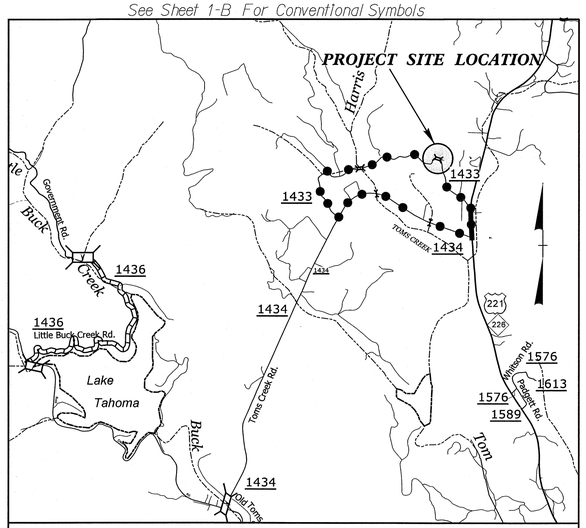
09/06/99

PROJECT: 17BP.13.R.54

CONTRACT:

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP

DETOUR ROUTE

N.T.S.

FINAL PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MCDOWELL COUNTY

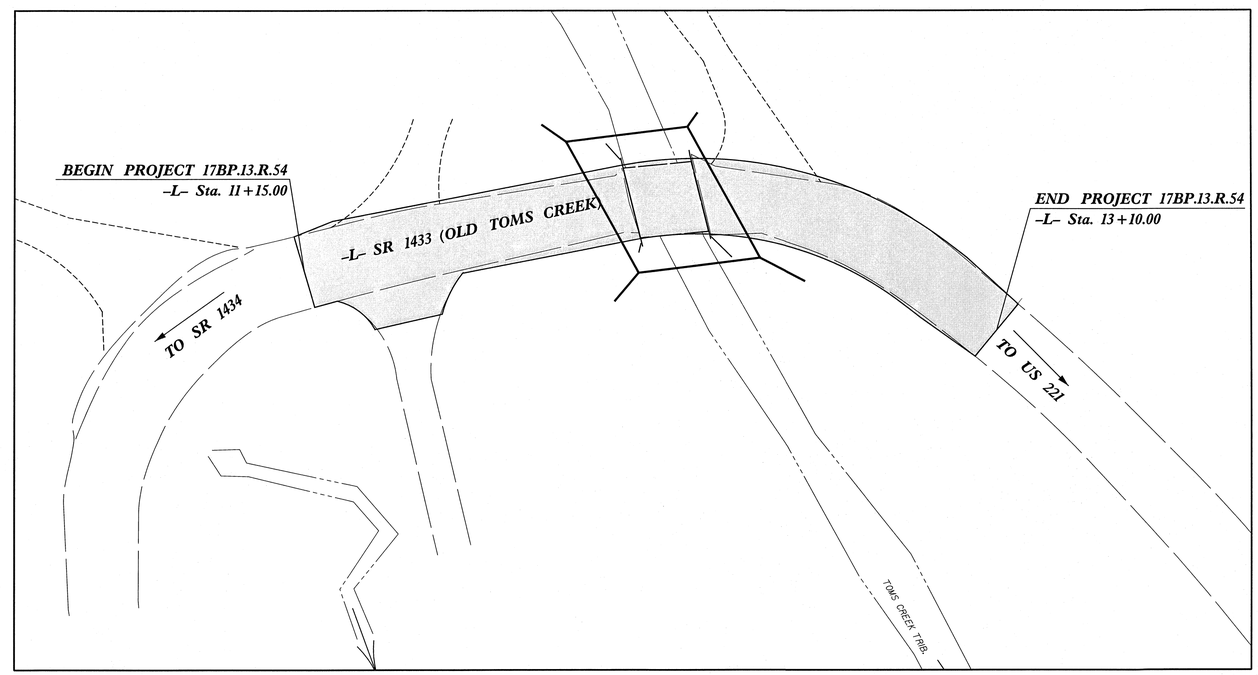
LOCATION: BRIDGE NO. 580134 ON SR 1433 (OLD TOMS CREEK ROAD) OVER OLD TOMS CREEK TRIBUTARY 1

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.13.R.54	1	
MCDOWELL COUNTY #580134			

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.13.R.54		PE
17BP.13.R.54		R/W & UTILITIES
17BP.13.R.54		CONST.

NAD 83/ NSRS 2007



GRAPHIC SCALES

20 10 0 20 40
PLANS

20 10 0 20 40
PROFILE (HORIZONTAL)

4 2 0 4 8
PROFILE (VERTICAL)

DESIGN DATA

ADT 2010 = 30
ADT 2025 = 60
DHV = N/A %
D = N/A %
T = N/A % *
V = 25 MPH

FUNCTIONAL CLASSIFICATION:
RURAL LOCAL

PROJECT LENGTH

LENGTH ROADWAY PROJECT 17BP.13.R.54 = 0.031 mi

LENGTH STRUCTURE PROJECT 17BP.13.R.54 = 0.006 mi

TOTAL LENGTH OF PROJECT 17BP.13.R.54 = 0.037 mi

PLANS PREPARED BY:
CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TELE 919.788.0224 FAX. 919.788.0232
NC LICENSE #P-0189

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
6-11-12

LETTING DATE:

NCDOT CONTACT:

PLANS PREPARED FOR:
DIVISION OF HIGHWAYS
20 Old 74
Asheville, NC 28803

THOMAS R. HEPLER, PE, PLS
PROJECT ENGINEER

ERIC M. TWEED, PE
PROJECT DESIGN ENGINEER

PAUL SPROUSE, PE
DIVSION 13 BRIDGE PROGRAM MANAGER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21162 ENGINEER W. HERBERT TURNER, JR.
SIGNATURE: 2/20/14

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 10359 ENGINEER THOMAS R. HEPLER
SIGNATURE: P.E. 2/6/14

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

PROJECT REFERENCE NO.	SHEET NO.
17BP.13.R.54	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 039 ENGINEER THOMAS R. HAPPER

2/6/14

INDEX OF SHEETS

1	Title Sheet
1-A	Index of Sheets, Roadway Standards, General Notes
1-B	Conventional Symbols
2	Typical Sections
3	Pipe Data Sheet/ Summary of Quantities
4	Plan and Profile Sheets
TCP-1	Traffic Control Plans
EC-1 thru EC-5	Erosion Control Plans
RF-1 thru RF-2	Reforestation Plans
UO-1 thru UO-2	Utilities by Others Plans
X-1 thru X-3	-L- line Cross Sections
S-1 thru S-2	Structure Plans

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-12

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 II.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 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.

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.

UNDERDRAINS:

UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.03 AT LOCATIONS DIRECTED BY THE ENGINEER.

STREET TURNOUT:

STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

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.

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 STRUCTURE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE REMCO POWER, FRONTIER COMMUNICATIONS, AND CHARTER COMMUNICATIONS

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

RIGHT-OF-WAY POINTS INDICATED IN THESE PLANS HAVE BEEN PLACED. AT THE END OF CONSTRUCTION CONTRACTOR IS RESPONSIBLE FOR PLACING CONCRETE MONUMENTS AT POINTS INDICATED ON PLANS. ANY RIGHT-OF-WAY POINTS DESTROYED DURING CONSTRUCTION SHALL BE ACCURATELY RESET BY CONTRACTOR.

EFF. 01-17-12

2012 ROADWAY STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated Jan 17, 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 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 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
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap
DIVISION 11 - WORK ZONE TRAFFIC CONTROL	
1101.01	Work Zone Advance Warning Signs
1101.03	Temporary Road Closures
1110.01	Stationary Work Zone Signs
1145.01	Barricades - Type III
DIVISION 12 - PAVEMENT MARKINGS, MARKERS AND DELINEATION	
1205.01	Pavement Markings - Line Types and Offsets
1205.02	Pavement Markings - Two Lane and Multilane Roadways
1264.01	Object Markers

8/17/99

1/24/2014
R:\Roadway\Proj\5_00134_RDY_PSH01A.dgn

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
17BP.13.R.54	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 R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

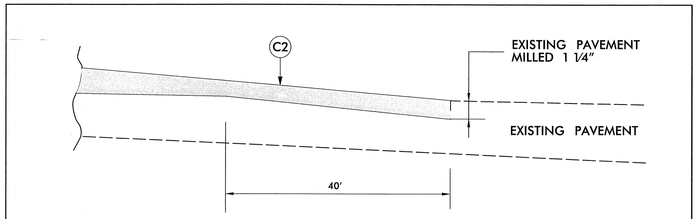
SANITARY SEWER:

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

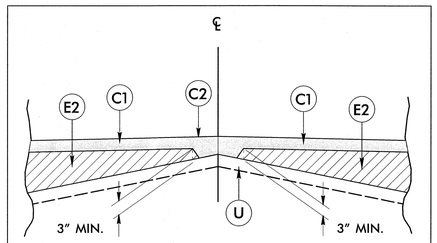
MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc.
- 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.

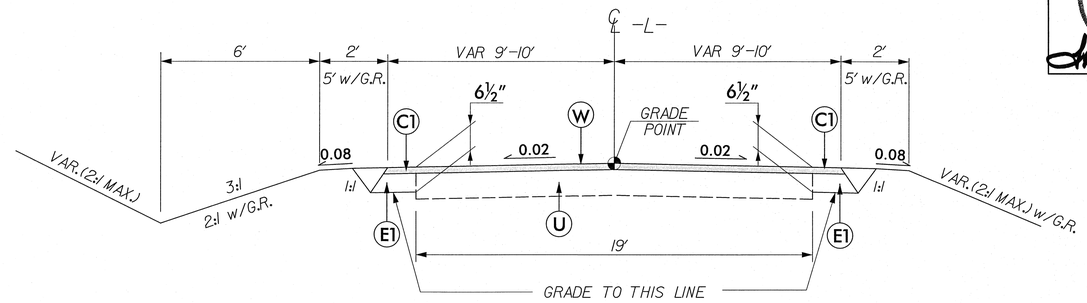
	PAVEMENT SCHEDULE
C1	PROP. APPROX. 3 " ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1½" OR GREATER THAN 2" 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.
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL, THIS SHEET)



Incidental Milling Existing Pavement

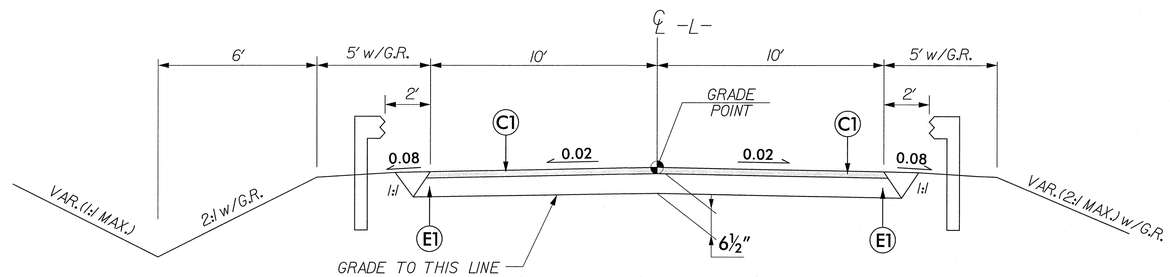


Detail Showing Method of Wedging



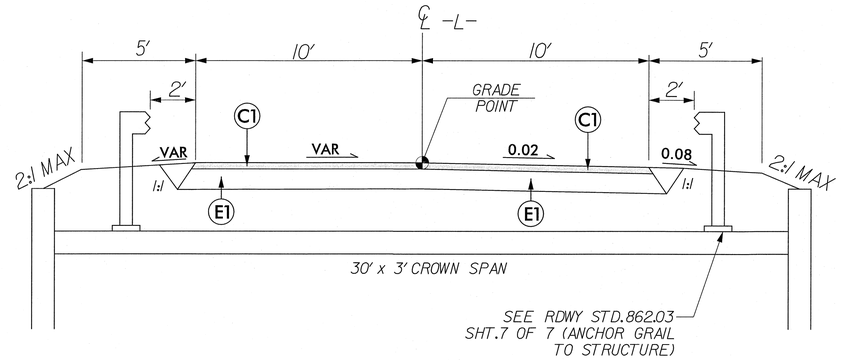
TYPICAL SECTION NO. 1

-L- Sta. 11+15.00 TO -L- Sta. 11+70.00
-L- Sta. 12+60.00 TO -L- Sta. 13+10.00



TYPICAL SECTION NO. 2

-L- Sta. 11+70.00 TO -L- Sta. 11+95.60
-L- Sta. 12+28.93 TO -L- Sta. 12+60.00



TYPICAL SECTION NO. 3

-L- Sta. 11+95.60 TO -L- Sta. 12+28.93
AT CULVERT

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TELE 919.788.0224 FAX 919.788.0232
NC LICENSE #P-0189

PROJECT REFERENCE NO.	SHEET NO.
17BP.13.R.54	2
MCDOWELL COUNTY #580134	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 10359 ENGINEER THOMAS B. HEPLER
2/6/14

PROJECT NO. 17BP.13.R.54
COUNTY: MCDOWELL
REPLACES BRIDGE NO. 580134

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE NO. 580134
ON SR 1433, OVER
OLD TOMS CREEK TRIB 1

6/2/99
1/24/2014
R:\Roadway\Proj\580134_rdy_typ.dgn
USERNAME

COMPUTED BY: TLH	DATE: 4-4-13
CHECKED BY: TRH	DATE: 4-4-13

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
17BP.13.R.54	3
BRIDGE NO. 580134	

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TELE 919.788.0224 FAX 919.788.0232
NC LICENSE #P-0189

SUMMARY OF EARTHWORK

CHAIN	FROM STATION	TO STATION	SIDE	UNCL. EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L-	11+00	13+00	CENTERLINE	317		250	0	67
SUBTOTAL SUMMARY NO. 1				317		250	0	67
-L-								
SUBTOTAL SUMMARY NO. 2								
SUBTOTAL SUMMARY 1-2				317		250	0	67
LOSS DUE TO CLEARING AND GRUBBING								
PROJECT TOTAL								
WASTE IN LIEU OF BORROW								
ESTIMATE 5% FOR TOPSOIL ON BORROW PITS								
GRAND TOTAL				317		250	0	67
SAY				340				

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".

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

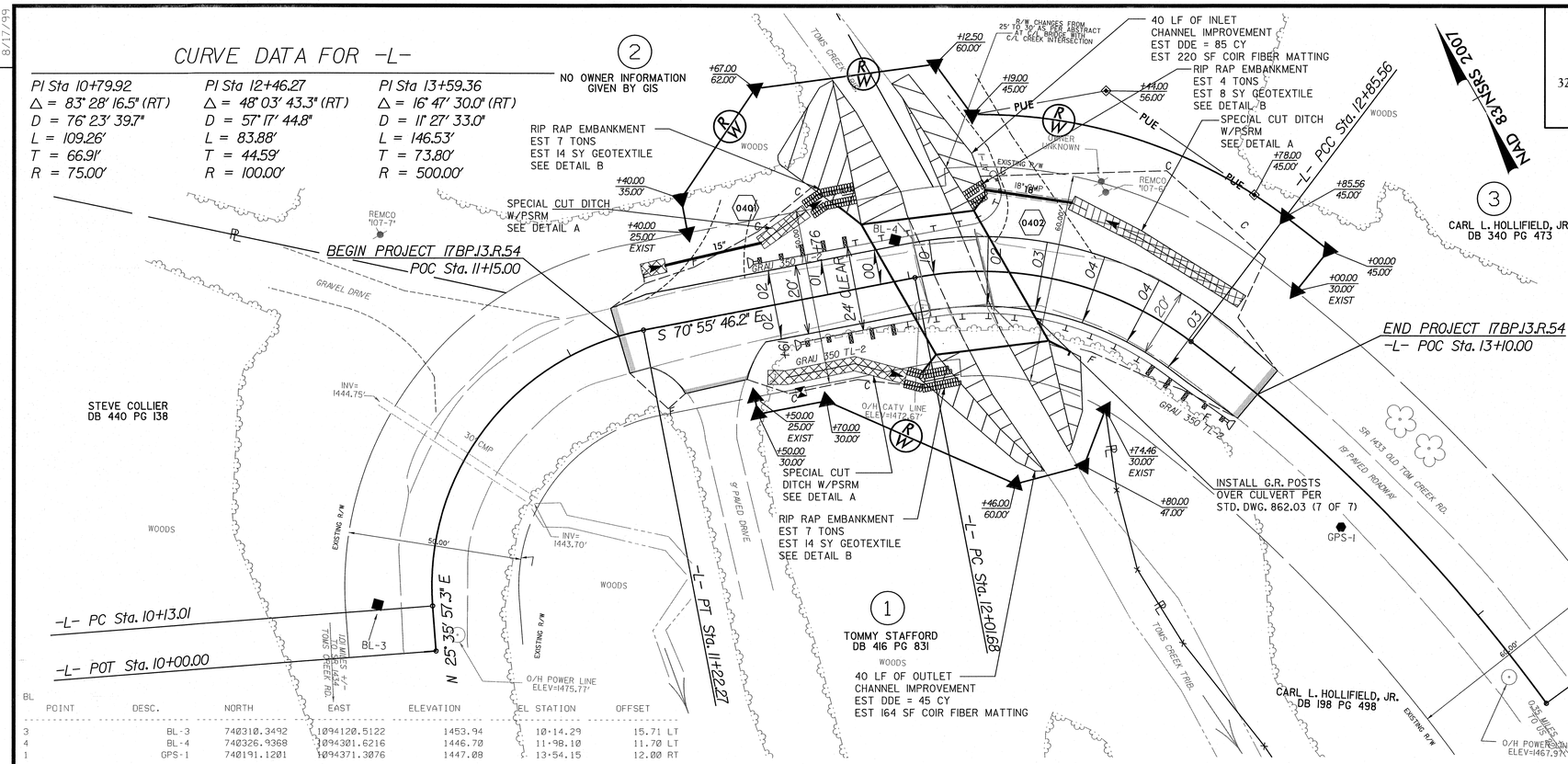
| STATION / SIZE / THICKNESS OR GAUGE | LOCATION (LT,RT, OR CL) | STRUCTURE NO. FROM | STRUCTURE NO. TO | TOP ELEVATION | INVERT ELEVATION | INVERT ELEVATION | SLOPE CRITICAL | DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | C.S. PIPE (UNLESS NOTED OTHRWISE) 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | CLASS III R.C. PIPE (UNLESS OTHERWISE NOTED) 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | 15" SIDE DRAIN PIPE | 18" SIDE DRAIN PIPE | 24" SIDE DRAIN PIPE | ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P. | C.S.P. | QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') LIN. *FT. PER EACH (0' THRU 5.0') | 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 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME & GRATE STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR 840.26 | G.D.I. TYPE "B" STD. 840.18 OR 840.27 | G.D.I. TYPE "D" STD. 840.19 OR 840.28 | G.D.I. FRAME WITH GRATE STD. 840.22 | G.D.I. FRAME WITH TWO GRATES STD. 840.22 | G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24 | G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24 | J.B. STD. 840.31 OR 840.32 | CORR. STEEL ELBOWS NO. & SIZE | CONC. COLLARS CL. "B" C.Y. STD 840.72 | CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71 | PIPE REMOVAL LIN.FT. | REMARKS |
|---|---|---|---|---|---|---|---|---

8/17/99

REVISIONS

CURVE DATA FOR -L-

PI Sta 10+79.92	PI Sta 12+46.27	PI Sta 13+59.36
Δ = 83° 28' 16.5" (RT)	Δ = 48° 03' 43.3" (RT)	Δ = 16° 47' 30.0" (RT)
D = 76° 23' 39.7"	D = 57° 17' 44.8"	D = 11° 27' 33.0"
L = 109.26'	L = 83.88'	L = 146.53'
T = 66.91'	T = 44.59'	T = 73.80'
R = 75.00'	R = 100.00'	R = 500.00'



POINT	DESC.	NORTH	EAST	ELEVATION	-L- STATION	OFFSET
3	BL-3	740310.3492	1094120.5122	1453.94	10+14.29	15.71 LT
4	BL-4	740326.9368	1094301.6216	1446.70	11+98.10	11.70 LT
1	GPS-1	740191.1201	1094371.3076	1447.08	13+54.15	12.00 RT

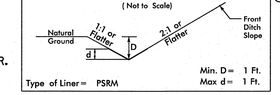
CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TELE 919.788.0224 FAX 919.788.0232
NC LICENSE #P-0189

PROJECT REFERENCE NO.	SHEET NO.
17BP.13.R.54	4
BRIDGE NO. 580134	

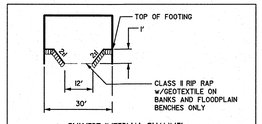
ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 10359 ENGINEER THOMAS R. HEFFLER — 3-14-14

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21162 ENGINEER HERBERT TURNER, JR. — 3-14-14

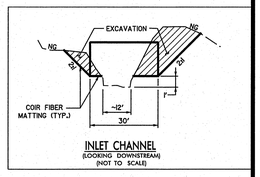
DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



FROM -L- STA. 11+25 TO STA. 11+75 LT.
FROM -L- STA. 12+42 TO STA. 12+90 LT.
FROM -L- STA. 11+55 TO STA. 11+94 RT.

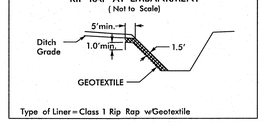


CULVERT INTERNAL CHANNEL
EST. 86 TONS CLASS II RIPRAP
EST. 121 SY GEOTEXTILE



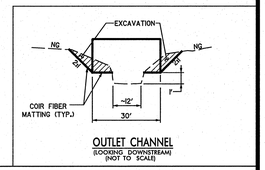
INLET CHANNEL
(LOOKING DOWNSTREAM)
(NOT TO SCALE)

DETAIL B
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner=Class 1 Rip Rap wGeotextile

FROM -L- STA. 11+75 TO STA. 11+90 LT.
FROM -L- STA. 12+17 TO STA. 12+22 LT.
FROM -L- STA. 11+94 TO STA. 12+12 RT.



OUTLET CHANNEL
(LOOKING DOWNSTREAM)
(NOT TO SCALE)

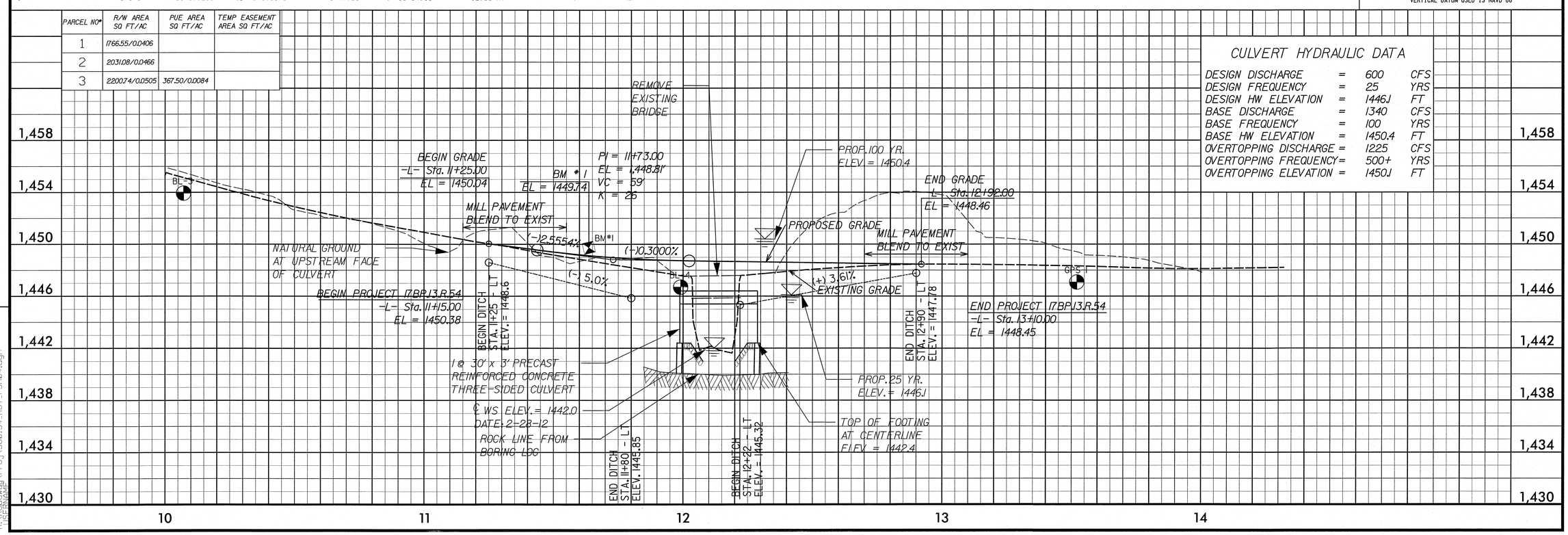
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS-2"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 739460.3387(ft) EASTING: 1094541.1727(ft)
ELEVATION: 1449.16(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99984535
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-2" TO -L- STATION 11+15.00 IS
N20°02'58.4"W 939.2742
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

PARCEL NO*	R/W AREA SQ FT/AC	PUE AREA SQ FT/AC	TEMP EASEMENT AREA SQ FT/AC
1	1766.55/0.0406		
2	2031.08/0.0466		
3	2200.74/0.0505	367.50/0.0084	

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	=	600	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	1446.1	FT
BASE DISCHARGE	=	1340	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	1450.4	FT
OVERTOPPING DISCHARGE	=	1225	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	1450.1	FT



3/13/2014
R:\Roadway\Proj\58013_RDY_PSH04.dgn
USER: DAME

OLD TOMS CREEK ROAD (SR 1433)
TEMPORARY ROAD CLOSURE

PROJECT REFERENCE NO.	SHEET NO.
17BP.13.R.54	TCP-1
BRIDGE NO. 580134	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

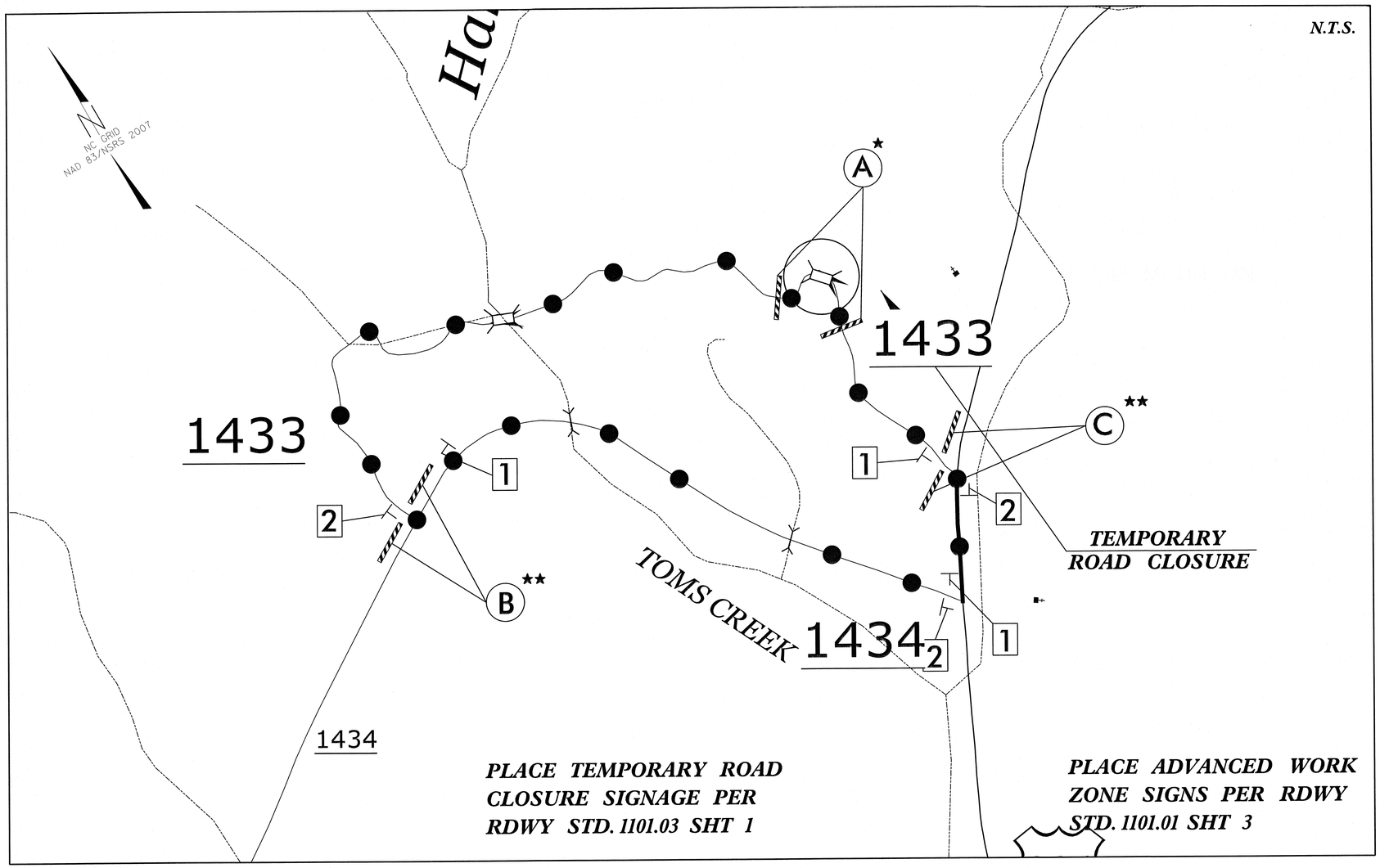
NORTH CAROLINA PROFESSIONAL SEAL 10359 ENGINEER THOMAS B. HEFLER

2/4/14

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TELE 919.788.0224 FAX 919.788.0232
NC LICENSE #P-0189

REVISIONS

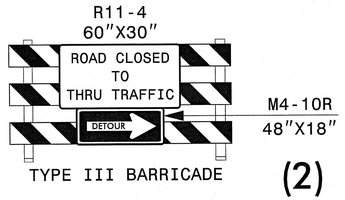
REV. 8-17-12



A

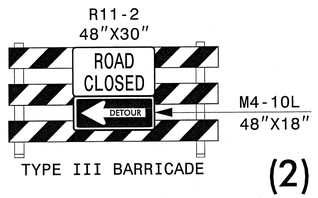
(2)

B



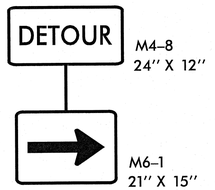
(2)

C



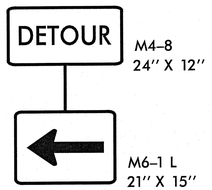
(2)

1



(3)

2



(3)

PROPOSED DETOUR

DETOUR ROUTE ●—●—●—●—●

DETOUR LENGTH 2.40 MILES

ROADWAY STANDARD DRAWINGS

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
1101.01	WORK ZONE ADVANCED WARNING SIGNS
1101.03	TEMPORARY ROAD CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES - TYPE III
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS

*NOTE: DRIVEWAY ACCESS IN PROXIMITY TO BRIDGE SHALL BE MAINTAINED. PLACE ADVANCED WORK ZONE SIGNS PER RDWY STD. 1101.01 SHT 3.

**NOTE: PLACE TEMPORARY ROAD CLOSURE SIGNAGE PER RDWY STD. 1101.03 SHT 1.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17.BP.13.R.54	EC-1	

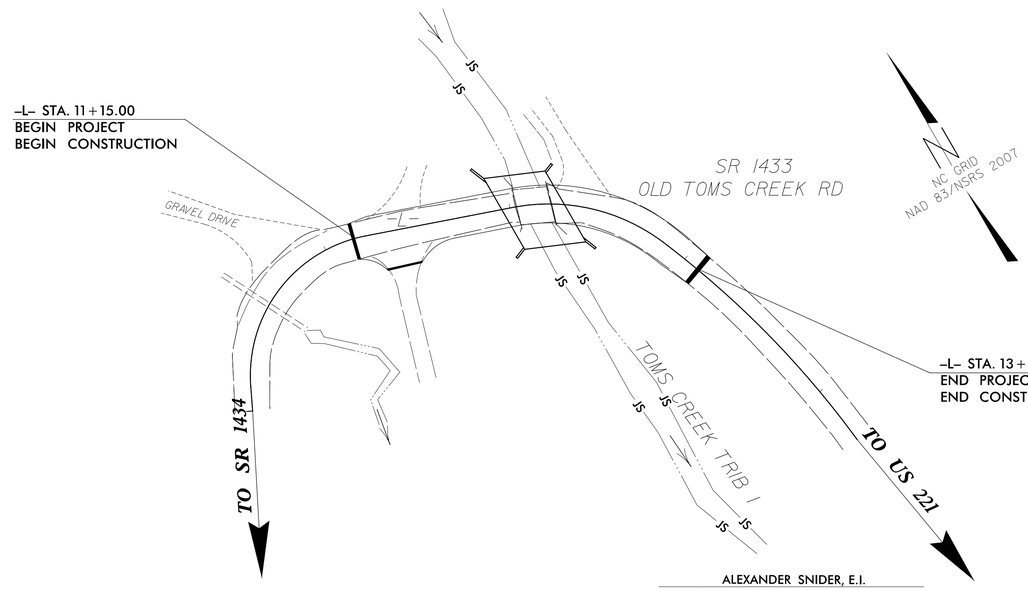
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

MCDOWELL COUNTY

BRIDGE NO. 134 ON SR 1433
OVER TOMS CREEK TRIB 1



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	
	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	
	Coir Fiber Wattle Segment	-CFW-

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

ALEXANDER SNIDER, E.I.
ROADSIDE ENVIRONMENTAL ENGINEER
3064
LEVEL III CERTIFICATION NUMBER
TRENTON J. CORMIER, P.E.
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER
118
LEVEL III CERTIFICATION NUMBER

Florence & Hutcheson
CONSULTING ENGINEERS
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

17.BP.13.R.54

GRAPHIC SCALE

20 10 0 20 40
PLANS

20 10 0 20 40
PROFILE (HORIZONTAL)

4 2 0 4 8
PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

LEVEL III CERTIFIED BY:
ALEXANDER SNIDER, E.I.
CERTIFICATION NUMBER: 3064
ISSUED: OCTOBER 24, 2012

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:

FLORENCE & HUTCHESON
5121 KINGDOM WAY, SUITE 100
RALEIGH NC 27607
NC License No: F-0258

2012 STANDARD SPECIFICATIONS

Roadway Standard Drawings

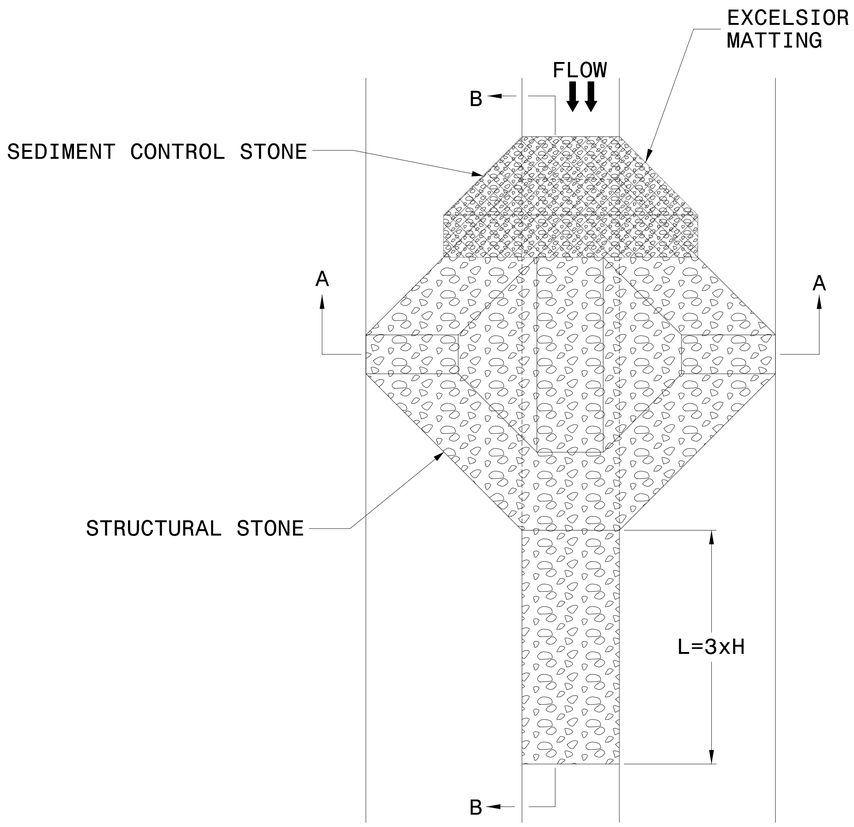
The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

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		

10/24/2012
ulsp\Erosion Control\cadd\17BP.13.R.54_hyd_erosion_title.dgn
pgscoggins & hutcheson,inc.

PROJECT REFERENCE NO.	SHEET NO.
17.BP.13.R.54	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



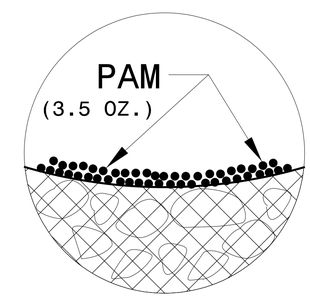
PLAN

NOTES

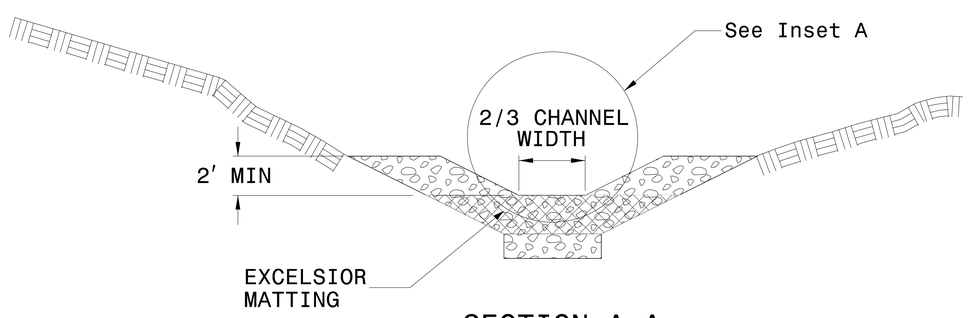
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.

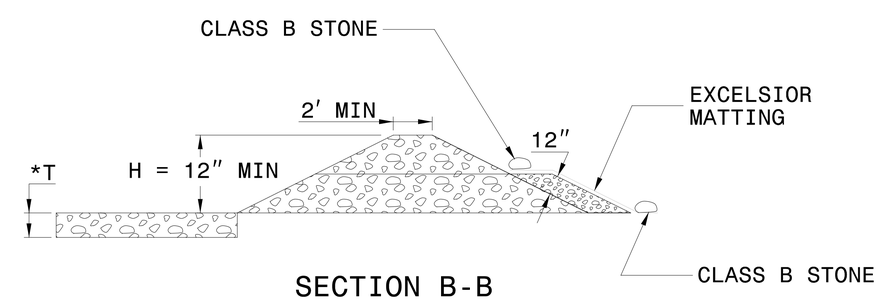
INITIALLY APPLY 3.5 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

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

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
17.BP.13.R.54	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

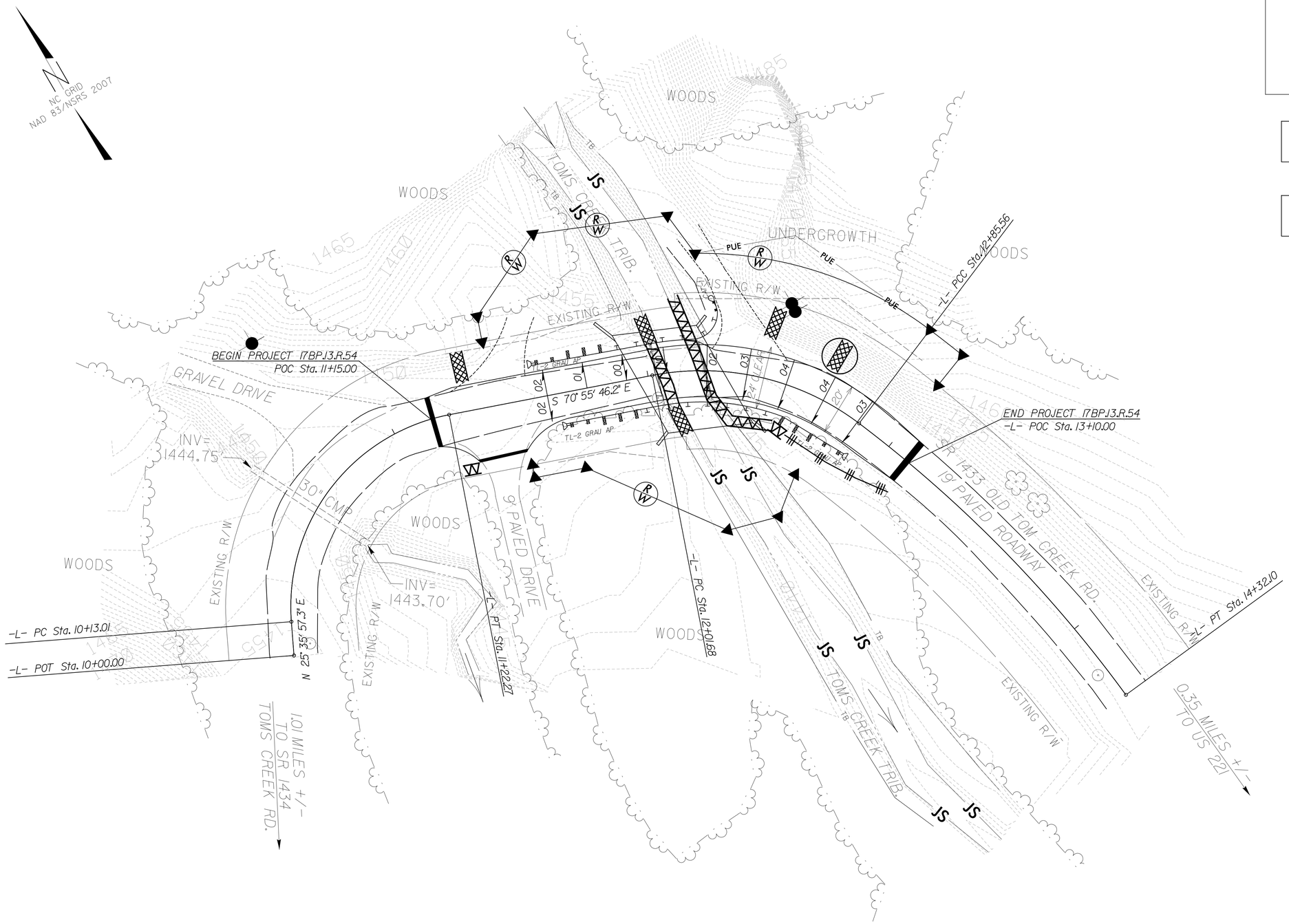
SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS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

PROJECT REFERENCE NO.	SHEET NO.
17.BP.13.R.54	EC-4/CONST.4
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
ALEXANDER SNIDER, E.I.
CERTIFICATION NUMBER: 3064
ISSUED: OCTOBER 24, 2012

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

CULVERT AT -L- 12+13.75
FOR CONSTRUCTION SEQUENCE,
SEE SHEET EC-4A



NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING/PROPOSED R/W OR EASEMENT.

Florence & Hutcheson
CONSULTING ENGINEERS
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

5/14/99
10/24/2012
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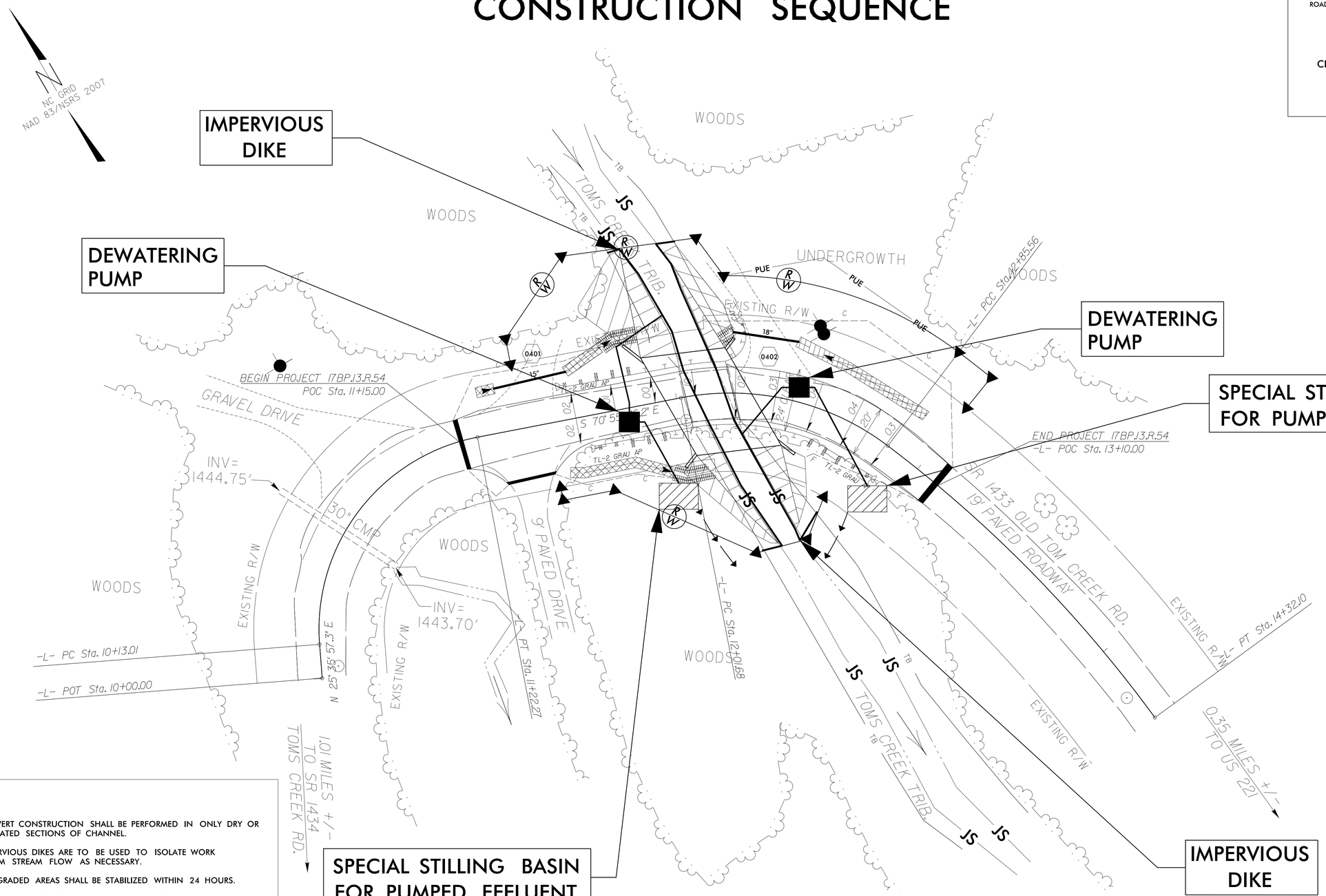
Ko & Associates, P.C.

PROJECT REFERENCE NO.	SHEET NO.
17.BP.13.R.54	EC-4A/CONST.4
R/W SHEET NO.	____
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
ALEXANDER SNIDER, E.I.
CERTIFICATION NUMBER: 3064
ISSUED: OCTOBER 24, 2012

CONSTRUCTION SEQUENCE



NOTES:

1. CULVERT CONSTRUCTION SHALL BE PERFORMED IN ONLY DRY OR ISOLATED SECTIONS OF CHANNEL.
2. IMPERVIOUS DIKES ARE TO BE USED TO ISOLATE WORK FROM STREAM FLOW AS NECESSARY.
3. ALL GRADED AREAS SHALL BE STABILIZED WITHIN 24 HOURS.
4. MAINTENANCE OF STREAM FLOW OPERATIONS SHALL BE INCIDENTAL TO THE WORK.
5. PUMPS AND HOSES SHALL BE OF SUFFICIENT SIZE TO DEWATER THE WORK AREA.
6. THE CONTRACTOR SHALL NOT PUMP SEDIMENT–LADEN WATER DIRECTLY INTO STREAM. FOR DE–WATERING OF CULVERT SITES, THE CONTRACTOR SHALL FILTER SEDIMENT–LADEN WATER THROUGH SPECIAL STILLING BASIN.

CONSTRUCTION SEQUENCE (STA. 12+13.75 –L–)

(ROAD CLOSURE – MAINTENANCE OF TRAFFIC VIA OFFSITE DETOUR.)

1. REMOVE EXISTING BRIDGE.
2. CONSTRUCT SPECIAL STILLING BASINS FOR PUMPED EFFLUENT (10' X 15' MIN) FROM DEWATERED SITE.
3. INSTALL IMPERVIOUS DIKES.
4. MAINTAIN CHANNEL FLOW THROUGH CONSTRUCTION SITE VIA EXISTING CHANNEL.
5. INSTALL CULVERT AND HEADWALLS. BACKFILL CULVERT.
6. STABILIZE CHANNEL BANKS.
7. REMOVE IMPERVIOUS DIKES, SPECIAL STILLING BASINS, AND BYPASS PUMPS.
8. COMPLETE ROADWAY.

Florence & Hutcheson
CONSULTING ENGINEERS
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

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10/24/2012
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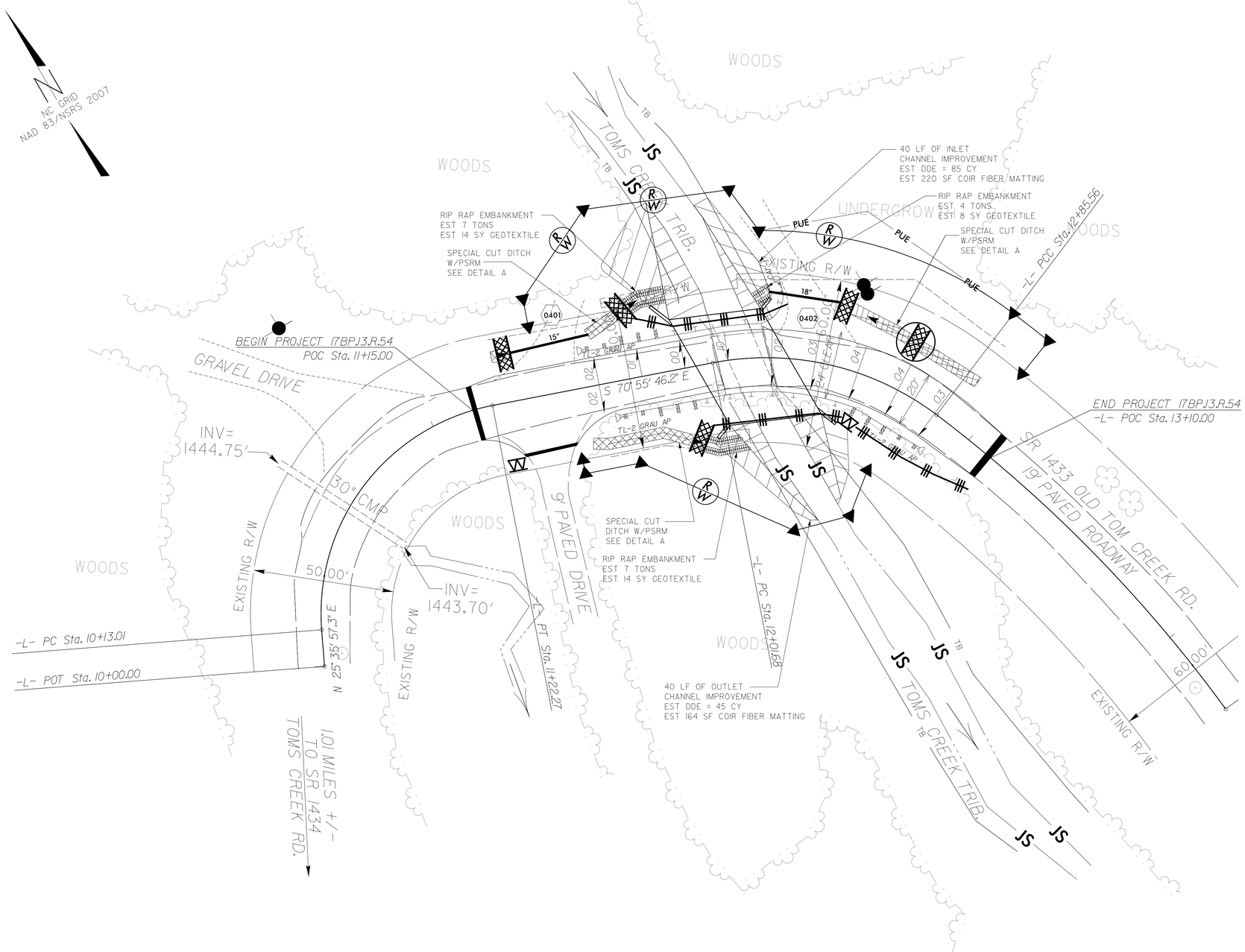
Florence & Hutcheson, Inc.

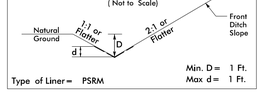
PROJECT REFERENCE NO.	SHEET NO.
17.BP.13.R.54	EC-5/CONST.4
R/W SHEET NO.	___
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
ALEXANDER SNIDER, E.I.
CERTIFICATION NUMBER: 3064
ISSUED: OCTOBER 24, 2012

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 4



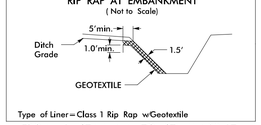
DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



Type of Liner = PSRM

FROM -L- STA. 11+25 TO STA. 11+75 LT.
FROM -L- STA. 12+42 TO STA. 12+90 LT.
FROM -L- STA. 11+55 TO STA. 11+94 RT.

DETAIL B
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner = Class 1 Rip Rap wGeotextile

FROM -L- STA. 11+75 TO STA. 11+90 LT.
FROM -L- STA. 12+17 TO STA. 12+22 LT.
FROM -L- STA. 11+94 TO STA. 12+12 RT.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.

Florence & Hutcheson
CONSULTING ENGINEERS
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0258

10/24/2012
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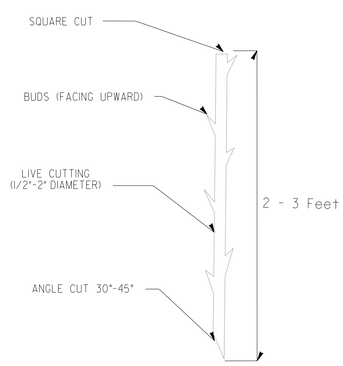
K.S. & Associates, P.C.

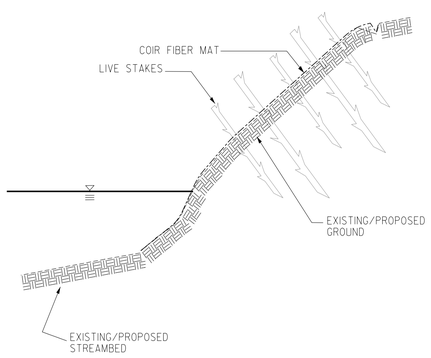
PROJECT REFERENCE NO.	SHEET NO.
17.BP.13.R.54	RF-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PLANTING DETAILS

LIVE STAKES PLANTING DETAIL

LIVE STAKE

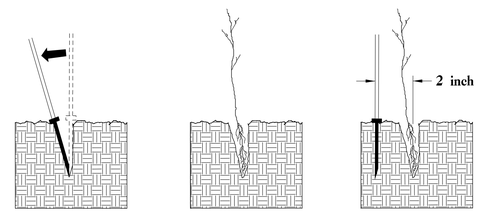




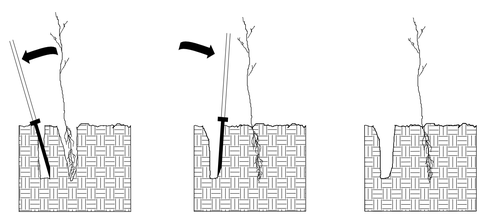
BANK STABILIZATION WITH LIVE STAKES

NOTE:
LIVE STAKES SHALL BE SPACED APPROXIMATELY 4 FEET ON CENTER
LIVE STAKES SHALL BE DRIVEN UNTIL APPROXIMATELY 3/4 OF LIVE STAKE IS WITHIN GROUND

BAREROOT PLANTING DETAIL
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:

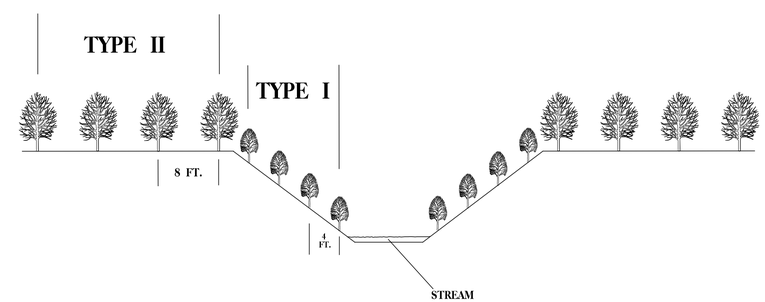
PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.

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.

- ☐ TYPE 1 STREAMBANK REFORESTATION SHALL BE PLANTED 3 FT. TO 5 FT. ON CENTER, RANDOM SPACING, AVERAGING 4 FT. ON CENTER, APPROXIMATELY 2724 PLANTS PER ACRE.
- ☐ TYPE 2 STREAMBANK REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.
- ☐ NOTE: TYPE 1 AND TYPE 2 STREAMBANK REFORESTATION SHALL BE PAID FOR AS "STREAMBANK REFORESTATION"

STREAMBANK REFORESTATION TYPICAL



STREAMBANK REFORESTATION

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

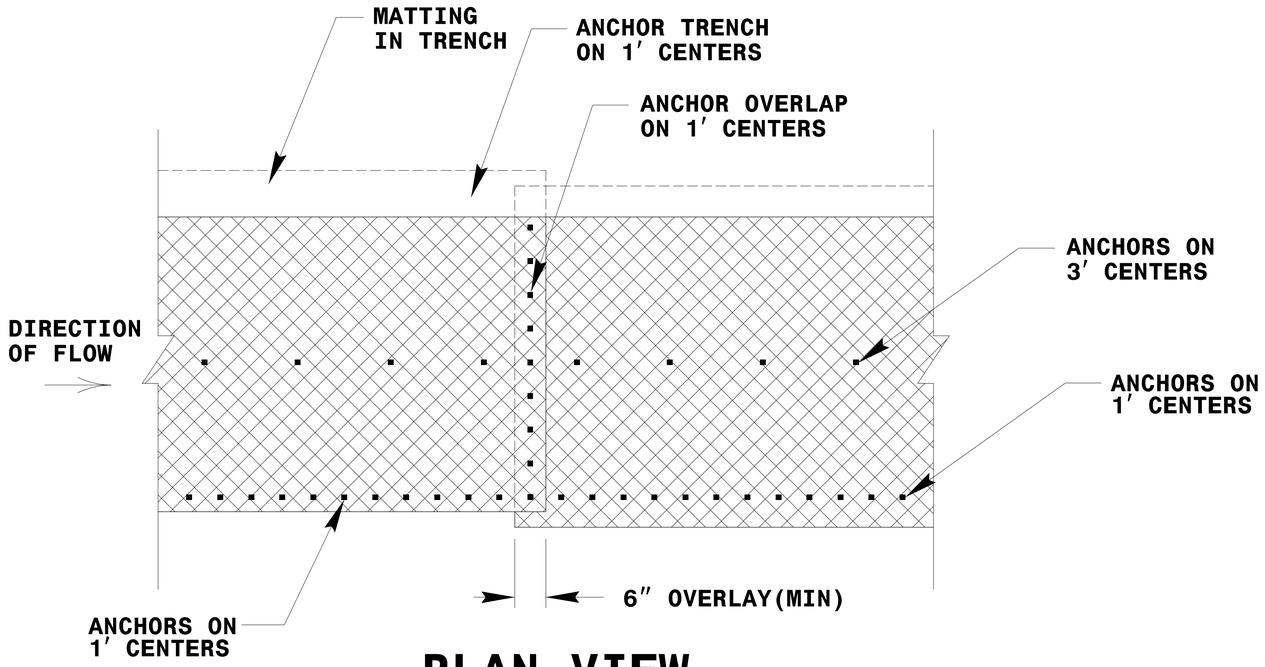
TYPE 1		
50% SALIX NIGRA	BLACK WILLOW	2 ft - 3 ft LIVE STAKES
50% CORNUS AMOMUM	SILKY DOGWOOD	2 ft - 3 ft LIVE STAKES
TYPE 2		
25% LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
25% PLATANUS OCCIDENTALIS	SYCAMORE	12 in - 18 in BR
25% PRUNUS SEROTINA	BLACK CHERRY	12 in - 18 in BR
25% BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

- ☐ SEE PLAN SHEETS FOR AREAS TO BE PLANTED

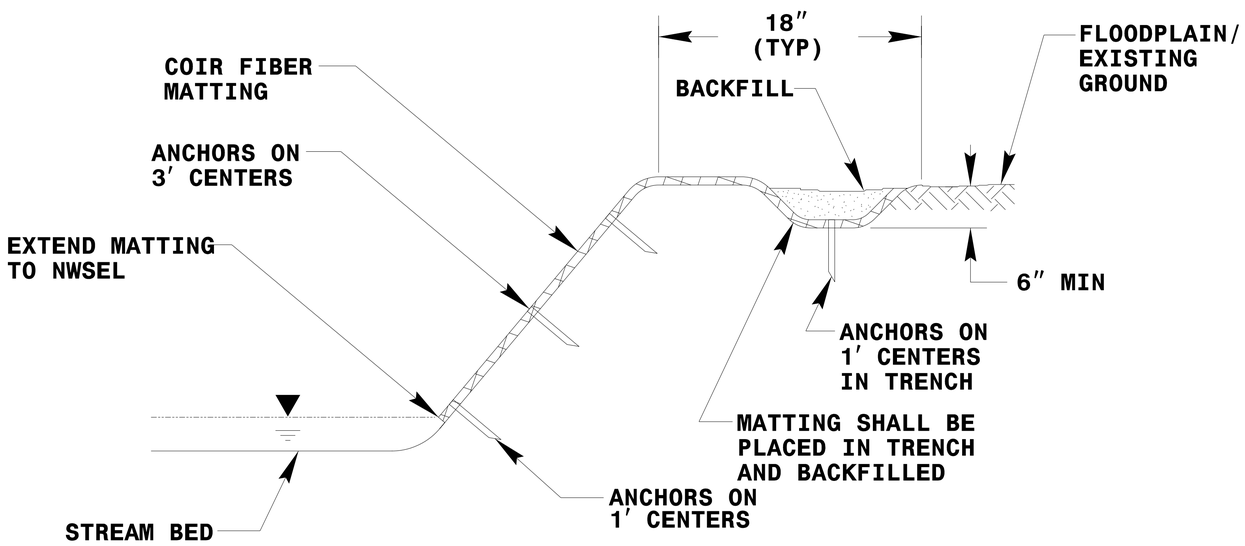
STREAMBANK REFORESTATION DETAIL SHEET 1 OF 2

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

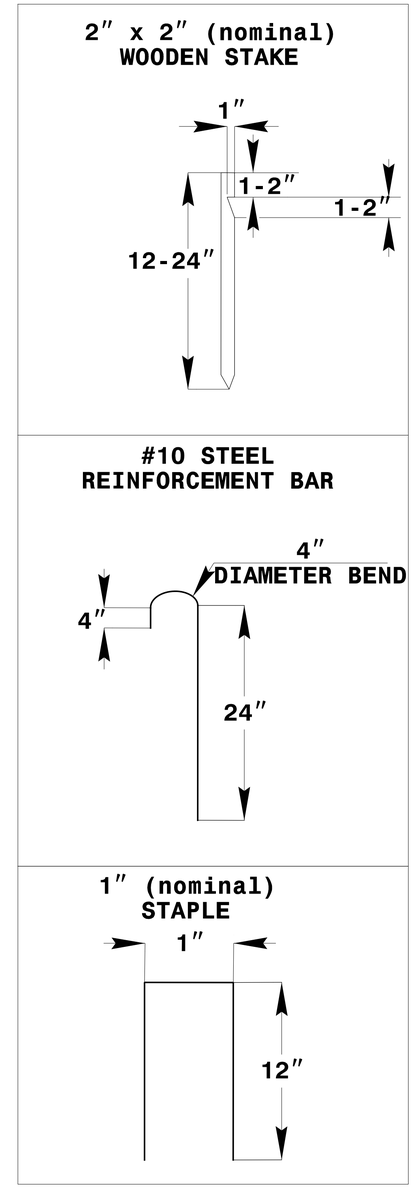
PROJECT REFERENCE NO.	SHEET NO.
17.BP.13.R.54	RF-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PLAN VIEW



TYPICAL CROSS SECTION



ANCHOR OPTIONS

COIR FIBER MATTING DETAIL

NOT TO SCALE

STREAMBANK REFORESTATION
DETAIL SHEET 2 OF 2
N.C.D.O.T.- ROADSIDE ENVIRONMENTAL UNIT

PROJECT: 17BP.13.R.54

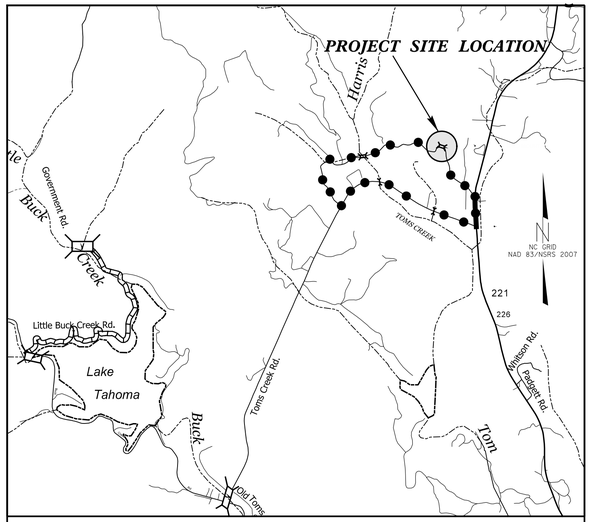
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
17BP.13.R.54	UO–1

UTILITIES BY OTHERS PLANS
MCDOWELL COUNTY

LOCATION: BRIDGE NO. 580134 ON SR 1433 (OLD TOMS CREEK ROAD)
OVER OLD TOMS CREEK TRIBUTARY 1

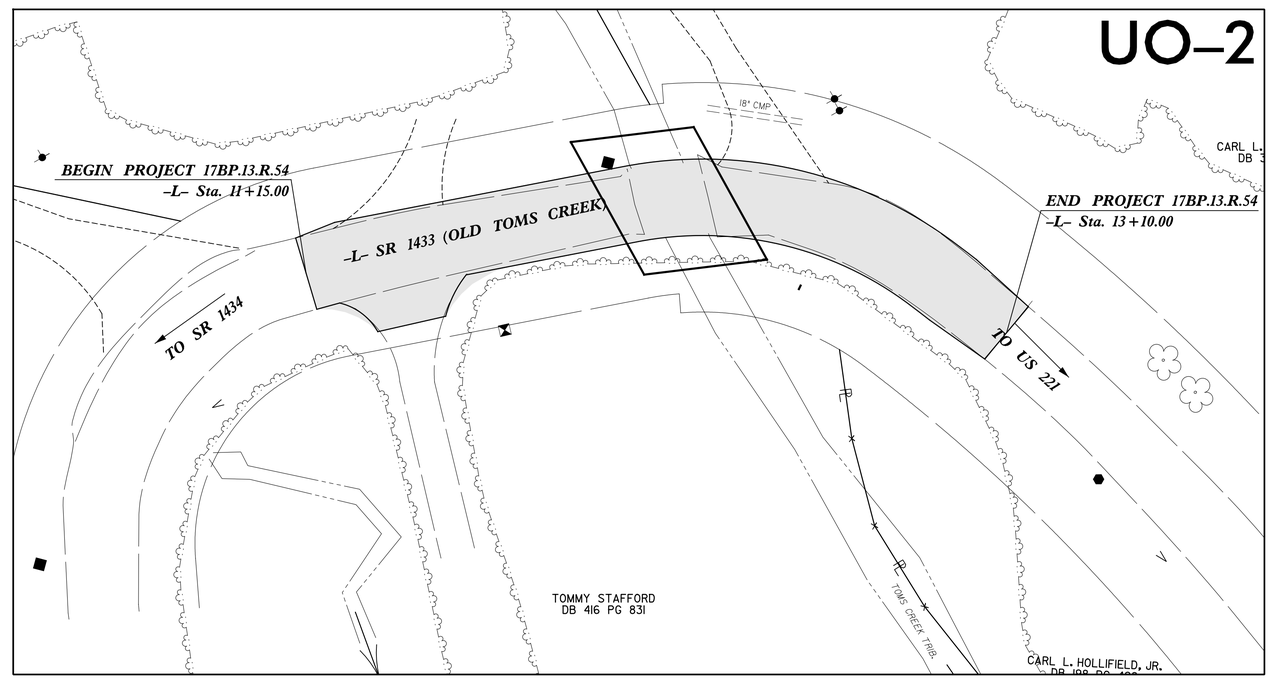
TYPE OF WORK: AERIAL UTILITIES

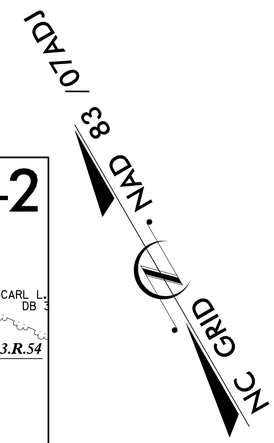


VICINITY MAP

DETOUR ROUTE

N.T.S.





GRAPHIC SCALES

20 10 0 20 40

PLANS

INDEX OF SHEETS

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

POWER AND PHONE OWNERS ON PROJECT

(1) POWER – REMCO
Thomas Connor
PHONE 1–(800) 521–0920

(2) TELEPHONE – FRONTIER COMMUNICATIONS
Glonnie Turbyfill
PHONE (828) 645–1811

(3) CABLE – CHARTER COMMUNICATIONS
Michael Rodgers
PHONE (828) 230–2291

PLANS PREPARED BY:

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TELE 919.788.0224 FAX 919.788.0232
NC LICENSE #P-0189

UTILITIES PROJECT ENGINEER

Mary Jo Lee, P.E.

PREPARED FOR 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

09/08/09
1/24/2014
R:\Utilities\580134_UBO_TSH.dgn
USERNAME=

CONTACT INFORMATION FOR UTILITIES

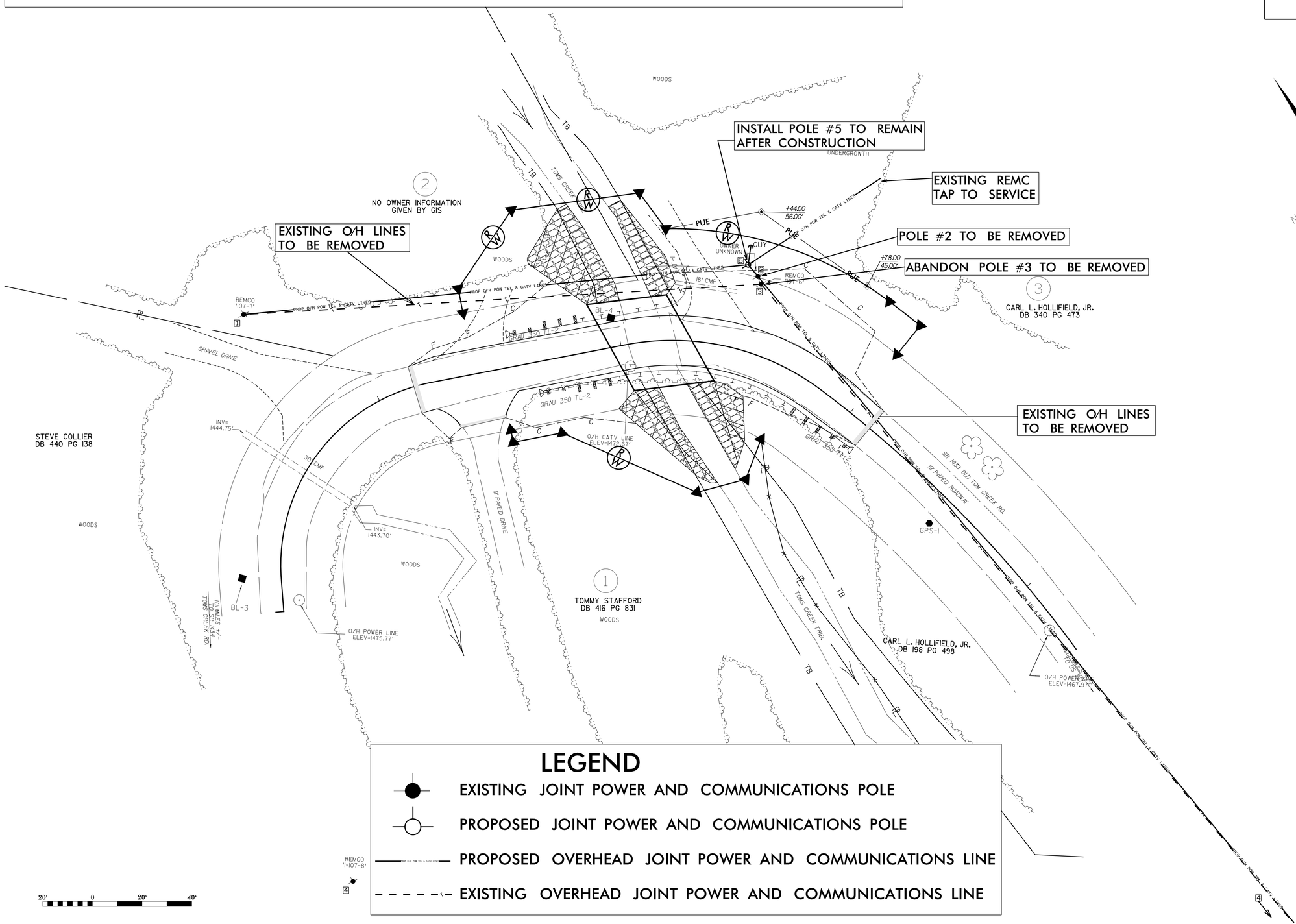
POWER: REMCO; THOMAS CONNER 1-800-521-0920 TCONNER@REMC.COM
PHONE: FRONTIER COMMUNICATIONS; GLONNIE TURBYFILL 828-645-1811 GLONNIETURBYFILL@YAHOO.COM
CABLE: CHARTER COMMUNICATIONS; MICHAEL RODGERS 1-828-230-2291 MICHAEL.RODGERS@CHARTERCOM.COM

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TELE 919.788.0224 FAX 919.788.0232
NC LICENSE #P-0189

PROJECT REFERENCE NO.	SHEET NO.
17BP.13.R.54	UO-2

UTILITIES BY OTHERS

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



EXIST	POLE	DATA
1	REMCO	107-7
2	UNKNOWN	
3	REMCO	107-6
4	REMCO	107-5

LEGEND

- EXISTING JOINT POWER AND COMMUNICATIONS POLE
- PROPOSED JOINT POWER AND COMMUNICATIONS POLE
- PROPOSED OVERHEAD JOINT POWER AND COMMUNICATIONS LINE
- EXISTING OVERHEAD JOINT POWER AND COMMUNICATIONS LINE

5/14/99

1/24/2014
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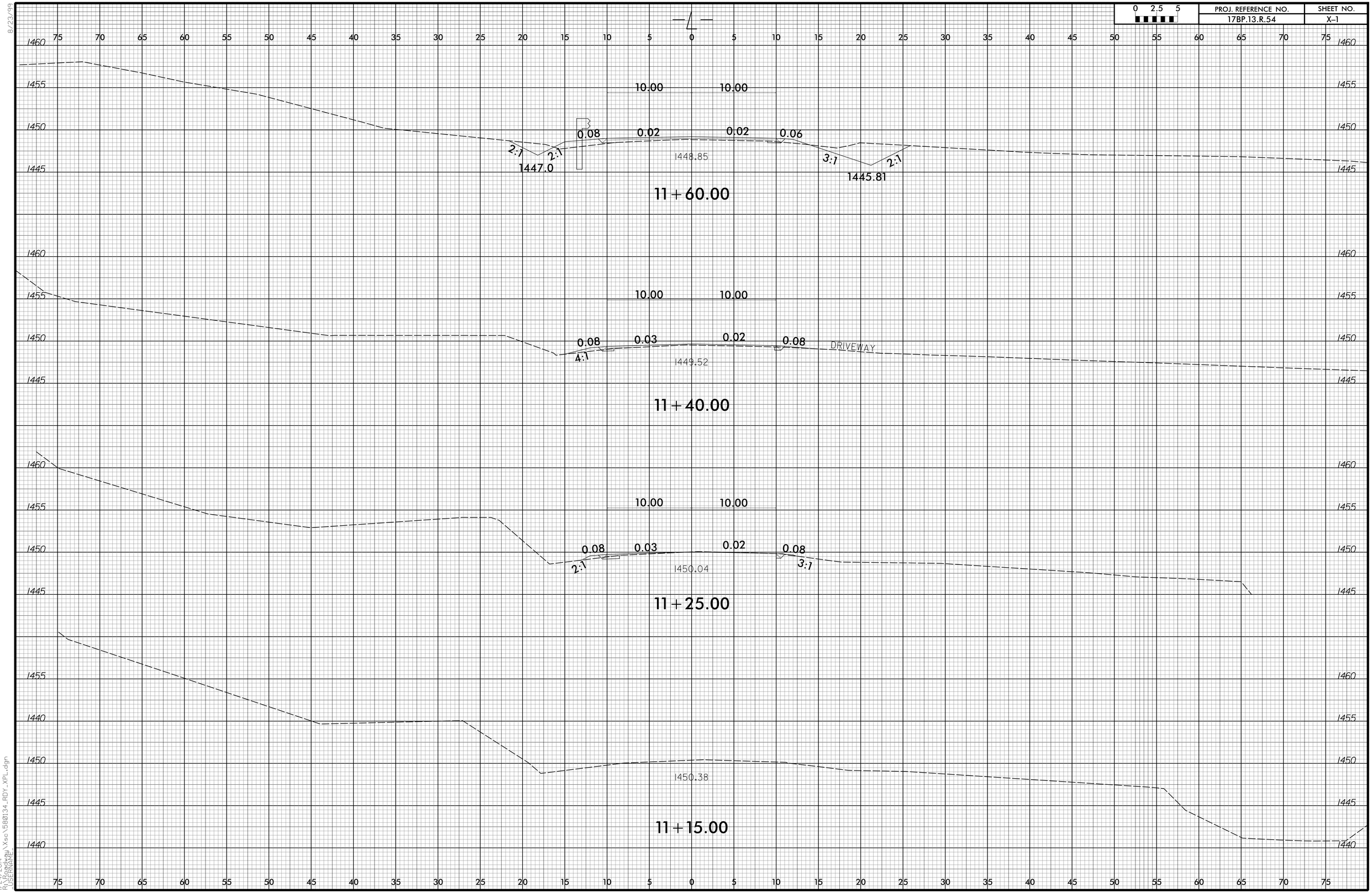

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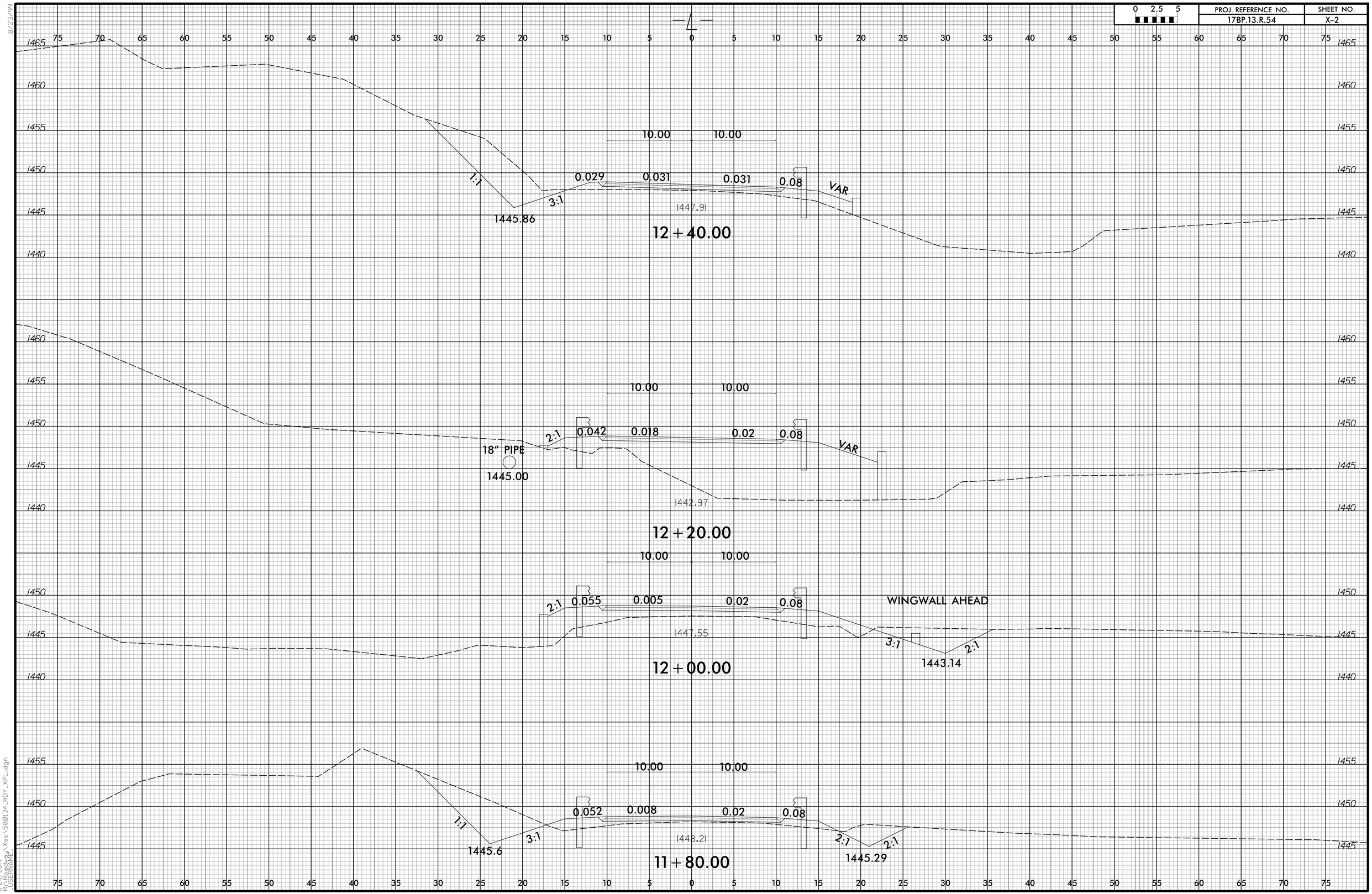
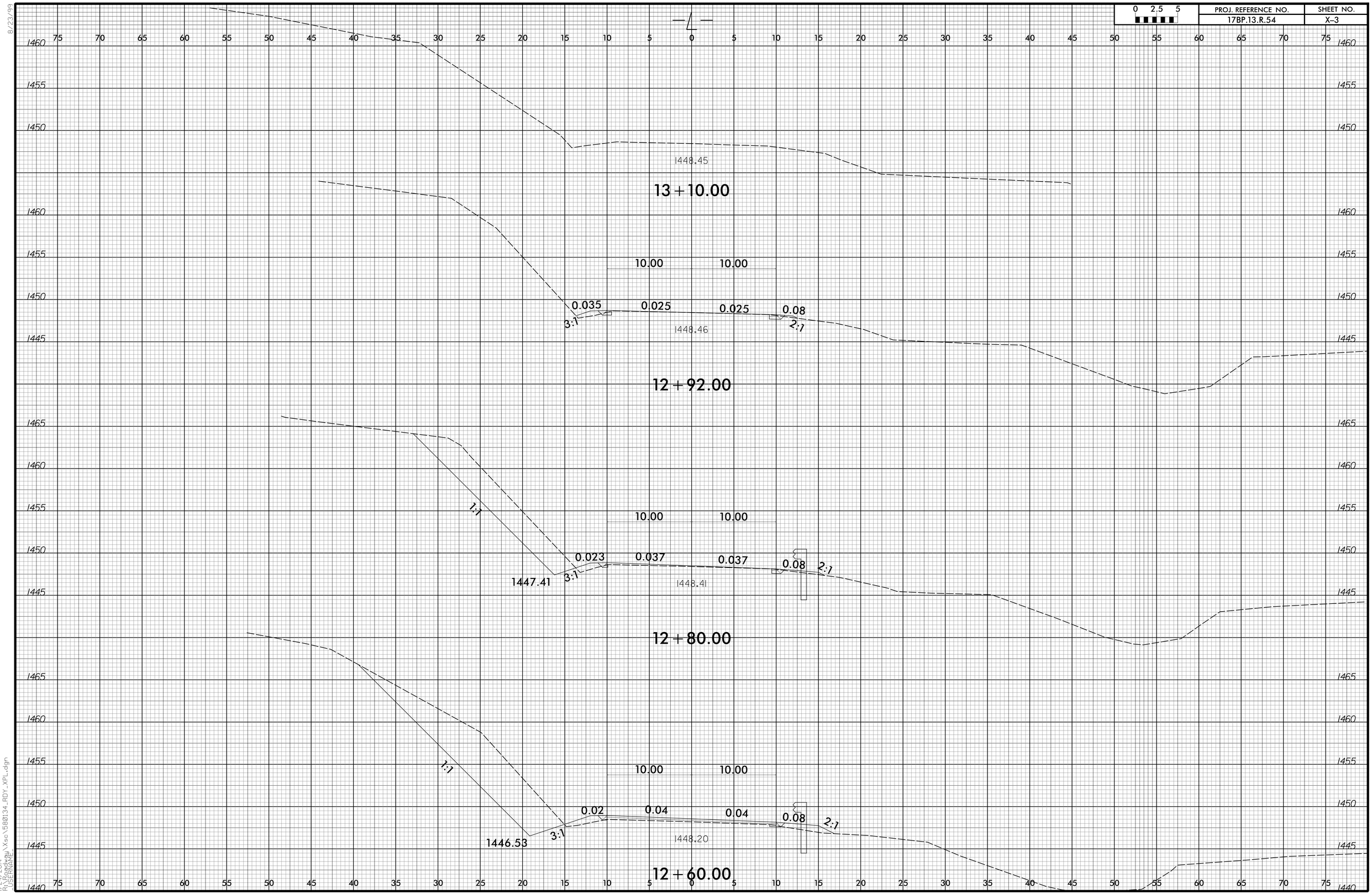


0 2.5 5
PROJ. REFERENCE NO.
17BP.13.R.54
SHEET NO.
X-2
10.00
10.00
0.029
0.031
0.031
0.08
VAR
1:1
3:1
1445.86
1447.91
12+40.00
10.00
10.00
2:1
0.042
0.018
0.02
0.08
VAR
18" PIPE
1445.00
1442.97
12+20.00
10.00
10.00
2:1
0.055
0.005
0.02
0.08
WINGWALL AHEAD
1447.55
3:1
2:1
1443.14
12+00.00
10.00
10.00
0.052
0.008
0.02
0.08
1:1
3:1
1445.6
1448.21
2:1
2:1
1445.29
11+80.00



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1/24/2014
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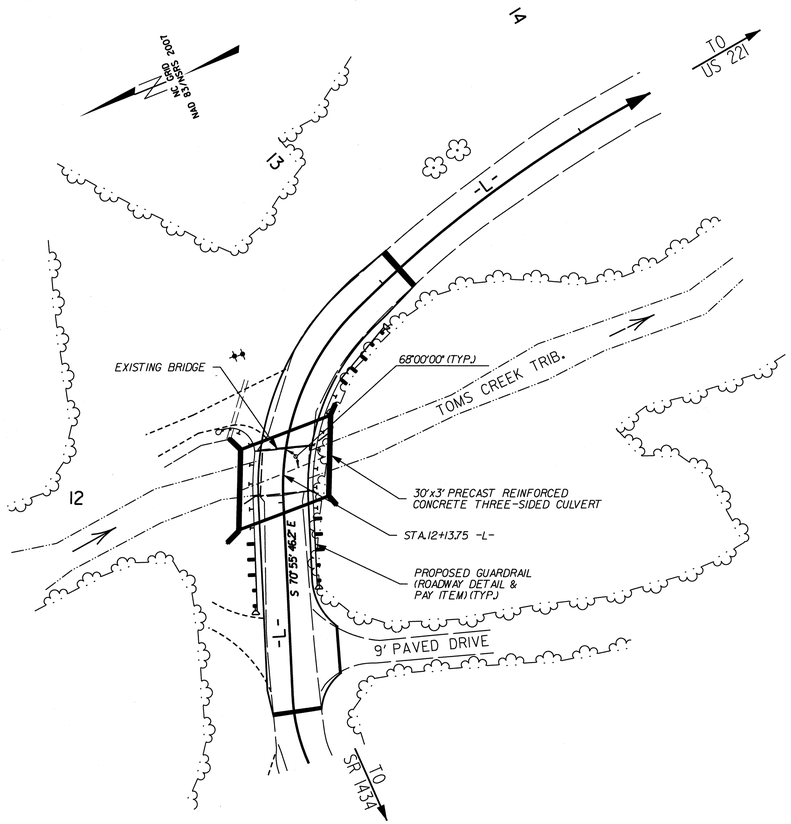
BM#1 : RR SPIKE SET IN 12"DBL. MAPLE TREE, -L- STA. 11+63.67, 18' RT., EL. 1449.74'



LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD ---------- HL-93 OR ALTERNATE LOADING.

DESIGN FILL ---------- 3'-0"

FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

FOR BORING INFORMATION, SEE GEOTECHNICAL REPORT.

SEE ROADWAY PLANS FOR RIP RAP REQUIREMENTS AT CULVERT ENDS.

FOR ADDITIONAL INFORMATION REGARDING DRAINAGE, GRADING, AND ROADWAY, SEE ROADWAY PLANS.

THE DETAILS SHOWN ARE FOR GENERAL LAYOUT ONLY, THE SUPPLIER SHALL PROVIDE DESIGNS AND DETAILS FOR REVIEW AND APPROVAL THAT MEET THE REQUIREMENTS OF AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12, AND ARE SEALED BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER.

UNLESS OTHERWISE INDICATED, THE SUPPLIER SHALL DESIGN, DETAIL, AND FURNISH ALL STRUCTURAL ELEMENTS AND HARDWARE.

THE EXISTING STRUCTURE CONSISTING OF ONE 18'-7" SPAN CONSISTING OF TIMBER FLOOR ON TIMBER JOISTS SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

FOR PRECAST REINFORCED CONCRETE THREE-SIDED CULVERT, SEE SPECIAL PROVISIONS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18-EVALUATING SCOUR AT BRIDGES."

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

THE CONTRACTOR SHALL STAKE OUT THE LENGTH OF CULVERT FOR ENGINEER REVIEW PRIOR TO ORDERING CULVERT.

CONTRACTOR WILL MAINTAIN THE ALIGNMENT OF THE CULVERT SECTIONS DURING BACKFILL.

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

TOTAL STRUCTURE QUANTITIES	QUANTITY	UNIT
REMOVAL OF EXISTING STRUCTURE	N/A	LS
30' X 3' PRECAST REINFORCED CONCRETE THREE-SIDED CULVERT STA. 12+13.75 -L-	N/A	LS
CLASS A CONCRETE	42.4	CY

FOUNDATION NOTES

THE SCOUR CRITICAL ELEVATION FOR END BENTS NO. 1 AND 2 ARE THE BOTTOM OF THE FOOTING ELEVATIONS. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING LIFE OF THE STRUCTURE.

THE SPREAD FOOTINGS AT END BENTS NO. 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 4 TSF. CHECK FIELD CONDITIONS FOR THE REQUIRED RESISTANCE OF 9 TSF JUST BEFORE PLACING CONCRETE.

KEY IN SPREAD FOOTING AT END BENTS NO. 1 AND 2 AT LEAST 12 INCHES INTO WEATHERED ROCK WITH MINIMUM THICKNESS AS SHOWN ON THE PLANS.

PIER SCOUR PROTECTION IS REQUIRED FOR SPREAD FOOTINGS AT END BENTS NO. 1 AND 2.

GRADE DATA

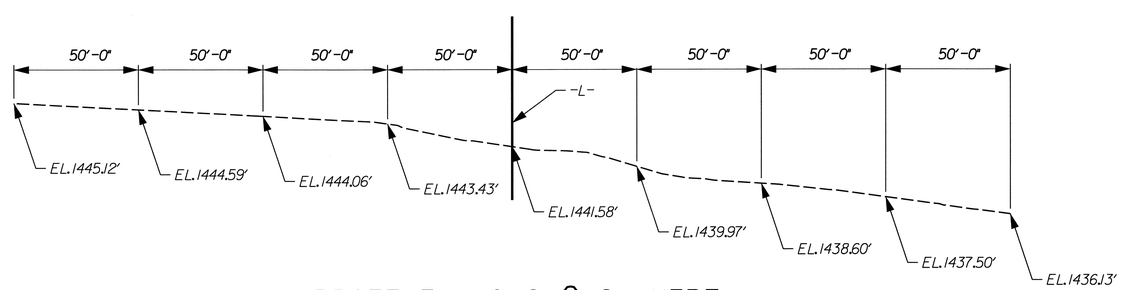
GRADE POINT ELEVATION @ STA. 12+13.75 -L-	= 1448.68'
BED ELEVATION @ STA. 12+13.75 -L-	= 1442.40'
ROADWAY SLOPES	= 2 : 1

HYDRAULIC DATA

DESIGN DISCHARGE	= 600 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 25 YEARS
DESIGN HIGH WATER ELEVATION	= 1446.1'
DRAINAGE AREA	= 1.8 SQ. MI.
BASIC DISCHARGE (Q100)	= 1340 C.F.S.
BASIC HIGH WATER ELEVATION	= 1450.4'

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 1225 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= 500 + YEARS
OVERTOPPING FLOOD ELEVATION	= 1450.1'



PROFILE ALONG ℄ CULVERT

PROJECT NO. 17BP.13.R.54

McDOWELL COUNTY

STATION: 12+13.75 -L-

SHEET 1 OF 2 REPLACES BRIDGE #134

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

30' X 3' PRECAST REINFORCED CONCRETE THREE-SIDED CULVERT ON SR 1433 AT TOMS CREEK TRIBUTARY

JANUARY 2013

NORTH CAROLINA PROFESSIONAL SEAL 14047 ENGINEER STEPHEN D. COOK

REGISTERED ENGINEER
3/12/2014

THE LOUIS BERGER GROUP, Inc.
1001 Wade Avenue, Suite 400
Raleigh, NC 27605-3322

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			2

ASSEMBLED BY : C. KING DATE : NOV 2012
CHECKED BY : S. COOK DATE : DEC 2012

SPECIAL

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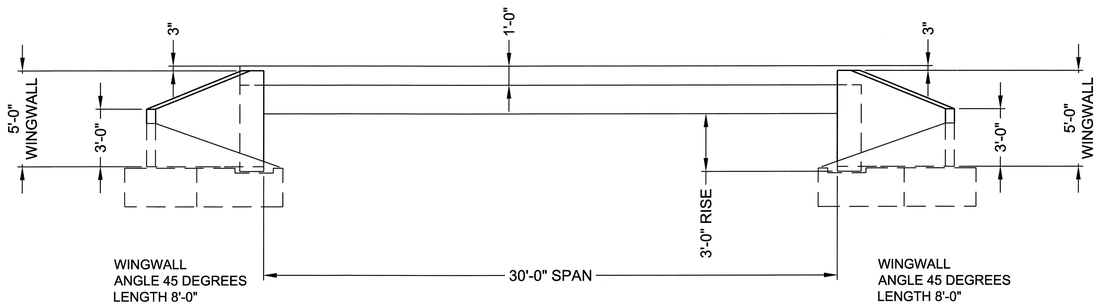
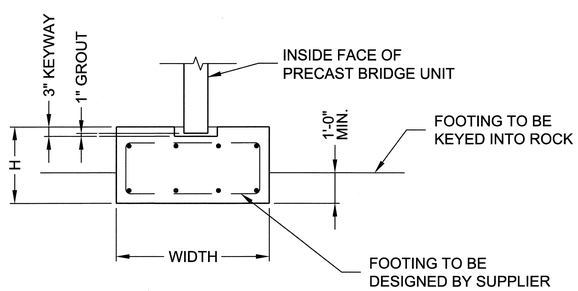


TYPICAL END ELEVATION



DETAIL 1

PROJECT NO. 17BP.13.R.54

McDOWELL COUNTY

STATION: 12+13.75 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

30' X 3' PRECAST REINFORCED CONCRETE THREE-SIDED CULVERT ON SR 1433 AT TOMS CREEK TRIBUTARY

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NORTH CAROLINA PROFESSIONAL SEAL 14047 ENGINEER STEPHEN D. COOK

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			2

ASSEMBLED BY : L. MASTROFRANCESCO DATE : NOV 2012
CHECKED BY : J. PYLE DATE : DEC 2012

SPECIAL

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