STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5146	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
42307.1.1	BRZ-1562(2)	P.E.
42307.2.1	BRZ-1562(2)	ROW/UTIL.
42307.3.FD1	BRZ-1562(2)	CONST.

TIP PROJECT: B-5146

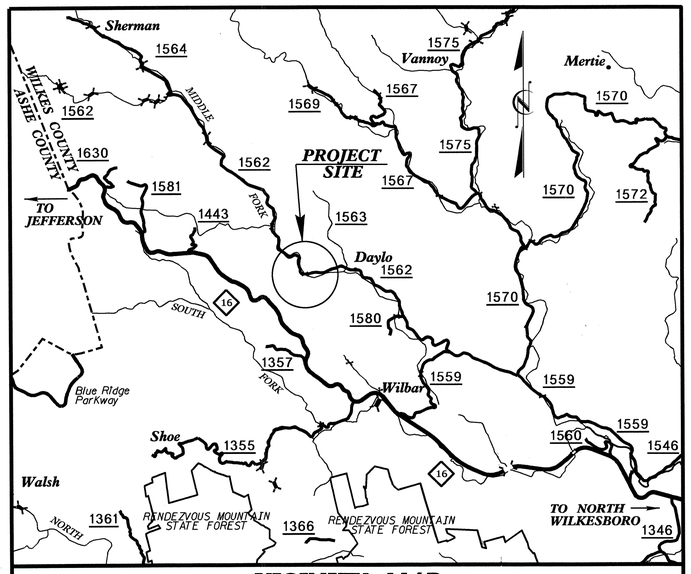
CONTRACT: C203303

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

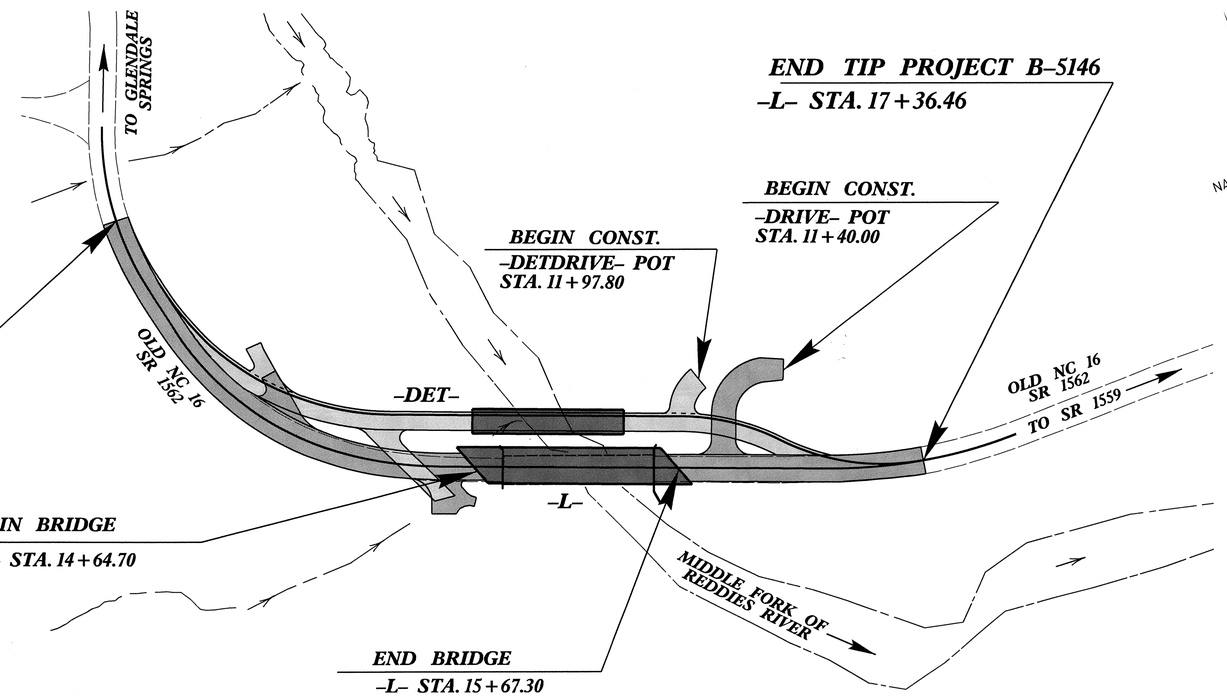
WILKES COUNTY

LOCATION: BRIDGE 302 OVER MIDDLE FORK OF REDDIES RIVER ON SR 1562 (OLD NC 16)

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



VICINITY MAP



BEGIN TIP PROJECT B-5146
-L- STA. 11+29.50

BEGIN CONST.
-DETDRIVE- POT
STA. 11+97.80

BEGIN CONST.
-DRIVE- POT
STA. 11+40.00

END TIP PROJECT B-5146
-L- STA. 17+36.46

BEGIN BRIDGE
-L- STA. 14+64.70

END BRIDGE
-L- STA. 15+67.30

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2013	=	165 VPD
ADT 2039	=	250 VPD
K	=	10 %
D	=	60 %
* T	=	3 %
V	=	40 MPH
*(TTST 1%	+	DUAL 2%)
FUNC. CLASS.	=	RURAL LOCAL

SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5146	=	0.096	MILE
LENGTH STRUCTURE TIP PROJECT B-5146	=	0.019	MILE
TOTAL LENGTH TIP PROJECT B-5146	=	0.115	MILE

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JANUARY 18, 2013

LETTING DATE:
JANUARY 21, 2014

JASON MOORE, PE
PROJECT ENGINEER

BRYAN KEY, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SIGNATURE: NORTH CAROLINA PROFESSIONAL SEAL 34364 ENGINEER TRENTON J. CORNIER P.E. 10/23/13

ROADWAY DESIGN ENGINEER
SIGNATURE: NORTH CAROLINA PROFESSIONAL SEAL 26964 ENGINEER BRYAN C. KEY P.E. 10-23-13

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

09/08/99

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RD261646 10/22/2013 tsh_01 bckey RD-Oce860-34

PROJECT REFERENCE NO.	SHEET NO.
B-5146	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26964 ENGINEER BRYAN C. KEY

10-23-13

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C THRU 1-D	SURVEY CONTROL SHEETS
2 THRU 2-A	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-B	DETOUR PLAN SHEET
2-C	HYDRAULICS DETAILS, DETOUR AND DRIVE DETAILS, AND CURVE DATA
2-D	STRUCTURE ANCHOR UNITS GRAU - TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE DETAIL, AND GRAU - TYPE III DETAIL
2-E	STANDARD TEMPORARY SHORING DETAIL
~~3~~	~~SUMMARY OF QUANTITIES SHEET~~
3-A	SUMMARY OF DRAINAGE QUANTITIES, SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-6	TRANSPORTATION MANAGEMENT PLANS
PMP-1	PAVEMENT MARKING PLAN
EC-1 THRU EC-7	EROSION CONTROL PLANS
REF-1	REFORESTATION DETAIL SHEET
SIG-1 THRU SIG-4	TEMPORARY SIGNAL PLANS
UO-1 THRU UO-2B	UTILITIES PLANS
X-0	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-17	CROSS-SECTIONS

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

2012 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.11	Reinforced Bridge Approach Fills - Sub Regional Tier
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
840.17	Concrete Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.26	Brick Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.29	Frames and Narrow Slot Flat Grates
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
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
876.02	Guide for Rip Rap at Pipe Outlets

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 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

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

UNDERDRAINS:

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

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".

SUBSURFACE PLANS:

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

END BENTS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

Blue Ridge Electric Membership Cooperative (BREMC) (Power Distribution)

Wilkes Telecom (Telecommunications)

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

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

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PROJECT REFERENCE NO.	SHEET NO.
B-5146	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
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

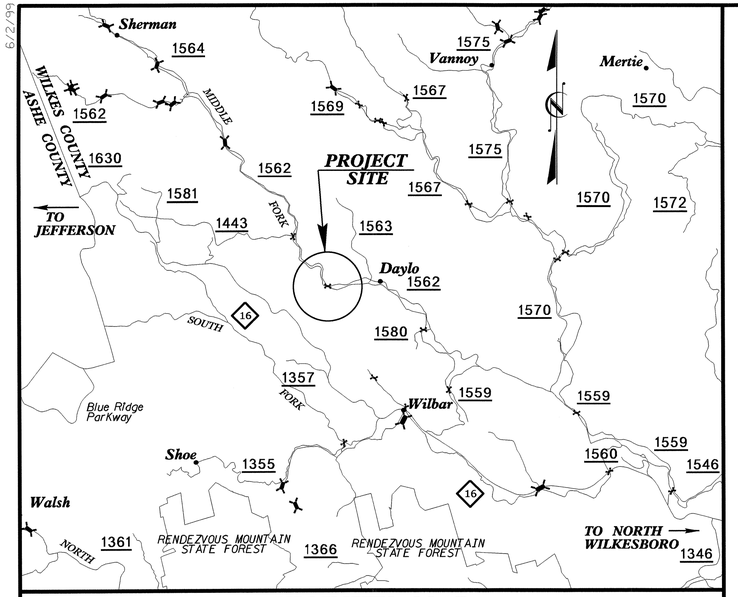
PROJECT REFERENCE NO.	SHEET NO.
B-5146	1-C
Location and Surveys	

SURVEY CONTROL SHEET B-5146

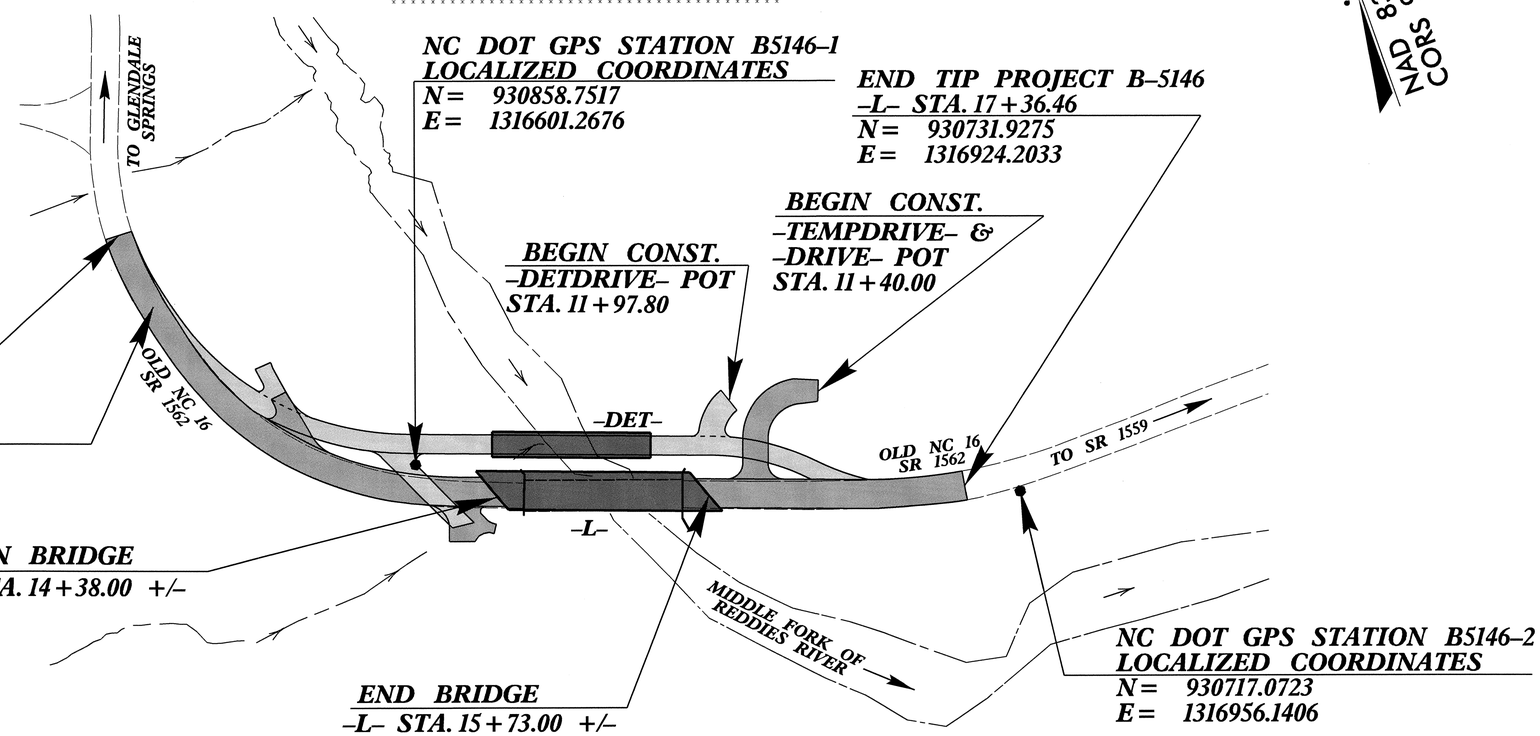
BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
BL3	BL-3	931171.3801	1316522.5997	1412.19	10+03.24	17.49 LT
BL4	BL-4	931042.7058	1316459.4562	1407.45	11+42.69	13.28 RT
B51461	GPS B5146-1	930858.7517	1316601.2676	1396.49	13+87.49	15.21 LT
B51462	GPS B5146-2	930717.0723	1316956.1406	1391.84	17+69.25	11.40 RT
BL5	BL-5	930702.6653	1317285.5628	1385.68	OUTSIDE PROJECT LIMITS	

****
BM1 ELEVATION = 1389.44'
N 930924. E 1316702.
L STATION 14+62.00 112' LEFT
8" SPIKE IN 8" BEECH TREE
****



VICINITY MAP



NAD 83/96
CORS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B5146-1"
WITH NAD 83/CORS 96 STATE PLANE GRID COORDINATES OF
NORTHING: 930858.7517(ft) EASTING: 1316601.2676(ft)
ELEVATION: 1396.49(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999738207
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5146-1" TO -L- 11+79.50 IS
N 39°45'41" W 192.79
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES:

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

THE FILES TO BE FOUND ARE AS FOLLOWS:
B5146_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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SURVEY CONTROL SHEET B-5146

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	931180.4935	1316507.3288
PC	10+66.04	931118.5656	1316484.3971
PT	11+79.50	931006.9524	1316477.9608
PC	12+11.41	930975.9507	1316485.5288
PCC	13+44.62	930867.3612	1316557.9475
PT	14+15.86	930834.0453	1316620.6335
PC	16+72.96	930747.5477	1316862.7525
PT	18+00.13	930728.0989	1316987.6662
POT	19+19.20	930732.1710	1317106.6664

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+79.50	30.00	930999.8378	1316448.8166
L	11+79.50	-30.00	931014.0670	1316507.1049
L	12+11.41	30.00	930968.8361	1316456.3846
L	12+11.41	-30.00	930983.0653	1316514.6730
L	13+44.62	30.00	930843.1895	1316540.1789
L	13+44.62	-30.00	930891.5330	1316575.7162
L	14+15.86	31.81	930804.0872	1316609.9309
L	14+16.59	-28.19	930860.3414	1316630.8114
L	16+72.74	-29.99	930775.8648	1316872.6307
L	16+73.17	30.01	930719.2129	1316852.8680

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+85.00	30.87	930818.6937	1316578.3535
L	13+85.00	50.00	930801.6261	1316569.7039
L	14+15.86	50.00	930786.9598	1316603.8121

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B5146-1"
WITH NAD 83/CORS 96 STATE PLANE GRID COORDINATES OF
NORTHING: 930858.7517(ft) EASTING: 1316601.2676(ft)
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THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5146-1" TO -L- 11+79.50 IS
N 39°45'41" W 192.79
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

FINAL TABLES

NOTES:

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

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   B5146_LS_CONTROL.TXT

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

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

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PROJECT REFERENCE NO.	SHEET NO.
B-5146	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

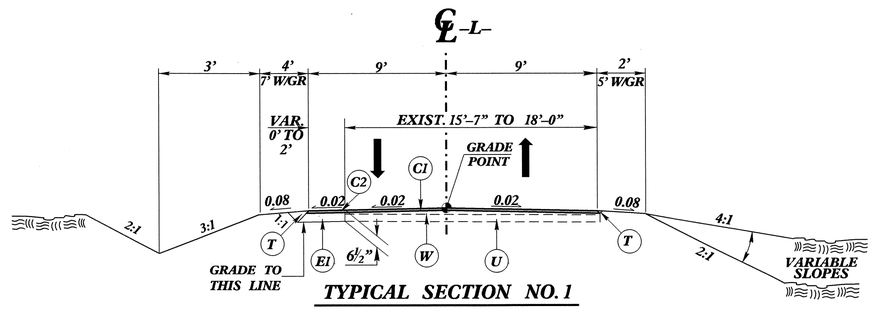
NORTH CAROLINA PROFESSIONAL SEAL 26996 ENGINEER BRIAN C. KEY 10-23-13

NORTH CAROLINA PROFESSIONAL SEAL 034819 ENGINEER JAMES E. HAYWARD OCTOBER 22nd 2013

FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.	J2	PROP. 8" AGGREGATE BASE COURSE.
C2	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	T	EARTH MATERIAL.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1 1/2" IN DEPTH.	P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YARD.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R	EXPRESSWAY GUTTER.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAT 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.	U	EXISTING PAVEMENT.
J1	PROP. 6" AGGREGATE BASE COURSE.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING).

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



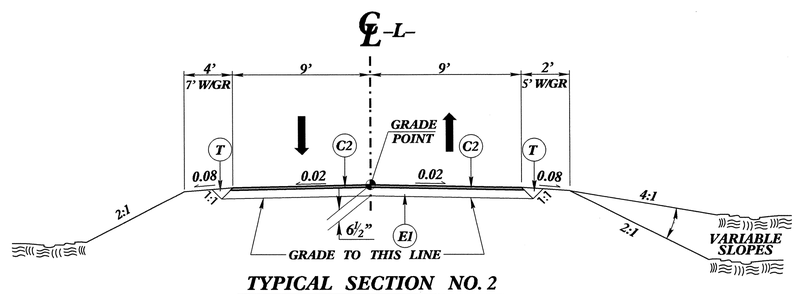
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:

-L- STA. 13+25.00 TO STA. 14+00.00
-L- STA. 16+00.00 TO STA. 17+00.00

NOTE: OVERLAY EXISTING PAVEMENT WITH 1 1/4" OF SF9.5A AT -L- STA. 11+29.50 TO STA. 13+25.00
-L- STA. 17+00.00 TO STA. 17+36.46

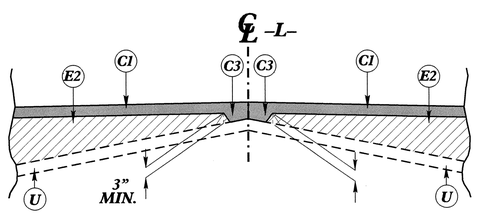
NOTE: USE 2' SHOULDERS FROM
-L- STA. 16+50.00 LT. TO STA. 17+00.00 LT.



TYPICAL SECTION NO. 2

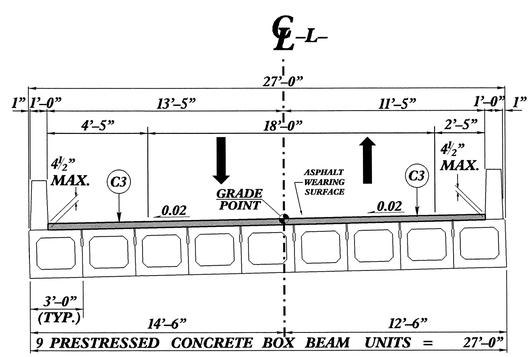
USE TYPICAL SECTION NO. 2 AT THE FOLLOWING LOCATIONS:

-L- STA. 14+00.00 TO STA. 14+64.70 (BEGIN BRIDGE)
-L- STA. 15+67.30 (END BRIDGE) TO STA. 16+00.00



DETAIL SHOWING METHOD OF WEDGING

USE IN CONJUNCTION WITH TYPICAL SECTION NO. 1



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AT THE FOLLOWING LOCATION:

-L- STA. 14+64.70 (BEGIN BRIDGE) TO
-L- STA. 15+67.30 (END BRIDGE)

17-OCT-2013 14:28
R:\Roadway\Proj\B-5146_rdy_typ02.dgn
$$$$USERNAME$$$$

RD266217 10/17/2013 typ_02 jrhatfield RD-Oce860-34

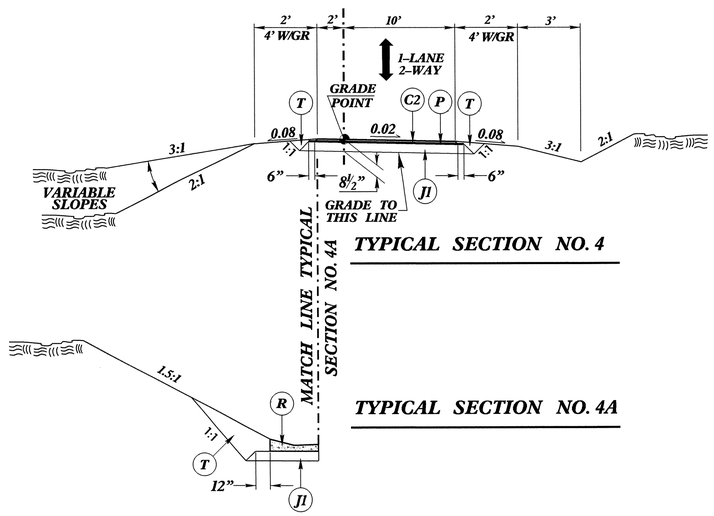
PROJECT REFERENCE NO.	SHEET NO.
B-5146	2-A

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 26964 ENGINEER
RYAN C. KEY
10-23-13

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 036819 ENGINEER
JOHN D. SHEFFARD
OCTOBER 22, 2013

C2	2 1/2" SF9.5A
J1	6" AGGREGATE BASE COURSE
J2	8" AGGREGATE BASE COURSE
P	PRIME COAT
R	EXPRESSWAY GUTTER
T	EARTH MATERIAL

℄ -DET-



TYPICAL SECTION NO. 4

TYPICAL SECTION NO. 4A

USE TYPICAL SECTION NO. 4 AT THE FOLLOWING LOCATIONS:

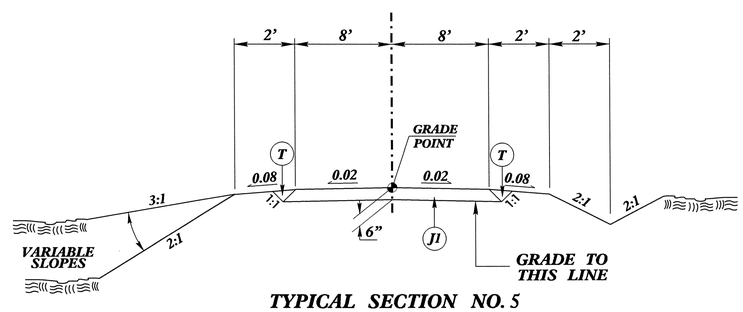
-DET- STA. 10+00.00 TO STA. 12+37.00 +/- (BEGIN BRIDGE)
-DET- STA. 13+37.00 +/- (END BRIDGE) TO STA. 14+72.93

NOTE:
FOR NARROW WIDENING ON THE DETOUR
4" OF B25.0B MAY BE USED IN LIEU OF ABC.

USE TYPICAL SECTION NO. 4A IN CONJUNCTION WITH TYPICAL SECTION NO. 4 AT THE FOLLOWING LOCATION:

-DET- STA. 14+13.00 LT. TO STA. 14+65.00 LT.

℄ -DETDRIVE-

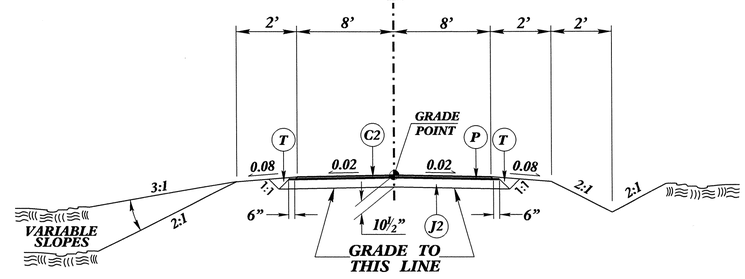


TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5 AT THE FOLLOWING LOCATIONS:

-DETDRIVE- STA. 11+97.80 TO STA. 12+24.29

℄ -DRIVE-



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6 AT THE FOLLOWING LOCATION:

-DRIVE- STA. 11+40.00 TO STA. 12+22.84

6/2/99

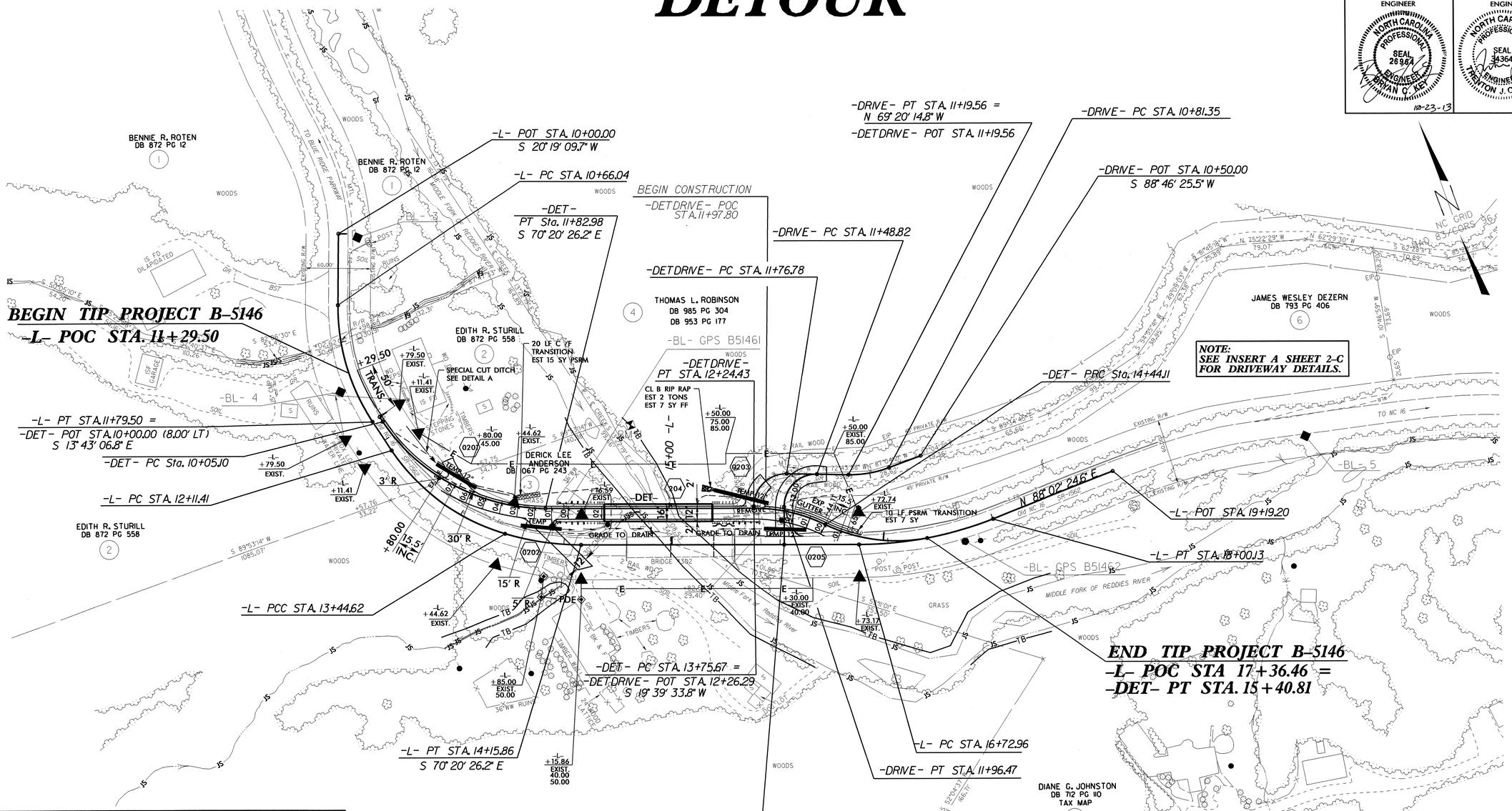
24-SEP-2013 11:30
R:\Roadway\Proj\B-5146_rdy_typ02a.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-5146	2-B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

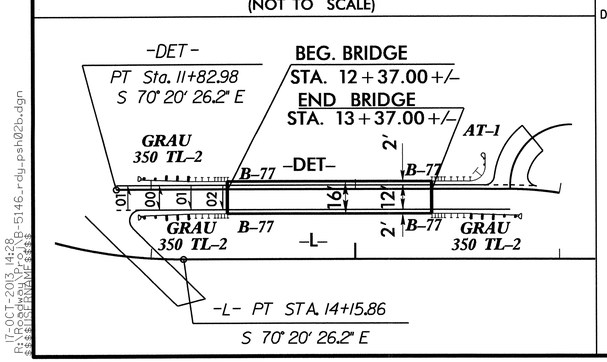
NORTH CAROLINA PROFESSIONAL SEAL 26964 ENGINEER BRYAN Q. KE 10-23-13

NORTH CAROLINA PROFESSIONAL SEAL 34364 ENGINEER TREMTON J. CORNNER 10/23/13

DETOUR



SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP
(NOT TO SCALE)



1.) FOR -L- PLAN VIEW SEE SHEET 4.
2.) FOR -DET- AND -DETDRIVE- PROFILES SEE SHEET 5.
3.) ALL DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE ON PLANS.
4.) SEE SHEET 2-C FOR CURVE DATA AND DETAILS.
5.) SEE TRANSPORTATION MANAGEMENT PLANS FOR SHORING LOCATIONS.

17-OCT-2013 14:28
R:\Roadway\Proj\B-5146_rdy_psh02b.dgn
$$$$USERNAME$$$$

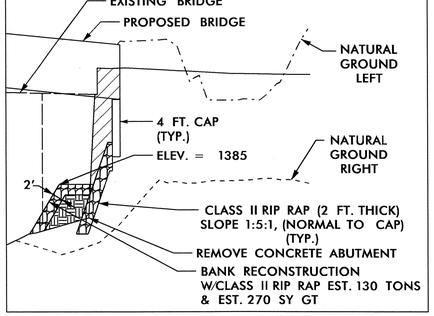
PROJECT REFERENCE NO.	SHEET NO.
B-5146	2-C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26964 ENGINEER BRYAN C. KEY 10-23-13

NORTH CAROLINA PROFESSIONAL SEAL 34864 ENGINEER TRENTON J. CORMIER 10/24/13

DETAIL D

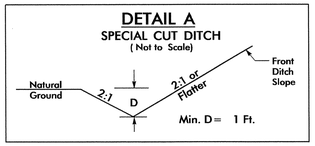
BANK RECONSTRUCTION W/CLASS II RIP RAP



(SEE SHEET 4 FOR PLAN VIEW)

DETAIL A

SPECIAL CUT DITCH (Not to Scale)

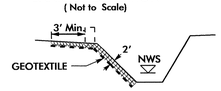


FROM -L- STA. 13+50 LT TO STA. 14+51 LT
FROM -L- STA. 13+50 RT TO STA. 14+00 RT

(SEE SHEET 4 FOR PLAN VIEW)

DETAIL C

BANK STABILIZATION (Not to Scale)



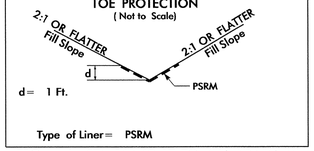
Type of Liner = CLASS II RIPRAP

FROM -L- STA. 14+75 RT TO 15+20 RT

(SEE SHEET 4 FOR PLAN VIEW)

DETAIL B

TOE PROTECTION (Not to Scale)



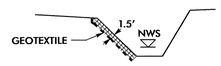
Type of Liner = PSRM

FROM -L- STA. 16+63 LT TO STA. 17+74 LT

(SEE SHEET 4 FOR PLAN VIEW)

DETAIL E

BANK STABILIZATION (Not to Scale)



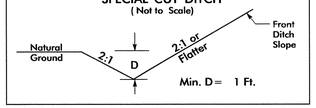
Type of Liner = CLASS I RIPRAP

FROM -L- STA. 13+90 RT TO 14+06 RT

(SEE SHEET 4 FOR PLAN VIEW)

DETAIL A

SPECIAL CUT DITCH (Not to Scale)

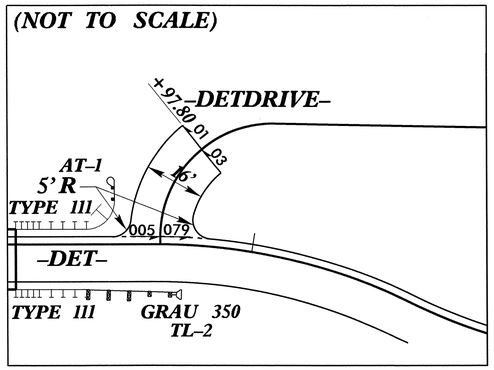


FROM -DET- STA. 10+21 LT TO STA. 11+58 LT

(SEE SHEET 2-B FOR PLAN VIEW)

-DETDRIVE- DETAIL

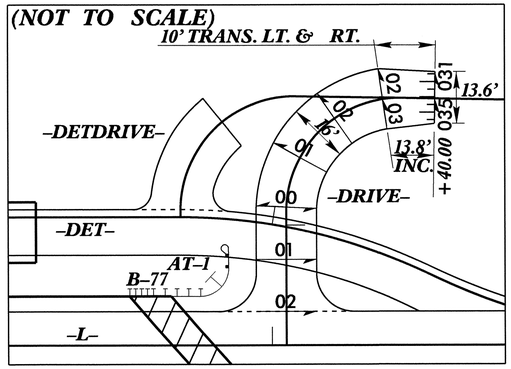
(NOT TO SCALE)



(SEE SHEET 2-B FOR PLAN VIEW)

-DRIVE- DETAIL

(NOT TO SCALE)



(SEE SHEET 4 FOR PLAN VIEW)

-DET-

PI Sta 11+02.07	PI Sta 14+10.50	PI Sta 14+94.21
S 13° 43′ 06.8″ W (BACK)	Δ = 26° 08′ 33.2″ (RT)	S 81° 08′ 07.5″E (AHEAD)
Δ = 56° 37′ 19.5″ (LT)	D = 38° 11′ 49.9″	Δ = 36° 56′ 15.6″ (RT)
D = 31° 49′ 51.6″	L = 68.44′	D = 38° 11′ 49.9″
L = 177.88′	T = 34.83′	L = 96.70′
T = 96.96′	R = 150.00′	T = 50.10′
R = 180.00′		R = 150.00′

(SEE SHEET 2-B FOR PLAN VIEW)

-DRIVE-

PI Sta 11+00.69	PI Sta 11+79.35
Δ = 88° 46′ 25.5″ (BACK)	S 19° 39′ 33.8″ W (AHEAD)
D = 57° 17′ 44.8″	Δ = 91° 00′ 11.4″ (LT)
L = 38.20′	D = 190° 59′ 09.4″
T = 19.34′	L = 47.65′
R = 100.00′	T = 30.53′
	R = 30.00′

(SEE SHEET 4 FOR PLAN VIEW)

-L-

PI Sta 11+24.50	PI Sta 12+80.85	PI Sta 13+80.49	PI Sta 17+37.31
S 20° 19′ 09.7″ W (BACK)	Δ = 39° 57′ 42.7″ (LT)	Δ = 16° 39′ 36.7″ (LT)	N 88° 02′ 24.6″E (AHEAD)
Δ = 34° 02′ 16.5″ (LT)	D = 30° 00′ 00.0″	D = 23° 23′ 09.7″	Δ = 21° 37′ 09.2″ (LT)
D = 30° 00′ 00.0″	L = 133.21′	L = 71.24′	D = 17° 00′ 00.0″
L = 113.46′	T = 69.44′	T = 35.87′	L = 127.17′
T = 58.46′	R = 190.99′	R = 245.00′	T = 64.35′
R = 190.99′	SE = EXIST.	SE = EXIST.	R = 337.03′
SE = EXIST.	V_D = EXIST.	V_D = EXIST.	SE = EXIST.
V_D = EXIST.			V_D = EXIST.

(SEE SHEET 4 FOR PLAN VIEW)

-DETDRIVE-

PI Sta 12+07.31
N 69° 20′ 14.8″ W (BACK)
S 19° 39′ 33.8″ W (AHEAD)
Δ = 91° 00′ 11.4″ (LT)
D = 190° 59′ 09.4″
L = 47.65′
T = 30.53′
R = 30.00′

(SEE SHEET 2-B FOR PLAN VIEW)

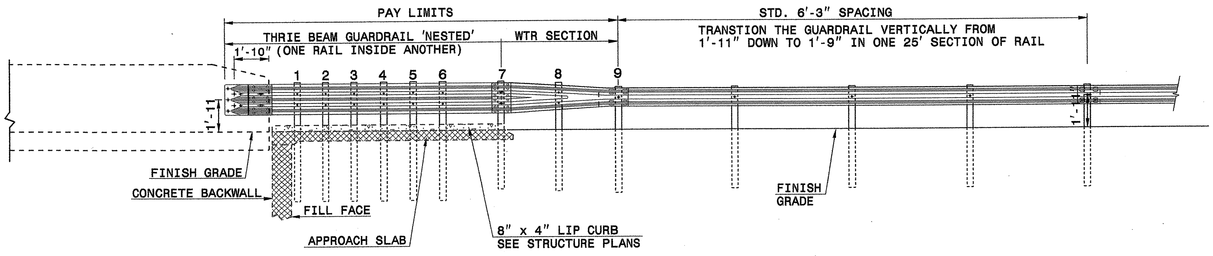
21-OCT-2013 15:40
R:\ROADWAY\PROJ\B-5146_rdy_psh02c.dgn
$$$$USERNAME$$$$

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

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

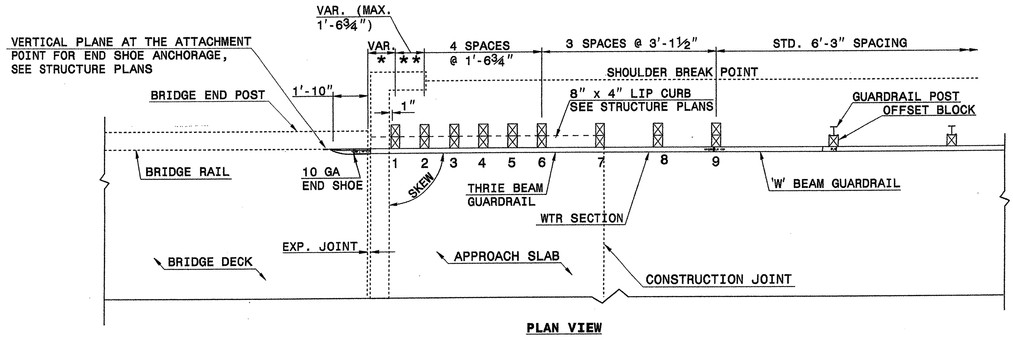
ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862d03



ELEVATION

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



PLAN VIEW

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

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

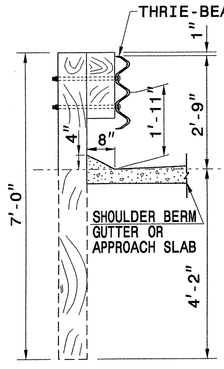
ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862d03

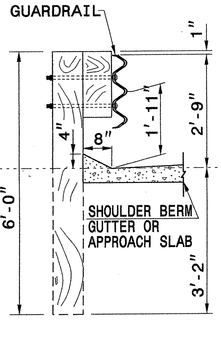
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

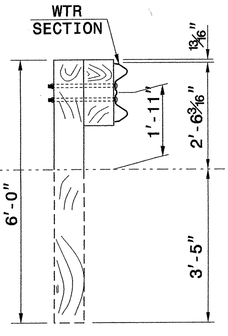
SHEET 3 OF 7
862d03



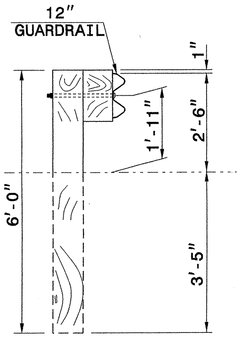
SECTION OF THRIE BEAM POSTS 1 THRU 6



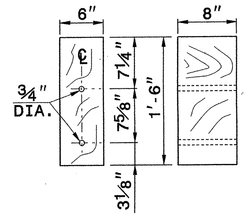
SECTION OF THRIE BEAM POST 7



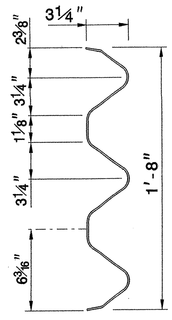
SECTION OF WTR BEAM POST 8



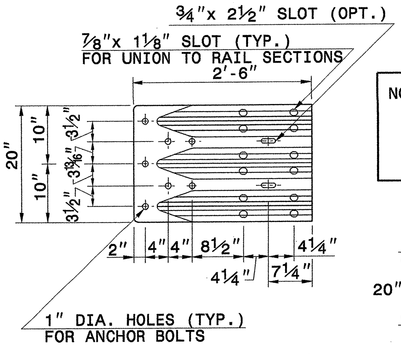
SECTION OF 'W' BEAM POST 9



THRIE BEAM OFFSET BLOCK

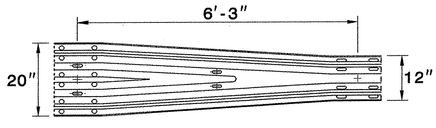


THRIE-BEAM SECTION

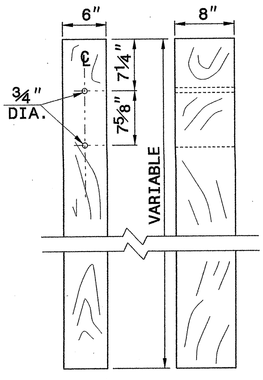


END SHOE

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



WTR SECTION
ELEVATION VIEW



THRIE BEAM LINE POST

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

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

SHEET 3 OF 7
862d03

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

SEE TITLE BLOCK

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

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER
10/24/13

PROJECT REFERENCE NO. B-5146
SHEET NO. 2-D

PROJECT REFERENCE NO.	SHEET
B-5146	2-E

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

Scott A. Hidden 7/22/13

SIGNATURE DATE

ENGINEER

SIGNATURE DATE

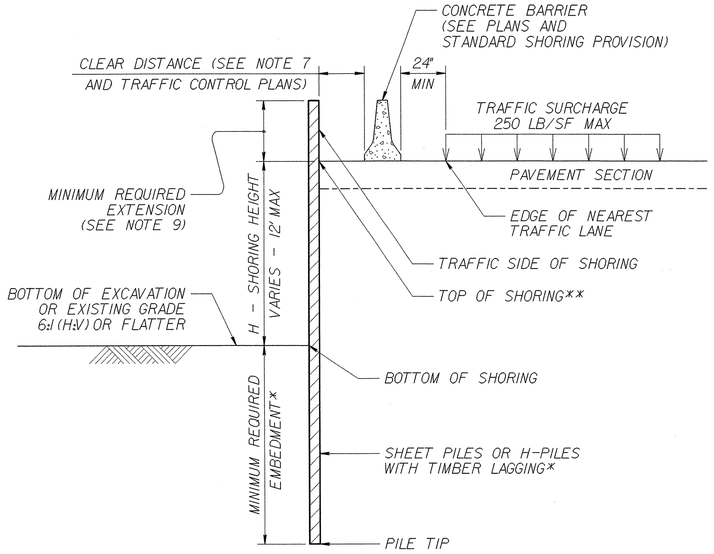
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H-PILES WITH TIMBER LAGGING			SHEET PILES		H-PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (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 BETWEEN 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 "--".**

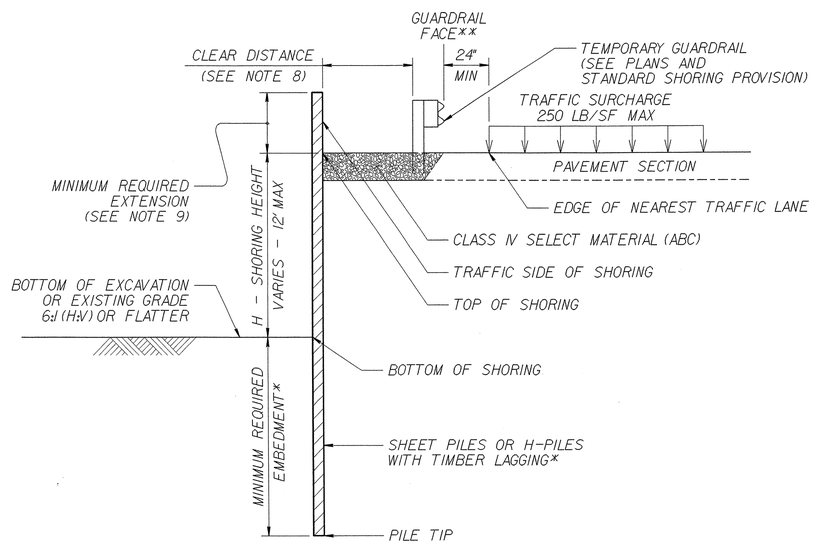
NOTES:

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. STANDARD SHORING SELECTION FORMS ARE AVAILABLE FROM: connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx
12. CONTACT THE ENGINEER IF PILES DO NOT ATTAIN THE MINIMUM REQUIRED EMBEDMENT.



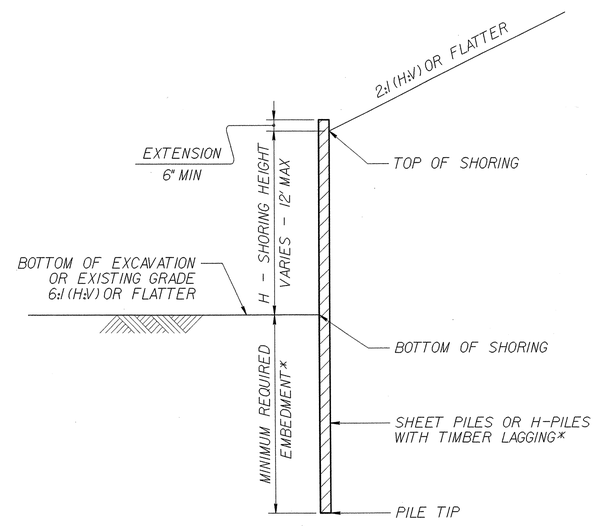
CONCRETE BARRIER

****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.**

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 1801.01

STANDARD TEMPORARY SHORING

DATE: 11-19-13

4/04/06

COMPUTED BY: JRH DATE: 08/30/13
CHECKED BY: BCK DATE: 09/16/13

PROJECT REFERENCE NO.	SHEET NO.
B-5146	3-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL
-L- 13+06	LT	0400					
-L- 13+99	RT	0402	0403		1395.5	1390.8	
-L- 14+00	RT	0403		1396.0	1390.8		
-L- 14+45	RT	0403	0404		1390.8	1390.0	
-L- 15+85	LT	0405		1394.0	1391.4		
-L- 14+45	LT	0405	0406		1391.4	1390.0	
-DET- 10+93	LT	0201					
-DET- 11+79	RT	0202					
-DET- 13+64	LT	0203	0204		1395.7	1391.9	
-DET- 14+08	RT	0205					
TOTAL							

STATION (SIZE / THICKNESS OR GAUGE)	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
-L- 13+06												
-L- 13+99					24				X			
-L- 14+00												
-L- 14+45					92							
-L- 15+85												
-L- 14+45		36							X			
-DET- 10+93												
-DET- 11+79												
-DET- 13+64	52											
-DET- 14+08												
TOTAL	52	36			116				X			

STATION	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	36" .079	42" .109	48" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
-L- 13+06																						
-L- 13+99																						
-L- 14+00																						
-L- 14+45																						
-L- 15+85																						
-L- 14+45																						
-DET- 10+93																						
-DET- 11+79																						
-DET- 13+64																						
-DET- 14+08																						
TOTAL																						

STATION	**" R. C. PIPE (CLASS V)	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	12" SIDE DRAIN PIPE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02
-L- 13+06				44							
-L- 13+99											
-L- 14+00								1	0.2		
-L- 14+45											
-L- 15+85								1			
-L- 14+45											
-DET- 10+93			44								
-DET- 11+79			40								
-DET- 13+64											
-DET- 14+08			40								
TOTAL			124	44				2	0.2		

STATION	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G		CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET			G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	T.B.D.I. STD. 840.35	DRAINAGE ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- 13+06																	
-L- 13+99																	
-L- 14+00									1	1							
-L- 14+45																81	REMOVE EXIST. 30" CMP
-L- 15+85											1	1					
-L- 14+45													2@15"			53	REMOVE EXIST. 12" RCP
-DET- 10+93																44	REMOVE TEMP. PIPE
-DET- 11+79																40	REMOVE TEMP. PIPE
-DET- 13+64																52	REMOVE TEMP. PIPE
-DET- 14+08																40	REMOVE TEMP. PIPE
TOTAL									1	1	1	1	2@15"			310	

ABBREVIATIONS

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

SUMMARY OF EARTHWORK
IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
PHASE 1					
(DET) -L- 11+79.50	14+37.56	74	197	123	
(DET) -L- 15+37.56	16+76.55	69	722	653	
-DETDRIVE- 11+79.80	12+24.29	7			7
SUBTOTALS:		150	919	776	7
PHASE 2					
-L- 13+25.00	14+64.70		227	227	
-L- 15+67.30	16+00.00		63	63	
SUBTOTALS:			290	290	
PHASE 3					
-L- 16+00.00	17+00.00		49	49	
-DRIVE- 11+40.00	12+24.07	32	100	68	
SUBTOTALS:		32	149	117	
DETOUR REMOVAL					
(DET) -L- 11+79.50	16+76.55	879	107		772
SUBTOTALS:		879	107		772
SUMMARY TOTALS:		1061	1465	1183	779

STATION / STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
SUMMARY TOTALS:	1061	1465	1183	779
LOSS DUE TO CLEARING & GRUBBING	-30		30	
WASTE IN LIEU OF BORROW			-7	-7
PROJECT TOTALS:	1031	1465	1206	772
EST. 5% TO REPL TOPSOIL ON BRW PIT			60	
GRAND TOTALS:	1031	1465	1266	772
SAY:	1050		1300	
UNDERCUT=200 CY				
SELECT GRANULAR MATERIAL=100 CY				
FABRIC FOR SOIL STABILIZATION=320 SY				
CL IV SUBGRADE STABILIZATION=113 TONS				
SHALLOW UNDERCUT=60 CY				
6" PERFORATED SUBDRAIN PIPE=100 LF				

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

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

SUMMARY OF PAVT REMOVAL

LINE	STATION	STATION	LOC.	SY
-L-	14+00.00	14+64.70	CL	103.28
-L-	15+67.30	16+00.00	CL	79.26
-DET-	10+00.00	10+92.25	CL	101.64
-DET-	10+92.25	11+26.72	CL	400.29
-DET-	14+14.63	14+80.34	CL	61.94
-DETDRIVE-	11+97.80	12+24.29	CL	48.38
			TOTALS:	794.79
			SAY	800

SUMMARY OF SHOULDER BERM GUTTER

LINE	STATION	STATION	LOC.	LF
-L-	END APPR SLAB	15+90	LT	20

"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
IN FEET

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH STRAIGHT	SHOP CURVED	TEMP STRAIGHT	TEMP SHOP CURVED	WARRANT POINT APPROACH END	TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH APPROACH END	TRAILING END	W APPROACH END	TRAILING END
-L-	14+14.51	14+58.26 BR	LT	43.75					14+58.26 BR	4.4	7		25		0.5
-L-	14+39.82	14+72.58 BR	RT	25.00	11.50			14+72.58 BR		2.4	5	6.25		5.7	
-L-	15+58.26 BR	15+91.34	LT	33.75	8.80			15+91.34 BR		4.4	7		6.25		
-L-	15+72.58 BR	16+16.33	RT	43.75					15+91.34 BR	2.4	5	25		0.5	
-DET-	11+93.25	12+37.00 BR	LT			43.75			12+37.00 BR	2.0	4		25		0.5
-DET-	11+93.25	12+37.00 BR	RT			43.75		12+37.00 BR		2.0	4	25		0.5	
-DET-	13+37.00 BR	13+63.58	LT			25.00	11.75	13+37.00 BR		2.0	4		6.25		4.1
-DET-	13+37.00 BR	13+80.75	RT			43.75			13+37.00 BR	2.0	4	25		0.5	
SUBTOTAL				146.25	20.30	156.25	11.75								
LESS ANCHOR DEDUCTIONS				-137.50		-156.25									
TOTAL				8.75	20.30		11.75								
SAY				12.50	25.00		12.50								
5 ADD'L GUARDRAIL POSTS															

SURVEY LINE / BEG. STA.	ANCHORS TYPE III	AT-1	GRAU 350 TL-2	GRAU 350	CAT-1	TEMP B-77	TEMP AT-1	TEMP GRAU 350 TL-2	IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L- 14+14.51	1		1												
-L- 14+39.82	1	1													
-L- 15+58.26 BR	1	1													
-L- 15+72.58 BR	1		1												
-DET- 11+93.25 (LT)						1		1							
-DET- 11+93.25 (RT)						1		1							
-DET- 13+37.00 BR (LT)						1	1								
-DET- 13+37.00 BR (RT)						1		1							
SUBTOTAL	4	2	2			4	1	3							

PERM ANCHOR DEDUCT: 4 TYPE III@18.75=75, 2 AT-1@6.25=12.50, 2 TL-2@25=50
TEMP ANCHOR DEDUCT: 4 B-77@18.75=75, 1 AT-1@6.25=6.25, 3 TL-2@25=75
PERM DEDUCT TOTAL: 137.50' TEMP DEDUCT TOTAL: 156.25'

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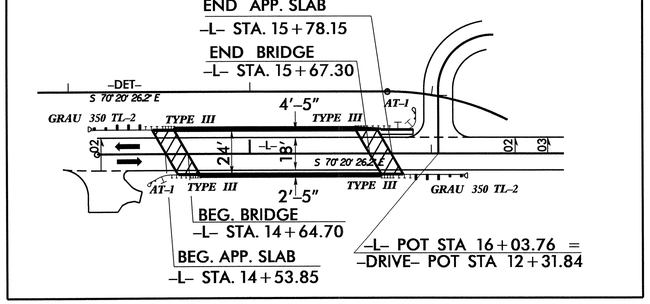
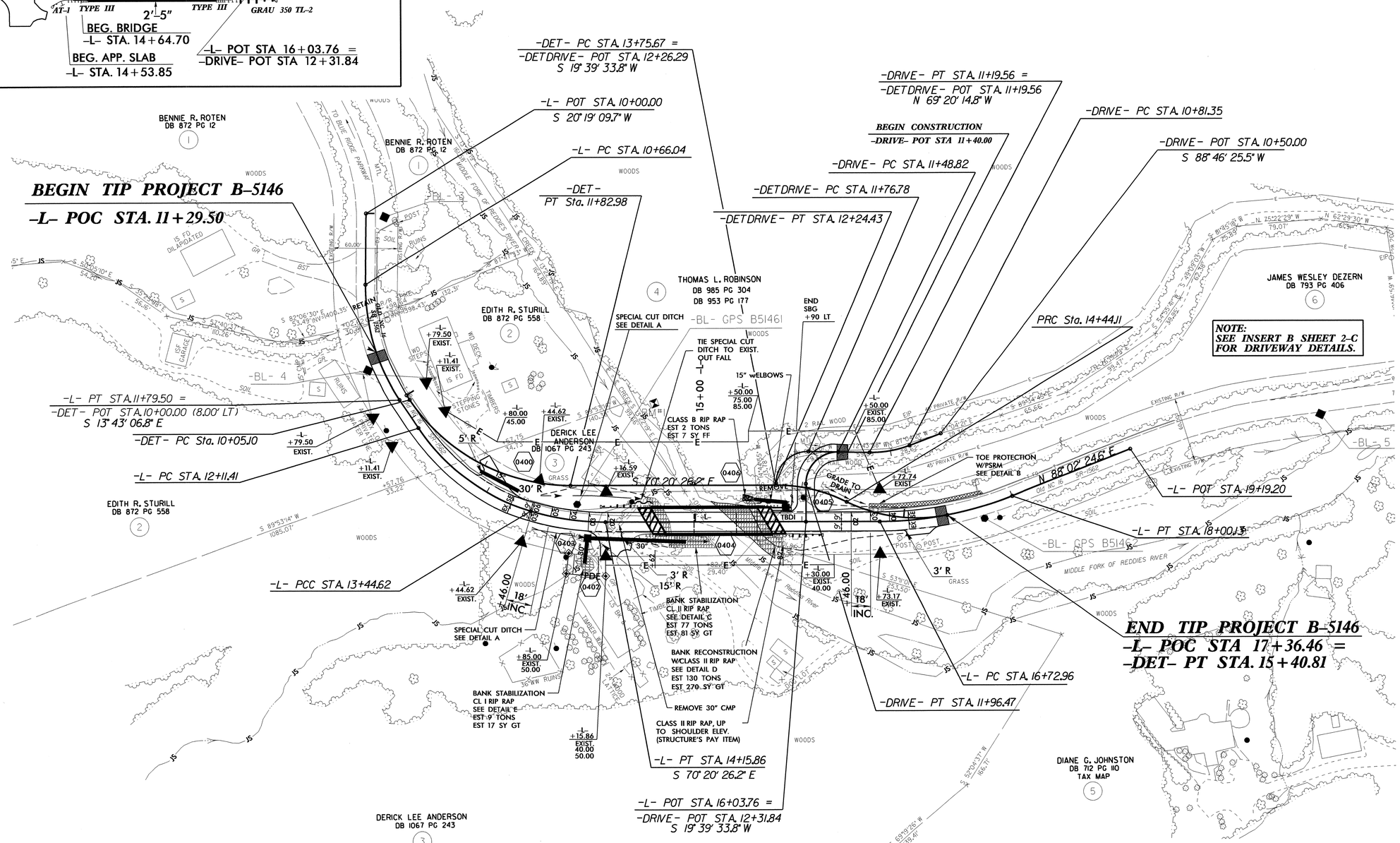
PROJECT REFERENCE NO.	SHEET NO.
B-5146	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26964 ENGINEER BRYAN C. KEY 10-23-13

NORTH CAROLINA PROFESSIONAL SEAL 34364 ENGINEER TRENTON J. CORNIER 10/23/12

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP (NOT TO SCALE)





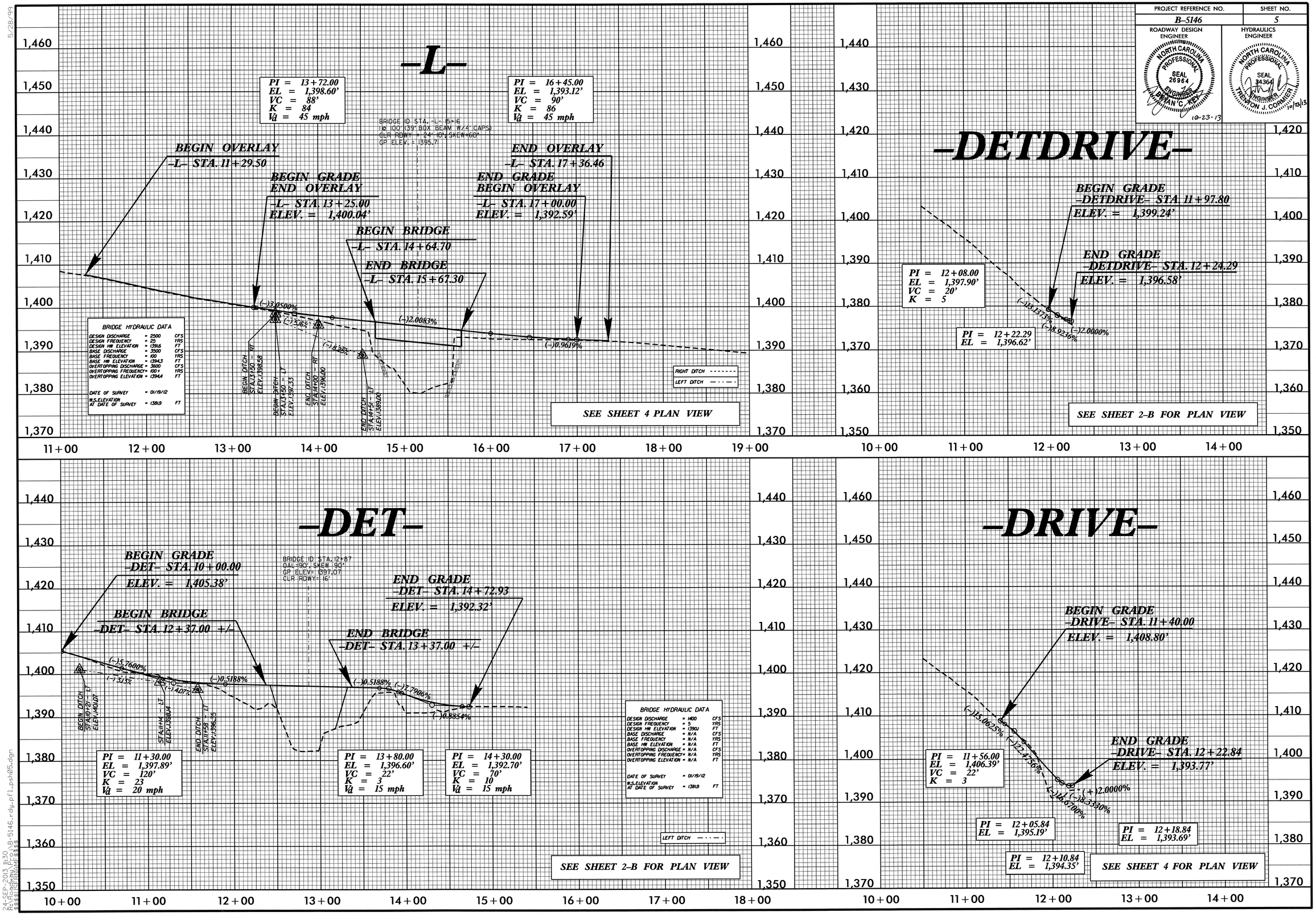
1.) FOR -DET- PLAN VIEW SEE SHEET 2-B.
2.) FOR -L- AND -DRIVE- PROFILES SEE SHEET 5
3.) ALL DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE ON PLANS.
4.) FOR STRUCTURE PLANS SEE SHEET S-1 THRU S-16
5.) SEE SHEET 2-C FOR CURVE DATA & DETAILS
6.) SEE TRANSPORTATION MANAGEMENT PLANS FOR SHORING LOCATIONS.

RD266217 10/17/2013 psh_04 jrhatfield RD-Oce860-34

PROJECT REFERENCE NO.	SHEET NO.
B-5146	5

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 26964 ENGINEER EVAN C. KEY 10-23-13

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 34364 ENGINEER TRENT ON J. CORMIER 10/9/13



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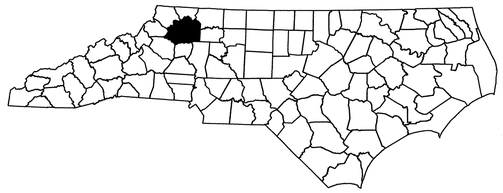
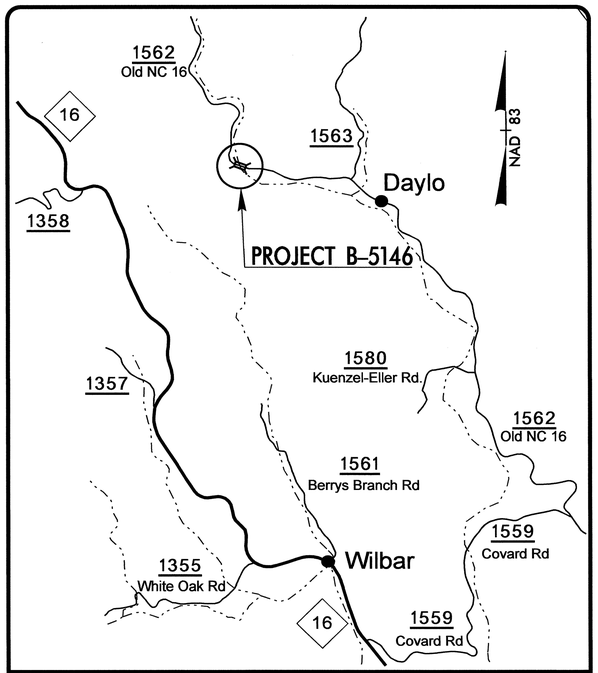
RD266217 9/24/2013 pfl_05 jrhatfield RD-Oce860-34

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

WILKES COUNTY





VICINITY MAP

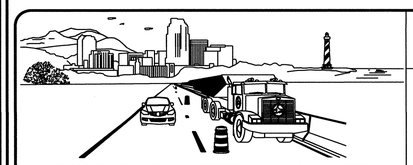
INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY PAVEMENT MARKINGS
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (TRANSPORTATION OPERATIONS AND GENERAL NOTES)
TMP-2	TEMPORARY SHORING DATA
TMP-3	PHASING AND PHASE I DETAILS
TMP-4	PHASE I DETAILS
TMP-5	PHASE II DETAILS
TMP-6	PHASE III DETAILS

SHEET NO.
TMP-1

B-5146

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
G. L. GETTIER, P.E. TRAFFIC CONTROL PROJECT ENGINEER
J. W. WOOLARD, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER
S. B. COATS TRAFFIC CONTROL DESIGN ENGINEER

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

APPROVED:
DATE: 9/16/13
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19862 ENGINEER J. W. WOOLARD JR.

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PROJ. REFERENCE NO.	SHEET NO.
B-5146	TMP-1A

ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1180.01	SKINNY - DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
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
- REMOVAL
- USER DEFINED (IF NEEDED)
- USER DEFINED (IF NEEDED)

TRAFFIC CONTROL DEVICES

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

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY (TEMP)

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKINGS

PA - 4" WHITE EDGELINE (PAINT)
PD - 4" 2 FT. WHITE MINISKIP (PAINT)
PI - 4" YELLOW DOUBLE CENTER (PAINT)
P2 - 24" WHITE STOP BAR (PAINT)

APPROVED: _____ DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 19862 ENGINEER J.W. WOOLARD, JR.

9/16/13

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

ROADWAY STANDARD DRAWINGS & LEGEND

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PROJ. REFERENCE NO.	SHEET NO.
B-5146	TMP-1B

GENERAL NOTES

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

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

LANE AND SHOULDER CLOSURE REQUIREMENTS

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

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

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

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

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

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

PAVEMENT EDGE DROP OFF REQUIREMENTS

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

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

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

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

H) 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.

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

TRAFFIC CONTROL DEVICES

J) 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.

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

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
SR 1562	PAINT	N/A
-DET-	PAINT	N/A

M) 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.

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

TRANSPORTATION OPERATIONS

CONSTRUCTION

CONSTRUCT ON-SITE DETOUR AND NEW BRIDGE REPLACEMENT ON SR 1562 (OLD NC 16) INCLUDING ROADWAY APPROACHES AND DRIVES AS SHOWN IN THE CONSTRUCTION PLANS. OBLITERATE DETOUR BRIDGE AND TEMPORARY PAVEMENT AS SHOWN IN THE CONSTRUCTION PLANS.

TMP DESIGN PARAMETERS

UTILIZE FLAGGERS, TEMPORARY SIGNAGE, TEMPORARY SIGNALS, AND TRAFFIC CONTROL DEVICES TO CONSTRUCT ON-SITE DETOUR AND BRIDGE REPLACEMENT ON SR 1562 (OLD NC 16)(SEE SHEET TMP-3 THRU TMP-6).

APPROVED: _____ DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 19862 ENGINEER J. W. WOOLARD, III

9/16/13

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

TRANSPORTATION OPERATIONS PLAN

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SHORING LOCATION NO.	BEGIN STATION AND OFFSET	END STATION AND OFFSET	ESTIMATED AVERAGE HEIGHT	ESTIMATED MAXIMUM HEIGHT	SHORING LOCATION TYPE
NO. 1	STA. 15+37 -L- 18.5 FT. LT.	STA. 15+58 -L- 18.5 FT. LT.	8.8 FT.	9.0 FT.	ROADWAY
NO. 2	STA. 14+41 -L- 18.5 FT. LT.	STA. 14+60 -L- 18.5 FT. LT.	6.3 FT.	6.3 FT.	STRUCTURES
NO. 3	STA. 15+58 -L- 18.5 FT. LT.	STA. 15+71 -L- 18.5 FT. LT.	8.6 FT.	8.6 FT.	STRUCTURES

TEMPORARY SHORING NOTES

SHORING LOCATION NO. 1

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 15+37 -L-, 18.5 FT. LEFT, TO STATION 15+58 -L-, 18.5 FT. LEFT, 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 = 1385 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 15+37 -L-, 18.5 FT. LEFT, TO STATION 15+58 -L-, 18.5 FT. LEFT. THE INFORMATION PROVIDED FOR THE TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 15+37 -L-, 18.5 FT. LEFT, TO STATION 15+58 -L-, 18.5 FT. LEFT WILL NOT PENETRATE BELOW ELEVATION 572 FT. DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

AT THE CONTRACTOR'S OPTION, USE STANDARD SHORING FOR TEMPORARY SHORING FROM STATION 15+37 -L-, 18.5 FT. LEFT, TO STATION 15+58 -L-, 18.5 FT. LEFT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION 15+37 -L-, 18.5 FT. LEFT, TO STATION 15+58 -L-, 18.5 FT. LEFT FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

SHORING LOCATION NO. 2

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 14+41 -L-, 18.5 FT. LEFT, TO STATION 14+60 -L-, 18.5 FT. LEFT, 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 = 1385 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 14+41 -L-, 18.5 FT. LEFT, TO STATION 14+60 -L-, 18.5 FT. LEFT. THE INFORMATION PROVIDED FOR THE TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 14+41 -L-, 18.5 FT. LEFT, TO STATION 14+60 -L-, 18.5 FT. LEFT WILL NOT PENETRATE BELOW ELEVATION 572 FT. DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

AT THE CONTRACTOR'S OPTION, USE STANDARD SHORING FOR TEMPORARY SHORING FROM STATION 14+41 -L-, 18.5 FT. LEFT, TO STATION 14+60 -L-, 18.5 FT. LEFT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION 14+41 -L-, 18.5 FT. LEFT, TO STATION 14+60 -L-, 18.5 FT. LEFT FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

SHORING LOCATION NO. 3

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 15+58 -L-, 18.5 FT. LEFT, TO STATION 15+71 -L-, 18.5 FT. LEFT, 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 = 1385 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 15+58 -L-, 18.5 FT. LEFT, TO STATION 15+71 -L-, 18.5 FT. LEFT. THE INFORMATION PROVIDED FOR THE TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 15+58 -L-, 18.5 FT. LEFT, TO STATION 15+71 -L-, 18.5 FT. LEFT WILL NOT PENETRATE BELOW ELEVATION 572 FT. DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

AT THE CONTRACTOR'S OPTION, USE STANDARD SHORING FOR TEMPORARY SHORING FROM STATION 15+58 -L-, 18.5 FT. LEFT, TO STATION 15+71 -L-, 18.5 FT. LEFT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION 15+58 -L-, 18.5 FT. LEFT, TO STATION 15+71 -L-, 18.5 FT. LEFT FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

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 WZTC SECTION ON 08-26-2013 AND SEALED BY A PROFESSIONAL ENGINEER, SHANE C. CLARK, LICENSE # 029869.

APPROVED: _____ DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 19862 ENGINEER J. W. WOODLAND, JR.

9/16/13

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

TEMPORARY SHORING DATA

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PROJ. REFERENCE NO.	SHEET NO.
B-5146	TMP-3

PHASING

PHASE I

STEP 1. INSTALL ALL ADVANCE WORK ZONE SIGNS ON SR 1562 (OLD NC 16), SEE RSD 1101.01 (SHEET 3 OF 3).

STEP 2. USING RSD NO. 1101.02 (SHEET 1 OF 15), CONSTRUCT -TEMPDRIVE- UP TO EDGE AND ELEVATION OF THE EXISTING PAVEMENT AS FOLLOWS (SEE CONSTRUCTION PLANS AND TMP-3):

- STA. 11+40+/- -TEMPDRIVE- TO STA. 12+24+/- -DRIVE-

- USING RSD NO. 1101.02 (SHEET 1 OF 15), CONSTRUCT -DET- LINE AND -DETDRIVE-, INCLUDING SHORING, DETOUR BRIDGE, TEMPORARY DRAINAGE, DRAINAGE, AND GUARDRAIL, UP TO EDGE AND ELEVATION OF THE EXISTING PAVEMENT AS FOLLOWS (SEE CONSTRUCTION PLANS AND TMP-4):

- STA. 11+30+/- -L- TO STA. 13+90+/- -DET-
- STA. 14+20+/- -DET- TO STA. 16+77+/- -L-
- STA. 11+98+/- -DETDRIVE- TO STA. 12+26+/- -DETDRIVE-
- TEMPORARY DRIVE

- INSTALL/CONSTRUCT TEMPORARY SIGNALS, BUT DO NOT ACTIVATE (SEE SIGNALS PLAN).

PHASE II

STEP 1. USING RSD NO. 1101.02 (SHEET 1 OF 15), CONSTRUCT -DET- LINE UP TO BASE COURSE AS FOLLOWS (SEE CONSTRUCTION PLANS AND TMP-5):

- STA. 13+90+/- -DET- TO STA. 14+20+/- -DET-

- PAVE UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE AS FOLLOWS (SEE CONSTRUCTION PLANS AND TMP-5):

- STA. 11+30+/- -L- TO STA. 14+80+/- -DET-
- TEMPORARY DRIVE

STEP 2. USING RSD NO. 1101.02 (SHEET 1 OF 15), PLACE TEMPORARY PAVEMENT MARKINGS AND MARKERS AND ACTIVATE TEMPORARY SIGNALS AS FOLLOWS (SEE CONSTRUCTION PLANS AND TMP-5):

- STA. 11+30+/- -L- TO STA. 17+50+/- -L-

- SHIFT TRAFFIC FROM A TWO-LANE, TWO-WAY TRAFFIC TO A ONE-LANE, TWO-WAY PATTERN ON -DET- LINE.

STEP 2. USING RSD NO. 1101.03 (SHEET 3 OF 9), CONSTRUCT -L- LINE, INCLUDING SHORING, NEW BRIDGE AND APPROACHES, DRAINAGE, AND GUARDRAIL UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE AS FOLLOWS (SEE CONSTRUCTION PLANS AND TMP-5):

- STA. 14+00+/- -L- TO STA. 16+00+/- -L-

- WIDEN -L- LINE, UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE AS FOLLOWS (SEE CONSTRUCTION PLANS AND TMP-5):

- STA. 13+25+/- -L- TO STA. 14+00+/- -L-

PHASE III

STEP 1. USING RSD NO. 1101.02 (SHEET 1 OF 15), DEACTIVATE TEMPORARY SIGNALS AND PLACE TEMPORARY PAVEMENT MARKINGS AND MARKERS AS FOLLOWS (SEE CONSTRUCTION PLANS AND TMP-6):

- STA. 11+30+/- -L- TO STA. 17+50+/- -L-

- CONSTRUCT DRIVEWAYS, COMPLETE DRAINAGE, AND INSTALL GUARDRAIL AS SHOWN ON TMP-6.

- SHIFT TRAFFIC FROM A ONE-LANE, TWO-WAY TRAFFIC TO A TWO-LANE, TWO-WAY PATTERN ON -L- LINE.

STEP 2. USING RSD NO. 1101.02 (SHEET 1 OF 15), WIDEN -L- LINE, UP TO EDGE AND ELEVATION OF THE EXISTING PAVEMENT AS FOLLOWS (SEE CONSTRUCTION PLANS AND TMP-6):

- STA. 16+00+/- -L- TO STA. 17+00+/- -L-

- REMOVE TEMPORARY PAVEMENT AND OBLITERATE DETOUR BRIDGE.

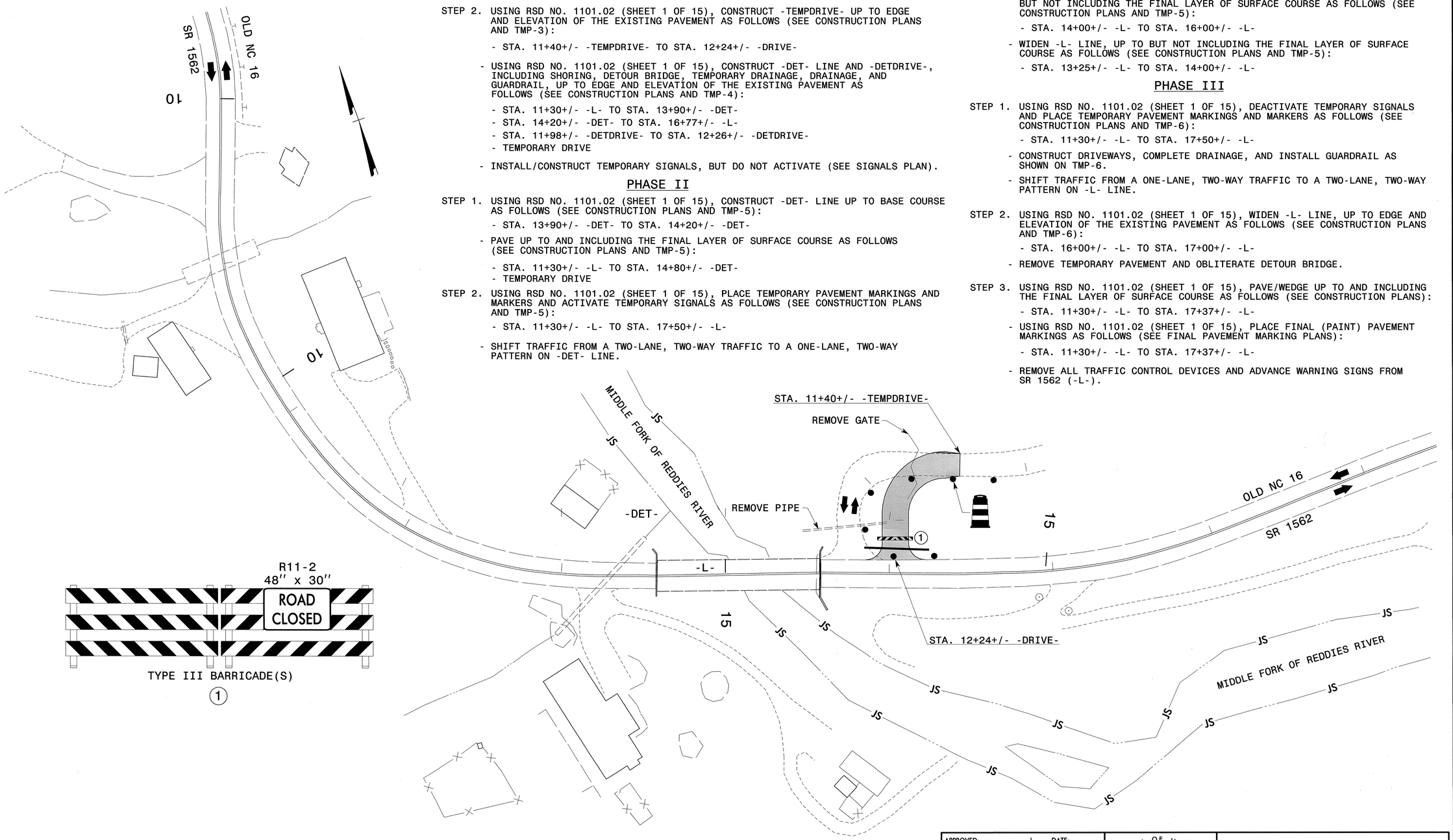
STEP 3. USING RSD NO. 1101.02 (SHEET 1 OF 15), PAVE/WEDGE UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE AS FOLLOWS (SEE CONSTRUCTION PLANS):

- STA. 11+30+/- -L- TO STA. 17+37+/- -L-

- USING RSD NO. 1101.02 (SHEET 1 OF 15), PLACE FINAL (PAINT) PAVEMENT MARKINGS AS FOLLOWS (SEE FINAL PAVEMENT MARKING PLANS):

- STA. 11+30+/- -L- TO STA. 17+37+/- -L-

- REMOVE ALL TRAFFIC CONTROL DEVICES AND ADVANCE WARNING SIGNS FROM SR 1562 (-L-).



APPROVED: _____ DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 19862 ENGINEER J. W. WOOLARD, JR.

11/18/13

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

PHASING AND PHASE I DETAILS

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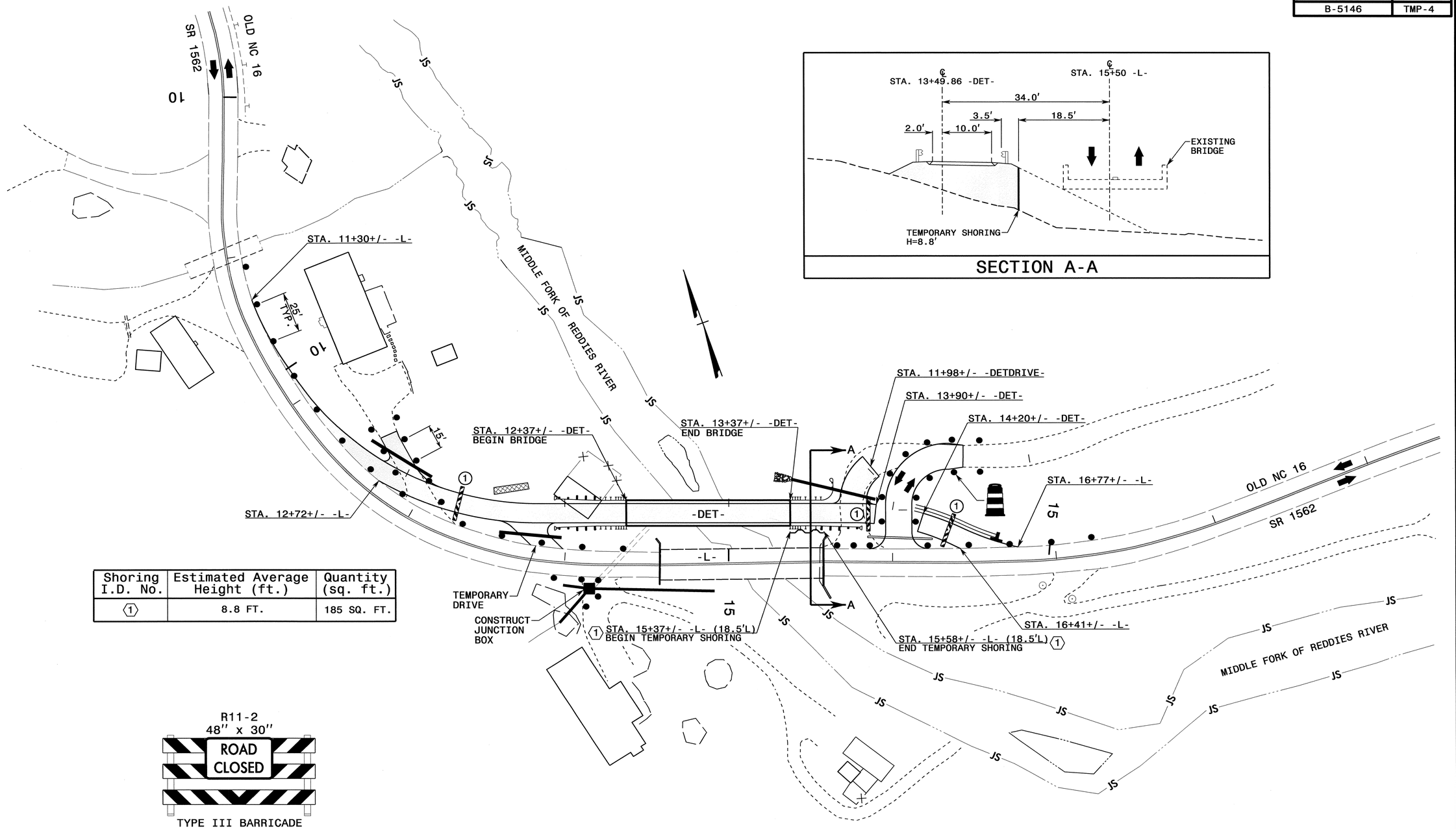
PROJ. REFERENCE NO.	SHEET NO.
B-5146	TMP-4



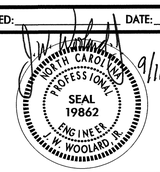
Shoring I.D. No.	Estimated Average Height (ft.)	Quantity (sq. ft.)
1	8.8 FT.	185 SQ. FT.

R11-2
48" x 30"

TYPE III BARRICADE
1

APPROVED: DATE:

SEAL



PHASE I DETAILS

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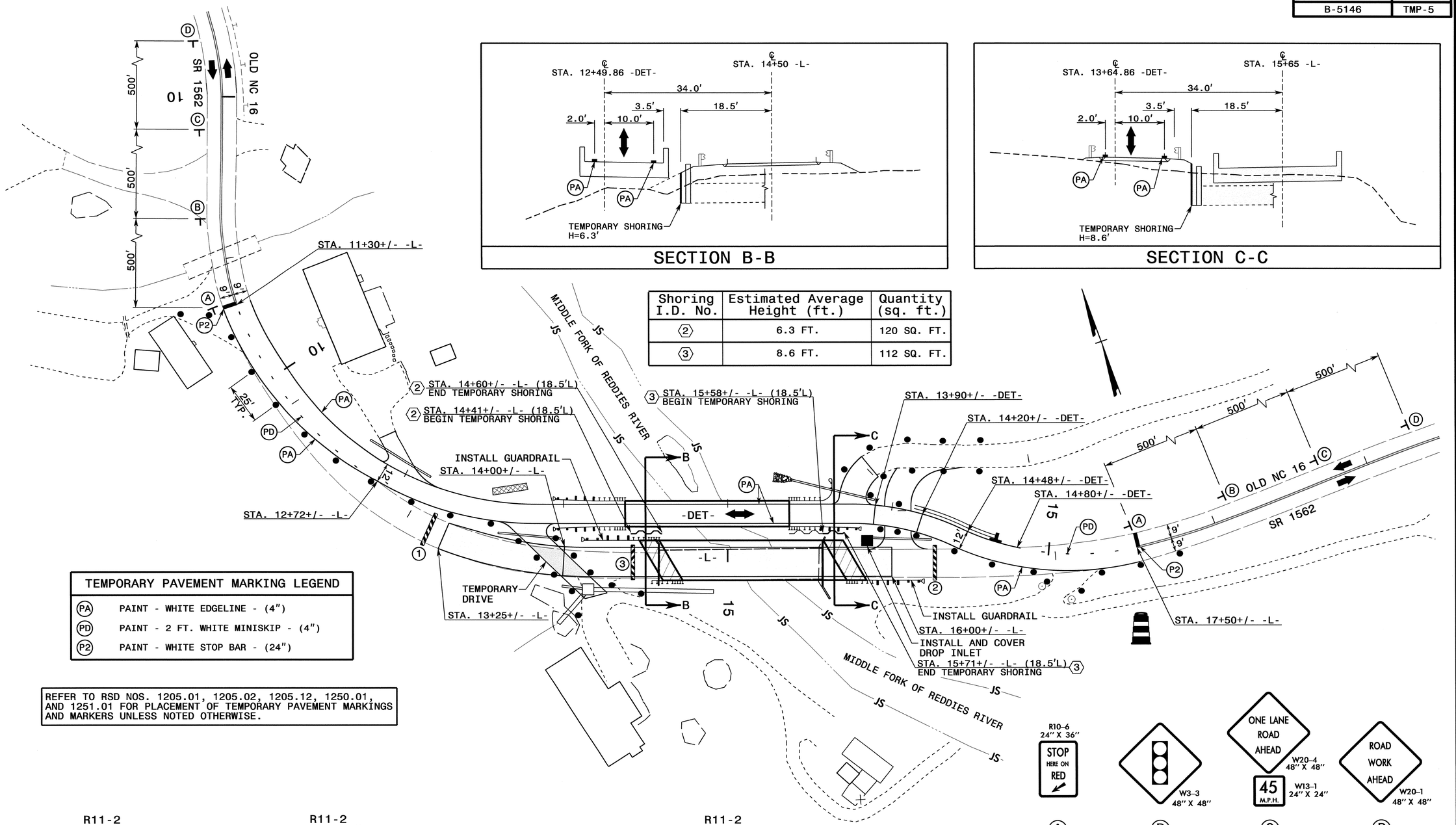
PROJ. REFERENCE NO.	SHEET NO.
B-5146	TMP-5



Shoring I.D. No.	Estimated Average Height (ft.)	Quantity (sq. ft.)
2	6.3 FT.	120 SQ. FT.
3	8.6 FT.	112 SQ. FT.

TEMPORARY PAVEMENT MARKING LEGEND	
PA	PAINT - WHITE EDGELINE - (4")
PD	PAINT - 2 FT. WHITE MINISKIP - (4")
P2	PAINT - WHITE STOP BAR - (24")

REFER TO RSD NOS. 1205.01, 1205.02, 1205.12, 1250.01, AND 1251.01 FOR PLACEMENT OF TEMPORARY PAVEMENT MARKINGS AND MARKERS UNLESS NOTED OTHERWISE.

APPROVED: _____ DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 19862 ENGINEER W. WOOLARD JR. 9/16/13

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

PHASE II DETAILS

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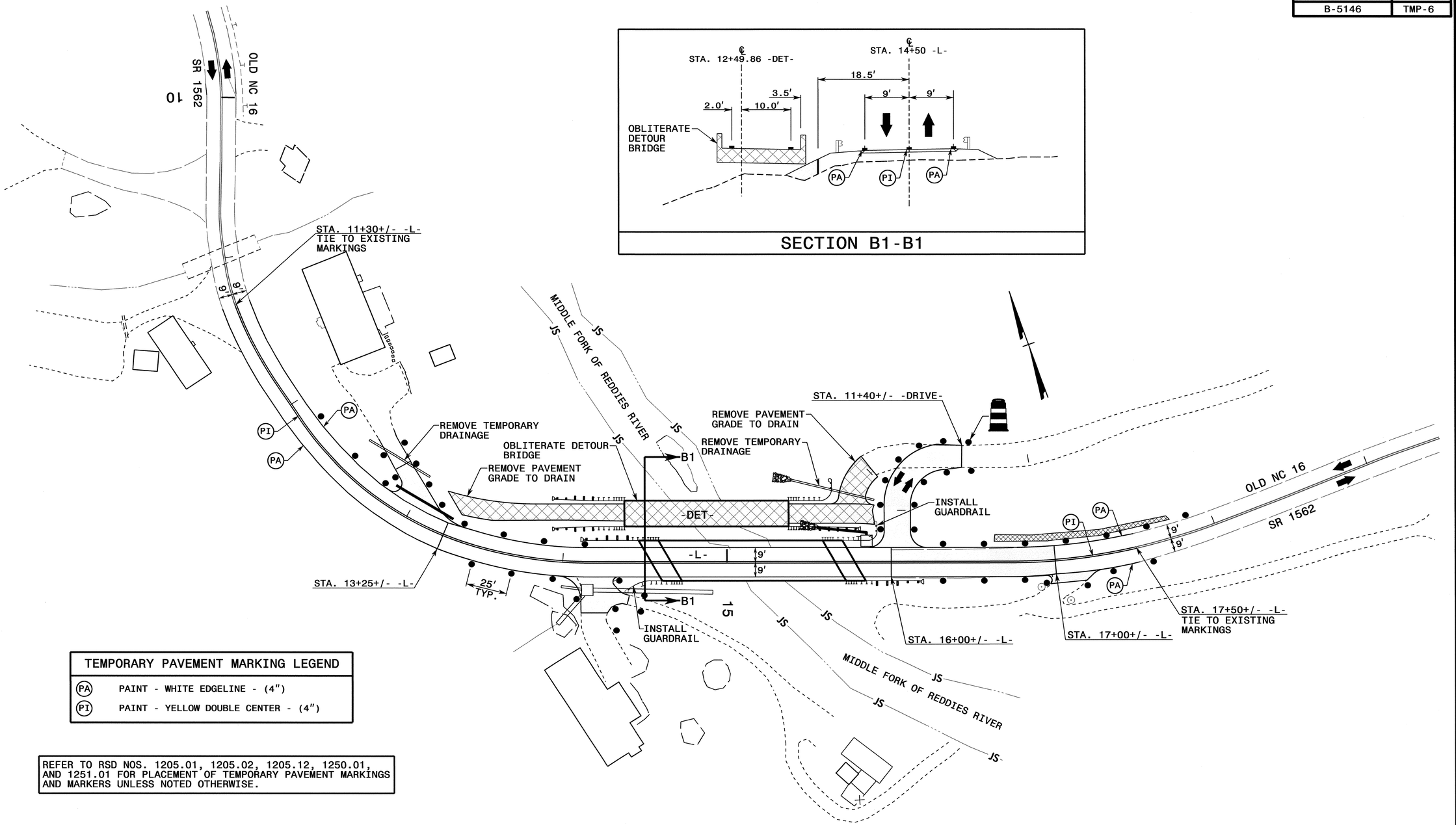
PROJ. REFERENCE NO.	SHEET NO.
B-5146	TMP-6

SECTION B1-B1



TEMPORARY PAVEMENT MARKING LEGEND	
PA	PAINT - WHITE EDGELINE - (4")
PI	PAINT - YELLOW DOUBLE CENTER - (4")

REFER TO RSD NOS. 1205.01, 1205.02, 1205.12, 1250.01, AND 1251.01 FOR PLACEMENT OF TEMPORARY PAVEMENT MARKINGS AND MARKERS UNLESS NOTED OTHERWISE.

APPROVED: _____ DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 19862 ENGINEER J. W. WOOLARD JR.

9/16/13

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

PHASE III DETAILS

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CONTRACT:

TIP NO.	SHEET NO.
B-5146	PMP-1

APPROVED: [illegible]

DATE: 9/20/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022959 ENGINEER RONALD W. KING

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
WILKES COUNTY

LOCATION: BRIDGE No. 302 ON SR 1562 (OLD NC 16) OVER MIDDLE FORK REDDIES RIVER

ROADWAY STANDARD DRAWING

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

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
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

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
-L- OLD NC 16	PAINT	PERM. RAISED

B) PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.

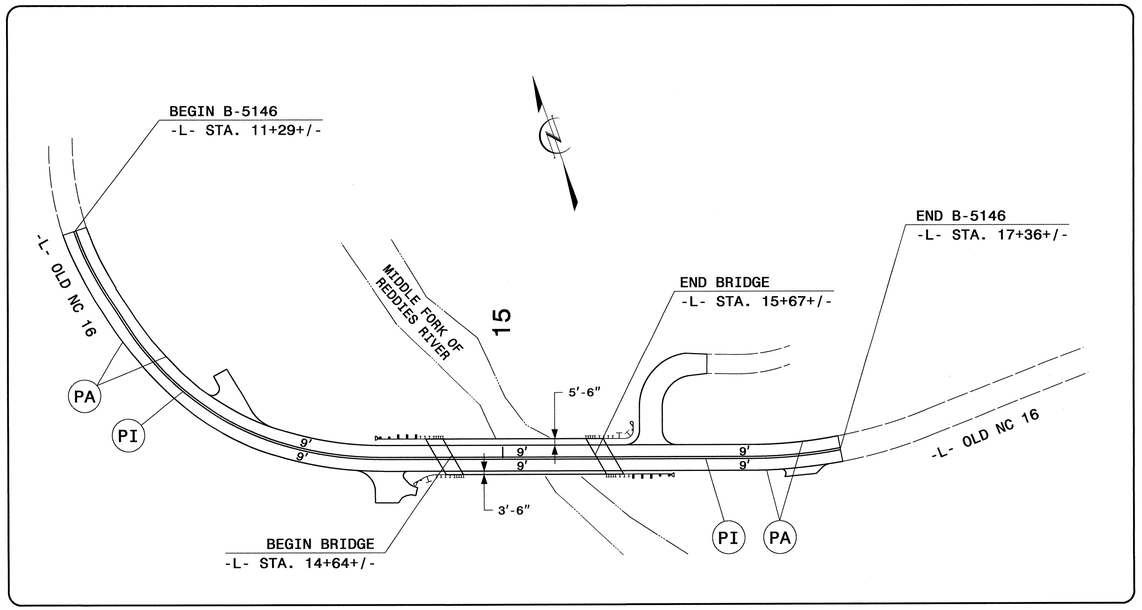
C) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

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

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

PAVEMENT MARKING SCHEDULE

SYMB	DESCRIPTION
	FINAL PAVEMENT MARKINGS
	PAINT (4")
PA	WHITE EDGELINE
PI	YELLOW DOUBLE CENTER
	MARKERS
	PERMANENT RAISED PAVEMENT MARKERS
MB	CRYSTAL & RED



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

KELVIN L. JORDAN — SIGNING & DELINEATION REGIONAL ENGINEER

DERRICK H. BEARD — SIGNING & DELINEATION PROJECT DESIGN ENGINEER

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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TIP PROJECT: B-5146

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5146	EC-1	

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

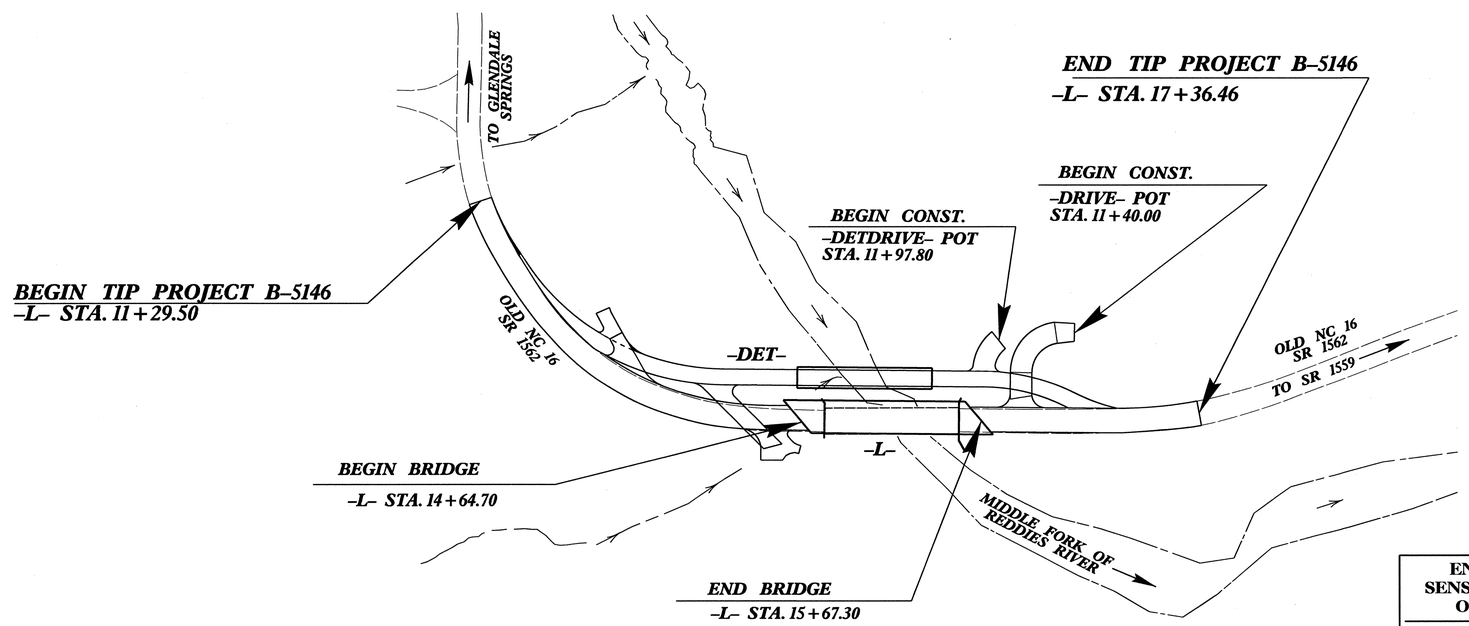
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

WILKES COUNTY

LOCATION: BRIDGE 302 OVER MIDDLE FORK OF REDDIES RIVER ON SR 1562 (OLD NC 16)

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

NC GRID
NAD 83/CORS 96



EROSION AND SEDIMENT CONTROL MEASURES

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

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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

Refer To E. C. Special Provisions for Special Considerations.

HIGH QUALITY WATER(S) EXIST ON THIS PROJECT

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

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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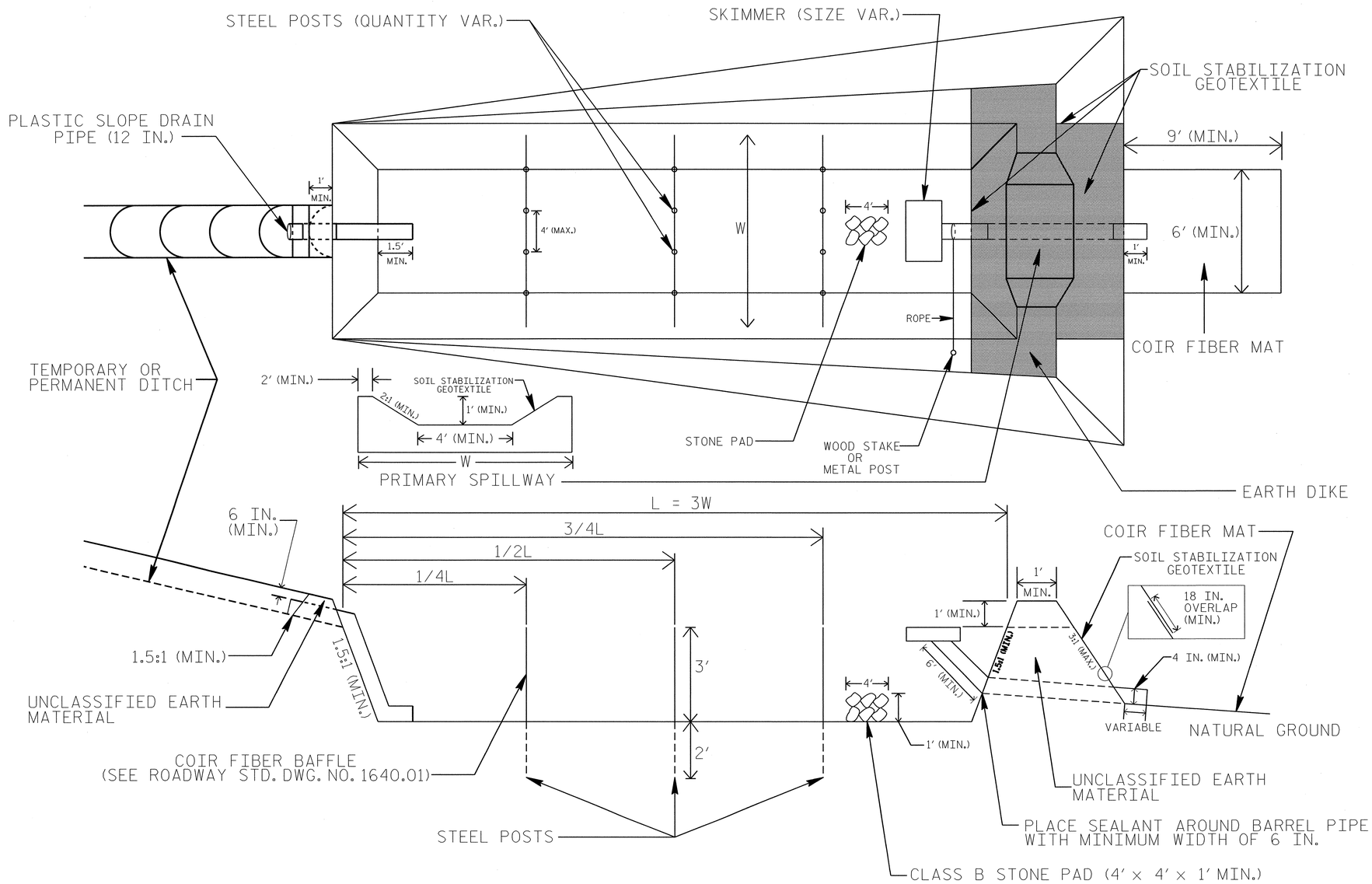
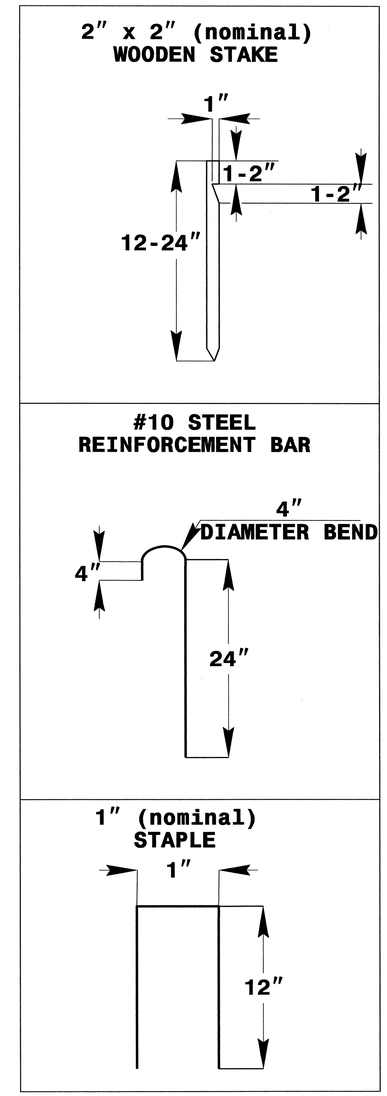
PROJECT REFERENCE NO.	SHEET NO.
B-5146	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SKIMMER BASIN WITH BAFFLES DETAIL





COIR FIBER MAT ANCHOR OPTIONS

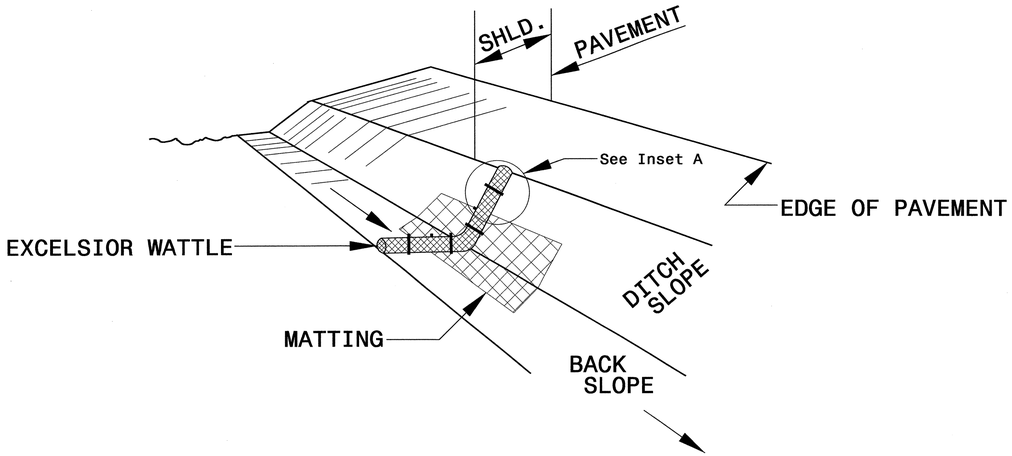
NOTES

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

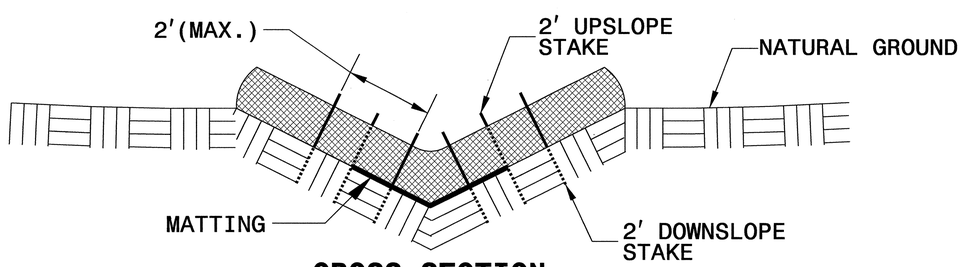
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-5146	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

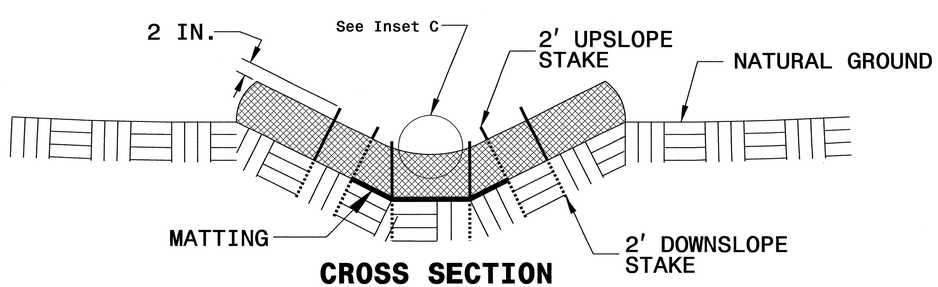
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



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.

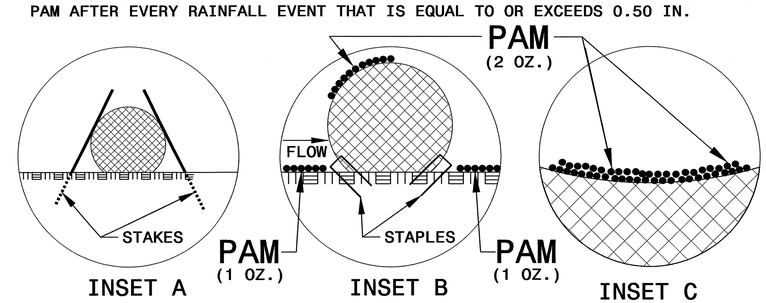
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

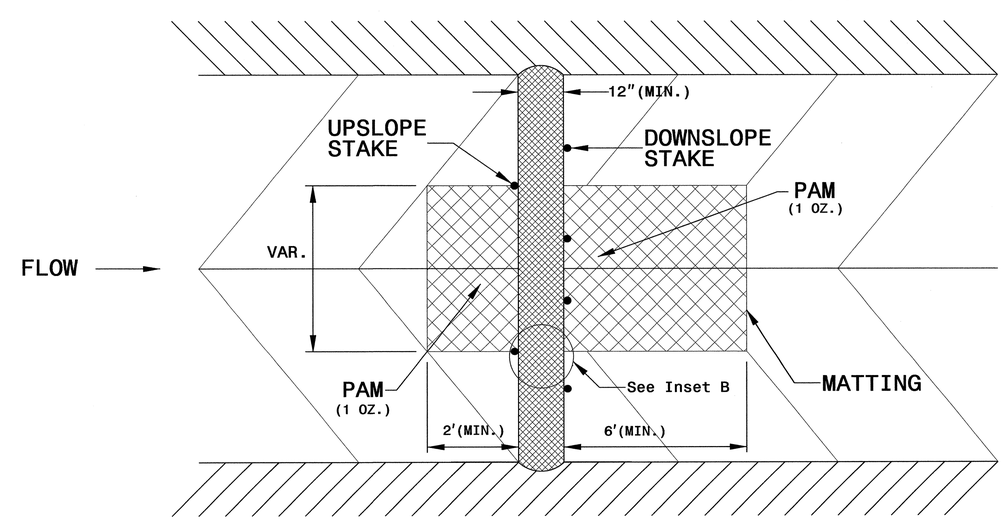
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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.

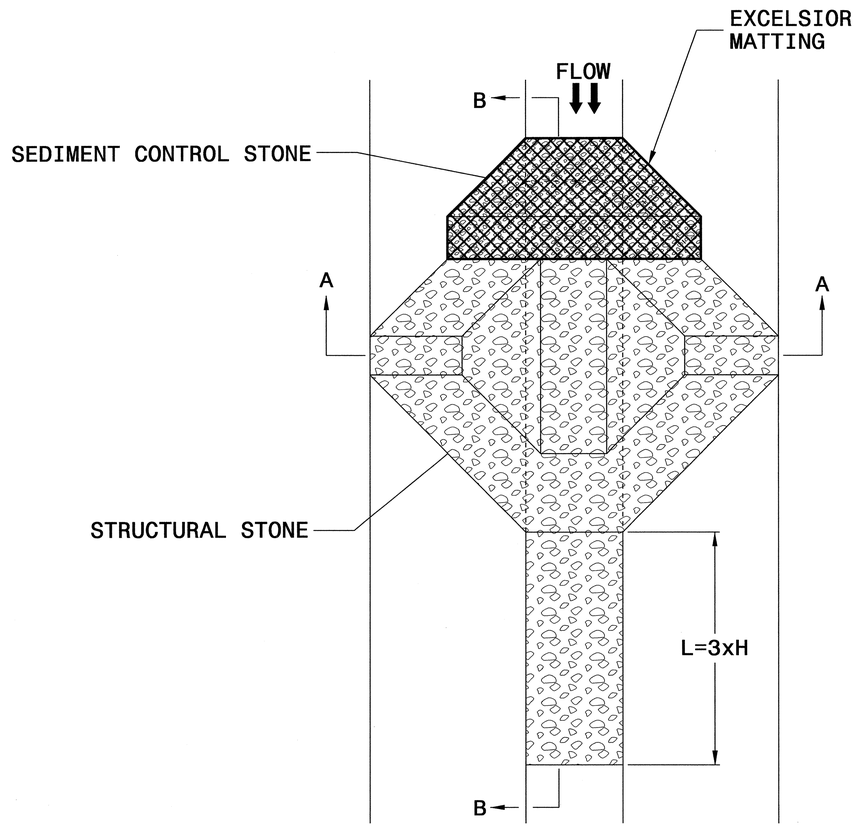




TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
B-5146	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



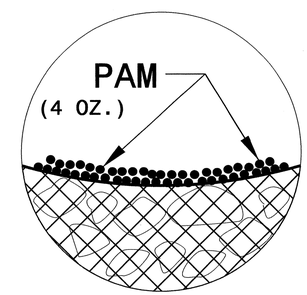
PLAN

NOTES

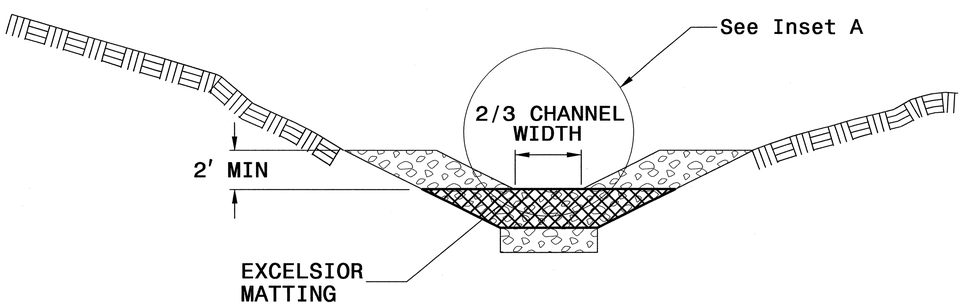
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

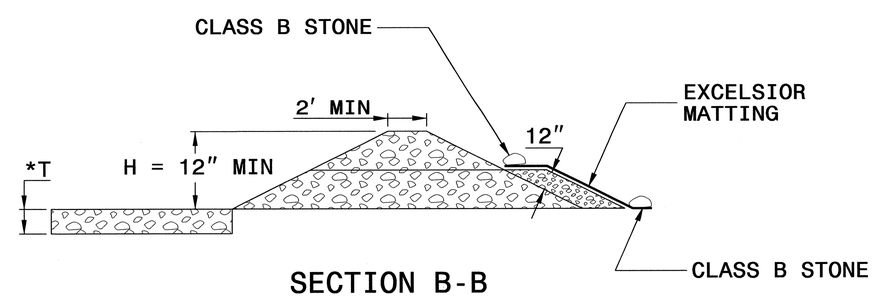
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

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

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-5146	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

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

PROJECT REFERENCE NO.	SHEET NO.
B-5146	EC-3A
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)
20	-DET-	10+20	13+50	LT	90
4	-L-	13+50	14+00	RT	50
			SUBTOTAL		140
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					3700
			TOTAL		3840
			SAY		3875

PERMANENT SOIL REINFORCEMENT MAT

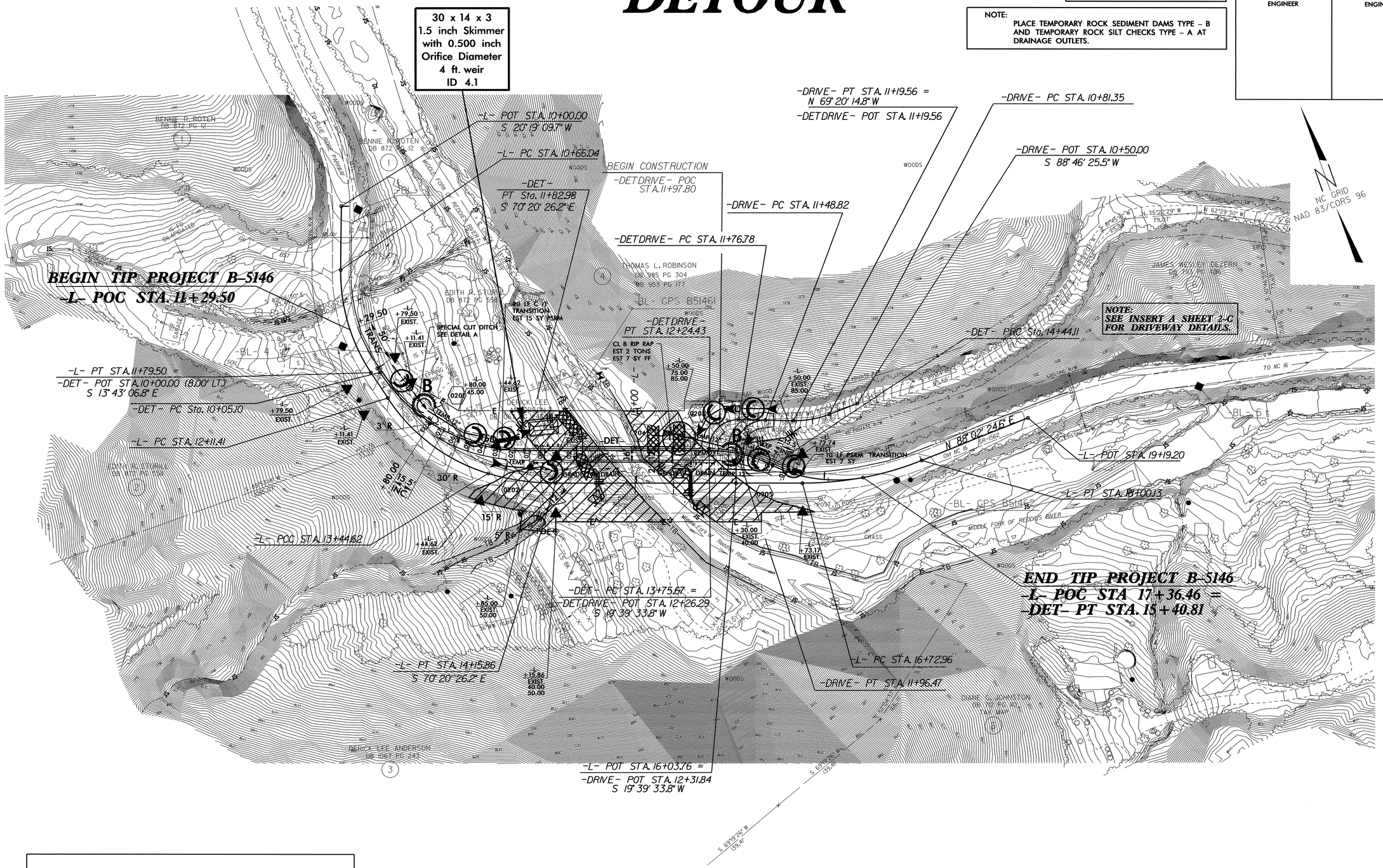
CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
20	-DET-	15+50	15+65	LT	15
20	-DET-	15+65	16+00	LT	15
20	-DETDRIVE-	12+00	12+10	RT	15
4	-L-	13+50	14+50	LT	60
4	-L-	16+50	17+50	LT	75
4	-DRIVE-	11+40	12+00	LT	40
4	-DRIVE-	11+40	11+50	RT	10
4	-DRIVE-	11+70	11+80	RT	10
			SUBTOTAL		240
		ADDITIONAL PSRM TO BE INSTALLED			100
			TOTAL		340
			SAY		350

DETOUR

PROJECT REFERENCE NO.	SHEET NO.
B-5146	EC-4/CONST.2-B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 2-B

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



NOTE:
UTILIZE SKIMMER BASIN OR SPECIAL STILLING BASIN(S) WHERE APPLICABLE.

5/14/99

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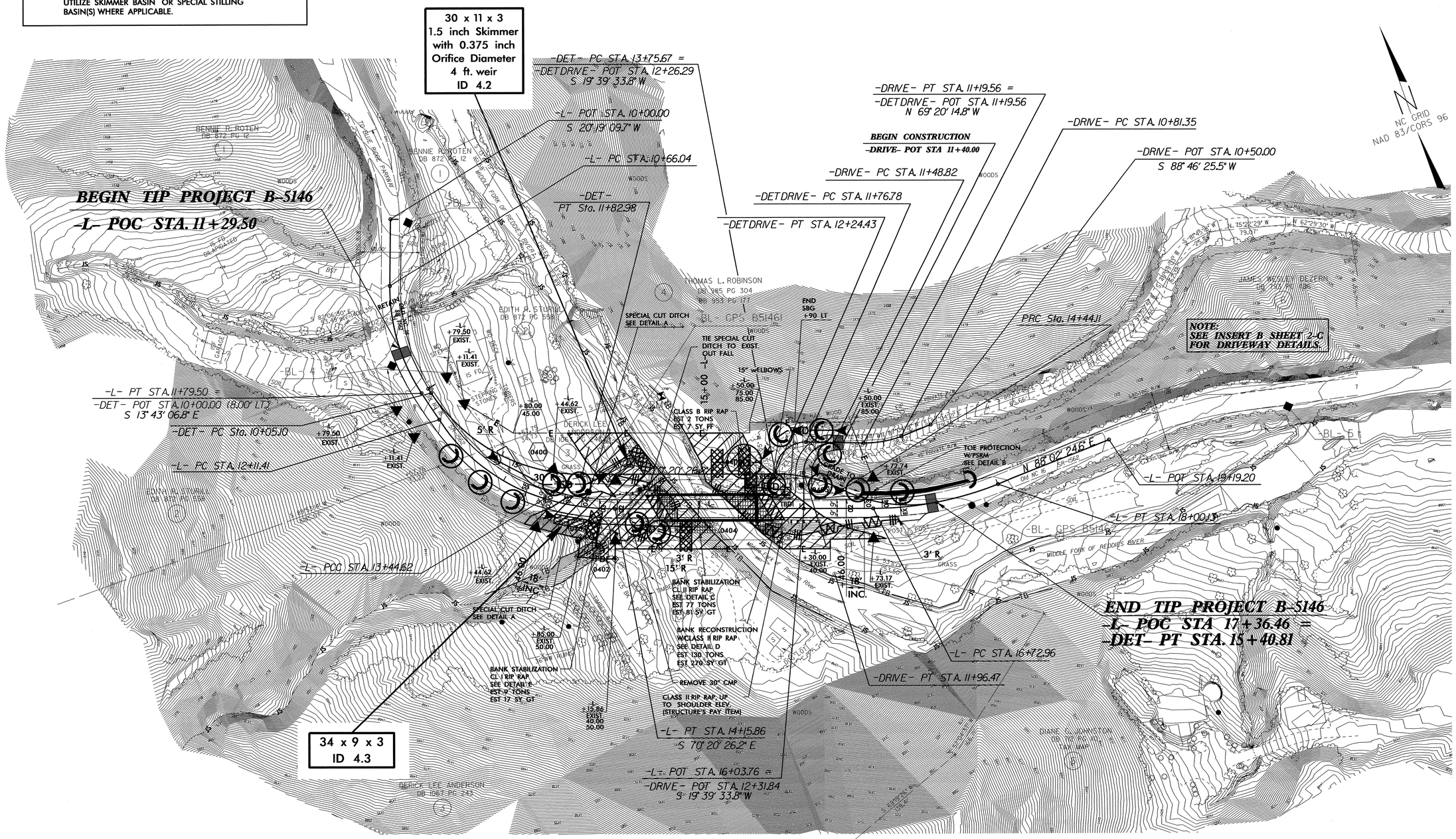
PROJECT REFERENCE NO.	SHEET NO.
B-5146	EC-5/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

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

NOTE:
UTILIZE SKIMMER BASIN OR SPECIAL STILLING BASIN(S) WHERE APPLICABLE.



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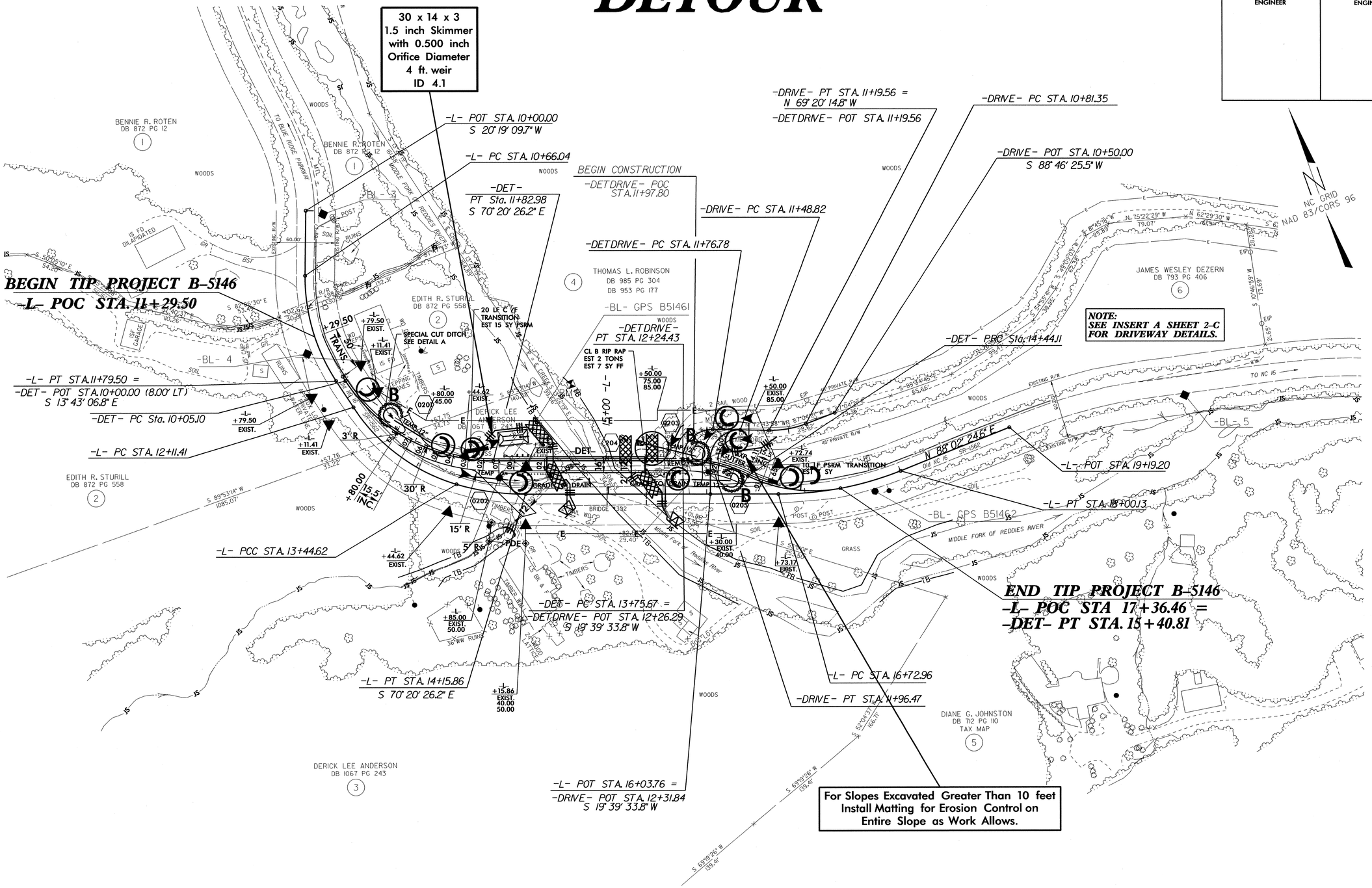
PROJECT REFERENCE NO.	SHEET NO.
B-5146	EC-6/CONST.2-B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DETOUR



NOTE:
UTILIZE SKIMMER BASIN OR SPECIAL STILLING BASIN(S) WHERE APPLICABLE.

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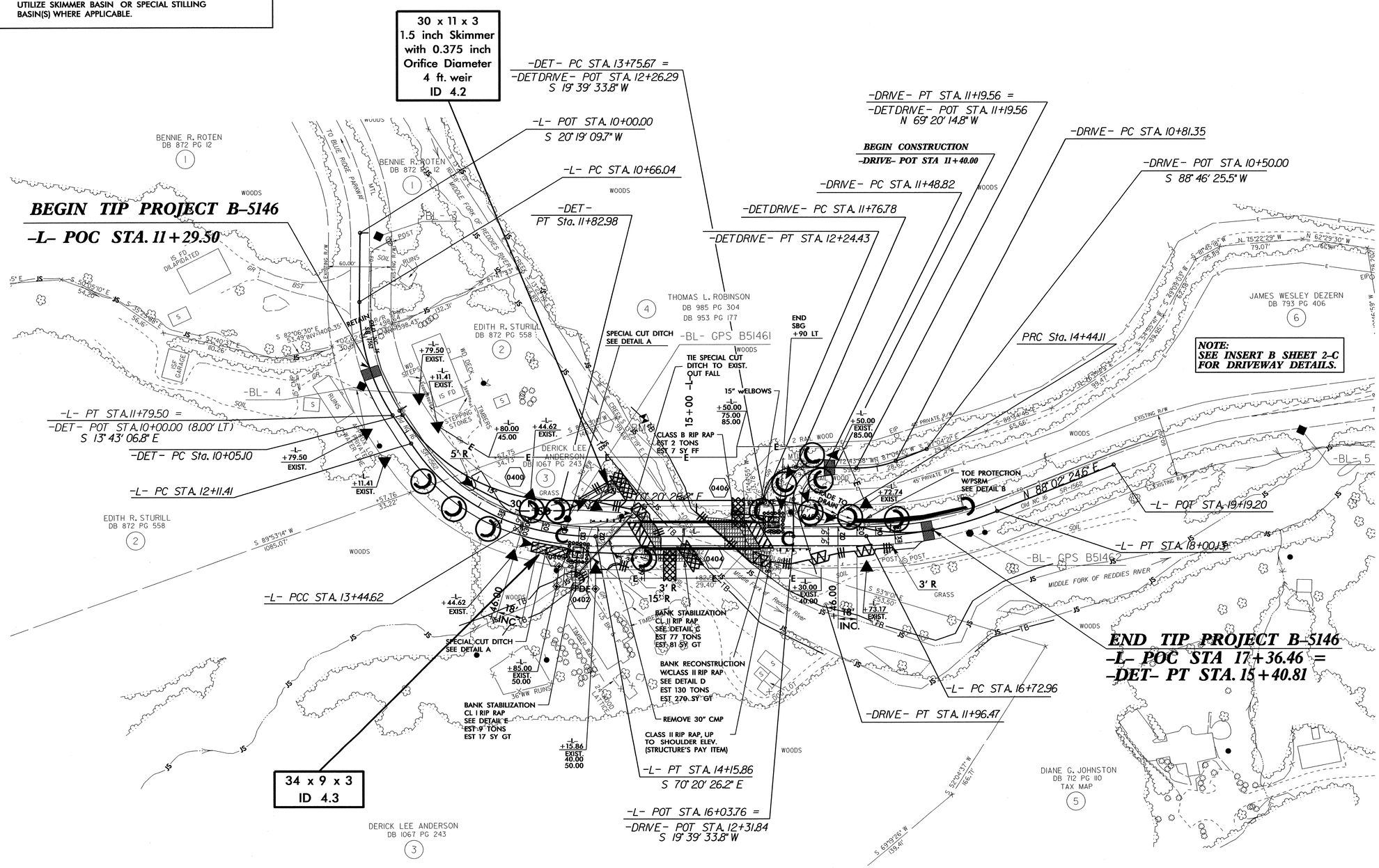
PROJECT REFERENCE NO.	SHEET NO.
B-5146	EC-7/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

5/14/99

NOTE:
UTILIZE SKIMMER BASIN OR SPECIAL STILLING BASIN(S) WHERE APPLICABLE.



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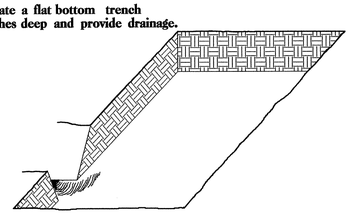
PROJECT REFERENCE NO.	SHEET NO.
B-5146	RF-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PLANTING DETAILS

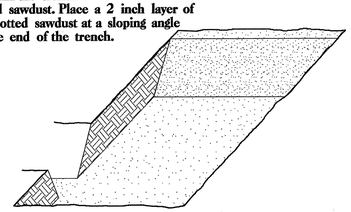
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

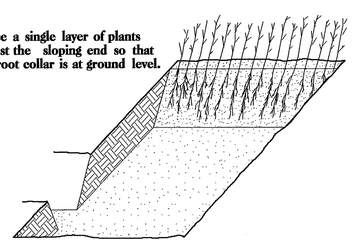
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



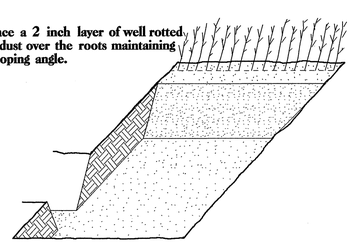
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

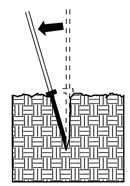


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

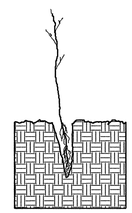


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

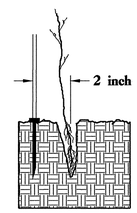
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



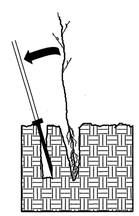
1. Insert planting bar as shown and pull handle toward planter.



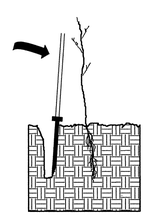
2. Remove planting bar and place seedling at correct depth.



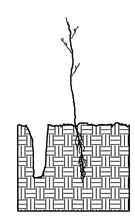
3. Insert planting bar 2 inches toward planter from seedling.



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



5. Push handle forward firming soil at top.



6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

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

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

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

REFORESTATION

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

REFORESTATION

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

34%	LIRIODENDRON TULIPIFERA	YELLOW POPLAR	12 in - 18 in BR
33%	PRUNUS SEROTINA	BLACK CHERRY	12 in - 18 in BR
33%	ALNUS SERRULATA	TAG ALDER	12 in - 18 in BR

REFORESTATION DETAIL SHEET

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

Project No.	Sheet No.
B-5146	Sig. 1

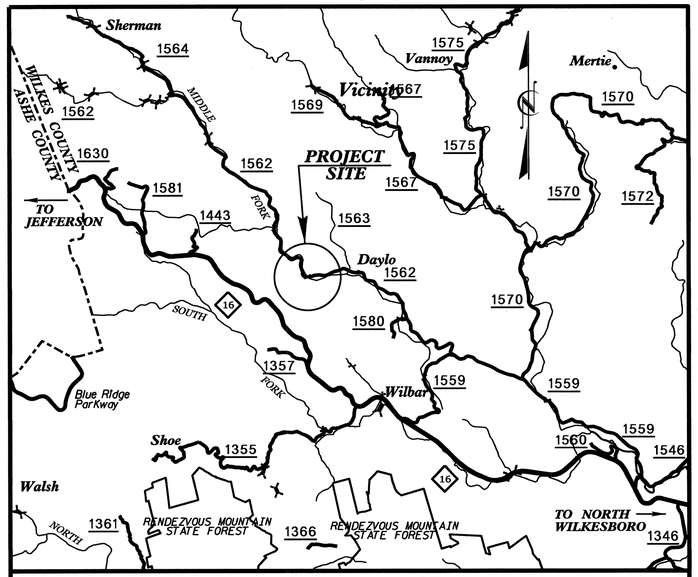
TIP PROJECT: B-5146

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

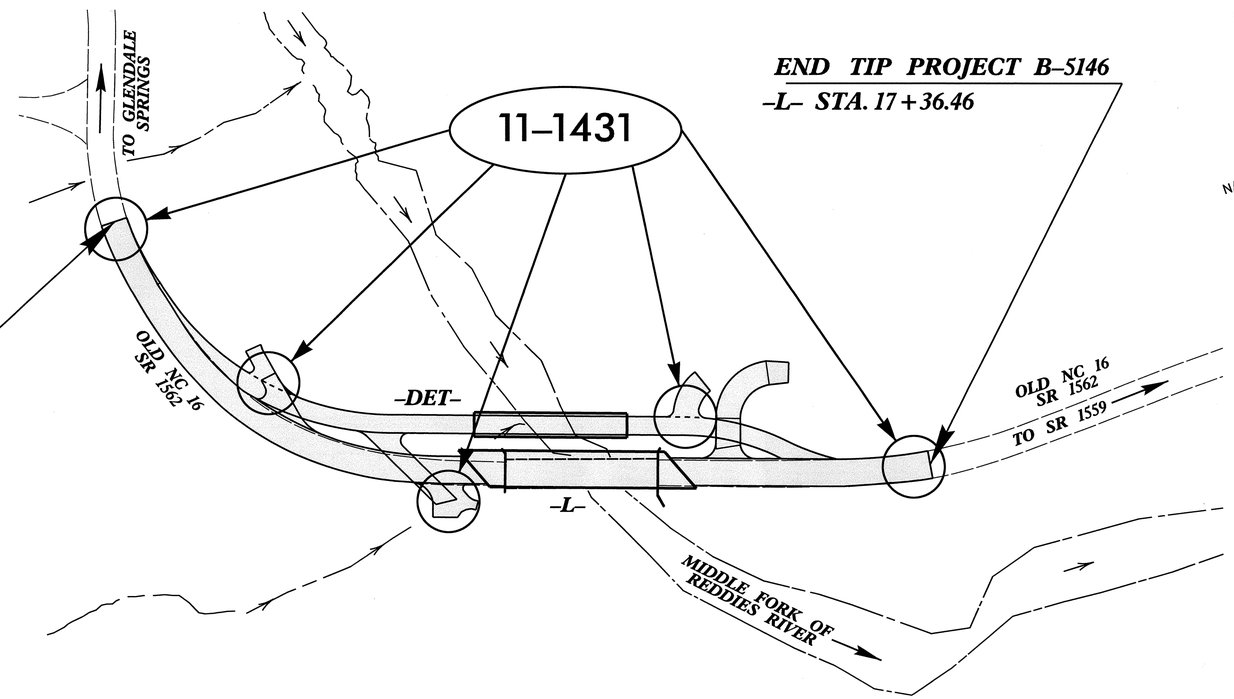
WILKES COUNTY

LOCATION: BRIDGE 302 OVER MIDDLE FORK OF REDDIES RIVER ON SR 1562 (OLD NC 16)

TYPE OF WORK: TEMPORARY TRAFFIC SIGNAL



VICINITY MAP



Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.

Index of Plans

Sheet #	Reference #	Location/Description
Sig. 1	--------	Title Sheet
Sig. 2-4	11-1431	SR 1562 (Old NC 16) at Bridge 302 over Middle Fork of Reddies River

INTELLIGENT TRANSPORTATION AND SIGNALS UNIT

Contacts:

Timothy J. Williams, PE - Western Region Signals Engineer
John T. Rowe, Jr., PE - Signal Equipment Design Engineer

Prepared in the Office of:
DIVISION OF HIGHWAYS
TRANSPORTATION MOBILITY AND SAFETY DIVISION
Intelligent Transportation Systems & Signals Unit
750 N. Greenfield Parkway, Garner, NC 27529

30-SEP-2013 15:22
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twilliams

PROJECT REFERENCE NO.	SHEET NO.
B-5146	Sig. 2

PHASING DIAGRAM

PHASING DIAGRAM DETECTION LEGEND

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

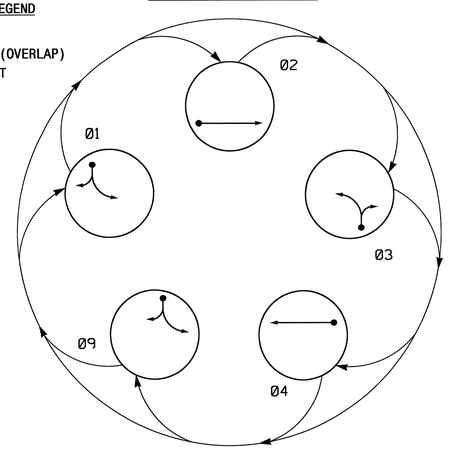


TABLE OF OPERATION

SIGNAL FACE	PHASE 01	02	03	04	09	FLASH
11,12	G	R	R	R	R	R
21,22	R	G	R	R	R	R
31,32	R	R	G	R	R	R
41,42	R	R	R	G	R	R
91,92	R	R	R	R	G	R

SIGNAL FACE I.D.

All Heads L.E.D.

R
Y 12"
G

11,12
21,22
31,32
41,42
91,92

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

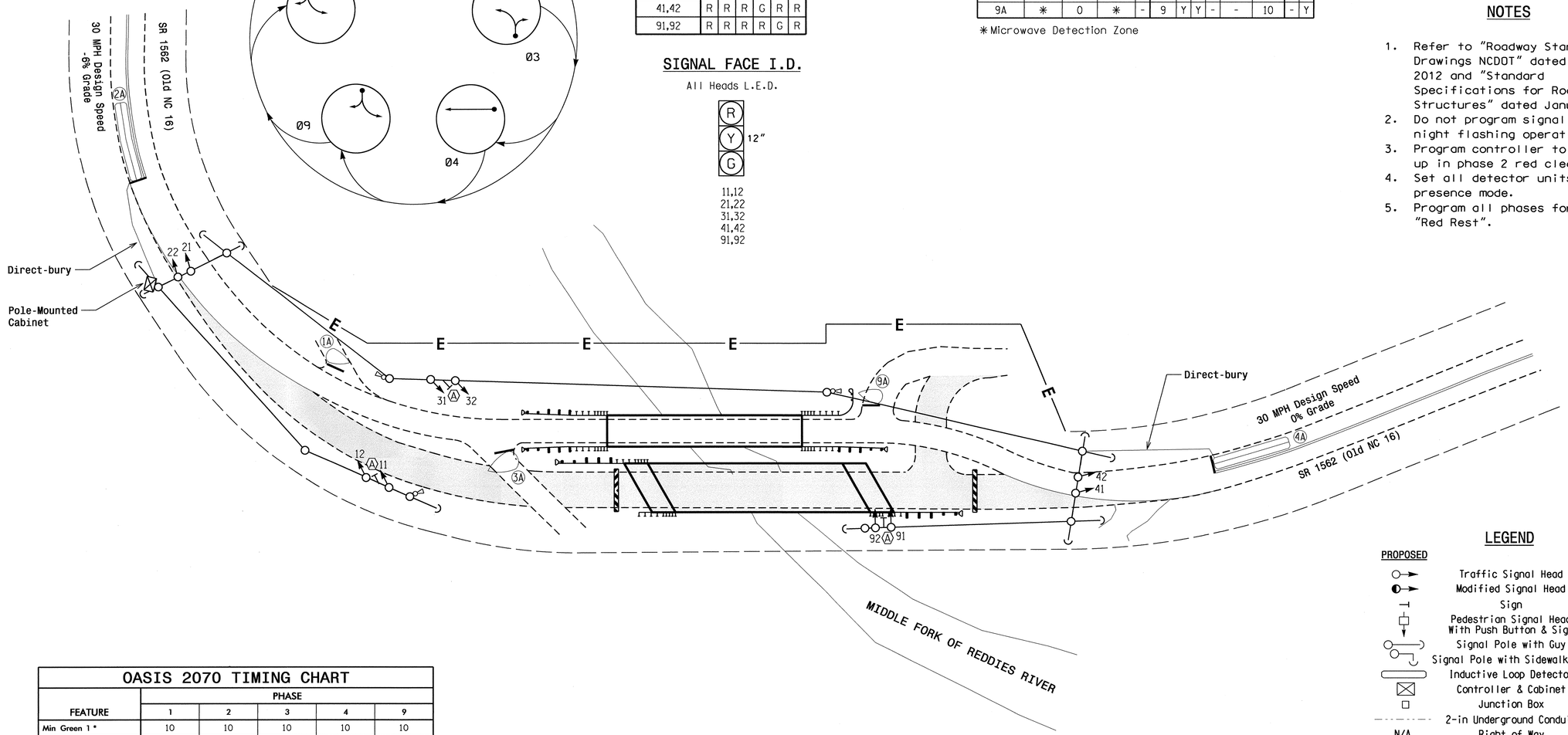
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	*	0	*	-	1	Y	Y	-	-	10	-	Y
2A	0	0	2-4-2	Y	2	Y	Y	-	-	-	-	Y
3A	*	0	*	-	3	Y	Y	-	-	10	-	Y
4A	0	0	2-4-2	Y	4	Y	Y	-	-	-	-	Y
9A	*	0	*	-	9	Y	Y	-	-	10	-	Y

* Microwave Detection Zone

5 Phase
Fully Actuated
Isolated

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. Do not program signal for late night flashing operation.
3. Program controller to start up in phase 2 red clearence.
4. Set all detector units to presence mode.
5. Program all phases for "Red Rest".



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
E	Temporary Construction Easement	E
	Out of Pavement Detector	
	Out of Pavement Detection Zone	
	Construction Zone	
A	"NO TURN ON RED" Sign (R10-11)	A

OASIS 2070 TIMING CHART

FEATURE	PHASE 1	2	3	4	9
Min Green 1 *	10	10	10	10	10
Extension 1 *	2.0	2.0	2.0	2.0	2.0
Max Green 1 *	20	45	20	45	20
Yellow Clearance	3.2	5.1	3.2	4.5	3.2
Red Clearance	15.0	20.0	15.0	20.0	15.0
Red Revert	2.0	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-	-
Don't Walk 1	-	-	-	-	-
Seconds Per Actuation *	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-
Time To Reduce *	-	-	-	-	-
Minimum Gap	-	-	-	-	-
Recall Mode	-	-	-	-	-
Vehicle Call Memory	YELLOW	YELLOW	YELLOW	YELLOW	YELLOW
Dual Entry	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

New Installation - Temporary Signal

Prepared in the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SCALE 0 30 1"=30'

SR 1562 (Old NC 16) at Bridge 302 Over Middle Fork of Reddies River

Division 11 Wilkes County near North Wilkesboro

PLAN DATE: September 2013 REVIEWED BY: T.J. Williams
PREPARED BY: Z.M. Little REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 24393 ENGINEER TIMOTHY J. WILLIAMS
SIGNATURE T.J. Williams DATE 9/25/13
SIG. INVENTORY NO. 11-1431

25-SEP-2013 14:15
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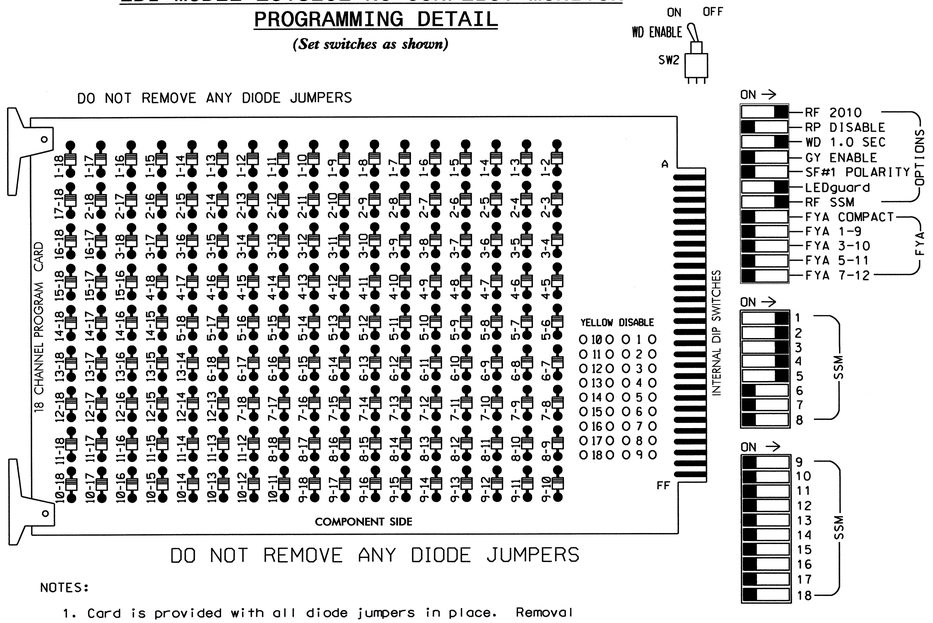
zmlittle

PROJECT REFERENCE NO.	SHEET NO.
B-5146	Sig. 3

EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(Set switches as shown)



■ = DENOTES POSITION OF SWITCH

NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Enable Simultaneous Gap-Out for all phases.
3. Program phase 2 for Start Up In Red Clear.
4. Program all phases for Red Rest.

EQUIPMENT INFORMATION

CONTROLLER.....2070L
CABINET.....332
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...12
LOAD SWITCHES USED.....S1,S2,S4,S5,S7
PHASES USED.....1,2,3,4,9
OVERLAP E.....9

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16
PHASE	1	2	2 PED	3	4	4 PED	OLE	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	11,12	21,22	NU	31,32	41,42	NU	91,92	NU	NU	NU	NU	NU
RED	125	128		116	101		131					
YELLOW	126	129		117	102		132					
GREEN	127	130		118	103		133					
RED ARROW												
YELLOW ARROW												
GREEN ARROW												
✋												
🚶												

NU = Not Used

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

PRESS '+' 4 TIMES

```
PAGE 1: VEHICLE OVERLAP 'E' SETTINGS
PHASE:          ¦123456789101112131415 16
VEH OVL PARENTS:¦          X
VEH OVL NOT VEH:¦
VEH OVL NOT PED:¦
VEH OVL GRN EXT:¦
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  _ GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....5
```

OVERLAP PROGRAMMING COMPLETE

INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	SLOT EMPTY *	ø2 2A NOT USED	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY *	ø4 4A NOT USED	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	FS DC ISOLATOR
	L														ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY *	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L														

EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

* Microwave Detector Input - Do not populate slot with detector card.

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
*1A	TB2-1,2	I1U	56	18	1	1	Y	Y			10
2A	TB2-5,6	I2U	39	1	2	2	Y	Y			
*3A	TB4-5,6	I5U	58	20	3	3	Y	Y			10
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			
*9A	TB3-1,2	J1U	55	17	5	9	Y	Y			10

* Microwave detector - see wiring detail on sheet 2.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

PHASE SEQUENCE PROGRAMMING DETAIL

(program controller as shown below)

FROM OASIS LOCAL CONTROLLER MAIN MENU
SELECT: 4 PHASE SEQUENCE

```
PHASE SEQUENCE: PAGE 1  NEXT: PAGES)
RNG¦LEAD   BARRIER 1  X-LAG¦LEAD   BARRIER 2  X-LAG¦LEAD   BARRIER 3  X-LAG
1  ¦1    2    0    0    ¦3    4    0    0    ¦9    0    0    0
2  ¦0    0    0    0    ¦0    0    0    0    ¦0    0    0    0
3  ¦0    0    0    0    ¦0    0    0    0    ¦0    0    0    0
4  ¦0    0    0    0    ¦0    0    0    0    ¦0    0    0    0
```

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 11-1431
DESIGNED: September 2013
SEALED: 9/25/13
REVISED: N/A

New Installation - Temporary Signal - Sheet 1 of 2

ELECTRICAL AND PROGRAMMING DETAILS FOR:

SR 1562 (Old NC 16)
at
Bridge 302 over
Middle Fork of Reddies River

Division 11 Wilkes County near N. Wilkesboro

PLAN DATE: September 2013 REVIEWED BY: JTR
PREPARED BY: S. Armstrong REVIEWED BY:

REVISIONS	INIT.	DATE

Prepared in the Offices of: Transportation Mobility and Safety Division, Signal Management Section, NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 N.Greenfield Pkwy,Garner,NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 008453 ENGINEER JOHN T. ROWE, JR.

SIGNATURE DATE 9-26-13
SIG. INVENTORY NO. 11-1431

26-SEP-2013 07:07
S:♦ITS&SU♦ITS Signals♦Workgroups♦Sig Mgmt♦Armstrong♦11431_smt_ele_xxx.dgn
armstrong

PROJECT REFERENCE NO.	SHEET NO.
B-5146	Sig. 4

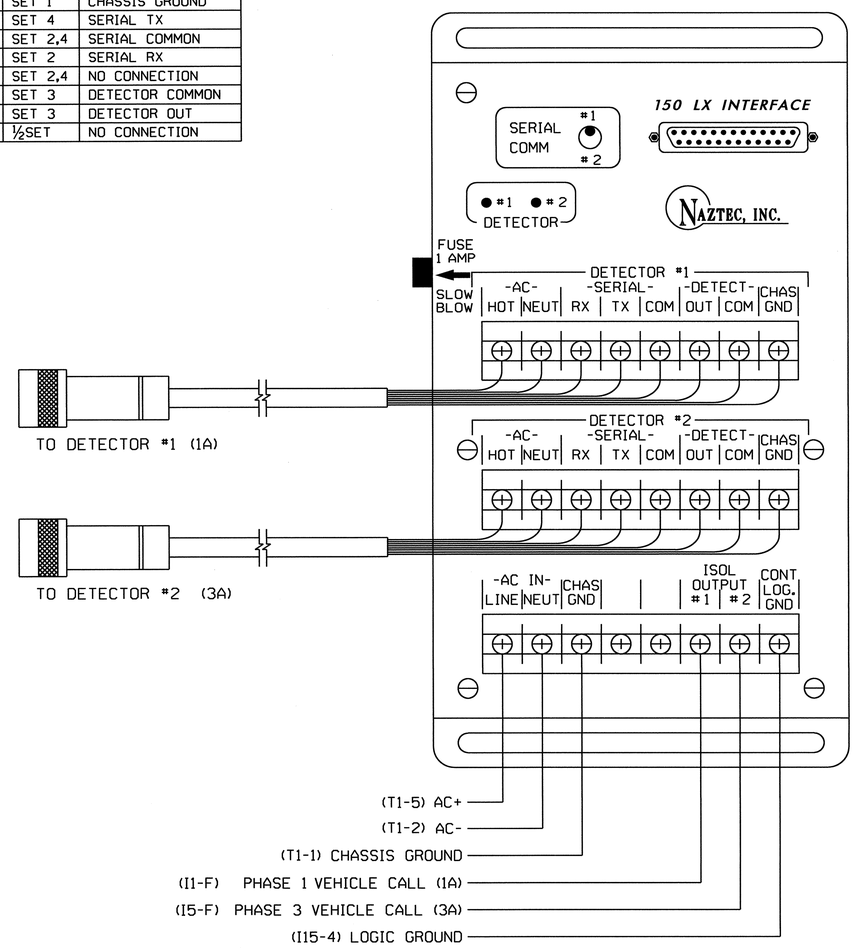
ACCUWAVE DETECTOR PANEL WIRING DETAIL

(wire as shown)

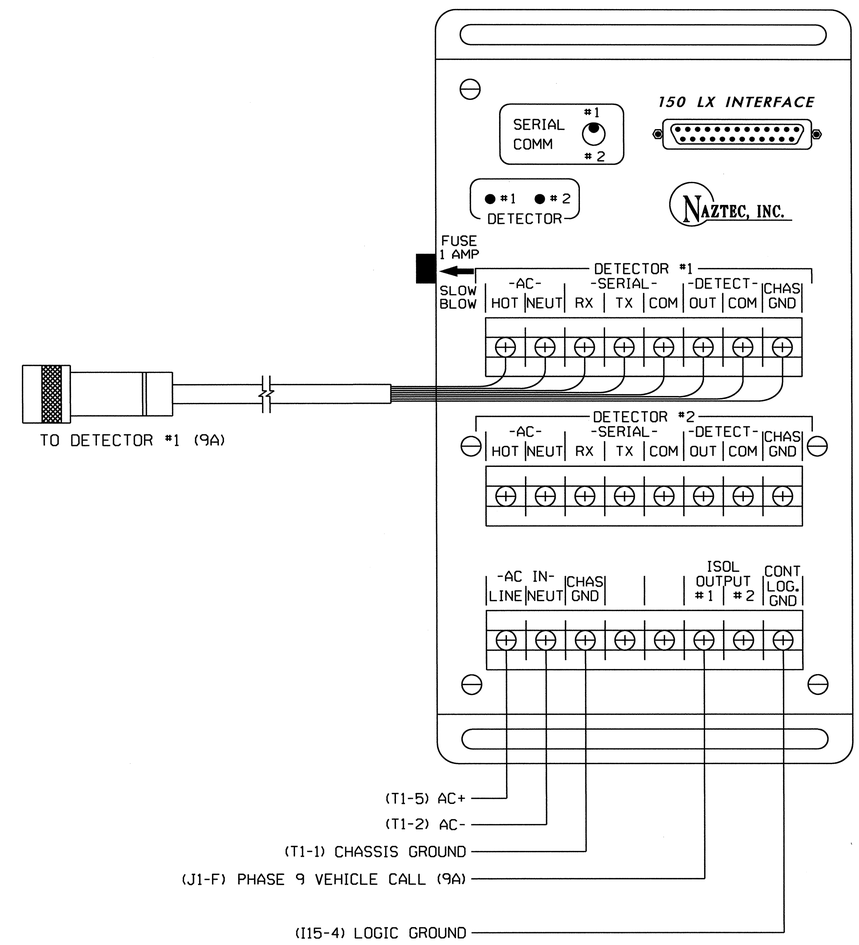
WIRE LIST FOR ACCUWAVE DETECTOR CABLE

COLOR	PIN#	SET #	PANEL CONNECTIONS
BLACK	A	SET 1	AC HOT
WHITE	B	SET 1	AC NEUTRAL
SILVER	C	SET 1	CHASSIS GROUND
BROWN	D	SET 4	SERIAL TX
BLACK	E	SET 2,4	SERIAL COMMON
RED	F	SET 2	SERIAL RX
SILVER	N.C.	SET 2,4	NO CONNECTION
BLUE	H	SET 3	DETECTOR COMMON
BLACK	L	SET 3	DETECTOR OUT
YELLOW	M	½SET	NO CONNECTION

UNIT #1 FOR LOOPS 1A & 3A



UNIT #2 FOR LOOP 9A



NOTES:

1. Detectors are Accuwave Model 150LX presence detectors.
2. Information in the detector cable wire list chart is for cable purchased from Naztec and may vary if purchased from another source.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 11-1431
DESIGNED: September 2013
SEALED: 9/25/13
REVISED: N/A

New Installation - Temporary Signal - Sheet 2 of 2

ELECTRICAL AND PROGRAMMING DETAILS FOR:

SR 1562 (Old NC 16)
at
Bridge 302 over
Middle Fork of Reddies River

Division 11 Wilkes County near N. Wilkesboro

PLAN DATE: September 2013 REVIEWED BY: JTR
PREPARED BY: S. Armstrong REVIEWED BY:

REVISIONS	INIT.	DATE

Prepared in the Offices of: Transportation Mobility and Safety Division, Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 008453 ENGINEER JOHN T. ROWE, JR.
John T. Rowe 9-26-13
SIGNATURE DATE
SIG. INVENTORY NO. 11-1431

26-SEP-2013 07:06
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S. Armstrong

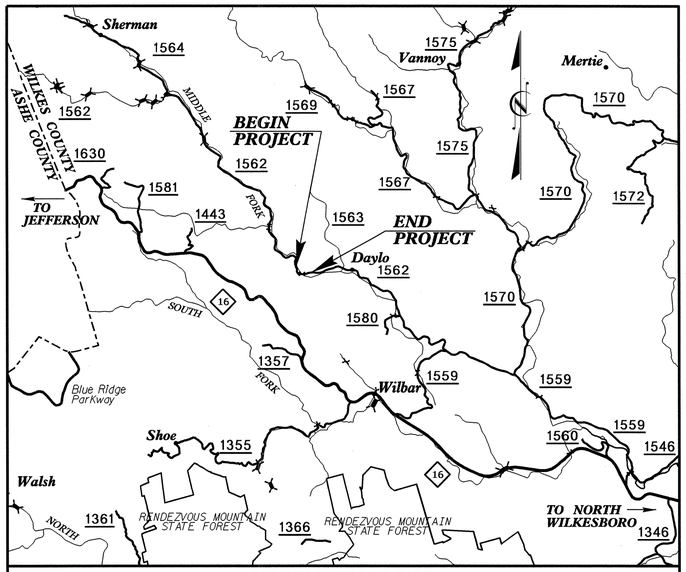
09/08/99

TIP PROJECT: B-5146

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
B-5146	UO-1

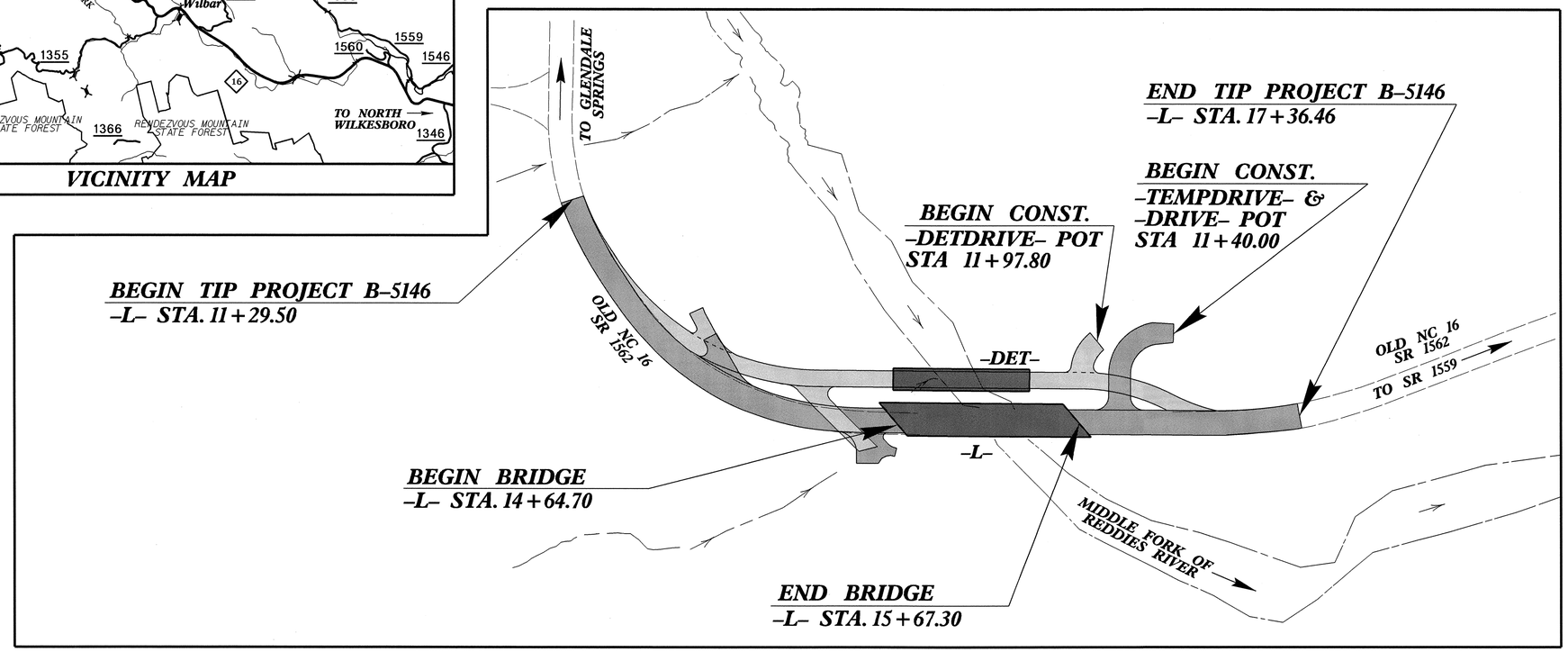
UTILITIES BY OTHERS PLAN
WILKES COUNTY



VICINITY MAP

LOCATION: BRIDGE NO. 302 OVER MIDDLE FORK REDDIES RIVER ON SR 1562

TYPE OF WORK: POWER DISTRIBUTION AND TELEPHONE COMMUNICATIONS RELOCATION



NAD 83

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

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

UTILITY OWNERS ON PROJECT

(1) BLUE RIDGE ELECTRIC MEMBERSHIP COOPERATIVE (BREMC) (POWER DISTRIBUTION)
(2) WILKES TELECOM (TELECOMMUNICATIONS)

Baker
Michael Baker Engineering, Inc.
8000 Regency Parkway, Suite 600
Cary, NC 27518
919-463-5488

UTILITIES COORDINATION CONSULTANT
Gus Kretschmer

PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING
1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4119

Roger Worthington, P.E. — UTILITIES SECTION ENGINEER
Carl Barclay, P.E. — UTILITIES SQUAD LEADER PROJECT ENGINEER
James Swinson — UTILITIES PROJECT DESIGNER

08-OCT-2013 13:43
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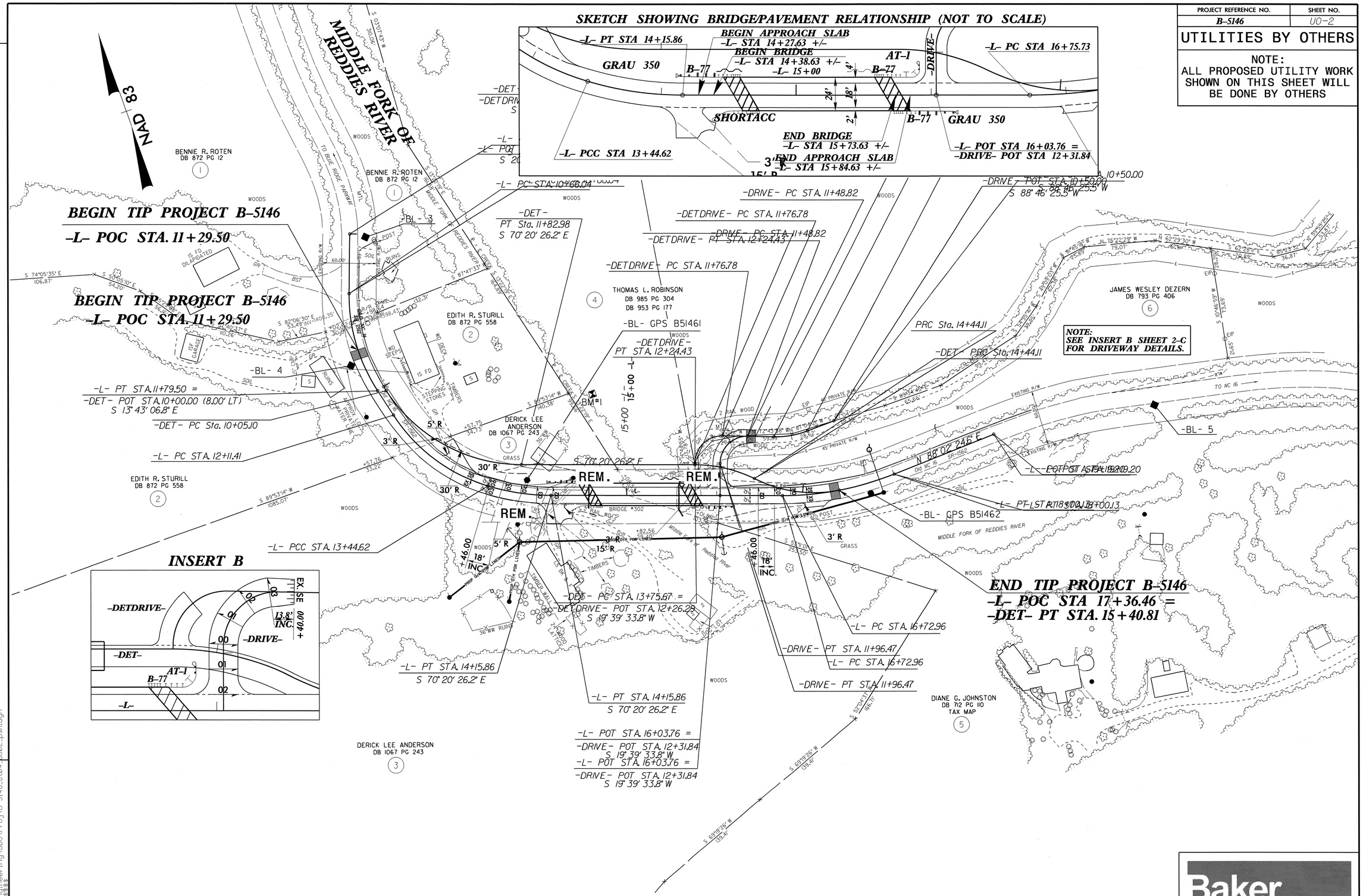
PROJECT REFERENCE NO.	SHEET NO.
B-5146	U0-2

UTILITIES BY OTHERS

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



NOTE: PUE AQUIRED BY BREMC

Baker
Michael Baker Engineering, Inc.
8000 Regency Parkway, Suite 600
Cary, NC 27518
919-463-5488

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
B-5146	UO-2B

UTILITIES BY OTHERS

NOTE:
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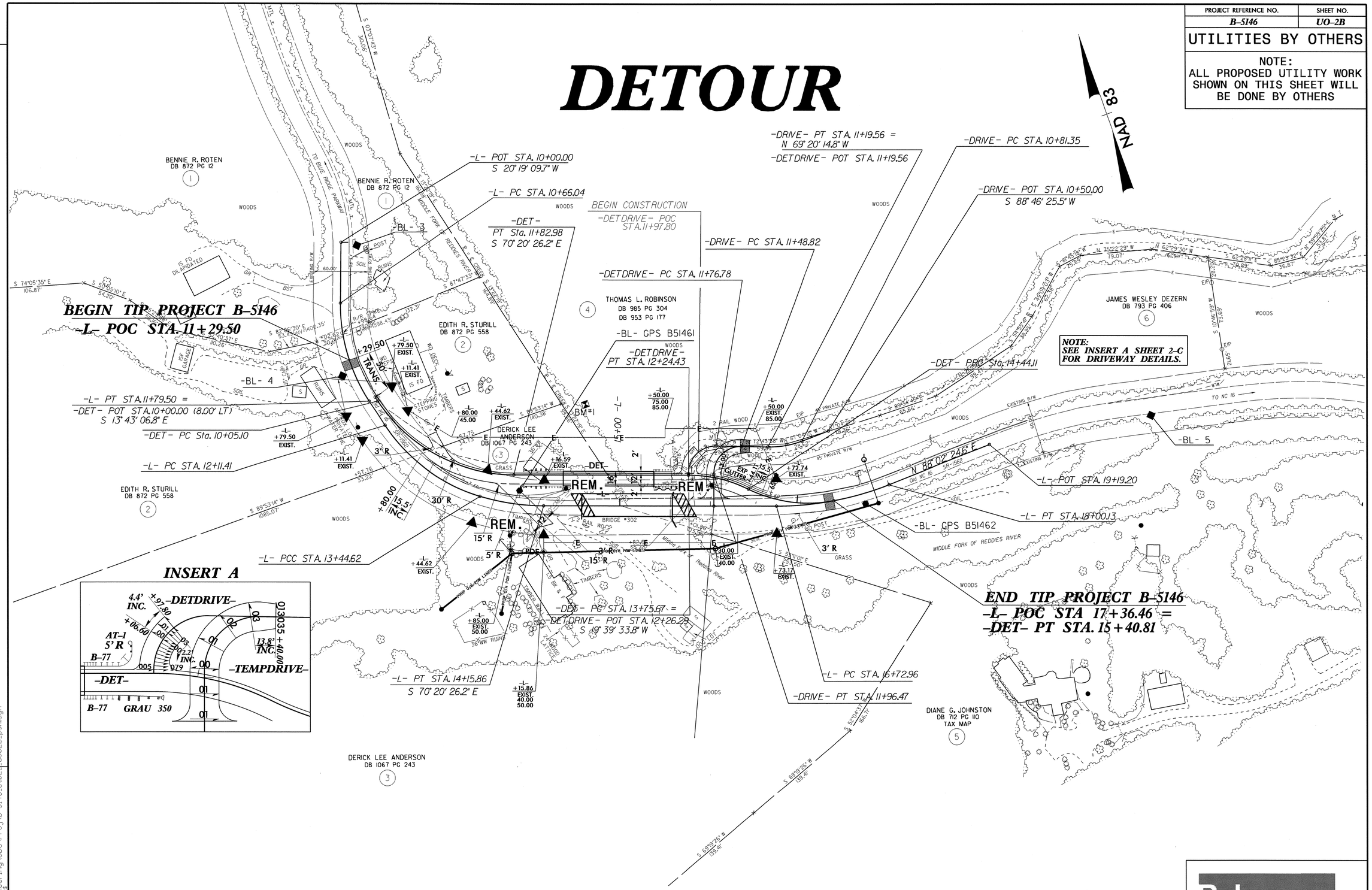
DETOUR



NOTE: PUE AQUIRED BY BREMC

Baker
Michael Baker Engineering, Inc.
8000 Regency Parkway, Suite 600
Cary, NC 27518
919-463-5488

REVISIONS

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PROJ. REFERENCE NO.	SHEET NO.
B-5146	X-0

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CROSS-SECTION SUMMARY

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

NOTE: EMBANKMENT COLUMN INCLUDES BACKFILL FOR UNDERCUT

Station (DET) -L-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
11+29.50	0	0
11+50.00	0	0
12+00.00	1	0
12+50.00	6	2
13+00.00	21	2
13+50.00	26	0
14+00.00	10	64
14+37.50	10	95
14+43.90	0	8

Station -DRIVE-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
11+40.00	0	0
11+50.00	6	0
11+60.00	6	0
11+70.00	7	1
11+80.00	8	2
11+90.00	5	7
12+00.00	0	28
12+10.00	0	34
12+20.00	0	14
12+30.00	0	1

Station (DET) -L-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
15+23.50	0	0
15+37.50	0	78
15+50.00	0	140
16+00.00	0	343
16+50.00	45	66
16+76.55	24	1

Station (DET REMOVAL) -L-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
11+79.50	0	0
12+00.00	1	0
12+50.00	6	3
13+00.00	6	10
13+50.00	1	10
14+00.00	70	3
14+50.00	69	0
15+00.00	0	0
15+50.00	288	0
16+00.00	360	0
16+50.00	76	44
16+76.55	2	23

Station -DETDRIVE-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
12+00.00	0	0
12+10.00	3	0
12+20.00	2	0

Station -L-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
13+25.00	0	0
13+50.00	0	1
14+00.00	0	27
14+50.00	0	104
14+64.70	0	47
14+76.00	0	18

Station -L-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
15+57.10	0	0
15+67.30	0	7
16+00.00	0	48

Station -L-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
16+00.00	0	0
16+50.00	0	39
17+00.00	0	4

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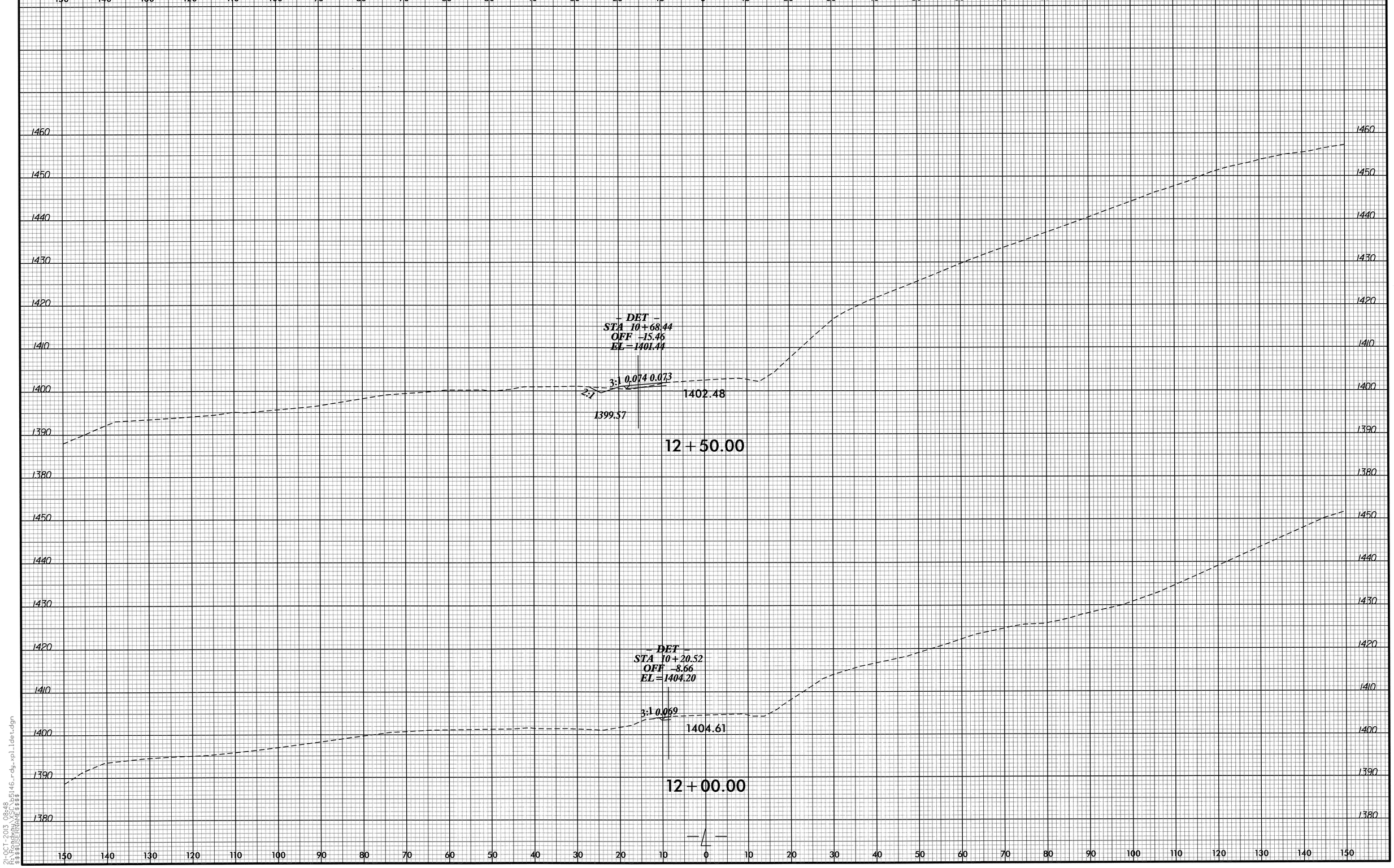
	B-5146	X-1



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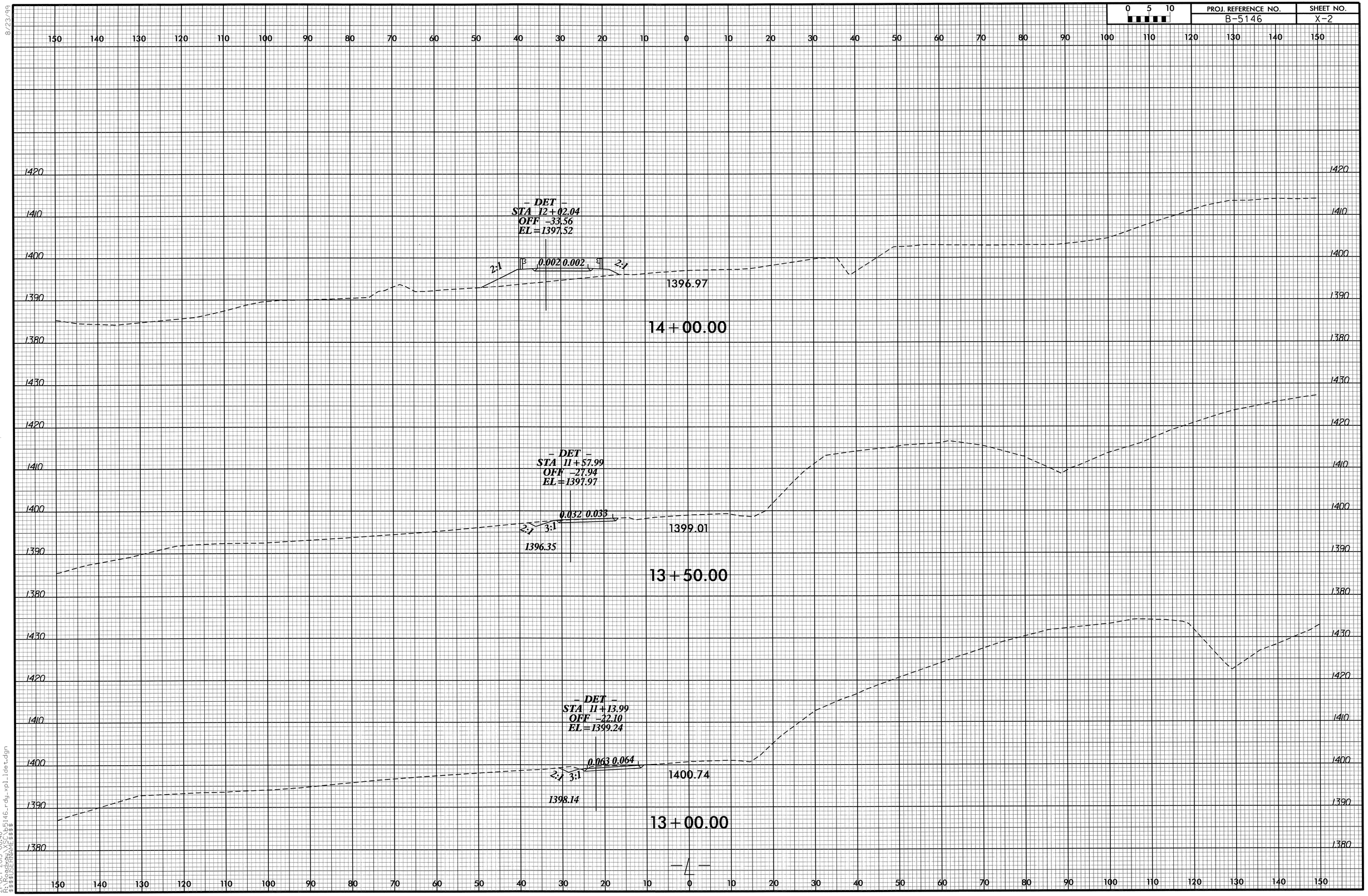

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RD266217 10/21/2013 xpl_DET_X-02 jrhatfield RD-Oce860-34

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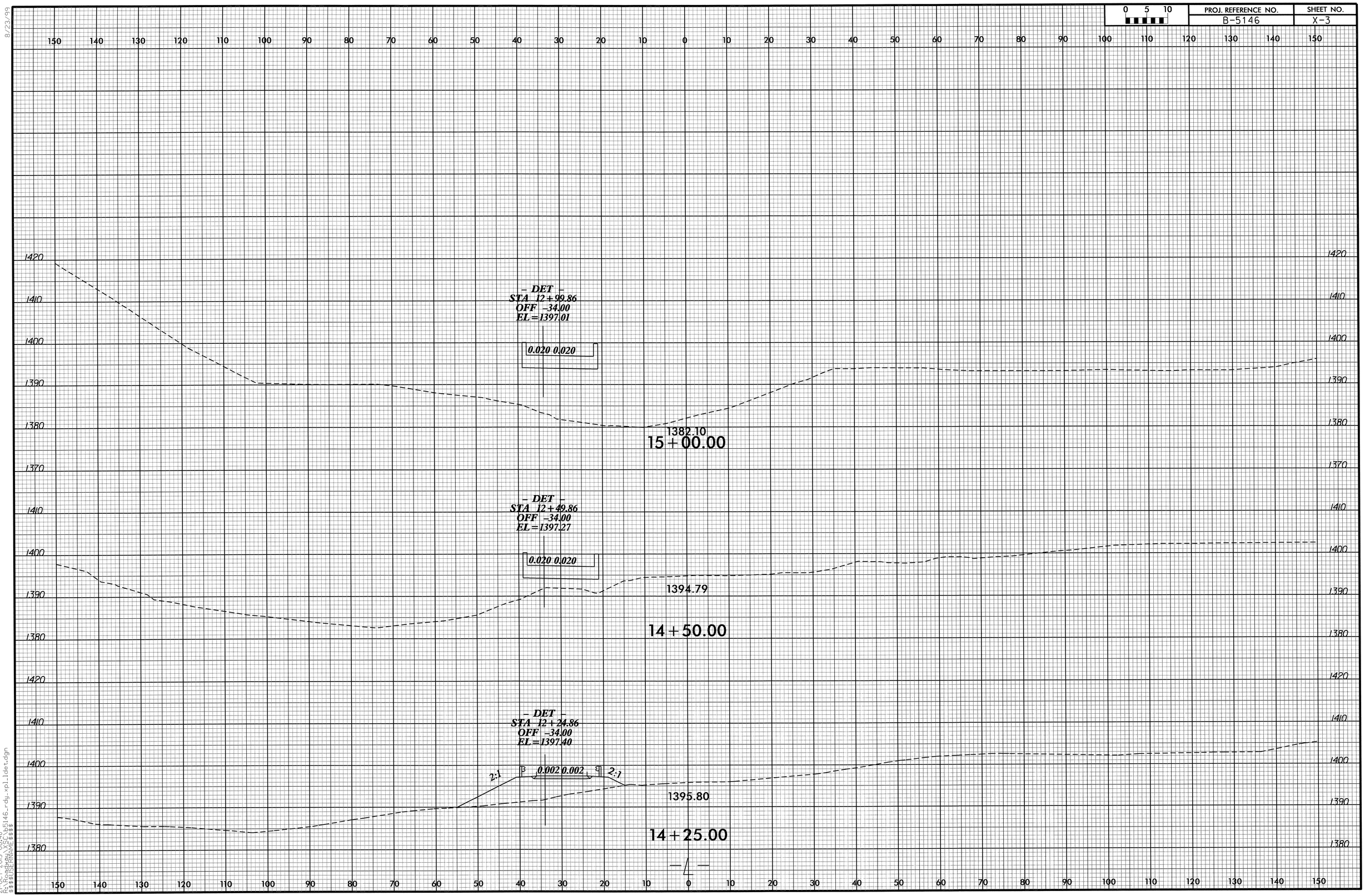

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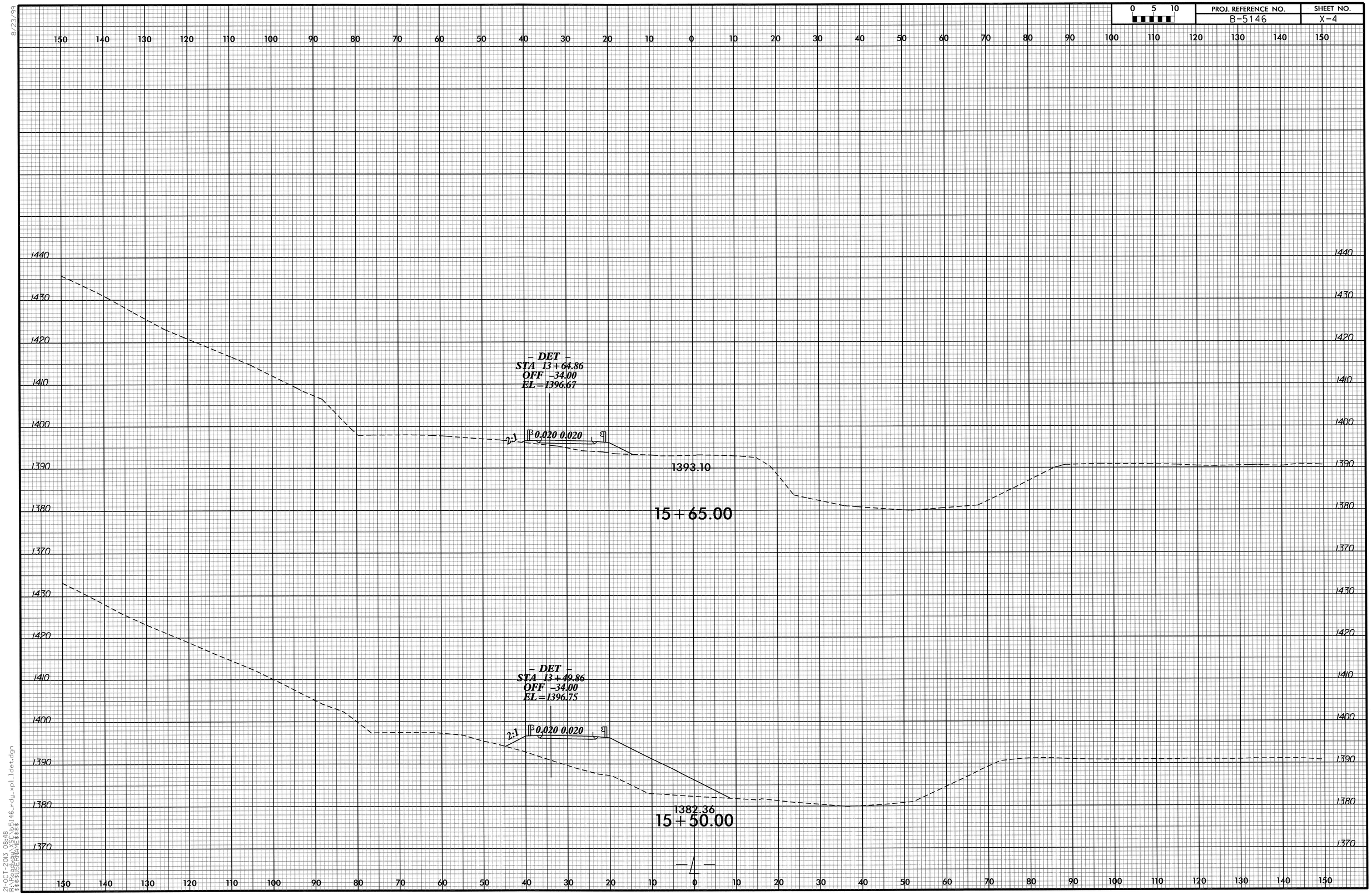
PROJ. REFERENCE NO.	SHEET NO.
B-5146	X-4



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RD266217 10/21/2013 xpl_DET_X-04 jrhatfield RD-Oce860-34

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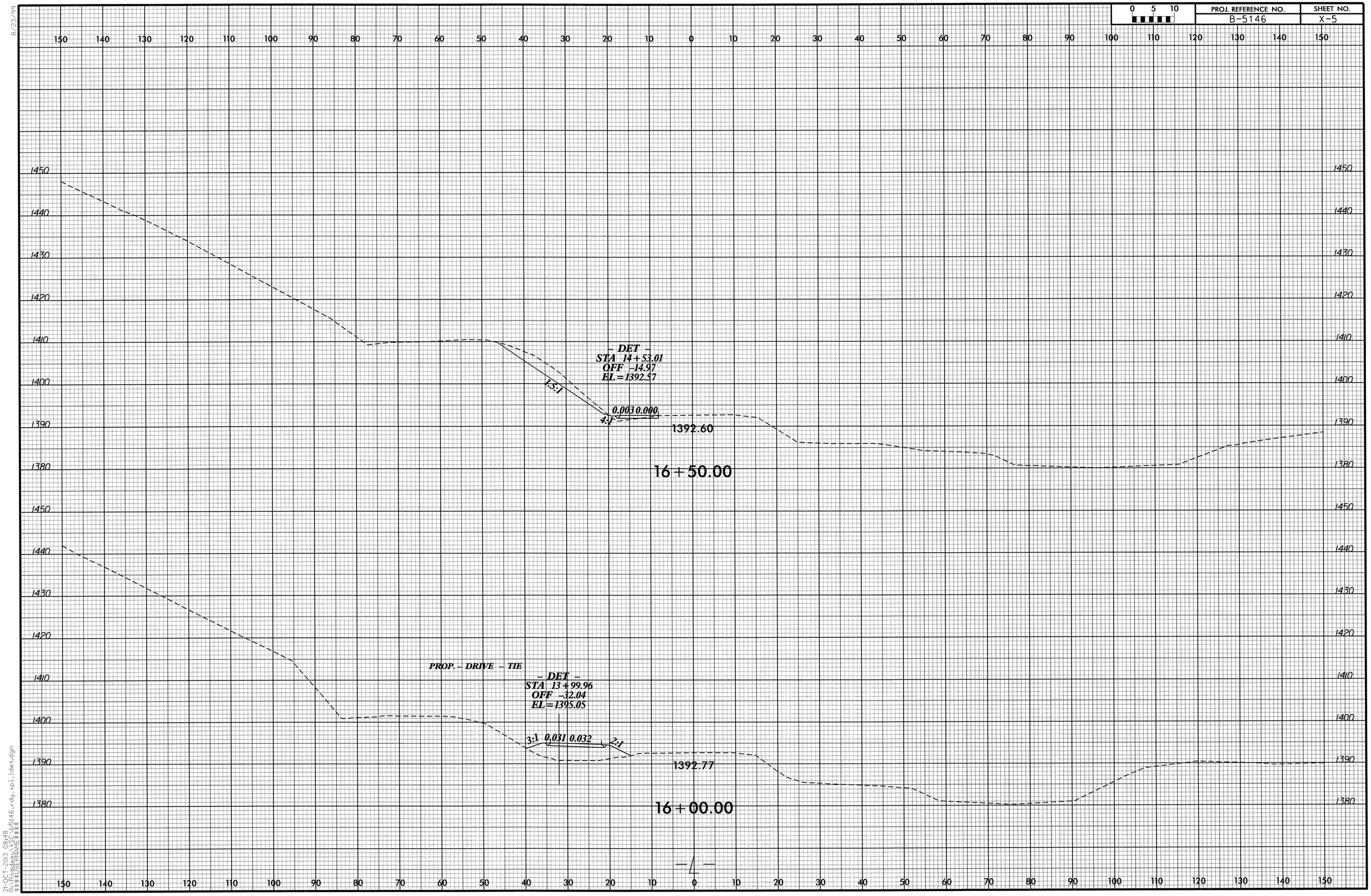

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RD266217 10/21/2013 xpl_DET_X-05 jrhatfield RD-Oce860-34

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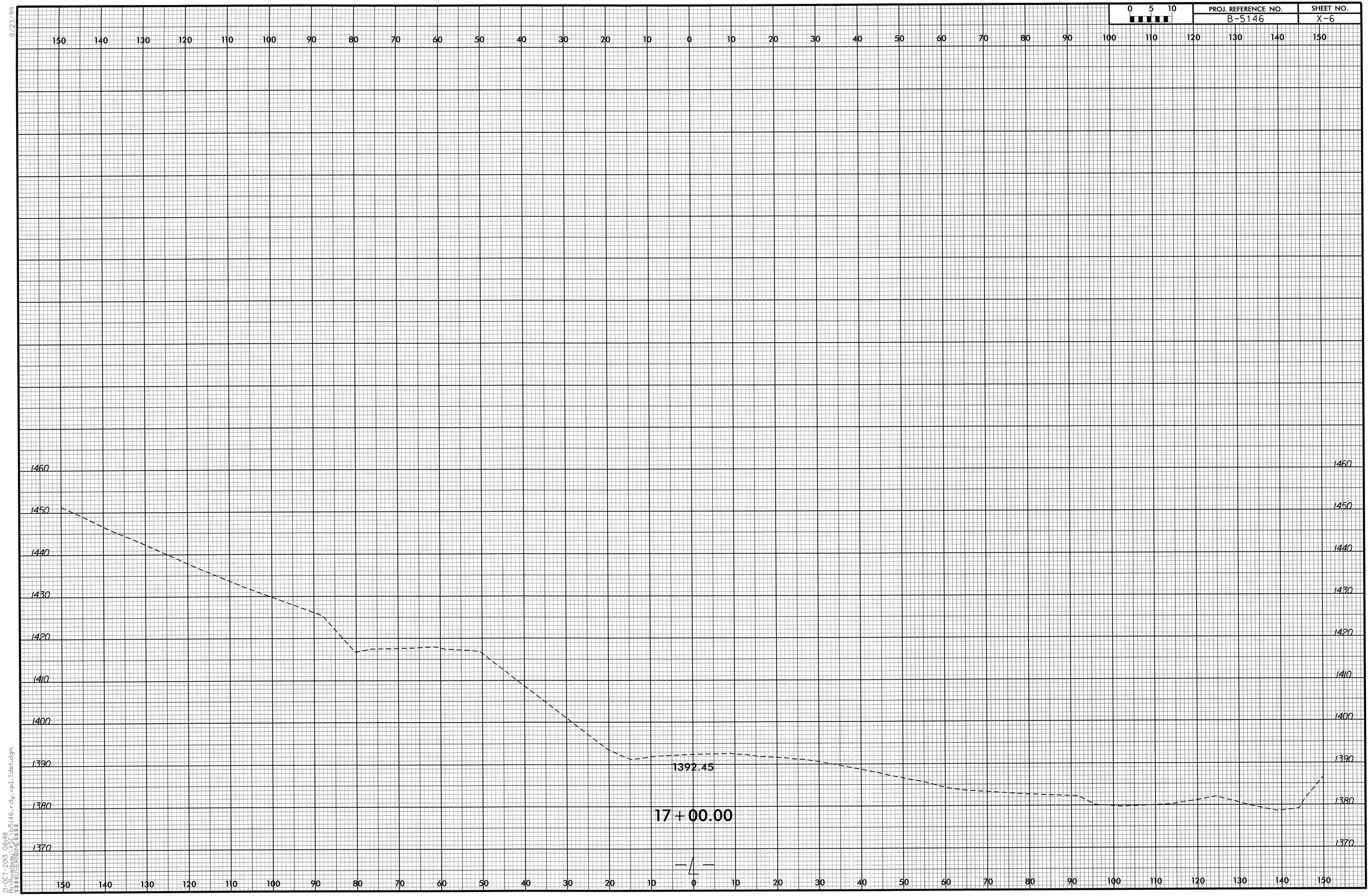

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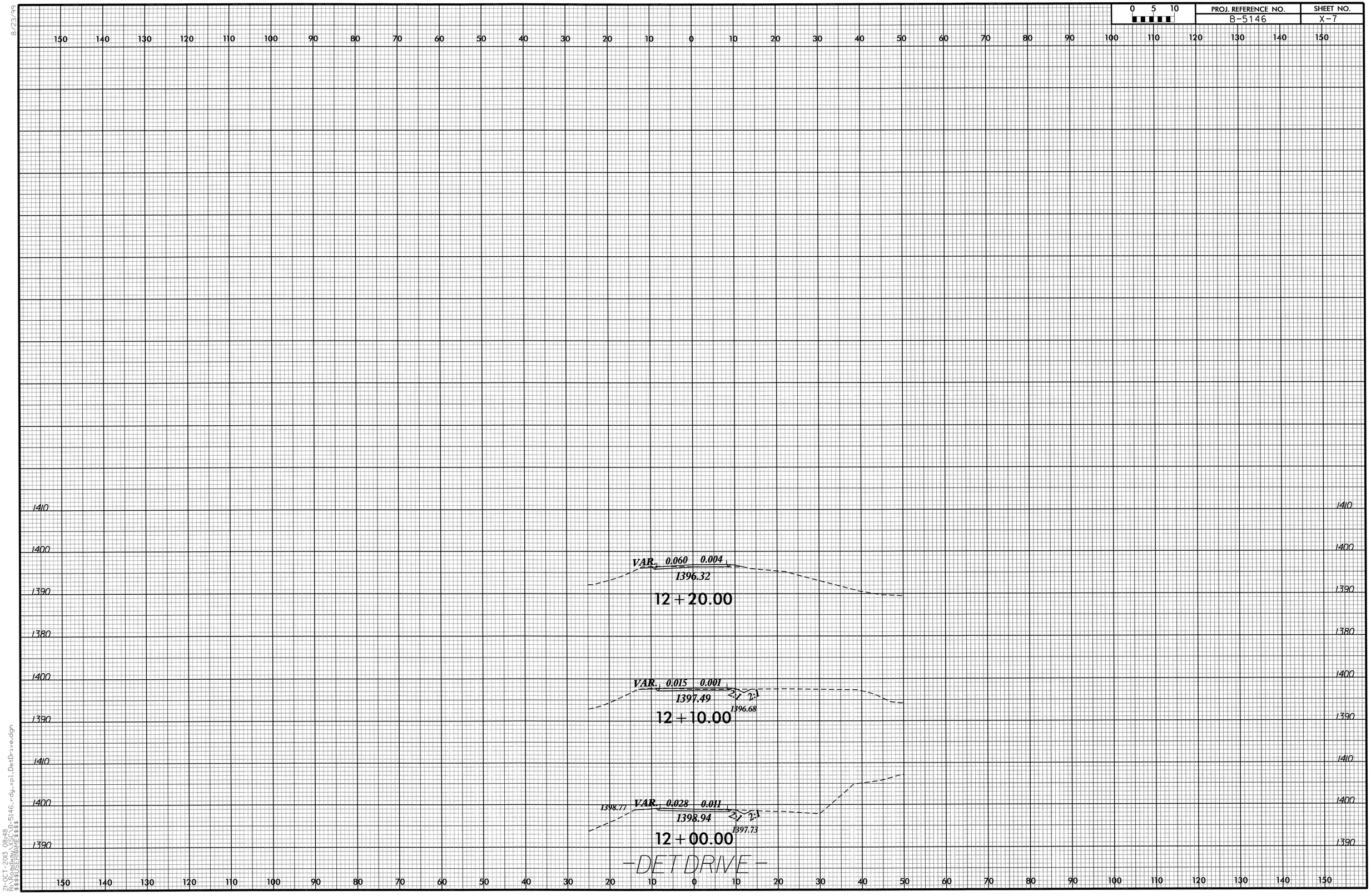

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RD266217 10/21/2013 xpl_DetDrive_X-07 jrhatfield RD-Oce860-34

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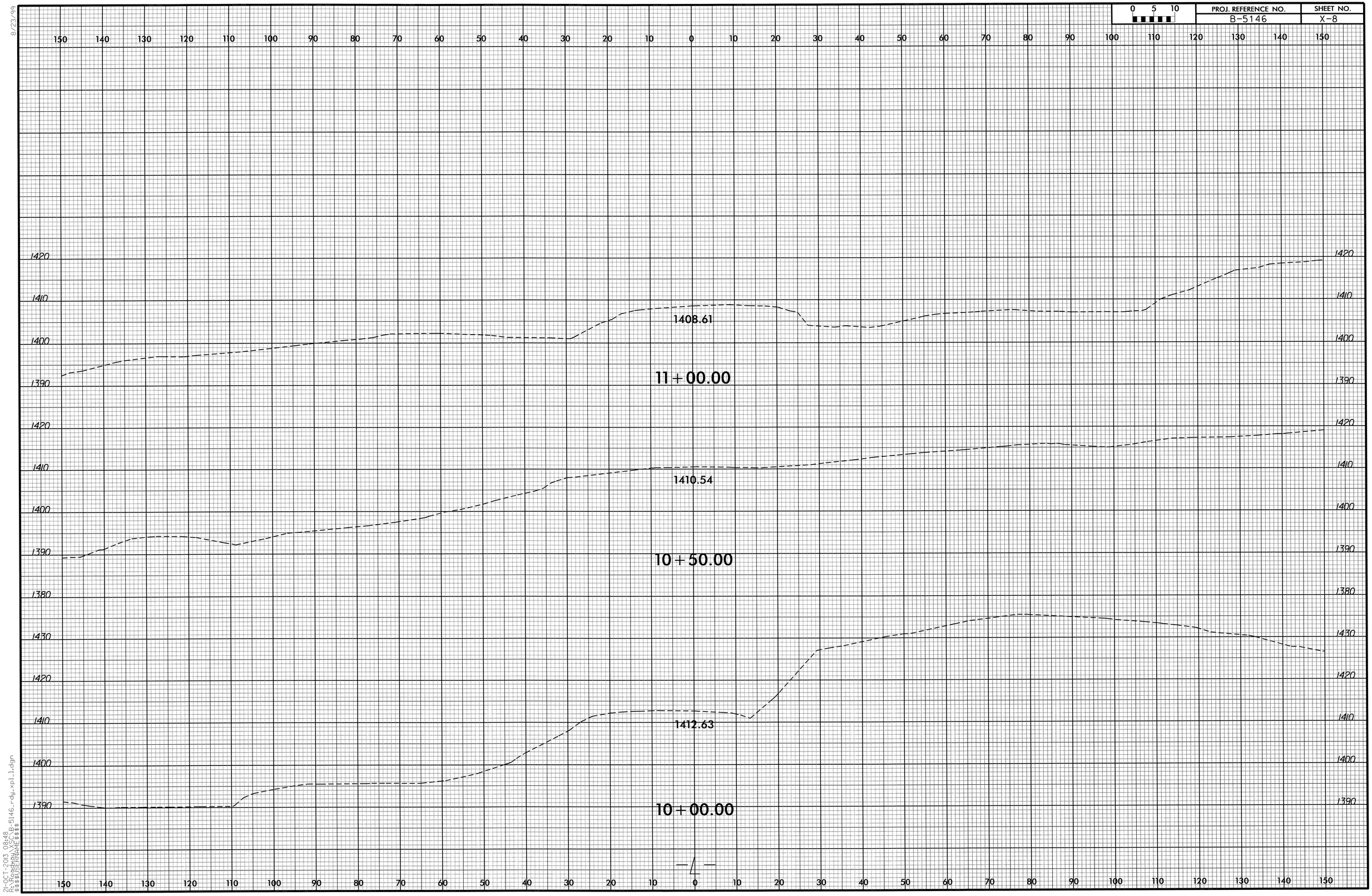

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RD266217 10/21/2013 xpl_L_X-08 jrhatfield RD-Oce860-34

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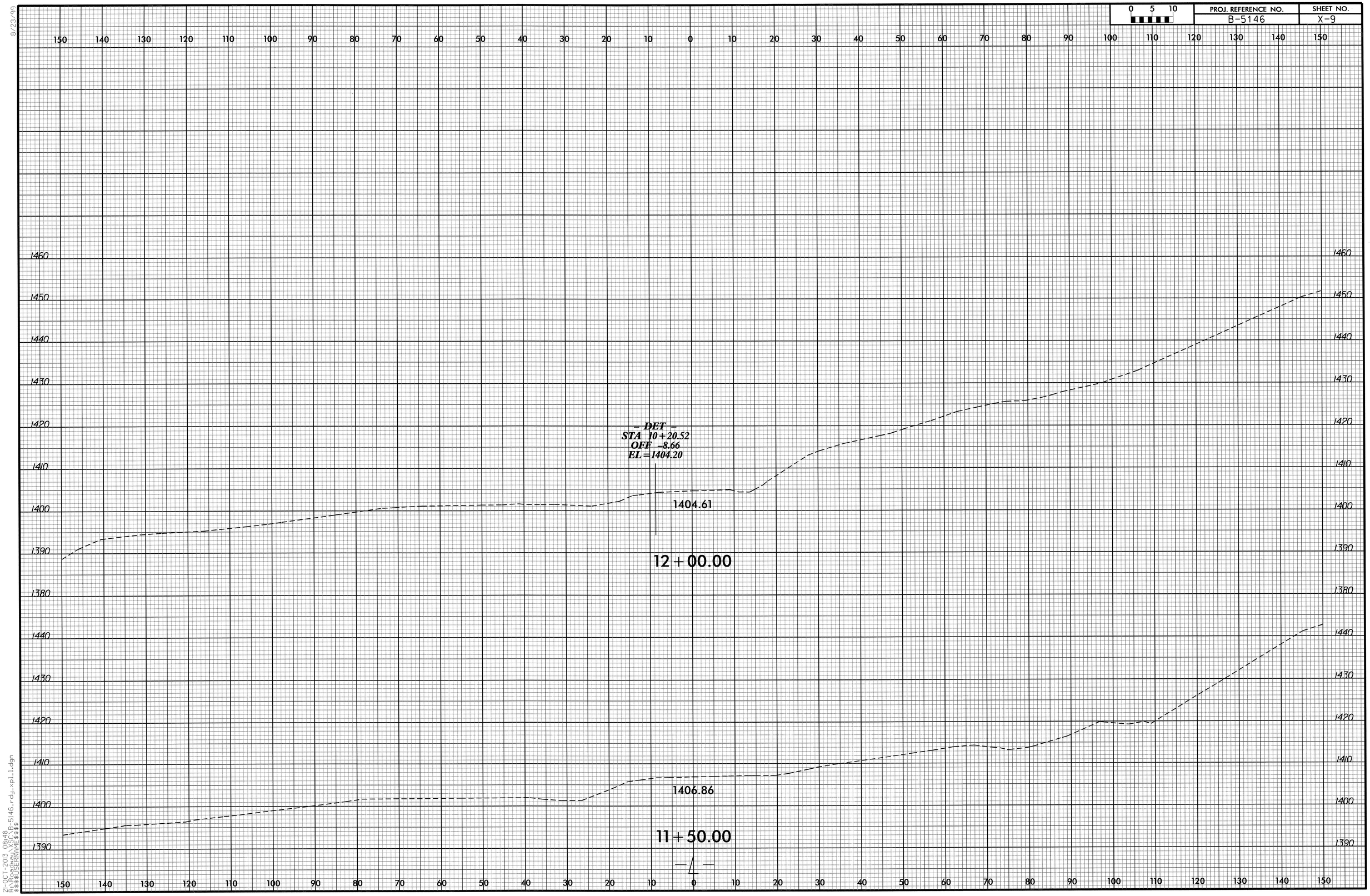

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RD266217 10/21/2013 xpl_L_X-09 jrhatfield RD-Oce860-34

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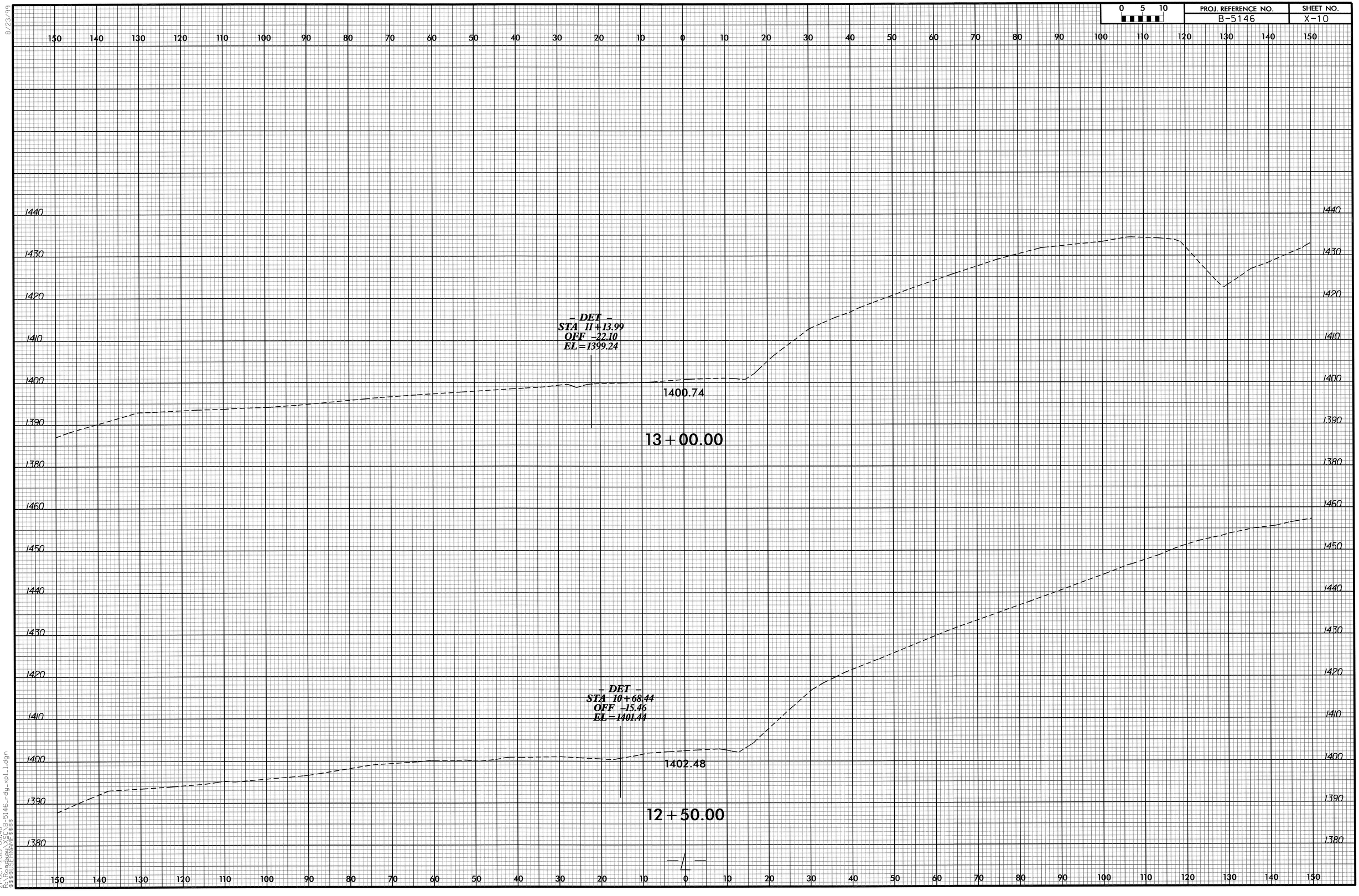

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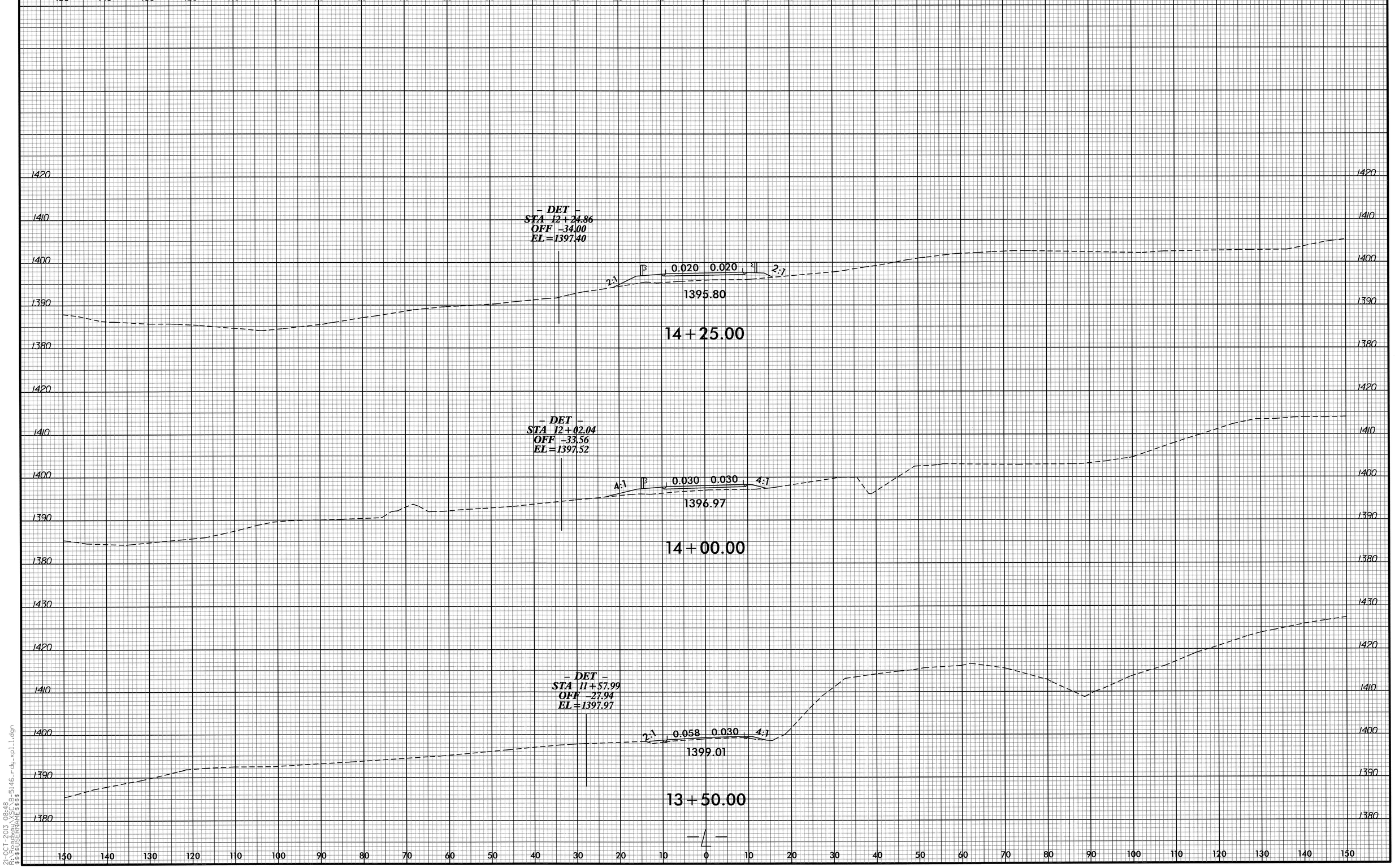

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RD266217 10/21/2013 xpl_L_X-11 jrhatfield RD-Oce860-34

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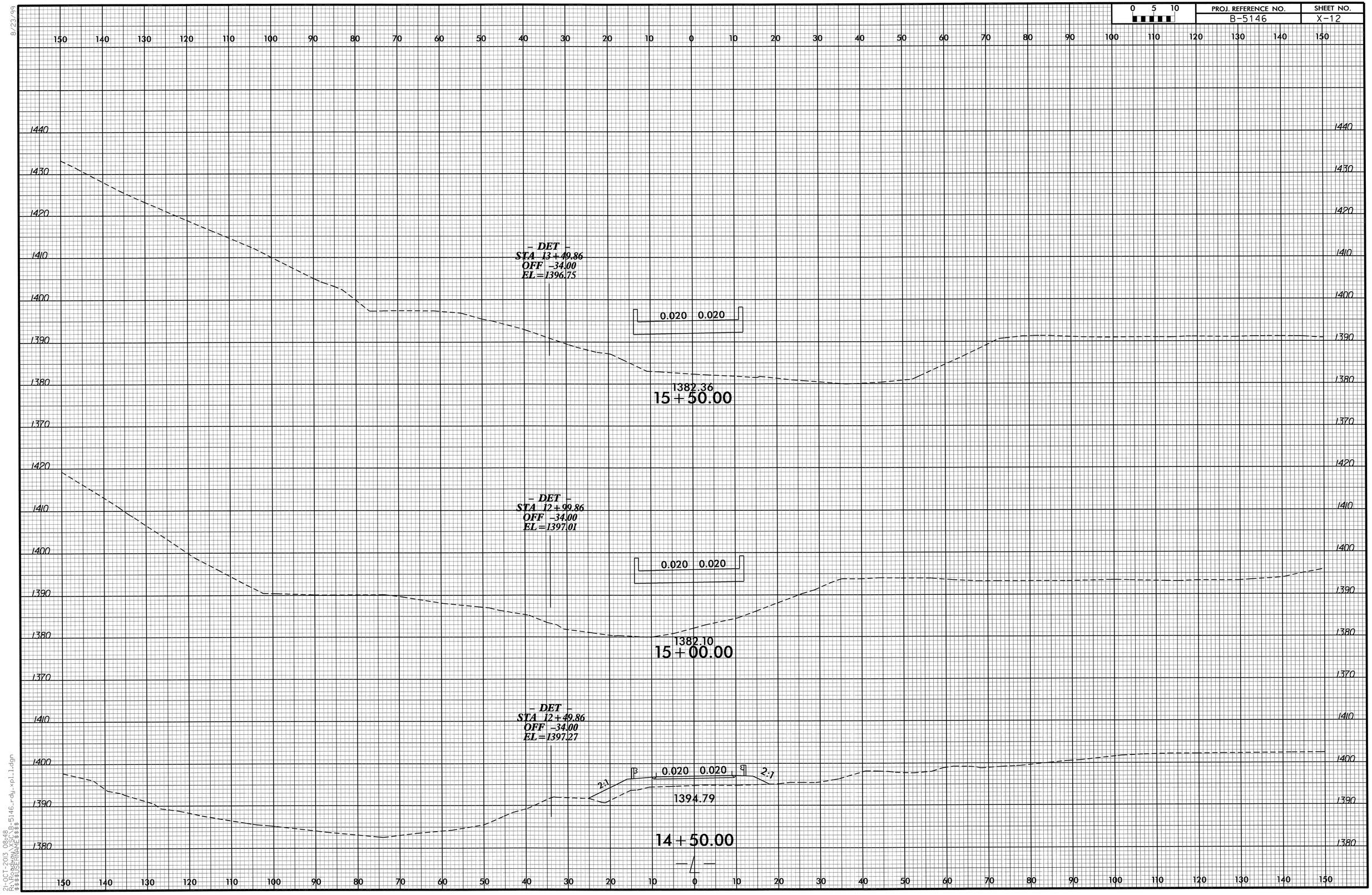

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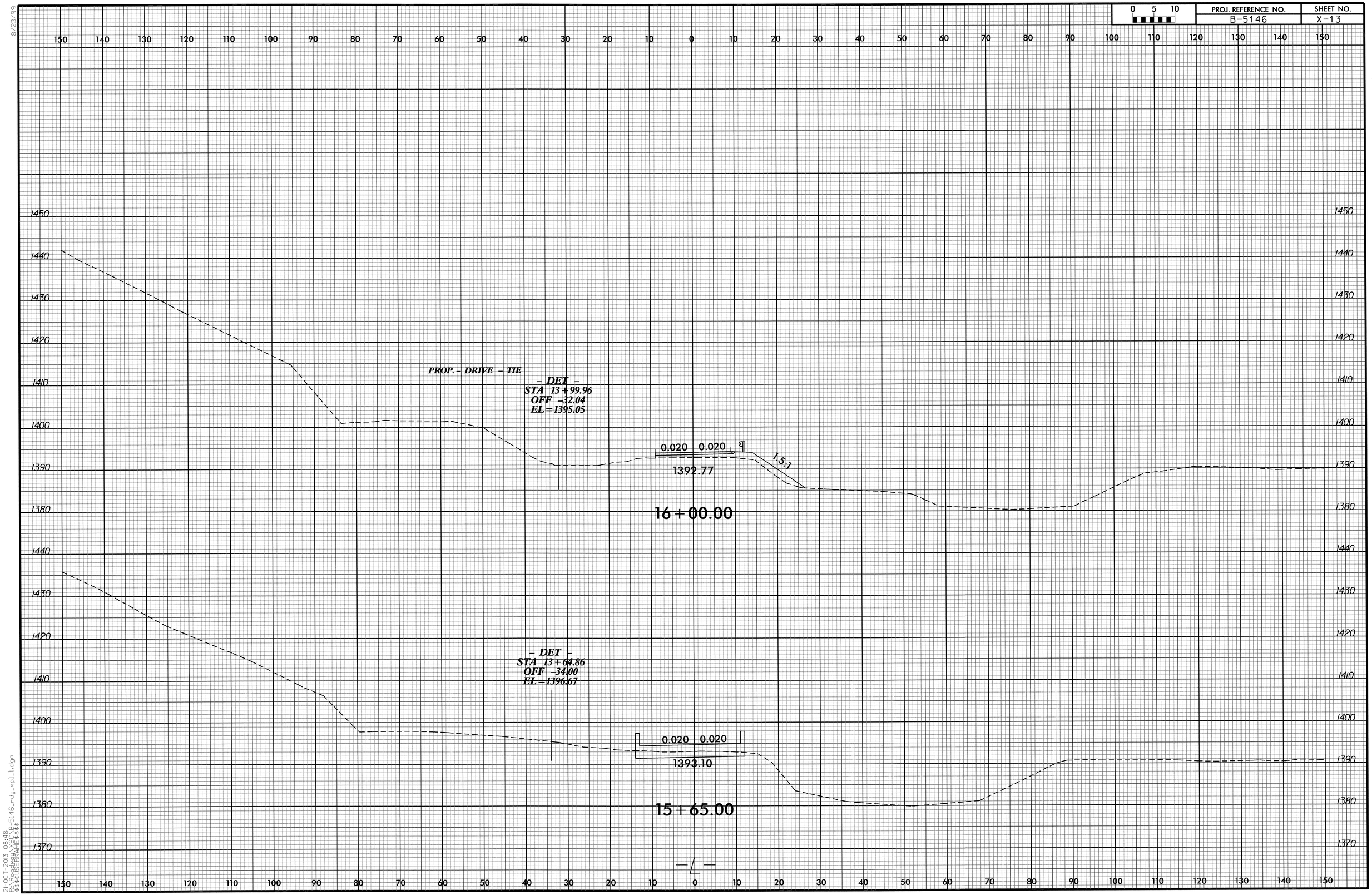
RD266217 10/21/2013 xpl_L_X-12 jrhatfield RD-Oce860-34



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1450
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1410
1400
1390
1380
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17+00.00
– DET –
STA 14+53.01
OFF -14.97
EL = 1392.57
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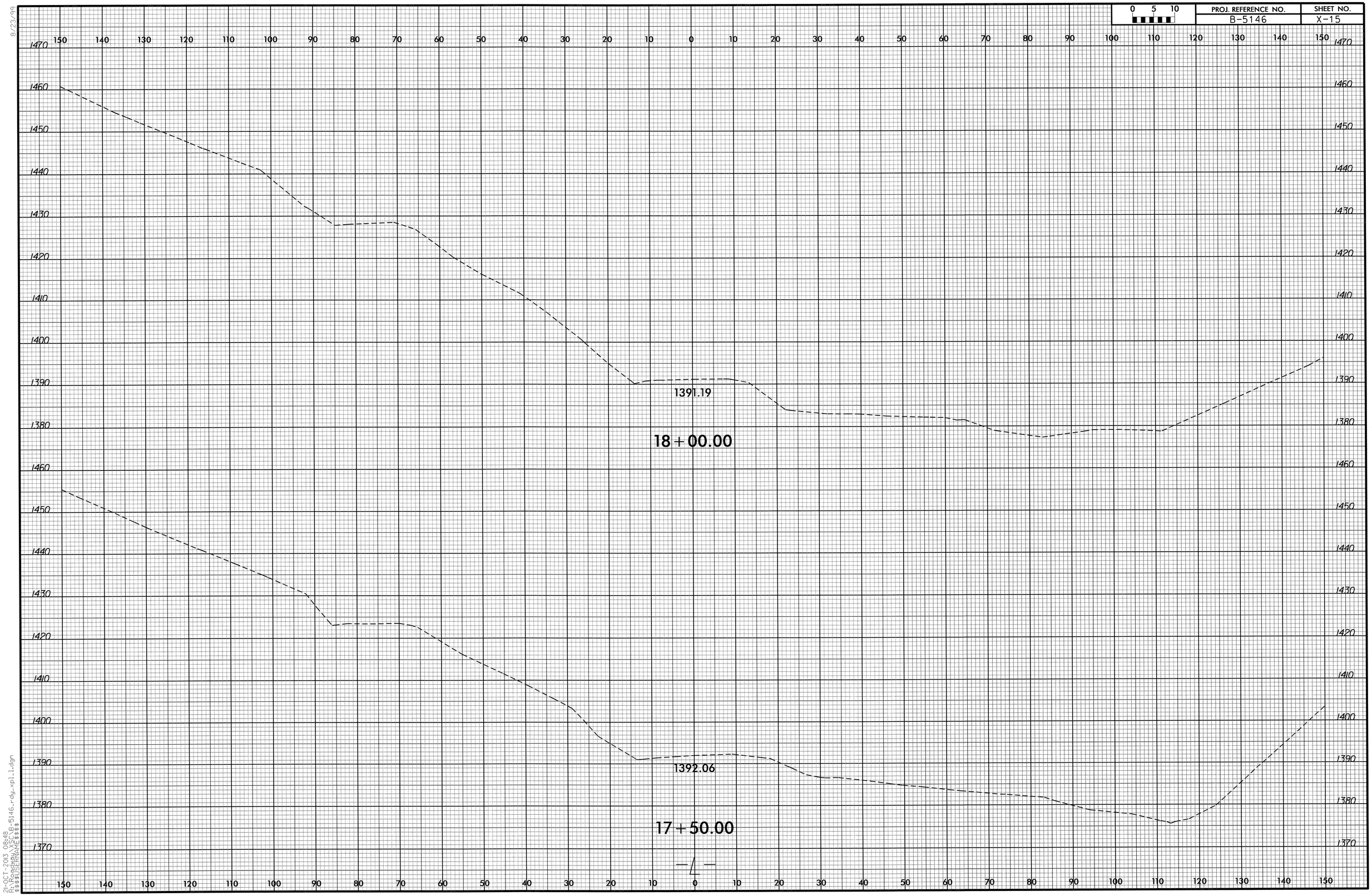

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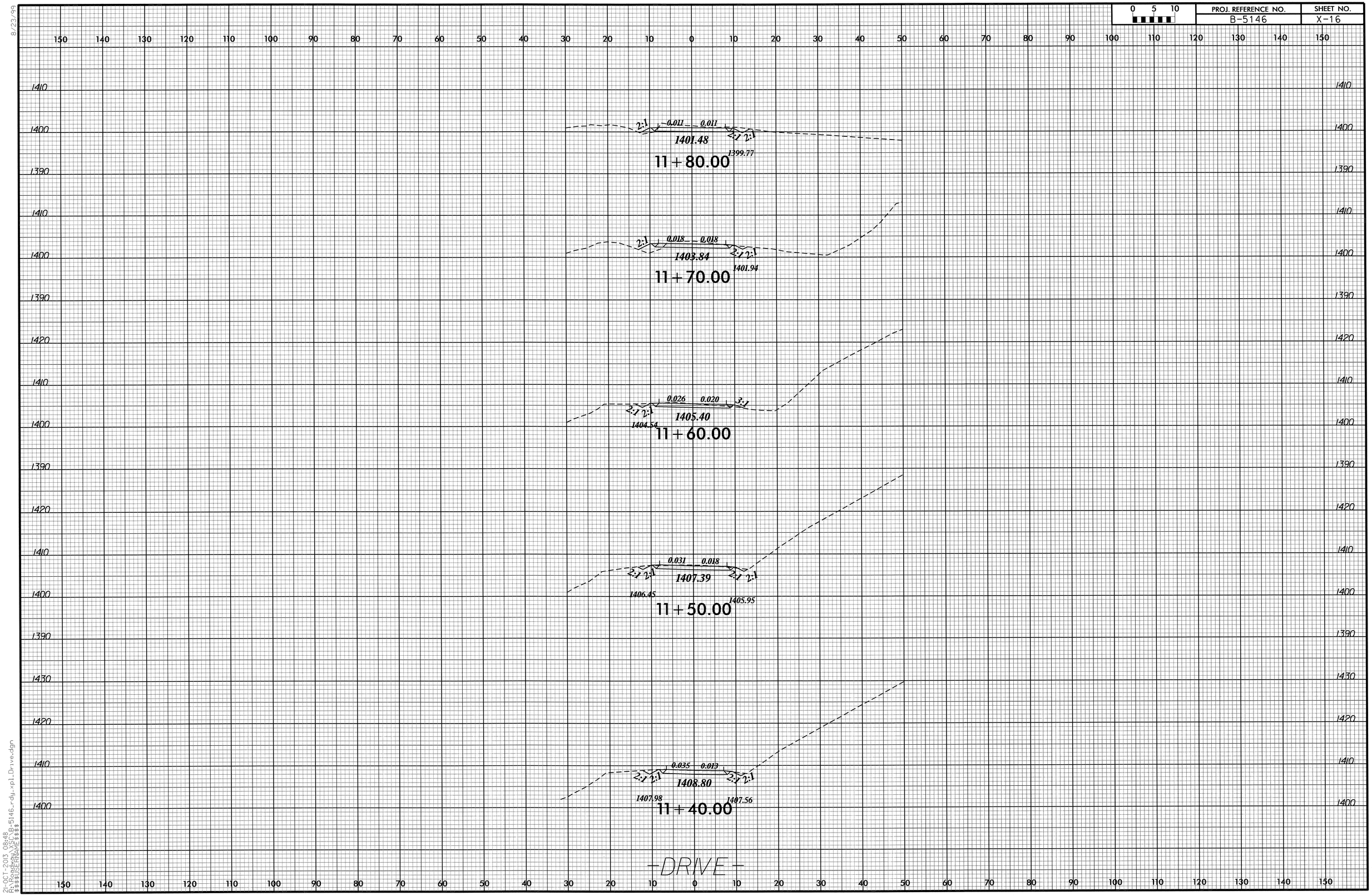

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RD266217 10/21/2013 xpl_Drive_X-16 jrhatfield RD-Oce860-34

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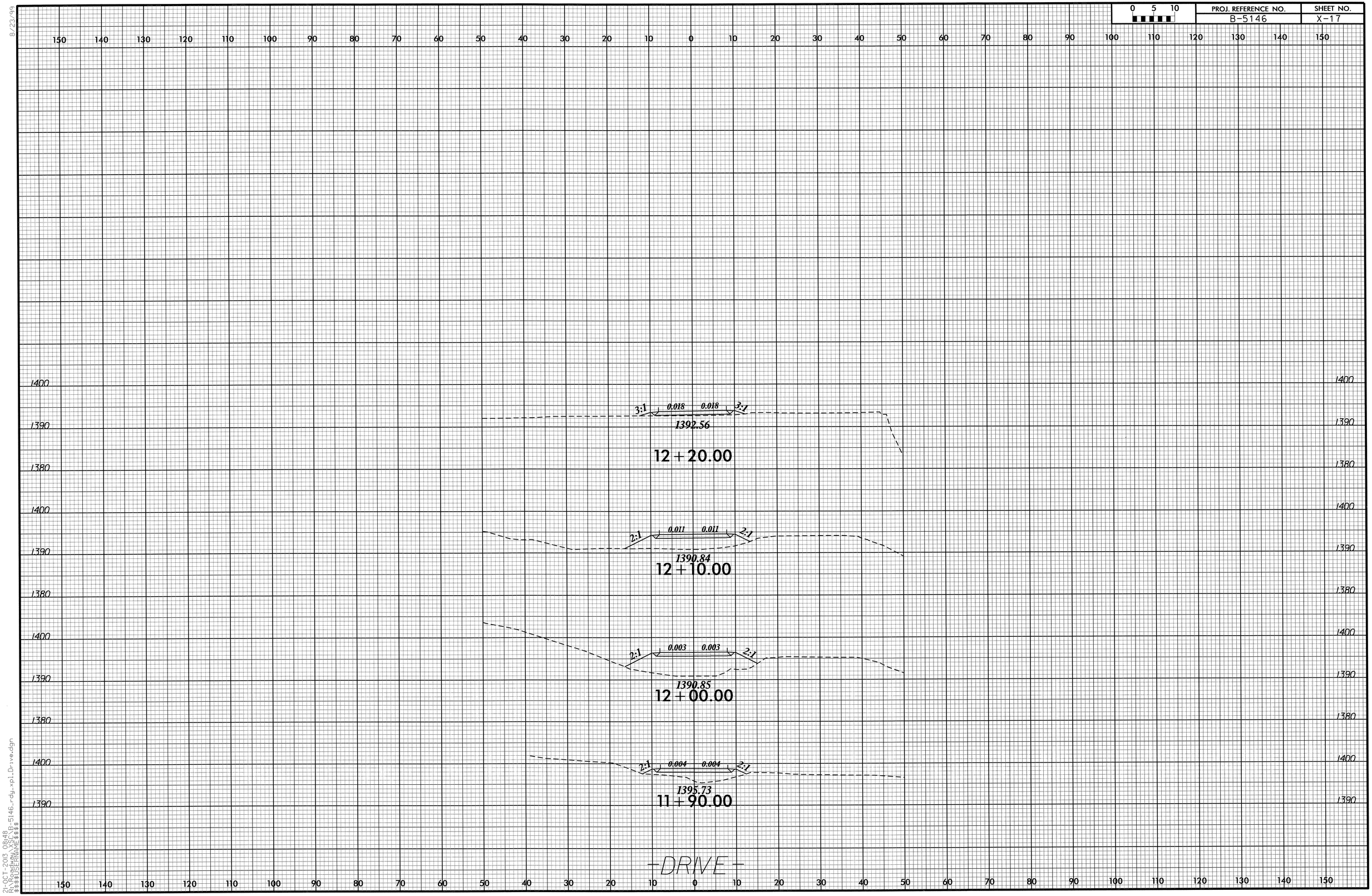

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