NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	A.1

U. S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
CRATER LAKE NATIONAL PARK

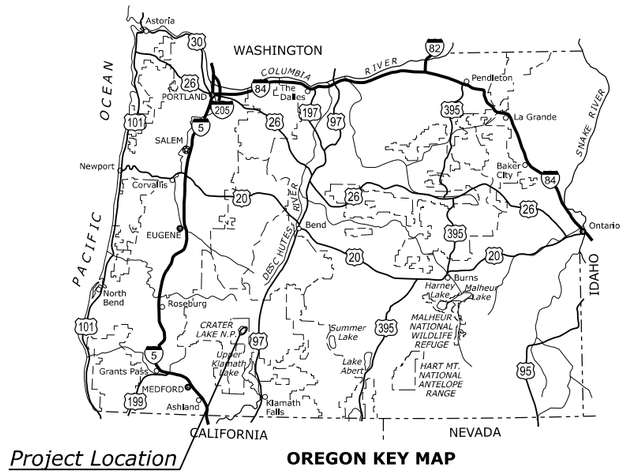
PLANS FOR PROPOSED PROJECT

OR NPS CRLA 13(1)
NPS PMIS NO. 241696

REHABILITATE EAST RIM DRIVE

KLAMATH COUNTY
OREGON

LENGTH 18.7 MILES



Project Location

OREGON KEY MAP

TYPE OF CONSTRUCTION:

Grading, base, paving, subexcavation, and drainage

DESIGN DESIGNATION:

AADT (2020)	*208*
AADT (2040)	*309*
V	*35 MPH*
e (max)	*0.060*

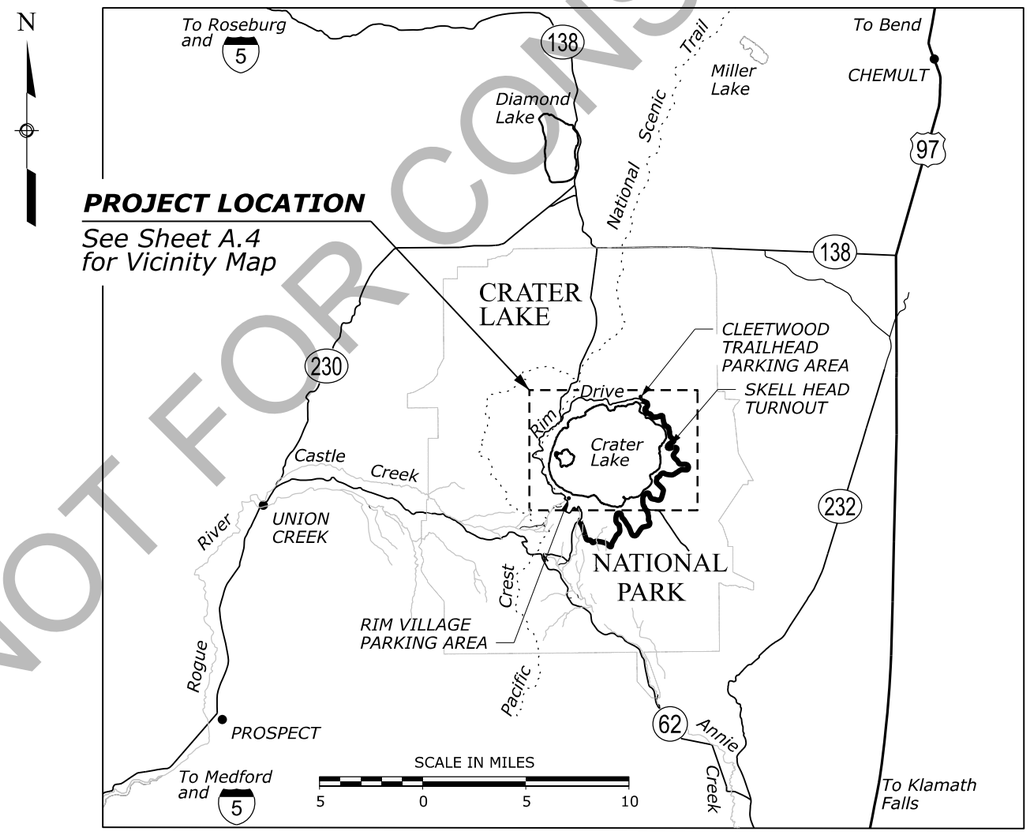
SPECIFICATION:

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

PLANS PREPARED BY

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION
VANCOUVER, WASHINGTON

PROJECT MANAGER
H. OPPENHEIMER



PROJECT LOCATION
See Sheet A.4 for Vicinity Map

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B. SUMMARY OF QUANTITIES
C. TYPICAL SECTIONS
D. MAINLINE PLAN-PROFILE
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H. EROSION CONTROL
I. GUARDWALLS AND STONE MASONRY
J. TEMPORARY TRAFFIC CONTROL
K. PERMANENT TRAFFIC CONTROL
L. STAGING, MATERIAL AND DISPOSAL SITES

See Index to Sheets on A.2

APPROVED:

_____ *DATE* _____
Chief of Engineering,
Western Federal Lands Highway Division

_____ *DATE* _____
Project Manager, Denver Service Center
National Park Service

_____ *DATE* _____
Superintendent,
Crater Lake National Park

_____ *DATE* _____
Regional Director, Pacific West Region,
National Park Service

NOT FOR CONSTRUCTION

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STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	A.2

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A.3 PLAN SYMBOLS AND ABBREVIATIONS
A.4 VICINITY MAP

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INDEX TO SHEETS

Δ	total central angle
Δc	curve central angle
Ø	diameter
θs	spiral central angle
abut.	abutment
ADT	average daily traffic
AH	ahead
appr.	approach
BK	back
BM	bench mark
BP	balance point
br.	bridge
brg.	bearing
cc or c. to c.	center to center
℄	centerline
clr.	clear
CMP	corrugated metal pipe
col.	column
conc.	concrete
conn.	connection
constr. jt.	construction joint
cont.	continuous
CS	point of curve to spiral
ctrs.	centers
CUFT	cubic foot (feet)
culv.	culvert
CUYD	cubic yard(s)
D	diameter
DHV	design hourly volume
dia.	diameter
diag.	diagonal
diaph.	diaphragm
dist.	distance
drwg(s).	drawing(s)
E	east
e	superelevation rate
El. 94.16 ft	elevation with number
elev.	elevation
emb.	embankment
EP	edge of pavement
EQ or eq.	equation
ER	edge of road
EW	edge of water
exc.	excavation
exp. jt.	expansion joint
fin.	finish
flg.	flange
ft2	square foot
ft3	cubic foot (feet)
ftg.	footing
ga.	gage (gauge)
galv.	galvanized
hdwl.	headwall
hex.	hexagon
HW	high water
ID	inside diameter
jt.	joint
L	length of curve
lam.	lamination
lat.	latitude
LNFT	linear foot (feet)
long.	longitudinal
LPSM	lump sum
Ls	length of spiral
lt. or LT	left
LW	low water

M.L.	main line
M.P.	mile post
matl.	material
max.	maximum
MGAL	thousand gallon
min.	minimum
mon.	monument
N	north
NC	normal crown
o. c.	on center
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
PI	point of intersection
pl.	plate
POC	point on curve
POS	point on spiral
POT	point on tangent
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
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
SLRY	slurry unit
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)
ST	point of spiral to tangent
STA, Sta.	station
std.	standard
stgr.	stringer
stiff.	stiffener
struc.	structural
STS	point of spiral to tangent spiral
sym.	symmetrical
T	tangent distance
T.	township
TBM	temporary bench mark
thd.	thread
TS	point of tangent to spiral
Ts	tangent distance (spiraled curve)
typ.	typical
V	design speed
vph	vehicles per hour
VPI	vertical point of intersection
W	west
yd2	square yard
yd3	cubic yard(s)

NOTE:

1. Other symbols used in the plans will be shown in a legend on the appropriate plan sheet.

National Boundary

State Boundary

County Boundary

City Boundary

Township or Range Line

Section Line

Section Corner (Found, Projected)

¼ Section Line

¼ Section Corner (Found, Projected)

1/16 Section Line

1/16 Section Corner (Found, Projected)

Property Line w/Found Property Corner

Parcel Number

National Park Boundary

National Forest Boundary

National Wildlife Refuge Boundary

BLM Lands Boundary

Indian Reservation Boundary

Existing Roadway (Road, Paved, Gravel)

Railroad

Trail

Fiber Roll or Wattle

Silt Fence

Intermittent Drainage or Small Creek

Large Creek or River

Lake, Pond or Reservoir; Marshland

Spring or Seep

Treeline; Individual Trees

Material Source; Bore Hole; Test Pit

Spot Elevation; Coordinate Grid Tick

Above Ground Tank; Underground Tank

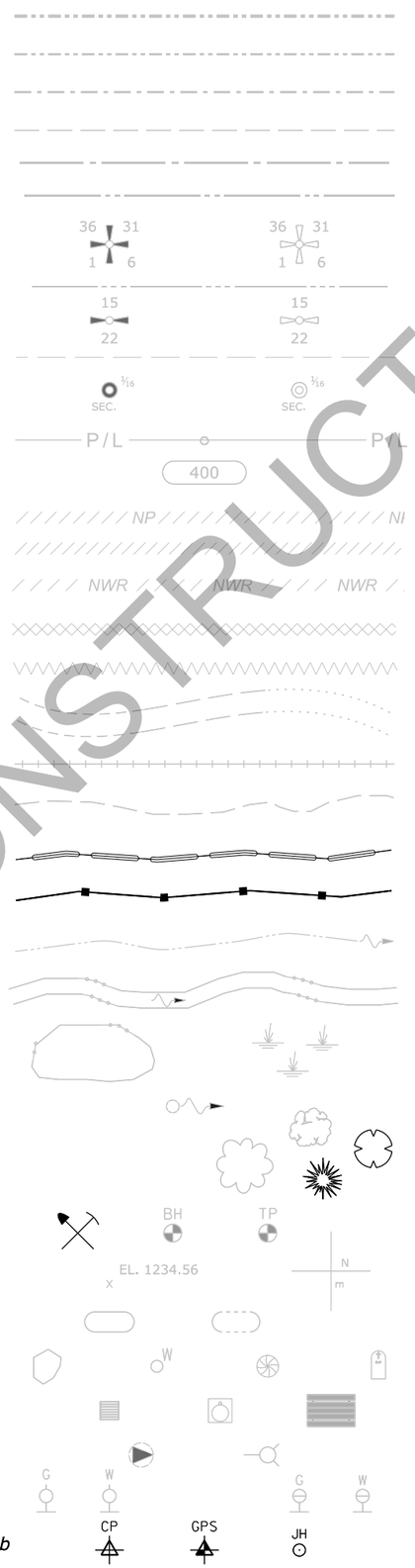
Boulder; Well; Satellite Dish; Grave

Cooking Grate; Garbage Can; Picnic Table

Flagpole; Fire Hydrant

Gas & Water Meter; Gas & Water Valve

Control Point (Terrestrial and GPS); Jump Hub



STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	A.3

NPS PMIS No. 241696
NPS Drwg. No. 106/175169

North Arrow

	EXISTING	PROPOSED
Slope Stake Limits	Top of Cut Toe of Fill Transition	
Fence		
Gate with Fence		
Cattleguard		
Guardrail		
Concrete Barrier		
Retaining Wall		wall face
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	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 — - no symbol - — TCE

Riprap

NO SCALE

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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

PLAN SYMBOLS AND ABBREVIATIONS

DETAIL APPROVED FOR USE 11/2001
REVISED: 9/2005 1/2007 10/2009 10/2014

DETAIL W101-1

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	A.4

N

CRATER LAKE NATIONAL PARK

CLEETWOOD TRAILHEAD PARKING AREA

BEGIN PROJECT EAST RIM DRIVE
12+00.00 Line 'MAIN01'

Grouse Hill

EAST RIM DRIVE

Liao Rock

Steel Bay

Pumice Point

Cleetwood Cove

Palisade Point

Mazama Rock

ROUNDTOP QUARRY
STAGING AREA AND STOCKPILE SITE

Liao Bay

Merriam Point

Hillman Peak

DRIVE

Grotto Cove

CRATER LAKE

SKELL HEAD OVERLOOK

Skell Channel

Lookout House

Wizard Island

RIM

Line 'APPR01'

See Detail A
Cloudcap Spur

Cloudcap Bay

Cloudcap

WEST

Discovery Point

Sentinel Rock

END PROJECT EAST RIM DRIVE
990+95.00 Line 'MAIN01'

10+00.00 Line 'APPR03' =
556+27.11 Line 'MAIN01'

Danger Bay

Kerr Notch

Eagle Point

Phantom Ship

Crater Lake Lodge

Chaski Bay

Line 'APPR03'

Little Castle Creek

Trapper Creek

Park Headquarters

Castle Creek

BALL DIAMOND
STAGING AREA AND STOCKPILE SITE

RIM DRIVE

Pinnacles road

EAST

To US 230 / 62 JCT
7 Miles

Valley Rd.

JCT US 62
To Ball Diamond
3.5 Miles

Creek

62

Munson

Line 'APPR04' = Vidae Falls Picnic Area Approach Road
10+00.00 Line 'APPR04' =
831+69.13 Line 'MAIN01'

Mazama Campground

Middle Fork

East Fork

Sun Creek

POLE BRIDGE CREEK
MATERIAL SOURCE STAGING AREA AND STOCKPILE SITE
S32, T31S, R6E

JCT US 62
To Klamath Falls
45 Miles

62

SCALE IN MILES
1 0 1 2 3

Line 'APPR01' = Cloudcap Overlook East Approach Road

Line 'MAIN01' = East Rim Drive

23+03.83 Line 'APPR01' =
10+00.00 Line 'APPR02'

Line 'APPR02' = Cloudcap Overlook West Approach Road

10+00.00 Line 'APPR01' =
353+99.35 Line 'MAIN01'

20+90.84 Line 'APPR02' =
366+43.23 Line 'MAIN01'

DETAIL A

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

VICINITY MAP

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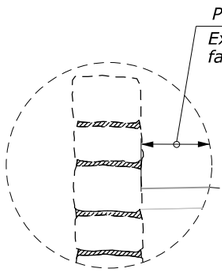
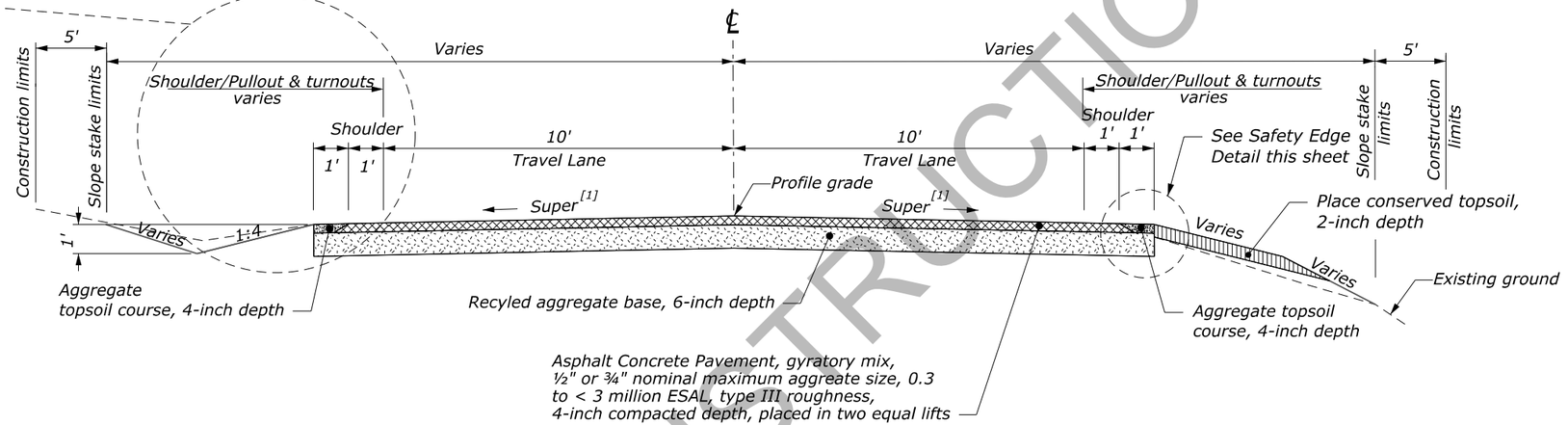


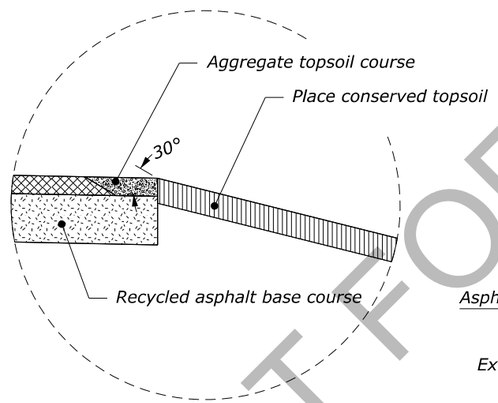
GUARDWALL SECTION EAST RIM DRIVE

LINE MAIN01
19+21 22+49 RT
24+87 to 25+49 RT
83+38 to 84+50 RT
105+79 to 109+21 RT
186+13 to 186+64 RT
190+06 to 190+67 RT
192+17 to 192+65 RT
302+08 to 307+37 LT
504+16 to 506+35 LT
591+91 to 603+37 LT
705+96 to 716+03 LT
731+30 to 739+30 LT
741+90 to 754+09 LT

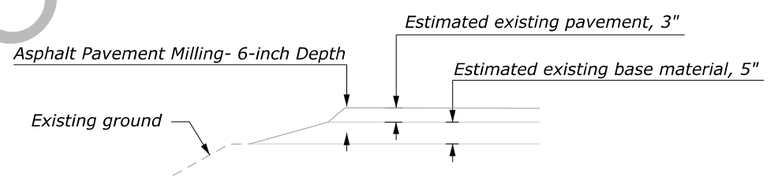


TYPICAL ROADWAY SECTION [2]

23+67 to 568+00	LINE MAIN01
590+15 to 656+50	LINE MAIN01
701+25 to 9990+60	LINE MAIN01
10+00 to 74.95	LINE APPR01
10+00 to 20+91	LINE APPR02
10+00 to 12+47	LINE APPR03
10+00 to 27+96	LINE APPR04



SAFETY EDGE DETAIL



EXISTING PAVEMENT STRUCTURE

East Rim Drive

NOTE:

1. See Sheet D.1 for Tabulation of Quantities.
2. See Sheet F.32 for Milling Along Guardwall @ Turnouts.
3. See Sheet F.32 for Typical Turnout Details.
4. See G.6 for Paved Ditch Details and locations.

FOOTNOTE:

[1] See super elevation tables in government furnished data.

[2] See Sheets C.3 to C.12.

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NO SCALE

TYPICAL SECTION

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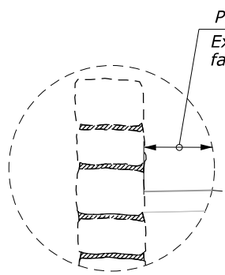
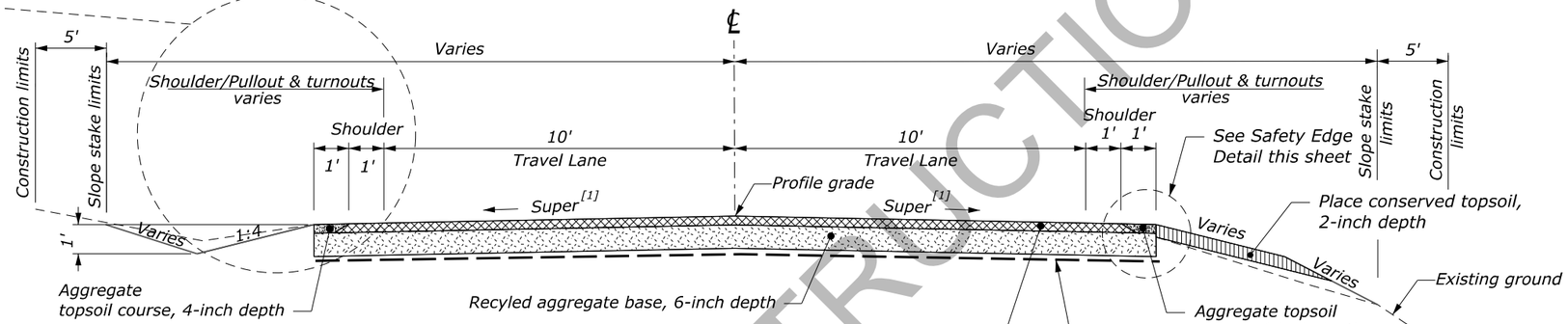
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	C.2



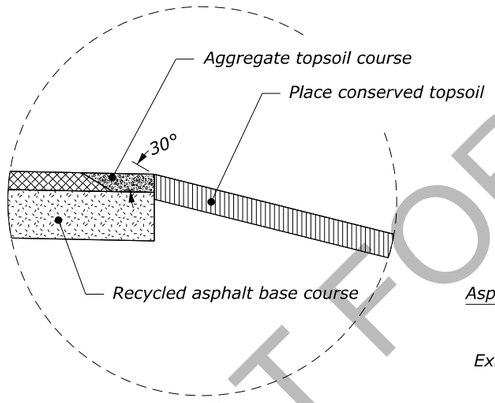
GUARDWALL SECTION EAST RIM DRIVE

574+65 to 577+37 LT
578+37 to 579+92 LT
580+98 to 582+34 LT
739+30 to 741+90 LT

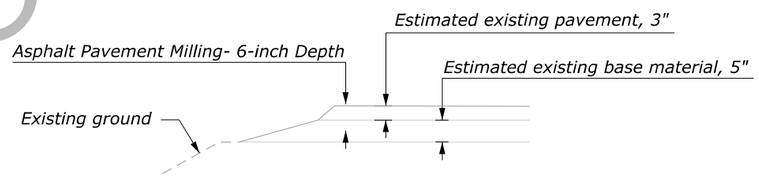


TYPICAL ROADWAY SECTION [2]

568+00 to 590+15 LINE MAIN01
656+50 to 679+75 LINE MAIN01
684+25 to 701+25 LINE MAIN01
739+30 to 741+90 LINE MAIN01



SAFETY EDGE DETAIL



EXISTING PAVEMENT STRUCTURE

East Rim Drive

NOTE:

1. See Sheet D.1 for Tabulation of Quantities.
2. See Sheet F.32 for Milling Along Guardwall @ Turnouts.
3. See Sheet F.32 for Typical Turnout Details.

FOOTNOTE:

[1] See super elevation tables in government furnished data.

[2] See Sheets C.3 to C.12.

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TYPICAL SECTION

SHEET 2 of 2

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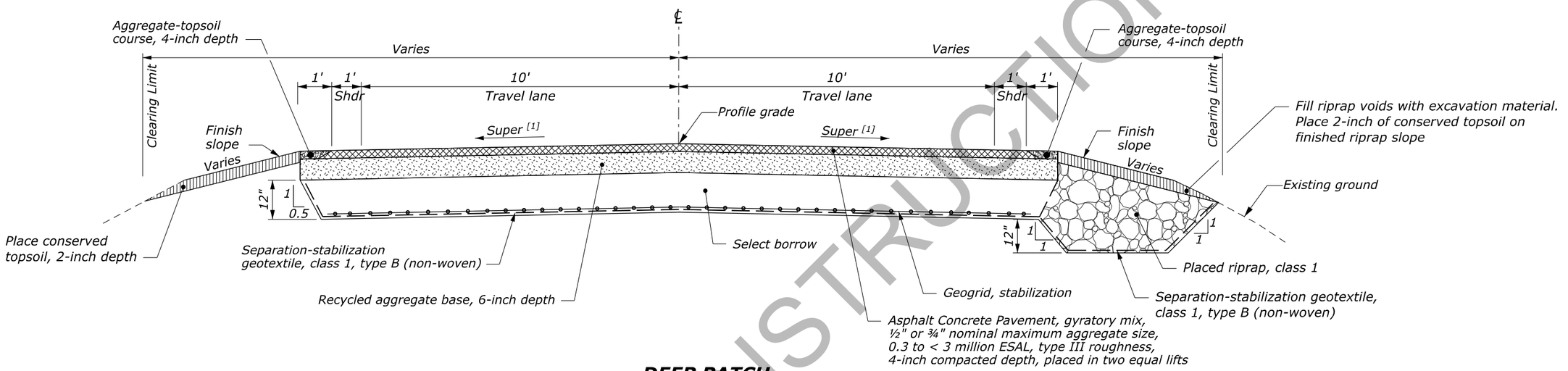
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	C.3



DEEP PATCH TYPE 1 FULL WIDTH WITH SHOULDER STABILIZATION

DEEP PATCH TYPE 1 WITH SHOULDER STABILIZATION

PROPOSED STATION LIMITS	LENGTH, FEET	PROPOSED STATION LIMITS	LENGTH, FEET
457+95 to 461+60	365	467+80 to 468+20	40

FOOTNOTE:

[1] See super elevation tables in government furnished data.

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DEEP PATCH TYPE 1 WITH SHOULDER STABILIZATION DETAILS

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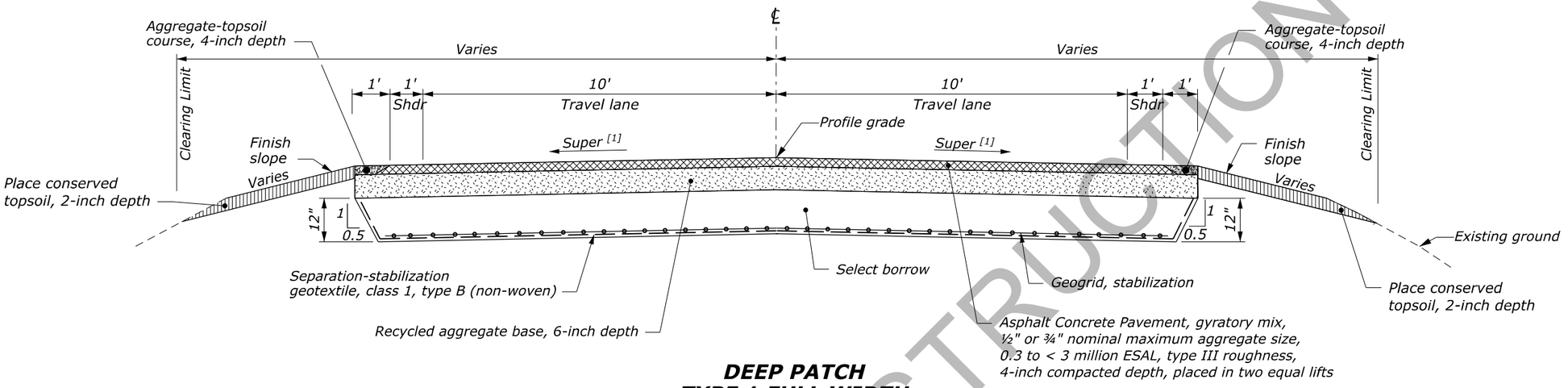
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	C.4



DEEP PATCH TYPE 1 FULL WIDTH

DEEP PATCH TYPE 1 FULL

PROPOSED STATION LIMITS	LENGTH, FEET	PROPOSED STATION LIMITS	LENGTH, FEET
091+85 to 096+00	415	562+75 to 568+00	525
102+80 to 103+70	90	597+75 to 601+40	365
113+80 to 118+00	420	603+85 to 607+25	340
165+20 to 173+70	850	770+50 to 771+00	50
216+00 to 216+70	70	783+60 to 784+90	130
223+10 to 223+80	70	823+65 to 825+75	210
354+55 to 394+20	3,965	839+70 to 842+10	240
403+10 to 407+80	470	858+50 to 861+00	250
432+00 to 457+95	2,595	928+27 to 929+80	153
461+60 to 462+10	50	936+55 to 937+50	95
466+00 to 467+80	180	944+70 to 964+20	1,950
470+70 to 474+70	400	971+10 to 973+20	210
523+80 to 551+30	2,750	APPR01 44+50 to 46+10	160

FOOTNOTE:

[1] See super elevation tables in government furnished data.

NOT FOR CONSTRUCTION

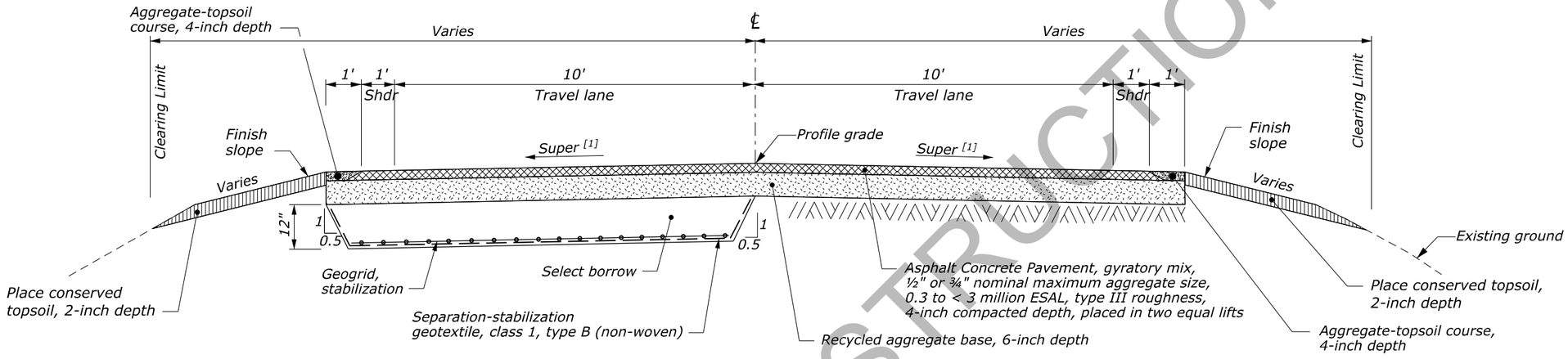
NO SCALE

DEEP PATCH TYPE 1 DETAILS

SHEET 1 of 3

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_cb.dgn [Deep Patch Type 1 Details]
23 March 2021 3:16 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	C.5



DEEP PATCH TYPE 1
HALF WIDTH LEFT

DEEP PATCH TYPE 1
LEFT

PROPOSED STATION LIMITS	LENGTH, FEET	PROPOSED STATION LIMITS	LENGTH, FEET
139+65 to 140+80	115	273+20 to 274+00	80
152+05 to 152+70	65	333+35 to 334+50	115
158+20 to 160+05	185	611+95 to 613+10	115
201+80 to 202+80	100	629+60 to 629+80	20
225+30 to 227+30	200	703+10 to 704+60	150
238+20 to 241+65	345	776+20 to 777+23	103
257+00 to 259+30	230	810+40 to 816+30	590

NOT FOR CONSTRUCTION

FOOTNOTE:

[1] See super elevation tables in government furnished data.

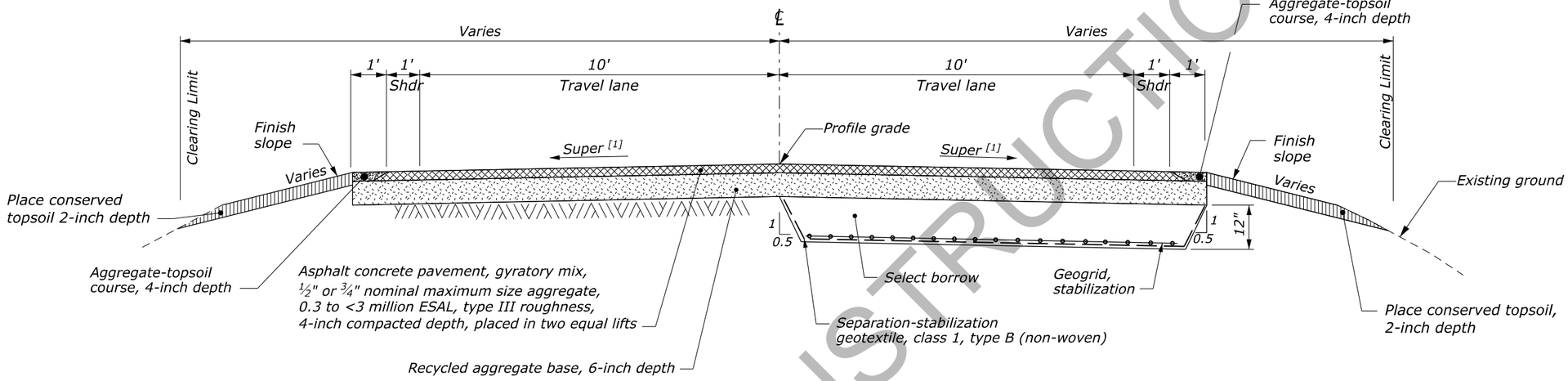
NO SCALE

DEEP PATCH TYPE 1 DETAILS

SHEET 2 of 3

C:\Users\jennifer.longmore\Desktop\Exported from PW\cfd01301_cb.dgn [Deep Patch_Type 1-1]
23 March 2021 3:16 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	C.6



DEEP PATCH TYPE 1

DEEP PATCH TYPE 1 HALF WIDTH RIGHT

DEEP PATCH TYPE 1 RIGHT

PROPOSED STATION LIMITS	LENGTH, FEET
106+80 to 109+25	245
512+20 to 513+55	135
786+30 to 787+60	130
976+20 to 979+80	360

NOT FOR CONSTRUCTION

FOOTNOTE:

[1] See super elevation tables in government furnished data.

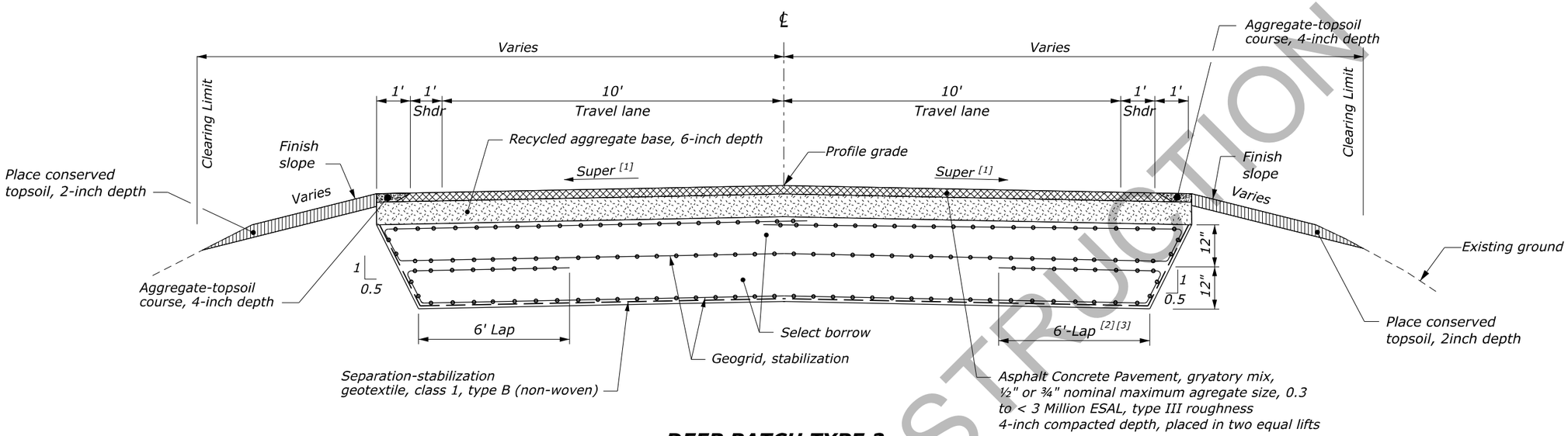
NO SCALE

DEEP PATCH TYPE 1 DETAILS

SHEET 3 of 3

C:\Users\jennifer.longmore\Desktop\Exported from PW\cfa01301_cb.dgn [Deep Patch_Type 1-2]
23 March 2021 3:22 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	C.7



DEEP PATCH TYPE 2 FULL WIDTH

DEEP PATCH TYPE 2 FULL	
PROPOSED STATION LIMITS	LENGTH, FEET
072+95 to 074+90	195
077+95 to 078+35	40
096+00 to 100+05	405
253+80 to 255+90	210
283+55 to 284+00	45
301+30 to 301+90	60
517+50 to 520+40	290
842+10 to 843+40	130

FOOTNOTE:

[1] *See super elevation tables in government furnished data.*

[2] *Place a thin layer (3" nominal) of select borrow between geogrid reinforcement lap and overlaying geogrid layer to prevent contact between the two layers.*

[3] *Extend the top course lap to 1-foot beyond centerline.*

NOT FOR CONSTRUCTION

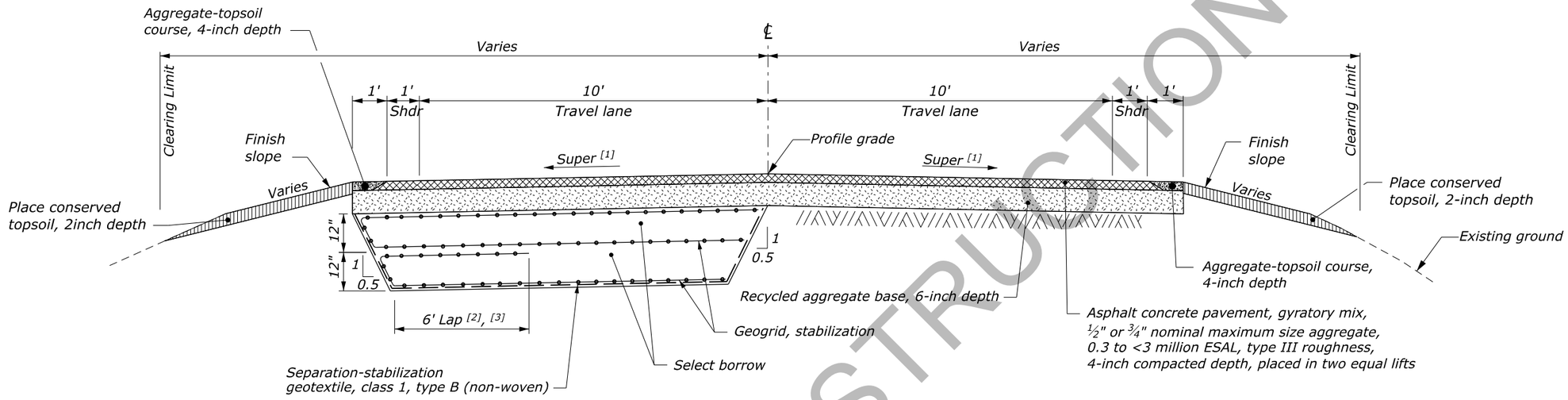
NO SCALE

DEEP PATCH TYPE 2 DETAILS

SHEET 1 of 2

C:\Users\jennifer.longmore\Desktop\Exported from PW\cfa01301_cc.dgn [Deep Patch Type 2 Details]
23 March 2021 3:19 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	C.8



DEEP PATCH TYPE 2 HALF WIDTH LEFT

DEEP PATCH TYPE 2 LEFT	
PROPOSED STATION LIMITS	LENGTH, FEET
173+70 to 176+00	230
398+70 to 401+85	315
818+15 to 820+75	260
843+40 to 844+60	120

FOOTNOTE:

[1] See super elevation tables in government furnished data.

[2] Place a thin layer (3" nominal) of select borrow between geogrid reinforcement lap and overlaying geogrid layer to prevent contact between the two layers.

[3] Extend the top course lap to back of excavation.

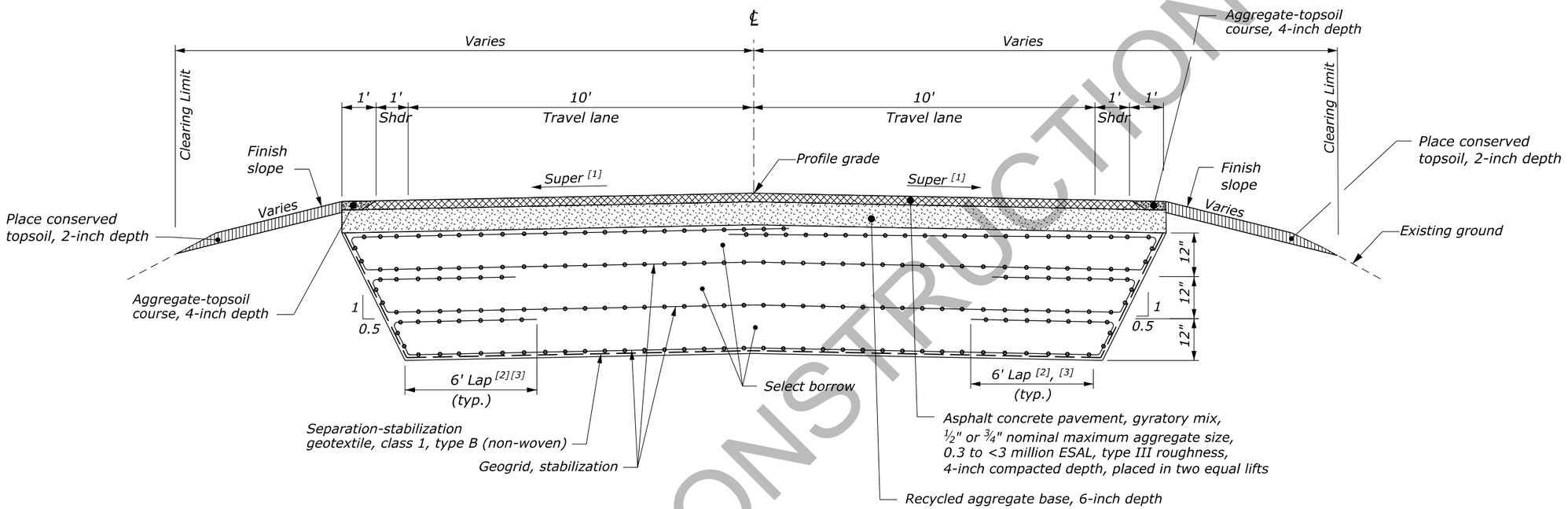
NOT FOR CONSTRUCTION

NO SCALE

DEEP PATCH TYPE 2 DETAILS

C:\Users\jennifer.longmore\Desktop\Exported from PW\cfla01301_cc.dgn [Deep Patch Type 2-1]
23 March 2021 3:19 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	C.9



DEEP PATCH TYPE 3 FULL WIDTH

DEEP PATCH TYPE 3 FULL	
PROPOSED STATION LIMITS	LENGTH, FEET
037+95 to 048+55	1060
244+00 to 249+00	500
311+60 to 312+95	135
506+70 to 508+30	160
822+20 to 823+65	145

FOOTNOTE:

[1] Match existing superelevation.

[2] Place a thin layer (3-inch nominal) of select borrow between geogrid reinforcement lap and overlaying geogrid layer to prevent contact between the two layers.

[3] Extend the top course lap to 1-foot beyond centerline.

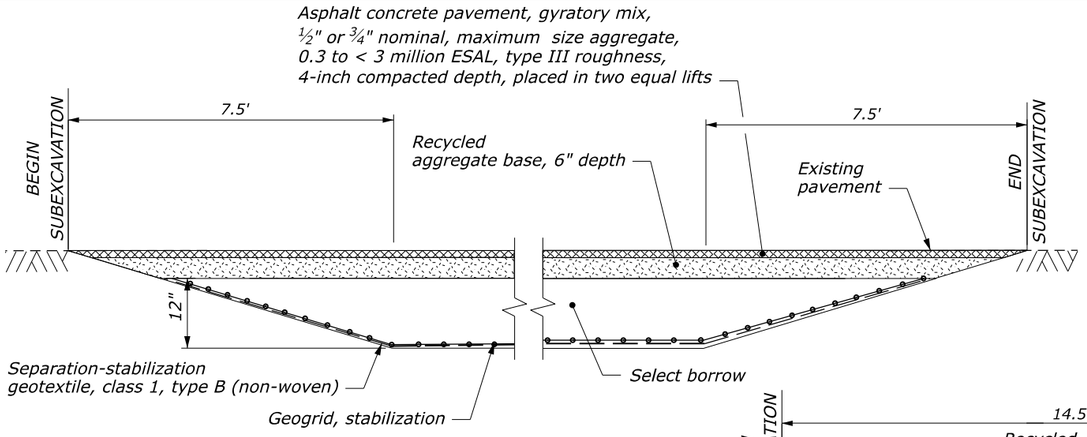
NO SCALE

DEEP PATCH TYPE 3 DETAILS

NOT FOR CONSTRUCTION

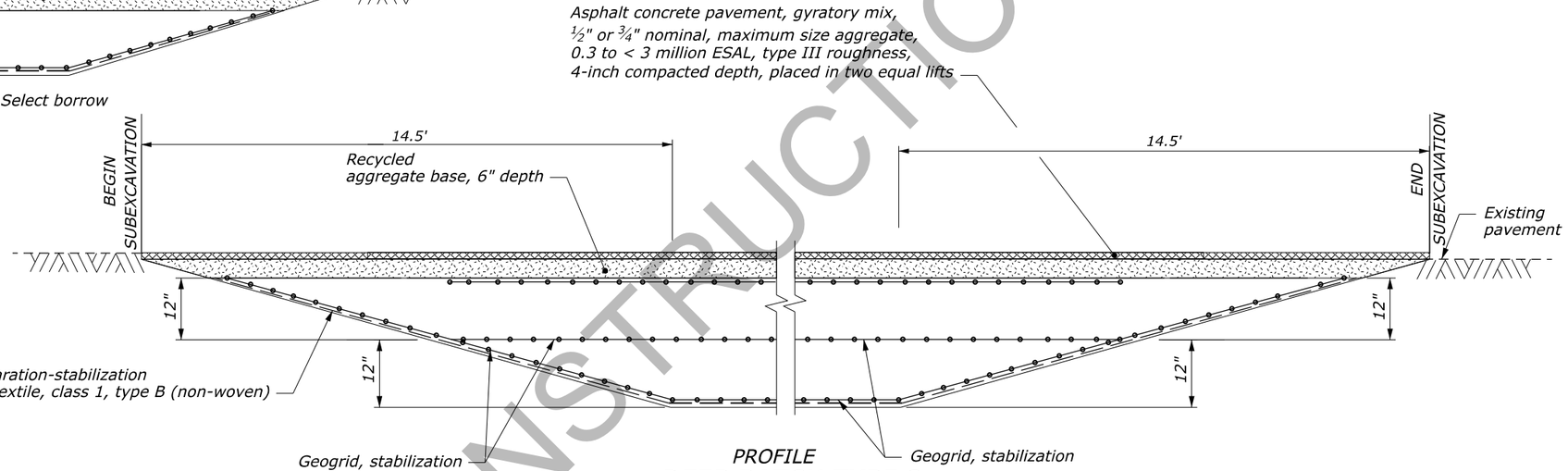
C:\Users\jennifer.longmore\Desktop\Exported from PW\cfa01301x_cd.dgn [Deep Patch Type 3 Details]
23 March 2021 3:24 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	C.10



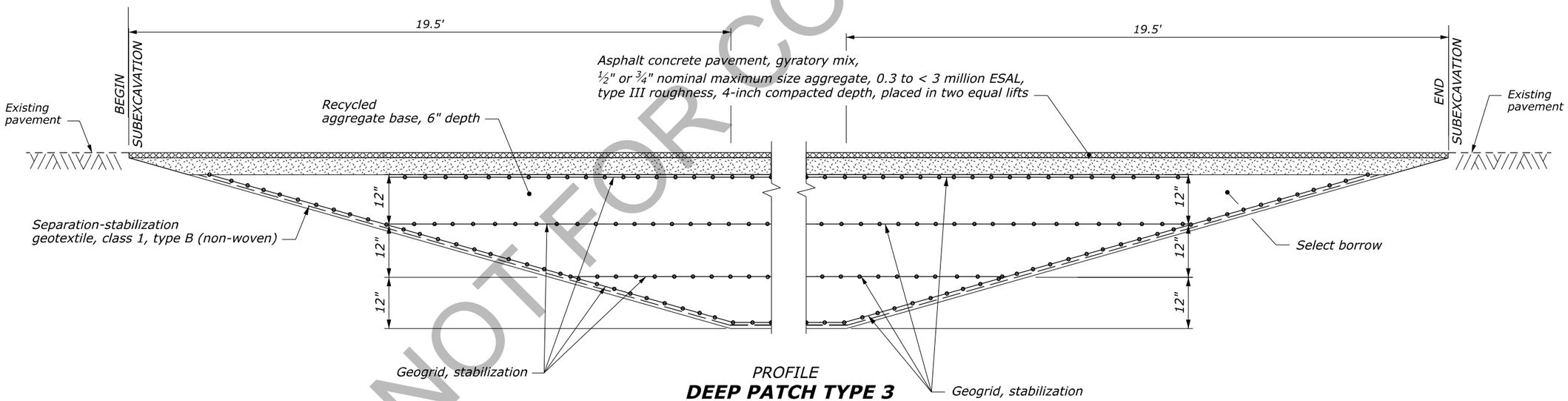
PROFILE

DEEP PATCH TYPE 1
TRANSITION DETAIL



PROFILE

DEEP PATCH TYPE 2
TRANSITION DETAIL



PROFILE

DEEP PATCH TYPE 3
TRANSITION DETAIL

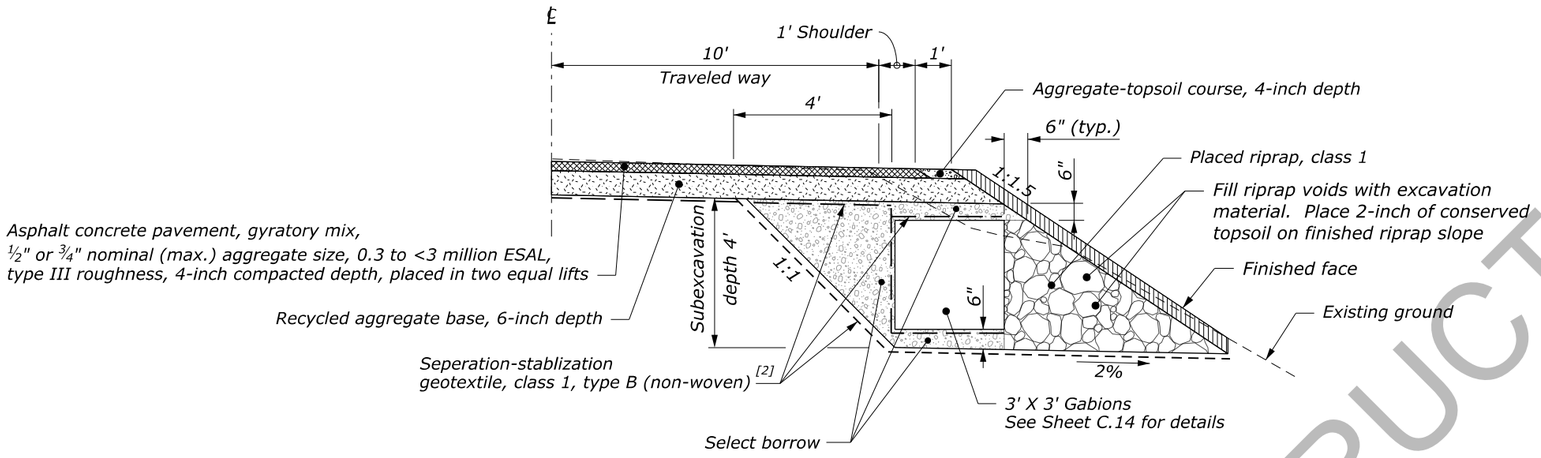
NOT FOR CONSTRUCTION

NO SCALE

DEEP PATCH TRANSITION DETAILS

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_ce.dgn [Deep Patch Transition Details]
9 March 2021 2:52 PM

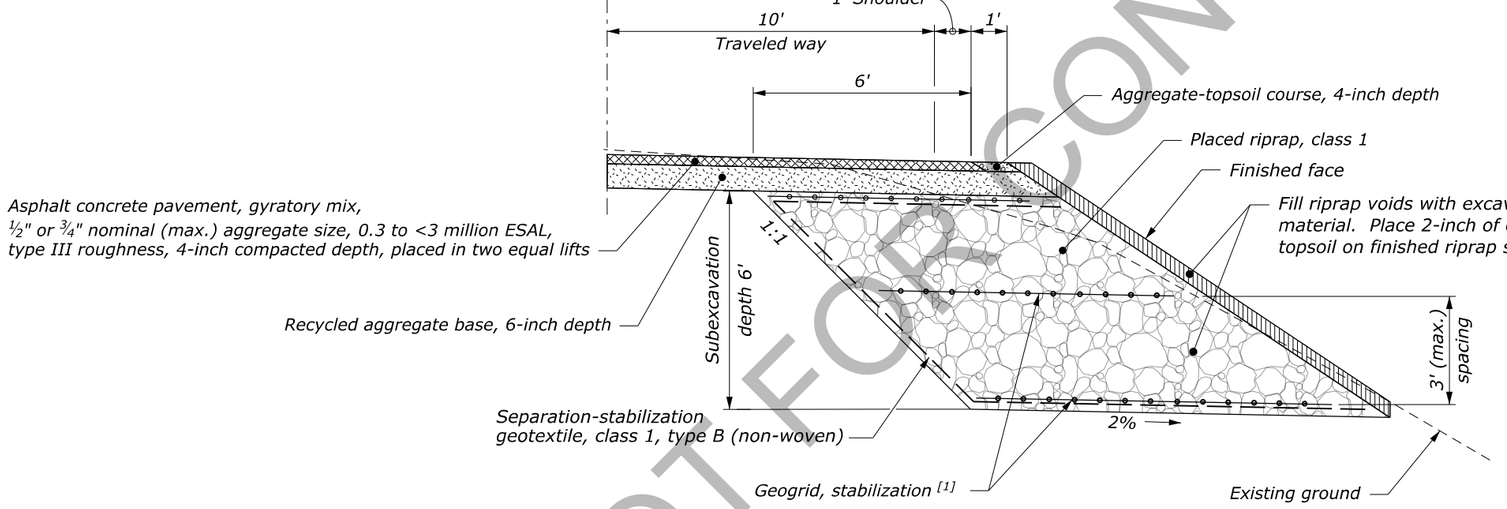
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	C.11



EDGE STABILIZATION DETAIL
TYPE 1

EDGE STABILIZATION
TYPE 1

PROPOSED STATION LIMITS	LENGTH, FEET	CENTER LINE ORIENTATION
298+80 to 300+50	170	LT
332+65 to 333+35	70	LT
339+58 to 341+15	157	RT
342+80 to 345+20	240	RT
353+00 to 353+58	58	LT
889+40 to 892+30	290	LT
904+10 to 905+90	180	RT
904+90 to 905+90	100	LT
APPR01 30+40 to 31+50	110	RT
APPR01 32+45 to 32+80	35	RT
APPR01 47+80 to 49+10	130	RT
APPR01 50+00 to 50+70	70	RT



EDGE STABILIZATION DETAIL
TYPE 2

EDGE STABILIZATION
TYPE 2

PROPOSED STATION LIMITS	LENGTH, FEET	CENTER LINE ORIENTATION
127+94 to 130+40	246	LT
243+10 to 243+60	50	LT
287+15 to 288+10	95	LT
350+85 to 352+15	130	LT
351+18 to 351+85	67	RT
636+00 to 641+00	500	LT
892+80 to 894+20	140	LT
APPR01 26+80 to 27+80	100	RT

FOOTNOTE:

[1] Terminate geogrid and geotextile filter 8-inch behind finished slope face.

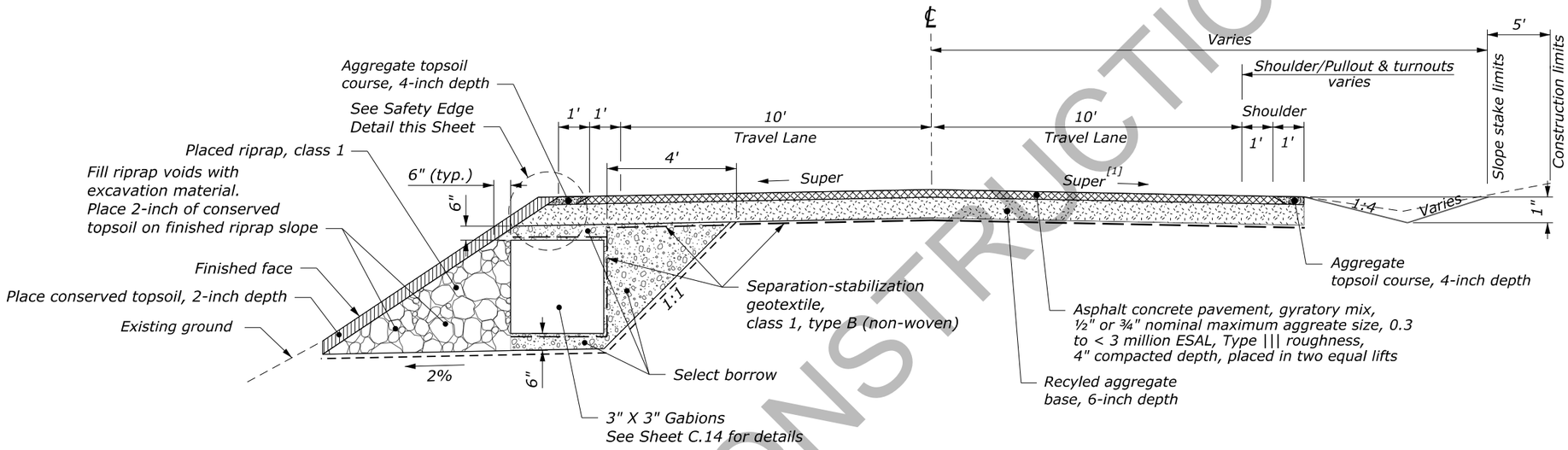
[2] Allow 18-inch (min.) overlaps where geotextile filter fabrics cross.

NOT FOR CONSTRUCTION

C:\Users\jennifer.longmore\Desktop\Exported from PW\cfa01301_cf.dgn [Edge Stabilization Details]
23 March 2021 3:28 PM

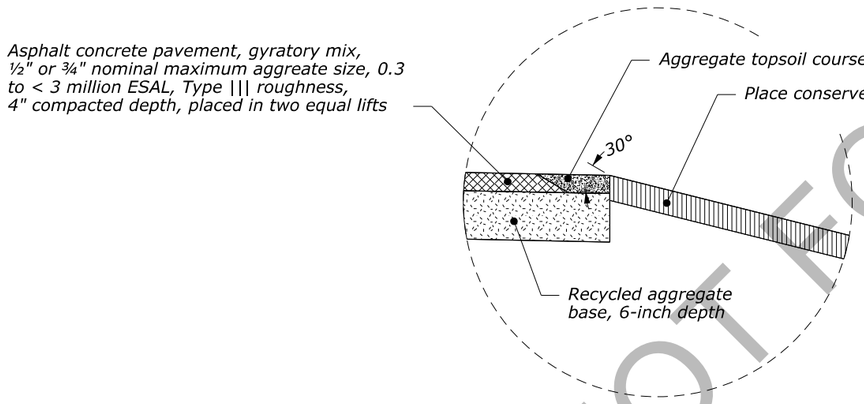
EDGE STABILIZATION DETAILS

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	C.12



TYPICAL ROADWAY SECTION [2]

679+75 to 684+25 LINE MAIN01



SAFETY EDGE DETAIL

NOTE:

1. *See Sheet D.1 for Tabulation of Quantities.*
2. *See Sheet F.29 for Milling Along Guardwall @ Turnouts.*
3. *See Sheet F.29 for Typical Turnout Details.*

FOOTNOTE:

[1] See super elevation tables in government furnished data.

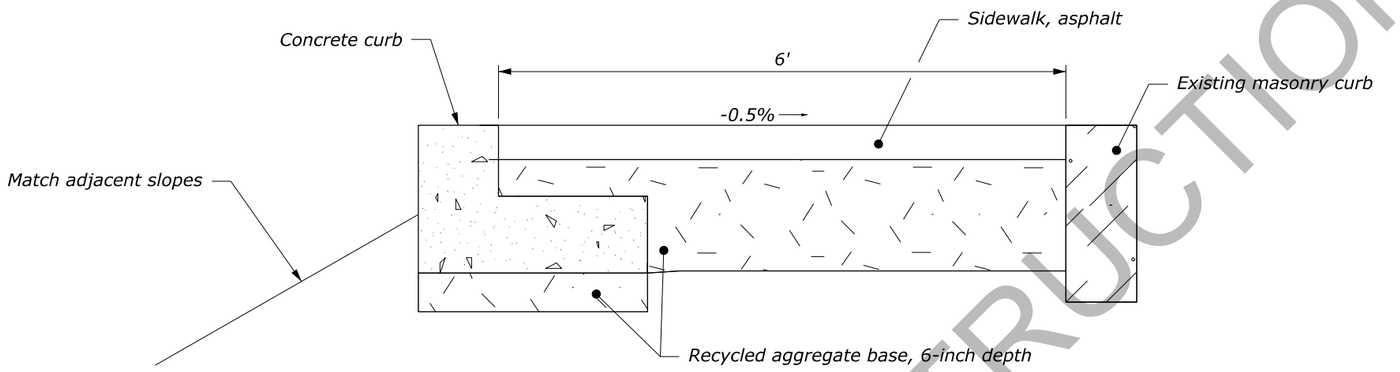
[2] See Sheets C.2 to C.9.

NOT FOR CONSTRUCTION

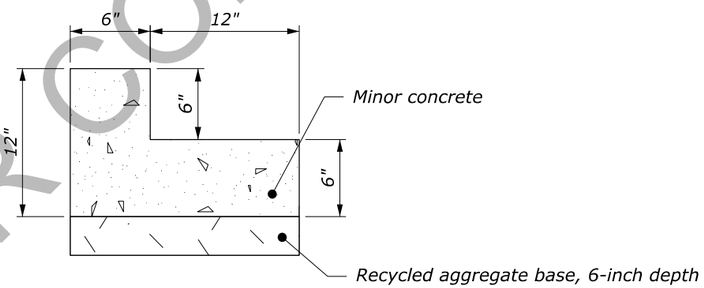
BASE STABILIZATION WITH EDGE STABILIZATION TYPE 1

C:\Users\jennifer.longmore\Desktop\Exported from PW\crfa01301_d.dgn [Base Stabilization With Edge Stabilization Type 1]
23 March 2021 3:31 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	C.13



TURNOUT 834+00, VIDAE FALLS
SIDEWALK DETAILS



CONCRETE CURB DETAIL

NOTE:

1. See Turnout Sheet F.27 for curb location.

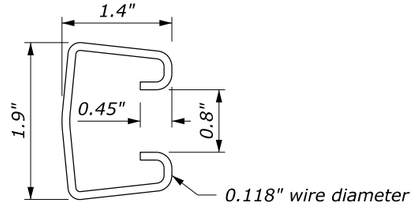
NO SCALE

SIDEWALK AND CURB DETAILS

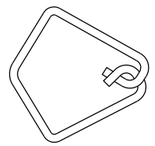
NOT FOR CONSTRUCTION

C:\Users\jennifer.longmore\Desktop\Exported from PW\cfa01301_cj.dgn [Sidewalk and Curb Details]
23 March 2021 3:38 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	C.14



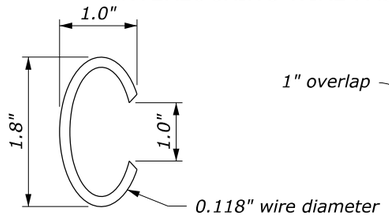
BEFORE CLOSURE



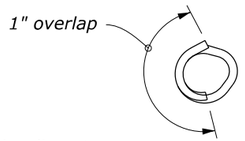
AFTER CLOSURE

NOTE:
All dimensions
are nominal

INTERLOCKING WIRE FASTENER



BEFORE CLOSURE

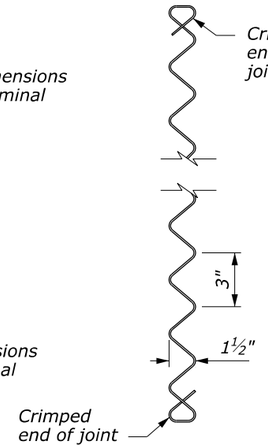


AFTER CLOSURE

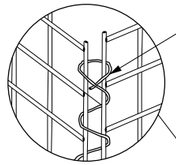
NOTE:
All dimensions
are nominal

OVERLAPPING RING WIRE FASTENER
(Not allowed for basket to basket connection)

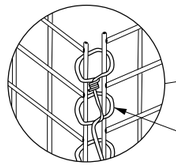
ALTERNATE TYING FASTENERS



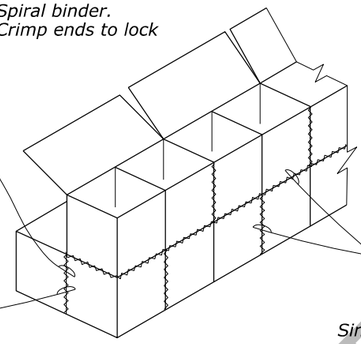
0.150" DIAMETER SPIRAL BINDER

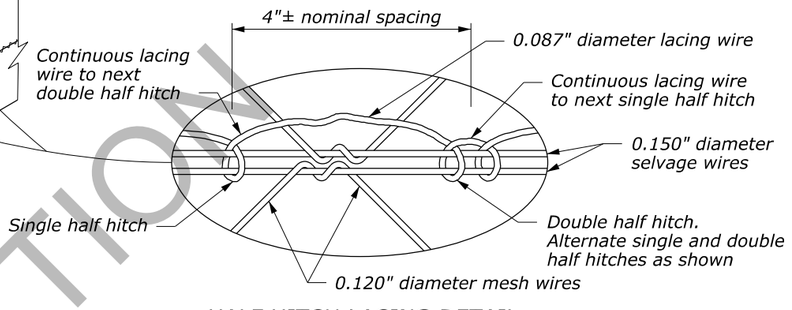


SPIRAL BINDER TIE
(Welded wire mesh)



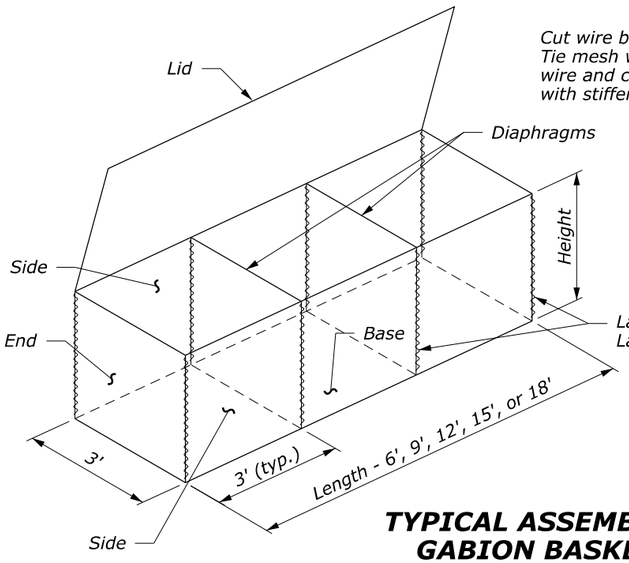
HALF HITCH LACING DETAIL
(Welded wire mesh)



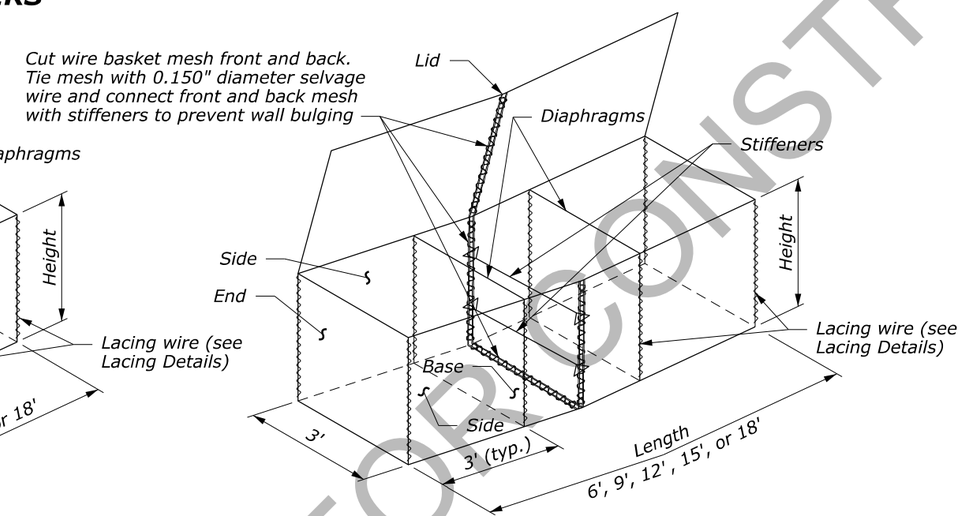


HALF HITCH LACING DETAIL
(Twisted wire mesh)

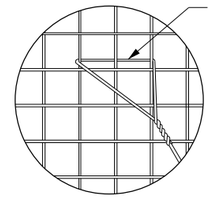
TYPICAL INSTALLATION GABION BASKETS



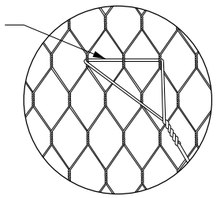
TYPICAL ASSEMBLED GABION BASKET



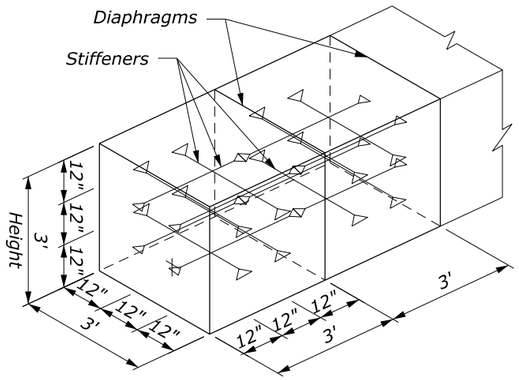
ASSEMBLED GABION BASKET IN WALL GRADE TRANSITION AREAS



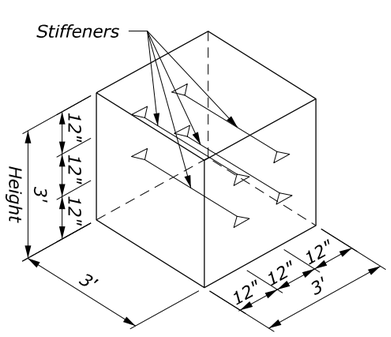
WELDED WIRE MESH



TWISTED WIRE MESH



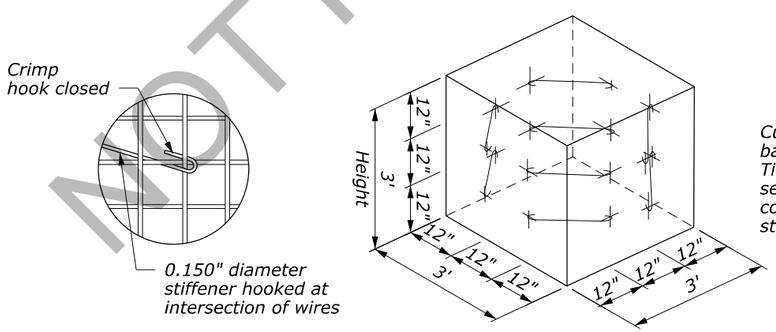
ALL END GABION CELLS



ALL INTERIOR GABION CELLS

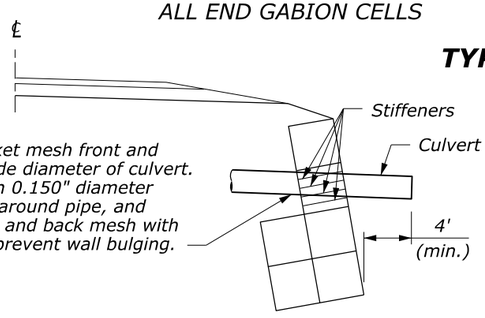
TYPICAL STIFFENERS

GABION BASKET NOMINAL SIZES AND CAPACITY				
Size Code Letter	Size in feet		Diaphragm Partitions	Capacity (CUYD)
	Length	Height		
A	6	3.0	1	2.00
B	9	3.0	2	3.00
C	12	3.0	3	4.00
X	15	3.0	4	5.00
Y	18	3.0	5	6.00
D	6	1.5	1	1.00
E	9	1.5	2	1.50
F	12	1.5	3	2.00
G	6	1.0	1	0.67
H	9	1.0	2	1.00
I	12	1.0	3	1.33



ALL GABION CELLS

OPTIONAL STIFFENERS WELDED WIRE GABION BASKET



Cut wire basket mesh front and
back to outside diameter of culvert.
Tie mesh with 0.150" diameter
selvage wire around pipe, and
connect front and back mesh with
stiffeners to prevent wall bulging.

TYPICAL CULVERT INSTALLATION
THROUGH GABION WALL

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

GABION BASKET

DETAIL APPROVED FOR USE --/----

REVISED:
DRAFT: 9/2011

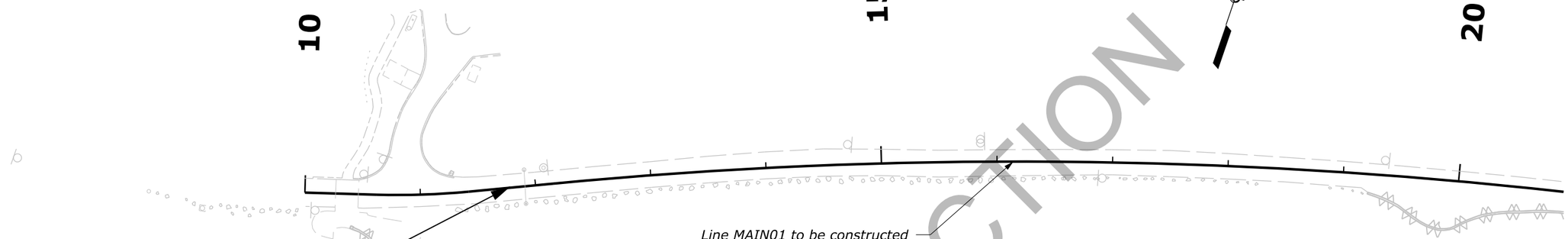
DETAIL
W253-1

NOT FOR CONSTRUCTION

18 November 2014 1:50 PM c:\myfiles\pw_production\dms43173\Det.W253-1.dgn [USC]

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.2



BEGIN PROJECT
OR NPS CRLA 13(1)
12+00
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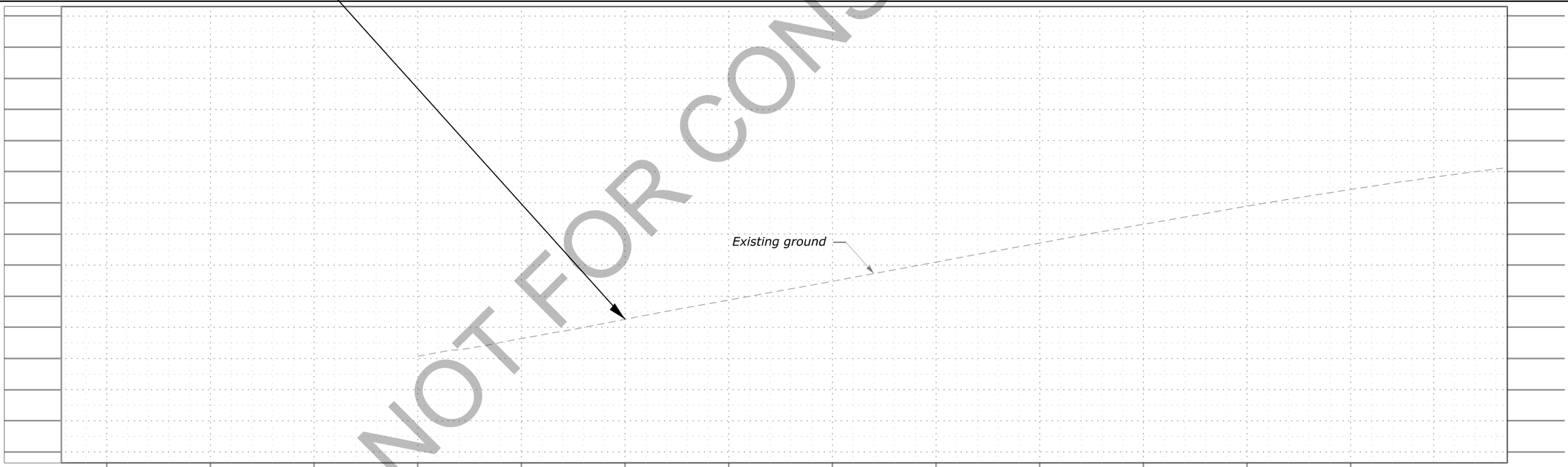
E = 4497756.0261
EL = 6,832.64

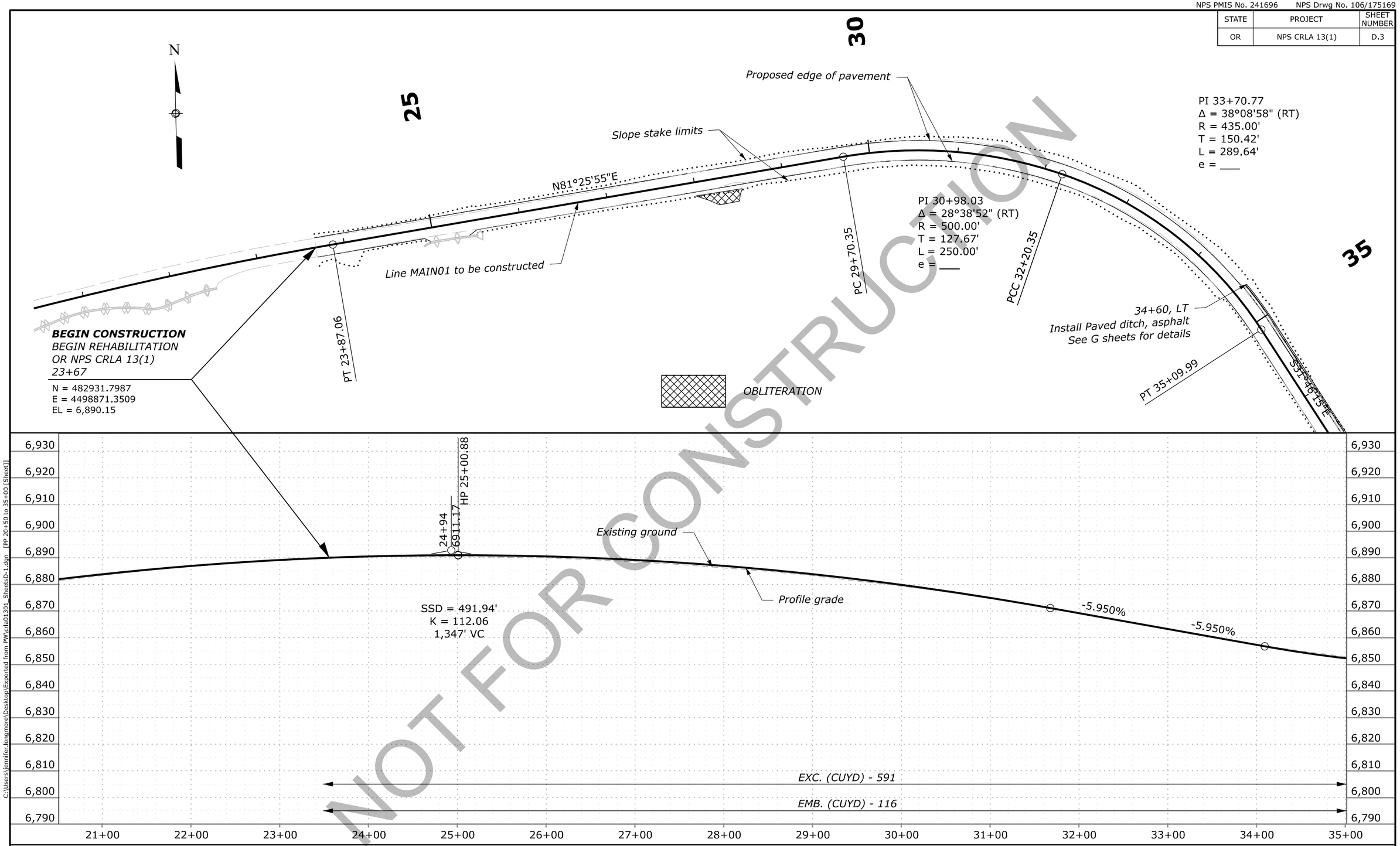


NOT FOR CONSTRUCTION

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_SheetsD-1.dgn [PP 6+00 to 20+50 (Sheet)]
7 April 2021 12:23 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.3



NOT FOR CONSTRUCTION

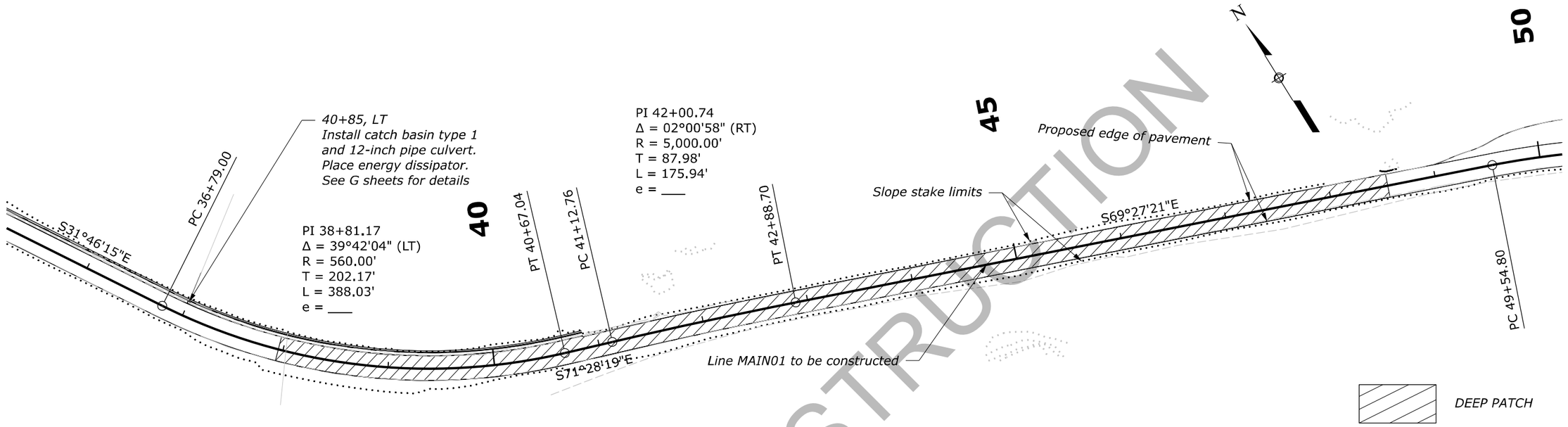
NOTE:

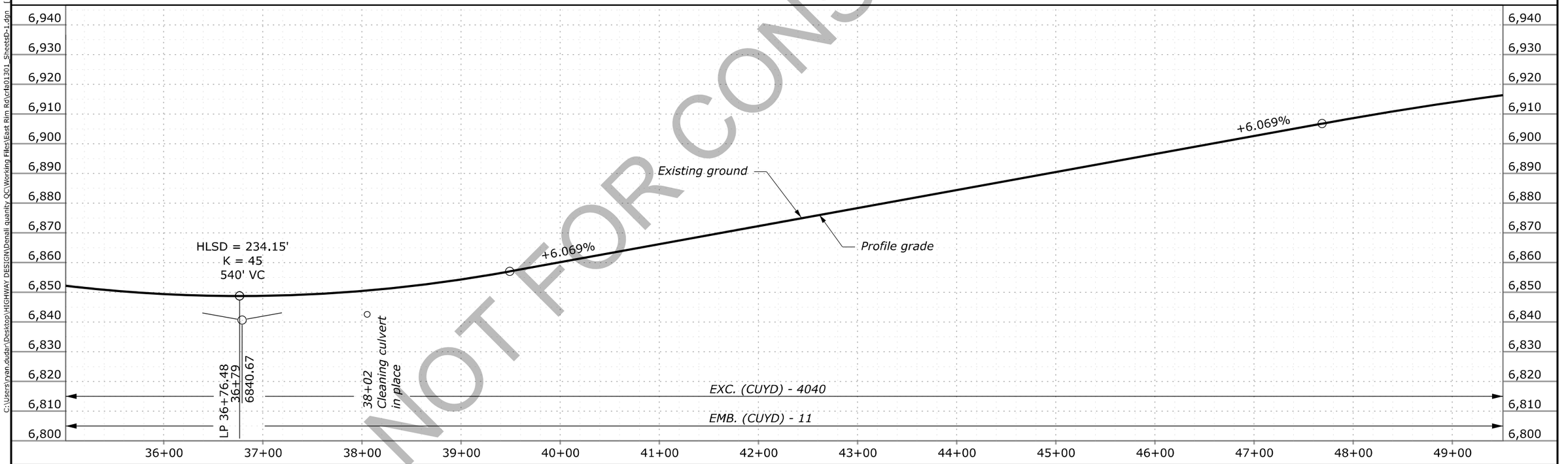
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_SheetsD-1.dgn [PP 20+50 to 35+00 [Sheet]]
7 April 2021 12:26 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.4





NOT FOR CONSTRUCTION

NOTE:

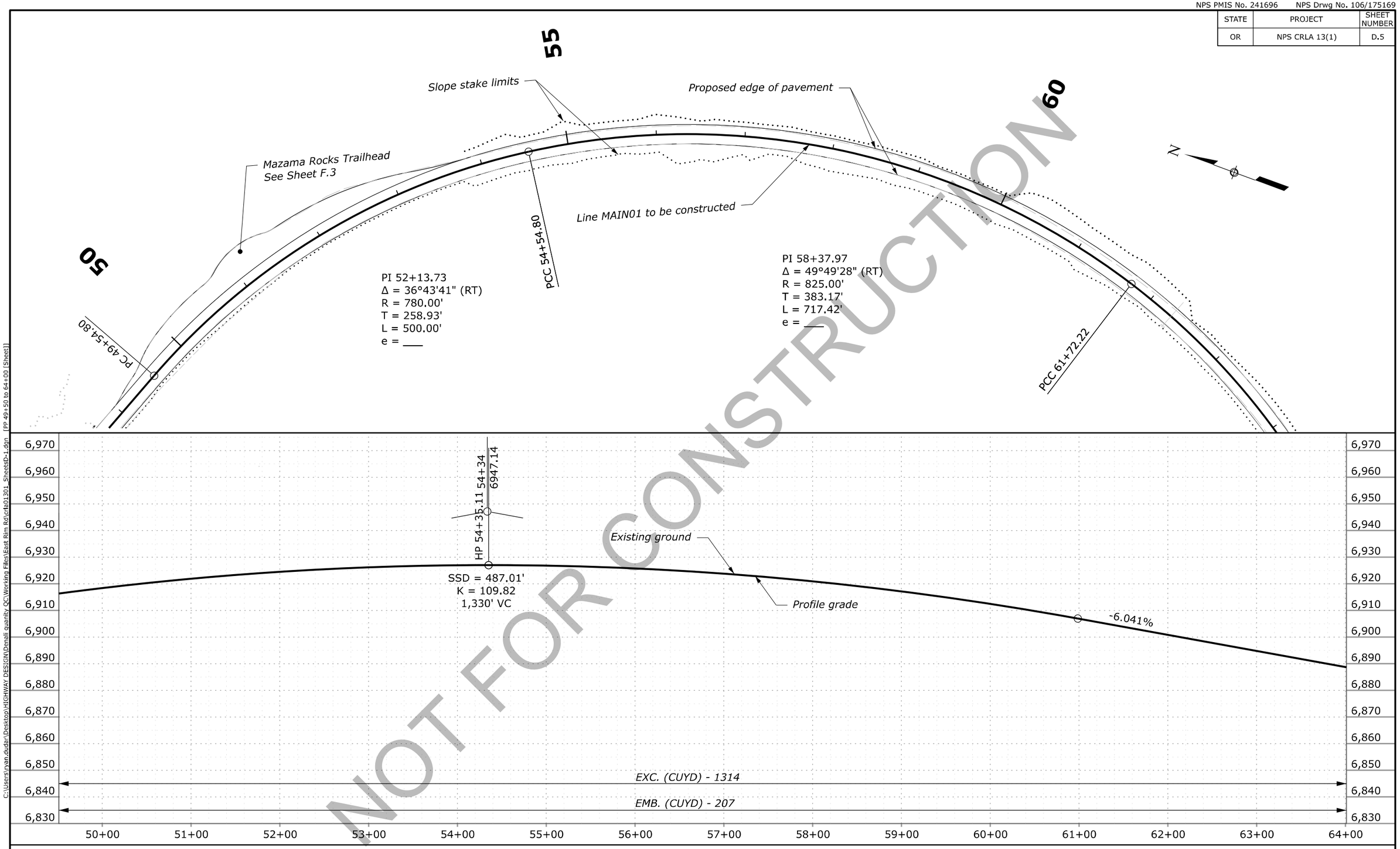
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crfa01301_SheetsD-1.dgn [PP 35+00 to 49+50 [Sheet1]]

7 April 2021 9:49 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.5



NOT FOR CONSTRUCTION

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crta01301_SheetsD-1.dgn [PP 49+50 to 64+00 (Sheet)]

7 April 2021 9:52 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.6

65

Slope stake limits

Proposed edge of pavement

PT 66+72.22

S52°54'24"W

TS 69+24.18

70

Δs = 06°55'51"
Ls = 150.00'

SC 70+74.18

71+00, LT
Install paved ditch, asphalt
See G sheets for detials

Line MAIN01 to be constructed

PI 64+30.69
Δ = 35°48'36" (RT)
R = 800.00'
T = 258.47'
L = 500.00'
e = ___

75

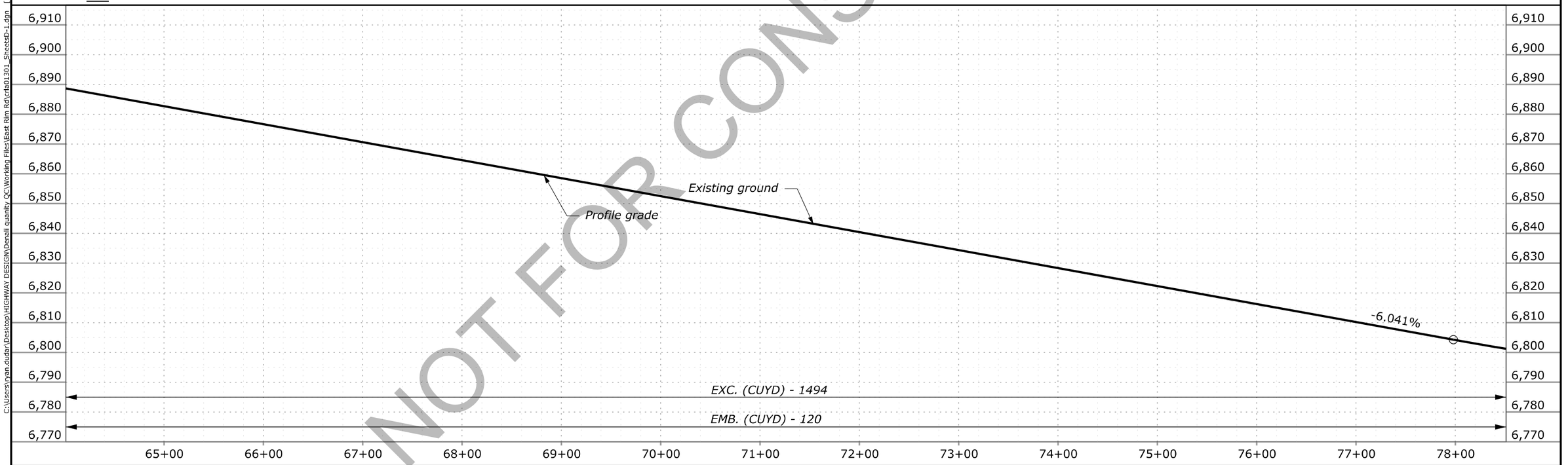
PI 75+02.03
Δ = 69°13'06" (LT)
R = 620.00'
T = 427.86'
L = 749.02'
e = ___

76+73, LT
Install catch basin type 1
and 12-inch pipe culvert.
Place energy dissipator.
See G sheets for details

Δs = 09°14'29"
Ls = 200.00'

CS 78+23.19

DEEP PATCH



NOT FOR CONSTRUCTION

NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudar\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-1.dgn [PP 64+00 to 78+50 [Sheet]]
7 April 2021 9:53 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.7

Δs = 09°14'29"
Ls = 200.00'

80

ST 80+23.19

Slope stake limits

S32°29'02"E

TS 82+70.17

Δs = 22°55'06"
Ls = 400.00'

85

Palisades Overlook See Sheet F.4

SC 86+70.17

CS 87+05.35

PI 86+87.77
Δ = 04°01'53" (LT)
R = 500.00'
T = 17.60'
L = 35.18'
e = ___

Δs = 17°11'19"
Ls = 300.00'

90

ST 90+05.35

S76°37'20"E

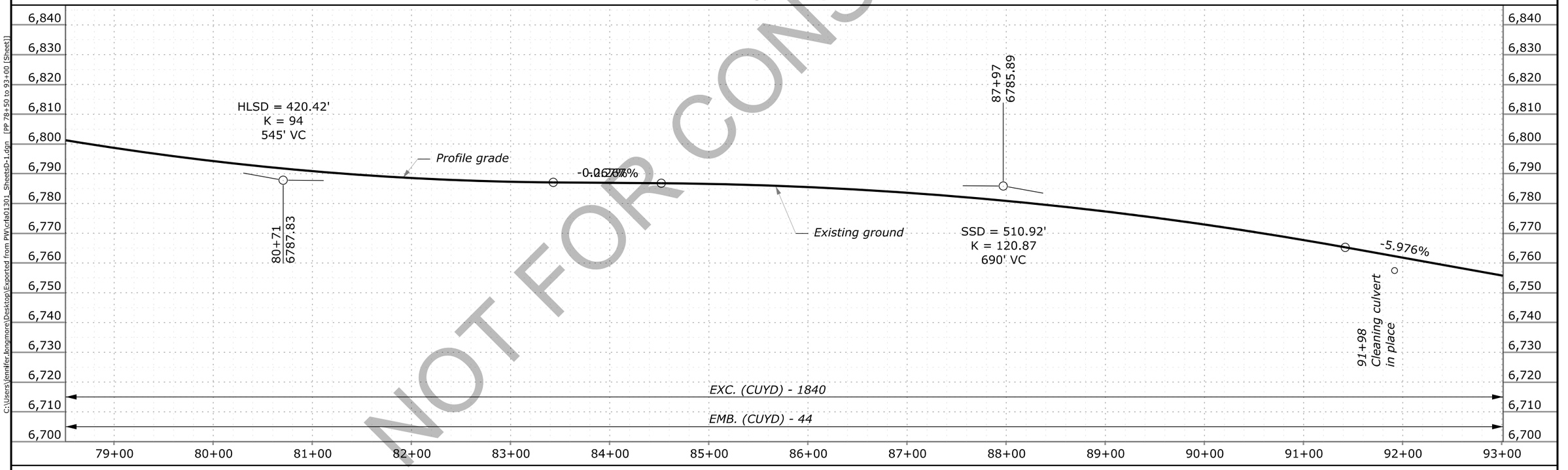
Line MAIN01 to be constructed

Wall Section: Q4W1

Q4W1 Extension
See I Sheets for details

Proposed edge of pavement

DEEP PATCH



NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

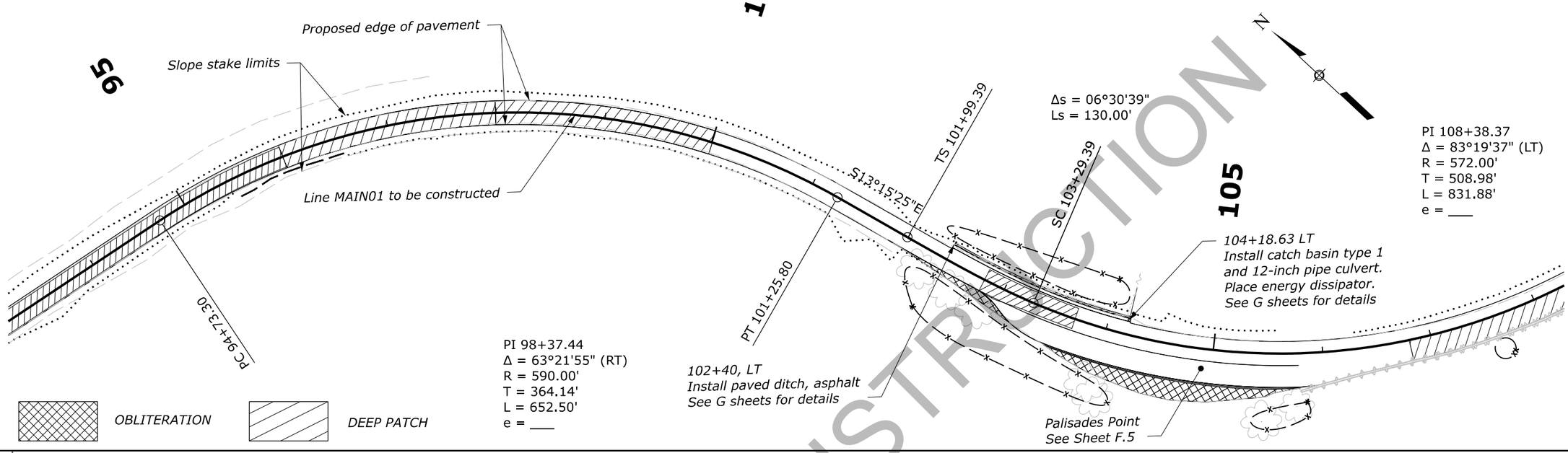
NOT FOR CONSTRUCTION

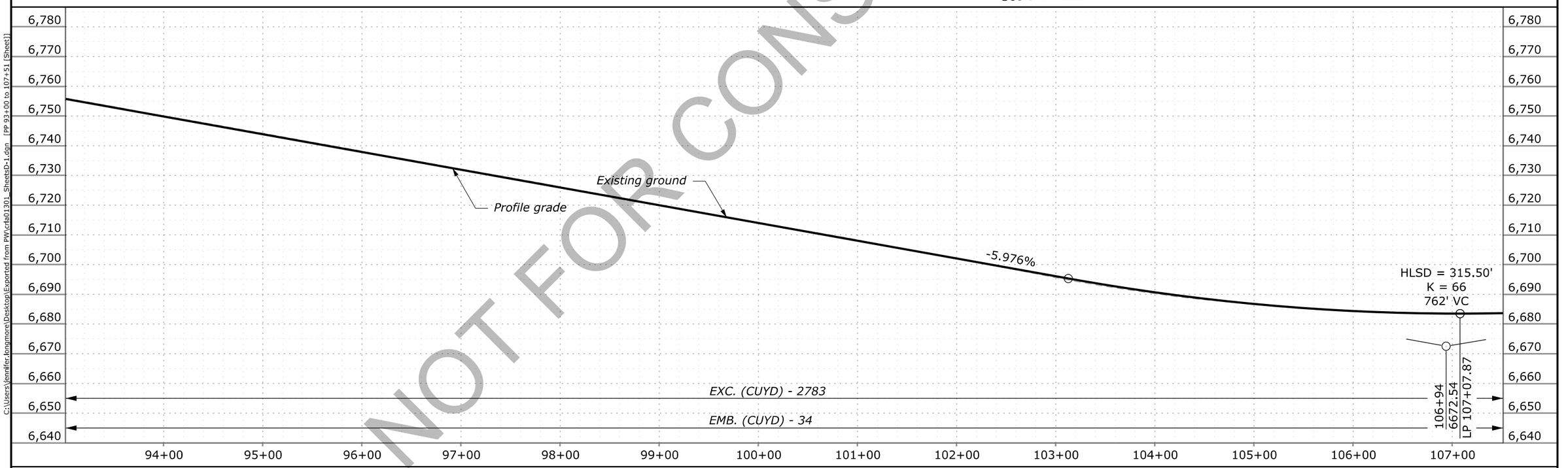
C:\Users\jennifer.longmore\Desktop\Exported from PW\cfa01301_SheetsD-1.dgn [PP 78+50 to 93+00 [Sheet]]

7 April 2021 12:30 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.8





NOT FOR CONSTRUCTION

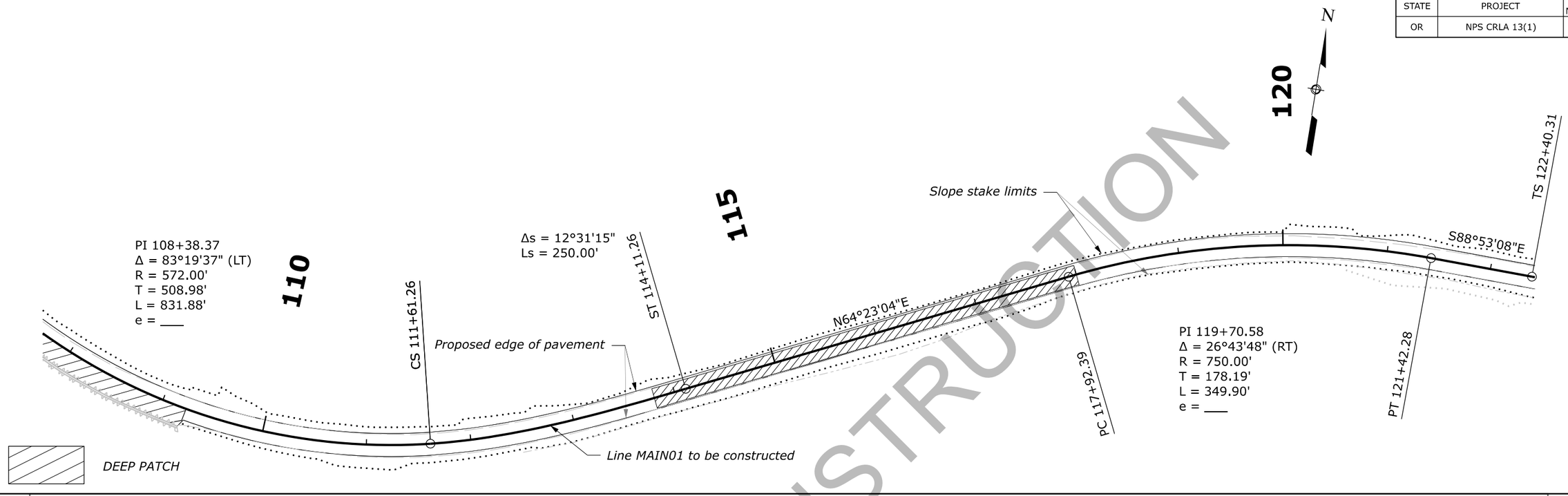
NOTE:

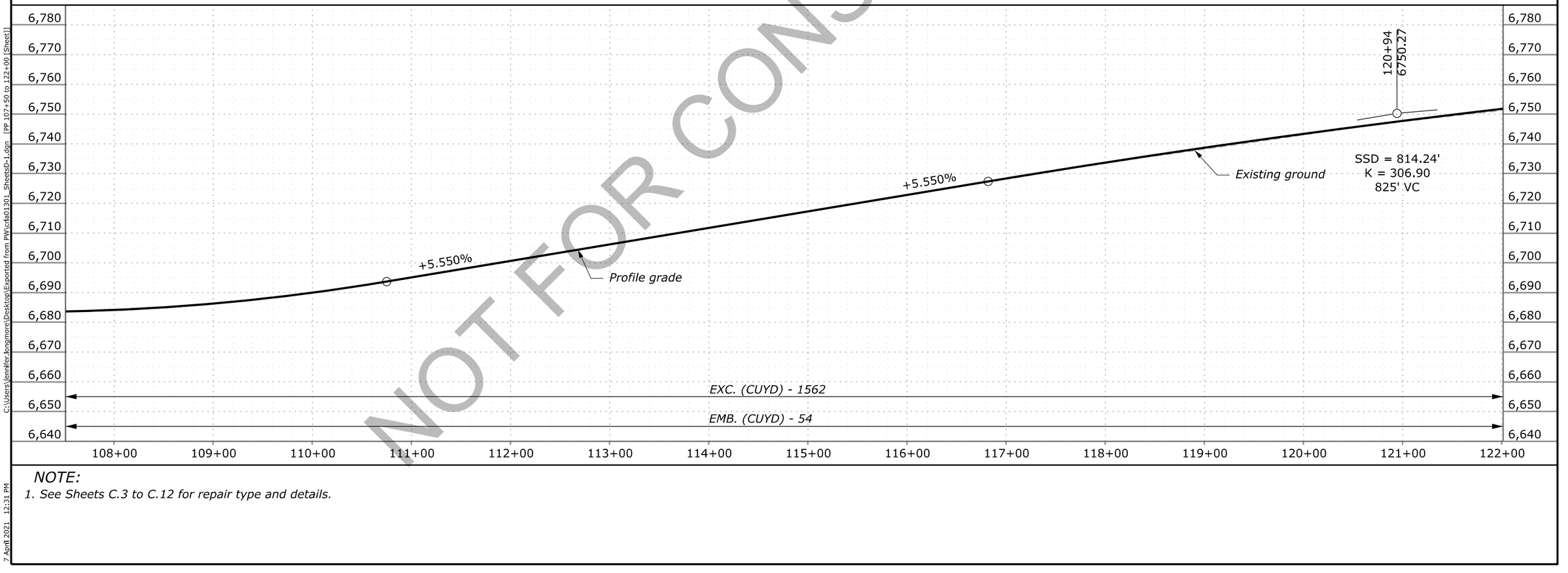
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\jennifer.longmore\Desktop\Exported from PW\cria01301_SheetsD-1.dgn [PP 93+00 to 107+51 [Sheet]]
7 April 2021 12:31 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.9





NOT FOR CONSTRUCTION

NOTE:

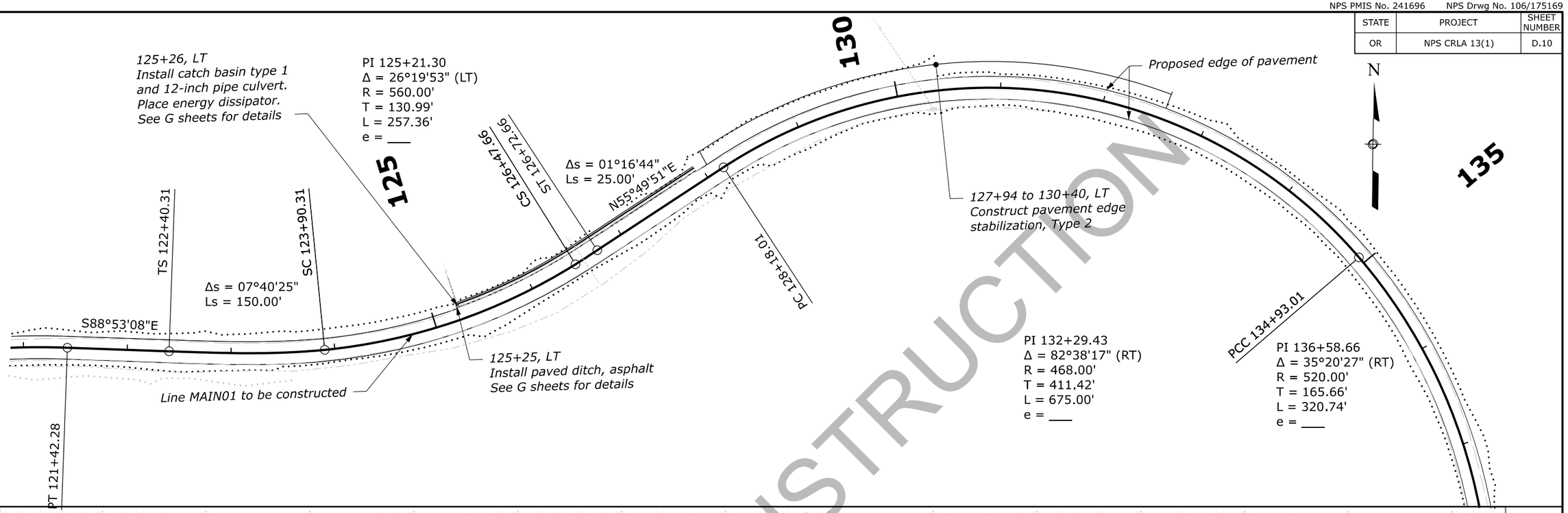
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\jennifer.longmore\Desktop\Exported from PW\cria01301_SheetsD-1.dgn [PP 107+50 to 122+00 [Sheet]]

7 April 2021 12:31 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.10

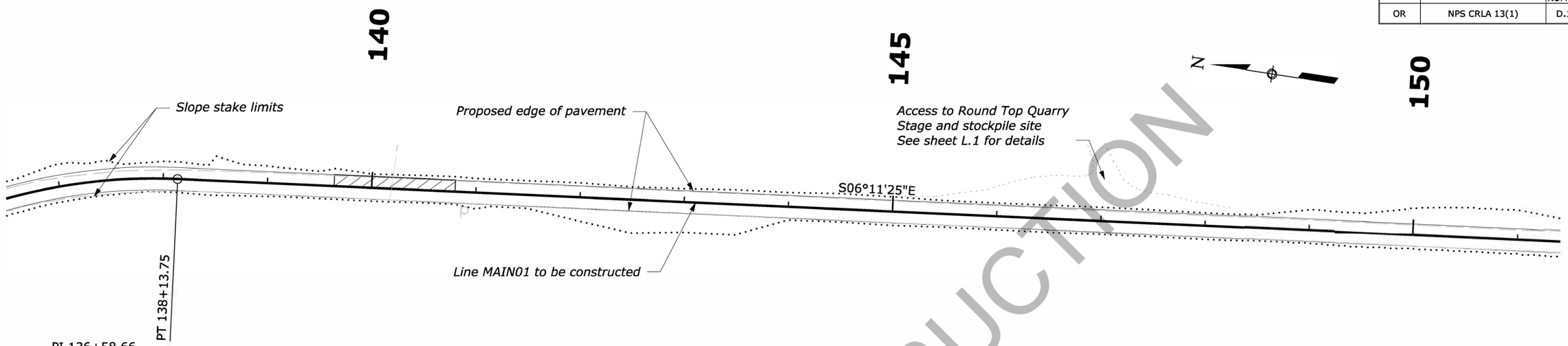


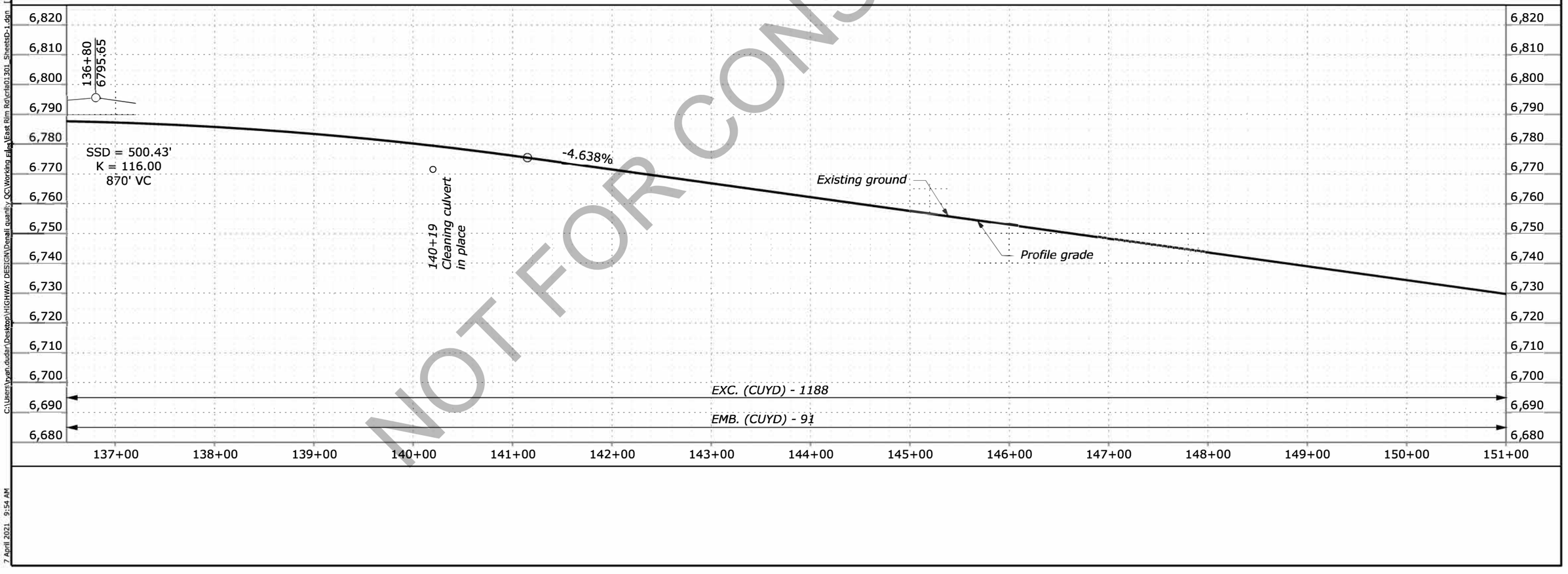
NOT FOR CONSTRUCTION

C:\Users\jennifer.longmore\Desktop\Exported from PW\cria01301_SheetsD-1.dgn [PP 122+00 to 136+50 [Sheet]]

7 April 2021 12:53 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.11



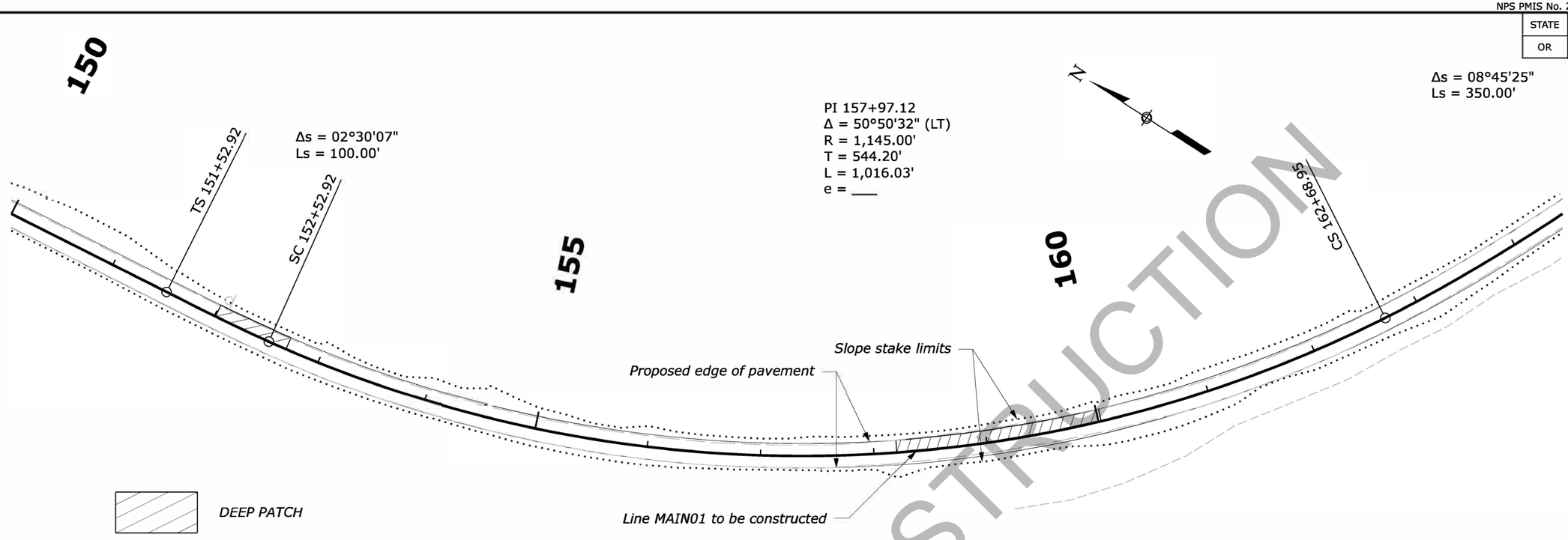


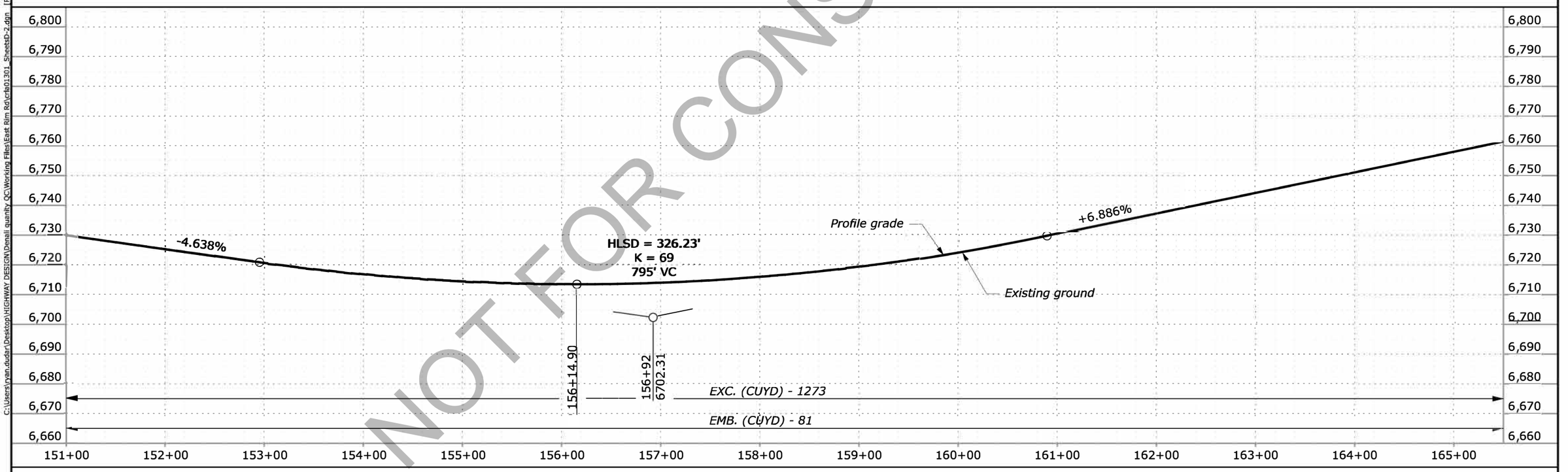
NOT FOR CONSTRUCTION

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working plans\East Rim Rd\crla01301_SheetsD-1.dgn [PP 136+50 to 151+00 (Sheet)]
7 April 2021 9:54 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.12





NOT FOR CONSTRUCTION

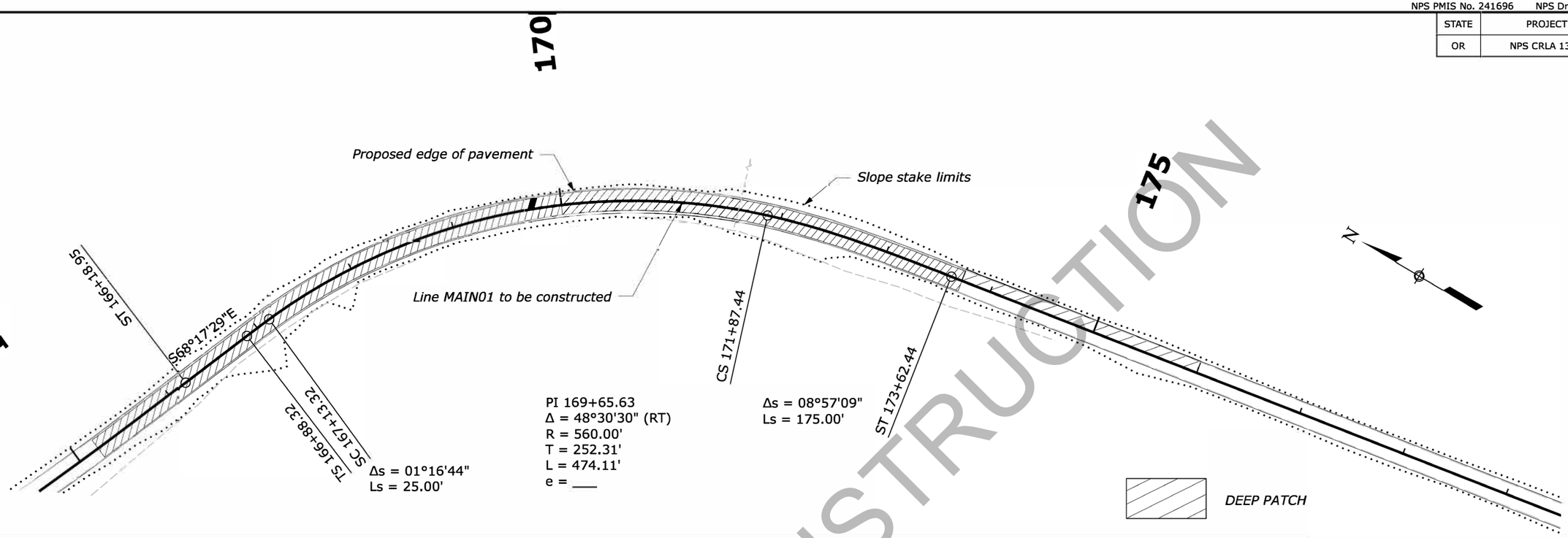
NOTE:

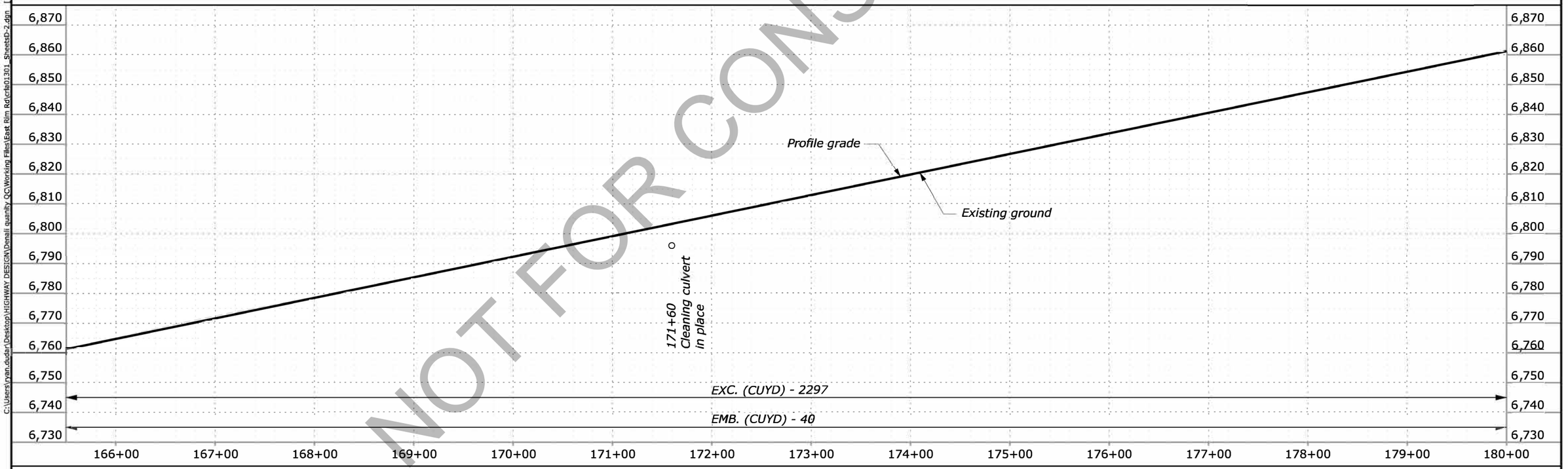
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-2.dgn [Plan and Profile 151+00]
5 April 2021 11:15 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.13





NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

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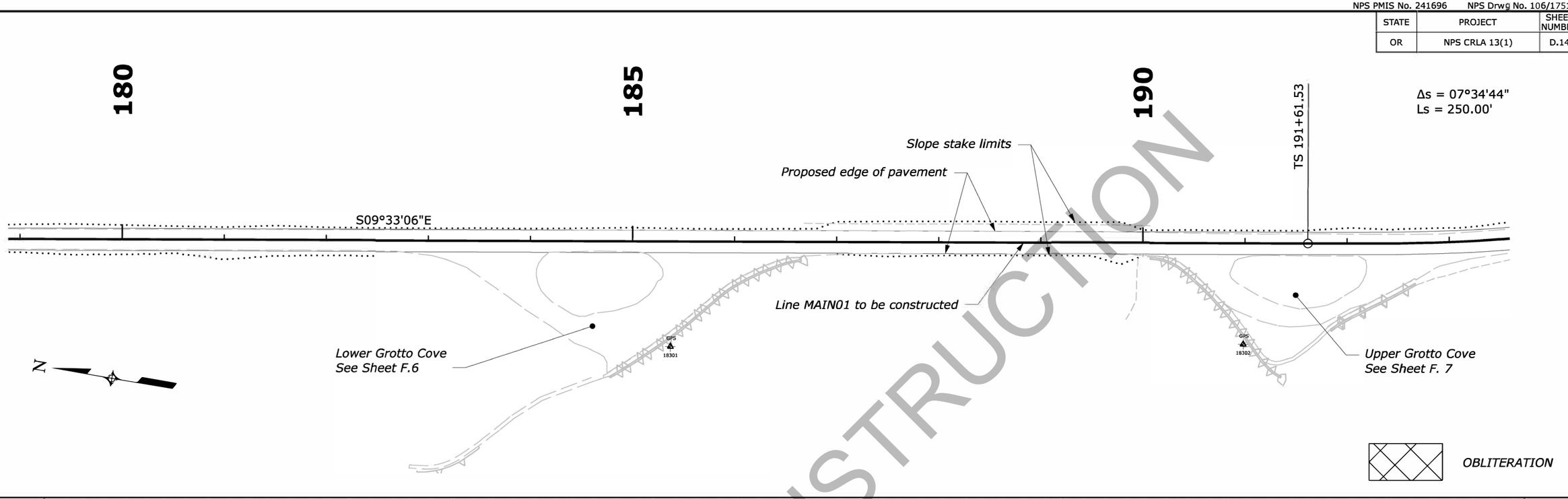
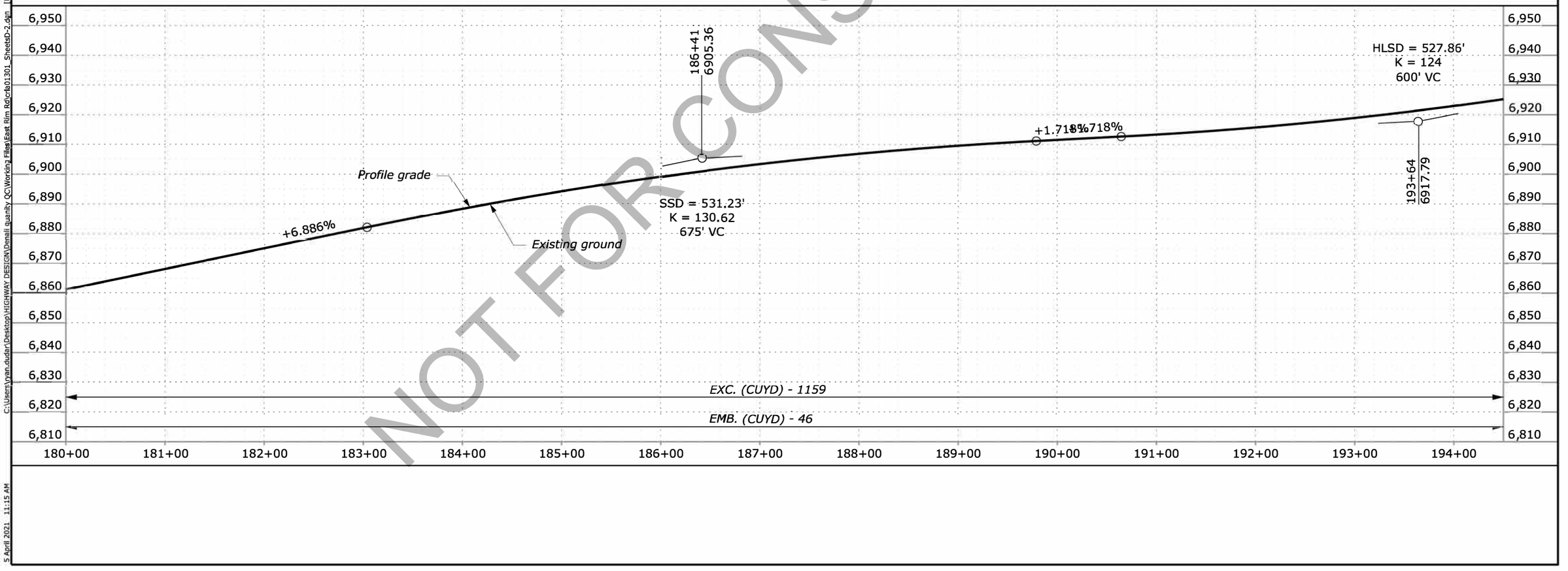
5 April 2021 11:15 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.14



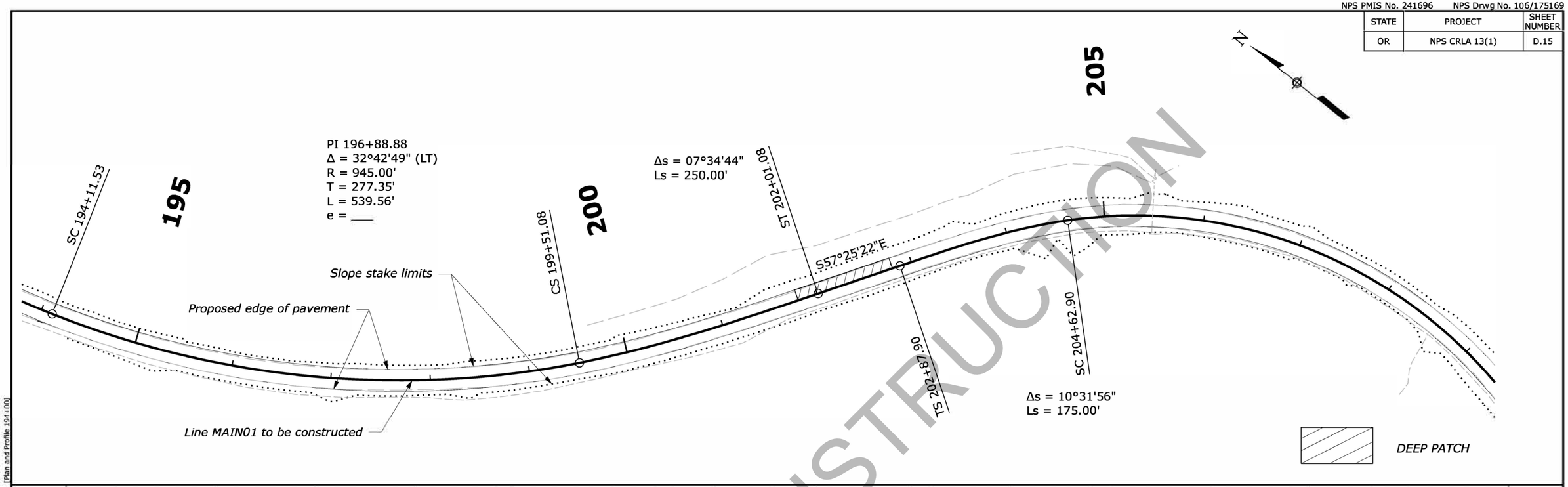


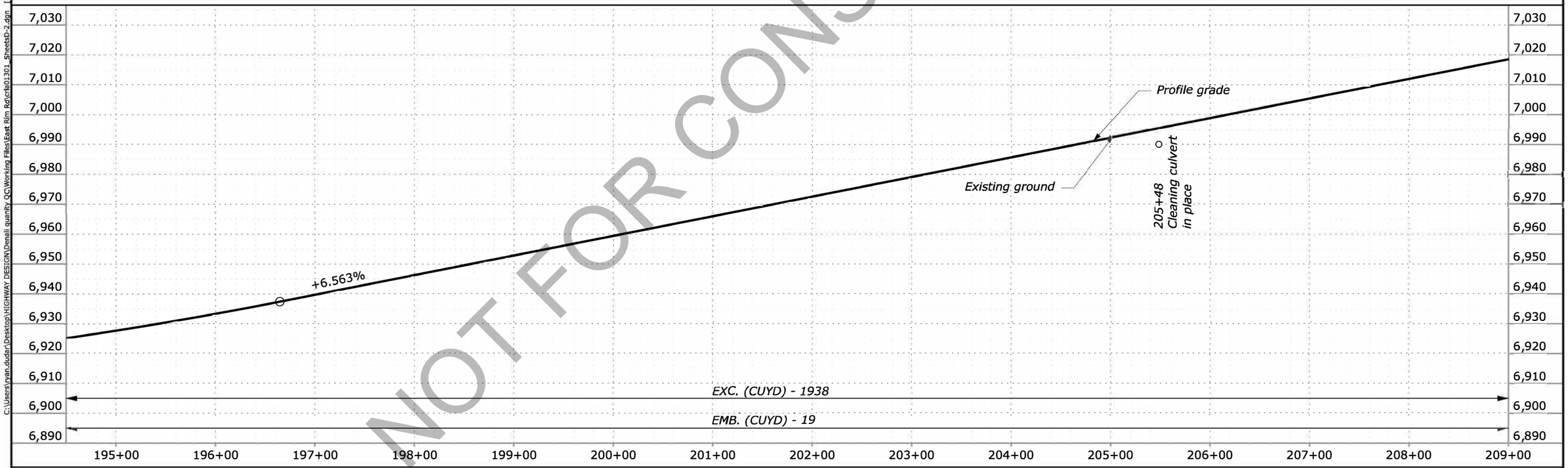
NOT FOR CONSTRUCTION

C:\Users\ryan.dudar\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-2.dgn [Plan and Profile 179+00]
5 April 2021 11:15 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.15





NOT FOR CONSTRUCTION

NOTE:

1. See Sheets C.2 to C.8 for repair type and details.

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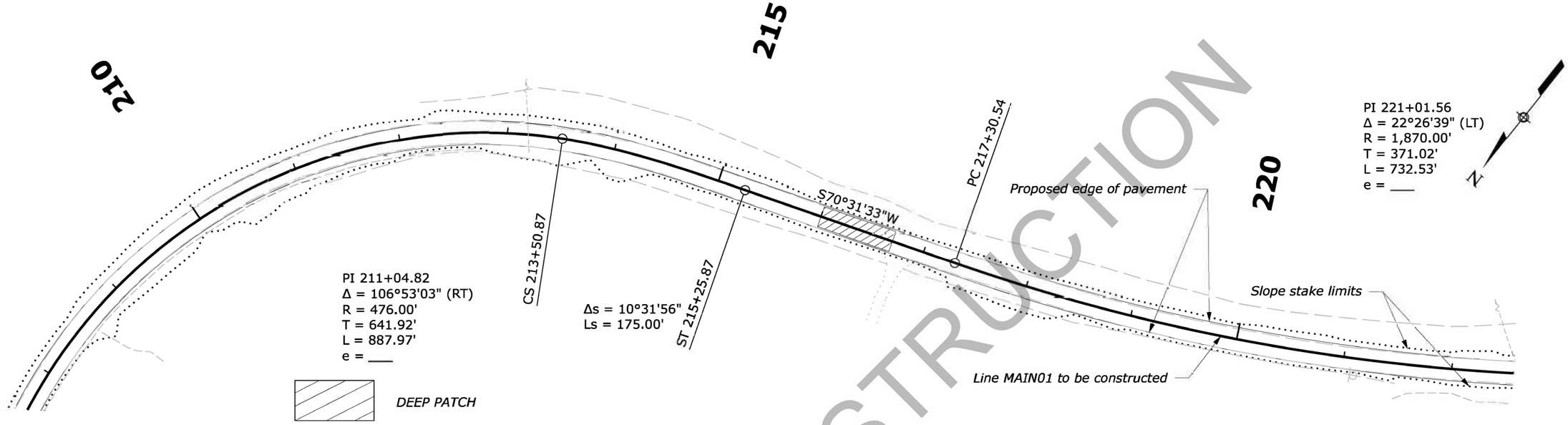
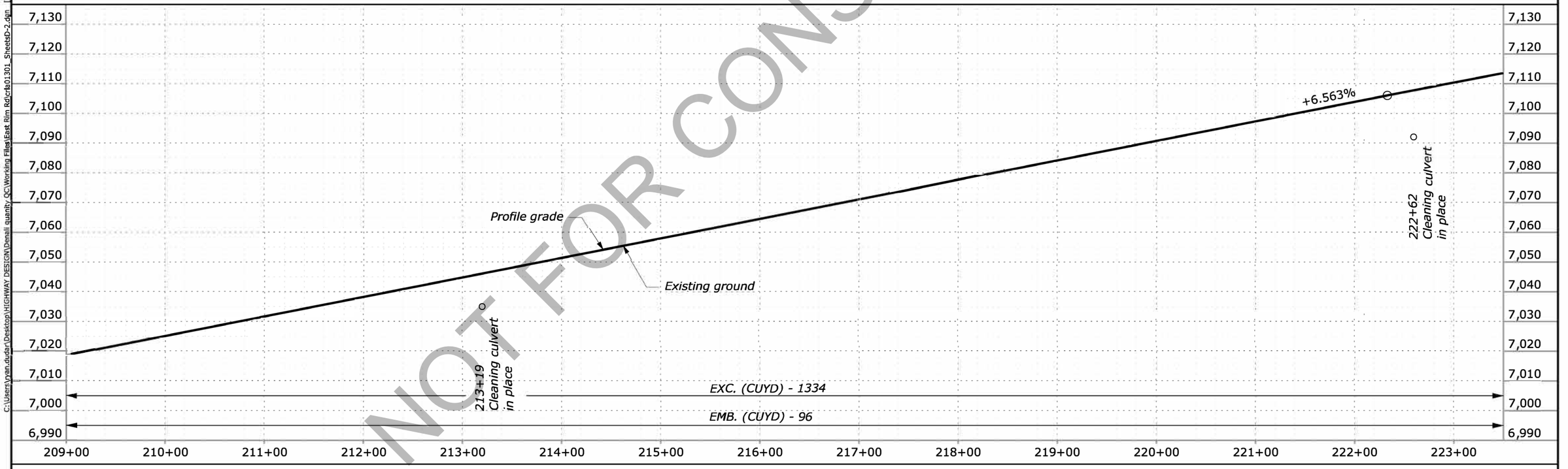
5 April 2021 11:15 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.16





NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

NOT FOR CONSTRUCTION

C:\Users\ryan.duda\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-2.dgn [Plan and Profile 208+00]
5 April 2021 11:15 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.17

223+45, LT
Install paved ditch, asphalt
See G sheets for details

PT 224+63.07

225

PC 225+26.57

223+46, LT
Install catch basin type 1
and 12-inch pipe culvert.
Place energy dissipator.
See G sheets for details.

S48°04'54"W

PI 227+26.89
Δ = 14°52'11" (LT)
R = 1,535.00'
T = 200.31'
L = 398.37'
e = ___

228+40, LT
Install catch basin type 1
and 12-inch pipe culvert.
Place energy dissipator.
See G sheets for details.

PT 229+24.95

230

PC 230+04.36

S33°12'43"W

227+52, LT
Install paved ditch, asphalt
See G sheets for details

Skellhead Overlook
See Sheet F.8

235

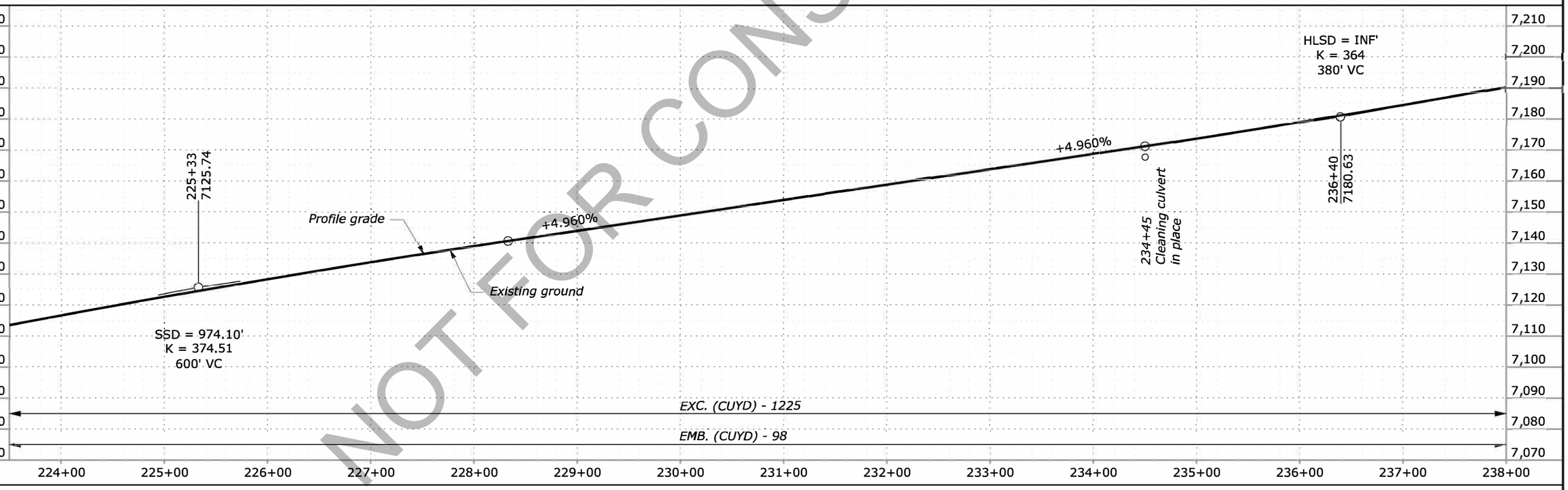
Slope stake limits

Proposed edge of pavement

Line MAIN01 to be constructed

DEEP PATCH

N



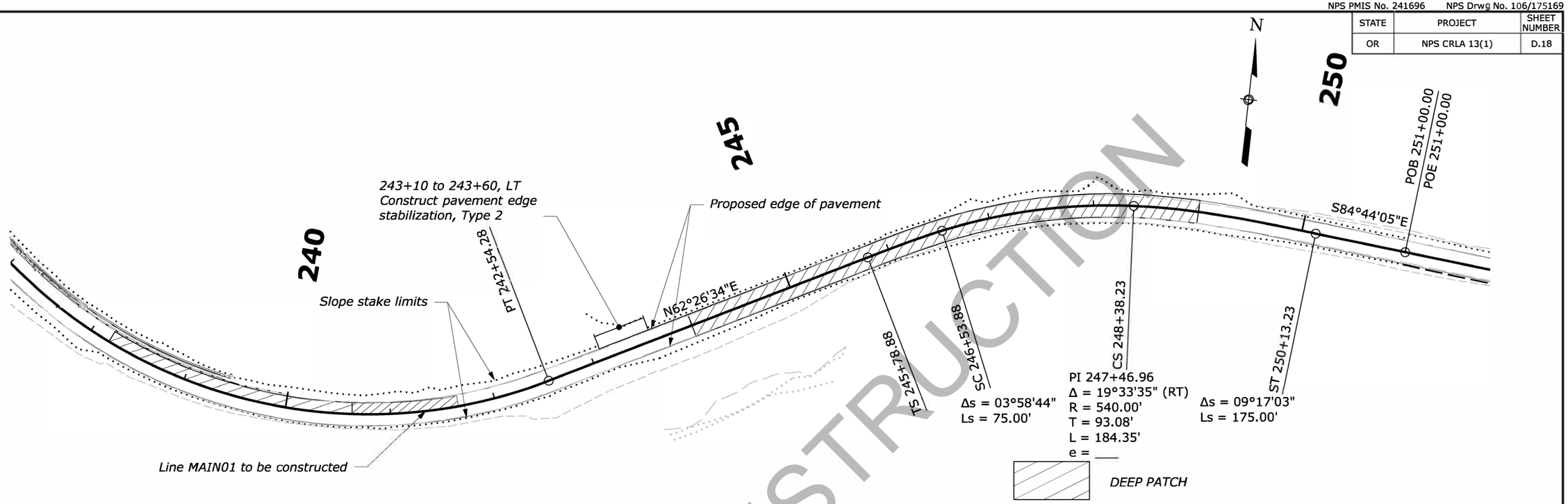
NOTE:

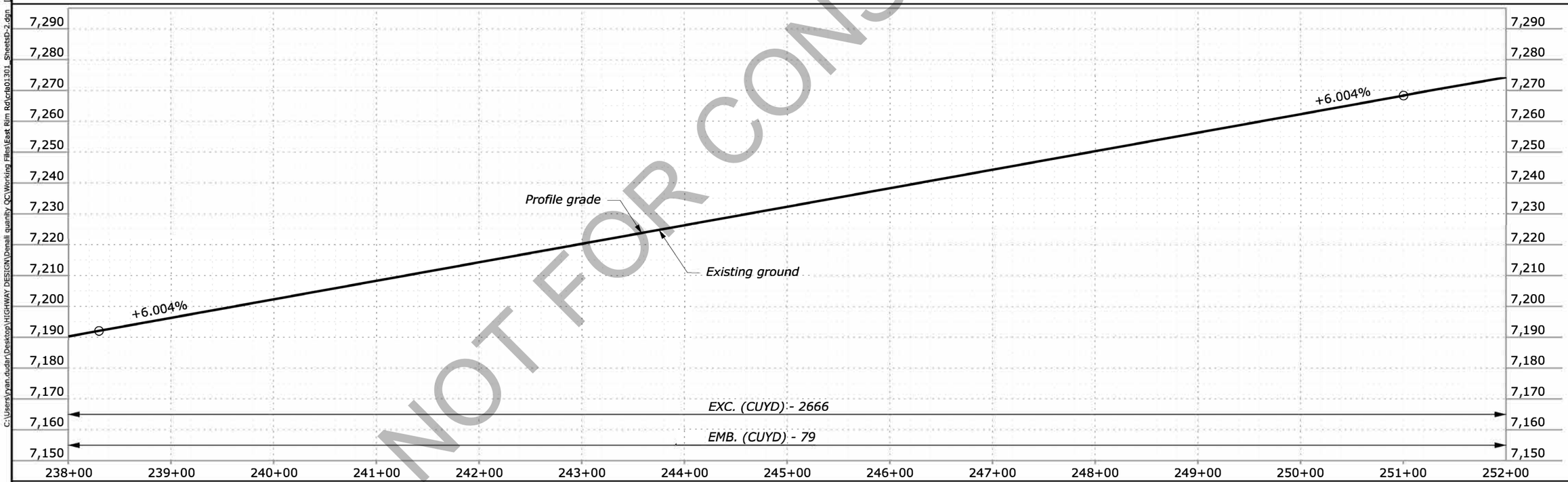
1. See Sheets C.3 to C.12 for repair type and details.

NOT FOR CONSTRUCTION

C:\Users\ryan.dubin\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-2.dgn [Plan and Profile 223+00]
6 April 2021 11:32 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.18





NOT FOR CONSTRUCTION

NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

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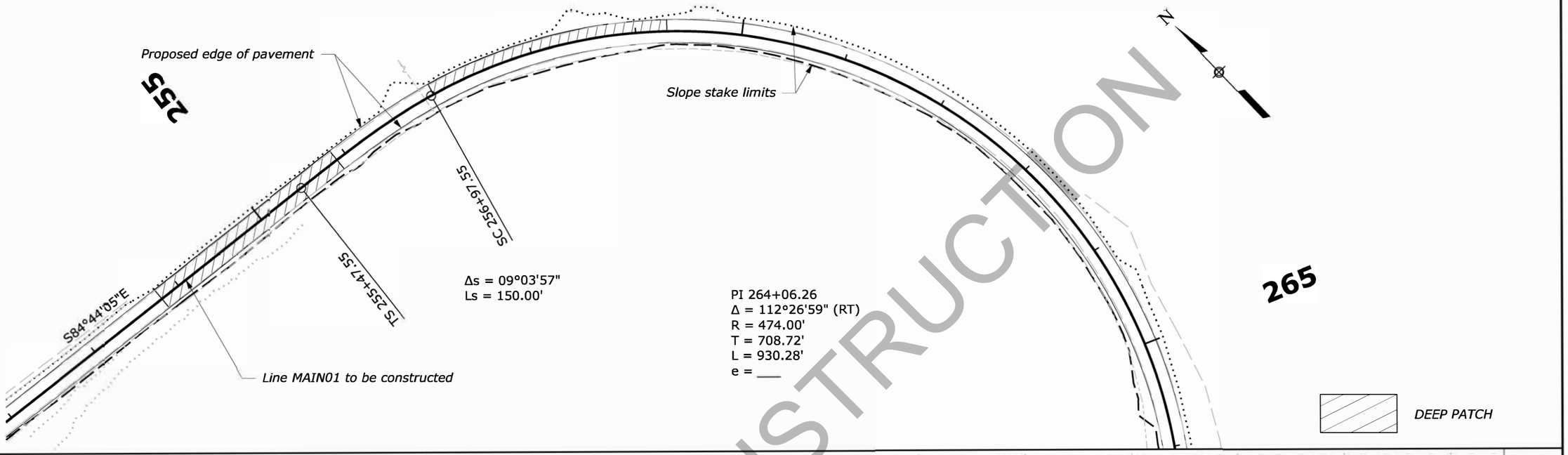
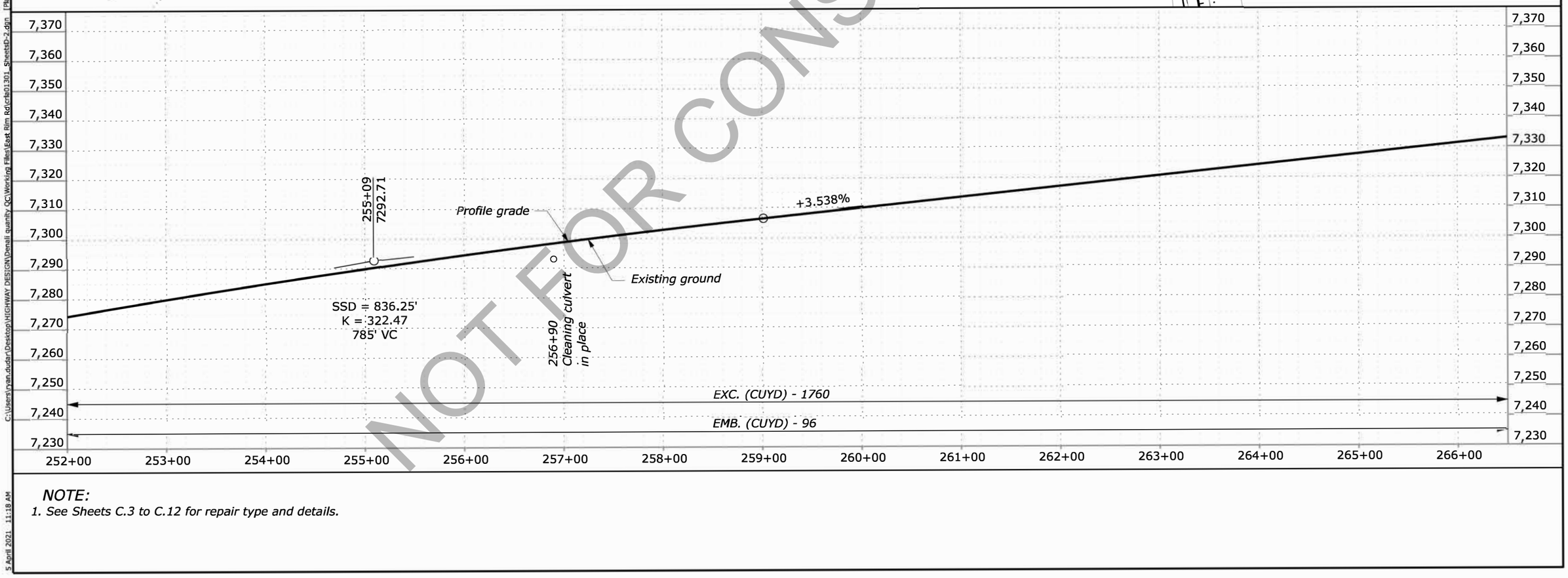
6 April 2021 11:39 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.19





NOT FOR CONSTRUCTION

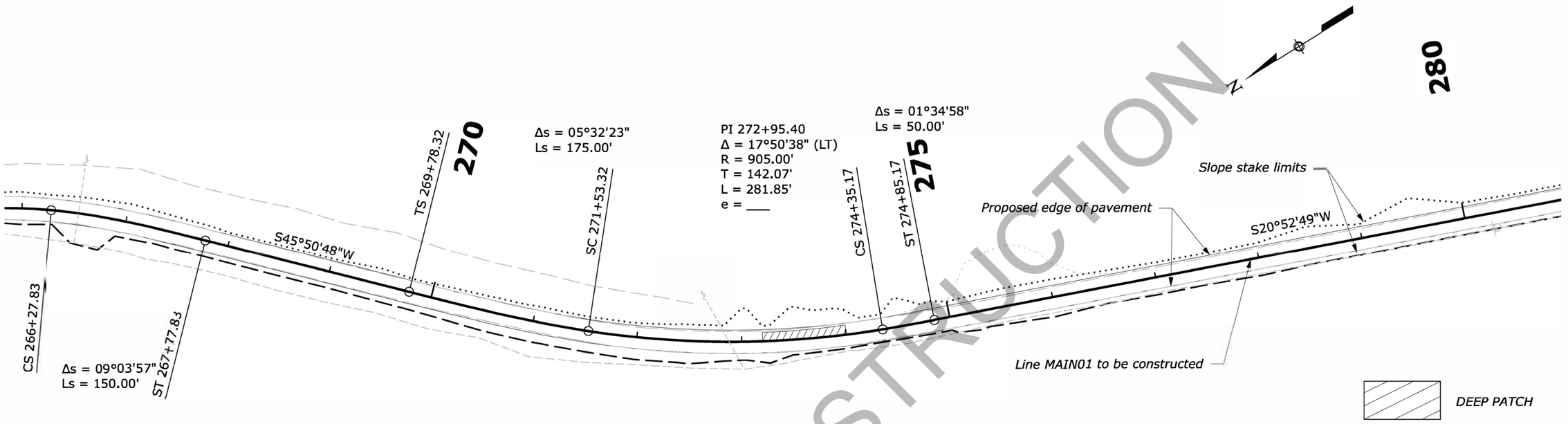
NOTE:

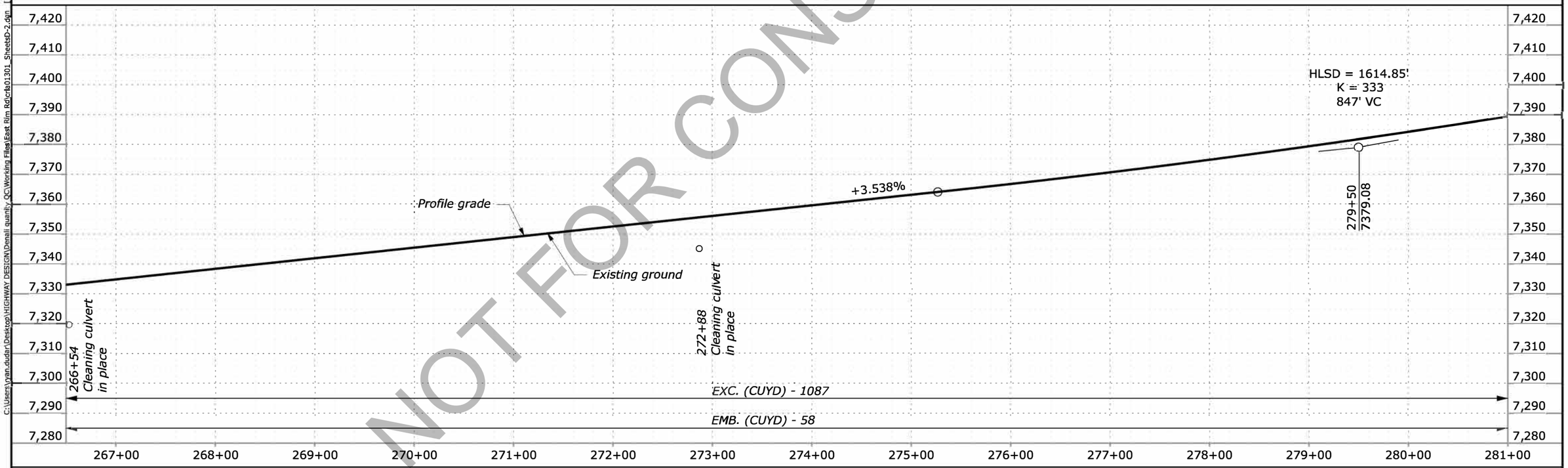
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudar\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-2.dgn [Plan and Profile 252+00]
5 April 2021 11:18 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.20





NOT FOR CONSTRUCTION

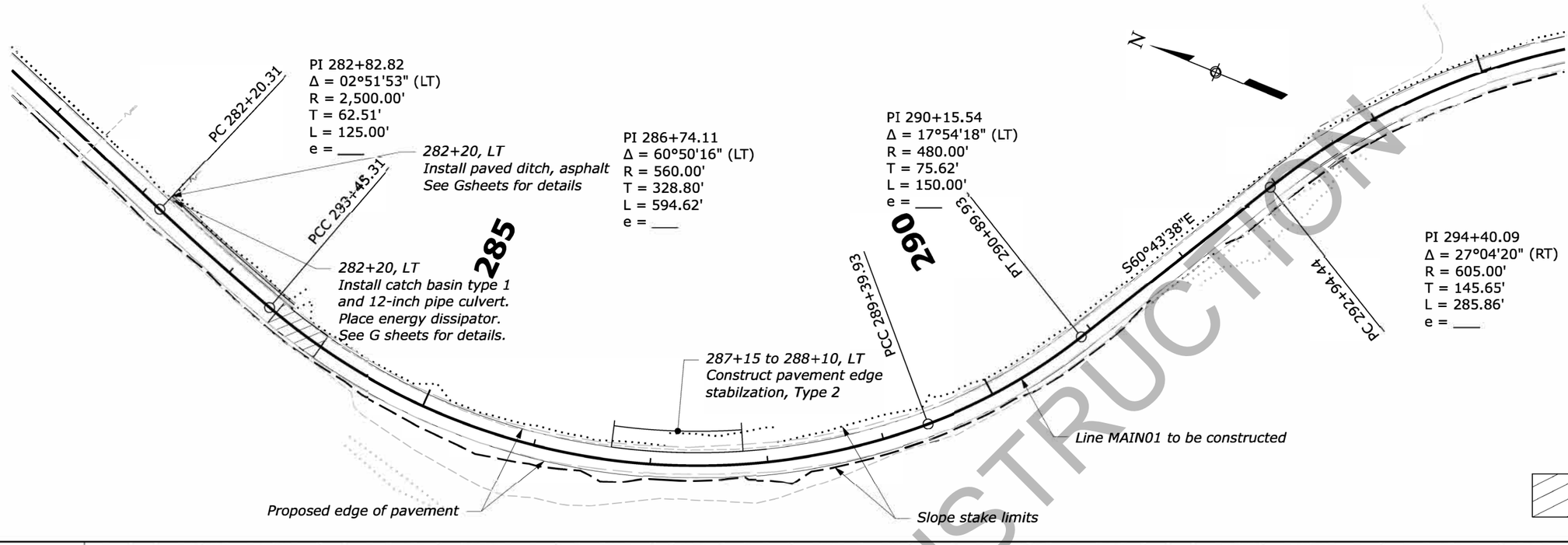
NOTE:

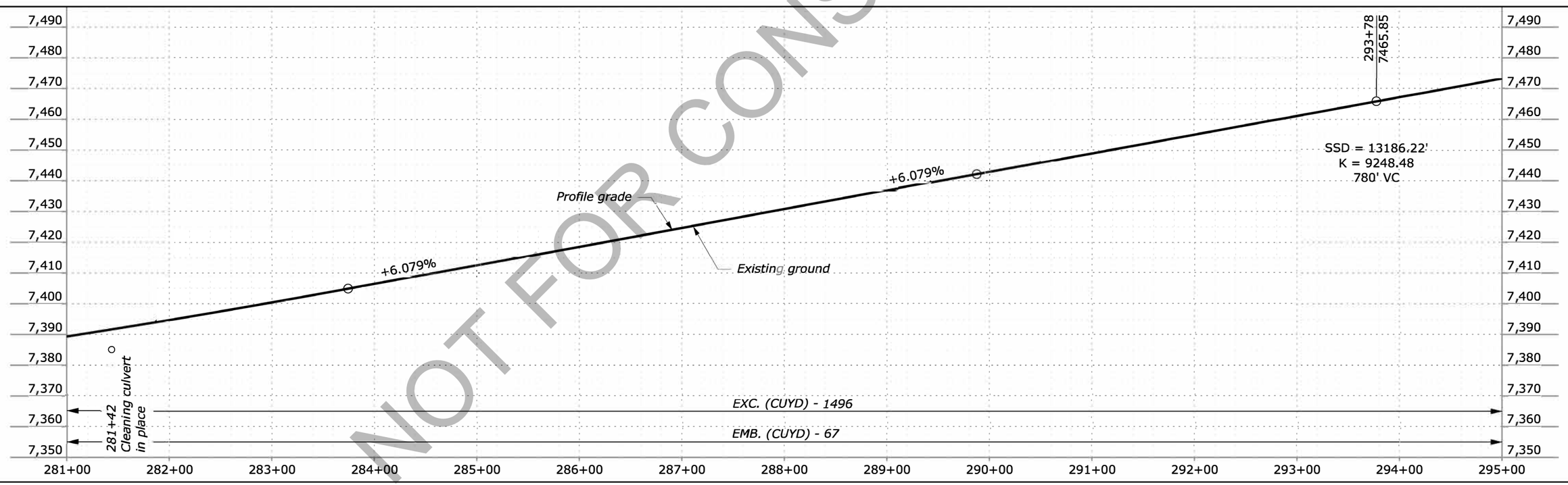
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-2.dgn [Plan and Profile 265+00]
5 April 2021 11:18 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.21





NOT FOR CONSTRUCTION

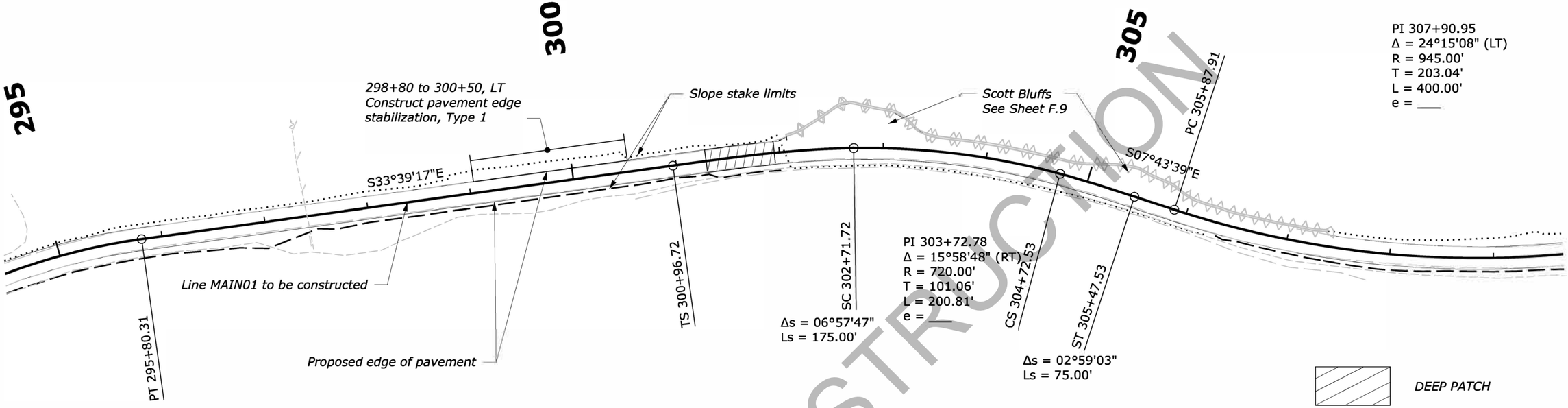
NOTE:

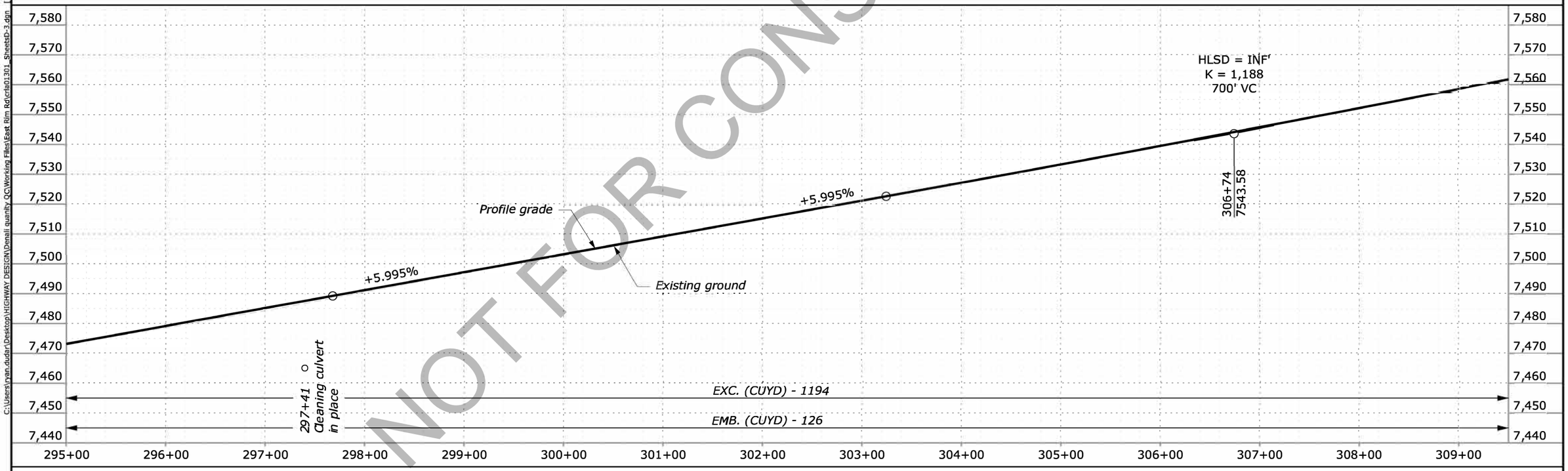
1. *See Sheets C.3 to C.12 for repair type and details.*

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Donalli quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-2.dgn [Plan and Profile 281+00]
5 April 2021 11:18 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.22





NOT FOR CONSTRUCTION

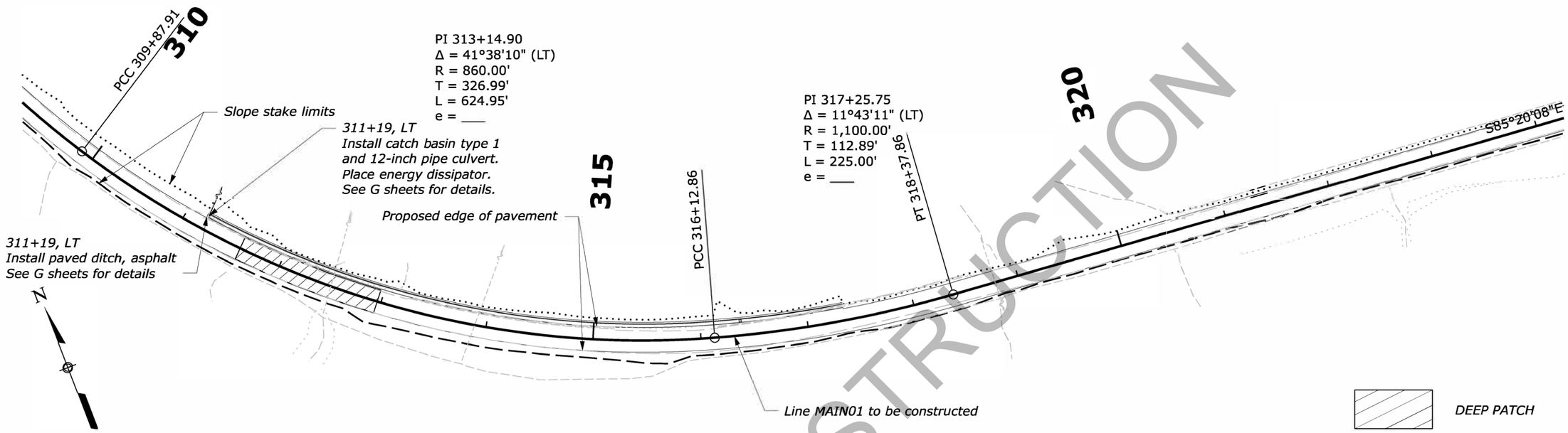
NOTE:

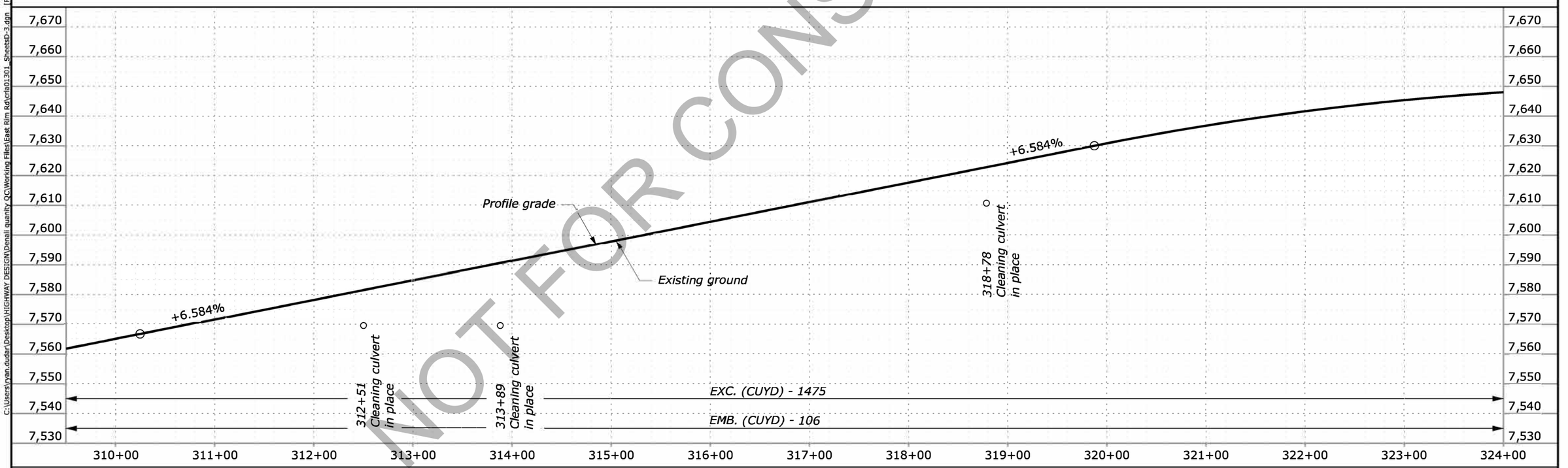
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-3.dgn [Plan and Profile 295+00]
6 April 2021 11:30 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.23





NOT FOR CONSTRUCTION

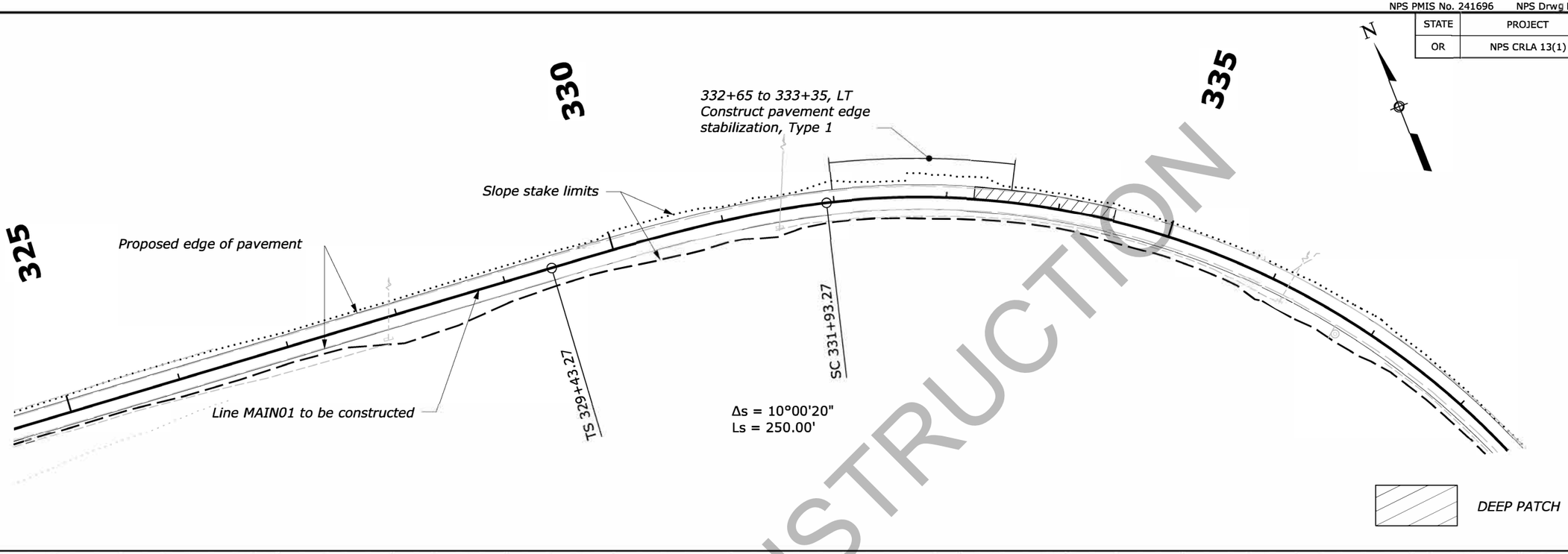
NOTE:

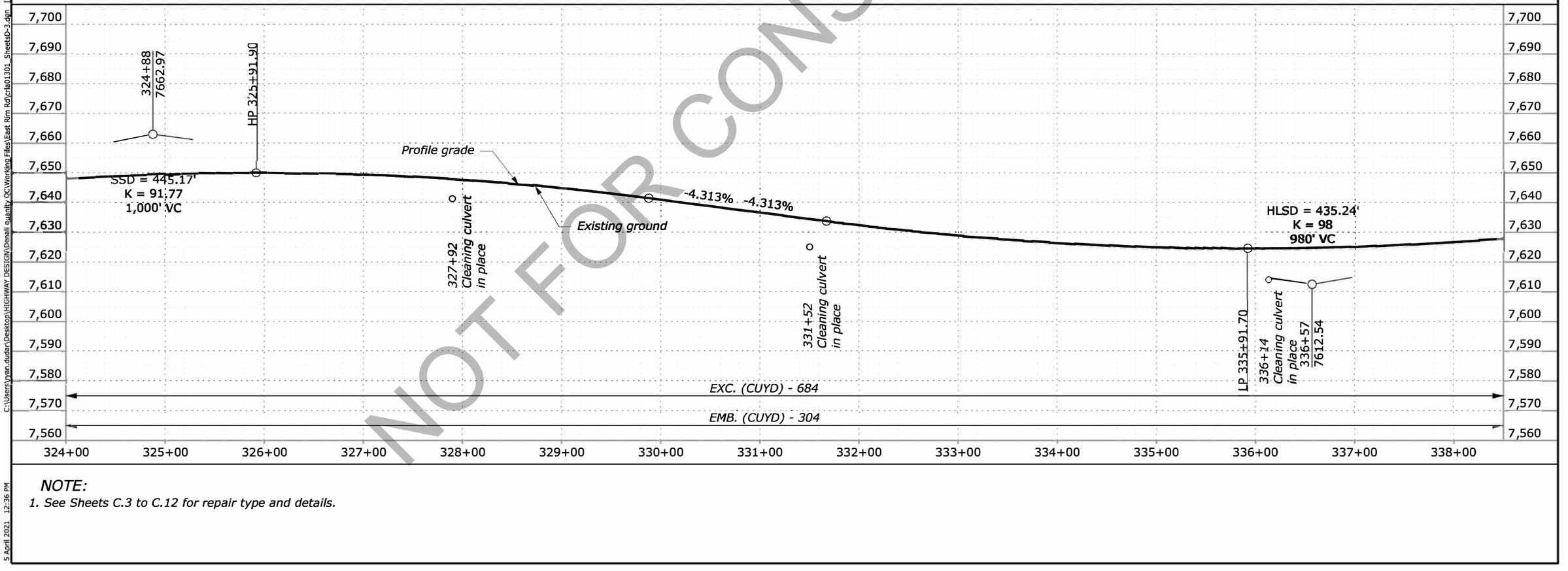
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-3.dgn [Plan and Profile 310+00]
5 April 2021 12:36 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.24





NOT FOR CONSTRUCTION

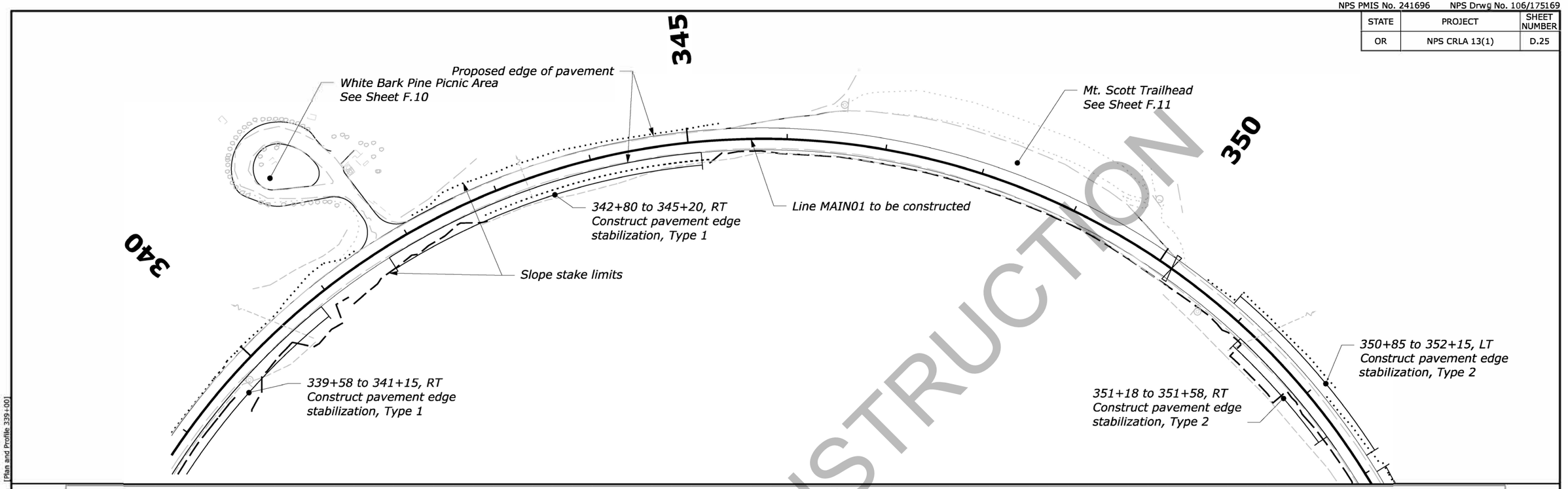
NOTE:

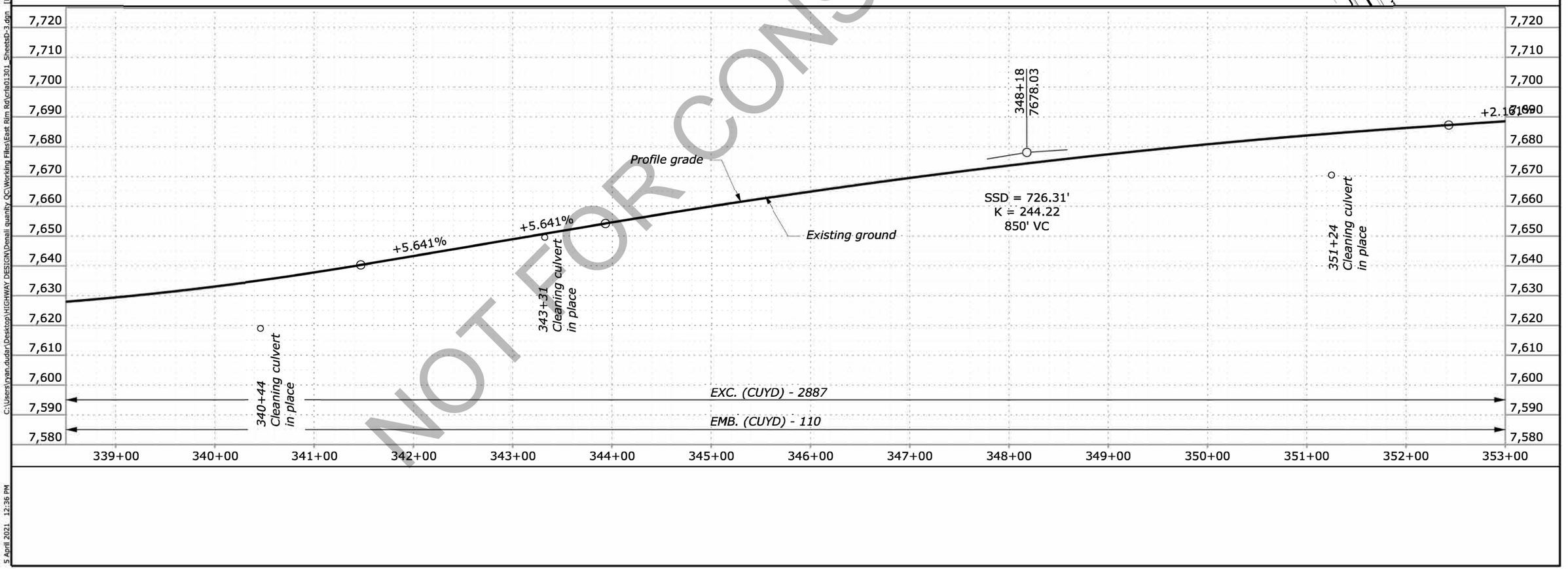
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dubin\Desktop\HIGHWAY DESIGN\Denali quality QC\Working Files\East Rim Rd\crla01301_SheetsD-3.dgn [Plan and Profile 325+00]
5 April 2021 12:36 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.25





NOT FOR CONSTRUCTION

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Danali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-3.dgn [Plan and Profile 339+00]
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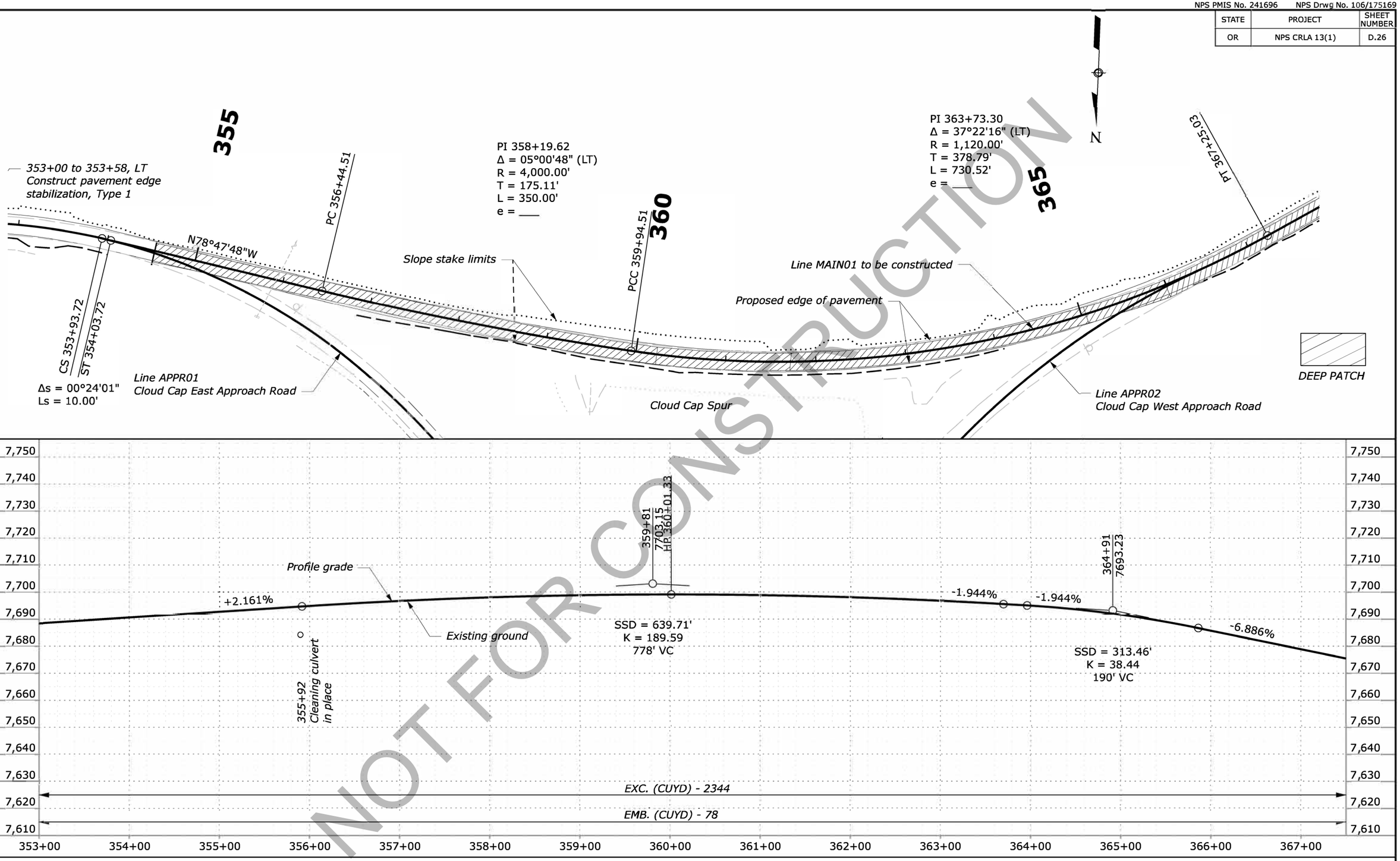
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.26



NOT FOR CONSTRUCTION

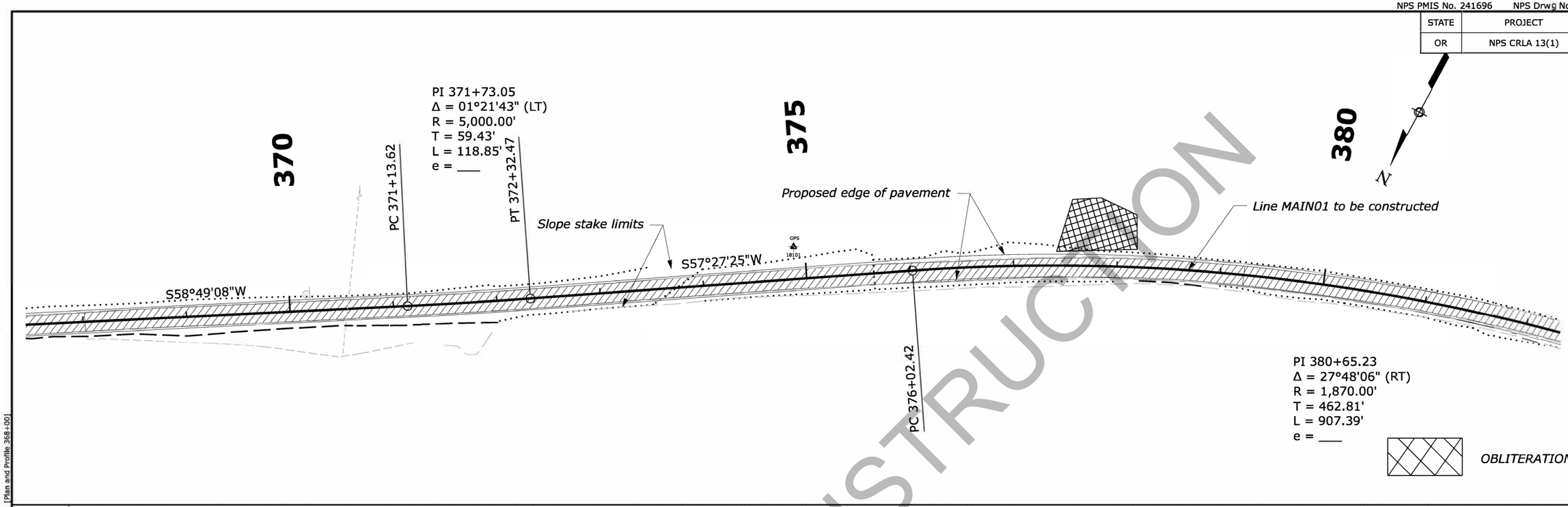
NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudar\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crta01301_SheetsD-3.dgn [Plan and Profile 354+00]
5 April 2021 12:36 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.27



NOT FOR CONSTRUCTION

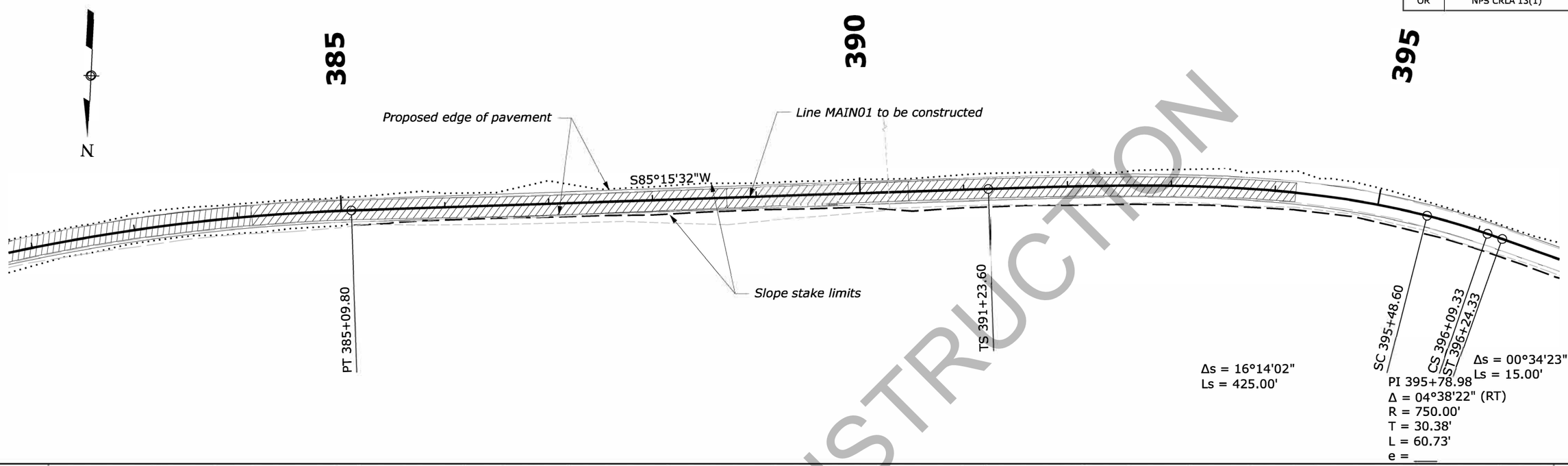
NOTE:

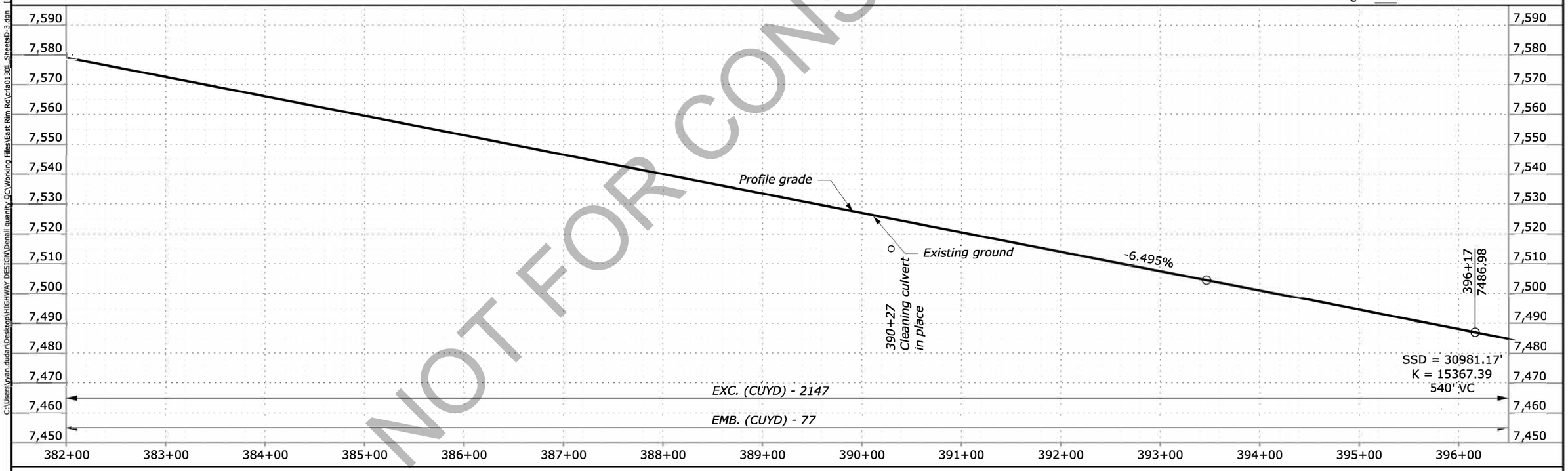
1. See Sheets C.2 to C.8 for repair type and details.

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-3.dgn [Plan and Profile 368+00]
5 April 2021 12:36 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.28





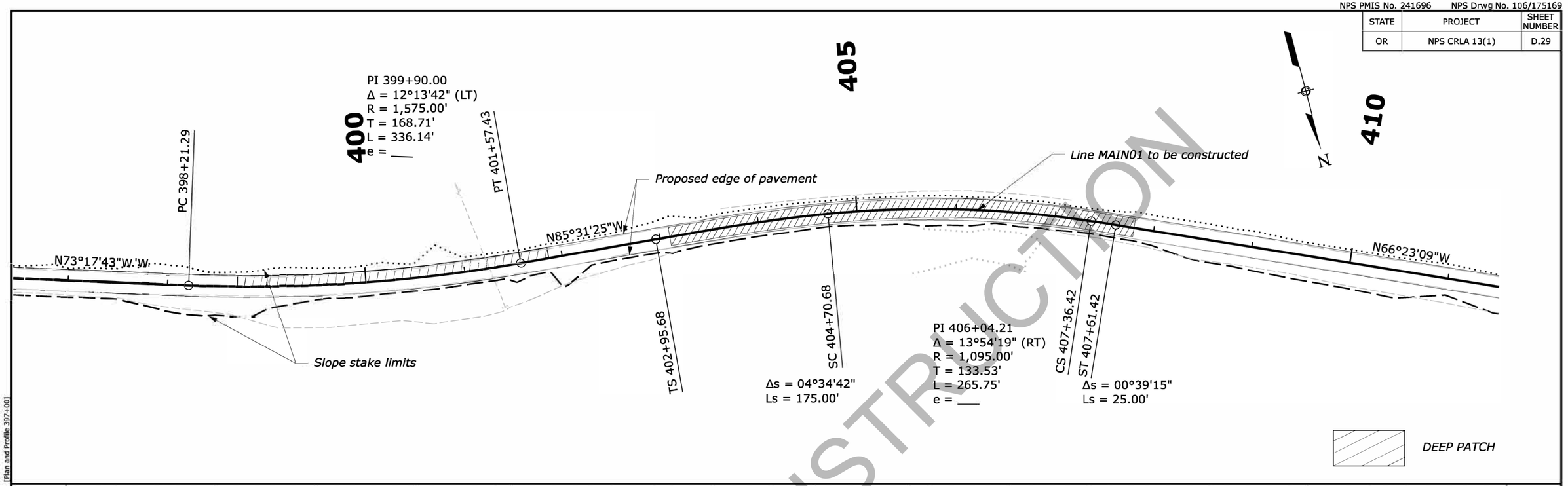
NOT FOR CONSTRUCTION

NOTE:

1. See Sheets C.2 to C.8 for repair type and details.

C:\Users\ryan.dubin\Desktop\HIGHWAY DESIGN\Denali quality QC\Working Files\East Rim Rd\crla0130_SheetsD-3.dgn [Plan and Profile 382+00]
5 April 2021 12:50 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.29



NOT FOR CONSTRUCTION

NOTE:

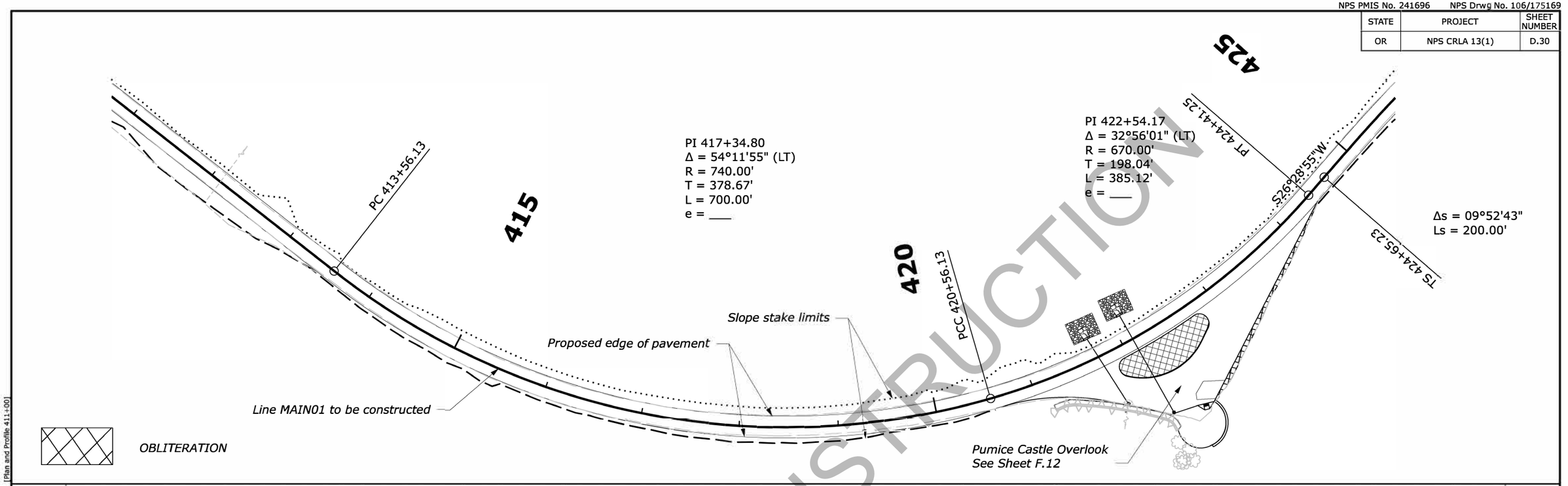
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dubin\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-3.dgn [Plan and Profile 397+00]
5 April 2021 12:50 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.30

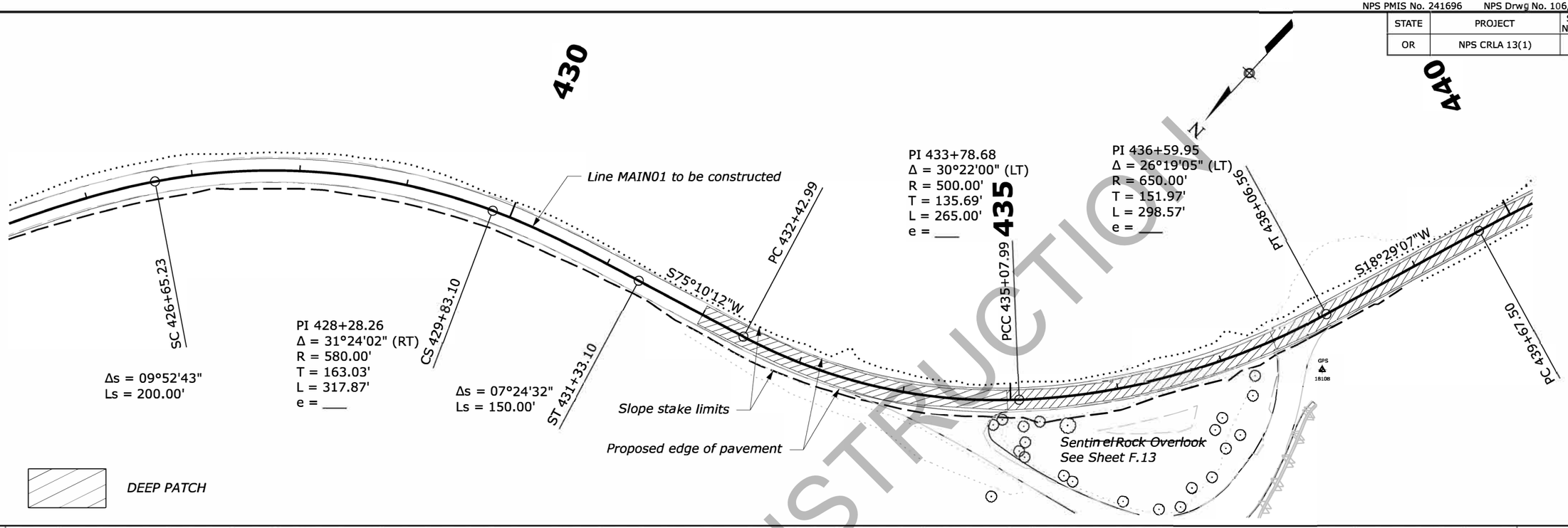
NOT FOR CONSTRUCTION

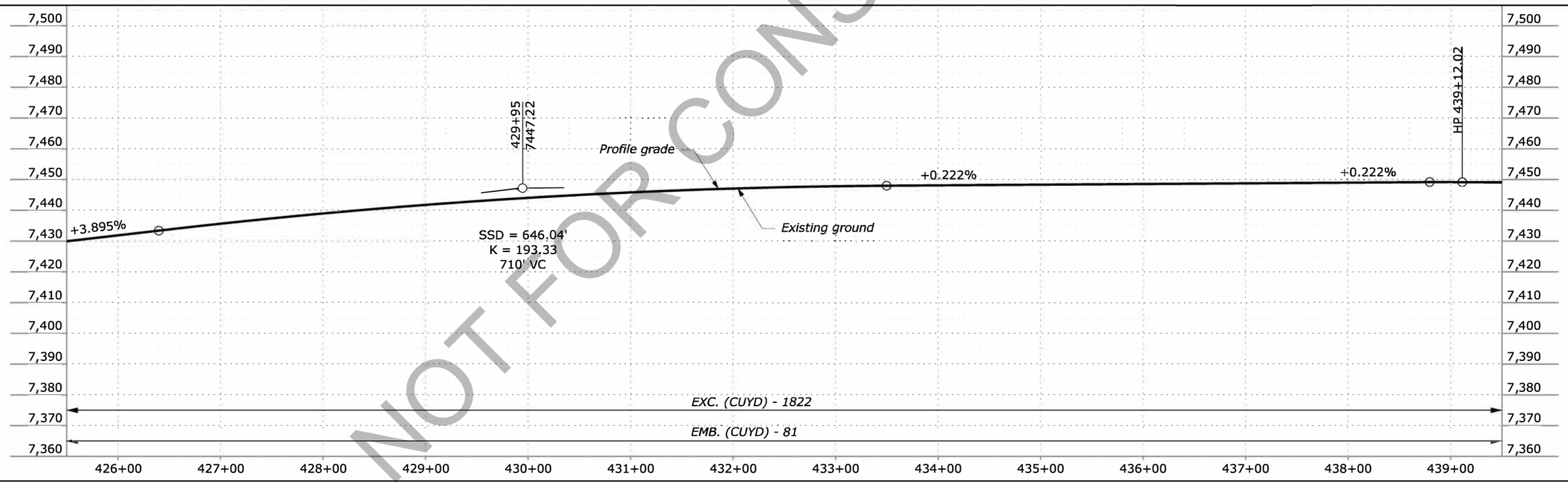


C:\Users\ryan.dugan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crta01301_SheetsD-3.dgn [Plan and Profile 411+00]

5 April 2021 12:36 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.31





NOT FOR CONSTRUCTION

NOTE:

1. See Sheets C.3 to C.12 for repair and type details.

C:\Users\ryan.dudar\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crte01301_SheetsD-3.dgn [Plan and Profile 426+00]
5 April 2021 12:36 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.32

PC 439+67.50

PI 440+42.37
Δ = 06°51'18" (RT)
R = 1,250.00'
T = 74.87'
L = 149.55'
e = ___

PT 441+17.06

S25°30'25"W

PC 443+00.14

PI 444+14.07
Δ = 22°13'37" (LT)
R = 580.00'
T = 113.93'
L = 225.00'
e = ___

PCC 445+25.14

PI 447+77.87
Δ = 46°22'35" (LT)
R = 590.00'
T = 252.73'
L = 477.56'
e = ___

PT 450+02.69

Slope stake limits

Line MAIN01 to be constructed

Proposed edge of pavement

Reflection Point
See Sheet F.14

Protected Vegitation

OBLITERATION

DEEP PATCH

443+67
7450.27

SSD = 562.95'
K = 146.74
975' VC

Profile grade

Existing ground

-6.422%

7,409.44

EXC. (CUYD) - 2441

EMB. (CUYD) - 102

7,480 7,470 7,460 7,450 7,440 7,430 7,420 7,410 7,400 7,390 7,380 7,370 7,360 7,350 7,340

440+00 441+00 442+00 443+00 444+00 445+00 446+00 447+00 448+00 449+00 450+00 451+00 452+00 453+00 454+00

NOT FOR CONSTRUCTION

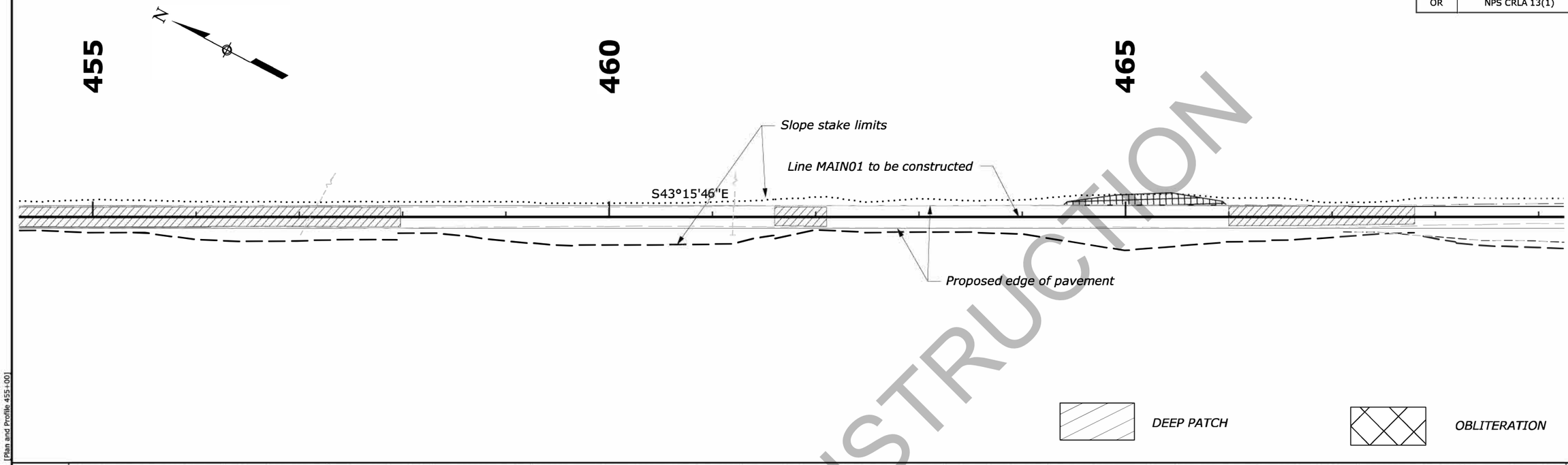
NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_SheetsD-4.dgn [Plan and Profile 440+00]
7 April 2021 1:23 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.33



NOT FOR CONSTRUCTION

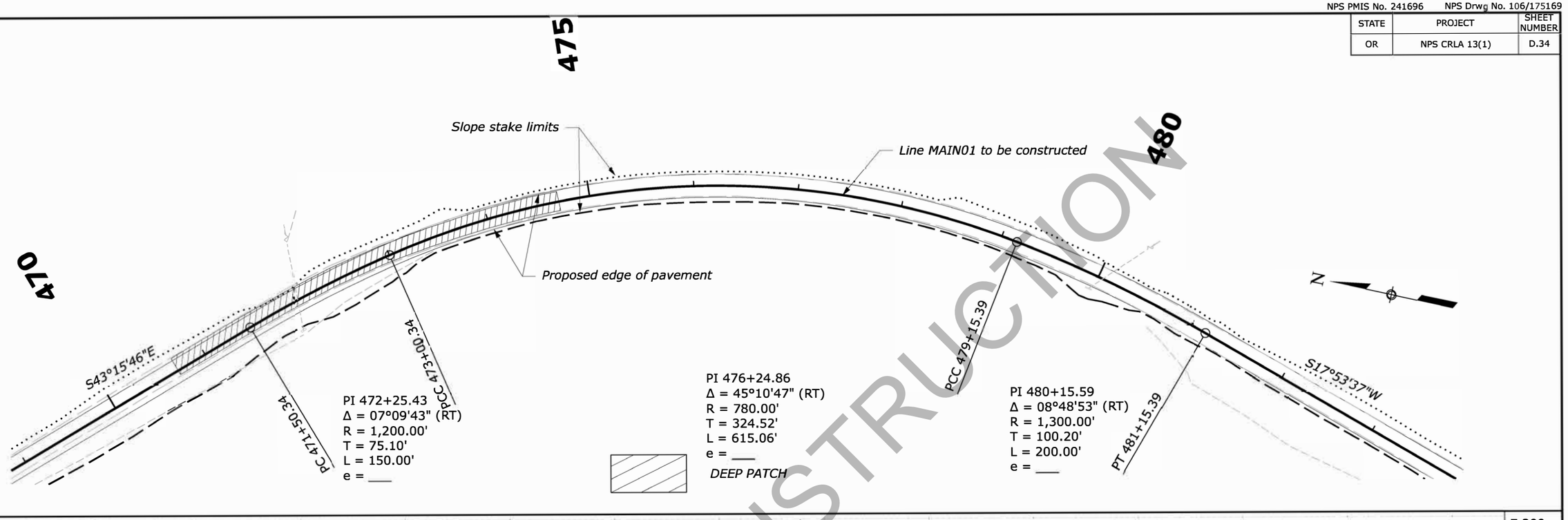
NOTE:

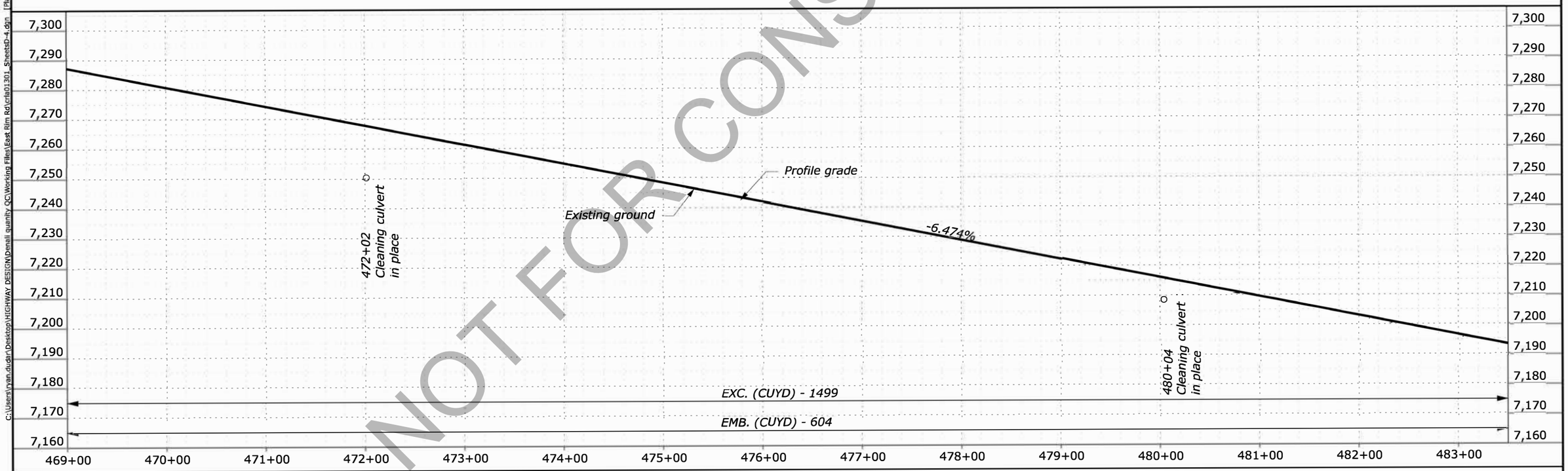
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudar\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-4.dgn [Plan and Profile 455+00]
5 April 2021 1:09 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.34





NOTE:

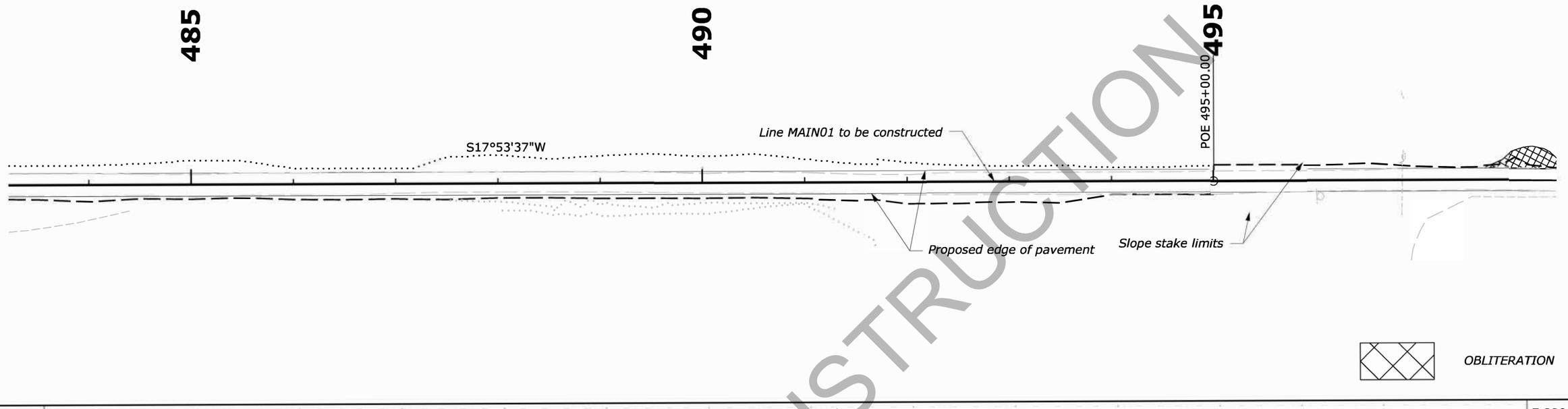
1. See Sheets C.3 to C.12 for repair type and details.

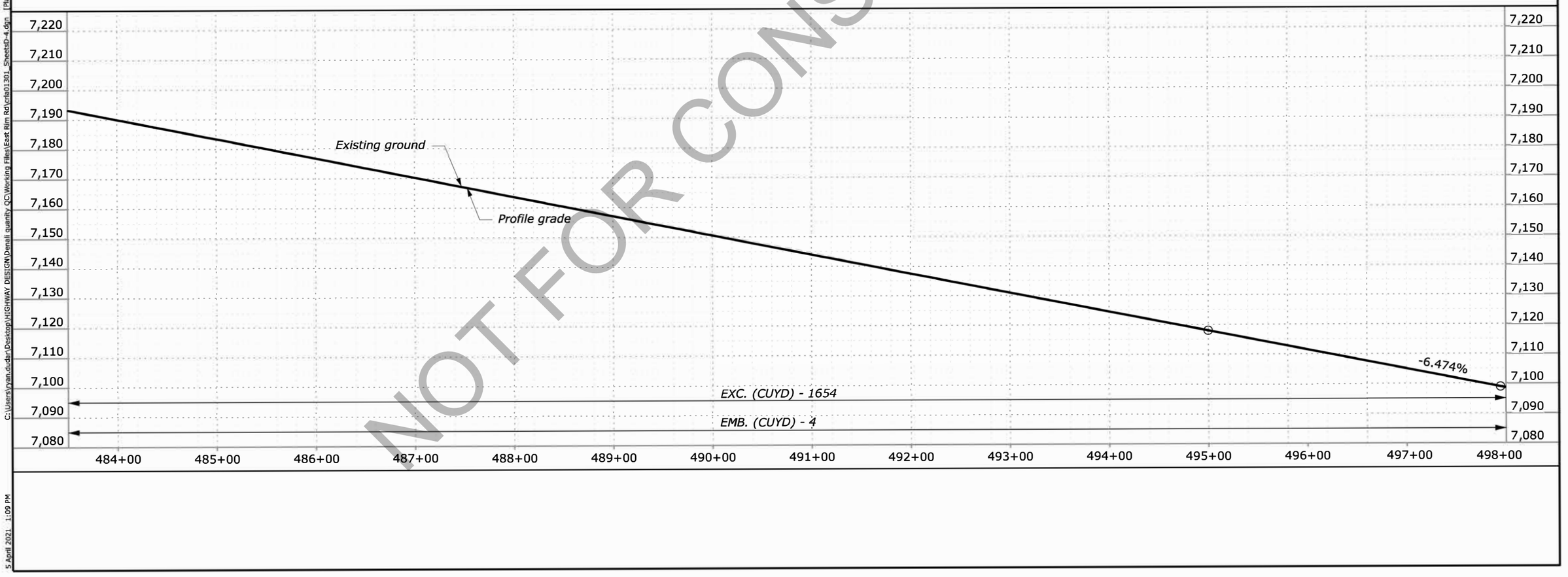
NOT FOR CONSTRUCTION

C:\Users\ryan.dolan\Desktop\HIGHWAY DESIGN\Detail quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-4.dgn [Plan and Profile 470+00]
5 April 2021 1:09 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.35



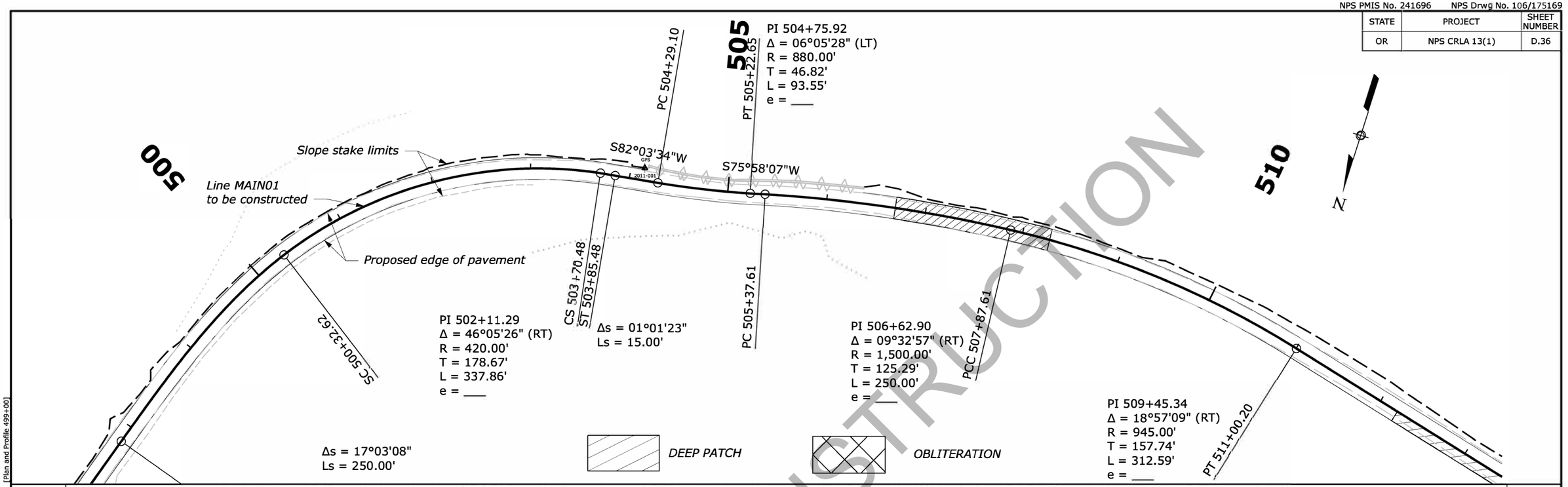


NOT FOR CONSTRUCTION

C:\Users\ryan.duda\Desktop\HIGHWAY DESIGN\Denali quanity QC\Working Files\East Rim Rd\crla01301_SheetsD-4.dgn [Plan and Profile 484+00]
5 April 2021 1:09 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.36



NOT FOR CONSTRUCTION

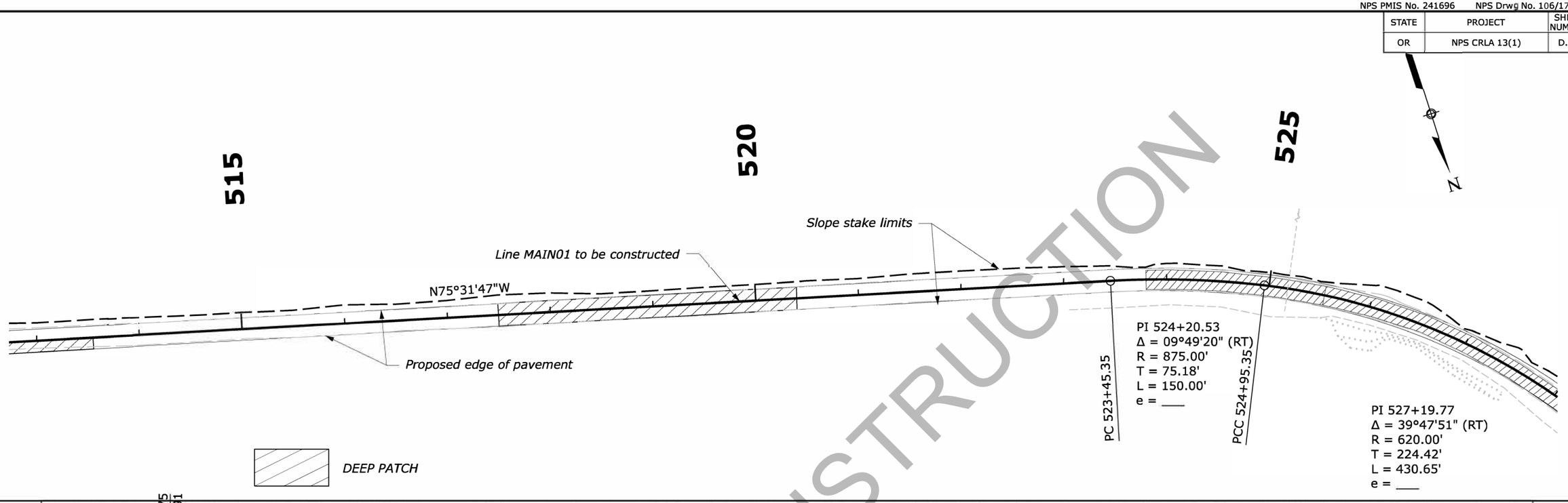
NOTE:

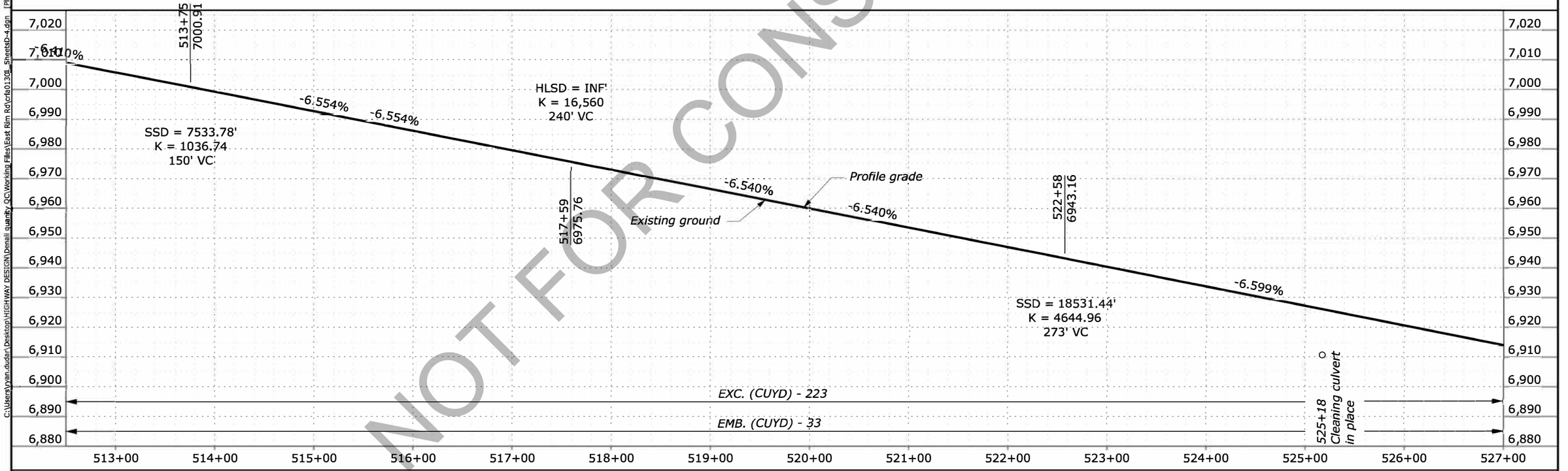
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\yvan.dudan\Desktop\HIGHWAY DESIGN\Dynamic quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-4.dgn [Plan and Profile 499+00]
5 April 2021 1:28 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.37





NOTE:

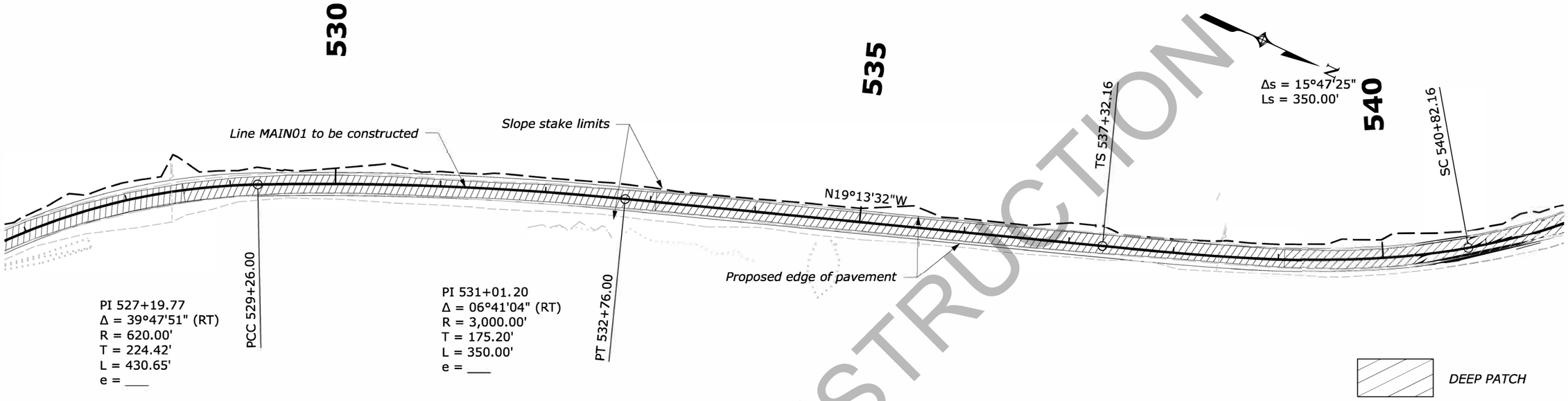
1. See Sheets C.3 to C.12 for repair type and details.

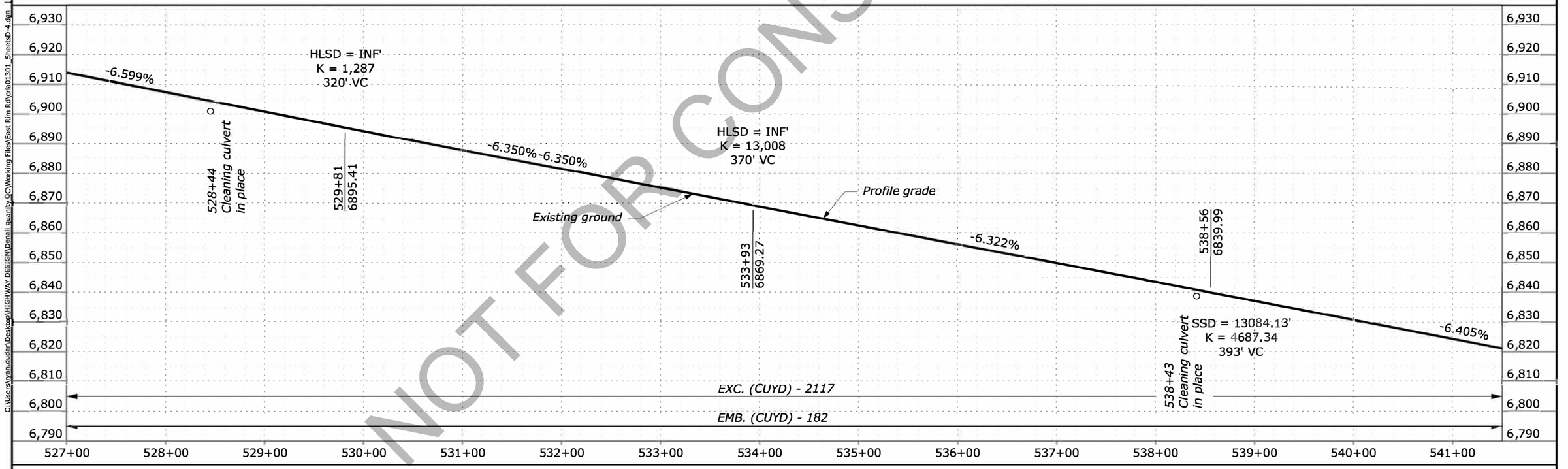
NOT FOR CONSTRUCTION

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Donall quality QC\Working Files\East Rim Rd\crla0130_SheetsD-4.dgn [Plan and Profile 513+00]
5 April 2021 1:24 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.38





NOT FOR CONSTRUCTION

NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudar\Desktop\HIGHWAY DESIGN\Donall quality QC\Working Files\East Rim Rd\crla01301_SheetsD-4.dgn [Plan and Profile 528+00]
5 April 2021 1:29 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.39

PI 547+59.93
Δ = 93°43'55" (LT)
R = 635.00'
T = 677.77'
L = 1,038.82'
e = ___

N

545

550

555

Line APPR03

Δs = 01°44'29"
Ls = 100.00'

Δs = 07°53'42"
Ls = 175.00'

SC 554+16.36
ST 552+95.98
TS 553+16.36
CS 551+20.98
S43°21'26"W

Proposed edge of pavement

Slope stake limits

Line MAIN01 to be constructed

Phantom Ship Overlook
See sheets F.15-F.17

DEEP PATCH

OBLITERATION

NOT FOR CONSTRUCTION

-6.405%

-6.448%

-6.448%

547+46
6782.99

SSD = 25281.24'
K = 9642.24
415' VC

548+52
Cleaning culvert in place

550+96
Cleaning culvert in place

EXC. (CUYD) - 1603

EMB. (CUYD) - 127

6,840 6,830 6,820 6,810 6,800 6,790 6,780 6,770 6,760 6,750 6,740 6,730 6,720 6,710 6,700

542+00 543+00 544+00 545+00 546+00 547+00 548+00 549+00 550+00 551+00 552+00 553+00 554+00 555+00 556+00

NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dubin\Desktop\HIGHWAY DESIGN\Dsmall quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-4.dgn [Plan and Profile 542+00]
5 April 2021 1:24 PM

NPS PMIS No. 241696 NPS Drwg No. 1O6/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.40

PI 557+23.03
Δ = 21°07'13" (LT)
R = 1,645.00'
T = 306.67'
L = 606.37'
e = ___

Pinnacles Road
Line 'APPR03'
See Sheet E.9

560

CS 560+22.74

Δs = 05°13'28"
Ls = 300.00'

ST 563+22.74

565

PC 565+79.84

570

S15°16'16"W

Slope stake limits

Line MAIN01 to be constructed

Proposed edge of pavement

Begin tree trimming 556+80,LT
End tree trimming 557+85,LT

Trim trees from EOP to top of berm
as directed by CO

DEEP PATCH

OBLITERATION

Line 'Main01' 556+31 = Line 'APPR03' 10+00
See sheet E.9 for details

HLSD = 332.98'
K = 71
851' VC

Profile grade

+5.574%

Existing ground

558+35
5712.77
558+45
Cleaning culvert
in place

561+90
Cleaning culvert
in place

564+32
Cleaning culvert
in place

EXC. (CUYD) - 1512

EMB. (CUYD) - 86

6,810
6,800
6,790
6,780
6,770
6,760
6,750
6,740
6,730
6,720
6,710
6,700
6,690
6,680
6,670

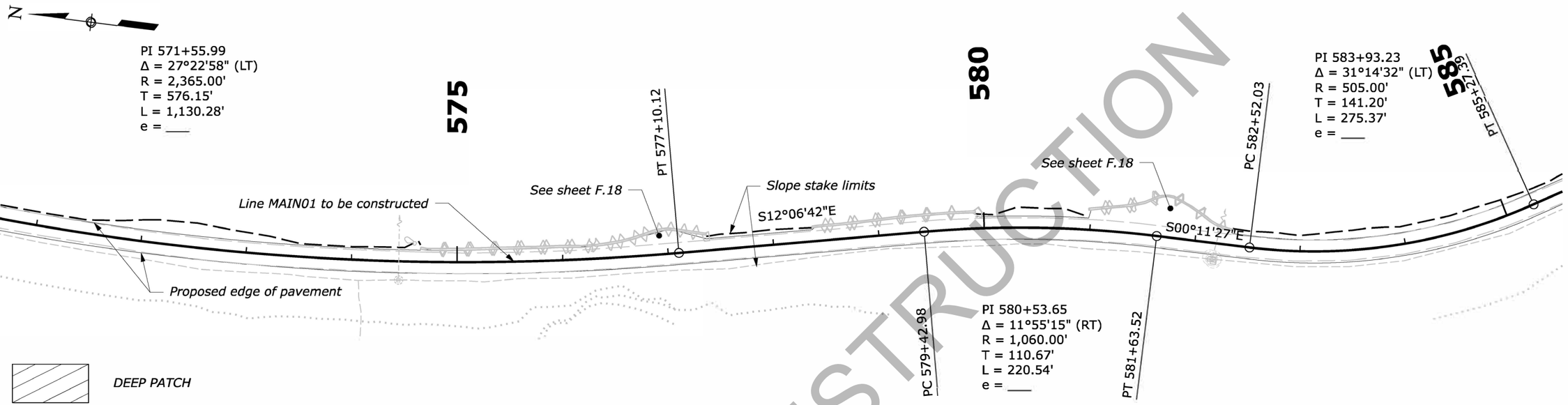
556+00 557+00 558+00 559+00 560+00 561+00 562+00 563+00 564+00 565+00 566+00 567+00 568+00 569+00 570+00

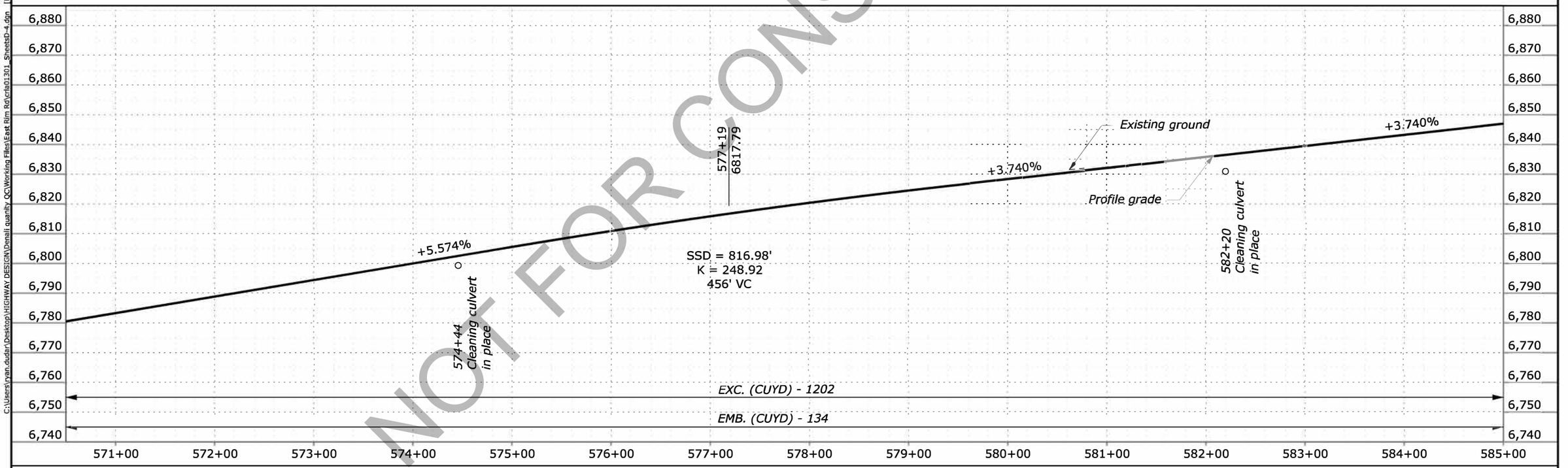
NOTE:
1. See Sheets C.3 to C.12 for repair type and details.

NOT FOR CONSTRUCTION

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-4.dgn [Plan and Profile 557+00]
5 April 2021 1:24 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.41





NOT FOR CONSTRUCTION

NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudar\Desktop\HIGHWAY DESIGN\Denali quality QC\Working Files\East Rim Rd\crla01301_SheetsD-4.dgn [Plan and Profile 571+00]
5 April 2021 1:24 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.42

585

PT 585+27.39

S31°25'59"E

GPS
2011-003

PC 587+40.72

PI 588+14.63
Δ = 16°48'56" (RT)
R = 500.00'
T = 73.90'
L = 146.74'
e = ___

PT 588+87.47

590

S14°37'03"E

PC 590+80.34

Slope stake limits

Line MAIN01 to be constructed

595

PI 596+21.58
Δ = 29°34'48" (LT)
R = 2,050.00'
T = 541.25'
L = 1,058.35'
e = ___

N

Proposed edge of pavement

DEEP PATCH

NOT FOR CONSTRUCTION

6,950
6,940
6,930
6,920
6,910
6,900
6,890
6,880
6,870
6,860
6,850
6,840
6,830
6,820
6,810

HLSD = 1555.22'
K = 223
500' VC

587+18
6855.15

+5.979%

Existing ground

Profile grade

+5.979%

595+66
Cleaning culvert in place

HLSD = INF'
K = 3,752
400' VC

597+16
6914.83

598+07
Cleaning culvert in place

+6.086%

EXC. (CUYD) - 1274

EMB. (CUYD) - 153

585+00 586+00 587+00 588+00 589+00 590+00 591+00 592+00 593+00 594+00 595+00 596+00 597+00 598+00 599+00

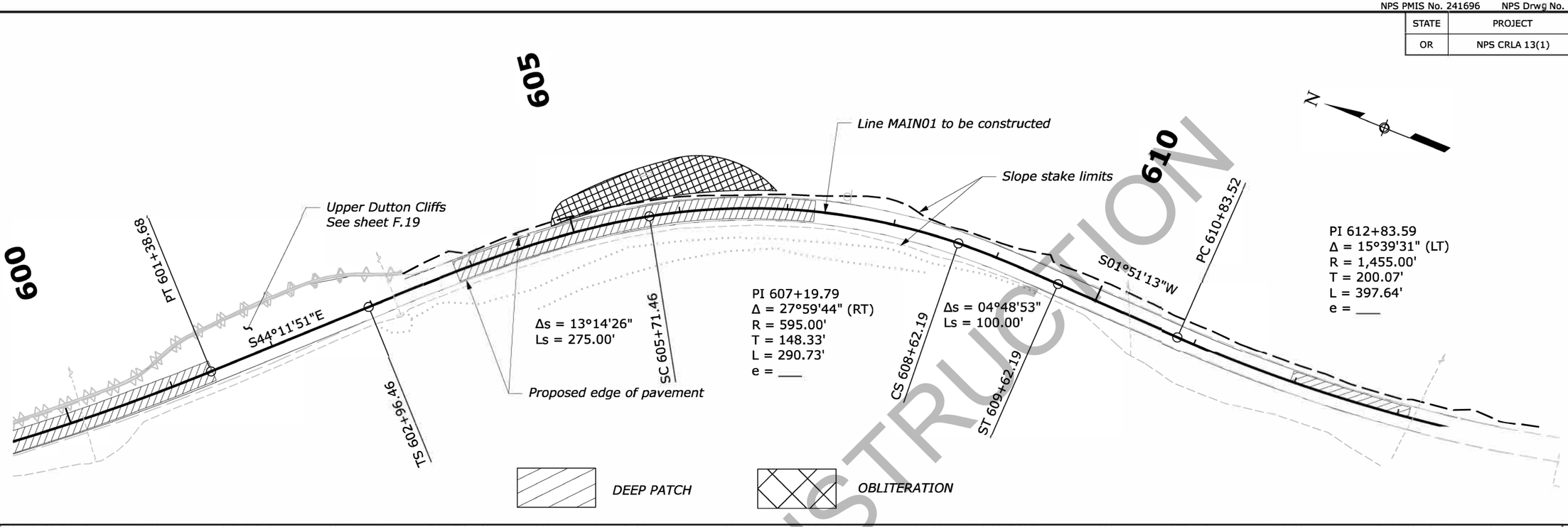
NOTE:

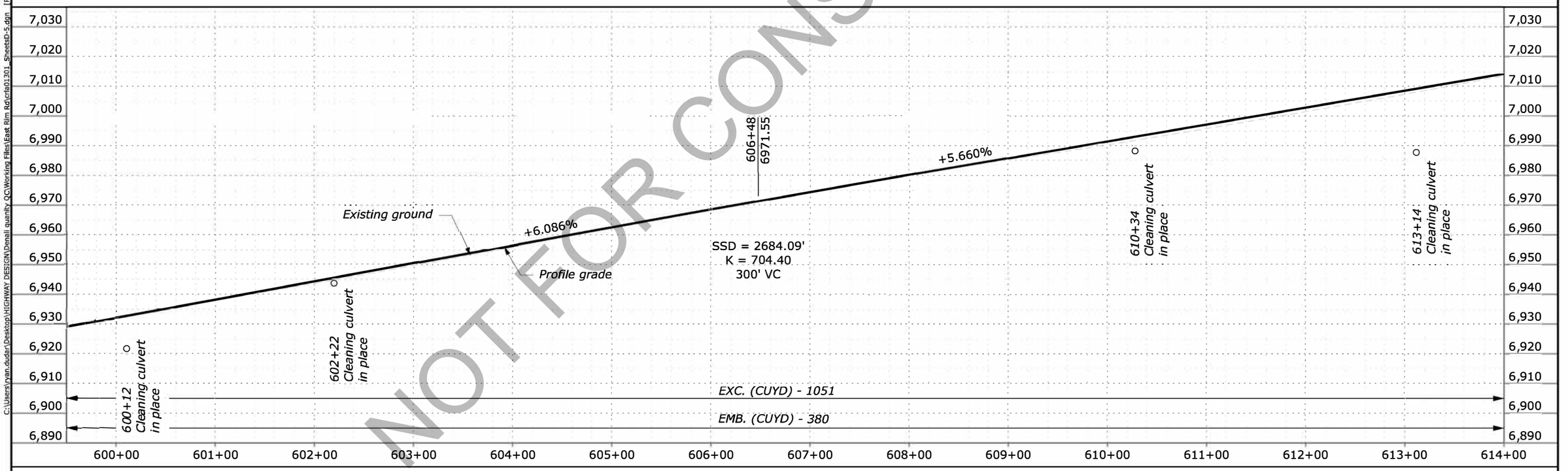
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dubin\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-5.dgn [Plan and Profile 585+00]
6 April 2021 11:26 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.43





NOT FOR CONSTRUCTION

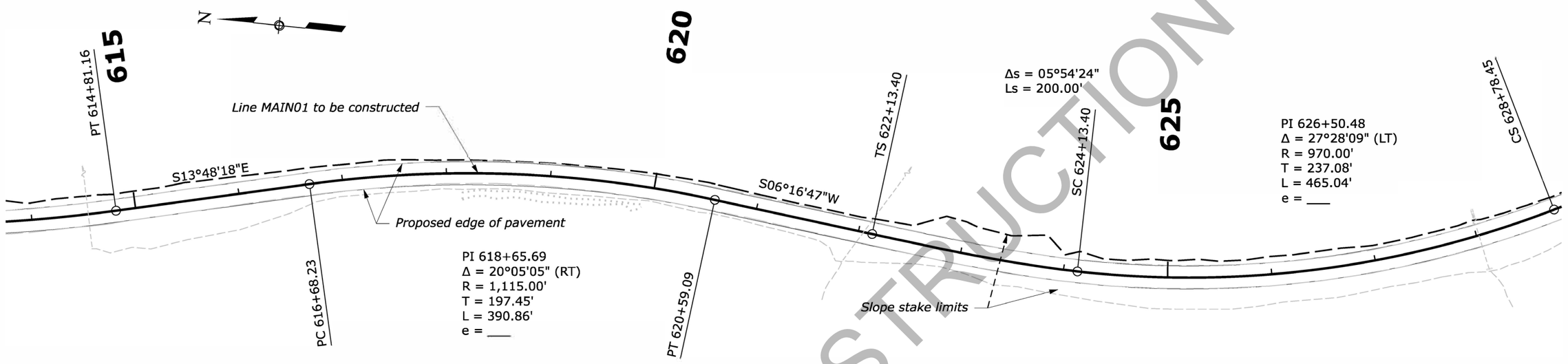
NOTE:

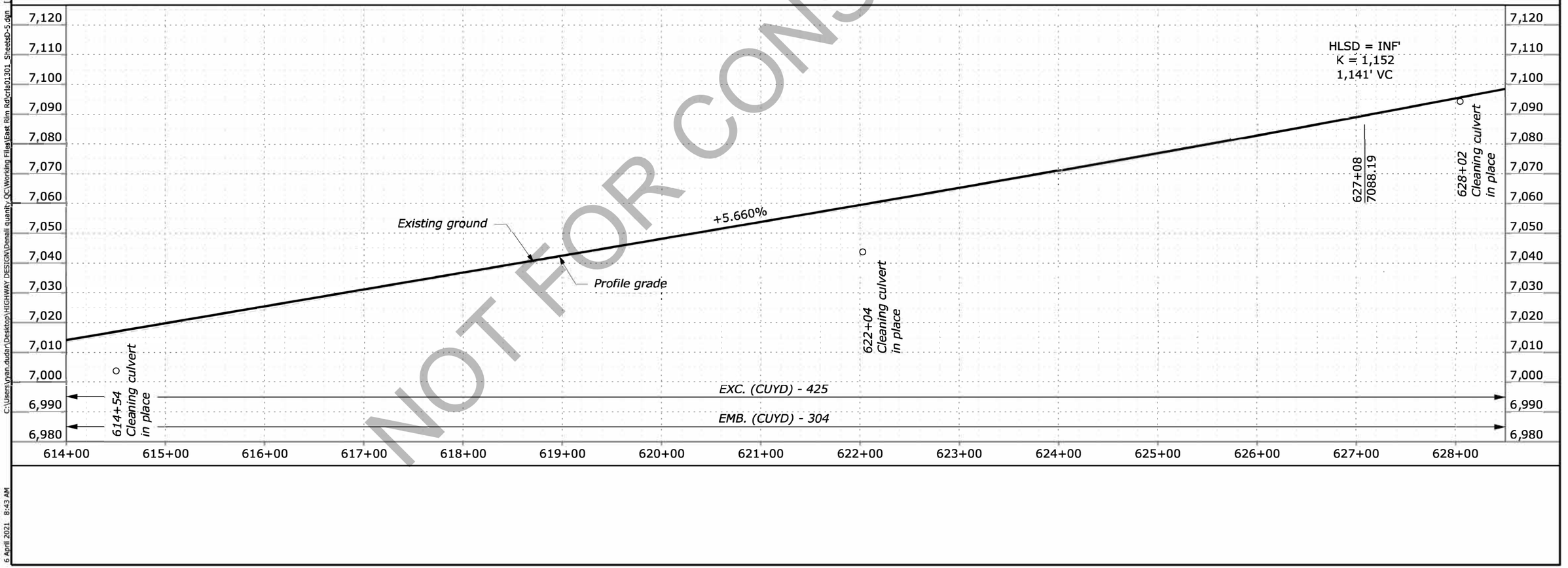
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dubin\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-5.dgn [Plan and Profile 600+00]
6 April 2021 8:40 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.44



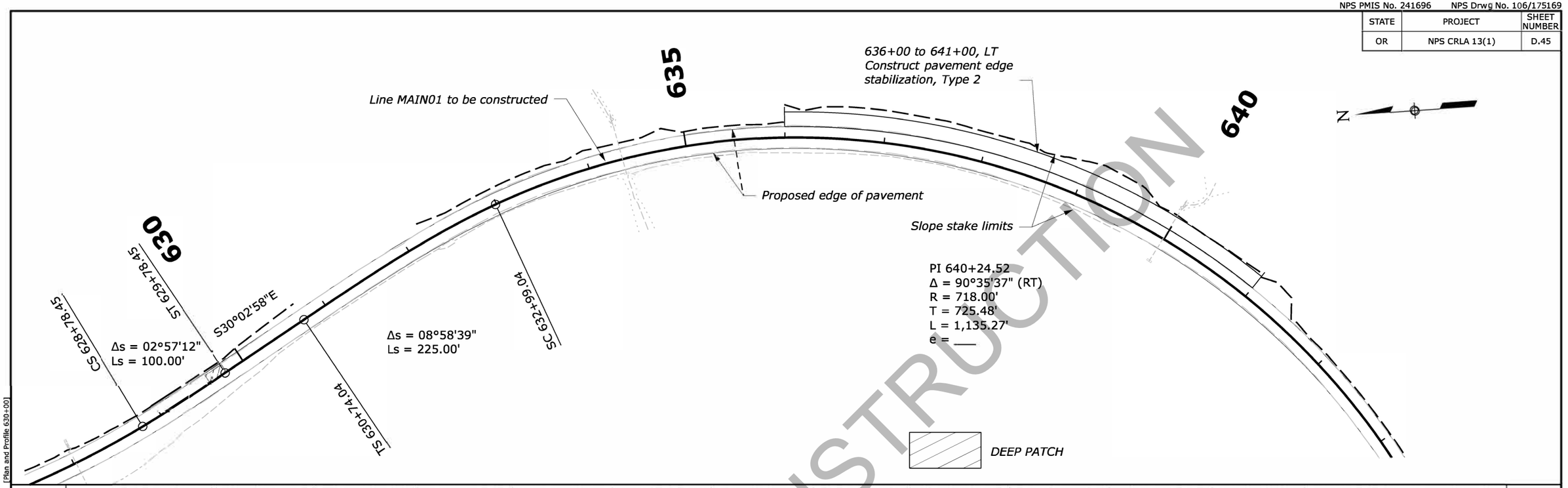


NOT FOR CONSTRUCTION

C:\Users\ryan.dudar\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\cra01301_SheetsD-5.dgn [Plan and Profile 615+00]
6 April 2021 8:43 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.45



NOT FOR CONSTRUCTION

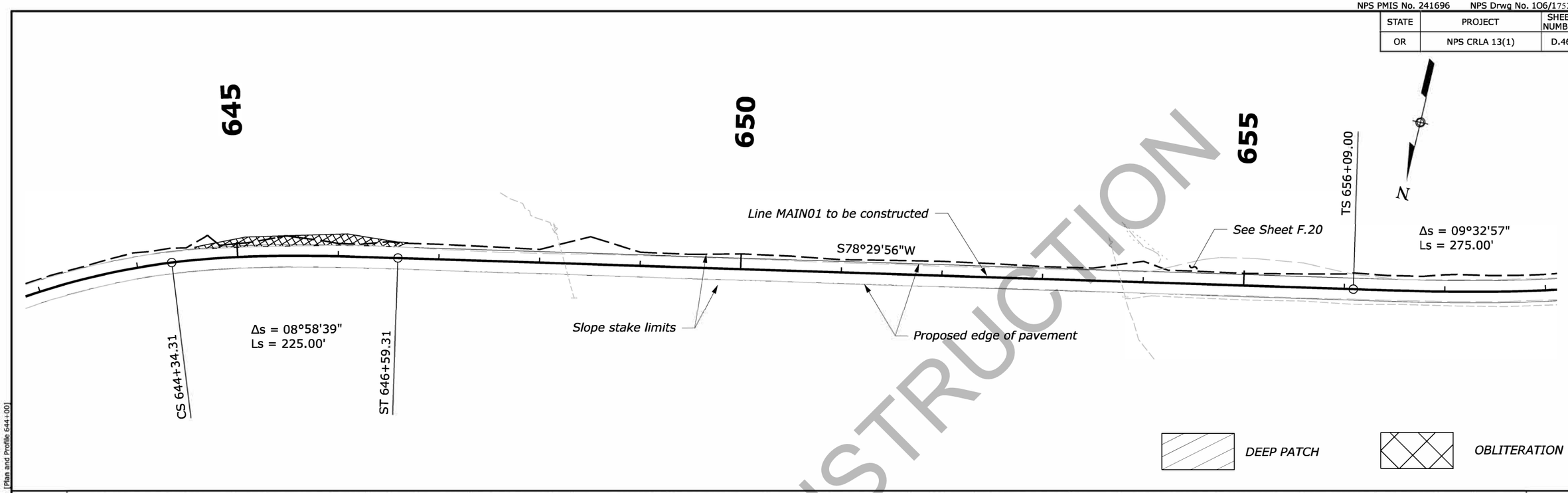
NOTE:

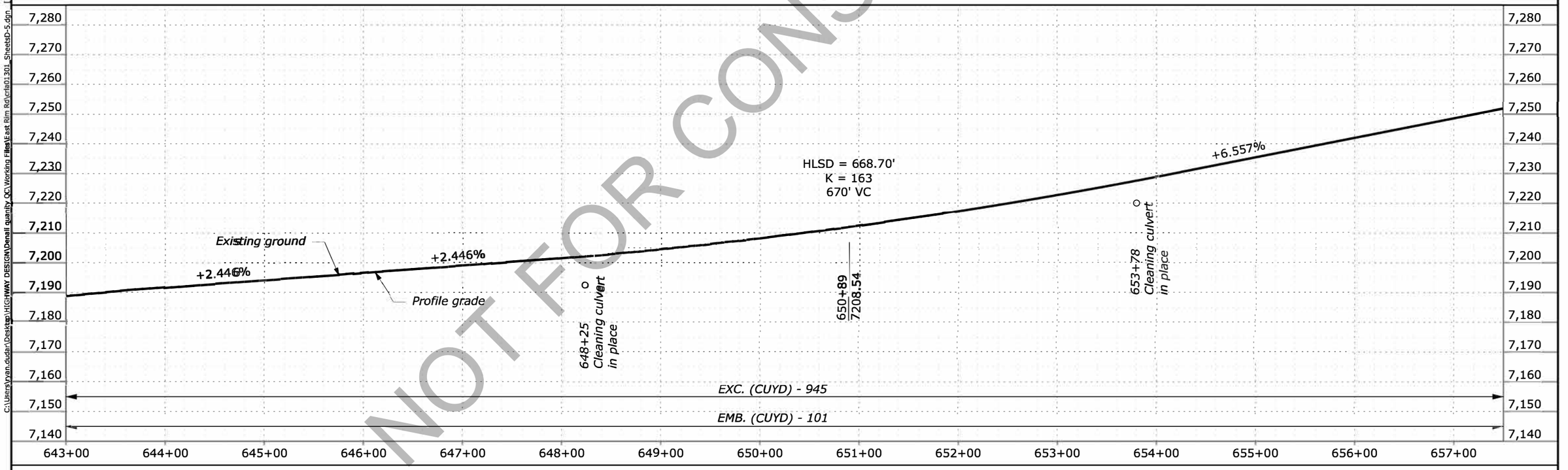
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dugan\Desktop\HIGHWAY DESIGN\Denali Quality QC\Working Files\East Rim Rd\crla01301_SheetsD-5.dgn [Plan and Profile 630+00]
6 April 2021 8:43 AM

NPS PMIS No. 241696 NPS Drwg No. 1O6/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.46





NOT FOR CONSTRUCTION

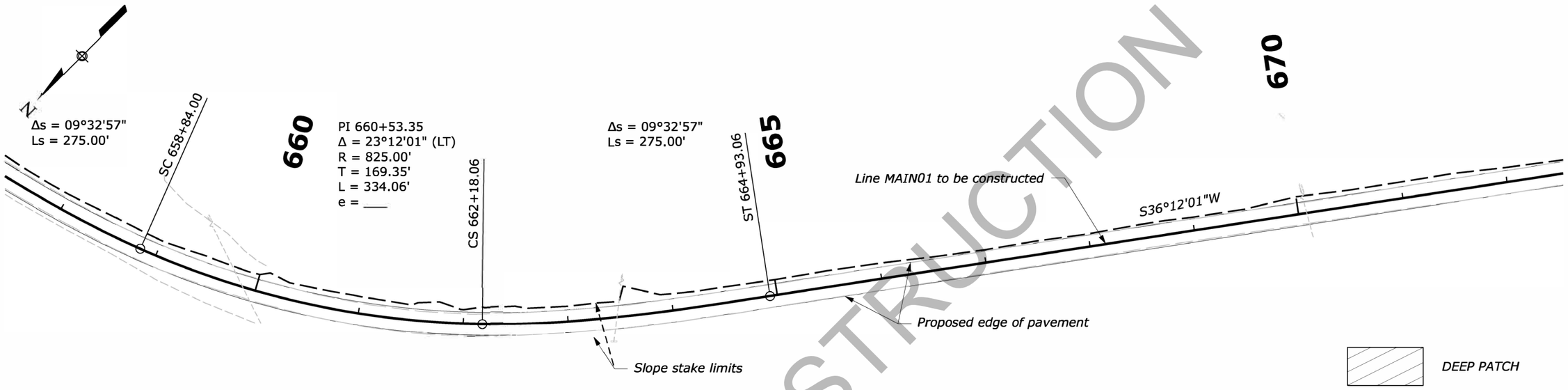
NOTE:

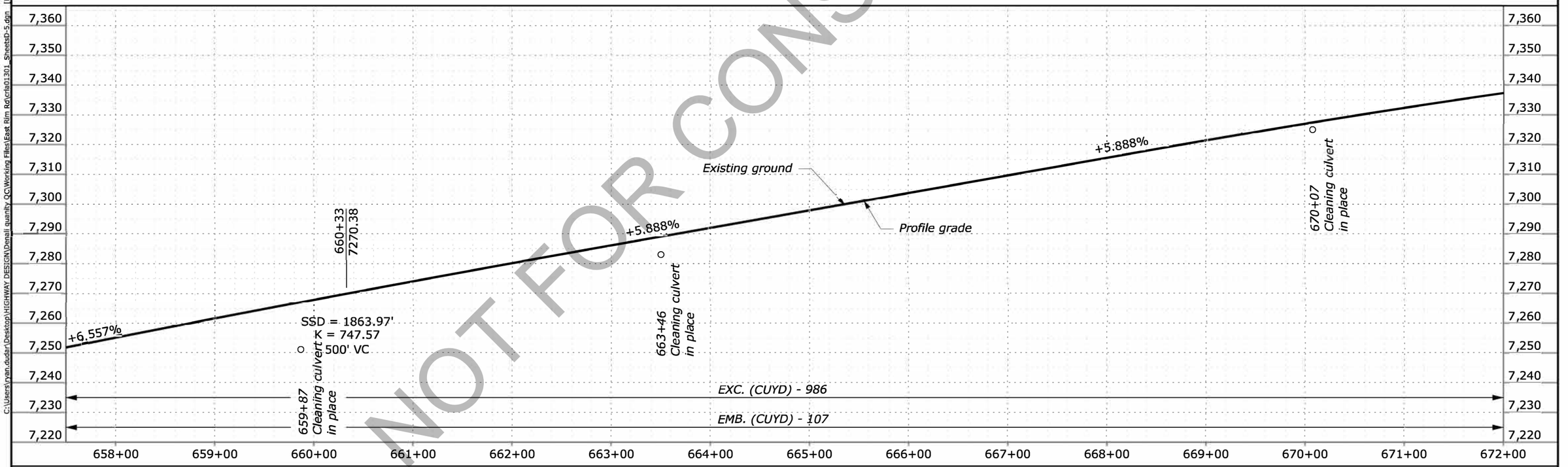
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dugan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-5.dgn [Plan and Profile 644+00]
6 April 2021 8:43 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.47





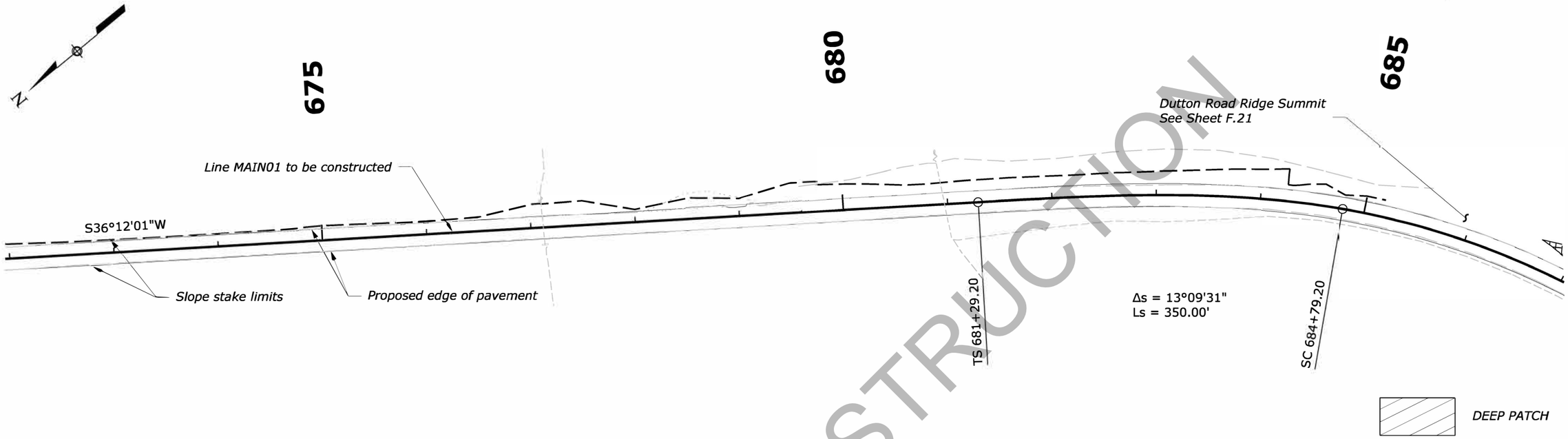
NOT FOR CONSTRUCTION

NOTE:

1. *See Sheets C.3 to C.12 for repair type and details.*

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Detail quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-5.dgn [Plan and Profile 658+00]
6 April 2021 8:43 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.48



NOT FOR CONSTRUCTION

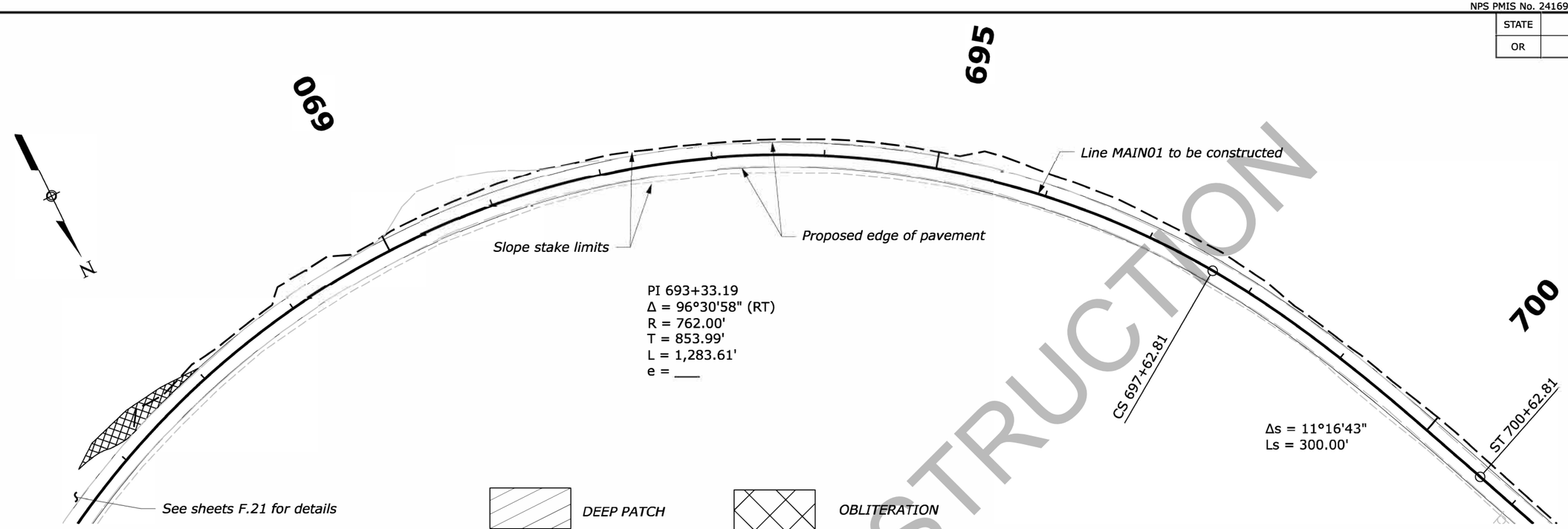
NOTE:

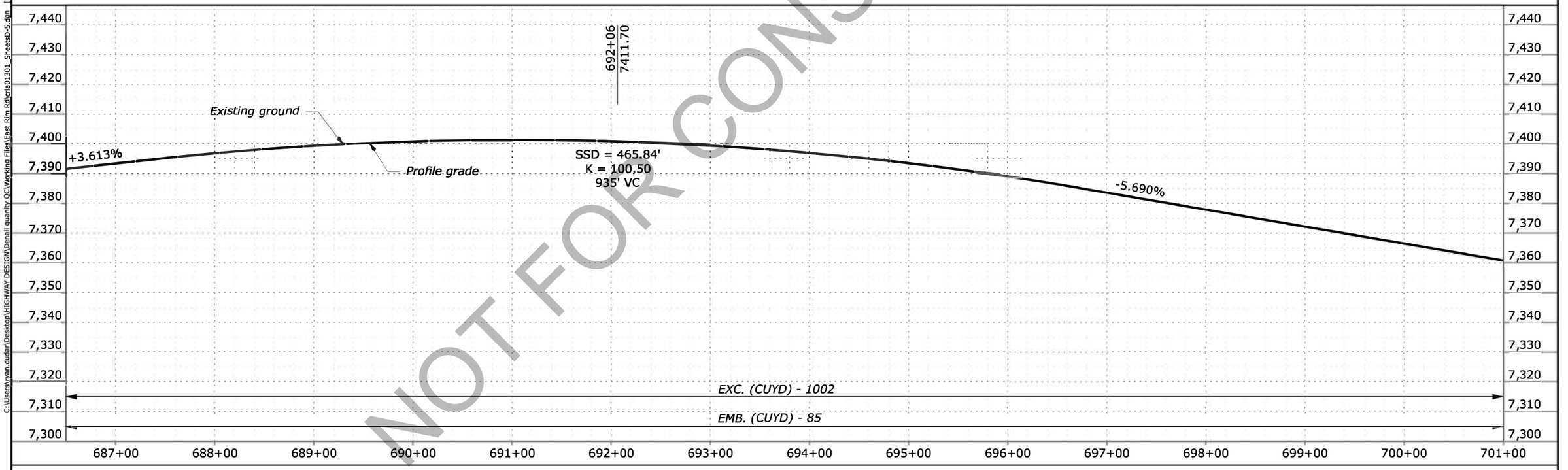
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudar\Desktop\HIGHWAY DESIGN\Denali quality QC\Working Files\East Rim Rd\crla01301_SheetsD-5.dgn [Plan and Profile 673+00]
6 April 2021 8:43 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.49





NOT FOR CONSTRUCTION

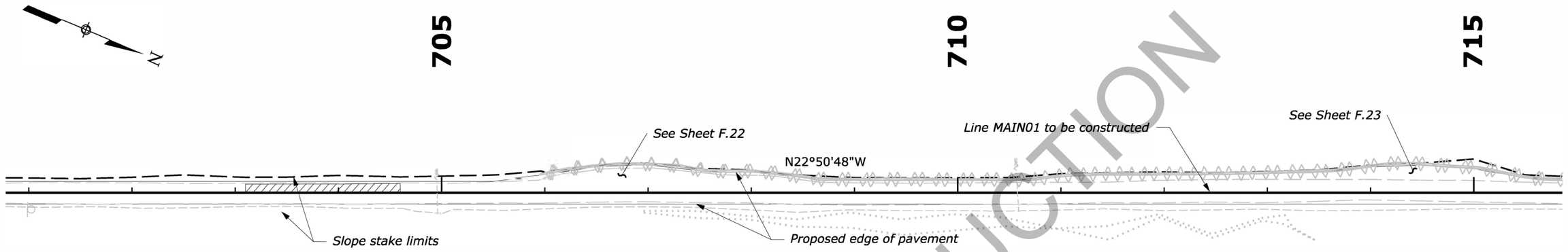
C:\Users\ryan.dubin\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crte01301_SheetsD-5.dgn [Plan and Profile 687+00]

6 April 2021 8:43 AM

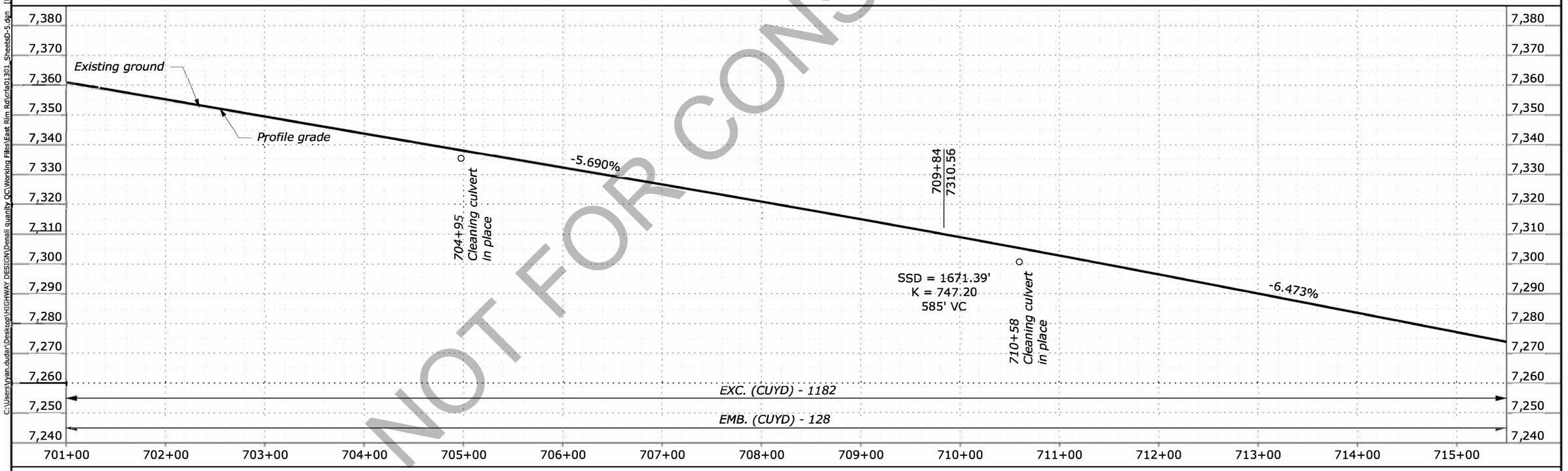
NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.50



DEEP PATCH



NOT FOR CONSTRUCTION

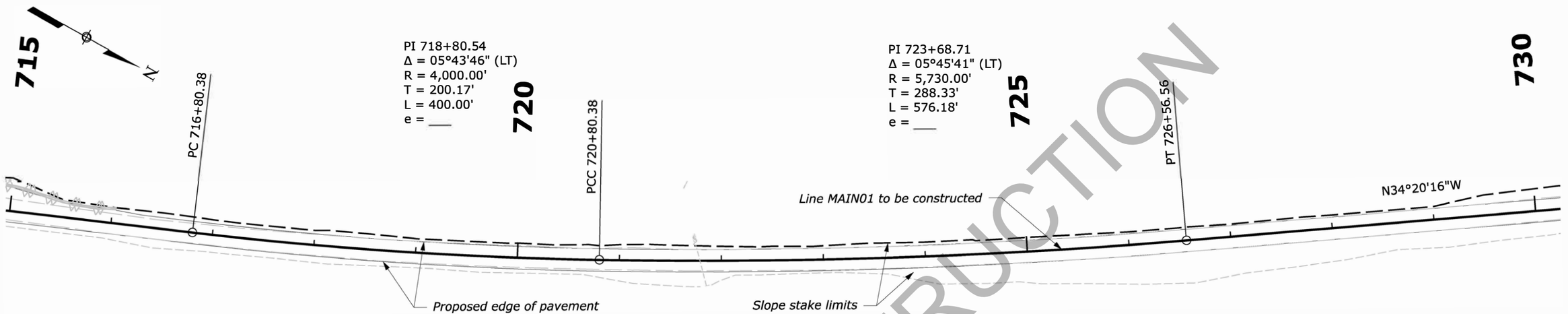
NOTE:

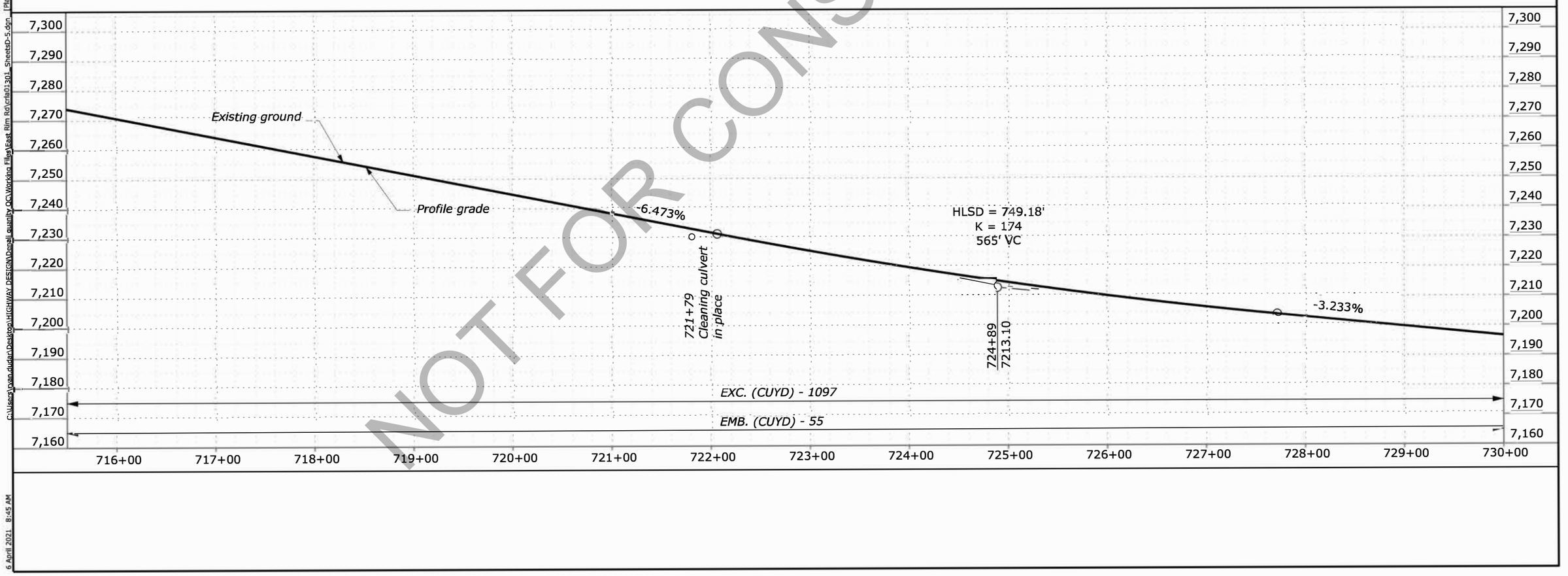
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.duda\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-5.dgn [Plan and Profile 702+00]
6 April 2021 8:45 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.51





NOT FOR CONSTRUCTION

C:\Users\ryan.dugan\Desktop\HIGHWAY DESIGN\Dugan Laundry OCV\Working Files\East Rim Rd\crla01301_SheetsD-5.dgn [Plan and Profile 716+00]
6 April 2021 8:45 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.52

730

735

740

See Sheet F.24

PC 731+20.29

PI 732+80.41
Δ = 05°12'06" (RT)
R = 3,525.00'
T = 160.12'
L = 320.03'
e = ___

PT 734+40.32

Line MAIN01 to be constructed
N29°08'09"W

Proposed edge of pavement

Slope stake limits

PC 739+79.45

PI 740+69.34
Δ = 06°51'30" (LT)
R = 1,500.00'
T = 89.88'
L = 179.55'
e = ___

PT 741+59.01

N35°59'39"W

N

DEEP PATCH

733+91
7183.94

731+81
Cleaning culvert
in place

SSD = 739.87'
K = 253.34
735' VC

Existing ground

Profile grade

-6.63%

HLSD = INF'
K = 2,647
1,010' VC

743+93
7122.48

EXC. (CUYD) - 1308

EMB. (CUYD) - 81

7,220
7,210
7,200
7,190
7,180
7,170
7,160
7,150
7,140
7,130
7,120
7,110
7,100
7,090
7,080

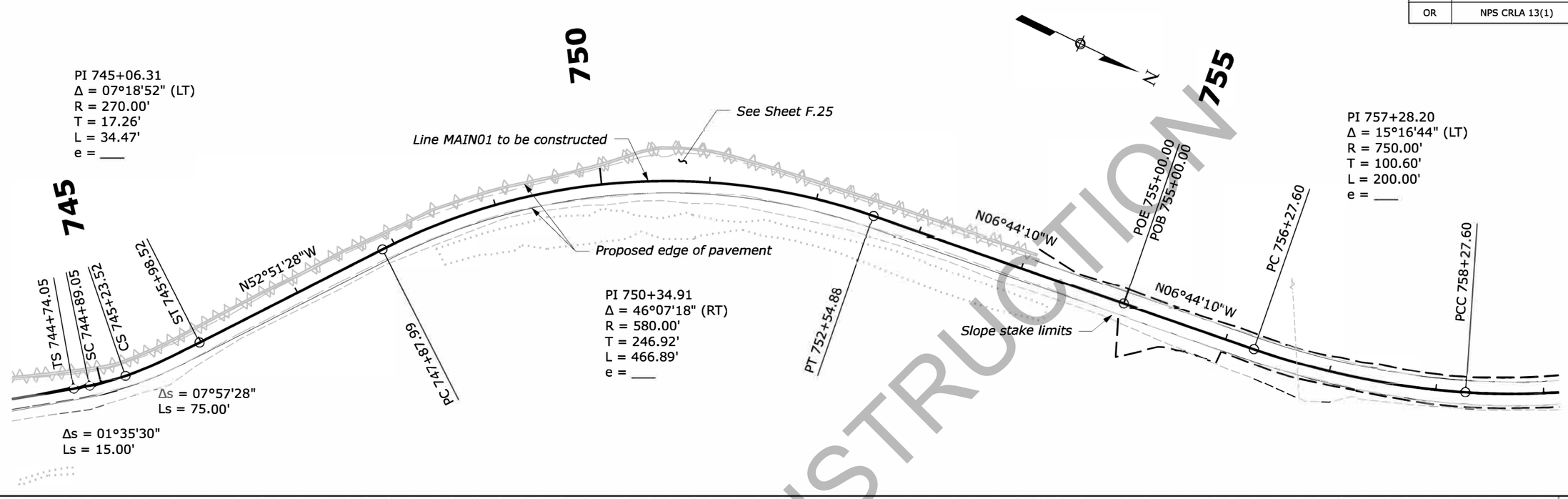
730+00 731+00 732+00 733+00 734+00 735+00 736+00 737+00 738+00 739+00 740+00 741+00 742+00 743+00 744+00

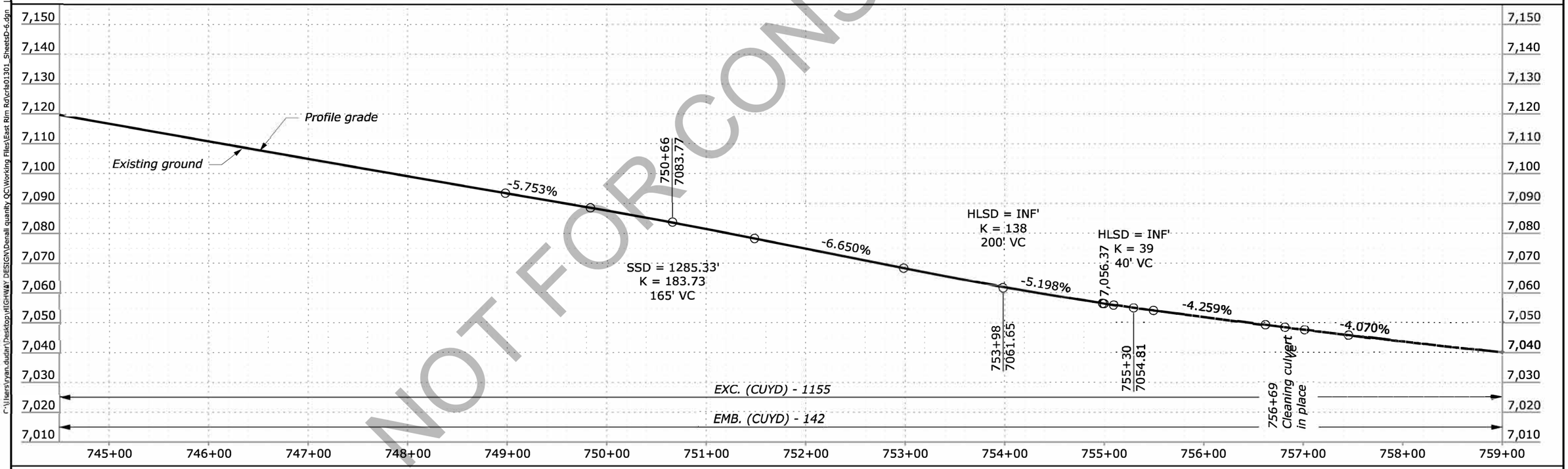
NOTE:
1. See Sheets C.3 to C.12 for repair type and details.

NOT FOR CONSTRUCTION

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetD-6.dgn [Plan and Profile 731+00]
6 April 2021 9:33 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.53





NOT FOR CONSTRUCTION

C:\Users\ryan.dugan\Desktop\NTIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-6.dgn [Plan and Profile 745+00]
6 April 2021 9:42 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.54

760

765

770

N

PI 771+39.76
Δ = 128°21'08" (LT)
R = 635.00'
T = 1,312.16'
L = 1,422.51'
e = ___

PCC 772+50.11

PI 773+50.71
Δ = 15°16'44" (LT)
R = 750.00'
T = 100.60'
L = 200.00'
e = ___

Proposed edge of pavement mainline

Sun Notch
See Sheet F.26

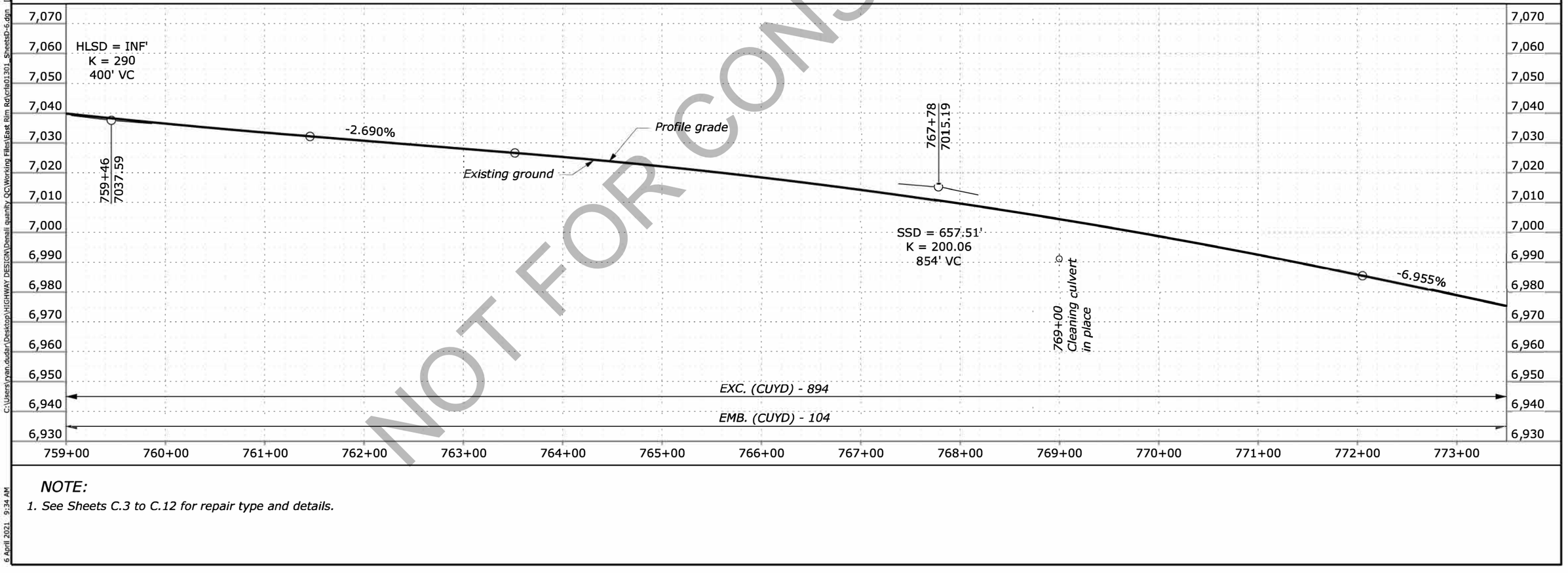
Line MAIN01 to be constructed

Slope stake limits

Install Culvert, 24-inch diameter
See G sheets for details

OBLITERATION

DEEP PATCH



NOT FOR CONSTRUCTION

NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-6.dgn [Plan and Profile 760+00]
6 April 2021 9:34 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.55

PI 773+50.71
Δ = 15°16'44" (LT)
R = 750.00'
T = 100.60'
L = 200.00'
e = ___

PT 774+50.11

775

780

TS 779+32.75

Δs = 08°47'16"
Ls = 500.00'

785

SC 784+32.75

N

Line MAIN01 to be constructed

S14°21'14"W

Proposed edge of pavement

Slope stake limits

DEEP PATCH

NOT FOR CONSTRUCTION

HLSD = INF'
K = 196
64' VC

-6.955%

-6.632%

HLSD = INF'
K = 744
150' VC

-6.430%

774+05 Cleaning culvert in place

776+79
6952.54

779+60
6933.94

786+79
6887.68

Profile grade

Existing ground

SSD = 5301.70'
K = 3908.03
868' VC

EXC. (CUYD) - 1298

EMB. (CUYD) - 69

6,990 6,980 6,970 6,960 6,950 6,940 6,930 6,920 6,910 6,900 6,890 6,880 6,870 6,860 6,850

774+00 775+00 776+00 777+00 778+00 779+00 780+00 781+00 782+00 783+00 784+00 785+00 786+00 787+00 788+00

NOTE:

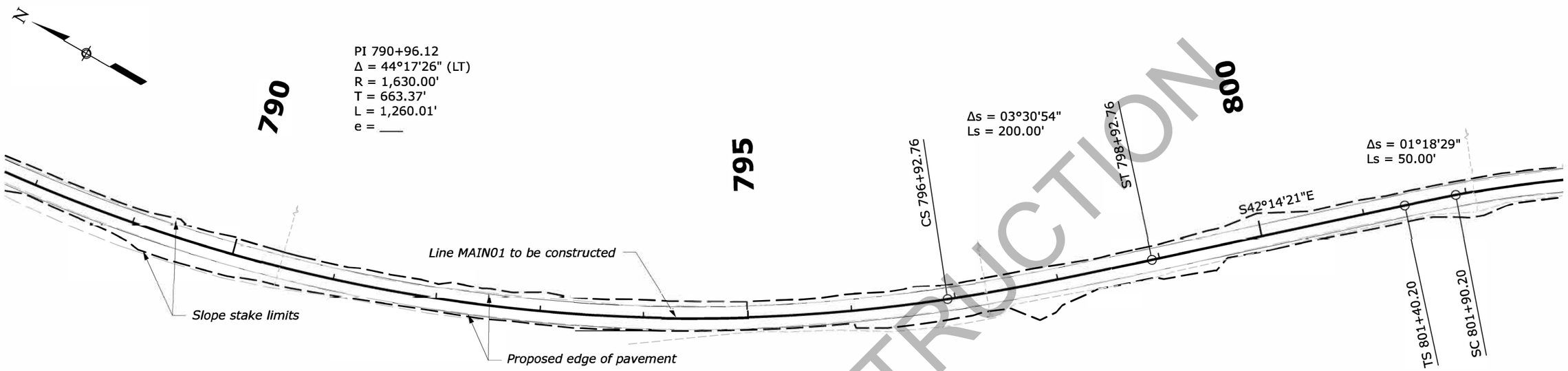
1. See Sheets C.3 to C.12 for repair type and details.

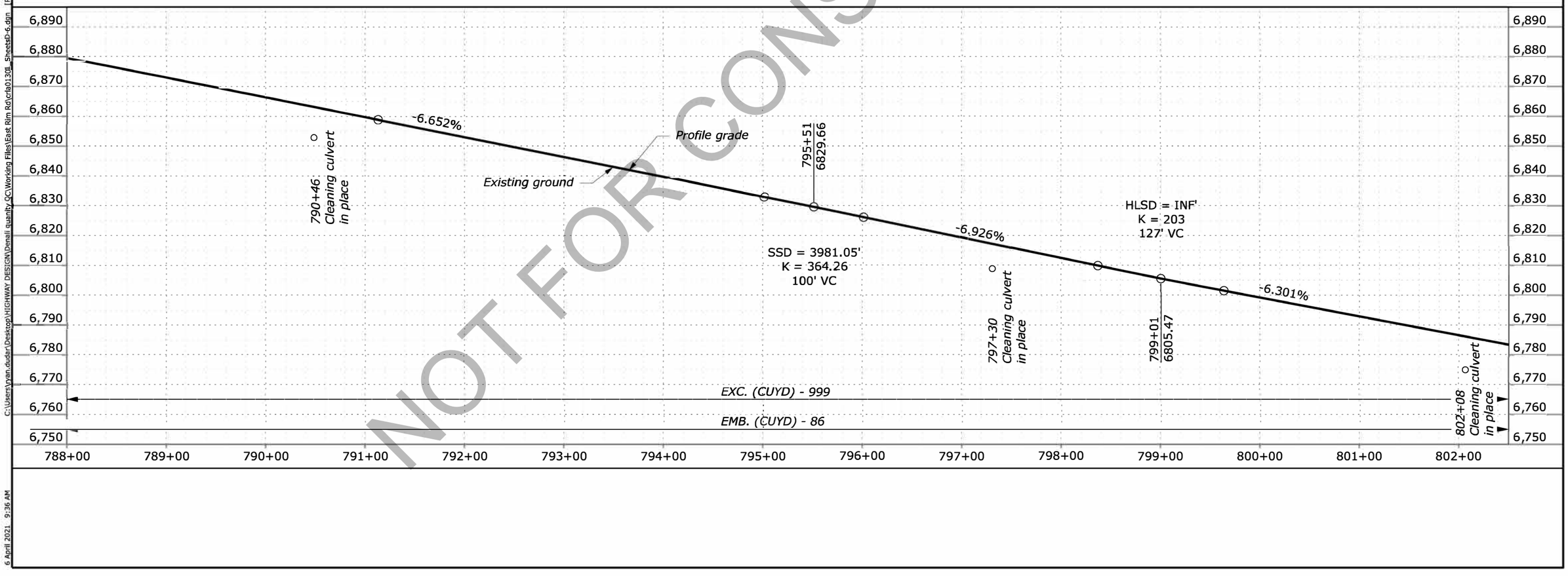
C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-6.dgn [Plan and Profile 774+00]

6 April 2021 9:35 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.56



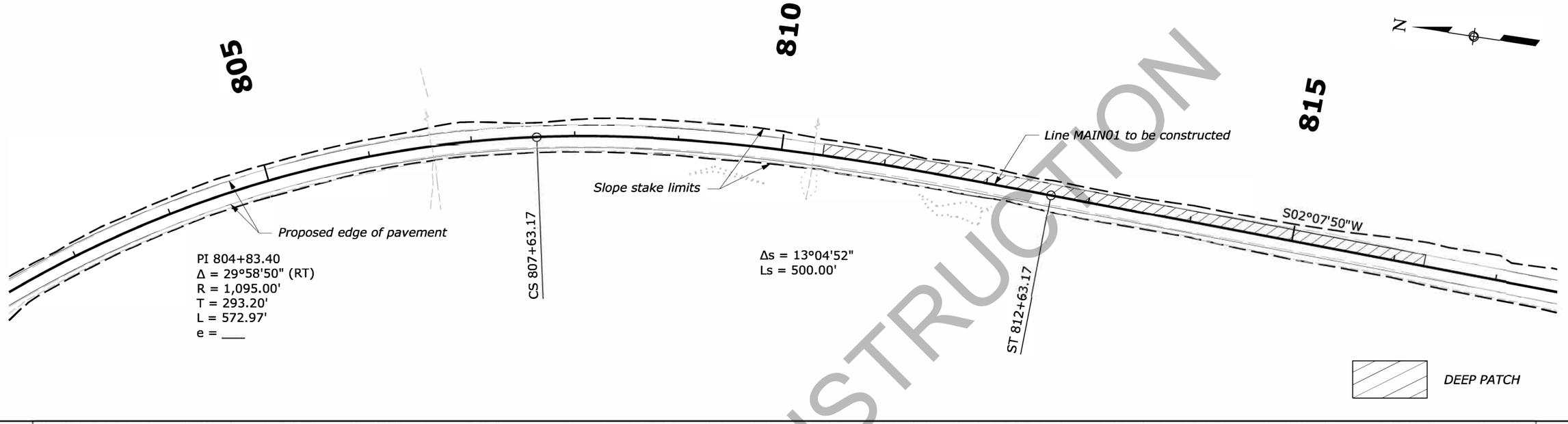


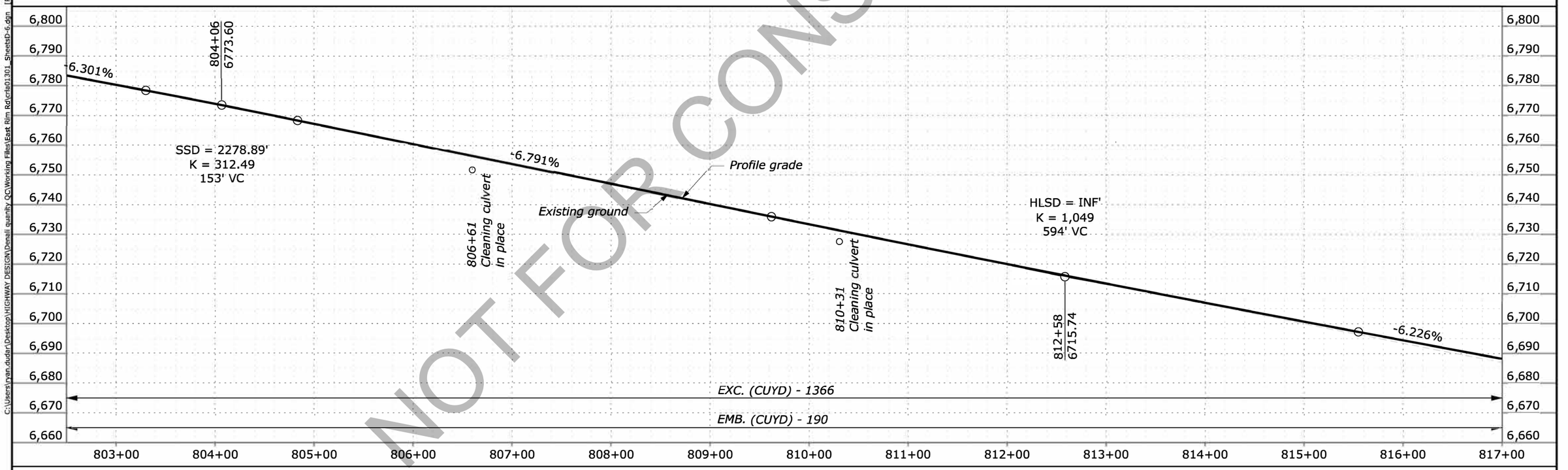
NOT FOR CONSTRUCTION

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla0130_SheetsP-6.dgn [Plan and Profile 789+00]
6 April 2021 9:36 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.57





NOT FOR CONSTRUCTION

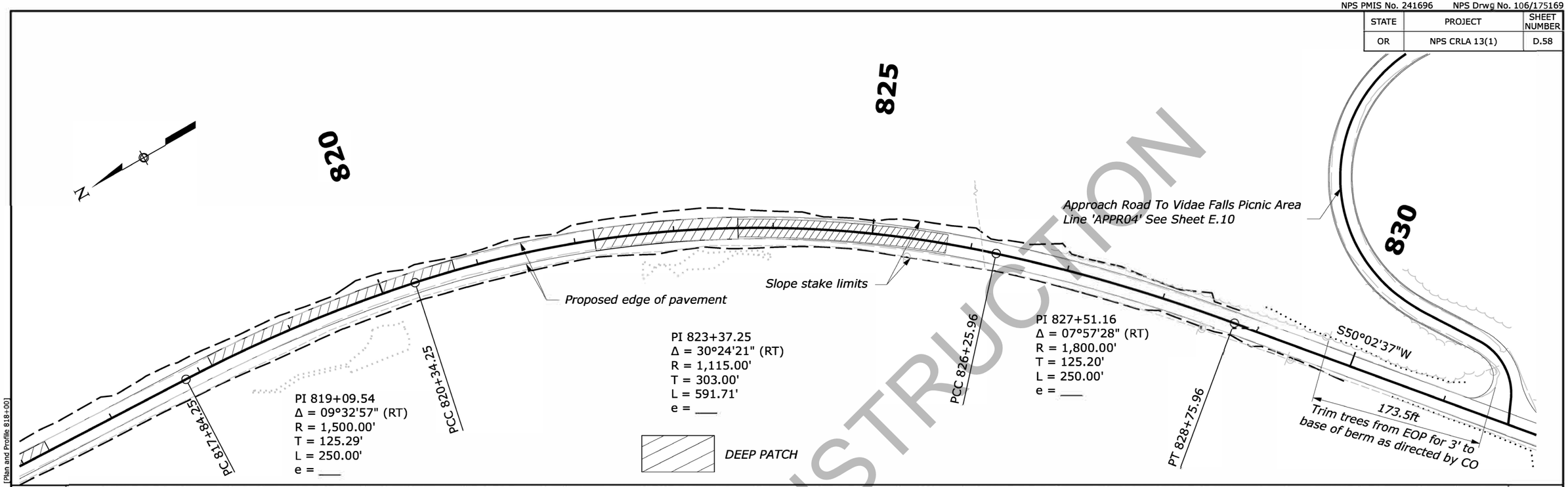
NOTE:

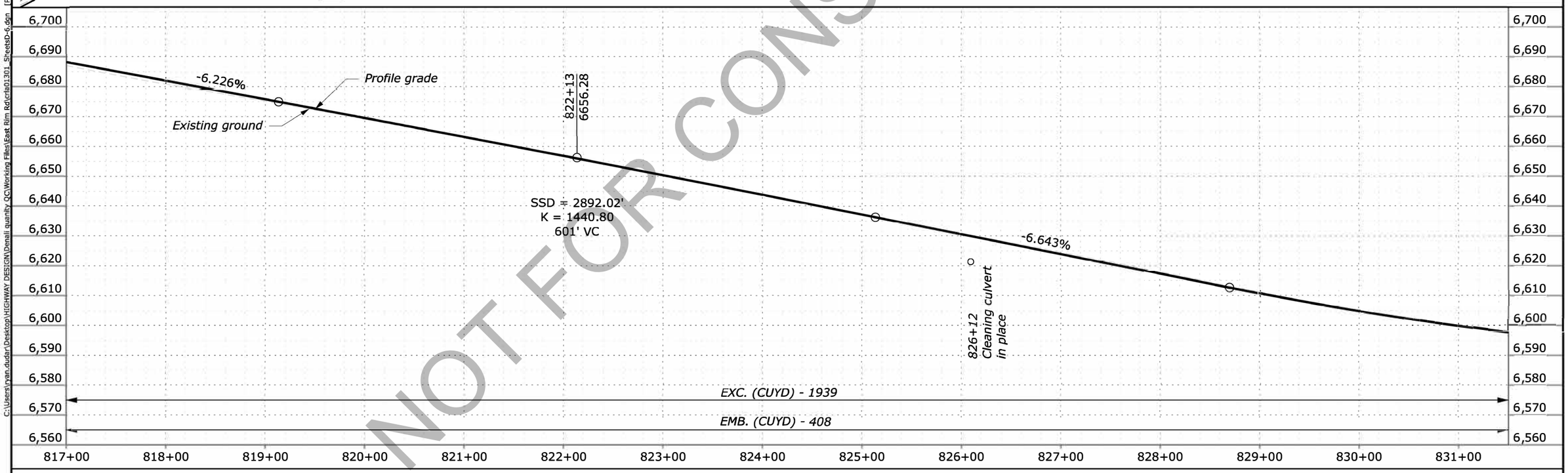
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Donali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-6.dgn [Plan and Profile 803+00]
6 April 2021 9:36 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.58





NOT FOR CONSTRUCTION

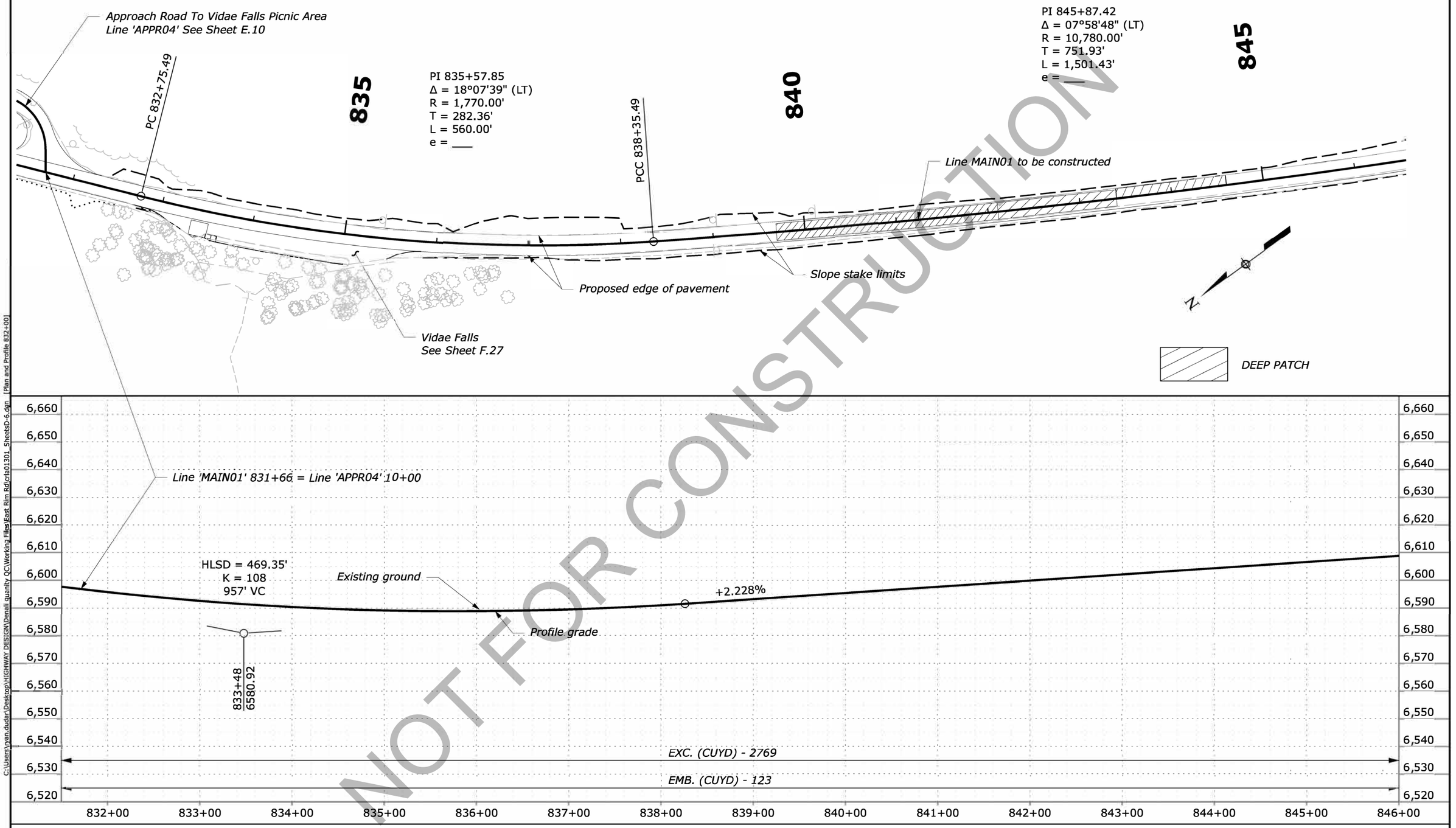
NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-6.dgn [Plan and Profile 818+00]
6 April 2021 9:37 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.59



NOT FOR CONSTRUCTION

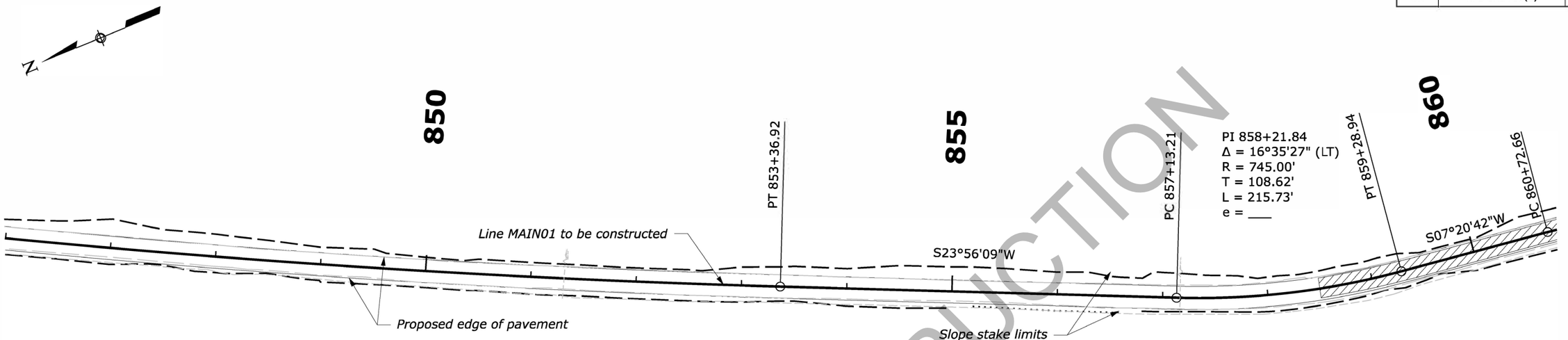
NOTE:

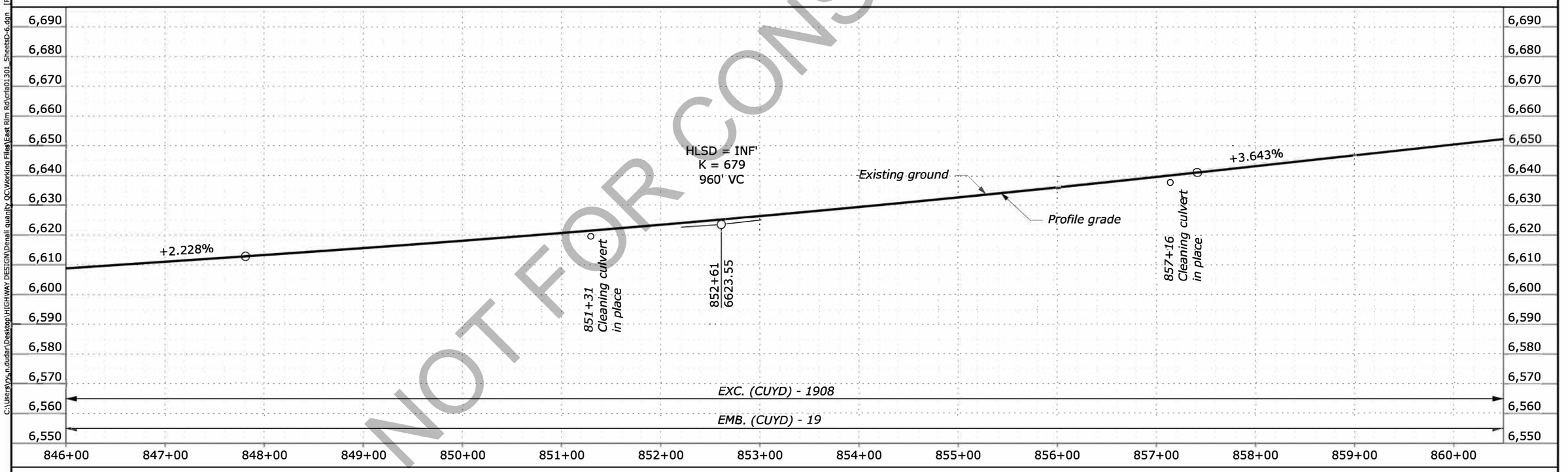
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crte01301_SheetsD-6.dgn [Plan and Profile 832+00]
6 April 2021 9:37 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.60





NOT FOR CONSTRUCTION

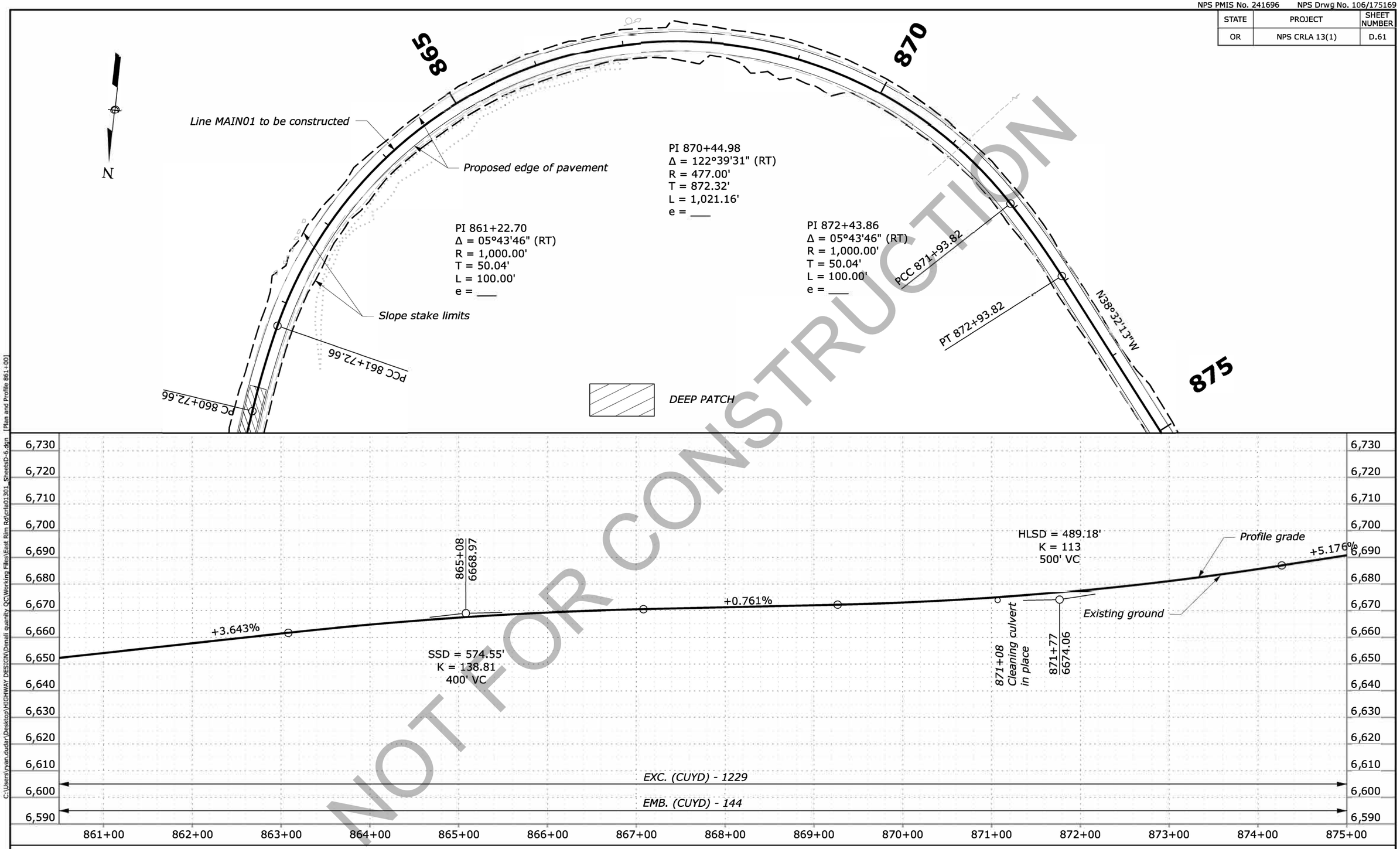
NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.duban\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-6.dgn [Plan and Profile 847+00]
6 April 2021 9:38 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.61



NOT FOR CONSTRUCTION

NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-6.dgn [Plan and Profile 861+00]
6 April 2021 9:38 AM

NPS PMIS No. 241696 NPS Drwg No. 1O6/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.62

875

TS 876+00.58
SC 876+15.58

Δs = 00°13'26"
Ls = 15.00'

880

PI 881+68.19
Δ = 32°06'50" (LT)
R = 1,920.00'
T = 552.62'
L = 1,076.14'
e = ___

885

CS 886+91.72

Δs = 05°58'06"
Ls = 400.00'

Line MAIN01 to be constructed

Slope stake limits

Proposed edge of pavement

N

6,790
6,780
6,770
6,760
6,750
6,740
6,730
6,720
6,710
6,700
6,690
6,680
6,670
6,660
6,650

Existing ground

883+27
6733.60

+5.176%

+5.015%

Profile grade

SSD = 6801.71'
K = 1492.09
241' VC

883+81 Cleaning culvert in place

EXC. (CUYD) - 953

EMB. (CUYD) - 142

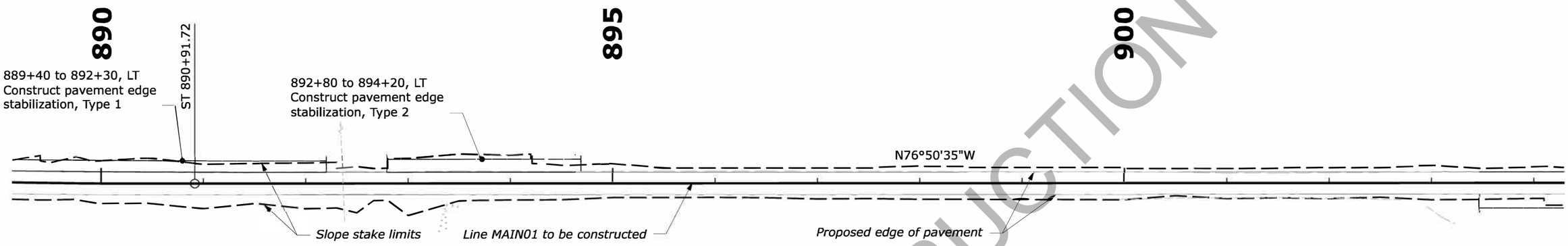
875+00 876+00 877+00 878+00 879+00 880+00 881+00 882+00 883+00 884+00 885+00 886+00 887+00 888+00 889+00

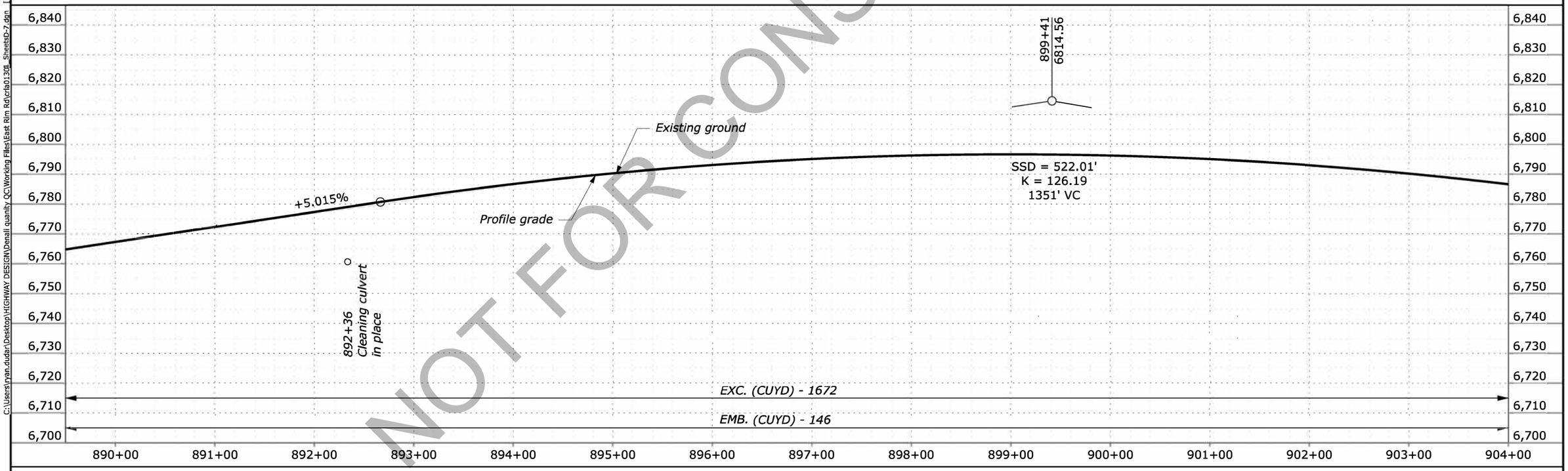
NOT FOR CONSTRUCTION

C:\Users\ryan.dubay\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\cra01301_SheetsD-7.dgn [Plan and Profile 875+00]
6 April 2021 10:56 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.63





NOT FOR CONSTRUCTION

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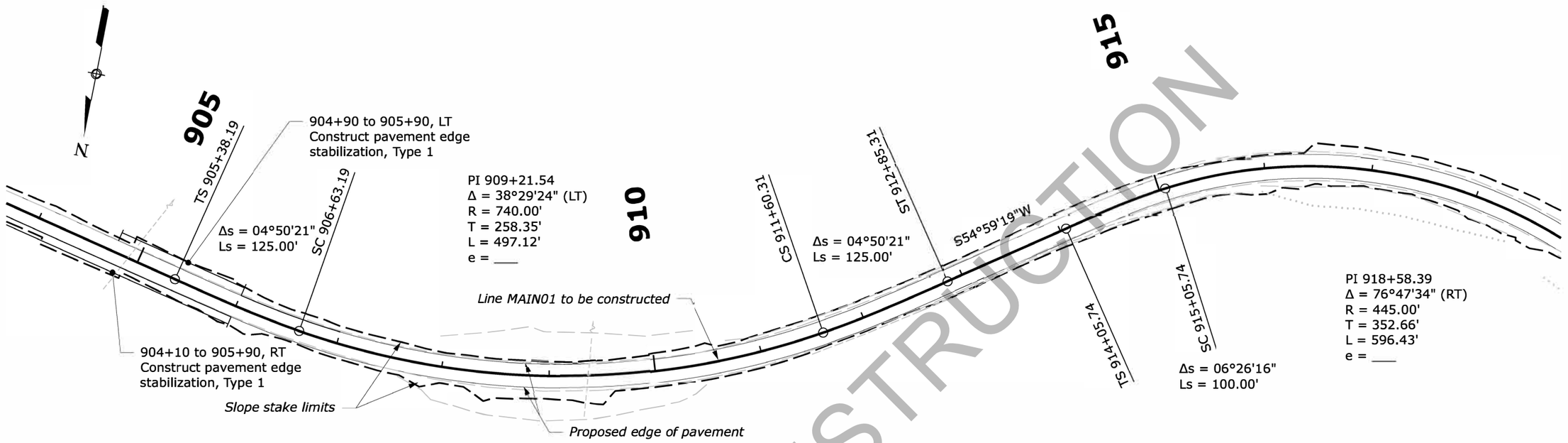
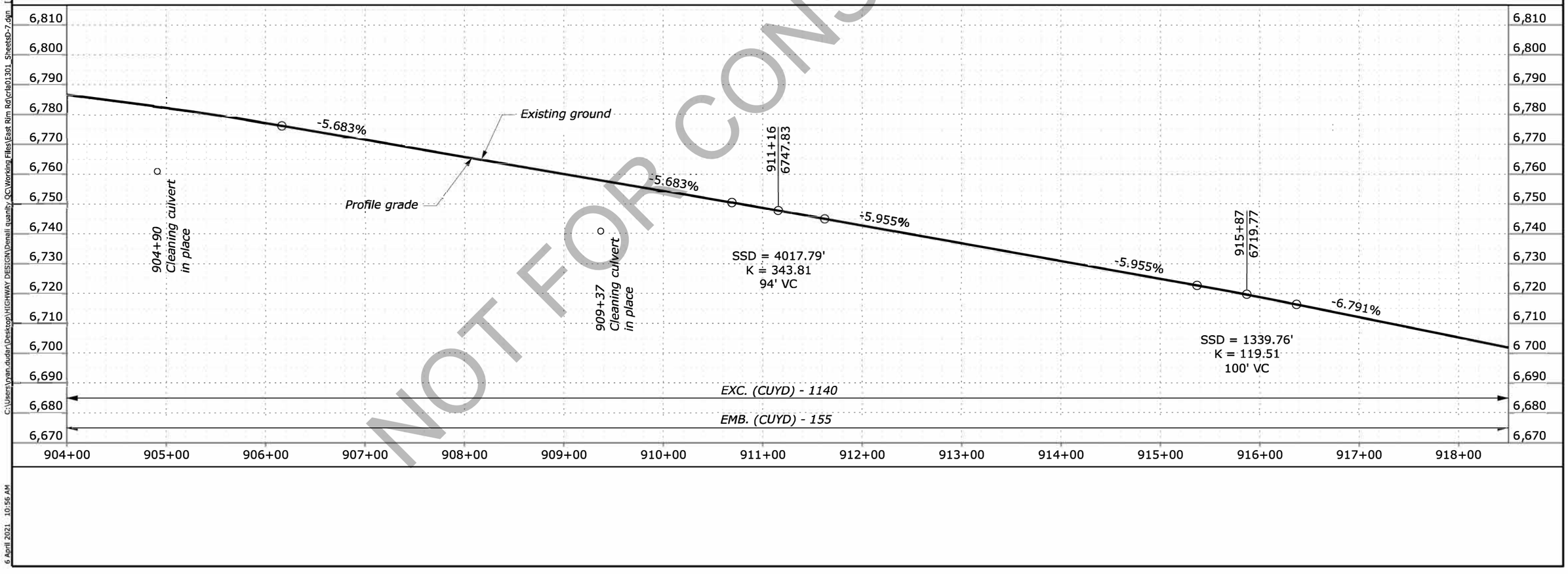
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.64





NOT FOR CONSTRUCTION

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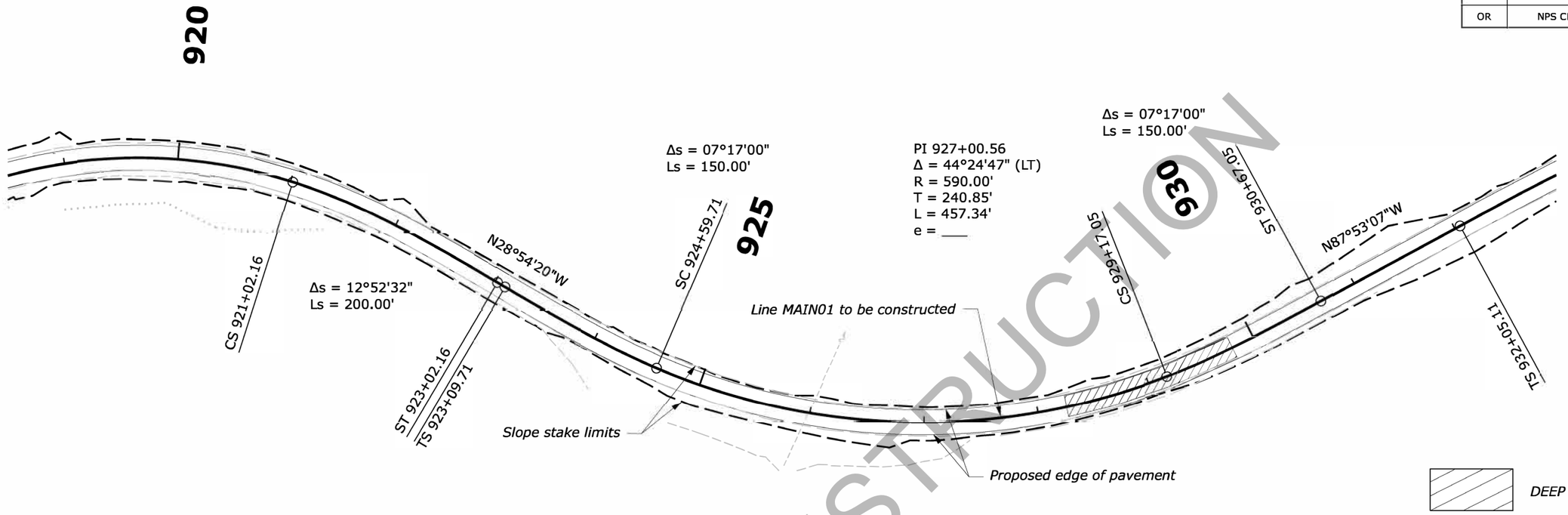
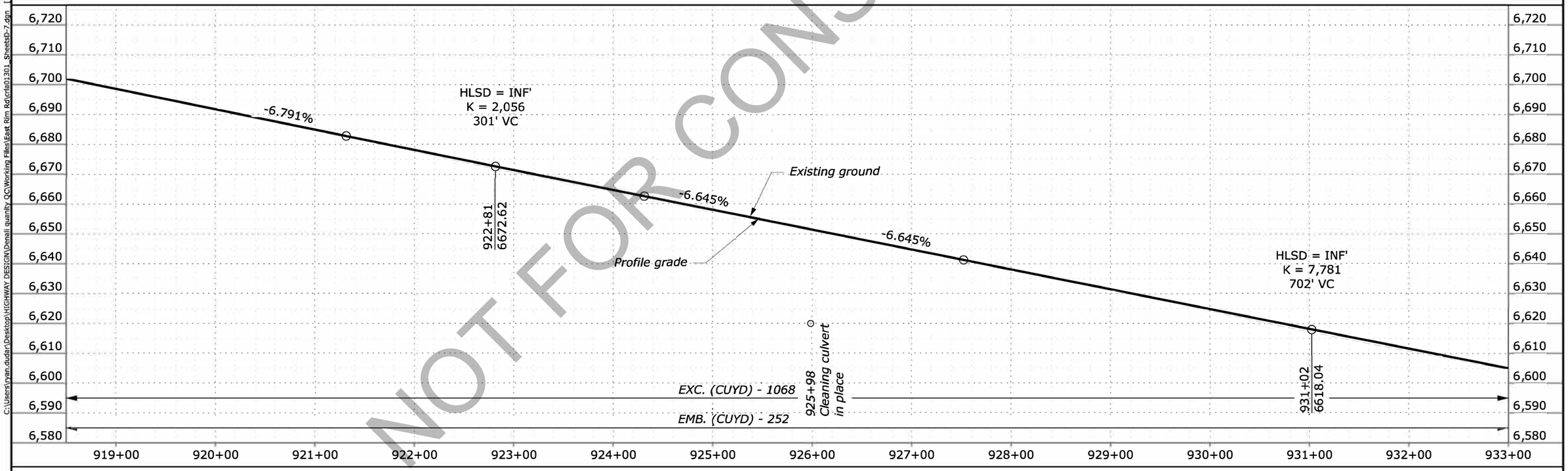
6 April 2021 10:56 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.65





NOT FOR CONSTRUCTION

NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-7.dgn [Plan and Profile 919+00]
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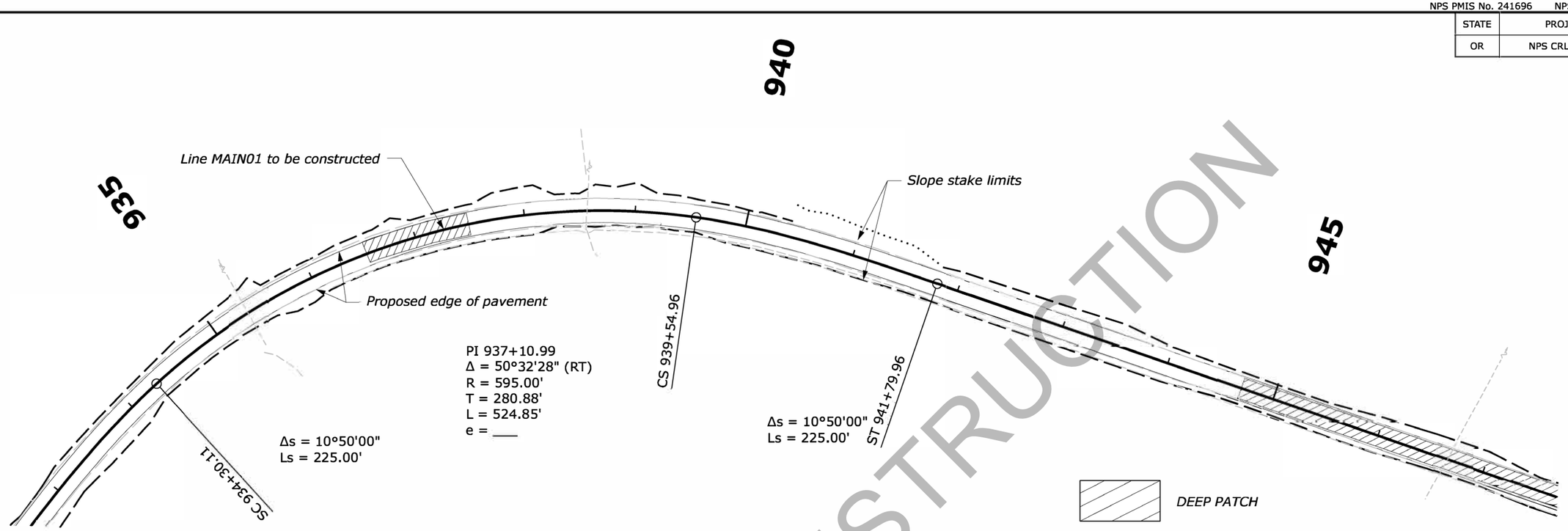
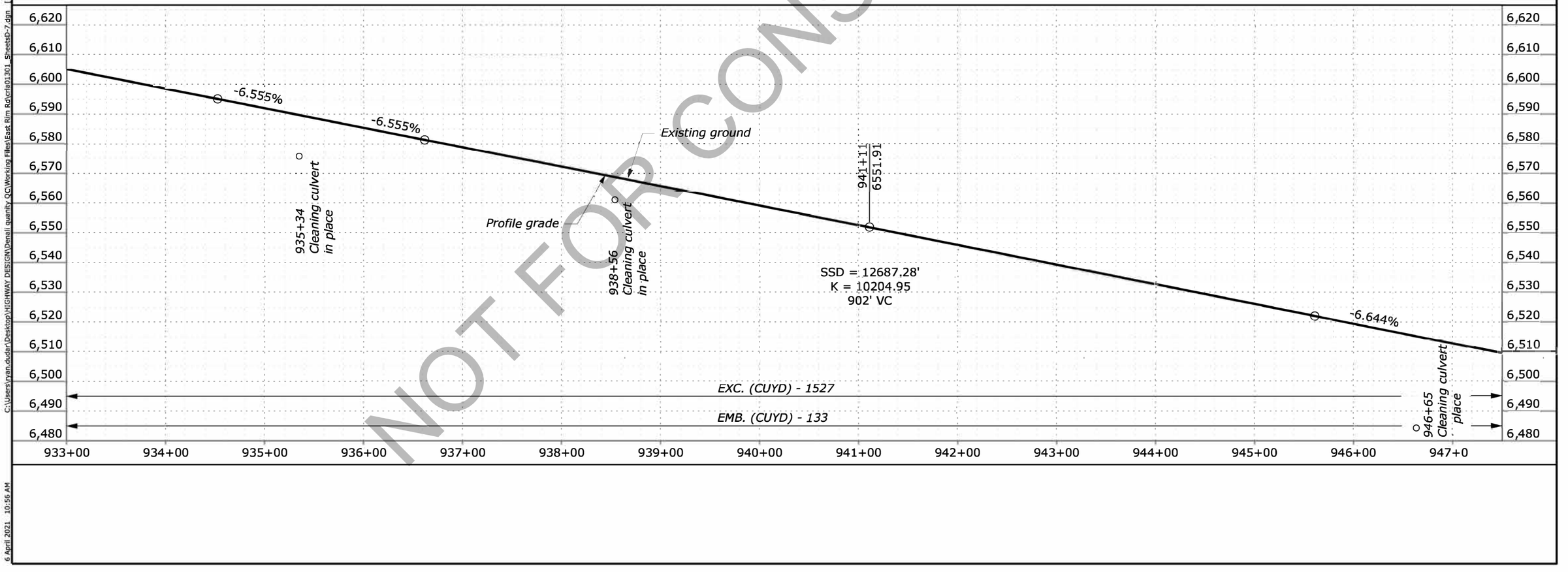
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.66





NOT FOR CONSTRUCTION

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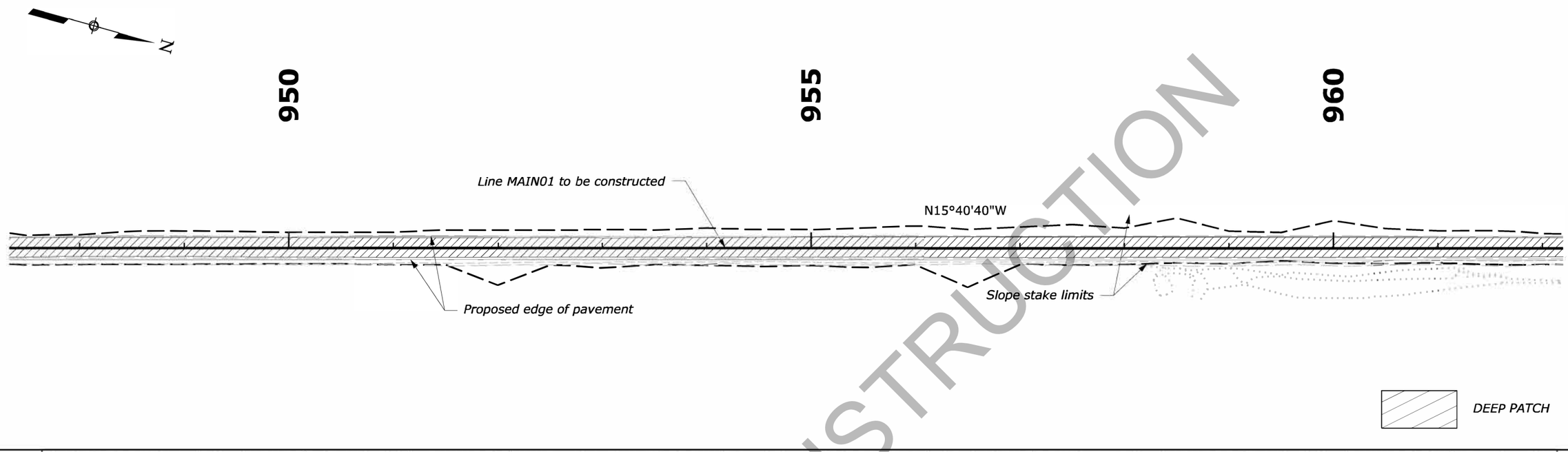
6 April 2021 10:56 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.67



NOT FOR CONSTRUCTION

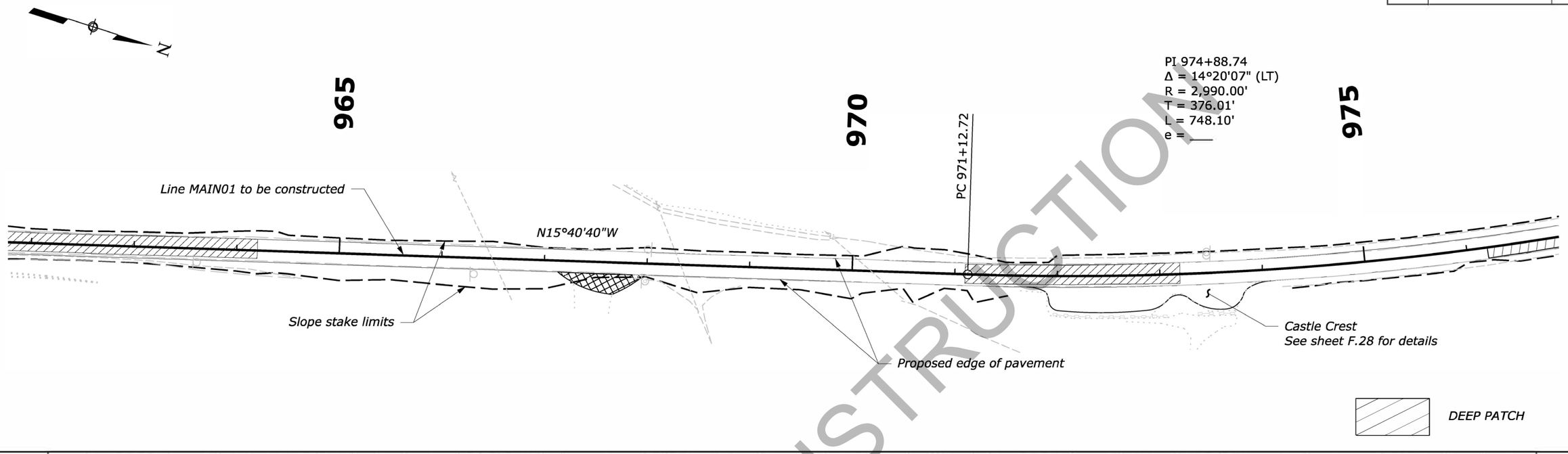
NOTE:

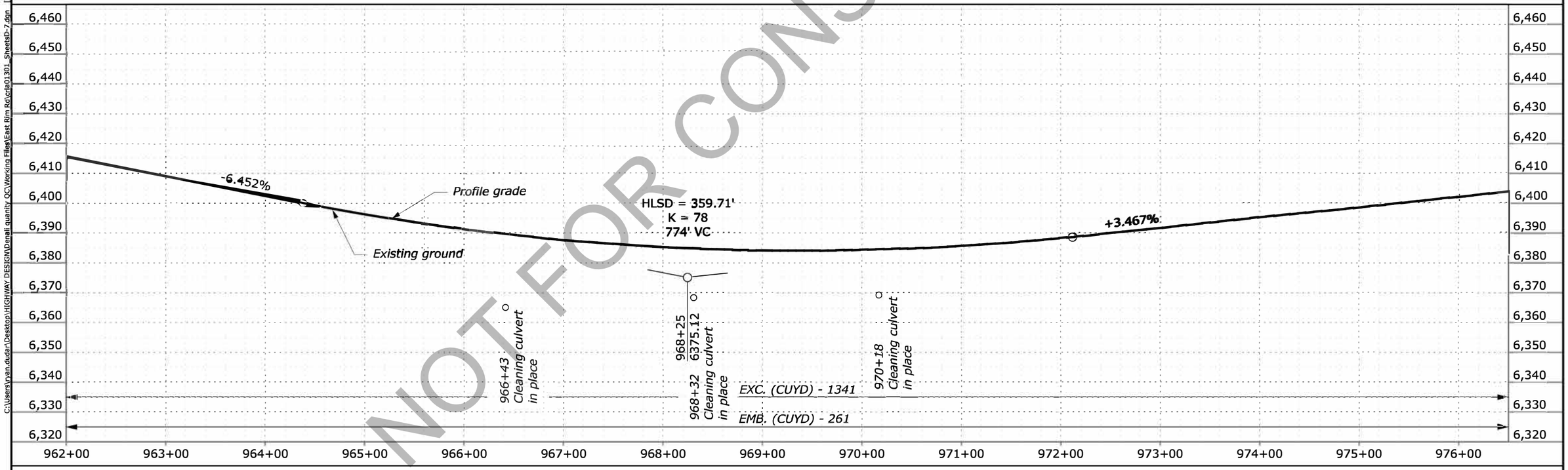
1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-7.dgn [Plan and Profile 948+00]
6 April 2021 10:56 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.68





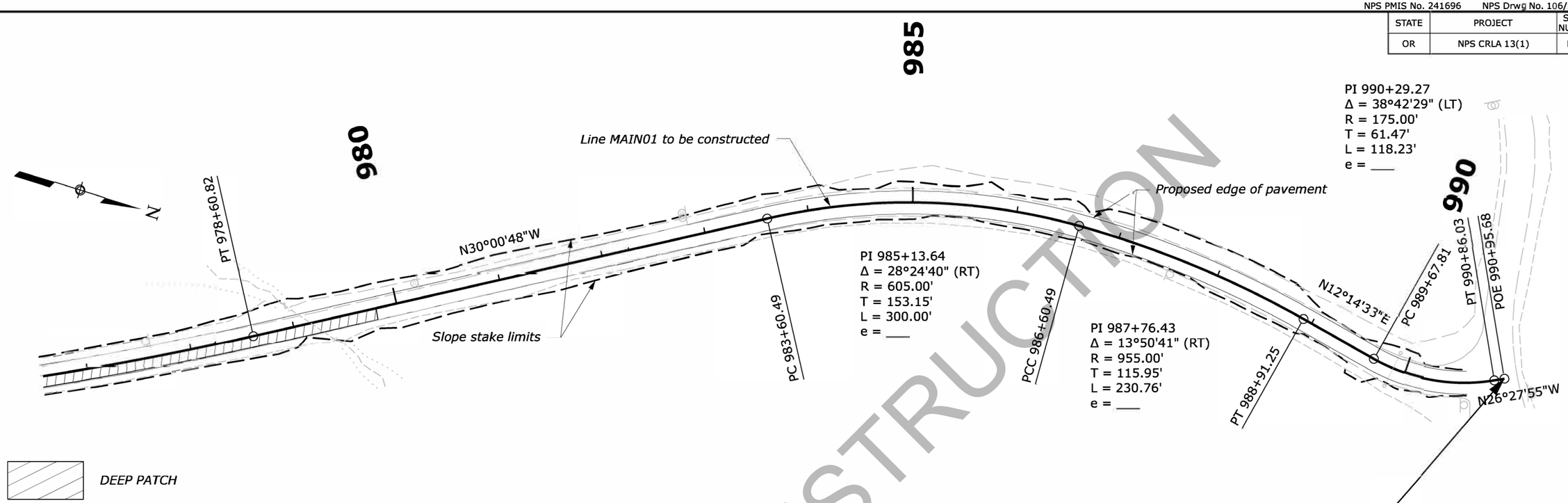
NOT FOR CONSTRUCTION

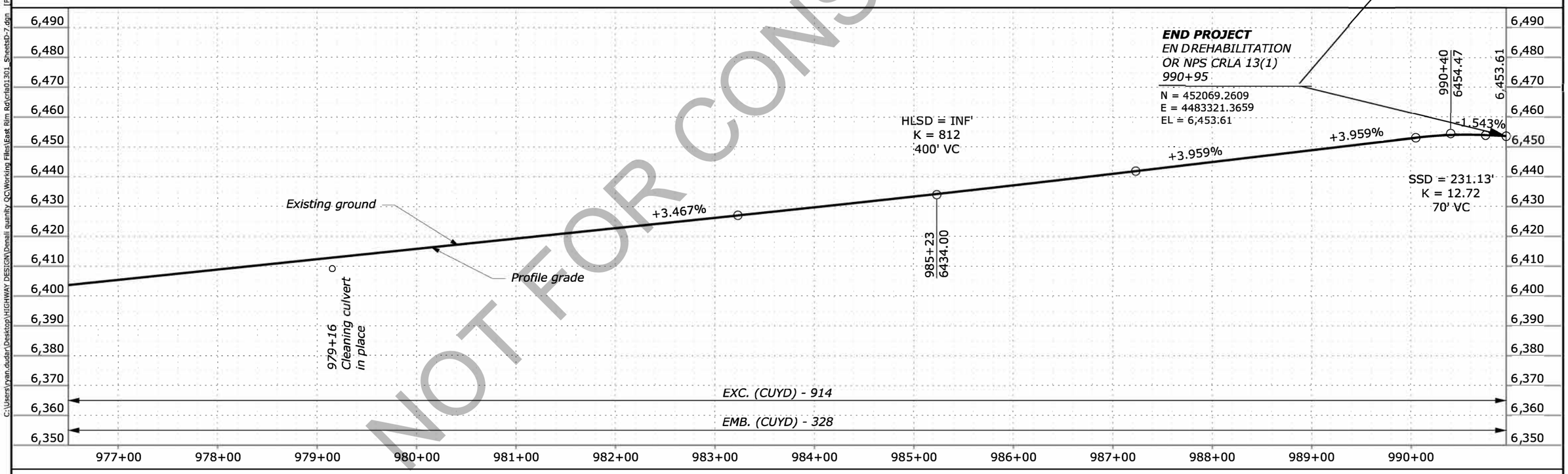
NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.duden\Desktop\HIGHWAY DESIGN\Draill quantity QC\Working Files\East Rim Rd\crla01301_Sheets5-7.dgn [Plan and Profile 962+00]
6 April 2021 10:56 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	D.69





NOT FOR CONSTRUCTION

NOTE:

1. See Sheets C.3 to C.12 for repair type and details.

C:\Users\ryan.dudan\Desktop\HIGHWAY DESIGN\Denali quantity QC\Working Files\East Rim Rd\crla01301_SheetsD-7.dgn [Plan and Profile 977+00]
6 April 2021 10:54 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1	D.70

PROJECT : East Rim Crater Lake Control
DATE OF FIELD WORK : September 2018

PROJECT UNITS : International foot
COORDINATE SYSTEM : Oregon South SPCS NAD83 (2011)
EPOCH DATE : 2010.000
VERTICAL DATUM : Orthometric Elevations based on the NAVD88 GEOID 12b

POINT NUMBER	STATE PLANE COORDINATES			GEO COORDINATES				DESCRIPTION
	NORTH	EAST	ELEVATION	LATITUDE	LONGITUDE	ELLIPSOID HEIGHT	COMBINED FACTOR	
100	482504.805	4497400.910	6809.963	42°58'46.624618"N	122°05'02.808175"W	6739.0441	0.999578032	DEA LIDAR Control
101	482859.036	4498473.806	6877.588	42°58'50.323359"N	122°04'48.466245"W	6806.678	0.999574743	DEA LIDAR Control
102	483025.578	4499648.365	6873.118	42°58'52.186798"N	122°04'32.708783"W	6802.2148	0.999574926	DEA LIDAR Control
103	482348.255	4500603.020	6881.852	42°58'45.674480"N	122°04'19.696031"W	6810.9477	0.999574612	DEA LIDAR Control
104	481678.178	4501619.401	6926.604	42°58'39.244737"N	122°04'05.855597"W	6855.6995	0.999572578	DEA LIDAR Control
105	480661.058	4501273.618	6866.284	42°58'29.135218"N	122°04'10.250256"W	6795.3617	0.999575623	DEA LIDAR Control
106	479757.414	4500918.755	6799.746	42°58'20.144710"N	122°04'14.795269"W	6728.8111	0.999578949	DEA LIDAR Control
107	478994.678	4501710.991	6772.122	42°58'12.758220"N	122°04'03.947841"W	6701.1924	0.999580391	DEA LIDAR Control
108	478410.307	4502603.944	6704.699	42°58'07.151635"N	122°03'51.791438"W	6633.7753	0.999583705	DEA LIDAR Control
109	477968.410	4503502.193	6710.381	42°58'02.952812"N	122°03'39.600126"W	6639.4658	0.999583504	DEA LIDAR Control
110	478253.433	4504591.106	6761.438	42°58'05.968055"N	122°03'25.026927"W	6690.5341	0.999581014	DEA LIDAR Control
111	478097.501	4505583.828	6787.287	42°58'04.610075"N	122°03'11.636995"W	6716.3933	0.999579802	DEA LIDAR Control
112	476927.407	4505719.850	6737.861	42°57'53.078562"N	122°03'09.515881"W	6666.9703	0.999582359	DEA LIDAR Control
113	475868.665	4506188.072	6731.460	42°57'42.707595"N	122°03'02.955479"W	6660.5773	0.999582843	DEA LIDAR Control
114	475177.720	4507048.274	6812.246	42°57'36.040647"N	122°02'51.216188"W	6741.3784	0.9995791	DEA LIDAR Control
115	473927.985	4507258.588	6896.523	42°57'23.735998"N	122°02'48.077667"W	6825.6689	0.999575291	DEA LIDAR Control
116	472790.977	4507561.958	6941.614	42°57'12.561634"N	122°02'43.716272"W	6870.7766	0.999573338	DEA LIDAR Control
117	472027.717	4508274.457	7014.127	42°57'05.153042"N	122°02'33.947153"W	6943.3108	0.999570008	DEA LIDAR Control
118	471326.975	4507428.764	7090.638	42°56'58.078098"N	122°02'45.143764"W	7019.816	0.999566483	DEA LIDAR Control
119	470549.078	4506653.916	7154.224	42°56'50.253773"N	122°02'55.368018"W	7083.3994	0.999563591	DEA LIDAR Control
120	469973.610	4507276.291	7213.861	42°56'44.683747"N	122°02'46.857721"W	7143.0578	0.999560846	DEA LIDAR Control
121	470199.508	4508151.776	7270.616	42°56'47.074344"N	122°02'35.143673"W	7199.8287	0.999558089	DEA LIDAR Control
122	469723.314	4509071.004	7320.899	42°56'42.538307"N	122°02'22.667711"W	7250.1355	0.999555772	DEA LIDAR Control
123	468768.472	4508462.595	7360.300	42°56'32.997204"N	122°02'30.610725"W	7289.5388	0.99955407	DEA LIDAR Control
124	467660.778	4508120.712	7417.978	42°56'21.994824"N	122°02'34.932364"W	7347.2259	0.999551525	DEA LIDAR Control
125	466814.783	4508880.943	7489.657	42°56'13.777536"N	122°02'24.503693"W	7418.9323	0.99954826	DEA LIDAR Control
126	465803.181	4509317.269	7557.975	42°56'03.865607"N	122°02'18.388717"W	7487.2852	0.999545189	DEA LIDAR Control
127	465307.053	4510270.216	7633.883	42°55'59.138283"N	122°02'05.457390"W	7563.215	0.999541656	DEA LIDAR Control
128	465177.842	4511478.166	7629.974	42°55'58.080477"N	122°01'49.189266"W	7559.3264	0.999541862	DEA LIDAR Control
129	464249.061	4511906.550	7654.796	42°55'48.984572"N	122°01'43.203365"W	7584.1595	0.999540858	DEA LIDAR Control
130	463830.057	4510865.938	7694.860	42°55'44.658389"N	122°01'57.086806"W	7624.2098	0.999539032	DEA LIDAR Control
131	463728.172	4509792.304	7676.494	42°55'43.457791"N	122°02'11.491725"W	7605.8281	0.999539934	DEA LIDAR Control
132	463111.233	4508748.413	7595.507	42°55'37.175136"N	122°02'25.369406"W	7524.8205	0.99954393	DEA LIDAR Control
133	462930.843	4507598.556	7519.391	42°55'35.184307"N	122°02'40.778645"W	7448.6782	0.999547607	DEA LIDAR Control
134	463077.975	4506527.132	7448.307	42°55'36.442007"N	122°02'55.214914"W	7377.5653	0.999550978	DEA LIDAR Control
135	463383.591	4505531.783	7420.168	42°55'39.278412"N	122°03'08.668388"W	7349.3822	0.999552266	DEA LIDAR Control
136	463149.299	4504540.712	7423.307	42°55'36.782735"N	122°03'21.929862"W	7352.4918	0.999552169	DEA LIDAR Control
137	462519.193	4503684.468	7447.672	42°55'30.402171"N	122°03'33.279950"W	7376.8355	0.999551136	DEA LIDAR Control
138	461434.823	4503304.284	7427.003	42°55'19.622414"N	122°03'38.117815"W	7356.1679	0.999552345	DEA LIDAR Control
139	460554.152	4504023.250	7355.723	42°55'11.056669"N	122°03'28.235593"W	7284.9087	0.999555927	DEA LIDAR Control

NOT FOR CONSTRUCTION

NOTE:

1. *To precisely check distances between points as measured on the ground, inverse the state plane coordinates and divide the computed distance by a mean combined factor of the two points.*

SURVEY CONTROL

--/---- WFLHD Survey
--/---- Checked by:
DEA Designed by:
C:\WyFiles\Projects_2021\Oregon\Crater_Lake\Control\[OR NPS CRLA 13(1)_east rim control sheet.xlsx]Sheet
2-Apr-2021 12:49 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1	D.71

PROJECT : East Rim Crater Lake Control
DATE OF FIELD WORK : September 2018

PROJECT UNITS : International foot
COORDINATE SYSTEM : Oregon South SPCS NAD83 (2011)
EPOCH DATE : 2010.000
VERTICAL DATUM : Orthometric Elevations based on the NAVD88 GEOID 12b

POINT NUMBER	STATE PLANE COORDINATES			GEO COORDINATES				DESCRIPTION
	NORTH	EAST	ELEVATION	LATITUDE	LONGITUDE	ELLIPSOID HEIGHT	COMBINED FACTOR	
140	459724.262	4504809.016	7281.705	42°55'03.004470"N	122°03'17.469165"W	7210.9088	0.99955963	DEA LIDAR Control
141	458762.488	4505127.731	7213.169	42°54'53.563883"N	122°03'12.946554"W	7142.3732	0.999563104	DEA LIDAR Control
142	457664.051	4504772.984	7137.269	42°54'42.650098"N	122°03'17.439316"W	7066.456	0.999566964	DEA LIDAR Control
143	456754.763	4504352.396	7071.972	42°54'33.592302"N	122°03'22.863488"W	7001.1403	0.999570281	DEA LIDAR Control
144	456709.327	4503297.804	7006.200	42°54'32.949716"N	122°03'37.021611"W	6935.3535	0.999573437	DEA LIDAR Control
145	456984.718	4502241.449	6935.161	42°54'35.474988"N	122°03'51.283873"W	6864.3	0.999576776	DEA LIDAR Control
146	457863.738	4501620.074	6862.096	42°54'44.041920"N	122°03'59.853679"W	6791.2269	0.99958008	DEA LIDAR Control
147	458650.986	4500993.310	6792.287	42°54'51.701280"N	122°04'08.473462"W	6721.4043	0.999583251	DEA LIDAR Control
148	458097.018	4500132.023	6726.359	42°54'46.070465"N	122°04'19.906871"W	6655.4556	0.999586522	DEA LIDAR Control
149	456965.318	4499765.500	6771.098	42°54'34.825222"N	122°04'24.546001"W	6700.1968	0.999584628	DEA LIDAR Control
150	455775.527	4499868.835	6832.287	42°54'23.093418"N	122°04'22.857293"W	6761.4063	0.999581961	DEA LIDAR Control
151	454651.085	4500223.896	6889.438	42°54'12.053698"N	122°04'17.803392"W	6818.5609	0.999579476	DEA LIDAR Control
152	453622.341	4500958.780	6967.489	42°54'02.029384"N	122°04'07.671544"W	6896.5971	0.999575973	DEA LIDAR Control
153	452401.265	4501152.516	7037.618	42°53'50.005235"N	122°04'04.761718"W	6966.7113	0.999572897	DEA LIDAR Control
154	451328.021	4501240.127	7102.027	42°53'39.421499"N	122°04'03.314923"W	7031.1033	0.999570064	DEA LIDAR Control
155	450199.689	4501250.539	7182.608	42°53'28.279415"N	122°04'02.891347"W	7111.6634	0.999566475	DEA LIDAR Control
156	449830.255	4500030.143	7230.569	42°53'24.404744"N	122°04'19.190560"W	7159.6352	0.999564274	DEA LIDAR Control
157	449333.471	4499131.977	7297.431	42°53'19.331536"N	122°04'31.128985"W	7226.4875	0.9995612	DEA LIDAR Control
158	448372.842	4498429.482	7356.751	42°53'09.713237"N	122°04'40.321374"W	7285.784	0.999558595	DEA LIDAR Control
159	447571.465	4497534.376	7400.671	42°53'01.631663"N	122°04'52.140187"W	7329.6771	0.999556691	DEA LIDAR Control
160	448187.776	4496660.301	7361.463	42°53'07.555485"N	122°05'04.035945"W	7290.4816	0.999558422	DEA LIDAR Control
161	449219.558	4496222.614	7296.743	42°53'17.664046"N	122°05'10.176882"W	7225.7824	0.999561273	DEA LIDAR Control
162	450251.689	4495733.347	7222.846	42°53'27.766297"N	122°05'17.011289"W	7151.9	0.999564565	DEA LIDAR Control
163	451228.542	4495096.332	7175.178	42°53'37.294770"N	122°05'25.816844"W	7104.2258	0.999566621	DEA LIDAR Control
164	452185.413	4494428.430	7104.895	42°53'46.619889"N	122°05'35.032943"W	7033.9476	0.999569763	DEA LIDAR Control
165	453190.495	4494036.129	7042.032	42°53'56.472808"N	122°05'40.559849"W	6971.0858	0.999572541	DEA LIDAR Control
166	453526.159	4493158.952	7003.585	42°53'59.622830"N	122°05'52.429576"W	6932.6287	0.999574307	DEA LIDAR Control
167	452536.855	4492688.617	6929.042	42°53'49.763325"N	122°05'58.494099"W	6858.0757	0.999578091	DEA LIDAR Control
168	451494.278	4492683.739	6858.979	42°53'39.465435"N	122°05'58.292110"W	6787.9997	0.999581675	DEA LIDAR Control
169	450615.165	4493281.720	6788.606	42°53'30.895630"N	122°05'50.034417"W	6717.6223	0.999585235	DEA LIDAR Control
170	449543.462	4493562.236	6712.919	42°53'20.363817"N	122°05'45.992112"W	6641.9207	0.999589097	DEA LIDAR Control
171	448458.216	4493372.233	6643.414	42°53'09.609629"N	122°05'48.266177"W	6572.39	0.999592672	DEA LIDAR Control
172	447659.392	4492556.648	6589.137	42°53'01.566321"N	122°05'59.015172"W	6518.0829	0.999595458	DEA LIDAR Control
173	446662.060	4491956.374	6611.795	42°52'51.602871"N	122°06'06.820790"W	6540.6933	0.999594618	DEA LIDAR Control
174	445611.744	4491492.016	6645.999	42°52'41.141679"N	122°06'12.786859"W	6574.861	0.99959324	DEA LIDAR Control
175	444950.509	4491028.706	6672.170	42°52'34.523335"N	122°06'18.838454"W	6601.0074	0.999592153	DEA LIDAR Control
176	445500.997	4490292.011	6701.450	42°52'39.820610"N	122°06'28.873225"W	6630.2973	0.999590624	DEA LIDAR Control
177	446084.726	4489321.245	6760.075	42°52'45.401460"N	122°06'42.060458"W	6688.9271	0.999587687	DEA LIDAR Control
178	446350.471	4488199.405	6795.724	42°52'47.812547"N	122°06'57.194819"W	6724.5659	0.999585927	DEA LIDAR Control
179	446464.054	4487253.057	6753.433	42°52'48.753782"N	122°07'09.933227"W	6682.2608	0.999587924	DEA LIDAR Control

NOTE:

1. *To precisely check distances between points as measured on the ground, inverse the state plane coordinates and divide the computed distance by a mean combined factor of the two points.*

NOT FOR CONSTRUCTION

SURVEY CONTROL

--/--- WFLHD Survey
--/--- Checked by:
DEA Designed by:
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STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1	D.72

PROJECT : East Rim Crater Lake Control
DATE OF FIELD WORK : September 2018

PROJECT UNITS : International foot
COORDINATE SYSTEM : Oregon South SPCS NAD83 (2011)
EPOCH DATE : 2010.000
VERTICAL DATUM : Orthometric Elevations based on the NAVD88 GEOID 12b

POINT NUMBER	STATE PLANE COORDINATES			GEO COORDINATES				DESCRIPTION
	NORTH	EAST	ELEVATION	LATITUDE	LONGITUDE	ELLIPSOID HEIGHT	COMBINED FACTOR	
180	446333.786	4486236.251	6683.059	42°52'47.272761"N	122°07'23.554467"W	6611.862	0.999591323	DEA LIDAR Control
181	446846.959	4485549.105	6619.110	42°52'52.209409"N	122°07'32.916195"W	6547.9131	0.999594258	DEA LIDAR Control
182	447239.874	4484759.577	6559.864	42°52'55.938461"N	122°07'43.621916"W	6488.6561	0.999596999	DEA LIDAR Control
183	448363.421	4484437.168	6482.542	42°53'06.973105"N	122°07'48.245558"W	6411.3534	0.999600427	DEA LIDAR Control
184	449480.728	4484122.395	6406.167	42°53'17.947532"N	122°07'52.765471"W	6334.9943	0.999603814	DEA LIDAR Control
185	450556.490	4483802.033	6396.432	42°53'28.510520"N	122°07'57.350021"W	6325.2713	0.999604031	DEA LIDAR Control
186	451587.822	4483293.482	6437.126	42°53'38.598373"N	122°08'04.451189"W	6365.9695	0.999601853	DEA LIDAR Control
187	452374.241	4483572.281	6469.803	42°53'46.419078"N	122°08'00.912317"W	6398.6718	0.999600112	DEA LIDAR Control
188	453542.506	4483765.702	6545.355	42°53'57.994575"N	122°07'58.620146"W	6474.2397	0.999596238	DEA LIDAR Control
189	454638.298	4483500.843	6620.495	42°54'08.766002"N	122°08'02.465409"W	6549.3793	0.999592407	DEA LIDAR Control
190	455501.640	4483097.710	6682.345	42°54'17.214963"N	122°08'08.107750"W	6611.2211	0.999589265	DEA LIDAR Control
191	454835.928	4482747.187	6753.754	42°54'10.572494"N	122°08'12.642121"W	6682.6228	0.999586002	DEA LIDAR Control
192	454539.569	4482342.897	6802.921	42°54'07.567461"N	122°08'17.995601"W	6731.7797	0.999583721	DEA LIDAR Control
193	455229.231	4481960.415	6866.221	42°54'14.304874"N	122°08'23.315376"W	6795.0731	0.999580548	DEA LIDAR Control
194	454951.258	4481471.923	6942.097	42°54'11.464984"N	122°08'29.804846"W	6870.9379	0.999576987	DEA LIDAR Control
195	454082.343	4480793.980	7009.821	42°54'02.751901"N	122°08'38.683414"W	6938.642	0.999573949	DEA LIDAR Control
196	454270.215	4479886.843	7016.295	42°54'04.431305"N	122°08'50.919417"W	6945.1043	0.999573602	DEA LIDAR Control
197	455282.581	4479825.255	7036.570	42°54'14.417812"N	122°08'52.014409"W	6965.3833	0.999572411	DEA LIDAR Control
198	456402.613	4480224.614	7046.369	42°54'25.557218"N	122°08'46.945047"W	6975.1944	0.999571696	DEA LIDAR Control
199	457356.891	4479945.953	7052.902	42°54'34.927864"N	122°08'50.941168"W	6981.7149	0.999571179	DEA LIDAR Control
200	458114.385	4479770.198	7106.614	42°54'42.374978"N	122°08'53.502901"W	7035.4232	0.999568453	DEA LIDAR Control
201	447870.215	4493215.001	6581.991	42°53'03.772637"N	122°05'50.227291"W	6510.9505	0.999595746	DEA LIDAR Control
205	464694.949	4510138.434	7761.292	42°55'53.068935"N	122°02'07.077869"W	7690.6266	0.999535691	DEA LIDAR Control
206	464919.036	4509150.084	7776.077	42°55'55.102957"N	122°02'20.417524"W	7705.3924	0.999534945	DEA LIDAR Control
207	465825.006	4508638.740	7778.332	42°56'03.957942"N	122°02'27.514575"W	7707.6277	0.999534663	DEA LIDAR Control
208	466353.188	4507796.846	7802.854	42°56'09.021384"N	122°02'38.961843"W	7732.1117	0.999533395	DEA LIDAR Control
209	466090.785	4506805.975	7863.788	42°56'06.249076"N	122°02'52.215762"W	7793.034	0.999530539	DEA LIDAR Control
500	482484.603	4497413.708	6811.883	42°58'46.427493"N	122°05'02.630888"W	6740.9639	0.999577943	DEA LIDAR Control
501	482841.882	4498497.265	6878.004	42°58'50.158310"N	122°04'48.146334"W	6807.0942	0.999574725	DEA LIDAR Control
502	483002.387	4499657.152	6870.040	42°58'51.959378"N	122°04'32.584719"W	6799.137	0.999575077	DEA LIDAR Control
503	482323.592	4500609.428	6883.084	42°58'45.432082"N	122°04'19.603601"W	6812.1795	0.999574557	DEA LIDAR Control
504	481671.263	4501600.310	6924.576	42°58'39.172908"N	122°04'06.110643"W	6853.6712	0.999572676	DEA LIDAR Control
505	480676.298	4501258.792	6865.514	42°58'29.282991"N	122°04'10.453512"W	6794.5922	0.999575658	DEA LIDAR Control
506	479756.875	4500898.334	6801.815	42°58'20.135600"N	122°04'15.069789"W	6730.8792	0.999578851	DEA LIDAR Control
507	478979.239	4501691.214	6772.827	42°58'12.602077"N	122°04'04.209939"W	6701.8964	0.99958036	DEA LIDAR Control
508	478366.141	4502591.542	6702.005	42°58'06.713147"N	122°03'51.947137"W	6631.0814	0.999583841	DEA LIDAR Control
509	477940.064	4503492.705	6709.611	42°58'02.671104"N	122°03'39.720624"W	6638.6953	0.999583546	DEA LIDAR Control
510	478234.328	4504598.786	6763.584	42°58'05.780782"N	122°03'24.918861"W	6692.6802	0.999580915	DEA LIDAR Control
511	478093.805	4505564.726	6785.827	42°58'04.570071"N	122°03'11.892972"W	6714.9332	0.999579872	DEA LIDAR Control
512	476923.675	4505696.714	6737.763	42°57'53.037475"N	122°03'09.826086"W	6666.8721	0.999582364	DEA LIDAR Control

NOT FOR CONSTRUCTION

NOTE:

1. *To precisely check distances between points as measured on the ground, inverse the state plane coordinates and divide the computed distance by a mean combined factor of the two points.*

SURVEY CONTROL

--/--- WFLHD Survey
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STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1	D.73

PROJECT : East Rim Crater Lake Control
DATE OF FIELD WORK : September 2018

PROJECT UNITS : International foot
COORDINATE SYSTEM : Oregon South SPCS NAD83 (2011)
EPOCH DATE : 2010.000
VERTICAL DATUM : Orthometric Elevations based on the NAVD88 GEOID 12b

POINT NUMBER	STATE PLANE COORDINATES			GEO COORDINATES				DESCRIPTION
	NORTH	EAST	ELEVATION	LATITUDE	LONGITUDE	ELLIPSOID HEIGHT	COMBINED FACTOR	
513	475845.655	4506186.229	6733.691	42°57'42.479996"N	122°03'02.974528"W	6662.8088	0.99958274	DEA LIDAR Control
514	475147.424	4507031.305	6812.731	42°57'35.738331"N	122°02'51.436841"W	6741.8635	0.999579082	DEA LIDAR Control
515	473923.440	4507233.509	6896.428	42°57'23.686537"N	122°02'48.413755"W	6825.5736	0.999575297	DEA LIDAR Control
516	472779.314	4507545.618	6943.341	42°57'12.443471"N	122°02'43.933087"W	6872.5035	0.999573257	DEA LIDAR Control
517	472026.582	4508254.546	7012.289	42°57'05.138206"N	122°02'34.214579"W	6941.4724	0.999570096	DEA LIDAR Control
518	471342.116	4507416.483	7092.143	42°56'58.225406"N	122°02'45.312637"W	7021.3207	0.999566409	DEA LIDAR Control
519	470554.758	4506634.941	7156.131	42°56'50.306411"N	122°02'55.624535"W	7085.3056	0.999563499	DEA LIDAR Control
520	469954.244	4507282.602	7215.578	42°56'44.493627"N	122°02'46.768080"W	7144.7755	0.999560767	DEA LIDAR Control
521	470180.912	4508149.011	7270.540	42°56'46.890176"N	122°02'35.176237"W	7199.7521	0.999558097	DEA LIDAR Control
522	469720.876	4509050.631	7318.968	42°56'42.510528"N	122°02'22.941005"W	7248.2043	0.999555864	DEA LIDAR Control
523	468775.916	4508444.559	7361.404	42°56'33.067446"N	122°02'30.855036"W	7290.6423	0.999554016	DEA LIDAR Control
524	467657.351	4508101.493	7419.848	42°56'21.957480"N	122°02'35.189872"W	7349.095	0.999551437	DEA LIDAR Control
525	466801.718	4508864.899	7489.855	42°56'13.645585"N	122°02'24.716133"W	7419.1307	0.999548253	DEA LIDAR Control
526	465795.266	4509300.107	7559.647	42°56'03.784321"N	122°02'18.617437"W	7488.9568	0.999545111	DEA LIDAR Control
527	465288.020	4510266.120	7633.774	42°55'58.949559"N	122°02'05.507760"W	7563.1062	0.999541665	DEA LIDAR Control
528	465160.021	4511471.800	7628.647	42°55'57.903313"N	122°01'49.270451"W	7558.0002	0.999541929	DEA LIDAR Control
529	464261.735	4511891.724	7652.787	42°55'49.107077"N	122°01'43.405744"W	7582.1503	0.999540951	DEA LIDAR Control
530	463848.742	4510869.610	7695.249	42°55'44.843595"N	122°01'57.042052"W	7624.5991	0.999539009	DEA LIDAR Control
531	463740.876	4509778.659	7676.303	42°55'43.580790"N	122°02'11.678257"W	7605.6362	0.99953994	DEA LIDAR Control
532	463130.265	4508741.253	7594.648	42°55'37.361808"N	122°02'25.470338"W	7523.9619	0.999543967	DEA LIDAR Control
533	462950.637	4507598.683	7519.214	42°55'35.379824"N	122°02'40.781849"W	7448.5016	0.999547611	DEA LIDAR Control
534	463095.959	4506537.555	7449.047	42°55'36.621533"N	122°02'55.079303"W	7378.3063	0.999550939	DEA LIDAR Control
535	463399.936	4505541.925	7419.989	42°55'39.441698"N	122°03'08.536149"W	7349.2033	0.999552272	DEA LIDAR Control
536	463170.704	4504525.610	7424.723	42°55'36.991379"N	122°03'22.138167"W	7353.9078	0.999552097	DEA LIDAR Control
537	462551.451	4503685.066	7449.726	42°55'30.720875"N	122°03'33.279983"W	7378.8887	0.999551031	DEA LIDAR Control
538	461428.269	4503285.140	7429.150	42°55'19.554161"N	122°03'38.373440"W	7358.3139	0.999552244	DEA LIDAR Control
539	460540.722	4504010.716	7355.425	42°55'10.921723"N	122°03'28.400671"W	7284.6105	0.999555944	DEA LIDAR Control
540	459721.643	4504785.591	7282.486	42°55'02.974306"N	122°03'17.783293"W	7211.6888	0.999559594	DEA LIDAR Control
541	458765.964	4505107.601	7212.092	42°54'53.594530"N	122°03'13.217910"W	7141.2959	0.999563155	DEA LIDAR Control
542	457671.369	4504754.511	7137.226	42°54'42.718985"N	122°03'17.689353"W	7066.4128	0.999566965	DEA LIDAR Control
543	456772.582	4504343.304	7071.020	42°54'33.766622"N	122°03'22.990097"W	7000.1891	0.999570322	DEA LIDAR Control
544	456727.907	4503303.241	7006.110	42°54'33.134233"N	122°03'36.953223"W	6935.2634	0.999573437	DEA LIDAR Control
545	457003.222	4502250.661	6934.457	42°54'35.659437"N	122°03'51.164744"W	6863.597	0.999576805	DEA LIDAR Control
546	457870.364	4501637.550	6861.884	42°54'44.110583"N	122°03'59.620534"W	6791.015	0.999580089	DEA LIDAR Control
547	458670.375	4500996.281	6793.979	42°54'51.893328"N	122°04'08.438425"W	6723.0959	0.999583166	DEA LIDAR Control
548	458109.083	4500113.868	6728.237	42°54'46.186256"N	122°04'20.153863"W	6657.3331	0.99958643	DEA LIDAR Control
549	456968.415	4499747.058	6771.916	42°54'34.852394"N	122°04'24.794571"W	6701.0151	0.999584588	DEA LIDAR Control
550	455769.458	4499848.166	6832.299	42°54'23.029642"N	122°04'23.133456"W	6761.4184	0.999581962	DEA LIDAR Control
551	454642.202	4500206.555	6889.759	42°54'11.962752"N	122°04'18.034132"W	6818.8811	0.999579463	DEA LIDAR Control
552	453609.675	4500942.912	6965.868	42°54'01.901349"N	122°04'07.881525"W	6894.9759	0.999576054	DEA LIDAR Control

NOTE:

1. *To precisely check distances between points as measured on the ground, inverse the state plane coordinates and divide the computed distance by a mean combined factor of the two points.*

NOT FOR CONSTRUCTION

SURVEY CONTROL

--/---- WFLHD Survey
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STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1	D.74

PROJECT : East Rim Crater Lake Control
DATE OF FIELD WORK : September 2018

PROJECT UNITS : International foot
COORDINATE SYSTEM : Oregon South SPCS NAD83 (2011)
EPOCH DATE : 2010.000
VERTICAL DATUM : Orthometric Elevations based on the NAVD88 GEOID 12b

POINT NUMBER	STATE PLANE COORDINATES			GEO COORDINATES				DESCRIPTION
	NORTH	EAST	ELEVATION	LATITUDE	LONGITUDE	ELLIPSOID HEIGHT	COMBINED FACTOR	
553	452394.679	4501133.391	7036.267	42°53'49.936647"N	122°04'05.016978"W	6965.36	0.999572963	DEA LIDAR Control
554	451317.415	4501223.101	7103.280	42°53'39.313601"N	122°04'03.540952"W	7032.3562	0.999570007	DEA LIDAR Control
555	450195.443	4501217.185	7181.929	42°53'28.231312"N	122°04'03.338289"W	7110.985	0.999566508	DEA LIDAR Control
556	449870.886	4500119.440	7224.787	42°53'24.822592"N	122°04'18.001385"W	7153.8539	0.99956454	DEA LIDAR Control
557	449349.947	4499119.998	7297.171	42°53'19.492038"N	122°04'31.294037"W	7226.2281	0.999561208	DEA LIDAR Control
558	448339.083	4498380.658	7358.817	42°53'09.370728"N	122°04'40.968591"W	7287.8489	0.999558504	DEA LIDAR Control
559	447590.614	4497520.847	7398.761	42°53'01.818262"N	122°04'52.326743"W	7327.7681	0.999556778	DEA LIDAR Control
560	448188.919	4496679.760	7361.661	42°53'07.570417"N	122°05'03.774886"W	7290.6799	0.999558412	DEA LIDAR Control
561	449231.619	4496239.507	7296.502	42°53'17.786328"N	122°05'09.953054"W	7225.5423	0.999561281	DEA LIDAR Control
562	450264.152	4495748.446	7223.175	42°53'27.892221"N	122°05'16.811653"W	7152.2301	0.999564546	DEA LIDAR Control
563	451241.767	4495114.193	7175.033	42°53'37.428732"N	122°05'25.580290"W	7104.082	0.999566624	DEA LIDAR Control
564	452200.219	4494440.770	7104.631	42°53'46.768443"N	122°05'34.870974"W	7033.6843	0.999569772	DEA LIDAR Control
565	453195.239	4494055.253	7044.099	42°53'56.523262"N	122°05'40.304159"W	6973.1531	0.999572441	DEA LIDAR Control
566	453539.474	4493139.983	7005.098	42°53'59.750766"N	122°05'52.687817"W	6934.1414	0.999574232	DEA LIDAR Control
567	452541.648	4492669.743	6929.399	42°53'49.807099"N	122°05'58.748866"W	6858.4321	0.999578073	DEA LIDAR Control
568	451529.105	4492652.094	6863.342	42°53'39.803427"N	122°05'58.726117"W	6792.3621	0.999581459	DEA LIDAR Control
569	450604.229	4493265.070	6787.847	42°53'30.784489"N	122°05'50.255258"W	6716.8631	0.999585274	DEA LIDAR Control
570	449538.084	4493542.555	6712.238	42°53'20.306989"N	122°05'46.255076"W	6641.2392	0.999589131	DEA LIDAR Control
571	448459.105	4493348.613	6641.130	42°53'09.613968"N	122°05'48.583641"W	6570.1057	0.999592781	DEA LIDAR Control
572	447680.770	4492541.590	6590.630	42°53'01.774627"N	122°05'59.222891"W	6519.577	0.999595382	DEA LIDAR Control
573	446676.800	4491942.821	6611.859	42°52'51.745884"N	122°06'07.006593"W	6540.7572	0.999594611	DEA LIDAR Control
574	445607.239	4491468.991	6647.582	42°52'41.092830"N	122°06'13.094911"W	6576.4435	0.999593165	DEA LIDAR Control
575	444972.453	4491027.032	6669.903	42°52'34.739752"N	122°06'18.866586"W	6598.7412	0.999592256	DEA LIDAR Control
576	445512.638	4490310.785	6702.118	42°52'39.939145"N	122°06'28.624102"W	6630.9658	0.999590589	DEA LIDAR Control
577	446104.866	4489325.749	6760.949	42°52'45.601224"N	122°06'42.005182"W	6689.8019	0.999587641	DEA LIDAR Control
578	446366.807	4488214.482	6795.868	42°52'47.976759"N	122°06'56.996581"W	6724.7111	0.999585916	DEA LIDAR Control
579	446485.068	4487246.939	6755.634	42°52'48.960154"N	122°07'10.020836"W	6684.4624	0.999587814	DEA LIDAR Control
580	446342.346	4486258.164	6681.496	42°52'47.361496"N	122°07'23.262408"W	6610.3001	0.999591395	DEA LIDAR Control
581	446868.702	4485545.449	6619.176	42°52'52.423450"N	122°07'32.970970"W	6547.9792	0.99959425	DEA LIDAR Control
582	447251.044	4484778.525	6558.053	42°52'56.052423"N	122°07'43.370360"W	6486.8459	0.999597082	DEA LIDAR Control
583	448371.975	4484456.239	6482.283	42°53'07.061263"N	122°07'47.991666"W	6411.0949	0.999600437	DEA LIDAR Control
584	449485.278	4484143.013	6406.595	42°53'17.996444"N	122°07'52.489738"W	6335.4225	0.999603793	DEA LIDAR Control
585	450594.259	4483808.995	6398.416	42°53'28.884881"N	122°07'57.266393"W	6327.2561	0.999603928	DEA LIDAR Control
586	451590.241	4483317.929	6436.886	42°53'38.626972"N	122°08'04.123443"W	6365.7299	0.999601864	DEA LIDAR Control
587	452528.139	4483686.834	6480.383	42°53'47.961110"N	122°07'59.413852"W	6409.256	0.999599571	DEA LIDAR Control
588	453544.837	4483790.704	6546.082	42°53'58.022407"N	122°07'58.284892"W	6474.9669	0.999596203	DEA LIDAR Control
589	454657.754	4483517.245	6621.324	42°54'08.961323"N	122°08'02.250157"W	6550.2087	0.999592363	DEA LIDAR Control
590	455509.259	4483121.456	6682.921	42°54'17.294795"N	122°08'07.790730"W	6611.7979	0.999589236	DEA LIDAR Control
591	454864.936	4482727.040	6751.621	42°54'10.855101"N	122°08'12.920392"W	6680.4894	0.999586098	DEA LIDAR Control
592	454580.746	4482334.509	6800.879	42°54'07.972517"N	122°08'18.119114"W	6729.7374	0.99958381	DEA LIDAR Control

NOTE:

1. *To precisely check distances between points as measured on the ground, inverse the state plane coordinates and divide the computed distance by a mean combined factor of the two points.*

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SURVEY CONTROL

--/---- WFLHD Survey
--/---- Checked by:
DEA Designed by:
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STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1	D.75

PROJECT : East Rim Crater Lake Control
DATE OF FIELD WORK : September 2018

PROJECT UNITS : International foot
COORDINATE SYSTEM : Oregon South SPCS NAD83 (2011)
EPOCH DATE : 2010.000
VERTICAL DATUM : Orthometric Elevations based on the NAVD88 GEOID 12b

POINT NUMBER	STATE PLANE COORDINATES			GEO COORDINATES				DESCRIPTION
	NORTH	EAST	ELEVATION	LATITUDE	LONGITUDE	ELLIPSOID HEIGHT	COMBINED FACTOR	
593	455206.999	4481972.179	6866.430	42°54'14.087575"N	122°08'23.151470"W	6795.283	0.999580543	DEA LIDAR Control
594	454947.146	4481440.640	6941.992	42°54'11.418313"N	122°08'30.224034"W	6870.8329	0.999576994	DEA LIDAR Control
595	454107.489	4480774.523	7008.830	42°54'02.996478"N	122°08'38.951429"W	6937.6512	0.999573991	DEA LIDAR Control
596	454292.135	4479898.163	7015.227	42°54'04.649994"N	122°08'50.773145"W	6944.0366	0.999573649	DEA LIDAR Control
597	455261.600	4479851.508	7036.402	42°54'14.215699"N	122°08'51.656170"W	6965.2157	0.999572423	DEA LIDAR Control
598	456399.470	4480255.387	7047.703	42°54'25.532157"N	122°08'46.530775"W	6976.529	0.999571632	DEA LIDAR Control
599	457387.002	4479947.726	7054.801	42°54'35.225598"N	122°08'50.925304"W	6983.614	0.999571082	DEA LIDAR Control
600	458141.866	4479869.253	7110.731	42°54'42.665642"N	122°08'52.179242"W	7039.5424	0.99956825	DEA LIDAR Control
601	447762.607	4493187.690	6570.505	42°53'02.704705"N	122°05'50.566519"W	6499.4617	0.99959632	DEA LIDAR Control
605	464711.650	4510153.031	7762.753	42°55'53.236531"N	122°02'06.885782"W	7692.0883	0.999535618	DEA LIDAR Control
606	464938.867	4509154.521	7774.177	42°55'55.299624"N	122°02'20.362776"W	7703.4927	0.999535032	DEA LIDAR Control
607	465867.118	4508646.249	7780.556	42°56'04.375226"N	122°02'27.424060"W	7709.8518	0.999534549	DEA LIDAR Control
608	466373.122	4507799.845	7804.075	42°56'09.218814"N	122°02'38.926468"W	7733.3322	0.999533332	DEA LIDAR Control
609	466221.217	4506839.689	7861.100	42°56'07.543445"N	122°02'51.794993"W	7790.3461	0.999530642	DEA LIDAR Control
1000	482663.272	4497930.135	6843.975	42°58'48.288522"N	122°04'55.729700"W	6773.0612	0.99957638	DEA LIDAR Control
1001	482976.298	4499105.022	6889.643	42°58'51.599041"N	122°04'40.005143"W	6818.7373	0.999574146	DEA LIDAR Control
1002	482606.246	4500057.742	6850.447	42°58'48.121337"N	122°04'27.095938"W	6779.5427	0.999576074	DEA LIDAR Control
1003	482122.878	4501202.525	6919.236	42°58'43.559644"N	122°04'11.575091"W	6848.3324	0.99957286	DEA LIDAR Control
1004	481082.338	4501601.484	6898.091	42°58'33.356643"N	122°04'05.946500"W	6827.1737	0.999574035	DEA LIDAR Control
1005	480297.677	4500911.017	6833.331	42°58'25.479153"N	122°04'15.035646"W	6762.3998	0.999577257	DEA LIDAR Control
1006	479270.855	4501203.677	6787.487	42°58'15.391998"N	122°04'10.840472"W	6716.5539	0.999579614	DEA LIDAR Control
1007	478839.562	4502289.072	6737.981	42°58'11.333039"N	122°03'56.134060"W	6667.056	0.999582045	DEA LIDAR Control
1008	477912.930	4502915.406	6685.143	42°58'02.296757"N	122°03'47.477724"W	6614.2212	0.999584721	DEA LIDAR Control
1009	478207.870	4504064.708	6743.280	42°58'05.421332"N	122°03'32.094982"W	6672.3709	0.999581891	DEA LIDAR Control
1010	478463.153	4505153.620	6779.160	42°58'08.142585"N	122°03'17.514097"W	6708.2616	0.999580131	DEA LIDAR Control
1011	477520.749	4505653.507	6765.324	42°57'58.926551"N	122°03'10.556043"W	6694.432	0.999580947	DEA LIDAR Control
1012	476310.795	4505817.569	6714.627	42°57'47.006490"N	122°03'08.048030"W	6643.7385	0.999583573	DEA LIDAR Control
1013	475622.813	4506684.516	6772.323	42°57'40.370190"N	122°02'56.218397"W	6701.4481	0.999580931	DEA LIDAR Control
1014	474473.601	4507145.871	6860.762	42°57'29.104219"N	122°02'49.728851"W	6789.9017	0.999576904	DEA LIDAR Control
1015	473387.513	4507348.331	6913.081	42°57'18.414384"N	122°02'46.736754"W	6842.2334	0.999574595	DEA LIDAR Control
1016	472453.317	4507940.182	6976.425	42°57'09.295644"N	122°02'38.547079"W	6905.5975	0.999571734	DEA LIDAR Control
1017	471538.124	4507963.034	7053.620	42°57'00.260872"N	122°02'38.012946"W	6982.8046	0.999568211	DEA LIDAR Control
1018	471031.764	4506955.343	7126.660	42°56'55.076079"N	122°02'51.435472"W	7055.8359	0.999564818	DEA LIDAR Control
1019	470057.342	4506784.876	7182.071	42°56'45.421051"N	122°02'53.485118"W	7111.2558	0.999562351	DEA LIDAR Control
1020	470115.189	4507594.018	7236.056	42°56'46.139987"N	122°02'42.621326"W	7165.2583	0.999559758	DEA LIDAR Control
1021	470140.142	4508710.264	7299.477	42°56'46.589586"N	122°02'27.620582"W	7228.7003	0.99955672	DEA LIDAR Control
1022	469227.324	4508799.103	7340.488	42°56'37.590252"N	122°02'26.200442"W	7269.7267	0.999554929	DEA LIDAR Control
1023	468213.363	4508249.117	7385.390	42°56'27.475819"N	122°02'33.343109"W	7314.6322	0.999552977	DEA LIDAR Control
1024	467211.669	4508463.677	7455.186	42°56'17.621567"N	122°02'30.210861"W	7384.4473	0.999549832	DEA LIDAR Control
1025	466353.199	4509171.982	7523.912	42°56'09.271523"N	122°02'20.477470"W	7453.2001	0.999546711	DEA LIDAR Control

NOTE:

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SURVEY CONTROL

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STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1	D.76

PROJECT : East Rim Crater Lake Control
DATE OF FIELD WORK : September 2018

PROJECT UNITS : International foot
COORDINATE SYSTEM : Oregon South SPCS NAD83 (2011)
EPOCH DATE : 2010.000
VERTICAL DATUM : Orthometric Elevations based on the NAVD88 GEOID 12b

POINT NUMBER	STATE PLANE COORDINATES			GEO COORDINATES				DESCRIPTION
	NORTH	EAST	ELEVATION	LATITUDE	LONGITUDE	ELLIPSOID HEIGHT	COMBINED FACTOR	
1026	465400.851	4509694.378	7596.689	42°55'59.960367"N	122°02'13.220525"W	7526.0105	0.999543416	DEA LIDAR Control
1027	465259.534	4510861.935	7649.446	42°55'58.776001"N	122°01'57.492250"W	7578.7876	0.999540919	DEA LIDAR Control
1028	464811.692	4511861.112	7625.361	42°55'54.533252"N	122°01'43.952154"W	7554.721	0.999542153	DEA LIDAR Control
1029	463820.647	4511503.031	7681.804	42°55'44.680513"N	122°01'48.521707"W	7611.1659	0.999539654	DEA LIDAR Control
1030	463911.436	4510310.647	7699.332	42°55'45.361689"N	122°02'04.570174"W	7628.6741	0.999538804	DEA LIDAR Control
1031	463399.137	4509258.140	7633.463	42°55'40.111186"N	122°02'18.589806"W	7562.7867	0.999542057	DEA LIDAR Control
1032	463001.084	4508204.485	7559.047	42°55'35.988359"N	122°02'32.652477"W	7488.3487	0.999545696	DEA LIDAR Control
1033	462955.172	4507092.186	7486.851	42°55'35.332282"N	122°02'47.590181"W	7416.1256	0.999549159	DEA LIDAR Control
1034	463172.481	4506063.378	7423.965	42°55'37.290650"N	122°03'01.471208"W	7353.2099	0.999552124	DEA LIDAR Control
1035	463461.519	4504962.606	7417.497	42°55'39.943783"N	122°03'16.337562"W	7346.693	0.999552381	DEA LIDAR Control
1036	462742.868	4504160.955	7442.110	42°55'32.698882"N	122°03'26.932135"W	7371.2859	0.999551354	DEA LIDAR Control
1037	462009.396	4503438.115	7448.957	42°55'25.321829"N	122°03'36.463142"W	7378.1159	0.999551179	DEA LIDAR Control
1038	460970.161	4503605.520	7393.182	42°55'15.088595"N	122°03'33.953275"W	7322.3569	0.999554054	DEA LIDAR Control
1039	460150.355	4504405.253	7320.215	42°55'07.138711"N	122°03'23.001279"W	7249.4103	0.999557704	DEA LIDAR Control
1040	459278.210	4505102.875	7245.419	42°54'58.652880"N	122°03'13.409130"W	7174.6267	0.999561455	DEA LIDAR Control
1041	458197.152	4504947.624	7173.843	42°54'47.947315"N	122°03'15.225703"W	7103.0388	0.999565103	DEA LIDAR Control
1042	457157.582	4504591.042	7101.514	42°54'37.614559"N	122°03'19.757572"W	7030.691	0.999568782	DEA LIDAR Control
1043	456639.354	4503834.699	7040.198	42°54'32.357372"N	122°03'29.790414"W	6969.3582	0.999571826	DEA LIDAR Control
1044	456868.878	4502772.884	6969.993	42°54'34.428870"N	122°03'44.114410"W	6899.1402	0.999575134	DEA LIDAR Control
1045	457373.802	4501806.591	6896.007	42°54'39.237509"N	122°03'57.224423"W	6825.1408	0.999578564	DEA LIDAR Control
1046	458422.644	4501404.144	6824.613	42°54'49.522054"N	122°04'02.895622"W	6753.7391	0.999581753	DEA LIDAR Control
1047	458468.290	4500439.138	6752.358	42°54'49.794263"N	122°04'15.873851"W	6681.4589	0.9995852	DEA LIDAR Control
1048	457595.737	4499898.230	6735.761	42°54'41.076195"N	122°04'22.921752"W	6664.8578	0.99958618	DEA LIDAR Control
1049	456411.091	4499755.027	6801.860	42°54'29.349459"N	122°04'24.546789"W	6730.9752	0.999583277	DEA LIDAR Control
1050	455182.334	4500026.961	6855.718	42°54'17.264075"N	122°04'20.583167"W	6784.8404	0.999580971	DEA LIDAR Control
1051	454112.746	4500527.592	6926.027	42°54'06.793055"N	122°04'13.587708"W	6855.1486	0.999577846	DEA LIDAR Control
1052	452986.202	4501022.060	7003.166	42°53'55.758248"N	122°04'06.661355"W	6932.2668	0.999574411	DEA LIDAR Control
1053	451806.104	4501120.325	7069.996	42°53'44.121152"N	122°04'05.044440"W	6999.081	0.999571486	DEA LIDAR Control
1054	450774.427	4501452.598	7140.853	42°53'33.993185"N	122°04'00.321728"W	7069.9186	0.999568336	DEA LIDAR Control
1055	449973.936	4500718.876	7199.113	42°53'25.951409"N	122°04'09.975818"W	7128.1668	0.999565741	DEA LIDAR Control
1056	449736.973	4499557.562	7262.961	42°53'23.395763"N	122°04'25.514608"W	7192.0261	0.99956275	DEA LIDAR Control
1057	448861.240	4498786.799	7331.059	42°53'14.603375"N	122°04'35.645804"W	7260.1043	0.999559706	DEA LIDAR Control
1058	447860.858	4498023.406	7379.906	42°53'04.581006"N	122°04'45.645631"W	7308.9228	0.999557612	DEA LIDAR Control
1059	447705.888	4496993.364	7395.056	42°53'02.858339"N	122°04'59.440306"W	7324.0636	0.99955693	DEA LIDAR Control
1060	448714.244	4496457.783	7329.867	42°53'12.717294"N	122°05'06.889762"W	7258.8968	0.999559808	DEA LIDAR Control
1061	449754.059	4495996.999	7258.625	42°53'22.900823"N	122°05'13.343247"W	7187.6731	0.99956297	DEA LIDAR Control
1062	450742.418	4495432.911	7199.102	42°53'32.556684"N	122°05'21.171813"W	7128.1479	0.999565588	DEA LIDAR Control
1063	451753.841	4494799.965	7139.846	42°53'42.427252"N	122°05'29.931901"W	7068.8967	0.99956819	DEA LIDAR Control
1064	452622.319	4494146.225	7072.305	42°53'50.881933"N	122°05'38.935552"W	7001.3573	0.999571222	DEA LIDAR Control
1065	453557.846	4493671.763	7025.756	42°54'00.032376"N	122°05'45.548664"W	6954.8061	0.999573238	DEA LIDAR Control

NOTE:

1. *To precisely check distances between points as measured on the ground, inverse the state plane coordinates and divide the computed distance by a mean combined factor of the two points.*

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SURVEY CONTROL

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PROJECT : East Rim Crater Lake Control
DATE OF FIELD WORK : September 2018

PROJECT UNITS : International foot
COORDINATE SYSTEM : Oregon South SPCS NAD83 (2011)
EPOCH DATE : 2010.000
VERTICAL DATUM : Orthometric Elevations based on the NAVD88 GEOID 12b

POINT NUMBER	STATE PLANE COORDINATES			GEO COORDINATES				DESCRIPTION
	NORTH	EAST	ELEVATION	LATITUDE	LONGITUDE	ELLIPSOID HEIGHT	COMBINED FACTOR	
1066	453142.665	4492825.994	6971.916	42°53'55.772499"N	122°05'56.804093"W	6900.9546	0.999575907	DEA LIDAR Control
1067	452054.172	4492609.869	6896.926	42°53'44.981270"N	122°05'59.428054"W	6825.9556	0.999579735	DEA LIDAR Control
1068	451026.277	4492898.251	6826.208	42°53'34.883696"N	122°05'55.290625"W	6755.2247	0.999583346	DEA LIDAR Control
1069	450071.503	4493547.740	6749.339	42°53'25.576265"N	122°05'46.322008"W	6678.3504	0.999587235	DEA LIDAR Control
1070	448990.579	4493519.563	6676.728	42°53'14.895246"N	122°05'46.423718"W	6605.7175	0.999590955	DEA LIDAR Control
1071	448051.887	4492990.998	6606.453	42°53'05.524708"N	122°05'53.282315"W	6535.4145	0.999594535	DEA LIDAR Control
1072	447188.250	4492222.341	6598.192	42°52'56.850002"N	122°06'03.384041"W	6527.1207	0.999595139	DEA LIDAR Control
1073	446156.687	4491713.813	6626.032	42°52'46.565726"N	122°06'09.948409"W	6554.9125	0.99959406	DEA LIDAR Control
1074	445112.604	4491308.774	6664.403	42°52'36.177273"N	122°06'15.119214"W	6593.2492	0.999592483	DEA LIDAR Control
1075	445057.407	4490667.086	6676.842	42°52'35.510621"N	122°06'23.722053"W	6605.6777	0.999591906	DEA LIDAR Control
1076	445877.443	4489872.513	6731.865	42°52'43.458965"N	122°06'34.603806"W	6660.719	0.999589082	DEA LIDAR Control
1077	446216.583	4488766.871	6787.714	42°52'46.598293"N	122°06'49.539434"W	6716.5612	0.999586338	DEA LIDAR Control
1078	446497.437	4487652.915	6777.715	42°52'49.159825"N	122°07'04.572004"W	6706.5518	0.999586754	DEA LIDAR Control
1079	446172.464	4486744.128	6720.262	42°52'45.776649"N	122°07'16.692040"W	6649.0709	0.999589582	DEA LIDAR Control
1080	446771.111	4485927.965	6647.348	42°52'51.532920"N	122°07'27.808469"W	6576.1572	0.999592925	DEA LIDAR Control
1081	446955.711	4484989.916	6584.179	42°52'53.176190"N	122°07'40.454294"W	6512.9626	0.999595904	DEA LIDAR Control
1082	447823.646	4484610.864	6518.740	42°53'01.675463"N	122°07'45.771661"W	6447.5428	0.999598825	DEA LIDAR Control
1083	448938.322	4484275.763	6443.833	42°53'12.620024"N	122°07'50.563682"W	6372.6531	0.999602141	DEA LIDAR Control
1084	450052.647	4483985.836	6383.405	42°53'23.569753"N	122°07'54.749313"W	6312.24	0.999604769	DEA LIDAR Control
1085	451099.841	4483520.014	6417.673	42°53'33.822549"N	122°08'01.280429"W	6346.5143	0.999602893	DEA LIDAR Control
1086	452049.016	4483359.298	6455.525	42°53'43.165988"N	122°08'03.688032"W	6384.3771	0.999600869	DEA LIDAR Control
1087	453057.753	4483776.759	6513.502	42°53'53.209097"N	122°07'58.344624"W	6442.383	0.999597869	DEA LIDAR Control
1088	454114.065	4483699.223	6582.965	42°54'03.626706"N	122°07'59.662951"W	6511.8518	0.999594315	DEA LIDAR Control
1089	455029.745	4483255.153	6650.869	42°54'12.584714"N	122°08'05.868756"W	6579.7484	0.999590871	DEA LIDAR Control
1090	455371.003	4482778.601	6717.757	42°54'15.863162"N	122°08'12.360599"W	6646.6265	0.999587604	DEA LIDAR Control
1091	455048.698	4482316.737	6783.992	42°54'12.590751"N	122°08'18.480867"W	6712.8514	0.999584513	DEA LIDAR Control
1092	454931.098	4482028.637	6833.664	42°54'11.373593"N	122°08'22.320412"W	6762.5175	0.999582168	DEA LIDAR Control
1093	455339.682	4481783.341	6902.697	42°54'15.361473"N	122°08'25.723355"W	6831.5461	0.999578782	DEA LIDAR Control
1094	454552.644	4481134.323	6977.394	42°54'07.462740"N	122°08'34.235233"W	6906.2262	0.999575391	DEA LIDAR Control
1095	454054.402	4480428.737	7012.197	42°54'02.405096"N	122°08'43.582660"W	6941.0174	0.999573843	DEA LIDAR Control
1096	454756.841	4479598.687	7025.153	42°54'09.181387"N	122°08'54.919203"W	6953.9587	0.999573073	DEA LIDAR Control
1097	455809.055	4480102.150	7043.355	42°54'19.671255"N	122°08'48.433547"W	6972.1765	0.99957197	DEA LIDAR Control
1098	456934.363	4480185.593	7048.217	42°54'30.801392"N	122°08'47.609774"W	6977.041	0.999571493	DEA LIDAR Control
1099	457586.184	4479467.956	7078.834	42°54'37.099509"N	122°08'57.424118"W	7007.6387	0.999569894	DEA LIDAR Control
1100	447903.158	4492825.284	6596.066	42°53'04.024544"N	122°05'55.469806"W	6525.0213	0.999595068	DEA LIDAR Control
1101	447287.077	4493081.583	6532.101	42°52'57.988149"N	122°05'51.869723"W	6461.0431	0.999598268	DEA LIDAR Control
1102	447104.408	4493213.508	6518.023	42°52'56.208882"N	122°05'50.051158"W	6446.9617	0.999598984	DEA LIDAR Control
1103	447014.432	4493058.143	6506.328	42°52'55.290962"N	122°05'52.114651"W	6435.2622	0.999599565	DEA LIDAR Control
1104	464278.546	4510475.474	7726.682	42°55'49.017310"N	122°02'02.445217"W	7656.0248	0.999537425	DEA LIDAR Control
1105	464911.179	4509670.173	7782.795	42°55'55.119702"N	122°02'13.425058"W	7712.1201	0.999534624	DEA LIDAR Control

NOTE:

1. *To precisely check distances between points as measured on the ground, inverse the state plane coordinates and divide the computed distance by a mean combined factor of the two points.*

NOT FOR CONSTRUCTION

SURVEY CONTROL

--/---- WFLHD Survey
--/---- Checked by:
DEA Designed by:
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STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1	D.78

PROJECT : East Rim Crater Lake Control
DATE OF FIELD WORK : September 2018

PROJECT UNITS : International foot
COORDINATE SYSTEM : Oregon South SPCS NAD83 (2011)
EPOCH DATE : 2010.000
VERTICAL DATUM : Orthometric Elevations based on the NAVD88 GEOID 12b

POINT NUMBER	STATE PLANE COORDINATES			GEO COORDINATES				DESCRIPTION
	NORTH	EAST	ELEVATION	LATITUDE	LONGITUDE	ELLIPSOID HEIGHT	COMBINED FACTOR	
1106	465290.520	4508730.210	7772.385	42°55'58.695683"N	122°02'26.152911"W	7701.6889	0.999535051	DEA LIDAR Control
1107	466286.813	4508254.595	7787.909	42°56'08.449157"N	122°02'32.792414"W	7717.1907	0.999534118	DEA LIDAR Control
1108	466268.372	4507209.994	7840.965	42°56'08.076737"N	122°02'46.829159"W	7770.2204	0.999531593	DEA LIDAR Control
1109	466016.122	4506631.573	7867.281	42°56'05.479813"N	122°02'54.541453"W	7796.5235	0.999530388	DEA LIDAR Control
10001	457965.259	4480386.485	7127.169	42°54'41.021872"N	122°08'45.182927"W	7055.9879	0.9995675	5/8" IR w/ FHWA alum cap
10002	458147.538	4480106.996	7123.290	42°54'42.767844"N	122°08'48.986356"W	7052.1019	0.999567647	5/8" IR w/ FHWA alum cap
10003	470830.825	4474444.458	7625.609	42°56'46.924429"N	122°10'08.466145"W	7554.3881	0.999541158	5/8" IR w/ FHWA alum cap
10004	477100.591	4478361.141	7309.290	42°57'49.613998"N	122°09'17.476833"W	7238.1549	0.999555136	5/8" IR w/ FHWA alum cap
10005	477817.197	4479270.886	7265.125	42°57'56.868773"N	122°09'05.432989"W	7194.0057	0.999557121	5/8" IR w/ FHWA alum cap
10008	482819.503	4498294.559	6869.347	42°58'49.899502"N	122°04'50.867351"W	6798.4362	0.999575143	5/8" IR w/ FHWA alum cap
10009	482894.747	4498793.048	6892.129	42°58'50.735529"N	122°04'44.181016"W	6821.2203	0.999574041	5/8" IR w/ FHWA alum cap
10101	458219.345	4479796.735	7108.787	42°54'43.416755"N	122°08'53.174107"W	7037.5967	0.999568326	5/8" IR w/ FHWA alum cap
10102	458450.795	4479423.320	7072.670	42°54'45.630014"N	122°08'58.252688"W	7001.4739	0.999570004	5/8" IR w/ FHWA alum cap
10185	482596.911	4497803.119	6834.966	42°58'47.609410"N	122°04'57.421366"W	6764.0502	0.999576822	5/8" IR w/ FHWA alum cap
10201	477902.899	4502910.138	6684.376	42°58'02.196706"N	122°03'47.546059"W	6613.4511	0.999584759	5/8" IR w/ FHWA alum cap
10202	477852.565	4503202.091	6694.311	42°58'01.753406"N	122°03'43.607047"W	6623.3923	0.999584292	5/8" IR w/ FHWA alum cap
10401	471142.310	4506828.548	7139.474	42°56'56.144736"N	122°02'53.167657"W	7068.641	0.999564187	5/8" IR w/ FHWA alum cap
10501	446227.005	4491718.750	6624.039	42°52'47.261154"N	122°06'09.900183"W	6552.9222	0.999594139	5/8" IR w/ FHWA alum cap
10502	445805.579	4491531.296	6639.581	42°52'43.063509"N	122°06'12.309208"W	6568.4494	0.999593499	5/8" IR w/ FHWA alum cap
10503	445581.507	4491490.590	6646.649	42°52'40.842766"N	122°06'12.798229"W	6575.5107	0.999593216	5/8" IR w/ FHWA alum cap
10504	445130.252	4491406.475	6673.582	42°52'36.370053"N	122°06'13.811750"W	6602.4289	0.99959204	5/8" IR w/ FHWA alum cap
18004	482915.332	4499886.777	6858.940	42°58'51.142249"N	122°04'29.473854"W	6788.0373	0.99957562	FHWA Control
18005	482429.322	4500284.630	6862.793	42°58'46.416069"N	122°04'23.999272"W	6791.8882	0.999575511	FHWA Control
18006	482007.579	4501416.384	6927.208	42°58'42.460490"N	122°04'08.669375"W	6856.3049	0.999572497	FHWA Control
18007	481382.820	4501678.994	6917.071	42°58'36.338672"N	122°04'04.979625"W	6846.1644	0.99957308	FHWA Control
18008	480823.546	4501479.251	6883.061	42°58'30.778079"N	122°04'07.525375"W	6812.1419	0.999574795	FHWA Control
18009	480524.742	4501052.808	6850.876	42°58'27.748015"N	122°04'13.185831"W	6779.9485	0.999576382	FHWA Control
18010	480019.384	4500827.655	6817.652	42°58'22.715163"N	122°04'16.086648"W	6746.7178	0.999578052	FHWA Control
18012	479112.011	4501272.428	6789.641	42°58'13.835919"N	122°04'09.875780"W	6718.7074	0.999579537	FHWA Control
18013	479087.160	4501366.486	6786.354	42°58'13.607886"N	122°04'08.604497"W	6715.4215	0.999579697	FHWA Control
18014	478646.665	4502510.098	6720.613	42°58'09.468703"N	122°03'53.112964"W	6649.6899	0.999582906	FHWA Control
18015	478102.556	4502655.297	6689.465	42°58'04.121619"N	122°03'51.023471"W	6618.5404	0.999584484	FHWA Control
18018	478004.777	4502755.672	6687.964	42°58'03.174424"N	122°03'49.648994"W	6617.0407	0.999584572	FHWA Control
18019	478207.670	4504518.157	6760.911	42°58'05.502686"N	122°03'25.996564"W	6690.0067	0.999581047	FHWA Control
18020	478442.892	4504973.309	6773.428	42°58'07.909403"N	122°03'19.934046"W	6702.5281	0.999580409	FHWA Control
18021	478396.815	4505404.372	6788.638	42°58'07.533364"N	122°03'14.125173"W	6717.7424	0.999579688	FHWA Control
18022	476079.380	4505947.991	6716.409	42°57'44.744801"N	122°03'06.236481"W	6645.5172	0.999583527	FHWA Control
18023	475720.289	4506394.507	6750.466	42°57'41.279908"N	122°03'00.142506"W	6679.5866	0.99958196	FHWA Control
18024	475393.847	4506977.771	6797.885	42°57'38.162354"N	122°02'52.217963"W	6727.0157	0.999579749	FHWA Control
18025	473012.817	4507412.112	6927.583	42°57'14.725320"N	122°02'45.786131"W	6856.7403	0.999573969	FHWA Control

NOTE:

1. *To precisely check distances between points as measured on the ground, inverse the state plane coordinates and divide the computed distance by a mean combined factor of the two points.*

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SURVEY CONTROL

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STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1	D.79

PROJECT : East Rim Crater Lake Control
DATE OF FIELD WORK : September 2018

PROJECT UNITS : International foot
COORDINATE SYSTEM : Oregon South SPCS NAD83 (2011)
EPOCH DATE : 2010.000
VERTICAL DATUM : Orthometric Elevations based on the NAVD88 GEOID 12b

POINT NUMBER	STATE PLANE COORDINATES			GEO COORDINATES				DESCRIPTION
	NORTH	EAST	ELEVATION	LATITUDE	LONGITUDE	ELLIPSOID HEIGHT	COMBINED FACTOR	
18026	472560.157	4507772.502	6964.064	42°57'10.320305"N	122°02'40.828111"W	6893.2323	0.999572306	FHWA Control
18027	472308.804	4508165.879	6994.939	42°57'07.909441"N	122°02'35.476667"W	6924.1166	0.999570874	FHWA Control
18028	471687.677	4508179.660	7037.747	42°57'01.777374"N	122°02'35.137470"W	6966.9338	0.999568941	FHWA Control
18029	470257.084	4506630.071	7170.881	42°56'47.365529"N	122°02'55.615994"W	7100.0594	0.999562849	FHWA Control
18030	469940.449	4506898.823	7194.368	42°56'44.287353"N	122°02'51.924165"W	7123.557	0.999561785	FHWA Control
18031	470218.800	4507832.363	7252.148	42°56'47.206730"N	122°02'39.442689"W	7181.3538	0.999558969	FHWA Control
18032	469964.960	4508990.551	7312.410	42°56'44.910321"N	122°02'23.809053"W	7241.6412	0.999556133	FHWA Control
18033	469428.661	4509009.594	7331.046	42°56'39.616998"N	122°02'23.420462"W	7260.2859	0.999555342	FHWA Control
18034	468999.098	4508571.209	7352.904	42°56'35.294745"N	122°02'29.207667"W	7282.1423	0.99955438	FHWA Control
18035	467929.261	4508117.412	7403.555	42°56'24.645903"N	122°02'35.043230"W	7332.7991	0.999552163	FHWA Control
18036	467357.292	4508240.304	7439.433	42°56'19.019186"N	122°02'33.249588"W	7368.6876	0.999550558	FHWA Control
18037	467058.959	4508719.106	7474.041	42°56'16.159749"N	122°02'26.739516"W	7403.3102	0.999548959	FHWA Control
18038	466462.852	4509121.263	7518.442	42°56'10.345316"N	122°02'21.186316"W	7447.7272	0.999546951	FHWA Control
18039	465564.437	4509458.449	7578.000	42°56'01.533259"N	122°02'16.432099"W	7507.3152	0.999544278	FHWA Control
18040	465309.720	4510557.157	7651.747	42°55'59.216550"N	122°02'01.601201"W	7581.0833	0.999540801	FHWA Control
18041	464531.386	4511957.100	7638.088	42°55'51.782092"N	122°01'42.593201"W	7567.4505	0.9995416	FHWA Control
18042	463992.904	4511749.906	7670.327	42°55'46.426365"N	122°01'45.245894"W	7599.6908	0.999540167	FHWA Control
18043	463778.788	4511125.521	7690.083	42°55'44.198932"N	122°01'53.585301"W	7619.4403	0.999539269	FHWA Control
18044	464881.896	4509906.538	7778.553	42°55'54.873326"N	122°02'10.240851"W	7707.8824	0.999534831	FHWA Control
18045	466123.485	4508475.092	7784.214	42°56'06.876142"N	122°02'29.788130"W	7713.5024	0.999534325	FHWA Control
18046	465954.409	4506679.052	7867.258	42°56'04.878972"N	122°02'53.887921"W	7796.5027	0.999530401	FHWA Control
18047	463199.139	4508958.360	7611.587	42°55'38.081483"N	122°02'22.569455"W	7540.9052	0.999543143	FHWA Control
18048	463509.170	4505213.069	7420.793	42°55'40.460320"N	122°03'12.983213"W	7349.9968	0.999552213	FHWA Control
18049	462865.152	4504382.276	7438.494	42°55'33.947269"N	122°03'23.988222"W	7367.6759	0.999551501	FHWA Control
18050	463380.428	4504530.632	7418.530	42°55'39.063641"N	122°03'22.123059"W	7347.7135	0.99955235	FHWA Control
18051	461696.469	4503280.887	7441.006	42°55'22.202266"N	122°03'38.497778"W	7370.1623	0.999551623	FHWA Control
18052	461191.232	4503383.204	7415.337	42°55'17.231108"N	122°03'36.996236"W	7344.5049	0.999552952	FHWA Control
18055	459447.241	4505048.902	7258.475	42°55'00.312432"N	122°03'14.176547"W	7187.6821	0.999560797	FHWA Control
18056	459075.765	4505177.955	7234.017	42°54'56.667181"N	122°03'12.349780"W	7163.2248	0.999562042	FHWA Control
18057	456924.743	4504529.314	7087.469	42°54'35.303590"N	122°03'20.528855"W	7016.6422	0.999569503	FHWA Control
18058	455669.268	4482940.188	6697.915	42°54'18.840124"N	122°08'10.268017"W	6626.7886	0.999588485	FHWA Control
18059	455102.181	4482746.230	6734.771	42°54'13.201930"N	122°08'12.724893"W	6663.6402	0.99958685	FHWA Control
18060	454854.462	4482566.273	6760.909	42°54'10.720617"N	122°08'15.077453"W	6689.773	0.999585657	FHWA Control
18061	454771.469	4482362.044	6795.825	42°54'09.861487"N	122°08'17.799325"W	6724.6853	0.999584009	FHWA Control
18062	454596.819	4482179.594	6809.307	42°54'08.101321"N	122°08'20.204498"W	6738.1626	0.999583405	FHWA Control
18063	454921.321	4482137.754	6834.952	42°54'11.298135"N	122°08'20.851915"W	6763.8076	0.999582108	FHWA Control
18064	454917.508	4481925.855	6840.367	42°54'11.219495"N	122°08'23.697658"W	6769.2181	0.999581852	FHWA Control
18065	455396.134	4482117.194	6884.988	42°54'15.983586"N	122°08'21.252997"W	6813.8443	0.999579614	FHWA Control
18066	455232.659	4481507.210	6923.051	42°54'14.251035"N	122°08'29.404892"W	6851.8938	0.999577835	FHWA Control
18067	454487.366	4479653.555	7020.824	42°54'06.530626"N	122°08'54.110827"W	6949.6293	0.999573339	FHWA Control

NOTE:

1. *To precisely check distances between points as measured on the ground, inverse the state plane coordinates and divide the computed distance by a mean combined factor of the two points.*

NOT FOR CONSTRUCTION

SURVEY CONTROL

--/---- WFLHD Survey
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STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1	D.80

PROJECT : East Rim Crater Lake Control
DATE OF FIELD WORK : September 2018

PROJECT UNITS : International foot
COORDINATE SYSTEM : Oregon South SPCS NAD83 (2011)
EPOCH DATE : 2010.000
VERTICAL DATUM : Orthometric Elevations based on the NAVD88 GEOID 12b

POINT NUMBER	STATE PLANE COORDINATES			GEO COORDINATES				DESCRIPTION
	NORTH	EAST	ELEVATION	LATITUDE	LONGITUDE	ELLIPSOID HEIGHT	COMBINED FACTOR	
18068	455073.372	4479647.268	7032.160	42°54'12.317001"N	122°08'54.350269"W	6960.9684	0.999572668	FHWA Control
18069	455482.100	4480033.290	7042.250	42°54'16.428758"N	122°08'49.272274"W	6971.0692	0.999572094	FHWA Control
18101	463313.217	4509165.134	7624.209	42°55'39.245712"N	122°02'19.818587"W	7553.5311	0.999542517	5/8" IR w/ FHWA alum cap
18102	447612.915	4497382.249	7402.994	42°53'02.012665"N	122°04'54.193830"W	7332.0012	0.999556571	5/8" IR w/ FHWA alum cap
18103	452502.580	4483479.518	6472.877	42°53'47.668734"N	122°08'02.192034"W	6401.7446	0.999599936	5/8" IR w/ FHWA alum cap
18104	446183.099	4488312.691	6812.572	42°52'46.181094"N	122°06'55.630094"W	6741.4111	0.999585162	5/8" IR w/ FHWA alum cap
18105	445529.227	4490229.108	6706.180	42°52'40.087489"N	122°06'29.725221"W	6635.0279	0.999590391	5/8" IR w/ FHWA alum cap
18106	452225.859	4492642.899	6907.571	42°53'46.683159"N	122°05'59.028431"W	6836.6019	0.999579187	5/8" IR w/ FHWA alum cap
18107	449627.757	4496046.671	7267.108	42°53'21.662697"N	122°05'12.643929"W	7196.154	0.999562594	5/8" IR w/ FHWA alum cap
18108	462310.970	4503487.541	7452.811	42°55'28.309431"N	122°03'35.874404"W	7381.9693	0.999550934	5/8" IR w/ FHWA alum cap
18109	479075.933	4501314.455	6789.238	42°58'13.487370"N	122°04'09.301439"W	6718.304	0.999579562	5/8" IR w/ FHWA alum cap
18301	473920.389	4507145.758	6894.547	42°57'23.640388"N	122°02'49.592929"W	6823.6915	0.999575388	5/8" IR w/ FHWA alum cap
18302	473367.724	4507242.691	6911.231	42°57'18.199666"N	122°02'48.152272"W	6840.3819	0.999574688	5/8" IR w/ FHWA alum cap
18401	471142.311	4506828.537	7139.489	42°56'56.144747"N	122°02'53.167803"W	7068.6609	0.999564186	FHWA Control
18402	470787.289	4506720.285	7144.675	42°56'52.618590"N	122°02'54.534953"W	7073.8494	0.999564003	5/8" IR w/ FHWA alum cap
18502	456648.506	4503537.984	7022.746	42°54'32.393208"N	122°03'33.779349"W	6951.9015	0.999572659	FHWA Control
18503	457105.176	4501997.904	6918.183	42°54'36.619742"N	122°03'54.586413"W	6847.3187	0.999577562	FHWA Control
18504	458626.538	4500634.482	6770.536	42°54'51.393394"N	122°04'13.288901"W	6699.6401	0.999584297	FHWA Control
18505	455149.104	4500073.378	6859.731	42°54'16.944483"N	122°04'19.951177"W	6788.8537	0.999580786	FHWA Control
18506	455160.284	4500071.967	6860.558	42°54'17.054645"N	122°04'19.972955"W	6789.6807	0.999580744	FHWA Control
18509	454325.579	4500356.721	6911.021	42°54'08.863446"N	122°04'15.936888"W	6840.1431	0.999578516	FHWA Control
18510	453956.885	4500626.411	6938.398	42°54'05.271995"N	122°04'12.220882"W	6867.519	0.999577289	FHWA Control
18511	453336.479	4501052.655	6984.344	42°53'59.223427"N	122°04'06.338496"W	6913.4494	0.999575232	FHWA Control
18512	450927.211	4501461.454	7132.556	42°53'35.503795"N	122°04'00.241168"W	7061.6248	0.999568697	FHWA Control
18513	450480.098	4501431.440	7162.212	42°53'31.082327"N	122°04'00.531953"W	7091.272	0.999567383	FHWA Control
18514	450034.535	4500985.046	7193.138	42°53'26.599169"N	122°04'06.415904"W	7122.1914	0.999566011	FHWA Control
18515	447682.214	4497909.028	7388.697	42°53'02.795318"N	122°04'47.136529"W	7317.7089	0.999557235	FHWA Control
18517	447896.757	4496801.541	7381.523	42°53'04.707627"N	122°05'02.065056"W	7310.5343	0.999557532	FHWA Control
18520	452419.255	4494187.802	7087.220	42°53'48.884196"N	122°05'38.325115"W	7016.2717	0.999570555	FHWA Control
18521	453470.995	4493873.878	7033.613	42°53'59.212640"N	122°05'42.811256"W	6962.6655	0.999572881	FHWA Control
18522	453620.738	4493480.014	7020.898	42°54'00.617428"N	122°05'48.140710"W	6949.9452	0.999573457	FHWA Control
18523	453303.738	4492889.492	6984.184	42°53'57.375307"N	122°05'55.992402"W	6913.2234	0.999575284	FHWA Control
18524	451764.875	4492598.653	6878.944	42°53'42.121917"N	122°05'59.504477"W	6807.966	0.99958066	FHWA Control
18525	450316.055	4493475.884	6766.477	42°53'27.978047"N	122°05'47.349788"W	6695.4906	0.99958636	FHWA Control
18526	448763.258	4493505.217	6665.095	42°53'12.647414"N	122°05'46.558193"W	6594.0798	0.999591564	FHWA Control
18527	447980.310	4493104.977	6593.209	42°53'04.839260"N	122°05'51.733170"W	6522.1702	0.999595184	FHWA Control
18528	447303.069	4493056.775	6536.028	42°52'58.141418"N	122°05'52.206991"W	6464.971	0.999598077	FHWA Control
18529	446927.979	4493169.383	6510.078	42°52'54.458072"N	122°05'50.598557"W	6438.9988	0.999599406	FHWA Control
18530	446946.830	4493079.879	6505.300	42°52'54.627383"N	122°05'51.805423"W	6434.22	0.99959963	FHWA Control
18531	447141.445	4493182.084	6518.124	42°52'56.568757"N	122°05'50.482676"W	6447.0634	0.99959897	FHWA Control

NOTE:

1. *To precisely check distances between points as measured on the ground, inverse the state plane coordinates and divide the computed distance by a mean combined factor of the two points.*

NOT FOR CONSTRUCTION

SURVEY CONTROL

--/--- WFLHD Survey
--/--- Checked by:
DEA Designed by:
C:\MyFiles\Projects_2021\Oregon\Crater_Lake\Control\[OR NPS CRLA 13(1)_east rim control sheet.xlsx]Sheet (11)
2-Apr-2021 12:49 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1	D.81

PROJECT : East Rim Crater Lake Control
DATE OF FIELD WORK : September 2018

PROJECT UNITS : International foot
COORDINATE SYSTEM : Oregon South SPCS NAD83 (2011)
EPOCH DATE : 2010.000
VERTICAL DATUM : Orthometric Elevations based on the NAVD88 GEOID 12b

POINT NUMBER	STATE PLANE COORDINATES			GEO COORDINATES				DESCRIPTION
	NORTH	EAST	ELEVATION	LATITUDE	LONGITUDE	ELLIPSOID HEIGHT	COMBINED FACTOR	
18532	447409.965	4493063.637	6544.959	42°52'59.198471"N	122°05'52.142233"W	6473.9046	0.999597625	FHWA Control
18533	447890.245	4493208.532	6583.753	42°53'03.969245"N	122°05'50.319312"W	6512.7132	0.999595657	FHWA Control
18534	447985.644	4493082.110	6594.482	42°53'04.887631"N	122°05'52.041659"W	6523.4435	0.999595123	FHWA Control
18535	447888.131	4492817.637	6597.764	42°53'03.874688"N	122°05'55.568657"W	6526.7198	0.99959499	FHWA Control
18541	445746.111	4490071.364	6719.467	42°52'42.199609"N	122°06'31.899519"W	6648.3192	0.999589705	FHWA Control
18542	446357.272	4488410.338	6808.811	42°52'47.919906"N	122°06'54.363878"W	6737.6572	0.999585299	FHWA Control
18543	446387.512	4488279.331	6811.766	42°52'48.193608"N	122°06'56.131066"W	6740.6103	0.999585151	FHWA Control
18551	466046.483	4506678.558	7871.396	42°56'05.788257"N	122°02'53.917447"W	7800.6392	0.999530185	3" dia. Brass cap, Bureau of Public Roads
18575	446196.077	4486376.421	6697.974	42°52'45.939513"N	122°07'21.636234"W	6626.7767	0.999590643	FHWA Control
18576	446859.666	4485273.216	6602.669	42°52'52.281987"N	122°07'36.624604"W	6531.4568	0.999595042	FHWA Control
2011001	456696.945	4504168.515	7059.888	42°54'32.987494"N	122°03'25.319669"W	6989.053	0.999570871	5/8" IR w/ FHWA alum cap
2011002	456642.844	4503889.535	7043.060	42°54'32.401917"N	122°03'29.054520"W	6972.2211	0.999571688	5/8" IR w/ FHWA alum cap
2011003	455133.826	4500106.549	6862.296	42°54'16.799738"N	122°04'19.501671"W	6791.4184	0.999580667	Mag Nail
2011004	454610.065	4500242.001	6891.574	42°54'11.651915"N	122°04'17.549821"W	6820.6969	0.999579383	Mag Nail

NOTE:

1. *To precisely check distances between points as measured on the ground, inverse the state plane coordinates and divide the computed distance by a mean combined factor of the two points.*

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--/---- WFLHD Survey
--/---- Checked by:
DEA Designed by:
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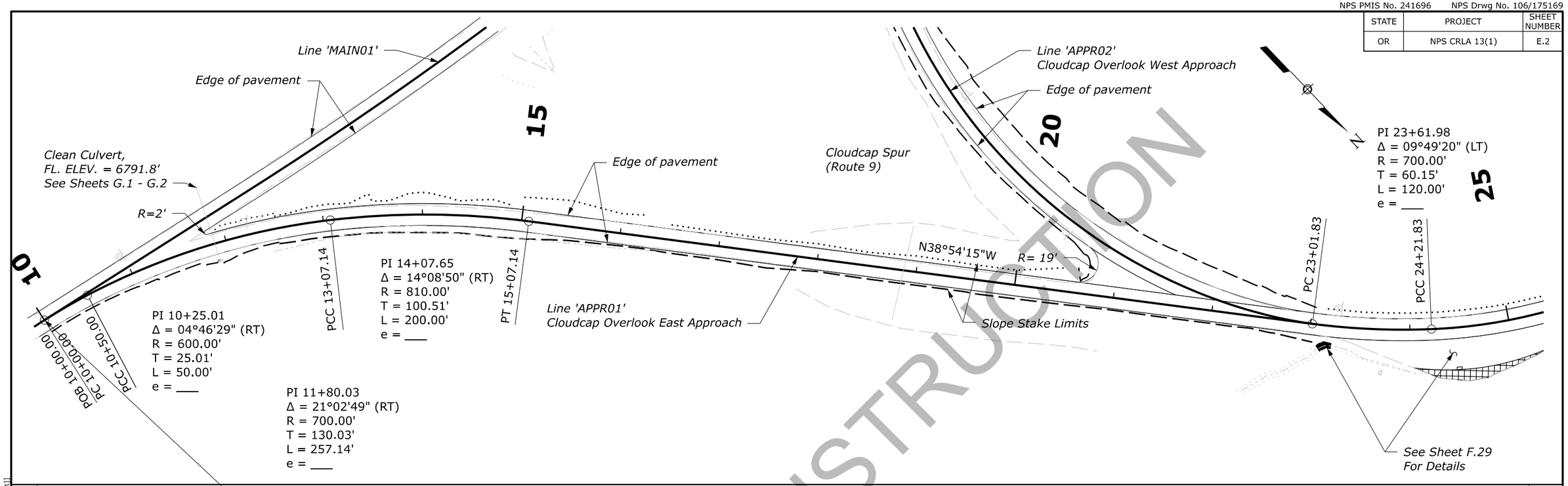
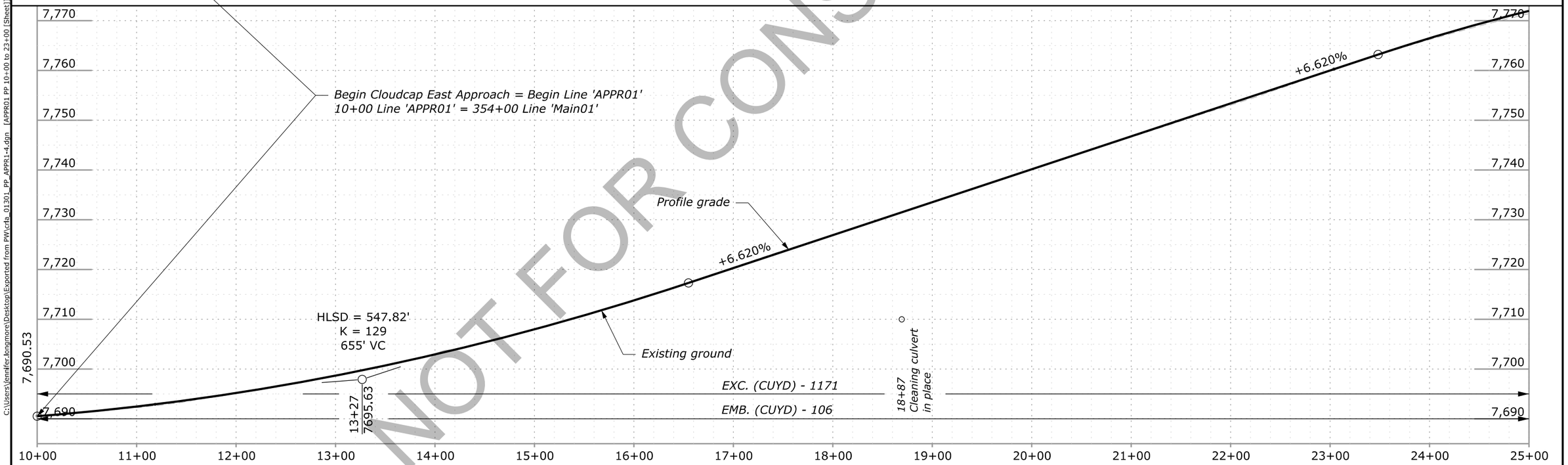
SURVEY CONTROL

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	E.2





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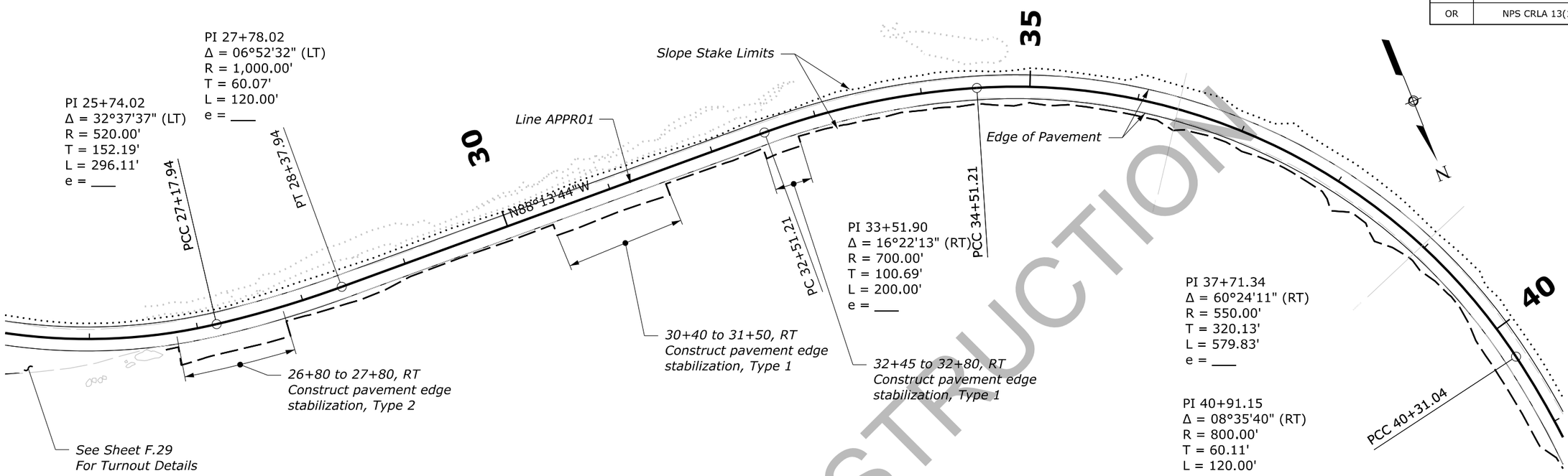
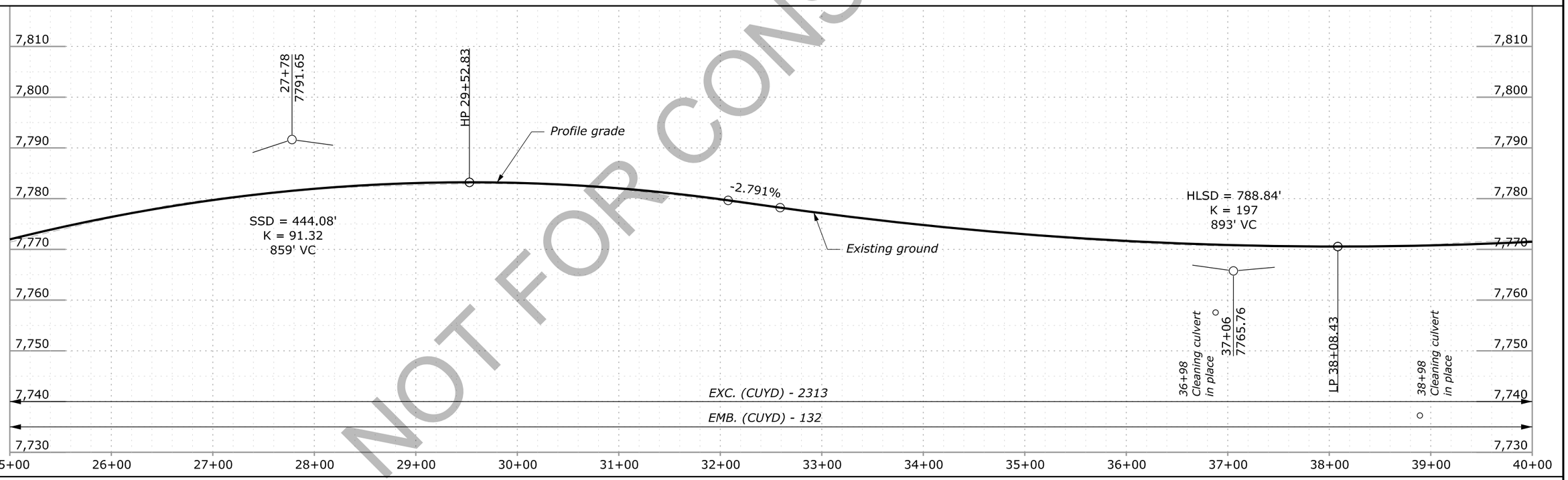
20 April 2021 11:17 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	E.3





NOT FOR CONSTRUCTION

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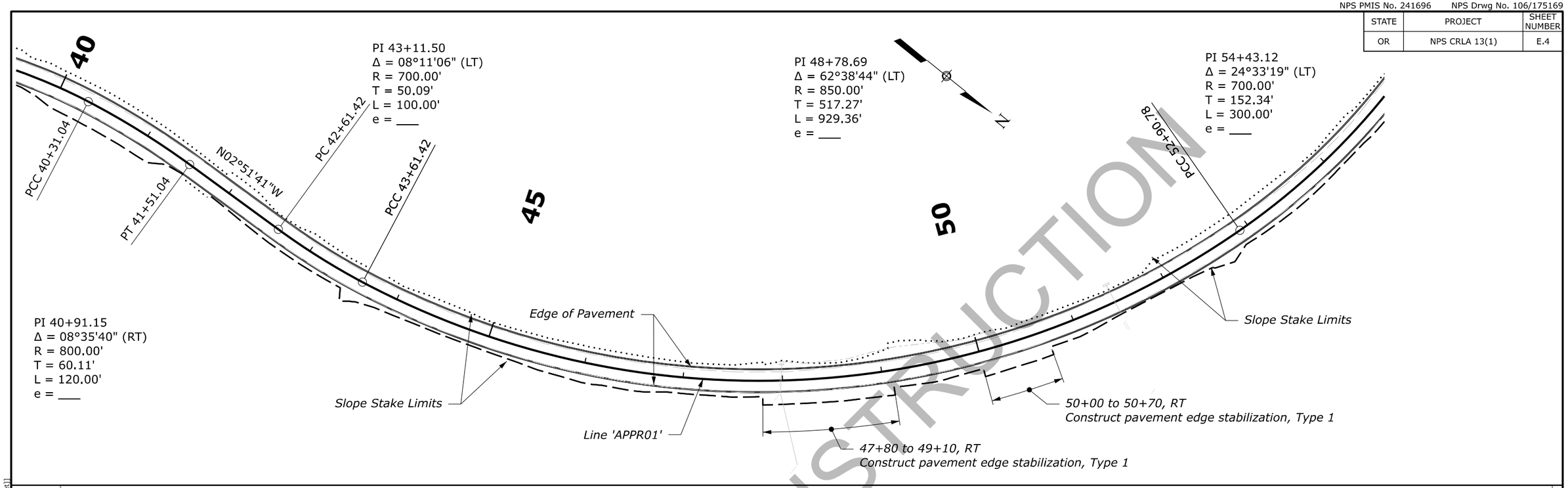
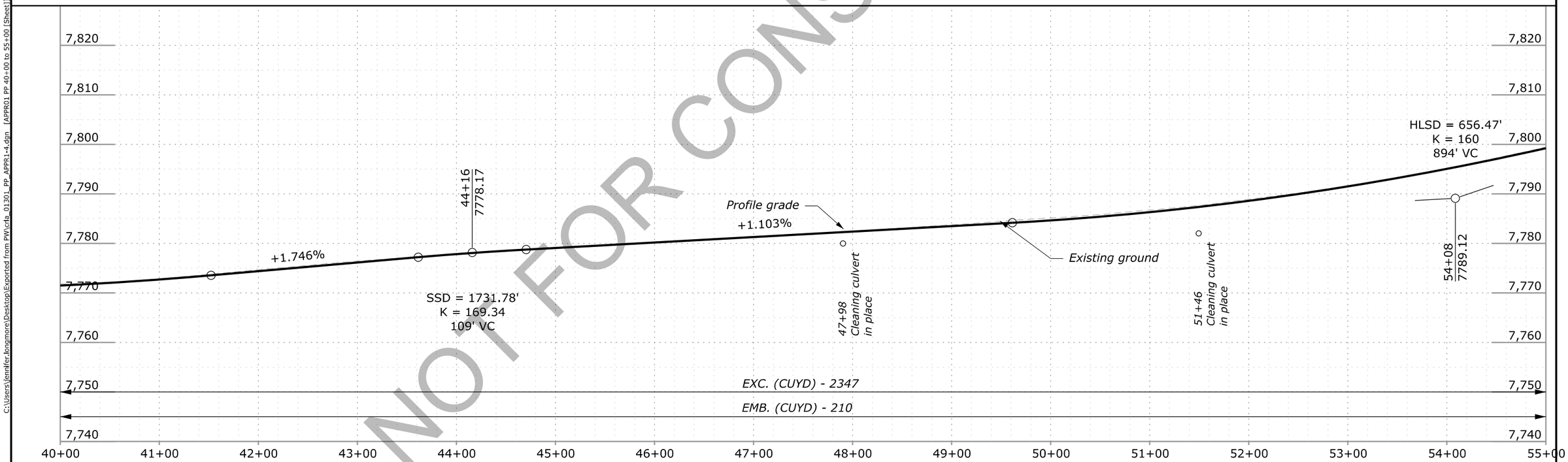
20 April 2021 11:17 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	E.4





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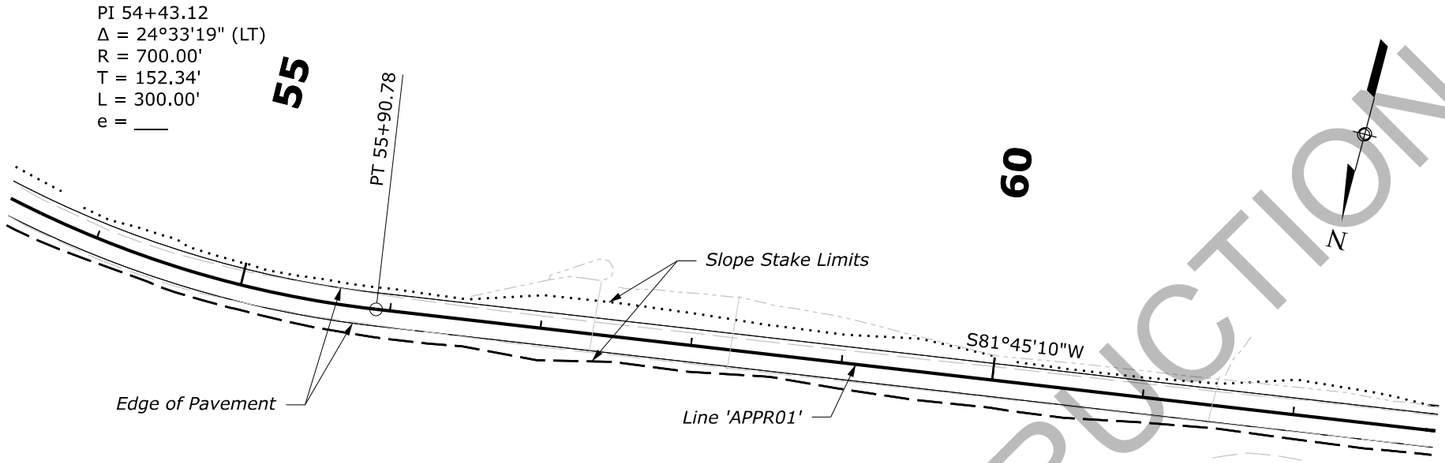
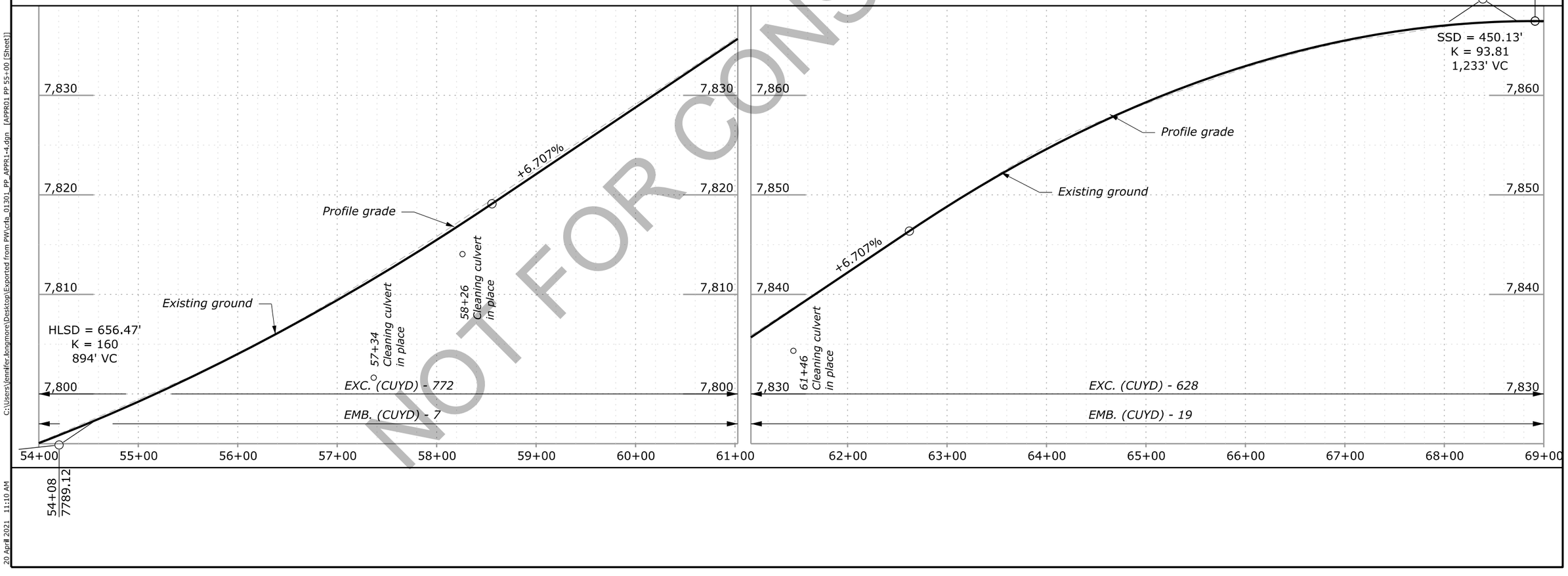
20 April 2021 11:10 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	E.5

PI 54+43.12
Δ = 24°33'19" (LT)
R = 700.00'
T = 152.34'
L = 300.00'
e = ___





NOT FOR CONSTRUCTION

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20 April 2021 11:10 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	E.6

PI 65+32.26
Δ = 17°39'42" (LT)
R = 600.00'
T = 93.22'
L = 184.95'
e = ___

PI 67+06.38
Δ = 07°40'34" (LT)
R = 500.00'
T = 33.54'
L = 66.99'
e = ___

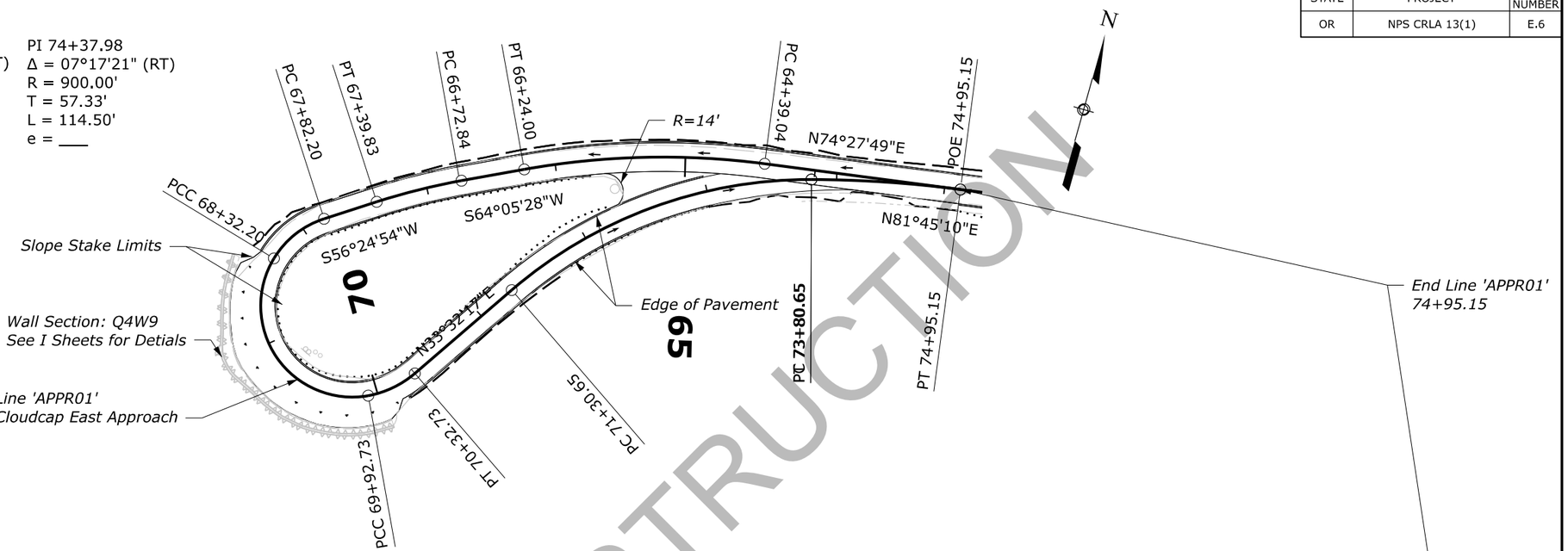
PI 68+08.32
Δ = 40°55'32" (LT)
R = 70.00'
T = 26.12'
L = 50.00'
e = ___

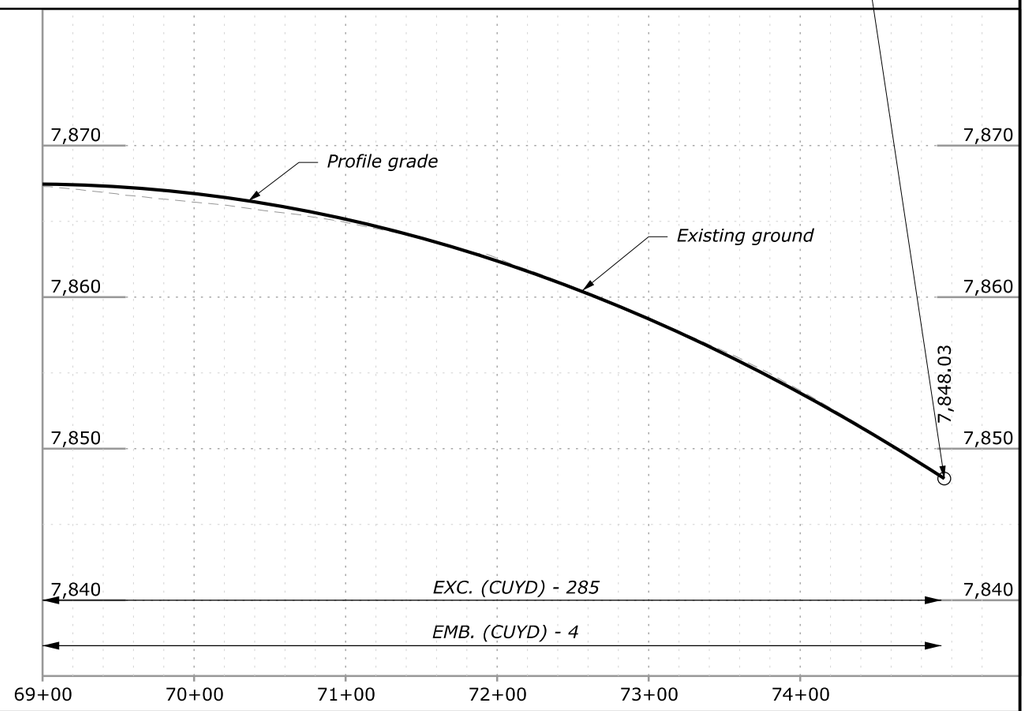
PI 69+87.21
Δ = 131°23'37" (LT)
R = 70.00'
T = 155.01'
L = 160.53'
e = ___

PI 70+13.22
Δ = 30°33'28" (LT)
R = 75.00'
T = 20.49'
L = 40.00'
e = ___

PI 72+61.25
Δ = 40°55'32" (RT)
R = 350.00'
T = 130.60'
L = 250.00'
e = ___

PI 74+37.98
Δ = 07°17'21" (RT)
R = 900.00'
T = 57.33'
L = 114.50'
e = ___





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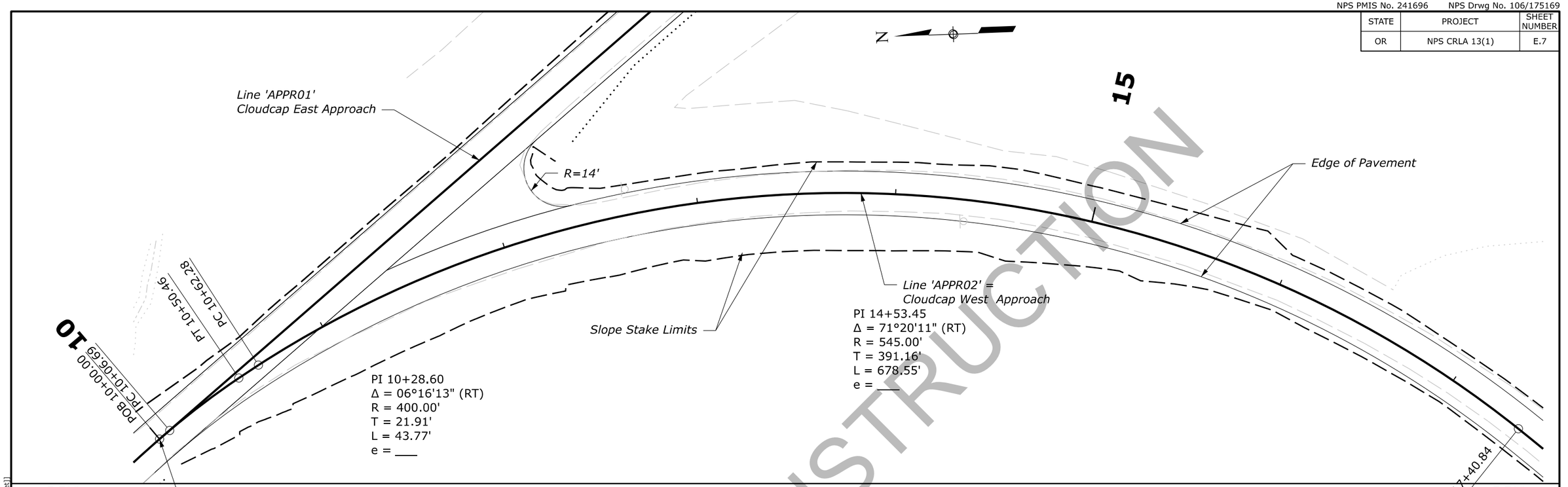
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	E.7



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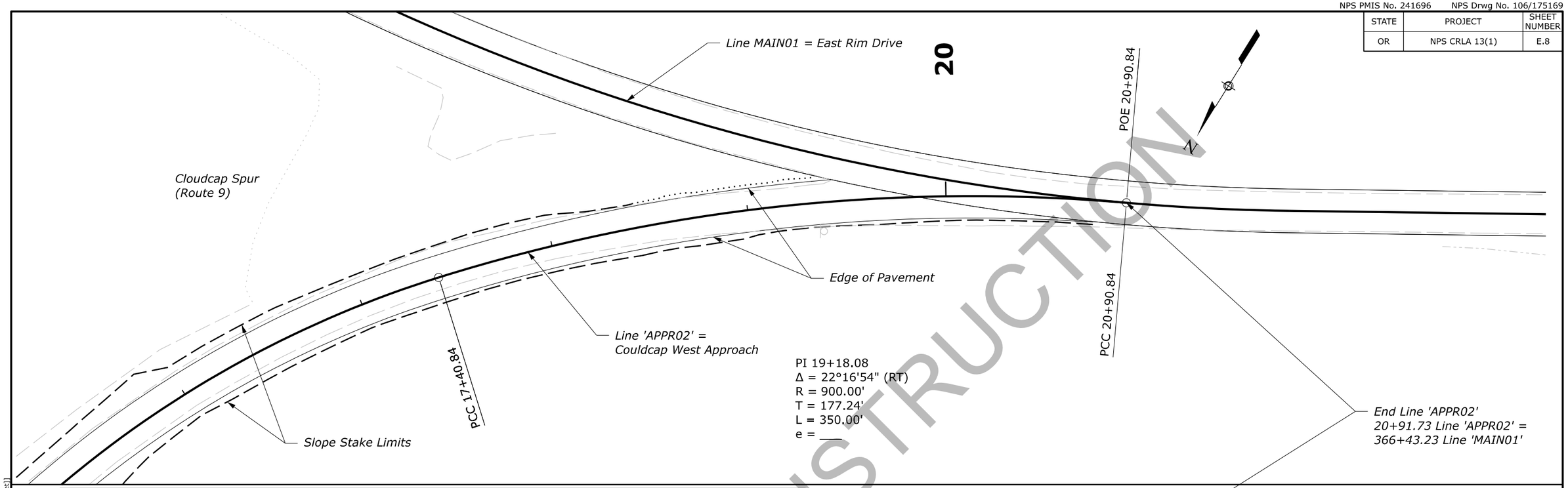
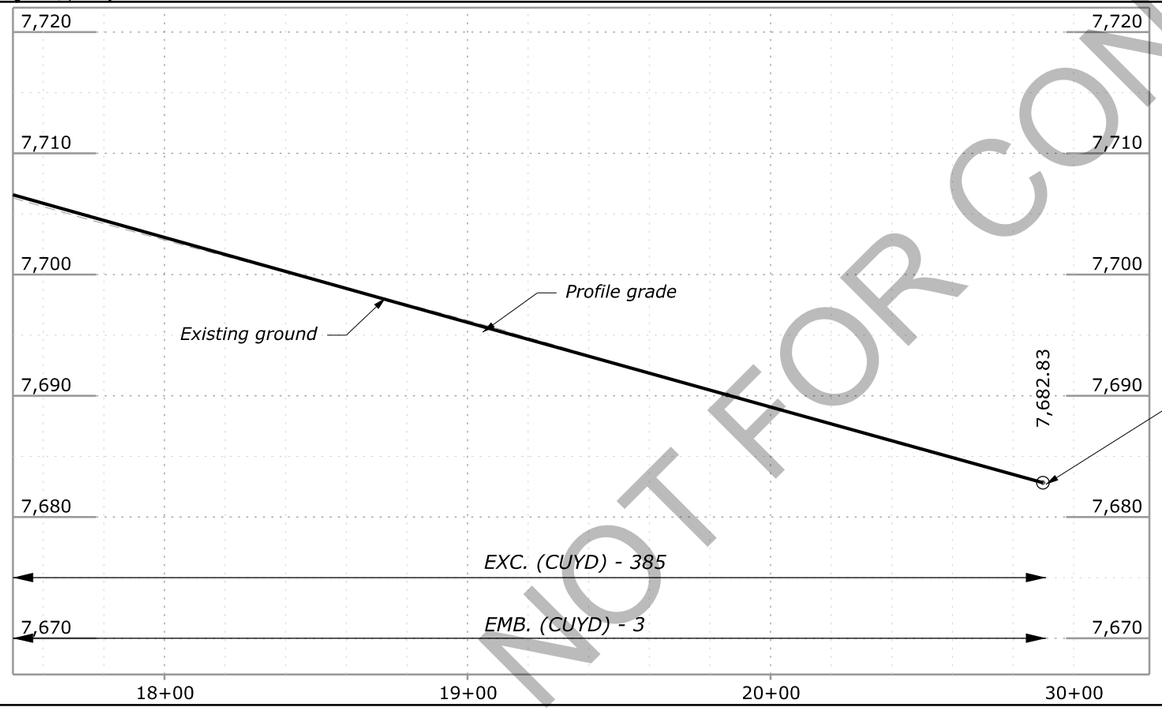
20 April 2021 11:20 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	E.8





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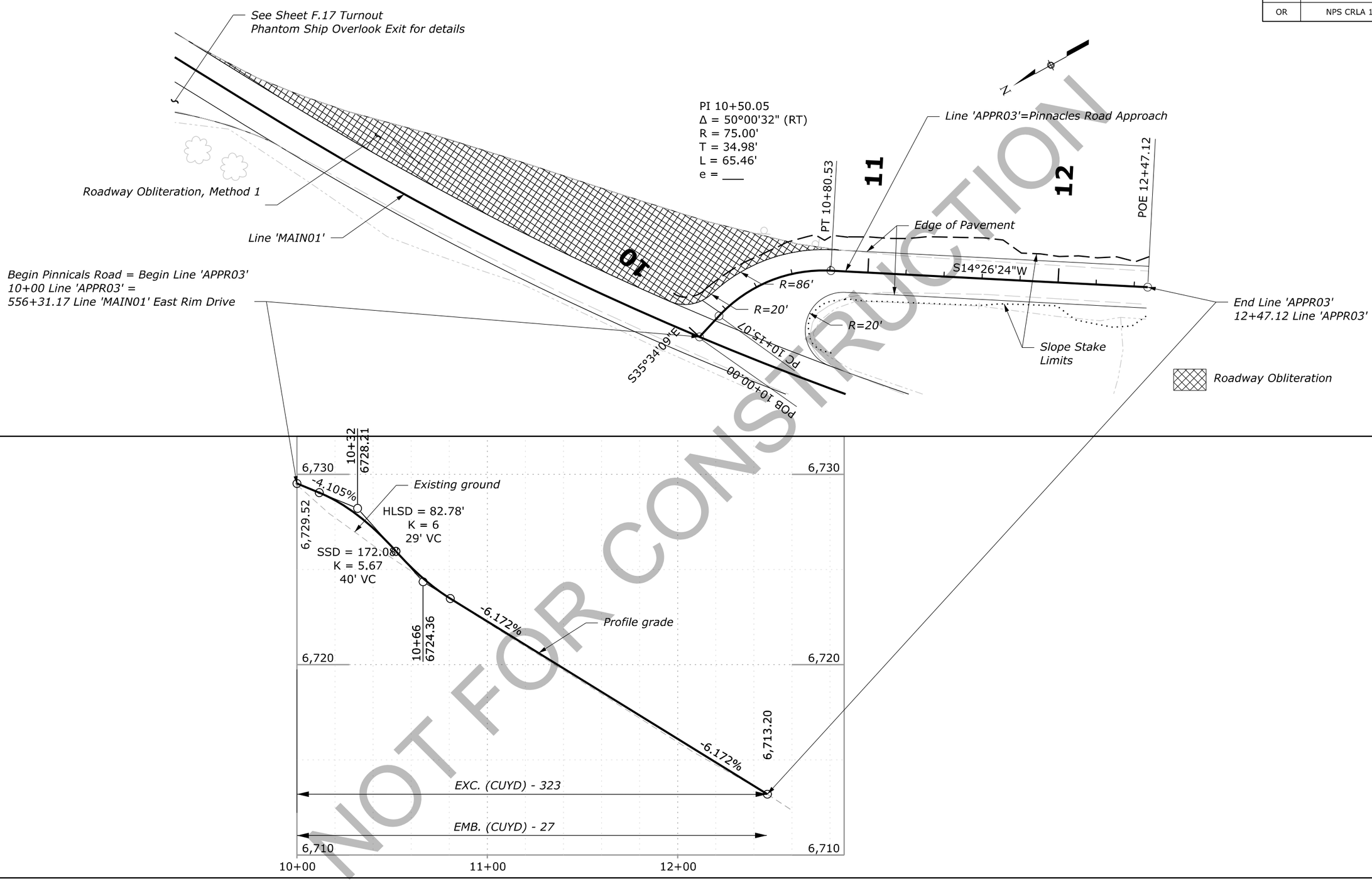
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	E.9



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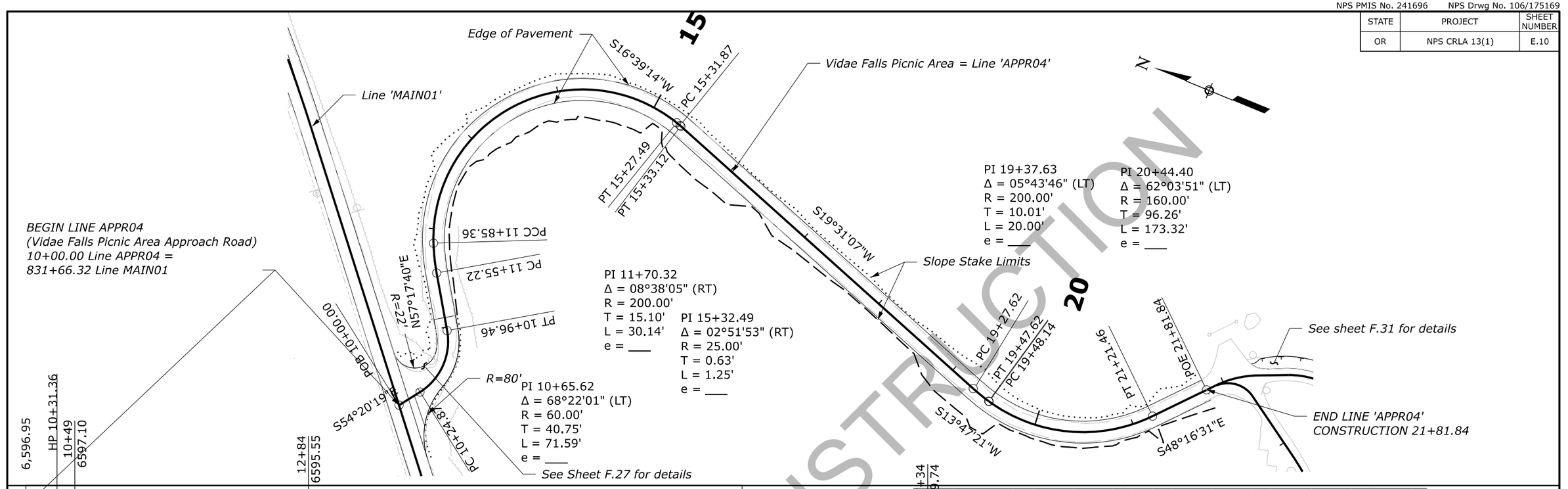
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	E.10



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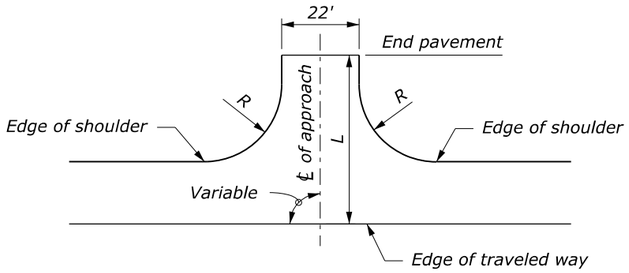
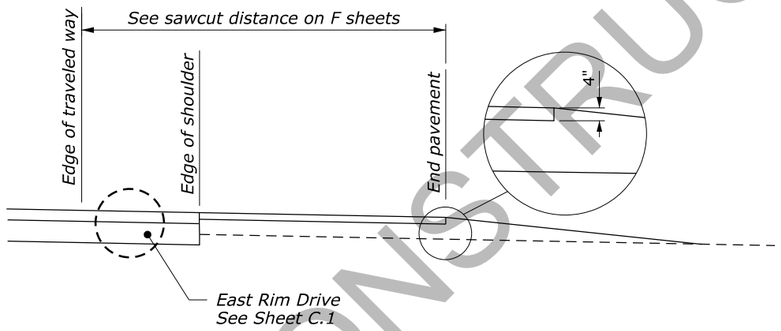
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	E.11

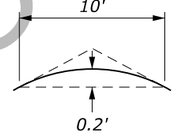


PLAN VIEW

354+00.00 Line 'APPR01' Cloudcap East Approach Entrance
366+43.23 Line 'APPR02' Cloudcap West Approach Exit
556+31.17 Line 'APPR03' Pinnicales Approach Entrance
831+66.32 Line 'APPR04' Vidae Falls Picnic Area Approach Entrance



CONNECTION DETAIL



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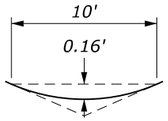

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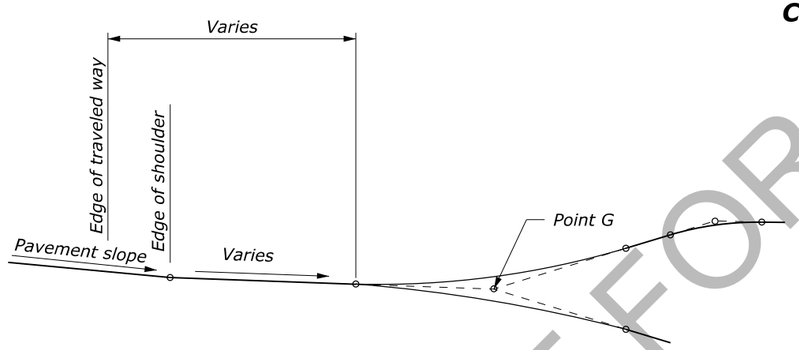
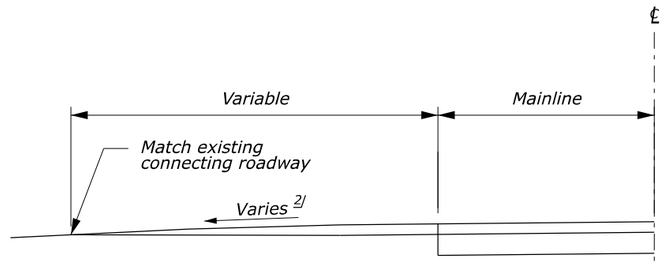


PROFILE VIEW



ELEVATION

PAVED ROAD APPROACH

NOTE:

1. Construct side slope ratio and degree of finish of approaches compatible with adjacent roadway construction.
2. Where approach grades meet without vertical curves, limit the maximum algebraic difference to 8% on crests and 12% on sags.
3. Transition from turnouts to roadway top paved width by restoring approximate original ground contours. Finish slopes by providing a gradual transition slope adjustment without noticeable breaks.

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TYPICAL APPROACH ROAD DETAILS

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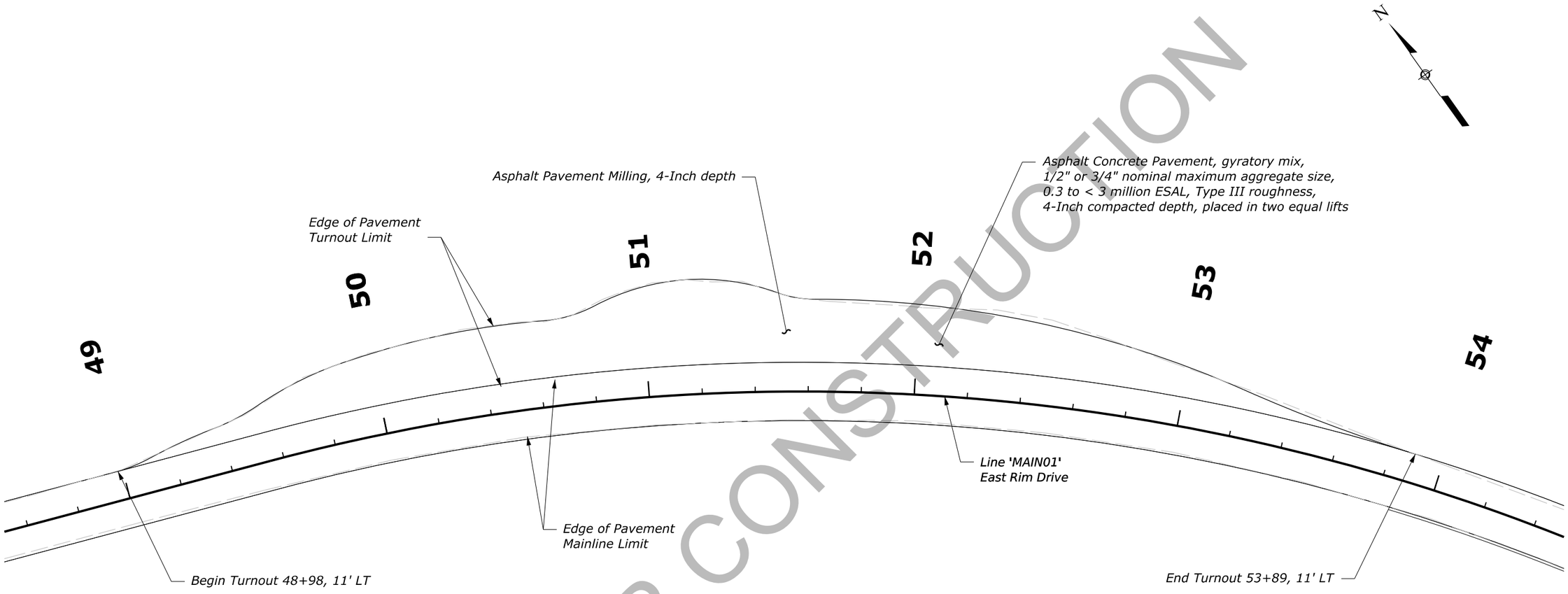
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.3



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TURNOUT 51+50
MAZAMA ROCKS TRAILHEAD

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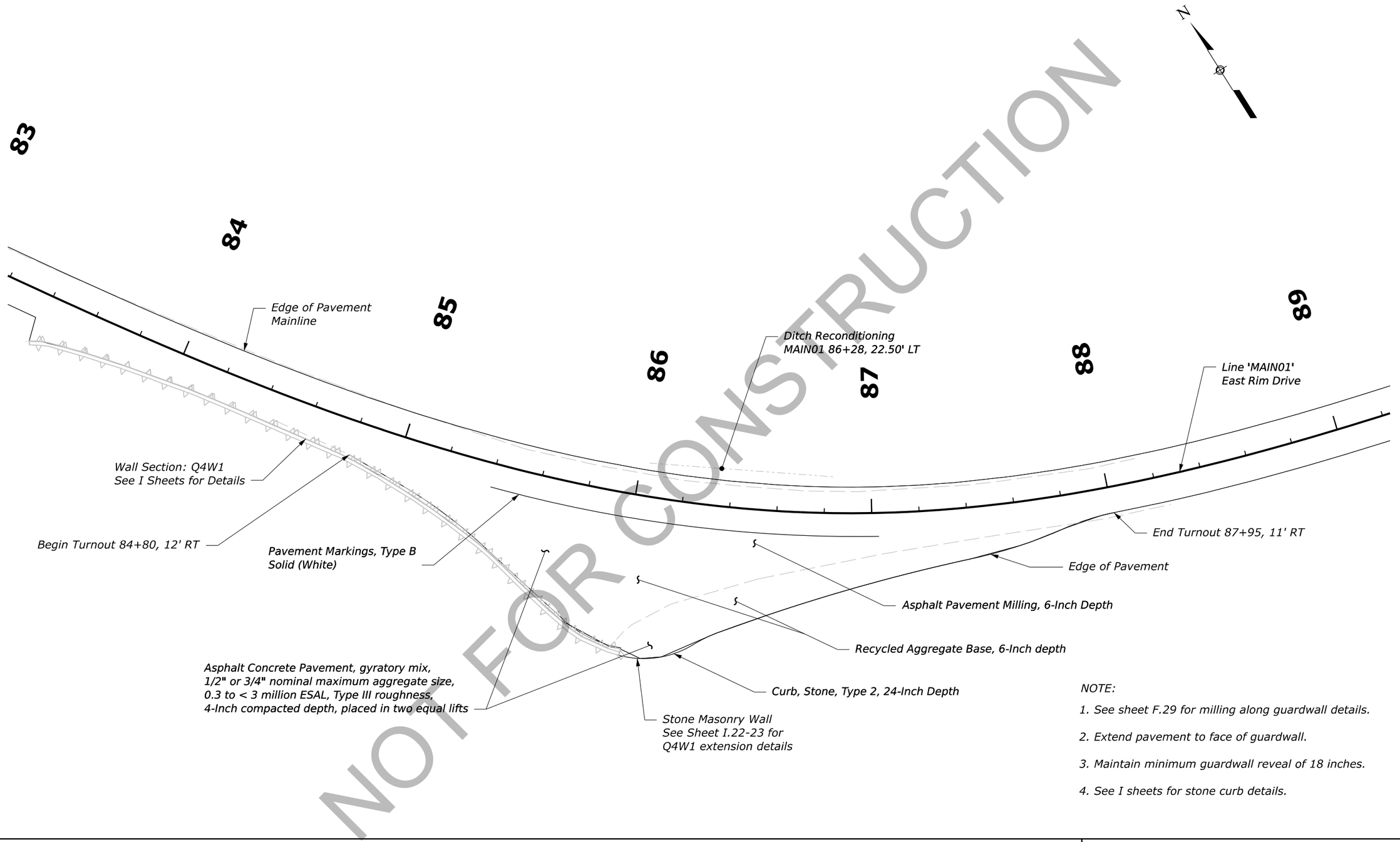
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.4



NOTE:

1. See sheet F.29 for milling along guardwall details.
2. Extend pavement to face of guardwall.
3. Maintain minimum guardwall reveal of 18 inches.
4. See I sheets for stone curb details.

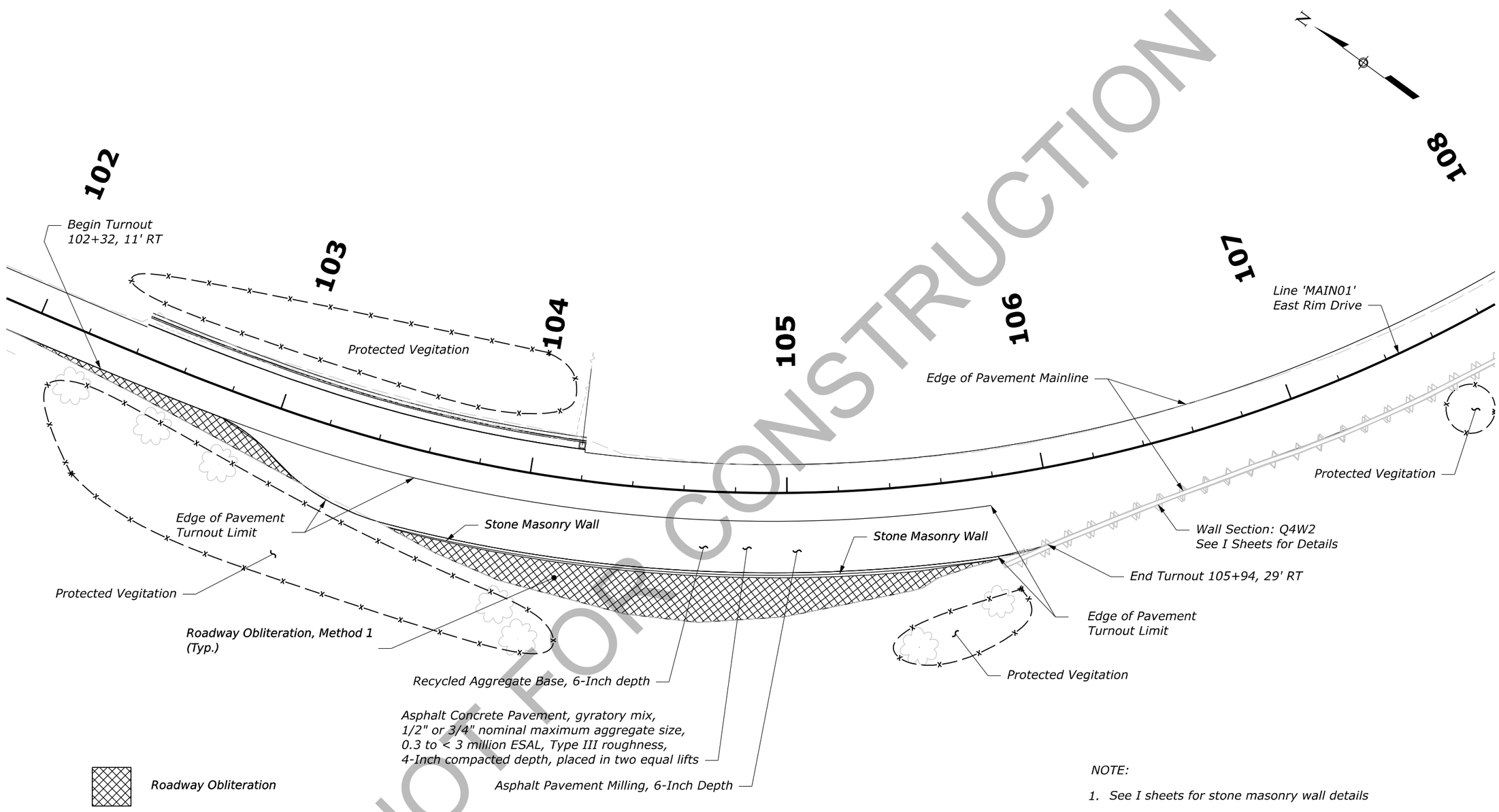
NOT FOR CONSTRUCTION

TURNOUT 86+00
PALISADES OVERLOOK

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn {86+00 Palisades Overlook [Sheet]}
24 March 2021 9:49 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.5



NOTE:

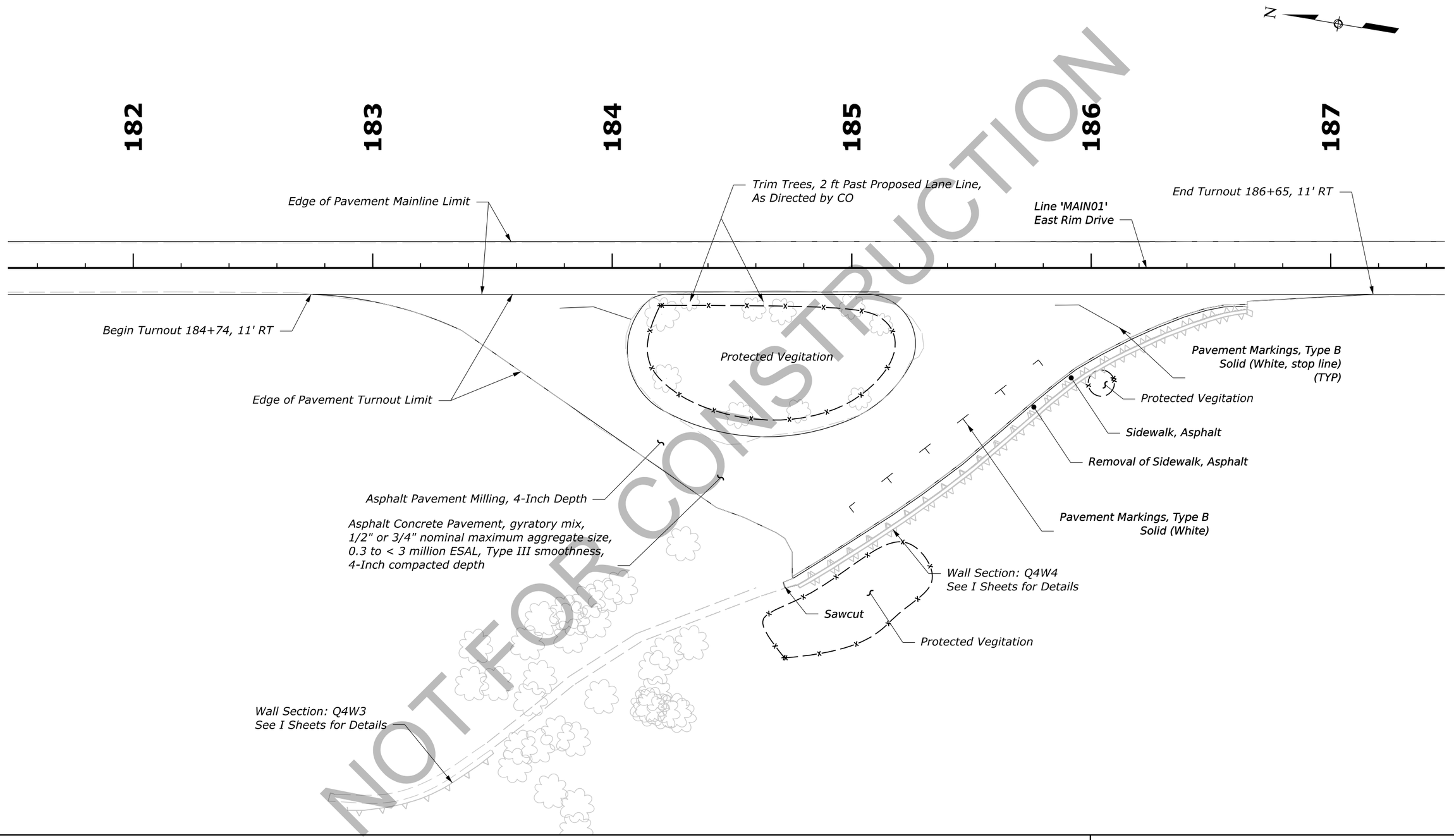
1. See I sheets for stone masonry wall details

NOT FOR CONSTRUCTION

TURNOUT 104+50
PALISADES POINT

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [104+50 Palisades Point [Sheet]]
24 March 2021 10:07 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.6



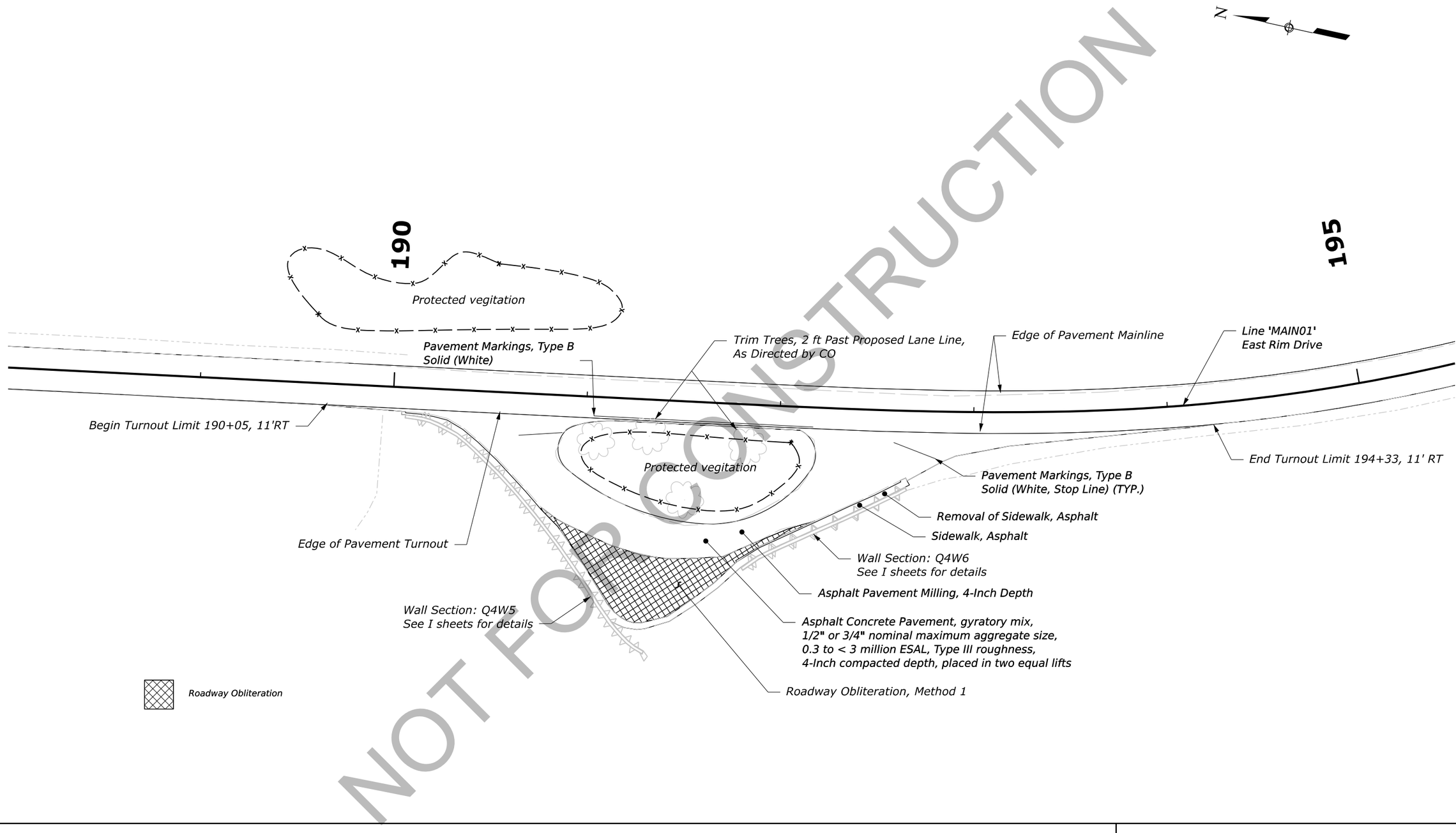
NOT FOR CONSTRUCTION

TURNOUT 184+50
LOWER GROTTO COVE

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [184+50 Lower Grotto Cove [Sheet]]
24 March 2021 9:51 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.7



NOT FOR CONSTRUCTION

C:\Users\jennifer.longmore\Desktop\Exported from PW\cfa01301_Turnout_Plans_F_Sheets_F3_F.31.dgn [191+00 Upper Grotto Cove [Sheet]]

24 March 2021 10:07 AM

TURNOUT 191+00
UPPER GROTTO COVE

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.8

225

230

Protected Vegitation

Edge of Pavement Mainline Limit

Line 'MAIN01'
East Rim Drive

Begin Turnout
223+68, 11' RT

End Turnout
230+27, 11' RT

Edge of Pavement Turnout Limit

Conserve and Place Boulder (Typ.)

Pavement Markings, Type B
Solid (White, Stop Line) (Typ.)

Pavement Markings, Type B Solid (White)

Asphalt Concrete Pavement, gyratory mix,
1/2" or 3/4" nominal maximum aggregate size,
0.3 to < 3 million ESAL, Type III roughness,
4-Inch compacted depth, placed in two equal lifts

Asphalt Pavement Milling, 4-Inch Depth

Protected Vegitation

Protected Vegitation

Removal of Sidewalk, Asphalt

Sidewalk, Asphalt

Pavement Markings, Tybe B,
Accessibility Symbol

Sawcut

Install sign system
see K sheets for sign details

Wall Section: Q4W7
See I sheets for details

Minor Concrete Pavement Plain, 6-Inch Depth

Pavement Markings, Type B
Solid (White) (Typ.)

Remove and Reset Stone Masonry (Curb)

Replanting by Park Crews

Special Clearing and Grubbing

Placing Conserved Topsoil, 2-Inch depth

Conserve and Place Boulder
As Directed by CO

N

NOTE:

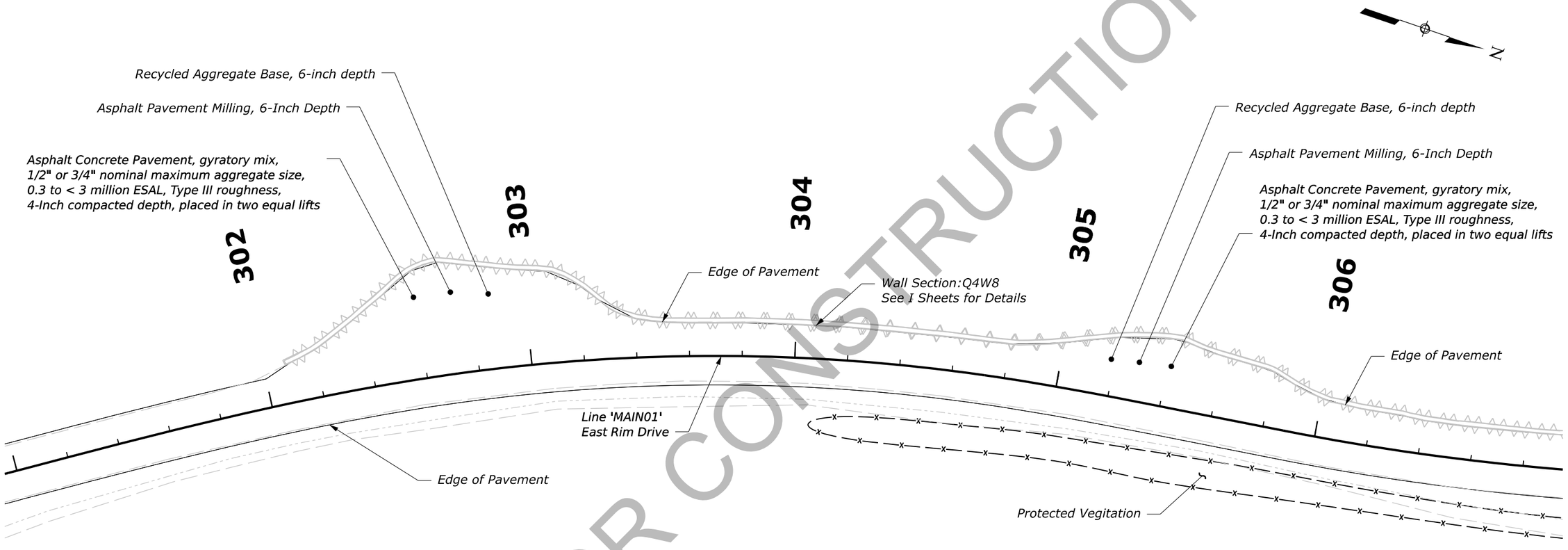
1. See sheet F.38 for accessible parking space grading details

NOT FOR CONSTRUCTION

TURNOUT 227+00
SKELLHEAD

C:\Users\jennifer.longmore\Desktop\Exported from PW\cfa01301_Turnout_Plans_F_Sheets_F3_F.31.dgn [227+00 Skellhead [Sheet]]
24 March 2021 10:06 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.9



NOTE:

1. See sheet F.29 for milling along guardwall details.

2. Extend pavement to face of guardwall.

3. Maintain minimum guardwall reveal of 18 inches.

NOT FOR CONSTRUCTION

TURNOUT 302+00
SCOTT BLUFFS

C:\Users\jennifer.longmore\Desktop\Exported from PW\cfa01301_Turnout_Plans_F_Sheets_F3_F.31.dgn [302+00 Scott Bluffs [Sheet]]
24 March 2021 10:05 AM

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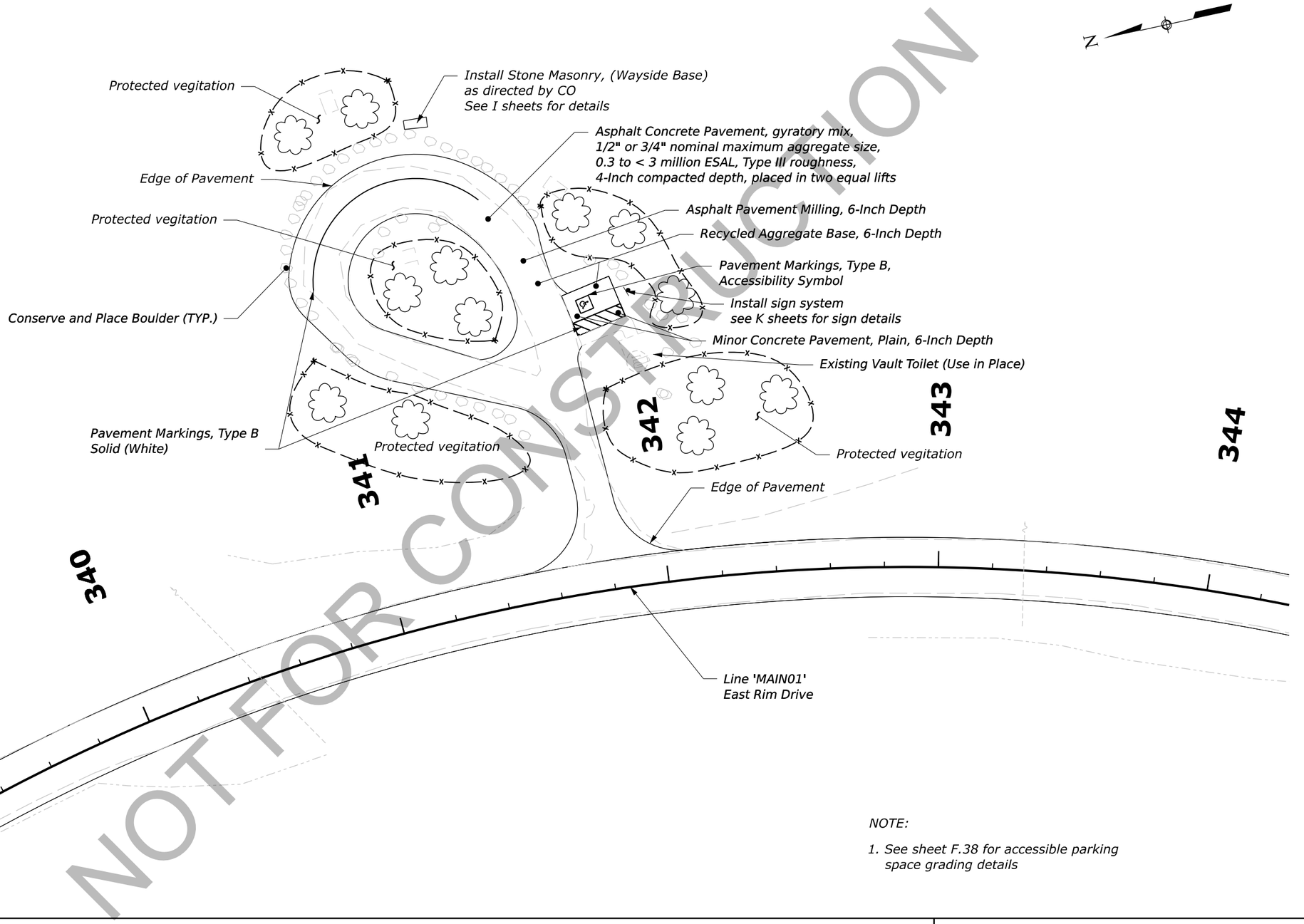
OR	NPS CRLA 13(1)	F.10



NOT FOR CONSTRUCTION

NOTE:

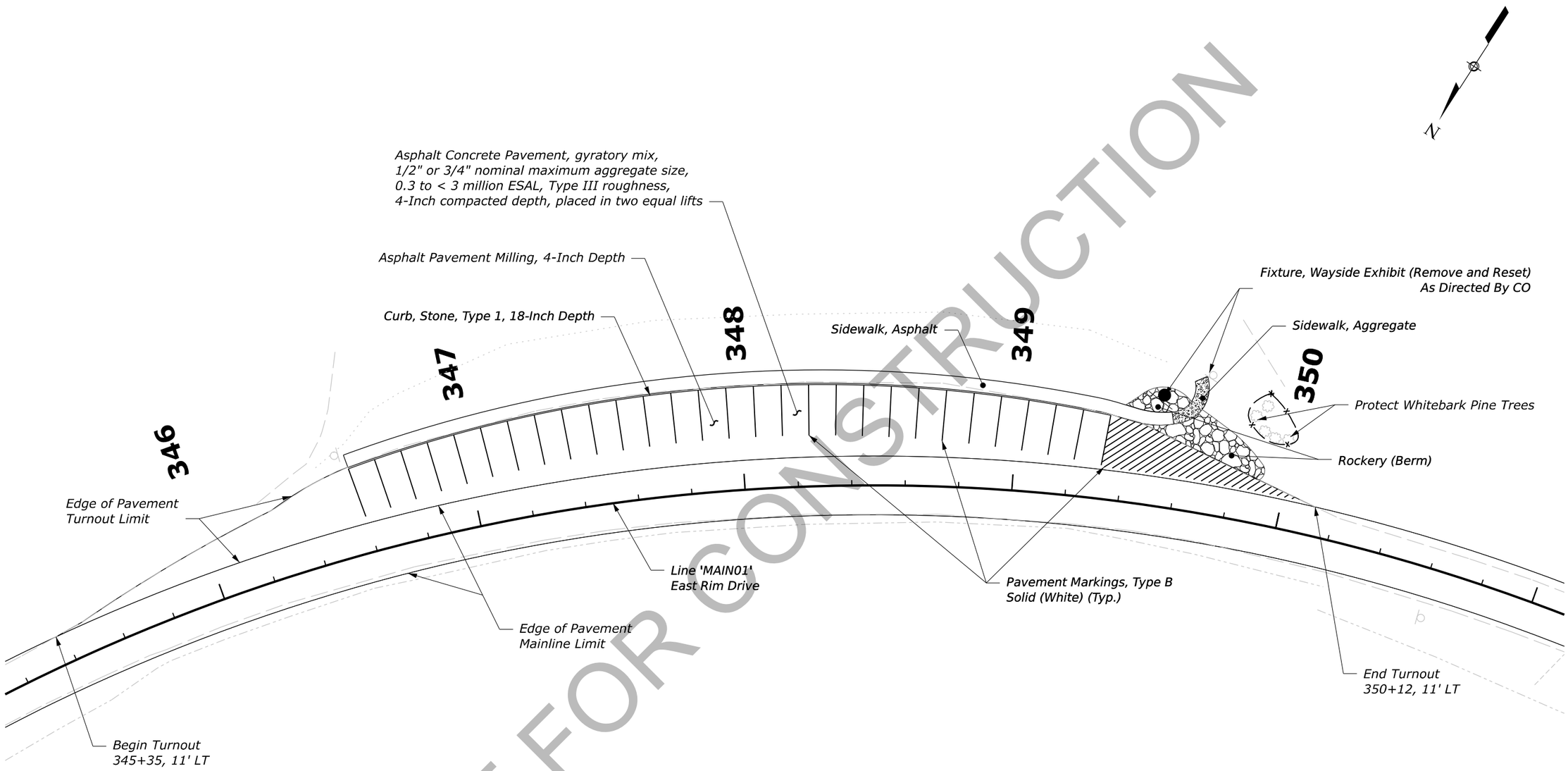
1. *See sheet F.38 for accessible parking space grading details*

TURNOUT 341+75
WHITEBARK PICNIC AREA

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [341+75 Whitebark Picnic Area-1 [Sheet]]
12 April 2021 1:41 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.11



NOT FOR CONSTRUCTION

NOTE:

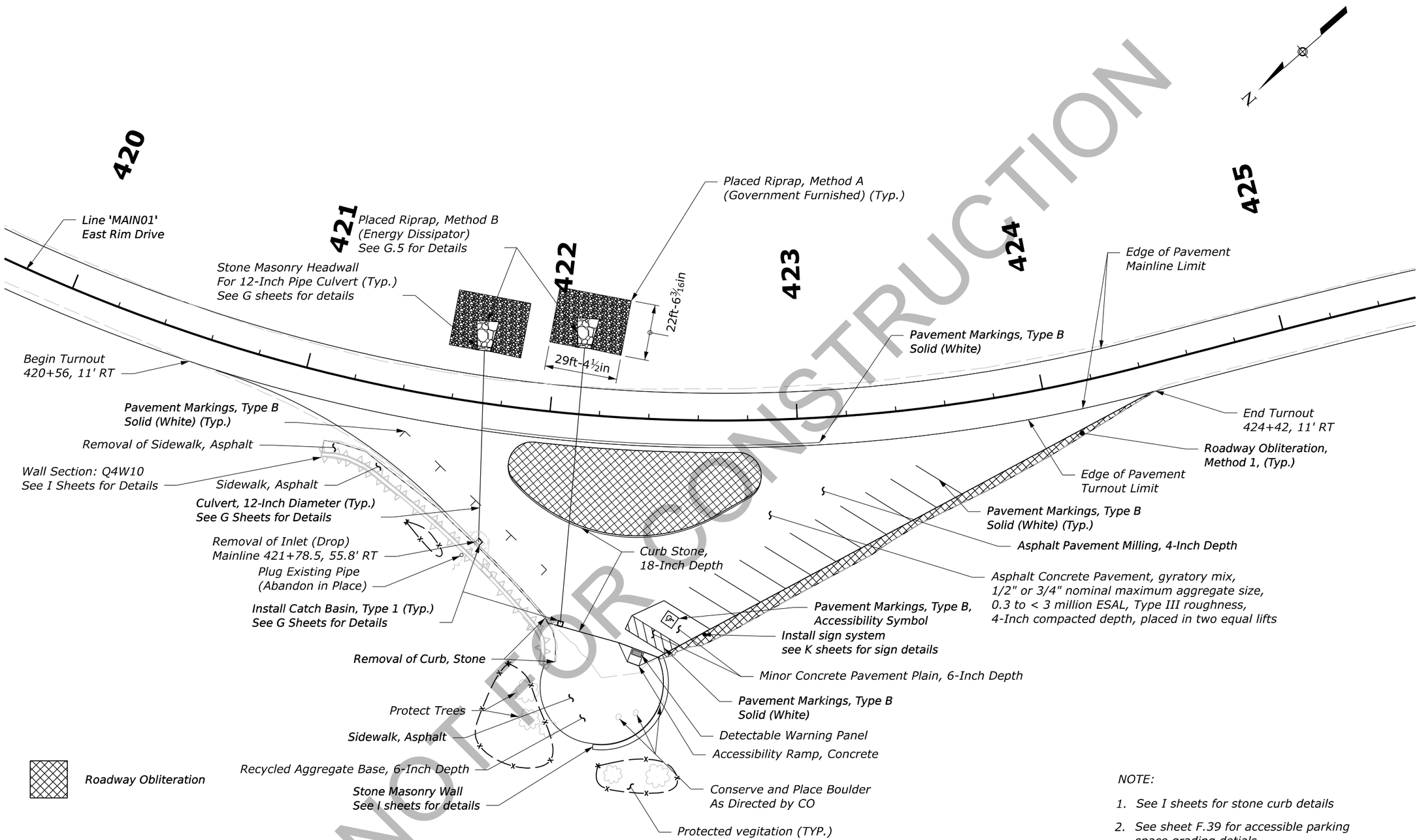
1. See I sheets for stone curb details

TURNOUT 348+00
MT. SCOTT TRAILHEAD

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [348+00 Mt Scott Trailhead (Sheet)]
24 March 2021 10:10 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.12



NOTE:

1. See I sheets for stone curb details
2. See sheet F.39 for accessible parking space grading detials

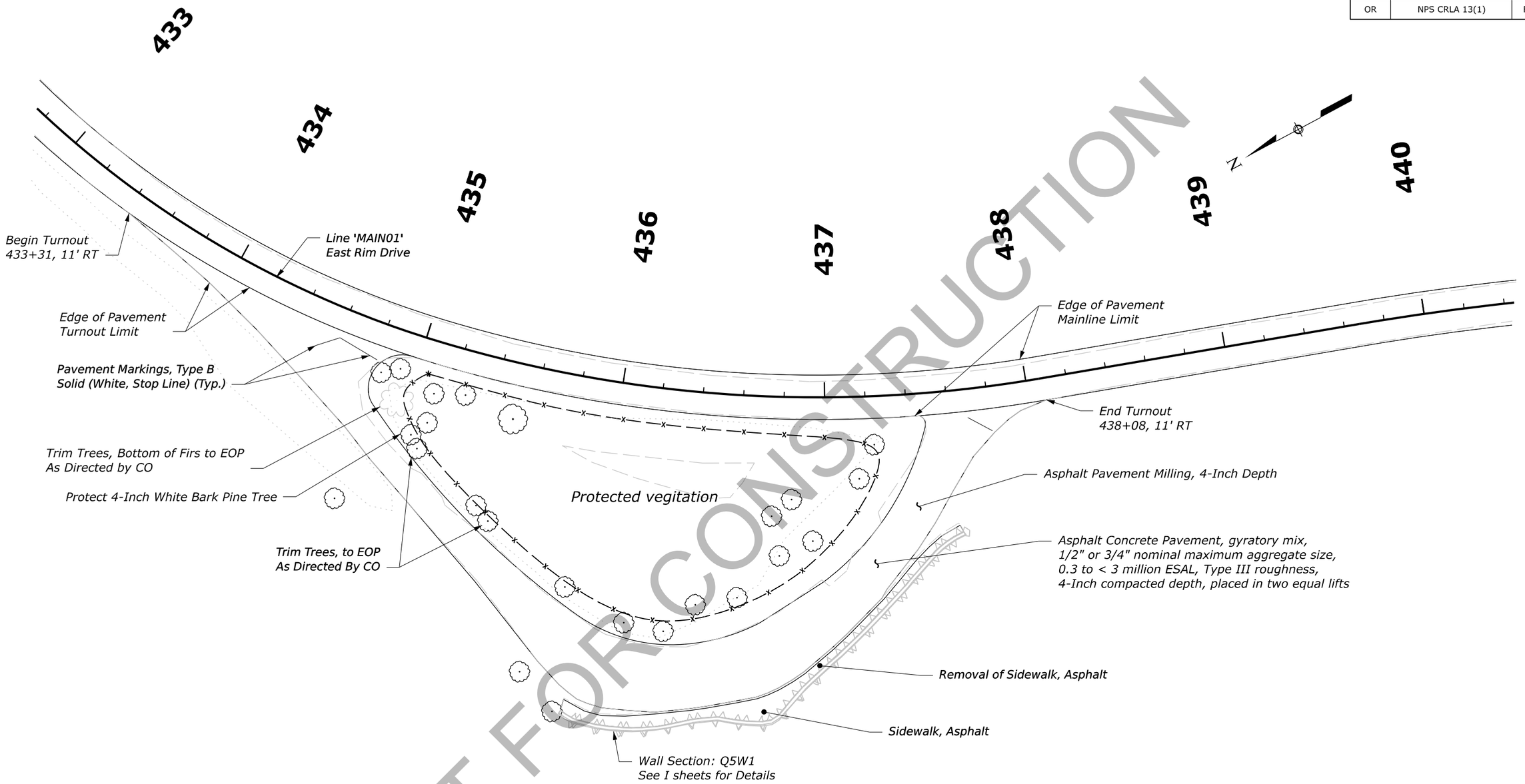
NOT FOR CONSTRUCTION

TURNOUT 422+50
PUMICE CASTLE OVERLOOK

C:\Users\jennifer.longmore\Desktop\Exported from PW\cra01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [422+50 Pumice Castle Overlook [Sheet]]
24 March 2021 10:11 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.13



NOT FOR CONSTRUCTION

TURNOUT 436+00
SENTINEL ROCK OVERLOOK

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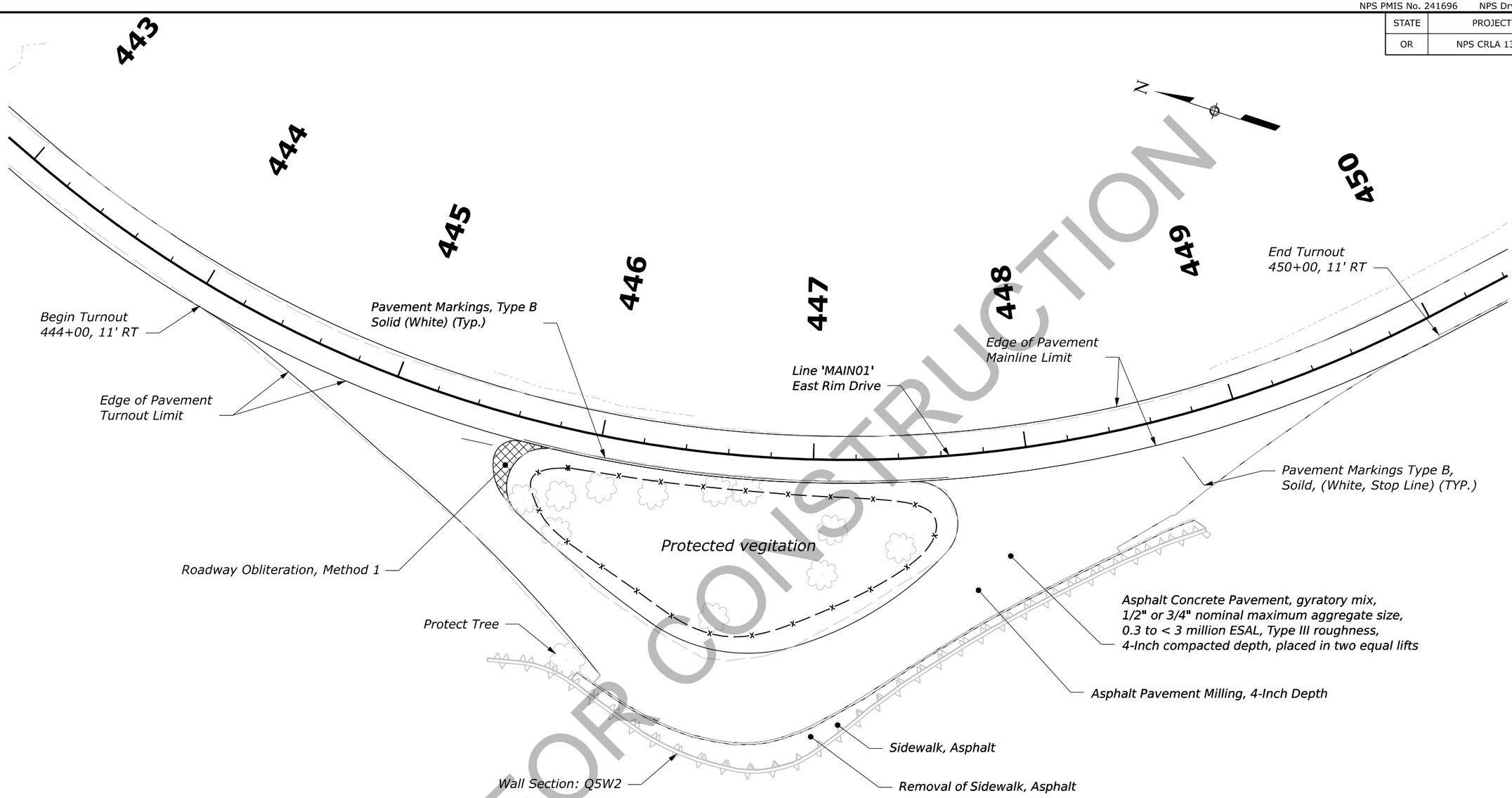
24 March 2021 10:13 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.14



NOT FOR CONSTRUCTION

TURNOUT 446+00
REFLECTION POINT

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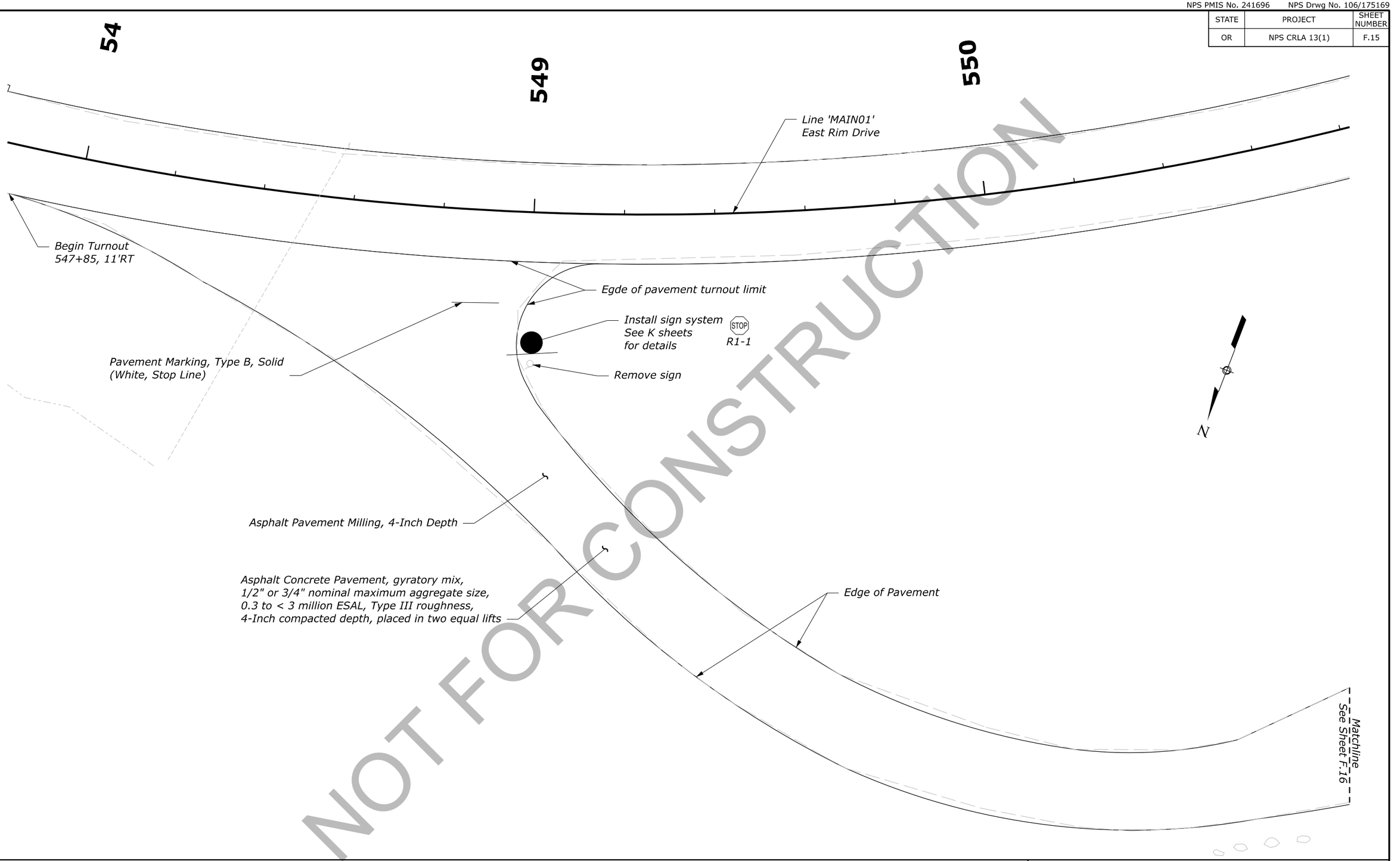
24 March 2021 10:25 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.15



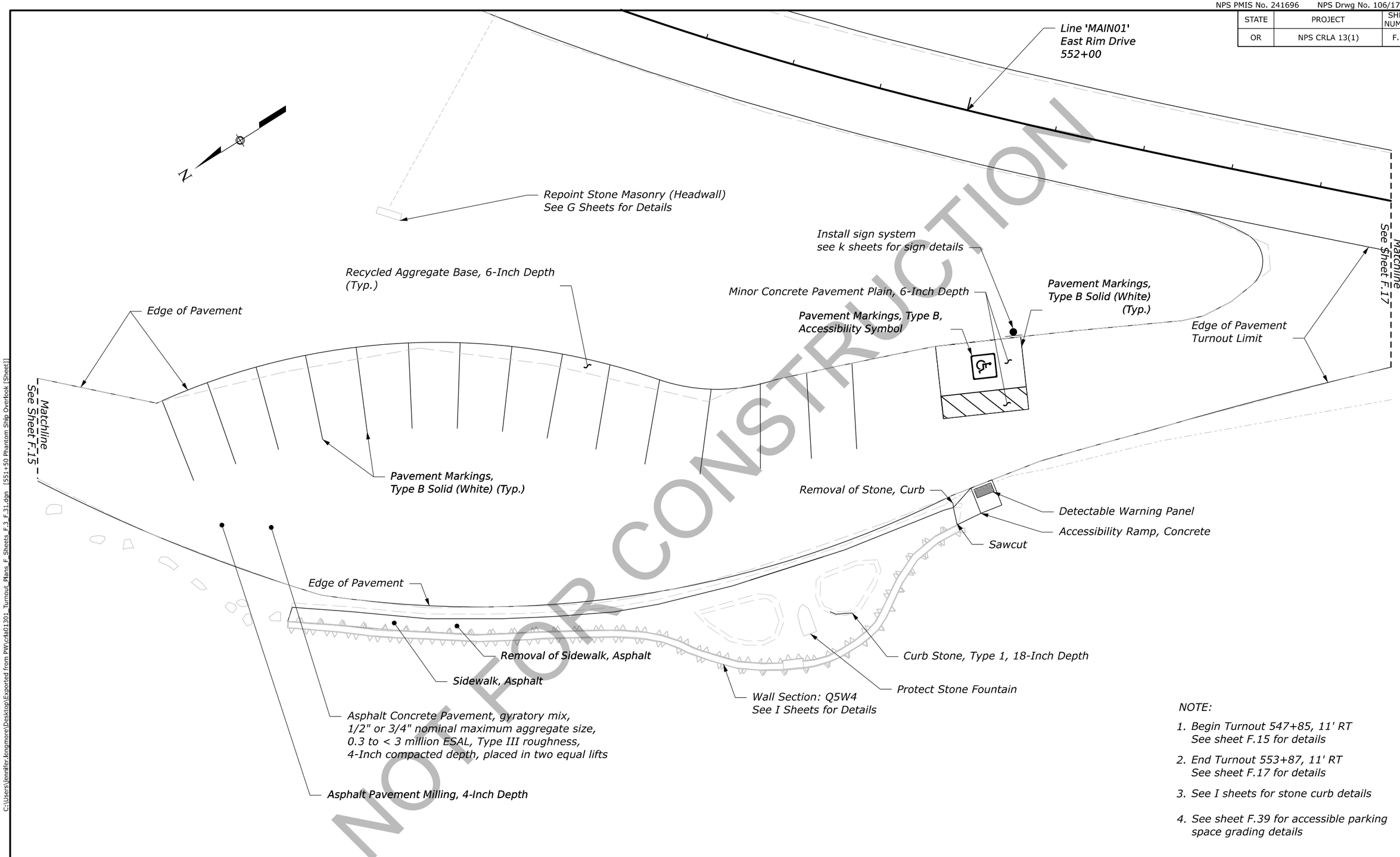
NOT FOR CONSTRUCTION

TURNOUT 551+50
PHANTOM SHIP OVERLOOK ENTRANCE

24 March 2021 10:25 AM C:\Users\jennifer.longmore\Desktop\Exported from PW\cfta01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [548+00 Phantom Ship Entrance (Sheet)]

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.16

NOT FOR CONSTRUCTION



NOTE:

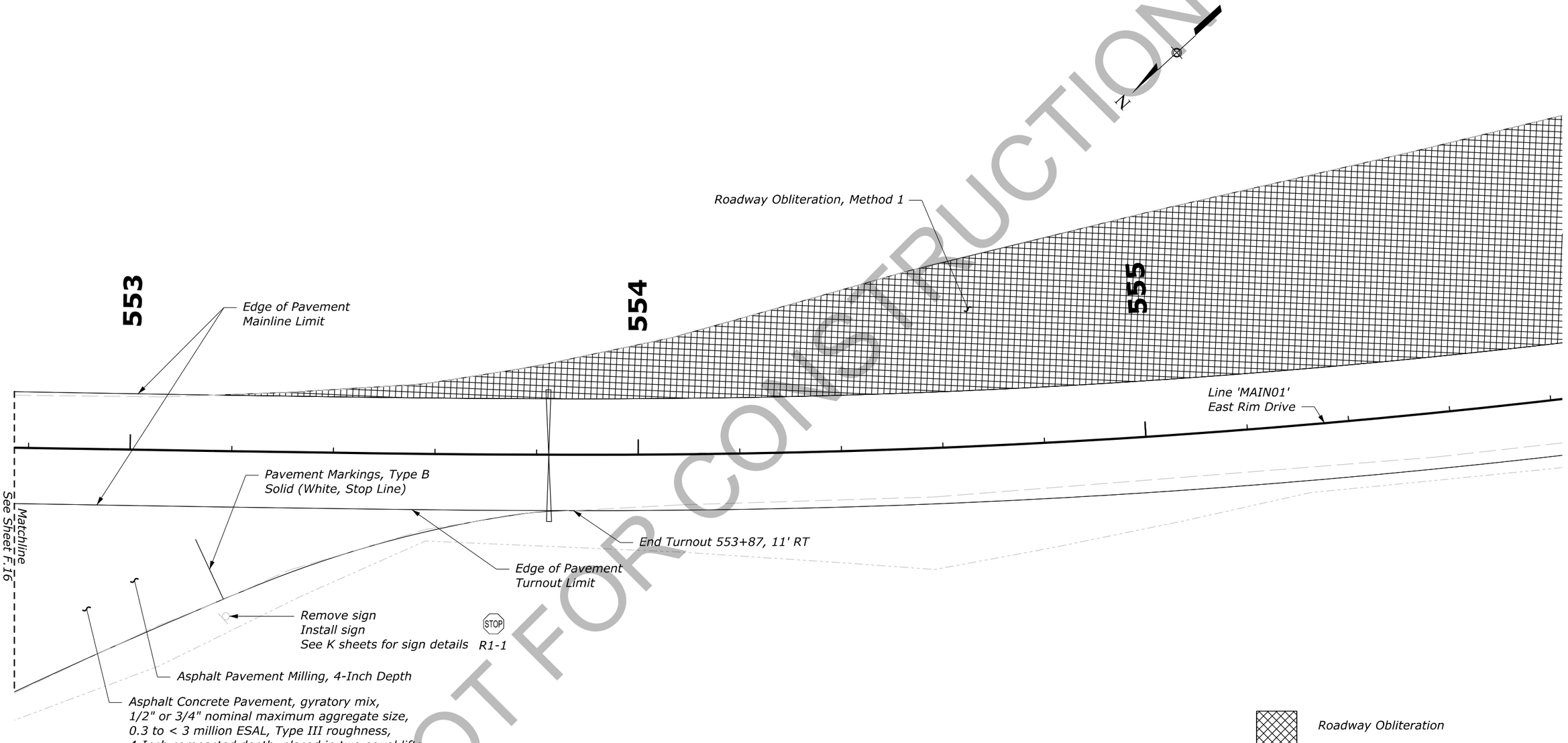
1. Begin Turnout 547+85, 11' RT
   See sheet F.15 for details
2. End Turnout 553+87, 11' RT
   See sheet F.17 for details
3. See I sheets for stone curb details
4. See sheet F.39 for accessible parking space grading details

TURNOUT 551+50
PHANTOM SHIP OVERLOOK

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [551+50 Phantom Ship Overlook [Sheet1]]
24 March 2021 10:15 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.17



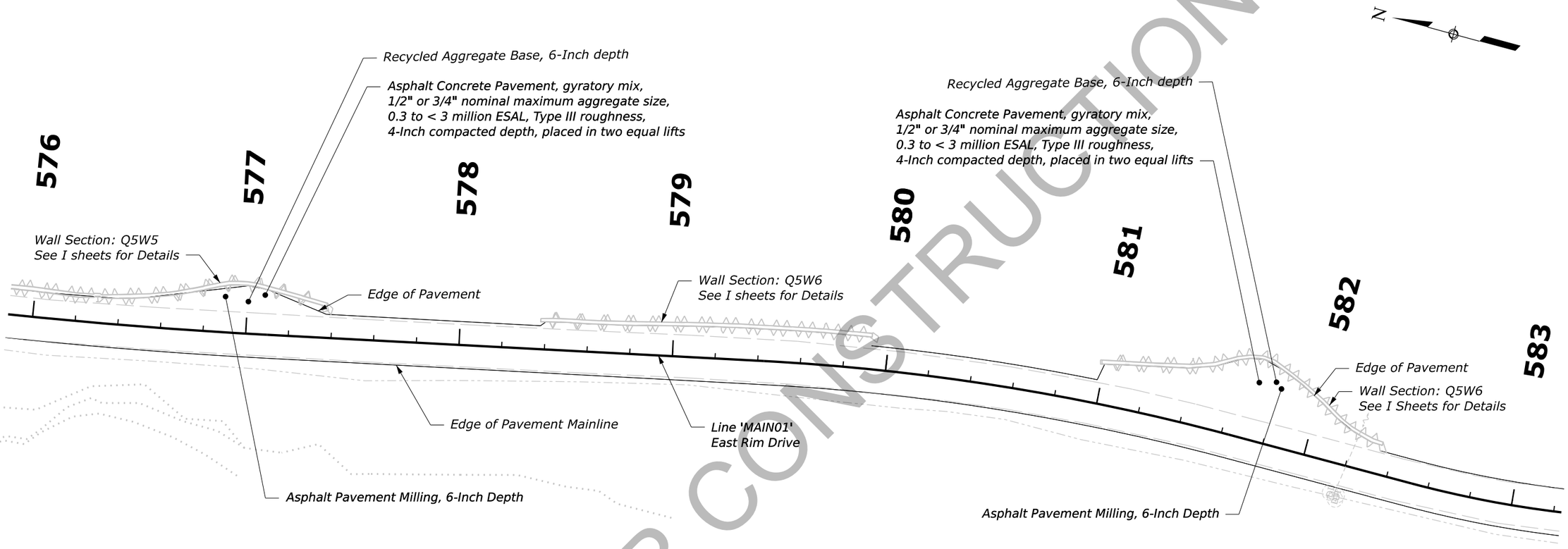
NOT FOR CONSTRUCTION

TURNOUT 551+50
PHANTOM SHIP OVERLOOK
EXIT

C:\Users\jennifer.longmore\Desktop\Exported from PW\crfa01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [553+00 Phantom Ship Exit [Sheet]]
24 March 2021 10:15 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.18



NOT FOR CONSTRUCTION

NOTE:

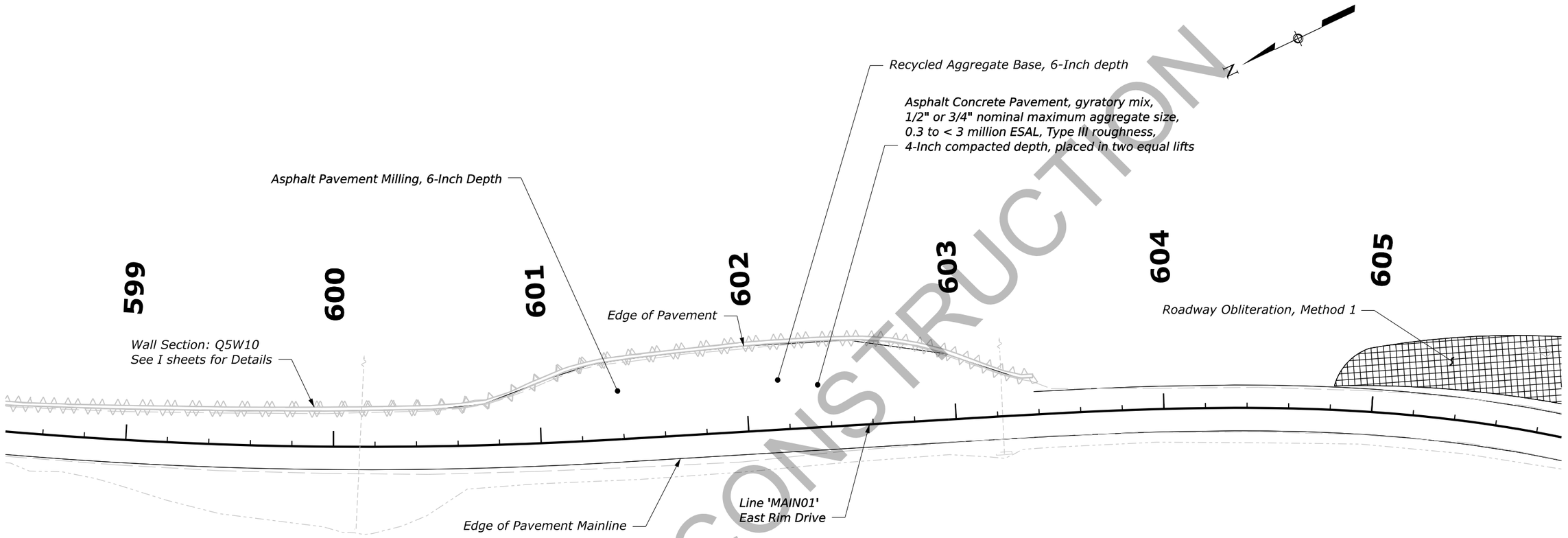
1. See sheet F.29 for milling along guardwall details.
2. Extend pavement to face of guardwall.
3. Maintain minimum guardwall reveal of 18 inches.

TURNOUT 581+63

C:\Users\jennifer.longmore\Desktop\Exported from PW\cfda01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [581+63 [Sheet]]
24 March 2021 10:15 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.19



Roadway Obliteration

NOTE:

1. *See sheet F.29 for milling along guardwall details.*
2. *Extend pavement to face of guardwall.*
3. *Maintain minimum guardwall reveal of 18 inches.*

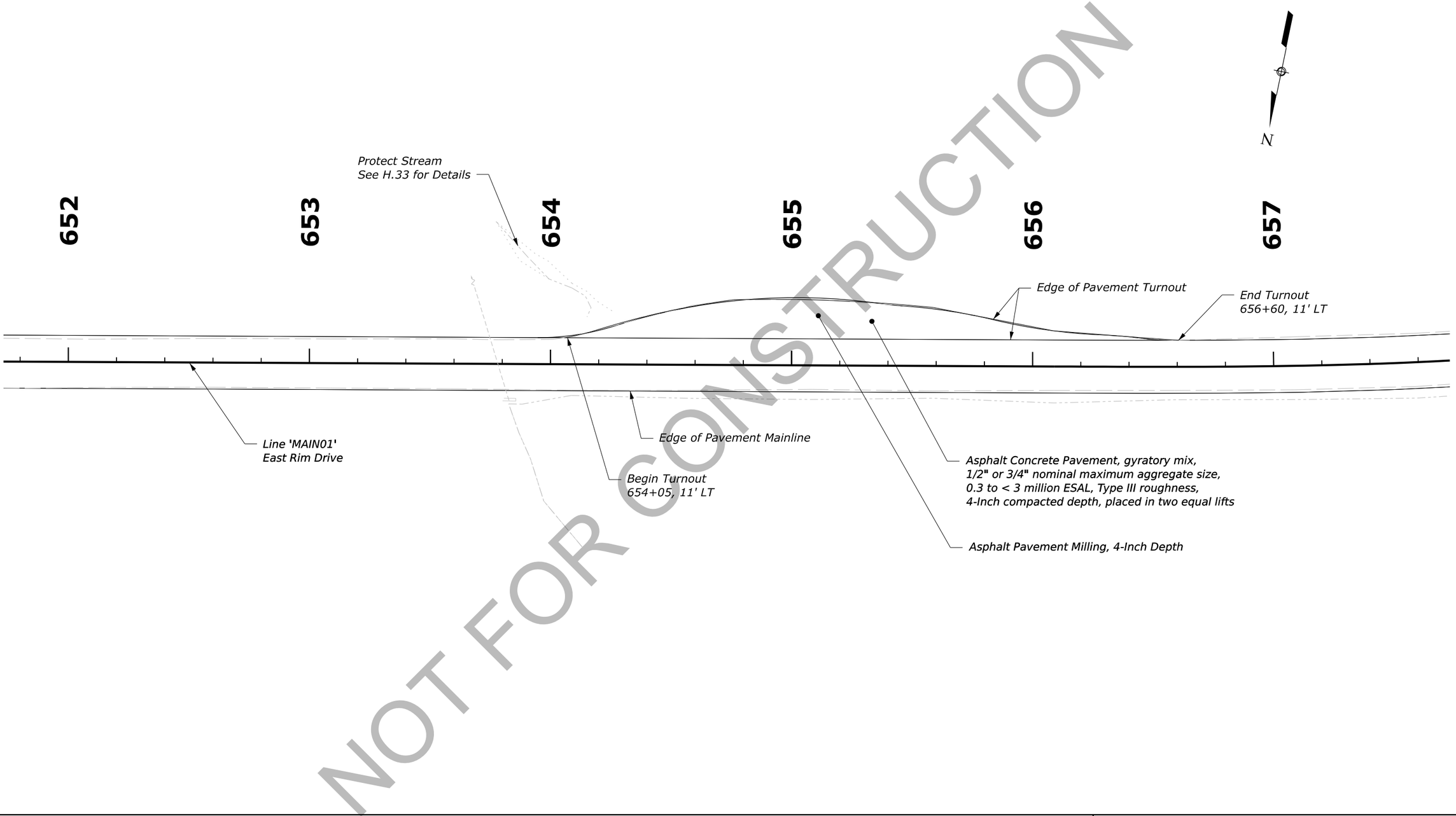
NOT FOR CONSTRUCTION

TURNOUT 602+00
UPPER DUTTON CLIFFS

C:\Users\jennifer.longmore\Desktop\Exported from PW\cfda01301_Turnout_Plans_F_Sheets_F3_F.31.dgn [602+00 Upper Dutton Cliffs [Sheet]]
24 March 2021 10:15 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.20

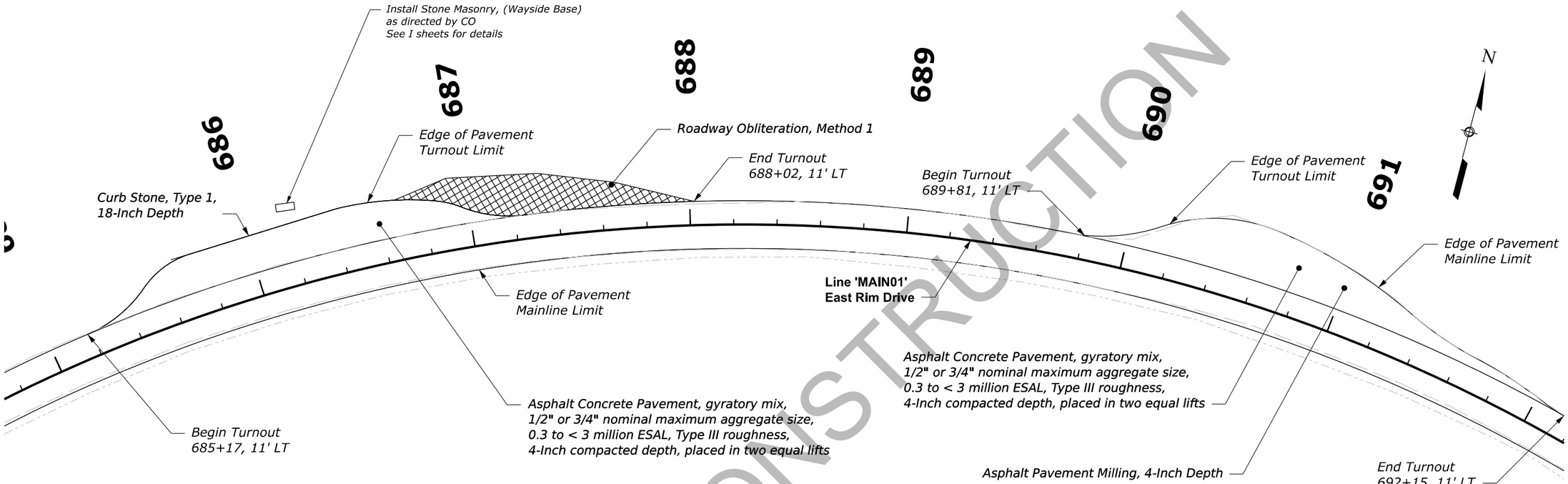


NOT FOR CONSTRUCTION

TURNOUT 655+00
KERR VALLEY VIEWPOINT

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [655+00 Kerr Valley View Point [Sheet]]
24 March 2021 10:15 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.21



Roadway Obliteration

NOTE:

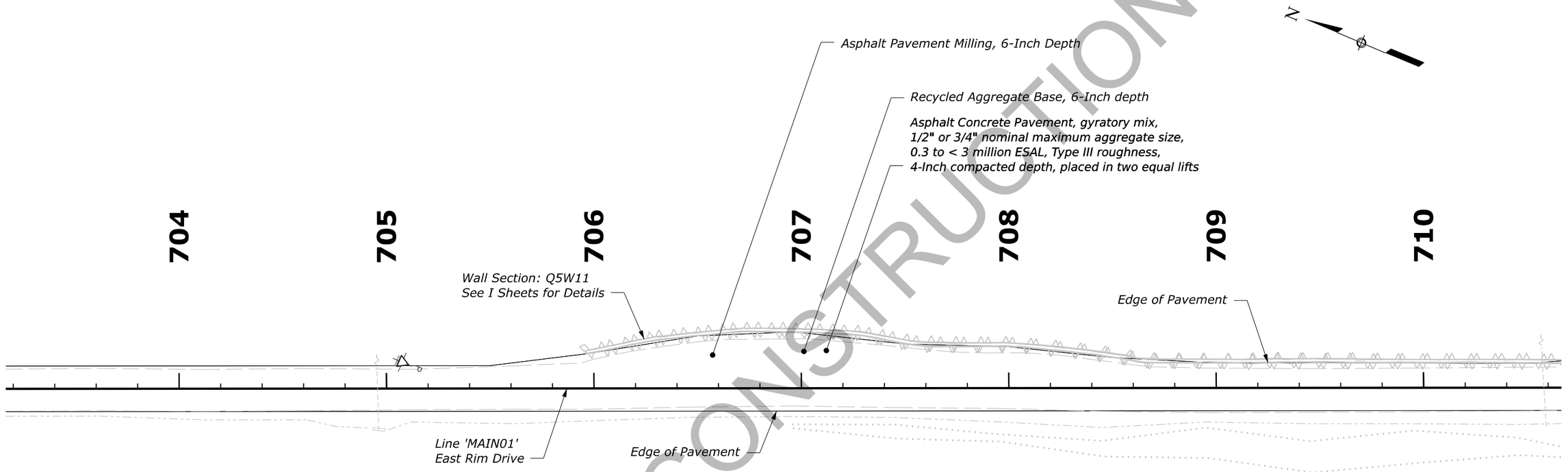
1. See I sheets for stone curb details

NOT FOR CONSTRUCTION

TURNOUTS 686+00
DUTTON RIDGE ROAD SUMMIT

C:\Users\jennifer.longmore\Desktop\Exported from PW\cfa01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [686+00 Dutton Ridge Road Summit [Sheet]]
12 April 2021 1:41 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.22



NOT FOR CONSTRUCTION

NOTE:

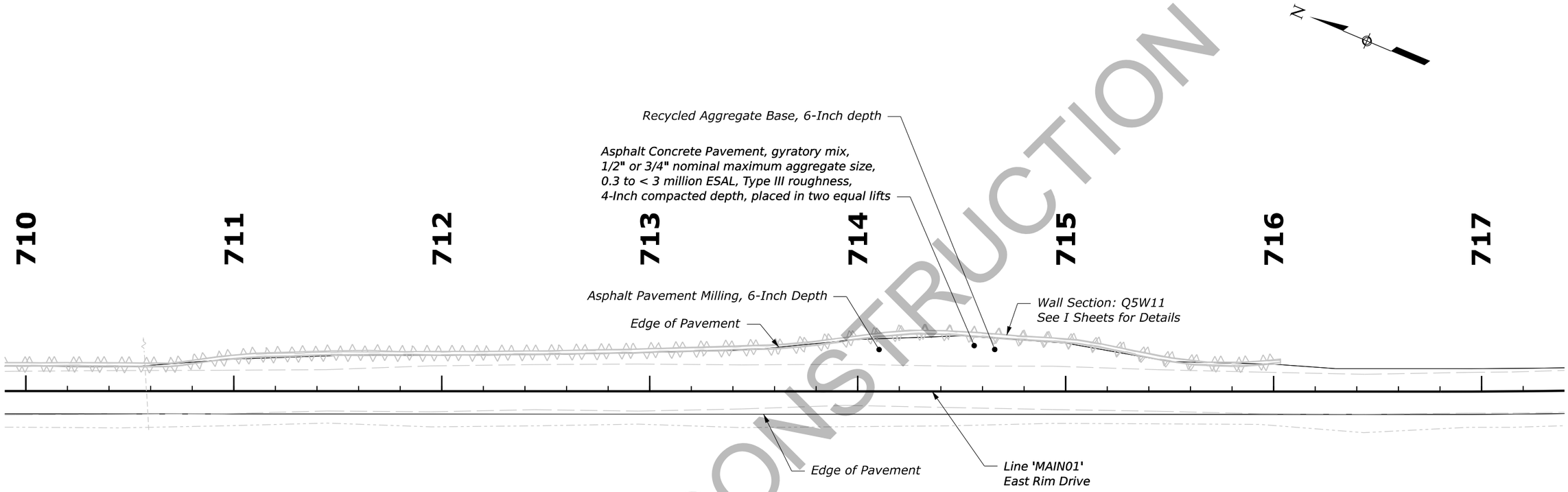
1. See sheet F.29 for milling along guardwall details.
2. Extend pavement to face of guardwall.
3. Maintain minimum guardwall reveal of 18 inches.

TURNOUT 707+00

C:\Users\jennifer.longmore\Desktop\Exported from PW\cfa01301_Turnout_Plans_F_Sheets_F3_F.31.dgn [707+00 [Sheet]]
24 March 2021 10:15 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.23



NOT FOR CONSTRUCTION

NOTE:

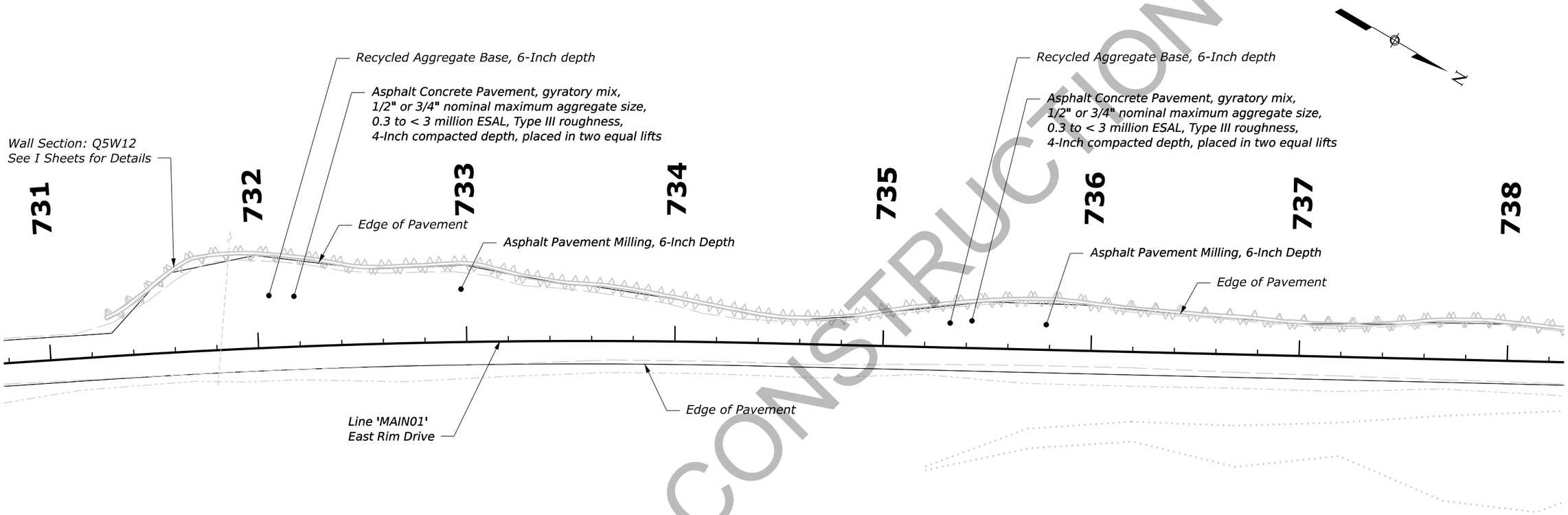
1. See sheet F.29 for milling along guardwall details.
2. Extend pavement to face of guardwall.
3. Maintain minimum guardwall reveal of 18 inches.

TURNOUT 714+00

24 March 2021 10:15 AM C:\Users\jennifer.longmore\Desktop\Exported from PW\cfa01301_Turnout_Plans_F_Sheets_F3_F.31.dgn [714+00 [Sheet]]

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.24



NOT FOR CONSTRUCTION

NOTE:

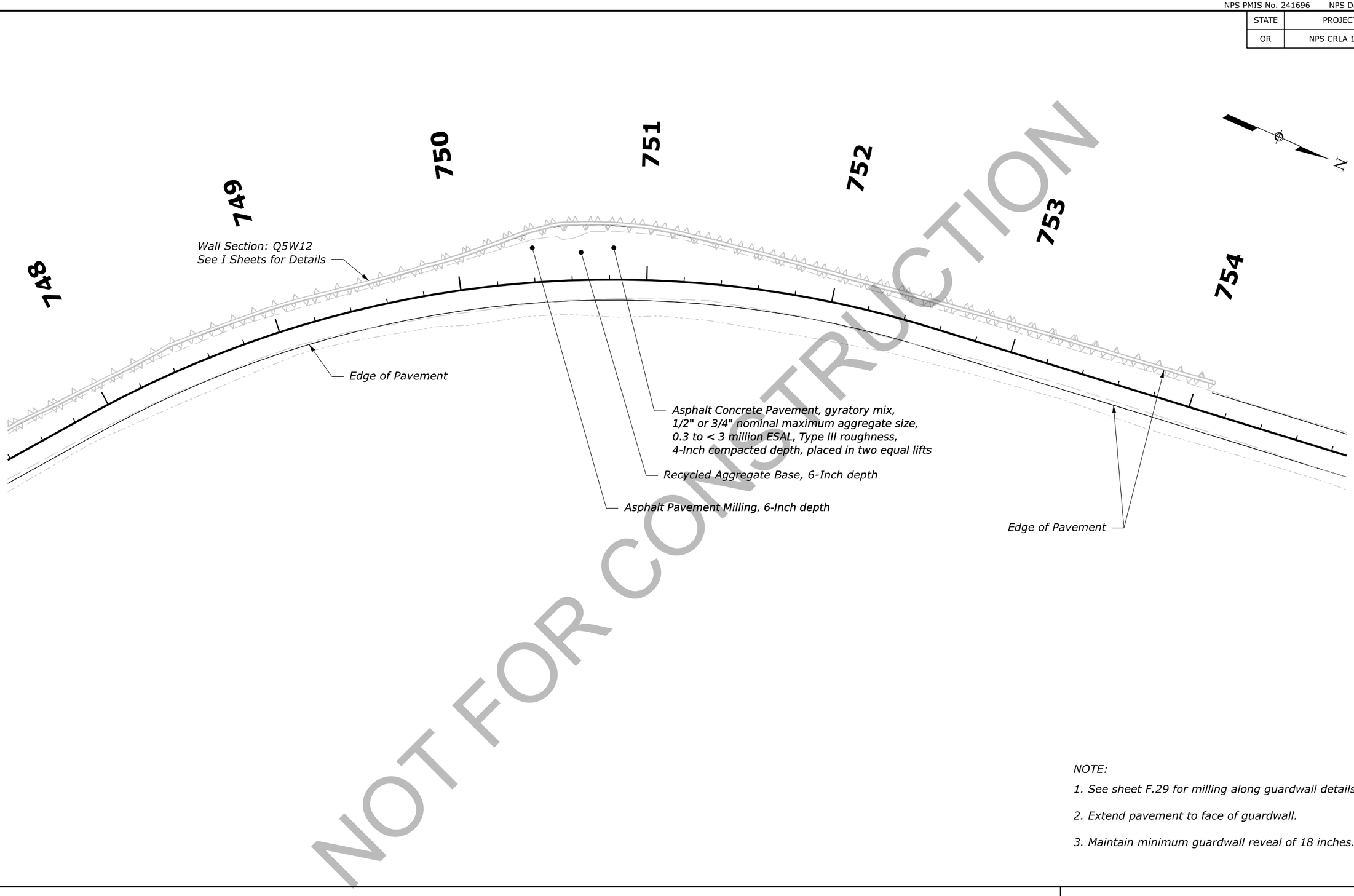
1. See sheet F.29 for milling along guardwall details.
2. Extend pavement to face of guardwall.
3. Maintain minimum guardwall reveal of 18 inches.

TURNOUTS 736+00

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [733+00 to 736+00 [Sheet]]
24 March 2021 10:15 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.25



NOT FOR CONSTRUCTION

NOTE:

1. See sheet F.29 for milling along guardwall details.
2. Extend pavement to face of guardwall.
3. Maintain minimum guardwall reveal of 18 inches.

TURNOUT 751+00

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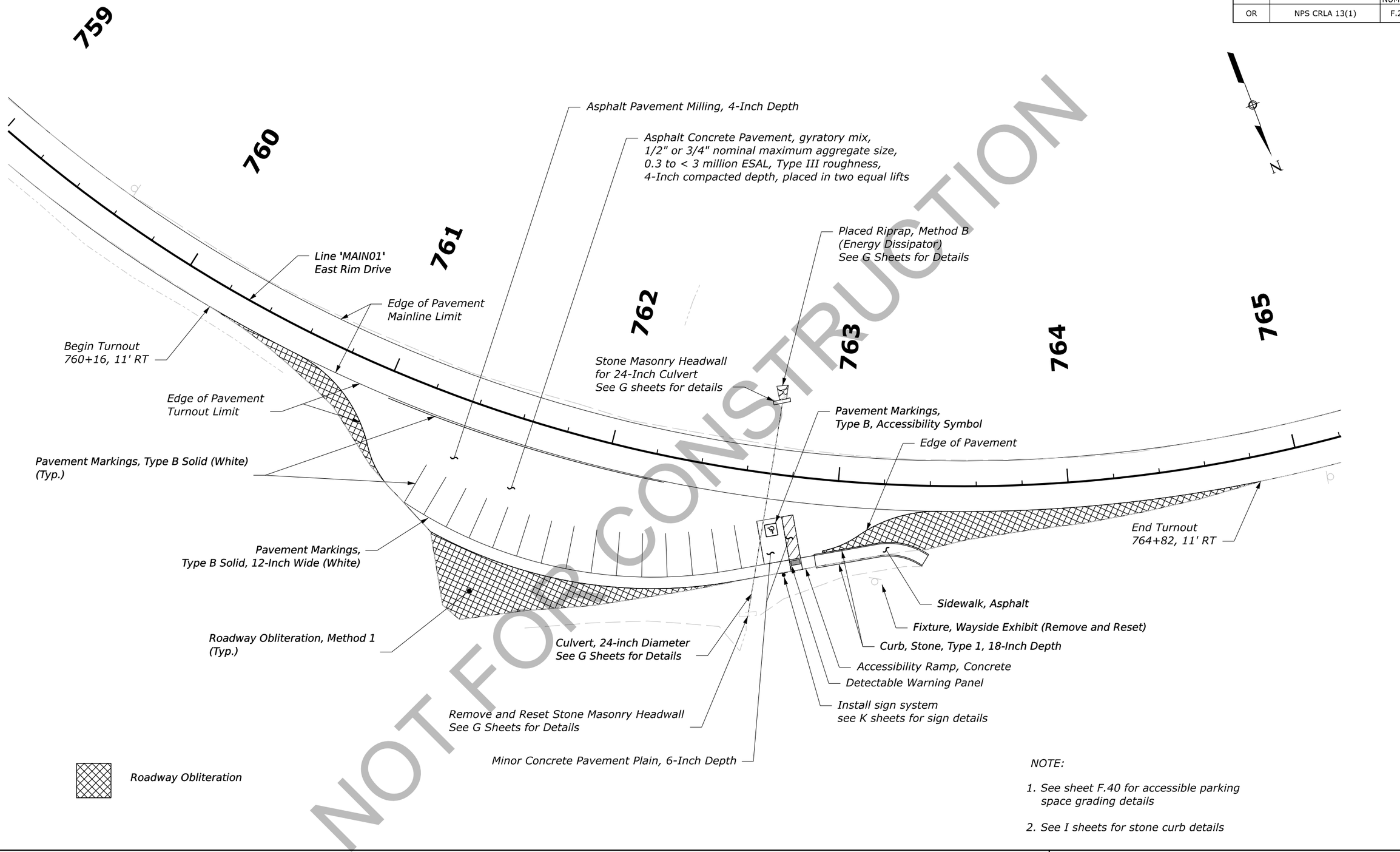
24 March 2021 10:15 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.26



NOT FOR CONSTRUCTION

NOTE:

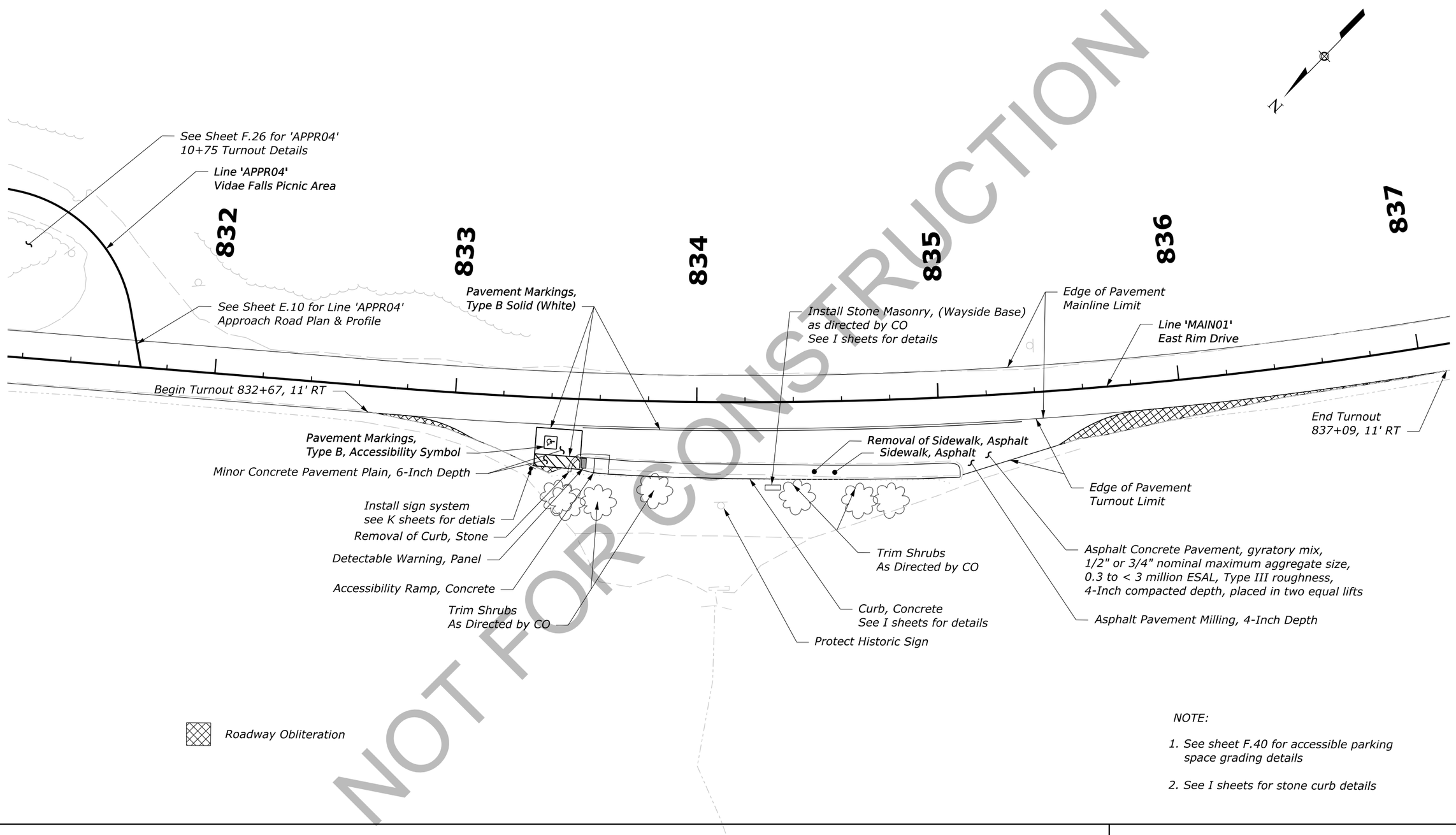
1. See sheet F.40 for accessible parking space grading details
2. See I sheets for stone curb details

TURNOUT 762+00
SUN NOTCH

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [762+00 Sun Notch [Sheet]]
24 March 2021 10:15 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.27



NOTE:

1. See sheet F.40 for accessible parking space grading details
2. See I sheets for stone curb details

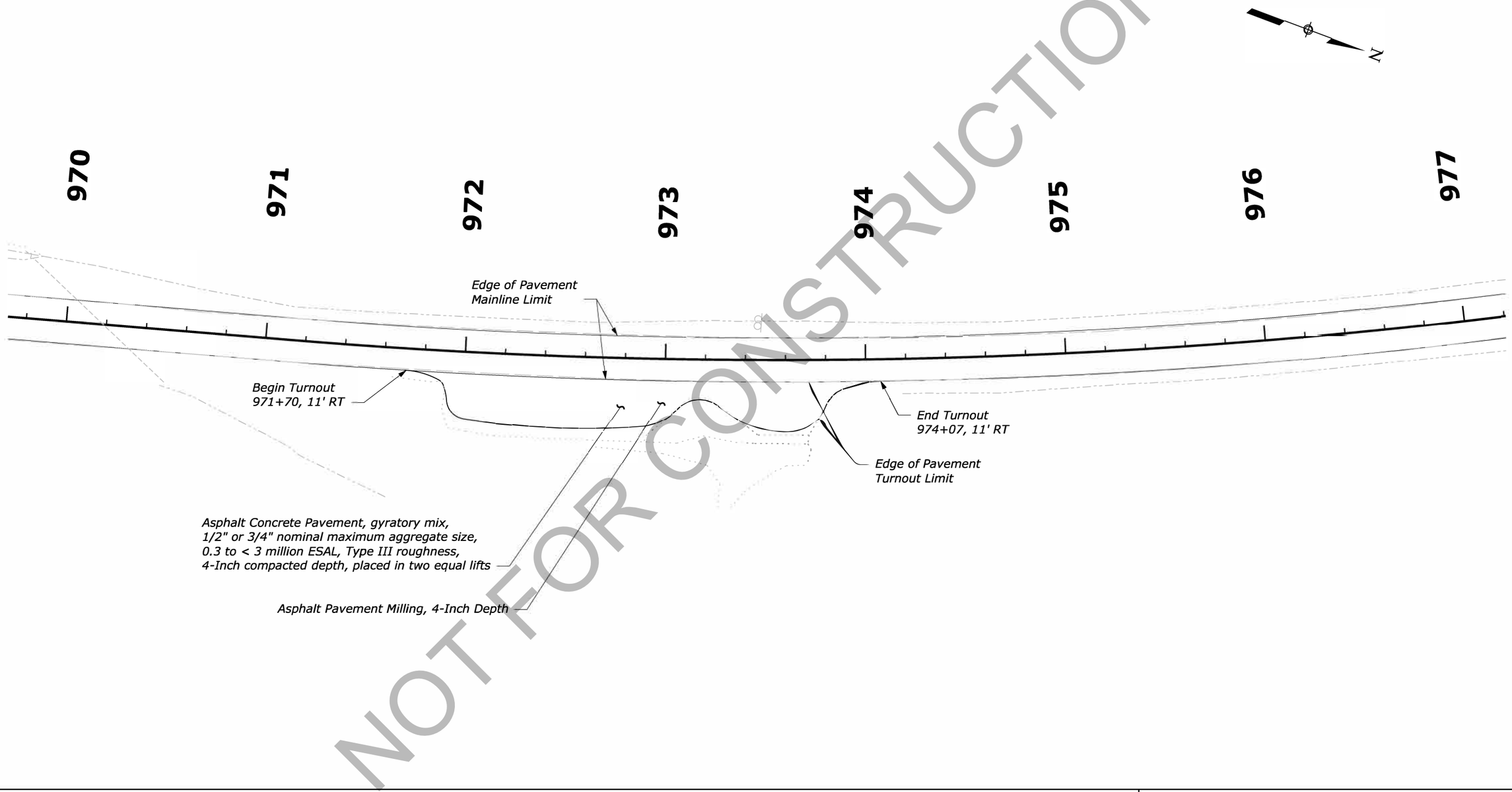
NOT FOR CONSTRUCTION

TURNOUT 834+00
VIDAE FALLS

C:\Users\Jennifer.longmore\Desktop\Exported from PW\cfa01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [834+00 Vidae Fall [Sheet]]
12 April 2021 1:43 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.28



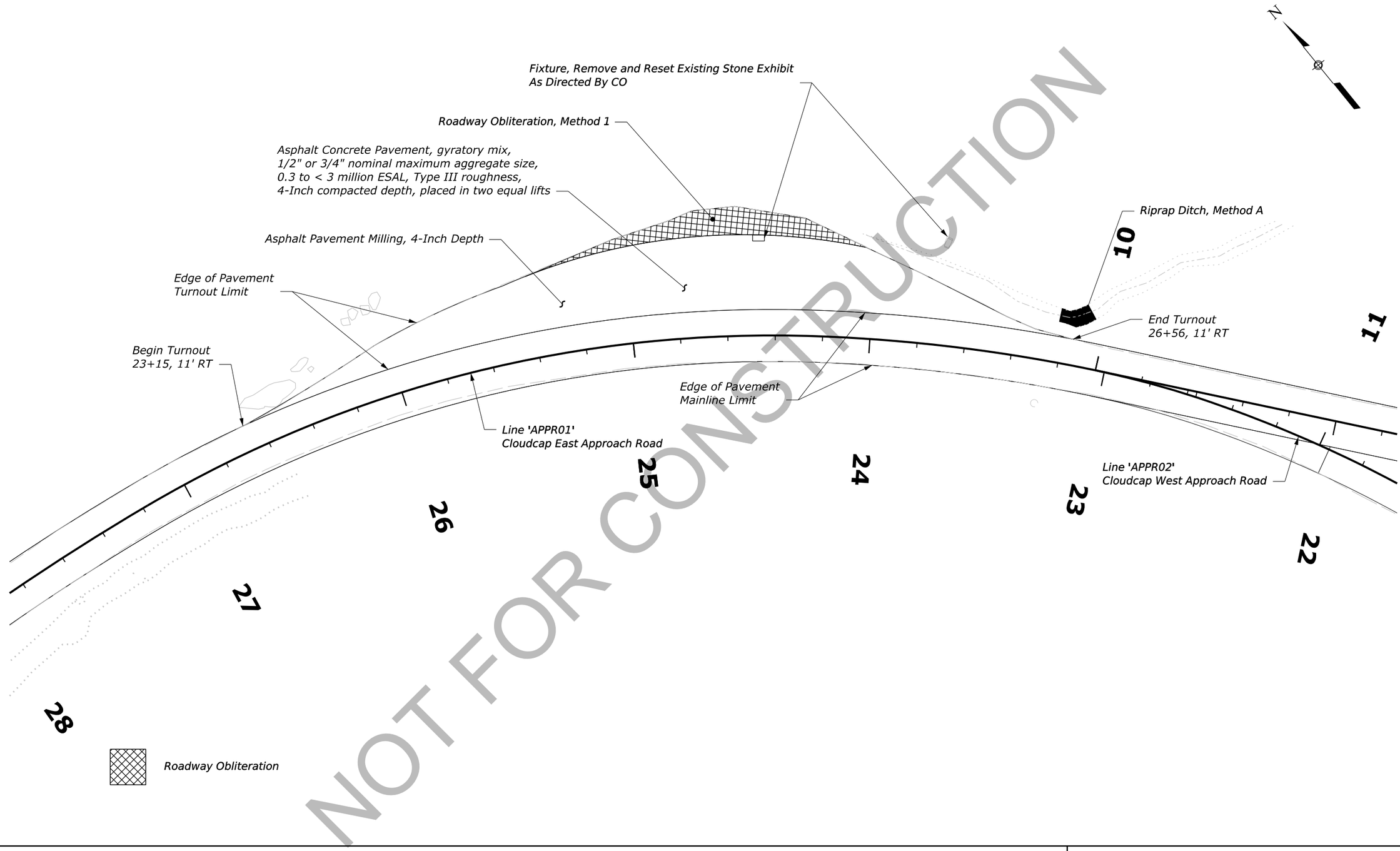
NOT FOR CONSTRUCTION

TURNOUT 973+00
CASTLE CREST

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [973+00 Castle Crest [Sheet]]
22 March 2021 1:58 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.29



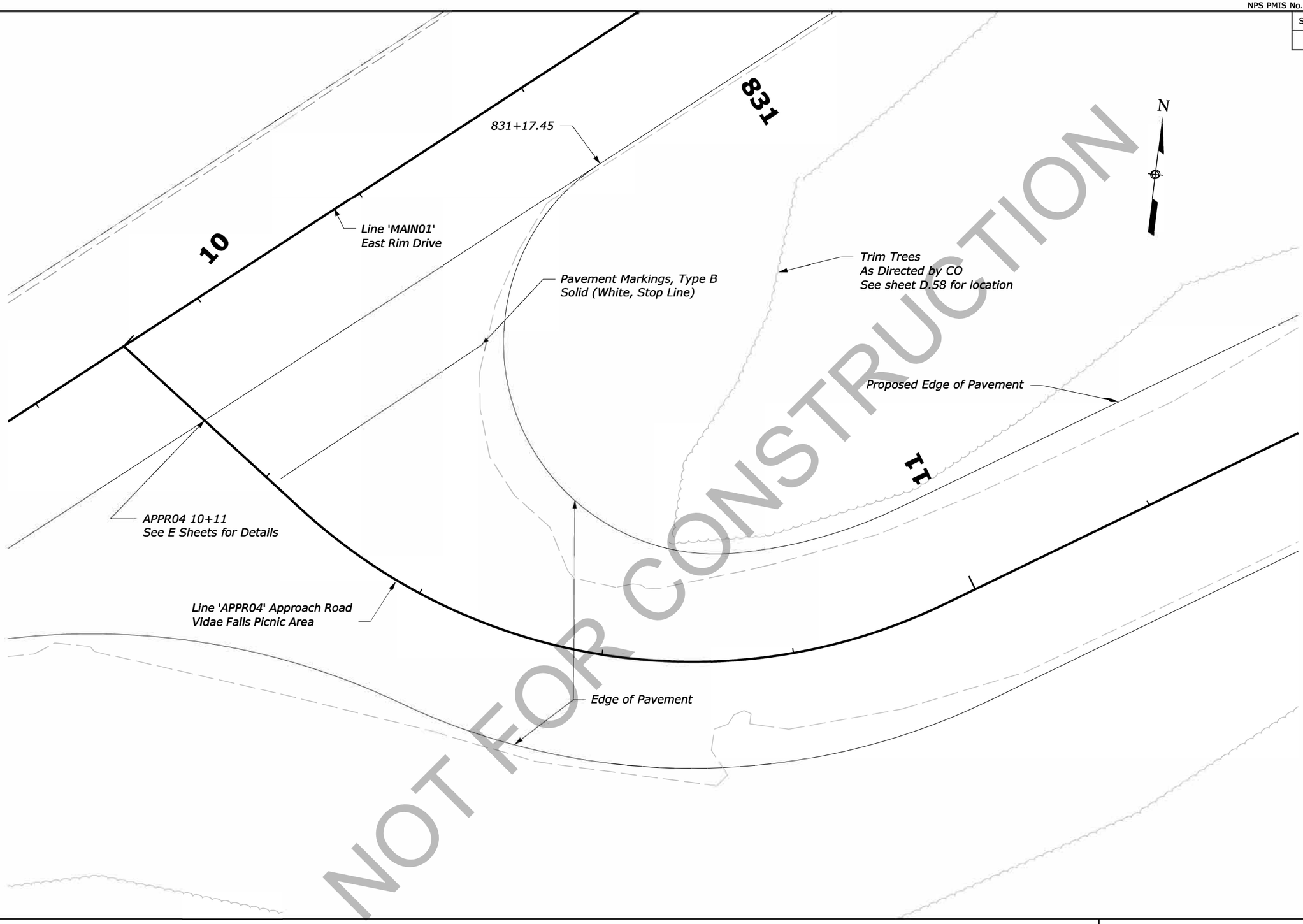
NOT FOR CONSTRUCTION

TURNOUT APPR01 24+50
MT. SCOTT OVERLOOK

C:\Users\Jennifer.Longmore\Desktop\Exported from PW\crla01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [24+50 Mt Scott Overlook (Sheet)]
24 March 2021 9:44 AM

NPS PMIS No. 241696 NPS Drawg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.30



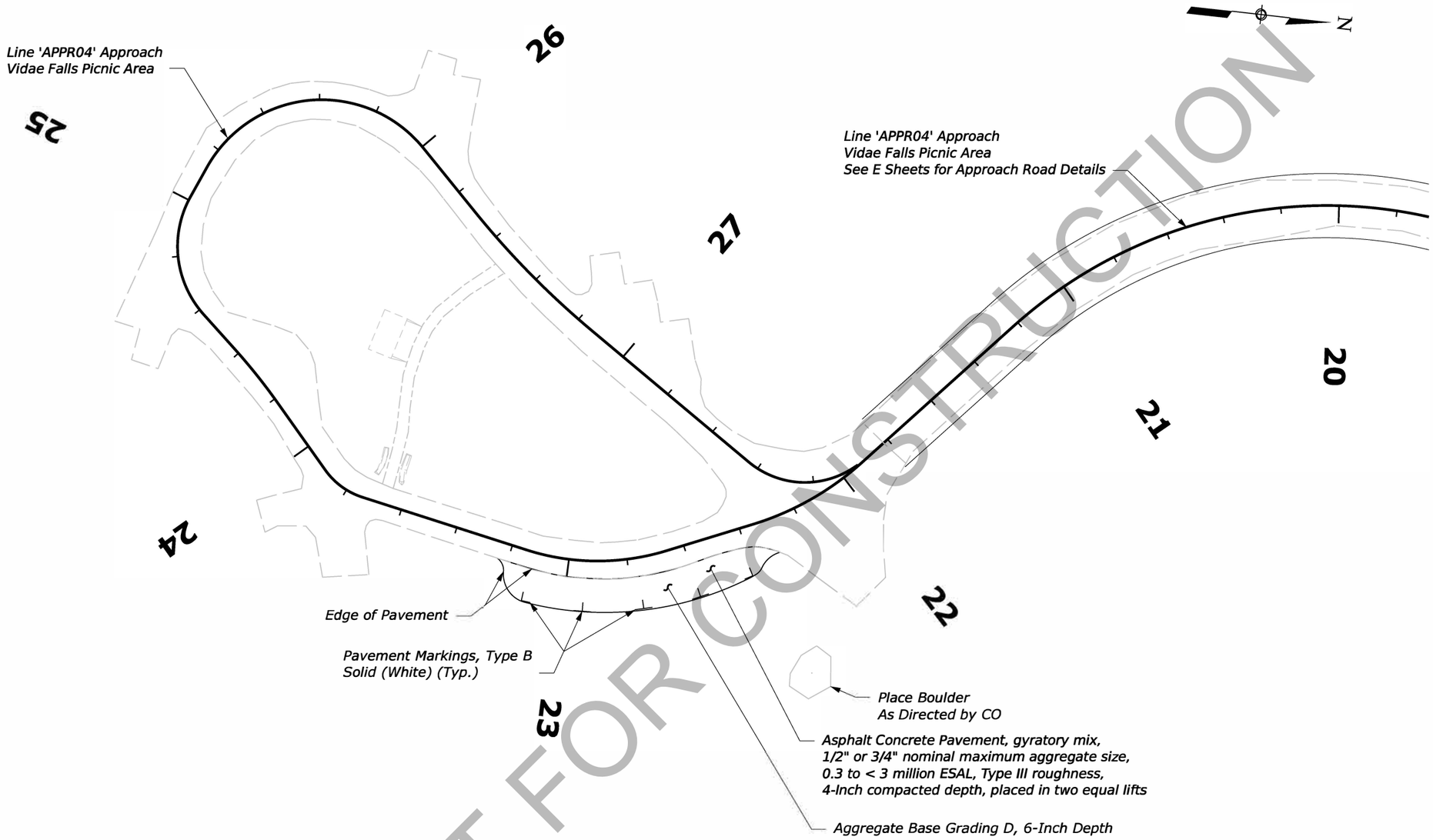
NOT FOR CONSTRUCTION

TURNOUT
VIDAE FALLS PICNIC AREA
APPR04 10+75

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [APPR04 10+75 [Sheet]]
22 March 2021 1:58 PM

NPS PMIS No. 241696 NPS Drawing No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.31



NOT FOR CONSTRUCTION

TURNOUT
VIDAE FALLS PICNIC AREA
APPR04 22+50

C:\Users\jennifer.longmore\Desktop\Exported from PW\cria01301_Turnout_Plans_F_Sheets_F.3_F.31.dgn [APPR04 22+50 (Sheet)]
22 March 2021 1:58 PM

STATE	PROJECT	SHEET NUMBER
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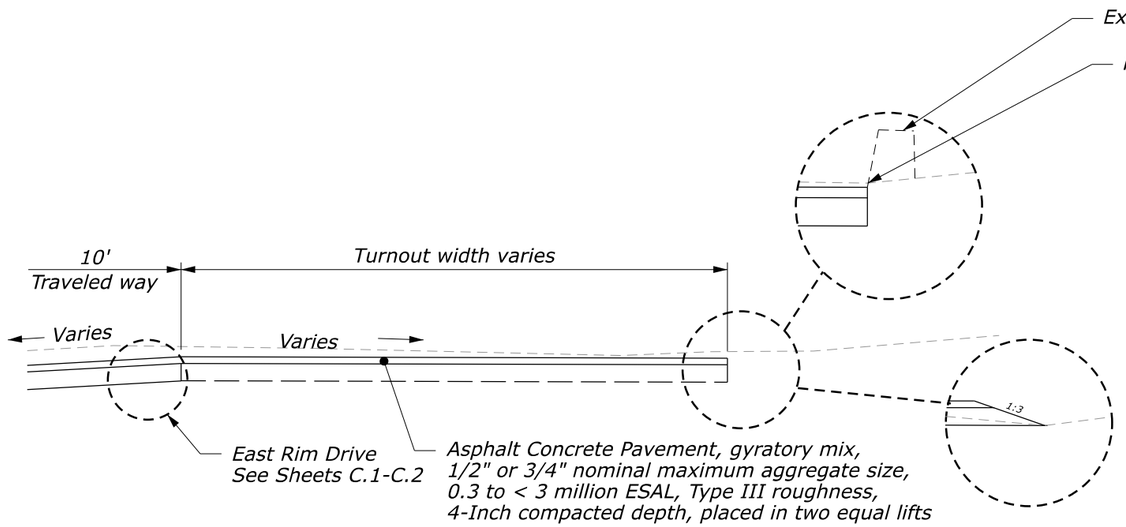
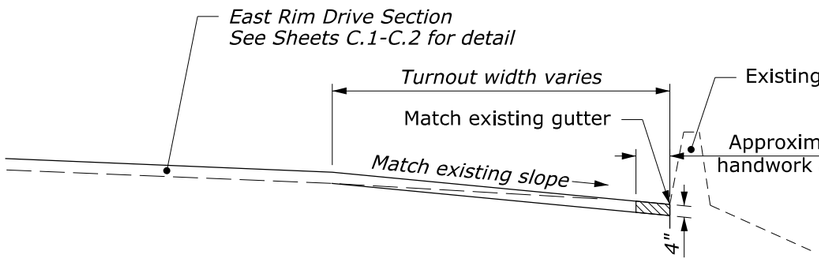


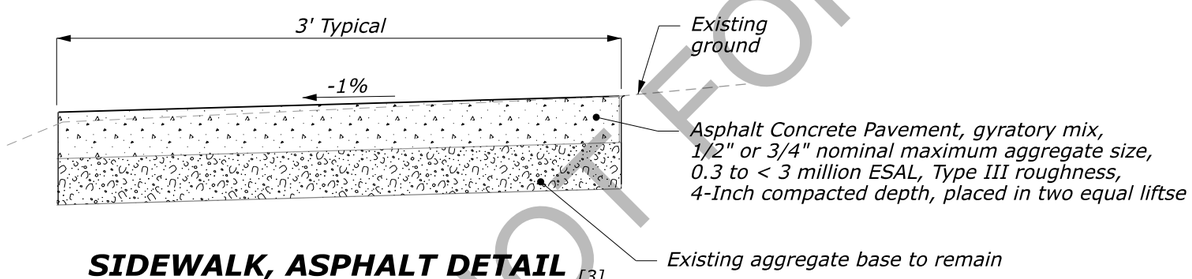
RECONSTRUCTION OF PAVED TURNOUT DETAILS

Line	Station	Notes	SQYD	Restoration Type
MAIN01	28+50	Roadside	56.00	Berm
MAIN01	102+50	Palisades Point (2 Areas)	389.00	Berm
MAIN01	191+00	Upper Grotto Cove	246.00	Prepare for Planting
MAIN01	378+00	Roadside	358.00	Berm
MAIN01	422+50	Pumice Castle (2 Areas)	398.00	Prepare for Planting
MAIN01	446+00	Reflection Point	28.00	None
MAIN01	465+00	Roadside	142.00	Berm & Boulder
MAIN01	498+00	Anderson Point: Roadside	115.00	Boulders & Prep. For Planting
MAIN01	555+00	Pinnacles Road (Line'APPR03') Vic.	892.00	Berm
MAIN01	605+50	Roadside	603.00	Boulders & Logs
MAIN01	645+75	Roadside	195.00	Boulders
MAIN01	687+50	Dutton Ridge Road Summit	299.00	Boulders
MAIN01	762+00	Sun Notch (3 Areas)	376.00	Prepare for Planting
MAIN01	834+00	Vidae Falls (2 Areas)	56.00	None
MAIN01	968+00	Roadside	114.00	Berm
APPR01	24+50	Mt. Scott O.L. (Line 'APPR01')	99.00	Berm

ROADWAY OBLITERATION, METHOD 1 LOCATIONS [2]



MILLING ALONG GUARDWALL AT TURNOUTS [1]



SIDEWALK, ASPHALT DETAIL [3]

Width of sidewalk 5' for the following Turnouts:
348+00 Mt. Scott Trailhead
762+00 Sun Notch

NOTE:

1. *Pavement structure for turnouts is not included in mainline quantities. See Sheets C.1-C.2 for Mainline and Approach Road Typical Sections.*
2. *See Sheets F.1-F.2 for summary of turnout quantities.*
3. *See Sheets F.1-F.2 for turnout locations.*

FOOTNOTE:

[1] Manually remove asphalt strip between guardwall and machine-milled pavement edge.

[2] Restore obliterated areas per direction of the CO

[3] Match existing width of sidewalk where replacing existing sidewalk

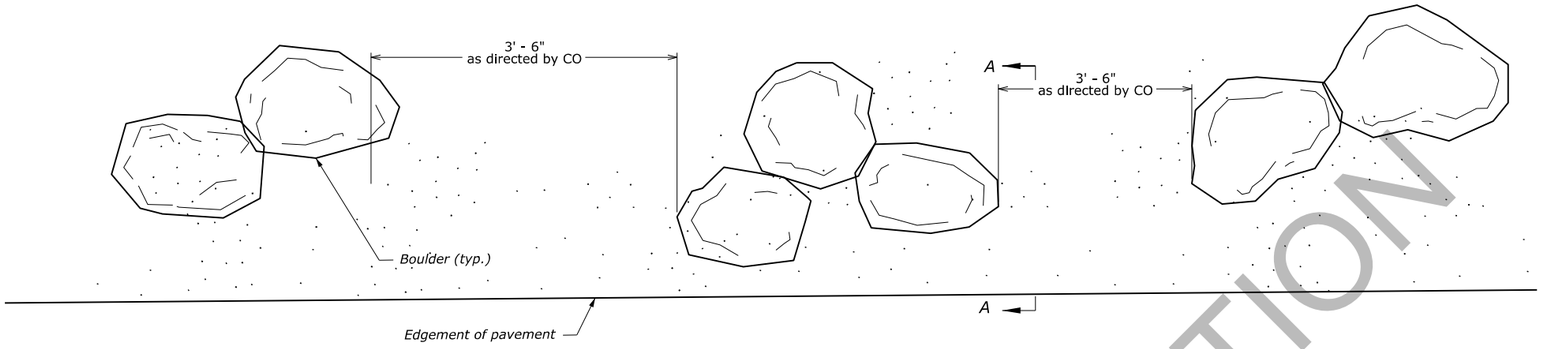
NOT FOR CONSTRUCTION

TYPICAL TURNOUT DETAILS

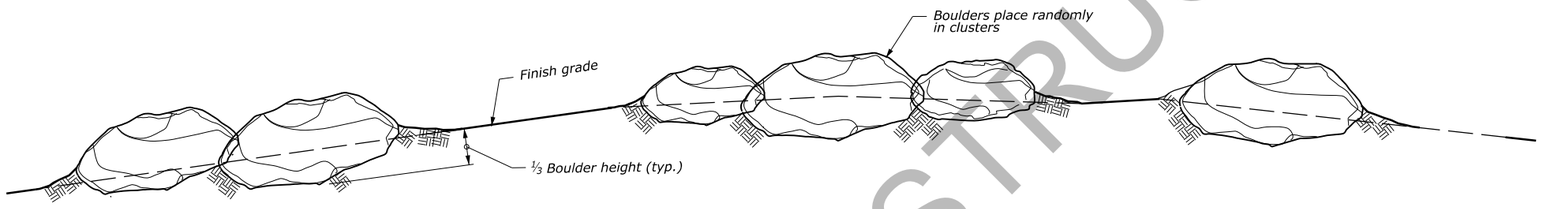
C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_Turnout Details & Restoration Plans.dgn [TYPICAL TURNOUT DETAILS]
24 March 2021 2:42 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

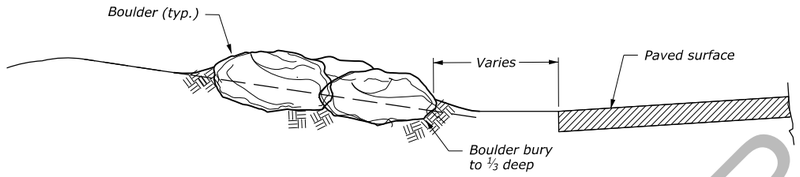
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.33



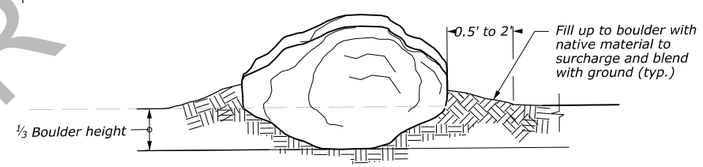
PLAN



SECTION



SECTION A-A



BARRIER BOULDER PLACEMENT

NOTE:

1. *Boulder locations shown on the plans are approximate. Place as directed by the CO in coordination with the NPS.*
2. *Place boulders weathered side up.*
3. *Place boulders randomly within the maximum spacing. Vary number of boulders as directed by CO.*
4. *Bury boulders to 1/3 of boulder height.*
5. *Boulders to be no smaller than 2.5-feet in any dimension and no larger than 6-feet in any dimension.*
6. *Boulders sized as follows:*
   60% - 36-inches to 54-inches
   40% - 55-inches to 72-inches

NOT FOR CONSTRUCTION

TYPICAL RESTORATION DETAIL BOULDER PLACEMENT

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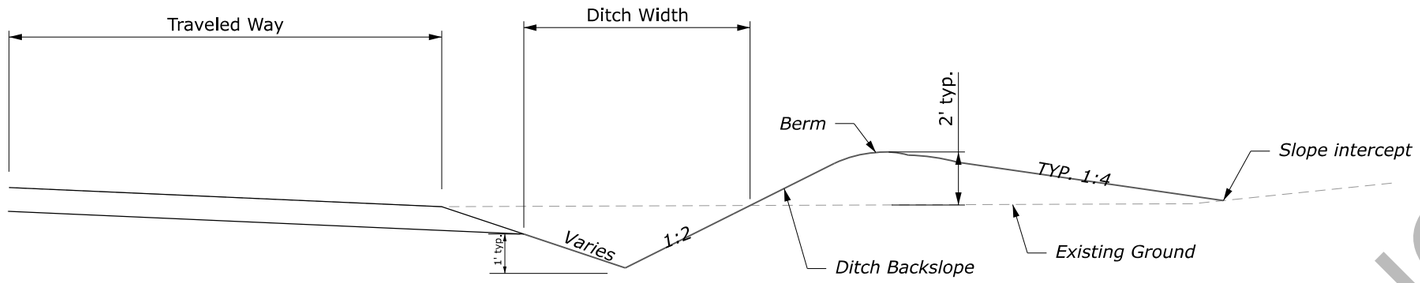
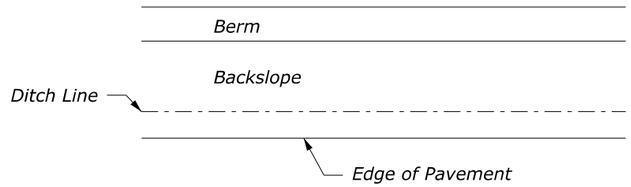
24 March 2021 2:42 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

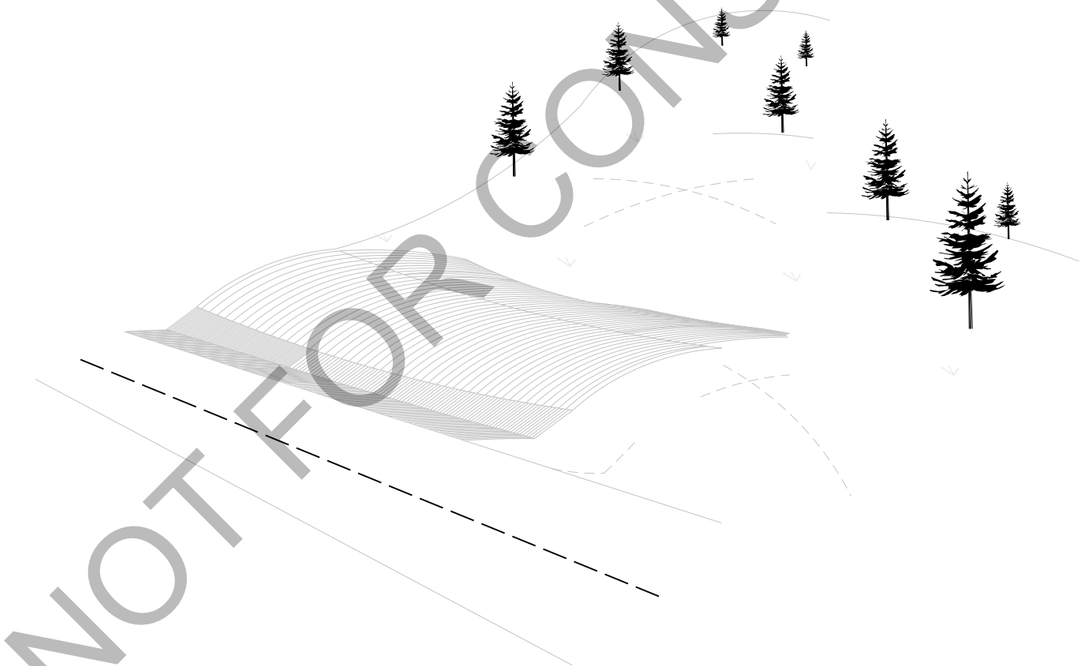
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.34



DITCH WITH BACKSLOPE BERM



PLAN VIEW



NOT FOR CONSTRUCTION

TYPICAL RESTORATION DETAIL
DITCH WITH BACKSLOPE BERM

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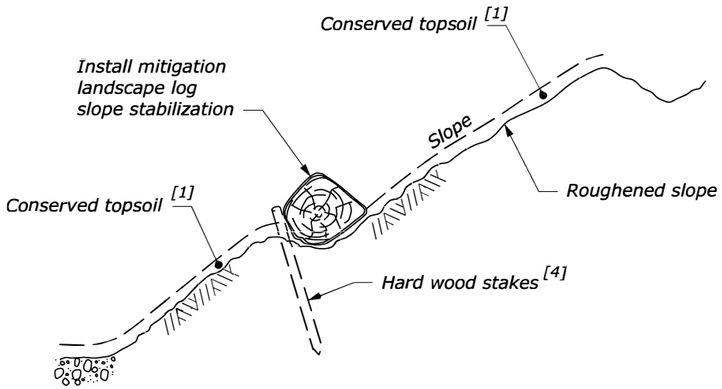
24 March 2021 2:42 PM

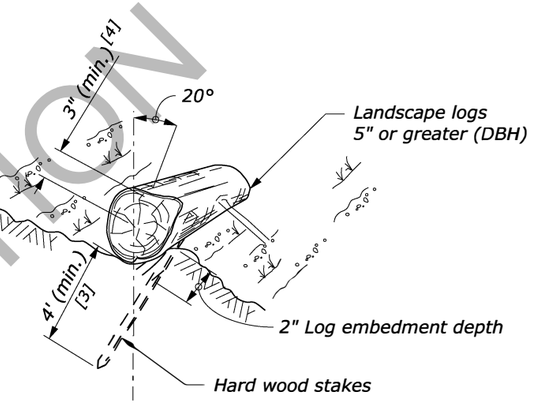
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.35

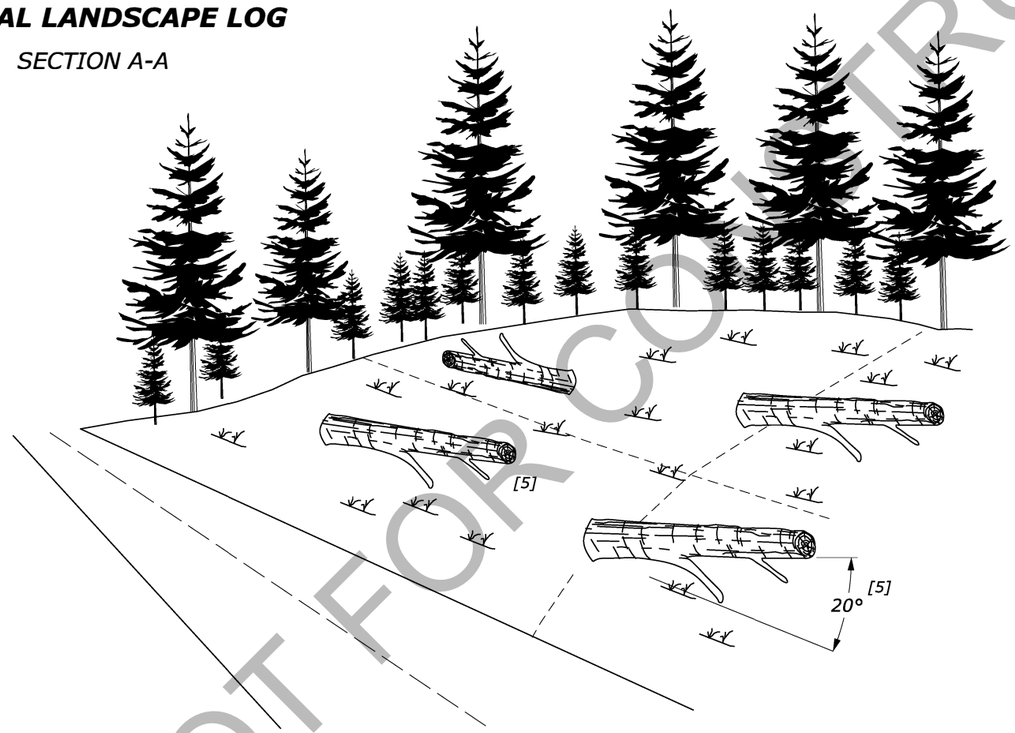


TYPICAL LANDSCAPE LOG

SECTION A-A



LOG STAKING DETAIL [4]



NOT FOR CONSTRUCTION

NOTE:

1. *Selection, placement location, and orientation of logs will be identified by the CO.*
2. *Minimum length of landscape logs = 10-feet.*

FOOTNOTE:

[1] Place conserved topsoil.

[2] Not used.

[3] Minimum depth of 4-foot, at refusal.

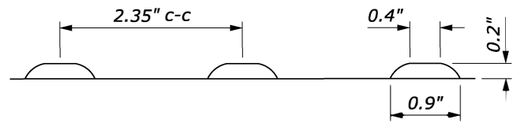
[4] Embed stake to the midpoint of the log at embedment point.

[5] Vary angles and overlap logs by 18" (min.) to achieve natural fallen appearance, as approved by CO.

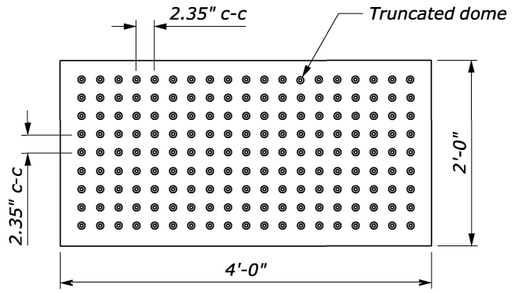
TYPICAL RESTORATION DETAIL LOG

C:\Users\jennifer.longmore\Desktop\Exported from PW\cfa01301_Turnout_Restoration_Logs.dgn [Typical Restoration Detail Log]
29 October 2020 9:28 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.36

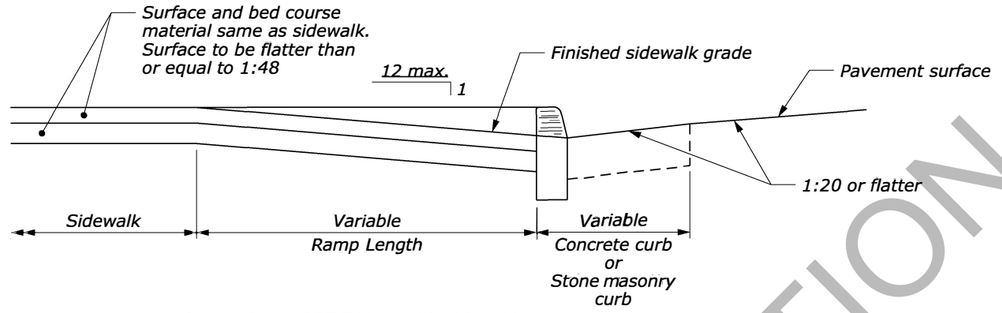


SECTION
TRUNCATED DOME

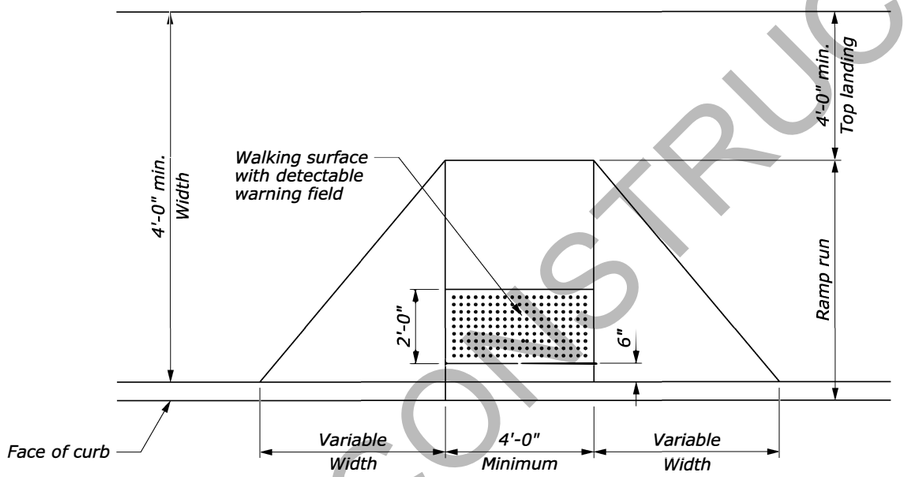


PLAN

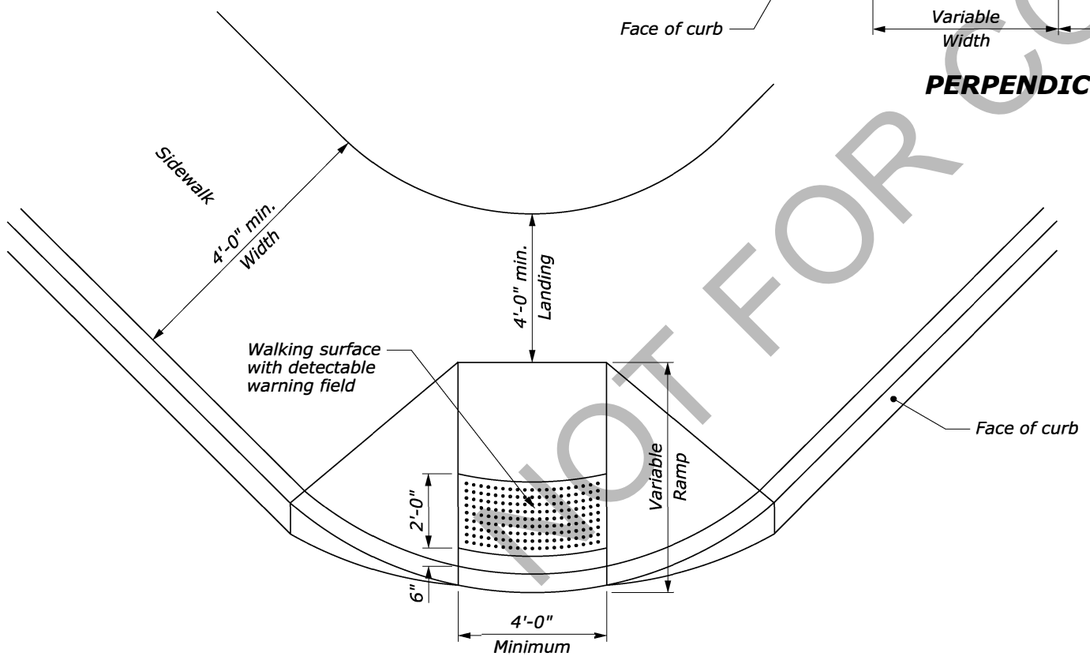
DETECTABLE WARNING FIELD WITH TRUNCATED DOMES



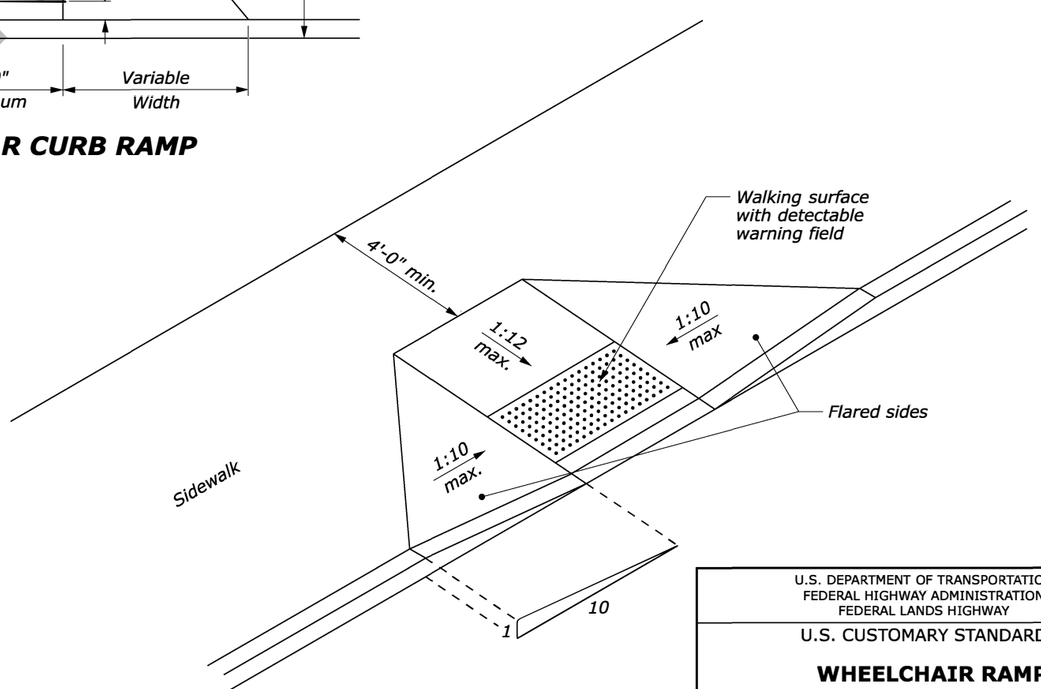
RAMP - TYPICAL SECTION



PERPENDICULAR CURB RAMP



DIAGONAL CURB RAMP



RAMP - ISOMETRIC

NO SCALE

NOTE:

1. The maximum cross slopes of ramps must not exceed 2% in any direction.
2. Use a coarse broom finish running perpendicular to the slope to create a slip resistant surface on concrete ramp surfaces, exclusive of the detectable warning fields.
3. Construct curb ramp perpendicular to the curb. Avoid skewing the ramp face.
4. Construct ramp transitions between walks, gutters, or streets that are flush and free of abrupt vertical changes not to exceed 2.5 inches.
5. Locate drainage inlets and manholes outside of ramp walking surfaces or landings.

NOT FOR CONSTRUCTION

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

U.S. CUSTOMARY STANDARD

WHEELCHAIR RAMP CURB CUT

STANDARD APPROVED FOR USE --/----

REVISED:
DRAFT: 1/2004

STANDARD 615-1

29 October 2020 9:32 AM C:\Users\jennifer.longmore\Desktop\Exported from PW\cra01301_Parallel_CurbRamp_st61501.dgn [curb cut [Sheet]]

STATE	PROJECT	SHEET NUMBER
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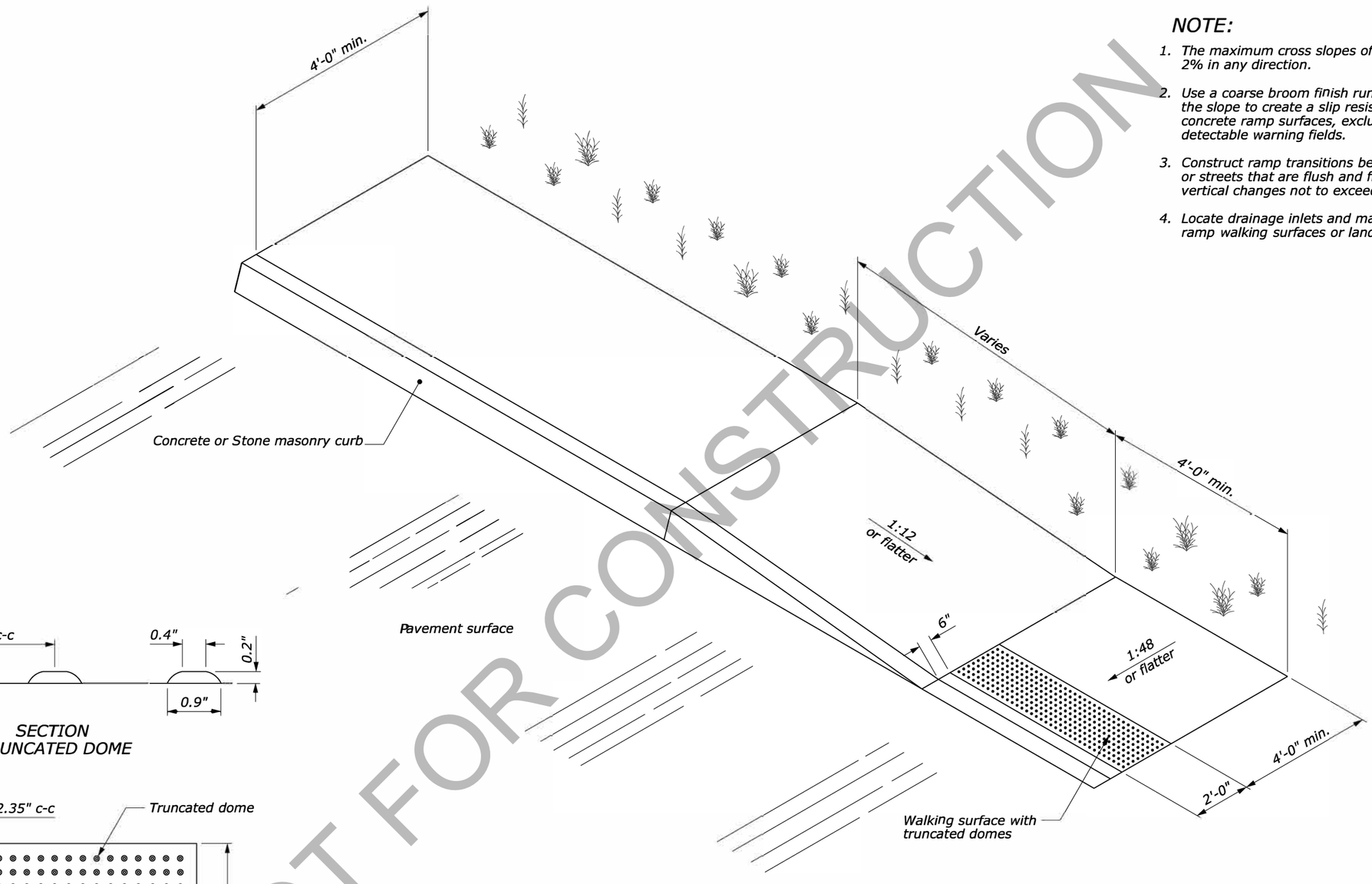
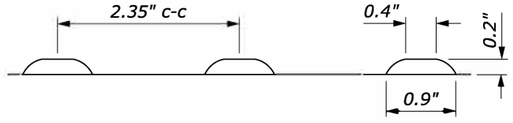


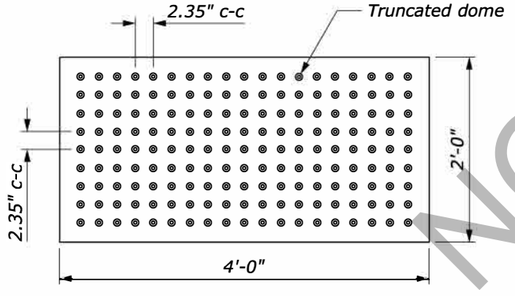
PARALLEL CURB RAMP

NOTE:

1. *The maximum cross slopes of ramps must not exceed 2% in any direction.*
2. *Use a coarse broom finish running perpendicular to the slope to create a slip resistant surface on concrete ramp surfaces, exclusive of the detectable warning fields.*
3. *Construct ramp transitions between walks, gutters, or streets that are flush and free of abrupt vertical changes not to exceed 2.5 inches.*
4. *Locate drainage inlets and manholes outside of ramp walking surfaces or landings.*



SECTION
TRUNCATED DOME



PLAN

DETECTABLE WARNING FIELD WITH TRUNCATED DOMES

NOT FOR CONSTRUCTION

NO SCALE

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

U.S. CUSTOMARY STANDARD

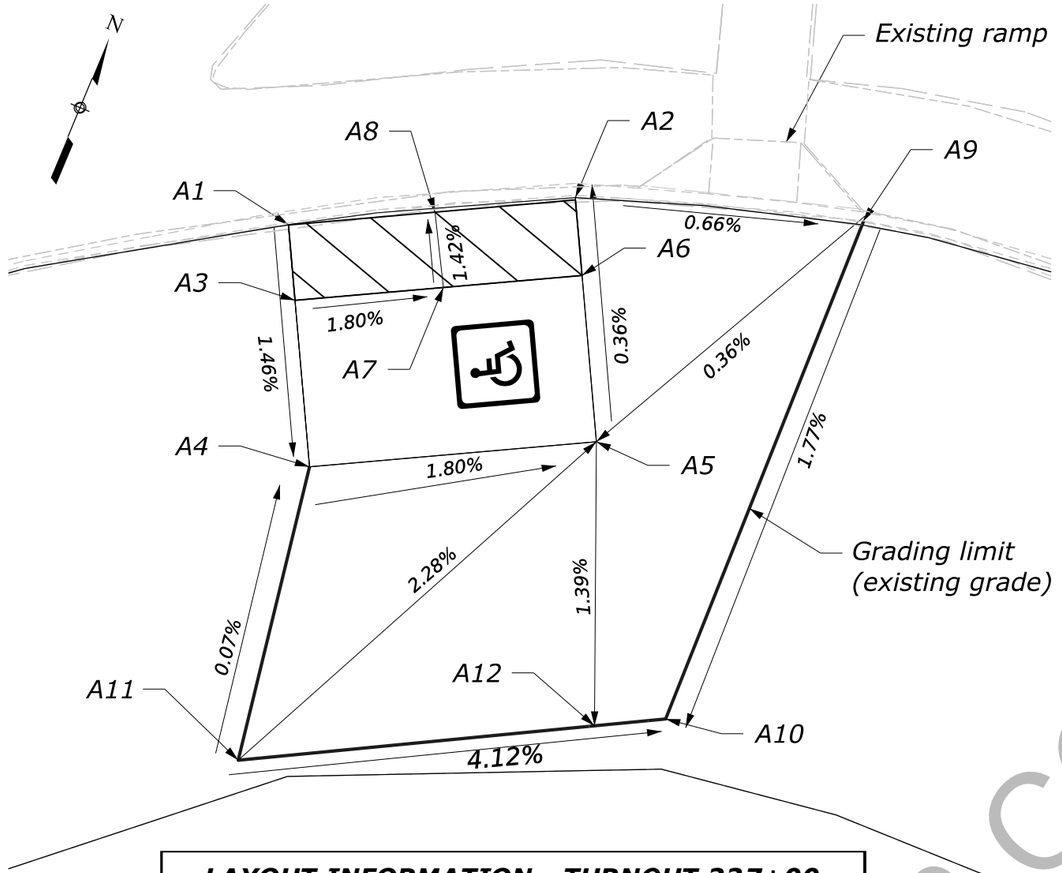
WHEELCHAIR RAMP CURB TAPER

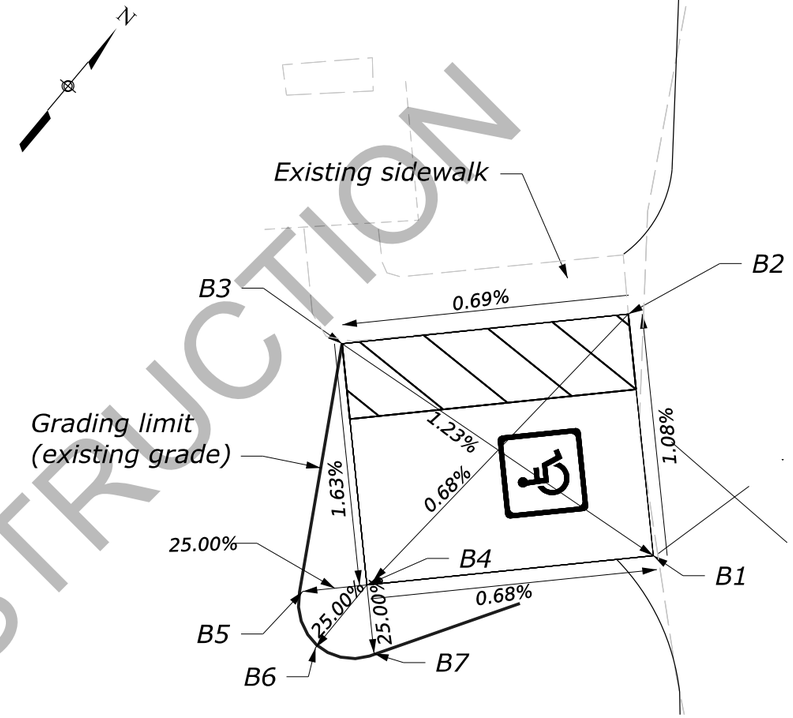
STANDARD APPROVED FOR USE --/----

REVISED:
DRAFT: 1/2004

STANDARD 615-2

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.38





LAYOUT INFORMATION - TURNOUT 227+00

POINT	NORTHING	EASTING	ELEVATION
A1	Y=471021.2835	X=4506630.3118	Z=7138.3588 (exist)
A2	Y=471040.1369	X=4506632.8059	Z=7137.6278 (exist)
A3	Y=471020.5941	X=4506635.2819	Z=7138.1847 (exist)
A4	Y=471019.0700	X=4506646.1997	Z=7138.0278 (exist)
A5	Y=471037.9001	X=4506648.8282	Z=7137.6858
A6	Y=471039.4241	X=4506637.9105	Z=7137.6458
A7	Y=471030.0088	X=4506636.5982	Z=7138.0137
A8	Y=471030.6964	X=4506631.6458	Z=7137.5008 (exist)
A9	Y=471058.3457	X=4506638.5540	Z=7137.9428 (exist)
A10	Y=471038.2704	X=4506667.6788	Z=7136.8741 (exist)
A11	Y=471010.1573	X=4506664.0210	Z=7138.0418 (exist)
A12	Y=471033.5849	X=4506667.0691	Z=7137.0630

LAYOUT INFORMATION - TURNOUT 341+75

POINT	NORTHING	EASTING	ELEVATION
B1	Y = 4512049.8124	X = 464449.3969	Z = 7644.7765 (exist)
B2	Y = 4512034.0480	X = 464446.5300	Z = 7644.9500 (exist)
B3	Y = 4512037.4516	X = 464427.8373	Z = 7645.0804 (exist)
B4	Y = 4512053.1916	X = 464430.7100	Z = 7644.8200
B5	Y = 4512053.9949	X = 464426.3083	Z = 7643.7014
B6	Y = 4512057.8422	X = 464428.4761	Z = 7643.5302
B7	Y = 4512057.7666	X = 464431.4627	Z = 7643.6609

NOT FOR CONSTRUCTION

SCALE IN FEET
5 0 5 10 15 20

PARKING GRADING TURNOUTS 227+00 and 341+75

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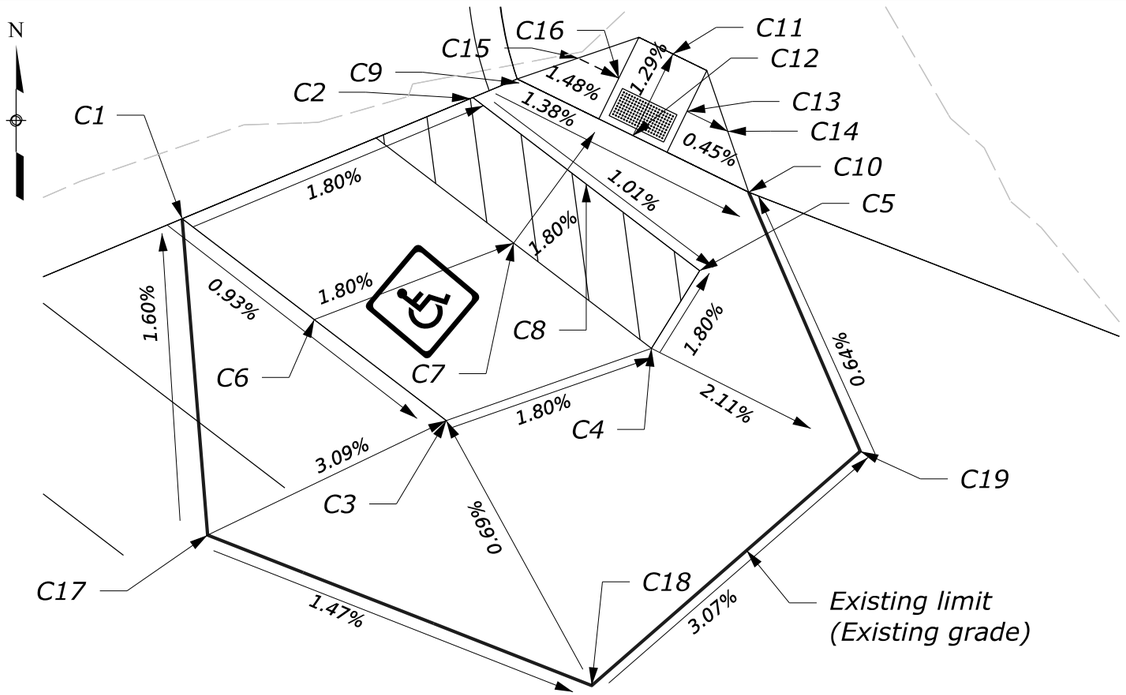
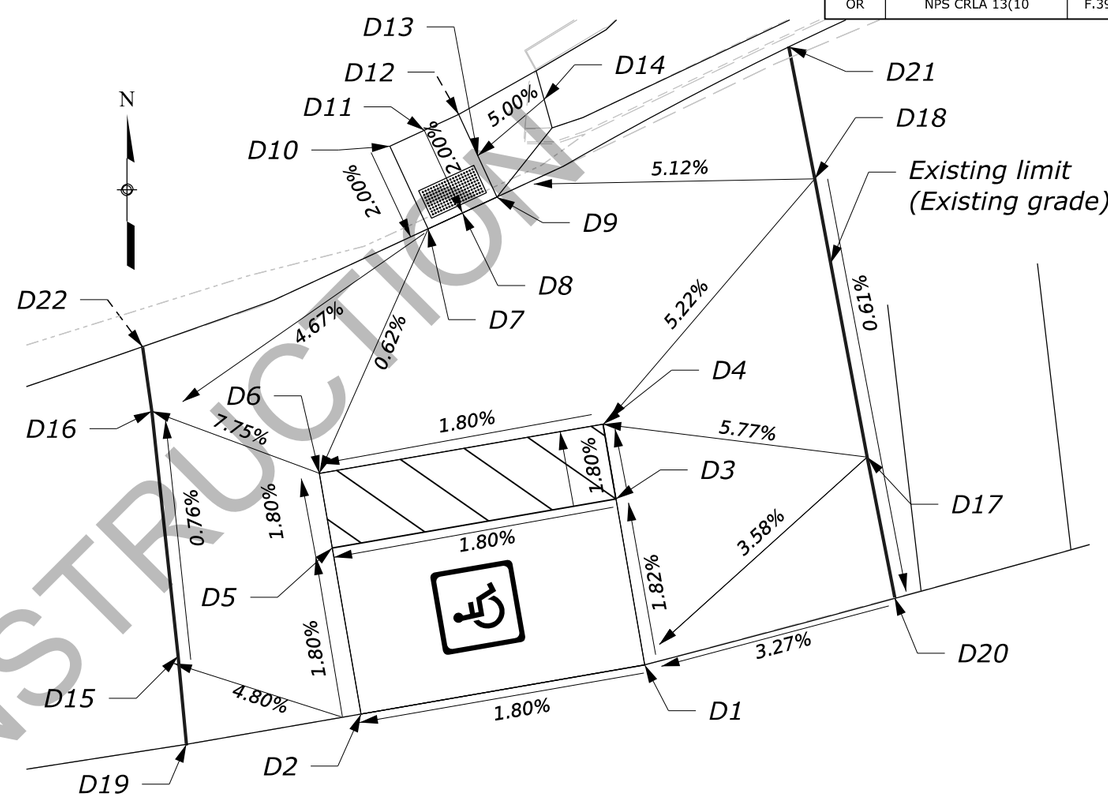
24 March 2021 3:03 PM

NPS PMIS No. 241696 NPS Drwg. No. XXX/XXXXX

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(10	F.39





LAYOUT INFORMATION - TURNOUT 422+50

POINT	NORTHING	EASTING	ELEVATION
C1	Y=463315.5520	X=4504543.4966	Z=7419.6141 (exist.)
C2	Y=463335.8114	X=4504548.1395	Z=7419.2361
C3	Y=458515.8442	X=4500383.0767	Z=7419.4104
C4	Y=463335.7803	X=4504568.4528	Z=7419.1522
C5	Y=463341.3472	X=4504566.1429	Z=7419.0442
C6	Y=463318.7761	X=4504553.9817	Z=7419.4687
C7	Y=463332.4193	X=4504557.5223	Z=7419.2167
C8	Y=463338.5793	X=4504557.1412	Z=7419.1087
C9	Y=463338.9043	X=4504548.8484	Z=7418.9423 (exist.)
C10	Y=463346.9960	X=4504563.7991	Z=7418.7083 (exist.)
C11	Y=463348.2269	X=4504553.4679	Z=7418.7263 (exist.)
C12	Y=463348.2269	X=4504553.4679	Z=7418.8030 (exist.)
C13	Y=463346.7785	X=4504557.0944	Z=7418.7424 (exist)
C14	Y=463348.2064	X=4504559.7328	Z=7418.7290
C15	Y=463342.9706	X=4504550.0588	Z=7418.8353
C16	Y=463344.3986	X=4504552.6972	Z=7418.7909
C17	Y=463304.7863	X=4504561.4520	Z=7419.9499 (exist.)
C18	Y=463319.6417	X=4504584.2700	Z=7419.5486 (exist.)
C19	Y=463343.0509	X=4504581.9940	Z=7418.8271 (exist.)

LAYOUT INFORMATION - TURNOUT 551+50

POINT	NORTHING	EASTING	ELEVATION
D1	Y=458511.0202	X=4500393.0984	Z=6751.8089 (exist.)
D2	Y=458493.9003	X=4500384.8576	Z=6751.4669
D3	Y=458515.8442	X=4500383.0767	Z=6751.6085
D4	Y=458518.0162	X=4500378.5645	Z=6751.5185
D5	Y=458498.7277	X=4500374.8290	Z=6751.2665
D6	Y=458500.8929	X=4500370.3307	Z=6751.1765
D7	Y=458516.1153	X=4500361.3698	Z=6751.2860
D8	Y=458518.5717	X=4500361.8349	Z=6751.4238
D9	Y=458527.5426	X=4500362.0863	Z=6751.5617
D10	Y=458517.2316	X=4500355.4746	Z=6751.4060
D11	Y=458519.6879	X=4500355.9397	Z=6751.5438

LAYOUT INFORMATION - TURNOUT 551+50

POINT	NORTHING	EASTING	ELEVATION
D12	Y=458522.1443	X=4500356.4048	Z=6751.5438
D13	Y=458521.5862	X=4500359.3524	Z=6751.9085
D14	Y=458527.3055	X=4500358.8688	Z=6752.2085
D15	Y=458486.3009	X=4500374.7349	Z=6750.3821
D16	Y=458494.2852	X=4500360.5684	Z=6750.2622
D17	Y=458530.9352	X=4500390.4663	Z=6752.5285
D18	Y=458538.7917	X=4500373.5158	Z=6752.6427
D19	Y=458483.3286	X=4500379.8350	Z=6750.4882 (exist.)
D20	Y=458527.0185	X=4500399.1210	Z=6752.3681 (exist.)
D21	Y=458542.4808	X=4500365.4068	Z=6752.6657 (exist.)
D22	Y=458496.2539	X=4500356.7476	Z=6750.1365 (exist)

SCALE IN FEET
5 0 5 10 15 20

NOT FOR CONSTRUCTION

PARKING GRADING TURNOUTS 422+50 and 551+50

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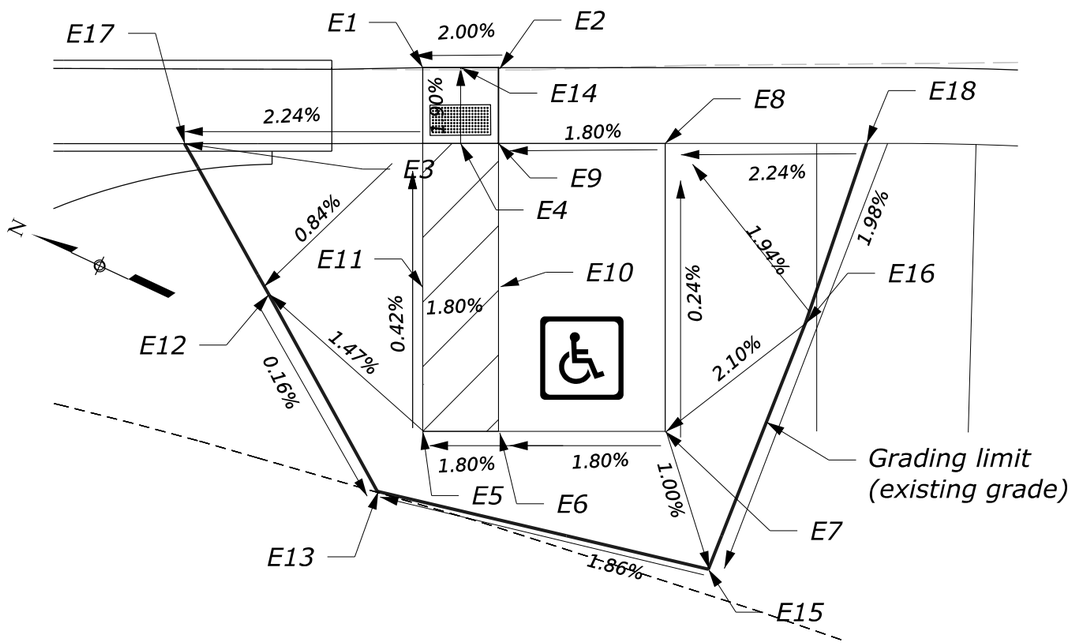
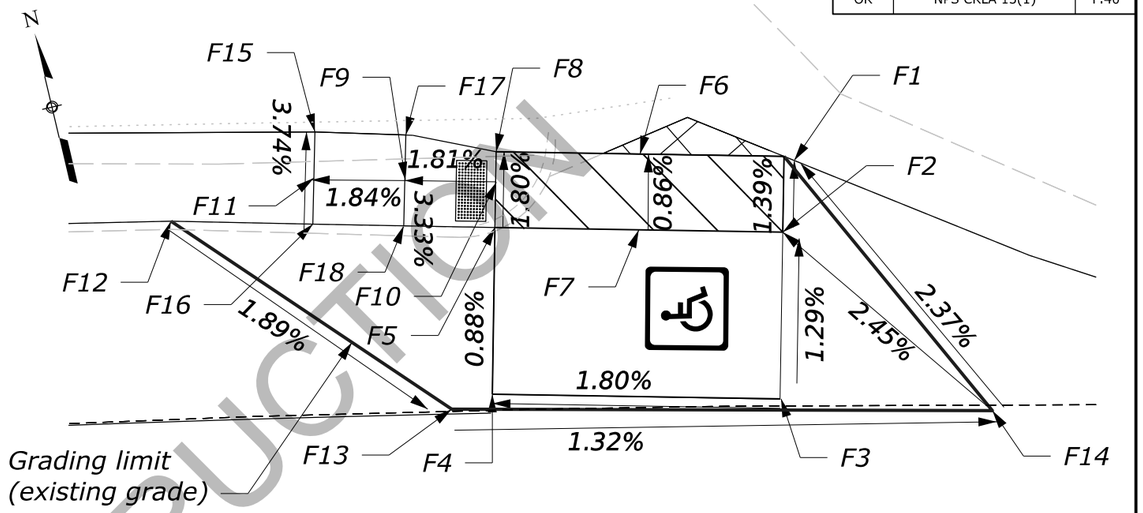
24 March 2021 3:01 PM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	F.40





LAYOUT INFORMATION - TURNOUT 762+00

POINT	NORTHING	EASTING	ELEVATION
E1	Y=453576.5472	X=4493750.1284	Z=7029.6791
E2	Y=453575.6334	X=4493755.0442	Z=7029.7716
E3	Y=453571.6318	X=4493749.2126	Z=7029.7775 (exist.)
E4	Y=453571.1749	X=4493751.6705	Z=7029.8341
E5	Y=453552.9518	X=4493745.7402	Z=7029.8589
E6	Y=453552.0380	X=4493750.6559	Z=7029.9489
E7	Y=453550.0242	X=4493761.4700	Z=7030.1469
E8	Y=453568.7032	X=4493764.9483	Z=7029.1020 (exist.)
E9	Y=453570.7180	X=4493754.1283	Z=7029.8811
E10	Y=453561.3780	X=4493752.3921	Z=7029.9827
E11	Y=453562.2918	X=4493747.4764	Z=7029.8927
E12	Y=453563.6920	X=4493737.4007	Z=7029.6579 (exist.)
E13	Y=453549.6199	X=4493742.0631	Z=7029.6341 (exist.)
E14	Y=453576.0903	X=4493752.5863	Z=7029.7391
E15	Y=453540.5614	X=4493762.6007	Z=7030.0513 (exist.)
E16	Y=453555.3776	X=4493771.8811	Z=7030.3936 (exist.)
E17	Y=453574.5001	X=4493733.7543	Z=7029.3965 (exist.)
E18	Y=453566.2737	X=4493778.0116	Z=7030.4003 (exist.)

LAYOUT INFORMATION - TURNOUT 834+00

POINT	NORTHING	EASTING	ELEVATION
F1	Y=447850.2228	X=4492690.6544	Z=6592.5396 (exist.)
F2	Y=447846.4104	X=4492693.8895	Z=6592.6089
F3	Y=447838.0057	X=4492701.0216	Z=6592.7507
F4	Y=447825.7341	X=4492686.5248	Z=6592.4087
F5	Y=447833.9401	X=4492679.5555	Z=6592.3144
F6	Y=447844.0761	X=4492683.4109	Z=6592.4405
F7	Y=447840.2644	X=4492686.6468	Z=6592.4835
F8	Y=447837.9294	X=4492676.1675	Z=6592.4405
F9	Y=447832.5354	X=4492672.8915	Z=6592.9548 (exist.)
F10	Y=447836.4121	X=4492677.4561	Z=6593.0630 (exist.)
F11	Y=447828.6997	X=4492668.2706	Z=6592.8445 (exist.)
F12	Y=447820.3390	X=4492663.0586	Z=6592.6506 (exist.)
F13	Y=447823.2260	X=4492685.1688	Z=6592.2295 (exist.)
F14	Y=447846.6840	X=4492712.0522	Z=6593.0543 (exist.)
F15	Y=447831.0301	X=4492666.3139	Z=6592.6439 (exist.)
F16	Y=447826.3693	X=4492670.2273	Z=6592.8715 (exist.)
F17	Y=447834.8392	X=4492670.9641	Z=6592.8123 (exist.)
F18	Y=447830.2316	X=4492674.8188	Z=6593.0131 (exist.)

NOT FOR CONSTRUCTION

SCALE IN FEET
5 0 5 10 15 20

PARKING GRADING TURNOUTS 762+00 and 834+00

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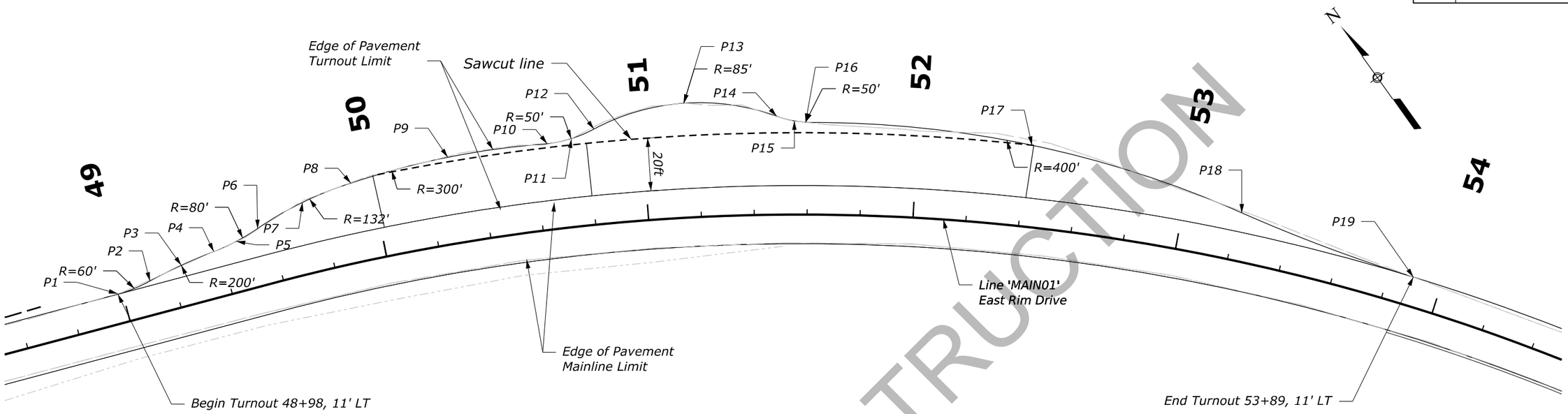
24 March 2021 3:09 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.41



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 51+50

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	482160.519	4501104.638	6913.869	MATCH PROP. EOP
P2	482157.567	4501117.381	6914.858	
P3	482155.558	4501130.520	6915.613	
P4	482152.681	4501143.497	6916.401	
P5	482150.178	4501162.044	6916.941	
P6	482148.387	4501181.611	6917.453	
P7	482143.719	4501200.697	6918.379	
P8	482130.471	4501236.209	6919.425	
P9	482112.850	4501269.767	6920.776	
P10	482109.159	4501278.308	6921.973	
P11	482107.114	4501287.385	6922.254	
P12	482095.384	4501320.754	6922.532	
P13	482071.088	4501346.460	6924.007	
P14	482065.713	4501350.907	6924.794	
P15	482061.193	4501356.221	6924.881	
P16	482006.153	4501418.742	6925.002	
P17	481939.358	4501468.508	6927.283	
P18	481910.108	4501487.045	6928.321	
P19	481881.976	4501507.239	6927.441	MATCH PROP. EOP

TURNOUT LAYOUT 51+50
MAZAMA ROCKS TRAILHEAD

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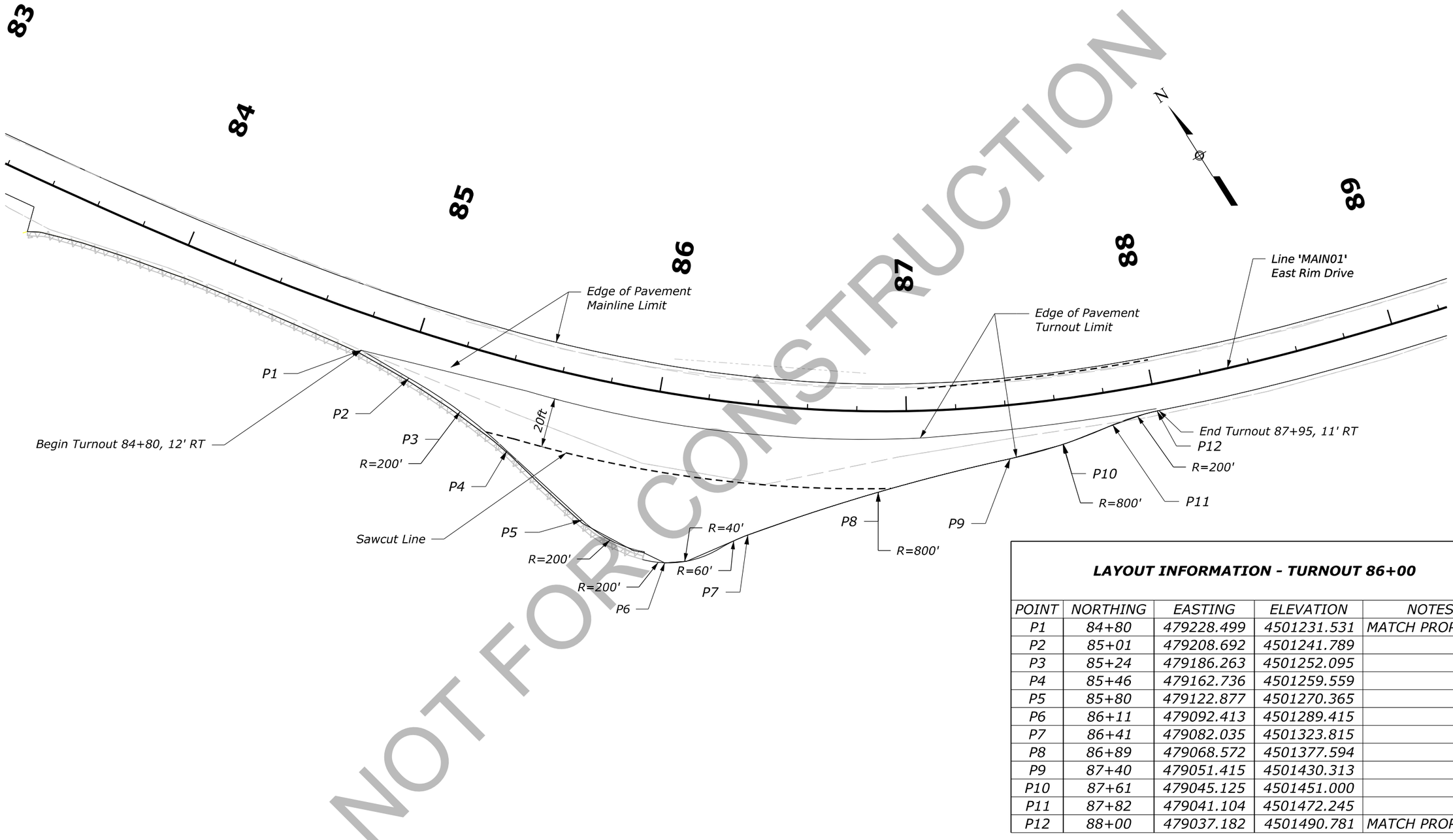
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.42



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 86+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	84+80	479228.499	4501231.531	MATCH PROP. EOP
P2	85+01	479208.692	4501241.789	
P3	85+24	479186.263	4501252.095	
P4	85+46	479162.736	4501259.559	
P5	85+80	479122.877	4501270.365	
P6	86+11	479092.413	4501289.415	
P7	86+41	479082.035	4501323.815	
P8	86+89	479068.572	4501377.594	
P9	87+40	479051.415	4501430.313	
P10	87+61	479045.125	4501451.000	
P11	87+82	479041.104	4501472.245	
P12	88+00	479037.182	4501490.781	MATCH PROP. EOP

TURNOUT LAYOUT 86+00
PALISADES OVERLOOK

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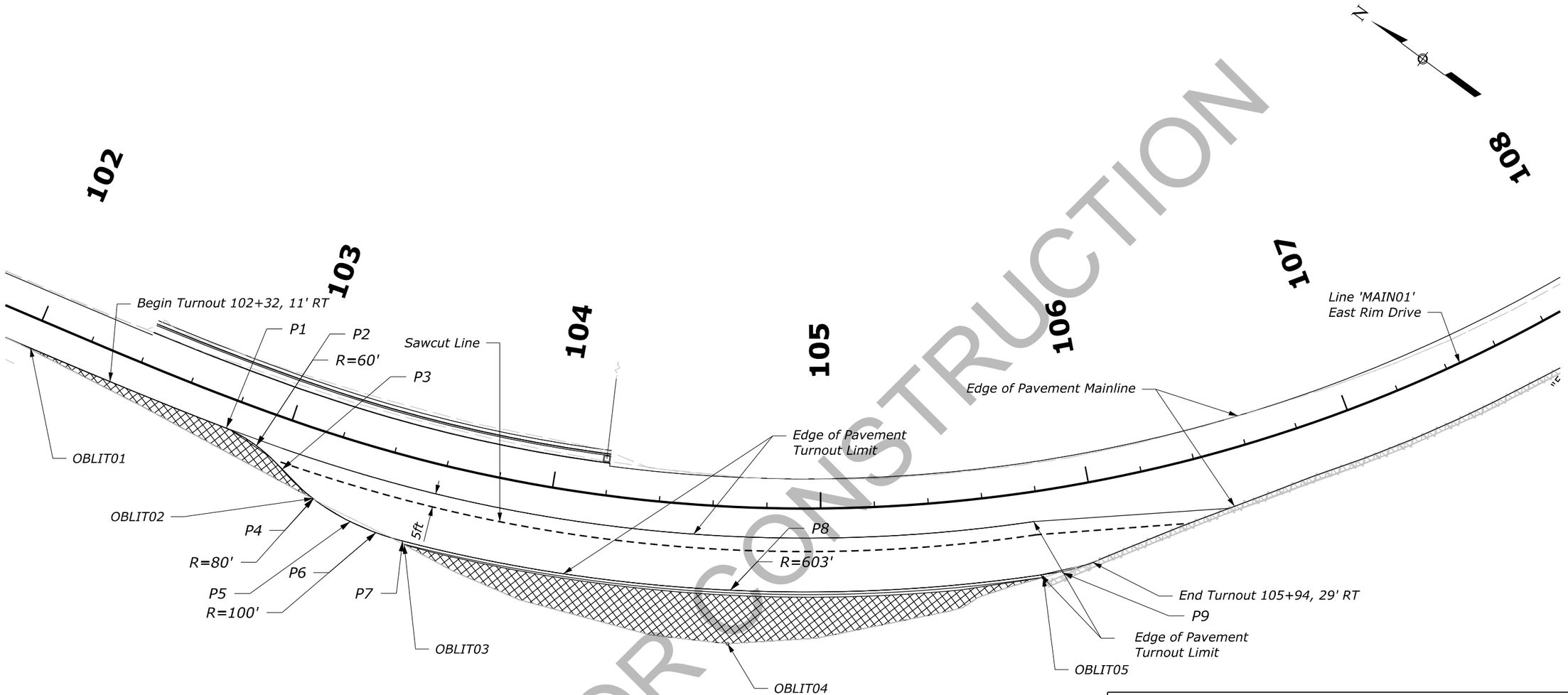
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.43



ROADWAY OBLITERATION LAYOUT INFORMATION - TURNOUT 104+50

POINT	NORTHING	EASTING	ELEVATION	NOTES
OBLIT01	478368.015	4502590.922	6702.090	
OBLIT02	478250.275	4502608.074	6696.105	
OBLIT03	478094.288	4502655.704	6689.300	
OBLIT04	478212.866	4502614.197	6694.341	
OBLIT05	478014.389	4502745.003	6686.783	

Roadway Obliteration

LAYOUT INFORMATION - TURNOUT 104+50

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	478291.750	4502610.039	6697.709	MATCH PROP. EOP
P2	478278.889	4502611.363	6697.134	
P3	478266.042	4502609.902	6696.691	
P4	478250.128	4502607.968	6696.290	
P5	478234.149	4502609.246	6695.807	
P6	478224.017	4502611.583	6695.330	
P7	478214.182	4502614.959	6694.816	
P8	478105.287	4502672.333	6689.677	
P9	478010.310	4502750.624	6686.755	MATCH PROP. EOP

NOT FOR CONSTRUCTION

TURNOUT LAYOUT 104+50
PALISADES POINT

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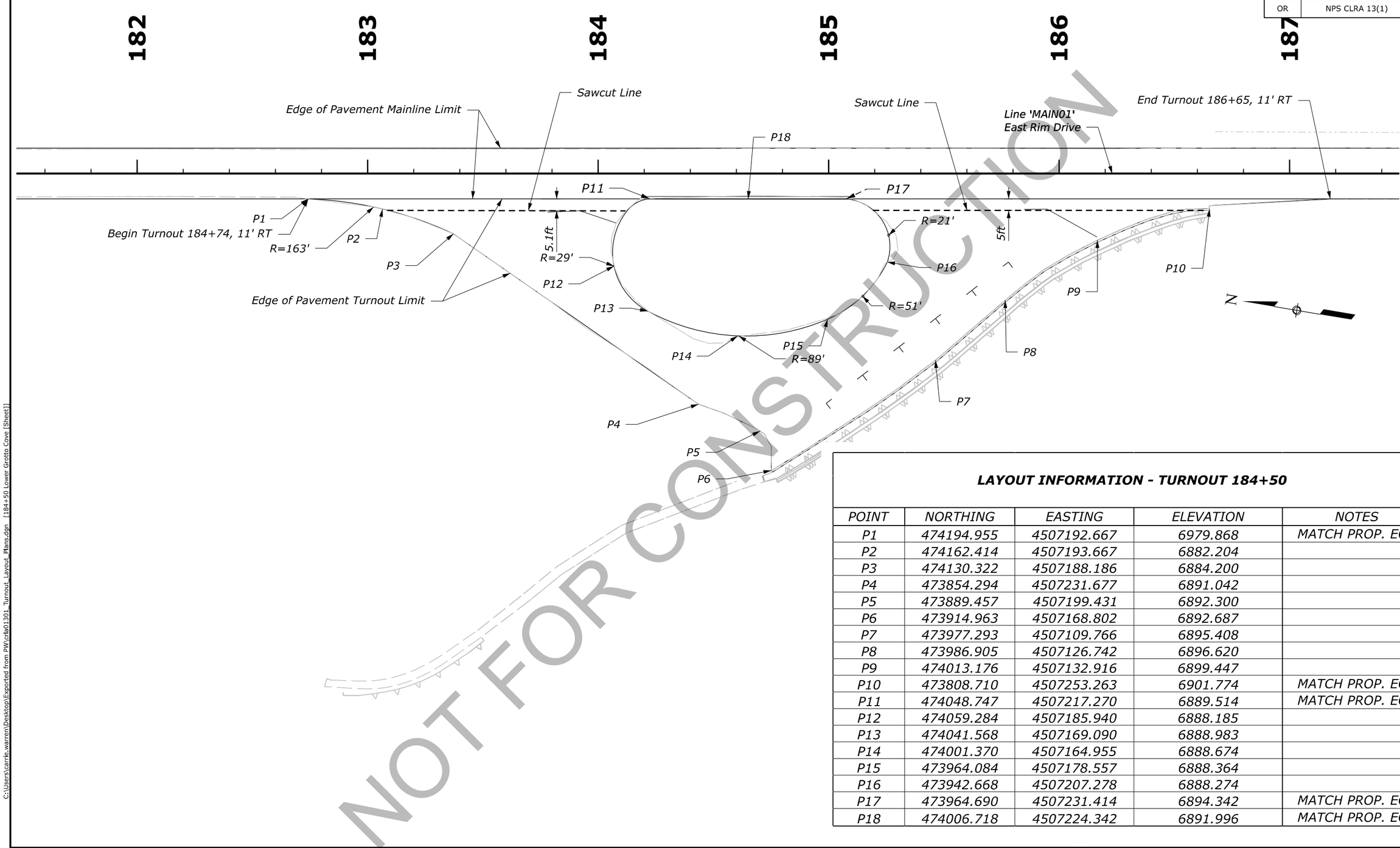
30 March 2021 8:08 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.44



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 184+50

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	474194.955	4507192.667	6979.868	MATCH PROP. EOP
P2	474162.414	4507193.667	6882.204	
P3	474130.322	4507188.186	6884.200	
P4	473854.294	4507231.677	6891.042	
P5	473889.457	4507199.431	6892.300	
P6	473914.963	4507168.802	6892.687	
P7	473977.293	4507109.766	6895.408	
P8	473986.905	4507126.742	6896.620	
P9	474013.176	4507132.916	6899.447	
P10	473808.710	4507253.263	6901.774	MATCH PROP. EOP
P11	474048.747	4507217.270	6889.514	MATCH PROP. EOP
P12	474059.284	4507185.940	6888.185	
P13	474041.568	4507169.090	6888.983	
P14	474001.370	4507164.955	6888.674	
P15	473964.084	4507178.557	6888.364	
P16	473942.668	4507207.278	6888.274	
P17	473964.690	4507231.414	6894.342	MATCH PROP. EOP
P18	474006.718	4507224.342	6891.996	MATCH PROP. EOP

TURNOUT LAYOUT 184+50
LOWER GROTTO COVE

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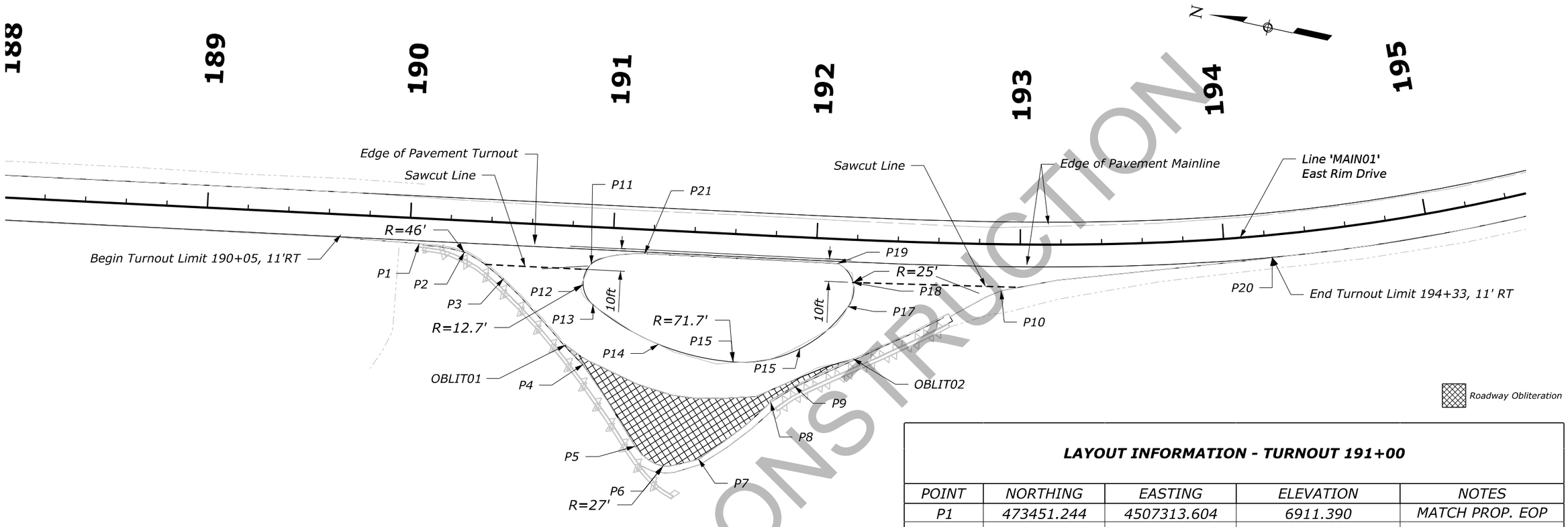
30 March 2021 8:23 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.45



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 191+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	473451.244	4507313.604	6911.390	MATCH PROP. EOP
P2	473474.268	4507312.452	6912.032	
P3	473429.982	4507304.694	6912.209	
P4	473382.637	4507272.296	6912.820	
P5	473349.134	4507238.041	6913.498	
P6	473333.162	4507231.468	6913.455	
P7	473317.423	4507238.582	6913.573	
P8	473288.685	4507273.534	6914.422	
P9	473279.115	4507283.763	6914.544	
P10	473189.825	4507351.352	6919.387	
P11	473348.730	4507289.477	6912.950	
P12	473384.330	4507301.546	6912.567	
P13	473391.147	4507310.110	6912.378	
P14	473389.402	4507320.916	6912.752	
P15	473260.938	4507329.565	6913.523	
P16	473261.763	4507339.598	6914.456	
P17	473280.359	4507302.261	6915.741	
P18	473260.938	4507329.565	6916.407	
P19	473261.763	4507339.598	6915.804	MATCH PROP. EOP
P20	473063.214	4507395.987	6923.505	MATCH PROP. EOP
P21	473364.846	4507331.415	6913.427	MATCH PROP. EOP

ROADWAY OBLITERATION LAYOUT INFORMATION - TURNOUT 191+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
OBLIT01	473393.189	4507279.341	6912.548	
OBLIT02	473253.696	4507303.023	6915.847	

TURNOUT LAYOUT 191+00
UPPER GROTTO COVE

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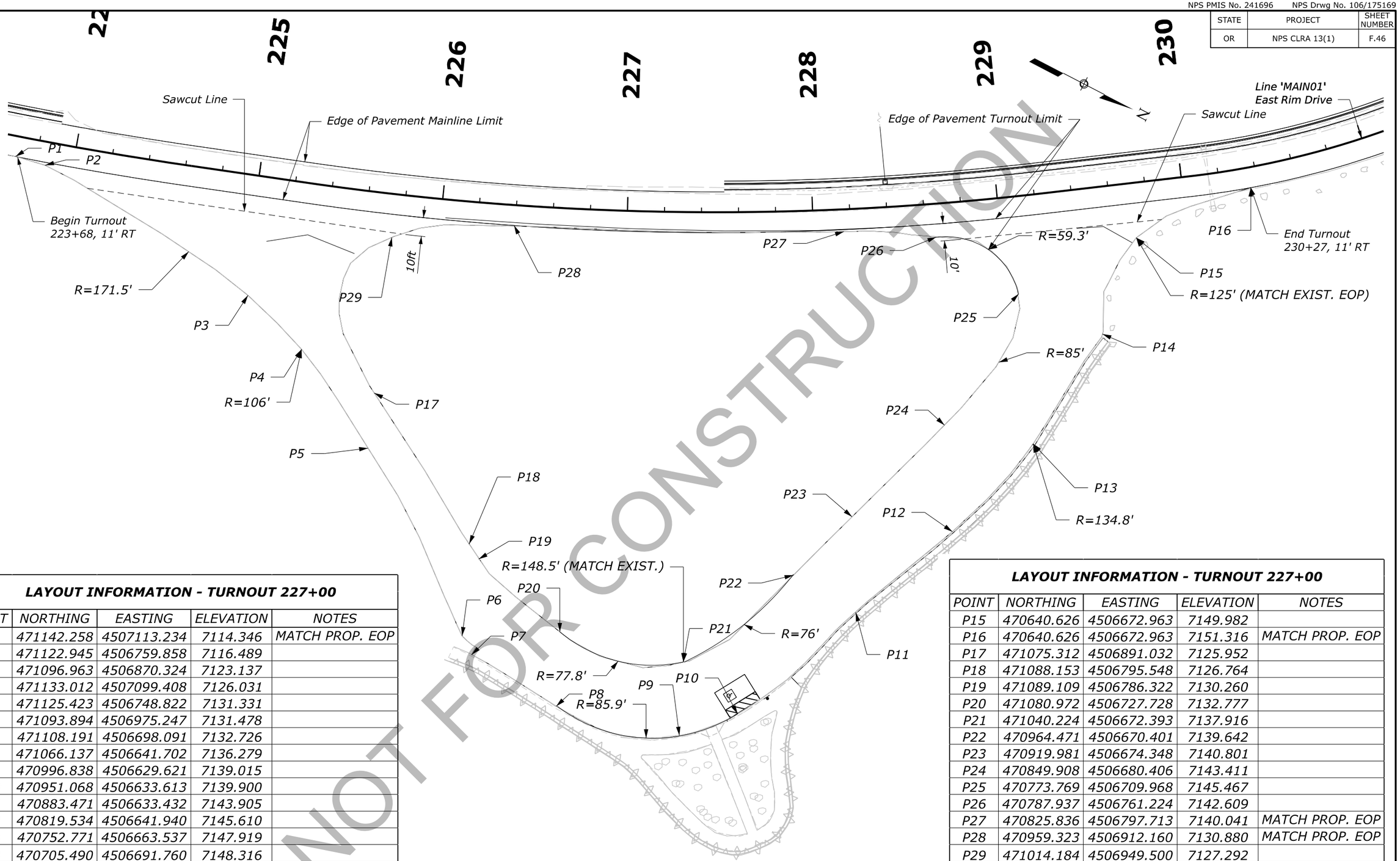
30 March 2021 8:23 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.46



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 227+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	471142.258	4507113.234	7114.346	MATCH PROP. EOP
P2	471122.945	4506759.858	7116.489	
P3	471096.963	4506870.324	7123.137	
P4	471133.012	4507099.408	7126.031	
P5	471125.423	4506748.822	7131.331	
P6	471093.894	4506975.247	7131.478	
P7	471108.191	4506698.091	7132.726	
P8	471066.137	4506641.702	7136.279	
P9	470996.838	4506629.621	7139.015	
P10	470951.068	4506633.613	7139.900	
P11	470883.471	4506633.432	7143.905	
P12	470819.534	4506641.940	7145.610	
P13	470752.771	4506663.537	7147.919	
P14	470705.490	4506691.760	7148.316	

LAYOUT INFORMATION - TURNOUT 227+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P15	470640.626	4506672.963	7149.982	
P16	470640.626	4506672.963	7151.316	MATCH PROP. EOP
P17	471075.312	4506891.032	7125.952	
P18	471088.153	4506795.548	7126.764	
P19	471089.109	4506786.322	7130.260	
P20	471080.972	4506727.728	7132.777	
P21	471040.224	4506672.393	7137.916	
P22	470964.471	4506670.401	7139.642	
P23	470919.981	4506674.348	7140.801	
P24	470849.908	4506680.406	7143.411	
P25	470773.769	4506709.968	7145.467	
P26	470787.937	4506761.224	7142.609	
P27	470825.836	4506797.713	7140.041	MATCH PROP. EOP
P28	470959.323	4506912.160	7130.880	MATCH PROP. EOP
P29	471014.184	4506949.500	7127.292	

TURNOUT LAYOUT 227+00
SKELLHEAD

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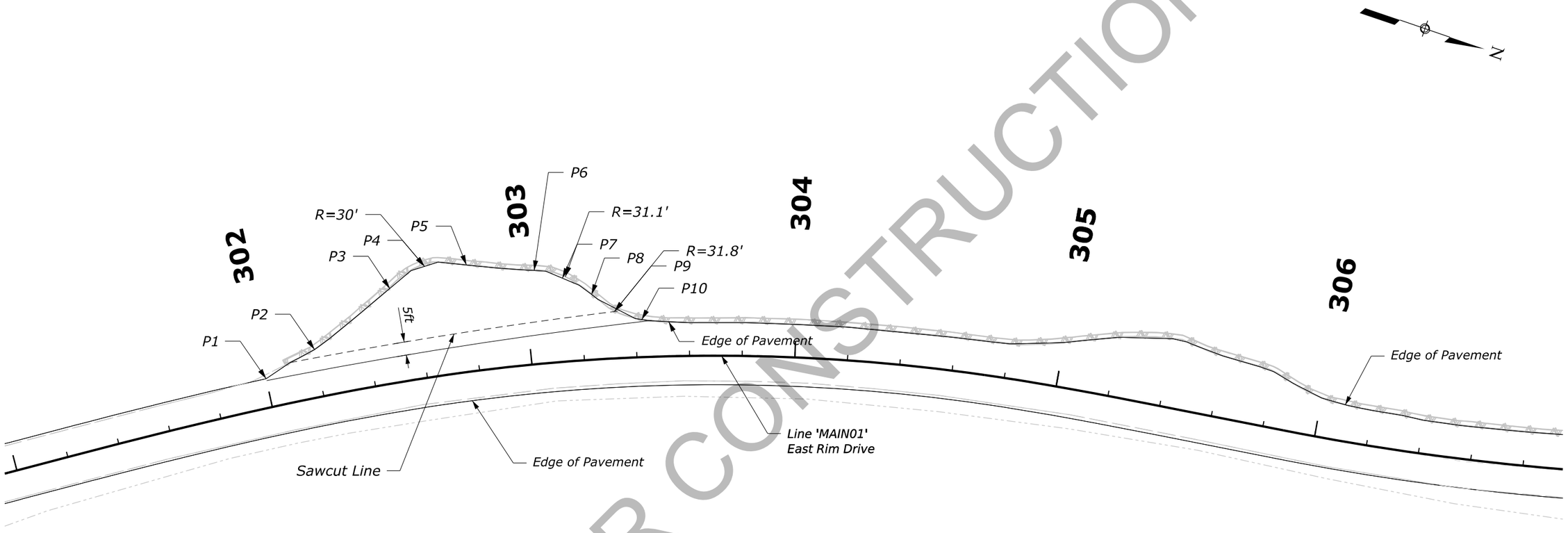
30 March 2021 8:24 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.47



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 302+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	466471.798	4509108.287	7515.539	MATCH PROP. EOP
P2	466457.993	4509124.718	7517.069	
P3	466438.455	4509155.903	7519.645	
P4	466428.572	4509168.227	7520.716	
P5	466413.771	4509173.750	7521.528	
P6	466388.731	4509180.126	7522.768	
P7	466376.786	4509181.699	7523.256	
P8	466365.137	4509178.624	7523.555	
P9	466354.835	4509175.350	7523.825	
P10	466344.032	4509175.718	7524.227	MATCH PROP. EOP

TURNOUT LAYOUT 302+00
SCOTT BLUFFS

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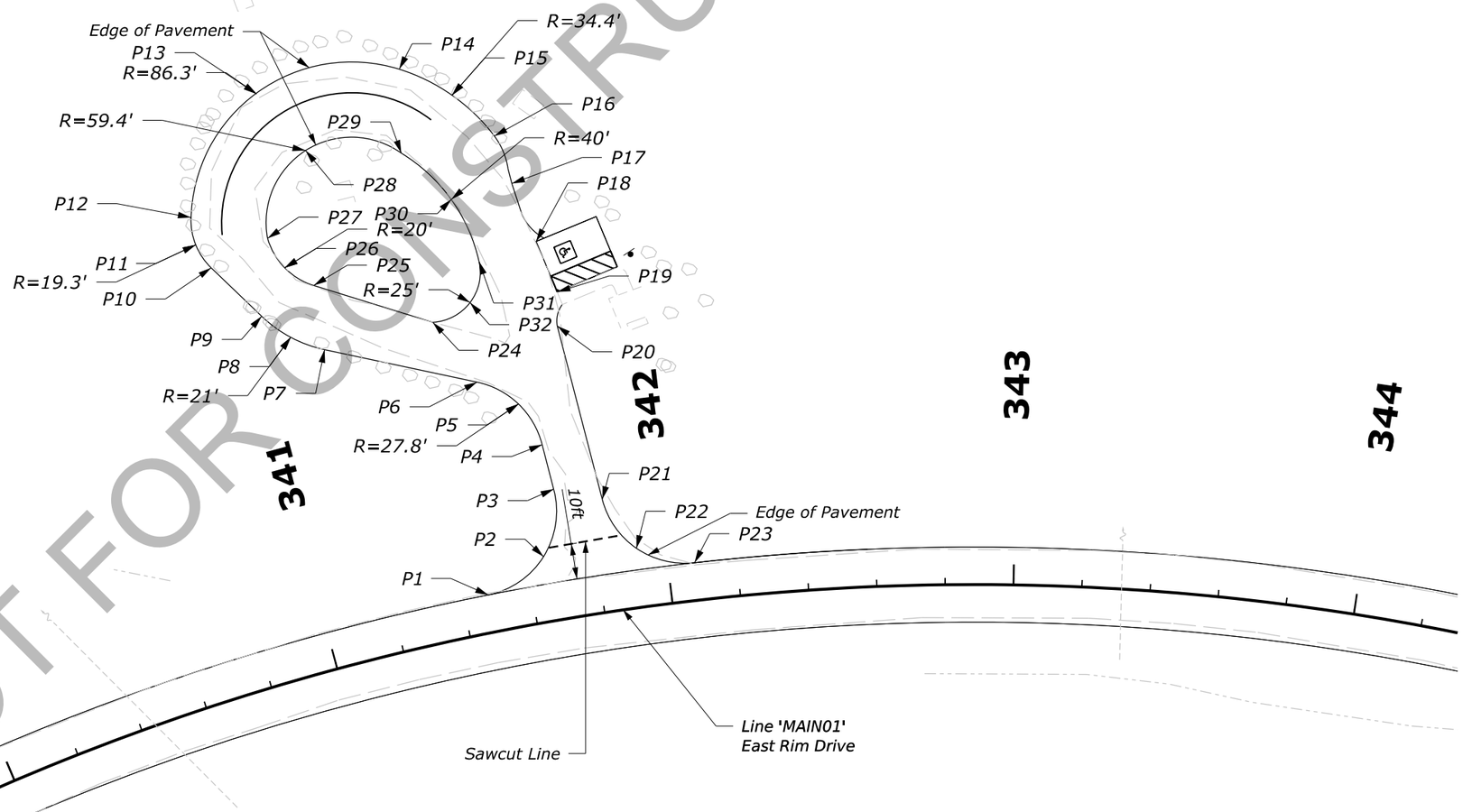
30 March 2021 8:25 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.48

LAYOUT INFORMATION - TURNOUT 341+75

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	34147.450	464485.194	7640.750	MATCH PROP. EOP
P2	34165.150	464466.788	7642.148	
P3	34171.160	464459.762	7643.042	
P4	34170.010	464460.423	7643.785	
P5	34165.530	464464.657	7644.291	
P6	34155.730	464475.086	7644.322	
P7	34118.340	464516.685	7642.302	
P8	34110.630	464525.568	7641.646	
P9	34104.760	464532.571	7641.097	
P10	34095.670	464543.939	7641.145	
P11	34093.470	464546.942	7641.451	
P12	34094.010	464546.928	7641.145	
P13	34117.260	464519.768	7642.738	
P14	34151.250	464477.796	7643.381	
P15	34162.510	464464.313	7643.293	
P16	34170.930	464454.770	7643.810	
P17	34173.280	464452.748	7644.611	
P18	34177.020	464449.407	7644.776	
P19	34180.390	464446.528	7644.950	
P20	34181.160	464445.557	7645.014	
P21	34184.070	464446.439	7643.328	
P22	34191.740	464439.616	7643.852	
P23	34207.740	464424.034	7644.151	MATCH PROP. EOP
P24	34147.320	464483.983	7644.096	
P25	34111.110	464522.940	7642.392	
P26	34125.260	464546.732	7642.059	
P27	34125.260	464519.768	7641.995	
P28	34147.860	464509.621	7642.842	
P29	34157.780	464482.426	7643.671	
P30	34157.780	464471.064	7644.282	
P31	34161.870	464466.994	7644.721	
P32	34157.730	464472.122	7644.551	



NOT FOR CONSTRUCTION

TURNOUT LAYOUT 341+75
WHITEBARK PICNIC AREA

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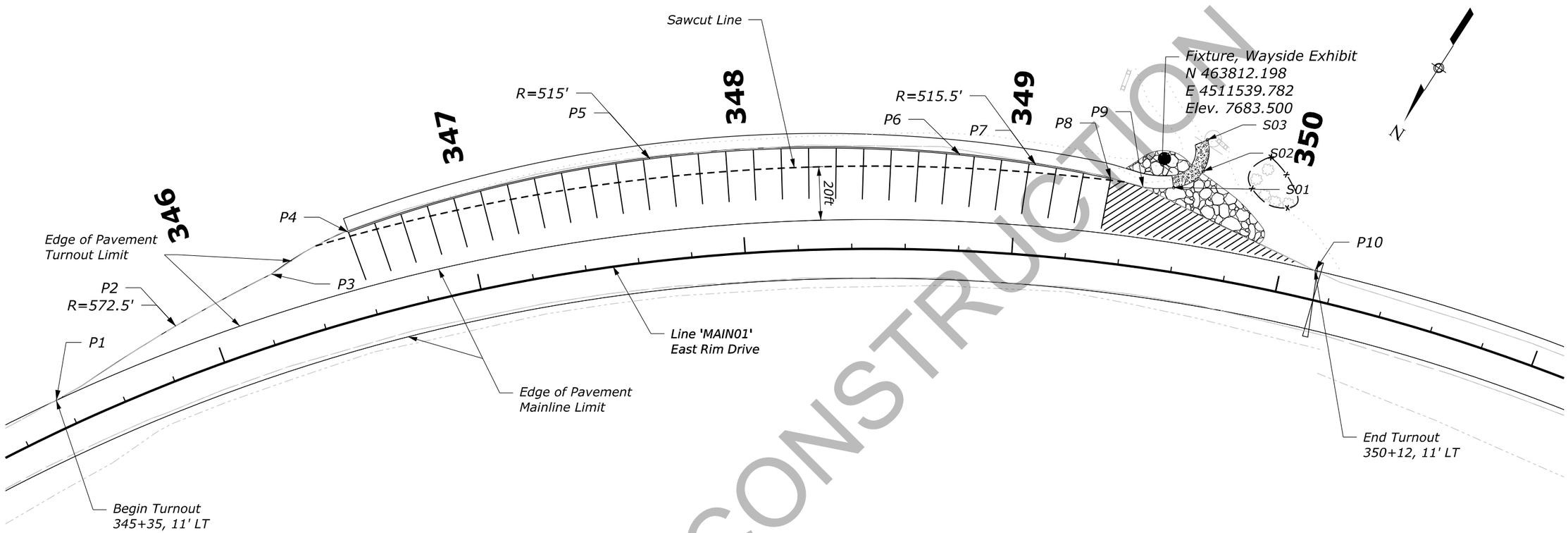
30 March 2021 7:49 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.49



NOT FOR CONSTRUCTION

SIDEWALK LAYOUT INFORMATION - TURNOUT 348+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
S01	463795.102	4511530.516	7681.700	
S02	463805.835	4511525.464	7684.900	
S03	463817.034	4511531.456	7687.300	

LAYOUT INFORMATION - TURNOUT 348+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	464111.264	4511840.050	7662.286	MATCH PROP. EOP
P2	464063.874	4511817.728	7665.298	
P3	464027.757	4511797.954	7667.580	
P4	463998.960	4511782.183	7669.265	
P5	463914.524	4511702.166	7674.095	
P6	463850.200	4511605.240	7677.917	
P7	463837.915	4511579.481	7679.227	
P8	463827.075	4511553.080	7680.320	
P9	463823.129	4511541.256	7680.660	
P10	463814.377	4511470.158	7681.694	MATCH PROP. EOP

TURNOUT LAYOUT 348+00
MT. SCOTT TRAILHEAD

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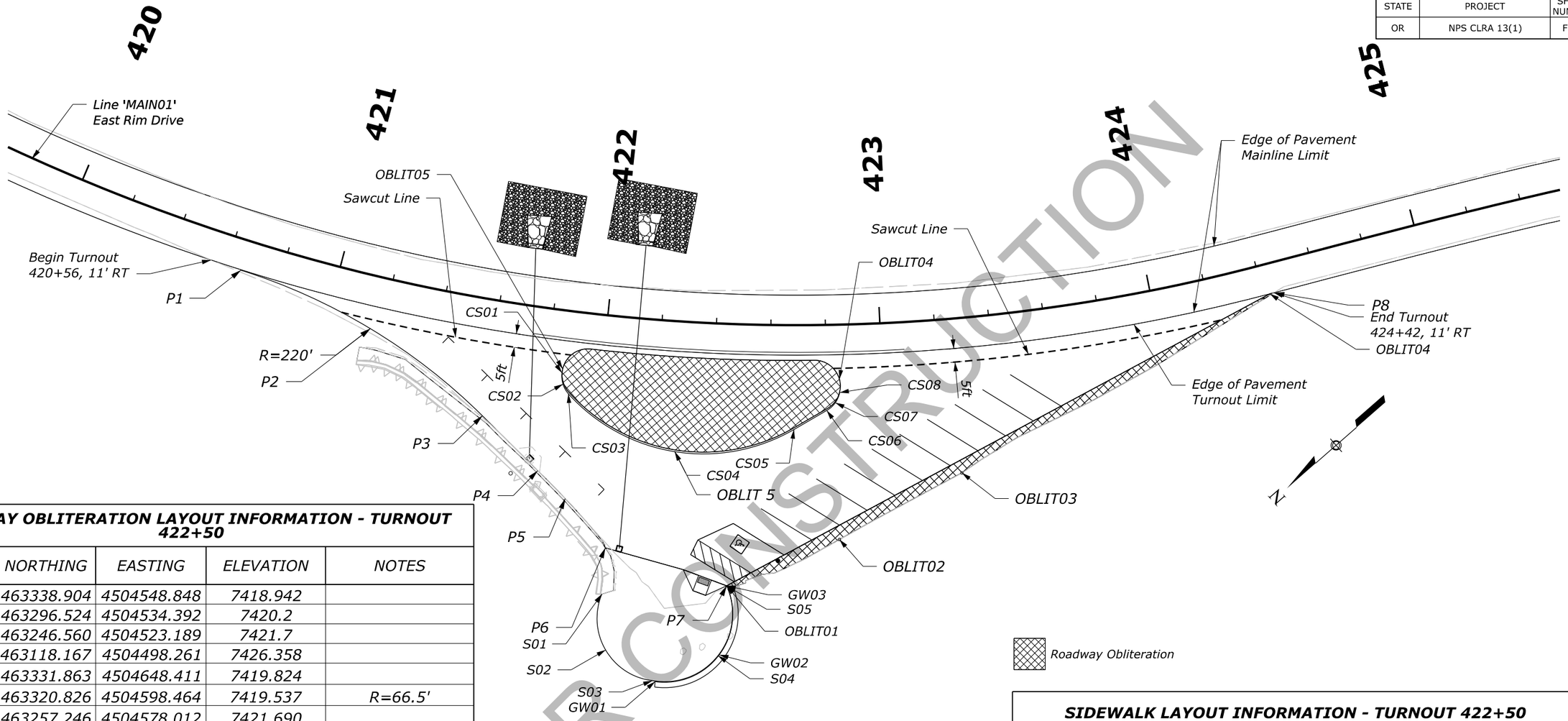
30 March 2021 7:49 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.50



NOT FOR CONSTRUCTION

ROADWAY OBLITERATION LAYOUT INFORMATION - TURNOUT 422+50

POINT	NORTHING	EASTING	ELEVATION	NOTES
OBLIT01	463338.904	4504548.848	7418.942	
OBLIT02	463296.524	4504534.392	7420.2	
OBLIT03	463246.560	4504523.189	7421.7	
OBLIT04	463118.167	4504498.261	7426.358	
OBLIT05	463331.863	4504648.411	7419.824	
OBLIT06	463320.826	4504598.464	7419.537	R=66.5'
OBLIT07	463257.246	4504578.012	7421.690	

CURB STONE LAYOUT INFORMATION - TURNOUT 422+50

POINT	NORTHING	EASTING	ELEVATION	NOTES
CS01	463333.058	4504647.420	7419.739	
CS02	463335.444	4504644.152	7419.582	R=9.5'
CS03	463336.253	4504640.189	7419.494	
CS04	463320.826	4504598.464	7419.537	R=66.5'
CS05	463282.546	4504575.800	7420.605	
CS06	463268.831	4504572.638	7421.042	
CS07	463264.600	4504573.172	7421.243	R=9.5'
CS08	463260.942	4504574.958	7421.465	
CS09	463363.279	4504588.674	7418.757	
CS10	463346.996	4504563.799	7418.708	

LAYOUT INFORMATION - TURNOUT 422+50

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	463396.999	4504753.524	7419.224	MATCH PROP. EOP
P2	463375.295	4504706.089	7419.331	
P3	463365.368	4504654.877	7418.849	
P4	463363.318	4504626.336	7418.339	
P5	463362.450	4504611.961	7418.895	
P6	463363.279	4504588.674	7418.428	
P7	463338.904	4504548.848	7418.910	
P8	463118.167	4504498.261	7426.358	MATCH PROP. EOP

SIDEWALK LAYOUT INFORMATION - TURNOUT 422+50

POINT	NORTHING	EASTING	ELEVATION	NOTES
S01	463375.428	4504576.699	7418.964	
S02	463387.895	4504560.373	7419.148	R=23'
S03	463382.392	4504540.571	7419.012	
S04	463358.136	4504531.630	7420.244	R=25'
S05	463338.904	4504548.848	7418.942	

GUARDWALL LAYOUT INFORMATION - TURNOUT 422+50

POINT	NORTHING	EASTING	ELEVATION	NOTES
GW01	463381.813	4504539.669		
GW02	463357.636	4504531.532		R=25'
GW03	463338.904	4504548.848		

TURNOUT LAYOUT 422+50
PUMICE CASTLE OVERLOOK

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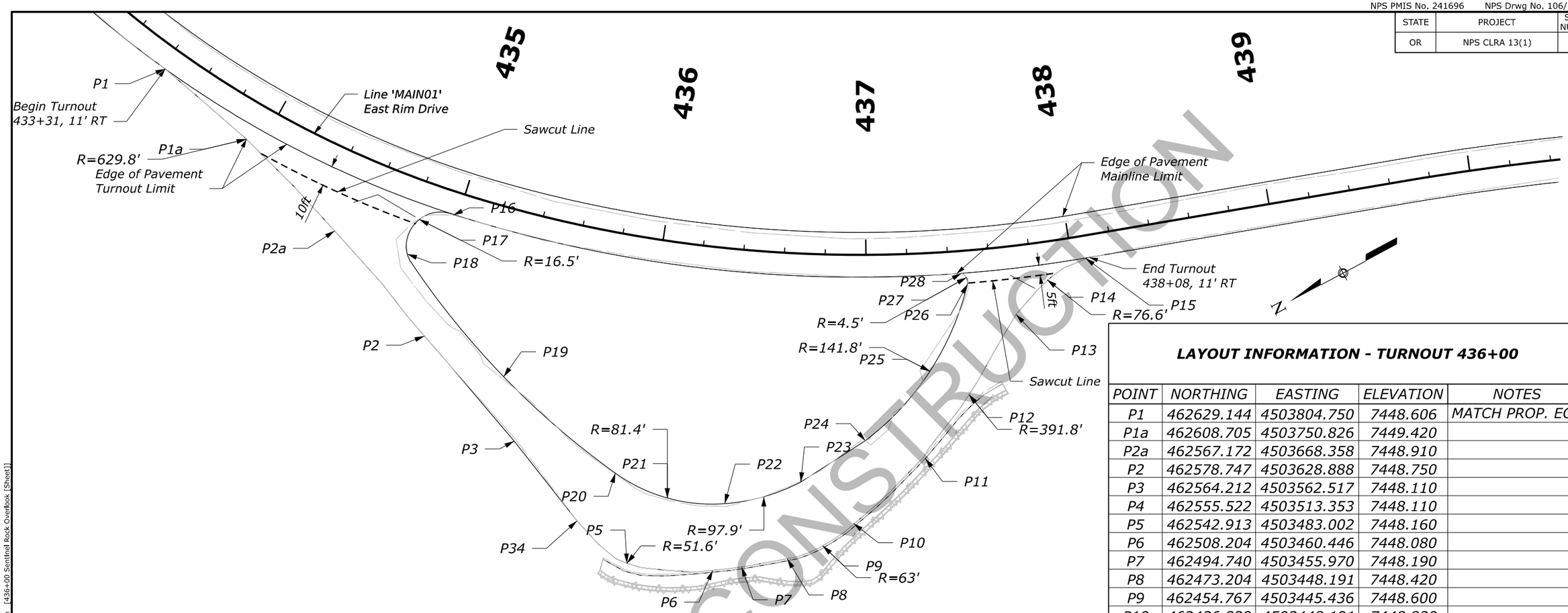
30 March 2021 8:25 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.51



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 436+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	462629.144	4503804.750	7448.606	MATCH PROP. EOP
P1a	462608.705	4503750.826	7449.420	
P2a	462567.172	4503668.358	7448.910	
P2	462578.747	4503628.888	7448.750	
P3	462564.212	4503562.517	7448.110	
P4	462555.522	4503513.353	7448.110	
P5	462542.913	4503483.002	7448.160	
P6	462508.204	4503460.446	7448.080	
P7	462494.740	4503455.970	7448.190	
P8	462473.204	4503448.191	7448.420	
P9	462454.767	4503445.436	7448.600	
P10	462436.329	4503448.191	7448.830	
P11	462388.324	4503461.876	7449.130	
P12	462356.319	4503477.176	7449.180	
P13	462317.370	4503501.029	7449.590	
P14	462295.827	4503508.786	7449.680	
P15	462274.244	4503509.321	7449.471	MATCH PROP. EOP
P16	462538.270	4503674.651	7448.955	MATCH PROP. EOP
P17	462553.939	4503680.572	7449.330	
P18	462567.172	4503668.358	7448.910	
P19	462553.860	4503592.851	7447.840	
P20	462527.827	4503525.186	7447.600	
P21	462511.083	4503502.303	7447.730	
P22	462487.510	4503486.547	7447.880	
P23	462449.526	4503478.277	7448.170	
P24	462411.914	4503481.236	7448.380	
P25	462367.830	4503496.333	7449.190	
P26	462331.428	4503525.422	7449.720	
P27	462330.296	4503528.452	7119.720	
P28	462331.485	4503531.461	7449.464	MATCH PROP. EOP

TURNOUT LAYOUT 436+00
SENTINEL ROCK OVERLOOK

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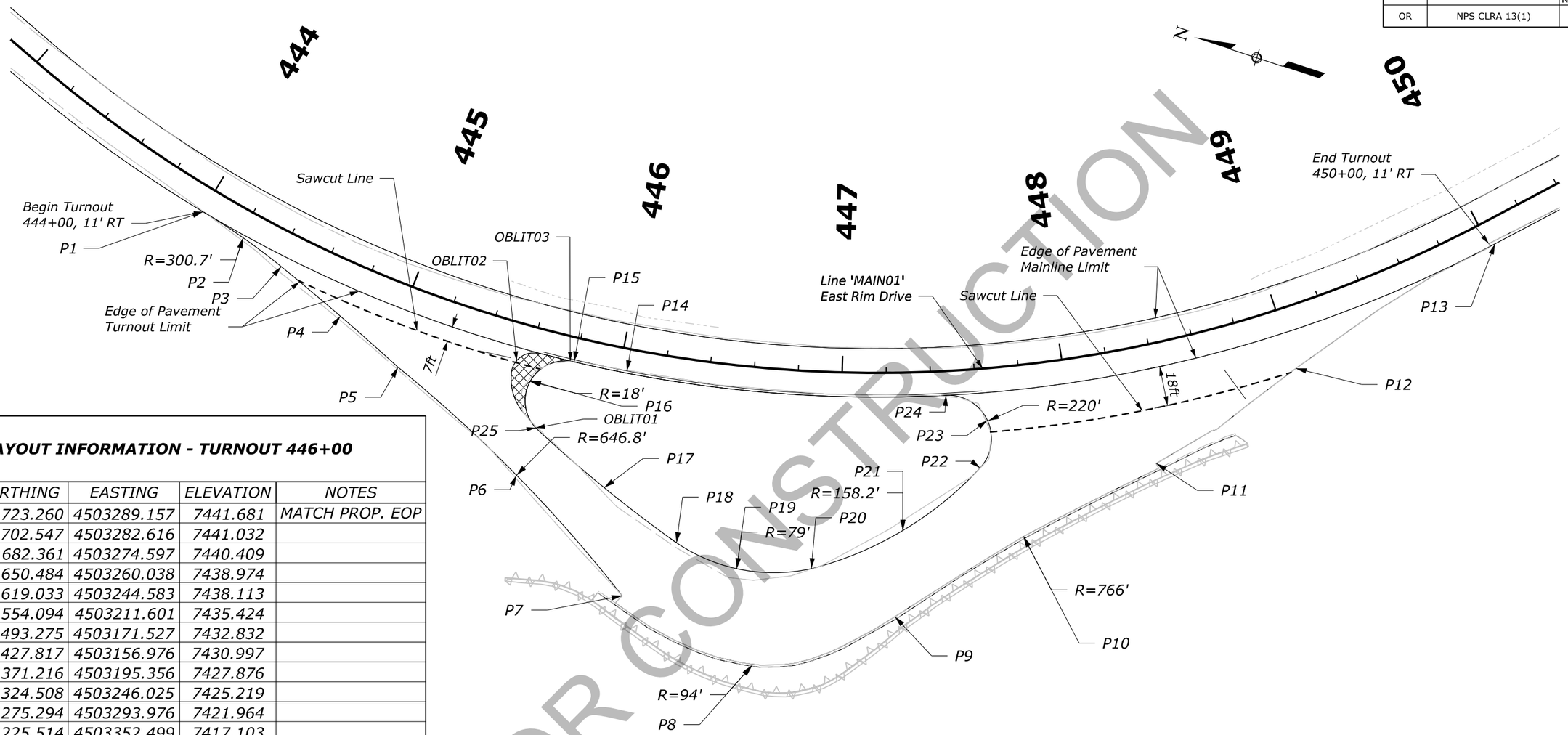
30 March 2021 7:49 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.52



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 446+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	461723.260	4503289.157	7441.681	MATCH PROP. EOP
P2	461702.547	4503282.616	7441.032	
P3	461682.361	4503274.597	7440.409	
P4	461650.484	4503260.038	7438.974	
P5	461619.033	4503244.583	7438.113	
P6	461554.094	4503211.601	7435.424	
P7	461493.275	4503171.527	7432.832	
P8	461427.817	4503156.976	7430.997	
P9	461371.216	4503195.356	7427.876	
P10	461324.508	4503246.025	7425.219	
P11	461275.294	4503293.976	7421.964	
P12	461225.514	4503352.499	7417.103	
P13	461153.312	4503431.107	7409.842	MATCH PROP. EOP
P14	461542.540	4503268.194	7434.510	MATCH PROP. EOP
P15	461559.388	4503254.708	7435.724	
P16	461551.408	4503234.657	7435.564	
P17	461514.166	4503216.723	7433.923	
P18	461475.812	4503201.308	7432.252	
P19	461446.300	4503197.257	7431.084	
P20	461413.653	4503206.251	7429.478	
P21	461378.127	4503234.045	7427.680	
P22	461351.920	4503270.668	7425.762	
P23	461354.406	4503292.548	7425.107	
P24	461375.620	4503298.452	7426.088	MATCH PROP. EOP
P25	463338.904	4504548.848	7418.942	

Roadway Obliteration

ROADWAY OBLITERATION LAYOUT INFORMATION - TURNOUT 446+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
OBLIT01	461550.908	4503234.657	7435.600	
OBLIT02	461567.872	4503261.842	7436.000	
OBLIT03	461544.308	4503268.078	7435.000	

TURNOUT LAYOUT 446+00 REFLECTION POINT

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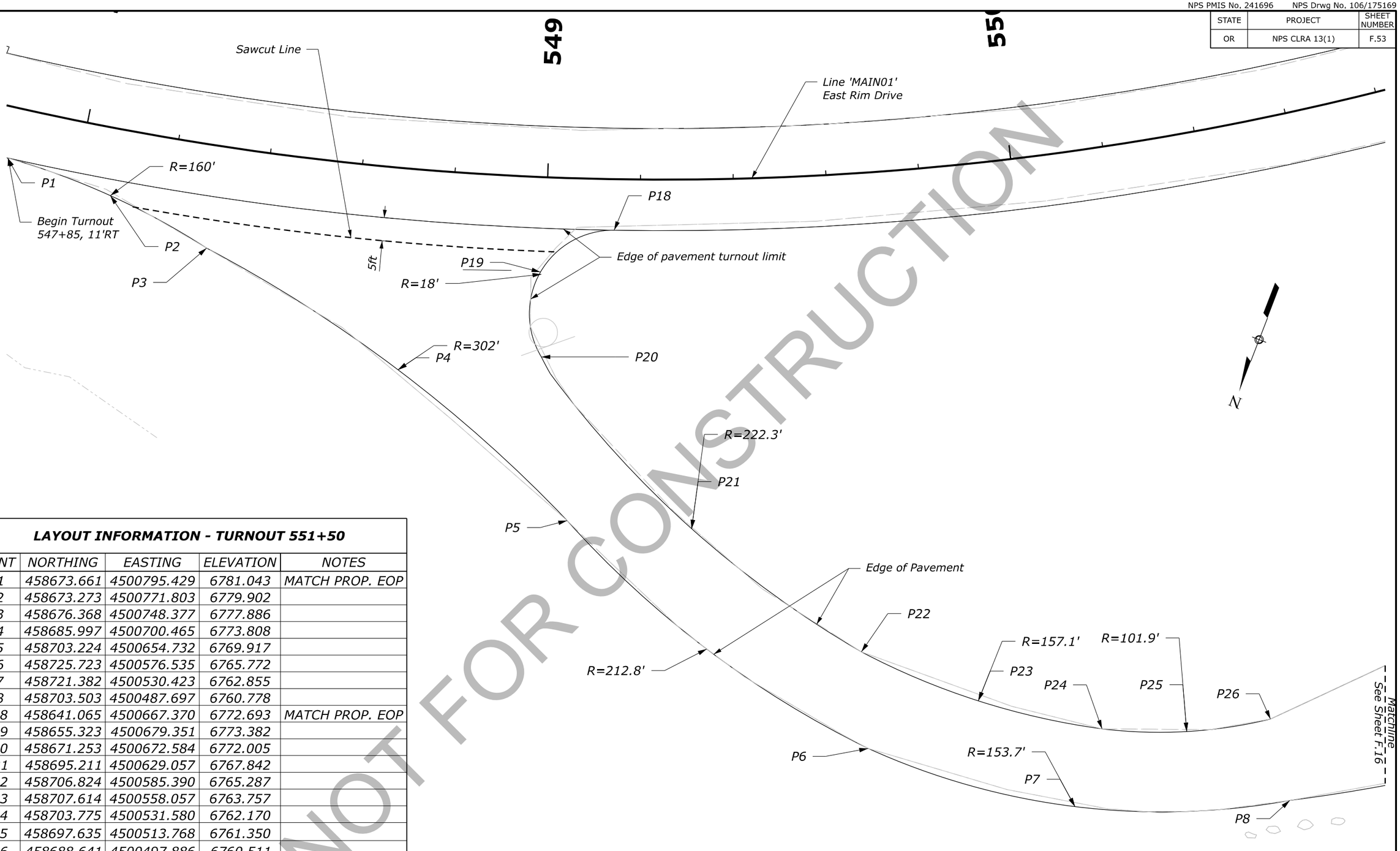
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.53



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 551+50

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	458673.661	4500795.429	6781.043	MATCH PROP. EOP
P2	458673.273	4500771.803	6779.902	
P3	458676.368	4500748.377	6777.886	
P4	458685.997	4500700.465	6773.808	
P5	458703.224	4500654.732	6769.917	
P6	458725.723	4500576.535	6765.772	
P7	458721.382	4500530.423	6762.855	
P8	458703.503	4500487.697	6760.778	
P18	458641.065	4500667.370	6772.693	MATCH PROP. EOP
P19	458655.323	4500679.351	6773.382	
P20	458671.253	4500672.584	6772.005	
P21	458695.211	4500629.057	6767.842	
P22	458706.824	4500585.390	6765.287	
P23	458707.614	4500558.057	6763.757	
P24	458703.775	4500531.580	6762.170	
P25	458697.635	4500513.768	6761.350	
P26	458688.641	4500497.886	6760.511	

TURNOUT LAYOUT 551+50
PHANTOM SHIP OVERLOOK ENTRANCE

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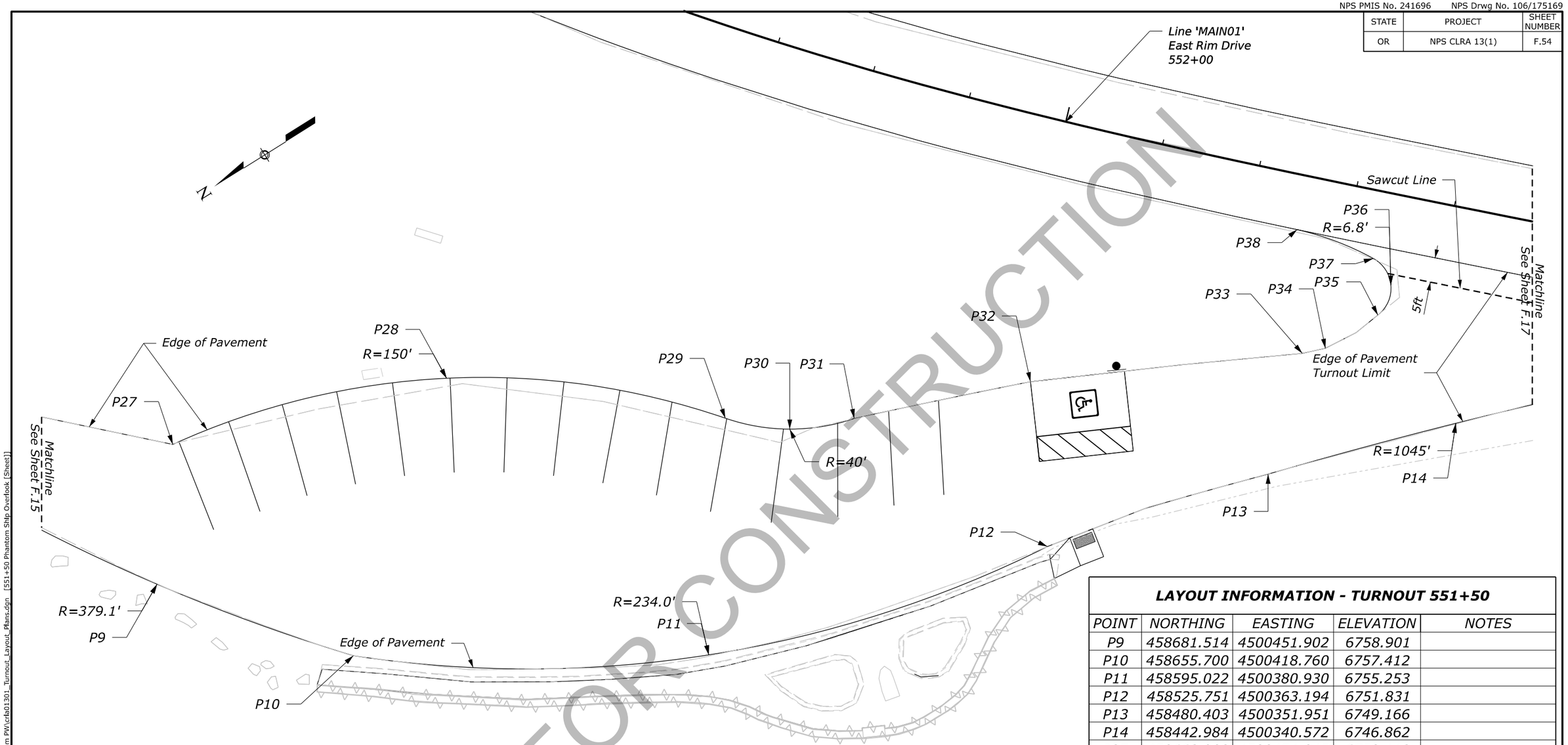
30 March 2021 7:49 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.54



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 551+50

POINT	NORTHING	EASTING	ELEVATION	NOTES
P9	458681.514	4500451.902	6758.901	
P10	458655.700	4500418.760	6757.412	
P11	458595.022	4500380.930	6755.253	
P12	458525.751	4500363.194	6751.831	
P13	458480.403	4500351.951	6749.166	
P14	458442.984	4500340.572	6746.862	
P27	458663.908	4500474.045	6759.112	
P28	458610.173	4500456.090	6756.841	
P29	458566.931	4500419.485	6754.480	
P30	458557.111	4500410.743	6753.781	
P31	458544.987	4500405.658	6753.126	
P32	458511.024	4500393.091	6751.810	
P33	458461.677	4500368.887	6748.974	
P34	458457.196	4500367.288	6748.658	
P35	458444.542	4500367.364	6748.273	
P36	458439.279	4500371.045	6748.509	
P37	458439.416	4500377.466	6749.170	

TURNOUT LAYOUT 551+50
PHANTOM SHIP OVERLOOK

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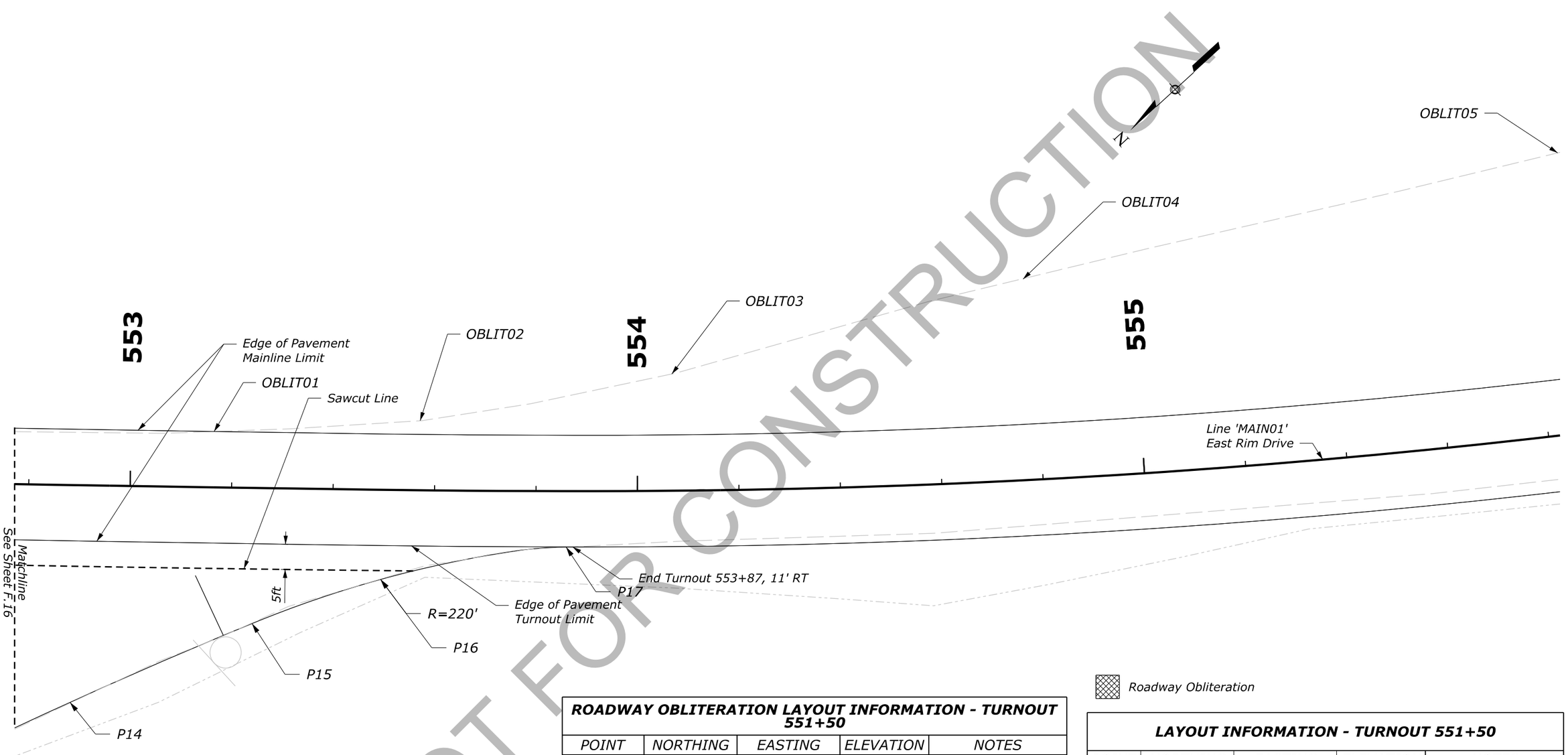
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.55



NOT FOR CONSTRUCTION

ROADWAY OBLITERATION LAYOUT INFORMATION - TURNOUT 551+50

POINT	NORTHING	EASTING	ELEVATION	NOTES
OBLIT01	458386.000	4500360.784	6744.840	
OBLIT02	458354.314	4500334.706	6742.101	
OBLIT03	458311.769	4500308.241	6739.094	
OBLIT04	458248.056	4500275.301	6734.445	
OBLIT05	458153.525	4500222.545	6727.900	

Roadway Obliteration

LAYOUT INFORMATION - TURNOUT 551+50

POINT	NORTHING	EASTING	ELEVATION	NOTES
P14	458442.984	4500340.572	6746.862	
P15	458406.017	4500327.800	6744.505	
P16	458381.450	4500317.108	6742.935	
P17	458349.055	4500296.144	6741.785	MATCH PROP. EOP

TURNOUT LAYOUT 551+50 PHANTOM SHIP OVERLOOK EXIT

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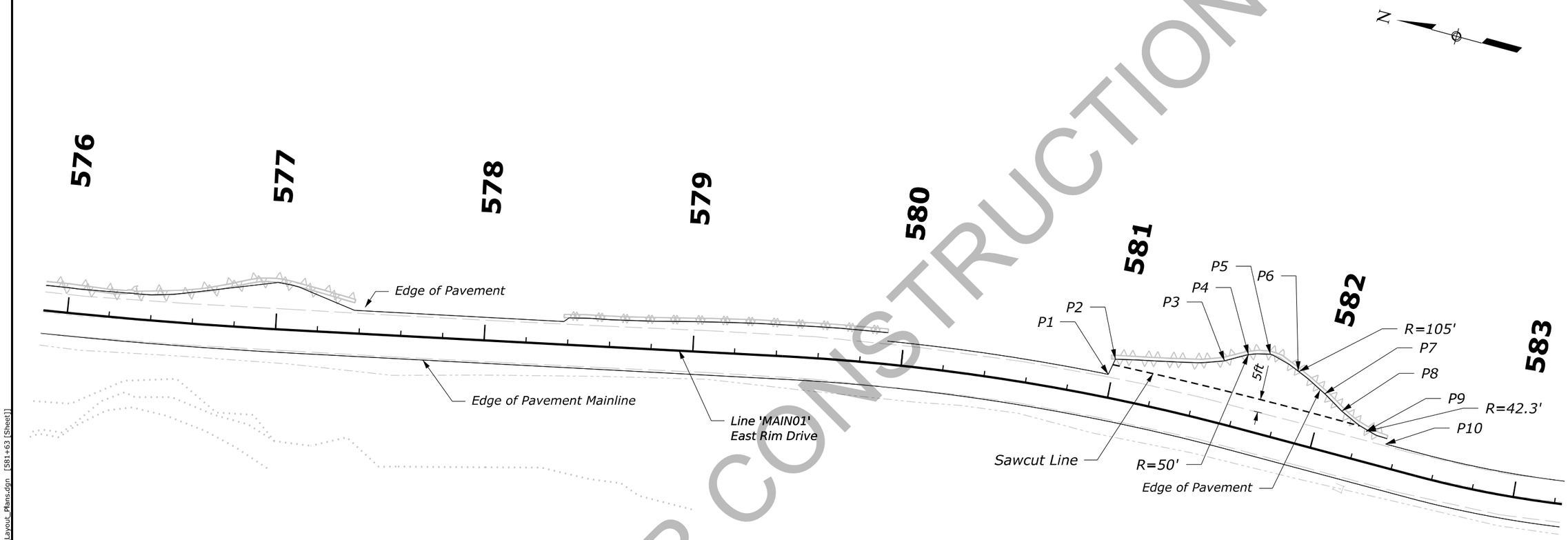
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.56



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 581+63

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	455769.222	4499868.701	6832.438	MATCH PROP. EOP
P2	455767.819	4499876.592	6832.020	
P3	455717.152	4499889.488	6834.155	
P4	455707.622	4499895.122	6834.559	
P5	455697.086	4499898.522	6834.715	
P6	455681.420	4499893.891	6834.715	
P7	455666.661	4499886.887	6835.356	
P8	455656.746	4499880.950	6835.901	
P9	455642.998	4499874.564	6836.625	
P10	455627.968	4499872.591	6836.938	MATCH PROP. EOP

TURNOUT LAYOUT 581+63

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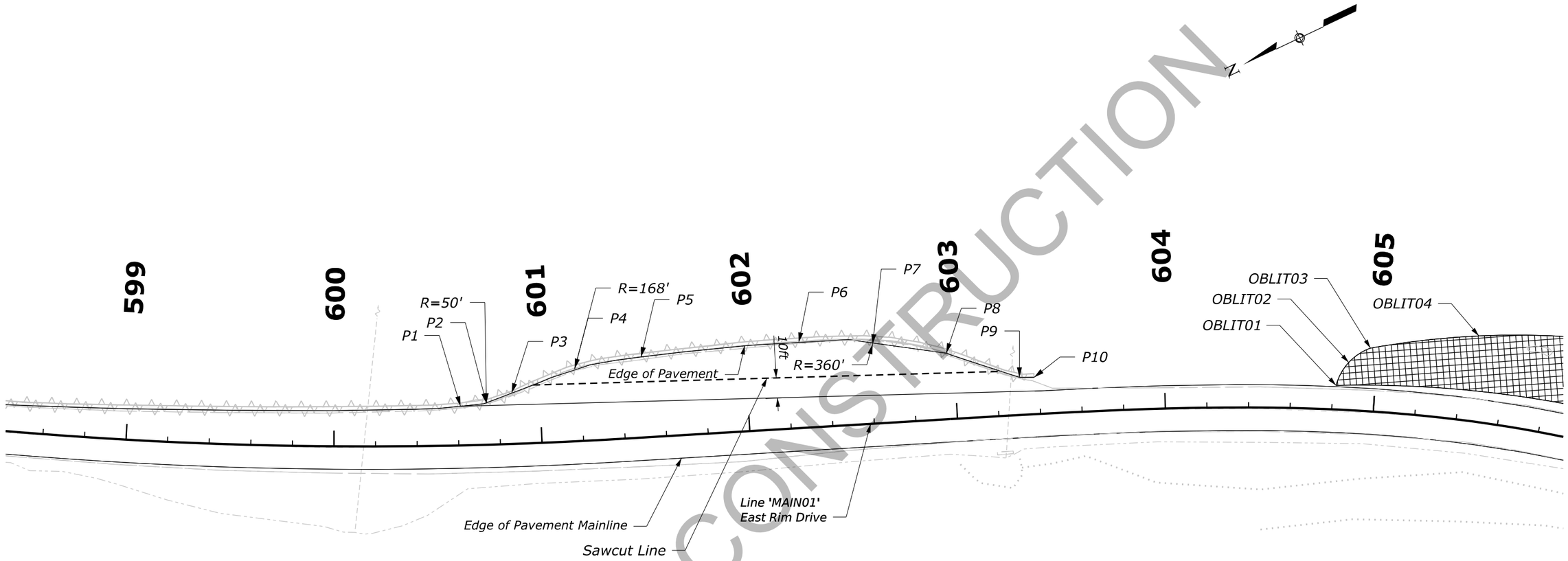
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.57



Roadway Obliteration

ROADWAY OBLITERATION LAYOUT INFORMATION - TURNOUT 602+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
OBLIT01	453694.969	4500908.765	6961.901	
OBLIT02	453697.552	4500921.055	6961.365	R=26.288'
OBLIT03	453694.138	4500933.141	6962.314	
OBLIT04	453658.511	4500971.589	6964.473	R=396.164'

LAYOUT INFORMATION - TURNOUT 602+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	454007.449	4500625.991	6935.296	MATCH PROP. EOP
P2	453998.632	4500635.646	6936.056	
P3	453992.620	4500647.257	6936.696	
P4	453977.325	4500675.932	6938.317	
P5	453956.795	4500701.126	6940.481	
P6	453903.979	4500755.794	6945.065	
P7	453876.564	4500778.335	6947.264	
P8	453847.063	4500798.068	6949.529	
P9	453812.841	4500812.276	6951.893	
P10	453807.533	4500816.884	6952.326	MATCH PROP. EOP

NOT FOR CONSTRUCTION

TURNOUT LAYOUT 602+00
UPPER DUTTON CLIFFS

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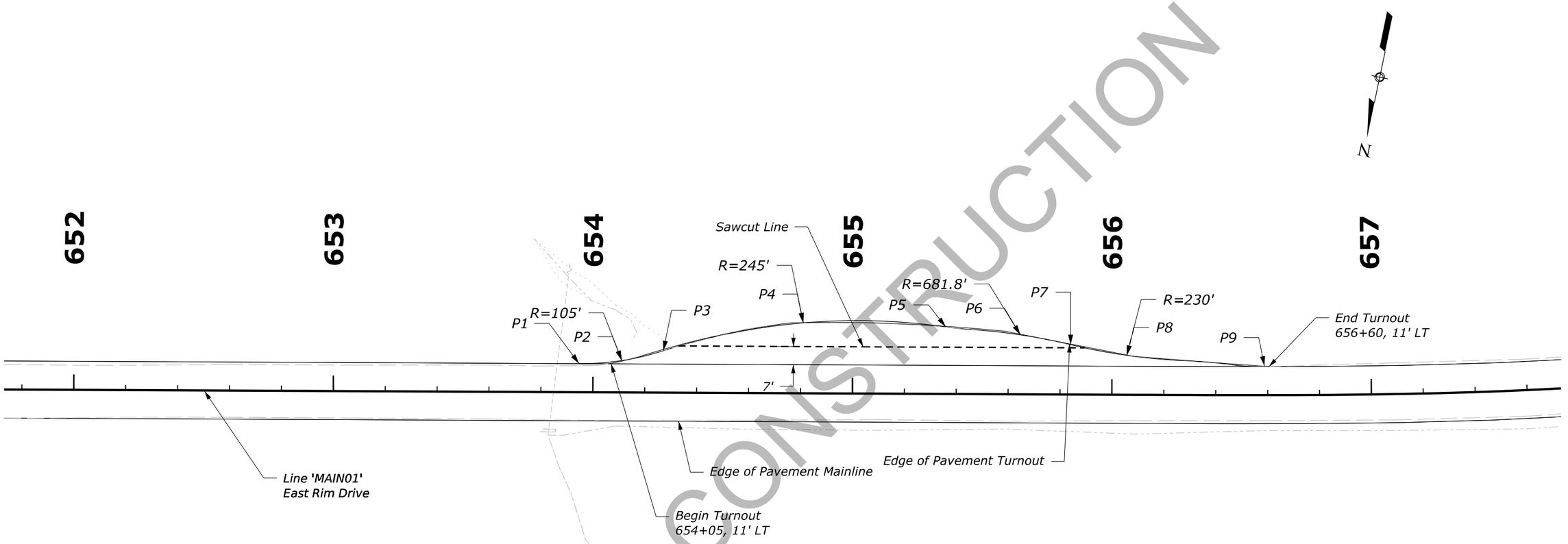
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.58



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 655+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	449837.960	4500060.382	7242.388	MATCH PROP. EOP
P2	449833.426	4500044.563	7229.490	
P3	449826.475	4500029.647	7230.530	
P4	449804.970	4499979.080	7233.980	
P5	449795.275	4499924.992	7237.340	
P6	449792.431	4499896.246	7239.160	
P7	449792.193	4499876.499	7240.340	
P8	449791.819	4499854.467	7241.670	
P9	449785.069	4499801.674	7245.644	MATCH PROP. EOP

TURNOUT LAYOUT 655+00
KERR VALLEY VIEWPOINT

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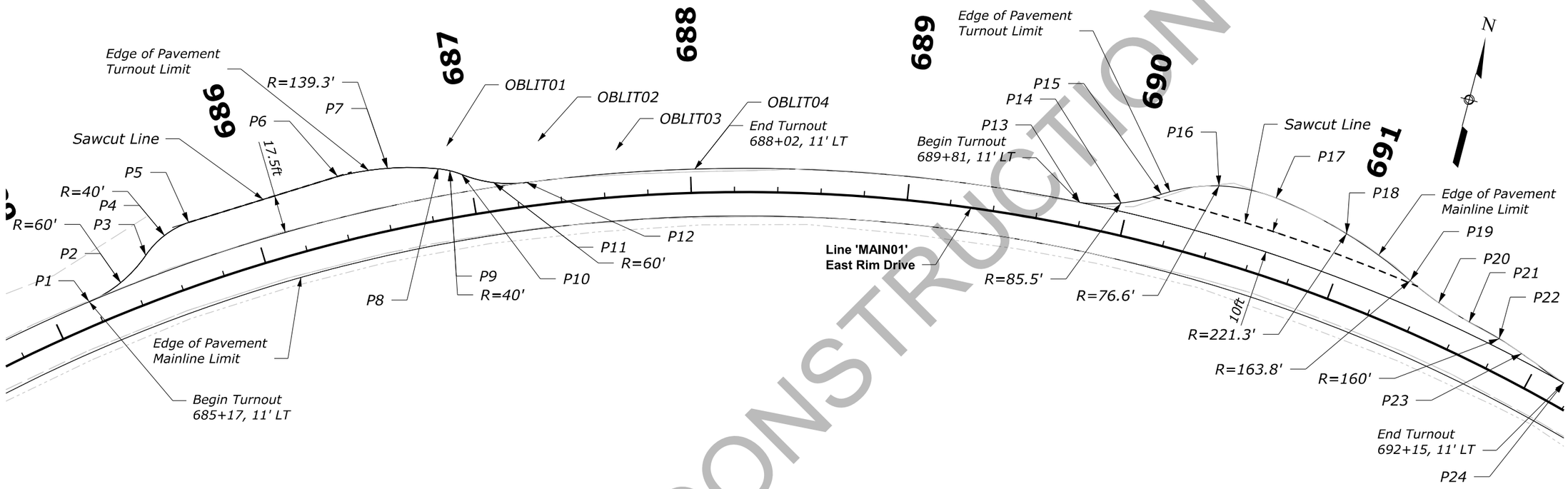
STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.59



LAYOUT INFORMATION - TURNOUT 686+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	447726.541	4497912.225	7387.345	MATCH PROP. EOP
P2	447714.283	4497900.354	7387.945	
P3	447699.180	4497892.413	7388.485	
P4	447688.049	4497886.323	7388.883	
P5	447679.385	4497877.052	7389.320	
P6	447641.306	4497815.793	7391.830	
P7	447631.864	4497794.421	7392.641	
P8	447626.165	4497772.006	7393.441	
P9	447625.626	4497766.290	7393.623	
P10	447625.911	4497760.557	7393.802	
P11	447625.825	4497745.353	7394.295	
P12	447621.920	4497730.658	7394.831	MATCH PROP. EOP

Roadway Obliteration

ROADWAY OBLITERATION LAYOUT INFORMATION - TURNOUT 686+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
OBLIT01	447614.988	4497770.59	7396.745	
OBLIT02	447602.023	4497730.326	7396.745	
OBLIT03	447596.956	4497694.49	7396.745	
OBLIT04	447596.169	4497656.989	7396.745	

LAYOUT INFORMATION - TURNOUT 691+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P13	447565.952	4497480.929	7401.128	MATCH PROP. EOP
P14	447561.363	4497462.400	7401.436	
P15	447552.781	4497445.349	7402.016	
P16	447542.260	4497420.547	7402.414	
P17	447540.979	4497393.637	7402.549	
P18	447548.665	4497357.911	7402.794	
P19	447562.126	4497323.938	7402.672	
P20	447568.770	4497308.603	7402.769	
P21	447573.818	4497292.671	7402.438	
P22	447577.716	4497277.370	7402.193	
P23	447581.720	4497265.612	7402.050	
P24	447590.192	4497242.647	7401.249	MATCH PROP. EOP

NOT FOR CONSTRUCTION

TURNOUTS LAYOUT 686+00
DUTTON RIDGE ROAD SUMMIT

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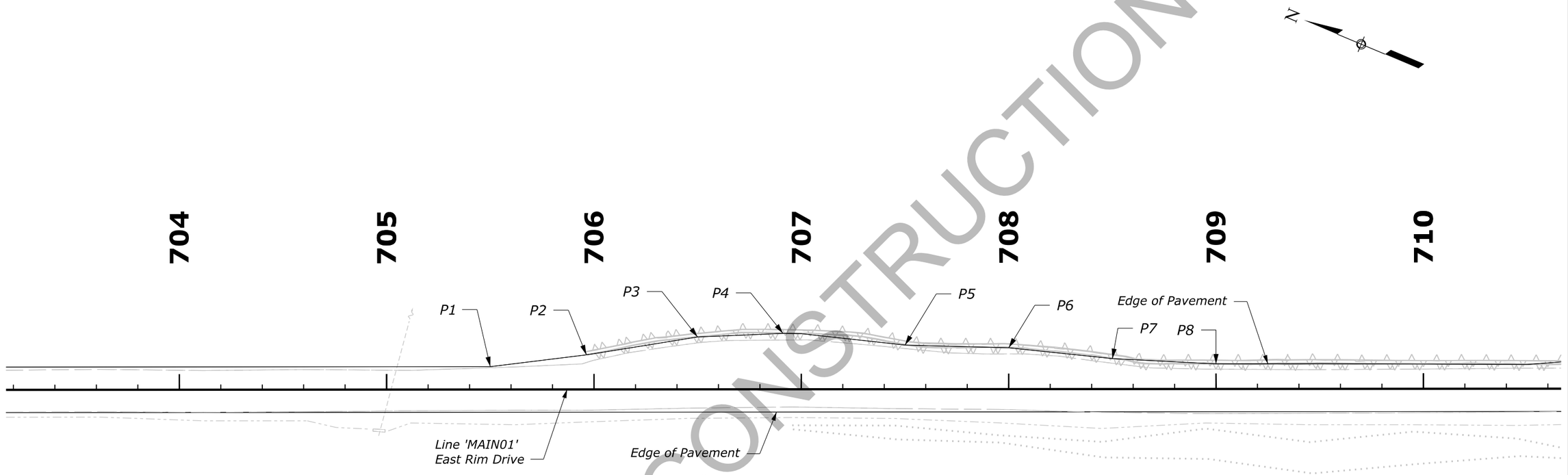
30 March 2021 7:54 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.60



NOT FOR CONSTRUCTION

NOTE: Reconstruct turnout to wall.

LAYOUT INFORMATION - TURNOUT 707+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	448622.806	4496474.866	7335.389	MATCH PROP. EOP
P2	448663.285	4496451.642	7332.935	
P3	448709.420	4496422.889	7330.052	
P4	448746.730	4496405.337	7327.742	
P5	448803.130	4496387.754	7324.259	
P6	448849.719	4496369.554	7321.331	
P7	448897.839	4496354.990	7318.291	
P8	448944.938	4496338.000	7315.270	MATCH PROP. EOP

TURNOUT LAYOUT 707+00

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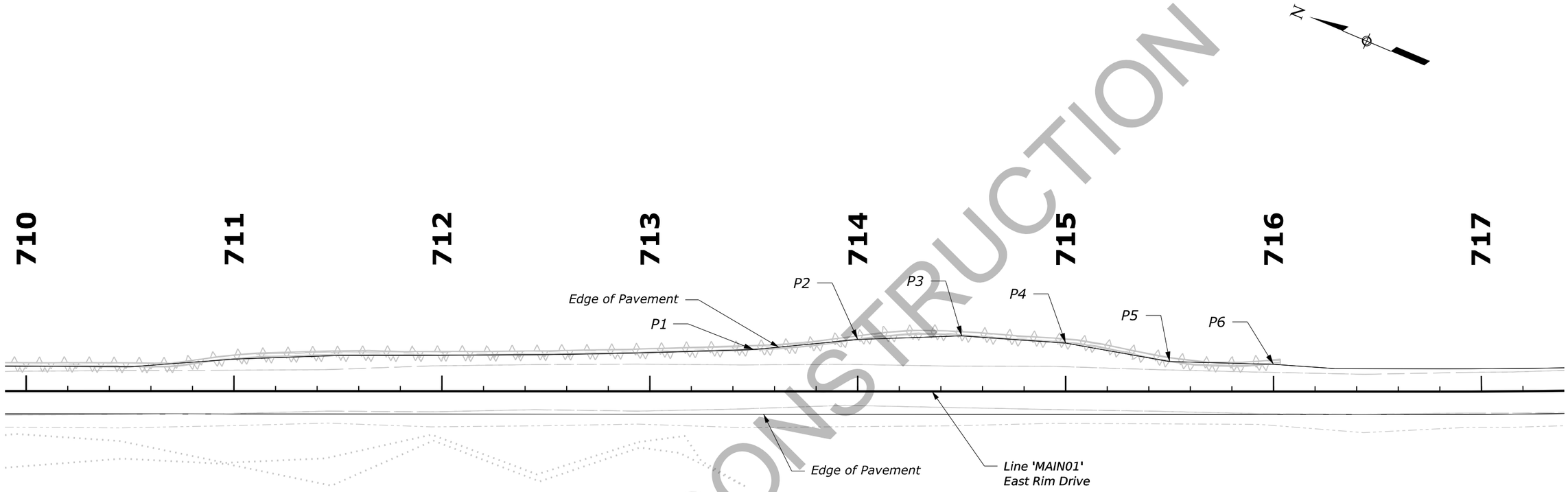
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.61



NOT FOR CONSTRUCTION

NOTE: Reconstruct turnout to wall.

LAYOUT INFORMATION - TURNOUT 714+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	449589.609	4496065.236	7287.247	MATCH PROP. EOP
P2	449543.041	4496083.486	7284.108	
P3	449493.525	4496094.737	7280.907	
P4	449446.096	4496110.942	7277.600	
P5	449400.707	4496131.991	7274.160	
P6	449356.527	4496155.906	7270.750	MATCH PROP. EOP

TURNOUT LAYOUT 714+00

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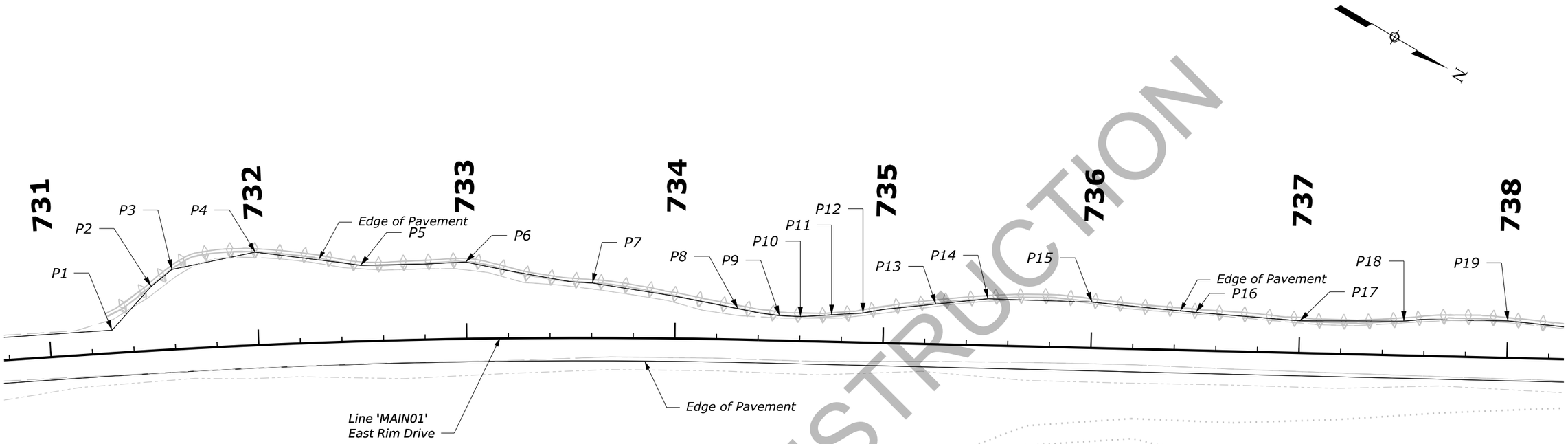
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.62



NOT FOR CONSTRUCTION

NOTE: Reconstruct turnout to wall.

LAYOUT INFORMATION - TURNOUT 736+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	450905.116	4495295.924	7192.376	MATCH PROP. EOP
P2	450910.655	4495268.257	7192.004	
P3	450915.094	4495256.195	7191.740	
P4	450945.207	4495228.878	7190.220	
P5	450992.221	4495208.512	7187.990	
P6	451034.901	4495181.478	7185.787	
P7	451092.519	4495159.245	7182.907	
P8	451159.099	4495134.333	7179.483	
P9	451177.948	4495127.080	7179.487	
P10	451186.834	4495122.385	7177.983	
P11	451199.344	4495114.019	7177.172	
P12	451211.853	4495105.653	7176.386	
P13	451239.892	4495084.166	7174.589	
P14	451259.042	4495068.398	7173.288	
P15	451304.080	4495045.278	7170.568	
P16	451349.578	4495024.209	7167.832	
P17	451394.621	4495002.322	7164.857	
P18	451437.787	4494977.066	7161.840	
P19	451480.858	4494951.641	7158.755	

TURNOUTS LAYOUT 736+00

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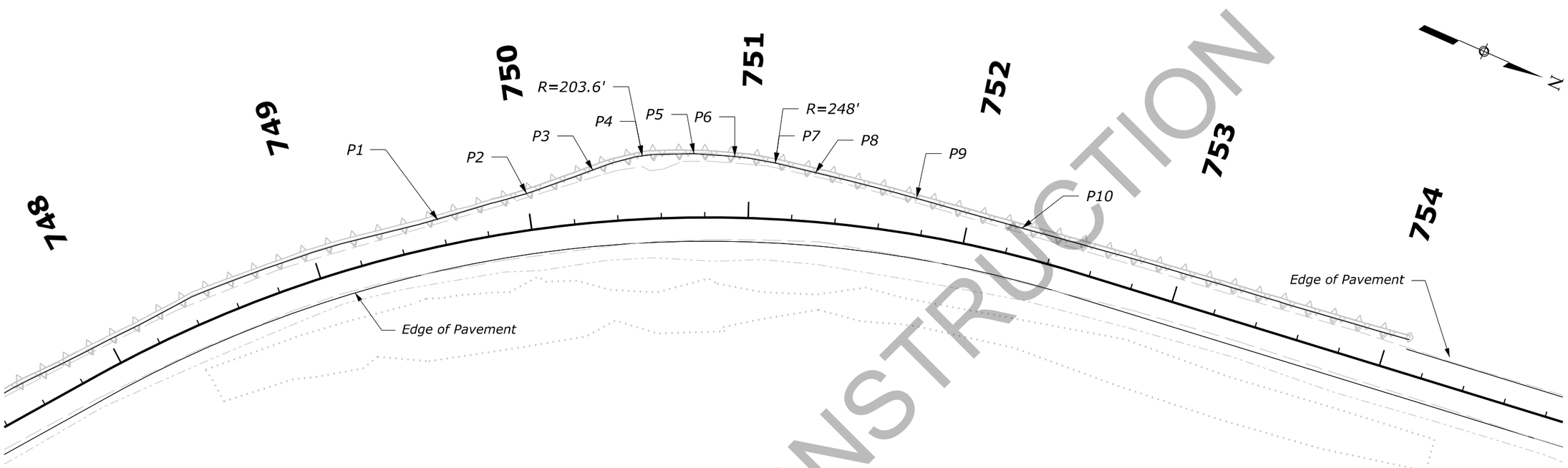
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.63



NOT FOR CONSTRUCTION

NOTE: Reconstruct turnout to wall.

LAYOUT INFORMATION - TURNOUT 751+00				
POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	452366.724	4494228.655	7090.058	MATCH PROP. EOP
P2	452399.476	4494201.302	7087.810	MATCH PROP. EOP
P3	452422.977	4494179.064	7086.230	MATCH PROP. EOP
P4	452441.237	4494163.849	7085.070	MATCH PROP. EOP
P5	452462.527	4494153.281	7083.774	MATCH PROP. EOP
P6	452480.296	4494146.874	7082.684	MATCH PROP. EOP
P7	452498.606	4494142.045	7081.447	MATCH PROP. EOP
P8	452517.276	4494138.634	7081.447	MATCH PROP. EOP
P9	452564.713	4494130.419	7076.783	MATCH PROP. EOP
P10	452614.739	4494123.546	7073.349	MATCH PROP. EOP

TURNOUT LAYOUT 751+00

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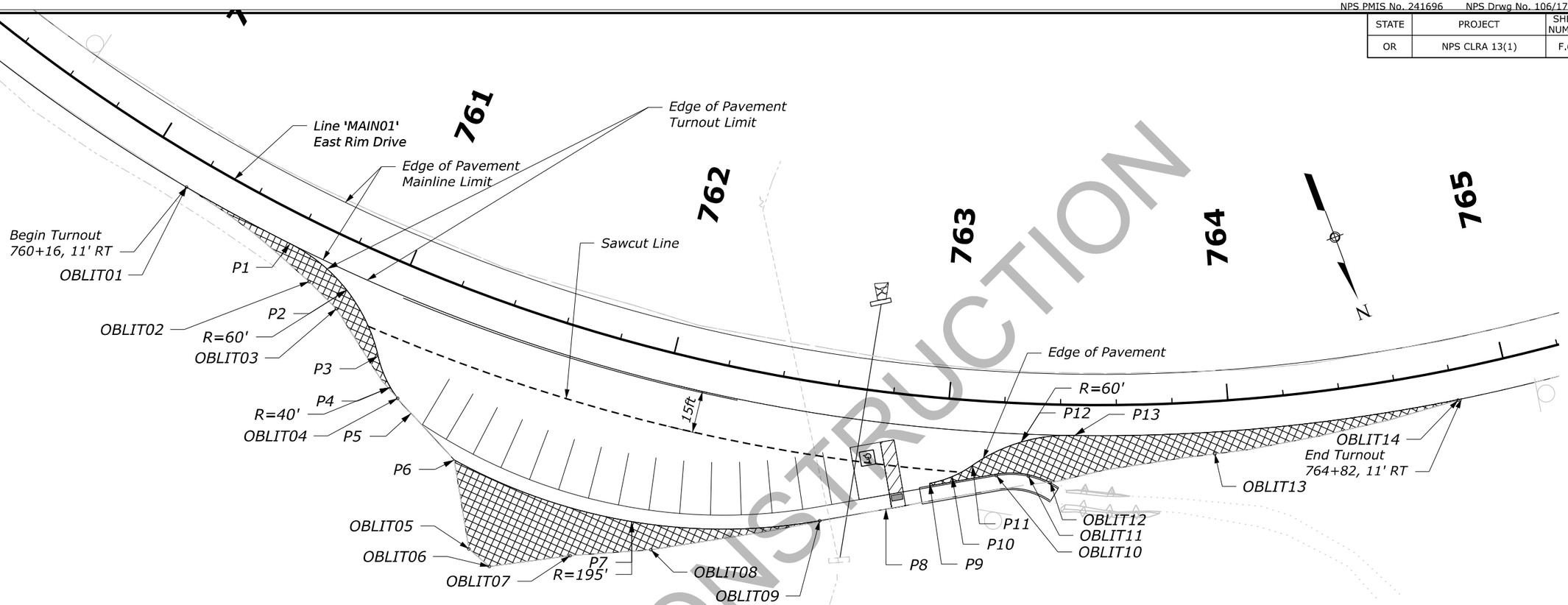
STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.64



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 762+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	453214.424	4494048.926	7035.274	MATCH PROP. EOP
P2	453433.912	4493910.803	7035.184	
P3	453460.068	4493908.563	7034.873	
P4	453472.055	4493908.380	7034.733	
P5	453483.450	4493904.652	7034.392	
P6	453504.522	4493896.036	7033.752	
P7	453547.518	4493844.125	7032.077	
P8	453570.828	4493780.880	7030.365	
P9	453575.633	4493755.044	7029.799	
P10	453572.105	4493739.190	7029.557	
P11	453572.639	4493730.841	7029.376	
P12	453571.425	4493722.564	7029.244	
P13	453569.713	4493703.324	7028.590	
P14	453574.203	4493684.538	7027.416	MATCH PROP. EOP

Roadway Obliteration

ROADWAY OBLITERATION LAYOUT INFORMATION - TURNOUT 762+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
OBLIT01	453379.225	4493951.730	7036.969'	
OBLIT02	453426.389	4493922.407	7035.486'	
OBLIT03	453438.886	4493916.650	7035.214'	
OBLIT04	453476.697	4493907.316	7034.61'	
OBLIT05	453536.223	4493902.275	7033.543'	
OBLIT06	453544.719	4493897.600	7033.384'	
OBLIT07	453551.227	4493869.126	7032.575'	
OBLIT08	453559.376	4493841.212	7032.103'	
OBLIT09	453570.828	4493780.880	7030.365'	
OBLIT10	453577.826	4493715.874	7028.998'	
OBLIT11	453582.075	4493705.150	7028.704'	R=30.5'
OBLIT12	453586.828	4493698.590	7028.582'	
OBLIT13	453597.981	4493639.686	7026.777'	
OBLIT14	453610.471	4493551.218	7023.564'	

TURNOUT LAYOUT 762+00
SUN NOTCH

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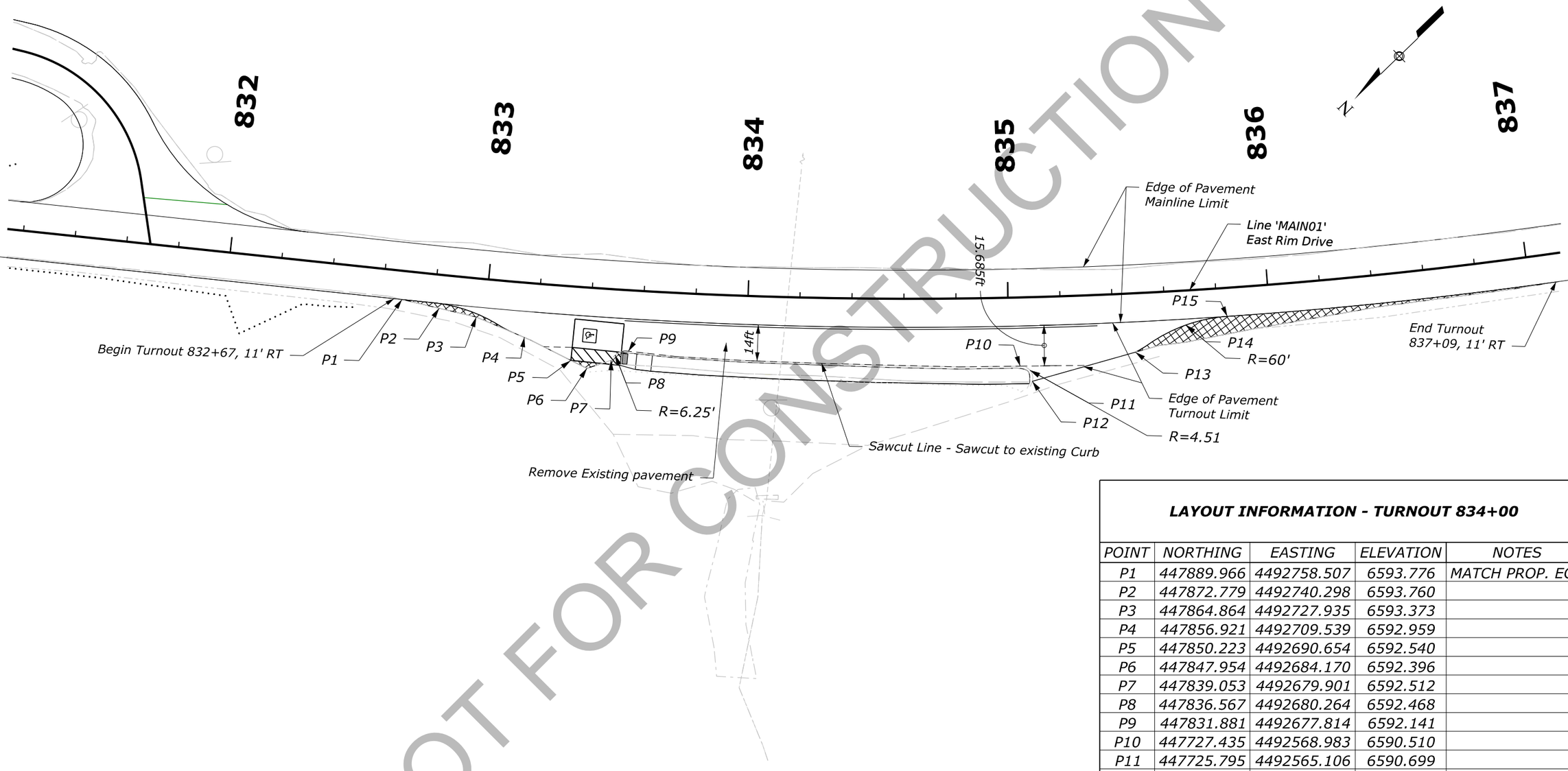
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.65



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 834+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	447889.966	4492758.507	6593.776	MATCH PROP. EOP
P2	447872.779	4492740.298	6593.760	
P3	447864.864	4492727.935	6593.373	
P4	447856.921	4492709.539	6592.959	
P5	447850.223	4492690.654	6592.540	
P6	447847.954	4492684.170	6592.396	
P7	447839.053	4492679.901	6592.512	
P8	447836.567	4492680.264	6592.468	
P9	447831.881	4492677.814	6592.141	
P10	447727.435	4492568.983	6590.510	
P11	447725.795	4492565.106	6590.699	
P12	447728.071	4492561.559	6590.694	
P13	447691.786	4492542.032	6590.602	
P14	447670.575	4492536.071	6590.386	
P15	447656.799	4492527.375	6589.231	MATCH PROP. EOP

TURNOUT LAYOUT 834+00
VIDAE FALLS

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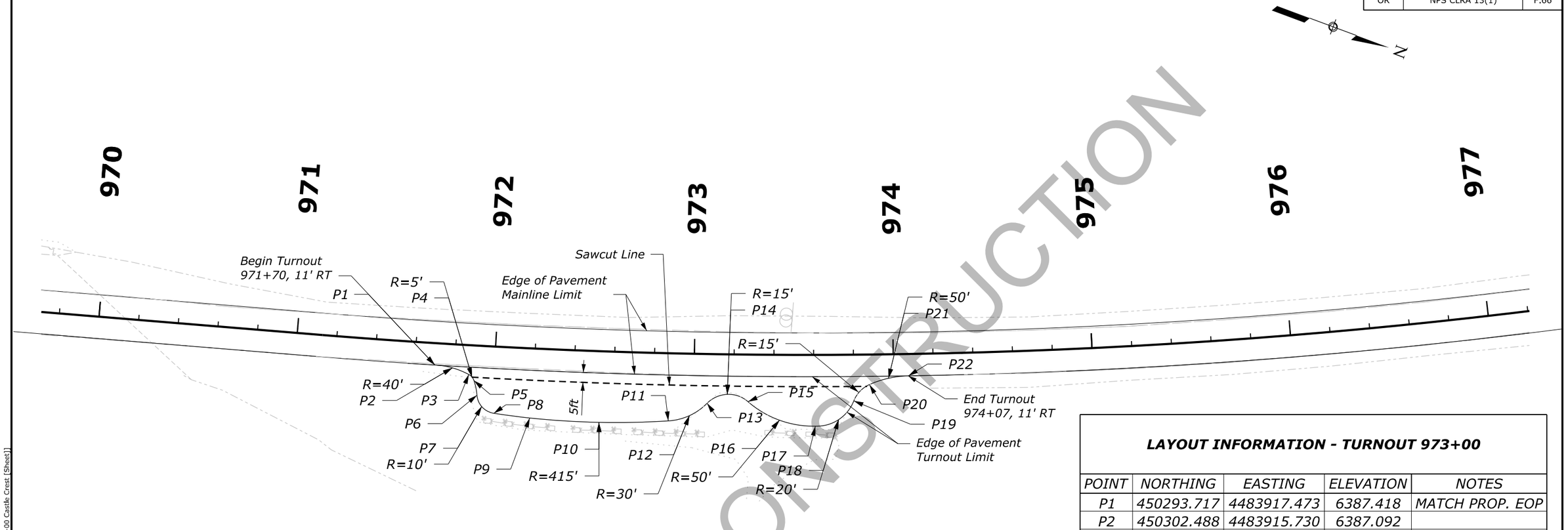
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.66



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 973+00

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	450293.717	4483917.473	6387.418	MATCH PROP. EOP
P2	450302.488	4483915.730	6387.092	
P3	450311.427	4483915.978	6387.691	
P4	450313.369	4483916.601	6388.117	
P5	450314.902	4483917.947	6388.663	
P6	450318.900	4483924.332	6388.219	
P7	450323.069	4483928.845	6388.218	
P8	450329.992	4483929.925	6388.279	
P9	450347.756	4483925.842	6389.070	
P10	450381.169	4483915.790	6390.211	
P11	450413.619	4483902.967	6391.517	
P12	450422.611	4483896.800	6392.062	
P13	450428.806	4483887.826	6392.461	
P14	450436.745	4483880.107	6392.730	
P15	450447.817	4483879.938	6393.011	
P16	450465.864	4483883.192	6393.637	
P17	450483.870	4483879.721	6393.974	
P18	450493.682	4483872.575	6394.348	
P19	450497.554	4483861.071	6394.703	
P20	450502.045	4483850.611	6394.731	
P21	450509.914	4483844.312	6394.708	
P22	450518.886	4483839.718	6395.539	MATCH PROP. EOP

TURNOUT LAYOUT 973+00
CASTLE CREST

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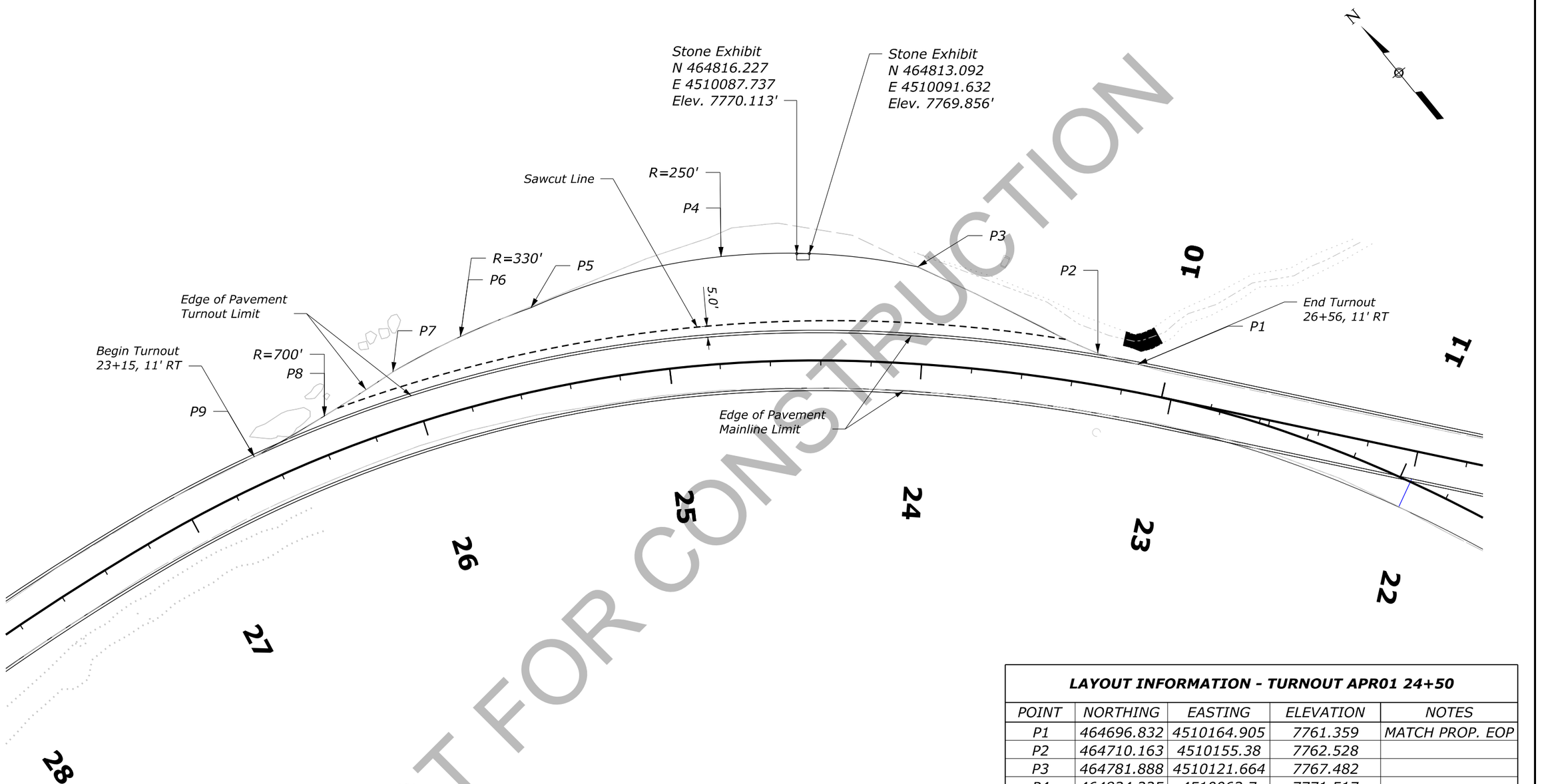
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.67



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT APR01 24+50

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	464696.832	4510164.905	7761.359	MATCH PROP. EOP
P2	464710.163	4510155.38	7762.528	
P3	464781.888	4510121.664	7767.482	
P4	464834.225	4510063.7	7771.517	
P5	464866.124	4509992.416	7774.959	
P6	464874.861	4509963.485	7776.122	
P7	464880.916	4509933.876	7777.471	
P8	464884.441	4509901.803	7778.650	
P9	464889.441	4509869.926	7779.964	MATCH PROP. EOP

TURNOUT LAYOUT APPR01 24+50
MT. SCOTT OVERLOOK

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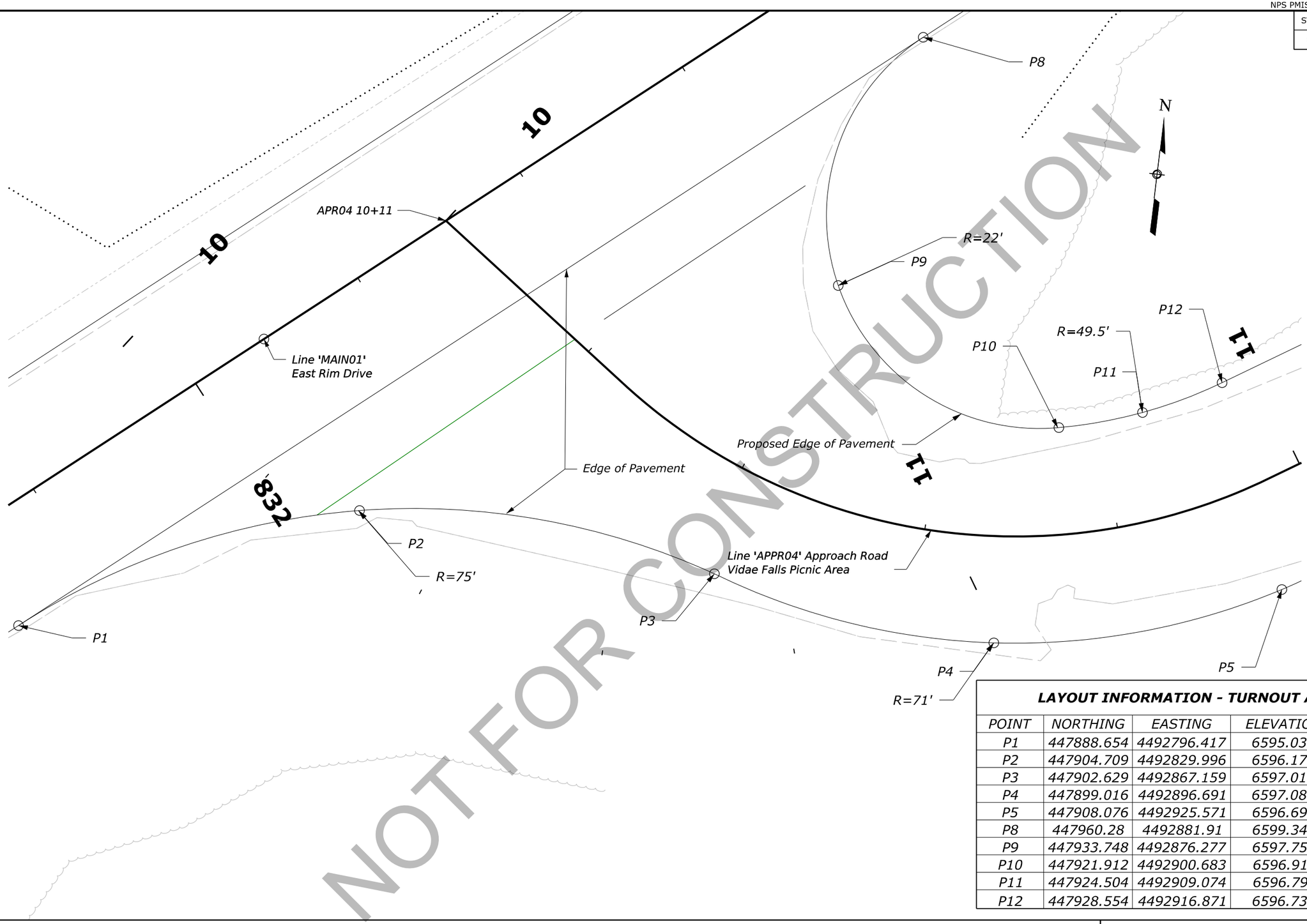
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.68



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT APR04 10+75

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	447888.654	4492796.417	6595.037	MATCH PROP. EOP
P2	447904.709	4492829.996	6596.175	
P3	447902.629	4492867.159	6597.015	
P4	447899.016	4492896.691	6597.087	
P5	447908.076	4492925.571	6596.699	
P8	447960.28	4492881.91	6599.344	
P9	447933.748	4492876.277	6597.752	
P10	447921.912	4492900.683	6596.911	
P11	447924.504	4492909.074	6596.791	
P12	447928.554	4492916.871	6596.733	MATCH PROP. EOP

TURNOUT LAYOUT
VIDAE FALLS PICNIC AREA
APPR04 10+75

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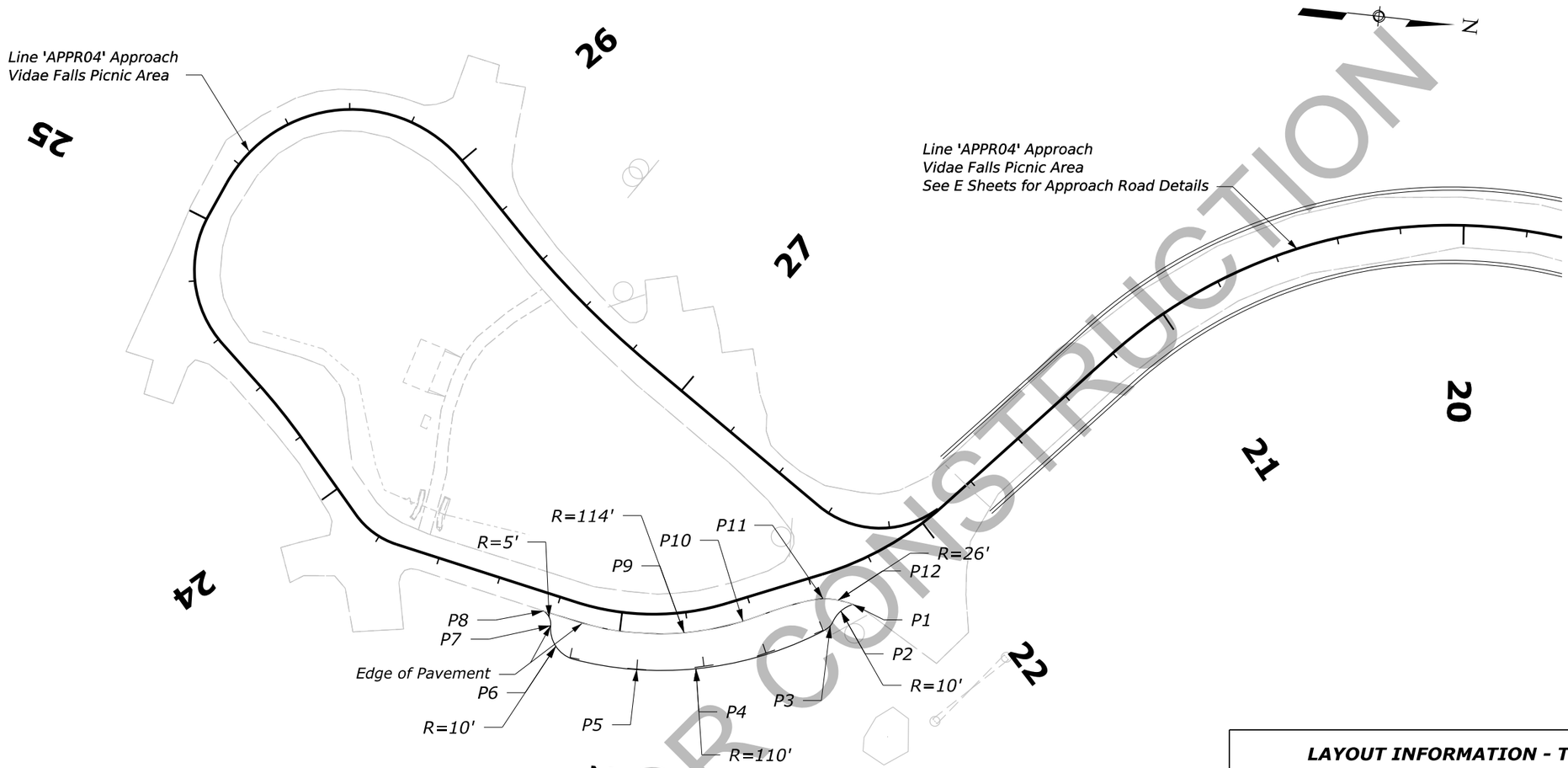
STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	F.69



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT APR04 22+50

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	447159.517	4493199.343	6519.336	MATCH PROP. EOP
P2	447155.992	4493201.825	6519.272	MATCH PROP. EOP
P3	447153.198	4493206.783	6519.414	MATCH PROP. EOP
P4	447112.297	4493224.438	6518.105	MATCH PROP. EOP
P5	447073.157	4493225.543	6516.833	MATCH PROP. EOP
P6	447068.31	4493222.557	6516.776	MATCH PROP. EOP
P7	447066.011	4493216.347	6516.871	MATCH PROP. EOP
P8	447107.887	4493213.963	6517.042	MATCH PROP. EOP
P9	447063.334	4493212.005	6518.073	
P10	447125.803	4493208.358	6518.476	
P11	447149.987	4493198.531	6518.921	
P12	447154.79	4493198.495	6519.124	MATCH PROP. EOP

TURNOUT LAYOUT
VIDAE FALLS PICNIC AREA
APPR04 22+50

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Note: The quantities shown hereon are approximate and are subject to field adjustments.

TABULATION OF DRAINAGE QUANTITIES

STATE	PROJECT	SHEET NUMBER
OR	NPS-CRLA 13(1)	G.1

PAY ITEM NUMBER			20301 -1400	20310 -1000	25101 -0000	25101 -2000	60201 -0400	60201 -0800	60404 -0000	60704 -0000	60705 -0000	60706 -0000	60907 -1000	62011 -0300	62011 -0500	62028 -1000	62031 -0000									
Station	ESTIMATED MAXIMUM COVER	STRUCTURAL EXCAVATION	REMOVAL OF INLET (DROP)	PLUG, EXISTING PIPE(ABANDON IN PLACE)	PLACED RIPRAP, METHOD A(GOVERNMENT FURNISHED)	PLACED RIPRAP, METHOD B (ENERGY DISSIPATOR)	12-INCH PIPE CULVERT	24-INCH PIPE CULVERT	CATCH BASIN (TYPE 1)	CLEANING CULVERT IN PLACE	REPAIRING DRAINAGE STRUCTURE	CLEANING DRAINAGE STRUCTURE	PAVED DITCH, ASPHALT	STONE MASONRY HEADWALL FOR 18-INCH PIPE CULVERT	STONE MASONRY HEADWALL FOR 24-INCH PIPE CULVERT	REMOVE AND RESET STONE MASONRY HEADWALL	REPOINT STONE MASONRY(HEADWALL)				SKEW ANGLE	Allowable Pipe Material (See key below)	BEVELS 1V:nH	BEVELS 1V:nH	REMARKS See below for numbered notes	DESIGNER NOTES
	FEET	CUYD	EACH	EACH	CUYD	CUYD	LNFT	LNFT	EACH	EACH	EACH	EACH	LNFT	EACH	EACH	EACH	SQFT						Lt	Rt		
Line 'MAIN01'																										
34+60 LT													627													
37+00,13.6' LT						2	30		1													GS				
38+02.74										1															4	24-inch, Elev. 6843.44
62+29.81										1							10								3	18-inch, Elev. 6894.64
71+00 LT													580													
76+73,13.7' LT						2	30		1													GS				
91+98.27										1															4	24-inch, Elev. 6757.44
102+40 LT													180													
104+00												1														
104+18.63,13.7' LT						2	30		1													GS				
125+25 LT													269													
125+26,13.2' LT						2	30		1													GS				
126+56.66										1															4	24-inch, Elev. 6762.26
130+24.78										1															4	18-inch, Elev. 6765.86
140+18.96										1															3	18-inch, Elev. 6774.71
171+60.61										1															3	18-inch, Elev. 6796.24
205+48.48										1							15								4	18-inch, Elev. 6990.83
213+19.12										1															3	18-inch, Elev. 7034.90
222+62.48										1															3	18-inch, Elev. 7092.77
223+45 LT													45													
223+46,13.6' LT						2	30		1													GS				
227+52 LT													1190													
228+40, 13.3' LT						2	30		1													GS				
234+90.97										1															4	18-inch, Elev. 7167.95
256+90										1															4	18-inch, Elev. 7293.20
266+54.03										1															3	18-inch, Elev. 7319.80
272+88.02										1															3	18-inch, Elev. 7345.05
281+42.54										1															5	18-inch, Elev. 7385.20
282+20,13.6' LT						2	30		1				140									GS				
297+41.16										1							10								4	24-inch, Elev. 7465.25
311+19,13.6' LT						2	30		1				616									GS				
312+51.21										1							15								4	24-inch, Elev. 7568.08
313+89.52										1															4	24-inch, Elev. 7568.05
CUMULATIVE TOTAL		0	0	0	0	16	240	0	8	18	0	1	3647	0	0	0	50									

Allowable Pipe Material
GS Galvanized steel

NOTE:
1. Steel pipe culvert minimum wall thickness is the larger of 0.079" or the thickness required by the Std. 602-1 fill height table.
2. Plastic pipe is not allowed when final installation is exposed. Furnish metal end sections for all pipe including those specified with bevels. See Std. 602-5 for acceptable cell class.
3. CMP
4. Concrete
5. Metal

NOT FOR CONSTRUCTION

3/2021 Designed by: J. Longmore 3/2021 Checked by:
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29-Mar-2021 2:55 PM

Note: The quantities shown hereon are approximate and are subject to field adjustments.

TABULATION OF DRAINAGE QUANTITIES

STATE	PROJECT	SHEET NUMBER
OR	NPS-CRLA 13(1)	G.2

PAY ITEM NUMBER			20301 -1400	20310 -1000	25101 -0000	25101 -2000	60201 -0400	60201 -0800	60404 -0000	60704 -0000	60705 -0000	60706 -0000	60907 -1000	62011 -0300	62011 -0500	62028 -1000	62031 -0000									
Station	ESTIMATED MAXIMUM COVER	STRUCTURAL EXCAVATION	REMOVAL OF INLET (DROP)	PLUG, EXISTING PIPE(ABANDON IN PLACE)	PLACED RIPRAP, METHOD A(GOVERNMENT FURNISHED)	PLACED RIPRAP, METHOD B (ENERGY DISSIPATOR)	12-INCH PIPE CULVERT	24-INCH PIPE CULVERT	CATCH BASIN (TYPE 1)	CLEANING CULVERT IN PLACE	REPAIRING DRAINAGE STRUCTURE	CLEANING DRAINAGE STRUCTURE	PAVED DITCH, ASPHALT	STONE MASONRY HEADWALL FOR 18-INCH PIPE CULVERT	STONE MASONRY HEADWALL FOR 24-INCH PIPE CULVERT	REMOVE AND RESET STONE MASONRY HEADWALL	REPOINT STONE MASONRY(HEADWALL)				SKEW ANGLE	Allowable Pipe Material (See key below)	BEVELS 1V:nH	BEVELS 1V:nH	REMARKS See below for numbered notes	DESIGNER NOTES
	FEET	CUYD	EACH	EACH	CUYD	CUYD	LNFT	LNFT	EACH	EACH	EACH	EACH	LNFT	EACH	EACH	EACH	SQFT						Lt	Rt		
PREVIOUS ####						16	240		8	18		1	3647				50									
318+78.21										1							15								3	30-inch, Elev. 7613.53
327+92.80										1															3	30-inch, Elev. 7641.79
331+52.14										1	1														4	24-inch, Elev. 7625.22
336+14.89										1															3	18-inch, Elev. 7618.27
340+44.37										1															4	24-inch, Elev. 7618.22
343+31.62										1															4	18-inch, Elev. 7650.92
351+24.14										1															4	18-inch, Elev. 7670.79
355+92.25										1															3	18-inch, Elev. 7684.80
370+55.56										1															4	24-inch, Elev 7621.19
390+27.64										1															4	18-inch, Elev. 7515.39
401+24.40										1															4	24-inch, Elev. 7425.74
412+10.67										1															4	18-inch, Elev. 7411.61
421+78, 55.8' RT	4	12	1		22	6	78		1													GS		1		
422+11, 84.8' RT	6	17		1	22	6	112		1													GS		1		
457+10.59										1															3	18-inch, Elev. 7357.43
461+20.18										1															3	18-inch, Elev. 7330.42
472+02.64										1															4	18-inch, Elev. 7251.01
480+04.44										1															4	24-inch, Elev. 7207.33
496+84.35										1															4	18-inch, Elev. 7101.59
525+18.26										1															3	18-inch, Elev. 6912.77
528+43.96										1															4	18-inch, Elev. 6902.17
538+43										1															4	18-inch, Elev. 6838.76
548+52.09										1															4	18-inch, Elev. 6772.71
550+96.08										1				1											4	18-inch, Elev. 6741.58
558+45.01										1															3	18-inch, Elev. 6722.14
561+90.20										1															3	18-inch, Elev. 6717.13
564+32.07										1															3	18-inch, Elev. 6740.33
574+44.59										1															3	18-inch, Elev. 6798.63
582+20										1	1														3	18-inch, Elev. 6832.00
595+66.49										1															3	18-inch, Elev. 6902.11
598+07.79										1															3	18-inch, Elev. 6916.82
600+12.74										1															3	30-inch, Elev. 6922.20
602+22.40										1															3	30-inch, Elev. 6945.53
CUMULATIVE TOTAL		29	1	1	44	28	430	0	10	49	2	1	3647	1	0	0	65									

Allowable Pipe Material
GS Galvanized steel

NOTE:
1. Steel pipe culvert minimum wall thickness is the larger of 0.079" or the thickness required by the Std. 602-1 fill height table.
2. Plastic pipe is not allowed when final installation is exposed. Furnish metal end sections for all pipe including those specified with bevels. See Std. 602-5 for acceptable cell class.
3. CMP
4. Concrete
5. Metal

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Note: The quantities shown hereon are approximate and are subject to field adjustments.

TABULATION OF DRAINAGE QUANTITIES

STATE	PROJECT	SHEET NUMBER
OR	NPS-CRLA 13(1)	G.3

PAY ITEM NUMBER			20301 -1400	20310 -1000	25101 -0000	25101 -2000	60201 -0400	60201 -0800	60404 -0000	60704 -0000	60705 -0000	60706 -0000	60907 -1000	62011 -0300	62011 -0500	62028 -1000	62031 -0000										
Station	ESTIMATED MAXIMUM COVER	STRUCTURAL EXCAVATION	REMOVAL OF INLET (DROP)	PLUG, EXISTING PIPE(ABANDON IN PLACE)	PLACED RIPRAP, METHOD A(GOVERNMENT FURNISHED)	PLACED RIPRAP, METHOD B (ENERGY DISSIPATOR)	12-INCH PIPE CULVERT	24-INCH PIPE CULVERT	CATCH BASIN (TYPE 1)	CLEANING CULVERT IN PLACE	REPAIRING DRAINAGE STRUCTURE	CLEANING DRAINAGE STRUCTURE	PAVED DITCH, ASPHALT	STONE MASONRY HEADWALL FOR 18-INCH PIPE CULVERT	STONE MASONRY HEADWALL FOR 24-INCH PIPE CULVERT	REMOVE AND RESET STONE MASONRY HEADWALL	REPOINT STONE MASONRY(HEADWALL)				SKEW ANGLE	Allowable Pipe Material (See key below)	BEVELS 1V:nH	BEVELS 1V:nH	REMARKS See below for numbered notes	DESIGNER NOTES
	FEET	CUYD	EACH	EACH	CUYD	CUYD	LNFT	LNFT	EACH	EACH	EACH	EACH	LNFT	EACH	EACH	EACH	SQFT						Lt	Rt		
PREVIOUS ####		29	1	1	44	28	430		10	49	2	1	3647	1			65								3	18-inch, Elev. 6988.98
610+34.40										1															3	18-inch, Elev. 6988.98
613+14.63										1															3	24-inch, Elev. 6986.60
614+54.53										1															3	18-inch, Elev. 7004.82
622+04.98										1															3	24-inch, Elev. 7043.48
628+02.35										1															3	18-inch, Elev. 7095.42
634+34.89										1															3	18-inch, Elev. 7130.41
639+98.91										1															3	18-inch, Elev. 7164.19
648+25.10										1															3	18-inch, Elev. 9193.25
653+78.19										1															3	18-inch, Elev. 7220.95
659+87.52										1															3	30-inch, Elev. 7251.29
663+46.62										1															3	18-inch, Elev. 7283.03
670+07.93										1															3	18-inch, Elev. 7325.25
677+11.94										1															3	18-inch, Elev. 7353.20
680+97.14										1															3	18-inch, Elev. 7355.08
704+95.67										1															3	18-inch, Elev. 7336.70
710+58										1															3	18-inch, Elev. 7301.82
721+78.93										1															3	18-inch, Elev. 7230.73
731+81.79										1															3	18-inch, Elev. 7186.31
756+69.30										1															3	18-inch, Elev. Unknown
762+70.44	3	30				2		160							1	1						GS		1	3	24-inch, Elev. 7017.96
769+00										1															3	18-inch, Elev. 6991.96
774+05.06										1															3	18-inch, Elev. 6970.06
790+46.35										1															3	18-inch, Elev. 6853.88
797+30.50										1															3	18-inch, Elev. 6808.96
802+08.86										1															3	18-inch, Elev. 6775.12
806+60.96										1															3	18-inch, Elev. 6752.21
810+31.01										1															3	18-inch, Elev. 6727.13
826+12.06										1															3	18-inch, Elev. 6621.40
851+31.54										1															3	18-inch, Elev. 6619.57
857+16.53										1															3	18-inch, Elev. 6637.87
871+08.30										1															3	18-inch, Elev. 6675.00
883+81.75										1															3	18-inch, Elev. 6731.55
892+36.44										1															3	24-inch, Elev. 6761.33
CUMULATIVE TOTAL		59	1	1	44	30	430	160	10	81	2	1	3647	1	1	1	65									

NOTE:
1. Steel pipe culvert minimum wall thickness is the larger of 0.079" or the thickness required by the Std. 602-1 fill height table.
2. Plastic pipe is not allowed when final installation is exposed. Furnish metal end sections for all pipe including those specified with bevels. See Std. 602-5 for acceptable cell class.

3. CMP
4. Concrete
5. Metal

Allowable Pipe Material
GS Galvanized steel

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3/2021 Designed by: J. Longmore 3/2021 Checked by:
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Note: The quantities shown hereon are approximate and are subject to field adjustments.

TABULATION OF DRAINAGE QUANTITIES

STATE	PROJECT	SHEET NUMBER
OR	NPS-CRLA 13(1)	G.4

PAY ITEM NUMBER			20301 -1400	20310 -1000	25101 -0000	25101 -2000	60201 -0400	60201 -0800	60404 -0000	60704 -0000	60705 -0000	60706 -0000	60907 -1000	62011 -0300	62011 -0500	62028 -1000	62031 -0000									
Station	ESTIMATED MAXIMUM COVER	STRUCTURAL EXCAVATION	REMOVAL OF INLET (DROP)	PLUG, EXISTING PIPE(ABANDON IN PLACE)	PLACED RIPRAP, METHOD A(GOVERNMENT FURNISHED)	PLACED RIPRAP, METHOD B (ENERGY DISSIPATOR)	12-INCH PIPE CULVERT	24-INCH PIPE CULVERT	CATCH BASIN (TYPE 1)	CLEANING CULVERT IN PLACE	REPAIRING DRAINAGE STRUCTURE	CLEANING DRAINAGE STRUCTURE	PAVED DITCH, ASPHALT	STONE MASONRY HEADWALL FOR 18-INCH PIPE CULVERT	STONE MASONRY HEADWALL FOR 24-INCH PIPE CULVERT	REMOVE AND RESET STONE MASONRY HEADWALL	REPOINT STONE MASONRY(HEADWALL)				SKEW ANGLE	Allowable Pipe Material (See key below)	BEVELS 1V:nH	BEVELS 1V:nH	REMARKS See below for numbered notes	DESIGNER NOTES
	FEET	CUYD	EACH	EACH	CUYD	CUYD	LNFT	LNFT	EACH	EACH	EACH	EACH	LNFT	EACH	EACH	EACH	SQFT						Lt	Rt	
PREVIOUS ####		59	1	1	44	30	430	160	10	81	2	1	3647	1	1	1	65									
904+90.14										1															3	18-inch, Elev. 6762.79
909+37.31										1															3	24-inch, Elev. 6741.63
925+98.58										1															3	24-inch, Elev. 6620.62
935+34.69										1															3	24-inch, Elev. 6576.36
938+56.67										1															3	18-inch, Elev. 6562.05
946+65.80										1															3	18-inch, Elev. 6484.80
966+43.24										1															3	18-inch, Elev. 6365.13
968+32.75										1															3	18-inch, Elev. 6368.38
970+18.37										1															3	30-inch, Elev. 6374.17
979+16.50										1															3	18-inch, Elev. 6408.13
Line 'APPR01'																										
18+87.15										1															4	18-inch, Elev. 7710.16
36+97.97										1															4	18-inch, Elev. 7757.74
38+97.15										1															4	30-inch, Elev. 7737.74
47+98.46										1															4	18-inch, Elev. 7780.50
51+45.88										1															4	24-inch, Elev. 7782.73
57+34.44										1															4	30-inch, Elev. 7802.43
58+26.14										1															4	30-inch, Elev. 7814.79
61+46.20										1															3	18-inch, Elev. 7834.23
PROJECT TOTAL		**59**	**1**	**1**	**44**	**30**	**430**	**160**	**10**	**99**	**2**	**1**	**3647**	**1**	**1**	**1**	**65**									

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NOTE:
1. Steel pipe culvert minimum wall thickness is the larger of 0.079" or the thickness required by the Std. 602-1 fill height table.
2. Plastic pipe is not allowed when final installation is exposed. Furnish metal end sections for all pipe including those specified with bevels. See Std. 602-5 for acceptable cell class.

3. CMP
4. Concrete
5. Metal

Allowable Pipe Material
GS Galvanized steel

3/2021 Designed by: J. Longmore 3/2021 Checked by:
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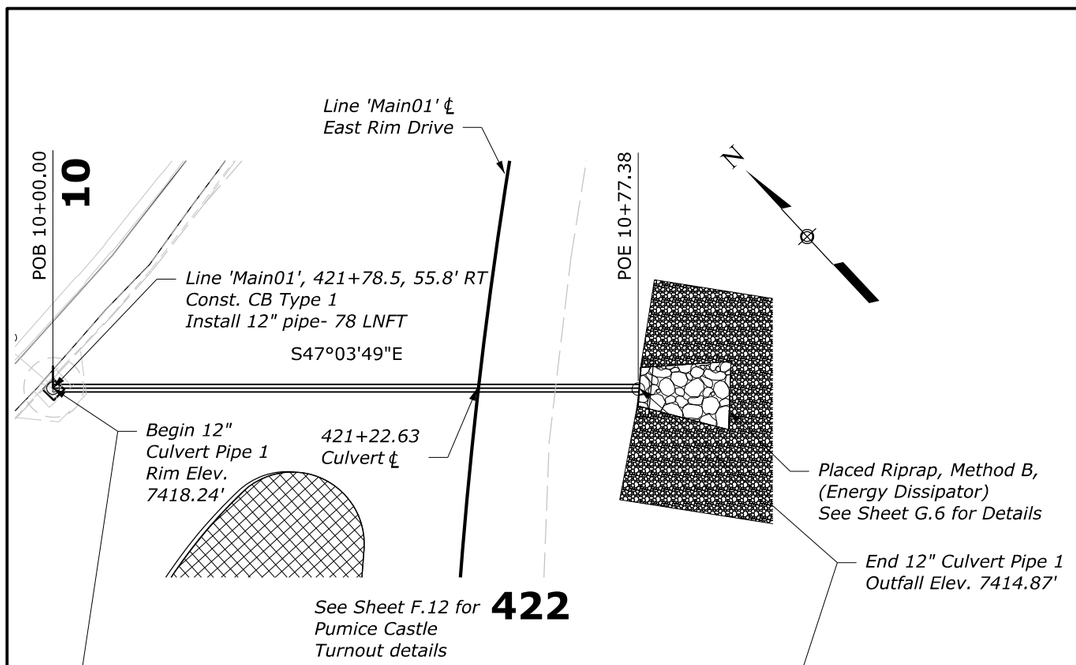
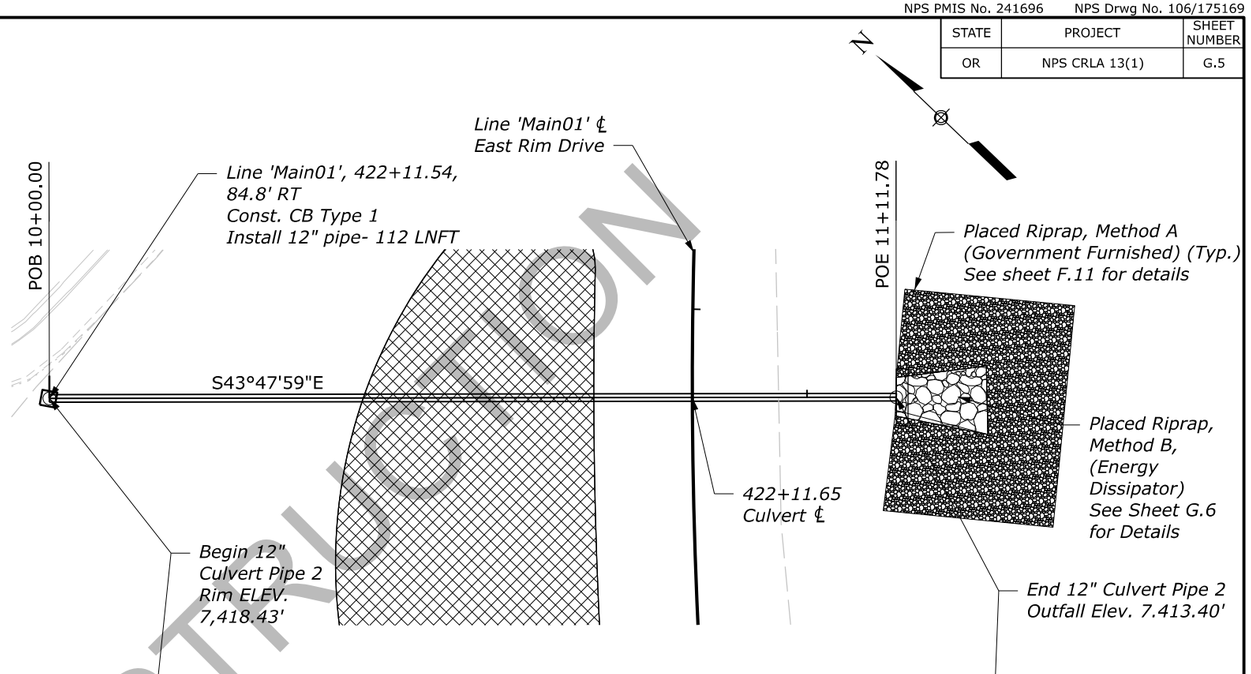
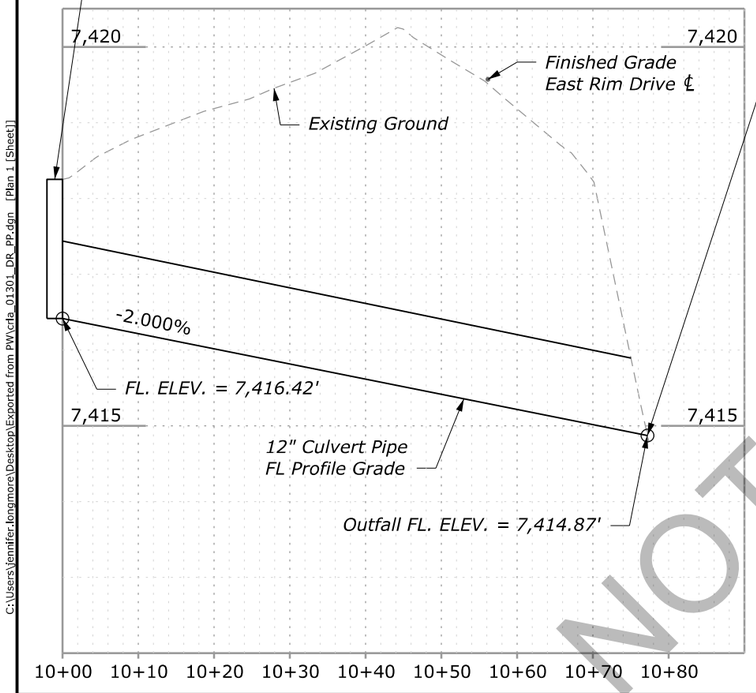
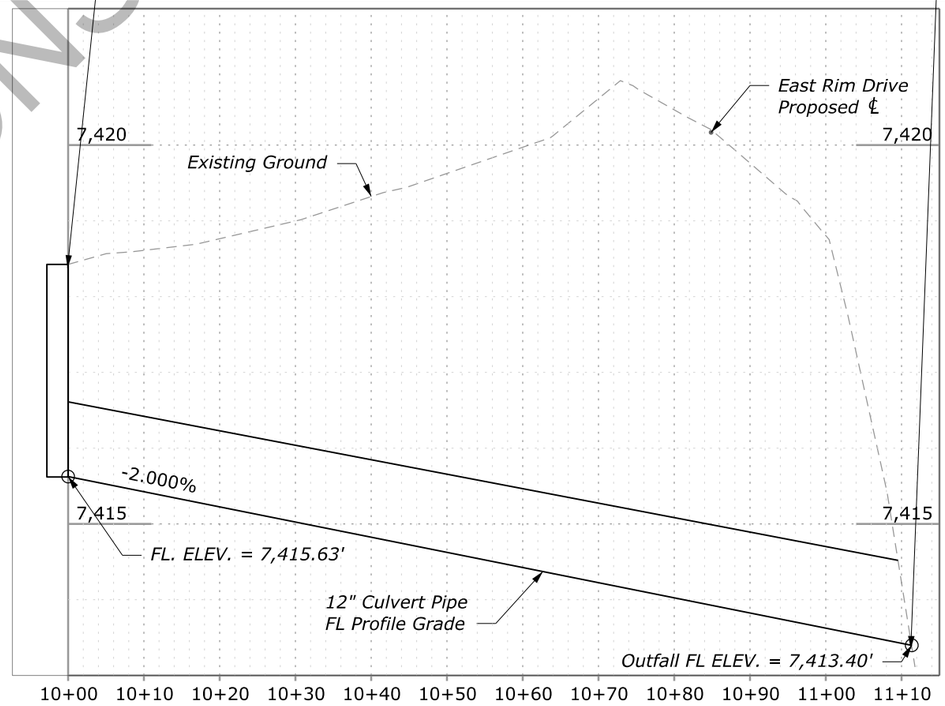
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	G.5









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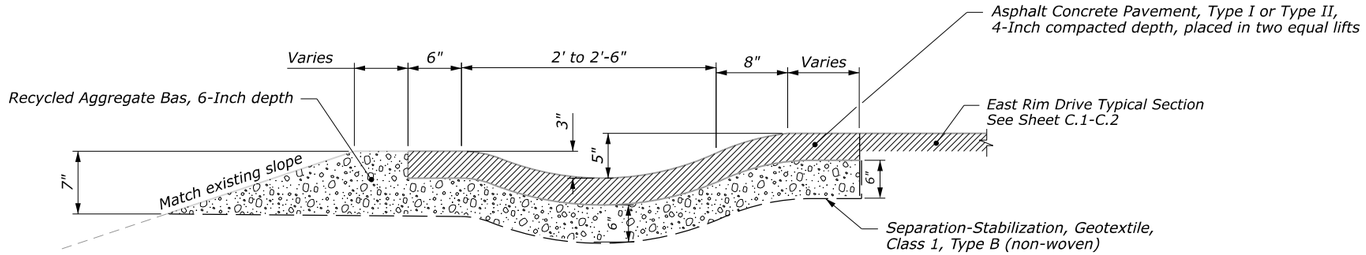
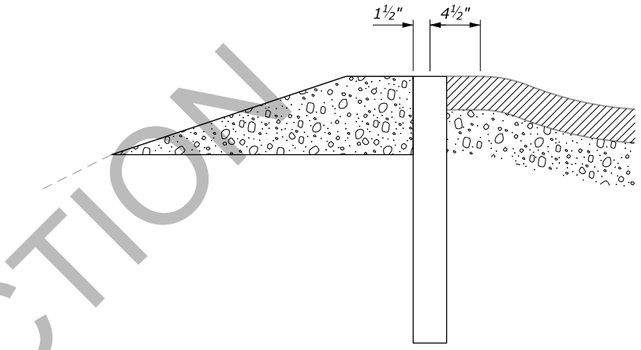
PUMICE CASTLE OVERLOOK DRAINAGE PLAN AND PROFILE

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	G.6

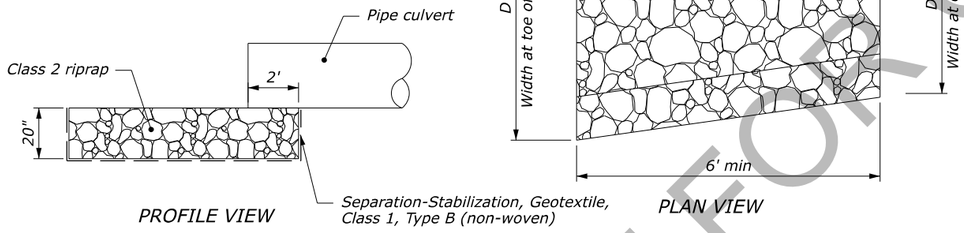


PAVED DITCH, ASPHALT DETAIL [1]

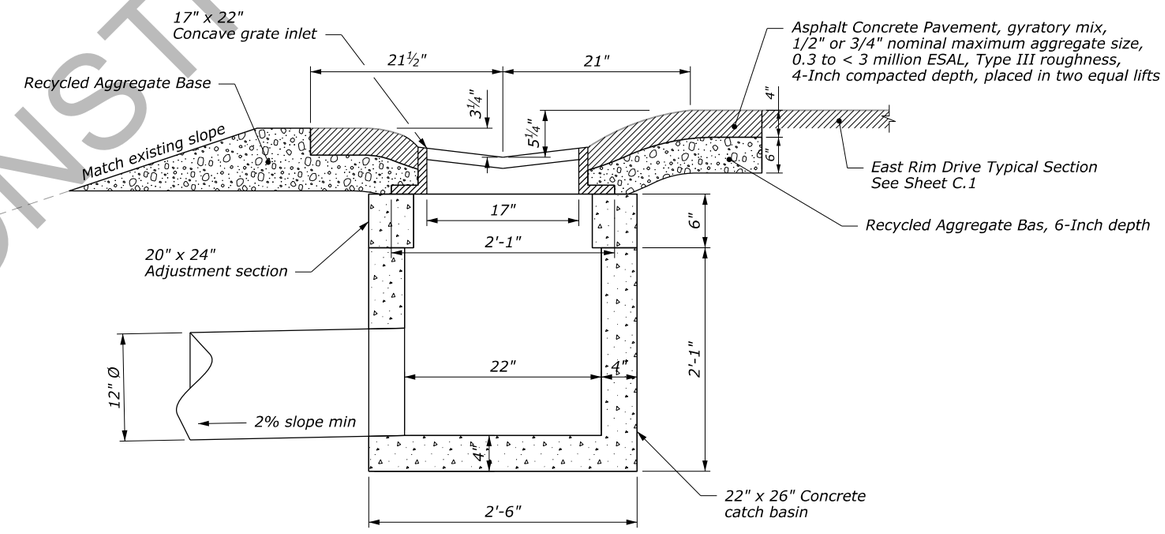
34+60 to 40+87,LT
71+00 to 76+80, LT
102+40 to 104+20, LT
125+18 to 127+87, LT
223+45 to 223+90, LT
227+52 to 239+42, LT
282+20 to 283+60, LT
311+19 to 317+35, LT



PAVED DITCH SNOWPOLE HOLDER DETAIL [2]



PLACED RIPRAP, METHOD B, ENERGY DISSIPATOR [3]



PAVED DITCH CATCH BASIN TYPE 1 DETAIL [4]

FOOTNOTE:

[1] Place geotextile as a continuous layer or overlap 24 inches (min.)

[2] See K sheets for snow pole details and locations.

[3] Double the size of Placed Riprap, Method B, Energy Dissipator on Line Main01, 421+78 and 422+11

[4] Dayight culvert down slope from Paved Ditch Catch Basin Type 1, away from roadway

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DRAINAGE AND PAVED DITCH DETAILS

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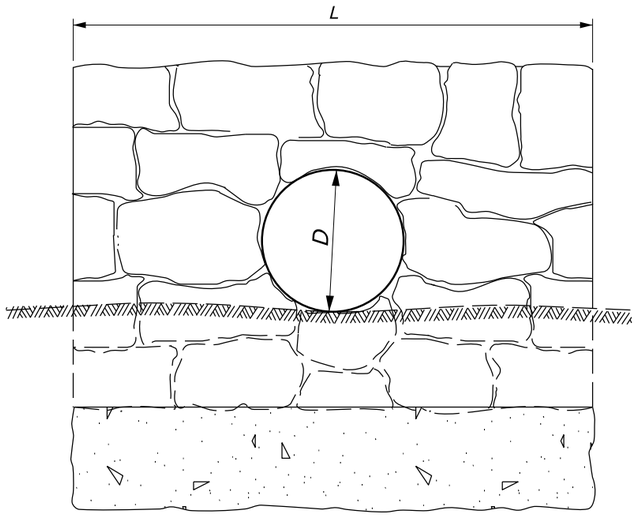
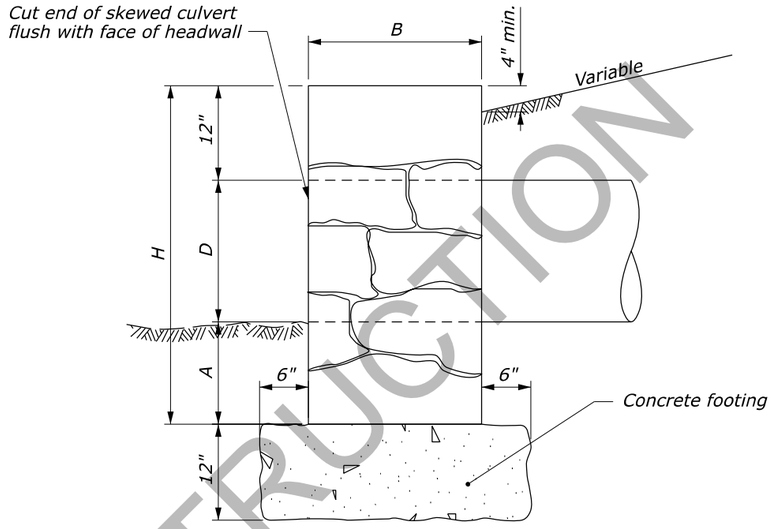
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	G.7

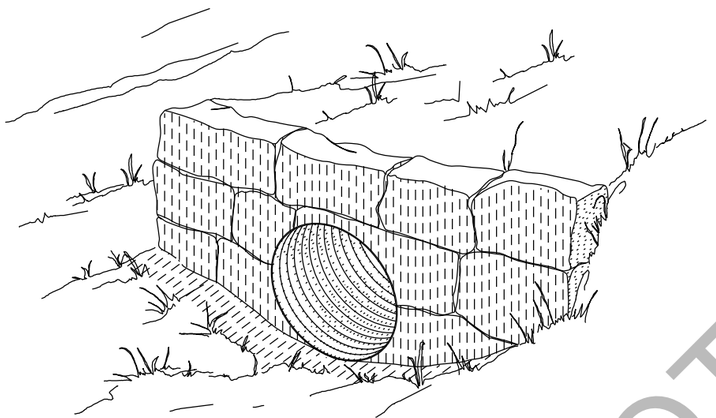


FRONT ELEVATION



SIDE ELEVATION

ROUND PIPE



ISOMETRIC

ROUND PIPE					
				SINGLE PIPE	
D (in)	A (in)	B (in)	H (in)	L (in)	STONE (cy)
12	12	14	36	44	0.37
15	12	16	40	52	0.61
18	12	18	42	60	0.72
24	16	22	52	76	1.41
30	20	26	62	94	2.52
36	24	30	72	108	4.35
48	24	36	84	144	7.93

NO SCALE

NOTE:

1. Construct headwalls parallel to the line and grade of the roadway, unless shown otherwise on the plans.
2. Modify headwall when pipes are skewed, as directed by the CO.
3. For existing headwalls being reset, reset heawall to original dimensions, except at locations where new culvert is of a different diameter than original culvert.
4. See Sheets G.1-G.4 for Tabulation of Drainage Quantities locations.

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HEADWALL DETAILS

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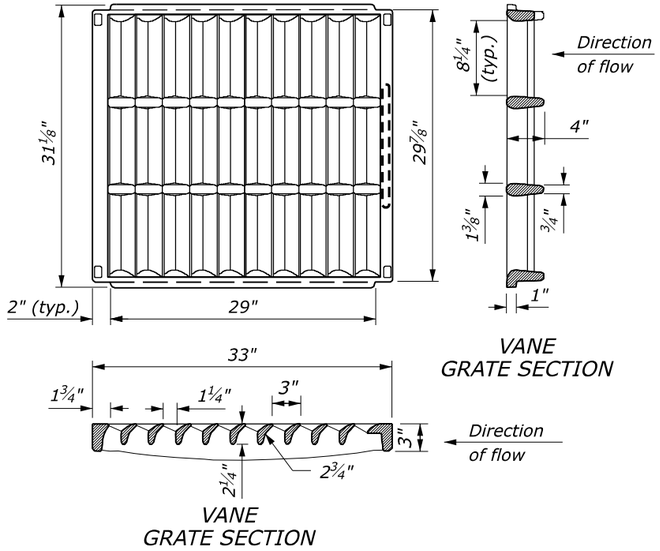
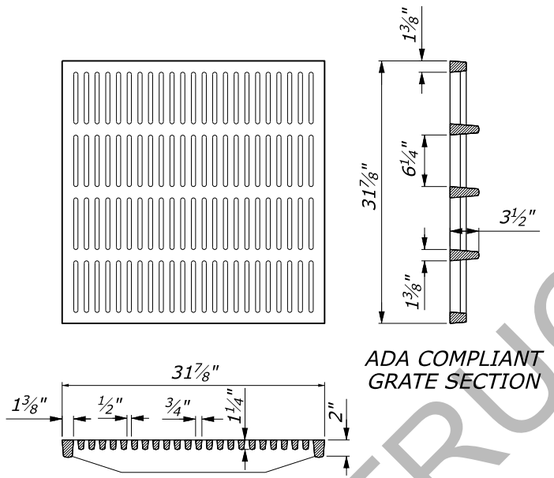
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	G.8



VANE GRATE SECTION

VANE GRATE SECTION

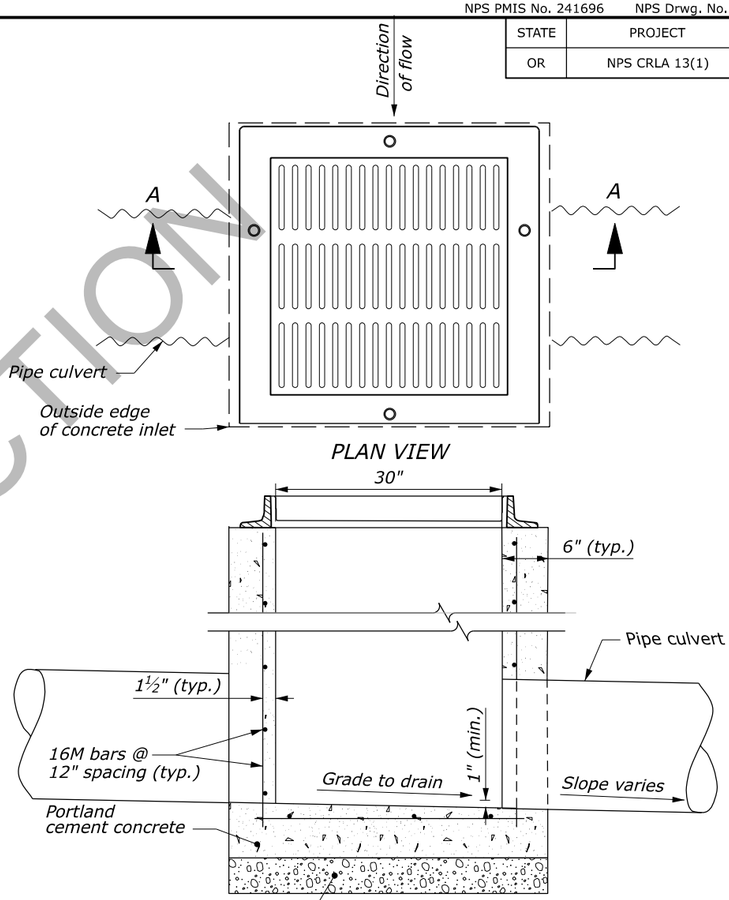
ROADSIDE VANE GRATE DETAIL [2]



ADA COMPLIANT GRATE SECTION

ADA COMPLIANT GRATE SECTION

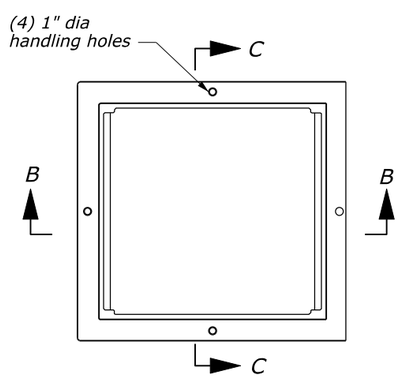
ADA COMPLIANT GRATE DETAIL [1]

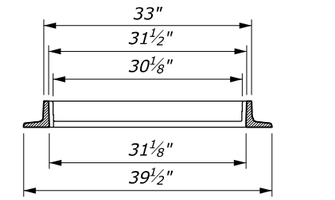


PLAN VIEW

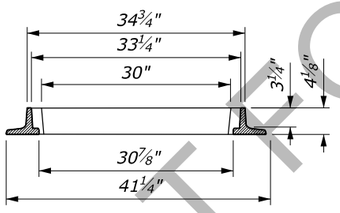
SECTION A-A

INLET DETAILS



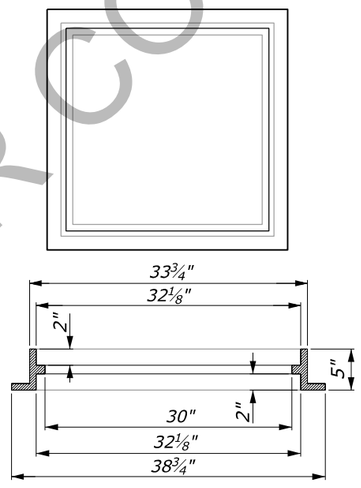


SECTION C-C



SECTION B-B

ROADSIDE VANE INLET FRAME DETAILS 2/



ADA COMPLIANT INLET FRAME DETAILS [1]

NOTE:

1. Foundation will be inspected and approved by the CO prior to pouring the floor or placement of concrete inlet.
2. Construct inlet to fit adjacent pavement slopes.
3. Provide concrete that conforms to the requirements of Section 601. Chamfer all exposed edges and corners 3-inches
4. Cut ends of skewed culverts flush with inside face of inlet wall.
5. Construct inlets parallel to the roadway centerline and grade. For pipes on skew, adapt inlets as directed by the CO.
6. For frames and grates, minor variations in design and dimensions are permitted to allow manufacturers standards.

FOOTNOTE:

[1] To be use at pedistrian facilities, turnouts and parking areas.

[2] To be use for roadside application.

NOT FOR CONSTRUCTION

NO SCALE

CATCH BASIN TYPE 1 DETAIL

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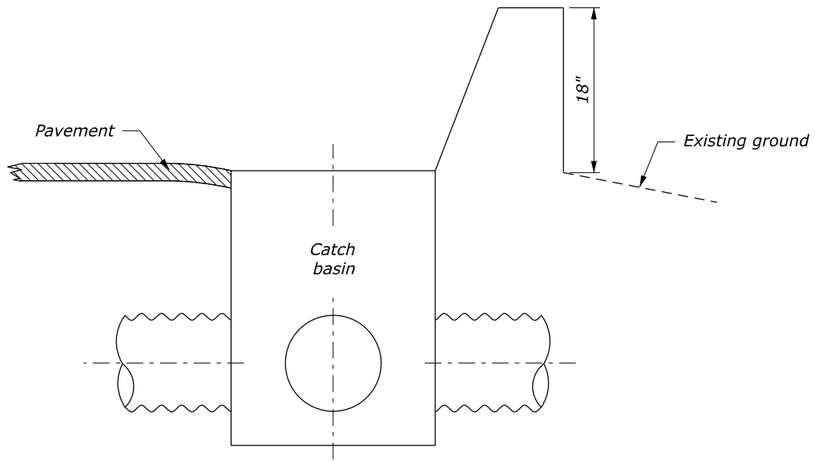
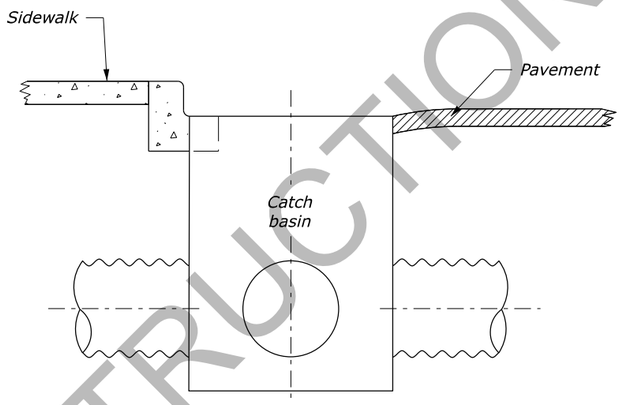
16 October 2020 9:12 AM

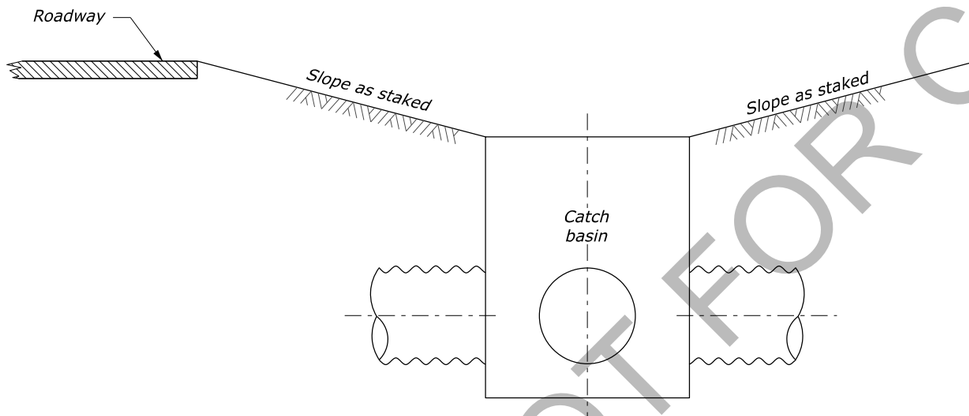
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	G.9



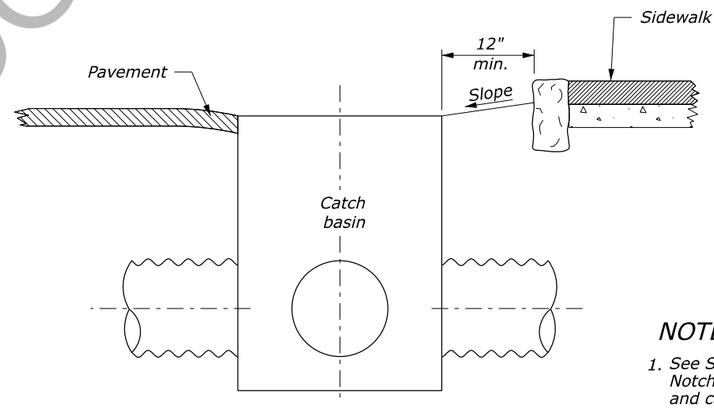
TYPICAL INSTALLATION WALL SECTION



TYPICAL INSTALLATION CURB AND GUTTER SECTION



TYPICAL INSTALLATION DITCH SECTION [1]



TYPICAL INSTALLATION STONE CURB

NOTE:

1. *See Sheets F.11 (Pumice Castle Overlook), F.23 (Sun Notch) and G.1-G.4 Drainage Summary for locations and catch basin rim and invert elevations.*

FOOTNOTE:

[1] See Sheet G.6 for Catch Basin at Paved Waterway.

NOT FOR CONSTRUCTION

CATCH BASIN INSTALLATION DETAILS

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24 March 2021 7:37 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	G.10

NPS PMIS No. 241696 NPS Drwg No. 106/175169

METAL ROUND PIPE CULVERT

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

STEEL

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

ALUMINUM

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

NOTE:

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

METAL PIPE ARCH CULVERT

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

STEEL

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

ALUMINUM

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

NO SCALE

NOT FOR CONSTRUCTION

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

U.S. CUSTOMARY STANDARD

METAL PIPE CULVERT

STANDARD APPROVED FOR USE 12/1993
REVISED: 4/1994 6/2005

STANDARD 602-1

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24 August 2015 3:46 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	G.11

NPS PMIS No. 241696 NPS Drwg No. 106/175169

COUPLING BANDS FOR METAL PIPE CULVERT [1]

CORRUGATION SIZE [2] INCHES	ROUND PIPE DIAMETER INCHES	PIPE ARCH SPAN × RISE INCHES	MINIMUM BAND WIDTH (INCHES)		
			ANNULAR CORRUGATED BANDS [3]	HELICALLY CORRUGATED BANDS [4]	SEMI-CORRUGATED BANDS [5]
1½ × ¼	underdrain [6]	-	10.5	7	10.5
2⅔ × ½	12 to 36	17 × 13 to 42 × 29	7	12	
	42 to 72	49 × 33 to 83 × 57	10.5	12	
	78 to 84	-	10.5	12	10.5
3 × 1	36 to 72	60 × 46 to 81 × 59	12	14	10.5
	78 to 144	87 × 64 to 142 × 91	12	14	10.5
5 × 1	36 to 72	60 × 46 to 81 × 59	20	22	
	78 to 144	87 × 64 to 142 × 91	20	22	

[1] Fabricate annular, helical and semi-corrugated type coupling bands from the same metal as the connecting pipe. Provide coupling bands not more than 3 nominal sheet thicknesses thinner than the thickness of the pipe to be connected, and no thinner than 0.052 inch for steel or 0.048 inch for aluminum. Fasten coupling bands with the following diameter of bolt:
⅜" for 18" round culvert (21" × 15" pipe arch) or less
½" for 21" round culvert (24" × 18" pipe arch) or more

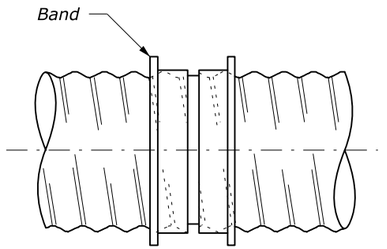
[2] For helically corrugated pipe with rerolled ends, the nominal corrugations size refers to the dimension of the end corrugation in the pipe.

[3] Use annular corrugated bands with pipes having annular corrugations or with helical pipe having rerolled end to form annular corrugations. A 10.5 inch band is acceptable on pipe ends rerolled with 2⅔" × ½" corrugations. A 12 inch band is acceptable on pipe ends rerolled with 3" × 1" pipe corrugations.

[4] Use helical corrugated bands with pipes having helically corrugated ends.

[5] The minimum band widths shown for 3" × 1" and 5" × 1" corrugated sizes apply to 2⅔" × ½" corrugations on rerolled pipe ends.

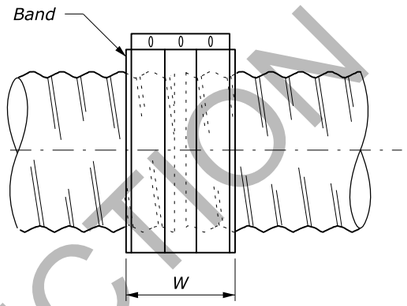
[6] Smooth sleeve-type couplers and flat bands may be used for pipe diameters of 12" or less. Use a matching metal having a nominal thickness of not less than 0.040 inch for steel, or 0.036 inch for aluminum, or a plastic with an equivalent strength to metal.



SLEEVE JOINT

Smoother sleeve with center stop.
Stab type joint

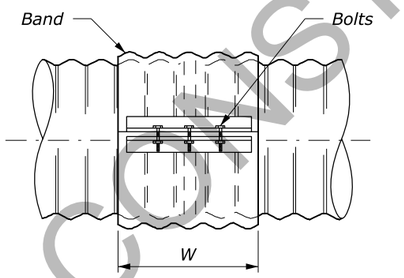
SMOOTH SLEEVE BAND



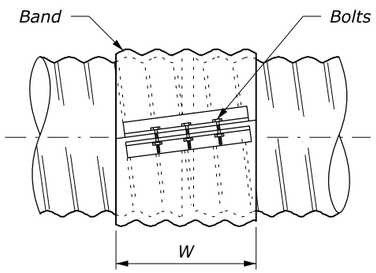
FLAT BAND

NOTE:

1. Watertight pipe joints are not required unless specified in the Special Contract Requirements.
2. Other types of coupling bands or fastening devices that comply with the joint performance criteria of AASHTO Standard specifications for Highway Bridges, Division II Section 26 may be used.



SIDE VIEW



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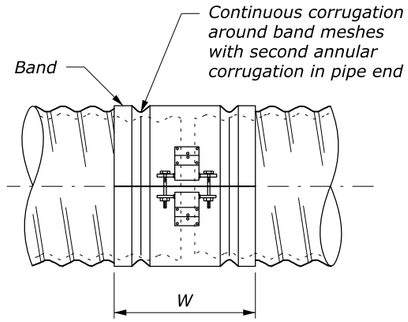
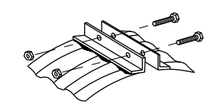
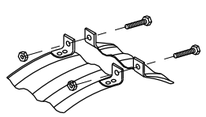


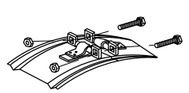
SIDE VIEW



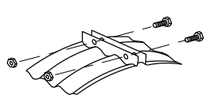
Band Angle



Oval Lug



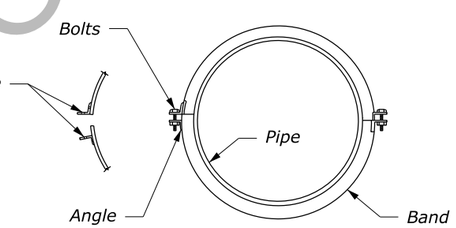
Bar & Strap



Integral Flange

Wedge and Strap

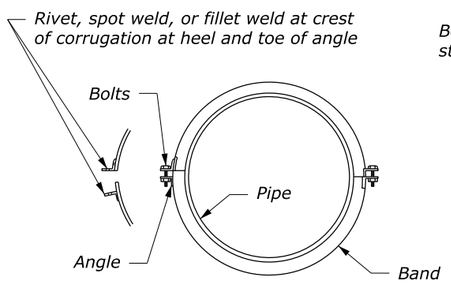
STANDARD BAND CONNECTIONS



END VIEW

Second angle connection optional to 42" diameter, required above 42" diameter

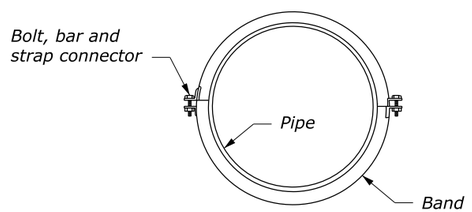
ANNULAR BAND



END VIEW

Second angle connection optional to 42" diameter, required above 42" diameter

HELICAL BAND



END VIEW

SEMI-CORRUGATED BAND

NO SCALE

NOT FOR CONSTRUCTION

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

U.S. CUSTOMARY STANDARD

METAL PIPE CULVERT COUPLING BAND

STANDARD APPROVED FOR USE 12/1993
REVISED: 4/1994 6/2005

STANDARD 602-2

2 September 2015 11:30 AM c:\myfiles\pw_production\dms52075\Std602-2.dgn [USC]

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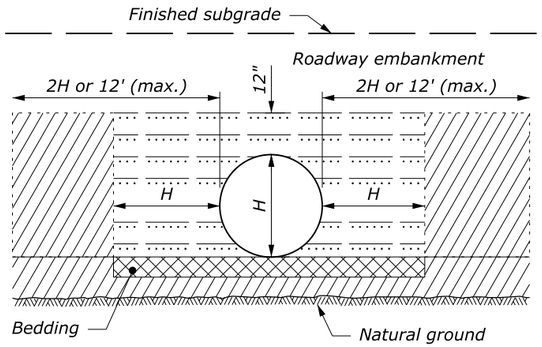
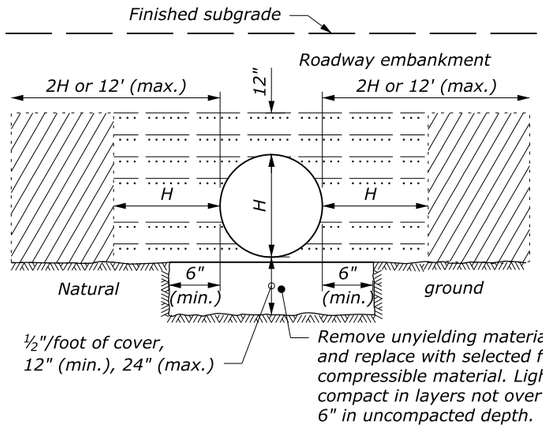
OR	NPS CRLA 13(1)	G.12

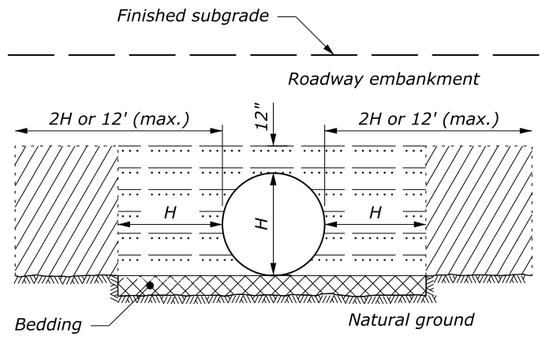
NPS PMIS No. 241696 NPS Drwg No. 106/175169



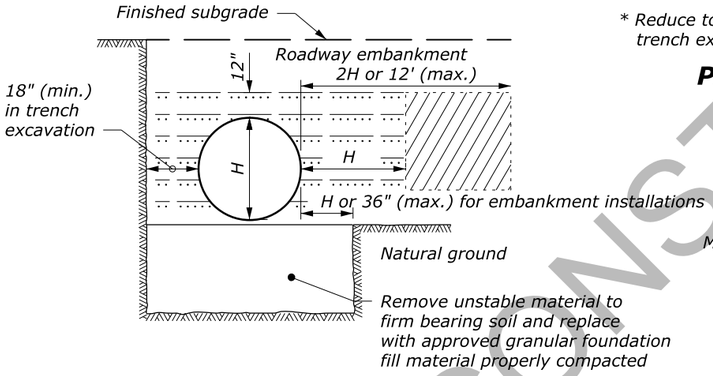
ABOVE NATURAL GROUND



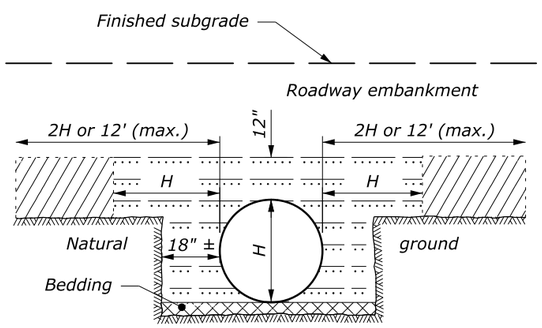
ON UNYIELDING MATERIAL



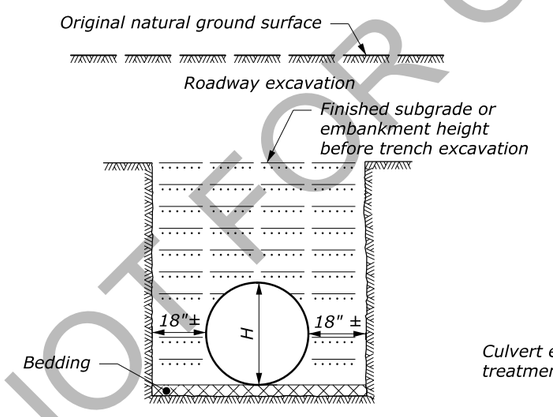
ON NATURAL GROUND



ON UNSTABLE MATERIAL



ABOVE AND BELOW NATURAL GROUND

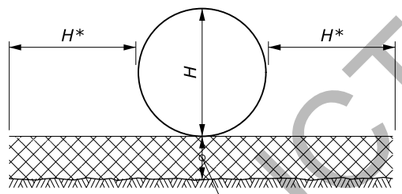


BELOW NATURAL GROUND OR TRENCH EXCAVATION IN EMBANKMENT

LEGEND:

- Bedding material (uncompacted)
- Embankment material placed in layers not exceeding 6" compacted depth.
- Compacted backfill material placed in layers not exceeding 6" compacted depth; or lean concrete backfill in accordance with Section 614.
- Impermeable backfill material.

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

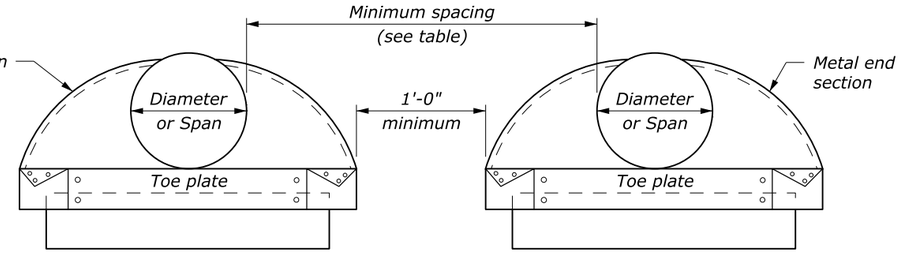


PIPE BEDDING

NOTE:

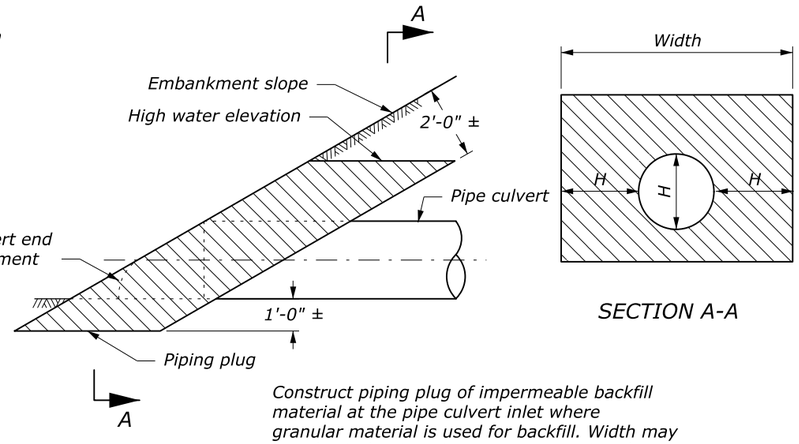
1. When directed, camber pipe culverts upward from a chord through the inlet and outlet inverts an ordinate amount equal to 1% of the pipe length. Develop camber on a parabolic curve. If the midpoint elevation on the parabolic curve as designed exceeds the elevation of the inlet invert, reduce the amount of camber or increase the pipe culvert gradient.
2. H equals the diameter of all round pipe culverts or the rise dimension of all pipe arch culverts.
3. See Section 704 for bedding and backfill requirements.

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



ELEVATION

MULTIPLE PIPE INSTALLATION



SECTION A-A

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

PIPING PLUG

NO SCALE

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

U.S. CUSTOMARY STANDARD

METAL AND PLASTIC PIPE CULVERT BEDDING

STANDARD APPROVED FOR USE 12/1993
REVISED: 4/1994 6/2005
DRAFT: 10/2017

STANDARD 602-3

NOT FOR CONSTRUCTION

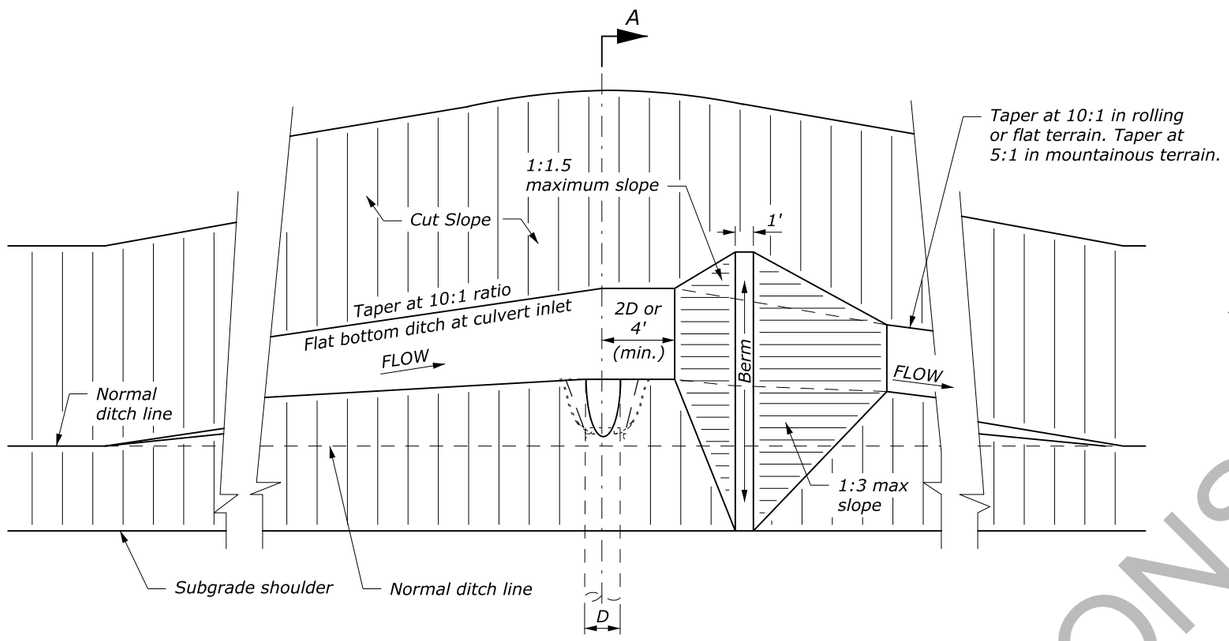
24 February 2016 8:59 AM c:\mvfiles\pw_production\d0243077\FLH-Cells.dgnlib [Border.US]

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	G.13

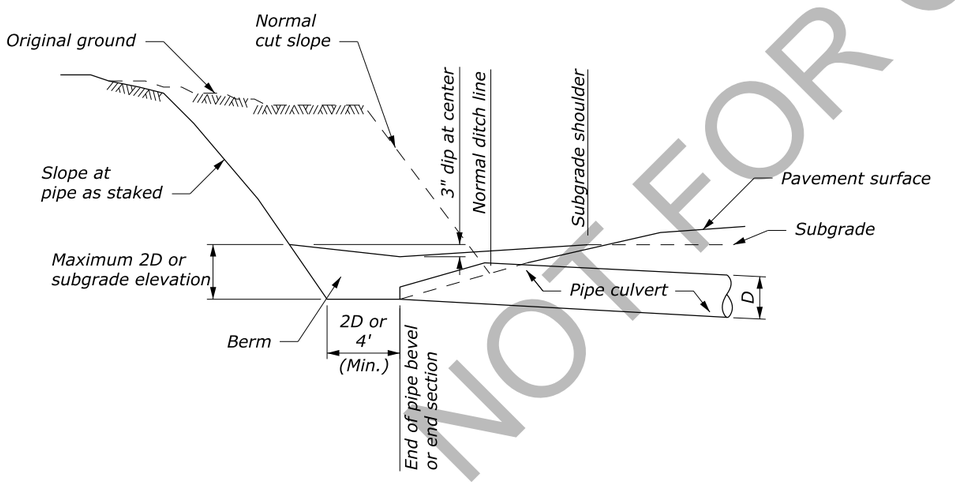
NPS PMIS No. 241696 NPS Drwg No. 106/175169

NOTE:

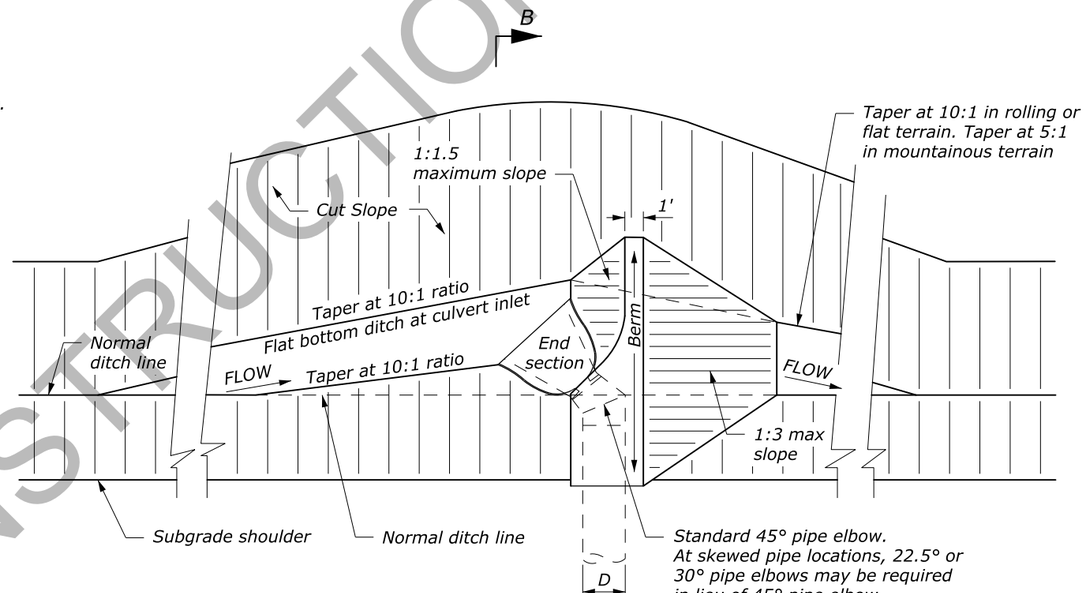
1. D equals the diameter of all round pipe or the rise dimension of all pipe arch culverts.



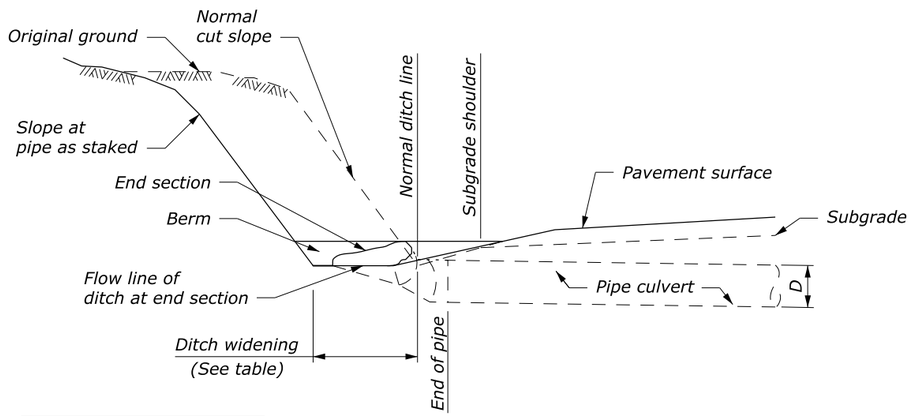
PLAN



SECTION A-A
TYPE I



PLAN



DITCH WIDENING	
PIPE SIZE (D)	WIDENING
18"	5'
24"	6'
30"	7'

SECTION B-B
TYPE II

NO SCALE

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

U.S. CUSTOMARY STANDARD

PIPE CULVERT INLET TREATMENT IN CUT SLOPES

STANDARD APPROVED FOR USE 12/1993
REVISED: 4/1994 6/2005

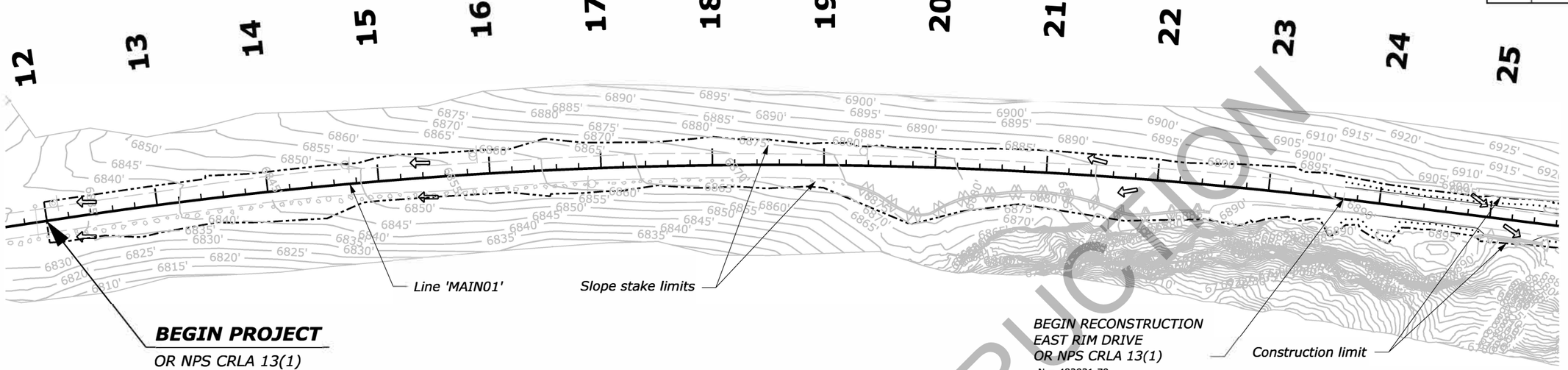
STANDARD 602-6

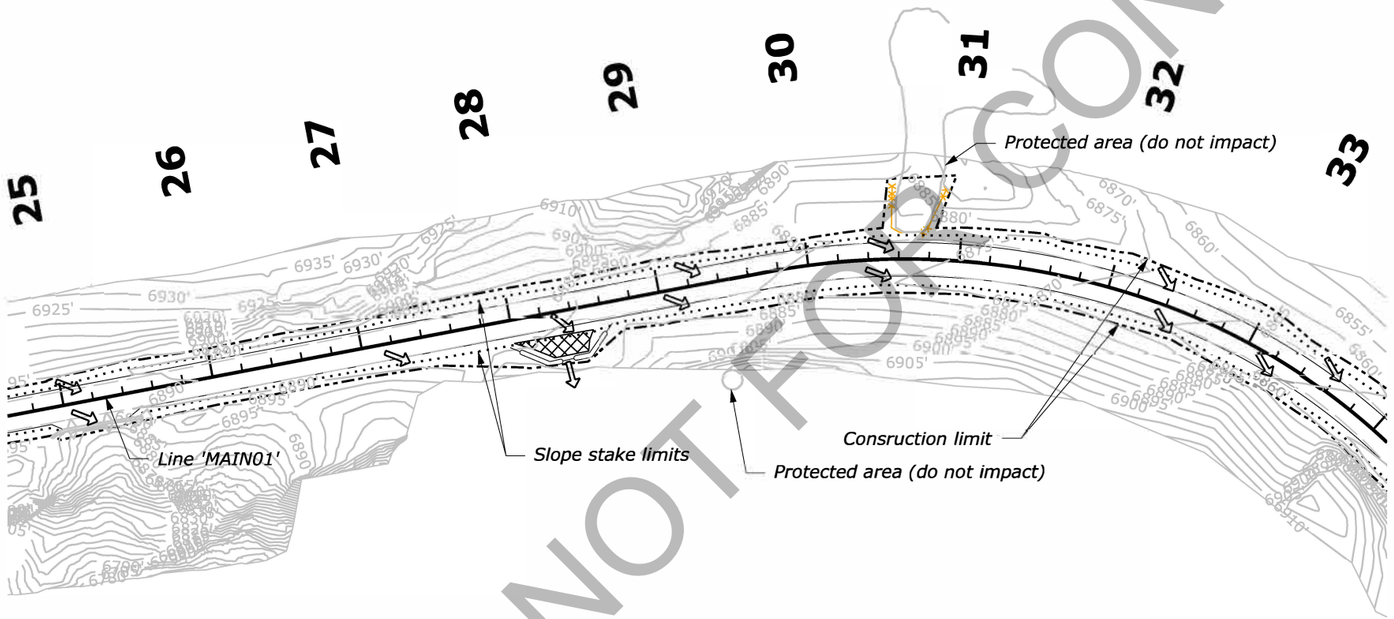
NOT FOR CONSTRUCTION

3 December 2015 8:11 AM c:\myfiles\pw_production\dms52075\Std602-6.dgn [USC]

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.3





LEGEND:

- Flow arrow
- Fiber roll
- Check dam
- Obliteration
- Plastic Fence (Protected Vegetation)

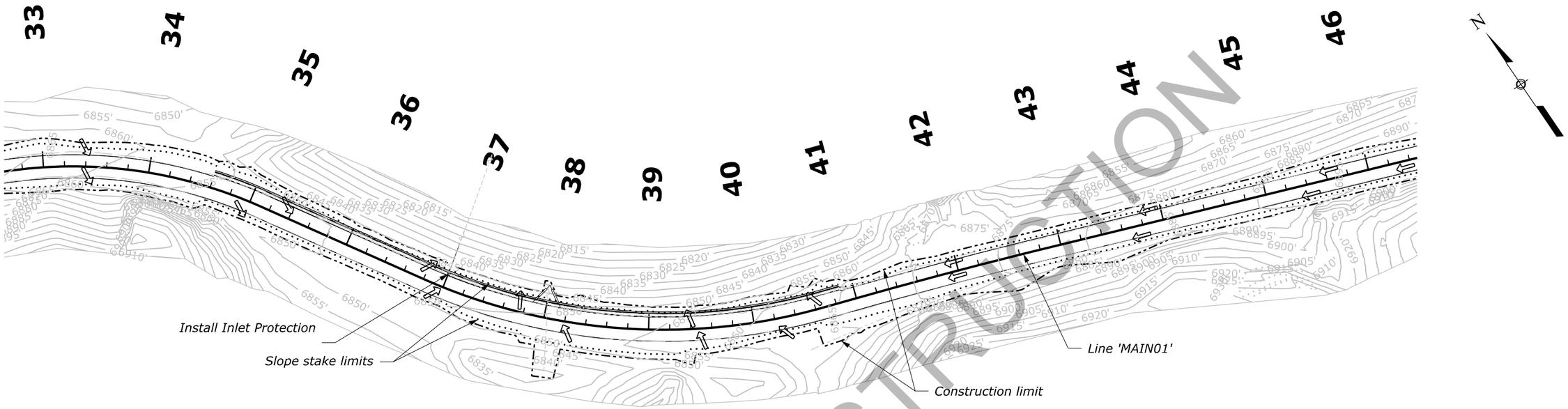
NOT FOR CONSTRUCTION

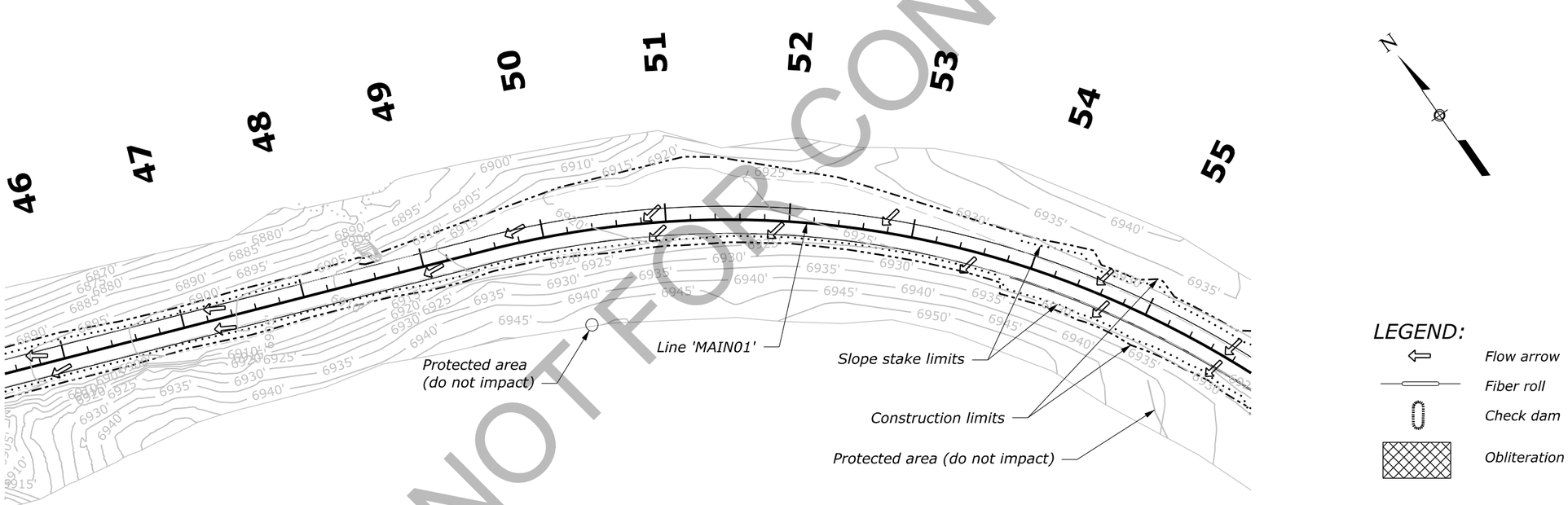
SOIL EROSION AND SEDIMENT CONTROL PLAN 12+00 TO 33+00

C:\Users\carrie.warren\Desktop\Exported from PW\cria01301_ESC1.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 12+00 TO 33+00]
25 March 2021 8:15 AM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.4





LEGEND:

- Flow arrow
- Fiber roll
- Check dam
- Obliteration

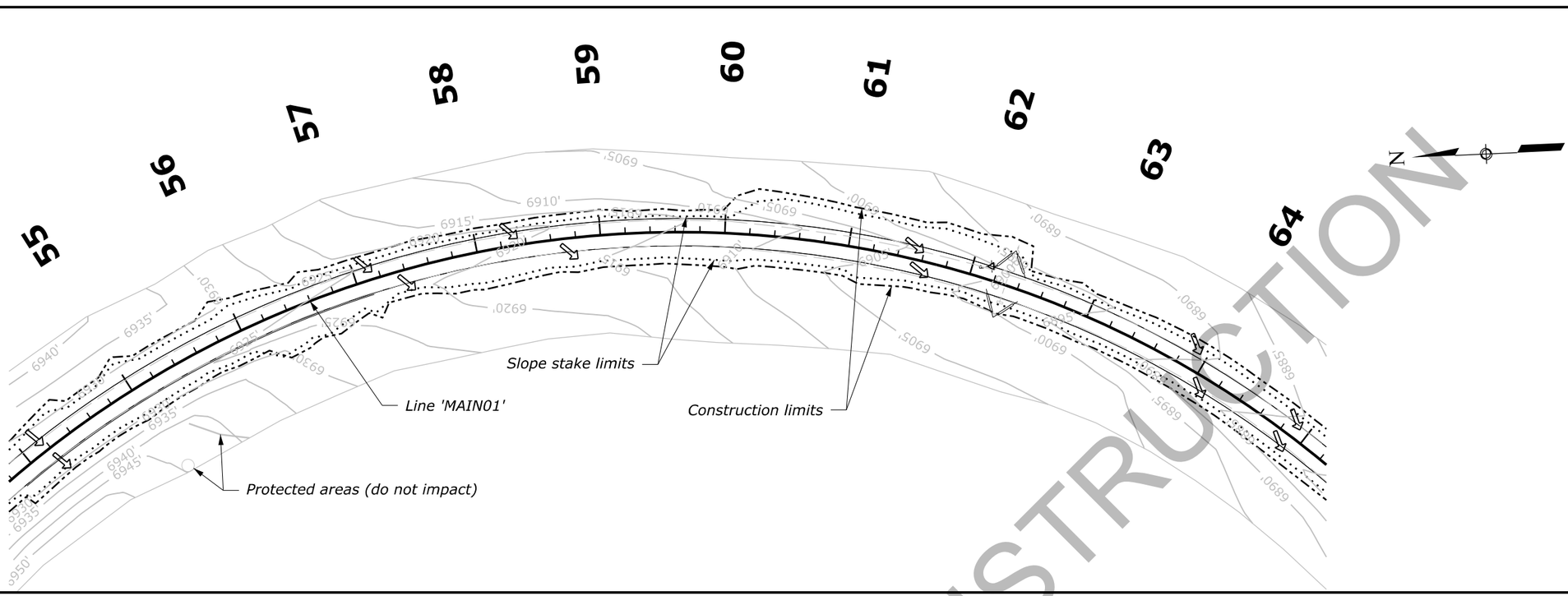
NOT FOR CONSTRUCTION

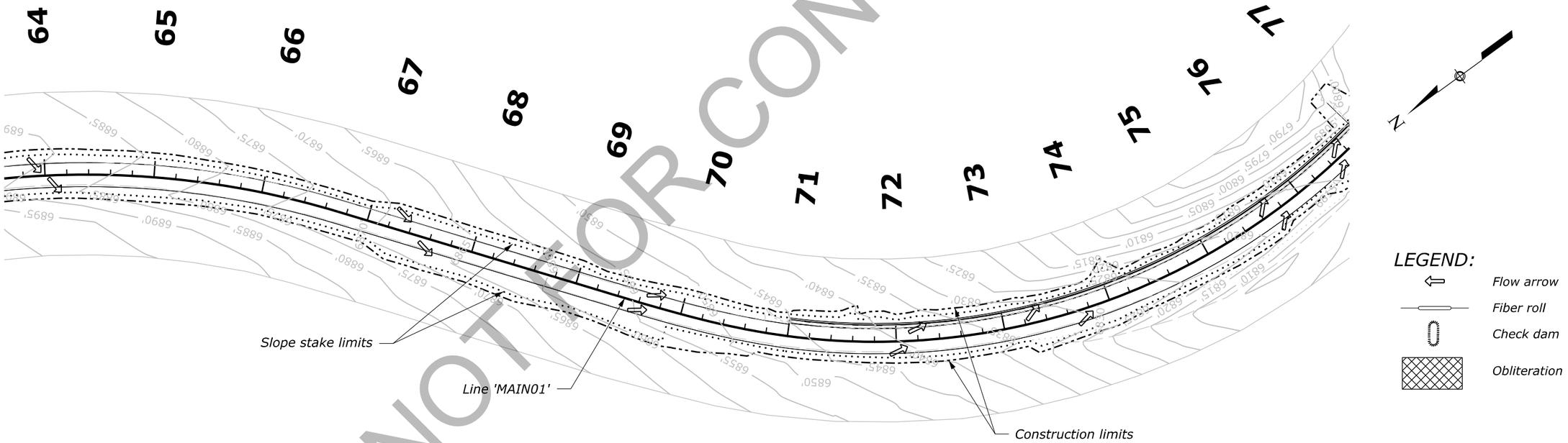
SOIL EROSION AND SEDIMENT CONTROL PLAN 33+00 TO 55+00

C:\Users\carrie.warren\Desktop\Exported from PW\cfa01301_ESC1.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 33+00 TO 55+00]
25 March 2021 8:15 AM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.5





NOT FOR CONSTRUCTION

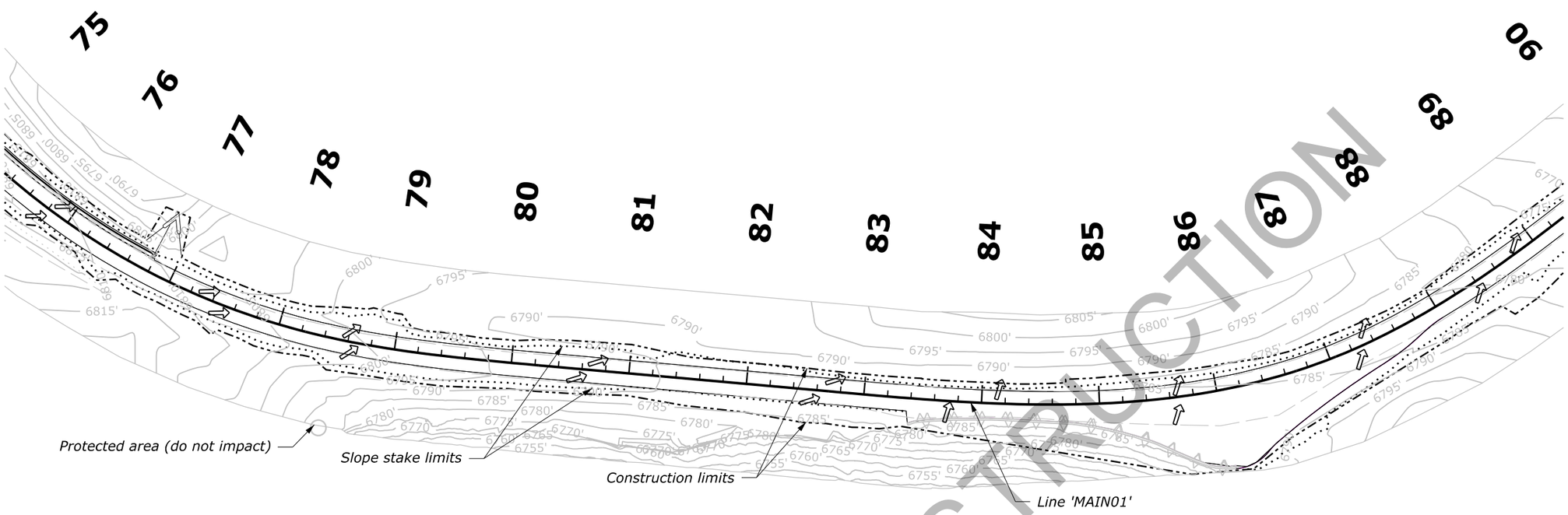
C:\Users\carrie.warren\Desktop\Exported from PW\crla01301_ESC1.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 55+00 TO 76+00]

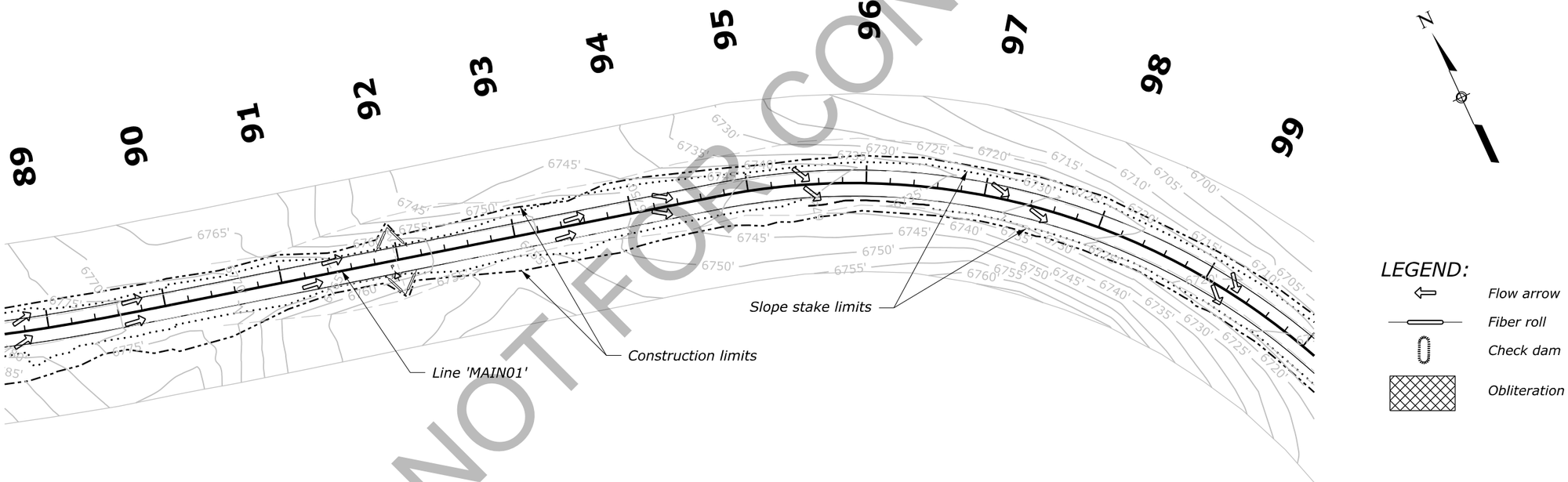
25 March 2021 8:15 AM

SOIL EROSION AND SEDIMENT CONTROL PLAN 55+00 TO 76+00

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.6





LEGEND:

- Flow arrow
- Fiber roll
- Check dam
- Obliteration

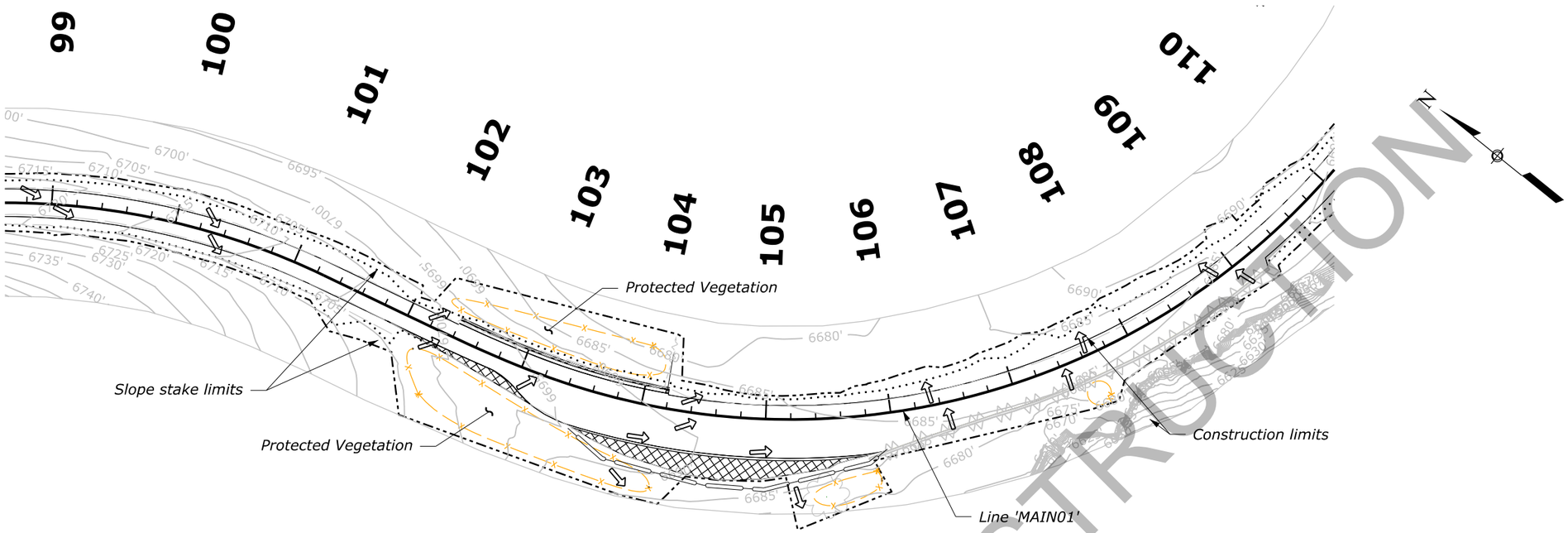
NOT FOR CONSTRUCTION

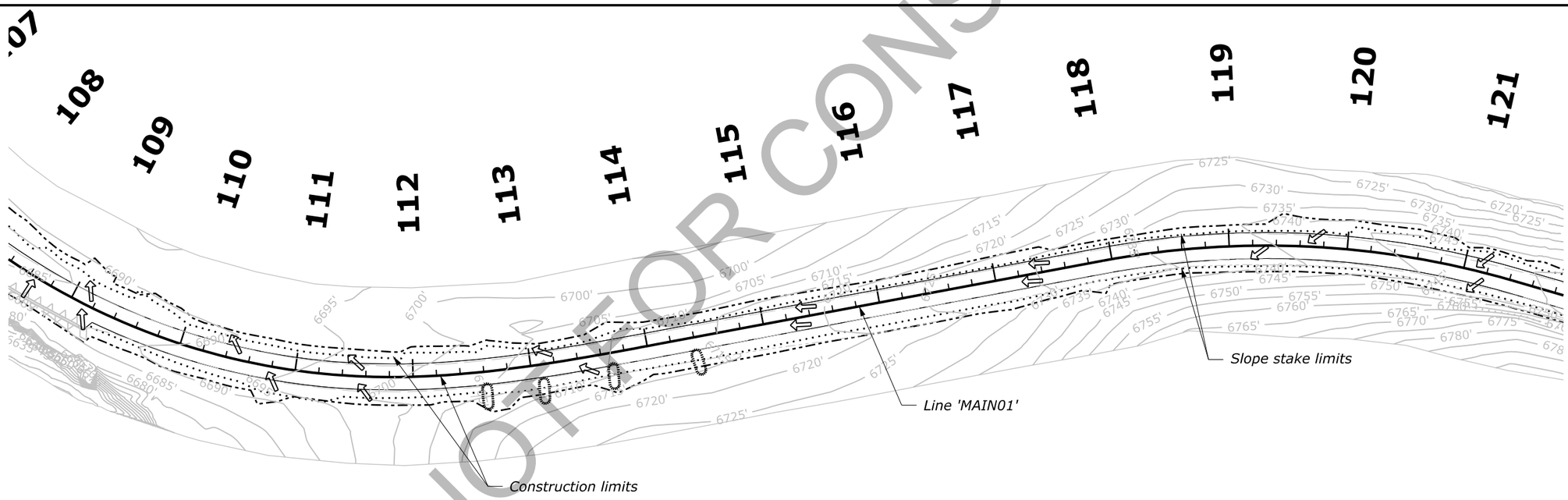
SOIL EROSION AND SEDIMENT CONTROL PLAN 76+00 TO 99+00

C:\Users\carrie.warren\Desktop\Exported from PW\crfa01301_ESC1.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 76+00 TO 99+00]
25 March 2021 8:15 AM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.7





NOT FOR CONSTRUCTION

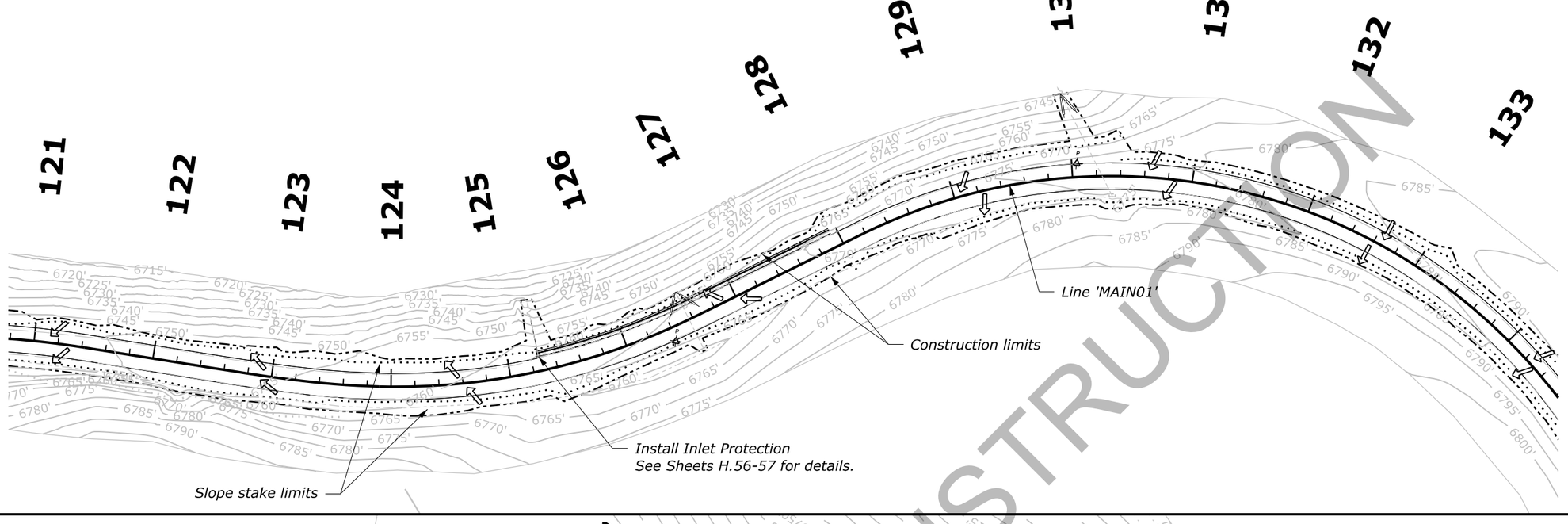
C:\Users\carrie.warren\Desktop\Exported from PW\crfa01301_ESC1.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 99+00 TO 121+00]

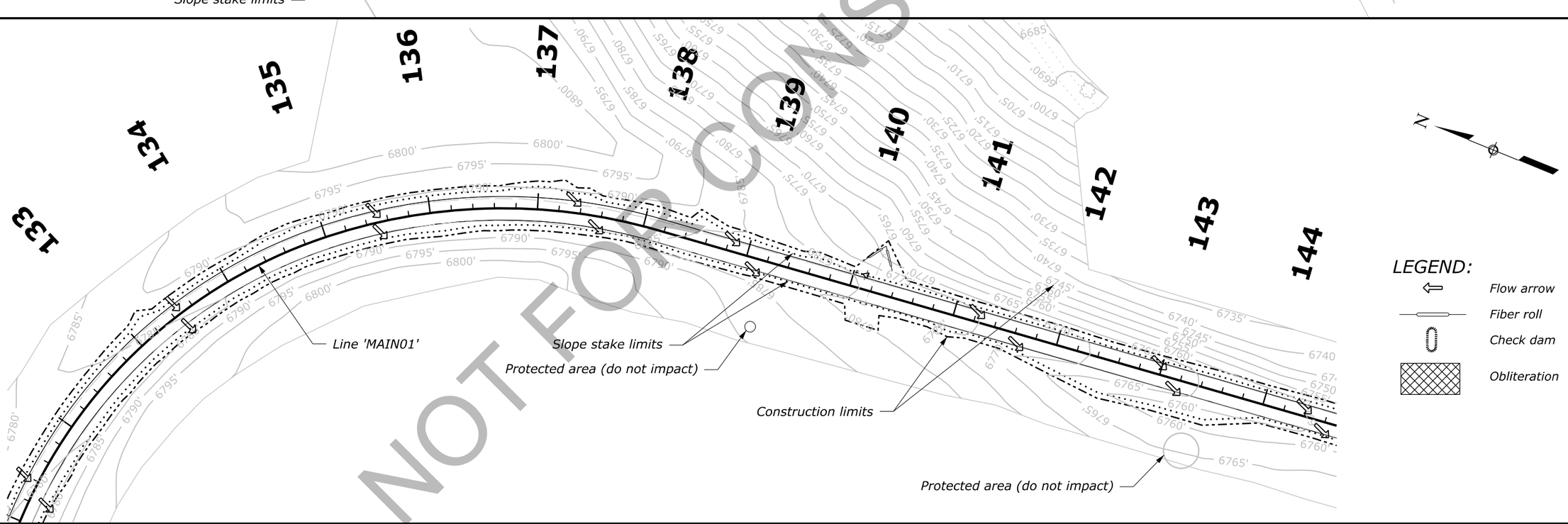
25 March 2021 8:15 AM

SOIL EROSION AND SEDIMENT CONTROL PLAN 99+00 TO 121+00

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.8





NOT FOR CONSTRUCTION

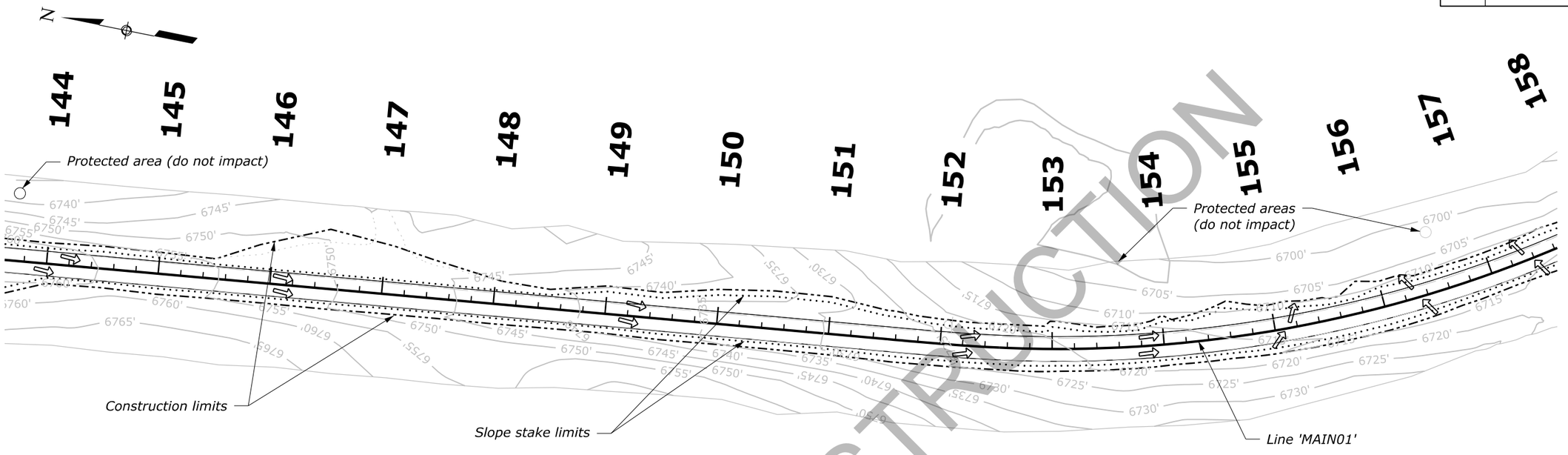
C:\Users\carrie.warren\Desktop\Exported from PW\crla01301_ESC1.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 121+00 TO 144+00]

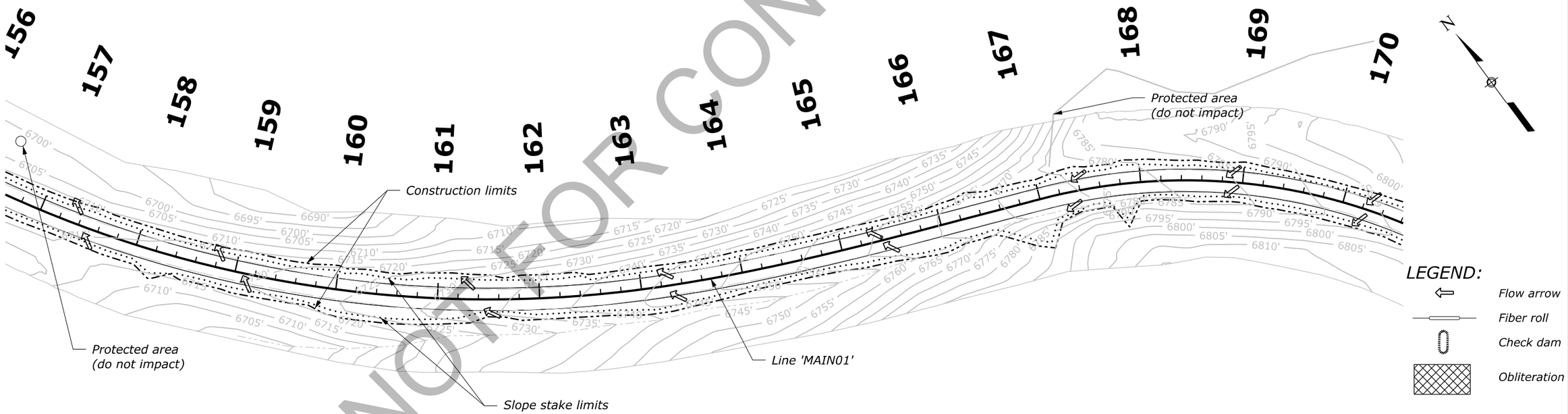
25 March 2021 1:51 PM

SOIL EROSION AND SEDIMENT CONTROL PLAN 121+00 TO 144+00

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.9





NOT FOR CONSTRUCTION

SOIL EROSION AND SEDIMENT CONTROL PLAN 144+00 TO 170+00

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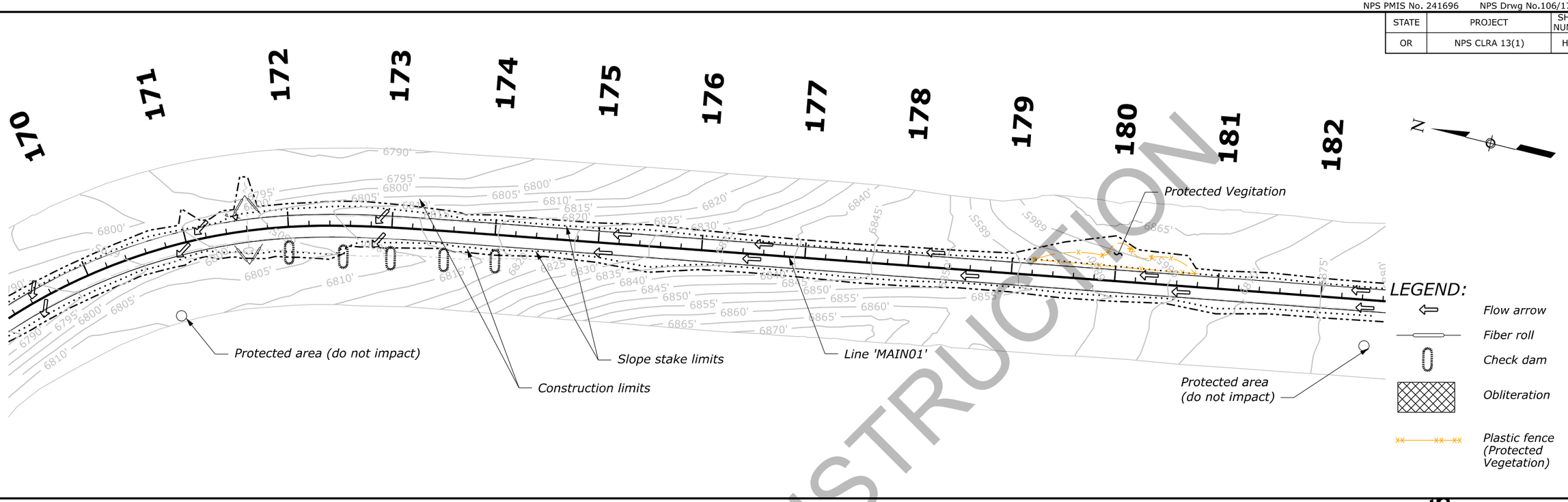
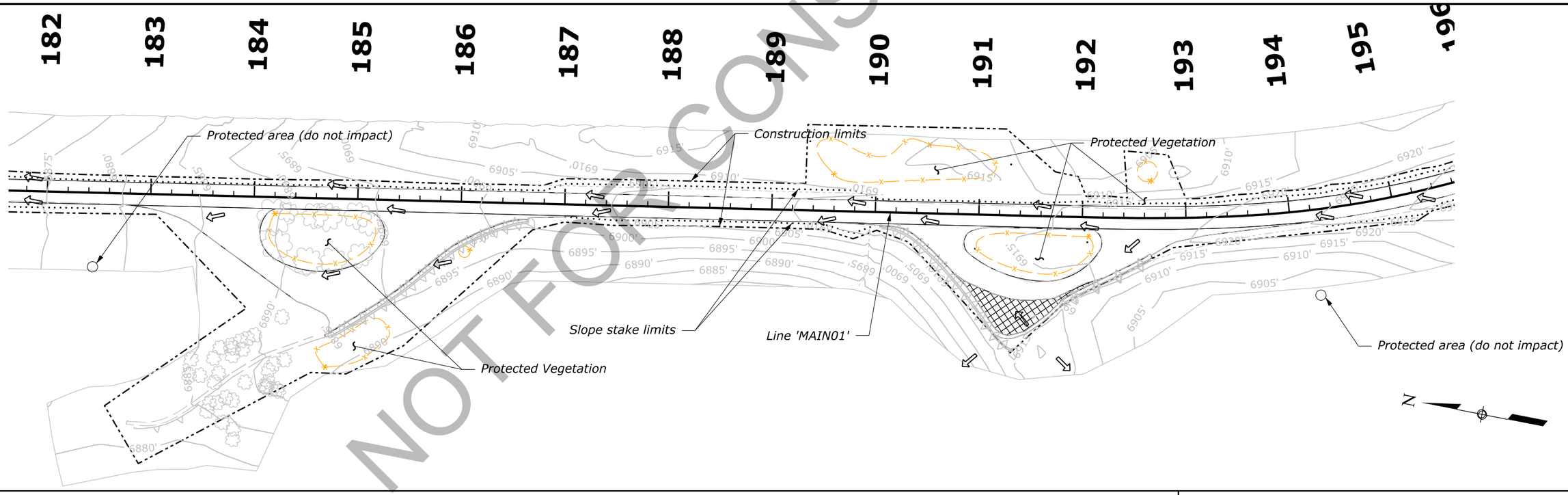
25 March 2021 8:15 AM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.10





NOT FOR CONSTRUCTION

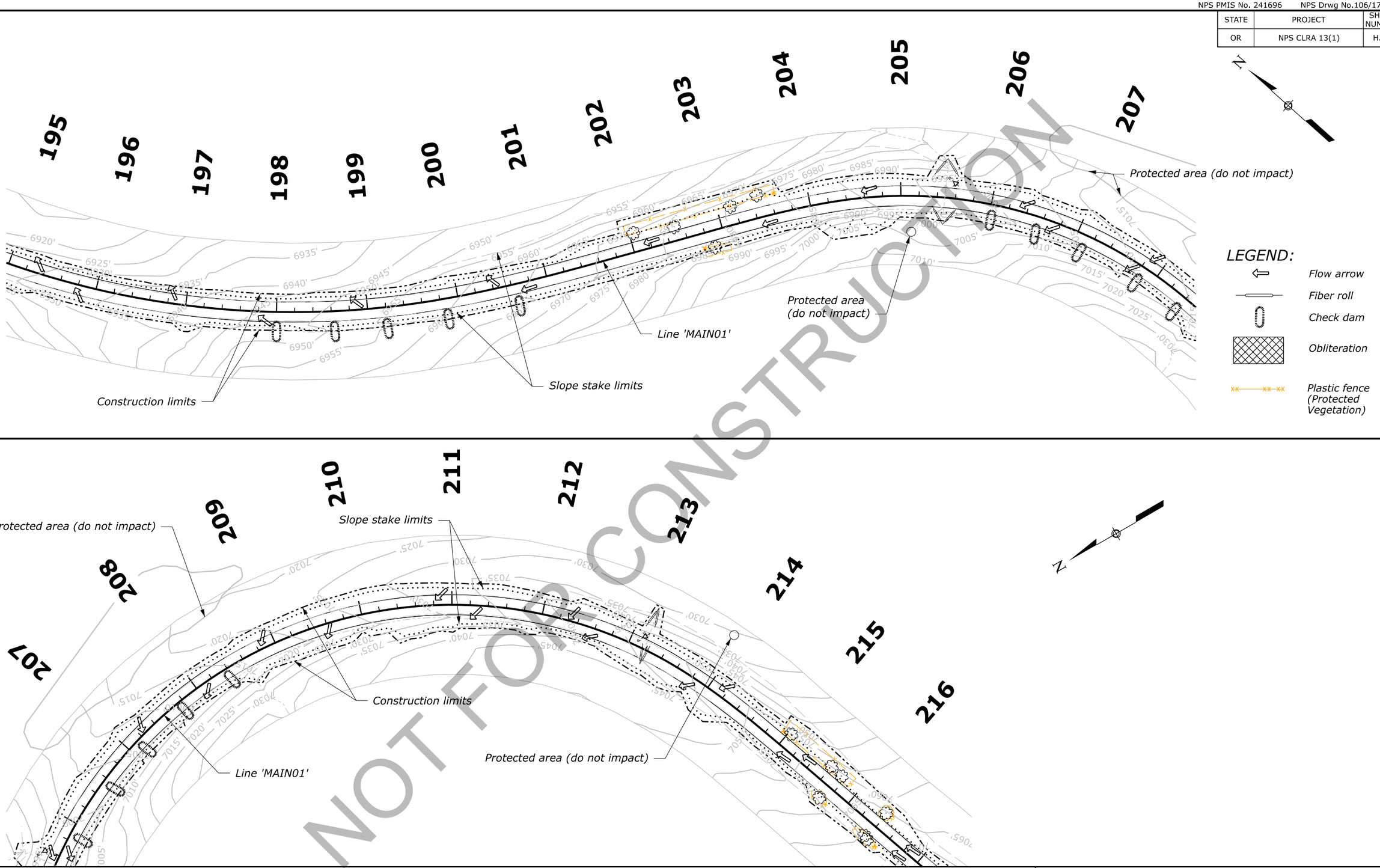
C:\Users\carrie.warren\Desktop\Exported from PW\crla01301_ESC1.dgn SOIL EROSION AND SEDIMENT CONTROL PLAN 170+00 TO 195+00

25 March 2021 1:56 PM

SOIL EROSION AND SEDIMENT CONTROL PLAN 170+00 TO 195+00

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.11



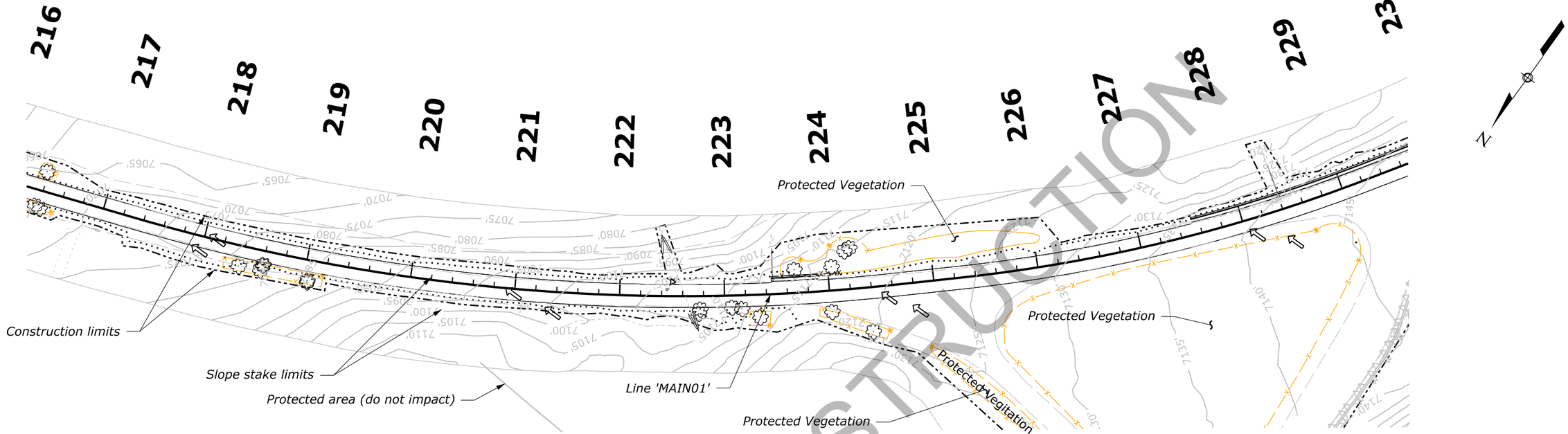
NOT FOR CONSTRUCTION

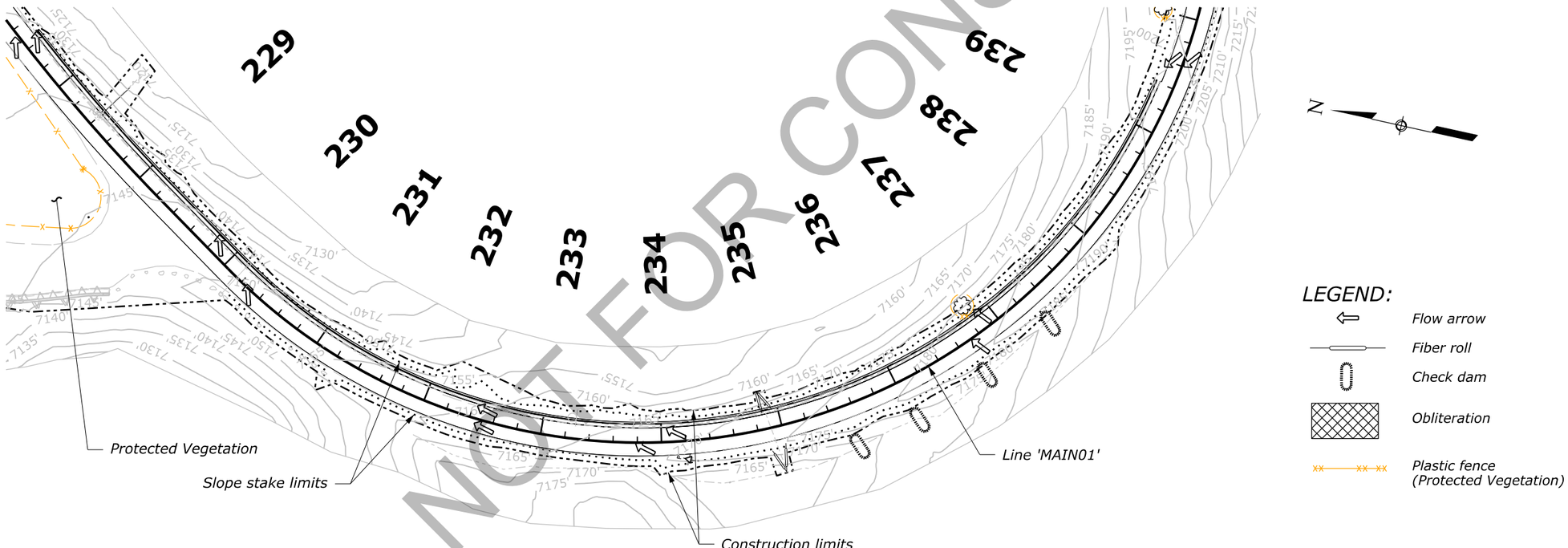
SOIL EROSION AND SEDIMENT CONTROL PLAN 195+00 216+00

C:\Users\carrie.warren\Desktop\Exported from PW\crta01301_ESC1.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 195+00 216+00]
29 March 2021 8:02 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	H.12





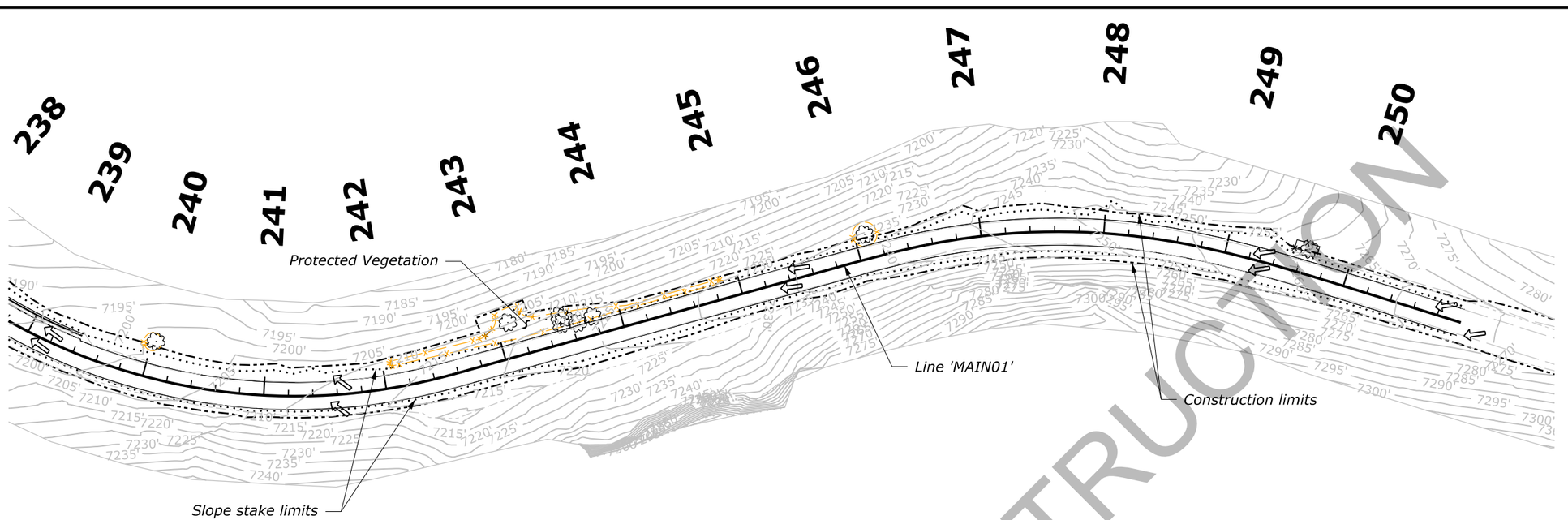
NOT FOR CONSTRUCTION

SOIL EROSION AND SEDIMENT CONTROL PLAN 216+00 TO 239+00

C:\Users\carrie.warren\Desktop\Exported from PW\crla01301_ESC1.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 216+00 TO 239+00]
29 March 2021 7:31 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	H.13



LEGEND:

- *Flow arrow*
- *Fiber roll*
- *Check dam*
- *Obliteration*
- *Plastic fence (Protected Vegetation)*

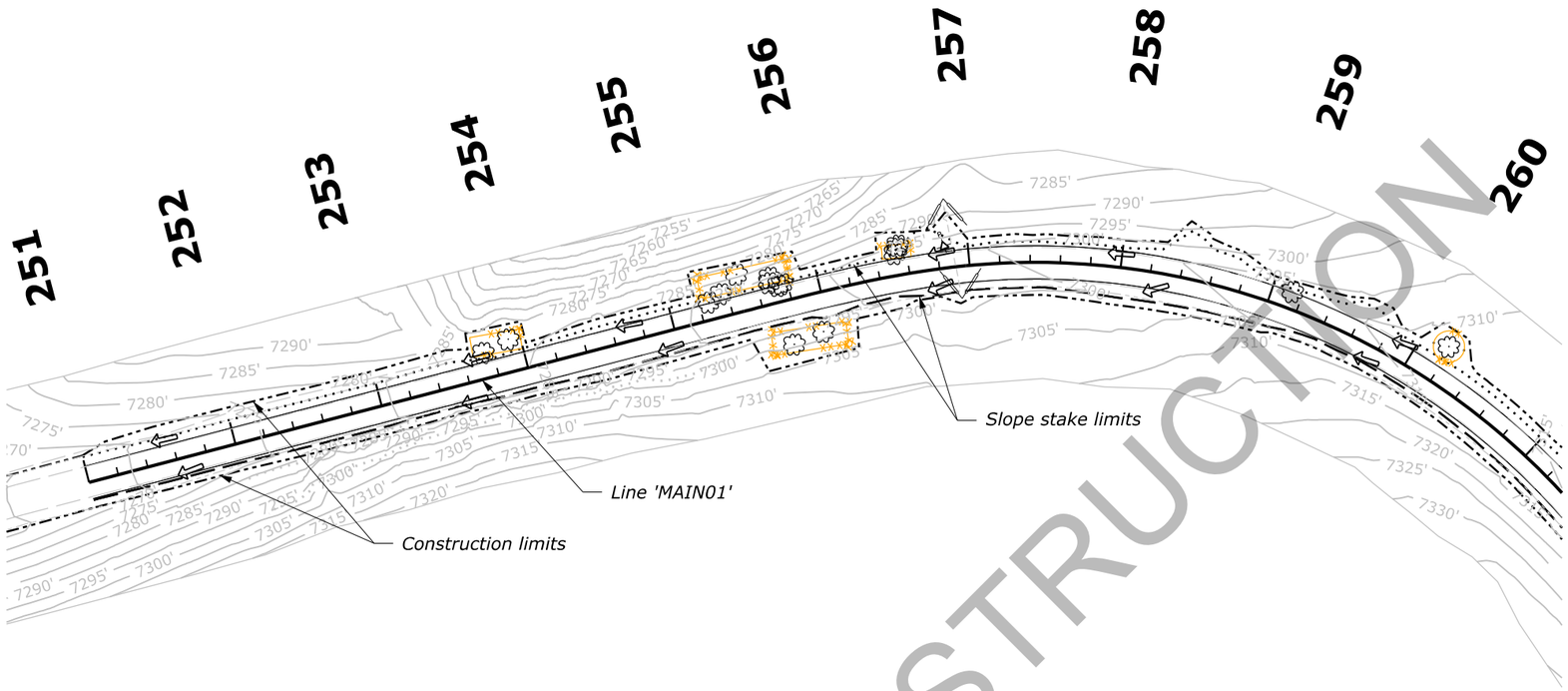
NOT FOR CONSTRUCTION

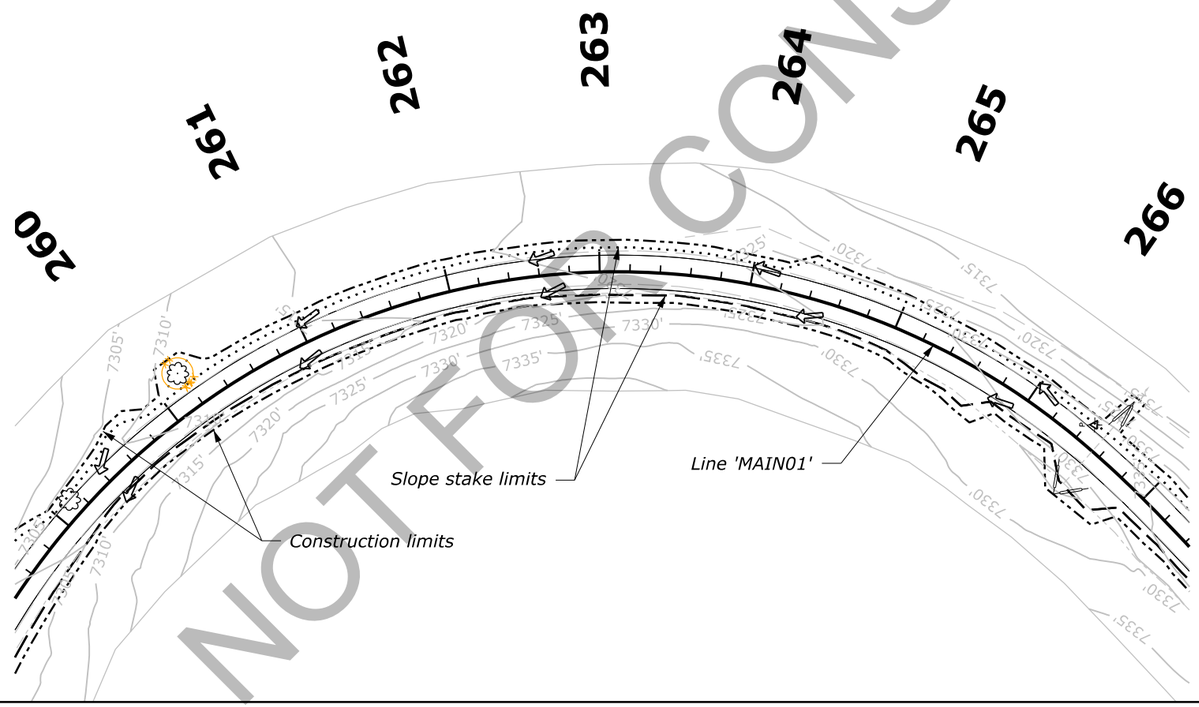
SOIL EROSION AND SEDIMENT CONTROL PLAN 239+00 TO 251+00

29 March 2021 8:04 AM C:\Users\carrie.warren\Desktop\Exported from PW\crla01301_ESC1.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 239+00 TO 251+00]

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.14





LEGEND:

- Flow arrow
- Fiber roll
- Check dam
- Obliteration
- Plastic fence (Protected Vegetation)

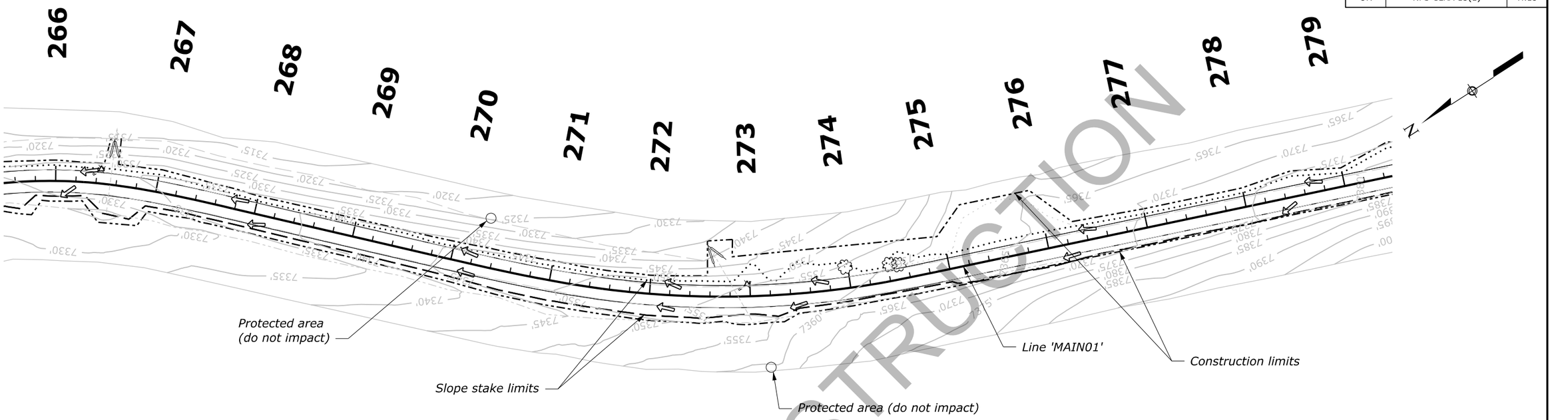
NOT FOR CONSTRUCTION

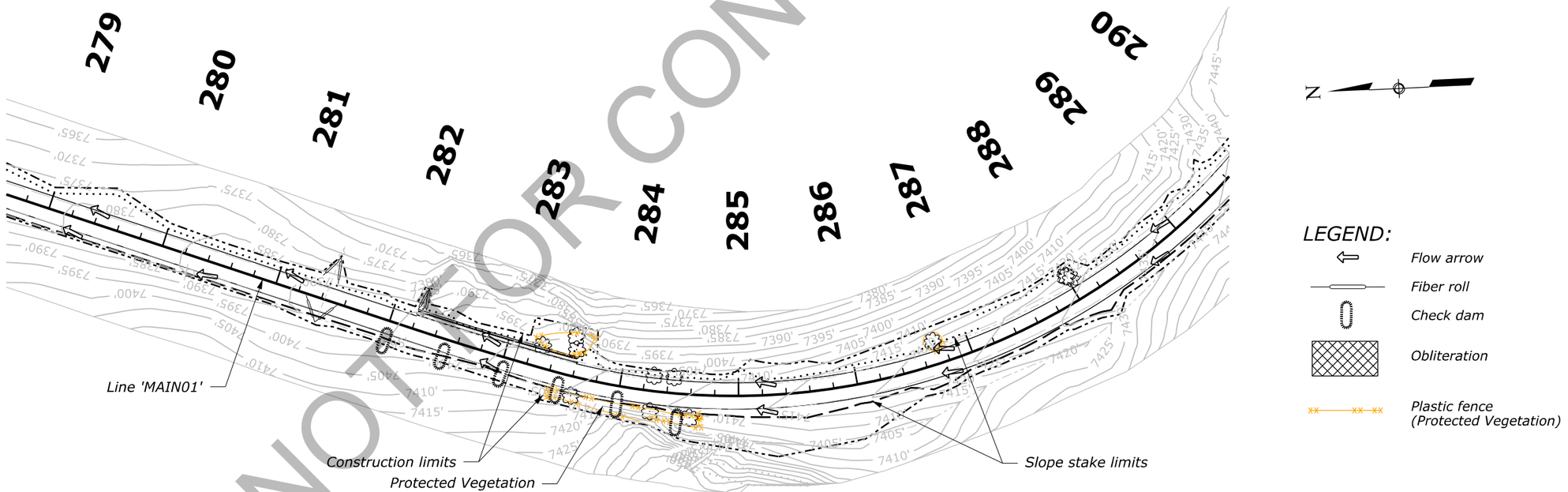
SOIL EROSION AND SEDIMENT CONTROL PLAN 251+00 TO 266+00

C:\Users\carrie.warren\Desktop\Exported from PW\crfa01301_ESC2.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 251+00 TO 266+00]
24 March 2021 11:46 AM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.15





LEGEND:

- Flow arrow
- Fiber roll
- Check dam
- Obliteration
- Plastic fence (Protected Vegetation)

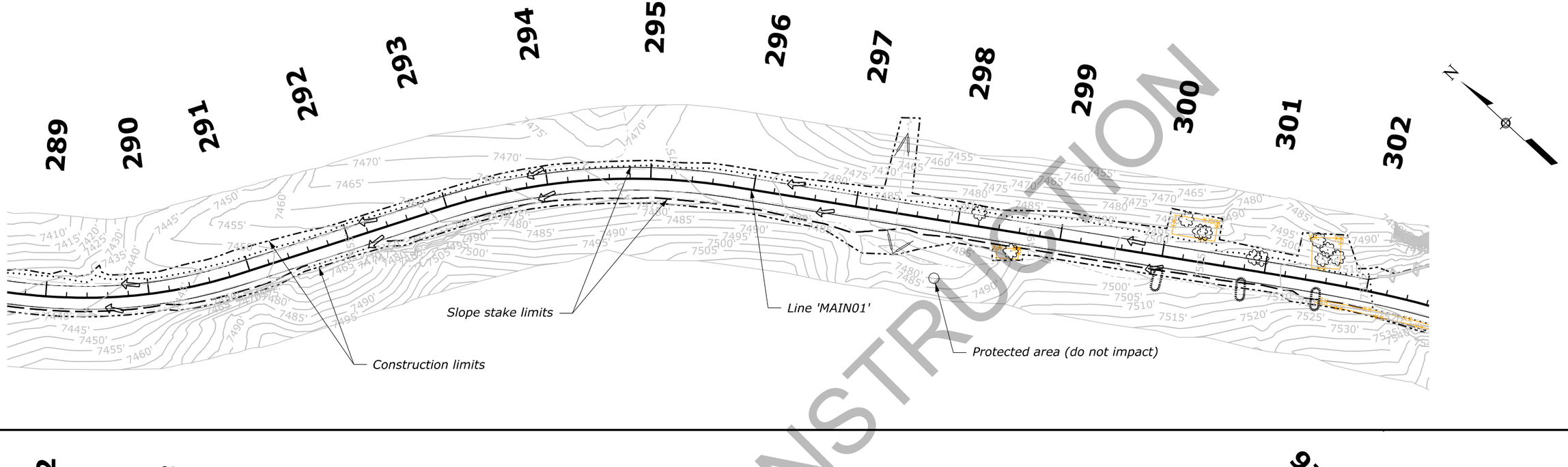
NOT FOR CONSTRUCTION

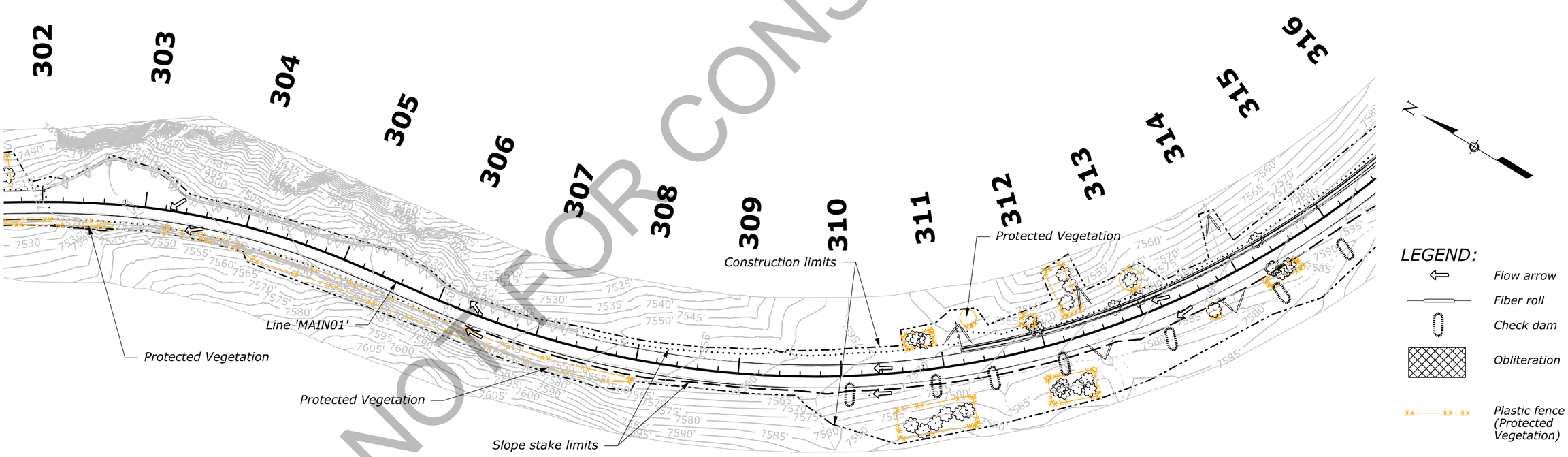
SOIL EROSION AND SEDIMENT CONTROL PLAN 266+00 TO 289+00

C:\Users\carrie.warren\Desktop\Exported from PW\cra01301_ESC2.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 266+00 TO 289+00]
25 March 2021 8:21 AM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.16





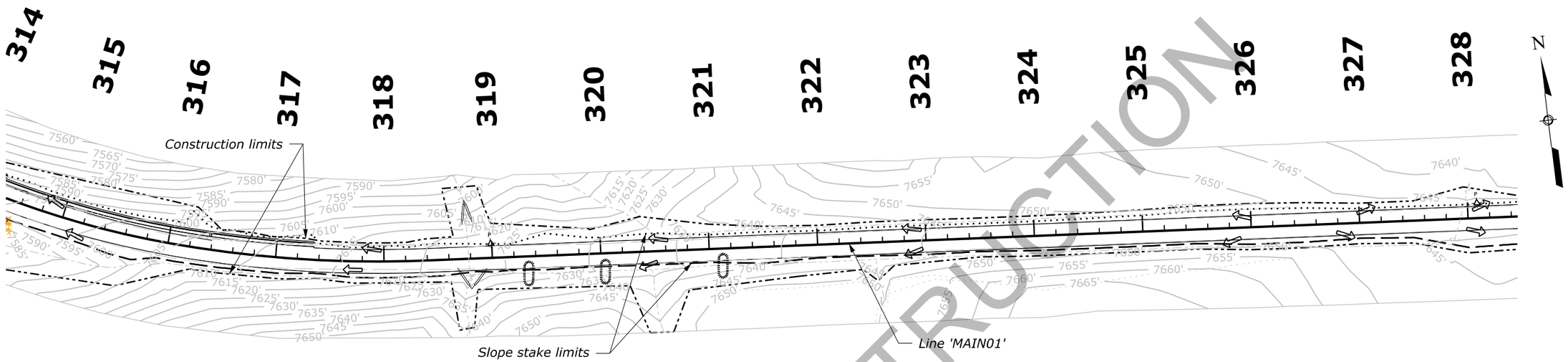
NOT FOR CONSTRUCTION

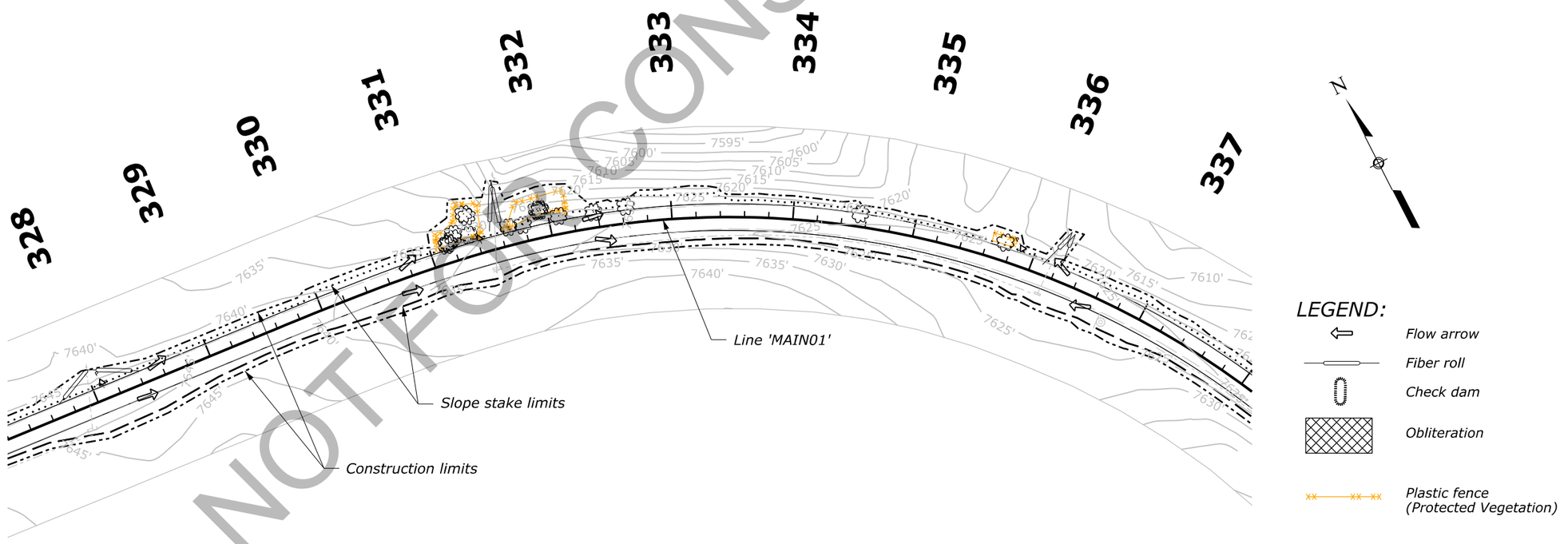
SOIL EROSION AND SEDIMENT CONTROL PLAN 289+00 TO 315+00

C:\Users\carrie.warren\Desktop\Exported from PW\crfs01301_ESC2.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 289+00 TO 315+00]
25 March 2021 8:32 AM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.17





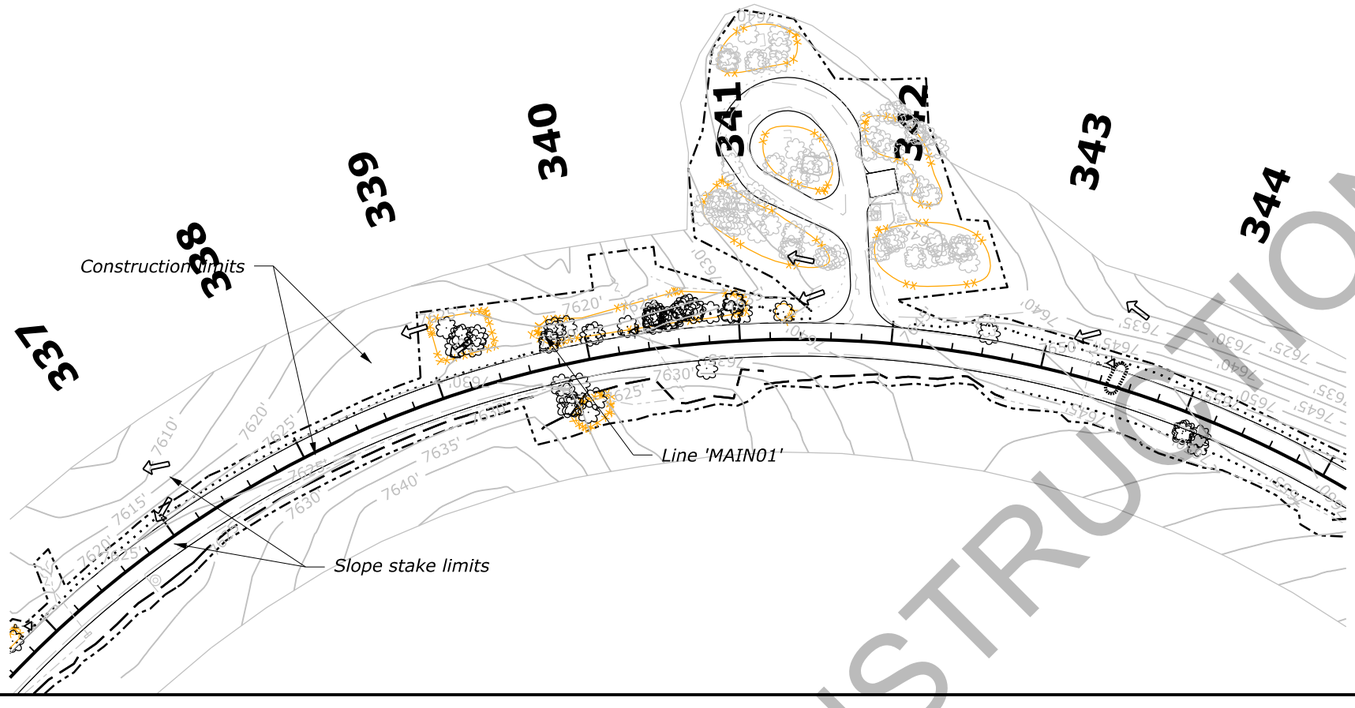
NOT FOR CONSTRUCTION

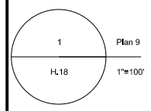
SOIL EROSION AND SEDIMENT CONTROL PLAN 315+00 TO 337+00

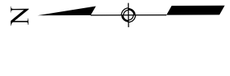
C:\Users\carrie.warren\Desktop\Exported from PW\crfa01301_ESC2.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 315+00 TO 337+00]
25 March 2021 8:34 AM

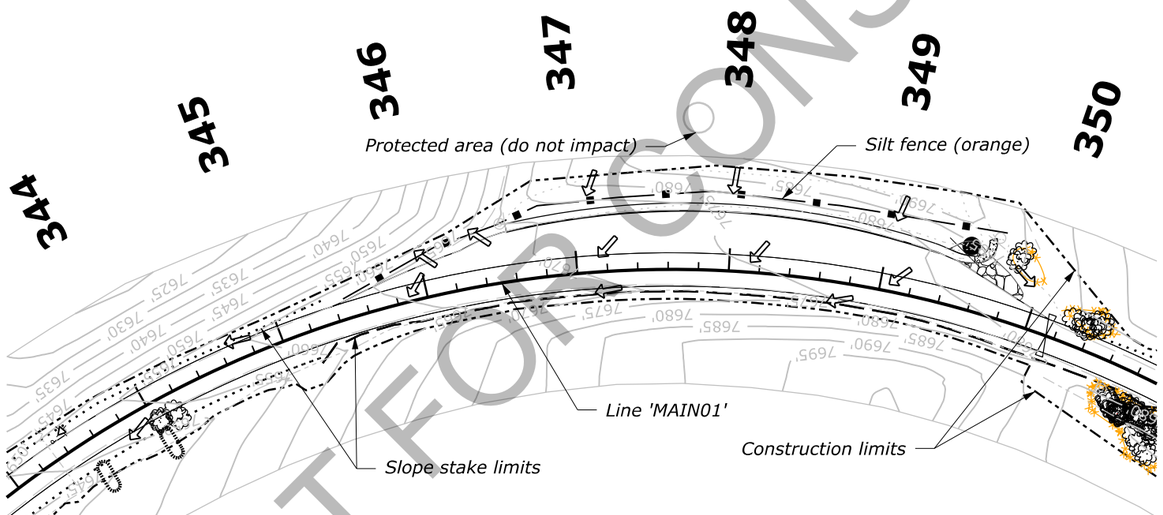
NPS PMIS No. 241696 NPS Drwg No.106/175169

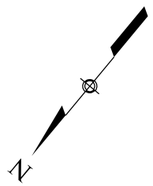
STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.18











LEGEND:

- *Flow arrow*
- *Fiber roll*
- *Check dam*
- *Obliteration*
- *Plastic fence (Protected Vegetation)*

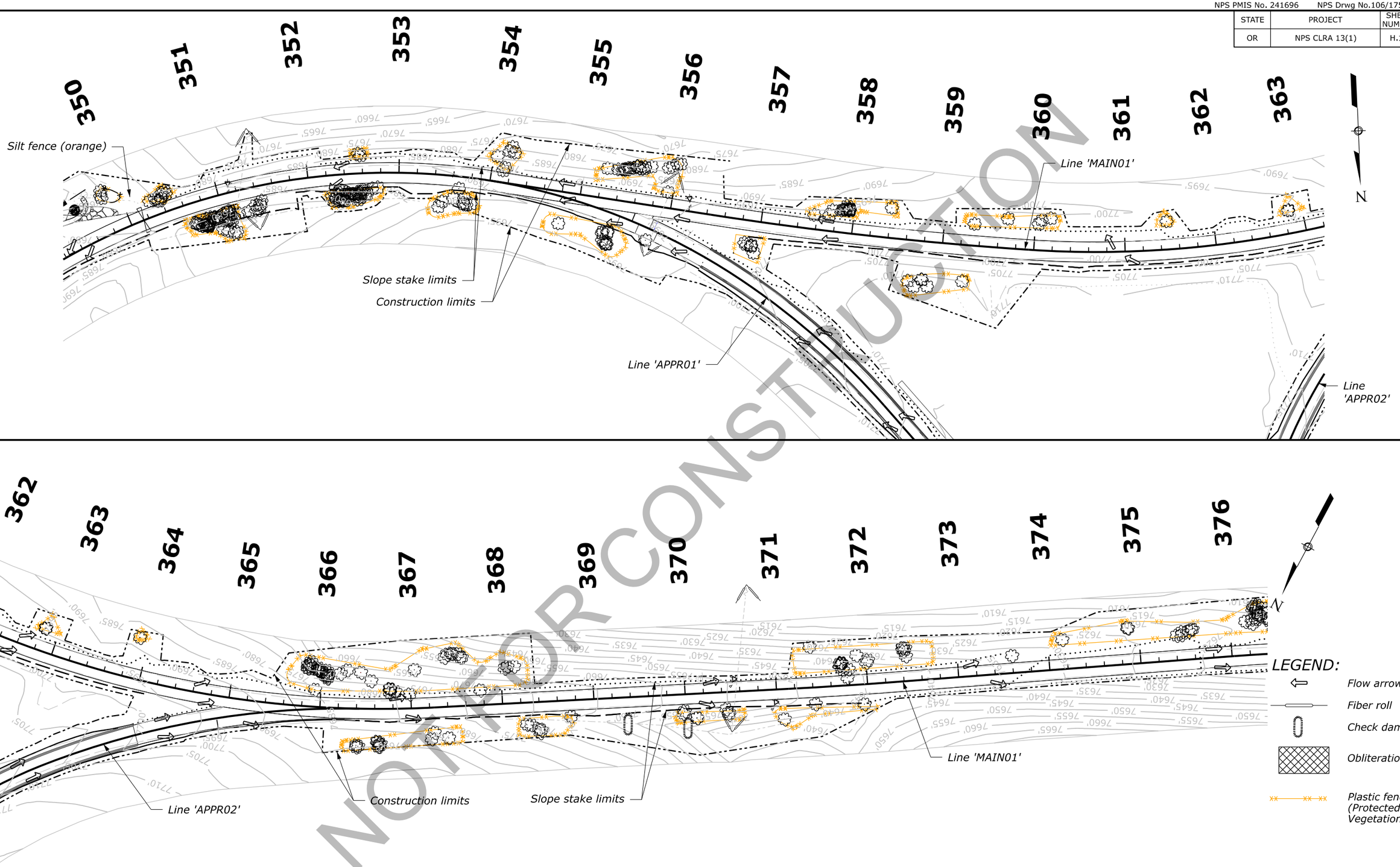
NOT FOR CONSTRUCTION

SOIL EROSION AND SEDIMENT CONTROL PLAN 337+00 TO 350+00

C:\Users\carrie.warren\Desktop\Exported from PW\crfa01301_ESC2.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 337+00 TO 350+00]
25 March 2021 8:43 AM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.19



NOT FOR CONSTRUCTION

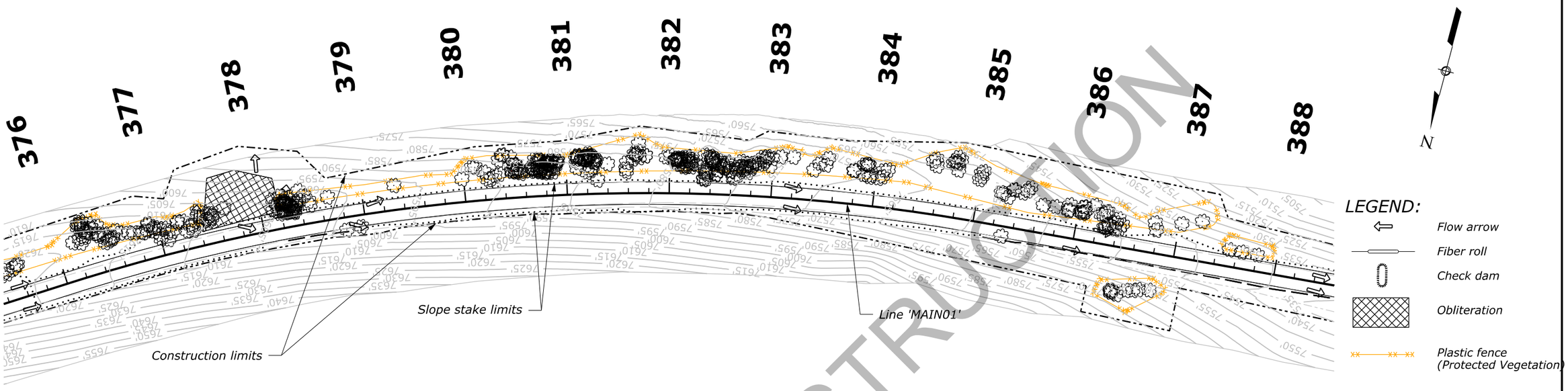
C:\Users\carrie.warren\Desktop\Exported from PW\crla01301_ESC2.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 350+00 TO 376+00]

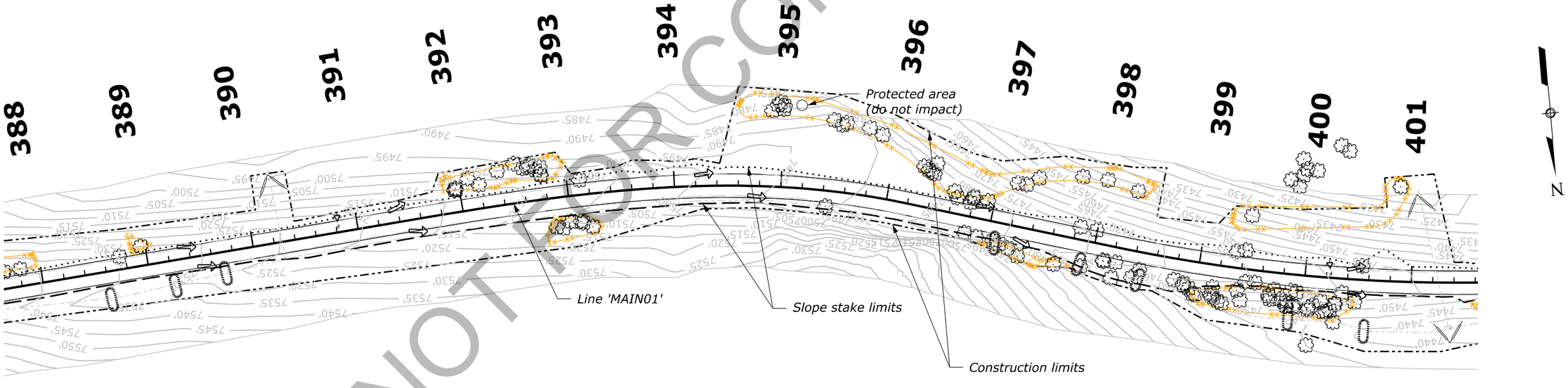
24 March 2021 11:50 AM

SOIL EROSION AND SEDIMENT CONTROL PLAN 350+00 TO 376+00

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.20





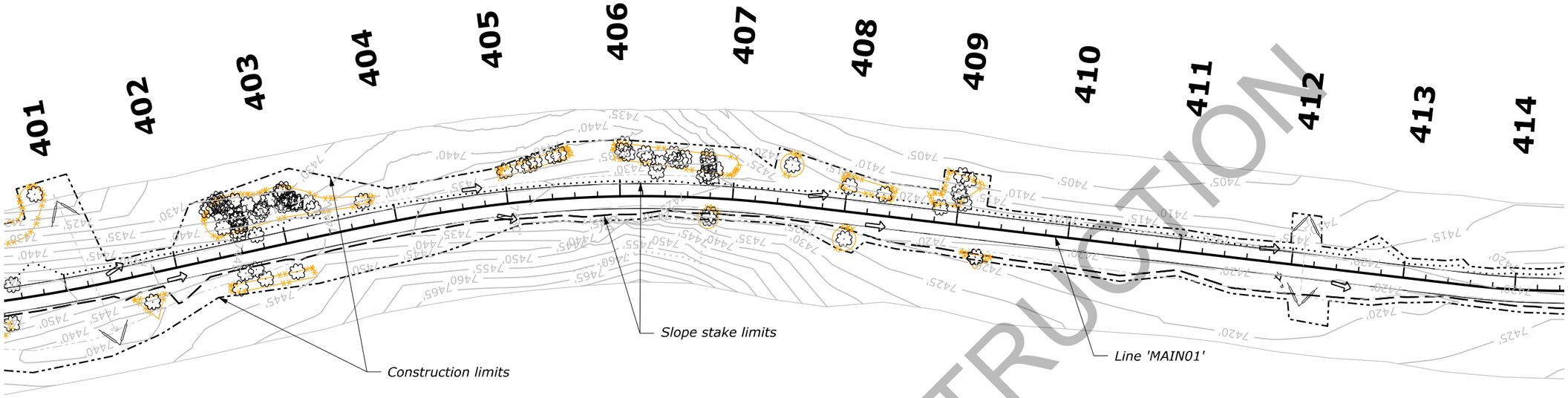
NOT FOR CONSTRUCTION

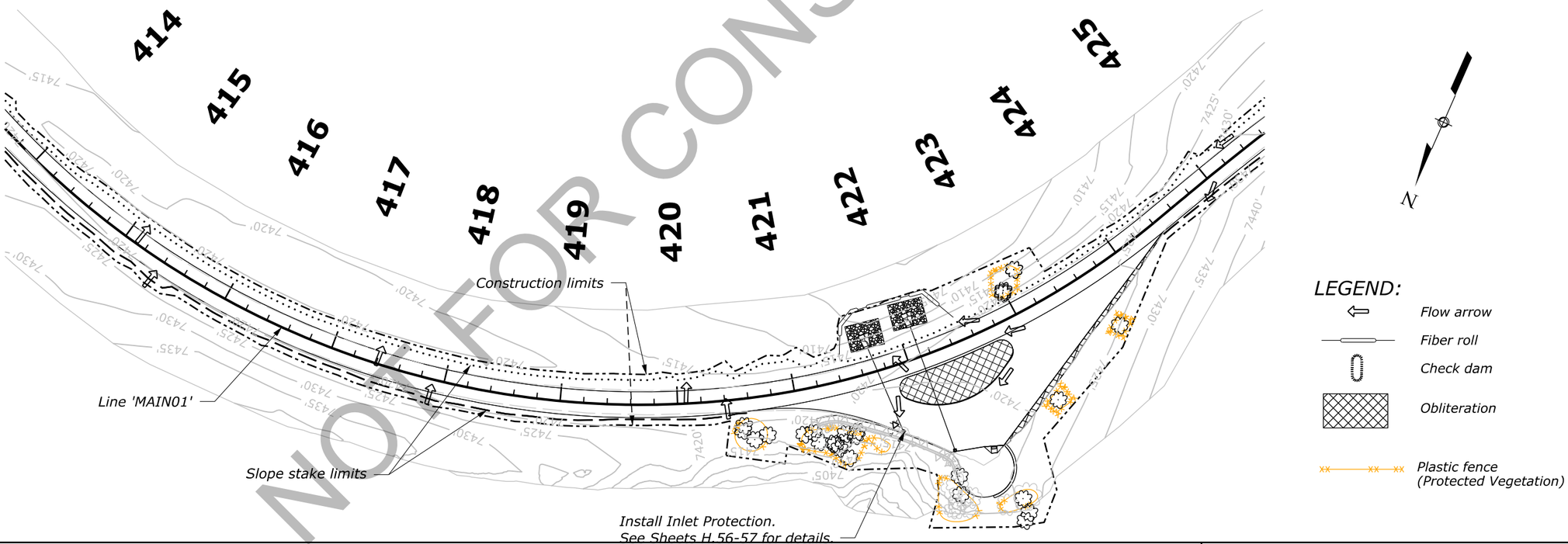
SOIL EROSION AND SEDIMENT CONTROL PLAN 376+00 TO 401+00

C:\Users\carrie.warren\Desktop\Exported from PW\cfa01301_ESC2.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 376+00 TO 401+00]
25 March 2021 8:50 AM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.21





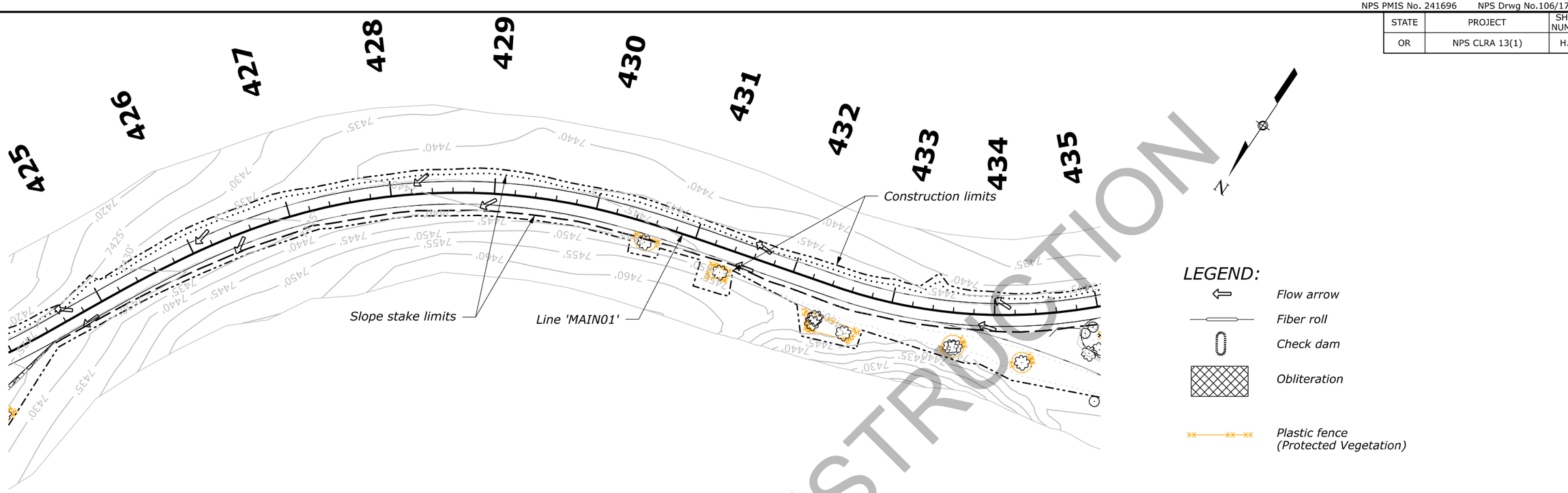
NOT FOR CONSTRUCTION

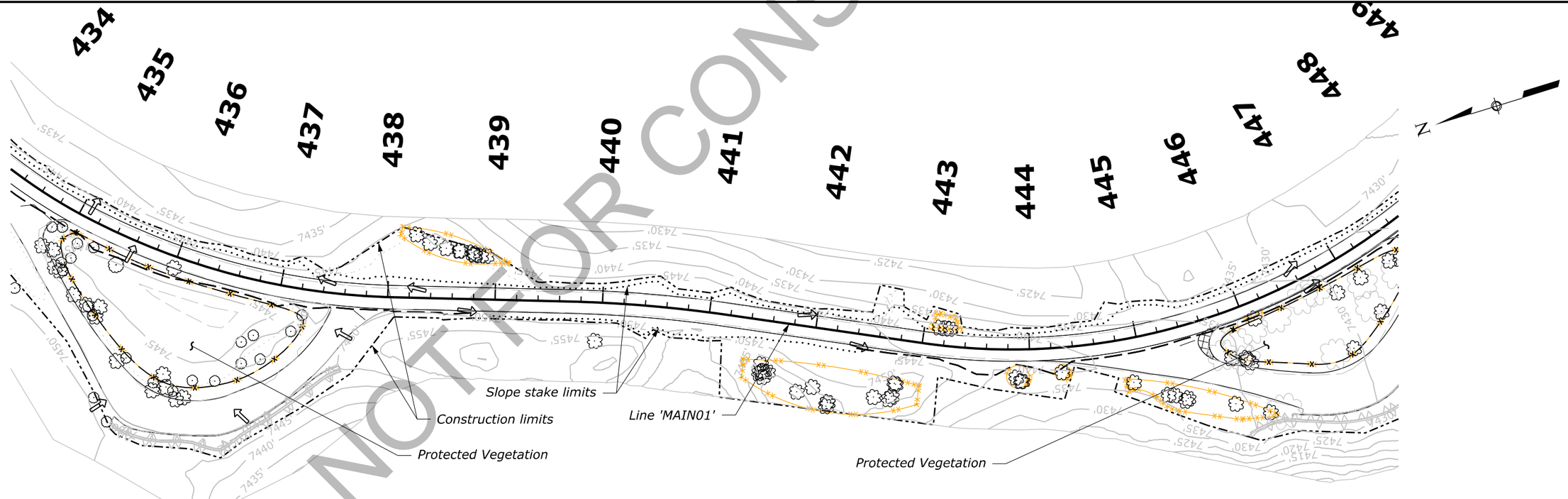
SOIL EROSION AND SEDIMENT CONTROL PLAN 401+00 TO 425+00

C:\Users\carrie.warren\Desktop\Exported from PW\crfa01301_ESC2.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 401+00 TO 425+00]
25 March 2021 8:51 AM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.22





NOT FOR CONSTRUCTION

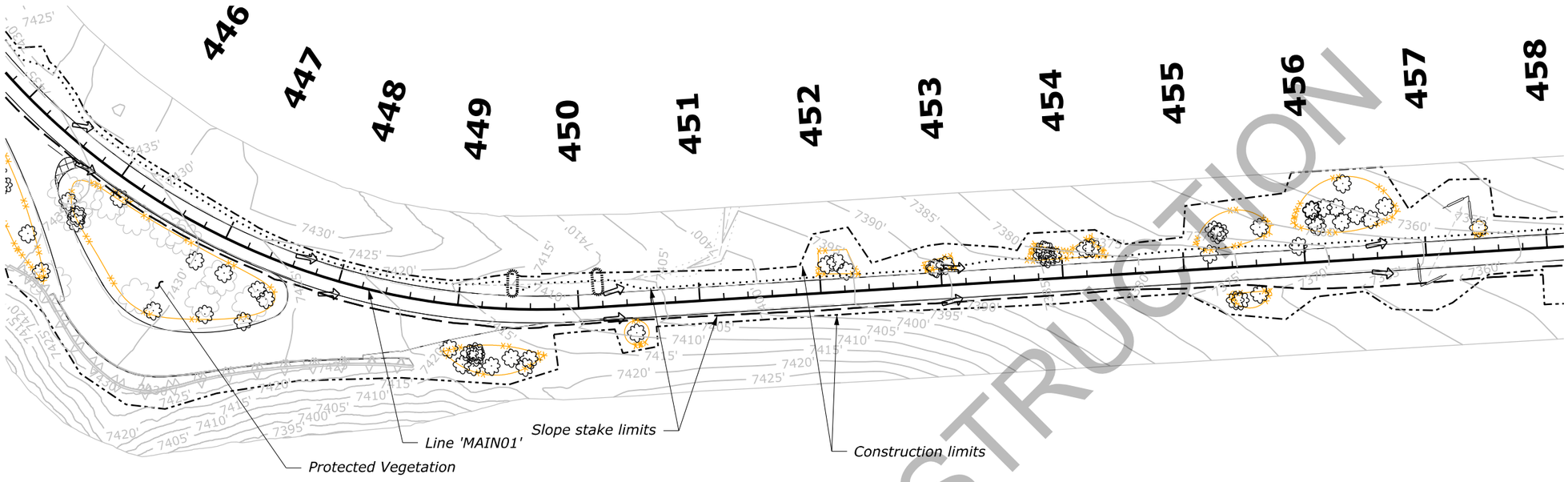
C:\Users\carrie.warren\Desktop\Exported from PW\cra01301_ESC2.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 425+00 TO 447+00]

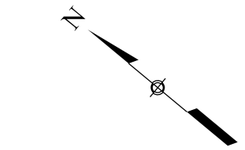
24 March 2021 11:51 AM

SOIL EROSION AND SEDIMENT CONTROL PLAN 425+00 TO 447+00

NPS PMIS No. 241696 NPS Drwg No.106/175169

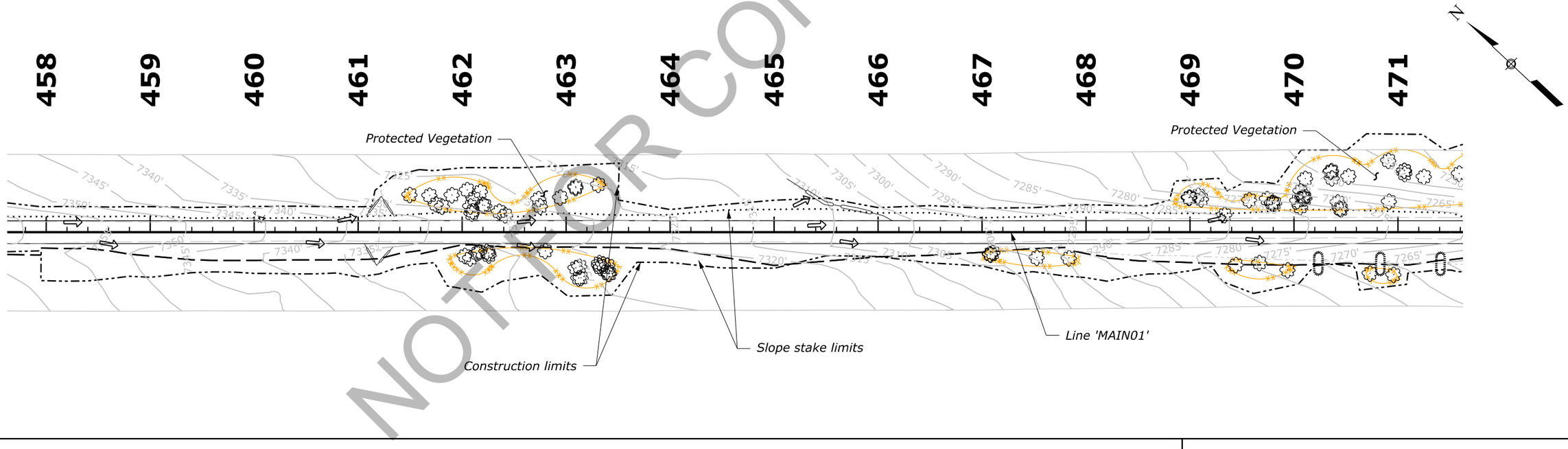
STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.23





LEGEND:

- Flow arrow
- Fiber roll
- Check dam
- Obliteration
- Plastic fence (Protected Vegetation)



NOT FOR CONSTRUCTION

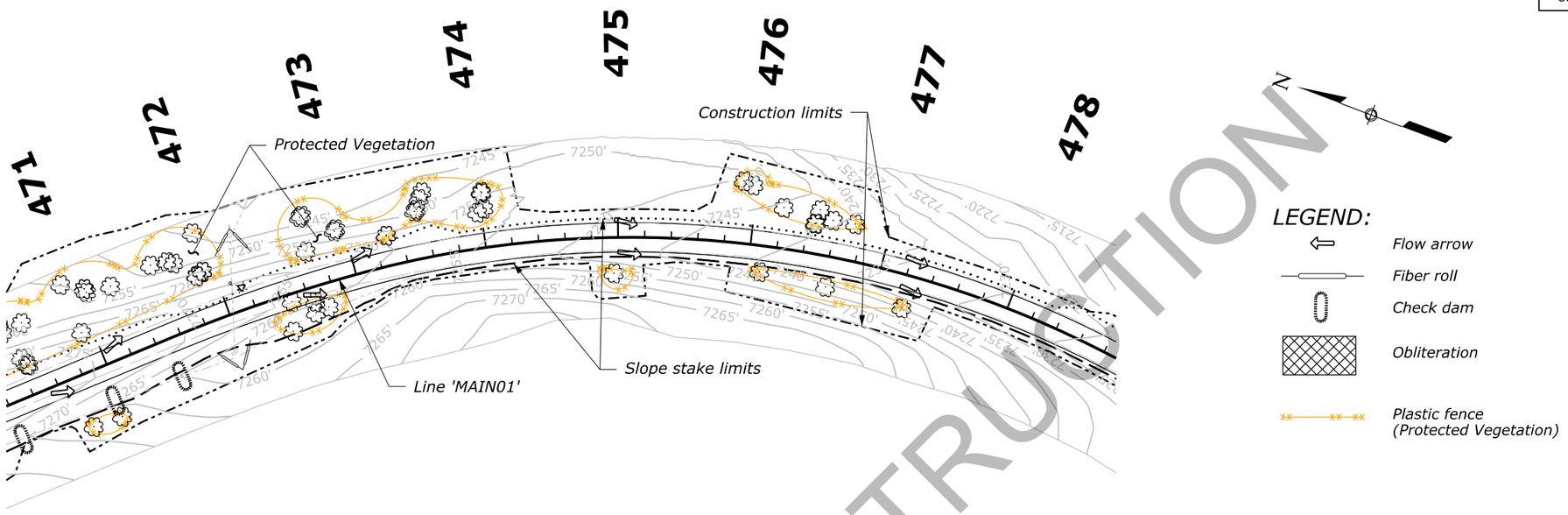
C:\Users\carrie.warren\Desktop\Exported from PW\cfa01301_ESC2.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 447+00 TO 471+00]

25 March 2021 9:05 AM

SOIL EROSION AND SEDIMENT CONTROL PLAN 447+00 TO 471+00

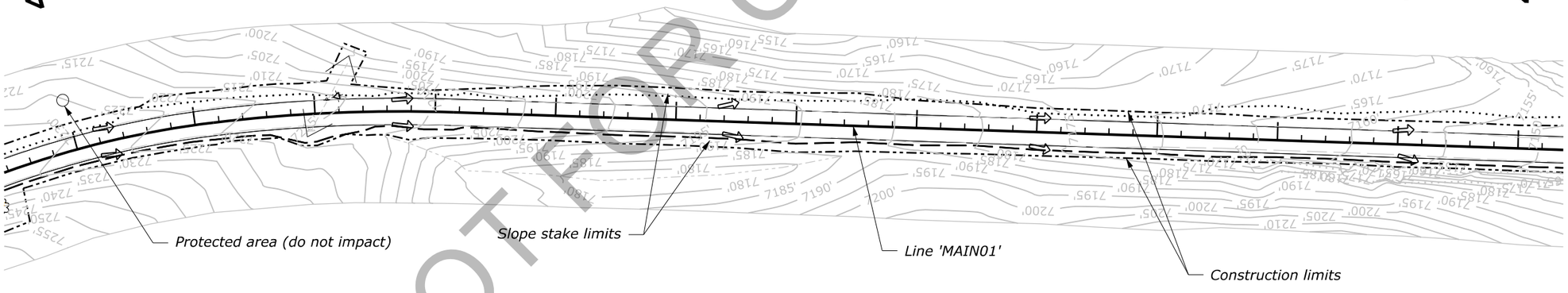
NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.24



LEGEND:

- Flow arrow
- Fiber roll
- Check dam
- Obliteration
- Plastic fence (Protected Vegetation)



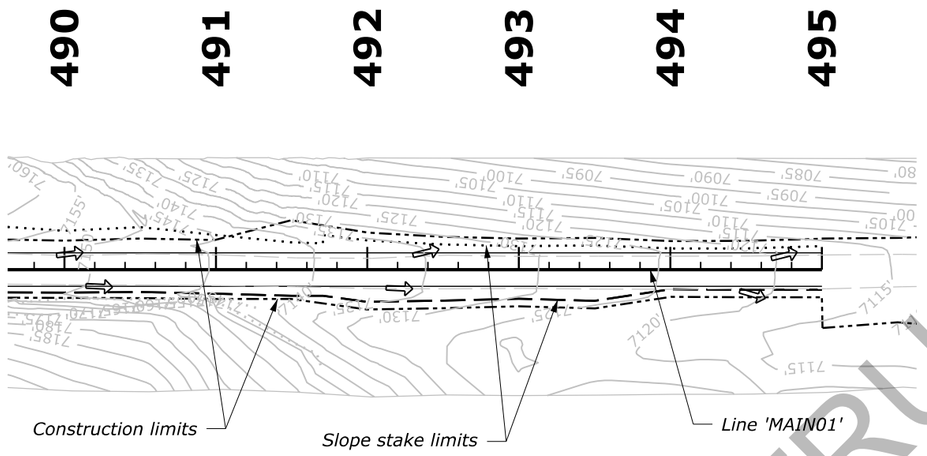
NOT FOR CONSTRUCTION

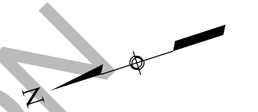
SOIL EROSION AND SEDIMENT CONTROL PLAN 471+00 TO 490+00

C:\Users\carrie.warren\Desktop\Exported from PW\cfa01301_ESC2.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 471+00 TO 490+00]
25 March 2021 9:28 AM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.25





LEGEND:

- Flow arrow
- Fiber roll
- Check dam
- Obliteration

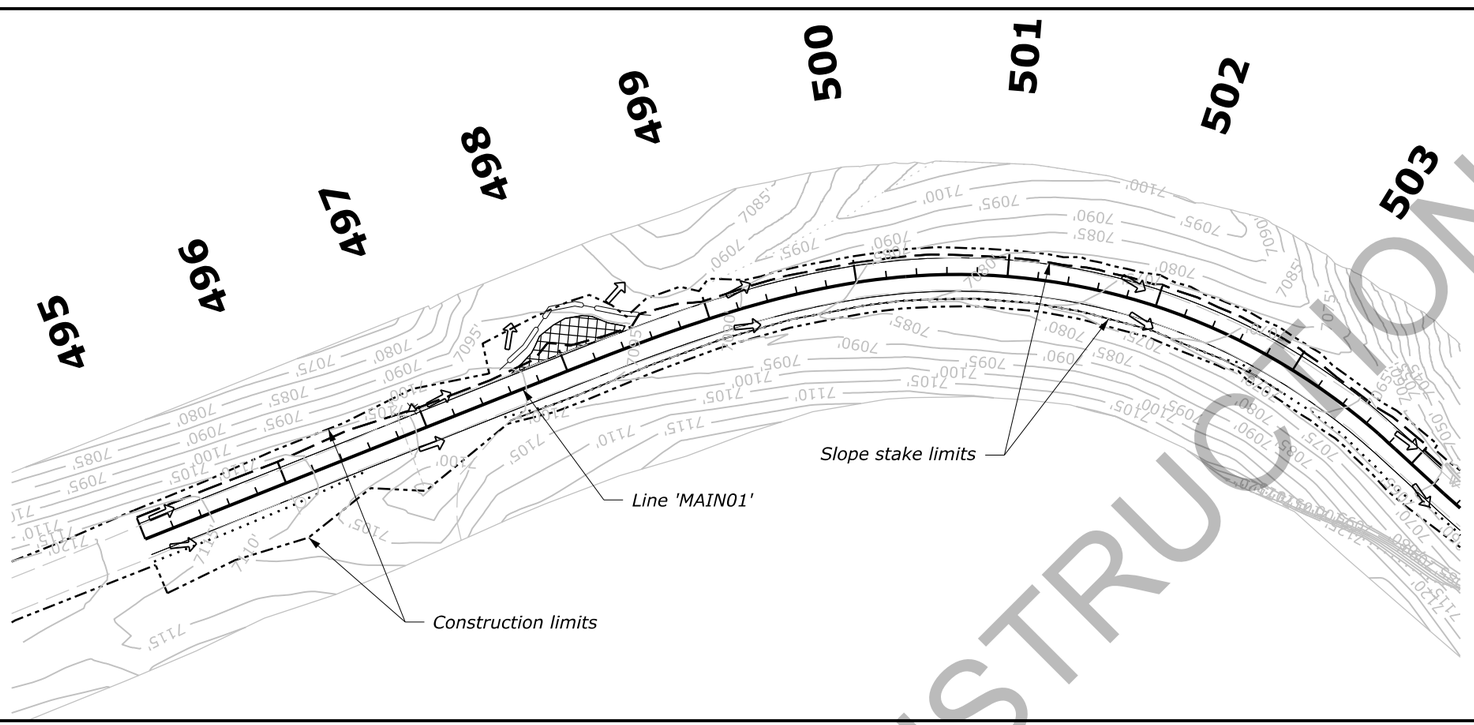
NOT FOR CONSTRUCTION

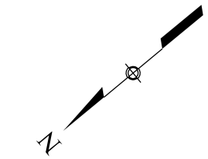
SOIL EROSION AND SEDIMENT CONTROL PLAN 490+00 TO 495+00

24 March 2021 11:25 AM C:\Users\carrie.warren\Desktop\Exported from PW\cfa0130l_ESC2.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 490+00 TO 495+00]

NPS PMIS No. 241696 NPS Drwg No.106/175169

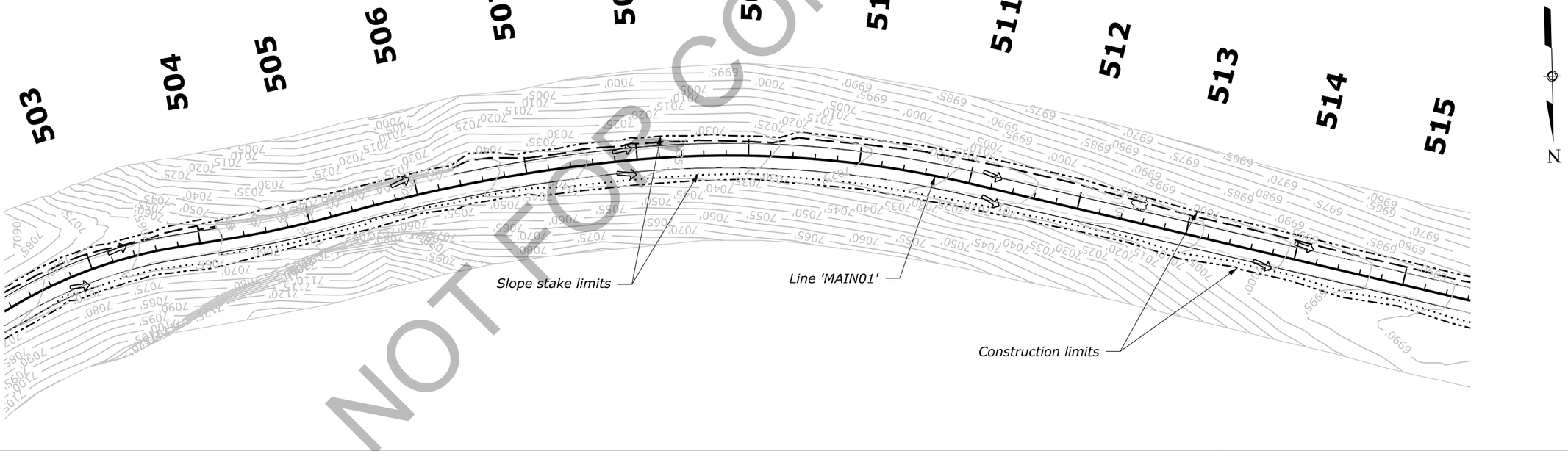
STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.26





LEGEND:

- Flow arrow
- Fiber roll
- Check dam
- Obliteration



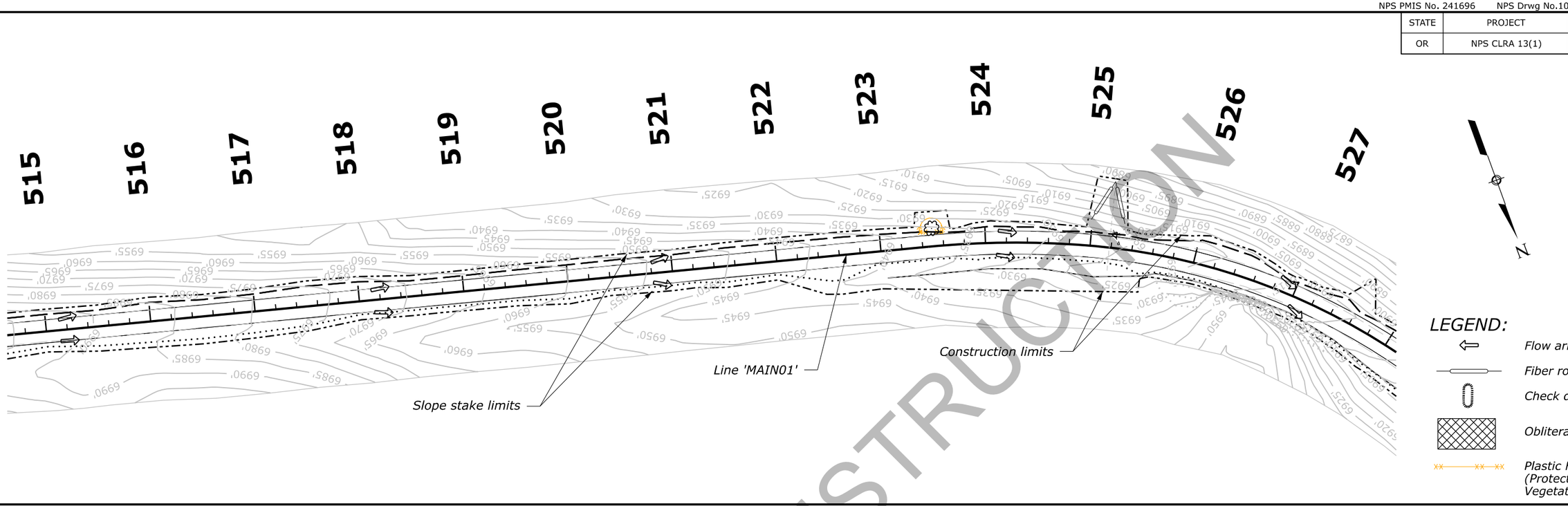
NOT FOR CONSTRUCTION

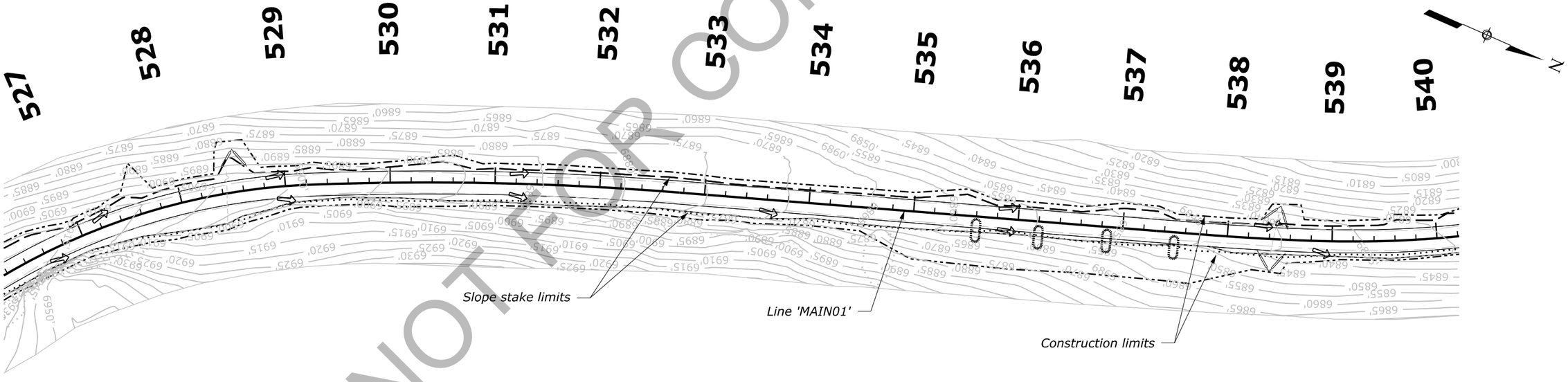
SOIL EROSION AND SEDIMENT CONTROL PLAN 495+00 TO 515+00

C:\Users\carrie.warren\Desktop\Exported from PW\crla01301_ESC3.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 495+00 TO 515+00]
25 March 2021 1:09 PM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.27





NOT FOR CONSTRUCTION

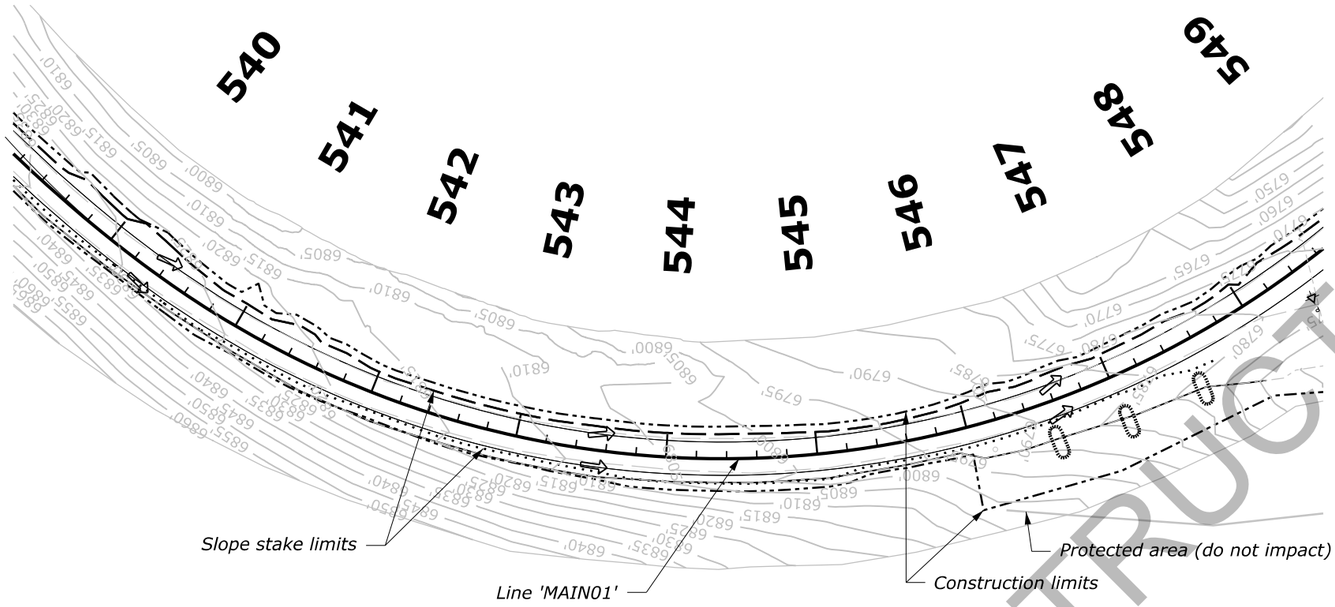
C:\Users\carrie.warren\Desktop\Exported from PW\cha01301_ESC3.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 515+00 TO 540+00]

25 March 2021 1:16 PM

SOIL EROSION AND SEDIMENT CONTROL PLAN 515+00 TO 540+00

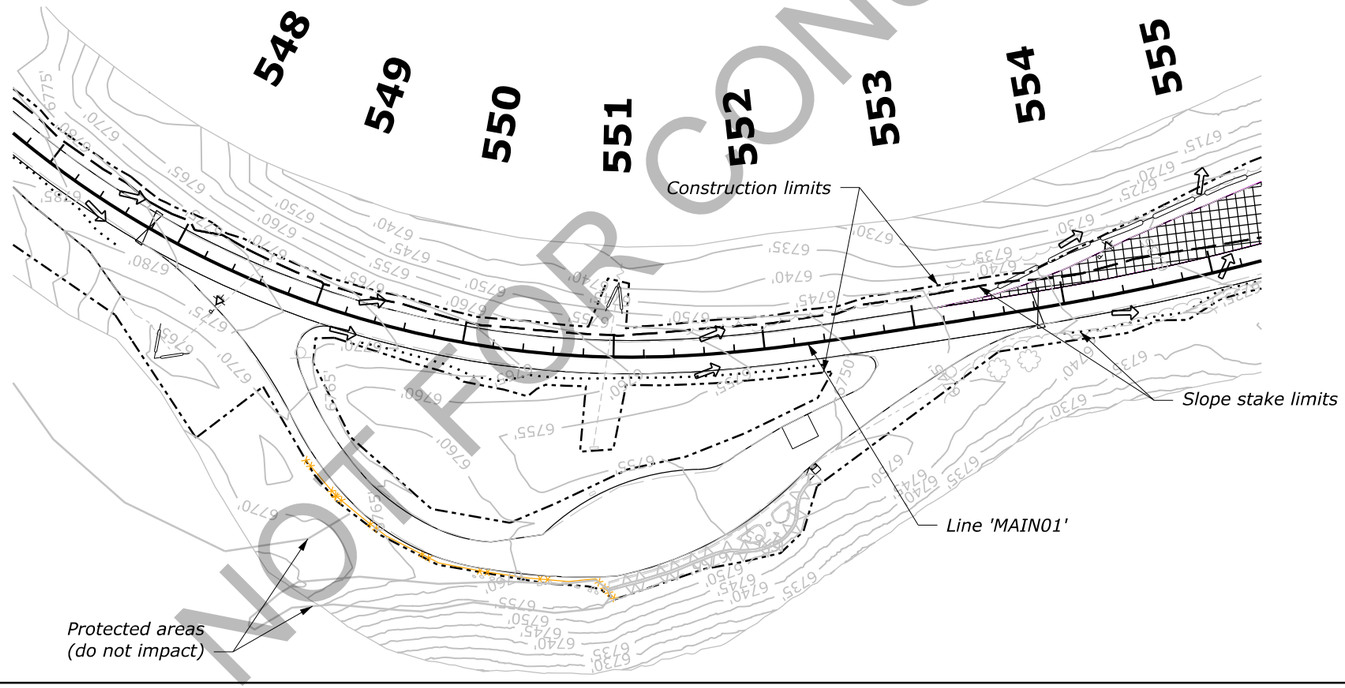
NPS PMIS No. 241696 NPS Drwg No.106/175169

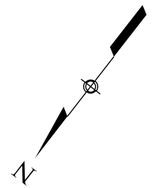
STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.28



LEGEND:

- *Flow arrow*
- *Fiber roll*
- *Check dam*
- *Obliteration*





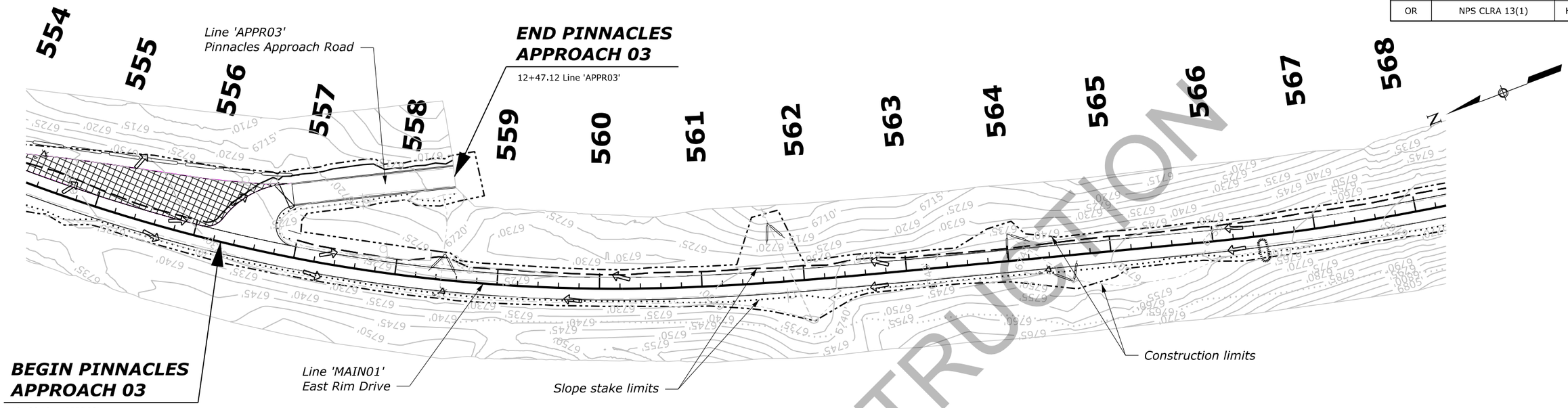
NOT FOR CONSTRUCTION

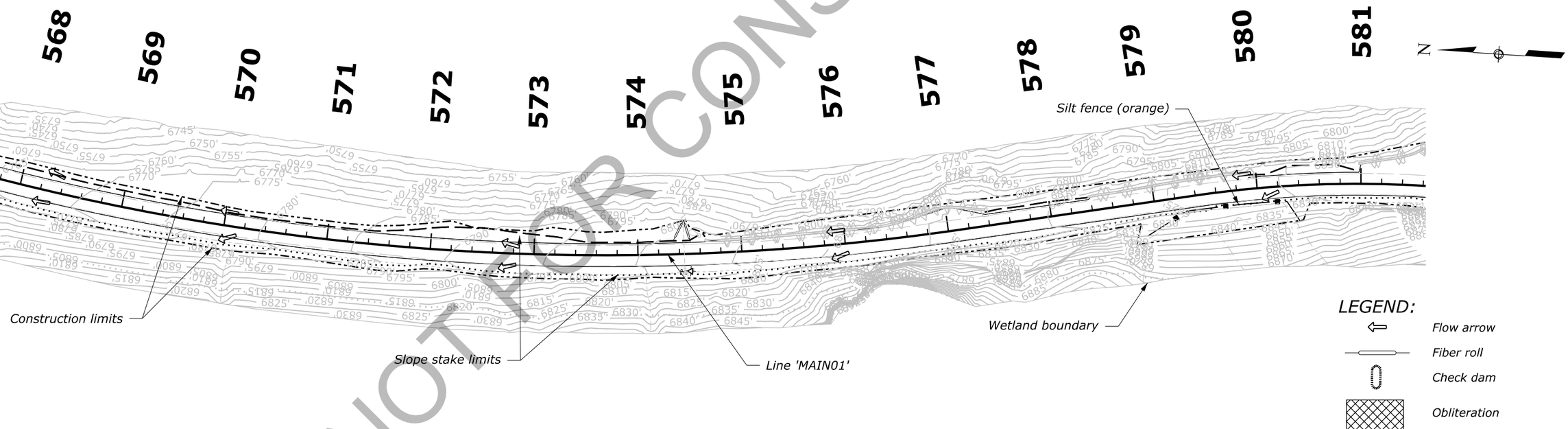
SOIL EROSION AND SEDIMENT CONTROL PLAN 540+00 TO 555+00

C:\Users\carrie.warren\Desktop\Exported from PW\crfa01301_ESC3.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 540+00 TO 555+00]
25 March 2021 1:09 PM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.29





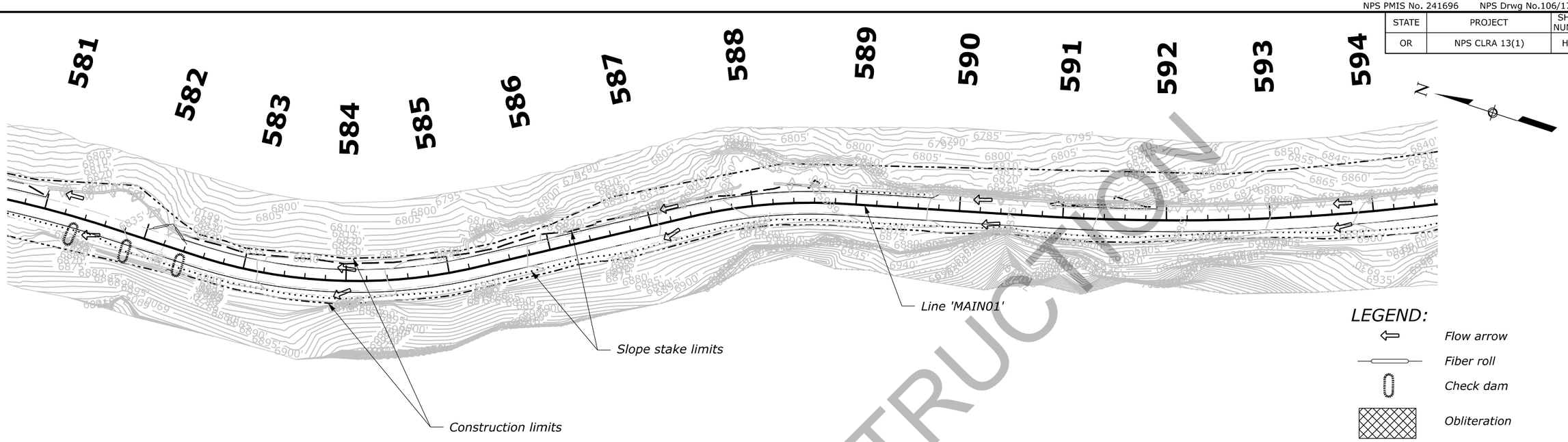
NOT FOR CONSTRUCTION

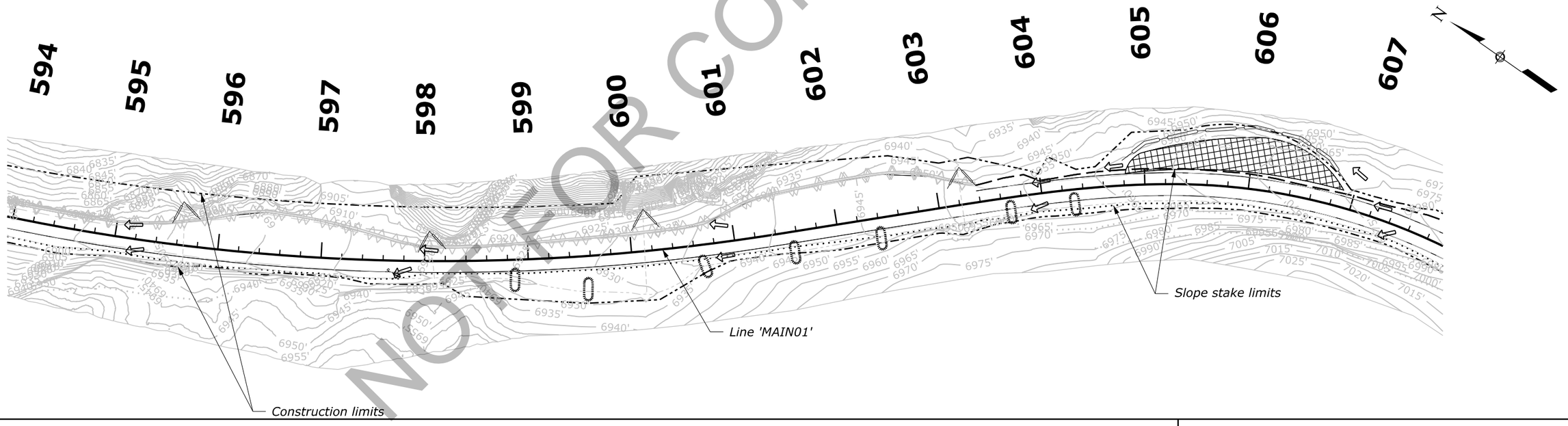
SOIL EROSION AND SEDIMENT CONTROL PLAN 555+00 TO 581+00

C:\Users\carrie.warren\Desktop\Exported from PW\crfa01301_ESC3.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 555+00 TO 581+00]
25 March 2021 1:17 PM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.30





NOT FOR CONSTRUCTION

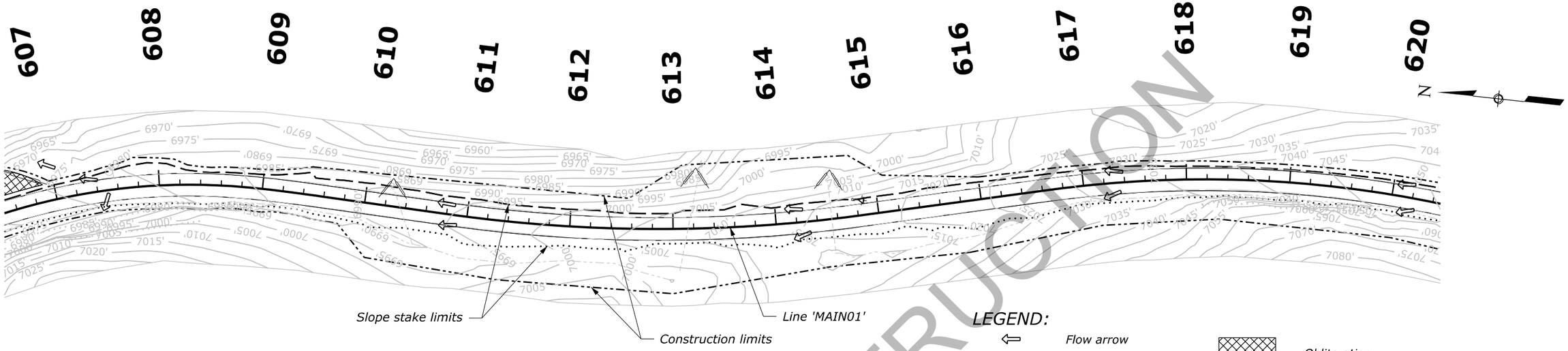
C:\Users\carrie.warren\Desktop\Exported from PW\cfa01301_ESC3.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 581+00 TO 607+00]

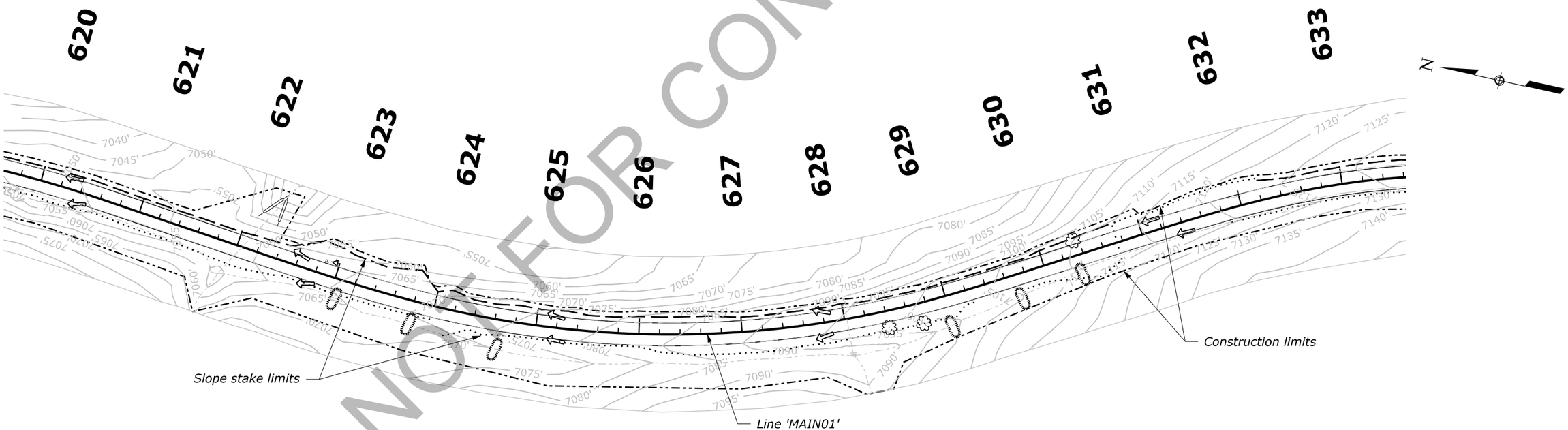
25 March 2021 1:31 PM

SOIL EROSION AND SEDIMENT CONTROL PLAN 581+00 TO 607+00

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.31





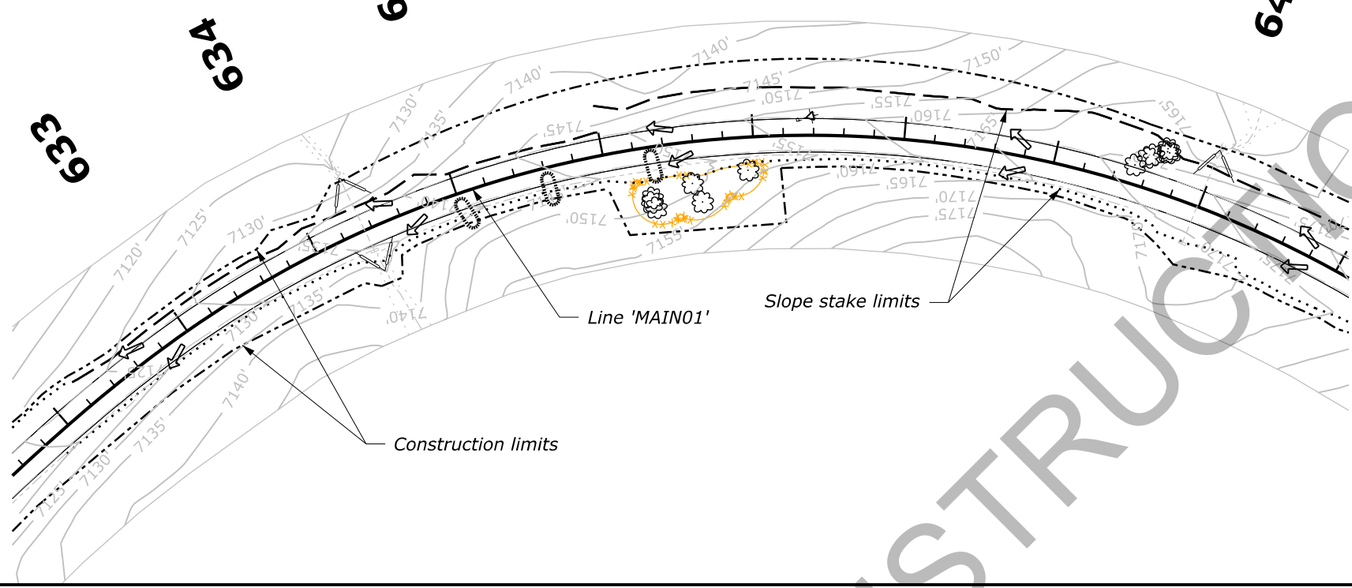
NOT FOR CONSTRUCTION

SOIL EROSION AND SEDIMENT CONTROL PLAN 607+00 TO 633+00

C:\Users\carrie.warren\Desktop\Exported from PW\crla01301_ESC3.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 607+00 TO 633+00]
25 March 2021 1:32 PM

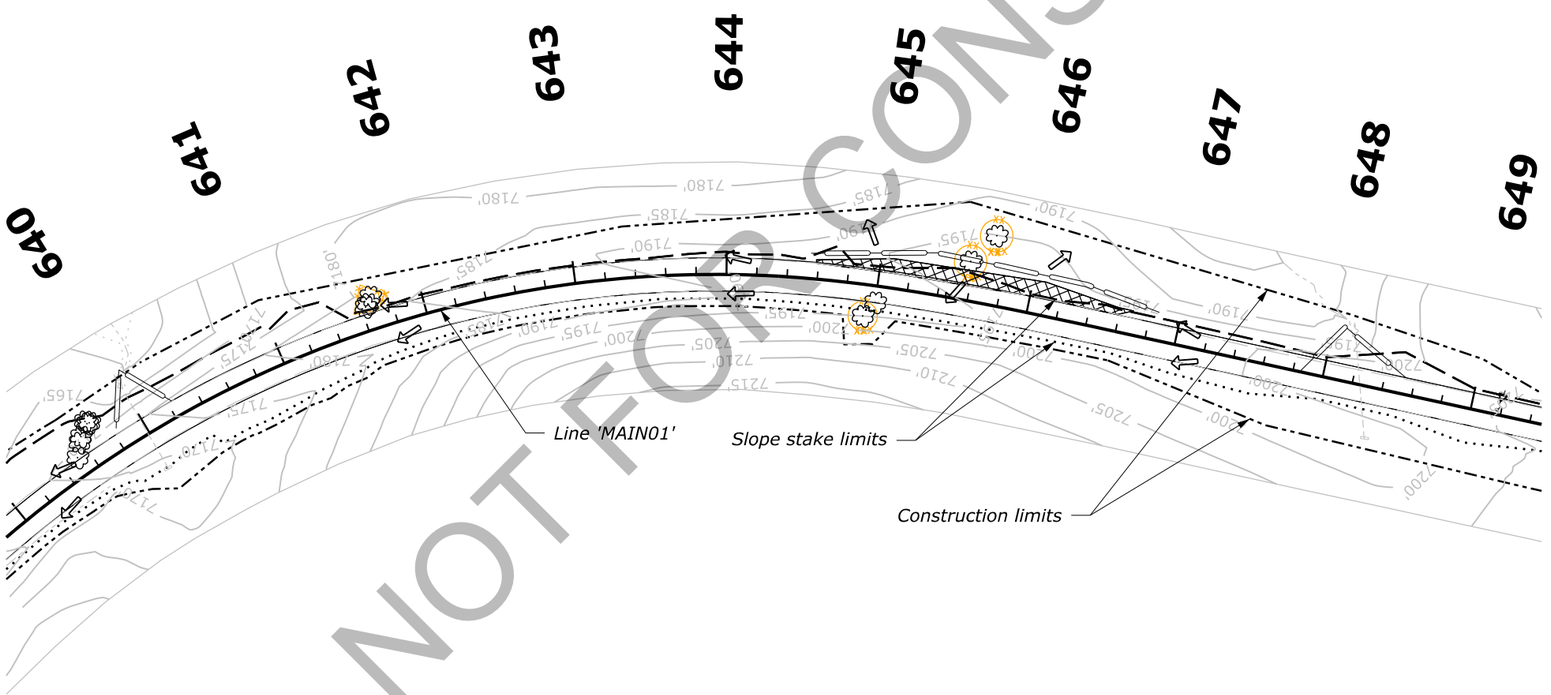
NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.32



LEGEND:

- Flow arrow
- Fiber roll
- Check dam
- Obliteration
- Plastic fence (Protected Vegetation)



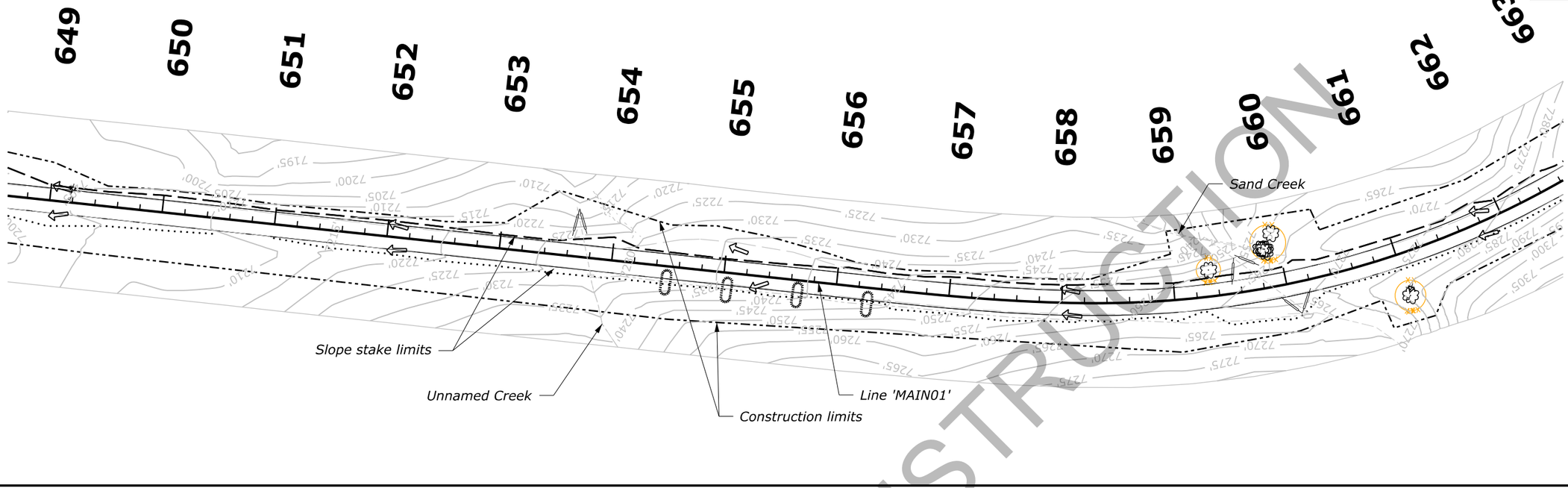
NOT FOR CONSTRUCTION

SOIL EROSION AND SEDIMENT CONTROL PLAN 633+00 TO 649+00

C:\Users\carrie.warren\Desktop\Exported from PW\cfa01301_ESC3.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 633+00 TO 649+00]
25 March 2021 1:09 PM

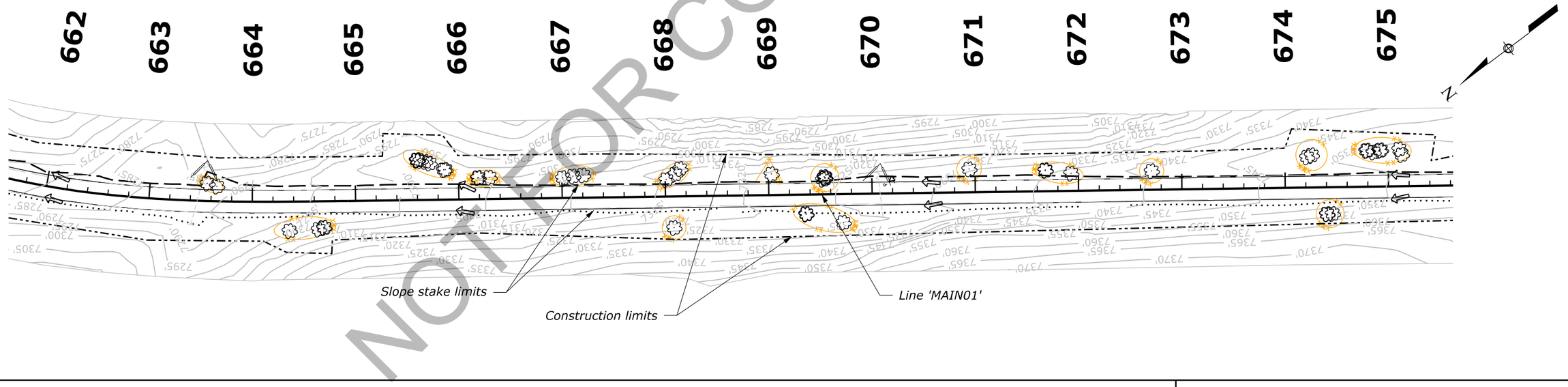
NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.33



LEGEND:

- Flow arrow
- Fiber roll
- Check dam
- Obliteration
- Plastic fence (Protected Vegetation)



NOT FOR CONSTRUCTION

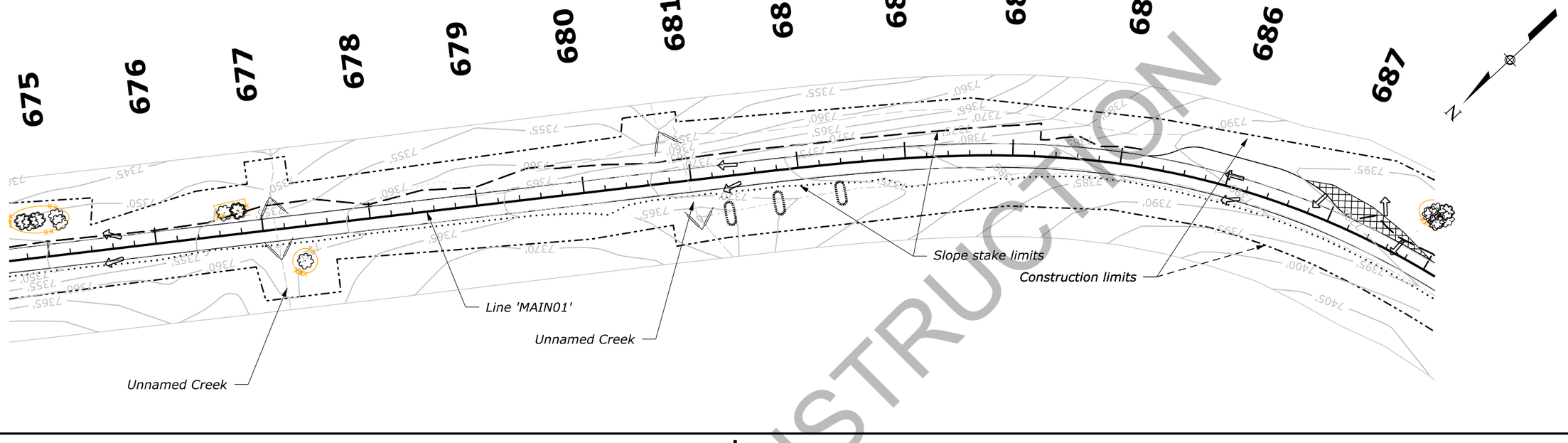
C:\Users\carrie.warren\Desktop\Exported from PW\cha01301_ESC3.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 649+00 TO 675+00]

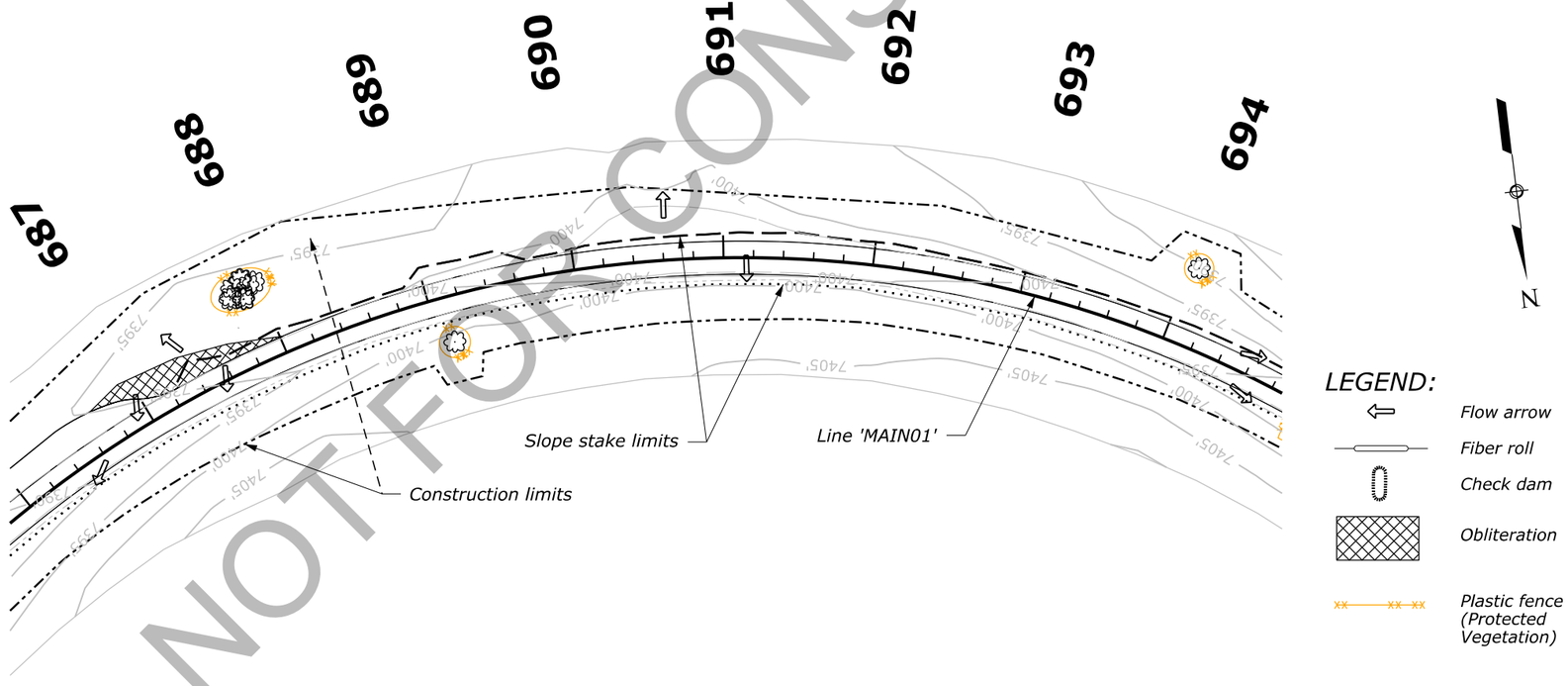
29 March 2021 8:12 AM

SOIL EROSION AND SEDIMENT CONTROL PLAN 649+00 TO 675+00

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.34





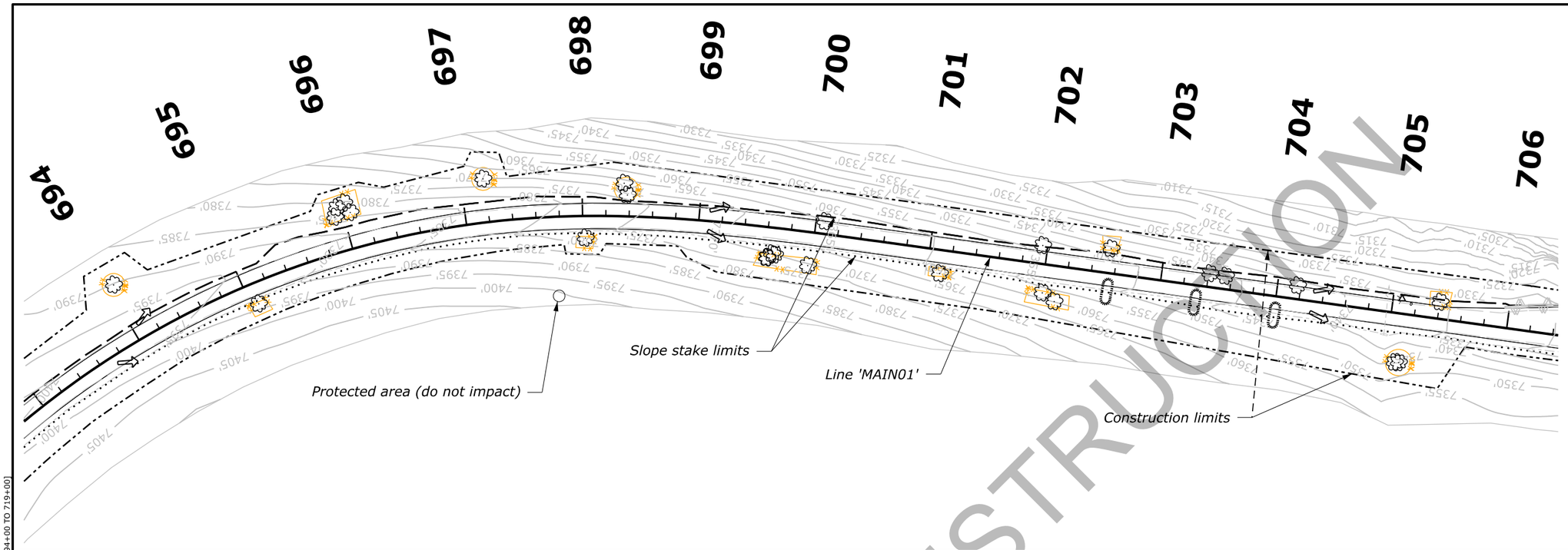
NOT FOR CONSTRUCTION

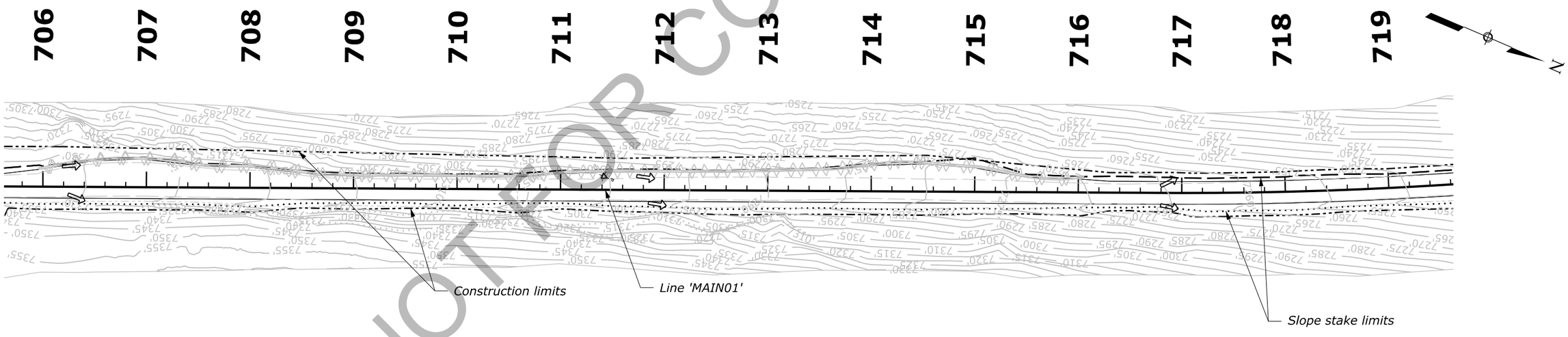
SOIL EROSION AND SEDIMENT CONTROL PLAN 675+00 TO 694+00

C:\Users\carrie.warren\Desktop\Exported from PW\crfa01301_ESC3.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 675+00 TO 694+00]
29 March 2021 8:13 AM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.35





NOT FOR CONSTRUCTION

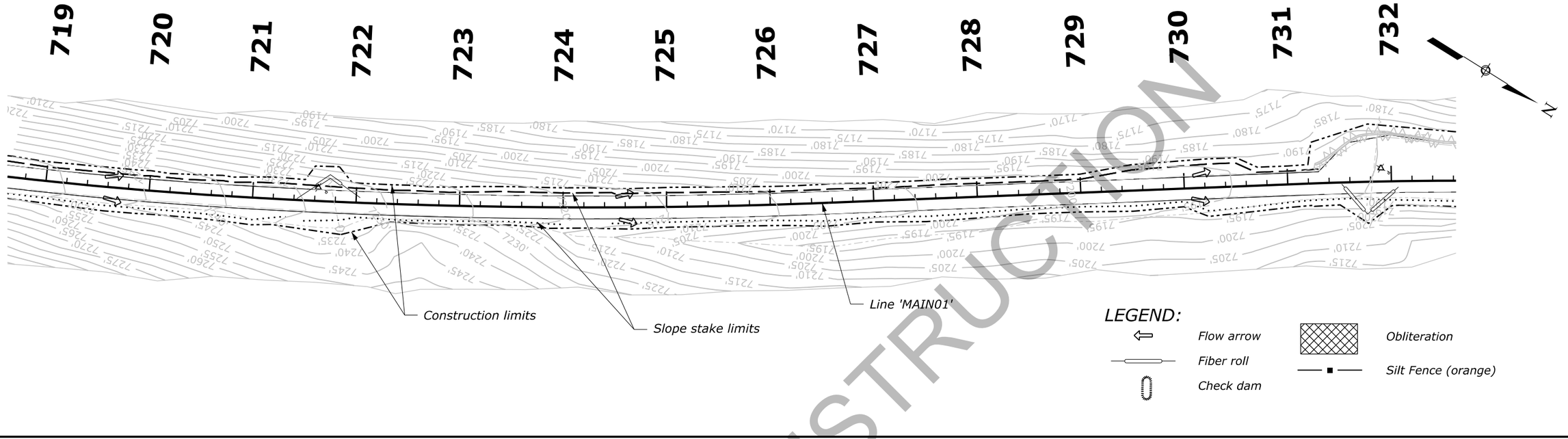
C:\Users\carrie.warren\Desktop\Exported from PW\cda0130i_ESC3.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 694+00 TO 719+00]

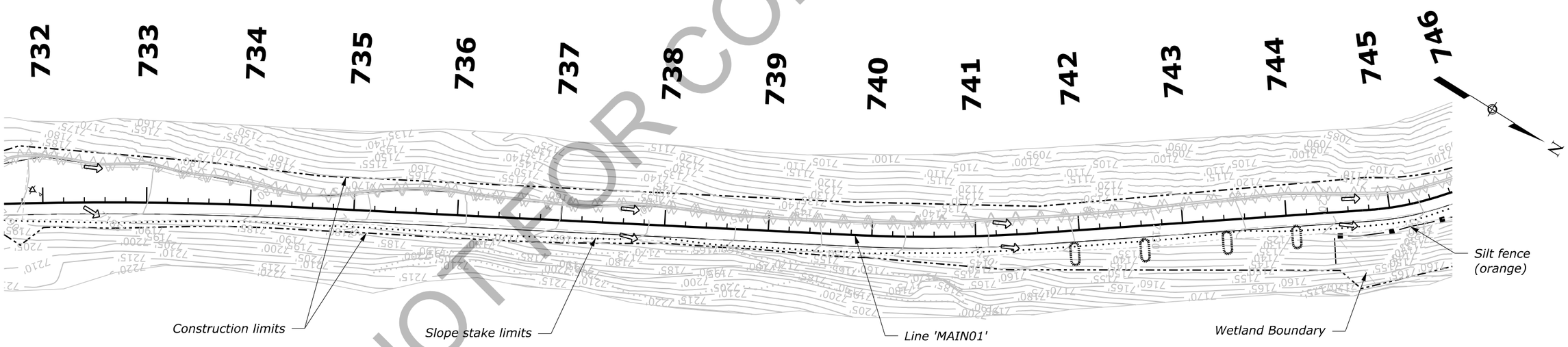
25 March 2021 1:09 PM

SOIL EROSION AND SEDIMENT CONTROL PLAN 694+00 TO 719+00

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.36





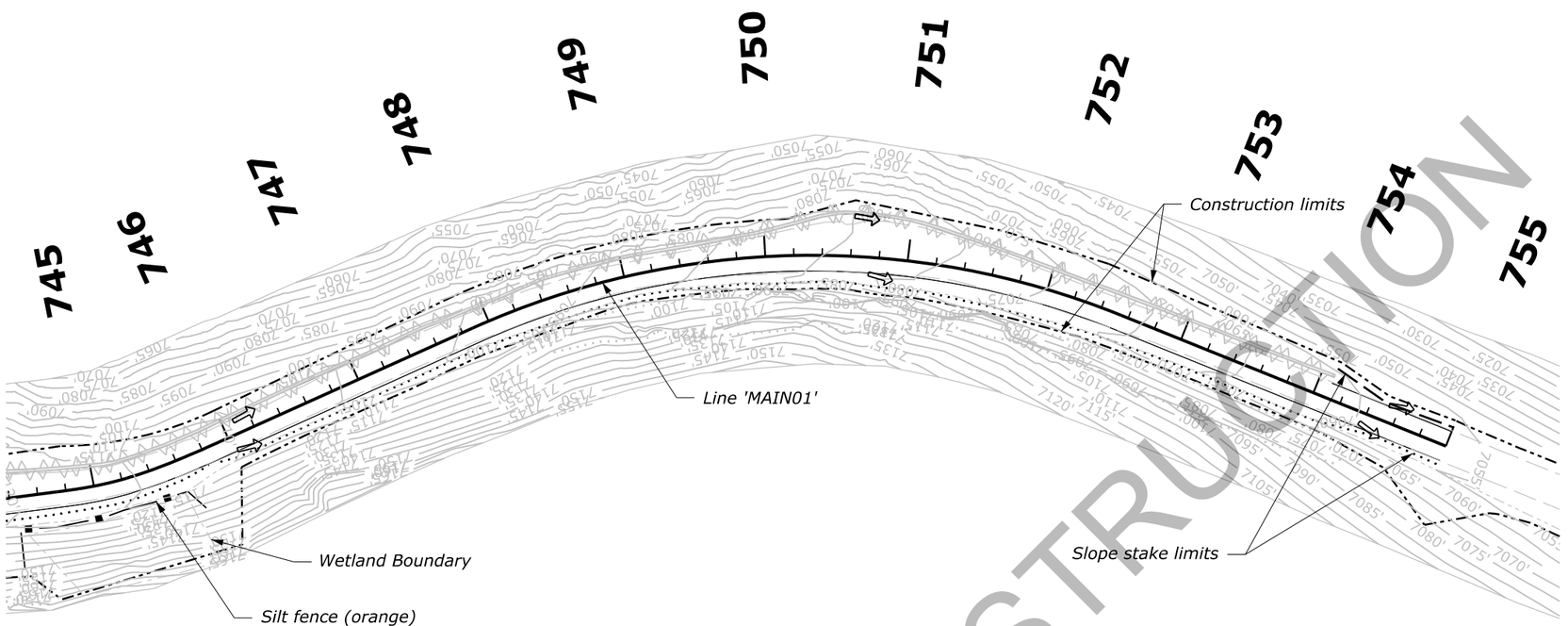
NOT FOR CONSTRUCTION

SOIL EROSION AND SEDIMENT CONTROL PLAN 719+00 TO 745+00

C:\Users\carrie.warren\Desktop\Exported from PW\cfa01301_ESC3.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 719+00 TO 745+00]
25 March 2021 1:09 PM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.37



LEGEND:

- *Flow arrow*
- *Fiber roll*
- *Check dam*
- *Obliteration*
- *Silt Fence (orange)*

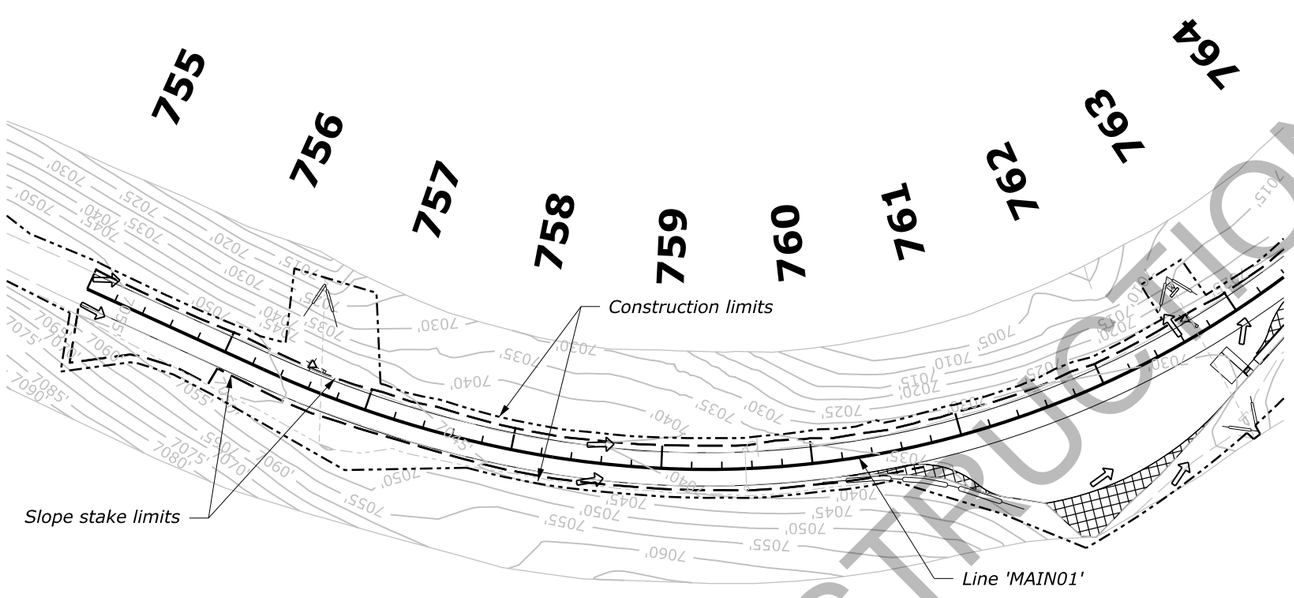
NOT FOR CONSTRUCTION

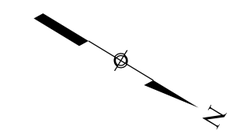
SOIL EROSION AND SEDIMENT CONTROL PLAN 745+00 TO 755+00

C:\Users\carrie.warren\Desktop\Exported from PW\cfa0130i_ESC3.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN 745+00 TO 755+00]
25 March 2021 1:09 PM

NPS PMIS No. 241696 NPS Drwg No.106/175169

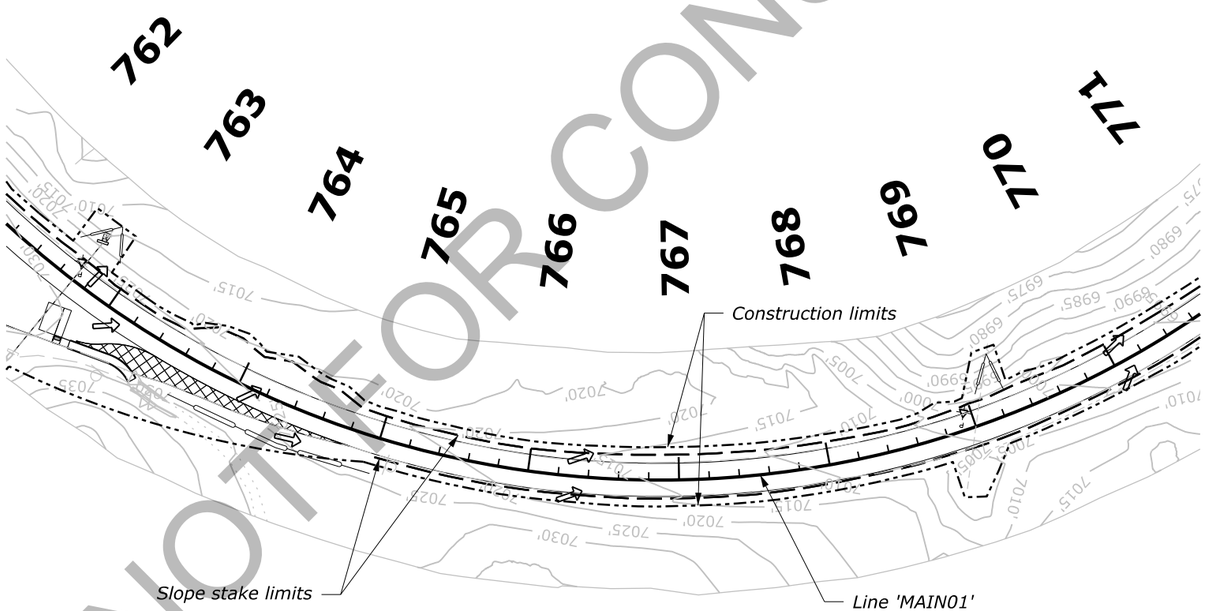
STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.38





LEGEND:

- *Flow arrow*
- *Fiber roll*
- *Check dam*
- *Obliteration*



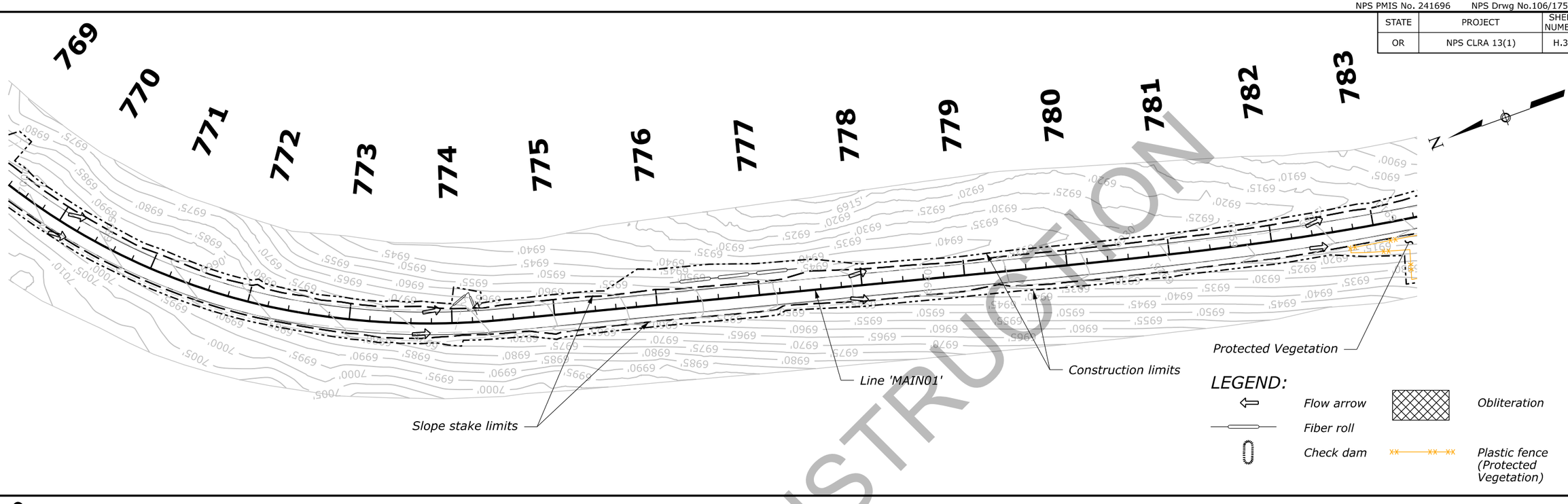
NOT FOR CONSTRUCTION

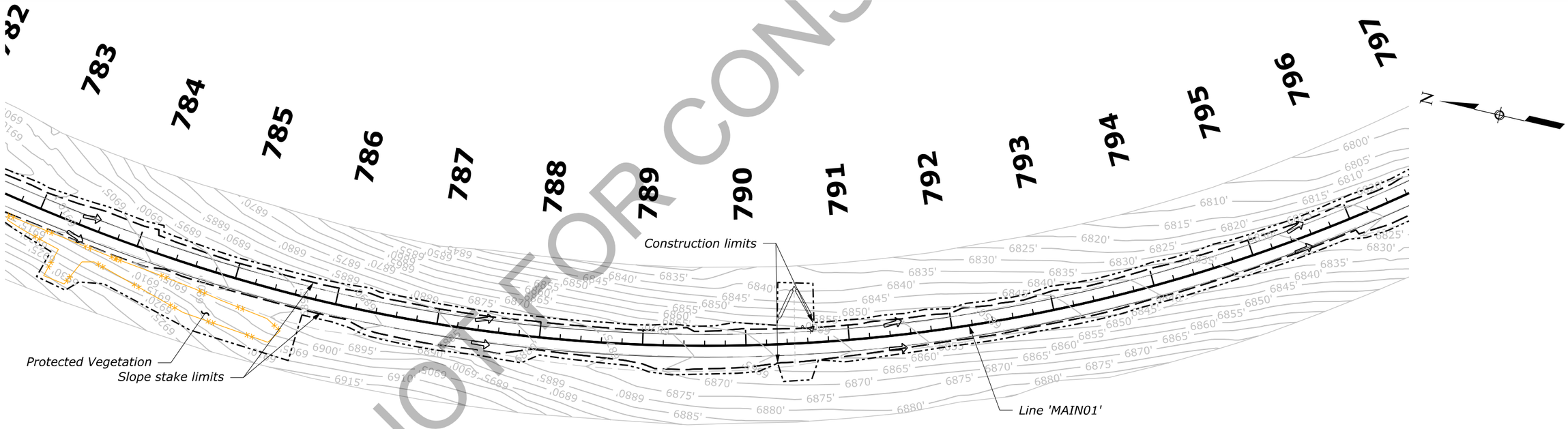
SOIL EROSION AND SEDIMENT CONTROL PLAN 770+00 TO 796+00

C:\Users\carrie.warren\Desktop\Exported from PW\crla01301_ESC4.dgn [SOIL EROSION ANDSEDIMENT CONTROL PLAN 755+00 TO 770+00]
29 March 2021 8:25 AM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.39





NOT FOR CONSTRUCTION

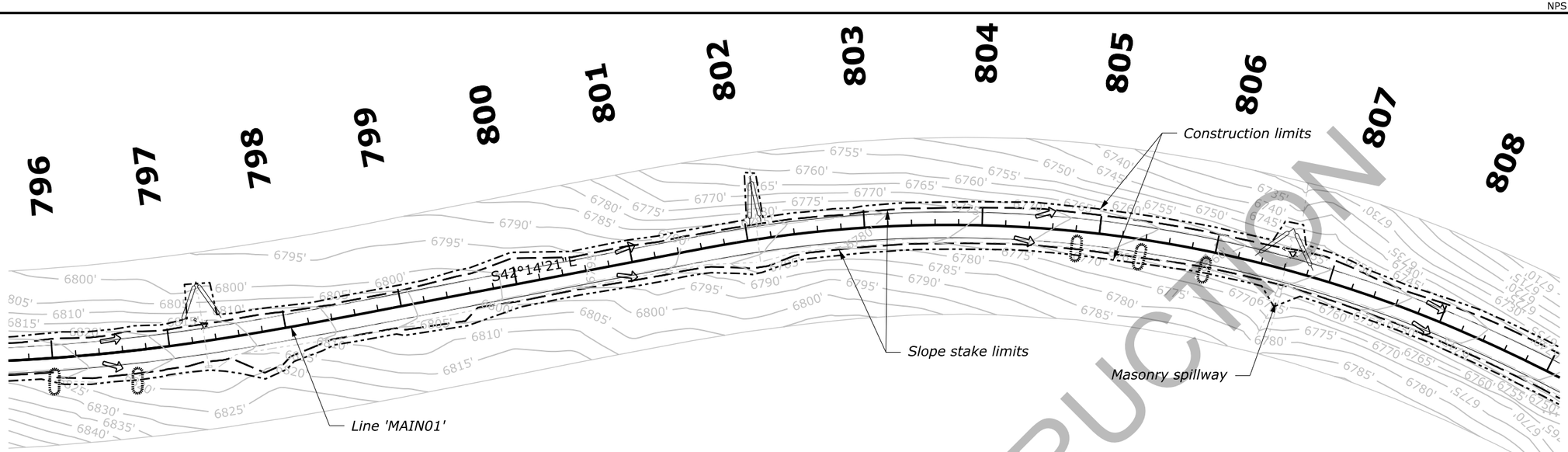
C:\Users\carrie.warren\Desktop\Exported from PW\crla01301_ESC4.dgn [SOIL EROSION ANDSEDIMENT CONTROL PLAN 770+00 TO 796+00]

25 March 2021 2:24 PM

SOIL EROSION AND SEDIMENT CONTROL PLAN 770+00 TO 796+00

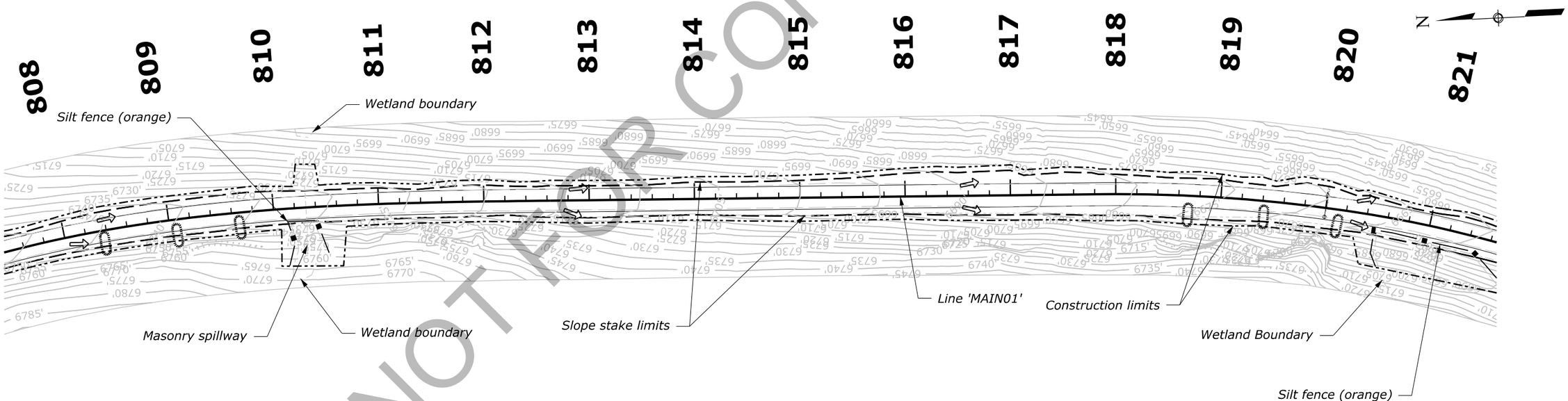
NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.40



LEGEND:

- Flow arrow
- Fiber roll
- Check dam
- Obliteration
- Silt Fence (orange)

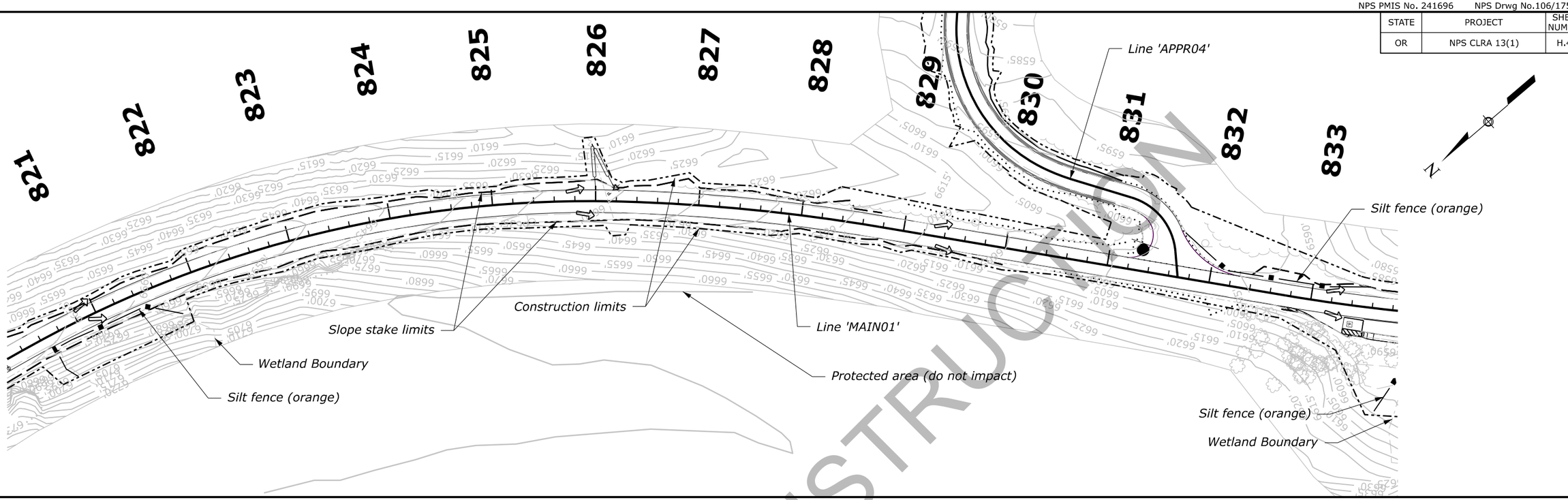


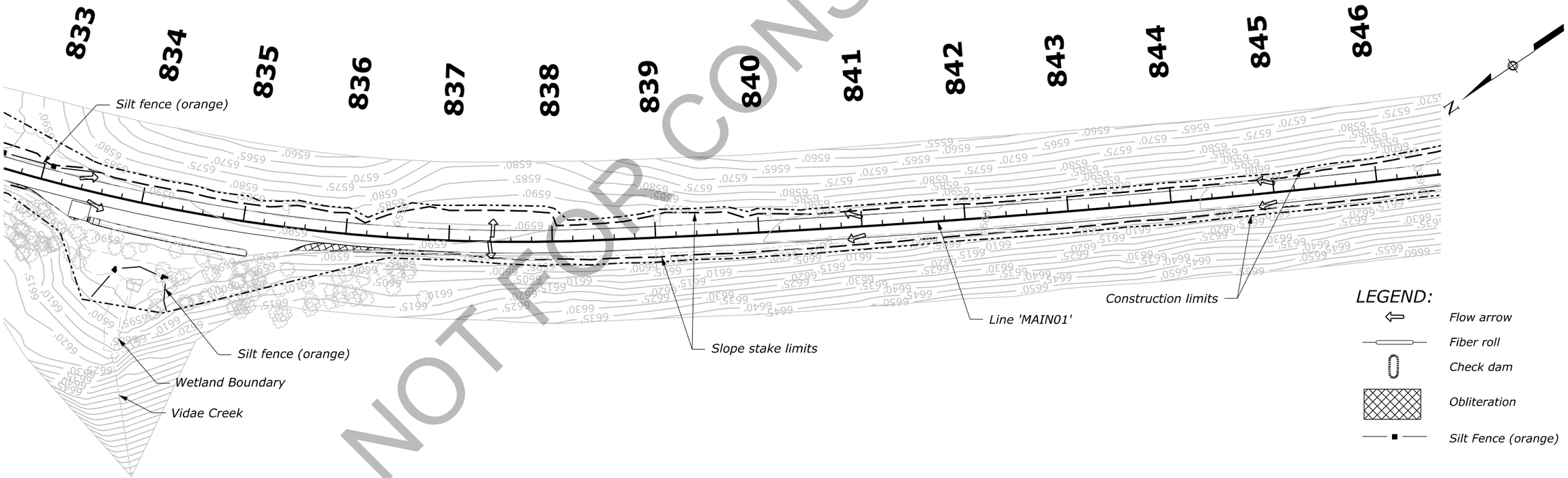
NOT FOR CONSTRUCTION

SOIL EROSION AND SEDIMENT CONTROL PLAN 796+00 TO 821+00

C:\Users\carrie.warren\Desktop\Exported from PW\cfa01301_ESC4.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN796+00 TO 821+00]
25 March 2021 12:06 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.41





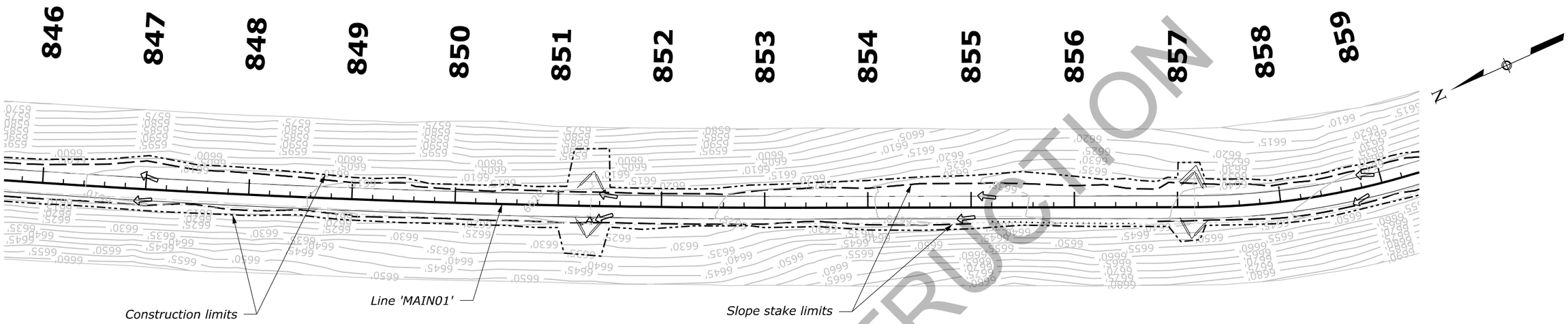
NOT FOR CONSTRUCTION

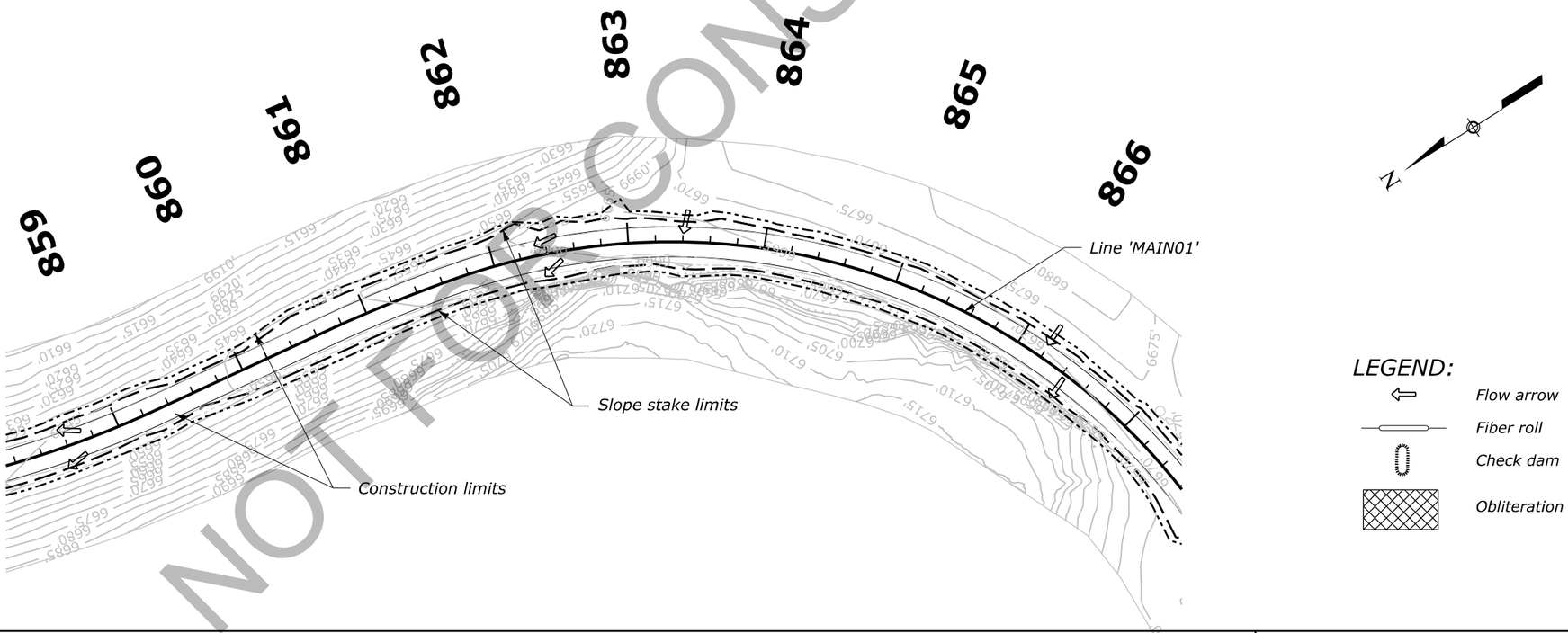
SOIL EROSION AND SEDIMENT CONTROL PLAN 821+00 TO 846+00

C:\Users\carrie.warren\Desktop\Exported from PW\cfa01301_ESC4.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN821+00 TO 846+00]
25 March 2021 2:24 PM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.42





LEGEND:

- Flow arrow
- Fiber roll
- Check dam
- Obliteration

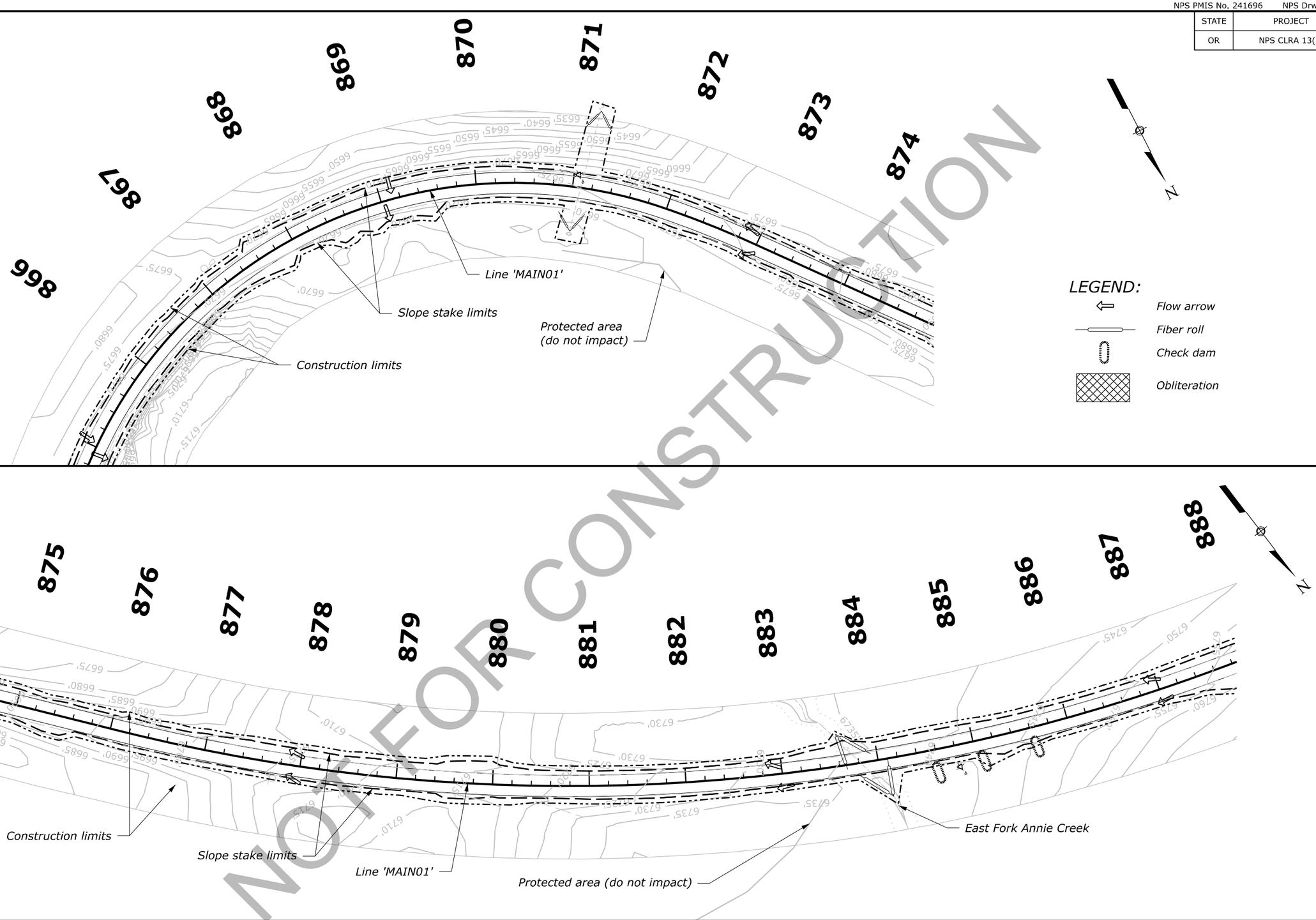
NOT FOR CONSTRUCTION

SOIL EROSION AND SEDIMENT CONTROL PLAN 846+00 TO 866+00

C:\Users\carrie.warren\Desktop\Exported from PW\cfa01301_ESC4.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN846+00 TO 866+00]
25 March 2021 2:05 PM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.43



NOT FOR CONSTRUCTION

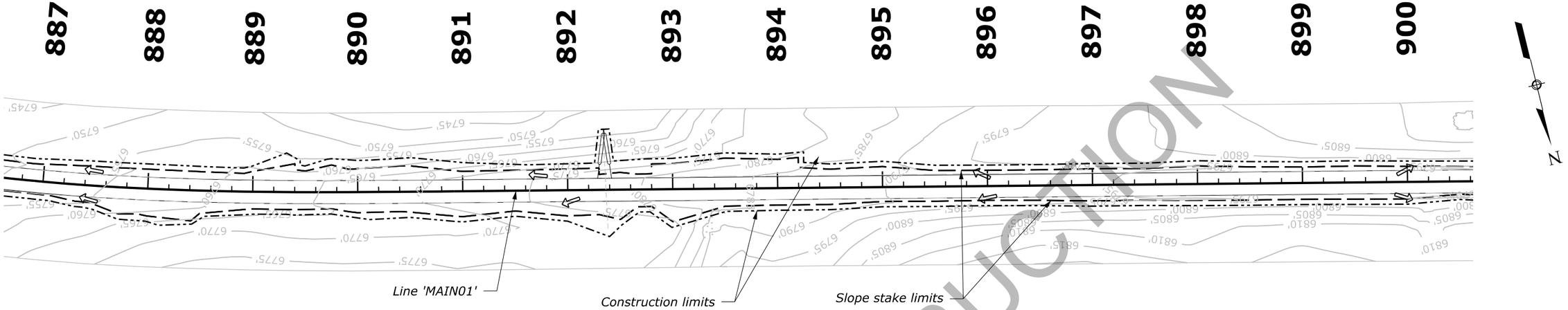
C:\Users\carrie.warren\Desktop\Exported from PW\crfa01301_ESC4.dgn [SOIL EROSION ANDSEDIMENT CONTROL PLAN866+00 TO 887+00]

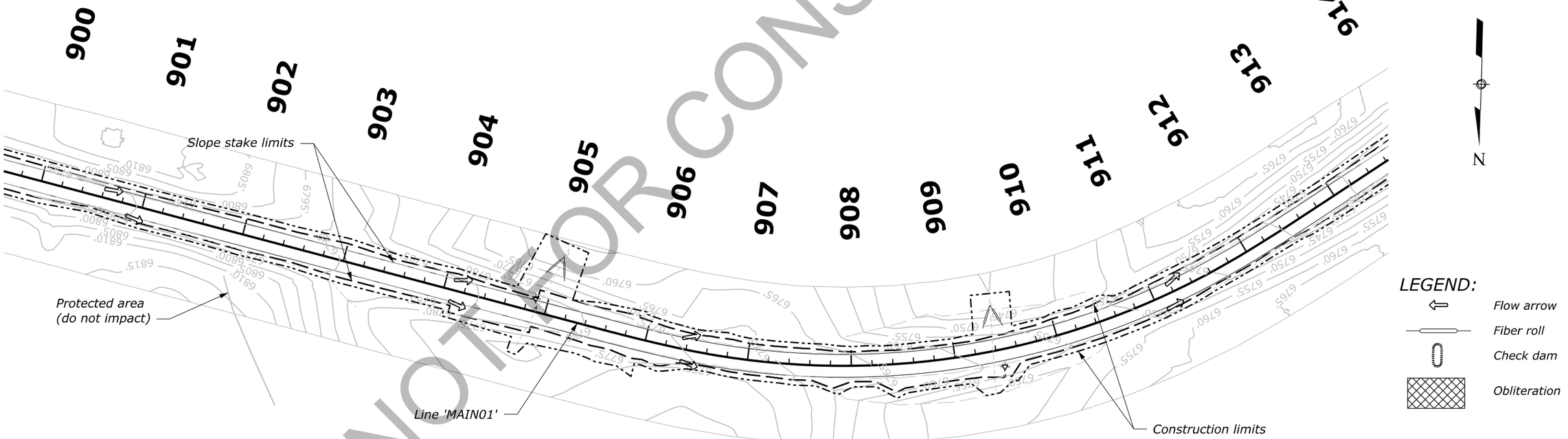
25 March 2021 2:05 PM

SOIL EROSION AND SEDIMENT CONTROL PLAN 866+00 TO 887+00

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.44





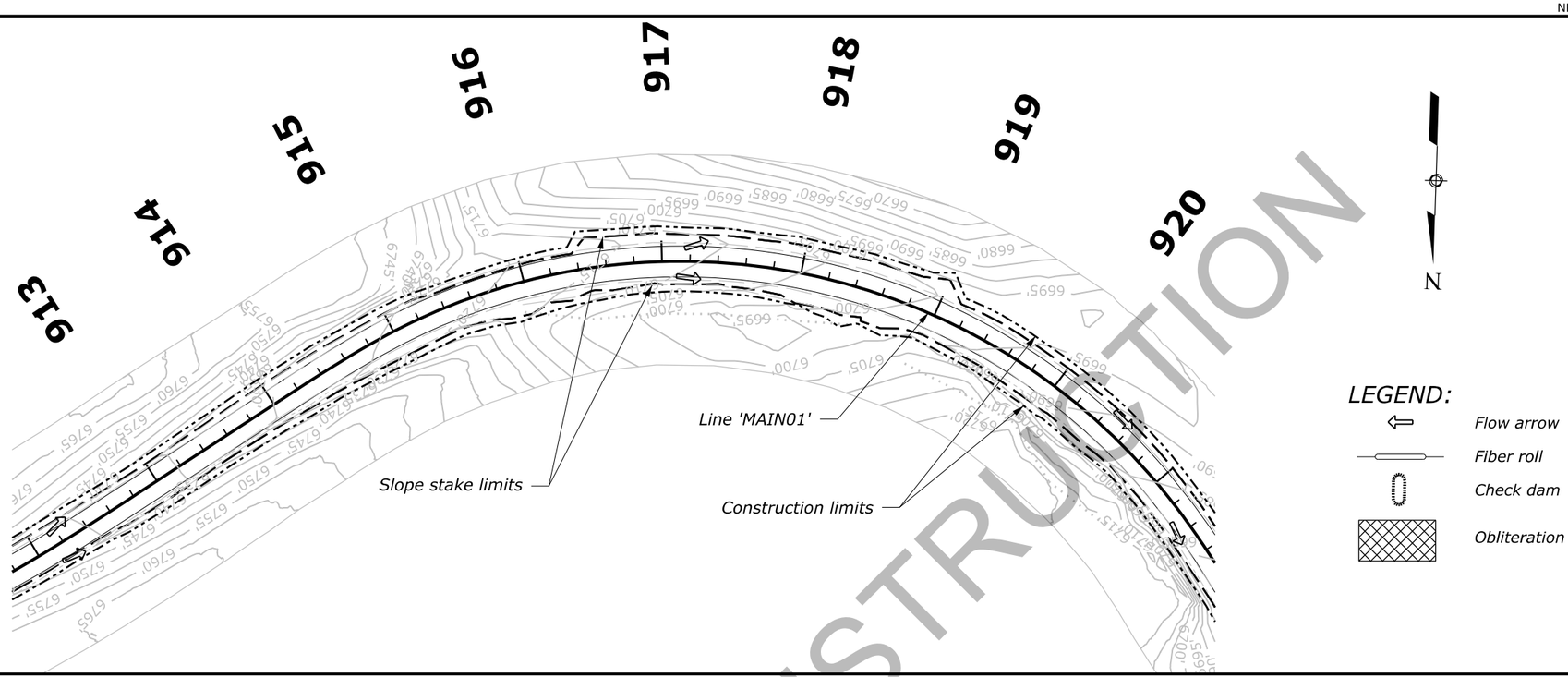
NOT FOR CONSTRUCTION

SOIL EROSION AND SEDIMENT CONTROL PLAN 887+00 TO 913+00

C:\Users\carrie.warren\Desktop\Exported from PW\cra01301_ESC4.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN887+00 TO 913+00]
29 March 2021 8:28 AM

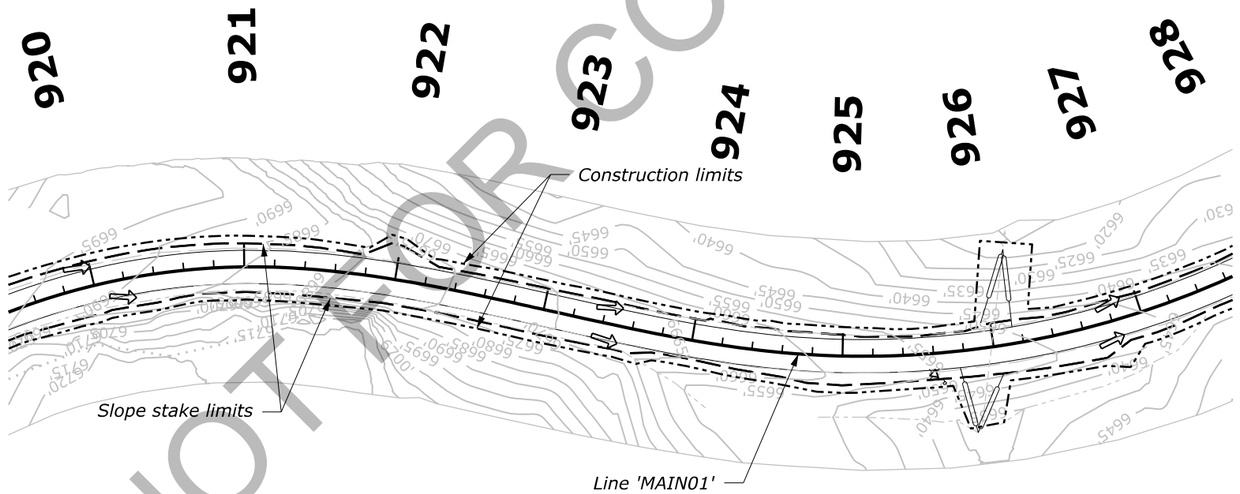
NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.45



LEGEND:

- Flow arrow
- Fiber roll
- Check dam
- Obliteration



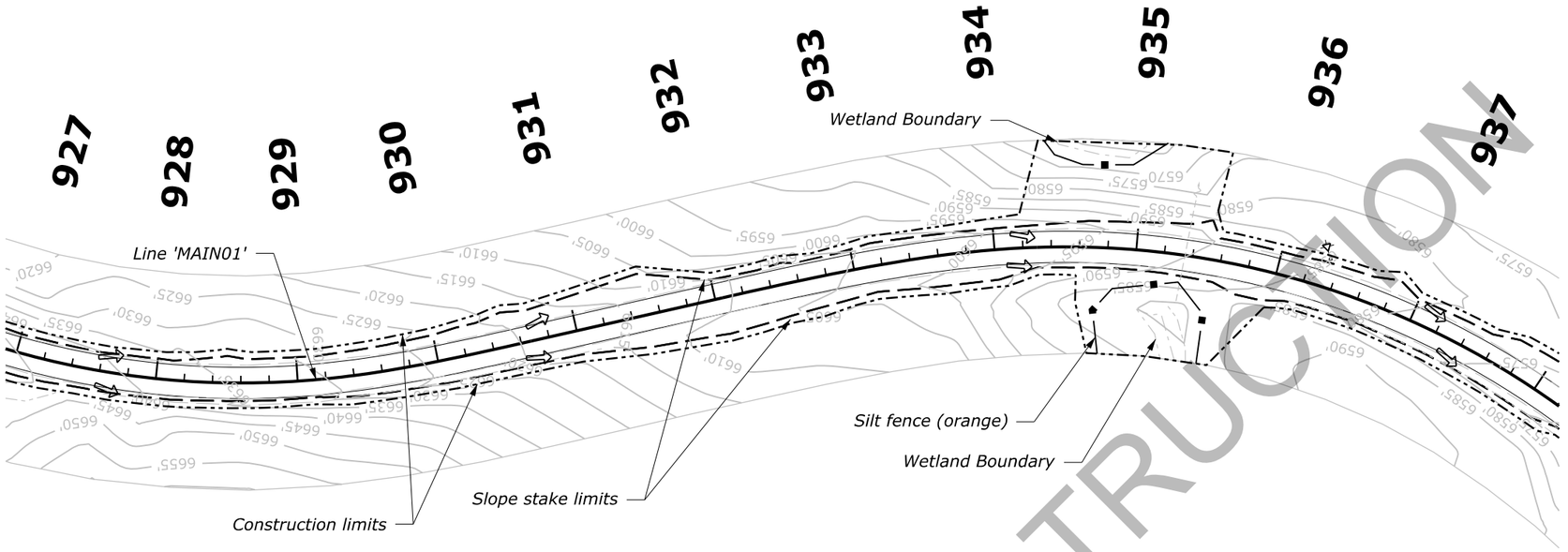
NOT FOR CONSTRUCTION

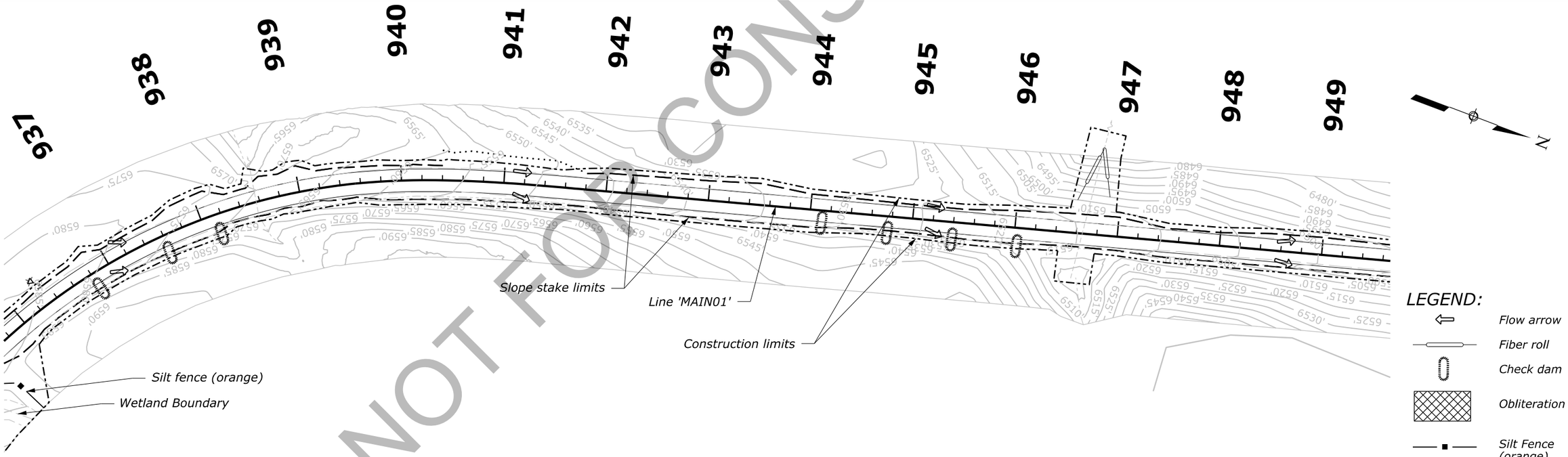
SOIL EROSION AND SEDIMENT CONTROL PLAN 913+00 TO 927+00

C:\Users\carrie.warren\Desktop\Exported from PW\cfa01301_ESC4.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN913+00 TO 927+00]
25 March 2021 3:48 PM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.46





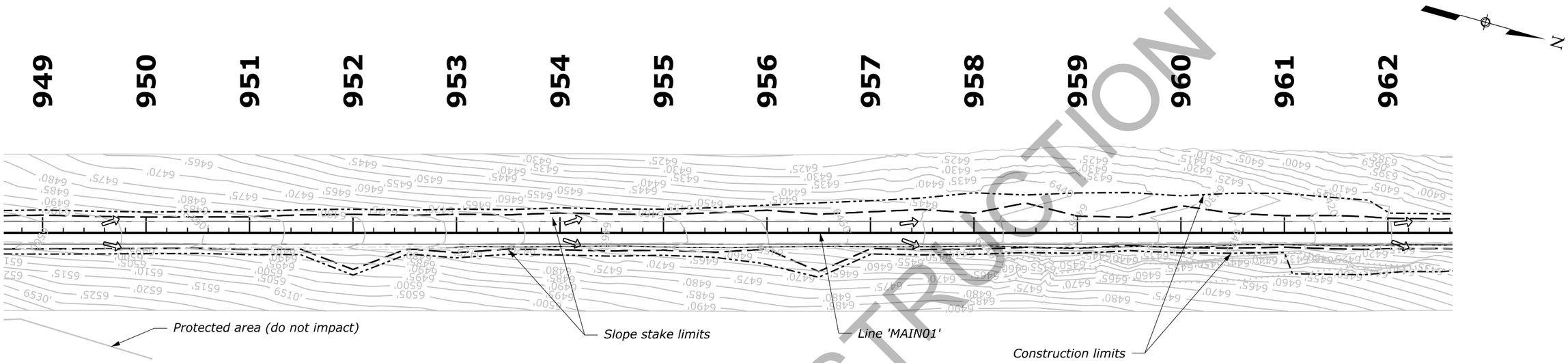
NOT FOR CONSTRUCTION

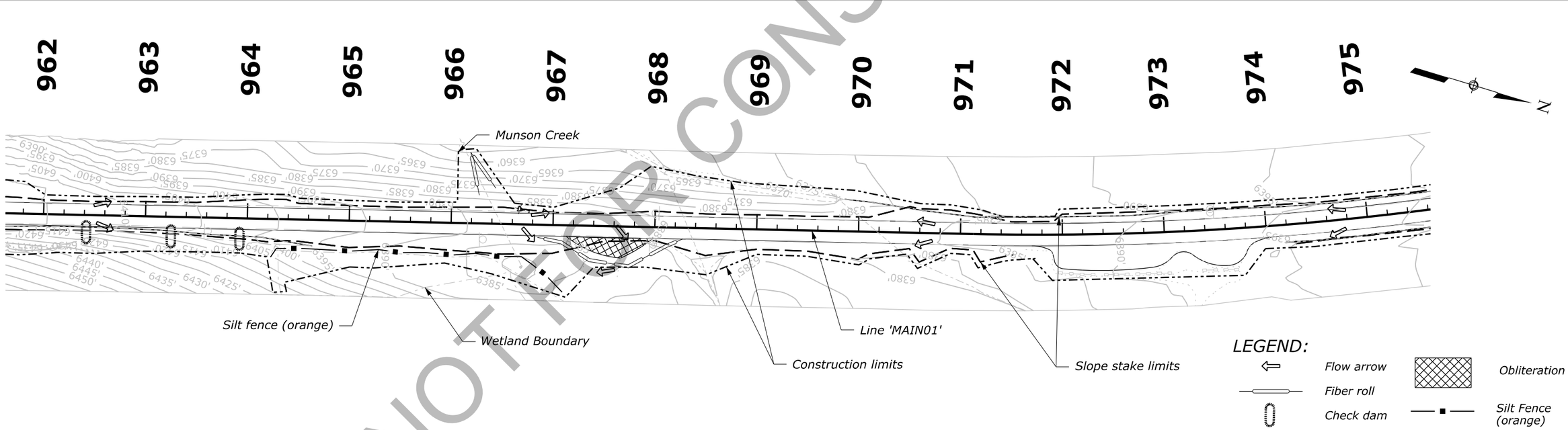
SOIL EROSION AND SEDIMENT CONTROL PLAN 927+00 TO 949+00

C:\Users\carrie.warren\Desktop\Exported from PW\cr6a01301_ESC4.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN927+00 TO 949+00]
25 March 2021 2:11 PM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.47





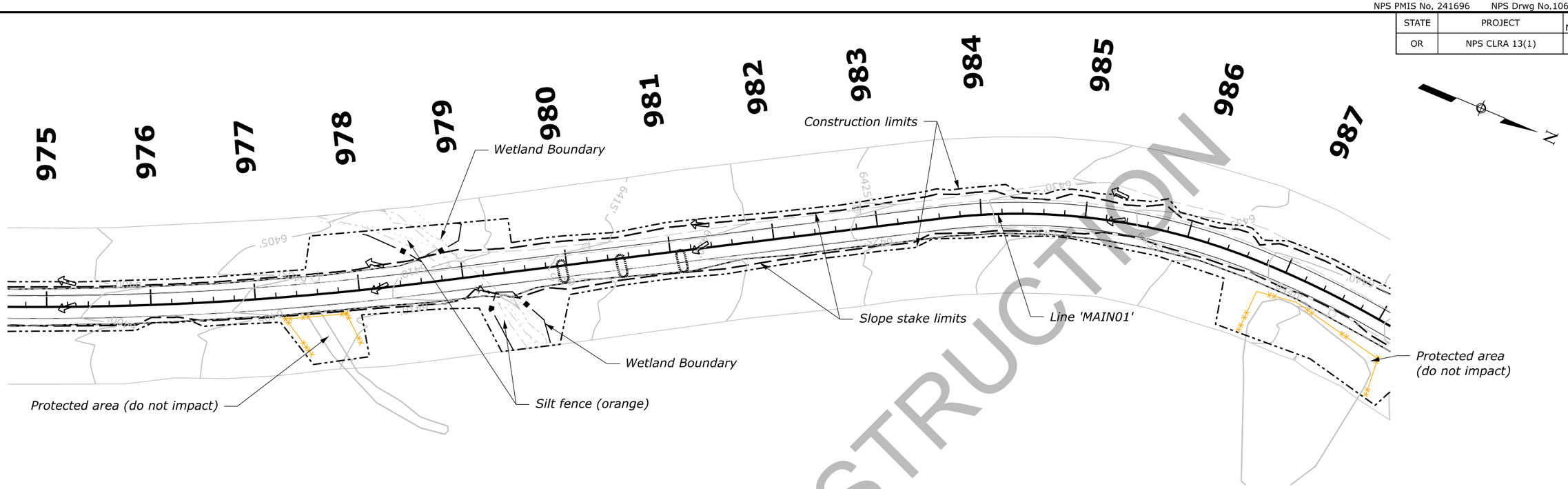
NOT FOR CONSTRUCTION

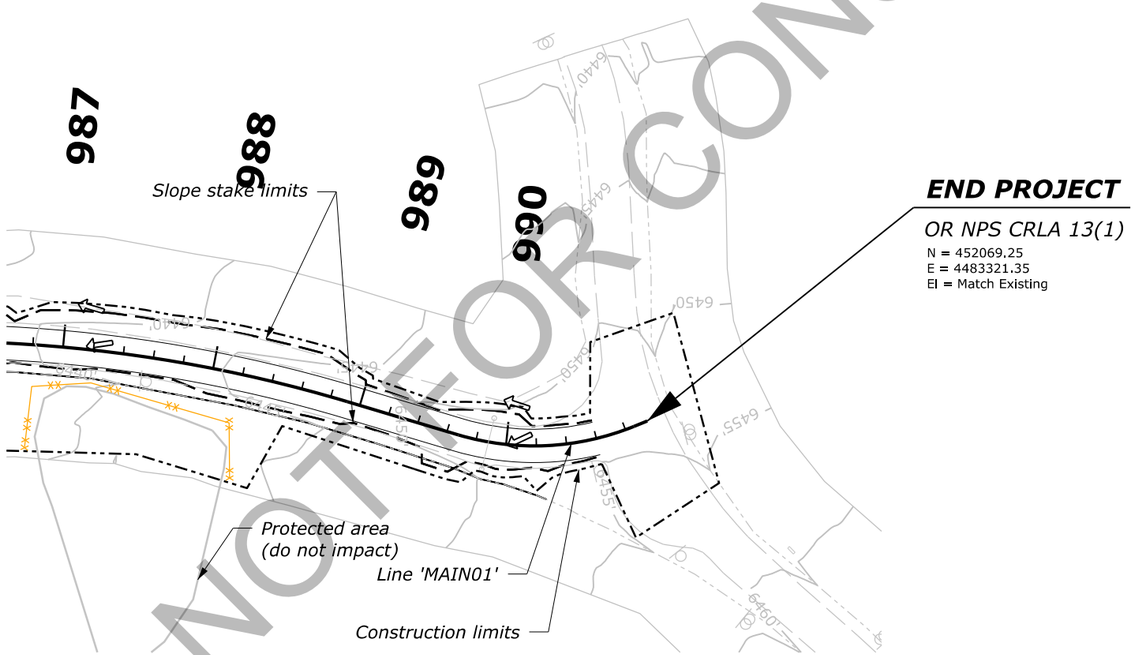
SOIL EROSION AND SEDIMENT CONTROL PLAN 949+00 TO 975+00

C:\Users\carrie.warren\Desktop\Exported from PW\crla01301_ESC4.dgn [SOIL EROSION ANDSEDIMENT CONTROL PLAN949+00 TO 975+00]
25 March 2021 3:52 PM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.48





LEGEND:

- Flow arrow
- Fiber roll
- Check dam
- Obliteration
- Plastic fence (Protected Vegetation)

NOT FOR CONSTRUCTION

SOIL EROSION AND SEDIMENT CONTROL PLAN 975+00 TO 990+95.68

C:\Users\carrie.warren\Desktop\Exported from PW\cfa01301_ESC4.dgn [SOIL EROSION AND SEDIMENT CONTROL PLAN975+00 TO 990+95.68]
25 March 2021 2:14 PM

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.49

Line 'APPR01'
Cloudcap Overlook East Approach

Slope stake limits

Line 'MAIN01'
East Rim Drive

Line 'APPR02'
Cloudcap Overlook West Approach

Construction limits

BEGIN CLOUDCAP WEST APPROACH

10+00 Line 'APPR02' =
24+03.86 Line 'APPR01'

END CLOUDCAP WEST APPROACH

20+80 Line 'APPR02' =
366+31.96 Line 'MAIN01'

N

LEGEND:

- Flow arrow
- Fiber roll
- Check dam
- Obliteration
- Plastic fence (Protected Vegetation)

Line 'MAIN01'
East Rim Drive

Construction limits

18+87.15

Line 'APPR02'
Cloudcap Overlook West Approach

Slope stake limits

Line 'APPR01'
Cloudcap Overlook East Approach

BEGIN CLOUDCAP EAST APPROACH

10+00 Line 'APPR01' =
353+99.37 Line 'MAIN01'

N

NOT FOR CONSTRUCTION

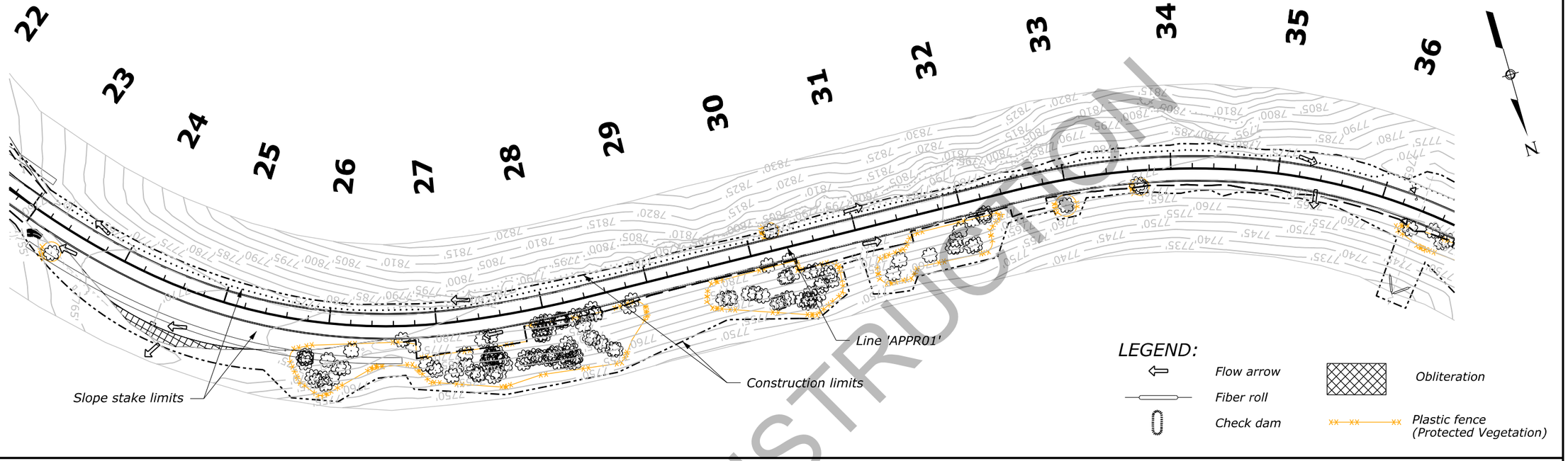
C:\Users\carrie.warren\Desktop\Exported from PW\crla01301_ESC_APP.dgn [SOIL EROSION ANDSEDIMENT CONTROL PLANCLOUDCAP WEST APPROACH ANDCLOUDCAP EAST APPROACH]

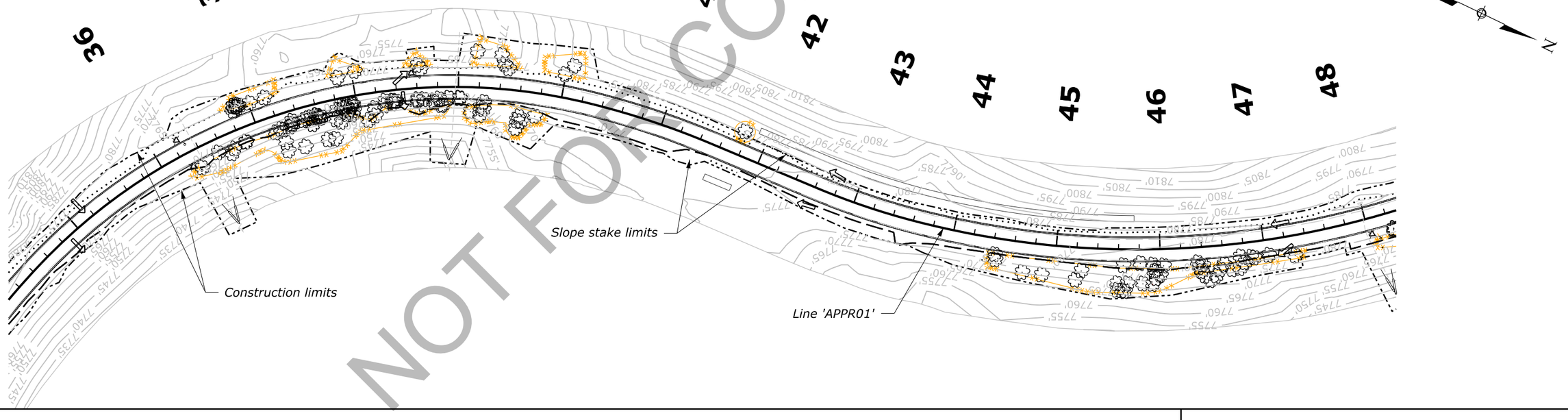
29 March 2021 9:02 AM

SOIL EROSION AND SEDIMENT CONTROL PLAN CLOUDCAP WEST APPROACH AND CLOUDCAP EAST APPROACH

NPS PMIS No. 241696 NPS Drwg No.106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.50





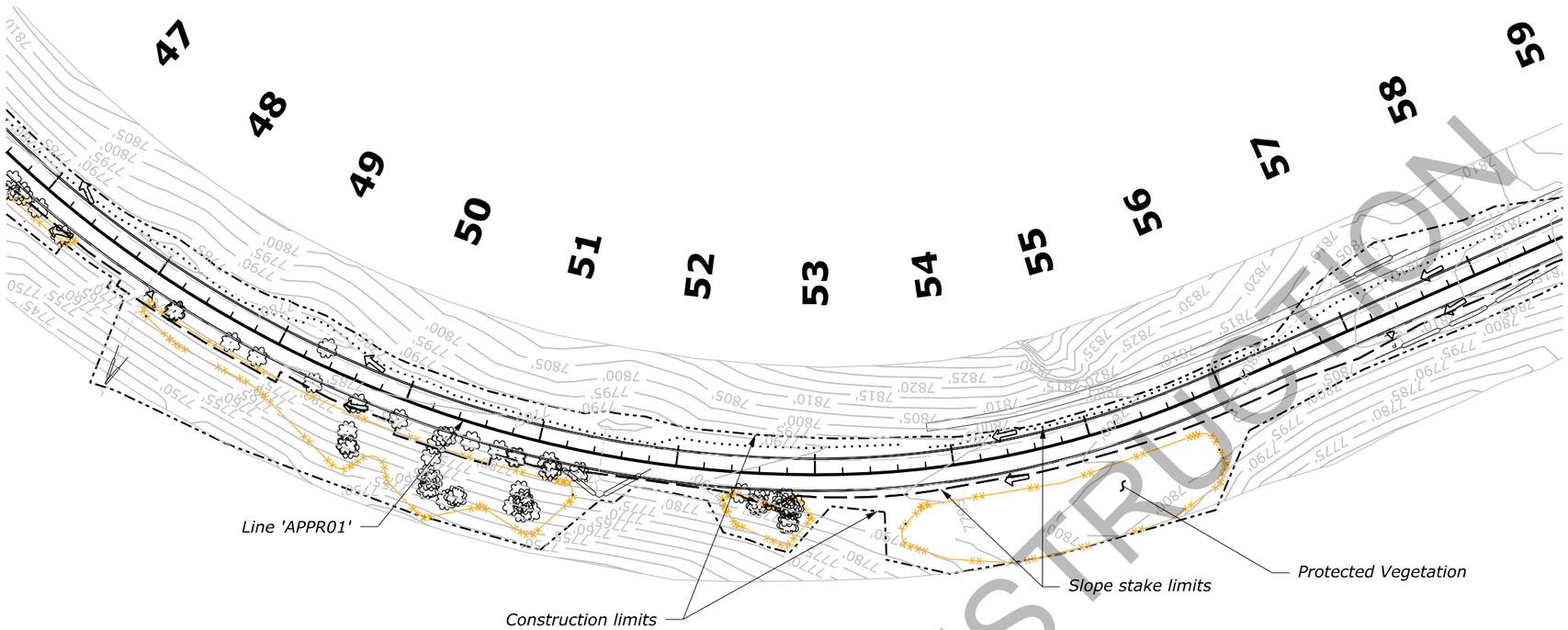
NOT FOR CONSTRUCTION

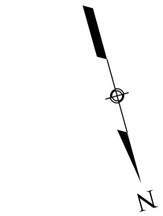
CLOUDCAP SOIL EROSION AND SEDIMENT CONTROL PLAN 23+00 TO 48+00

C:\Users\carrie.warren\Desktop\Exported from PW\cra01301_ESC_APP.dgn [CLOUDCAP SOIL EROSION AND SEDIMENT CONTROL PLAN23+00 TO 48+00]
29 March 2021 8:58 AM

NPS PMIS No. 241696 NPS Drwg No.106/175169

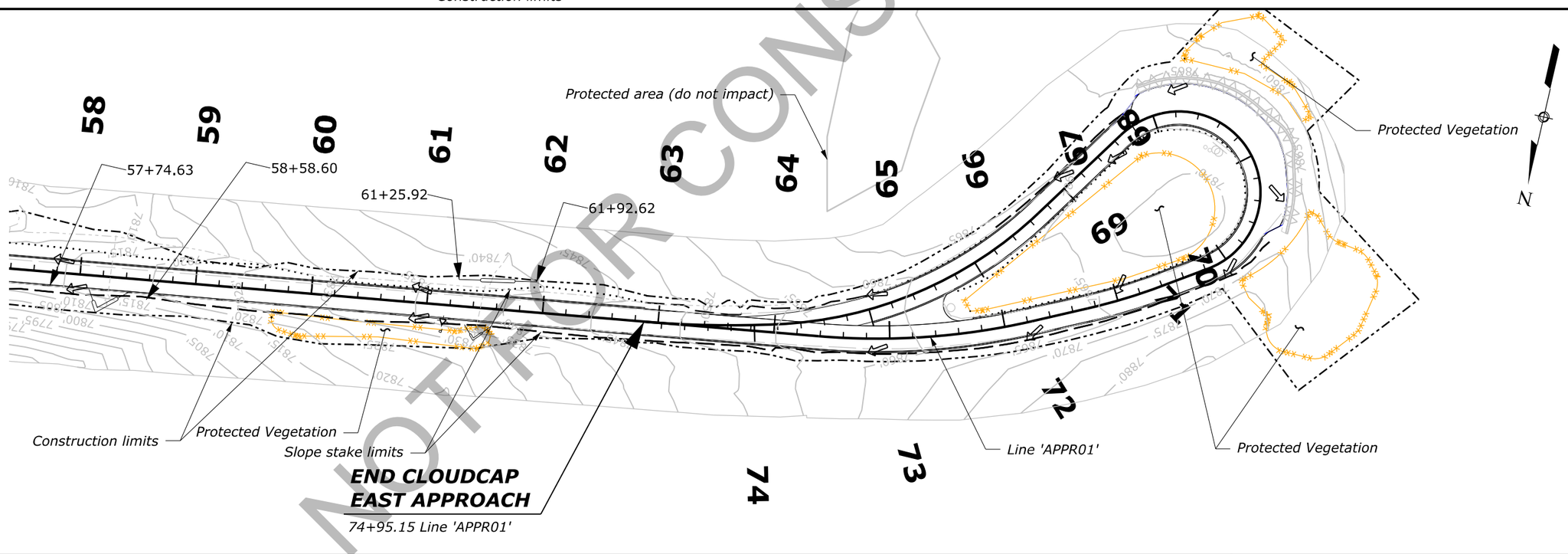
STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	H.51





LEGEND:

- Flow arrow
- Fiber roll
- Check dam
- Obliteration
- Plastic fence



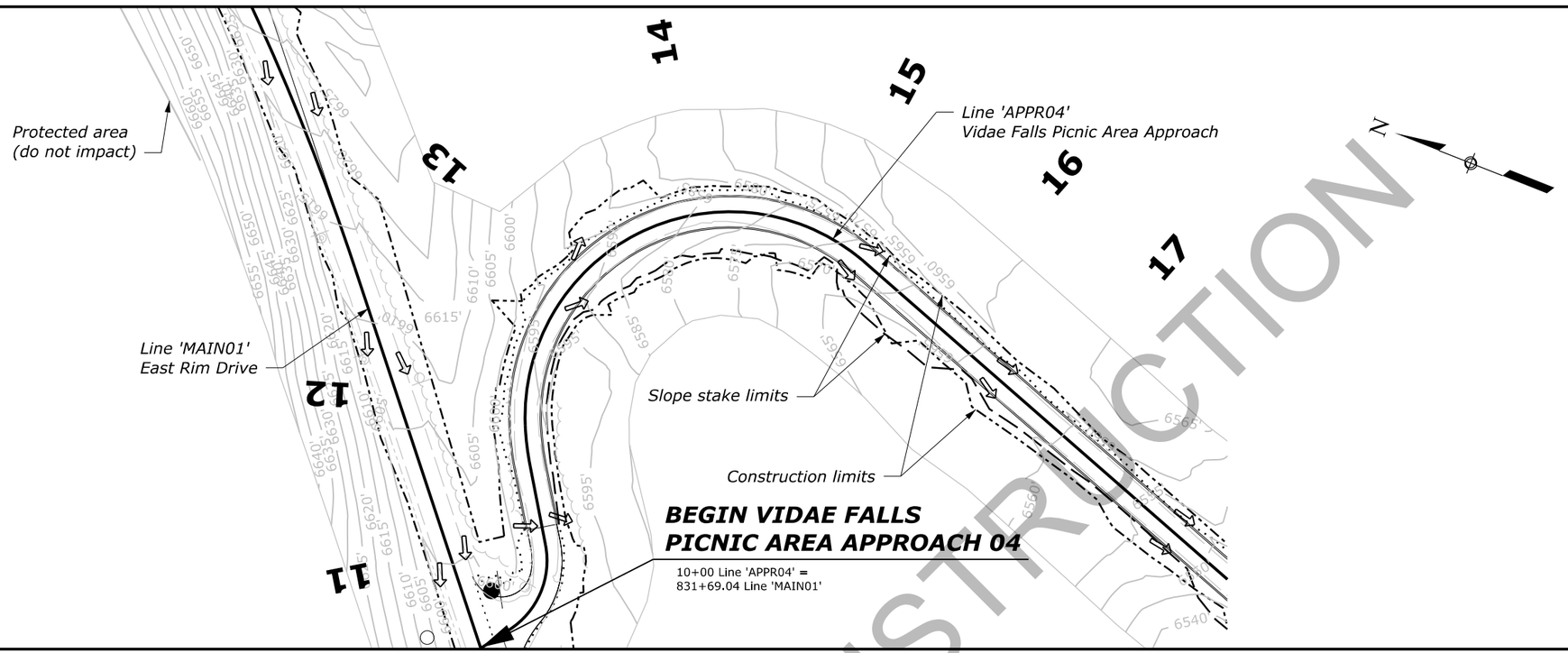
NOT FOR CONSTRUCTION

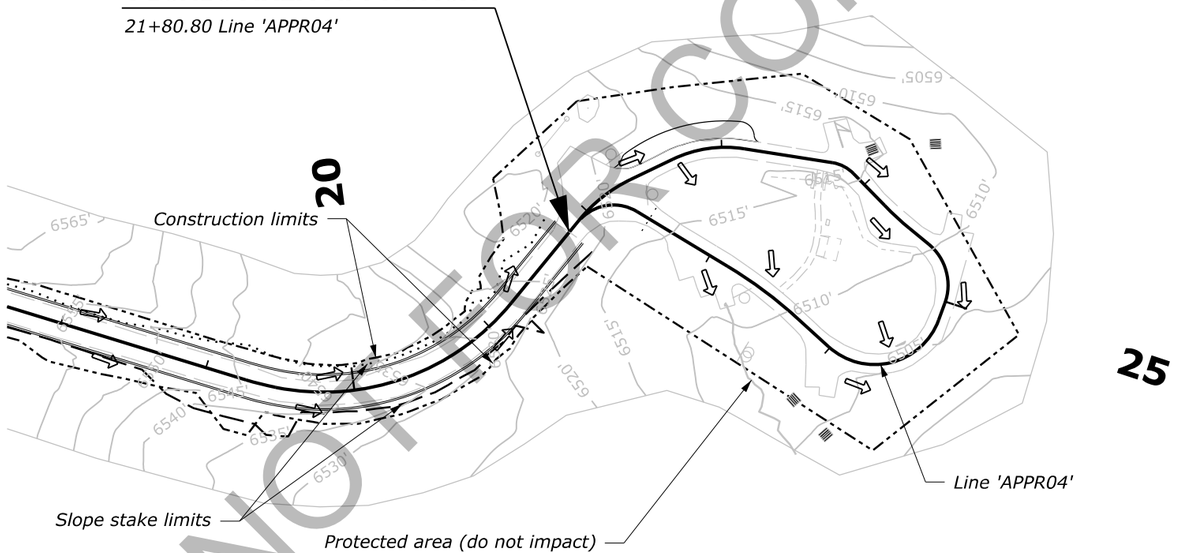
CLOUDCAP SOIL EROSION AND SEDIMENT CONTROL PLAN 48+00 TO 74+00

C:\Users\carrie.warren\Desktop\Exported from PW\crla01301_ESC_APP.dgn [CLOUDCAP SOIL EROSION ANDSEDIMENT CONTROL PLAN48+00 TO 74+00]
29 March 2021 9:01 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	H.52





LEGEND:

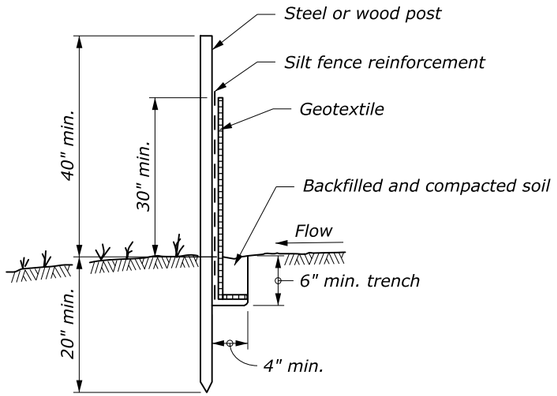
- Flow arrow
- Fiber roll
- Check dam
- Obliteration

NOT FOR CONSTRUCTION

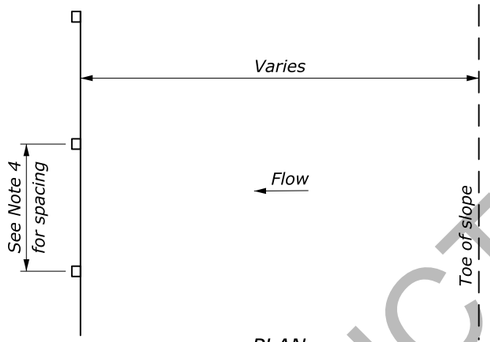
VIDAE FALLS SOIL EROSION AND SEDIMENT CONTROL PLAN 10+00 TO 27+00

C:\Users\Jennifer.Longmore\Desktop\Exported from PW\crfa01301_ESC_APP.dgn [VIDAE FALLS SOIL EROSION AND SEDIMENT CONTROL PLAN10+00 TO 27+00]
8 April 2021 7:59 AM

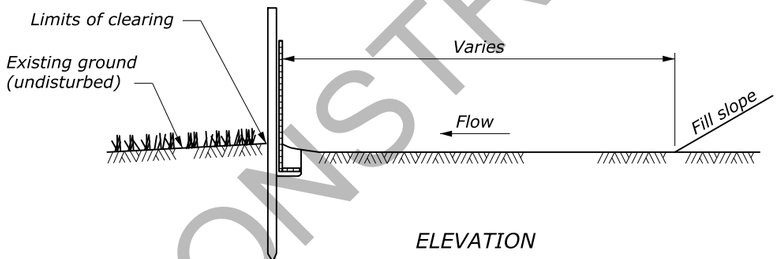
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	H.53



POST AND GEOTEXTILE INSTALLATION DETAIL



PLAN

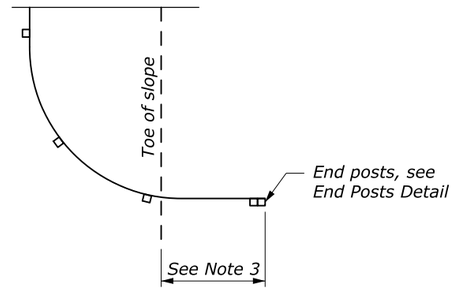


ELEVATION

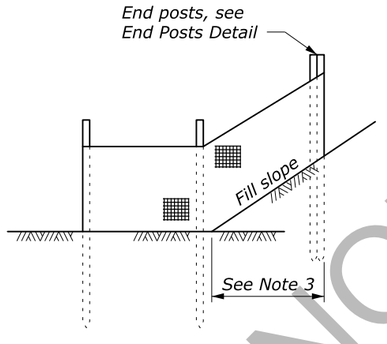
SILT FENCE INSTALLATION AT TOE OF FILL

NOTE:

1. *Alternate preassembled silt fence options will be allowed as long as specified dimensions are satisfied. Follow manufacturer's recommendations for installation procedures. All types must ensure silt fence remains attached to, and does not slide down, supporting posts.*
2. *Install silt fence to follow the ground contours as closely as possible.*
3. *Curve ends of silt fence upgrade to prevent water from running around the ends.*
4. *10-foot (max.) spacing with silt fence reinforcement. 6-foot (max.) spacing without silt fence reinforcement.*

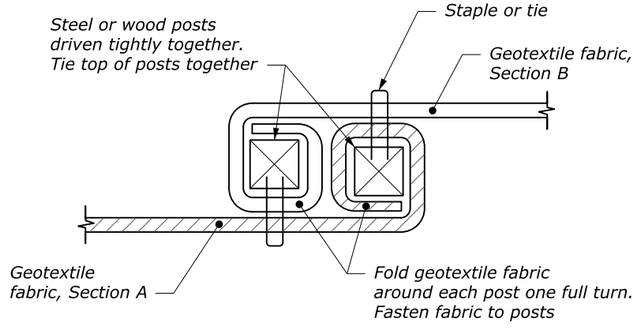


PLAN



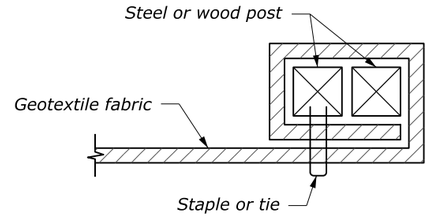
ELEVATION

END DETAIL



PLAN

POSTS AT JOINTS



PLAN

END POSTS DETAIL

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

SILT FENCE

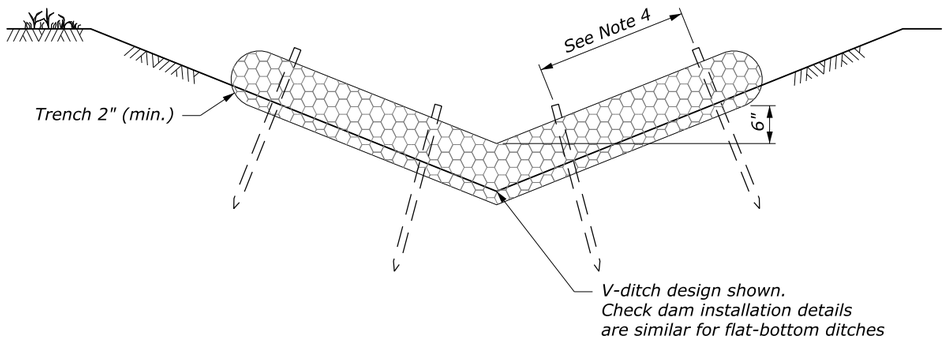
DETAIL APPROVED FOR USE --/----
REVISED: 10/2016

DETAIL W157-1

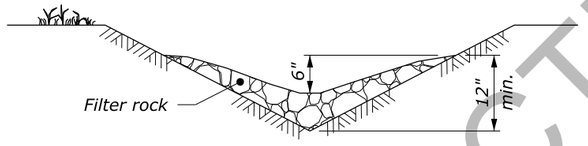
NOT FOR CONSTRUCTION

24 October 2016 9:53 AM c:\myfiles\pw_production\dms43148\W157-1.dgn [USC]

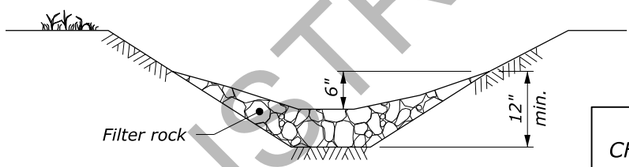
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	H.54



CROSS SECTION



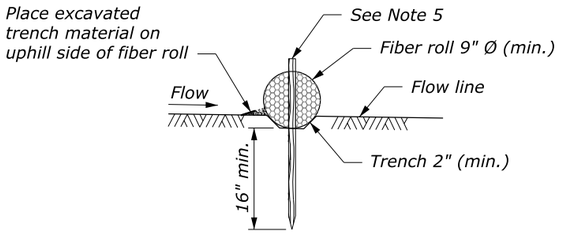
V-DITCH
CROSS SECTION



FLAT-BOTTOM DTICH
CROSS SECTION

NOTE:

1. Construct check dams from fiber rolls, filter rock, or gravel bags as approved by the CO, to meet the functional requirements of the check dam device.
2. Repair all rills or gullies and properly compact prior to installation.
3. Install check dams in ditches perpendicular to the flowline.
4. Stake fiber rolls in place with 1⅛-inch x 1⅛-inch wood stakes. Drive stakes at each end of the fiber roll and at 2-foot (max.) spacing.
5. Drive stakes into undisturbed soil of trench bottom. Expose stakes 2-inches (min.) above top of fiber roll.
6. Provide sufficient length to prevent water from flowing around the ends of the fiber roll.
7. Adjust check dam spacing based on site-specific conditions.



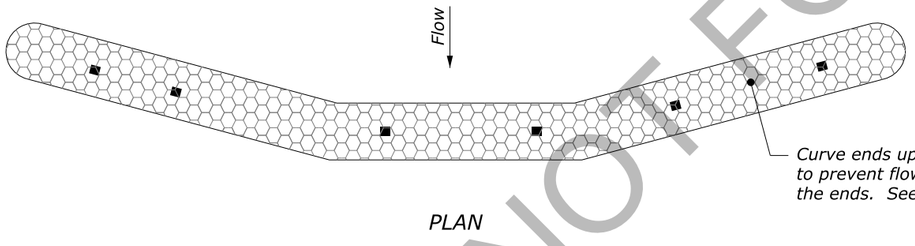
FIBER ROLL
STAKING DETAIL

FIBER ROLL CHECK DAM SPACING* (See Note 7)	
DITCH GRADE	CHECK DAM SPACING (max.) (FT)
2%	150
3%	100
4%	80
5%	60

* Spacing calculated based on 9" Ø minimum fiber roll.
Do not use fiber roll check dams on ditch grades steeper than 5%.

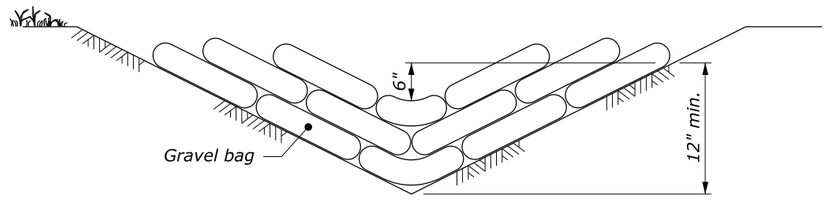
FILTER ROCK CHECK DAM SPACING (See Note 7)	
DITCH GRADE	CHECK DAM SPACING (max.) (FT)
2%	150
3%	100
4%	80
5%	60
6%	50

FILTER ROCK CHECK DAM



PLAN

FIBER ROLL CHECK DAM



CROSS SECTION

GRAVEL BAG CHECK DAM

GRAVEL BAG CHECK DAM SPACING* (See Note 7)	
DITCH GRADE	CHECK DAM SPACING (max.) (FT)
2%	150
3%	100
4%	80
5%	60
6%	50

* Do not use gravel bag check dams on ditch grades steeper than 6%.

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

CHECK DAM
MODERATE GRADES

DETAIL APPROVED FOR USE --/----
REVISED: 7/2016

DETAIL
W157-15

NOT FOR CONSTRUCTION

12 July 2016 11:47 AM c:\myfiles\pw_production\dms43148\W157-15.dgn [USC]

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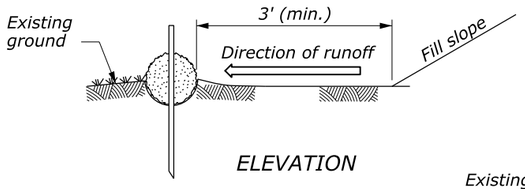
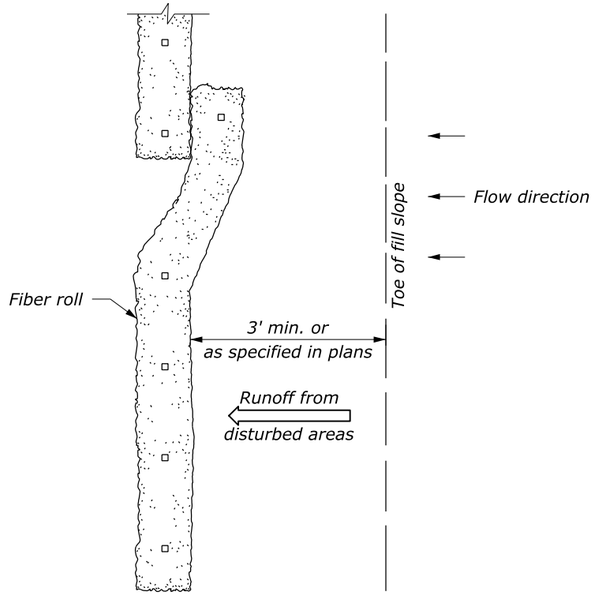
OR	NPS CRLA 13(1)	H.55

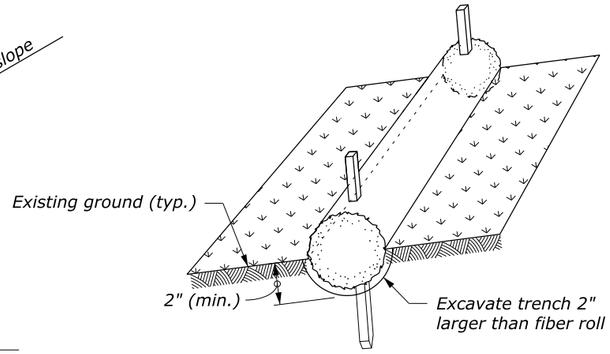


ELEVATION

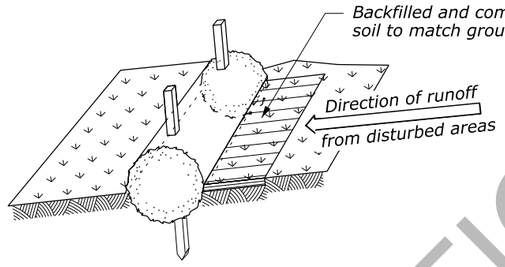


PLAN

INSTALLATION BEYOND TOE OF SLOPE



Step 1: Excavate trench and install fiber rolls



Step 2: Backfill soil against fiber rolls

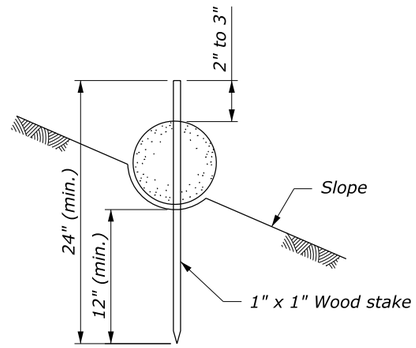
PROPERLY STAKED AND ENTRENCHED FIBER ROLL

FIBER ROLL SPACING	
Slope	Spacing (FT)
1:4 or flatter	40
1:3	30
1:2	20
1:1	10

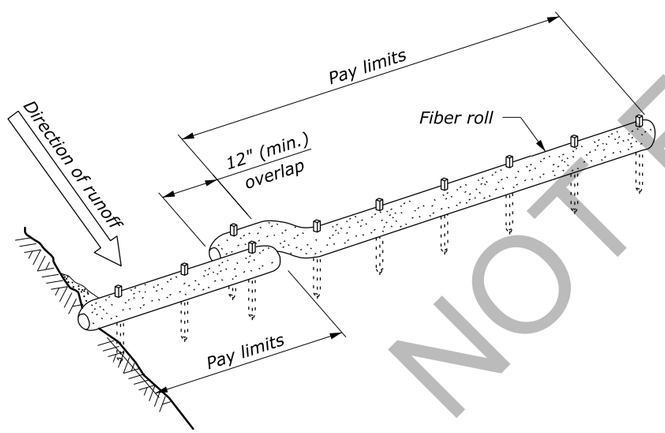
STAKES REQUIRED	
Fiber roll length (FT)	Stakes required for each roll
25	8
20	6
12	4

NOTE:

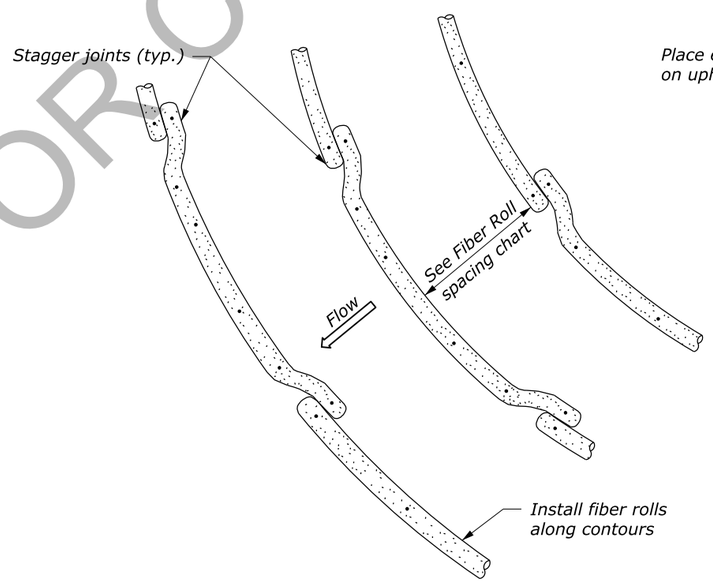
1. Drive stakes at each end and at 4-foot spacing until fiber roll is secure to slope. Live stakes may be used for permanent installations. Do not crush fiber roll while staking.
2. Overlap fiber rolls 12-inch minimum. Drive stakes at 6-inches from fiber roll end angles towards the adjacent fiber roll and space stakes at 4-foot max.



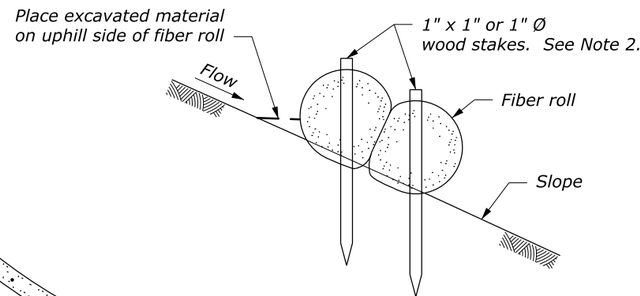
FIBER ROLL STAKING DETAIL



ALTERNATE FIBER ROLL JOINT DETAIL SLOPE PROTECTION INSTALLATION



INSTALLATION ALONG SLOPES



FIBER ROLL LAPPING DETAIL

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

FIBER ROLL

DETAIL APPROVED FOR USE 10/2014
REVISED:
DRAFT: 7/2016

DETAIL W157-21

NOT FOR CONSTRUCTION

14 July 2016 6:24 AM c:\myfiles\pw_production\dms43148\W157-21.dgn [USC]

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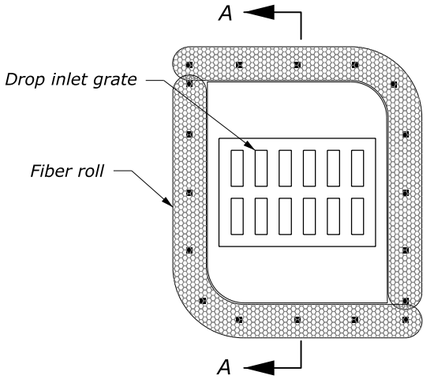
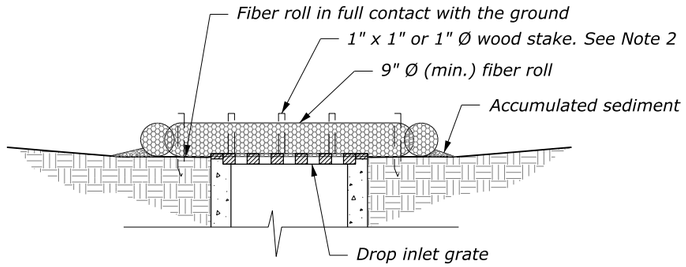
OR	NPS CRLA 13(1)	H.56

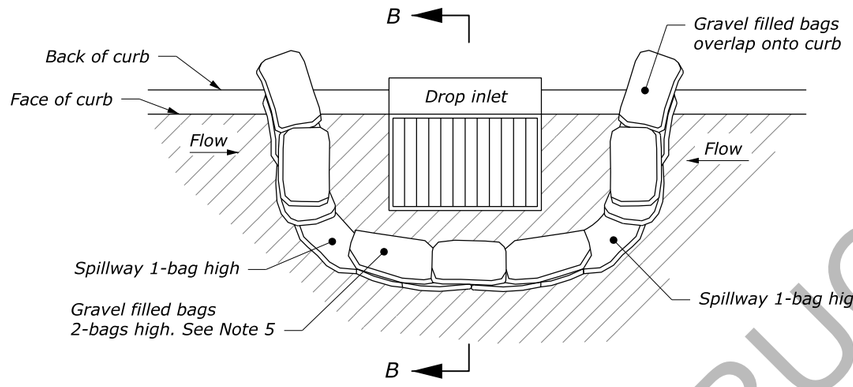


PLAN

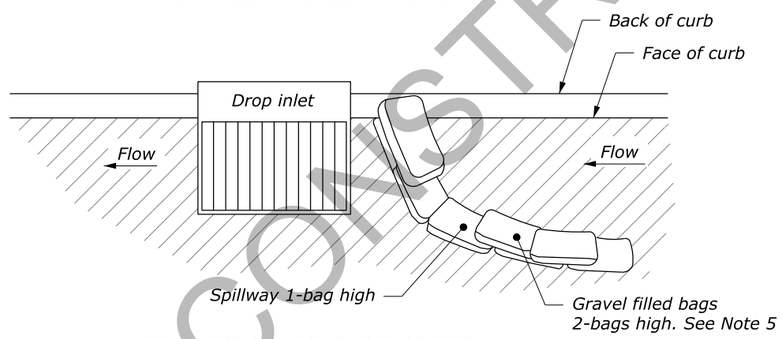


SECTION A-A

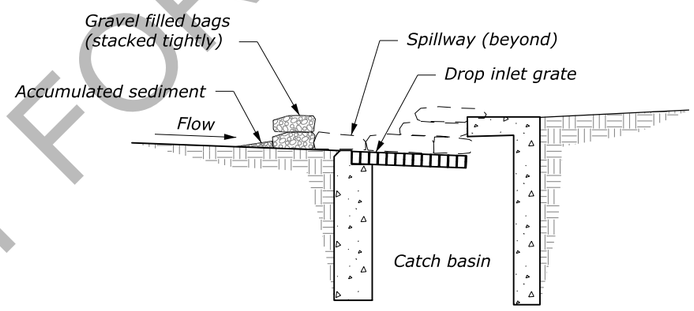
FIBER ROLL
DROP INLET PROTECTION (TYPE A)



PLAN VIEW - INLET AT SAG



PLAN VIEW - INLET ON GRADE

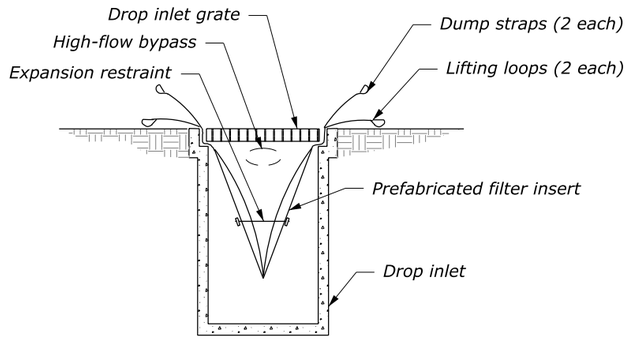


SECTION B-B

GRAVEL BAG BERM
DROP INLET PROTECTION (TYPE B)

NOTE:

1. *Select the inlet protection device to fit field conditions as approved by the CO.*
2. *Install fiber rolls with stakes spaced no more than 24-inches on center. Drive stakes 12-inches (min.) in undisturbed soil.*
3. *Approximate finished dimension of gravel bags is 12-inches x 18-inches.*
4. *Maximum top of gravel bag spillway elevation = Top of curve minus 1-inch.*
5. *Pack gravel filled bags tightly together end to end to ensure no sediment flows between or underneath the bags. Where tight fit is unachievable, install geotextile filter, class 2, type C along the upstream face of the bags. Place fabric over the top of the bags to the spillway elevation. Anchor the fabric by placing the next layer of bags on top of it. Extend the geotextile fabric a minimum of 18-inches upstream of the bags. Cover geotextile fabric to the top of the fabric with clean, silt-free coarse aggregate between 2-inches and 3-inches in diameter.*
6. *Size the prefabricated filter insert (Type C) to fit the drop inlet and allow collected material removal without spillage. Include a high-flow bypass in the insert.*



PREFABRICATED FILTER INSERT
DROP INLET PROTECTION (TYPE C)
See Note 6

NOT FOR CONSTRUCTION

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

TEMPORARY INLET PROTECTION

Sheet 1 of 2

DETAIL APPROVED FOR USE --/----

REVISED: 7/2016

DETAIL W157-2

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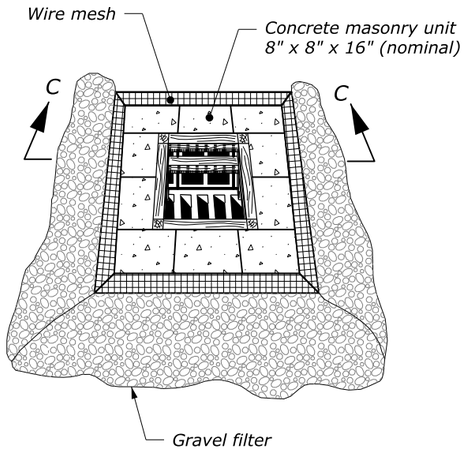
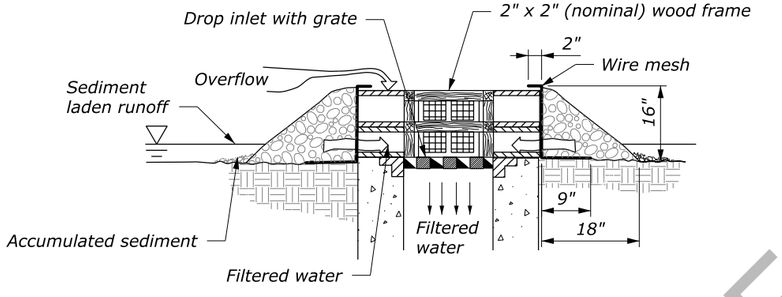
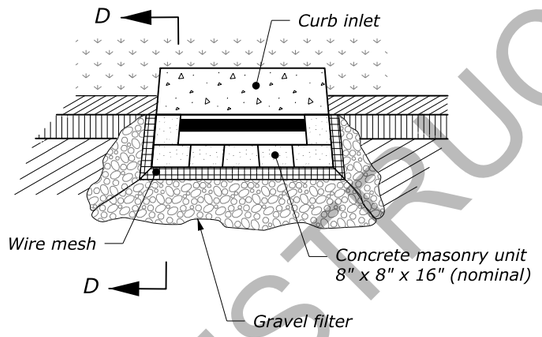
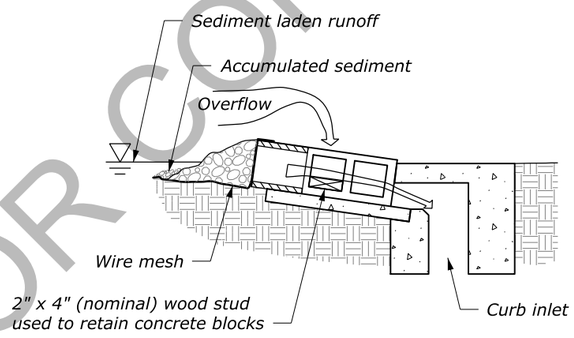




SECTION C-C

BLOCK AND GRAVEL
DROP INLET PROTECTION (TYPE D1)



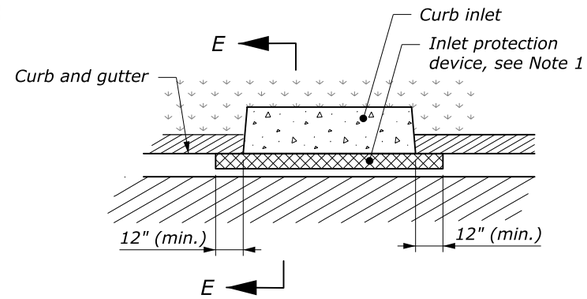


SECTION D-D

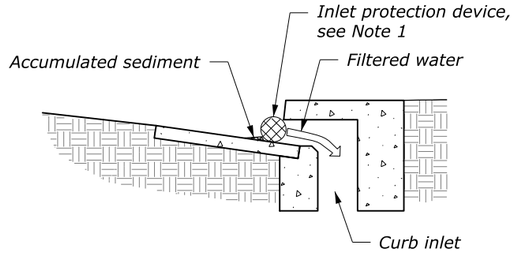
BLOCK AND GRAVEL
CURB INLET PROTECTION (TYPE D2)

NOTE:

1. *Inlet protection device (type E) may consist of continuous filter tubing filled with gravel or other prefabricated filter material. Install device according to manufacturer's recommendations.*
2. *Vary dimensions to fit field conditions.*



PLAN



SECTION E-E

INLET PROTECTION DEVICE
CURB INLET PROTECTION (TYPE E)

NOT FOR CONSTRUCTION

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

TEMPORARY INLET PROTECTION

Sheet 2 of 2

DETAIL APPROVED FOR USE --/----
REVISED: 7/2016

DETAIL W157-2

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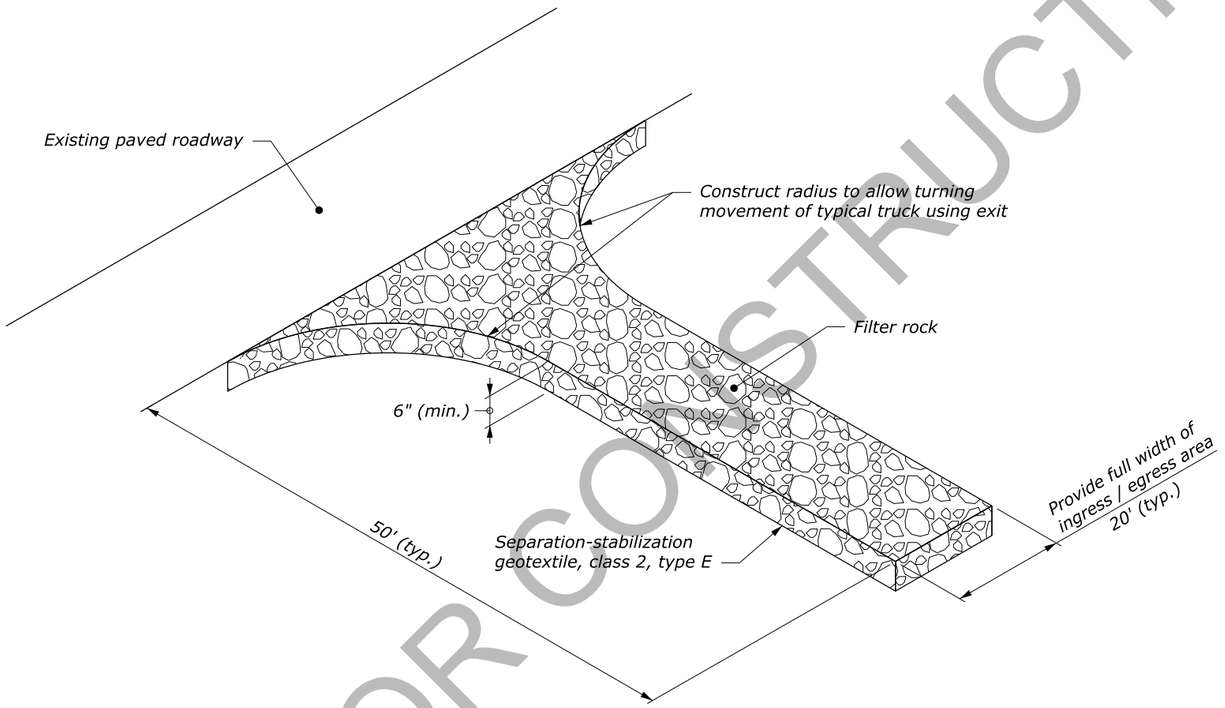
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	H.58

NOTE:

1. *Use this entrance for construction vehicles only.*
2. *Construct drainage ditches along entrance as directed. Provide temporary drainage culvert where entrance crosses existing drainage ditches.*
3. *Minimize tracking onto paved roadway by removing built up sediment.*
4. *Adjust length to fit field conditions as approved.*



STABILIZED CONSTRUCTION EXIT

NOT FOR CONSTRUCTION

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

STABILIZED CONSTRUCTION EXIT

DETAIL APPROVED FOR USE --/----
REVISED: 7/2016

DETAIL W157-19

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NPS PMIS No. 241696 NPS Drwg No.106/175169

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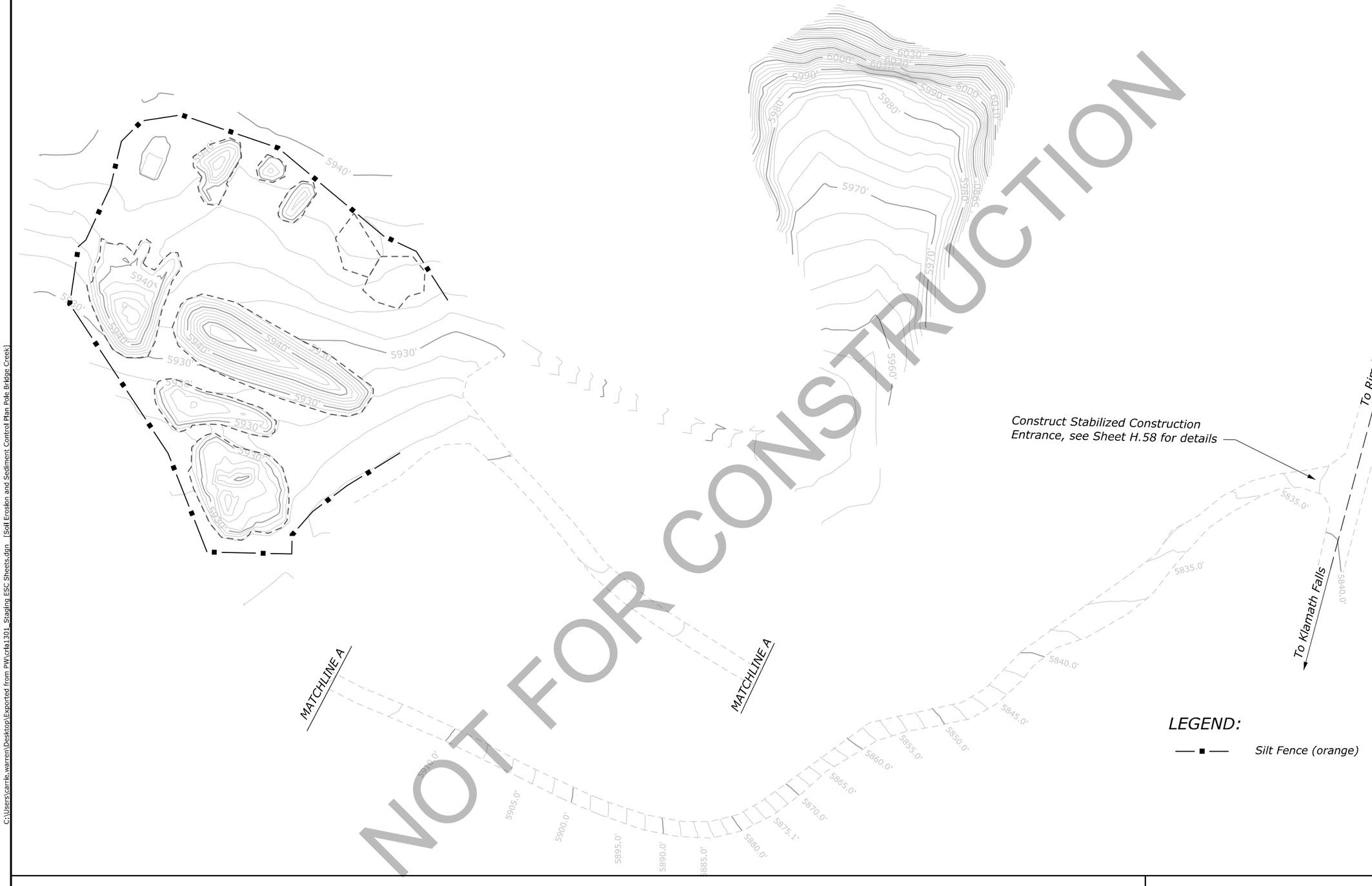

LEGEND:

— ■ — *Silt Fence (orange)*

NOT FOR CONSTRUCTION

SOIL EROSION AND SEDIMENT CONTROL PLAN POLE BRIDGE CREEK

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29 March 2021 7:39 AM

NPS PMIS No. 241696 NPS Drwg No.106/175169

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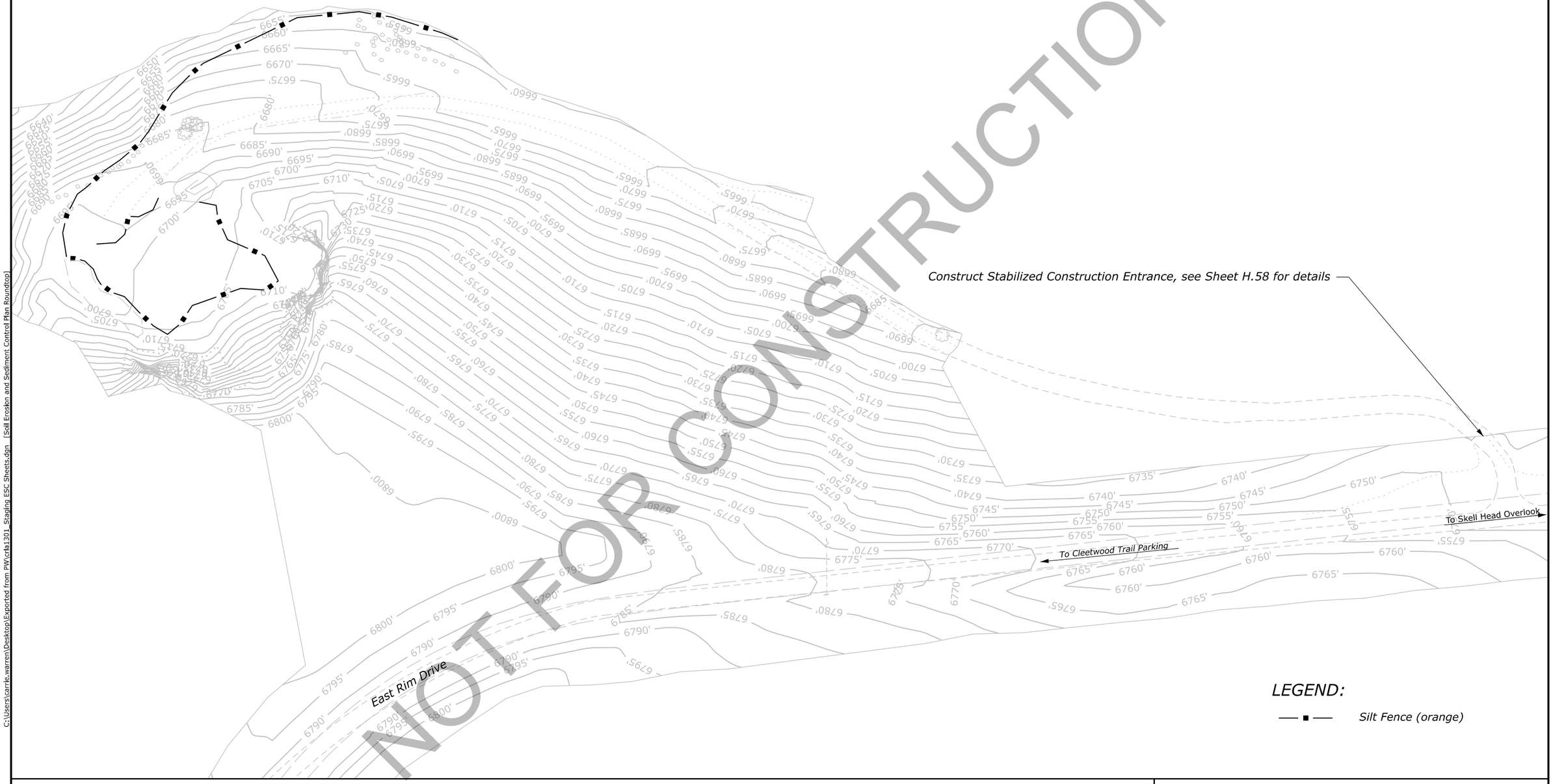

NOT FOR CONSTRUCTION

SOIL EROSION AND SEDIMENT CONTROL PLAN ROUNDTOP

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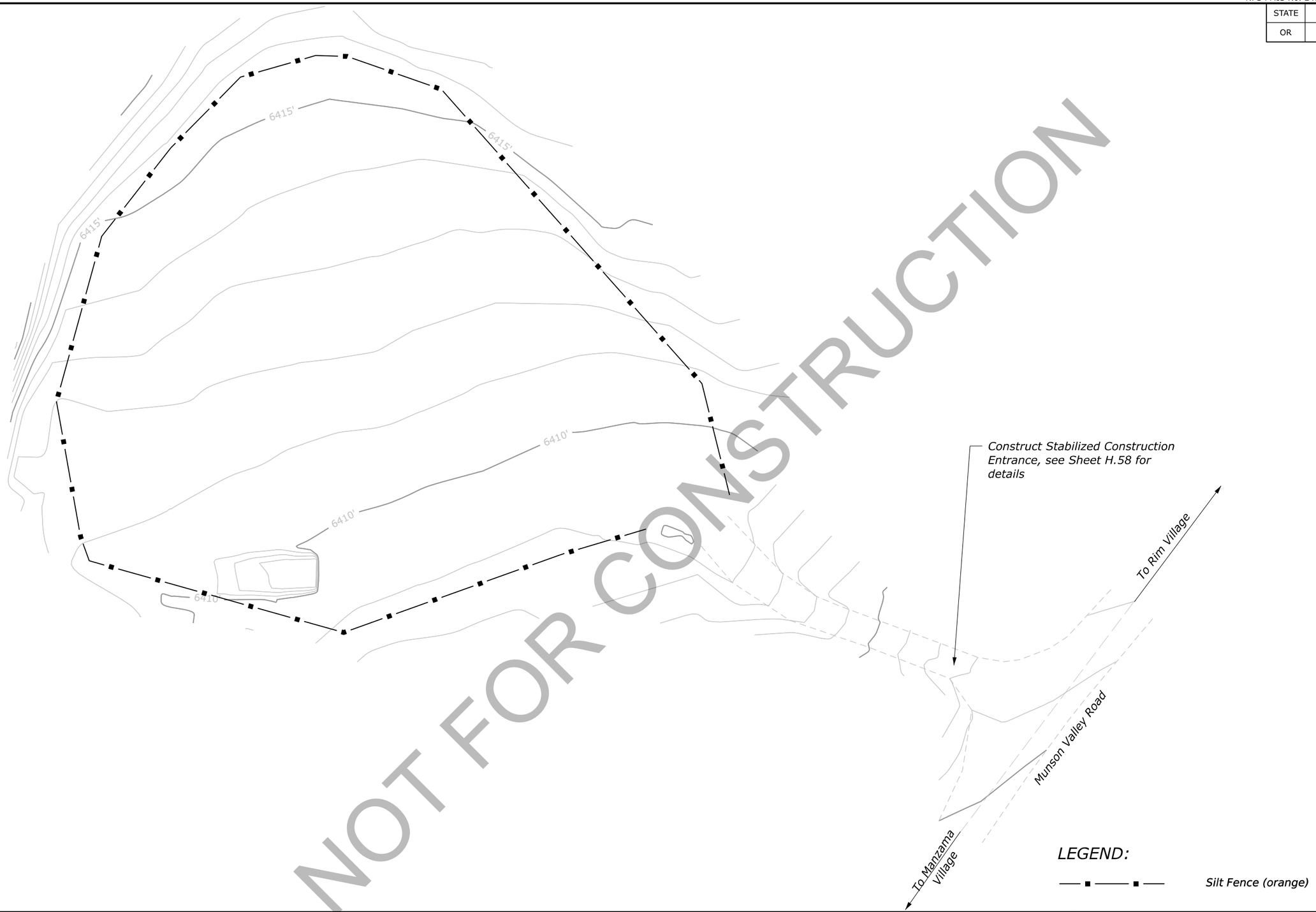

NOT FOR CONSTRUCTION

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29 March 2021 7:43 AM

SOIL EROSION AND SEDIMENT CONTROL PLAN BALL DIAMOND

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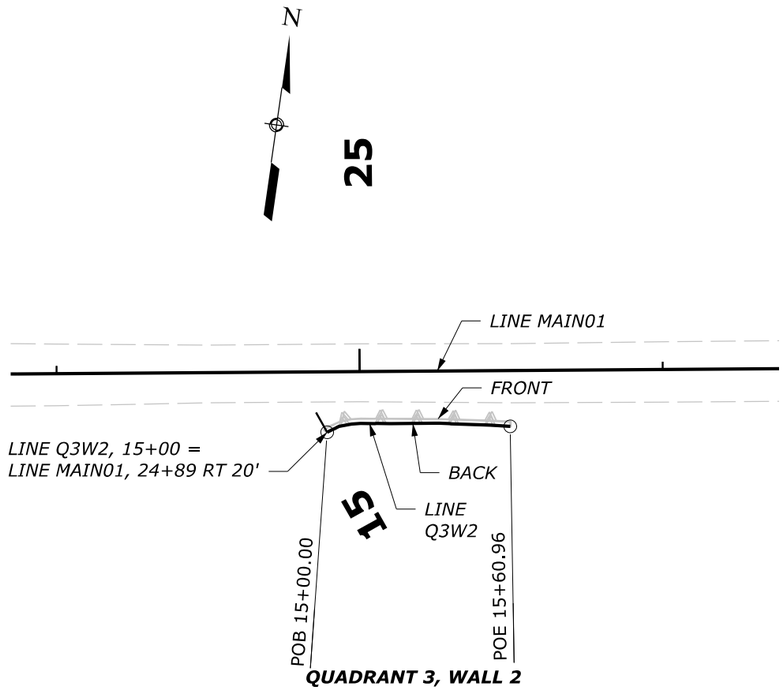
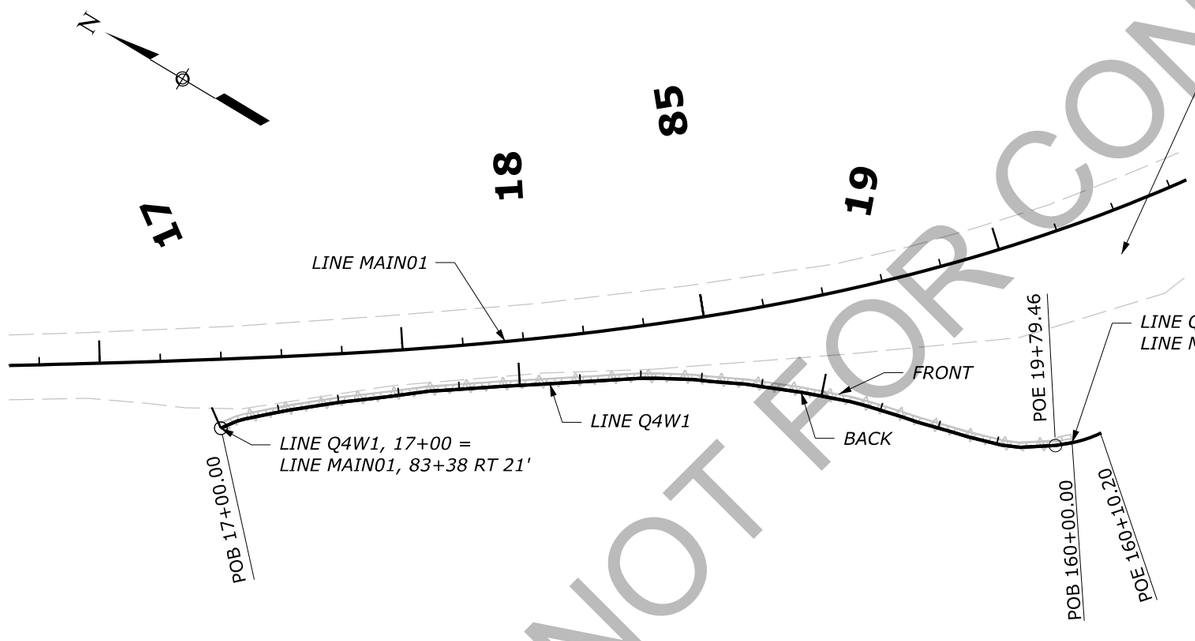


QUADRANT 3, WALL 2

QUADRANT 3, WALL 2				
ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	15+00 TO 15+61	BOTH	194	SQFT
TOTAL			**194**	**SQFT**
62031-0000, REPOINT STONE MASONRY (>6' HEIGHT)	15+00 TO 15+61	BACK	538	SQFT
TOTAL			**538**	**SQFT**



QUADRANT 4, WALL 1

QUADRANT 4, WALL 1 EXTENSION				
ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62010-1000, STONE MASONRY GUARDWALL	86+04 TO 86+13	-	17	LNFT
TOTAL			**17**	**LNFT**

QUADRANT 4, WALL 1				
ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	17+00 TO 19+80	BACK	956	SQFT
TOTAL			**956**	**SQFT**

Note:

1. *See Sheet I.24 for underpinning repair locations.*

NOT FOR CONSTRUCTION

QUADRANT 3, WALL 2
QUADRANT 4, WALL 1

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30 March 2021 11:56 AM

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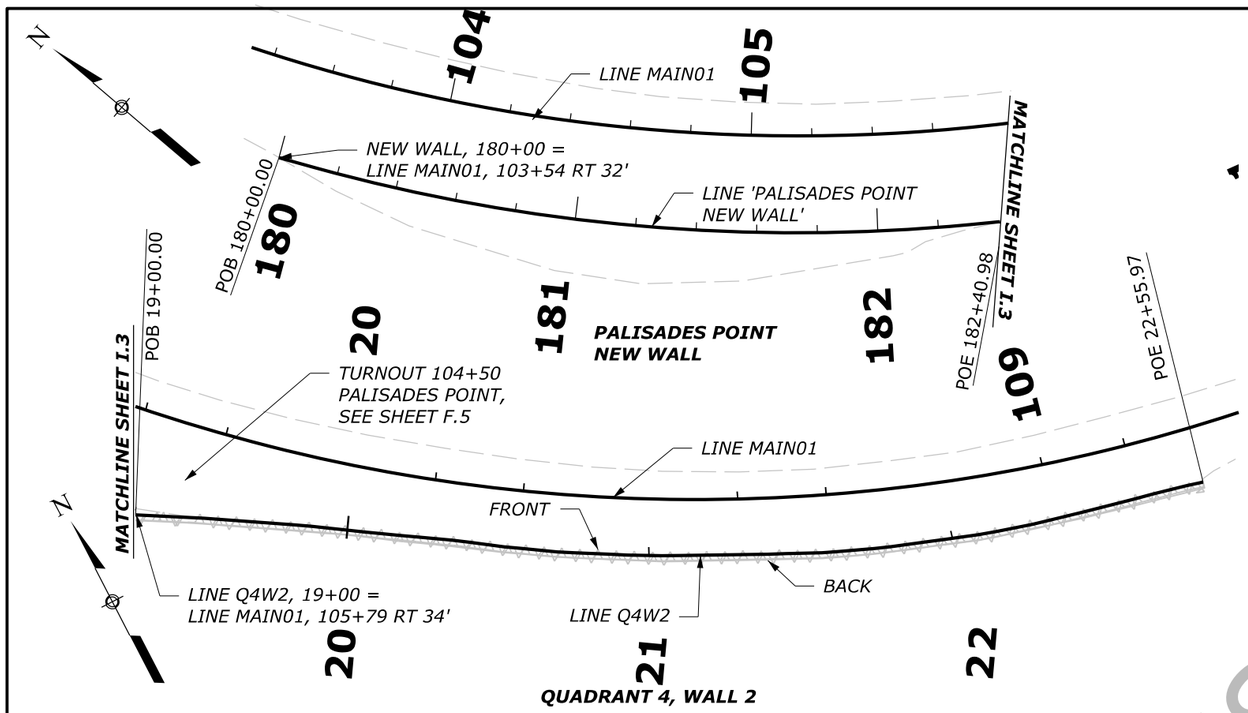
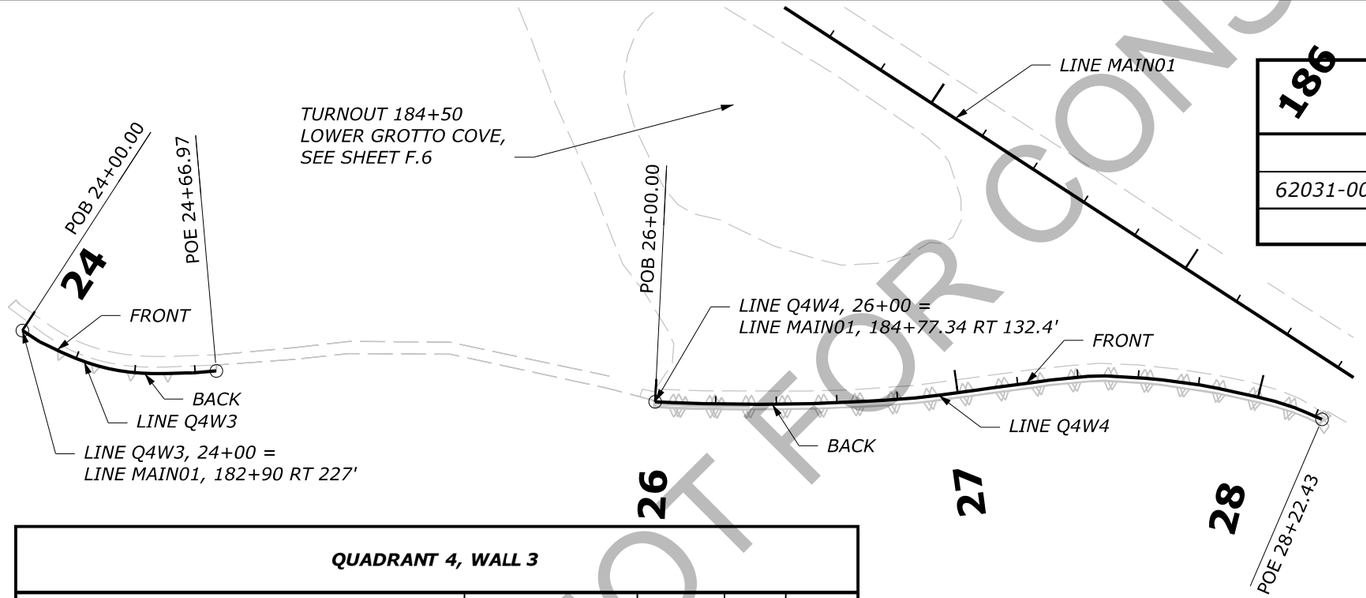


PALISADES POINT NEW WALL				
ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62010-1000, STONE MASONRY GUARDWALL	103+51 TO 105+79	-	241	LNFT
TOTAL			**241**	**LNFT**
60901-6350, CURB STONE, TYPE 2, 24-INCH DEPTH	103+51 TO 105+79	-	35	LNFT
TOTAL			**35**	**LNFT**

QUADRANT 4, WALL 2				
ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT 2' TO 6' HEIGHT)	21+50 TO 21+70	BACK	0.9	SQYD
TOTAL			**0.9**	**SQYD**
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	19+00 TO 22+56	BACK	793	SQFT
TOTAL			**793**	**SQFT**
62031-0000, REPOINT STONE MASONRY (>6' HEIGHT)	20+20 TO 20+80	BACK	315	SQFT
TOTAL			**315**	**SQFT**



QUADRANT 4, WALL 4				
ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	26+00 TO 28+23	BACK	364	SQFT
TOTAL			**364**	**SQFT**

QUADRANT 4, WALL 3				
ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62010-1000, STONE MASONRY GUARDWALL	24+00 TO 24+67	-	67	LNFT
TOTAL			**67**	**LNFT**

QUADRANT 4, WALLS 3 & 4

Note:

1. *See Sheet I.25 for underpinning repair locations.*

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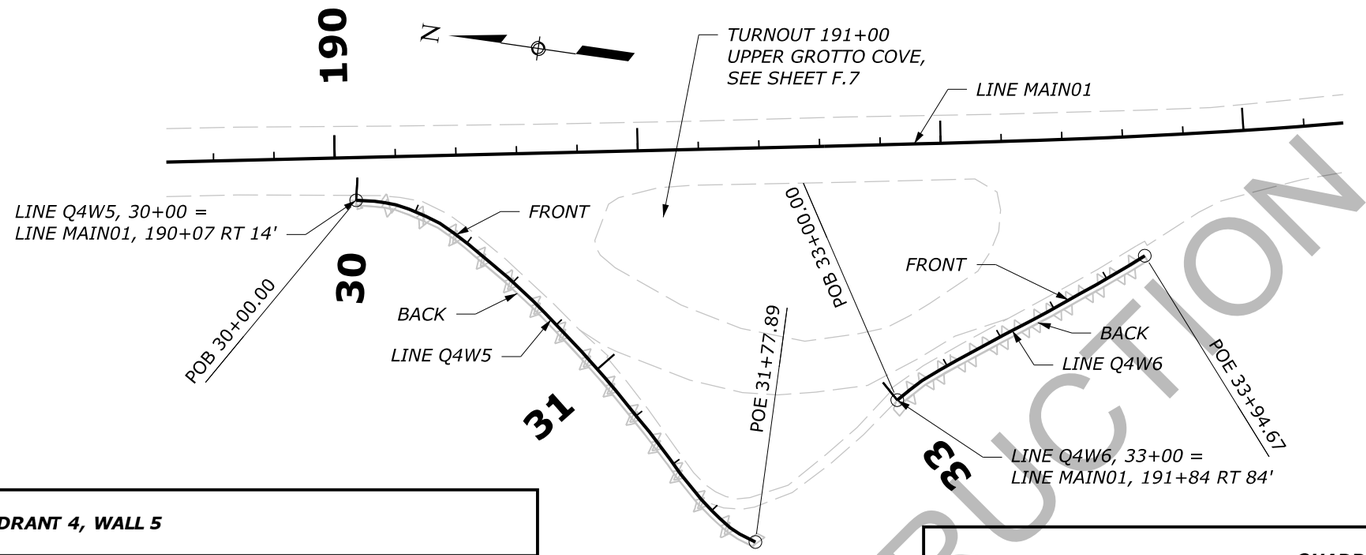
QUADRANT 4, WALLS 2-4

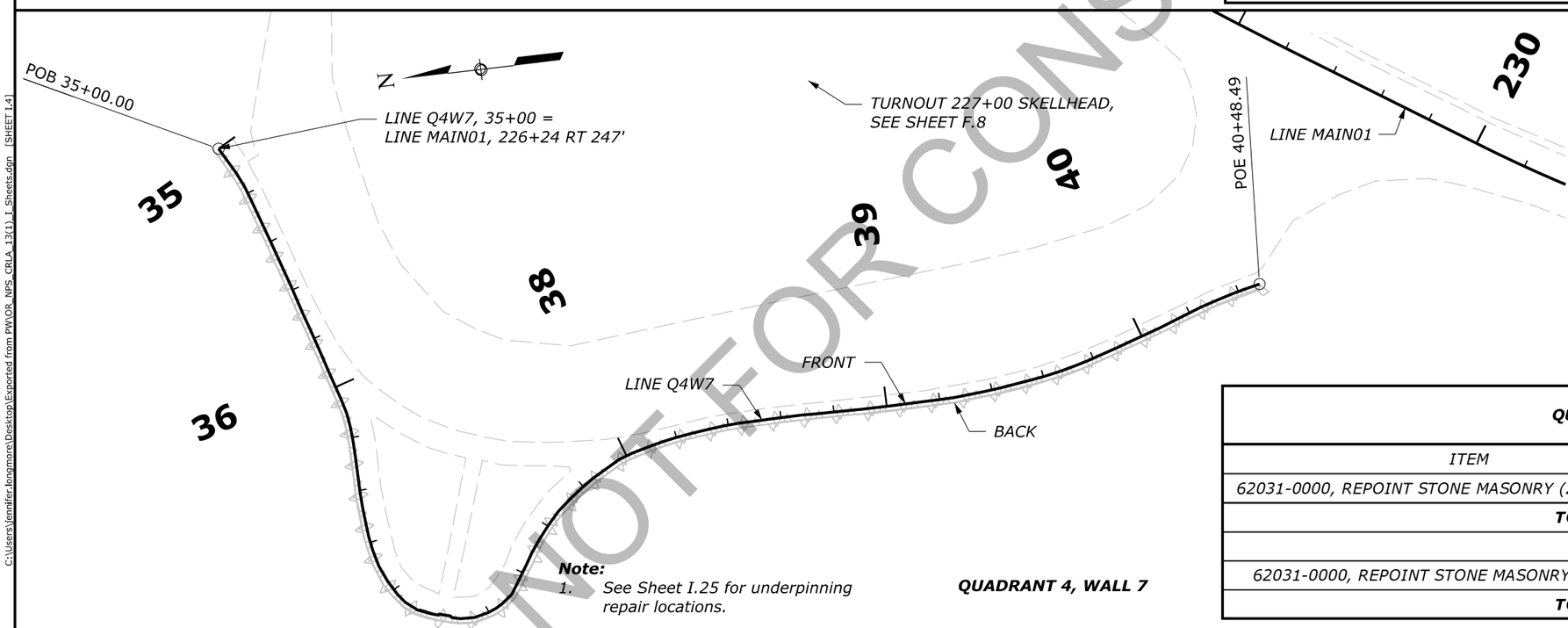
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	I.4



QUADRANT 4, WALLS 5 & 6

QUADRANT 4, WALL 5				
ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	30+00 TO 31+78	BACK	258	SQFT
TOTAL			**258**	**SQFT**

QUADRANT 4, WALL 6				
ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	33+00 TO 33+95	BACK	134	SQFT
TOTAL			**134**	**SQFT**



Note:
1. See Sheet I.25 for underpinning repair locations.

QUADRANT 4, WALL 7

QUADRANT 4, WALL 7				
ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	35+00 TO 40+49	BACK	1053	SQFT
TOTAL			**1053**	**SQFT**
62031-0000, REPOINT STONE MASONRY (>6' HEIGHT)	36+50 to 37+40	BACK	669	SQFT
TOTAL			**669**	**SQFT**

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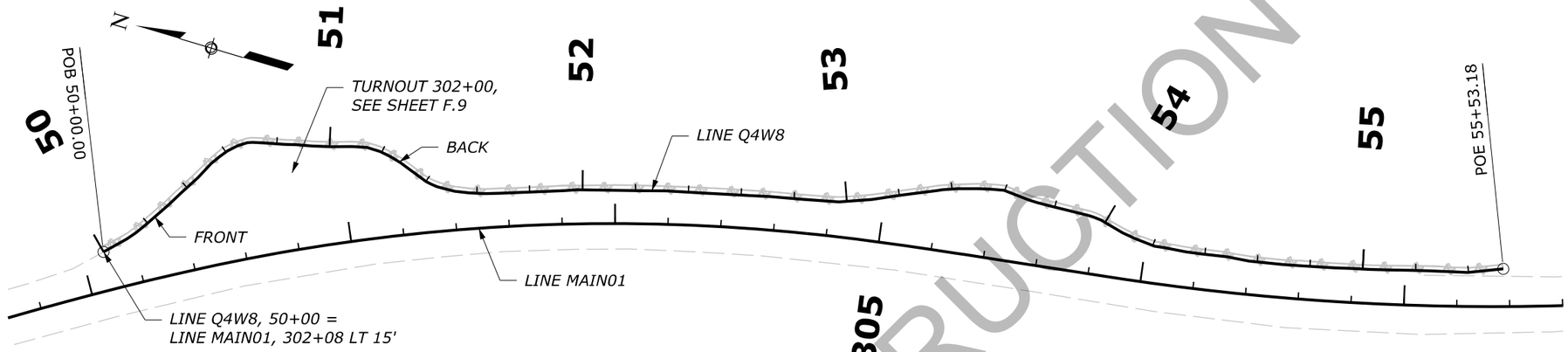
QUADRANT 4, WALL 5-7

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	I.5



QUADRANT 4, WALL 8				
ITEM	*LOCATION*	*SIDE(S)*	*QTY.*	*UNITS*
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT >6' HEIGHT)	*50+50 TO 50+52*	*BOTH*	*0.4*	*SQYD*
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT >6' HEIGHT)	*50+70 TO 50+71*	*BOTH*	*0.4*	*SQYD*
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT >6' HEIGHT)	*53+60 TO 53+65*	*BOTH*	*2.2*	*SQYD*
TOTAL			***3.0***	***SQYD***
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	*50+00 TO 55+54*	*BOTH*	*1964*	*SQFT*
TOTAL			***1964***	***SQFT***
62031-0000, REPOINT STONE MASONRY (>6' HEIGHT)	*51+50 TO 53+00*	*BACK*	*1368*	*SQFT*
62031-0000, REPOINT STONE MASONRY (>6' HEIGHT)	*54+20 TO 54+80*	*BACK*	*717*	*SQFT*
TOTAL			***2085***	***SQFT***

QUADRANT 4, WALL 8

Note:
1. *See Sheet I.25 for underpinning repair locations.*

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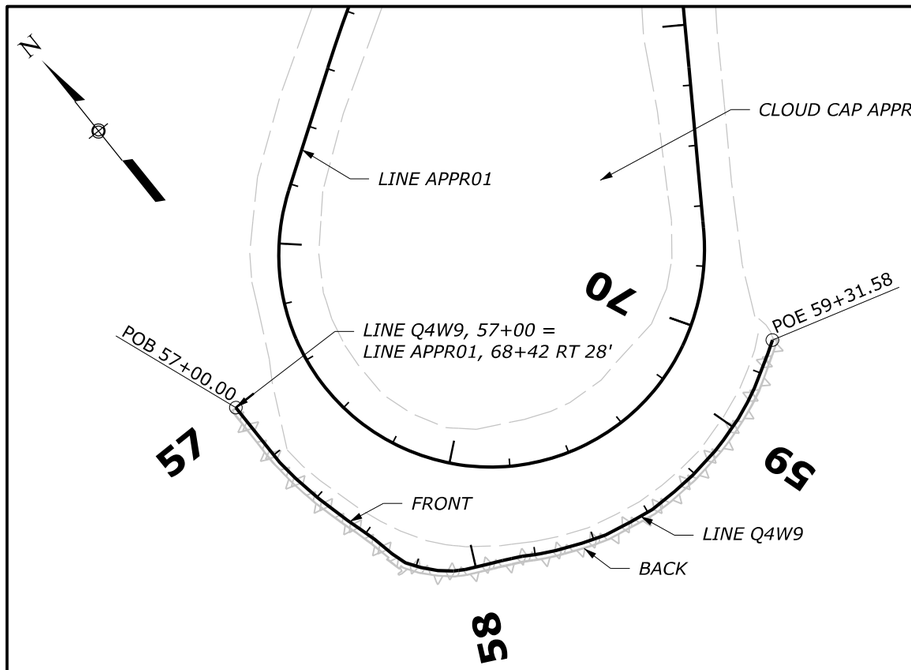
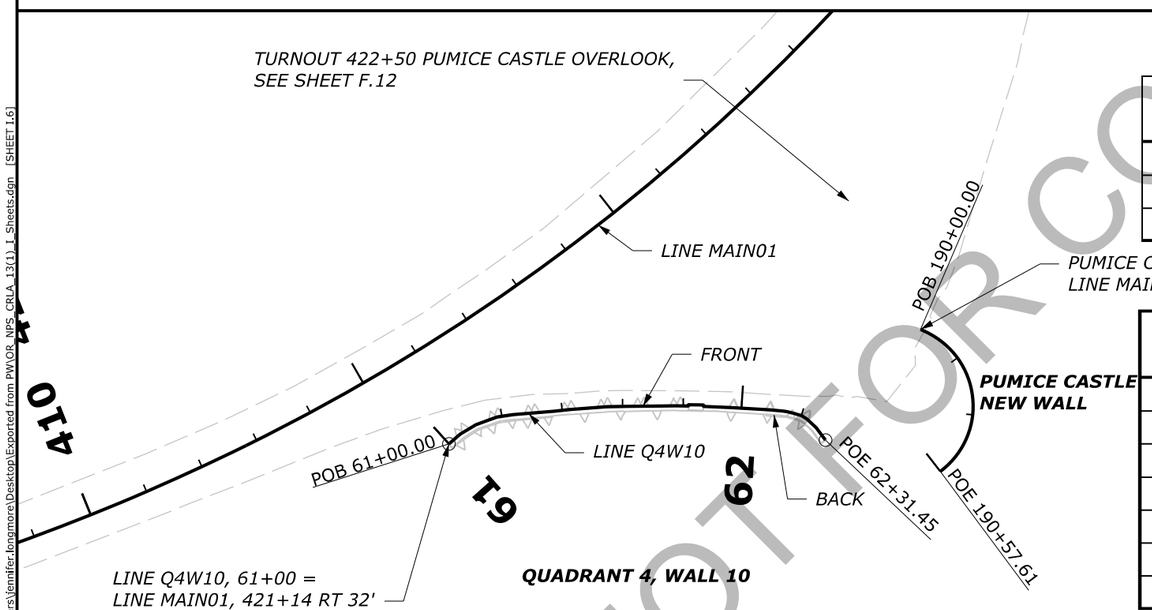
QUADRANT 4, WALL 8

STATE	PROJECT	SHEET NUMBER
OR	NPS CLRA 13(1)	I.6



QUADRANT 4, WALL 9

ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT 2' TO 6' HEIGHT)	58+00 TO 58+03	BACK	0.7	SQYD
TOTAL			**0.7**	**SQYD**
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	57+00 TO 59+32	BACK	476	SQFT
TOTAL			**476**	**SQFT**



PUMICE CASTLE NEW WALL

ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62010-1000, STONE MASONRY GUARDWALL	422+47 to 422+50	-	60	LNFT
TOTAL			**60**	**LNFT**

QUADRANT 4, WALL 10

ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT 2' TO 6' HEIGHT)	61+70 TO 61+71	BACK	0.1	SQYD
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT 2' TO 6' HEIGHT)	62+24 TO 62+32	BOTH	3.6	SQYD
TOTAL			**3.7**	**SQYD**
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	61+00 TO 62+32	BOTH	358	SQFT
TOTAL			**358**	**SQFT**

Note:
1. *See Sheet I.25 for underpinning repair locations.*

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QUADRANT 4, WALLS 9 & 10

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STATE	PROJECT	SHEET NUMBER
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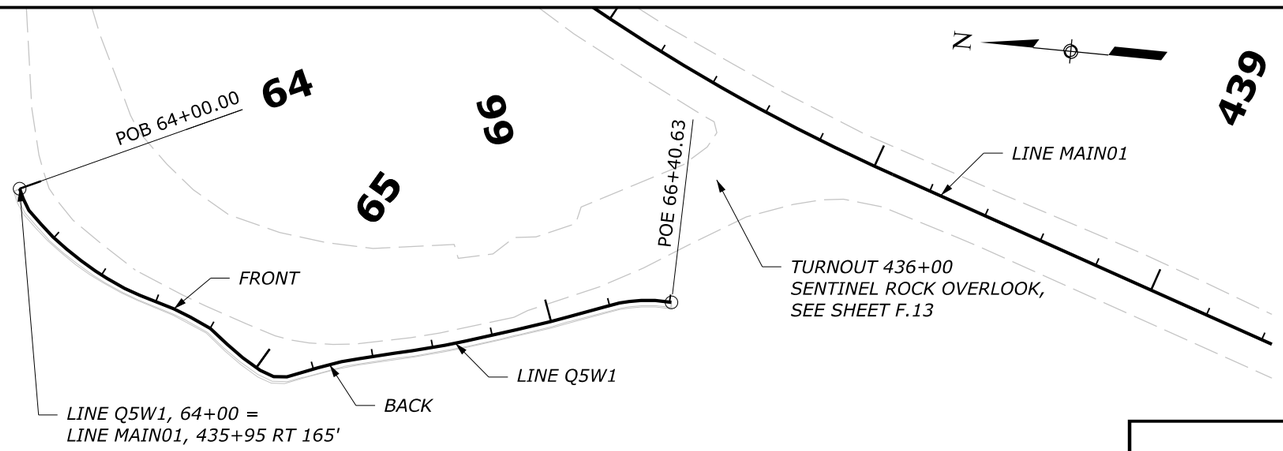
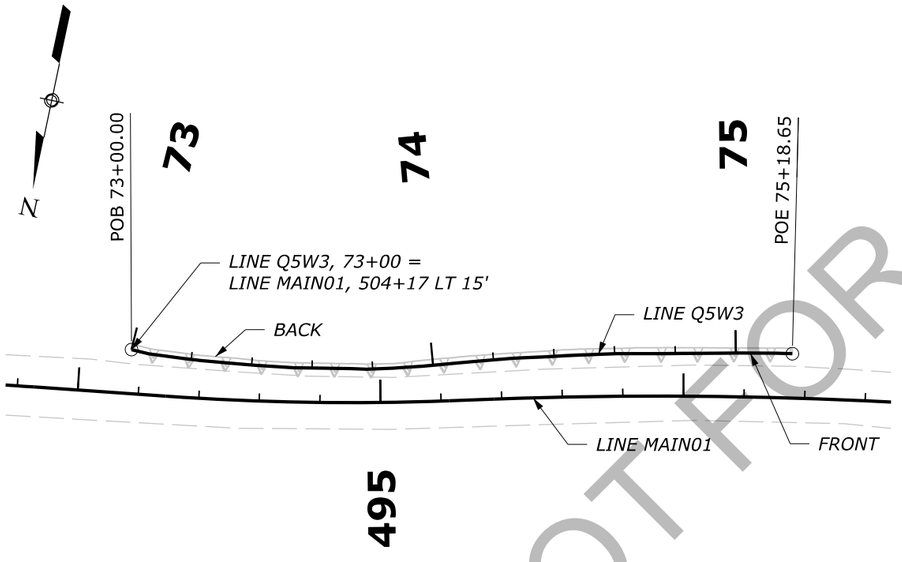


QUADRANT 5, WALL 1				
ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT 2' TO 6' HEIGHT)	64+85 TO 64+92	BOTH	28	SQFT
TOTAL			**28**	**SQFT**

QUADRANT 5, WALL 1

NOTE:
1. See Sheet I.25 for underpinning repair locations.



QUADRANT 5, WALL 3				
ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62031-0000, REPOINT STONE MASONRY (>6' HEIGHT)	73+00 TO 75+10	BACK	2589	SQFT
TOTAL			**2589**	**SQFT**
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	73+00 TO 75+19	BOTH	811	SQFT
TOTAL			**811**	**SQFT**

QUADRANT 5, WALL 3

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QUADRANT 5, WALLS 1 & 3

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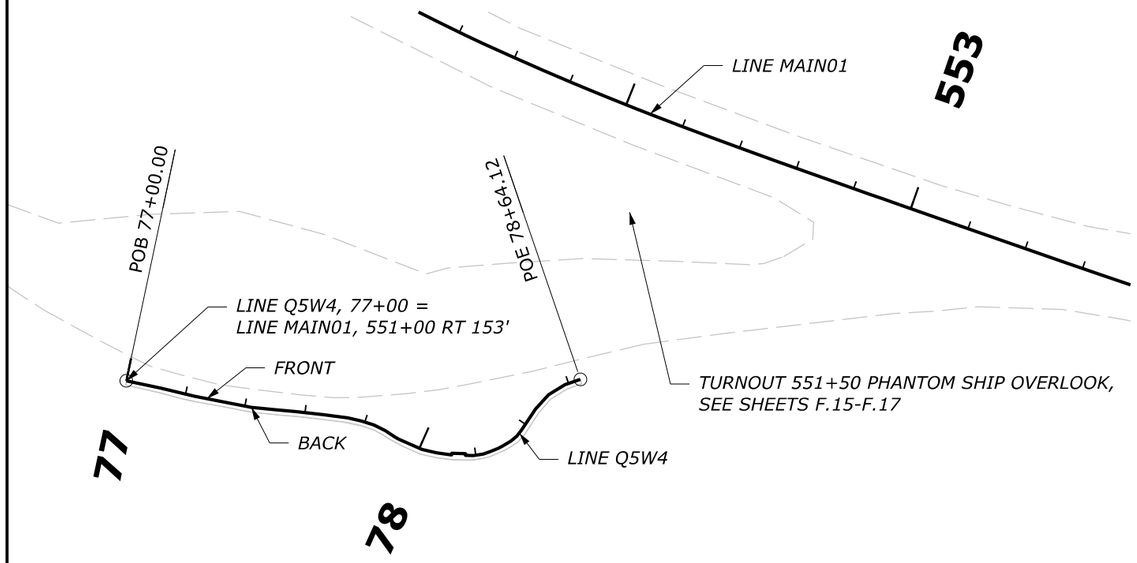
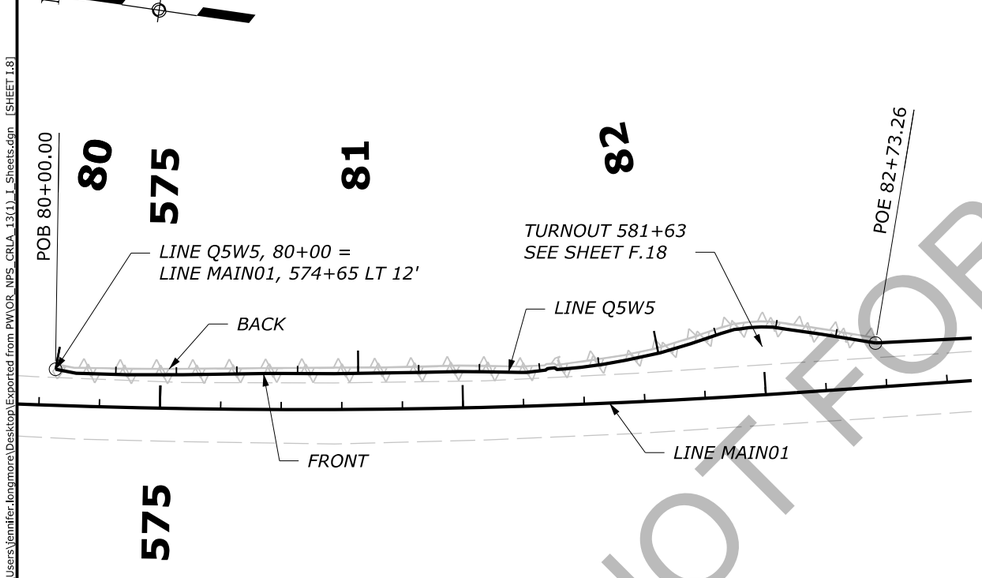
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	I.8



QUADRANT 5, WALL 4				
ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT 2' TO 6' HEIGHT)	78+10 TO 78+11	BACK	0.1	SQYD
TOTAL			**0.1**	**SQYD**
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	77+00 TO 78+65	BACK	521	SQFT
TOTAL			**521**	**SQFT**
62031-0000, REPOINT STONE MASONRY (>6' HEIGHT)	77+90 TO 78+65	BACK	272	SQFT
TOTAL			**272**	**SQFT**

QUADRANT 5, WALL 4



QUADRANT 5, WALL 5				
ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT >6' HEIGHT)	81+55 TO 81+75	BOTH	8.9	SQYD
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT >6' HEIGHT)	82+00 TO 82+10	BOTH	4.4	SQYD
TOTAL			**13.3**	**SQYD**
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT 2' TO 6' HEIGHT)	80+00 TO 80+02	BOTH	0.9	SQYD
TOTAL			**0.9**	**SQYD**
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	80+00 TO 82+74	BOTH	1091	SQFT
TOTAL			**1091**	**SQFT**

QUADRANT 5, WALL 5

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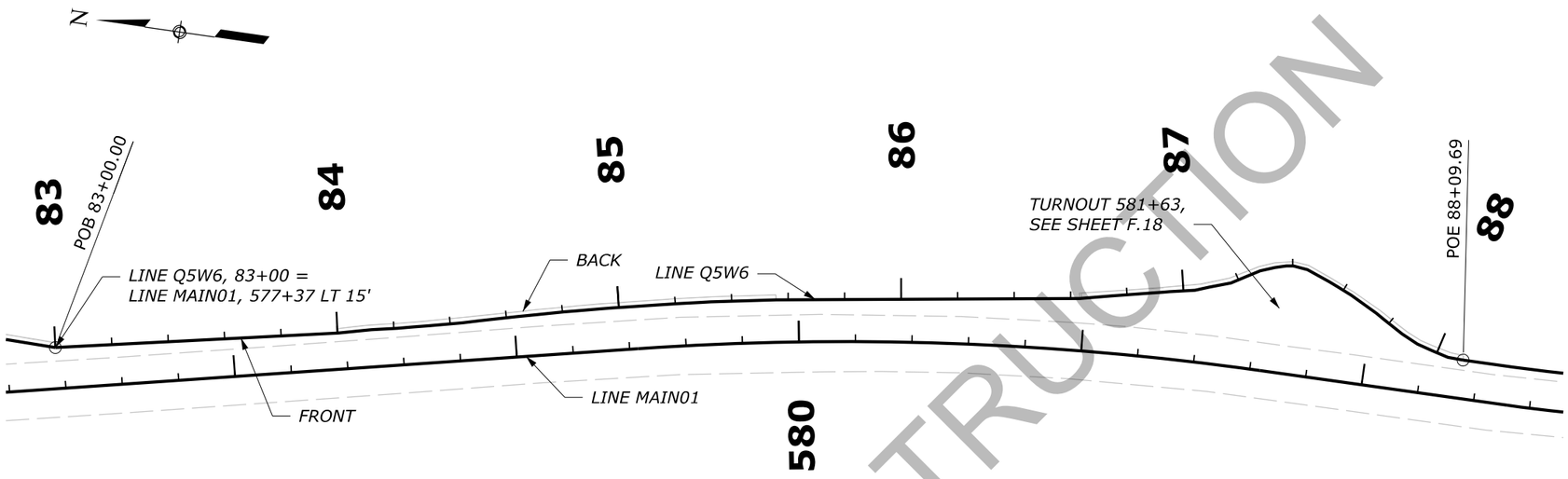
QUADRANT 5, WALLS 4 & 5

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	I.9



QUADRANT 5, WALL 6

ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT 2' TO 6' HEIGHT)	84+30 TO 84+40	FRONT	2.2	SQYD
TOTAL			**2.2**	**SQYD**
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT >6' HEIGHT)	86+60 TO 86+75	BOTH	6.7	SQYD
TOTAL			**6.7**	**SQYD**
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	83+90 TO 85+70	FRONT	288	SQFT
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	86+60 TO 88+10	FRONT	204	SQFT
TOTAL			**492**	**SQFT**
62031-0000, REPOINT STONE MASONRY (>6' HEIGHT)	83+90 TO 85+70	BACK	354	SQFT
62031-0000, REPOINT STONE MASONRY (>6' HEIGHT)	86+60 TO 88+10	BACK	450	SQFT
TOTAL			**804**	**SQFT**

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QUADRANT 5, WALL 6

Note:

1. *See Sheet I.25 for underpinning repair locations.*

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STATE	PROJECT	SHEET NUMBER
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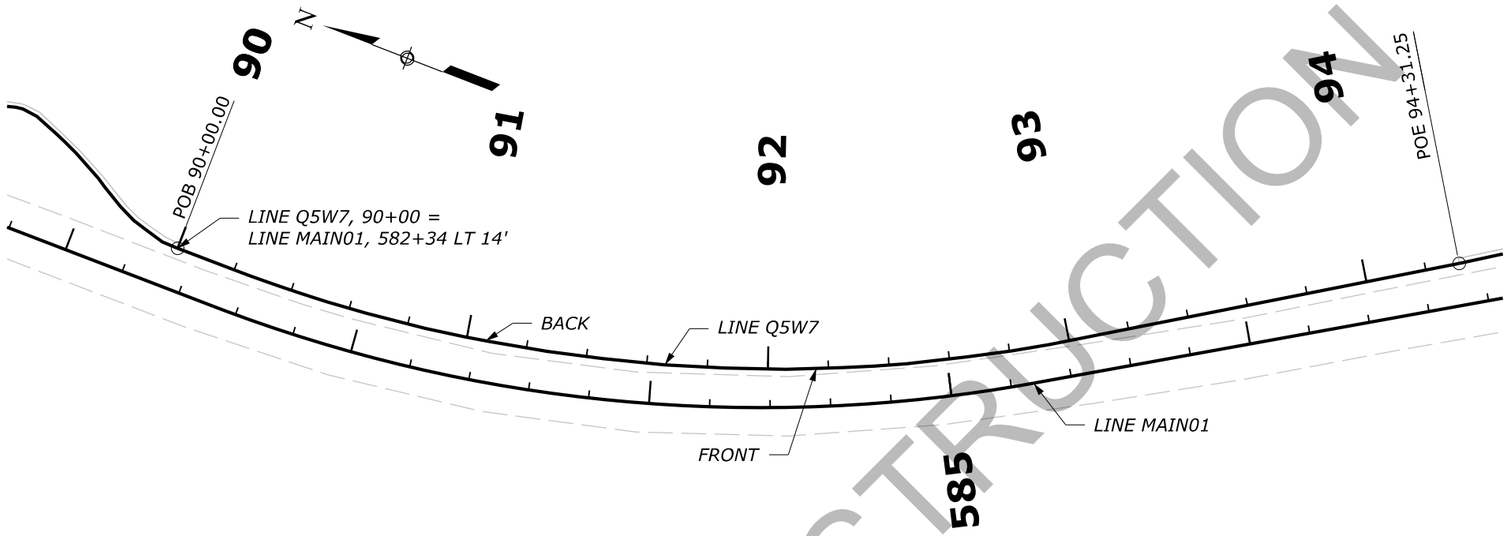

QUADRANT 5, WALL 7				
ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT >6' HEIGHT)	92+60 TO 92+70	BACK	3.3	SQYD
TOTAL			**3.3**	**SQYD**
62031-0000, REPOINT STONE MASONRY (>6' HEIGHT)	91+50 TO 92+70	BACK	1740	SQFT
TOTAL			**1740**	**SQFT**
62010-1000, STONE MASONRY GUARDWALL	90+00 TO 93+90	-	390	LNFT
TOTAL			**390**	**LNFT**

QUADRANT 5, WALL 7

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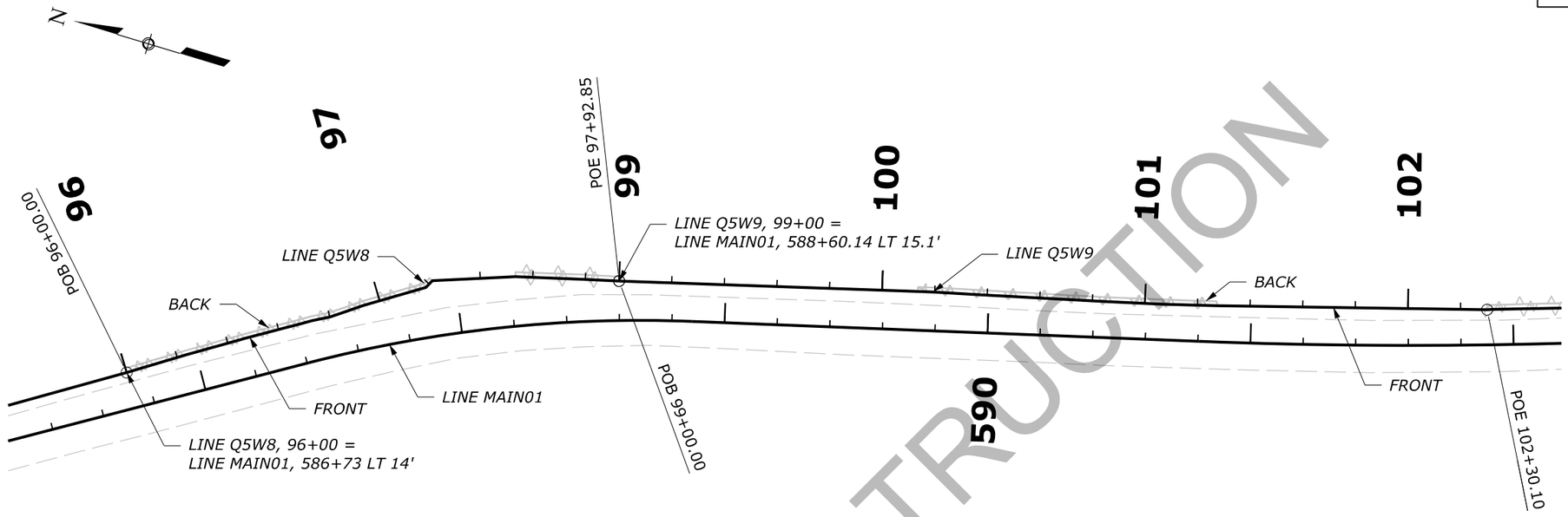
QUADRANT 5, WALL 7

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	I.11



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QUADRANT 5, WALL 8

ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT 2' TO 6' HEIGHT)	97+12 TO 97+92	BOTH	35.6	SQYD
TOTAL			**35.6**	**SQYD**
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	96+00 TO 97+93	FRONT	272	SQFT
TOTAL			**272**	**SQFT**
62031-0000, REPOINT STONE MASONRY (>6' HEIGHT)	96+00 TO 97+93	BACK	285	SQFT
TOTAL			**285**	**SQFT**
62010-1000, STONE MASONRY GUARDWALL	96+00 to 96+36	-	36	LNFT
62010-1000, STONE MASONRY GUARDWALL	98+10 to 98+40	-	30	LNFT
TOTAL			**66**	**LNFT**

QUADRANT 5, WALL 9

ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62010-1000, STONE MASONRY GUARDWALL	99+00 TO 100+18	-	118	LNFT
62010-1000, STONE MASONRY GUARDWALL	101+30 TO 102+30	-	100	LNFT
TOTAL			**218**	**LNFT**
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	99+90 TO 101+40	BOTH	438	SQFT
TOTAL			**438**	**SQFT**
62031-0000, REPOINT STONE MASONRY (>6' HEIGHT)	99+00 TO 101+10	BACK	5046	SQFT
TOTAL			**5046**	**SQFT**

QUADRANT 5, WALLS 8 & 9

QUADRANT 5, WALLS 8 & 9

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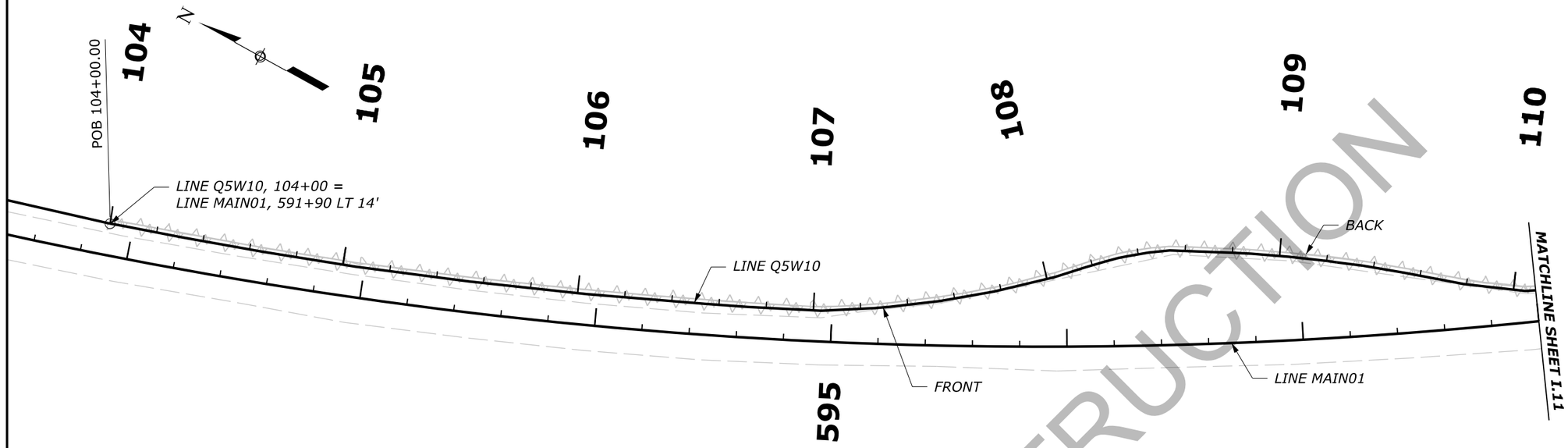
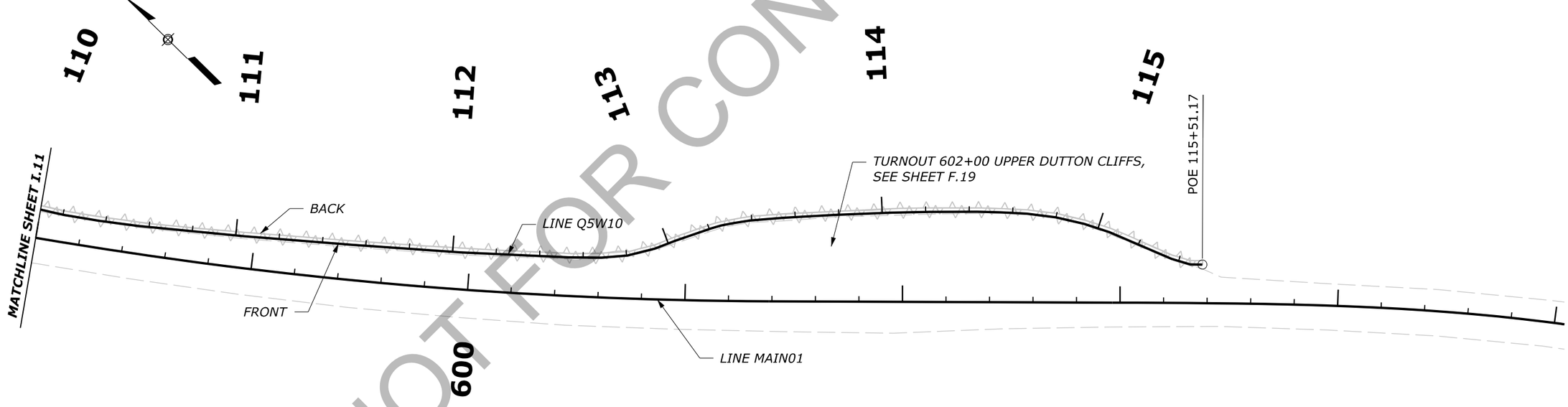
NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	I.12



QUADRANT 5, WALL 10



QUADRANT 5, WALL 10

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QUADRANT 5, WALL 10

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	I.13

QUADRANT 5, WALL 10				
ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT >6' HEIGHT)	104+15 TO 104+30	BOTH	6.7	SQYD
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT >6' HEIGHT)	104+48 TO 104+56	BOTH	3.6	SQYD
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT >6' HEIGHT)	104+61 TO 104+65	BOTH	1.8	SQYD
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT >6' HEIGHT)	104+90 TO 105+15	BOTH	11.1	SQYD
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT >6' HEIGHT)	105+35 TO 105+45	BOTH	6.7	SQYD
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT >6' HEIGHT)	106+95 TO 107+05	BOTH	4.4	SQYD
62013-2000, STONE MASONRY WALL (REPAIR AND REPOINT >6' HEIGHT)	110+45 TO 110+53	BOTH	3.6	SQYD
TOTAL			**37.9**	**SQYD**
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	104+00 TO 115+52	FRONT	1791	SQFT
TOTAL			**1791**	**SQFT**
62031-0000, REPOINT STONE MASONRY (>6' HEIGHT)	104+00 TO 115+52	BACK	2058	SQFT
TOTAL			**2058**	**SQFT**

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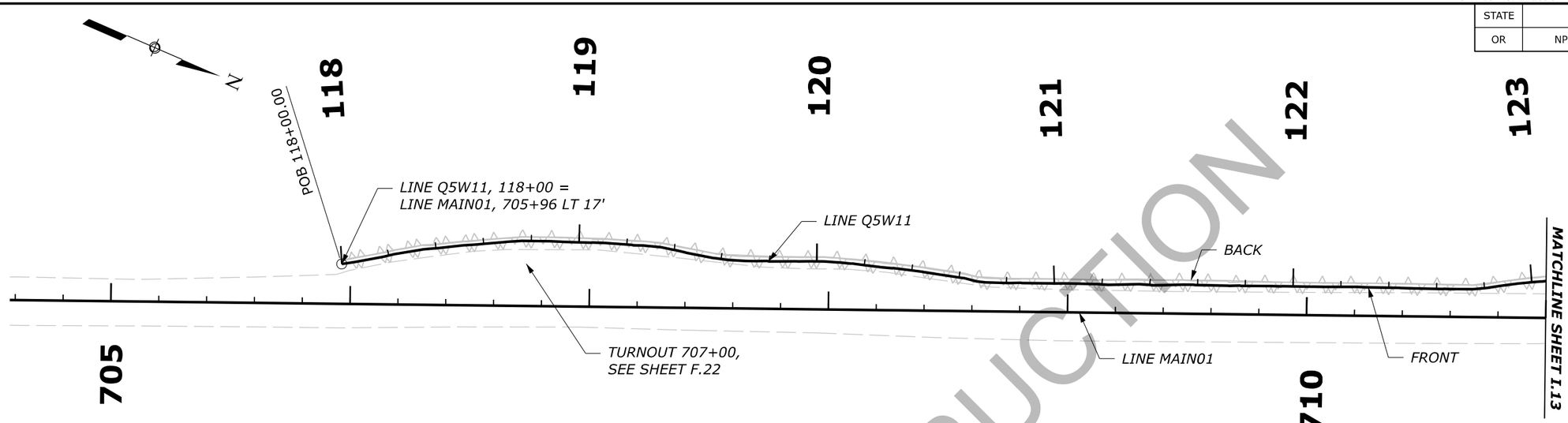
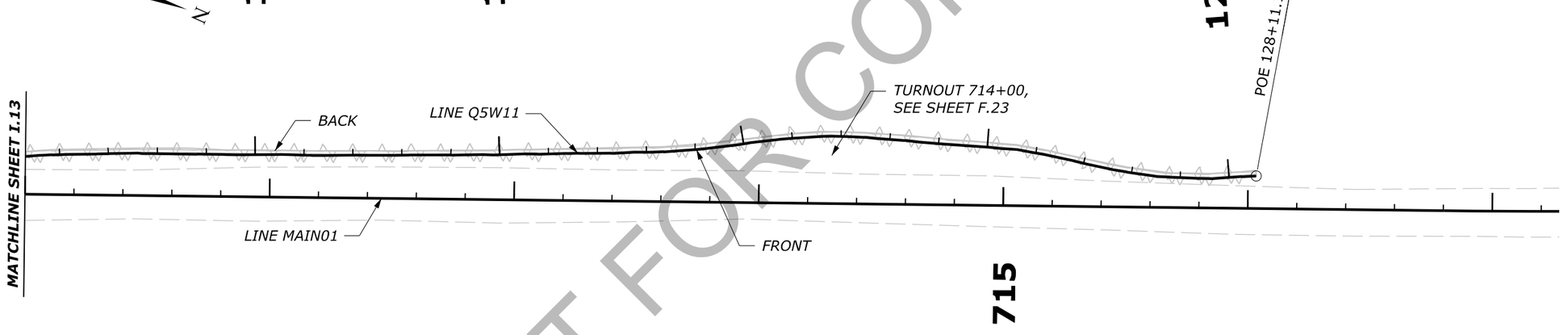
QUADRANT 5, SHEET 10

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	I.14



QUADRANT 5, WALL 11



QUADRANT 5, WALL 11

Note:

1. *See Sheet I.25 for underpinning repair locations.*

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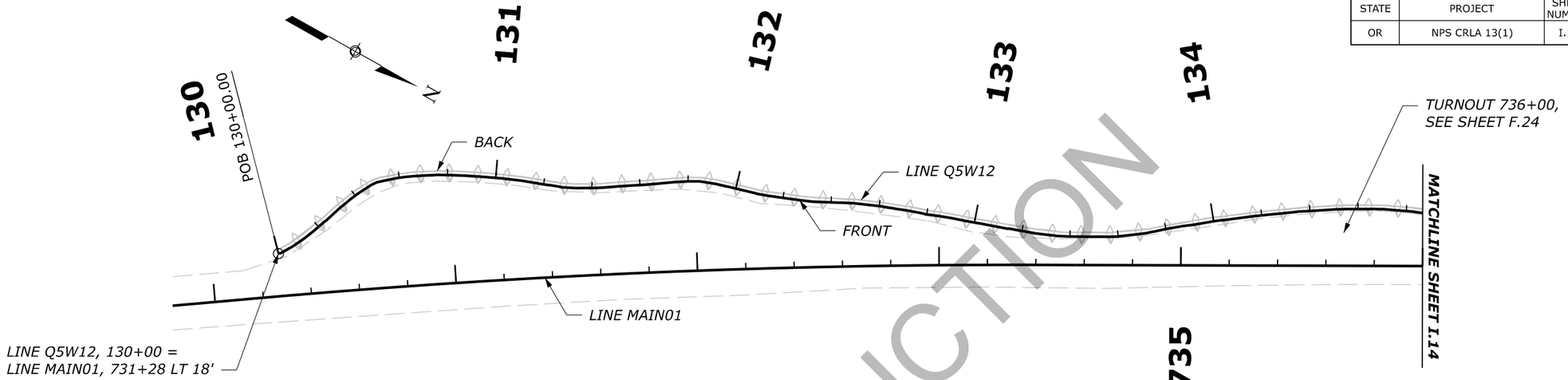
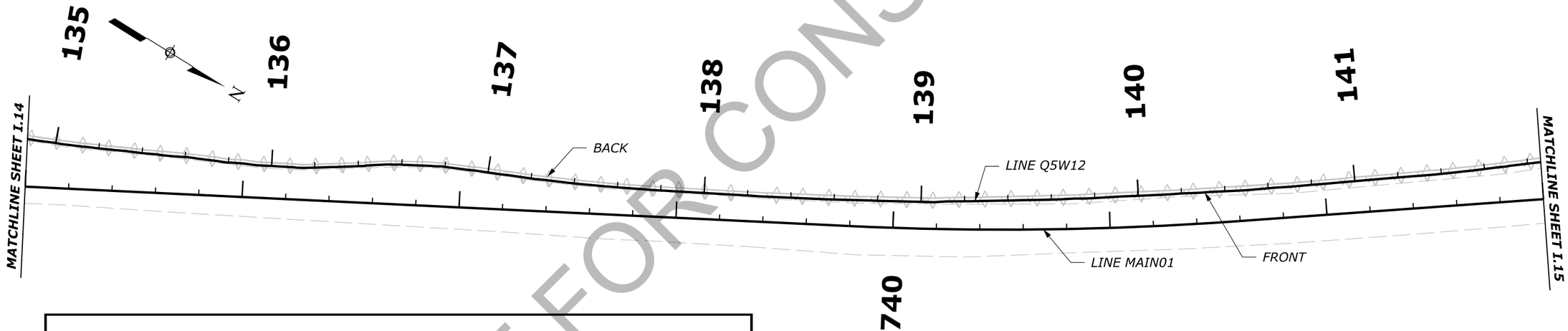
QUADRANT 5, WALL 11

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	I.15



QUADRANT 5, WALL 12



QUADRANT 5, WALL 12				
ITEM	LOCATION	SIDE(S)	QTY.	UNITS
62031-0000, REPOINT STONE MASONRY (2' TO 6' HEIGHT)	130+00 TO 153+10	FRONT	3569	SQFT
TOTAL			**3569**	**SQFT**

QUADRANT 5, WALL 12

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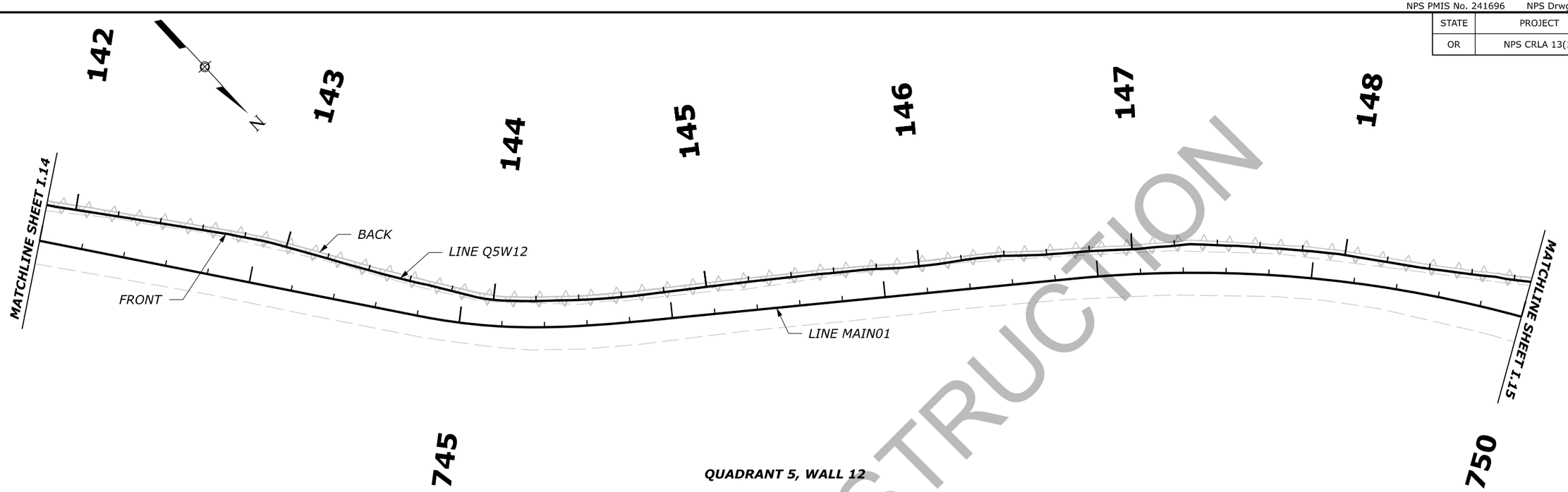
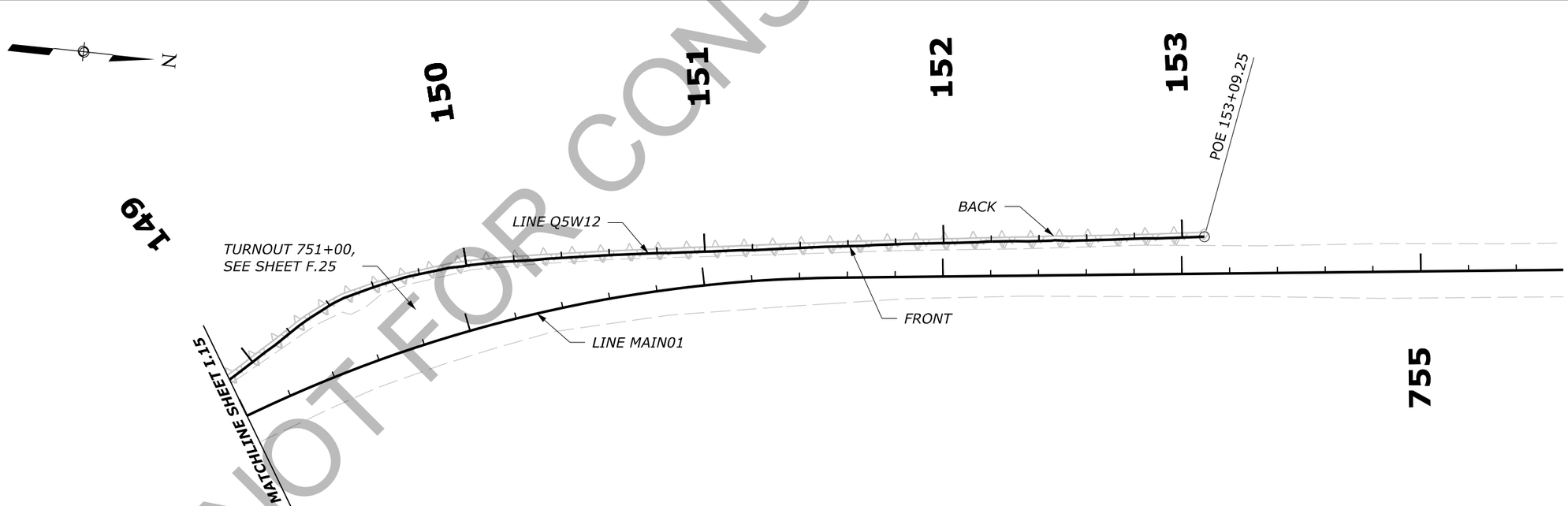
QUADRANT 5, WALL 12

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	I.16



QUADRANT 5, WALL 12



QUADRANT 5, WALL 12

NOT FOR CONSTRUCTION

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24 March 2021 1:26 PM

QUADRANT 5, WALL 12

STATE	PROJECT	SHEET NUMBER
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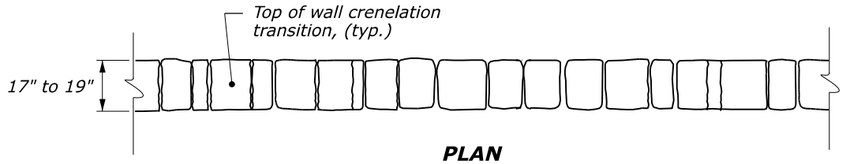
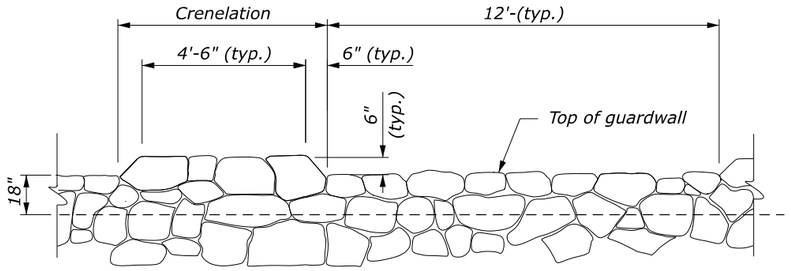
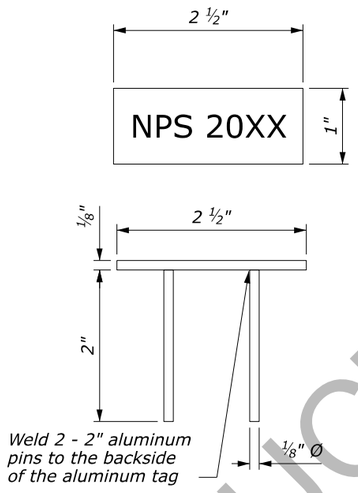


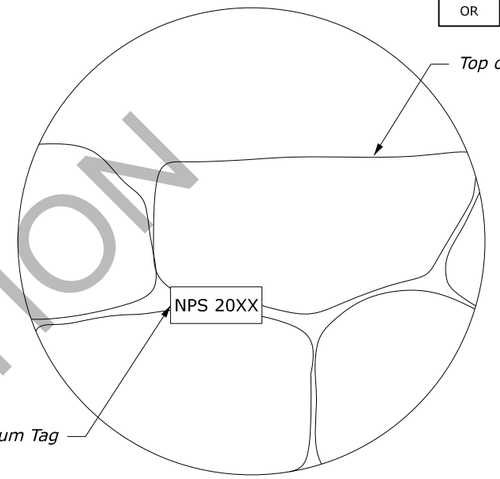
PLAN



ELEVATION

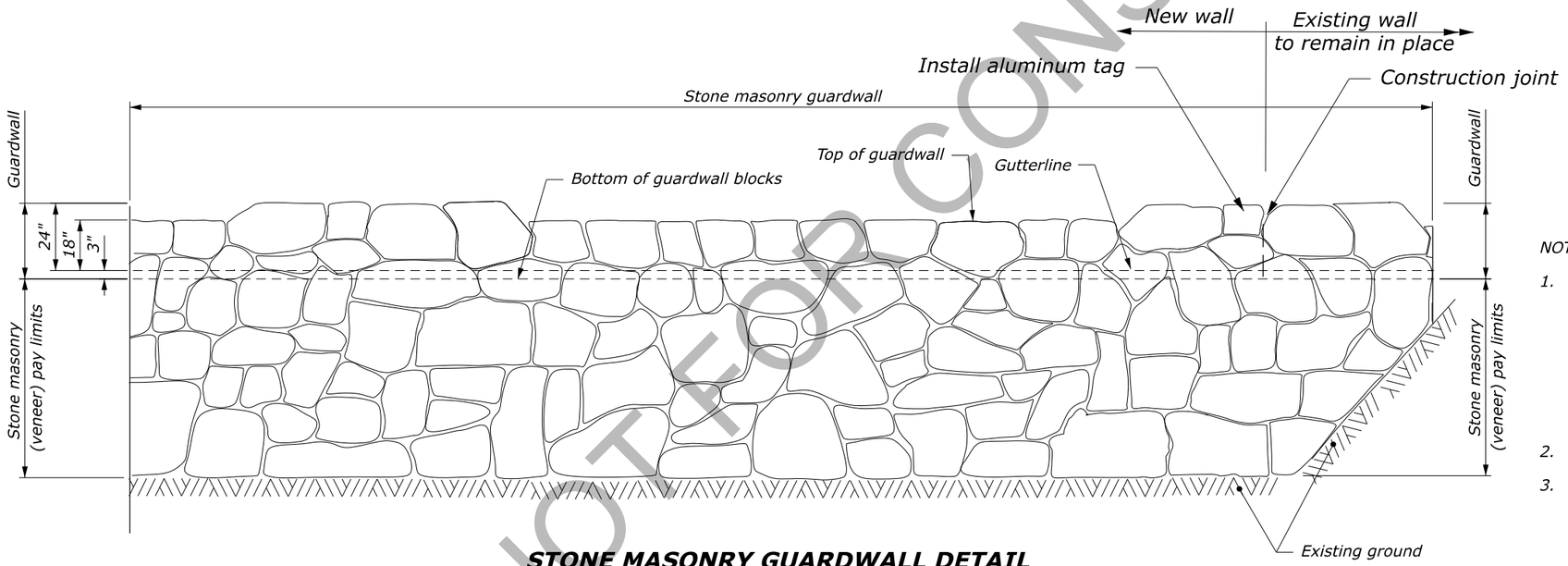


ALUMINUM TAG



GUARDWALL BACKSIDE ELEVATION VIEW

ALUMINUM TAG DETAIL



STONE MASONRY GUARDWALL DETAIL

ELEVATION VIEW *NO SCALE*

NOTES:

1. *General shape and character requirements of stone:*
   - Shapes are angular (square or rectangular). Edges are sharp. Corners where the bed and joint lines meet may have a maximum 1½-inch radius.
   - Generally uniform thickness. Do not use round cobbly shapes.
   - Do not use stones that have indentations greater than 2 inches at deepest point on any face.
   - All stones exposed on top of wall must be full depth of wall (unless it is veneer).
2. *Stone pattern shown is subject to the requirements of Section 620.*
3. *Create irregular joint where new or reset stone masonry joins existing wall. When removing existing stone masonry wall, remove whole stones only, creating an irregular seam. Do not cut existing stones.*

NOT FOR CONSTRUCTION

STONE MASONRY GUARDWALL DETAILS

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30 March 2021 11:23 AM

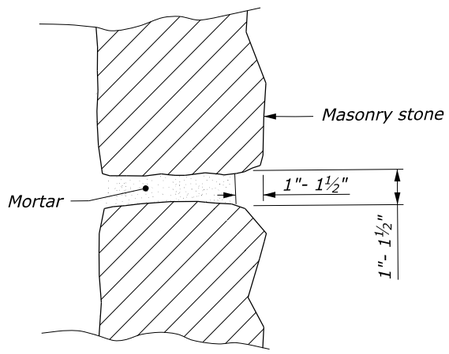
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	I.18

GENERAL NOTES:

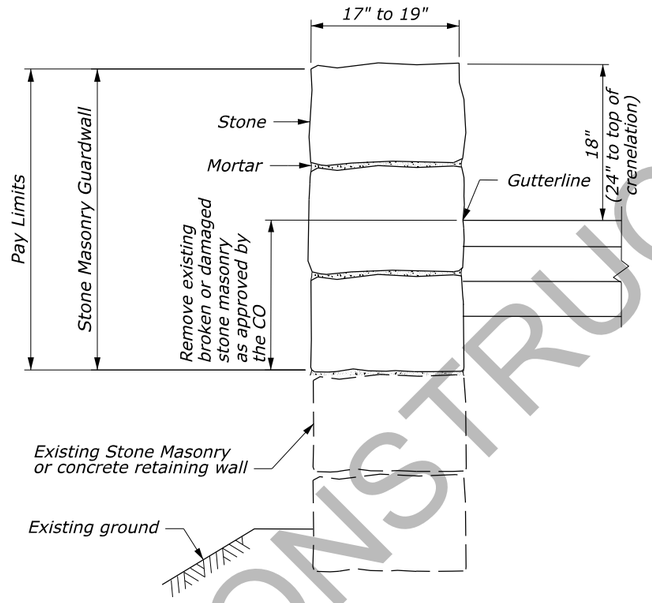
SPECIFICATIONS:

DESIGN: AASHTO LRFD Bridge Design Specifications, Customary U.S. Units 5th, Edition 2010.

CONSTRUCTION: Federal Highway Administration Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-14 (U.S. Customary).

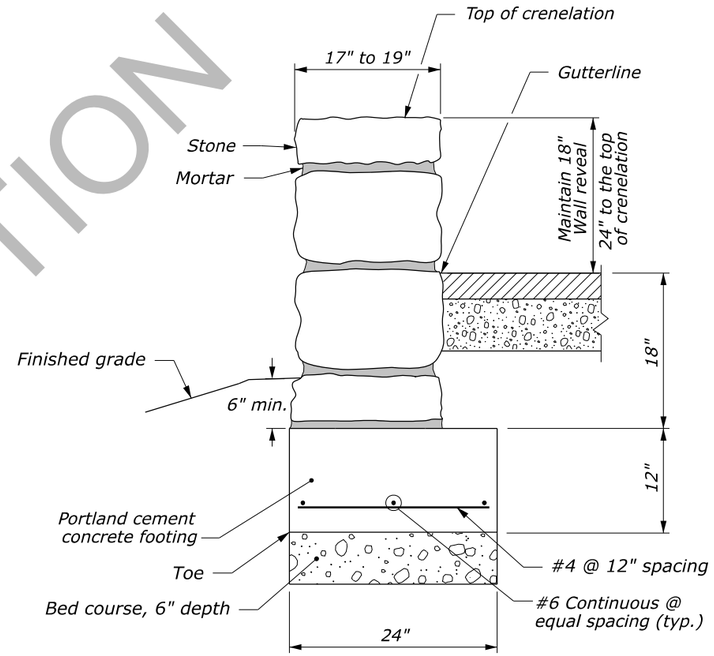


MORTAR JOINT DETAIL



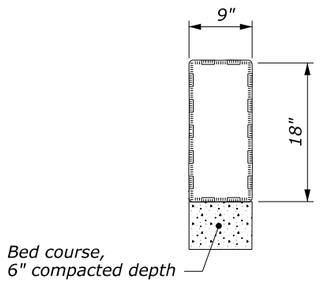
STONE MASONRY GUARDWALL DETAIL

Quadrant 4 Wall 3
Quadrant 5 Wall 7
Quadrant 5 Wall 8
Quadrant 5 Wall 9

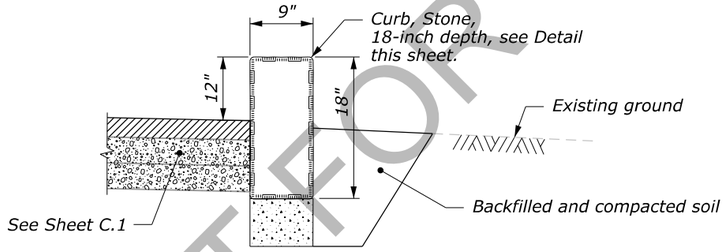


ASHLAR GUARDWALL ON CONCRETE FOOTING (STONE MASONRY GUARDWALL)

Turnout 104+50, Palisades Point New Wall
Turnout 422+50, Pumice Castle New Wall



CURB, STONE, TYPE 1, 18-INCH DEPTH DETAIL



CURB, STONE, TYPE 1, 18-INCH DEPTH

Turnout 348+00, Mt. Scott Trailhead
Turnout 422+50, Pumice Castle Overlook
Turnout 551+50, Phantom Ship Overlook
Turnout 686+00, Dutton Ridge Road Summit
Turnout 762+00, Sun Notch

NOTES:

1. *Indivdual walls have independent stationing, see corresponding sheet for wall repair and installation locations.*
2. *Construct Stone Masonry according to Section 620.*
3. *Extend rubble masonry underpinning to the face of existing wall and position the flat surface of each stone to match the vertical face of the existing wall.*
4. *Underpinning quantities are included in the Tabulation of Wall Repairs, see Sheet I.1*
5. *See sheet I.1 for stone masonry guardwall locations.*
6. *See sheets F.1-F.2 for stone masonry curb locations.*

NOT FOR CONSTRUCTION

STONE MASONRY GUARDWALL DETAILS

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2 April 2021 12:08 PM

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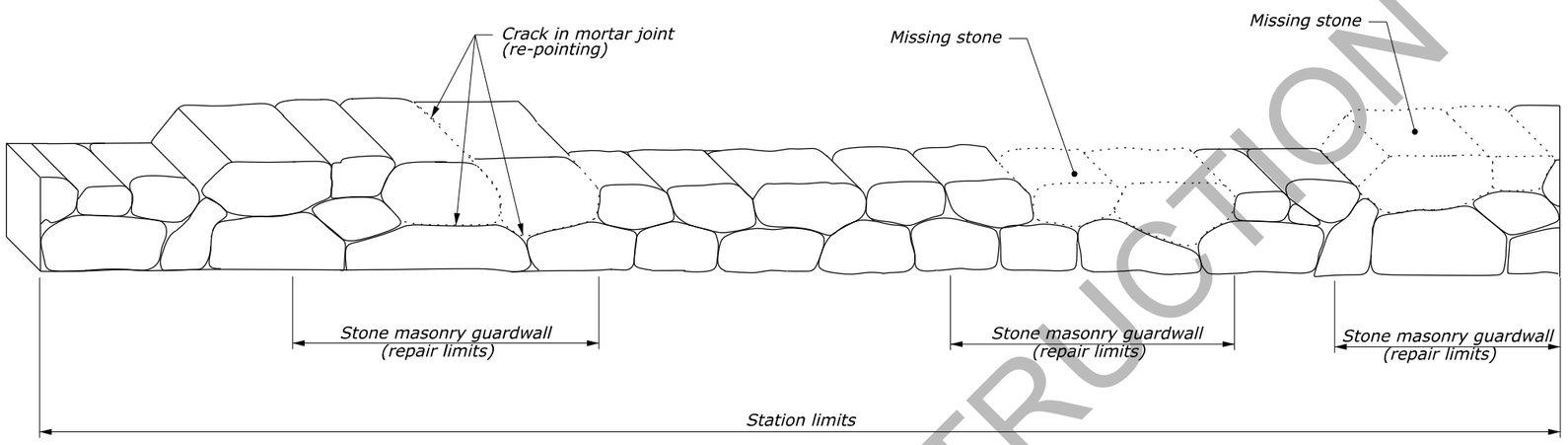

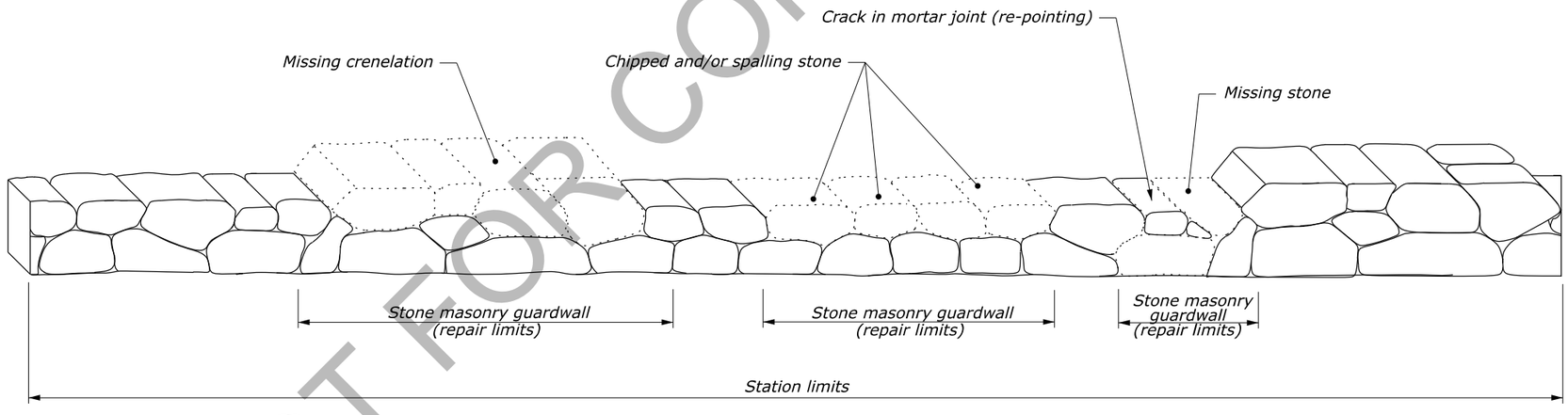

NO SCALE

EXISTING STONE MASONRY GUARDWALL

NOT FOR CONSTRUCTION

STONE MASONRY EXISTING GUARDWALL REPAIR SCHEMATIC

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30 March 2021 11:23 AM

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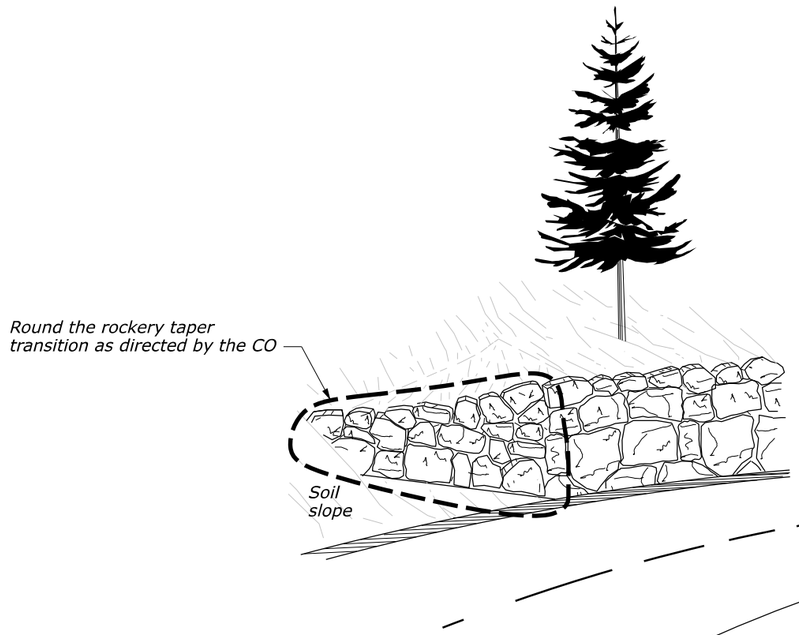
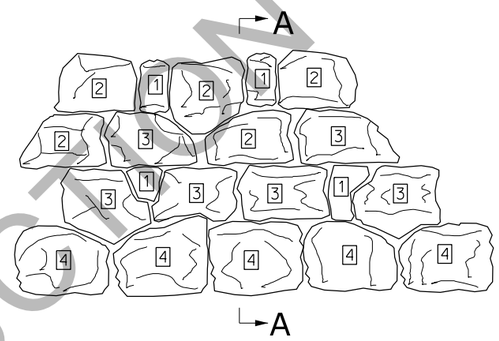
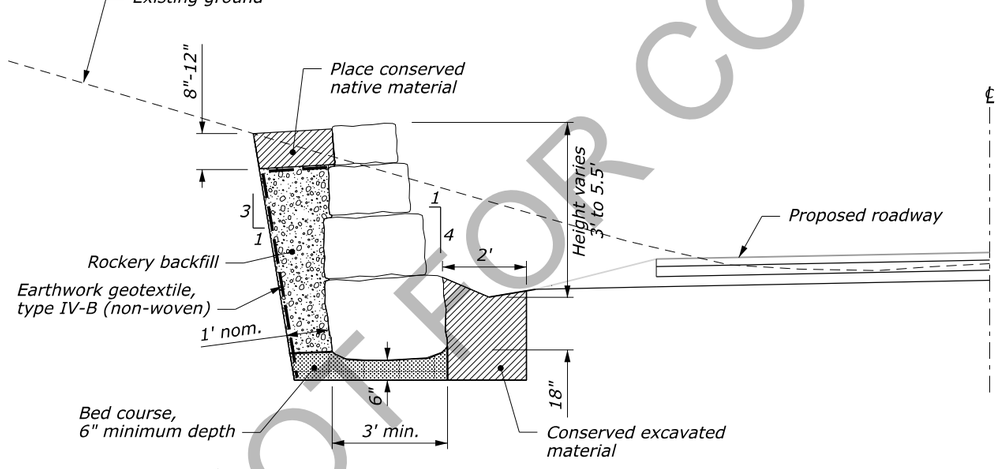


ROCKERY TAPER DETAIL



CONSTRUCTION DETAIL

Stone class	Stone mass	Average longest dimension
1	42 to 140 lbs	12" - 18"
2	140 to 525 lbs	18" - 28"
3	525 to 1025 lbs	28" - 35"
4	1025 to 2500 lbs	35" - 47"



SECTION A-A *NO SCALE*

NOTE:

1. *Place larger stones (class 2-4) with longest axis perpendicular to wall.*
2. *Bear each larger stone (class 2-4) firmly on at least two stones beneath it. Use smaller stones as needed to maintain spacing and eliminate gaps over 4-inches.*
3. *See Section 252 for additional requirements.*

NOT FOR CONSTRUCTION

ROCKERY WALL DETAILS

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30 March 2021 11:23 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	I.21

NOT FOR CONSTRUCTION

NOTE:

1. Stone pattern shown is representative.
2. Use stone of similar size, color and character as adjacent historic guardwall.

FOOTNOTE:

[1] Mortared random rubble footing is assumed. Contractor to verify existing footing type.

NO SCALE

QUADRANT 4 WALL 1 EXTENSION

SHEET 1 of 2

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30 March 2021 1:24 PM

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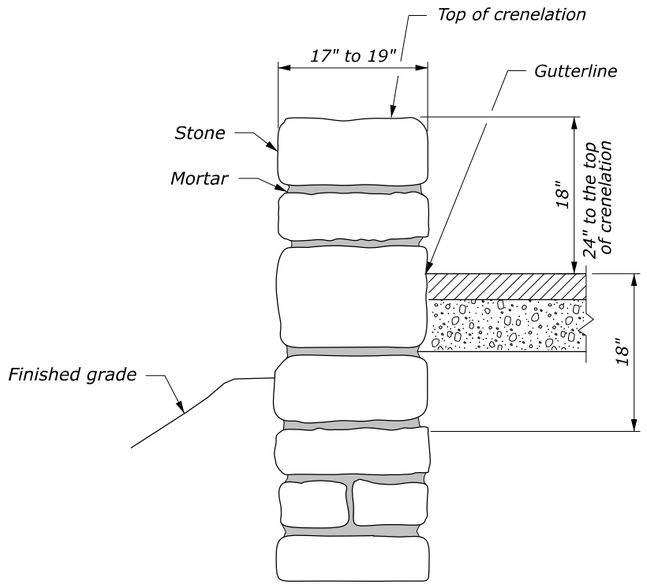
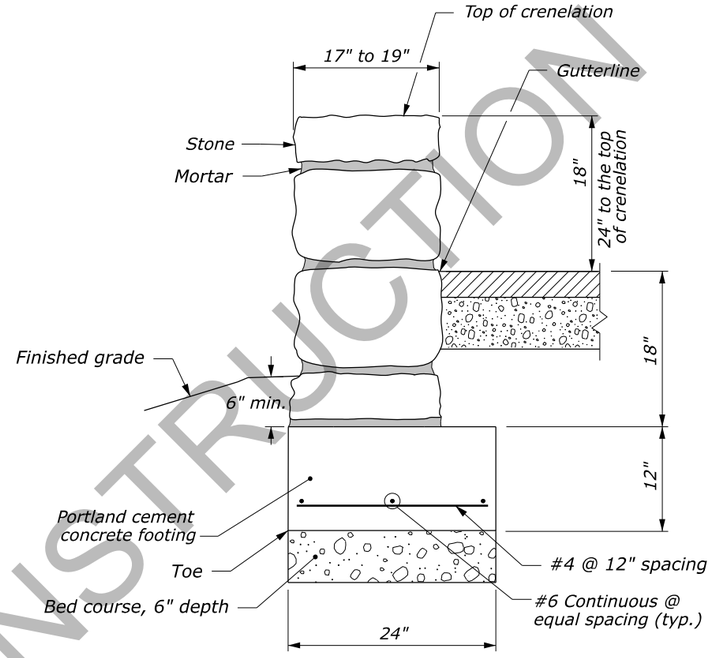


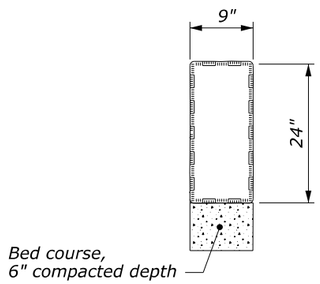
EXISTING STONE MASONRY GUARDWALL ON MORTARED RANDOM RUBBLE FOOTING

SECTION A-A

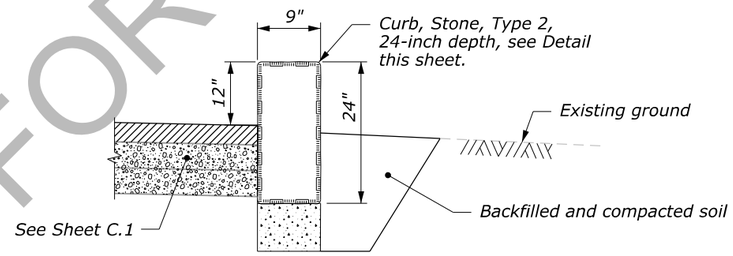


ASHLAR GUARDWALL ON CONCRETE FOOTING (STONE MASONRY GUARDWALL)

SECTION B-B



CURB, STONE, TYPE 2, 24-INCH DEPTH DETAIL



CURB, STONE, TYPE 2, 24-INCH DEPTH

See Turnout 86+00 Palisades Overlook for location

NOTE:

1. *Minimum splice length of 12-inches for all horizontal bars.*
2. *Maintain 12-inches of stone curb reveal*

NOT FOR CONSTRUCTION

NO SCALE

QUADRANT 4 WALL 1 EXTENSION

SHEET 2 of 2

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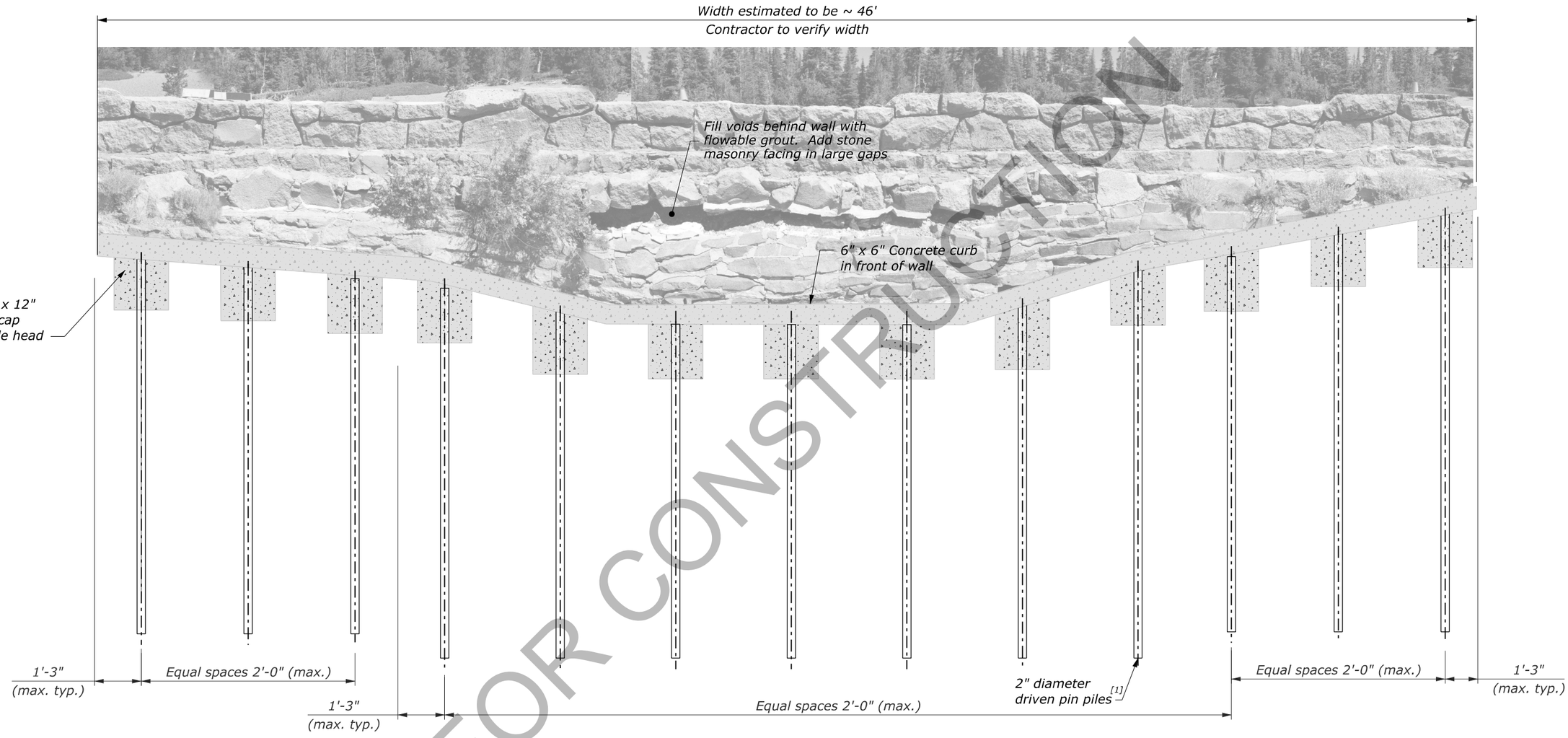
13 April 2021 12:40 PM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	I.23



WALL REPAIR ELEVATION

NOTE:

1. Steel pin piles shall be 2.375-inch O.D. with 0.218-inch Schedule 80 wall thickness with a nominal axial compressive resistance of 2 tons. Conform to ASTM A53 Grade A with hot-dip galvanization.

2. Concrete backfill (min.) compressive strength shall be 4000 psi.

FOOTNOTE:

[1] Drive piles to refusal criteria. Estimated length 20'-0" (min. 6'-0").

NOT FOR CONSTRUCTION

NO SCALE

QUADRANT 4 WALL 2
STONE MASONRY (UNDERPINNING WITH MICROPILES)

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30 March 2021 1:35 PM

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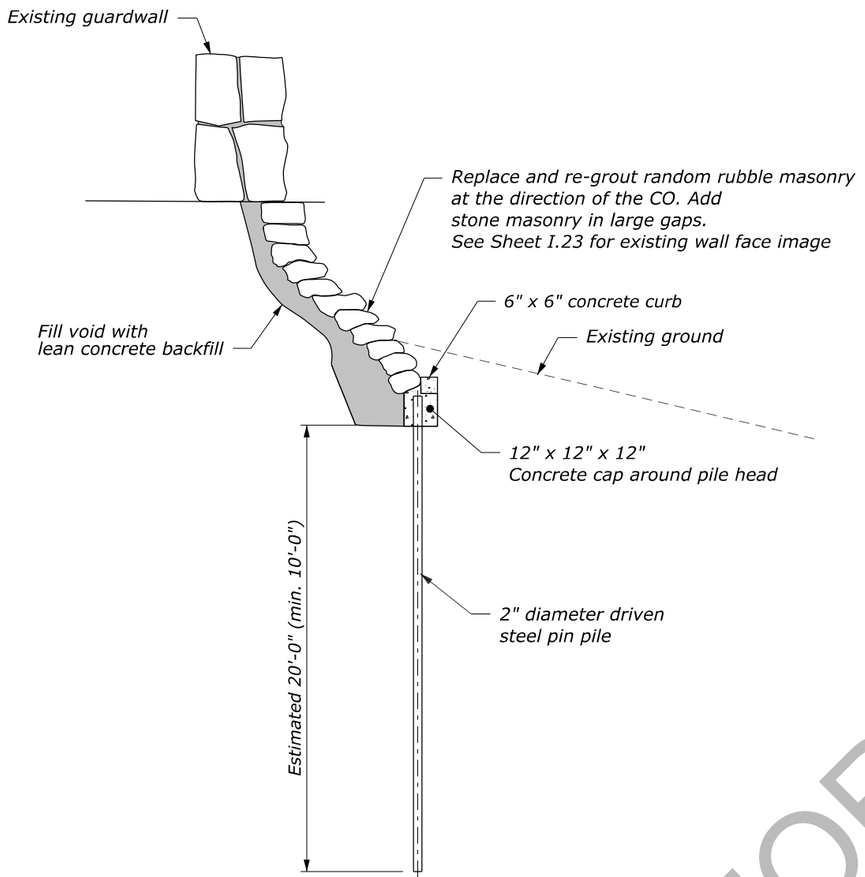
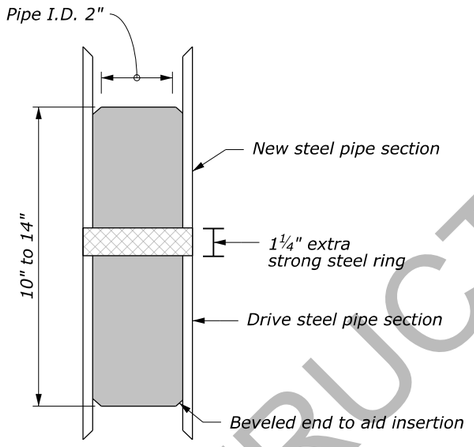
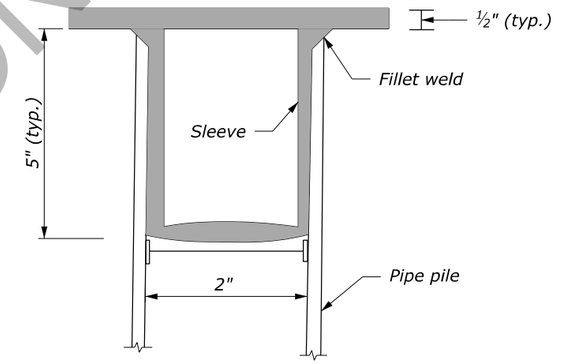


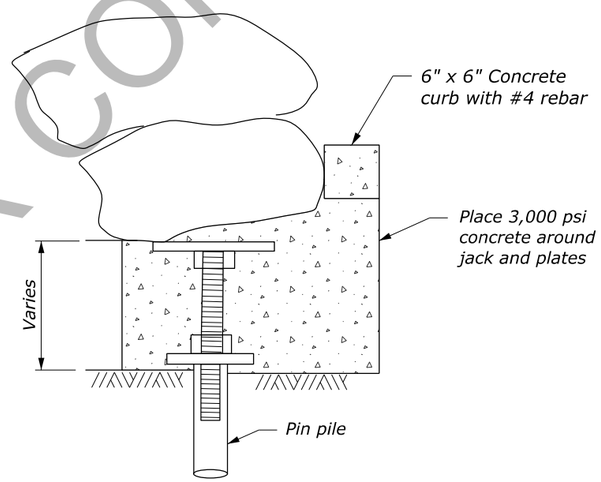
WALL REPAIR SECTION



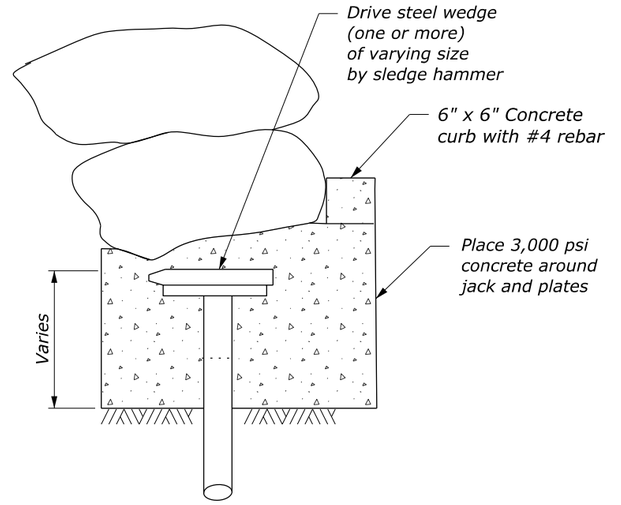
COUPLER DETAIL



TOP PLATE DETAIL



SCREWJACK CONNECTION DETAIL



STEEL WEDGE CONNECTION DETAIL

NO SCALE

NOT FOR CONSTRUCTION

QUADRANT 4 WALL 2
STONE MASONRY (UNDERPINNING WITH MICROPILES)

SHEET 2 of 2

2 April 2021 12:11 PM C:\Users\jennifer.longmore\Desktop\Exported from PW\or-1301_wall-2.dgn [Historical Details]

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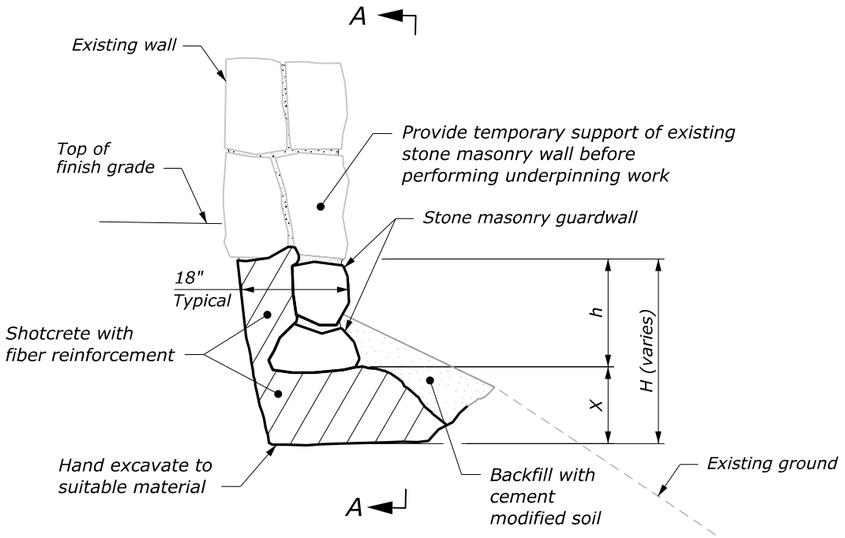
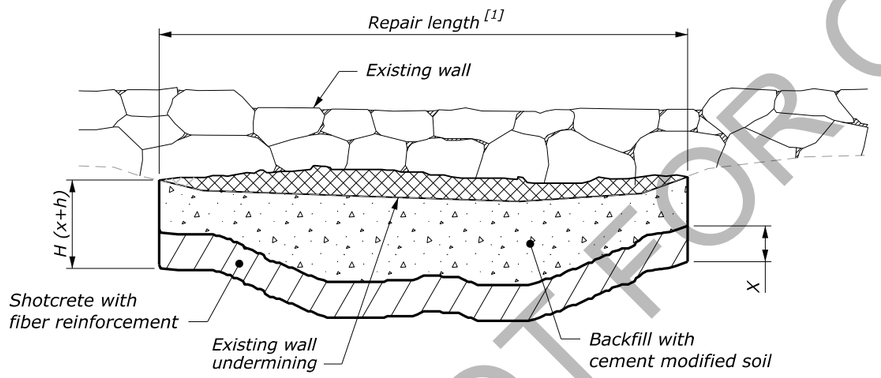
OR	NPS CRLA 13(1)	I.25



REINFORCED SHOTCRETE (GUARDWALL UNDERPINNING) DETAIL



SECTION A-A

ITEM 56604-0000
REINFORCED SHOTCRETE
(GUARDWALL UNDERPINNING)

BEGINNING WALL STATION	ENDING WALL STATION	RT/LT	LENGTH (FT)	h [2] (INCHES)	x [2] (INCHES)	Assumed width (INCHES)	QUANTITY (CUYD)
QUANDRANT 4, WALL 1 - 17+00 to 19+79.49							
19+05	19+25		20	12	6	18	1.67
17+06	17+26		20	12	6	18	1.67
QUANDRANT 4, WALL 2 - 19+00to 22+55.97							
19+90	20+05		15	12	6	18	1.25
21+15	21+46		31	24	12	18	5.17
22+10	22+40		30	18	10	18	3.89
22+40	22+52		12	12	6	18	1.00
QUANDRANT 4, WALL 7 - 35+00 to 40+48.49							
36+62	36+72		10	36	8	18	2.04
QUANDRANT 4, WALL 8 - 50+00 to 55+53.18							
50+60	50+70		10	18	8	18	1.20
21+20	51+35		15	18	8	18	1.81
QUANDRANT 4, WALL 9 - 57+00 to 59+31.58							
57+95	58+05		10	9	6	18	0.69
QUANDRANT 4, WALL 10 - 61+00 to 62+31.45							
61+80	61+90		10	9	6	18	0.69
QUANDRANT 5, WALL 6 - 83+00 to 88+09.69							
87+05	87+15		10	12	8	18	0.93
87+90	88+00		10	12	8	18	0.93
QUANDRANT 5, WALL 11 - 118+00 to 128.11.11							
120+50	120+65		15	8	6	18	0.97
						TOTAL	**24**

NOTE:

1. Indivdual walls have independent stationing.
2. Perform shotcrete (underpinning) according to Section 566.
3. Underpinning quantities are included in the Tabulation of Underpinning Quantities. See Sheet I.1.

FOOTNOTE:

[1] Perform shotcrete (underpinning) work in segments not exceeding 10-feet maximum. Shorter segments may be necessary for maintaining wall stability. Do not start work on the next segment until the shotcrete placed on the prior segment has cured for a minimum of 24 hours.

[2] x and h are approximate minimum values.

NOT FOR CONSTRUCTION

GUARDWALL UNDERPINNING DETAILS

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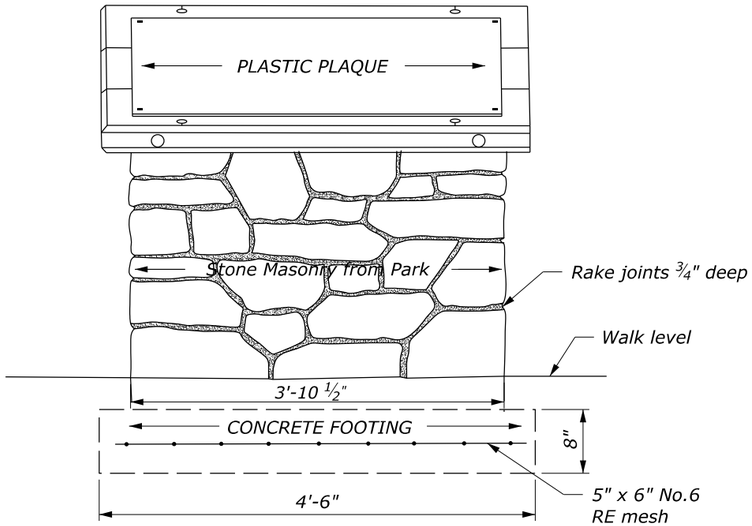
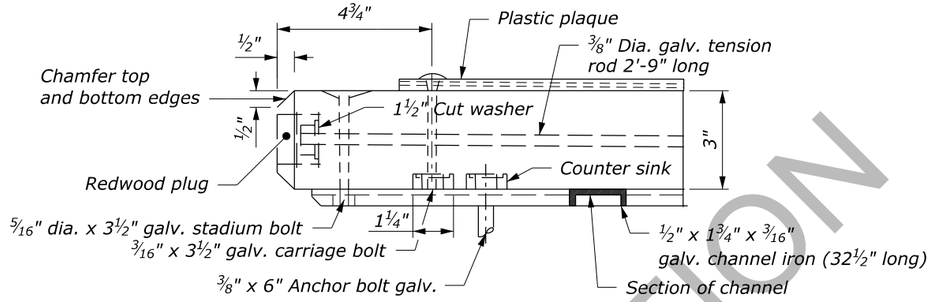
2 April 2021 12:14 PM

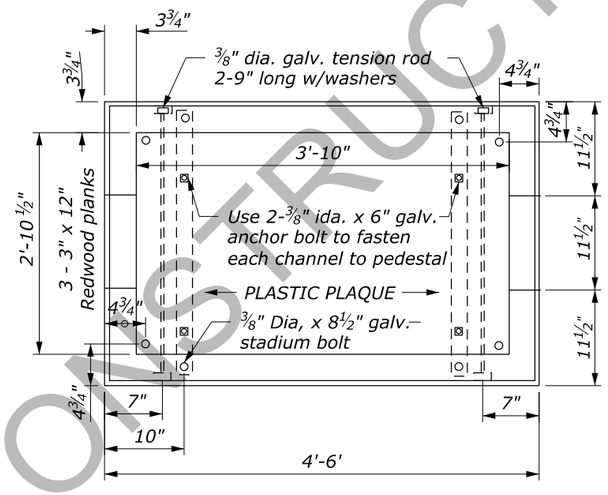
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	I.26



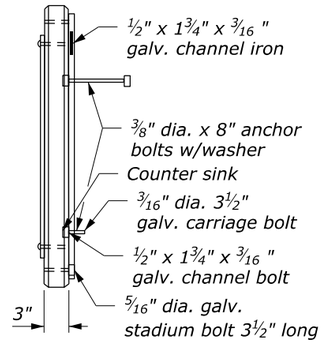
FRONT VIEW

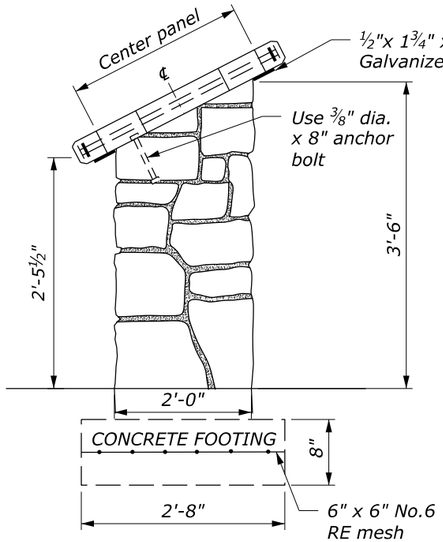


DETAIL FOR FASTENING

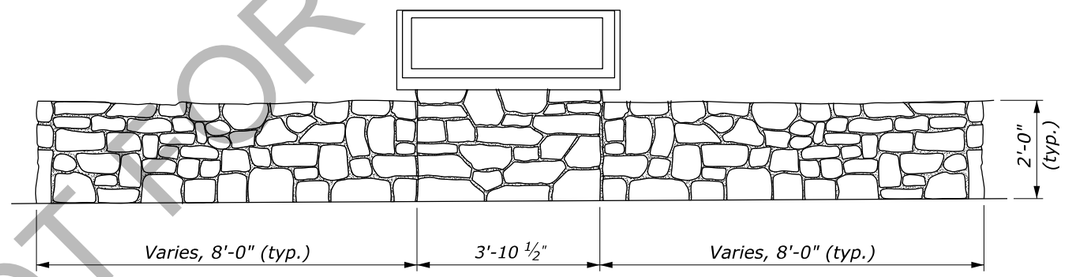


PANEL

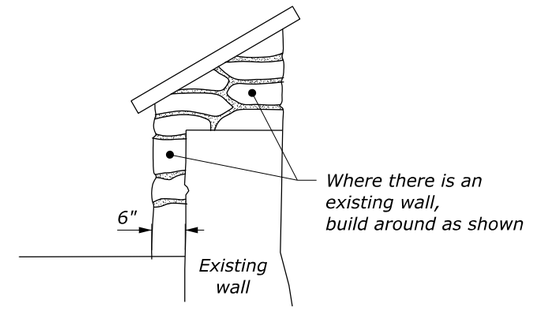




END VIEW



DEVICES USED IN EXISTING GUARDWALL



SECTION

EXISTING WALL

Note:

1. Install Stone Masonry, (Wayside Base) per direction of the CO

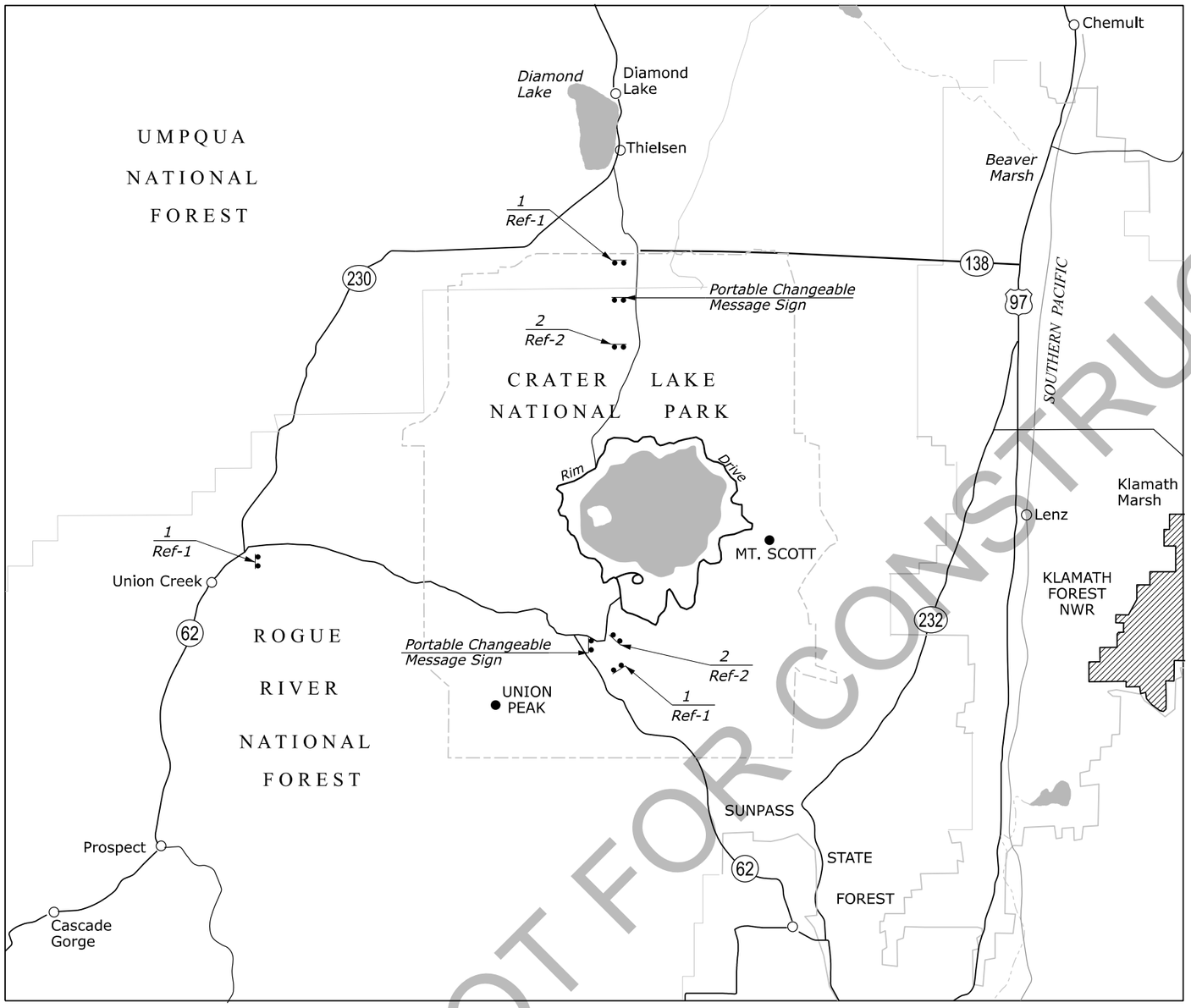
NOT FOR CONSTRUCTION

NO SCALE

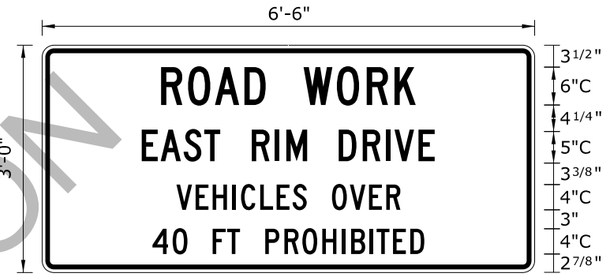
STONE MASONRY WAYSIDE BASE DETAIL

--/---- Checked by: --/---- Designed by: Detailed by:
C:\Users\Jennifer.Jongmore\Desktop\100% Design\STONE MASONRY WAYSIDE BASE\or_1301_wall_dgn [2D Design]
12 April 2021 3:17 PM

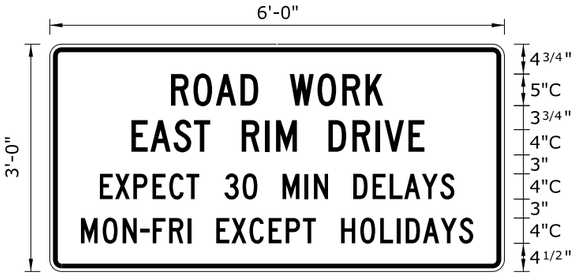
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	J.2



NOT FOR CONSTRUCTION



1
REF-1



2
REF-2

NOTE:

1. Construction sign colors:
   Background: Orange, reflectorized
   Legend: Black, non-reflectorized
   Border: Black, non-reflectorized; 1⅜" radius, ¾" thick, ½" indent

LEGEND:

5 / W8-1 — Sign No. / MUTCD No.

Post mounted sign

ADVANCED SIGNING PLAN

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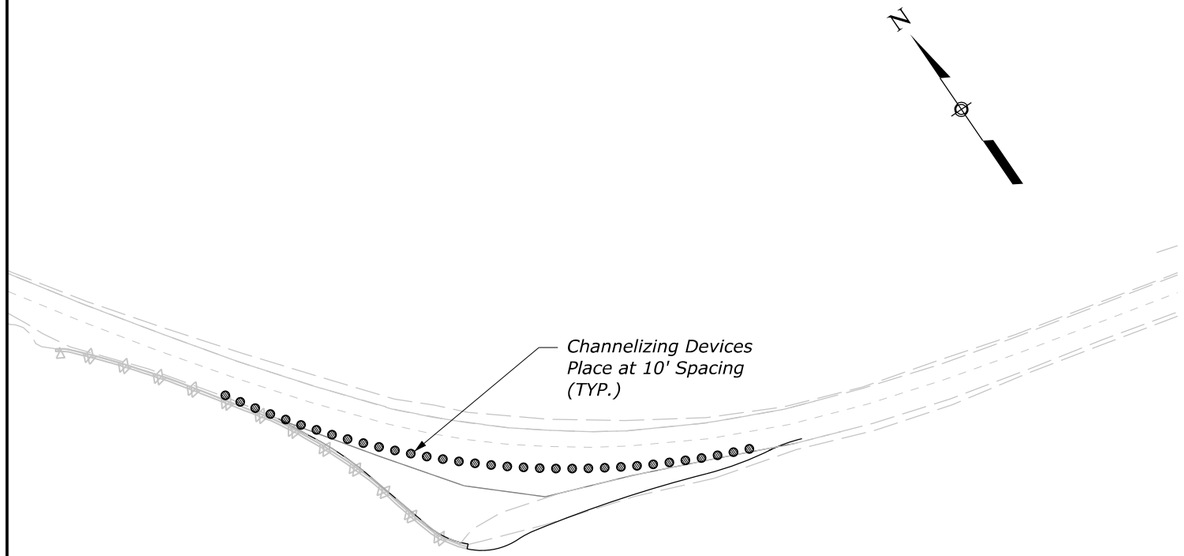
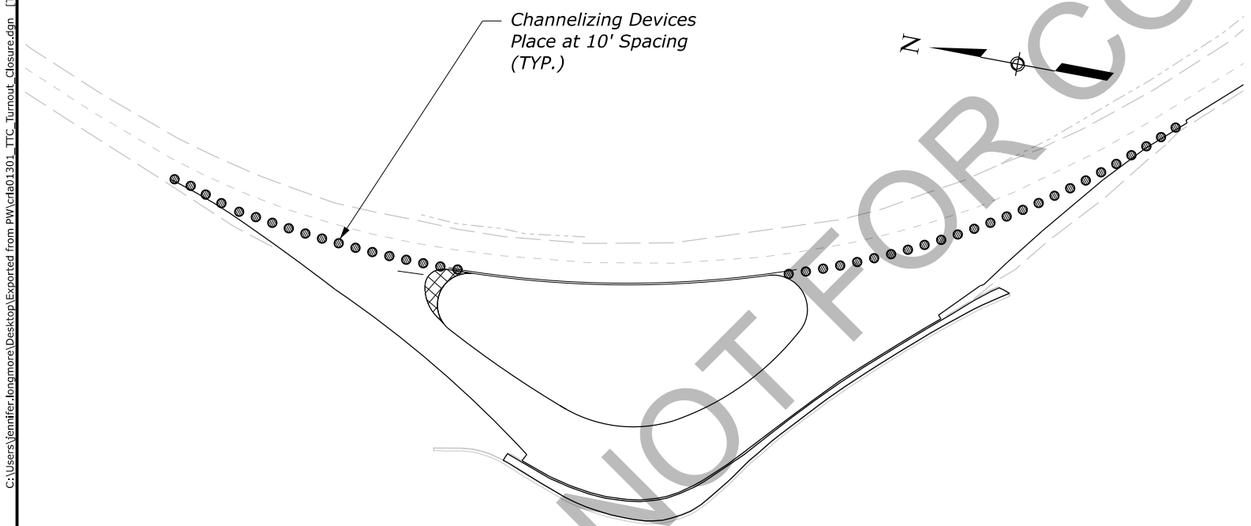
24 March 2021 3:35 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	J.3





LOCATION	DESCRIPTION
LINE 'MAIN01'	
51+50	Mazama Rocks Trailhead
86+00	Palisades Overlook
104+50	Palisades Point
184+50	Lower Grotto Cove
191+00	Upper Grotto Cove
227+00	Skellhead
302+00	Scott Bluffs
341+75	Whitebark Picnic Area
348+00	Mt. Scott Trailhead
422+50	Pumice Castle Overlook
436+00	Sentinel Rock
446+00	Reflection Point
551+50	Phantom Ship Overlook
581+00	Pullout
596+50	Pullout
602+00	Upper Dutton Cliffs
655+00	Kerr Valley Viewpoint
686+00	Dutton Ridge Road Summit
707+00	Pullout
714+00	Pullout
736+00	Pullout
751+00	Pullout
762+00	Sun Notch
834+00	Vidae Falls
973+00	Castle Crest

NOT FOR CONSTRUCTION

Note:

1. *Install temporary traffic control advance signing see sheet K.5 for Std. 635-1 details*
2. *Cover existing signs conflicting with turnout closure*
3. *Install "Turnout Closed Ahead" sign when turnouts are closed to the public*

TYPICAL TURNOUT CLOSURE

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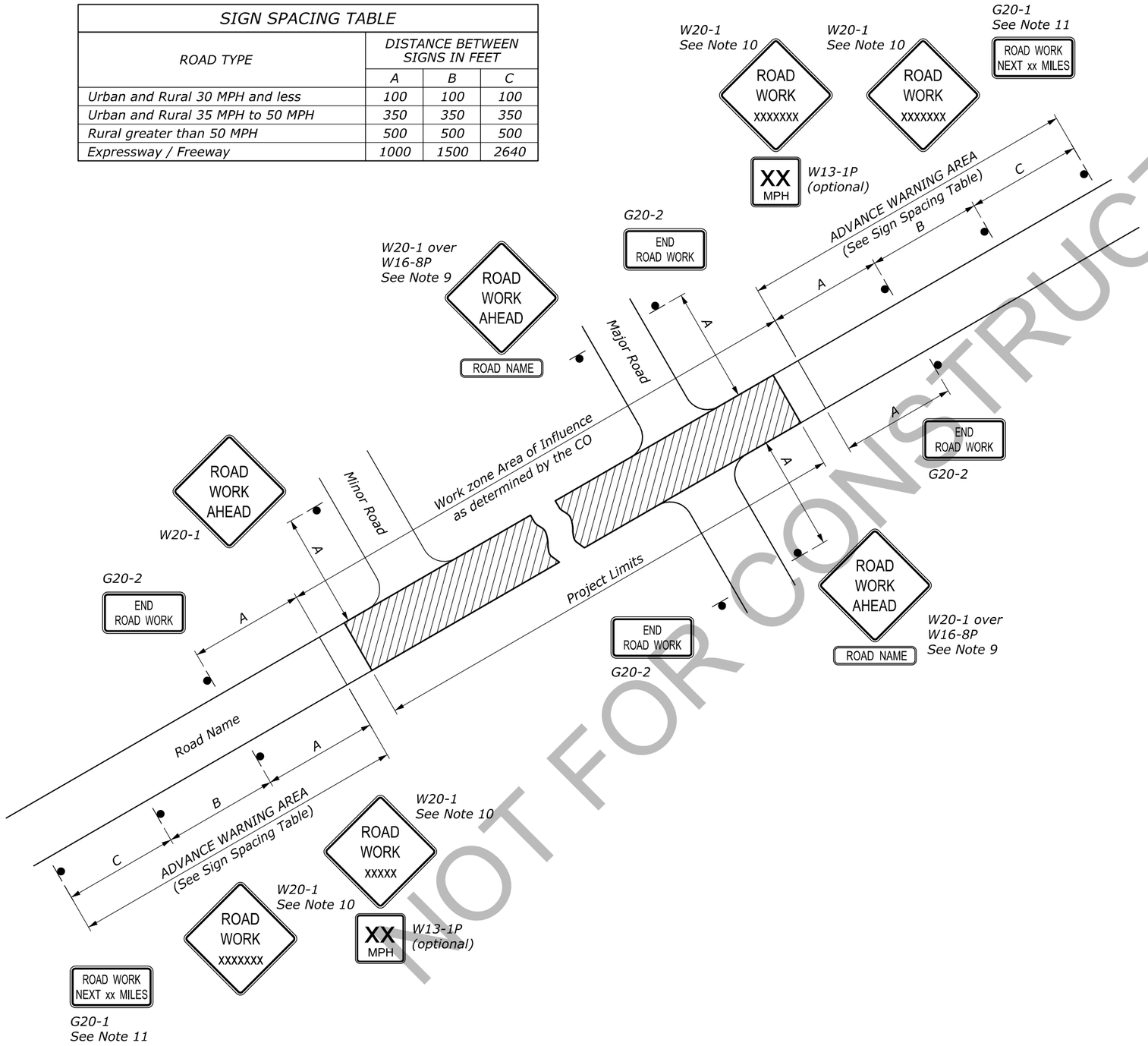
24 March 2021 3:37 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	J.4

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



NOTE:

1. *Erect all project advance warning signs before starting construction work.*
2. *Not all details shown on the temporary traffic control sheets may be applicable to this project. The Contractor may add or delete information and details in this traffic control plan as necessary to accommodate actual operations.*
3. *Where advance warning signs, placed as shown, interfere with permanent signs, locate the warning signs as determined by the CO for best results. Vary messages as required.*
4. *Additional or different message signs may be required to fit the actual construction conditions.*
5. *Install advisory speed plates under the W20 series warning signs as needed to indicate a maximum recommended speed through the construction area.*
6. *Ensure all sign supports exposed to impact by traffic meet the requirements of NCHRP-350 or MASH for crashworthiness.*
7. *Maintain two-way traffic during all non-work hours except as approved by the CO.*
8. *Do not store traffic control devices along the roadway when not in use. Cover post-mounted signs when not applicable.*
9. *If W20-1 is placed on a roadway other than that on which the actual construction work occurs, include a supplementary plaque indicating the name of the road on which the construction does occur (applies to major roads only).*
10. *The message on the W20-1 signs may be "ROAD WORK AHEAD" or may specify the distance to the work area in feet or in miles. Install an additional W20-1 sign when approach speeds exceed 50 MPH. When used place the two W20-1 signs "B" feet apart according to the Sign Spacing Table.*
11. *For work zones that are 2 miles or more in length, install G20-1 signs at each end of the project. Show the distance on the G20-1 sign to the nearest whole mile.*
12. *If signing on a roadway under a jurisdiction other than the client agency, verify that an encroachment permit has been obtained.*
13. *State standards may be used as an alternative if approved by the CO.*
14. *Refer to the Section 635 of the Special Contract Requirements for allowable retroreflective sheeting types.*

NOT FOR CONSTRUCTION

NO SCALE

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

U.S. CUSTOMARY STANDARD

TEMPORARY TRAFFIC CONTROL ADVANCE SIGNING

STANDARD APPROVED FOR USE 6/2005
REVISED:
DRAFT: 6/2014

STANDARD 635-1

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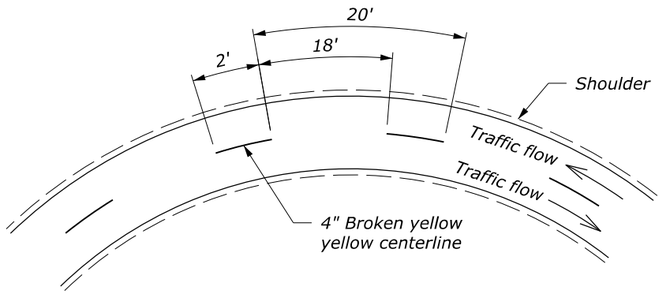
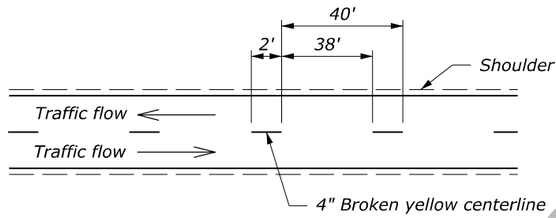
20 May 2020 11:58 AM

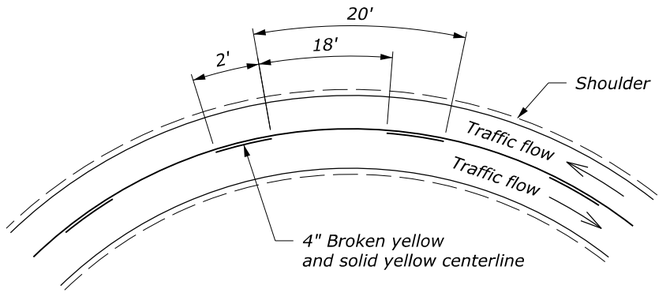
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	J.5



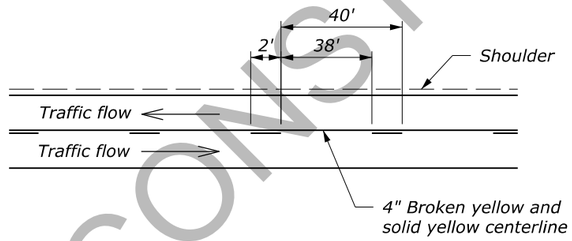
DETAIL A1
Passing zone both directions
Two-way traffic



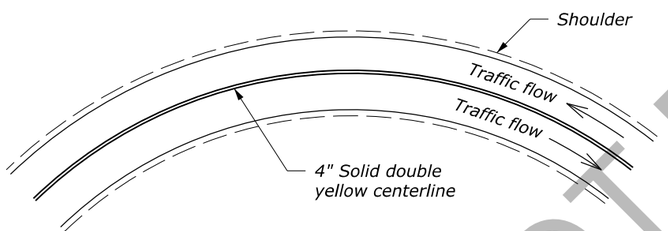
DETAIL B1
Passing zone both directions
Two-way traffic



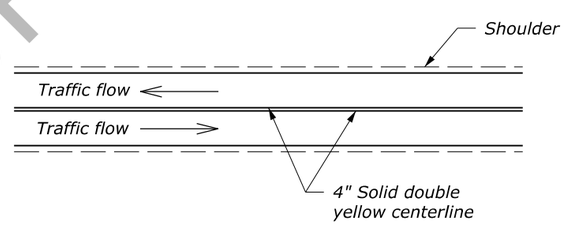
DETAIL A2
No passing zone one direction
Two-way traffic



DETAIL B2
No Passing zone one direction
Two-way traffic



DETAIL A3
No passing zone both directions
Two-way traffic



DETAIL B3
No Passing zone both directions
Two-way traffic

DETAIL A
Curves < 500' Radius

DETAIL B
Tangents or Curves ≥ 500' Radius

NOTE:

1. *To substitute raised pavement markers for lines, use the following patterns:*

   2' broken line: two pavement markers spaced 2' apart allowed by the gap shown based on curvature.

   Single solid line: pavement markers spaced on 10' centers.

   Double solid line: two pavement markers, side by side, spaced on 10' centers.

2. *On two- or three-lane roads, signs may be used instead of temporary pavement markings as shown on Standard 635-3.*

NOT FOR CONSTRUCTION

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

U.S. CUSTOMARY STANDARD

TEMPORARY PAVEMENT MARKINGS

STANDARD APPROVED FOR USE 6/2005
REVISED:
DRAFT: 9/2016

STANDARD 635-2

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20 May 2020 12:03 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	J.6

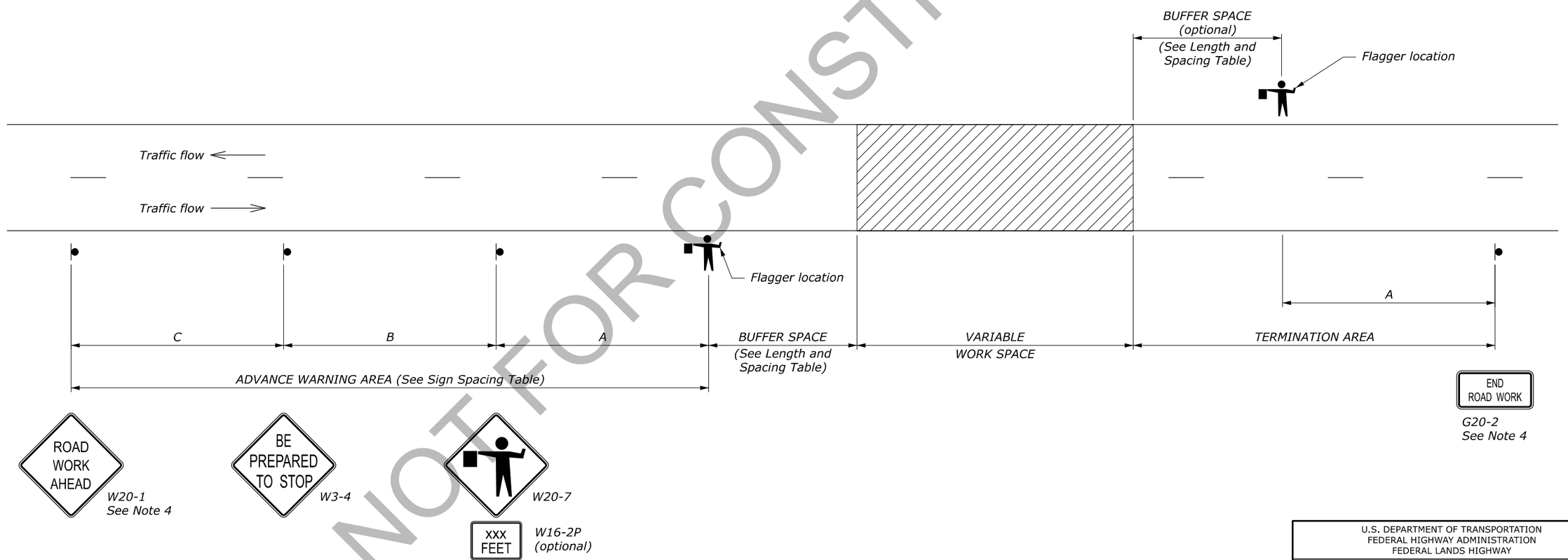
LENGTH AND SPACING TABLE	
APPROACH SPEED*	BUFFER SPACE LENGTH
MPH	FEET
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730

* 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 devices similar to those depicted for the opposite direction of travel.
2. Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
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 night time flagging operation, provide floodlighting at flagger stations.
6. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.



NOT FOR CONSTRUCTION

NO SCALE

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

U.S. CUSTOMARY STANDARD

TEMPORARY TRAFFIC CONTROL ROAD CLOSURE LAYOUT (WITH FLAGGERS)

STANDARD APPROVED FOR USE 6/2005

REVISED:
DRAFT: 8/2013

STANDARD 635-5

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20 May 2020 12:11 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	J.7

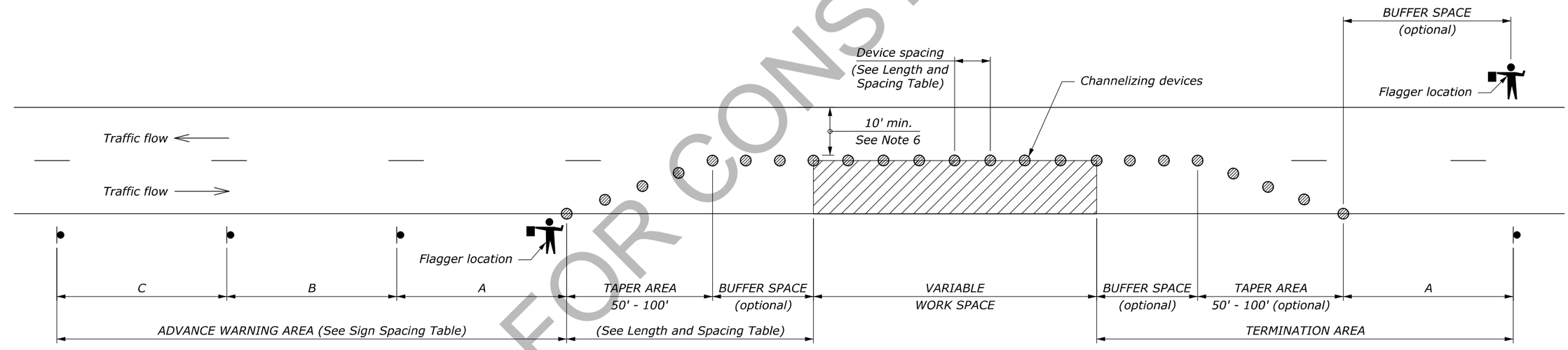
LENGTH AND SPACING TABLE				
APPROACH SPEED*	BUFFER SPACE LENGTH	CHANNELIZING DEVICE		
		TAPER AREA	BUFFER SPACE	WORK SPACE
MPH	FEET	SPACING IN FEET		
20	115	20	40	40
25	155	20	50	50
30	200	20	60	60
35	250	20	70	70
40	305	20	80	80
45	360	20	90	90
50	425	20	100	100
55	495	20	110	110
60	570	20	120	120
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 devices similar to those depicted for the opposite direction of travel.
2. Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
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 night time flagging operation, provide floodlighting at flagger stations.
6. For project specific minimum width, refer to the Special Contract Requirements, Section 156.
7. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.



W20-1
See Note 4

W20-4

W20-7

W13-1P
(optional)

W16-2P
(optional)

G20-2
See Note 4

NO SCALE

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

U.S. CUSTOMARY STANDARD

TEMPORARY TRAFFIC CONTROL SINGLE LANE CLOSURE LAYOUT (WITH FLAGGERS)

STANDARD APPROVED FOR USE 6/2005
REVISED:
DRAFT: 8/2013

STANDARD 635-6

NOT FOR CONSTRUCTION

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20 May 2020 12:17 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	J.8

LENGTH AND SPACING TABLE

APPROACH SPEED*	MINIMUM TAPER LENGTH**	BUFFER SPACE LENGTH	CHANNELIZING DEVICE		
			TAPER AREA	BUFFER SPACE	WORK SPACE
MPH	FEET	FEET	SPACING IN FEET		
20	Shoulder taper formula:	115	20	40	40
25	$L = \frac{WS^2}{180}$ for $S \le 40$ MPH	155	25	50	50
30		200	30	60	60
35	$L = \frac{WS}{3}$ for $S \ge 45$ 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.

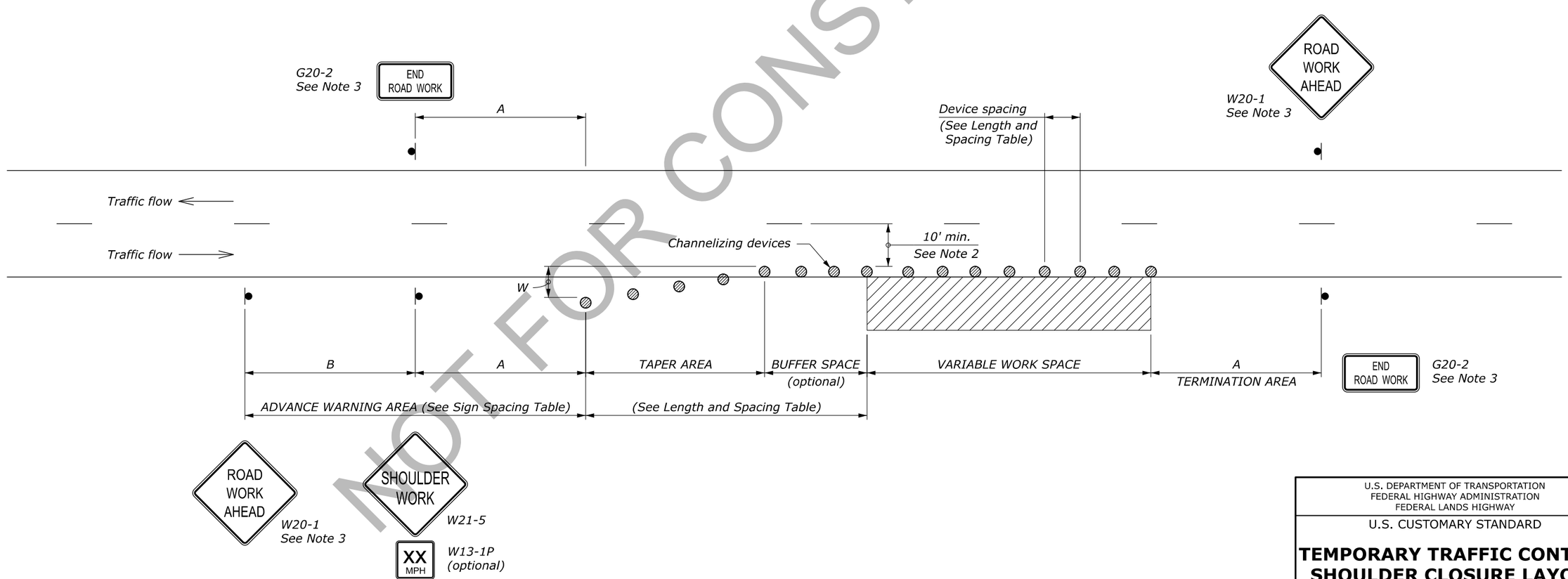
** Lengthen taper as needed to provide minimum of three channelizing devices in taper at required spacing.

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 signs and devices may be changed to fit field conditions as approved by the CO.
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
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

TEMPORARY TRAFFIC CONTROL SHOULDER CLOSURE LAYOUT

STANDARD APPROVED FOR USE 6/2005

REVISED:
DRAFT: 8/2013

STANDARD 635-10

NOT FOR CONSTRUCTION

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20 May 2020 12:21 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	J.9

LENGTH AND SPACING TABLE

APPROACH SPEED*	MINIMUM TAPER LENGTH	BUFFER SPACE LENGTH	CHANNELIZING DEVICE		
			TAPER AREA	BUFFER SPACE	WORK SPACE
MPH	FEET	FEET	SPACING IN FEET		
20	Shifting taper formula:	115	20	40	40
25	$L = \frac{WS^2}{120}$ for $S \le 40$ MPH	155	25	50	50
30		200	30	60	60
35	$L = \frac{WS}{2}$ for $S \ge 45$ 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

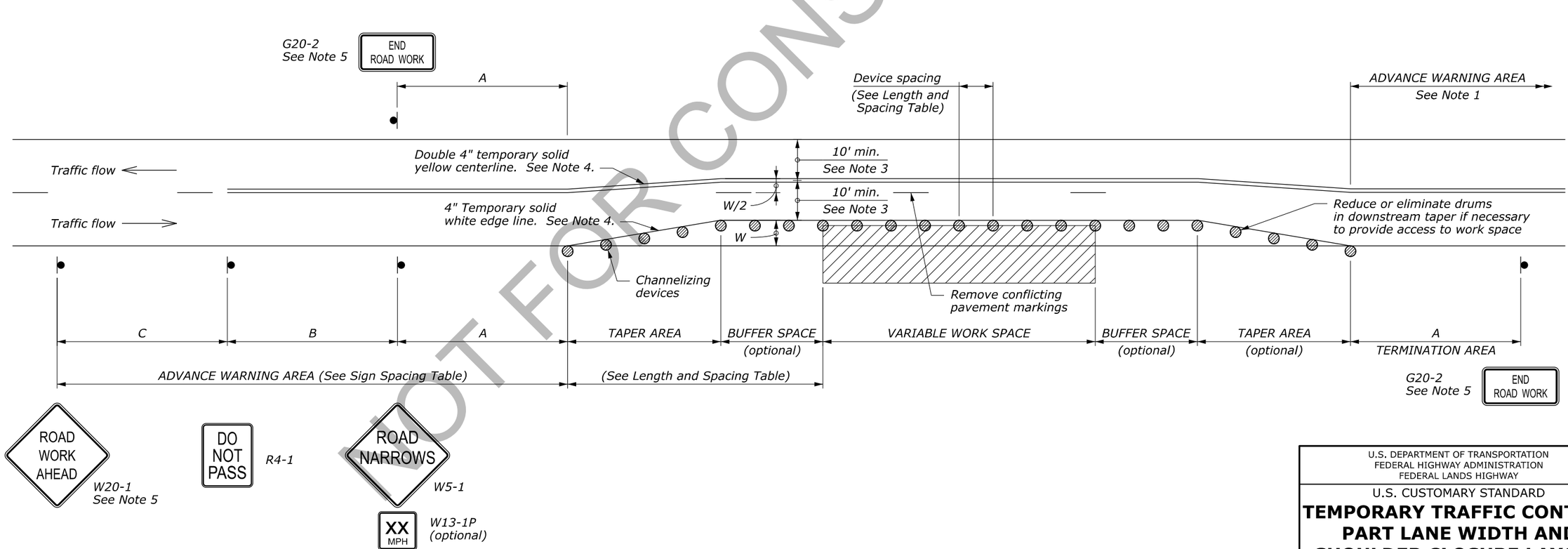
* Approach speed based on the regulatory posted speed, not the advisory speed.

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 devices similar to those depicted for the opposite direction of travel.
2. Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
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', 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 by the CO.
7. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.



NO SCALE

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

U.S. CUSTOMARY STANDARD

TEMPORARY TRAFFIC CONTROL PART LANE WIDTH AND SHOULDER CLOSURE LAYOUT

STANDARD APPROVED FOR USE 6/2005
REVISED:
DRAFT: 8/2013

STANDARD 635-11

NOT FOR CONSTRUCTION

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21 May 2020 11:12 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	J.10

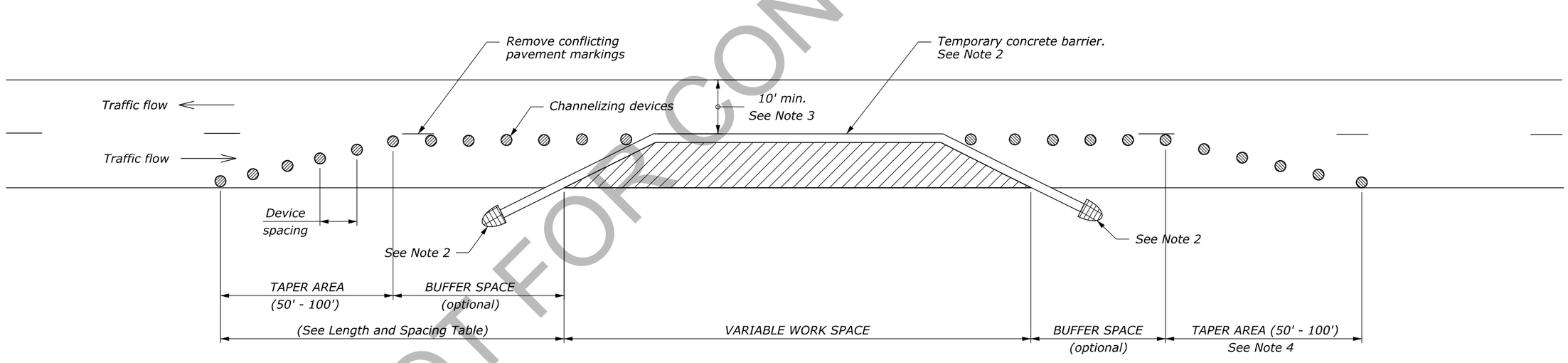
LENGTH AND SPACING TABLE

APPROACH SPEED* MPH	BUFFER SPACE LENGTH FEET	CHANNELIZING DEVICE SPACING IN FEET			CONCRETE BARRIER FLARE RATE	WORK ZONE CLEAR ZONE WIDTH FEET
		TAPER AREA	BUFFER SPACE	WORK SPACE		
20	115	20	40	40	1:8	10
25	155	20	50	50	1:8	10
30	200	20	60	60	1:8	10
35	250	20	70	70	1:9	10
40	305	20	80	80	1:10	15
45	360	20	90	90	1:12	20
50	425	20	100	100	1:14	20
55	495	20	110	110	1:16	20
60	570	20	120	120	1:16	30
65	645	20	130	130	1:16	30
70	730	20	140	140	1:16	30

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

NOTE:

1. Install signs and other devices for single lane closure according to Standard 635-6, 7, 8, or 9. Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
2. Place 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' intervals.
3. For project specific minimum width, refer to Special Contract Requirements, Section 156.
4. Place channelizing devices at downstream taper during non-work hours or when access is not needed.
5. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.
6. Reduce or eliminate drums and barrier in downstream taper if necessary to provide access to work space.



NO SCALE

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

U.S. CUSTOMARY STANDARD

TEMPORARY TRAFFIC CONTROL SINGLE LANE CLOSURE LAYOUT (WITH TEMPORARY BARRIER)

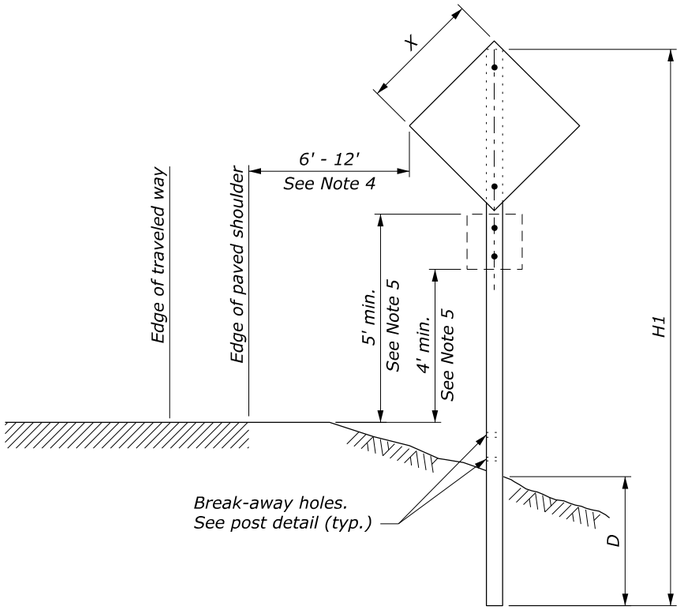
STANDARD APPROVED FOR USE 6/2005
REVISED:
DRAFT: 6/2015

STANDARD 635-13

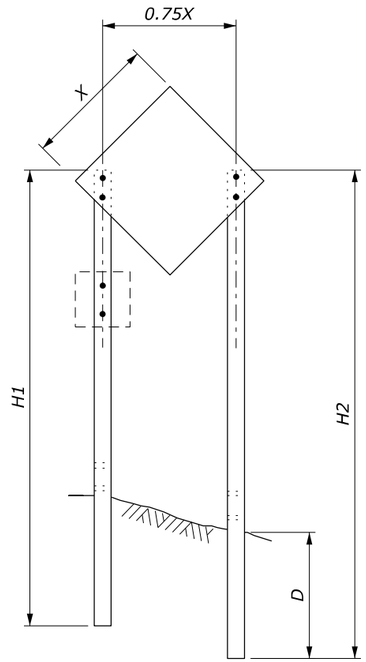
NOT FOR CONSTRUCTION

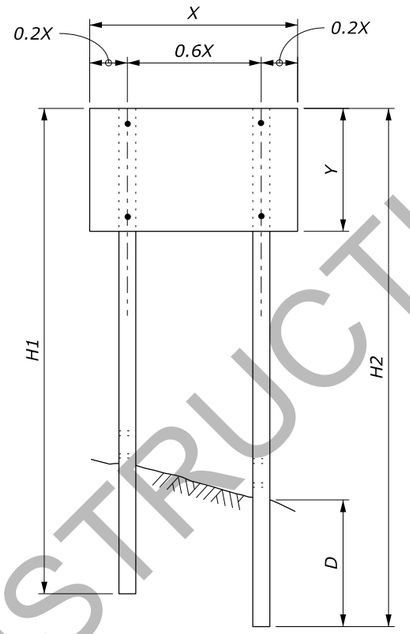
C:\Users\jennifer.longmore\Desktop\Exported from PW\cfa01301_TTC_Std635-13.dgn [Standard]
20 May 2020 12:31 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	J.11



SINGLE POST SIGN





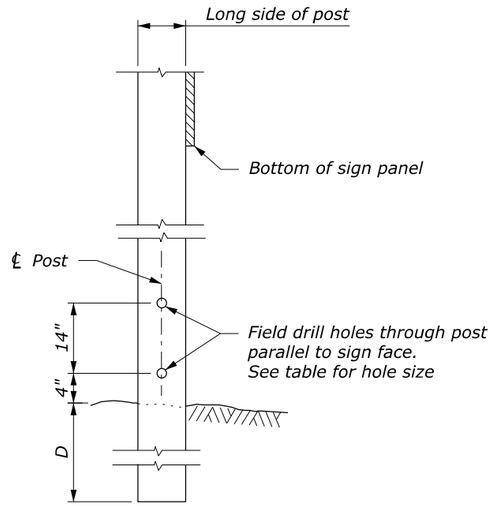
TWO POST SIGN

NOTE:

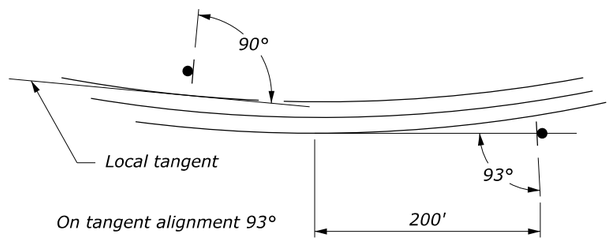
1. *Attach sign panels with a minimum of 2 - ¼" dia. bolts per post.*
2. *H1 and H2 = Overall post length. Select post lengths to fit field conditions.*
3. *D = Post embedment depth for average soil conditions.*
4. *In areas where lateral distance is limited, a minimum lateral offset of 2' may be used. In areas with curbs, a minimum lateral distance of 1' behind the face of the curb may be used.*
5. *In pedestrian locations, or in areas with obstructed views, use 7' minimum mounting height for main sign and 6' minimum mounting height for secondary sign.*
6. *Use 7' minimum spacing between posts for sign posts 6" x 6" or larger.*
7. *State standards may be used as an alternative if approved by the CO.*

WOOD POST SELECTION TABLE

WIDTH "X"	AREA (SQFT)	NUMBER OF POSTS	POST SIZE (INCH)	D (INCH)	HOLE SIZE (INCH)
Diamond ≤ 36" Other Shapes ≤ 48"	< 10	1	4 x 4	36	0
		1	4 x 6	48	1.5
Diamond ≤ 48"	10 - 20	1	6 x 6	48	2
Diamond ≤ 48" Other Shapes ≤ 12'	10 - 20	2	4 x 4	36	0
	20 - 50	2	4 x 6	48	1.5
> 13'	50 - 65	2	6 x 6	48	2
12' - 16'	50 - 65	3	4 x 6	48	1.5
> 17'	65 - 95	4	4 x 6	48	1.5
> 30'	65 - 95	3	6 x 6	48	2



POST DETAIL



SIGN INSTALLATION ANGLE

NO SCALE

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

U.S. CUSTOMARY STANDARD

TEMPORARY TRAFFIC CONTROL SIGN INSTALLATION WOOD POSTS

STANDARD APPROVED FOR USE 6/2005
REVISED:
DRAFT: 10/2017

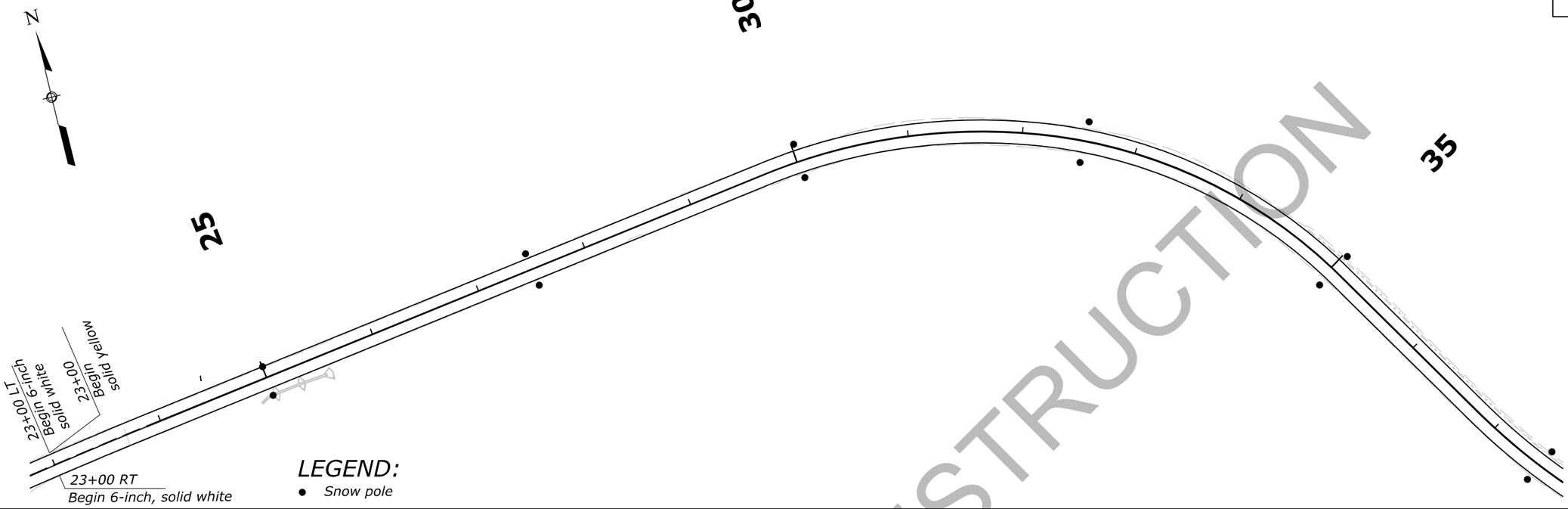
STANDARD 635-14

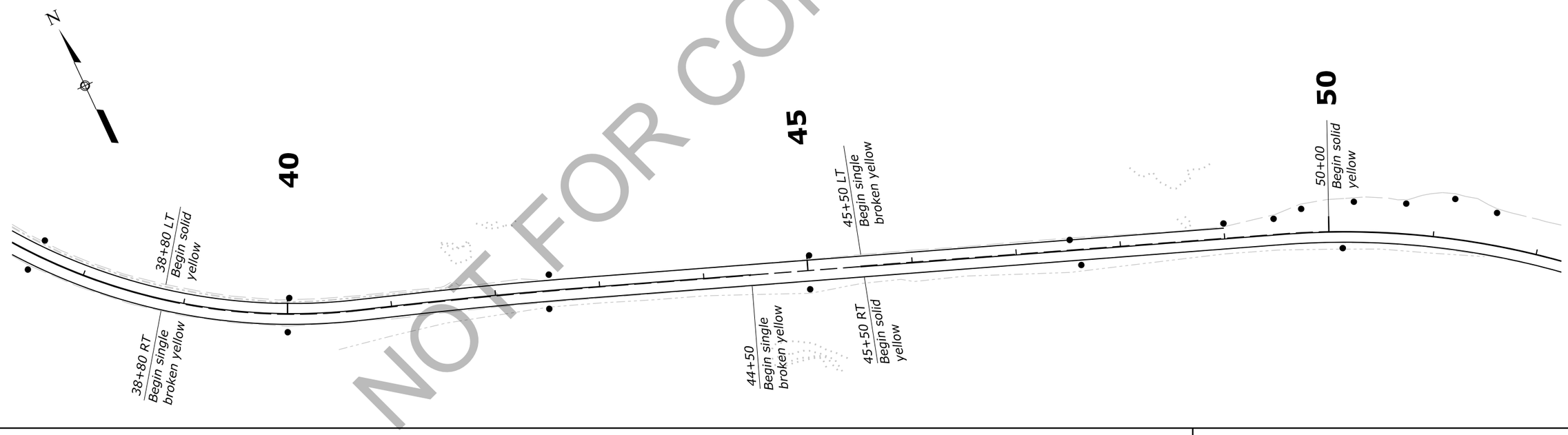
NOT FOR CONSTRUCTION

C:\Users\jennifer.lonamore\Desktop\Exported from PW\cfa01301_TTC_Std635-14.dgn [Standard]
20 May 2020 12:34 PM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.7





NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\d0441684\crla01301_ndd.dgn [HA Cor1 - Plan 1 [Sheet]]
14 April 2021 9:50 AM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
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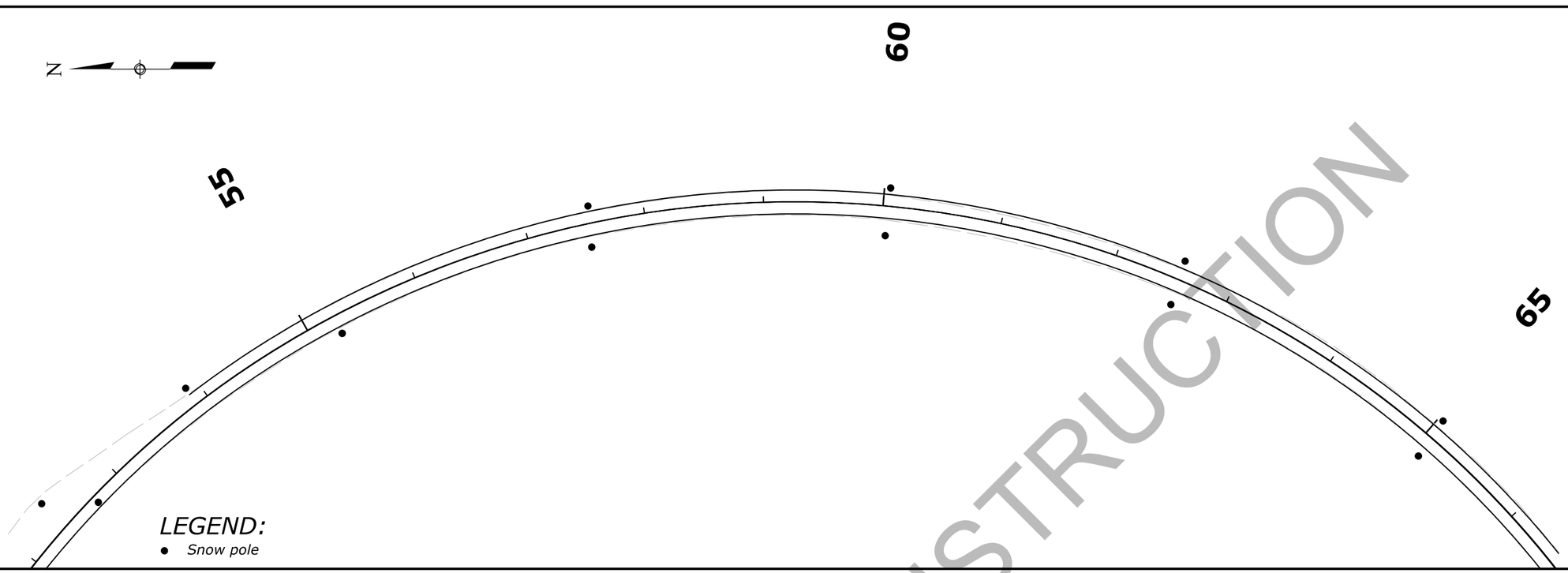
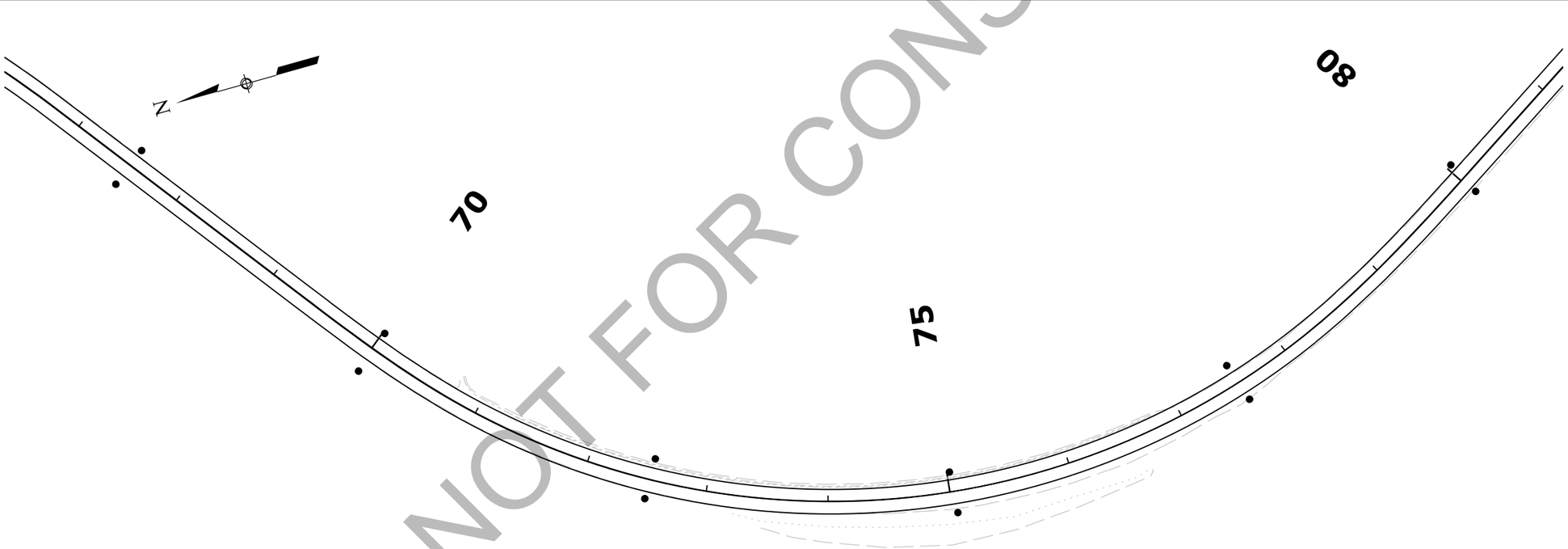




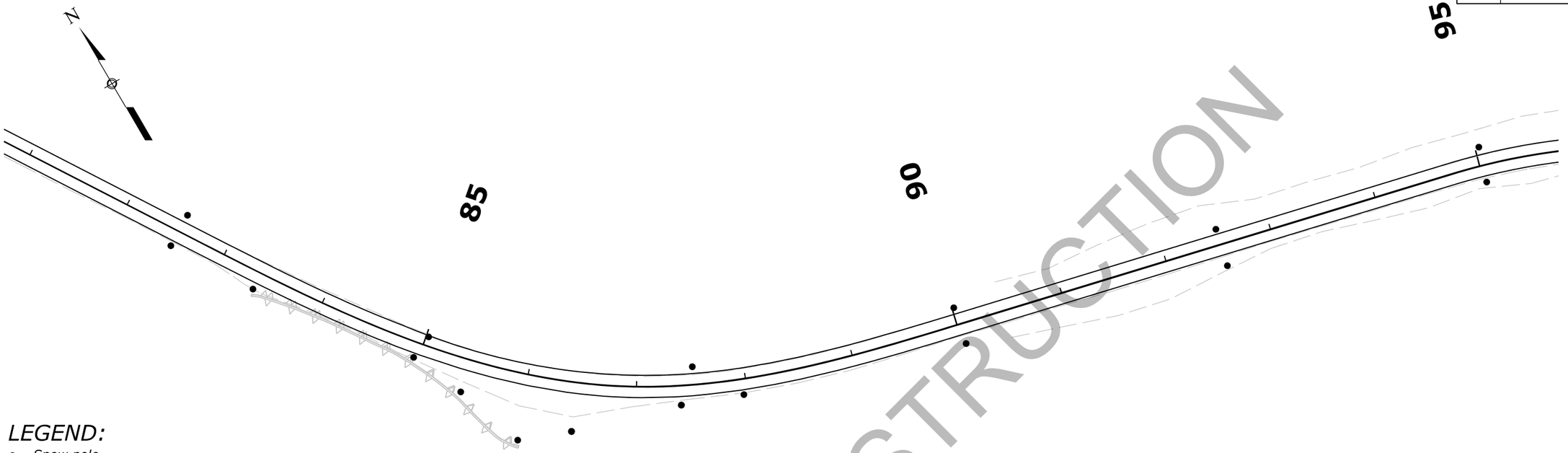
NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\d0441684\crla01301_ndd.dgn [HA Cor1 - Plan 3 (Sheet)]
14 April 2021 9:50 AM

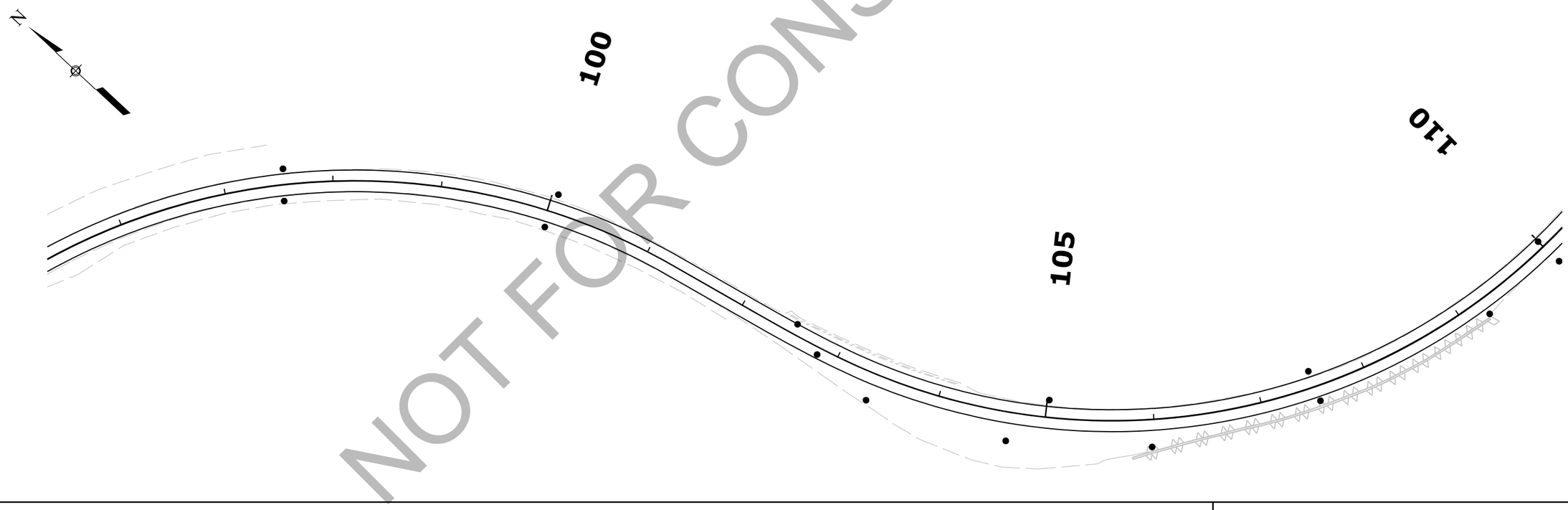
NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.9



LEGEND:

- *Snow pole*



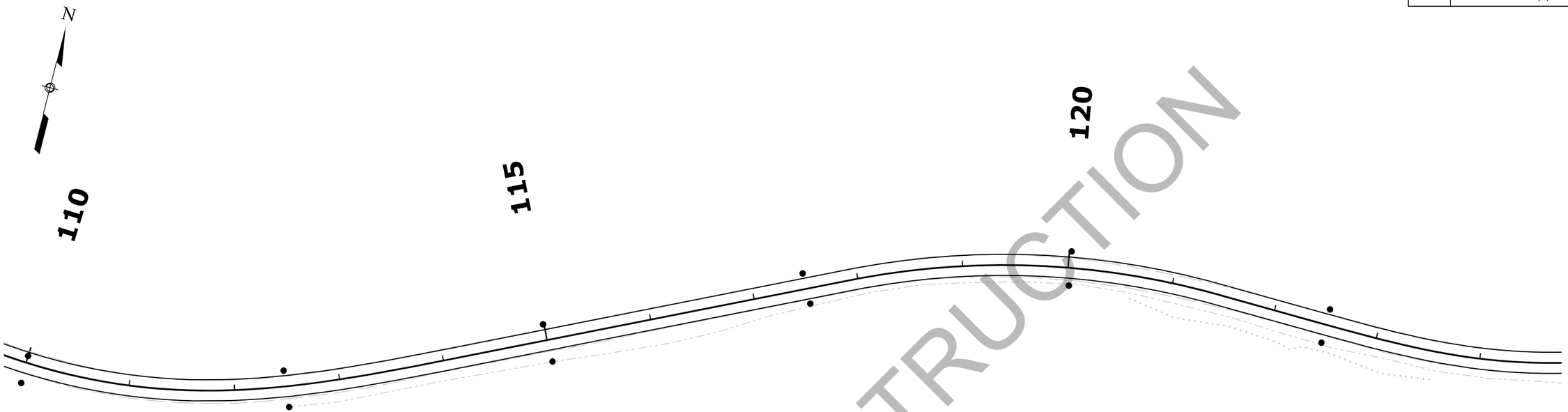
NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\d0441684\crla01301_ndd.dgn [HA Cor1 - Plan 5 (Sheet)]
14 April 2021 9:52 AM

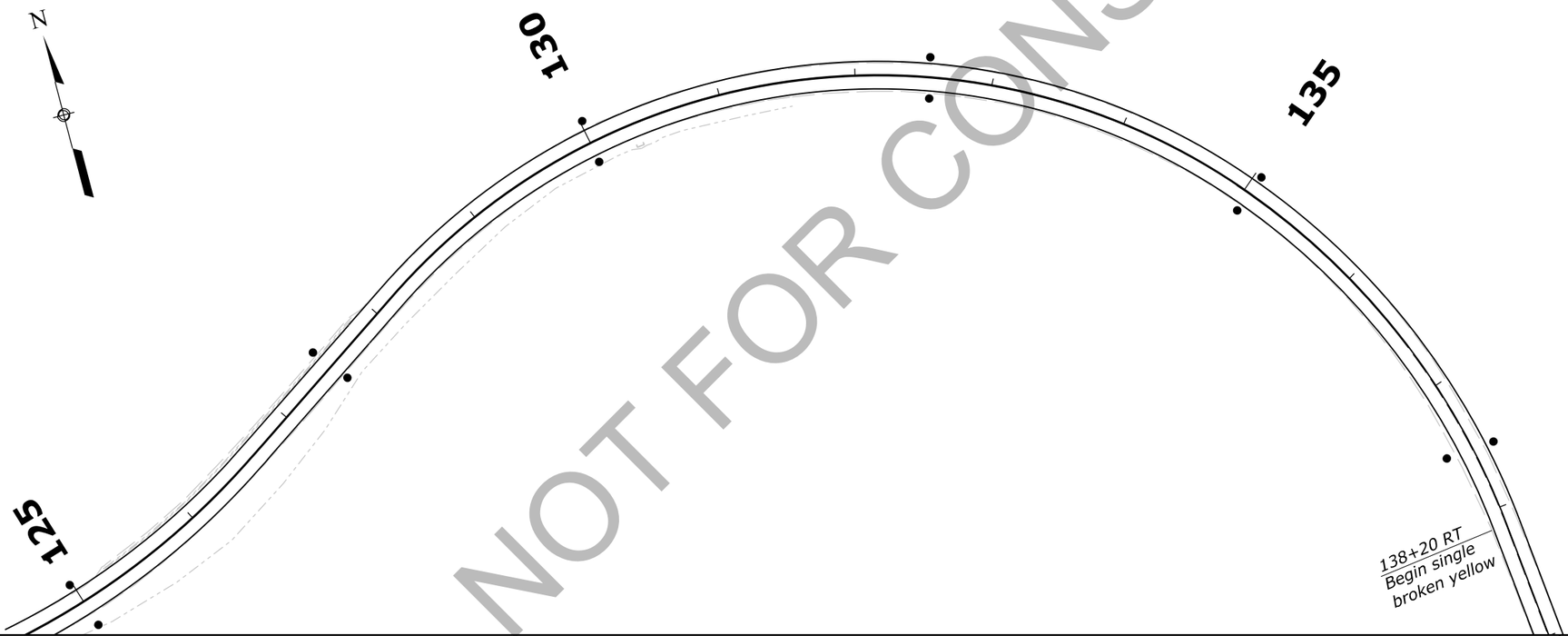
NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.10



LEGEND:

- *Snow pole*



NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

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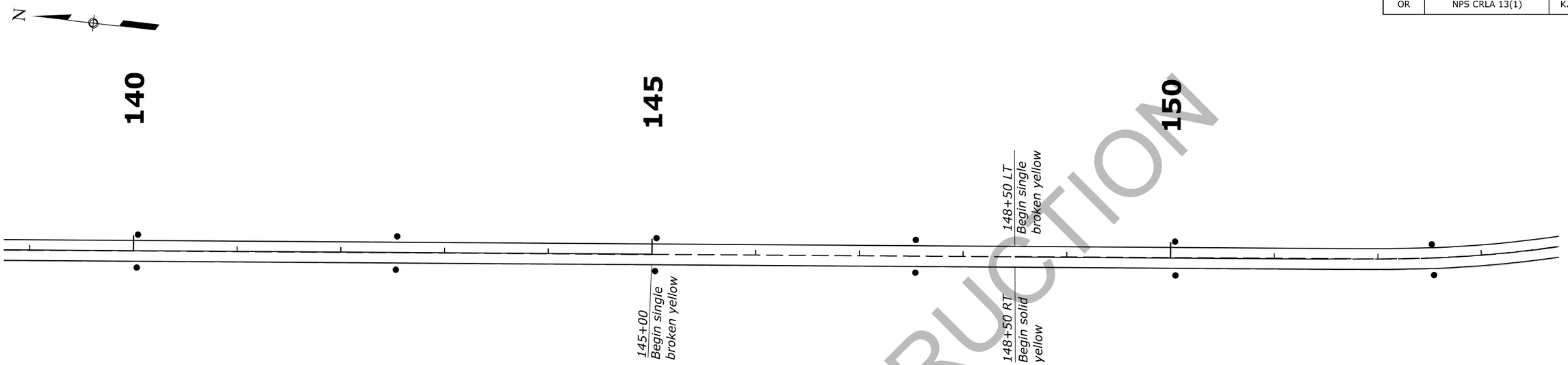
14 April 2021 9:53 AM

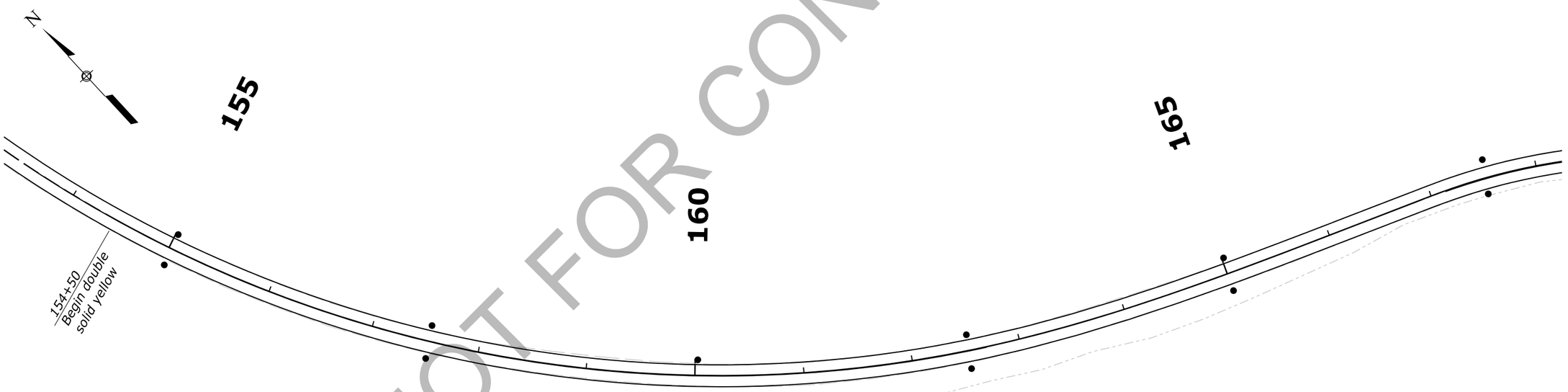
NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.11



LEGEND:

- *Snow pole*



NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

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14 April 2021 9:54 AM

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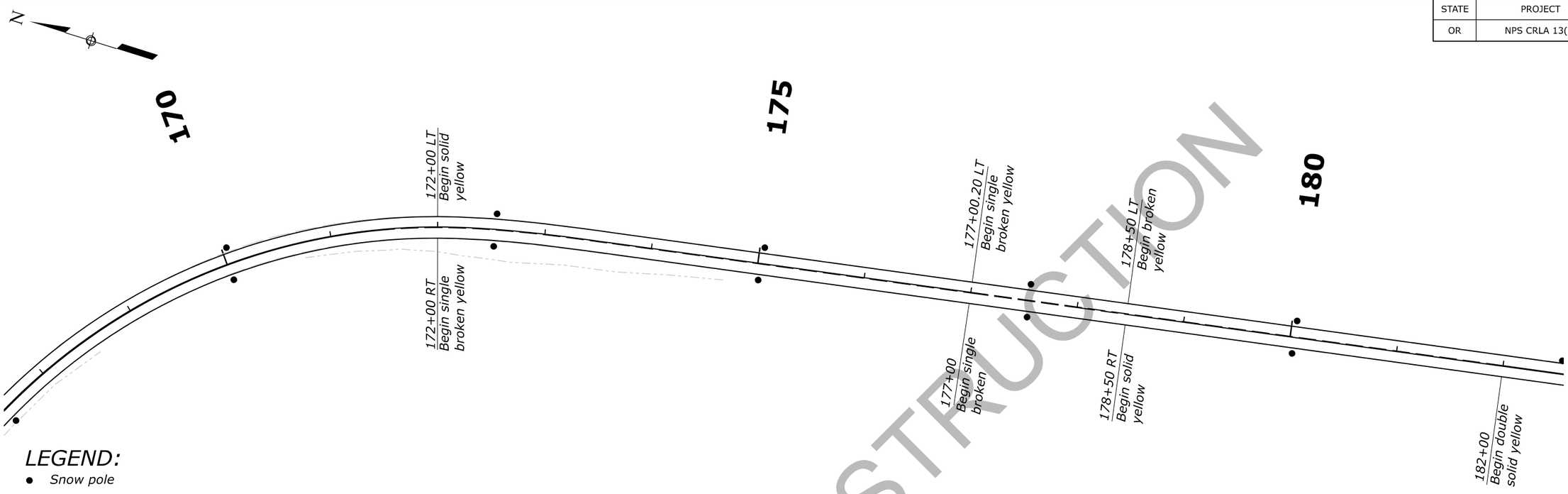
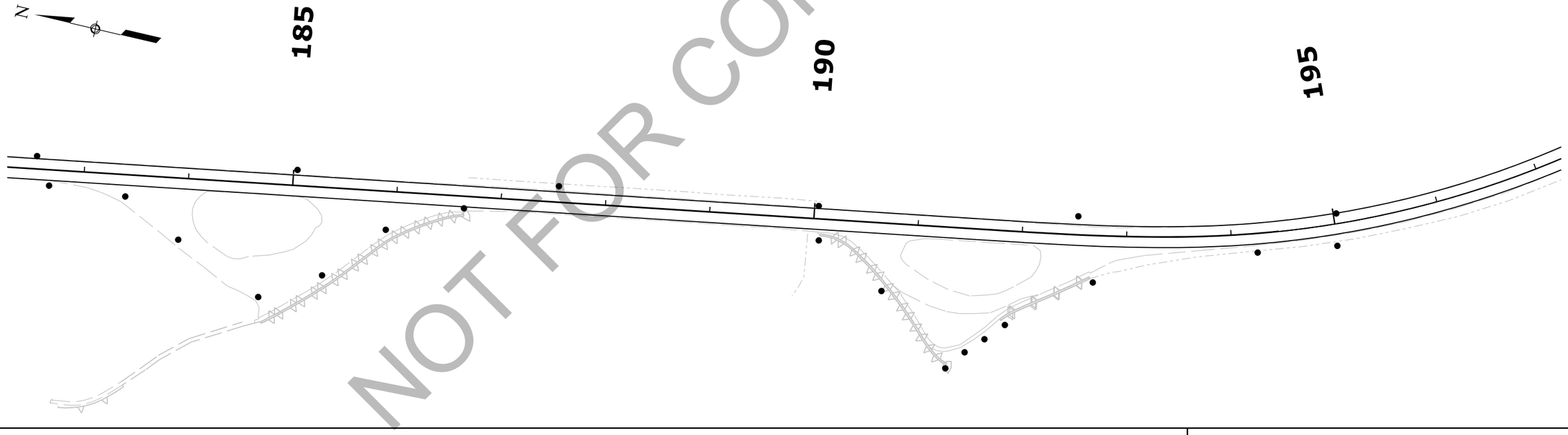


LEGEND:

- *Snow pole*



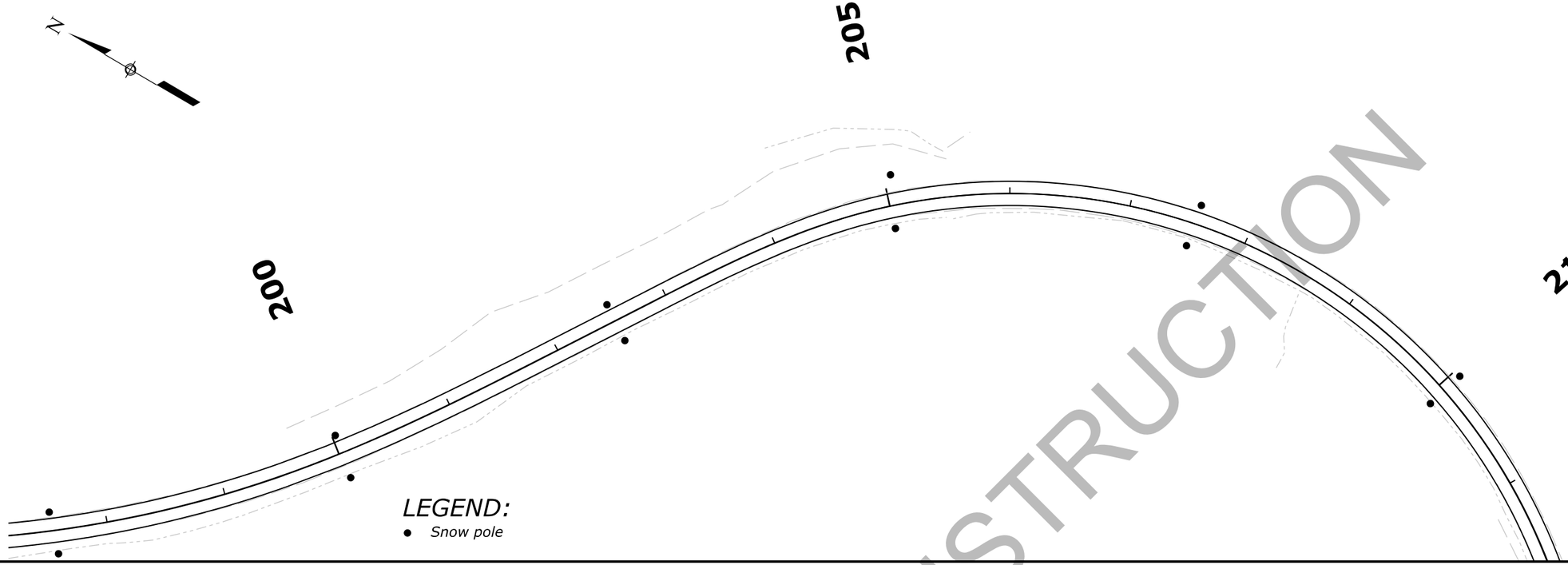
NOT FOR CONSTRUCTION

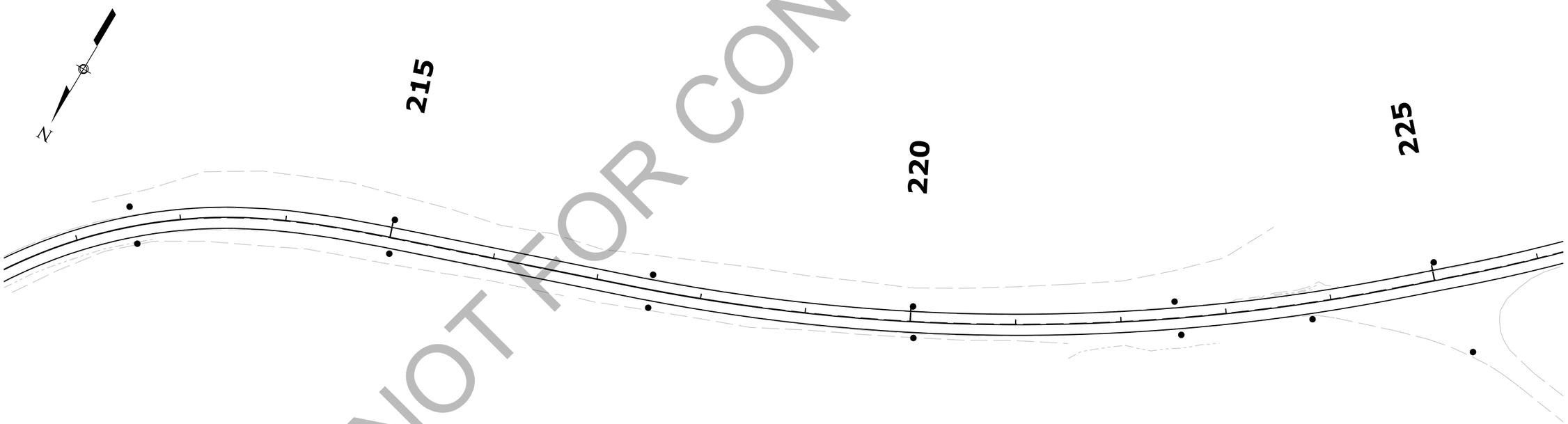
PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\d0441684\crfa01301_ndd.dgn [HA Cor1 - Plan 11 (Sheet)]
14 April 2021 10:02 AM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.13





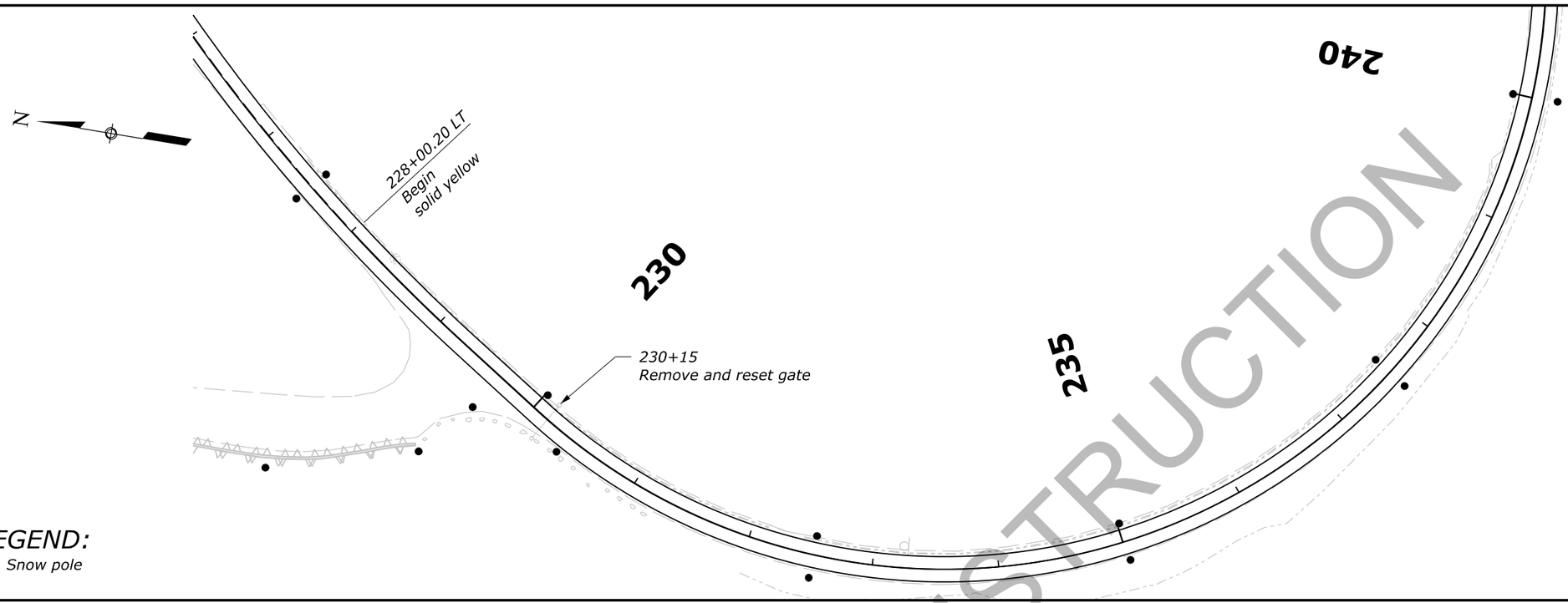
NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\d0441684\cha01301_ndd.dgn [HA Cor1 - Plan 13 [Sheet]]
14 April 2021 10:04 AM

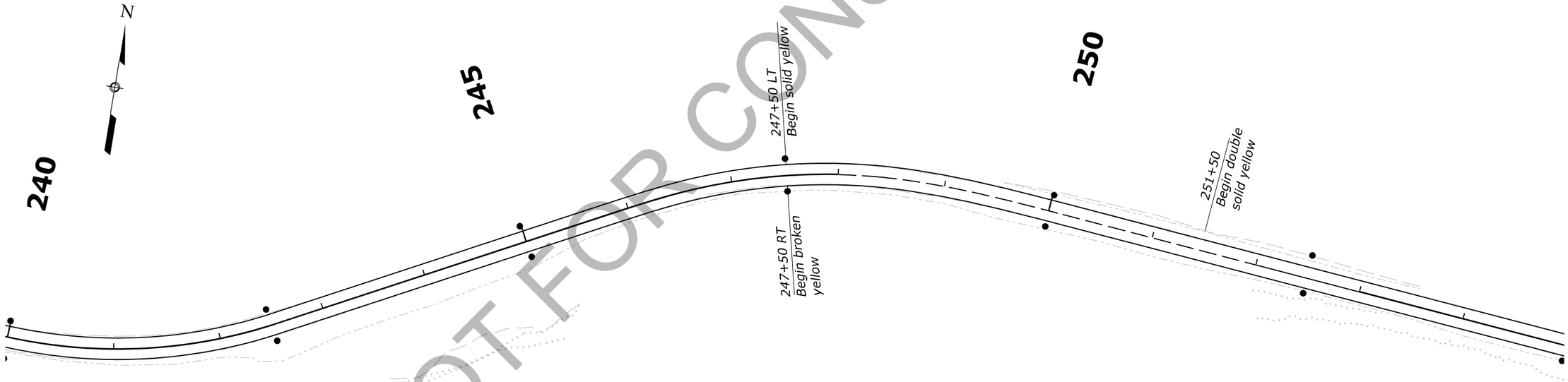
NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.14



LEGEND:

- Snow pole



NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

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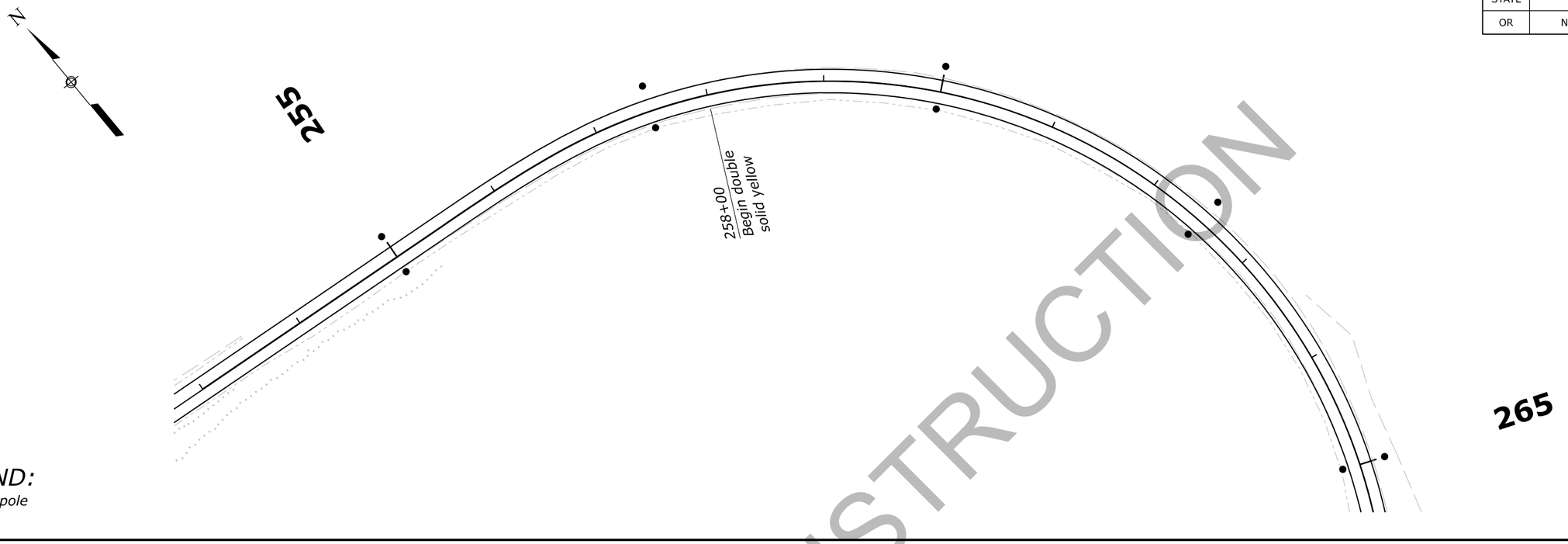
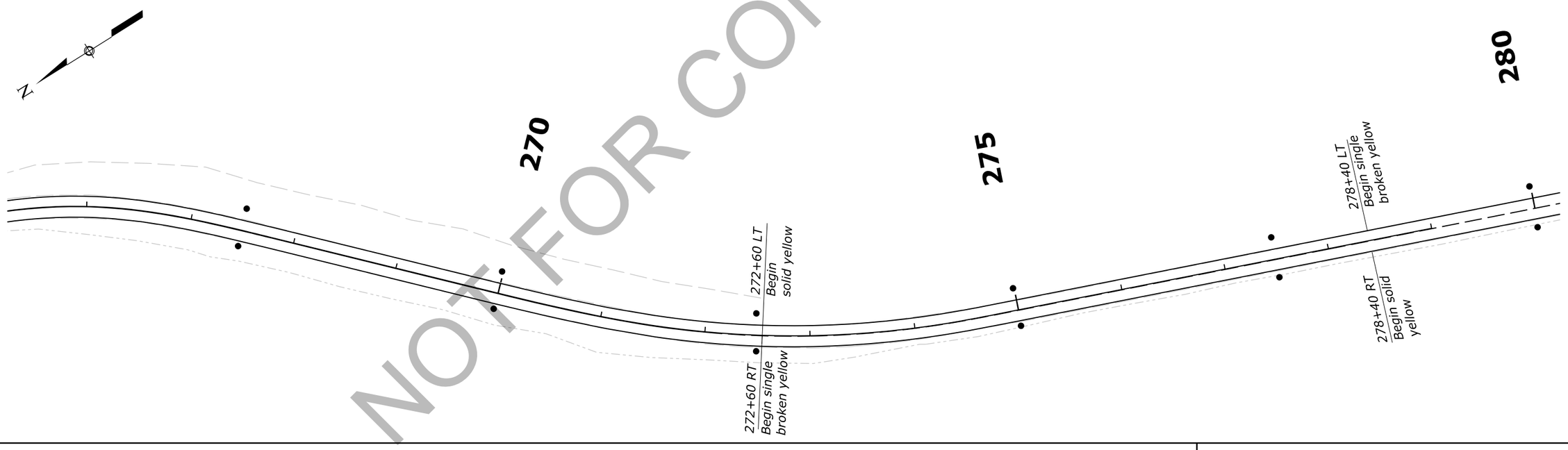
14 April 2021 10:04 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.15



LEGEND:

- *Snow pole*



NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\d0441684\crla01301_ndd.dgn [HA 251+00 to 495+00 - Plan 17 [Sheet]]
14 April 2021 10:13 AM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

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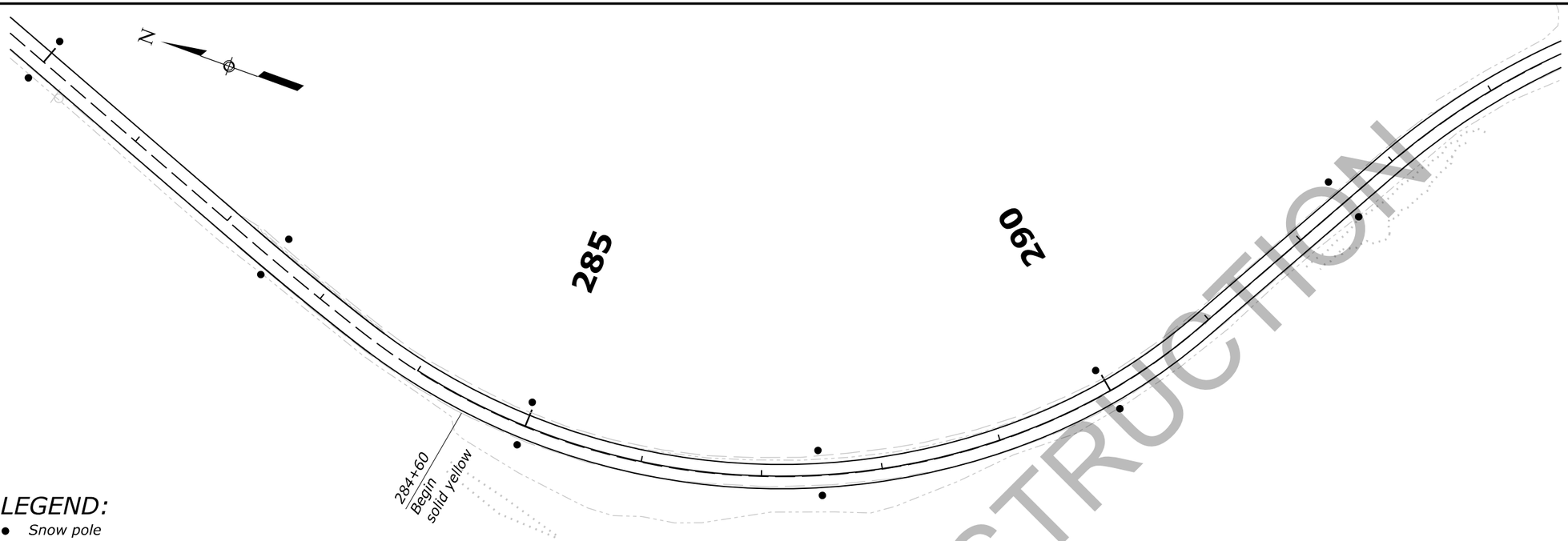
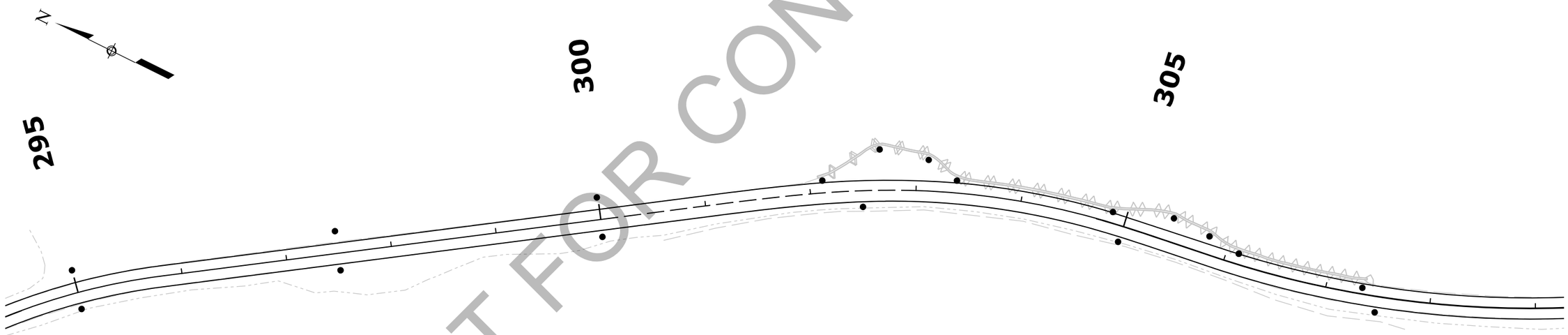
OR	NPS CRLA 13(1)	K.16



LEGEND:

- *Snow pole*



NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\d0441684\cha01301_ndd.dgn [HA 251+00 to 495+00 - Plan 19 (Sheet)]
14 April 2021 10:20 AM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
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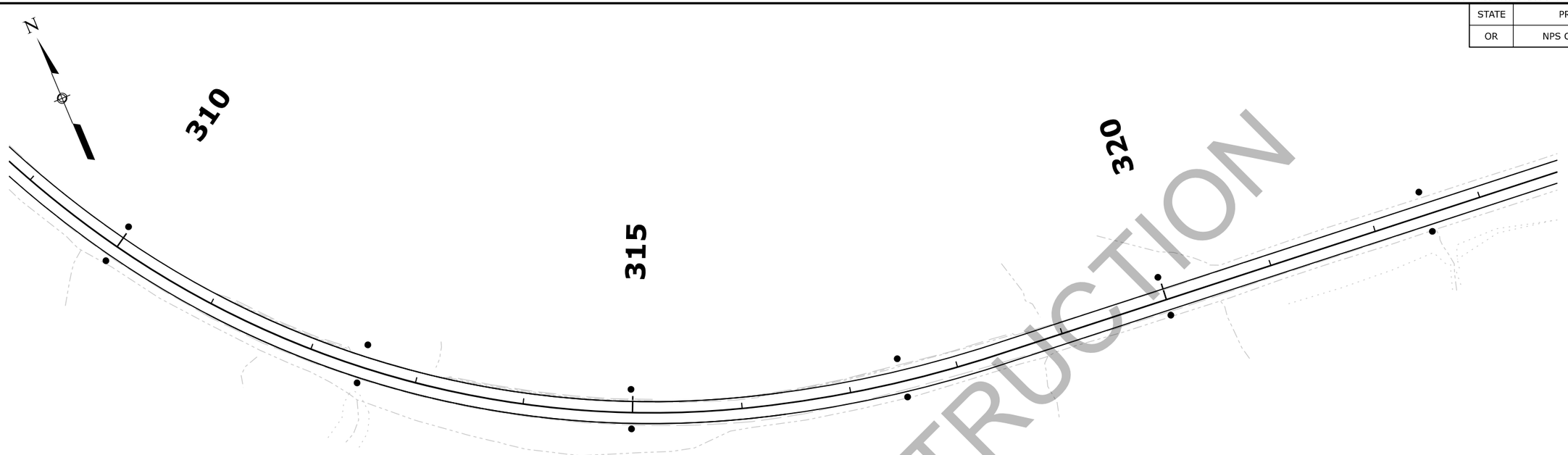
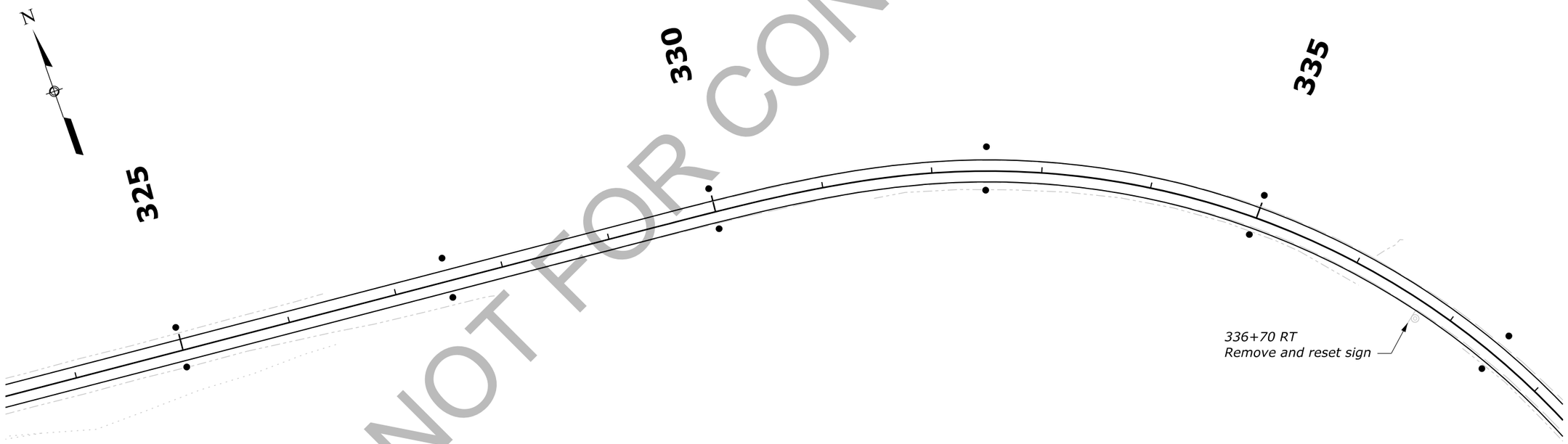


LEGEND:

- *Snow pole*



NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

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14 April 2021 10:20 AM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

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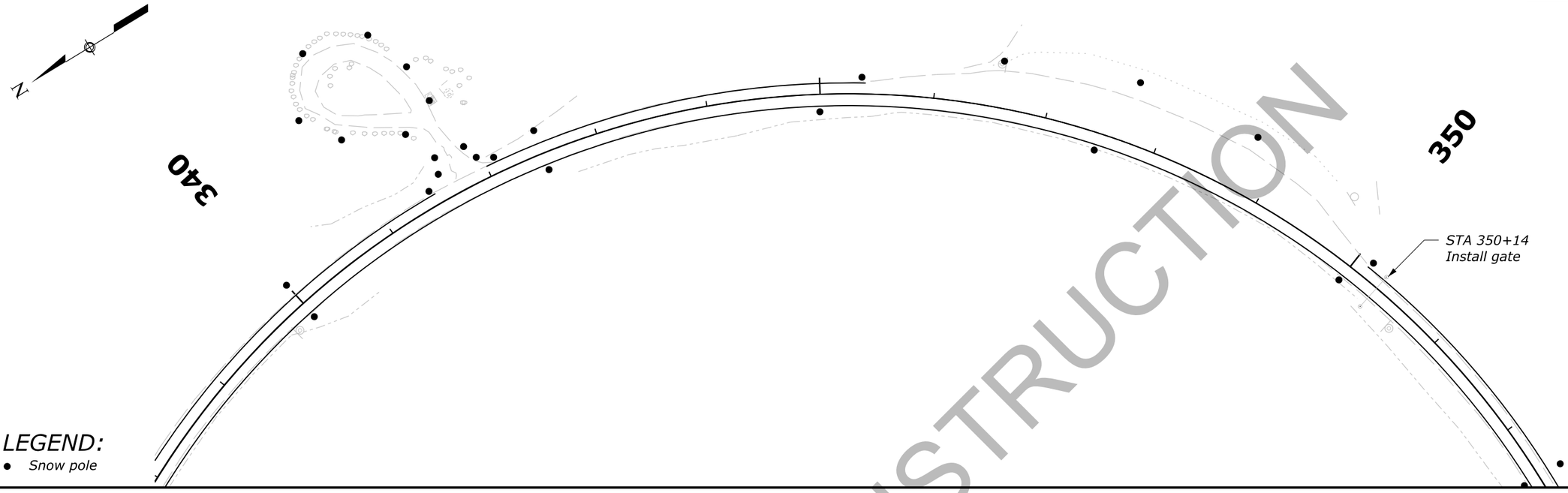
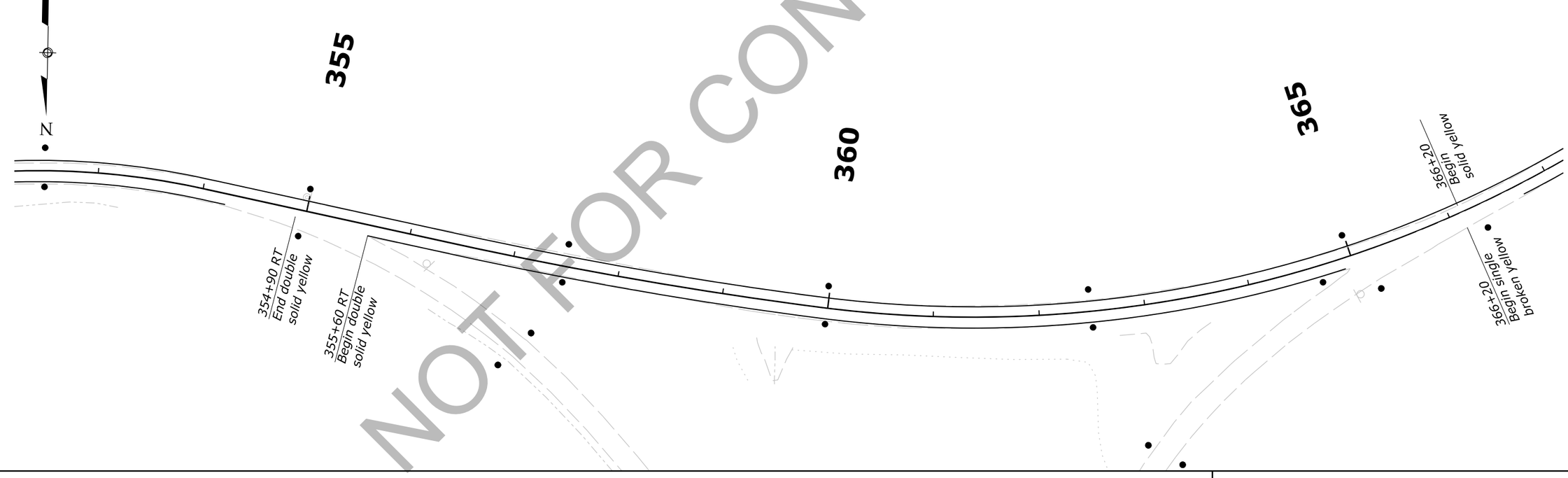


LEGEND:

- *Snow pole*



NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

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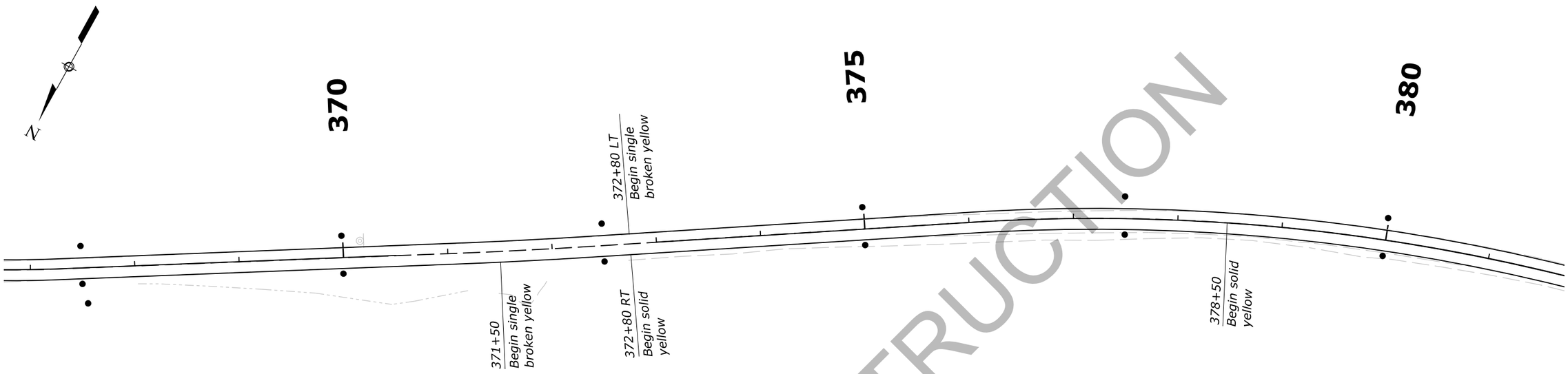
14 April 2021 10:20 AM

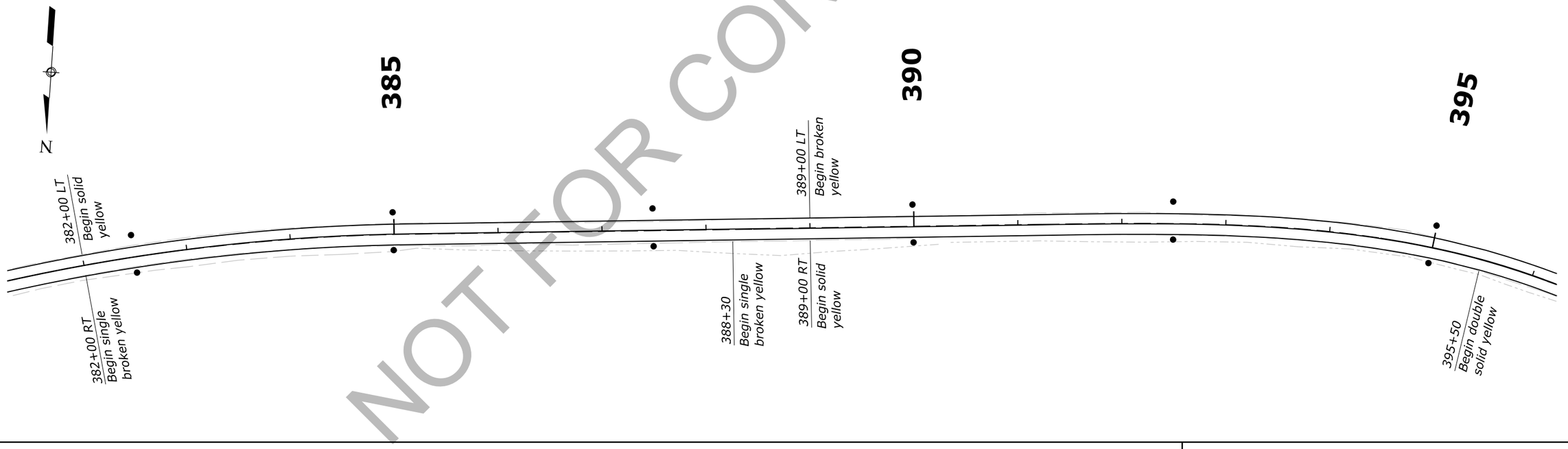
NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.19



LEGEND:

- *Snow pole*



NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw~work\d0441684\cfa01301_ndd.dgn [HA 251+00 to 495+00 - Plan 25 [Sheet]]
14 April 2021 10:31 AM

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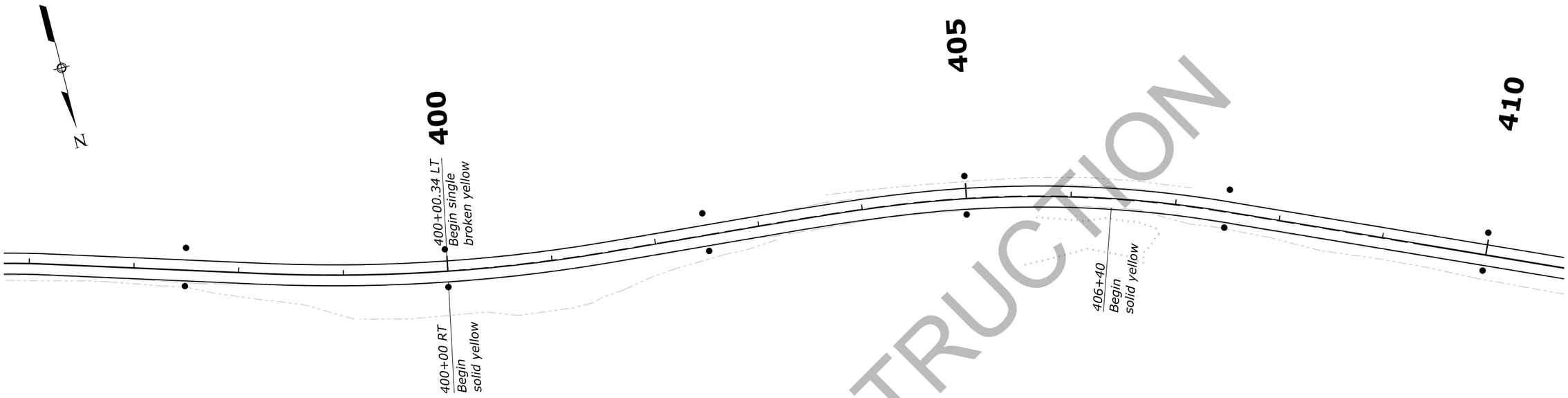
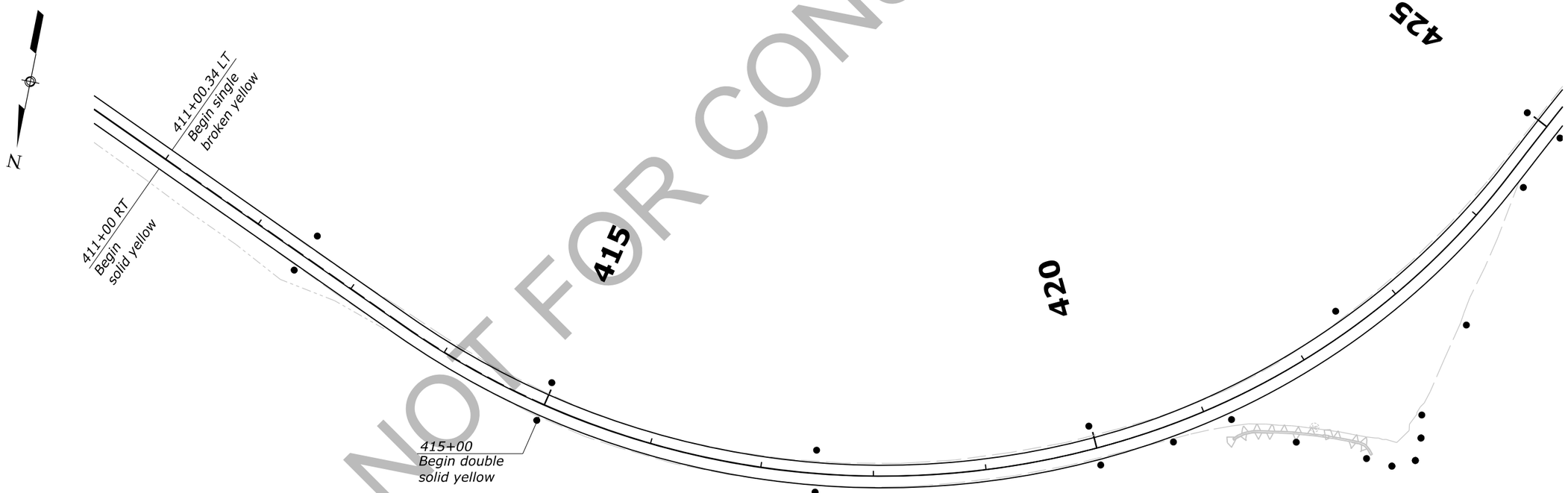
OR	NPS CRLA 13(1)	K.20



LEGEND:

- *Snow pole*



NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

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14 April 2021 10:34 AM

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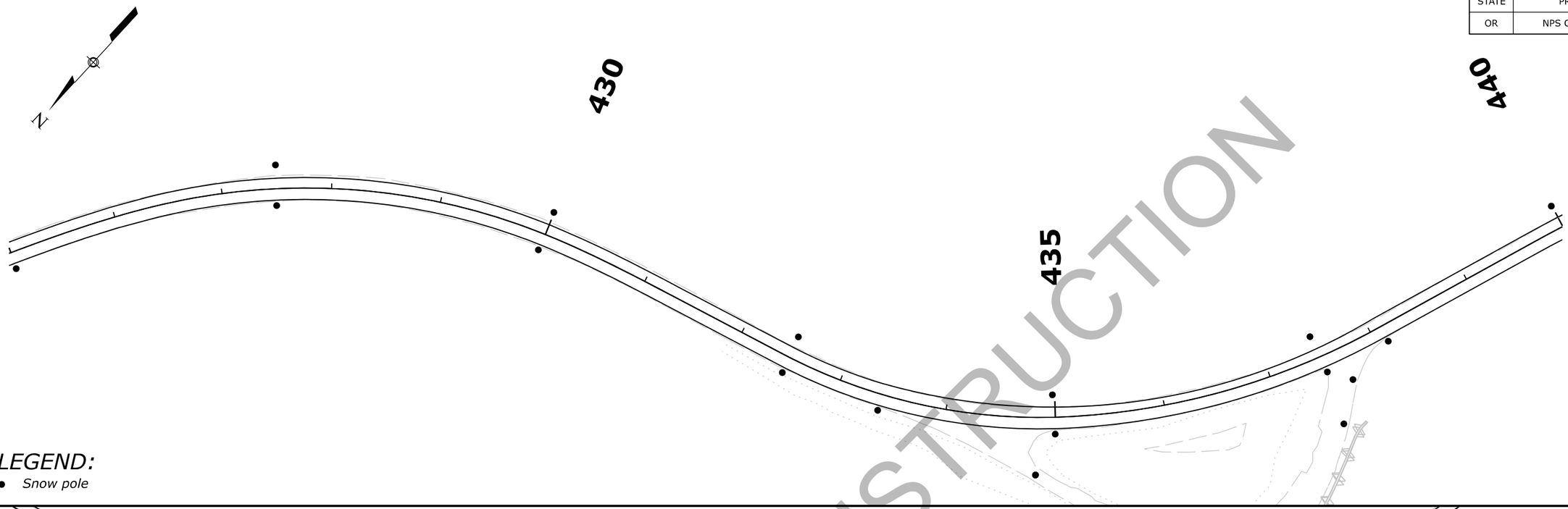
OR	NPS CRLA 13(1)	K.21



LEGEND:

- *Snow pole*

NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\dd0441684\cnt\d01301_ndd.dgn [HA 251+00 to 495+00 - Plan 29 [Sheet]]
14 April 2021 10:39 AM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.22

LEGEND:

- *Snow pole*

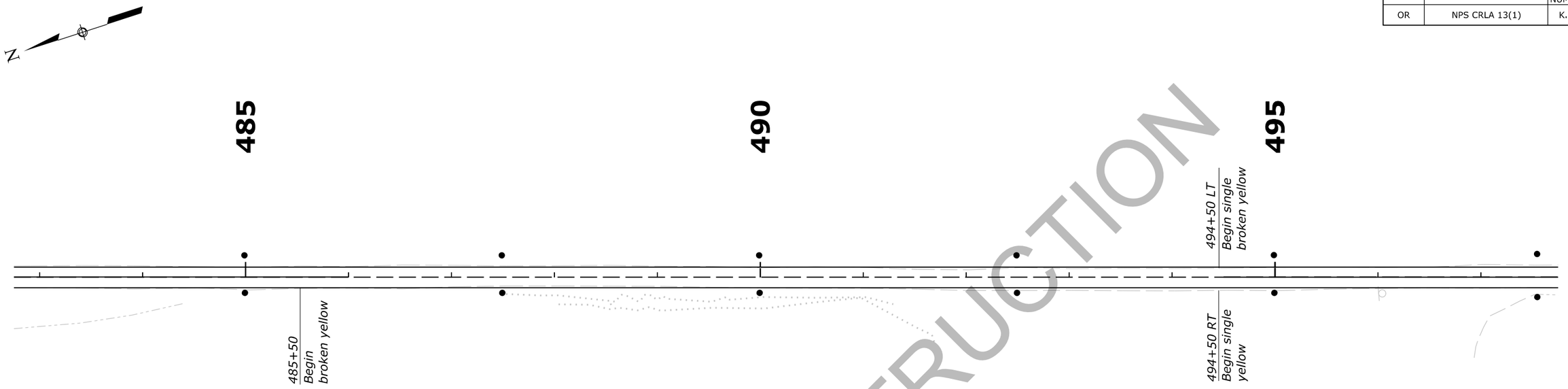
NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

14 April 2021 10:39 AM c:\pw-work\c0441684\crla01301_ndd.dgn [HA 251+00 to 495+00 - Plan 31 [Sheet]]

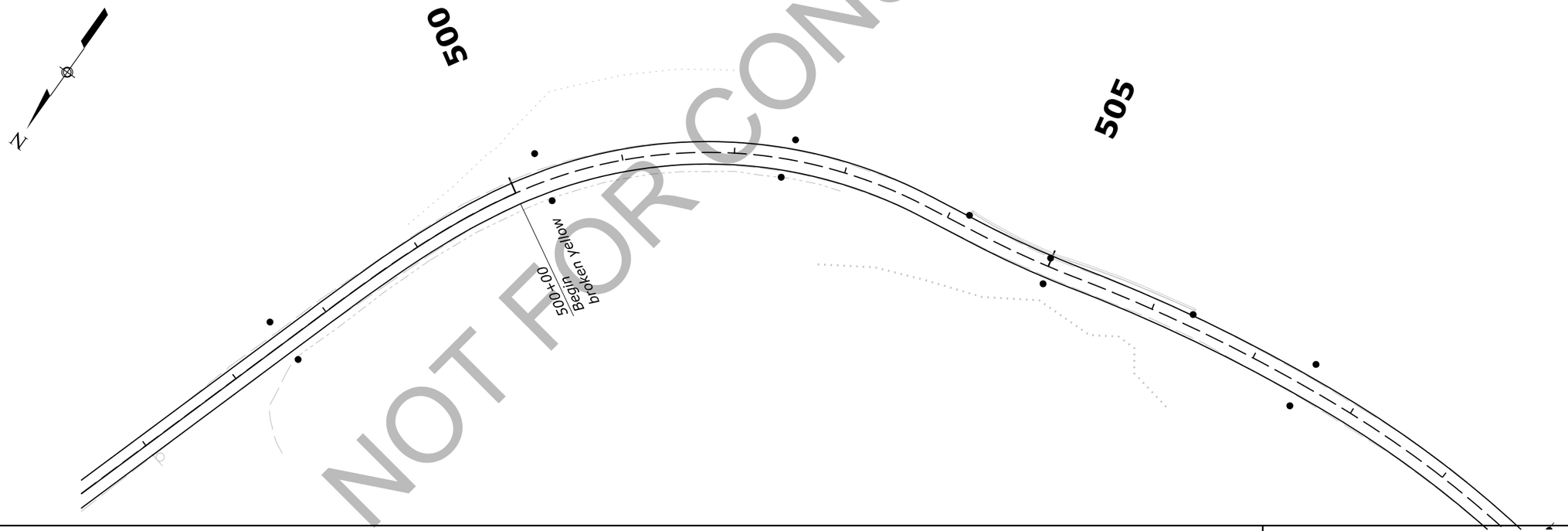
NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.23



LEGEND:

- *Snow pole*



NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\d0441684\cha01301_ndd.dgn [HA 251+00 to 495+00 - Plan 33 [Sheet]]
14 April 2021 10:43 AM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

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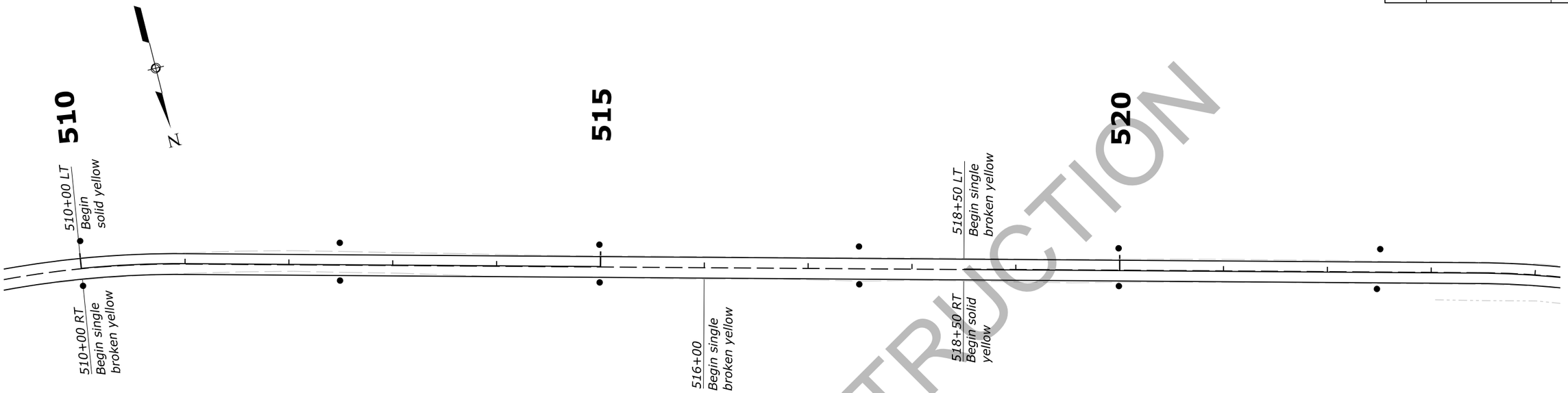
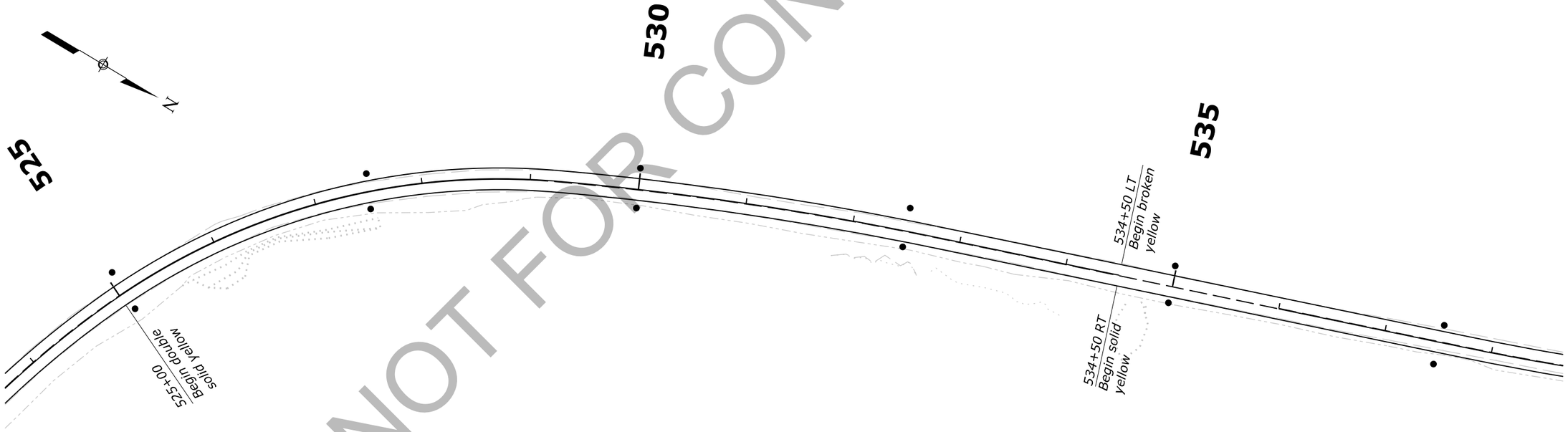


LEGEND:

- *Snow pole*



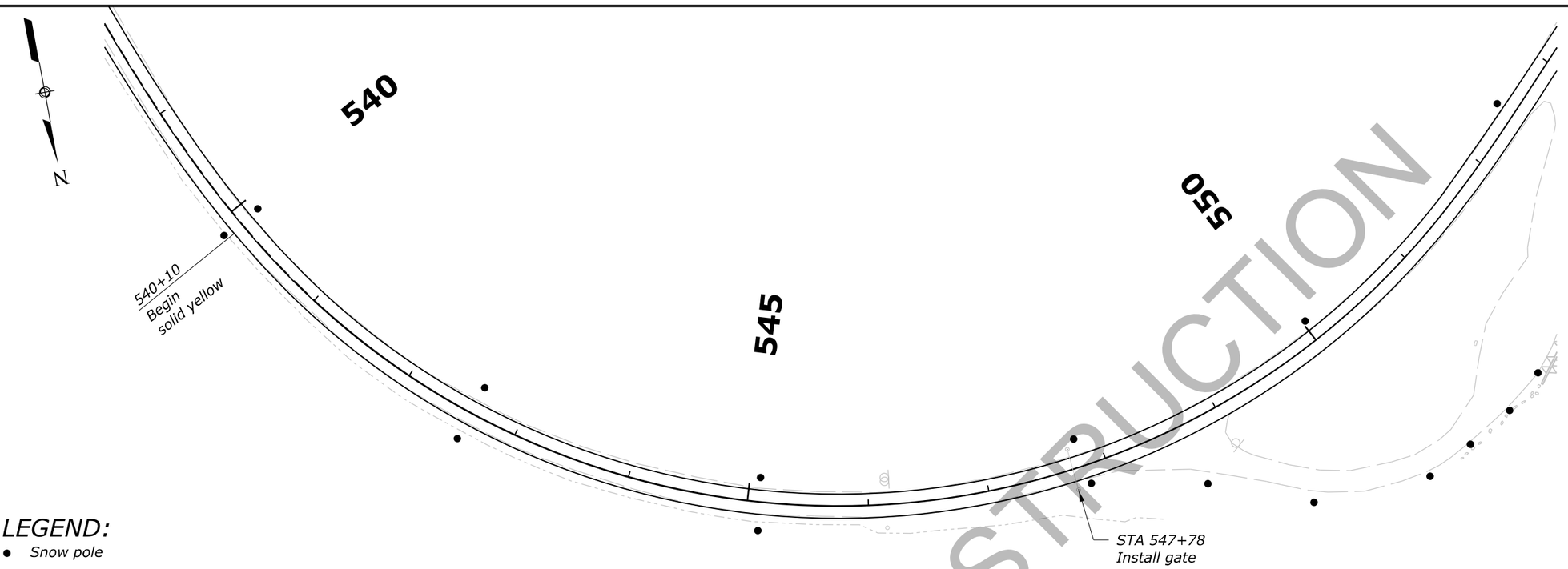
NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\d0441684\crla01301_ndd.dgn [VA 495 to 755 - Plan 34 [Sheet]]
14 April 2021 10:45 AM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.25



LEGEND:

- *Snow pole*

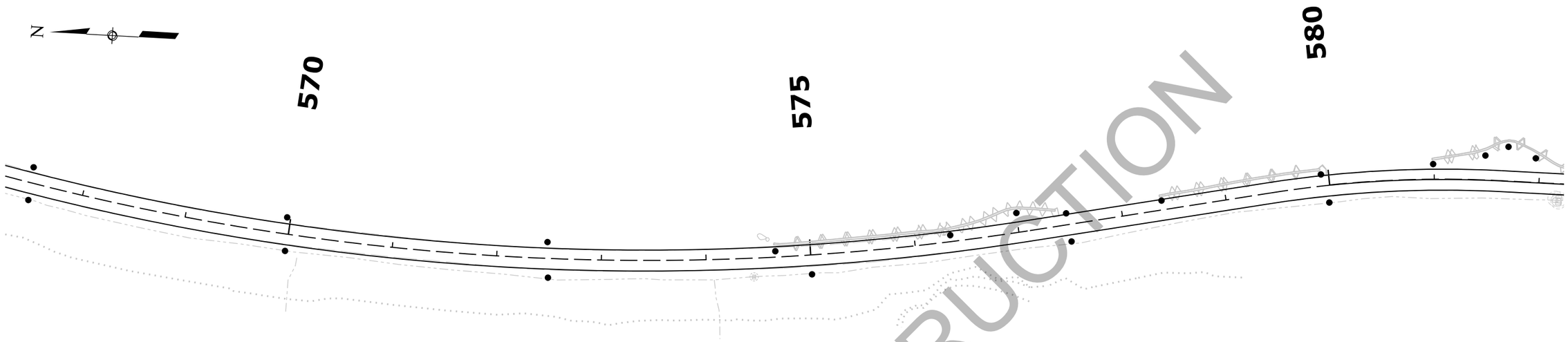
NOT FOR CONSTRUCTION

c:\pw~work\d0441684\cfd01301_ndd.dgn [VA 495 to 755 - Plan 36 [Sheet]]
14 April 2021 10:50 AM

PERMANENT TRAFFIC CONTROL SINGING AND STRIPING

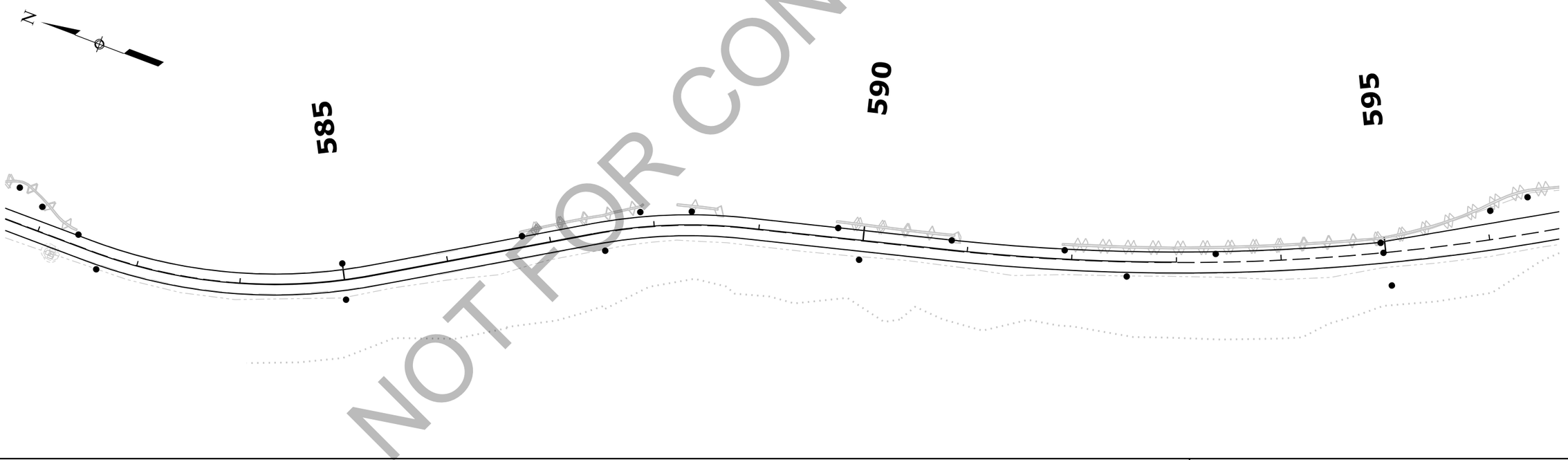
NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.26



LEGEND:

- *Snow pole*



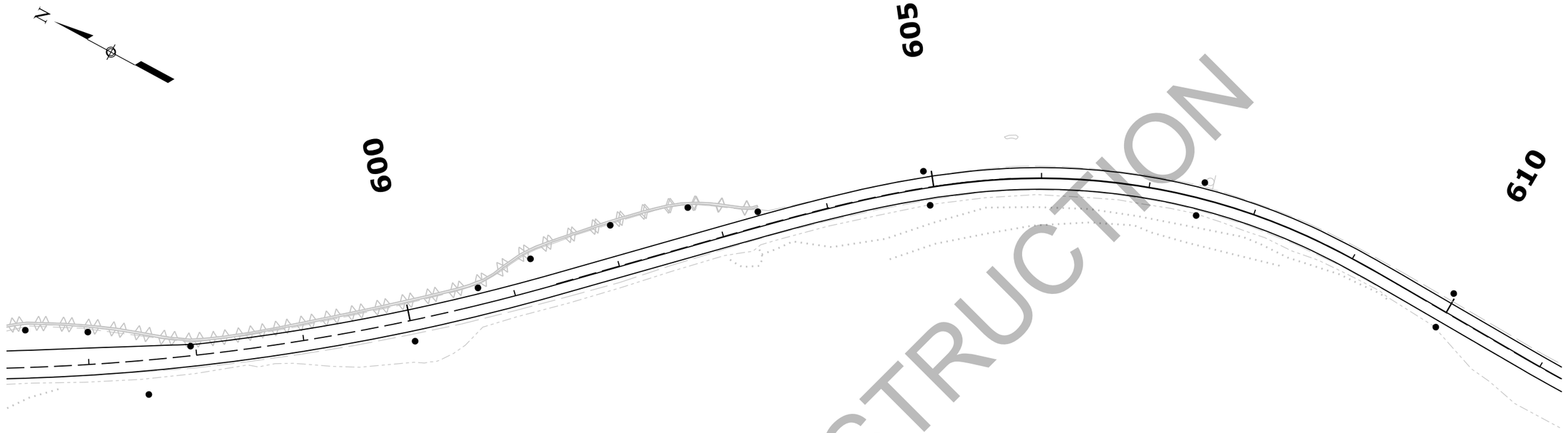
NOT FOR CONSTRUCTION

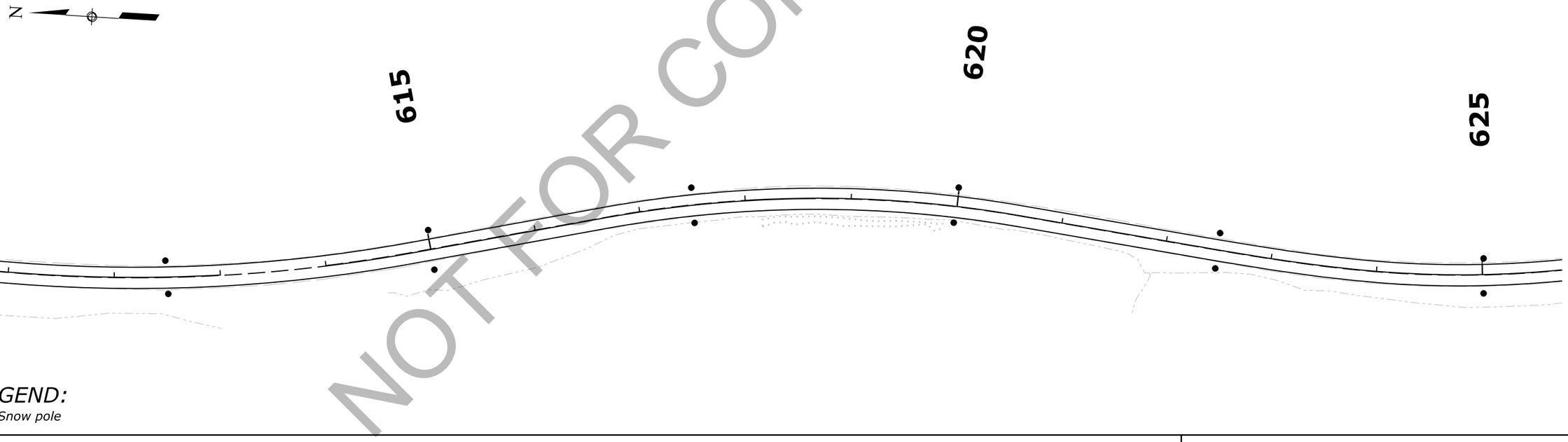
PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\d0441684\crla01301_ndd.dgn [VA 495 to 755 - Plan 38 [Sheet]]
14 April 2021 10:51 AM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.27





LEGEND:

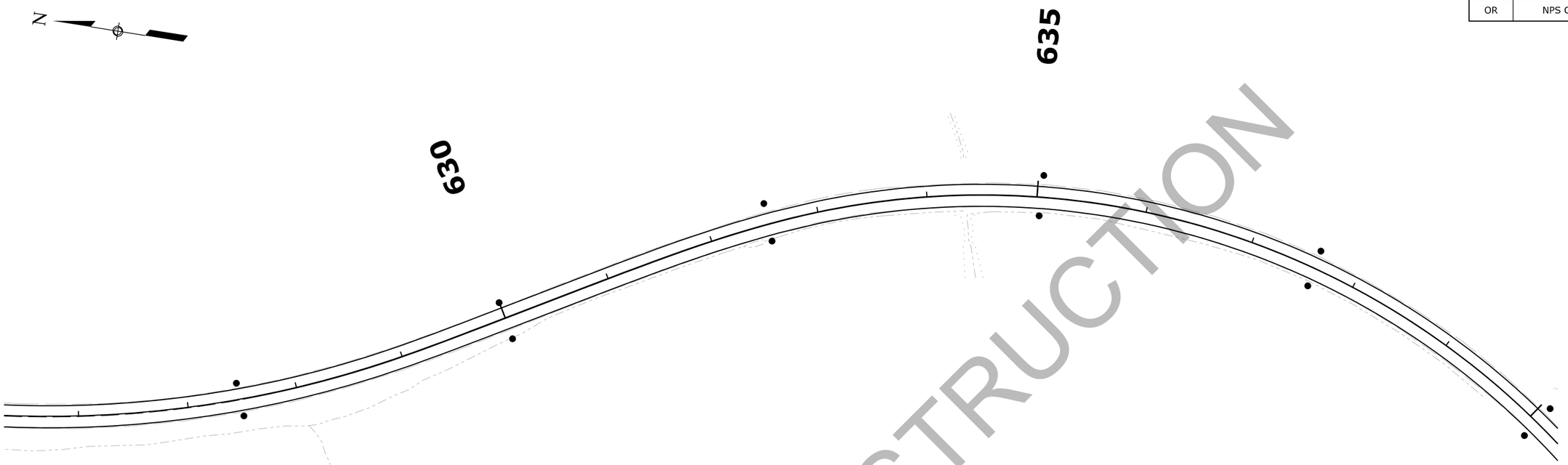
- *Snow pole*

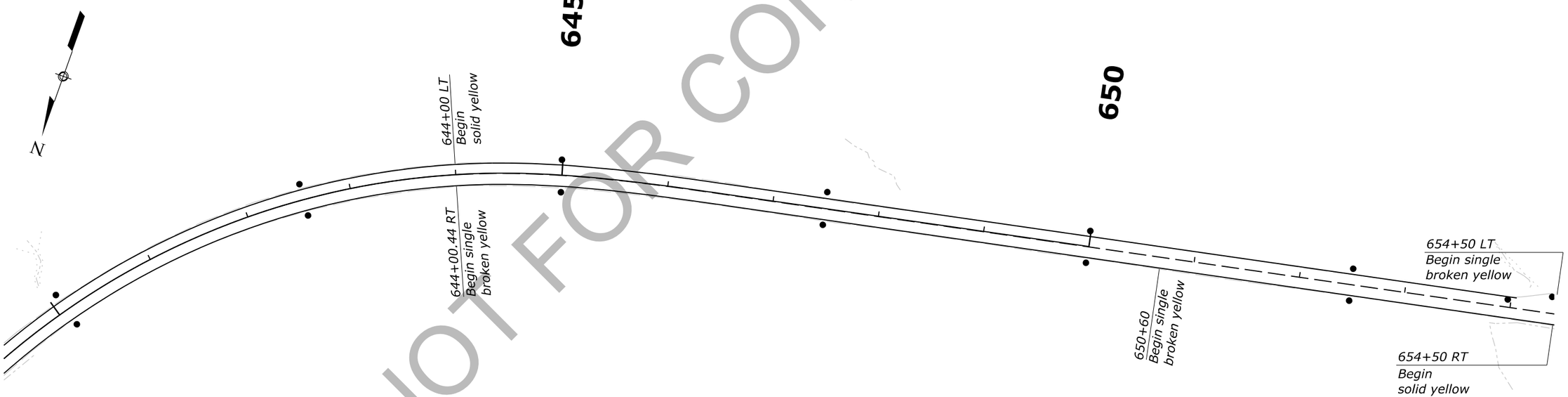
NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw~work\d0441684\cfd01301_ndd.dgn [VA 495 to 75S - Plan 40 [Sheet]]
14 April 2021 10:53 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.28





LEGEND:

- *Snow pole*

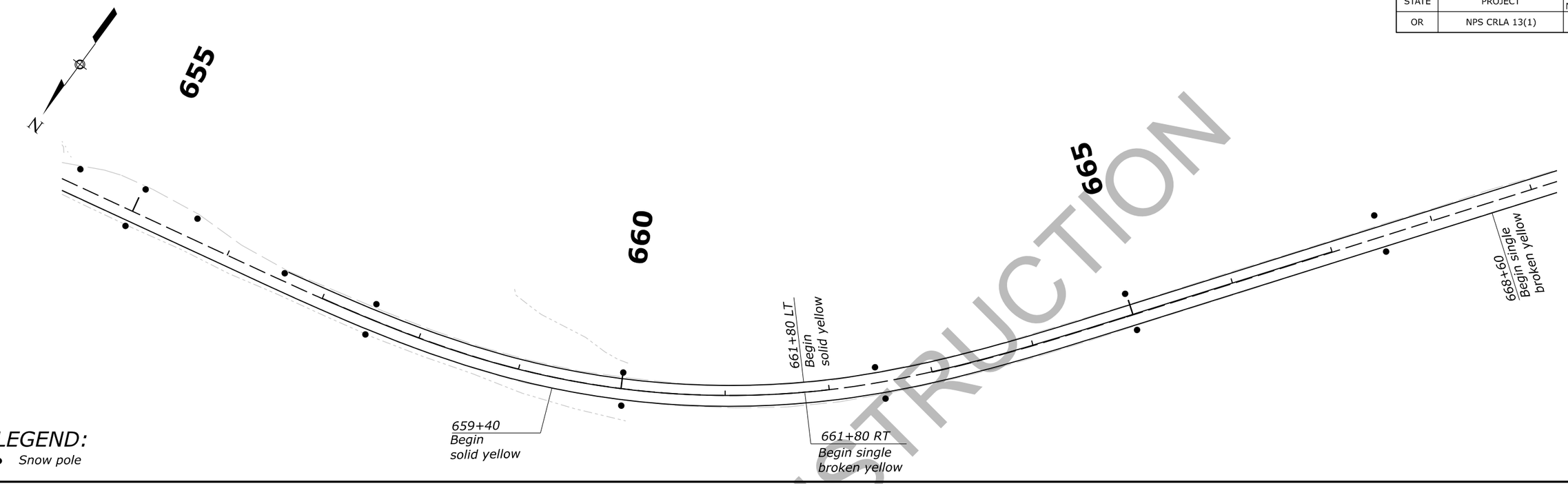
NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\d0441684\crla01301_ndd.dgn [VA 495 to 755 - Plan 42 [Sheet]]
14 April 2021 10:54 AM

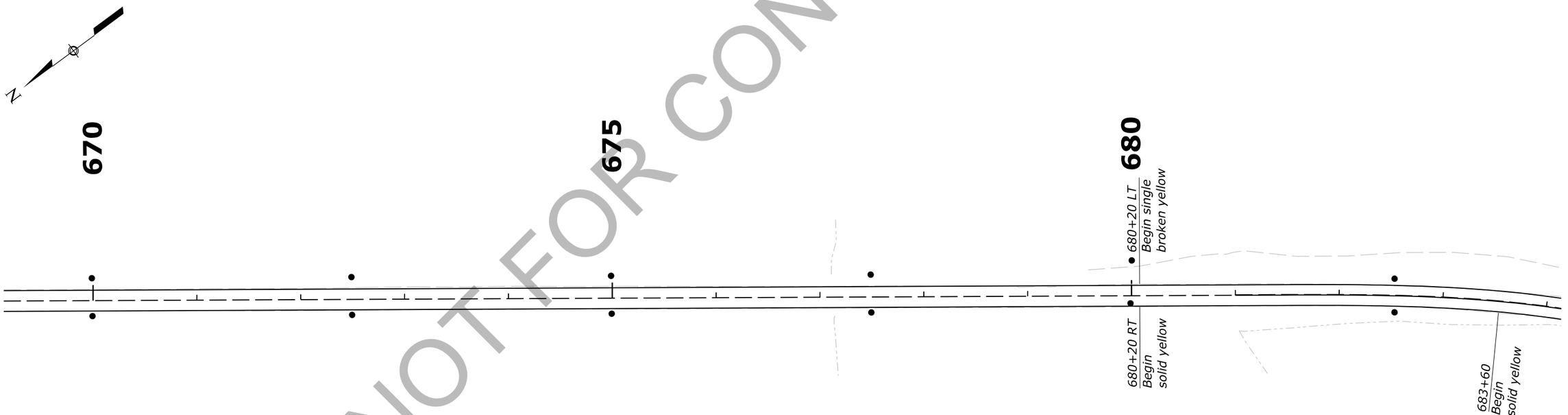
NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.29



LEGEND:

- *Snow pole*

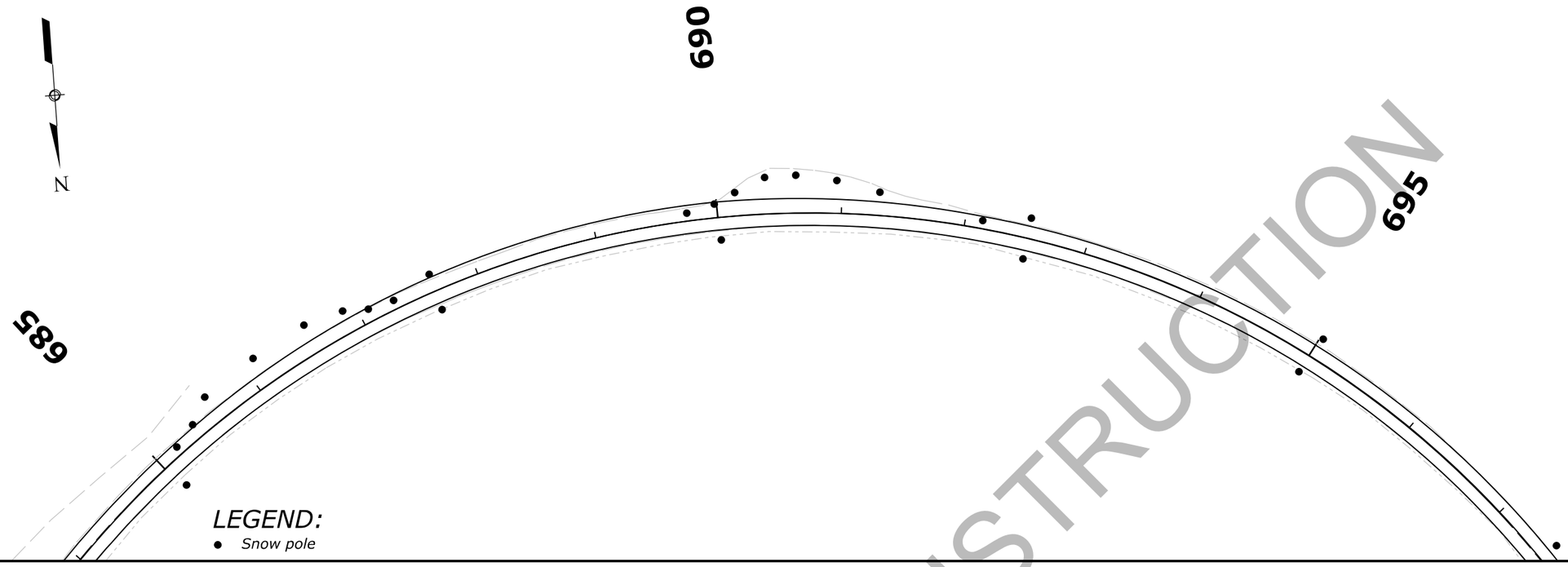


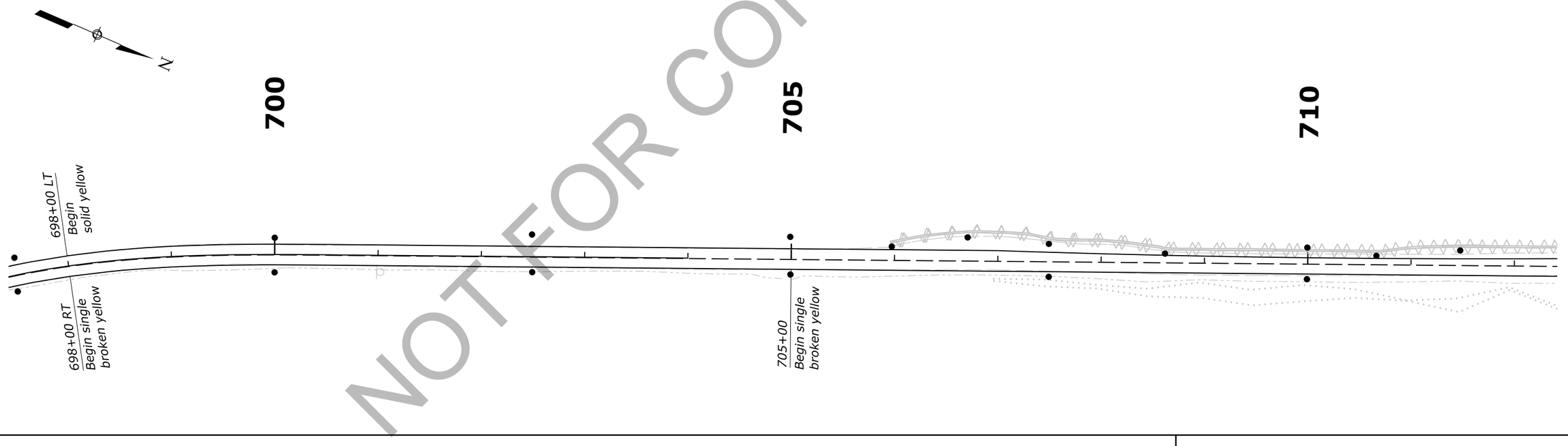
NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\d0441684\cha01301_ndd.dgn [VA 495 to 755 - Plan 44 [Sheet]]
14 April 2021 10:57 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.30



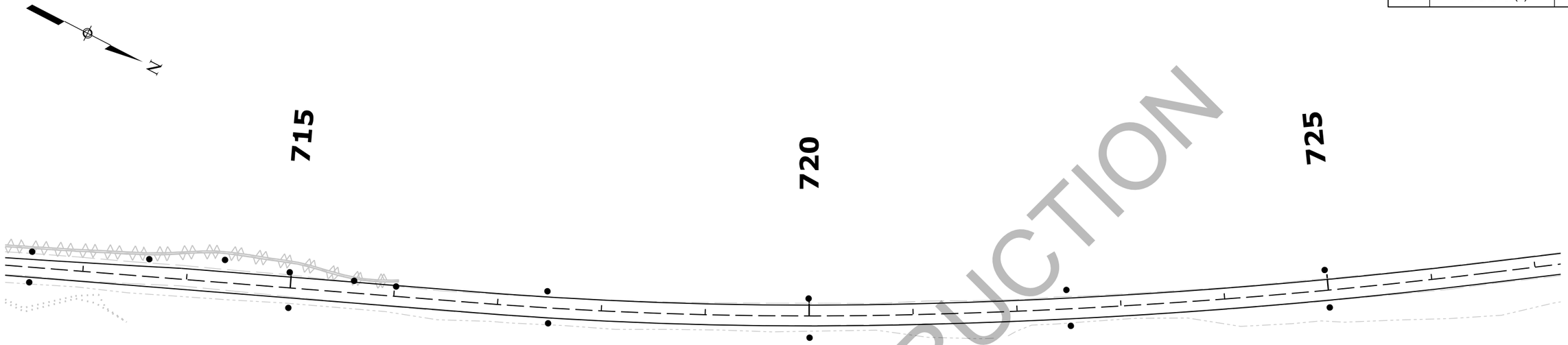


NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

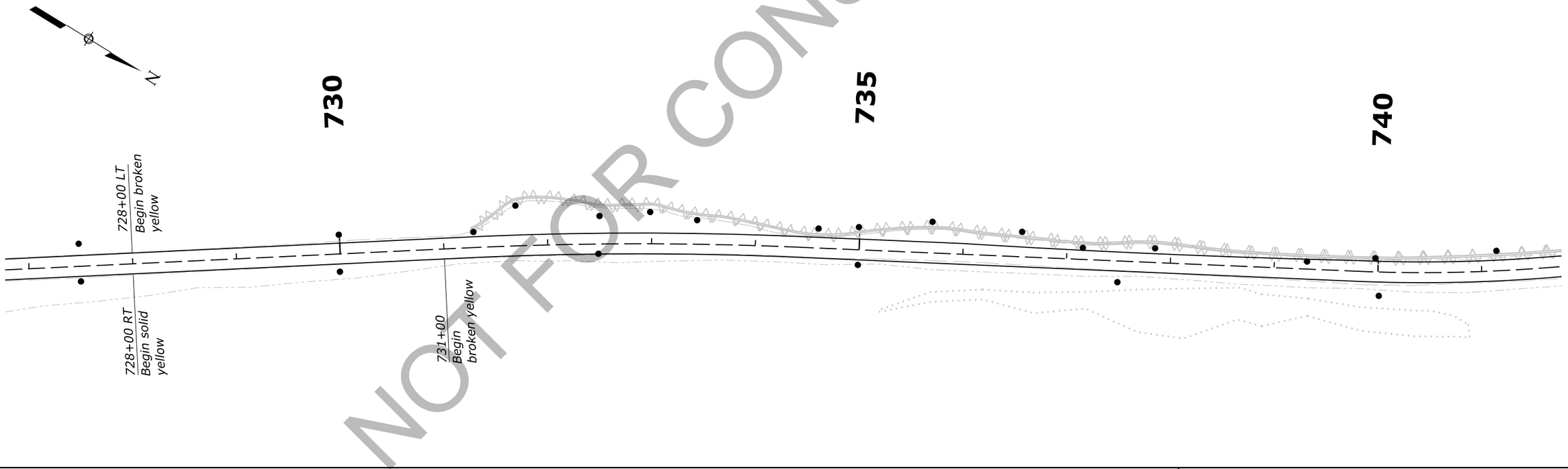
c:\pw~work\d0441684\cfa01301_ndd.dgn [VA 495 to 7S5 - Plan 46 [Sheet]]
14 April 2021 11:00 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.31



LEGEND:

- *Snow pole*

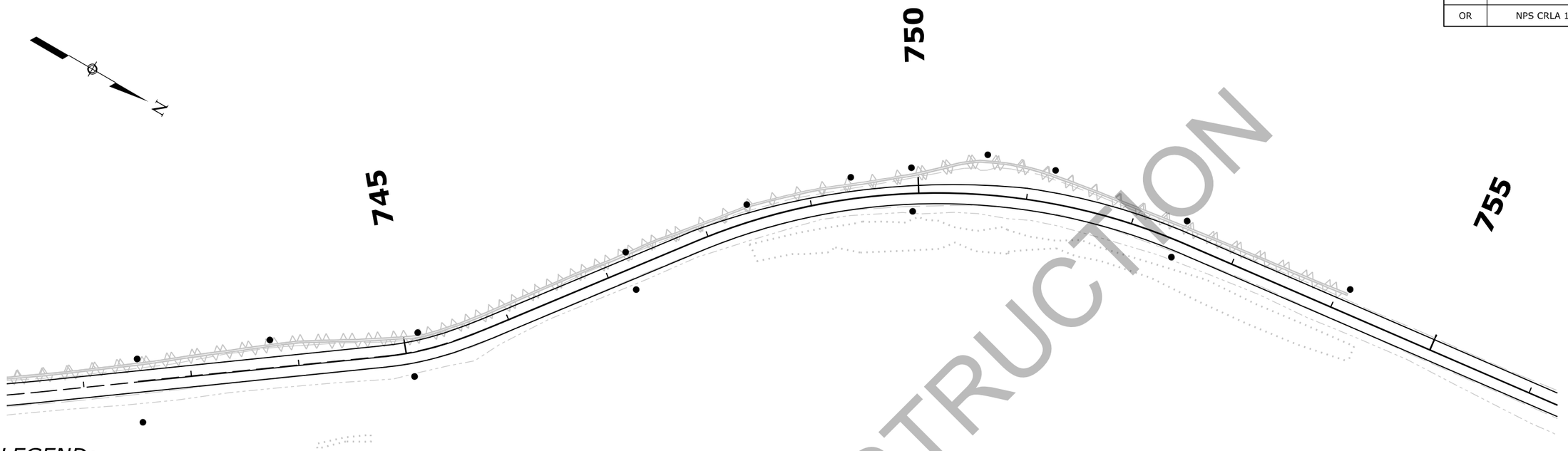


NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

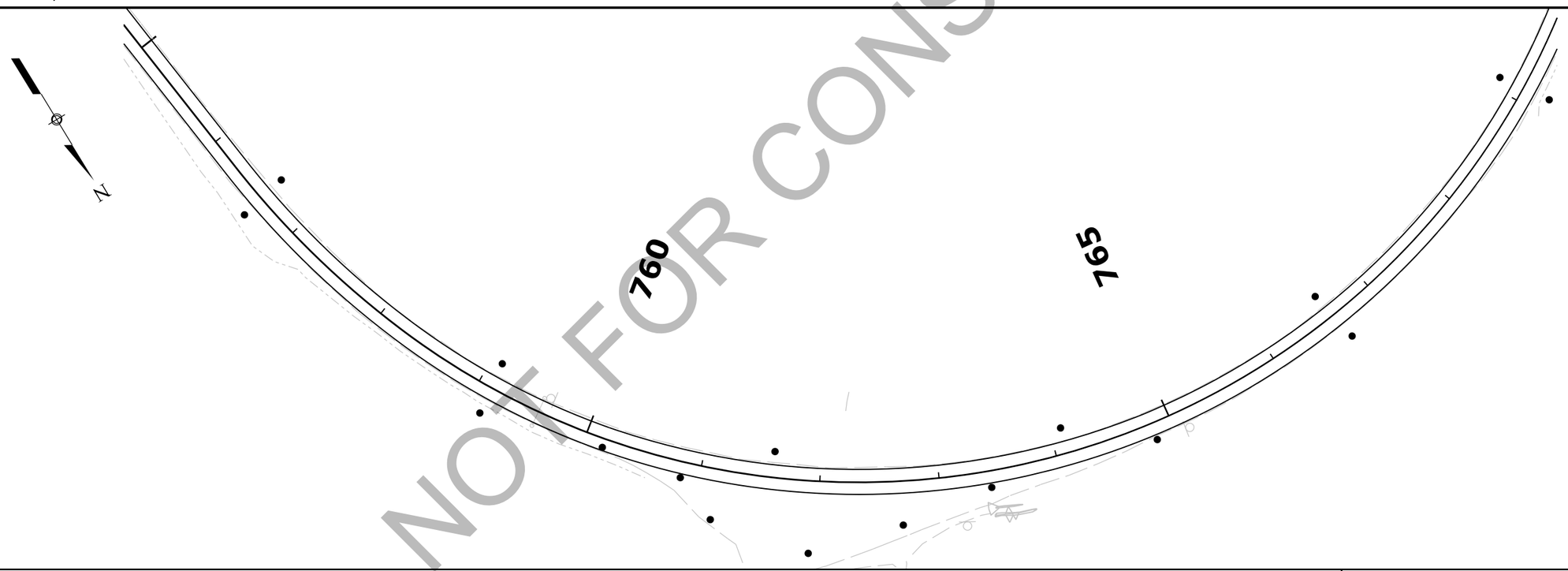
c:\pw-work\d0441684\cha01301_ndd.dgn [VA 495 to 755 - Plan 48 [Sheet]]
14 April 2021 11:02 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.32



LEGEND:

- *Snow pole*



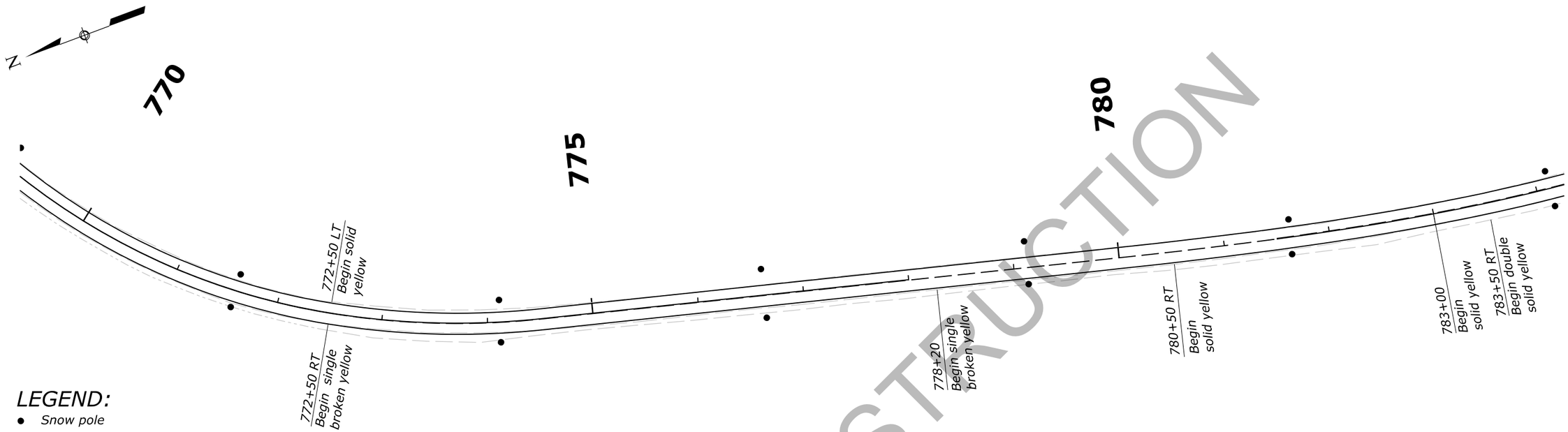
NOT FOR CONSTRUCTION

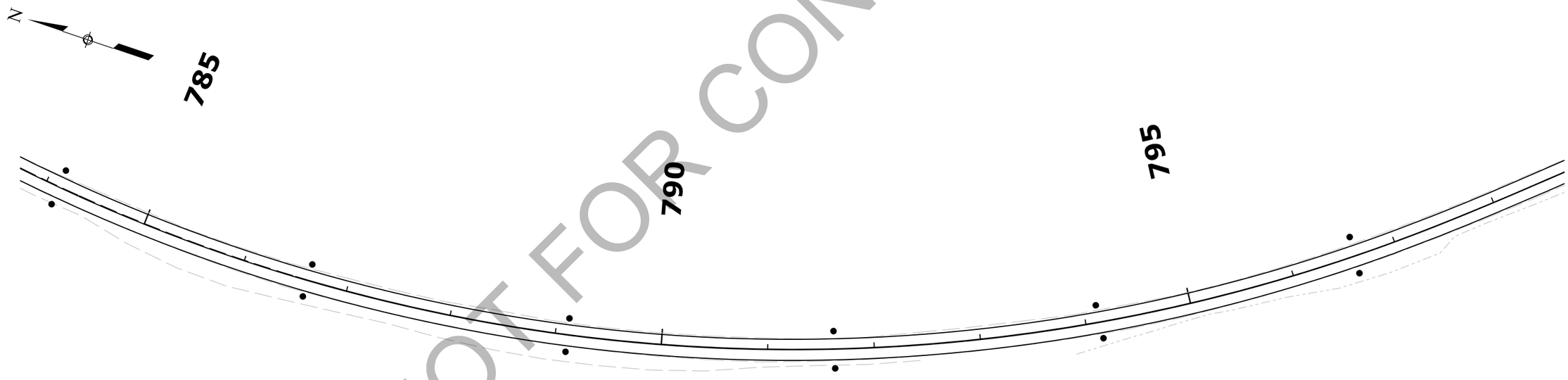
PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw~work\dot041684\d0041684\cha01301_ndd.dgn [VA 495 to 755 - Plan 50 [Sheet]]
14 April 2021 11:03 AM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.33





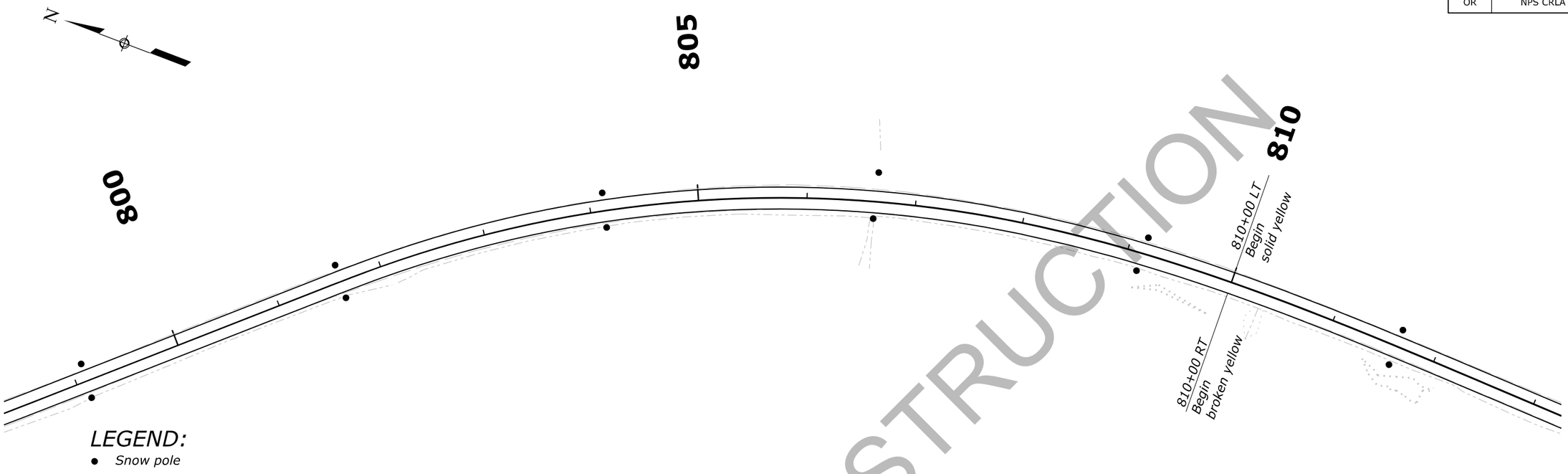
NOT FOR CONSTRUCTION

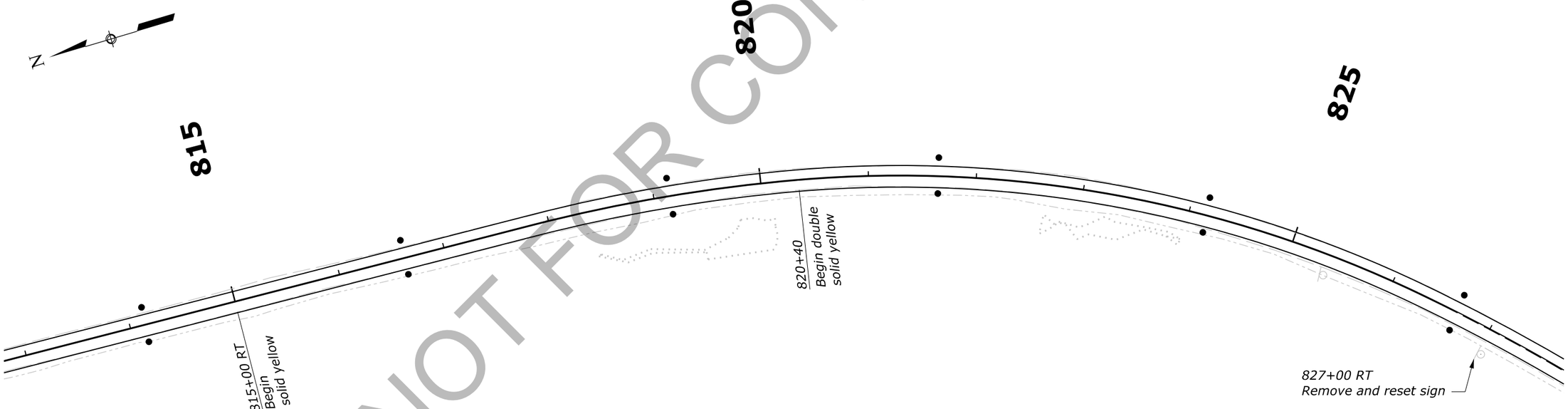
PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\d0441684\crla01301_ndd.dgn [HA Cor 4 755 - Plan 52 [Sheet]]
14 April 2021 11:05 AM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.34





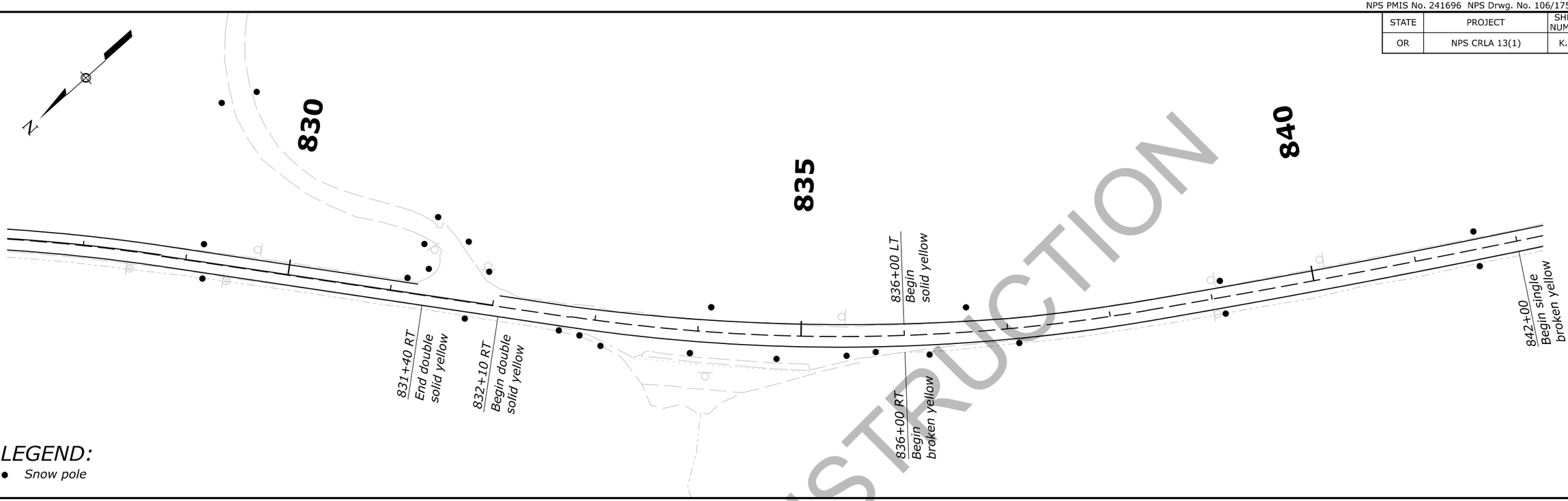
NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\d0441684\crla01301_ndd.dgn [HA Cor 4 755 - Plan 54 [Sheet]]
14 April 2021 11:10 AM

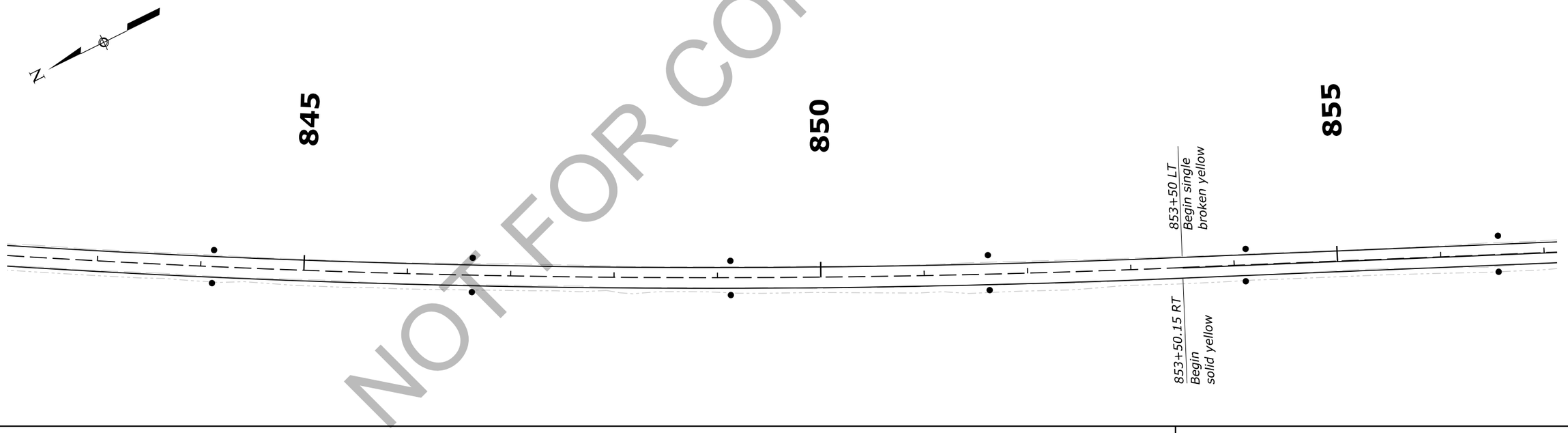
NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.35



LEGEND:

- Snow pole



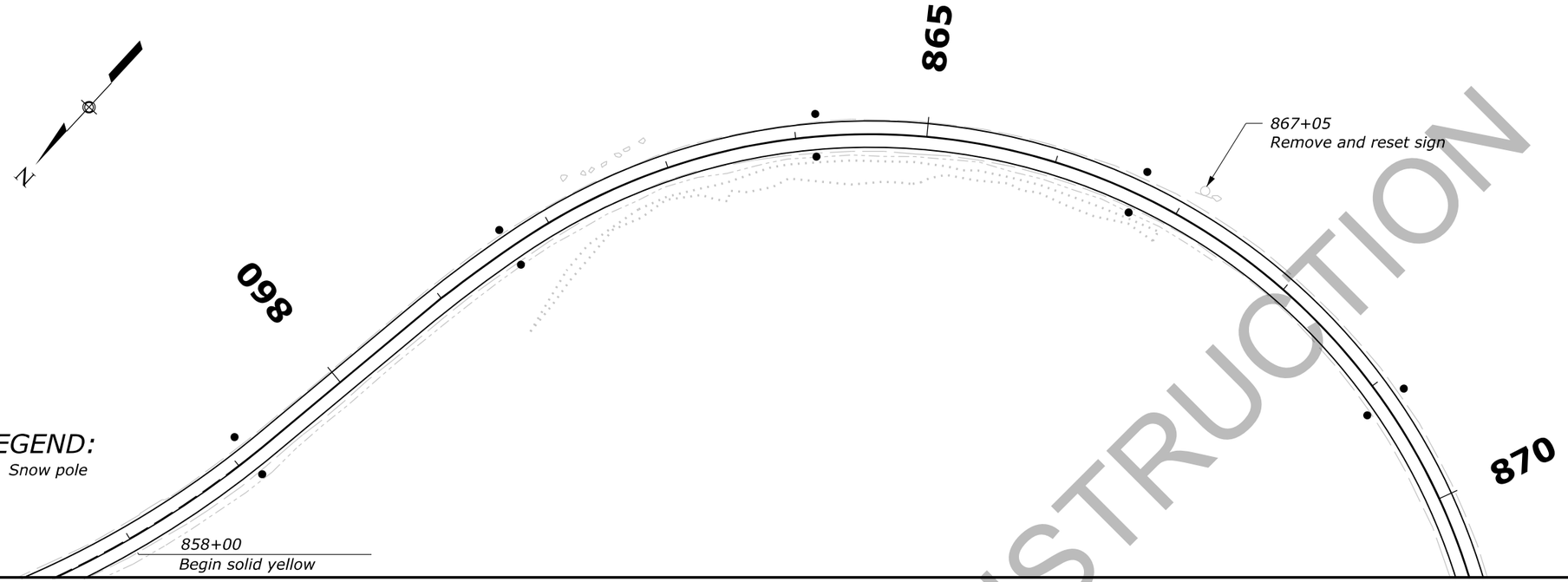
NOT FOR CONSTRUCTION

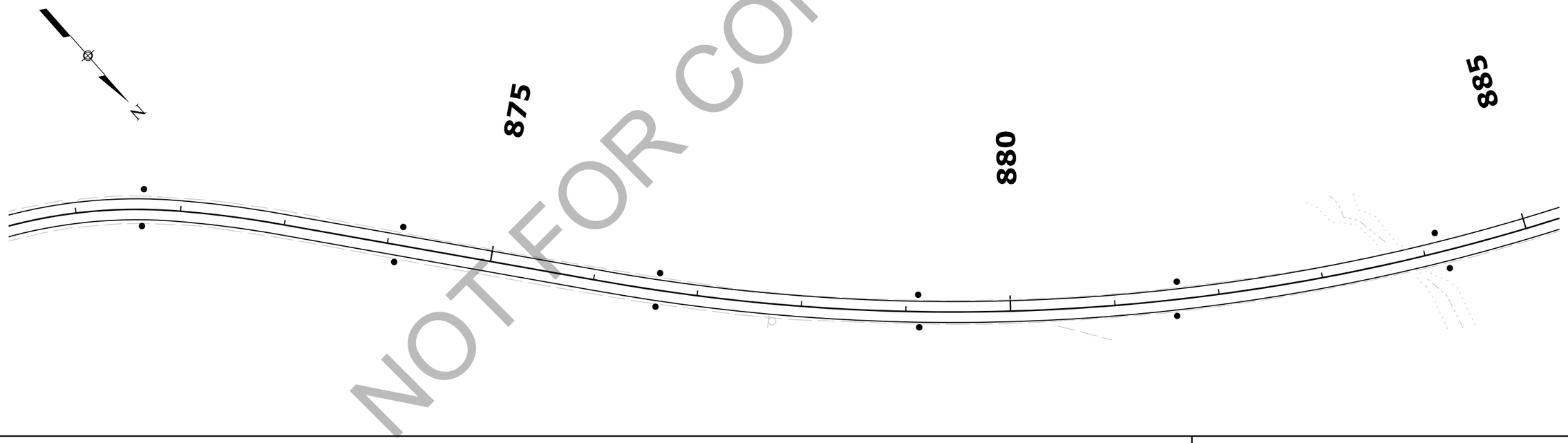
PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\d0441684\crla01301_ndd.dgn [HA Cor 4 755 - Plan 56 [Sheet]]
14 April 2021 11:13 AM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.36





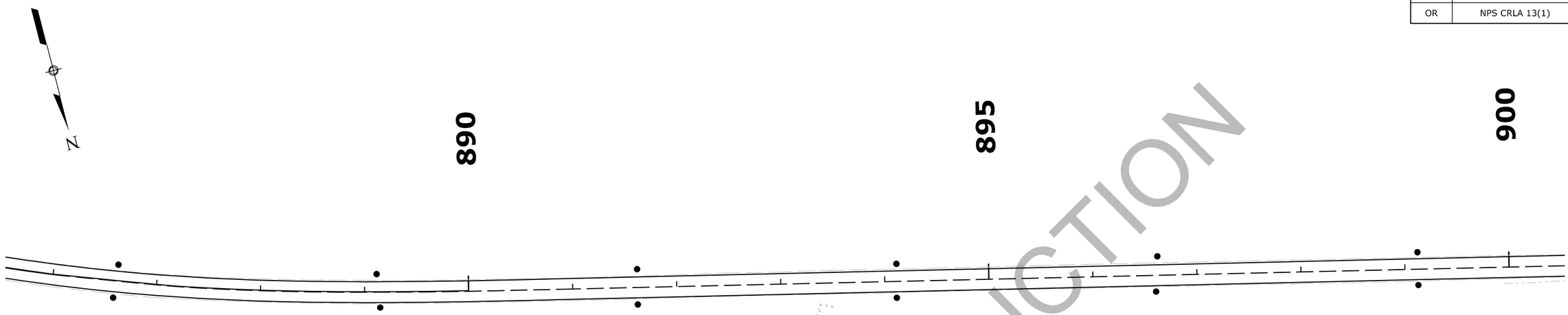
NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw~work\d0441684\cr1e01301_ndd.dgn [HA Cor 4 755 - Plan 58 [Sheet]]
14 April 2021 11:14 AM

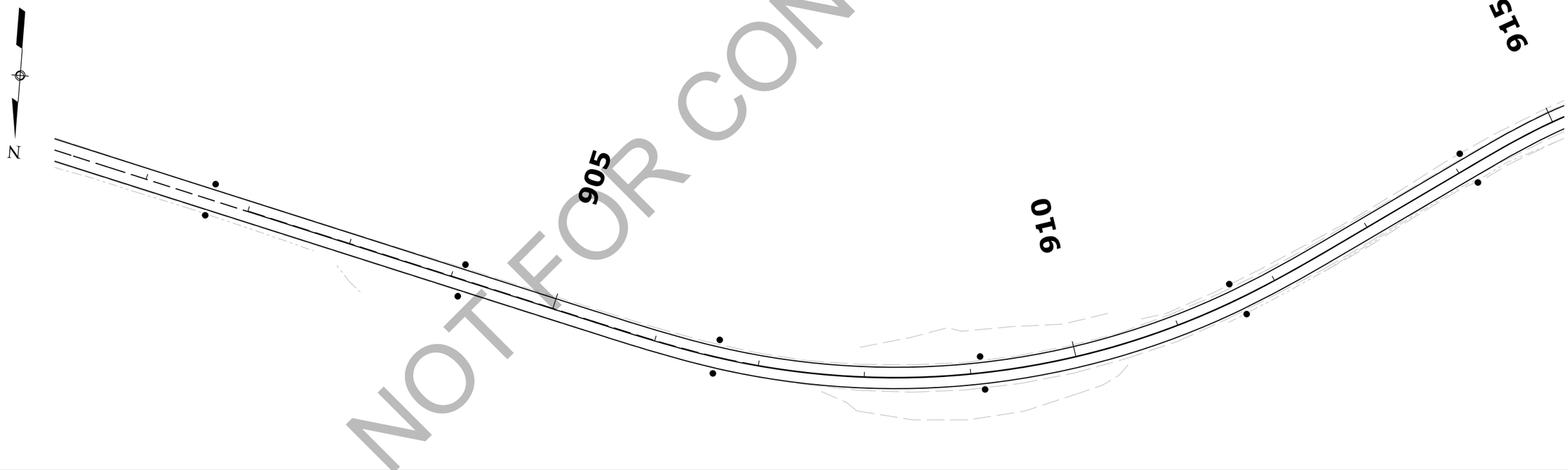
NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.37



LEGEND:

- *Snow pole*

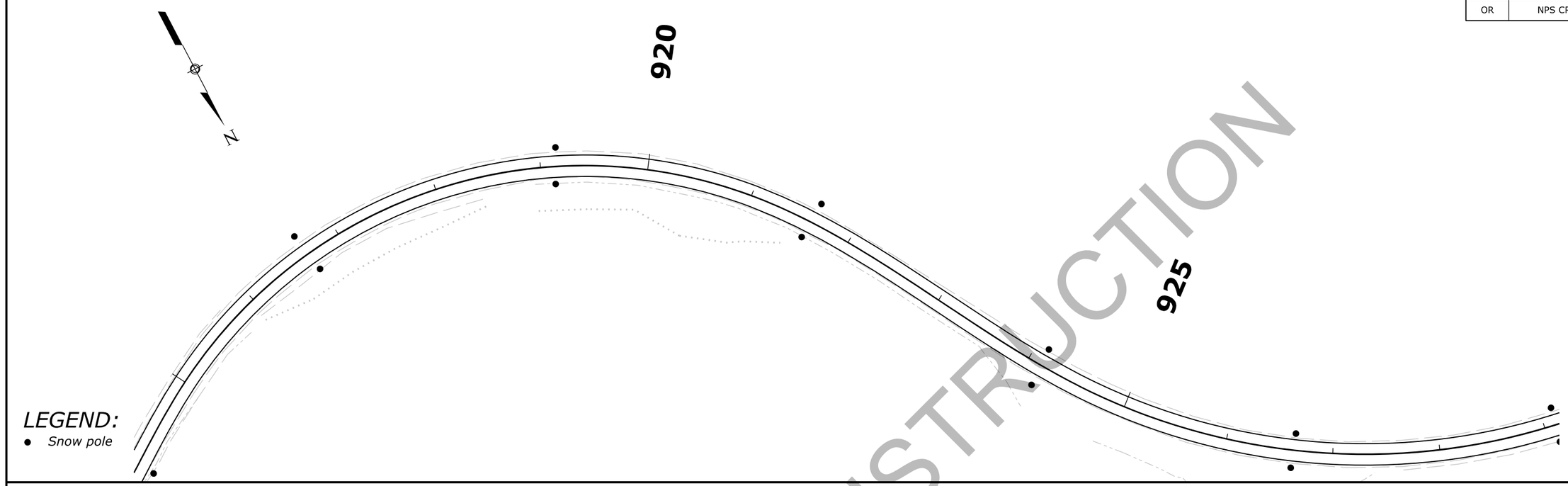


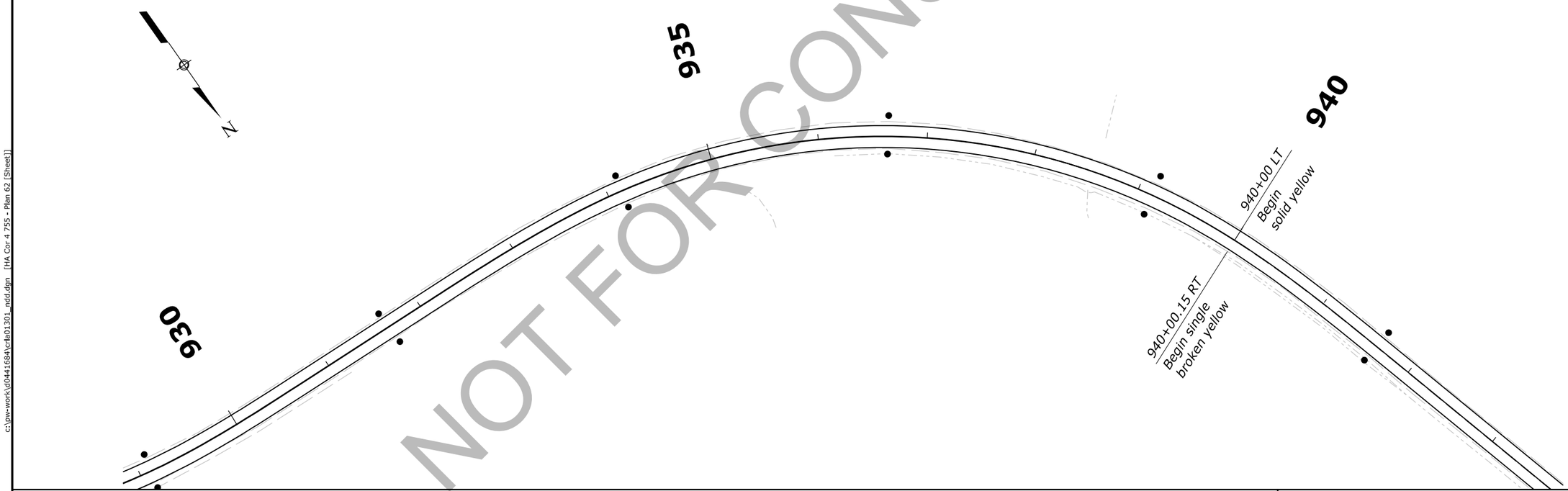
NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\d0441684\crla01301_ndd.dgn [HA Cor 4 75S - Plan 60 (Sheet)]
14 April 2021 11:16 AM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.38





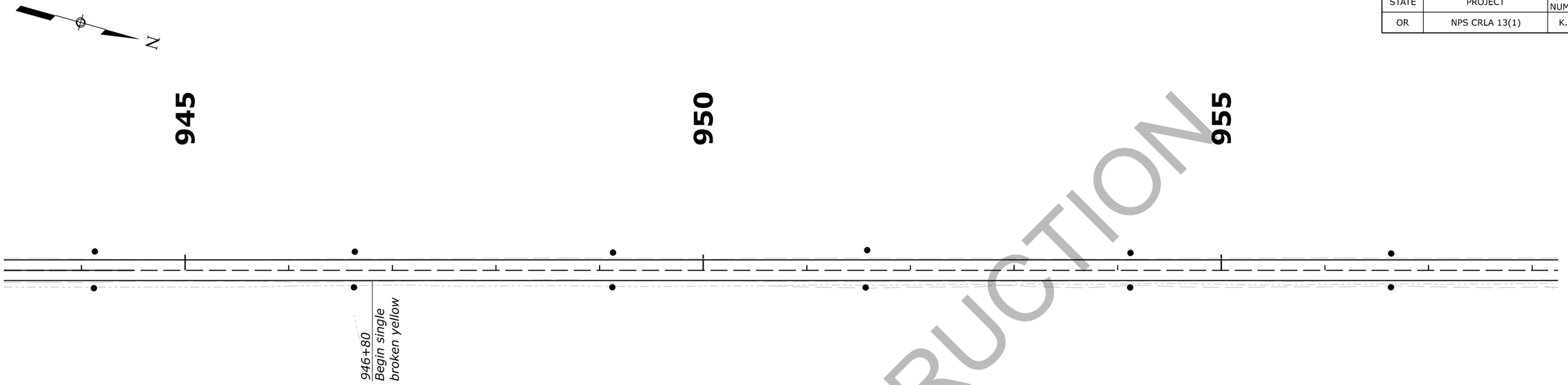
NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNS AND STRIPING

c:\pw-work\d0441684\cha01301_ndd.dgn [HA Cor 4 75S - Plan 62 [Sheet]]
14 April 2021 11:16 AM

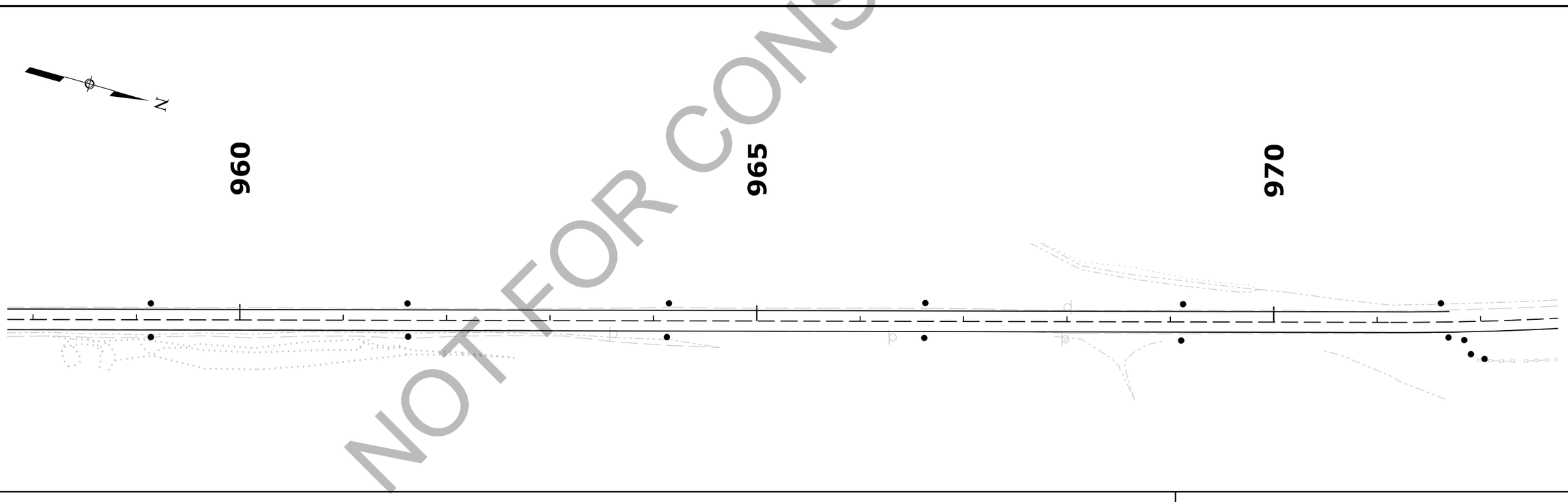
NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.39



LEGEND:

- *Snow pole*



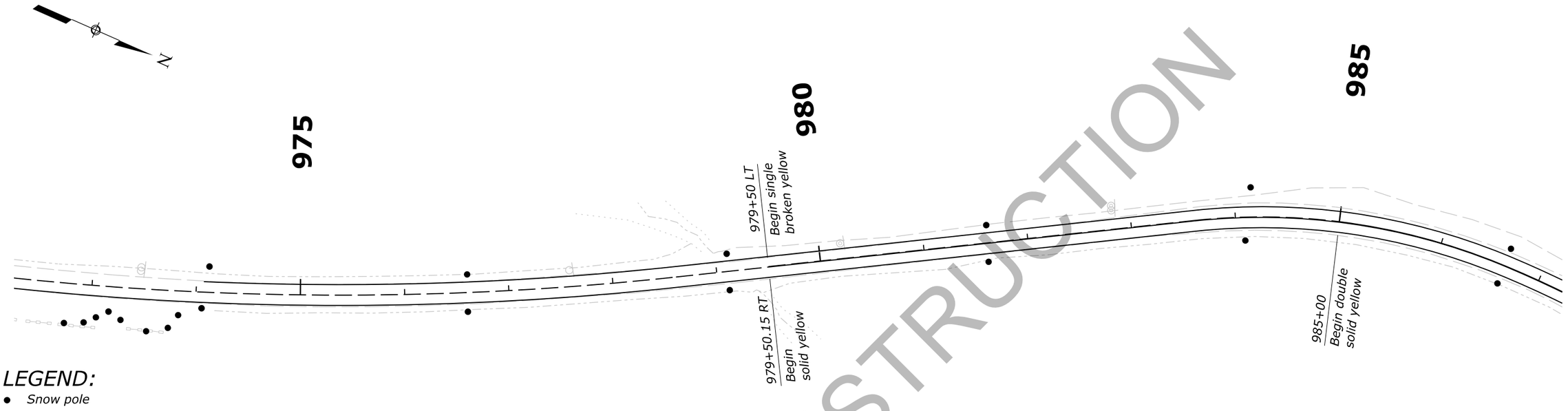
NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw-work\d0441684\cfd01301_ndd.dgn [HA Cor 4 755 - Plan 64 [Sheet]]
14 April 2021 11:16 AM

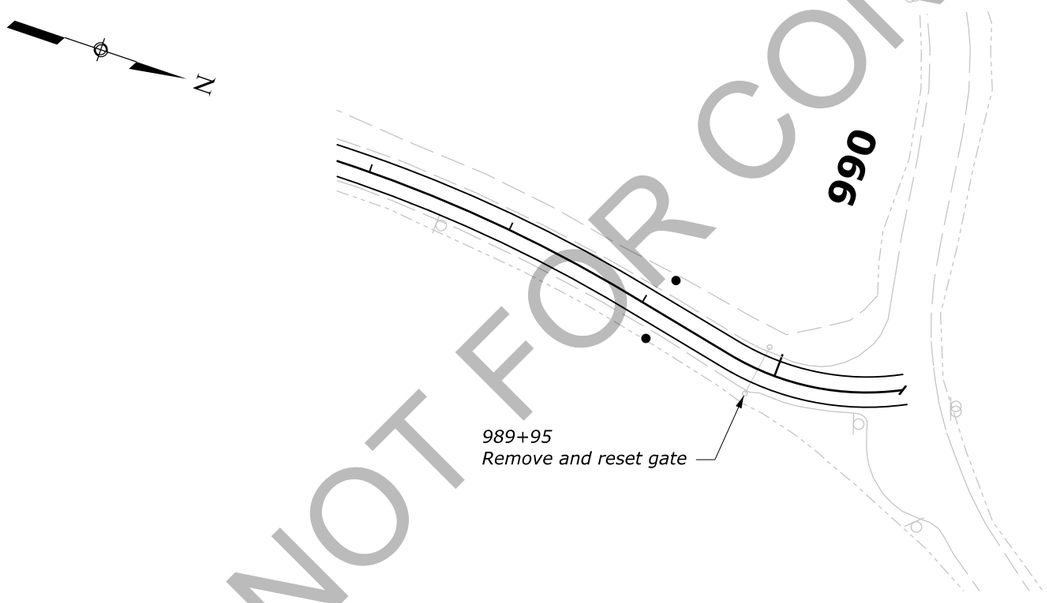
NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.40



LEGEND:

- *Snow pole*



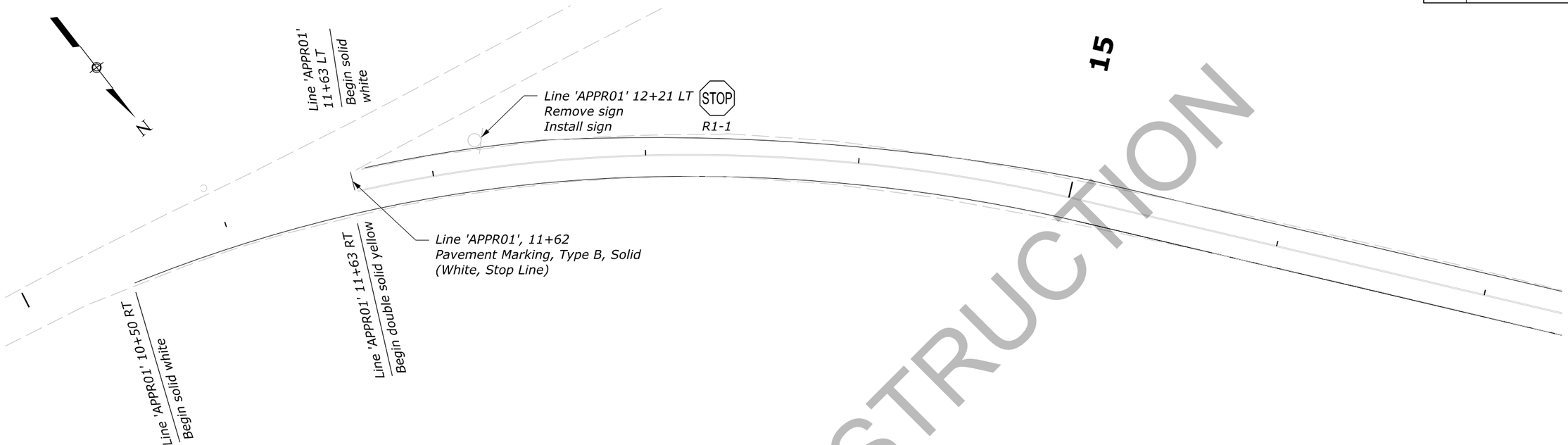
NOT FOR CONSTRUCTION

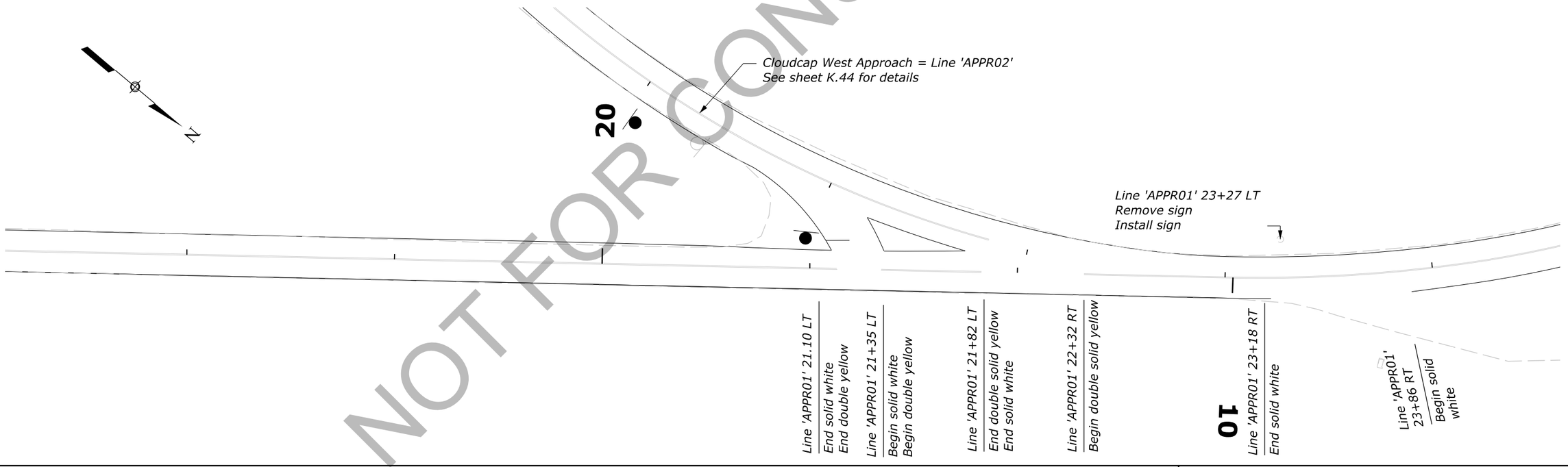
PERMANENT TRAFFIC CONTROL SIGNING AND STRIPING

c:\pw~work\d0441684\cfle01301_ndd.dgn [HA Cor 4 755 - Plan 66 [Sheet]]
14 April 2021 11:21 AM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.41





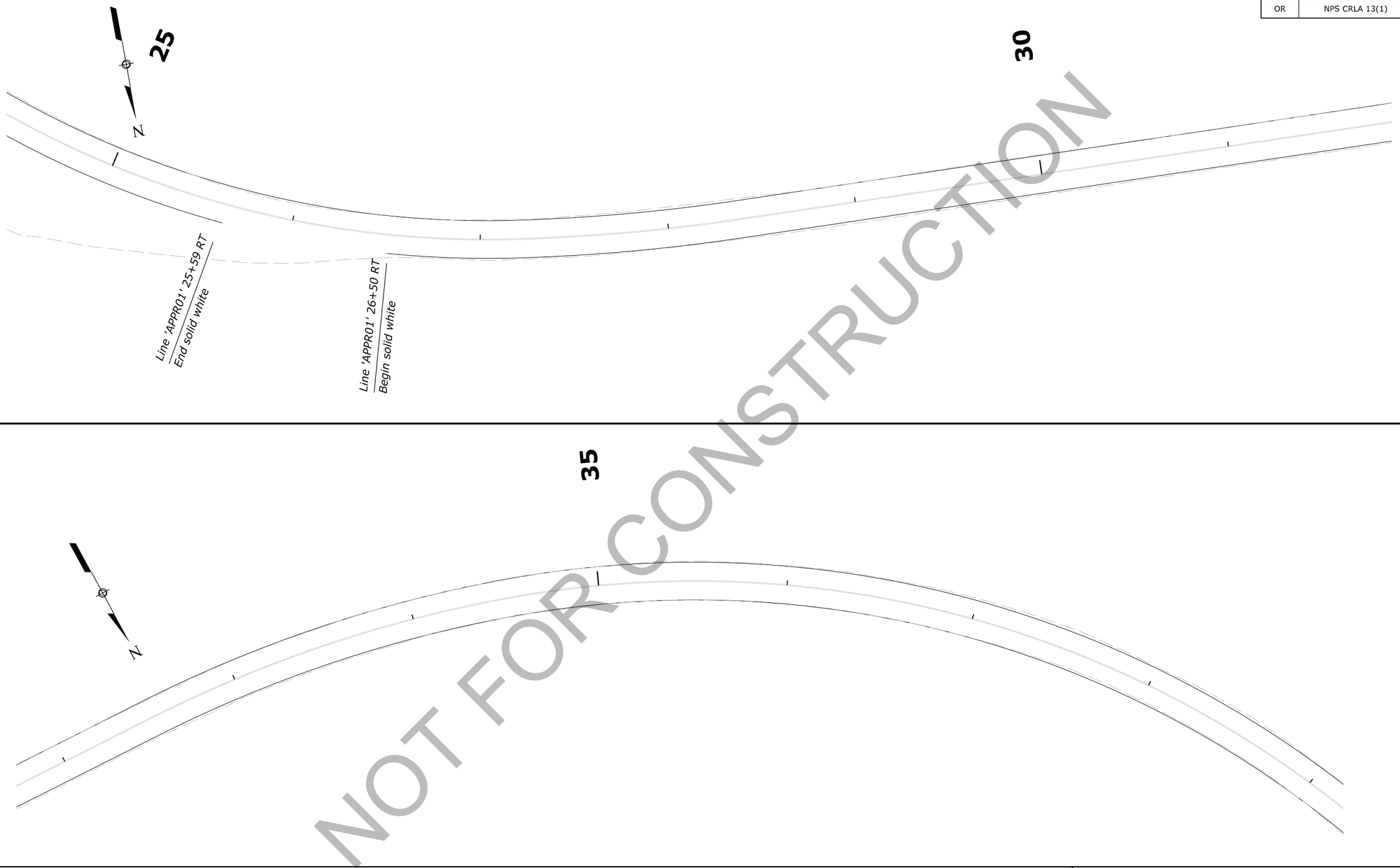
NOT FOR CONSTRUCTION

CLOUDCAP EAST APPROACH ROAD LINE 'APPR01' PERMANENT TRAFFIC CONTROL

29 March 2021 10:06 AM C:\Users\jennifer.longmore\Desktop\Exported from PW\cfa01301_PTC_APPR_1-4.dgn [Cloudcap EAST Approach Road Line 'APPR01' Permanent Traffic Control]

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.42



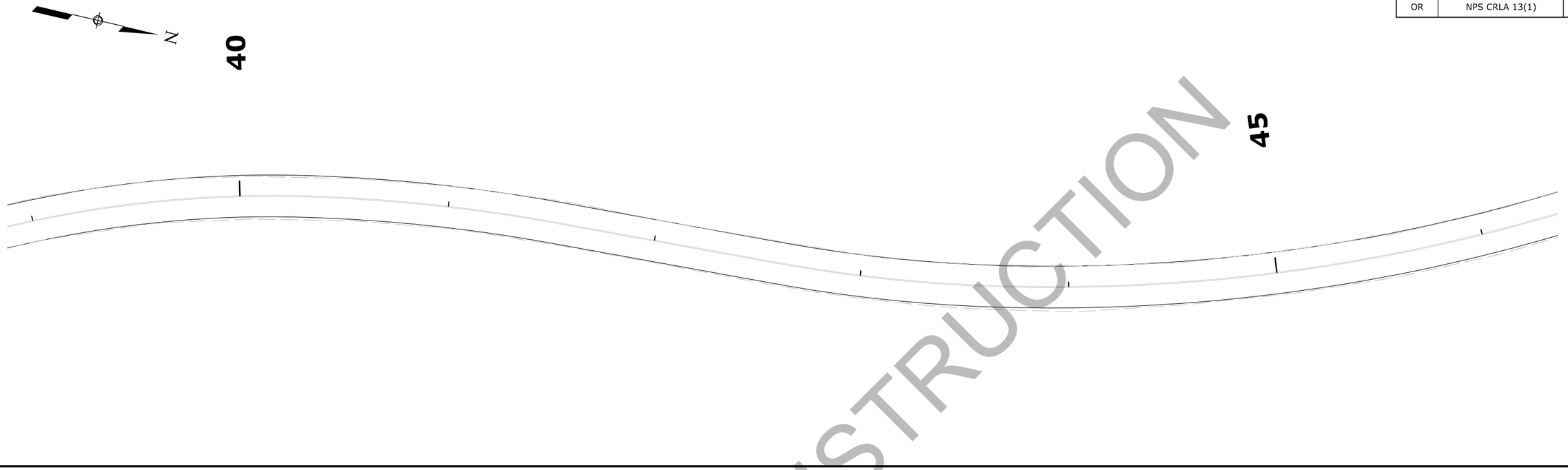
NOT FOR CONSTRUCTION

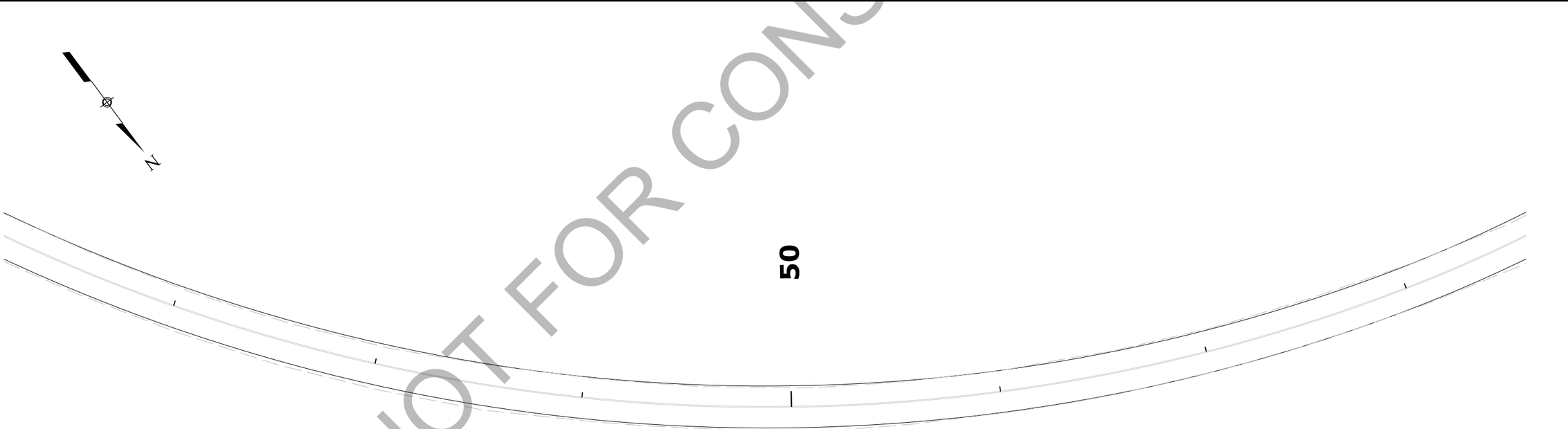
CLOUDCAP EAST APPROACH ROAD
LINE 'APPR01' PERMANENT
TRAFFIC CONTROL

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_PTC_APPR_1-4.dgn [APPR01 Approach road01 part 2]
29 March 2021 10:07 AM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.43





NOT FOR CONSTRUCTION

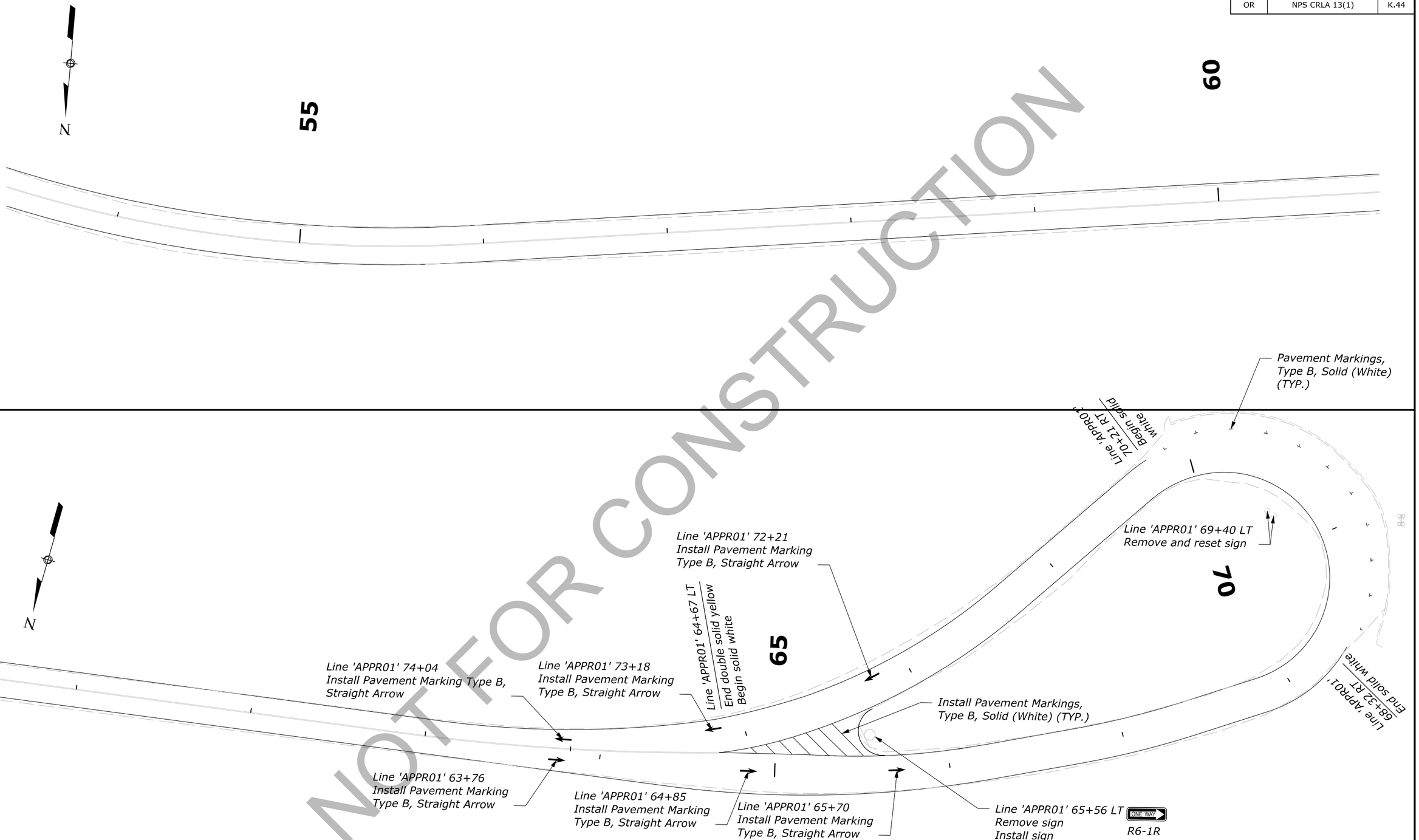
CLOUDCAP EAST APPROACH ROAD
LINE 'APPR01' PERMANENT
TRAFFIC CONTROL

29 March 2021 10:07 AM C:\Users\Jennifer.longmore\Desktop\Exported from PW\crfa01301_PTC_APPR_1-4.dgn [APPR01 Approach road01 part 3]

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.44

NOT FOR CONSTRUCTION

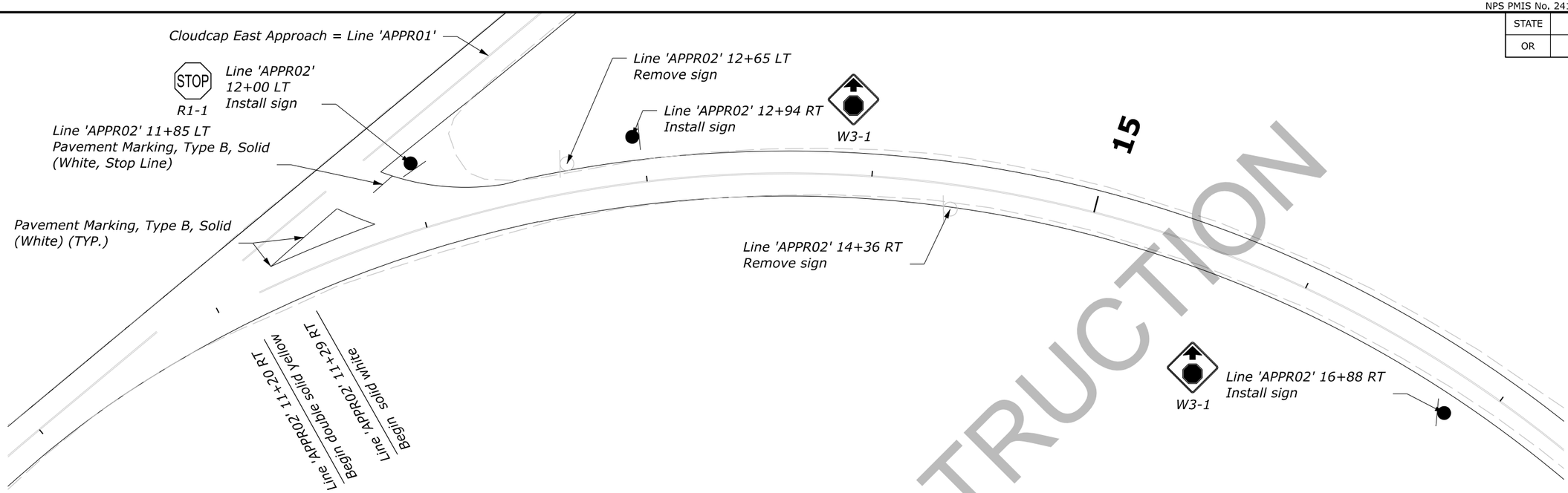


CLOUDCAP EAST APPROACH ROAD LINE 'APPR01' PERMANENT TRAFFIC CONTROL

C:\Users\Jennifer.Longmore\Desktop\Exported from PW\crfa01301_PTC_APPR_1-4.dgn [APPR01 Approach road01 part 4]
29 March 2021 10:07 AM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.45



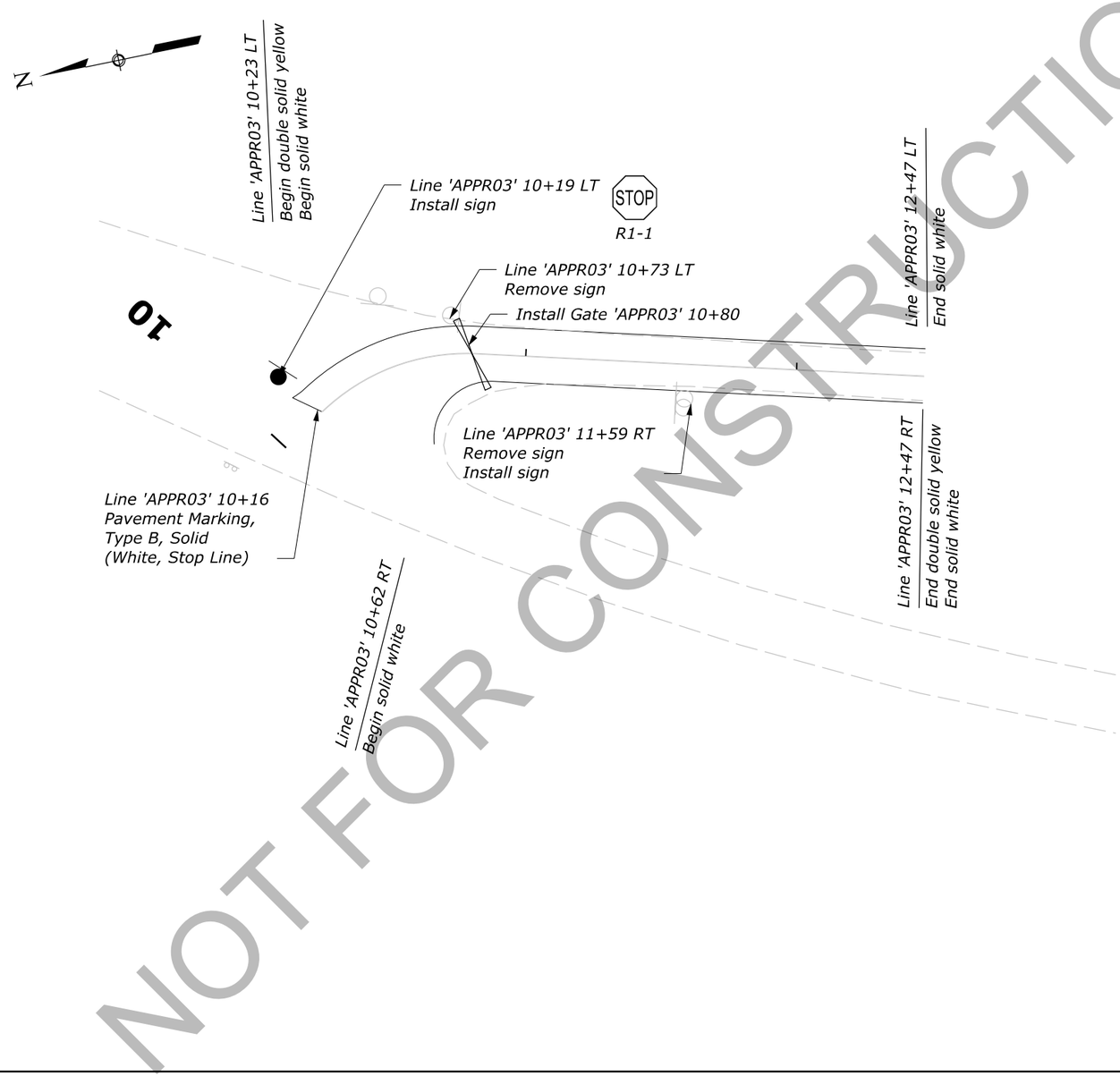
NOT FOR CONSTRUCTION

CLOUDCAP WEST APPROACH ROAD LINE 'APPR02' PERMANENT TRAFFIC CONTROL

29 March 2021 10:07 AM C:\Users\jennifer.longmore\Desktop\Exported from PW\cfd01301_PTC_APPR_1-4.dgn [Cloudcap West Approach Road Line 'APPR02']

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.46



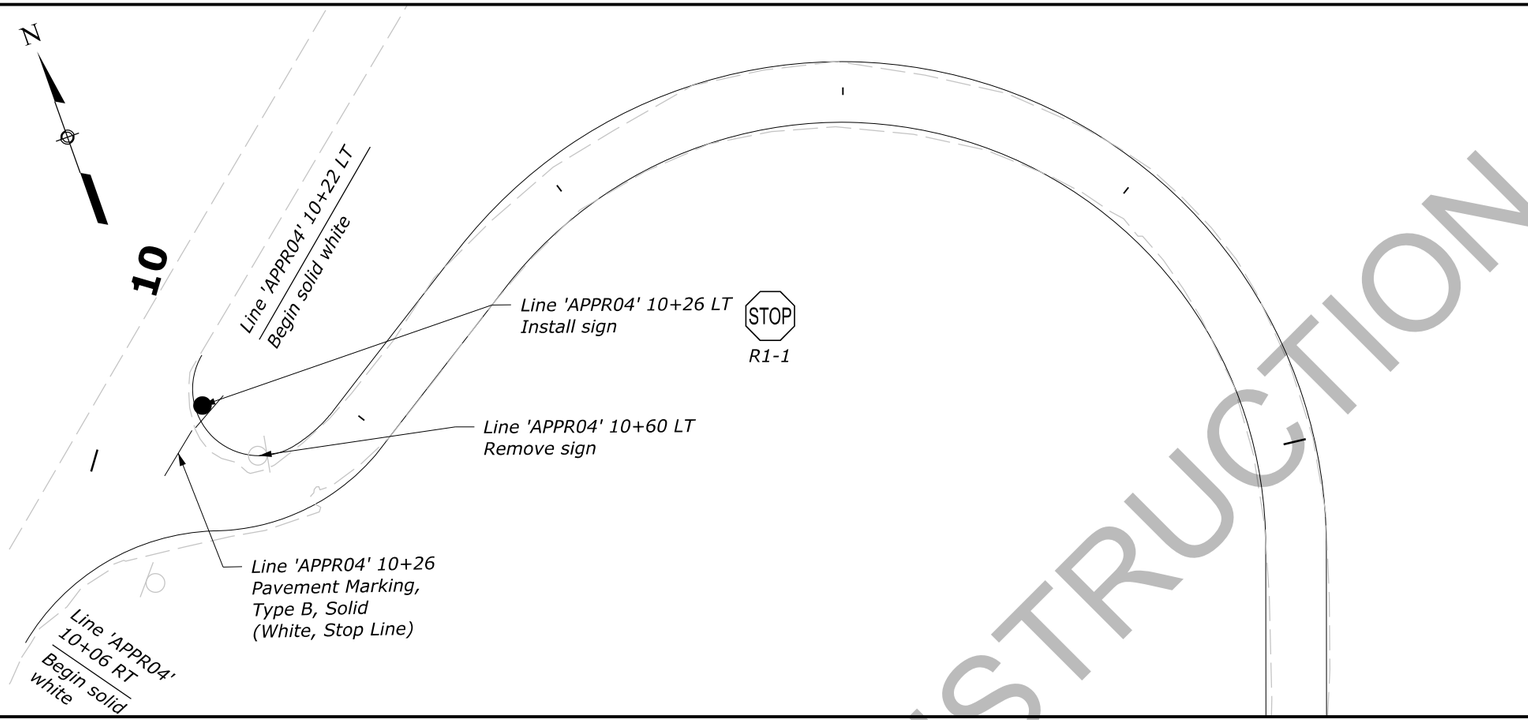
NOT FOR CONSTRUCTION

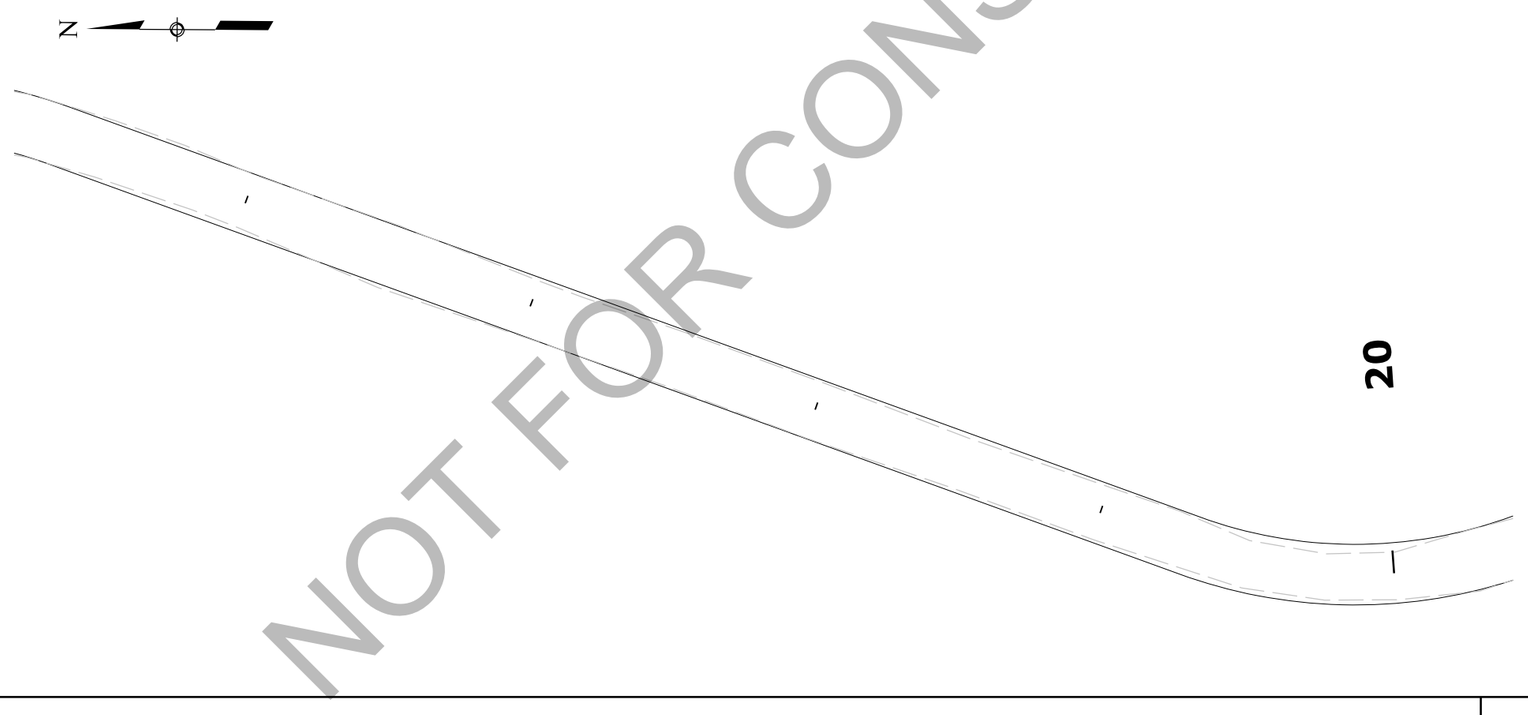
29 March 2021 10:07 AM C:\Users\Jennifer.longmore\Desktop\Exported from PW\cfa01301_PTC_APPR_1-4.dgn [Pinnacles Road Line 'APPR03' Permanent Traffic Control]

PINNACLES ROAD LINE 'APPR03' PERMANENT TRAFFIC CONTROL

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.47





NOT FOR CONSTRUCTION

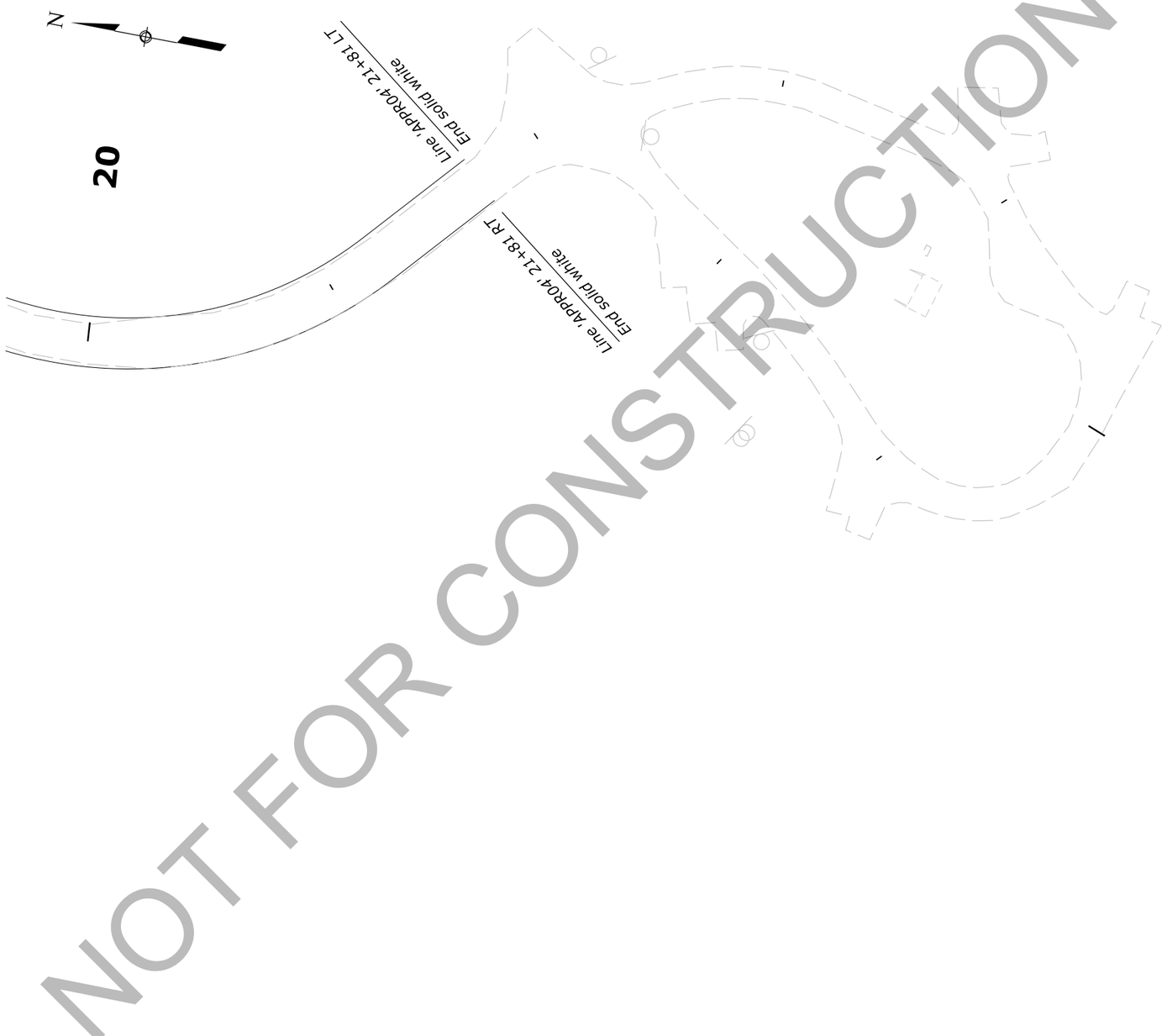
C:\Users\Jennifer.Longmore\Desktop\Exported from PW\cfa01301_PTC_APPR_1-4.dgn [Vidae Falls Picnic Area Line 'APPR04' Permenant Traffic Control]

29 March 2021 10:07 AM

VIDAE FALLS PICNIC AREA
LINE 'APPR04' PERMANENT
TRAFFIC CONTROL

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.48



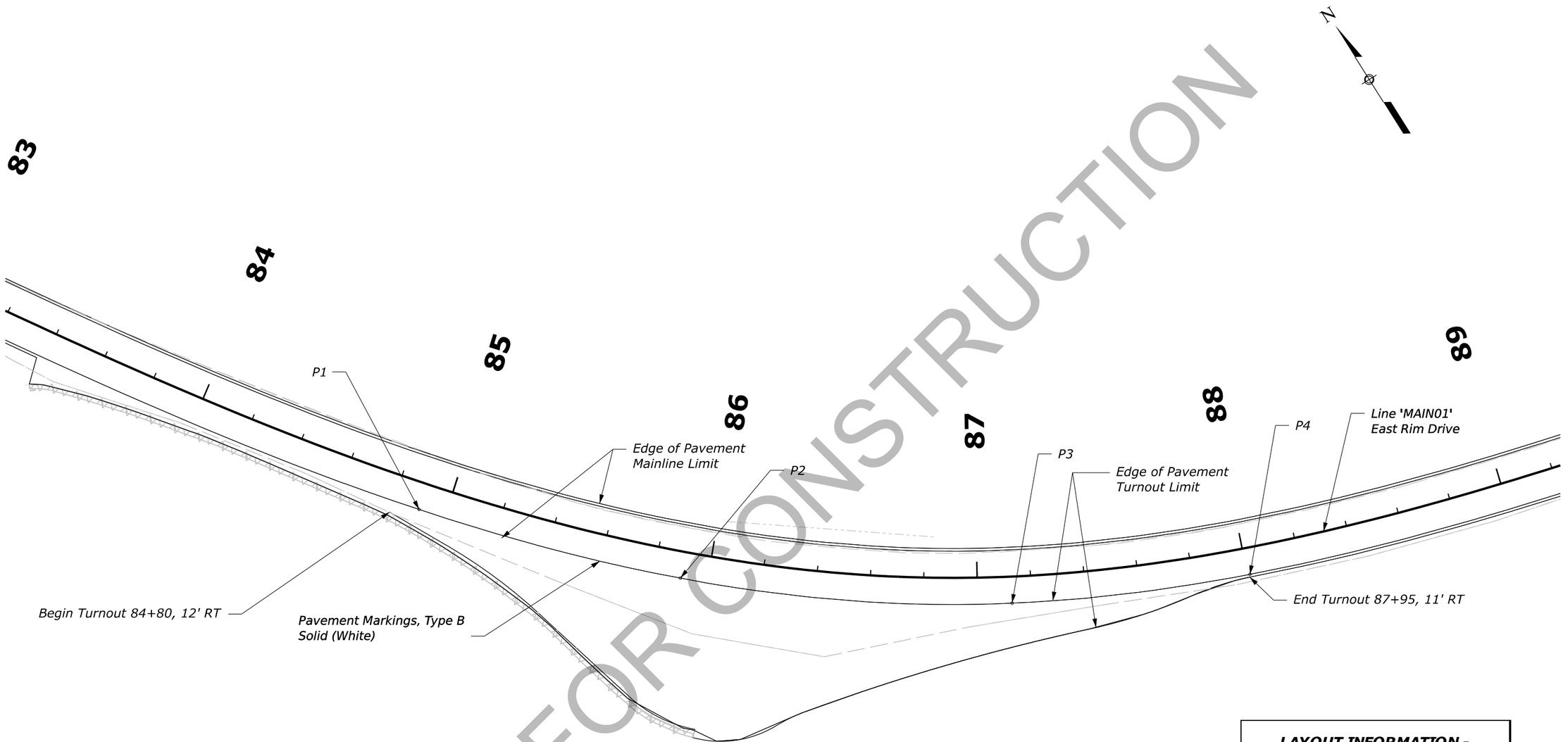
NOT FOR CONSTRUCTION

VIDAE FALLS PICNIC AREA
LINE 'APPR04' PERMANENT TRAFFIC CONTROL

29 March 2021 10:07 AM C:\Users\jennifer.longmore\Desktop\Exported from PW\crfa01301_PTC_APPR_1-4.dgn [APPROACH04 STRIPE-2 [Sheet]]

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.49



NOT FOR CONSTRUCTION

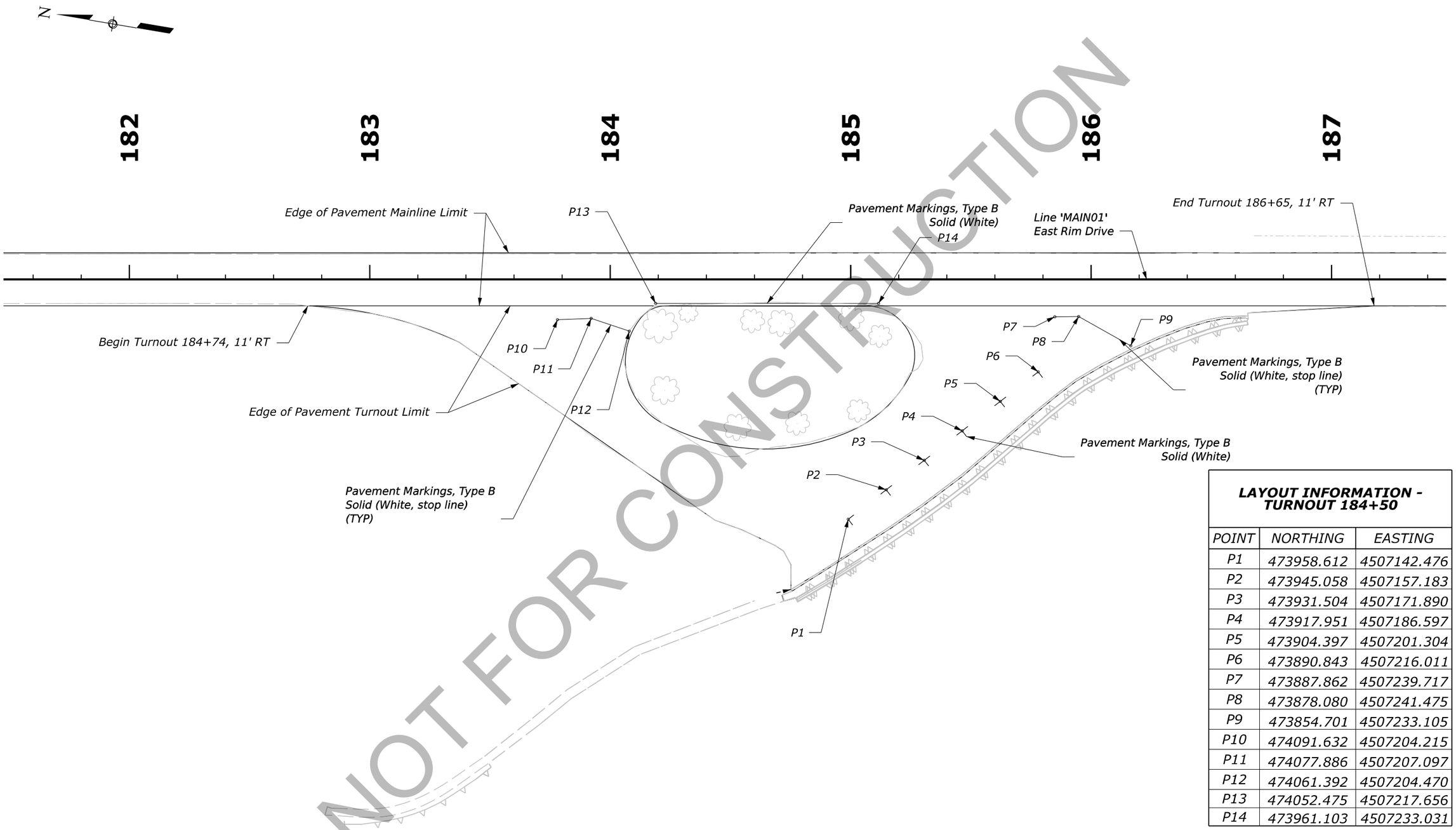
LAYOUT INFORMATION - TURNOUT 86+00		
POINT	NORTHING	EASTING
P1	479223.463	4501241.388
P2	479149.460	4501310.520
P3	479075.199	4501410.646
P4	479036.786	4501491.830

TURNOUT STRIPING PLAN 86+00
PALISADES OVERLOOK

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_Turnout_Striping Layout.dgn [Turnout Striping Plan 86+00 Palisades Overlook]
13 April 2021 2:49 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.50



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 184+50

POINT	NORTHING	EASTING
P1	473958.612	4507142.476
P2	473945.058	4507157.183
P3	473931.504	4507171.890
P4	473917.951	4507186.597
P5	473904.397	4507201.304
P6	473890.843	4507216.011
P7	473887.862	4507239.717
P8	473878.080	4507241.475
P9	473854.701	4507233.105
P10	474091.632	4507204.215
P11	474077.886	4507207.097
P12	474061.392	4507204.470
P13	474052.475	4507217.656
P14	473961.103	4507233.031

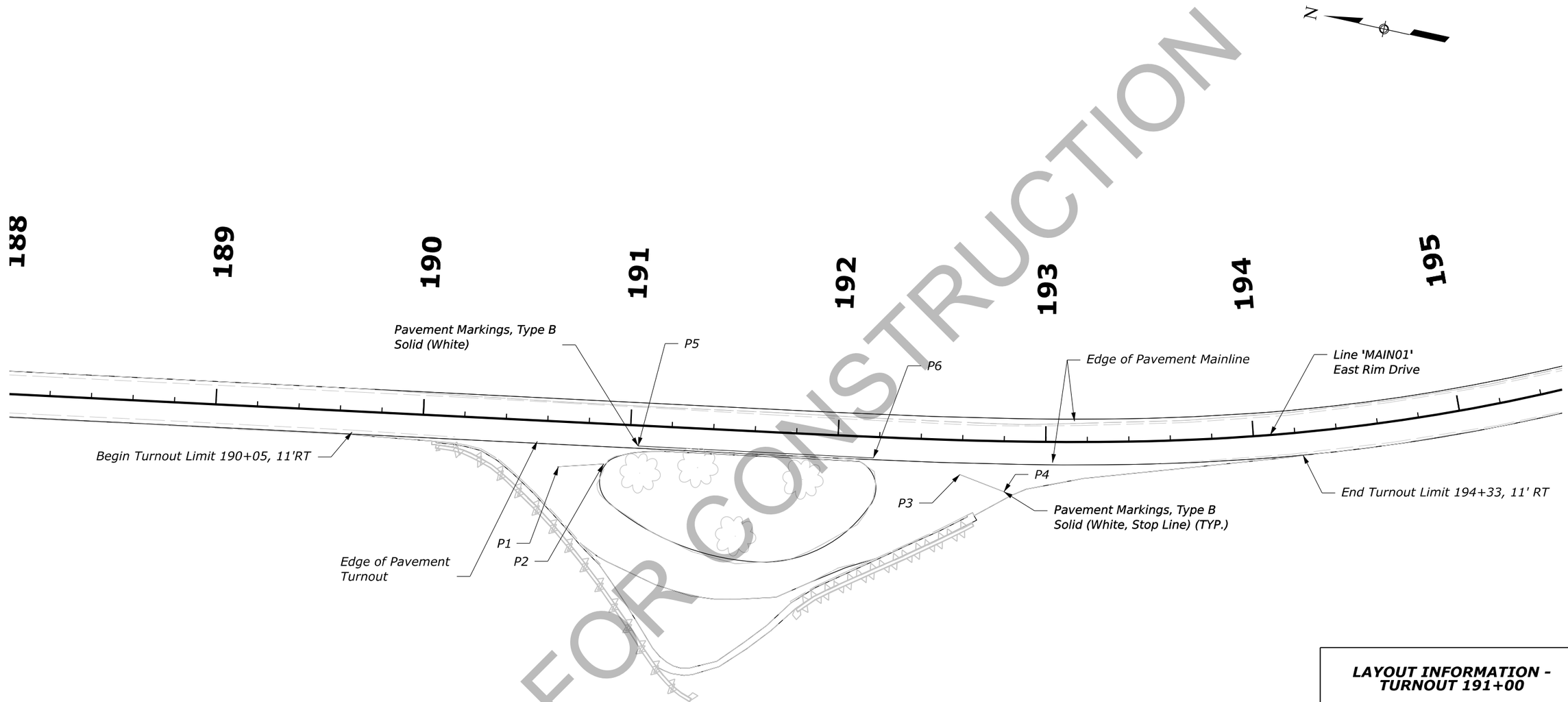
TURNOUT STRIPING PLAN 184+50
LOWER GROTTO COVE

C:\Users\Jennifer.Longmore\Desktop\Exported from PW\crla01301_Turnout_Striping Layout.dgn [Turnout Striping plan 184+50 Lower Grotto Cove]

13 April 2021 2:50 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.51



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 191+00

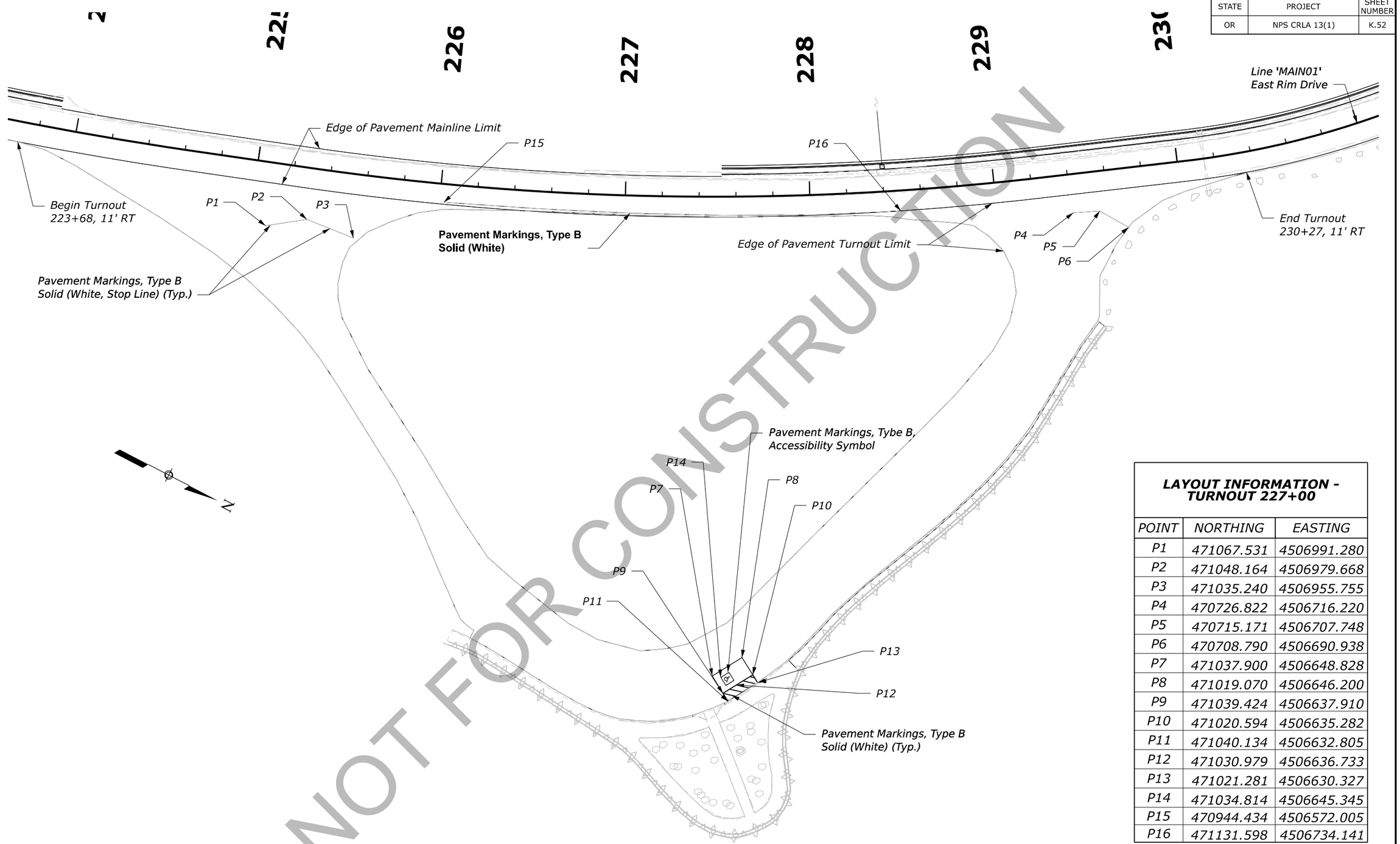
POINT	NORTHING	EASTING
P1	473412.202	4507313.483
P2	473391.163	4507319.496
P3	473222.601	4507351.314
P4	473200.087	4507347.786
P5	473376.803	4507331.494
P6	473264.945	4507350.173

TURNOUT STRIPING PLAN 191+00
UPPER GROTTO COVE

13 April 2021 2:50 PM C:\Users\Jennifer.Longmore\Desktop\Exported from PW\crfa01301_Turnout_Striping Layout.dgn [Turnout striping plan 191+00 Upper Grotto Cove]

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.52



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 227+00

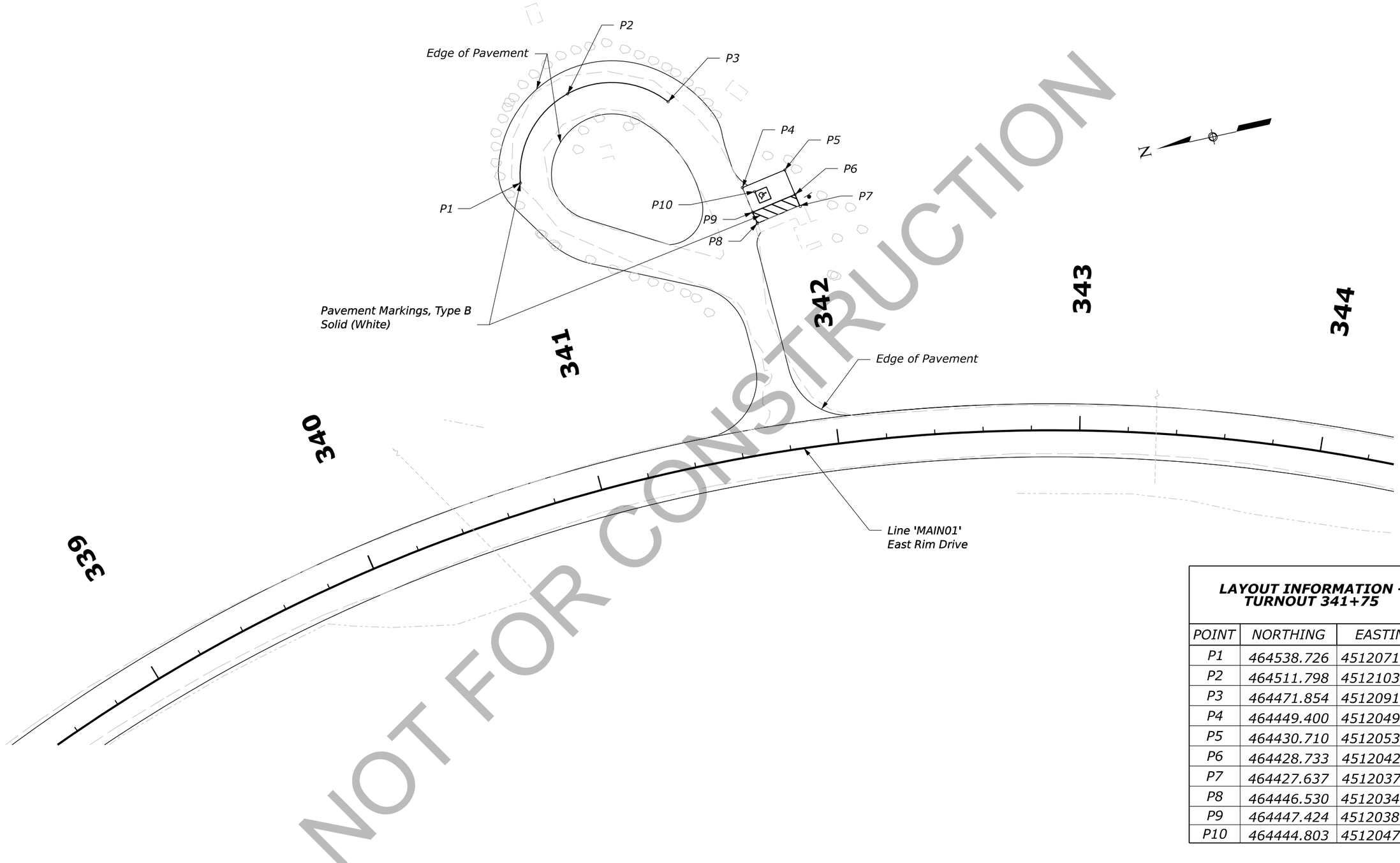
POINT	NORTHING	EASTING
P1	471067.531	4506991.280
P2	471048.164	4506979.668
P3	471035.240	4506955.755
P4	470726.822	4506716.220
P5	470715.171	4506707.748
P6	470708.790	4506690.938
P7	471037.900	4506648.828
P8	471019.070	4506646.200
P9	471039.424	4506637.910
P10	471020.594	4506635.282
P11	471040.134	4506632.805
P12	471030.979	4506636.733
P13	471021.281	4506630.327
P14	471034.814	4506645.345
P15	470944.434	4506572.005
P16	471131.598	4506734.141

TURNOUT STRIPING PLAN 227+00 SKELLHEAD

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_Turnout_Striping_Layout.dgn [Turnout striping plan 227+00 Skellhead]
13 April 2021 2:50 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.53



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 341+75

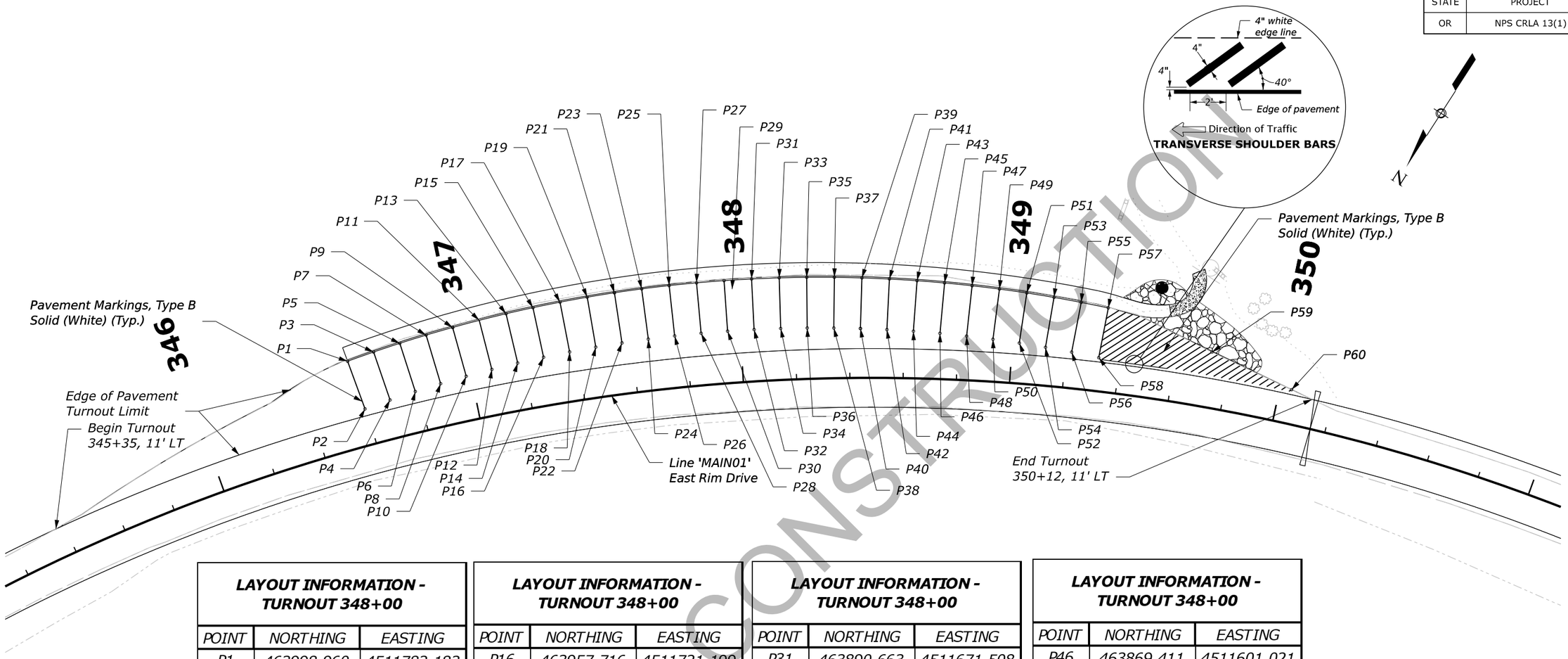
POINT	NORTHING	EASTING
P1	464538.726	4512071.308
P2	464511.798	4512103.178
P3	464471.854	4512091.126
P4	464449.400	4512049.812
P5	464430.710	4512053.192
P6	464428.733	4512042.371
P7	464427.637	4512037.141
P8	464446.530	4512034.048
P9	464447.424	4512038.967
P10	464444.803	4512047.093

TURNOUT STRIPING PLAN 341+75
WHITEBARK PICNIC AREA

C:\Users\Jennifer.Longmore\Desktop\Exported from PW\crfs01301_Turnout_Striping Layout.dgn [Turnout striping plan 341+75 Whitebark Picnic Area]
13 April 2021 2:50 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.54



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 348+00		
POINT	NORTHING	EASTING
P1	463998.960	4511782.183
P2	464010.388	4511767.004
P3	463990.745	4511775.867
P4	464002.476	4511760.921
P5	463982.659	4511769.388
P6	463994.688	4511754.681
P7	463974.704	4511762.747
P8	463987.027	4511748.285
P9	463966.885	4511755.947
P10	463979.497	4511741.736
P11	463966.885	4511755.947
P12	463972.099	4511735.037
P13	463951.665	4511741.883
P14	463964.838	4511728.190
P15	463944.270	4511734.624

LAYOUT INFORMATION - TURNOUT 348+00		
POINT	NORTHING	EASTING
P16	463957.716	4511721.199
P17	463937.023	4511727.217
P18	463950.736	4511714.066
P19	463929.927	4511719.667
P20	463943.901	4511706.794
P21	463922.983	4511711.975
P22	463937.214	4511699.386
P23	463916.196	4511704.145
P24	463930.677	4511691.845
P25	463909.568	4511696.180
P26	463924.294	4511684.174
P27	463903.101	4511688.083
P28	463918.066	4511676.376
P29	463896.799	4511679.858
P30	463911.996	4511668.454

LAYOUT INFORMATION - TURNOUT 348+00		
POINT	NORTHING	EASTING
P31	463890.663	4511671.508
P32	463906.086	4511660.412
P33	463884.696	4511663.036
P34	463900.340	4511652.252
P35	463878.902	4511654.445
P36	463894.759	4511643.979
P37	463873.281	4511645.740
P38	463889.346	4511635.595
P39	463867.836	4511636.923
P40	463884.102	4511627.103
P41	463862.570	4511627.999
P42	463884.102	4511627.103
P43	463857.485	4511618.970
P44	463874.133	4511609.813
P45	463852.582	4511609.842

LAYOUT INFORMATION - TURNOUT 348+00		
POINT	NORTHING	EASTING
P46	463869.411	4511601.021
P47	463847.836	4511600.560
P48	463864.827	4511592.056
P49	463843.305	4511591.238
P50	463860.463	4511583.078
P51	463838.963	4511581.829
P52	463856.282	4511574.016
P53	463834.811	4511572.334
P54	463852.284	4511564.870
P55	463830.851	4511562.758
P56	463848.470	4511555.647
P57	463827.075	4511553.080
P58	463844.695	4511545.969
P59	463819.874	4511511.401
P60	463815.504	4511478.611

TURNOUT STRIPING PLAN 348+00
MT SCOTT TRAILHEAD

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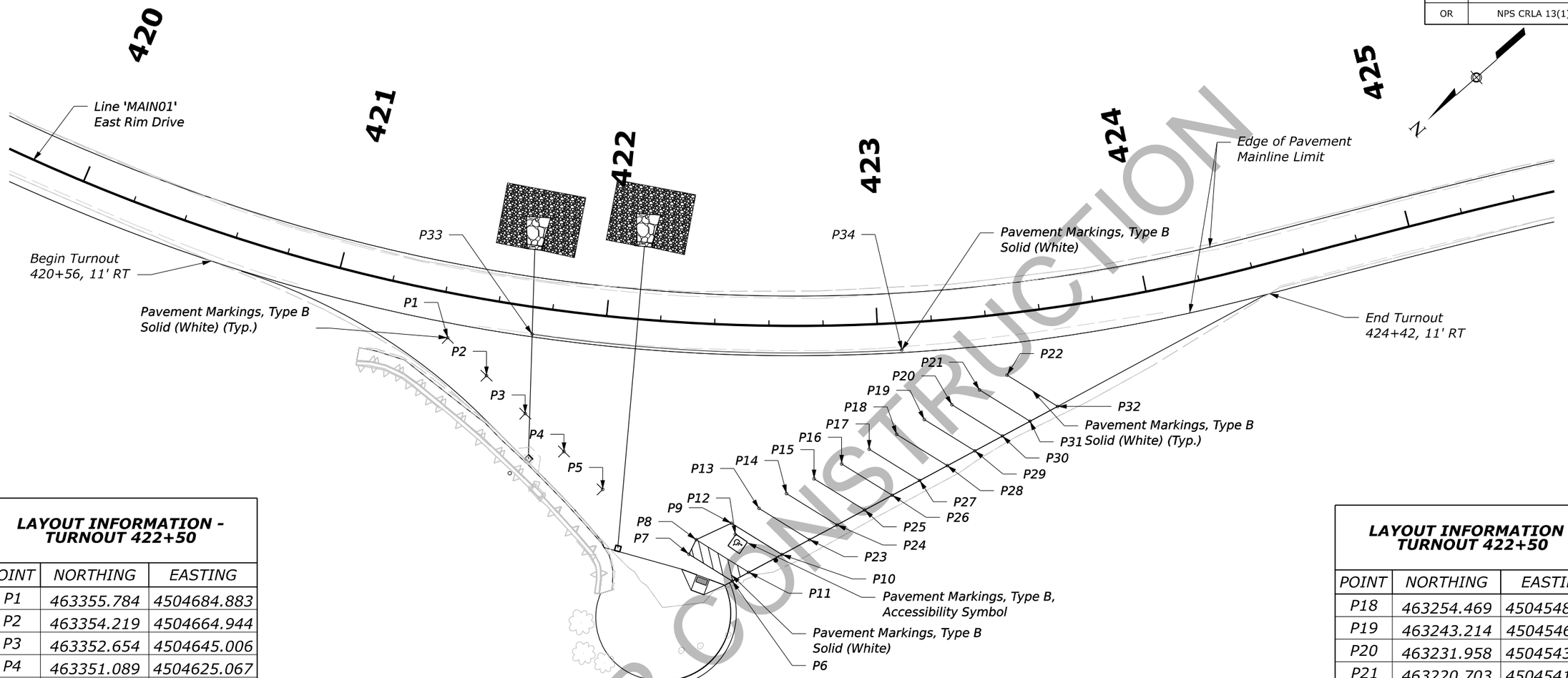
13 April 2021 2:50 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.55



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 422+50

POINT	NORTHING	EASTING
P1	463355.784	4504684.883
P2	463354.219	4504664.944
P3	463352.654	4504645.006
P4	463351.089	4504625.067
P5	463349.524	4504605.128
P6	463335.811	4504548.140
P7	463341.347	4504566.143
P8	463335.780	4504568.453
P9	463322.000	4504564.467
P10	463315.552	4504543.497
P11	463329.058	4504546.592
P12	463323.626	4504560.432
P13	463310.745	4504561.887
P14	463299.490	4504559.308
P15	463288.235	4504556.729
P16	463276.979	4504554.149
P17	463265.724	4504551.570

LAYOUT INFORMATION - TURNOUT 422+50

POINT	NORTHING	EASTING
P18	463254.469	4504548.990
P19	463243.214	4504546.411
P20	463231.958	4504543.832
P21	463220.703	4504541.252
P22	463209.448	4504538.673
P23	463304.297	4504540.917
P24	463293.042	4504538.338
P25	463281.786	4504535.758
P26	463270.531	4504533.179
P27	463259.276	4504530.599
P28	463248.021	4504528.020
P29	463236.765	4504525.441
P30	463225.510	4504522.861
P31	463214.255	4504520.282
P32	463203.000	4504517.702
P33	463331.449	4504665.378
P34	463232.578	4504571.239

TURNOUT STRIPING PLAN 422+50
PUMICE CASTLE OVERLOOK

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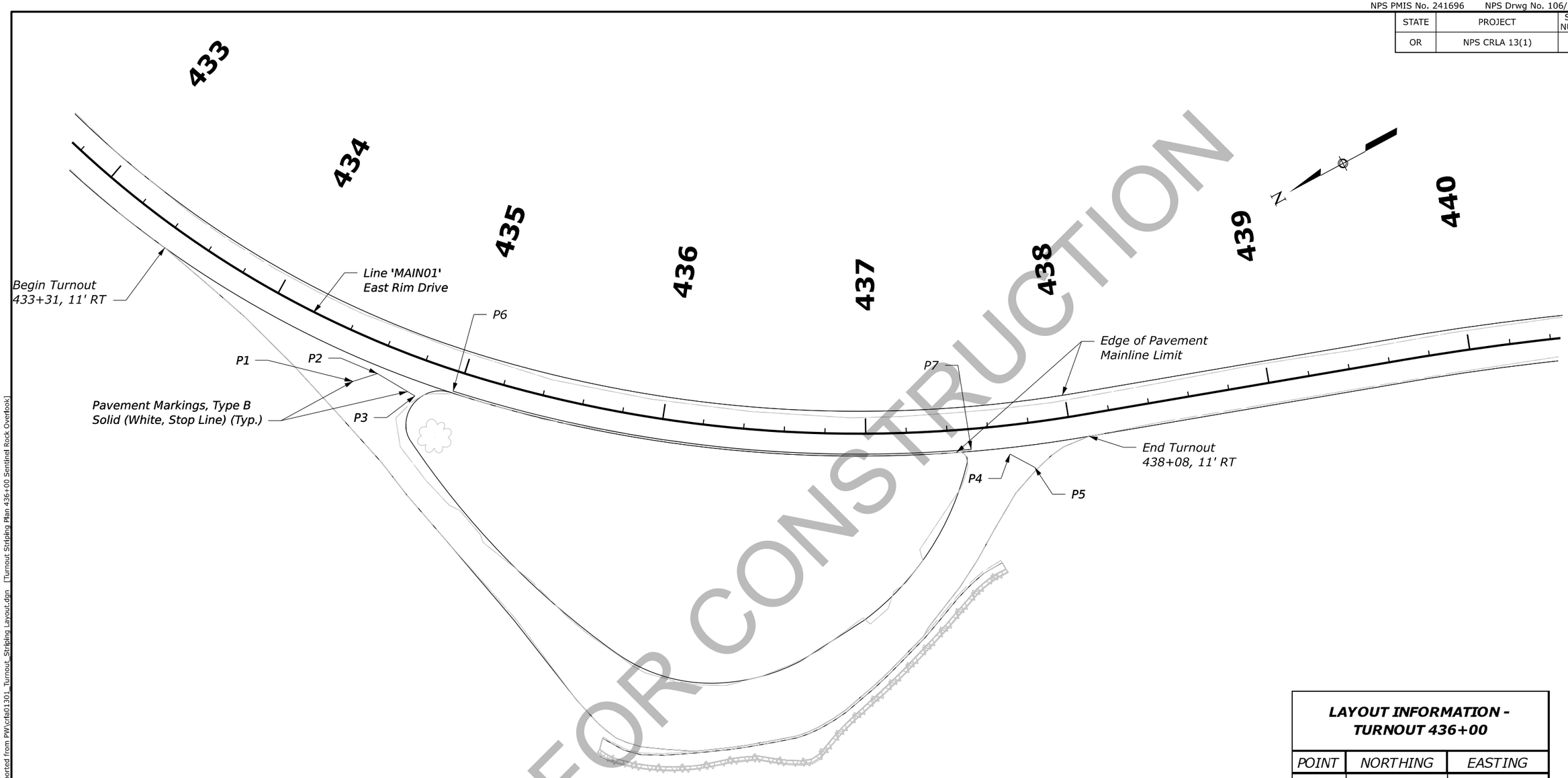
13 April 2021 2:50 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.56



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 436+00

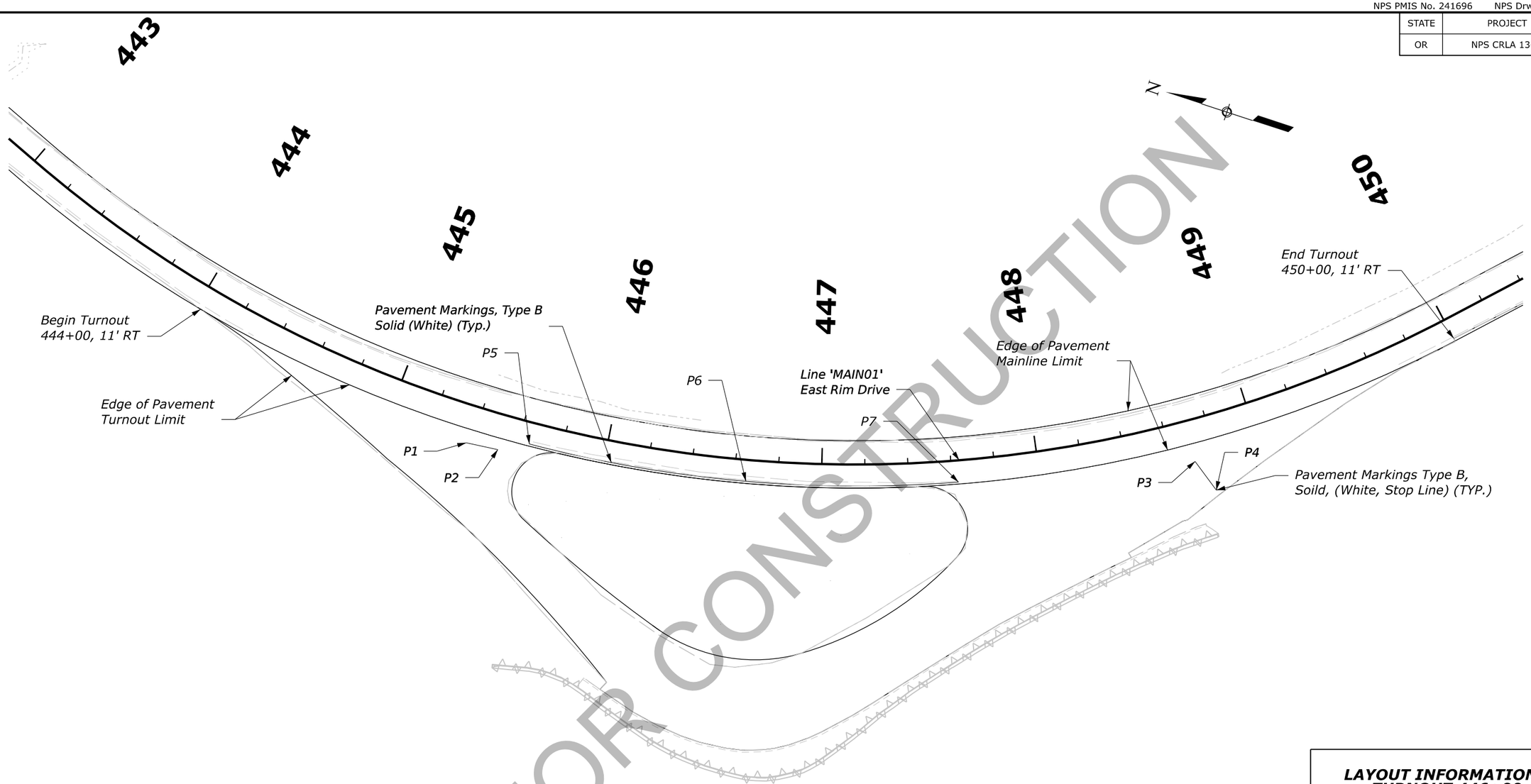
POINT	NORTHING	EASTING
P1	462578.494	4503703.167
P2	462566.125	4503700.856
P3	462555.053	4503682.503
P4	462310.809	4503519.376
P5	462303.119	4503507.865
P6	462537.442	4503675.728
P7	462326.520	4503530.384

TURNOUT STRIPING PLAN 436+00
SENTINEL ROCK OVERLOOK

C:\Users\jennifer.longmore\Desktop\Exported from PW\cfa01301_Turnout_Striping Layout.dgn [Turnout Striping Plan 436+00 Sentinel Rock Overlook]
13 April 2021 2:50 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.57



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 446+00

POINT	NORTHING	EASTING
P1	461585.770	4503261.579
P2	461570.791	4503262.379
P3	461256.809	4503343.285
P4	461243.782	4503332.985
P5	461557.340	4503268.824
P6	461455.691	4503278.839
P7	461360.342	4503304.775

TURNOUT STRIPING PLAN 446+00 REFLECTION POINT

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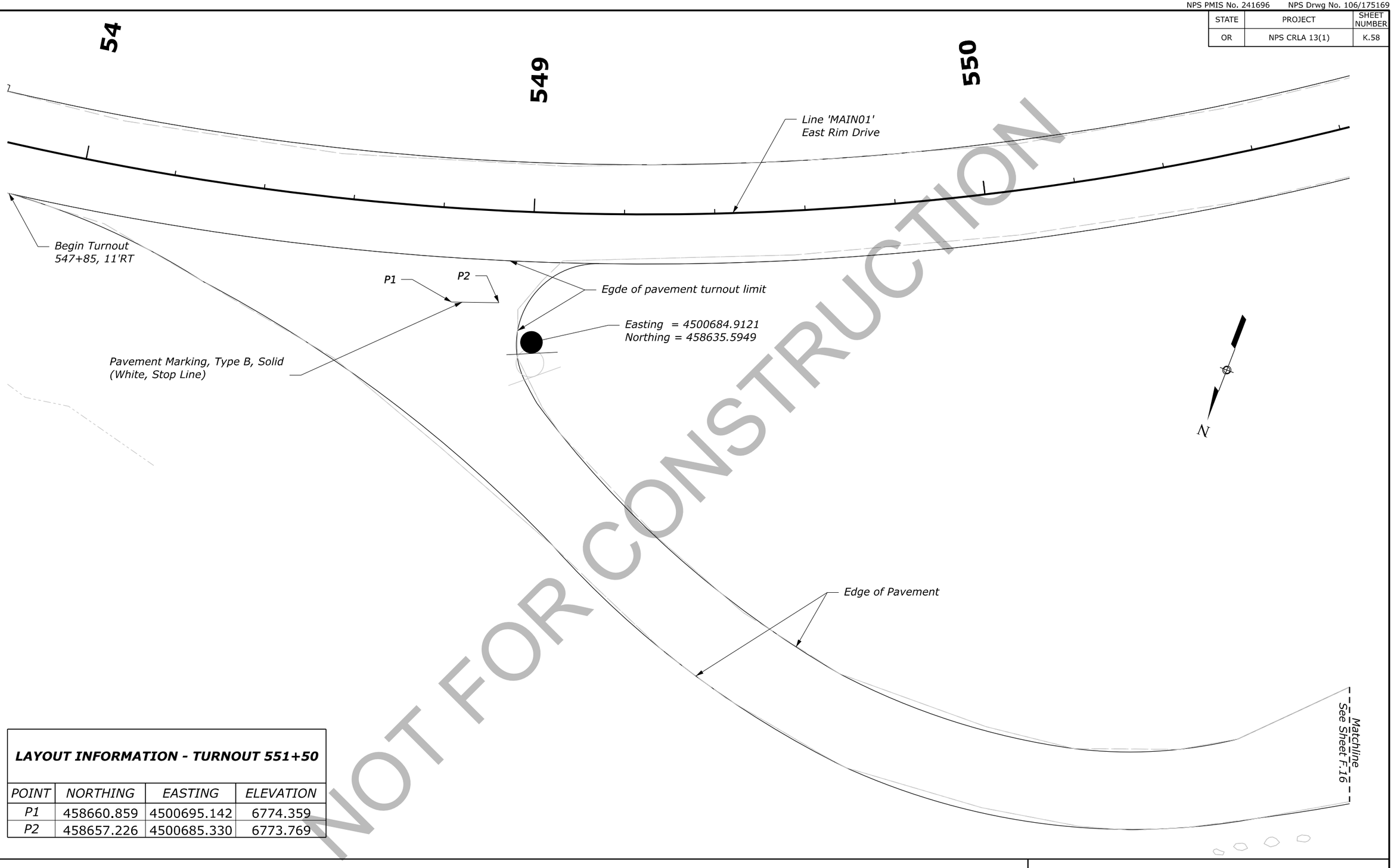
13 April 2021 2:50 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.58



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 551+50

POINT	NORTHING	EASTING	ELEVATION
P1	458660.859	4500695.142	6774.359
P2	458657.226	4500685.330	6773.769

TURNOUT STRIPING PLAN 548+00
PHANTOM SHIP ENTRANCE

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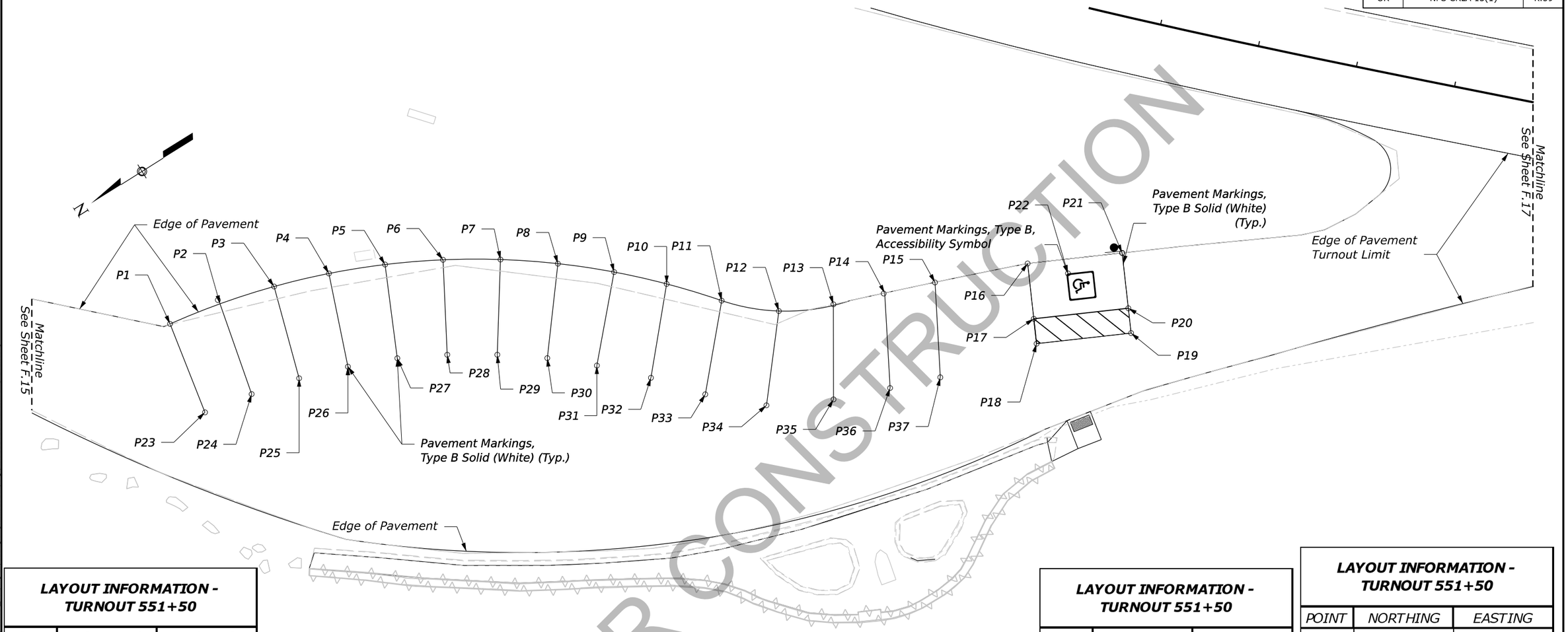
13 April 2021 2:56 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.59



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 551+50

POINT	NORTHING	EASTING
P1	458662.572	4500473.861
P2	458651.943	4500472.826
P3	458640.995	4500469.145
P4	458630.328	4500465.535
P5	458619.879	4500461.094
P6	458609.570	4500455.749
P7	458599.812	4500449.694
P8	458590.537	4500442.903
P9	458581.912	4500435.516
P10	458574.277	4500427.934
P11	458566.752	4500419.262
P12	458558.163	4500412.305

LAYOUT INFORMATION - TURNOUT 551+50

POINT	NORTHING	EASTING
P13	458548.221	4500406.792
P14	458538.071	4500404.064
P15	458528.707	4500399.715
P16	458511.024	4500393.091
P17	458515.844	4500383.077
P18	458518.016	4500378.564
P19	458500.893	4500370.331
P20	458498.728	4500374.829
P21	458493.900	4500384.858
P22	458505.248	4500387.126
P23	458666.044	4500455.161
P24	458656.216	4500453.313

LAYOUT INFORMATION - TURNOUT 551+50

POINT	NORTHING	EASTING
P25	458646.494	4500450.958
P26	458637.000	4500447.743
P27	458627.755	4500443.929
P28	458618.934	4500439.217
P29	458610.457	4500433.912
P30	458602.358	4500428.028
P31	458594.755	4500421.514
P32	458586.896	4500413.711
P33	458579.463	4500405.140
P34	458570.278	4500396.791
P35	458558.293	4500390.681
P36	458547.515	4500386.602
P37	458537.882	4500383.077

TURNOUT STRIPING PLAN 551+50
PHANTOM SHIP OVERLOOK

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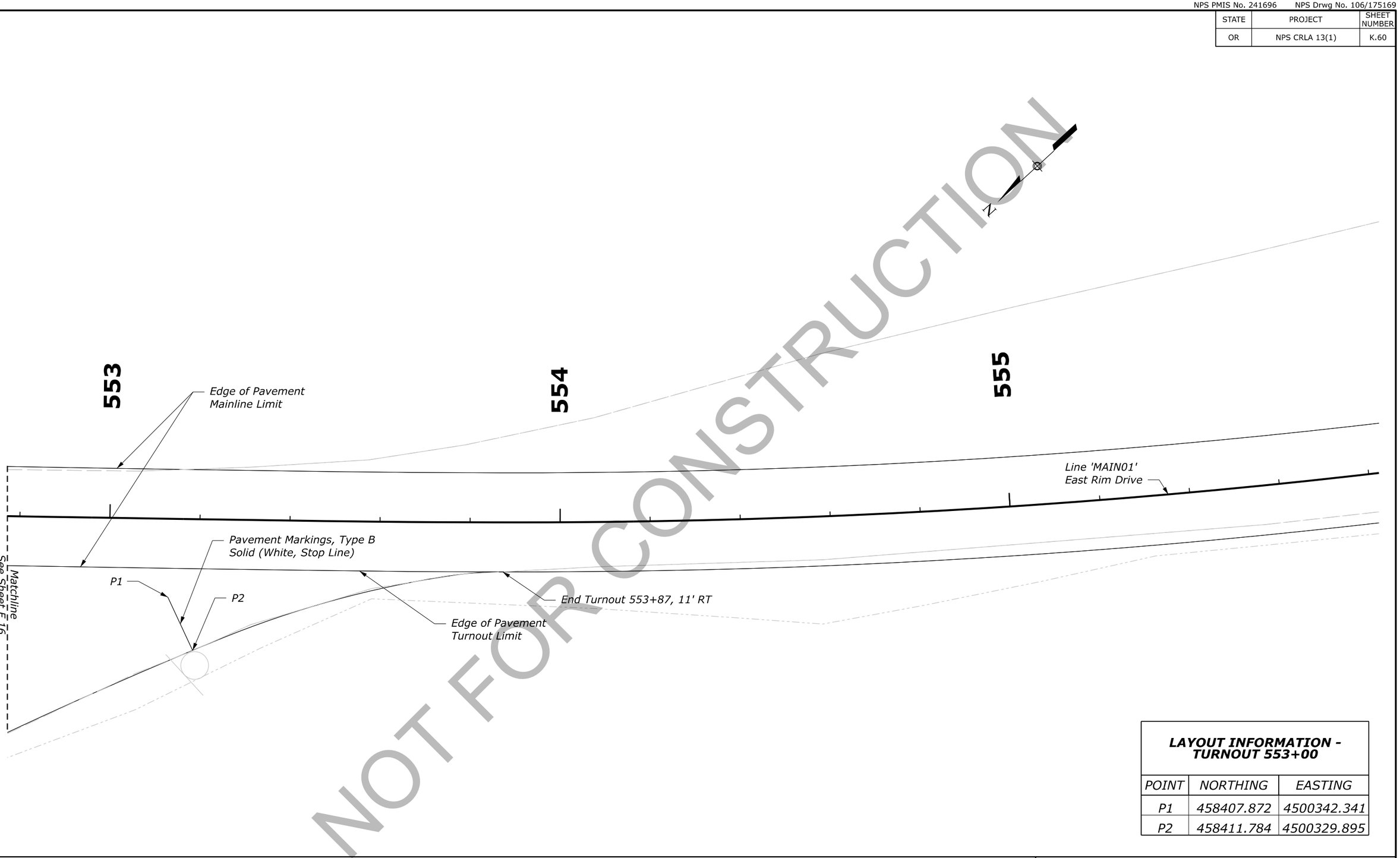
13 April 2021 2:56 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.60

NOT FOR CONSTRUCTION



LAYOUT INFORMATION - TURNOUT 553+00

POINT	NORTHING	EASTING
P1	458407.872	4500342.341
P2	458411.784	4500329.895

TURNOUT STRIPING PLAN 553+00 PHANTOM SHIP EXIT

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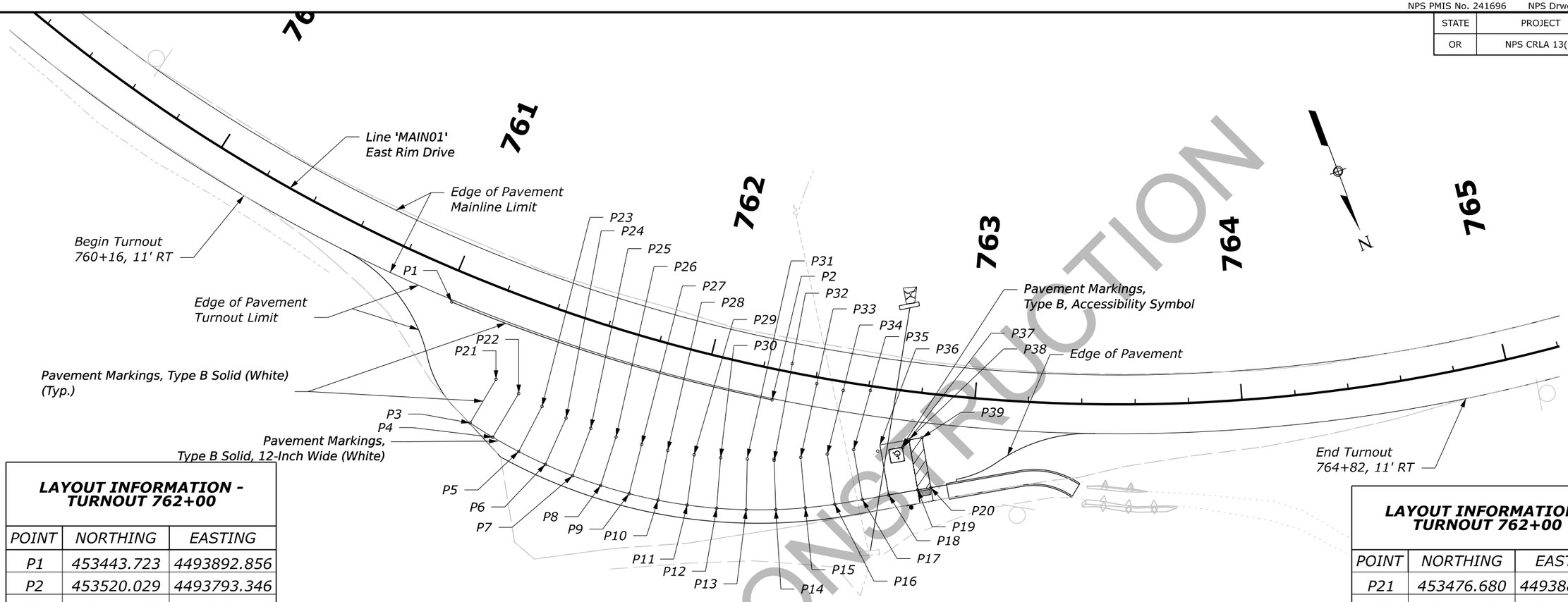
13 April 2021 2:56 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.61



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT 762+00

POINT	NORTHING	EASTING
P1	453443.723	4493892.856
P2	453520.029	4493793.346
P3	453488.602	4493902.240
P4	453496.549	4493896.165
P5	453504.976	4493888.971
P6	453512.980	4493881.310
P7	453520.536	4493873.207
P8	453527.619	4493864.687
P9	453534.207	4493855.779
P10	453540.279	4493846.512
P11	453545.814	4493836.914
P12	453550.796	4493827.017
P13	453555.207	4493816.854
P14	453559.034	4493806.456
P15	453562.264	4493795.858
P16	453564.887	4493785.094
P17	453566.878	4493774.774
P18	453568.721	4493764.946
P19	453570.717	4493754.131
P20	453571.632	4493749.213

LAYOUT INFORMATION - TURNOUT 762+00

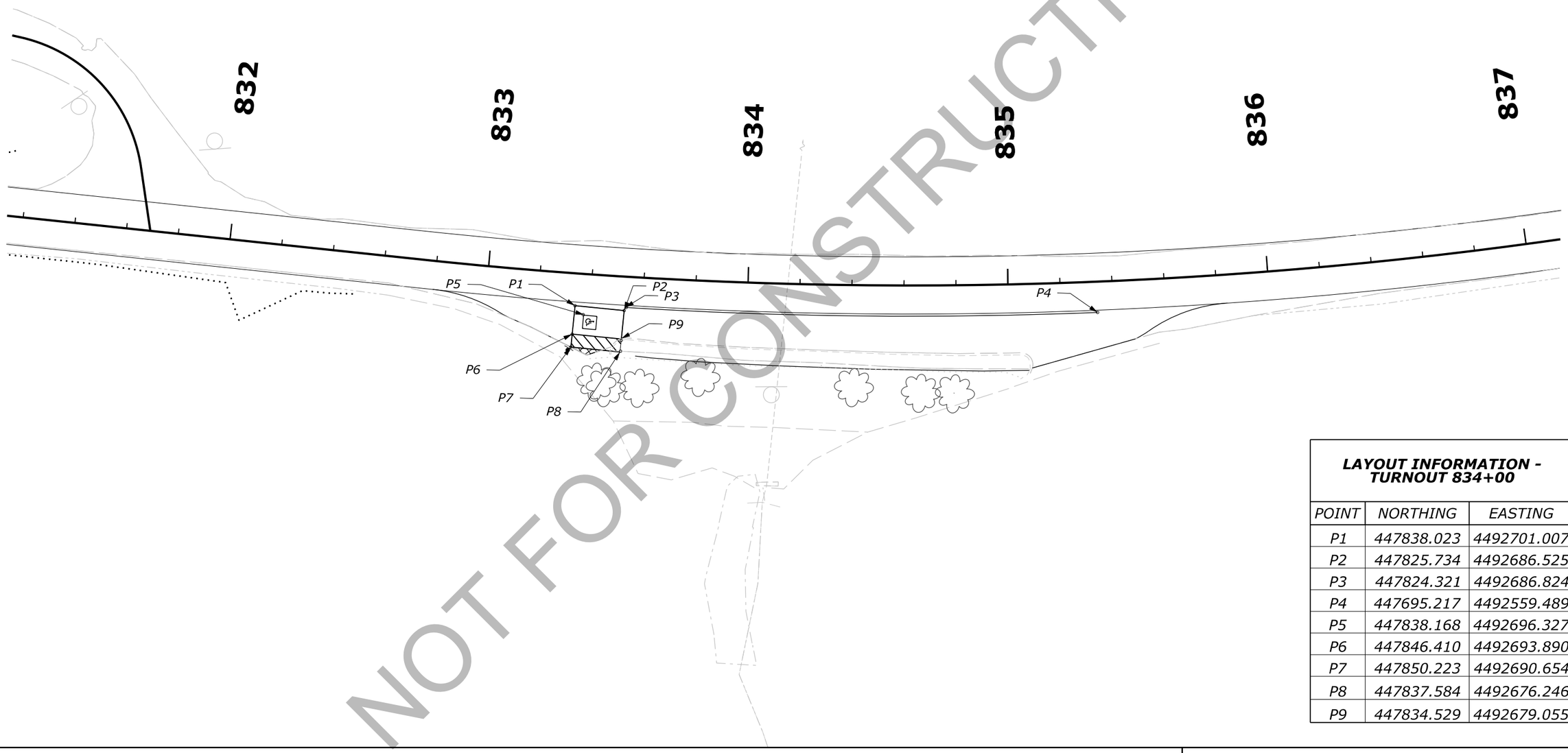
POINT	NORTHING	EASTING
P21	453476.680	4493887.446
P22	453484.628	4493881.371
P23	453492.233	4493874.878
P24	453499.457	4493867.963
P25	453506.277	4493860.649
P26	453512.670	4493852.960
P27	453518.616	4493844.920
P28	453524.096	4493836.555
P29	453529.093	4493827.893
P30	453533.589	4493818.960
P31	453537.570	4493809.787
P32	453541.024	4493800.403
P33	453541.498	4493800.562
P34	453543.940	4493790.837
P35	453546.307	4493781.121
P36	453548.194	4493771.301
P37	453553.920	4493753.793
P38	453551.967	4493750.643
P39	453552.954	4493745.733

TURNOUT STRIPING PLAN 762+00
SUN NOTCH

C:\Users\jennifer.bonamore\Desktop\Exported from PW\crla01301_Turnout_Striping Layout.dgn [Turnout striping plan 762+00 Sun Notch]
13 April 2021 2:56 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.62



NOT FOR CONSTRUCTION

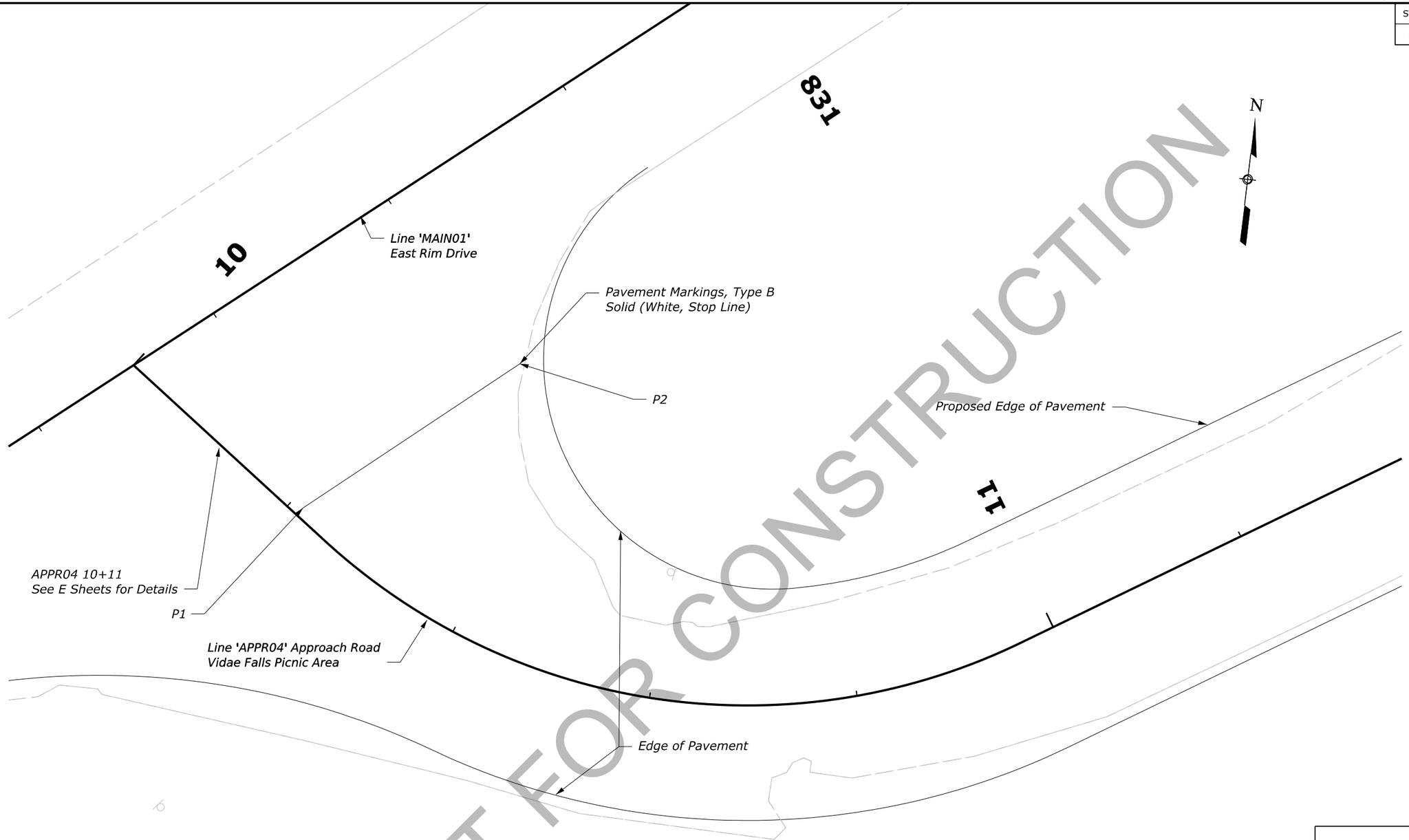
LAYOUT INFORMATION - TURNOUT 834+00		
POINT	NORTHING	EASTING
P1	447838.023	4492701.007
P2	447825.734	4492686.525
P3	447824.321	4492686.824
P4	447695.217	4492559.489
P5	447838.168	4492696.327
P6	447846.410	4492693.890
P7	447850.223	4492690.654
P8	447837.584	4492676.246
P9	447834.529	4492679.055

TURNOUT STRIPING PLAN 834+00
VIDAE FALLS

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_Turnout_Striping_Layout.dgn [Turnout striping plan 834+00 Vidae Falls]
13 April 2021 2:56 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.63



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT APPR04 10+75

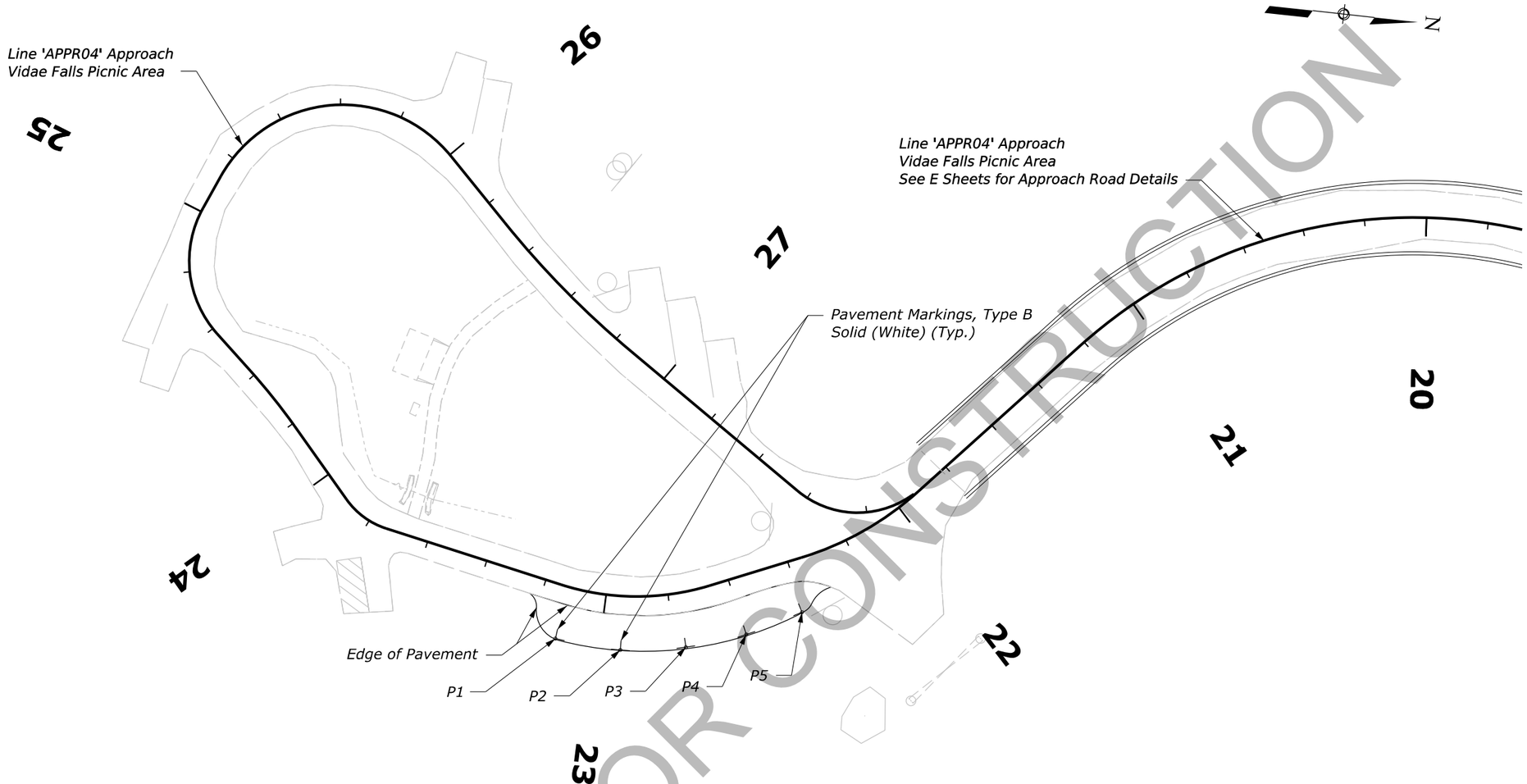
POINT	NORTHING	EASTING
P1	447923.871	4492852.998
P2	447940.107	4492871.991

TURNOUT STIPING PLAN APPR04 10+75

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_Turnout_Striping_Layout.dgn [Turnout Striping plan APPR04 10+75]
13 April 2021 2:59 PM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.64



NOT FOR CONSTRUCTION

LAYOUT INFORMATION - TURNOUT APPR04 22+50		
POINT	NORTHING	EASTING
P1	447073.157	4493225.543
P2	447094.335	4493226.892
P3	447115.205	4493223.699
P4	447134.083	4493217.468
P5	447151.149	4493208.404

TURNOUT STRIPING PLAN APPR04 22+50

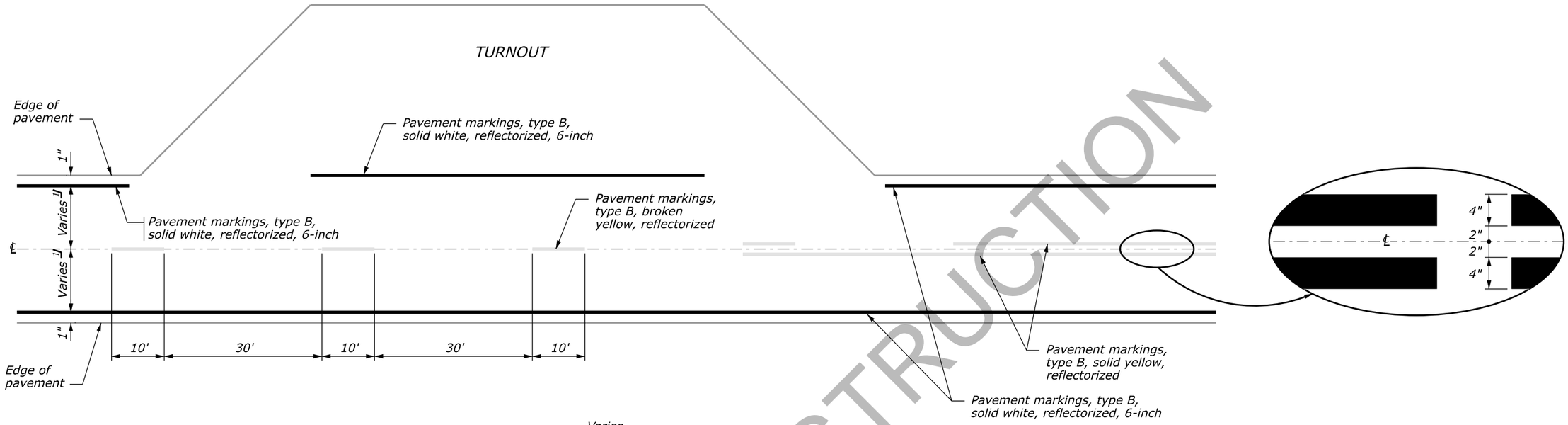
C:\Users\jennifer.longmore\Desktop\Exported from PW\crla01301_Turnout_Striping Layout.dgn [Turnout striping plan APPR04 22+50]
13 April 2021 3:01 PM

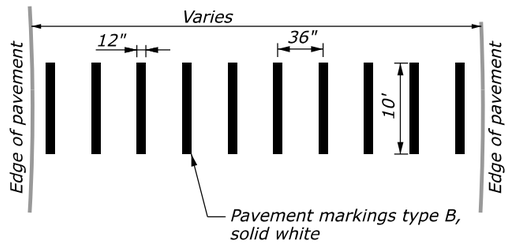
NPS PMIS No. 241696 NPS Drwg. No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.65

--/---- Designed by:
--/---- Checked by:
14 April 2021 7:34 AM
c:\pw-work\d0441684\crla01301_nf.dgn [PAVEMENT MARKING DETAILS]

NOT FOR CONSTRUCTION

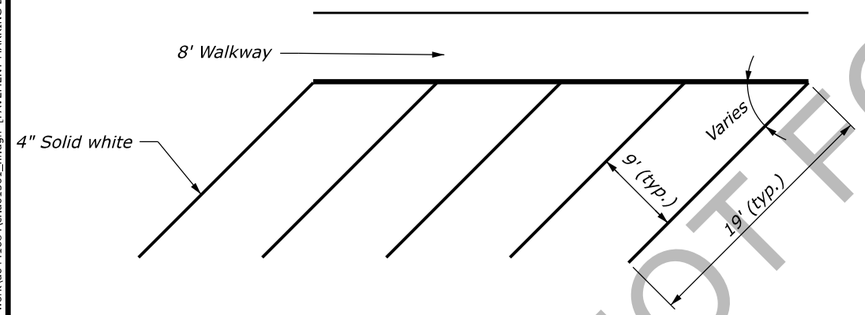




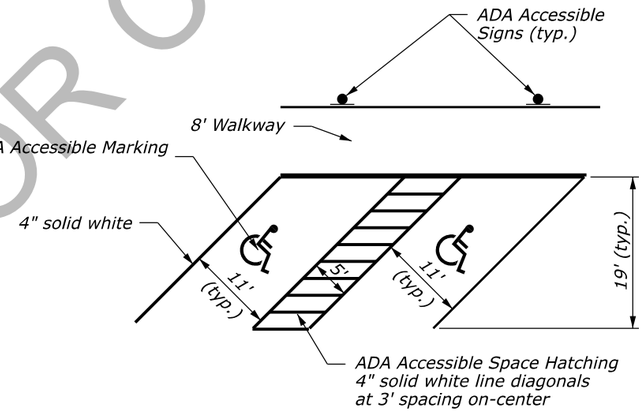
CROSSWALK DETAIL

STOP LINE

ACCESSIBILITY PARKING SPACE MARKING



TYPICAL ANGLED PARKING STALL STRIPING



TYPICAL VAN ACCESSIBLE ANGLED PARKING STALL STRIPING

PAVEMENT MARKING AREAS	
TYPE	SQFT
Accessibility Marking (symbol only)	2

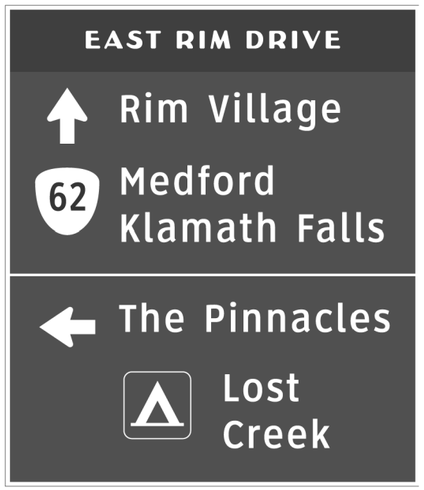
FOOTNOTE:

[1] Traveled way width is 11-feet for East Rim Drive.

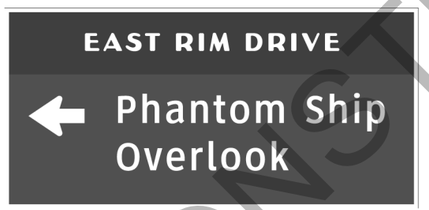
NO SCALE

PAVEMENT MARKINGS DETAILS

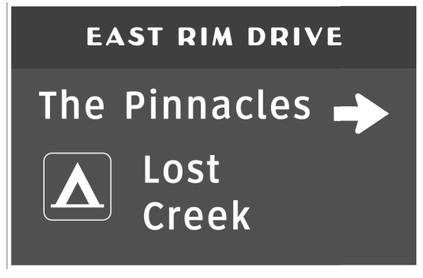
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.66



79.0-CRLA
Road Guide - 4" Cap Height - 62" x 72"



78.0-CRLA
Road Guide - 4" Cap Height - 62" x 30"



87.0-CRLA
Road Guide - 4" Cap Height - 62" x 40"

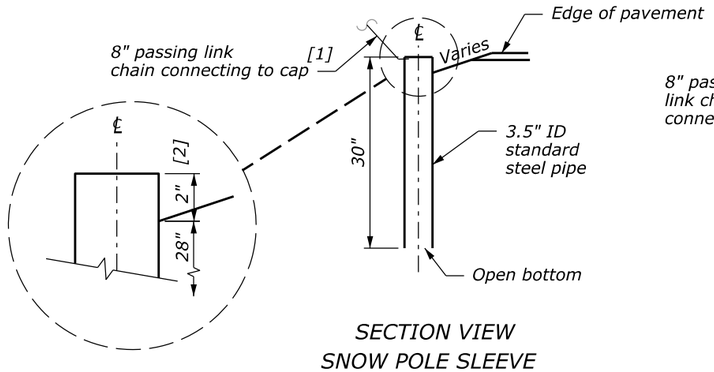
NOTE:
1. See Sheet K.71 for paint colors.

NOT FOR CONSTRUCTION

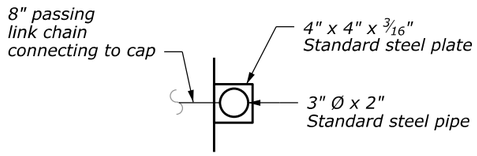
PERMANENT SIGN DETAILS

c:\pw-work\d0441684\crla01301_nadgn_[Permanent Sign Details - 2]
14 April 2021 7:39 AM

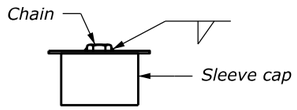
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.67



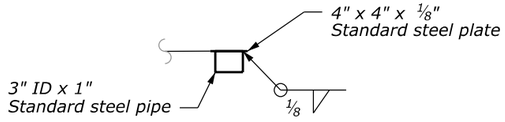
SECTION VIEW
SNOW POLE SLEEVE



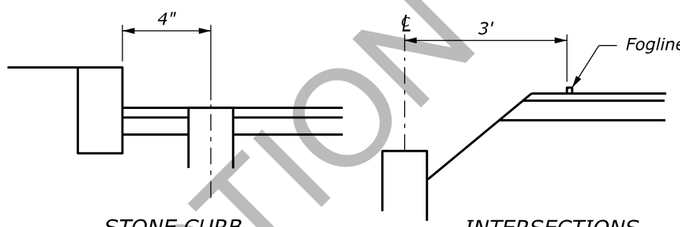
PLAN VIEW



CHAIN/WELD SECTION

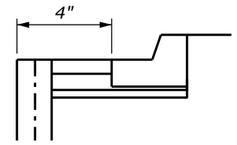


ELEVATION VIEW
SNOW POLE SLEEVE CAP

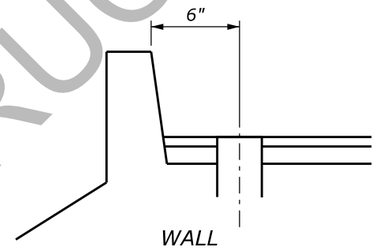


STONE CURB

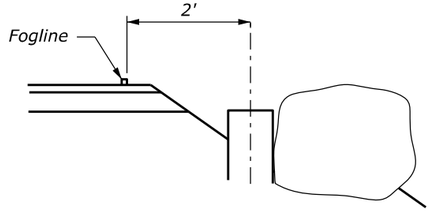
INTERSECTIONS



CONCRETE CURB AND GUTTER

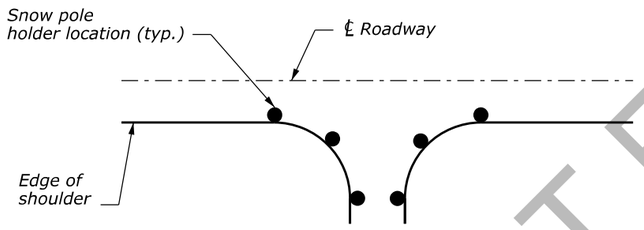


WALL



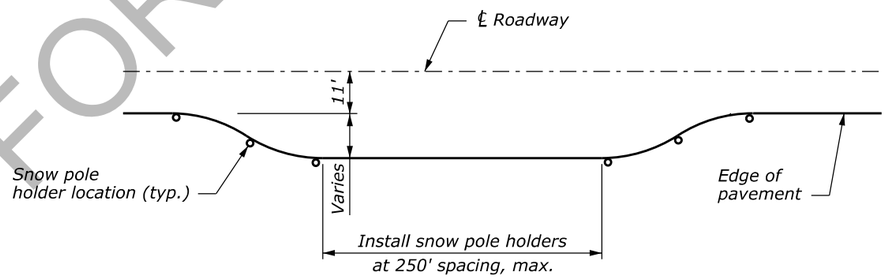
BOULDERS

SNOW POLE HOLDER DETAIL



SNOW POLE HOLDER LAYOUT AT INTERSECTION

SNOW POLE HOLDER LAYOUT



SNOW POLE HOLDER LAYOUT AT TURNOUTS

NOTE:

1. Install snow pole holders on both sides of the road and at wall locations a maximum of 250-foot intervals. Install snow pole holders at PC and PT of curves.
2. Countersink snow pole holder cap so that the cap top is level or recessed 1/4-inch from final roadway surface.
3. Stagger boulders to avoid placement of snow pole holders.
4. Location of the snow pole holders may be adjusted in the field by the CO.

FOOTNOTE:

[1] 8-inch chain will be specified as passing link chain, 3/16-inch thickness.

[2] Install snow pole holder sleeve flush with ground, at Rim Village and Cleetwood Parking Areas and turnouts.

NOT FOR CONSTRUCTION

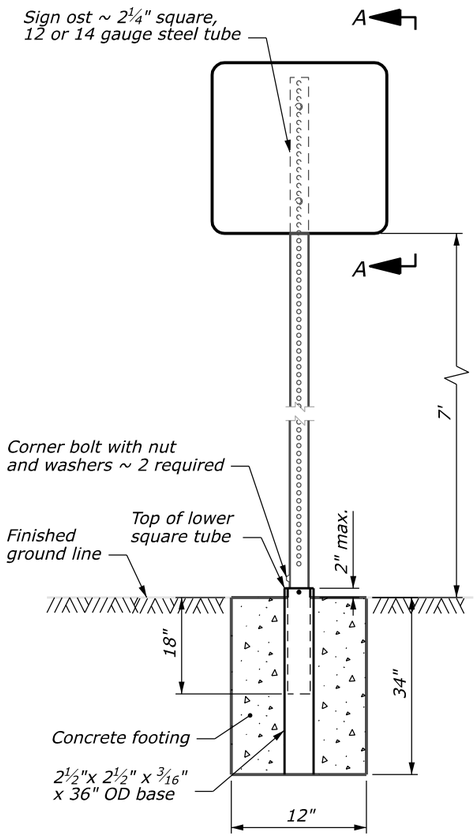
NO SCALE

SNOW POLE HOLDER DETAILS

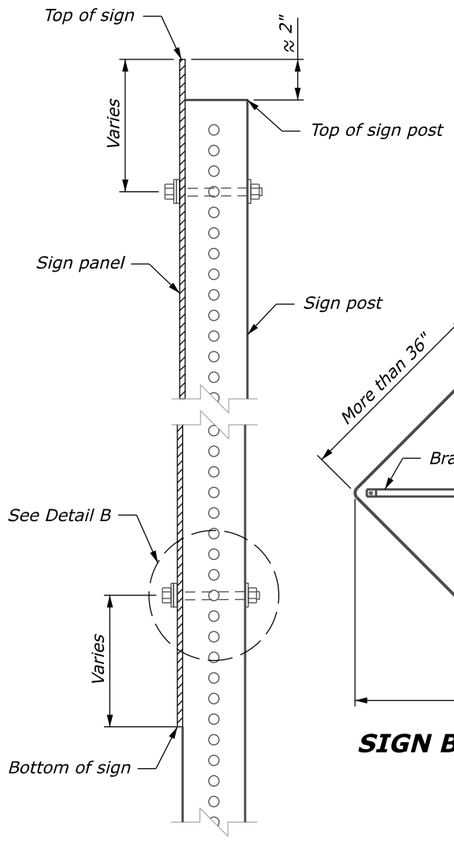
c:\nps-work\d09441694\crla01301_nh.dgn {Snow Pole Holder Details}
26 March 2021 8:44 AM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

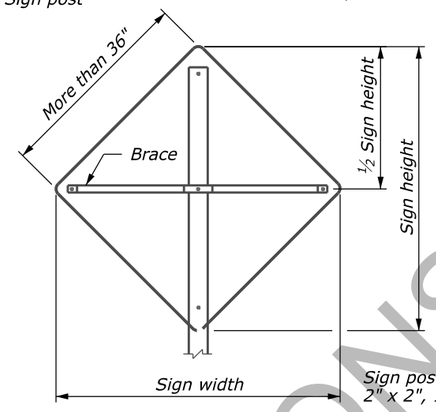
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.68



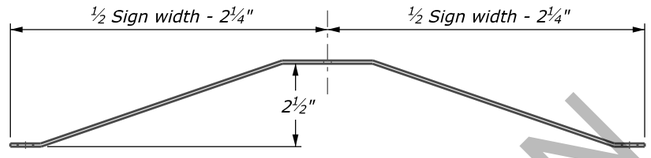
ELEVATION



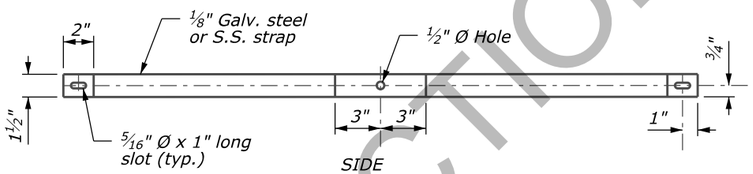
SECTION A-A



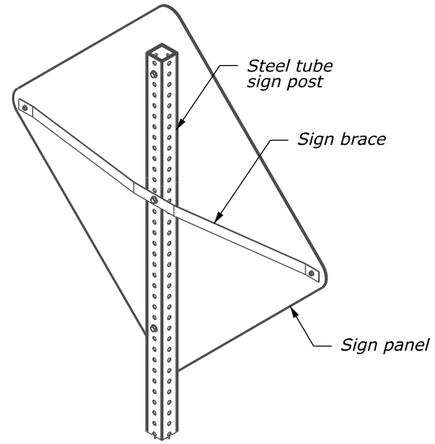
SIGN BRACE DETAIL

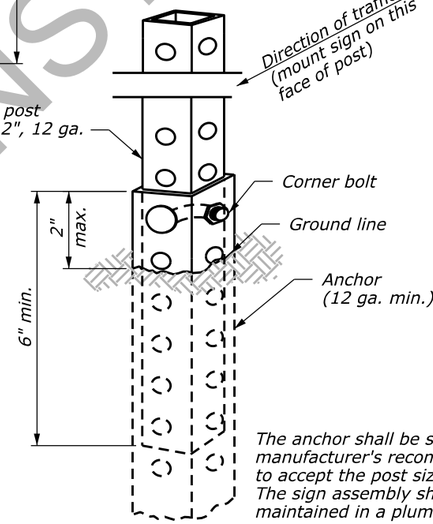


TOP



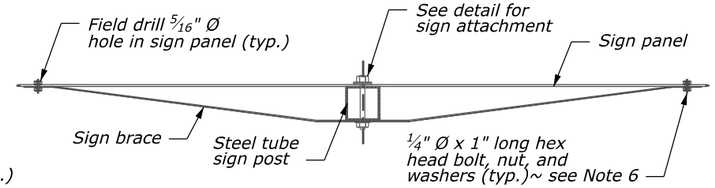
SIDE





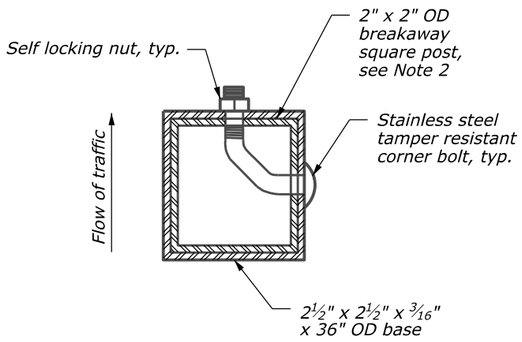
The anchor shall be sized as per manufacturer's recommendations to accept the post size specificied. The sign assembly shall be maintained in a plumb position.

PERFORATED SQUARE STEEL TUBE POST DETAIL



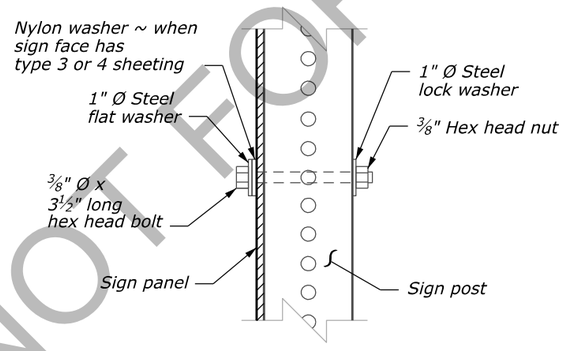
PLAN

SIGN BRACE ON STEEL TUBE



TOP

ANCHOR DETAIL



DETAIL B

NOTE:

1. Follow manufacturer's specifications for the installation of their posts.
2. Breakaway sign posts are to be "Quick-Punch" with knock outs in place.
3. Mounting brackets with steel straps shall be a stainless steel band and buckle system product or an approved equal. Mounting brackets shall be one bolt, flared leg; steel straps shall be ¾-inch wide and 0.030-inch thick.
4. A nylon washer shall be placed between the sign and the steel washer when the sign face has type 3 or 4 sheeting.

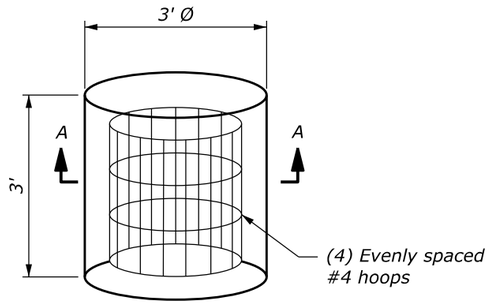
NOT FOR CONSTRUCTION

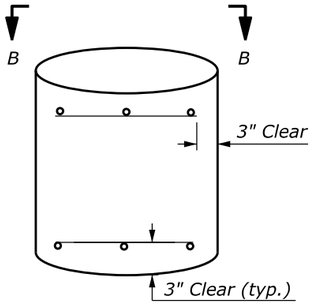
NO SCALE

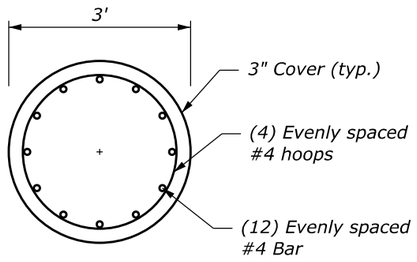
METAL SIGN POST DETAILS

c:\nps-work\c00441684\crla01301_nf.dgn [Metal Sign Post Details]
29 March 2021 7:27 AM

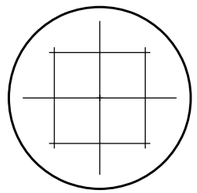
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.69





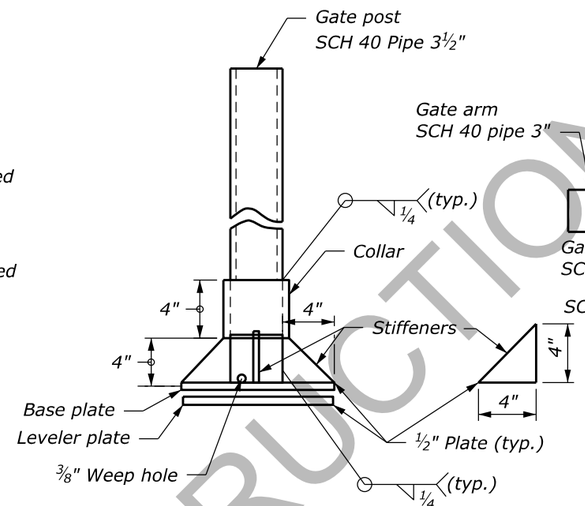


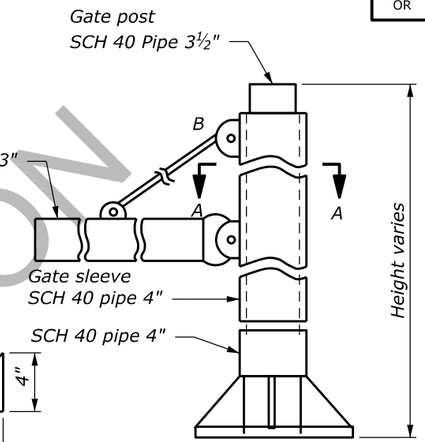
SECTION A-A

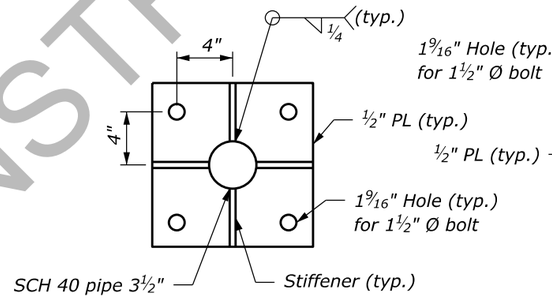


SECTION B-B

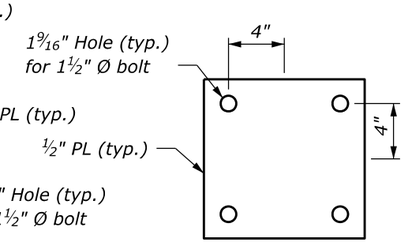
TOP & BOTTOM
REBAR MATERIAL



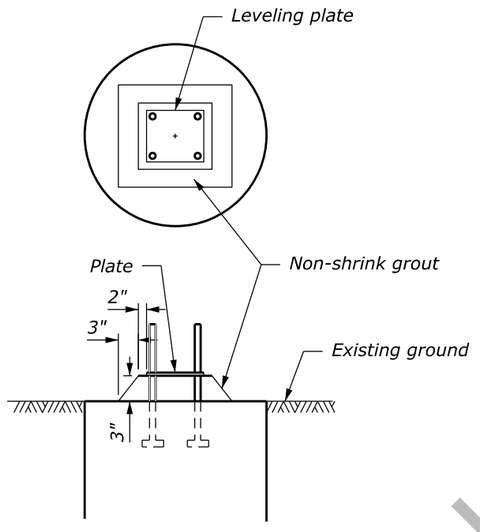


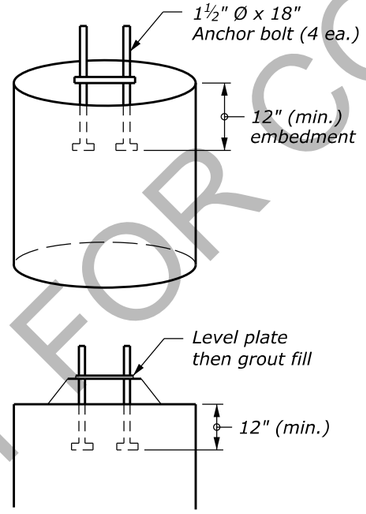


BASE PLATE

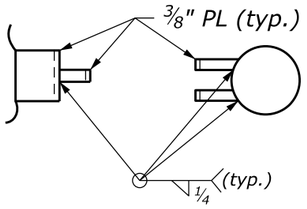


LEVELING PLATE

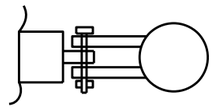




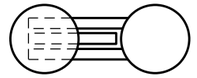
FOOTING DETAILS



LATCH DETAIL
SECTION B-B



HINGE DOWN POSITION
SECTION A-A



HINGE UP POSITION

POST DETAILS

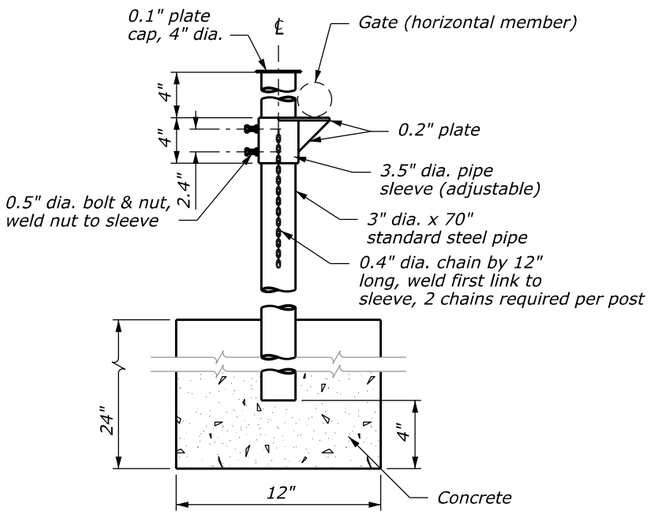
NOT FOR CONSTRUCTION

NO SCALE

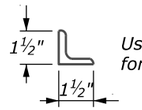
GATE FOOTING AND POST DETAILS

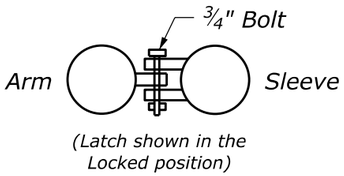
cs\pw\work\d0441684\vrfa01301_nt.dgn [Footing and Post Details]
13 April 2021 3:26 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.70



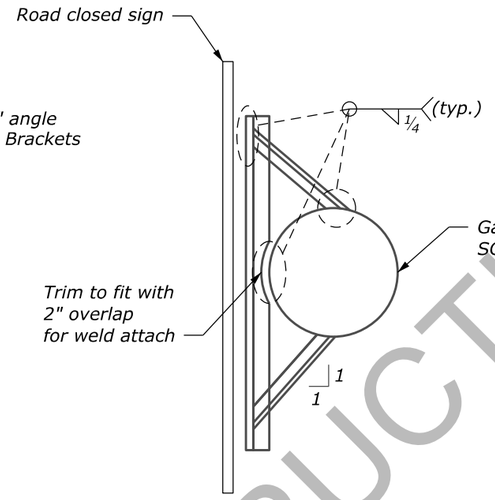
DETAIL
TIEBACK POST



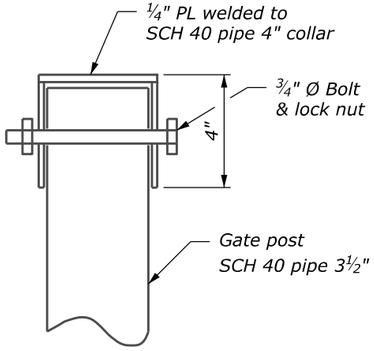


(Latch shown in the Locked position)

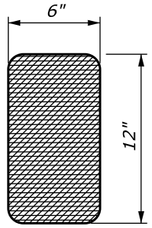
SECTION B-B
LATCH DETAIL



SECTION C-C
SIGN BRACKET DETAIL

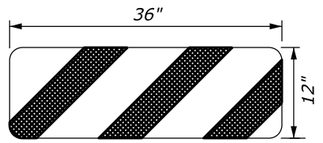


CAP DETAIL



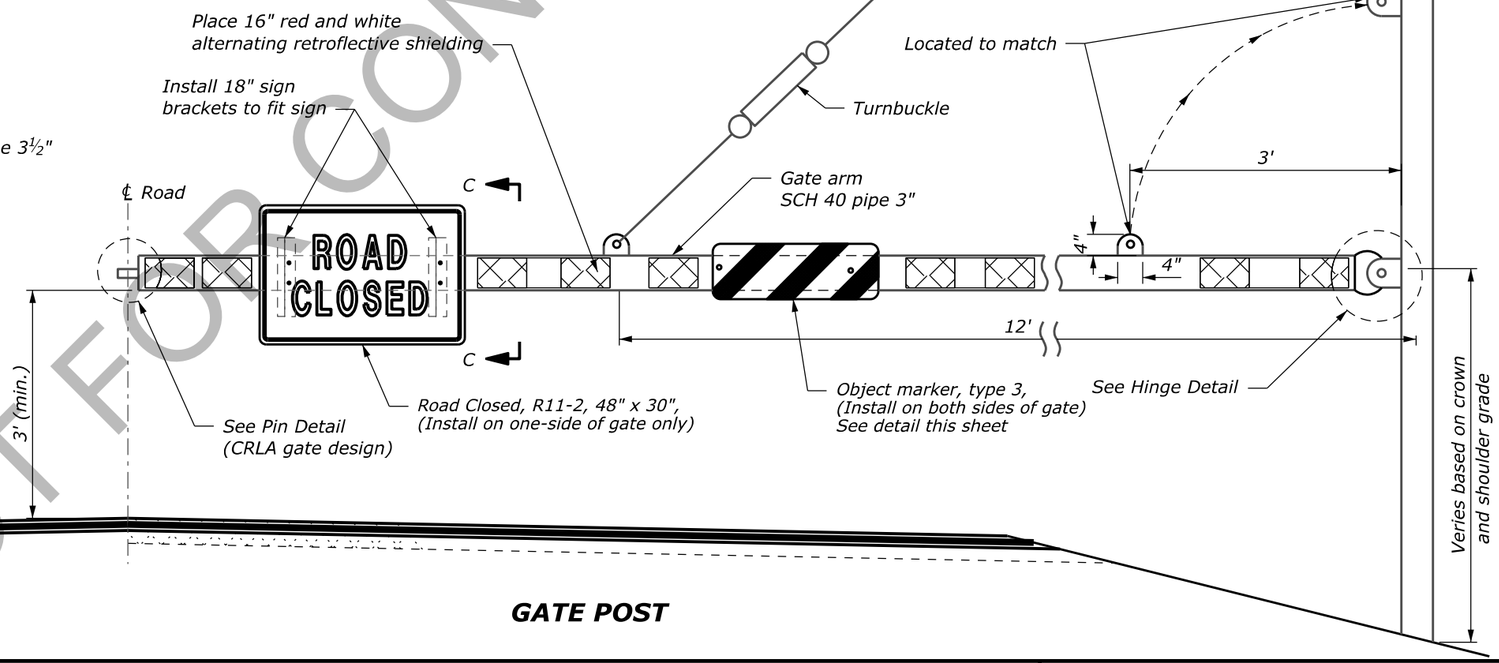
TYPE 2
OBJECT MARKER

Color: Reflectorized white



TYPE 3
OBJECT MARKER

Color: Black and reflectorized yellow



GATE POST

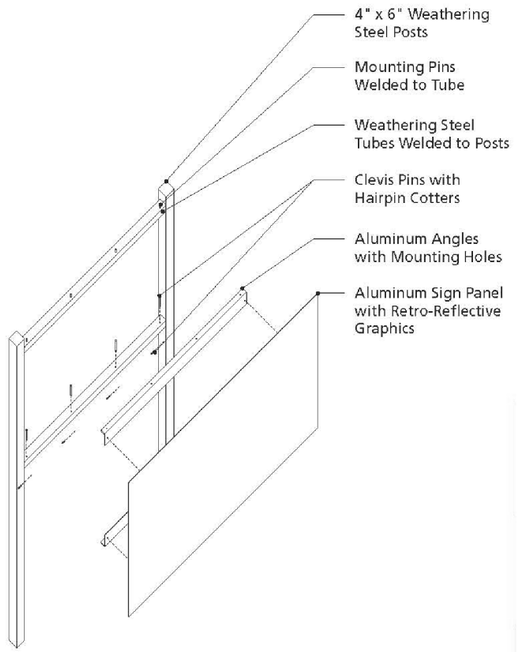
NO SCALE

GATE AND SIGN DETAILS

NOT FOR CONSTRUCTION

c:\plw-work\d0441684\crla01301_gt.dgn [Sign Details]
13 April 2021 3:13 PM

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.71



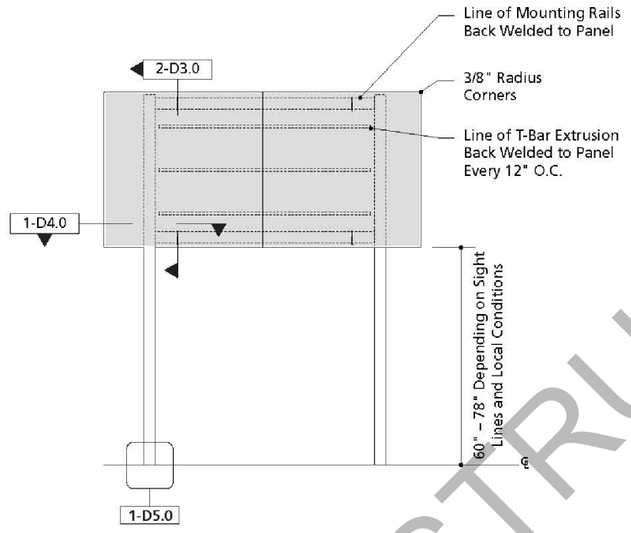
Detachable Sign Construction

Rim Road Overbar

PMS Black 4C

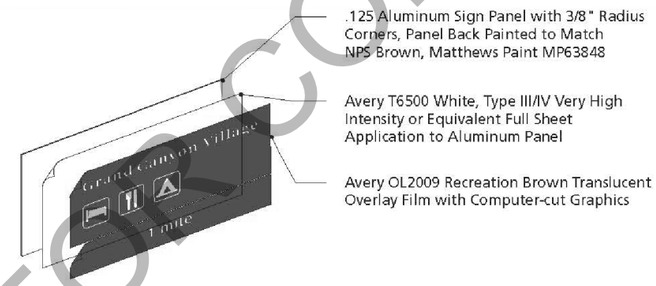
NPS Brown

Matthews Paint MP63848



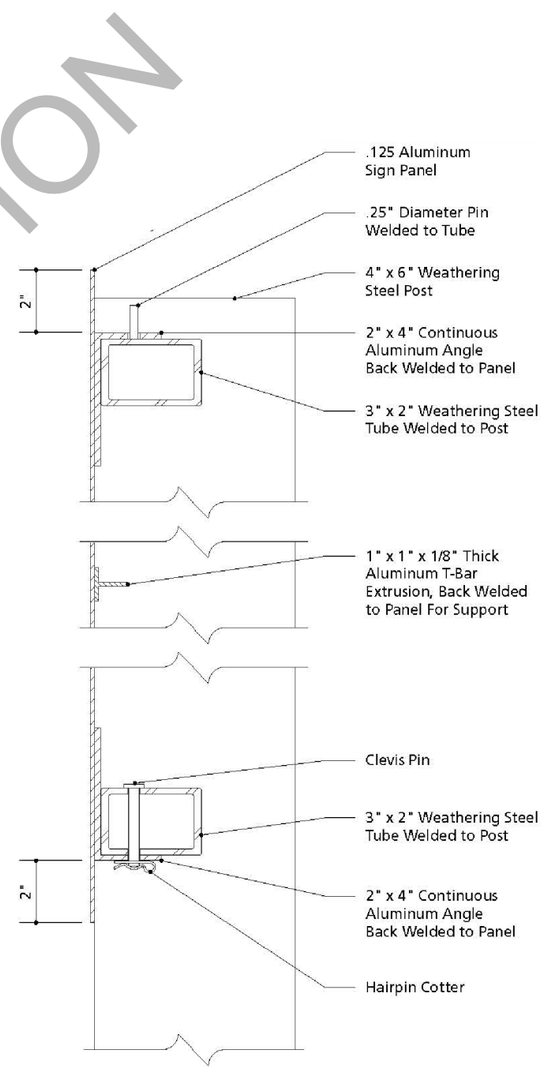
Typical .125 Aluminum Sign Elevation

Sign posts, mounting rails, angles, T-bars and panel backs shall be painted to match NPS Brown.



Typical Applied Vinyl Fabrication Detail

1. *Contractor shall fabricate all XX-CRLA Road Guide Signs in accordance with NPS Standards.*
2. *Contractor shall confirm fabricated panels match the specified Pantone color swatches.*
3. *All XX-CRLA Road Guide posts, mounting rails, angles, T-bars and panel backs shall be painted to match NPS Brown, Matthews Paint MP63848.*
4. *Rim Road Drive Overbar shall be painted to match PMS Black 4C, see signs 49-CRLA thru 55-CRLA, 57-CRLA, and 62-CRLA thru 67-CRLA.*



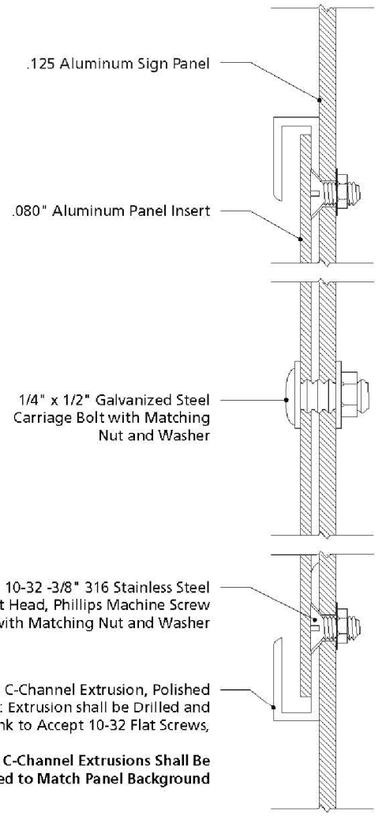
Typical .125 Aluminum Sign Section Cut
Section 2-D3.0

NOT FOR CONSTRUCTION

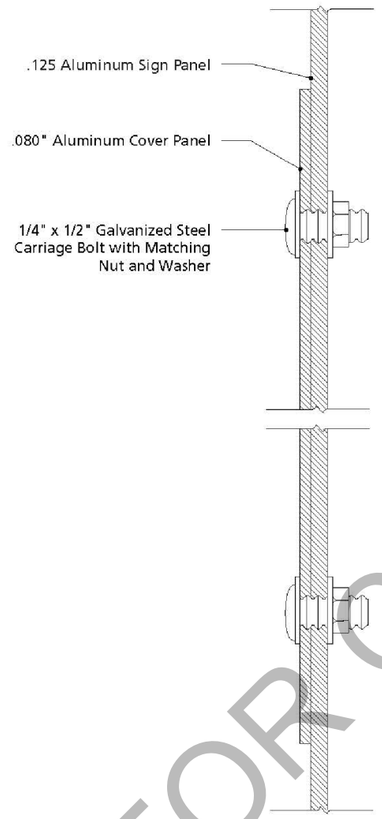
c:\pw\work\d0441694\crla01301_nk.dgn [PTC Sign Installation Details]
14 April 2021 7:46 AM

PERMANENT TRAFFIC CONTROL SIGN INSTALLATION DETAILS

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.72

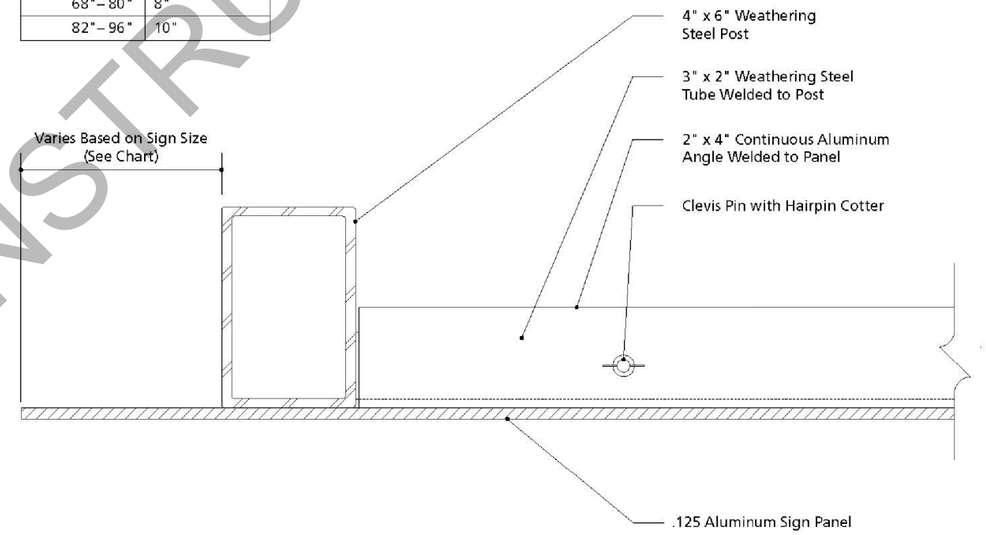


Road Guide with Panel Insert Detail



Road Guide with Cover Panel Detail

Panel Width	Post Inset to Panel Edge
38"– 52"	4"
54"– 66"	6"
68"– 80"	8"
82"– 96"	10"



Typical .125 Aluminum Panel-Post Attachment Detail

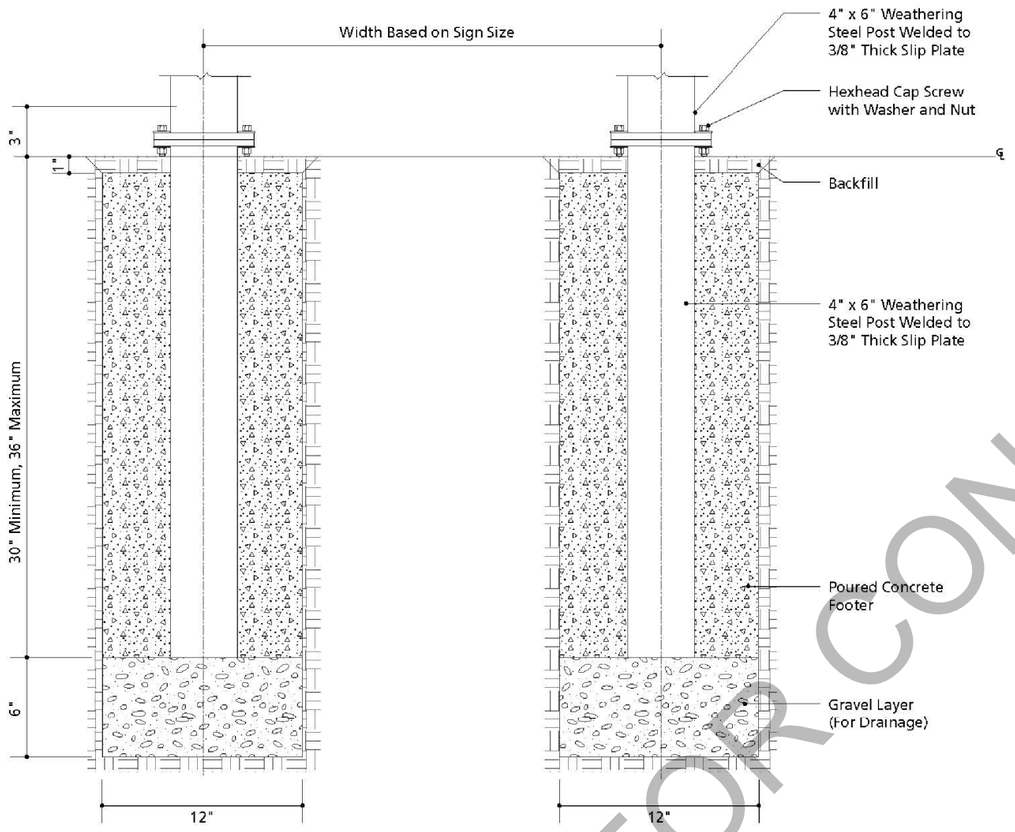
Section 1-D4.0

NOT FOR CONSTRUCTION

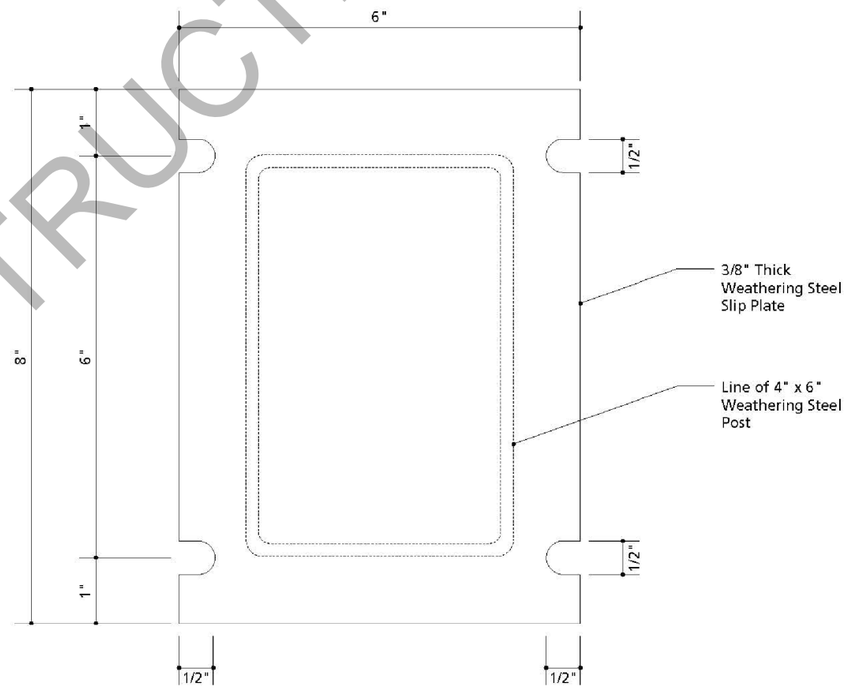
c:\new-work\d0441694\cfd01301_rl.dgn [PTC Sign Installation Details]
14 April 2021 7:47 AM

PERMANENT TRAFFIC CONTROL SIGN INSTALLATION DETAILS

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.73



Breakaway Post Detail



Slip Plate Detail

NOT FOR CONSTRUCTION

PERMANENT TRAFFIC CONTROL SIGN INSTALLATION DETAILS

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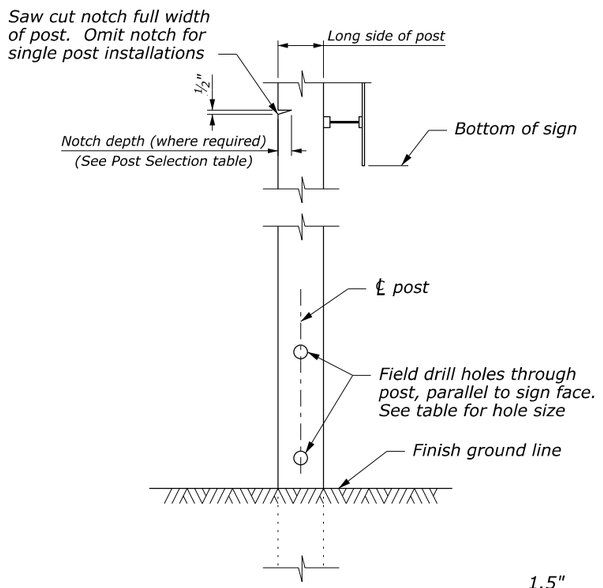
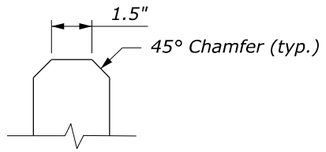
13 April 2021 4:16 PM

NPS PMIS No. 241696 NPS Drwg. No. 106/175169

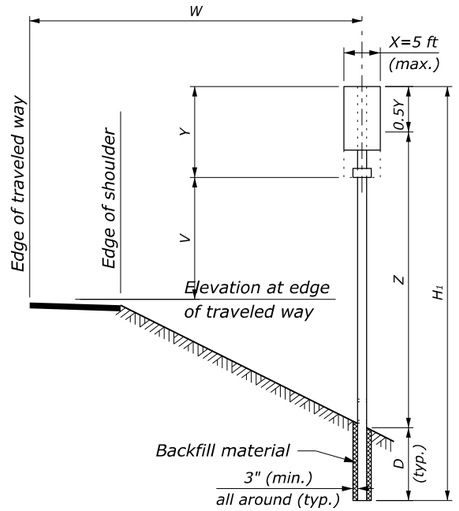
STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	K.74



POST DETAIL



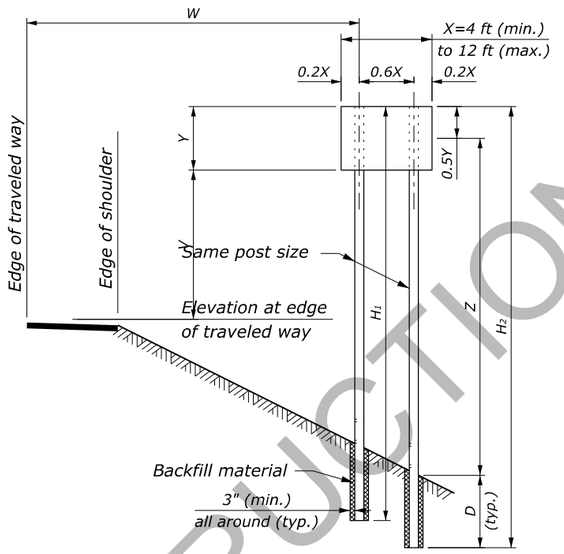
TOP OF POST DETAIL



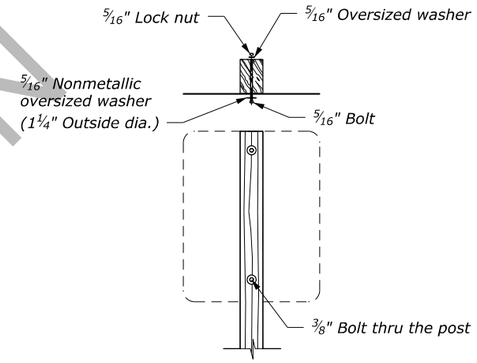
SINGLE POST SIGNS

SIGN INSTALLATION ANGLE

For all retroflectorized signs where W > 25'



TWO POST SIGNS



TYPICAL MOUNTING FOR SIGNS WITHOUT ANGLES

MINIMUM DISTANCE TO SIGN

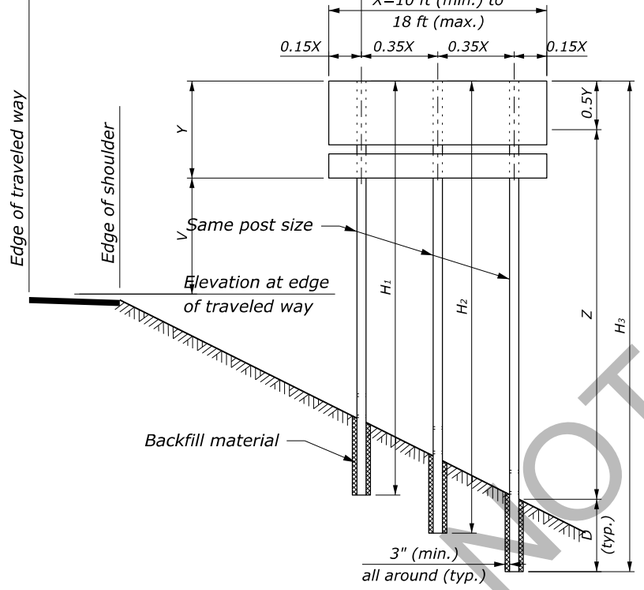
Location	Lateral Offset (W)	Mounting Height (V)
Business or Residence Districts	2 ft from curb	7 ft

V may be reduced by 1 foot in rural districts for a secondary sign mounted below another sign.

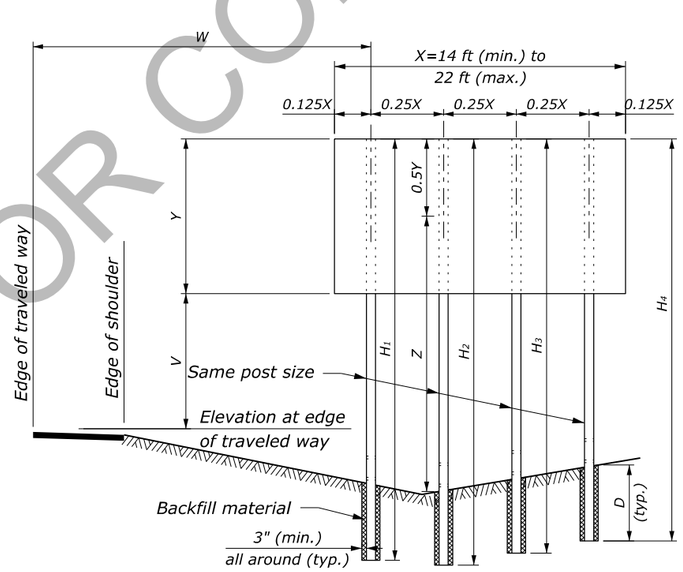
WOOD POST SELECTION TABLE

POST SIZE (inch)	NUMBER OF POSTS 1	2	3	4	D	Notch depth and hole diameter
	Product of X-Y-Z in CUFT					
6 x 6	235	475	710	950	30"	1¾"

Values shown are the maximum permitted. If the product of XYZ exceeds the limit for the largest post, use steel post installation.



THREE POST SIGNS



FOUR POST SIGNS

NO SCALE

NOTE:

1. *Traffic barrier protection is required for all posts larger or if the post is vulnerable to being struck when placed outside the clear zone.*
2. *H_1 thru H_4 indicate overall post length. Select post lengths to fit field conditions.*
3. *D is the minimum post embedment depth for average soil conditions. See Wood Post Selection Table below.*
4. *Z is the height from ground line to mid-height of sign at the longest post.*
5. *For the purpose of post selection X and Y are as follows:*
   - *Single sign, or back to back signs: X and Y are the overall dimensions of the signs.*
   - *Multiple sign installations: X and Y are the dimensions of a rectangle enclosing all the signs.*

PERMANENT SIGN INSTALLATION WOOD POSTS

NOT FOR CONSTRUCTION

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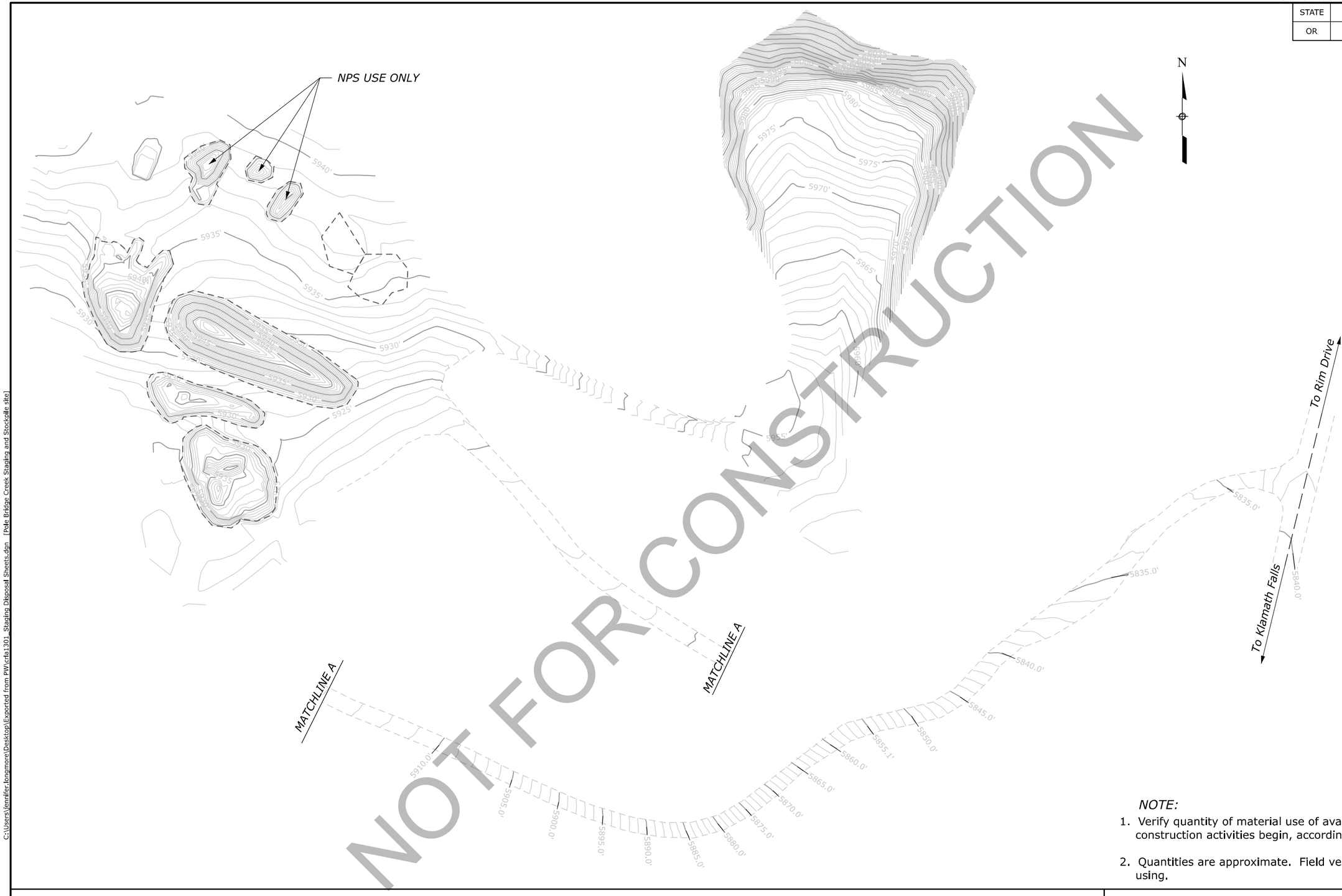
26 March 2021 11:24 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	L.1



NOT FOR CONSTRUCTION

NOTE:

1. Verify quantity of material use of available stock piles before construction activities begin, according to Subsection 105.02

2. Quantities are approximate. Field verify quantities before using.

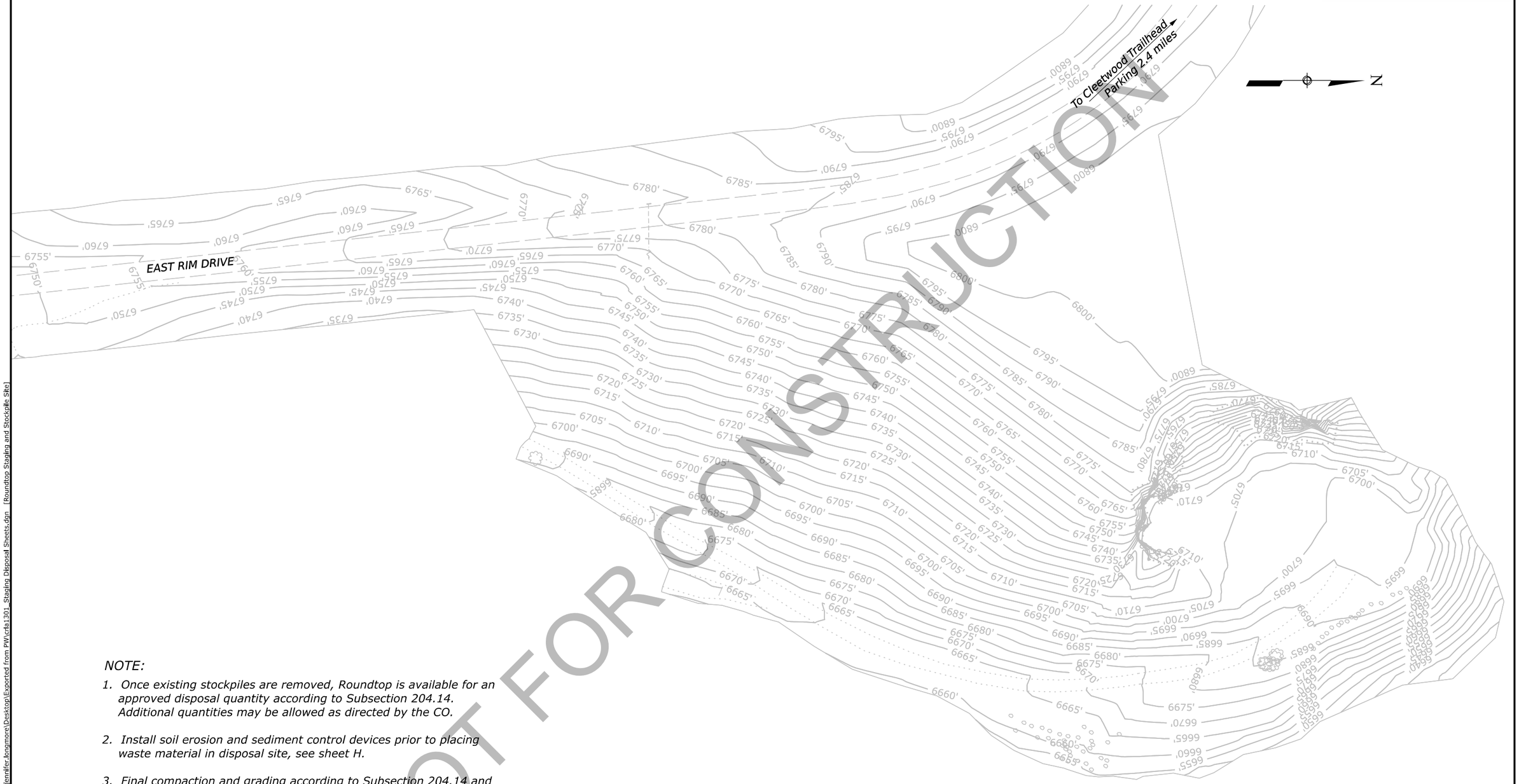
POLE BRIDGE CREEK STAGING AND STOCKPILE SITE

C:\Users\jennifer.longmore\Desktop\Exported from PW\crla1301_Staging Disposal Sheets.dgn [Pole Bridge Creek Staging and Stockpile site]

7 April 2021 7:37 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	L.2



NOT FOR CONSTRUCTION

NOTE:

1. *Once existing stockpiles are removed, Roundtop is available for an approved disposal quantity according to Subsection 204.14. Additional quantities may be allowed as directed by the CO.*

2. *Install soil erosion and sediment control devices prior to placing waste material in disposal site, see sheet H.*

3. *Final compaction and grading according to Subsection 204.14 and Section 622.*

4. *Existing stockpiles of rock scaling material are located at Roundtop Quarry. Verify quality and material use of available stockpiles before construction activities begin according to Subsection 105.02.*

ROUNDTOP STAGING AND STOCKPILE SITE

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7 April 2021 7:38 AM

NPS PMIS No. 241696 NPS Drwg No. 106/175169

STATE	PROJECT	SHEET NUMBER
OR	NPS CRLA 13(1)	L.3

NOT FOR CONSTRUCTION

BALL DIAMOND STAGING AND STOCKPILE SITE

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7 April 2021 7:39 AM