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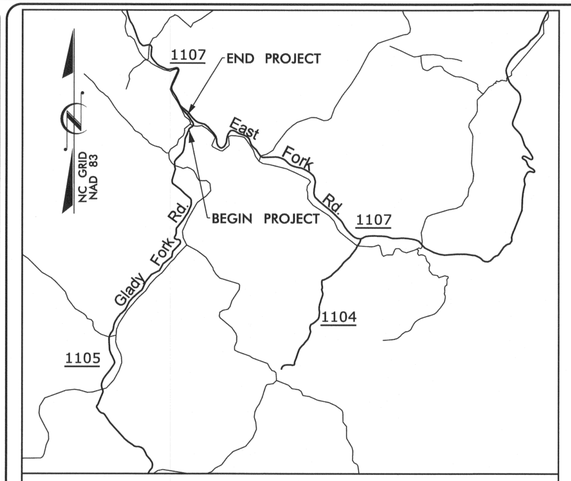
TIP PROJECT 17BP.14.R.134

CONTRACT: DN00114



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

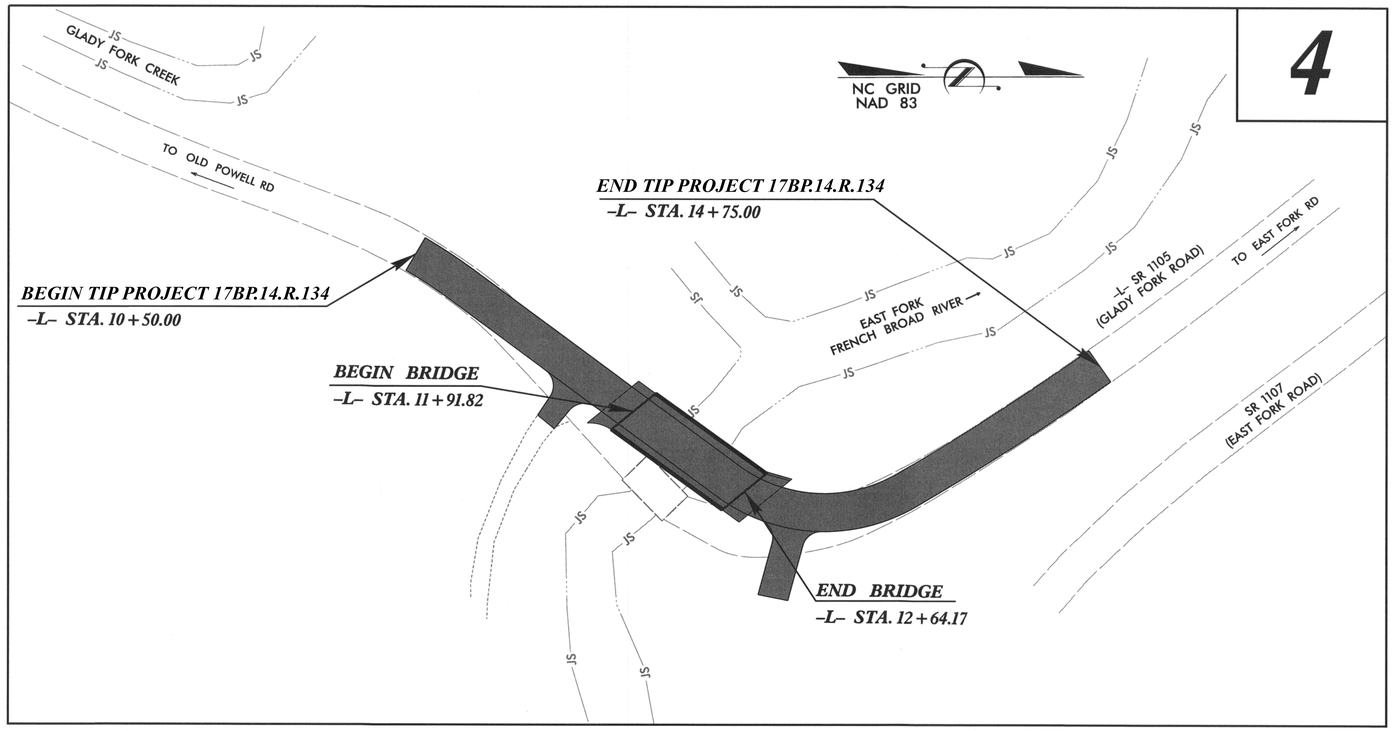
TRANSYLVANIA COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.134	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
45360.1.27	BRZ-1105(23)	P.E.
45360.2.27	BRZ-1105(23)	R/W & UTIL.
45360.3.27	BRZ-1105(23)	CONST.

LOCATION: BRIDGE NO. 117 OVER THE EAST FORK OF THE FRENCH BROAD RIVER ON SR 1105 (GLADY FORK RD.)

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



Vaughn & Melton
Consulting Engineers
Asheville, North Carolina 828-253-2796
Charlotte, North Carolina 704-357-8488
Tri-Cities, Tennessee 423-467-8401
Knoxville, Tennessee 865-546-5800
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-574-4775

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GRAPHIC SCALES

30 15 0 30 60
PLANS

30 15 0 30 60
PROFILE (HORIZONTAL)

6 3 0 6 12
PROFILE (VERTICAL)

DESIGN DATA

ADT 2011 = 120
ADT 2025 = 240

T = 6 %
V = 20 MPH

FUNC CLASS = LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT 17BP.14.R.134 = 0.066 MI.
LENGTH STRUCTURE TIP PROJECT 17BP.14.R.134 = 0.014 MI.
TOTAL LENGTH OF TIP PROJECT 17BP.14.R.134 = 0.080 MI.

Prepared In the Office of:
VAUGHN & MELTON
1318-F PATTON AVE.
ASHEVILLE NC, 28806
FOR THE NORTH CAROLINA DIVISION OF HIGHWAYS

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 21, 2013

LETTING DATE:
FEBRUARY 27, 2014

REECE M. SCHULER, PE
PROJECT ENGINEER

NICHOLAS V. ASARO
PROJECT DESIGN ENGINEER

NCDOT CONTACT:
JOSH DEYTON, PE
PROJECT ENGINEER - ROADWAY DESIGN

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 023993 ENGINEER MAX S. PRICE
SIGNATURE: P.E. 1/29/14

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 26960 ENGINEER REECE M. SCHULER
SIGNATURE: P.E. 1/28/14

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

$$$$SYSTIME$$$$
$$$$DGN$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.134	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26960 ENGINEER REECE M. SCHULER

7/25/14

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
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-A	MODIFIED CONCRETE FLUME DETAIL
2-B	STRUCTURE ANCHOR UNITS DETAIL
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF DRAINAGE QUANTITIES, SUMMARY OF GUARDRAIL, ASPHALT PAVEMENT REMOVAL SUMMARY, AND EARTHWORK SUMMARY
4	PLAN AND PROFILE SHEET
TMP-1 THRU TMP-5	TRAFFIC MANAGEMENT PLANS
PM-1	PAVEMENT MARKING PLAN
SIG-1	SIGNAL PLAN
EC-1 THRU EC-3A	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL SHEET
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-0	CROSS-SECTION SUMMARY
X-1 THRU X-6	CROSS-SECTIONS
S-1 THRU S-23	STRUCTURE PLANS

GENERAL NOTES:

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

GRADING AND SURFACING OR RESURFACING AND 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 PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING 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.

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

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.02 USING 3' RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

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.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

SUBSURFACE PLANS:

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

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 HAYWOOD EMC AND COMPORIUM COMMUNICATIONS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT IN ACCORDANCE WITH SECTION 801 OF THE NORTH CAROLINA STANDARD SPECIFICATION FOR ROADS AND STRUCTURES.

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
225.04	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	
815.03	Pipe Underdrain and Blind Drain
862.01	Guardrail Placement
862.02	Guardrail Installation
876.02	Guide for Rip Rap at Pipe Outlets

$$$$SYSTIME$$$$
$$$$DGN$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

3/15/06

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.134	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

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
- Swamp Marsh
- 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 Utility Easement — PUE

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Wheel Chair Ramp — WCR
- Proposed Wheel Chair Ramp Curb Cut — WCC
- Curb Cut for Future Wheel Chair Ramp — CCFR
- 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 — HH
- 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
- A/G Tank; Water, Gas, Oil
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.134	1-C
Location and Surveys	

SURVEY CONTROL SHEET 17BP.14.R.134

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	519510.3440	875258.2805	2301.52	OUTSIDE PROJECT LIMITS	
2	BL-2	519762.2544	875478.1080	2302.07	12+87.93	42.48 RT
3	BL-3	519982.6050	875313.5873	2305.27	15+40.09	13.08 LT

BM1 ELEVATION = 2301.17
N 519699 E 875348
BL STATION 7+01.66 56.53' LEFT
RR SPIKE IN BASE OF 12" WALNUT

BM2 ELEVATION = 2299.94
N 519705 E 875458
BL STATION 7+78.31 22.79' RIGHT
RR SPIKE IN BASE OF 24" POPLAR

ROW MARKER IRON PIN AND CAP-E

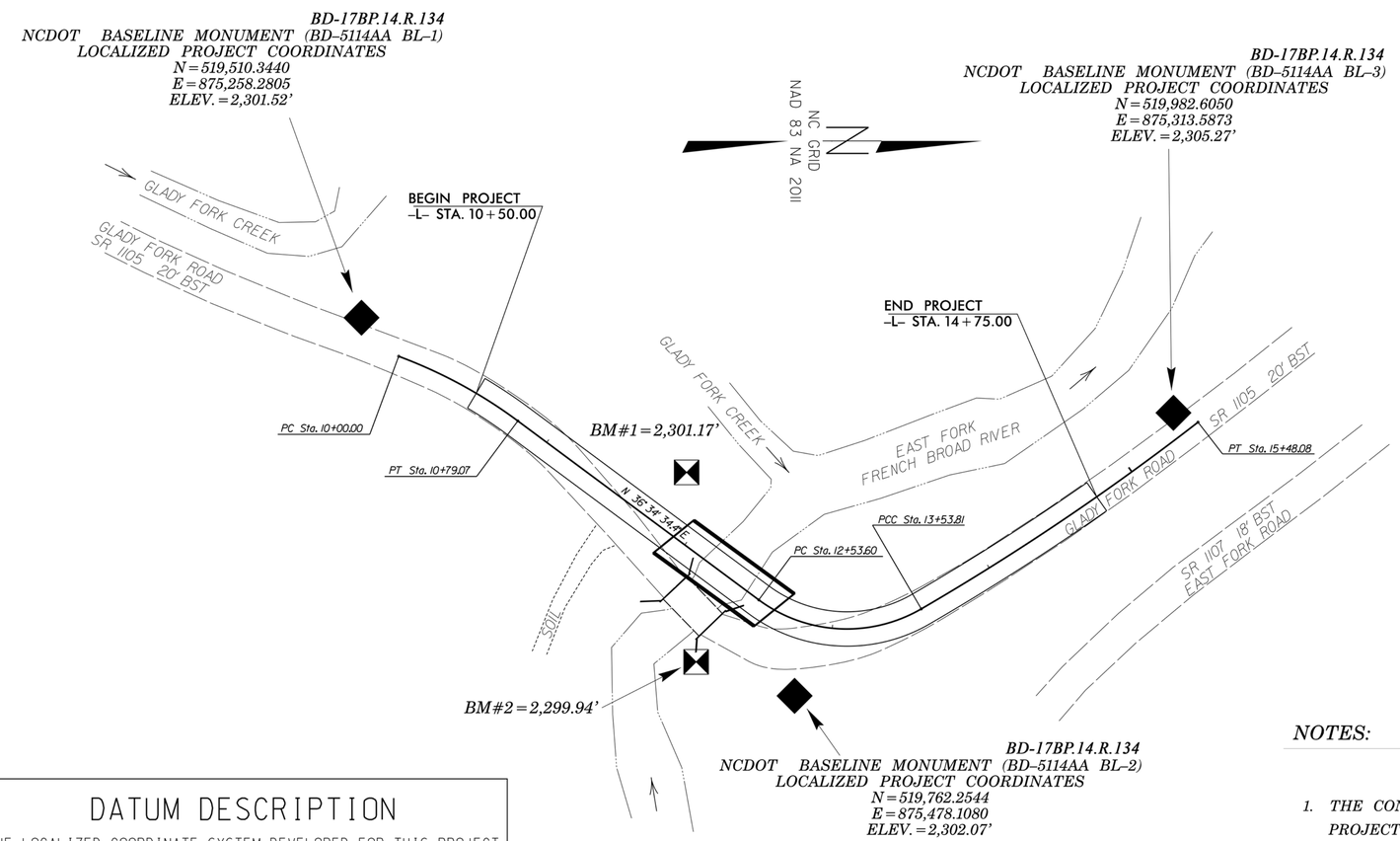
ALIGN	STATION	OFFSET	NORTH	EAST
L	10+50.00	-25.00	519589.8166	875280.7497
L	10+79.07	-30.00	519619.1650	875294.2515
L	12+53.60	-30.00	519759.3230	875398.2519
L	13+15.07	30.00	519801.5450	875468.9429
L	13+53.81	30.00	519851.0178	875453.5524
L	13+53.81	-30.00	519820.8504	875401.6879
L	14+75.00	-30.00	519920.8700	875337.8224
L	14+75.00	-24.95	519923.7618	875341.9625
L	14+75.00	25.05	519952.3935	875382.9531
L	14+75.00	30.00	519955.2280	875387.0111

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	9+36.00	-25.00	519480.7137	875235.0634
L	9+40.00	-34.00	519487.5959	875228.0181
L	9+61.00	-25.00	519504.1508	875243.7640
L	10+29.00	25.00	519547.5458	875314.6680
L	10+78.00	40.00	519576.7145	875349.9205
L	12+56.00	65.00	519706.1311	875477.0060
L	13+15.07	55.00	519803.4526	875493.8700

FINAL -L-

TYPE	STATION	NORTH	EAST
PC	10+00.00	519532.0120	875280.7742
PT	10+79.07	519601.2882	875318.3434
PC	12+53.60	519741.4474	875422.3446
PCC	13+53.81	519835.9341	875427.6202
PT	15+48.08	519996.8936	875319.0866



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "870117 BL-2"
WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 519762.2544(ft) EASTING: 875478.1080(ft)
ELEVATION: 2302.07(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99976988
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "870117 BL-2" TO -L- STATION 10+00.00 IS
S 40°35'56" W 303.24'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

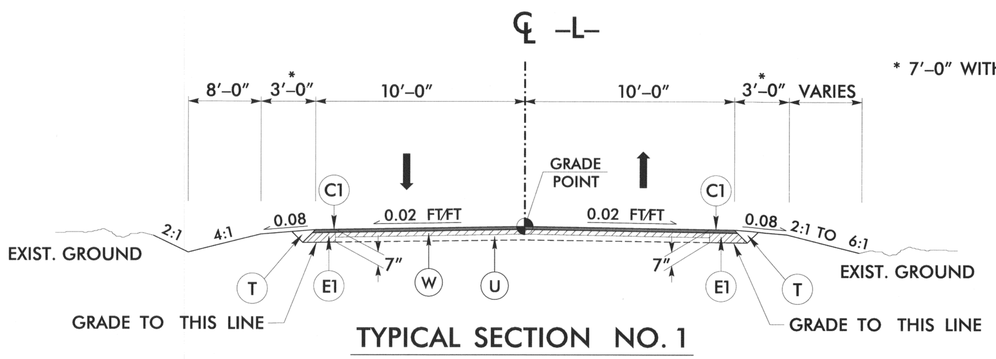
1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

THE FILES TO BE FOUND ARE AS FOLLOWS:
BD-5114AA_LS_CONTROL_140129.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.
NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

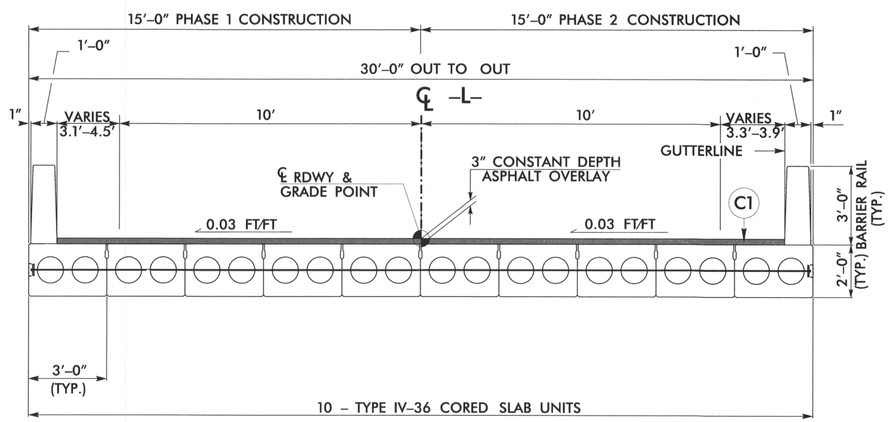
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.134	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

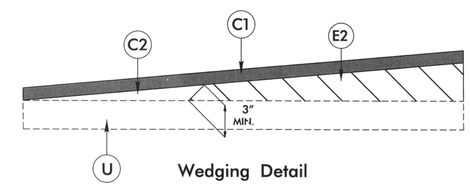
-L- STA. 10+50 TO -L- STA. 11+91.82 (BEGIN BRIDGE)
-L- STA. 12+64.17 (END BRIDGE) TO -L- STA. 14+75.00



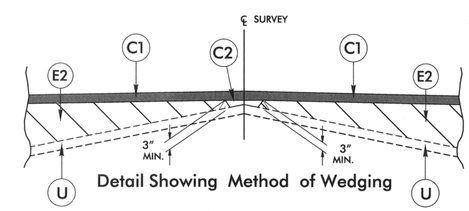
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

-L- STA. 11+91.82 (BEGIN BRIDGE) TO
-L- STA. 12+64.17 (END BRIDGE)



Wedging Detail

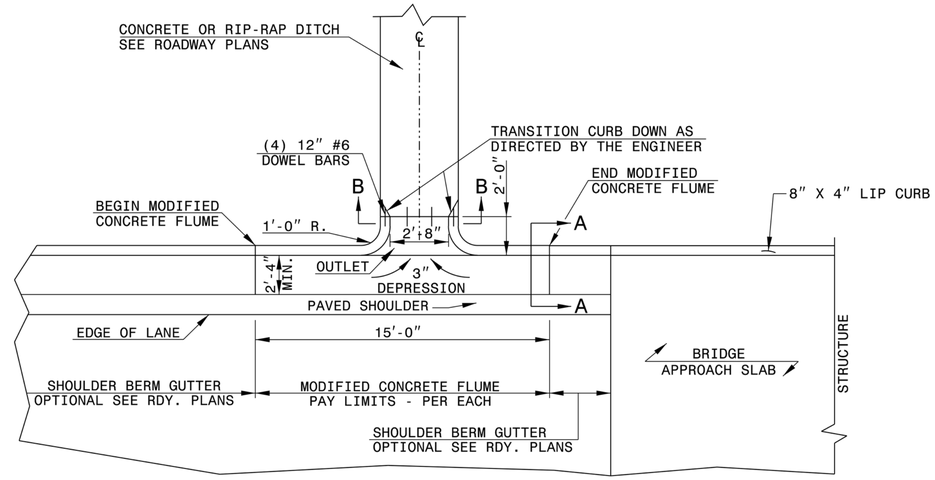


Detail Showing Method of Wedging

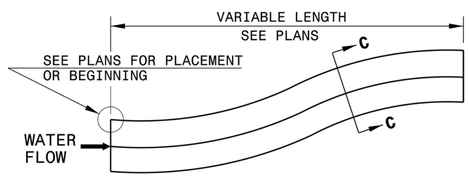
	PAVEMENT SCHEDULE
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" 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.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	PROPOSED WEDGING (SEE APPROPRIATE DETAILS)

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

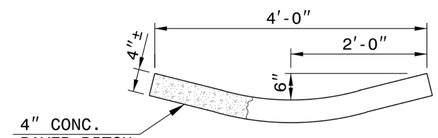
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.134	2-A



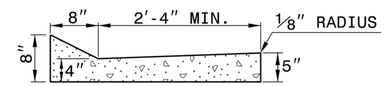
PLAN VIEW



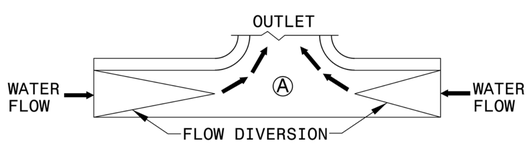
DOWNGRADE OR SAG



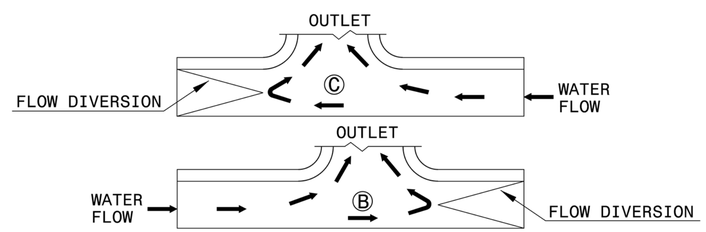
SECTION C-C



SECTION A-A

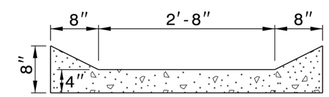


SAG

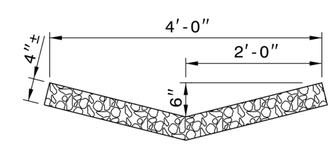


DOWN GRADE

FLOW DIVERSION EXAMPLES



SECTION B-B



RIP-RAP LINED DITCH

NOTES:

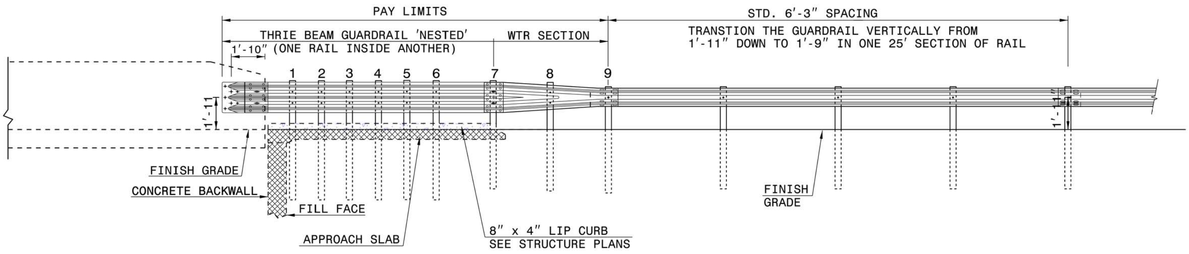
- CONSTRUCT MODIFIED CONCRETE FLUME AND SHOULDER BERM GUTTER IN ACCORDANCE WITH THIS DETAIL.
- CONSTRUCT CONCRETE DITCH IN ACCORDANCE WITH STD. DWG. NO. 850.01.
- CONSTRUCT RIP RAP LINED DITCH IN ACCORDANCE WITH THIS DETAIL, IF CALLED FOR IN PLANS.
- CONCRETE OR RIP RAP LINED DITCH SHALL BE THE TYPE AND LENGTH SPECIFIED BY THE ROADWAY PLANS. THE DITCH SHALL TERMINATE AS SHOWN ON THE PLANS. IF NO TERMINATION IS INDICATED PLACE RIP-RAP AT THE END OF THE DITCH AS INDICATED BY STD. DWG. 876.02 FOR AN 18″ PIPE. TRANSITIONS FROM THE DITCH TO TERMINATION SHALL BE AS DIRECTED BY THE ENGINEER.
- MODIFICATIONS SHALL BE AS DICTATED BY SITE CONDITIONS AND DIRECTED BY THE ENGINEER.

MODIFIED CONCRETE FLUME

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

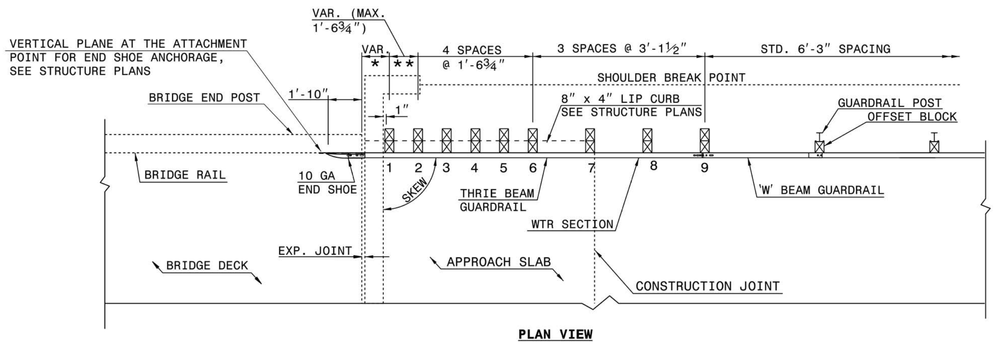
ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862d03



ELEVATION

NOTE:
- **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
- -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
- -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
- -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
- -SEE SHEET 5 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

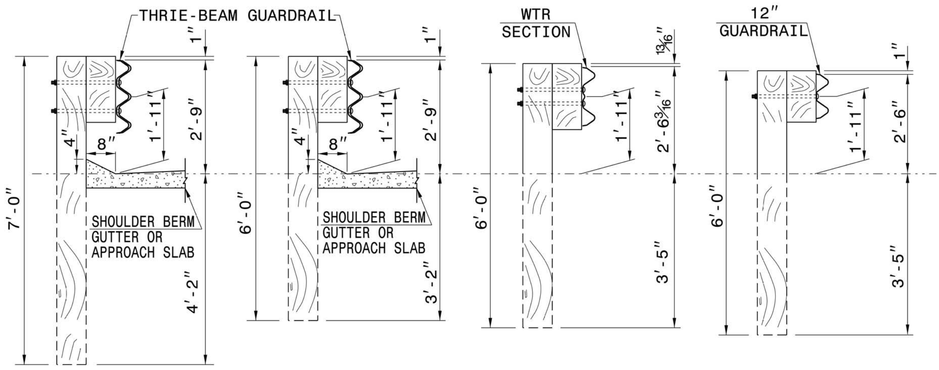
ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862d03

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7
862d03

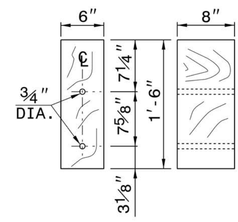


SECTION OF THRIE BEAM POSTS 1 THRU 6

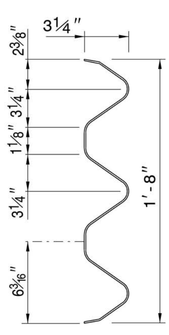
SECTION OF THRIE BEAM POST 7

SECTION OF WTR BEAM POST 8

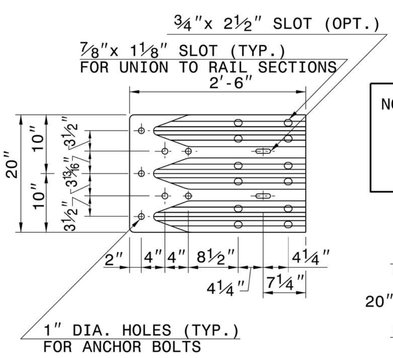
SECTION OF 'W' BEAM POST 9



THRIE BEAM OFFSET BLOCK

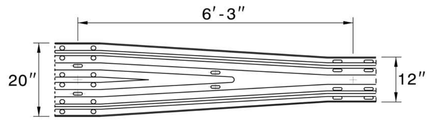


THRIE-BEAM SECTION

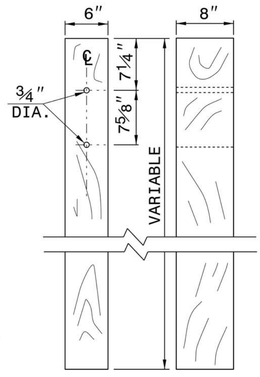


END SHOE

NOTE: THE MID POST AND OFFSET BLOCK OF THE WTR SECTION WILL REQUIRE SPECIAL BOLT HOLE DRILLING IN THE THRIE BEAM OFFSET BLOCK AND LINE POST.



WTR SECTION
ELEVATION VIEW



THRIE BEAM LINE POST

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7
862d03

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON DATE: 06-22-12
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

PROJECT REFERENCE NO. 17BP.14.R.134
SHEET NO. 2-B

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

Des	Quantity	Unit	Description
800	1	LS	Mobilization
801	1	LS	Construction Surveying
SP	1	LS	Reinforced Bridge Approach Fill - Sub Regional Tier (Sta. 12+28.00)
226	1	LS	Grading
200	0.1	Acres	Supplemental Clearing and Grubbing
226	50	CY	Undercut Excavation
265	50	CY	Select Granular Material
270	50	SY	Geotextile for Soil Stabilization
300	5	Tons	Foundation Conditioning Material, Minor Strs
300	12	Tons	Foundation Conditioning Geotextile
310	32	LF	15" Side Drain Pipe
505	50	Tons	Class IV Subgrade Stabilization
545	30	Tons	Incidental Stone Base
610	140	Tons	Asphalt Conc Base Course Type B25.0B
610	190	Tons	Asphalt Conc Surface Course Type S9.5B
620	20	Tons	Asphalt Binder for Plant Mix
846	18	LF	Shoulder Berm Gutter
SP	1	EA	Modified Concrete Flume
862	12.5	LF	Steel BM Guardrail
862	39.25	LF	Steel BM Guardrail, Shop Curved
862	5	EA	Additional Guardrail Posts
862	2	EA	Guardrail Anchor Units, Type III Shop Curved
862	2	EA	Guardrail Anchor Units, AT-1
862	2	EA	Guardrail Anchor Units, Type III
SP	2	EA	Guardrail Anchor Units, Type 350 TL-2
864	181.25	LF	Remove & Reset Existing Guardrail
862	150	LF	Temporary Steel Beam Guardrail
862	1	EA	Guardrail Anchor Units, AT-1 Temporary
SP	1	EA	Guardrail Anchor Units, TL-2 Temporary
876	35	Tons	Rip Rap, Class I
876	2	Tons	Rip Rap, Class B
876	360	SY	Geotextile for Drainage
1110	156	SF	Stationary Work Zone Signs
1130	60	EA	Drums
1150	10	DAY	Flagger (By Day)
1205	3400	LF	Paint Pavement Marking Lines (4")
1205	20	LF	Paint Pavement Marking Lines(24")
1205	20	LF	Removal of Pavement Marking (24") (from temp. alignment)
1605	660	LF	Temporary Silt Fence
1610	75	Tons	Erosion Control Stone, Class A
1610	85	Tons	Erosion Control Stone, Class B
1610	75	Tons	Sediment Control Stone
1615	0.5	Acres	Temporary Mulching
1620	50	Lbs	Seed For Temporary Seeding
1620	0.25	Tons	Fertilizer For Temporary Seeding
1622	100	LF	Temporary Slope Drains
SP	100	LF	Safety Fence
1630	80	CY	Silt Excavation
1631	225	SY	Matting for Erosion Control
SP	100	SY	Coir Fiber Mat
1639	2	EA	Special Stilling Basins
SP	10	Lbs	Polyacrylamide (PAM)
1640	75	LF	Coir Fiber Baffle
1660	0.5	Acres	Seeding & Mulching
1660	0.5	Acres	Mowing
1661	50	Lbs	Seed for Repair Seeding
1661	0.25	Tons	Fertilizer For Repair Seeding
1662	50	Lbs	Seed for Supplemental Seeding
1665	0.25	Tons	Fertilizer Topdressing
SP	75	LF	Impervious Dike
1667	10	MHR	Specialized Hand Mowing
SP	10	EA	Response For Erosion Control
1670	0.1	Acres	Reforestation
SP	1	EA	Portable Traffic Signal System (2 Head)
			STRUCTURAL ITEMS
402	1	LS	Removal Of Existing Structure
412	1	LS	Unclassified Structure Excavation
420	42.6	CY	Class A Concrete (Bridge)
422	1	LS	Bridge Approach Slabs
425	4,957	Lbs	Reinforcing Steel (Bridge)
450	175	LF	Hp12x53 Steel Piles
460	140.26	LF	Vertical Conc Barr Rail
430	1	LS	Elastomeric Bearings
430	700	LF	3'-0" X 2'-0" Prestressed Concrete Cored Slabs
450	105	LF	Pile Excavation (In Soil)
450	50	LF	Pile Excavation (Not In Soil)
876	50	TONS	Rip Rap II (2'-0" Thick)
876	57	SY	Geotextile for Drainage
1084	1208	SF	18" Steel Sheet Piles

COMPUTED BY: PHS	DATE: 6-30-14
CHECKED BY: RMS	DATE: 6-30-14

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.134	3-A

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
SUMMARY NO.1					
-L- STA. 10+50 TO STA. 11+91.82 (BEG. BRIDGE)	0		74	74	
SUBTOTAL SUMMARY NO.1	0		74	74	
SUMMARY NO.2					
-L- STA. 12+64.17 (END BRIDGE) TO STA. 14+75.00	0		204	204	
SUBTOTAL SUMMARY NO.2	0		204	204	
PROJECT SUBTOTAL	0		278	278	
EST. 5% FOR REPLACING TOP SOIL ON BORROW PITS				14	
GRAND TOTAL	0		278	292	
SAY	0			300	

NOTE: 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.

Approximate quantities only. Unclassified Excavation, Borrow 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."

CONTINGENCY ITEMS:
INCIDENTAL STONE = 30 TONS
UNDERCUT EXCAVATION = 50 CY
SELECT GRANULAR MATERIAL = 50 CY
CLASS IV SUBGRADE STABILIZATION = 50 TONS
GEOTEXTILE FOR SOIL STABILIZATION = 50 SY

PAVEMENT REMOVAL SUMMARY

IN SQUARE YARDS

LINE	LOCATION	ASPHALT REMOVAL	ASPHALT BREAK-UP	CONCRETE REMOVAL	CONCRETE REMOVAL
-L-	10+92 TO 11+51	26			
-L-	11+64 TO 12+11	80			
-L-	12+39 TO 12+86	115			
-L-	12+98 TO 13+49	28			
	TOTAL	249			
	SAY	250			

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

SUB-REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL
11+81	LT	401					
13+00	RT	402			2300.98	2300.19	
TOTAL							

STATION	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
11+81												
13+00												
TOTAL												

STATION	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	36" .079	42" .109	48" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"
11+81														
13+00														
TOTAL														

STATION	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	**" R. C. PIPE (CLASS V)	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE
11+81													
13+00												32	
TOTAL												32	

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 PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') 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	
11+81										
13+00										
TOTAL										

STATION	CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET		T.B.D.I. STD. 840.35	T.B.D.I. FRAME WITH TWO GRATES STD. 840.29	D.I. STD. 840.14	D.I. FRAME WITH TWO GRATES STD. 840.16	MODIFIED CONCRETE FLUME	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
11+81								1					
13+00													
TOTAL								1					

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

"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
-L-	11+37.68	11+95.50	LT	56.25				11+95.50	4	7	25		1	
-L-	11+68.64	11+88.27	RT		25.0		11+88.20		4	7				
-L-	12+86.10	13+81.04	LT	25.0	58.0		12+86.10		4	7	25		1	
-L-	12+59.62	12+80.26	RT	25.0				12+59.62	4	7	25		1	
			SUBTOTAL	106.25	83.0									
			LESS DEDUCTIONS FOR ANCHORS											
			GRAU-350 TL-2 2 @ 25'=	-50.0										
			TYPE III 2 @ 18.75'=	-37.50										
			TYPE III SHOP CURVED 2 @ 18.75'=		-37.50									
			AT-I 2 @ 6.25'=	-6.25	-6.25									
			PROJECT TOTALS:	12.50	39.25									
			ADDITIONAL GUARDRAIL POSTS=5 EA.											

SURVEY LINE	BEG. STA.	ANCHORS XI MOD	XI	GRAU 350	GRAU 350 TL-2	IA-350 TL-2	TYPE III	TYPE III SHOP CURVED	B-77	AT-1	IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L-	11+37.68				1		1										
-L-	11+68.64							1		1							
-L-	12+86.10				1			1									
-L-	12+59.62						1			1							
SUBTOTAL					2		2	2		2							

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.134	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26980 ENGINEER RECE M. SCHULER 7/29/14

NORTH CAROLINA PROFESSIONAL SEAL 023063 ENGINEER MAX G. PRICE 7/29/14

V&M Vaughn & Melton Consulting Engineers
Asheville, North Carolina 828 253 2796
Charlotte, North Carolina 704-357-0488
Tri-Cities, Tennessee 423-467-840
Knoxville, Tennessee 865 546 5800
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-574-4775

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8/17/99

REVISIONS

SHOULDER BERM GUTTER FROM -L- STA. 11+67 TO BEGIN BRIDGE LEFT

NAD 83

BEGIN PROJECT 17BP.14.R.134
-L- STA 10+50.00

END PROJECT 17BP.14.R.134
-L- STA 14+75.00

BEGIN BRIDGE
-L- STA 11+91.82

BEGIN APPR. SLAB
-L- STA 11+80.84

END APPR. SLAB
-L- STA 12+75.94

END BRIDGE
-L- STA 12+64.17

CL B RIP RAP MODIFIED CONC FLUME

CL II RIP RAP (STUCTURAL PAY ITEM)

PAVEMENT TO BE REMOVED

NOTE:
PAVE ALL DRIVEWAYS

PAULA Y. ASHWORTH
DB 2010E PG 122
(DB 345 PG 83)

GLADY FORK ROAD SR 1105 20' BST

EAST FORK FRENCH BROAD RIVER

GLADY FORK CREEK

SR 1107 18' BST EAST FORK ROAD

Sta. 9+25.00

PC Sta. 10+00.00

PT Sta. 10+79.07

PC Sta. 12+53.60

PC Sta. 13+53.81

PT Sta. 14+48.08

N 36°34'34.4" E

RETAIN GATE

SOIL

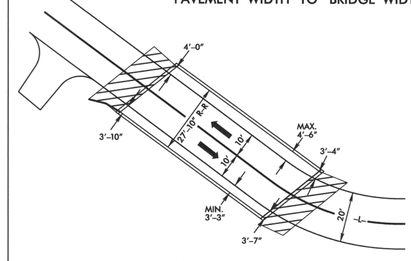
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "870117 BL-2"
WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 519762.2544(ft) EASTING: 875478.1080(ft)
ELEVATION: 2302.07(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99976988
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "870117 BL-2" TO -L- STATION 10+50.00 IS
S 43°31'12" W 255.3604'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

-L- CURVE DATA

PI Sta 10+39.80	PI Sta 13+10.27	PI Sta 14+51.09
Δ= 16° 12' 34.4" (RT)	Δ= 66° 45' 39.8" (LT)	Δ= 7° 36' 47.8" (LT)
D = 20° 30' 00.0"	D = 66° 37' 22.8"	D = 3° 55' 07.7"
L = 79.07'	L = 100.21'	L = 194.28'
T = 39.80'	T = 56.66'	T = 97.28'
R = 279.49'	R = 86.00'	R = 1,462.08'

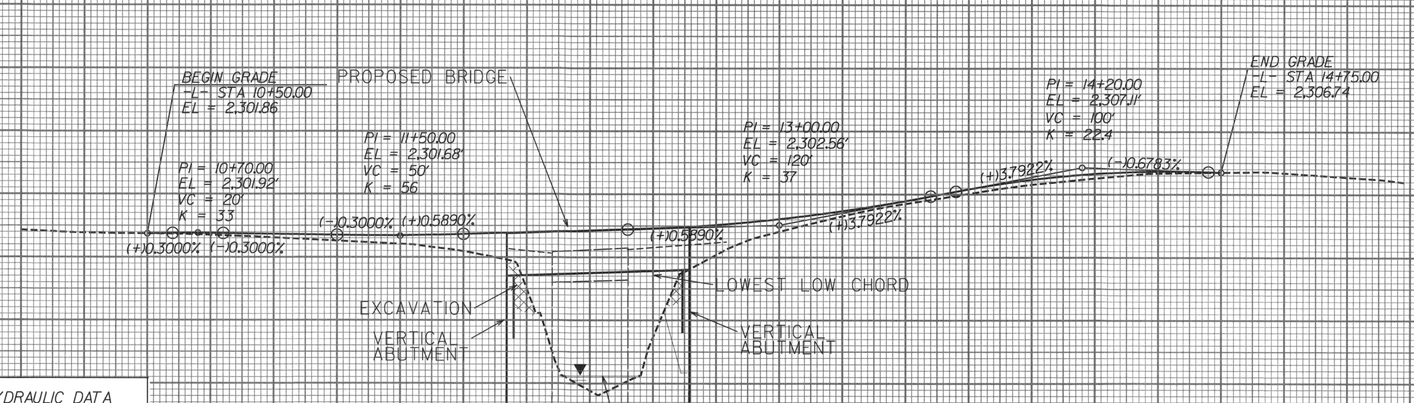
SKETCH SHOWING RELATIONSHIP OF PAVEMENT WIDTH TO BRIDGE WIDTH



BL-1	519510.3440	875258.2805	2301.52
BL-2	519762.2544	875478.1080	2302.07
BL-3	519982.6050	875313.5873	2305.27

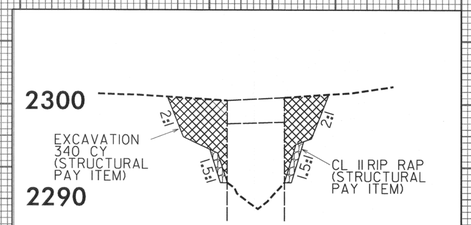
STA. 12+28.0-L-
SKEW = 105°
℄ ELEV. = 2302.14
1@70' - 24" CORED SLAB W/ CONC. VERTICAL ABUTMENTS

BM-2
N 519705.4164 E 875459.5798
ELEVATION = 2299.94'
-L- STA 12+46.85 51.37' RT.



STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 2100 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 2299.1 FT
BASE DISCHARGE	= 2900 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2300.7 FT
OVERTOPPING DISCHARGE	= 4300 CFS
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING ELEVATION	= 2302.1 FT
W.S. ELEVATION AT DATE OF SURVEY	= 2290.7 FT



DETAIL A

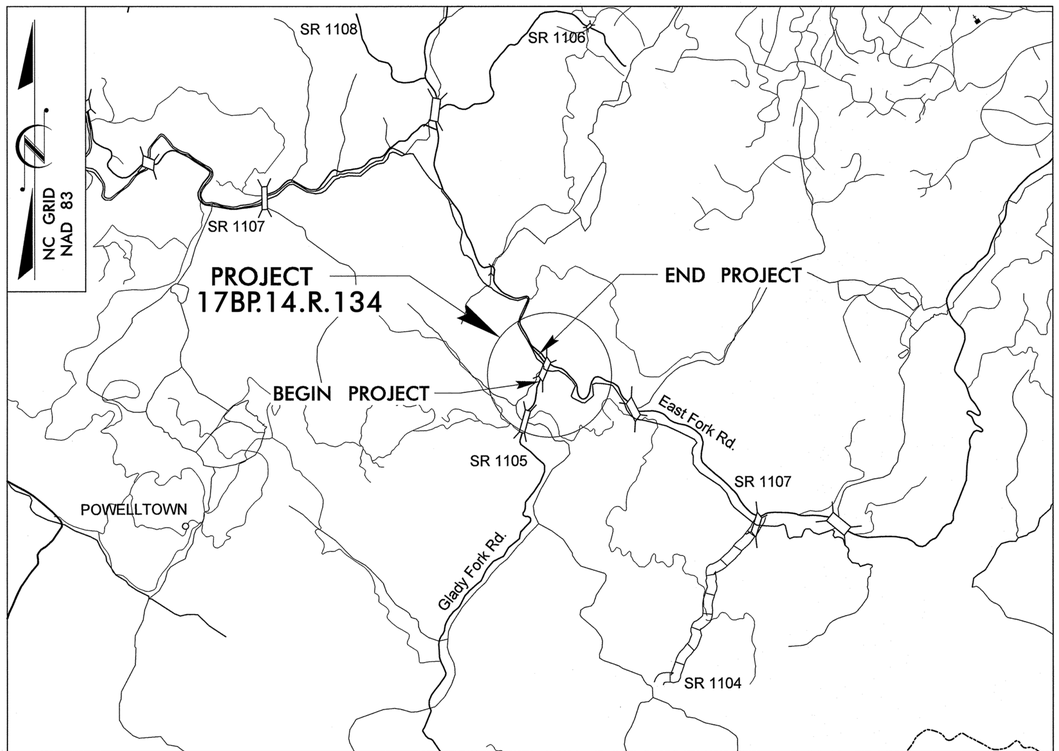
$$$$SYSTIME$$$$
$$$$CSTEMP$$$$
$$$$DGN$$$$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

TRANSYLVANIA COUNTY

DIVISION 14



VICINITY MAP

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET AND INDEX OF SHEETS
TMP-1A	ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-2	PROJECT NOTES
TMP-3	PHASING
TMP-4	PHASE I DETAIL
TMP-5	PHASE II DETAIL

SHEET NO.
TMP-1

TIP PROJECT 17BP.14.R.134

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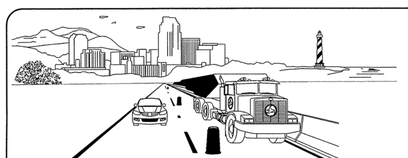

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"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
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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
_____ TRAFFIC CONTROL PROJECT ENGINEER
_____ TRAFFIC CONTROL PROJECT DESIGN ENGINEER
_____ TRAFFIC CONTROL DESIGN ENGINEER

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

STV / Ralph Whitehead Associates, Inc.
900 West Trade St., Ste. 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT ENGINEER JOHN JOHNSON, PE
DESIGN ENGINEER GERALD H. McCAULEY, PE

APPROVED: Gerald H. McCauley
DATE: 1/31/2014

NORTH CAROLINA PROFESSIONAL SEAL 13008 ENGINEER GERALD H. McCAULEY

1/31/2014
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PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.134	TMP-1A

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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 JAN 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD.NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES - TYPE III
1150.01	FLAGGING DEVICES
1180.01	SKINNY DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.08	PAVEMENT MARKINGS - SYMBOLS & WORD MESSAGES
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

REVISED JULY 2, 2014; REMOVED TEMPORARY PAVEMENT MARKINGS.

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA
- REMOVAL/BREAKING OF PAVEMENT
- TEMPORARY PAVEMENT

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM — SKINNY DRUM — TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW PANEL (TYPE C)
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY (TEMP)
- PORTABLE TRAFFIC SIGNAL

TEMPORARY PAVEMENT MARKING

PAINT 24"

P2 WHITE STOPBAR

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

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ROADWAY STANDARD DRAWINGS & LEGEND

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PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.134	TMP-2

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PROJECT NOTES

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 BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

E) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

F) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

G) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 350 ft IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

I) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

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

TRAFFIC CONTROL DEVICES

K) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

L) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN OPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

M) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
SR 1105 (GLADY FORK RD) (-L-)	PAINT	NONE

N) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.

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

P) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

Q) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) 100 FT AND 200 FT RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

LOCAL NOTES

1. CONTACT TRANSYLVANIA COUNTY EMERGENCY SERVICES AND SCHOOLS AT LEAST ONE MONTH PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR SHALL BUILD AS MUCH AS POSSIBLE AWAY FROM TRAFFIC.

MANAGEMENT STRATEGIES

PHASE I TRAFFIC WILL BE MAINTAINED ON THE EXISTING ROAD, BUT REDUCED TO ONE LANE USING TEMPORARY SIGNALS AND PAVEMENT MARKINGS AS THE NEW ALIGNMENT IS CONSTRUCTED.

PHASE II WILL SHIFT TRAFFIC ONTO THE NEW ALIGNMENT, ONE LANE USING TEMPORARY SIGNALS AND PAVEMENT MARKINGS AS THE NEW ALIGNMENT IS CONSTRUCTED. A FLAGGING OPERATION WILL BE USED TO CONSTRUCT THE NEW TIE-INS,SHIFT TRAFFIC, AND INSTALL FINAL PAVEMENT MARKINGS.

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NORTH CAROLINA PROFESSIONAL SEAL 13008 ENGINEER GERALD H. McCAULEY

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

PROJECT NOTES

1/31/2014
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PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.134	TMP-3

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PROJECT PHASING

PHASE I

STEP 1: INSTALL ADVANCED WORK ZONE WARNING SIGNS IN ACCORDANCE TO NCDOT RSD. 1101.01 SHEET 3 OF 3.

STEP 2: USING NCDOT RSD. 1101.02 SHEET 1 OF 15, INSTALL PORTABLE TRAFFIC SIGNALS AS REQUIRED IN THE SIGNAL PLANS. INSTALL SIGNING, TEMPORARY PAVEMENT MARKINGS AND DRUMS AS SHOWN ON SHEET TMP-4. ONCE SIGNS AND DEVICES ARE IN PLACE, ACTIVATE PORTABLE TRAFFIC SIGNALS AND PLACE TRAFFIC INTO A ONE-LANE, TWO-WAY OPERATION.

STEP 3: CONSTRUCT LEFT SIDE OF BRIDGE, GUARDRAIL, AND -L- (SR 1105) FROM +/- STA. 10+50 TO 14+75 AND RIGHT SIDE OF -L- FROM +/- STA. 11+65 TO 12+87, UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE AS SHOWN ON SHEET TMP-4.

PHASE II

STEP 1: USING NCDOT RSD. 1101.02 SHEET 1 OF 15, INSTALL SIGNING, TEMPORARY PAVEMENT MARKINGS, TEMPORARY GUARDRAIL AND DRUMS AS SHOWN ON SHEET TMP-5. ONCE SIGNS AND DEVICES ARE IN PLACE, ACTIVATE PORTABLE TRAFFIC SIGNALS AND SHIFT ONE-LANE, TWO-WAY TRAFFIC ONTO THE NEWLY CONSTRUCTED LEFT SIDE OF -L-.

STEP 2: AWAY FROM TRAFFIC REMOVE EXISTING BRIDGE, CONSTRUCT RIGHT SIDE OF BRIDGE, AND RIGHT SIDE OF -L- (SR 1105) FROM +/- STA. 10+50 TO 14+75, UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE AS SHOWN ON SHEET TMP-5.

STEP 3: USING NCDOT RSD. 1101.02 SHEET 1 OF 15, INSTALL FINAL LAYER OF SURFACE COURSE AND PAVEMENT MARKINGS ON -L-.

STEP 4: ONCE ALL CONSTRUCTION IS COMPLETE, REMOVE ALL SIGNS AND DEVICES AND PLACE TRAFFIC IN ITS FINAL PATTERN.

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WORK ZONE TRAFFIC CONTROL UNIT

PHASING

1/31/2014
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PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.134	TMP-4

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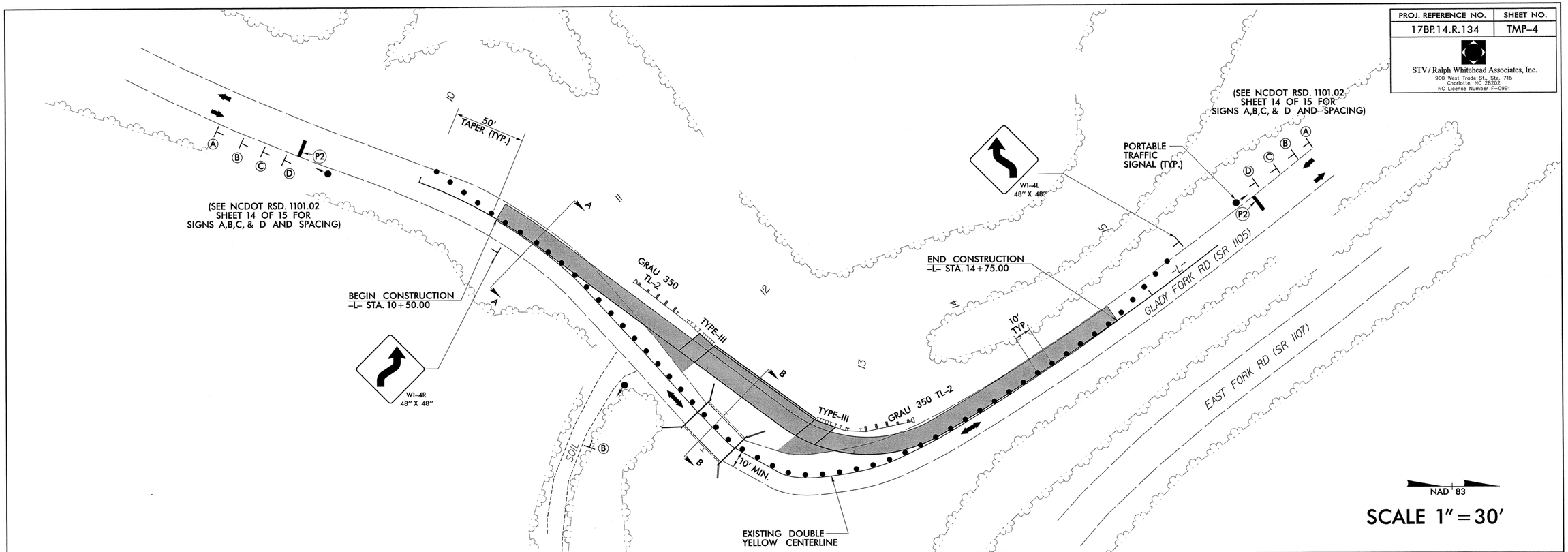
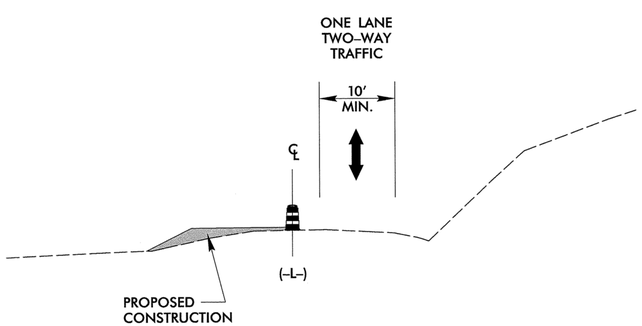


SECTION A-A



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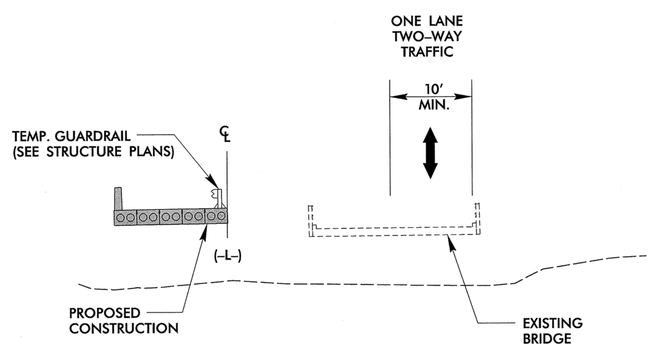

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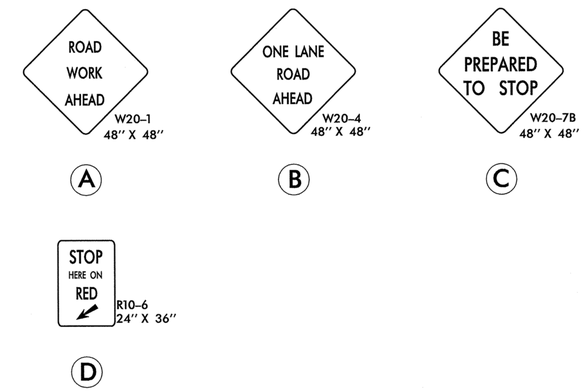

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PHASE I DETAIL

1/31/2014
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PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.134	TMP-5

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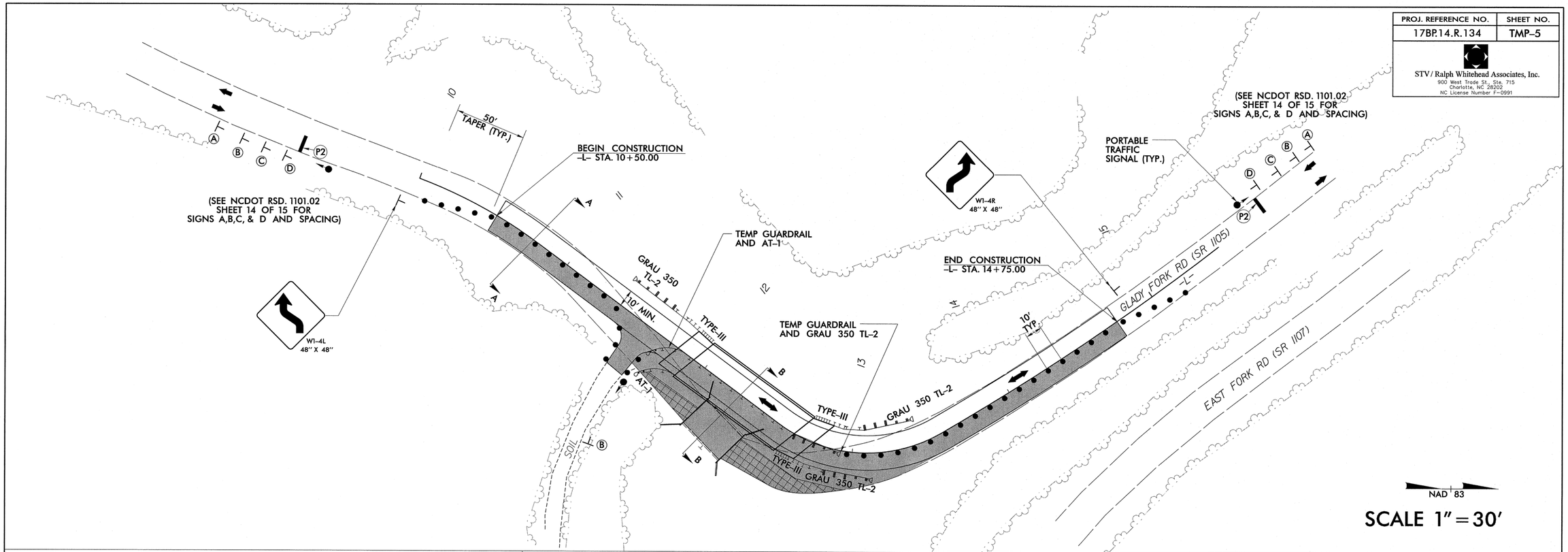
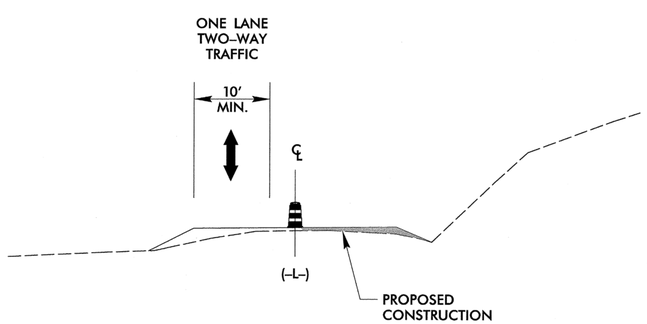


SCALE 1" = 30'

SECTION A-A



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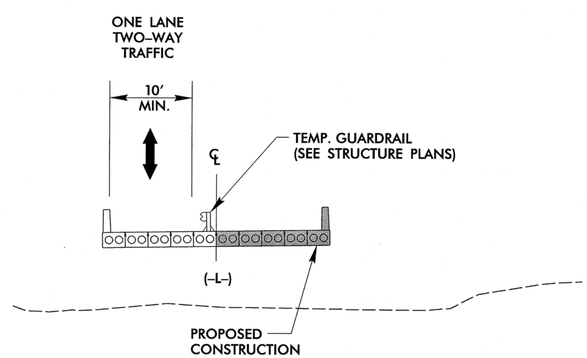

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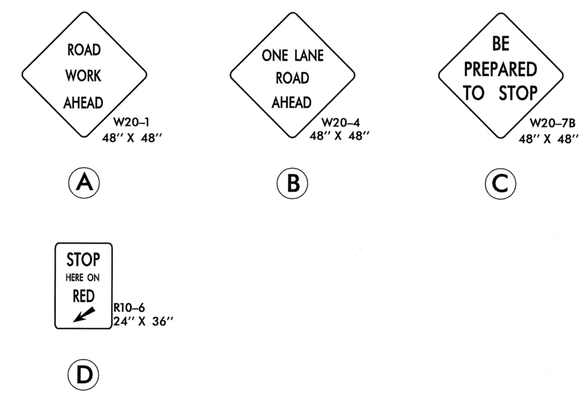

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WORK ZONE TRAFFIC CONTROL UNIT

PHASE II DETAIL

REVISED JULY 2, 2014; REMOVED TEMPORARY PAVEMENT MARKINGS.

7/2/2014
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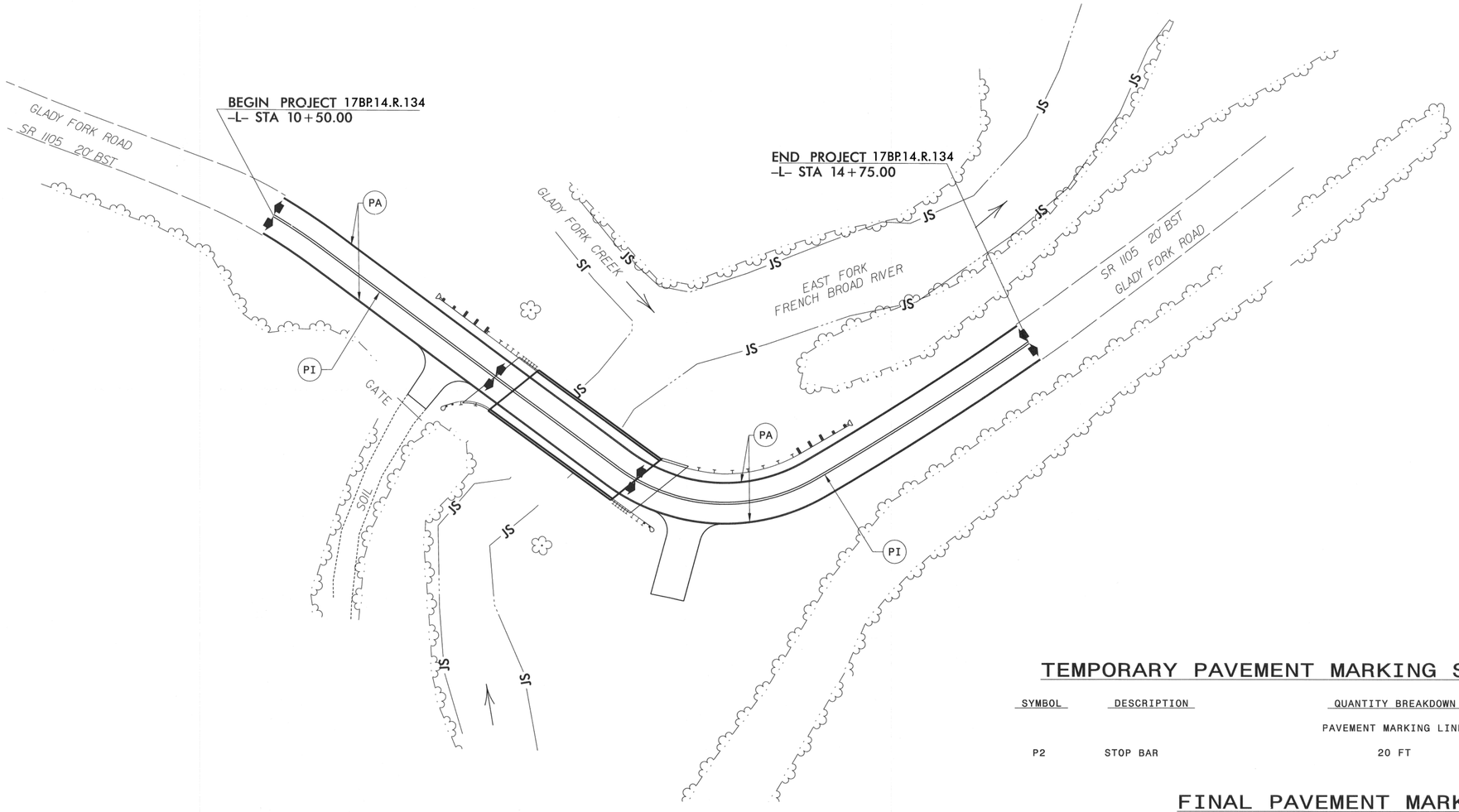
PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.134	PM-1



TEMPORARY PAVEMENT MARKING SCHEDULE (SEE TMP-4&5)

SYMBOL	DESCRIPTION	QUANTITY BREAKDOWN	PAY ITEM	TOTAL QUANTITY
		PAVEMENT MARKING LINES		
P2	STOP BAR	20 FT	PAINT (24")	20 FT

FINAL PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	QUANTITY BREAKDOWN	PAY ITEM	TOTAL QUANTITY
		PAVEMENT MARKING LINES		
PA	WHITE SOLID EDGE LINE	425 FT	PAINT (4")	1700 FT
PI	YELLOW DOUBLE CENTER LINE	425 FT	PAINT (4")	1700 FT

NOTE: FINAL PAVEMENT MARKINGS = 2 COATS OF PAINT

30 15 0 30 60

SCALE 1"=30'

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APPROVED: DATE: July 30, 2014

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 20119 ENGINEER LLOYD D. BROWN

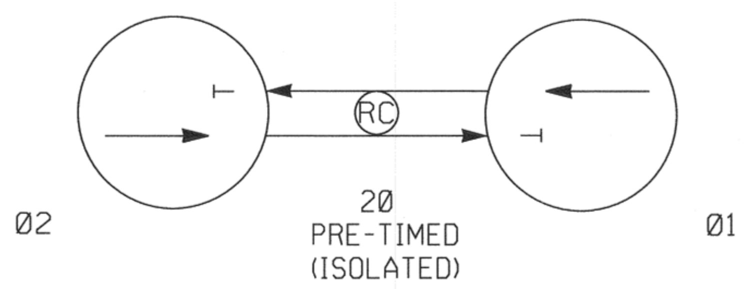
DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

PERMANENT PAVEMENT MARKING PLAN

$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$DGN$$$$
$$$$RFN$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.134	SIG. 1

PHASING DIAGRAM



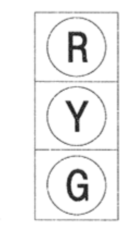
PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	Ø2 R/W	Ø2 CLEAR Ø1 1	Ø2 CLEAR Ø1 2	Ø1 R/W	Ø1 CLEAR Ø2 1	Ø1 CLEAR Ø2 2	FLASH
11,12	R	R	R	G	Y	R	R
21,22	G	Y	R	R	R	R	R

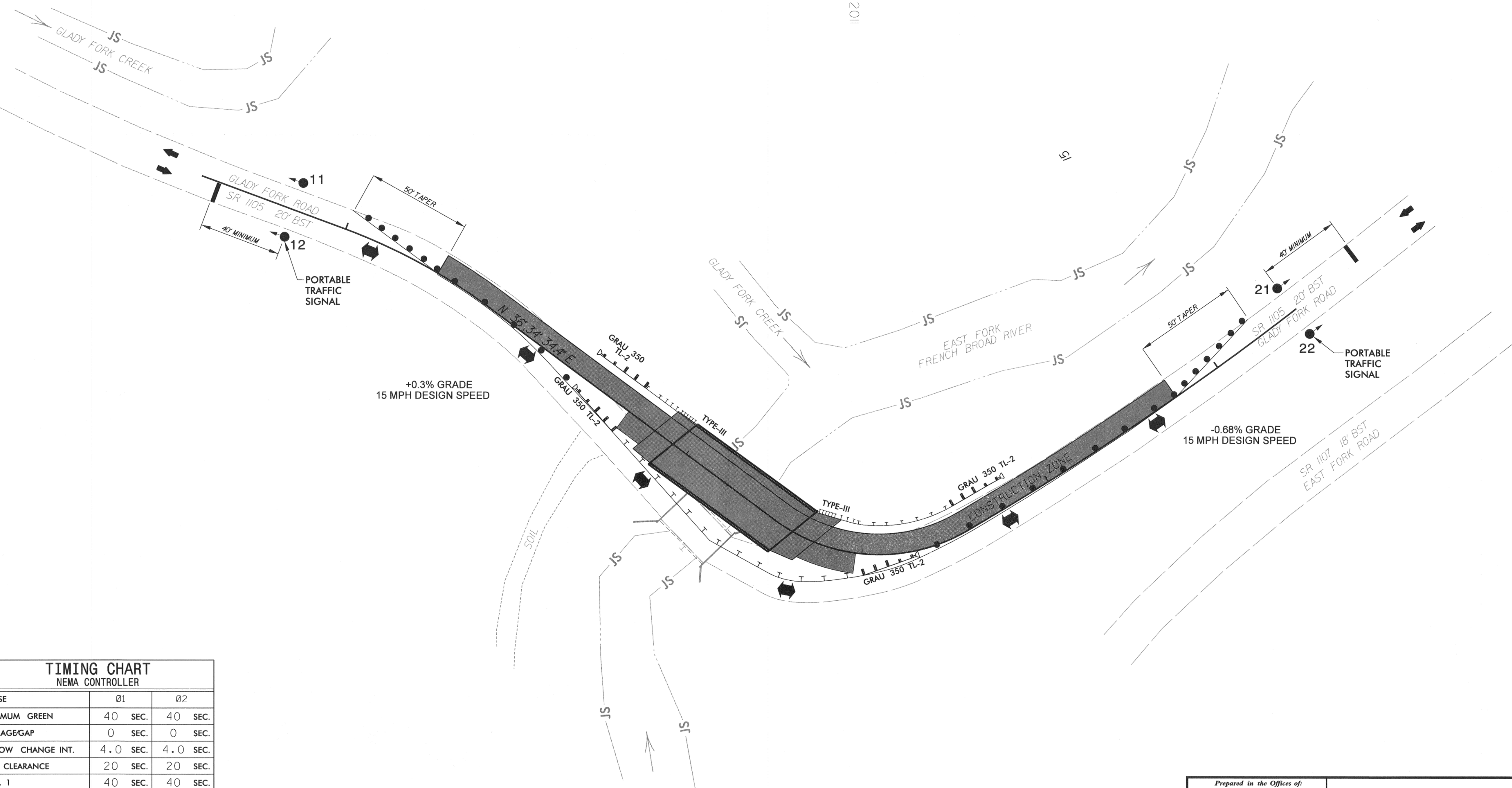
SIGNAL FACE I.D.



11, 12
21, 22

NOTES

1. PORTABLE TEMPORARY INSTALLATION.
2. SIGNAL HEADS SHALL BE NO CLOSER THAN 40 FEET FROM THE STOPLINE.
3. NO COUNTS AVAILABLE.
4. CONTRACTOR TO UTILIZE NCDOT PRE-APPROVED PORTABLE TRAFFIC SIGNAL MANUFACTURER AND MODEL.



TIMING CHART NEMA CONTROLLER		
PHASE	Ø1	Ø2
MINIMUM GREEN	40 SEC.	40 SEC.
PASSAGE/GAP	0 SEC.	0 SEC.
YELLOW CHANGE INT.	4.0 SEC.	4.0 SEC.
RED CLEARANCE	20 SEC.	20 SEC.
MAX. 1	40 SEC.	40 SEC.
RECALL POSITION	MAX. RECALL	MAX. RECALL
VEHI. CALL MEMORY	–	–

$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$
$$$USERNAME$$$$

Prepared in the Offices of:
Vaughn & Melton
Consulting Engineers
Asheville, North Carolina 828-253-2796
Charlotte, North Carolina 704-357-0488
Tri-Cities, Tennessee 423-467-8401
Knoxville, Tennessee 865-546-5800
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-574-4775

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SCALE 0 30

PORTABLE TRAFFIC SIGNAL PLAN
SR 1105 GLADY FORK ROAD

DIV. 14 TRANSYLVANIA COUNTY

PLAN DATE:	5/5/14	REVIEWED BY:	ACC
PREPARED BY:	JDD	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 20119 ENGINEER LLOYD D. BROWN

SIGNATURE July 30, 2014 DATE

SIG. INVENTORY NO.

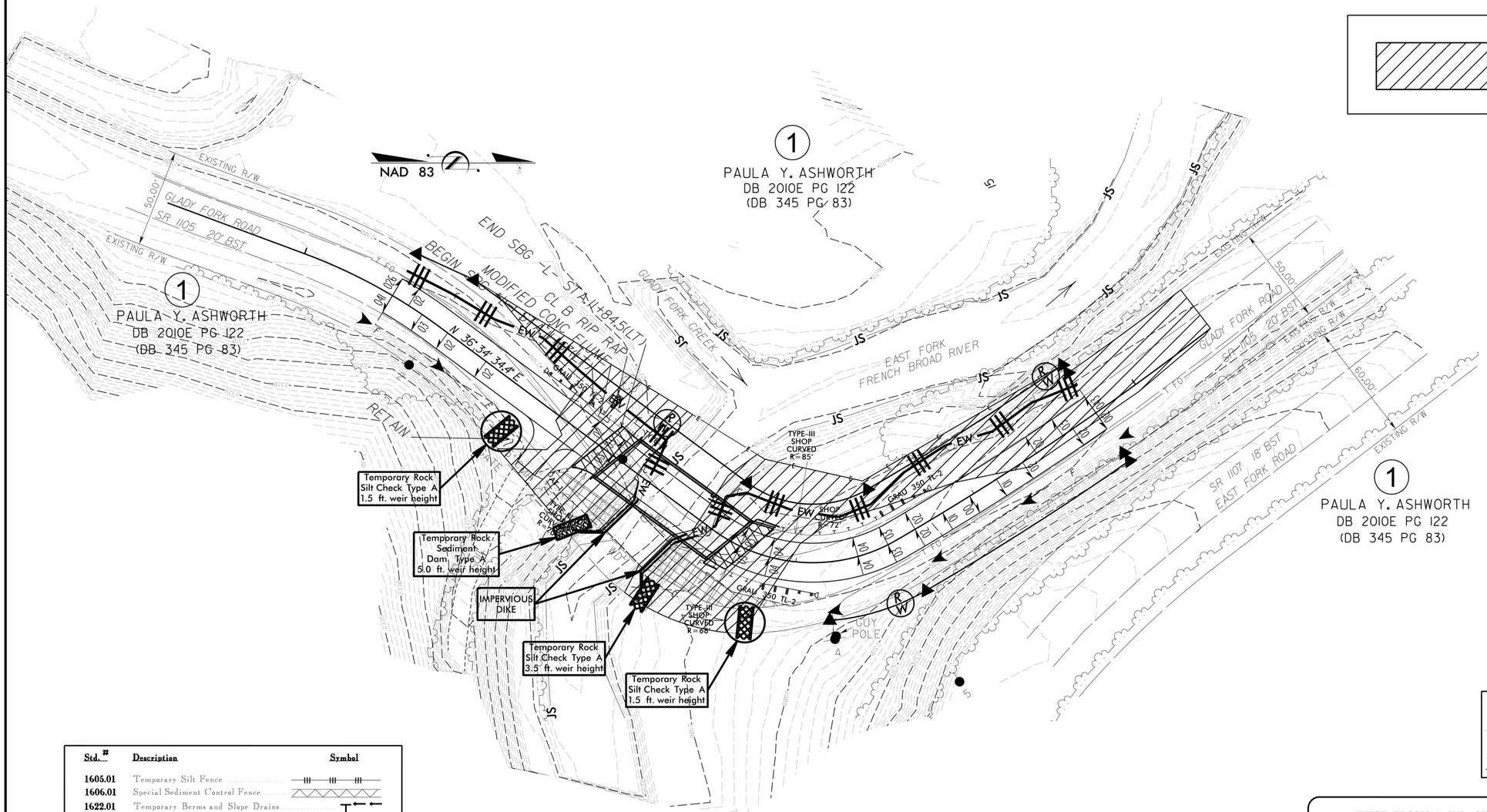
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.134	EC-1

EROSION CONTROL PLAN

KEVIN B. ALFORD, PE
LEVEL IIIA NAME

396
LEVEL IIIA CERTIFICATION NO.

ENVIRONMENTALLY SENSITIVE AREA
PLEASE SEE HIGH QUALITY WATERS NOTE



Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1630.06	Special Stilling Basin	
1632.03	Rock Inlet Sediment Trap Type C	
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	
	Silt Fence Excelsior Wattle Break	EW
	Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	

2012 STANDARD DRAWINGS

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		

HIGH QUALITY WATER(S) EXIST ON THIS PROJECT

High Quality Water Zone(s) Exist
From Sta. Beginning
to Sta. End
Refer To E. C. Special Provisions for Special Considerations.

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.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

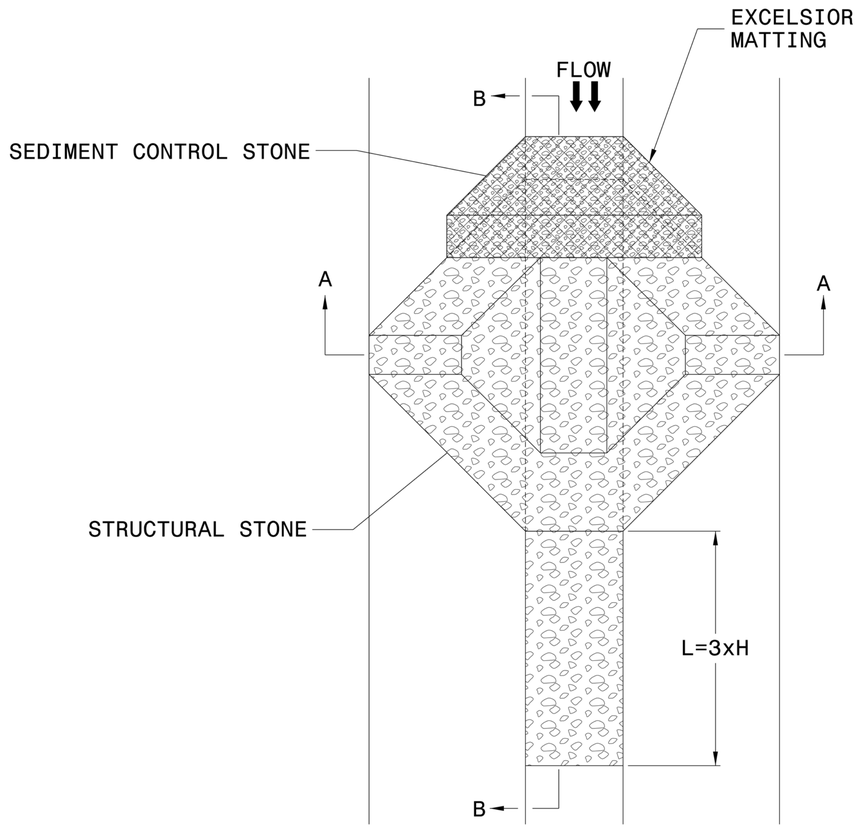
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

2012 STANDARD SPECIFICATIONS

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.134	EC-2

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



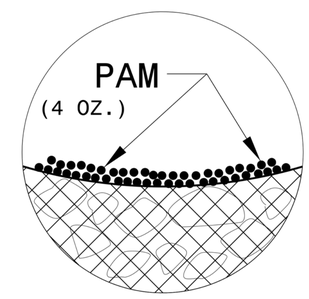
PLAN

NOTES

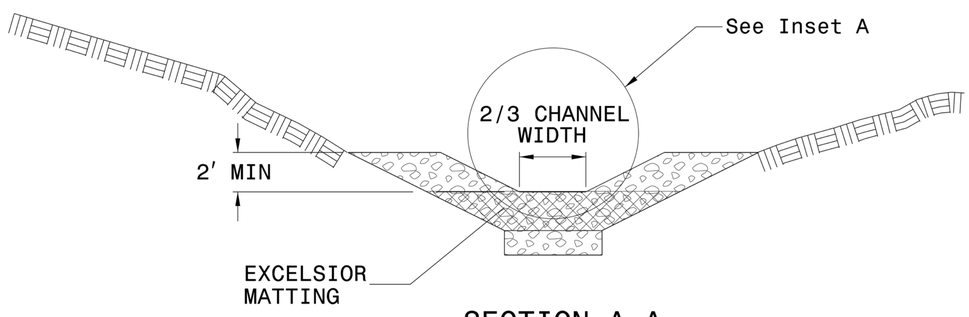
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.

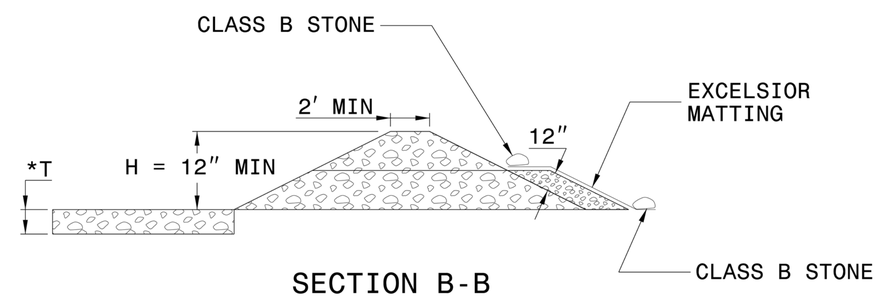
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



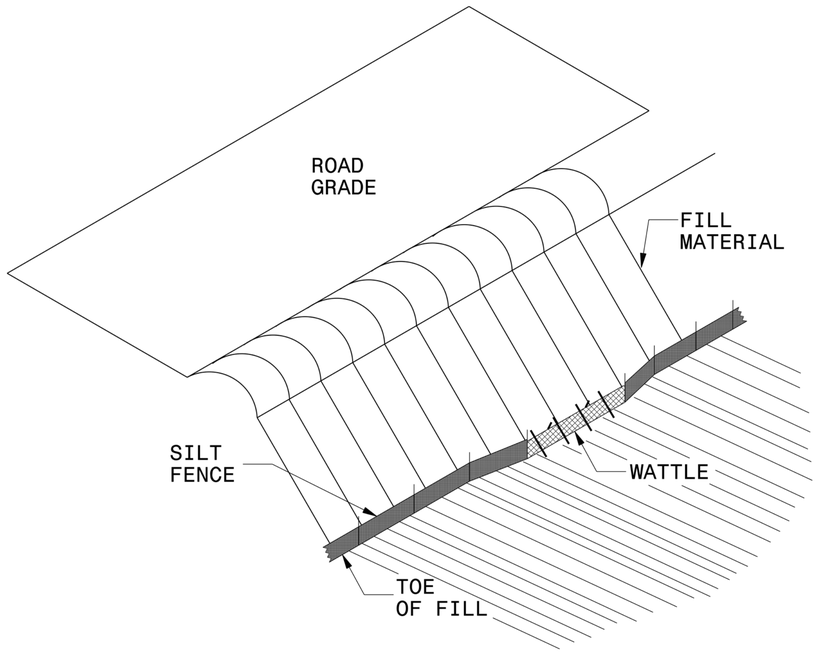
SECTION B-B

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

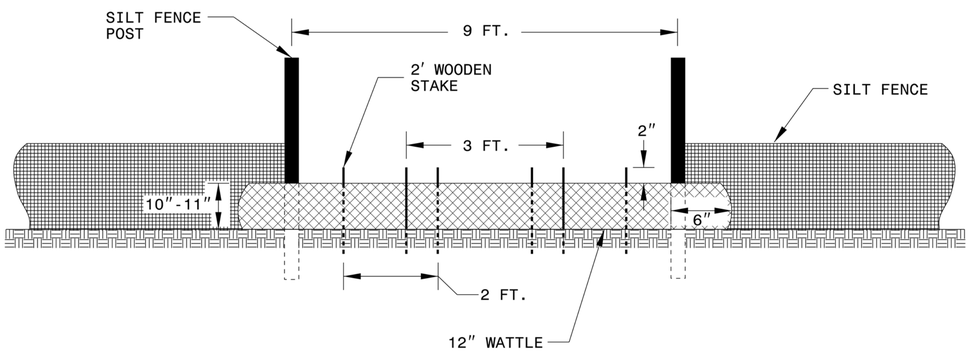
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.134	EC-2A

SILT FENCE WATTLE BREAK DETAIL



ISOMETRIC VIEW



VIEW FROM SLOPE

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

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

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

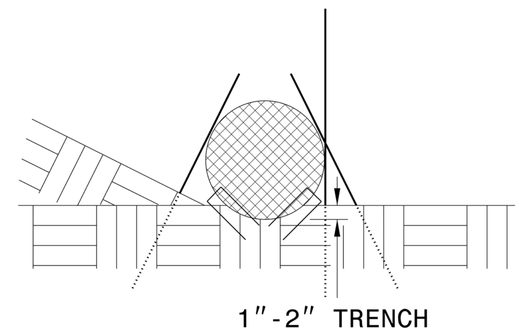
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

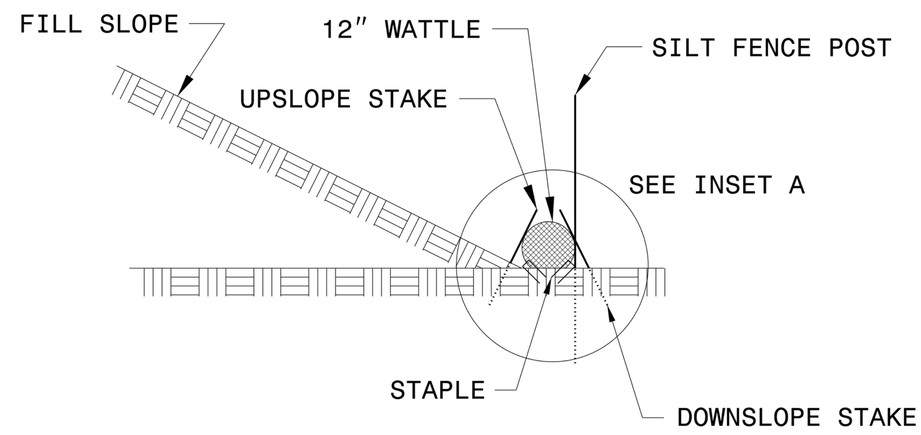
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A





SIDE VIEW

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.134	EC-3

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-	10+50	11+25	RT	80
4	-L-	13+50	14+50	RT	105
				SUBTOTAL	185
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					25
				TOTAL	210
				SAY	210

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.134	EC-3A

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.

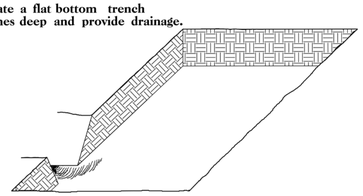
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.134	RF-1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

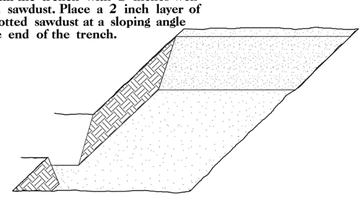
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

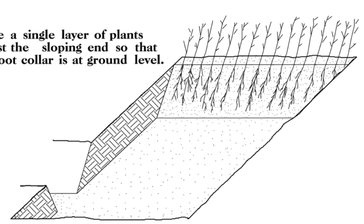
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



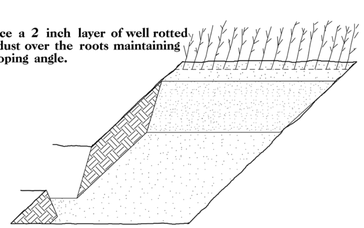
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

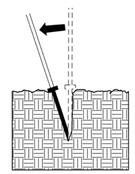


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

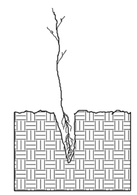


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

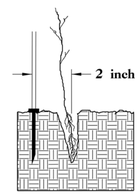
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



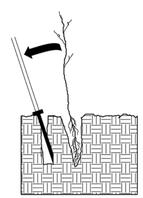
1. Insert planting bar as shown and pull handle toward planter.



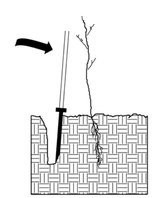
2. Remove planting bar and place seedling at correct depth.



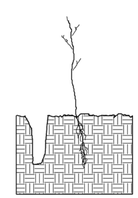
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.



6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.

KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.

ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION

☐ TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

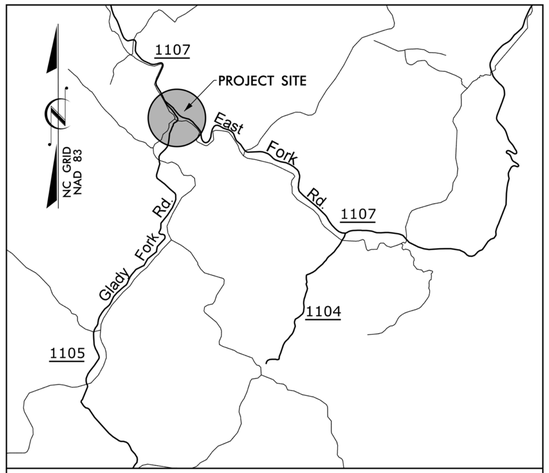
25%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in – 18 in BR
25%	PLATANUS OCCIDENTALIS	SYCAMORE	12 in – 18 in BR
25%	FRAXINUS PENNSYLVANICA	GREEN ASH	12 in – 18 in BR
25%	BETULA NIGRA	RIVER BIRCH	12 in – 18 in BR

REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

TIP PROJECT: 17BP.14.R.134

CONTRACT: DN00114



VICINITY MAP

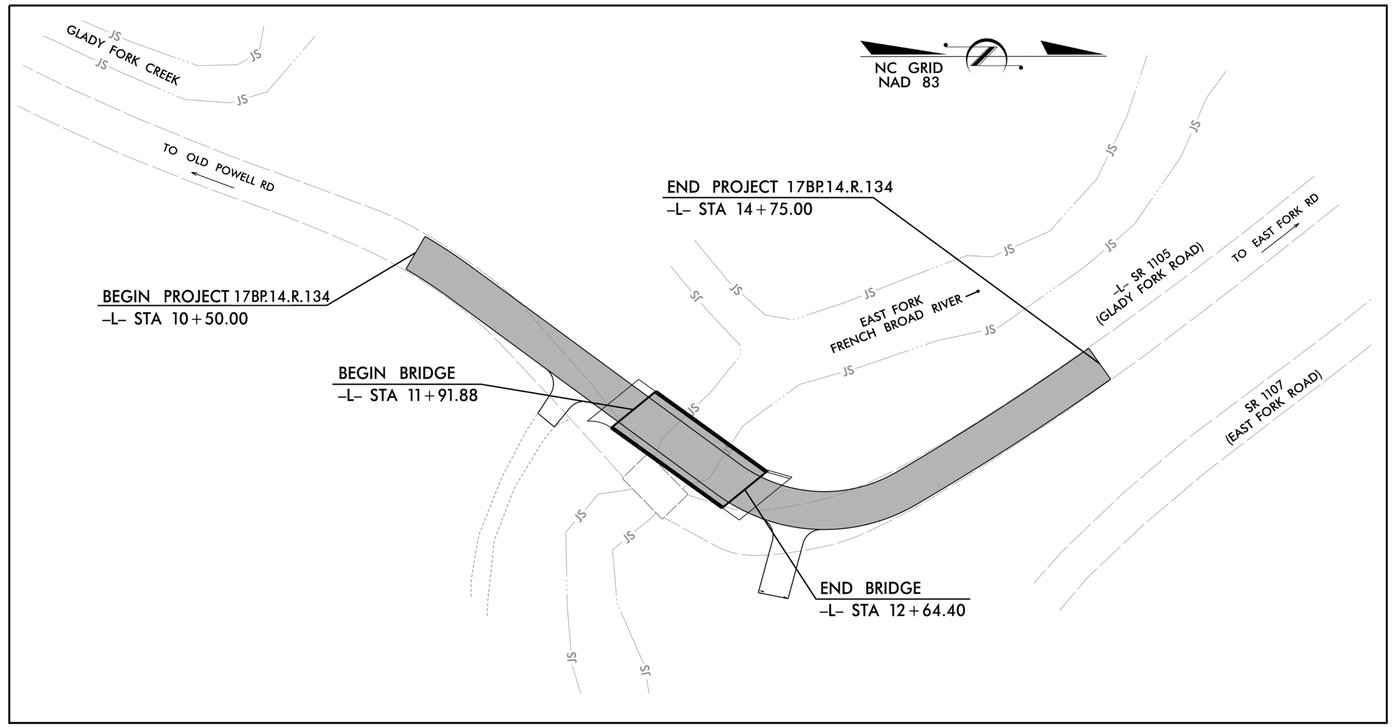
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
17BP.14.R.134	UO–1

UTILITIES BY OTHERS PLANS
TRANSYLVANIA COUNTY

LOCATION: BRIDGE NO. 117 OVER THE EAST FORK OF THE FRENCH BROAD RIVER ON SR 1105 (GLADY FORK ROAD)

TYPE OF WORK: AERIAL POWER & TELEPHONE AND UNDERGROUND TELEPHONE



GRAPHIC SCALES

30 15 0 30 60

PLANS

INDEX OF SHEETS

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

UTILITY OWNERS ON PROJECT

(1) POWER – HAYWOOD EMC

(2) TELEPHONE – CITIZENS TELEPHONE COMPANY (COMPORIUM)

PLANS PREPARED BY:

V&M
Vaughn & Melton
Consulting Engineers
1318-F PATTON AVE.
Asheville, NC 28806
828-253-2796

PREPARED FOR THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES ENGINEERING SECTION
1591 MAIL SERVICES CENTER
RALEIGH NC 27699–1591
PHONE (919) 250–4128
FAX (919) 250–4119

Roger Worthington, P.E. — UTILITIES SECTION ENGINEER
Xxxxx Xxxxx, P.E. — UTILITIES SQUAD LEADER PROJECT ENGINEER
Lynn A. Mann, P.G. — UTILITIES PROJECT DESIGNER

09/25/13
V&M PROJECT #31235-05
TRANSPORTATION\31235\05\UTILITIES\UO-1.DGN

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.134	UO-2

UTILITIES BY OTHERS

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

V&M
Vaughn & Melton
Consulting Engineers
Charlotte, North Carolina 704-357-0488
Tri-Cities, Tennessee 423-467-8401
Knoxville, Tennessee 865-546-5800
Asheville, North Carolina 828-253-2796
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-574-4775

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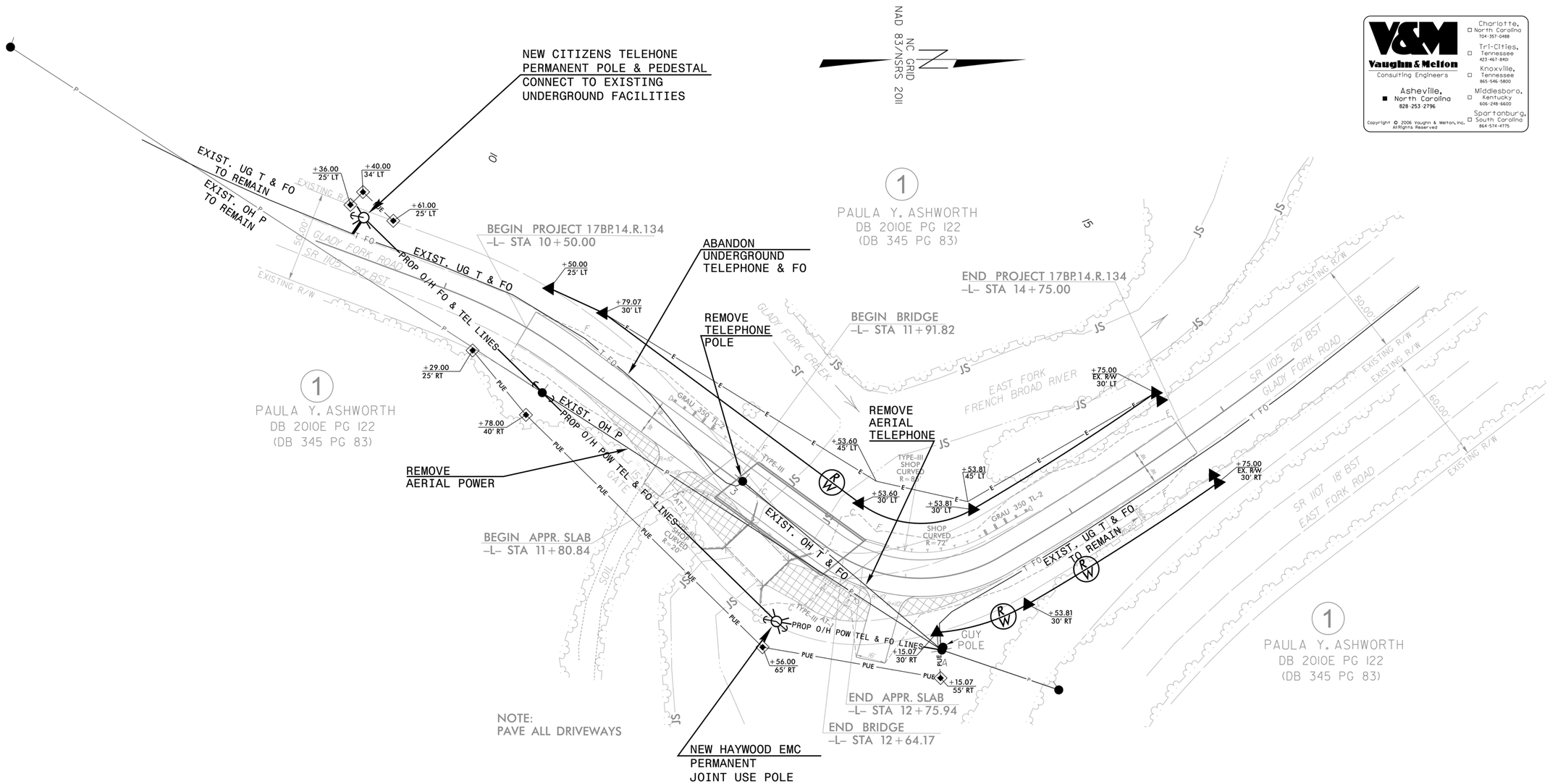


CONTRACT: DN00114

TIP PROJECT:17BP.14.R.134

9/25/13

V&M PROJECT #31235-05
TRANSPORTATION\31235-05\UTILITIES\UO-2.DGN

COMPUTED BY: PHS DATE: 1-27-14
CHECKED BY: RMS DATE: 1-27-14

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.134	X-0

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL SEAL 26880 ENGINEER BRUCE M. SCHULER
7/25/14

CROSS SECTION SUMMARY

IN CUBIC YARDS

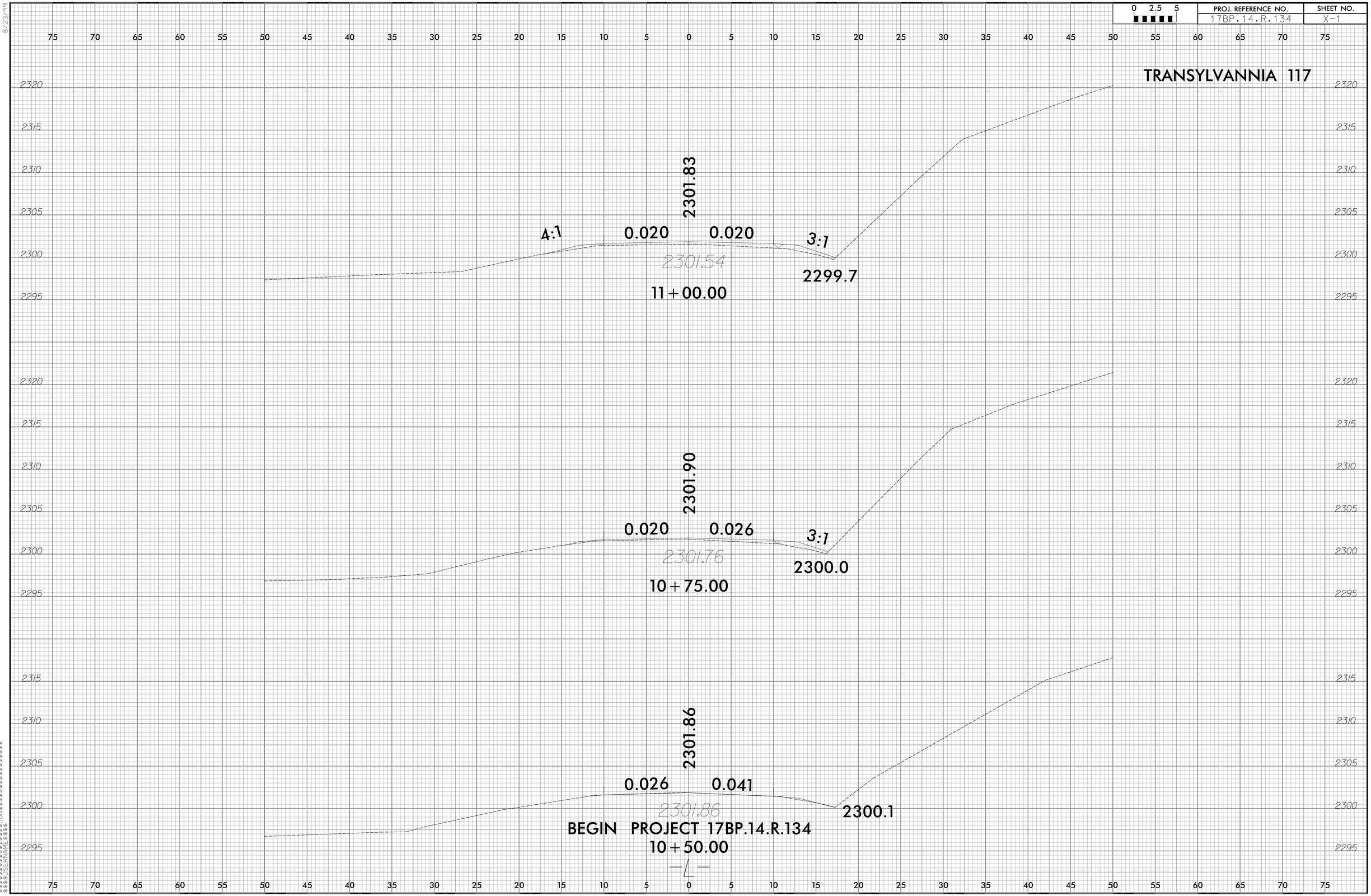
-L- LOCATION	UNCLASSIFIED EXCAVATION	EMBT
10+50	0	0
10+75	0	2
11+00	0	4
11+25	0	7
11+50	0	14
11+75	0	26
11+91.82 BEGIN BRIDGE	0	11
12+64.17 END BRIDGE	0	0
12+75	0	14
13+00	0	74
13+25	0	41
13+50	0	8
13+75	0	11
14+00	0	14
14+25	0	10
14+50	0	5
14+75	0	0

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT.

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

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.14.R.134	X-1



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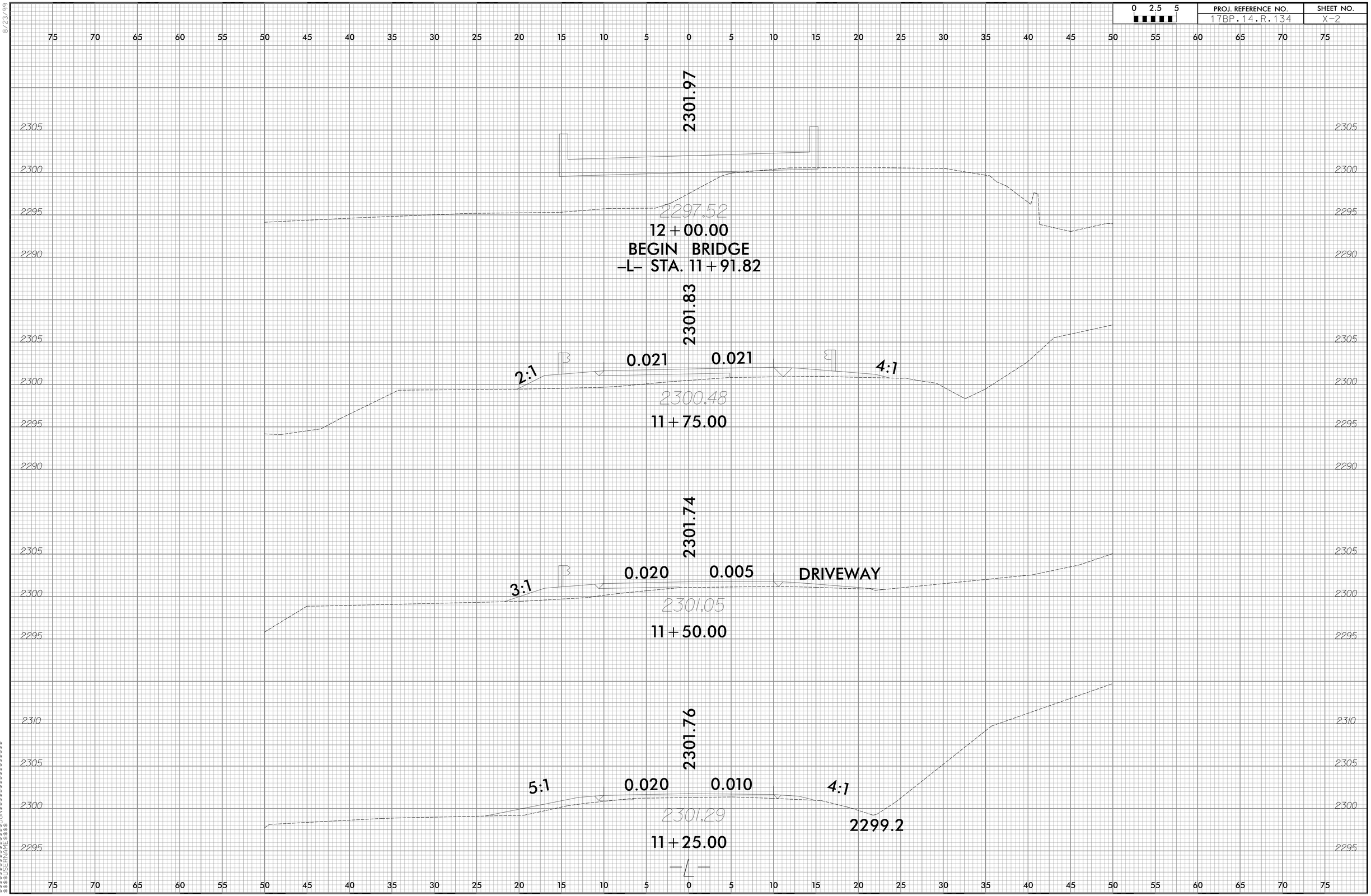
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.134	X-2



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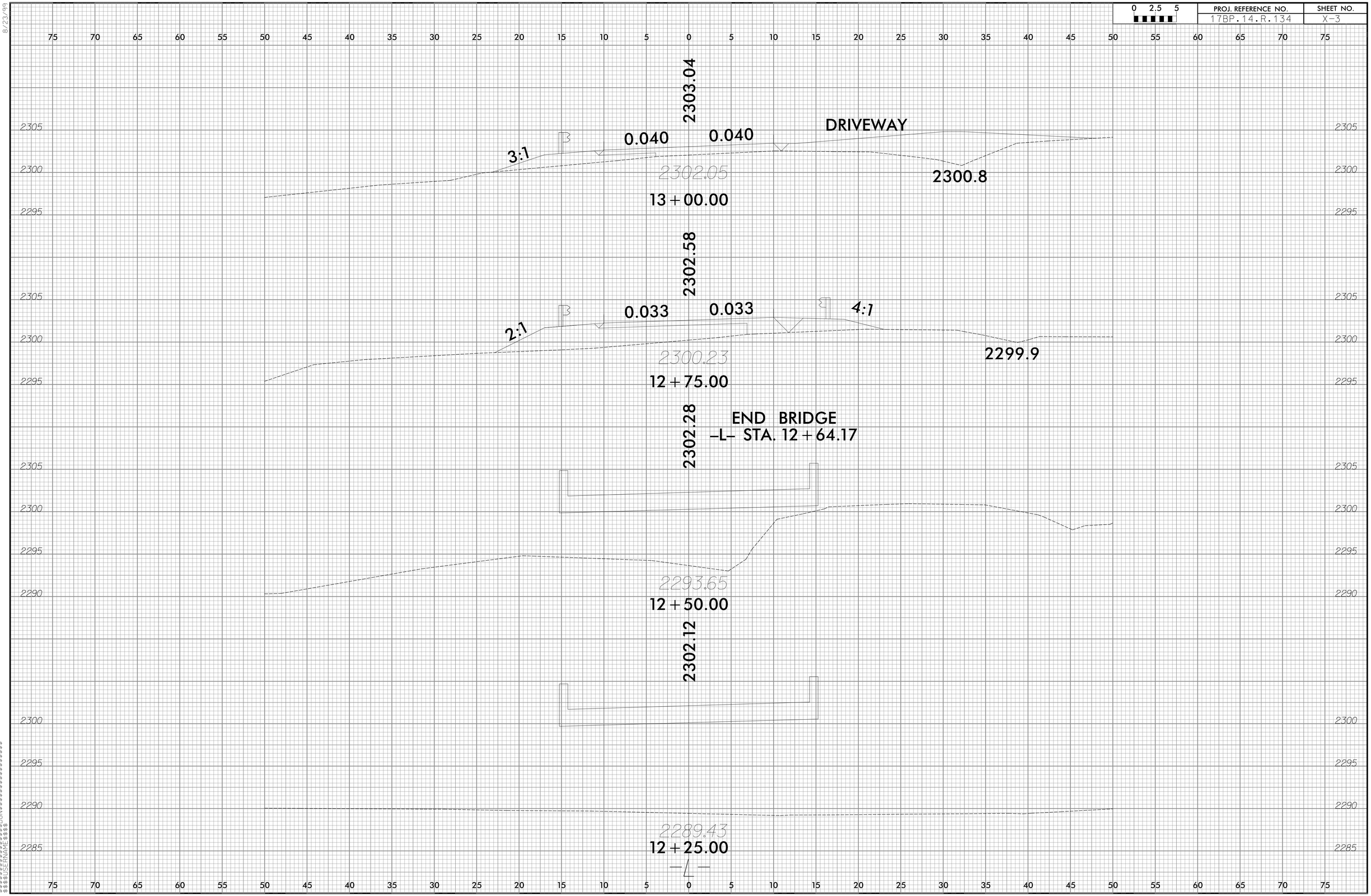
8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.14.R.134	X-3



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8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
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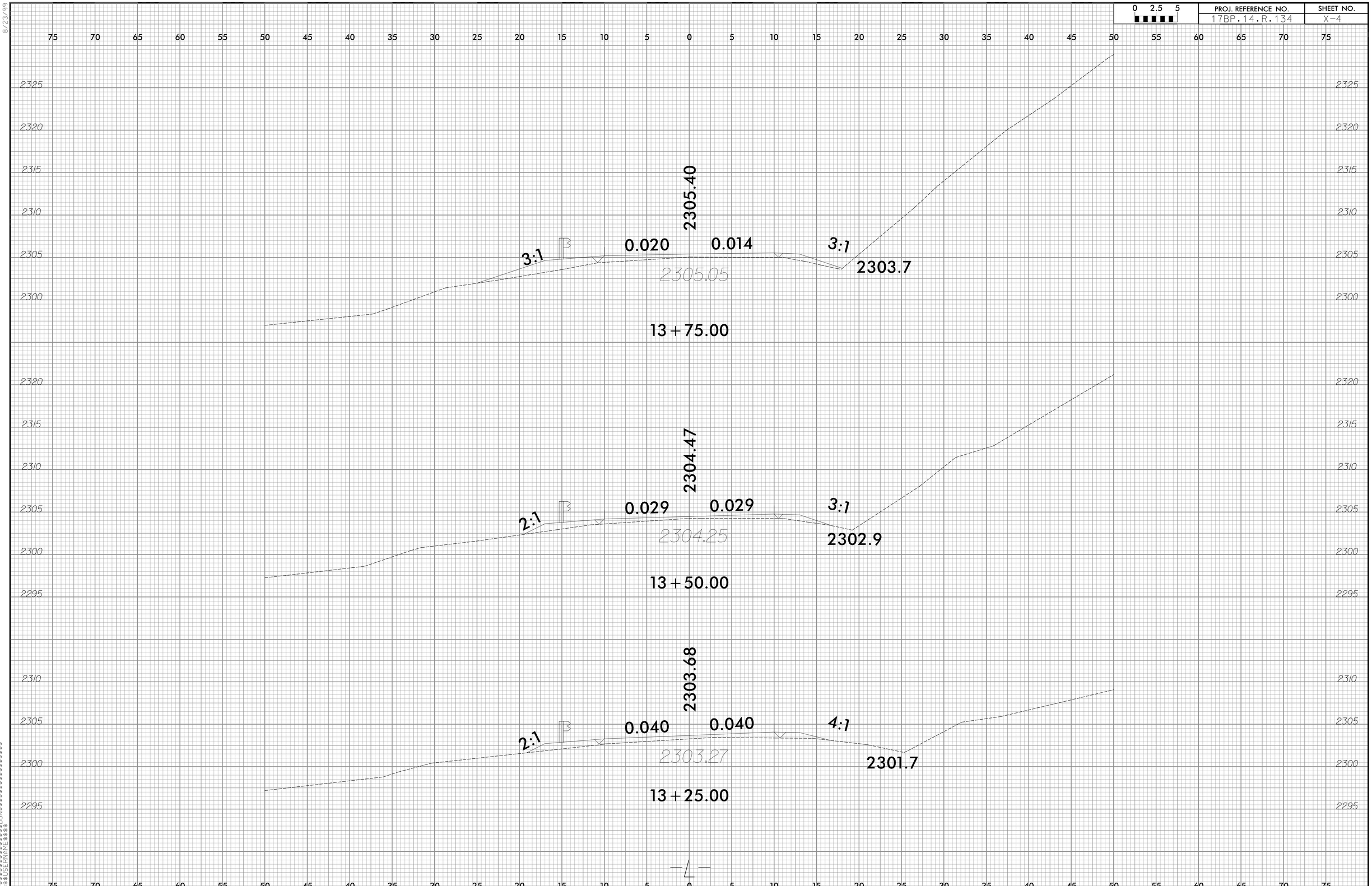

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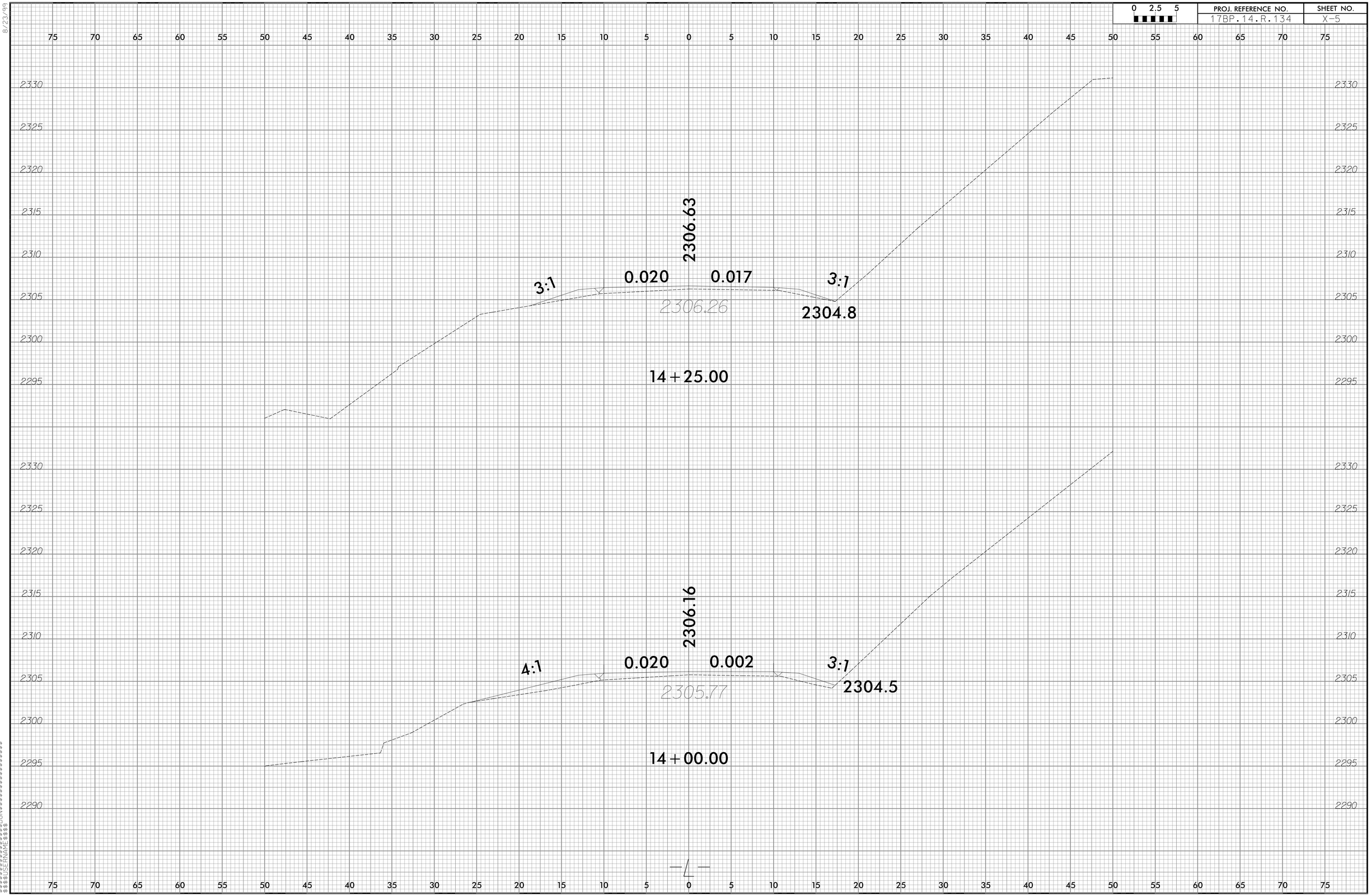
8/23/99

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.134	X-5

0 2.5 5



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$$$$SYSTIME$$$$
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8/23/99

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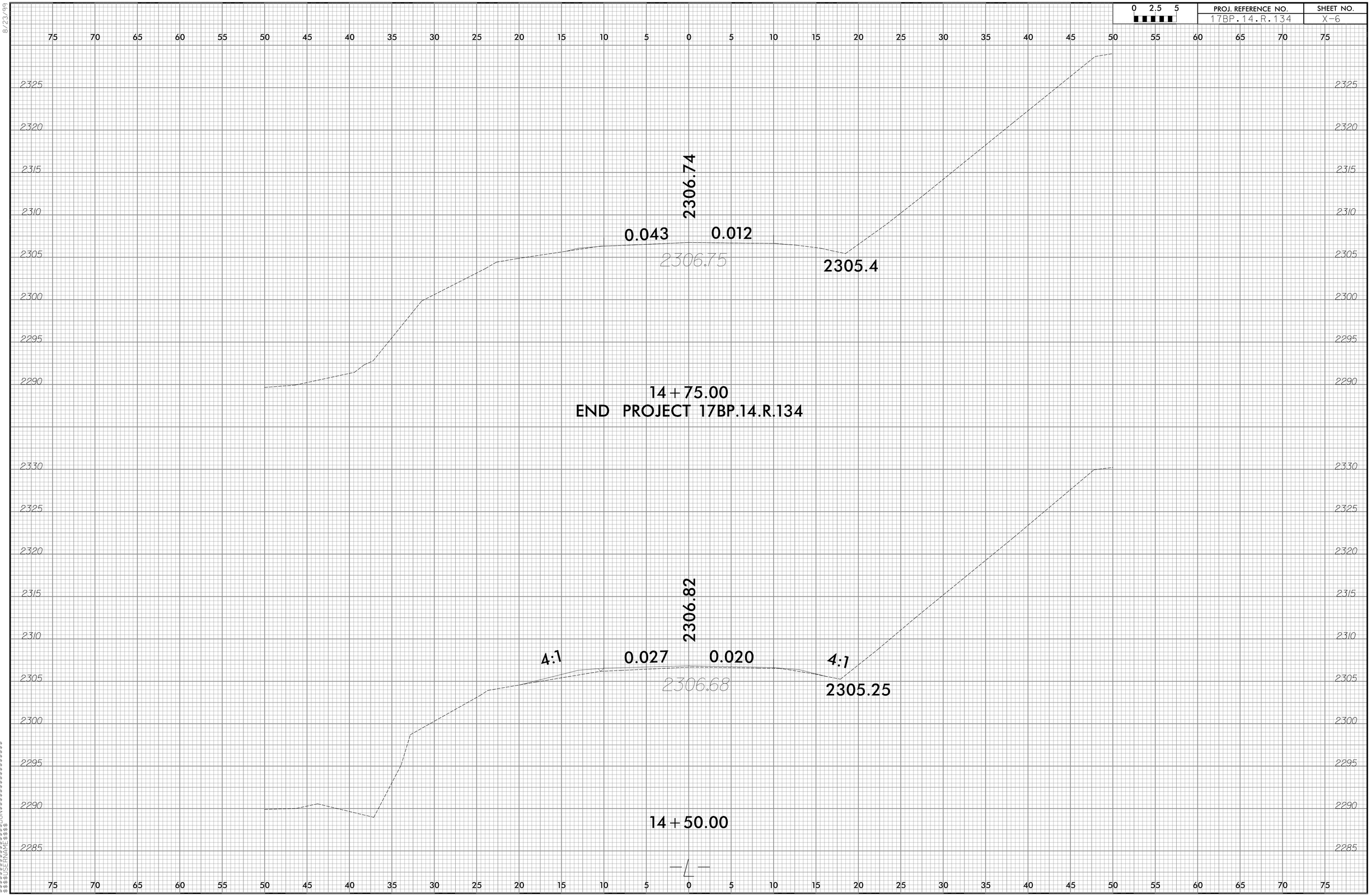

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