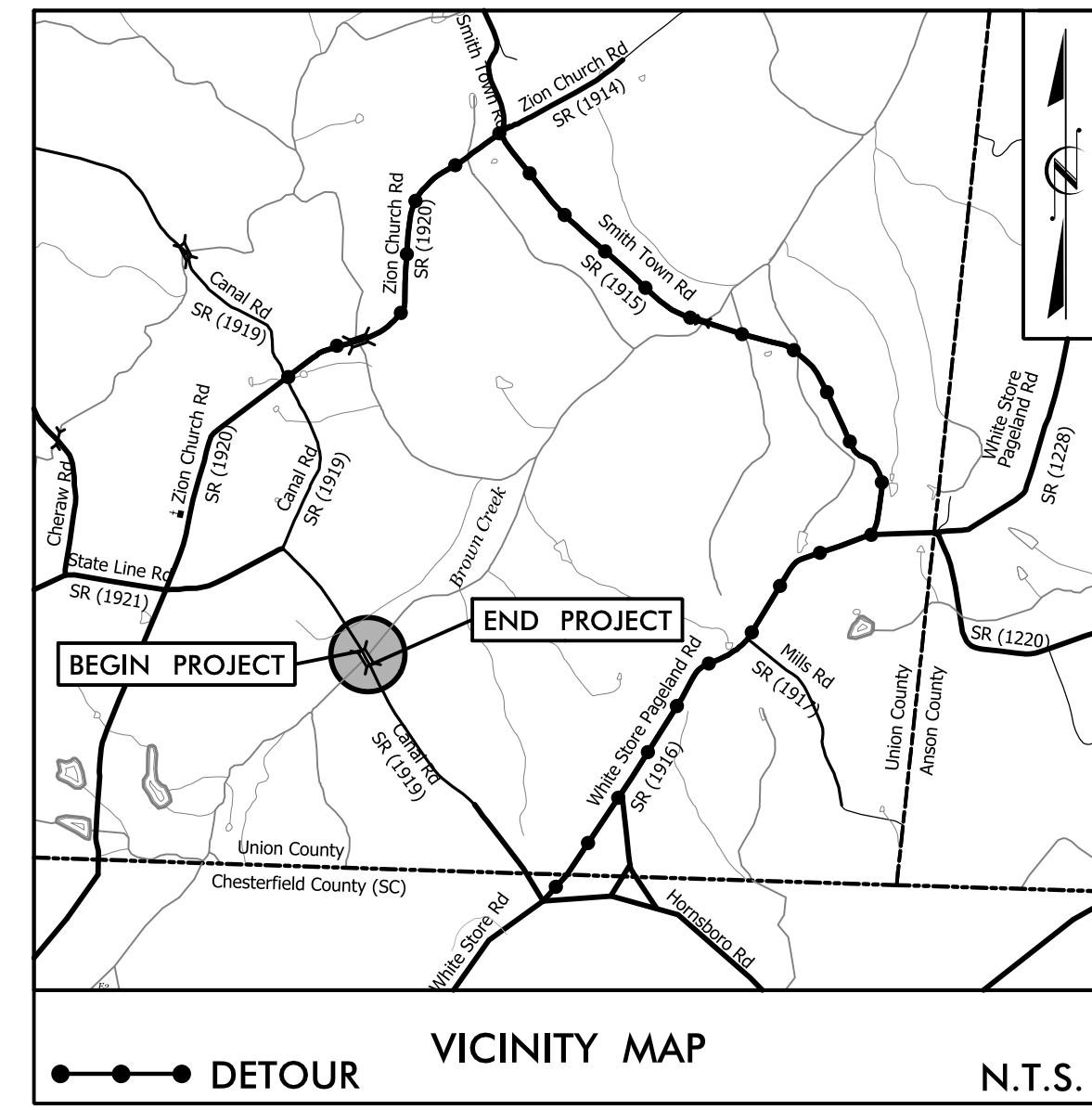


**PROJECT WBS: 17BP.10.R.109**

See Sheet 1A For Index of Sheets  
See Sheet 1B For Standard Symbology Sheet

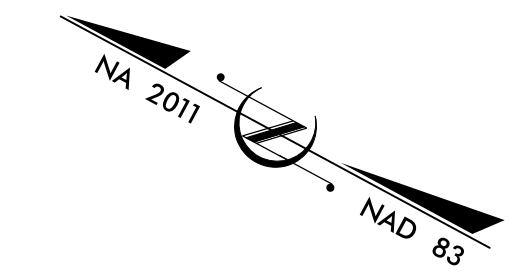
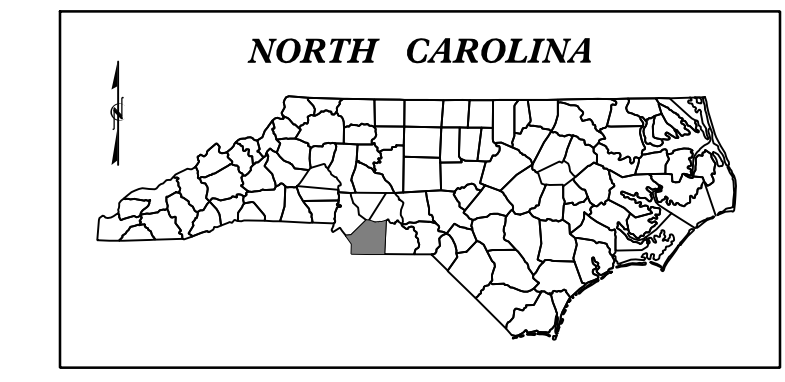


**FINAL PLANS**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**UNION COUNTY**

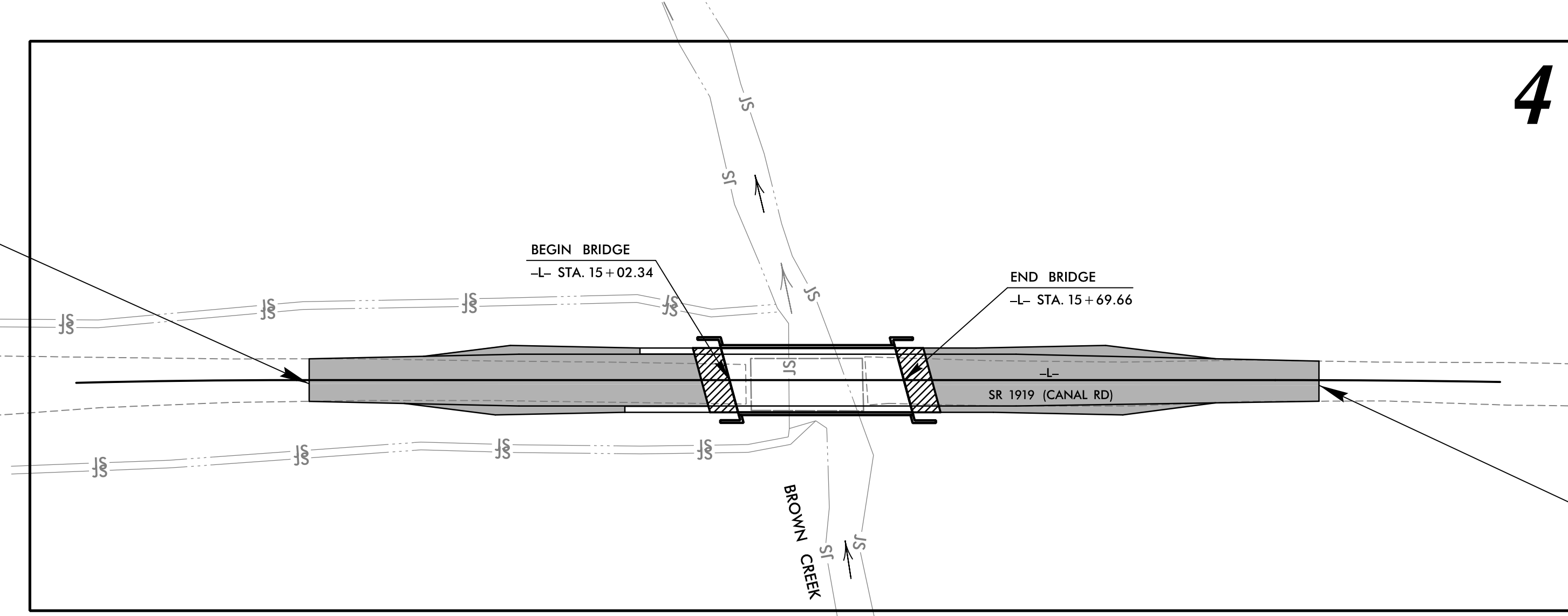
**LOCATION: BRIDGE #110 OVER BROWN CREEK  
ON SR 1919 (CANAL RD)  
TYPE OF WORK: GRADING, PAVING, DRAINAGE, & STRUCTURE**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.10.R.109	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.10.R.109		P.E.	
17BP.10.R.109		ROW & UTILITIES	
17BP.10.R.109		CONSTRUCTION	



**BEGIN PROJECT WBS 17BP.10.R.109**  
-L- STA. 13 + 40.00

TO STATELINE RD  
(SR 1921)

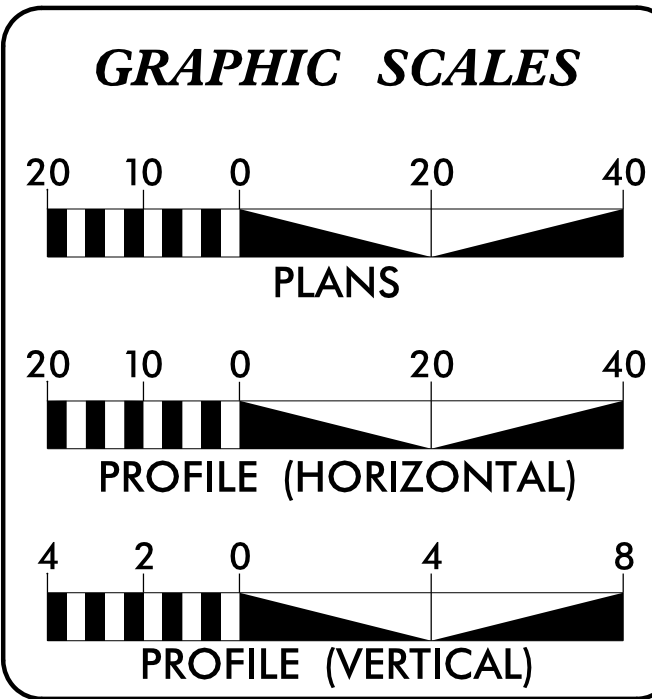


TO WHITE STORE  
PAGELAND RD  
(SR 1916)

**END PROJECT WBS 17BP.10.R.109**  
-L- STA. 17 + 30.00

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

**CONTRACT:**



**DESIGN DATA**

ADT 2000 =	50
ADT 2025 =	100
DHV =	N/A
D =	N/A
T =	N/A
V =	45 MPH
<b>FUNC. CLASSIFICATION:</b>	
LOCAL	

**PROJECT LENGTH**

<b>LENGTH OF ROADWAY WBS PROJECT 17BP.10.R.109 =</b>	0.061 MILES
<b>LENGTH OF STRUCTURE WBS PROJECT 17BP.10.R.109 =</b>	0.013 MILES
<b>TOTAL LENGTH OF WBS PROJECT 17BP.10.R.109 =</b>	0.074 MILES

NCDOT CONTACT: GARLAND HAYWOOD, PE  
Division Bridge Manager

**PLANS PREPARED FOR THE NCDOT BY:**

**STV** 100 Years  
STV Engineers, Inc.  
900 West Trade St., Suite 715  
Charlotte, NC 28202  
NC License Number F-0991

<b>2018 STANDARD SPECIFICATIONS</b>	
<b>RIGHT OF WAY DATE:</b>	FEBRUARY 16, 2018
<b>LETTING DATE:</b>	AUGUST 20, 2018
<b>PROJECT ENGINEER:</b>	NIKKI T. HONEYCUTT, PE
<b>PROJECT DESIGNER:</b>	CLARK E. GROVES

**HYDRAULICS ENGINEER**

DocuSigned by:  
Shirshant Sharma  
SIGNATURE: Shirshant Sharma  
7/16/2018

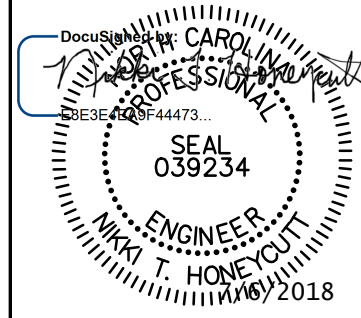
**ROADWAY DESIGN ENGINEER**

DocuSigned by:  
Nikki T. Honeycutt  
SIGNATURE: Nikki T. Honeycutt  
7/6/2018





**STV Engineers, Inc.**  
 800 West Trade St., Suite 715  
 Charlotte, NC 28202  
 NC License Number F-0991

PROJECT REFERENCE NO. <i>17BP-10.R.109</i>	SHEET NO. <i>1A</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

**INDEX OF SHEETS**

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2C-1 THRU 2C-2	ROADWAY DETAILS
3	SUMMARIES AND TYPICAL SECTIONS SHEET
4	PLAN AND PROFILE SHEET
TMP-1	TRAFFIC MANAGEMENT PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
X-1 THRU X-5	CROSS-SECTIONS
S-1 THRU S-13	STRUCTURE PLANS
SN	STANDARD NOTES

**GENERAL NOTES**

GENERAL NOTES: 2018 SPECIFICATIONS EFFECTIVE: 01-01-2018

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 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.

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.

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

RIGHT-OF-WAY MARKERS:  
 ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY THE DIVISION.

**STANDARD DRAWINGS**

2018 ROADWAY ENGLISH STANDARD DRAWINGS EFF. January, 2018

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - 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
<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 4 - MAJOR STRUCTURES</b>	
422.02	Type II - Modified Approach Fill
<b>DIVISION 5 - SUBGRADE, BASES AND SHOULDERS</b>	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
<b>DIVISION 8 - INCIDENTALS</b>	
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Junction Box - for Cast Iron Double Frame and Grates
862.01	Guardrail Placement
862.02	Guardrail Installation
876.02	Guide for Rip Rap at Pipe Outlets
<b>DIVISION 11 - WORK ZONE TRAFFIC CONTROL</b>	
1101.03	Temporary Road Closures
1110.01	Stationary Work Zone Signs - Mounting Height & Lateral Clearance
1145.01	Barricades - Type III
<b>DIVISION 16 - EROSION CONTROL AND ROADSIDE DEVELOPMENT</b>	
1605.01	Temporary Silt Fence
1606.01	Special Sediment Control Fence
1607.01	Gravel Construction Entrance
1622.01	Temporary Berms And Slope Drains
1631.01	Matting Installation
1633.01	Temporary Rock Silt Check Type A
1633.02	Temporary Rock Silt Check Type B



# STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

## BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Computed Property Corner	-----x
Property Monument	□ ECM
Parcel/Sequence Number	⑩23
Existing Fence Line	-x-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---
Existing Historic Property Boundary	---HPB---
Known Contamination Area: Soil	☠-S-☠
Potential Contamination Area: Soil	☠-S-☠
Known Contamination Area: Water	☠-W-☠
Potential Contamination Area: Water	☠-W-☠
Contaminated Site: Known or Potential	☠?

## 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	---WLB---
Proposed Lateral, Tail, Head Ditch	-----
False Sump	▽

## RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

## RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	◆
Exist Permanent Easment Pin and Cap	◇
New Permanent Easement Pin and Cap	◆
Vertical Benchmark	⊠
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	-----
New Right of Way Line with Pin and Cap	○ R/W
New Right of Way Line with Concrete or Granite R/W Marker	○ R/W
New Control of Access Line with Concrete CA Marker	○ CA
Existing Control of Access	○ CA
New Control of Access	○ CA
Existing Easement Line	---E---
New Temporary Construction Easement	---E---
New Temporary Drainage Easement	---TDE---
New Permanent Drainage Easement	---PDE---
New Permanent Drainage / Utility Easement	---DUE---
New Permanent Utility Easement	---PUE---
New Temporary Utility Easement	---TUE---
New Aerial Utility Easement	---AUE---

## 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	☼

Note: Not to Scale \*S.U.E. = Subsurface Utility Engineering

Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----

## EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
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	-----

## UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○ P
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	○
H-Frame Pole	●
U/G Power Line LOS B (S.U.E.*)	-----
U/G Power Line LOS C (S.U.E.*)	-----
U/G Power Line LOS D (S.U.E.*)	-----

## TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	○ T
Telephone Pedestal	□ T
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	○
U/G Telephone Cable LOS B (S.U.E.*)	-----
U/G Telephone Cable LOS C (S.U.E.*)	-----
U/G Telephone Cable LOS D (S.U.E.*)	-----
U/G Telephone Conduit LOS B (S.U.E.*)	-----
U/G Telephone Conduit LOS C (S.U.E.*)	-----
U/G Telephone Conduit LOS D (S.U.E.*)	-----
U/G Fiber Optics Cable LOS B (S.U.E.*)	-----
U/G Fiber Optics Cable LOS C (S.U.E.*)	-----
U/G Fiber Optics Cable LOS D (S.U.E.*)	-----

## WATER:

Water Manhole	○ W
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	-----
U/G Water Line LOS C (S.U.E.*)	-----
U/G Water Line LOS D (S.U.E.*)	-----
Above Ground Water Line	---A/G Water---

## TV:

TV Pedestal	□
TV Tower	⊗
U/G TV Cable Hand Hole	○
U/G TV Cable LOS B (S.U.E.*)	-----
U/G TV Cable LOS C (S.U.E.*)	-----
U/G TV Cable LOS D (S.U.E.*)	-----
U/G Fiber Optic Cable LOS B (S.U.E.*)	-----
U/G Fiber Optic Cable LOS C (S.U.E.*)	-----
U/G Fiber Optic Cable LOS D (S.U.E.*)	-----

## GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	-----
U/G Gas Line LOS C (S.U.E.*)	-----
U/G Gas Line LOS D (S.U.E.*)	-----
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---
SS Forced Main Line LOS B (S.U.E.*)	-----
SS Forced Main Line LOS C (S.U.E.*)	-----
SS Forced Main Line LOS D (S.U.E.*)	-----

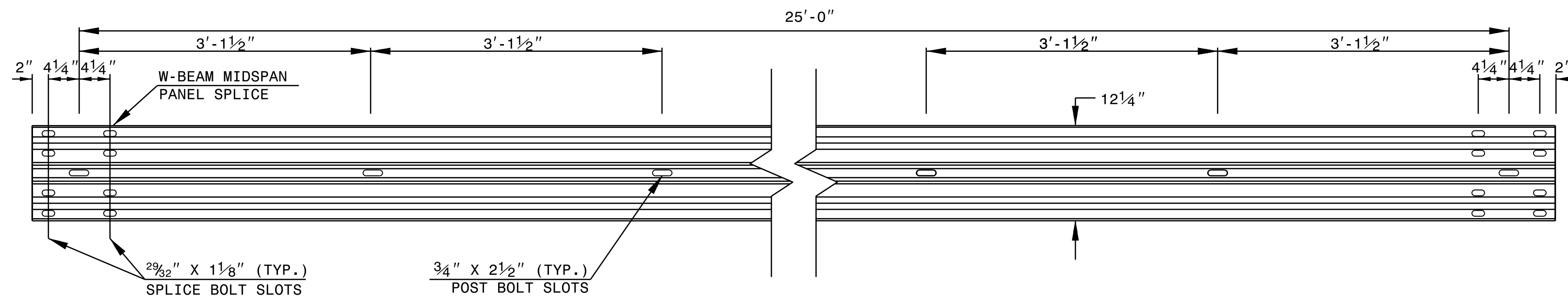
## MISCELLANEOUS:

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

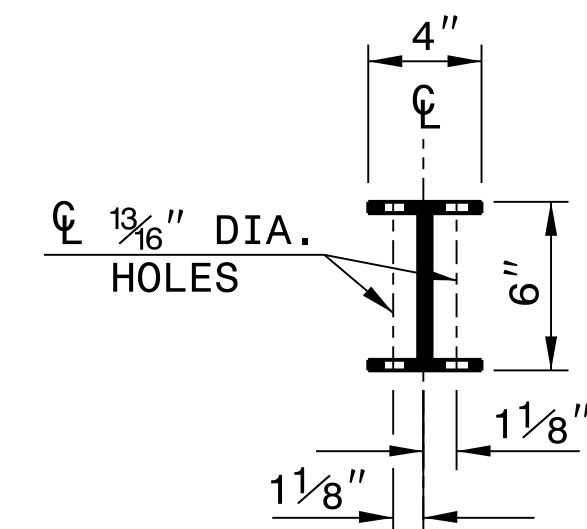
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

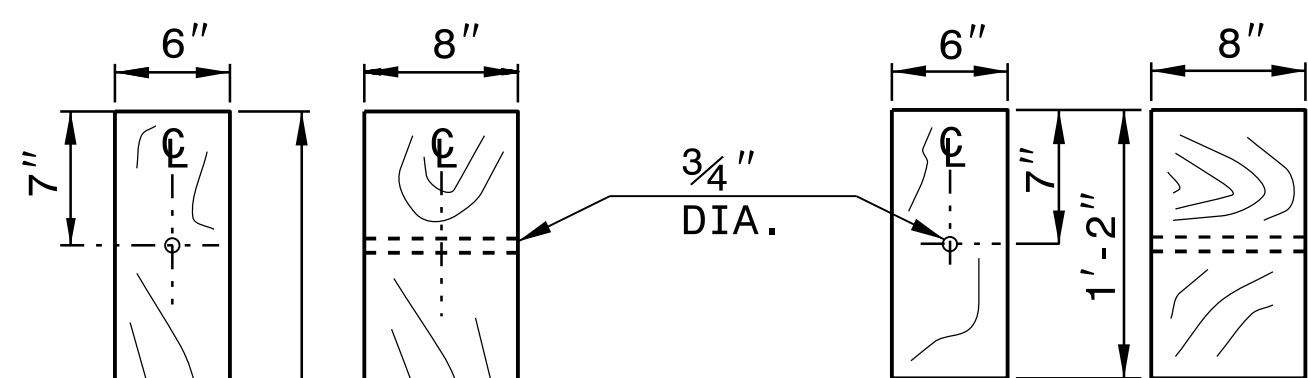
SHEET 6 OF 8  
**862D02**



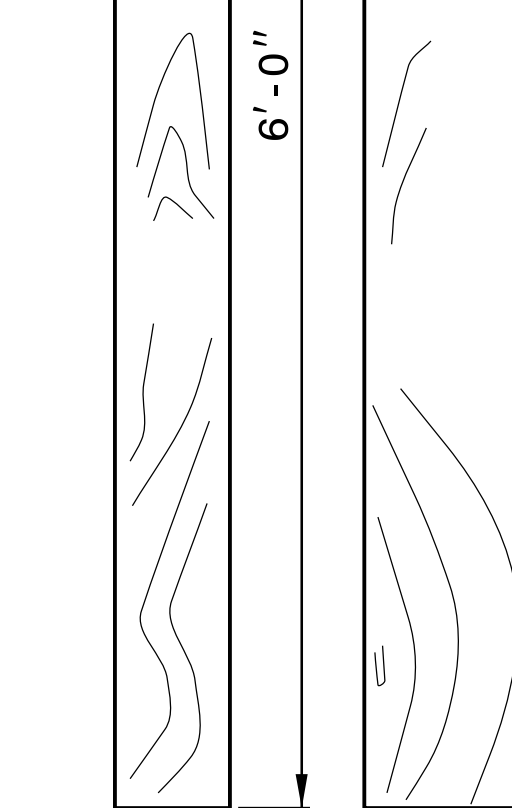
**STANDARD W-BEAM GUARDRAIL**



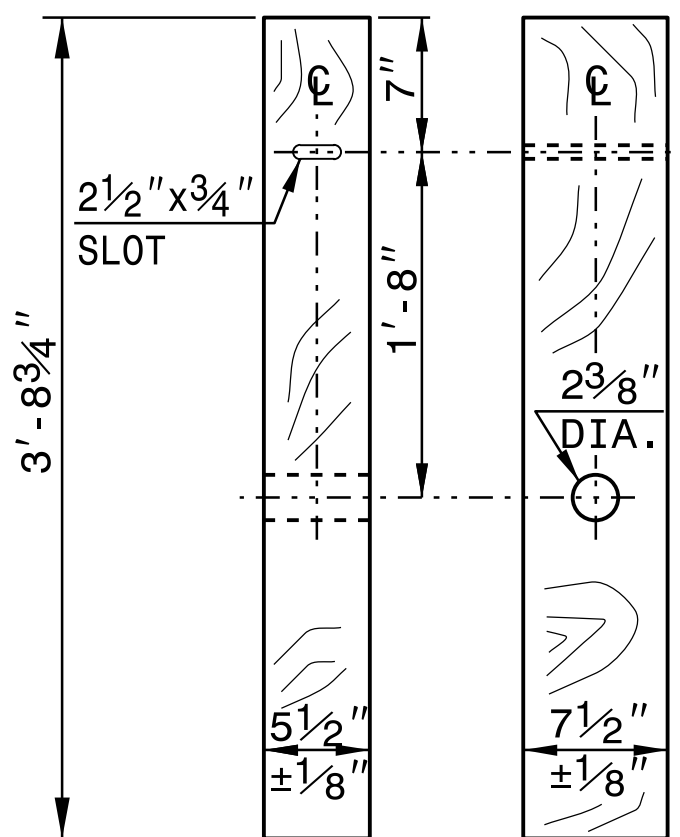
**PLAN**



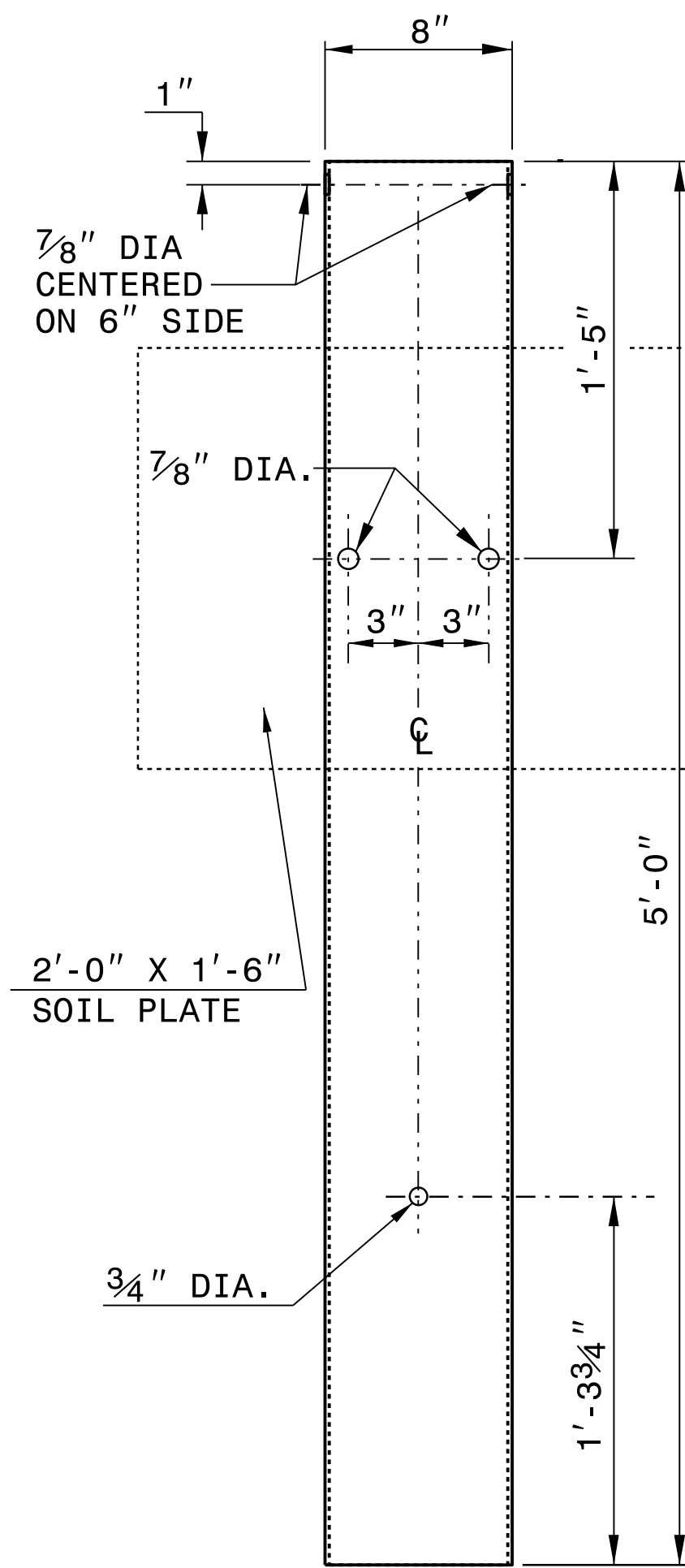
**WOOD OFFSET BLOCK  
(FOR WOOD POSTS)**



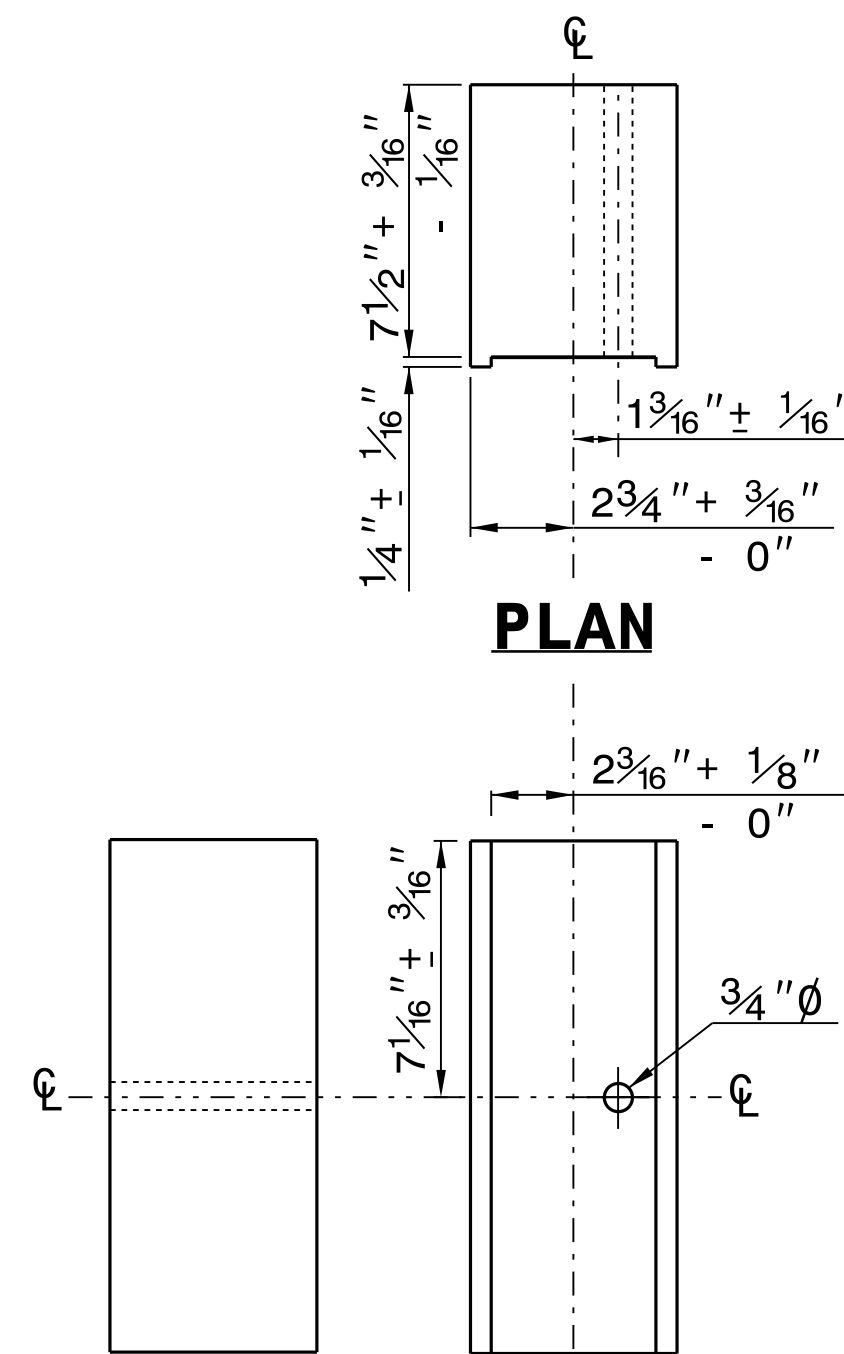
**STANDARD  
LINE POST**



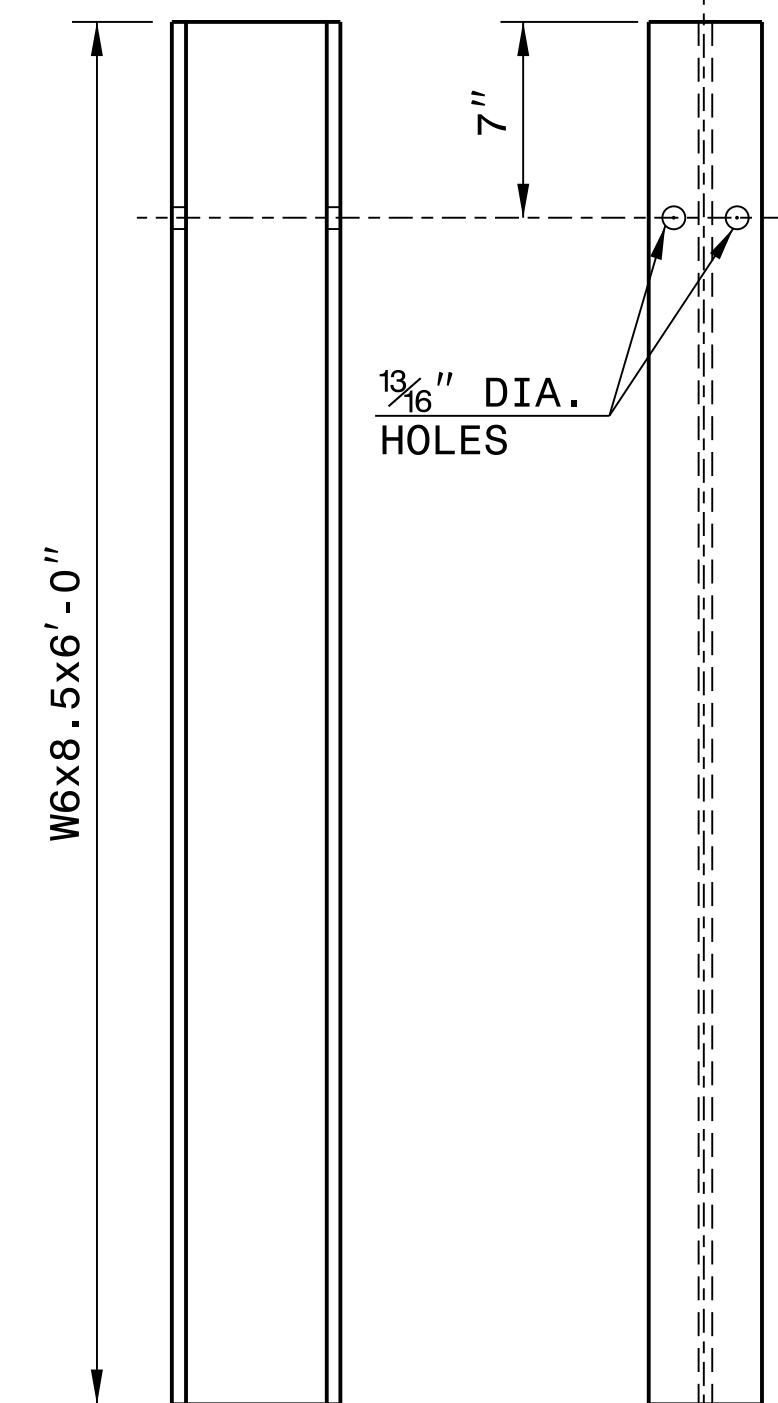
**SHORT WOOD  
BREAKAWAY POST**



**STEEL TUBE  
TS 6"x8"x0.1875"**



**ROUTED  
OFFSET BLOCK**



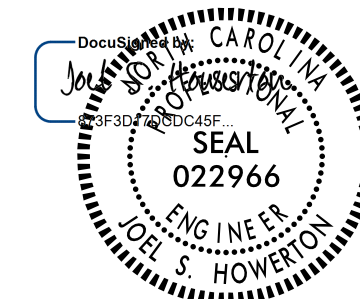
**"W6" STEEL POST**

**SYSTEM PARTS**

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

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 6 OF 8  
**862D02**



7/6/2018

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

**SEE TITLE BLOCK**

ORIGINAL BY: J. HOWERTON DATE: 3-7-2018  
MODIFIED BY: DATE: \_\_\_\_\_  
CHECKED BY: DATE: \_\_\_\_\_  
FILE SPEC.: \_\_\_\_\_







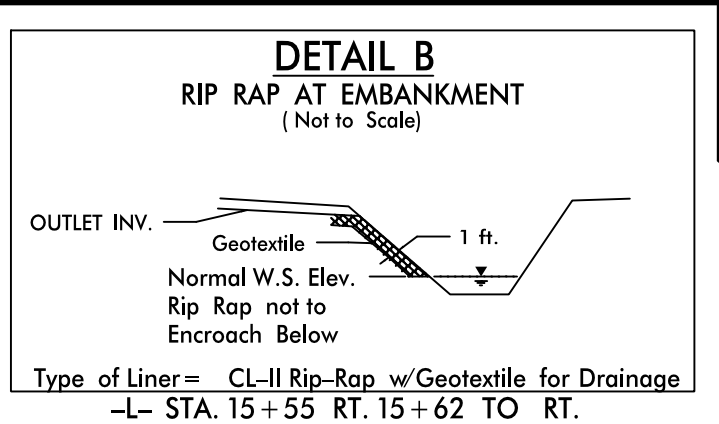
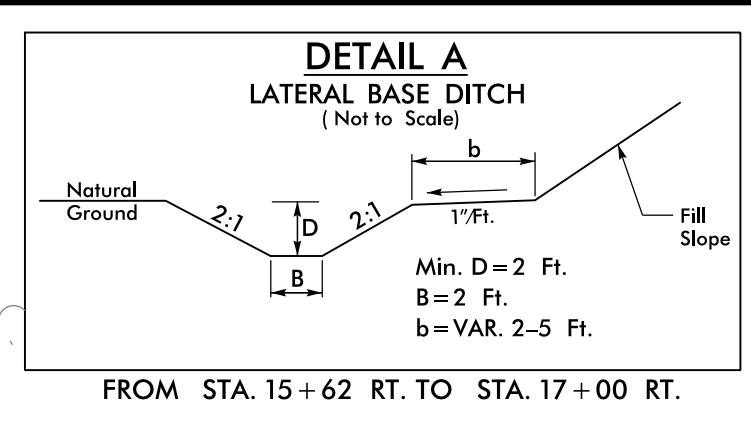




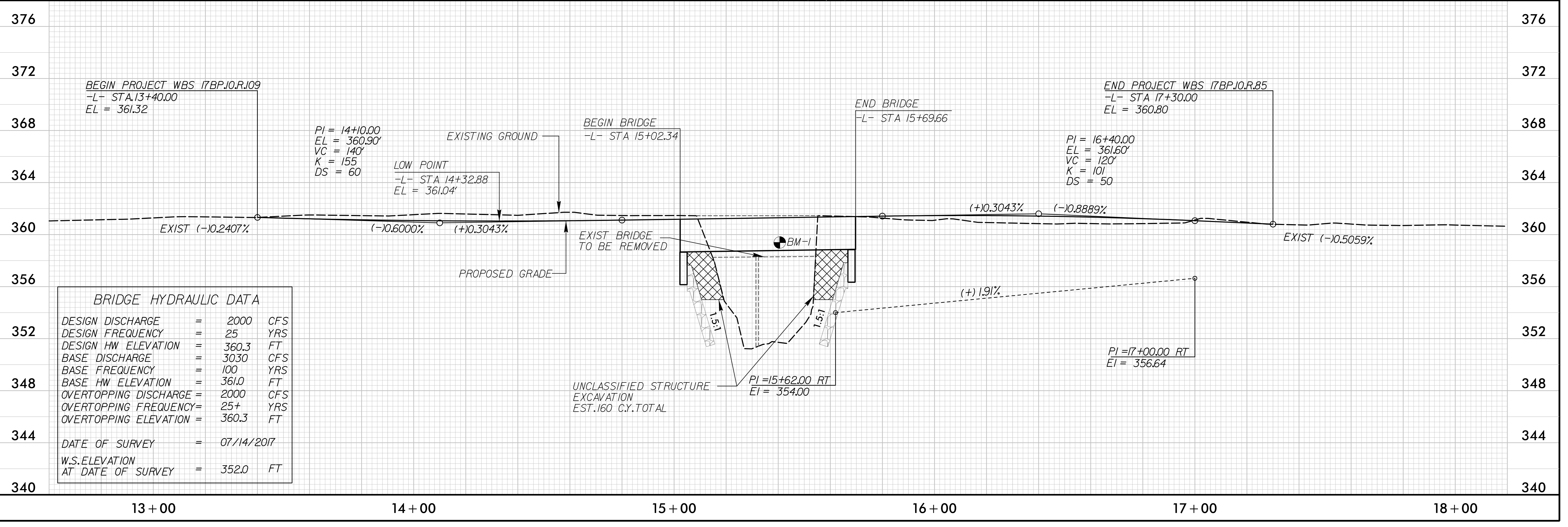
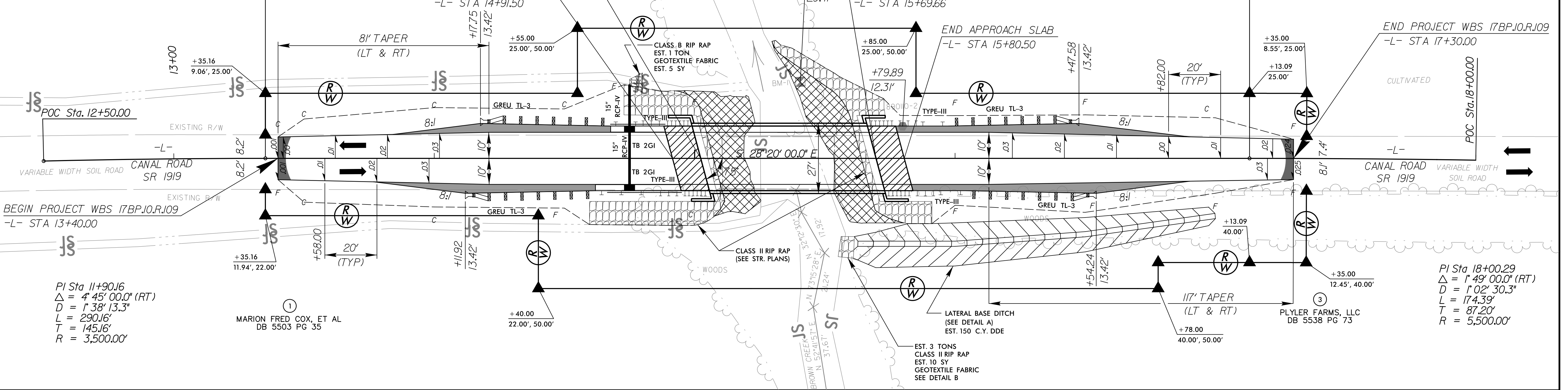
8/17/19

**DATUM DESCRIPTION**  
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY SEPI FOR MONUMENT "890110-2" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 394006.4454(ft) EASTING: 1593952.4135(ft) ELEVATION: 360.96(ft)  
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99987609 AND THE (1/X) IS 1.00012393. THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "890110-2" TO -L- STATION 13+40.00 IS N 31°16'15.1574"W 240.201 (ft)  
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

BM-1  
 890110-2 N 394049.16 E 1593948.81 ELEV 359.39'  
 N 394006.4454 E 1593952.4135 ELEV 360.96'



PROJECT REFERENCE NO. <b>17BP.10.R.109</b>	SHEET NO. <b>4</b>
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



**BRIDGE HYDRAULIC DATA**

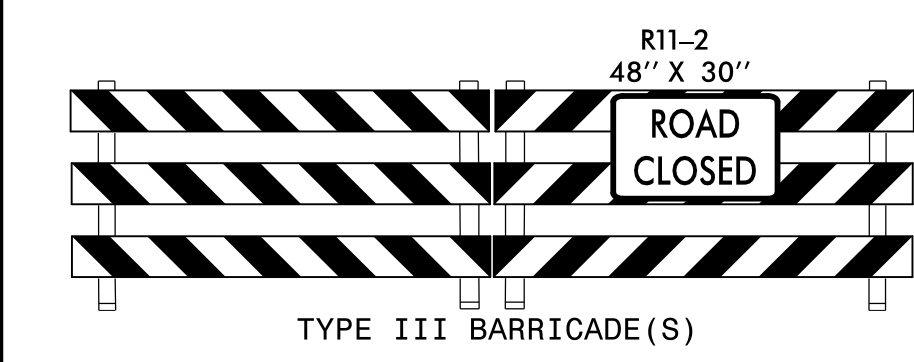
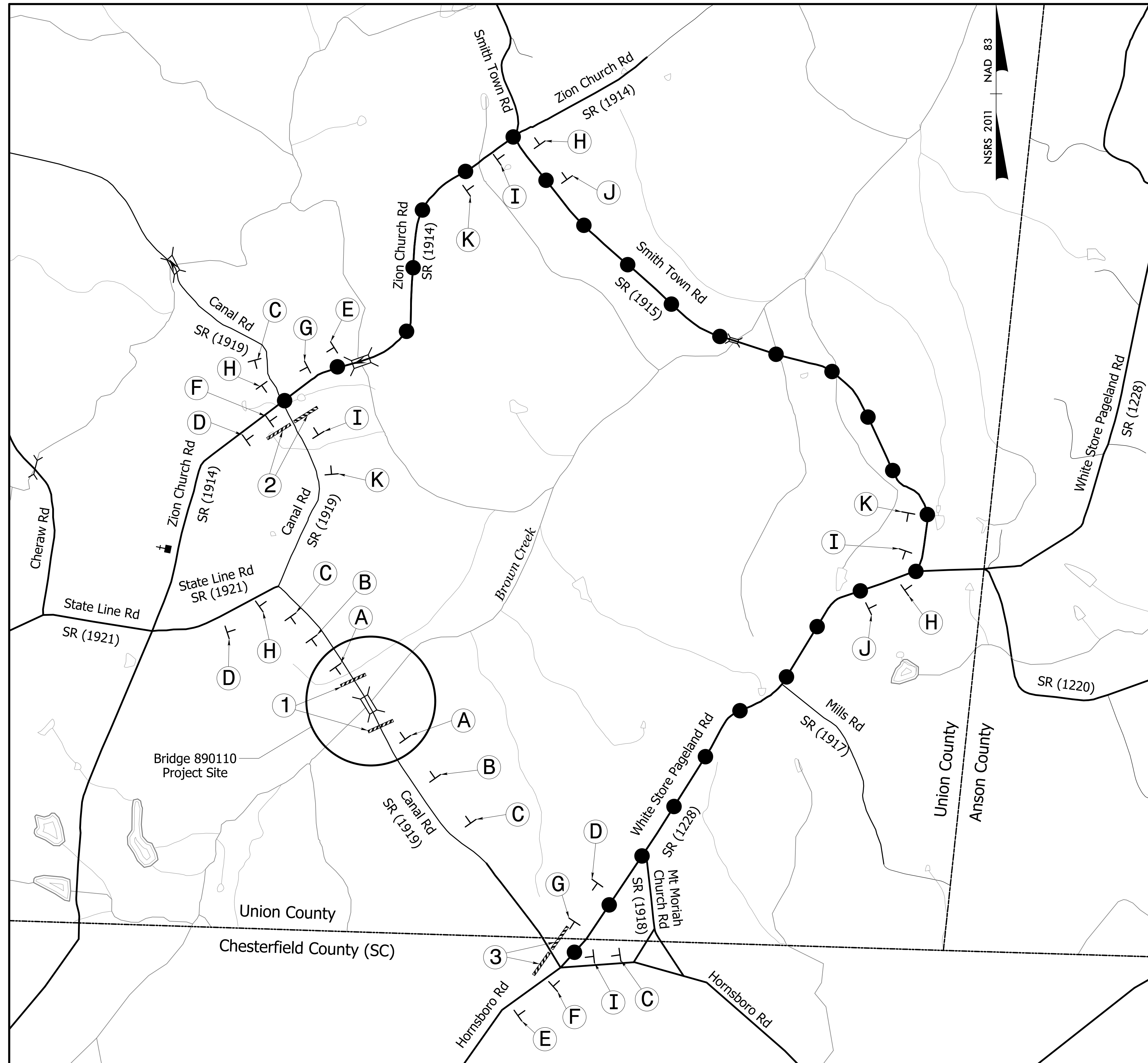
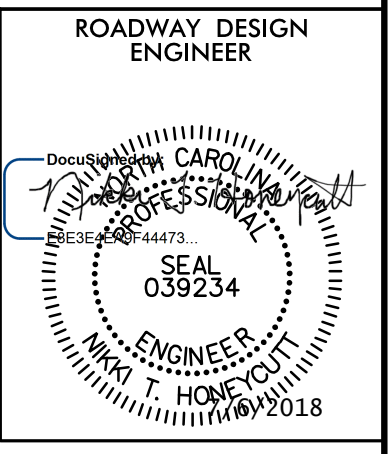
DESIGN DISCHARGE	=	2000	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	360.3	FT
BASE DISCHARGE	=	3030	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	361.0	FT
OVERTOPPING DISCHARGE	=	2000	CFS
OVERTOPPING FREQUENCY	=	25+	YRS
OVERTOPPING ELEVATION	=	360.3	FT
DATE OF SURVEY	=	07/14/2017	
W.S. ELEVATION AT DATE OF SURVEY	=	352.0	FT

F:\2018\17BP.10.R.109\Proj\Sheet\17BP.10.R.109\_rdy\_psh04.dgn  
 8/17/19

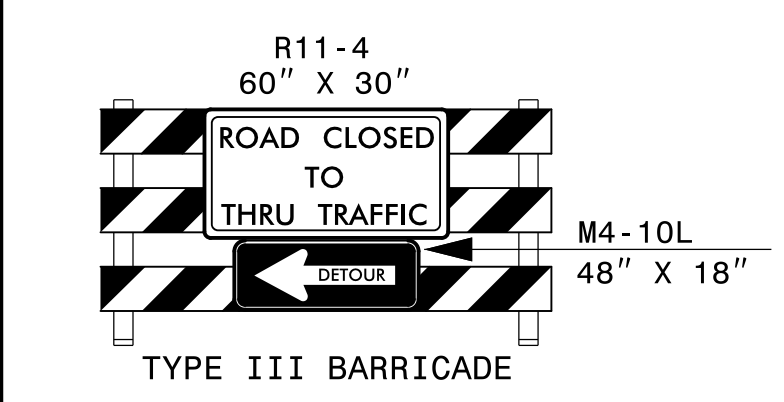


# OFF-SITE DETOUR SIGNING AND ROAD CLOSURE SIGNING

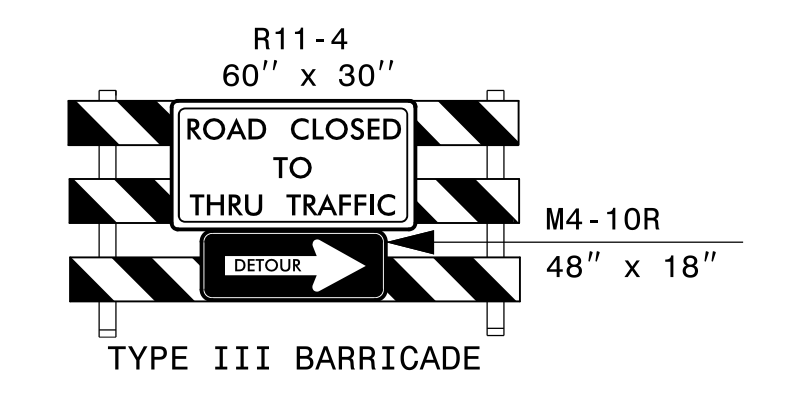
PROJECT REFERENCE NO. 17BP10.R109	SHEET NO. TMP-1
RW SHEET NO.	
<b>STV Engineers, Inc.</b> 900 West Trade St., Suite 715 Charlotte, NC 28202 NC License Number F-0991	
<b>DOCUMENT NOT CONSIDERED FINAL          UNLESS ALL SIGNATURES COMPLETED</b>	



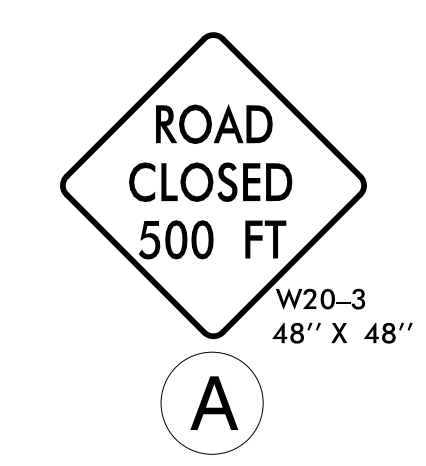
1



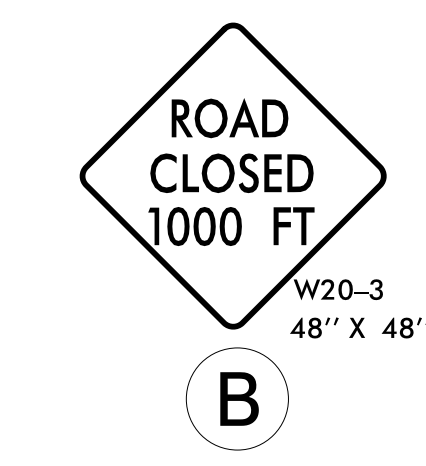
2



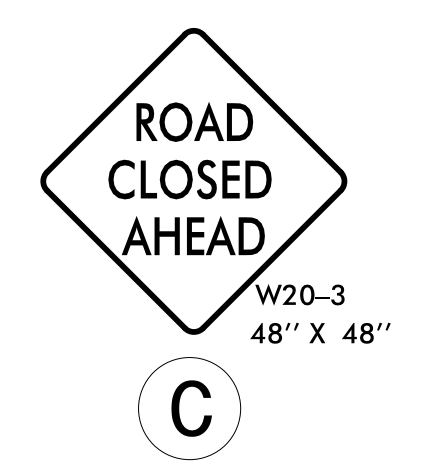
3



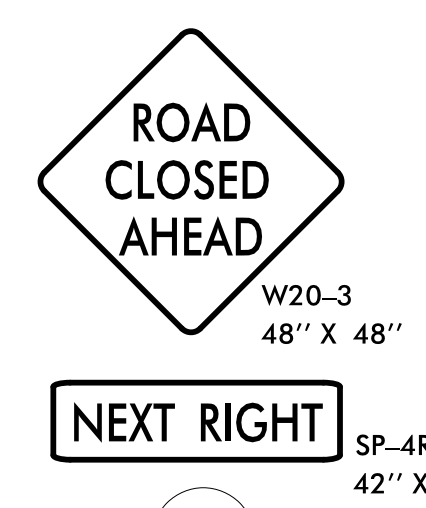
A



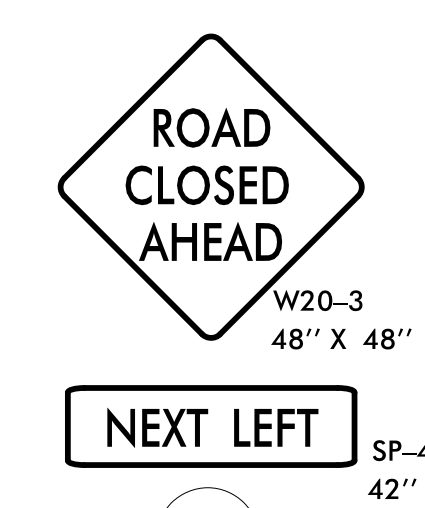
B



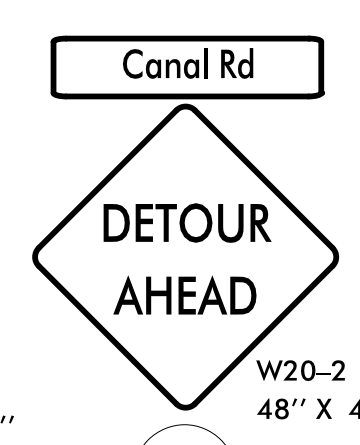
C



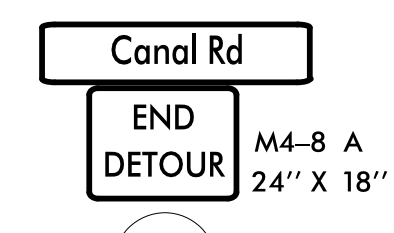
D



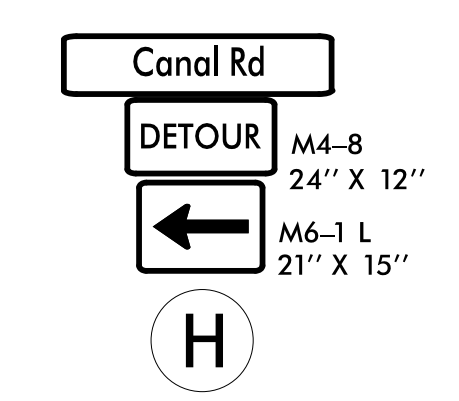
E



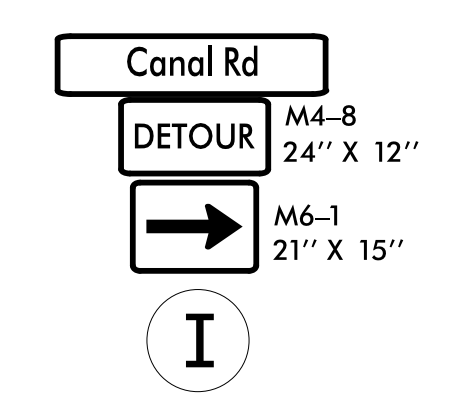
F



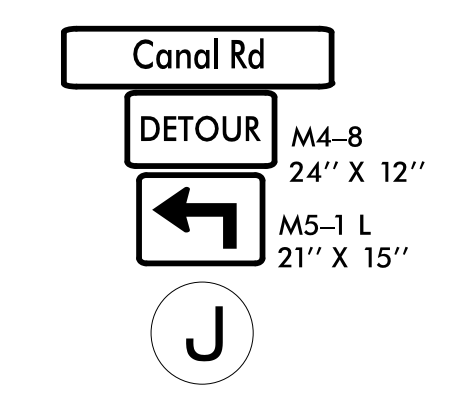
G



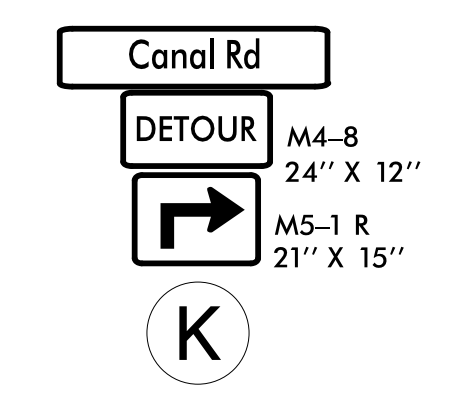
H



I

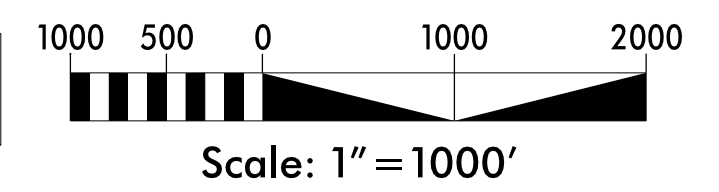


J



K

SEE ROADWAY STD DWG 1101.03, SHEET 1 OF 9 FOR ADVANCE WARNING AND BARRICADE PLACEMENT.

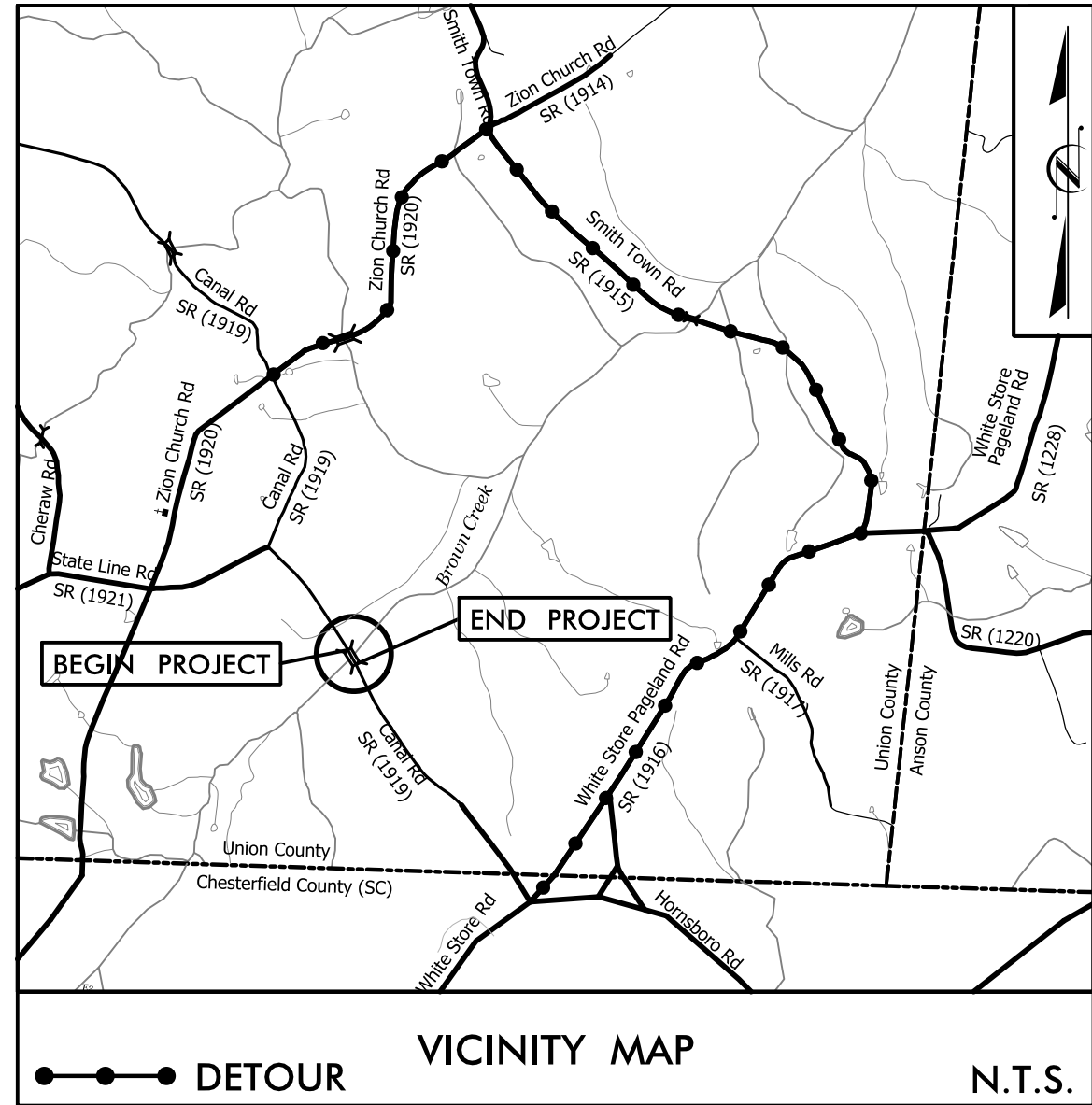


7/5/2018 R:\Traffic\TrafficContr\17BP10.R109\_rdy\_tmp01.dgn cgroves



**PROJECT WBS: 17BP.10.R.109**

See Sheet 1A For Index of Sheets  
See Sheet 1B For Standard Symbol Sheet



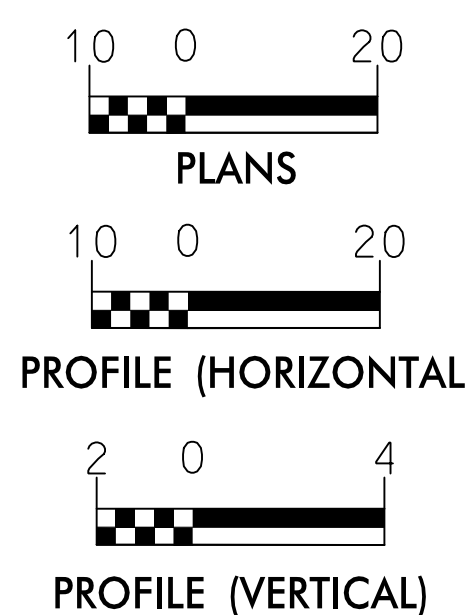
THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

BEGIN WBS PROJECT WBS 17BP.10.R.109  
-L- STA. 13 + 40.00

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT  
Refer To E. C. Special Provisions for Special Considerations.

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

**GRAPHIC SCALE**



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 1, 2016 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

Prepared in the Office of:



2018 STANDARD SPECIFICATIONS

Designed by:

**JORDAN BENDL** 3928  
NAME LEVEL III CERTIFICATION NO.

Reviewed in the Office of:



2018 STANDARD SPECIFICATIONS

Reviewed by:

**PHIL SUGGS, CPESC**

**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 Guide for 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 for Pumped Effluent	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	

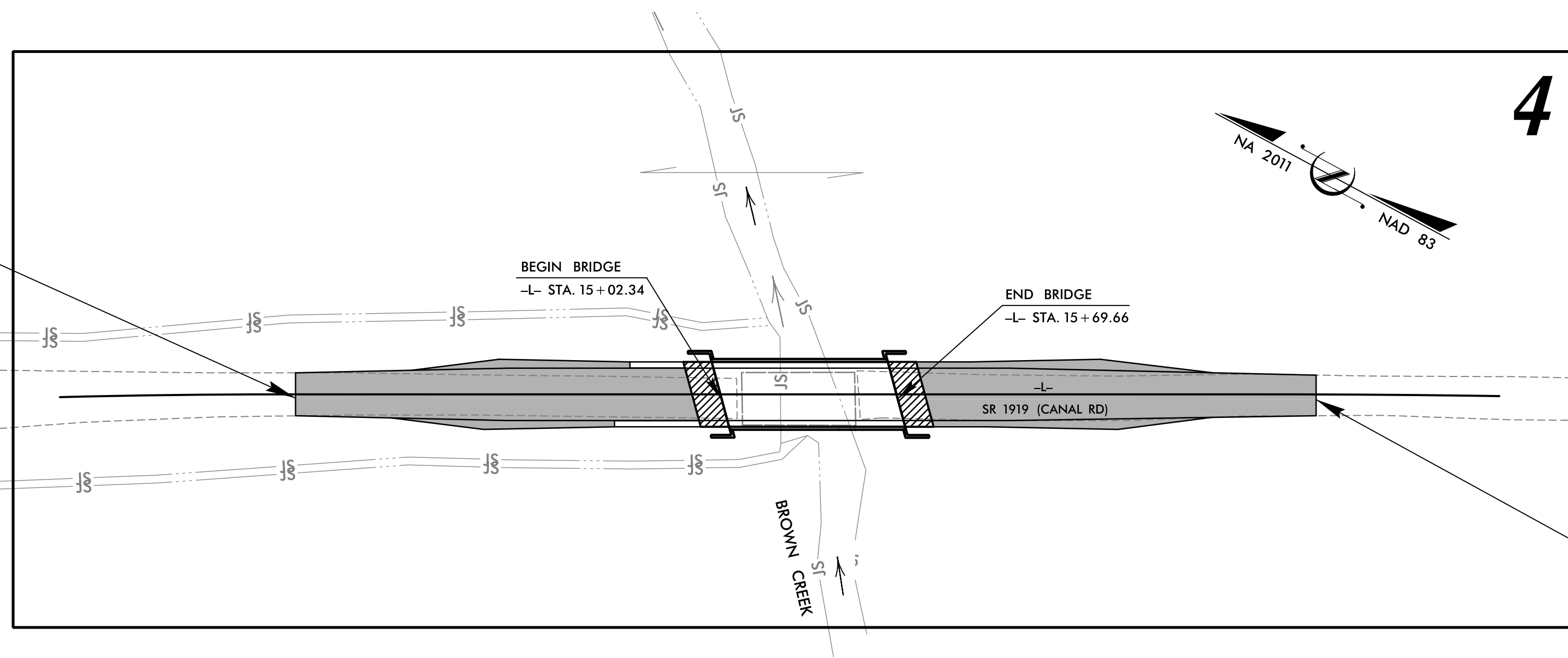
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED  
HIGHWAY EROSION CONTROL

**UNION COUNTY**

LOCATION: BRIDGE #110 OVER BROWN CREEK  
ON SR 1919 (CANAL RD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, & STRUCTURE



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.10.R.109	1	7
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.10.R.109		P.E.	
17BP.10.R.109		ROW & UTILITES	
17BP.10.R.109		CONSTRUCTION	

**EROSION AND SEDIMENT CONTROL MEASURES**

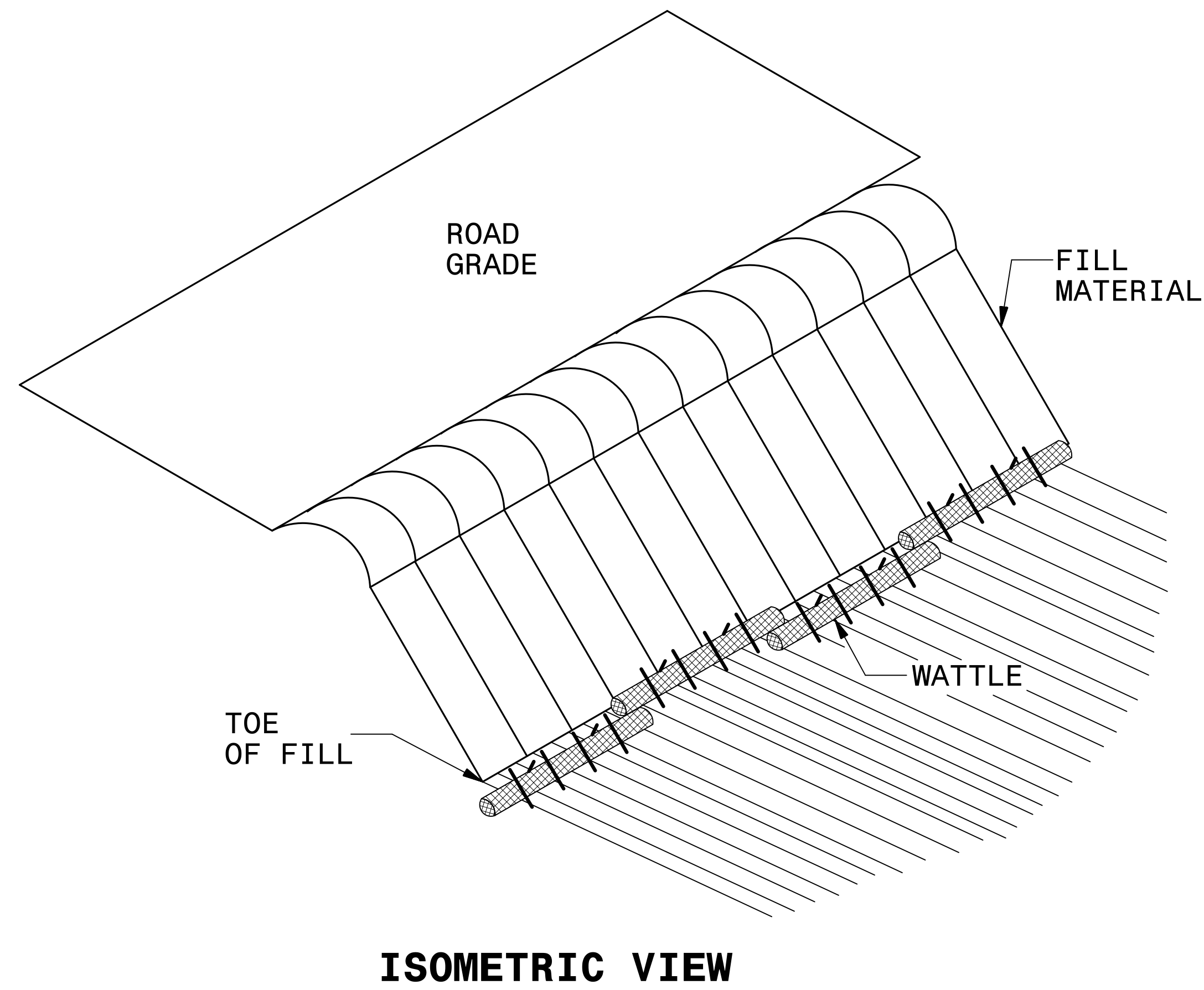
Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	▲▲▲▲▲▲▲▲
1622.01	Guide for Temporary Berms and Slope Drains	→
1630.02	Silt Basin Type B	▭
1633.01	Temporary Rock Silt Check Type-A	▨
	Temporary 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	U
1635.02	Rock Pipe Inlet Sediment Trap Type-B	U
1630.04	Stilling Basin for Pumped Effluent	▭
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.

303(d) IMPAIRED WATER(S) EXIST ON THIS PROJECT  
303(d) Impaired Water Zone(s) Exist  
From Sta. Begin to Sta. End  
Refer To E. C. Special Provisions for Special Considerations.

END WBS PROJECT WBS 17BP.10.R.109  
-L- STA. 17 + 30.00

# COIR FIBER WATTLE BARRIER DETAIL



**NOTES:**

USE MINIMUM 18 IN. NOMINAL DIAMETER COIR FIBER (COCONUT) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 2 TO 3 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLES ON TOE OF SLOPE.

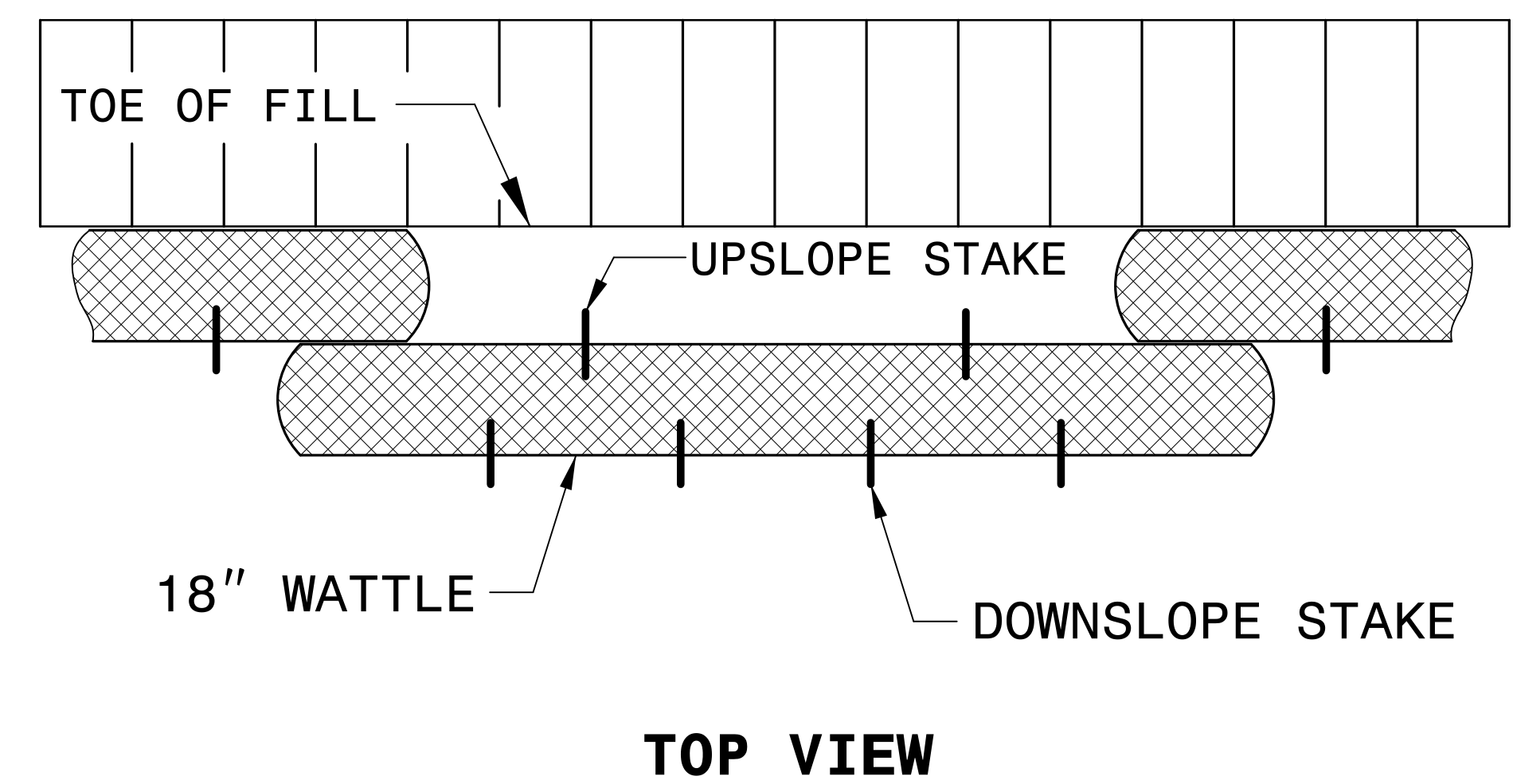
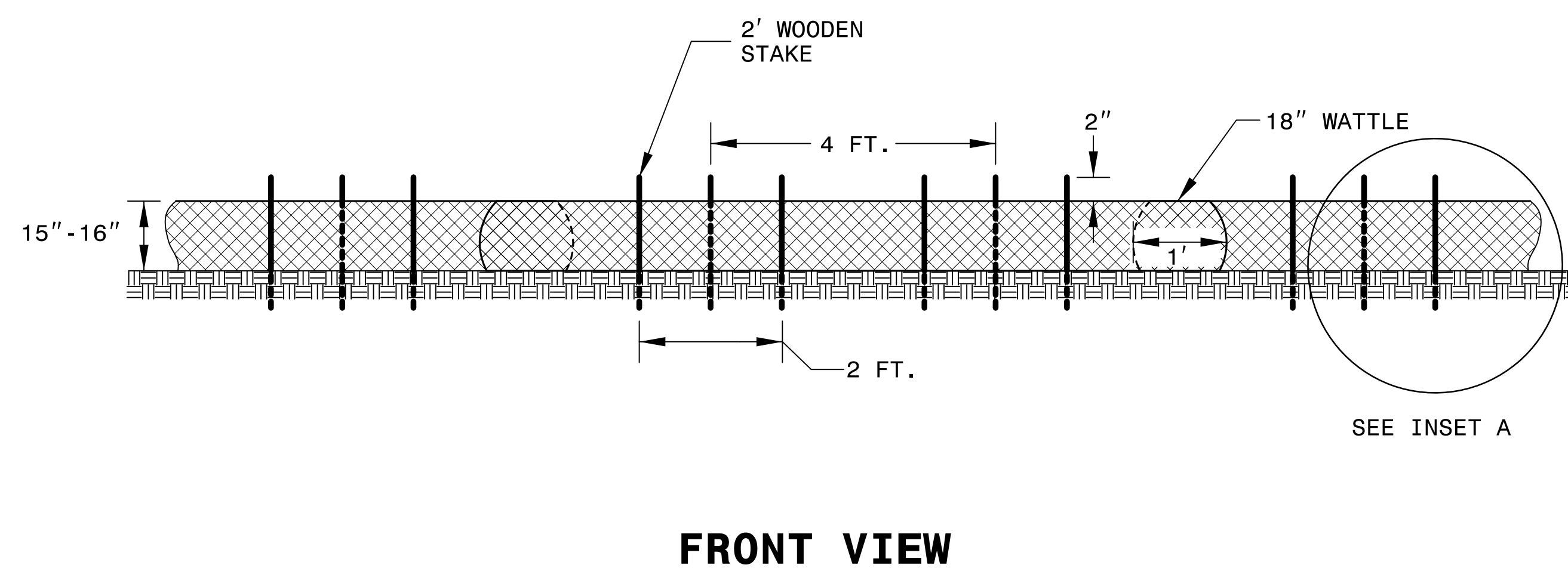
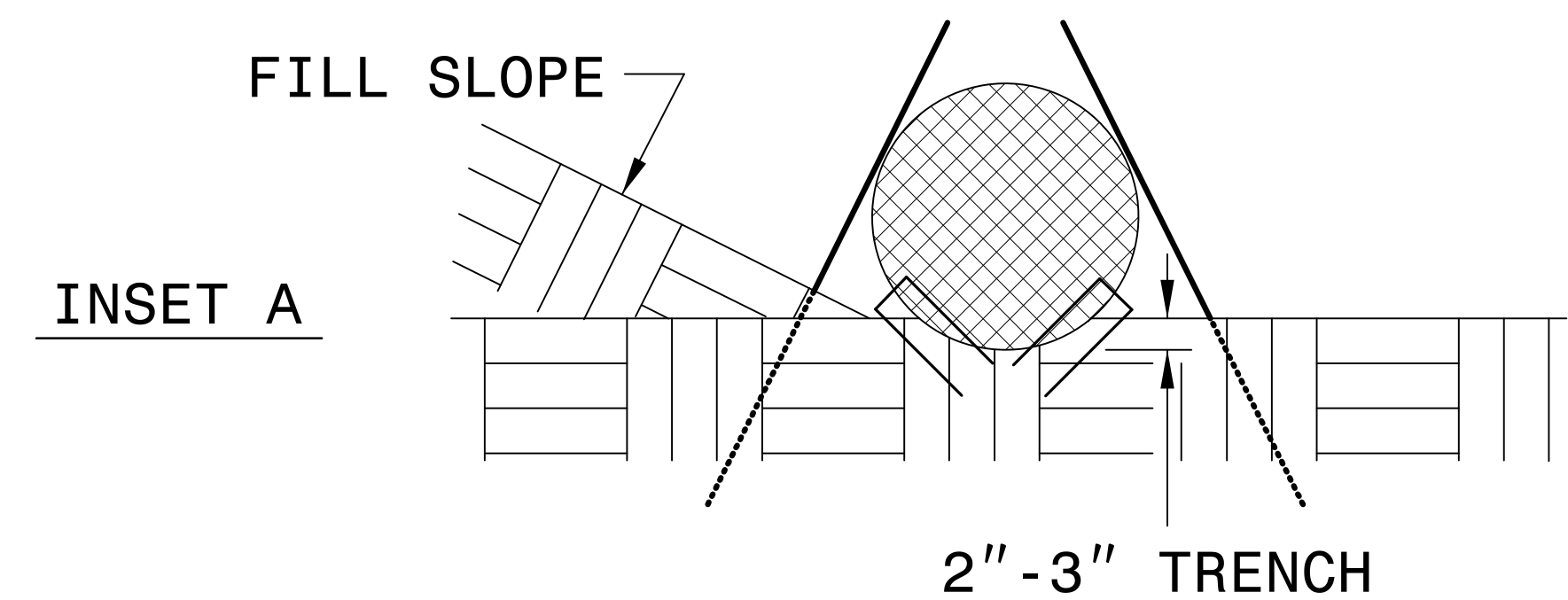
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

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


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.

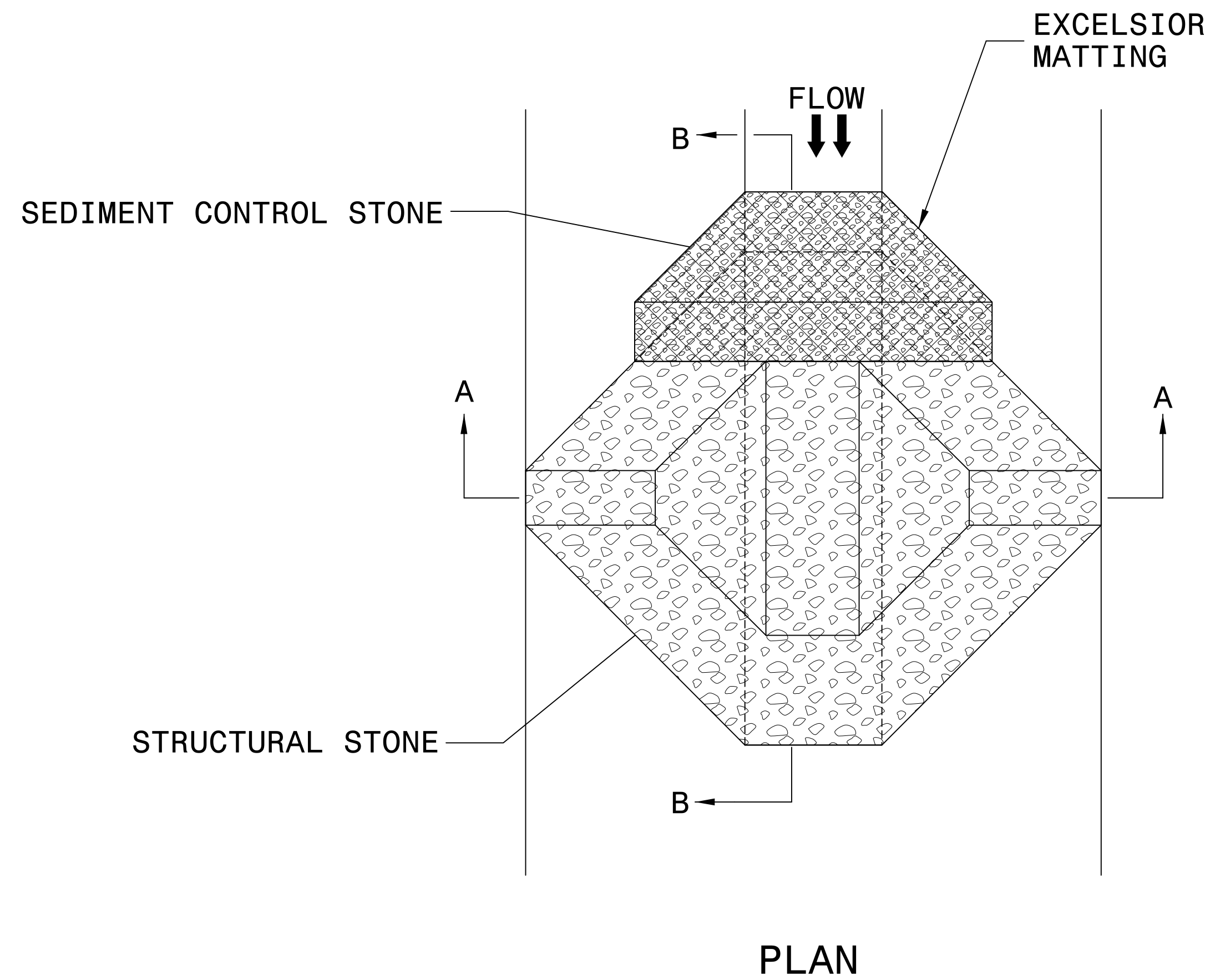
FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 25 FT.





PROJECT REFERENCE NO. 17BP.10.R.109	SHEET NO. EC-2A
RW SHEET NO.	
 STV Engineers, Inc. 900 West Trade St., Suite 715 Charlotte, NC 28202 NC License Number F-0991	

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



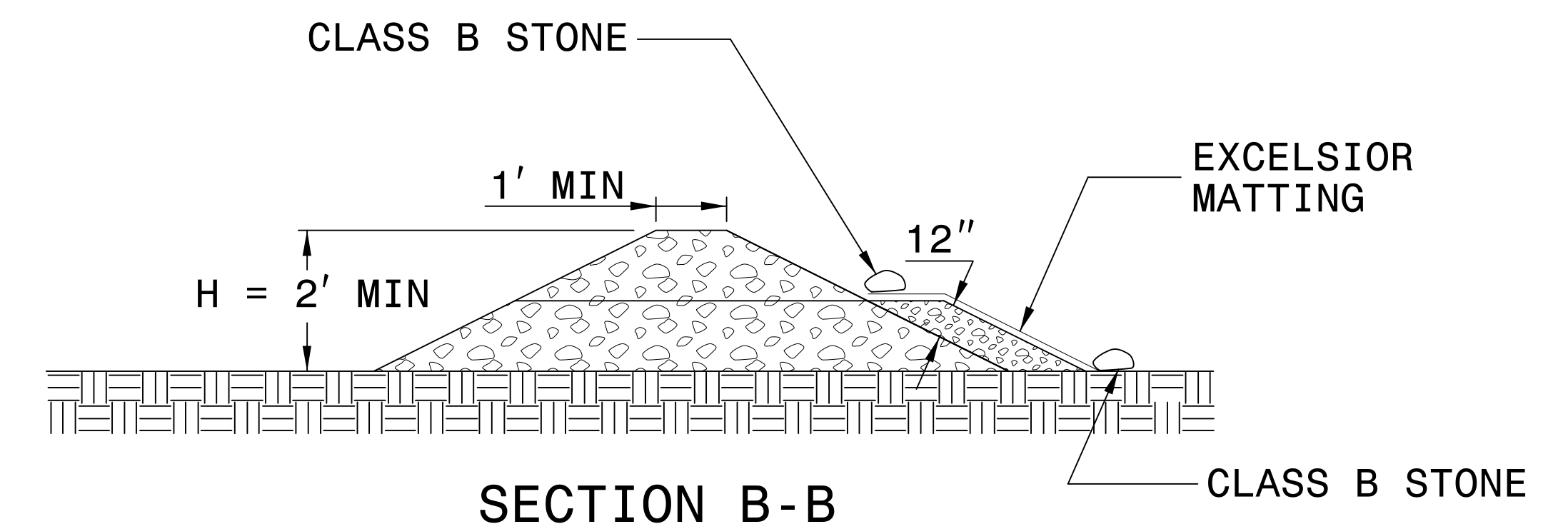
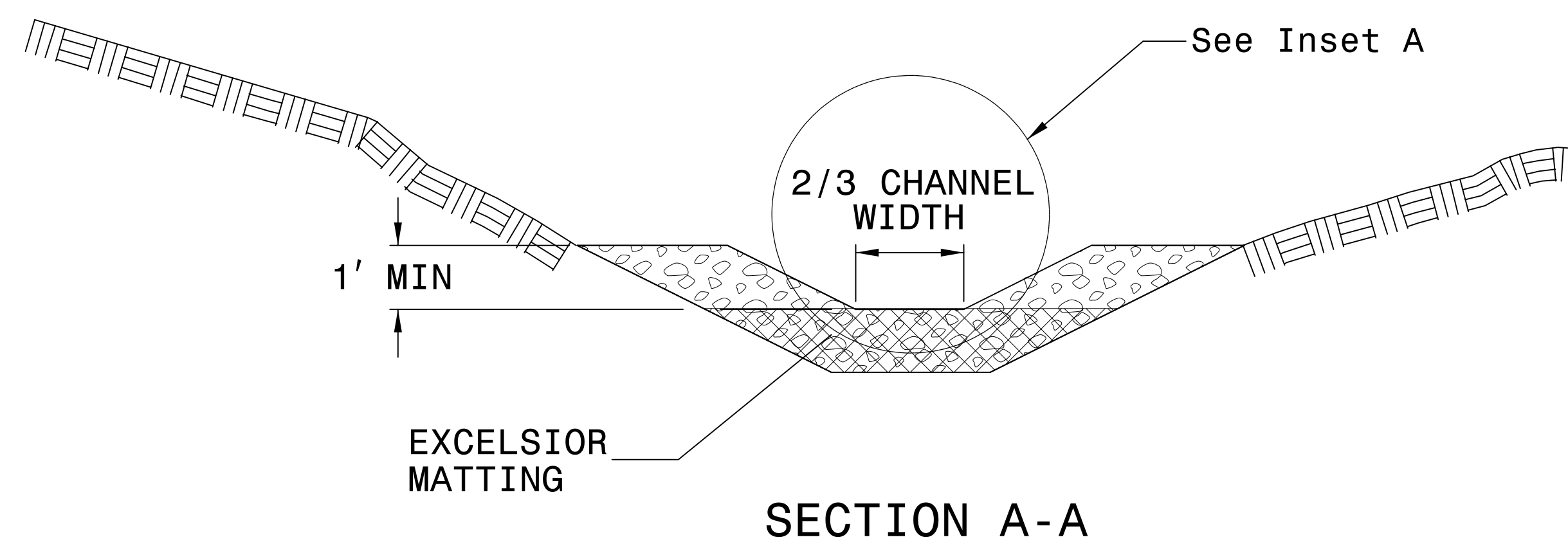
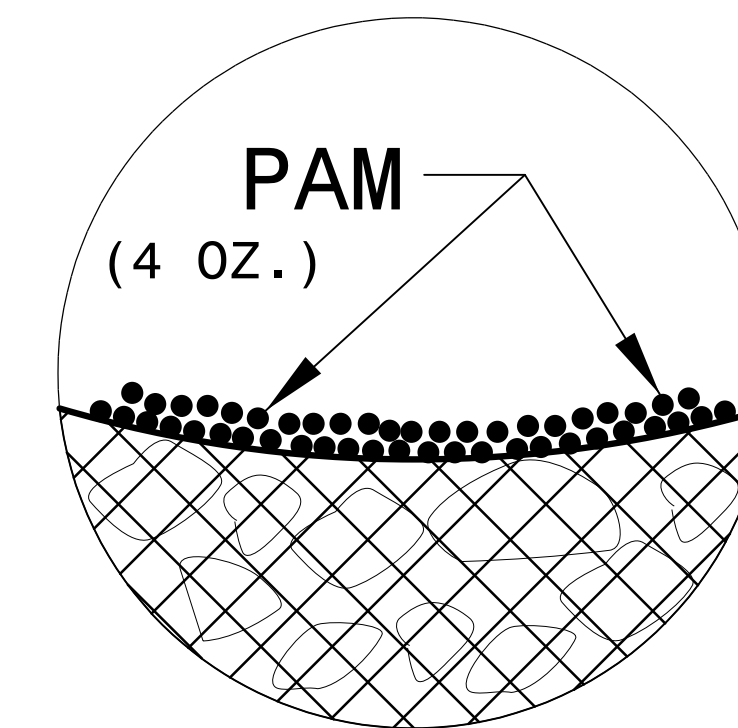
## NOTES:

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.




NOT TO SCALE



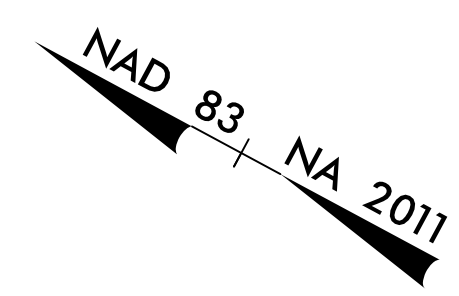


DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. 17BP10.R109	SHEET NO. EC-3A
RW SHEET NO.	
 STV Engineers, Inc. 900 West Trade St., Suite 715 Charlotte, NC 28202 NC License Number F-0991	

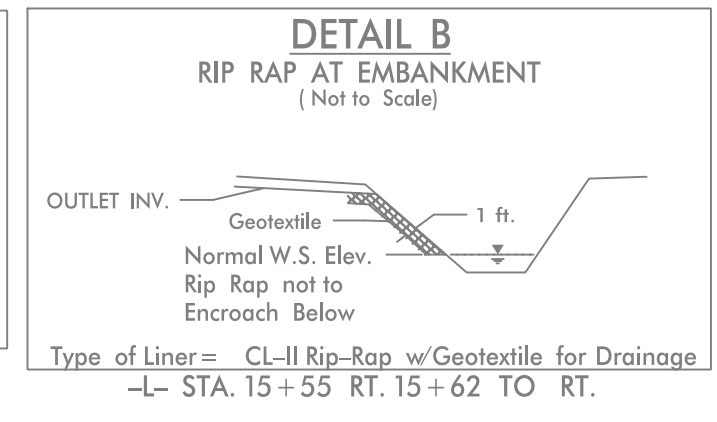
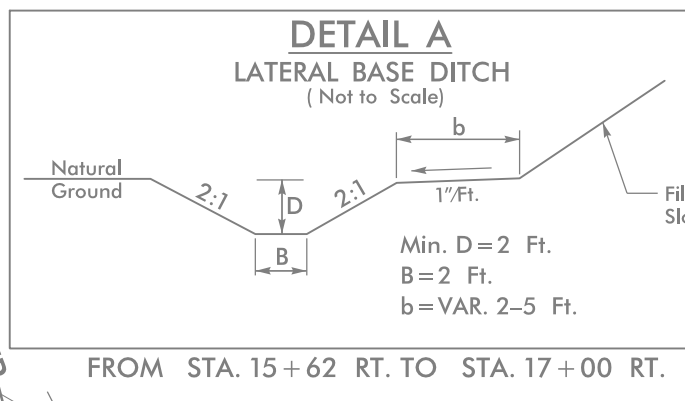
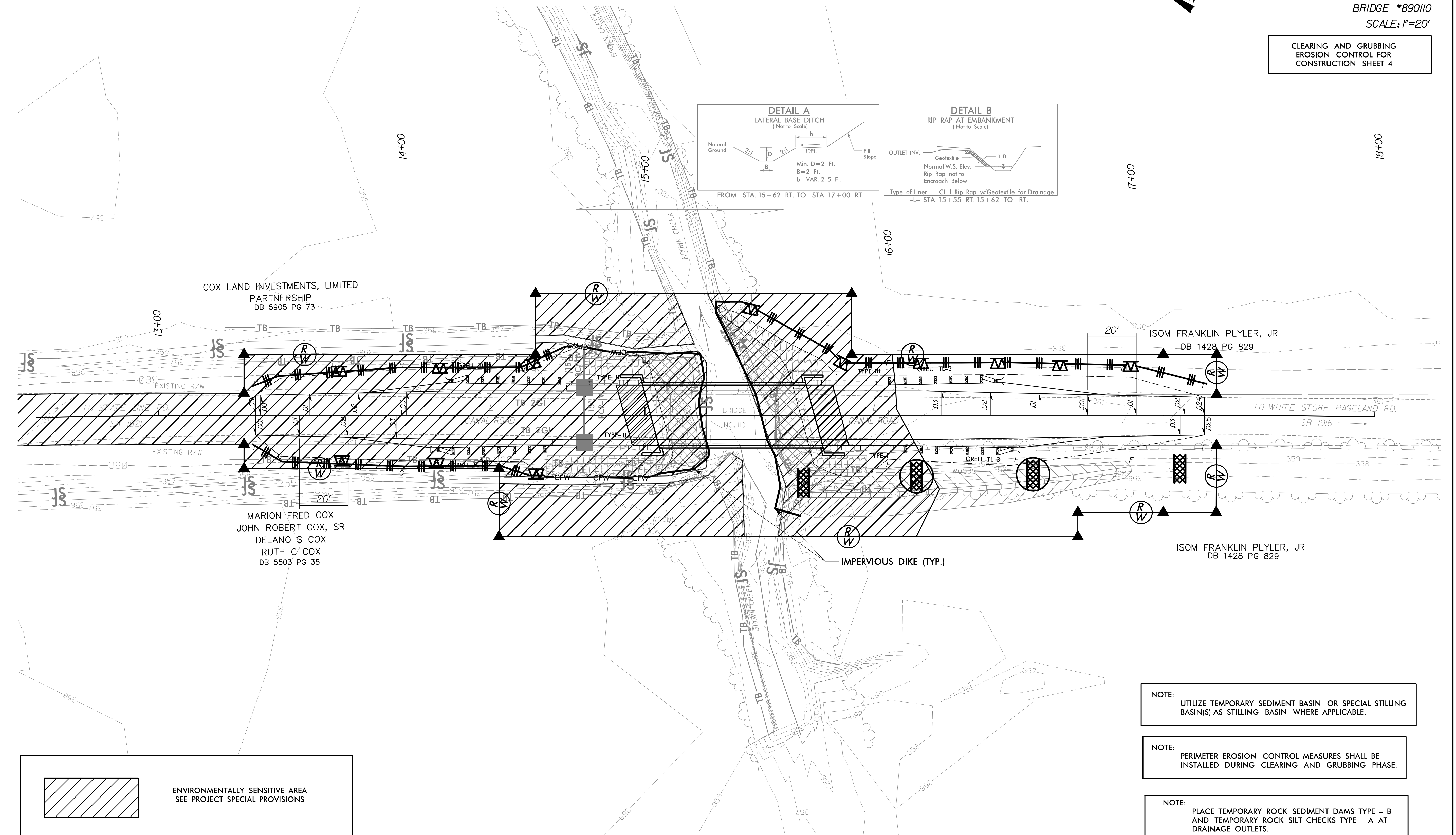
# SOIL STABILIZATION TIMEFRAMES

<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.



BRIDGE #890110  
SCALE: 1"=20'

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 4



COX LAND INVESTMENTS, LIMITED  
PARTNERSHIP  
DB 5905 PG 73

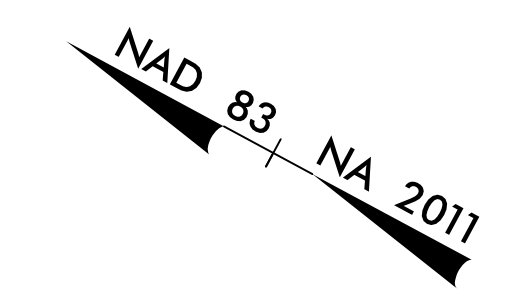
MARION FRED COX  
JOHN ROBERT COX, SR  
DELANO S COX  
RUTH C COX  
DB 5503 PG 35

ISOM FRANKLIN PLYLER, JR  
DB 1428 PG 829

ISOM FRANKLIN PLYLER, JR  
DB 1428 PG 829

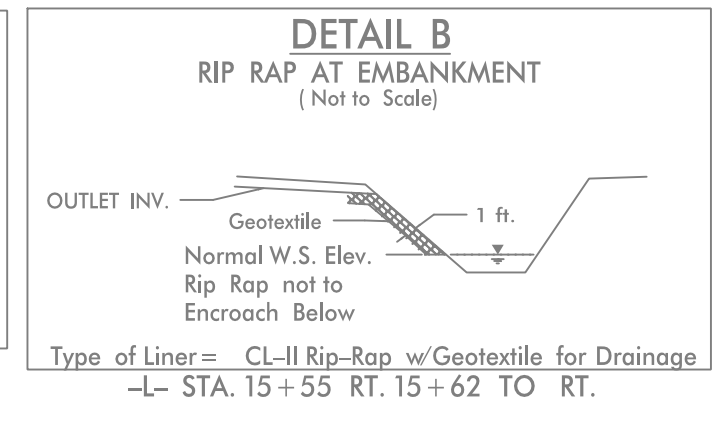
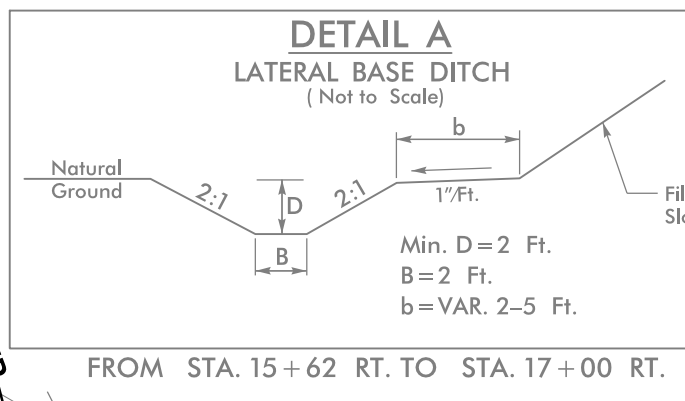
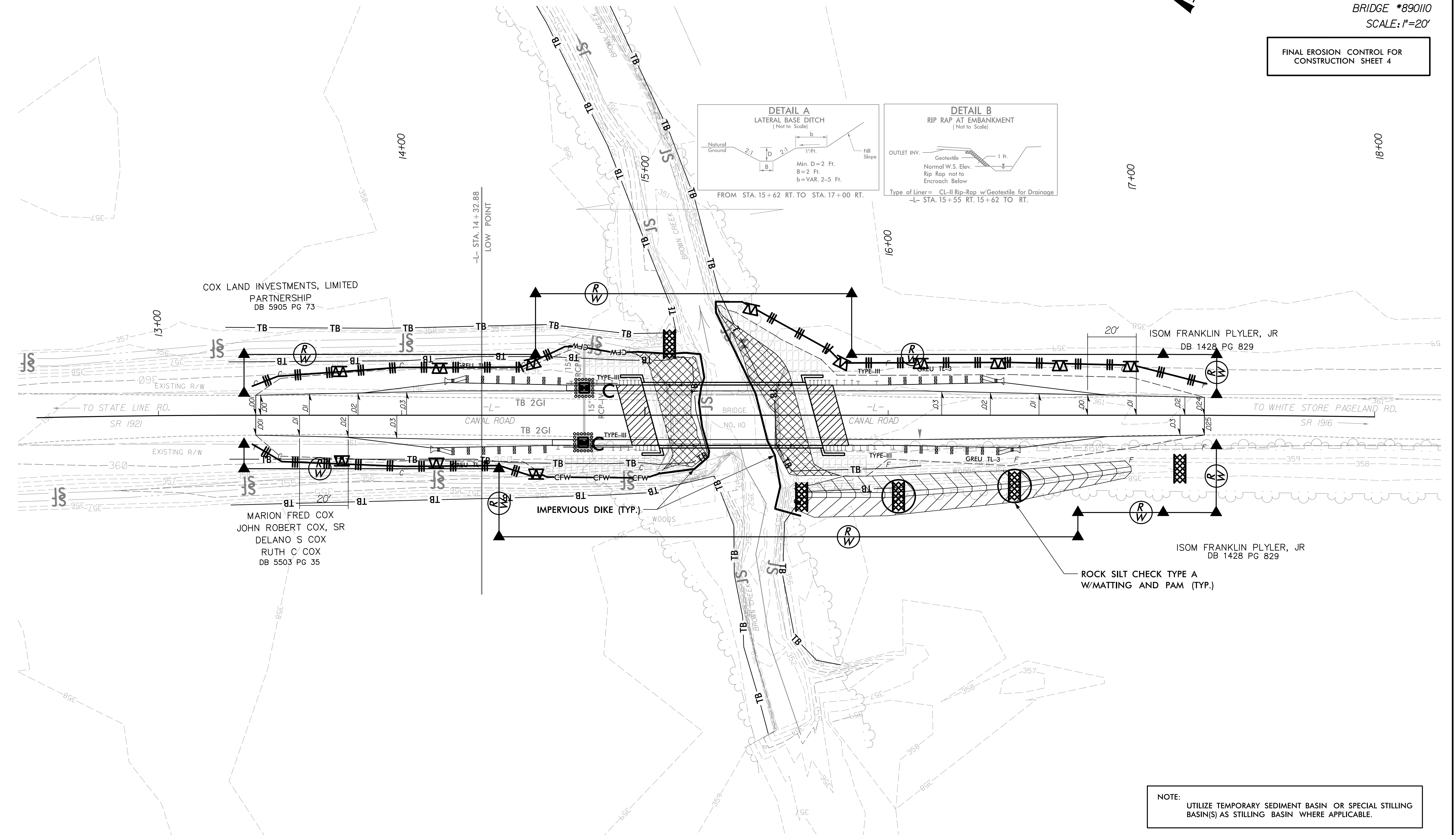


- NOTE: UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.
- NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.
- NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.



BRIDGE #890110  
SCALE: 1"=20'

FINAL EROSION CONTROL FOR  
CONSTRUCTION SHEET 4



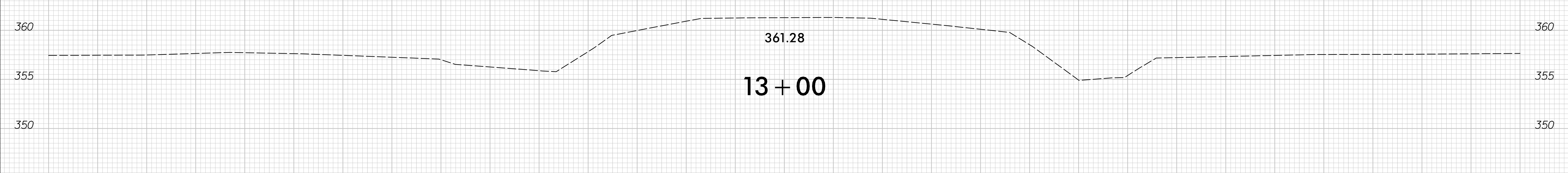
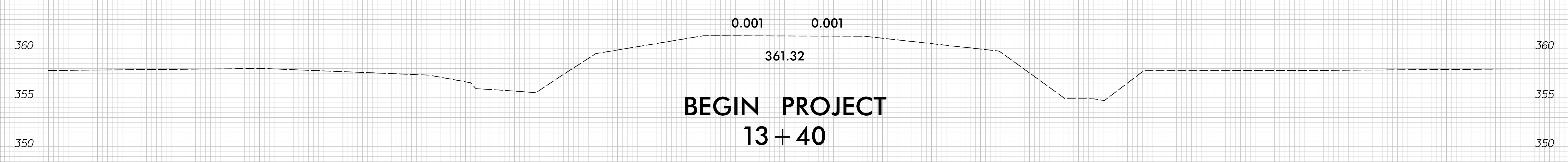
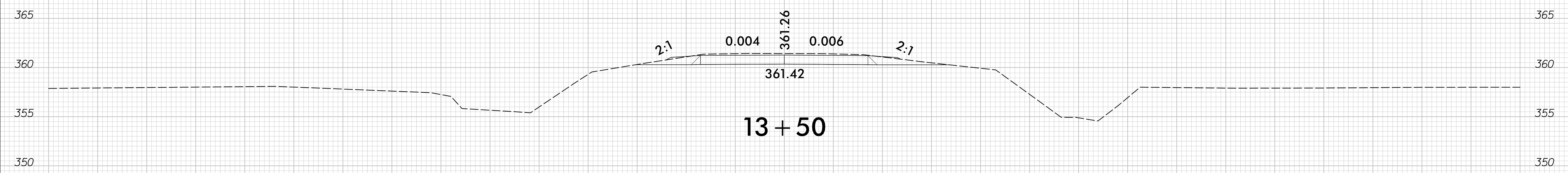
NOTE:  
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.



6/23/16

0 2.5 5	PROJ. REFERENCE NO. 17BP.10.R.109	SHEET NO. X-1
---------	--------------------------------------	------------------

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

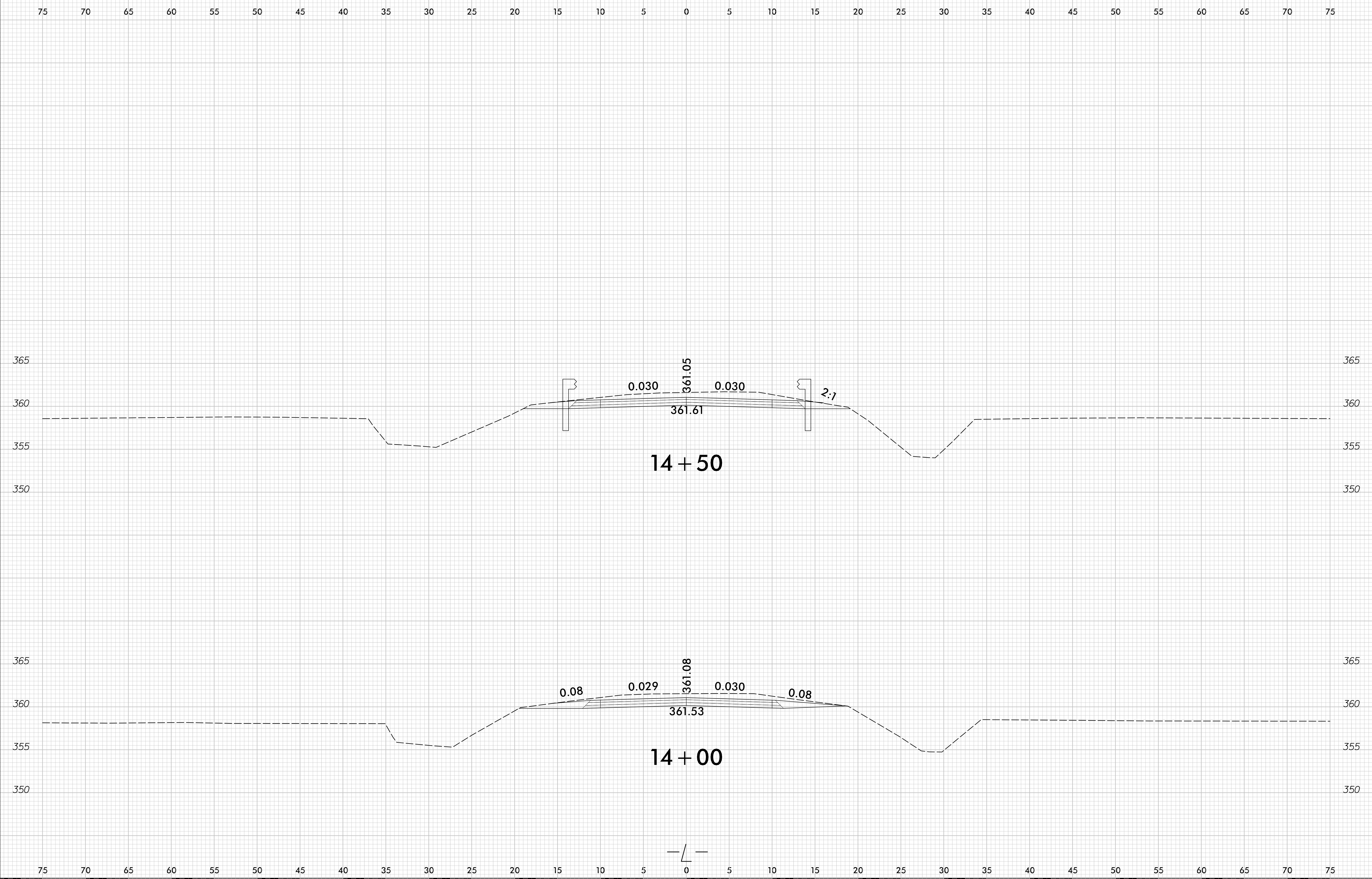


75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

7/5/2018 R:\Roadway\Xsc\R.109\_r.djv\_xp1.dgn

6/23/16

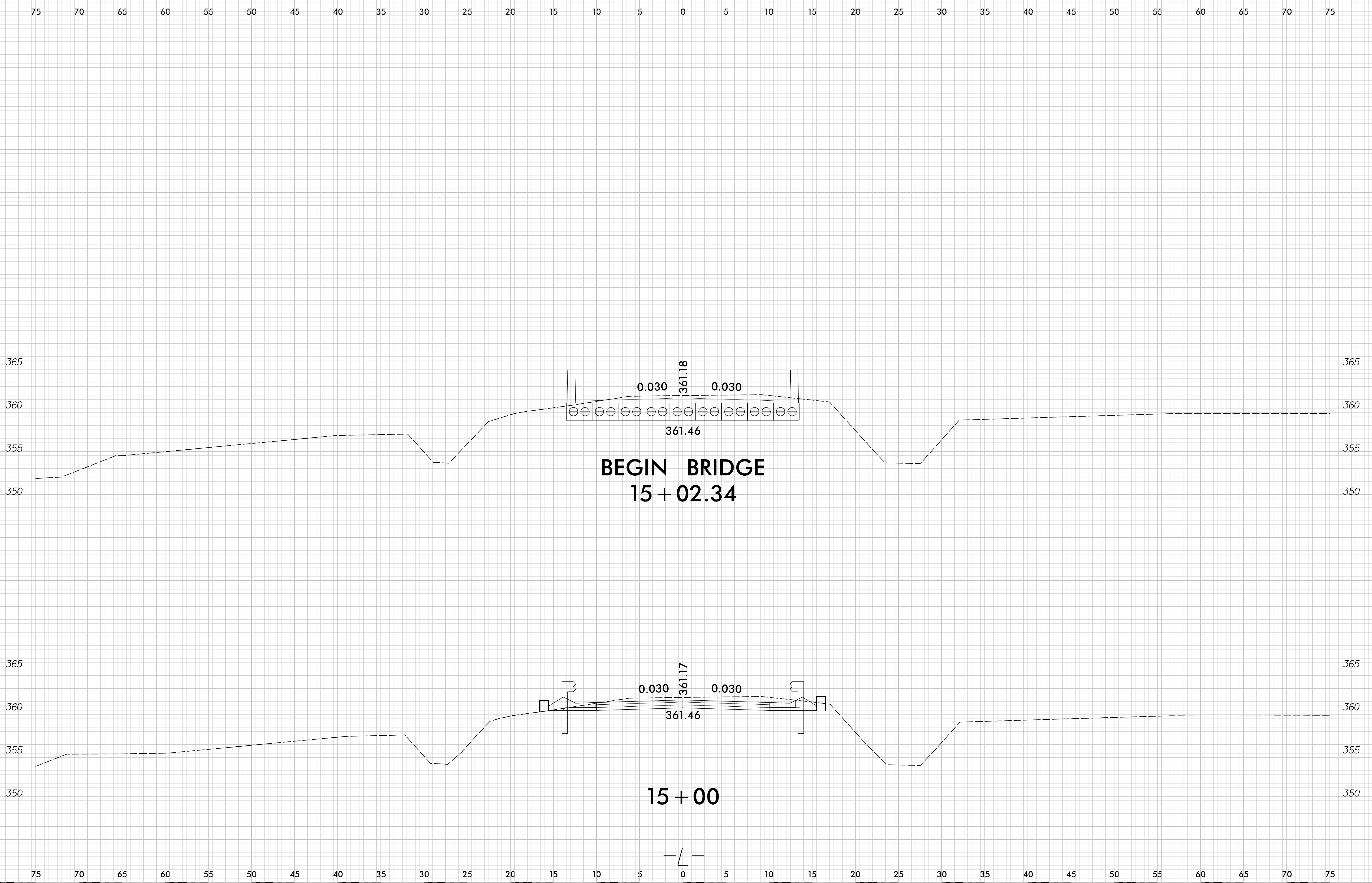
0 2.5 5	PROJ. REFERENCE NO. 17BP.10.R.109	SHEET NO. X-2
---------	--------------------------------------	------------------



7/5/2018  
R:\Roadway\Xsc\R.109\_r.djvxp1.dgn  
gpraves

6/23/16

0 2.5 5	PROJ. REFERENCE NO. 17BP.10.R.109	SHEET NO. X-3
---------	--------------------------------------	------------------

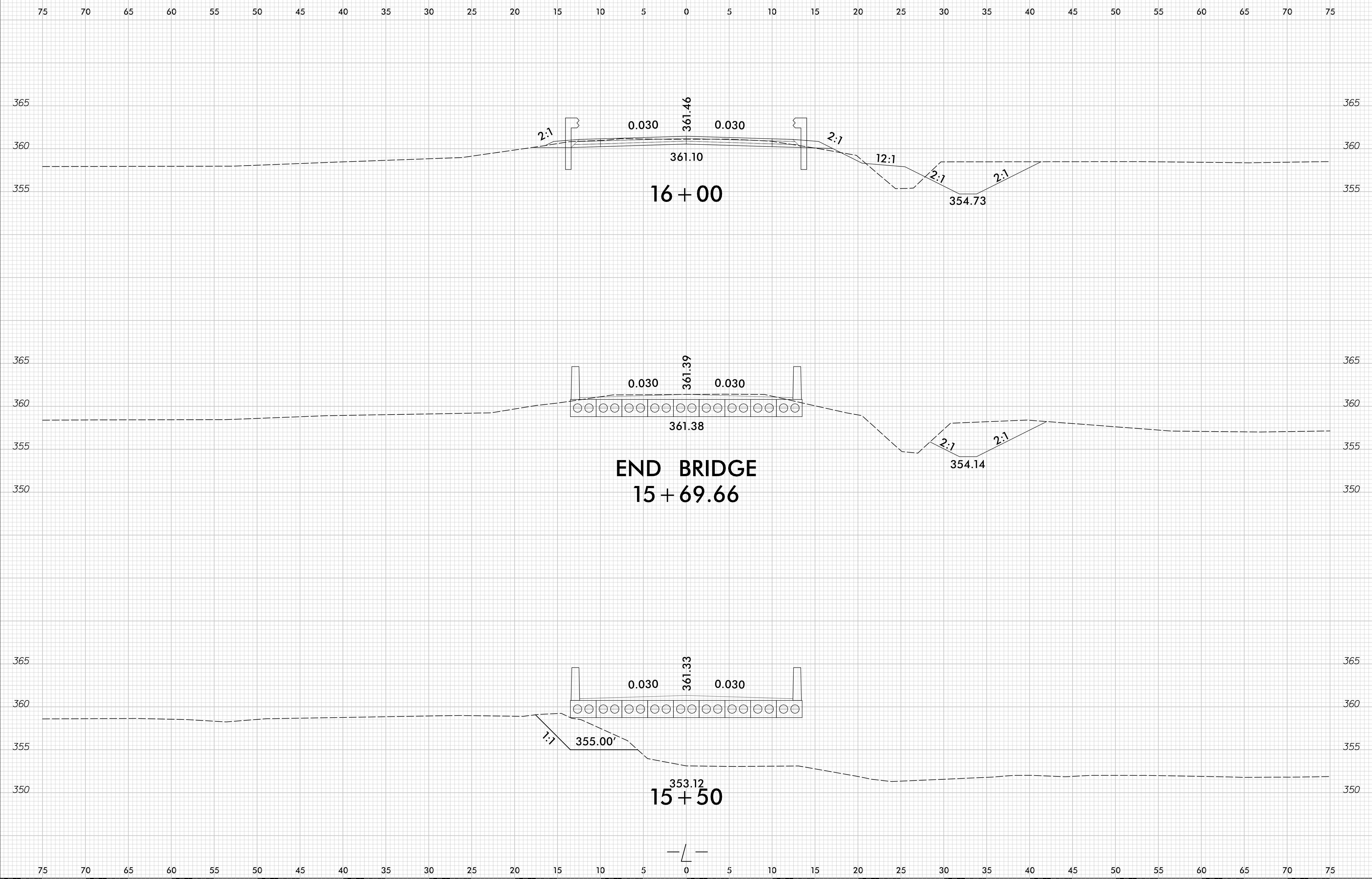


7/5/2018  
R:\Roadway\Xsc\R.109\_r.djv\_xp1.dgn  
gpraves



6/23/16

0 2.5 5	PROJ. REFERENCE NO. 17BP.10.R.109	SHEET NO. X-4
---------	--------------------------------------	------------------

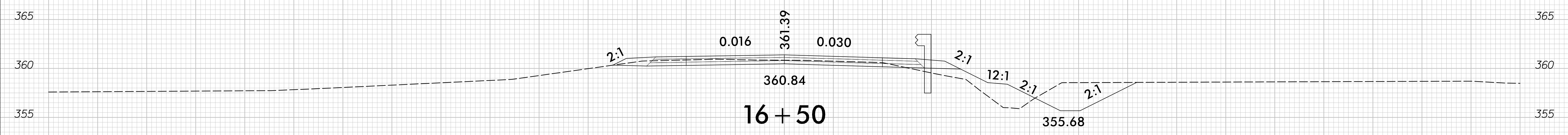
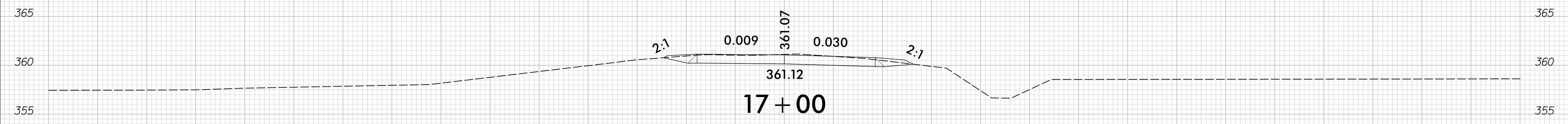
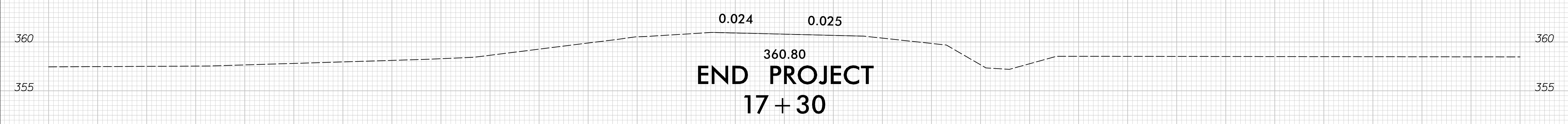
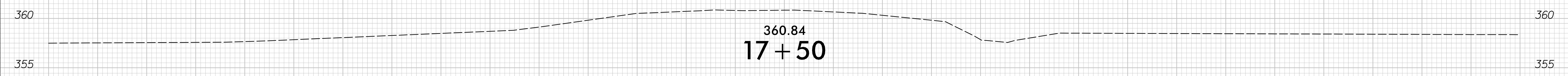


7/5/2018  
R:\Roadway\Xsc\R.109\_r.djv\_xpl.dgn  
gpraves

6/23/16

0 2.5 5	PROJ. REFERENCE NO. 17BP.10.R.109	SHEET NO. X-5
---------	--------------------------------------	------------------

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

7/5/2018 R:\Roadway\Xsc\R.109\_r.djv.dgn