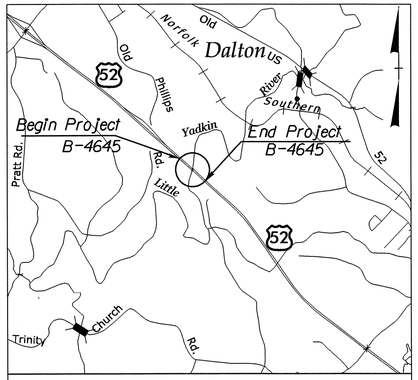
09/08/99

TIP PROJECT: B-4645

CONTRACT: C203205

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



VICINITY MAP SHOWING LOCATION OF PROJECT B-4645

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

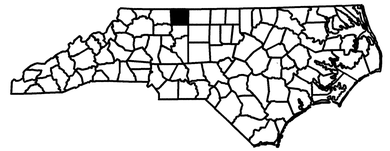
STOKES COUNTY

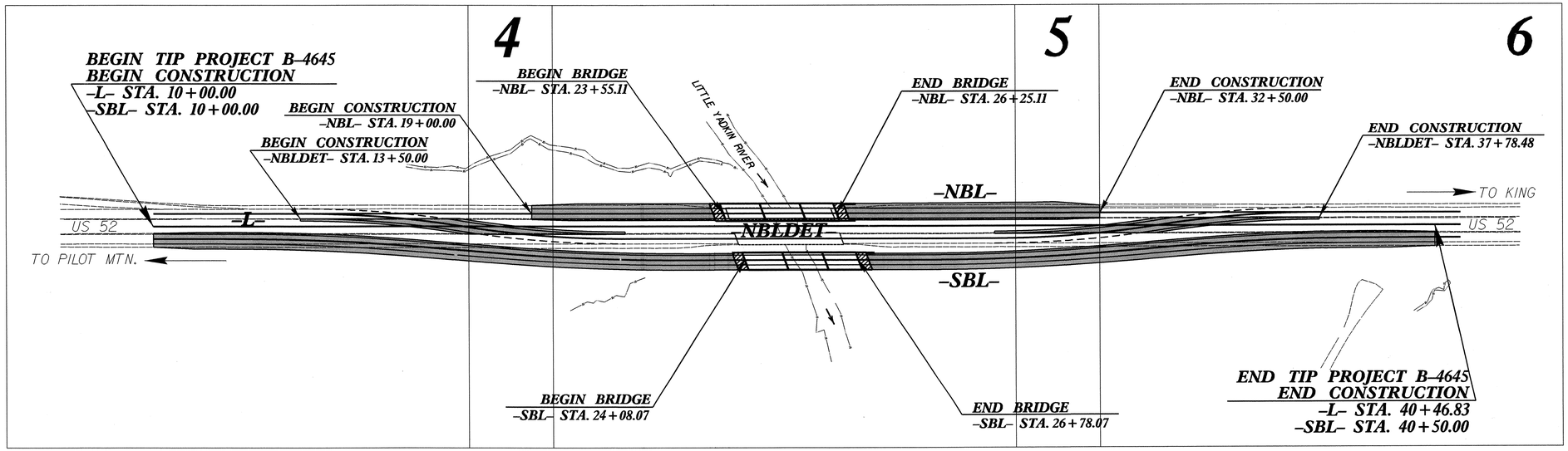
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4645	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
38452.1.1	BRNHS-0052(25)	P.E.
38452.2.1	BRNHS-0052(25)	RW & UTL
38452.3.1	BRNHS-0052(25)	CONST.

LOCATION: BRIDGES NO. 29 & 30 OVER THE LITTLE YADKIN RIVER ON US 52

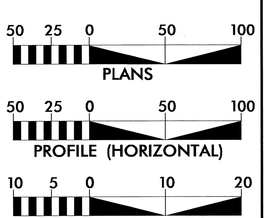
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURES





THERE IS CONTROL OF ACCESS ON THIS PROJECT

GRAPHIC SCALES



DESIGN DATA

ADT 2013 = 50,256
ADT 2033 = 82,896
DHV = 10 %
D = 60 %
T = 19 % *
V = 70 MPH
* TTST =12 DUAL 7
FUNC CLASS = INTERSTATE (FUTURE) STATEWIDE TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-4645 = 0.526 MILES
LENGTH OF STRUCTURE TIP PROJECT B-4645 = 0.051 MILES
TOTAL LENGTH OF TIP PROJECT B-4645 = 0.577 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: AUGUST 21, 2012

LETTING DATE: AUGUST 20, 2013

TONY HOUSER, P.E.
PROJECT ENGINEER

LEE ANN MOORE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 036821 ENGINEER ELENI M. RIGGS P.E.

SIGNATURE: 6/7/13

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON HOUSER P.E.

SIGNATURE: 5-31-13

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4645	1-A

ROADWAY DESIGN ENGINEER

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1C THRU 1D	SURVEY CONTROL SHEETS
2 THRU 2-A	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-B	SKETCH SHOWING BRIDGE / PAVEMENT RELATIONSHIP
2-C	CONSTRUCTION PHASING
2-D THRU 2-E	-NBL- DETOUR
2-F	STANDARD TEMPORARY SHORING
2-G	STRUCTURE ANCHOR UNIT DETAIL
2-H	DETAIL TO CONVERT EXISTING DROP INLET TO 2GI
2-I	DETAIL OF TEMPORARY 1" STEEL COVER OVER DRAINAGE STRUCTURE
2-J	DETAIL TO CONVERT EXISTING DROP INLET OR CATCH BASIN TO JUNCTION BOX (MANHOLE OPTIONAL)
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF ASPHALT PAVEMENT REMOVAL SUMMARY SUMMARY OF CONCRETE PAVEMENT REMOVAL SUMMARY SUMMARY OF GUARDRAIL SUMMARY OF EARTHWORK SUMMARY OF SHOULDER BERM GUTTER
3-B	SUMMARY OF DRAINAGE
3-C	PARCEL INDEX SHEET
4 THRU 6	PLAN SHEET
7 THRU 9	PROFILE SHEET
TMP-1 THRU TMP-18	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-3	PAVEMENT MARKING PLANS
EC-1 THRU EC-13/CONST.06	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-4	SIGNING PLANS
UO-1 THRU UO-4	UTILITIES BY OTHER PLANS
X-A THRU X-36	CROSS-SECTIONS
S-1 THRU S-70	STRUCTURE PLANS

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	
200.03	Method of Clearing - Method III
225.01	Guide for Grading Subgrade - Interstate and Freeway
225.05	Method of Obtaining Superelevation - Divided Highways
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.02	Method of Shoulder Construction - High Side of Superelevated Curve - Method II (Sheet 2 of 3 is no longer applicable)
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
846.03	Funnel Drain Installation in Shoulder Berm Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

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 III.

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

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

GUARDRAIL:

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

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

END BENTS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

DUKE ENERGY - POWER (DISTRIBUTION)

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

RIGHT-OF-WAY MARKERS:

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

ROCK

ROCK IS ANTICIPATED BETWEEN -L- 10+00 TO 14+00 RT AND -L- 33+00 TO 36+00 RT. BLASTING MAY BE REQUIRED FOR EXCAVATION ON THE PROJECT. SEE SECTION 220 OF THE STANDARD SPECIFICATIONS AND IF APPLICABLE, ROCK BLASTING PROVISION.

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04/16/11

PROJECT REFERENCE NO.	SHEET NO.
B-4645	1-B

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

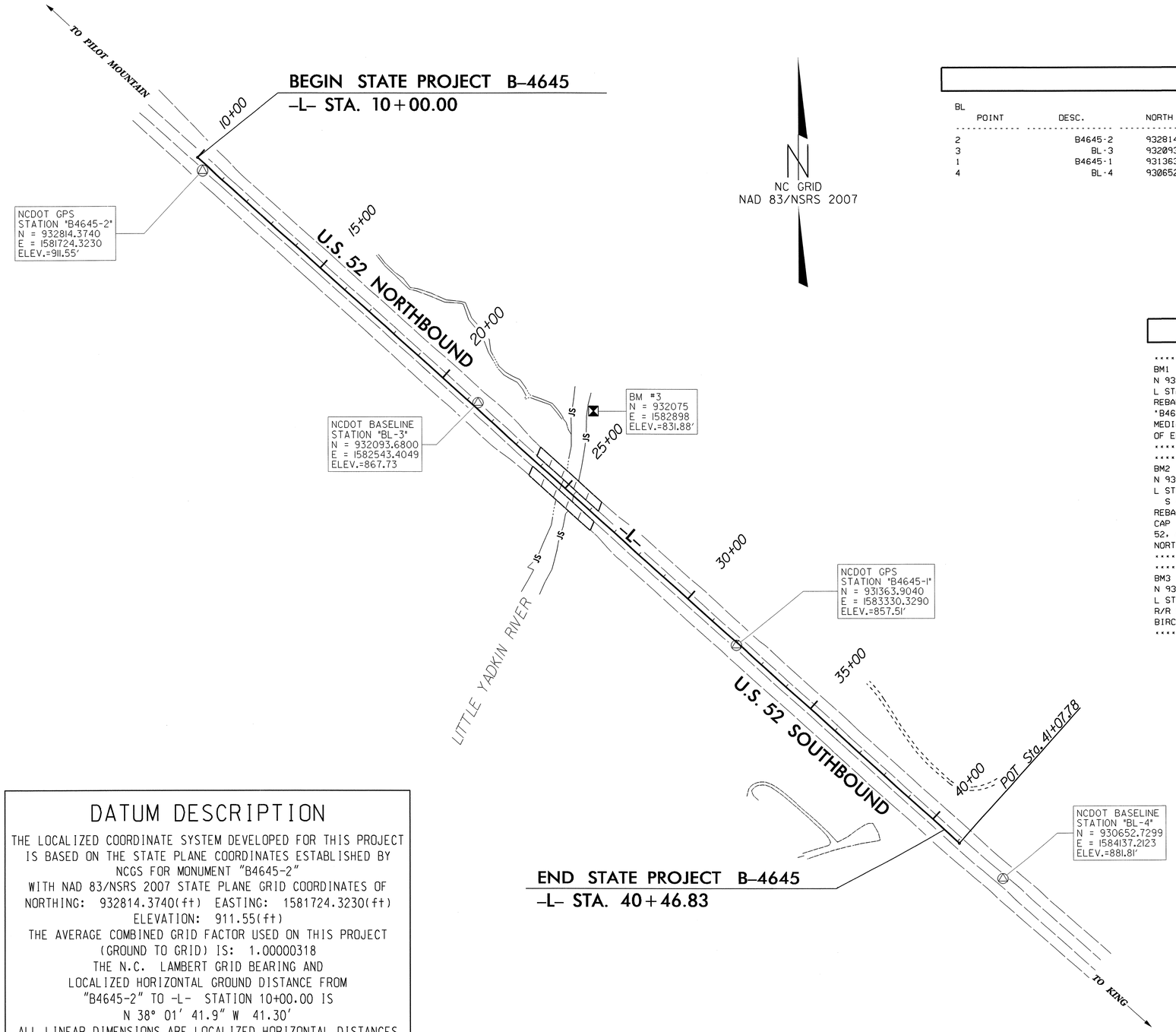
MISCELLANEOUS:

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

12/01/2005

PROJECT REFERENCE NO.	SHEET NO.
B-4645	1C
Location and Surveys	

B-4645 SURVEY CONTROL SHEET



BASELINE DATA

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
2	B4645-2	932814.3740	1581724.3230	911.55	10+40.69	7.10 RT
3	BL-3	932093.6800	1582543.4049	867.73	21+31.61	6.85 LT
1	B4645-1	931363.9040	1583330.3290	857.51	32+04.74	7.49 RT
4	BL-4	930652.7299	1584137.2123	881.81	OUTSIDE PROJECT LIMITS	

BENCHMARK DATA

```
**************************************
BM1        ELEVATION = 911.55
N 932814       E 1581724
L STATION 10+41.00 7 RIGHT
REBAR WITH ALUMINUM CAP STAMPED
"B4645-2".  CAP IS LOCATED INSIDE THE
MEDIAN OF US 52, APPROXIMATELY 9.4' NE
OF EP, SOUTHBOUND LANES.
**************************************
**************************************
BM2        ELEVATION = 881.81
N 930653       E 1584137
L STATION 41+08.00
  S 49°42'7.05" E  DIST    172.53
REBAR WITH ALUMINUM CAP STAMPED "BL-4".
CAP IS LOCATED INSIDE THE MEDIAN OF US
52, APPROXIMATELY 11.5' SW OF EP,
NORTHBOUND LANES.
**************************************
**************************************
BM3        ELEVATION = 831.88
N 932075       E 1582898
L STATION 24+08.00 231 LEFT
R/R SPIKE SET IN ROOT OF 28-INCH FORKED
BIRCH ON SE SIDE OF CREEK
**************************************
```

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B4645-2"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 932814.3740(ft) EASTING: 1581724.3230(ft)
ELEVATION: 911.55(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00000318
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4645-2" TO -L- STATION 10+00.00 IS
N 38° 01' 41.9" W 41.30'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES

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

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   b4645_ls_control.txt

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

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

NOTE: DRAWING NOT TO SCALE

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12/01/2005

PROJECT REFERENCE NO.	SHEET NO.
B-4645	1D
Location and Surveys	

B-4645 SURVEY CONTROL SHEET

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	18+40.00	130.00	932187.5136	1582235.2518
L	18+40.00	171.00	932157.0813	1582207.7768
L	32+60.00	171.00	931205.5068	1583261.7720
L	35+75.00	130.00	931024.8503	1583523.0558

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	14+75.00	129.98	932432.1245	1581964.3450
L	14+75.00	140.00	932424.6860	1581957.6293
L	15+50.00	140.00	932374.4267	1582013.2981
L	15+50.00	130.00	932381.8492	1582019.9993
L	16+25.00	130.00	932331.5900	1582075.6680
L	16+25.00	140.00	932324.1675	1582068.9668
L	18+40.00	186.00	932145.9476	1582197.7249
L	27+00.00	171.00	931580.7756	1582846.1119
L	27+00.00	186.00	931569.6419	1582836.0601
L	28+30.00	186.00	931482.5259	1582932.5526
L	28+30.00	171.00	931493.6597	1582942.6044
L	32+60.00	186.00	931194.3730	1583251.7201
L	35+75.00	150.00	931010.0053	1583509.6534

DESIGN ALIGNMENTS

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	932846.9094	1581698.8777
POT	41+07.78	930764.3148	1584005.6278

NBL

TYPE	STATION	NORTH	EAST
POT	10+00.00	932869.1769	1581718.9814
POT	41+07.48	930786.7833	1584025.5088

SBL

TYPE	STATION	NORTH	EAST
POT	10+00.00	932824.6419	1581678.7740
TS	11+00.00	932757.6296	1581752.9990
SC	13+00.00	932622.6304	1581900.5586
CS	15+17.43	932470.3935	1582055.7761
SRS	17+17.43	932325.4788	1582193.6106
SC	19+17.43	932180.5642	1582331.4451
CS	21+34.86	932028.3273	1582486.6627
ST	23+34.86	931893.3281	1582634.2222
TS	27+51.58	931614.0720	1582943.5355
SC	29+51.58	931481.0325	1583092.8643
CS	31+69.01	931342.1310	1583260.1213
SRS	33+69.01	931219.7760	1583418.3234
SC	35+69.01	931097.4211	1583576.5254
CS	37+86.44	930958.5195	1583743.7824
ST	39+86.44	930825.4801	1583893.1112
POT	41+10.65	930742.2483	1583985.3015

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VERTICAL DATUM USED IS NAVD 88

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PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

28-MAY-2013 15:15
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6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-4645	2

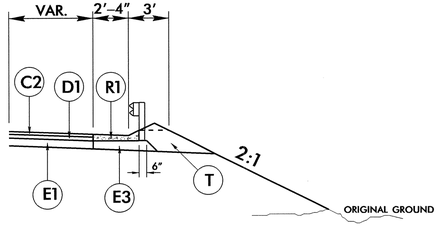
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON HOUSER
6-31-13

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 22896 ENGINEER CLARK S. MORRISON
6/4/13

PAVEMENT SCHEDULE

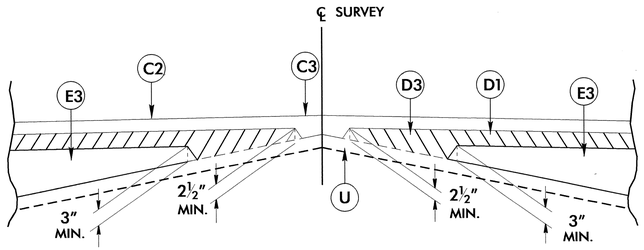
~~C1~~	~~PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.~~
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
D2	PROP. APPROX. 3½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 15" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD. IN EACH OF THREE LAYERS.
E2	PROP. APPROX. 7" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R1	CONCRETE SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).

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

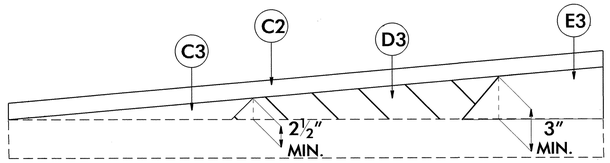


SHOULDER BERM GUTTER DETAIL

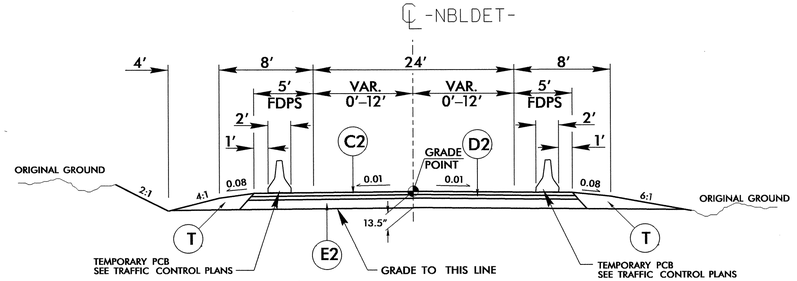
-NBL- STA 26+40.48 (END BRIDGE) TO STA 26+70.00 LT
-NBL- STA 26+55.77 (END BRIDGE) TO STA 26+70.00 RT
-SBL- STA 26+95.63 (END BRIDGE) TO STA 27+16.00 LT



Detail Showing Method of Wedging



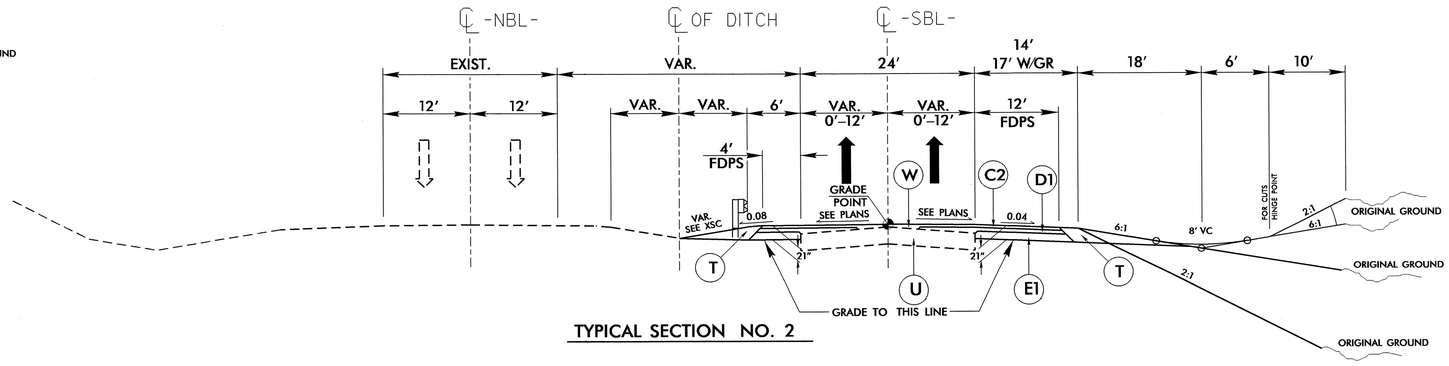
Wedging Detail For Resurfacing



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 FOR:

-NBLDET- STA 13+50.00 TO STA 23+45.00 RT
-NBLDET- STA 14+25.00 TO STA 23+45.00 LT
-NBLDET- STA 30+03.10 TO STA 39+15.00 RT & LT



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 FOR:

-SBL- STA 10+00.00 TO STA 16+25.00
-SBL- STA 34+50.00 TO STA 40+50.00

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6/2/99

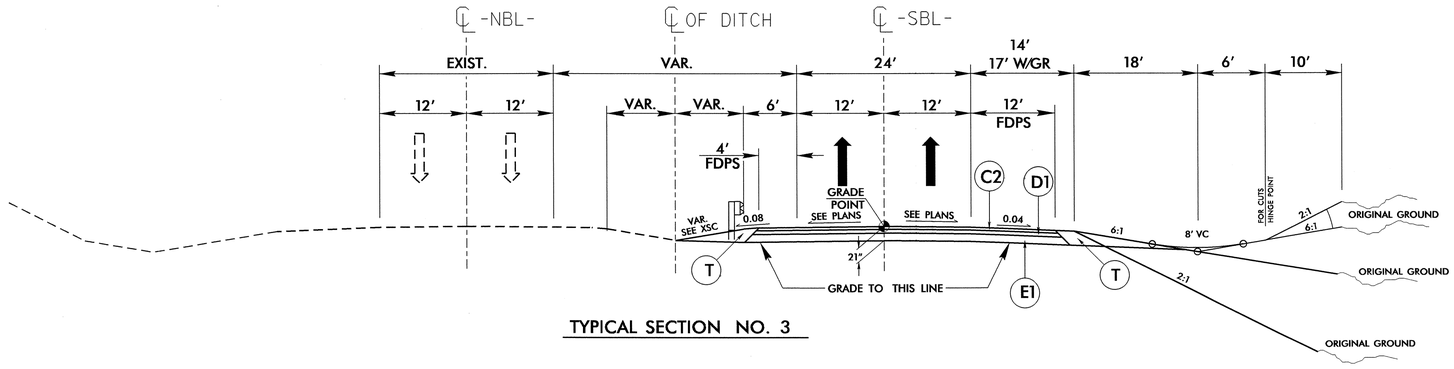
PROJECT REFERENCE NO.	SHEET NO.
B-4645	2-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON HOUSER 5-31-13

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 22696 ENGINEER CLARK S. MORRISON 6/6/13



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 FOR:

-SBL- STA 16+25.00 TO STA 18+94.66
-SBL- STA 32+59.27 TO STA 34+50.00

~~C1~~	~~1½" S9.5C~~
C2	3" S9.5C
C3	VAR. S9.5C
D1	3" I19.0C
D2	3½" I19.0C
D3	VAR. I19.0C
E1	15" B25.0C
E2	7" B25.0C
E3	VAR. B25.0C
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4 FOR:

-NBL- STA 19+00.00 TO STA 22+75.00
-SBL- STA 18+94.66 TO STA 22+76.40
-NBL- STA 29+00.00 TO STA 32+50.00
-SBL- STA 29+02.84 TO STA 32+59.27

TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5 FOR:

-NBL- STA 22+75.00 TO STA 23+55.11 (BEGIN BRIDGE)
-SBL- STA 22+76.40 TO STA 24+08.07 (BEGIN BRIDGE)
-NBL- STA 26+25.11 (END BRIDGE) TO STA 29+00.00
-SBL- STA 26+78.07 (END BRIDGE) TO STA 29+02.84

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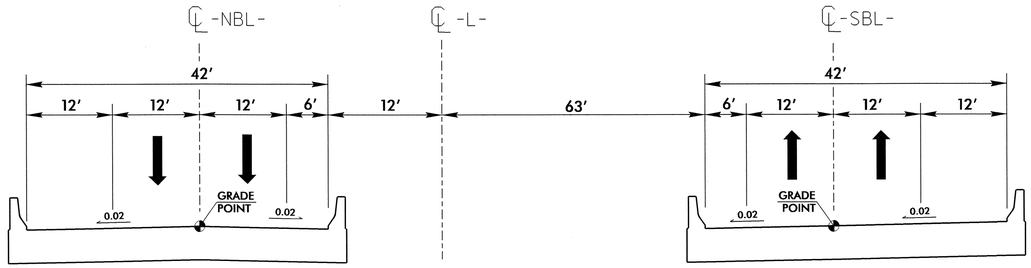
PROJECT REFERENCE NO.	SHEET NO.
B-4645	2-B
ROADWAY DESIGN	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON HOUSER
5-31-13



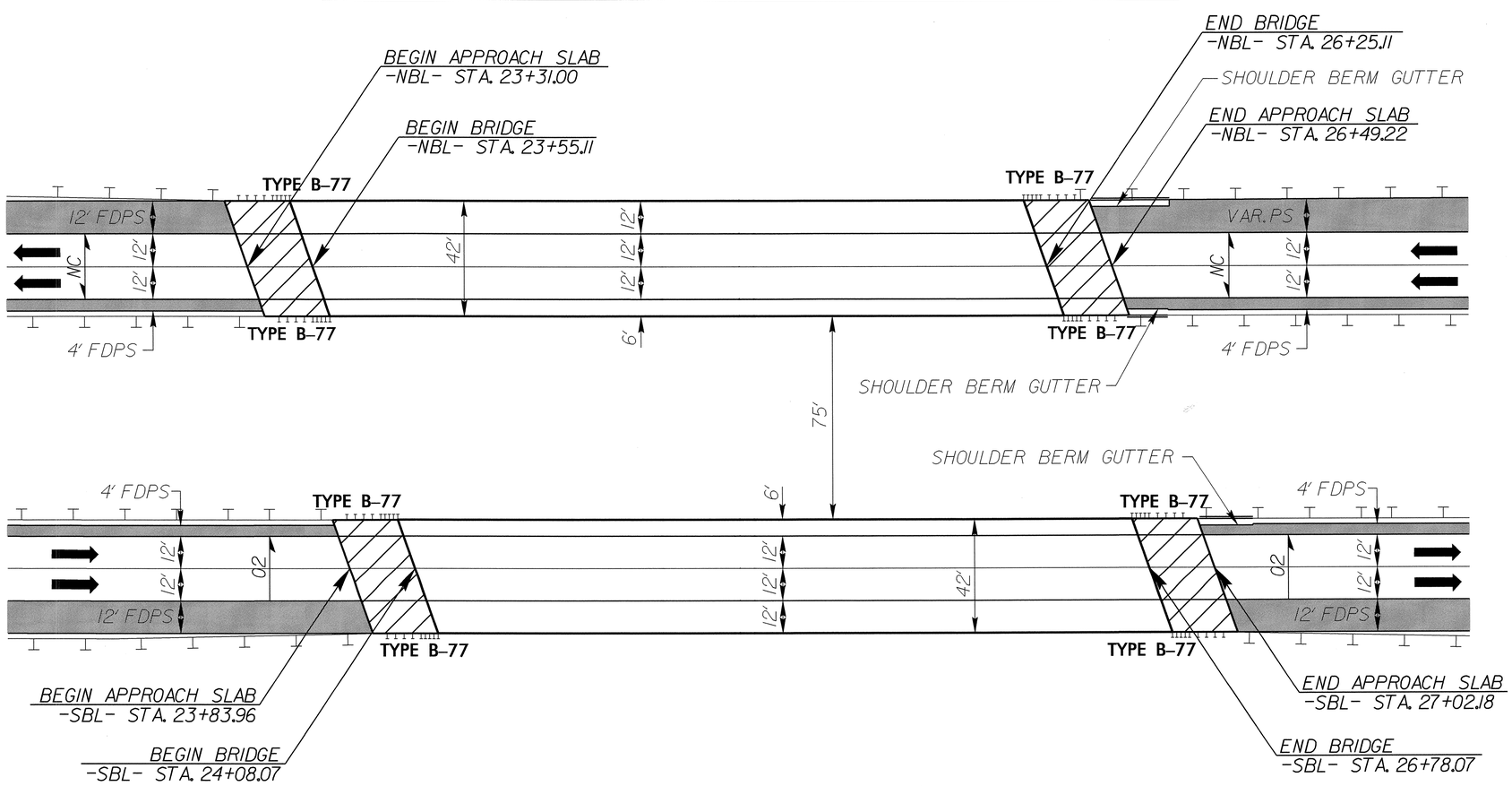
TYPICAL SECTION ON BRIDGE

USE TYPICAL SECTION FOR:

–NBL– STA 23+55.11 (BEGIN BRIDGE) TO STA 26+25.11 (END BRIDGE)

–SBL– STA 24+08.07 (BEGIN BRIDGE) TO STA 26+78.07 (END BRIDGE)

SKETCH SHOWING BRIDGE / PAVEMENT RELATIONSHIP



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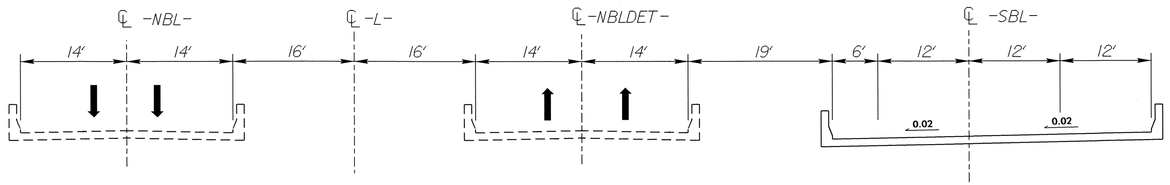
PROJECT REFERENCE NO.	SHEET NO.
B-4645	2-C

ROADWAY DESIGN ENGINEER

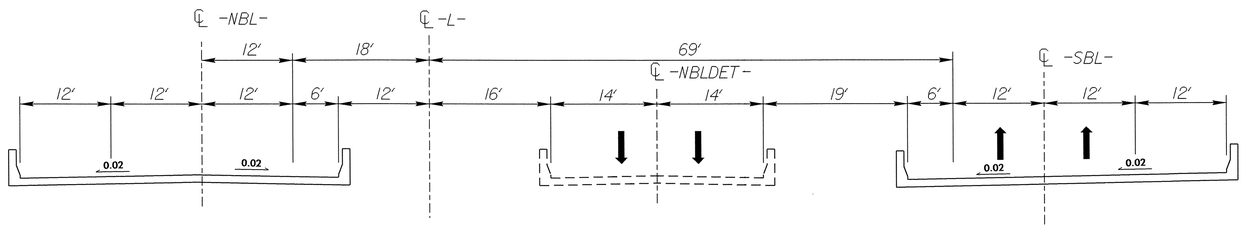
NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON ROUSER

5-31-13

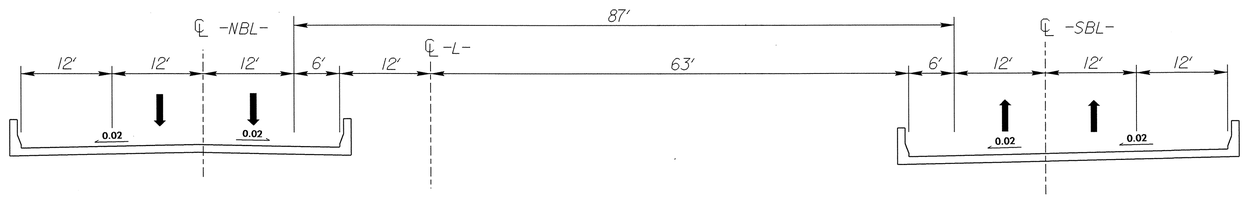
CONSTRUCTION PHASING



Phase 1:
Build New –SBL– Bridge



Phase 2:
Switch SB traffic on new –SBL– bridge
Switch NB traffic on existing –NBLDET– bridge
Remove existing –NBL– bridge
Build new –NBL– bridge



Phase 3:
Switch NB traffic on new –NBL– bridge
Remove existing –NBLDET– bridge

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PROJECT REFERENCE NO.	SHEET NO.
B-4645	2-D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON HOUSER 6-14-13

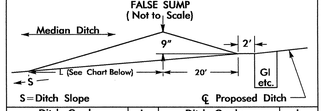
NORTH CAROLINA PROFESSIONAL SEAL 036821 ENGINEER ELENI M. RIGGS 6/18/13

-NBL- DETOUR

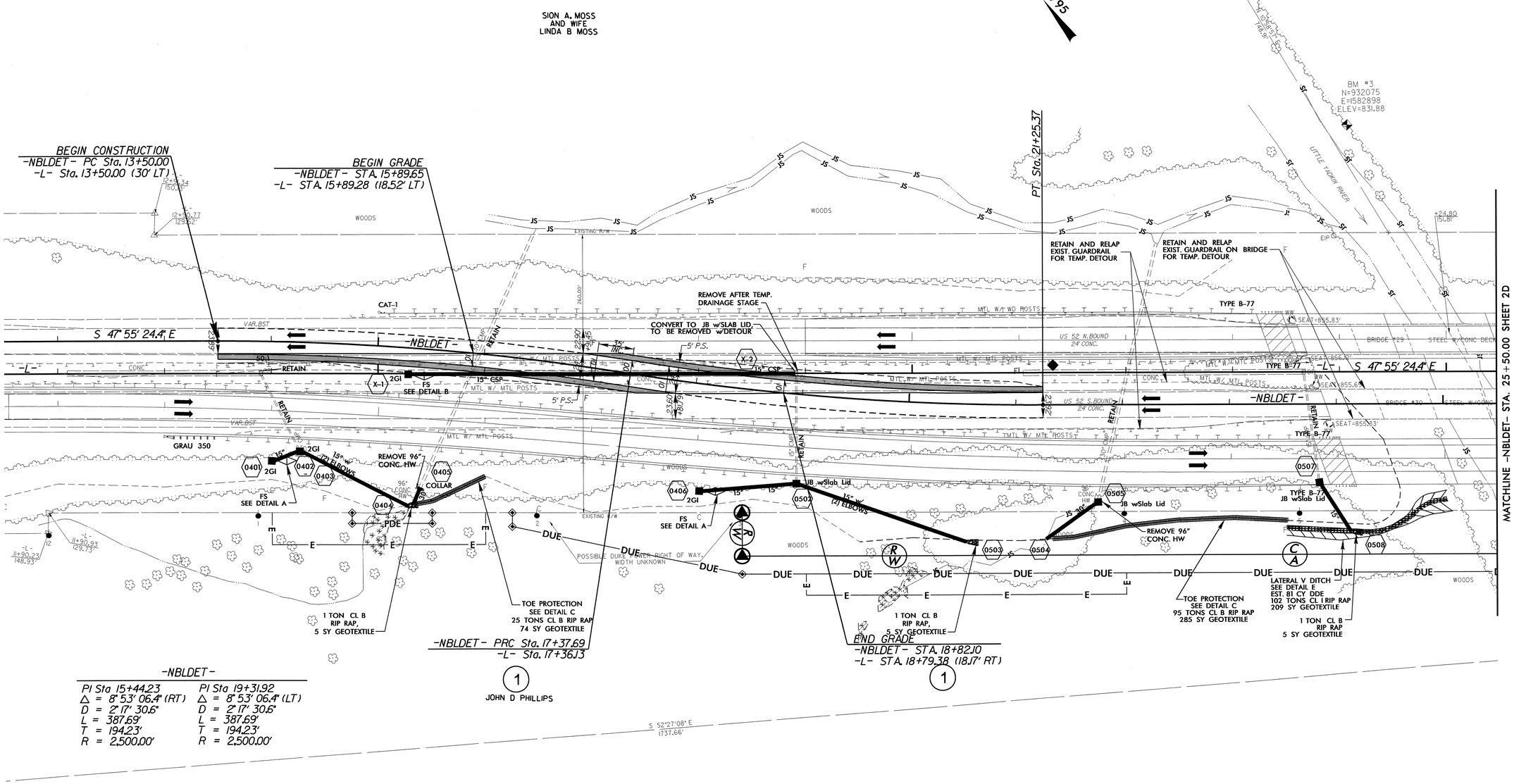
SEE TMP FOR PORTABLE CONCRETE BARRIER LOCATIONS ALONG -NBLDET-

PROP. PERMANENT DRAINAGE TO BE INSTALLED PRIOR TO INSTALLING TEMP. DRAINAGE SEE SHEETS 4 & 5

DETAIL B
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'



-NBLDET-

PI Sta 15+44.23	PI Sta 19+31.92
Δ = 8° 53' 06.4" (RT)	Δ = 8° 53' 06.4" (LT)
D = 2° 17' 30.6"	D = 2° 17' 30.6"
L = 387.69'	L = 387.69'
T = 194.23'	T = 194.23'
R = 2,500.00'	R = 2,500.00'

FOR -NBLDET- PROFILE, SEE SHEET NO. 9

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
B-4645	2-E
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON HOUSER — 6-14-13

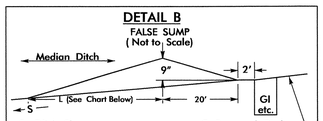
HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 036821 ENGINEER ELENI M. RIGGS — 6/18/13

–NBL– DETOUR

SEE TMP FOR PORTABLE CONCRETE BARRIER LOCATIONS ALONG –NBLDET–

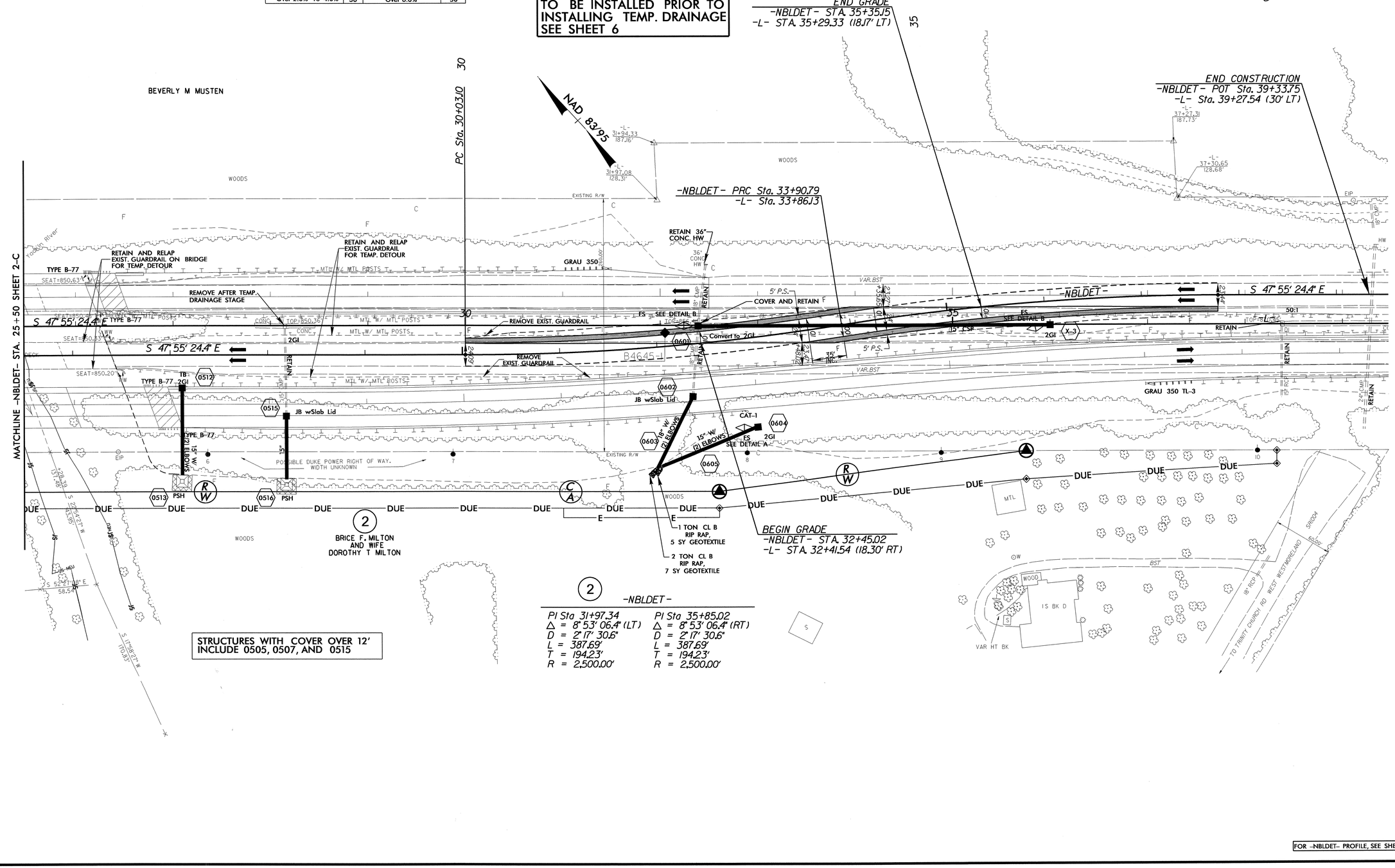
PROP. PERMANENT DRAINAGE TO BE INSTALLED PRIOR TO INSTALLING TEMP. DRAINAGE SEE SHEET 6

DETAIL B
FALSE SUMP
(Not to Scale)



S = Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'



-NBLDET-

PI Sta 31+97.34	PI Sta 35+85.02
Δ = 8° 53' 06.4" (LT)	Δ = 8° 53' 06.4" (RT)
D = 2° 17' 30.6"	D = 2° 17' 30.6"
L = 387.69'	L = 387.69'
T = 194.23'	T = 194.23'
R = 2,500.00'	R = 2,500.00'

STRUCTURES WITH COVER OVER 12' INCLUDE 0505, 0507, AND 0515

FOR –NBLDET– PROFILE, SEE SHEET NO. 9

REVISIONS 8/17/99

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PROJECT REFERENCE NO.	SHEET
B-4645	2F

GEOTECHNICAL ENGINEER	ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN Scott A. Hidden 8/10/12 SIGNATURE DATE	SIGNATURE DATE

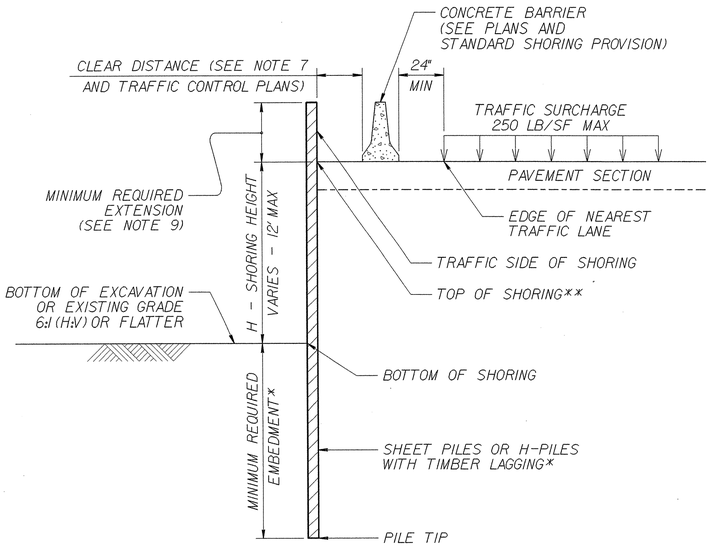
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H-PILES WITH TIMBER LAGGING			SHEET PILES		H-PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN^3/FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)			MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN^3/FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)		
				HP 10x42	HP 12x53	HP 14x73			HP 10x42	HP 12x53	HP 14x73
GROUNDWATER ELEVATION BEWTEEN BOTTOM OF SHORING AND PILE TIP	< 6	11.5	4.5	11.5	11.5	11.5	16.0	12.0	13.0	13.0	13.0
	7	13.0	7.0	13.0	13.0	13.0	17.0	14.5	14.5	14.5	14.5
	8	15.0	10.0	--	15.0	15.0	18.0	17.0	--	15.5	15.5
	9	17.0	14.0	--	17.0	17.0	19.0	20.0	--	17.0	17.0
	10	18.5	19.5	--	--	18.5	20.0	23.5	--	--	18.5
	11	20.5	26.0	--	--	--	21.0	28.0	--	--	20.0
	12	22.5	33.0	--	--	--	22.0	33.0	--	--	21.5
GROUNDWATER ELEVATION BELOW PILE TIP	< 6	7.5	3.0	8.0	8.0	8.0	11.0	10.0	9.5	9.5	9.5
	7	8.5	4.5	9.5	9.5	9.5	12.0	12.0	10.5	10.5	10.5
	8	10.0	6.5	10.5	10.5	10.5	12.5	14.0	11.5	11.5	11.5
	9	11.0	9.5	--	12.0	12.0	13.5	16.5	--	12.5	12.5
	10	12.5	13.0	--	--	13.5	14.0	19.5	--	13.5	13.5
	11	13.5	17.0	--	--	14.5	15.0	22.5	--	--	14.5
	12	15.0	21.5	--	--	16.0	16.0	25.5	--	--	15.5

MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

***DO NOT USE H-PILES WITH TIMBER LAGGING FOR GROUNDWATER CONDITION, SHORING HEIGHT AND H-PILE SIZE SHOWN IF MINIMUM REQUIRED EMBEDMENT IS "--".**

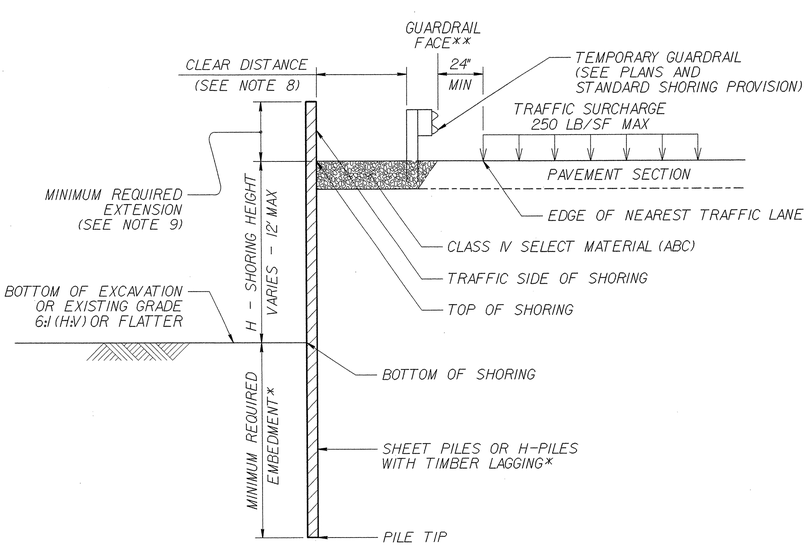
NOTES:

1. AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING AS NOTED IN THE PLANS.
2. FOR STANDARD TEMPORARY SHORING, SEE STANDARD SHORING PROVISION.
3. STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
   UNIT WEIGHT, γ = 120 LB/CF
   FRICTION ANGLE, ϕ = 30 DEGREES
   COHESION, c = 0 LB/SF
4. DO NOT USE STANDARD TEMPORARY SHORING IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
5. DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS WITHIN THE EMBEDMENT DEPTH.
6. USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, USE "GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP" FOR GROUNDWATER CONDITION. DO NOT USE STANDARD TEMPORARY SHORING IF GROUNDWATER IS ABOVE BOTTOM OF SHORING.
7. AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN THE MINIMUM REQUIRED FOR CONCRETE BARRIER, SET BARRIER NEXT TO AND UP AGAINST TRAFFIC SIDE OF PILES AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
8. AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN 4' FOR TEMPORARY GUARDRAIL, ATTACH GUARDRAIL TO TRAFFIC SIDE OF PILES AS SHOWN IN THE PLANS AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
9. MINIMUM REQUIRED EXTENSION IS 6" FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32" FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".
10. MINIMUM REQUIRED EMBEDMENT FOR H-PILES WITH TIMBER LAGGING IS BASED ON DRIVEN H-PILES AT MAXIMUM 6' SPACING. AT THE CONTRACTOR'S OPTION, EMBEDMENT DEPTHS MAY BE REDUCED BY 25% FOR DRILLED-IN H-PILES.
11. SUBMIT A "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY SHORING CONSTRUCTION. UP TO 3 SHORING LOCATIONS MAY BE INCLUDED ON EACH FORM.
12. CONTACT THE ENGINEER IF PILES DO NOT ATTAIN THE MINIMUM REQUIRED EMBEDMENT.



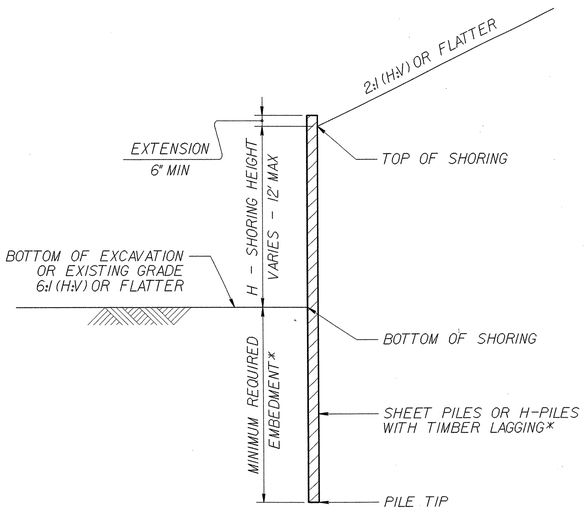
CONCRETE BARRIER

****TOP OF SHORING = EDGE OF PAVEMENT**



TEMPORARY GUARDRAIL

****GUARDRAIL FACE = EDGE OF PAVEMENT**



STANDARD TEMPORARY SHORING

(SLOPE CASE)
***SEE TABLE ABOVE.**

STANDARD TEMPORARY SHORING

(SURCHARGE CASE)
***SEE TABLE ABOVE.**

GEOTECHNICAL ENGINEERING UNIT	STANDARD DRAWING NO. 1801.01
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH	STANDARD TEMPORARY SHORING DATE: 11-20-12

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNIT GUARDRAIL ANCHOR UNIT TYPE B-77 FOR F-SHAPE BARRIER
SHEET 5 OF 7 862D03
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
ENGLISH DETAIL DRAWING FOR GUARDRAIL ANCHOR UNIT GUARDRAIL ANCHOR UNIT TYPE B-77 FOR F-SHAPE BARRIER
SHEET 4 OF 7 862D03

RUBRAIL BLOCKS 7" HIGH x 4" WIDE		
POST	THICKNESS	BOLT LENGTH
1	4¼"	9"
2	3¼"	5"*
3	2"	6"
4	1"	3"*

* BOLTS FOR POSTS 2 AND 4 ARE USED TO ATTACH BLOCK TO POST. RUBRAIL NOT ATTACHED TO BLOCK.

GENERAL NOTES:
1) POSTS 1 THROUGH 5 REQUIRE AN ADDITIONAL HOLE TO ATTACH LOWER BLOCKOUTS AND/OR RUBRAIL.
2) RUBRAIL BLOCKOUTS LOCATED ON POSTS 1 THROUGH 4 ARE OFFSET DRILLED AND SECURED WITH 5/8" BUTTONHEAD BOLTS (SEE CHART FOR BOLT LENGTHS). SECURE BLOCKS ONLY TO POSTS 2 AND 4. SECURE RUBRAIL AND BLOCKOUTS TO POSTS 1 AND 3. RUBRAIL IS SECURED TO POST 5 WITH A 5/8" x 4½" BUTTONHEAD BOLT. RUBRAIL IS FLARED TO BACK OF POST 6 AND NOT SECURED.
3) STEEL SPACER TUBE IS A SCHEDULE 40 GALVANIZED PIPE 6" INSIDE DIAMETER x 9" LONG. ATTACH TUBE TO GUARDRAIL ONLY WITH 5/8" x 1¼" LONG BUTTONHEAD BOLT AND RECTANGULAR PLATE WASHER.
4) SEE DETAIL D FOR SLOPED RUBRAIL BLOCKOUT. BLOCKOUT IS ATTACHED TO RAIL ELEMENT ONLY. USE 3/8" x 3" LAG BOLT WITH FLAT WASHER.
5) SHOP FABRICATE THE C6 x 8.2 RUBRAIL END TO BE CONSISTENT WITH THE SLOPE OF THE F SHAPE AND ATTACH FLUSH WITH THE SLOPED TOE OF THE BARRIER OR BRIDGE RAIL.
6) ANCHORAGE:
(a) AT EXISTING BRIDGE RAIL AND NEW OR EXISTING BARRIERS, ANCHOR RUBRAIL USING THREE 5/8" x 6" CHEMICALLY ANCHORED BOLTS WITH WASHERS. MAXIMUM PROJECTION FOR BOLTS IS ½".
(b) AT EXISTING BRIDGE RAIL AND NEW OR EXISTING BARRIERS, ANCHOR THE W-BEAM END SHOE USING A 4 BOLT HOLD DOWN PLATE (SEE STD. DWG. 862.04). A 4 BOLT INSERT ASSEMBLY IS ALLOWED ON PRECAST REINFORCED CONCRETE BARRIER (SEE STD. DWG. 857.01). INSTALL THE W-BEAM END SHOE BEHIND THE NESTED W-BEAM ELEMENTS.
(c) AT NEW BRIDGE RAIL, ANCHOR THE W-BEAM END SHOE AND RUBRAIL AS DETAILED ON THE STRUCTURE PLANS.
7) POSTS 1 AND 2 ARE W8 x 13, 7'-6" LONG. ALL OTHER POSTS IN THE ANCHOR UNIT ARE W6 x 8.5.

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNIT
GUARDRAIL ANCHOR UNIT TYPE B-77
FOR F-SHAPE BARRIER

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

SHEET 5 OF 7
862D03

SHEET 4 OF 7
862D03

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNIT
GUARDRAIL ANCHOR UNIT TYPE B-77
FOR F-SHAPE BARRIER

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

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022966 JOEL S. HOWERTON 6/6/13

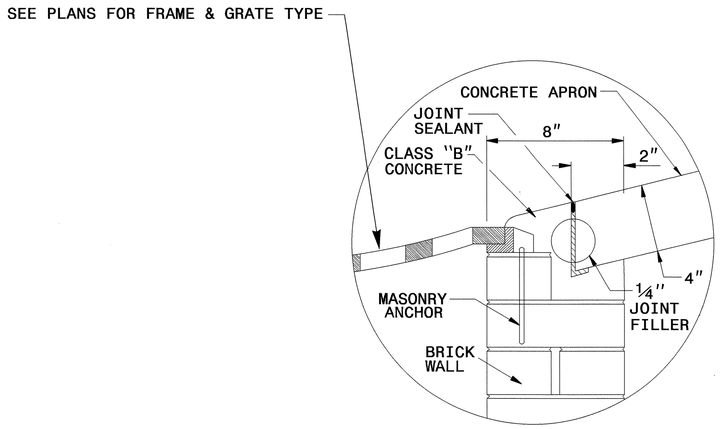
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: J HOWERTON DATE: 06-22-12
MODIFIED BY: DATE:
CHECKED BY: [signature] DATE: 11/13/12
FILE SPEC.:

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

PROJECT REFERENCE NO.	SHEET NO.
B-4645	2-H

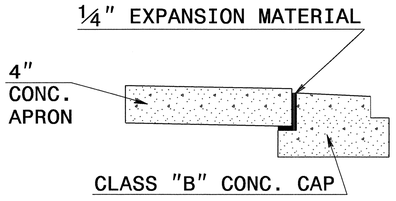


GRATE PLACEMENT DETAIL

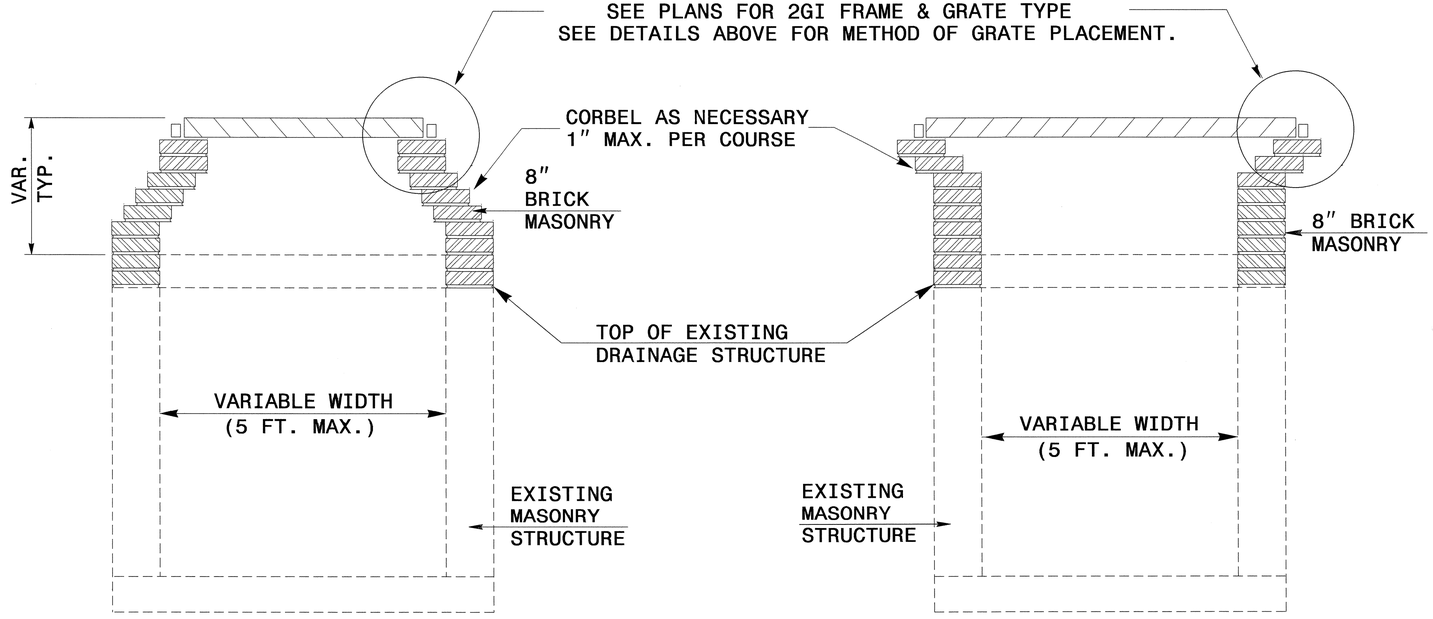
FOR GRATED DROP INLETS

GENERAL NOTES:

- CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.
- USE CLASS B CONCRETE.
- THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.
- JUMBO CONCRETE BRICK WILL BE PERMITTED. 4" CONCRETE BRICK OR 8" SOLID CONCRETE BLOCK ARE REQUIRED FOR DRAINAGE STRUCTURE.
- INCLUDE CONCRETE APRON IN UNIT PRICE BID PER EACH, CONVERT EXISTING DROP INLET TO 2GI AS NEEDED.
- SPECIAL DESIGN IS REQUIRED FOR USE UNDER PAVEMENT.
- CONFIRM DIMENSIONS ON EACH INDIVIDUAL FRAME & GRATE PROPOSAL.
- SEE STD. DRAWING 840.25 FOR MASONRY ANCHORAGE.



EXPANSION JOINT DETAIL



TYPICAL SECTION

TYPICAL SECTION

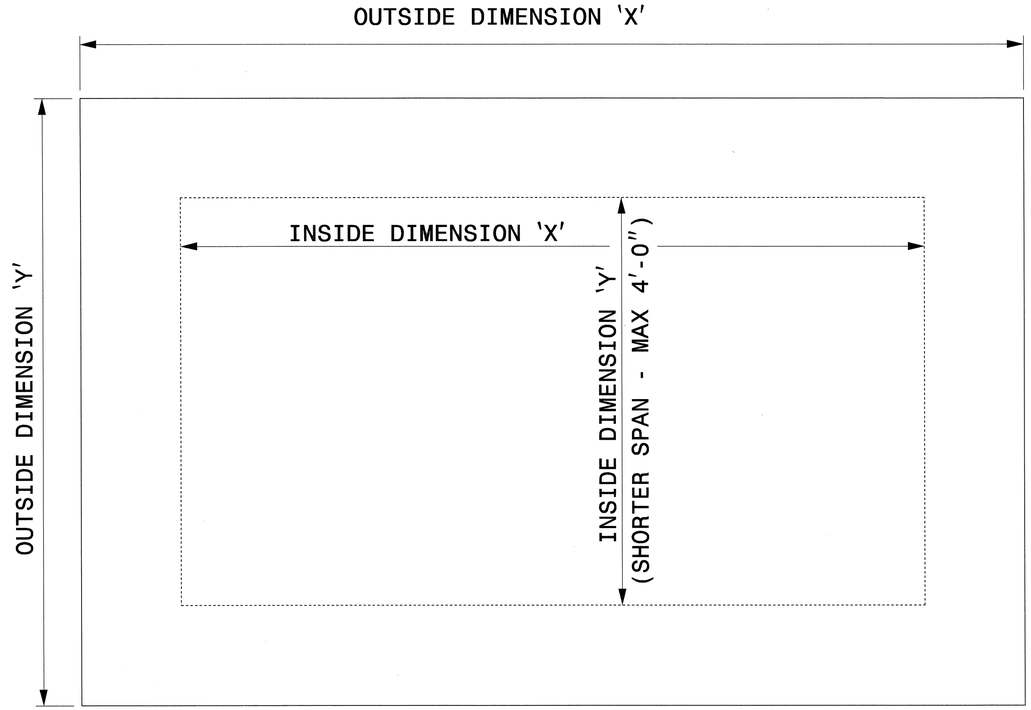
NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL S. HOWERTON 6/6/13

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

DETAIL TO CONVERT EXISTING DROP INLET TO 2GI

ORIGINAL BY:	T.S.S.	DATE:	NOV.1997
MODIFIED BY:	T.S.S.	DATE:	FEB.2000
CHECKED BY:	Joel S. Howerton	DATE:	6/4/13
FILE SPEC.:	s:/howerton/Convert DI to 2GI		

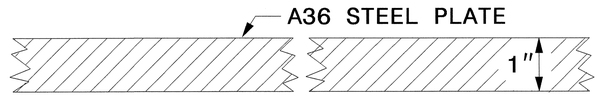
PROJECT REFERENCE NO.	SHEET NO.
B-4645	2-I



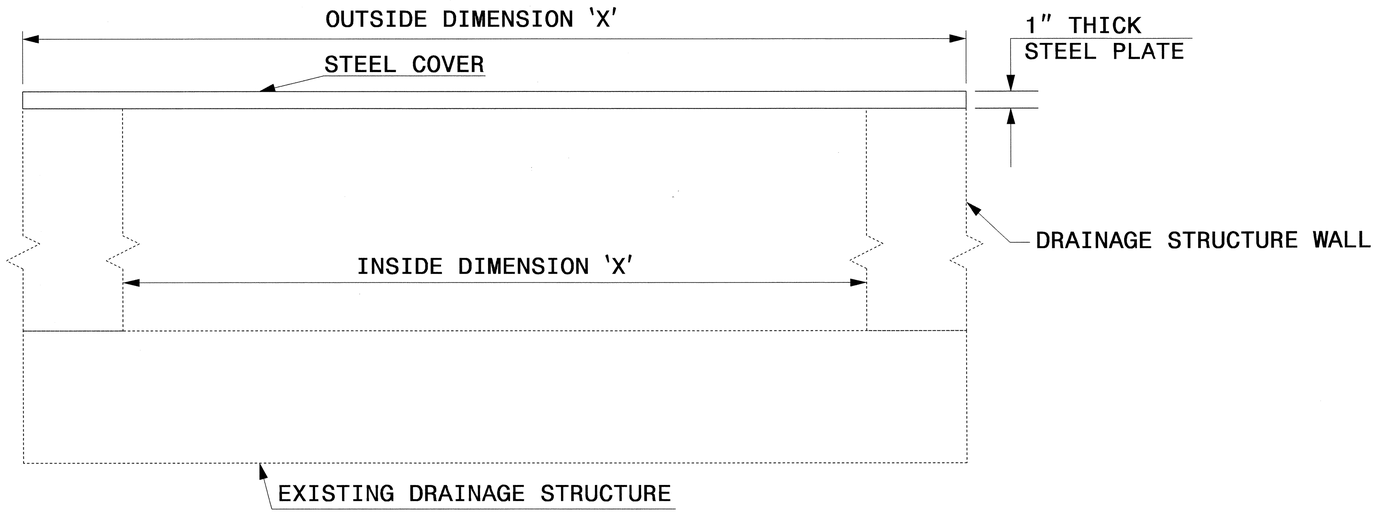
PLAN VIEWS

GENERAL NOTES:

- USE GRADE A36 STEEL
- STEEL COVERS ARE FOR TEMPORARY USE DURING PHASE CONSTRUCTION.
- FILL SHALL BE PLACED DIRECTLY OVER THE STEEL PLATES.
- SEE ROADWAY PLANS AND PROVISIONS FOR LOCATIONS
- QUANTITES TO BE PAID FOR AT THE UNIT PRICE BID PER EACH.



SECTION VIEW OF STEEL TOP PLATE



ELEVATION VIEWS

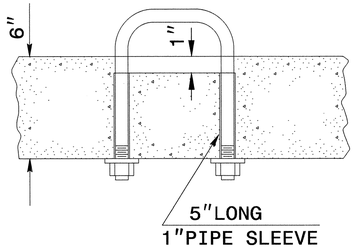
NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL S. HOWERTON
6/6/13

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

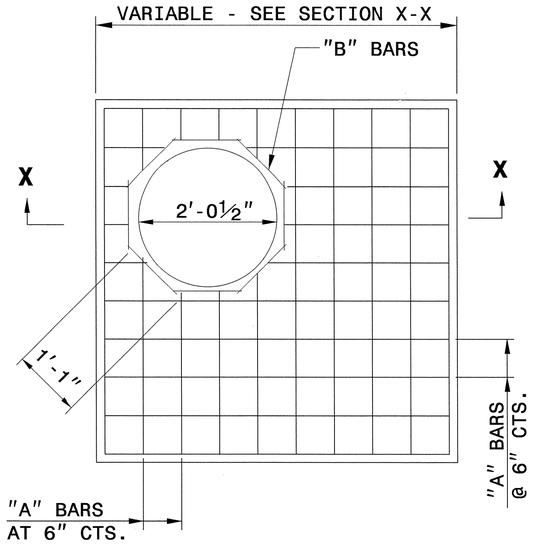
DETAIL OF TEMPORARY 1" STEEL COVER OVER DRAINAGE STRUCTURE

ORIGINAL BY: E.E. WARD DATE: 2-2-98
MODIFIED BY: DATE:
CHECKED BY: DATE: 5/28/13
FILE SPEC.: eric:/usr/details/metric/stand/stlcvr2.dgn

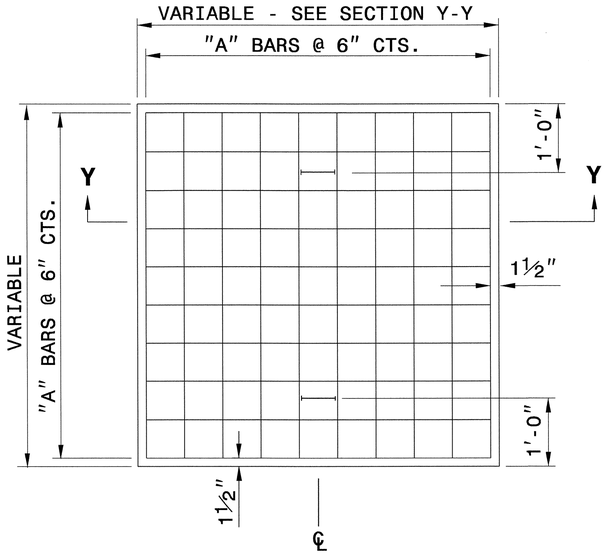
PROJECT REFERENCE NO.	SHEET NO.
B-4645	2-J



PARTIAL SECTION



PLAN



PLAN

GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

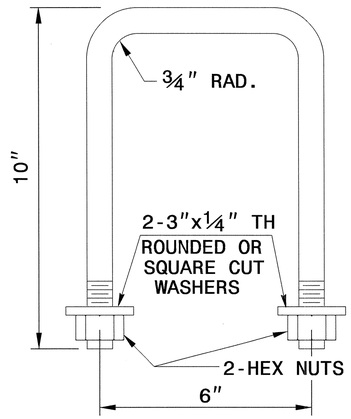
DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.

BILL OF MATERIALS

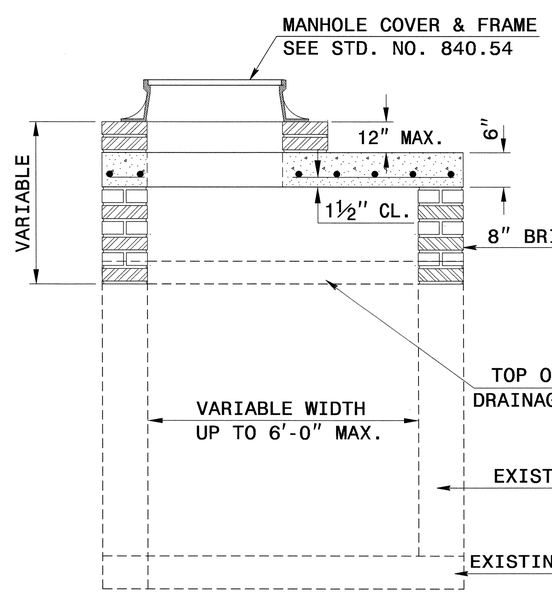
REINFORCING STEEL				
CODE	SIZE	QTY.	LENGTH	REINF. STEEL LBS.
A	#4	20	4'-6"	60.12
B	#4	8	1'-1"	5.79
TOTAL				65.91 *

MASONRY	CU YDS
TOP SLAB CONCRETE CLASS "B"	.4326 *
BRICK MASONRY PER FT HT (MIN)	.4111

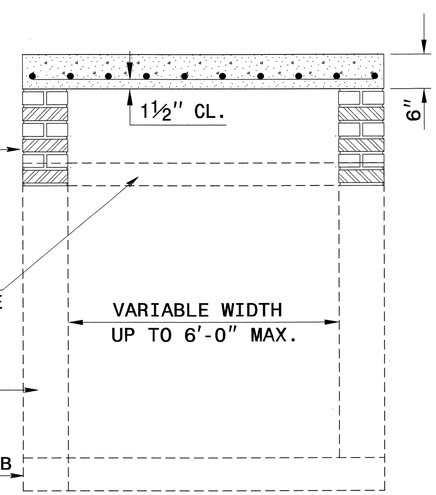
* NOTE:
QUANTITIES BASED ON 3'-6" X 3'-6" DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.



DETAIL OF HANDLE



SECTION X-X



SECTION Y-Y

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL S. HOWERTON
6/6/13

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

DETAIL TO CONVERT EXISTING DROP INLET OR CATCH BASIN TO JUNCTION BOX (MANHOLE OPTIONAL)

ORIGINAL BY: T.S.S. DATE: NOV.1997
MODIFIED BY: T.S.S. DATE: FEB.2000
CHECKED BY: DATE: 6/4/13
FILE SPEC.: ds174:/usr/details/stand/boxtojbe.dgn

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-4645	3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203205

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ********** (24+90.11 NBL)
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ********** (25+43.07 SBL)
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
0057000000-E	226	1,000	CY	UNDERCUT EXCAVATION
0063000000-N	SP	Lump Sum		GRADING
0106000000-E	230	42,500	CY	BORROW EXCAVATION
0134000000-E	240	81	CY	DRAINAGE DITCH EXCAVATION
0195000000-E	265	2,000	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	3,600	SY	GEOTEXTILE FOR SOIL STABILIZATION
0199000000-E	SP	1,236	SF	TEMPORARY SHORING
0223000000-E	275	1,000	SY	ROCK PLATING
0318000000-E	300	180	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
0320000000-E	300	570	SY	FOUNDATION CONDITIONING GEOTEXTILE
0366000000-E	310	240	LF	15" RC PIPE CULVERTS, CLASS III
0384000000-E	310	60	LF	30" RC PIPE CULVERTS, CLASS III
0448200000-E	310	40	LF	15" RC PIPE CULVERTS, CLASS IV
0582000000-E	310	1,248	LF	15" CS PIPE CULVERTS, 0.064" THICK
0588000000-E	310	84	LF	18" CS PIPE CULVERTS, 0.064" THICK
0600000000-E	310	16	LF	30" CS PIPE CULVERTS, 0.079" THICK
0636000000-E	310	10	EA	**" CS PIPE ELBOWS, *****" THICK (15", 0.064")
0636000000-E	310	2	EA	**" CS PIPE ELBOWS, *****" THICK (18", 0.064")
0995000000-E	340	786	LF	PIPE REMOVAL
1099500000-E	505	750	CY	SHALLOW UNDERCUT
1099700000-E	505	1,500	TON	CLASS IV SUBGRADE STABILIZATION
1220000000-E	545	300	TON	INCIDENTAL STONE BASE
1330000000-E	607	535	SY	INCIDENTAL MILLING
1491000000-E	610	13,360	TON	ASPHALT CONC BASE COURSE, TYPE B25.0C
1503000000-E	610	3,140	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C
1523000000-E	610	3,230	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5C
1575000000-E	620	930	TON	ASPHALT BINDER FOR PLANT MIX
1693000000-E	654	20	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
2000000000-N	806	4	EA	RIGHT OF WAY MARKERS
2190000000-N	828	1	EA	TEMPORARY STEEL PLATE COVERS FOR MASONRY DRAINAGE STRUCTURE
2253000000-E	840	0.66	CY	PIPE COLLARS
2286000000-N	840	17	EA	MASONRY DRAINAGE STRUCTURES
2308000000-E	840	0.73	LF	MASONRY DRAINAGE STRUCTURES
2366000000-N	840	9	EA	FRAME WITH TWO GRATES, STD 840.24
2367000000-N	840	4	EA	FRAME WITH TWO GRATES, STD 840.29
2556000000-E	846	55	LF	SHOULDER BERM GUTTER
2905000000-N	859	1	EA	CONVERT EXISTING DROP INLET TO JUNCTION BOX
2995000000-N	SP	1	EA	GENERIC DRAINAGE ITEM CONVERT DROP INLET TO TWO GRATE INLET
3030000000-E	862	8,250	LF	STEEL BM GUARDRAIL
3150000000-N	862	10	EA	ADDITIONAL GUARDRAIL POSTS
3210000000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE CAT-1
3270000000-N	SP	3	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3317000000-N	862	8	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3360000000-E	863	8,030	LF	REMOVE EXISTING GUARDRAIL
3595000000-E	869	1,756	LF	RELAPPING GUARDRAIL
3628000000-E	876	110	TON	RIP RAP, CLASS I
3635000000-E	876	1,600	TON	RIP RAP, CLASS II
3649000000-E	876	220	TON	RIP RAP, CLASS B
3656000000-E	876	5,255	SY	GEOTEXTILE FOR DRAINAGE
3659000000-N	SP	2	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON
4048000000-E	902	1	CY	REINFORCED CONCRETE SIGN FOUNDATIONS
4060000000-E	903	888	LB	SUPPORTS, BREAKAWAY STEEL BEAM
4072000000-E	903	73	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4096000000-N	904	2	EA	SIGN ERECTION, TYPE D
4110000000-N	904	1	EA	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (A)
4110000000-N	904	1	EA	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (B)
4158000000-N	907	1	EA	DISPOSAL OF SIGN SYSTEM, WOOD
4400000000-E	1110	918	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	180	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	18	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4415000000-N	1115	4	EA	FLASHING ARROW BOARD
4420000000-N	1120	2	EA	PORTABLE CHANGEABLE MESSAGE SIGN
4430000000-N	1130	171	EA	DRUMS
4445000000-E	1145	24	LF	BARRICADES (TYPE III)
4465000000-N	1160	6	EA	TEMPORARY CRASH CUSHIONS
4470000000-N	1160	4	EA	RESET TEMPORARY CRASH CUSHION
4480000000-N	1165	2	EA	TMA
4485000000-E	1170	7,245	LF	PORTABLE CONCRETE BARRIER
4500000000-E	1170	6,790	LF	RESET PORTABLE CONCRETE BARRIER
4510000000-N	SP	120	HR	LAW ENFORCEMENT
4516000000-N	1180	50	EA	SKINNY DRUM
4650000000-N	1251	281	EA	TEMPORARY RAISED PAVEMENT MARKERS
4815000000-E	1205	50,864	LF	PAINT PAVEMENT MARKING LINES (6")
4847100000-E	1205	9,901	LF	POLYUREA PAVEMENT MARKING LINES (6", **********) (HIGHLY REFLECTIVE ELEMENTS)
4855000000-E	1205	4,726	LF	REMOVAL OF PAVEMENT MARKING LINES (6")
4900000000-N	1251	8	EA	PERMANENT RAISED PAVEMENT MARKERS
4905000000-N	1253	47	EA	SNOWPLOWABLE PAVEMENT MARKERS
6000000000-E	1605	4,850	LF	TEMPORARY SILT FENCE
6006000000-E	1610	630	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	920	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	1,245	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	13	ACR	TEMPORARY MULCHING
6018000000-E	1620	450	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	2.75	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	1,000	LF	TEMPORARY SLOPE DRAINS
6029000000-E	SP	500	LF	SAFETY FENCE
6030000000-E	1630	2,700	CY	SILT EXCAVATION
6036000000-E	1631	20,000	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	1,925	SY	COIR FIBER MAT
6038000000-E	SP	1,200	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	975	LF	1/4" HARDWARE CLOTH
6070000000-N	1639	24	EA	SPECIAL STILLING BASINS
6071010000-E	SP	930	LF	WATTLE
6071020000-E	SP	360	LB	POLYACRYLAMIDE (PAM)
6071030000-E	1640	925	LF	COIR FIBER BAFFLE
6071050000-E	SP	4	EA	**" SKIMMER (1-1/2")
6084000000-E	1660	10	ACR	SEEDING & MULCHING
6087000000-E	1660	7	ACR	MOWING
6090000000-E	1661	150	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.5	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	350	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	10.25	TON	FERTILIZER TOPDRESSING
6114500000-N	1667	10	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	25	EA	RESPONSE FOR EROSION CONTROL

13-MAY-2013 15:10
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$$$$STRIPPER$$$$

12/06/07

COMPUTED BY: C. HARRIS DATE: 5/11/12
CHECKED BY: J. BRAXTON DATE: 5/16/13

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-4645	3-A

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
SBL CONSTRUCTION					
L 10+00.00 RT	L 19+00 RT	4,729	2,979		1,750
L 19+00 RT	L 24+08.07 RT	39	18,976	18,937	
L 26+78.07 RT	L 32+50 RT	109	25,009	24,900	
L 32+50 RT	L 40+46.83 RT	8,165	136		8,029
SUBTOTALS:		13,042	47,099	43,837	9,779
DETOUR CONSTRUCTION					
NBLDET 13+00	NBLDET 21+50	225	140		85
NBLDET 30+00	NBLDET 37+72.27	171	194	23	
SUBTOTALS:		396	334	23	85
NBL CONSTRUCTION					
NBL 19+00	NBL 23+55.11	581	737	156	
NBL 26+25.11	NBL 32+50	1,056	2,732	1,676	
SUBTOTALS:		1,637	3,469	1,832	
MEDIAN CONSTRUCTION					
L 10+00	L 19+00	1,110	46		1,064
L 19+00	L 24+08.07	2,971			2,971
L 26+78.07	L 32+50	2,223			2,223
L 32+50	L 40+46.83	624	72		522
SUBTOTALS:		6,928	118		6,810
DETOUR REMOVAL					
NBLDET 13+00	NBLDET 21+50	140	270	130	
NBLDET 30+00	NBLDET 37+72.27	194	205	11	
SUBTOTALS:		334	475	141	
PROJECT SUBTOTALS:		22,337	51,495	45,833	16,674
Material For Shoulder Construction:			3,732	3,732	
Loss Due To Clearing & Grubbing:		-600		600	
Waste In Lieu Of Borrow:				-9,779	-9,779
PROJECT TOTAL:		21,737	55,227	40,386	6,895
5% To Replace Top Soil On Borrow Pit:				2,019	
GRAND TOTALS:		21,737	55,227	42,405	6,895
SAY:		22,000		42,500	

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, fine grading, clearing and grubbing, removal of existing asphalt pavement and removal of existing concrete pavement will be paid for at the lump sum price for "Grading".

SUMMARY OF REMOVAL OF EXISTING ASPHALT PAVEMENT

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
-NBL-	19+00.00	23+55.11	LT	1038.76
-NBL-	19+00.00	23+55.11	RT	703.05
-NBL-	26+25.11	32+50.00	LT	1369.04
-NBL-	26+25.11	32+50.00	RT	930.71
-L-	10+00.00	23+94.92	LT	310.52
-L-	10+00.00	23+94.92	RT	1510.91
-L-	26+34.91	37+60.68	LT	307.46
-L-	26+34.91	37+60.68	RT	1458.60
-NBLDET-	13+50.00	21+25.37	CL	1171.37
-NBLDET-	30+03.10	37+78.48	CL	1178.02
			TOTAL:	9978.43
			SAY:	9980

SUMMARY OF REMOVAL OF EXISTING CONCRETE PAVEMENT

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
-L-	14+00.00	23+86.87	RT	2080.79
-L-	26+36.47	36+75.00	RT	2234.11
			TOTAL:	4314.90
			SAY:	4320.00

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH
-NBL-	26+49.22	26+70.00	20.78
-NBL-	26+49.22	26+69.10	19.88
-SBL-	27+02.18	27+16.00	13.82
		TOTAL:	54.48
		SAY:	55.00

SUMMARY OF ROCK PLATING

LINE	BEGINNING SLOPE	APPROX. STATION	ENDING SLOPE	APPROX. STATION	LOCATION LT/RT	ROCK PLATING DETAIL NO.	RIPRAP CLASS	SY
-L-	1.50:1	20+00.00	1.50:1	21+50.00	RT	2	*	793.00
							TOTAL SY	793.00

* USE CLASS 1, 2 OR B RIPRAP IF RIPRAP CLASS IS NOT SHOWN FOR ROCK PLATING LOCATION.

"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			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS										IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	RELAP EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	TYPE B-77	GRAU 350	CAT-1								EA	G	NG				
-SBL-	10+00.00	24+01.52 (BR)	LT	1401.52				24+01.52 (BR)	6	6	154		3.08		1													1346.77		TIE TO EXIST. GUARDRAIL
-SBL-	26+71.52 (BR)	40+50.00	LT	1378.48			26+71.52 (BR)		6	6		137.50		2.75	1													1414.25		TIE TO EXIST. GUARDRAIL
-SBL-	13+00.00	24+16.81 (BR)	RT	1116.81			14+50.00		14	17		100		2	1	1												824.69		
-SBL-	26+86.81 (BR)	32+90.00	RT	603.19			26+86.81 (BR)	32+90.00	14	17	100		2		1		1											482.62		
-SBL-	37+00.00	40+50.00	RT	350			38+50.00		14	17		152.50		3.05		1												275.25		TIE TO EXIST. GUARDRAIL
-NBL-	15+00.00	23+46.38 (BR)	LT	846.38				15+00.00	14	17	100		2		1		1											881.46		
-NBL-	26+16.38 (BR)	31+50.00	LT	533.62			30+00.00		14	17	514.87		3		1	1												481.82		
-NBL-	13+50.00	23+61.66 (BR)	RT	1011.66			23+61.66 (BR)		6	6		122.50		2.45	1													1016.26		TIE TO EXIST. GUARDRAIL
-NBL-	26+31.66 (BR)	39+27.54	RT	1295.88				26+31.66 (BR)	6	6	145.50		2.91		1													1305.58		TIE TO EXIST. GUARDRAIL
-NBLDET-	21+25.37	30+03.10	RT																										877.73	
-NBLDET-	21+25.37	30+03.10	LT																										877.73	
			SHEET TOTAL:	8538																										
			ANCHOR DEDUCTION:	312.5																										
			TOTAL:	8225.5																										
			SAY:	8250											8	3	2										TOTAL:	8028.70	1755.46	
																											SAY:	8030	1756	
															8	3	2													

ANCHOR DEDUCTION:
TYPE B-77 : 8 @ 18.75 = 150
GRAU 350 : 3 @ 50 = 150 } 312.5
CAT-1 : 2 @ 6.25 = 12.5
ADDITIONAL GUARDRAIL POSTS : 10

04-JUN-2013 10:37
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$$USERNAME$$

COMPUTED BY: C. HARRIS	DATE: 3/27/2012
CHECKED BY: J. BRAXTON	DATE: 6/6/13

RD253045

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
B-4645	3-B

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

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

STATION (SIZE / THICKNESS OR GAUGE)	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL
-L-							
14+02	RT	0401		894.40			
		0401	0402		891.65	889.10	
14+26	RT	0402		893.06			
		0402	0403		889.10	861.00	
15+33	RT	0404	0405		859.42	859.36	
18+00	RT	0406		879.00			
		0406	0502		876.25	868.51	
18+91	CL	0501		874.31	871.56		
18+91	RT	0502		871.53			
		0502	0503		868.51	839.08	
21+25	RT	0504	0505		835.25	832.74	
21+74	RT	0505		837.01			
23+70	CL	0506		854.71	848.98		
23+81	RT	0507		839.32			
		0507	0508		836.30	835.71	
26+65	LT	0509		855.81			
		0509	0510		853.06	852.86	
26+65	LT	0510		855.69			
		0510	0511		852.86	833.89	
27+09	RT	0512		855.57			
		0512	0513		852.82	833.90	
28+15	CL	0514		848.44	843.99		
28+16	RT	0515		837.85			
		0515	0516		834.83	831.28	
32+39	CL	0601		855.91	852.30		
32+33	RT	0602		853.30			
		0602	0603		850.03	834.61	
33+00	RT	0604		857.83			
		0604	0605		855.08	835.38	
-NBLDET-							
15+30	RT	X-1		890.72			
		X-1	X-2		887.47	872.18	
18+91.21	LT	X-2			872.18		
36+04	RT	X-3		865.11			
		X-3	0601		861.50	852.30	
SHEET TOTALS							

SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) and C.S. PIPE

STATION	FROM	TO	SD 12"	SD 15"	SD 18"	SD 24"	SD 30"	SD 36"	SD 42"	SD 48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	C.S. 12" .064	C.S. 15" .064	C.S. 18" .064	C.S. 24" .064	C.S. 30" .079	C.S. 36" .079	C.S. 42" .109	C.S. 48" .109
	0402	0403														112						
15+33	0404	0405																	16			
	0502	0503														168						
	0510	0511														48						
	0512	0513														92						
	0602	0603															84					
	0604	0605														104						
	X-1	X-2														364						
	X-3	0601														360						
SHEET TOTALS																1248	84		16			

R.C. PIPE CLASS III, R.C. PIPE CLASS IV and other pipe

STATION	FROM	TO	RC III 12"	RC III 15"	RC III 18"	RC III 24"	RC III 30"	RC III 36"	RC III 42"	RC III 48"	RC IV 12"	RC IV 15"	RC IV 18"	RC IV 24"	RC IV 30"	RC IV 36"	RC IV 42"	RC IV 48"	** " R.C. PIPE (CLASS V)	***" RC PIPE CULVERTS, CONTRACTOR DESIGN	***" RC PIPE CULVERTS, CONTRACTOR DESIGN	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE
	0401	0402		24																			
	0406	0502		92																			
21+25	0504	0505					60																
	0507	0508		56																			
	0509	0510										40											
	0515	0516		68																			
SHEET TOTALS				240			60					40											

ENDWALLS (STD. 838.01, 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE)) CU. YARDS; QUANTITIES FOR DRAINAGE STRUCTURES (*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B')); FRAME, GRATES, AND HOOD STANDARD 840.03; CONCRETE TRANSITIONAL SECTION

STATION	FROM	TO	ENDWALLS R.C.P.	ENDWALLS C.S.P.	PER EACH (0' THRU 5.0')	LIN. FT. A: 5.0' THRU 10.0'	LIN. FT. B: 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	TYPE OF GRATE E	F	G	DROP INLET	CATCH BASIN
14+02	0401				1								
14+26	0402				1								
18+00	0406				1								
18+91	0501				1								
18+91	0502				1								
21+74	0505				1								
23+70	0506				1	0.73							
23+81	0507				1								
26+65	0509				1								
26+65	0510				1								
27+09	0512				1								
28+15	0514				1								
28+16	0515				1								
32+33	0602				1								
33+00	0604				1								
15+30	X-1				1								
36+04	X-3				1								
SHEET TOTALS					17	0.73							

Drainage structures

STATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	J.B. STD. 840.31 OR 840.32	T.B.D.I. STD. 840.35	CONVERT EXIST. DI TO JB	CONVERT EXIST. DI TO 2GI	CS PIPE ELBOWS NO. & SIZE 15"	CS PIPE ELBOWS NO. & SIZE 18"	TEMPORARY STEEL PLATE, SEE TMP PHASING
14+02	0401					1					1								
14+26	0402					1						1					2		
18+00	0406					1					1								
18+91	0501					1					1								
18+91	0502												1						
	0502	0503															2		
21+74	0505												1						
23+70	0506					1					1								
23+81	0507												1						
26+65	0509											1		1					
26+65	0510											1		1					
	0510	0511															2		
27+09	0512											1		1					
	0512	0513															2		
28+15	0514					1					1								
28+16	0515												1						
32+39	0601										1					1			1
32+33	0602												1						
	0602	0603																2	
33+00	0604					1					1								
	0604	0605															2		
15+30	X-1					1					1								
18+91.21	X-2														1				
36+04	X-3					1					1								
SHEET TOTALS						9					9	4	5	3	1	1	10	2	1

STATION	FROM	TO	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
15+33	0404	0405		0.66		Remove Exist. 96" Headwall
18+91	0501				17	Remove Exist. Pipe After Temp. Drainage Stage
23+70	0506				23	Remove Exist. Pipe After Temp. Drainage Stage
28+15	0514				22	Remove Exist. Pipe After Temp. Drainage Stage
32+39	0601					Convert Exist. DI to 2GI After Temp Drainage Stage
	X-1	X-2			364	Remove Pipe After Temp. Drainage Stage
	X-3	0601			360	Remove Pipe After Temp. Drainage Stage
SHEET TOTALS				0.66	786	

ABBREVIATIONS

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

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PROJ. REFERENCE NO.	SHEET NO.
B-4645	3-C

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

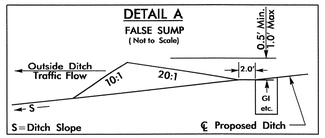
PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4,5	JOHN D PHILLIPS
2	5,6	BRICE F. MILTON AND WIFE DOROTHY T. MILTON

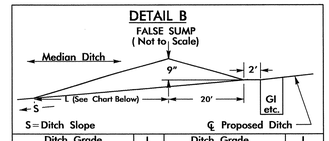
PARCEL No.	SHEET No.	PROPERTY OWNER NAME

PROJECT REFERENCE NO.	SHEET NO.
B-4645	4
R/W SHEET NO.	

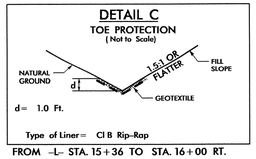
ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON HOUSER — 6-14-13

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 036821 ENGINEER ELENI M. RIGGS — 6/18/13

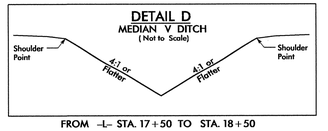




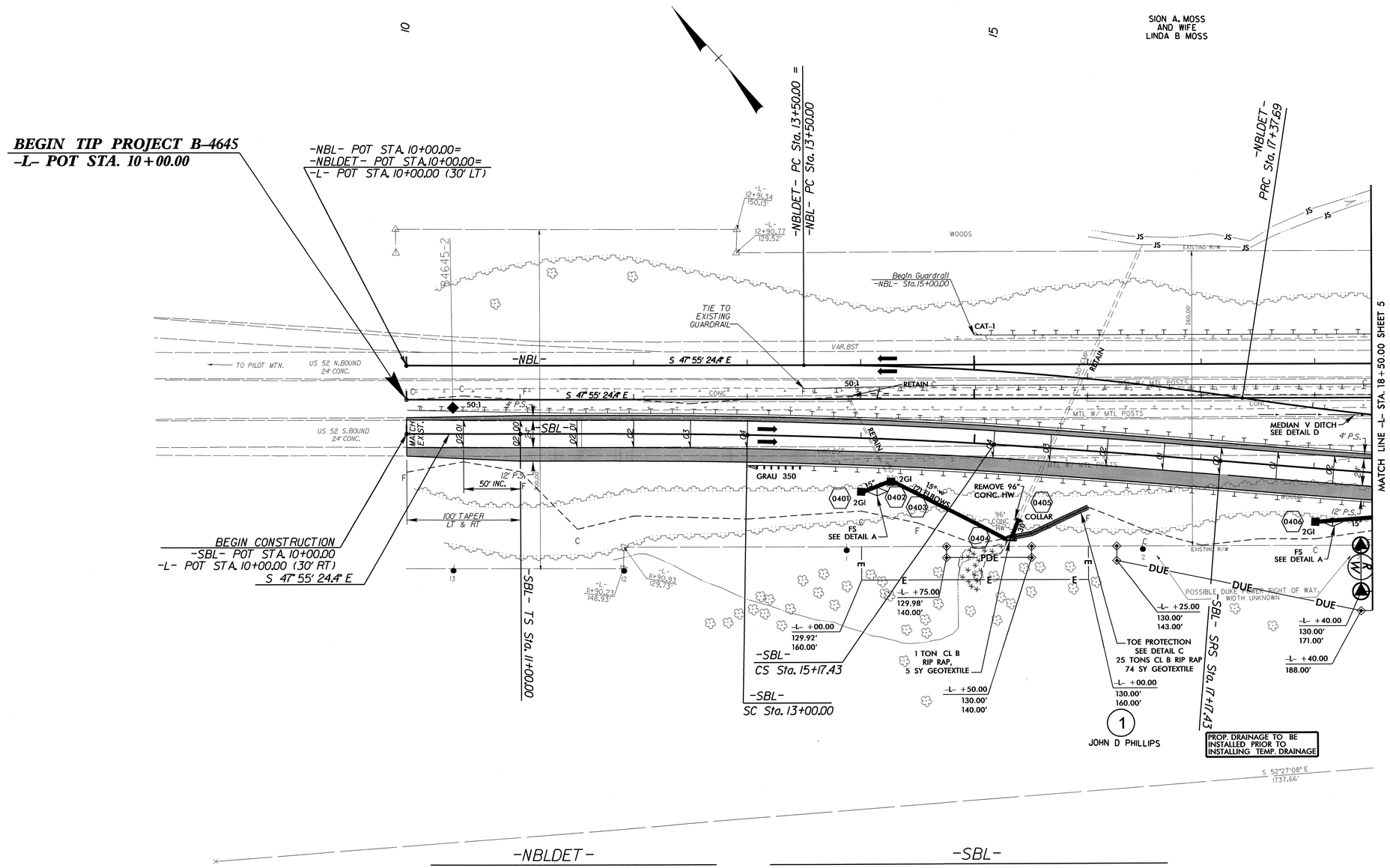
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'



FROM -L- STA. 15+36 TO STA. 16+00 RT.



FROM -L- STA. 17+50 TO STA. 18+50



-NBLDET-

PI Sta 15+44.23
Δ = 8° 53' 06.4" (RT)
D = 2° 17' 30.6"
L = 387.69'
T = 194.23'
R = 2,500.00'

PI Sta 19+31.92
Δ = 8° 53' 06.4" (LT)
D = 2° 17' 30.6"
L = 387.69'
T = 194.23'
R = 2,500.00'

-SBL-

PIs Sta 12+33.34
Θs = 1° 08' 04.5"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PI Sta 14+08.73
Δ = 2° 28' 00.8" (RT)
D = 1° 08' 04.5"
L = 217.43'
T = 108.73'
R = 5,050.00'
SE = SEE PLANS
RO = SEE PLANS

PIs Sta 15+84.10
Θs = 1° 08' 04.5"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

SEE SHEET 2-D & 2-E FOR DETOUR
FOR -SBL- PROFILE, SEE SHEET NO. 7

REVISIONS

8/17/99

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8/17/99

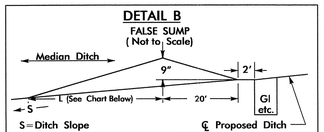
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B-4645	5
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON HOUSER — 6/18/13

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 036821 ENGINEER ELENI M RIGOS — 6/18/13

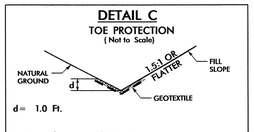
DETAIL B
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL C
TOE PROTECTION
(Not to Scale)

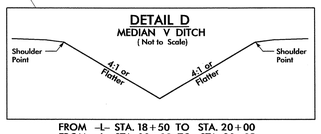


d= 1.0 Ft.

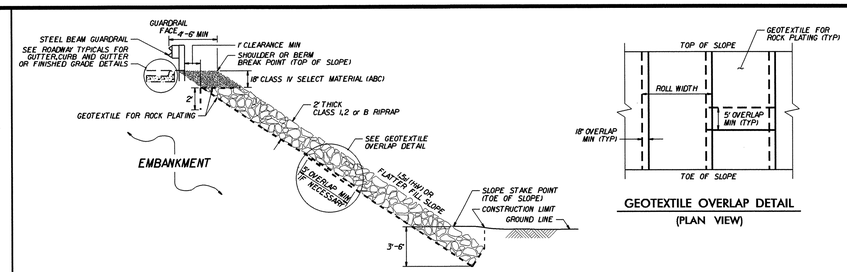
Type of Liner= Cl B Rip-Rap

FROM -L- STA. 21+30 TO STA. 23+50 RT.
FROM -L- STA. 29+00 TO STA. 30+00 LT.

DETAIL D
MEDIAN 'V' DITCH
(Not to Scale)



FROM -L- STA. 18+50 TO STA. 20+00
FROM -L- STA. 28+00 TO STA. 28+15
FROM -L- STA. 28+15 TO STA. 29+00



ROCK PLATING DETAIL NO. 2 – TYPICAL SECTION

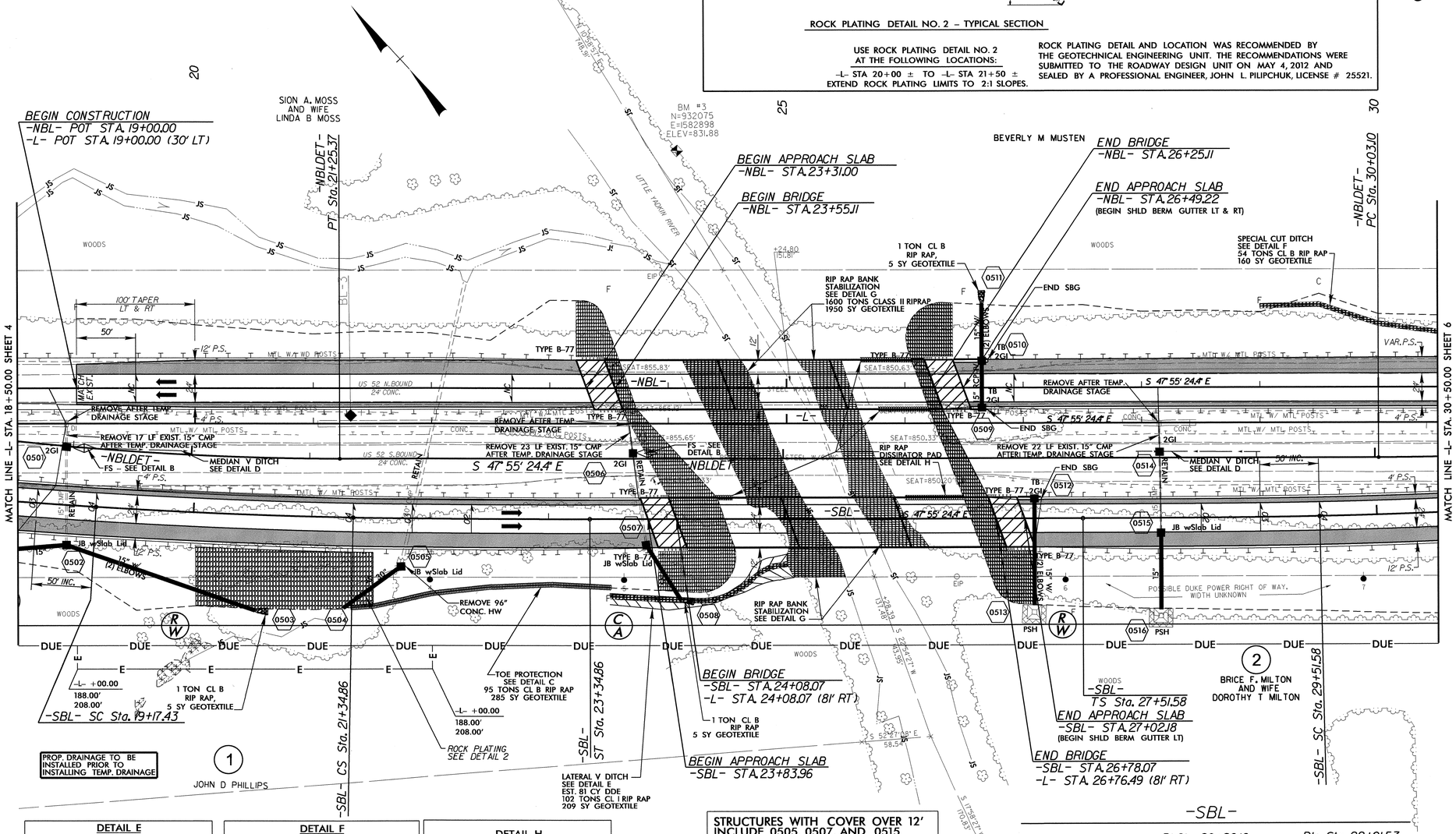
USE ROCK PLATING DETAIL NO. 2 AT THE FOLLOWING LOCATIONS:
-L- STA 20+00 ± TO -L- STA 21+50 ±
EXTEND ROCK PLATING LIMITS TO 2:1 SLOPES.

ROCK PLATING DETAIL AND LOCATION WAS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING UNIT. THE RECOMMENDATIONS WERE SUBMITTED TO THE ROADWAY DESIGN UNIT ON MAY 4, 2012 AND SEALED BY A PROFESSIONAL ENGINEER, JOHN L. PILIPCHUK, LICENSE # 25521.

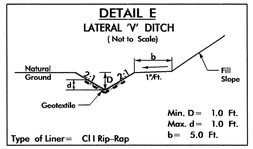
GEOTEXTILE OVERLAP DETAIL
(PLAN VIEW)

-NBLDET-
PI Sta 19+31.92
Δ = 8° 53' 06.4" (LT)
D = 2° 17' 30.6"
L = 387.69'
T = 194.23'
R = 2,500.00'

PI Sta 31+97.34
Δ = 8° 53' 06.4" (LT)
D = 2° 17' 30.6"
L = 387.69'
T = 194.23'
R = 2,500.00'



DETAIL E
LATERAL 'V' DITCH
(Not to Scale)

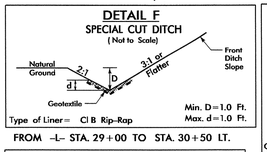


Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
b= 5.0 Ft.

Type of Liner= Cl I Rip-Rap

FROM -L- STA. 23+50 TO STA. 25+00 RT.

DETAIL F
SPECIAL CUT DITCH
(Not to Scale)

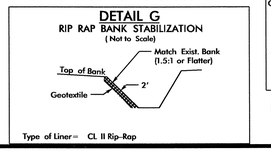


Min. D=1.0 Ft.
Max. d=1.0 Ft.

Type of Liner= Cl B Rip-Rap

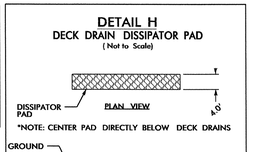
FROM -L- STA. 29+00 TO STA. 30+50 LT.

DETAIL G
RIP RAP BANK STABILIZATION
(Not to Scale)



Type of Liner= Cl II Rip-Rap

DETAIL H
DECK DRAIN DISSIPATOR PAD
(Not to Scale)



L= Varies
Type of Liner= 32 tons Cl B Rip-Rap
Geotextile = 105 sy

FROM -NBL- STA. 25+62 TO STA. 26+06 LT.
FROM -NBL- STA. 25+78 TO STA. 26+21 RT.
FROM -SBL- STA. 24+41 TO STA. 24+56 LT.
FROM -SBL- STA. 26+01 TO STA. 26+52 LT.

STRUCTURES WITH COVER OVER 12' INCLUDE 0505, 0507, AND 0515

DECK DRAINS
PLACE 6" DIAMETER DECK DRAINS AT THE FOLLOWING LOCATIONS:
-NBL- FROM STA. 25+64.38 TO 26+12.38 LT. SPACED AT 12' O.C.
-NBL- FROM STA. 25+79.66 TO 26+27.66 RT. SPACED AT 12' O.C.
-SBL- FROM STA. 24+05.52 TO 24+53.52 LT. SPACED AT 8' O.C.
-SBL- FROM STA. 26+03.52 TO 26+67.52 LT. SPACED AT 8' O.C.

-SBL-

PIs Sta 18+50.77
Θs = 1° 08' 04.5"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PI Sta 20+26.16
Δ = 2° 28' 00.8" (LT)
D = 1° 08' 04.5"
L = 217.43'
T = 108.73'
R = 5,050.00'
SE = SEE PLANS
RO = SEE PLANS

PIs Sta 22+01.53
Θs = 1° 08' 04.5"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PIs Sta 28+84.92
Θs = 1° 08' 04.5"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PI Sta 30+60.32
Δ = 2° 28' 00.8" (LT)
D = 1° 08' 04.5"
L = 217.43'
T = 108.73'
R = 5,050.00'
SE = SEE PLANS
RO = SEE PLANS

PIs Sta 32+35.68
Θs = 1° 08' 04.5"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

SEE SHEET 2-D & 2-E FOR DETOUR
FOR -NBL- PROFILE, SEE SHEET NO. 7,8
FOR -SBL- PROFILE, SEE SHEET NO. 7,8

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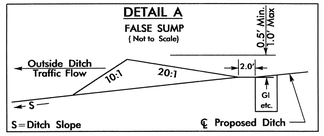
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B-4645	6
R/W SHEET NO.	

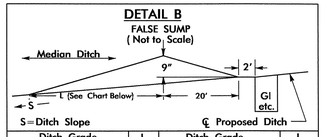
ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON HOUSER — 6-14-13

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 036821 ENGINEER ELENI M. RIGGS — 6/18/13

DETAIL A
FALSE SUMP
(Not to Scale)

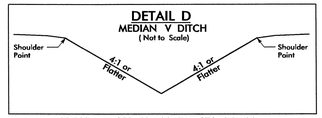


DETAIL B
FALSE SUMP
(Not to Scale)

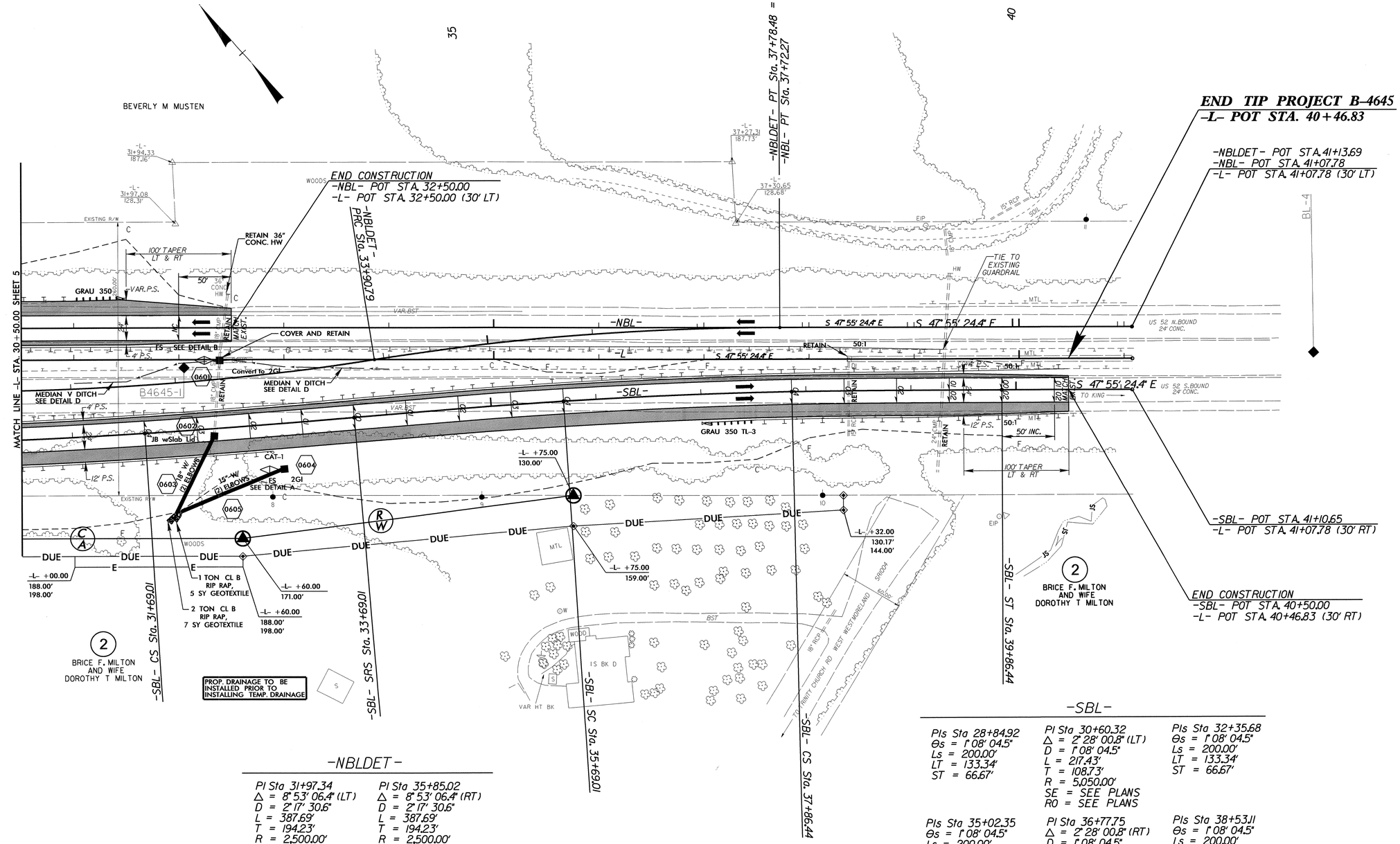


Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL D
MEDIAN V DITCH
(Not to Scale)



FROM -L- STA. 31+00 TO STA. 34+00



-NBLDET-

PI Sta 31+97.34	PI Sta 35+85.02
Δ = 8° 53' 06.4" (LT)	Δ = 8° 53' 06.4" (RT)
D = 2° 17' 30.6"	D = 2° 17' 30.6"
L = 387.69'	L = 387.69'
T = 194.23'	T = 194.23'
R = 2,500.00'	R = 2,500.00'

-SBL-

PIs Sta 28+84.92	PI Sta 30+60.32	PIs Sta 32+35.68
Θs = 1° 08' 04.5"	Δ = 2° 28' 00.8" (LT)	Θs = 1° 08' 04.5"
Ls = 200.00'	D = 1° 08' 04.5"	Ls = 200.00'
LT = 133.34'	L = 217.43'	LT = 133.34'
ST = 66.67'	T = 108.73'	ST = 66.67'
	R = 5,050.00'	
	SE = SEE PLANS	
	RO = SEE PLANS	
PIs Sta 35+02.35	PI Sta 36+77.75	PIs Sta 38+53.11
Θs = 1° 08' 04.5"	Δ = 2° 28' 00.8" (RT)	Θs = 1° 08' 04.5"
Ls = 200.00'	D = 1° 08' 04.5"	Ls = 200.00'
LT = 133.34'	L = 217.43'	LT = 133.34'
ST = 66.67'	T = 108.73'	ST = 66.67'
	R = 5,050.00'	
	SE = SEE PLANS	
	RO = SEE PLANS	

SEE SHEET 2-D & 2-E FOR DETOUR
FOR -NBL- PROFILE, SEE SHEET NO. 8
FOR -SBL- PROFILE, SEE SHEET NO. 8,9

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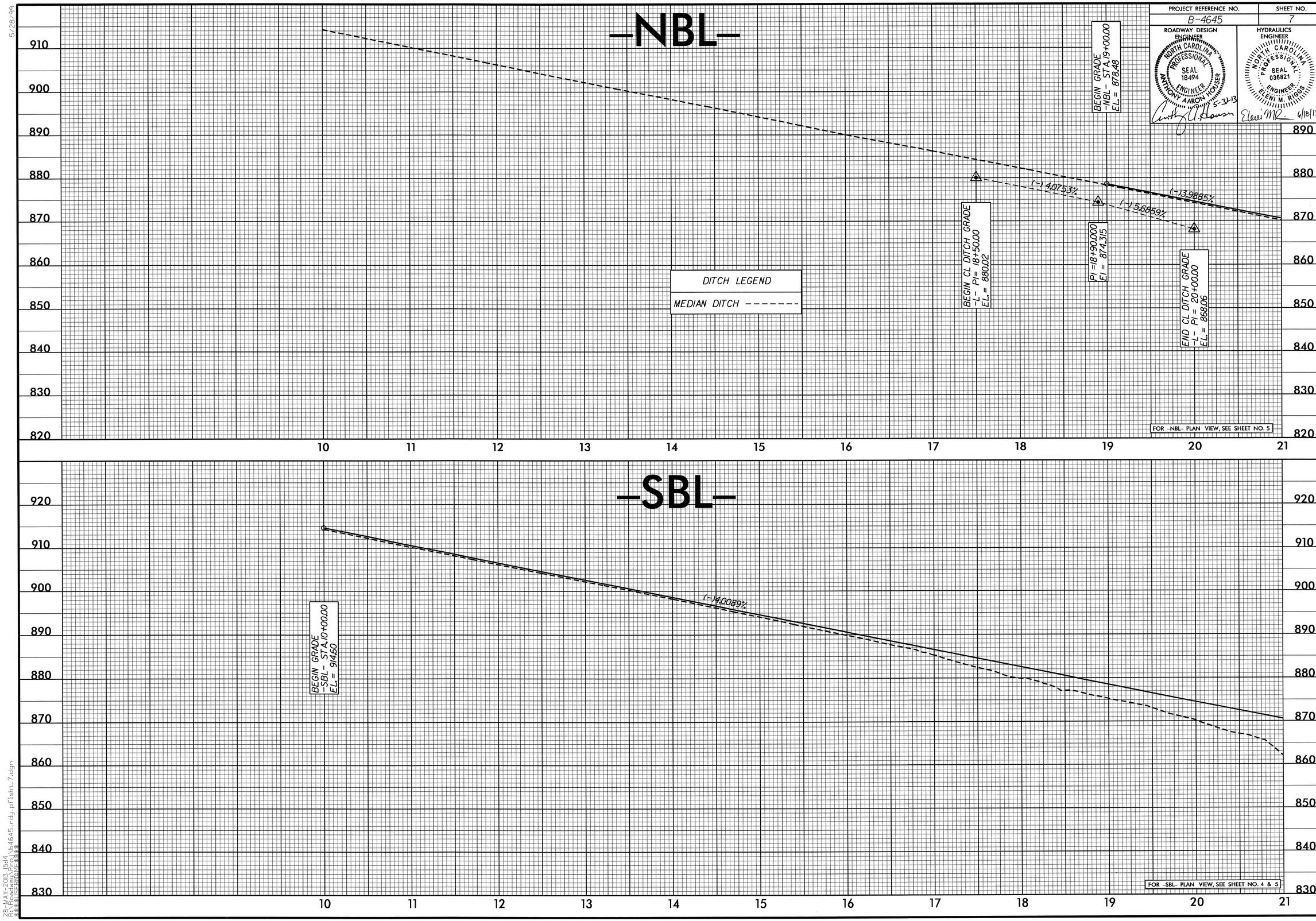
PROJECT REFERENCE NO.	SHEET NO.
B-4645	7

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON HOUSER
5-31-13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 036821 ENGINEER ELENI M. RIGGS
6/18/13



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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-4645	8

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON HOISER
5-31-13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 036821 ENGINEER ELENI M. RIGGS
6/18/13

-NBL-

℄ -NBL- STA. 24+90.11
54" PRESTRESSED CONC. GIRDERS
2@95', 1@80' : TOTAL LENGTH = 270'
EL. = 858.75 SKEW = 70°

BEGIN BRIDGE
-NBL- STA. 23+55.11

END BRIDGE
-NBL- STA. 26+25.11

BM*3
-BL- STA. 18+64.10 (23.1' LT)
RR SPIKE IN ROOT OF 28" FORKED BIRCH ON SE SIDE OF CREEK
EL = 831.88

PI = 26+84.00
EL = 847.21'
VC = 113.2'
K = 183

(-)3.9885% (+)2.2138% (-)1.6667% (+)0.2941% (+)1.1347% (+)3.6507% (+)2.0186%

BEGIN CL DITCH GRADE
-L- PI = 28+00.00
EL. = 848.70

PI =28+15.000
EL = 848.445

END CL DITCH GRADE
-L- PI = 29+00.00
EL = 848.70

BEGIN LT DITCH GRADE
-L- PI = 29+00.00
EL. = 834.74

END LT DITCH GRADE
-L- PI = 30+50.00
EL = 852.50

BEGIN CL DTICH GRADE
-L- PI = 31+00.00
EL = 850.84

PI =32+39.000
EL = 855.915

END CL DITCH GRADE
-L- PI = 34+00.00
EL = 859.17

END GRADE
-NBL- STA. 32+50.00
EL = 859.74

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 10,300	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 835.1	FT
BASE DISCHARGE	= 13,568	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 837.4	FT
OVERTOPPING DISCHARGE	= 51,648	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 855.5*	FT

* OVERTOPPING ELEVATION IS AT -NBL- STA. 28+45.92 CENTER (LOW POINT ON ROADWAY)

FOR -NBL- PLAN VIEW, SEE SHEET NO. 5 & 6

-SBL-

℄ -SBL- STA. 25+43.07
54" PRESTRESSED CONC. GIRDERS
2@95', 1@80' : TOTAL LENGTH = 270'
EL. = 857.89 SKEW = 70°

BEGIN BRIDGE
-SBL- STA. 24+08.07

END BRIDGE
-SBL- STA. 26+78.07

PI = 26+80.00
EL = 847.25'
VC = 114.0'
K = 182

(-)4.0089% (+)2.2477% (-)6.8001% (-)10.2400%

DITCH LEGEND
LEFT DITCH
MEDIAN DITCH
RIGHT DITCH

BEGIN RT DITCH GRADE
-L- PI = 23+50.00
EL. = 845.20

PI =24+51.580
EL = 829.39

BM*3
-BL- STA. 18+64.10 (23.1' LT)
RR SPIKE IN ROOT OF 28" FORKED BIRCH ON SE SIDE OF CREEK
EL = 831.88

END RT DITCH GRADE
-L- PI = 25+00.00
EL. = 824.02

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 10,300	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 835.1	FT
BASE DISCHARGE	= 13,568	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 837.4	FT
OVERTOPPING DISCHARGE	= 51,648	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 855.5*	FT

* OVERTOPPING ELEVATION IS AT -NBL- STA. 28+45.92 CENTER (LOW POINT ON ROADWAY)

FOR -SBL- PLAN VIEW, SEE SHEET NO. 5 & 6

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-4645	9

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY AARON HOUSER

5-31-13

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 036821 ENGINEER ELENI M. RIGGS

6/18/13

-SBL-

END GRADE
-SBL- STA 40+50.00
EL= 877.87

PI = 38+75.00
EL = 874.11'
VC = 350'
K = 3539

(+)2.2477%

(+)2.1486%

920 910 900 890 880 870 860 850 840 830

35 36 37 38 39 40 41

FOR -SBL- PLAN VIEW, SEE SHEET NO. 6

-NBLDET-

BEGIN GRADE
-NBLDET- STA. 15+89.65
EL = 890.36

(-)3.9323%

END GRADE
-NBLDET- STA. 18+82.10
EL = 878.86

920 910 900 890 880 870 860 850 840 830

14 15 16 17 18 19 20 21

FOR -NBLDET- PLAN VIEW, SEE SHEET NO. 2-D

-NBLDET-

BEGIN GRADE
-NBLDET- STA. 32+45.02
EL = 859.14

(+)2.2884%

END GRADE
-NBLDET- STA. 35+35.15
EL = 865.78

920 910 900 890 880 870 860 850 840 830

30 31 32 33 34 35 36

FOR -NBLDET- PLAN VIEW, SEE SHEET NO. 2-E

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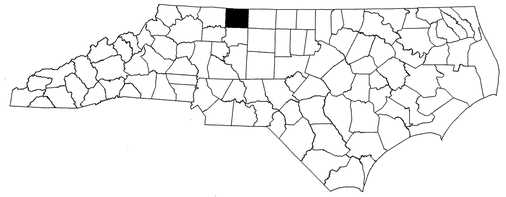
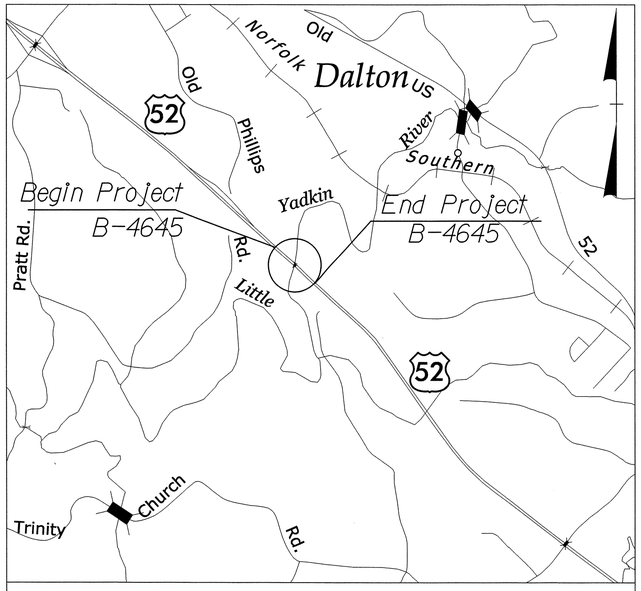
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

STOKES COUNTY





VICINITY MAP SHOWING LOCATION OF PROJECT B-4645

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND & TEMPORARY PAVEMENT MARKING SCHEDULE
TMP-2	TRANSPORTATION OPERATIONS PLAN
TMP-2A	TEMPORARY SHORING NOTES
TMP-2B	"WORK ZONE" SPEED LIMIT REDUCTION
TMP-3	PHASING
TMP-4 THRU 9	PHASE I DETAILS
TMP-10 THRU 15	PHASE II DETAILS
TMP-16 THRU 18	PHASE III DETAILS

SHEET NO.
TMP-1

B-4645

TIP PROJECT:

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

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

J. S. BOURNE, P.E. — STATE TRAFFIC MANAGEMENT ENGINEER
J. ISHAK, P.E. — TRAFFIC CONTROL PROJECT ENGINEER
B. SCHOENBAUER, P.E. — TRAFFIC CONTROL PROJECT DESIGN ENGINEER
A. LYUDMIRSKAYA — TRAFFIC CONTROL DESIGN ENGINEER

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

Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Raleigh, NC 27607
NC License No: F-0258

APPROVED: Michael T Rzepka
DATE: 6-20-13

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

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Florence & Hutcheson

PROJ. REFERENCE NO.	SHEET NO.
B-4645	TMP-1A

Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Raleigh, NC 27607
NC License No: F-0258

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 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 WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD 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	DRUMS
1135.01	CONES
1145.01	BARRICADES
1160.01	TEMPORARY CRASH CUSHION
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY - DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA
- CONTINUING CONSTRUCTION
- REMOVAL

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 TEMP TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

SYMBOL	DESCRIPTION
	PAINT (6")
P6	WHITE EDGELINE
P7	YELLOW EDGELINE
PJ	10 FT. WHITE SKIP
	TEMPORARY RAISED MARKERS
MI	CRYSTAL & RED

APPROVED: Michael T. Rzepka DATE: 4-12-13

SEAL — NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

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

ROADWAY STANDARD DRAWINGS, LEGEND & TEMPORARY PAVEMENT MARKING SCHEDULE

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Florence & Hutcheson

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.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
SB US 52	MONDAY - SUNDAY, 5:00 AM TO 9:00 AM
NB US 52	MONDAY - SUNDAY, 1:00 PM TO 8:00 PM

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME

US 52

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 5:00 A.M. DECEMBER 31st TO 8:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 8:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 5:00 A.M. THURSDAY AND 8:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 5:00 A.M. FRIDAY TO 8:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 5:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 8:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

   IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 5:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 8:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 5:00 A.M. FRIDAY AND 8:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 5:00 A.M. TUESDAY TO 8:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 5:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 8:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
9. FOR DIXIE CLASSIC FAIR, BETWEEN THE HOURS OF 5:00 A.M. THE DAY BEFORE THE DIXIE CLASSIC FAIR AND 8:00 P.M. THE DAY FOLLOWING THE DIXIE CLASSIC FAIR.
10. FOR WAKE FOREST HOME FOOTBALL GAMES, FOUR (4) HOURS BEFORE THE WAKE FOREST HOME FOOTBALL GAMES AND TWO (2) HOURS FOLLOWING THE GAMES.

C) DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	DURATION AND OPERATION
US 52	MONDAY - SUNDAY 5:00 AM TO 11:00 PM	15 MINUTES FOR TRAFFIC SHIFTS AND TIE-INS

D) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

E) 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.

F) 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.

G) 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.

H) 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.

I) 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.

J) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON US 52.

PAVEMENT EDGE DROP OFF REQUIREMENTS

K) 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.

L) 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) 1000 FEET IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

N) 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.

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

TRAFFIC BARRIER

P) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

Q) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS: (SEE ALSO 1101.05)

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT
55	25 FT
60 MPH or HIGHER	30 FT

TRAFFIC CONTROL DEVICES

R) 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.

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

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

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
US 52	PAINT	TEMPORARY RAISED

V) 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.

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

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

MISCELLANEOUS

Y) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

Z) THE CONTRACTOR SHALL USE ROADWAY STANDARD DRAWING 1101.05 AND COORDINATE WITH THE ENGINEER TO LOCATE WORK ZONE VEHICLE ACCESSES.

APPROVED: Michael T Rzepka DATE: 6-18-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

TRANSPORTATION OPERATIONS PLAN

SCALE:	NONE
DATE:	JUN '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

DIVISION OF HIGHWAYS TRAFFIC ENGINEERING BRANCH TRAFFIC CONTROL UNIT

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	B-4645	TMP-2A

TEMPORARY SHORING NOTES

TEMPORARY SHORING NO. 1 (SEE SHEET TMP-5)

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION 23+51± –SBL-, **25** FT LT of –SBL-, TO STATION 24+07± –SBL-, **25** FT LT of –SBL-, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 825 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 23+51± –SBL-, **25** FT LT of –SBL-, TO STATION 24+07± –SBL-, **25** FT LT of –SBL-. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM 23+51± –SBL-, **25** FT LT of –SBL-, TO STATION 24+07± –SBL-, **25** FT LT of –SBL-. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

TEMPORARY SHORING NO. 2 (SEE SHEET TMP-5)

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION 26+66± –SBL-, 25 FT LT of –SBL-, TO STATION 27+22± –SBL-, 25 FT LT of –SBL-, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 825 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 26+66± –SBL-, 25 FT LT of –SBL-, TO STATION 27+22± –SBL-, 25 FT LT of –SBL-. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM 26+66± –SBL-, 25 FT LT of –SBL-, TO STATION 27+22± –SBL-, 25 FT LT of –SBL-. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE WZTCU ON 02-25-13 AND SEALED BY A PROFESSIONAL ENGINEER, Shiping Yang, PE, LICENSE #031361.

APPROVED: Michael T. Rzepka DATE: 4-12-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

TEMPORARY SHORING NOTES

SCALE:	NONE
DATE:	JUN '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

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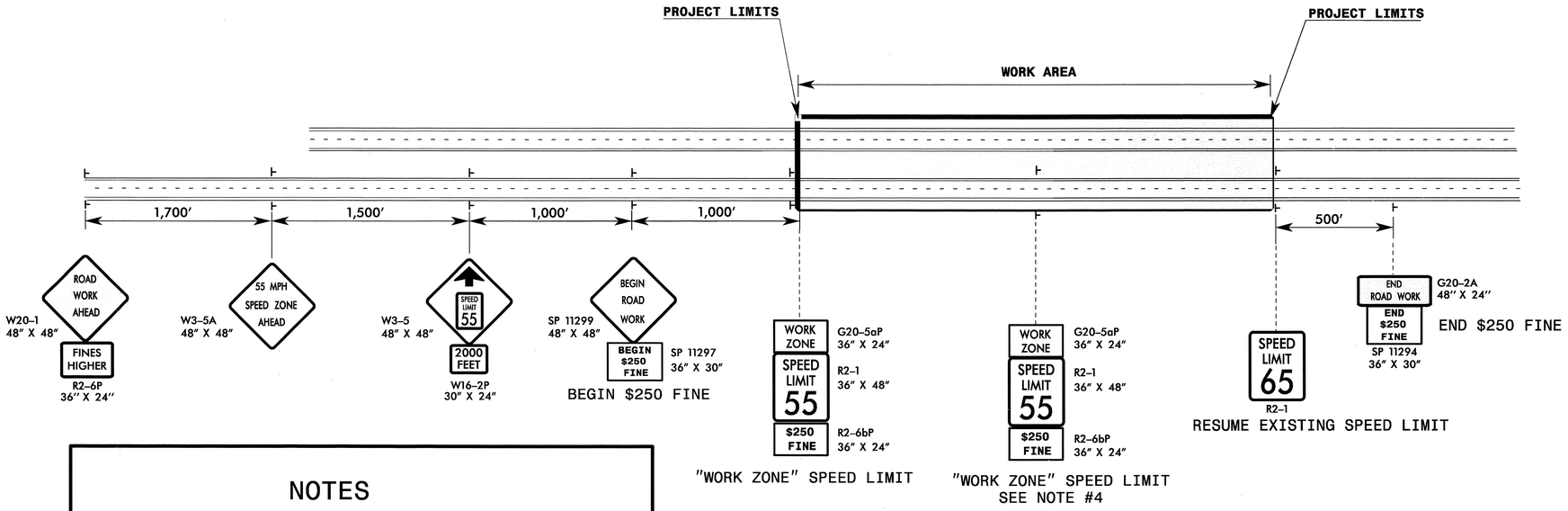
Florence & Hutcheson

PROJ. REFERENCE NO.	SHEET NO.
B-4645	TMP-2B



NOTES

1) THE WORK ZONE SPEED LIMIT WILL BE ESTABLISHED IN COLLABORATON BETWEEN THE REGIONAL TRAFFIC ENGINEER, THE DIVISION AND THE WORK ZONE TRAFFIC CONTROL SECTION. THIS DRAWING SHOWS THE TYPICAL APPLICATION OF REDUCING THE "WORK ZONE SPEED LIMIT" TO 55 MPH.

2) IF THE "WORK ZONE SPEED LIMIT" ONLY APPLIES TO A SPECIFIC PORTION AND NOT THE ENTIRE PROJECT, THE EXISTING SPEED LIMIT IS TO BE REESTABLISHED INSIDE THE PROJECT LIMITS. THE EXISTING SPEED LIMIT SIGNS AND THE "END $250 FINE" SIGNS ARE TO BE INSTALLED AT THE LOCATION WHERE THE EXISTING SPEED LIMIT IS TO RESUME. (SEE GUIDELINE- D)

3) IF THE WORK ZONE SPEED LIMIT REDUCTION IS INSIDE THE WORK AREA, SIGNS W3-5A, W3-5, AND THE R2-1'S ALONG WITH THE SPEEDING FINE SIGNS ARE TO BE INSTALLED AT THE DISTANCE SHOWN ABOVE IN ADVANCE OF WHERE THE SPEED LIMIT IS REDUCED.

4) THE WORK ZONE SPEED LIMIT SIGNS ARE TO BE MOUNTED FROM 7′ ABOVE EDGE OF PAVEMENT ELEVATION.

5) WHEN TEMPORARY LANE CLOSURES ARE INSTALLED AT THE BEGINNING OF THE PROJECT LIMITS, THE PORTABLE LANE CLOSURE SIGNS ARE TO BE ADJUSTED TO AVOID SIGN OVERLAP/CLUTTER

6) THE NEED AND LOCATION OF ADDITIONAL POSTED "WORK ZONE SPEED LIMIT" SIGNS WITHIN THE WORK AREA IS TO BE DETERMINED BY THE REGIONAL TRAFFIC ENGINEER.

GUIDELINES

A) THIS DRAWING IS FOR USE ONLY AFTER AN ENGINEERING INVESTIGATION AND CRITERIA REVIEW HAS BEEN PERFORMED BY THE REGIONAL TRAFFIC ENGINEER AND THE WORK ZONE TRAFFIC CONTROL SECTION. THE WORK ZONE SPEED LIMIT REDUCTION IS INTENDED FOR USE ON FREEWAYS WITH SPEED LIMITS 65 MPH OR GREATER. SEE WORK ZONE SPEED LIMIT GUIDELINES FOR CRITERIA.

B) THE STATE TRAFFIC ENGINEER HAS TO ORDINANCE THE SPEED LIMIT REDUCTION IN ORDER FOR THE REDUCTION TO BE VALID AND ENFORCEABLE. NO SPEED LIMIT SIGNS SHALL BE INSTALLED PRIOR TO RECEIVING A SIGNED ORDINANCE. IN ADDITION, THE $250 SPEEDING FINE ALSO REQUIRES A SEPARATE SIGNED ORDINANCE BY THE STATE TRAFFIC ENGINEER.

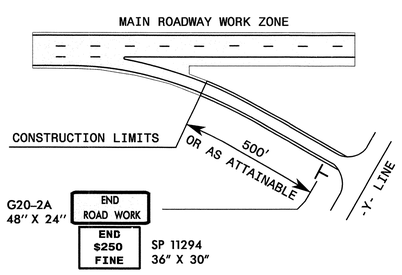
C) EACH DIRECTION OF THE PROJECT IS TO BE EVALUATED FOR THE "WORK ZONE" SPEED LIMIT REDUCTION. THIS DRAWING INTENTIONALLY HAS 1 DIRECTION SIGNED AS A REMINDER TO CAREFULLY CONSIDER WHETHER BOTH DIRECTIONS OF THE PROJECT NEED TO HAVE THE SPEED LIMIT REDUCED.

D) FOR PROJECTS THAT EXCEED 2 MILES IN LENGTH, AN EVALUATION IS TO BE MADE TO DETERMINE IF THE "WORK ZONE" SPEED LIMIT REDUCTION APPLIES TO THE ENTIRE PROJECT LENGTH OR IF ONLY A PORTION OF THE PROJECT LENGTH. THE "WORK ZONE" SPEED LIMIT REDUCTION MAY TERMINATE BEFORE THE END OF THE PROJECT LIMITS. THE DRAWING IS TO BE MODIFIED AS NEEDED TO REFLECT THESE CONDITIONS.

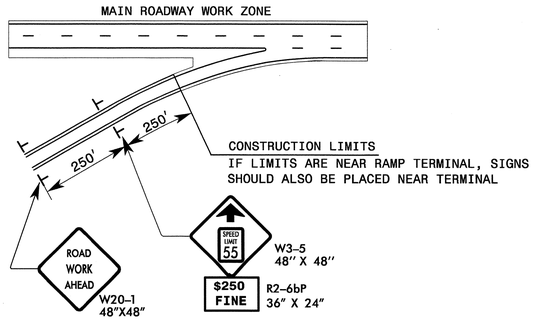
E) THE $250 SPEEDING FINE APPLIES FOR ALL PROJECTS THAT QUALIFY FOR A "WORK ZONE" SPEED LIMIT REDUCTION.

F) ALL "WORK ZONE" SPEED LIMIT REDUCTION SIGNAGE SHALL BE REMOVED WHEN THE CONDITION/S THAT WARRANTED THE REDUCTION AND FINE IS REMOVED. THE REGIONAL TRAFFIC ENGINEER WILL BE NOTIFIED BY THE RESIDENT ENGINEER AT THIS TIME TO RESCIND THE ORDINANCES AND RETURN THE EXISTING POSTED SPEED LIMIT. THIS SHOULD TAKE PLACE BEFORE THE PROJECT IS 100% COMPLETE AND ACCEPTED FOR MAINTENANCE.

EXIT RAMPS



ENTRANCE RAMPS



APPROVED: Michael T. Reyna DATE: 6-20-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. REYNA

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

"WORK ZONE" SPEED LIMIT REDUCTION

PHASING

NOTES:

- RSD REFERS TO THE NCDOT ROADWAY STANDARD DRAWINGS.
- CONSTRUCT ALL PAVEMENT UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE UNLESS STATED OTHERWISE IN THE PHASING, OR AS DIRECTED BY THE ENGINEER.
- MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION.
- REPLACE EXISTING PAVEMENT MARKINGS COVERED OR DAMAGED BY CONSTRUCTION ACTIVITY WITH TEMPORARY MARKINGS AT THE END OF EACH WORK DAY.

PHASE I

STEP 1

INSTALL ADVANCE WARNING SIGNS ON US 52 (SEE RSD 1101.01, SHEET 1 OF 3).

STEP 2A

USING RSD 1101.02 (SHEET 4 OF 15), STRENGTHEN EXISTING OUTSIDE SHOULDERS (5′ MINIMUM WIDTH) AT THE FOLLOWING LOCATIONS (SEE SHEETS TMP-4, 5 & 6):

SB -L- STA 7+00± TO STA 10+00±
NB -L- STA 11+25± TO STA 21+00±
NB -L- STA 30+50± TO STA 41+00±
SB -L- STA 40+50± TO STA 43+50±

USING RSD 1101.02 (SHEET 4 OF 15) AND BEHIND EXISTING GUARDRAIL, INSTALL TEMPORARY SHORING AND BEGIN PROPOSED CONSTRUCTION OF -SBL- STA 21+00± TO STA 30+00± INCLUDING -SBL- STRUCTURE (SEE SHEET TMP-5).

WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK REQUIRED IN STEP 2B IN SEVEN (7) CONSECUTIVE DAYS. SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.

STEP 2B

USING RSD 1101.02 (SHEET 4 OF 15), REMOVE AND REPLACE EXISTING SOUTHBOUND OUTSIDE SHOULDER (8′ MINIMUM) WITH PROPOSED FULL DEPTH PAVEMENT AT THE FOLLOWING LOCATIONS (SEE SHEETS TMP-4 & 6). PLACE TEMPORARY PAVEMENT MARKINGS (WHITE EDGELINES) AND REOPEN SOUTHBOUND TO ORIGINAL TWO-LANE PATTERN:

SB -L- STA 10+00± TO STA 19+00±
SB -L- STA 32+00± TO STA 40+50±

STEP 3

USING RSD 1101.02 (SHEET 4 OF 15), PLACE TEMPORARY PAVEMENT MARKINGS (EDGELINE) AND INSTALL PCB ALONG THE SOUTHBOUND OUTSIDE SHOULDER. BEHIND BARRIER, CONSTRUCT PROPOSED -SBL- AND TIE TO STEP 2B SHOULDER CONSTRUCTION AT THE FOLLOWING LOCATIONS (SEE SHEETS TMP-7, 8 & 9):

SB -L- STA 10+00± TO STA 21+00±
SB -L- STA 30+00± TO STA 40+50±

COMPLETE PROPOSED CONSTRUCTION BEGUN IN STEP 2A FROM -SBL- STA 21+00± TO STA 30+00± INCLUDING -SBL- STRUCTURE.

PHASE II

STEP 1

USING RSD 1101.02 (SHEET 4 OF 15), COMPLETE THE FOLLOWING TO SHIFT SB -L- TRAFFIC TO PROPOSED -SBL- ALIGNMENT (SEE SHEETS TMP-10, 11 & 12):

- BEHIND BARRIER, PLACE TEMPORARY PAVEMENT MARKINGS AND MARKERS ON -SBL-.
- REMOVE PCB ALONG OUTSIDE SB SHOULDER AND WEDGE TIE TO EXISTING SB PAVEMENT.
- SHIFT SB TRAFFIC AND TIE TEMPORARY PAVEMENT MARKINGS AND MARKERS TO EXISTING (PROTECT GUARDRAIL APPROACH END UNTIL PCB INSTALLATION).
- INSTALL PCB ALONG MEDIAN LANE OF -SBL-.

USING RSD 1101.02 (SHEET 4 OF 15), COMPLETE THE FOLLOWING TO SHIFT NB TRAFFIC ONTO OUTSIDE SHOULDER STRENGTHENED IN PHASE I, STEP 2A (SEE SHEETS TMP-10, 11 & 12):

- PLACE TEMPORARY PAVEMENT MARKINGS AND MARKERS LANE FOR TEMPORARY PATTERN.
- SHIFT NB TRAFFIC TO TEMPORARY PATTERN AND TIE TEMPORARY MARKINGS AND MARKERS TO EXISTING.
- INSTALL PCB ALONG MEDIAN NORHTBOUND LANE.

USING RSD 1101.02 (SHEET 4 OF 15) AND BEHIND BARRIER, CONSTRUCT PROPOSED MEDIAN CROSSOVERS (-NBLDET-) AND TIE TO EXISTING NB & SB MEDIAN LANES.

STEP 2

USING RSD 1101.02 (SHEET 4 OF 15), COMPLETE THE FOLLOWING TO SHIFT NB -L- TRAFFIC TO -NBLDET- ALIGNMENT (SEE SHEETS TMP-13, 14 & 15):

- BEHIND BARRIER, PLACE TEMPORARY PAVEMENT MARKINGS AND MARKERS ON -NBLDET-.
- BEHIND BARRIER, INSTALL PCB ALONG INSIDE AND OUTSIDE LANES OF -NBLDET- AND PROTECT APPROACH END (OUTSIDE LANE) UNTIL REMAINDER IS INSTALLED.
- REMOVE PCB (FROM PHASE II, STEP 1 PATTERN) ALONG INSIDE NB MEDIAN LANE AND WEDGE TIE TO EXISTING PAVEMENT.
- SHIFT NB TRAFFIC TO -NBLDET- AND TIE TEMPORARY MARKINGS AND MARKERS TO EXISTING.
- COMPLETE INSTALLATION OF PCB ALONG OUTSIDE LANE OF -NBLDET-.

USING RSD 1101.02 (SHEET 4 OF 15) AND BEHIND BARRIER, CONSTRUCT PROPOSED -NBL- STA 19+00± TO STA 32+50± INCLUDING -NBL- STRUCTURE.

PHASE III

USING RSD 1101.02 (SHEET 4 OF 15), COMPLETE THE FOLLOWING TO SHIFT NB TRAFFIC TO -NBL- AND OUTSIDE STRENGTHENED SHOULDER (SEE SHEETS TMP-16, 17 & 18):

- BEHIND BARRIER, PLACE TEMPORARY PAVEMENT MARKINGS AND MARKERS FOR PHASE III NB TEMPORARY PATTERN.
- REMOVE PCB ALONG -NBLDET- CONFLICTING WITH PHASE III TEMPORARY TRAFFIC PATTERN.
- SHIFT NB TRAFFIC TO -NBL- AND OUTSIDE STRENGTHENED SHOULDER AND TIE TEMPORARY MARKINGS AND MARKERS TO EXISTING. (PROTECT GUARDRAIL APPROACH ENDS UNTIL PCB INSTALLATION.)
- INSTALL PCB ALONG MEDIAN NORHTBOUND LANE.

BEHIND BARRIER, COMPLETE THE FOLLOWING (SEE SHEETS TMP-16, 17 & 18):

- REMOVE EXISTING SB PAVEMENT AND BRIDGE.
- REMOVE -NBLDET-.
- CONSTRUCT MEDIAN SHOULDER FROM -SBL- STA 10+00± TO STA 14+00±, AND FROM -SBL- STA 36+80± TO STA 40+50±.
- INSTALL REMAINING PROPOSED MEDIAN GUARDRAIL AND TIE TO EXISTING.

PHASE IV

USING RSD 1101.02 (SHEET 4 OF 15), COMPLETE THE FOLLOWING:

- REMOVE ALL PCB.
- PLACE FINAL LAYER OF SURFACE COURSE ON NORTHBOUND AND SOUTHBOUND LANES.
- PLACE FINAL PAVEMENT MARKINGS AND MARKERS AND SHIFT TRAFFIC TO FINAL PATTERN.

APPROVED: Michael T. Rzepka DATE: 6-26-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

PHASING

SCALE:	NONE
DATE:	JUN '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

DIVISION OF HIGHWAYS TRAFFIC ENGINEERING BRANCH TRAFFIC ENGINEERING UNIT TRAFFIC CONTROLS

REVISIONS

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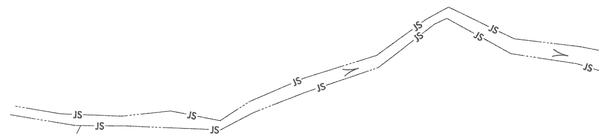

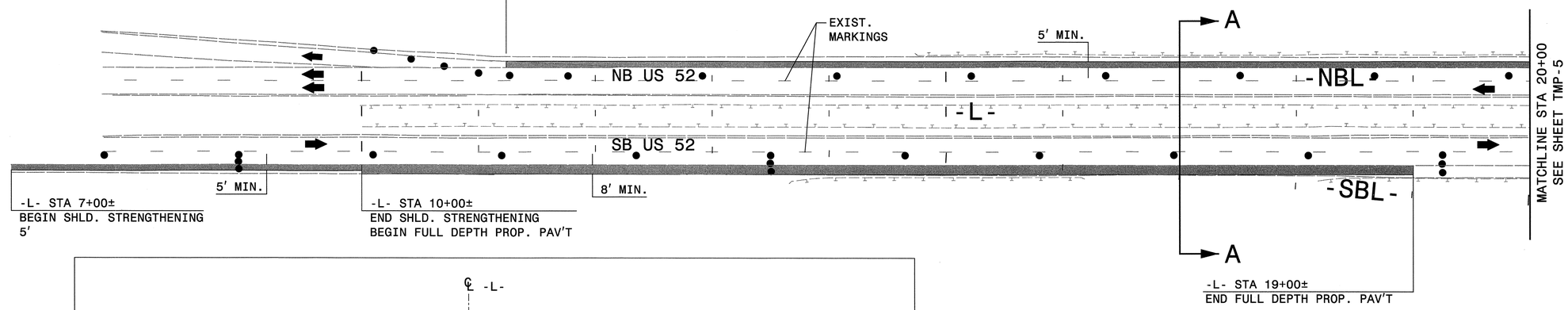

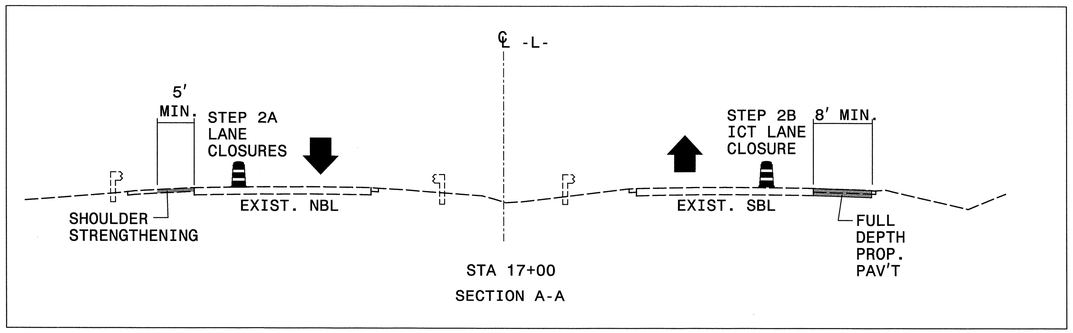

APPROVED: Michael T. Rzepka DATE: 4-12-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

PHASE I, STEP 2 DETAIL

SCALE:	NONE
DATE:	APR '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

DIVISION OF HIGHWAYS

REVISIONS

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PROJ. REFERENCE NO.	SHEET NO.
B-4645	TMP-5

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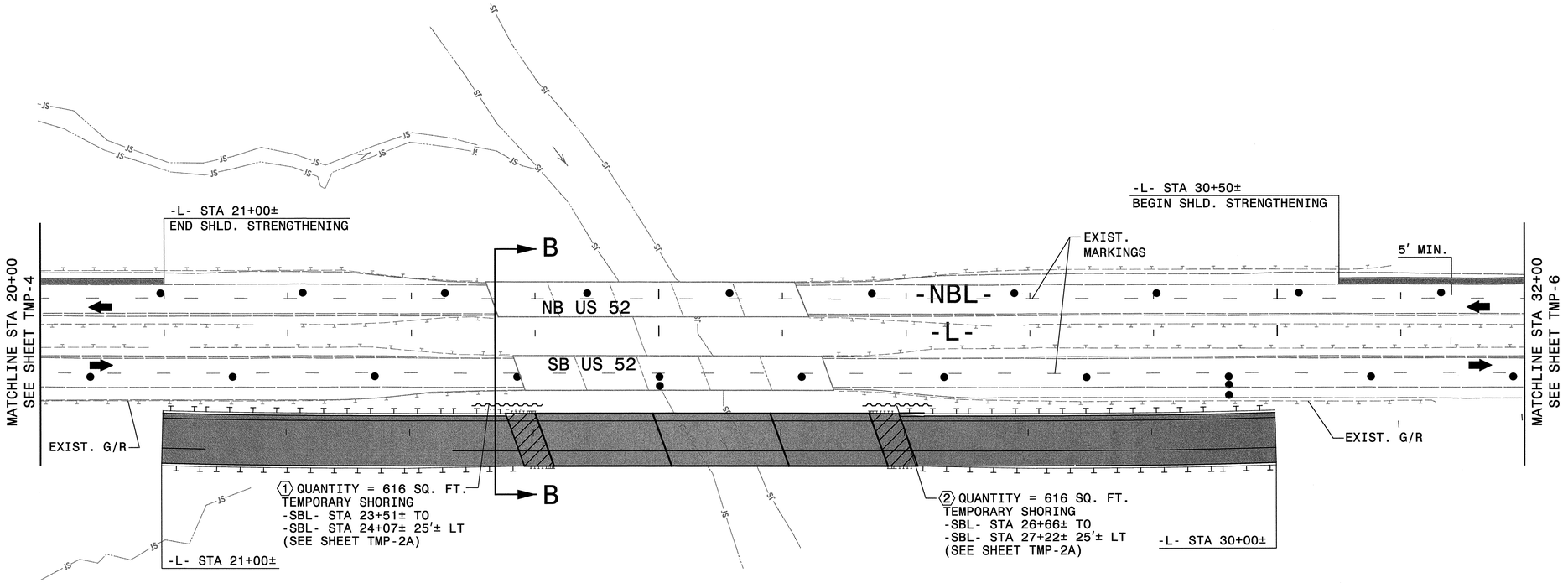

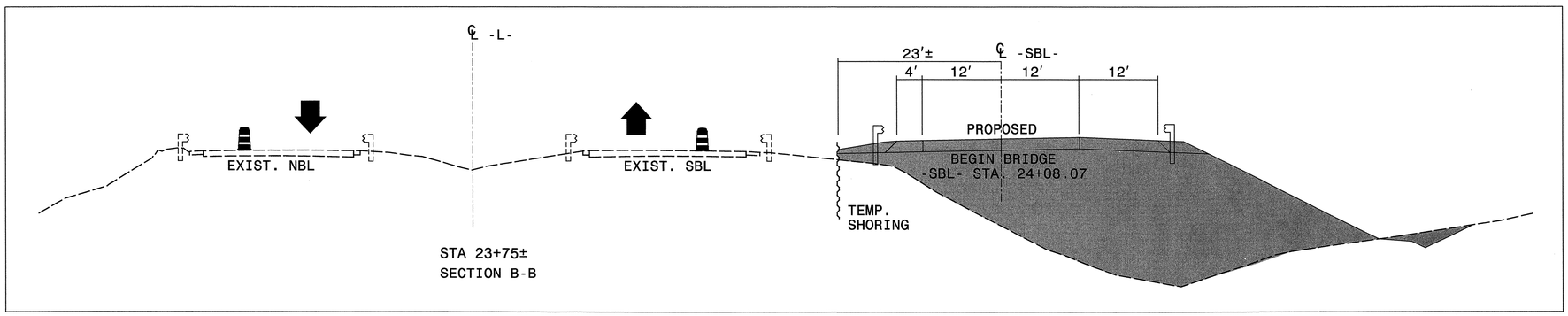

APPROVED: Michael T. Rizzuto DATE: 4-12-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RIZZUTO

PHASE I, STEP 2 DETAIL

SCALE:	NONE
DATE:	APR '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

REVISIONS

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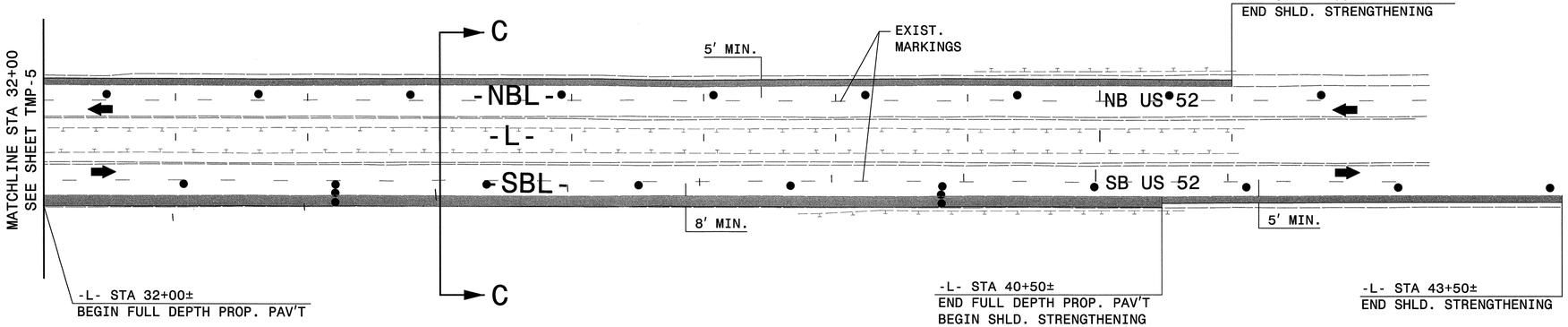

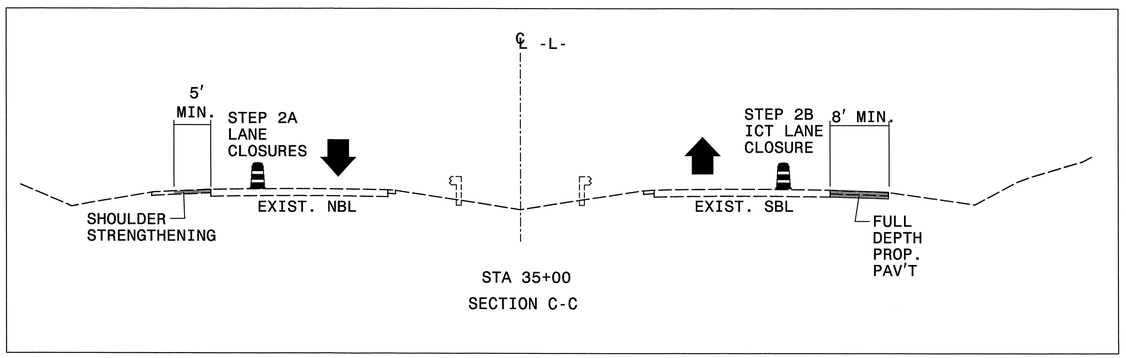

APPROVED: Michael T. Rzepka DATE: 4-12-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

PHASE I, STEP 2 DETAIL

SCALE:	NONE
DATE:	APR '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

DIVISION OF HIGHWAYS TRAFFIC ENGINEERING BRANCH NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

REVISIONS

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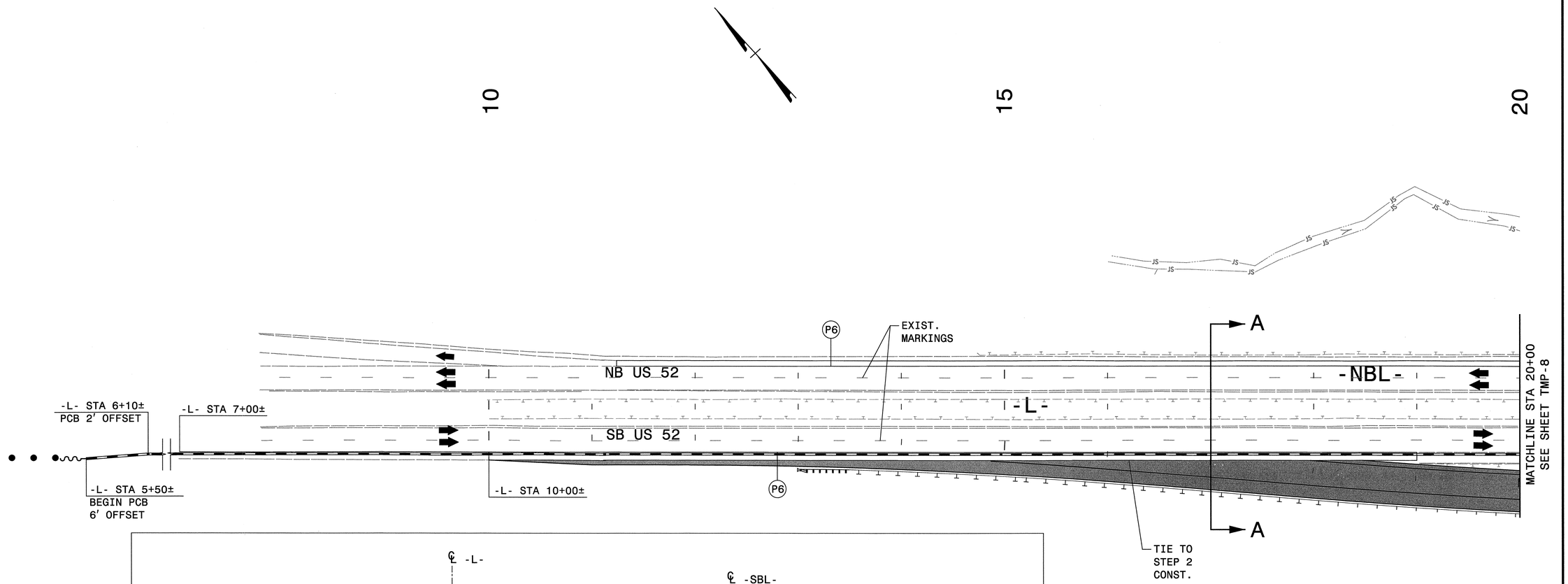

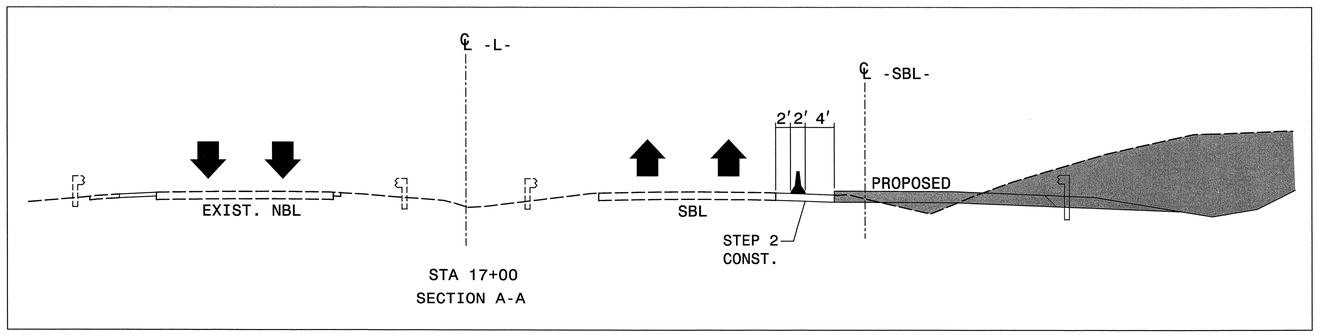

APPROVED: Michael T Riepka DATE: 4-12-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T RIEPKA

PHASE I, STEP 3 DETAIL

SCALE:	NONE
DATE:	APR '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

REVISIONS

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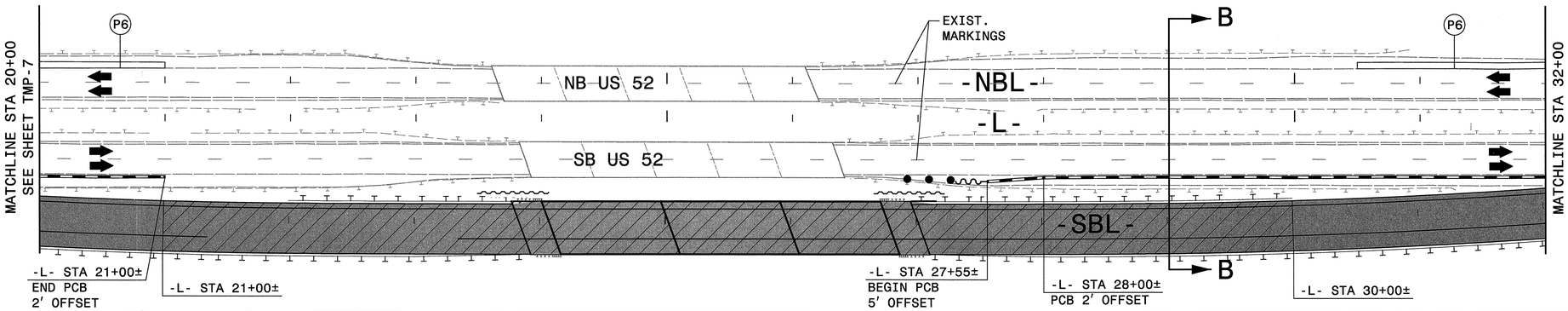

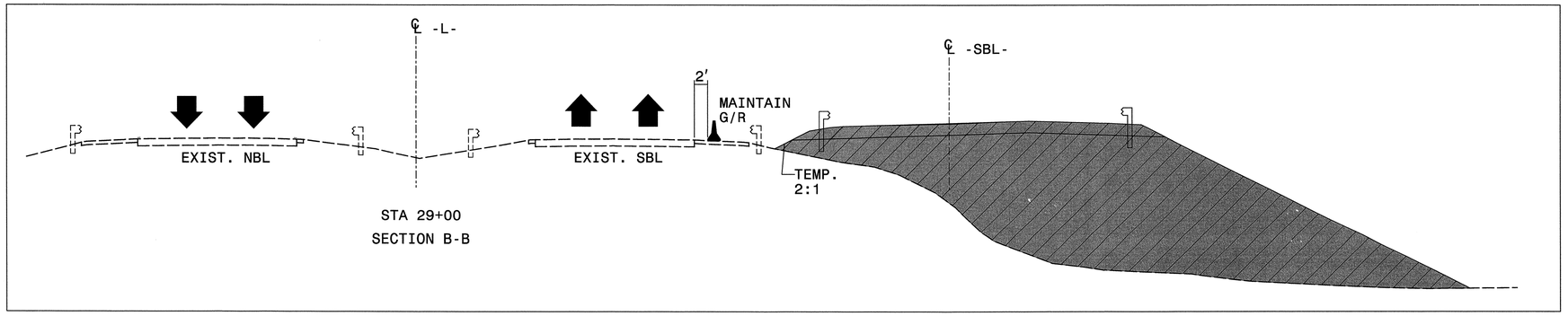

APPROVED: Michael T. Rzepka DATE: 4-12-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

PHASE I, STEP 3 DETAIL

SCALE:	NONE
DATE:	APR '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

REVISIONS

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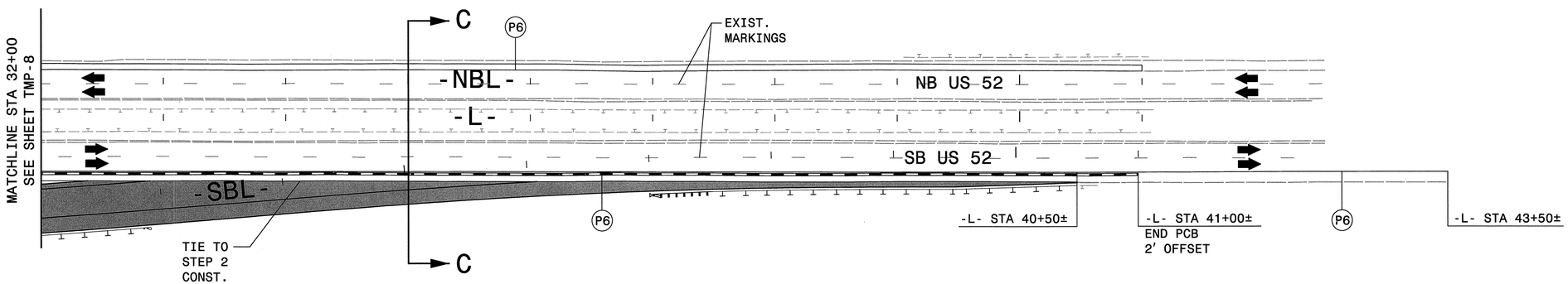

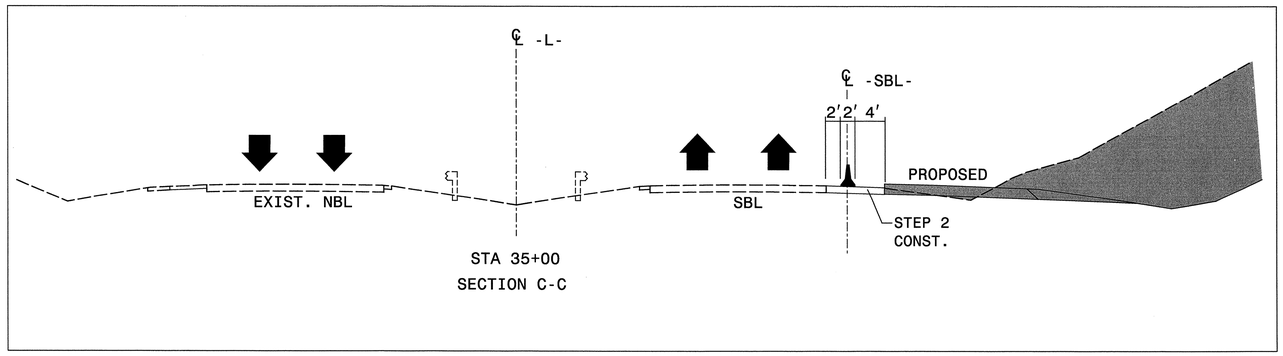

APPROVED: Michael T Rizzuto DATE: 4-12-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RIZZUTO

PHASE I, STEP 3 DETAIL

SCALE:	NONE
DATE:	APR '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

DIVISION OF HIGHWAYS TRAFFIC ENGINEERING BRANCH TRAFFIC ENGINEERING DESIGN UNIT STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION TRAFFIC CONTROL

REVISIONS	
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Florence & Hutcheson

Florence & Hutcheson An ICA Company 3121 Kingdom Way, Raleigh, NC 27607 NC License No: F-0258	PROJ. REFERENCE NO. B-4645	SHEET NO. TMP-10

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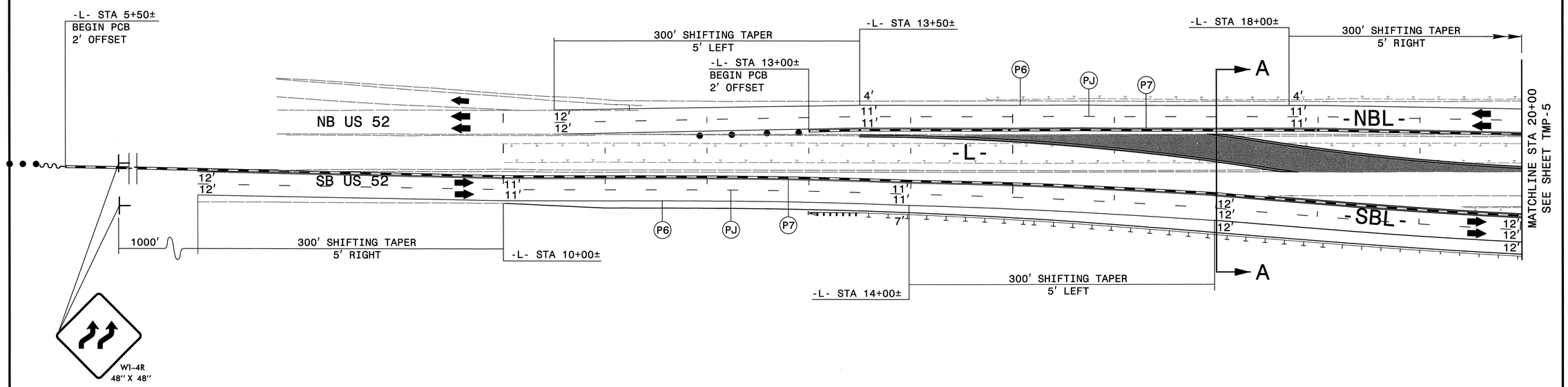

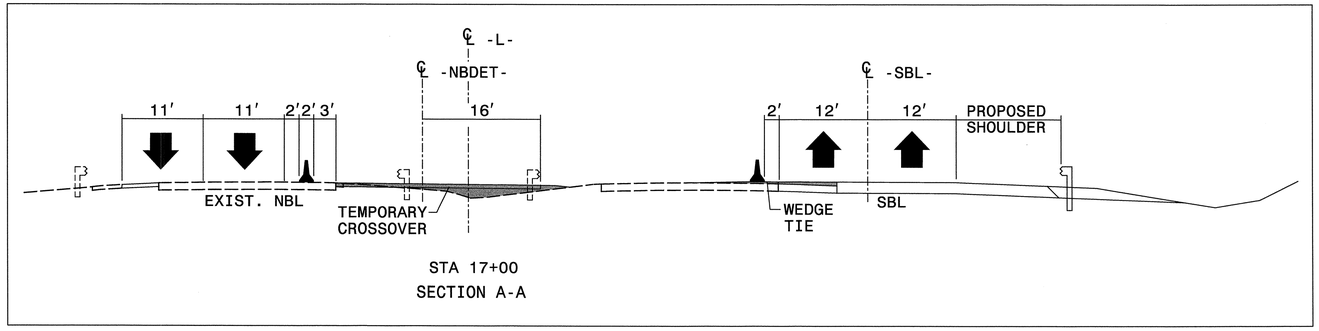

STA 17+00
SECTION A-A

APPROVED: Michael T. Rzepka DATE: 4-12-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

PHASE II, STEP 1 DETAIL

SCALE:	NONE
DATE:	APR '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

DIVISION OF HIGHWAYS TRAFFIC ENGINEERING BRANCH TRAFFIC CONTROL UNIT

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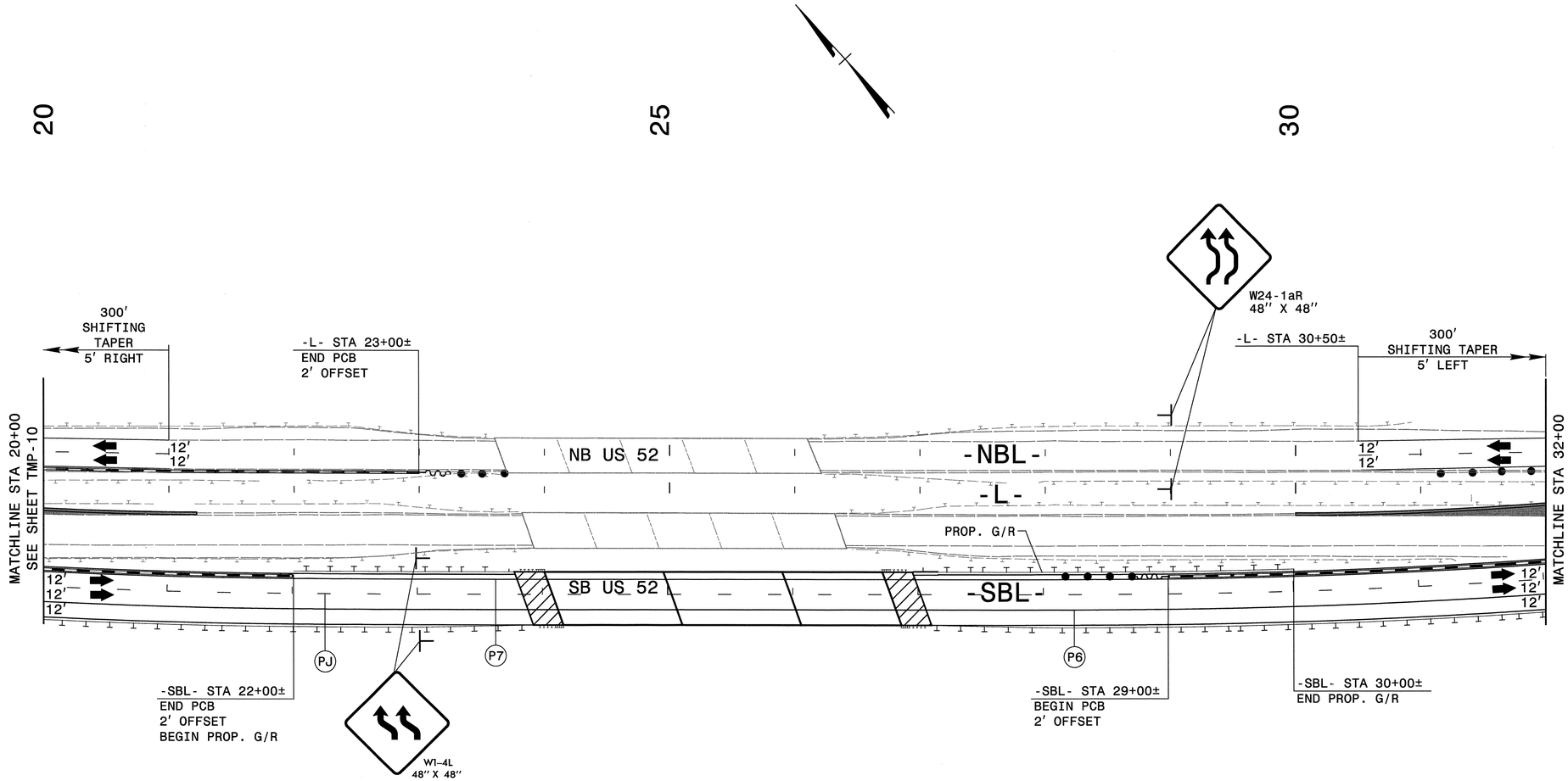

APPROVED: Michael T. Rzepka DATE: 4-12-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

PHASE II, STEP 1 DETAIL

SCALE:	NONE
DATE:	APR '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

REVISIONS

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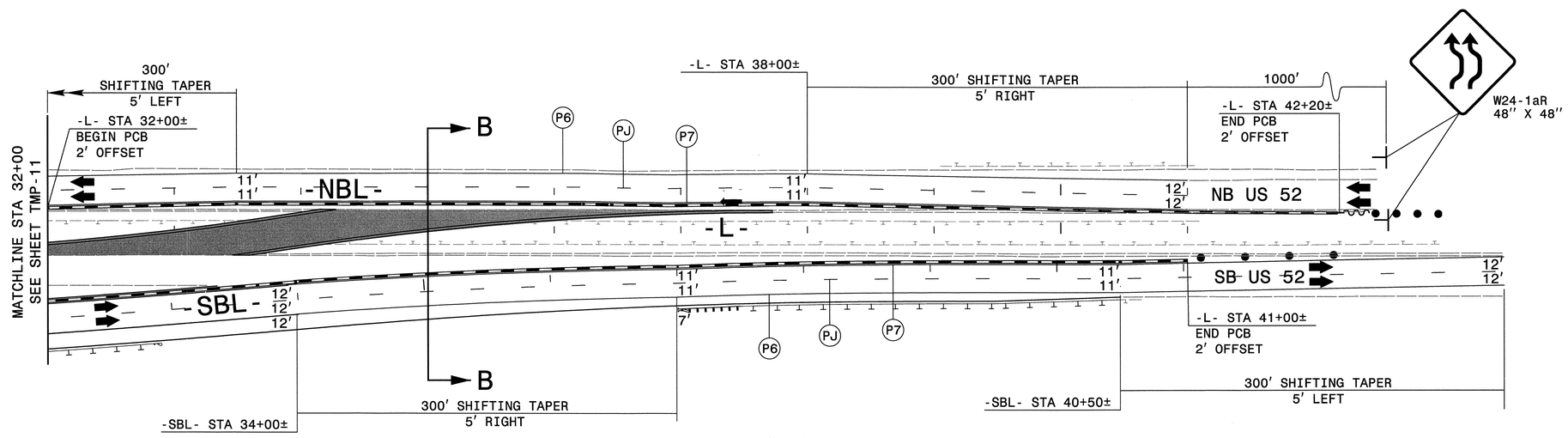

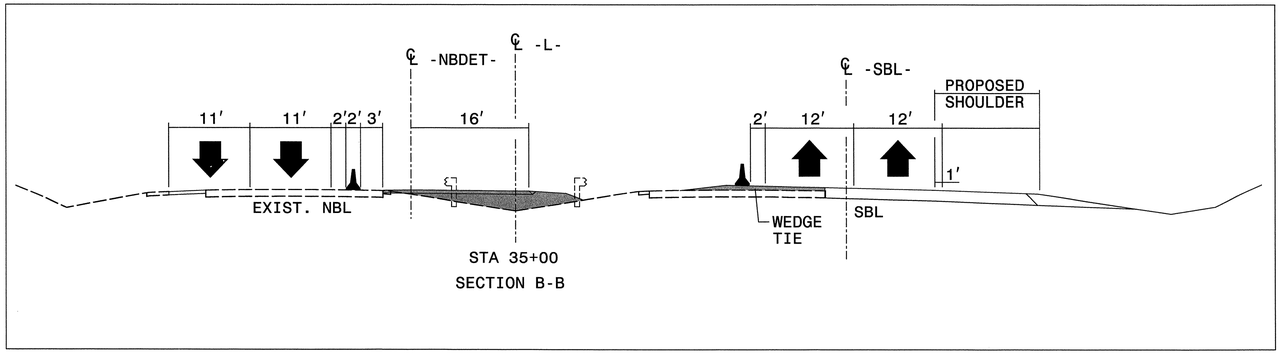

APPROVED: Michael T Rzepka DATE: 4-12-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

PHASE II, STEP 1 DETAIL

SCALE:	NONE
DATE:	APR '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

REVISIONS

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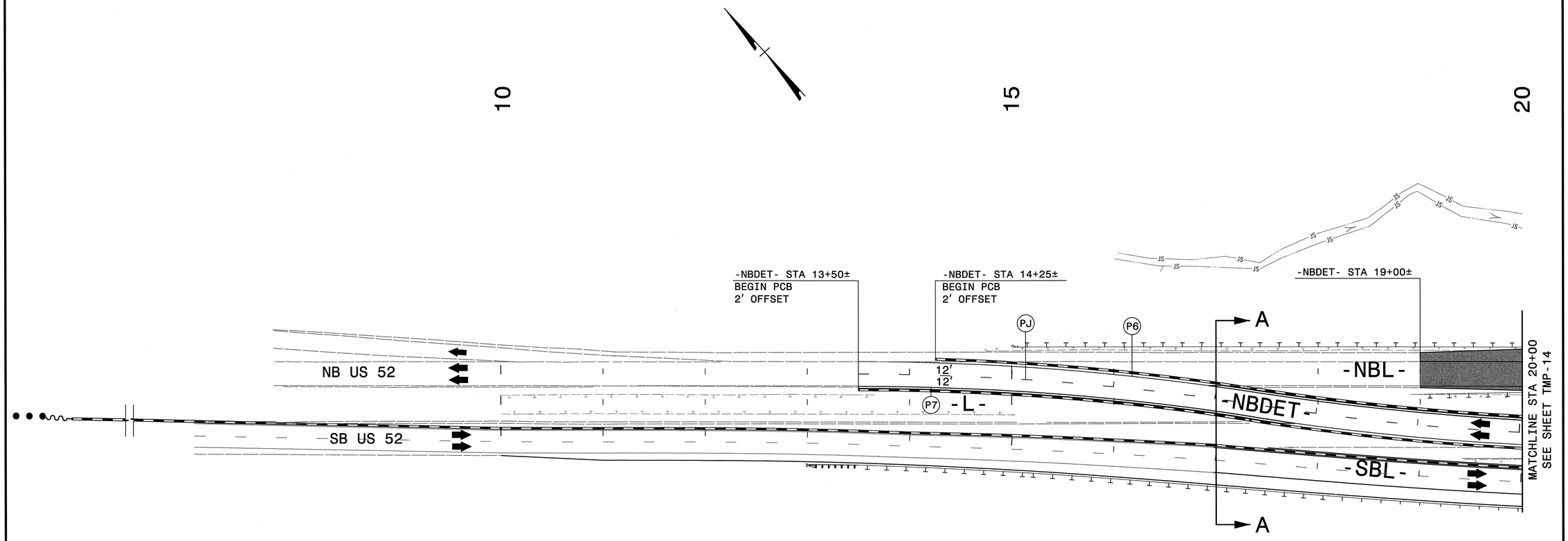
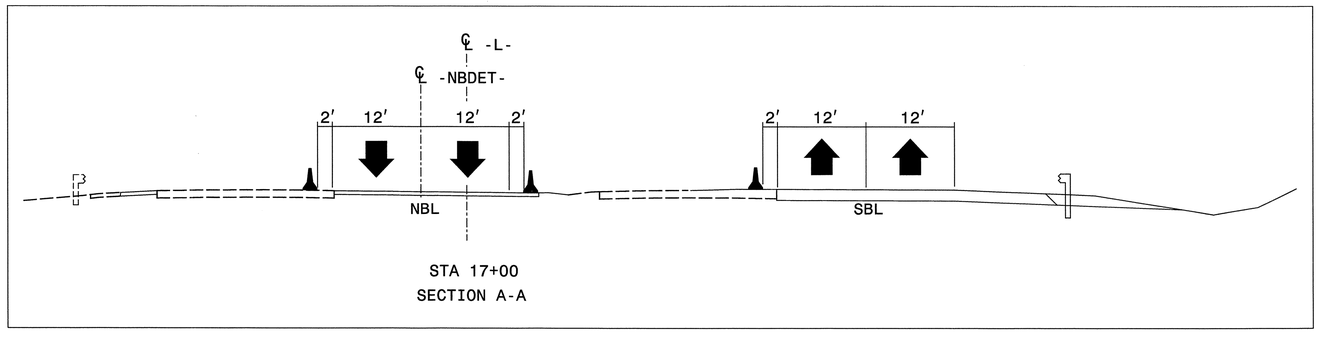
Florence & Hutcheson

Florence & Hutcheson An ICA Company 5121 Kingdom Way, Raleigh, NC 27607 NC License No: F-0258	PROJ. REFERENCE NO. B-4645	SHEET NO. TMP-13





APPROVED: Michael T. Rizzuto DATE: 4-12-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RIZZUTO

PHASE II, STEP 2 DETAIL

SCALE:	NONE
DATE:	APR '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

DIVISION OF HIGHWAYS TRAFFIC ENGINEERING BRANCH TRAFFIC ENGINEERING DESIGN UNIT TRAFFIC CONTROL

REVISIONS	
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Florence & Hutcheson

Florence & Hutcheson
An ICA Company
5121 Kingdom Way, Raleigh, NC 27607
NC License No: F-0258

PROJ. REFERENCE NO.	SHEET NO.
B-4645	TMP-14

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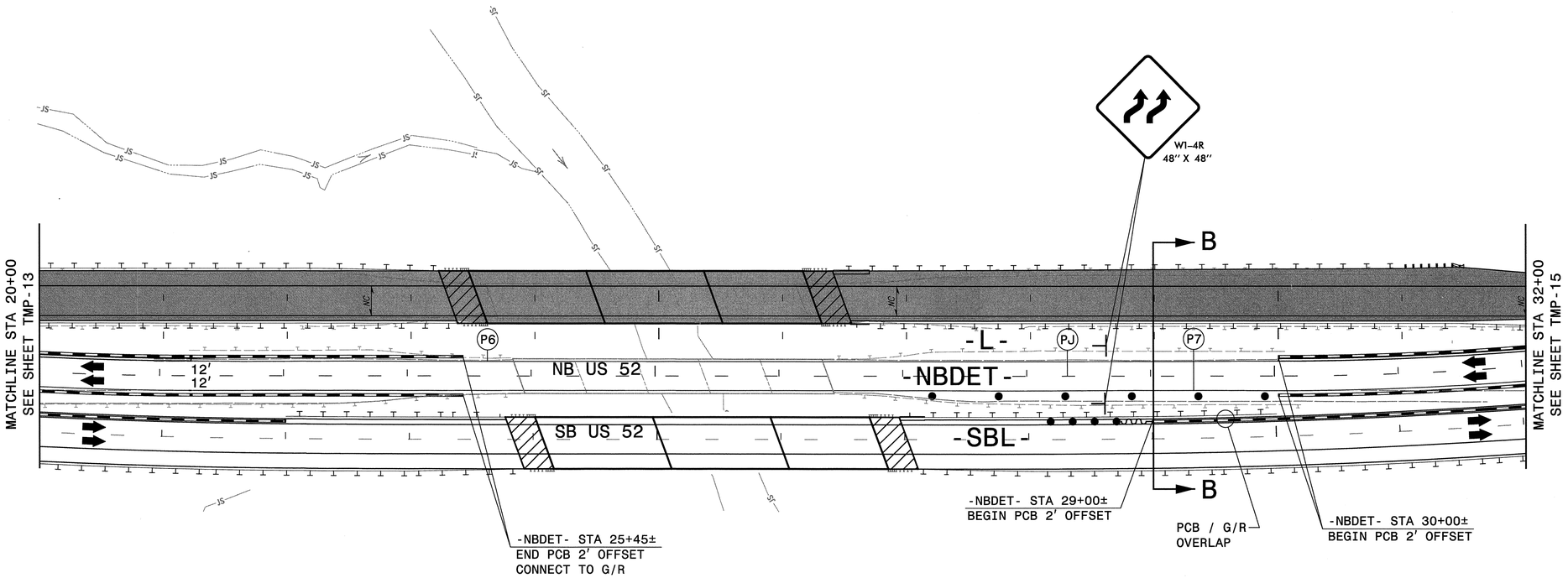

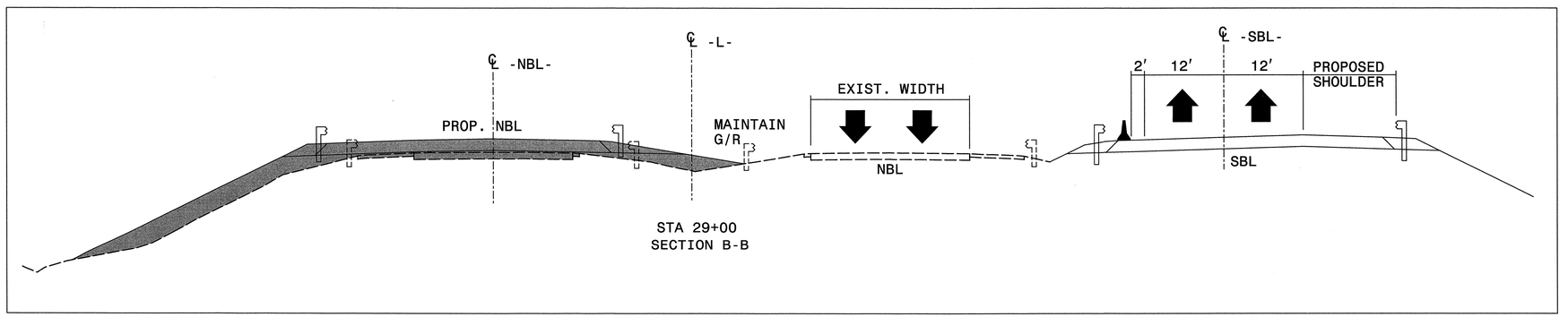

APPROVED: Michael T. Reepe DATE: 4-12-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. REEPE

PHASE II, STEP 2 DETAIL

SCALE:	NONE
DATE:	APR '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

DIVISION OF HIGHWAYS · TRAFFIC ENGINEERING BRANCH · TRAFFIC CONTROL UNIT

REVISIONS	
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Florence & Hutcheson An ICA Company	PROJ. REFERENCE NO.	SHEET NO.
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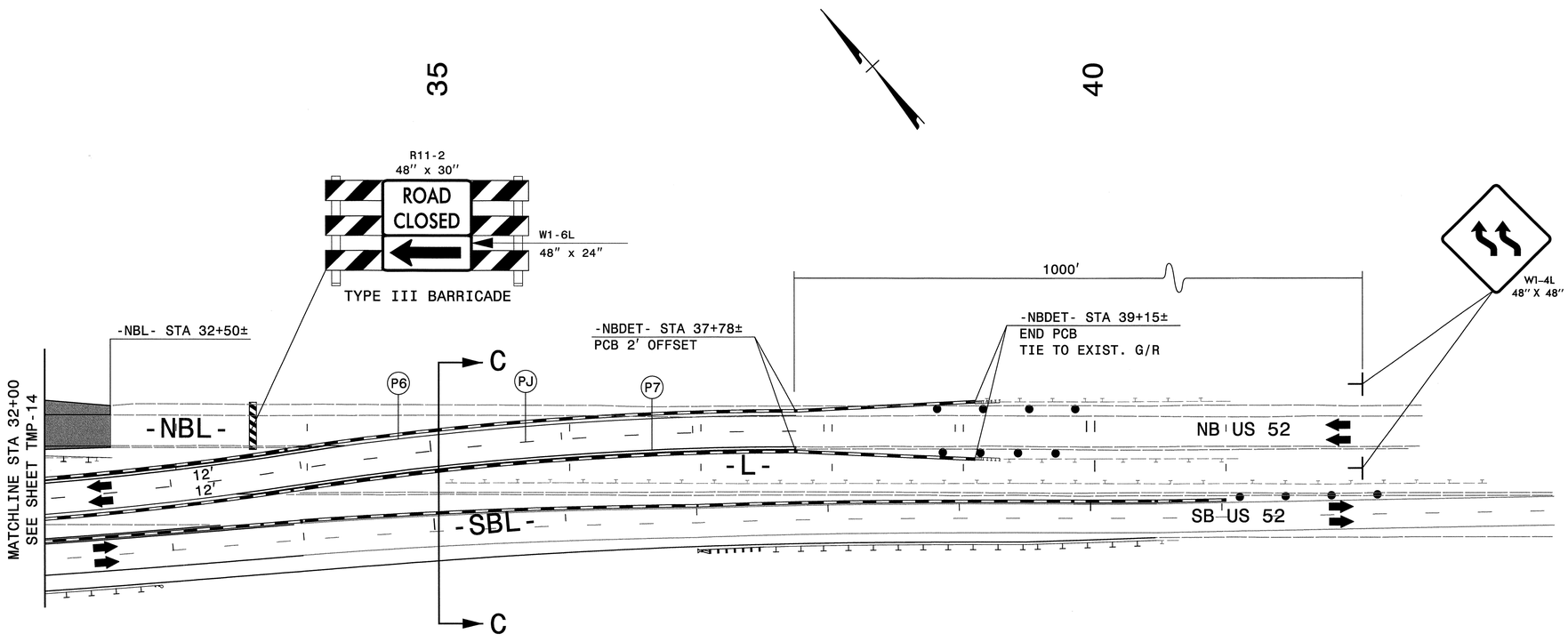

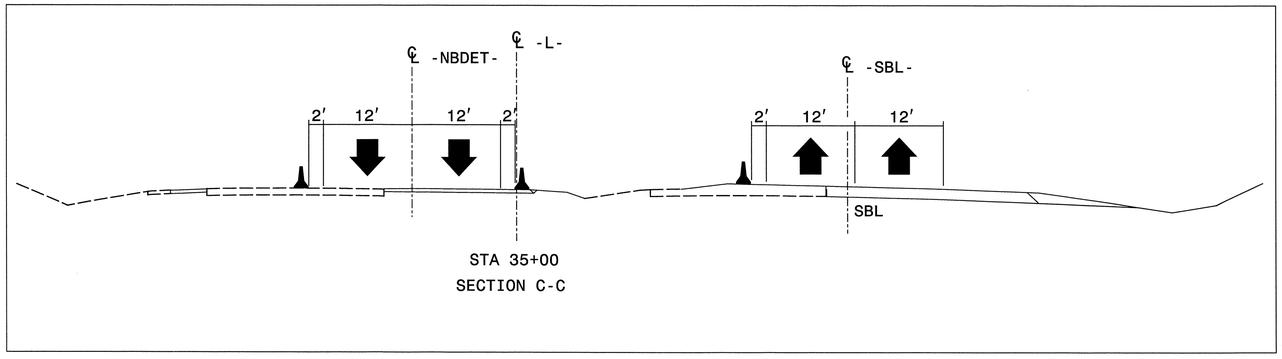

APPROVED: Michael T. Rzepka DATE: 4-12-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

PHASE II, STEP 2 DETAIL

SCALE:	NONE
DATE:	APR '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

REVISIONS

CADD FILE

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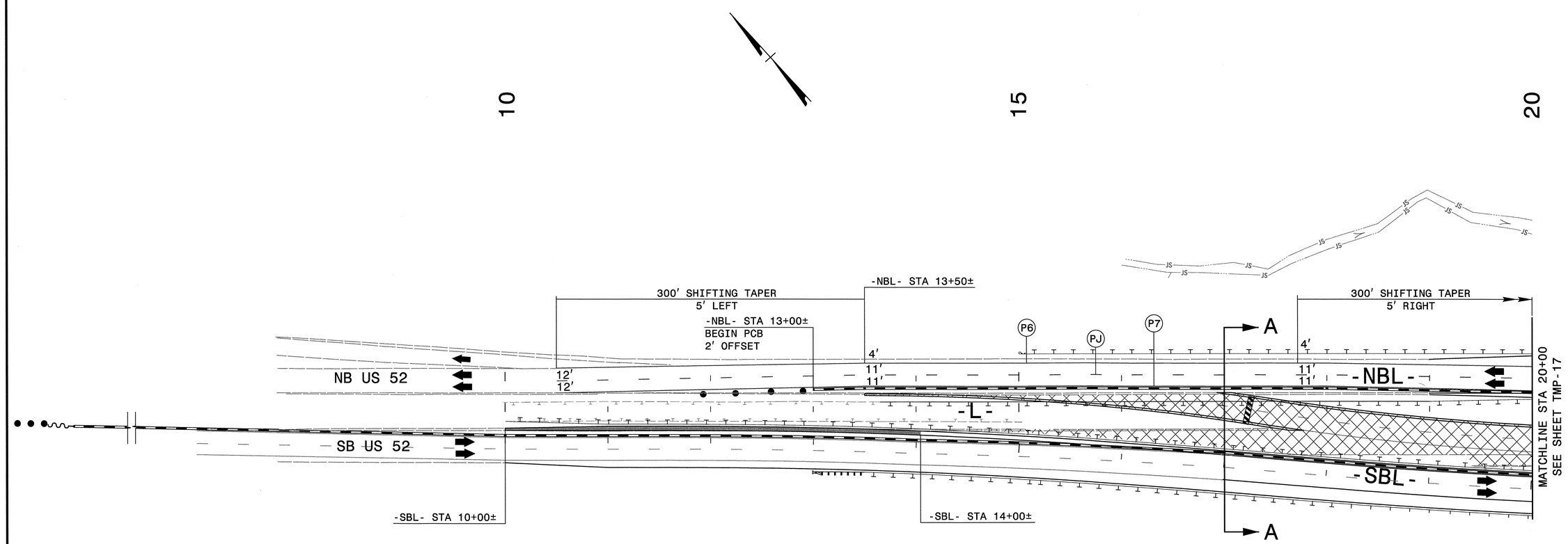
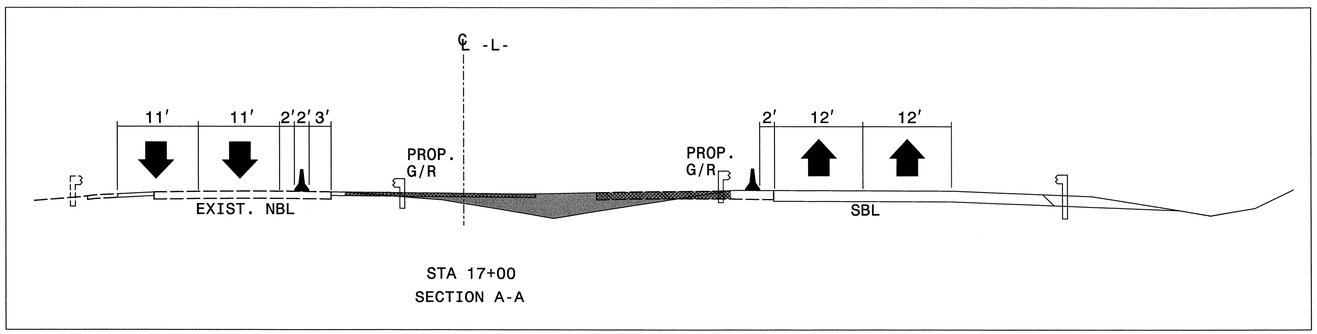
Florence & Hutcheson

Florence & Hutcheson An ICA Company 5121 Kingdom Way, Raleigh, NC 27607 NC License No: F-0258	PROJ. REFERENCE NO. B-4645	SHEET NO. TMP-16





STA 17+00
SECTION A-A

APPROVED: Michael T. Rzepka DATE: 4-12-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

PHASE III DETAIL

SCALE:	NONE
DATE:	APR '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

REVISIONS

CADD FILE

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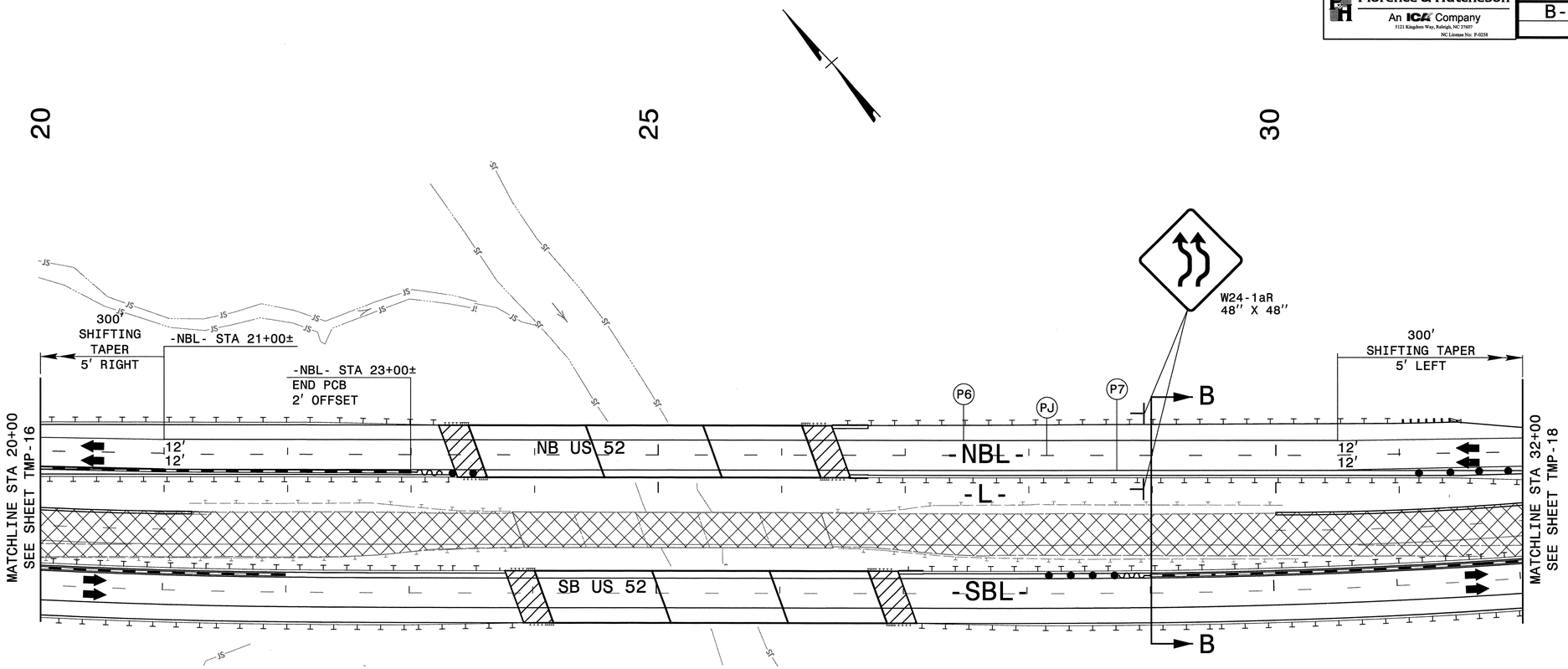
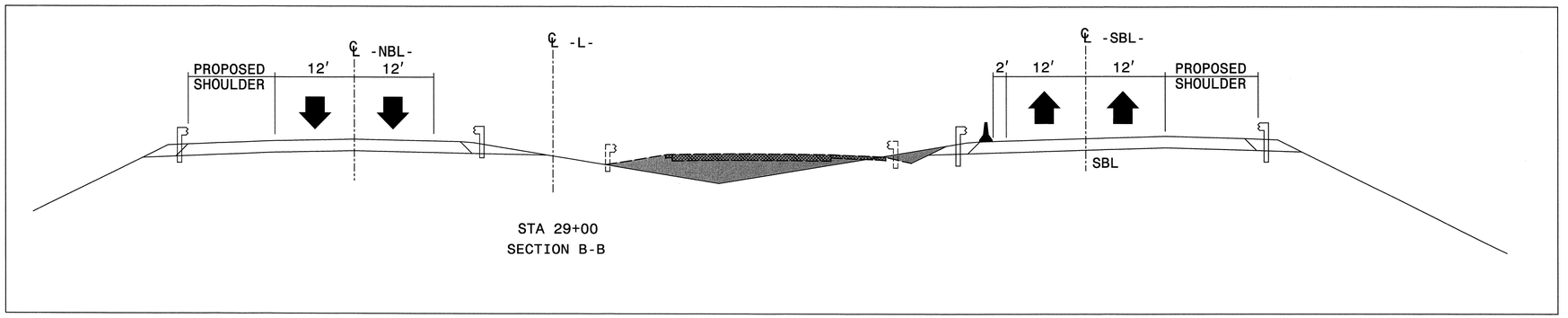
Florence & Hutcheson

Florence & Hutcheson An ICA Company 5121 Kingdom Way, Raleigh, NC 27607 NC License No. F-0258	PROJ. REFERENCE NO. B-4645	SHEET NO. TMP-17





STA 29+00
SECTION B-B

APPROVED: Michael T Riepka DATE: 4-12-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T RIEPKA

PHASE III DETAIL

SCALE:	NONE
DATE:	APR '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

DIVISION OF HIGHWAYS · TRAFFIC ENGINEERING BRANCH · STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

REVISIONS	
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Florence & Hutcheson

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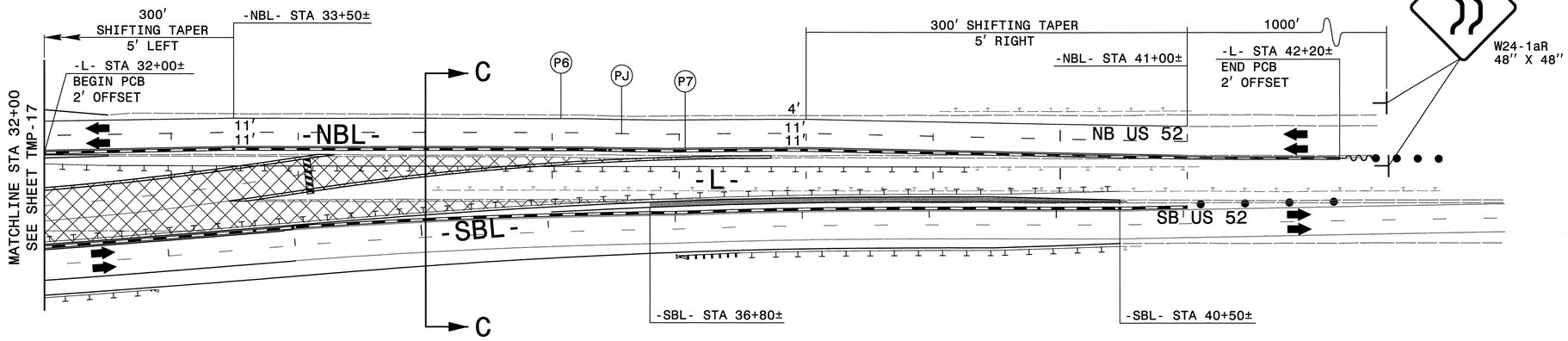

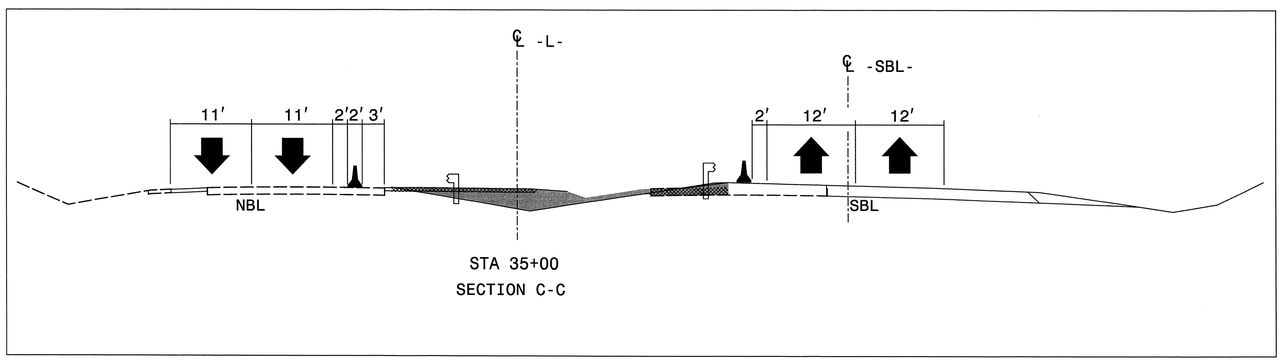

APPROVED: Michael T. Ritzma DATE: 4-12-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RITZMA

PHASE III DETAIL

SCALE:	NONE
DATE:	APR '13
DWG. BY:	YTM
DESIGN BY:	TAG
REVIEWED BY:	MTR

DIVISION OF HIGHWAYS TRAFFIC ENGINEERING BRANCH NORTH CAROLINA DEPARTMENT OF TRANSPORTATION TRAFFIC CONTROL

REVISIONS

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TIP NO.	SHEET NO.
B-4645	PMP-1

APPROVED: Rhonda S Early

DATE: 5.7.13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 023521 ENGINEER RHONDA B. EARLY

T.I.P.: B-4645

CONTRACT:

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN

STOKES COUNTY

LOCATION: BRIDGES NO. 29 & 30 OVER THE LITTLE YADKIN RIVER ON US 52

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
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE AND MULTI LANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT & TEMPORARY
1253.01	RAISED PAVEMENT MARKERS - SNOWPLOWABLE
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES & MOUNTING
1262.01	GUARDRAIL END DELINEATION

GENERAL NOTES

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

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

ROAD NAME	MARKING	MARKER
US 52 (-L-) (-NBL-) & (-SBL-)	POLYUREA (HIGLY REFLECTIVE ELEMENTS)	SNOWPLOWABLE
BRIDGES	POLYUREA (HIGHLY REFLECTIVE ELEMENTS)	RAISED

B) SIX-INCH WIDE MARKINGS INCLUDING BUT NOT LIMITED TO LANE LINES, EDGE LINES AND SKIPS SHALL BE USED ON ALL US ROUTES WITH CONTROLLED ACCESS.

C) REMOVE ALL RESIDUE AND SURFACE LAITANCE BY WATER BLASTING OR GRINDING ON BRIDGE DECK(S) PRIOR TO PLACING POLYUREA PAVEMENT MARKINGS.

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

E) MARKERS SHALL BE INSTALLED ACCORDING TO THE NCDOT ROADWAY STANDARD DRAWING 1250.01.

FINAL PAVEMENT MARKING SCHEDULE

MATERIAL	SYMBOL	DESCRIPTION
PAVEMENT MARKING		
POLYUREA (6")		
	V6	WHITE EDGELINE
	V7	YELLOW EDGELINE
	VJ	10' WHITE SKIP
PERMANENT RAISED PAVEMENT MARKERS		
	MB	CRYSTAL & RED
SNOWPLOWABLE RAISED PAVEMENT MARKERS		
	MF	TYPE 3 CRYSTAL & RED

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- NORTH ARROW
- PROPOSED PVMT.
- EXIST. PVMT.

INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING PLAN COVER SHEET
PMP-2 & PMP-3	PAVEMENT MARKING DETAILS

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

S. Kunz SIGNING & DELINEATION REGIONAL ENGINEER

S. Coleman, EI SIGNING & DELINEATION PROJECT DESIGN ENGINEER

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
C-1554

PLAN PREPARED BY: HNTB NORTH CAROLINA

R. B. Early, PE PROJECT ENGINEER

J. A. Phillips PROJECT DESIGNER

QA/QC STAGE:

REVIEW:

CONCUR:

REVISE:

VERIFY:

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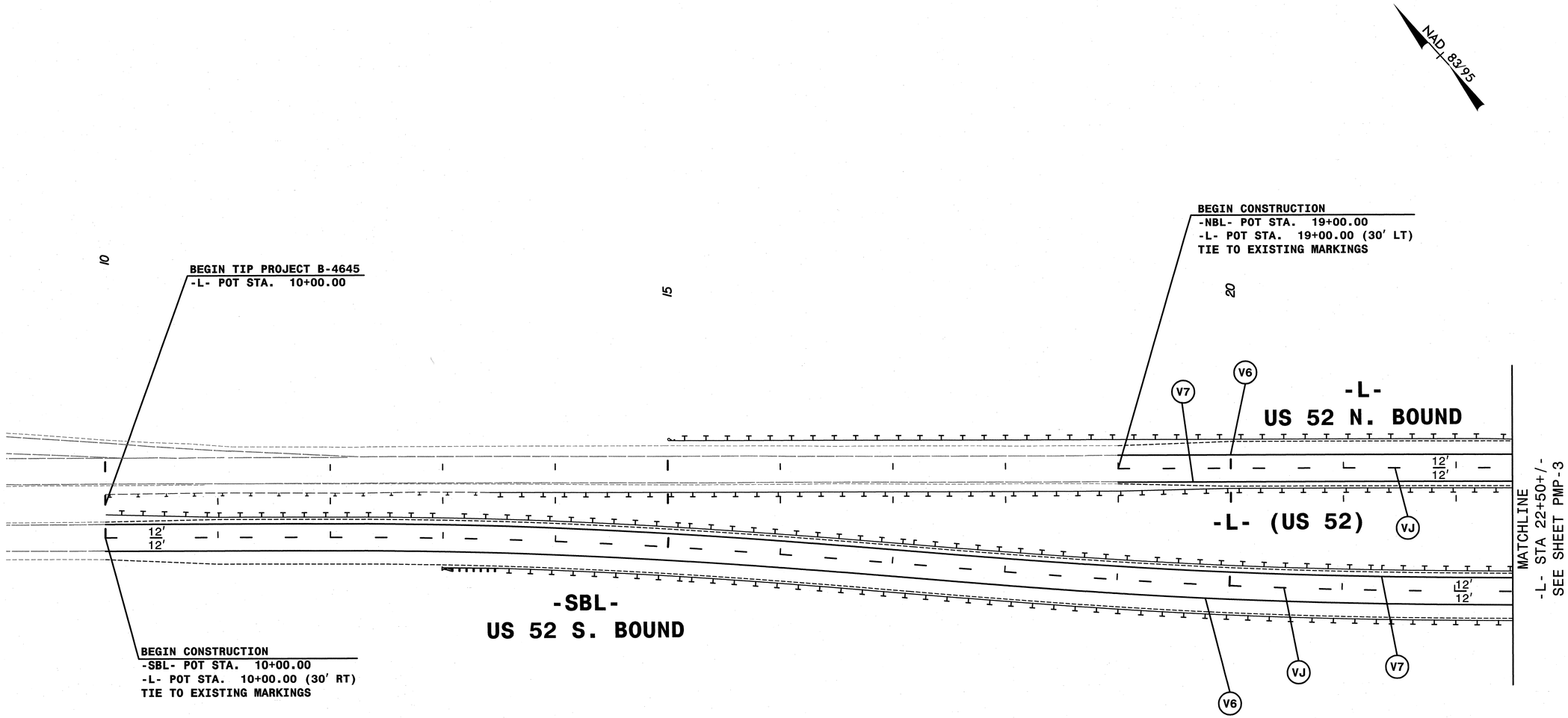
PROJ. REFERENCE NO.	SHEET NO.
B-4645	PMP-2



REVISIONS

8/17/99

QA/QC STAGE:

REVIEW:
CONCUR:
REVISE:
VERIFY:

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HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

APPROVED: Rhonda B. Early DATE: 5-7-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 023521 ENGINEER RHONDA B. EARLY

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
SIGNING AND DELINEATION

SIGNING AND DELINEATION

FINAL PAVEMENT MARKING PLANS

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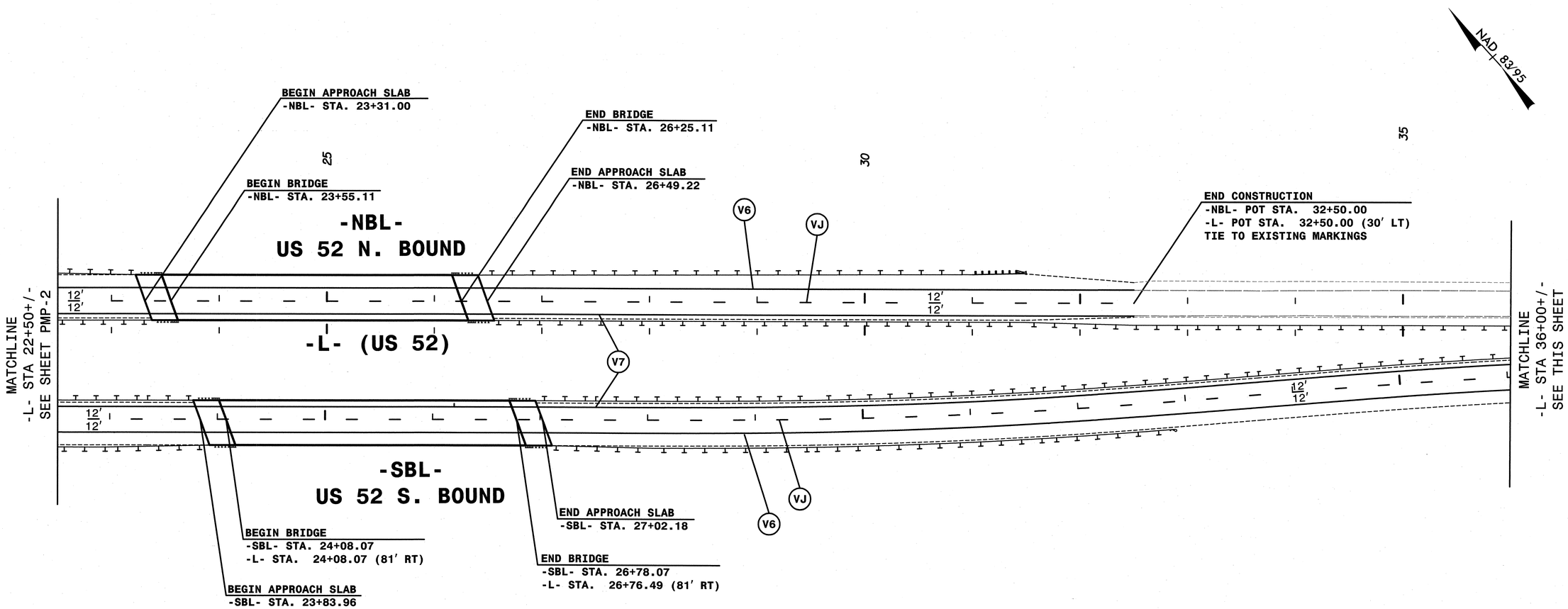

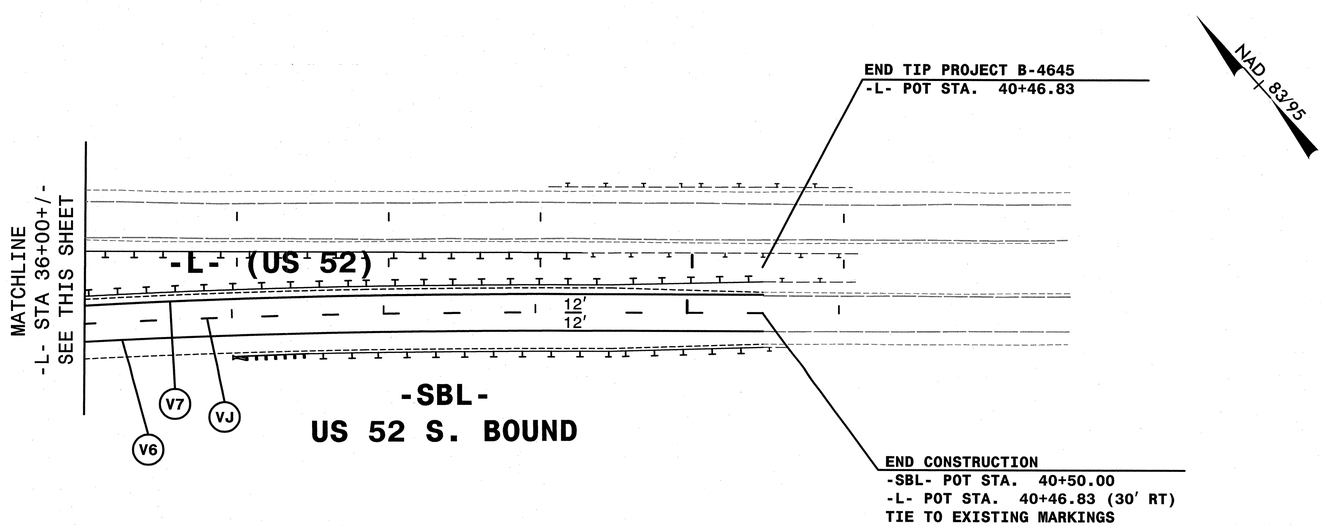

REVISIONS

8/17/99

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VERIFY:

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HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

APPROVED: Rhonda B. Early DATE: 5-7-13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 023521 ENGINEER RHONDA B. EARLY

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
SIGNING AND DELINEATION

SIGNING AND DELINEATION

FINAL PAVEMENT MARKING PLANS

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TIP PROJECT: B-4645

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4645	EC-1	

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

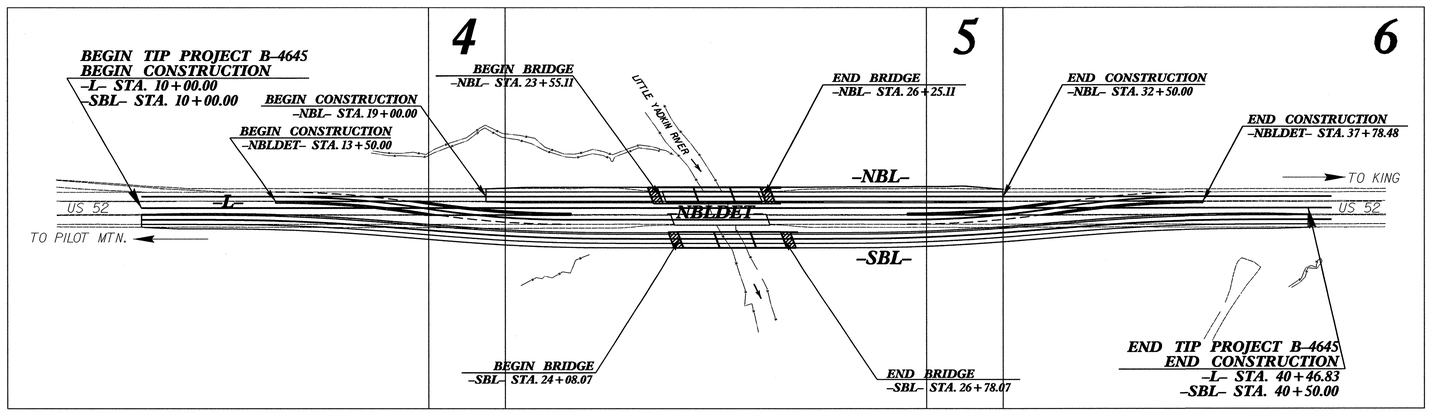
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

STOKES COUNTY

LOCATION: BRIDGES NO. 29 & 30 OVER THE LITTLE YADKIN RIVER ON US 52

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

NAD 83/95



EROSION AND SEDIMENT CONTROL MEASURES

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

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

GRAPHIC SCALE

0
PLANS
0
PROFILE (HORIZONTAL)
0
PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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

Prepared in the Office of:

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

2012 STANDARD SPECIFICATIONS

Roadway Standard Drawings

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

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

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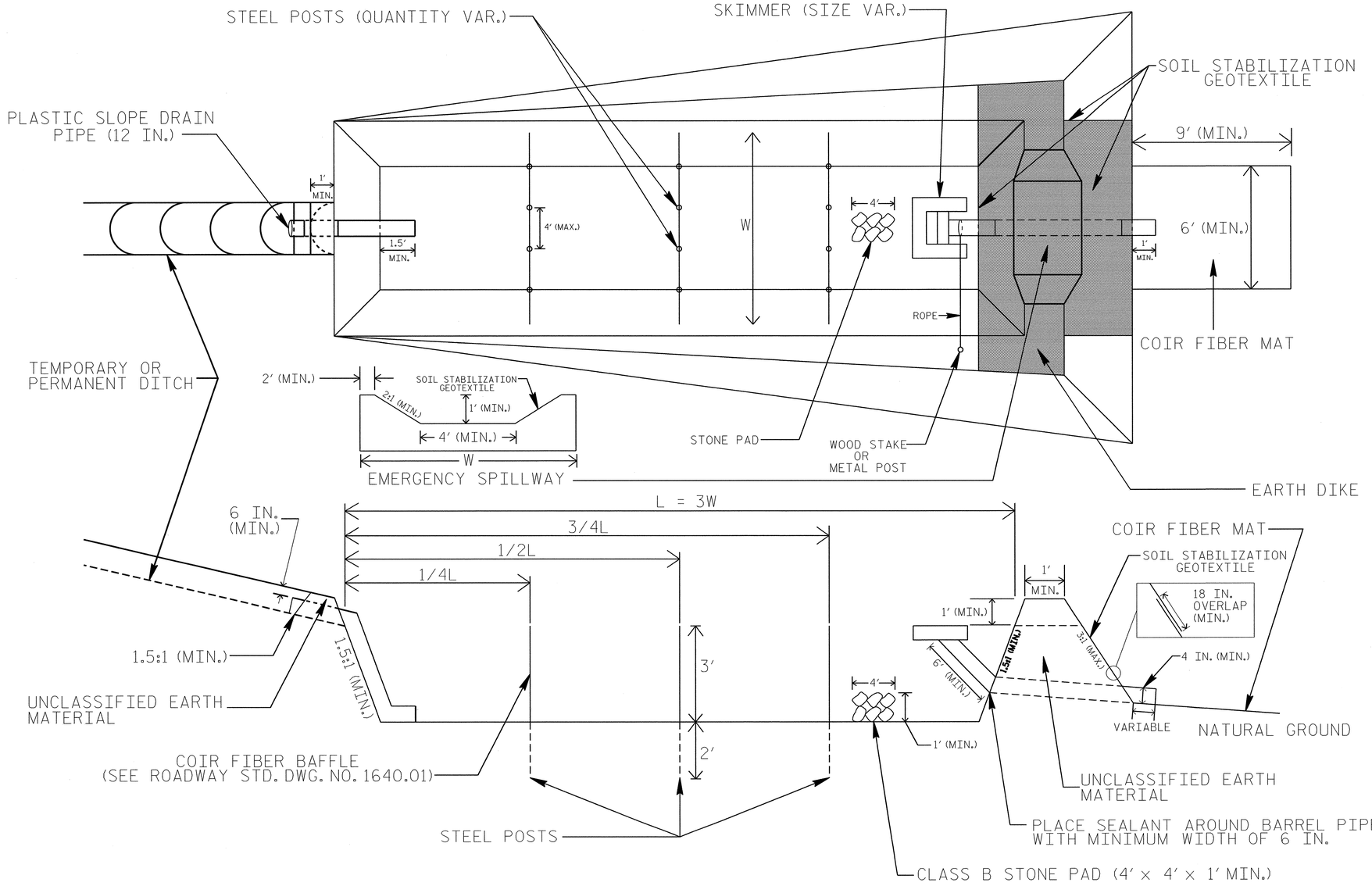
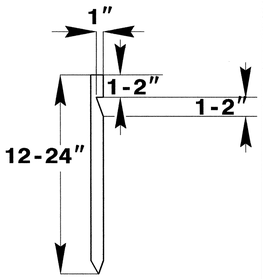
PROJECT REFERENCE NO.	SHEET NO.
B-4645	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

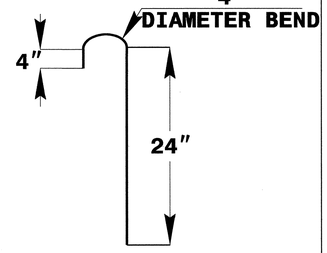
SKIMMER BASIN WITH BAFFLES DETAIL



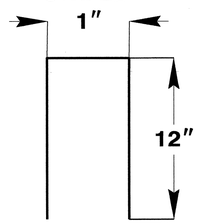
2" x 2" (nominal) WOODEN STAKE



#10 STEEL REINFORCEMENT BAR



1" (nominal) STAPLE



COIR FIBER MAT ANCHOR OPTIONS

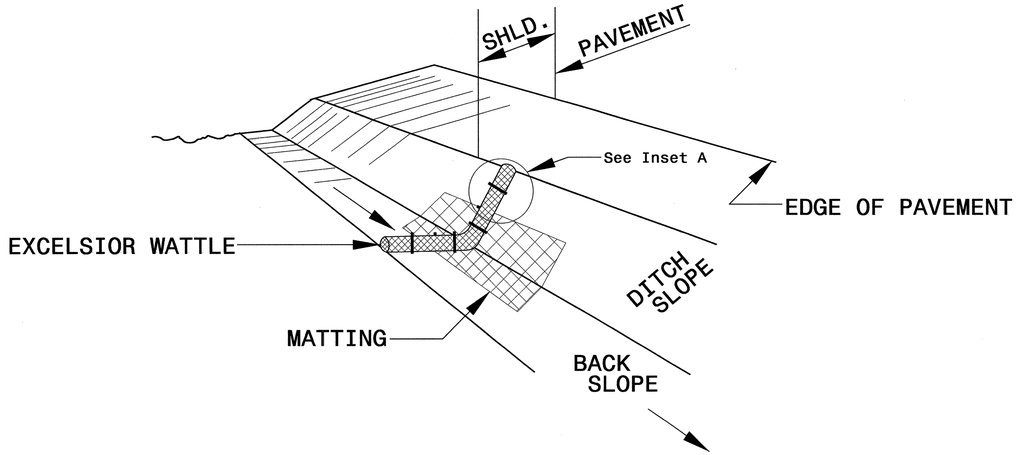
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. FOR BASIN DEPTH OF 3 FT., THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE EMERGENCY SPILLWAY WEIR LENGTH (FT.) USING Q/0.8, WHERE Q IS FLOW RATE (CFS) INTO BASIN.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTRATION GEOTEXTILE OR TARP AS DIRECTED.
6. SOIL STABILIZATION GEOTEXTILE FOR EMERGENCY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

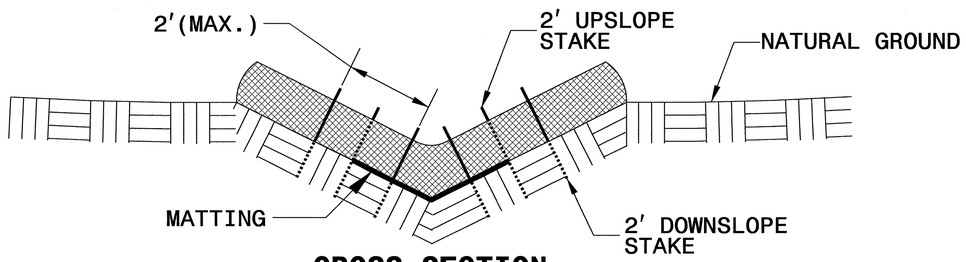
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-4645	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

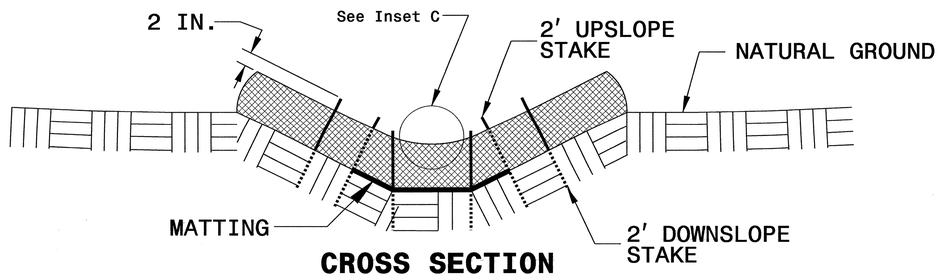
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

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

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

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

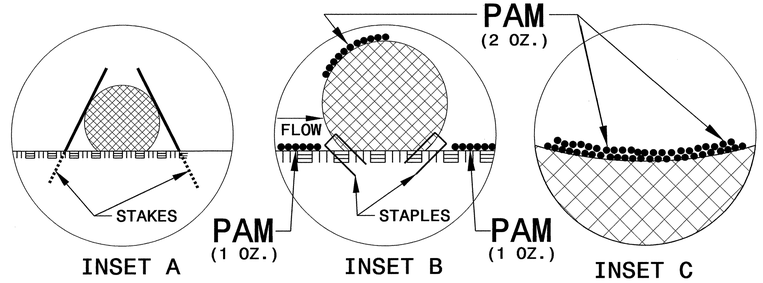
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

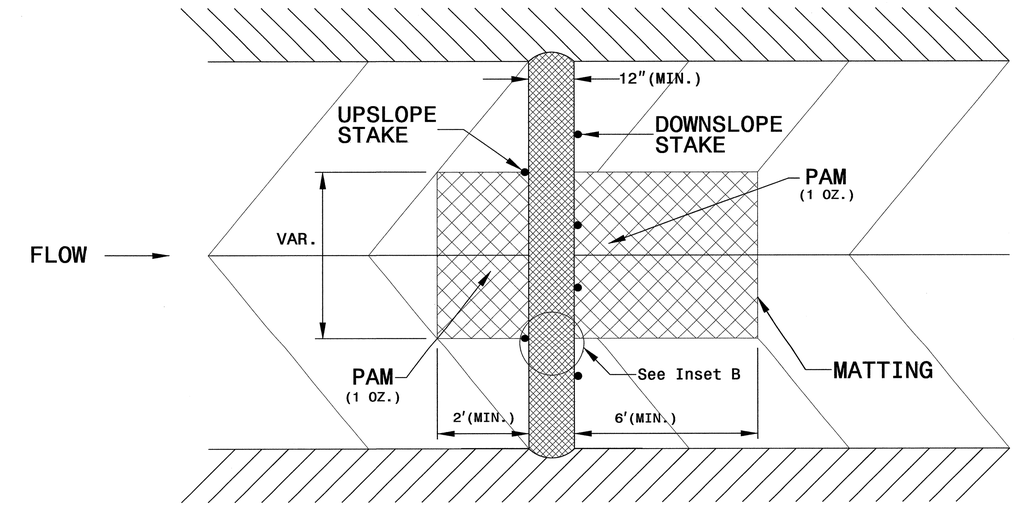
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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

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

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

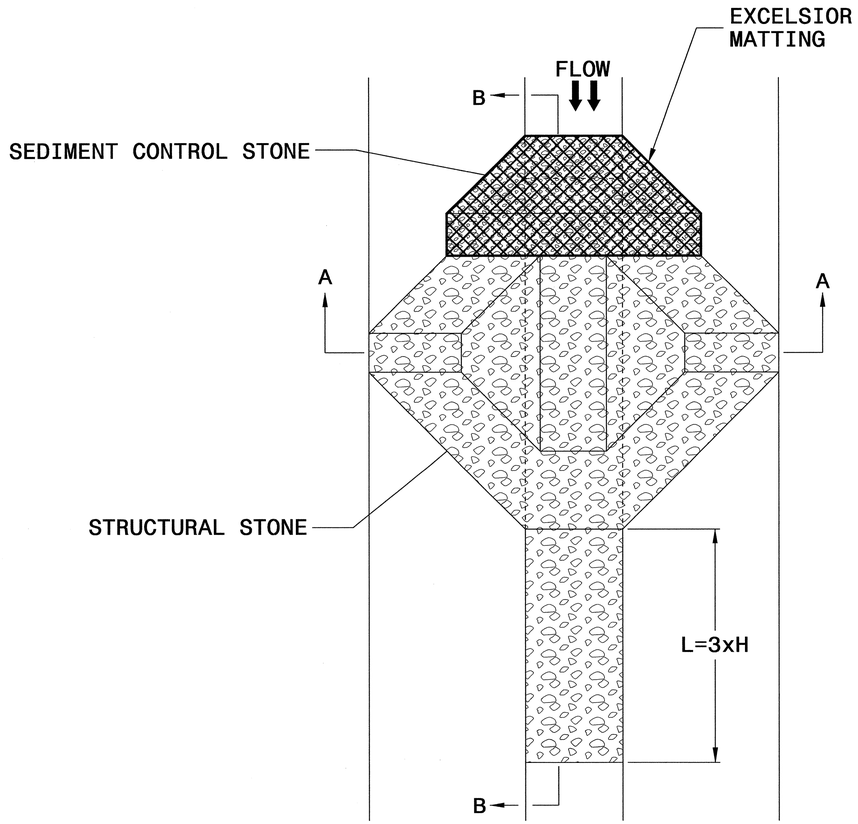




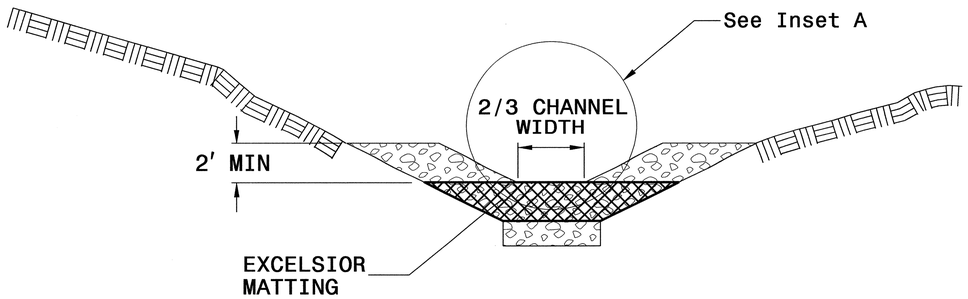
TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
B-4645	EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN



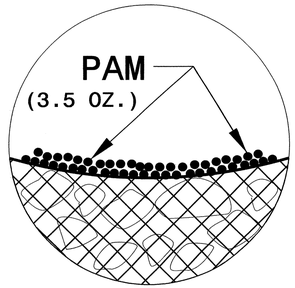
SECTION A-A

NOTES

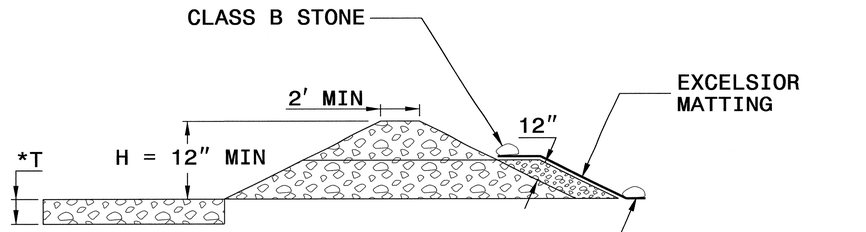
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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 B-B

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

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-4645	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	16+50	18+00	RT	145
5	-L-	20+00	23+50	MED	490
5-6	-L-	29+00	31+00	MED	275
5-6	-L-	30+50	31+50	LT	155
6	-L-	31+00	34+00	MED	410
6	-L-	33+00	37+00	RT	420
			SUBTOTAL		1895
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					17,500
				TOTAL	19,395
				SAY	20,000

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	11+00	17+50	MED	590
4	-L-	11+50	14+00	RT	235
4-5	-L-	17+50	18+50	MED	175
5	-L-	18+50	20+00	MED	145
			SUBTOTAL		1145
		ADDITIONAL PSRM TO BE INSTALLED			0
				TOTAL	1145
				SAY	1200

PROJECT REFERENCE NO.	SHEET NO.
B-4645	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

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

PROJECT REFERENCE NO.	SHEET NO.
B-4645	EC-04/CONST.2D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

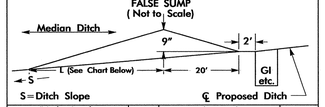
NOTE:
UTILIZE SPECIAL STILLING BASIN AS APPILCABLE.

-NBL- DETOUR

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 2-D

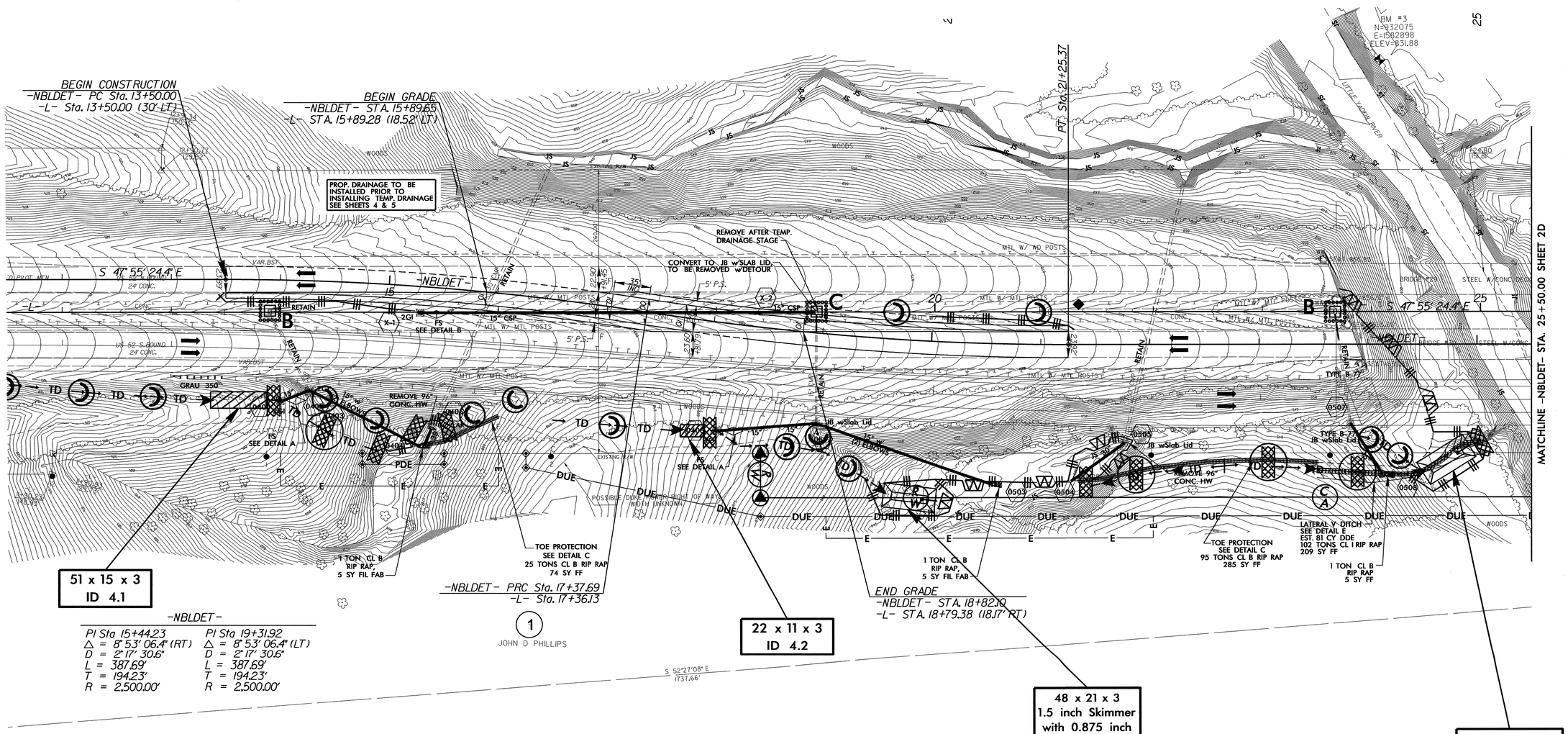
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

DETAIL B
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'



-NBLDET-

PI Sta 15+44.23	PI Sta 19+31.92
△ = 8° 53' 06.4" (RT)	△ = 8° 53' 06.4" (LT)
D = 2° 17' 30.6"	D = 2° 17' 30.6"
L = 387.69'	L = 387.69'
T = 194.23'	T = 194.23'
R = 2,500.00'	R = 2,500.00'

8/17/99

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pring AT RENV256948

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4645	EC-05/CONST.2E
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

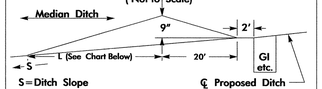
NOTE:
UTILIZE SPECIAL STILLING BASIN WHERE APPLICABLE

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 2-E

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

–NBL– DETOUR

DETAIL B
FALSE SUMP
(Not to Scale)



S = Ditch Slope

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

END GRADE
-NBLDET- STA. 35+35.15
-L- STA. 35+29.33 (18.17' LT)

END CONSTRUCTION
-NBLDET- POT Sta. 39+33.75
-L- Sta. 39+27.54 (30' LT)

-NBLDET- PRC Sta. 33+90.79
-L- Sta. 33+86.13

PC Sta. 30+03.10

NAD 83/95

BEVERLY M MUSTEN

MATCHLINE –NBLDET– STA. 25+50 SHEET 2–C

RETAIN EXIST. GUARDRAIL FOR TEMP. DETOUR

REMOVE AFTER TEMP. DRAINAGE STAGE

REMOVE EXIST. GUARDRAIL

RETAIN 36" CONC. HW

PROP. DRAINAGE TO BE INSTALLED PRIOR TO INSTALLING TEMP. DRAINAGE SEE SHEET 6

5' P.S. COVER AND RETAIN F

FS SEE DETAIL B

Convert to 2GI

15" CSP

18" CMP RETAIN

TYPE B-77 2GI

TYPE B-77

1ST W. BRANCH

JB w/Slab Lid

POSSIBLE DUKE POWER RIGHT OF WAY. WIDTH UNKNOWN

1 TON CL B RIP RAP, 5 SY FIL FAB

2 TON CL B RIP RAP, 7 SY FIL FAB

GRAU 350 TL-3

CAT I

DETAIL A

BEGIN GRADE
-NBLDET– STA. 32+45.02
-L– STA. 32+41.54 (18.30' RT)

2
BRICE F. MILTON AND WIFE DOROTHY T MILTON

2
-NBLDET–

PI Sta 31+97.34	PI Sta 35+85.02
△ = 8° 53' 06.4" (LT)	△ = 8° 53' 06.4" (RT)
D = 2° 17' 30.6"	D = 2° 17' 30.6"
L = 387.69'	L = 387.69'
T = 194.23'	T = 194.23'
R = 2,500.00'	R = 2,500.00'

STRUCTURES WITH COVER OVER 12' INCLUDE 0505, 0507, AND 0515

21 x 42 x 3
1.5 inch Skimmer
with 0.750 inch
Orifice Diameter
13 ft. weir
ID 6.1

73 x 18 x 3
ID 6.2

WOODS

IS BK D

VAR HT BK

MTL

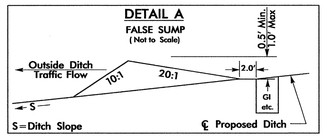
TO TRINITY CHURCH RD WEST WESTMORELAND

15-APR-2013 10:24
N:\Environmental\Design\b4645_EC_det_psh2e.dgn
proj: default (US Survey Foot)

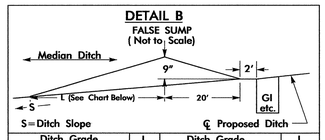
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4645	EC-06/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DETAIL A
FALSE SUMP
(Not to Scale)

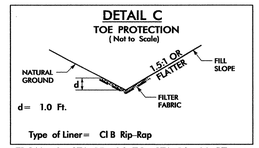


DETAIL B
FALSE SUMP
(Not to Scale)



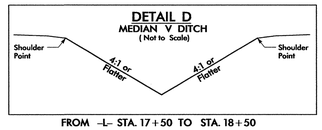
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL C
TOE PROTECTION
(Not to Scale)



d= 1.0 Ft.
Type of Liner= Cl B Rip-Rap
FROM –L– STA. 15+36 TO STA. 16+00 RT.

DETAIL D
MEDIAN V DITCH
(Not to Scale)



FROM –L– STA. 17+50 TO STA. 18+50

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

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

SION A. MOSS
AND WIFE
LINDA B MOSS

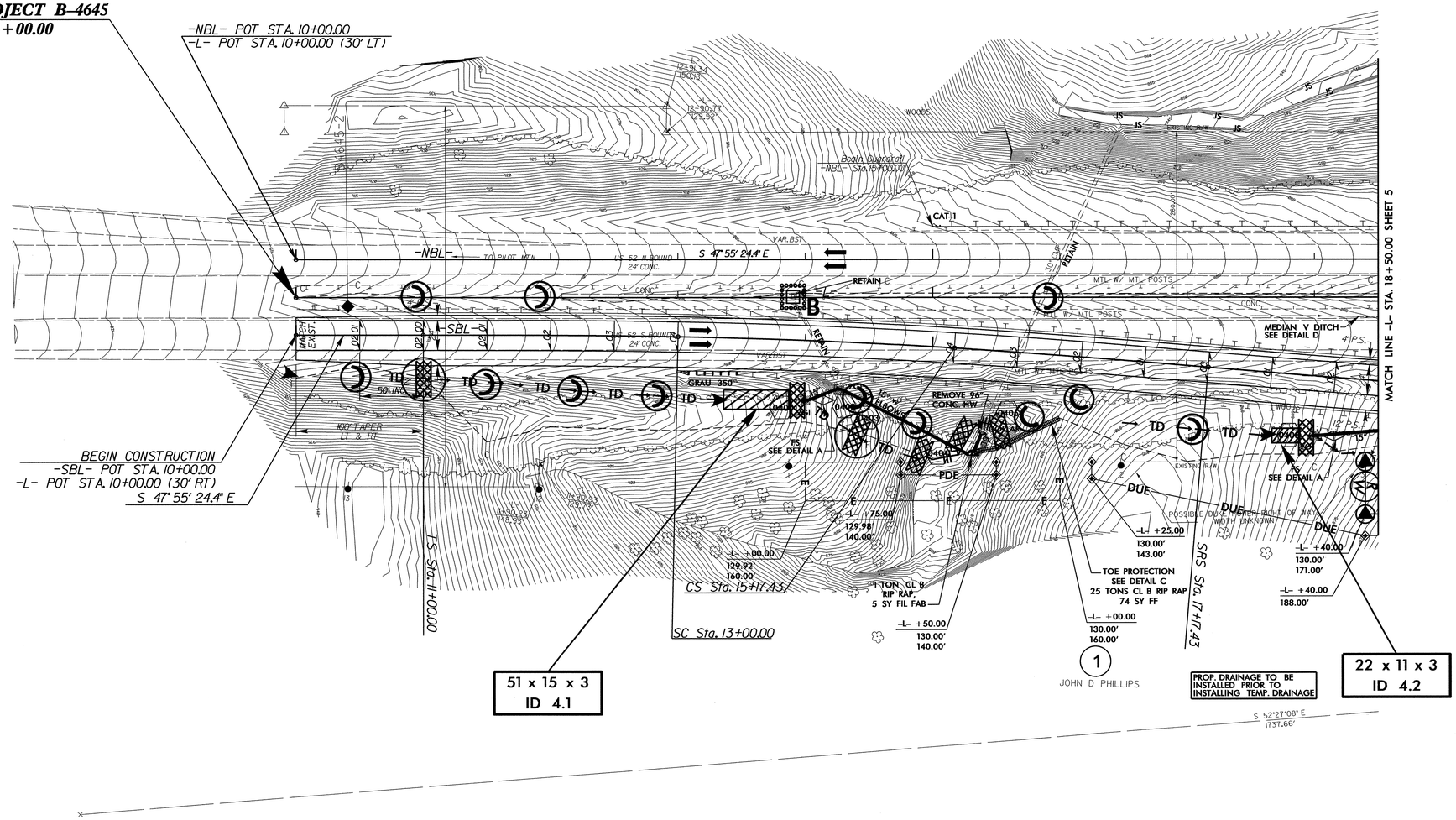
10

15

NAD 83/95

BEGIN TIP PROJECT B-4645
–L– POT STA. 10+00.00

–NBL– POT STA. 10+00.00
–L– POT STA. 10+00.00 (30' LT)



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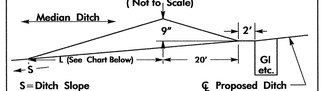
mcg 21 REV 20130405

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4645	EC-07/CONST.05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

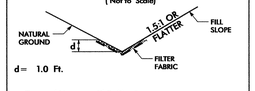
DETAIL B
FALSE SUMP
(Not to Scale)



S = Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL C
TOE PROTECTION
(Not to Scale)

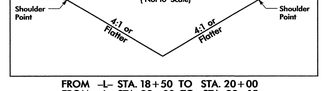


d = 1.0 Ft.

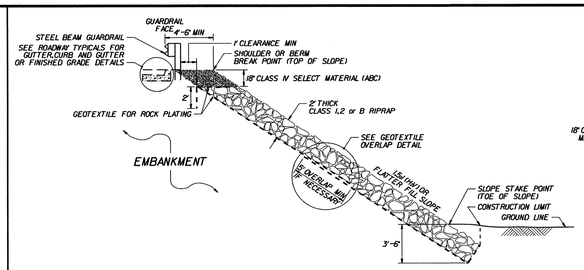
Type of Liner = Cl B Rip-Rap

FROM -L- STA. 21+30 TO STA. 23+50 RT.
FROM -L- STA. 29+00 TO STA. 30+00 LT.

DETAIL D
MEDIAN V DITCH
(Not to Scale)



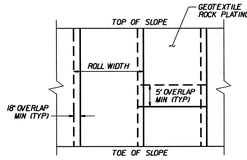
FROM -L- STA. 18+50 TO STA. 20+00
FROM -L- STA. 28+00 TO STA. 28+15
FROM -L- STA. 28+15 TO STA. 29+00



ROCK PLATING DETAIL NO. 2 – TYPICAL SECTION

USE ROCK PLATING DETAIL NO. 2
AT THE FOLLOWING LOCATIONS:
-L- STA 20+00 ± TO -L- STA 21+50 ±
EXTEND ROCK PLATING LIMITS TO 2:1 SLOPES.

ROCK PLATING DETAIL AND LOCATION WAS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING UNIT. THE RECOMMENDATIONS WERE SUBMITTED TO THE ROADWAY DESIGN UNIT ON MAY 4, 2012 AND SEALED BY A PROFESSIONAL ENGINEER, JOHN L. PILIPCHUK, LICENSE # 25521.



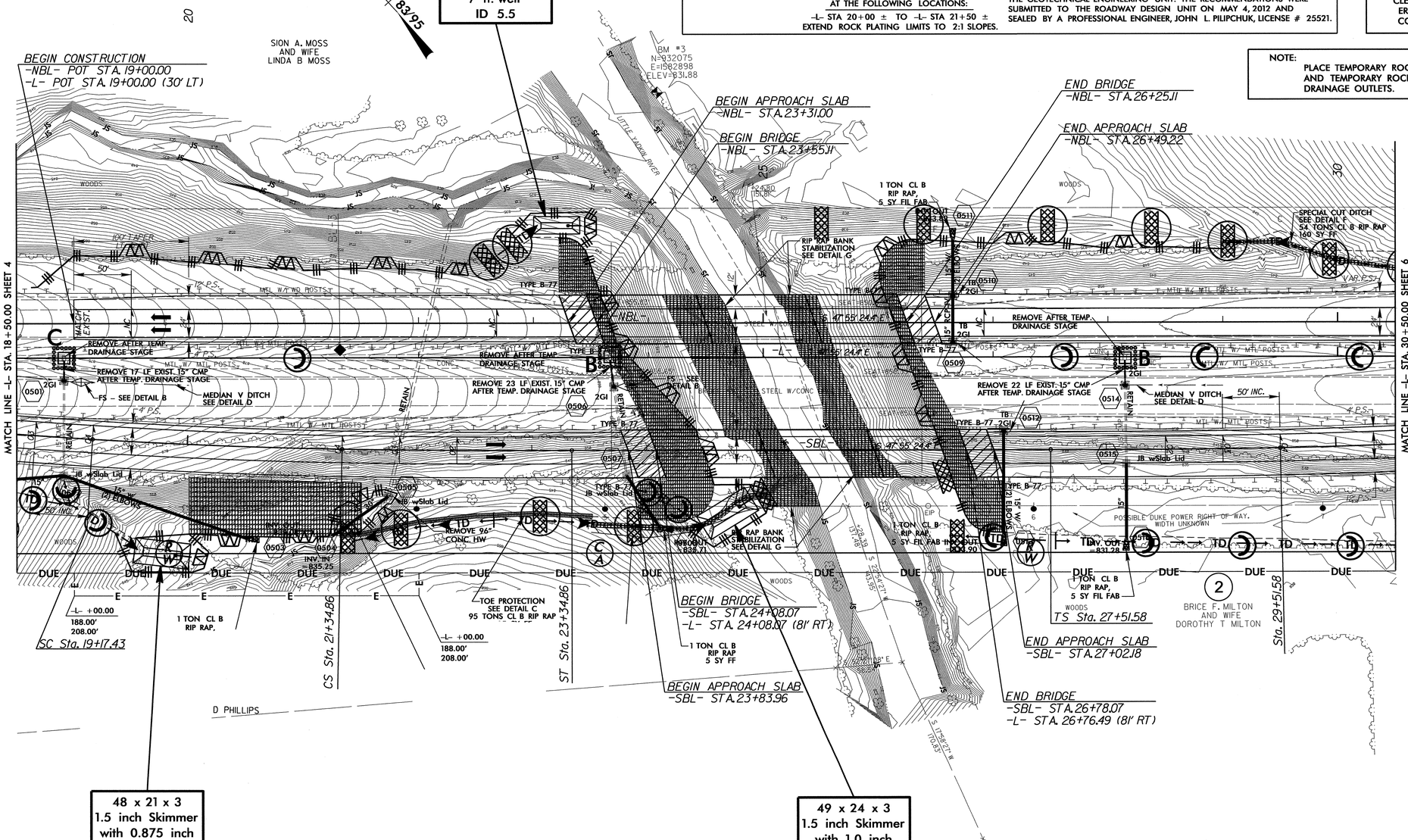
GEOTEXTILE OVERLAP DETAIL
(PLAN VIEW)

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 5

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

40 x 15 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
7 ft. weir
ID 5.5

NAD 83/95



48 x 21 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
13 ft. weir
ID 5.1

49 x 24 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
16 ft. weir
ID 5.4

NOTE:
UTILIZE SPECIAL STILLING BASINS WHERE APPLICABLE.

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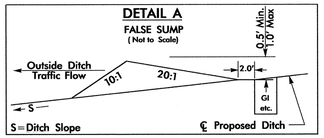
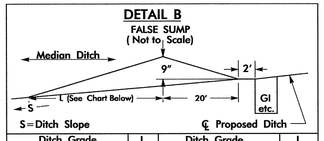
psharp
11" REVISED

PROJECT REFERENCE NO.	SHEET NO.
B-4645	EC-08/CONST.06
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

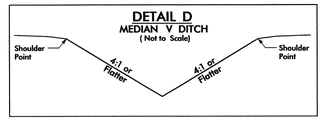
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 6

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

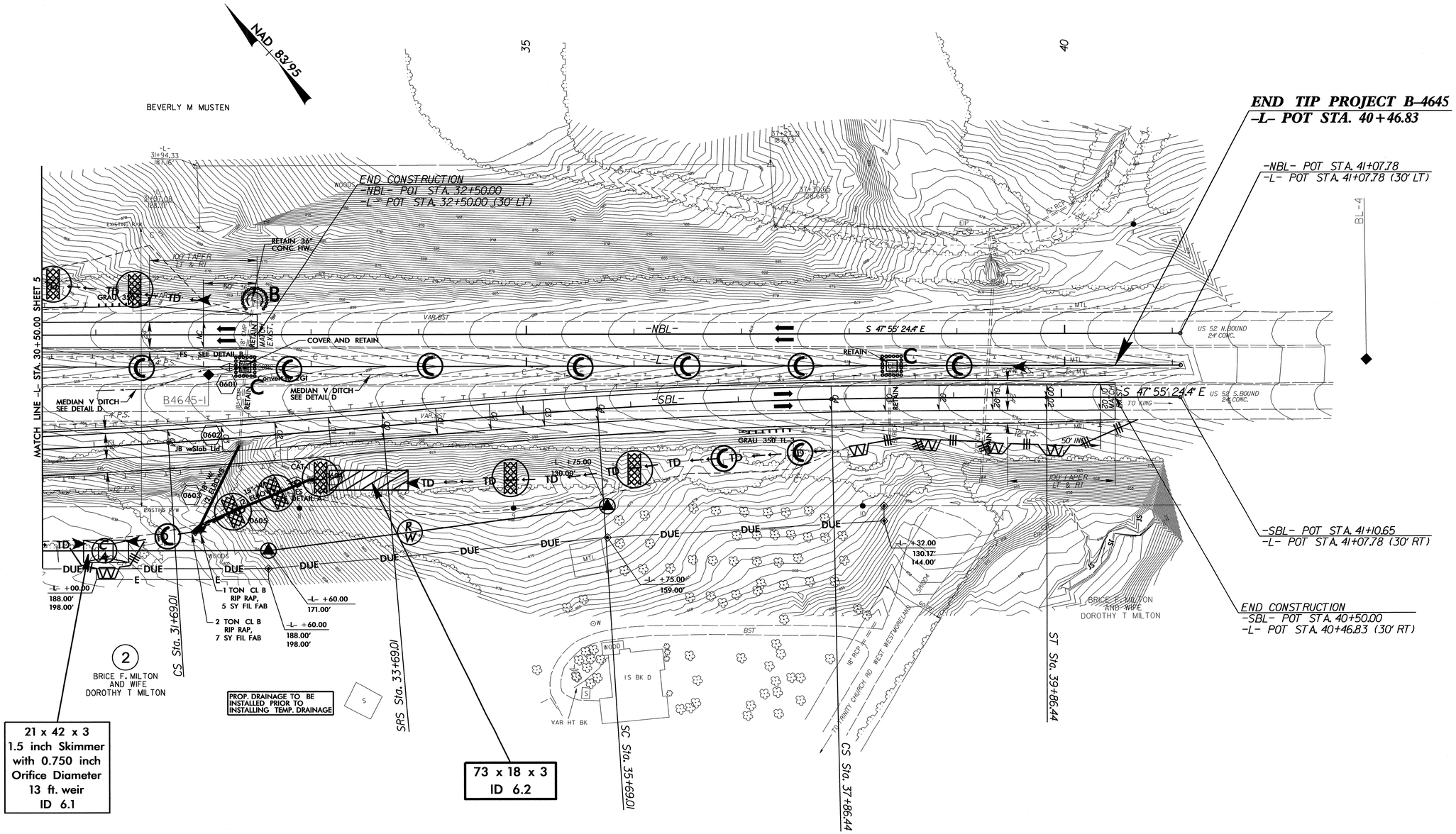




Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'



FROM -L- STA. 31+00 TO STA. 34+00



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pring AT REN\256948

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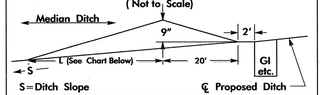
PROJECT REFERENCE NO.	SHEET NO.
B-4645	EC-09/CONST.2D
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE:
UTILIZE SPECIAL STILLING BASIN AS APPILCABLE.

-NBL- DETOUR

DETAIL B
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

NAD 83/95

SION A. MOSS
AND WIFE
LINDA B MOSS

BEGIN CONSTRUCTION
-NBLDET- PC Sta. 13+50.00
-L- Sta. 13+50.00 (30' LT)

BEGIN GRADE
-NBLDET- STA. 15+89.65
-L- STA. 15+89.28 (18.52' LT)

PT Sta. 21+25.37

BM #3
N=932075
E=1582898
ELEV=831.88

PROP. DRAINAGE TO BE INSTALLED PRIOR TO INSTALLING TEMP. DRAINAGE SEE SHEETS 4 & 5

REMOVE AFTER TEMP. DRAINAGE STAGE

CONVERT TO JB w/SLAB LID TO BE REMOVED w/DETOUR

S 47° 55' 24.4" E

-NBLDET-

-L-

US-52 S.BOUND
24' CONC.

VAR.BST

MTL W/ MTL POSTS

MTL W/ WD POSTS

TMTL W/ MTL POSTS

WOODS

EXISTING R/W

LITTLE YADKIN RIVER

BRIDGE #29 STEEL W/CONC DECK

BRIDGE #30 STEEL W/CONC

GRAU 350

REMOVE 96" CONC. HW

15" (2) ELBOWS

96" CONC HW

(0402) (0403) (0404) (0405) COLLAR (0501) (0502) (0503) (0504) (0505) (0507) (0508)

JB w/Slab Lid

TYPE B-77

FS SEE DETAIL A

PDE

DUE

POSSIBLE DUKE POWER RIGHT OF WAY WIDTH UNKNOWN

TOE PROTECTION SEE DETAIL C 25 TONS CL B RIP RAP 74 SY FF

1 TON CL B RIP RAP, 5 SY FIL FAB

TOE PROTECTION SEE DETAIL C 95 TONS CL B RIP RAP 285 SY FF

LATERAL V DITCH SEE DETAIL E EST. 81 CY DDE 102 TONS CL I RIP RAP 209 SY FF

1 TON CL B RIP RAP 5 SY FF

-NBLDET- PRC Sta. 17+37.69
-L- Sta. 17+36.13

END GRADE
-NBLDET- STA. 18+82.10
-L- STA. 18+79.38 (18.17' RT)

-NBLDET-

PI Sta 15+44.23	PI Sta 19+31.92
△ = 8° 53' 06.4" (RT)	△ = 8° 53' 06.4" (LT)
D = 2° 17' 30.6"	D = 2° 17' 30.6"
L = 387.69'	L = 387.69'
T = 194.23'	T = 194.23'
R = 2,500.00'	R = 2,500.00'

S 52°27'08" E
1737.66'

51 x 15 x 3
ID 4.1

22 x 11 x 3
ID 4.2

48 x 21 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
13 ft. weir
ID 5.1

49 x 24 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
16 ft. weir
ID 5.4

MATCHLINE -NBLDET- STA. 25+50.00 SHEET 2D

(1)
JOHN D PHILLIPS

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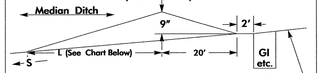
PROJECT REFERENCE NO.	SHEET NO.
B-4645	EC-10/CONST.2E
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE:
UTILIZE SPECIAL STILLING BASIN WHERE APPLICABLE

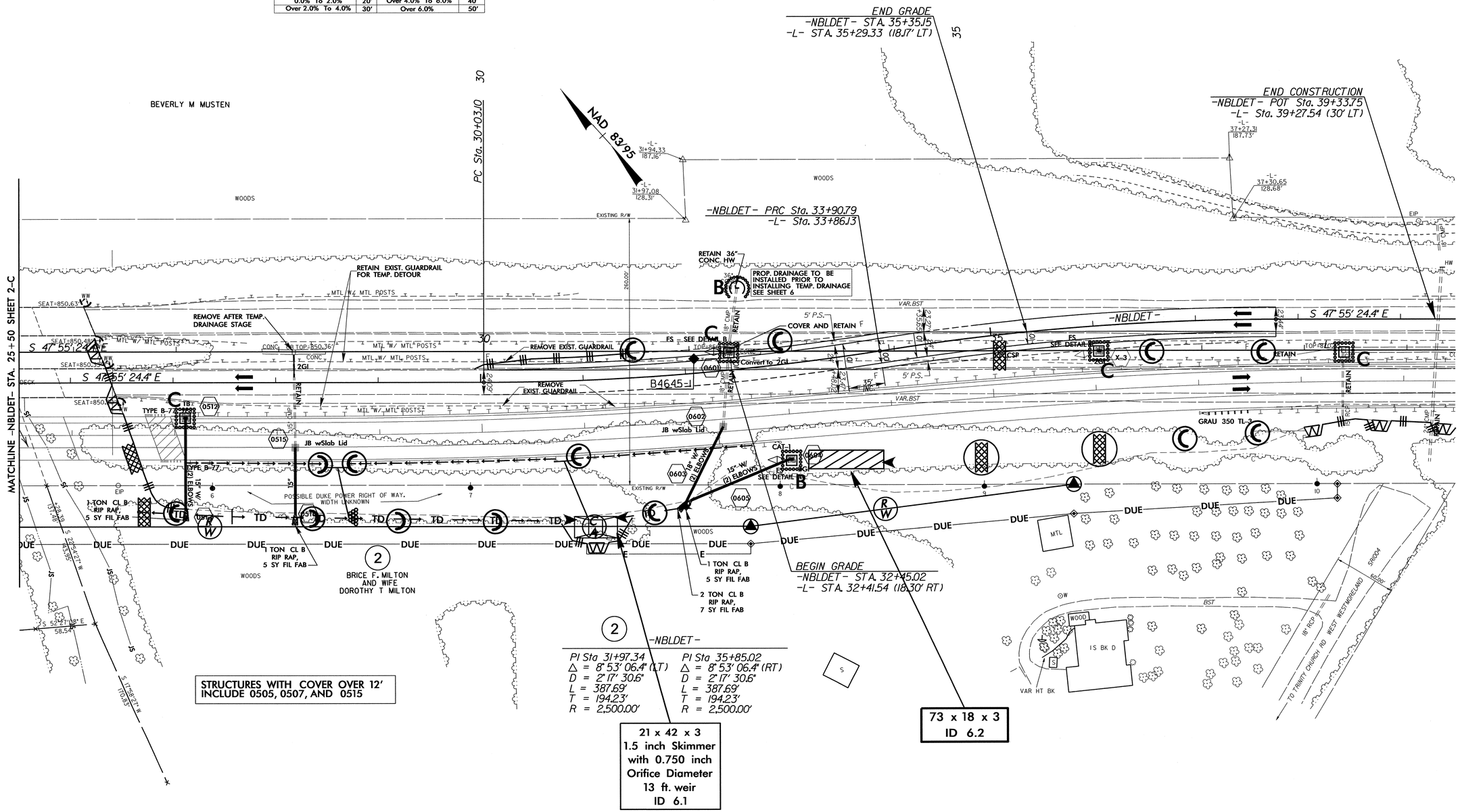
DETAIL B
FALSE SUMP
(Not to Scale)



S = Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

-NBL- DETOUR



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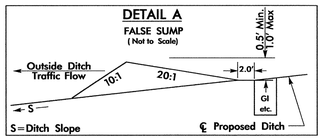
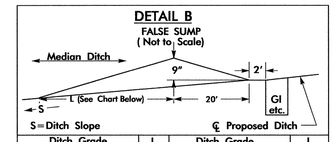
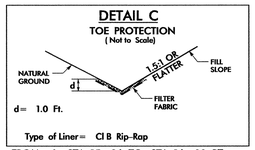
Option 21 REV 2.0.16

PROJECT REFERENCE NO.	SHEET NO.
B-4645	EC-11/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

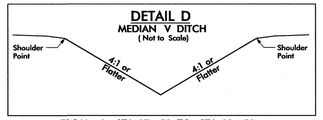




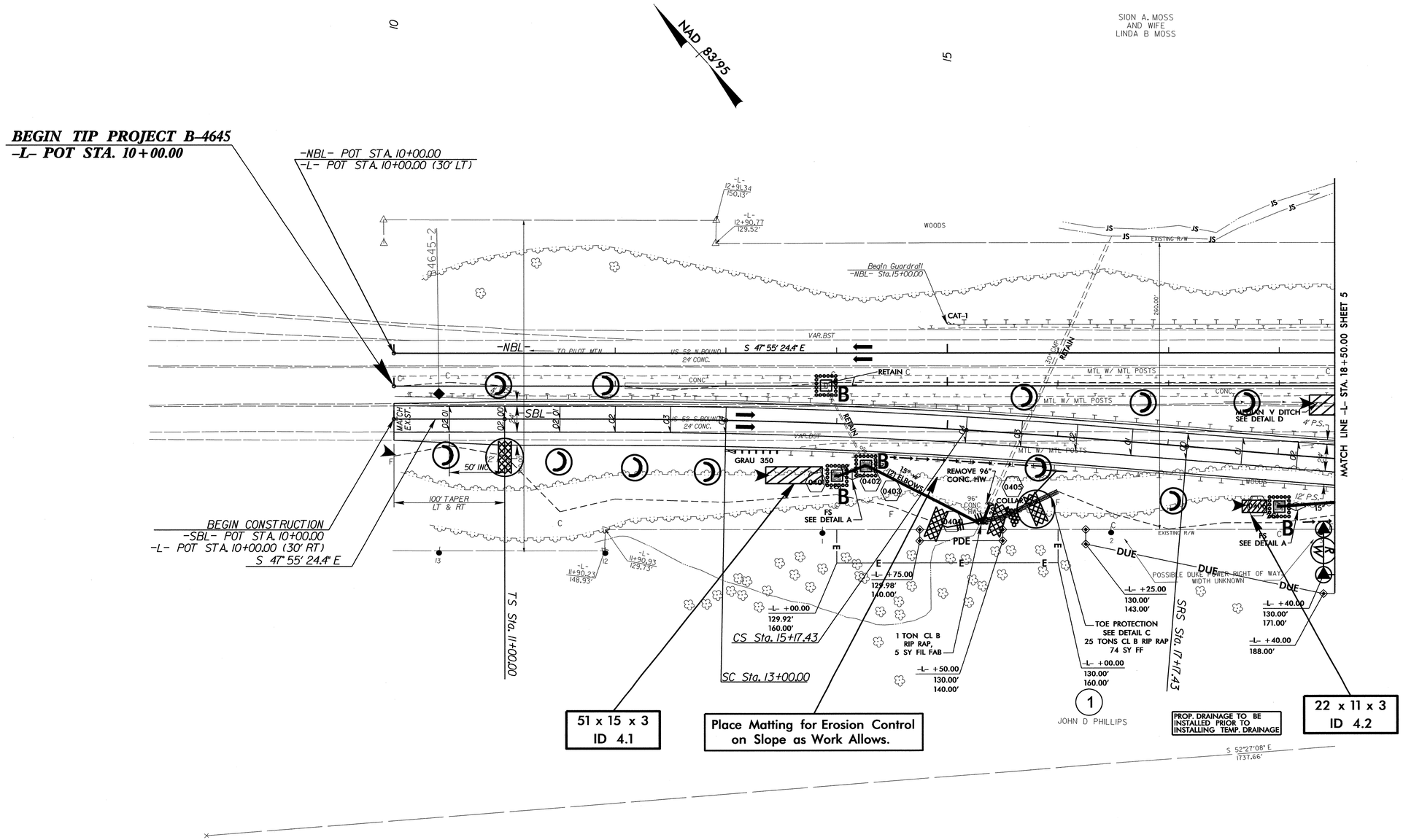
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'



FROM -L- STA. 15+36 TO STA. 16+00 RT.



FROM -L- STA. 17+50 TO STA. 18+50



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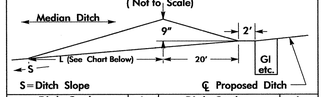
pring AT RENV256948

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4645	EC-12/CONST.05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

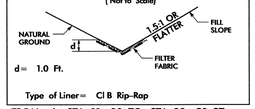
DETAIL B
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL C
TOE PROTECTION
(Not to Scale)

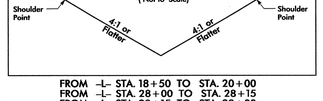


d= 1.0 Ft.

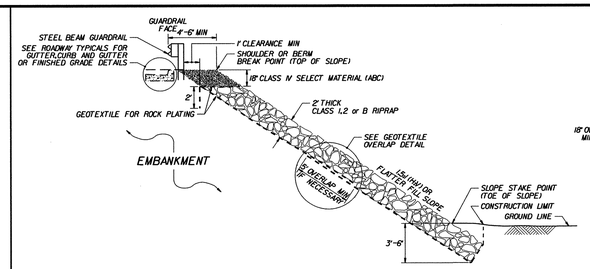
Type of Liner= Cl B Rip-Rap

FROM -L- STA. 21+30 TO STA. 23+50 RT.
FROM -L- STA. 29+00 TO STA. 30+00 LT.

DETAIL D
MEDIAN V DITCH
(Not to Scale)



FROM -L- STA. 18+50 TO STA. 20+00
FROM -L- STA. 28+00 TO STA. 28+15
FROM -L- STA. 28+15 TO STA. 29+00

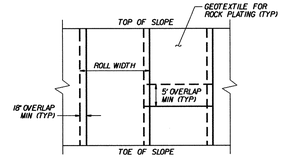


ROCK PLATING DETAIL NO. 2 – TYPICAL SECTION

USE ROCK PLATING DETAIL NO. 2 AT THE FOLLOWING LOCATIONS:

-L- STA 20+00 ± TO -L- STA 21+50 ±
EXTEND ROCK PLATING LIMITS TO 2:1 SLOPES.

ROCK PLATING DETAIL AND LOCATION WAS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING UNIT. THE RECOMMENDATIONS WERE SUBMITTED TO THE ROADWAY DESIGN UNIT ON MAY 4, 2012 AND SEALED BY A PROFESSIONAL ENGINEER, JOHN L. PILIPCHUK, LICENSE # 25521.



GEOTEXTILE OVERLAP DETAIL
(PLAN VIEW)

NAD 83/95

40 x 15 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
7 ft. weir
ID 5.5

SION A. MOSS
AND WIFE
LINDA B MOSS

BM #3
N=932075
E=1582898
ELEV=831.88

LITTLE YADKIN RIVER

BEGIN CONSTRUCTION
-NBL- POT STA. 19+00.00
-L- POT STA. 19+00.00 (30' LT)

BEGIN APPROACH SLAB
-NBL- STA. 23+31.00

BEGIN BRIDGE
-NBL- STA. 23+55.11

END BRIDGE
-NBL- STA. 26+25.11

END APPROACH SLAB
-NBL- STA. 26+49.22

Place Matting for Erosion Control on Slope as Work Allows.

MATCH LINE -L- STA. 18+50.00 SHEET 4

MATCH LINE -L- STA. 30+50.00 SHEET 6

WOODS

100' TAPER

50'

12' P.S.

MTL W/T WD POSTS

MTL W/ MTL POSTS

4' P.S.

REMOVE AFTER TEMP. DRAINAGE STAGE

REMOVE 17 LF EXIST. 15" CMP AFTER TEMP. DRAINAGE STAGE

FS – SEE DETAIL B

MEDIAN V DITCH SEE DETAIL D

REMOVE 21 LF EXIST. 15" CMP AFTER TEMP. DRAINAGE STAGE

FS SEE DETAIL B

REMOVE 22 LF EXIST. 15" CMP AFTER TEMP. DRAINAGE STAGE

MEDIAN V DITCH SEE DETAIL D

50' INC.

15" W (2) ELBOWS

JB wSlab Lid

REMOVE 96" CONC. HW

INV. IN =835.25

INV. OUT =835.71

RIP RAP BANK STABILIZATION SEE DETAIL G

1 TON CL B RIP RAP, 5 SY FIL FAB

SPECIAL CUT DITCH SEE DETAIL F 54 TONS CL B RIP RAP 160 SY FF

TOE PROTECTION SEE DETAIL C 95 TONS CL B RIP RAP

1 TON CL B RIP RAP 5 SY FF

POSSIBLE LAKE POWER RIGHT OF WAY WIDTH UNKNOWN

TS Sta. 27+51.58

END APPROACH SLAB
-SBL- STA. 27+02.18

BEGIN BRIDGE
-SBL- STA. 24+08.07
-L- STA. 24+08.07 (81' RT)

BEGIN APPROACH SLAB
-SBL- STA. 23+83.96

END BRIDGE
-SBL- STA. 26+78.07
-L- STA. 26+76.49 (81' RT)

BRICE F. MILTON
AND WIFE
DOROTHY T MILTON

D PHILLIPS

SC Sta. 19+17.43

CS Sta. 21+34.86

ST Sta. 23+34.86

Sta. 29+51.58

DUE

-L- +00.00
188.00'
208.00'

53 x 18 x 3
ID 5.2

48 x 21 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
13 ft. weir
ID 5.1

69 x 18 x 3
ID 5.3

Place Matting for Erosion Control on Slope as Work Allows.

49 x 24 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
16 ft. weir
ID 5.4

Place Matting for Erosion Control on Slope as Work Allows.

68 x 20 x 3
ID 5.7

45 x 14 x 3
ID 5.6

NOTE:
UTILIZE SPECIAL STILLING BASINS WHERE APPLICABLE.

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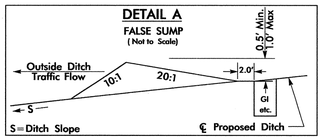
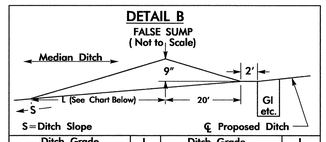
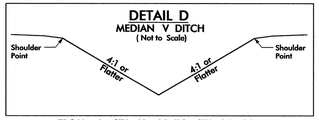
mmoore 11 REVISED

PROJECT REFERENCE NO.	SHEET NO.
B-4645	EC-13/CONST.06
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

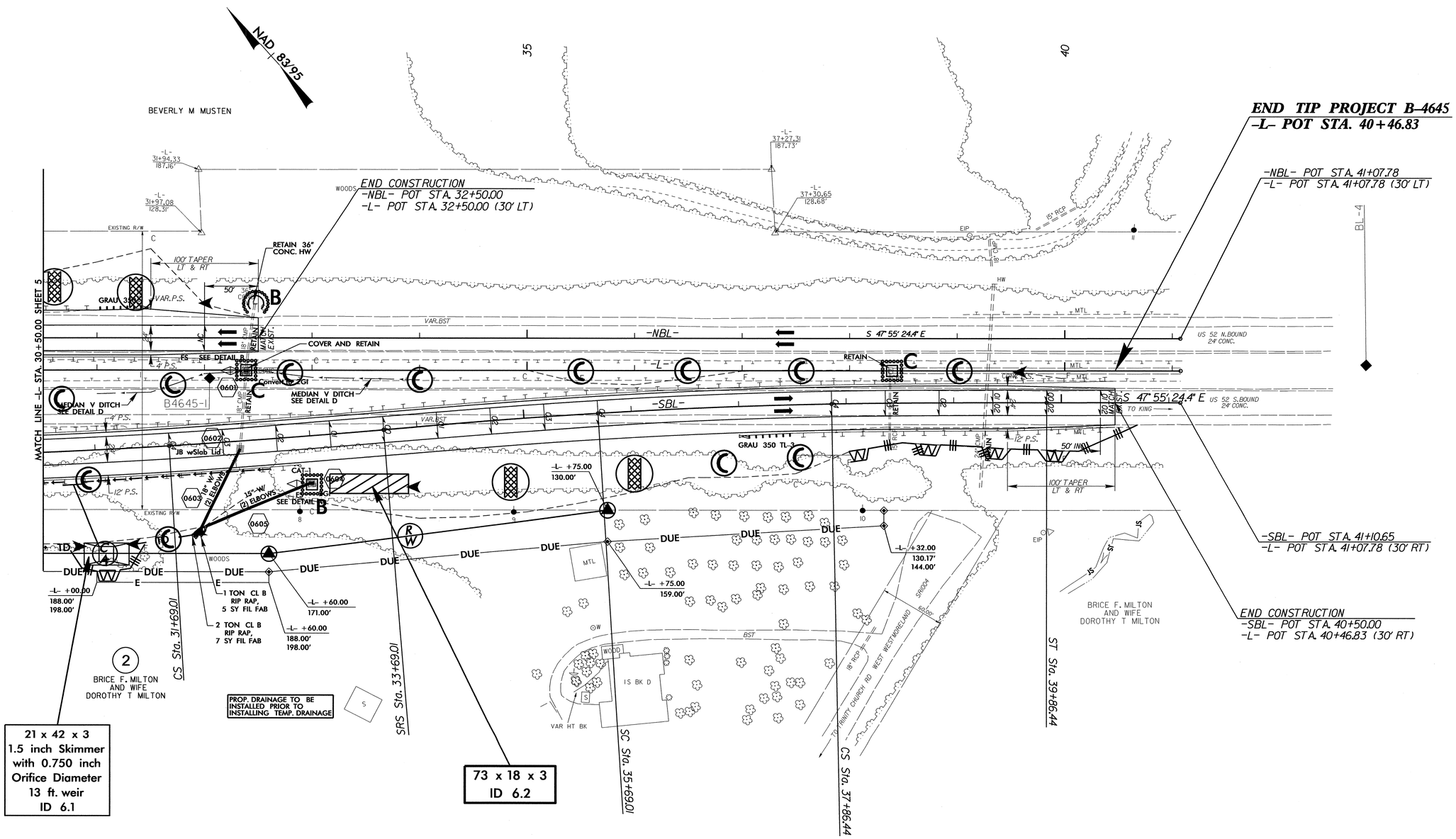




Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'



FROM -L- STA. 31+00 TO STA. 34+00



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T.I.P.: B-4645

CONTRACT:

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

TIP NO.	SHEET NO.
B-4645	SIGN-1

APPROVED: _____

DATE: 5-7-2013

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 20675 ENGINEER CHARLES A. JOHNSON III

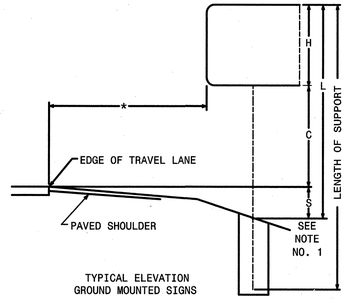
SIGNING PLAN
STOKES COUNTY

LOCATION: BRIDGES NO.29 & 30 OVER THE LITTLE YADKIN RIVER ON US-52

TYPE "A" & "B"
GROUND MOUNTED SIGN SUPPORTS

SIGN NO.	SIGN TYPE	SIGN SIZE (in.) w x h	ROADWAY STATION	NO. OF SUP.	BEAM SECTION	SUPPORT TYPE BA or S	ATTACH METHOD	MOUNTING METHOD	HORIZ CLR.* (ft.)	LENGTH (ft) SNS HT H	LENGTH (ft) MTG HT C	LENGTH (ft) EMBED-MENT	LEFT SUPPORT (ft) S	LEFT SUPPORT (ft) L	LEFT SUPPORT (ft) TOTAL LENGTH	CENTER SUPPORT (ft) S	CENTER SUPPORT (ft) L	CENTER SUPPORT (ft) TOTAL LENGTH	RIGHT SUPPORT (ft) S	RIGHT SUPPORT (ft) L	RIGHT SUPPORT (ft) TOTAL LENGTH	FOOTING DIAMETER (ft.)	FOOTING DEPTH (ft.)	B/A SUPPORT WEIGHTS (lbs.)	SIMPLE SUPPORT WEIGHTS (lbs.)	REINF. FTGS. (c.y.)	PLAIN FTGS. (c.y.)	FIELD VERIFIED (mm/dd/yy)
101A	A	132 X 78																										
101B	B	132 X 36	20+00 -L-	2	W6x16	BA	N/A	2	20.00	9.50	7.00	5	1.56	18.06	23.06	0.00	0.00	0.00	2.63	19.13	24.13	1.5	5.5	887.42	0.00	0.72	0.00	
----	----	---- - ----	-------	---	-----	----	------	------	----	----	----	----	---	---	-----	----	----	-----	---	---	-----	----	----	------	------	----	----	-------
																								TOTAL 887.42	TOTAL 0.00	TOTAL 0.72	TOTAL 0.00	
																								888	0	1	0	

USE:



TYPICAL ELEVATION
GROUND MOUNTED SIGNS

NOTES

1. DIMENSION "S" REPRESENTS AN INCREASE (+), OR A DECREASE (-) IN POLE LENGTH, RELATIVE TO THE ELEVATION OF THE EDGE OF TRAVEL WAY.
2. PLAN LOCATIONS FOR EXISTING UTILITIES ARE BASED ON THE BEST AVAILABLE INFORMATION AND MAY NOT BE PRECISELY ACCURATE. THEREFORE, IT IS INCUMBENT UPON THE CONTRACTOR TO DETERMINE THE EXACT LOCATION OF UTILITIES BEFORE BEGINNING WORK IN A LOCATION.
3. SIGN LOCATIONS ARE MARKED IN THE FIELD BY PAINT AND/OR STAKES. IF PRESENT, FIELD STAKES MARK APPROXIMATE LOCATIONS OF SUPPORTS. IT IS INCUMBENT UPON THE CONTRACTOR TO LOCATE SUPPORTS ACCORDING TO ROADWAY STANDARD DRAWING 904.1 AND ALL OTHER APPLICABLE STANDARDS.

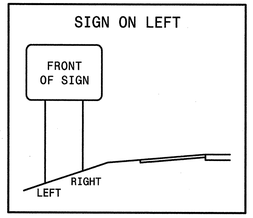
GENERAL NOTES

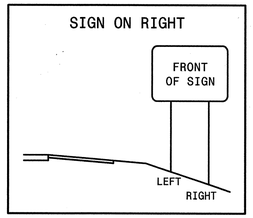
. SIGNS FURNISHED BY STATE

. ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.

. SIGNING PLANS DO NOT INCLUDE TEMPORARY CONSTRUCTION SIGNING, SEE TRAFFIC CONTROL PLANS. SEE PAVEMENT MARKING PLAN FOR PAVEMENT MARKING DESIGN.

. SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.





ROADWAY STANDARD DRAWING

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

STD. NO.	TITLE
901.10	TYPE 'A' SIGNS
901.20	TYPE 'B' SIGNS
901.80	SIGN MOUNTING DETAILS - FOR TYPE A AND TYPE B SIGNS
903.10	GROUND MOUNTED SIGN SUPPORTS (EXCEPT SHEET 2 OF 3 WHICH IS REPLACED WITH SHEET SIGN-2 IN PLANS)
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.30	SUPPLEMENTAL SIGN MOUNTING
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS

PAY ITEM NOTES

1	SIGN ERECTION, TYPE A (GROUND MOUNTED)
2	SIGN ERECTION, TYPE B (GROUND MOUNTED)
3	SIGN ERECTION, TYPE D
4	DISPOSAL OF SIGN SYSTEM, WOOD

STATE FURNISHED SIGNS ITEM DESCRIPTIONS	QUANTITY	UNIT
TYPE A SIGNS	71.5	S.F.
TYPE B SIGNS	33	S.F.
TYPE D SIGNS	22	S.F.

SUMMARY OF QUANTITIES

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT
4048000000	902	REINFORCED CONCRETE SIGN FOUNDATIONS	1	C.Y.
4060000000	903	SUPPORTS, BREAKAWAY STEEL BEAM	888	LB.
4072000000	903	SUPPORTS, 3-LB STEEL U-CHANNEL	73	L.F.
4110000000	904	SIGN ERECTION, TYPE A (GROUND MOUNTED)	1	EA.
4110000000	904	SIGN ERECTION, TYPE B (GROUND MOUNTED)	1	EA.
4096000000	904	SIGN ERECTION, TYPE D	2	EA.
4158000000	907	DISPOSAL OF SIGN SYSTEM, WOOD	1	EA.

INDEX

SHEET NO.	DESCRIPTION
SIGN-1	TITLE SHEET
SIGN-2	GROUND MOUNTED SIGN SUPPORTS
SIGN-3	PANEL DESIGNS
SIGN-4	PLAN SHEET

CONTACTS: N.C.D.O.T. SIGNING AND DELINEATION UNIT

SUSAN B. KUNZ — SIGNING & DELINEATION REGIONAL ENGINEER

STACEY W. JOHNS — SIGNING & DELINEATION PROJECT DESIGN ENGINEER

PLAN PREPARED BY :

HNTB

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

C.A. JOHNSON, III, PE — *SIGNING PROJECT ENGINEER*

A.D. KLINKSIEK, E.I. — *SIGNING DESIGN ENGINEER*

T.R. TERRELL — *SIGNING DESIGN TECHNICIAN*

TIP NO.	SHEET NO.
B-4645	SIGN-2

APPROVED:

DATE: 3/8/12

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022959 ENGINEER RONALD W KING

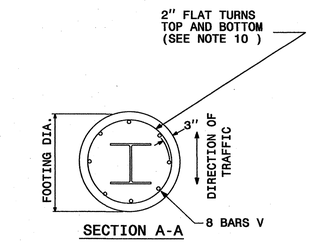
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-12

ENGLISH DETAIL DRAWING FOR

GROUND MOUNTED SIGN SUPPORTS

	SLIP BASE PLATE DATA								KEEPER PLATE DATA							HINGE CONNECTION DATA										BREAK AWAY SUPPORT WEIGHT CONSTANT LBS.
BEAM SHAPE	BOLT SIZE	A_1	B_1	C_1	D_1	E_1	T_1	R_1	A_2	B_2	C_2	D_2	E_2	R_2	T_2	BOLT SIZE	F	G	H	I	J	K	L	R_3	T_3	
S3X5.7	½"DIA.X 3"	7"	4"	1"	¾"	2½"	1"	9/32"	7"	4"	1"	¾"	2½"	9/32"	28 GAUGE	½"DIA.X1¼"	2¼"	3½"	4"	½"	1"	½"	2"	9/32"	3/8"	18
S4X7.7	½"DIA.X 3"	8"	4"	1"	¾"	2½"	1"	9/32"	8"	4"	1"	¾"	2½"	9/32"	28 GAUGE	½"DIA.X1¼"	2 5/8"	3½"	4"	½"	1"	½"	2"	9/32"	3/8"	20
W6X9	½"DIA.X 3"	10"	5"	1"	¾"	3½"	1"	9/32"	10"	5"	1"	¾"	3½"	9/32"	28 GAUGE	½"DIA.X1¼"	4"	3½"	4"	¾"	1"	½"	2"	9/32"	3/8"	32
W6X12	5/8"DIA.X3¾"	11"	5"	1¼"	7/8"	3¼"	1¼"	11/32"	11"	5"	1¼"	7/8"	3¼"	11/32"	28 GAUGE	5/8"DIA.X2¼"	4"	4"	4½"	¾"	1⅛"	5/8"	2¼"	11/32"	3/8"	39
W6X16	5/8"DIA.X3¾"	12"	6"	1¼"	7/8"	4¼"	1½"	11/32"	12"	6"	1¼"	7/8"	4¼"	11/32"	28 GAUGE	5/8"DIA.X2½"	4"	4"	4½"	¾"	1⅛"	5/8"	2¼"	11/32"	½"	47
W8X18	5/8"DIA.X 4¼"	13½"	6½"	1¼"	7/8"	4¾"	1½"	11/32"	13½"	6½"	1¼"	7/8"	4¾"	11/32"	28 GAUGE	5/8"DIA.X2½"	5¼"	4"	4½"	1"	1⅛"	5/8"	2¼"	11/32"	½"	70
W8X21	¾"DIA.X 4¼"	14"	7"	1½"	1"	5"	1½"	13/32"	14"	7"	1½"	1"	5"	13/32"	28 GAUGE	¾"DIA.X2¾"	5¼"	6"	7"	1"	1¾"	¾"	3½"	13/32"	½"	73
W10X22	¾"DIA.X 4¼"	16"	8"	1½"	1"	6"	1½"	13/32"	16"	8"	1½"	1"	6"	13/32"	28 GAUGE	¾"DIA.X2¾"	5¾"	6"	7"	1"	1¾"	¾"	3½"	13/32"	½"	119
W10X26	¾"DIA.X4¾"	16½"	8"	1½"	1"	6"	1¾"	13/32"	16½"	8"	1½"	1"	6"	13/32"	28 GAUGE	¾"DIA.X2¾"	5¾"	6"	7"	1"	1¾"	¾"	3½"	13/32"	5/8"	140
W12X26	¾"DIA.X4¾"	18½"	9"	1½"	1"	7"	1¾"	13/32"	18½"	9"	1½"	1"	7"	13/32"	28 GAUGE	¾"DIA.X2¾"	6½"	6"	7"	1"	1¾"	¾"	3½"	13/32"	5/8"	176
W14X30	1"DIA.X 5"	22"	9"	2"	1½"	6"	2"	17/32"	22"	9"	2"	1½"	6"	17/32"	28 GAUGE	1"DIA.X3"	6¾"	7"	8"	1¼"	2"	1"	4"	17/32"	5/8"	205
W16X31	1"DIA.X 5"	24"	9"	2"	1½"	6"	2"	17/32"	24"	9"	2"	1½"	6"	17/32"	28 GAUGE	1"DIA.X3¼"	5½"	7"	8"	1¼"	2"	1"	4"	17/32"	¾"	223
W18X35	1"DIA.X 5"	25"	9"	2"	1½"	6"	2"	17/32"	25"	9"	2"	1½"	6"	17/32"	28 GAUGE	1"DIA.X3¼"	6"	7"	8"	1¼"	2"	1"	4"	17/32"	¾"	243
W18X40	1"DIA.X5½"	26"	9"	2"	1½"	6"	2¼"	17/32"	26"	9"	2"	1½"	6"	17/32"	28 GAUGE	1"DIA.X3¾"	6"	7"	8"	1¼"	2"	1"	4"	17/32"	7/8"	278
W21X44	1"DIA.X5½"	29"	9"	2"	1½"	6"	2½"	17/32"	29"	9"	2"	1½"	6"	17/32"	28 GAUGE	1"DIA.X3¾"	6½"	7"	8"	1¼"	2"	1"	4"	17/32"	7/8"	310



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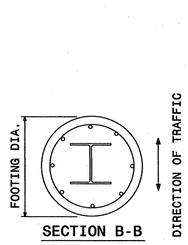

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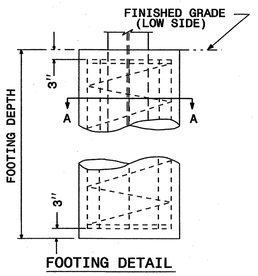
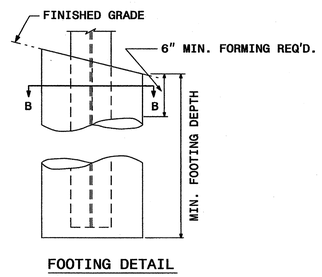


FOOTING DETAIL



FOOTING DETAIL

FOUNDATION DATA *		
FOOTING DIAMETER	REINFORCEMENT	SPIRAL BAR
1' 6"	8 # 6 BARS	#3 BAR, 6" PITCH
2'	8 # 7 BARS	#3 BAR, 6" PITCH
2' 6"	8 # 9 BARS	#3 BAR, 6" PITCH
3'	8 # 11 BARS	#3 BAR, 6" PITCH
3' 6"	8 # 12 BARS	#3 BAR, 6" PITCH
4'	8 # 14 BARS	#3 BAR, 6" PITCH

* FOUNDATION DIMENSIONS ARE SHOWN IN PLANS

SHEET 2 OF 3

903D10

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

1-12

ENGLISH DETAIL DRAWING FOR

GROUND MOUNTED SIGN SUPPORTS

SHEET 2 OF 3

903D10

REVISED SIGNING
ROADWAY STANDARD DRAWING

08-MAR-2012 14:10
S:\S&BU\Standards Group\PMP\2012 Standard Drawings\Standard Dwgs 8-17-11\Revised\0903J0_sgn_sht02_gm support_Revised_Sealed.dgn
dstokes
AT TE244745

TIP NO.	SHEET NO.
B-4645	SIGN-3

APPROVED:

DATE: 5-7-2013

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 20675 ENGINEER CHARLES A. JOHNSON III

SIGN NUMBER: 101A
TYPE: A
QUANTITY: 1

SIGN WIDTH: 11′-0″
HEIGHT: 6′-6″
TOTAL AREA: 71.5 Sq.Ft.

BORDER TYPE: FLUSH
RECESS: 0″
WIDTH: 1.5″
RADII: 6″

NO. Z BARS: 2
LENGTH: 124.0

BACKG COLOR: Blue
COPY COLOR: White

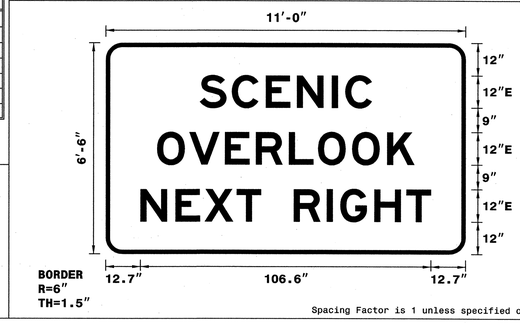
SYMBOL	X	Y	WID	HT

MAT'L: 0.125″ ALUMINUM

NOTES:

1. Legend and border shall be direct applied Grade C reflective sheeting.
2. Background shall be Grade C reflective sheeting.

DESIGN BY: TRT
PROJECT ID: B-4645
CHECKED BY: ADK/CAJ
DIV: 09
DATE: May 2013



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

																														Series/Size Text Length
		S	C	E	N	I	C																							E 2000
	34.4	11.8	12.5	11.4	12.8	4.9	9.7	34.4																						63.1
		O	V	E	R	L	O	O	K																					E 2000
	18.8	11.8	13.1	11.4	12.1	10.7	12.5	12.8	10	18.8																				94.3
		N	E	X	T		R	I	G	H	T																			E 2000
	12.7	12.8	10.7	11.8	9	12	12.1	4.9	12.5	11.8	9	12.7																		106.6

SIGN NUMBER: 101B
TYPE: B
QUANTITY: 1

SIGN WIDTH: 11′-0″
HEIGHT: 3′-0″
TOTAL AREA: 33.0 Sq.Ft.

BORDER TYPE: RECESSED
RECESS: 0.5″
WIDTH: 0.75″
RADII: 1.88″

NO. Z BARS: 2
LENGTH: 124.0

BACKG COLOR: White
COPY COLOR: Black

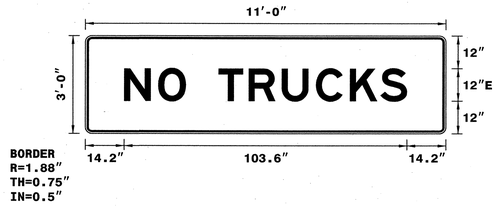
SYMBOL	X	Y	WID	HT

MAT'L: 0.125″ ALUMINUM

NOTES:

1. Legend and border shall be direct applied Grade C reflective sheeting.
2. Legend and border shall be direct applied non-reflective sheeting.
3. Use Mounting Method II.

DESIGN BY: TRT
PROJECT ID: B-4645
CHECKED BY: ADK/CAJ
DIV: 09
DATE: May 2013



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

																														Series/Size Text Length
		N	O		T	R	U	C	K	S																				E 2000
	14.2	12.5	10.1	12	11	12.1	12.5	12.5	11.2	9.7	14.2																			103.6

SIGN NUMBER: 301,302
TYPE: D
QUANTITY: 2

SIGN WIDTH: 6′-6″
HEIGHT: 2′-0″
TOTAL AREA: 13.0 Sq.Ft.

BORDER TYPE: FLUSH
RECESS: 0″
WIDTH: 1″
RADII: 1.5″

NO. Z BARS:
LENGTH:

BACKG COLOR: Green
COPY COLOR: White

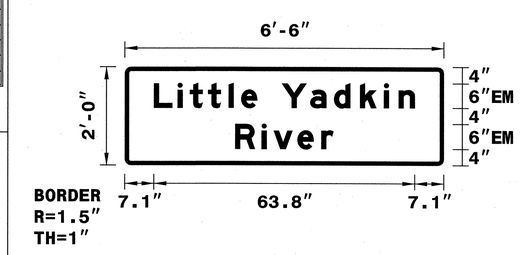
SYMBOL	X	Y	WID	HT

MAT'L: 0.125″ ALUMINUM

NOTES:

1. Legend and border shall be direct applied Grade C reflective sheeting.
2. Background shall be Grade C reflective sheeting.

DESIGN BY: TRT
PROJECT ID: B-4645
CHECKED BY: ADK/CAJ
DIV: 09
DATE: May 2013



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

																														Series/Size Text Length
		L	i	t	t	l	e		Y	a	d	k	i	n																EM 2000
	7.1	5.8	3	4.4	5	3.1	4	6	7	5.8	6.4	5.8	3.6	4	7.1															63.8
		R	i	v	e	r																								EM 2000
	27	6.5	2.9	5.8	5.8	3	27																							24.1

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

SIGN DESIGNS

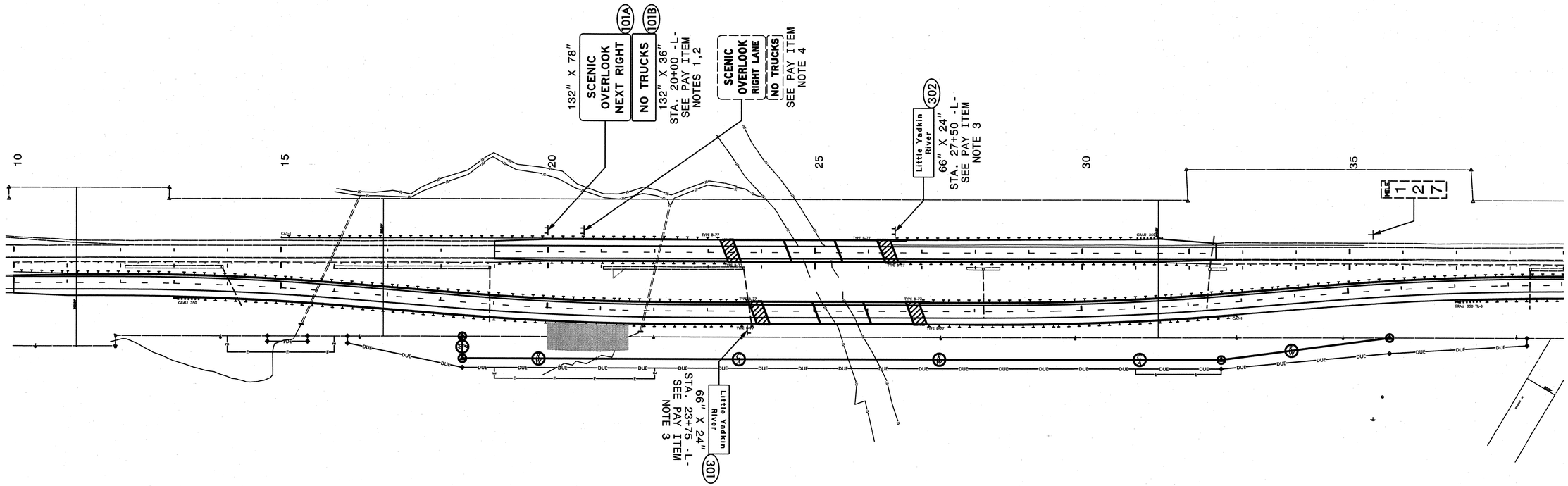
TIP NO.	SHEET NO.
B-4645	SIGN-4

APPROVED:

DATE: 5-7-2013

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 20675 ENGINEER CHARLES A. JOHNSON III

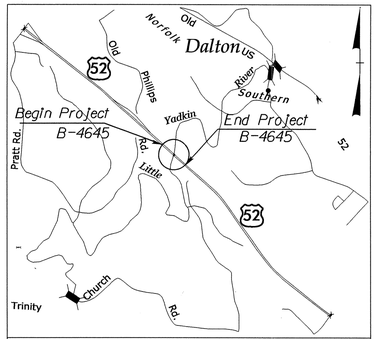


HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

EXISTING AND PROPOSED SIGNS
STA. 10+00 TO 39+00 -L-

09/08/99

TIP PROJECT: B-4645



VICINITY MAP SHOWING LOCATION OF PROJECT B-4645

T.I.P. NO.	SHEET NO.
B-4645	UO-1

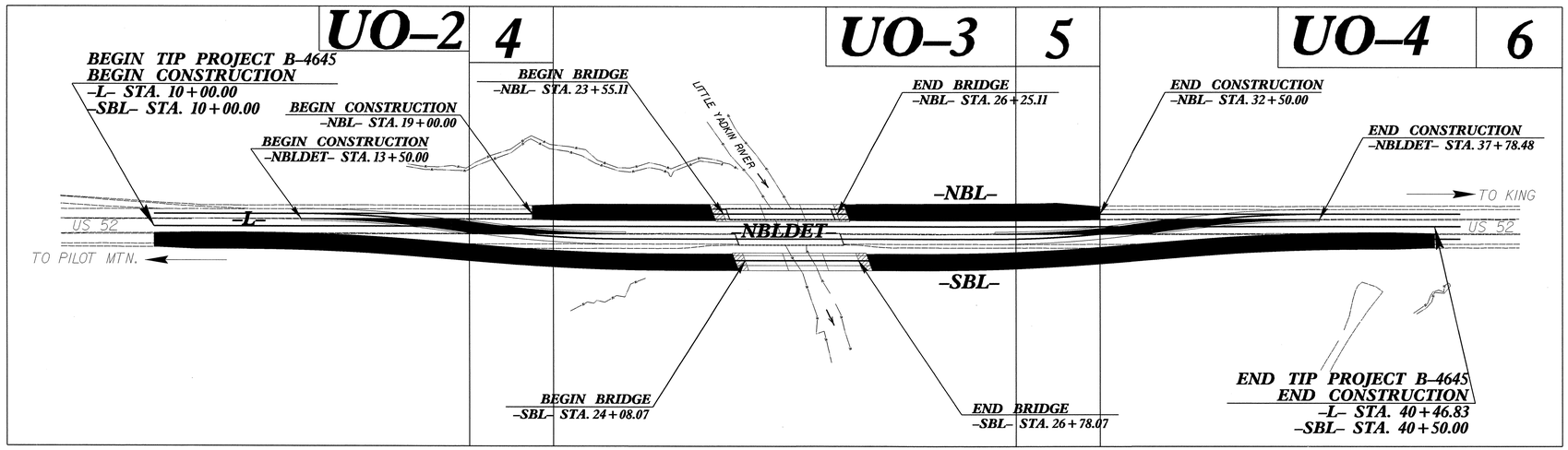
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS
STOKES COUNTY

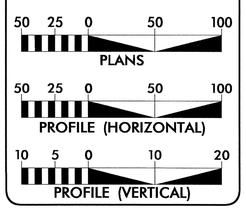
LOCATION: BRIDGES NO. 29 & 30
OVER THE LITTLE YADKIN RIVER ON US 52

TYPE OF WORK: UTILITIES BY OTHERS

NAD 83/95



GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.	*DESCRIPTION*
UO-1	*TITLE SHEET*
UO-2 THRU UO-4	*UTILITY BY OTHERS PLAN SHEETS*

UTILITY OWNERS ON PROJECT

(A) DUKE ENERGY - POWER (DISTRIBUTION)

PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING
1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E.	*UTILITIES SECTION ENGINEER*
Steve McKee, P.E.	*UTILITIES SQUAD LEADER PROJECT ENGINEER*
John Nigro, P.E.	*UTILITIES PROJECT DESIGNER*

20-DEC-2012 09:33
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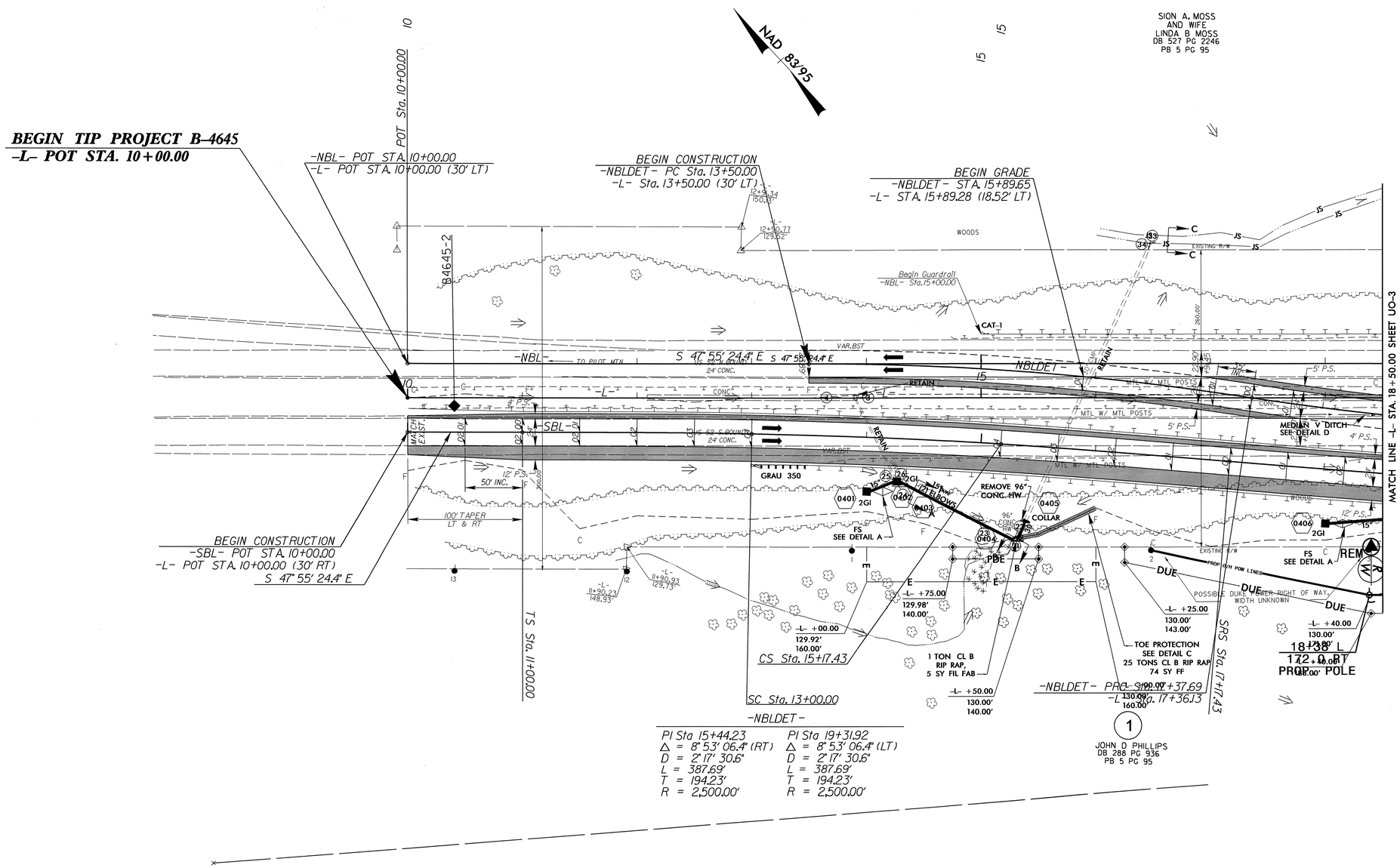
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-4645	UO-2

UTILITIES BY OTHERS

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



-NBLDET-

PI Sta 15+44.23	PI Sta 19+31.92
Δ = 8° 53' 06.4" (RT)	Δ = 8° 53' 06.4" (LT)
D = 2° 17' 30.6"	D = 2° 17' 30.6"
L = 387.69'	L = 387.69'
T = 194.23'	T = 194.23'
R = 2,500.00'	R = 2,500.00'

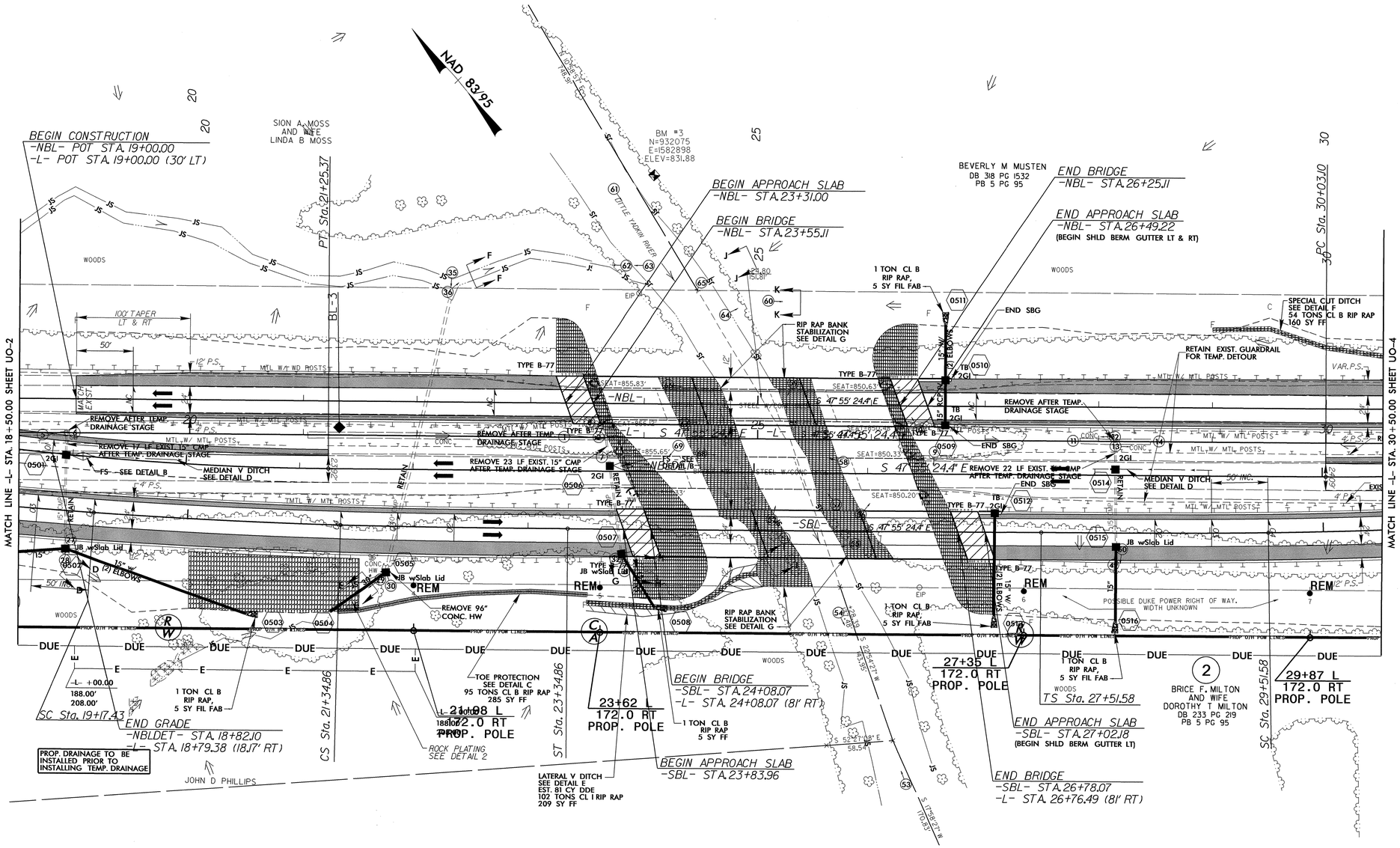
5/14/99

20-DEC-2012 07:55

PROJECT REFERENCE NO.	SHEET NO.
B-4645	U0-3

UTILITIES BY OTHERS

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



5/14/99

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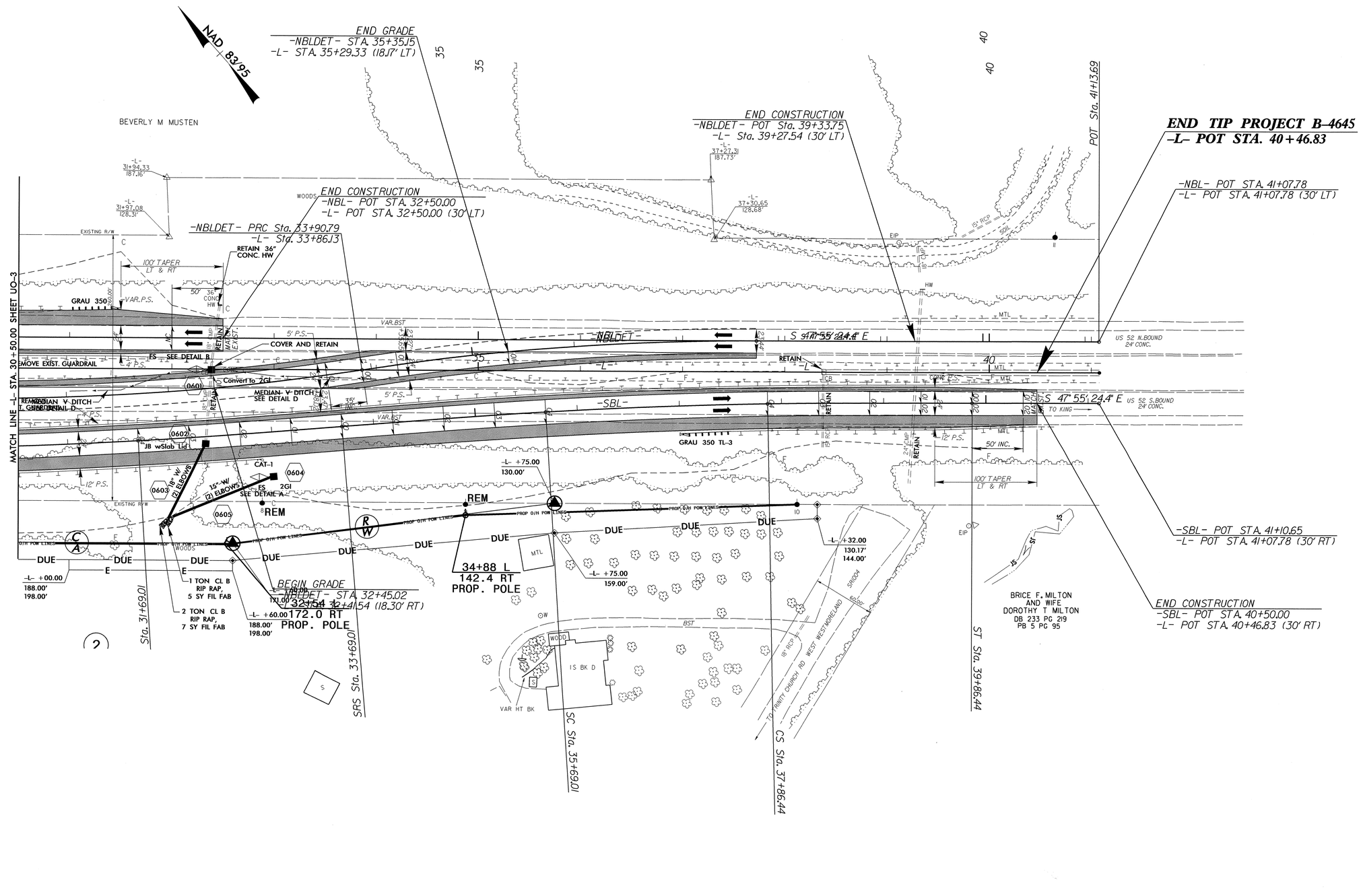
PROJECT REFERENCE NO.	SHEET NO.
B-4645	U0-4

UTILITIES BY OTHERS

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



5/14/99

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