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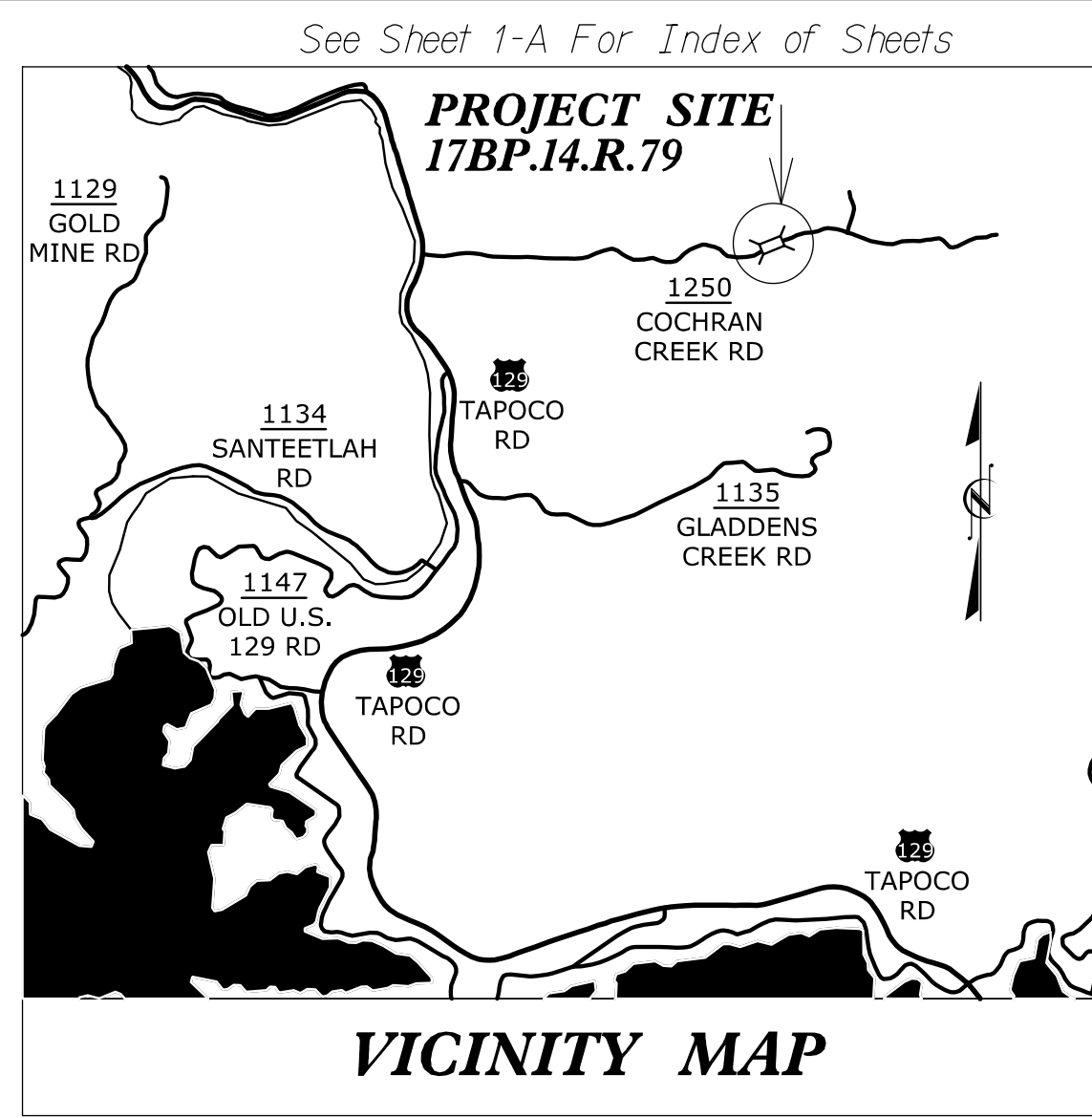
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with their signature on that page.**

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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.79	1	X
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.14.R.79	N/A	RIGHT-OF-WAY	
17PB.14.R.79	N/A	PE	
17BP.14.R.79	N/A	CONSTRUCTION	

**TIP PROJECT: 17BP.14.R.79**

**CONTRACT: DN00264**

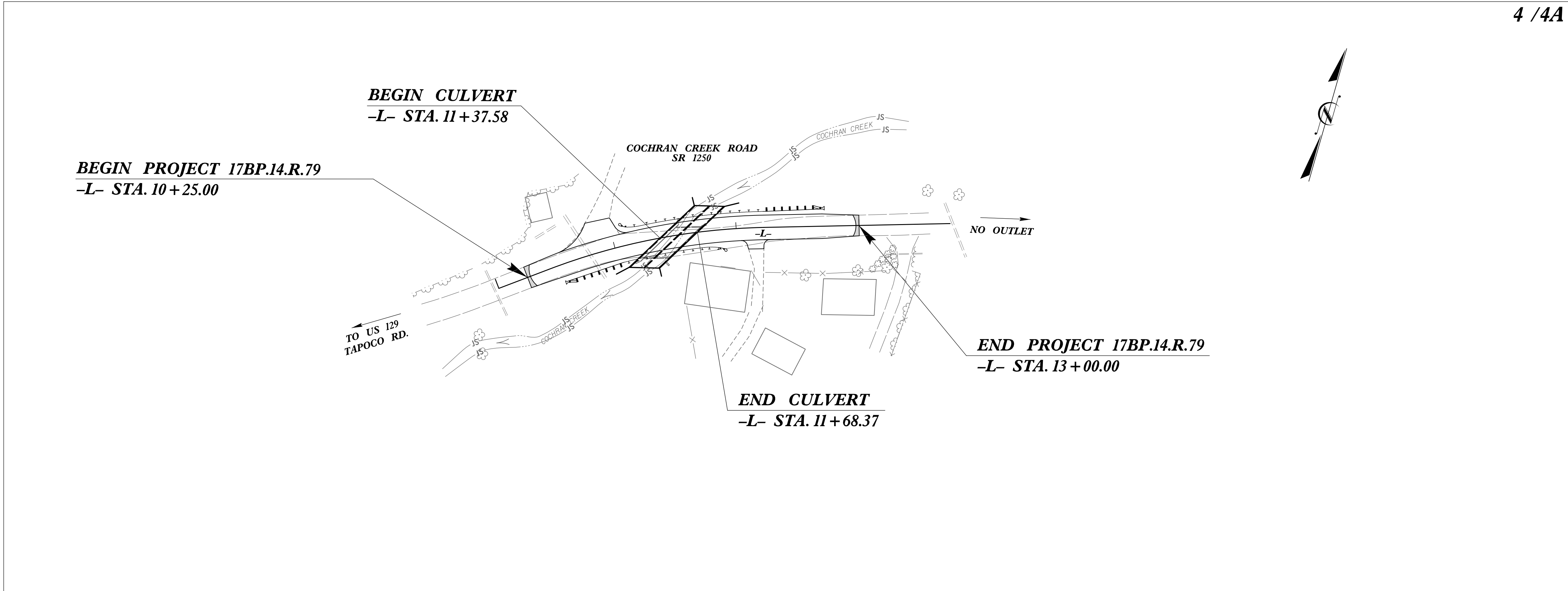


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**GRAHAM COUNTY**

**LOCATION: REPLACEMENT OF BRIDGE NO. 87 ON COCHRAN CREEK RD. (SR 1250) OVER COCHRAN CREEK**

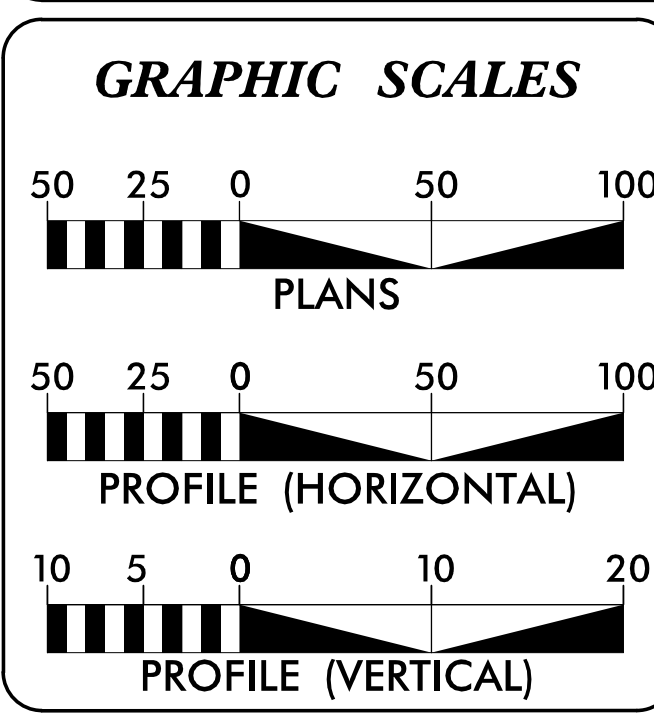
**TYPE OF WORK: GRADING, PAVING, TRAFFIC CONTROL, DRAINAGE, & CULVERT**



4 / 4A

**CONTACT: ADAM DOCKERY**  
**NCDOT HIGHWAY DIVISION 14**

**DOCUMENT NOT CONSIDERED FINAL**  
**UNLESS ALL SIGNATURES COMPLETED**



**DESIGN DATA**

ADT 2019 = 344

DHV = NA %  
D = NA %  
T = 6 % \*  
V = 25 MPH

\* TTST = NA DUAL NA  
FUNC CLASS = LOCAL  
SUB REGIONAL TIER

**PROJECT LENGTH**

LENGTH OF ROADWAY PROJECT 17BP.14.R.79	=	0.052 MILE
LENGTH OF STRUCTURE PROJECT 17BP.14.R.79	=	0.000 MILE
TOTAL LENGTH PROJECT 17BP.14.R.79	=	0.052 MILE

Prepared In the Office of:  
**WSP**  
For The  
**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**

2018 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:** RONYELL THIGPEN, PE  
PROJECT ENGINEER

**LETTING DATE:** JENNIFER L. STARNES, PE  
PROJECT DESIGN ENGINEER

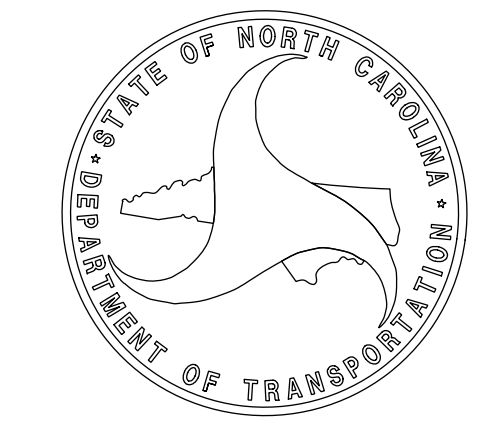
**HYDRAULICS ENGINEER**

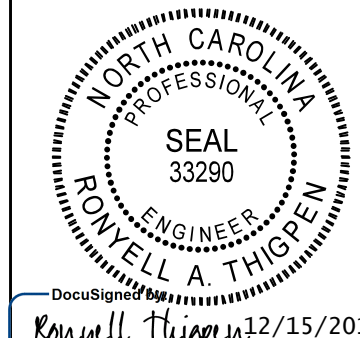
DocuSigned by:  
Kana Stansell  
12/17/2018

**ROADWAY DESIGN ENGINEER**

DocuSigned by:  
Ronell Thigpen  
12/15/2018

Professional Engineer Seals for Kana Stansell (Seal 27876) and Ronell Thigpen (Seal 33290).



<b>WSP</b> 434 Fayetteville Street Suite 1500 Raleigh, NC 27601 - 919.836.4040 LICENSE NO. F-0165	PROJECT REFERENCE NO. <i>17BP.14.R.79</i>	SHEET NO. <i>1-A</i>
	ROADWAY DESIGN ENGINEER  <i>Kenneth A. Thigpen</i> 2/15/2018	

**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**

**INDEX OF SHEETS**

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3-A	MISCELLANEOUS SUMMARIES (DRAINAGE, EARTHWORK, GUARDRAIL, PAVEMENT REMOVAL, RIGHT-OF-WAY, & SHOULDER BERM GUTTER)
4	PLAN & PROFILE SHEET
4A	TEMPORARY DETOUR PLAN AND PROFILE SHEET
TMP-1 THRU TMP-4	TRAFFIC MANAGEMENT PLANS
PMP-1	PAVEMENT MARKING PLANS
EC-1 THRU EC-8	EROSION CONTROL PLANS
UO-1	UTILITIES BY OTHERS
X-1A	CROSS-SECTION SUMMARY
X-1 THRU X-7	CROSS-SECTIONS
C-1 THRU C-11	STRUCTURE PLANS
SN	STANDARD NOTES

**GENERAL NOTES:** 2018 SPECIFICATIONS EFFECTIVE: 01-16-18 REVISED:

**GRADING AND SURFACING OR RESURFACING AND WIDENING:**  
 THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

**CLEARING:**  
 CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

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

**DRIVEWAYS:**  
 DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3' RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

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

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

**SUBSURFACE PLANS:**  
 SUBSURFACE PLANS WILL BE MADE AVAILABLE TO THE CONTRACTOR ON THIS PROJECT.

**UTILITIES:**  
 UTILITY OWNERS ON THIS PROJECT ARE:  
 UTILITY UTILITY OWNER  
 Power Duke Energy Corporation  
 Phone Frontier Communications

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

**RIGHT-OF-WAY MARKERS:**  
 ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT IN ACCORDANCE WITH SECTION 801 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

**2018 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
<b>DIVISION 2 - EARTHWORK</b>	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
<b>DIVISION 3 - PIPE CULVERTS</b>	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
<b>DIVISION 5 - SUBGRADE, BASES AND SHOULDERS</b>	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
<b>DIVISION 6 - ASPHALT BASES AND PAVEMENTS</b>	
654.01	Pavement Repairs
<b>DIVISION 8 - INCIDENTALS</b>	
848.02	Driveway Turnout-Radius Type
862.01	Guardrail Placement
862.02	Guardrail Installation
876.02	Guide for RipRap at Pipe Outlets

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

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

BOUNDARIES AND PROPERTY:

Table listing boundary symbols: State Line, County Line, Township Line, City Line, Reservation Line, Property Line, Existing Iron Pin, Property Corner, Property Monument, Parcel/Sequence Number, Existing Fence Line, Proposed Woven Wire Fence, Proposed Chain Link Fence, Proposed Barbed Wire Fence, Existing Wetland Boundary, Proposed Wetland Boundary, Existing Endangered Animal Boundary, Existing Endangered Plant Boundary, Known Soil Contamination: Area or Site, Potential Soil Contamination: Area or Site.

BUILDINGS AND OTHER CULTURE:

Table listing building and culture symbols: Gas Pump Vent or U/G Tank Cap, Sign, Well, Small Mine, Foundation, Area Outline, Cemetery, Building, School, Church, Dam.

HYDROLOGY:

Table listing hydrology symbols: Stream or Body of Water, Hydro, Pool or Reservoir, Jurisdictional Stream, Buffer Zone 1, Buffer Zone 2, Flow Arrow, Disappearing Stream, Spring, Wetland, Proposed Lateral, Tail, Head Ditch, False Sump.

RAILROADS:

Table listing railroad symbols: Standard Gauge, RR Signal Milepost, Switch, RR Abandoned, RR Dismantled.

RIGHT OF WAY:

Table listing right of way symbols: Baseline Control Point, Existing Right of Way Marker, Existing Right of Way Line, Proposed Right of Way Line, Proposed Right of Way Line with Iron Pin and Cap Marker, Proposed Right of Way Line with Concrete or Granite RW Marker, Proposed Control of Access Line with Concrete CA Marker, Existing Control of Access, Proposed Control of Access, Existing Easement Line, Proposed Temporary Construction Easement, Proposed Temporary Drainage Easement, Proposed Permanent Drainage Easement, Proposed Permanent Drainage / Utility Easement, Proposed Permanent Utility Easement, Proposed Temporary Utility Easement, Proposed Aerial Utility Easement, Proposed Permanent Easement with Iron Pin and Cap Marker.

ROADS AND RELATED FEATURES:

Table listing road and related features symbols: Existing Edge of Pavement, Existing Curb, Proposed Slope Stakes Cut, Proposed Slope Stakes Fill, Proposed Curb Ramp, Existing Metal Guardrail, Proposed Guardrail, Existing Cable Guiderail, Proposed Cable Guiderail, Equality Symbol, Pavement Removal.

VEGETATION:

Table listing vegetation symbols: Single Tree, Single Shrub, Hedge, Woods Line.

Table listing orchard and vineyard symbols: Orchard, Vineyard.

EXISTING STRUCTURES:

Table listing existing structures symbols: MAJOR: Bridge, Tunnel or Box Culvert, Bridge Wing Wall, Head Wall and End Wall; MINOR: Head and End Wall, Pipe Culvert, Footbridge, Drainage Box: Catch Basin, DI or JB, Paved Ditch Gutter, Storm Sewer Manhole, Storm Sewer.

UTILITIES:

Table listing utility symbols: 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, Designated U/G Power Line (S.U.E.\*); 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, Designated U/G Telephone Cable (S.U.E.\*), Recorded U/G Telephone Conduit, Designated U/G Telephone Conduit (S.U.E.\*), Recorded U/G Fiber Optics Cable, Designated U/G Fiber Optics Cable (S.U.E.\*).

WATER:

Table listing water symbols: Water Manhole, Water Meter, Water Valve, Water Hydrant, Recorded U/G Water Line, Designated U/G Water Line (S.U.E.\*), Above Ground Water Line.

TV:

Table listing TV symbols: TV Satellite Dish, TV Pedestal, TV Tower, U/G TV Cable Hand Hole, Recorded U/G TV Cable, Designated U/G TV Cable (S.U.E.\*), Recorded U/G Fiber Optic Cable, Designated U/G Fiber Optic Cable (S.U.E.\*).

GAS:

Table listing gas symbols: Gas Valve, Gas Meter, Recorded U/G Gas Line, Designated U/G Gas Line (S.U.E.\*), Above Ground Gas Line.

SANITARY SEWER:

Table listing sanitary sewer symbols: Sanitary Sewer Manhole, Sanitary Sewer Cleanout, U/G Sanitary Sewer Line, Above Ground Sanitary Sewer, Recorded SS Forced Main Line, Designated SS Forced Main Line (S.U.E.\*).

MISCELLANEOUS:

Table listing miscellaneous symbols: Utility Pole, Utility Pole with Base, Utility Located Object, Utility Traffic Signal Box, Utility Unknown U/G Line, U/G Tank; Water, Gas, Oil, Underground Storage Tank, Approx. Loc., A/G Tank; Water, Gas, Oil, Geoenvironmental Boring, U/G Test Hole (S.U.E.\*), Abandoned According to Utility Records, End of Information.

04/16/11

8/17/99

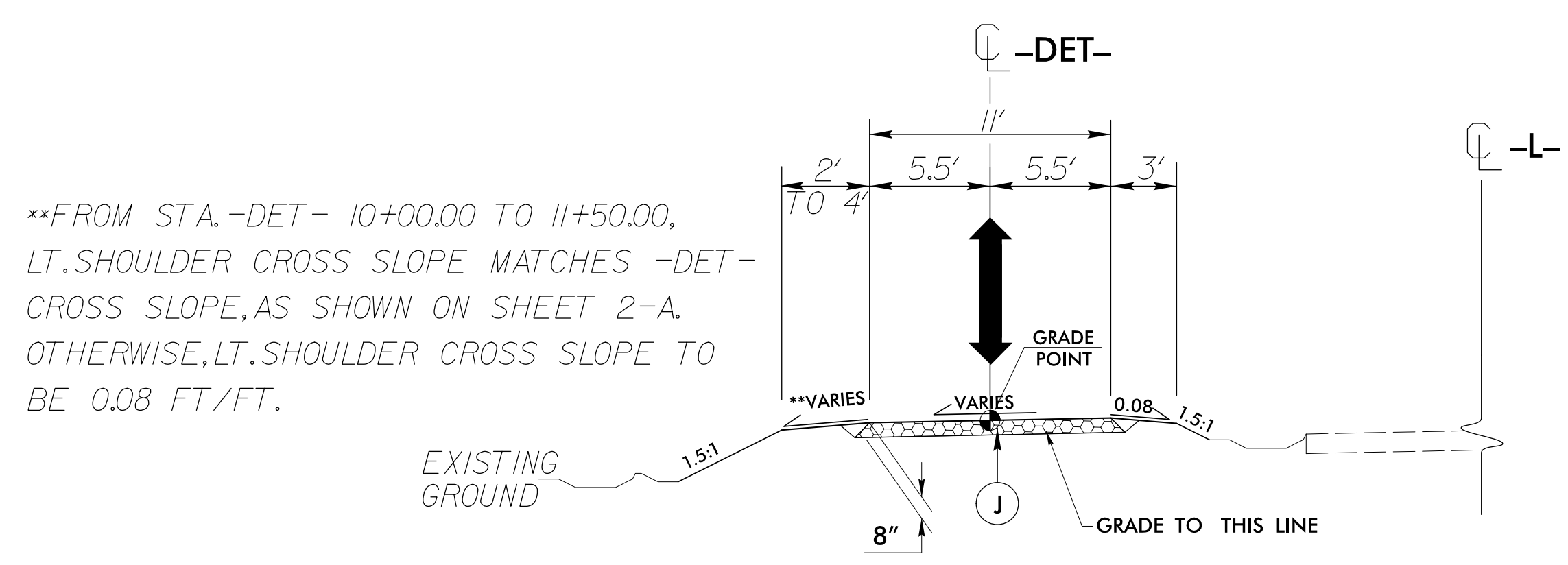
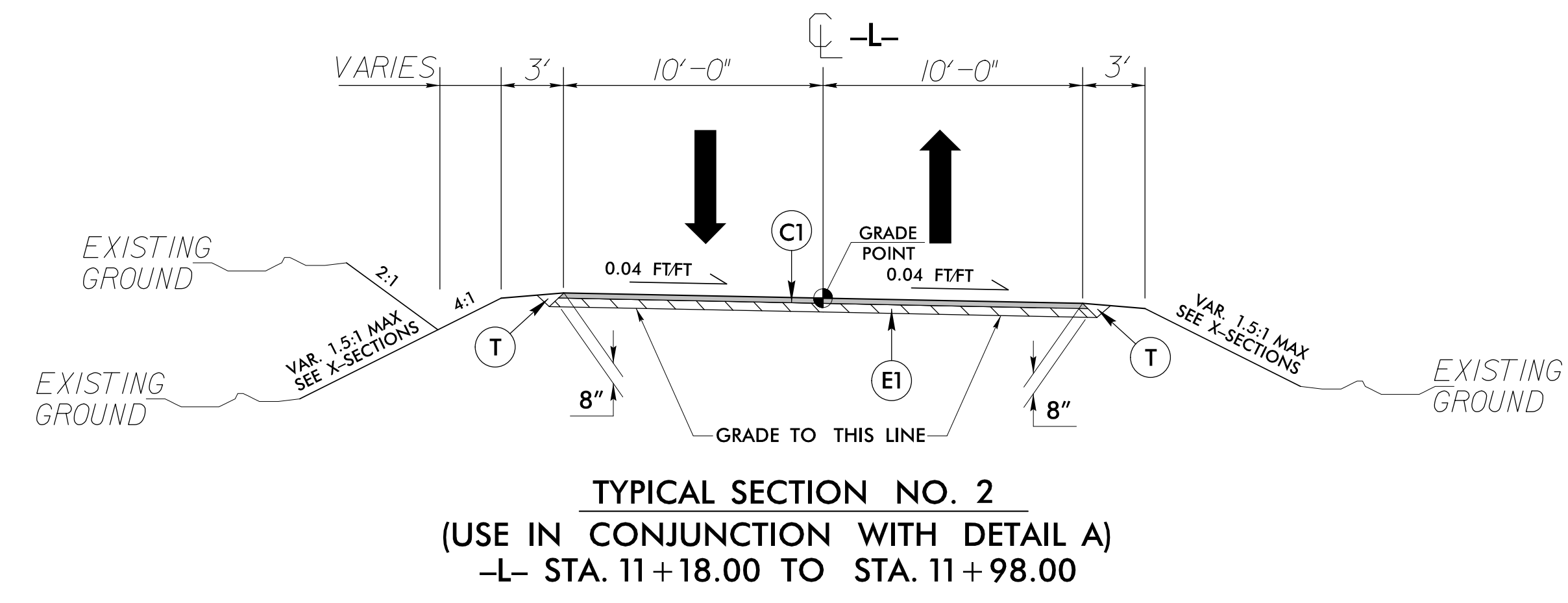
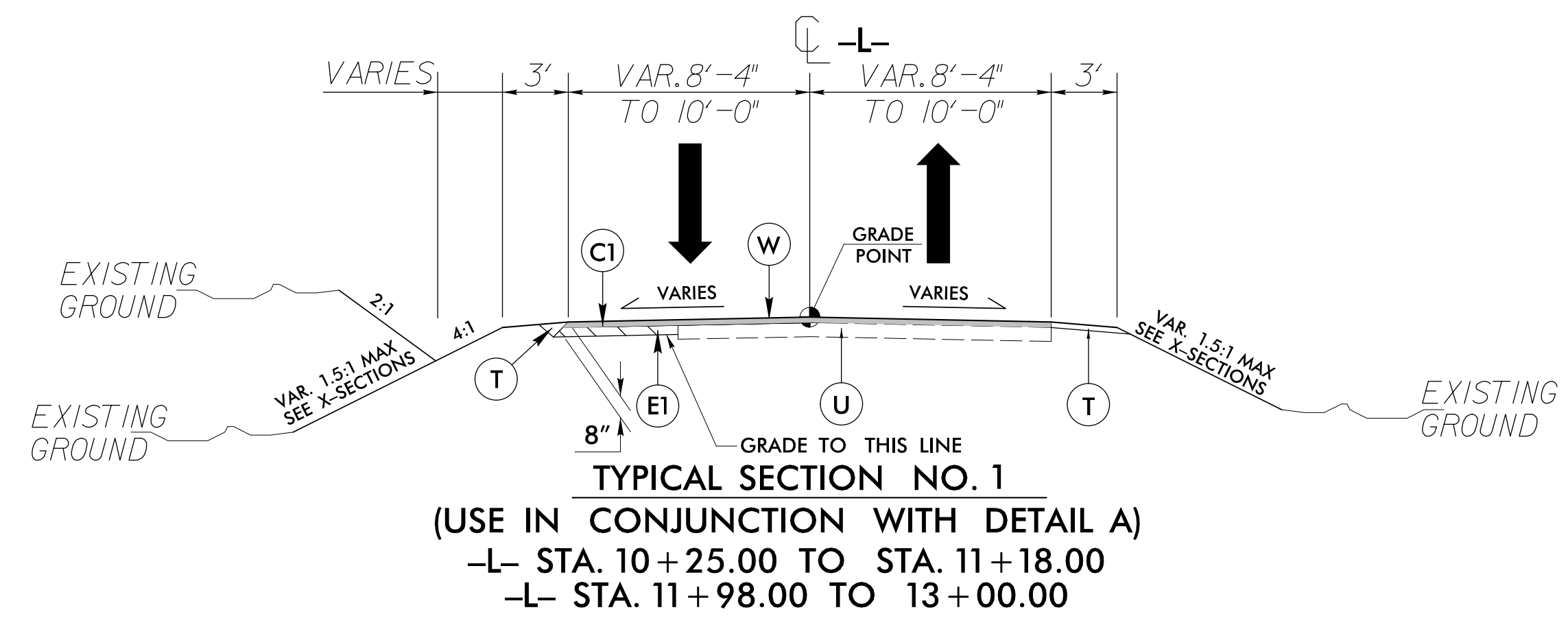
REVISIONS

12/15/2018  
 1:17BP-14-R-79\_3700877-Roadway\Project\17BP-14-R-79\_RDY\_TYP.dgn  
 11/17/2018  
 1:17BP-14-R-79\_3700877-Roadway\Project\17BP-14-R-79\_RDY\_TYP.dgn

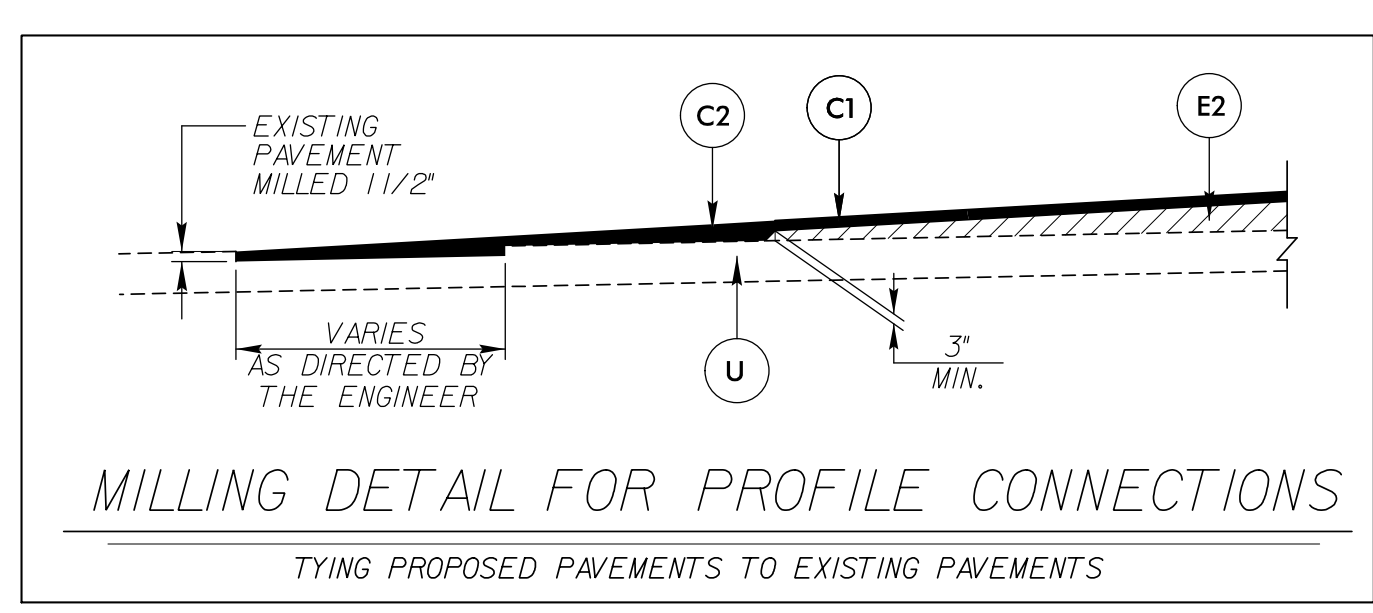
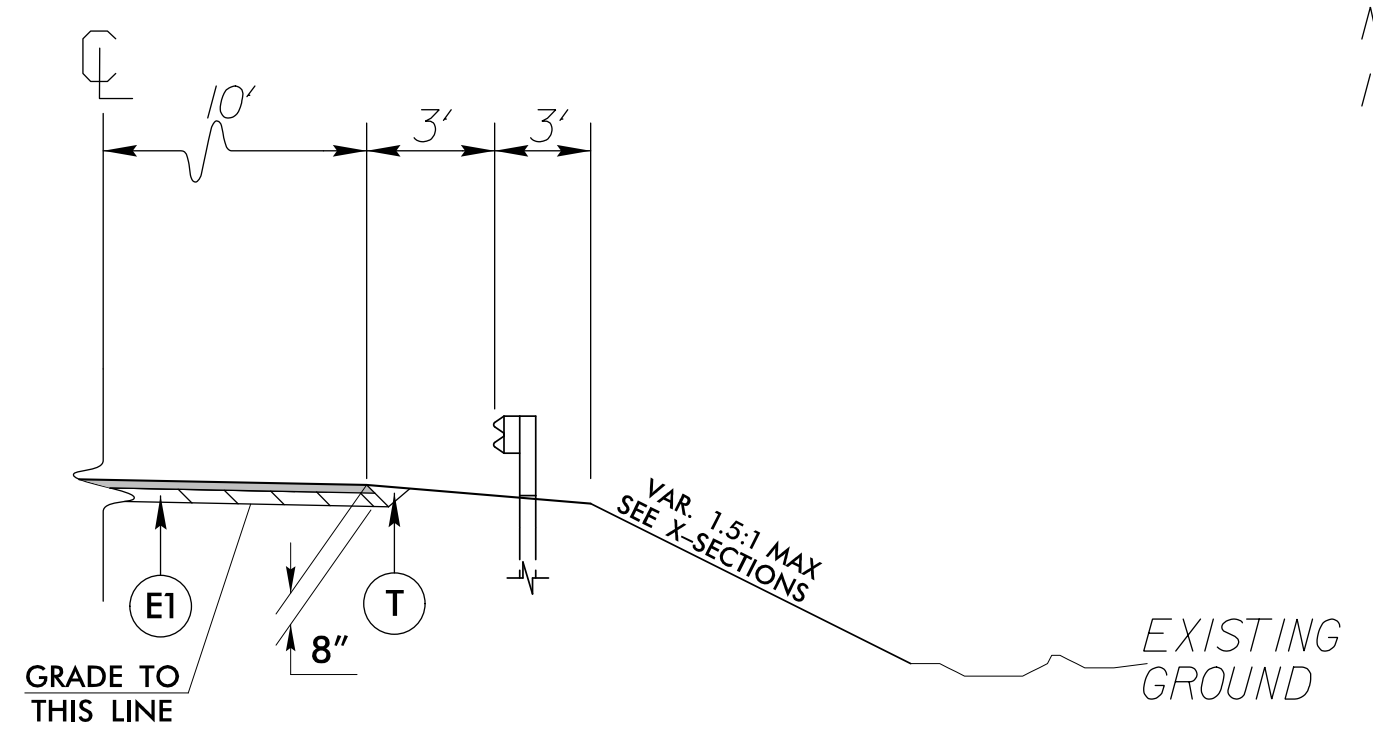
<h1 style="margin: 0;">WSP</h1> <p style="margin: 0;">434 Fayetteville Street Suite 1500 Raleigh, NC 27601 - 919.836.4040</p> <p style="margin: 0;">LICENSE NO. F-0165</p>	PROJECT REFERENCE NO. 17BP-14-R-79	SHEET NO. 2
	RW SHEET NO.	
	ROADWAY DESIGN ENGINEER	

Documented by: Royell Thigpen 12/15/2018

**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**

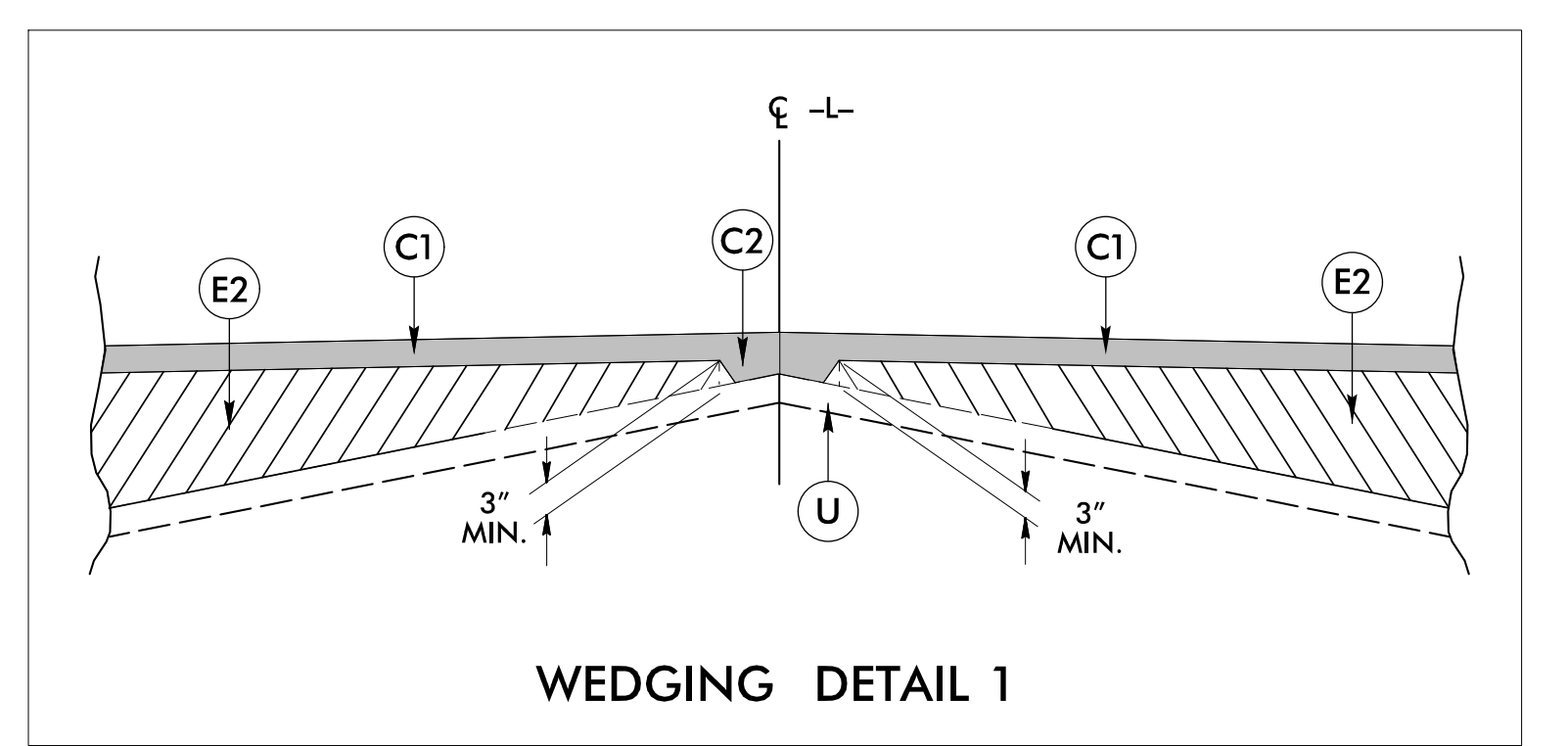


\*\*FROM STA. -DET- 10+00.00 TO 11+50.00, LT. SHOULDER CROSS SLOPE MATCHES -DET- CROSS SLOPE, AS SHOWN ON SHEET 2-A. OTHERWISE, LT. SHOULDER CROSS SLOPE TO BE 0.08 FT/FT.



PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 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.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
J	PROP. 8" AGGREGATE BASE COURSE.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W1	WEDGING (SEE DETAIL THIS SHEET).

NOTES:  
 1. ALL SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.



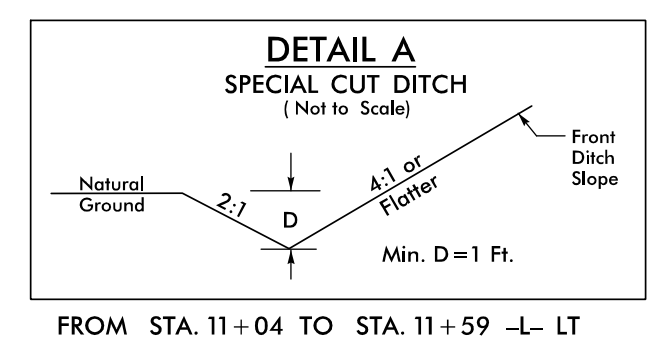
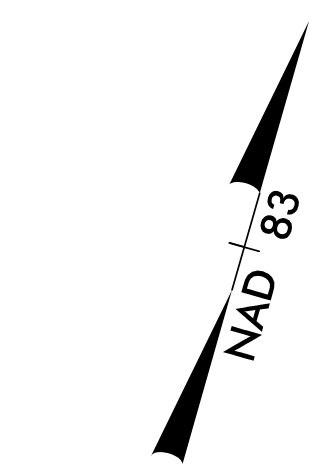


8/17/99

**WSP**

434 Fayetteville Street Suite 1500  
 Raleigh, NC 27601 - 919.836.4040  
 www.wspgroup.com  
 LICENSE NO. F-0165

PROJECT REFERENCE NO. <b>17BP.14.R.79</b>	SHEET NO. <b>4</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



**BEGIN PROJECT 17BP.14.R.79**  
 -L- STA. 10 + 25.00

**BEGIN CULVERT**  
 -L- STA. 11 + 37.58

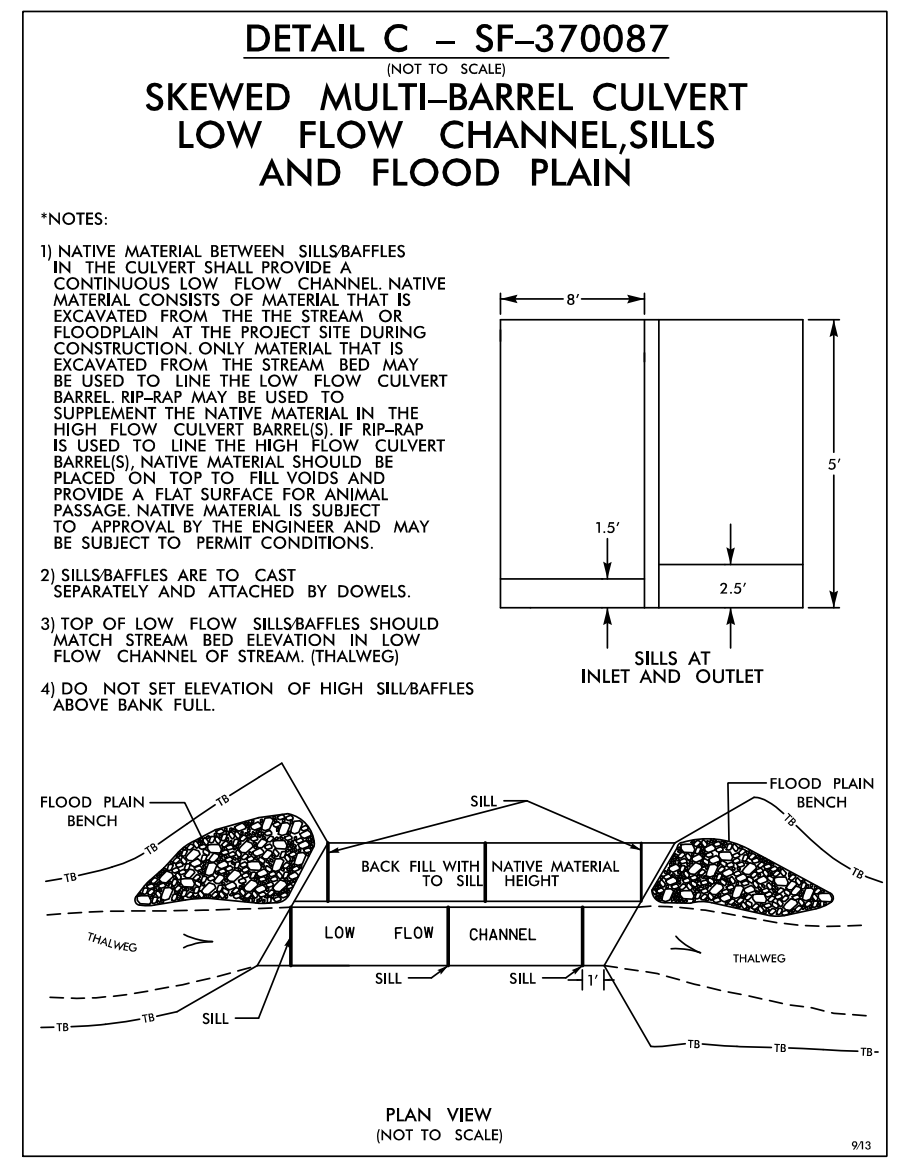
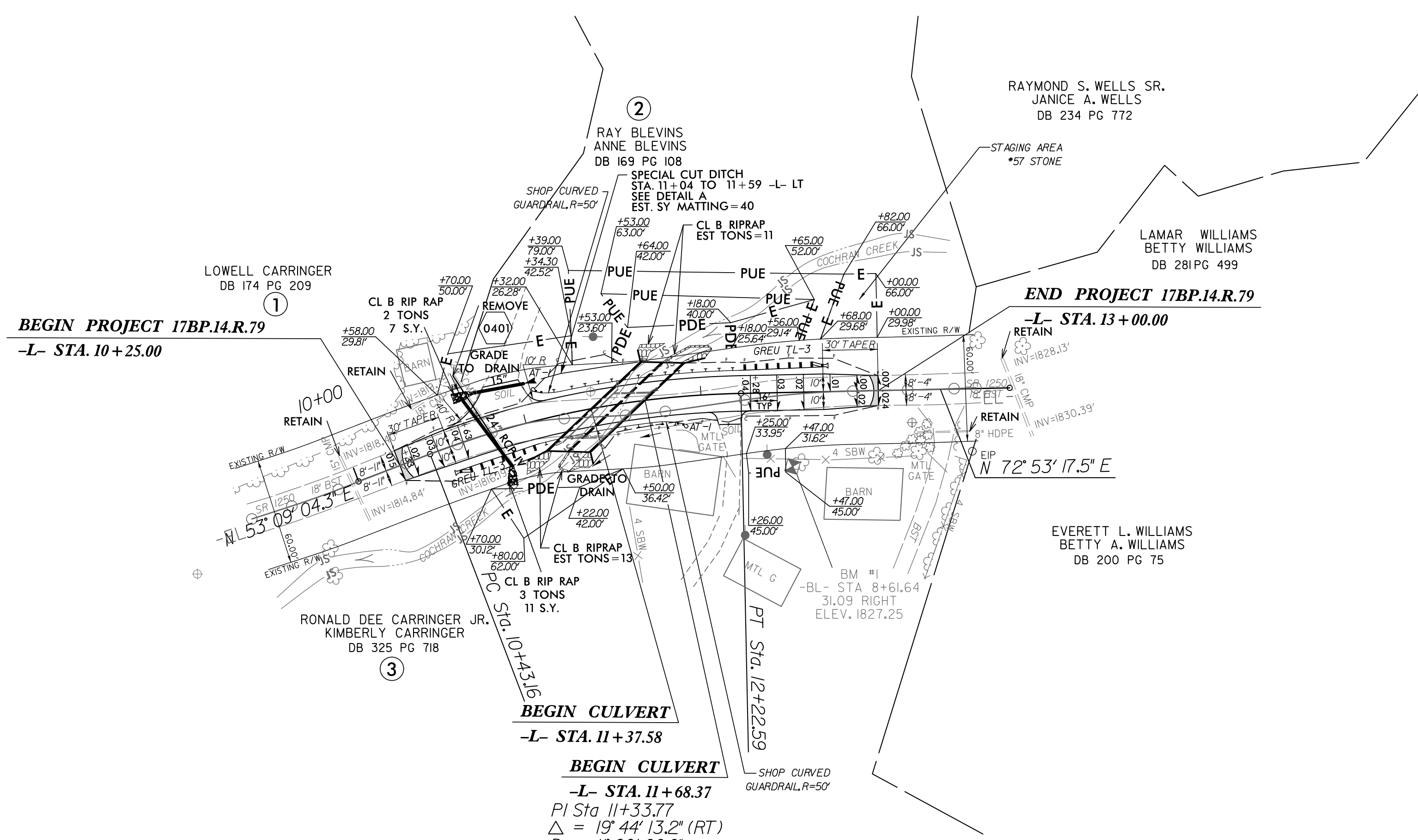
**BEGIN CULVERT**  
 -L- STA. 11 + 68.37

PI Sta 11+33.77  
 Δ = 19° 44' 13.2" (RT)  
 D = 11' 00' 00.0"  
 L = 179.43'  
 T = 90.61'  
 R = 520.87'  
 DS = 25MPH  
 SE = .04

RAYMOND S. WELLS SR.  
 JANICE A. WELLS  
 DB 234 PG 772

LAMAR WILLIAMS  
 BETTY WILLIAMS  
 DB 281 PG 499

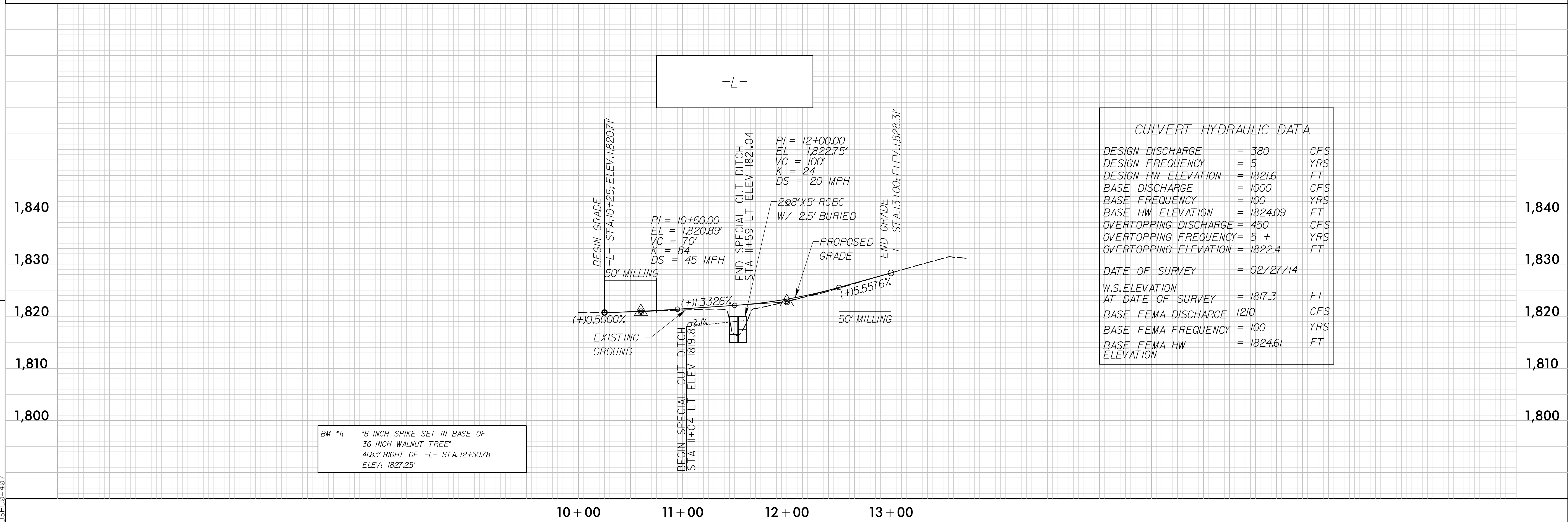
EVERETT L. WILLIAMS  
 BETTY A. WILLIAMS  
 DB 200 PG 75



REFERENCE STRUCTURE PLANS C-1 THRU C-11

REVISIONS

1/2/2019 GROUP 1\17BP.14.R.79\_370087\Roadway\Proj\17BP.14.R.79\_RDY\_PSH04.dgn  
 11:44:40



BM #: "8 INCH SPIKE SET IN BASE OF 36 INCH WALNUT TREE" 41.83' RIGHT OF -L- STA. 12+50.78 ELEV: 1827.25'

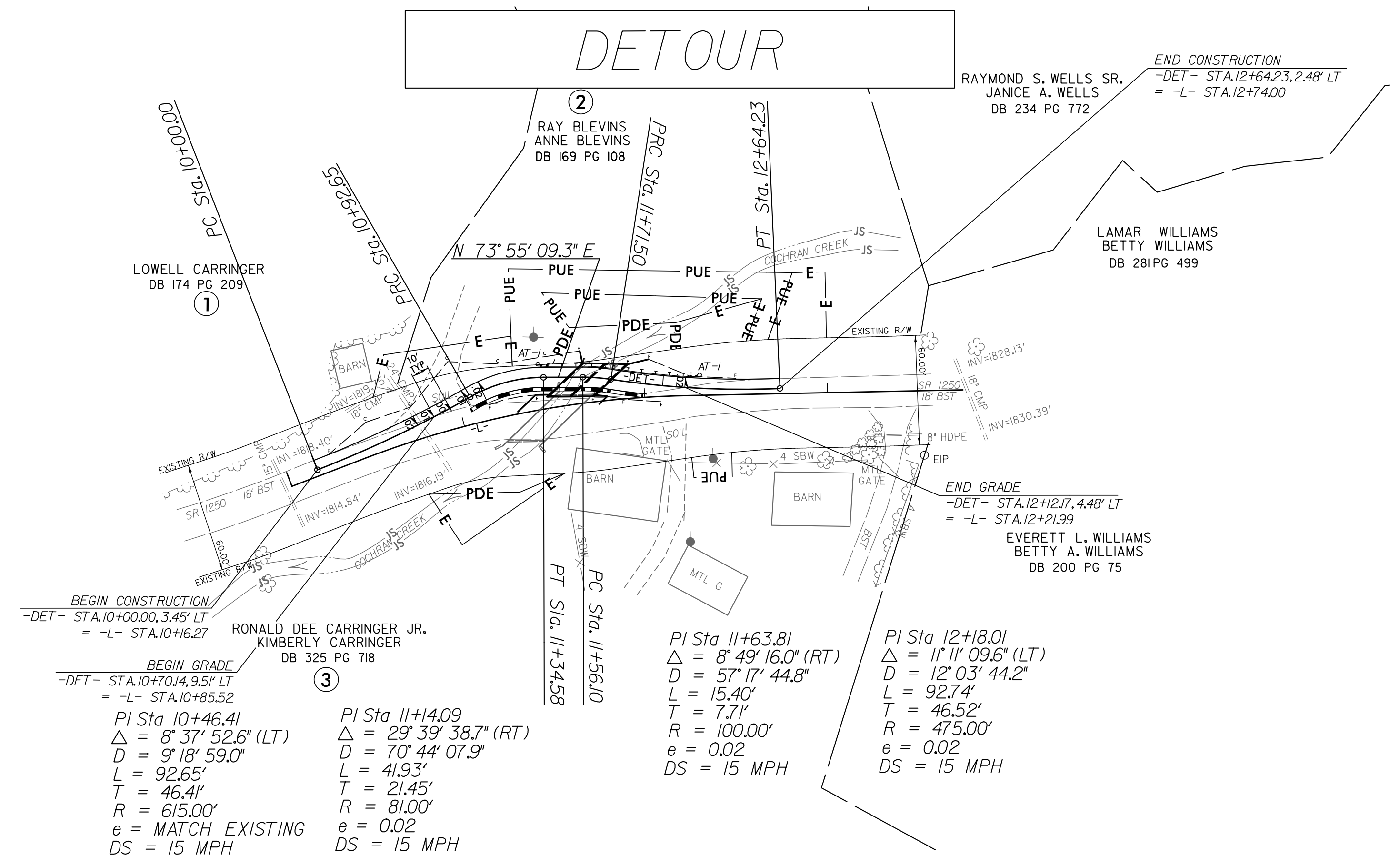
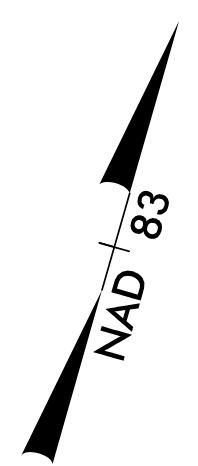
CULVERT HYDRAULIC DATA	
DESIGN DISCHARGE	= 380 CFS
DESIGN FREQUENCY	= 5 YRS
DESIGN HW ELEVATION	= 1821.6 FT
BASE DISCHARGE	= 1000 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 1824.09 FT
OVERTOPPING DISCHARGE	= 450 CFS
OVERTOPPING FREQUENCY	= 5 + YRS
OVERTOPPING ELEVATION	= 1822.4 FT
DATE OF SURVEY	= 02/27/14
W.S. ELEVATION AT DATE OF SURVEY	= 1817.3 FT
BASE FEMA DISCHARGE 1210	CFS
BASE FEMA FREQUENCY	= 100 YRS
BASE FEMA HW ELEVATION	= 1824.61 FT

10+00      11+00      12+00      13+00

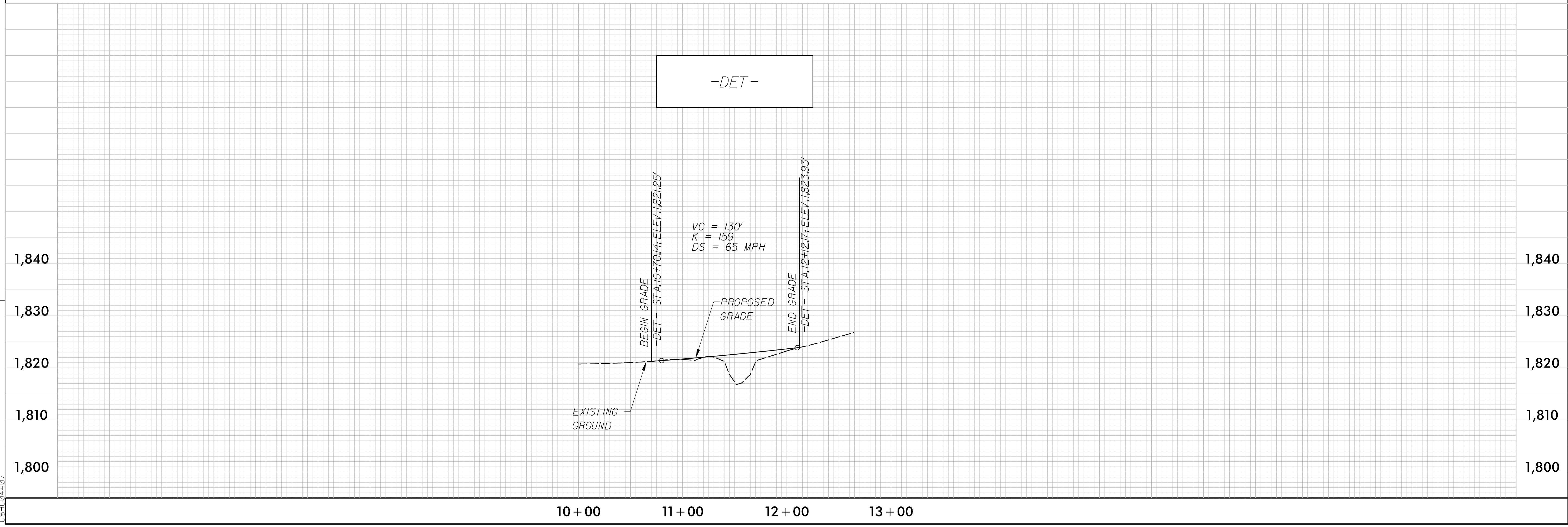
8/17/99

REVISIONS

12/17/2018 11:17BP.14.R.79\_370087.Roadway\Proj\17BP.14.R.79\_RDY\_4A.dgn  
15:44:40



-DET-



PROJECT REFERENCE NO. 17BP.14.R.79	SHEET NO. 4A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DocuSigned by: Royell Thigpen 12/15/2018	DocuSigned by: Rana Stansell 12/17/2018
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

**WSP**

434 Fayetteville Street Suite 1500  
Raleigh, NC 27601 - 919.836.4040

LICENSE NO. F-0185



# SURVEY CONTROL SHEET 37-0087

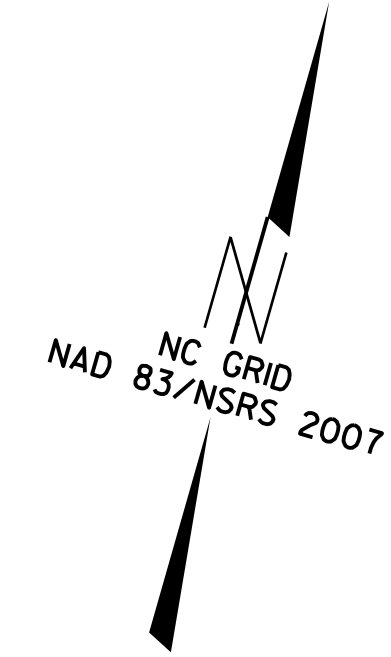
**-FINAL-**

PROJECT REFERENCE NO.	SHEET NO.
37-0087	1C-1
<b>Location and Surveys</b>	
PREPARED IN THE OFFICE OF:	
NCDOT, DIVISION 14 LOCATION AND SURVEYS UNIT 122 BONNIE LAND SYLVIA, NC 28779	

BL	POINT	DESC.	NORTH	EAST	ELEVATION
	1		633437.8350	555335.8580	1820.90
	2		633597.4810	555520.7740	1821.10
	3		633630.4652	555699.8110	1828.46

\*\*\*\*\*  
 BM1 ELEVATION = 1827.25  
 N 633588 E 555642  
 8 INCH SPIKE IN BASE OF 36 INCH WALNUTTREE  
 \*\*\*\*\*

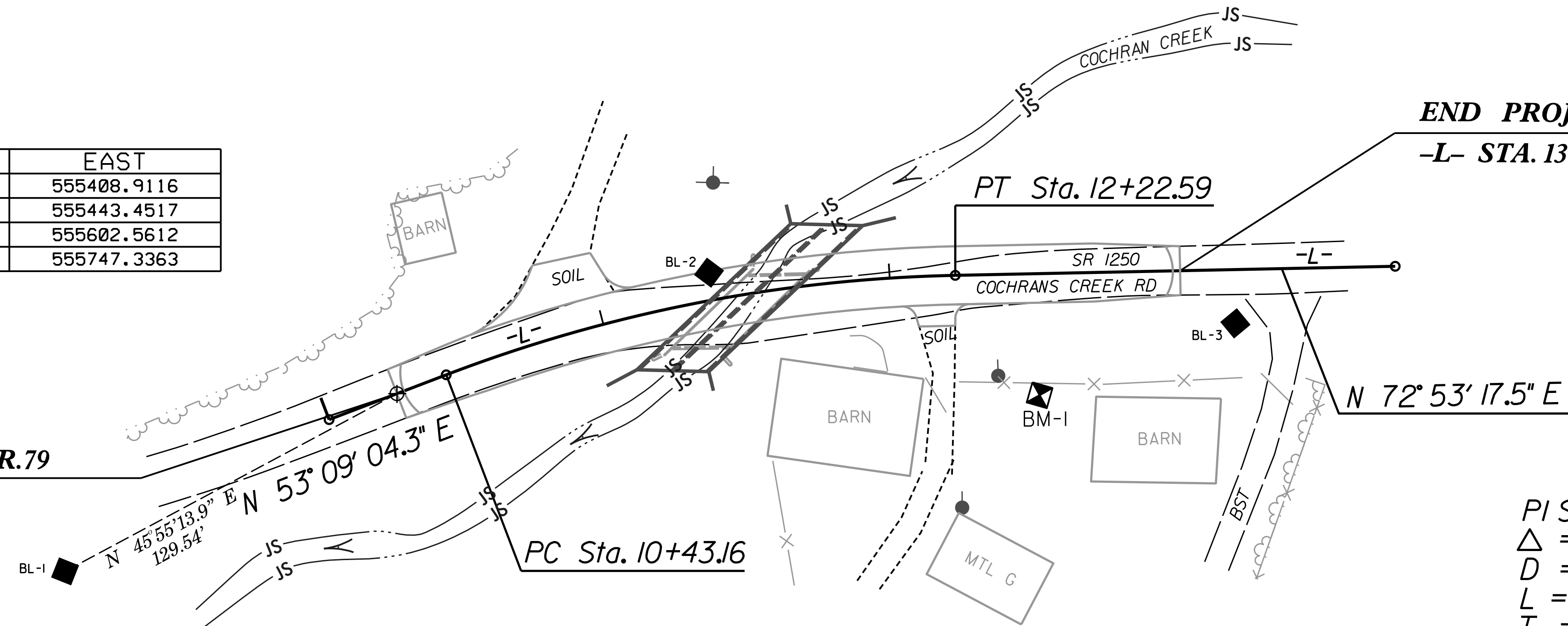
PDE				
ROW MARKER PERMANENT EASEMENT - E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	10+70.00	30.12	633529.3734	555482.1321
L	11+22.00	42.00	633544.1541	555529.7012
L	11+50.00	36.42	633560.7465	555550.3421
L	11+53.00	-23.60	633616.4195	555527.7296
L	11+64.00	-42.00	633637.9956	555530.8654
L	12+18.00	-40.00	633656.5990	555586.0740
L	12+18.00	-25.64	633642.9086	555590.4213



L			
TYPE	STATION	NORTH	EAST
POT	10+00.00	633512.9583	555408.9116
PC	10+43.16	633538.8435	555443.4517
PT	12+22.59	633619.8449	555602.5612
POT	13+74.07	633664.4162	555747.3363

**BEGIN PROJECT 17BP.14.R.79**  
**-L- STA. 10+25.00**

**END PROJECT 17BP.14.R.79**  
**-L- STA. 13+00.00**



PI Sta 11+33.77  
 $\Delta = 19^{\circ}44'13.2''$  (RT)  
 $D = 11^{\circ}00'00.0''$   
 $L = 179.43'$   
 $T = 90.61'$   
 $R = 520.87'$   
 $DS = 25MPH$   
 $SE = .04$

PUE				
ROW MARKER PERMANENT EASEMENT - E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	11+32.00	-26.28	633609.2144	555506.7662
L	11+39.00	-79.00	633659.7765	555489.9719
L	11+53.00	-63.00	633652.1986	555511.2225
L	12+25.00	33.95	633588.1080	555614.8530
L	12+26.00	45.00	633577.8402	555619.0604
L	12+47.00	31.62	633596.8069	555635.1939
L	12+47.00	45.00	633584.0192	555639.1308
L	12+56.00	-29.14	633657.5285	555625.9167
L	12+65.00	-52.00	633682.0215	555627.7930
L	12+68.00	-29.68	633661.5729	555637.2274
L	12+82.00	-66.00	633700.4038	555639.9211

## DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "370087-BL-1" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 633.437.835(ft) EASTING: 555.335.858(ft) ELEVATION: 1,820.90(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99979306 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "370087 BL-1" TO -L- STATION 10+25.00 IS N 45°55'13.9" E 129.54' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

**GEOID MODEL - G09NC**  
**NOTE: DRAWING NOT TO SCALE**

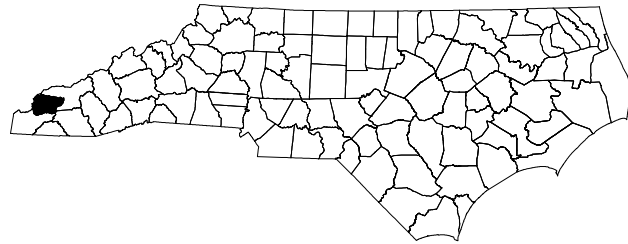
## NOTES:

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION](https://connect.ncdot.gov/resources/location)  
 THE FILES TO BE FOUND ARE AS FOLLOWS:  
 37-0087\_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.

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**GRAHAM COUNTY**



**INDEX OF SHEETS**

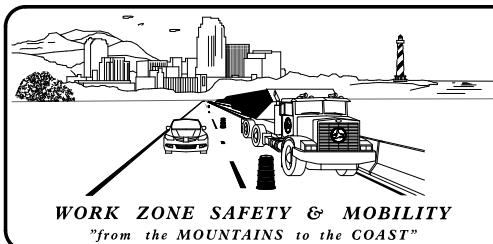
SHEET NO.	TITLE
TMP-1	TITLE SHEET, INDEX OF SHEETS LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1A	GENERAL NOTES
TMP-1B	CONSTRUCTION PHASING
TMP-2	PHASE I DETAILS
TMP-3	PHASE II DETAILS
TMP-4	PHASE III DETAILS

**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 2018 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
1101.03	TEMPORARY ROAD CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1170.01	POSITIVE PROTECTION - PORTABLE CONCRETE BARRIER
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



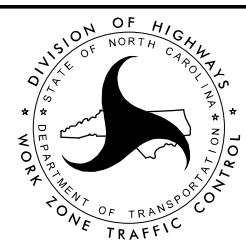
**N.C.D.O.T. WORK ZONE TRAFFIC CONTROL**  
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561  
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)  
PHONE: (919) 773-2800 FAX: (919) 771-2745

\_\_\_\_\_  
DON PARKER, P.E. STATE TRAFFIC MANAGEMENT ENGINEER

\_\_\_\_\_  
ROGER GARRETT, P.E. TRAFFIC CONTROL PROJECT ENGINEER

\_\_\_\_\_  
TRAFFIC CONTROL PROJECT DESIGN ENGINEER

\_\_\_\_\_  
TRAFFIC CONTROL DESIGN ENGINEER



**LEGEND**

**GENERAL**

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

**TRAFFIC CONTROL DEVICES**

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

**TEMPORARY SIGNING**

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

**SIGNALS**

- EXISTING
- PROPOSED
- TEMPORARY

**PAVEMENT MARKINGS**

- EXISTING LINES
- TEMPORARY LINES

**PAVEMENT MARKERS**

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

**PAVEMENT MARKING SYMBOLS**

- PAVEMENT MARKING SYMBOLS

SHEET NO.  
TMP-1

17BP.14.R.79

TIP PROJECT:

**wsp**

1001 Morehead Square Dr.  
Suite 610  
Charlotte NC, 28203  
NC LIC. NO. F-0165

APPROVED: \_\_\_\_\_  
DATE: 12/14/2018

SEAL

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# TRAFFIC MAINTENANCE GENERAL NOTES

PROJ. REFERENCE NO. 17BP.14.R.79	SHEET NO. TMP-1A
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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 UNDESIRE 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 AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.  
  
WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- E) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

**PAVEMENT EDGE DROP OFF REQUIREMENTS**

- F) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:  
  
BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.  
  
BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.  
  
BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.
- G) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

**TRAFFIC PATTERN ALTERATIONS**

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

**SIGNING**

- I) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- J) PROVIDE PERMANENT SIGNING.
- K) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- L) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

**TRAFFIC BARRIER**

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

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

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

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

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

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

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

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

**TRAFFIC CONTROL DEVICES**

- O) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADIUS, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED, REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.
- P) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

**PAVEMENT MARKINGS AND MARKERS**

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

ROAD NAME	MARKING	MARKER
SR1250	PAINT	NONE

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

ROAD NAME	MARKING	MARKER
SR1250	PAINT	NONE

- S) 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.
- T) 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.
- U) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- V) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

**TEMPORARY /FINAL SIGNALS**

- W) NOTIFY THE ENGINEER TWO (2) MONTHS BEFORE A TRAFFIC SIGNAL INSTALLATION BY OTHERS IS REQUIRED.

**MISCELLANEOUS**

- X) 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) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) AND RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

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UNLESS ALL SIGNATURES COMPLETED**

<p style="font-size: small; margin: 0;">1001 Morehead Square Dr. Suite 610 Charlotte NC, 28203 NC LIC. NO. F-0165</p>	<p style="font-size: small; margin: 0;">APPROVED: 12/14/2018 DATE: _____</p> <div style="text-align: center;"> </div>	<div style="text-align: center;"> </div>	<h2 style="margin: 0;">GENERAL NOTES</h2>
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# CONSTRUCTION PHASING

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.79	TMP-1B

## PHASE I

STEP 1:

INSTALL WORK ZONE ADVANCE WARNING SIGNS ON ALL ROADWAYS WITHIN THE PROJECT LIMITS (REFER TO TMP-2 THROUGH TMP-4). IF WORK IS NOT PURSUED WITHIN THREE DAYS OF SIGN INSTALLATION, THE SIGNS SHALL BE COVERED OR REMOVED IN A METHOD APPROVED BY THE ENGINEER.

INSTALL/CONSTRUCT TEMPORARY SIGNALS, INCLUDING SIGNAGE, BUT DO NOT ACTIVATE (SEE TMP-2). COVER SIGNS UNTIL SIGNALS ARE ACTIVATED.

STEP 2:

USING RSD NO 1101.02 (SHEET 1 OF 15), OBLITERATE EXISTING CONFLICTING MARKINGS, AND PLACE TEMPORARY PAVEMENT MARKINGS AS FOLLOWS (SEE TMP-2).

-L- STA. 9+85 +/- TO STA. 13+00 +/-

ACTIVATE TEMPORARY SIGNALS AND SHIFT TRAFFIC FROM A TWO-LANE, TWO-WAY TRAFFIC PATTERN TO A ONE-LANE, TWO-WAY TRAFFIC PATTERN AS SHOWN ON TMP-2.

STEP 3:

USING FLAGGERS AS NECESSARY, REMOVE PORTION OF EXISTING BRIDGE AND INSTALL TEMPORARY GUARDRAIL AND BARRIER AS SHOWN IN DETAIL TMP-1 ON SHEET TMP-2.

STEP 4:

USING FLAGGERS AS NECESSARY, CONSTRUCT TEMPORARY SHORING AND NEW CULVERT AS SHOWN ON TMP-2. WITHIN LIMITS OF CULVERT CONSTRUCTION AND AFTER COMPLETION, REPLACE PORTIONS OF EXISTING L BACK TO EXISTING GRADE.

CONSTRUCT TEMPORARY DETOUR AS FOLLOWS (SEE CROSS SECTIONS -L- PHASE 1 AND TMP-2):

-L- STA. 10+86 +/- TO STA. 12+22 +/-

## PHASE II

STEP 1:

USING RSD NO. 1101.01 (SHEET 1 OF 15), PLACE TEMPORARY PAVEMENT MARKINGS AND OBLITERATE EXISTING, CONFLICTING MARKINGS AS FOLLOWS (SEE TMP-3)

-L- STA. 9+88 +/- TO STA. 13+00 +/-

SHIFT TRAFFIC FROM A ONE-LANE, TWO-WAY TRAFFIC PATTERN ON EXISTING L TO A ONE-LANE, TWO-WAY TRAFFIC PATTERN ON TEMPORARY DETOUR (SEE TMP-3).

STEP 2:

USING FLAGGERS AS NECESSARY, REMOVE REMAINDER OF EXISTING BRIDGE, CONSTRUCT TEMPORARY SHORING AND REMAINDER OF CULVERT AS SHOWN ON TMP-3. WITHIN LIMITS OF CULVERT CONSTRUCTION AND AFTER COMPLETION, REPLACE PORTIONS OF EXISTING L BACK TO EXISTING GRADE.

STEP 3:

USING RSD NO. 1101.02 (SHEET 1 OF 15), OBLITERATE STOP BARS AND DEACTIVATE TEMPORARY SIGNALS, REMOVING ALL RELATED SIGNAGE.


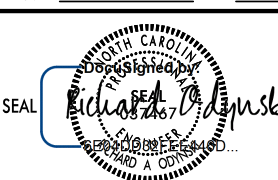

## PHASE III

STEP 1:

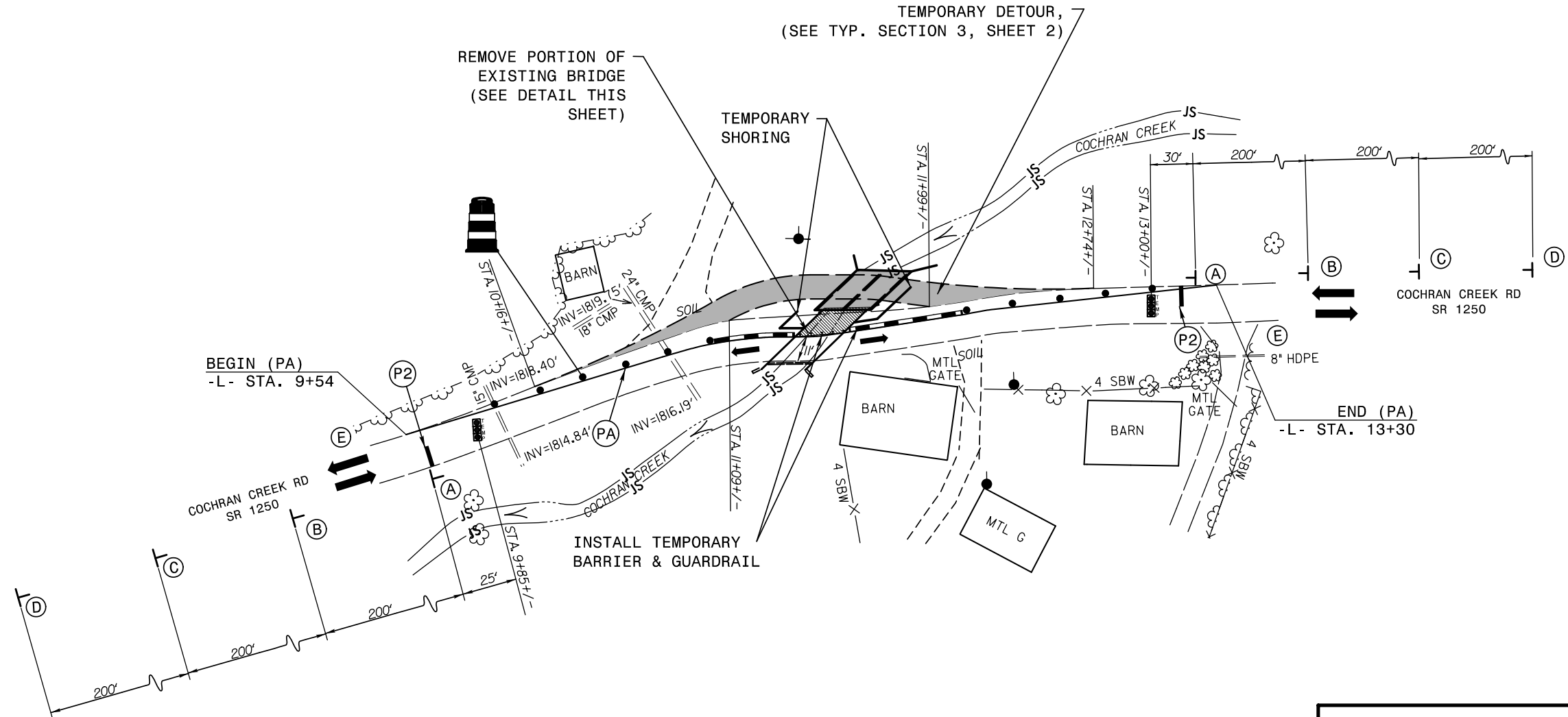
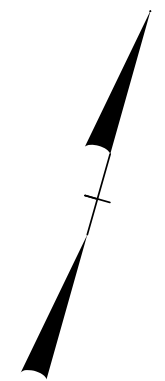
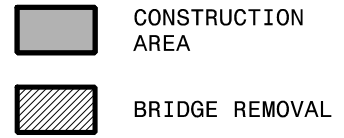
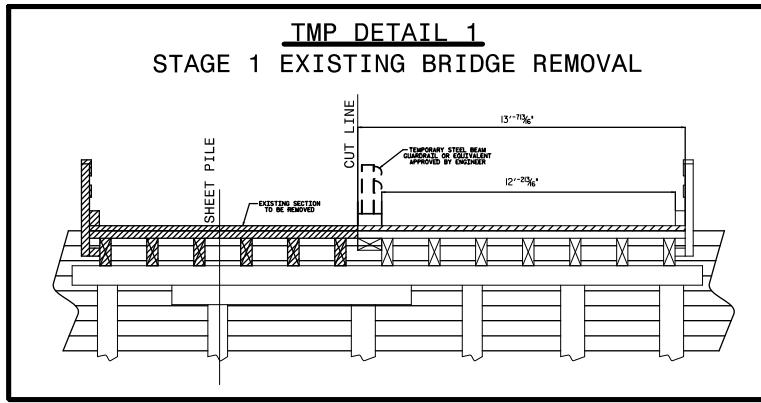
ALTERNATING LANE CLOSURES AS NECESSARY, COMPLETE CONSTRUCTION OF -L-, INCLUDING THE FINAL LAYER OF SURFACE COURSE, REMOVE TEMPORARY DETOUR, AND INSTALL FINAL PAVEMENT MARKINGS (SEE FINAL PAVEMENT MARKING PLANS).

REMOVE ALL TRAFFIC CONTROL DEVICES AND ADVANCE WARNING SIGNS FROM SR 1250 AND PLACE TRAFFIC IN ITS FINAL PATTERN.

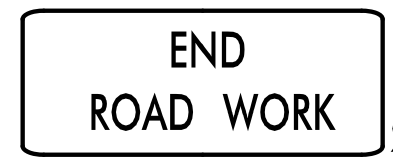
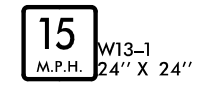
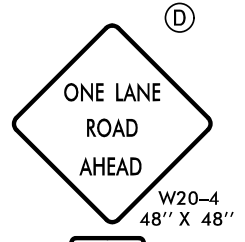
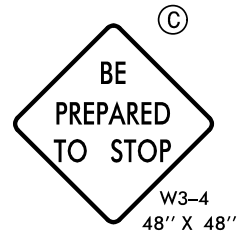
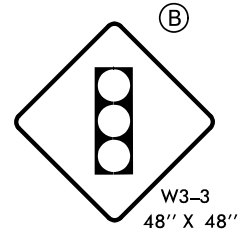
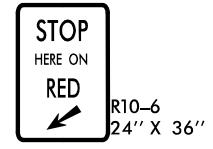
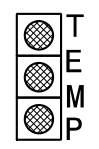
**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

 1001 Morehead Square Dr. Suite 610 Charlotte NC, 28203 NC LIC. NO. F-0165	APPROVED: <u>12/14/2018</u> DATE: _____ 		CONSTRUCTION PHASING
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dohmd



STA. 9+85  
STA. 13+00



TEMPORARY PAVEMENT MARKING LEGEND	
(PA)	PAINT - WHITE EDGELINE (4")
(P2)	PAINT - WHITE STOP BAR (24")



DOCUMENT NOT CONSIDERED FINAL  
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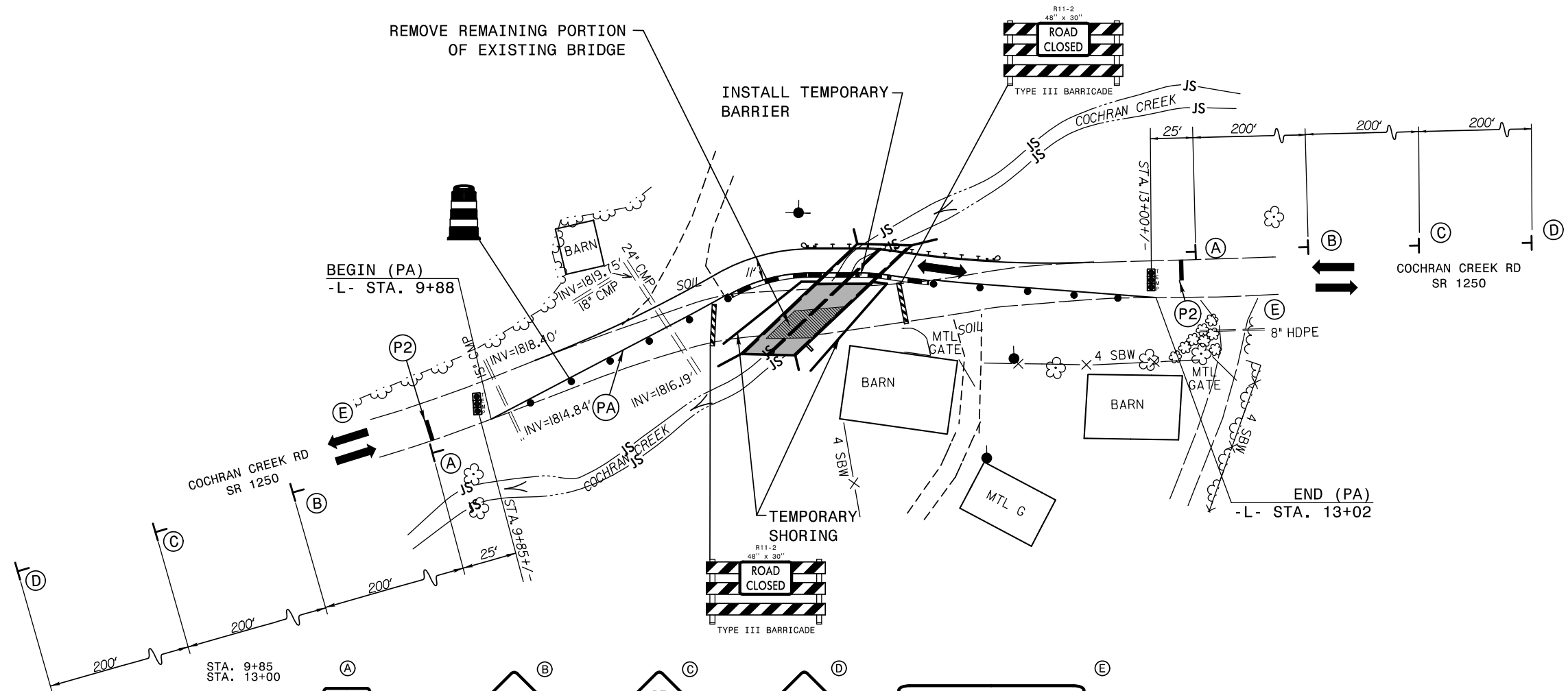
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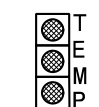

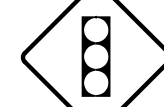


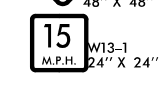

1001 Morehead Square Dr.  
Suite 610  
Charlotte NC, 28203  
NC LIC. NO. F-0165

APPROVED: 12/14/2018 DATE: \_\_\_\_\_

**PHASE I DETAILS**

-  CONSTRUCTION AREA
-  BRIDGE REMOVAL


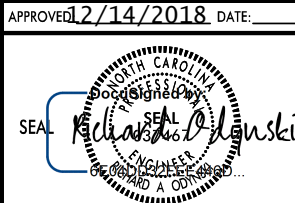

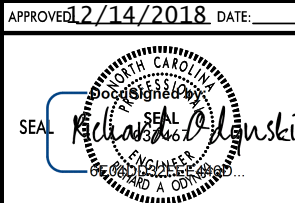





- (A)  T E M P
- (B)  STOP HERE ON RED  
R10-6 24" X 36"
- (C)  W3-3 48" X 48"
- (D)  BE PREPARED TO STOP  
W3-4 48" X 48"
- (E)  ONE LANE ROAD AHEAD  
W20-4 48" X 48"
- (F)  15  
W13-1 24" X 24"
- (G)  END ROAD WORK  
G20-2 A 48" X 24"

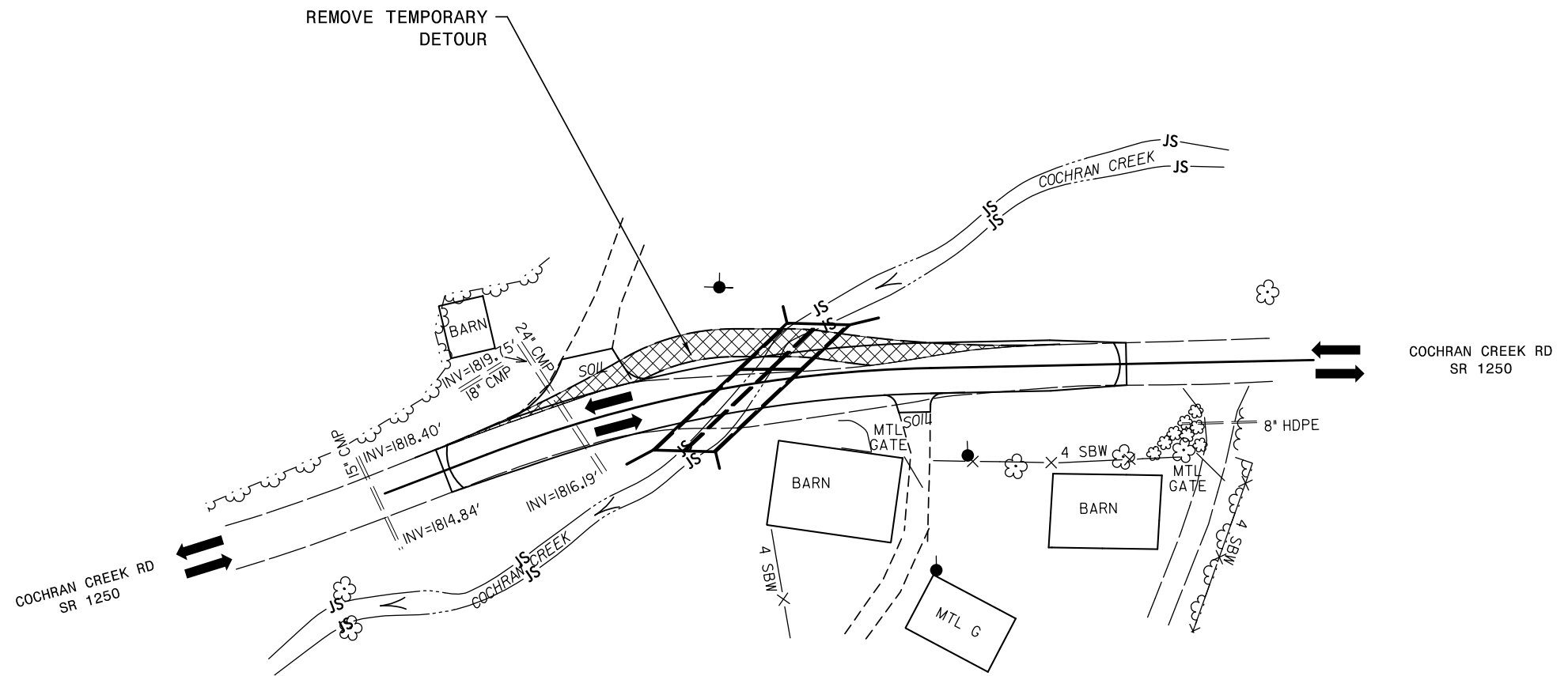
TEMPORARY PAVEMENT MARKING LEGEND	
(PA)	PAINT - WHITE EDGELINE (4")
(P2)	PAINT - WHITE STOP BAR (24")



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

11/29/2018 I:\NCDOT\_Div4\_LIBR\Gr-cham\_87\_17BP.14.R.79\17BP.14.R.79\_TC\_TMP\_3.dgn dohmd

 1001 Morehead Square Dr. Suite 610 Charlotte NC, 28203 NC LIC. NO. F-0165	APPROVED 12/14/2018 DATE:			<h2 style="text-align: center;">PHASE II DETAILS</h2>
				



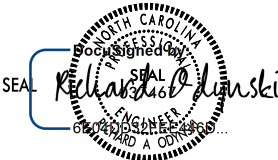
-  PAVEMENT REMOVAL
-  CONSTRUCTION AREA
-  BRIDGE REMOVAL



TEMPORARY PAVEMENT MARKING LEGEND	
	PAINT - WHITE EDGELINE (4")
	PAINT - WHITE STOP BAR (24")

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

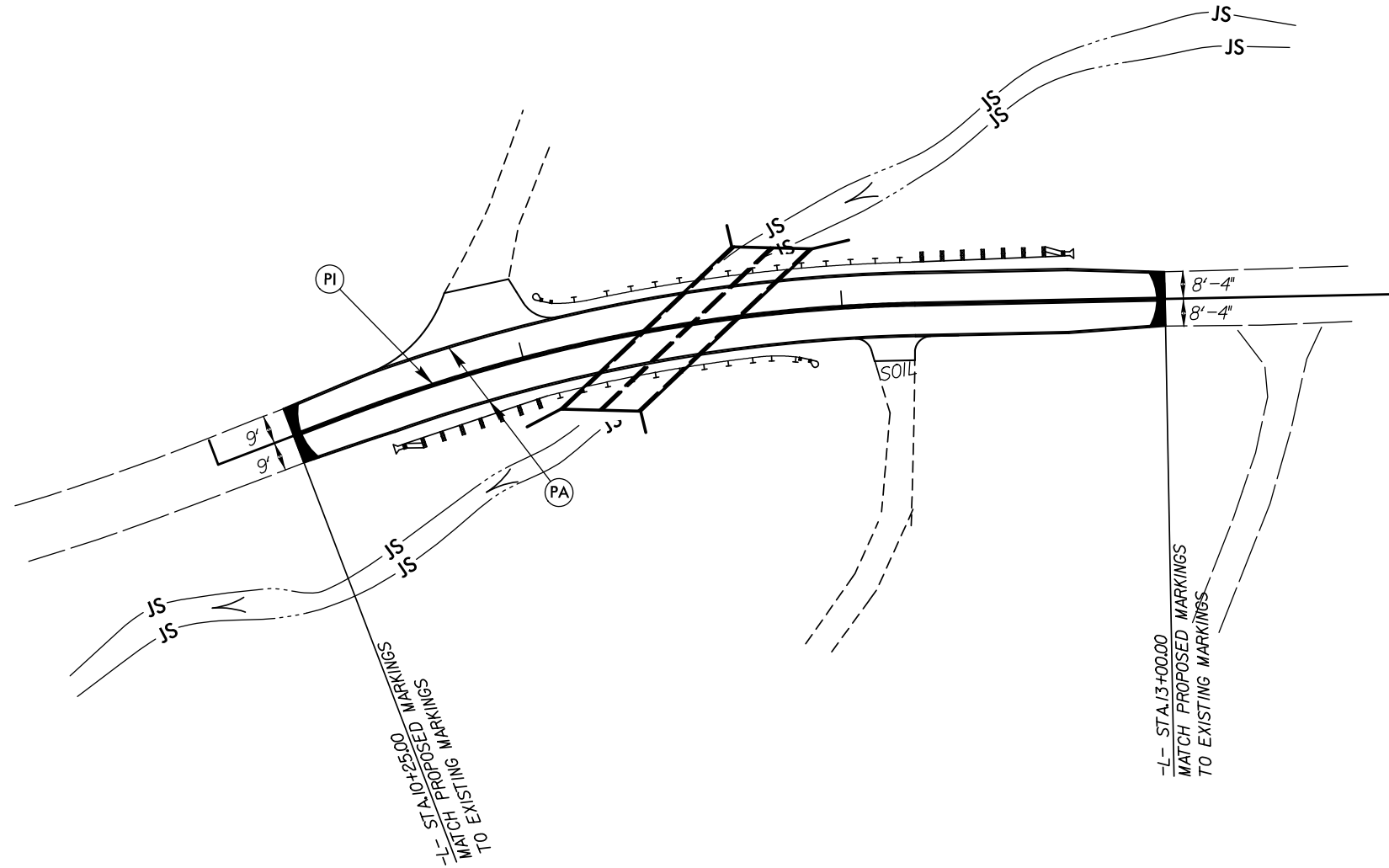
11/29/2018  
 I:\NCDDOT\_Div4\_LIBR\Gr-cham\_87\_17BP.14.R.79\17BP.14.R.79\_TC\_TMP\_4.dgn  
 dohmd

 1001 Morehead Square Dr. Suite 610 Charlotte NC, 28203 NC LIC. NO. F-0165	APPROVED: 12/14/2018 DATE: _____		<h2 style="text-align: center;">PHASE III DETAILS</h2>
			

PAVEMENT MARKING SCHEDULE TIP PROJECT # 17BP.14.R.79				
SYMBOL	DESCRIPTION	FINAL PAVEMENT MARKINGS	PAY ITEM QUANTITY BREAKDOWN	TOTAL QUANTITY
PI	YELLOW DOUBLE CENTER	PAINT (4", 2 COATS)	550 LF	1100 LF
PA	WHITE EDGELINE	PAINT (4", 2 COATS)	550 LF	1100 LF

NOTES:

1. WHITE EDGE TO MATCH EXISTING LANE WIDTHS THROUGHOUT NEWLY CONSTRUCTED AREA.



11/29/2018  
 I:\NCDOT\_Div4\_LIBR\Gr-cham\_87\_17BP.14.R.79\17BP.14.R.79\_TC\_...PMP.dgn  
 dohmd

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

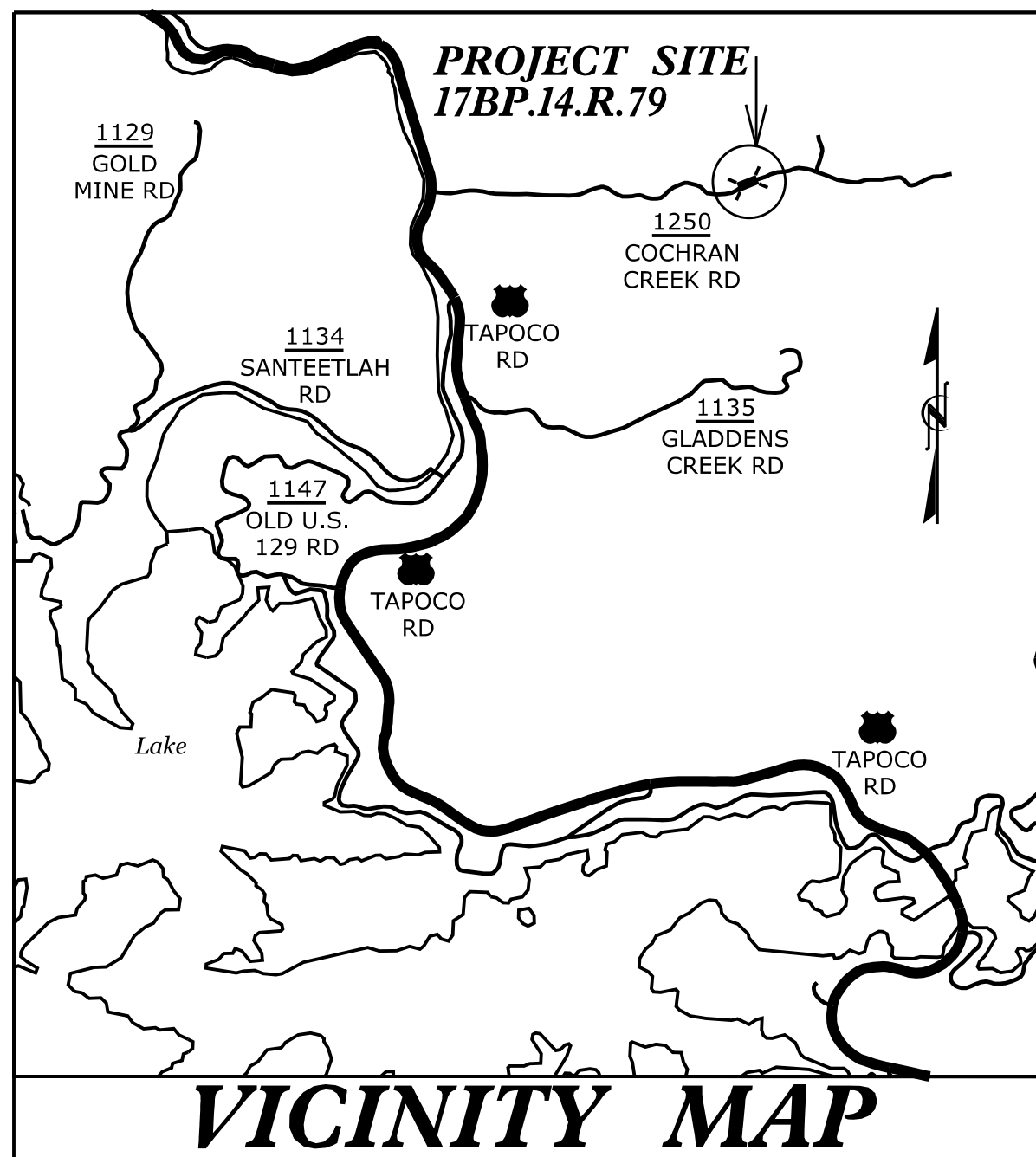
<p>1001 Morehead Square Dr. Suite 610 Charlotte NC, 28203 NC LIC. NO. F-0165</p>	APPROVED: 12/14/2018 DATE:	<p>SEAL [Signature] ENGINEER</p>	<p>PAVEMENT MARKING PLAN</p>



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.79	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

**TIP PROJECT: 17BP.14.R.79**

See Sheet 1-A For Index of Sheets



**RW PLANS**

# STATE OF NORTH CAROLINA

## DIVISION OF HIGHWAYS

### PLAN FOR PROPOSED HIGHWAY EROSION CONTROL

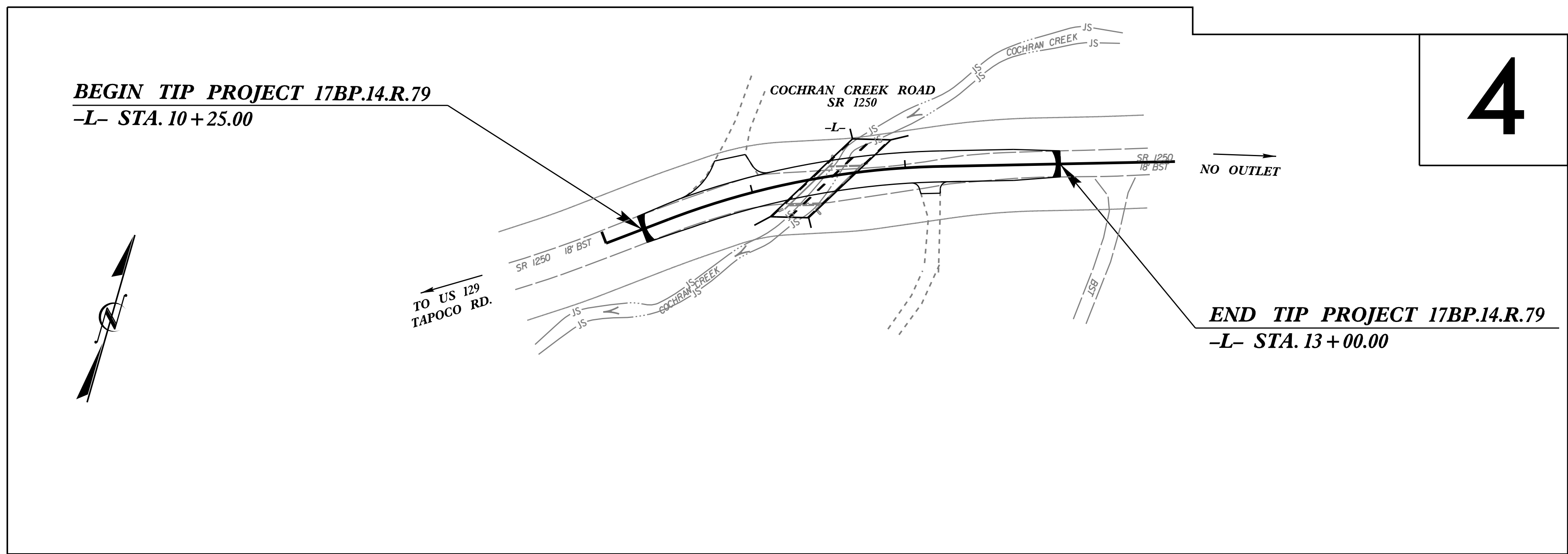
### GRAHAM COUNTY

**LOCATION: REPLACEMENT OF BRIDGE NO. 87 ON COCHRAN CREEK RD. (SR 1250) OVER COCHRAN CREEK**

**TYPE OF WORK: GRADING, PAVING, TRAFFIC CONTROL, DRAINAGE, & CULVERT**

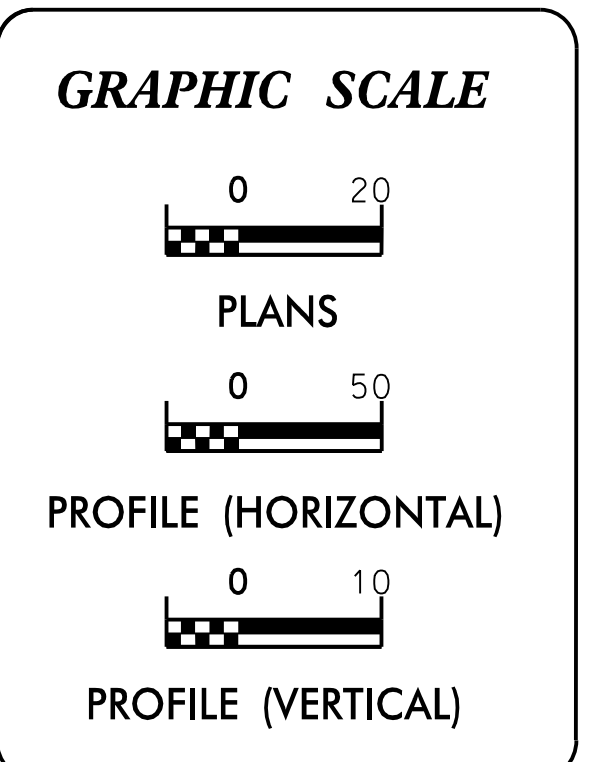
**EROSION AND SEDIMENT CONTROL MEASURES**

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	— m —
1630.05	Temporary Diversion	→ TD →
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	△△△△△△△△
1622.01	Temporary Berms and Slope Drains	— B —
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.

RANA STANSELL, PE  
LEVEL IIIA NAME  
  
3597  
LEVEL IIIA CERTIFICATION NO.



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 1, 2018  
ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND  
NATURAL RESOURCES DIVISION OF WATER QUALITY.

**wsp**

WSP USA  
434 FAYETTEVILLE STREET  
SUITE 1500  
RALEIGH, NC 27601  
TEL: 1.919.836.4040  
FAX: 1.919.836.4099  
LICENSE NO. F-0165

2018 STANDARD SPECIFICATIONS

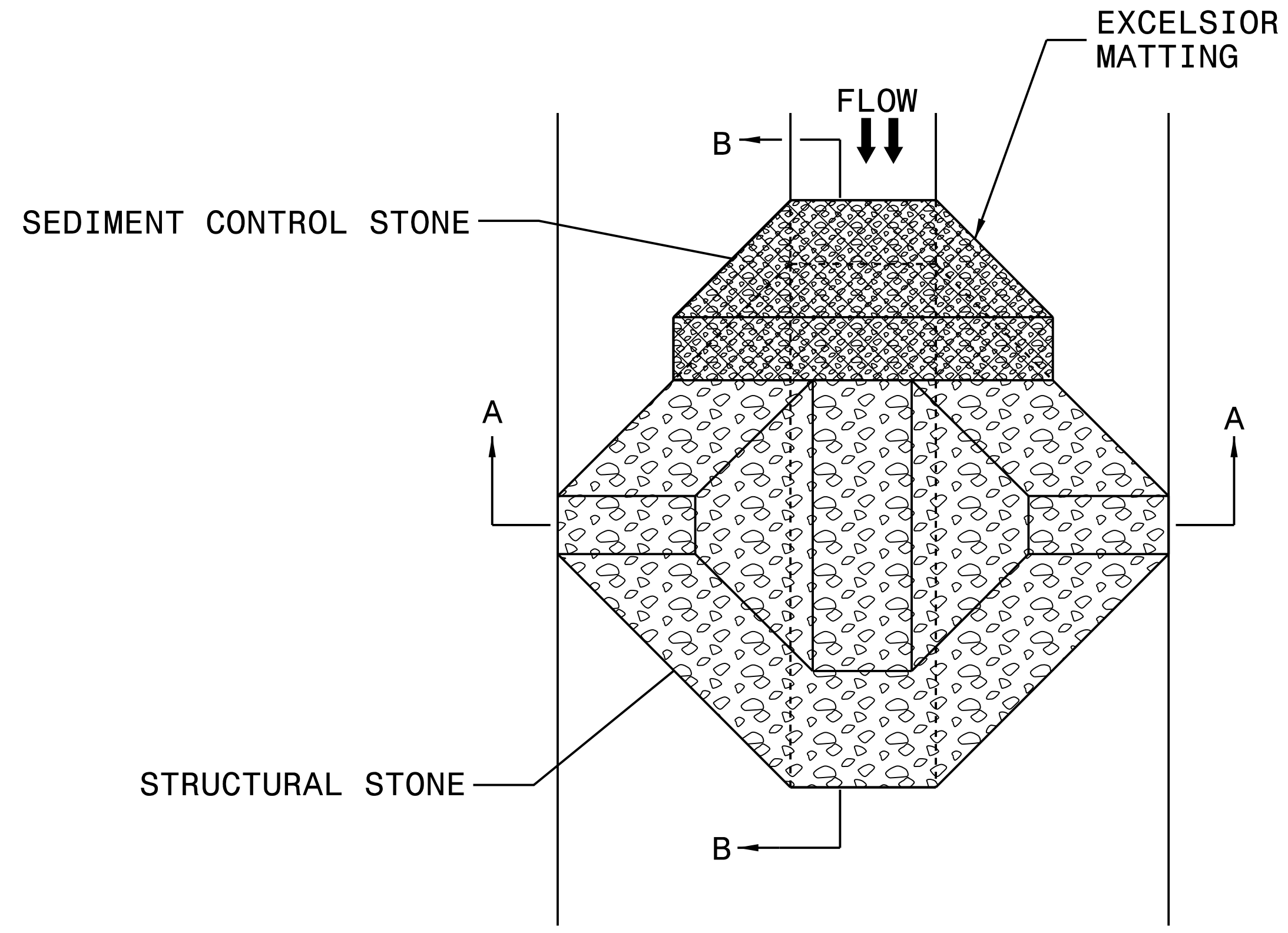
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 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 Baffle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

PROJECT REFERENCE NO. <i>17BPJ4.R.79</i>	SHEET NO. <i>EC-2</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN

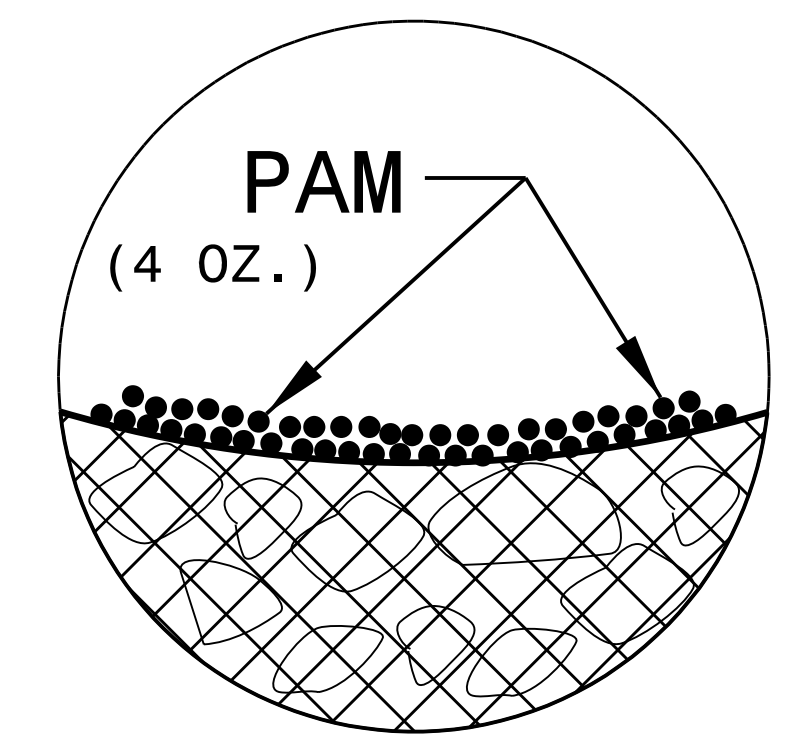
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

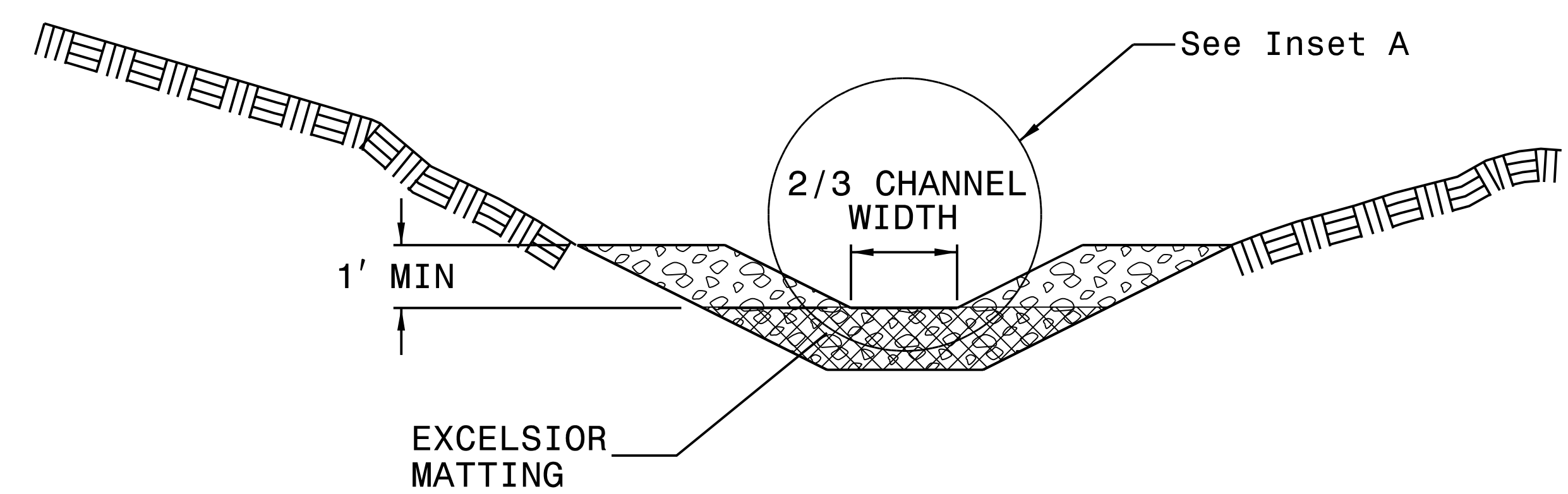
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.

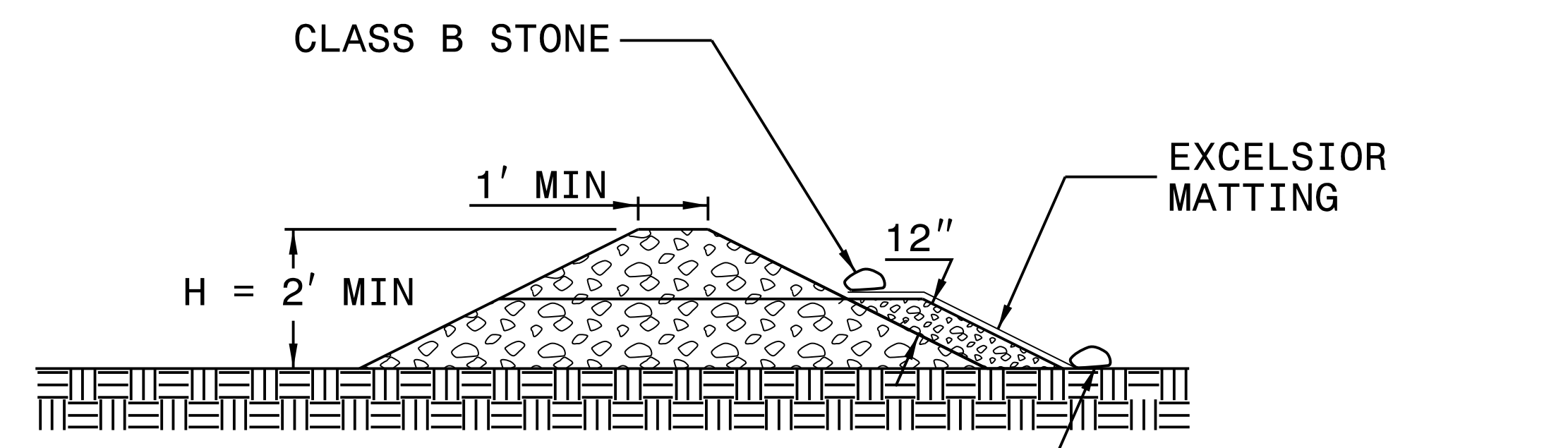
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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PROJECT REFERENCE NO. <i>17BPJ4R.79</i>	SHEET NO. <i>EC-3</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.

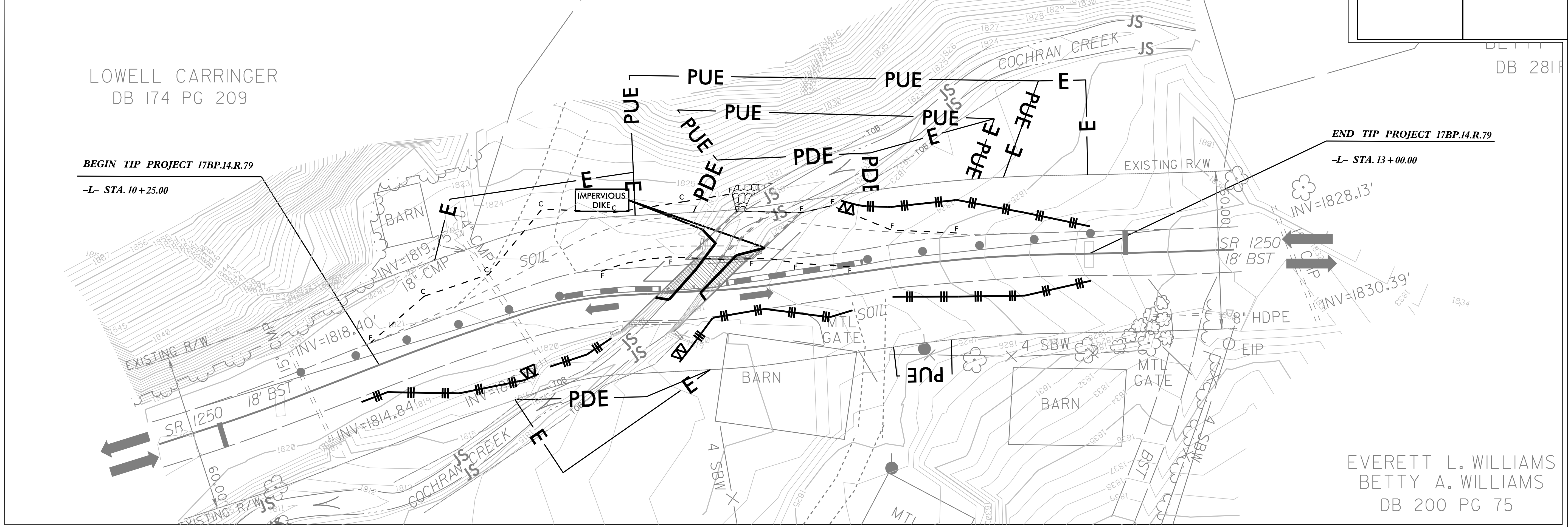
PROJECT REFERENCE NO. <b>17BP14.R.79</b>	SHEET NO. <b>EC-4/CONST.4</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# EROSION CONTROL PLAN

LOWELL CARRINGER  
DB 174 PG 209

BEGIN TIP PROJECT 17BP.14.R.79  
-L- STA. 10+25.00

END TIP PROJECT 17BP.14.R.79  
-L- STA. 13+00.00



EVERETT L. WILLIAMS  
BETTY A. WILLIAMS  
DB 200 PG 75

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEETS 2A, 4  
AND TMP-2 (PHASE I)

BRIDGE REMOVAL AND CULVERT CONSTRUCTION SHALL BE PER  
REQUIREMENTS IN THE NCDOT BEST MANAGEMENT PRACTICES  
FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL

CONTRACTOR SHALL INSTALL AN ONSITE CONCRETE WASHOUT  
STRUCTURE PER THE NCDOT DETAIL AND SPECIAL PROVISIONS.  
ACTUAL LOCATION OF THE STRUCTURE SHALL BE DETERMINED  
IN THE FIELD. CONCRETE WASHOUT STRUCTURE SHALL BE  
MAINTAINED BY THE CONTRACTOR. ALL CONCRETE TRUCKS SHALL  
USE THE CONCRETE WASHOUT STRUCTURE. NO WASHOUT OF  
CONCRETE TRUCKS SHALL BE ALLOWED EXCEPT IN THE CONCRETE  
WASHOUT STRUCTURE.

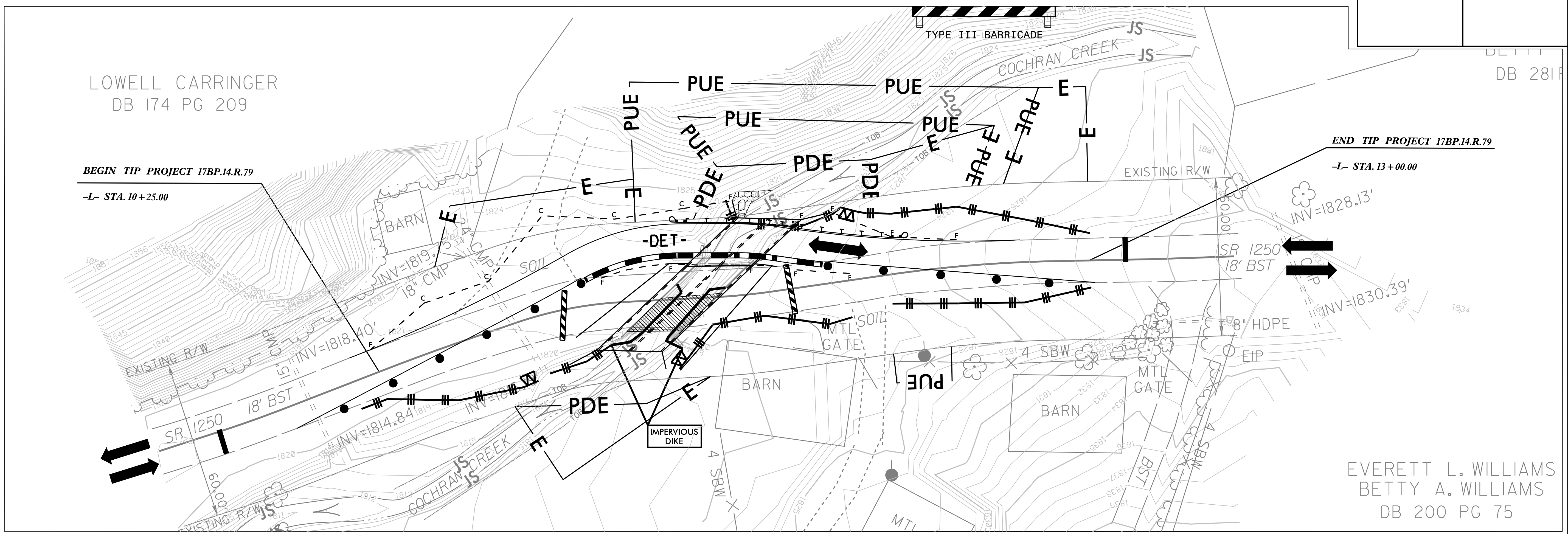
PROJECT REFERENCE NO. <b>17BP14.R.79</b>	SHEET NO. <b>EC-5/CONST.4</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# EROSION CONTROL PLAN

LOWELL CARRINGER  
DB 174 PG 209

BEGIN TIP PROJECT 17BP.14.R.79  
-L- STA. 10+25.00

END TIP PROJECT 17BP.14.R.79  
-L- STA. 13+00.00



EVERETT L. WILLIAMS  
BETTY A. WILLIAMS  
DB 200 PG 75

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEETS 2A, 4  
AND TMP-3(PHASE 2)

BRIDGE REMOVAL AND CULVERT CONSTRUCTION SHALL BE PER  
REQUIREMENTS IN THE NCDOT BEST MANAGEMENT PRACTICES  
FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL

CONTRACTOR SHALL INSTALL AN ONSITE CONCRETE WASHOUT  
STRUCTURE PER THE NCDOT DETAIL AND SPECIAL PROVISIONS.  
ACTUAL LOCATION OF THE STRUCTURE SHALL BE DETERMINED  
IN THE FIELD. CONCRETE WASHOUT STRUCTURE SHALL BE  
MAINTAINED BY THE CONTRACTOR. ALL CONCRETE TRUCKS SHALL  
USE THE CONCRETE WASHOUT STRUCTURE. NO WASHOUT OF  
CONCRETE TRUCKS SHALL BE ALLOWED EXCEPT IN THE CONCRETE  
WASHOUT STRUCTURE.

PROJECT REFERENCE NO. <b>17BP14.R.79</b>	SHEET NO. <b>EC-6/CONST.4</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# EROSION CONTROL PLAN

LOWELL CARRINGER  
DB 174 PG 209

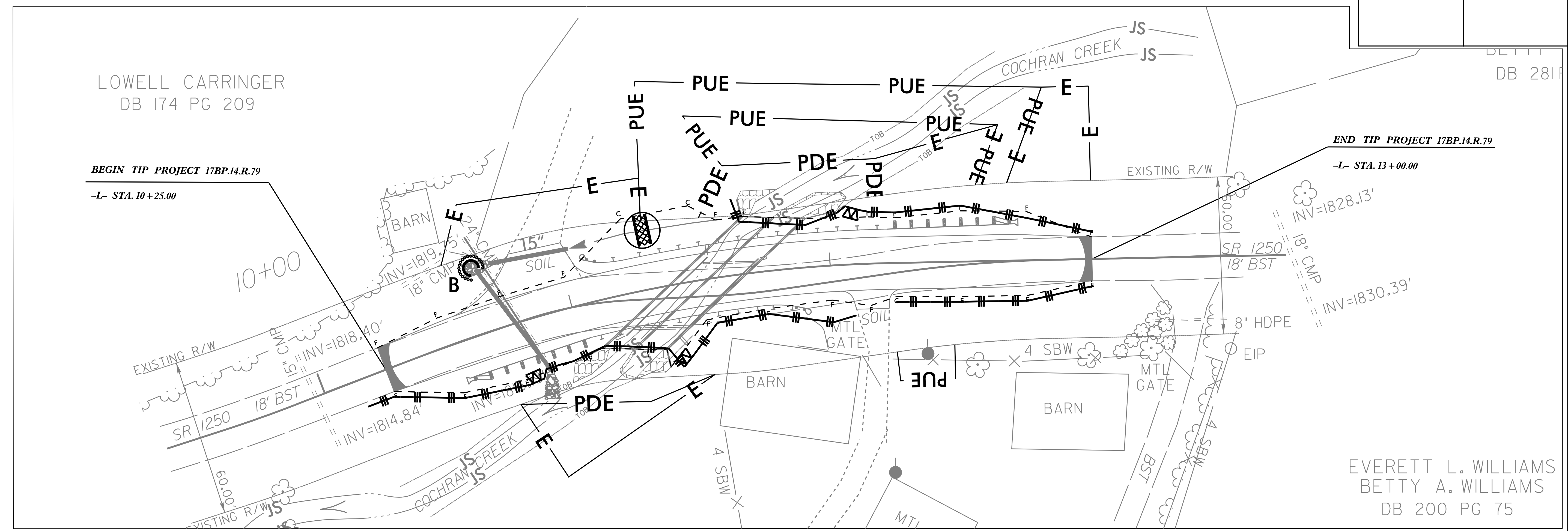
BETTY  
DB 281

BEGIN TIP PROJECT 17BP.14.R.79

-L- STA. 10+25.00

END TIP PROJECT 17BP.14.R.79

-L- STA. 13+00.00



EVERETT L. WILLIAMS  
BETTY A. WILLIAMS  
DB 200 PG 75

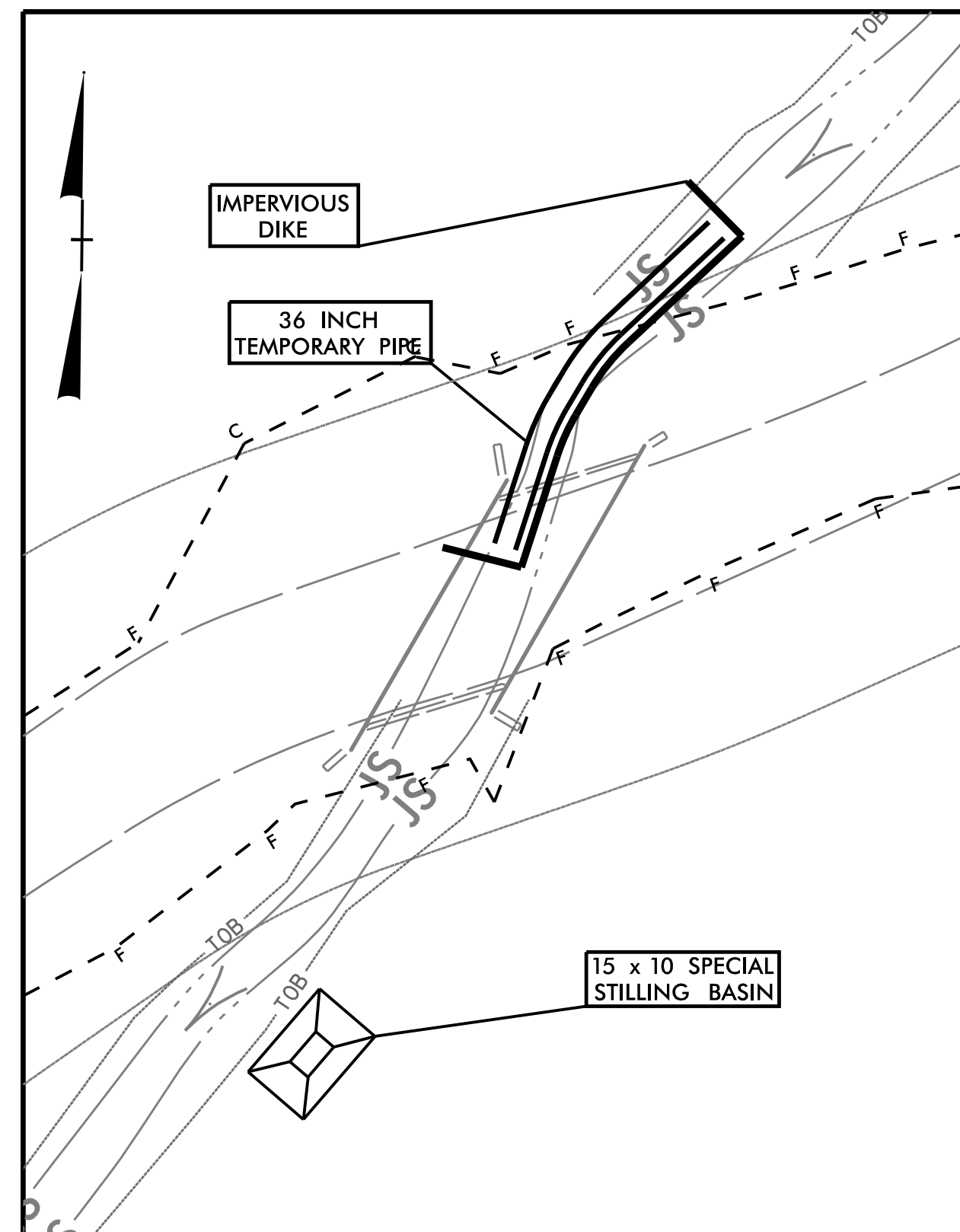
INSTALL MATTING FOR  
EROSION CONTROL IN THE  
PROPOSED DITCH LINE.  
STA 11+04 TO 11+59 LT

PROJECT REFERENCE NO. <b>17BPJ4.R.79</b>	SHEET NO. <b>EC-7/CONST.4</b>
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# CULVERT CONSTRUCTION SEQUENCE STA. 11+53 -L-

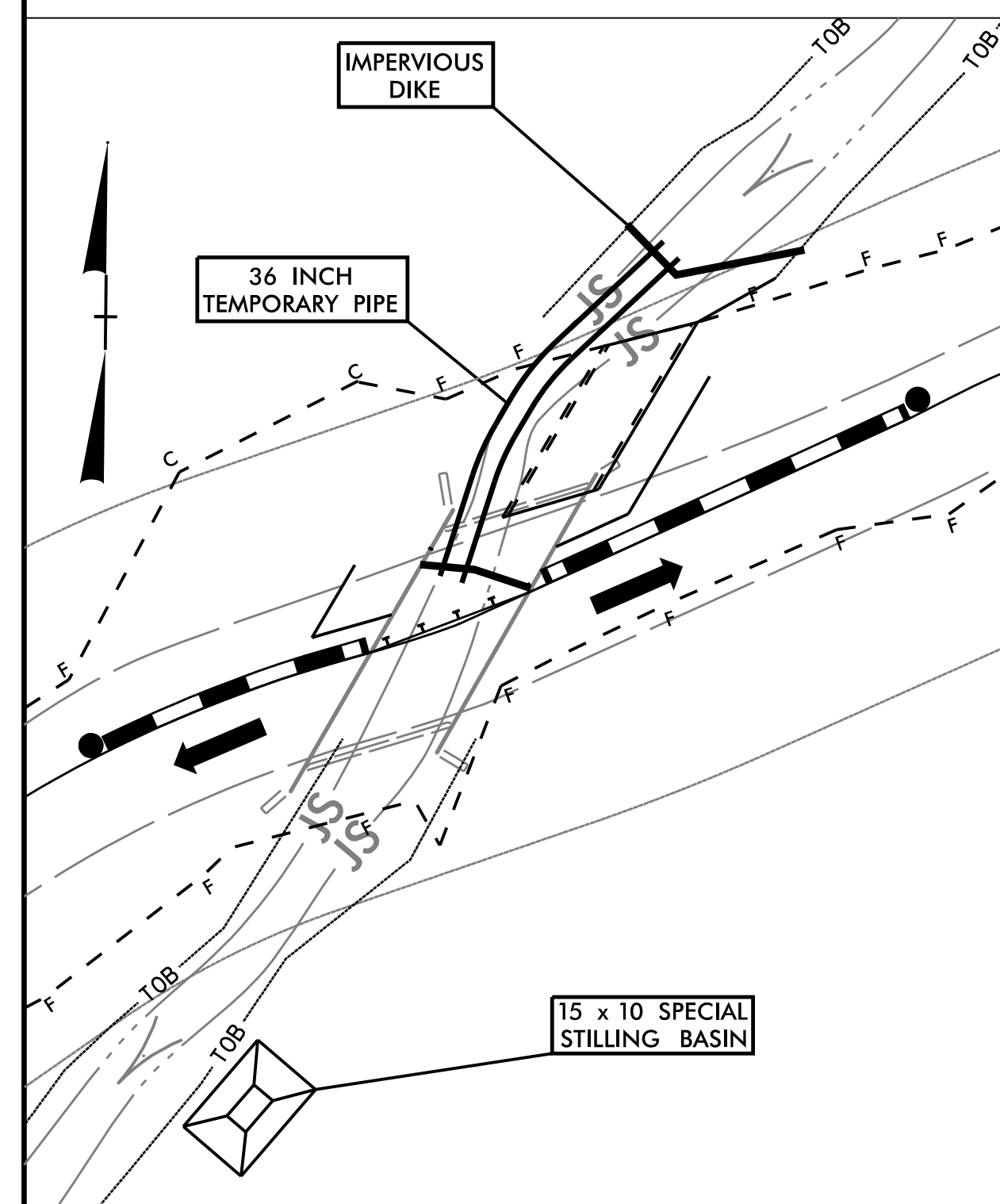
## STAGE I

(2) 8'X5' RCBC -L-



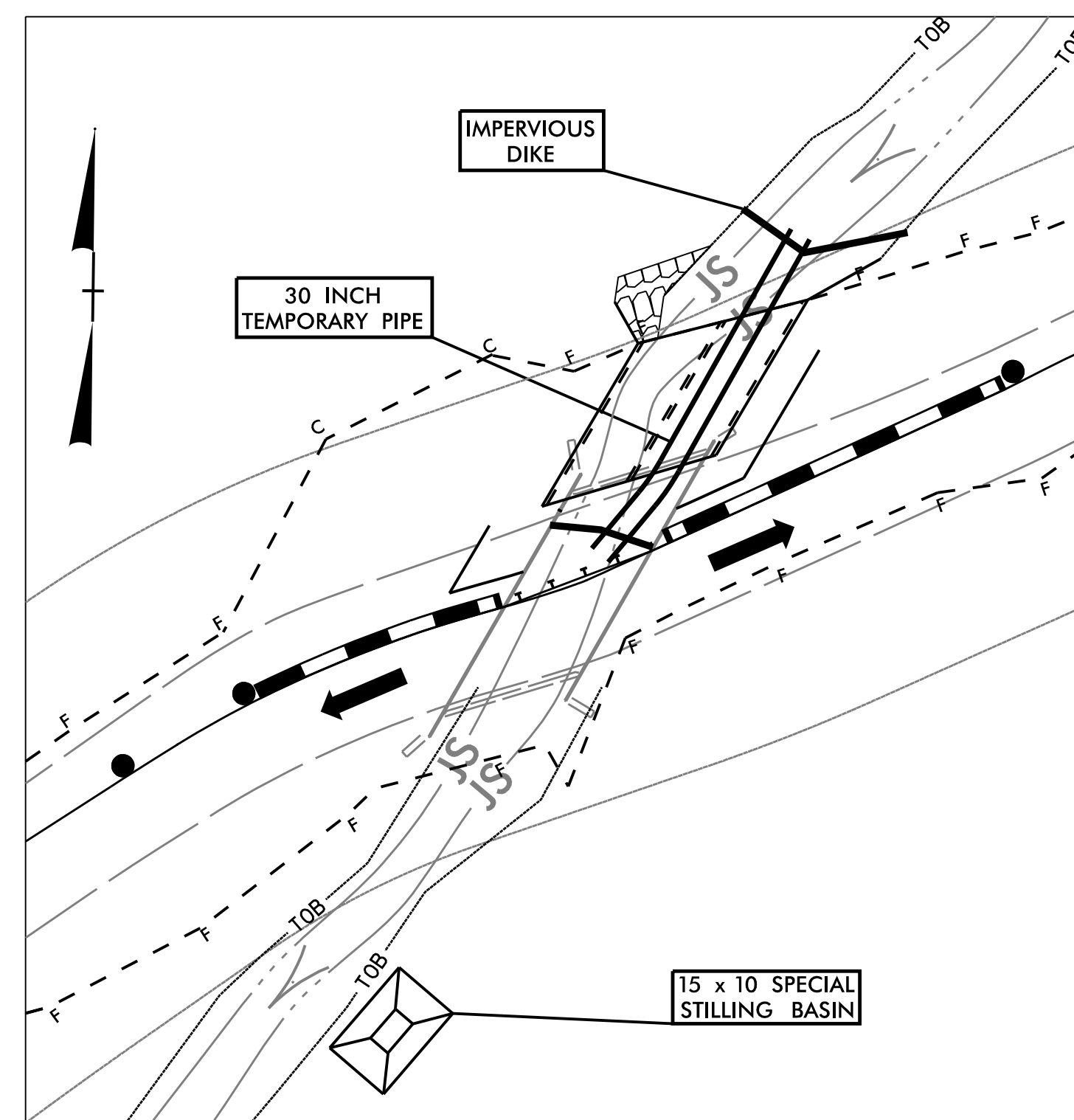
### PHASE I

1. INSTALL TEMPORARY SHORING/BARRIERS AND DIRECT TRAFFIC ONTO DOWNSTREAM SIDE OF ROAD OVER EXISTING BRIDGE.
2. REMOVE PORTION OF EXISTING BRIDGE.
3. CONSTRUCT IMPERVIOUS DIKE.
4. DEWATER AREA ENCLOSED INSIDE OF IMPERVIOUS DIKE INTO SPECIAL STILLING BASIN.
5. INSTALL TEMPORARY 36" FLEXIBLE PIPE AS SHOWN, DEWATER AREA AS NECESSARY INTO SPECIAL STILLING BASIN.



### PHASE II

1. RELOCATE IMPERVIOUS DIKES.
2. DEWATER AREA ENCLOSED INSIDE OF IMPERVIOUS DIKES INTO SPECIAL STILLING BASIN.
3. CONSTRUCT UPSTREAM NE BARREL INCLUDING WINGWALLS AND BOTTOM SLAB.
4. DO NOT CONSTRUCT SILL IN NE BARREL AT THIS TIME.



### PHASE III

1. RELOCATE TEMPORARY 36" FLEXIBLE PIPE AND IMPERVIOUS DIKES.
2. DEWATER AREA ENCLOSED INSIDE OF IMPERVIOUS DIKE INTO SPECIAL STILLING BASIN.
3. CONSTRUCT UPSTREAM NW BARREL INCLUDING WINGWALLS, BOTTOM SLAB, AND CLASS B RIPRAP ALONG WINGWALLS.
4. CONSTRUCT SILL AND BAFFLES IN NW BARREL.
5. BACKFILL INSIDE BARREL WITH STOCKPILED NATIVE MATERIAL.

GRAPHIC SCALE

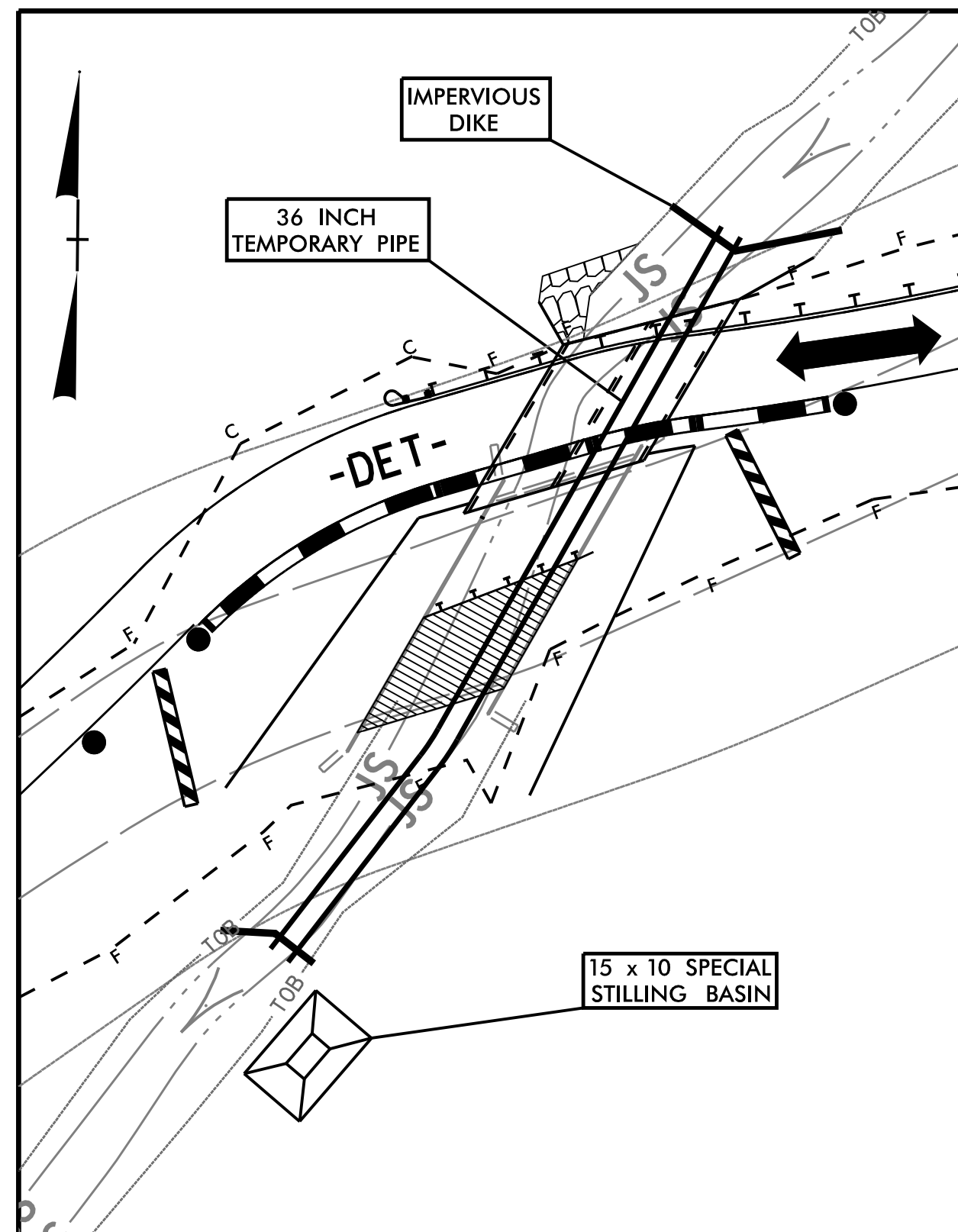


PROJECT REFERENCE NO. <b>17BP14R79</b>	SHEET NO. <b>EC-8/CONST.4</b>
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# CULVERT CONSTRUCTION SEQUENCE STA. 11+53 -L-

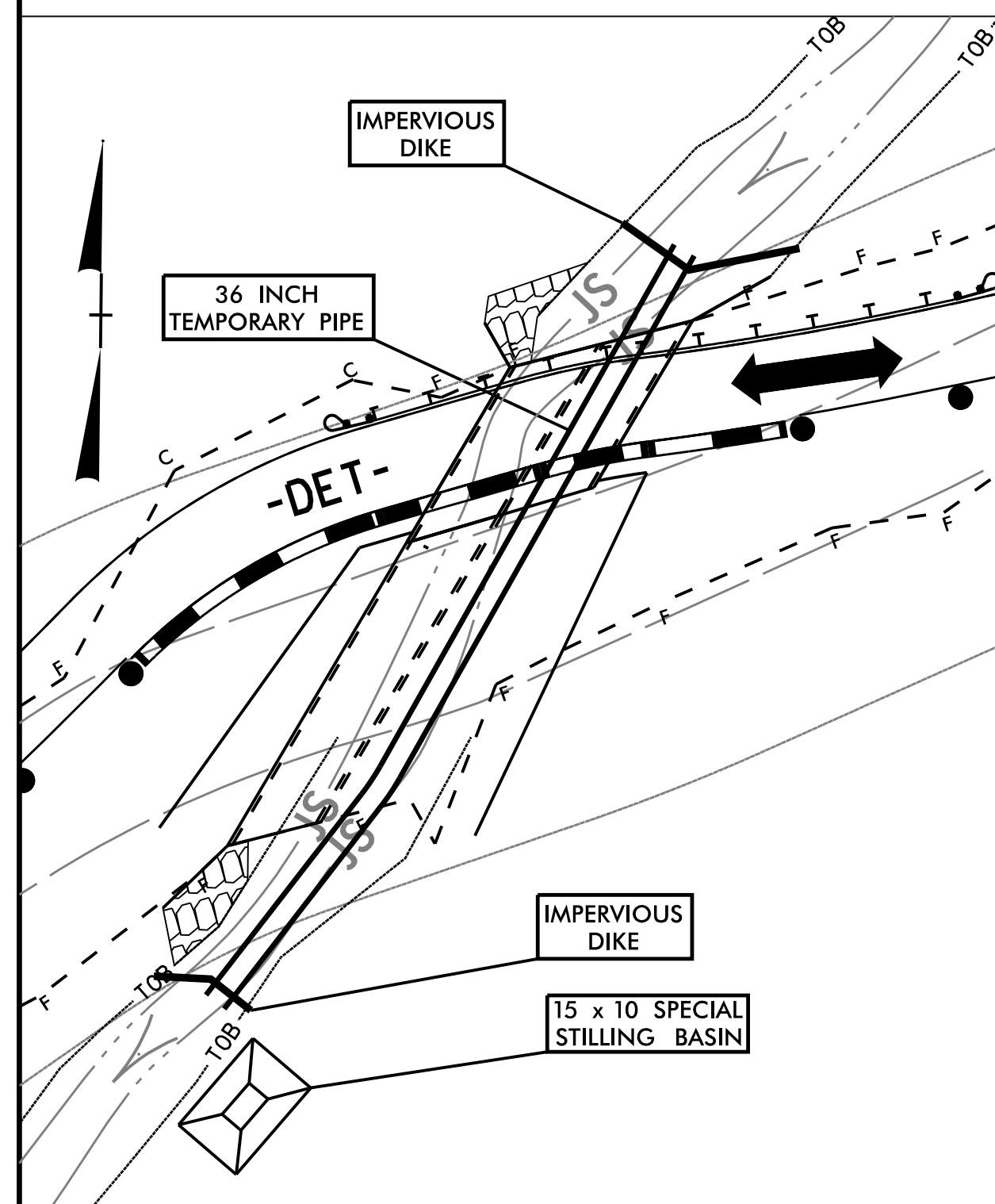
## STAGE II

(2) 8'X5' RCBC -L-



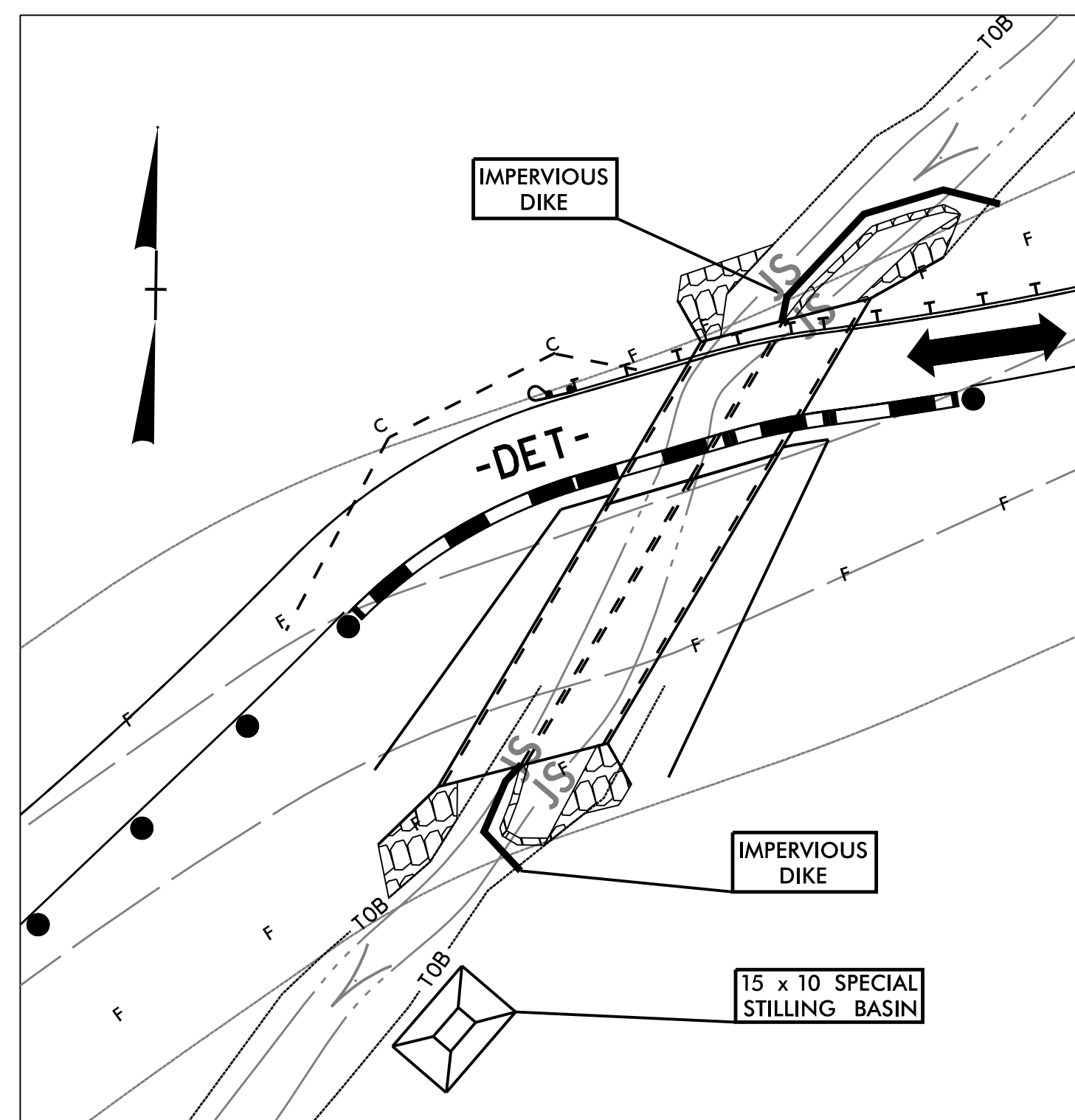
### PHASE I

1. CONSTRUCT TEMPORARY ROADWAY OVER NEWLY CONSTRUCTED BARRELS. INSTALL TEMPORARY BARRIERS AND DIRECT TRAFFIC ONTO TEMPORARY ROADWAY.
2. INSTALL TEMPORARY SHORING AND REMOVE REMAINING PORTION OF EXISTING BRIDGE. SEE NCDOT BRIDGE DEMOLITION GUIDELINES.
3. INSTALL ADDITIONAL 36" TEMPORARY FLEXIBLE PIPE AND RELOCATE IMPERVIOUS DIKE. DEWATER AREA ENCLOSED INSIDE OF IMPERVIOUS DIKE INTO SPECIAL STILLING BASIN.



### PHASE II

1. CONSTRUCT DOWNSTREAM SW BARREL INCLUDING WINGWALLS, BOTTOM SLAB AND CLASS B RIPRAP.
2. CONSTRUCT SILL AND BAFFLES IN SW BARREL.
3. BACKFILL INSIDE BARREL WITH STOCKPILED NATIVE MATERIAL.



### PHASE III

1. RELOCATE IMPERVIOUS DIKES IN ORDER TO REDIRECT WATER INTO WEST BARREL.
2. DEWATER AREA ENCLOSED INSIDE OF IMPERVIOUS DIKES INTO SPECIAL STILLING BASIN.
3. CONSTRUCT DOWNSTREAM SE BARREL INCLUDING WINGWALLS, BOTTOM SLAB, AND CLASS B RIPRAP ALONG WINGWALLS.
4. CONSTRUCT UPSTREAM AND DOWNSTREAM BENCHES AND SILLS IN EAST BARREL.
5. BACKFILL INSIDE BARREL WITH STOCKPILED NATIVE MATERIAL.
6. REMOVE IMPERVIOUS DIKES AND SPECIAL STILLING BASIN.
7. REMOVE TEMPORARY SHORING, FINISH ROADWAY WORK, OPEN NEW ROAD TO TRAFFIC, AND REMOVE TEMPORARY ROADWAY.

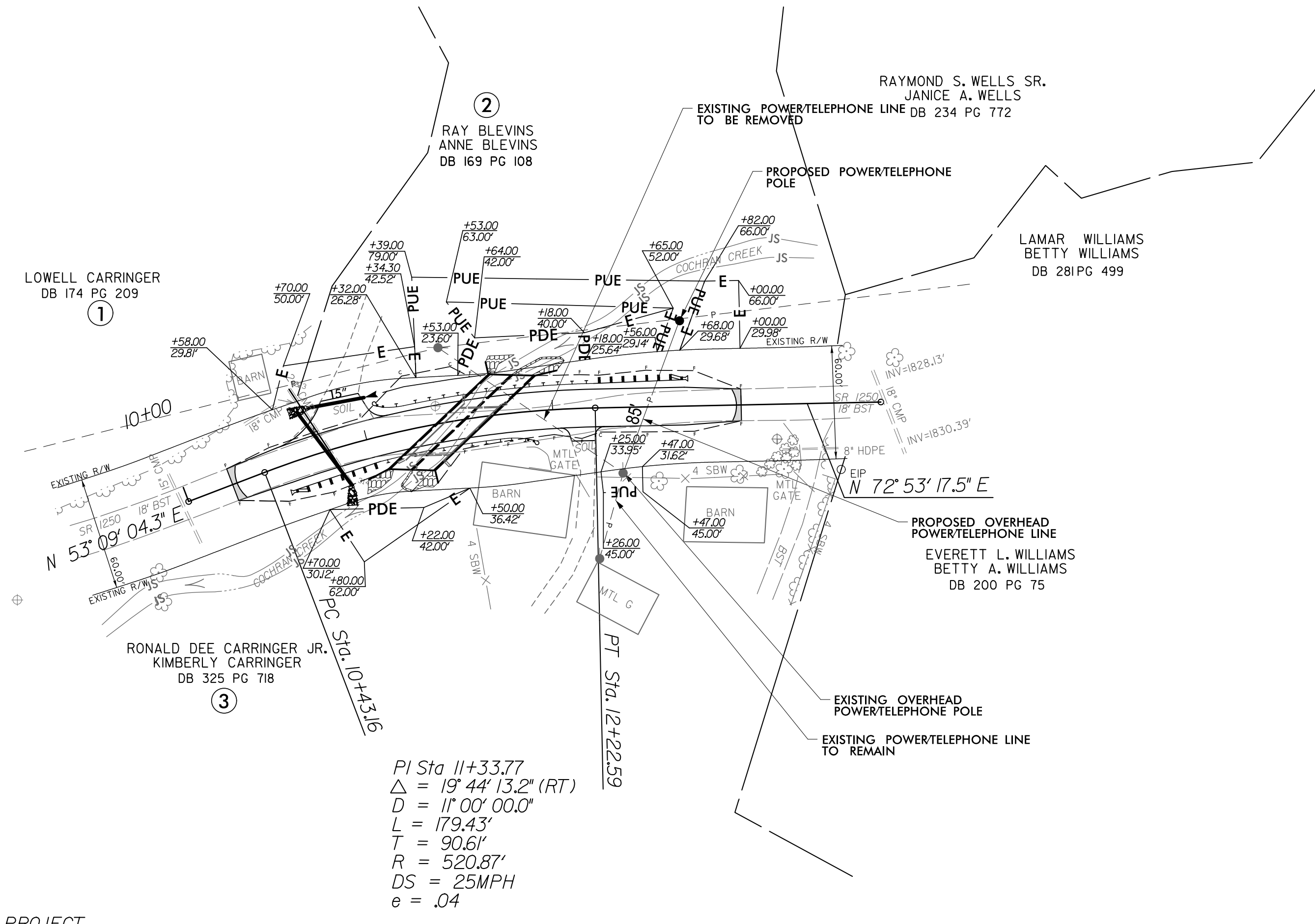
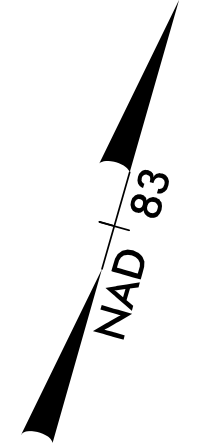
GRAPHIC SCALE





8/17/99

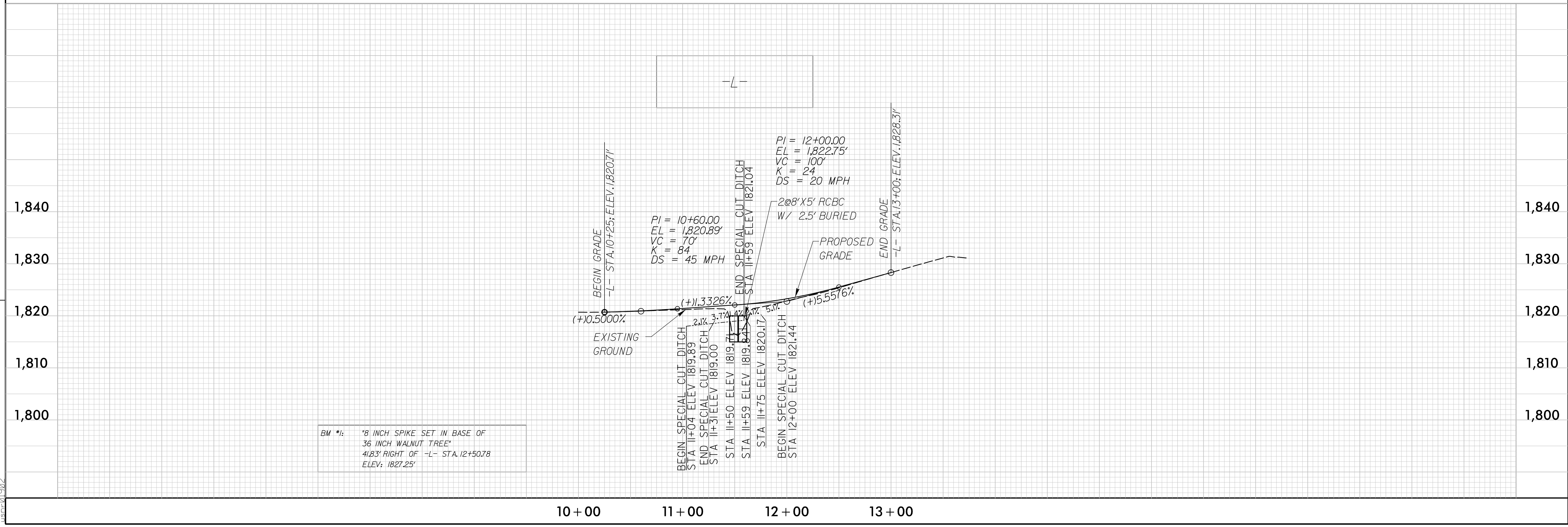
REVISIONS



$PI\ Sta\ 11+33.77$   
 $\Delta = 19^{\circ} 44' 13.2" (RT)$   
 $D = 11^{\circ} 00' 00.0"$   
 $L = 179.43'$   
 $T = 90.61'$   
 $R = 520.87'$   
 $DS = 25MPH$   
 $e = .04$

**NOTE:**  
 UTILITY RELOCATIONS ARE TO OCCUR PRIOR TO CONSTRUCTION OF THIS PROJECT.  
 THERE ARE NO UTILITY PROJECT SPECIAL PROVISION ASSOCIATED WITH THIS PROJECT.

8/17/2016  
 R:\Projects\17BP\GROUP 1\17BP.14.R.79\_370087\Utilities\NAD\_83\_PSH\_04.dgn  
 User: jls



BM #1: "8" INCH SPIKE SET IN BASE OF  
 36" INCH WALNUT TREE"  
 41.83' RIGHT OF -L- STA. 12+50.78  
 ELEV: 1827.25'

10+00      11+00      12+00      13+00