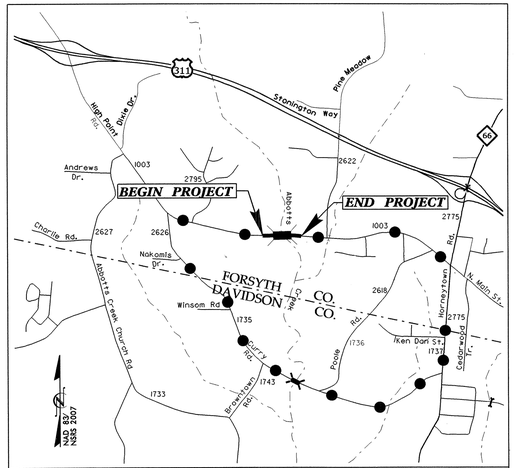
09/08/99

TIP PROJECT: B-5107

CONTRACT: C203262

See Sheet 1-A For Index of Sheets



VICINITY MAP SHOWING LOCATION OF PROJECT B-5107

OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

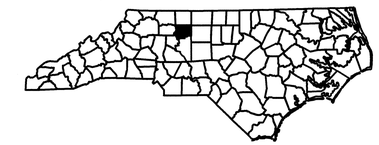
FORSYTH COUNTY

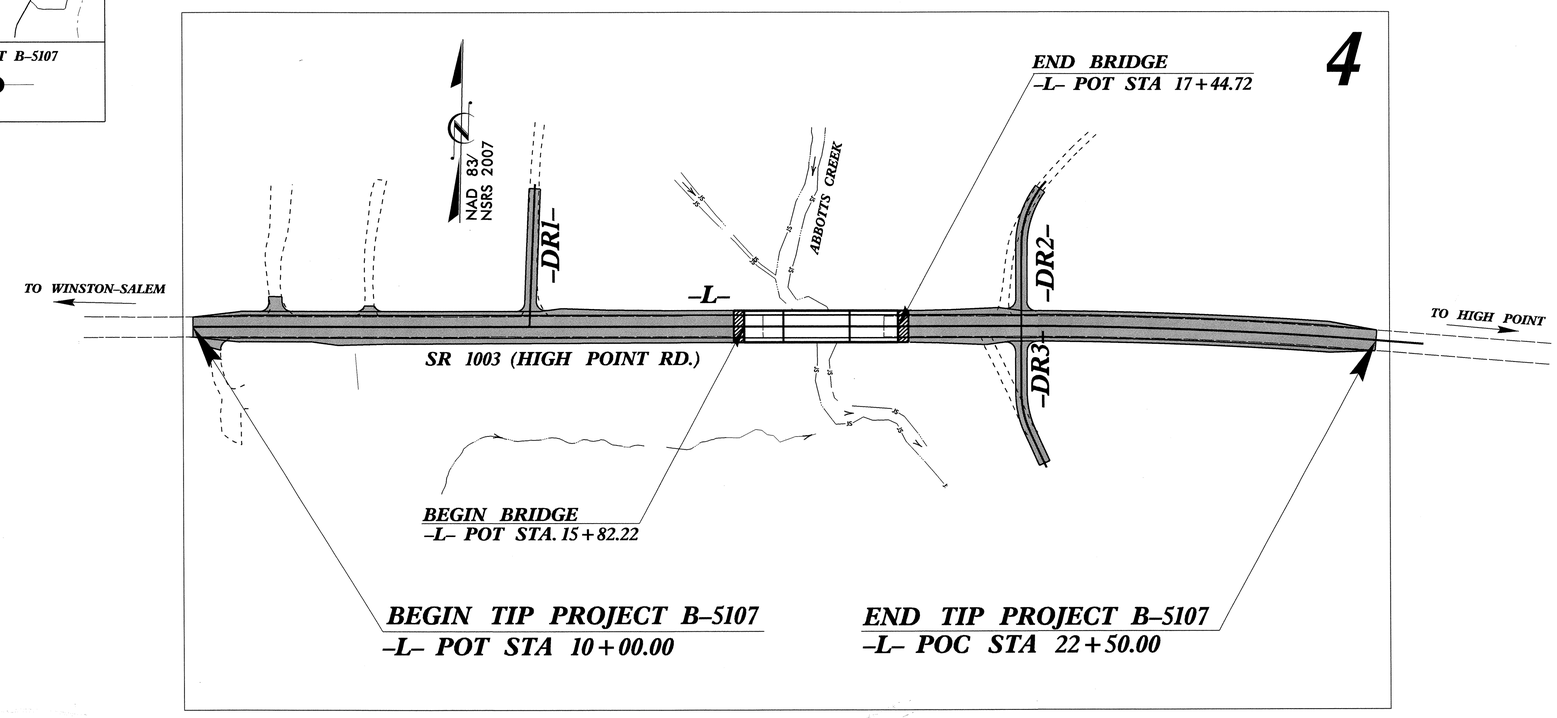
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5107	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
42244.1.1	BRSTP-1003 (71)	P.E.
42244.2.1	BRSTP-1003 (71)	ROW & UTIL
42244.3.FD1	BRSTP-1003 (71)	CONST

LOCATION: REPLACE BRIDGE NO. 34 OVER ABBOTT'S CREEK ON SR 1003 (HIGH POINT RD.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE





GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2013 = 2147
ADT 2033 = 3377
DHV = 12 %
D = 55 %
T = 4 % *
V = 50 MPH
* TTST =1% DUAL 3%
FUNC CLASS =
MINOR ARTERIAL
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5107 =	0.206 MILES
LENGTH STRUCTURE TIP PROJECT B-5107 =	0.031 MILES
TOTAL LENGTH TIP PROJECT B-5107 =	0.237 MILES

Prepared In the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 15, 2012

LETTING DATE:
NOVEMBER 19, 2013

TONY HOUSER P.E.
PROJECT ENGINEER

LEE ANN MOORE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 20329 ENGINEER AMY A. BILLINGS
SIGNATURE: 8/27/13 P.E.

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON HOUSER
SIGNATURE: 8-28-13 P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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PROJECT REFERENCE NO.	SHEET NO.
B-5107	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON HOUSER

8-28-13

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
1C THRU 1D	SURVEY CONTROL SHEETS
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3	SUMMARY OF QUANTITIES
3A 3A	SUMMARY OF BREAKING EXISTING ASPHALT PAVEMENT SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL SUMMARY OF GUARDRAIL SUMMARY OF EARTHWORK SUMMARY OF SHOULDER BERM GUTTER
3-B	SUMMARY OF DRAINAGE
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-3	TRANSPORTATION MANAGEMENT PLANS
PMP-1	PAVEMENT MARKING PLANS
EC-1 THRU EC-5/CONST.4	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-2	SIGNING PLANS
UC-1 THRU UC-5	UTILITIES CONSTRUCTION PLANS
UO-1 THRU UO-2	UTILITIES BY OTHER PLANS
X-A THRU X-14	CROSS-SECTIONS
S-1 THRU S-26	STRUCTURE PLANS

GENERAL NOTES:

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

GRADE LINE:
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED 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 III.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 AND/OR STD. NO. 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01 AND/OR STD. NO. 560.02

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 LOCATIONS 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.

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

DUKE ENERGY - POWER (DISTRIBUTION), North State Communication (Telephone

Time Warner Cable (CATV), Davidson Water, Inc. (water), Piedmont Natural Gas (gas),

Verizon (Telephone), other (unknown)

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT.

ROCK

ROCK IS ANTICIPATED BETWEEN -L- 20+00 TO 22+50. BLASTING MAY BE REQUIRED FOR EXCAVATION ON THE PROJECT. SEE SECTION 220 OF THE STANDARD SPECIFICATIONS AND IF APPLICABLE, ROCK BLASTING PROVISION.

2012 ROADWAY ENGLISH STANDARD DRAWINGS

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

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	
200.03	Method of Clearing - Method III
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.11	Reinforced Bridge Approach Fills - Sub Regional Tier
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
840.00	Concrete Base Pad for Drainage Structures
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.66	Drainage Structure Steps
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units (Beg. March 2013 Letting use detail in lieu of Standard)

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04/16/11

PROJECT REFERENCE NO.	SHEET NO.
B-5107	1-B

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 Marker — RW
- 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 — HH
- 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:

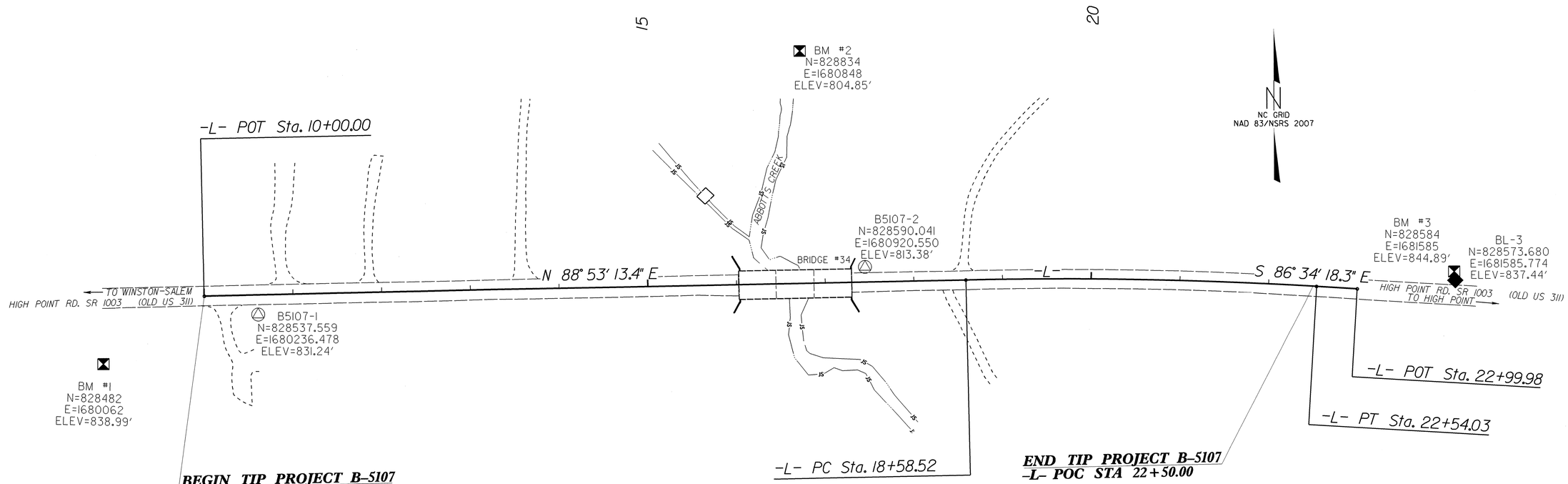
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

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.
B-5107	1C
Location and Surveys	

SURVEY CONTROL SHEET B-5107



BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	B5107-1	828537.5590	1680236.4780	831.24	10+60.22	21.74 RT
2	B5107-2	828590.0410	1680920.5500	813.38	17+45.18	17.44 LT
3	BL3	828573.6798	1681585.7742	837.44	OUTSIDE PROJECT LIMITS	

****
BM1 ELEVATION = 838.99
N 828482 E 1680062
-L- STATION 10+00.00 TO TO BM1
S 56°16'51" W DIST 136.97'
R/R SPIKE SET IN THE BASE OF A 30"
FORKED OAK TREE, 62' SOUTH OF THE
SOUTHERN EDGE OF PAVEMENT OF
HIGH POINT ROAD, 27' FROM A DUKE
POWER LIGHT POLE.
****

****
BM2 ELEVATION = 804.85
N 828834 E 1680848
-L- STATION 16+77.20 263' LEFT
R/R SPIKE SET IN ROOT OF A 24" MAPLE
TREE LOCATED ON THE EASTERN TOP OF
BANK OF ABBOTT'S CREEK, 245' NORTH
OF BRIDGE CARRYING HIGH POINT ROAD
OVER CREEK.
****

****
BM3 ELEVATION = 844.89
N 828584 E 1681585
-L- STATION 22+99.98 TO BM3
N 79°42'50" E DIST 111.11'
R/R SPIKE SET IN THE BASE OF 48"
FORKED OAK TREE, 15' NORTH OF
NORTHERN EDGE OF PAVEMENT OF
HIGH POINT ROAD, 10' NORTH OF
"B5107 BL-3."
****

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B5107-1"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 828537.559(ft) EASTING: 1680236.478(ft)
ELEVATION: 831.24'(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99992807
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5107-1" TO -L- STATION 10+00.00 IS
N71°15'34"W 64.03'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

1. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

THE FILES TO BE FOUND ARE AS FOLLOWS:
B5107_LS_CONTROL.TXT

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

△ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

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SURVEY CONTROL SHEET B-5107

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	828558.1301	1680175.8448
PC	18+58.52	828574.8055	1681034.2072
PT	22+54.03	828566.8170	1681429.5255
POT	22+99.98	828564.0691	1681475.3960

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+30.00	50.00	828512.6069	1680406.7726
L	12+30.00	65.00	828497.6098	1680407.0639
L	13+15.00	-65.00	828629.2362	1680489.5229
L	13+15.00	-50.00	828614.2390	1680489.8142
L	19+15.00	49.83	828525.7514	1681091.0812
L	19+15.00	65.00	828510.5851	1681091.2041
L	19+15.00	-50.17	828625.7486	1681090.2705
L	19+15.00	-65.00	828640.5808	1681090.1502

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+35.00	-80.00	828640.7372	1680309.2655
L	11+35.00	-50.00	828610.7428	1680309.8482
L	15+15.00	-100.00	828668.1143	1680688.8053
L	15+30.00	75.00	828493.4386	1680707.2016
L	15+30.00	65.00	828503.4368	1680707.0073
L	15+69.00	75.00	828494.1961	1680746.1942
L	15+69.00	65.00	828504.1943	1680746.0000
L	17+90.00	-100.00	828673.4557	1680963.7534
L	20+70.00	-71.00	828645.4135	1681247.2964
L	20+70.00	-50.38	828624.8019	1681246.8231

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B5107-1"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 828537.559(ft) EASTING: 1680236.478(ft)
ELEVATION: 831.24'(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99992807
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5107-1" TO -L- STATION 10+00.00 IS
N71°15'34"W 64.03'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES:

1. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
HTTP:/WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

THE FILES TO BE FOUND ARE AS FOLLOWS:
B5107_LS_CONTROL.TXT

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

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PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

6/2/99
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PROJECT REFERENCE NO.	SHEET NO.
B-5107	2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON HOUSER 8-28-13

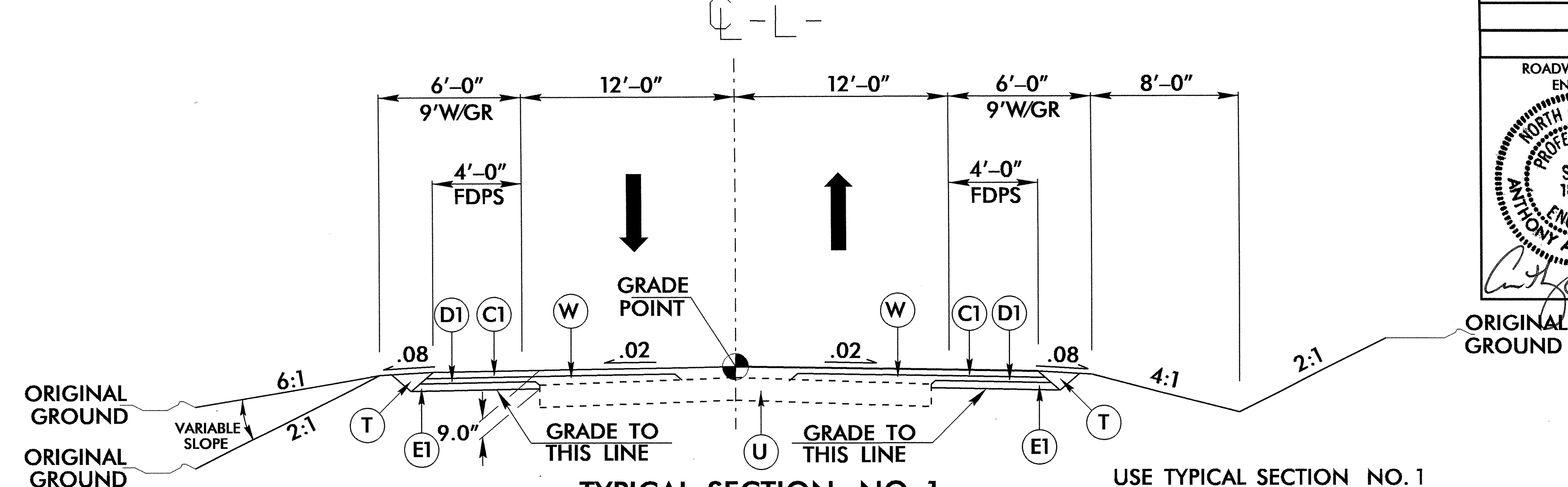
NORTH CAROLINA PROFESSIONAL SEAL 036819 ENGINEER LaTONYA T. HAYWARD SEPTEMBER 6th 2013

5/14/99

PAVEMENT SCHEDULE

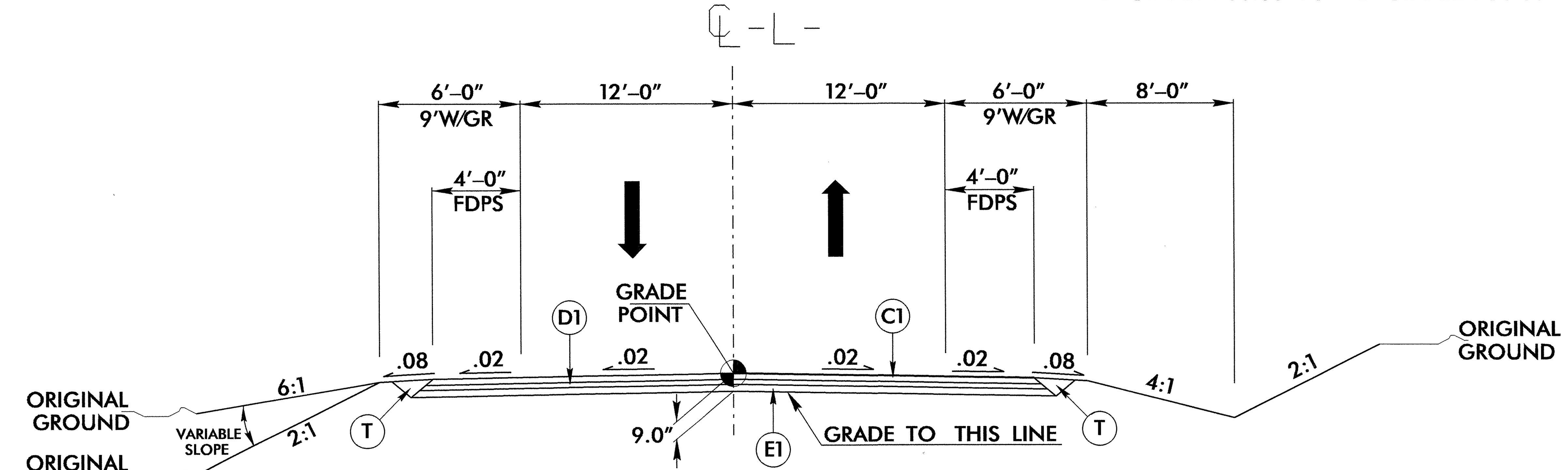
NOTE: PAVEMENT EDGE SLOPE ARE 1:1 UNLESS SHOWN OTHERWISE.

C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I 19.0B, AT AN AVERAGE RATE OF 114 LBS, PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R1	SHOULDER BERM GUTTER
R2	SPECIAL SHOULDER BERM CURB
T	EARTH MATERIAL.
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)



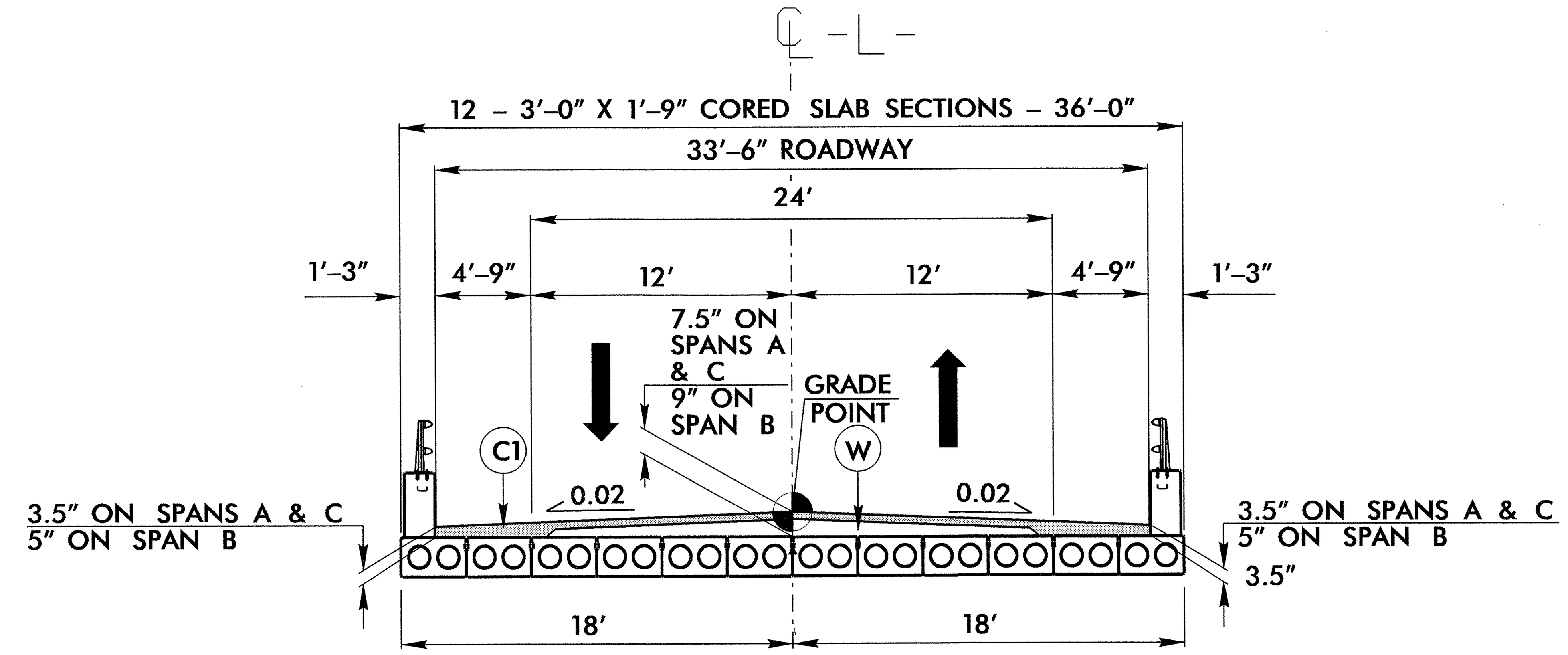
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
-L- STA. 10+00.00 TO -L- STA. 12+00.00
-L- STA. 21+00.00 TO -L- STA. 22+50.00



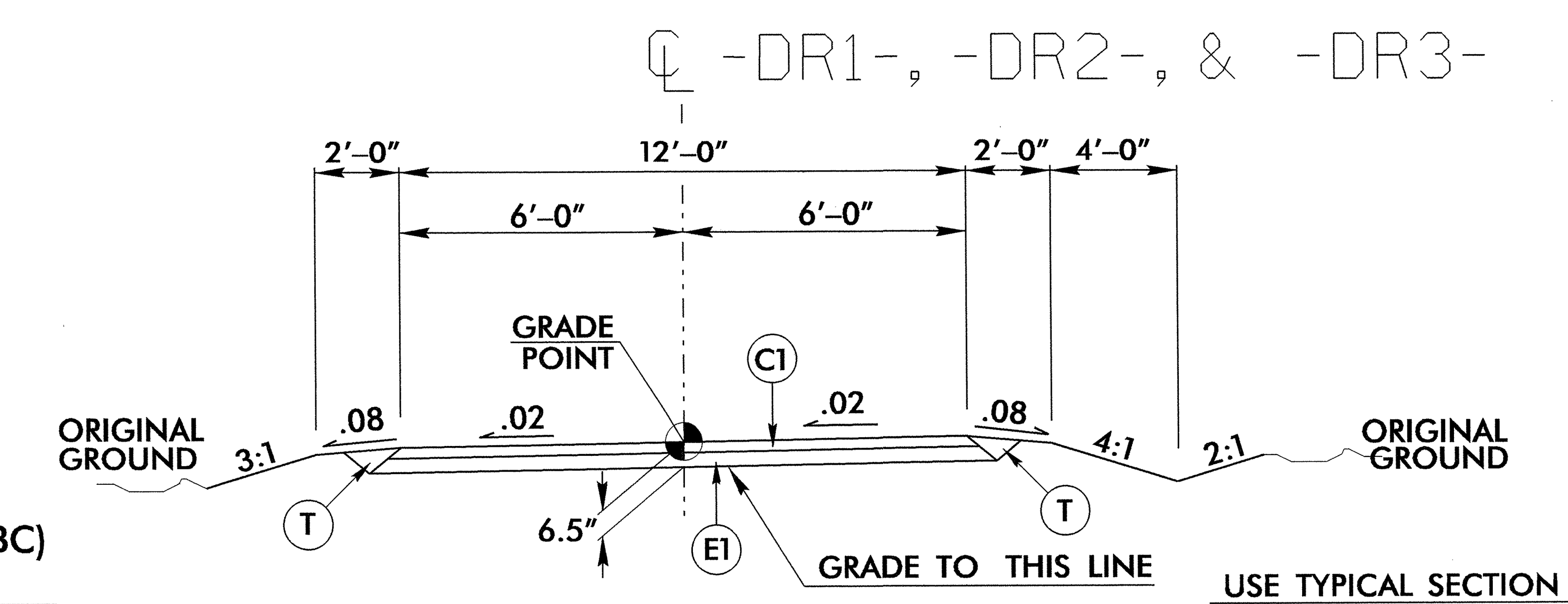
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
-L- STA. 12+00.00 TO -L- STA. 15+82.22 (BEGIN BRIDGE)
-L- STA. 17+44.72 (END BRIDGE) TO -L- STA. 21+00.00



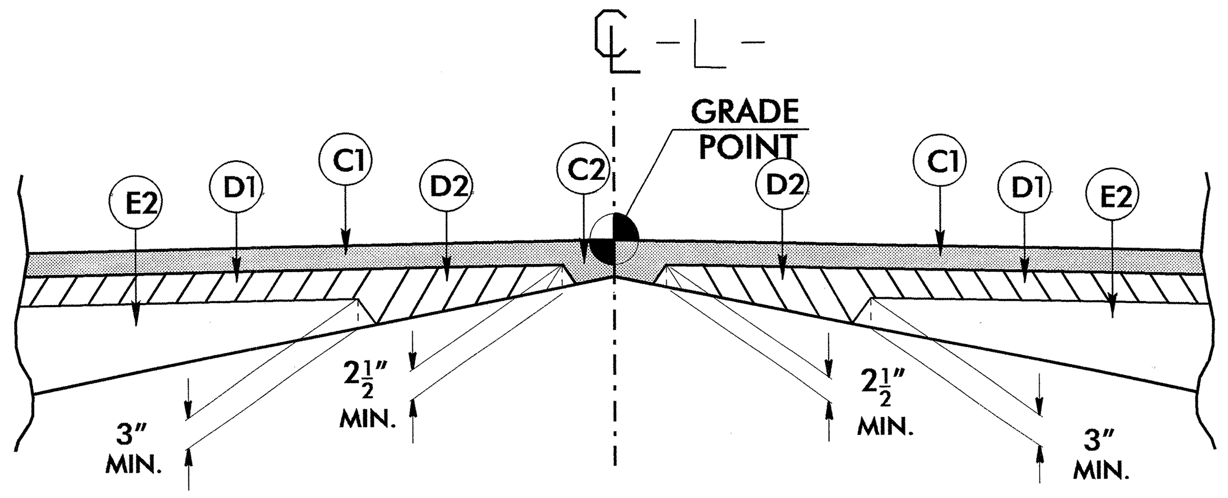
TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
-L- STA. 15+82.22 (BEGIN BRIDGE) TO -L- STA. 17+44.72 (END BRIDGE)



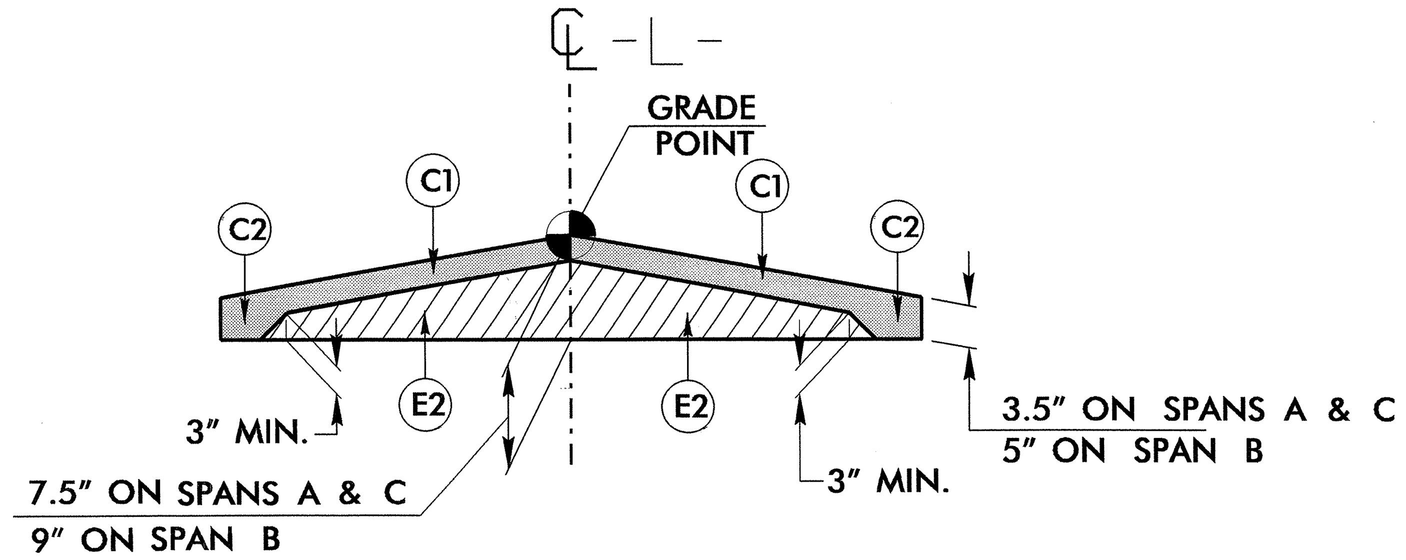
TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
-DR1- STA. 10+05.00 TO -DR1- STA. 11+38.12 (EOTL)
-DR2- STA. 10+10.00 TO -DR2- STA. 11+46.79 (EOTL)
-DR3- STA. 10+12.00 (EOTL) TO -DR3- STA. 11+50.00



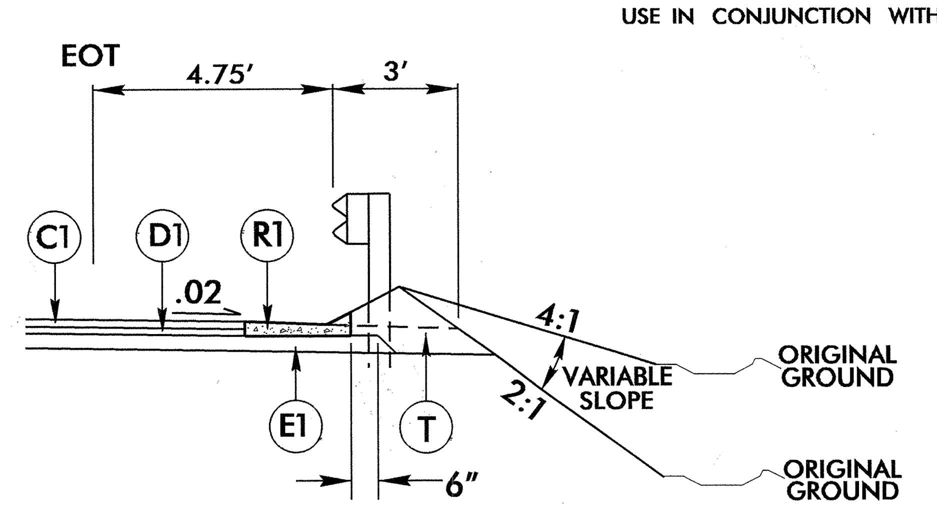
DETAIL SHOWING METHOD OF WEDGING

USE IN CONJUNCTION WITH TYPICAL SECTION NO. 1



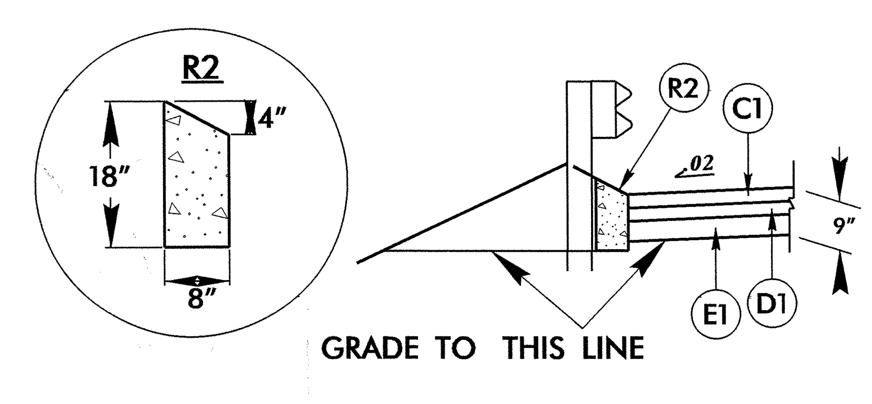
DETAIL SHOWING METHOD OF WEDGING ON BRIDGE

USE IN CONJUNCTION WITH TYPICAL SECTION NO. 3



SHOULDER BERM GUTTER DETAIL:

-L- STA. 15+15.00 TO -L- STA. 15+71.22 (BEG. APPROACH SLAB) LT.
-L- STA. 15+15.00 TO -L- STA. 15+71.22 (BEG. APPROACH SLAB) RT.



DETAIL SHOWING SPECIAL SHOULDER BERM CURB (SBC) ON TOP OF SUBGRADE

-L- STA. 17+55.72 (END APPROACH SLAB) TO -L- STA. 17+57.22 LT.
-L- STA. 17+55.72 (END APPROACH SLAB) TO -L- STA. 17+57.22 RT.

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$$$$USERNAME$$$$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203262

SUMMARY OF QUANTITIES - B-5107

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0030000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ******* (16+63.47 -L-)
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
0057000000-E	226	250	CY	UNDERCUT EXCAVATION
0063000000-N	SP	Lump Sum		GRADING
0106000000-E	230	12,400	CY	BORROW EXCAVATION
0195000000-E	265	450	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	550	SY	GEOTEXTILE FOR SOIL STABILIZA-TION
0318000000-E	300	60	TON	FOUNDATION CONDITIONING MATE-RIAL, MINOR STRUCTURES
0320000000-E	300	40	SY	FOUNDATION CONDITIONING GEO-TEXTILE
0343000000-E	310	48	LF	15" SIDE DRAIN PIPE
0448200000-E	310	60	LF	15" RC PIPE CULVERTS, CLASS IV
0995000000-E	340	44	LF	PIPE REMOVAL
1099500000-E	505	50	CY	SHALLOW UNDERCUT
1099700000-E	505	100	TON	CLASS IV SUBGRADE STABILIZA-TION
1220000000-E	545	200	TON	INCIDENTAL STONE BASE
1330000000-E	607	250	SY	INCIDENTAL MILLING
1489000000-E	610	1,060	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1498000000-E	610	460	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
1525000000-E	610	730	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1575000000-E	620	120	TON	ASPHALT BINDER FOR PLANT MIX
1693000000-E	654	20	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
2000000000-N	806	8	EA	RIGHT OF WAY MARKERS
2286000000-N	840	2	EA	MASONRY DRAINAGE STRUCTURES
2308000000-E	840	14.68	LF	MASONRY DRAINAGE STRUCTURES
2366000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.24
2556000000-E	846	113	LF	SHOULDER BERM GUTTER
2752000000-E	SP	3	LF	GENERIC PAVING ITEM SPECIAL SHOULDER BERM CURB
3030000000-E	862	575	LF	STEEL BM GUARDRAIL
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3215000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III
3270000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3656000000-E	876	1,405	SY	GEOTEXTILE FOR DRAINAGE
3659000000-N	SP	1	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON
4072000000-E	903	61	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4096000000-N	904	2	EA	SIGN ERECTION, TYPE D
4155000000-N	907	6	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4400000000-E	1110	417	SF	WORK ZONE SIGNS (STATIONARY)
4410000000-E	1110	194	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4445000000-E	1145	128	LF	BARRICADES (TYPE III)
4685000000-E	1205	3,300	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
4686000000-E	1205	3,300	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
4850000000-E	1205	400	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
5325600000-E	1510	819	LF	6" WATER LINE
5540000000-E	1515	2	EA	6" VALVE
5648000000-N	1515	3	EA	RELOCATE WATER METER
5871400000-E	1550	25	LF	TRENCHLESS INSTALLATION OF 6" IN SOIL
5871410000-E	1550	25	LF	TRENCHLESS INSTALLATION OF 6" NOT IN SOIL
6000000000-E	1605	2,310	LF	TEMPORARY SILT FENCE
6006000000-E	1610	205	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	330	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	455	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	4.5	ACR	TEMPORARY MULCHING
6018000000-E	1620	150	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	1.75	TON	FERTILIZER FOR TEMPORARY SEED-ING
6024000000-E	1622	470	LF	TEMPORARY SLOPE DRAINS
6029000000-E	SP	100	LF	SAFETY FENCE
6030000000-E	1630	870	CY	SILT EXCAVATION
6036000000-E	1631	5,600	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	525	SY	COIR FIBER MAT
6038000000-E	SP	120	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	355	LF	1/4" HARDWARE CLOTH
6070000000-N	1639	12	EA	SPECIAL STILLING BASINS
6071010000-E	SP	555	LF	WATTLE
6071020000-E	SP	185	LB	POLYACRYLAMIDE (PAM)
6071030000-E	1640	355	LF	COIR FIBER BAFFLE
6071050000-E	SP	5	EA	** SKIMMER (1-1/2")
6084000000-E	1660	4.5	ACR	SEEDING & MULCHING
6087000000-E	1660	2.3	ACR	MOWING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	125	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	3.25	TON	FERTILIZER TOPDRESSING
6114500000-N	1667	10	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	18	EA	RESPONSE FOR EROSION CONTROL

COMPUTED BY: JOHN BRAXTON DATE: 7/8/2013
CHECKED BY: LEE MOORE DATE: 7/9/2013

PROJECT REFERENCE NO.	SHEET NO.
B-5107	3A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK (IN CUBIC YARDS)

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
-L- 10+00.00	-L- 15+82.22(Beg.BR.)	126	6,302	6,176	
-L- 17+44.72(End BR.)	-L- 22+50.00	707	3,715	3,008	
SUBTOTALS:		833	10,018	9,185	
-DR1- 10+05.00	-DR1- 11+38.12		1,260	1,260	
-DR2- 10+10.00	-DR2- 11+46.79		419	419	
-DR3- 10+12.00	-DR3- 11+50.00	4	676	672	
SUBTOTALS:		4	2,354	2,350	
TOTALS:		837	12,372	11,535	
LOSS DUE TO CLEARING & GRUBBING		-200		200	
PROJECT TOTALS:		637	12,372	11,735	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				587	
GRAND TOTALS:		637	12,372	12,322	
SAY:		640		12,400	

Note: Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

SHOULDER BERM GUTTER SUMMARY (IN FEET)

SURVEY LINE	STATION	STATION	LENGTH
-L- LT	15+15.00	15+71.22	56.22
-L- RT	15+15.00	15+71.22	56.22
		TOTAL:	112.44
		SAY:	113.00

SPECIAL SHOULDER BERM CURB SUMMARY (IN FEET)

SURVEY LINE	STATION	STATION	LENGTH
-L- LT	17+55.72	17+57.22	1.50
-L- RT	17+55.72	17+57.22	1.50
		TOTAL:	3.00
		SAY:	3.00

SUMMARY OF BREAKING EXISTING ASPHALT PAVEMENT (IN SQUARE YARDS)

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
-L-	12+50.00	15+82.22 (BEG. BR.)	LT/RT	812.09
-L-	17+44.72 (END BR.)	20+50.00	LT/RT	746.24
TOTAL:				1,558.33
SAY:				1,560

SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL (IN SQUARE YARDS)

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
-L-	12+00.00	12+50.00	LT/RT	122.22
-L-	20+50.00	21+00.00	LT/RT	122.22
TOTAL:				244.44
SAY:				250

"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	ANCHORS: XI	ANCHORS: GRAU 350 TL-3	ANCHORS: M-350	ANCHORS: TYPE III	ANCHORS: CAT-1	ANCHORS: VI MOD	ANCHORS: BIC	ANCHORS: AT-1	IMPACT ATTENUATOR TYPE 350: EA	IMPACT ATTENUATOR TYPE 350: G	IMPACT ATTENUATOR TYPE 350: NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L-	13+88.47	15+82.22(BR)	LT	193.75				14+88.28	4.75	9		75.00		1.25			1		1											
-L-	17+44.72(BR)	18+50.97	LT	106.25			17+44.72(BR)		4.75	9	37.50		0.75				1		1											
-L-	11+50.97	15+82.22(BR)	RT	431.25			12+52.22		4.75	9	312.50		1.25				1		1											
-L-	17+44.72(BR)	18+38.47	RT	93.75				17+44.72(BR)	4.75	9		25.00		0.50			1		1											
			SUBTOTAL:	825.00													4		4											
			ANCHOR DEDUCTION:	-275.00												ANCHOR DEDUCTION:														
			TOTAL:	550.00												GRAU-350 TL-3:	4 @ 50 = 200			275.00										
			SAY:	575.00												TYPE-III:	4 @ 18.75 = 75													
																ADDITIONAL POSTS:	= 5													

12/06/07
28-AUG-2013 11:07
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RD248621

COMPUTED BY: JOHN BRAXTON DATE: 7/9/2013
CHECKED BY: LEE MOORE DATE: 7/8/2013

PROJECT NO.	SHEET NO.
B-5107	3B

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	R.C. PIPE CLASS IV 15"	15" SIDE DRAIN PIPE	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	LIN. FT. A 5.0' THRU 10.0'	LIN. FT. B 10.0' AND ABOVE	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.35	PREFORMED SCOUR HOLE	PIPE REMOVAL LIN. FT.	REMARKS
10+88.87 -L-	LT	0401							28							24	
15+50.00 -L-	LT	0402		819.2						1	5	1.6					
		0402	403		807.6	807.2		24					1	1			
15+50.00 -L-	RT	0403		819.2						1	5	2					
		0403	404		807.2	804.2		36					1	1	1		
10+20.00 -DR2-	CL	0405							20								
18+53.00 -L-	LT															20	
SHEET TOTALS								60	48	2	10	3.6	2	2	1	44	
GRAND TOTALS								60	48	2	14.68		2	2	1	44	

Other columns on the form (no entries): DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"–48", DO NOT USE RCP, DO NOT USE CSP, DO NOT USE CAAP, DO NOT USE HDPE; C.S. PIPE 12"–48" (.064, .064, .064, .064, .079, .079, .109, .109); R.C. PIPE CLASS III 12"–48"; R.C. PIPE CLASS IV 12", 18"–48"; ** " R.C. PIPE (CLASS V); ***" RC PIPE CULVERTS, CONTRACTOR DESIGN; ***" RC PIPE CULVERTS, CONTRACTOR DESIGN; 18" SIDE DRAIN PIPE; ENDWALLS STD. 838.01, 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P., C.S.P.; *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B'); C.B. STD. 840.01 OR STD. 840.02; FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E, F, G; CONCRETE TRANSITIONAL SECTION DROP INLET, CATCH BASIN; D.I. STD. 840.14 OR STD. 840.15; D.I. FRAME AND 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. 840.20; G.D.I. FRAME WITH TWO GRATES STD. 840.22; G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24; J.B. STD. 840.31 OR 840.32; DRAINAGE PIPE ELBOWS NO. & SIZE; CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71; CONC. COLLARS CL. "B" C.Y. STD. 840.72. Row labels: SIZE; THICKNESS OR GAUGE.

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.)	(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

PROJECT REFERENCE NO.	SHEET NO.
B-5107	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON HOUSER 8-28-13

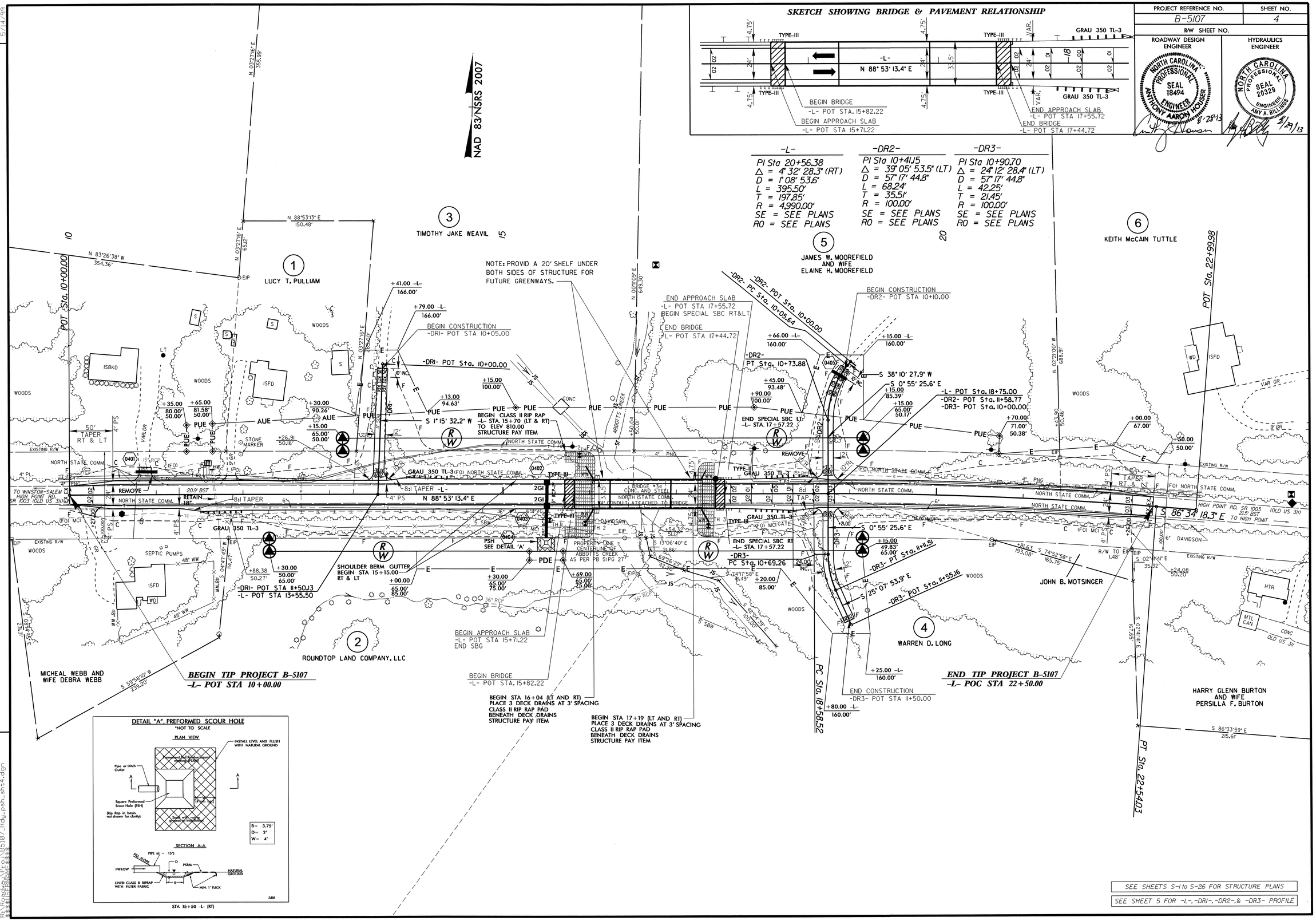
NORTH CAROLINA PROFESSIONAL SEAL 20329 ENGINEER AMY A. BILLINGS 8/29/13

REVISIONS

5/14/99

SKETCH SHOWING BRIDGE & PAVEMENT RELATIONSHIP

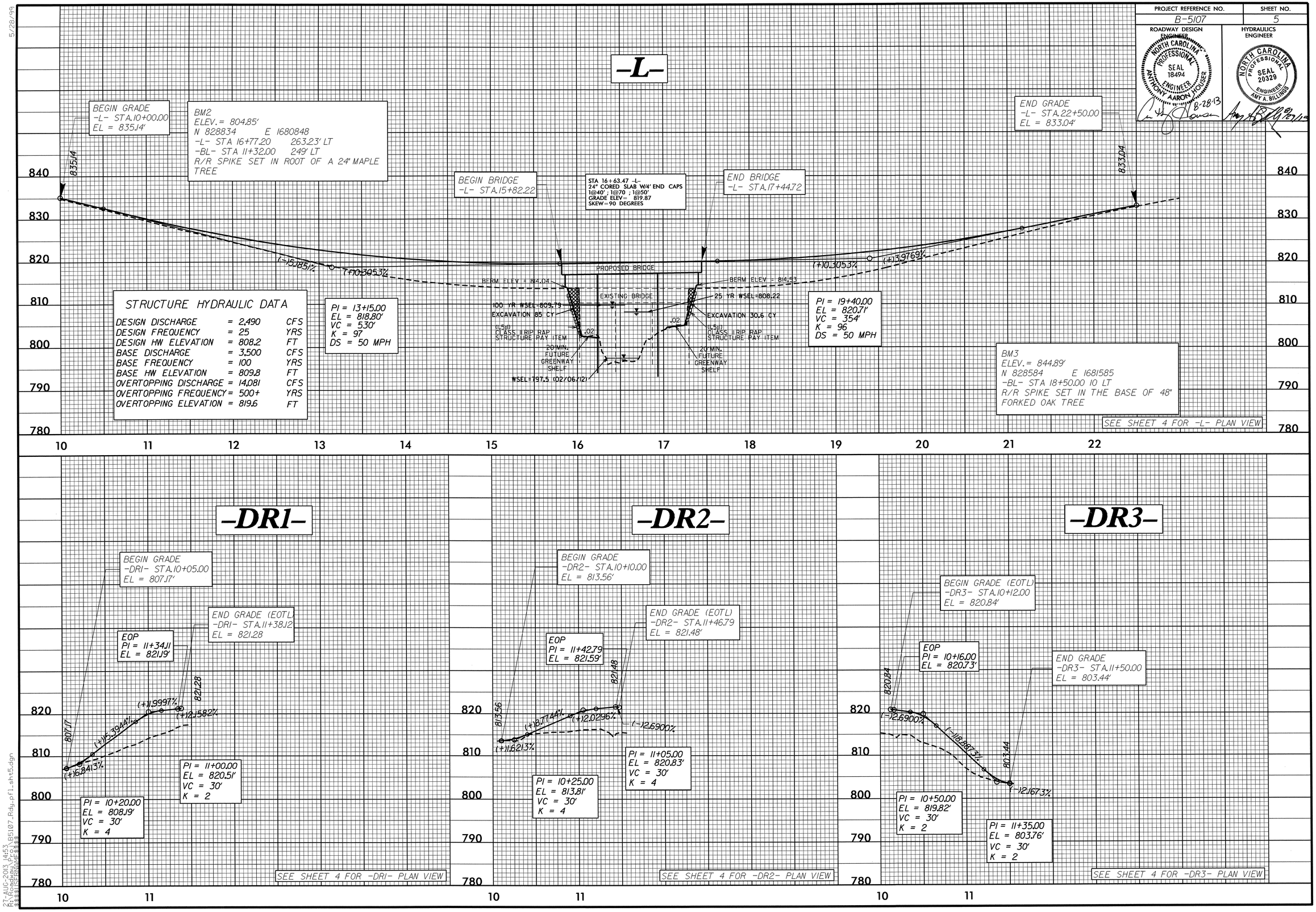
-L-	-DR2-	-DR3-
PI Sta 20+56.38	PI Sta 10+41.15	PI Sta 10+90.70
Δ = 4° 32' 28.3" (RT)	Δ = 39° 05' 53.5" (LT)	Δ = 24° 12' 28.4" (LT)
D = 1° 08' 53.6"	D = 57° 17' 44.8"	D = 57° 17' 44.8"
L = 395.50'	L = 68.24'	L = 42.25'
T = 197.85'	T = 35.51'	T = 21.45'
R = 4,990.00'	R = 100.00'	R = 100.00'
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS
RO = SEE PLANS	RO = SEE PLANS	RO = SEE PLANS


NAD 83/NSRS 2007
1 LUCY T. PULLIAM
2 ROUNDTOP LAND COMPANY, LLC
3 TIMOTHY JAKE WEAVIL
4 WARREN D. LONG
5 JAMES W. MOOREFIELD AND WIFE ELAINE H. MOOREFIELD
6 KEITH McCAIN TUTTLE
MICHEAL WEBB AND WIFE DEBRA WEBB
JOHN B. MOTSINGER
HARRY GLENN BURTON AND WIFE PERSILLA F. BURTON
NOTE: PROVIDE A 20' SHELF UNDER BOTH SIDES OF STRUCTURE FOR FUTURE GREENWAYS.
BEGIN TIP PROJECT B-5107
-L- POT STA 10+00.00
END TIP PROJECT B-5107
-L- POC STA 22+50.00
POT Sta. 10+00.00
POT Sta. 22+99.98
PC Sta. 18+56.52
PT Sta. 22+54.03
BEGIN CONSTRUCTION
-DRI- POT STA 10+05.00
-DRI- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-DR2- POT STA 10+10.00
-DR2- POT Sta. 10+00.00
-DR2- PC Sta. 10+05.64
END APPROACH SLAB
-L- POT STA 17+55.72
BEGIN SPECIAL SBC RT&LT
END BRIDGE
-L- POT STA 17+44.72
END SPECIAL SBC LT
-L- STA. 17+57.22
END SPECIAL SBC RT
-L- STA. 17+57.22
BEGIN CLASS II RIP RAP
-L- STA. 15+70 (LT & RT)
TO ELEV 810.00
STRUCTURE PAY ITEM
BEGIN APPROACH SLAB
-L- POT STA 15+71.22
END SBG
BEGIN BRIDGE
-L- POT STA. 15+82.22
BEGIN STA 16+04 (LT AND RT)
PLACE 3 DECK DRAINS AT 3' SPACING
CLASS II RIP RAP PAD
BENEATH DECK DRAINS
STRUCTURE PAY ITEM
BEGIN STA 17+19 (LT AND RT)
PLACE 3 DECK DRAINS AT 3' SPACING
CLASS II RIP RAP PAD
BENEATH DECK DRAINS
STRUCTURE PAY ITEM
SHOULDER BERM GUTTER
BEGIN STA 15+15.00
RT & LT
-DRI- POT STA 11+50.13
-L- POT STA 13+55.50
END CONSTRUCTION
-DR3- POT STA 11+50.00
-L- POT STA 18+75.00
-DR2- POT Sta. 11+58.77
-DR3- POT Sta. 10+00.00
-DR3- PT Sta. 11+11.51
-DR3- PT Sta. 11+55.16
-DR2- PT Sta. 10+73.88
-DR3- PC Sta. 10+69.26
S 38° 10' 27.9" W
S 0° 55' 25.6" E
S 1° 15' 32.2" W
N 88° 53' 13.4" E
S 86° 34' 18.3" E
TO HIGH POINT
HIGH POINT RD. SR 1003 (OLD US 311)
TO WINSTON-SALEM
HIGH POINT RD. SR 1003 (OLD US 311)
50' TAPER RT & LT
8:1 TAPER -L-
8:1 TAPER
REMOVE
RETAIN 18"
GRAU 350 TL-3
PSH SEE DETAIL 'A'
PDE
PROPERTY LINE CENTERLINE OF ABBOTTS CREEK AS PER PB 51 PG 27
BRIDGE #34 CONC. AND STEEL CONDUIT ATTACHED TO BRIDGE
NORTH STATE COMM.
ABBOTTS CREEK
SEPTIC PUMPS
ISBKD
ISFD
WOODS
STONE MARKER
EXISTING R/W
R/W TO EIP 1.48'
S 59°58'10" W 239.20'
S 86°33'59" E 215.61'
S 25° 07' 53.9" E
S 74°52'58" E 165.75'
S 74°17'58" E 8.49'
S 69°26'29" E 102.80'
S 64°04'49" E 100.00'
S 13°06'40" E 21.86'
S 02°14'41" E 35.32'
S 04°18'40" E 16.69'
N 00°11'09" E 649.30'
N 02°21'00" W 688.91'
N 03°27'16" E 355.99'
N 83°26'38" W 354.36'
N 88°53'13" E 150.48'
N 03°27'16" E 65.12'
N 03°27'16" E 455.40'
S 04°47'43" W 114.47'
S 04°47'43" W 114.47'
S 04°47'43" W 114.47

PROJECT REFERENCE NO.	SHEET NO.
B-5107	5

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON HOUSER
8-28-13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 20329 ENGINEER AMY A. BILLINGS
8/28/13



5/28/99

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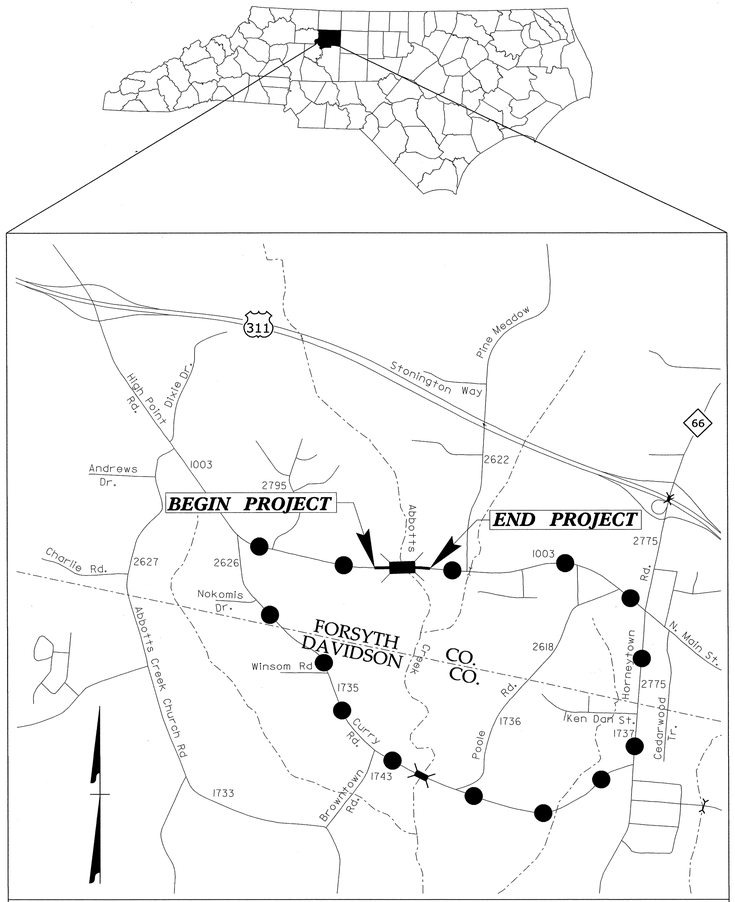
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

FORSYTH COUNTY



VICINITY MAP SHOWING LOCATION OF PROJECT B-5107

OFFSITE DETOUR

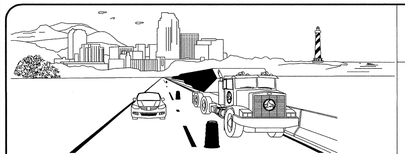
INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES AND PHASING)
TMP-2	OFF-SITE DETOUR ROUTE AND BARRICADE PLACEMENT
TMP-3	SPECIAL SIGN DESIGN

SHEET NO.
TMP-1

B-5107

TIP PROJECT:



WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. — STATE TRAFFIC MANAGEMENT ENGINEER
JOSEPH ISHAK, P.E. — TRAFFIC CONTROL PROJECT ENGINEER
MICHAEL STEELMAN — TRAFFIC CONTROL PROJECT DESIGN ENGINEER
DURWOOD KENNEDY, P.E. — TRAFFIC CONTROL DESIGN ENGINEER

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

APPROVED:
DATE:
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK
7-9-2013

7/8/2013
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User:drkennedyl

PROJ. REFERENCE NO.	SHEET NO.
B-5107	TMP-1A

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANAUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

LEGEND

GENERAL

DIRECTION OF TRAFFIC FLOW

DIRECTION OF PEDESTRIAN TRAFFIC FLOW

EXIST. PVMT.

NORTH ARROW

PROPOSED PVMT.

WORK AREA

TRAFFIC CONTROL DEVICES

BARRICADE (TYPE III)

CONE

DRUM — SKINNY DRUM — TUBULAR MARKER

TEMPORARY CRASH CUSHION

FLASHING ARROW BOARD

FLAGGER

LAW ENFORCEMENT

TRUCK MOUNTED ATTENUATOR (TMA)

CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

PORTABLE SIGN

STATIONARY SIGN

STATIONARY OR PORTABLE SIGN

APPROVED: _____ DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK

7-8-2013

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS & LEGEND

7/8/2013
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User:drkennedyj

PROJ. REFERENCE NO.	SHEET NO.
B-5107	TMP-1B

MANAGEMENT STRATEGIES

DURING REPLACEMENT OF THE EXISTING BRIDGE No.34 OVER ABBOTT'S CREEK, SR-1003 (HIGH POINT RD.) WILL BE CLOSED TO THROUGH TRAFFIC. THE HIGH POINT RD. TRAFFIC WILL BE DETOURED OFF-SITE.

MAINTAIN DRIVEWAYS WITHIN THE PROJECT LIMITS AT ALL TIMES THROUGHOUT THE PROJECT'S DURATION, IN ACCORDANCE WITH SECTION 1101-14 OF THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

PHASING

STEP 1:
USING RSD 1101.03, SHEET 1 OF 9, SHEETS TMP-2 AND TMP-3, INSTALL ROAD CLOSURE AND DETOUR SIGNS. PLACE TYPE III BARRICADES TO CLOSE SR-1003 (HIGH POINT RD.) TO THROUGH TRAFFIC, AND DETOUR TRAFFIC OFF-SITE. REFER TO SHEET TMP-2 FOR PLACEMENT OF TYPE III BARRICADES TO ALLOW ACCESS TO THE EXISTING DRIVEWAYS WHILE MAINTAINING ROAD CLOSURE TO THROUGH TRAFFIC.

ACCESS TO ALL DRIVEWAYS MUST BE PROVIDED AT ALL TIMES WITHIN THE PROJECT LIMITS.

STEP 2:
AWAY FROM TRAFFIC, COMPLETE THE FOLLOWING:

SEE ROADWAY AND STRUCTURE PLANS.

- REMOVE EXISTING STRUCTURE No.34, AND CONSTRUCT THE PROPOSED STRUCTURE.

- CONSTRUCT PROPOSED ROADWAY UP THROUGH THE FINAL LAYER OF SURFACE COURSE FROM -L- STA.10+00+/- TO -L- STA.22+50+/- AND ALONG -DR1-, -DR2- AND -DR3-, AS SPECIFIED BY THE ROADWAY PLANS. USING FINAL PAVEMENT MARKING PLAN, PLACE FINAL PAVEMENT MARKINGS AND MARKERS FROM -L- STA.10+00+/- TO -L- STA.22+50+/-, AND TIE INTO EXISTING PAVEMENT MARKINGS.

STEP 3:
REMOVE ALL ROAD CLOSURE SIGNING/DEVICES AND DETOUR SIGNING.
OPEN SR-1003 (HIGH POINT RD.) TO PROPOSED TRAFFIC PATTERN.

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS, OR RESULT IN DUPLICATE, OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER.

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

TRAFFIC PATTERN ALTERATIONS
A) NOTIFY THE ENGINEER TWENTY-ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING
B) PROVIDE PERMANENT SIGNING.

C) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRANSPORTATION MANAGEMENT PLAN.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRANSPORTATION MANAGEMENT PLAN.

D) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

E) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

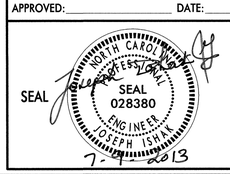
TRAFFIC CONTROL DEVICES
F) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

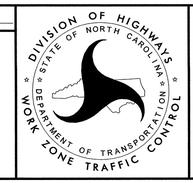
PAVEMENT MARKINGS AND MARKERS
G) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS SHOWN IN THE PAVEMENT MARKING PLAN.

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

APPROVED:_____ DATE:_____

SEAL





TRANSPORTATION OPERATIONS PLAN

7/9/2013
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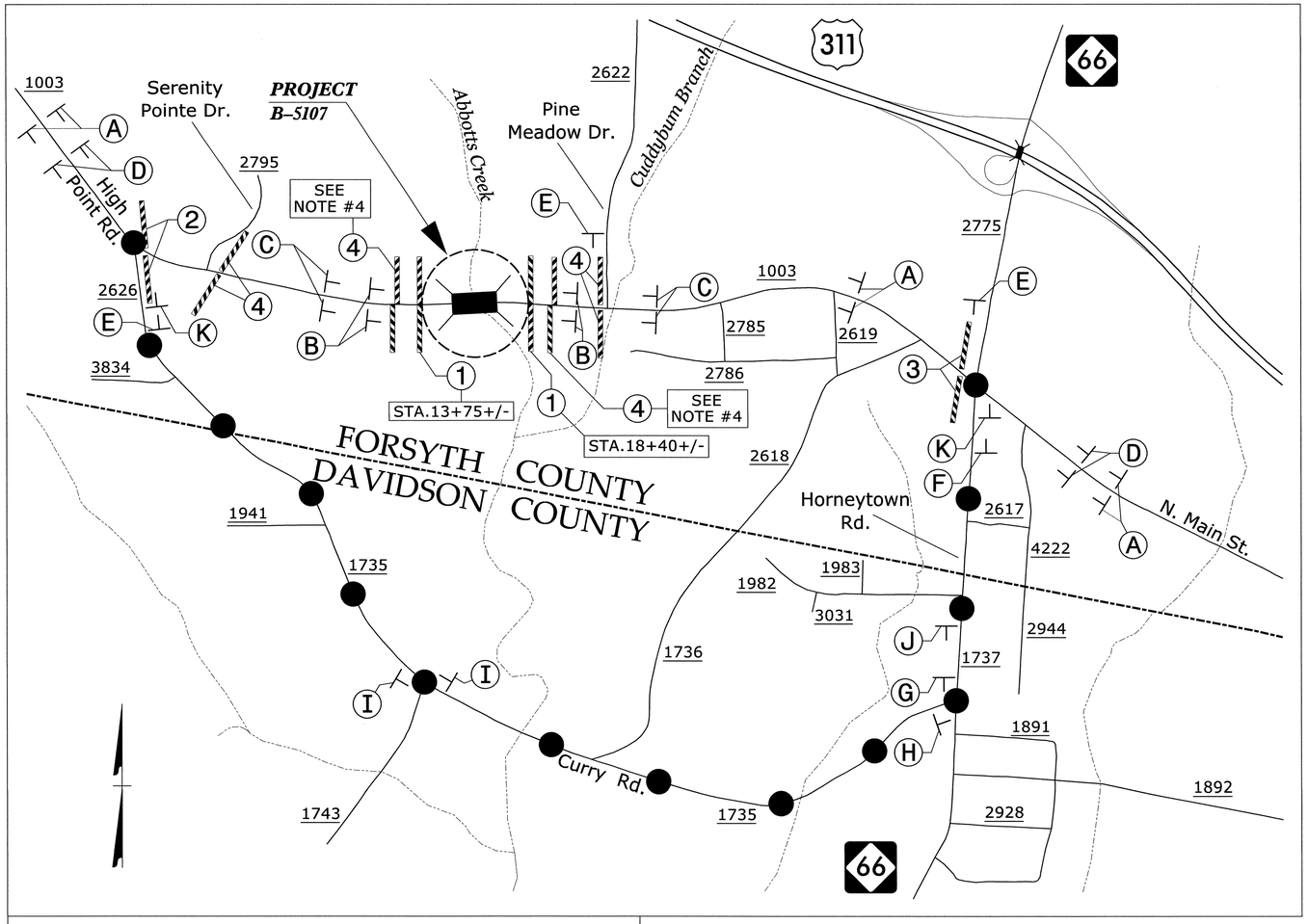
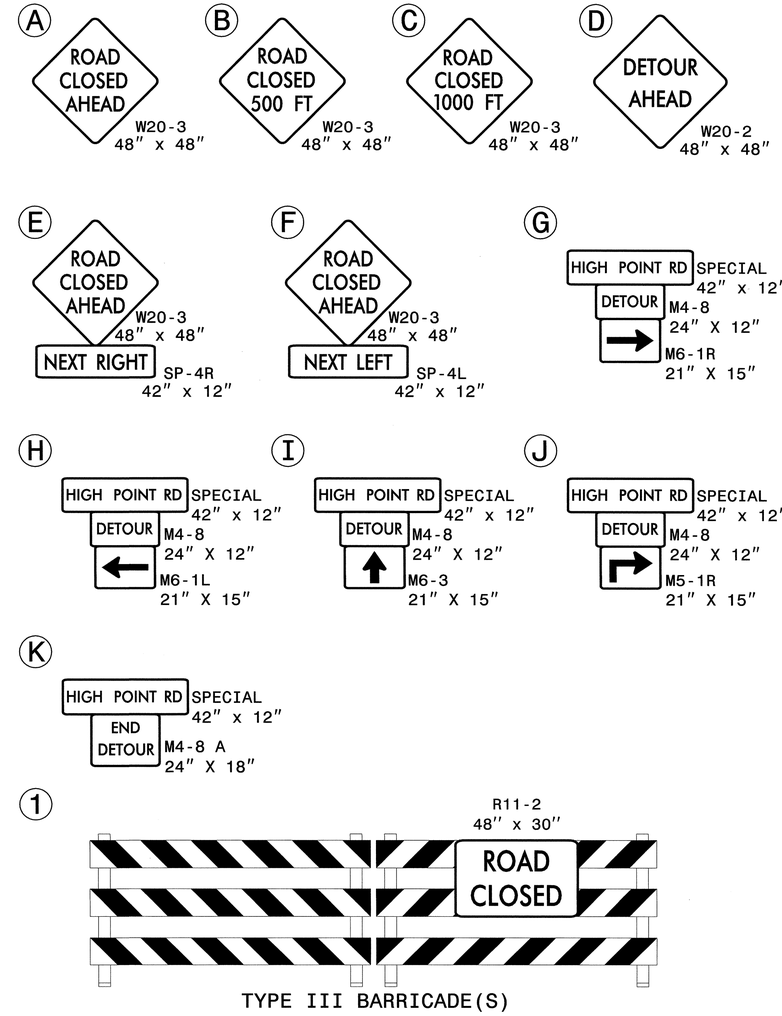
User:drkennedy1

PROJ. REFERENCE NO.	SHEET NO.
B-5107	TMP-2

VICINITY MAP: FORSYTH COUNTY





NOTES:

1) REFER TO SHEET TMP-3 FOR SPECIAL SIGN DESIGN.

2) REFER TO ROADWAY STANDARD DRAWING 1101.03, SHEET 1 OF 9, FOR ROAD CLOSURE SIGN DISTANCES AND APPLICABLE NOTES.

3) INSTALL DETOUR SIGNS AS DIRECTED BY THE ENGINEER.

4) AT STA.9+00+/- AND STA.23+50+/-, STAGGER BARRICADES IN ROAD TO ALLOW ACCESS TO EXISTING DRIVEWAYS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER.

OFF-SITE DETOUR = ●——●——●

OFF-SITE DETOUR ROUTE: FROM SR-1003 TO SR-2775 (WHICH BECOMES SR-1737) TO SR-1735 (WHICH BECOMES SR-2626) BACK TO SR-1003.

APPROVED: _____ DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK

7-9-2013

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

OFF-SITE DETOUR AND BARRICADE PLACEMENT

7/9/2013
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User:drkennedyj

PROJ. REFERENCE NO.	SHEET NO.
B-5107	TMP-3

SIGN NUMBER: TC
TYPE: STATIONARY
QUANTITY: SEE PLANS

SIGN WIDTH: 3'-6"
HEIGHT: 1'-0"
TOTAL AREA: 3.5 Sq.Ft.

BORDER TYPE: INSET
RECESS: 0.38"
WIDTH: 0.5"
RADII: 1.5"

NO. Z BARS:
LENGTH:

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L: 0.080" (2.0 mm) ALUMINUM

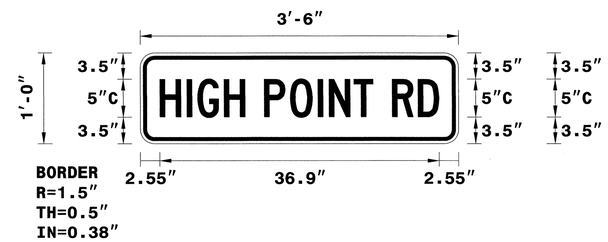
DESIGN BY: S.JOHNS
PROJECT ID: B-5107

CHECKED BY: S. KUNZ
DIV: 9

DATE: Apr 16, 2013

USE NOTES: 1,2

1. Legend and border shall be direct applied black non-reflective sheeting.
2. Background shall be NC GRADE B fluoresent orange retroreflective sheeting.



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

Series/Size
Text Length

		H	I	G	H		P	O	I	N	T		R	D														C 2000
	2.6	3.6	1.4	3.5	2.8	2.5	3.4	3.7	1.5	3.3	2.6	2.5	3.4	2.8	2.6													36.9

FILENAME: B-5107_workzoneSign

NORTH CAROLINA D.O.T. SIGN DETAIL

APPROVED: DATE: 7/8/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022959 ENGINEER RONALD W. KING

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

SPECIAL SIGN DESIGN

7/5/2013
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User:drkennedyl

T.I.P.: B-5107

CONTRACT: C203262

TIP NO.	SHEET NO.
B-5107	PMP-1

APPROVED: RWK

DATE: 7/25/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022959 ENGINEER RONALD W. KING

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
FORSYTH COUNTY
LOCATION: BRIDGE NO. 34 OVER ABBOTT'S CREEK ON SR 1003 (HIGH POINT RD)

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
THERMOPLASTIC(4", 120 MILS)	
TI	YELLOW DOUBLE CENTER
THERMOPLASTIC(4", 90 MILS)	
TA	WHITE EDGELINE

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
ALL	THERMOPLASTIC	NONE

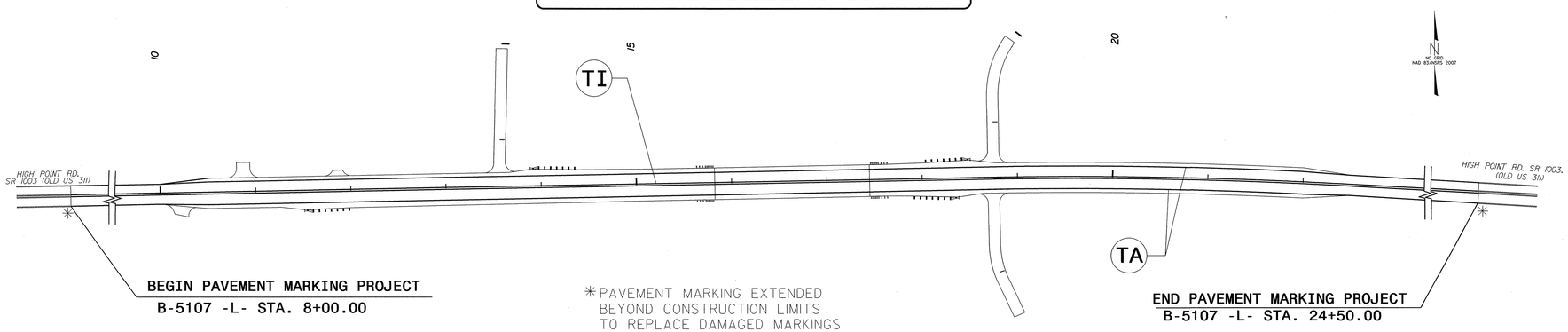
B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

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

D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

E) MARKERS ARE TO BE PLACED ACCORDING TO THE ROADWAY STANDARD DRAWINGS.

PAVEMENT MARKING DETAIL



PLAN PREPARED BY: N.C.D.O.T. SIGNING AND DELINEATION UNIT

SUSAN B. KUNZ — SIGNING & DELINEATION REGIONAL ENGINEER

STACEY W. JOHNS — SIGNING & DELINEATION DESIGN ENGINEER

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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TIP PROJECT: B-5107

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5107	EC-1	

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

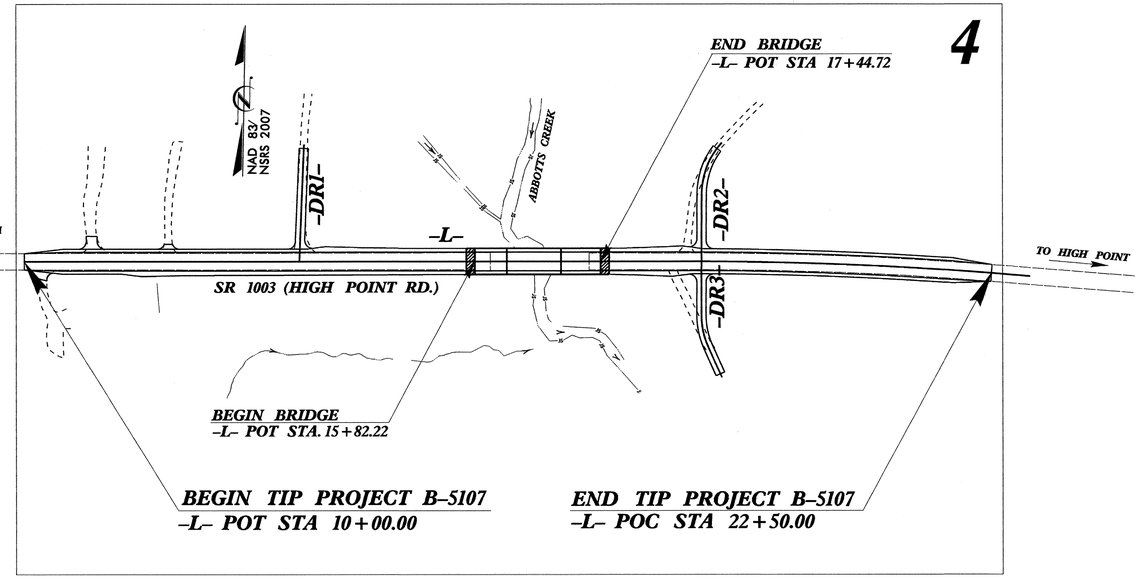
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

FORSYTH COUNTY

LOCATION: REPLACE BRIDGE NO. 34 OVER ABBOTT'S CREEK ON SR 1003 (HIGH POINT RD.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE



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	EW 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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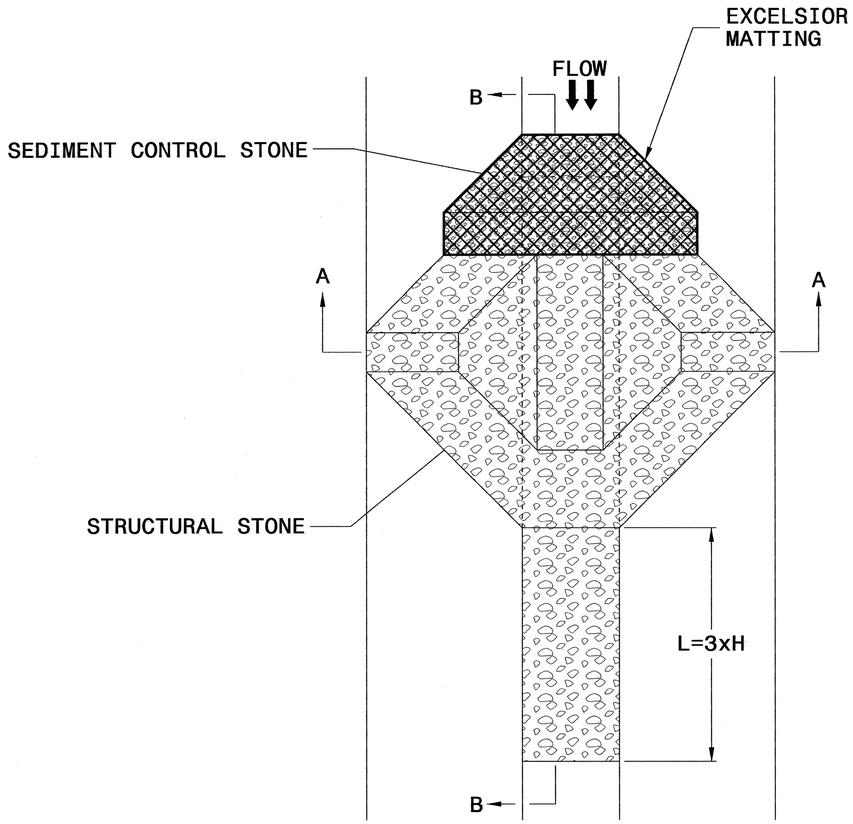
"Johnstonj" PW:AZAR01PW01\ecdgn01 Rev 24 PS

PROJECT REFERENCE NO.	SHEET NO.
B-5107	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



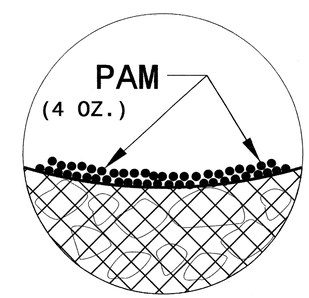
PLAN

NOTES

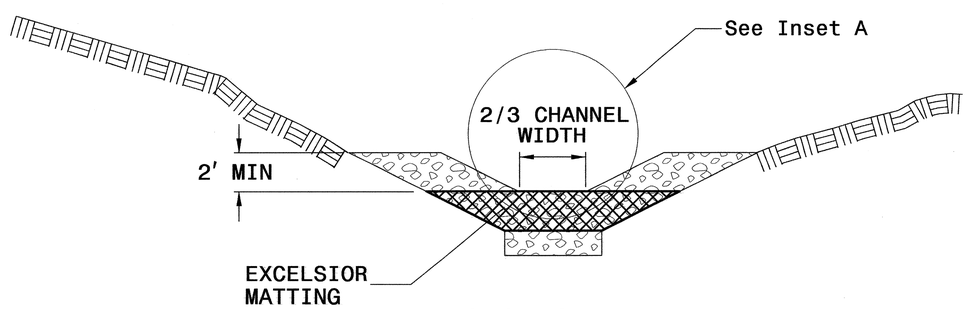
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.

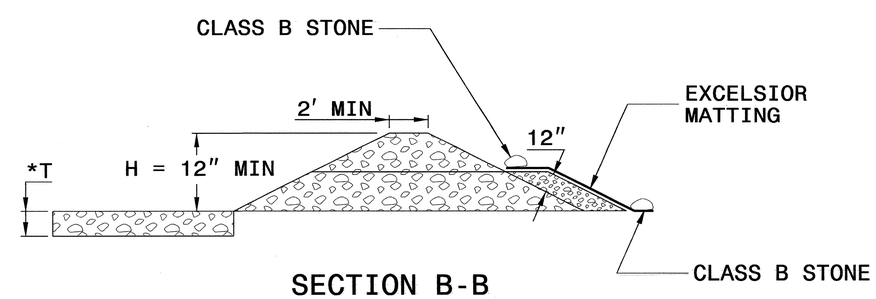
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



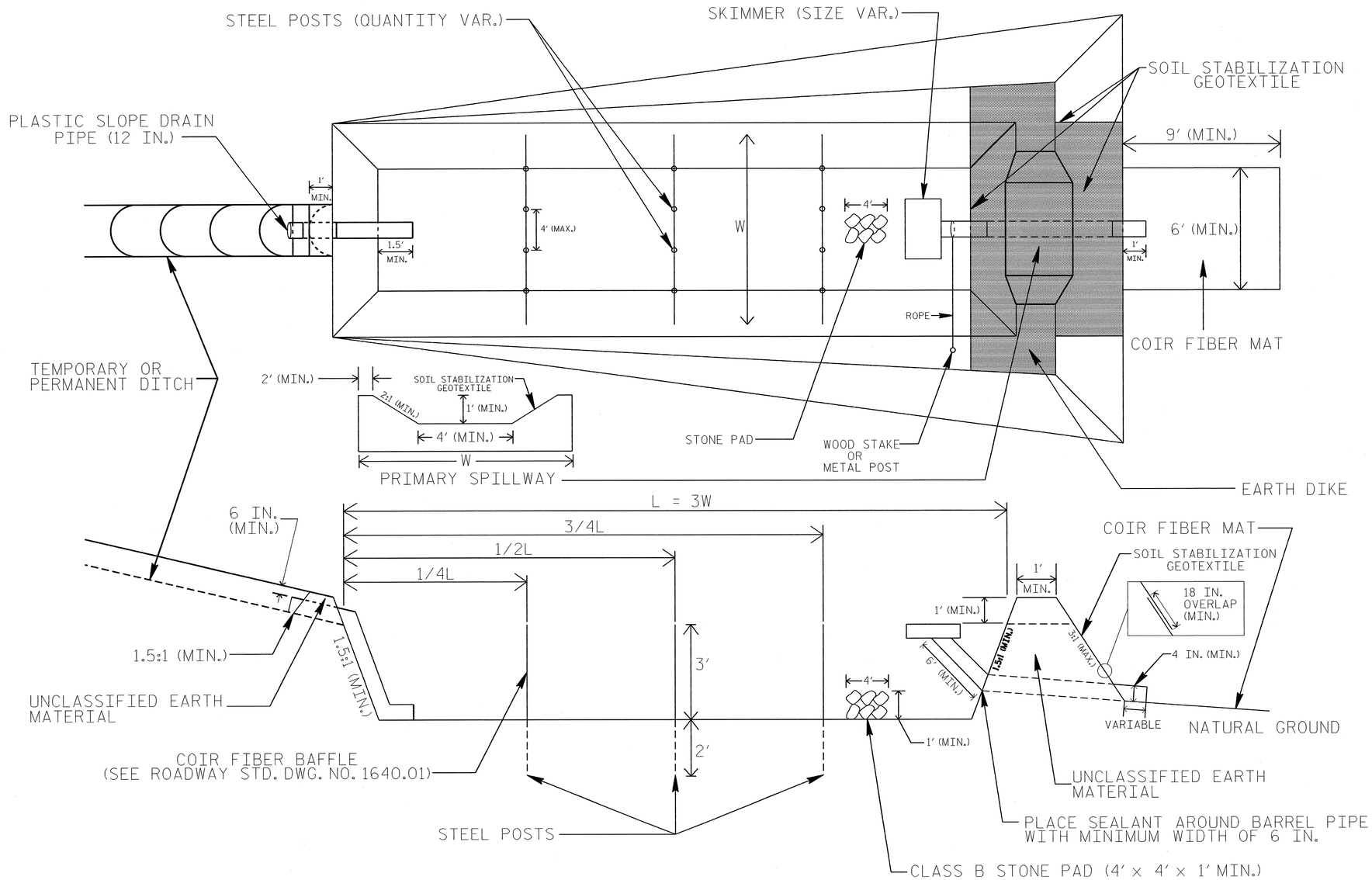
SECTION B-B

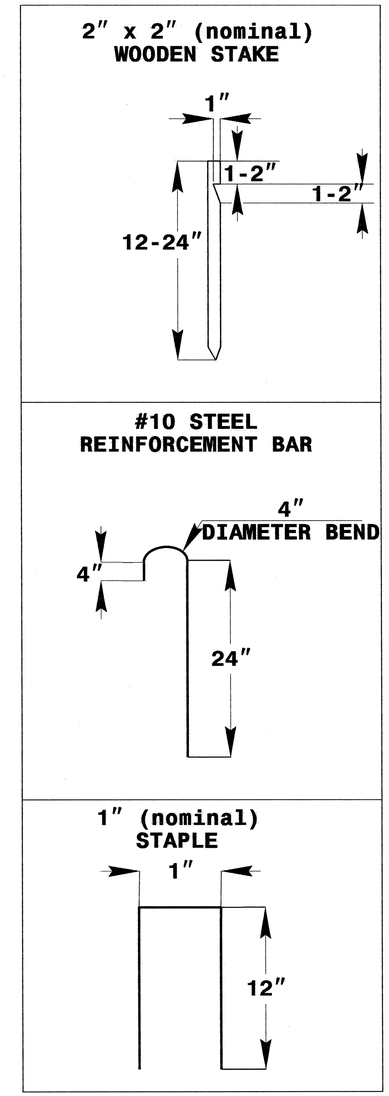
*T = 12" MIN., 18" MAX.

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-5107	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SKIMMER BASIN WITH BAFFLES DETAIL





COIR FIBER MAT ANCHOR OPTIONS

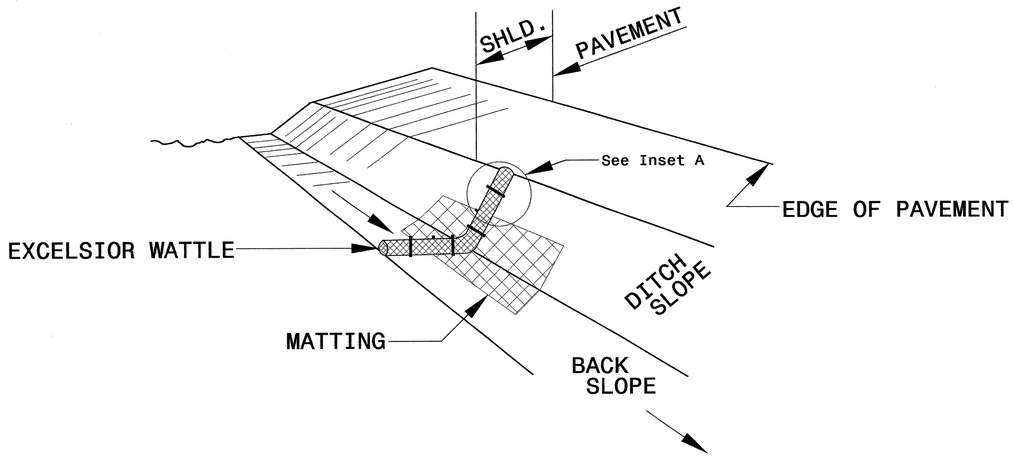
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. FOR BASIN DEPTH OF 3 FT., THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE PRIMARY SPILLWAY WEIR LENGTH (FT.) USING Q/0.4, WHERE Q IS FLOW RATE (CFS) INTO BASIN.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTRATION GEOTEXTILE OR TARP AS DIRECTED.
6. SOIL STABILIZATION GEOTEXTILE FOR PRIMARY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

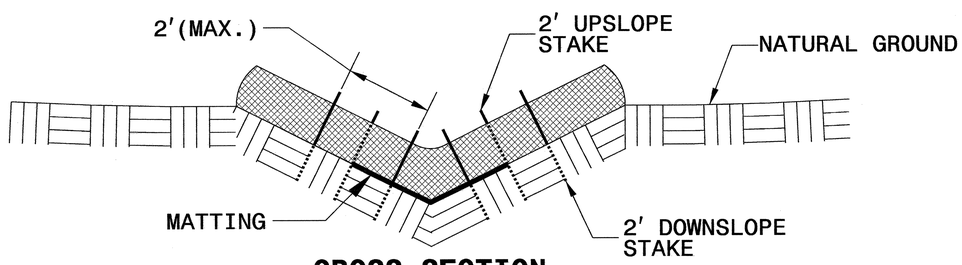
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-5107	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

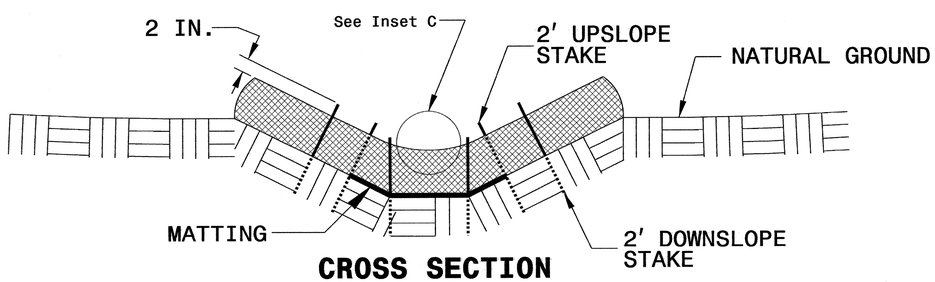
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR 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.

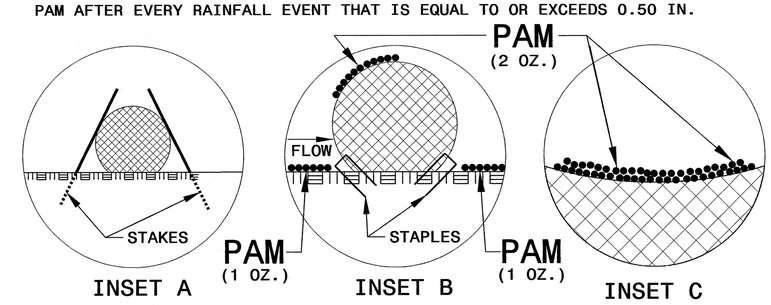
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

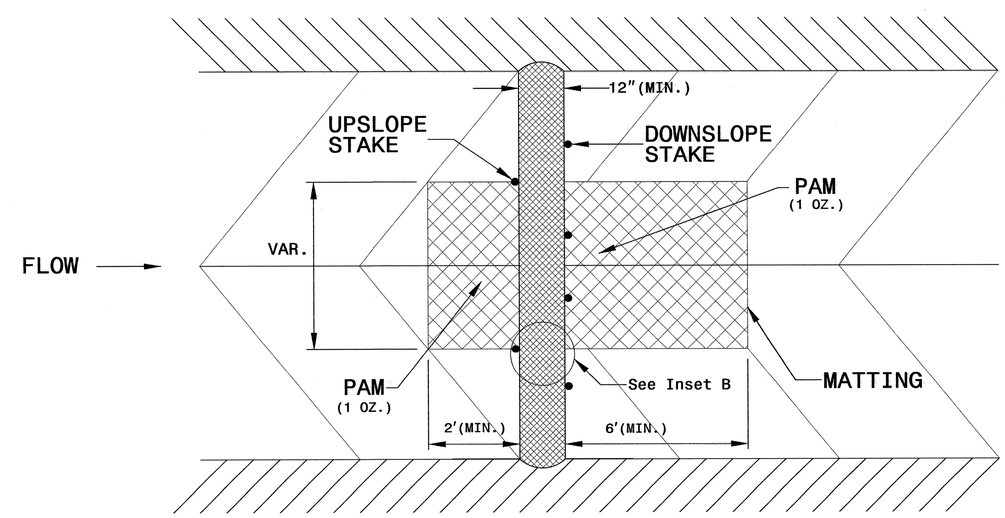
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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

PROJECT REFERENCE NO.	SHEET NO.
B-5107	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	20+50	22+00	LT	105
4	-L-	21+50	22+00	RT	35
			SUBTOTAL		140
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					5,400
				TOTAL	5,540
				SAY	5,600

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	10+50	11+50	RT	70
4	-L-	10+50	11+00	LT	35
			SUBTOTAL		105
		ADDITIONAL PSRM TO BE INSTALLED			0
				TOTAL	105
				SAY	120

PROJECT REFERENCE NO.	SHEET NO.
B-5107	EC-3A
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.

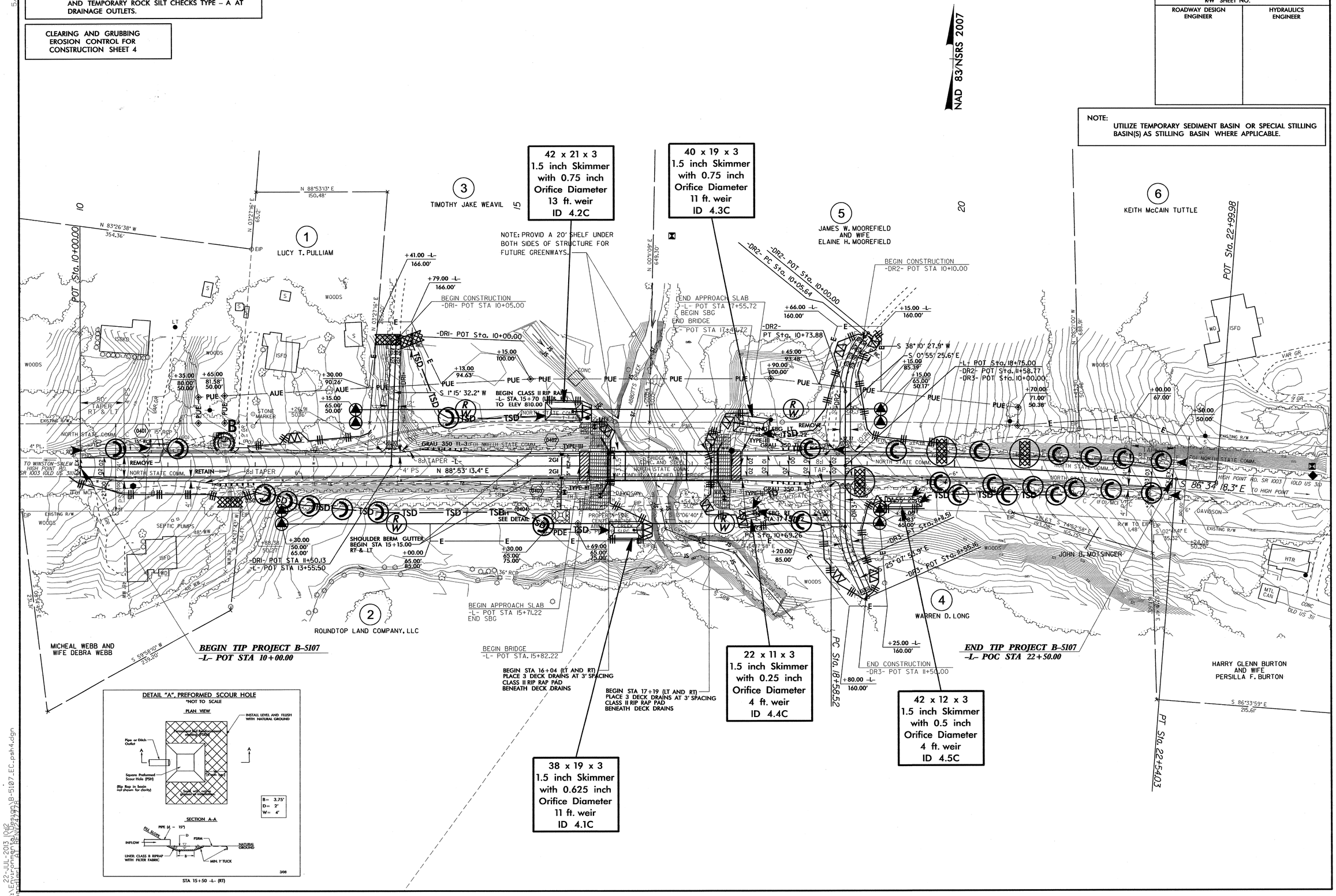
5/14/99

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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

PROJECT REFERENCE NO.	SHEET NO.
B-5107	EC-4/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.



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PROJECT REFERENCE NO.	SHEET NO.
B-5107	EC-5/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE:
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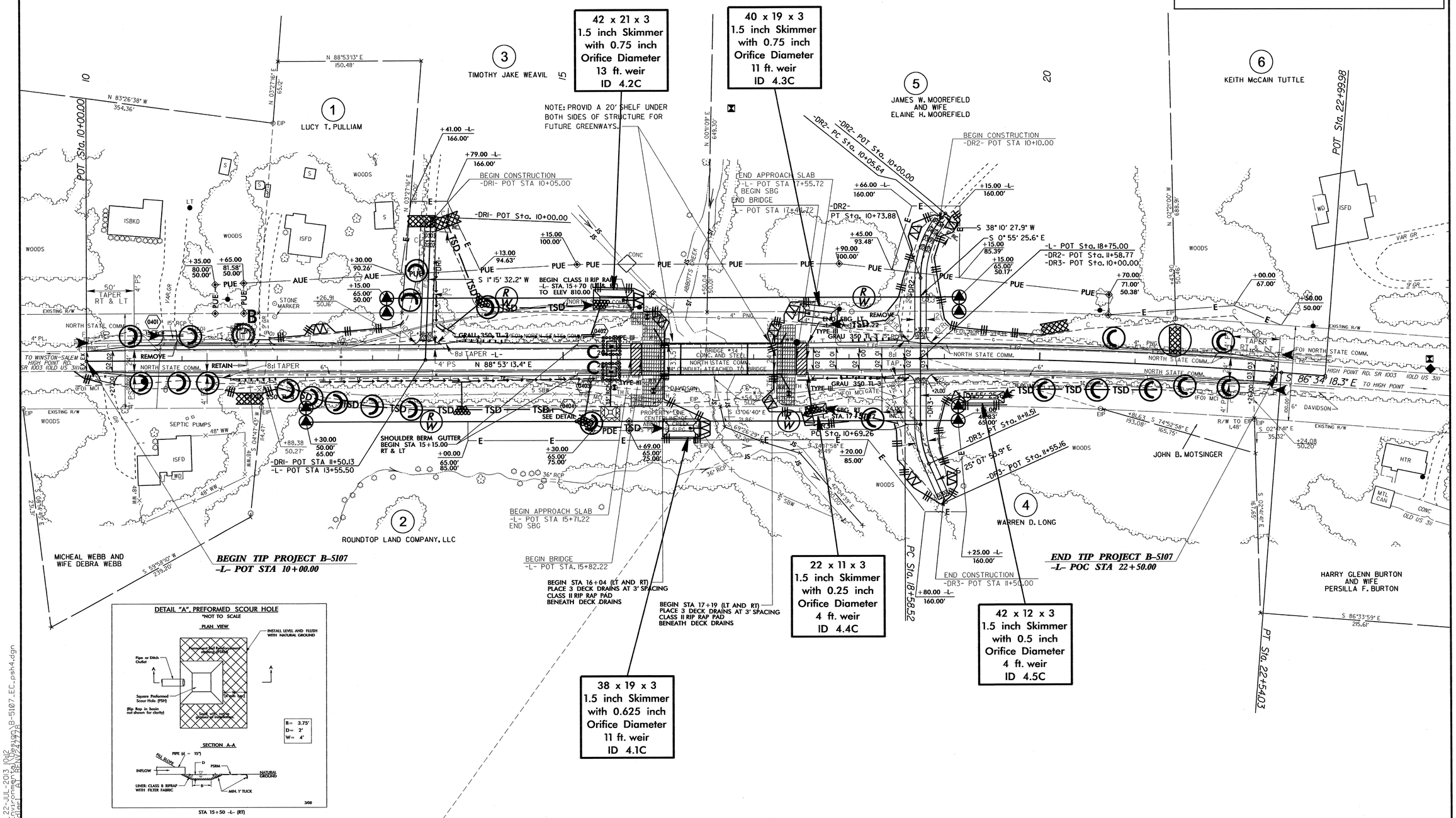

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T.I.P.: B-5107

CONTRACT: C203262

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

TIP NO.	SHEET NO.
B-5107	SIGN-1

APPROVED: RWK
DATE: 7/25/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022959 ENGINEER RONALD W. KING

SIGNING PLAN
FORSYTH COUNTY

LOCATION: BRIDGE NO. 34 OVER ABBOTT'S CREEK ON SR 1003 (HIGH POINT RD)

SUMMARY OF QUANTITIES

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT
4072000000	903	SUPPORTS, 3 LB STEEL U-CHANNEL	61	L.F.
4096000000	904	SIGN ERECTION, TYPE D	2	EA.
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	6	EA.

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS

GENERAL NOTES

- SIGNS FURNISHED BY STATE
- ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.
- 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
- ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
- THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.
- SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

SIGN NUMBER: 301,302
TYPE: D
QUANTITY: 2
SIGN WIDTH: 3'-0"
HEIGHT: 2'-0"
TOTAL AREA: 6.0 Sq.Ft.
BORDER TYPE: FLUSH
RECESS: 0"
WIDTH: 1"
RADII: 3"
NO. Z BARS:
LENGTH:

BACKG COLOR: Green
COPY COLOR: White

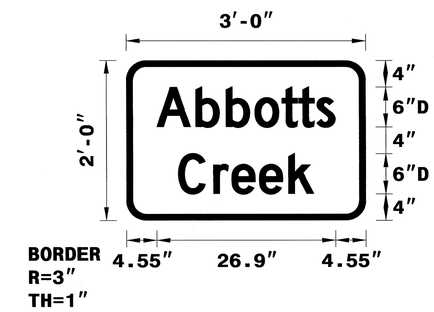
SYMBOL	X	Y	WID	HT

MAT'L: 0.125" (3.2 mm) ALUMINUM

USE NOTES: 1,2

1. Legend and border(except those that are colored black) shall be direct applied Grade C sheeting.
2. Background shall be Grade C reflective sheeting.

DESIGN BY: S.JOHNS
PROJECT ID: B-5107
CHECKED BY: S.KUNZ
DIV: 9
DATE: Jul 23, 2013



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter locations are panel edge to lower left corner

								Series/Size Text Length
A	b	b	o	t	t	s		D 2000
4.6	10.4	15	19.3	23.4	25.9	28.6		26.9
C	r	e	e	k				D 2000
7.8	13.1	15.8	20	24.4				20.4

FILENAME: B5107_Sgn_SGN

NORTH CAROLINA D.O.T. SIGN DETAIL

PLAN PREPARED BY: N.C.D.O.T. SIGNING AND DELINEATION UNIT

SUSAN B. KUNZ — SIGNING & DELINEATION REGIONAL ENGINEER

STACEY W. JOHNS — SIGNING & DELINEATION DESIGN ENGINEER

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROJECT NOTES

1	DISPOSAL OF SIGN SYSTEM, U-CHANNEL

INDEX

SHEET NO.	DESCRIPTION
SIGN-1	TITLE SHEET, SIGN DESIGN, & NOTES
SIGN-2	SIGN DETAIL SHEET

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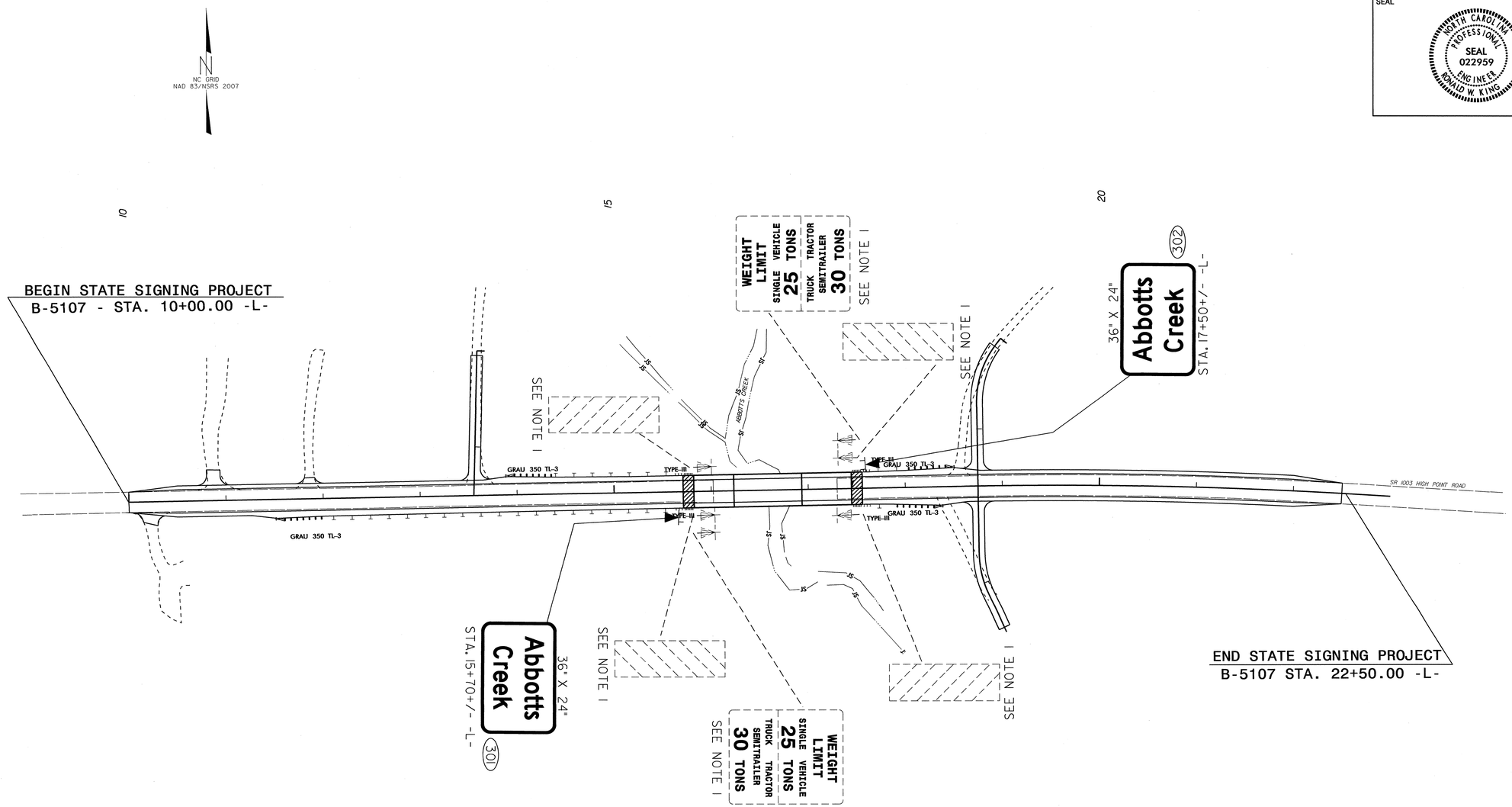
sjohns AT TEZ74911

TIP NO.	SHEET NO.
B-5107	SIGN-2

APPROVED: RWK
DATE: 7/25/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022959 ENGINEER RONALD W. KING



PAY ITEM NOTES

1	DISPOSAL OF SIGN SYSTEM, U-CHANNEL

SIGN DETAIL SHEET

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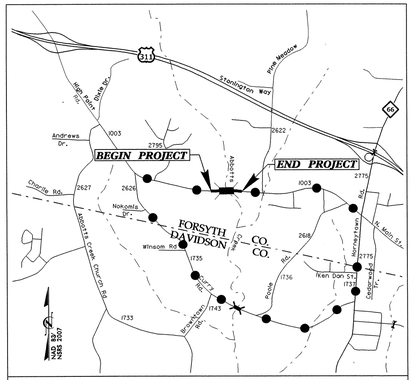
T.I.P. NO.	SHEET NO.
B–5107	UC–1

TIP PROJECT: B – 5107

See Sheet 1-A For Index of Sheets



VICINITY MAP SHOWING LOCATION OF PROJECT B–5107

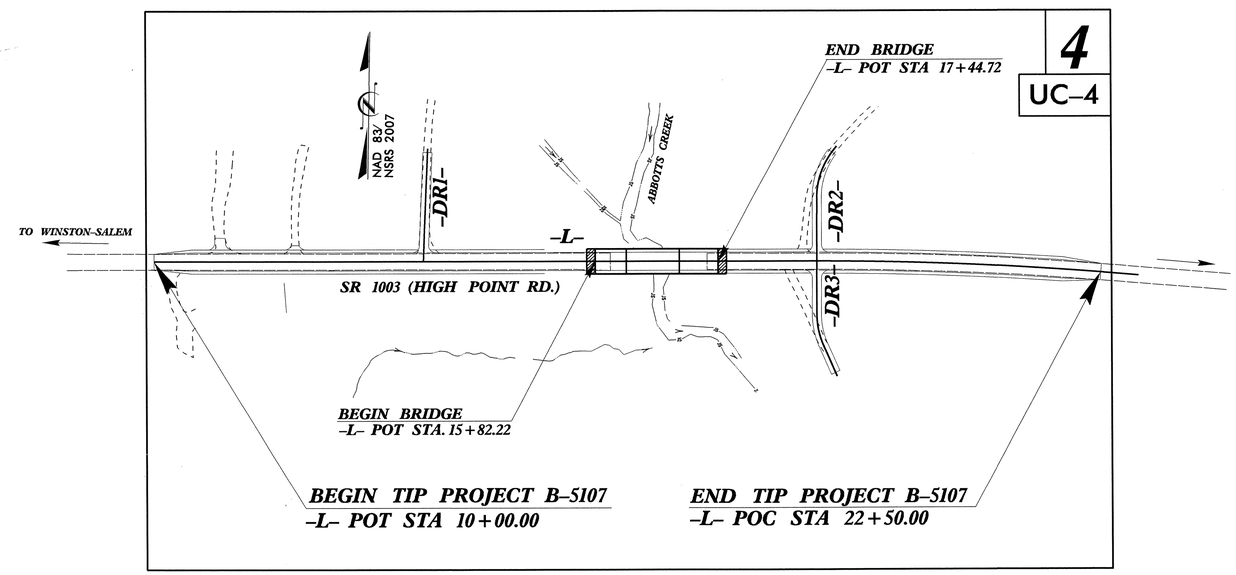
OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS
FORSYTH COUNTY

LOCATION: BRIDGE NO. 34 OVER ABBOTT'S CREEK ON SR1003 (HIGH POINT RD.)

TYPE OF WORK: UTILITIES



GRAPHIC SCALES

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PLANS

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC–1	TITLE SHEET
UC–2	UTILITY SYMBOLOGY
UC–3	NOTES
UC–3A	DETAILS
UC–4	UTILITY CONSTRUCTION SHEETS
UC–5	PROFILE SHEETS

WATER AND SEWER OWNERS ON PROJECT

(1) DAVIDSON WATER , INC.

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 18832 ENGINEER JAMES S. MCKEE
8/2/13

PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING

1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E.	UTILITIES SECTION ENGINEER
Steve McKee, P.E.	UTILITIES SQUAD LEADER PROJECT ENGINEER
Jamshid Hafshejani	UTILITIES PROJECT DESIGNER

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PROJECT REFERENCE NO.	SHEET NO.
B-5107	UC-2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

- Water Line (Sized as Shown) — 12" WL
- 11¼ Degree Bend
- 22½ Degree Bend
- 45 Degree Bend
- 90 Degree Bend
- Plug
- Tee
- Cross
- Reducer
- Gate Valve — GV
- Butterfly Valve — BV
- Tapping Valve — TGV
- Line Stop — LS
- Line Stop with Bypass — LS/BP
- Blow Off — BO
- Fire Hydrant — PFH
- Relocate Fire Hydrant — RFH
- Remove Fire Hydrant — REM FH
- Water Meter — PWM
- Relocate Water Meter — RWM
- Remove Water Meter — REM WM
- Water Pump Station — PS(W)
- RPZ Backflow Preventer — PBPZ
- DCV Backflow Preventer — PBFP
- Relocate RPZ Backflow Preventer — RBPZ
- Relocate DCV Backflow Preventer — RBFP

PROPOSED SEWER SYMBOLS

- Gravity Sewer Line (Sized as Shown) — 12" SS
- Force Main Sewer Line (Sized as Shown) — 12" FSS
- Manhole (Sized per Note)
- Sewer Pump Station — PS(SS)

PROPOSED MISCELLANOUS UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Telephone Pedestal — TEL PED
- Utility Line by Others (Type as Shown) — PROP O/H POWL LINES
- Trenchless Installation — 12" TL INSTALL
- Encasement by Open Cut — 24" ENCAS BY OC
- Encasement — 24" ENCASEMENT
- Thrust Block
- Air Release Valve — AR
- Utility Vault — UV
- Concrete Pier — CP
- Steel Pier — SP
- Plan Note — NOTE
- Pay Item Note — PAY ITEM

EXISTING UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Utility Pole
- Utility Pole with Base
- H-Frame Pole
- Power Transmission Line Tower
- Water Manhole
- Power Manhole
- Telephone Manhole
- Sanitary Sewer Manhole
- Hand Hole for Cable
- Power Transformer
- Telephone Pedestal
- CATV Pedestal
- Gas Valve
- Gas Meter
- Located Miscellaneous Utility Object
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.
- *Underground Power Line — P
- *Underground Telephone Cable — T
- *Underground Telephone Conduit — TC
- *Underground Fiber Optics Telephone Cable — T FO
- *Underground TV Cable — TV
- *Underground Fiber Optics TV Cable — TV FO
- *Underground Gas Pipeline — G
- Aboveground Gas Pipeline — A/G Gas
- *Underground Water Line — W
- Aboveground Water Line — A/G Water
- *Underground Gravity Sanitary Sewer Line — SS
- Aboveground Gravity Sanitary Sewer Line — A/G Sanitary Sewer
- *Underground SS Forced Main Line — FSS
- Underground Unknown Utility Line — ?UTL
- SUE Test Hole
- Water Meter
- Water Valve
- Fire Hydrant
- Sanitary Sewer Cleanout

*For Existing Utilities

- Utility Line Drawn from Record (Type as Shown) — W
- Designated Utility Line (Type as Shown) — W

REV: 2/1/2012

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PROJECT REFERENCE NO.	SHEET NO.
B-5107	UC-3
DESIGNED BY: JH	
DRAWN BY: JH	
CHECKED BY: JSM	
APPROVED BY: JSM	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 6832 ENGINEER JAMES S. MCKEE 8/2/13

UTILITY CONSTRUCTION

UTILITY CONSTRUCTION

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2012.

2. THE EXISTING UTILITIES BELONG TO DAVIDSON WATER , INC .

3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES, DIVISION OF ENVIRONMENTAL HEALTH. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF WATER QUALITY. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.

4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.

5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPROTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITONAL COST TO THE DEPARTMENT.

7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.

8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.

9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

PROJECT SPECIFIC NOTES:

1. ALL PROPOSED WATER LINE SHALL BE D.I.R.J. (DUCTILE IRON RESTRAINED JOINT) PIPE.

2. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS CONTRACTOR'S RESPONSIBILITY TO HAVE BORE DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO RIVER, WETLANDS, OR BUFFER ZONES.

LIST OF STANDARD DRAWINGS

1515.01 WATER METER

1515.02 FIRE HYDRANT

5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
B-5107	UC-3A

DESIGNED BY: JH
DRAWN BY: JH
CHECKED BY: JSM
APPROVED BY: JSM
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

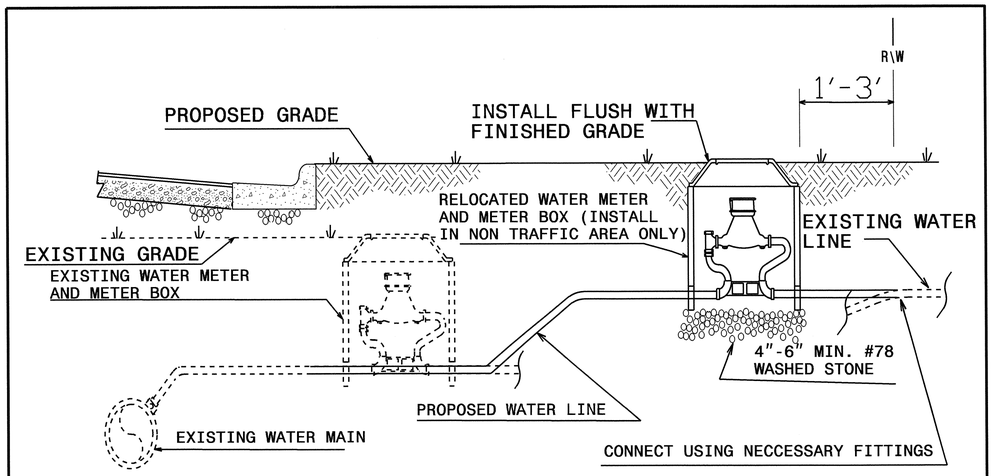
NORTH CAROLINA PROFESSIONAL SEAL 16832 ENGINEER JAMES S. MOORE 8/2/13

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

MAXIMUM TRENCH WIDTH
AT TOP OF PIPE

NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)	NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)
4	28	20	44
6	30	24	48
8	32	30	54
10	34	36	60
12	36	42	66
14	38	48	72
16	40	54	78
18	42		



NOTES:

1. RELOCATION SHALL INCLUDE THE REMOVAL AND INSTALLATION AT THE APPROPRIATE LOCATION OF THE WATER METER, METER SETTER AND YOKE, METER VALVES, AND METER BOX WITH LID.
2. THE NEW WATER SERVICE LINE SHALL BE OF THE SAME TYPE AND GRADE AS THE EXISTING WATER SERVICE LINE UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.
3. THE NEW WATER SERVICE LINE SHALL BE INSTALLED WITH A MINIMUN OF 36" COVER BELOW FINISHED GRADE.

WATER METER RELOCATION DETAIL

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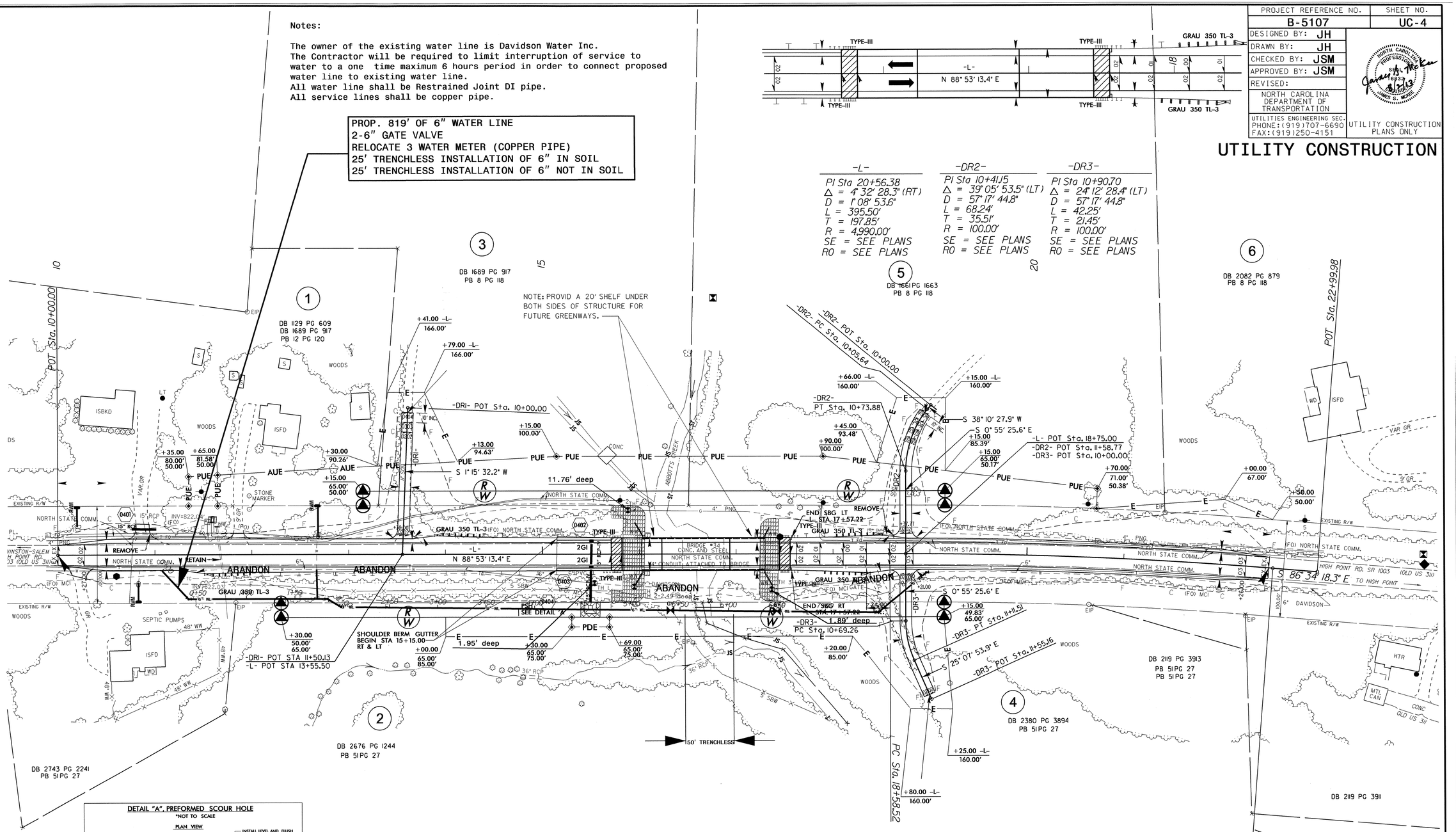
PROJECT REFERENCE NO.	SHEET NO.
B-5107	UC-4
DESIGNED BY: JH	
DRAWN BY: JH	
CHECKED BY: JSM	
APPROVED BY: JSM	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

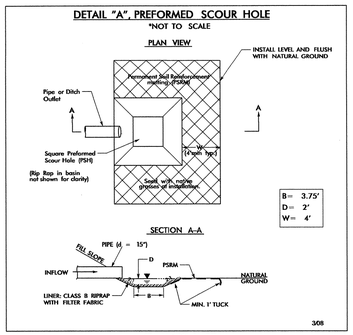
UTILITY CONSTRUCTION

Notes:

The owner of the existing water line is Davidson Water Inc.
The Contractor will be required to limit interruption of service to water to a one time maximum 6 hours period in order to connect proposed water line to existing water line.
All water line shall be Restrained Joint DI pipe.
All service lines shall be copper pipe.

PROP. 819' OF 6" WATER LINE
2-6" GATE VALVE
RELOCATE 3 WATER METER (COPPER PIPE)
25' TRENCHLESS INSTALLATION OF 6" IN SOIL
25' TRENCHLESS INSTALLATION OF 6" NOT IN SOIL





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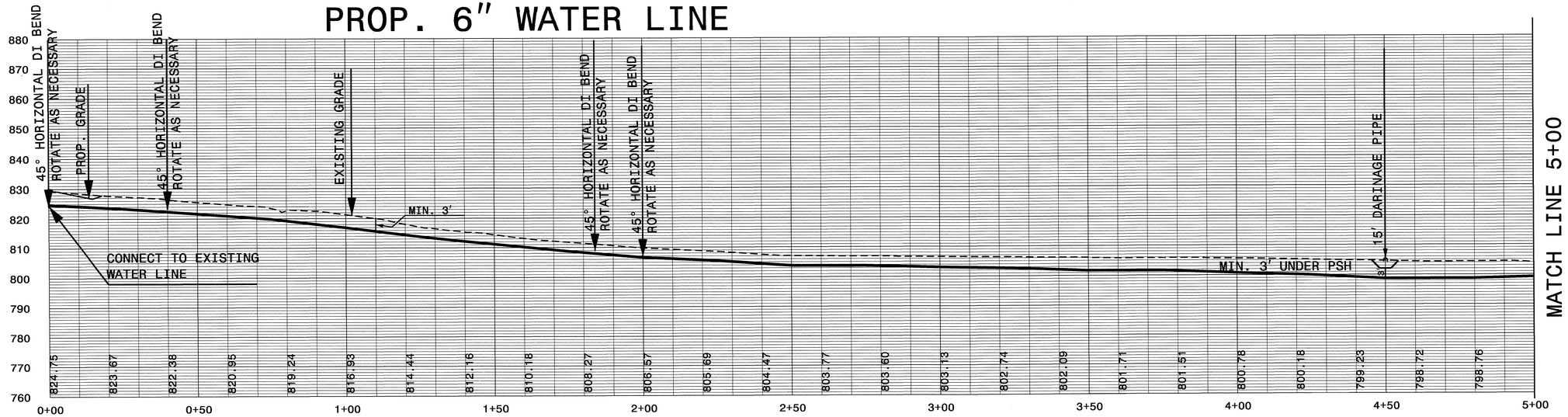
PROJECT REFERENCE NO.	SHEET NO.
B-5107	UC-5
DESIGNED BY: JH	
DRAWN BY: JH	
CHECKED BY: JSM	
APPROVED BY: JSM	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

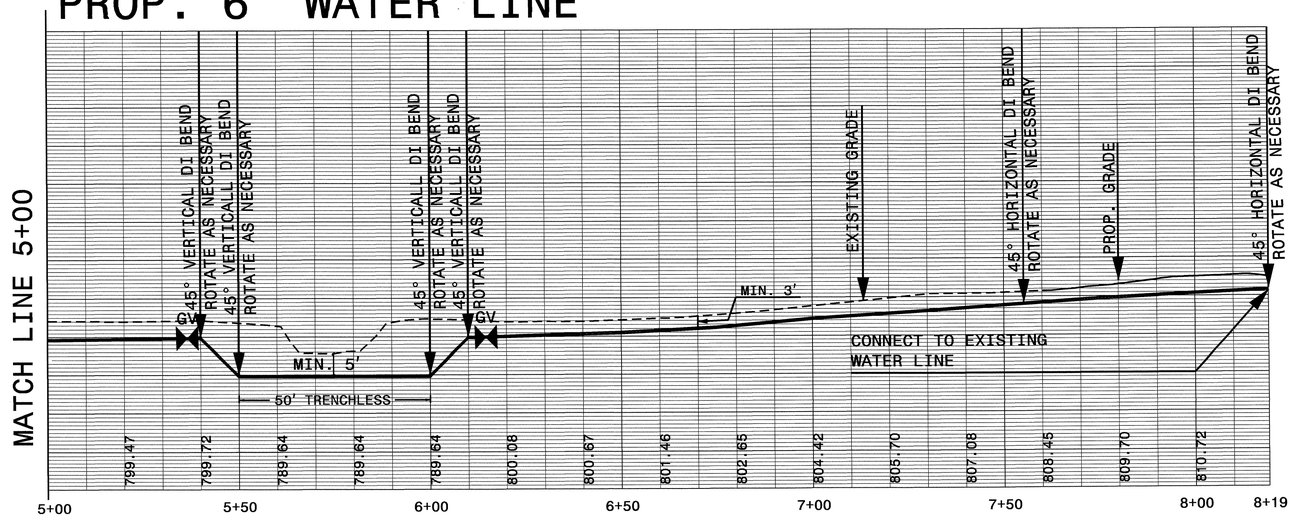
NORTH CAROLINA PROFESSIONAL SEAL 16832 ENGINEER JAMES S. MOREE 8/6/13

UTILITY CONSTRUCTION

PROP. 6" WATER LINE



PROP. 6" WATER LINE



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09/08/99

TIP PROJECT: B-5107

CONTRACT:

See Sheet 1-A For Index of Sheets

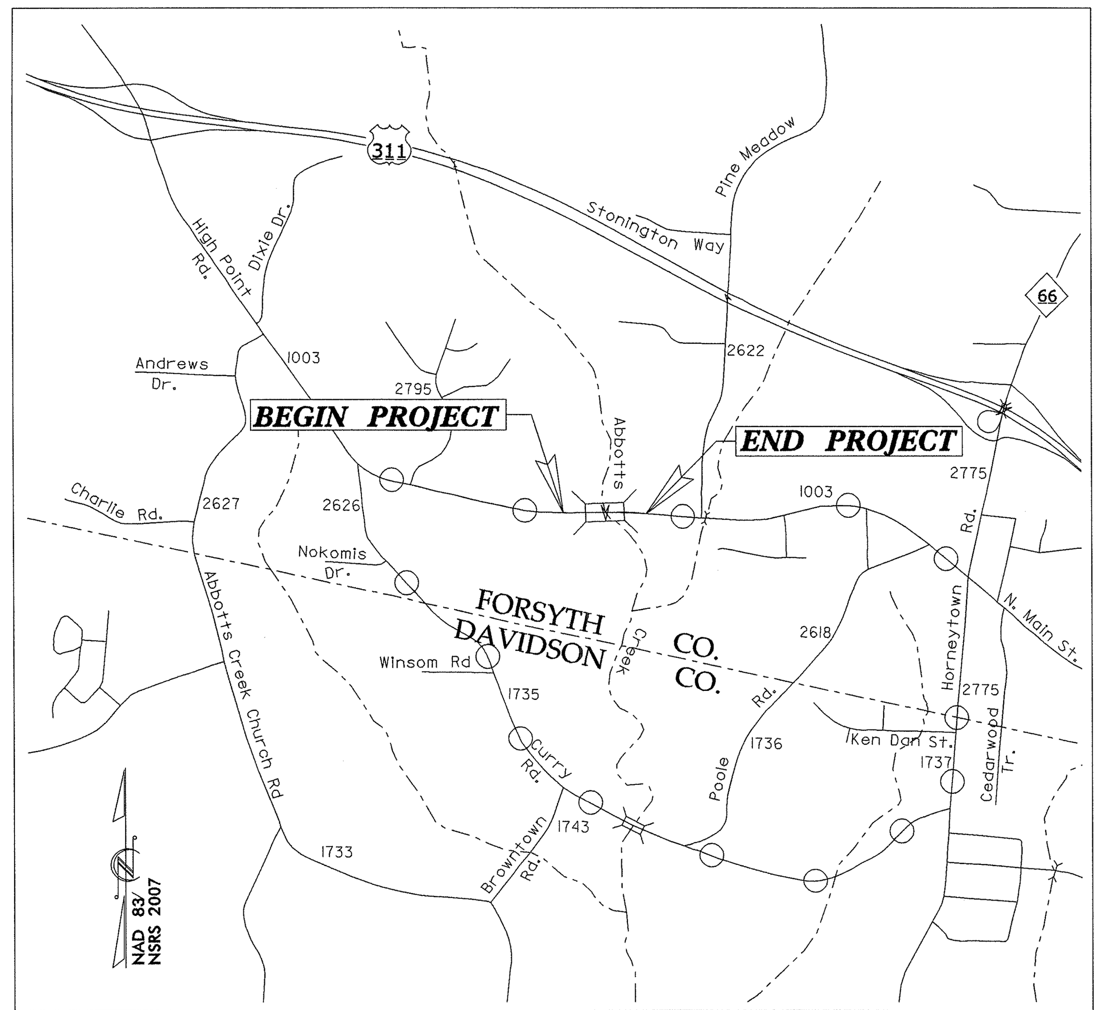
T.I.P. NO.	SHEET NO.
B-5107	UO-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS
FORSYTH COUNTY

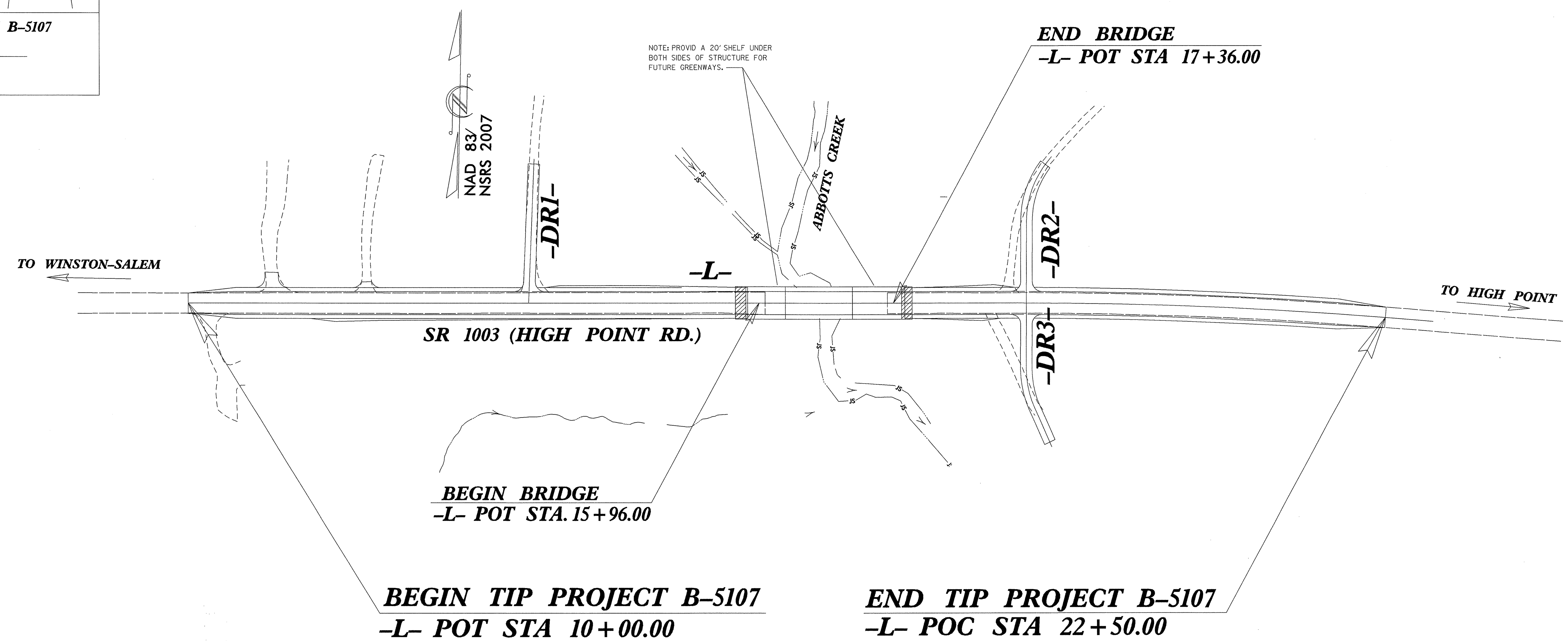
LOCATION: BRIDGE NO. 34 OVER ABBOTT'S CREEK ON SR 1003 (HIGH POINT RD.)

TYPE OF WORK: UTILITY RELOCATIONS



VICINITY MAP SHOWING LOCATION OF PROJECT B-5107

OFFSITE DETOUR



GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UTILITIES BY OTHERS PLAN SHEET

UTILITY OWNERS ON PROJECT

(A) DUKE ENERGY (POWER DISTRIBUTION)

(B) NORTH STATE COMMUNICATIONS (TELEPHONE)

(C) TIME WARNER CABLE (CATV)

(D) PIEDMONT NATURAL GAS (GAS)

(E) VERIZON (TELEPHONE)

Prepared by:

WETHERILL ENGINEERING

559 JONES FRANKLIN ROAD
SUITE 164
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

JOHN D. SCHRINER, PLS
UTILITY COORDINATOR

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING

1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E. — UTILITIES SECTION ENGINEER
Steve McKee, P.E. — UTILITIES SQUAD LEADER PROJECT ENGINEER
Jamshid Hafshejani — UTILITIES PROJECT DESIGNER

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-5107	U0-2

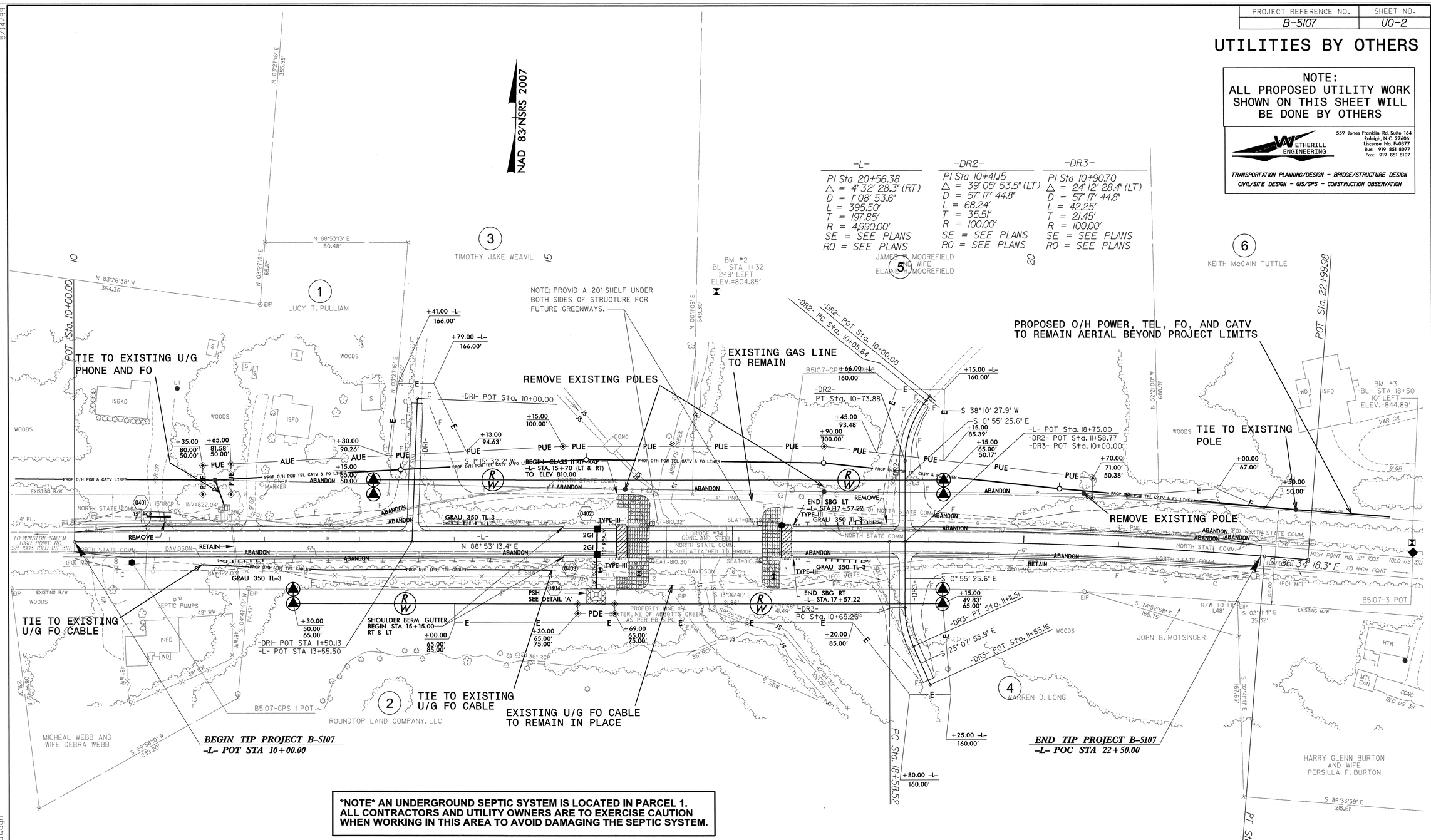
UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

-L-	-DR2-	-DR3-
PI Sta 20+56.38	PI Sta 10+41.15	PI Sta 10+90.70
Δ = 4° 32' 28.3" (RT)	Δ = 39° 05' 53.5" (LT)	Δ = 24° 12' 28.4" (LT)
D = 1° 08' 53.6"	D = 57° 17' 44.8"	D = 57° 17' 44.8"
L = 395.50'	L = 68.24'	L = 42.25'
T = 197.85'	T = 35.51'	T = 21.45'
R = 4,990.00'	R = 100.00'	R = 100.00'
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS
RO = SEE PLANS	RO = SEE PLANS	RO = SEE PLANS



***NOTE* AN UNDERGROUND SEPTIC SYSTEM IS LOCATED IN PARCEL 1. ALL CONTRACTORS AND UTILITY OWNERS ARE TO EXERCISE CAUTION WHEN WORKING IN THIS AREA TO AVOID DAMAGING THE SEPTIC SYSTEM.**

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-5107	X-A

CROSS SECTION INDEX

	X-SECTION EARTHWORK SUMMARY	X-B
-L-	10+00.00 TO 22+50.00	X-1 - X-8
-DR1-	10+00.00 TO 11+50.00	X-9 - X-10
-DR2-	10+00.00 TO 11+50.00	X-11 - X-12
-DR3-	10+00.00 TO 11+50.00	X-13 - X-14

PROJ. REFERENCE NO.	SHEET NO.
B-5107	X-8

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

CROSS-SECTION SUMMARY

Approximate quantities only. Unclassified excavation, fine grading, clearing and grubbing, breaking of existing pavement and removal of existing pavement will be paid for at the lump sum price for "Grading".

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
10+00.00	0	0
10+50.00	31	4
11+00.00	61	1
11+50.00	32	10
12+00.00	2	33
12+50.00	0	135
13+00.00	0	330
13+50.00	0	454
14+00.00	0	675
14+50.00	0	944
15+00.00	0	1018
15+50.00	0	1008
15+82.22	0	640

Station Dr3	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
10+12.00	0	0
10+25.00	0	85
10+50.00	0	180
10+75.00	0	144
11+00.00	0	88
11+25.00	0	54
11+50.00	4	12

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
17+44.72	0	0
17+50.00	0	85
18+00.00	0	731
18+50.00	0	655
19+00.00	0	569
19+50.00	0	420
20+00.00	0	293
20+50.00	19	188
21+00.00	76	105
21+50.00	168	45
22+00.00	277	19
22+50.00	167	6

Station Dr1	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
10+05.00	0	0
10+25.00	0	8
10+50.00	0	64
10+75.00	0	173
11+00.00	0	288
11+38.12	0	517

Station Dr2	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
10+10.00	0	0
10+25.00	0	1
10+50.00	0	4
10+75.00	0	26
11+00.00	0	77
11+25.00	0	122
11+46.79	0	119

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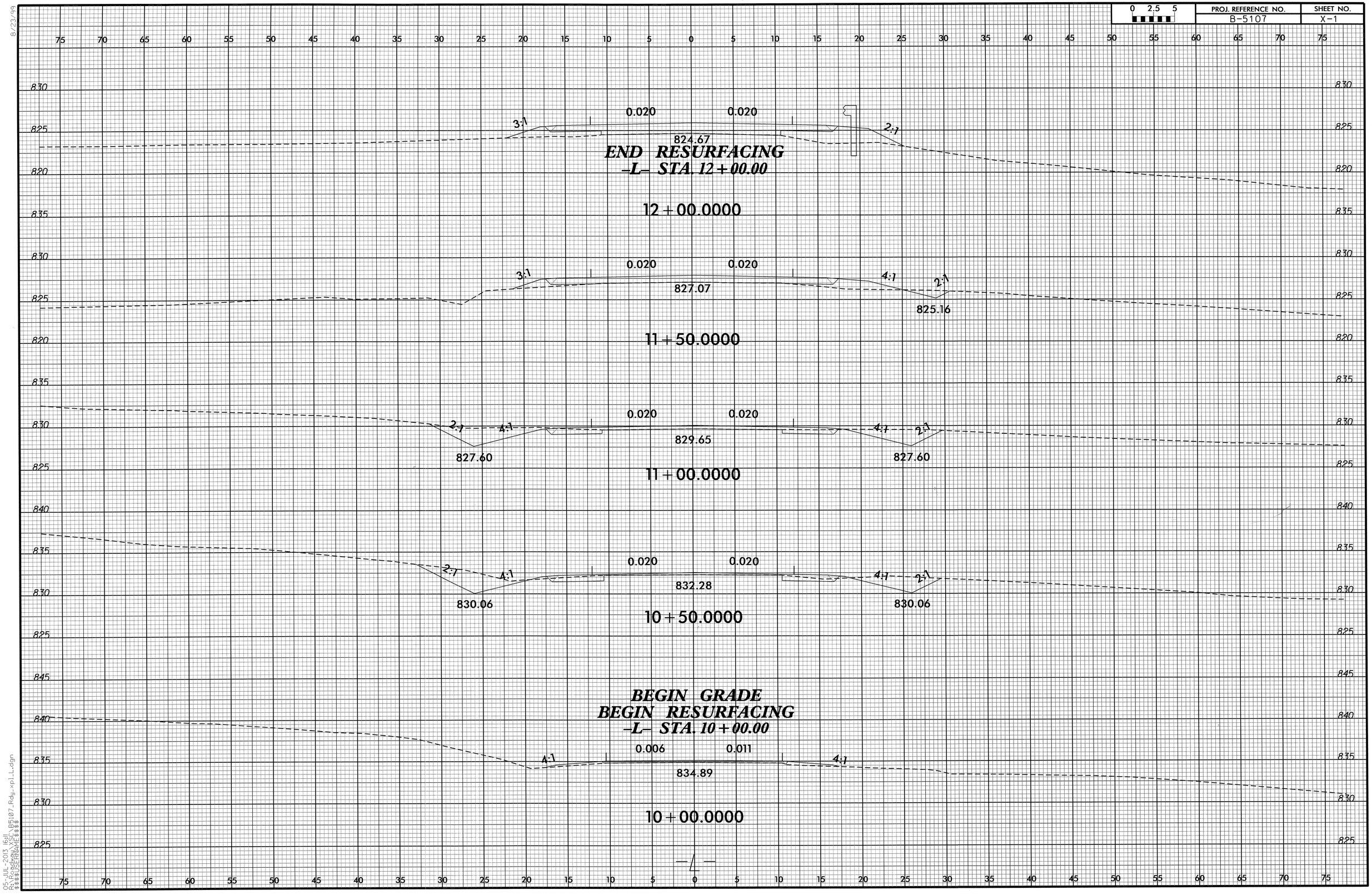

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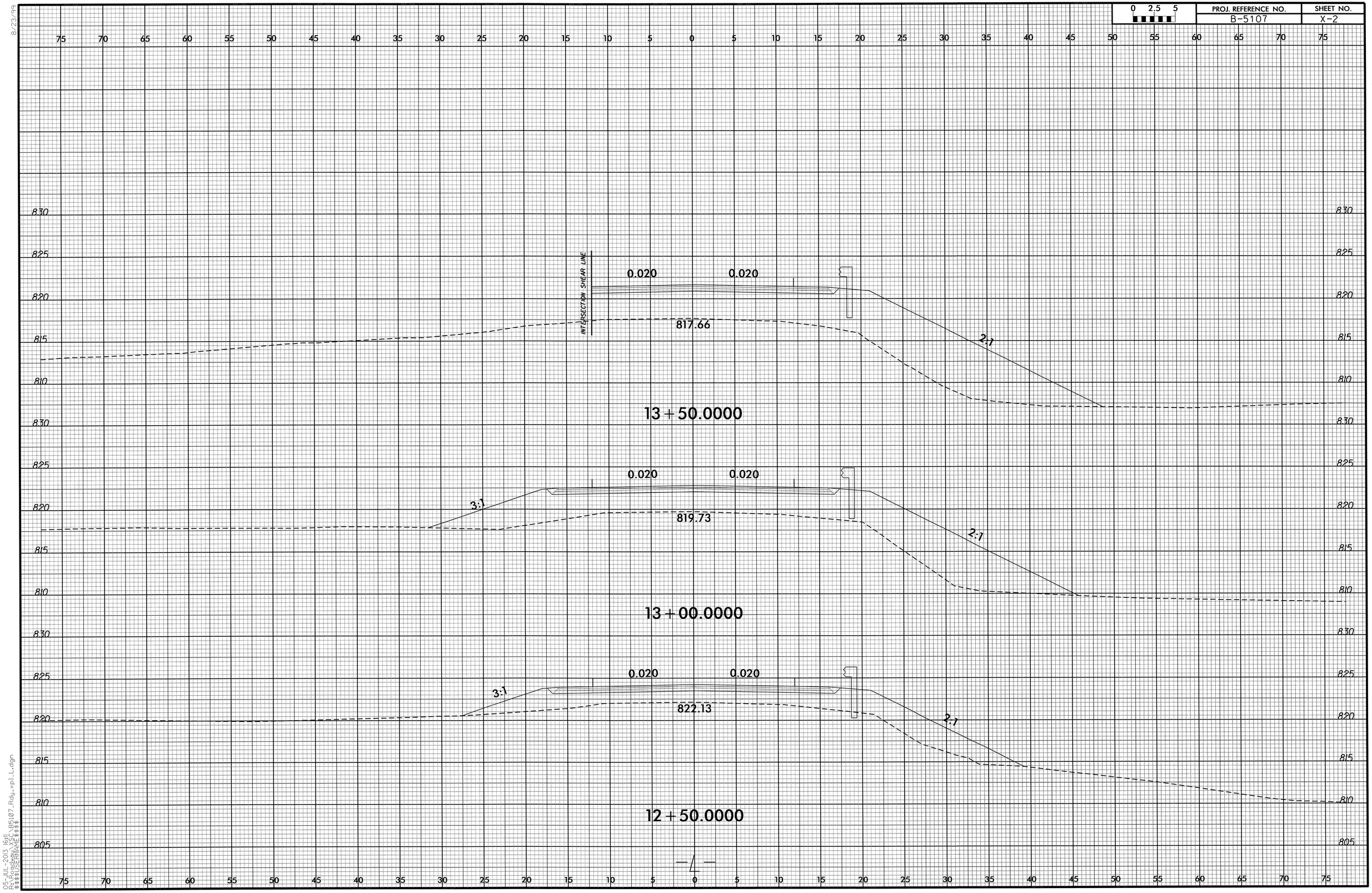

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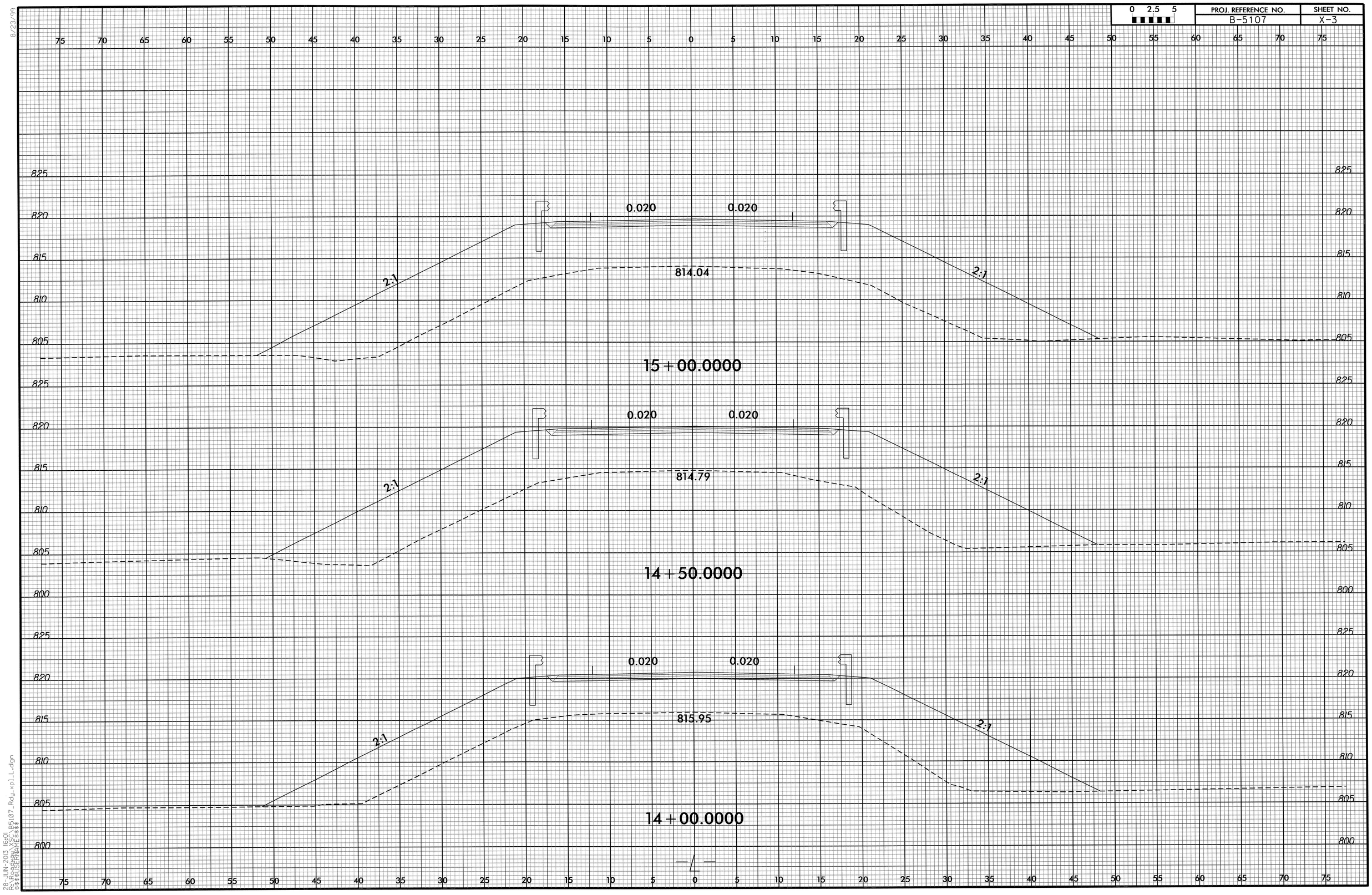

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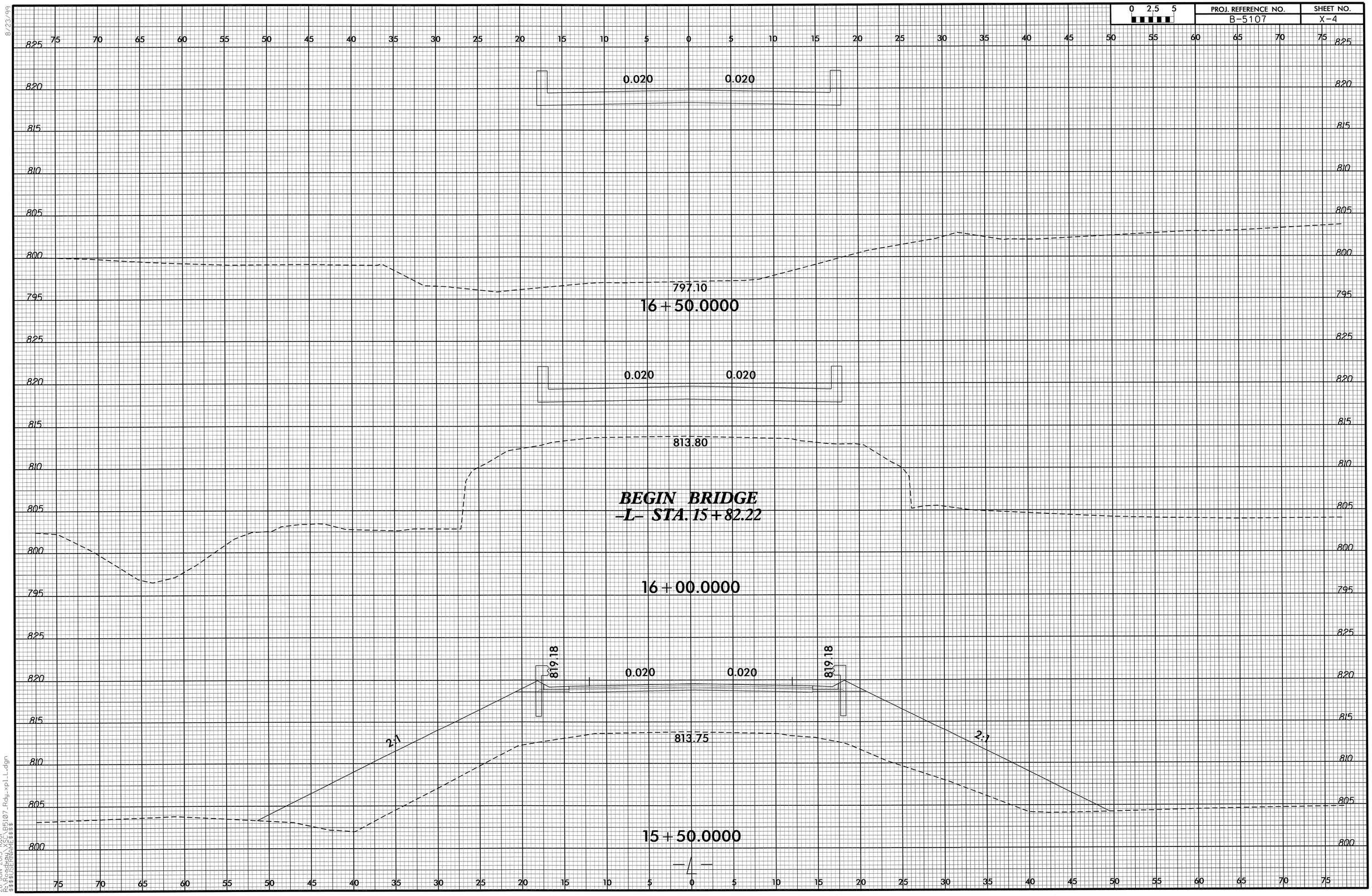

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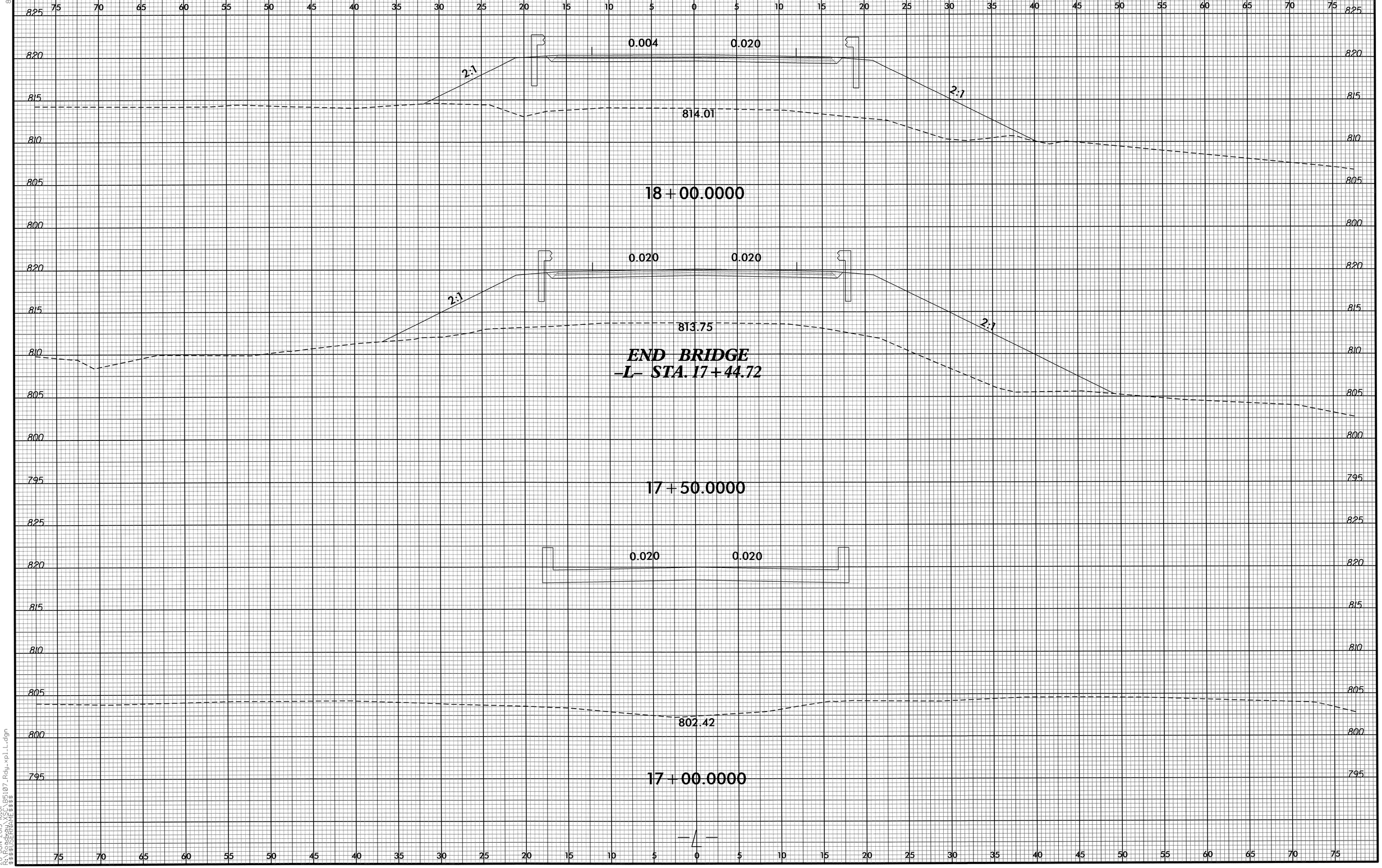

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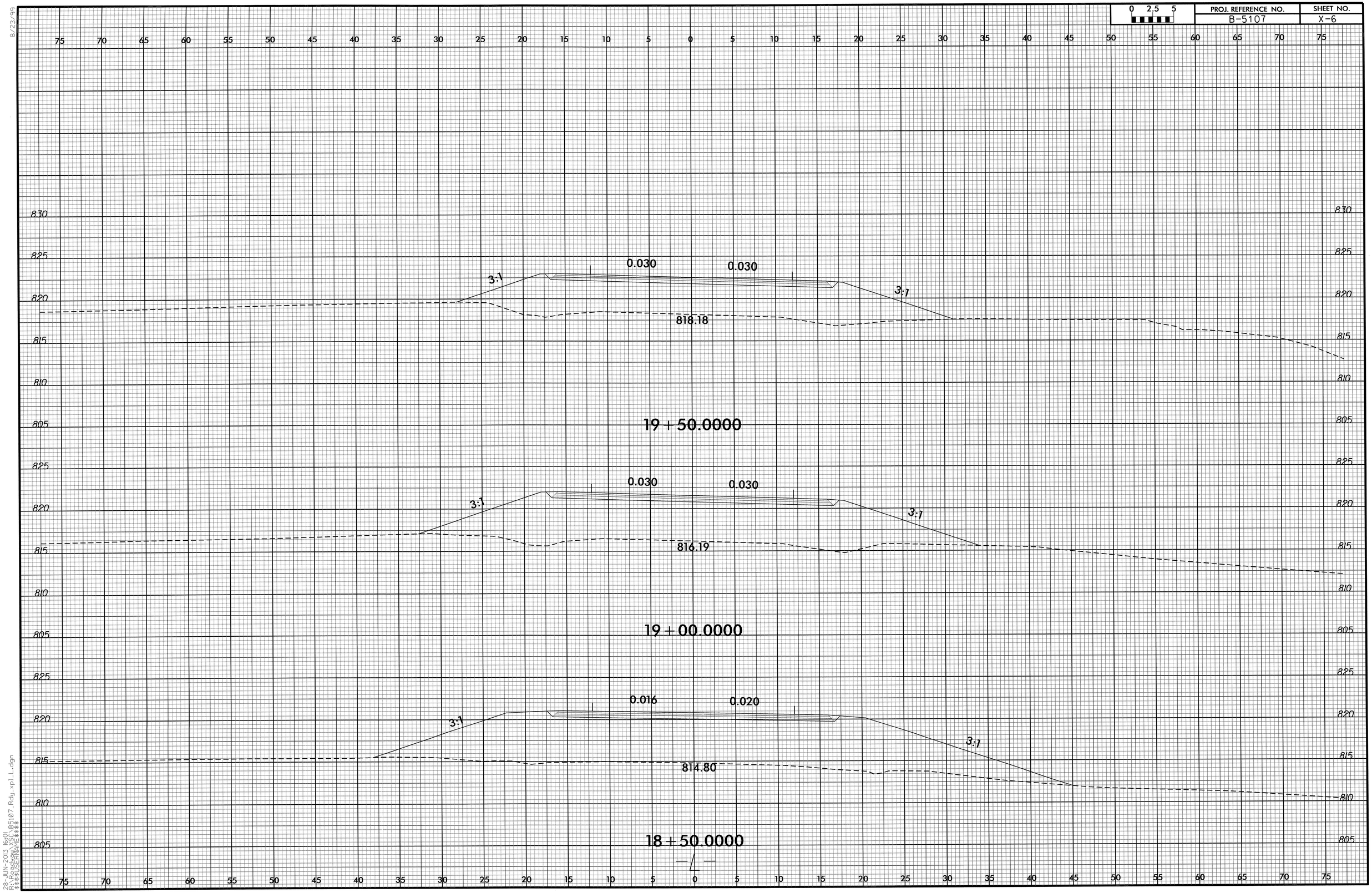

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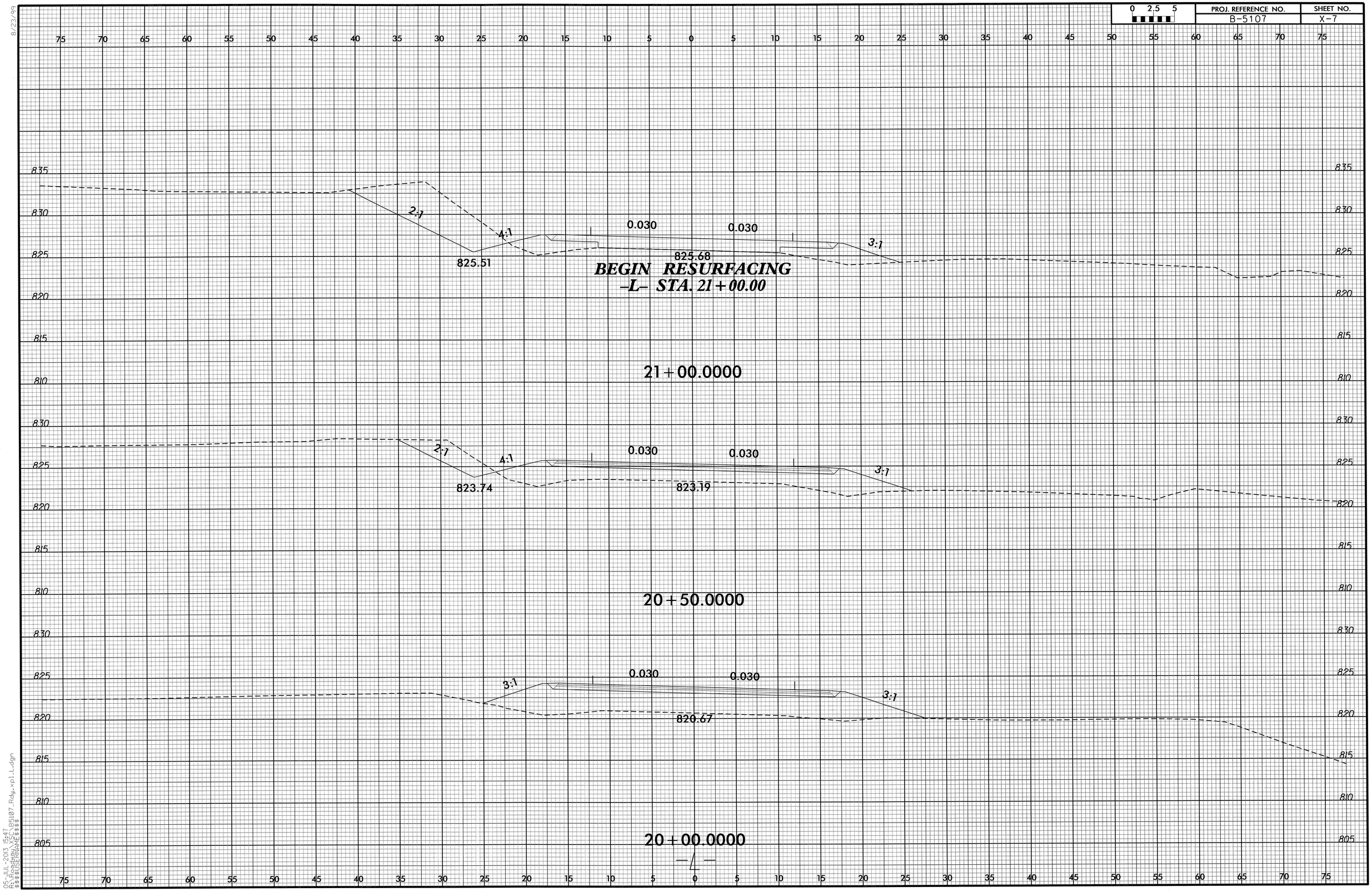

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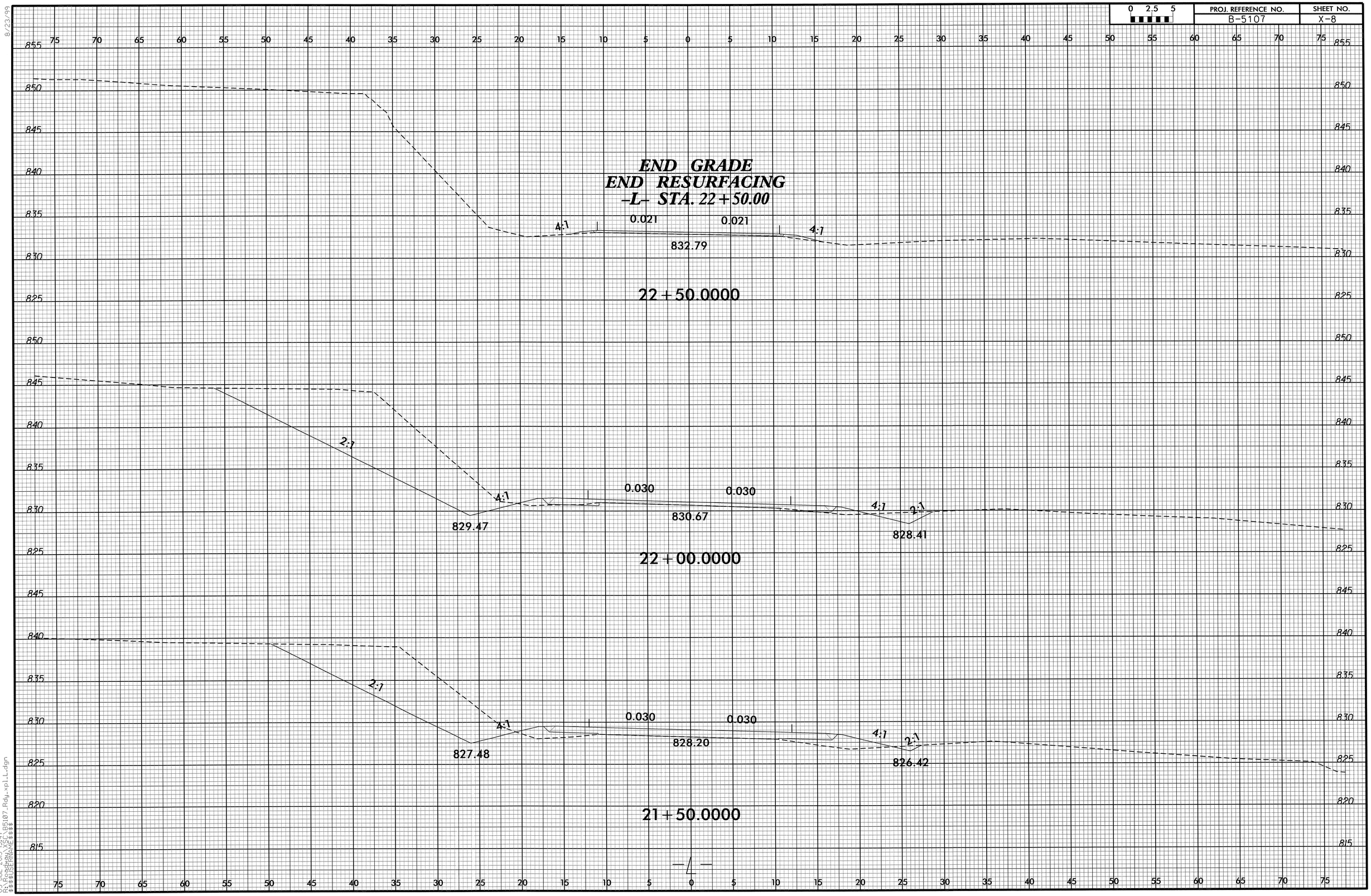

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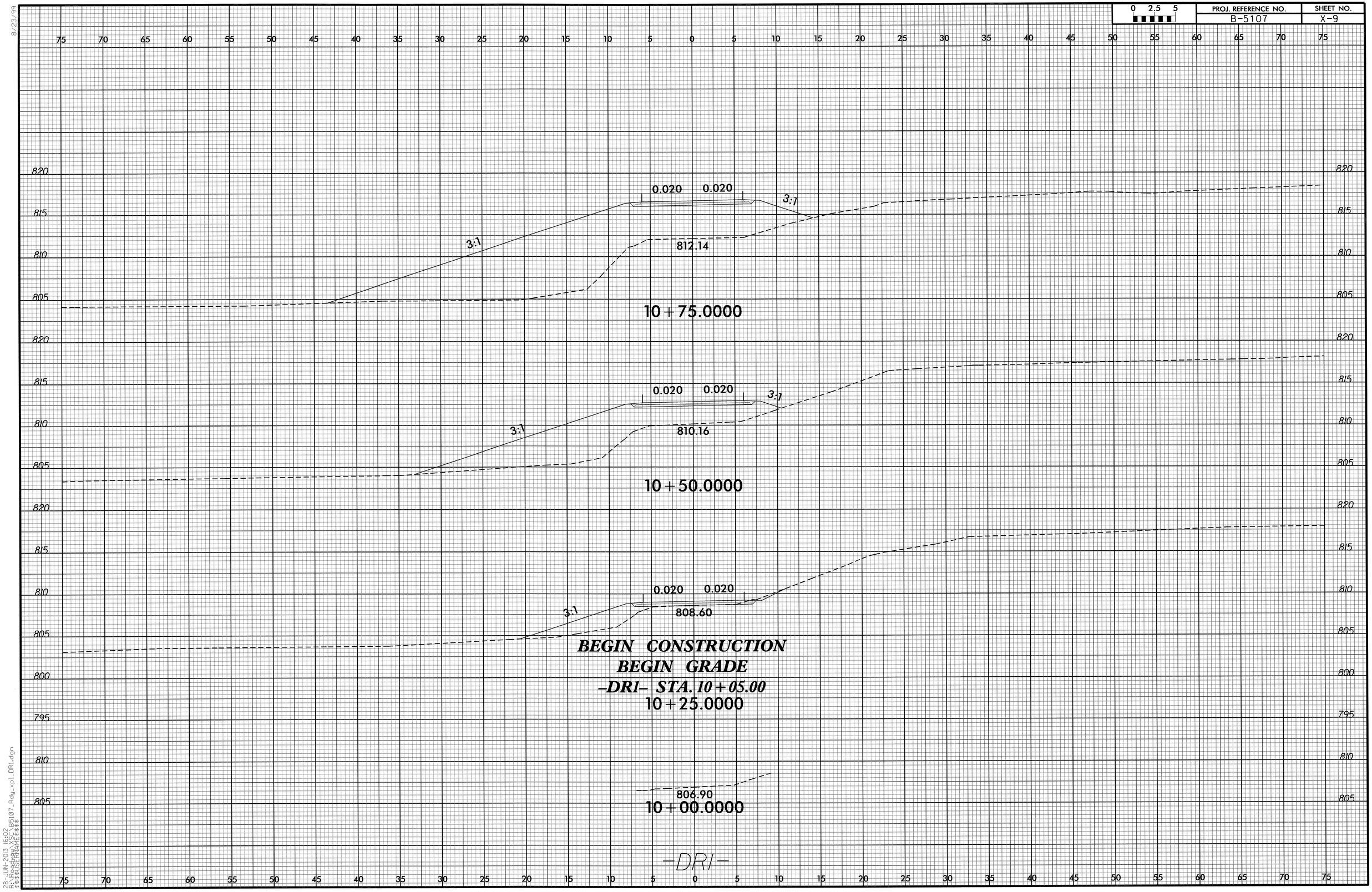

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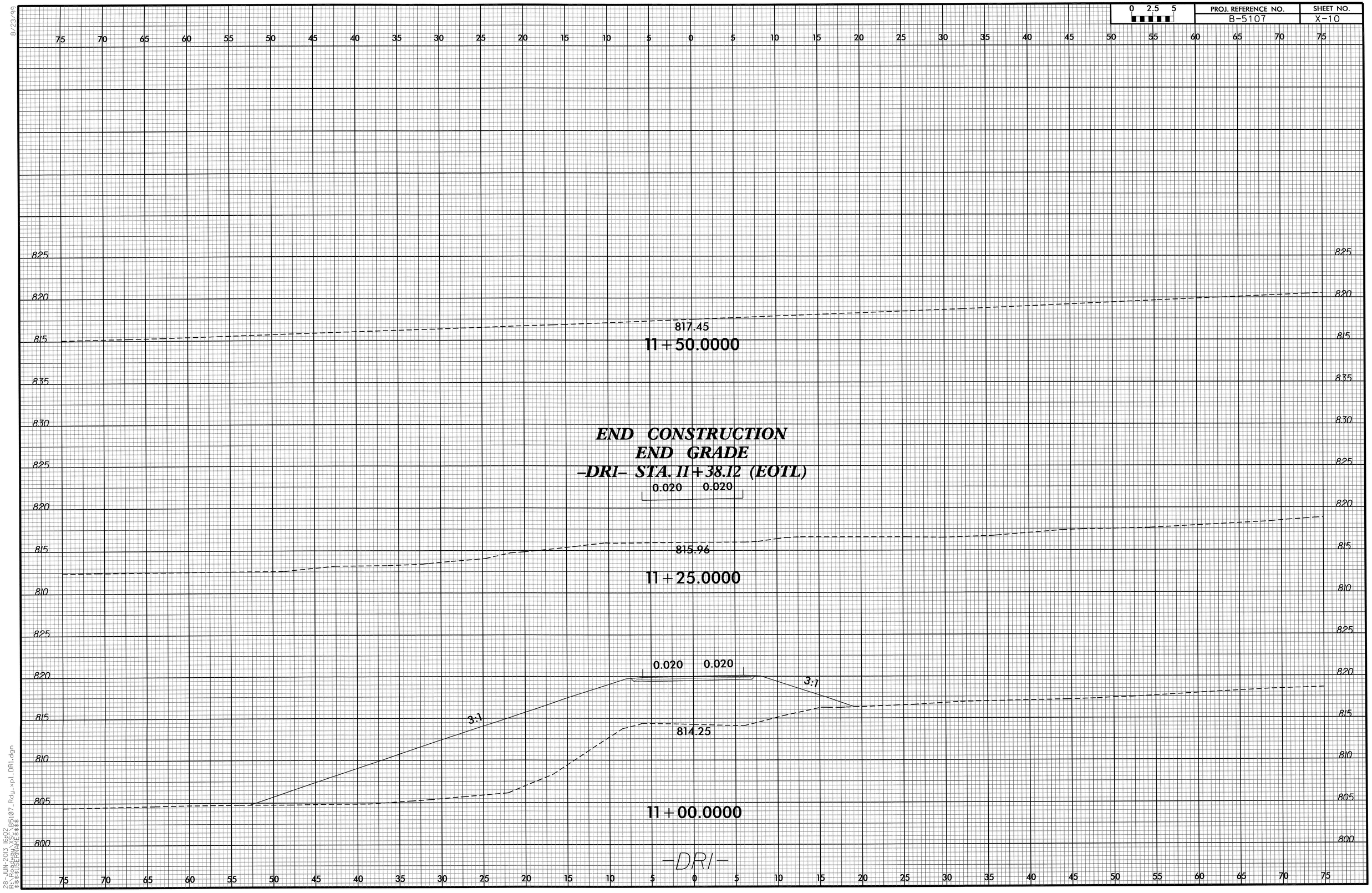

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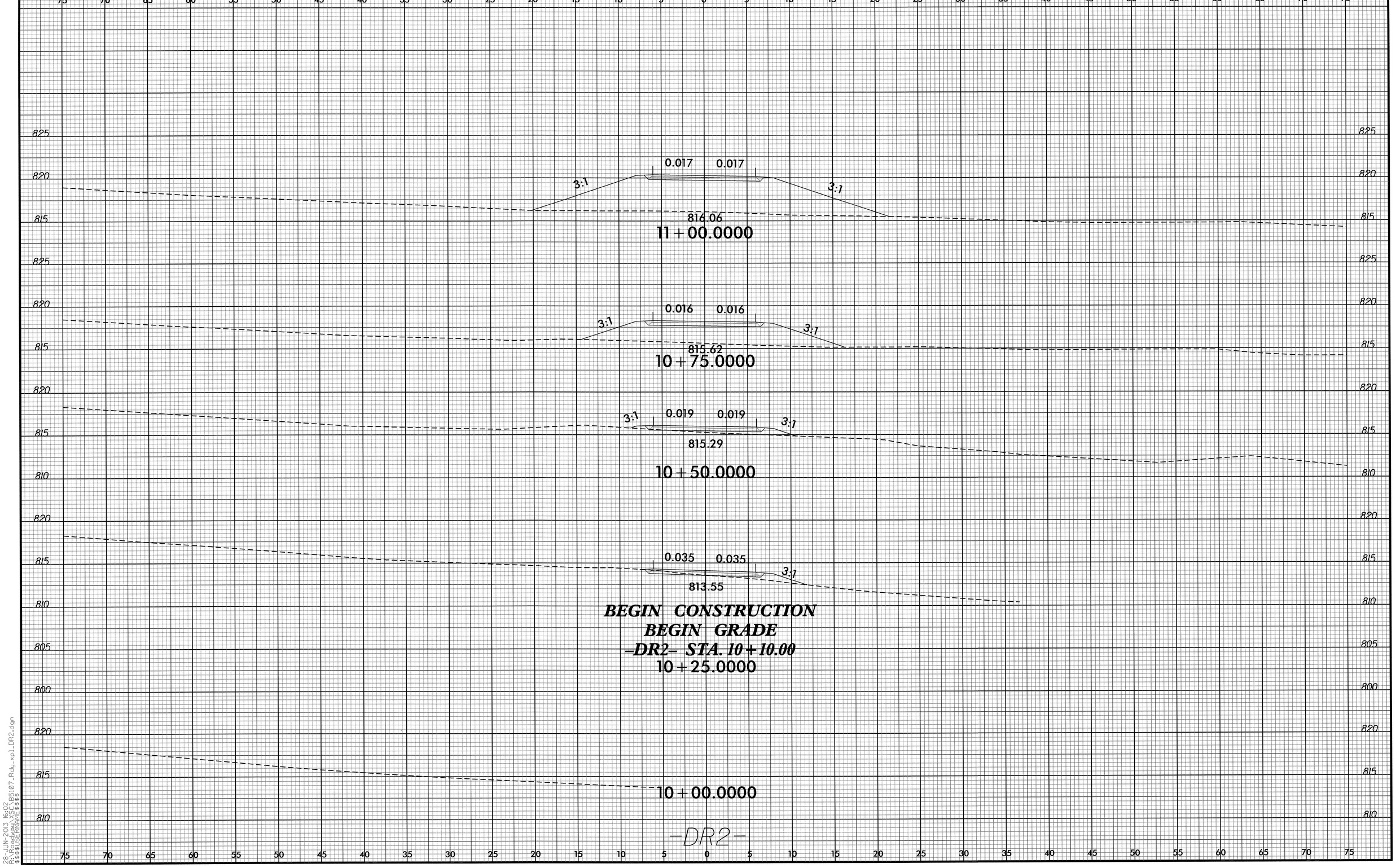

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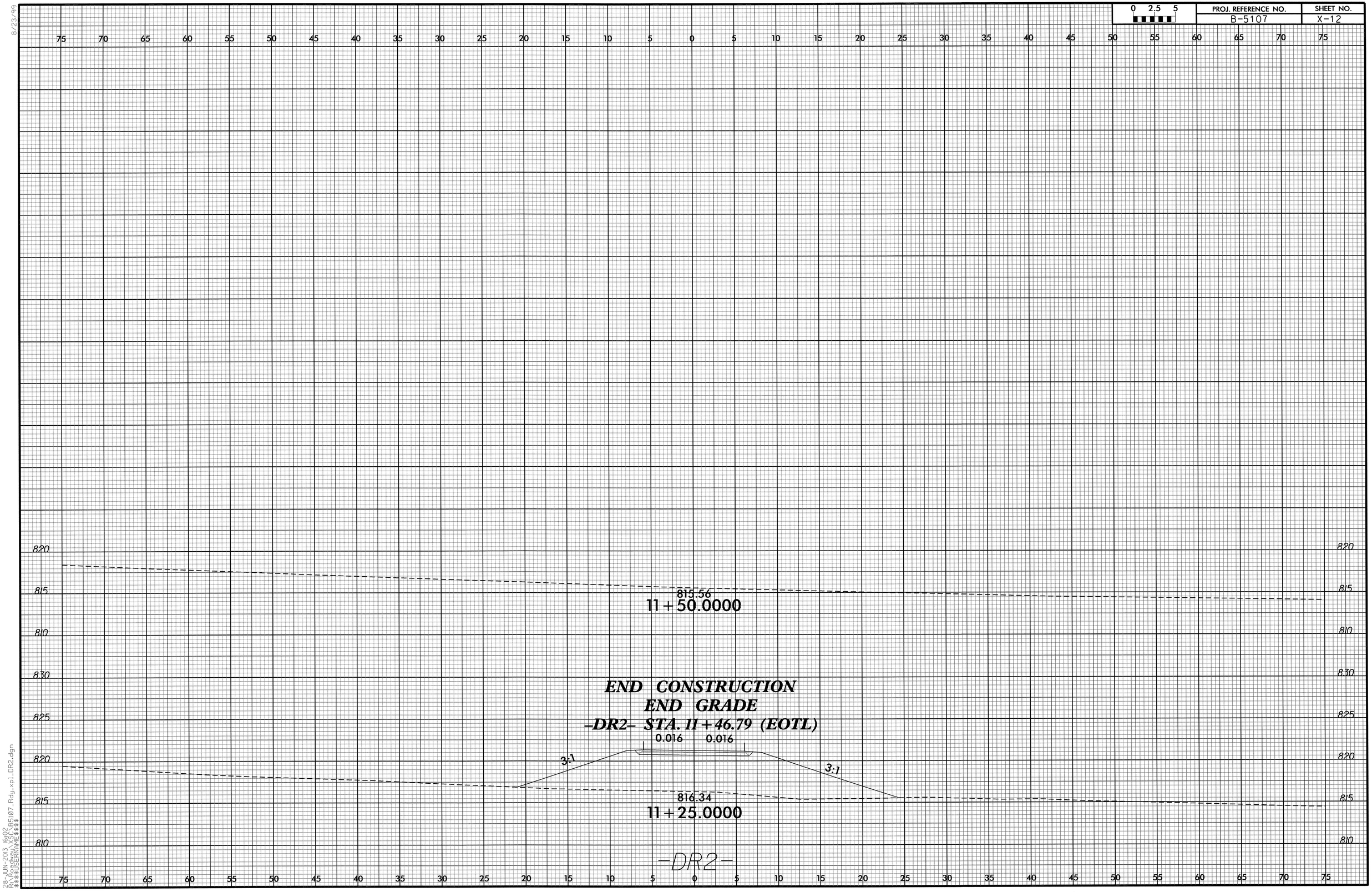

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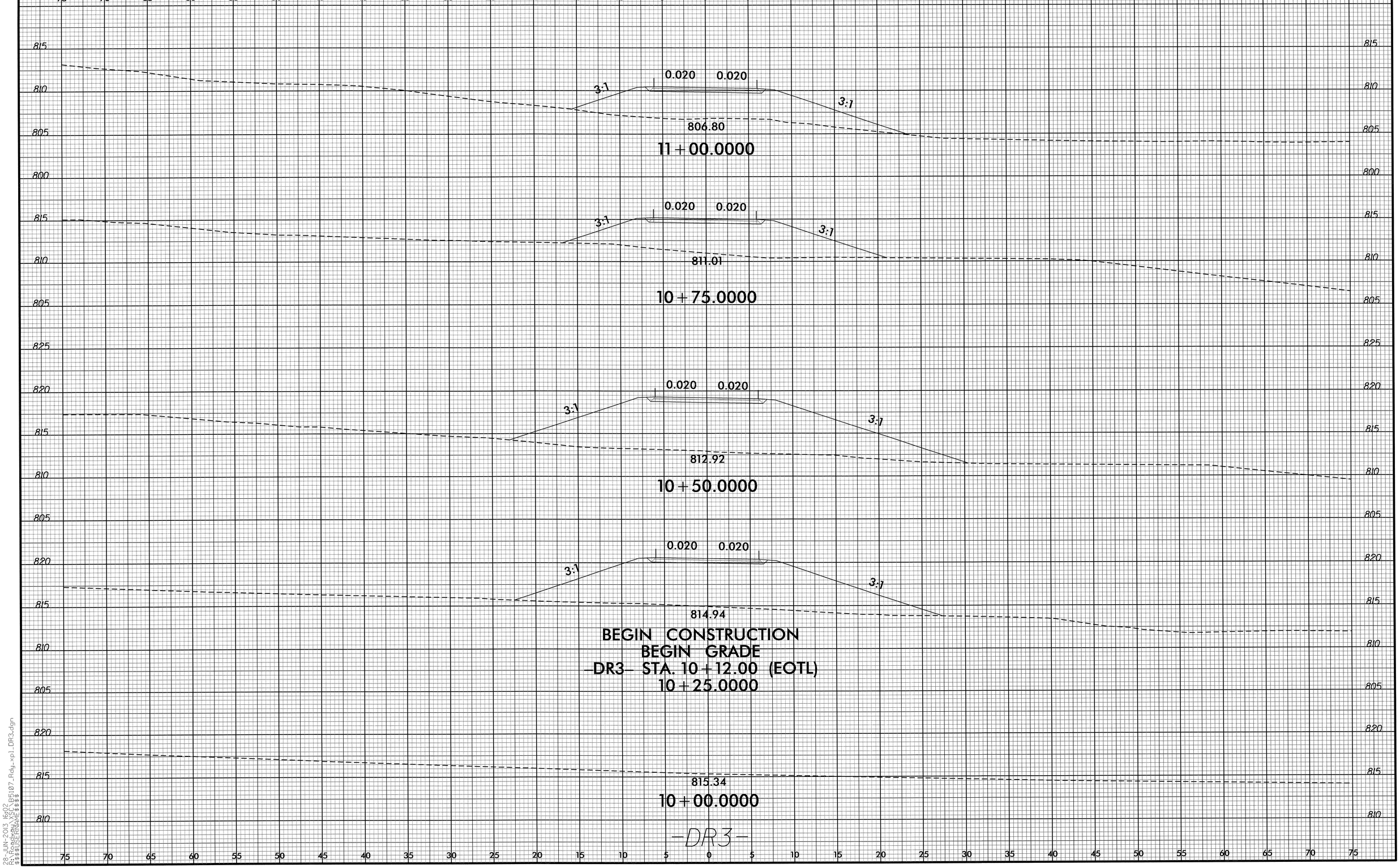

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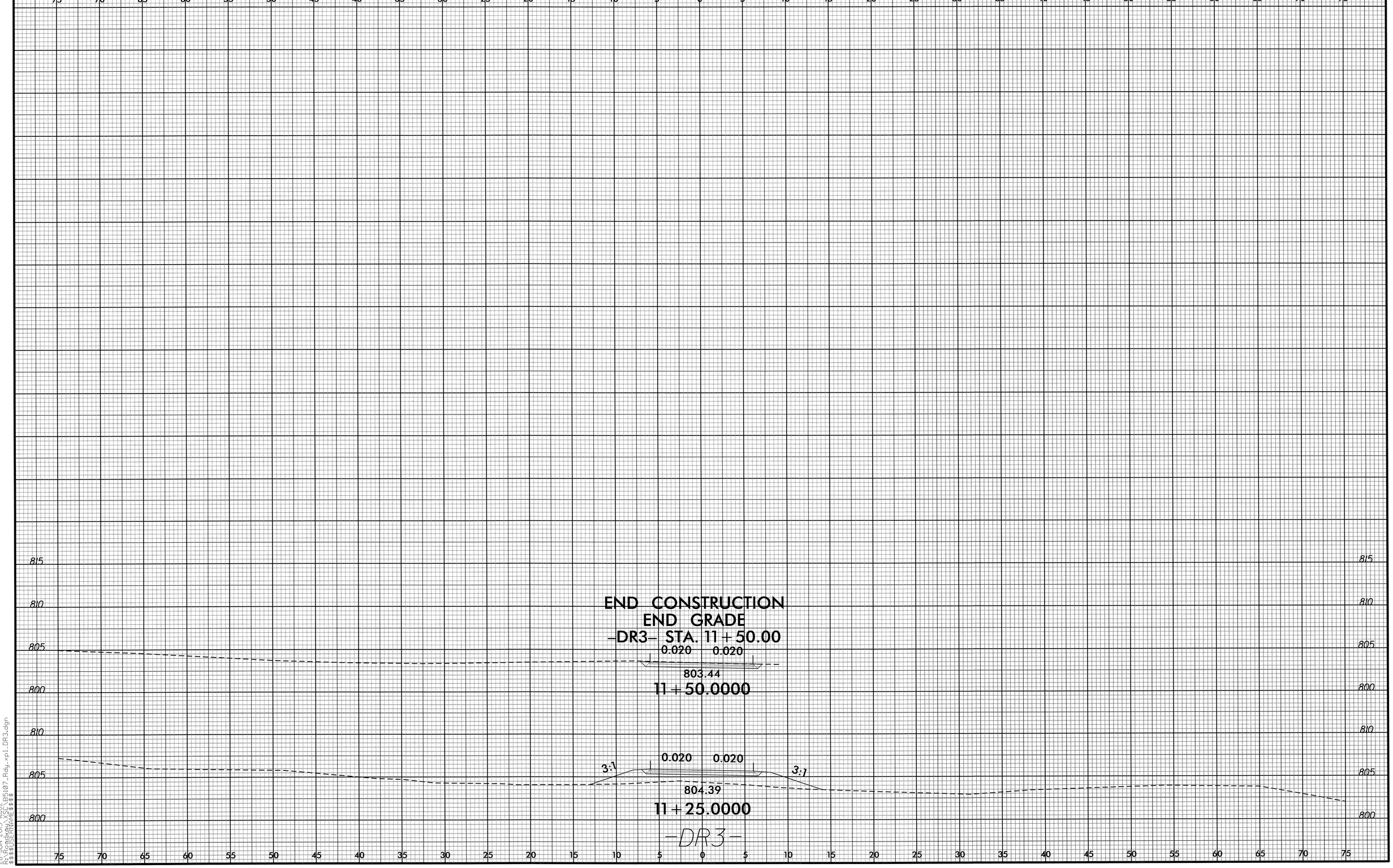

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