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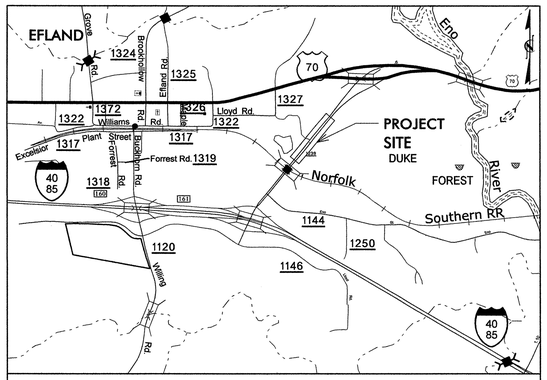
begackstetter AT RAILY26681GL

TIP PROJECT: P-4405F

CONTRACT: _____

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
RAIL DIVISION

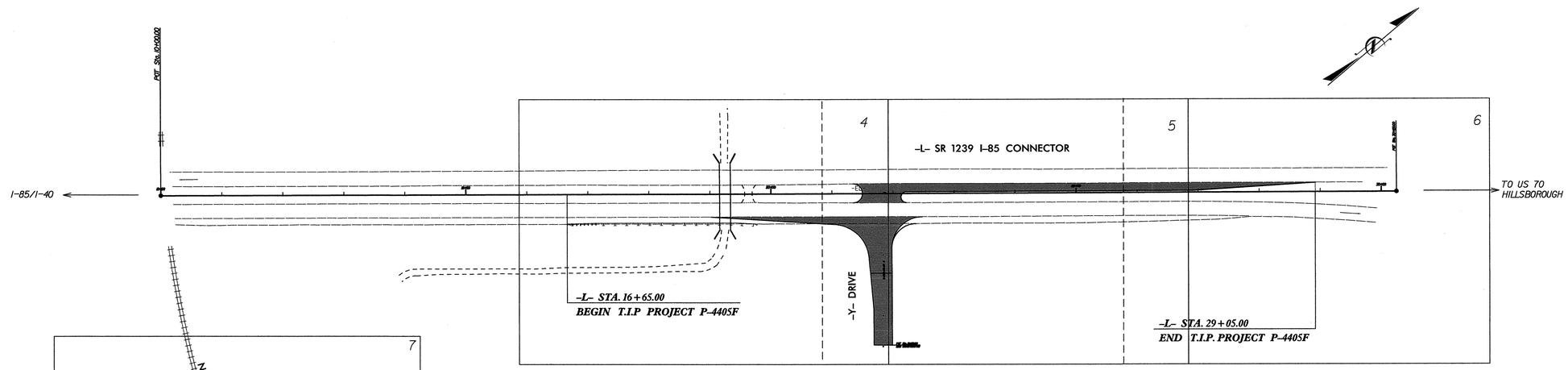
ORANGE COUNTY

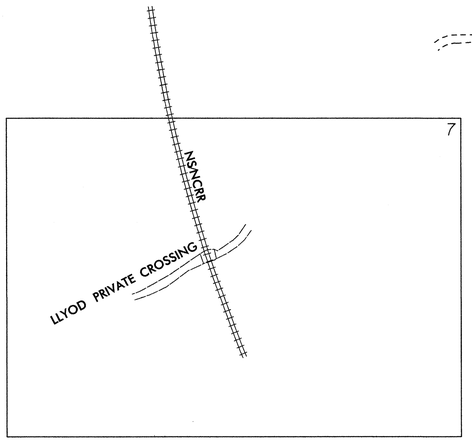
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	P-4405F	1	.

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
52000.7.STR06TIA		PE
52000.7.STR10T4	FRA-FR-HSR-0006-10-01-00	CONST.

LOCATION: SR 1239 I-85 CONNECTOR FROM APPROXIMATELY 650 FEET NORTHWEST OF NS/NCRR OVERPASS TO APPROXIMATELY 1000 FEET SOUTHWEST OF US 70 OVERPASS

TYPE OF WORK: PAVING, GRADING AND DRAINAGE





GRAPHIC SCALES

20 10 0 20 40
PLANS

20 10 0 20 40
PROFILE (HORIZONTAL)

5 2.5 0 4 8
PROFILE (VERTICAL)

DESIGN DATA

ADT 2012 = N/A
ADT 2032 = N/A
DHV = N/A %
D = N/A %
T = N/A % *
V = 60 MPH
N/A DUAL __
FUNC CLASS =
COLLECTOR
STATEWIDE TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT P-4405F = 0.235 MILE
TOTAL LENGTH TIP PROJECT P-4405F = 0.235 MILE

Prepared In the Office of:
RAIL DIVISION
1556 MAIL SERVICE CENTER, RALEIGH, NC 27699

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: .

LETTING DATE: MAY 15, 2014

DAN HAVENER, PE
PROJECT ENGINEER

BRIAN GACKSTETTER, EI
PROJECT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER DANIEL L. HAVENER
3-13-14

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
P-4405F	1-A

DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL ENGINEER DANIEL L. HAVENER
3-13-14

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
2	PAVEMENT SCHEDULE & TYPICAL SECTIONS
3-A	SUMMARY OF DRAINAGE QUANTITIES SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
4 THRU 7	PLAN SHEET
8 THRU 10	PROFILE SHEET
EC-1 THRU EC-9	EROSION CONTROL PLANS
PMP-1 THRU PMP-3	PAVEMENT MARKING PLANS
SIGN-1 THRU SIGN-2	SIGNING PLANS
X-0 THRU X-11	CROSS-SECTIONS

EFF. 01-17-2012
REV. 10-30-2012

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch – N. C. Department of Transportation – Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 – EARTHWORK	
200.02	Method of Clearing – Method II
225.02	Guide for Grading Subgrade – Secondary and Local
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 – PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 6 – ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 – INCIDENTALS	
840.00	Concrete Base Pad for Drainage Structures
840.18	Concrete Grated Drop Inlet Type 'B'
840.19	Concrete Graded Drop Inlet Type 'D' – 12" Thru 36" Pipe
840.22	Frames & Wide Slot Sag Grates
840.22	Frames & Wide Slot Sag Grates
840.25	Anchorage for Grames – Brick, Concrete or Precast
840.27	Brick Grated Drop Inlet Type 'B' – 12" Thru 36" Pipe
840.28	Brick Grated Drop Inlet Type 'D' – 12" Thru 36" Pipe
840.45	Precast Drainage Structure
840.66	Drainage Structure Steps
840.72	Pipe Collar
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for RIP-RAP at Pipe Outlets
DIVISION 9 – SIGNING	
904.50	Mounting of Type 'A', 'E', and 'F' Signs on 'U' Channel Posts
DIVISION 11 – WORK ZONE TRAFFIC CONTROL	
1101.01	Work Zone Advance Warning Signs For Facilities < 55 MPH
1101.02	Temporary Lane Closures-Divided Multi-Lane Roadway 1- Lane Closed (for Roadway < 60 MPH)
1101.04	Temporary Shoulder Closures
1101.11	Traffic Control Design Tables
1130.01	Drum
DIVISION 12 – PAVEMENT MARKINGS, MARKERS AND DELINEATION	
1205.01	Pavement Markings – Line Types & Offsets
1205.04	Pavement Markings – Intersections
1205.05	Pavement Markings – Turn Lanes
1205.08	Pavement Markings – Symbols and Word Messages
1235.01	Snowplowable Raised Pavement Markers
1250.01	Raised Pavement Markers – Installation Spacing
1251.01	Raised Pavement Markers – Permanent and Temporary
1261.01	Guradrail & Barrier Delineators – Installation Spacing
1262.01	Guardrail End Delineation

GENERAL NOTES: 2012 SPECIFICATIONS

EFFECTIVE: 01-17-2012
REVISED: 07-30-2012

GRADING AND SURFACING OR WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING MEDIAN EDGE OF PAVEMENT AT WHICH PROPOSED WIDENING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

GUARDRAIL:

THE GUARDRAIL LOCATION SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

UTILITIES:

UTILITY ON THIS PROJECT WERE NOT PART OF THE SURVEY. THE CONTRACTOR SHALL CONTACT NORTH CAROLINA 811 TO LOCATE ANY UNDERGROUND UTILITIES.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATIONS AS TO THE SUBSURFACE CONDITIONS.

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PROJECT REFERENCE NO.	SHEET NO.
P-4405F	1-B

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Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

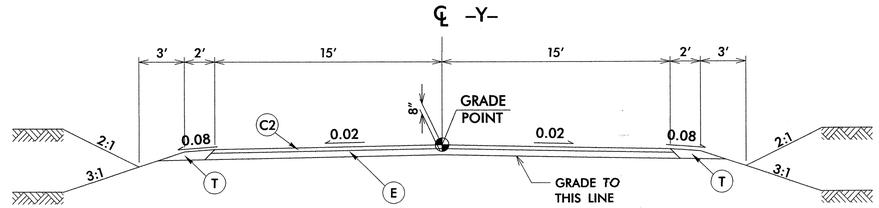
PROJECT REFERENCE NO.	SHEET NO.
P-4405F	2
R/W SHEET NO.	

DESIGN ENGINEER

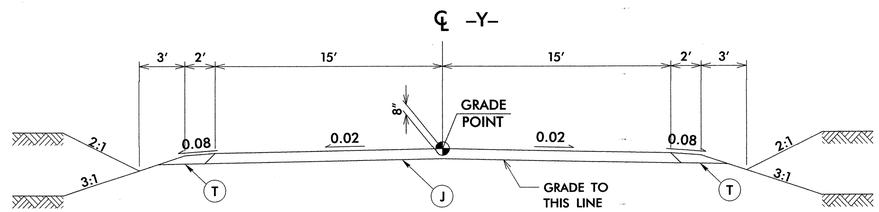
NORTH CAROLINA PROFESSIONAL SEAL 10743 ENGINEER DANIEL L. HAVENER

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF 2 LAYERS
D	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
J	PROP. APPROX. 8" AGGREGATE BASE COURSE.
T	EARTH MATERIAL
U	EXISTING PAVEMENT

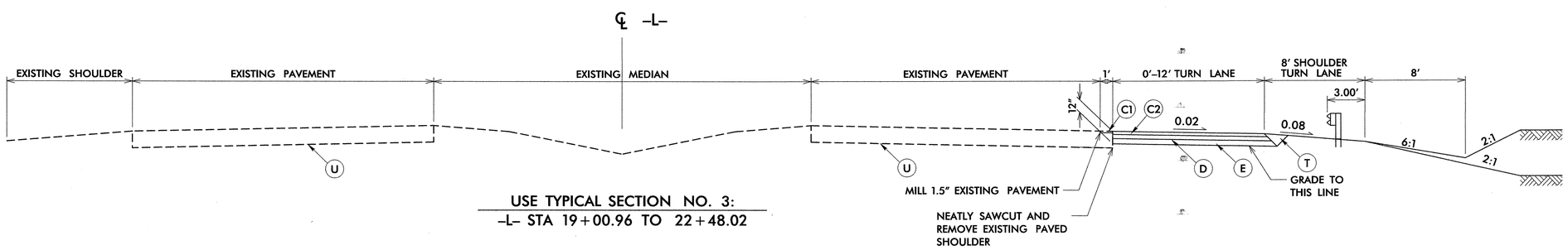
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
NOTE: PAVEMENT DESIGN PROVIDED BY DISTRICT ENGINEER.



USE TYPICAL SECTION NO. 1:
-Y- STA 10+38.17 TO 11+30.00



USE TYPICAL SECTION NO. 2:
-Y- STA 11+30.00 TO 12+47.50



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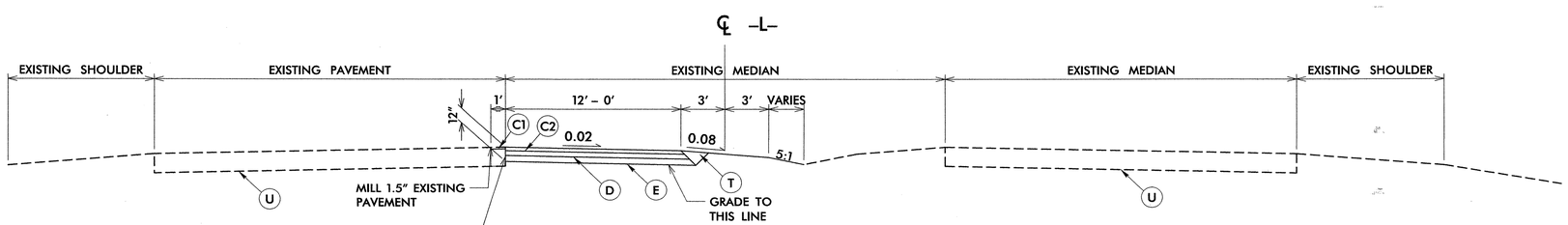
-L- STA 19+00.96 TO 22+48.02



USE TYPICAL SECTION NO. 4:
-L- STA 21+34.90 TO 28+91.96

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DCN
0596DEL_P2IL 12/06/07

COMPUTED BY: BEG DATE: 2/12/14
CHECKED BY: JGL DATE: 2/12/14

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL
-L- 21+25	CL	0501					
-L- 21+25 TO -Y- 10+91 RT	CL	0501	0502	611.96	609.21	.	
-Y- 10+91	RT	0502		609.36	606.36		
-Y- 10+85	CL	0502	0503		606.36	605.82	
-L- 26+71	CL	0601	.	597.10	592.27	592.27	

STATION	SIDE DRAIN PIPE (RCP,CSP,CAAP,HDPE,OR PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT RCP	DO NOT CSP	DO NOT CAAP	DO NOT HDPE	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109
-L- 21+25																				
-L- 21+25 TO -Y- 10+91 RT																				
-Y- 10+91																				
-Y- 10+85																				
-L- 26+71																				

STATION	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
-L- 21+25																
-L- 21+25 TO -Y- 10+91 RT		95														
-Y- 10+91																
-Y- 10+85			178													
-L- 26+71			12													

STATION	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') PER EACH (0' THRU 5.0')	LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G
-L- 21+25									
-L- 21+25 TO -Y- 10+91 RT									
-Y- 10+91									
-Y- 10+85									
-L- 26+71									

STATION		D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32					CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- 21+25					1			1												
-L- 21+25 TO -Y- 10+91 RT																				
-Y- 10+91					1			1												
-Y- 10+85																				
-L- 26+71					1			1									0.893		12	

ABBREVIATIONS

- C.B. CATCH BASIN
- N.D.I. NARROW DROP INLET
- D.I. DROP INLET
- G.D.I. GRATED DROP INLET
- G.D.I. (N.S.) GRATED DROP INLET (NARROW SLOT)
- J.B. JUNCTION BOX
- M.H. MANHOLE
- T.B.D.I. TRAFFIC BEARING DROP INLET
- T.B.J.B. TRAFFIC BEARING JUNCTION BOX

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
19+00.96	22+00.00	1488	236	–	1252
-L- RT TURN SUBTOTALS:		1488	236	–	1252
22+00.00	28+91.96	172	158	–	14
-L- LT TURN SUBTOTALS		172	158	–	14
10+00.00	12+50.00	3497	–	–	3497
-Y- SUBTOTALS:		3497	–	–	3497
PROJECT TOTALS:		5157	394	–	4793
EST. SHOULDER BORROW				32	–32
GRAND TOTALS:		5157	394	–	4731
SAY:		5200			

APPROXIMATE QUANTITIES ONLY. CLEARING AND GRUBBING, BORROW EXCAVATION, UNCLASSIFIED EXCAVATION, SHOULDER BORROW, FINE GRADING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AS THE LUMP SUM PRICE FOR "GRADING".

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
L	19+01	22+48	RT	302.6
			TOTAL:	302.6
			SAY:	305

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH STRAIGHT	LENGTH SHOP CURVED	LENGTH DOUBLE FACED	WARRANT POINT APPROACH END	WARRANT POINT TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH APPROACH END	FLARE LENGTH TRAILING END	W APPROACH END	W TRAILING END	ANCHORS XI MOD	XI	GRAU 350	M-350	XIII	CAT-1	VI MOD	BIC	AT-1	IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L-	16+66.03	19+72.28	RT	306.25		RT	16+78.53	19.72.28	-L-=9 TURN LN=5'	-L-=EXIST. TURN LN=8	50		1				1			1										

LESS ANCHOR DEDUCTIONS
GRAU-350 1@50'-50.00
CAT-1 1@6.25'-6.25
TOTAL 250.00
(5 ADDITIONAL GAURDRAIL POSTS)

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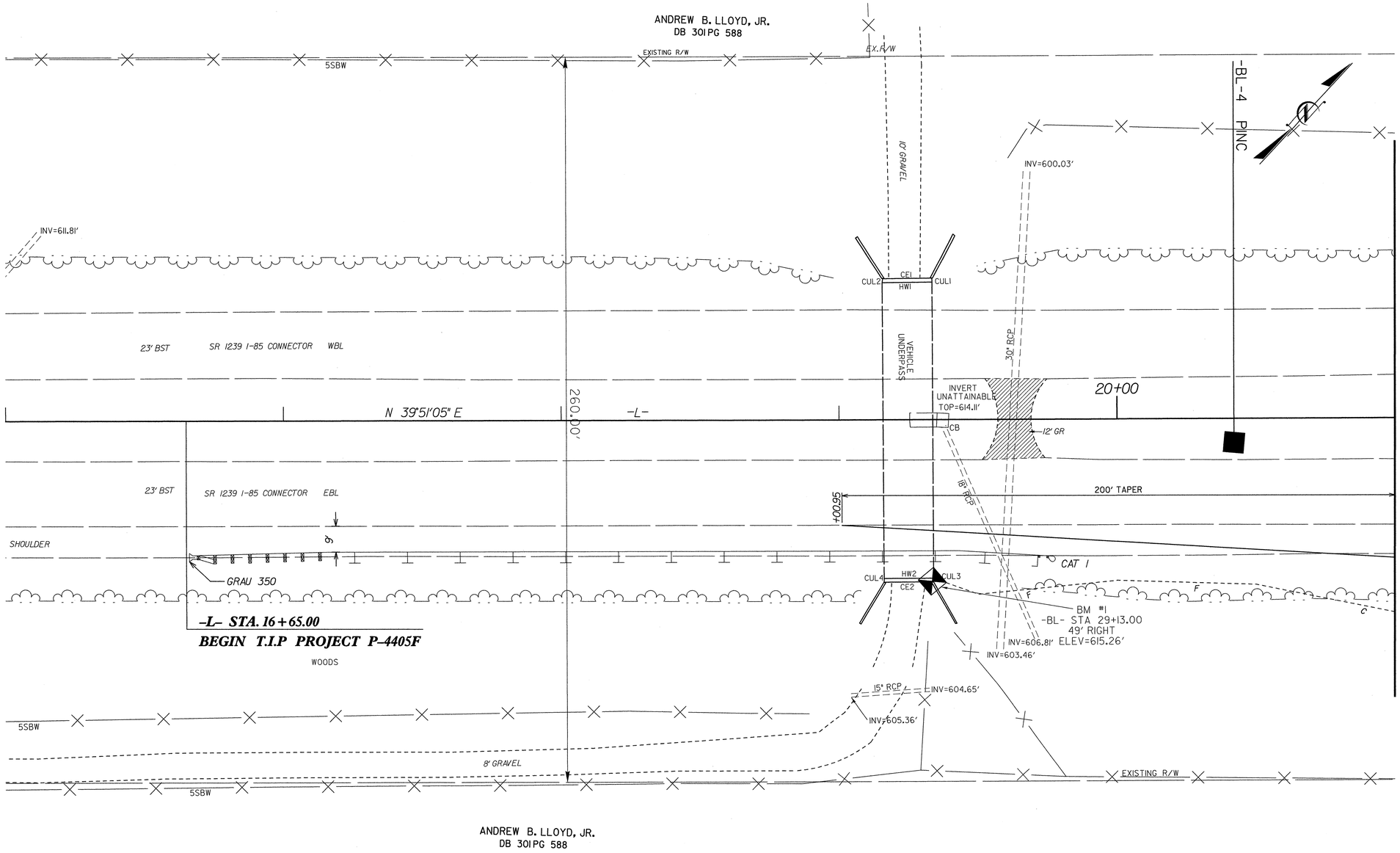
PROJECT REFERENCE NO.	SHEET NO.
P-4405F	4
R/W SHEET NO.	

DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 10748 ENGINEER DANIEL L. HAVENER

3-13-14



LEGEND:

REMOVE EXISTING GRAVEL

FOR -L- PROFILE SEE SHEET 8

-L- ALIGNMENT COORDINATES
STA.10+00.00 N-846,733.63
E-1,953,786.37
STA.30+25.00 N-848,328.24,
E-1,955,083.99

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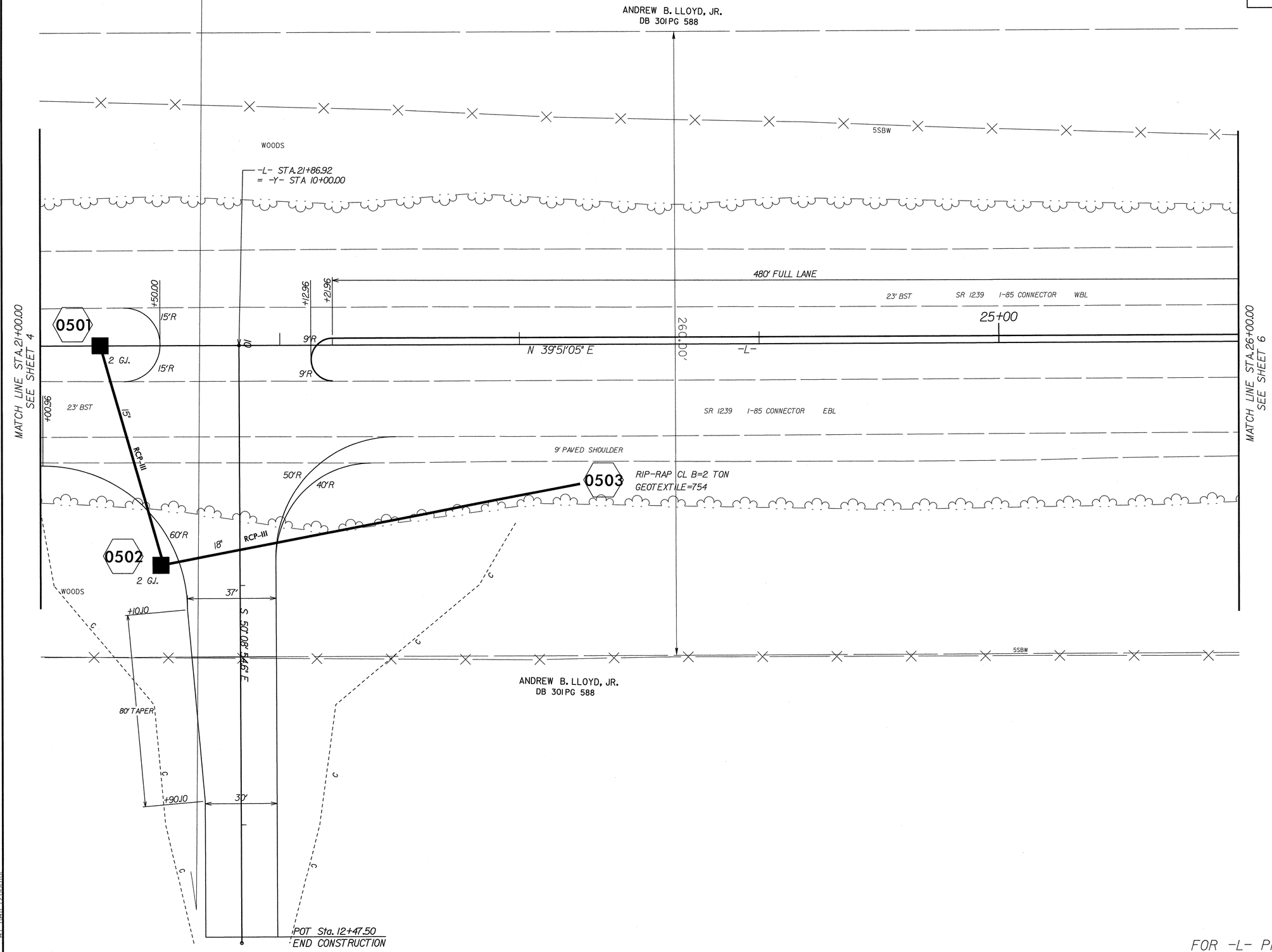
ockstetter AT RAILY2668161

PROJECT REFERENCE NO.	SHEET NO.
P-4405F	5
R/W SHEET NO.	

DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 10743 ENGINEER DANIEL L. HAVENER
3-13-14



FOR -L- PROFILE SEE SHEET 8
FOR -Y- PROFILE SEE SHEET 10

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PROJECT REFERENCE NO.	SHEET NO.
P-4405F	6
R/W SHEET NO.	

DESIGN ENGINEER
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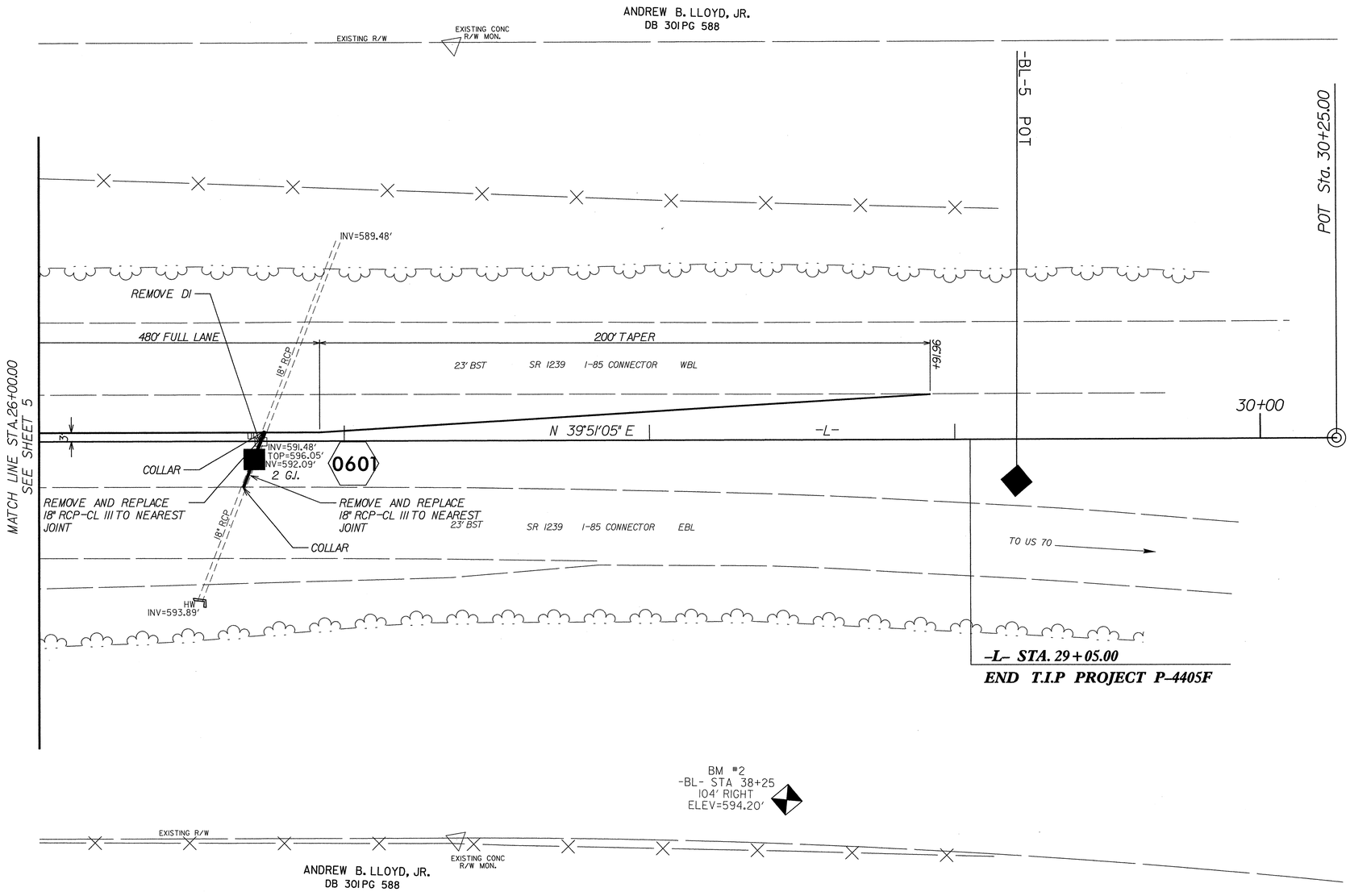

FOR -L- PROFILE SEE SHEET 9

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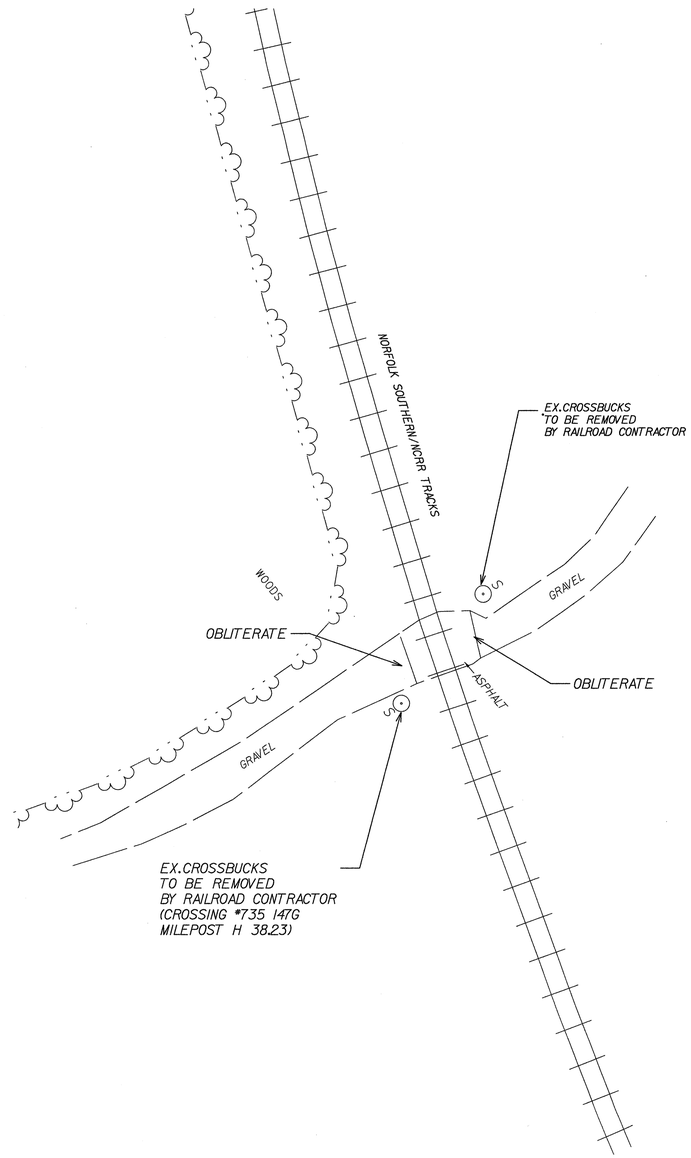
PROJECT REFERENCE NO.	SHEET NO.
P-4405F	7
R/W SHEET NO.	

DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 10743 ENGINEER DANIEL L. HAVENS

3-13-14



NOTES:

1.THE EXISTING PAVEMENT INSIDE THE NORFOLK SOUTHERN RAILROAD RAILS AND TO A POINT AT 10 FEET OUTSIDE THE RAILS WILL BE REMOVED BY THE RAILROAD CONTRACTOR.THE TIMBER FLANGES WILL ALSO BE REMOVED BY THE RAILROAD CONTRACTOR.

2.CONTRACTOR SHALL SEED AND MULCH THE DISTURBED AREA OUTSIDE THE RAILROAD BALLAST LINE.

3.ALL INFORMATION SHOWN ON THE PLAN SHEET HAS NOT BEEN FIELD SURVEYED AND IS BASED ON AERIAL PHOTOGRAPHY. ALL LOCATIONS SHOWN ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.

4.CONTRACTOR SHALL CONTACT NORTH CAROLINA 811 TO LOCATE ALL UNDERGROUND UTILITIES IN THE WORK AREA. ROADWAY CONTRACTOR SHALL ALSO CONTACT NSR TO VERIFY AND LOCATE ANY NSR UTILITIES THAT ARE IN THE PROJECT AREA (E.G. BURIED SIGNAL CABLES) BEFORE COMMENCING WORK.

5.ROADWAY CONTRACTOR SHALL REMOVE EXISTING ROADBED AND GRADE AREA AND EXISTING DITCHES TO DRAIN. ANY EXISTING CULVERTS AND STORM DRAINAGE (IF ANY) IN THE RAILROAD DITCHES SHALL BE REMOVED AS WELL.

6.ROADWAY CONTRACTOR SHALL HAUL AWAY ANY PAVEMENT REMOVED BY RAILROAD CONTRACTOR.

DGN 0596DEL_P2IL 5/14/99

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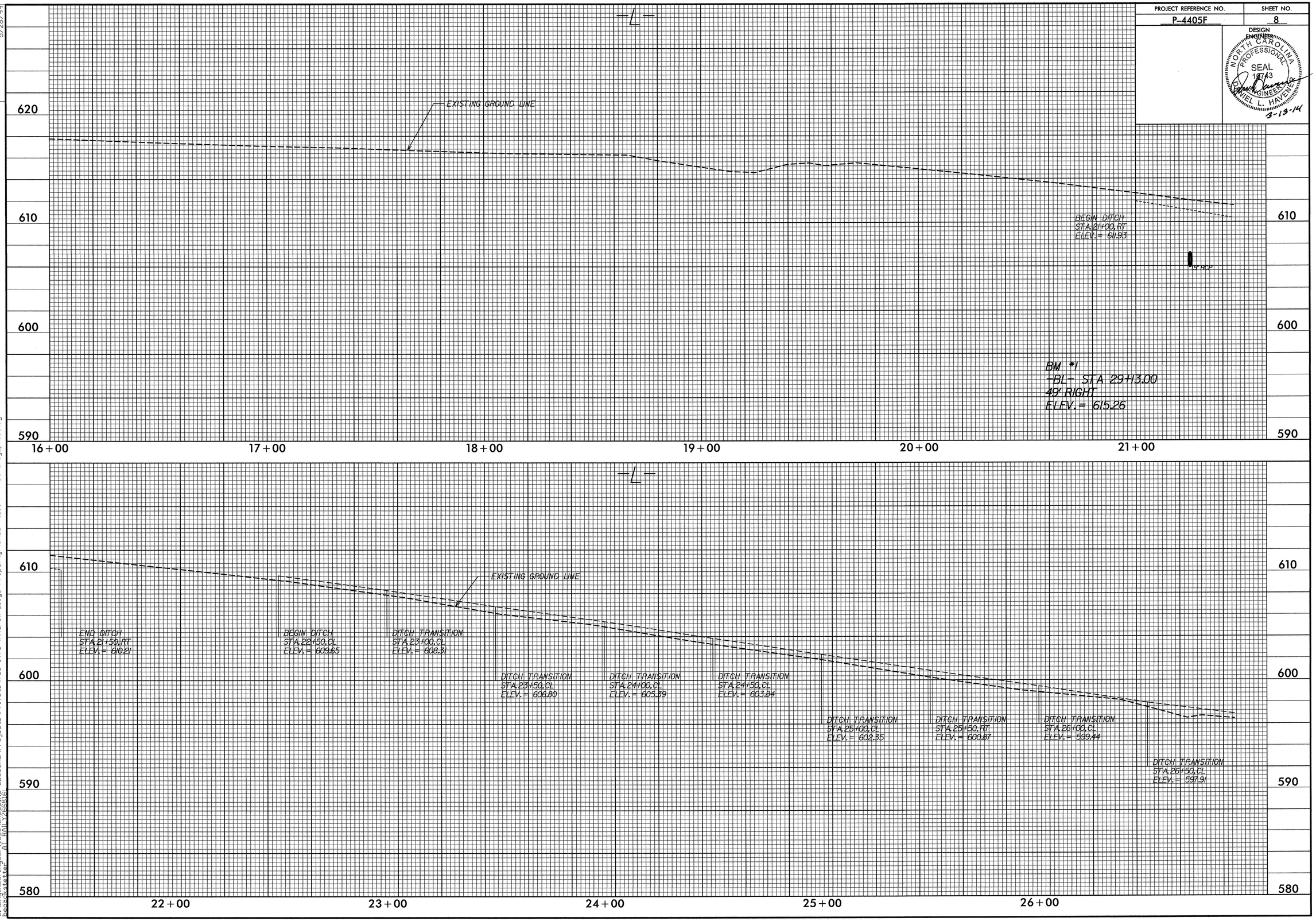
ck:jattar A1 Half 22x34(H)

PROJECT REFERENCE NO.	SHEET NO.
P-4405F	8

DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 19743 ENGINEER DANIEL L. HAVENER

3-13-14



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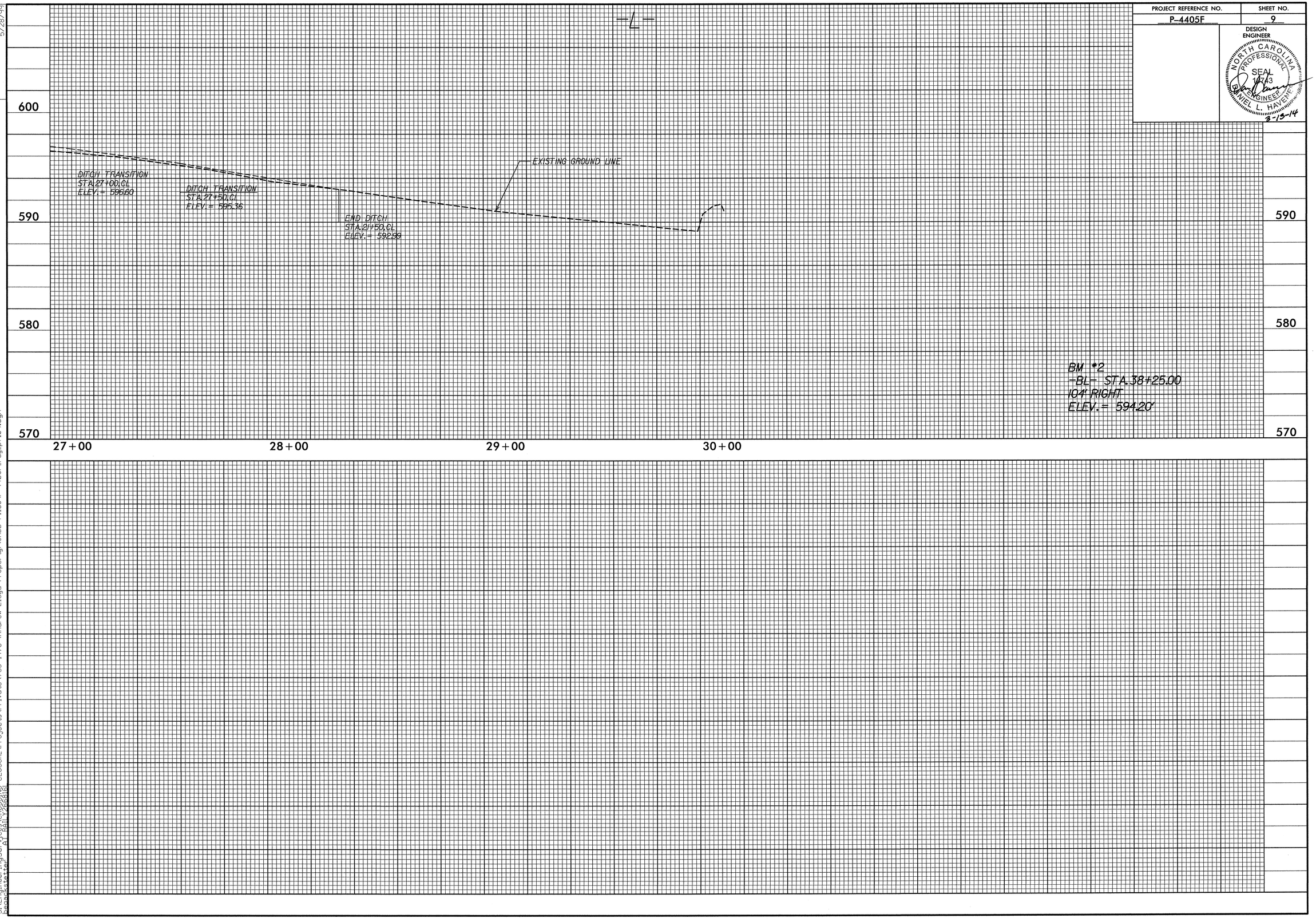
PROJECT REFERENCE NO.	SHEET NO.
P-4405F	9

DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 10743 ENGINEER DANIEL L. HAVENER

3-13-14



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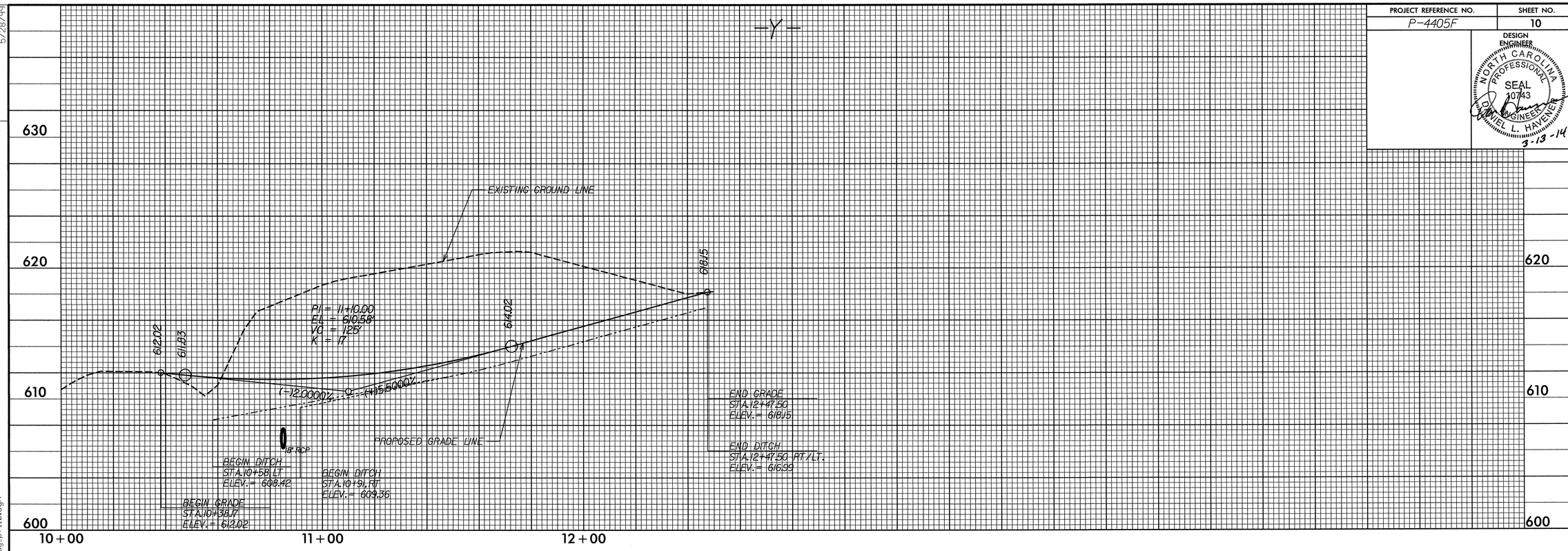
PROJECT REFERENCE NO.	SHEET NO.
P-4405F	10

DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 10743 ENGINEER DANIEL L. HAVENER

3-13-14



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PROJECT REFERENCE NO.	SHEET NO.
P-4405F	X-0

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

INDEX TO CROSS SECTIONS

ALIGNMENT	ROAD NAME	NO. OF SHEETS	SHEET NO.	
			FROM	TO
-L-	I-85 CONNECTOR	9	X-1	X-9
-Y-	DRIVEWAY	2	X-10	X-11

CROSS-SECTION SUMMARY

STATION	UNCL. EXCAV.	EMBANK.
L RT TURN		
19+00	0	0
19+50	3	5
20+00	9	11
20+50	12	12
21+00	20	17
21+50	173	15
22+00	374	9
22+50	551	5
23+00	346	0
L LT TURN		
22+50	24	3
23+00	16	8
23+50	13	11
24+00	12	14
24+50	12	13
25+00	12	13
25+50	11	16
26+00	10	18
26+50	12	20
27+00	13	20
27+50	14	14
28+00	12	11
28+50	8	77
28+91.96	3	2
Y1		
10+50	0	0
11+00	912	0
11+50	1479	0
12+00	837	0
12+50	269	0

APPROXIMATE QUANTITIES ONLY. CLEARING AND GRUBBING, BORROW EXCAVATION, UNCLASSIFIED EXCAVATION, SHOULDER BORROW, FINE GRADING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AS THE LUMP SUM PRICE FOR "GRADING".

DGN 0596DEL_P2IL 12/06/07
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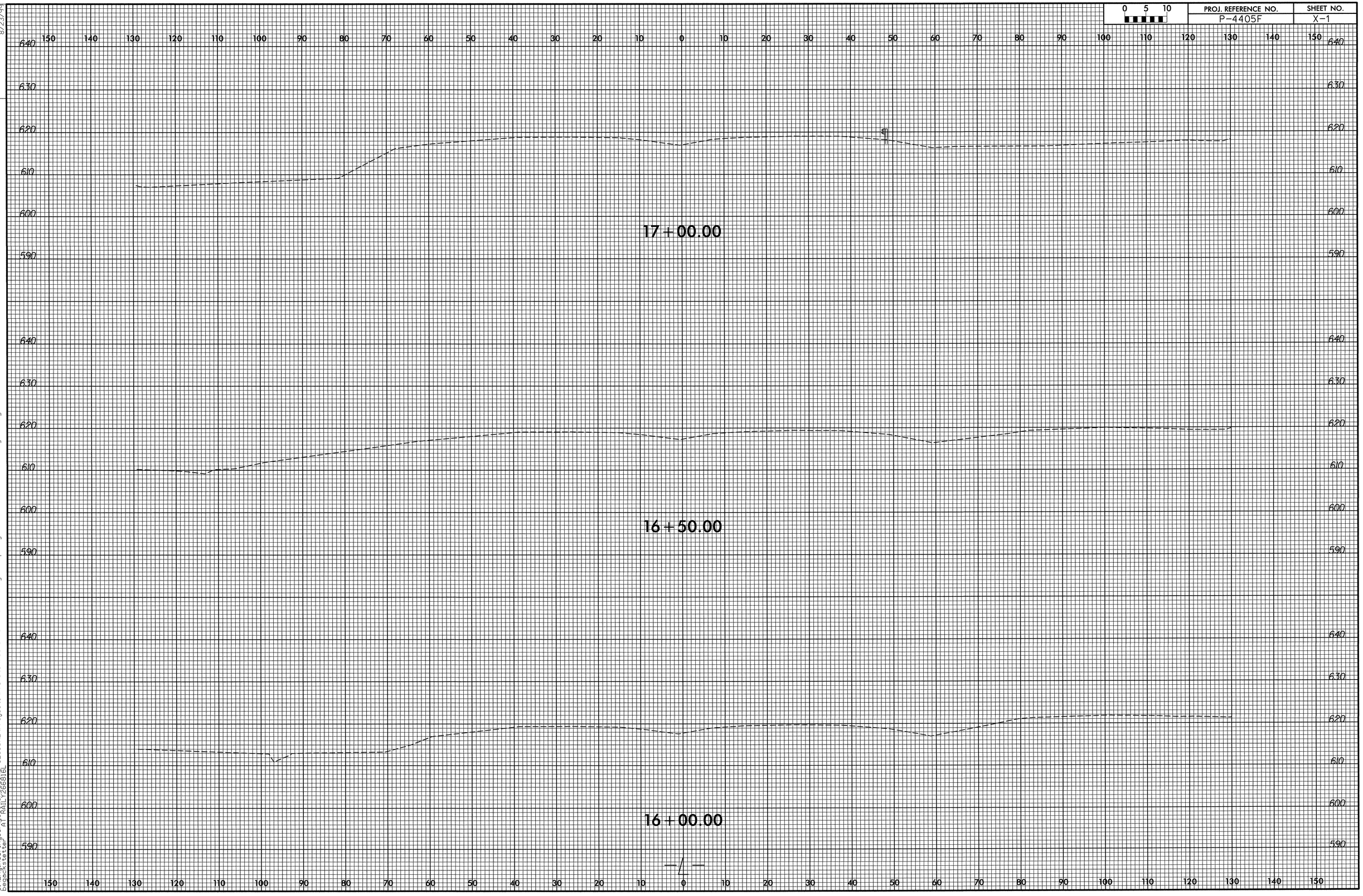

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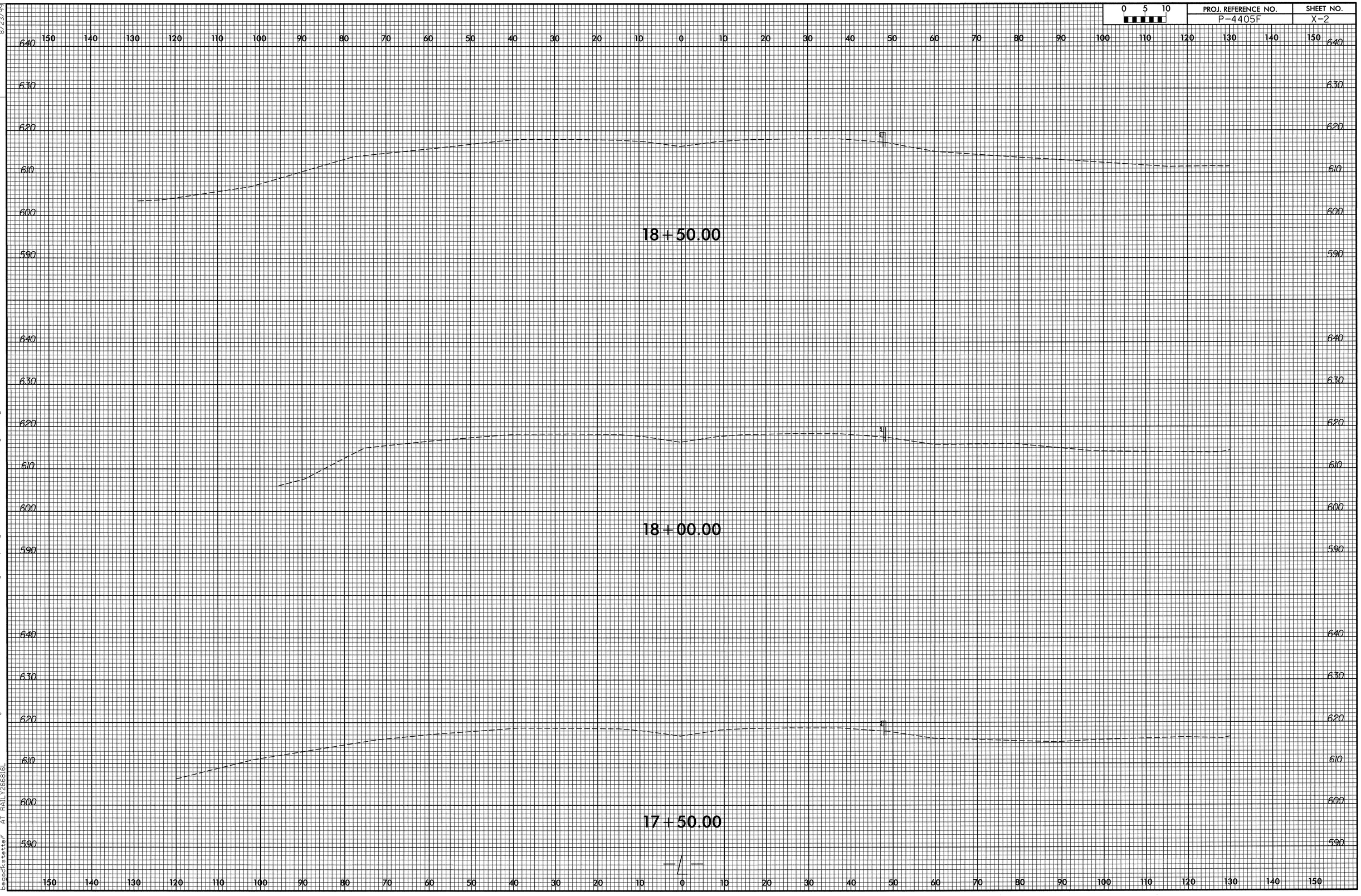

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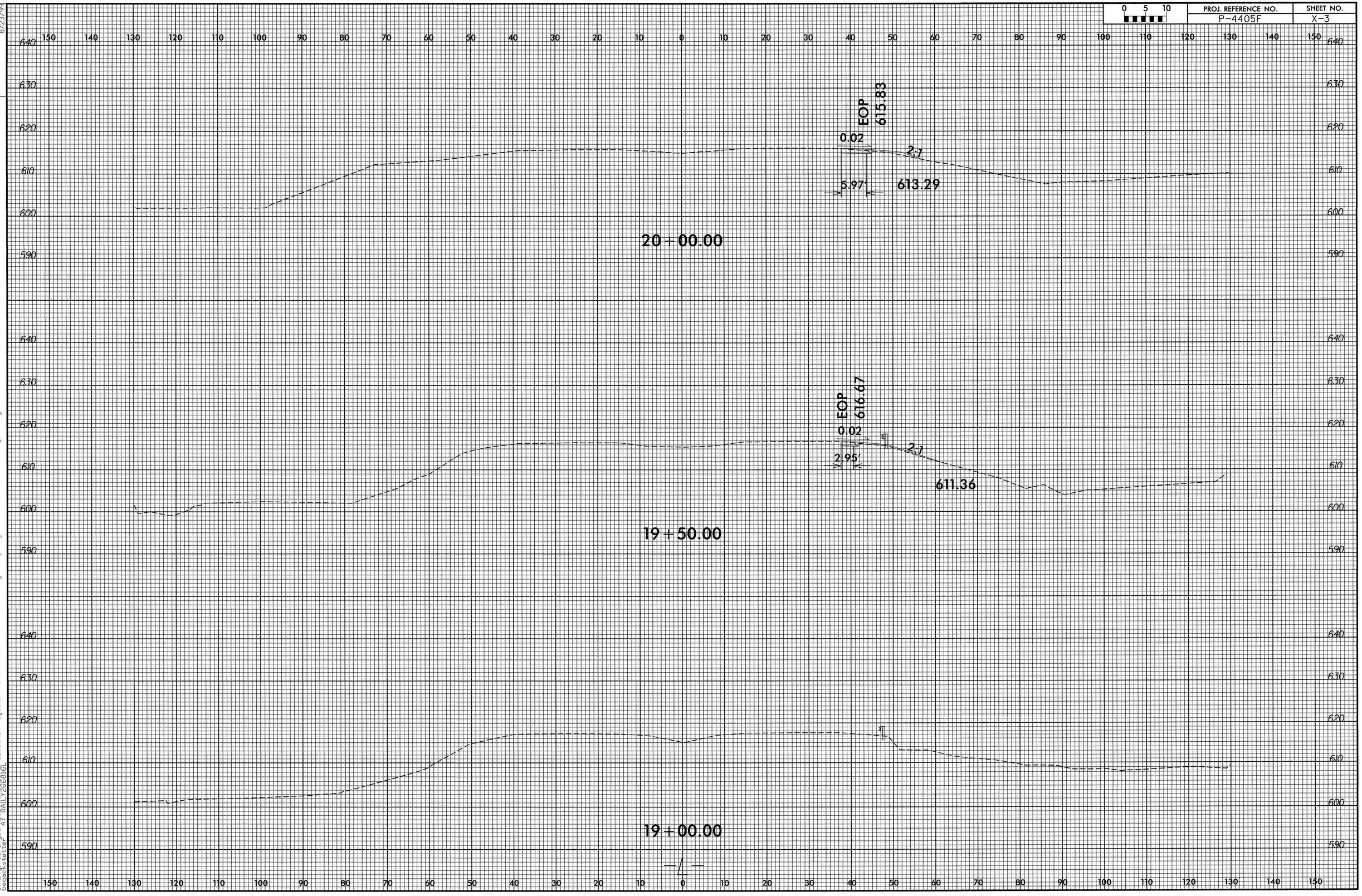

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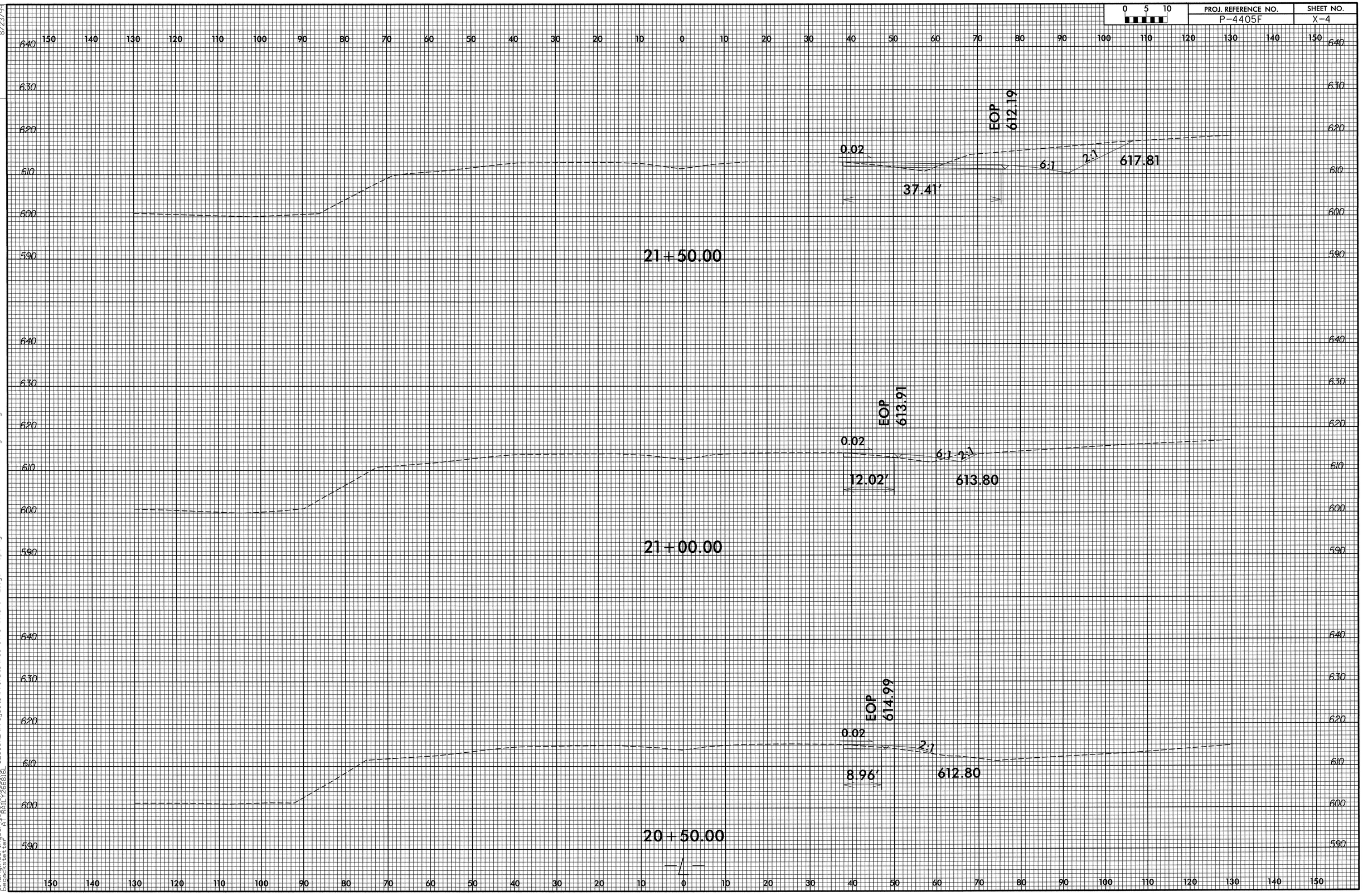

0 5 10
PROJ. REFERENCE NO.
P-4405F
SHEET NO.
X-4
0596DEL_P2IL
8/23/99
EOP
612.19
0.02
6:1
2:1
617.81
37.41'
21+50.00
EOP
613.91
0.02
6:1
2:1
12.02'
613.80
21+00.00
EOP
614.99
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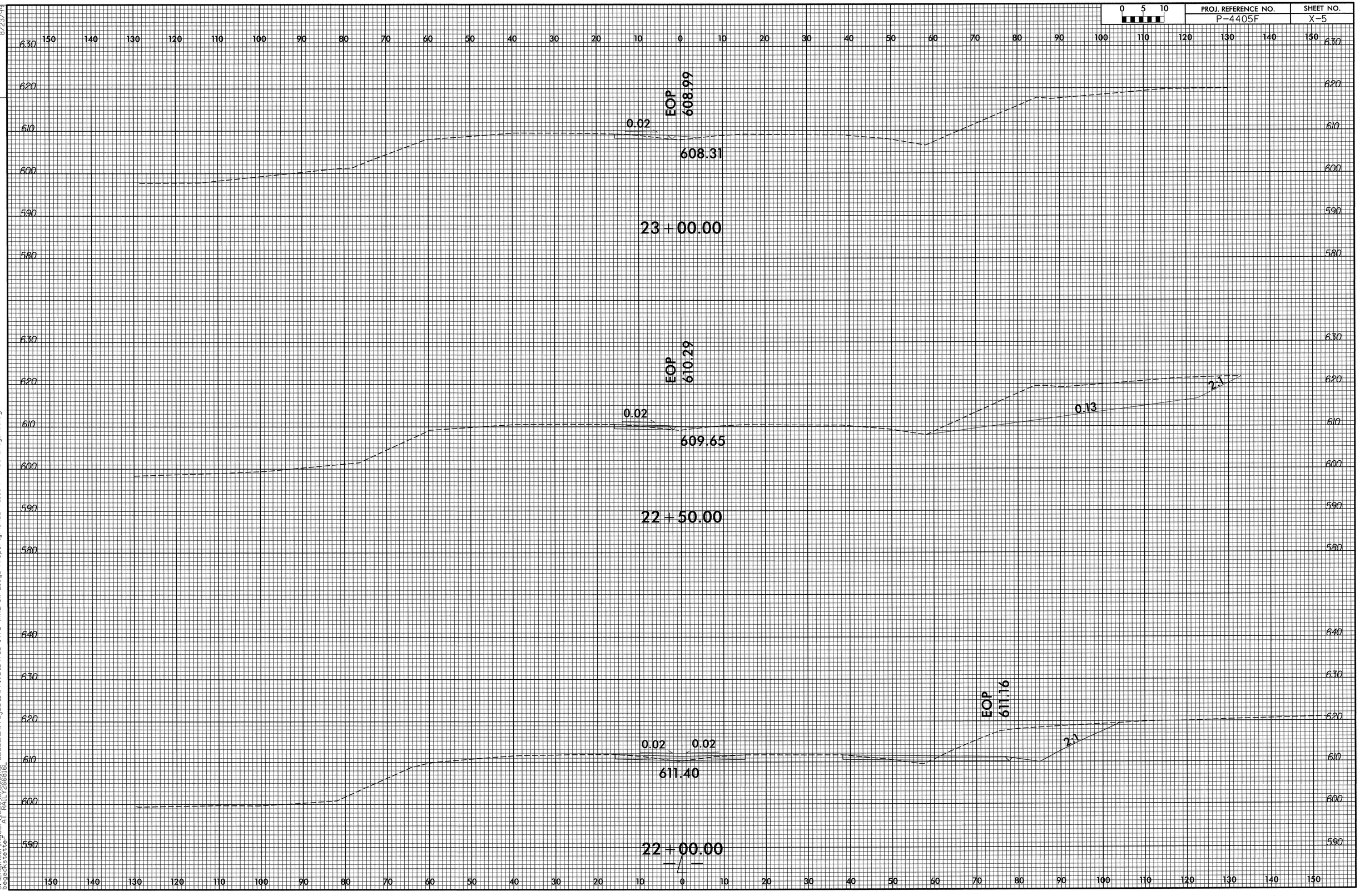
2:1
8.96'
612.80
20+50.00



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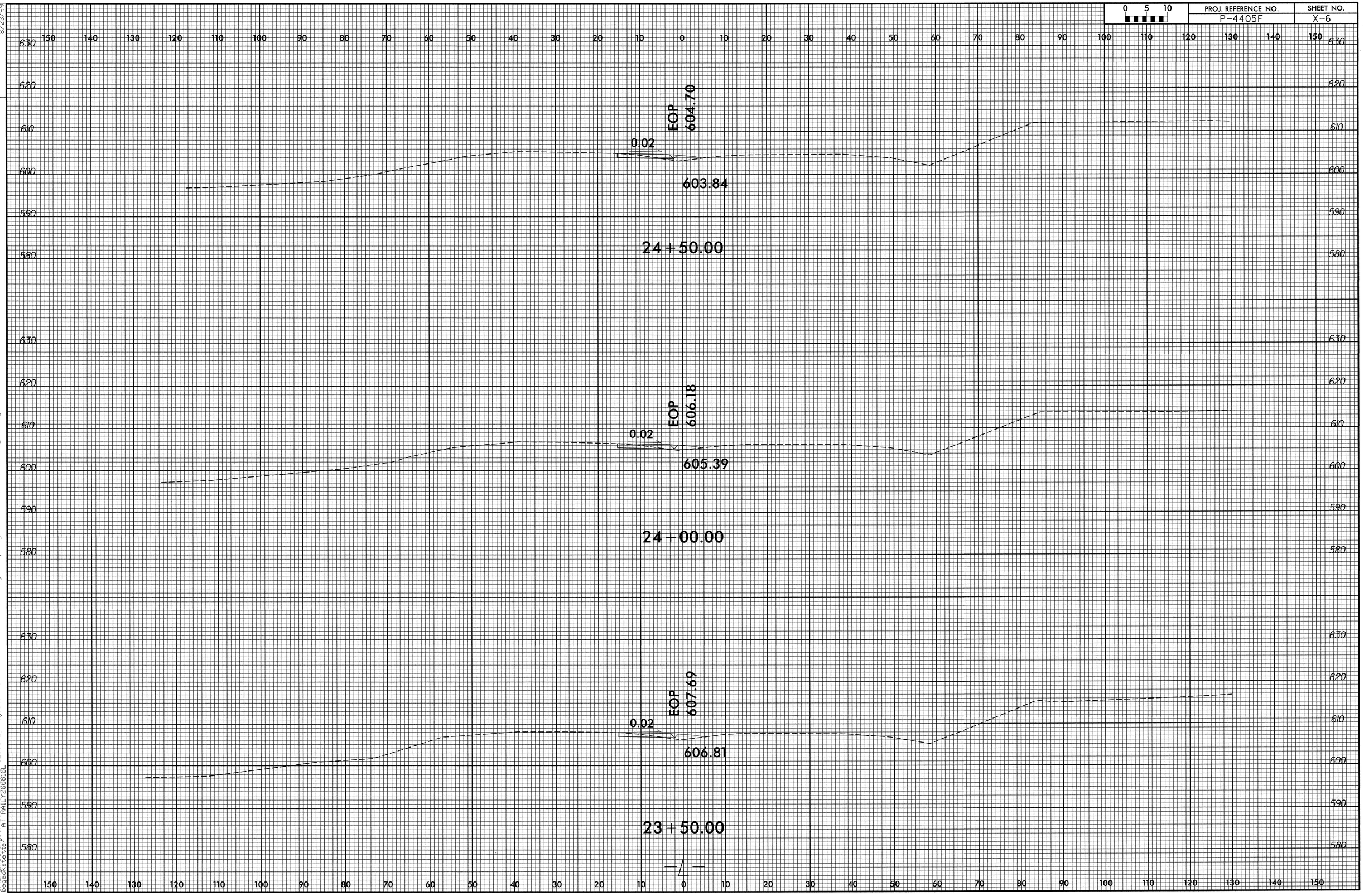

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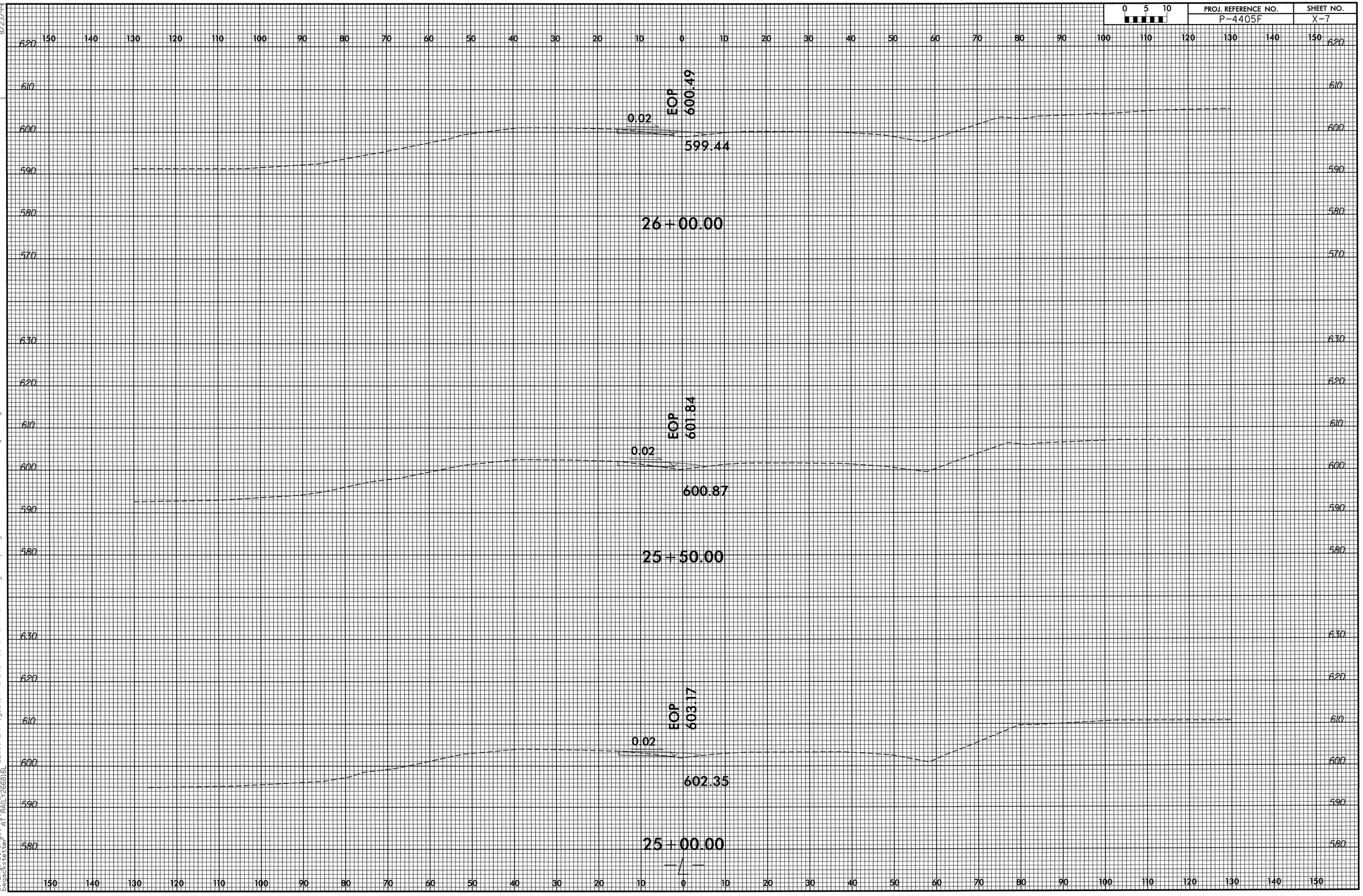

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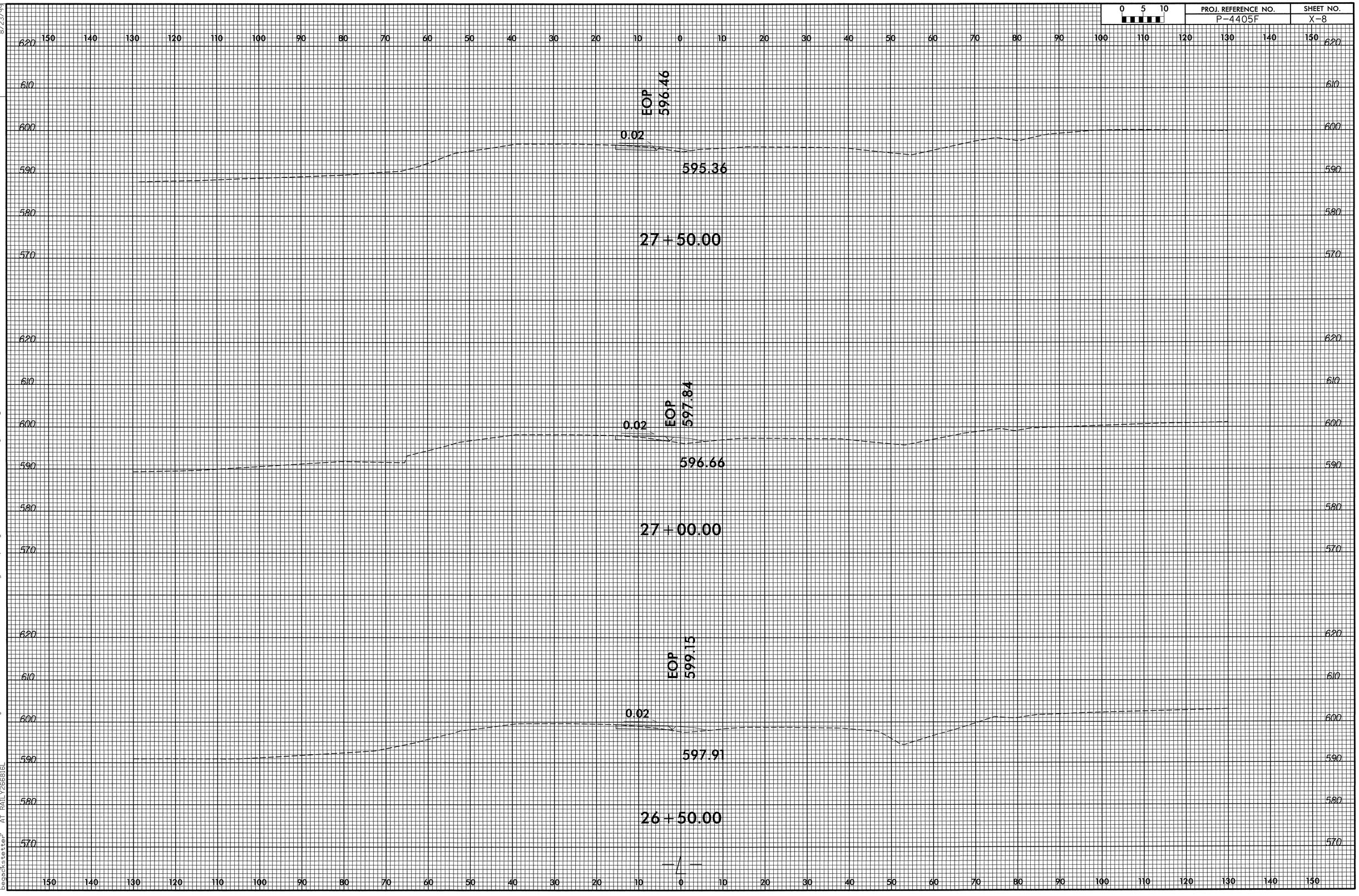

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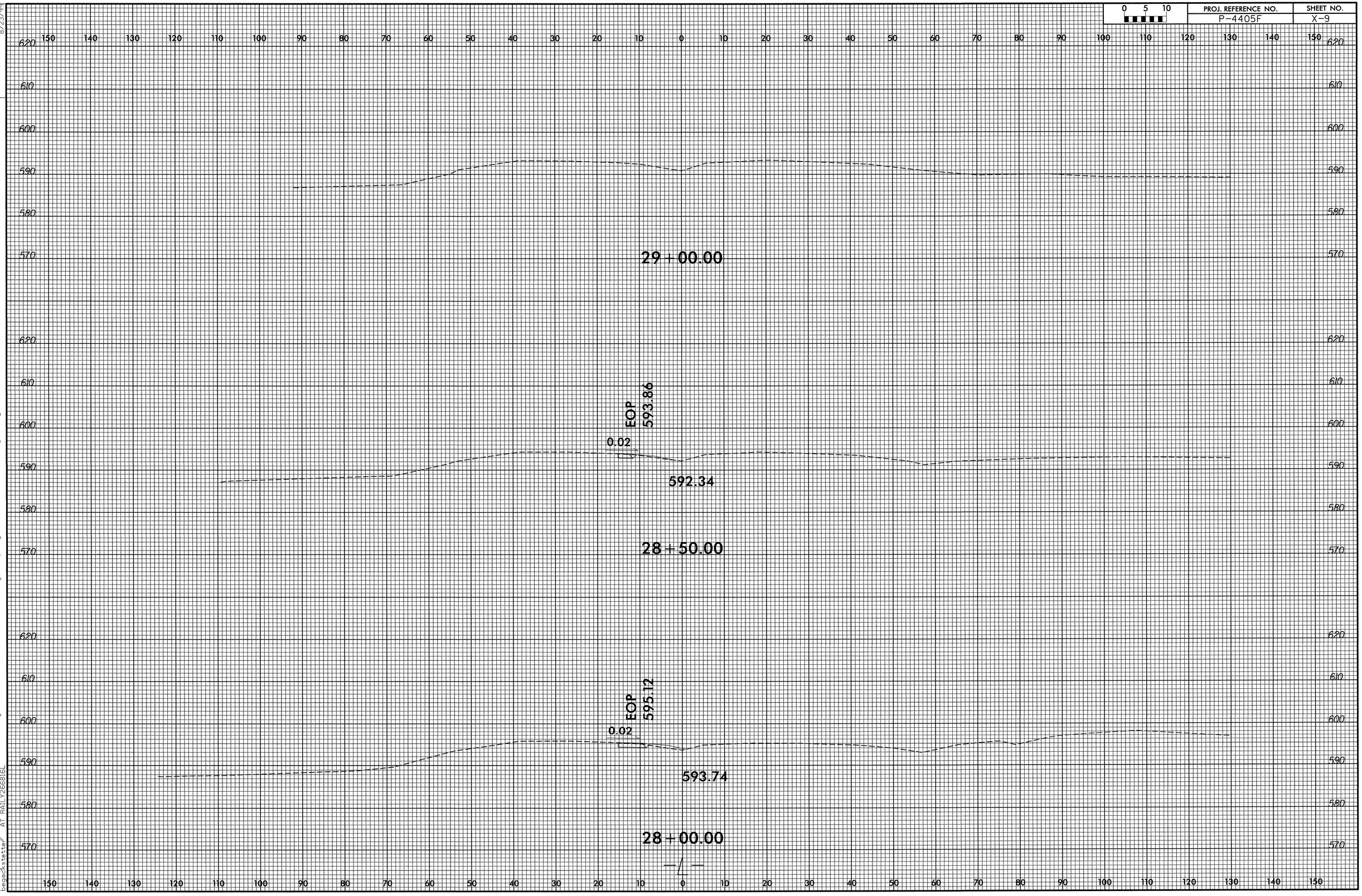

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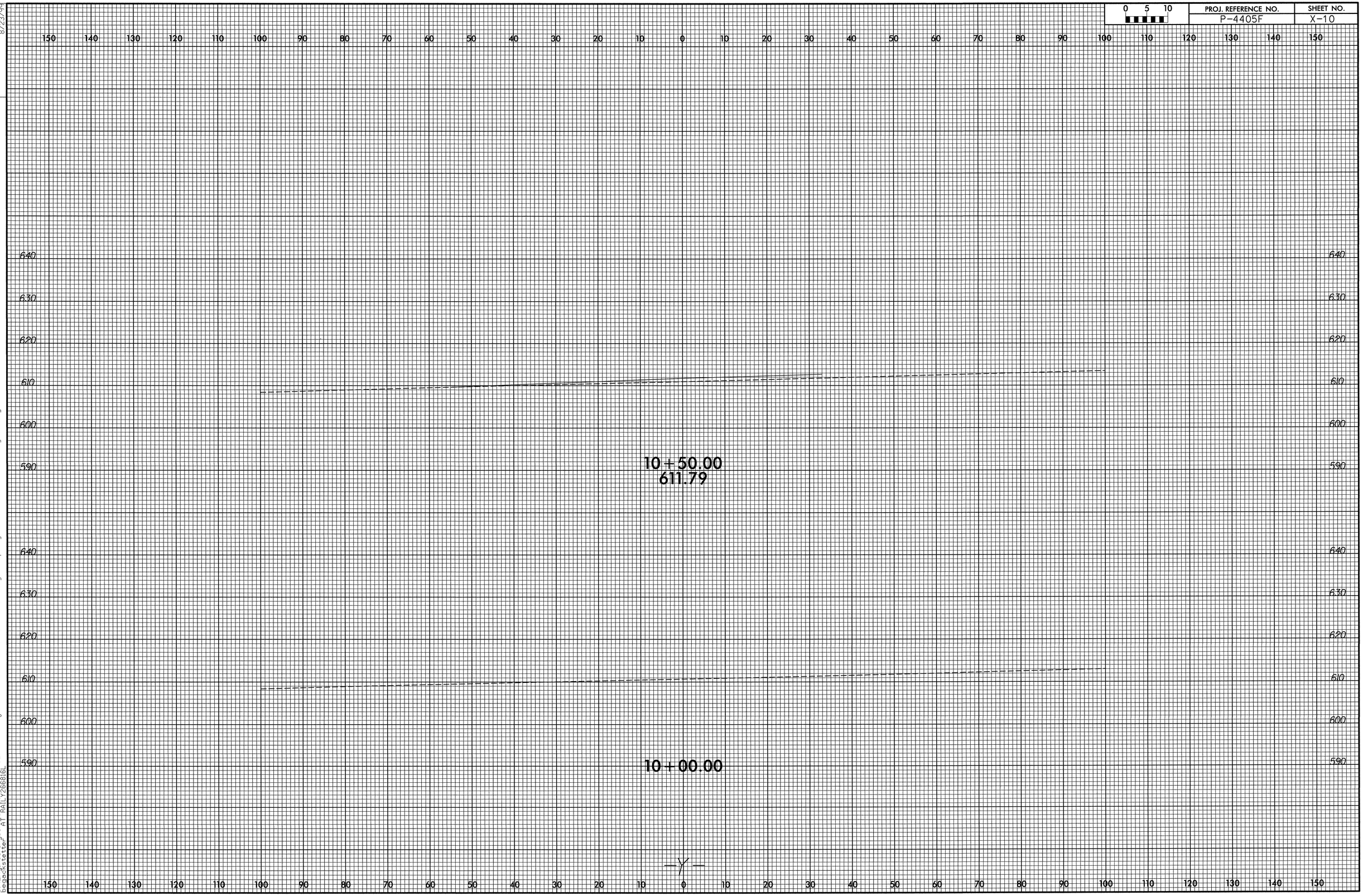

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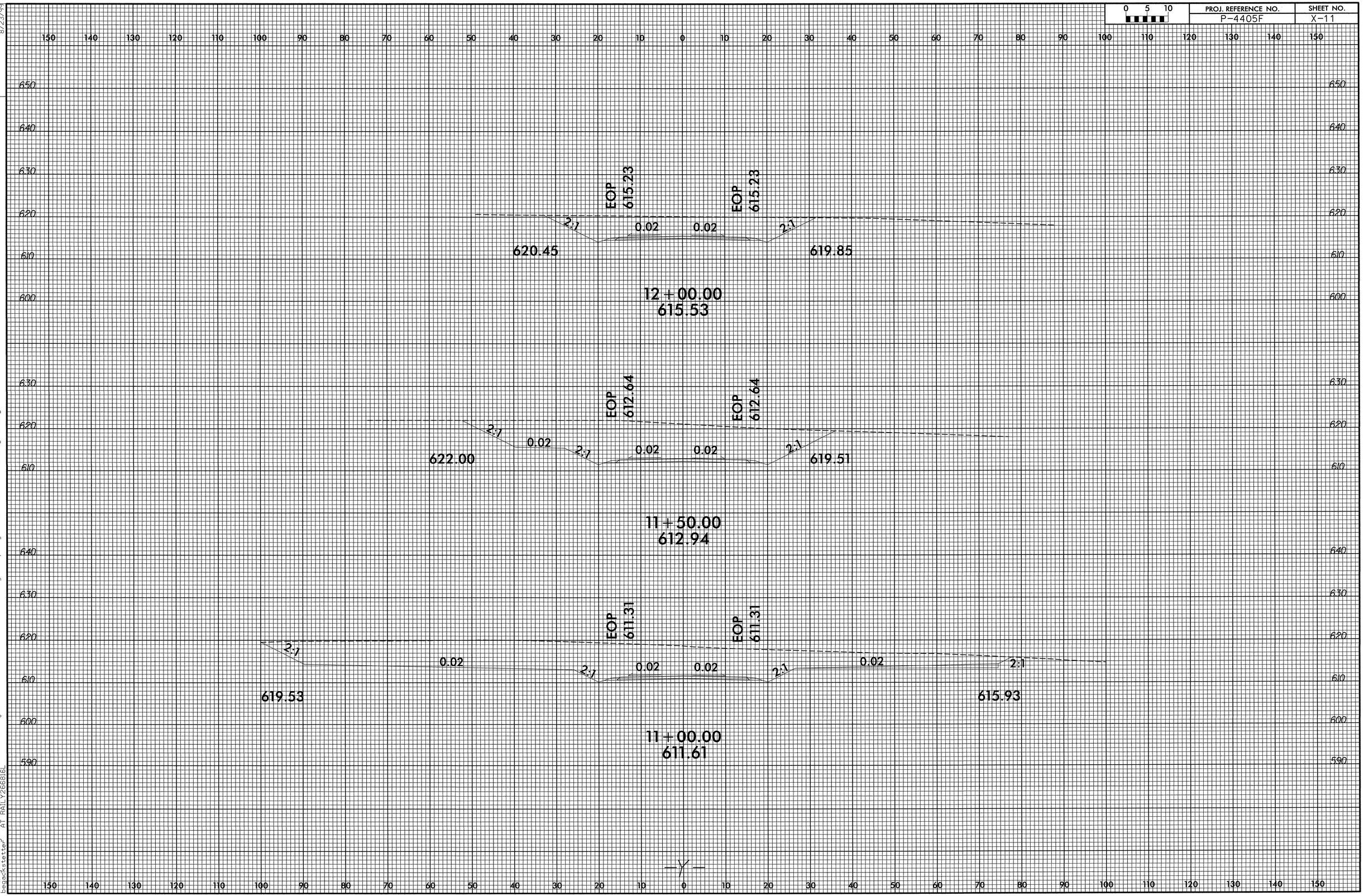

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DCN 0596DEL P21L

TIP PROJECT: P-4405F

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	P-4405F	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

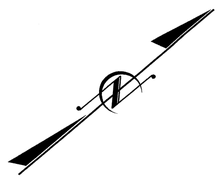
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

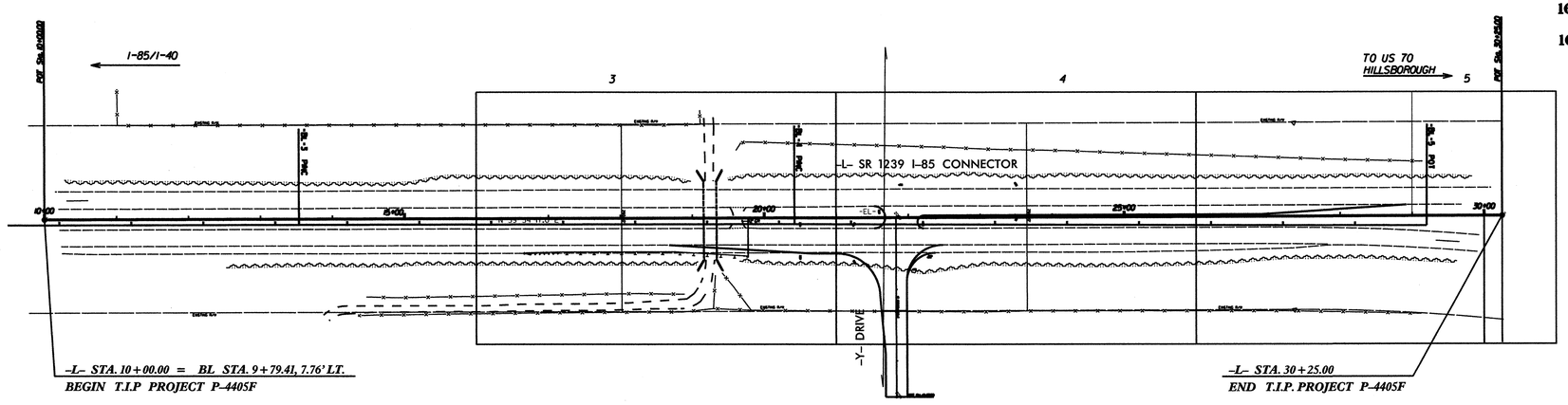
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

ORANGE COUNTY

LOCATION: SR 1239 I-85 CONNECTOR
FROM NS/NCRR OVERPASS TO US 70

TYPE OF WORK: PAVING, GRADING, DRAINAGE, & SIGNAGE





EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	SW CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

GRAPHIC SCALE

0
PLANS

0
PROFILE (HORIZONTAL)

0
PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared In the Office of:

ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

2012 STANDARD SPECIFICATIONS

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

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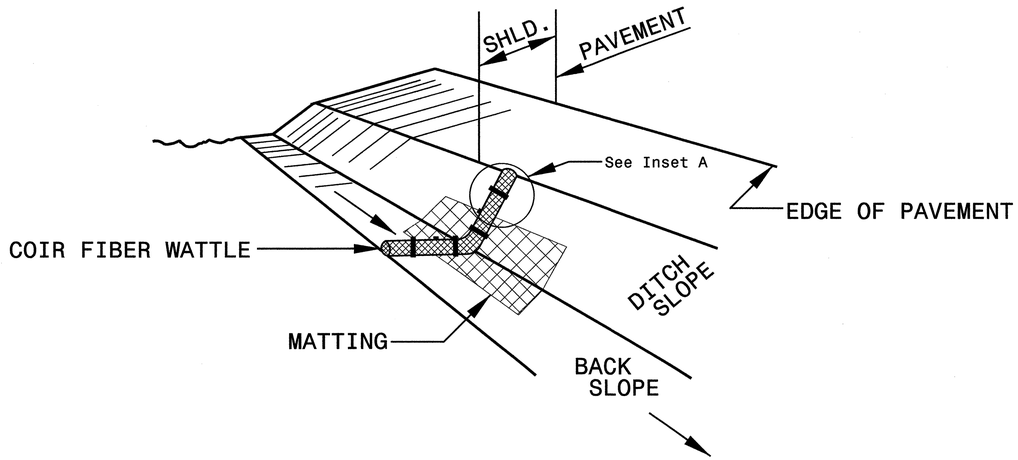
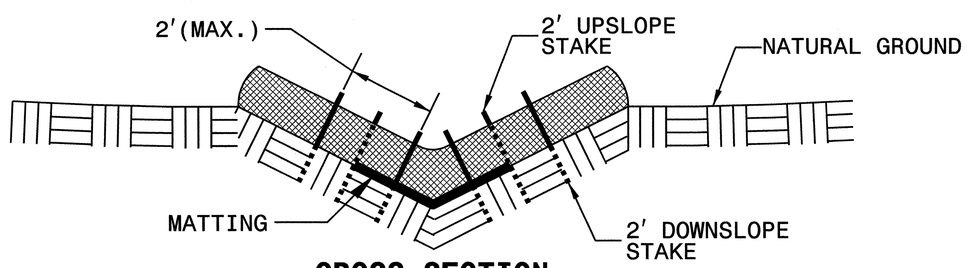
DCN
0596DEL_P21L

PROJECT REFERENCE NO.	SHEET NO.
P-4405F	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

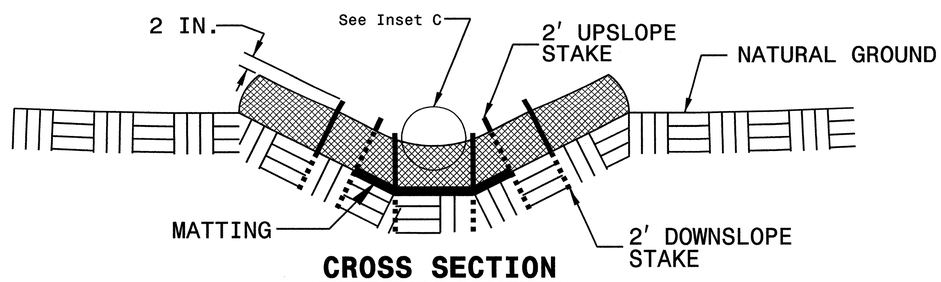
COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

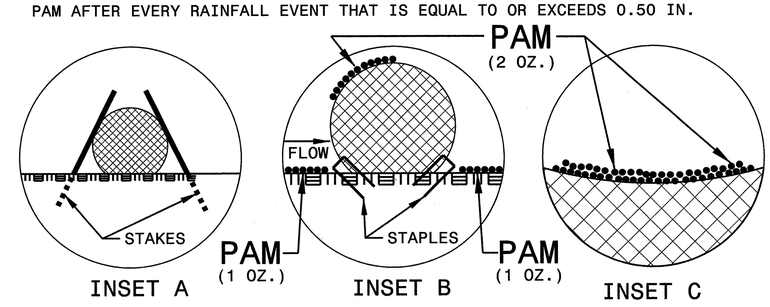
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

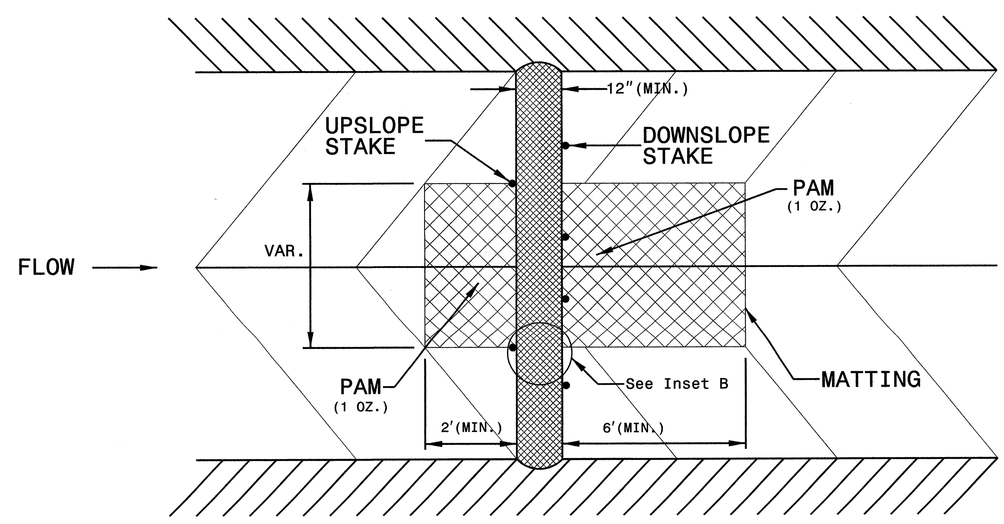
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



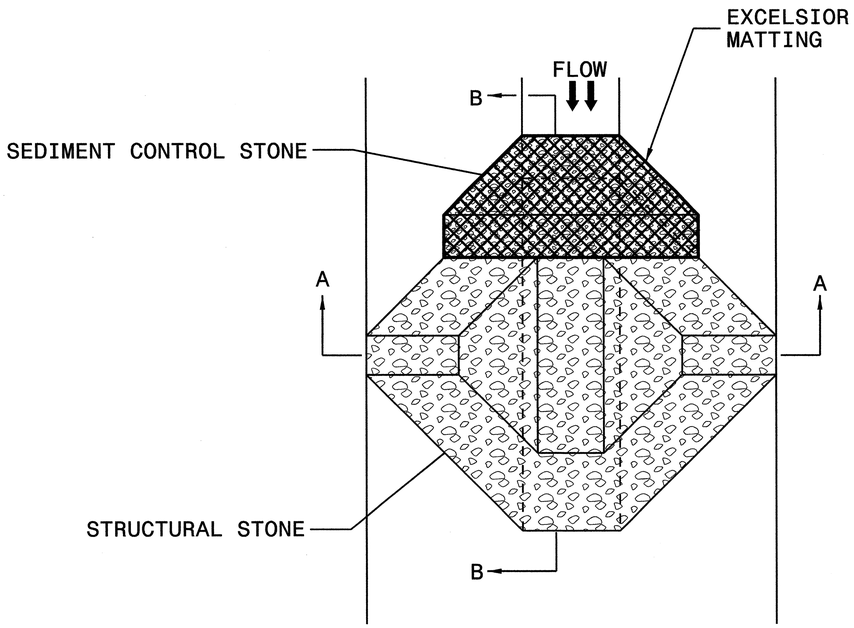


TOP VIEW

DCN
0596DEL_P21L

PROJECT REFERENCE NO.	SHEET NO.
P-4405F	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



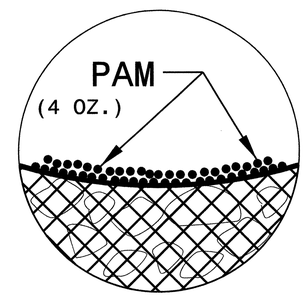
PLAN

NOTES

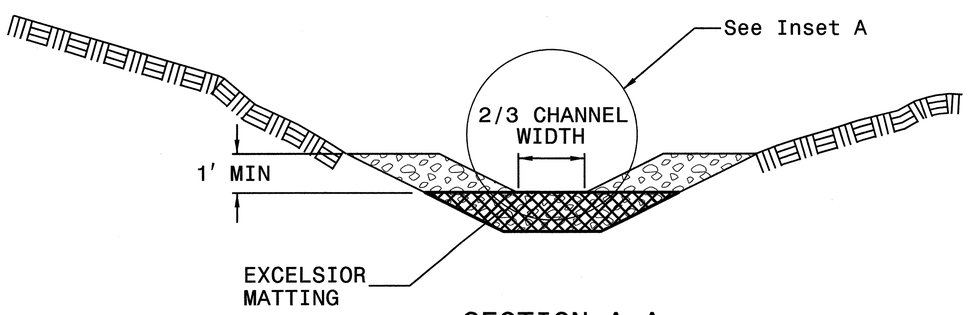
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

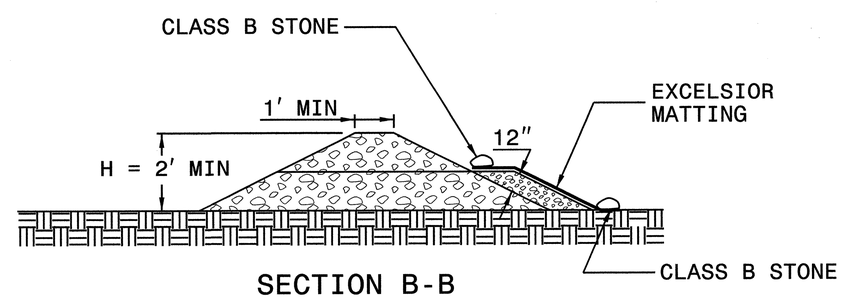
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

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0596DEL_P21L

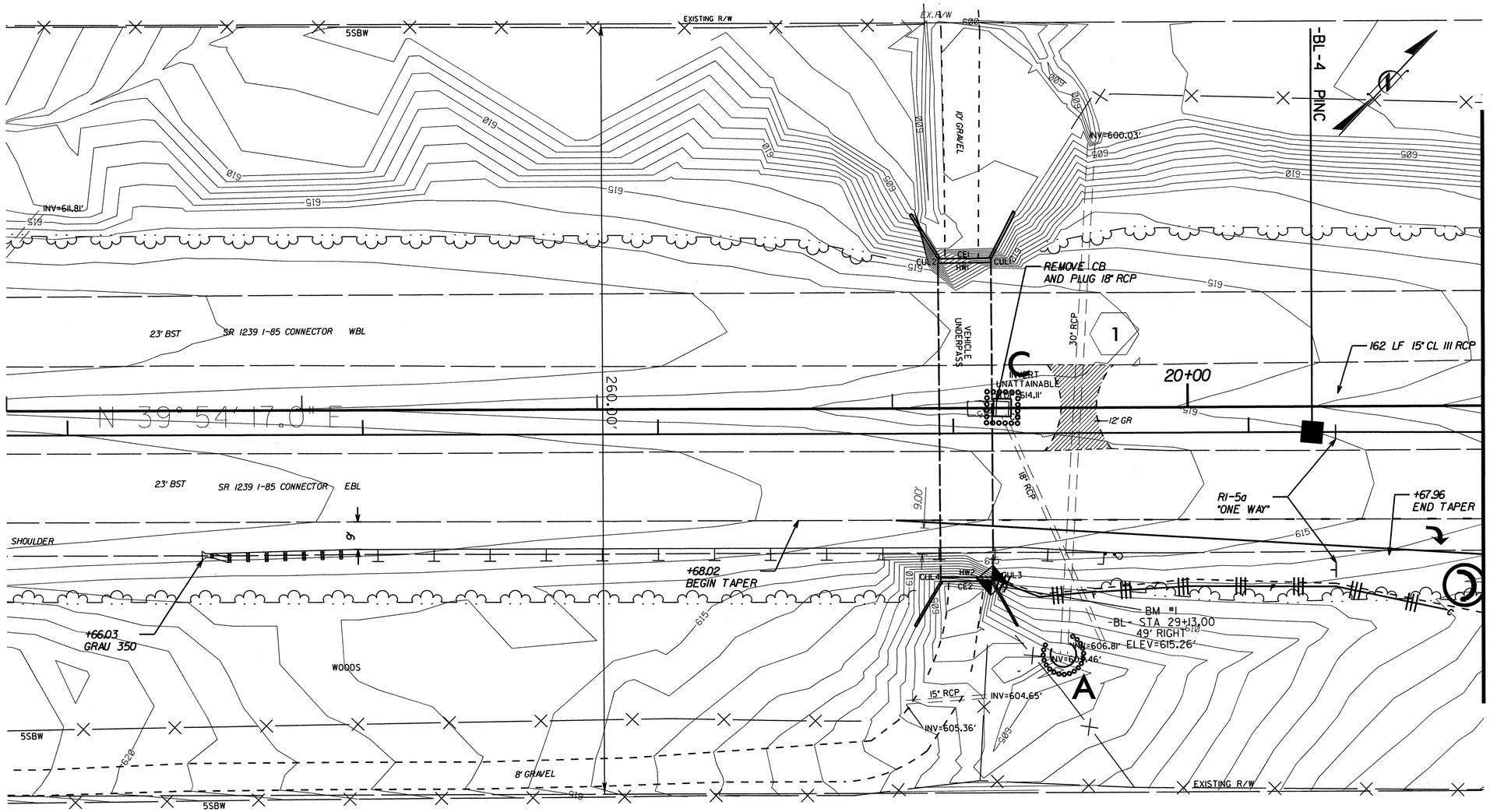
PROJECT REFERENCE NO.	SHEET NO.
P-4405F	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

PROJECT REFERENCE NO.	SHEET NO.
P-4405F	EC-4/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



ANDREW B. LLOYD, JR.
DB 3011 PG 588

LEGEND:

REMOVE EXISTING PAVEMENT

1 STD.840.18
T/G = 615.26
15" INV.= 605.12
30" INV.= 602.30

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTES:

1. CONTRACTOR SHALL CONTACT NORTH CAROLINA 811 TO LOCATE ALL UNDERGROUND UTILITIES IN THE WORK AREA.

-L- ALIGNMENT COORDINATES
STA.10+00.00 N-846,733.63
E-1,953,786.37
STA.30+25.00 N-848,328.24,
E-1,955,083.99

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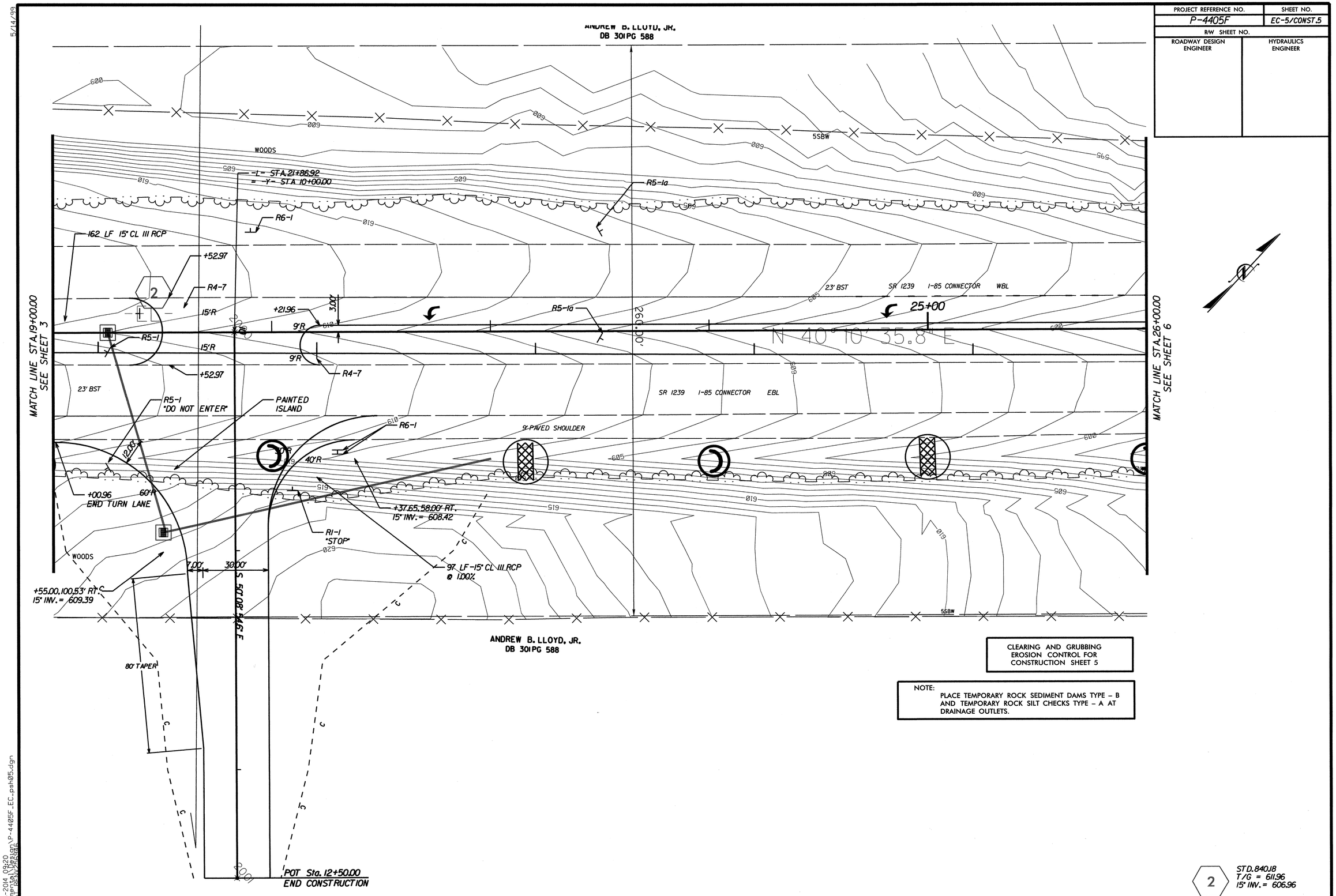
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
P-4405F	EC-5/CONST.5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 5

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

2

STD.840.18
T/G = 611.96
15" INV. = 606.96

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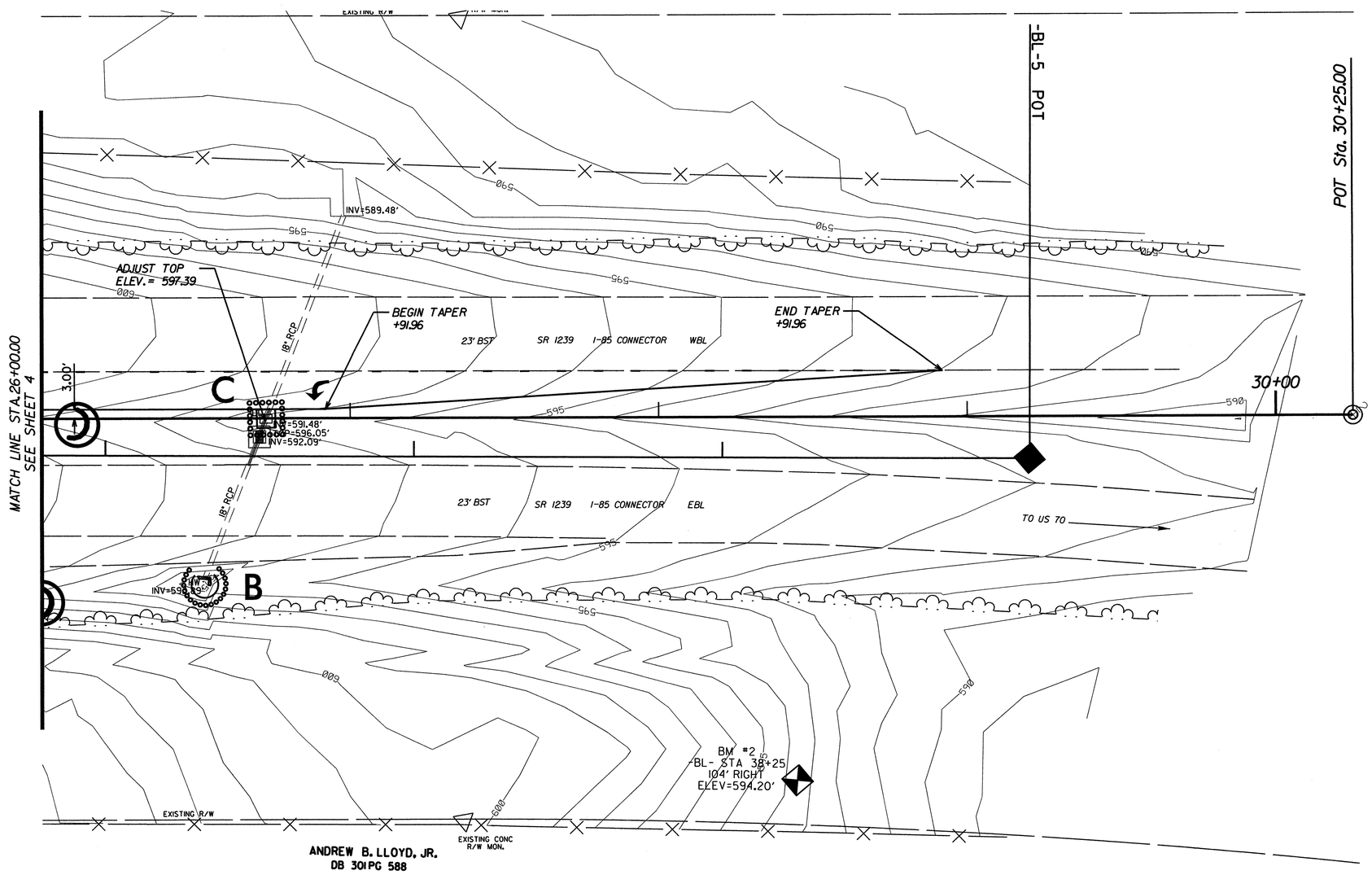
PROJECT REFERENCE NO.	SHEET NO.
P-4405F	EC-6/CONST.6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 6

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

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DCN
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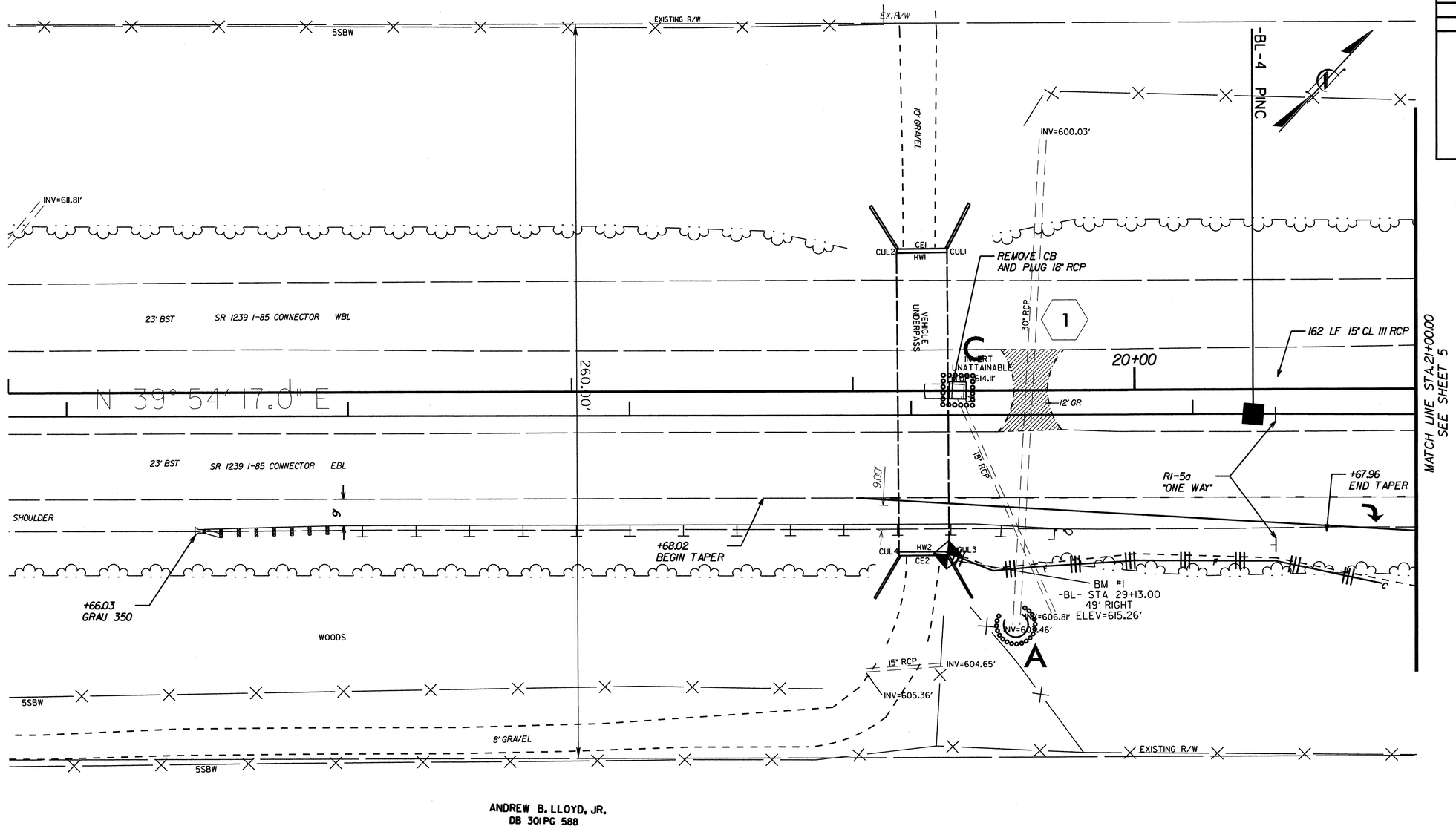
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
P-4405F	EC-7/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



LEGEND:

REMOVE EXISTING PAVEMENT

1 STD.840.18
T/G = 615.26
15" INV. = 605.12
30" INV. = 602.30

NOTES:

1. CONTRACTOR SHALL CONTACT NORTH CAROLINA 811 TO LOCATE ALL UNDERGROUND UTILITIES IN THE WORK AREA.

-L- ALIGNMENT COORDINATES
STA.10+00.00 N-846,733.63
E-1,953,786.37
STA.30+25.00 N-848,328.24,
E-1,955,083.99

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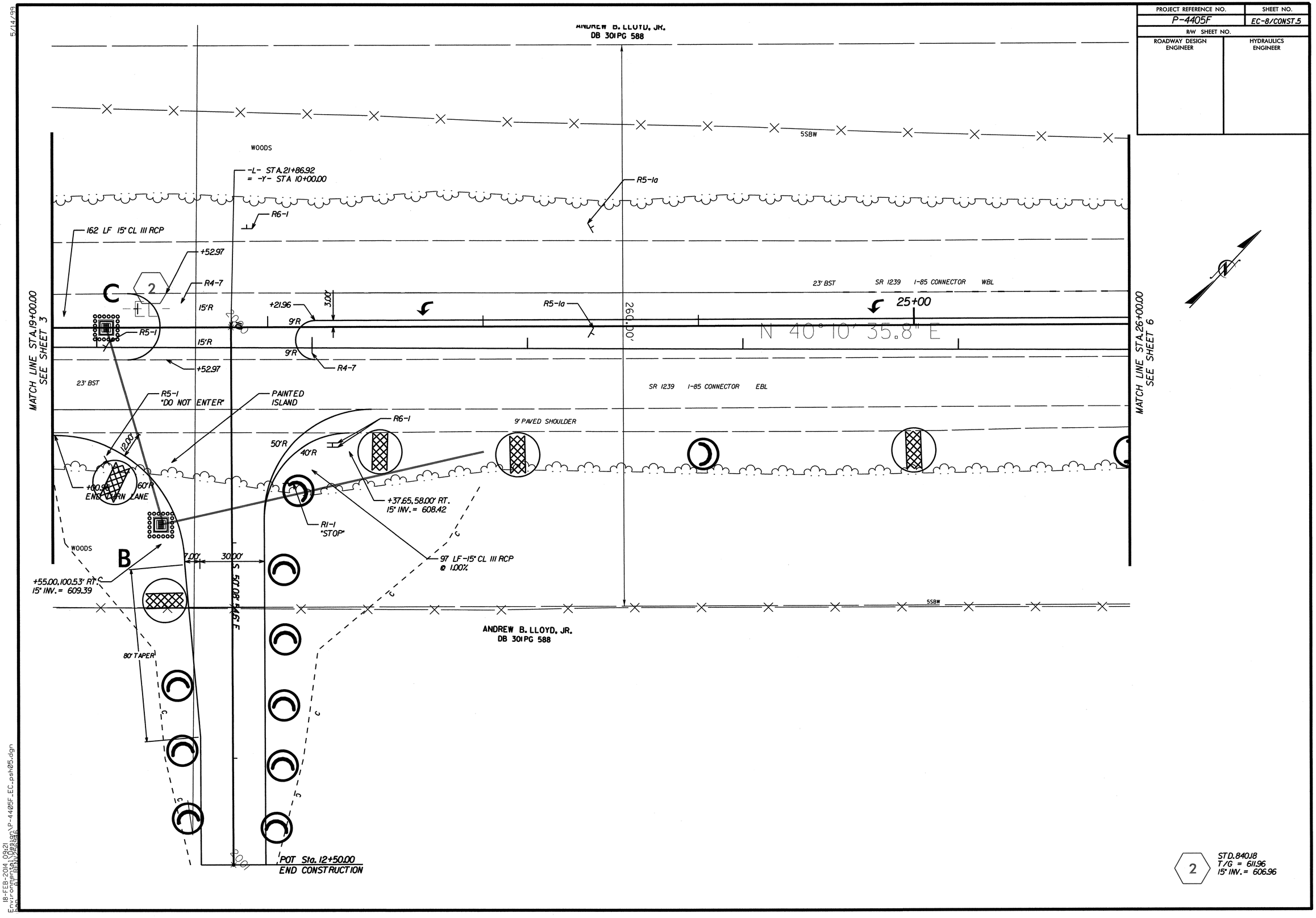
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
P-4405F	EC-8/CONST.5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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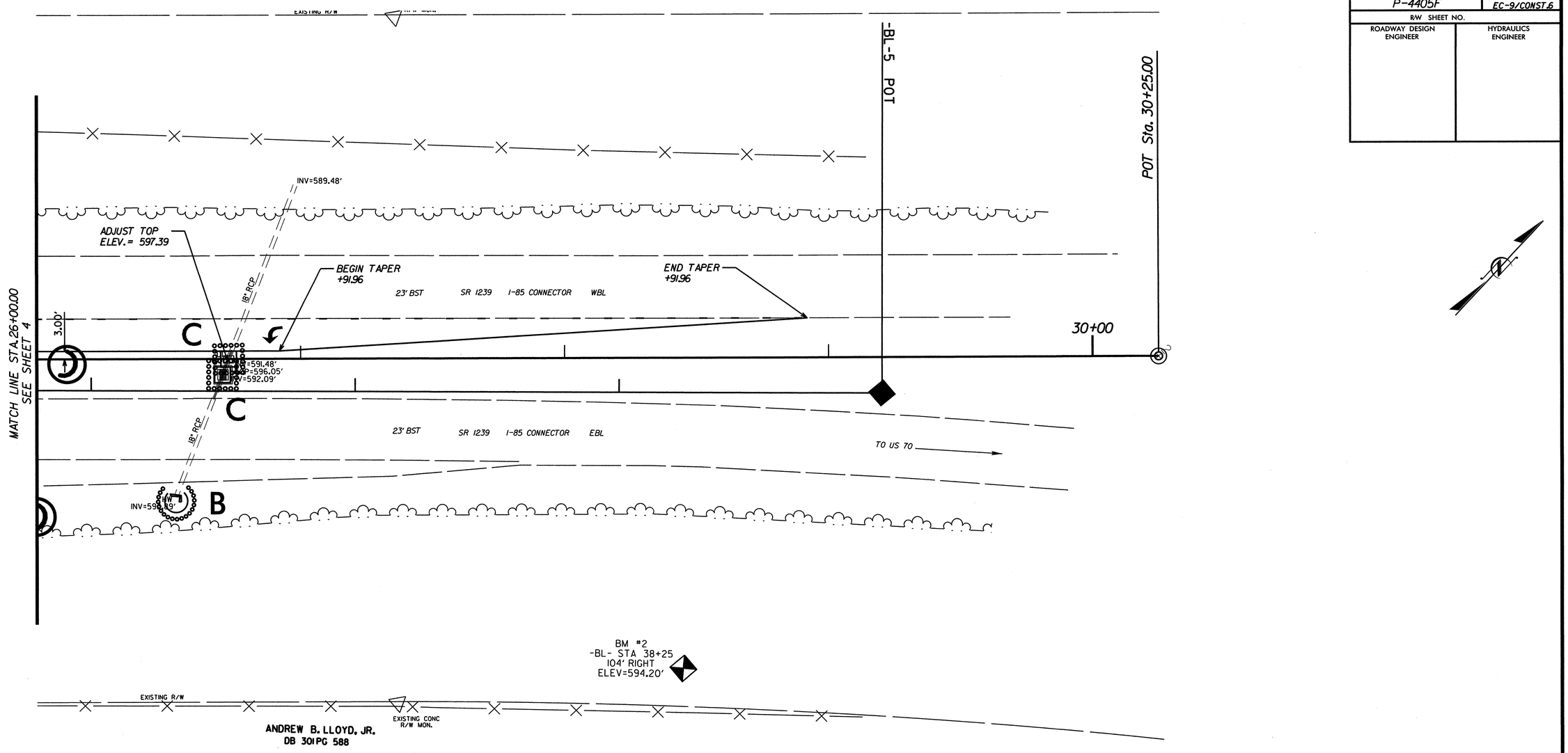
PROJECT REFERENCE NO.	SHEET NO.
P-4405F	EC-9/CONST.6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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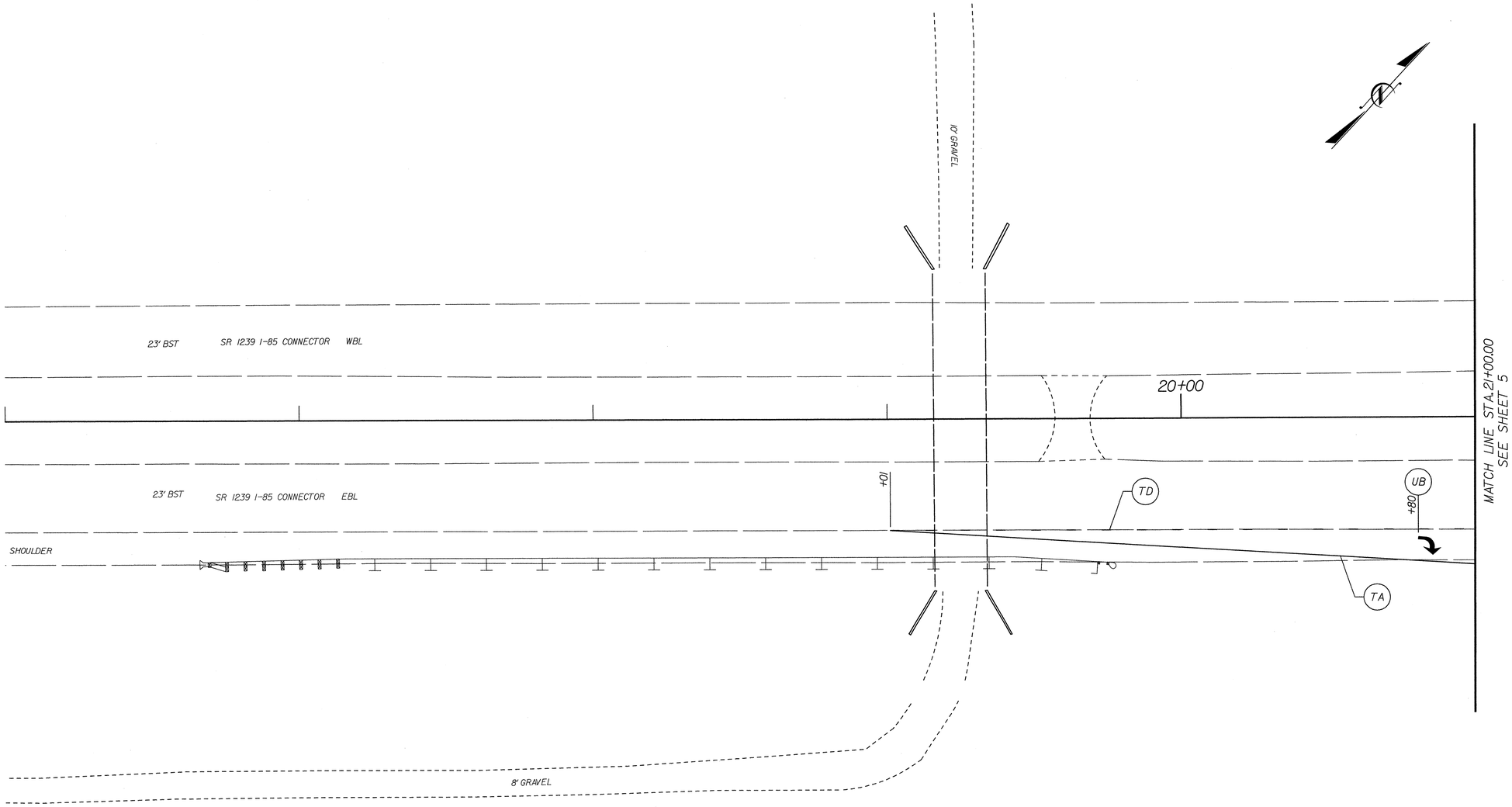
PROJECT REFERENCE NO.	SHEET NO.
P-4405F	PMP-1

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 19743 ENGINEER DANIEL L. HAVENER 3-13-14



PAVEMENT MARKING GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
I-85 CONNECTOR	THERMOPLASTIC	PERMANENT RAISED

B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
	THERMOPLASTIC (4", 120 MILS)
TD	3 FT.-9 FT./SP WHITE MINISKIP
TE	WHITE SOLID LANE LINE
	THERMOPLASTIC (4", 90 MILS)
TA	WHITE EDGELINE
TB	YELLOW EDGELINE
	THERMOPLASTIC PAVEMENT MARKING SYMBOLS(90 MILS)
UA	LEFT TURN ARROW
UB	RIGHT TURN ARROW

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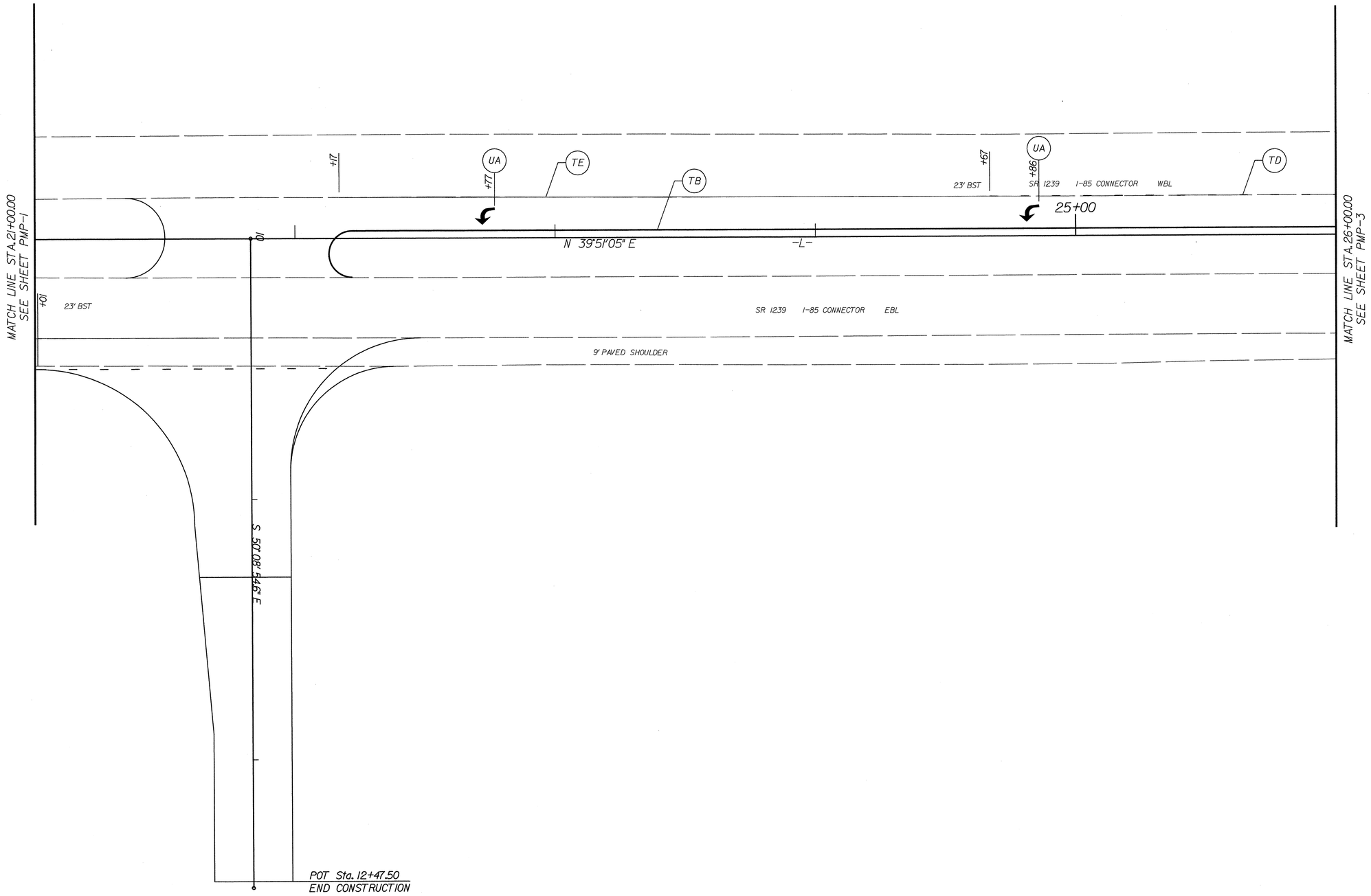
PROJECT REFERENCE NO.	SHEET NO.
P-4405F	PMP-2

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 10743 ENGINEER DANIEL L. HAVENER

3-13-14



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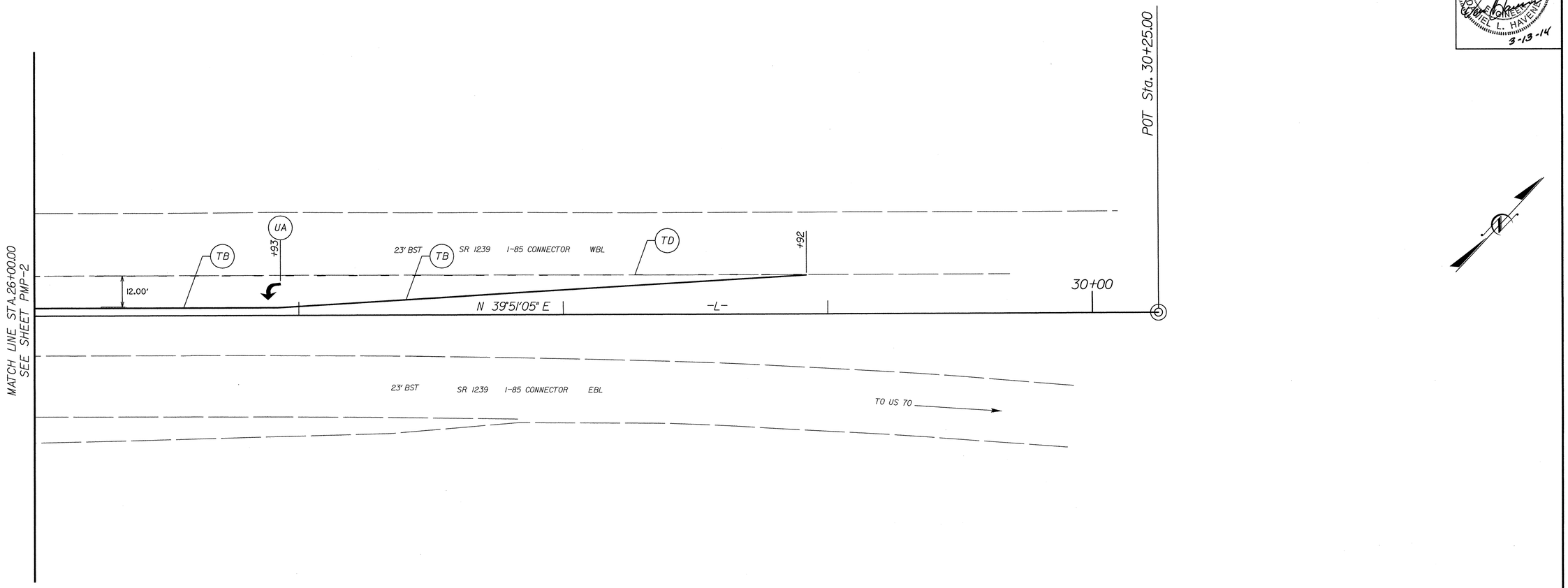
PROJECT REFERENCE NO.	SHEET NO.
P-4405F	PMP-3

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 10743 ENGINEER DANIEL L. HAVENER

3-13-14



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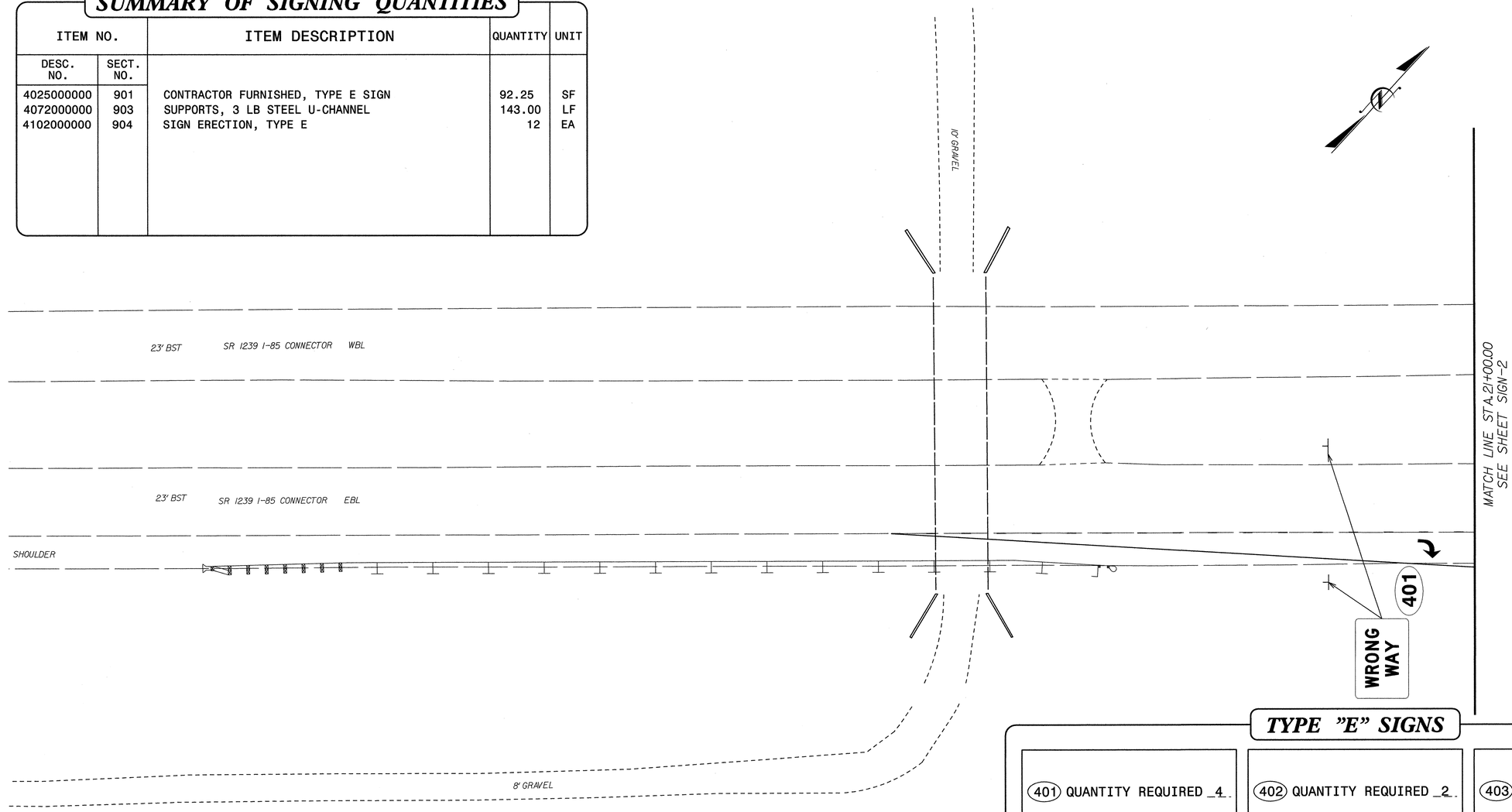
PROJECT REFERENCE NO.	SHEET NO.
P-4405F	SIGN-1

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19743 ENGINEER DANIEL L. HAVENER
3-13-14

SUMMARY OF SIGNING QUANTITIES

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT
4025000000	901	CONTRACTOR FURNISHED, TYPE E SIGN	92.25	SF
4072000000	903	SUPPORTS, 3 LB STEEL U-CHANNEL	143.00	LF
4102000000	904	SIGN ERECTION, TYPE E	12	EA



TYPE "E" SIGNS

(401) QUANTITY REQUIRED 4

WRONG WAY — 42" X 30" R5-1a

ONE "U" POST PER SIGN

(402) QUANTITY REQUIRED 2

DO NOT ENTER — 36" X 36" R5-1

ONE 'U' POST PER SIGN

(403) QUANTITY REQUIRED 2

24" X 30" R4-7

ONE "U" POST PER SIGN

(404) QUANTITY REQUIRED 1

STOP — 36" X 36" R1-1

TWO 'U' POST PER SIGN

(405) QUANTITY REQUIRED 1

ONE WAY — 54" X 18" R6-1 (R)

TWO 'U' POST PER SIGN

(406) QUANTITY REQ'D 2

ONE WAY — 54" X 18" R6-1 (L)

TWO "U" POST PER SIGN

SIGNING GENERAL NOTES

- SIGNS FURNISHED BY CONTRACTOR
- ALL EXISTING SIGNS AND SIGN SYSTEMS WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED IN THE PLANS.
- IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.
- SIGNING PLANS DO NOT INCLUDE TEMPORARY CONSTRUCTION SIGNING. SEE TRAFFIC CONTROL PLANS
- WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER
- THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.

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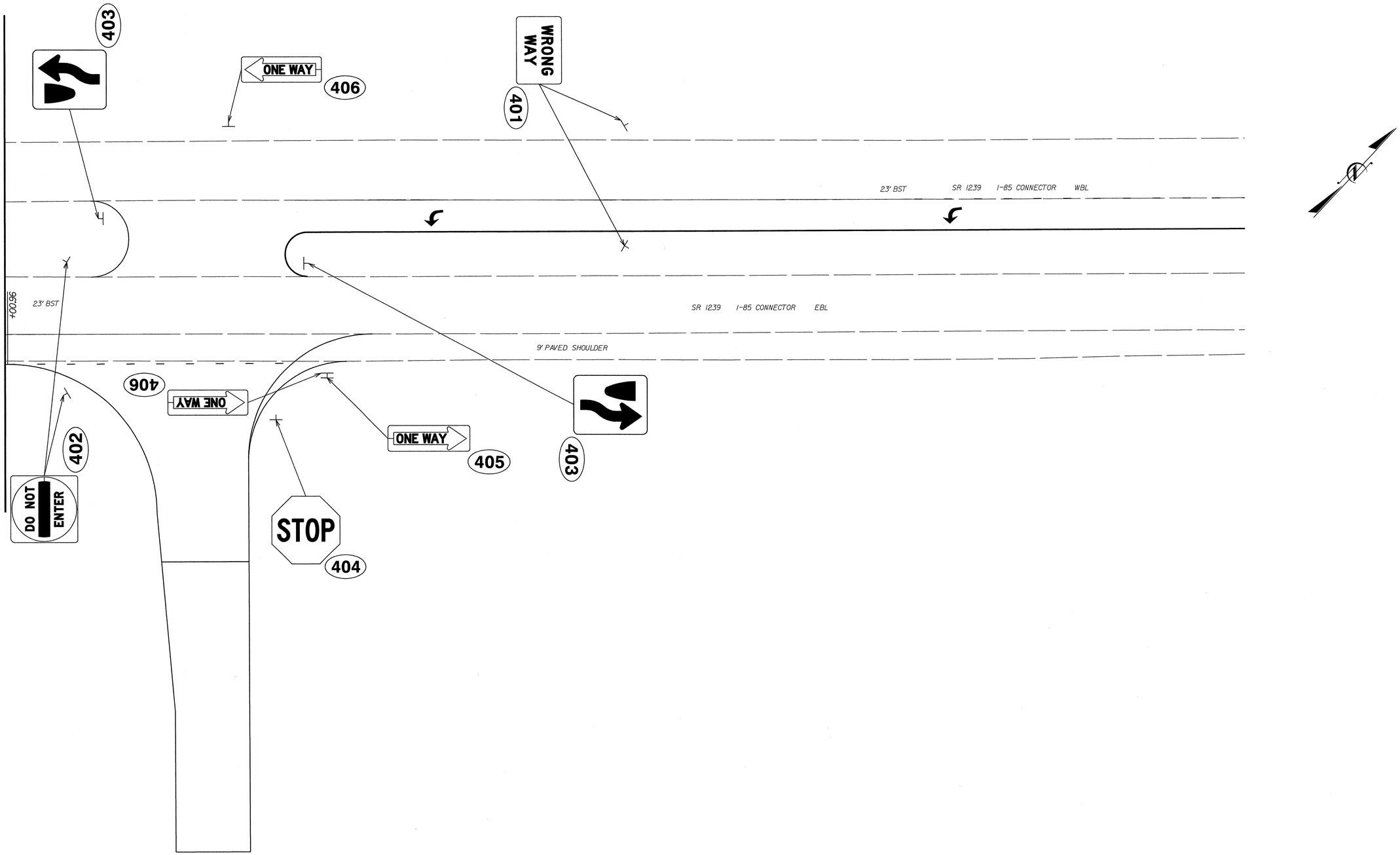
PROJECT REFERENCE NO.	SHEET NO.
P-4405F	SIGN-2

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 19743 ENGINEER DANIEL L. HAVENER

3-13-14



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DGN

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