

09/08/09

See Sheet 1-A For Index of Sheets

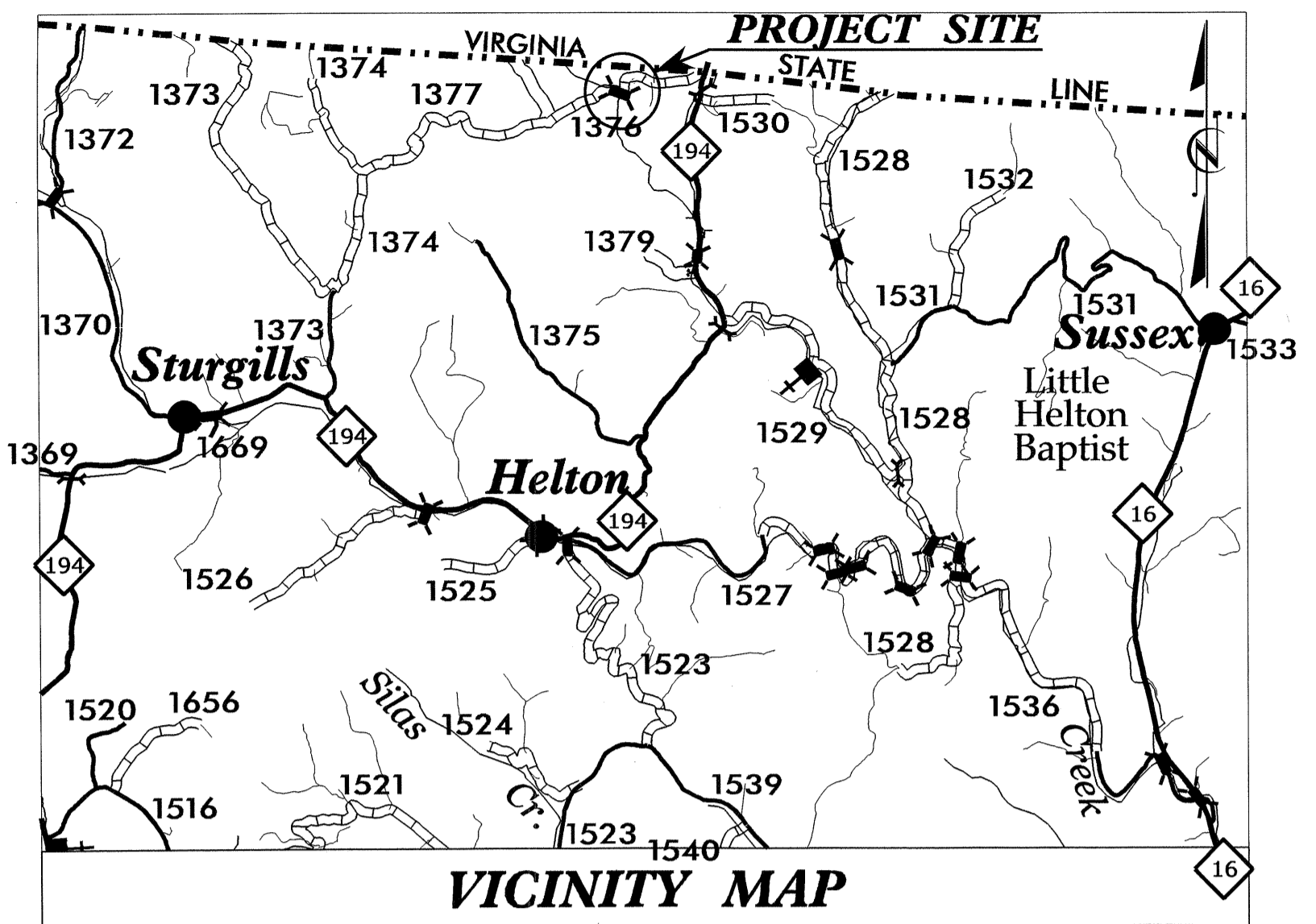
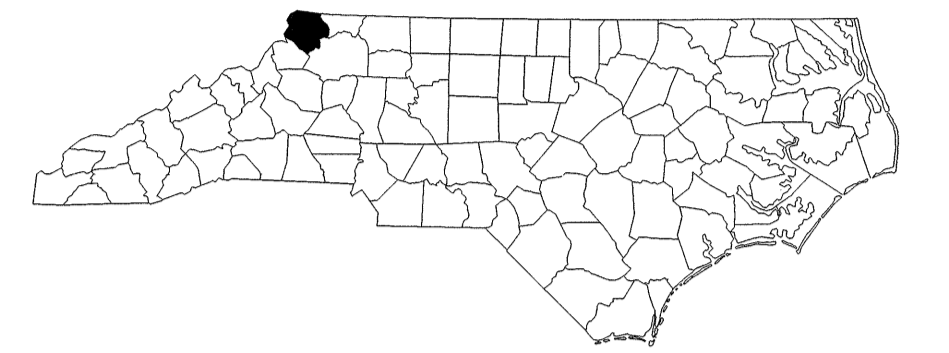
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

ASHE COUNTY

**LOCATION: BRIDGE 69 OVER LITTLE HELTON CREEK ON
SR 1376 (JOE THOMAS RD)**

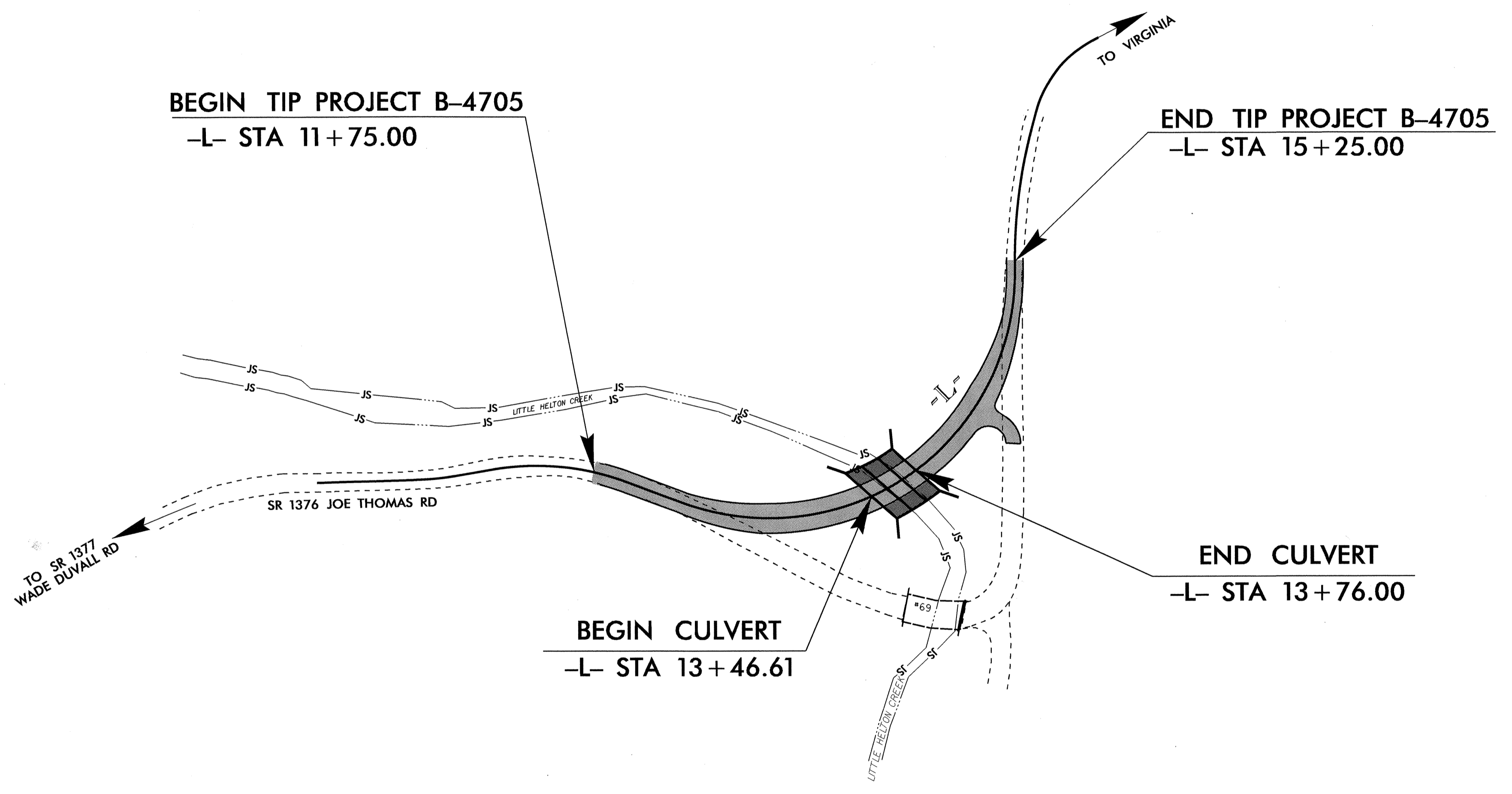
TYPE OF WORK: GRADING, DRAINAGE, AND CULVERT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4705	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38480.1.1	BRZ-1376(2)	PE	
38480.2.1	BRZ-1376(2)	R/W, UTIL	
38480.3.FD1	BRZ-1376(2)	CONST.	

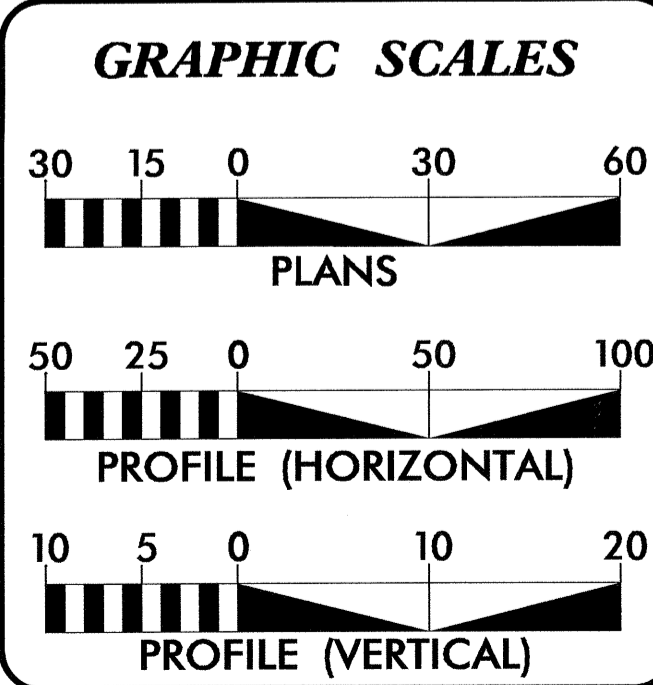


TIP PROJECT: B-4705

CONTRACT: C203295



NC GRID
NAD 83/CORS 96



DESIGN DATA

ADT 2009 =	50
ADT 2035 =	100
K =	10 %
D =	60 %
T =	3 % *
V =	25 MPH
* TTST =	1 DUAL 2
FUNC CLASS =	LOCAL
SUB REGIONAL TIER	

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-4705 =	0.060 MI
LENGTH OF STRUCTURE TIP PROJECT B-4705 =	0.006 MI
TOTAL LENGTH OF TIP PROJECT B-4705 =	0.066 MI

Prepared In the Office of:

DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

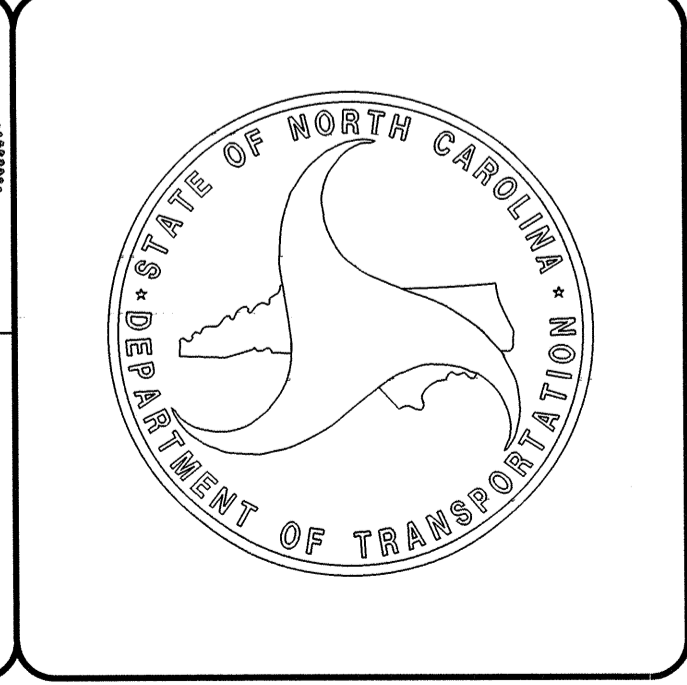
RIGHT OF WAY DATE: DECEMBER 18, 2012	JASON MOORE, PE PROJECT ENGINEER
LETTING DATE: JANUARY 21, 2014	BRYAN KEY, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

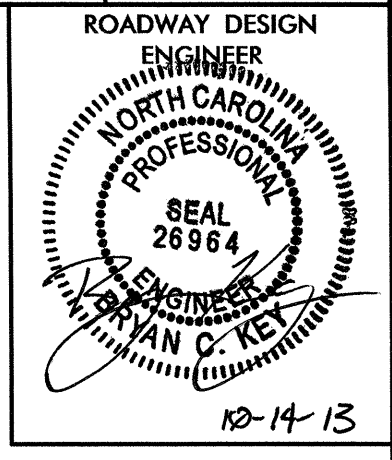
SIGNATURE: _____

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ 10-14-13



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8/17/99

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

INDEX OF SHEETS

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:

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	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF DRAINAGE QUANTITIES, SUMMARY OF GUARDRAIL AND EARTHWORK SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-3	TRANSPORTATION MANAGEMENT PLANS
EC-1 THRU EC-6	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-0	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-9	CROSS-SECTIONS
C-1 THRU C-7	CULVERT PLANS

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
866.02	Woven Wire Fence - with Wood Post
866.04	Barbed Wire Fence with Wood Posts (2 - 7 Strands)
876.02	Guide for Rip Rap at Pipe Outlets

GENERAL NOTES:

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

GRADE LINE:
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 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 WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

SUBSURFACE PLANS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE SKYLINE TELEPHONE MEMBERSHIP CORP. - TELEPHONE
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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BRYAN C. KELL

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

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

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	⑫③
Existing Fence Line	-x-x-x-
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	▭
False Sump	▭

RAILROADS:

Standard Gauge	-----
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	○ R/W
Proposed Right of Way Line with Iron Pin and Cap Marker	○ R/W ▲
Proposed Right of Way Line with Concrete or Granite Marker	○ R/W ▲
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	⊕
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	⊕
Telephone Booth	□
Telephone Pedestal	⊕
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	⊕
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	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	-----
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-

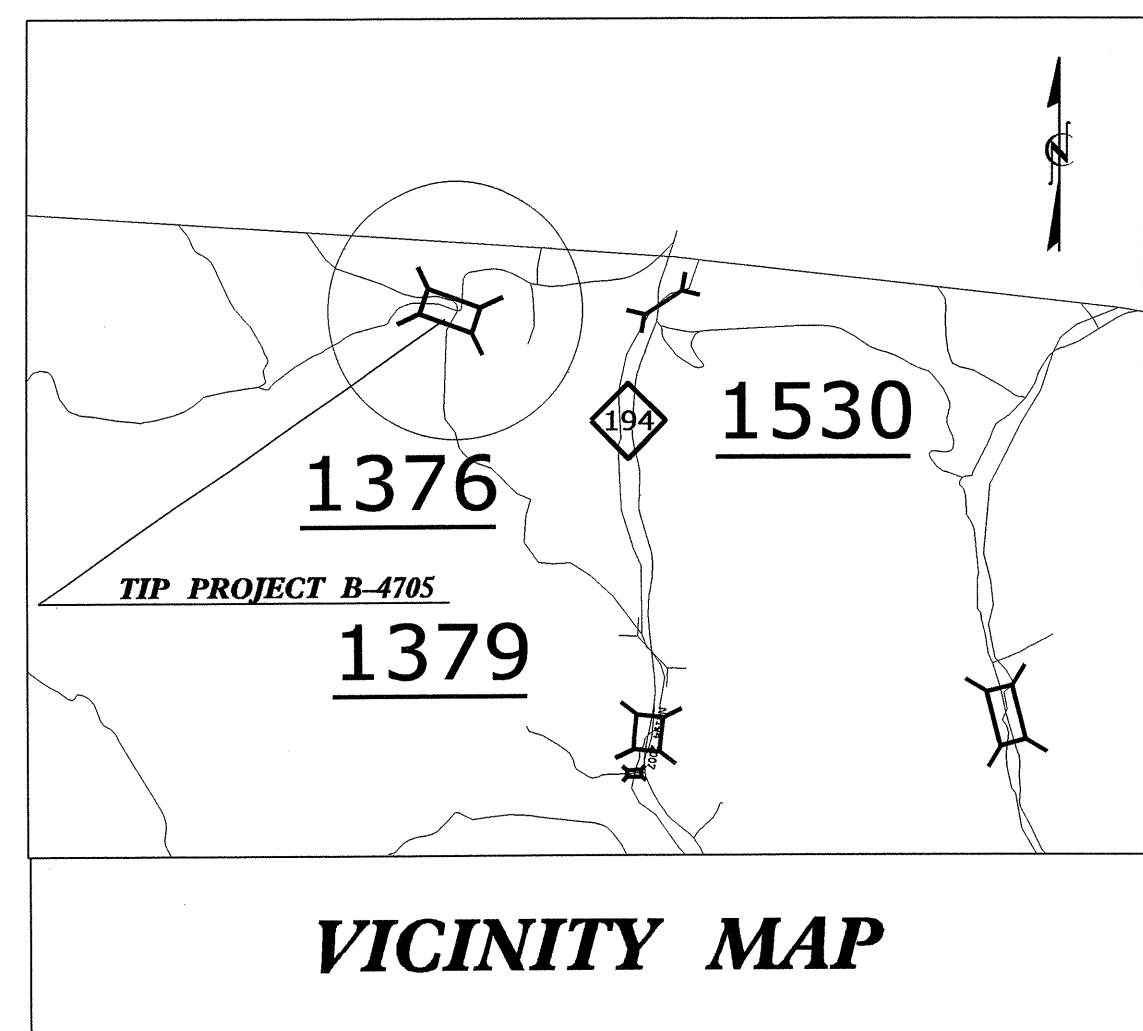
SANITARY SEWER:

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	⊕
Utility Unknown U/G Line	-ZUTL-
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.

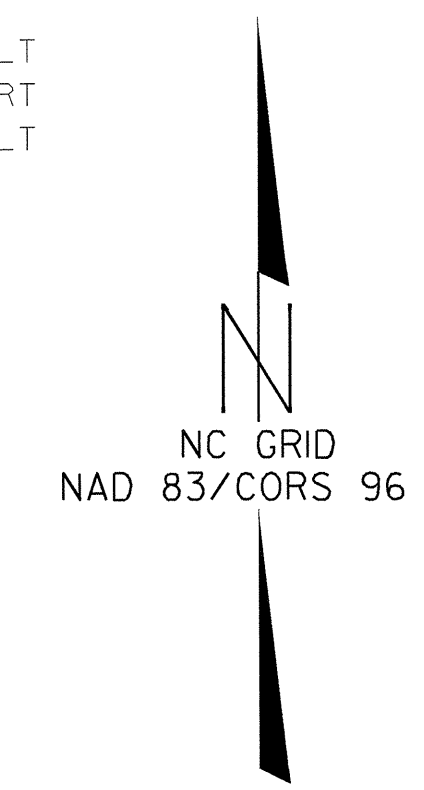
SURVEY CONTROL SHEET B-4705



BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
BL3	BL-3	1037855.8534	1275732.0820	2764.02	OUTSIDE PROJECT LIMITS	
BL4	BL-4	1037874.7840	1275896.7968	2763.08	11+01.48	7.47 LT
BL5	BL-5	1037776.5095	1276210.1127	2749.41	13+67.15	102.79 RT
BL6	BL-6	1038117.7501	1276241.2571	2788.67	16+43.77	10.43 LT

 BM*1 ELEVATION = 2748.03
 N 1037745. E 1276091.
 L STATION 12+92.00 94' RIGHT
 8" SPIKE IN 16" LOCUST TREE

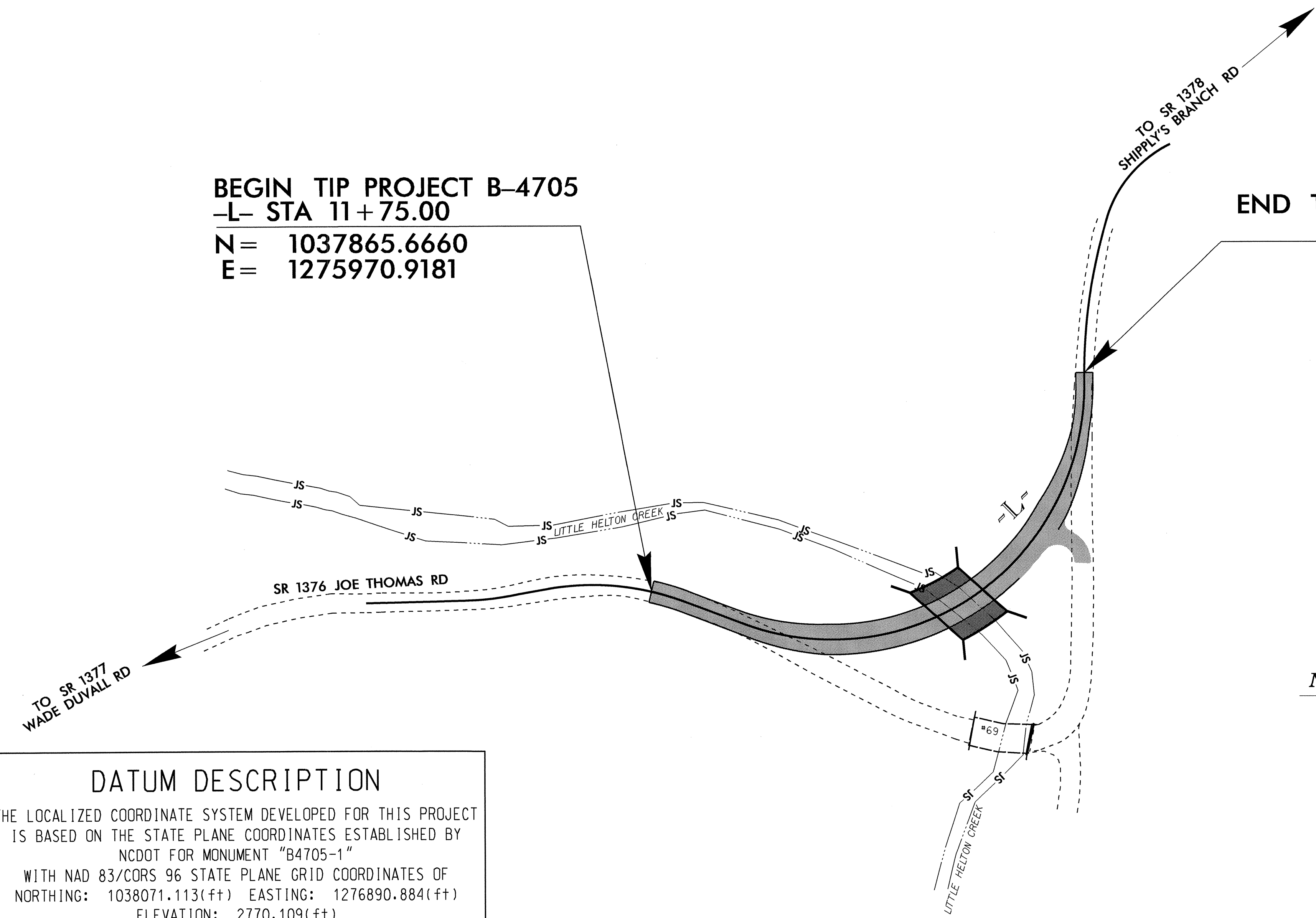
**NC DOT GPS STATION B4705-2
 LOCALIZED COORDINATES**
 N= 1039331.8680
 E= 1276948.5790



**BEGIN TIP PROJECT B-4705
 -L- STA 11+75.00**
 N= 1037865.6660
 E= 1275970.9181

**END TIP PROJECT B-4705
 -L- STA 15+25.00**
 N= 1037997.1335
 E= 1276222.5606

**NC DOT GPS STATION B4705-1
 LOCALIZED COORDINATES**
 N= 1038071.1130
 E= 1276890.8840



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4705-1" WITH NAD 83/CORS 96 STATE PLANE GRID COORDINATES OF NORTHING: 1038071.113(±) EASTING: 1276890.884(±) ELEVATION: 2770.109(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00001278

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4705-1" TO -L- STATION 11+75.00 IS
 S 77°24'40.5" W 942.63'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

NOTES:

- 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/](http://www.ncdot.org/doh/preconstruct/highway/location/project/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4705_LS_CONTROL_120313.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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ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+75.00	-8.00	1037873.3984	1275972.9698
L	11+75.00	-25.00	1037889.8299	1275977.3294
L	11+75.00	8.00	1037857.9335	1275968.8665
L	11+75.00	25.00	1037841.5020	1275964.5068
L	12+27.12	25.00	1037824.6994	1276011.2059
L	12+86.00	30.66	1037808.0423	1276078.7645
L	13+10.00	-40.00	1037880.6662	1276093.8013
L	13+24.00	65.07	1037782.3678	1276133.5826
L	13+35.25	77.08	1037776.2836	1276153.1224
L	13+55.07	96.22	1037771.9143	1276189.4874
L	13+64.56	100.15	1037776.4036	1276205.0317
L	13+74.31	98.84	1037786.5227	1276217.7787
L	13+81.26	93.24	1037797.8593	1276223.5019
L	13+88.95	83.89	1037812.8729	1276226.9036
L	13+95.00	-40.00	1037908.9426	1276148.4184
L	14+00.93	67.86	1037836.8999	1276228.9302
L	14+46.56	25.00	1037909.9638	1276228.8929
L	15+16.54	25.00	1037988.6836	1276247.5527
L	15+25.00	25.00	1037996.9250	1276247.5597
L	15+25.00	-8.31	1037997.2027	1276214.2543
L	15+25.00	-25.00	1037997.3419	1276197.5614
L	15+25.00	7.72	1037997.0691	1276230.2841

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	14+00.00	87.00	1037822.5238	1276241.6373
L	14+30.00	55.00	1037876.8665	1276244.4303
L	14+79.00	25.00	1037945.3429	1276242.1237

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	1037860.3449	1275797.0228
PC	10+58.82	1037861.9346	1275855.8204
PT	10+84.27	1037864.4660	1275881.1178
PC	11+08.07	1037868.5510	1275904.5726
PT	11+90.32	1037861.0138	1275985.5037
PC	12+27.12	1037848.1130	1276019.9697
PT	15+16.54	1037988.6709	1276222.5527
PC	15+22.26	1037994.3903	1276222.5498
PT	16+04.12	1038075.3103	1276233.2547
PC	16+14.13	1038084.9783	1276235.8636
PT	16+74.98	1038130.1336	1276273.7568

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4705-1" WITH NAD 83/CORS 96 STATE PLANE GRID COORDINATES OF NORTHING: 1038071.113(ft) EASTING: 1276890.884(ft) ELEVATION: 2770.109(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00001278 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4705-1" TO -L- STATION 11+75.00 IS S 77°24'40.5" W 942.63' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT](http://www.ncdot.org/doh/preconstruct/highway/location/project)

THE FILES TO BE FOUND ARE AS FOLLOWS:
B4705_LS_CONTROL_120313.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.

FINAL TABLES

6/2/09

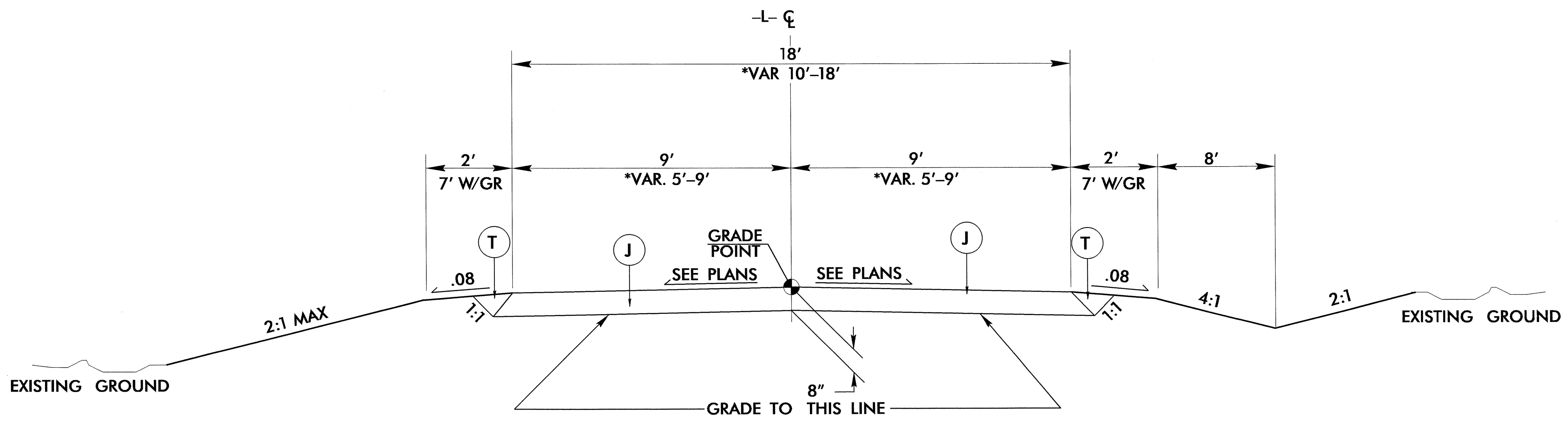
PROJECT REFERENCE NO. B-4705	SHEET NO. 2
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 26964 BRYAN C. KET	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 11111 T. HEYWARD 10-14-13

PAVEMENT SCHEDULE	
FINAL PAVEMENT DESIGN	
J	PROP. 8" AGGREGATE BASE COURSE.
T	EARTH MATERIAL

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

USE TYPICAL SECTION NO. 1 AS FOLLOWS

- * -L- STA. 11+75.00 TO STA. 12+77.12
- * -L- STA. 12+77.12 TO STA. 14+40.00
- * -L- STA. 14+40.00 TO STA. 15+25.00



TYPICAL SECTION NO. 1

NOTE:
TRANSITION TO EXISTING DITCH BEGIN AND END
(SEE CROSS SECTIONS)

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

Main table with columns: STATION, LOCATION (L,R,T, OR C), STRUCTURE NO., TOP ELEVATION, INVERT ELEVATION, SLOPE CRITICAL, DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, OR PVC), C.S. PIPE, R.C. PIPE CLASS III, R.C. PIPE CLASS IV, ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES AND HOOD STANDARD 840.03, CONCRETE TRANSITIONAL SECTION, SIDE DRAIN PIPE ELBOWS NO. & SIZE, CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71, PIPE REMOVAL LIN.FT., REMARKS.

SUMMARY OF EARTHWORK
IN CUBIC YARDS

Summary table with columns: STATION, EXCAVATION, UNCL. EXCAV., EMBANK. +%, BORROW, WASTE. Includes rows for station ranges (-L- 11+75.00 to -L- 15+25.00), EXIST. ROADWAY EXCAVATION, PROJECT TOTALS, EST. 5% TO REPLACE TOPSOIL ON BORROW PIT, GRAND TOTALS, and SAY.

UNDERCUT = 100 CY
GEOTEXT. FOR SOIL STABILIZATION = 200 SY
CLASS IV SUBGRADE STABILIZATION = 125 TONS
SELECT GRANULAR MATERIAL = 100 CY
6" UNDERDRAIN = 100 LF
SHALLOW UNDERCUT = 80 CY

Approximate quantities only. Unclassified excavation, fine grading and clearing and grubbing 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.

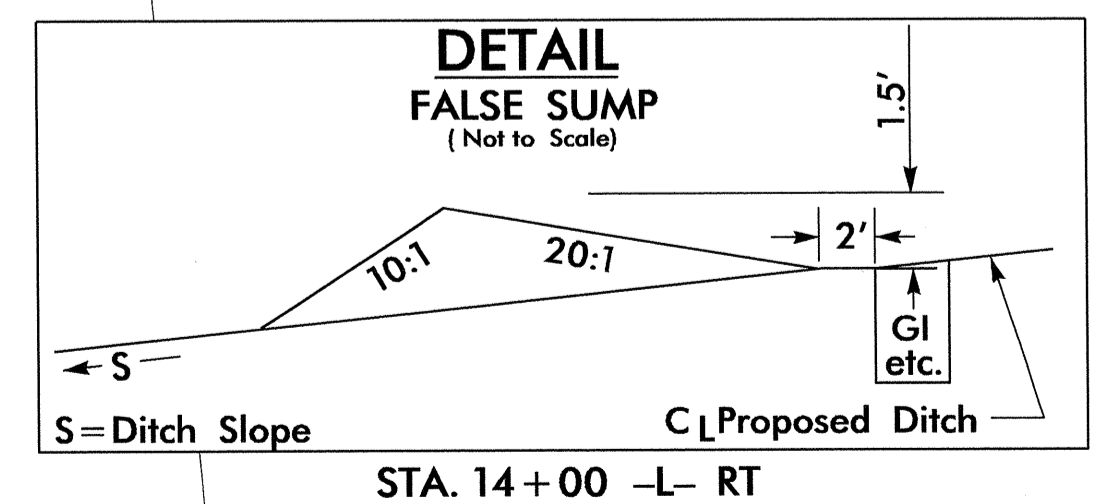
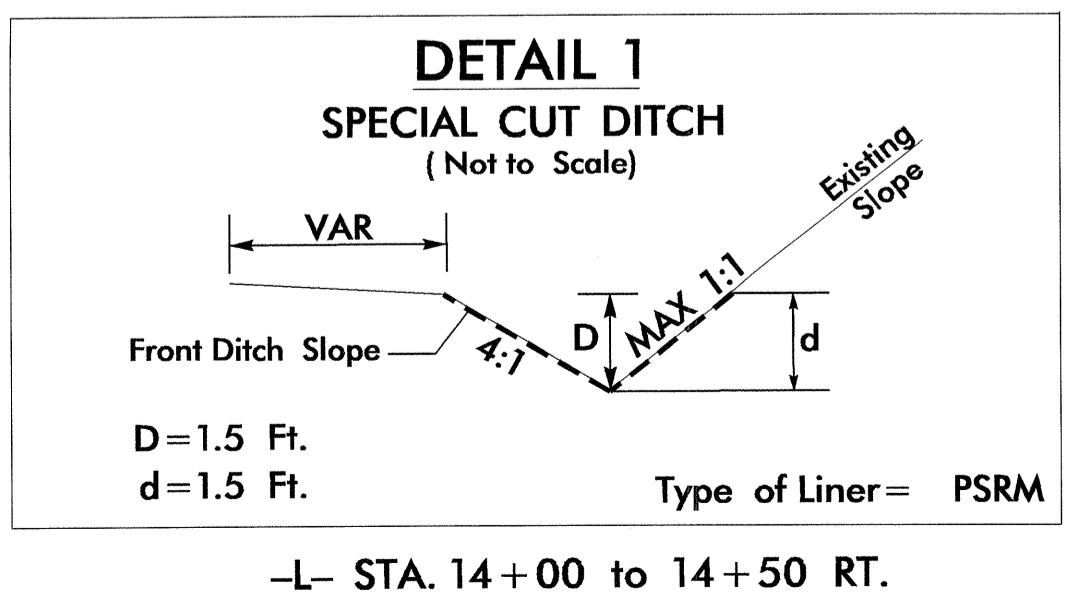
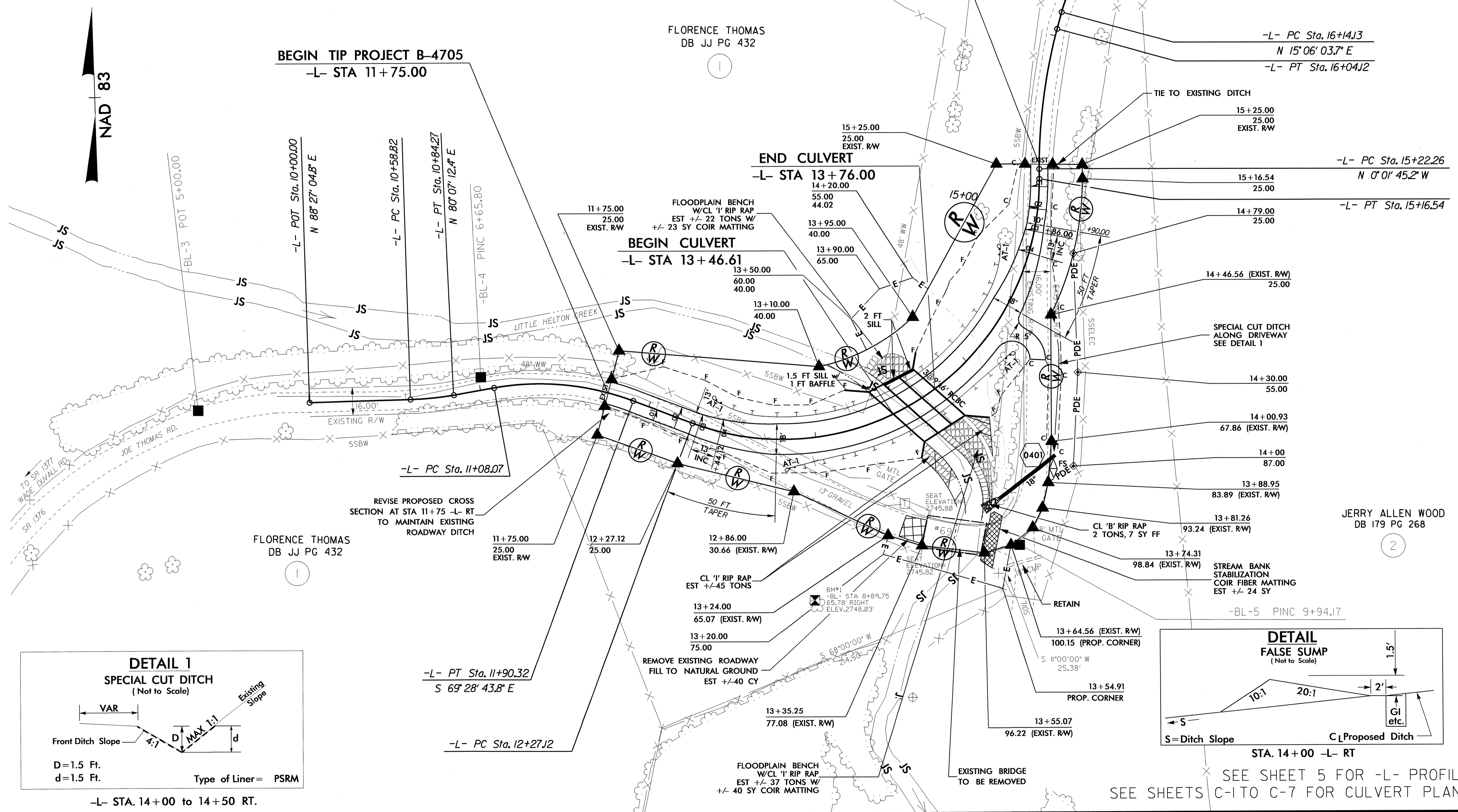
"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

Guardrail summary table with columns: SURVEY LINE, BEG. STA., END STA., LOCATION, LENGTH (STRAIGHT, SHOP CURVED, DOUBLE FACED), 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), ANCHORS (XI MOD, XI, GRAU 350, M-350, B-77, CAT-1, VI MOD, BIC, AT-1), IMPACT ATTENUATOR TYPE 350 (EA, G, NG), SINGLE FACED GUARDRAIL, REMOVE EXISTING GUARDRAIL, REMOVE AND STOCKPILE EXISTING GUARDRAIL, REMARKS.

10-OCT-2013 15:52
RD266217 10/10/2013 sum03-A jrhatfield RD-Oce860-34

-L-				
PI Sta 10+71.56	PI Sta 11+50.19	PI Sta 14+43.54	PI Sta 15+63.43	PI Sta 16+46.63
$\Delta = 8^{\circ}19'52.3"$ (LT)	$\Delta = 30^{\circ}24'03.8"$ (RT)	$\Delta = 110^{\circ}33'01.4"$ (LT)	$\Delta = 15^{\circ}07'48.9"$ (RT)	$\Delta = 49^{\circ}48'10.6"$ (RT)
D = 32'44'25.6"	D = 36'57'54.1"	D = 38'11'49.9"	D = 18'28'57.0"	D = 81'51'04.0"
L = 25.45'	L = 82.24'	L = 289.42'	L = 81.86'	L = 60.85'
T = 12.75'	T = 42.11'	T = 216.43'	T = 41.17'	T = 32.50'
R = 175.00'	R = 155.00'	R = 150.00'	R = 310.00'	R = 70.00'
SE = EXIST	SE = EXIST	SE = 04	SE = EXIST	SE = EXIST
		RO = 52'		



SEE SHEET 5 FOR -L- PROFILE
SEE SHEETS C-1 TO C-7 FOR CULVERT PLANS

REVISIONS

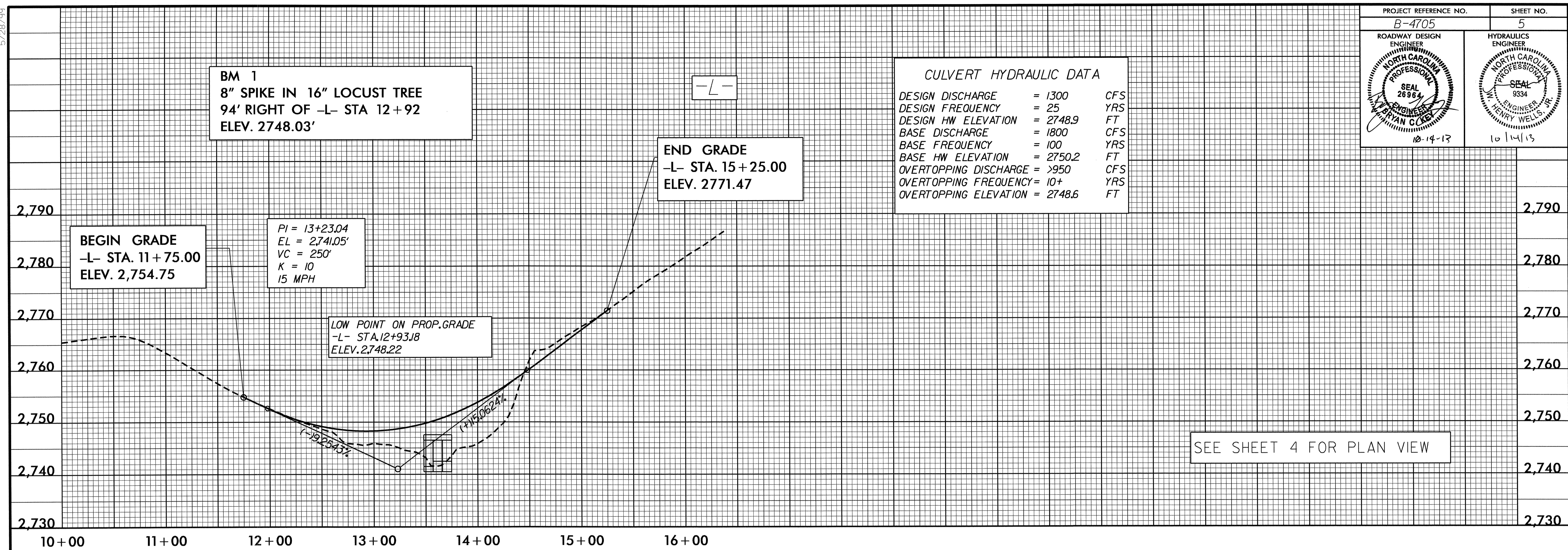
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5/28/99

PROJECT REFERENCE NO. B-4705	SHEET NO. 5

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 1300	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 2748.9	FT
BASE DISCHARGE	= 1800	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2750.2	FT
OVERTOPPING DISCHARGE	= >950	CFS
OVERTOPPING FREQUENCY	= 10+	YRS
OVERTOPPING ELEVATION	= 2748.6	FT

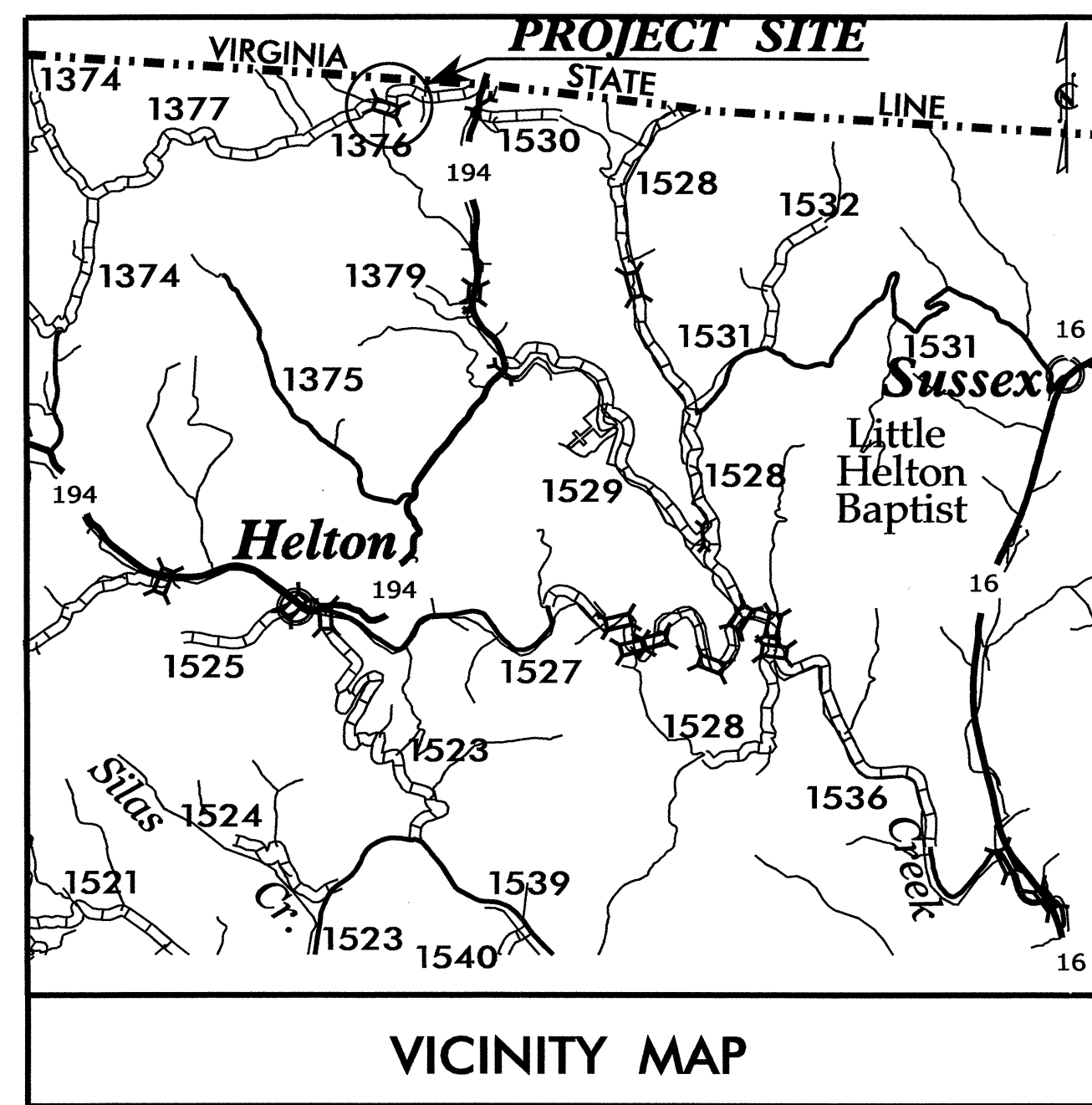
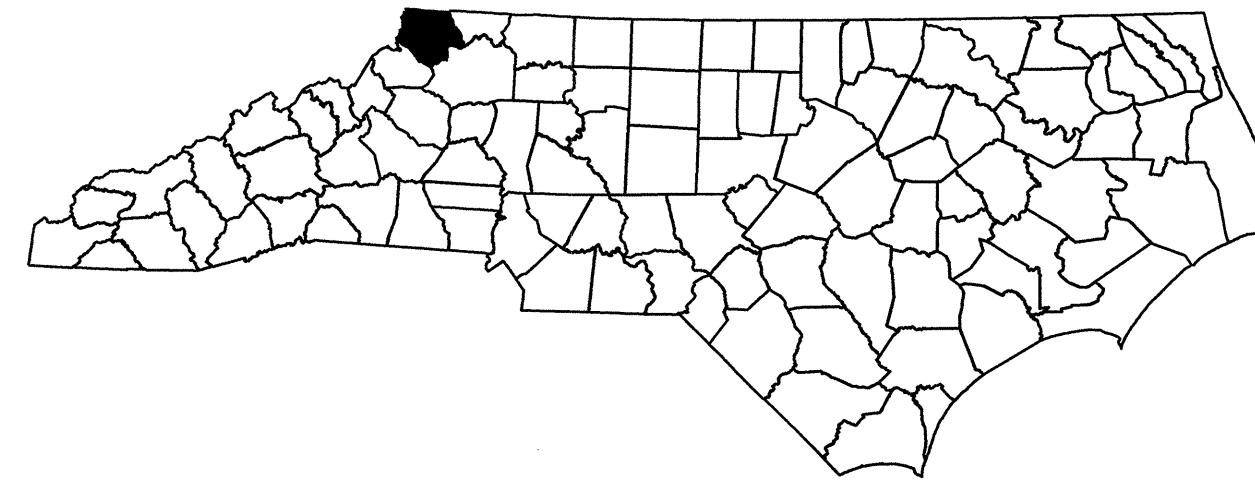


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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

ASHE COUNTY



LOCATION: REPLACE BRIDGE NO. 69 OVER LITTLE HELTON CREEK ON SR 1376 (JOE THOMAS RD).

INDEX OF SHEETS

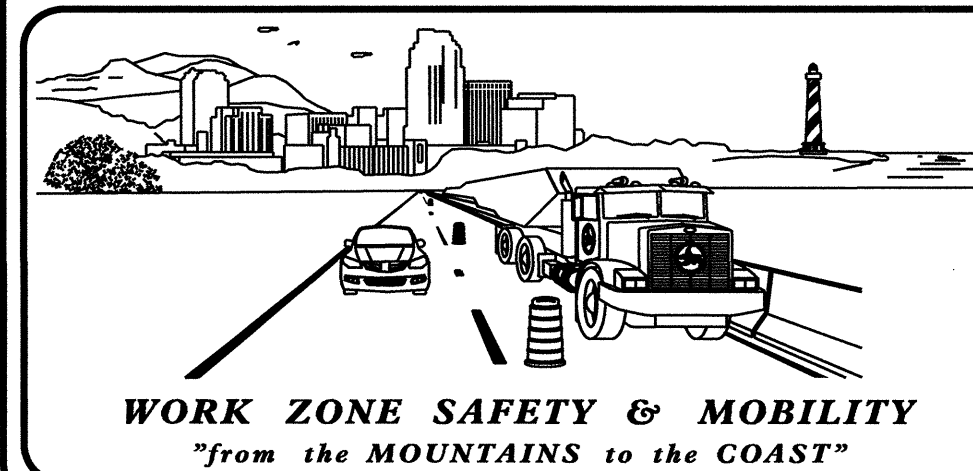
SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES AND LOCAL NOTES)
TMP-2	TEMPORARY TRAFFIC CONTROL PHASE I AND DETAIL
TMP-3	TEMPORARY TRAFFIC CONTROL PHASE II AND DETAIL

SHEET NO.
TMP-1

B-4705

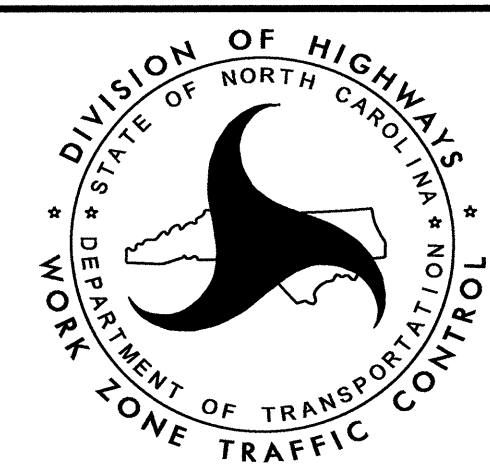
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N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER
G. L. GETTIER, P.E. TRAFFIC CONTROL PROJECT ENGINEER
J. W. GILSTRAP TRAFFIC CONTROL PROJECT DESIGN ENGINEER
S. N. GREEN TRAFFIC CONTROL DESIGN ENGINEER



APPROVED: _____
DATE: _____

SEAL

ROADWAY STANDARD DRAWINGS

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

<u>STD. NO.</u>	<u>TITLE</u>
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1180.01	SKINNY - DRUM

LEGEND

GENERAL

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

WORK AREA

REMOVAL

PROPOSED CONSTRUCTION

TEMPORARY PAVEMENT MARKING

N/A

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- FLAGGER
- TRUCK MOUNTED ATTENUATOR (TMA)

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

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

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APPROVED: _____ DATE: _____ 		ROADWAY STANDARD DRAWINGS & LEGEND
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MANAGEMENT STRATEGIES

CONSTRUCTION

REMOVE EXISTING STRUCTURE AND ROADWAY AND PLACE PROPOSED STRUCTURE AND ROADWAY IN NEW LOCATION AS SHOWN IN THE CONSTRUCTION PLANS.

TMP DESIGN PARAMETERS

TRAFFIC WILL BE MAINTAINED ON EXISTING ROADWAY DURING THE CONSTRUCTION PERIOD.

FINAL PAVEMENT DESIGN WILL BE ENTIRELY ABC.

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, OF 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 AS 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.

- F) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- G) 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 A 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

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

SIGNING

- I) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- J) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

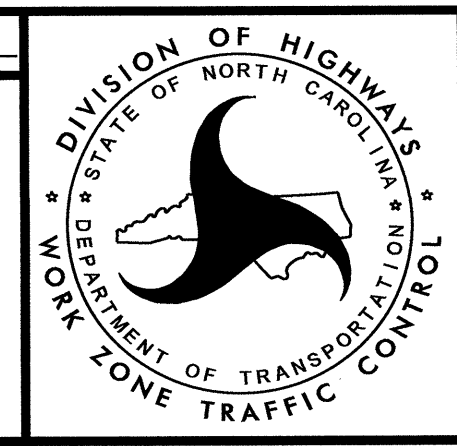
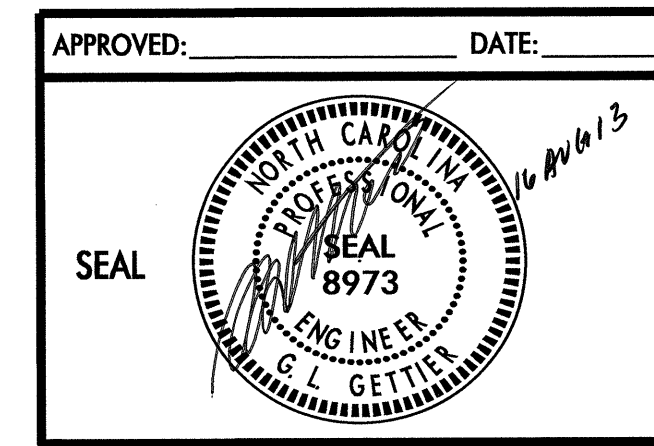
- K) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS),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

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

MISCELLANEOUS

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

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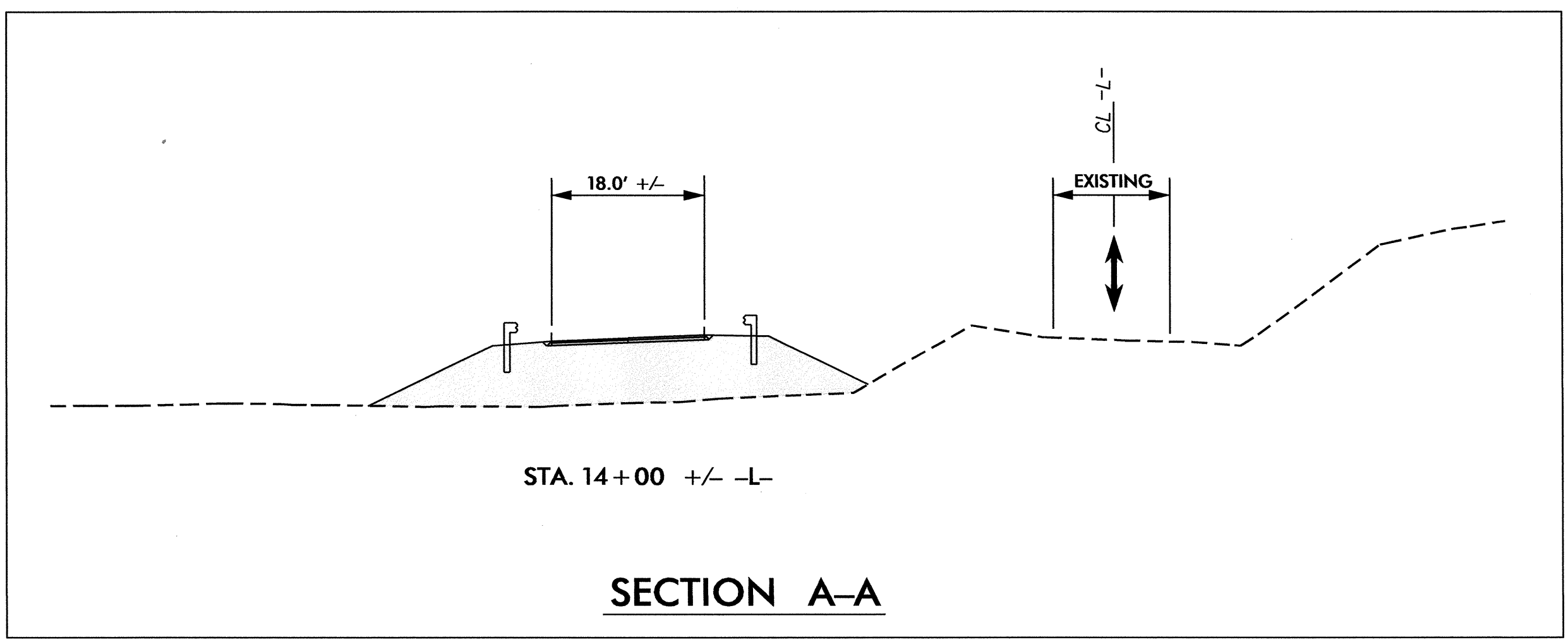
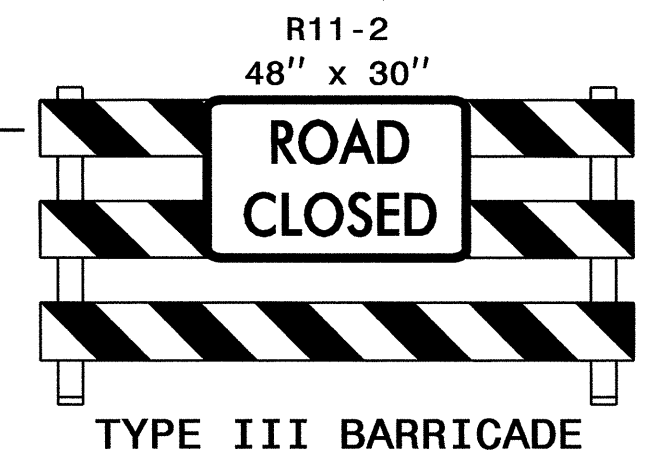
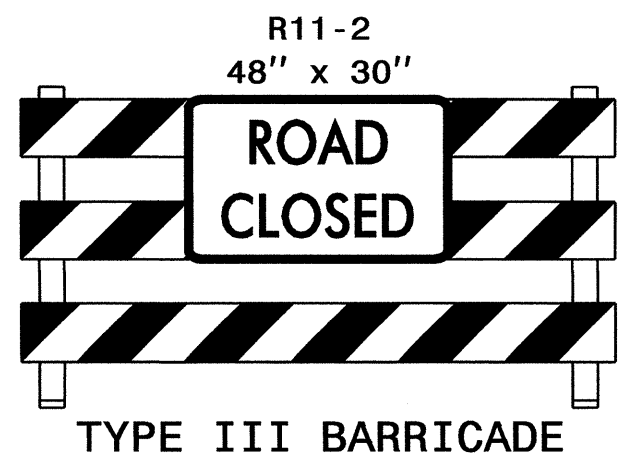
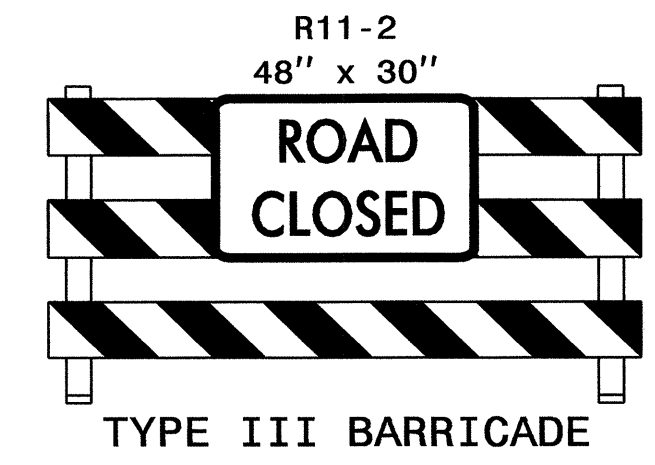
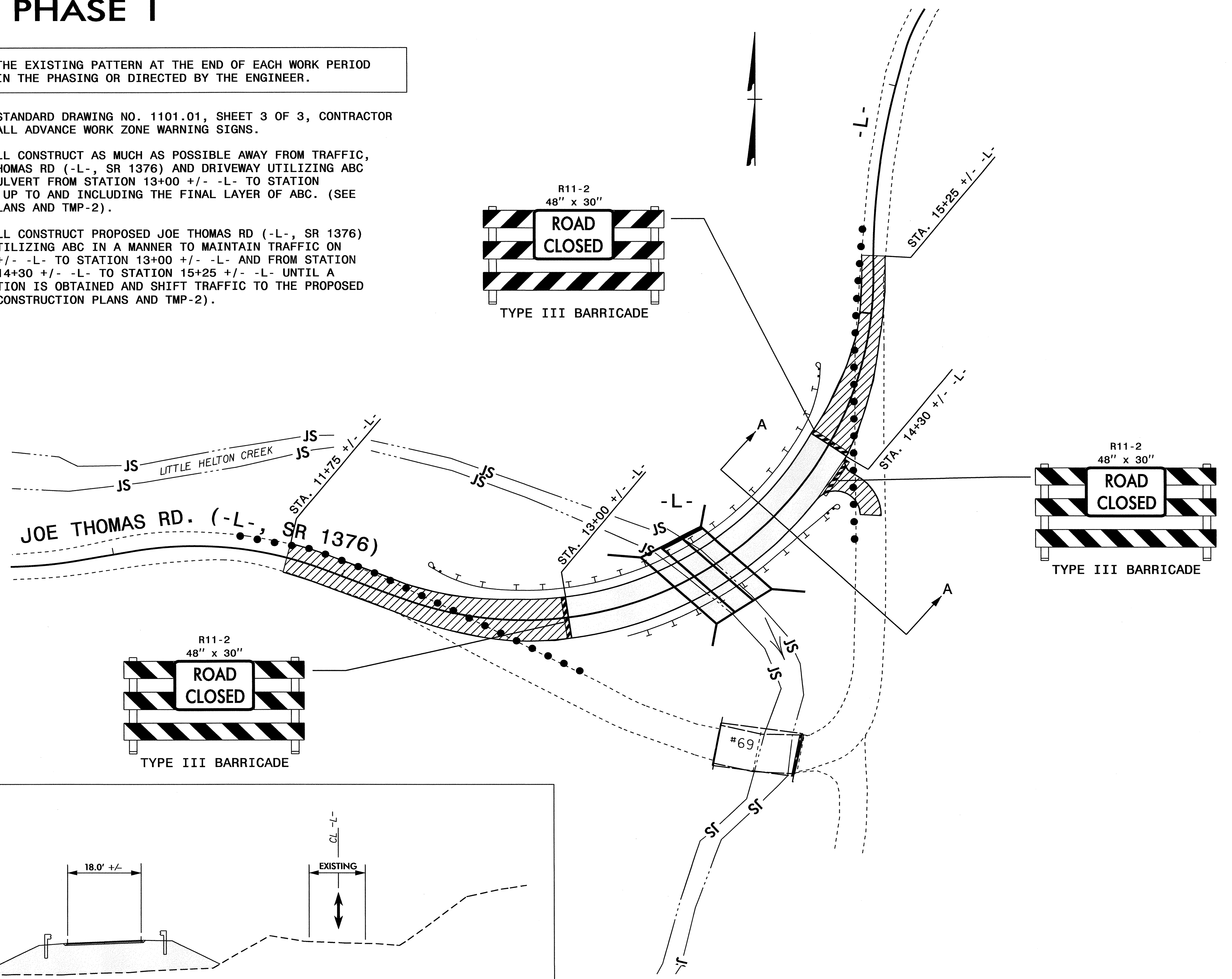


TRANSPORTATION OPERATIONS & PROJECT NOTES

PHASE I

NOTE: RETURN TRAFFIC TO THE EXISTING PATTERN AT THE END OF EACH WORK PERIOD UNLESS OTHERWISE STATED IN THE PHASING OR DIRECTED BY THE ENGINEER.

- STEP 1: - USING ROADWAY STANDARD DRAWING NO. 1101.01, SHEET 3 OF 3, CONTRACTOR SHALL INSTALL ALL ADVANCE WORK ZONE WARNING SIGNS.
- STEP 2: - CONTRACTOR SHALL CONSTRUCT AS MUCH AS POSSIBLE AWAY FROM TRAFFIC, PROPOSED JOE THOMAS RD (-L-, SR 1376) AND DRIVEWAY UTILIZING ABC AND PROPOSED CULVERT FROM STATION 13+00 +/- -L- TO STATION 14+30 +/- -L-, UP TO AND INCLUDING THE FINAL LAYER OF ABC. (SEE CONSTRUCTION PLANS AND TMP-2).
- CONTRACTOR SHALL CONSTRUCT PROPOSED JOE THOMAS RD (-L-, SR 1376) AND DRIVEWAY UTILIZING ABC IN A MANNER TO MAINTAIN TRAFFIC ON STATION 11+75 +/- -L- TO STATION 13+00 +/- -L- AND FROM STATION EXISTING FROM 14+30 +/- -L- TO STATION 15+25 +/- -L- UNTIL A SUITABLE ELEVATION IS OBTAINED AND SHIFT TRAFFIC TO THE PROPOSED PATTERN. (SEE CONSTRUCTION PLANS AND TMP-2).



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SEAL

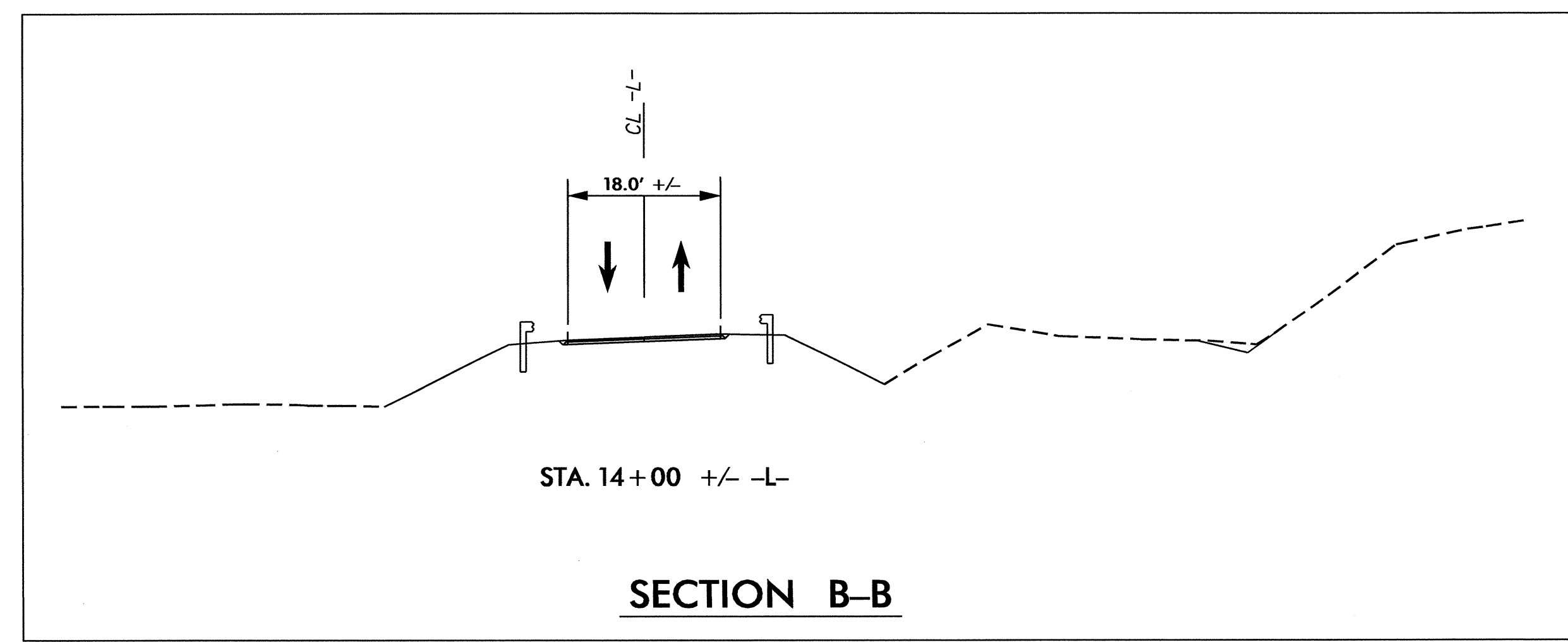
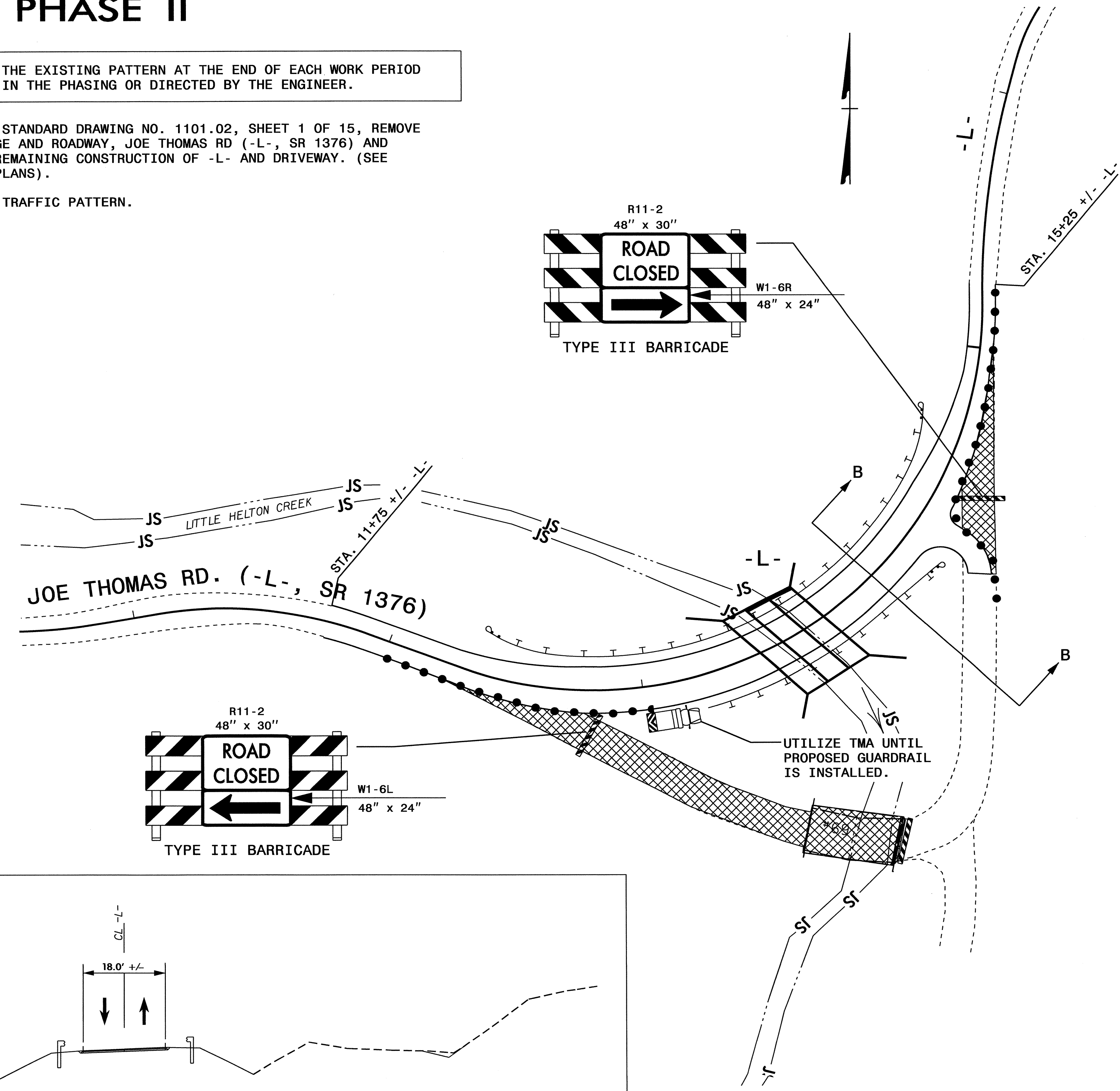
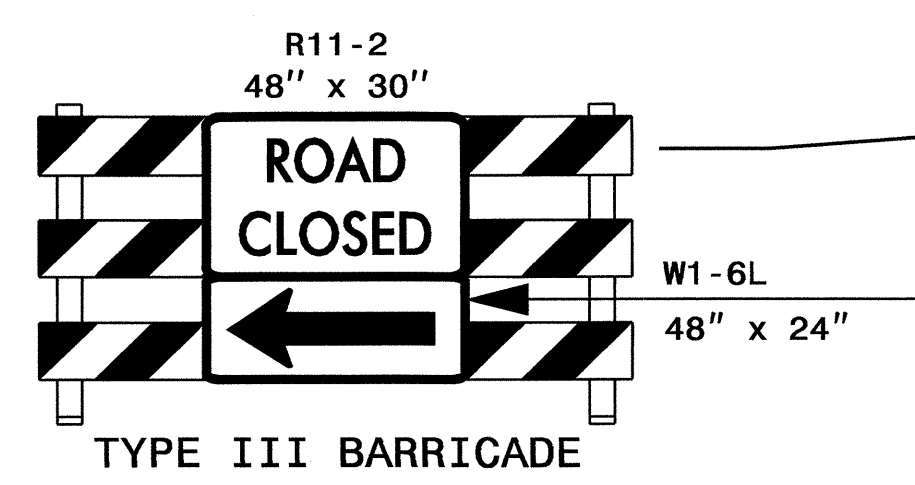
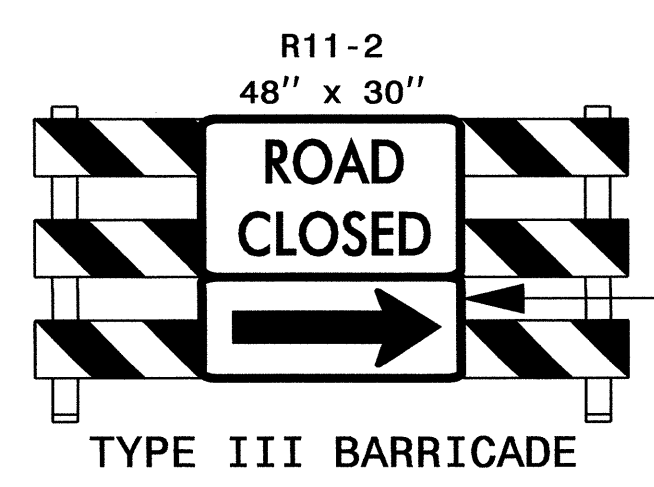
TEMPORARY TRAFFIC CONTROL PHASE I AND DETAIL

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PHASE II

NOTE: RETURN TRAFFIC TO THE EXISTING PATTERN AT THE END OF EACH WORK PERIOD UNLESS OTHERWISE STATED IN THE PHASING OR DIRECTED BY THE ENGINEER.

- STEP 1: - USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, REMOVE EXISTING BRIDGE AND ROADWAY, JOE THOMAS RD (-L-, SR 1376) AND COMPLETE ANY REMAINING CONSTRUCTION OF -L- AND DRIVEWAY. (SEE CONSTRUCTION PLANS).
- STEP 2: - OPEN TO FINAL TRAFFIC PATTERN.



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SEAL

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

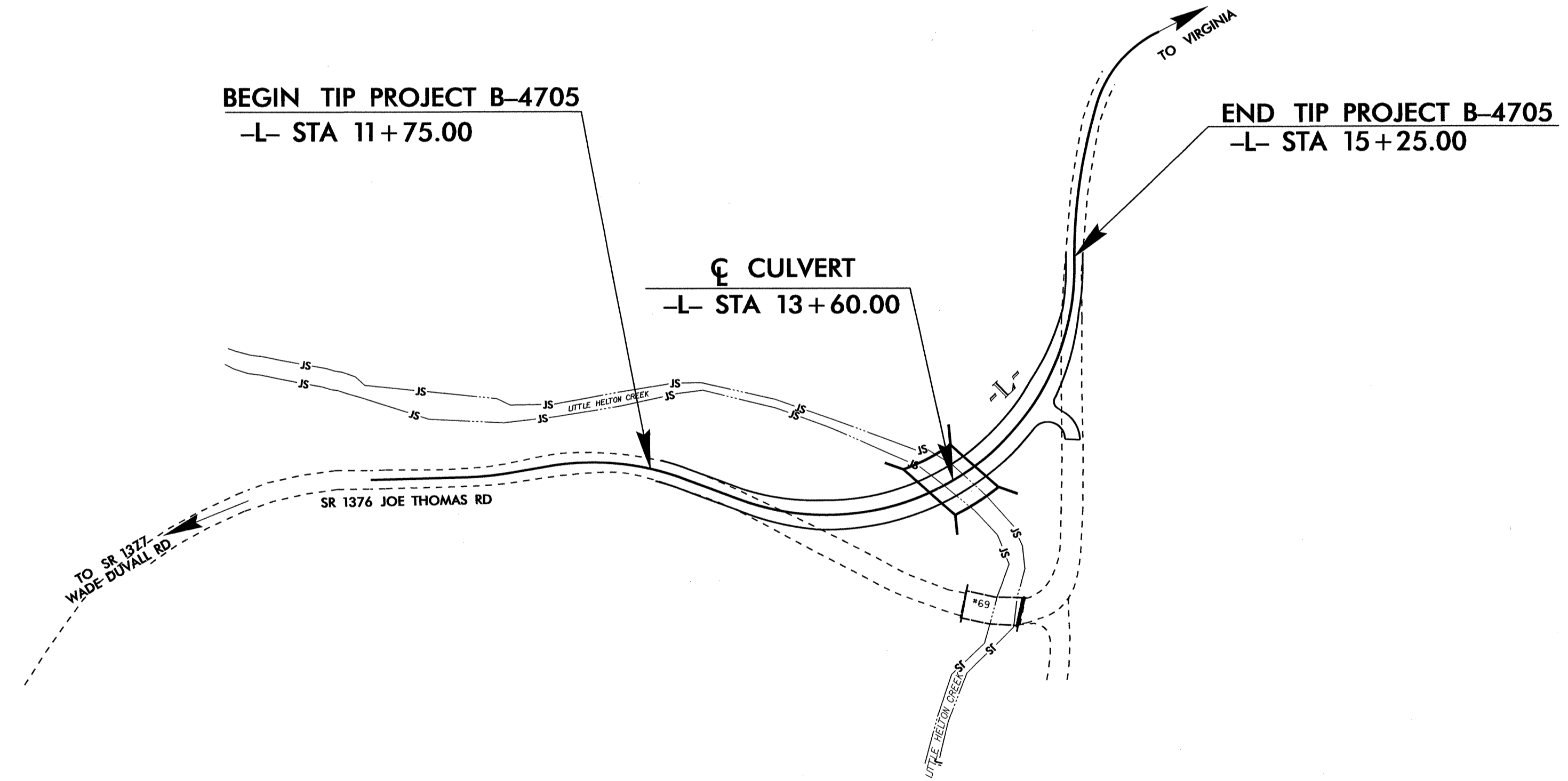
TEMPORARY TRAFFIC CONTROL PHASE II AND DETAIL

TIP PROJECT: B-4705

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
 PLAN FOR PROPOSED
 HIGHWAY EROSION CONTROL
ASHE COUNTY

**LOCATION: BRIDGE 69 OVER LITTLE HELTON CREEK ON
 SR 1376 (JOE THOMAS RD)**

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



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4705	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

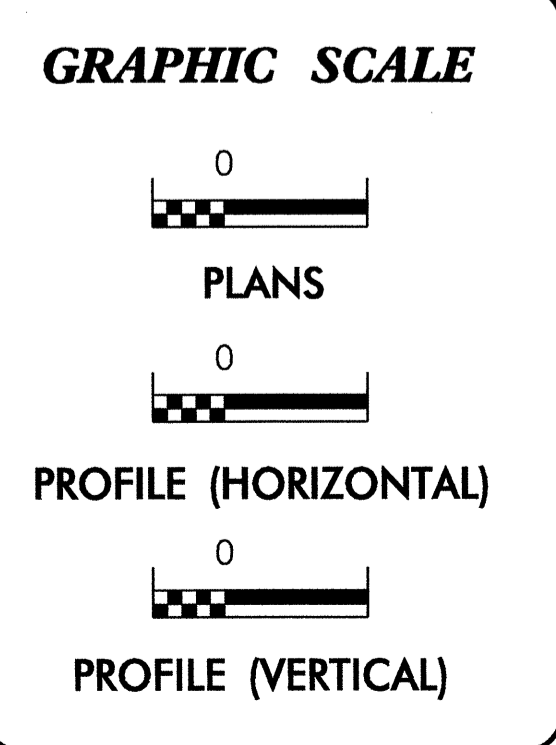
EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1650.03	Temporary Silt Ditch	TD
1650.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	▲▲▲
1622.01	Temporary Berms and Slope Drains	—
1630.02	Silt Basin Type B	□
1633.01	Temporary Rock Silt Check Type-A	⊗
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	⊗
1633.02	Temporary Rock Silt Check Type-B	▶
	Wattle / Coir Fiber Wattle	⌒
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	⌒
1634.01	Temporary Rock Sediment Dam Type-A	⊞
1634.02	Temporary Rock Sediment Dam Type-B	⊞
1635.01	Rock Pipe Inlet Sediment Trap Type-A	⌒
1635.02	Rock Pipe Inlet Sediment Trap Type-B	⌒
1630.04	Stilling Basin	⊞
1630.06	Special Stilling Basin	⊞
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	⊞
	Tiered Skimmer Basin	⊞
	Infiltration Basin	⊞

**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.*



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

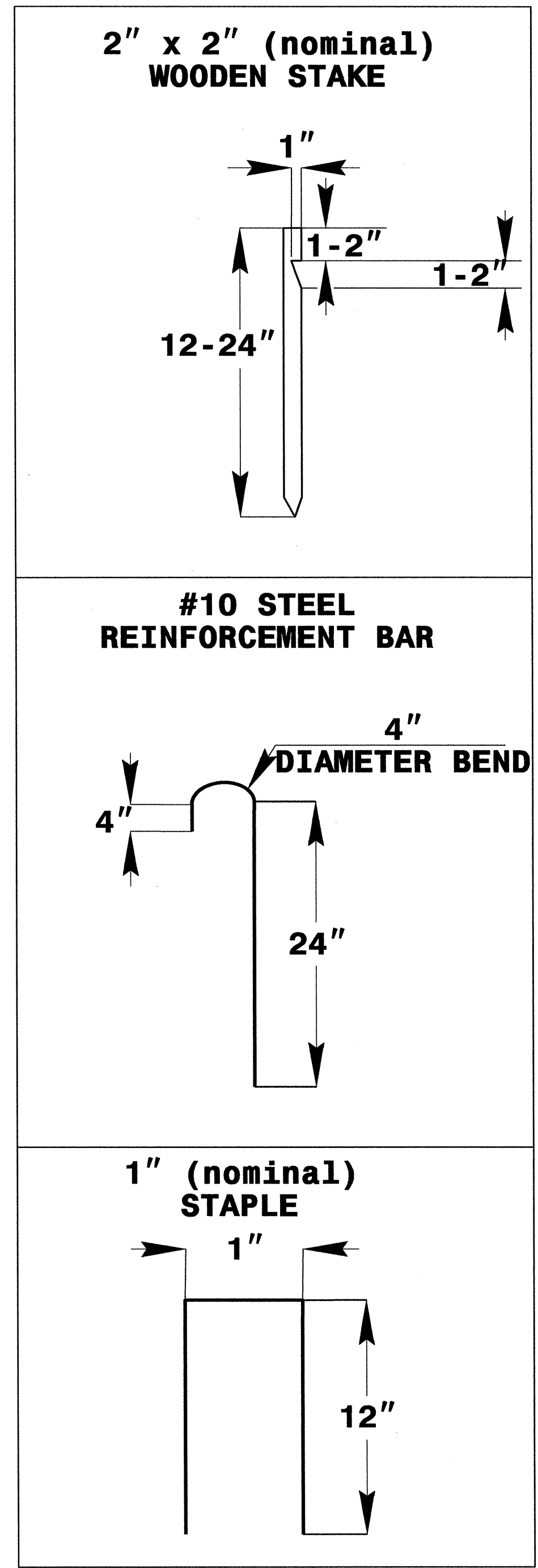
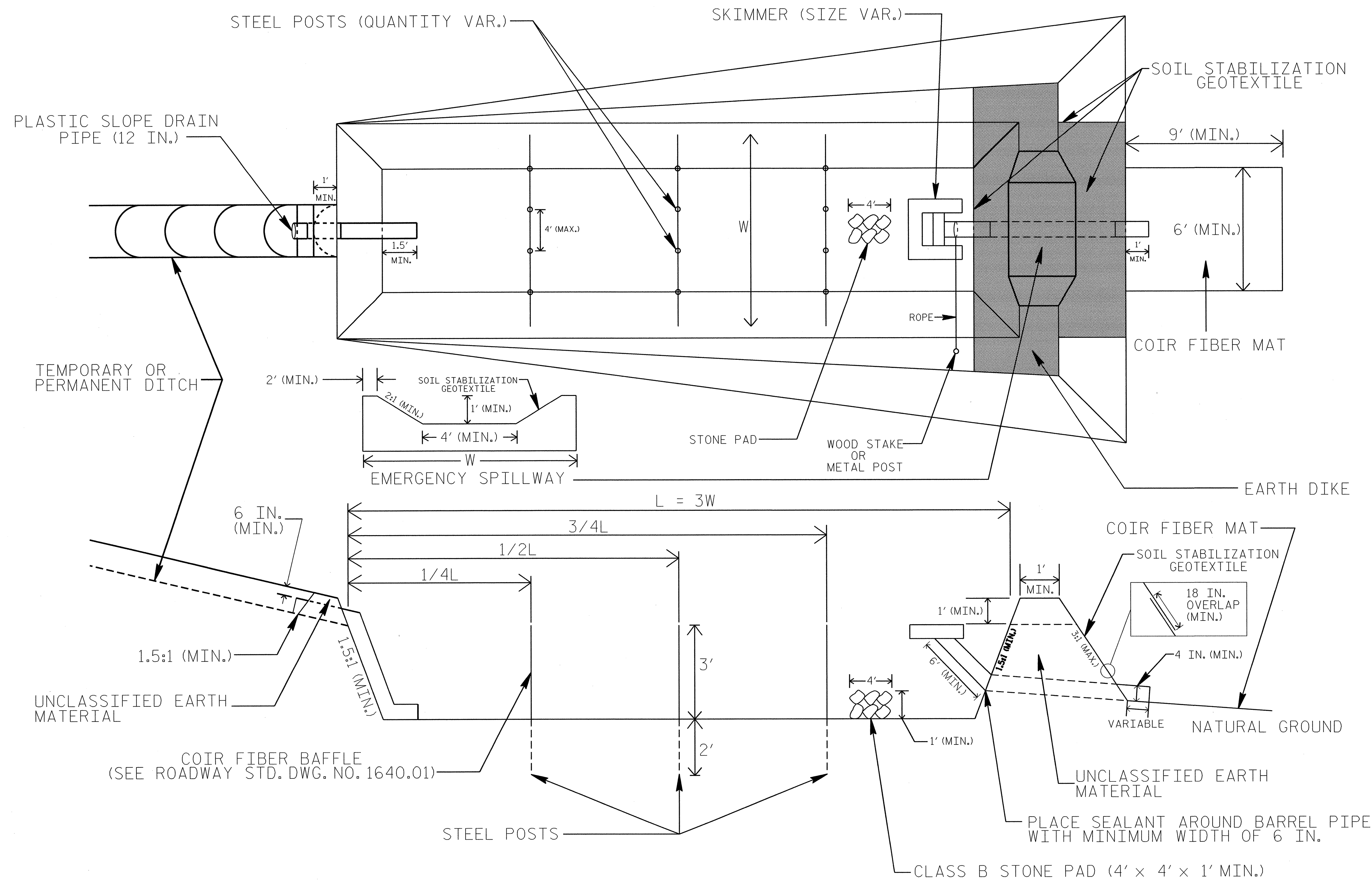
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

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 Wattle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

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PROJECT REFERENCE NO. B-4705	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SKIMMER BASIN WITH BAFFLES DETAIL



COIR FIBER MAT ANCHOR OPTIONS

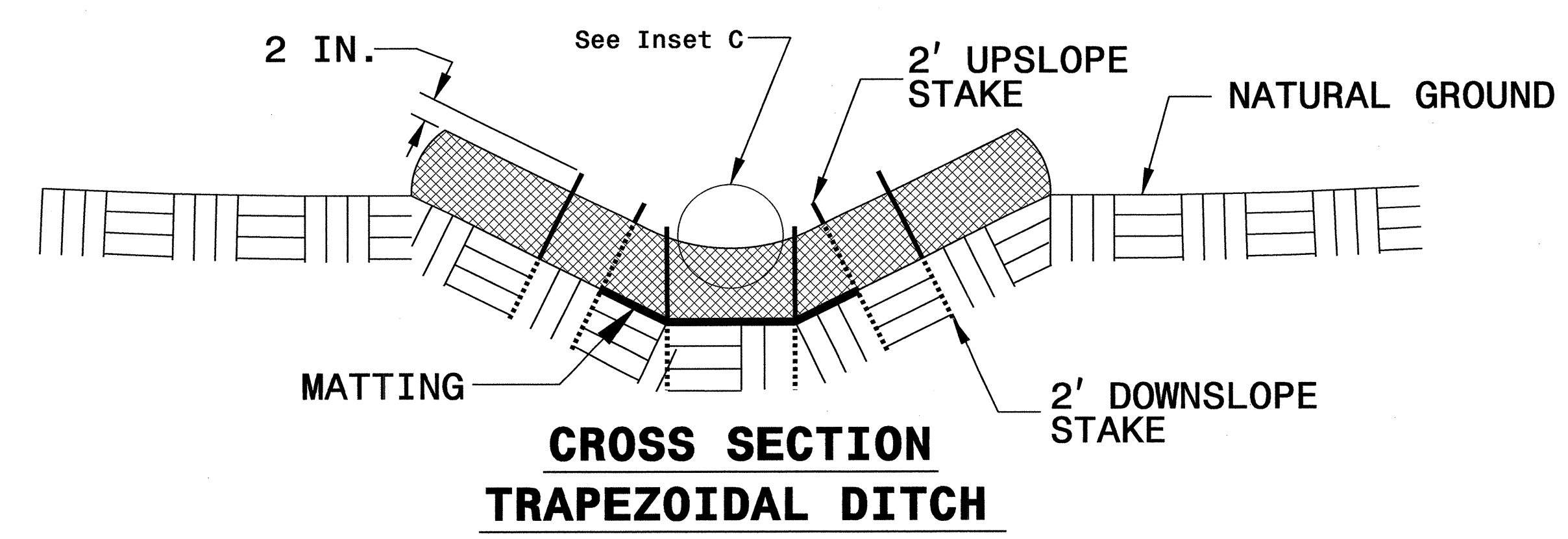
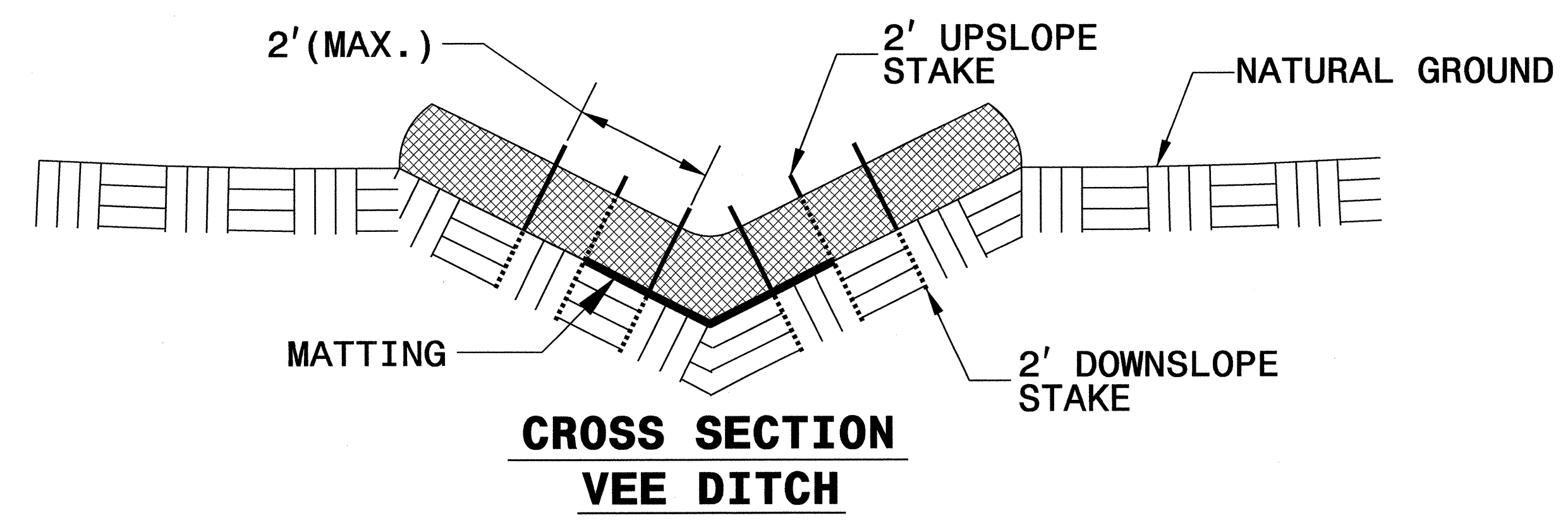
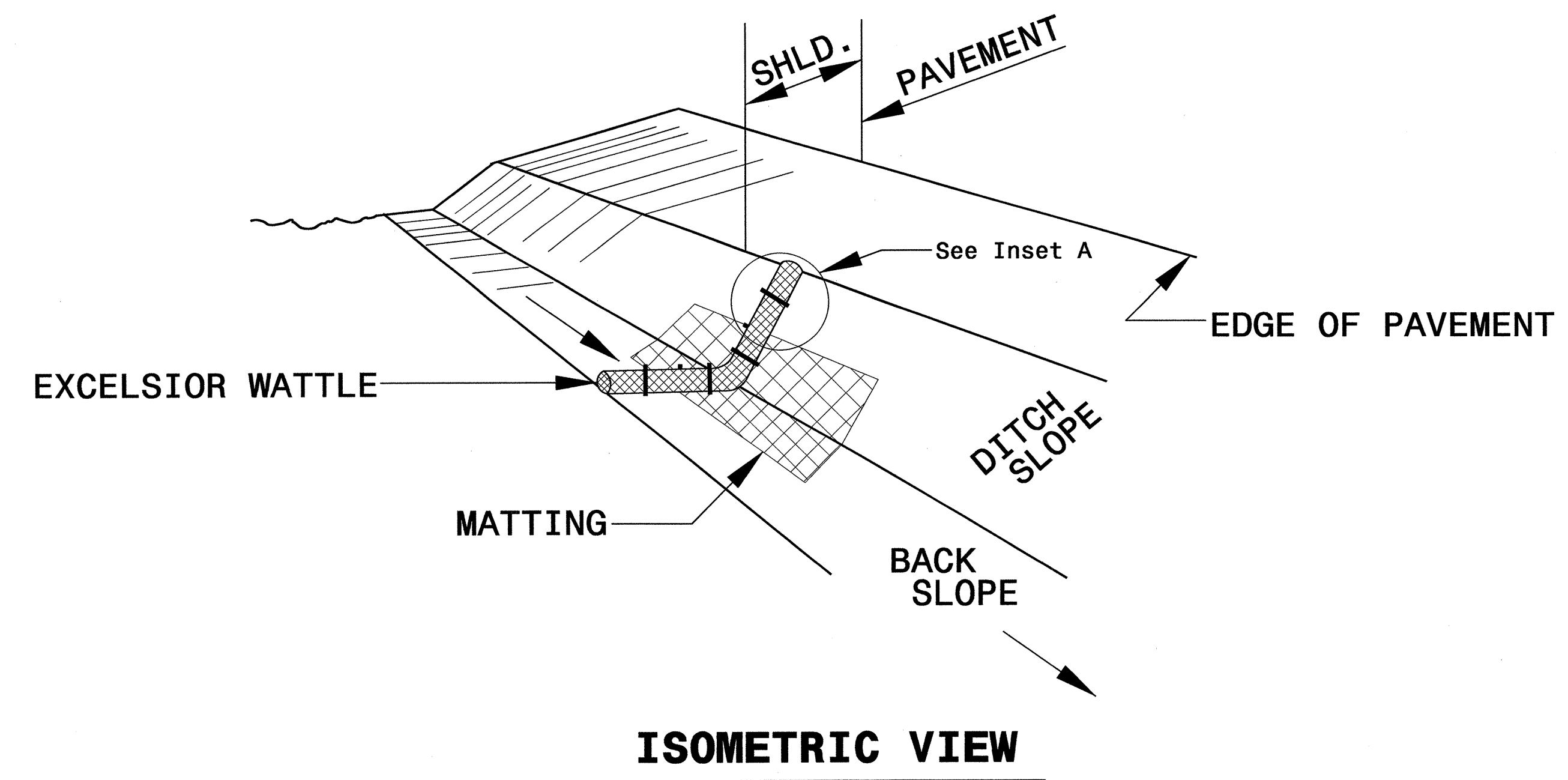
NOTES

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 EMERGENCY SPILLWAY WEIR LENGTH (FT.) USING $Q/0.8$, WHERE Q IS FLOW RATE (CFS) INTO BASIN.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTRATION GEOTEXTILE OR TARP AS DIRECTED.
6. SOIL STABILIZATION GEOTEXTILE FOR EMERGENCY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

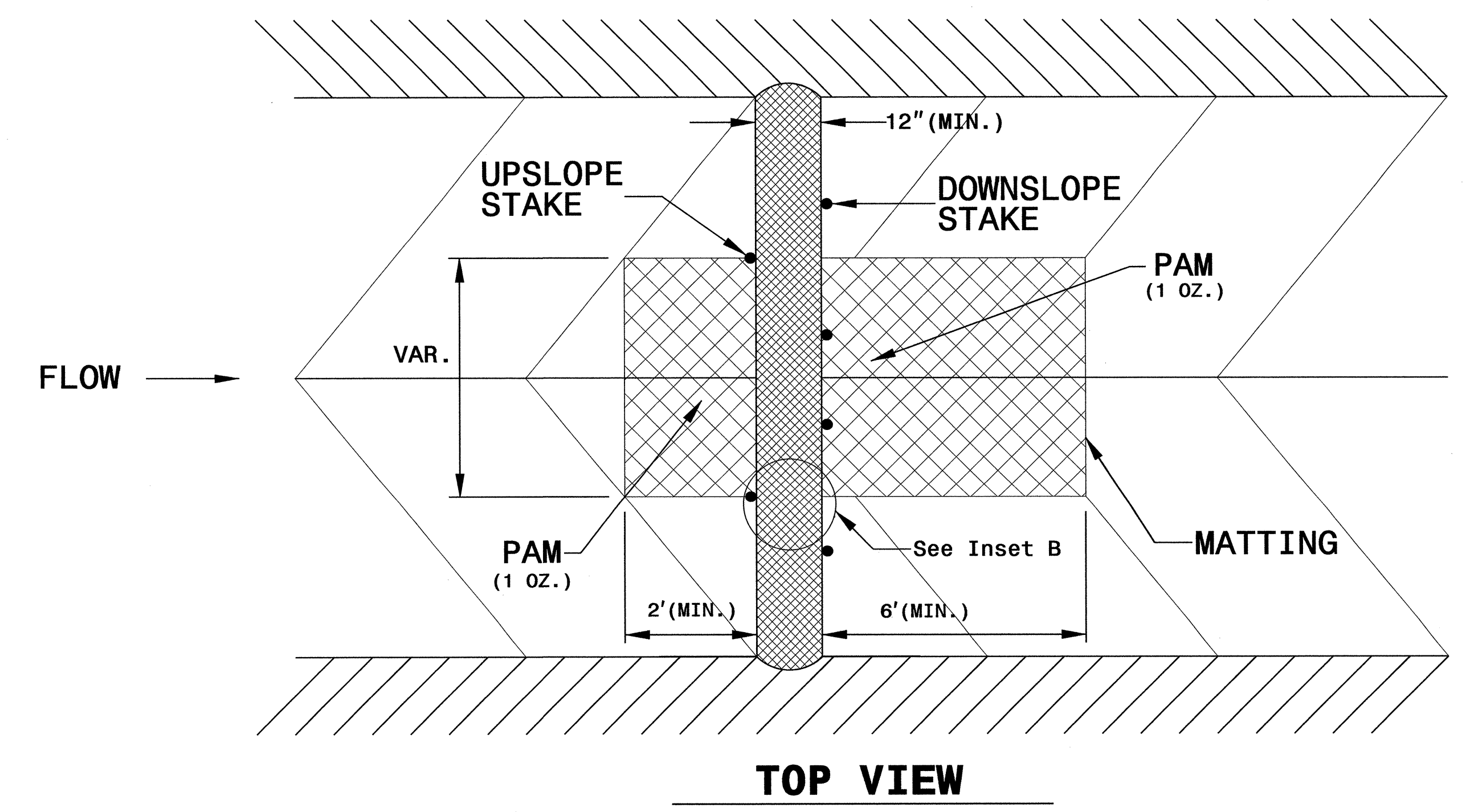
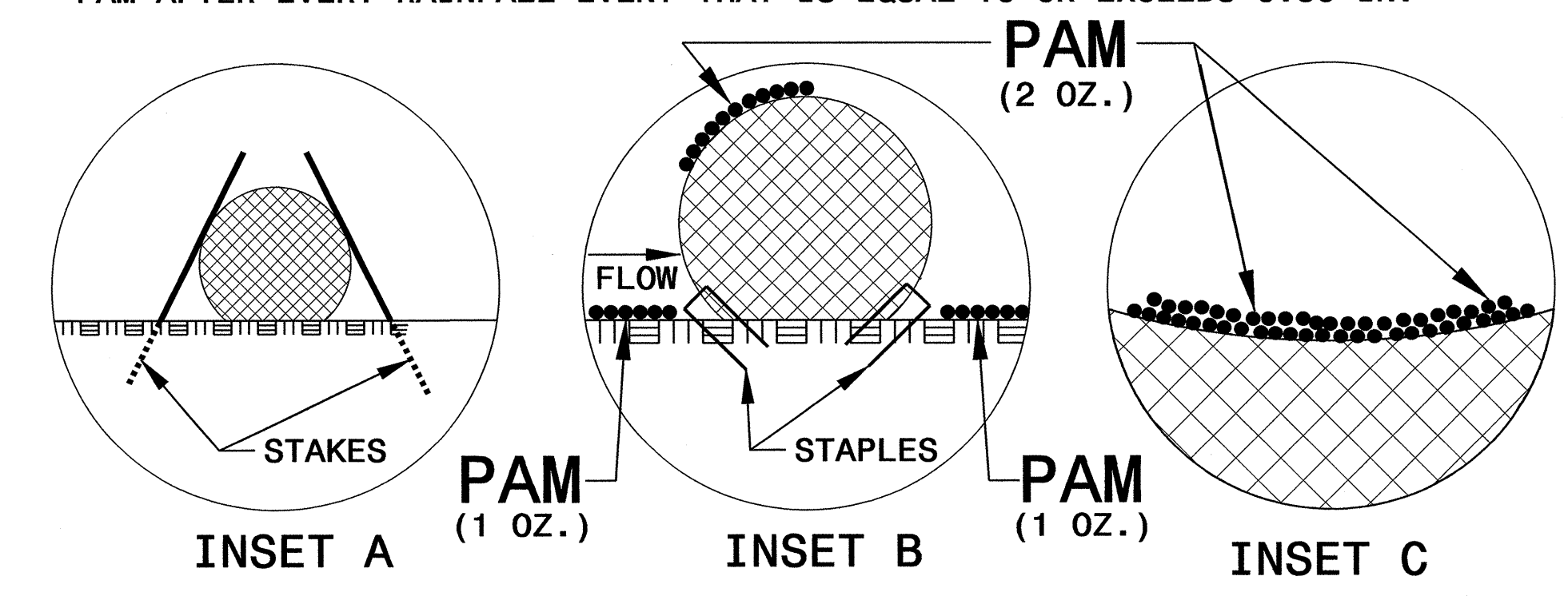
NOT TO SCALE

PROJECT REFERENCE NO. B-4705	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



- 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.



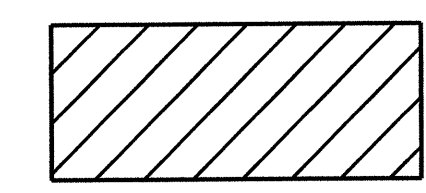
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>B-4705</i>	SHEET NO. <i>EC-3A</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
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-4705	EC-4/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



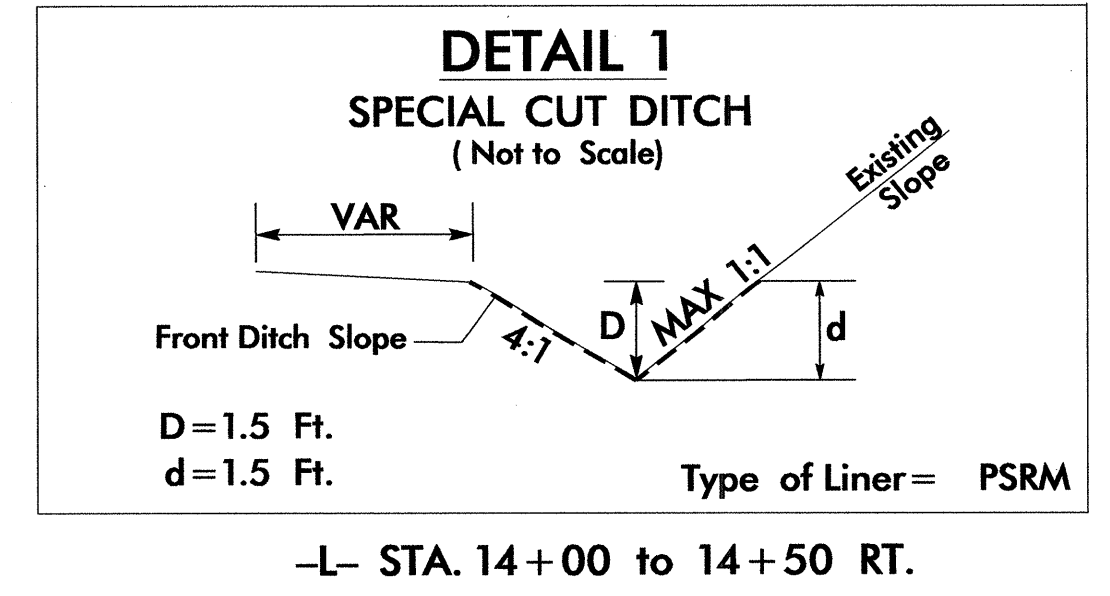
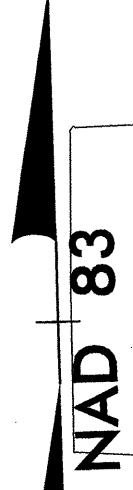
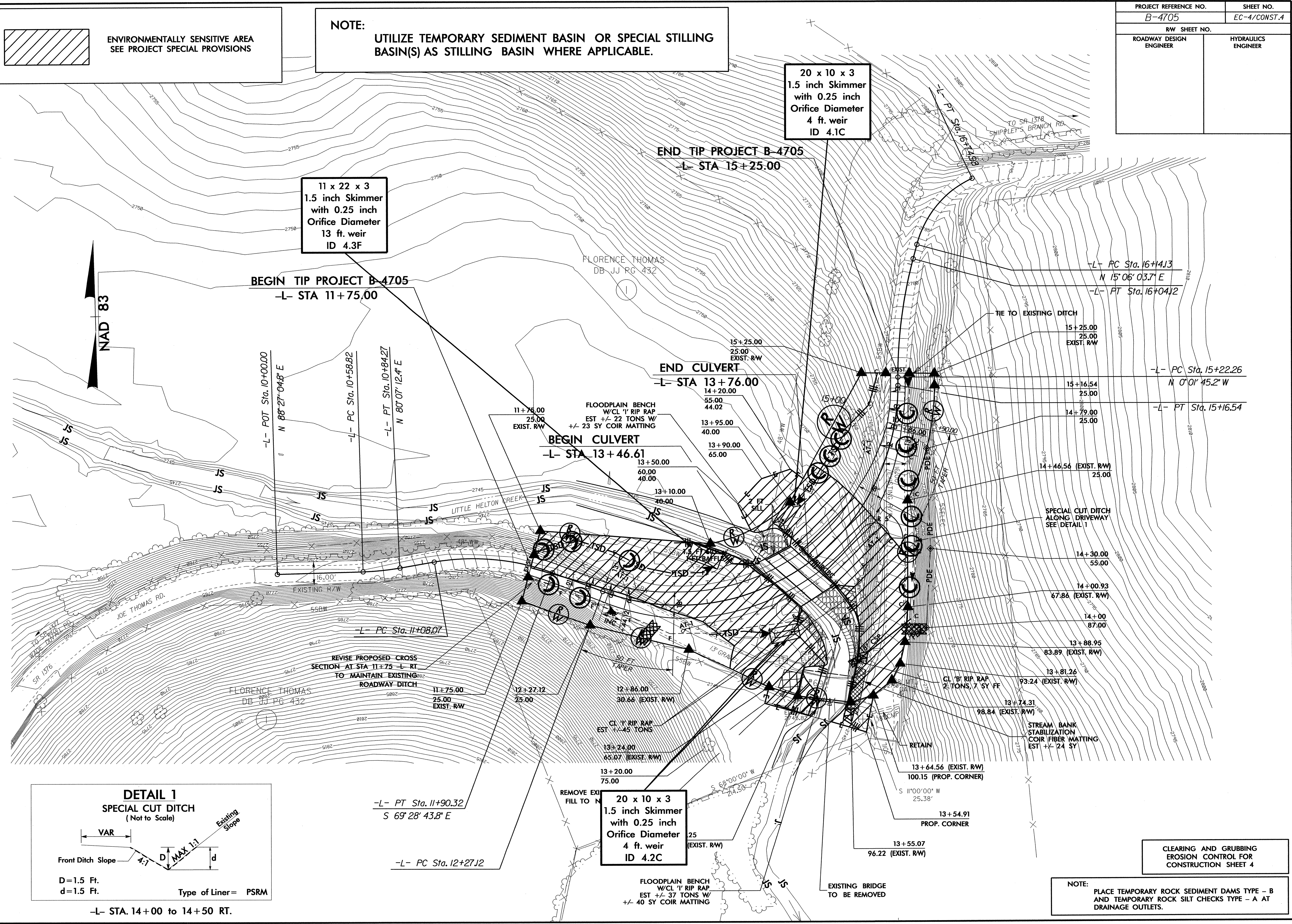
ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

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

20 x 10 x 3
1.5 inch Skimmer
with 0.25 inch
Orifice Diameter
4 ft. weir
ID 4.1C

11 x 22 x 3
1.5 inch Skimmer
with 0.25 inch
Orifice Diameter
13 ft. weir
ID 4.3F

20 x 10 x 3
1.5 inch Skimmer
with 0.25 inch
Orifice Diameter
4 ft. weir
ID 4.2C



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

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

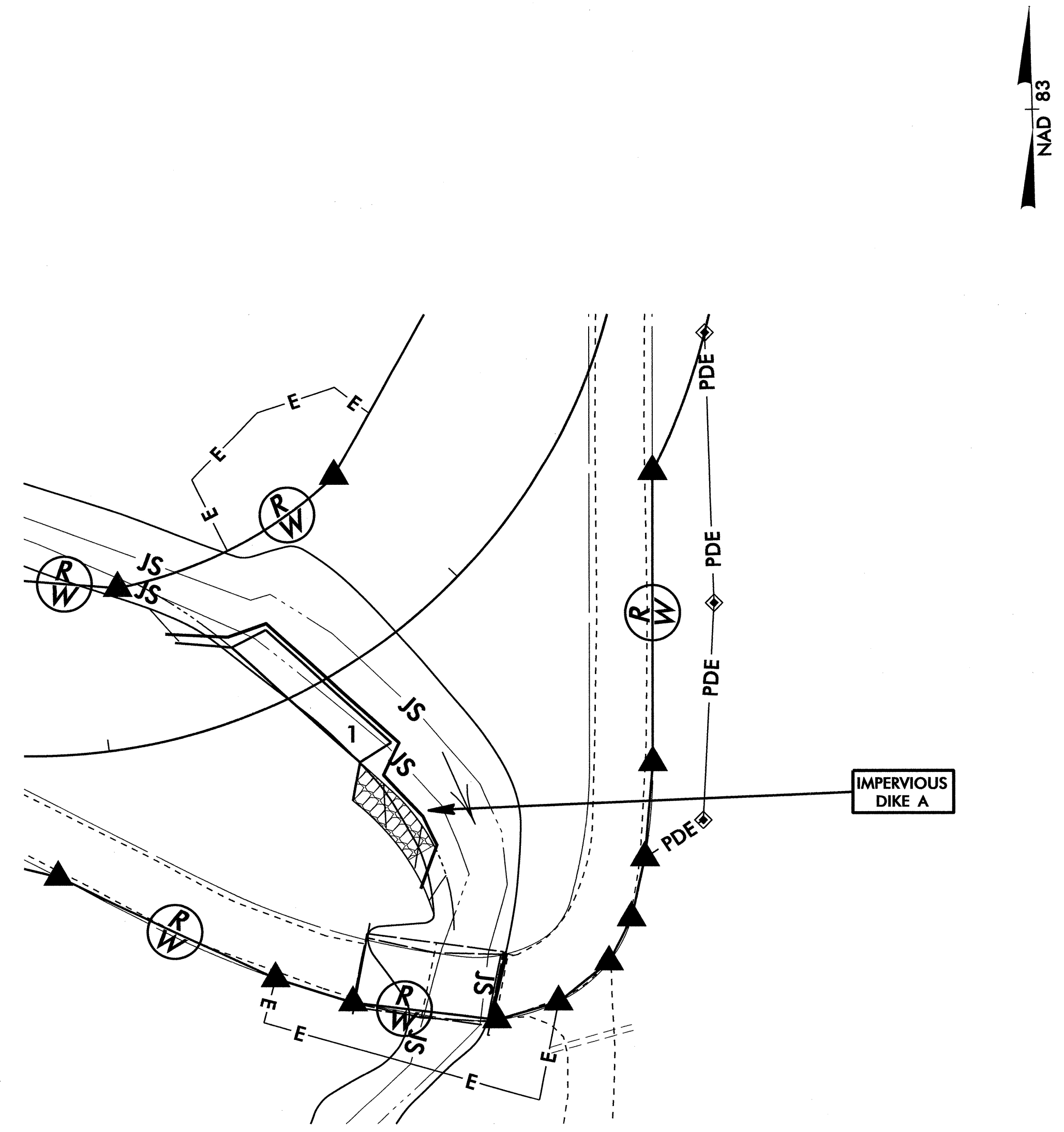
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micah@bentley.com

PROJECT REFERENCE NO. B-4705	SHEET NO. EC-5/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CULVERT CONSTRUCTION SEQUENCE STA. 13+61.50 -L-

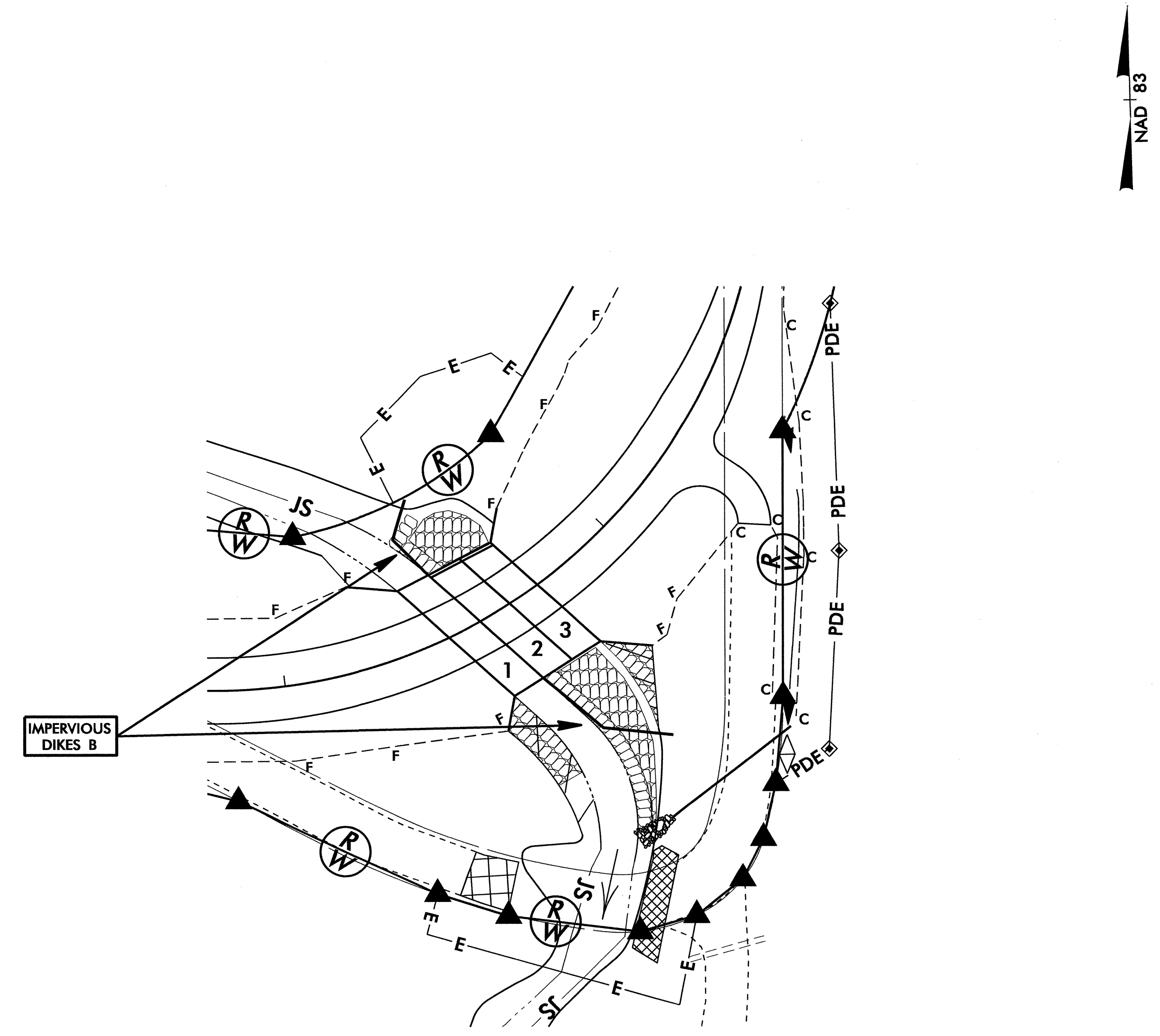
PHASE I

1. UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED THROUGHOUT CULVERT CONSTRUCTION.
2. CONSTRUCT IMPERVIOUS DIKE A, DIVERTING FLOW.
3. CONSTRUCT BARREL 1 OF PROPOSED CULVERT, AND PORTION OF INLET/OUTLET CHANNEL IMPROVEMENTS.
4. REMOVE IMPERVIOUS DIKE A.



PHASE II

5. CONSTRUCT IMPERVIOUS DIKES B, DIVERTING FLOW THROUGH COMPLETED BARREL 1 OF PROPOSED CULVERT.
6. CONSTRUCT BARRELS 2 AND 3 OF PROPOSED CULVERT.
7. COMPLETE REMAINDER OF UPSTREAM/DOWNSTREAM CHANNEL IMPROVEMENTS.
8. REMOVE IMPERVIOUS DIKES B.
9. REMOVE ANY REMAINING SPECIAL STILLING BASIN(S).
10. COMPLETE ROADWAY.

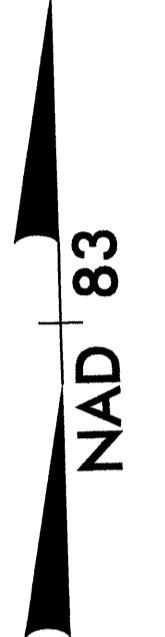


PROJECT REFERENCE NO.		SHEET NO.	
B-4705		EC-6/CONST.4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

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

20 x 10 x 3
1.5 inch Skimmer
with 0.25 inch
Orifice Diameter
4 ft. weir
ID 4.1C

11 x 22 x 3
1.5 inch Skimmer
with 0.25 inch
Orifice Diameter
13 ft. weir
ID 4.3F

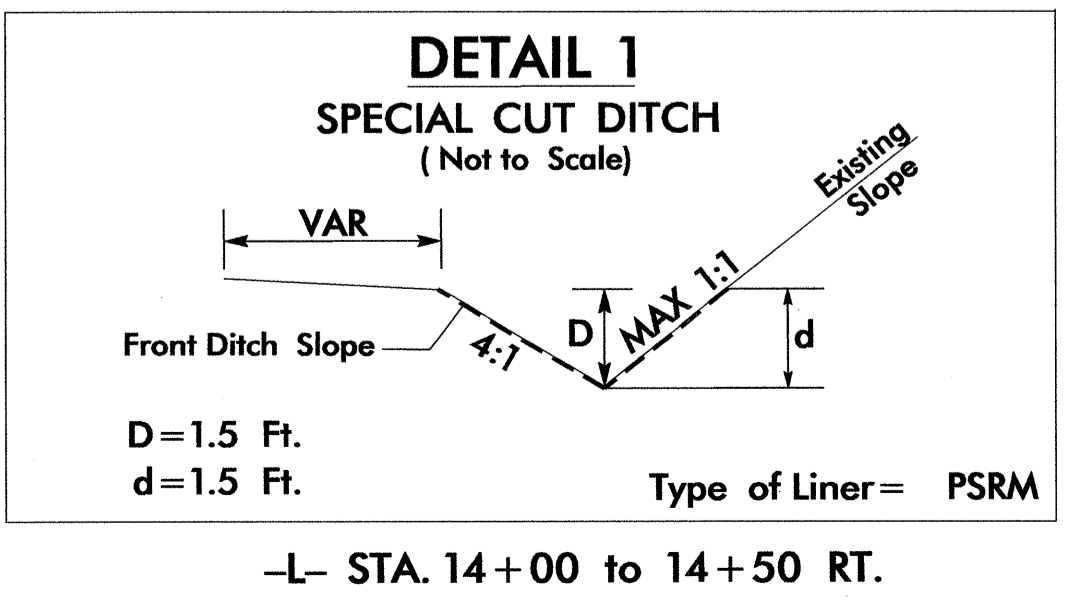
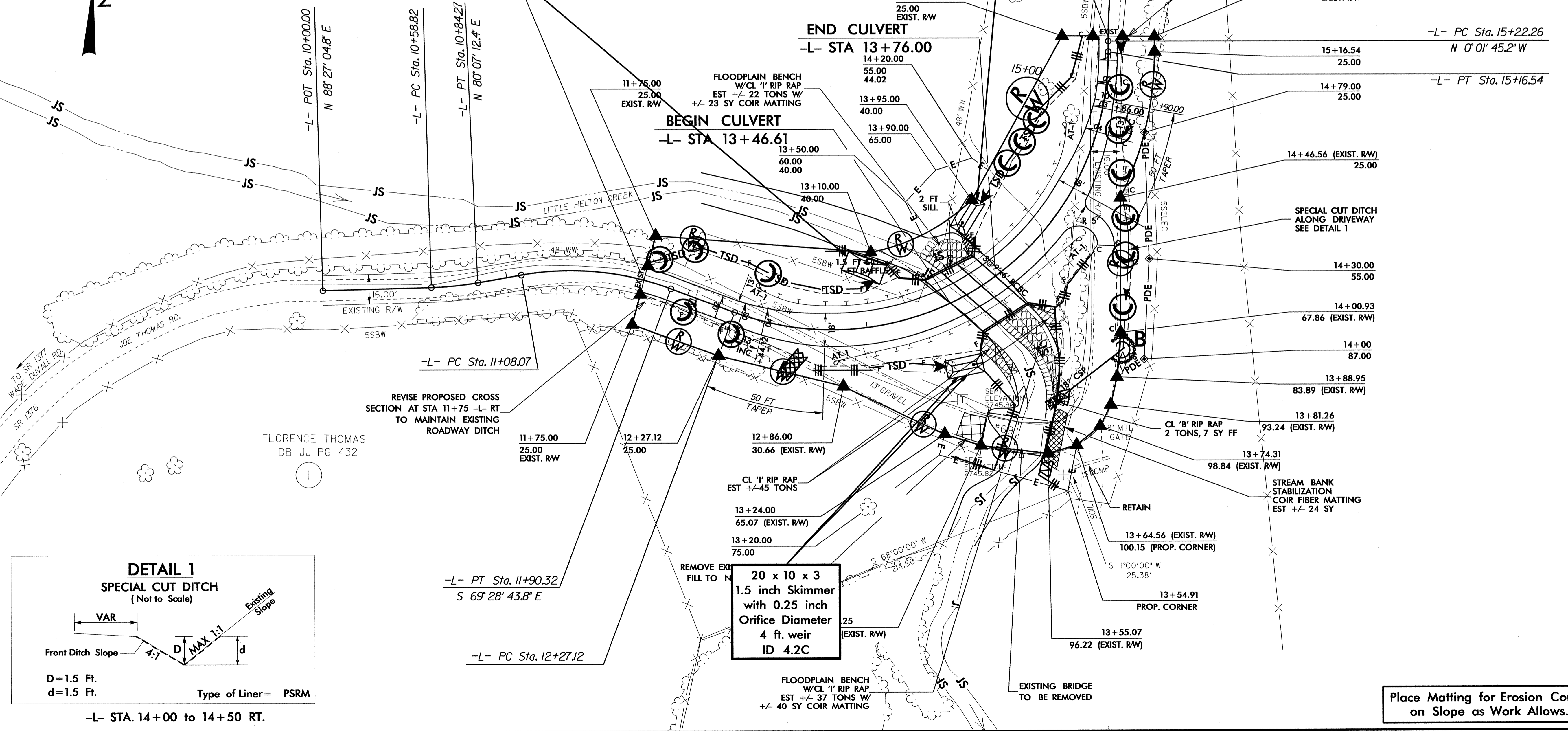


BEGIN TIP PROJECT B-4705
-L- STA 11+75.00

END TIP PROJECT B-4705
-L- STA 15+25.00

END CULVERT
-L- STA 13+76.00

BEGIN CULVERT
-L- STA 13+46.61



Place Matting for Erosion Control
on Slope as Work Allows.

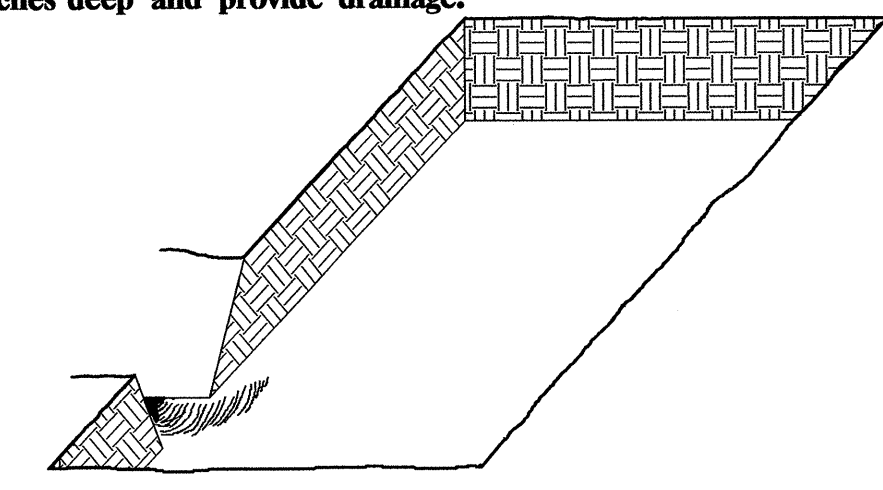
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PLANTING DETAILS

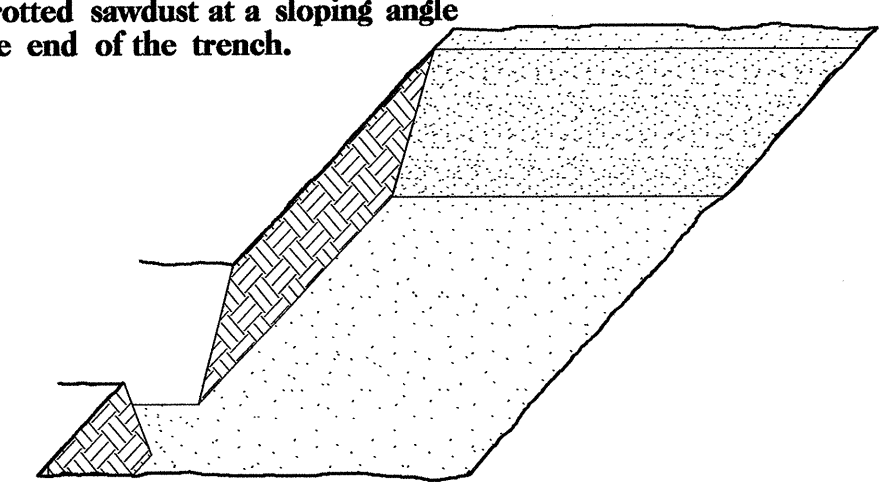
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

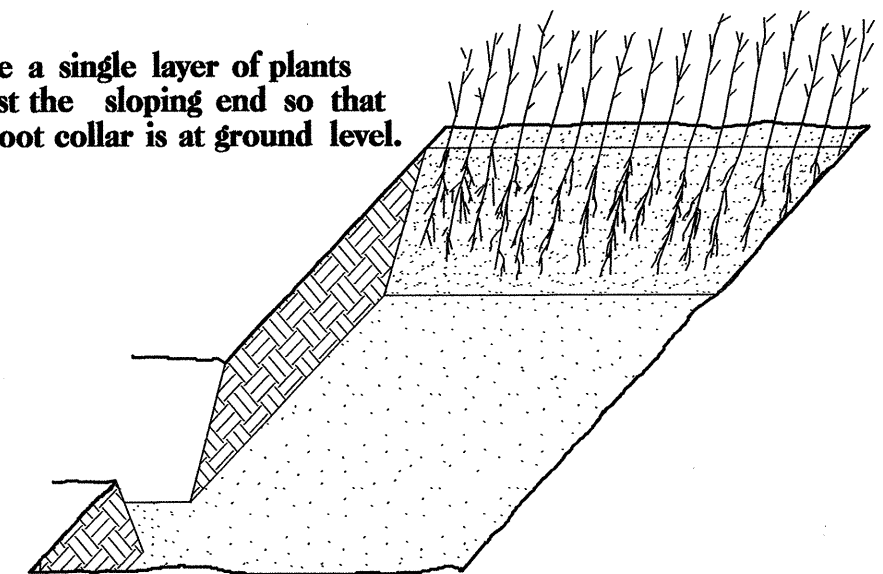
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



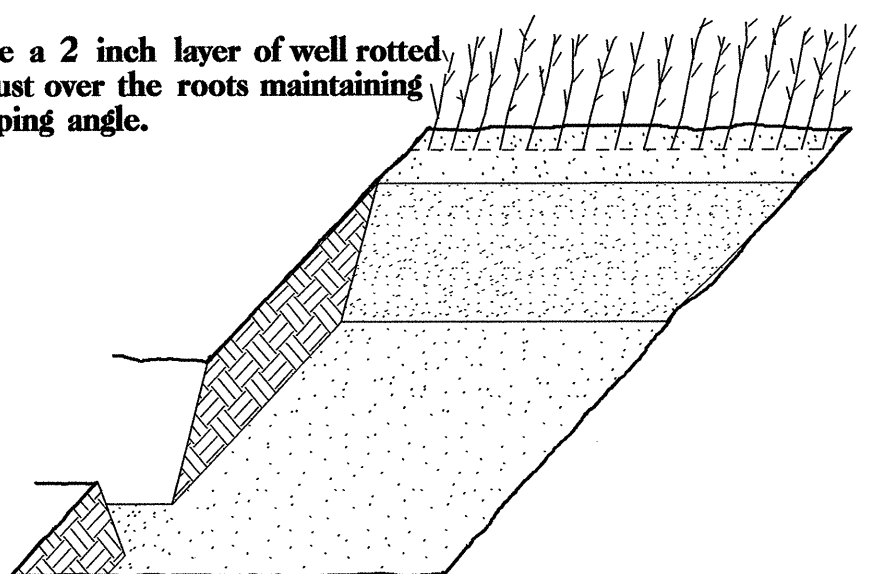
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

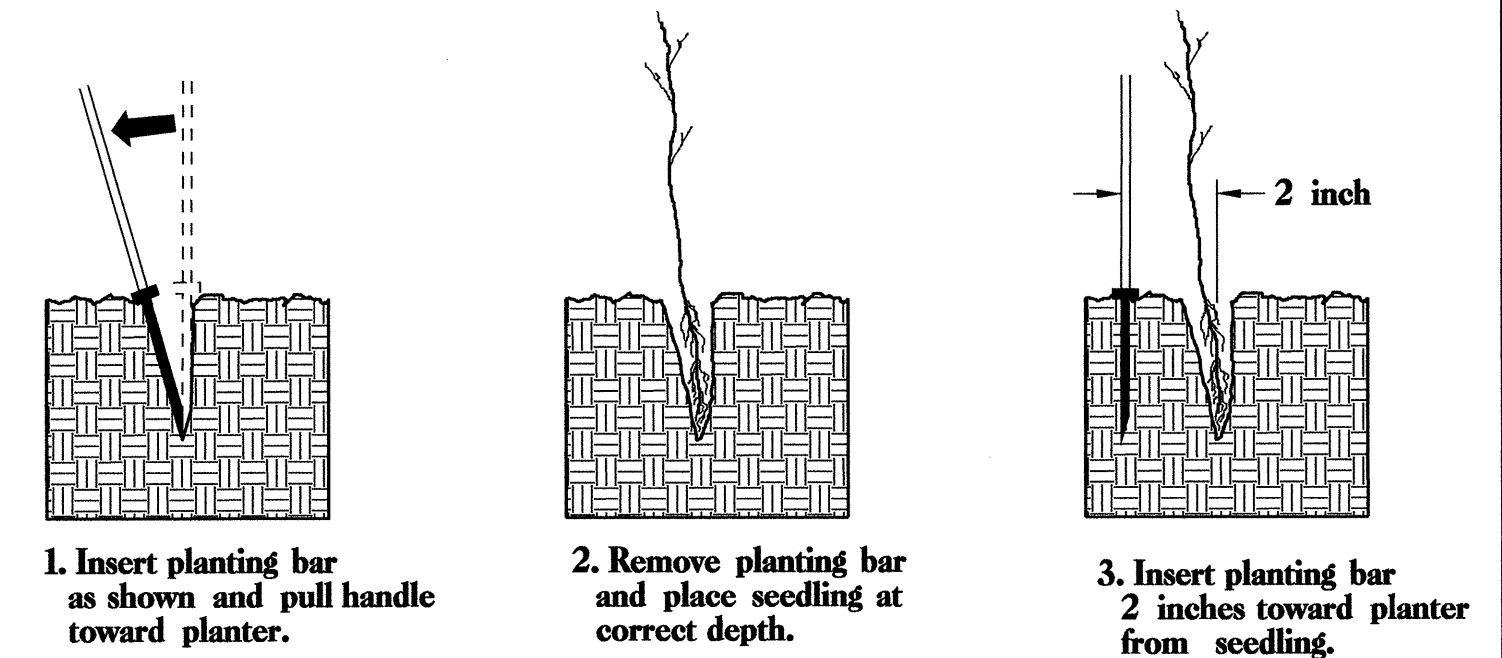


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

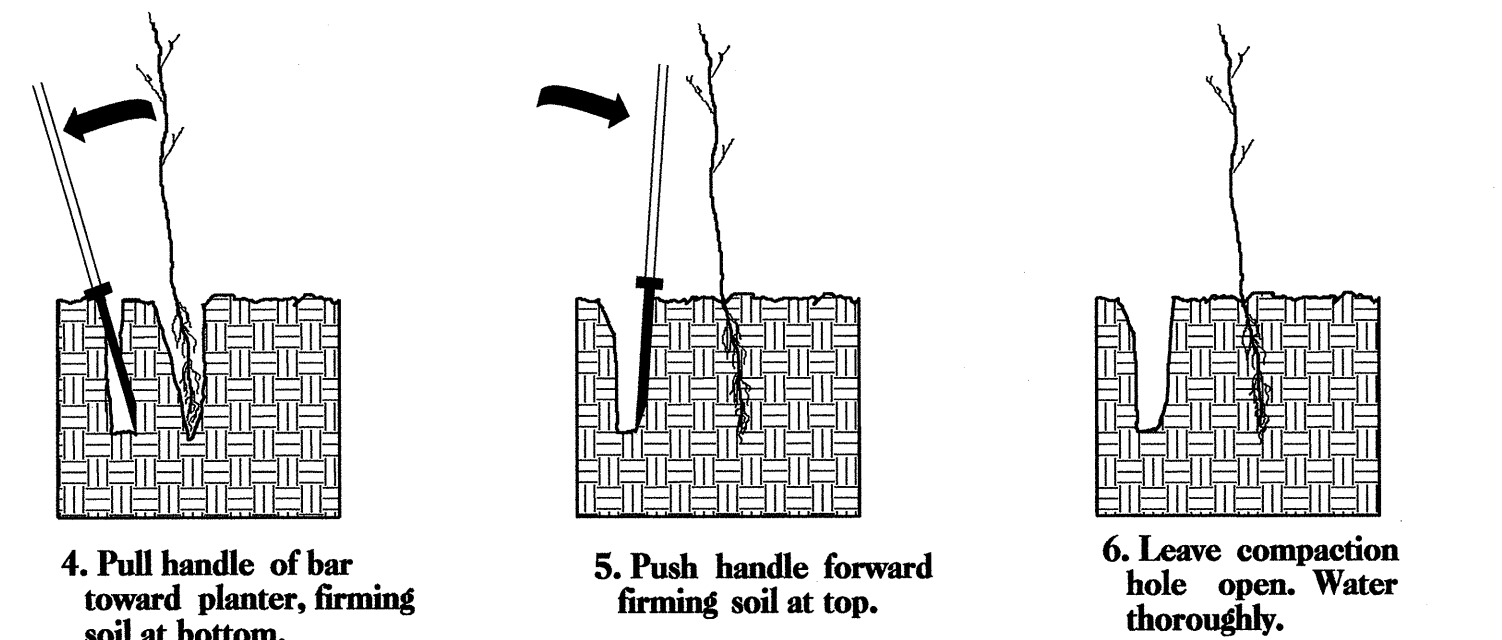


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



1. Insert planting bar as shown and pull handle toward planter.
2. Remove planting bar and place seedling at correct depth.
3. Insert planting bar 2 inches toward planter from seedling.



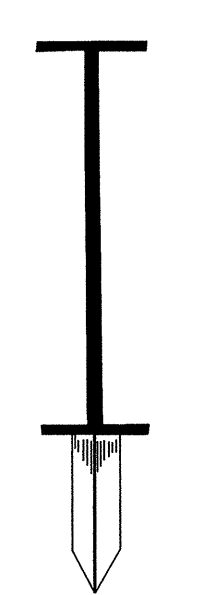
4. Pull handle of bar toward planter, firming soil at bottom.
5. Push handle forward firming soil at top.
6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

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



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



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

REFORESTATION

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

REFORESTATION

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

25% PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in - 18 in BR
25% LIRIODENDRON TULIPIFERA	YELLOW POPLAR	12 in - 18 in BR
25% FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in BR
25% QUERCUS ALBA	WHITE OAK	12 in - 18 in BR

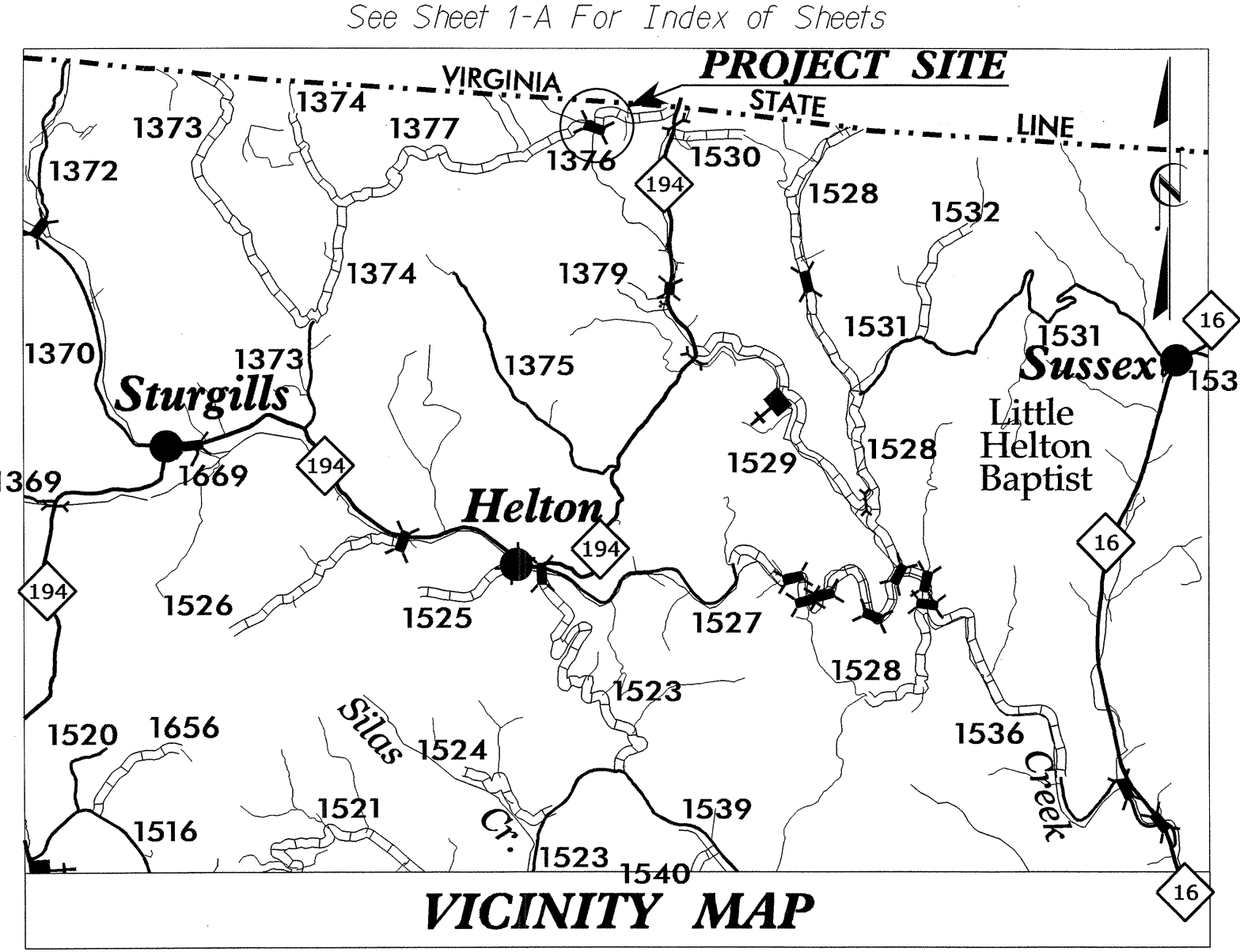
REFORESTATION DETAIL SHEET

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

08/08/99

TIP PROJECT: B-4705

T.I.P. NO.	SHEET NO.
B-4705	UO-1

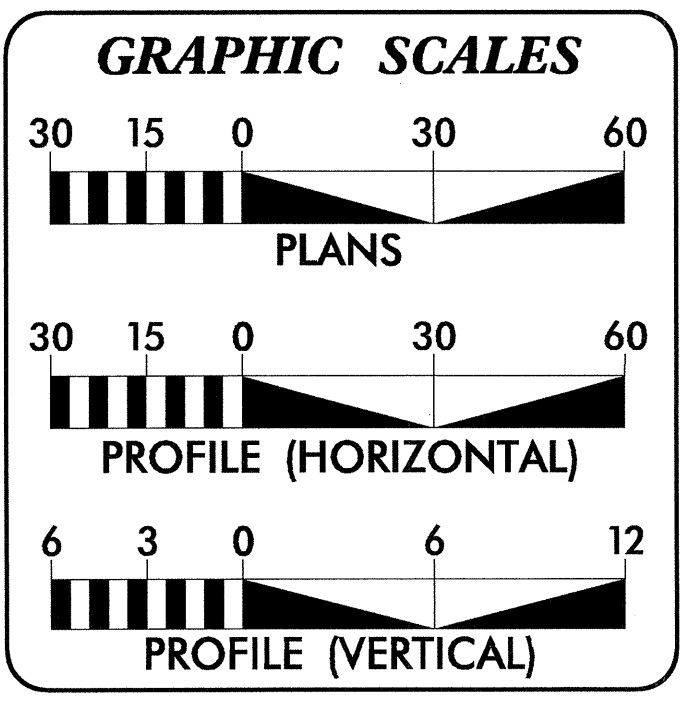
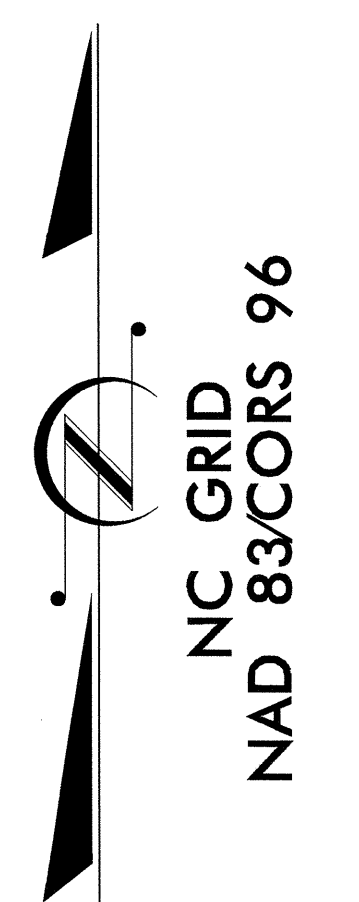
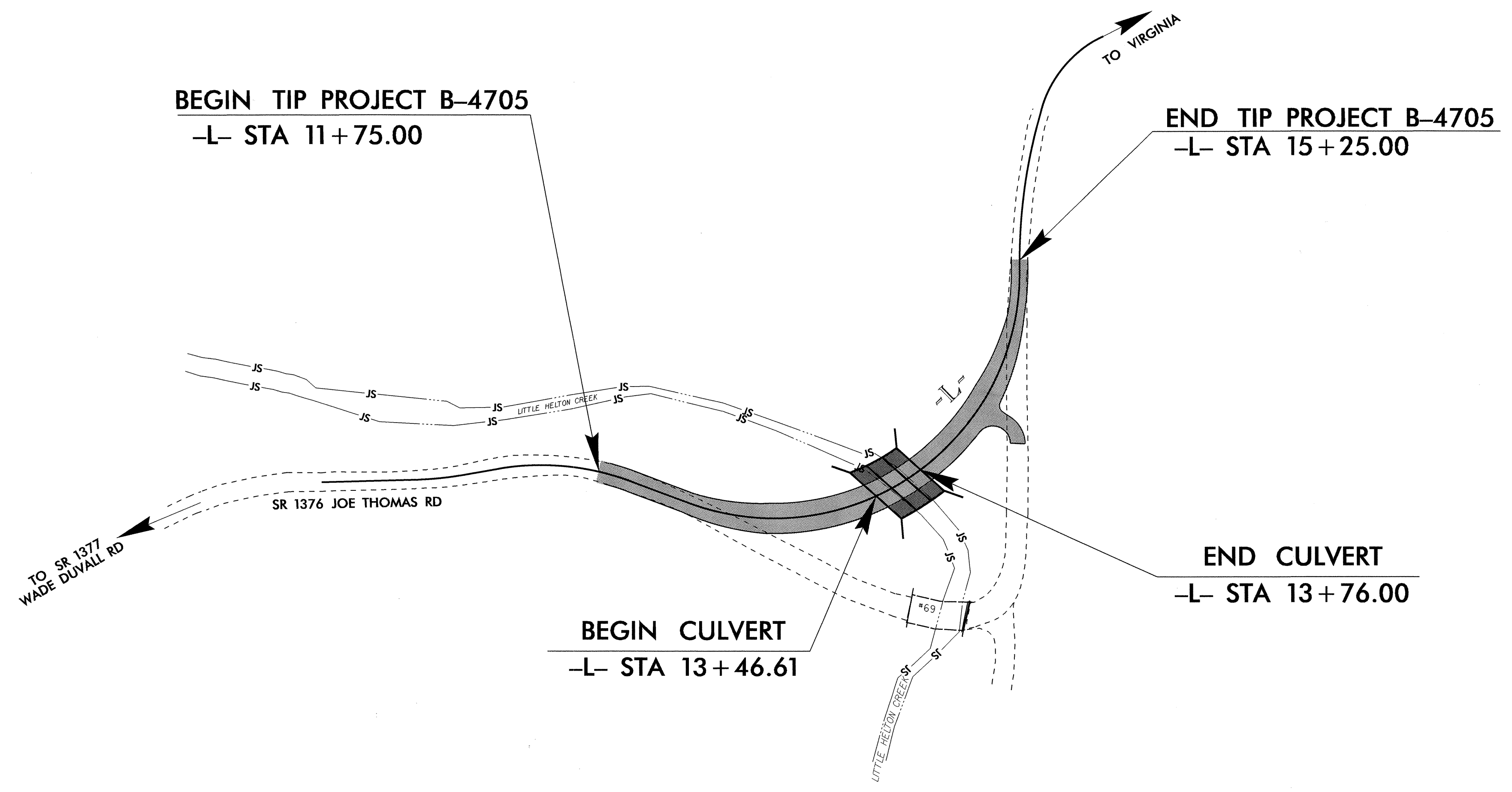
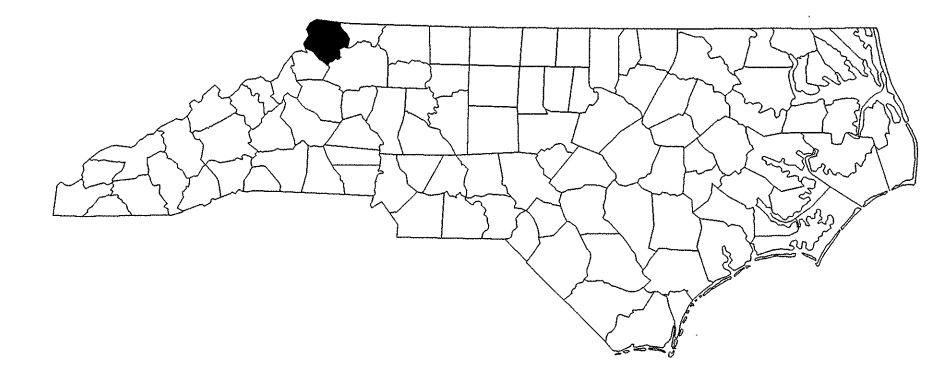


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS
ASHE COUNTY**

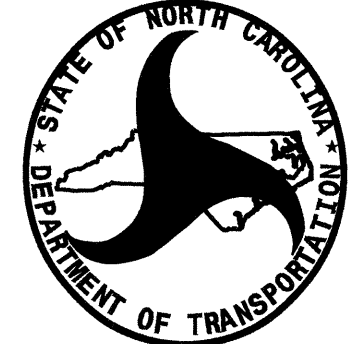
**LOCATION: BRIDGE 69 OVER LITTLE HELTON CREEK ON
SR 1376 (JOE THOMAS RD)**

TYPE OF WORK: RELOCATION OF TELEPHONE



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

UTILITY OWNERS ON PROJECT
(A) SkyLine Membership Corp.



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

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

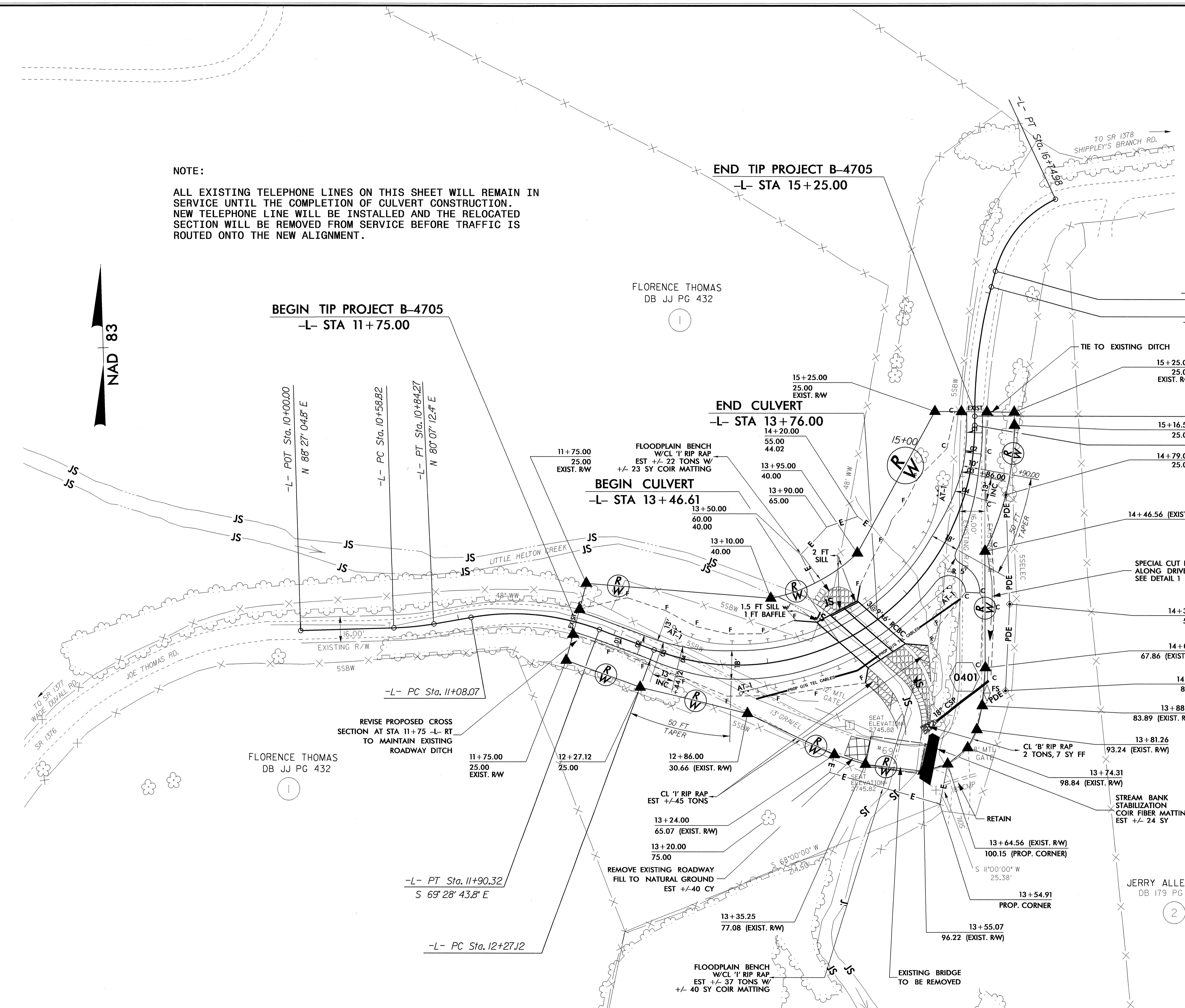
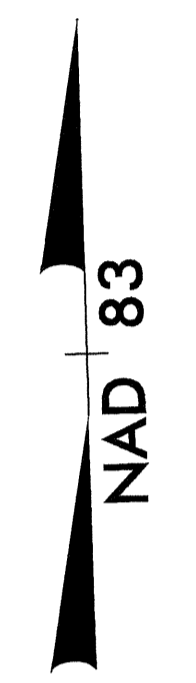
Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Carl Barclay, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Bo Hemphill, P.E. UTILITIES PROJECT DESIGNER

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UTILITIES BY OTHERS

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

NOTE:
ALL EXISTING TELEPHONE LINES ON THIS SHEET WILL REMAIN IN SERVICE UNTIL THE COMPLETION OF CULVERT CONSTRUCTION. NEW TELEPHONE LINE WILL BE INSTALLED AND THE RELOCATED SECTION WILL BE REMOVED FROM SERVICE BEFORE TRAFFIC IS ROUTED ONTO THE NEW ALIGNMENT.



BEGIN TIP PROJECT B-4705
-L- STA 11+75.00

END TIP PROJECT B-4705
-L- STA 15+25.00

BEGIN CULVERT
-L- STA 13+46.61

END CULVERT
-L- STA 13+76.00

FLORENCE THOMAS
DB JJ PG 432

JERRY ALLEN WOOD
DB 179 PG 268

REVISE PROPOSED CROSS SECTION AT STA 11+75 -L- RT TO MAINTAIN EXISTING ROADWAY DITCH

REMOVE EXISTING ROADWAY FILL TO NATURAL GROUND EST +/- 40 CY

EXISTING BRIDGE TO BE REMOVED

STREAM BANK STABILIZATION COIR FIBER MATTING EST +/- 24 SY

SPECIAL CUT DITCH ALONG DRIVEWAY SEE DETAIL 1

TIE TO EXISTING DITCH

FLOODPLAIN BENCH W/CL 'I' RIP RAP EST +/- 22 TONS W +/- 23 SY COIR MATTING

FLOODPLAIN BENCH W/CL 'I' RIP RAP EST +/- 37 TONS W +/- 40 SY COIR MATTING

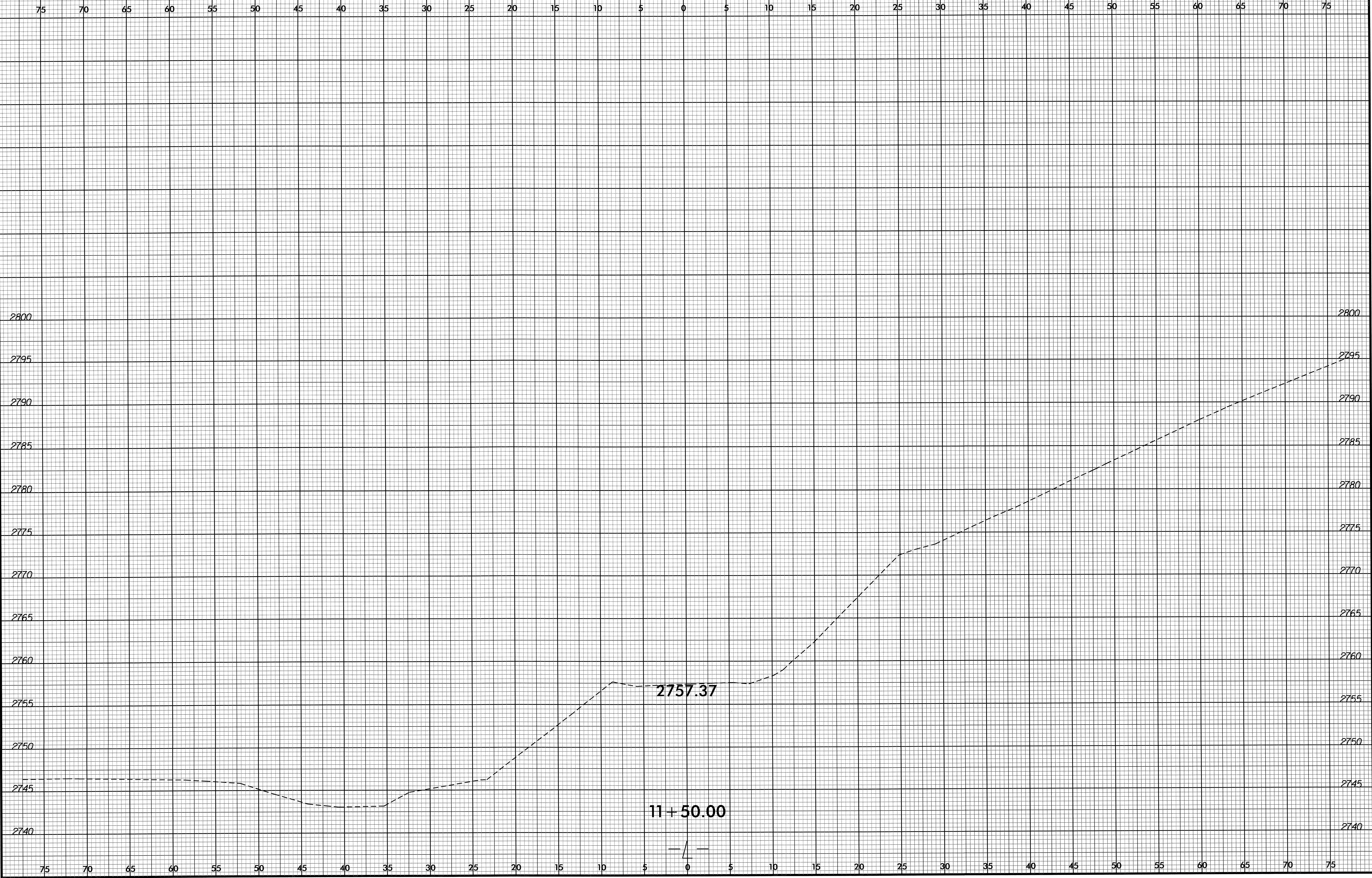
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8/23/99



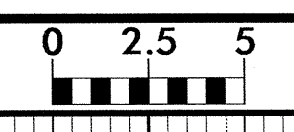
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B-4705

SHEET NO.
X-1



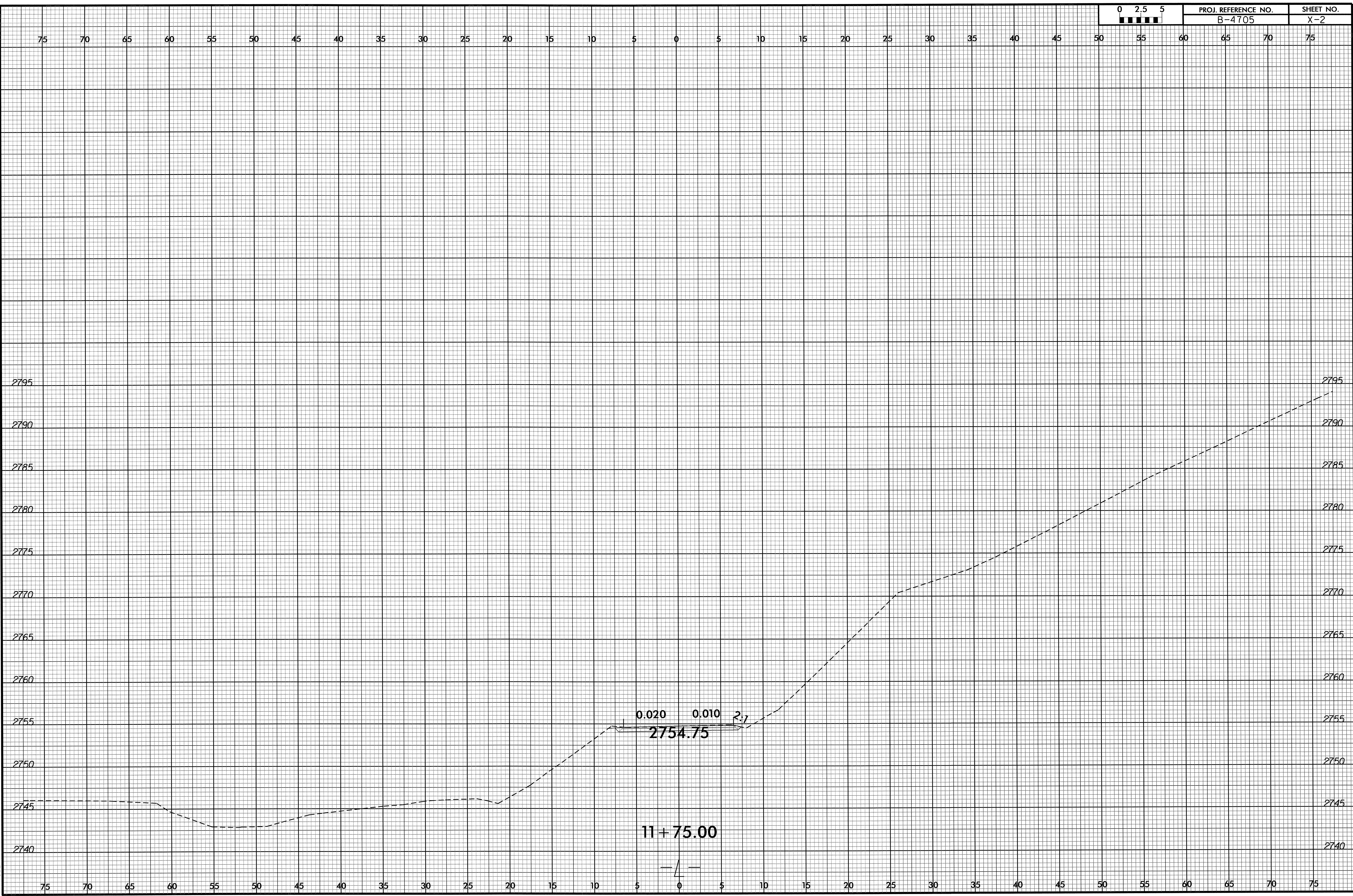
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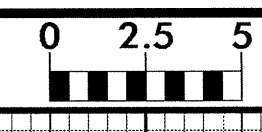
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SHEET NO.
X-2

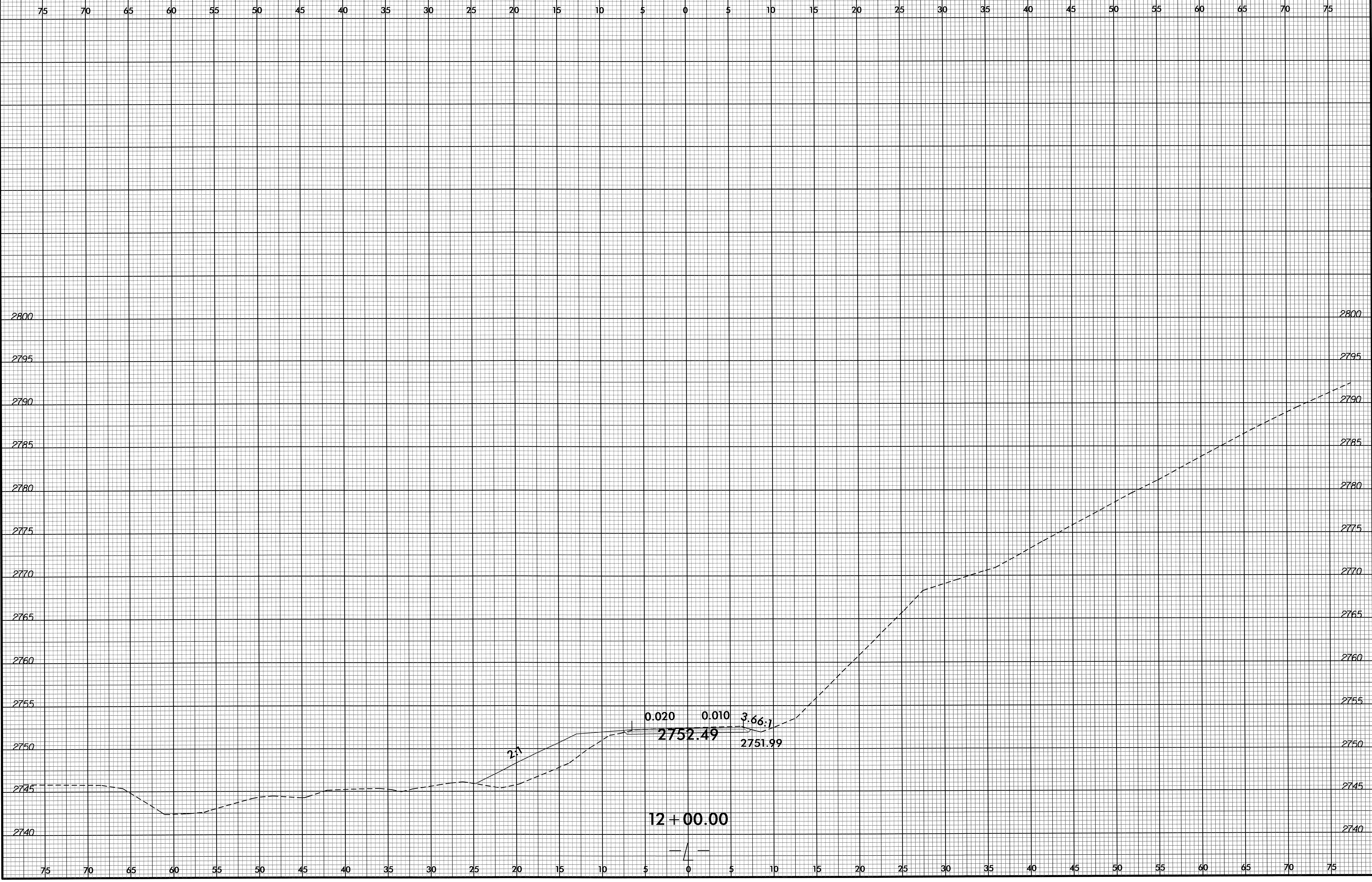


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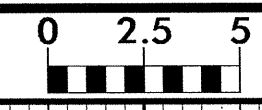


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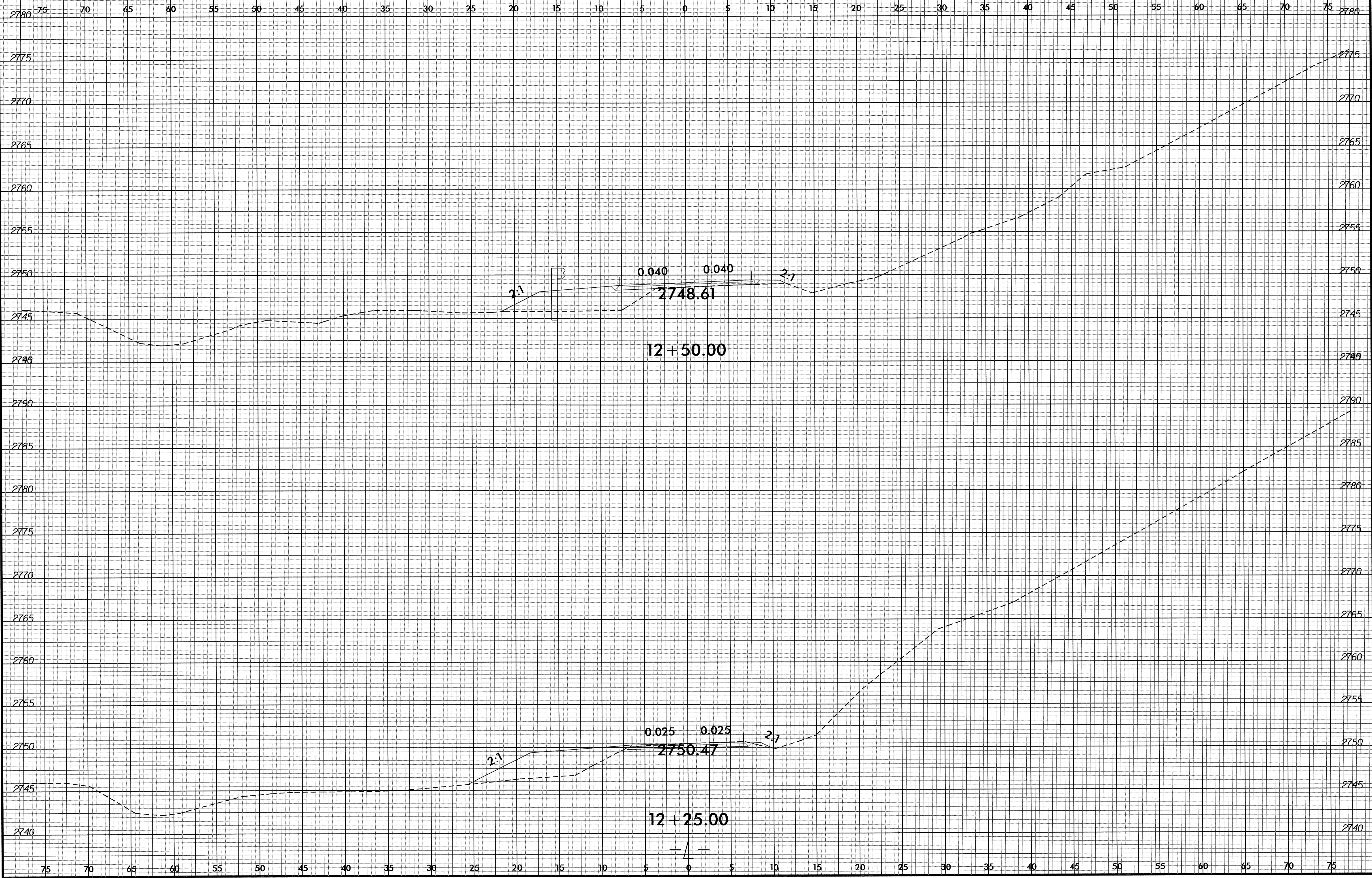
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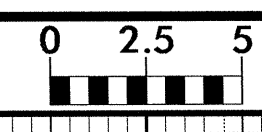
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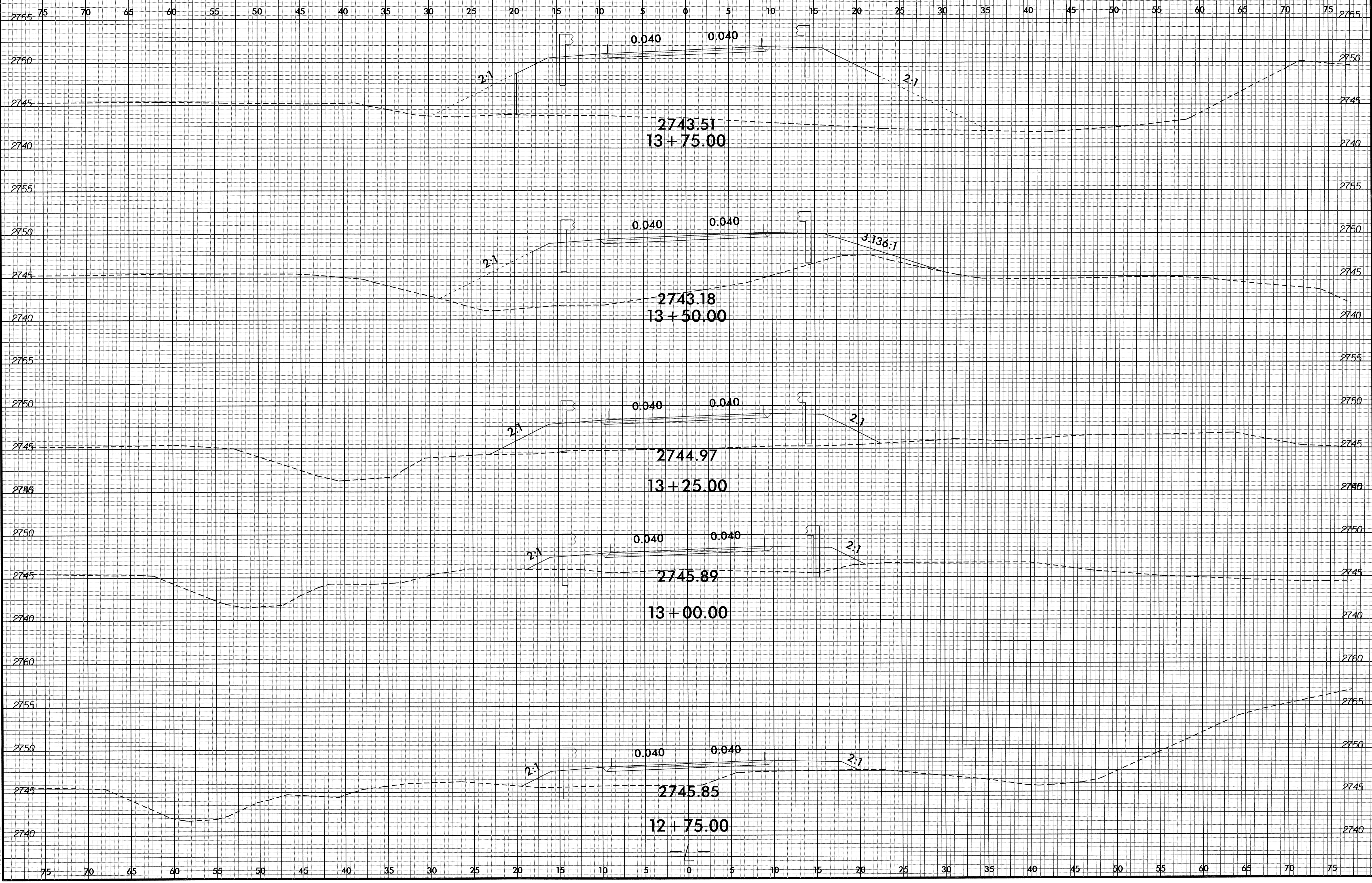


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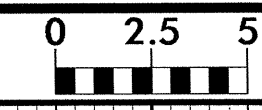


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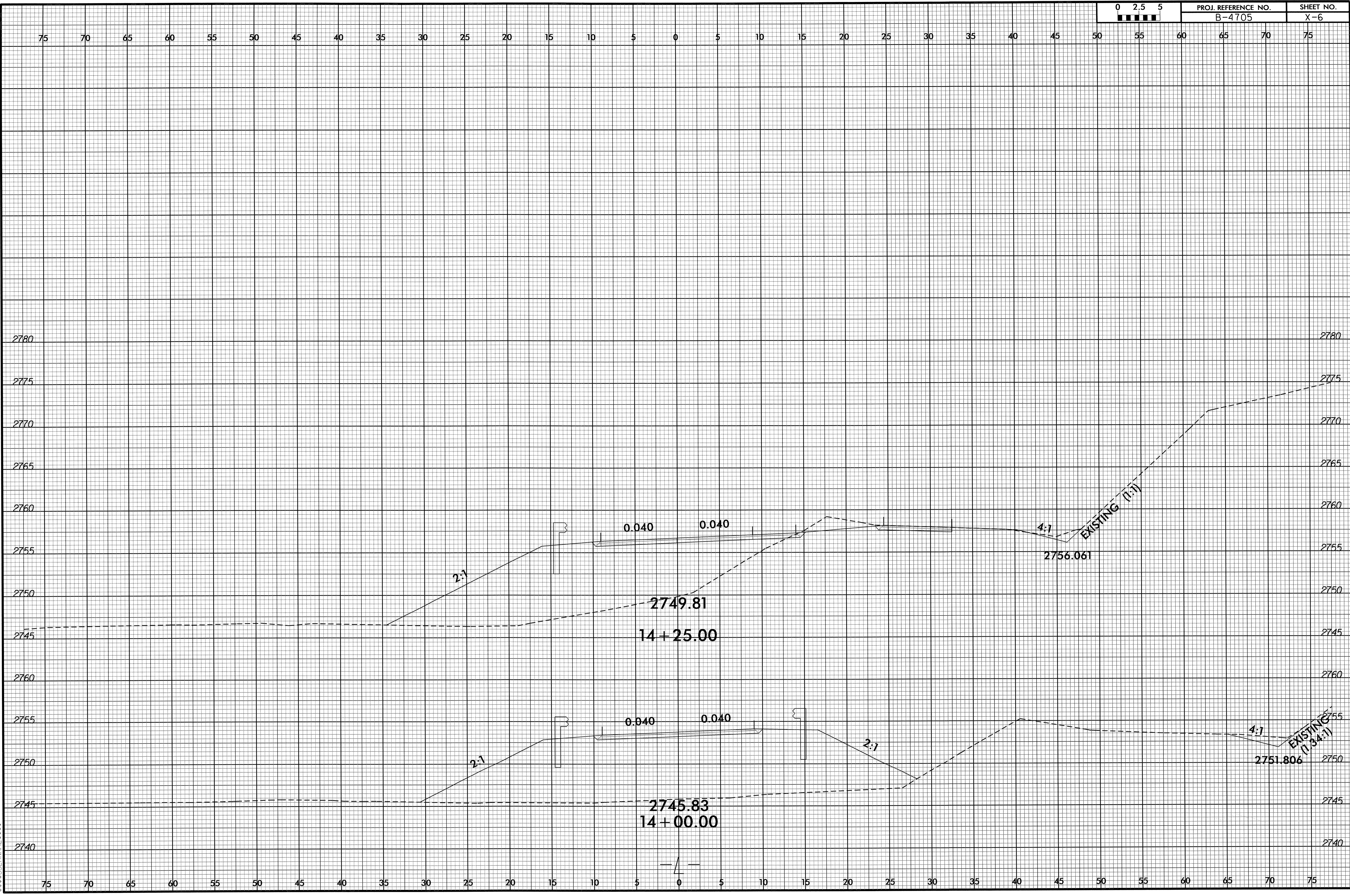


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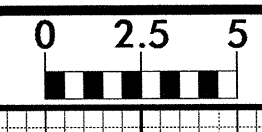


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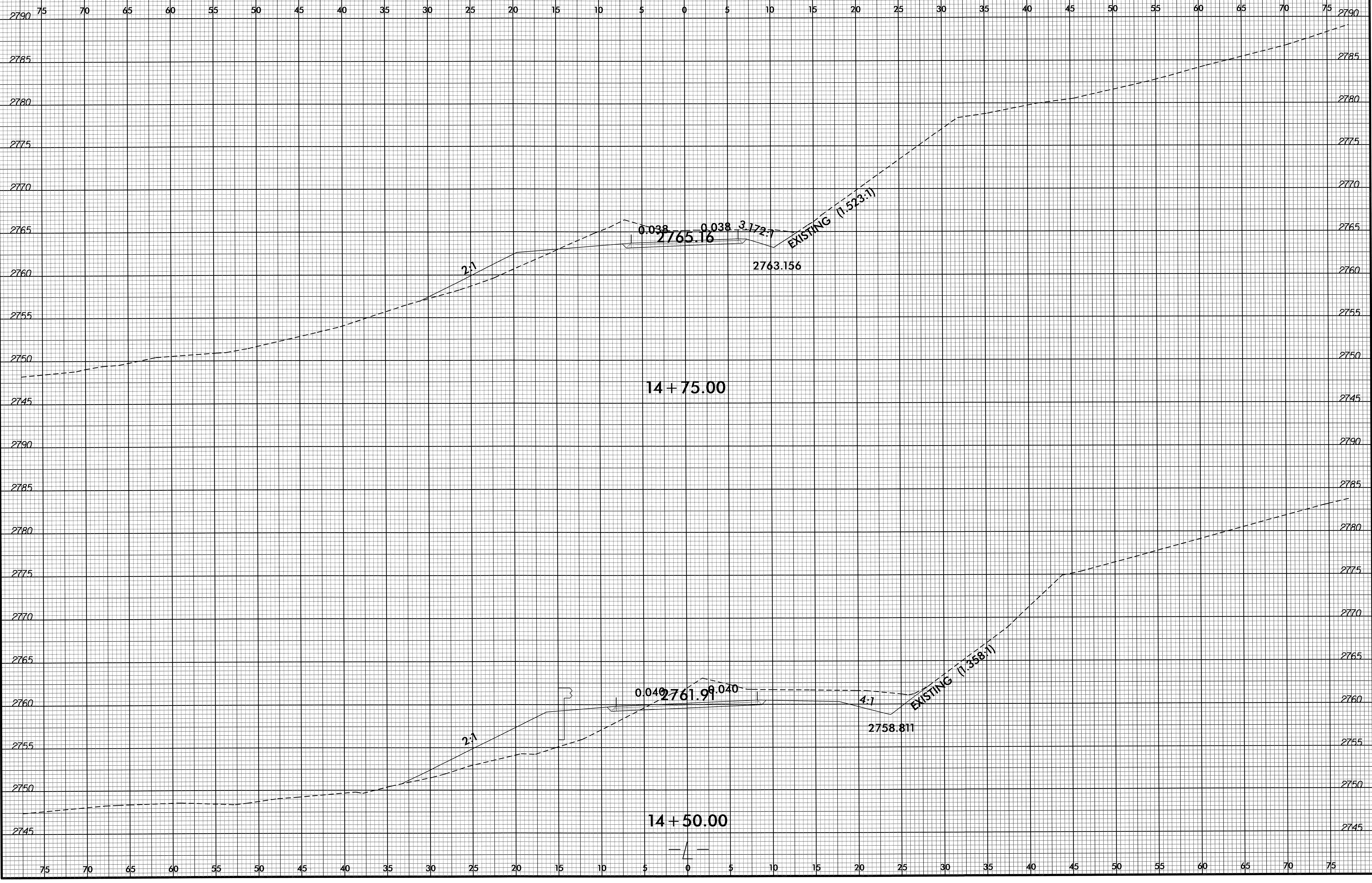


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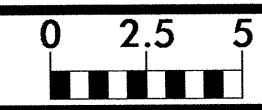


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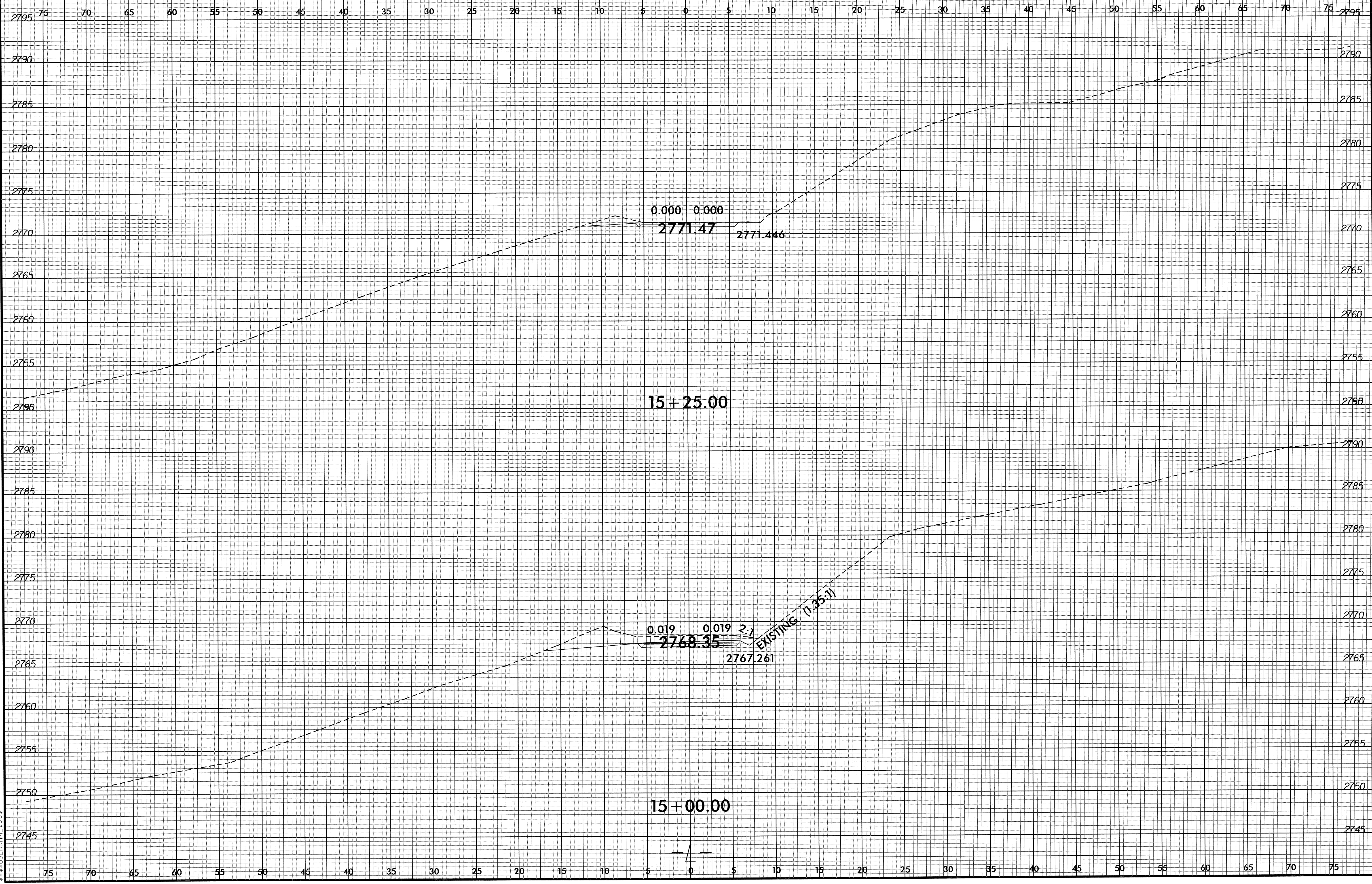


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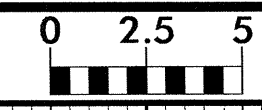


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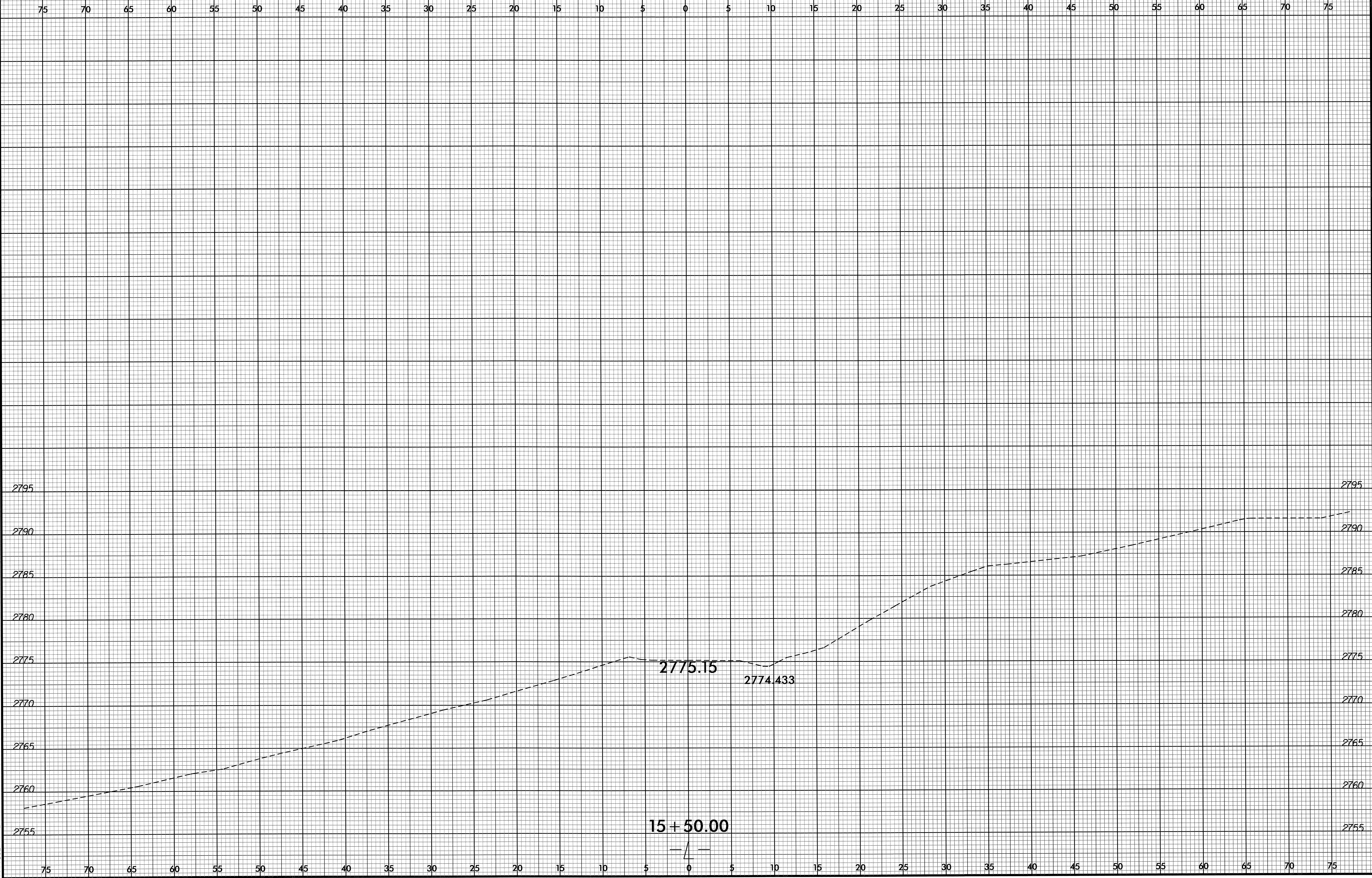


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