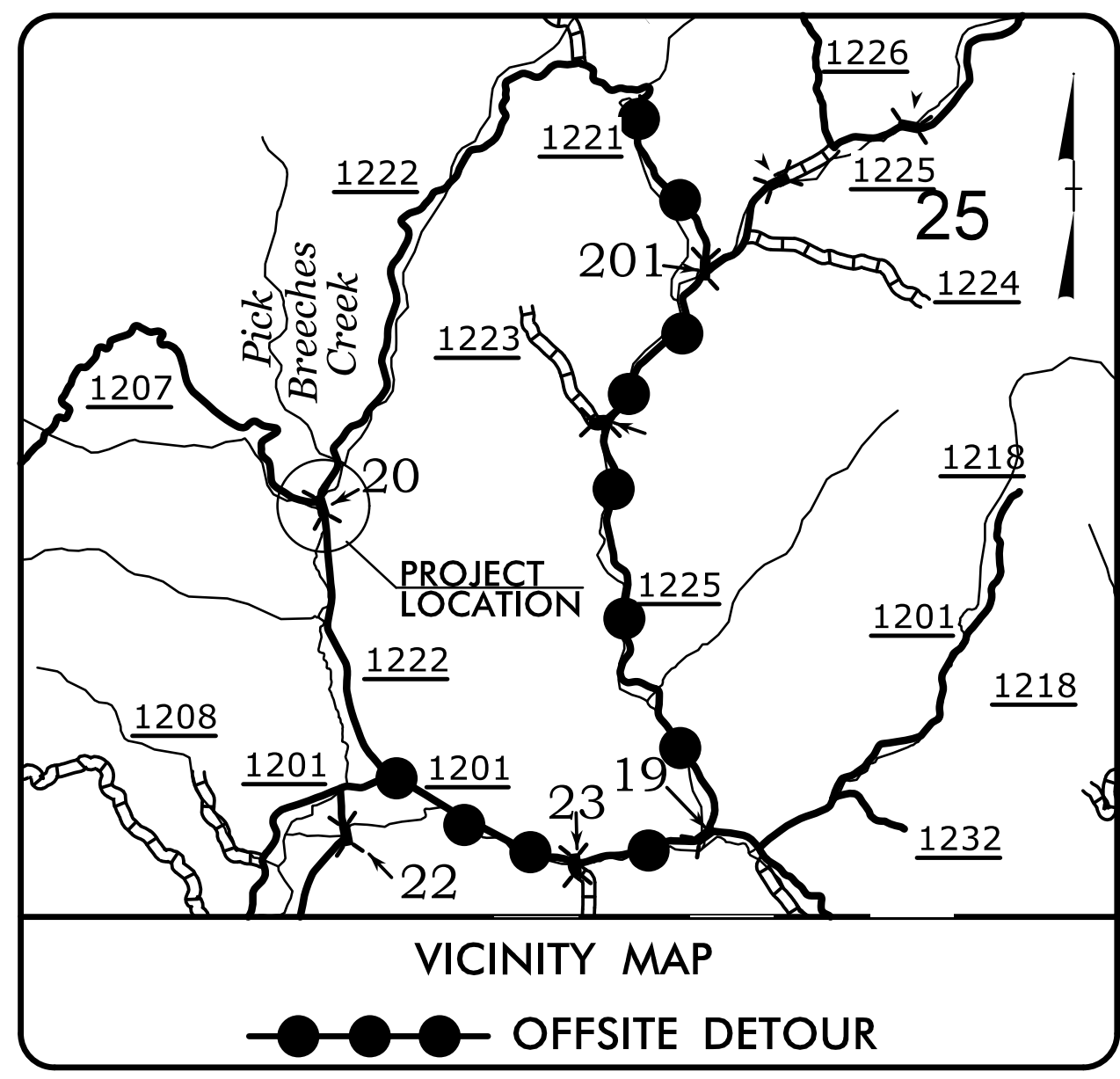


09/08/14

TIP PROJECT: 17BP.11.R.76

See Sheet 1-A For Index of Sheets



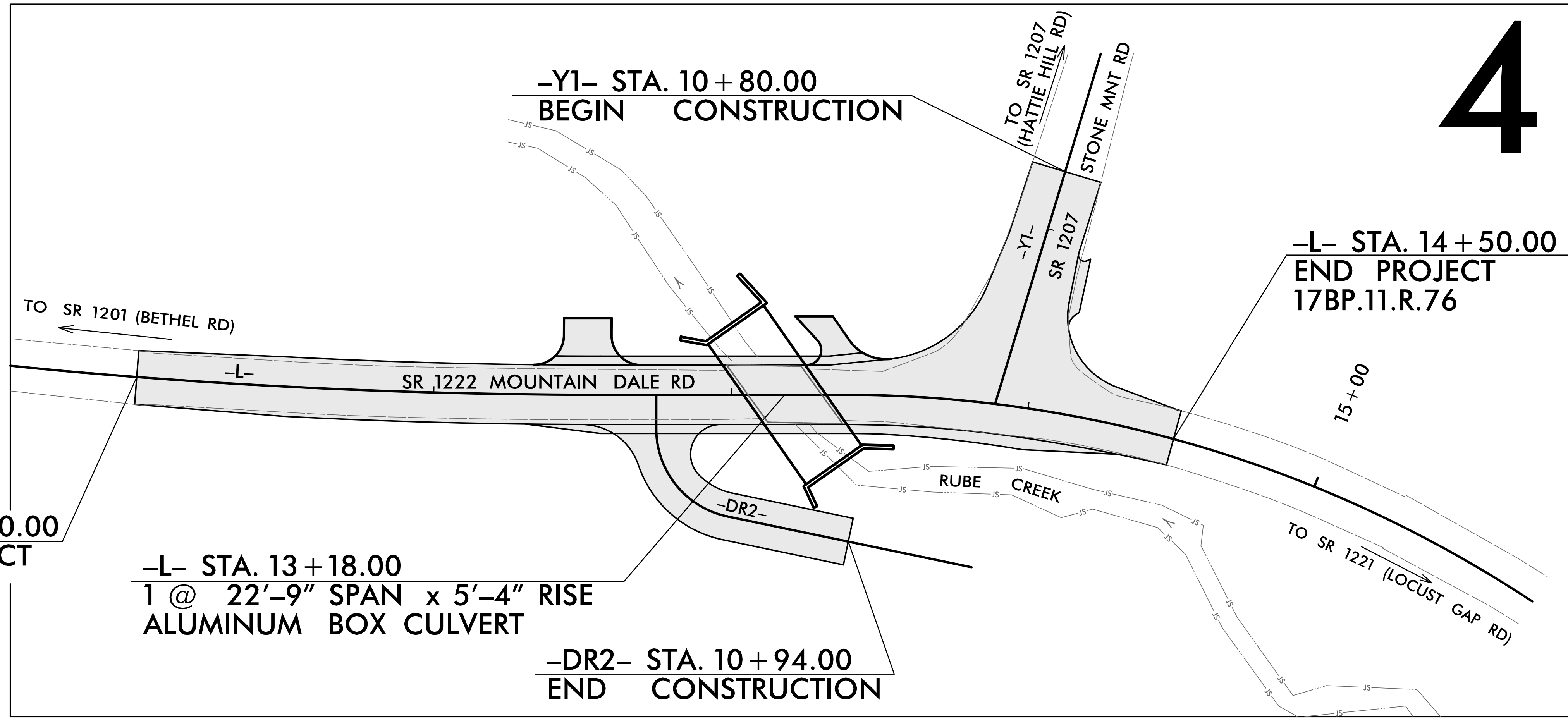
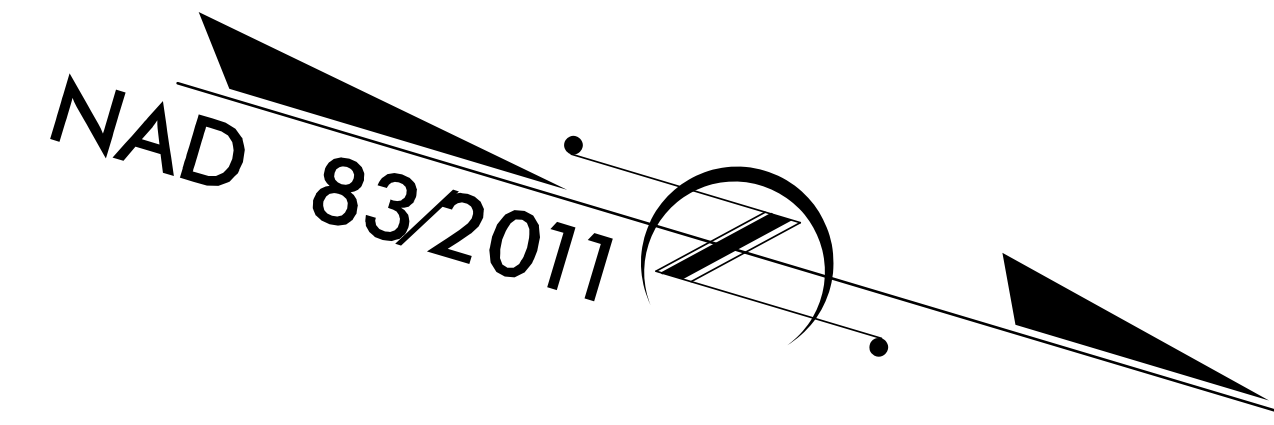
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WATAUGA COUNTY

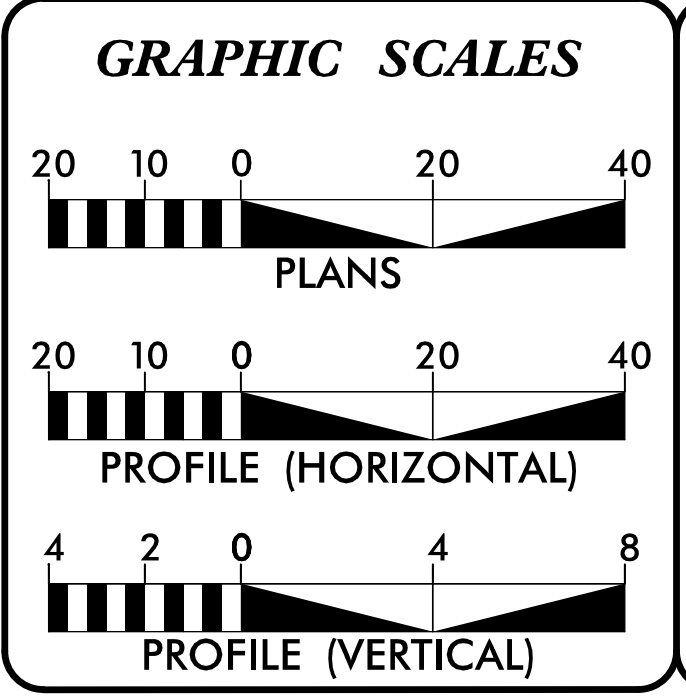
**LOCATION: BRIDGE NO. 940020 OVER RUBE CREEK
ON SR 1222 (MOUNTAIN DALE RD)**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.11.R.76	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.11.R.76	N/A	PE	
17BP.11.R.76	N/A	R/W & UTIL.	
17BP.11.R.76	N/A	CONST.	



CONTRACT:



DESIGN DATA

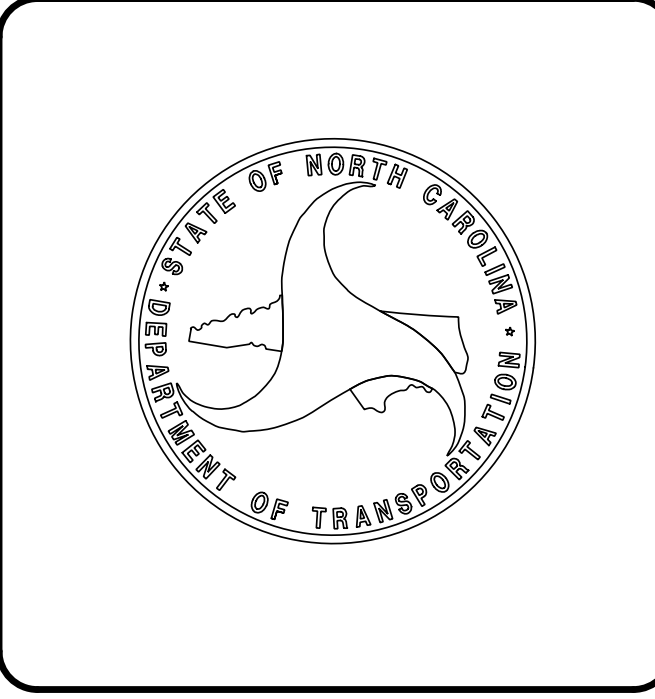
ADT 2013 =	490
V =	35 MPH
T =	6 % *
(TTST 3% + DUALS 3%)	
FUNC CLASS =	
RURAL LOCAL	
SUB REGIONAL TIER	

PROJECT LENGTH

LENGTH TOTAL PROJECT 17BP.11.R.76 =	0.066 MILES
-------------------------------------	-------------

NCDOT CONTACT: JAMI GUYNN	
PLANS PREPARED BY:	PLANS PREPARED FOR:
TGS ENGINEERS 804-C N. LAFAYETTE ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO. 1 C-0275	DIVISION 11 801 STATESVILLE RD NORTH WILKESBORO, 28659
2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: SEPTEMBER 30 2014	JIMMY TERRY, P.E. PROJECT ENGINEER
LETTING DATE:	TRAVIS COOK, E.I. PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER	
SIGNATURE: _____	
ROADWAY DESIGN ENGINEER	
SIGNATURE: _____	



\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DCN\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$













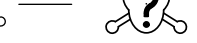

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering





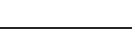
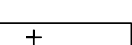

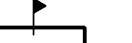
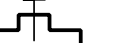
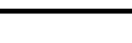

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

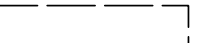









BOUNDARIES AND PROPERTY:

State Line	_____
County Line	_____
Township Line	_____
City Line	_____
Reservation Line	_____
Property Line	_____
Existing Iron Pin	_____ 
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	_____ 

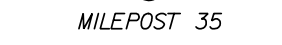

BUILDINGS AND OTHER CULTURE:

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



















HYDROLOGY:

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	_____ 





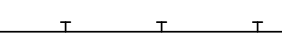
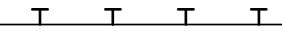
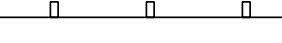




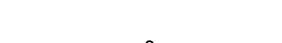

RAILROADS:


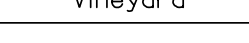
Standard Gauge	_____ 
RR Signal Milepost	_____ 
Switch	_____ 
RR Abandoned	_____ 
RR Dismantled	_____ 

RIGHT OF WAY:



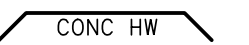
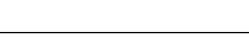
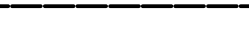
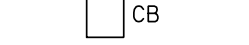
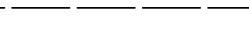


Baseline Control Point	_____ 
Existing Right of Way Marker	_____ 
Existing Right of Way Line	_____ 
Proposed Right of Way Line	_____ 
Proposed Right of Way Line with Iron Pin and Cap Marker	_____ 
Proposed Right of Way Line with Concrete or Granite RW Marker	_____ 
Proposed Control of Access Line with 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:






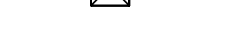


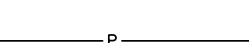
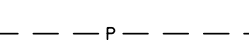

Existing Edge of Pavement	_____
Existing Curb	_____
Proposed Slope Stakes Cut	_____ 
Proposed Slope Stakes Fill	_____ 
Proposed Curb Ramp	_____ 
Existing Metal Guardrail	_____ 
Proposed Guardrail	_____ 
Existing Cable Guiderail	_____ 
Proposed Cable Guiderail	_____ 
Equality Symbol	_____ 
Pavement Removal	_____ 
VEGETATION:	
Single Tree	_____ 
Single Shrub	_____ 
Hedge	_____ 
Woods Line	_____ 

Orchard	_____ 
Vineyard	_____ 




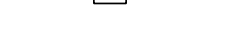

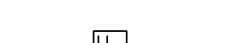

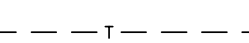
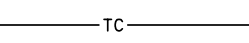
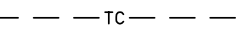
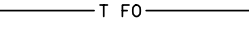
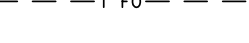

EXISTING STRUCTURES:

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:

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:

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:

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:

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

SANITARY SEWER:

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:

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	_____ 

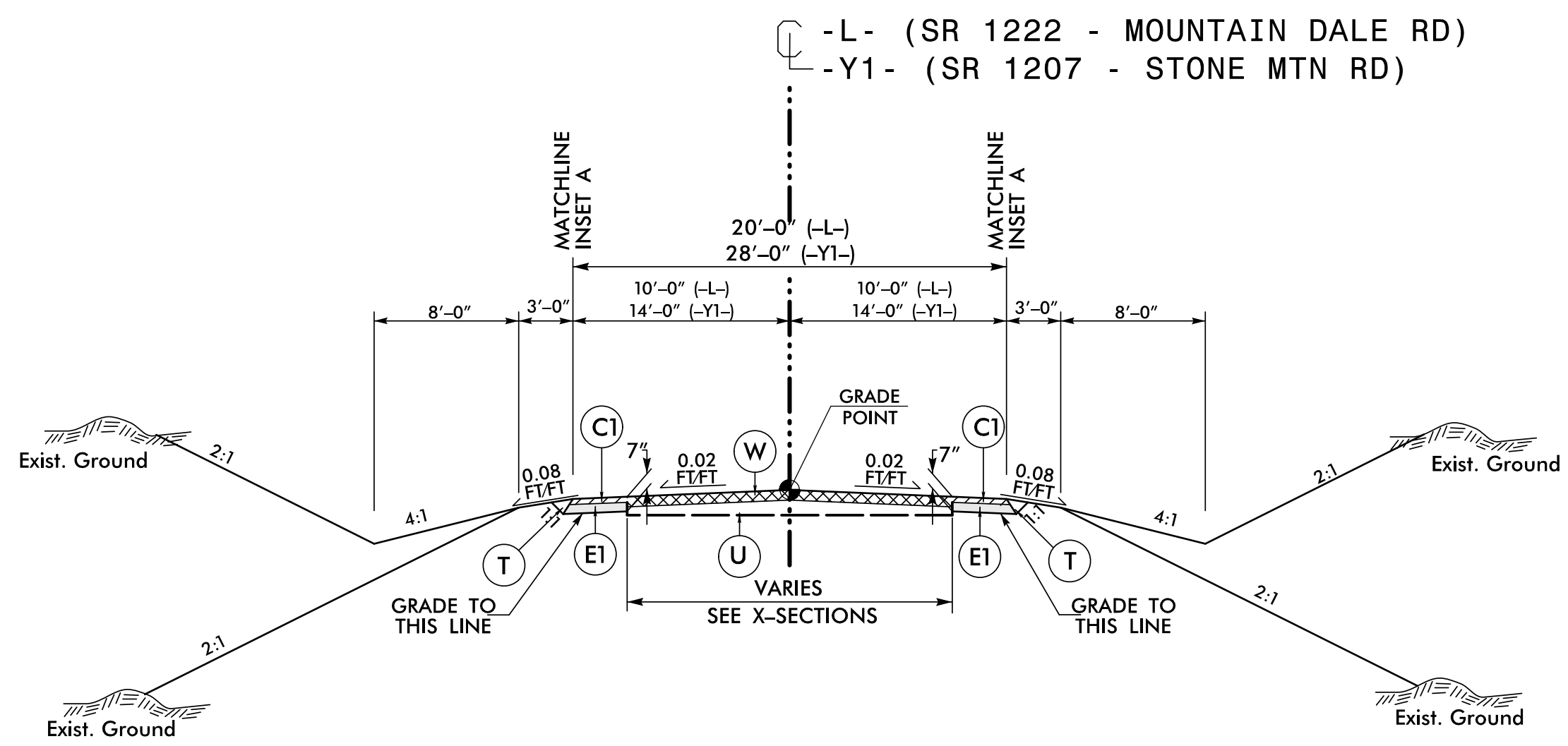
8/17/99

WATAUGA COUNTY
BRIDGE #940020

PROJECT REFERENCE NO. 17BPJLR76	SHEET NO. 2A-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER
TGS ENGINEERS 804-C N. LAFAYETTE ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO. C-0275	

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1.5" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
J1	6" AGGREGATE BASE COURSE
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAILS THIS SHEET)

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



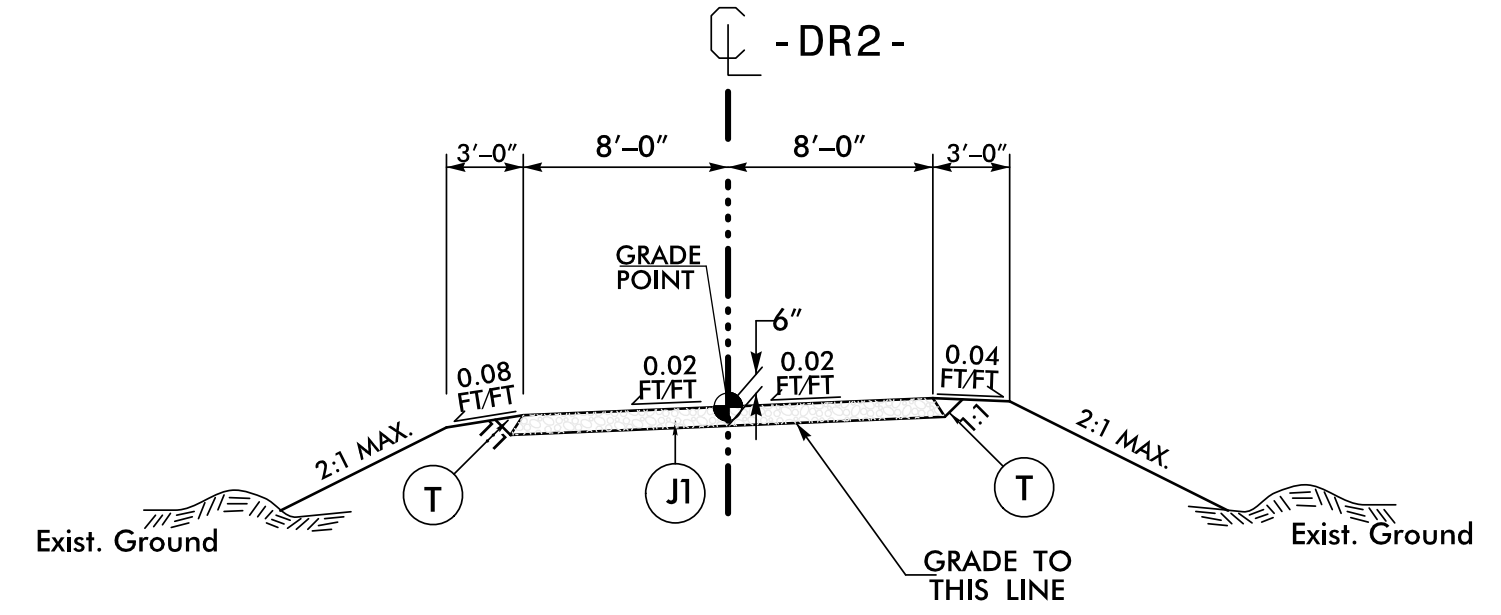
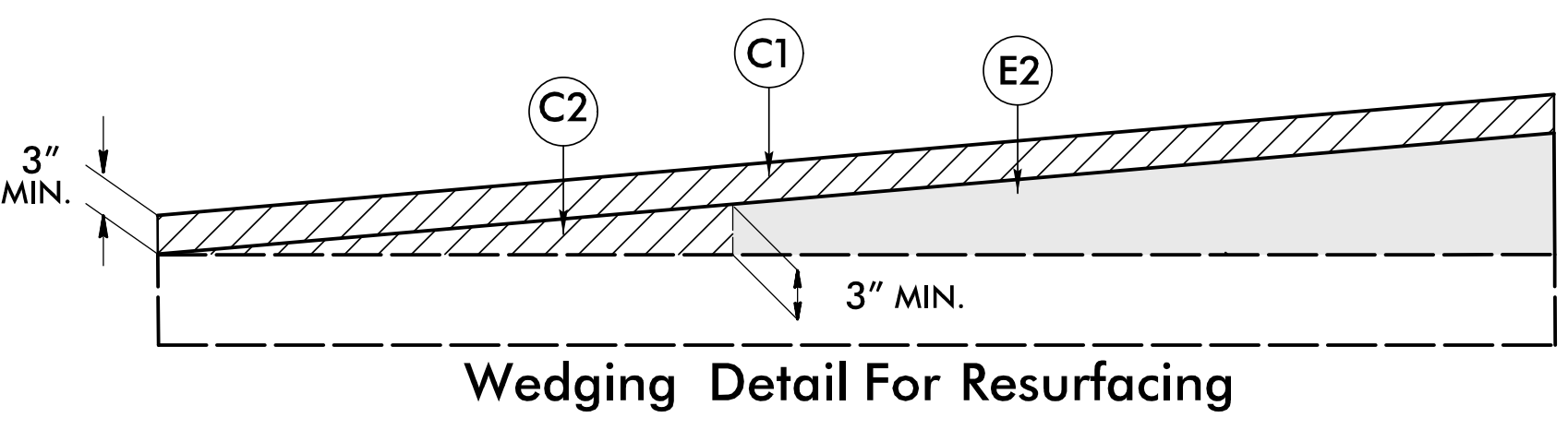
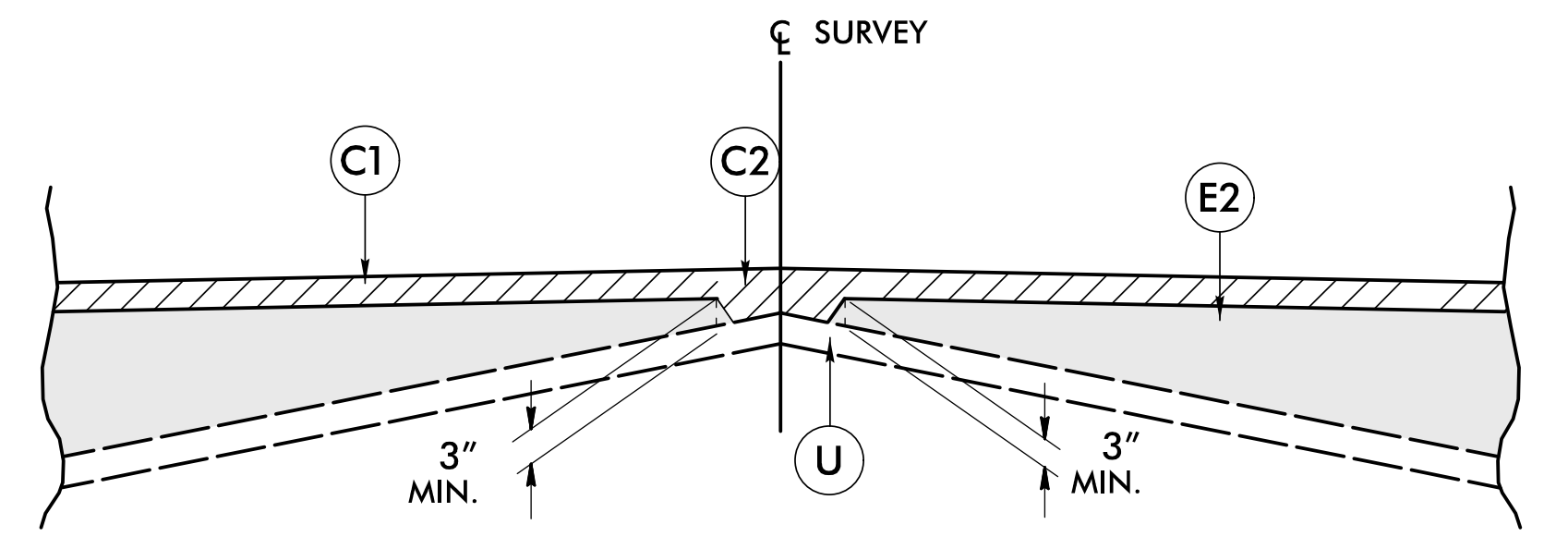
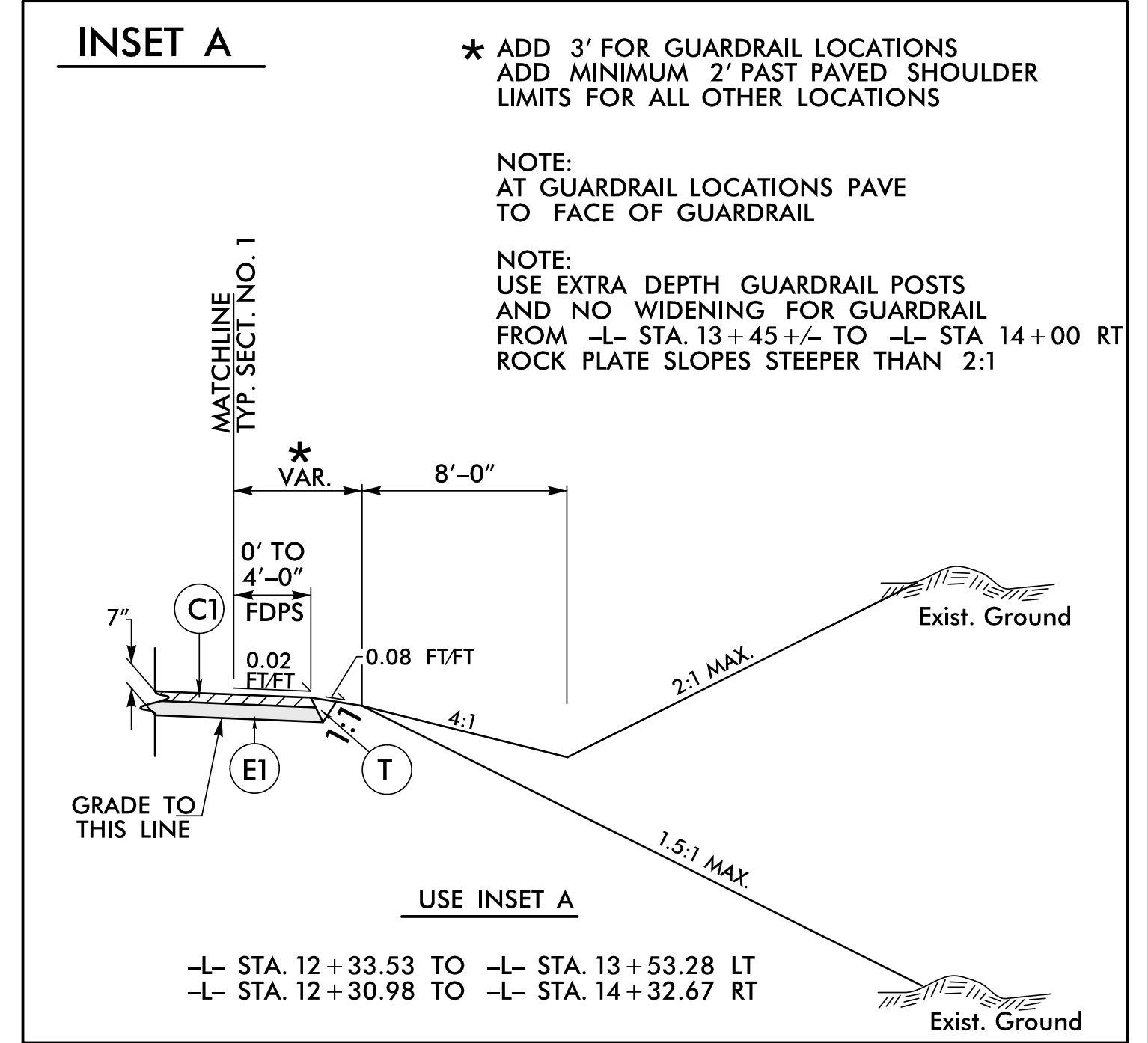
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
 -L- STA. 11+50.00 TO -L- STA. 14+00.00
 -Y1- STA. 11+21.88 (LT) TO -Y1- STA. 11+51.45
 -Y1- STA. 11+24.48 (RT) TO -Y1- STA. 11+51.45

NOTE: TRANSITION BETWEEN EXISTING AND TYP. SECT. NO. 1 AS FOLLOWS:

-L- STA. 11+00.00 TO -L- STA. 11+50.00
 -L- STA. 14+00.00 TO -L- STA. 14+50.00
 -Y1- STA. 10+80.00 TO -Y1- STA. 11+21.88 (LT)
 -Y1- STA. 10+80.00 TO -Y1- STA. 11+24.48 (RT)

NOTE: USE FULL DEPTH PAVEMENT FROM -L- STA. 12+80+/- TO -L- STA. 13+45+/-

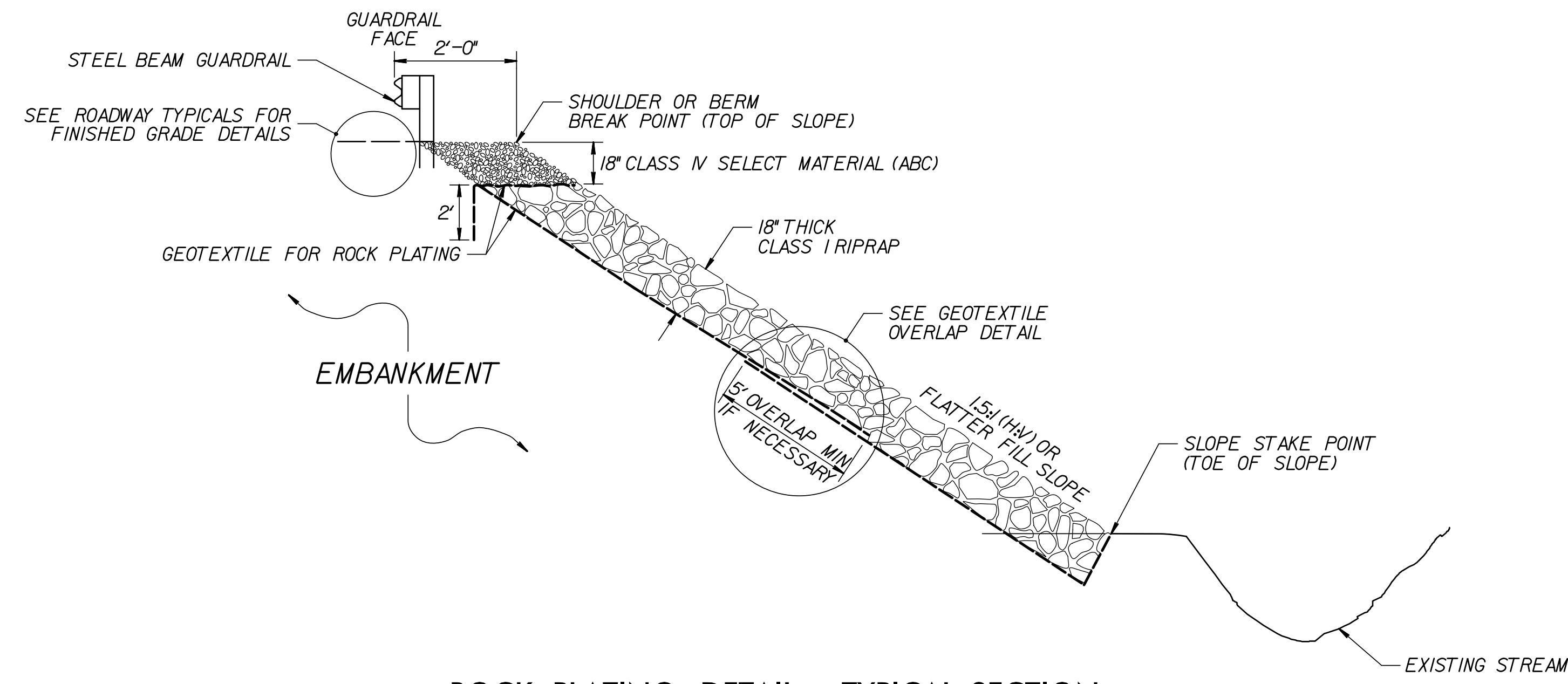


TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
 -DR2- STA. 10+10.00 TO -DR2- STA. 10+94.00

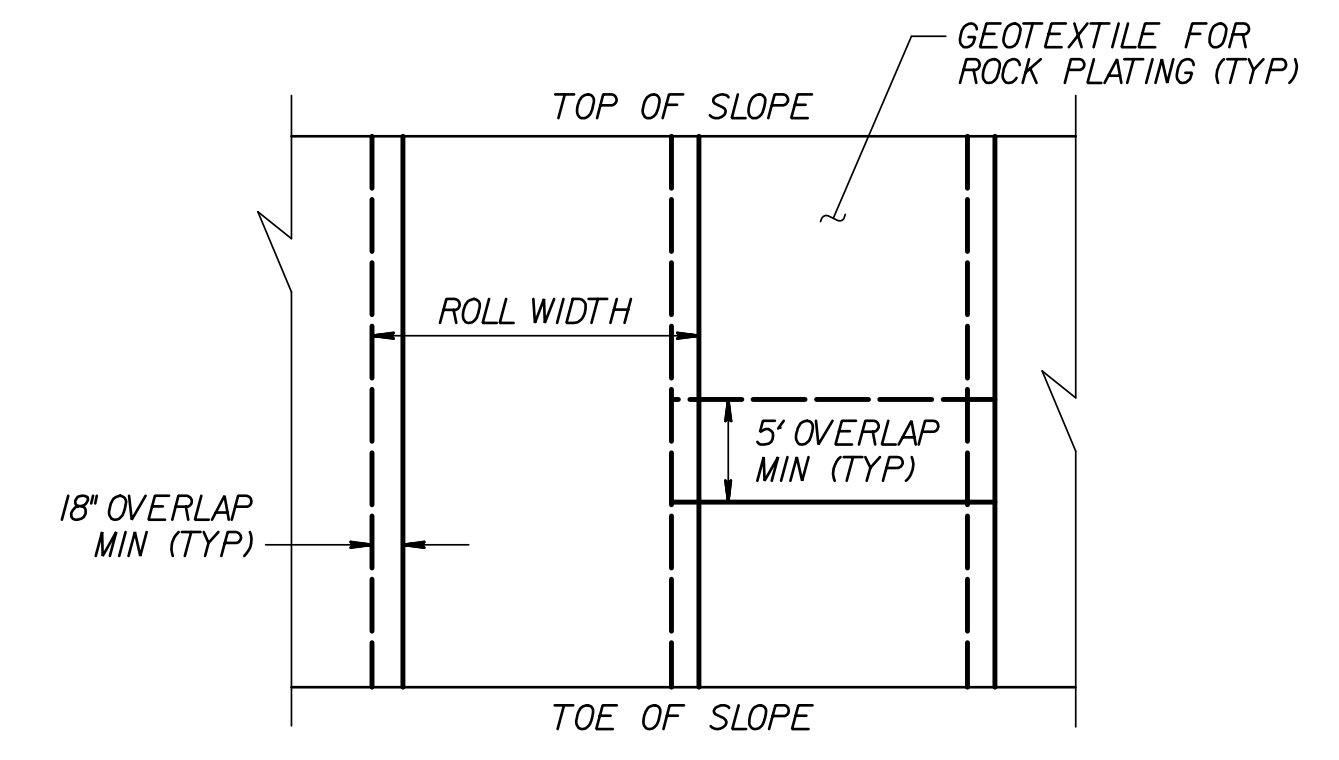
REVISIONS

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ROCK PLATING DETAIL – TYPICAL SECTION

USE ROCK PLATING DETAIL
WHERE FILL SLOPES ARE STEEPER THAN 2:1
AS DIRECTED ON PLANS



**GEOTEXTILE OVERLAP DETAIL
(PLAN VIEW)**

TOTAL BILL OF MATERIAL	
ROCK PLATING	EST. 35 SQ. YDS.

FOR ROCK PLATING, SEE SECTION 275 OF THE STANDARD SPECIFICATIONS.

PROJECT NO.: 17BP.11.R.76
WATAUGA COUNTY
STATION: 13 + 45 +/- TO 14 + 00 +/-

SHEET 1 OF 1
STANDARD DRAWING NO. #
ROCK PLATING
SHEET NO. 2G-1 TOTAL SHEETS

8/17/99

-DR2- CURVE DATA
 PI Sta 10+35.91
 $\Delta = 78^{\circ} 14' 51.0''$ (LT)
 $D = 190^{\circ} 59' 09.4''$
 $L = 40.97'$
 $T = 24.40'$
 $R = 30.00'$
 $SE = 0.02$
 ① -DR2- PC 10+11.50
 ② -DR2- PT 10+52.47

-L- PCC 10+83.50

BEGIN PROJECT
 17BP.11.R.76
 -L- STA. 11+00.00

-L- CURVE DATA

PI Sta 10+41.76 $\Delta = 3^{\circ} 47' 48.9''$ (LT) $D = 4^{\circ} 32' 50.2''$ $L = 83.50'$ $T = 41.76'$ $R = 1,260.00'$ $SE = EXIST.$	PI Sta 11+69.85 $\Delta = 4^{\circ} 50' 51.8''$ (LT) $D = 2^{\circ} 48' 31.0''$ $L = 172.60'$ $T = 86.35'$ $R = 2,040.00'$ $SE = NC$ $DS = 25$ MPH	PI Sta 14+64.04 $\Delta = 33^{\circ} 25' 22.0''$ (RT) $D = 13^{\circ} 38' 30.7''$ $L = 245.00'$ $T = 126.10'$ $R = 420.00'$ $SE = 0.04$ $DS = 35$ MPH
---	---	--

BEGIN CONSTRUCTION
 -Y1- STA. 10+80.00

END FDPS
 -L- STA 13+53.28

-L- PC 13+37.94

END CONSTRUCTION
 -DR2- STA. 10+94.00

USE NCDOT RDY STD 862.01, SHEET 10 OF 12 FOR GUARDRAIL PLACEMENT AT STRUCTURE.

FOR CULVERT PLANS, SEE SHEET C-1 THRU C-6

PROJECT REFERENCE NO. 17BP.11.R.76	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
TGS ENGINEERS 804-C N. LAFAYETTE ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO. C-C-0275	

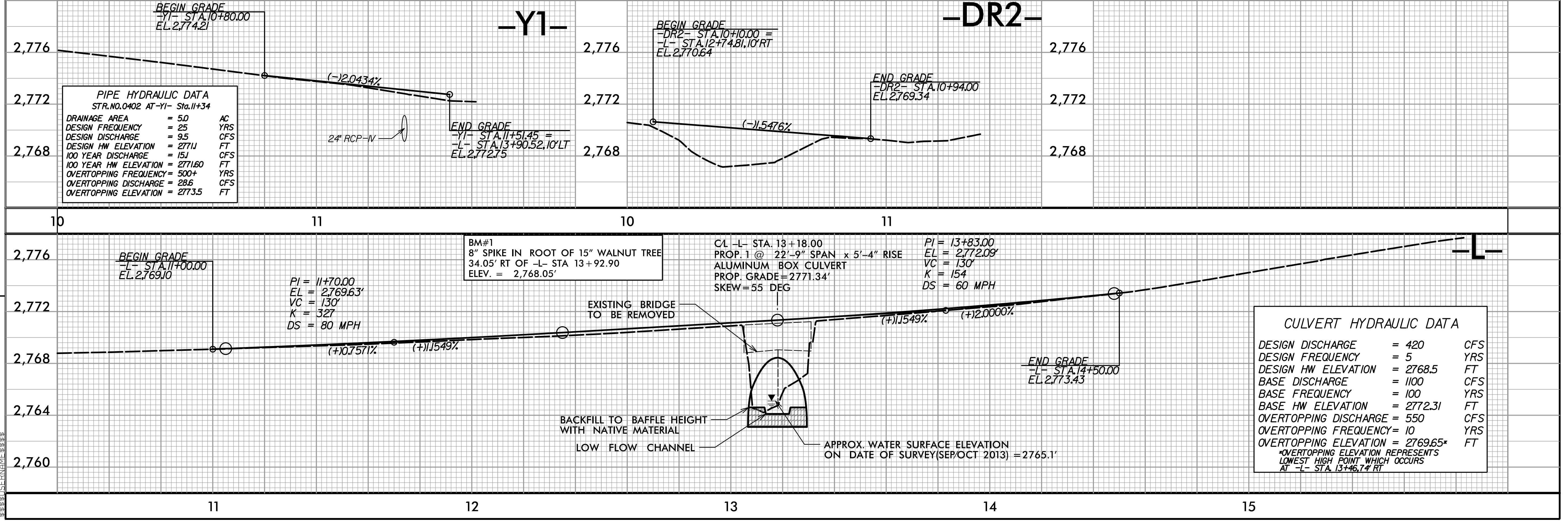
NC DOT GPS STATION 94-0020-1
 LOCALIZED PROJECT COORDINATES
 N = 944526.241T
 E = 159810.3486
 ELEVATION = 2773.59265

SHELBY EGGERS
 DB 568 PG 766

ANNE V. MILLSAPS
 ROBERT LEE MILLSAPS
 DB 1501 PG 330
 PB 21 PG 459

END PROJECT
 17BP.11.R.76
 -L- STA. 14+50.00

NAD 83/2011



PIPE HYDRAULIC DATA
 STR. NO. 0402 AT -Y1- STA. 11+34

DRAINAGE AREA = 5.0	AC
DESIGN FREQUENCY = 25	YRS
DESIGN DISCHARGE = 9.5	CFS
DESIGN HW ELEVATION = 2771.1	FT
100 YEAR DISCHARGE = 15.1	CFS
100 YEAR HW ELEVATION = 2771.60	FT
OVERTOPPING FREQUENCY = 500+	YRS
OVERTOPPING DISCHARGE = 28.6	CFS
OVERTOPPING ELEVATION = 2773.5	FT

BEGIN GRADE
 -L- STA. 11+00.00
 EL. 2,769.10

PI = 11+70.00
 EL = 2,769.63'
 VC = 130'
 K = 327
 DS = 80 MPH

BM#1
 8" SPIKE IN ROOT OF 15" WALNUT TREE
 34.05' RT OF -L- STA 13+92.90
 ELEV. = 2,768.05'

CL -L- STA. 13+18.00
 PROP. 1 @ 22'-9" SPAN x 5'-4" RISE
 ALUMINUM BOX CULVERT
 PROP. GRADE = 2771.34'
 SKEW = 55 DEG

PI = 13+83.00
 EL = 2,772.09'
 VC = 130'
 K = 154
 DS = 60 MPH

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE = 420	CFS
DESIGN FREQUENCY = 5	YRS
DESIGN HW ELEVATION = 2768.5	FT
BASE DISCHARGE = 1100	CFS
BASE FREQUENCY = 100	YRS
BASE HW ELEVATION = 2772.31	FT
OVERTOPPING DISCHARGE = 550	CFS
OVERTOPPING FREQUENCY = 10	YRS
OVERTOPPING ELEVATION = 2769.65*	FT

*OVERTOPPING ELEVATION REPRESENTS LOWEST HIGH POINT WHICH OCCURS AT -L- STA. 13+46.74 RT

BACKFILL TO BAFFLE HEIGHT WITH NATIVE MATERIAL
 LOW FLOW CHANNEL
 APPROX. WATER SURFACE ELEVATION ON DATE OF SURVEY (SEP/OCT 2013) = 2765.1'

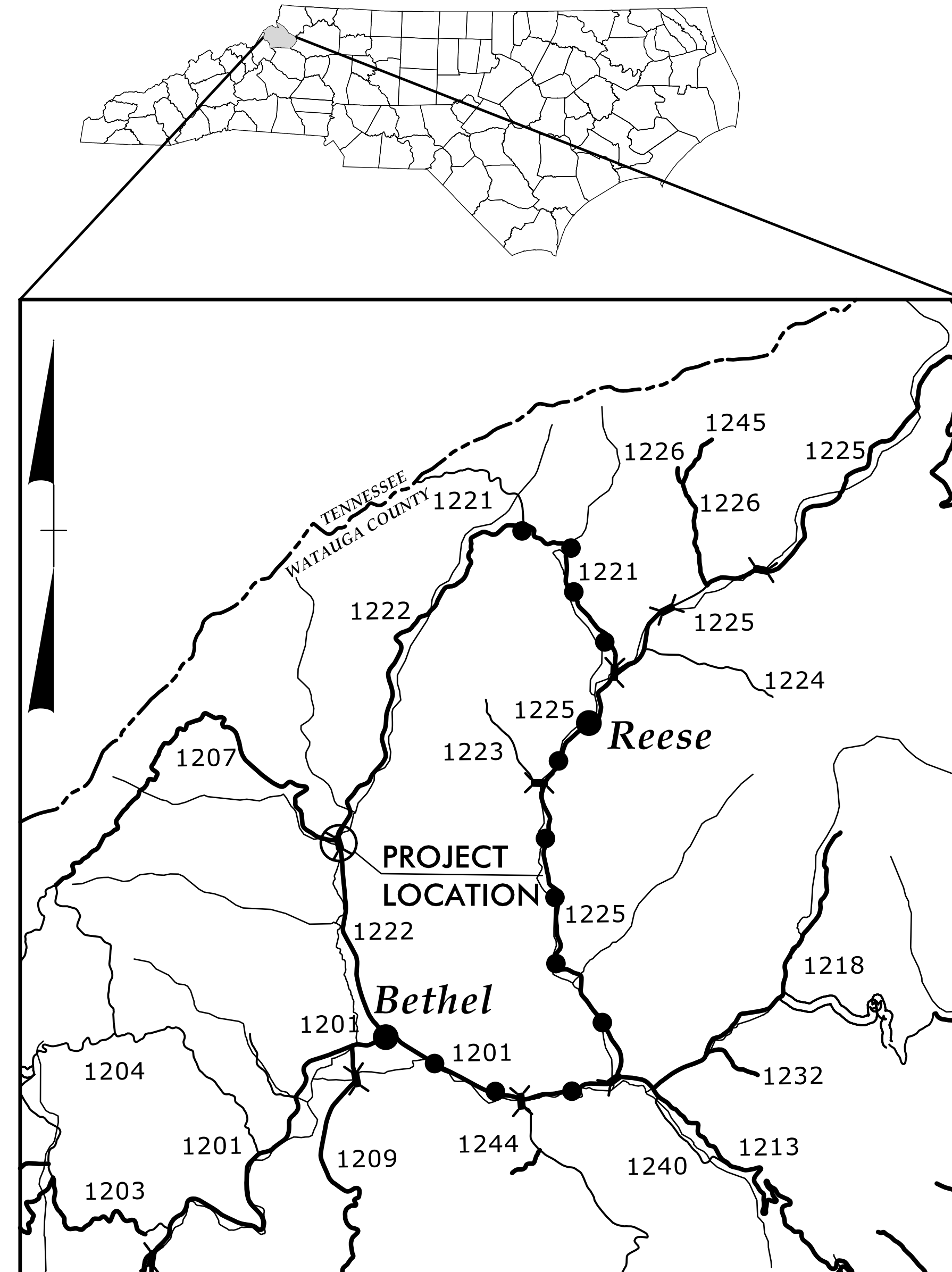
REVISIONS

8/17/99

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

WATAUGA COUNTY

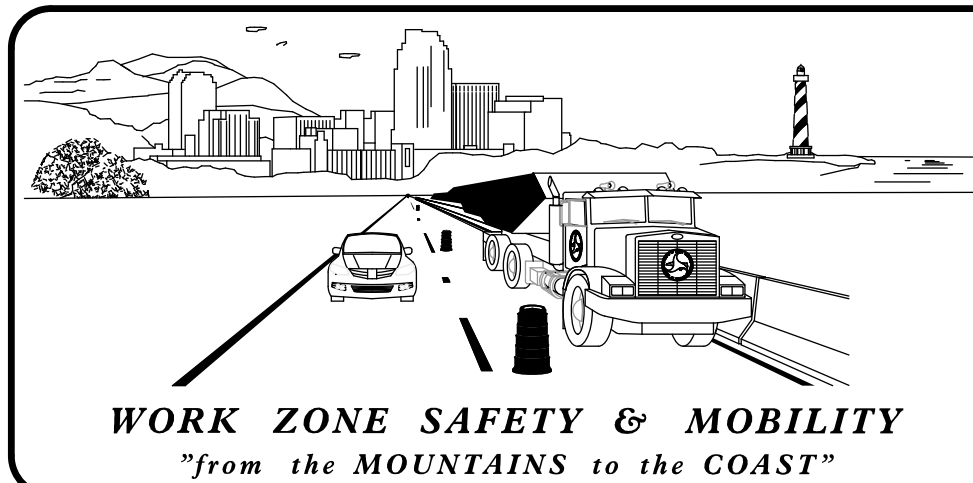


VICINITY MAP

●●●●● OFFSITE DETOUR

NCDOT CONTACT INFORMATION:
Phone: 336 903 9220 Fax: 336 667 4549

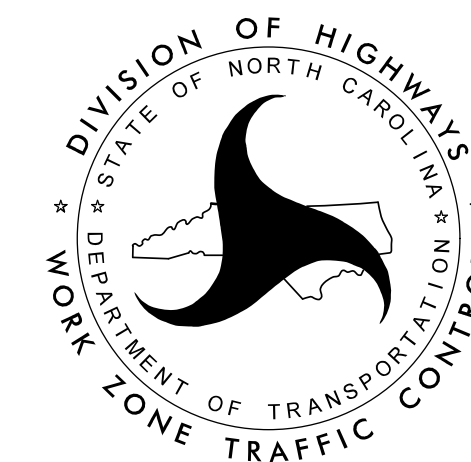
JAMI GUYNN
Division Bridge Project Manager



PLAN PREPARED FOR N.C.D.O.T. BY:

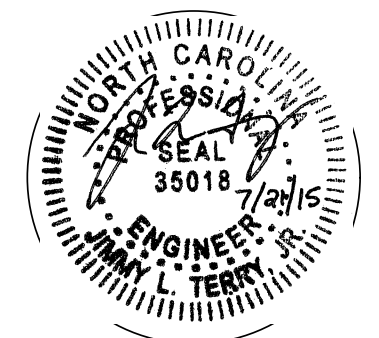
TGS ENGINEERS
804-C N. LAFAYETTE ST.
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

JIMMY L. TERRY, PE PROJECT ENGINEER
KATELYN SPANGLER DESIGN TECHNICIAN



APPROVED: _____
DATE: _____

SEAL



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES AND GENERAL NOTES)
TMP-1C	SPECIAL SIGN DESIGN
TMP-2	OVERVIEW AND PHASING
TMP-3	OFFSITE DETOUR LOCATION AND BARRICADE PLACEMENT
PMP-1	FINAL PAVEMENT MARKING PLAN AND SCHEDULE

SHEET NO.
TMP-1

PROJECT: 17BP.11.R.76

CONTRACT:

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DGN\$\$\$\$\$
\$\$\$\$\$USERNAM\$\$\$\$\$

ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1130.01	DRUM
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)

- WORK AREA
- REMOVAL
- USER DEFINED (IF NEEDED)
- USER DEFINED (IF NEEDED)

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

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

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

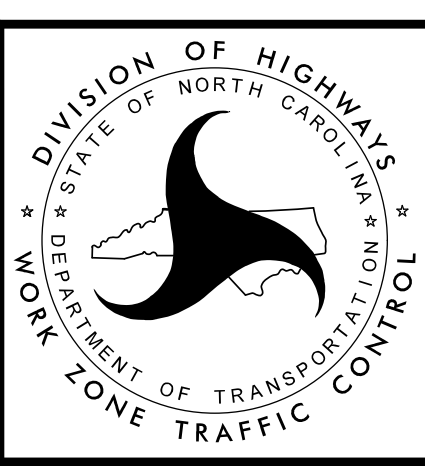
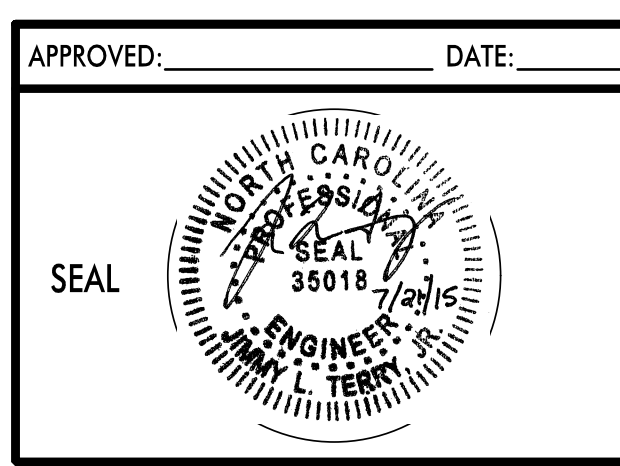
- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

\$\$\$\$\$SYTIME\$\$\$\$\$
 \$\$\$DDGN\$\$\$\$\$
 \$\$\$USERNAME\$\$\$\$\$

TGS ENGINEERS
 TGS ENGINEERS
 804-C N. LAFAYETTE ST.
 SHELBY, NC 28150
 PH (704) 476 0003
 CORP. LICENSE NO.: C-0275



ROADWAY STANDARD
 DRAWINGS & LEGEND

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRABLE 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.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- B) 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.
- C) PROVIDE PERMANENT SIGNING.
- D) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

- E) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

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

TRAFFIC CONTROL DEVICES

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

PAVEMENT MARKINGS AND MARKERS

- H) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE AS SHOWN IN THE PAVEMENT MARKING PLAN.
- I) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

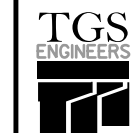
MANAGEMENT STRATEGIES

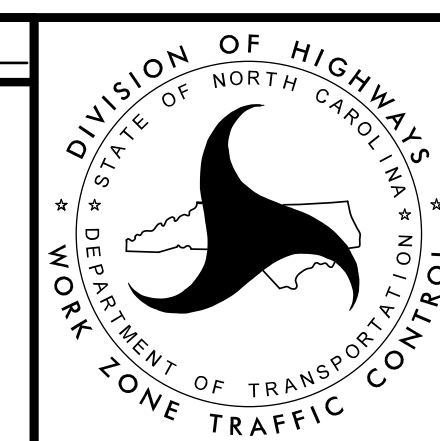
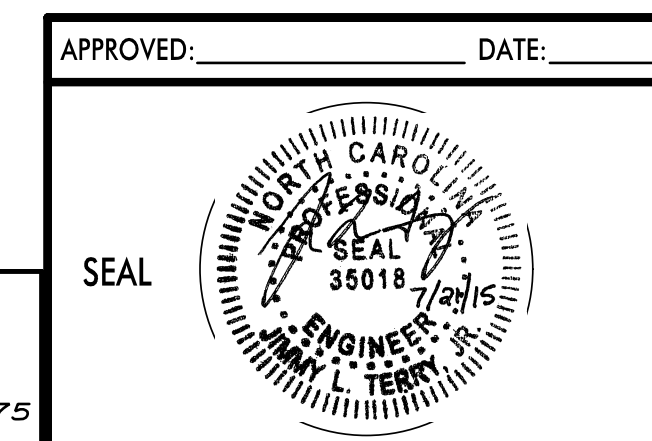
DURING CONSTRUCTION OF PROPOSED STRUCTURE, SR 1222 (MOUNTAIN DALE ROAD) WILL BE CLOSED TO THROUGH TRAFFIC. MOUNTAIN DALE ROAD TRAFFIC WILL BE MAINTAINED ON THE FOLLOWING OFFSITE DETOUR: FROM SR 1221 (LOCUST GAP RD) TO SR 1225 (BEAVER DAM RD) TO SR 1201 (BETHEL RD) BACK TO SR 1222 (MOUNTAIN DALE RD).

LOCAL NOTES

ACCESS TO STONE MOUNTAIN ROAD (SR 1207) AND ALL DRIVEWAYS MUST BE PROVIDED AT ALL TIMES WITHIN THE PROJECT LIMITS, EXCEPT AS NOTED ON PLANS.

\$\$\$SYTIME\$\$\$\$\$
 \$\$\$DGN\$\$\$\$\$
 \$\$\$USERNAME\$\$\$\$\$


TGS ENGINEERS
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 SHELBY, NC 28150
 PH (704) 476 0003
 CORP. LICENSE NO.: C-0275



TRANSPORTATION
 OPERATIONS
 PLAN

PHASING NOTES

WATAUGA COUNTY
BRIDGE #940020

PROJ. REFERENCE NO. 17BP.11.R.76	SHEET NO. TMP-2
-------------------------------------	--------------------

STEP 1: INSTALL ALL DETOUR ROUTE SIGNS AS SHOWN ON SHEET TMP-3.

STEP 2: INSTALL TYPE III BARRICADES AND SIGNS AND CLOSE SR 1222 (MOUNTAIN DALE RD) TO TRAFFIC AS SHOWN IN ROADWAY STANDARD DRAWING 1101.03 (SHEET 1 OF 9) AND ON SHEET TMP-2 AND TMP-3. PLACE TRAFFIC ON DETOUR ROUTE.

STEP 3: DEMOLISH AND REMOVE THE EXISTING BRIDGE AND CONSTRUCT THE NEW CULVERT ON RUBE CREEK AT -L- STA. 13+18.00. CONSTRUCT MOUNTAIN DALE ROAD (SR 1222) FROM -L- STA. 11+00.00 TO STA. 14+50.00, INCLUDING THE FINAL LAYER OF SURFACE COURSE.

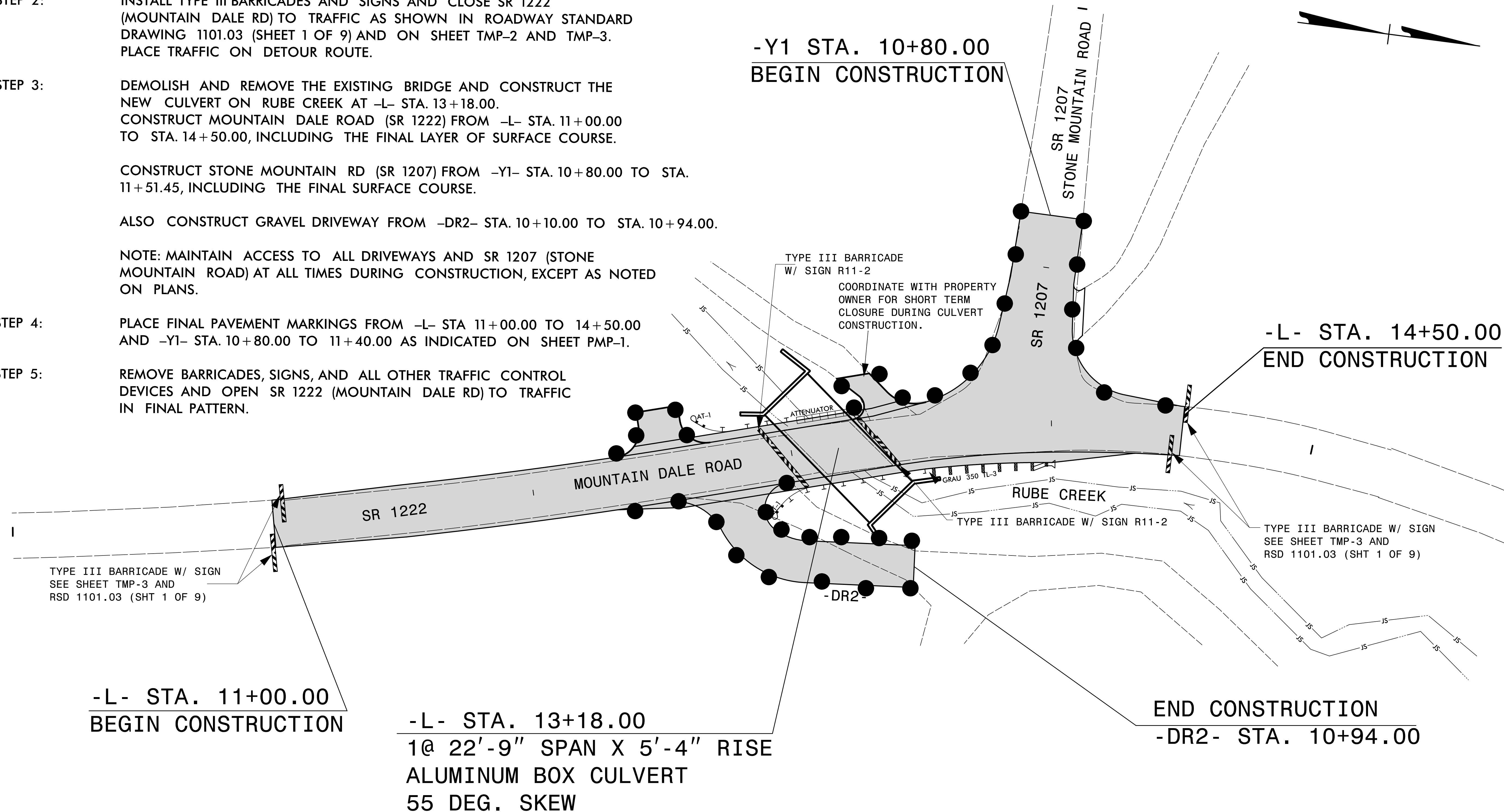
CONSTRUCT STONE MOUNTAIN RD (SR 1207) FROM -Y1- STA. 10+80.00 TO STA. 11+51.45, INCLUDING THE FINAL SURFACE COURSE.

ALSO CONSTRUCT GRAVEL DRIVEWAY FROM -DR2- STA. 10+10.00 TO STA. 10+94.00.

NOTE: MAINTAIN ACCESS TO ALL DRIVEWAYS AND SR 1207 (STONE MOUNTAIN ROAD) AT ALL TIMES DURING CONSTRUCTION, EXCEPT AS NOTED ON PLANS.

STEP 4: PLACE FINAL PAVEMENT MARKINGS FROM -L- STA 11+00.00 TO 14+50.00 AND -Y1- STA. 10+80.00 TO 11+40.00 AS INDICATED ON SHEET PMP-1.

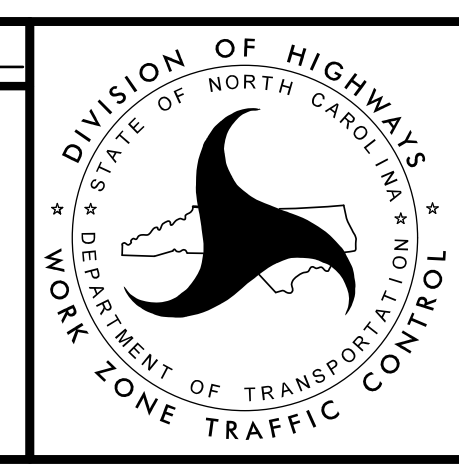
STEP 5: REMOVE BARRICADES, SIGNS, AND ALL OTHER TRAFFIC CONTROL DEVICES AND OPEN SR 1222 (MOUNTAIN DALE RD) TO TRAFFIC IN FINAL PATTERN.



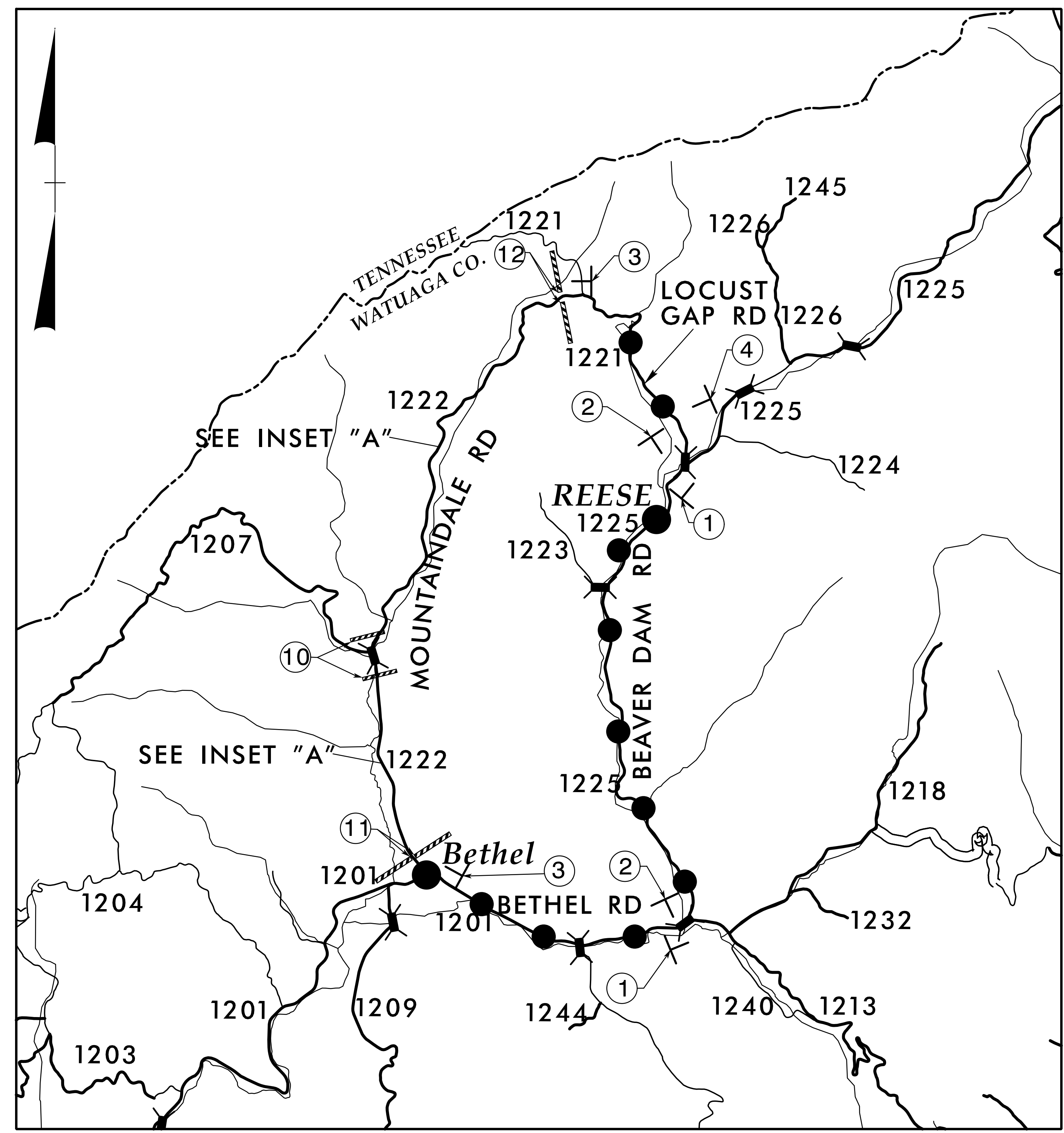
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\$\$\$\$\$ FILE \$\$\$\$\$\$
\$\$\$\$\$ USER NAME \$\$\$\$\$\$
\$\$\$\$\$

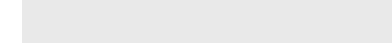

TGS ENGINEERS
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SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

APPROVED: _____ DATE: _____
SEAL

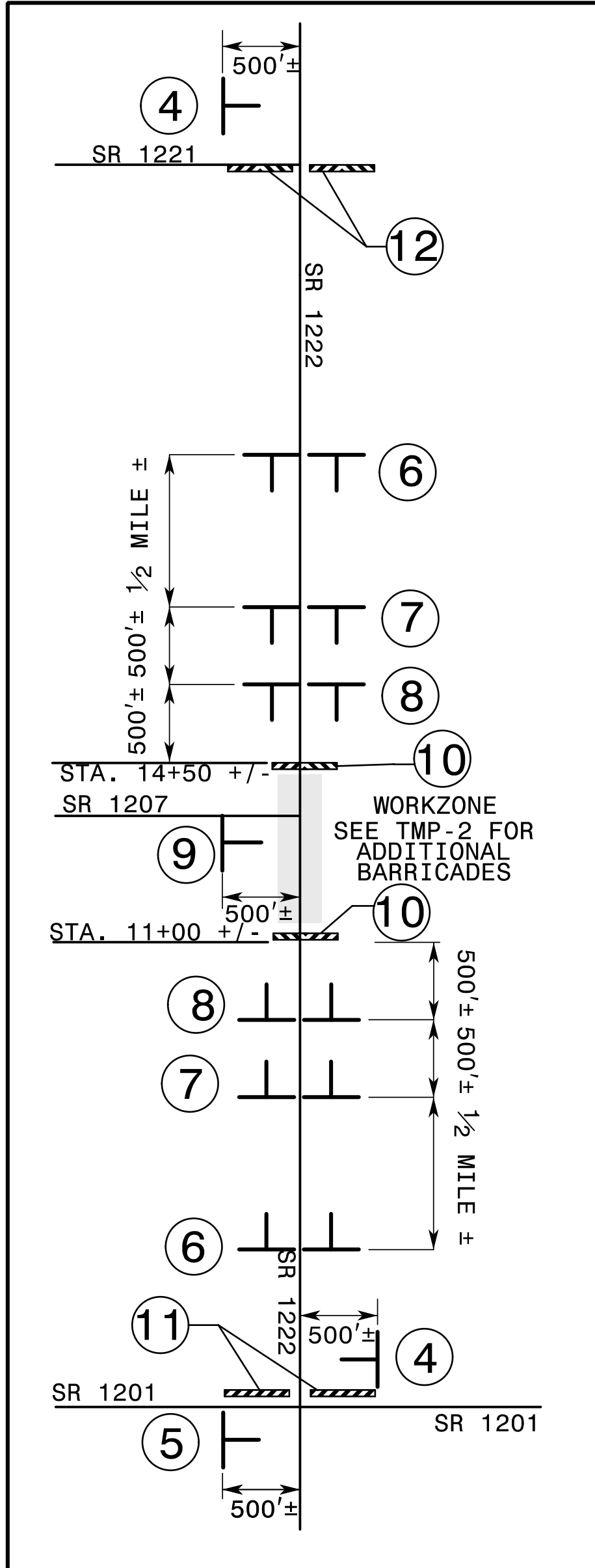


OVERVIEW
AND PHASING

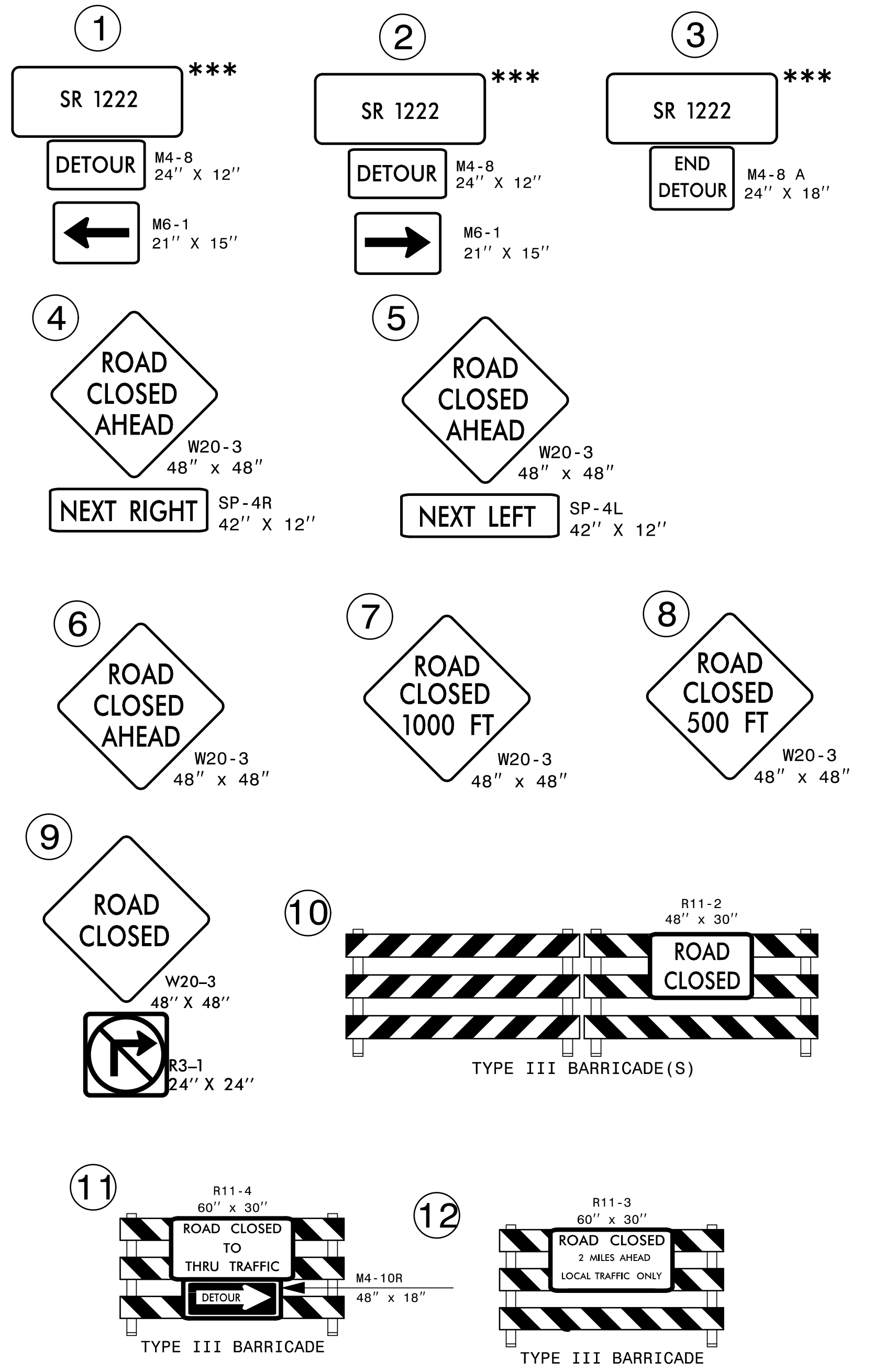


 CONSTRUCTION AREA
 DETOUR ROUTE
 *** SEE SHEET TMP-1C FOR SIGN DESIGN

INSET "A"



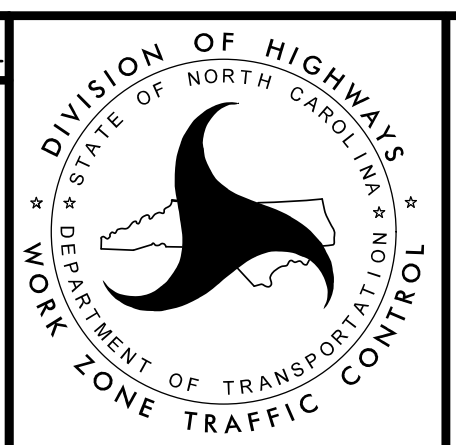
REFER TO ROADWAY STANDARD DRAWING 1101.03, SHEETS 1 OF 9 FOR APPLICABLE NOTES.



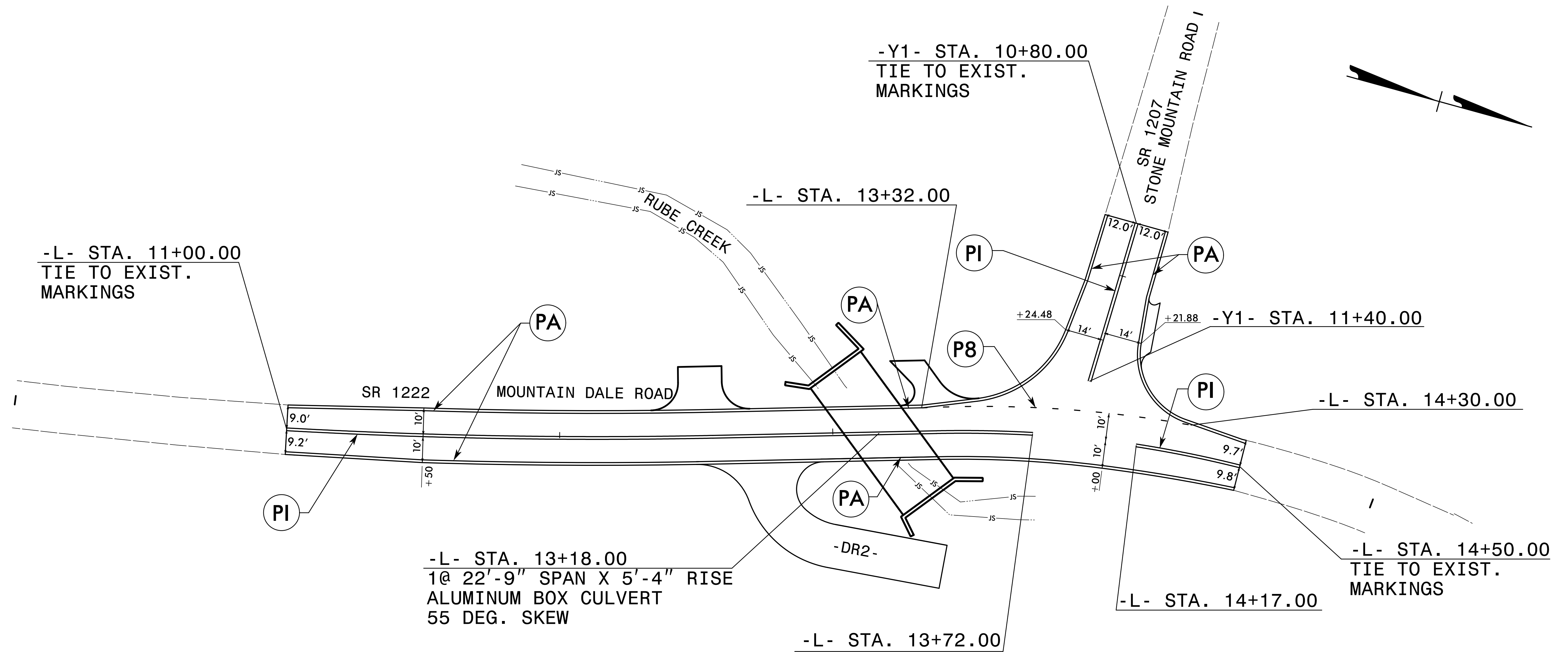
SYSTEMS DESIGN SERVICES
 1000 SHERMAN ST.
 WASHINGTON, DC 20004

TGS ENGINEERS
 804-C N. LAFAYETTE ST.
 SHELBY, NC 28150
 PH (704) 476 0003
 CORP. LICENSE NO.: C-0275

APPROVED: _____ DATE: _____
 SEAL



OFFSITE DETOUR ROUTE
 AND BARRICADE PLACEMENT

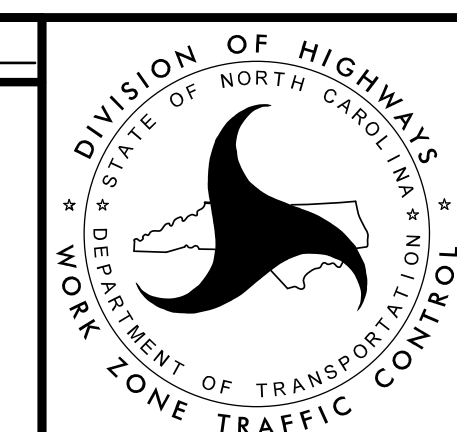
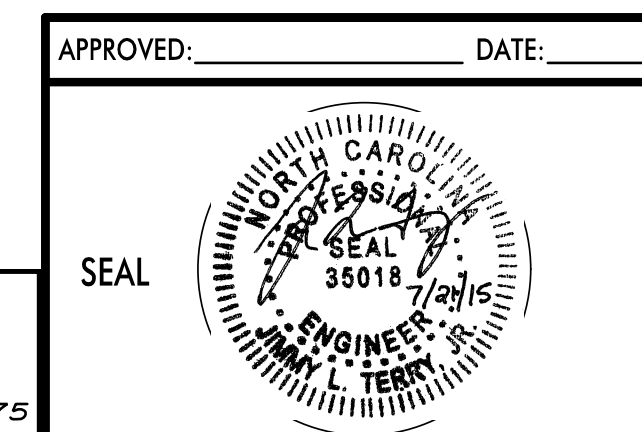


Pavement Marking Schedule
TIP Project # 17BP.11.R.76

SYMB	DESCRIPTION	PAY ITEM	QUANTITY	TOTAL
	FINAL PAVEMENT MARKINGS			
	PAINT (4")			
P8	2 FT. - 6 FT./SP WHITE MINISKIP (2X)		50 LF	
PA	WHITE EDGELINE (2X)		1540 LF	
PI	YELLOW DOUBLE CENTER (2X)		1460 LF	
		TOTAL		3050 LF

NOTE: FOR EACH PAINT PAVEMENT MARKING ITEM, 1X IMPLIES A SINGLE APPLICATION, 2X IMPLIES TWO APPLICATIONS, AND 3X IMPLIES THREE APPLICATIONS.

TGS ENGINEERS
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SHELBY, NC 28150
PH (704) 476 0003
CORP. LICENSE NO. C-0275



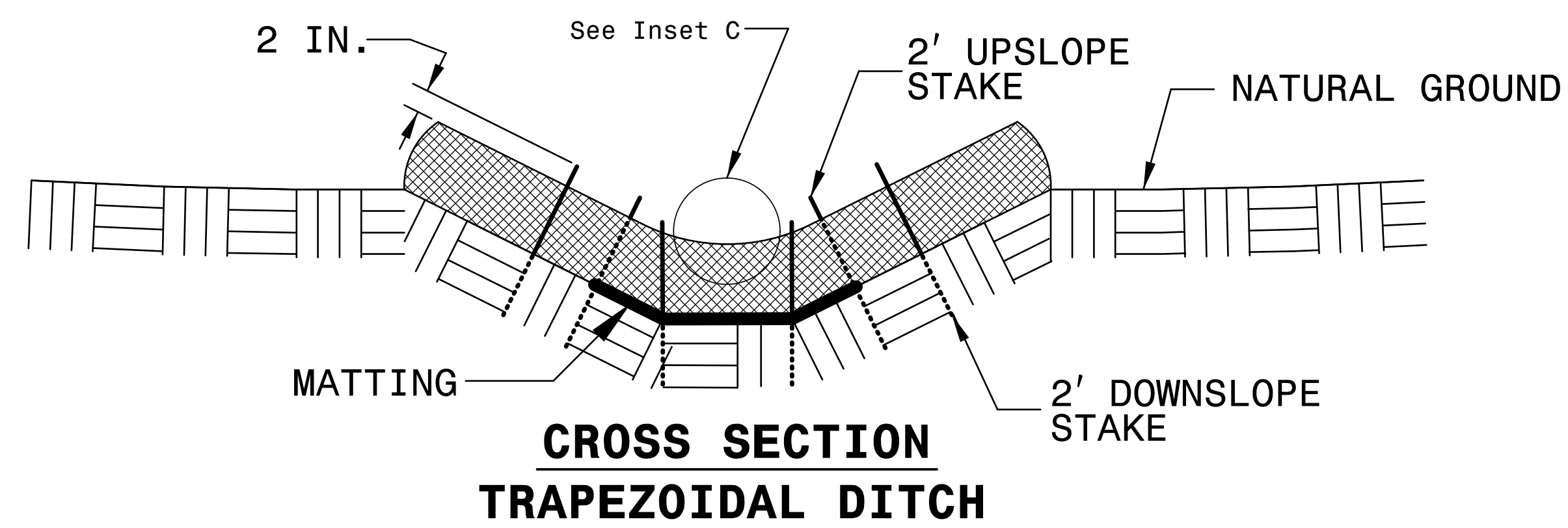
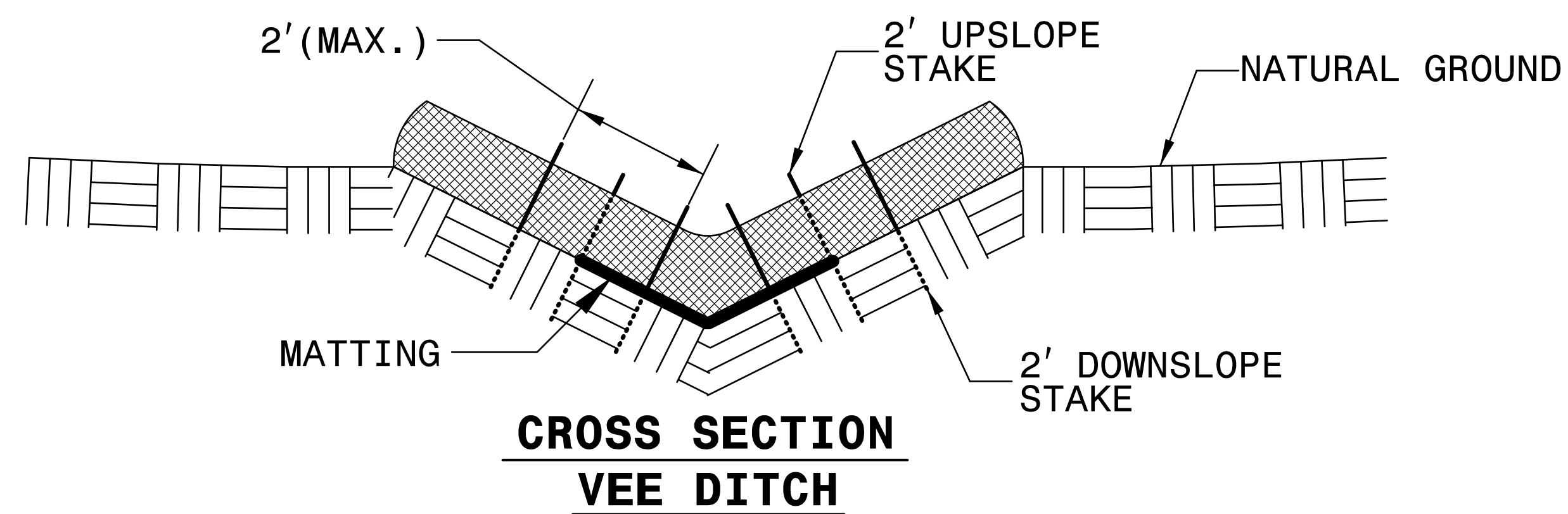
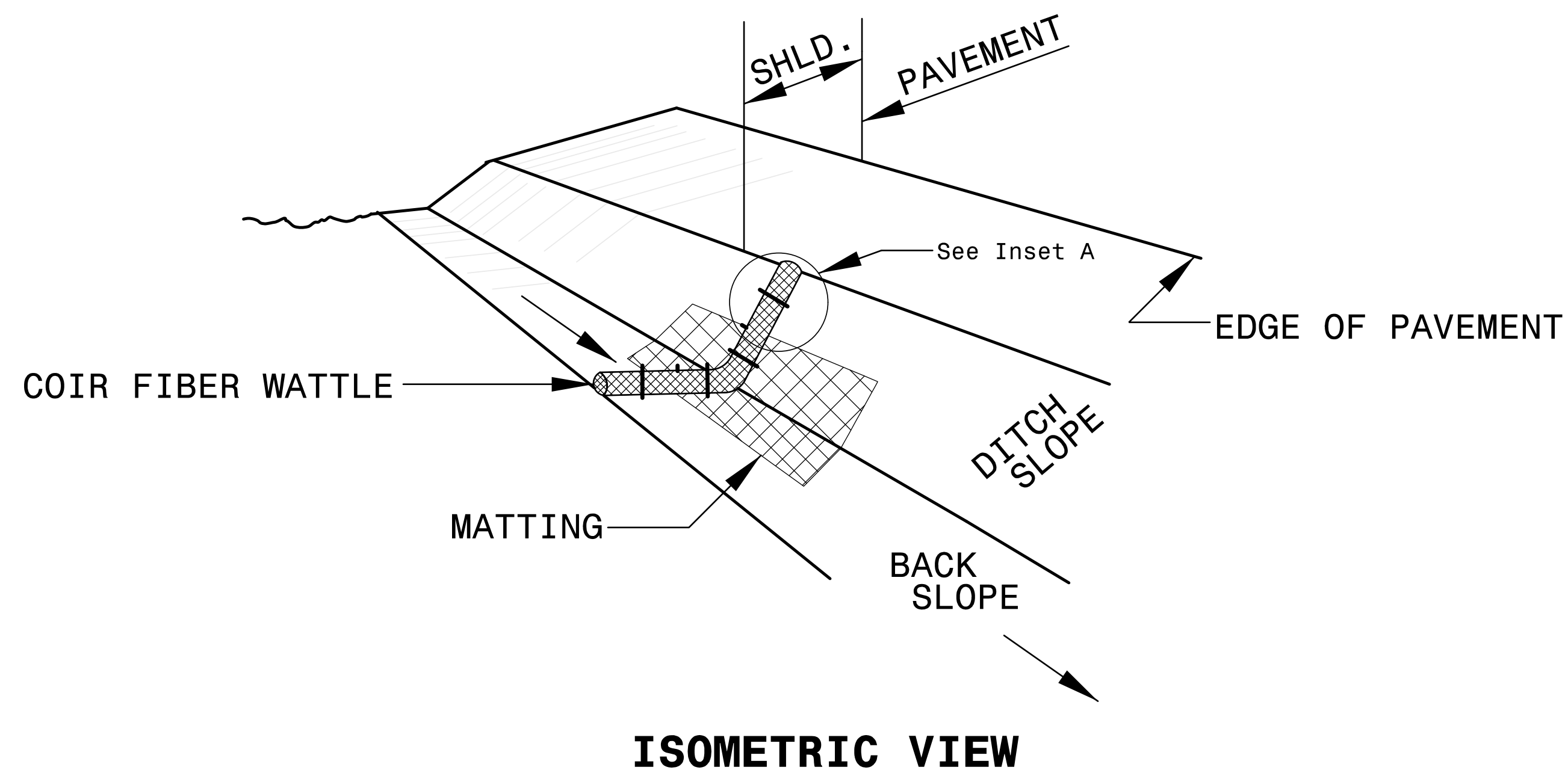
APPROVED: _____ DATE: _____

FINAL PAVEMENT MARKING PLAN AND SCHEDULE

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DGN\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

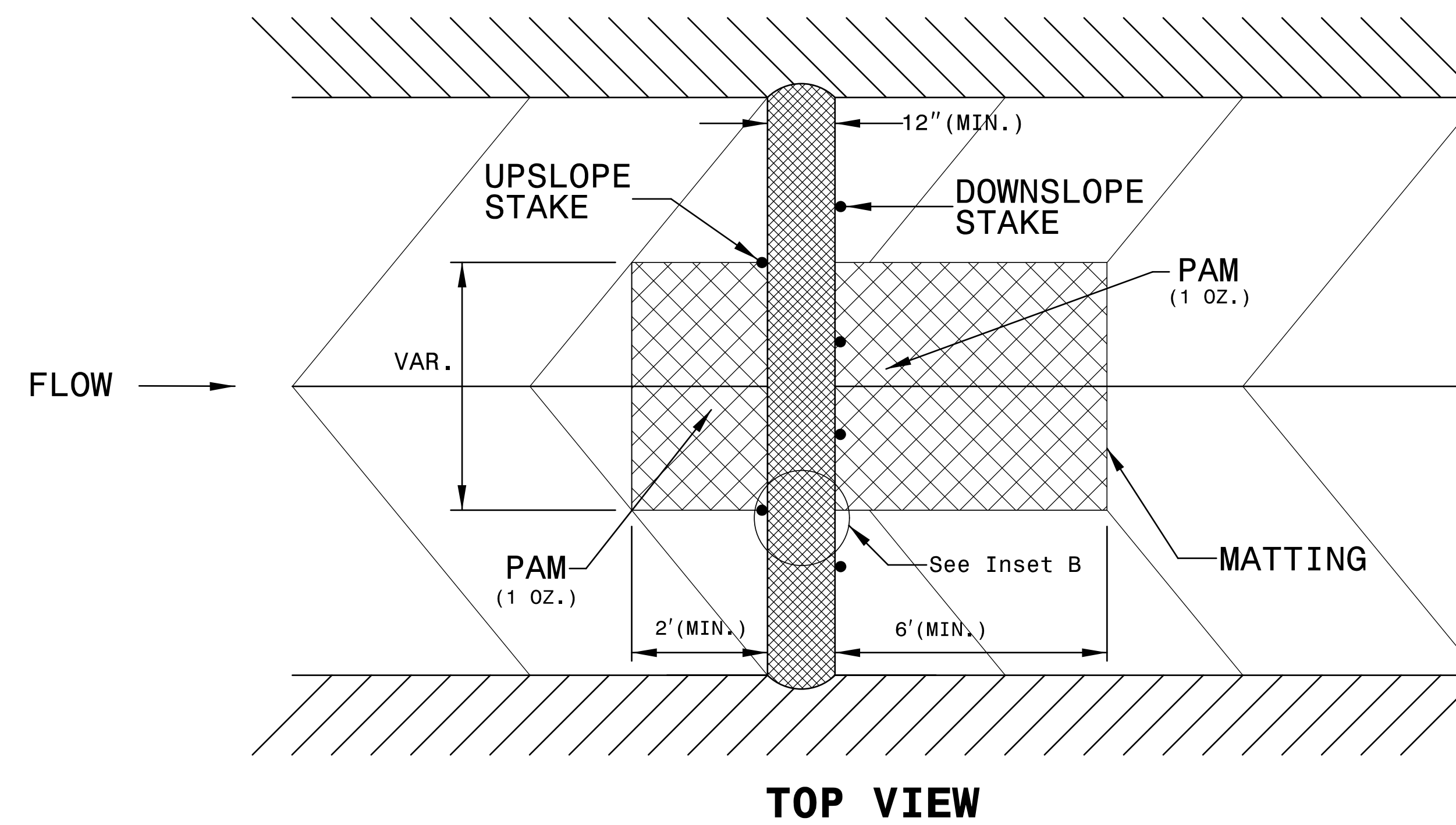
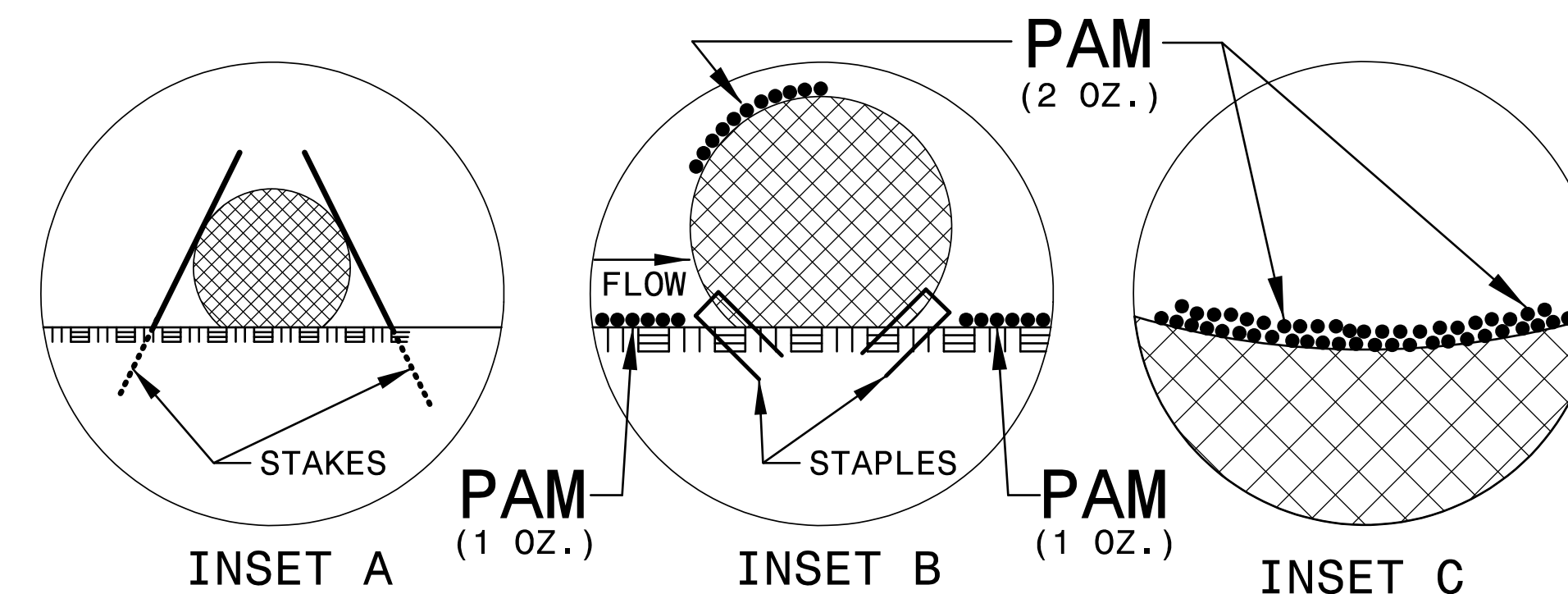
PROJECT REFERENCE NO. 17BPJLR76	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



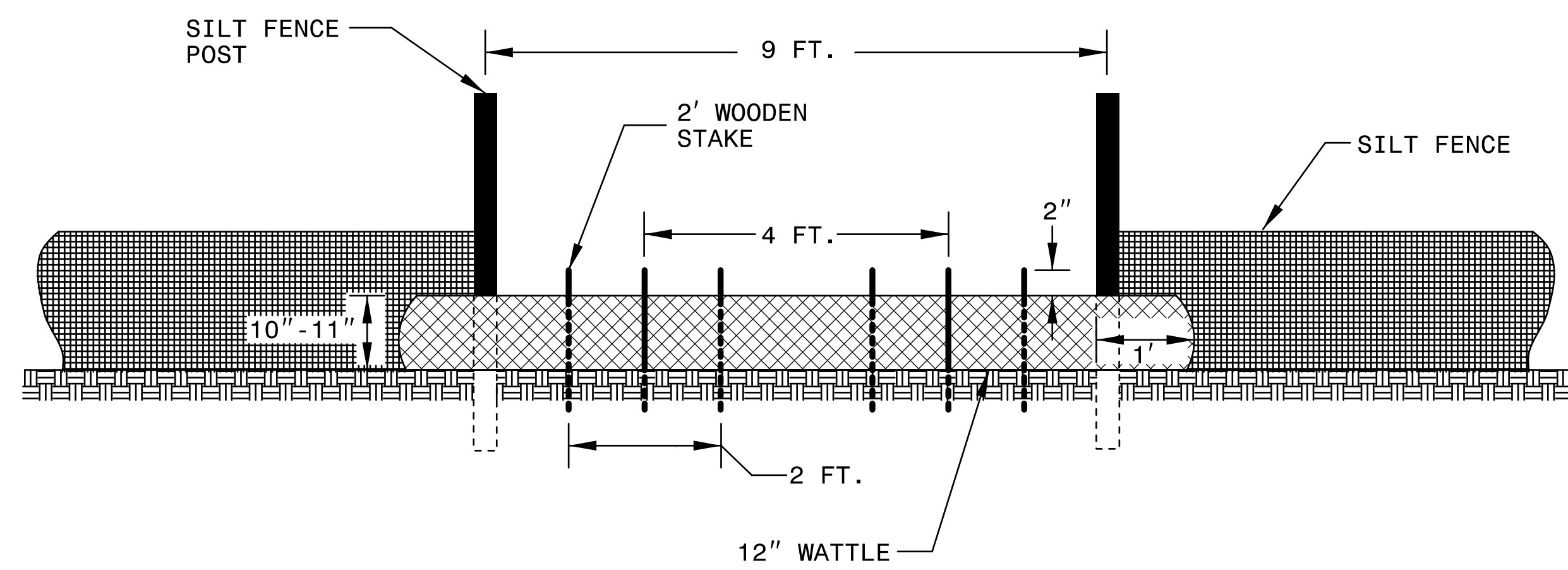
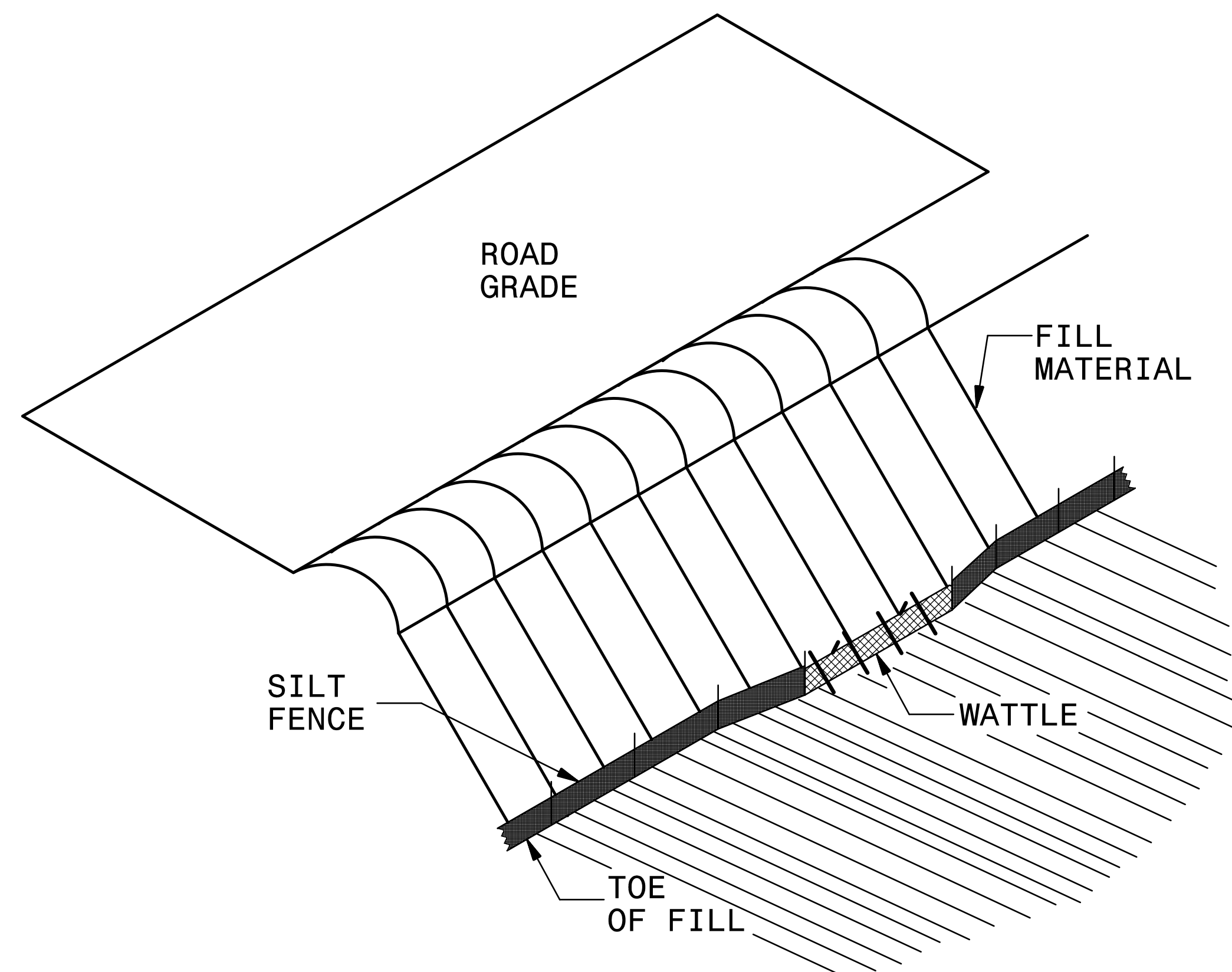
NOTES:

- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
- PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
- INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
- INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.
- PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.
- INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



SILT FENCE COIR FIBER WATTLE BREAK DETAIL

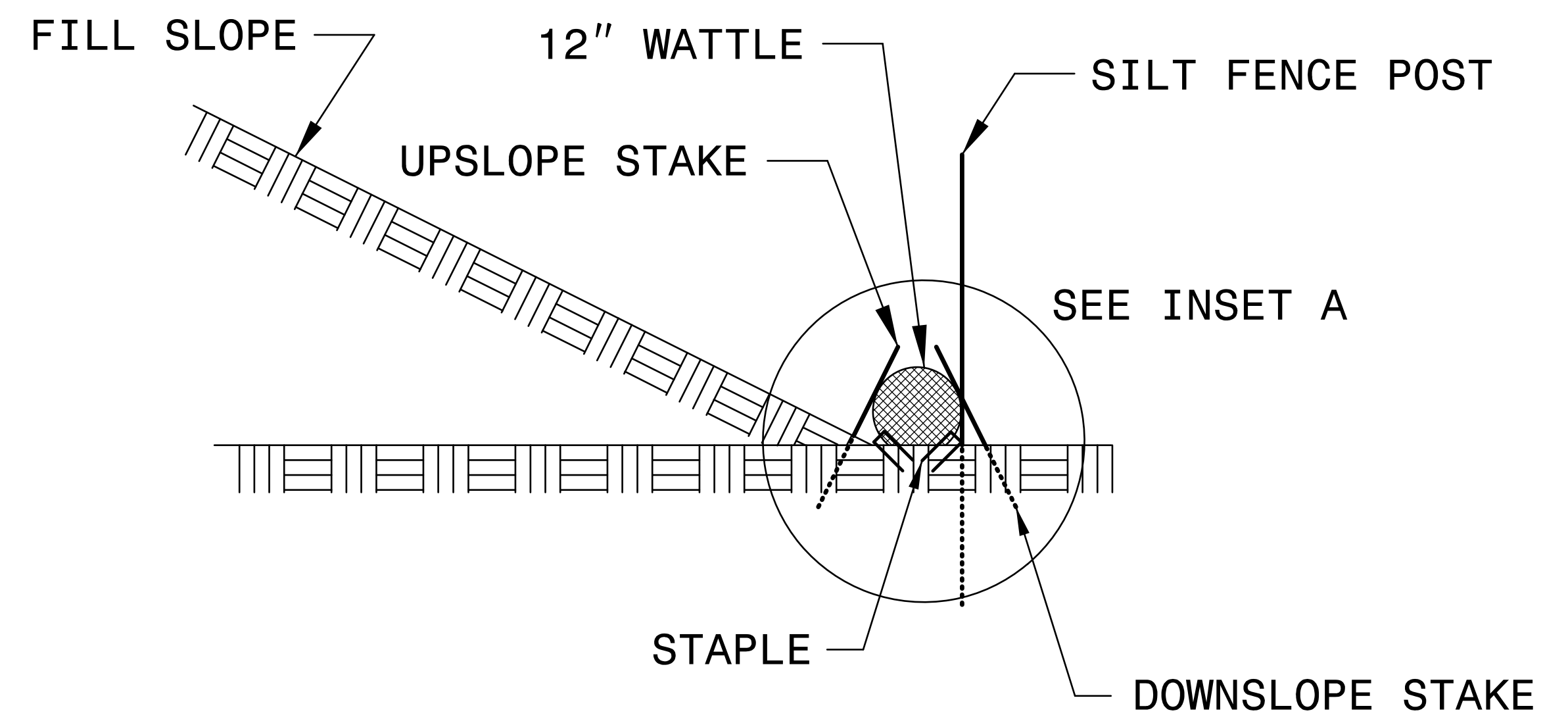
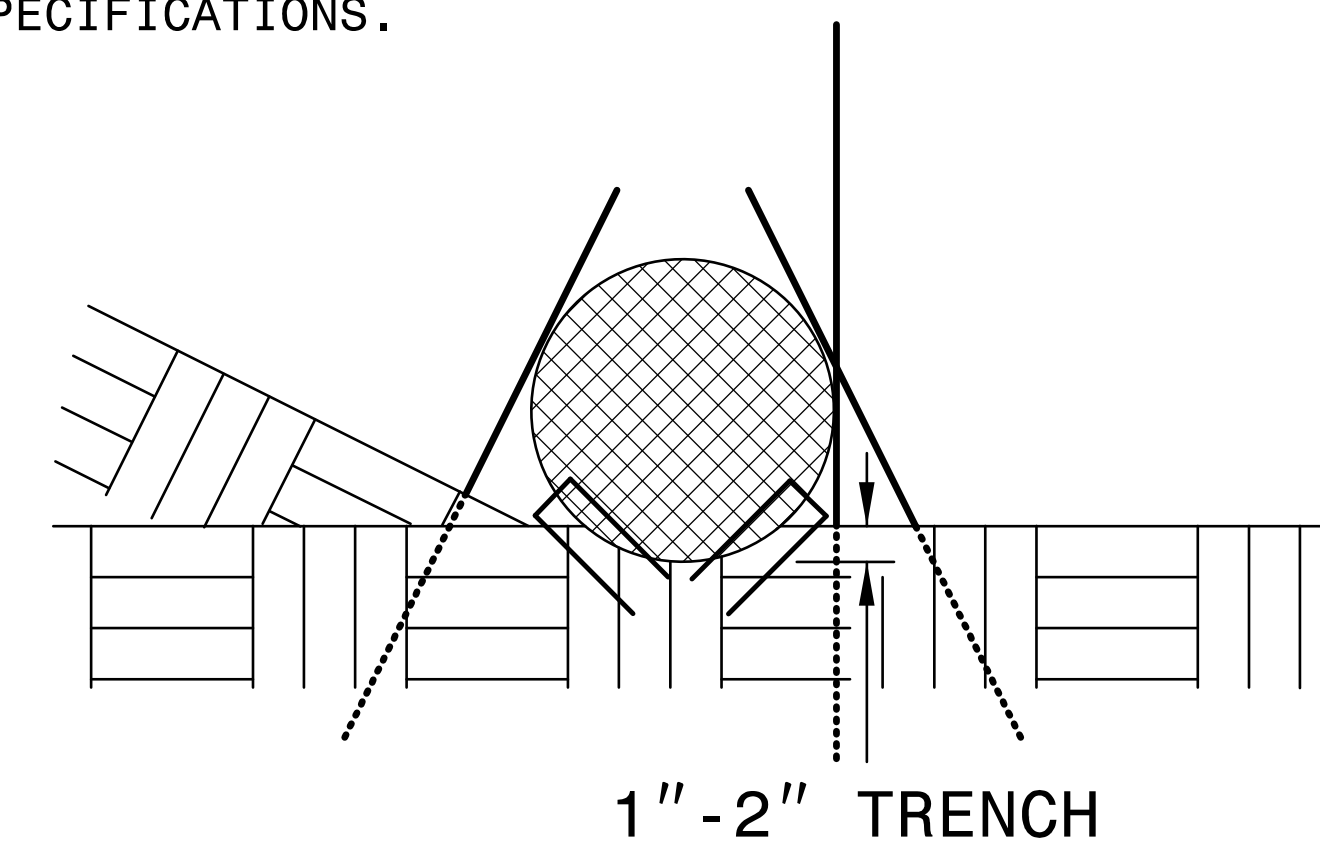
PROJECT REFERENCE NO. 17BPJLR76	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTES:

- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.
- DO NOT PLACE WATTLE 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.
- WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.
- INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A



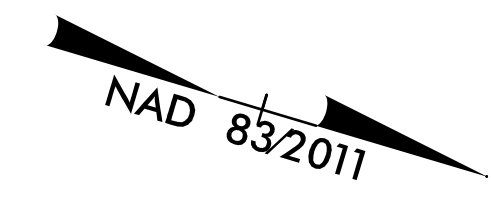
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>17BP11.R.76</i>	SHEET NO. <i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

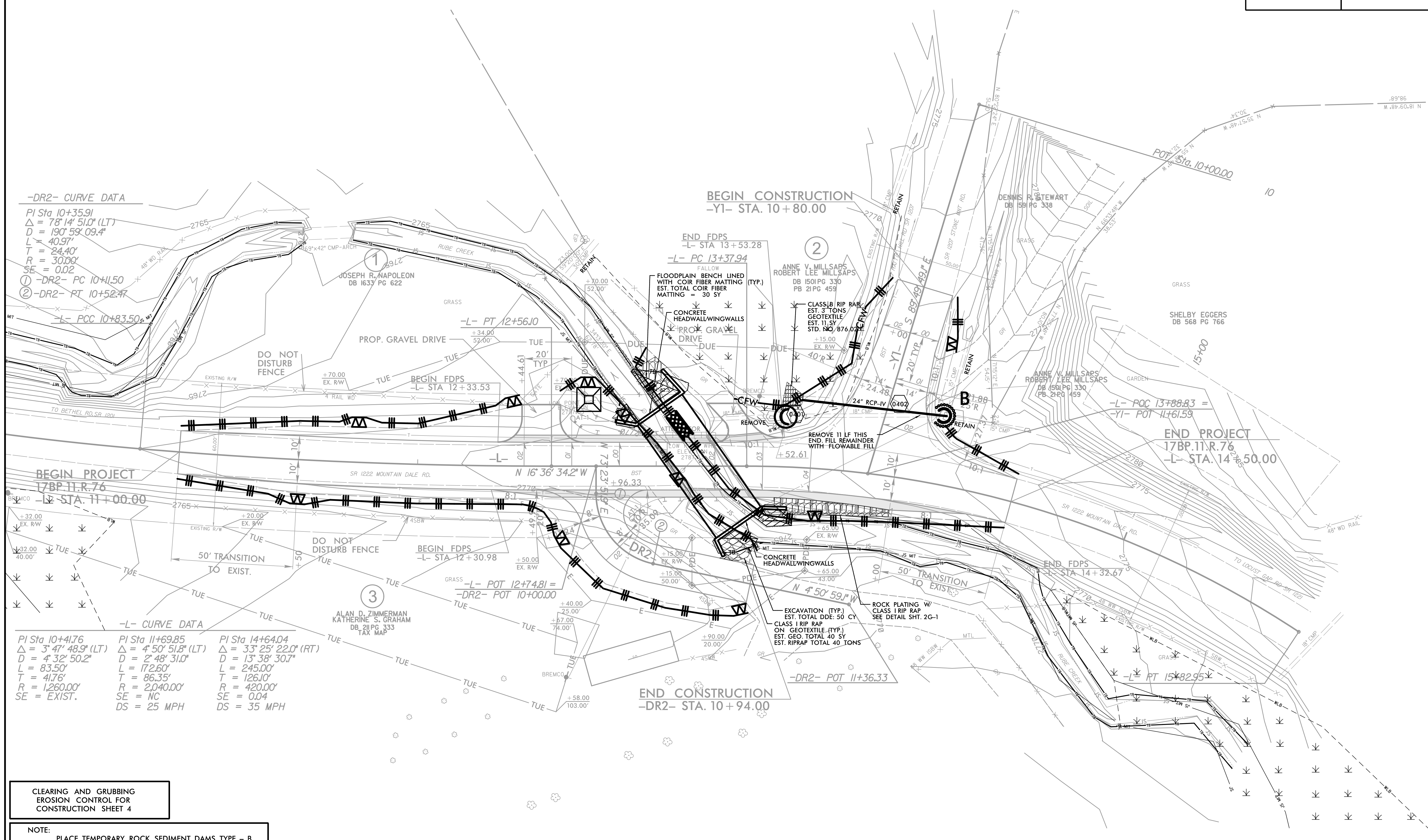
SOIL STABILIZATION TIMEFRAMES

<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.

Watauga County
Bridge #940020



PROJECT REFERENCE NO. 17BP.11.R.76	SHEET NO. EC-4/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



-DR2- CURVE DATA
 PI Sta 10+35.91
 $\Delta = 78^{\circ} 14' 51.0''$ (LT)
 $D = 190^{\circ} 59' 09.4''$
 $L = 40.97'$
 $T = 24.40'$
 $R = 30.00'$
 $SE = 0.02$
 ① -DR2- PC 10+11.50
 ② -DR2- PT 10+52.47

BEGIN PROJECT
 17BP.11.R.76
 -L- STA. 11+00.00

-L- CURVE DATA

PI Sta 10+41.76 $\Delta = 3^{\circ} 47' 48.9''$ (LT) $D = 4^{\circ} 32' 50.2''$ $L = 83.50'$ $T = 41.76'$ $R = 1,260.00'$ $SE = EXIST.$	PI Sta 11+69.85 $\Delta = 4^{\circ} 50' 51.8''$ (LT) $D = 2^{\circ} 48' 31.0''$ $L = 172.60'$ $T = 86.35'$ $R = 2,040.00'$ $DS = NC$	PI Sta 14+64.04 $\Delta = 33^{\circ} 25' 22.0''$ (RT) $D = 13^{\circ} 38' 30.7''$ $L = 245.00'$ $T = 126.10'$ $R = 420.00'$ $DS = 35 MPH$
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CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

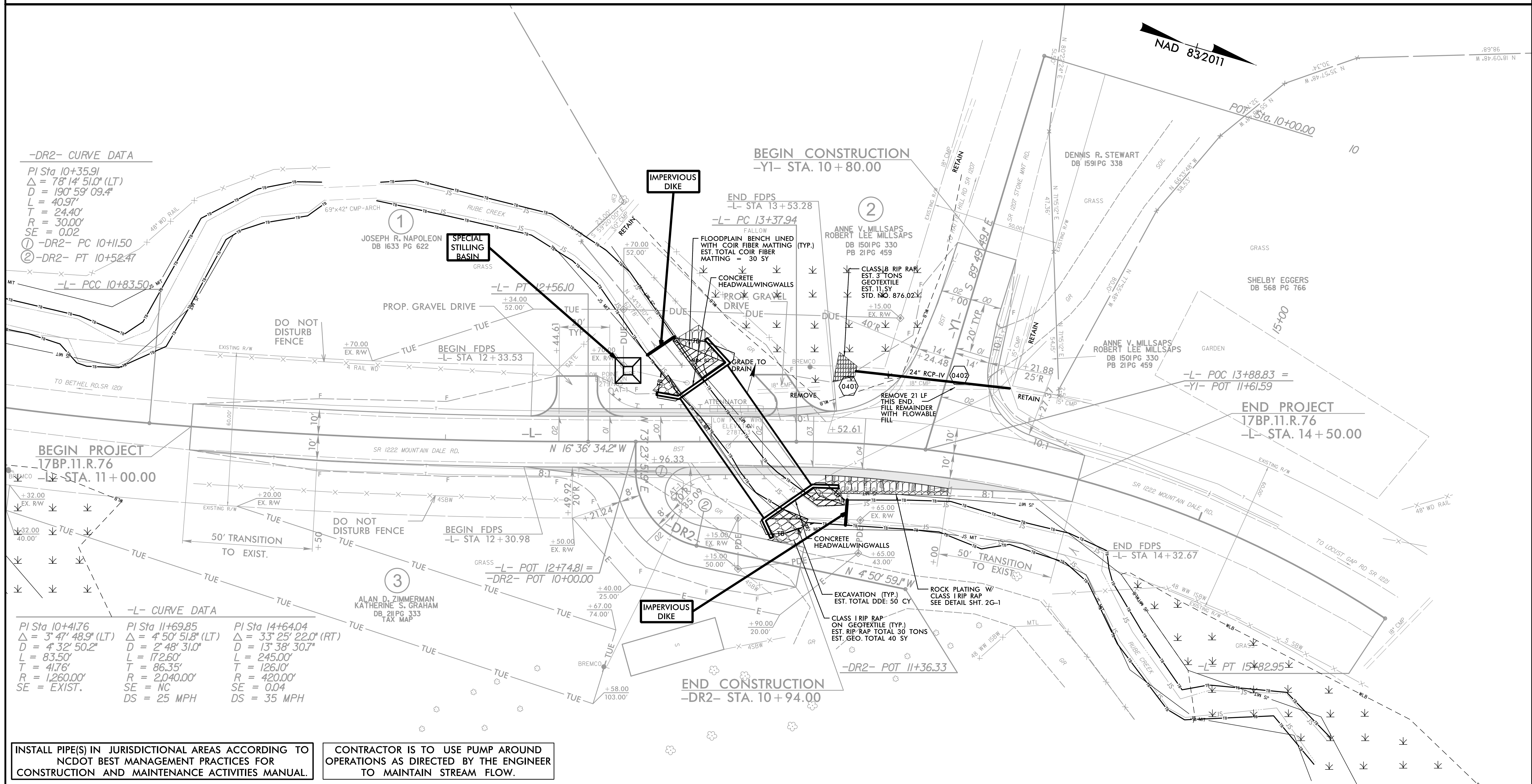
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT
DRAINAGE OUTLETS.

PROJECT REFERENCE NO.	SHEET NO.
17BP.11.R.76	EC-5/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CULVERT CONSTRUCTION SEQUENCE STA. 13+18 -L-

PHASING

1. Close SR 1222 (Mountain Dale Road) to traffic as shown in traffic management plans.
2. Install perimeter erosion control devices as shown on EC-4.
3. Construct impervious dikes to restrain stream and begin pump around operations. Utilize special stilling basin to dewater work site as needed.
4. Remove existing bridge over Rube Creek.
5. Install proposed 22'-9" Span x 5'-4" Rise Aluminum Box Culvert with concrete headwalls and wingwalls.
6. Complete any necessary Inlet/Outlet channel improvements.
7. Remove impervious dikes and divert water into new culvert.
8. Complete roadway construction.



Watauga County
Bridge #940020



PROJECT REFERENCE NO. 17BP.11.R.76	SHEET NO. EC-6/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Place Matting for Erosion Control on Slope as Work Allows.

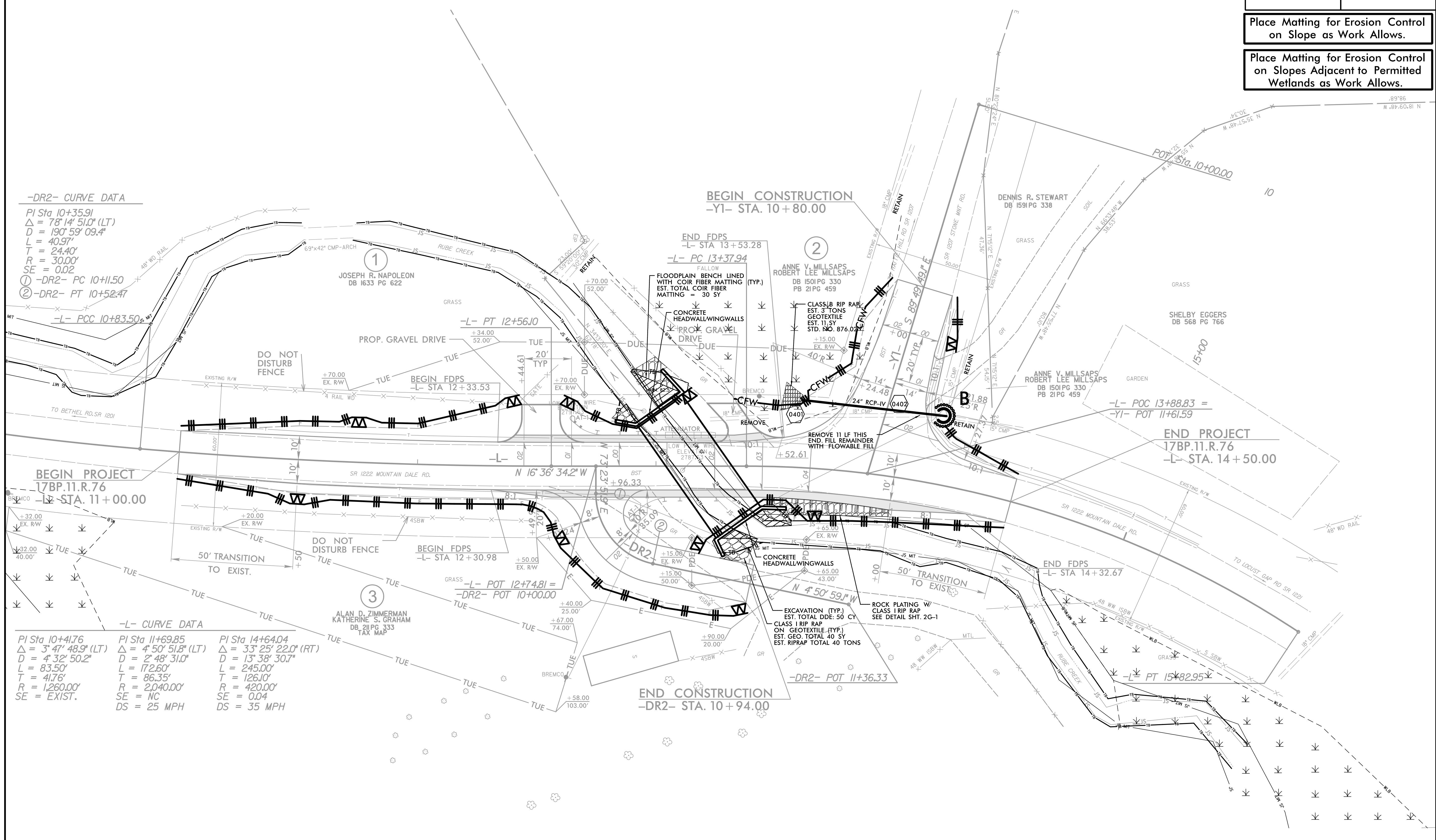
Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

-DR2- CURVE DATA
 PI Sta 10+35.91
 $\Delta = 78^{\circ} 14' 51.0''$ (LT)
 $D = 190^{\circ} 59' 09.4''$
 $L = 40.97'$
 $T = 24.40'$
 $R = 30.00'$
 $SE = 0.02$
 ① -DR2- PC 10+11.50
 ② -DR2- PT 10+52.47

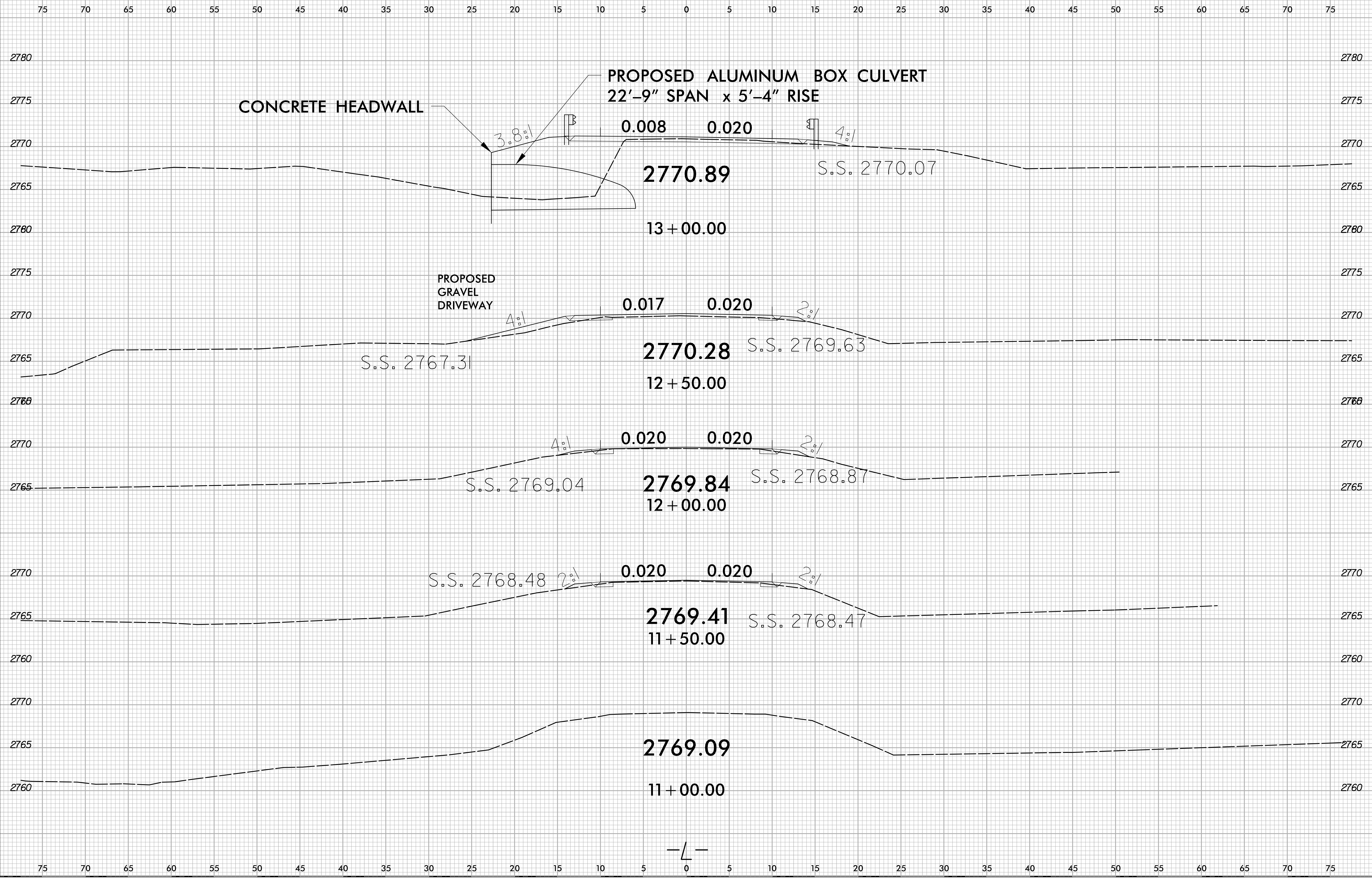
BEGIN PROJECT
 17BP.11.R.76
 -L- STA. 11+00.00

-L- CURVE DATA

PI Sta 10+41.76 $\Delta = 3^{\circ} 47' 48.9''$ (LT) $D = 4^{\circ} 32' 50.2''$ $L = 83.50'$ $T = 41.76'$ $R = 1,260.00'$ $SE = EXIST.$	PI Sta 11+69.85 $\Delta = 4^{\circ} 50' 51.8''$ (LT) $D = 2^{\circ} 48' 31.0''$ $L = 172.60'$ $T = 86.35'$ $R = 2,040.00'$ $SE = NC$	PI Sta 14+64.04 $\Delta = 33^{\circ} 25' 22.0''$ (RT) $D = 13^{\circ} 38' 30.7''$ $L = 245.00'$ $T = 126.10'$ $R = 420.00'$ $SE = 0.04$ $DS = 35$ MPH
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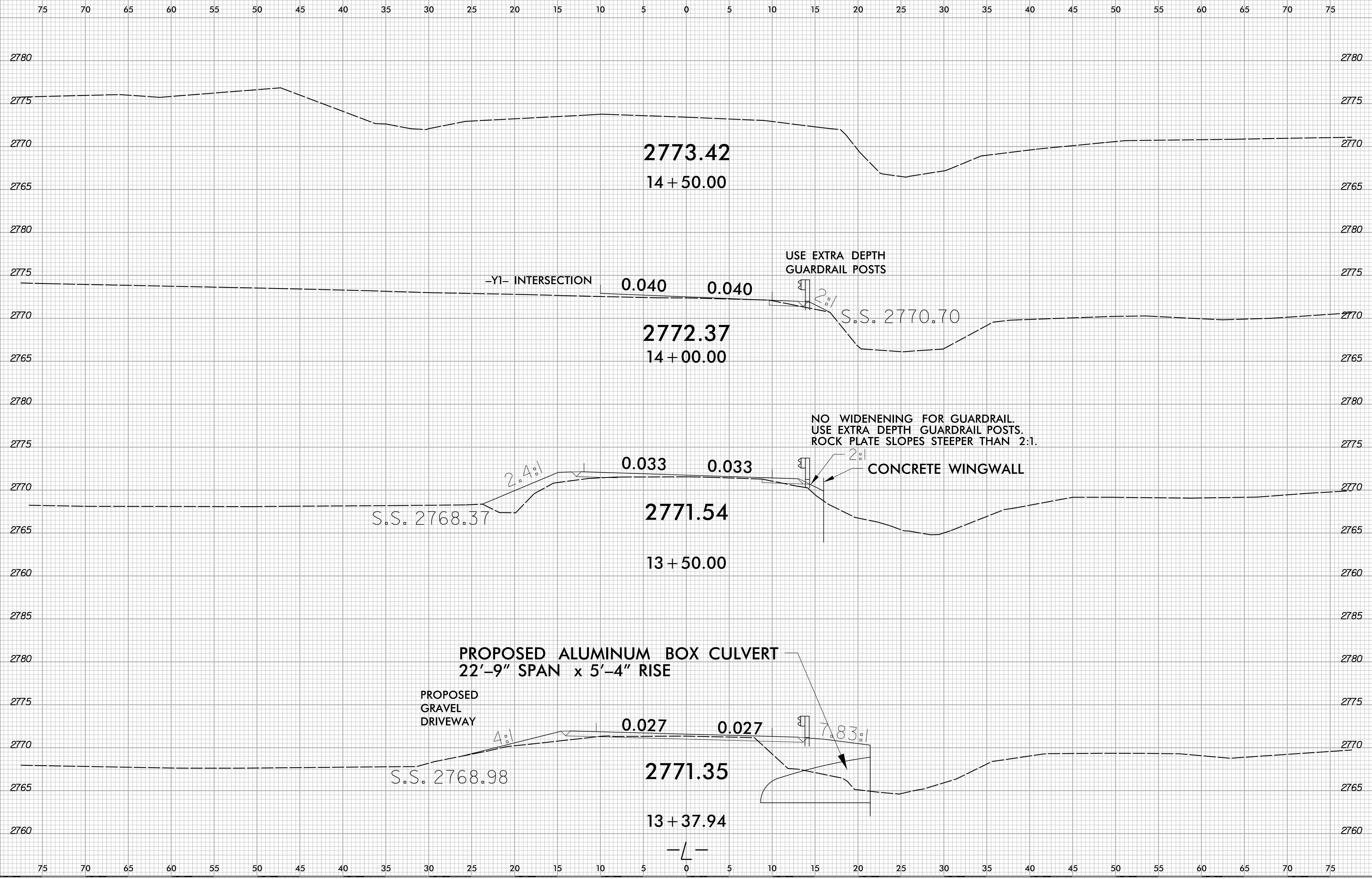


8/23/99



SYTIME
DGN

8/23/99



2773.42
14 + 50.00

2772.37
14 + 00.00

2771.54
13 + 50.00

2771.35
13 + 37.94

-Y1- INTERSECTION

USE EXTRA DEPTH
GUARDRAIL POSTS

NO WIDENING FOR GUARDRAIL.
USE EXTRA DEPTH GUARDRAIL POSTS.
ROCK PLATE SLOPES STEEPER THAN 2:1.

CONCRETE WINGWALL

PROPOSED ALUMINUM BOX CULVERT
22'-9" SPAN x 5'-4" RISE

PROPOSED
GRAVEL
DRIVEWAY

S.S. 2768.37

S.S. 2768.98

S.S. 2770.70

*****SYTIME*****
*****SUDRIVE*****

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

2780 2780

2775 2775

2770 2770

2765 2765

2780 2780

2775 2775

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2785 2785

2780 2780

2775 2775

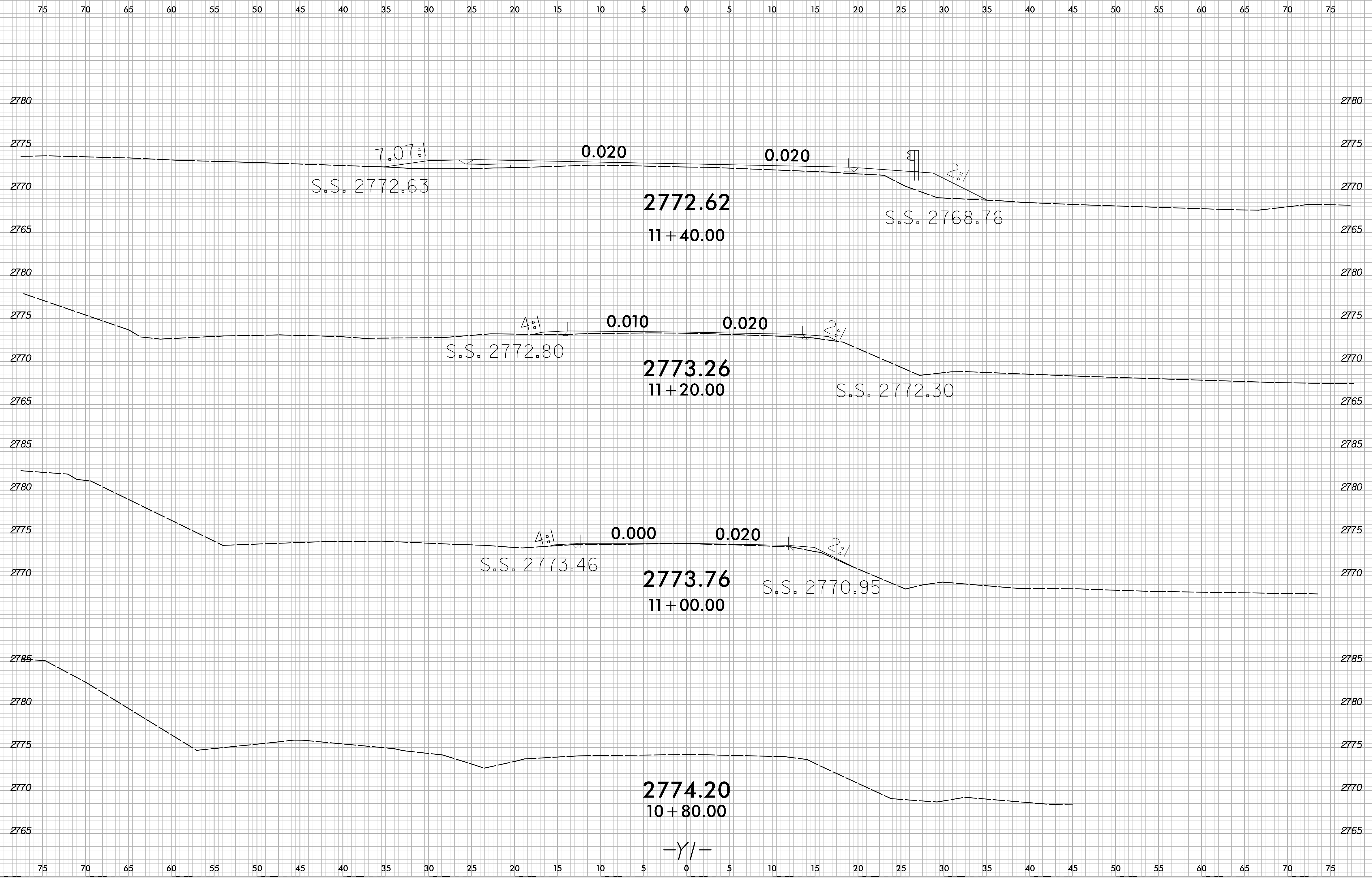
2770 2770

2765 2765

2760 2760

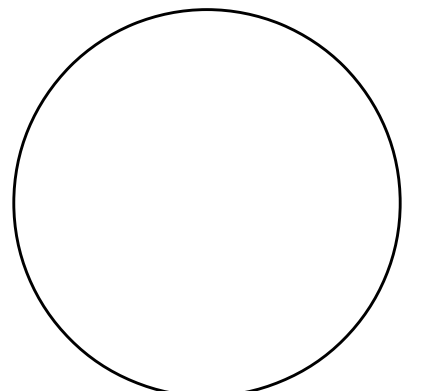
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

8/23/99



SYTIME
DGN
PLAN
DATE

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS.



SEAL

TOTAL STRUCTURE QUANTITIES	
REMOVAL OF EXISTING STRUCTURE @ STA. 13+18.00-L-	LUMP SUM
ALUMINUM BOX CULVERT @ STA. 13+18.00-L-	LUMP SUM
CULVERT EXCAVATION	LUMP SUM
FOUNDATION MATERIAL	106 TONS
CULVERT BACKFILL	450 TONS

HYDRAULIC DATA	
DESIGN DISCHARGE	= 420 CFS
FREQUENCY OF DESIGN FLOOD	= 5 YRS
DESIGN HIGH WATER ELEVATION	= 2,768.5'
DRAINAGE AREA	= 2.53 SQ. MILES
BASIC DISCHARGE (Q100)	= 1,100 CFS
BASIC HIGH WATER ELEVATION	= 2,772.31'
OVERTOPPING FLOOD DATA	
OVERTOPPING DISCHARGE	= 550 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 10 YRS
OVERTOPPING FLOOD ELEVATION	= 2,769.65' *

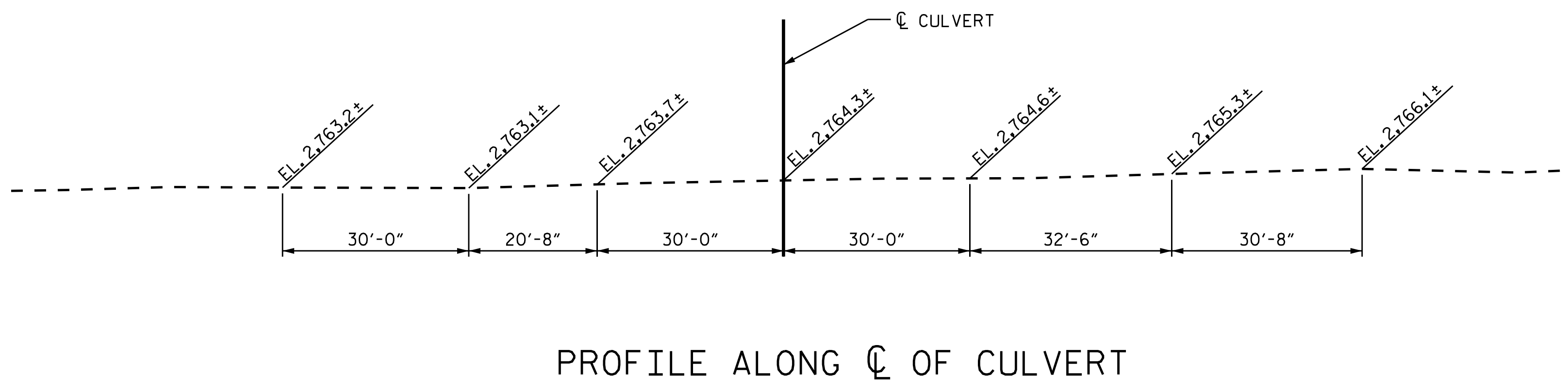
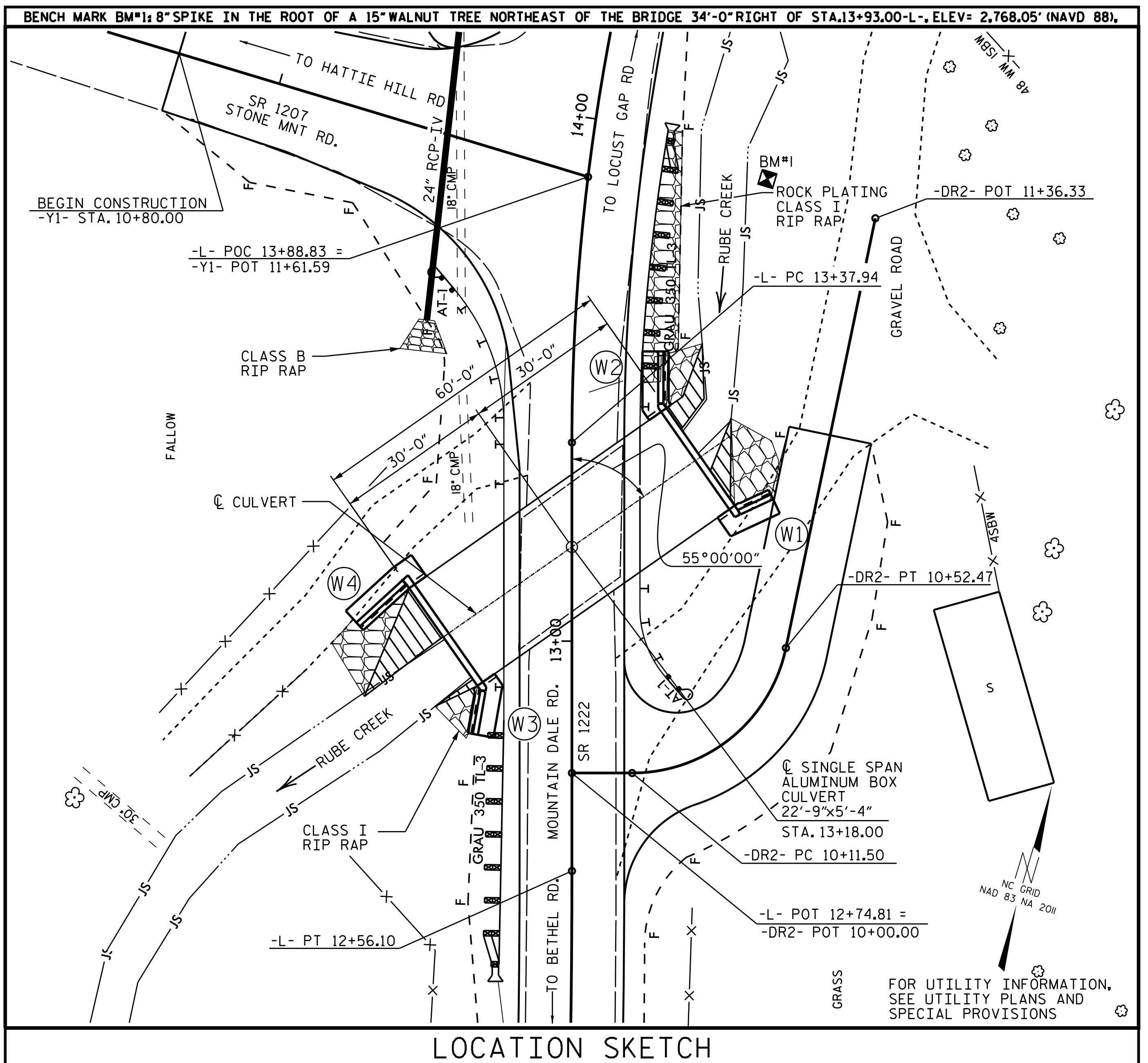
* OVERTOPPING ELEVATION REPRESENTS LOWEST HIGHPOINT WHICH OCCURS @ STA. 13+46.74' RT.

GRADE DATA	
GRADE POINT ELEVATION @ STA. 13+18.00-L-	2,771.34'
BED ELEVATION @ STA. 13+18.00-L-	2,764.1'
ROADWAY FILL SLOPES	2:1 (MAX)

NOTES:
 ASSUMED LIVE LOAD ----- HL-93 OR ALTERNATE LOADING.
 DESIGN FILL ----- MAX 3.1', MIN. 1.5'
 FOR CULVERT DIVERSION DETAILS & PAY ITEMS, SEE EROSION CONTROL PLANS.
 MATERIALS SHALL MEET THE REQUIREMENTS OF THE NCDOT STANDARDS SPECIFICATIONS FOR ROADS AND STRUCTURES DATED JANUARY 2012.
 THE DETAILS SHOWN ARE FOR GENERAL LAYOUT ONLY, THE SUPPLIER SHALL PROVIDE THE DESIGNS AND DETAILS THAT MEET THE REQUIREMENTS OF AASHTO SECTION 12 AND ARE SEALED BY NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER.
 UNLESS OTHERWISE INDICATED, THE SUPPLIER SHALL DESIGN, DETAIL AND FURNISH ALL STRUCTURAL ELEMENTS AND HARDWARE.
 FOR OTHER DESIGN DATA AND NOTES, SEE STANDARD NOTES SHEET.
 THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF THE CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.
 FOR ALUMINUM BOX CULVERT, SEE SPECIAL PROVISIONS.
 FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
 FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
 FOR FOUNDATION MATERIAL, SEE SPECIAL PROVISIONS.
 FOR CULVERT BACKFILL, SEE SPECIAL PROVISIONS.

THE EXISTING STRUCTURE CONSISTING OF (1) 26'-0" TIMBER DECK ON I-BEAMS SUPPORTED BY TIMBER CAP END BENTS ON TIMBER PILES AND SILLS SHALL BE REMOVED.
 REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER, THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATION.
 INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS, ANY COSTS RESULTING FROM THE COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STA. 13+18.00-L-".
 EXCAVATE 1 FOOT BELOW CULVERT AND REPLACE WITH FOUNDATION MATERIAL IN ACCORDANCE WITH ARTICLE 414 OF THE STANDARD SPECIFICATIONS AND THE "FOUNDATION MATERIALS" SPECIAL PROVISIONS.
 NO WORK SHALL BE DONE ON THE CULVERT UNTIL THE AREA OF THE BOX CULVERT HAS BEEN UNDERCUT AND UNSUITABLE MATERIAL REPLACED WITH SUITABLE MATERIAL, PROPERLY COMPACTED TO THE ELEVATION OF THE BOTTOM OF THE CULVERT. THE LIMITS OF THE UNDERCUT EXCAVATION SHALL BE AT LEAST THE LIMITS OF THE BOX CULVERT INCLUDING THE WINGS. THE COST OF THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "CULVERT EXCAVATION".
 NATIVE MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED OR FLOODPLAIN AT THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL EXCAVATED FROM THE STREAM USED TO LINE THE LOW FLOW CHANNEL. RIP RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL IN THE HIGH FLOW PORTION OF THE BARREL. IF RIP RAP IS USED, NATIVE MATERIAL SHALL BE PLACED ON TOP TO FILL THE VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

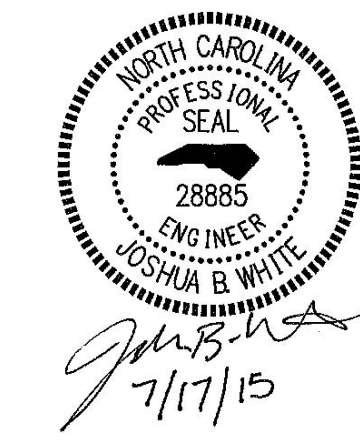
EXISTING BRIDGE INFORMATION
 1 SPAN @ 26'-0" TIMBER DECK ON I-BEAMS WITH TIMBER CAP END BENTS ON TIMBER PILES AND SILLS.



DRAWN BY : JLA DATE : 7/15
 CHECKED BY : JBW DATE : 7/15

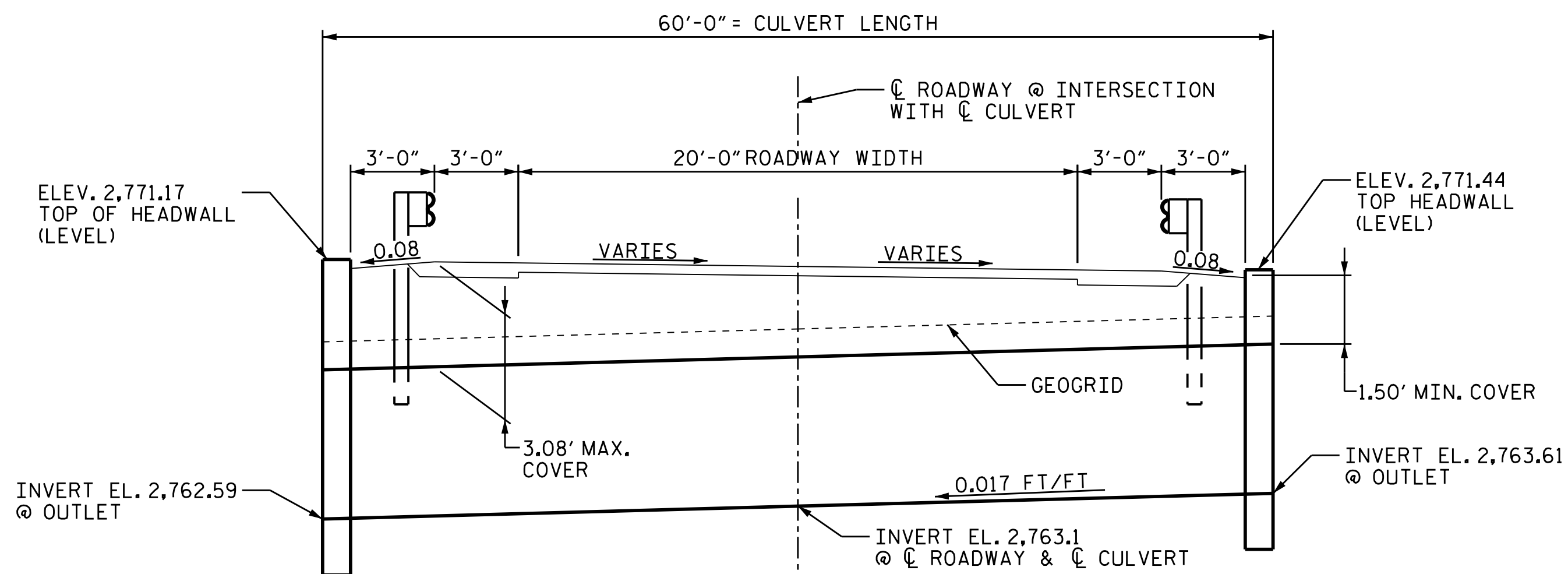
RELEASED FOR CONSTRUCTION

PREPARED BY
 TGS ENGINEERS
 107-A WICA AVENUE
 MORGANTON, NC 28655

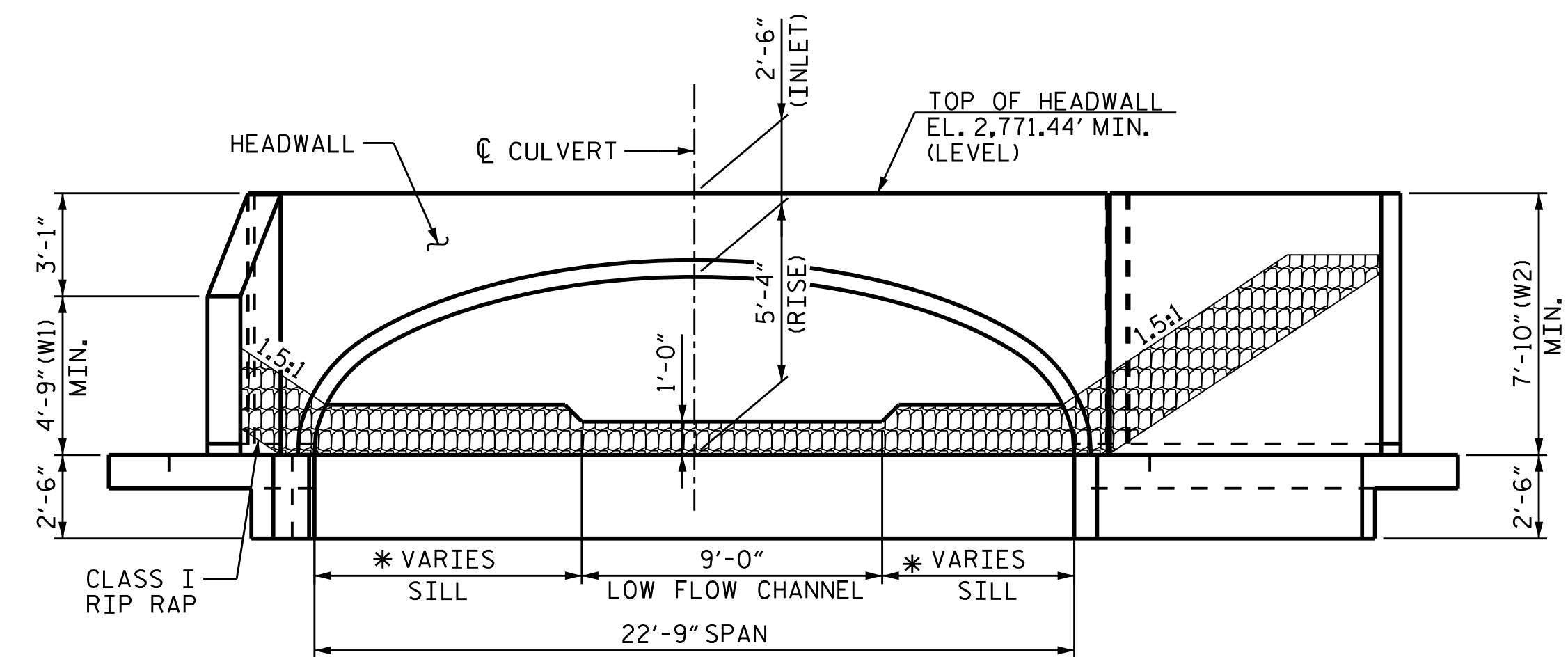


PROJECT NO. 17BP.11.R.76
 WATAUGA COUNTY
 STATION: 13+18.00-L-
 REPLACING BRIDGE NO. 20

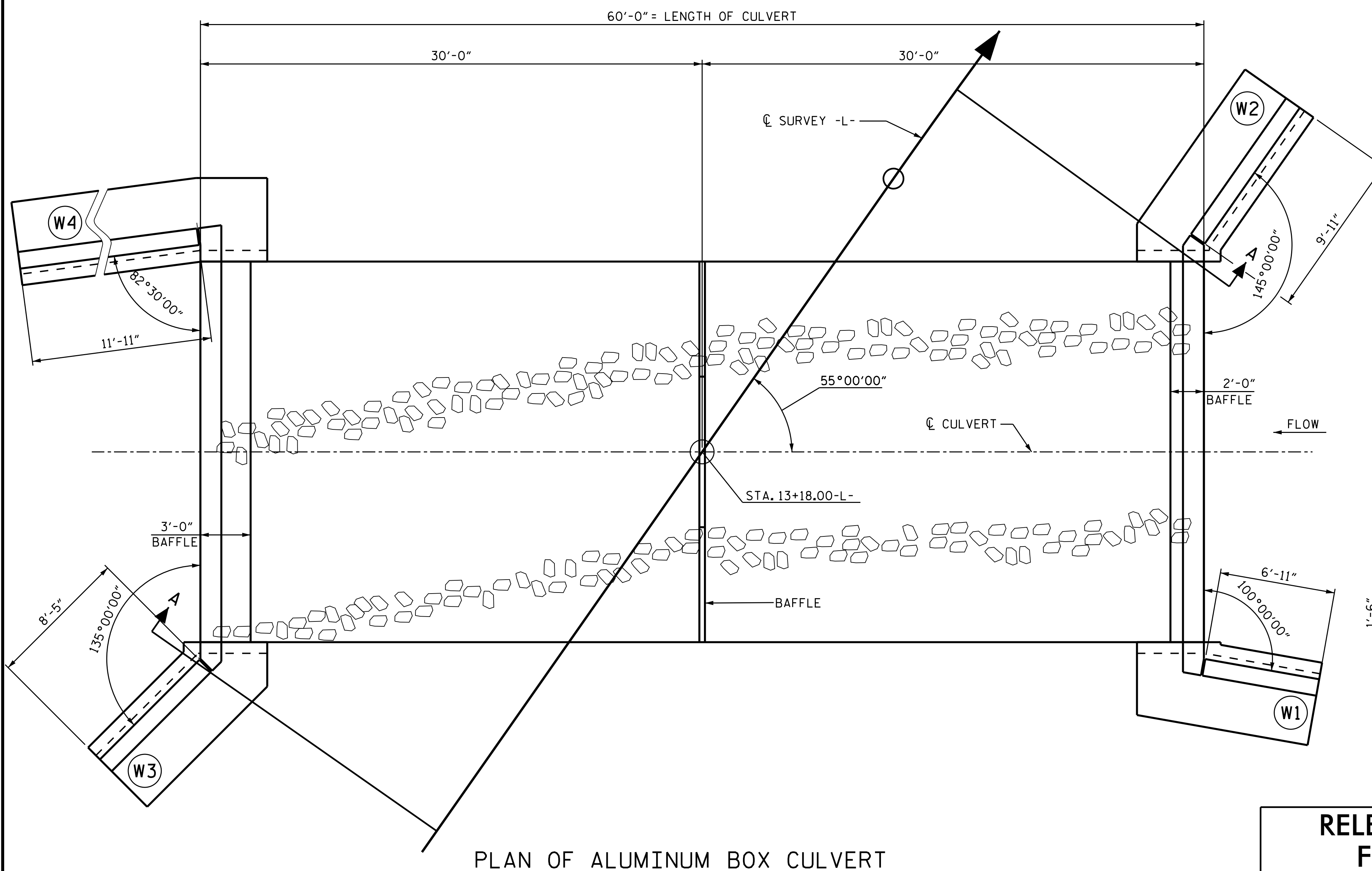
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SINGLE 22'-9" x 5'-4" ALUMINUM BOX CULVERT @ 55°					
REVISIONS					SHEET NO.
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
					C-1
					TOTAL SHEETS 6



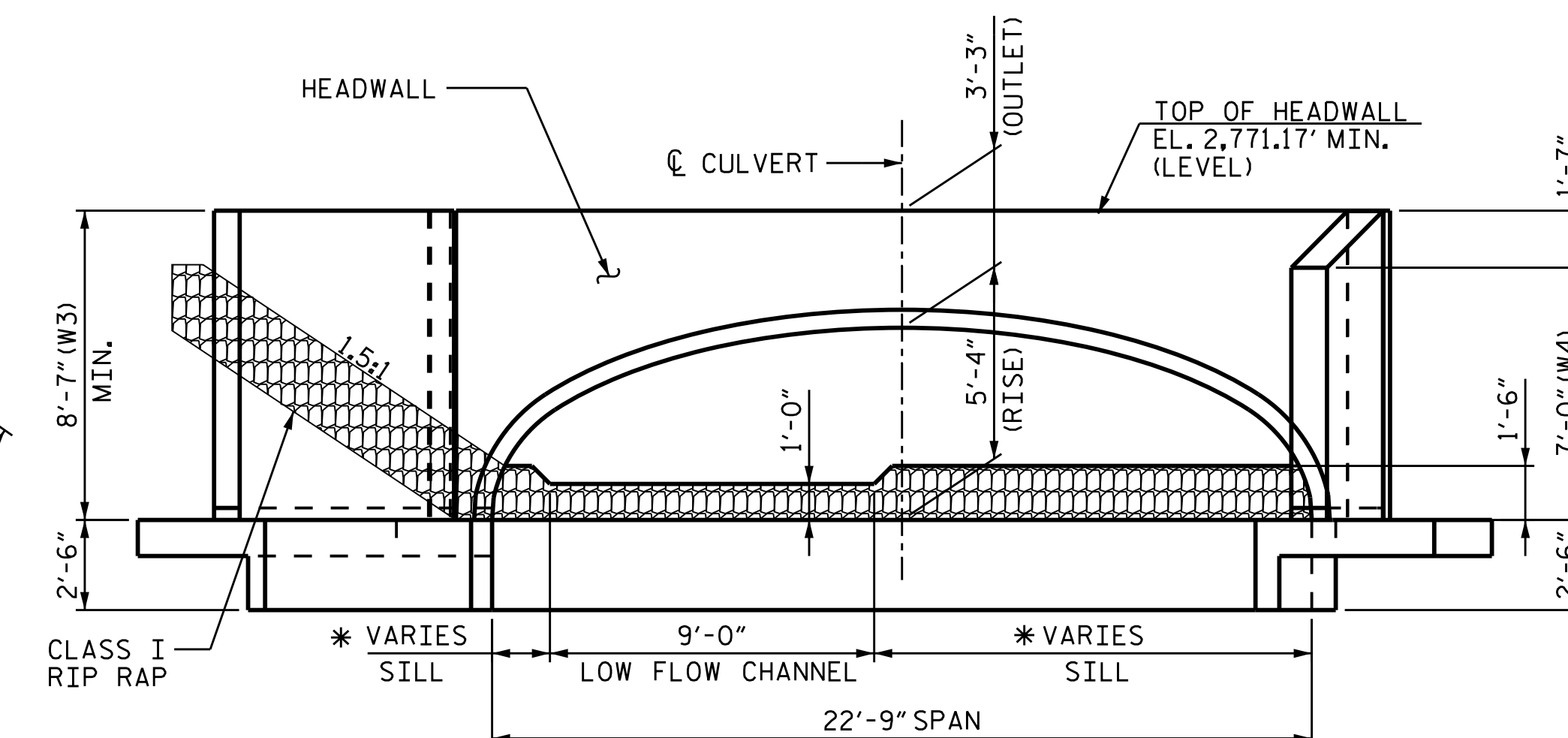
SECTION A-A
CULVERT SECTION NORMAL TO ROADWAY



END ELEVATION OF INLET - NORMAL TO SKEW
(LOOKING DOWNSTREAM)

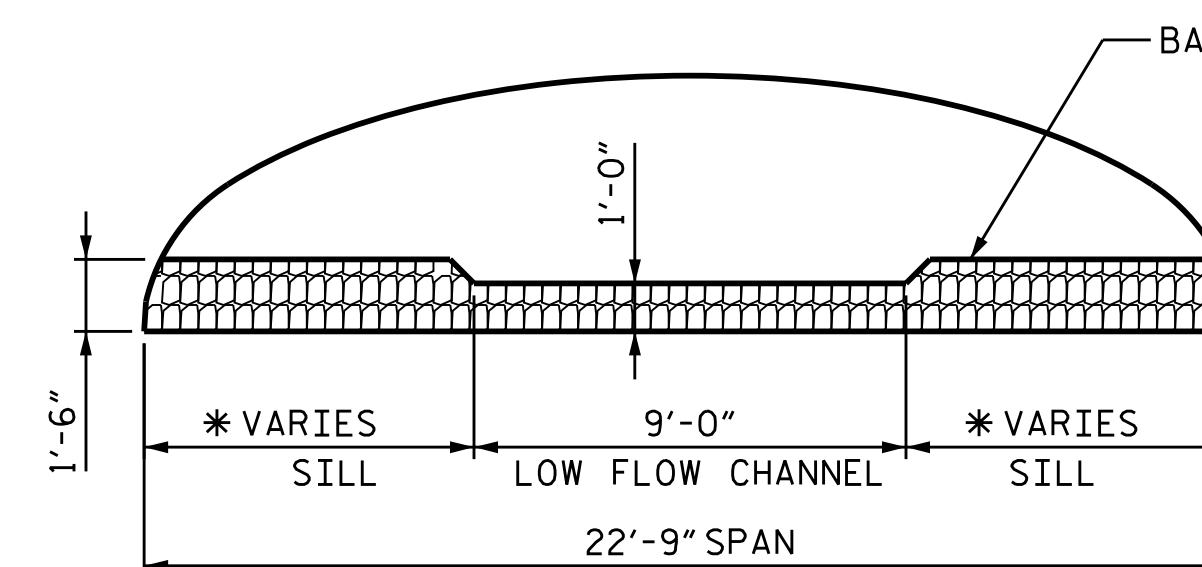


PLAN OF ALUMINUM BOX CULVERT



END ELEVATION OF OUTLET - NORMAL TO SKEW
(LOOKING DOWNSTREAM)

* C LOW FLOW CHANNEL TO BE LOCATED AT C EXISTING STREAM BED AT INLET AND OUTLET OF CULVERT. LOW FLOW CHANNEL INTERIOR BAFFLES SHALL BE LOCATED IN A STRAIGHT LINE BETWEEN THE INLET AND OUTLET FLOW CHANNELS.



CULVERT INTERNAL SECTION
(LOOKING DOWNSTREAM)

PROJECT NO. 17BP.11.R.76
WATAUGA COUNTY
STATION: 13+18.00-L-

REPLACING BRIDGE NO. 20

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE
22'-9" x 5'-4"
ALUMINUM BOX CULVERT
@ 55°



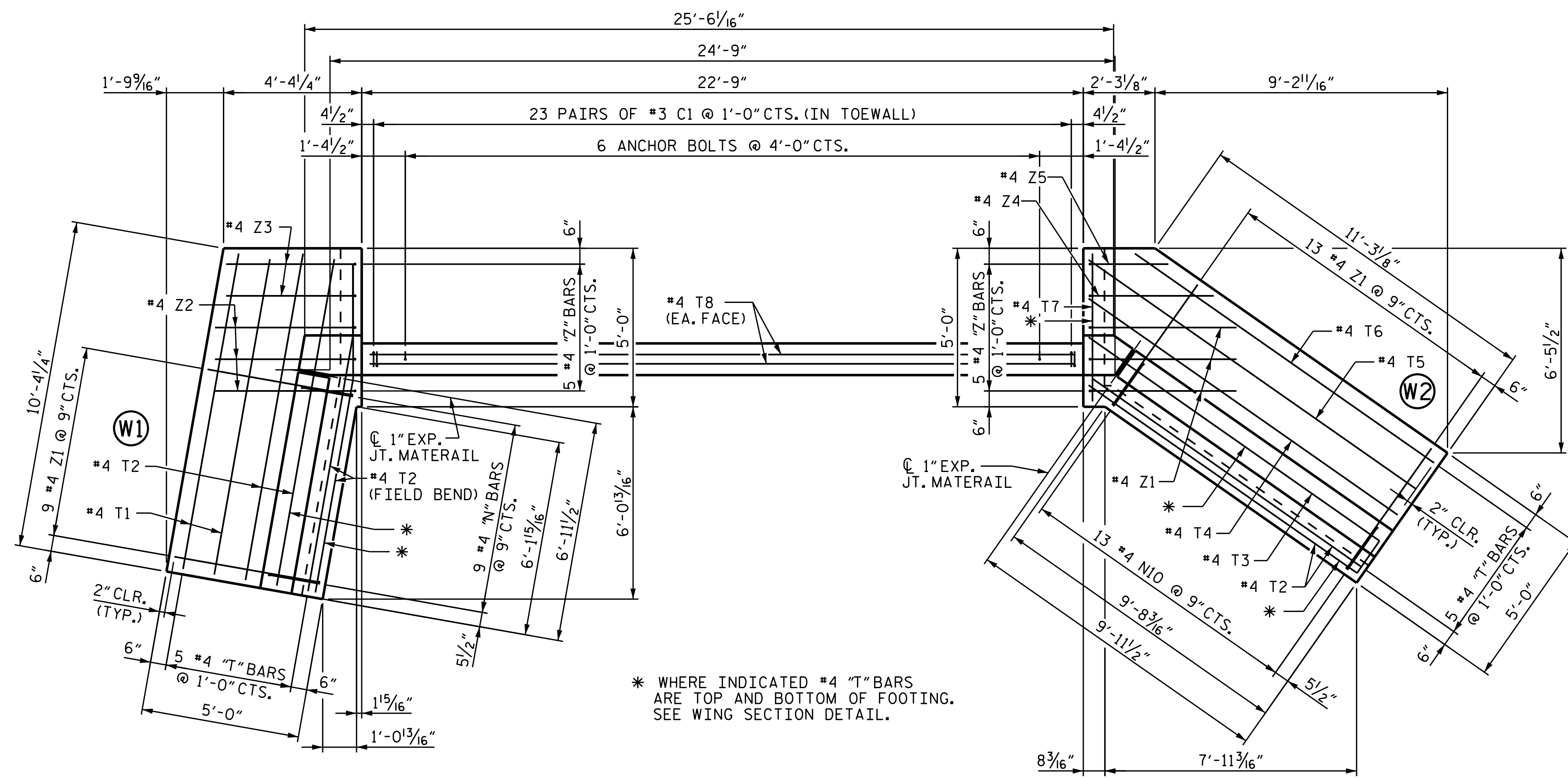
7/17/15

RELEASED
FOR
CONSTRUCTION

PREPARED BY
TGS ENGINEERS
107-A WICA AVENUE
MORGANTON, NC 28655

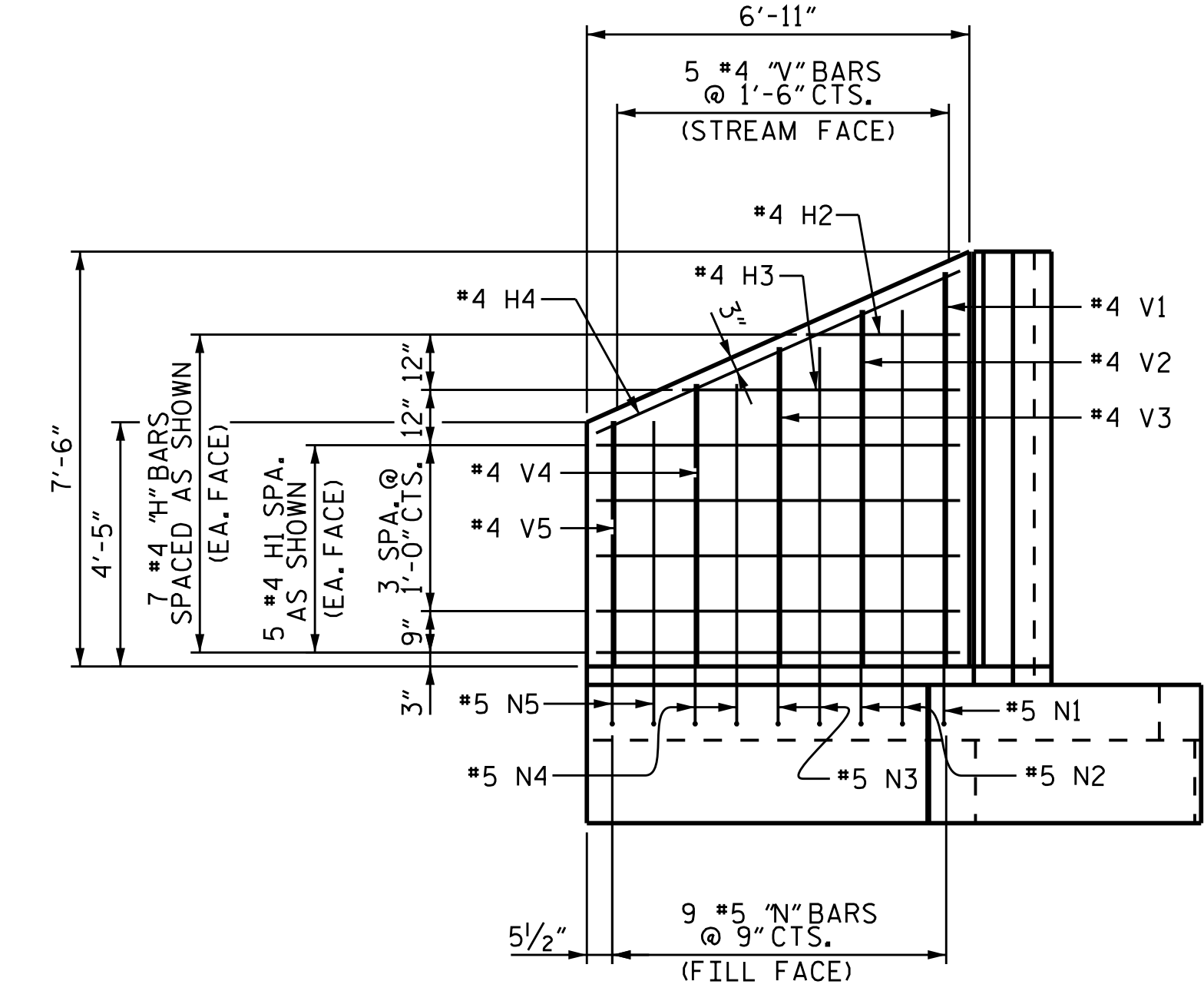
DRAWN BY : JLA DATE : 7/15
CHECKED BY : JBW DATE : 7/15

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	C-2
1			3			TOTAL SHEETS
2			4			6

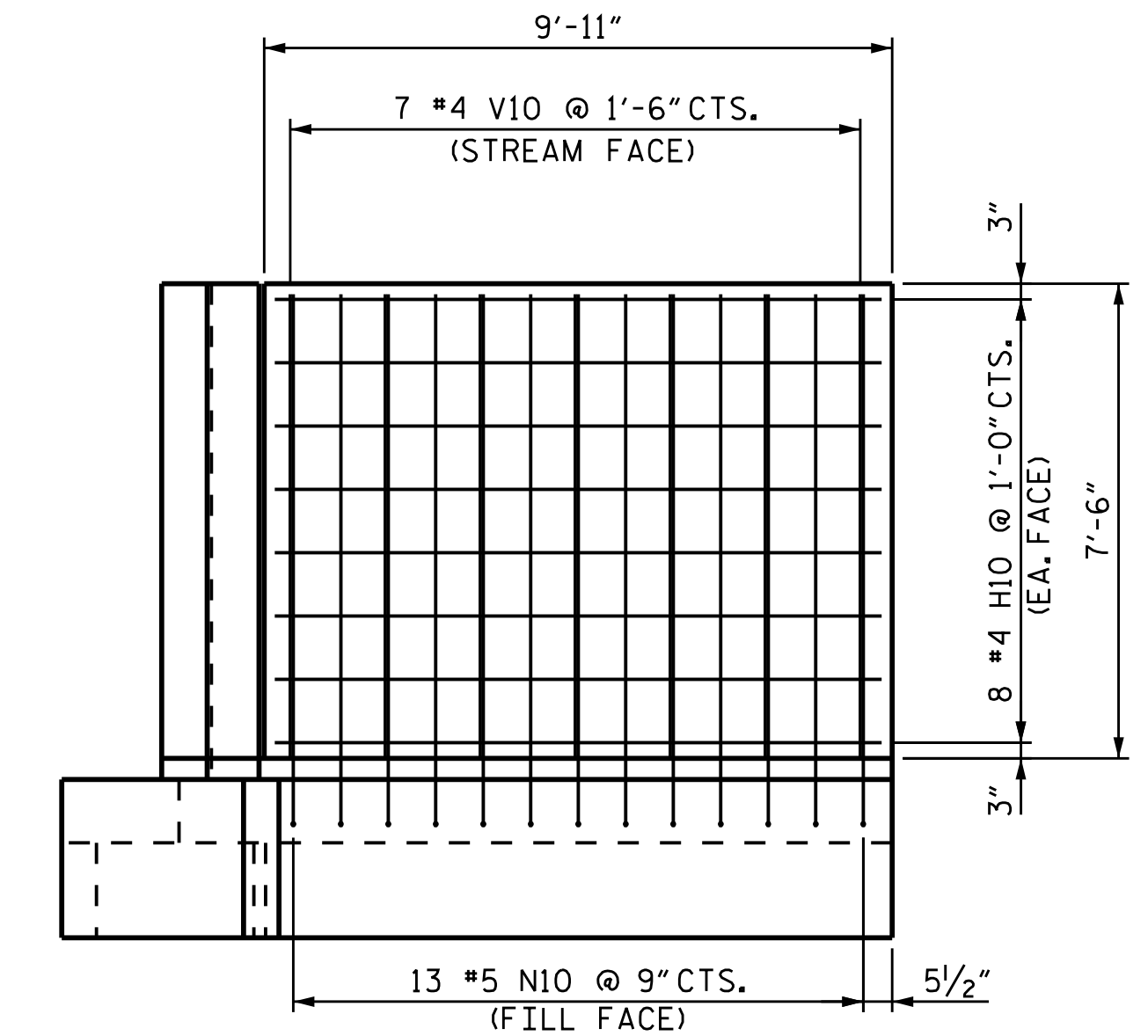


PLAN OF FOOTING & TOE WALL

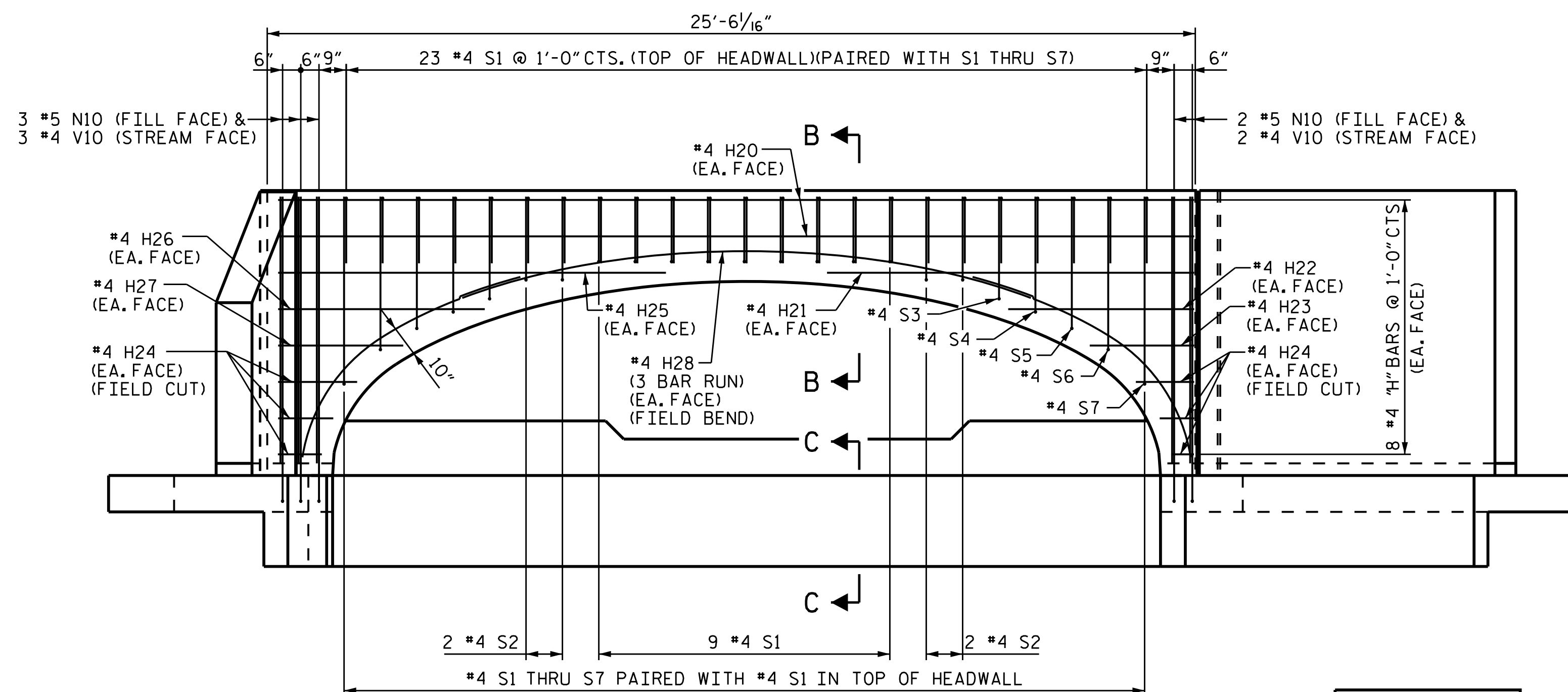
* WHERE INDICATED #4 "T" BARS ARE TOP AND BOTTOM OF FOOTING. SEE WING SECTION DETAIL.



W1 ELEVATION



W2 ELEVATION



ELEVATION

WING AND TOEWALL REINFORCEMENT NOT SHOWN FOR CLARITY.

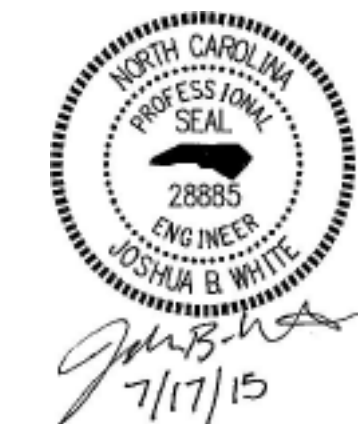
SPlice LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"

RELEASED FOR CONSTRUCTION

PREPARED BY
TGS ENGINEERS
107-A WICA AVENUE
MORGANTON, NC 28655

PROJECT NO. 17BP.11.R.76
WATAUGA COUNTY
STATION: 13+18.00-L-

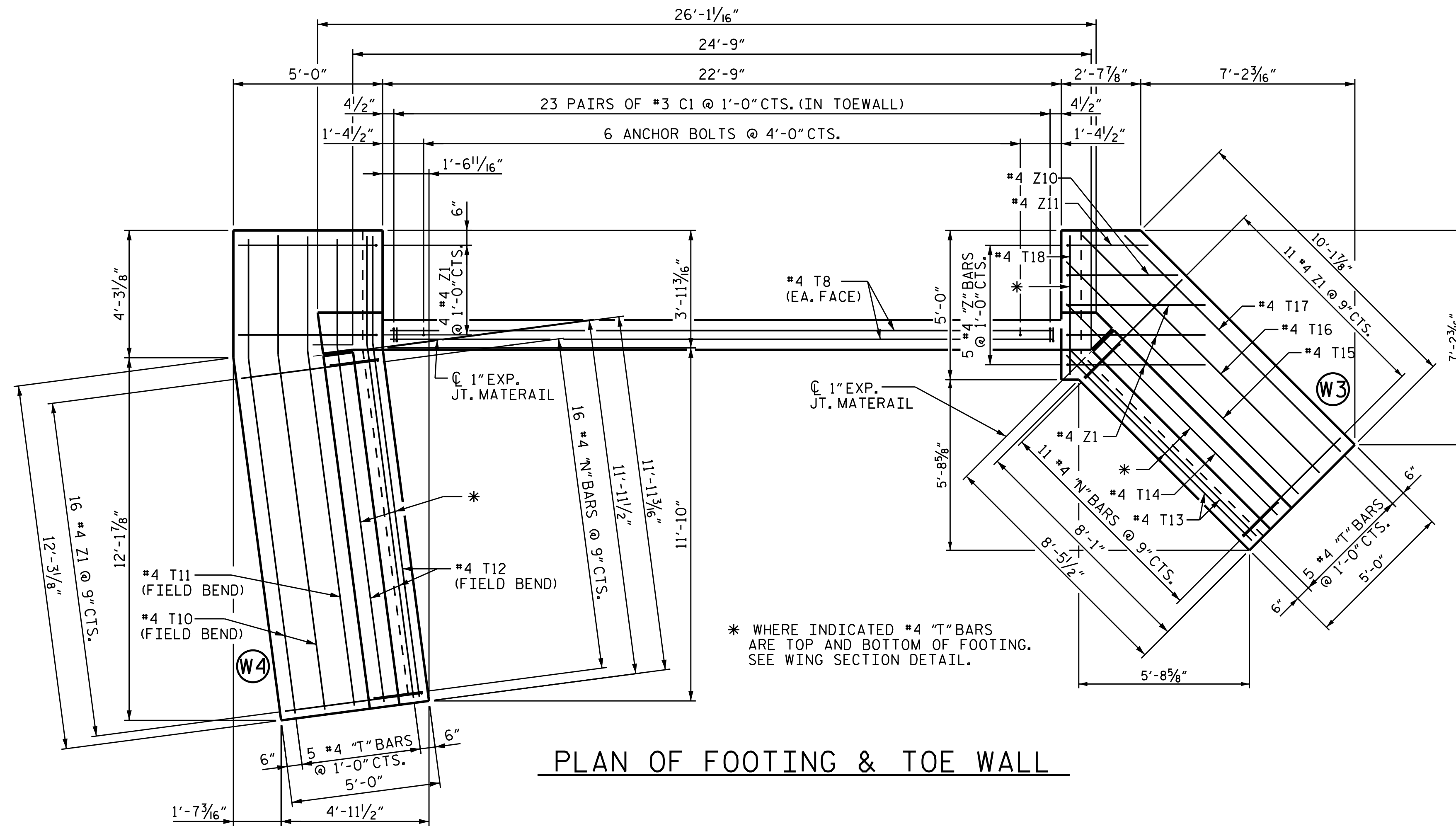
REPLACING BRIDGE NO. 20



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
CONCRETE INLET HEADWALL
& WING DETAILS FOR
SINGLE 22'-9" x 5'-4"
ALUMINUM BOX CULVERT
@ 55°

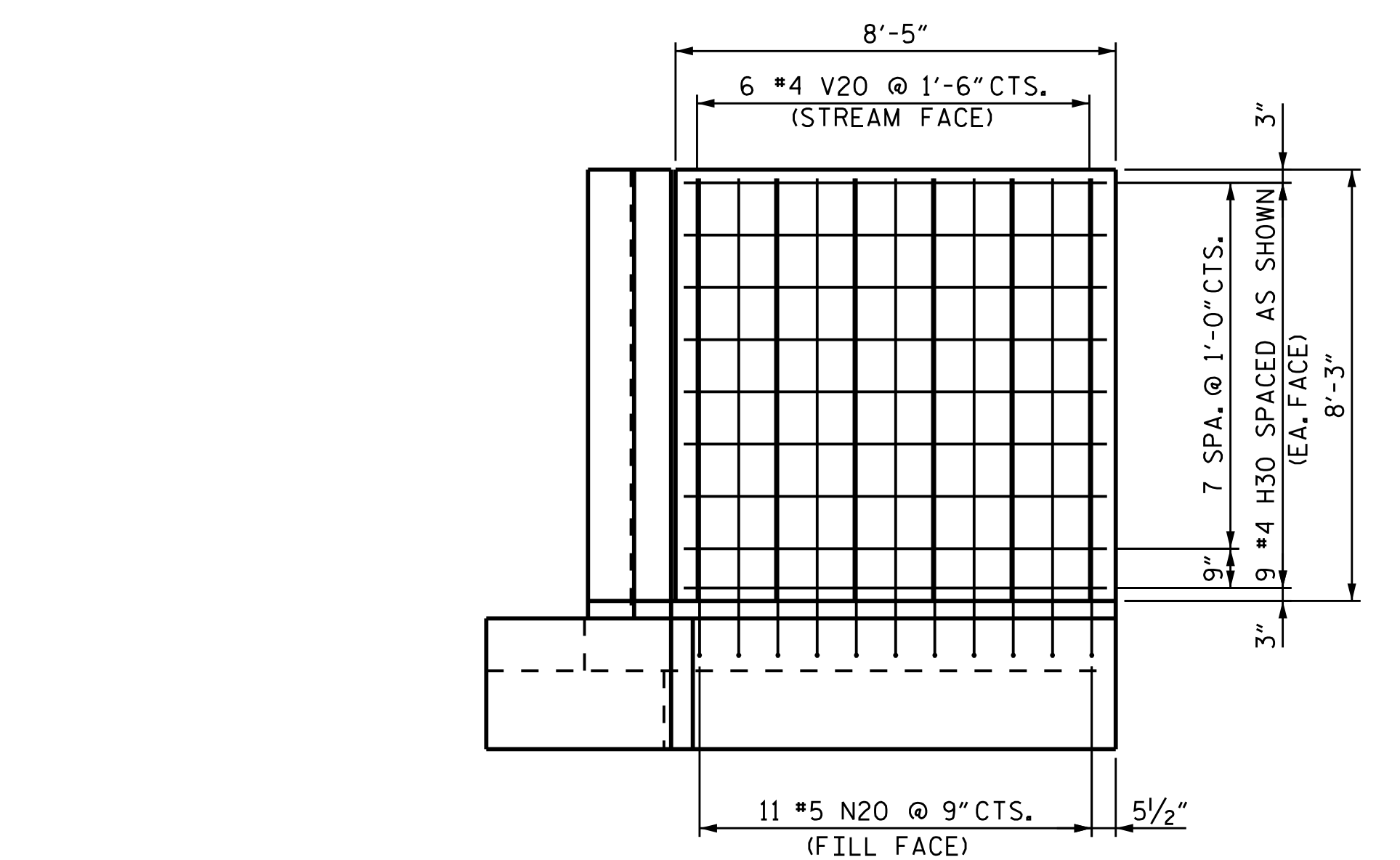
DRAWN BY : JLA DATE : 7/15
CHECKED BY : JBW DATE : 7/15

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-3
1			3			TOTAL SHEETS
2			4			6

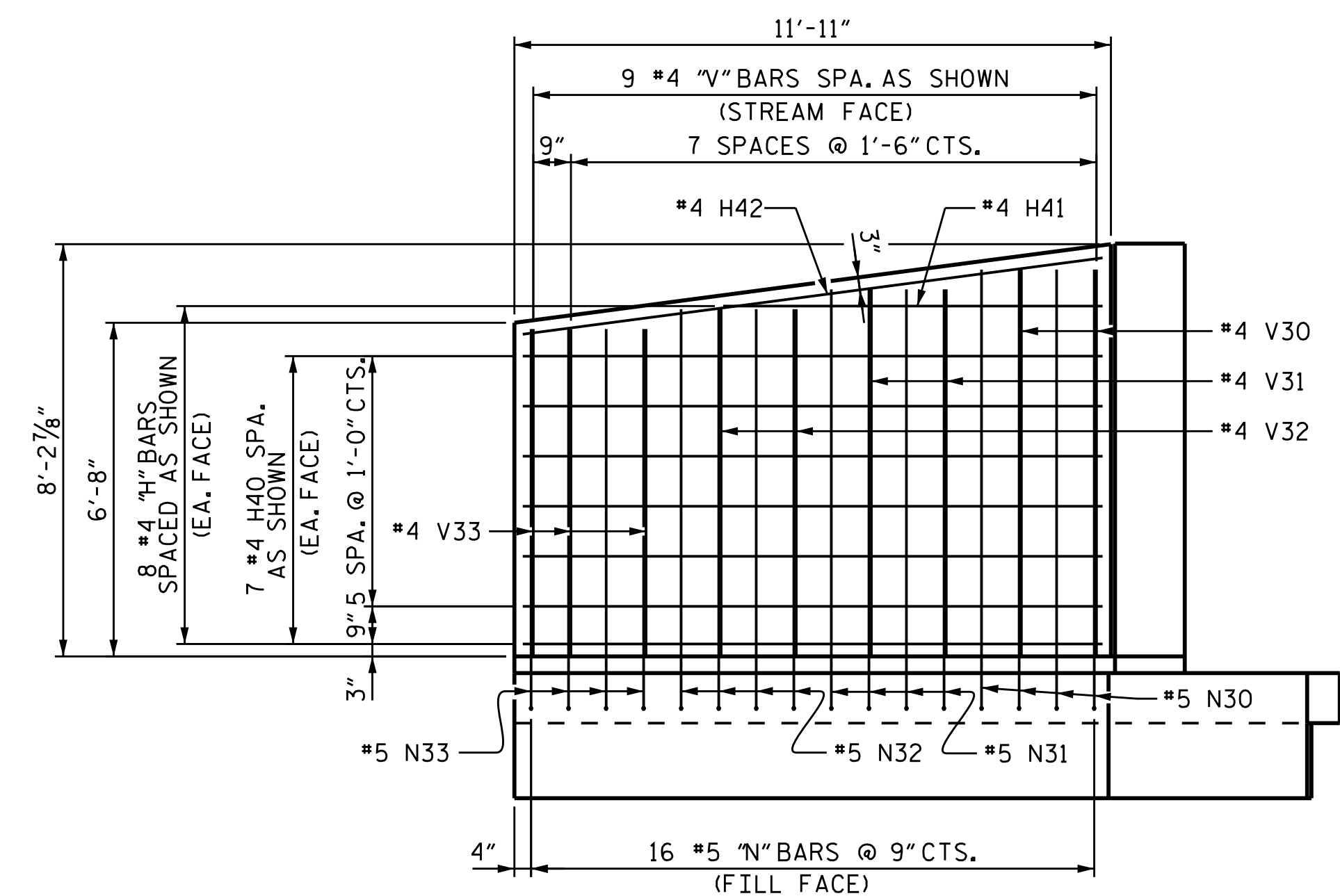


PLAN OF FOOTING & TOE WALL

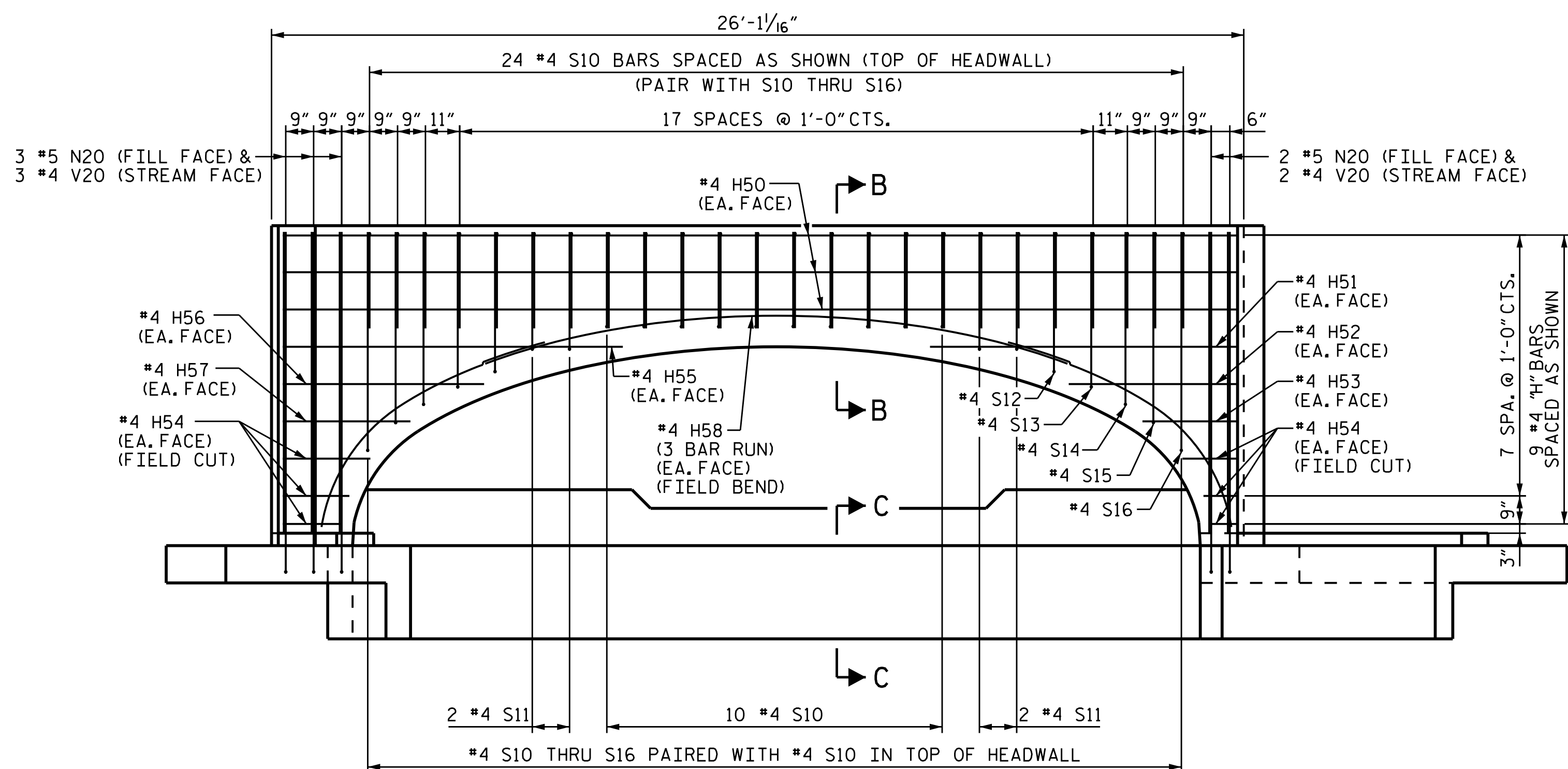
* WHERE INDICATED #4 "T" BARS ARE TOP AND BOTTOM OF FOOTING. SEE WING SECTION DETAIL.



W3 ELEVATION



W4 ELEVATION



ELEVATION

WING AND TOEWALL REINFORCEMENT NOT SHOWN FOR CLARITY.

SPlice LENGTHS			
BAR SIZE	EPOXY COATED	UNCOATED	
#4	2'-0"	1'-9"	

RELEASED FOR CONSTRUCTION

PREPARED BY
TGS ENGINEERS
107-A WICA AVENUE
MORGANTON, NC 28655



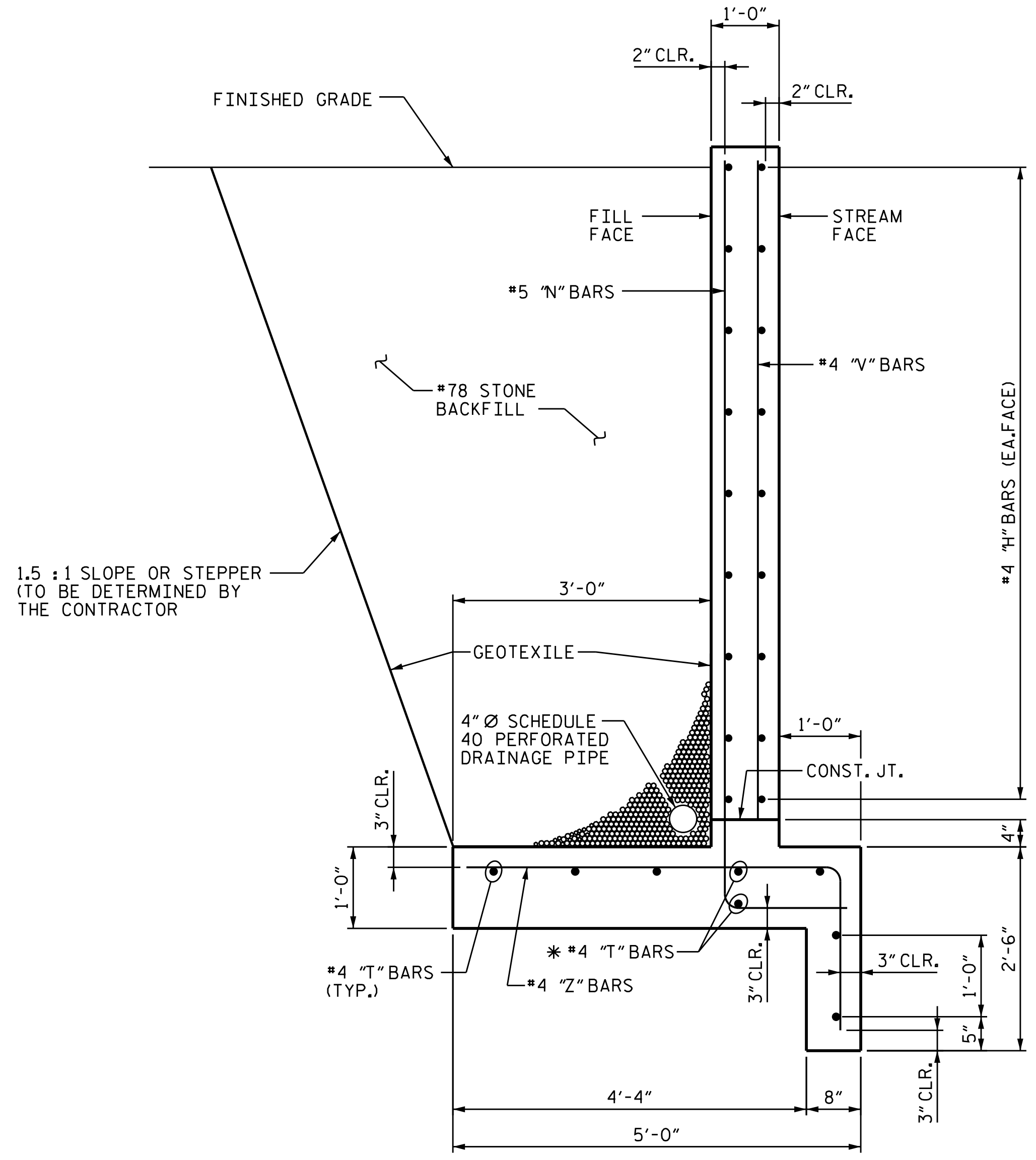
PROJECT NO. 17BP.11.R.76
WATAUGA COUNTY
STATION: 13+18.00-L-

REPLACING BRIDGE NO. 20

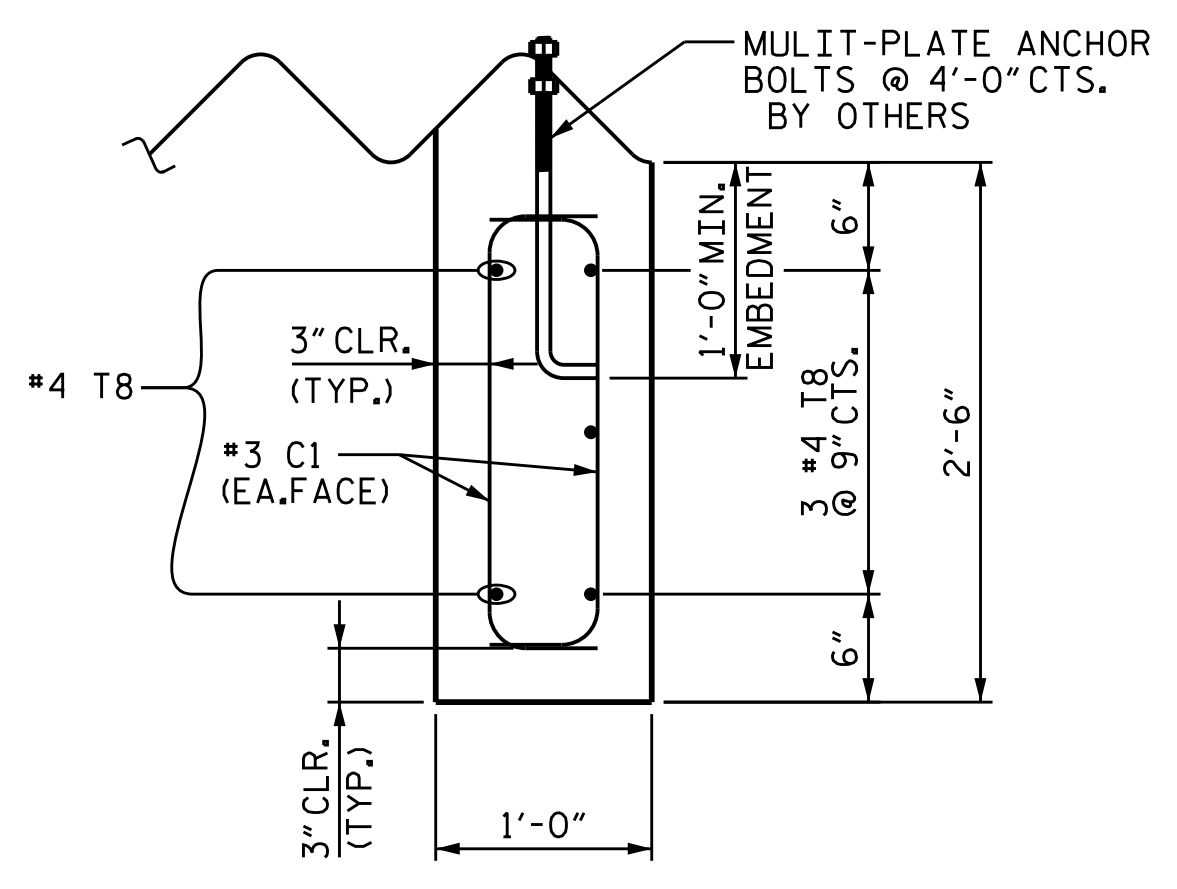
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
CONCRETE OUTLET HEADWALL & WING DETAILS FOR SINGLE 22'-9" x 5'-4" ALUMINUM BOX CULVERT @ 55°

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			C-4
2			4			TOTAL SHEETS 6

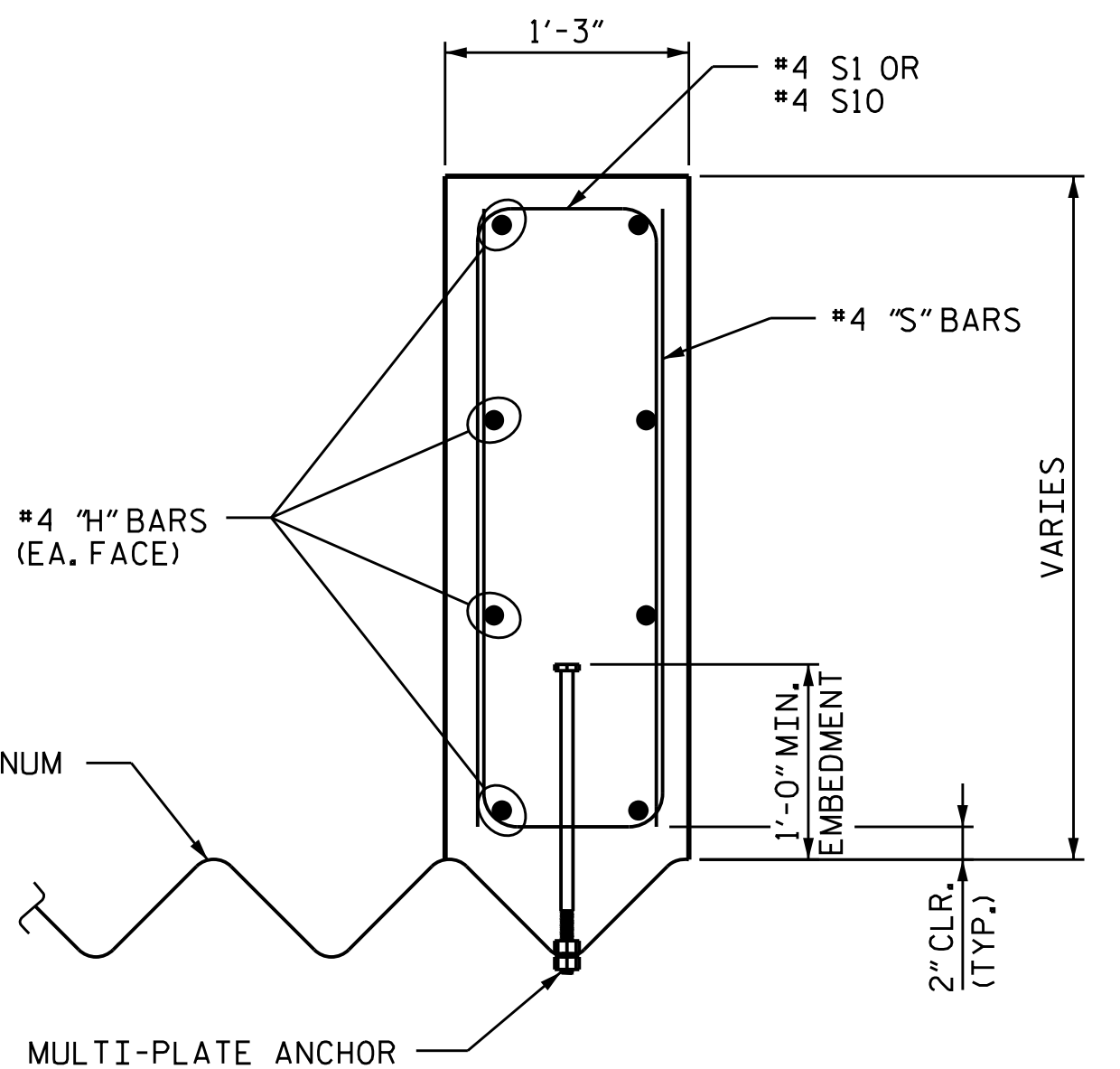
DRAWN BY : JLA DATE : 7/15
CHECKED BY : JBW DATE : 7/15



TYPICAL WING SECTION



SECTION C-C
6 ANCHOR BOLTS REQUIRED



SECTION B-B
7 ANCHOR BOLTS REQUIRED

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL FOR INLET HEADWALL & WINGS

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
C1	#3	4	3'-0"	52
H1	#4	STR	6'-7"	44
H2	#4	STR	5'-0"	7
H3	#4	STR	2'-9"	4
H4	#4	STR	7'-2"	10
H10	#4	STR	9'-7"	51
H20	#4	STR	25'-2"	67
H21	#4	STR	10'-1"	13
H22	#4	STR	5'-1"	7
H23	#4	STR	2'-10"	4
H24	#4	STR	2'-2"	17
H25	#4	STR	10'-7"	14
H26	#4	STR	5'-8"	8
H27	#4	STR	3'-5"	5
H28	#4	STR	15'-11"	64
N1	#5	1	9'-10"	10
N2	#5	1	9'-2"	19
N3	#5	1	8'-6"	18
N4	#5	1	7'-10"	16
N5	#5	1	7'-2"	15
N10	#5	1	10'-1"	189
S1	#4	2	4'-7"	98
S2	#4	2	5'-7"	15
S3	#4	2	6'-7"	9
S4	#4	2	7'-3"	10
S5	#4	2	8'-3"	11
S6	#4	2	9'-5"	13
S7	#4	2	11'-3"	15
T1	#4	STR	10'-1"	13
T2	#4	STR	10'-4"	62
T3	#4	STR	11'-2"	15
T4	#4	STR	11'-10"	8
T5	#4	STR	12'-7"	8
T6	#4	STR	11'-6"	8
T7	#4	STR	4'-8"	6
T8	#4	STR	22'-3"	74
V1	#4	STR	7'-1"	5
V2	#4	STR	6'-5"	4
V3	#4	STR	5'-9"	4
V4	#4	STR	5'-1"	3
V5	#4	STR	4'-5"	3
V10	#4	STR	7'-4"	59
Z1	#4	3	6'-7"	92
Z2	#4	3	6'-4"	13
Z3	#4	3	6'-0"	8
Z4	#4	3	5'-10"	4
Z5	#4	3	4'-5"	3
REINFORCING STEEL				1197 LBS.
CLASS A CONCRETE				
TOTAL CLASS A CONCRETE				14.5 C.Y.

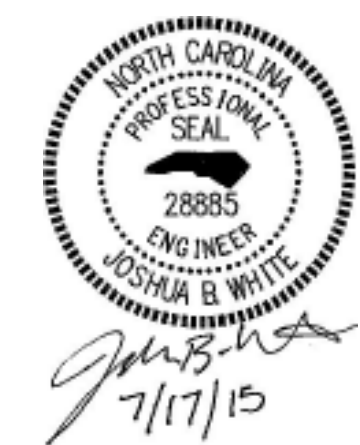
BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL FOR OUTLET HEADWALL & WINGS

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
C1	#3	4	3'-0"	52
H30	#4	STR	8'-1"	97
H40	#4	STR	11'-7"	108
H41	#4	STR	7'-7"	10
H42	#4	STR	11'-8"	16
H50	#4	STR	25'-7"	103
H51	#4	STR	8'-3"	11
H52	#4	STR	4'-6"	6
H53	#4	STR	2'-6"	3
H54	#4	STR	2'-4"	19
H55	#4	STR	9'-1"	12
H56	#4	STR	5'-4"	7
H57	#4	STR	3'-5"	5
H58	#4	STR	15'-11"	64
N20	#5	1	10'-10"	181
N30	#5	1	10'-5"	43
N31	#5	1	10'-1"	42
N32	#5	1	9'-8"	40
N33	#5	1	9'-3"	39
S10	#4	2	6'-1"	138
S11	#4	2	7'-3"	19
S12	#4	2	8'-5"	11
S13	#4	2	9'-3"	12
S14	#4	2	10'-3"	14
S15	#4	2	11'-1"	15
S16	#4	2	12'-7"	17
T8	#4	STR	22'-3"	74
T10	#4	STR	16'-0"	21
T11	#4	STR	15'-10"	11
T12	#4	STR	15'-7"	52
T13	#4	STR	8'-9"	18
T14	#4	STR	10'-0"	13
T15	#4	STR	11'-0"	7
T16	#4	STR	11'-3"	8
T17	#4	STR	10'-3"	7
T18	#4	STR	4'-8"	6
V20	#4	STR	8'-1"	59
V30	#4	STR	7'-10"	10
V31	#4	STR	7'-5"	10
V32	#4	STR	7'-1"	9
V33	#4	STR	6'-9"	14
Z1	#4	3	5'-2"	117
Z10	#4	3	4'-3"	3
Z11	#4	3	3'-3"	2
REINFORCING STEEL				1525 LBS.
CLASS A CONCRETE				
TOTAL CLASS A CONCRETE				17.0 C.Y.

PROJECT NO. 17BP.11.R.76
WATAUGA COUNTY
STATION: 13+18.00-L-
REPLACING BRIDGE NO. 20



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
BILL OF MATERIALS
HEADWALLS & WINGS

RELEASED FOR CONSTRUCTION

PREPARED BY
TGS ENGINEERS
107-A MICA AVENUE
MORGANTON, NC 28655

REVISIONS

NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

SHEET NO. C-5
TOTAL SHEETS 6

DRAWN BY: JLA DATE: 7/15
CHECKED BY: JBW DATE: 7/15

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	-	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	-	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION		
GRADE 60	--	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	-----	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	-----	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR		
UNTREATED - EXTREME FIBER STRESS	-----	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	-----	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	-----	30 LBS. PER CU. FT.
		(MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16" INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

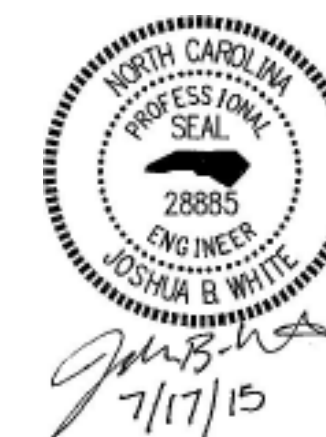
GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

PROJECT NO. 17BP.11.R.76

WATAUGA COUNTY

STATION: 13+18.00-L-

REPLACING BRIDGE NO. 20



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD NOTES

**RELEASED
FOR
CONSTRUCTION**

PREPARED BY
TGS ENGINEERS
107-A WICA AVENUE
MORGANTON, NC 28655

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-6
1			3			TOTAL SHEETS
2			4			6

DRAWN BY : JLA DATE : 7/15
CHECKED BY : JBW DATE : 7/15

REV. 6-16-95 EEM (R)GW REV. 5-7-03 RWW (J)TE REV. 10-1-11 MAA (M)GM
REV. 8-16-99 RWW (M)LES REV. 5-1-06 TLA (M)GM

*****SYSTEM*****
*****DCN*****
*****USERNAME*****

STD. NO. SN