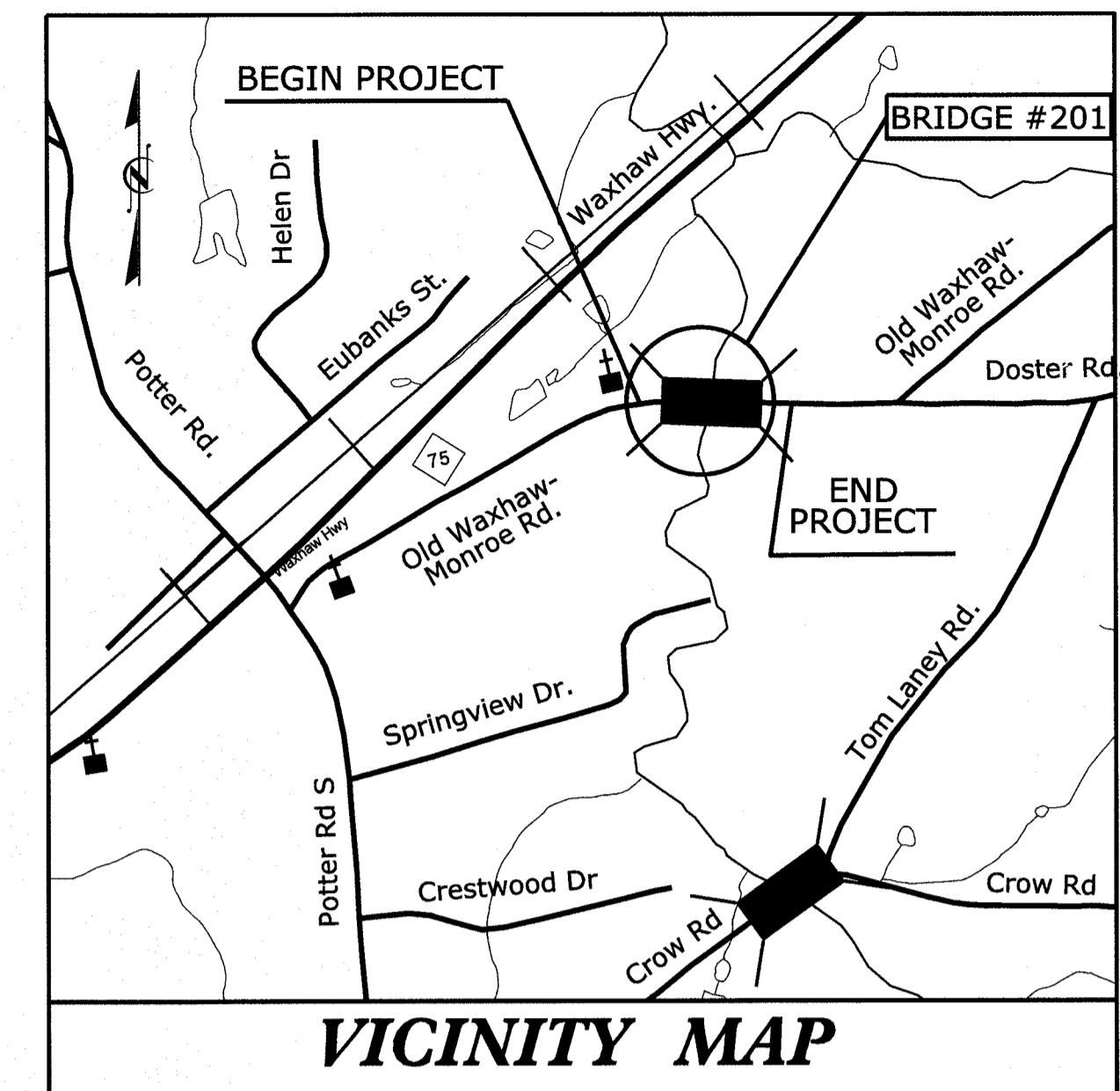


09/08/99

PROJECT: WBS 17BP.10.R.5

CONTRACT:

See Sheet 1-A For Index of Sheets



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
UNION COUNTY

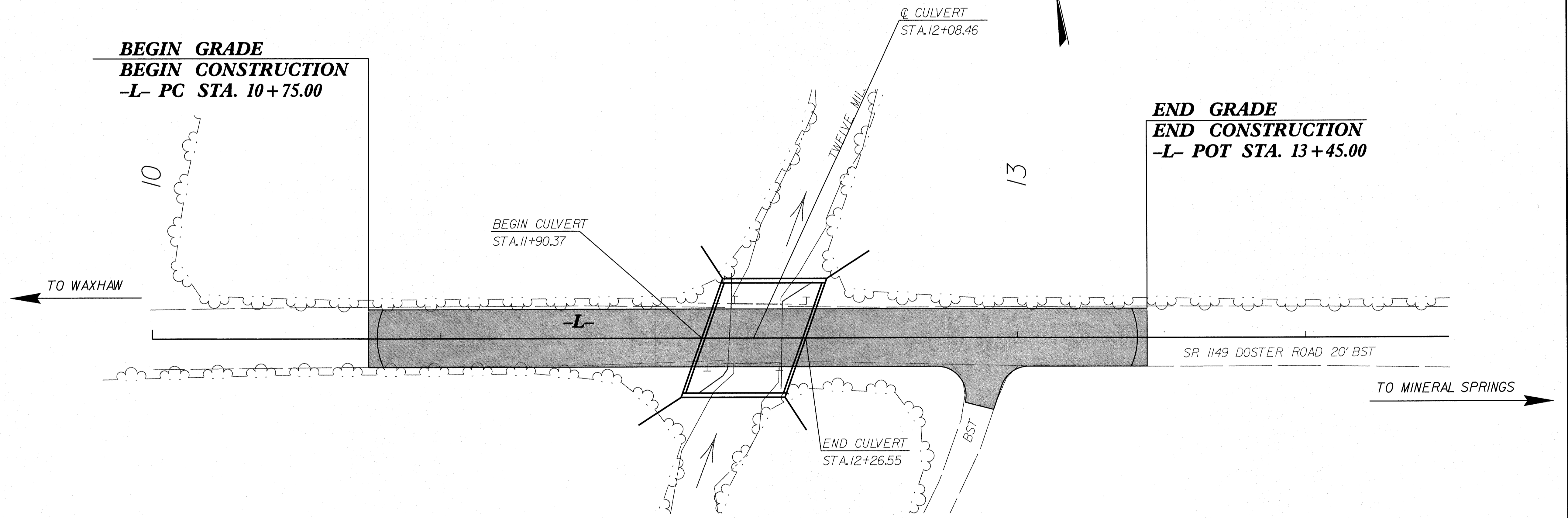
**LOCATION: BRIDGE NO. 201 ON SR 1149 (DOSTER ROAD)
OVER TWELVE MILE CREEK**

**TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURES AND
TRAFFIC CONTROL**

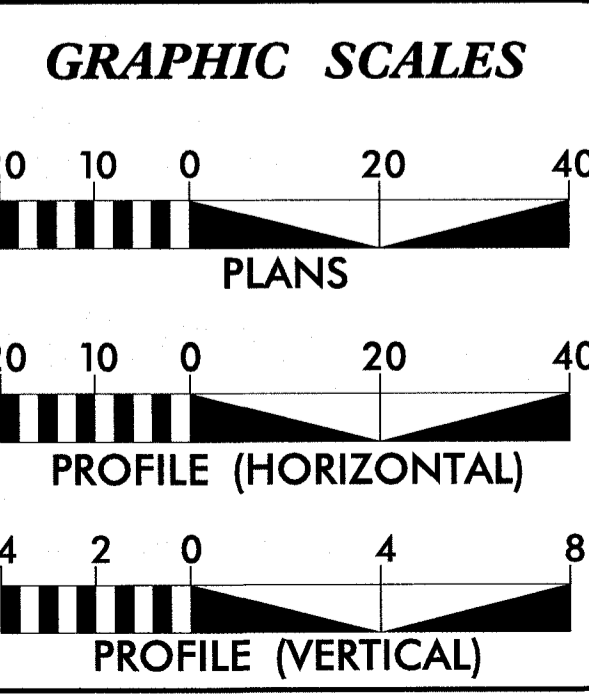
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.10.R.5	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.10.R.5		PE ROW/UTIL. CONST.	

**BEGIN GRADE
BEGIN CONSTRUCTION
-L- PC STA. 10+75.00**

**END GRADE
END CONSTRUCTION
-L- POT STA. 13+45.00**



- CLEARING SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.



DESIGN DATA

ADT 2010 =	1300
ADT 2030 =	2130
DHV =	NA %
D =	NA %
T =	6 % *
V =	45 MPH
FUNC CLASS =	
LOCAL	
SUB-REGIONAL TIER	

PROJECT LENGTH

LENGTH OF ROADWAY T.I.P. PROJECT 17BP.10.R.5	=	0.051 MI.
LENGTH OF STRUCTURE T.I.P. PROJECT 17BP.10.R.5	=	0.000 MI
TOTAL LENGTH OF T.I.P. PROJECT 17BP.10.R.5	=	0.051 MI

NCDOT CONTACT: GARLAND HAYWOOD, PE
BRIDGE PROGRAM MANAGER

PREPARED IN THE OFFICE OF:

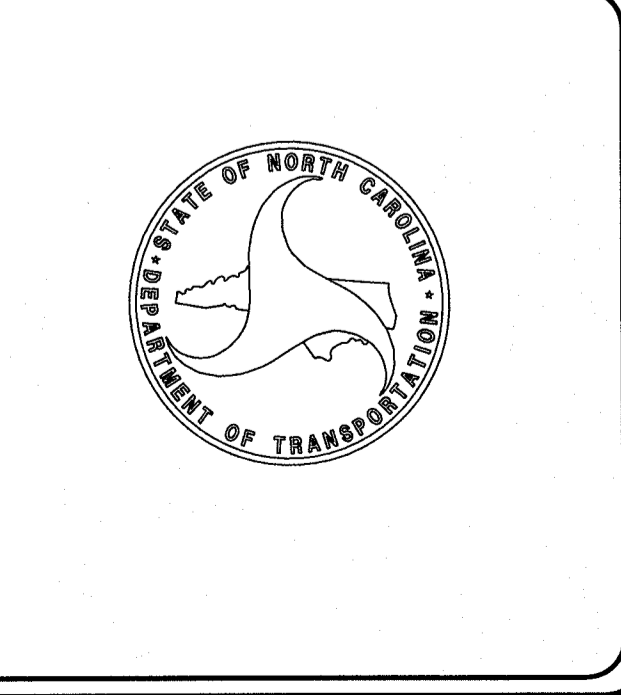
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MAY 15, 2013	GARLAND HAYWOOD, PE PROJECT ENGINEER
LETTING DATE: MAY 15, 2013	ROBERT WILLIAMS, PE PROJECT DESIGN ENGINEER

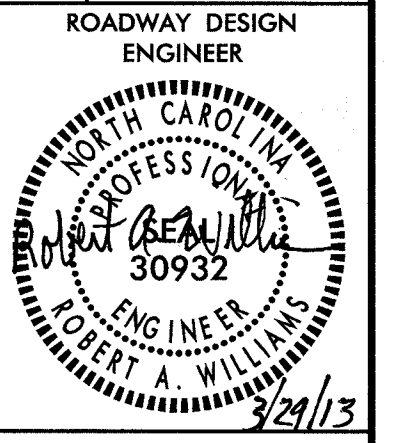
HYDRAULIC ENGINEER

ROADWAY DESIGN ENGINEER

SIGNATURE: *Robert Williams* P.E. 4/10/13



4/10/2013
I:\Union\2011Roadway\Proj\890201.Lrdy_tsh.dgn
RWilliams



INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
2	PAVEMENT SCHEDULE & TYPICAL SECTIONS
3	SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND DRAINAGE
4	PLAN/PROFILE SHEET
5	DRAINAGE SHEET
TMP-1 THRU TMP-3	TRAFFIC MAINTENANCE PLANS
EC-1 THRU EC-4	EROSION CONTROL PLANS
UO-1 THRU UO-2	UTILITY BY OTHER PLANS
X-1 THRU X-2	CROSS-SECTIONS
C-1 THRU C-3	CULVERT PLANS

GENERAL NOTES

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 11/01/11

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.

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

DRIVEWAYS:
DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.03 AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

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

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE WINDSTREAM COMMUNICATIONS, UNION POWER CO-OP, TIME WARNER CABLE, CITY OF MONROE (GAS), FRONTIER COMMUNICATIONS. ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

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

ROADWAY STANDARD DRAWINGS

2012 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
806.02	Granite Right-of-Way Marker
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

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

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	⊙ EIP
Property Corner	-----
Property Monument	⊠ ECM
Parcel/Sequence Number	Ⓜ 123
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	⊠
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	--- WLB ---
Proposed Wetland Boundary	--- WLB ---
Existing Endangered Animal Boundary	--- EAB ---
Existing Endangered Plant Boundary	--- EPB ---
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	☠ ?

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	Ⓢ
Well	⊙ W
Small Mine	⊗
Foundation	⊠
Area Outline	⊠
Cemetery	⊠ †
Building	⊠
School	⊠
Church	⊠
Dam	⊠

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	⊠
Jurisdictional Stream	--- JS ---
Buffer Zone 1	--- BZ 1 ---
Buffer Zone 2	--- BZ 2 ---
Flow Arrow	←
Disappearing Stream	→
Spring	⊙
Wetland	⊠
Proposed Lateral, Tail, Head Ditch	⊠
False Sump	⊠

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	Ⓜ CSX TRANSPORTATION MILEPOST 35
Switch	⊠ SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	Ⓜ
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	--- E ---
Proposed Temporary Construction Easement	--- E ---
Proposed Temporary Drainage Easement	--- TDE ---
Proposed Permanent Drainage Easement	--- PDE ---
Proposed Permanent Drainage / Utility Easement	--- DUE ---
Proposed Permanent Utility Easement	--- PUE ---
Proposed Temporary Utility Easement	--- TUE ---
Proposed Aerial Utility Easement	--- AUE ---
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	--- C ---
Proposed Slope Stakes Fill	--- F ---
Proposed Curb Ramp	Ⓜ CR
Existing Metal Guardrail	⊠
Proposed Guardrail	⊠
Existing Cable Guiderail	⊠
Proposed Cable Guiderail	⊠
Equality Symbol	⊠
Pavement Removal	⊠
VEGETATION:	
Single Tree	⊠
Single Shrub	⊠
Hedge	⊠
Woods Line	⊠

Orchard	⊠
Vineyard	⊠ Vineyard

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	⊠ CONC
Bridge Wing Wall, Head Wall and End Wall	⊠ CONC WW
MINOR:	
Head and End Wall	⊠ CONC HW
Pipe Culvert	⊠
Footbridge	⊠
Drainage Box: Catch Basin, DI or JB	⊠ CB
Paved Ditch Gutter	⊠
Storm Sewer Manhole	⊠ S
Storm Sewer	⊠ S

UTILITIES:

POWER:	
Existing Power Pole	⊠
Proposed Power Pole	⊠
Existing Joint Use Pole	⊠
Proposed Joint Use Pole	⊠
Power Manhole	⊠ P
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	⊠
H-Frame Pole	⊠
Recorded U/G Power Line	--- P ---
Designated U/G Power Line (S.U.E.*)	--- P ---

TELEPHONE:

Existing Telephone Pole	⊠
Proposed Telephone Pole	⊠
Telephone Manhole	⊠
Telephone Booth	⊠
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	⊠
Recorded U/G Telephone Cable	--- T ---
Designated U/G Telephone Cable (S.U.E.*)	--- T ---
Recorded U/G Telephone Conduit	--- TC ---
Designated U/G Telephone Conduit (S.U.E.*)	--- TC ---
Recorded U/G Fiber Optics Cable	--- T FO ---
Designated U/G Fiber Optics Cable (S.U.E.*)	--- T FO ---

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

Utility Pole	⊠
Utility Pole with Base	⊠
Utility Located Object	⊠
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line	--- 7UTL ---
U/G Tank; Water, Gas, Oil	⊠
Underground Storage Tank, Approx. Loc.	⊠ UST
A/G Tank; Water, Gas, Oil	⊠
Geoenvironmental Boring	⊠
U/G Test Hole (S.U.E.*)	⊠
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

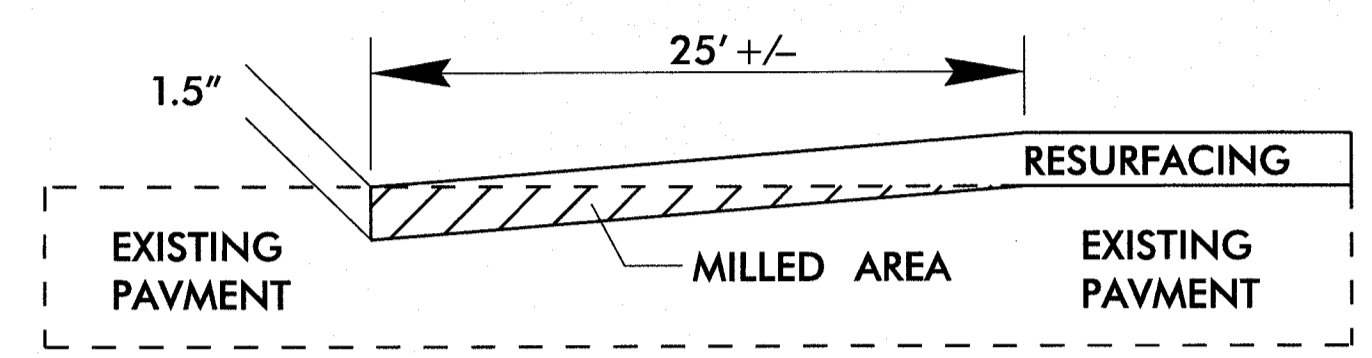
5/14/09

PAVEMENT SCHEDULE

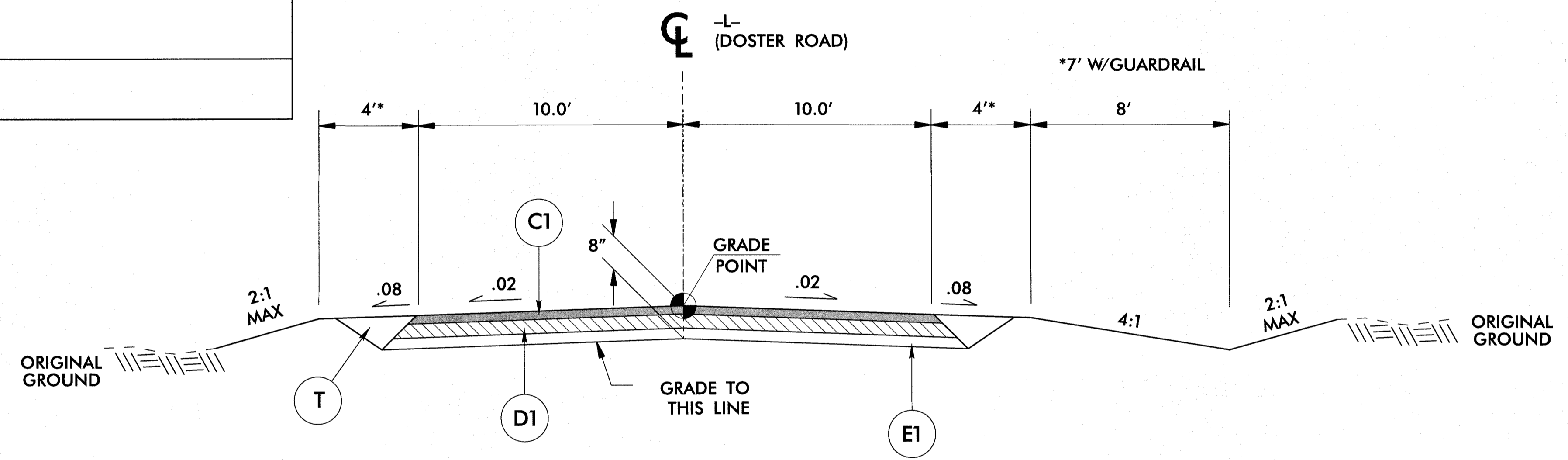
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE. TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER. SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2.0"
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE. TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER. SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4.0"
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" OR GREATER THAN 5.5"
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING
Z	VARIABLE DEPTH MILLING

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

PROJECT REFERENCE NO. 17BP10.R.5	SHEET NO. 2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER ROBERT A. WILLIAMS 30932 4/10/13	HYDRAULICS ENGINEER RICHARD L. HINER 29185

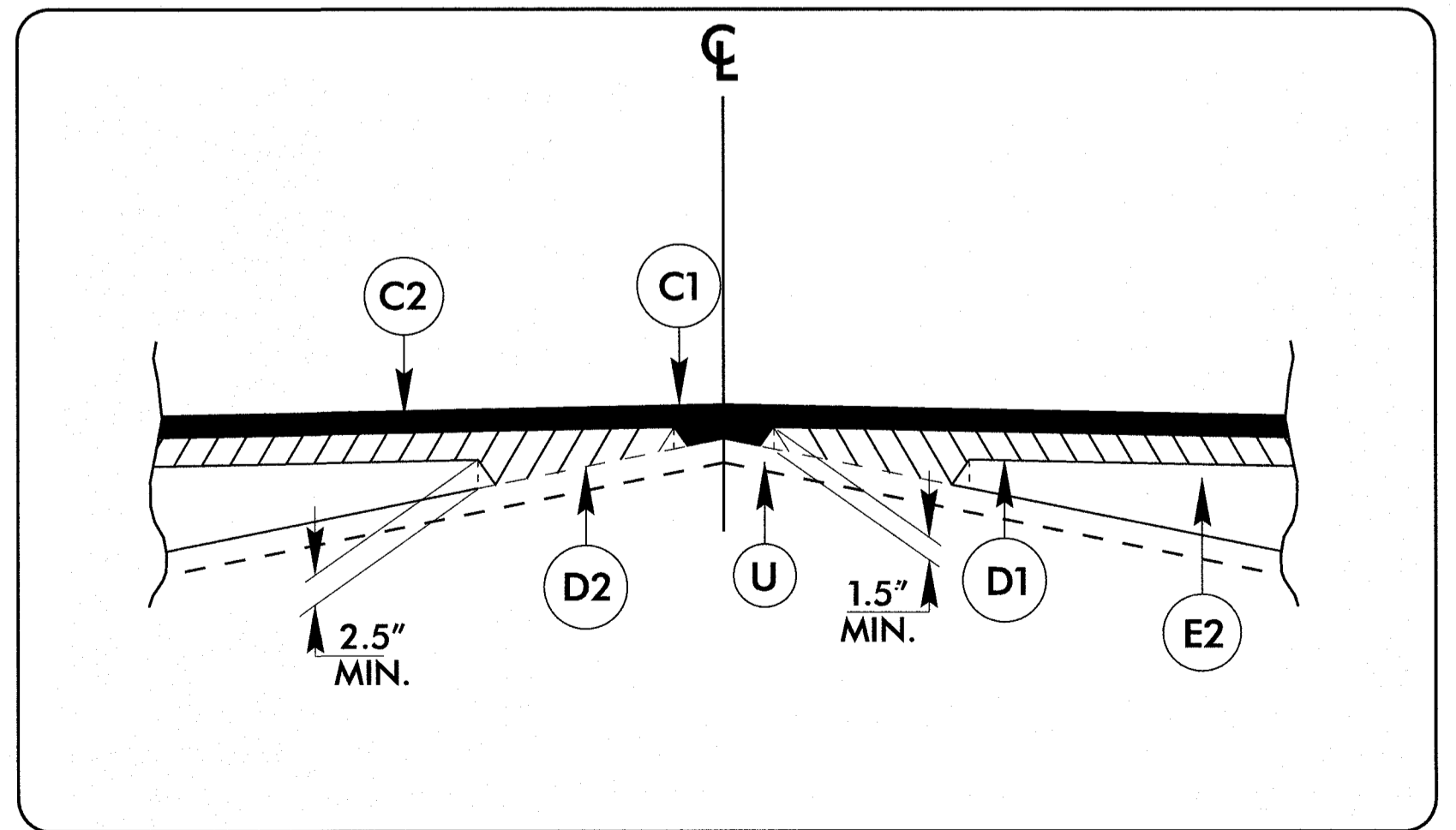


MILLING DETAIL

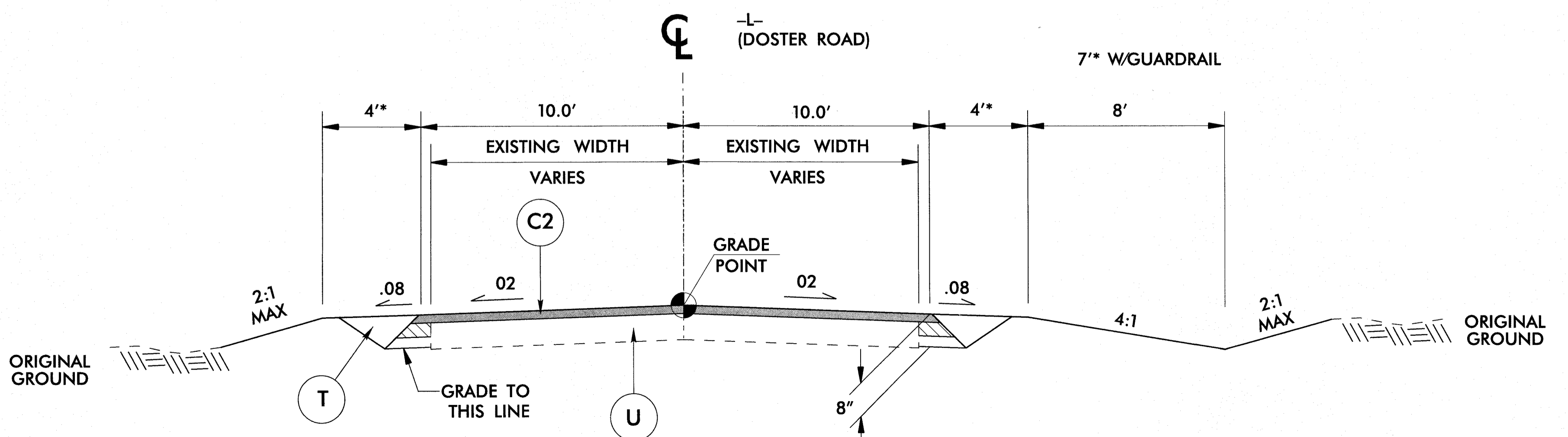


TYPICAL SECTION NO. 1

-L- STA. 10+75.00 TO STA. 13+45.00



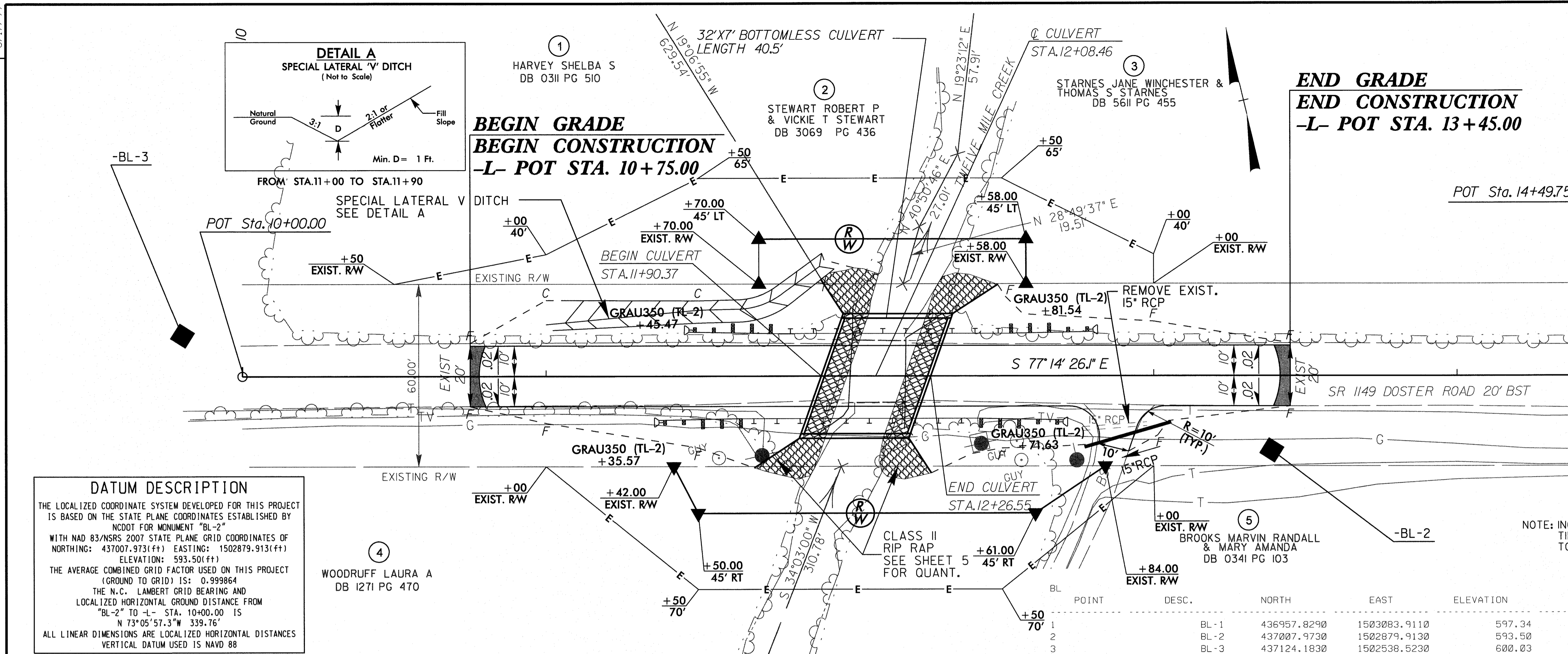
WEDGING DETAIL



TYPICAL SECTION NO. 2

AS NEEDED

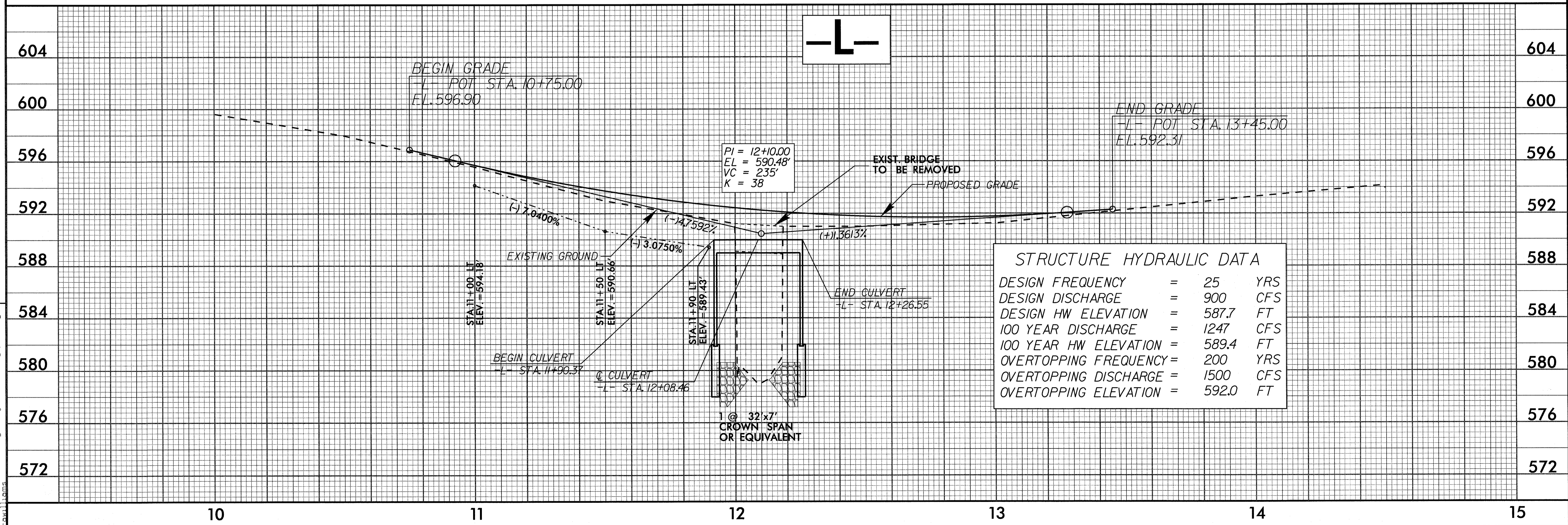
U:\Union\2011\Roadway\Proj\890201.r.dwg - tyjp.dgn 3/14/2013 10:41:11 AM



DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "BL-2" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 437007.973(FT) EASTING: 1502879.913(FT) ELEVATION: 593.50(FT)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999864
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-2" TO -L- STA. 10+00.00 IS N 73°05'57.3"W 339.76'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	436957.8290	1503083.9110	597.34	OUTSIDE PROJECT LIMITS	
2	BL-2	437007.9730	1502879.9130	593.50	13+38.87	24.54 RT
3	BL-3	437124.1830	1502538.5230	600.03	OUTSIDE PROJECT LIMITS	


NOTE: INCIDENTAL MILL APPROX. 25' AT EACH TIE IN TO PROVIDE A SMOOTH TRANSITION TO THE EXISTING ASPHALT PAVEMENT.

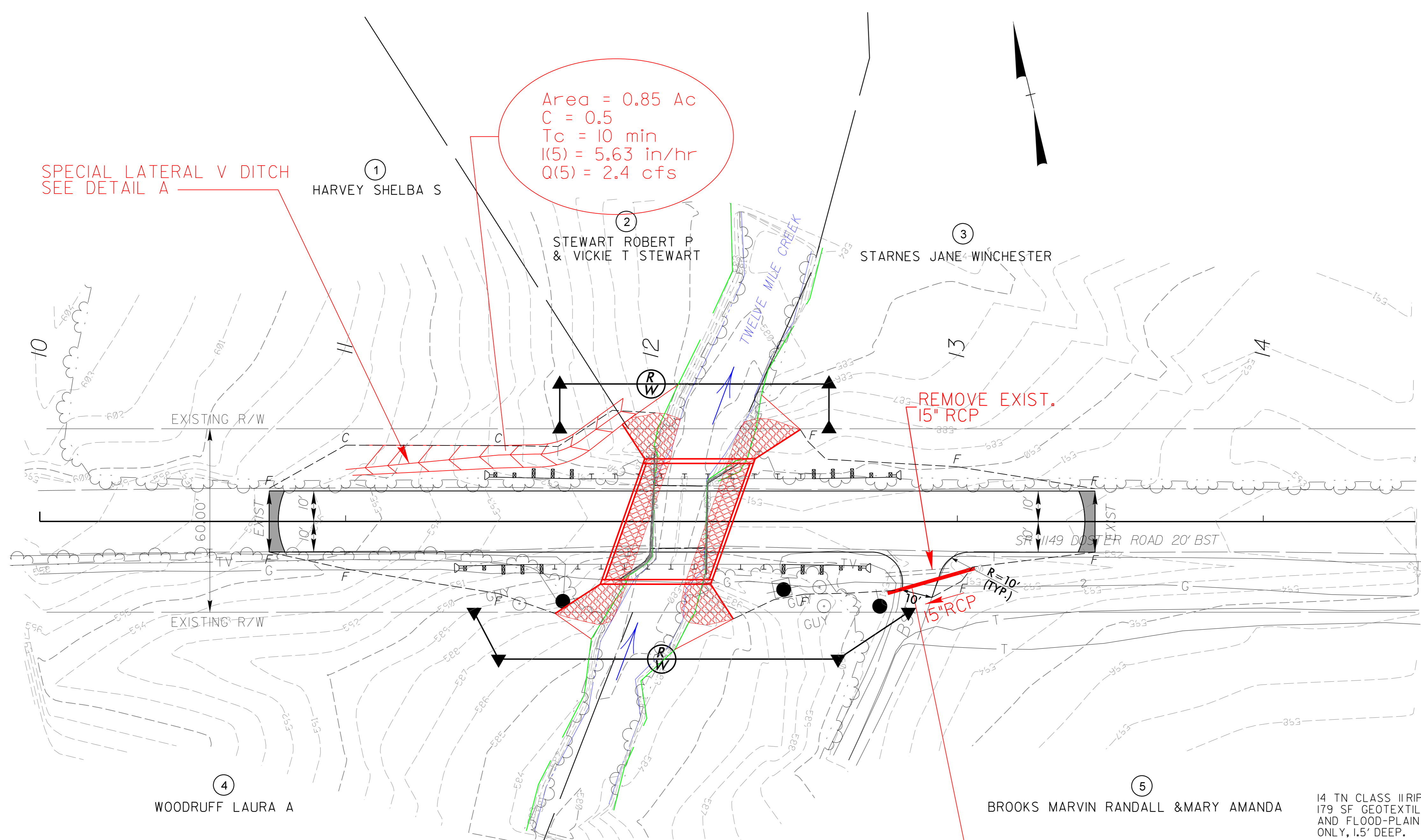


STRUCTURE HYDRAULIC DATA

DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	900	CFS
DESIGN HW ELEVATION	=	587.7	FT
100 YEAR DISCHARGE	=	1247	CFS
100 YEAR HW ELEVATION	=	589.4	FT
OVERTOPPING FREQUENCY	=	200	YRS
OVERTOPPING DISCHARGE	=	1500	CFS
OVERTOPPING ELEVATION	=	592.0	FT

8/17/99
 REVISIONS
 6/14/2015 2:01 Roadway Pro 18902201_r.dwg psh4.dgn
 10/11/2015

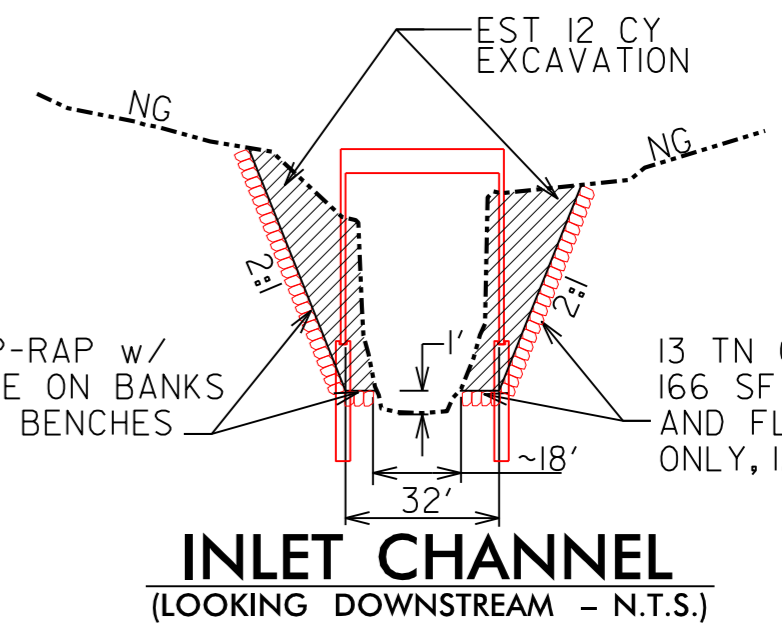
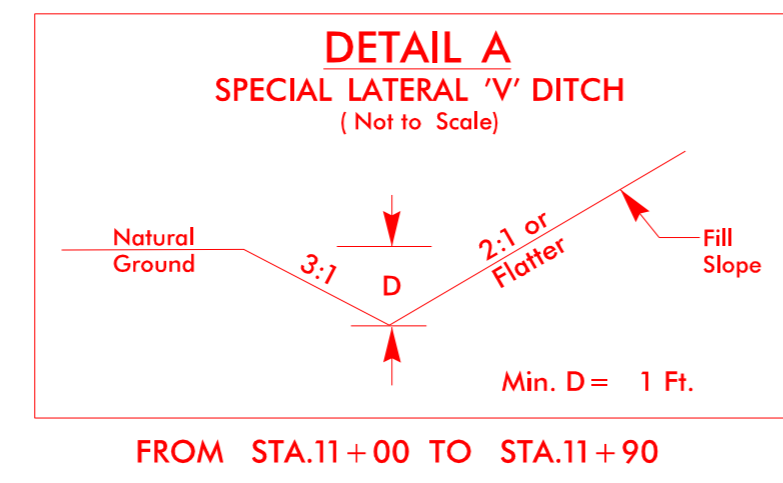
PROJECT REFERENCE NO. 17BP10.R.5	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
AMEC LICENSE No.F-1253	



Area = 0.85 Ac
 C = 0.5
 Tc = 10 min
 I(5) = 5.63 in/hr
 Q(5) = 2.4 cfs

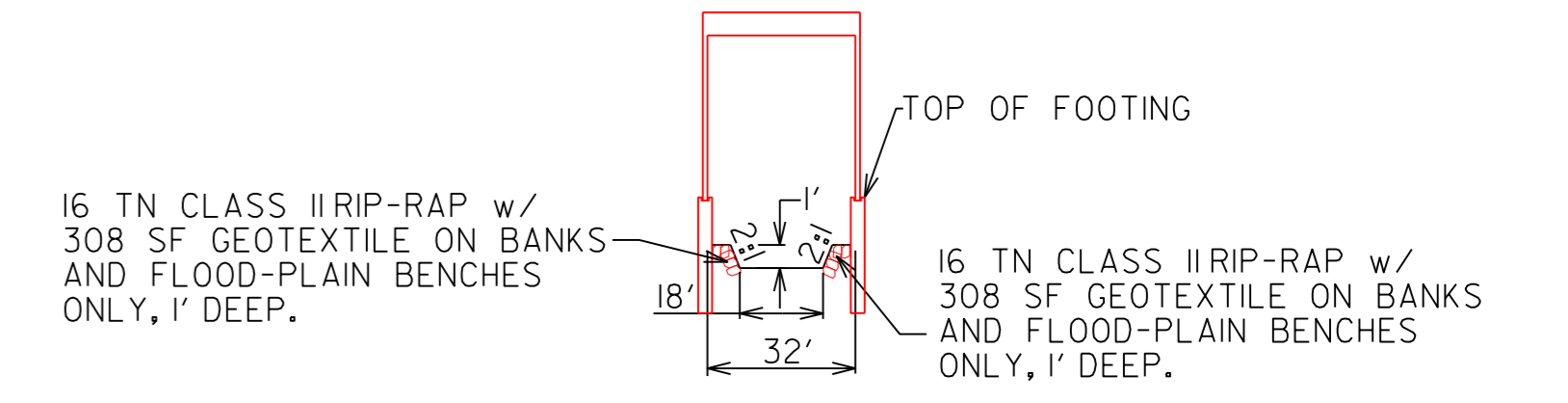
Inv. In = 590.50
 Inv. Out = 590.00

Area = 2.4 Ac
 C = 0.5
 Tc = 10 min
 I = 5.63 in/hr
 Q(5) = 7 cfs



14 TN CLASS II RIP-RAP w/
 179 SF GEOTEXTILE ON BANKS
 AND FLOOD-PLAIN BENCHES
 ONLY, 1.5' DEEP.

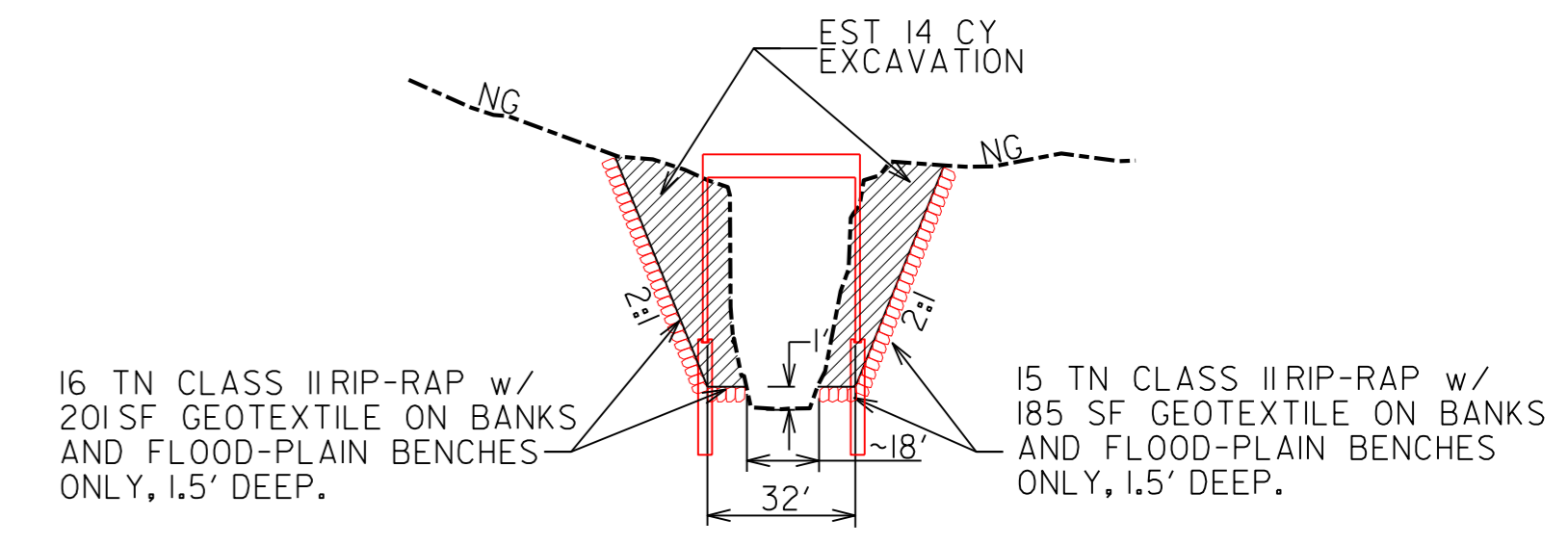
13 TN CLASS II RIP-RAP w/
 166 SF GEOTEXTILE ON BANKS
 AND FLOOD-PLAIN BENCHES
 ONLY, 1.5' DEEP.



16 TN CLASS II RIP-RAP w/
 308 SF GEOTEXTILE ON BANKS
 AND FLOOD-PLAIN BENCHES
 ONLY, 1' DEEP.

16 TN CLASS II RIP-RAP w/
 308 SF GEOTEXTILE ON BANKS
 AND FLOOD-PLAIN BENCHES
 ONLY, 1' DEEP.

CULVERT INTERNAL CHANNEL
 (LOOKING DOWNSTREAM - N.T.S.)



16 TN CLASS II RIP-RAP w/
 201 SF GEOTEXTILE ON BANKS
 AND FLOOD-PLAIN BENCHES
 ONLY, 1.5' DEEP.

15 TN CLASS II RIP-RAP w/
 185 SF GEOTEXTILE ON BANKS
 AND FLOOD-PLAIN BENCHES
 ONLY, 1.5' DEEP.

OUTLET CHANNEL
 (LOOKING DOWNSTREAM - N.T.S.)

8/17/99
 C:\STINE\DESIGN\17BP10\17BP10.R.5\17BP10.R.5.DWG

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

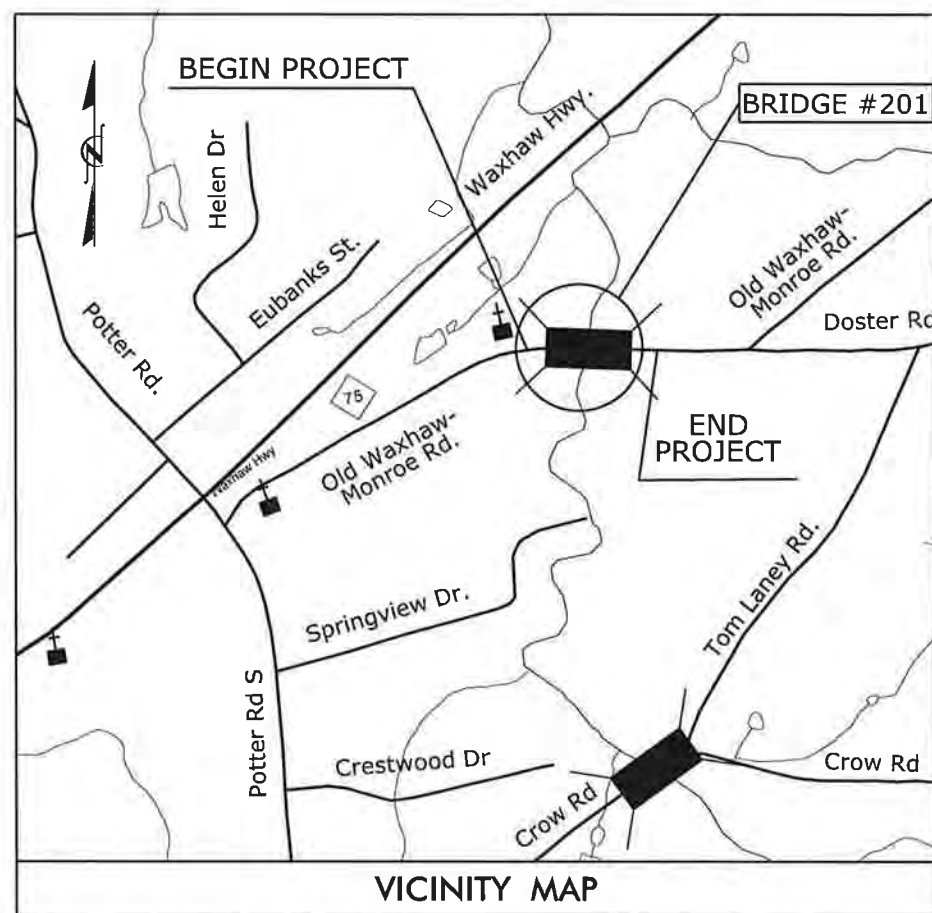
TRANSPORTATION MANAGEMENT PLAN

UNION COUNTY

DIVISION 10



**BRIDGE #201 - SR 1149 OLD WAXHAW-MONROE RD/DOSTER RD.
OVER TWELVE MILE CREEK**



VICINITY MAP

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET AND INDEX OF SHEETS
TMP-1A	LEGEND AND LIST OF ROADWAY STANDARD DRAWINGS
TMP-2	GENERAL NOTES AND PHASING
TMP-3	BRIDGE #201 - ROAD CLOSURE & DETOUR ROUTE

TRAFFIC MANAGEMENT STRATEGY

PROPOSED REPLACEMENT OF BRIDGE #201 WILL BE PERFORMED USING A ROAD CLOSURE WITH OFF-SITE DETOUR ROUTE. REFER TO SHEET TMP-2 FOR PHASING.



PLAN PREPARED BY:
Stantec Consulting Services Inc.
801 Jones Franklin Road-Suite 300
Raleigh, NC 27606
Tel 919 851 6866
Fax 919 851 7024
www.stantec.com

BETSY L. WATSON, P.E. TRAFFIC ENGINEER
GEORGE KARAGEORGE WORK ZONE TRANSPORTATION DESIGN MANAGER

APPROVED: *Betsy L. Watson*
DATE: 4/10/13





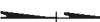








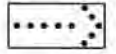










SHEET NO.
TMP-1



WBS 17BP.10.R.5

4/1/2013
U:\Union201\TrafficControl\TCP\Plansheets\17BP.10.R.5_TC_TMP_01_TITLE.dgn
blaton





LEGEND

-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  WORK AREA
-  PAVEMENT REMOVAL
-  NORTH ARROW
-  TYPE III BARRICADE
-  CONE
-  DRUM
-  SKINNY DRUM
-  TUBULAR MARKER
-  CHANGEABLE MESSAGE SIGN (CMS)
-  FLAGGER
-  AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD)
-  FLASHING ARROW BOARD (TYPE C)
-  LAW ENFORCEMENT
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  PORTABLE CONCRETE BARRIER (PCB)
-  TEMPORARY CRASH CUSHION
-  TEMPORARY SHORING
-  WORK ZONE SIGN-PORTABLE
-  WORK ZONE SIGN-STATIONARY
-  WORK ZONE SIGN-STATIONARY OR PORTABLE




SIGNALS

-  EXISTING
-  PROPOSED
-  TEMPORARY

PAVEMENT MARKINGS

-  EXISTING PAVEMENT MARKING (GRAY)
-  SKIP LINES
-  MINI-SKIP LINES
-  SOLID LINES

PAVEMENT MARKING SYMBOLS

-  PAVEMENT MARKING SYMBOLS
-  EXISTING PAVEMENT MARKING SYMBOLS (HOLLOW)
-  ONLY PAVEMENT MARKING ALPHANUMERIC CHARACTERS

PAVEMENT MARKERS

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

ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS

4/1/2013
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SLOT.DR




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www.stantec.com
License No. F-0672

APPROVED: _____ DATE: _____



Patsy L. Watson
4/8/13



LEGEND
&
ROADWAY STANDARD DRAWINGS

GENERAL NOTES

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

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

ROAD CLOSURES

- A) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY ROAD CLOSURE.
- B) FURNISH AND INSTALL SIGNING AND DEVICES FOR ROAD CLOSURES ACCORDING TO THE TRANSPORTATION MANAGEMENT PLAN. COVER OR REMOVE ALL SIGNS AND DEVICES FOR ROAD CLOSURES WHEN NOT IN EFFECT.
- C) FURNISH AND INSTALL OFFSITE-DETOUR ROUTE SIGNING AS SHOWN IN THE TRANSPORTATION MANAGEMENT PLAN. COVER OR REMOVE OFFSITE-DETOUR SIGNING WHEN THE DETOUR IS NOT IN OPERATION. ALL DETOUR ROUTES MUST BE APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTING.
- D) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- E) OTHER BRIDGE PROJECTS MAY BE ONGOING IN THE AREA. COORDINATE ALL DETOUR ROUTES WITH ENGINEER AND OTHER CONTRACTORS.

PAVEMENT MARKINGS AND MARKERS

- F) RECORD ALL LOCATIONS AND TYPES OF EXISTING PAVEMENT MARKINGS AS THEY WILL BE REPLACED IN THE SAME PATTERN ON THE NEW SURFACE.
- G) UPON COMPLETION OF ALL OTHER CONSTRUCTION OPERATIONS INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

<u>ROAD NAME</u>	<u>MARKING</u>	<u>PAVEMENT MARKER</u>
SR 1149 OLD WAXHAW-MONROE RD.	PAINT	NONE

- H) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- I) REPLACE PAVEMENT MARKINGS BEFORE OPENING LANES TO TRAFFIC.

PHASING

REFER TO SHEET TMP-3

STEP 1:

INSTALL DETOUR ROUTE SIGNS.

STEP 2:

CLOSE SR 1149 OLD WAXHAW-MONROE RD. IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 1101.03 SHEET 1 OF 9, TEMPORARY ROAD CLOSURES-CLOSURE BEYOND DETOUR POINT.

STEP 3:

WITH SR 1149 CLOSED TO TRAFFIC REPLACE BRIDGE #201 AND COMPLETE ALL CONSTRUCTION OPERATIONS.




STEP 4:

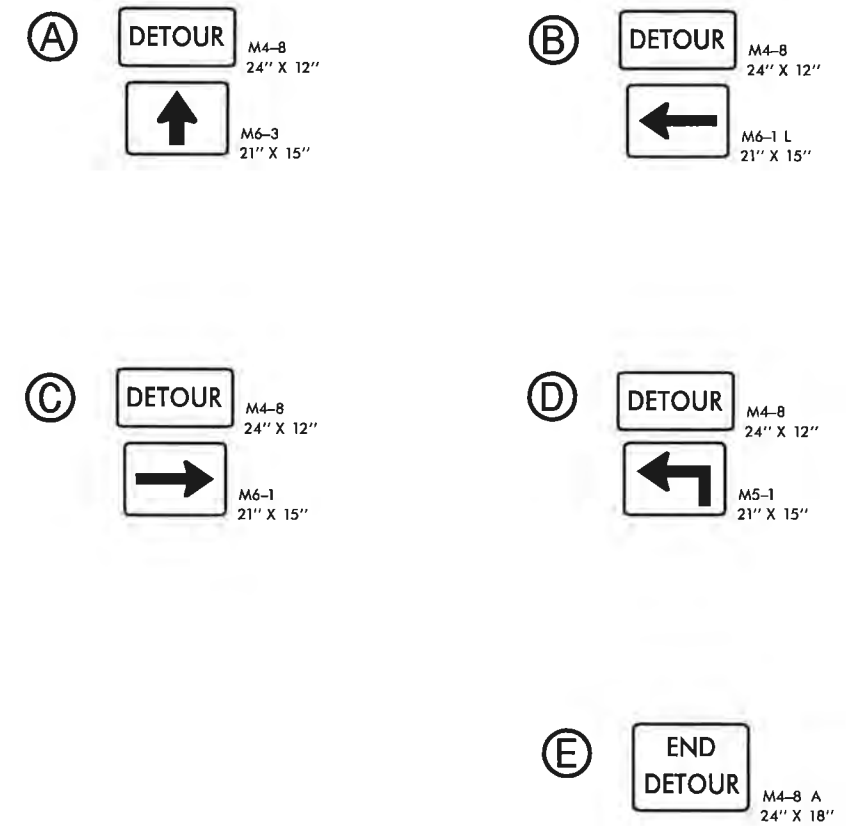
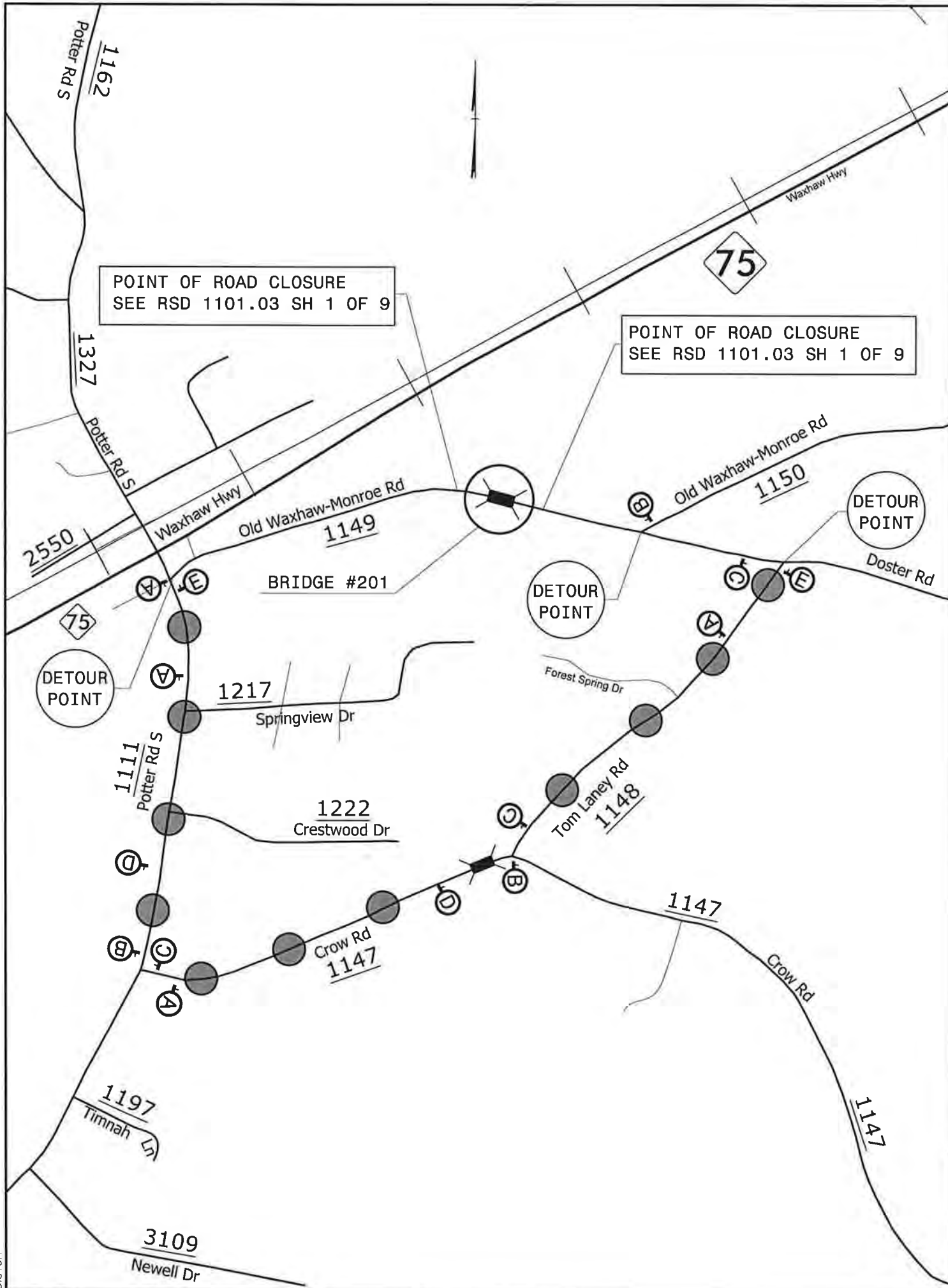
INSTALL FINAL PAVEMENT MARKINGS.

STEP 5:

OPEN SR 1149 TO TRAFFIC.

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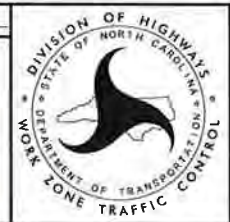
 <p>Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672</p>	<p>APPROVED: _____ DATE: _____</p> 	 <p>DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL</p>	<p>GENERAL NOTES & PHASING</p>
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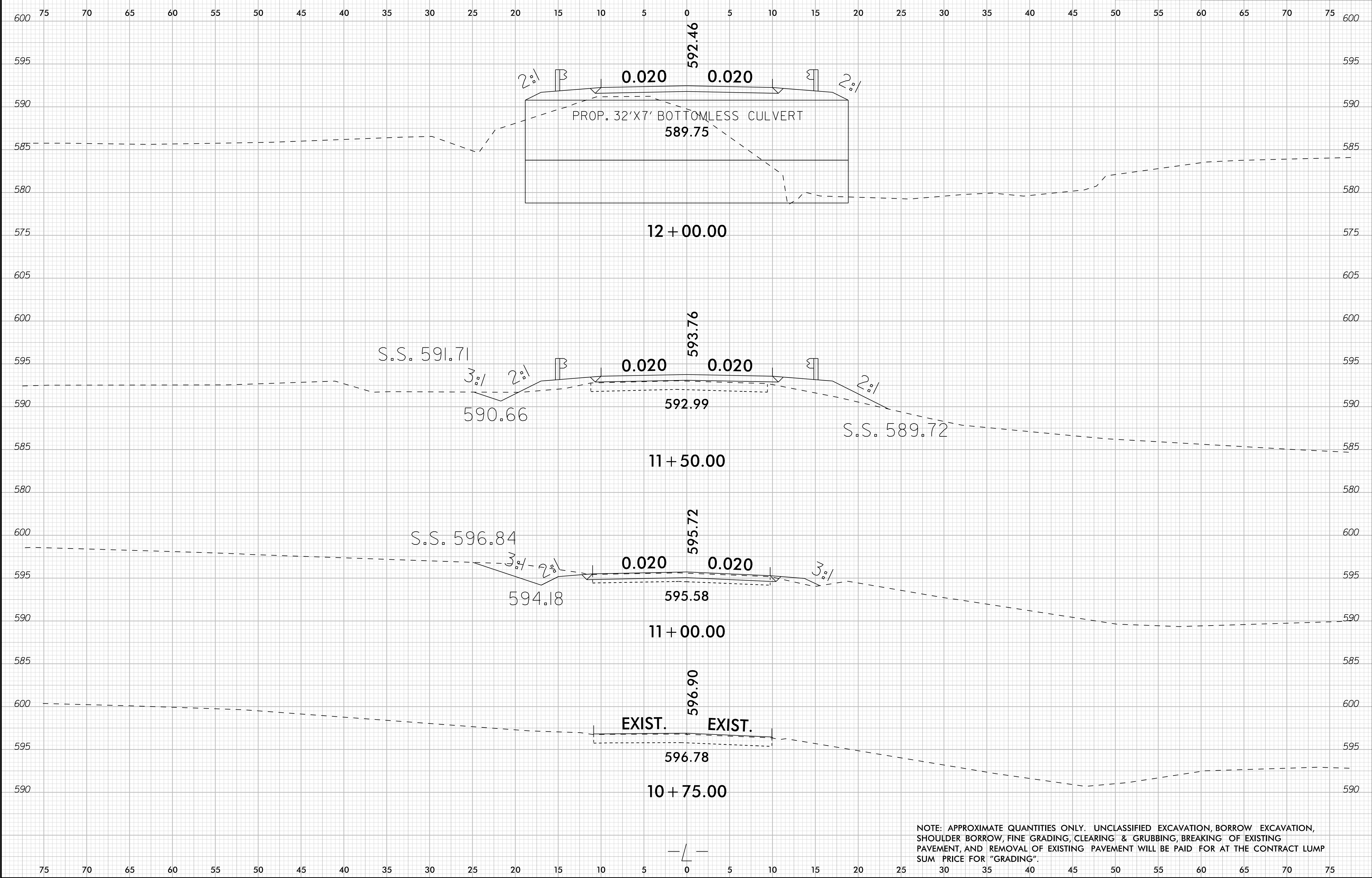
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APPROVED:
 DATE: 8/13



UNION CO. BRIDGE #201
 ROAD CLOSURE &
 DETOUR ROUTE

8/23/99

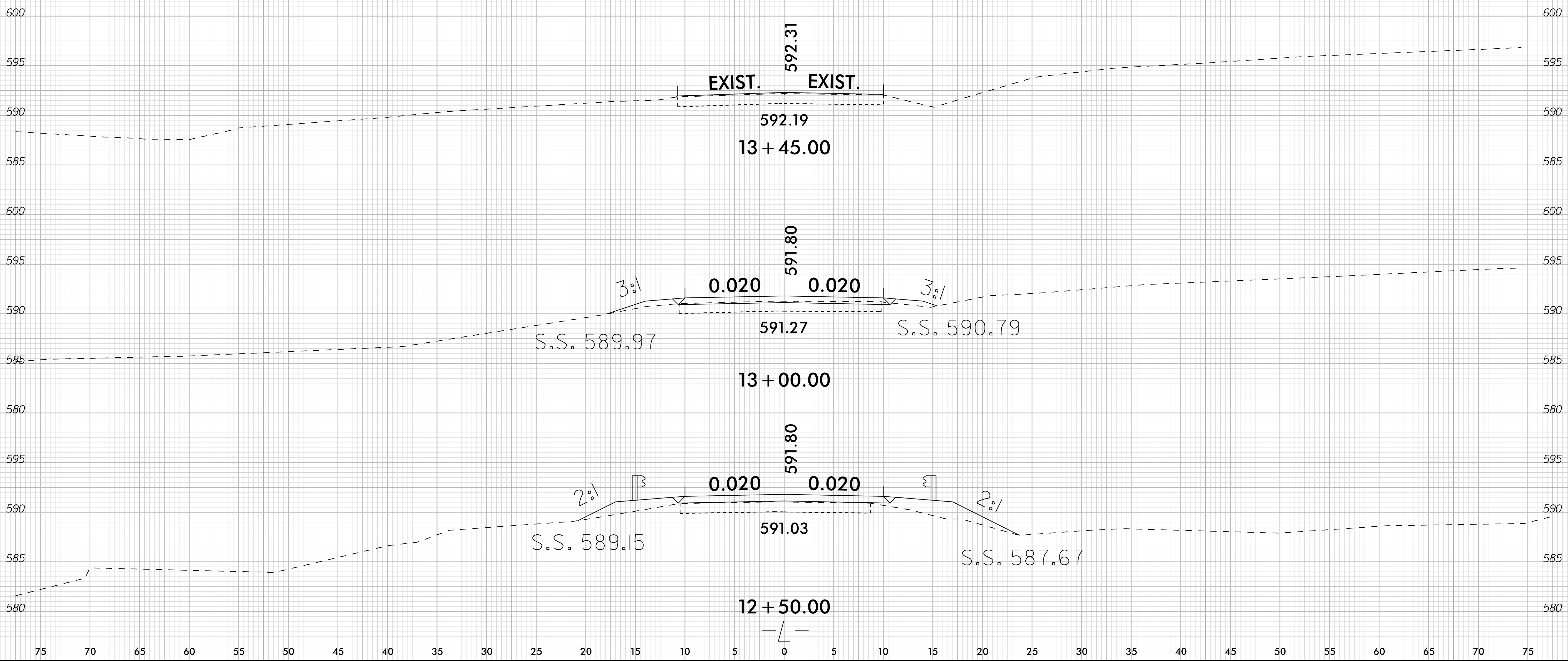


NOTE: APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, SHOULDER BORROW, FINE GRADING, CLEARING & GRUBBING, BREAKING OF EXISTING PAVEMENT, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".

3/14/2013
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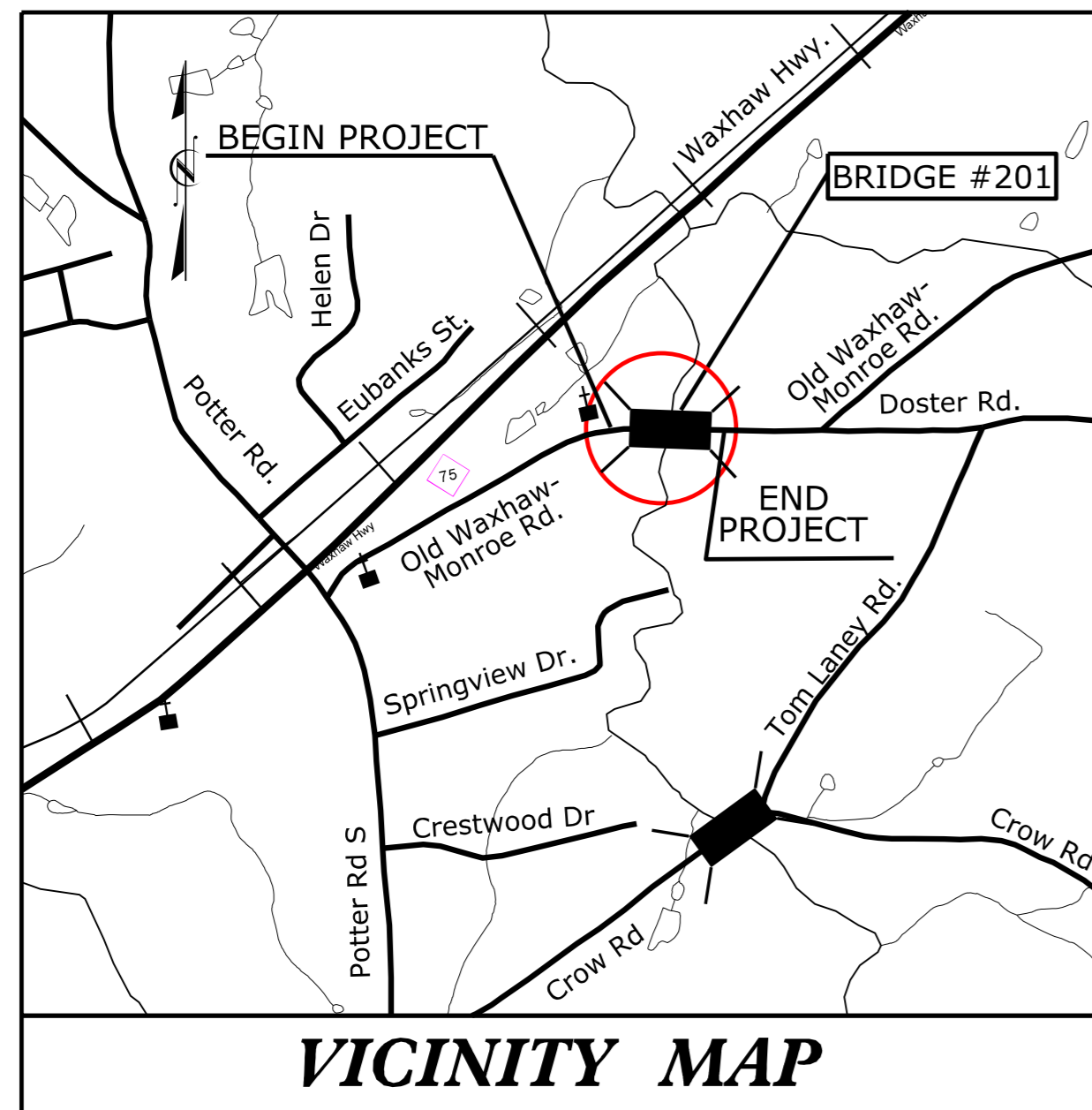


75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



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

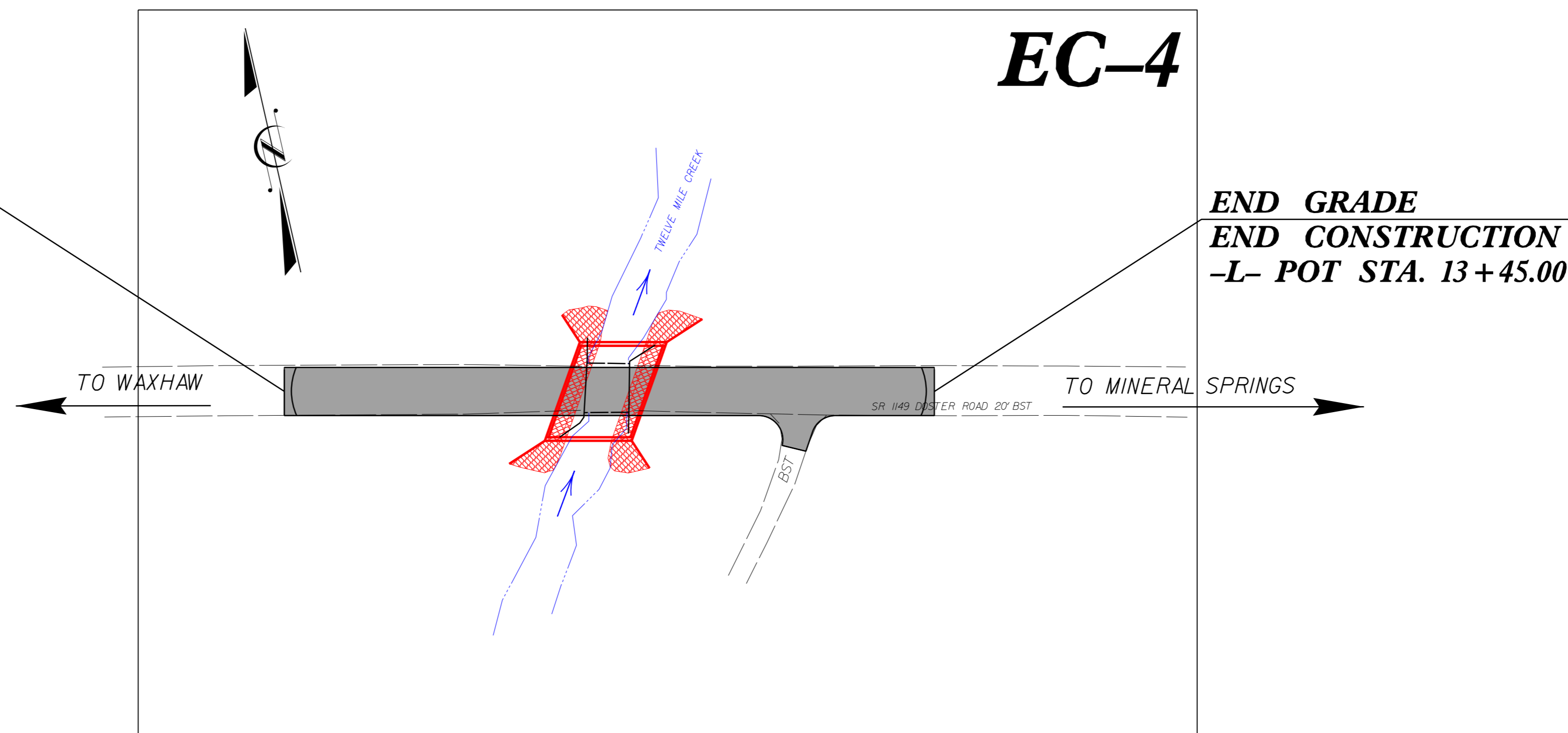
TIP PROJECT: 17BP.10.R.5



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

**LOCATION: BRIDGE NO. 201 ON SR 1149 (DOSTER ROAD)
OVER TWELVE MILE CREEK**

**BEGIN GRADE
BEGIN CONSTRUCTION
-L- PC STA. 10+75.00**



**END GRADE
END CONSTRUCTION
-L- POT STA. 13+45.00**

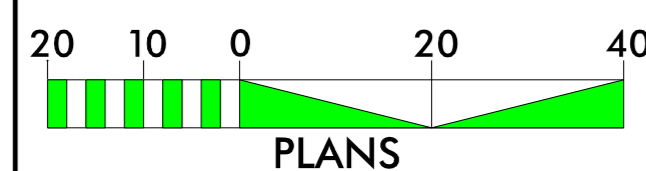
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.10.R.5	EC-1	4
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.10.R.5		PE ROWUTIL. CONST.	

EROSION AND SEDIMENT CONTROL MEASURES

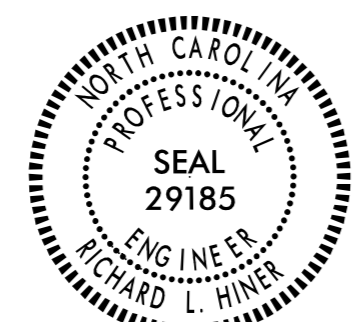
Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSO
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	▲▲▲▲▲
1622.01	Temporary Berms and Slope Drains	— T —
1630.02	Silt Basin Type B	▨
1633.01	Temporary Rock Silt Check Type-A	▩
	Temporary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

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

GRAPHIC SCALES



ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



AMEC LICENSE No.F-1253

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY
WITH THE REGULATIONS SET FORTH BY THE
NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011
ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND
NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared in the Office of:

AMEC Environment & Infrastructure, Inc.
4021 Stirrup Creek Drive, Suite 100
Durham, North Carolina, 27703
NC Eng. License # F-1253

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www.amec.com



FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

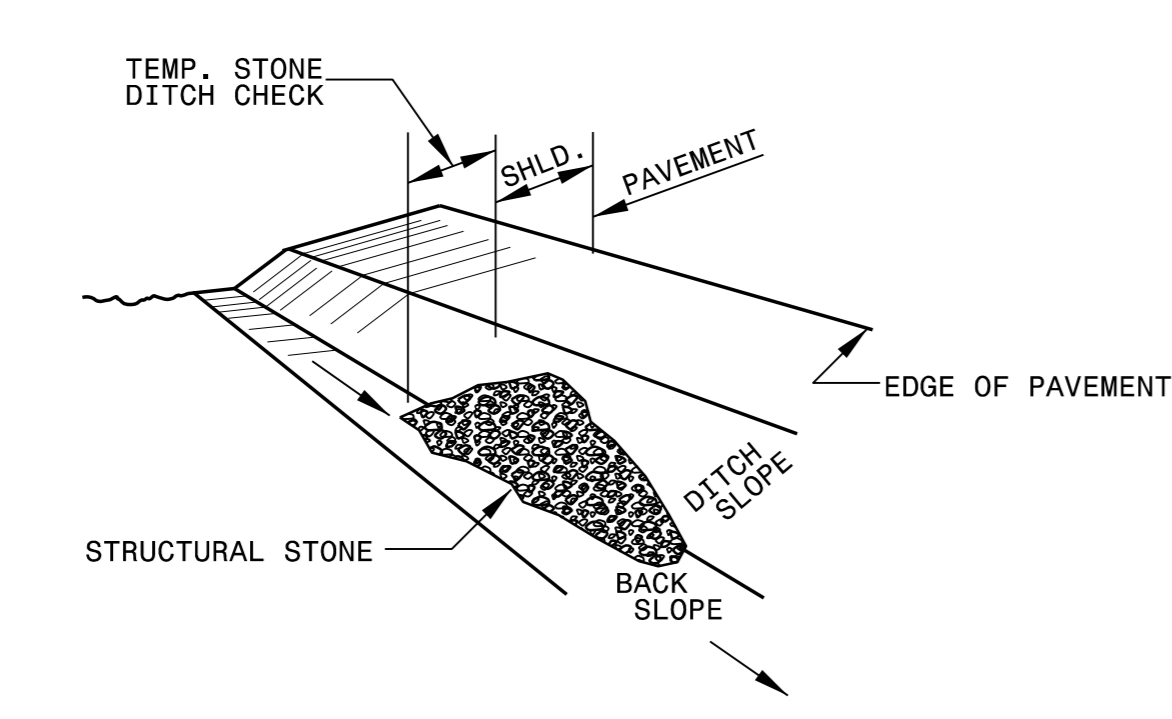
2012 STANDARD SPECIFICATIONS

Roadway Standard Drawings

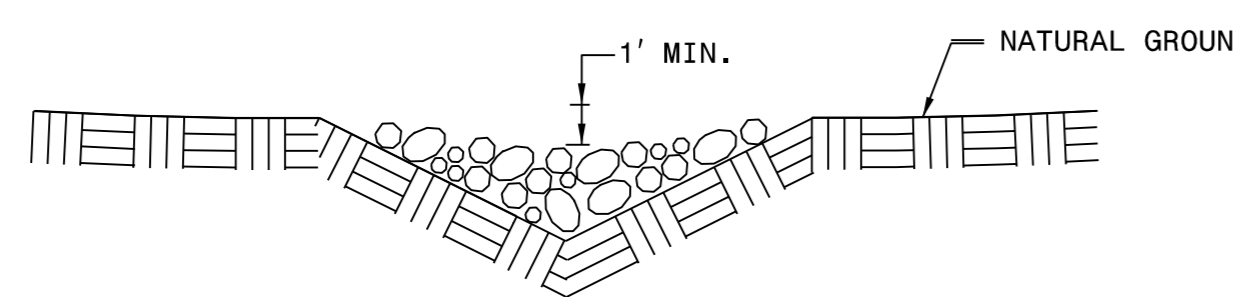
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type A
1622.01 Temporary Berms and Slope Drains	1633.02 Temporary Rock Silt Check Type B
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type B	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.04 Stilling Basin	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.05 Temporary Diversion	1640.01 Coir Fiber Baffle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

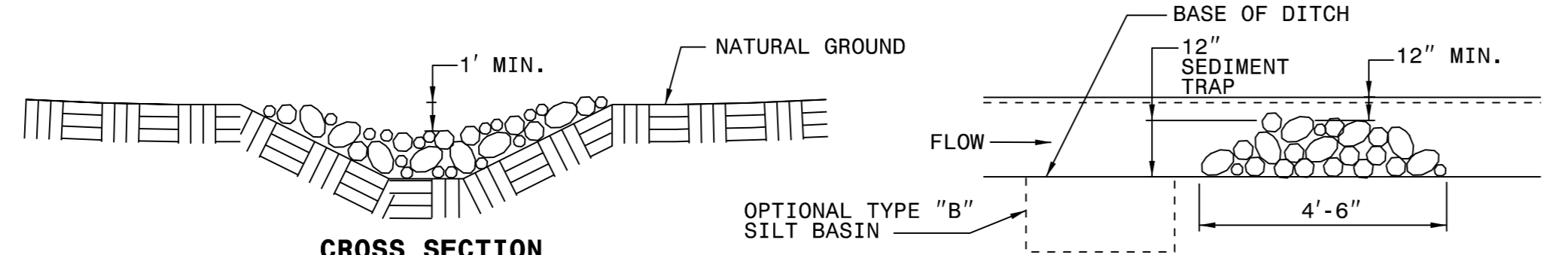
TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH

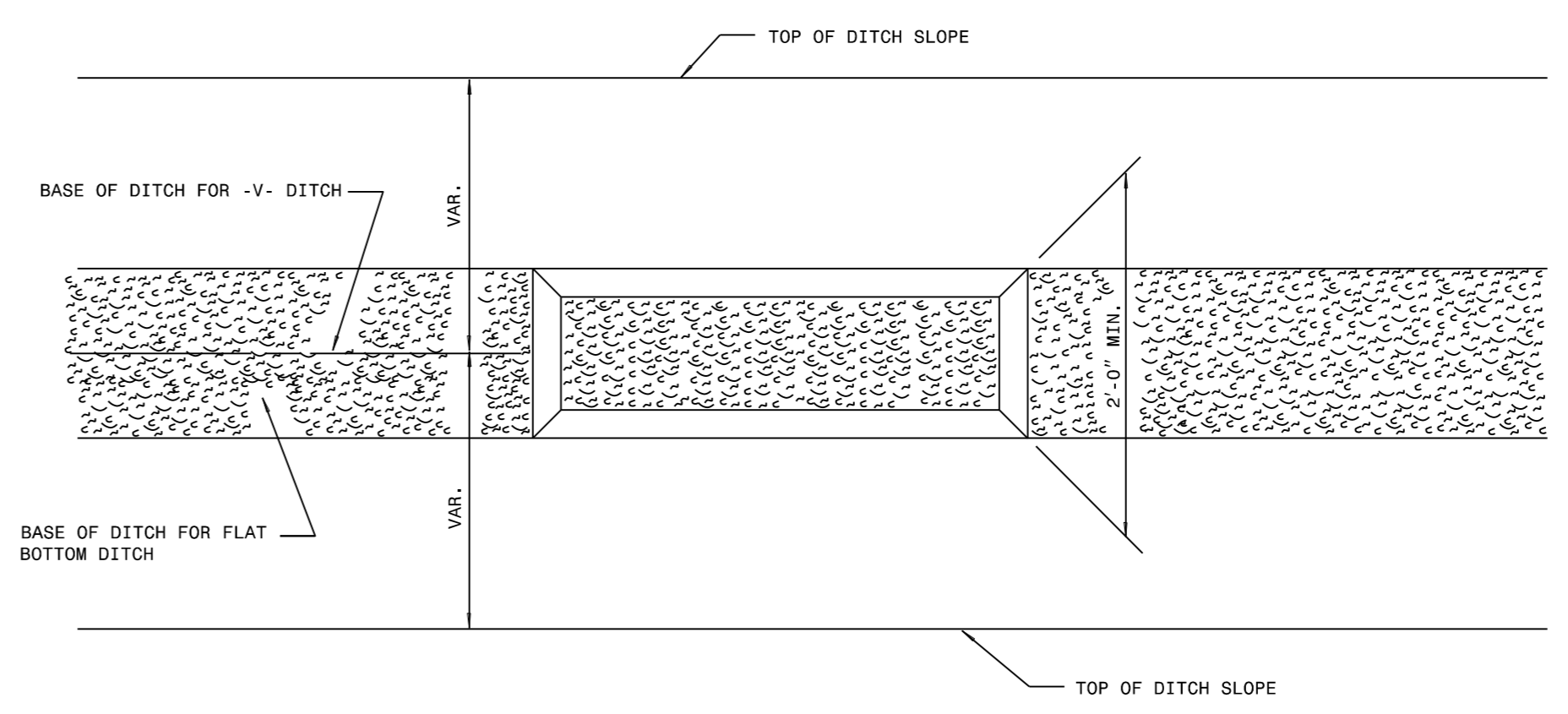


CROSS SECTION TRAPEZOIDAL DITCH

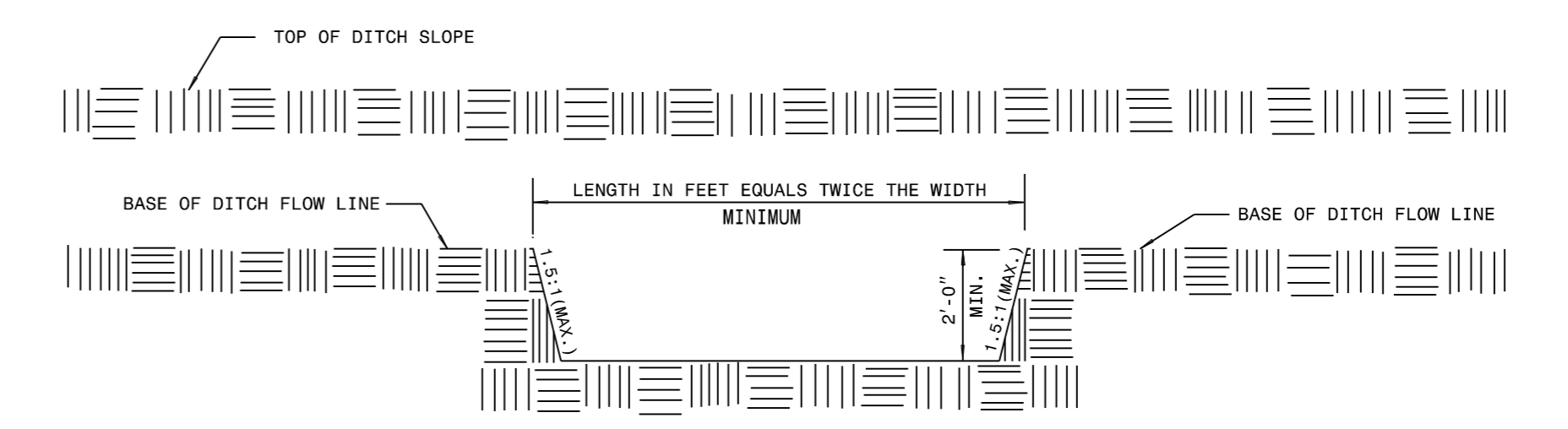
NOTES:
 USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.
 THE ENGINEER MAY DIRECT THE OPTION OF CLASS 'A' STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.

ELEVATION VIEW

SILT BASIN 'B' DETAIL



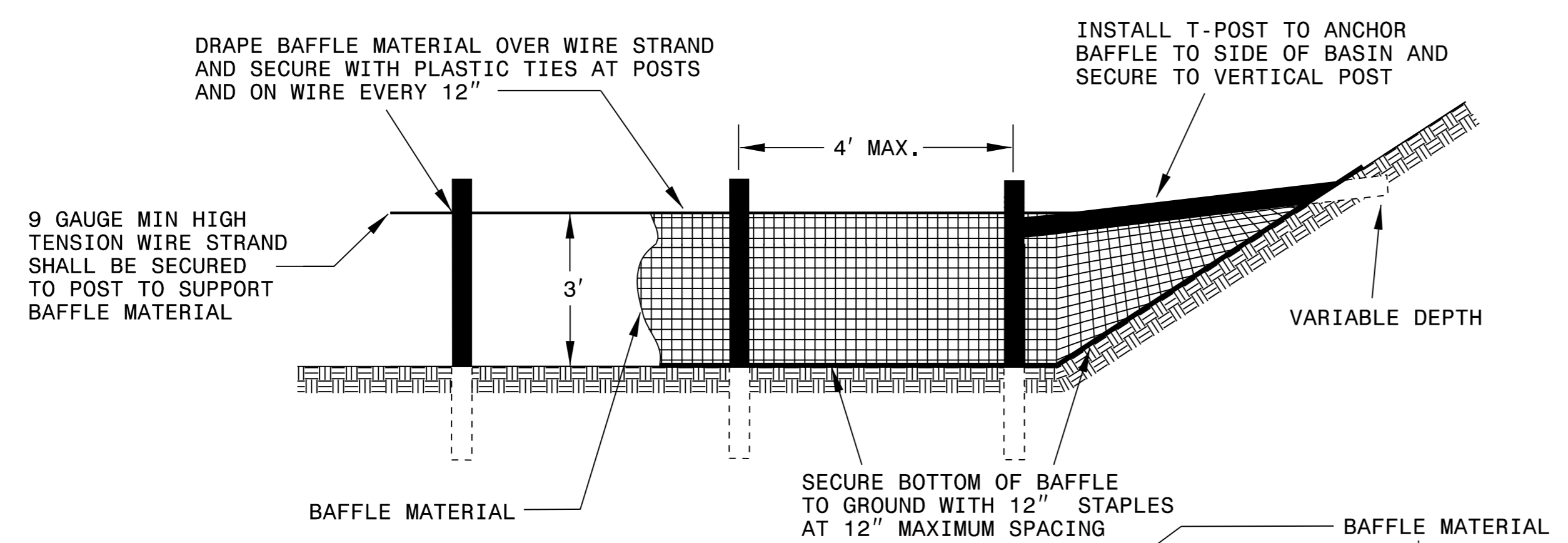
PLAN



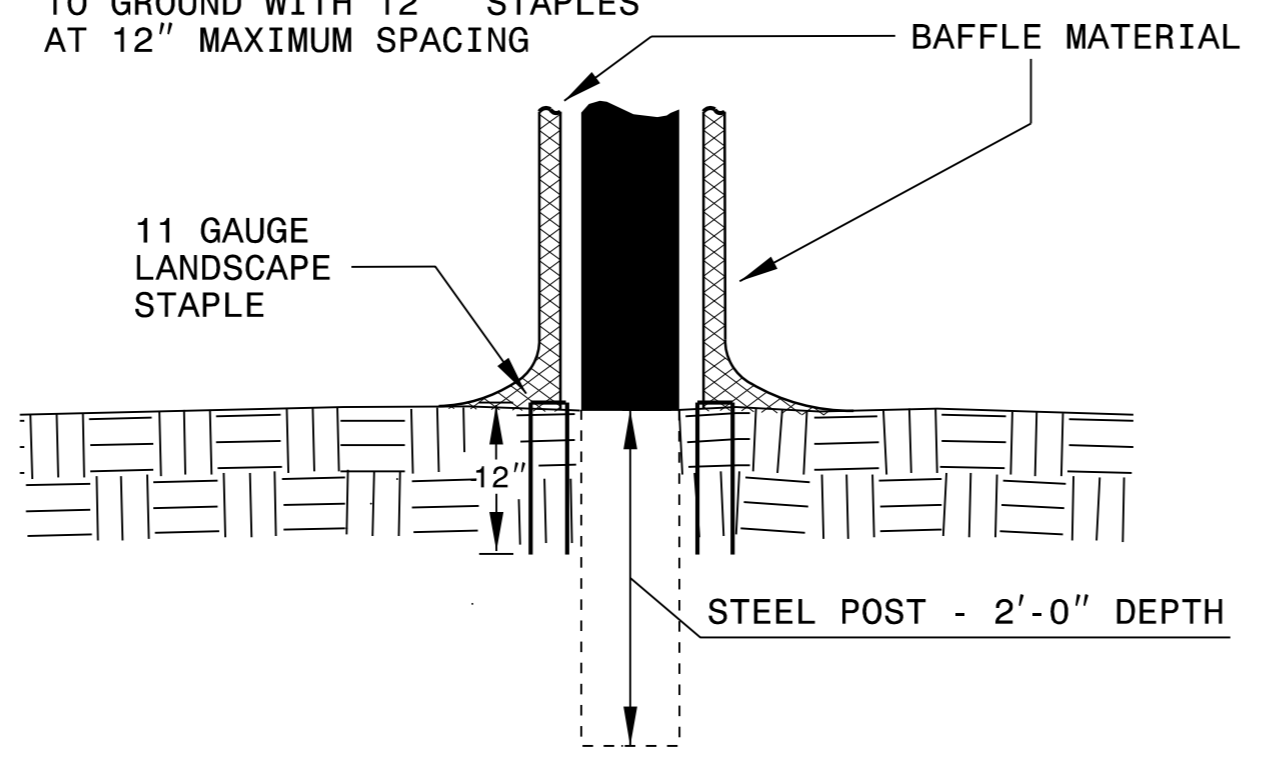
ELEVATION

PROJECT REFERENCE NO. 17BP.10.R.5	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER BAFFLE DETAIL

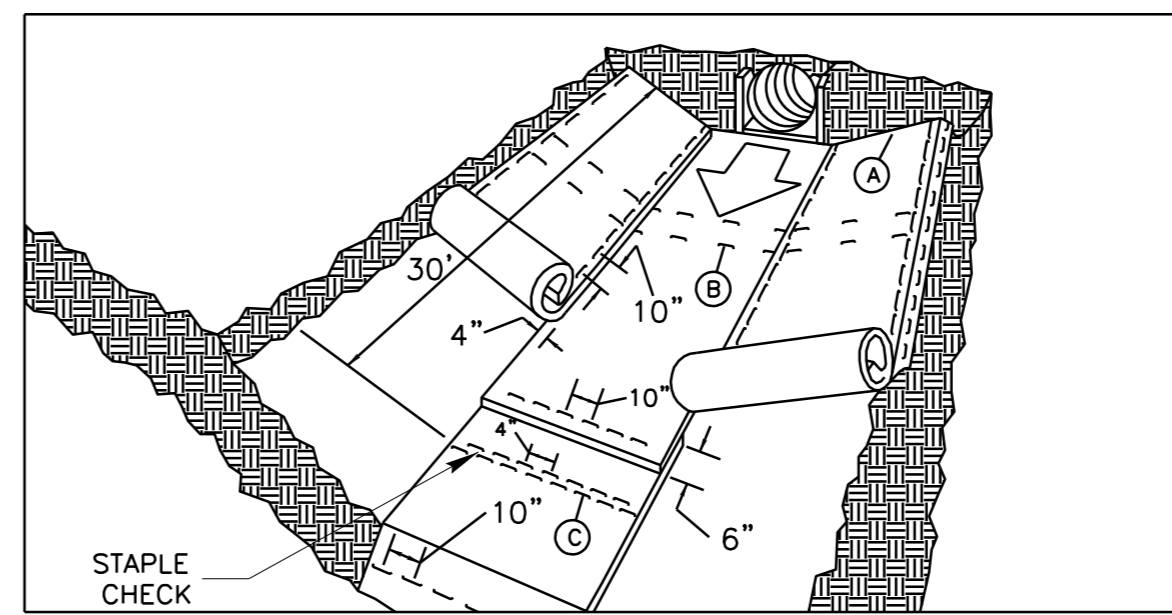


NOTES:
 1. INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF 1/4 THE BASIN LENGTH.
 2. TWO(2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF 1/3 THE BASIN LENGTH.
 3. TOP HEIGHT OF COIR FIBER BAFFLES SHALL NOT BE BELOW BASE OF EMERGENCY SPILLWAY ELEVATION.



BAFFLE MATERIAL SHALL BE SECURED TO THE BOTTOM AND SIDES OF BASIN USING 12\"/>

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

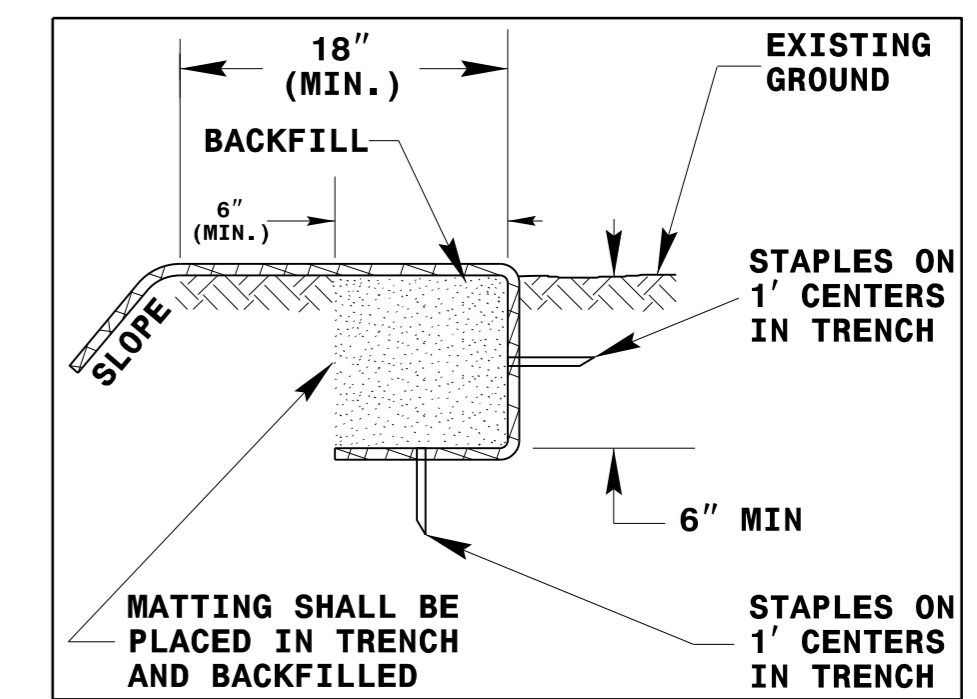
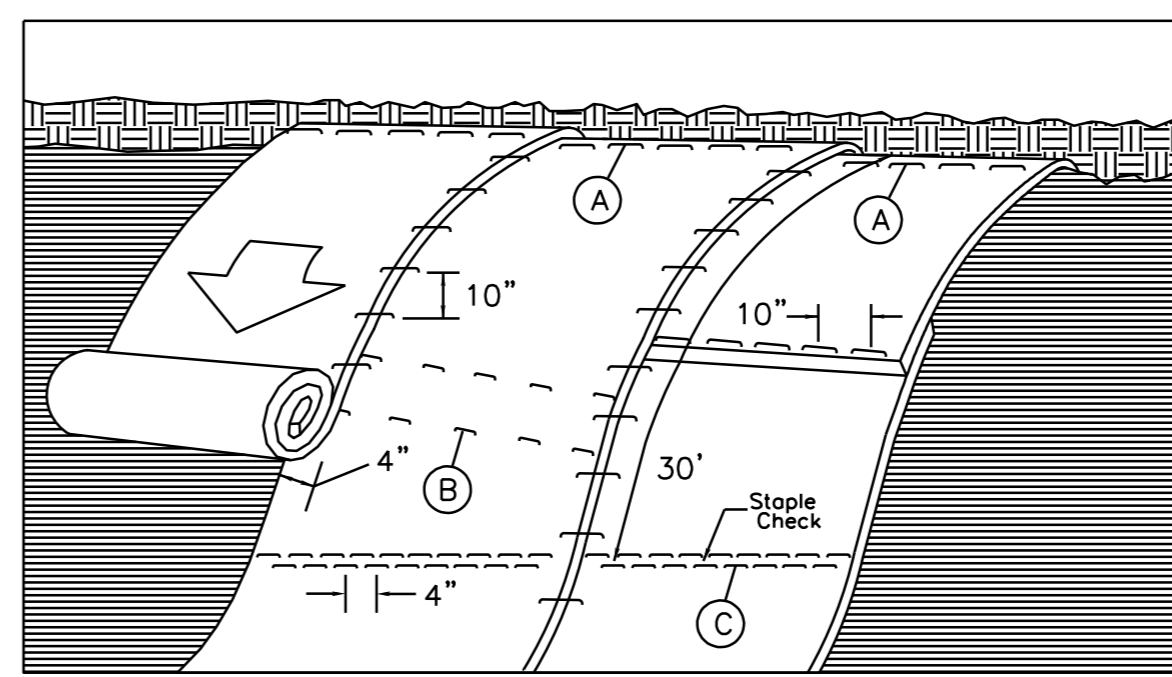


DIAGRAM (A)



MATTING ON SLOPES

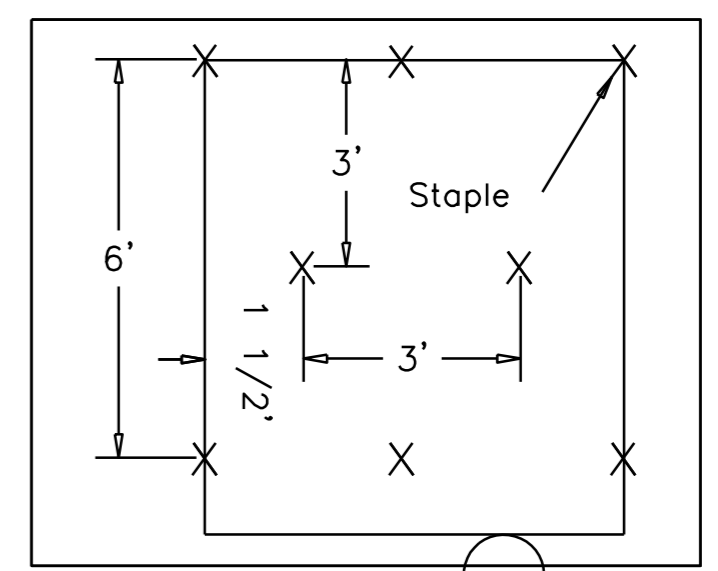


DIAGRAM B

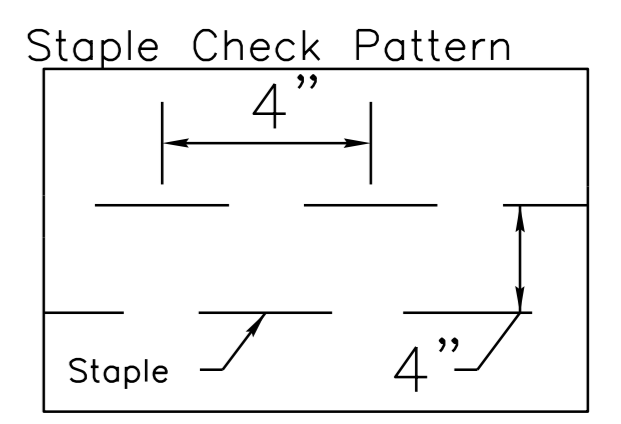
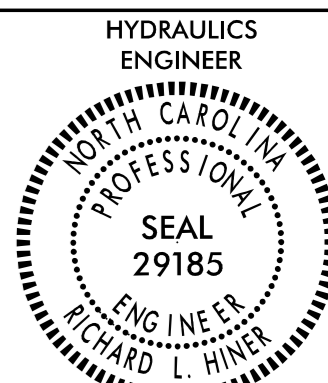


DIAGRAM (C)

NOTES:
 THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.
 STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A 'U' SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. 17BP.10.R.5	SHEET NO. EC-3
ROADWAY DESIGN ENGINEER	


SOIL STABILIZATION SUMMARY SHEET

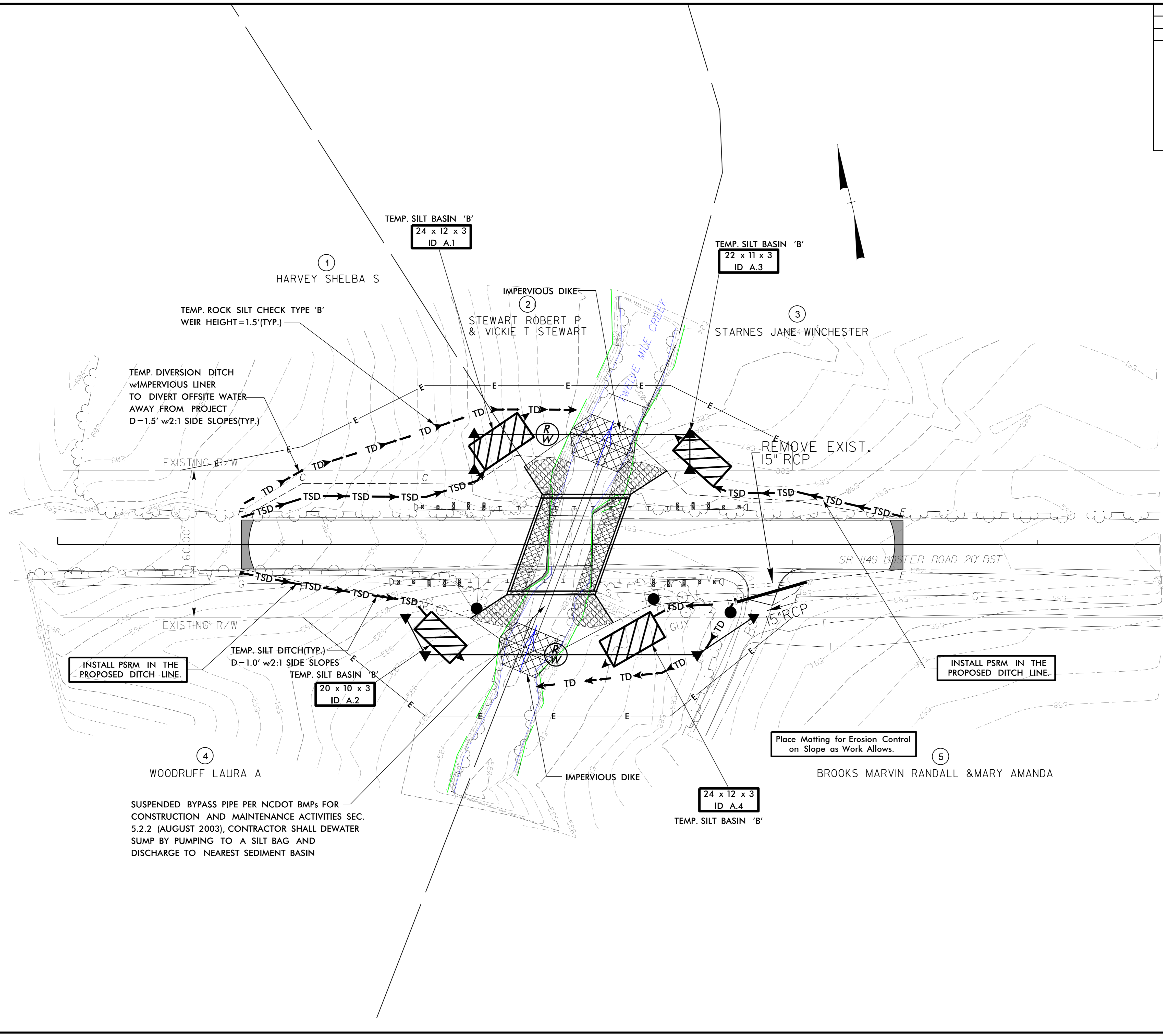
**MATTING FOR EROSION CONTROL
(FOR SLOPE STABILIZATION)**

**PERMANENT SOIL REINFORCEMENT MAT
(FOR TEMP. SILT DITCH STABILIZATION)**

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	10+75	11+91	LT	200
4	-L-	12+27	13+45	LT	100
4	-L-	10+75	11+91	RT	115
4	-L-	12+27	12+82	RT	105
4	-L-	12+92	13+45	RT	25
SUBTOTAL					545
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					0
TOTAL					545
SAY					560
IMPERVIOUS LINER (FOR TEMP. DIVERSION DITCHES)					
4	-L-	10+76	12+16	LT	135
4	-L-	11+96	12+79	RT	85
SUBTOTAL					220
MISCELLANEOUS LINER TO BE INSTALLED AS DIRECTED BY THE ENGINEER					0
TOTAL					220
SAY					235
TEMPORARY SILT FENCE (FOR STOCK PILES)					
TOTAL					300 LF
SILT BAG					
TOTAL					1
SPECIAL STILLING BASIN					
TOTAL					1

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	10+75	11+74	LT	95
4	-L-	12+68	13+45	LT	75
4	-L-	10+74	11+51	RT	75
4	-L-	12+43	12+71	RT	30
SUBTOTAL					275
ADDITIONAL PSRM TO BE INSTALLED					0
TOTAL					275
SAY					290
COIR FIBER MATTING (STREAM BANK AT TEMP. DIKE)					
SUBTOTAL					15
ADDITIONAL MATTING TO BE INSTALLED					0
TOTAL					15
SAY					20
CLASS II RIP RAP (WING WALLS AND CULVERT)					
SUBTOTAL					90
ADDITIONAL STONE TO BE INSTALLED					0
TOTAL					90
SAY					90 TON
GEOTEXTILE (BANKS AND FLOODPLAIN BENCHES)					
SUBTOTAL					1350
ADDITIONAL GEOTEXTILE TO BE INSTALLED					0
TOTAL					1350
SAY					1400 SF

PROJECT REFERENCE NO. 17BP10.R.5	SHEET NO. EC-4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
AMEC LICENSE No.F-1253	



SUSPENDED BYPASS PIPE PER NCDOT BMPs FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES SEC. 5.2.2 (AUGUST 2003), CONTRACTOR SHALL DEWATER SUMP BY PUMPING TO A SILT BAG AND DISCHARGE TO NEAREST SEDIMENT BASIN

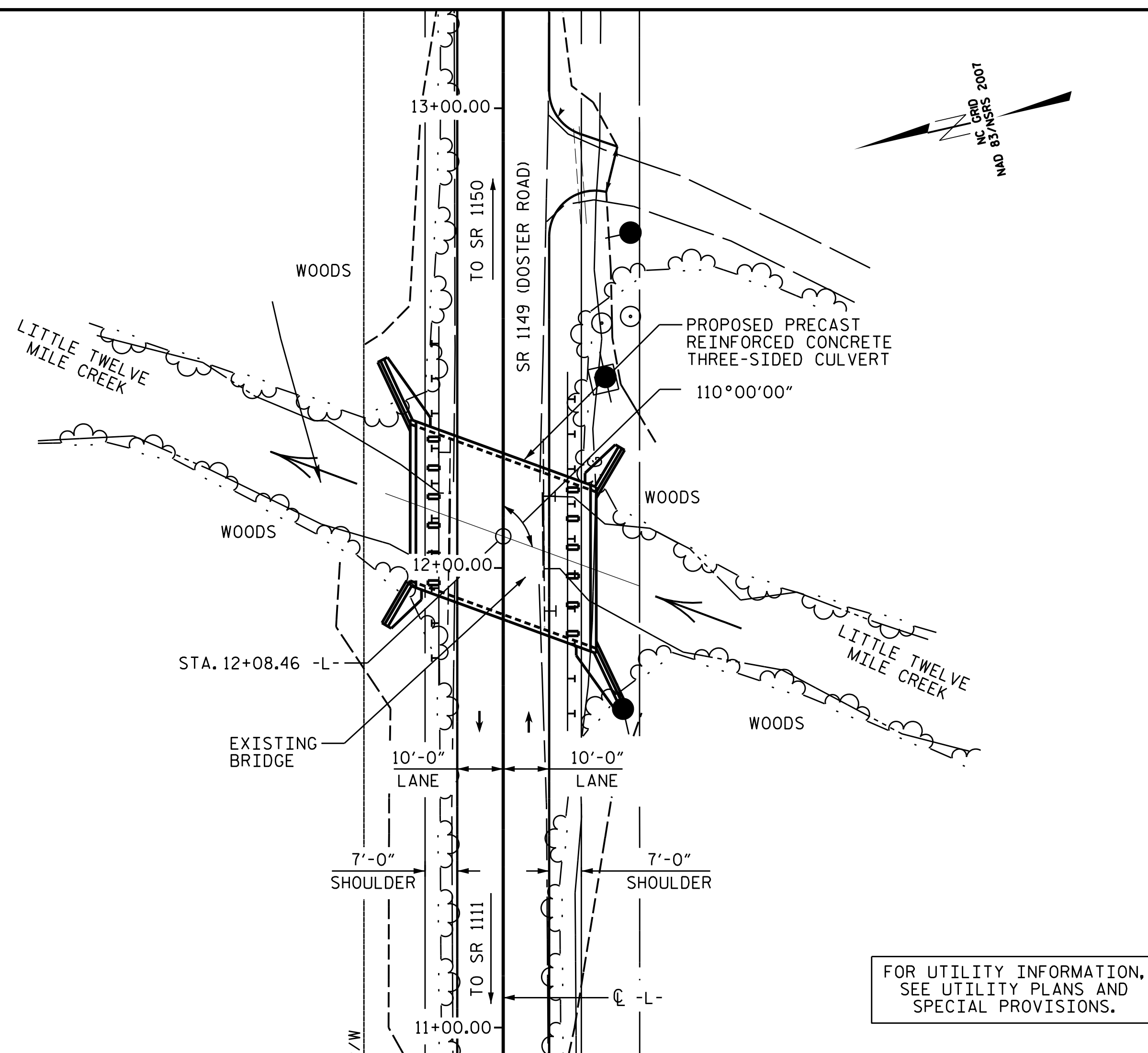
INSTALL PSRM IN THE PROPOSED DITCH LINE.

INSTALL PSRM IN THE PROPOSED DITCH LINE.

Place Matting for Erosion Control on Slope as Work Allows.

8/17/09

BM: BL-2, MONUMENT AT STA. 11+10.88, 24.89' LT, EL. 593.50



LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE = 900 CFS
 FREQUENCY OF DESIGN FLOOD = 25 YRS.
 DESIGN HIGH WATER ELEVATION = 587.7
 DRAINAGE AREA = 2.3 SQ. MI.
 BASIC DISCHARGE (Q100) = 1247 CFS
 BASIC HIGH WATER ELEVATION = 589.41

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 1500 CFS
 FREQUENCY OF OVERTOPPING FLOOD = 200 YRS.
 OVERTOPPING FLOOD ELEVATION = 592.0

GRADE DATA

GRADE POINT ELEVATION @ STA. 12+08.46 -L- = 592.30
 BED ELEVATION @ STA. 12+08.46 -L- = 578.80
 ROADWAY SLOPES = 2:1 MAX

NOTES:

- ASSUMED LIVE LOAD -----HL93 OR ALTERNATE LOADING.
- MAXIMUM DESIGN FILL -----3.0'
- MINIMUM DESIGN FILL -----0.5'
- FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.
- A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.
- THE SPREAD FOOTINGS ARE DESIGNED FOR A FACTORED RESISTANCE OF 4 TSF. CHECK FIELD CONDITIONS FOR THE REQUIRED RESISTANCE OF 9 TSF JUST BEFORE PLACING CONCRETE.
- KEY IN SPREAD FOOTINGS AT LEAST 12 INCHES INTO WEATHERED ROCK OR ROCK WITH A MINIMUM THICKNESS AS SHOWN ON THE PLANS.
- TO PROVIDE PROTECTION FROM POSSIBLE SCOUR, THE FOOTINGS SHALL NOT BE CONSTRUCTED AT AN ELEVATION HIGHER THAN SHOWN ON THE PLANS.
- SCOUR PROTECTION SHALL BE REQUIRED. RIP RAP NOT TO BE PLACED ABOVE THE STREAMBED.
- THE SCOUR CRITICAL ELEVATION IS THE BOTTOM OF FOOTING ELEVATION. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
- THE BOTTOM OF THE FOOTING ELEVATIONS MAY BE LOWERED IN ORDER TO SATISFY THE REQUIRED BEARING RESISTANCE AND MINIMUM ROCK EMBEDMENT REQUIREMENTS.
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH 'HEC 18-EVALUATION SCOUR AT BRIDGES'.
- FOR PRECAST REINFORCED CONCRETE THREE SIDED CULVERT, SEE SPECIAL PROVISIONS.
- THE EXISTING STRUCTURE CONSISTING OF A 19'-10" LONG SINGLE SPAN; A 20'-5" CLEAR ROADWAY WIDTH ON A REINFORCED CONCRETE SLAB SUPPORTED ON MASS CONCRETE ABUTMENTS AT THE PROPOSED STRUCTURE SITE, 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.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- ALL REINFORCING STEEL FOR THE HEADWALL AND GUARDRAIL PEDESTALS SHALL BE EPOXY COATED.
- CONCRETE USED FOR THE HEADWALL AND GUARDRAIL PEDESTALS SHALL MEET THE MINIMUM REQUIREMENTS OF CLASS AA CONCRETE.
- NO PRECAST WING OR HEADWALL OPTION WILL BE ALLOWED.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- RIP RAP CLASS II IS INCLUDED IN THE QUANTITY SHOWN ON THE DRAINAGE PLANS.

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

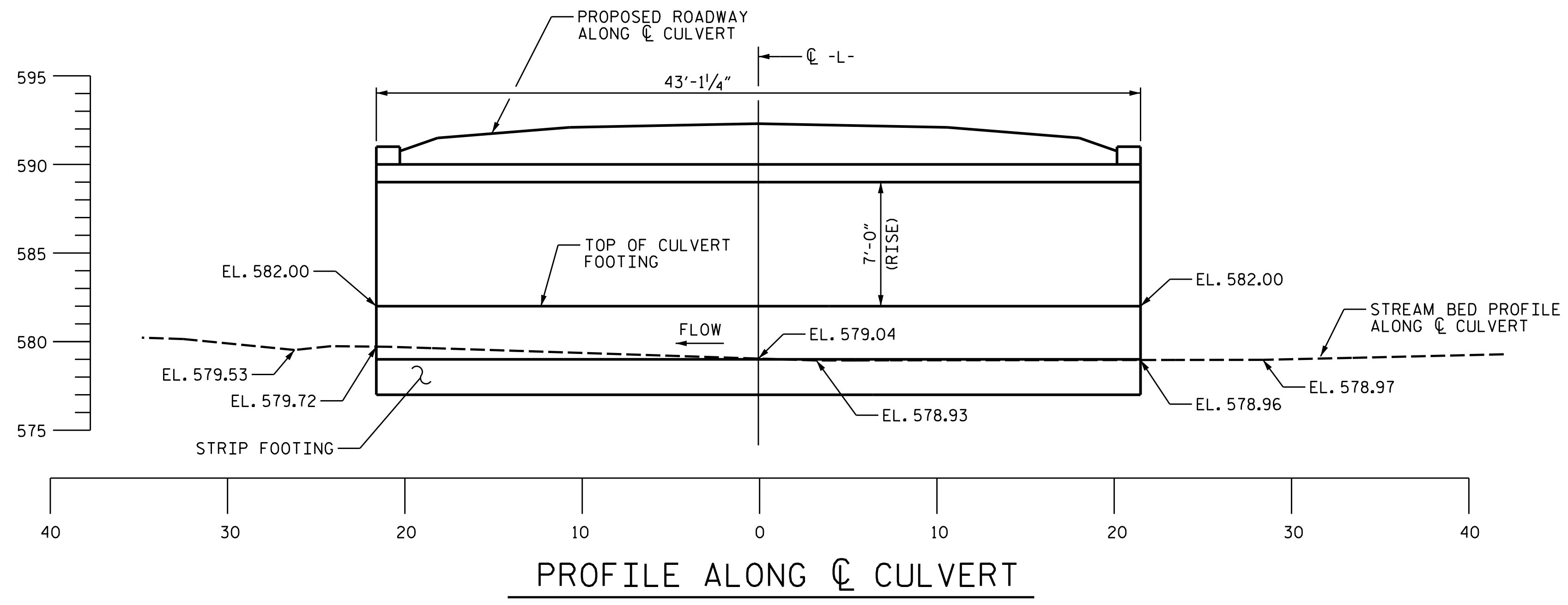
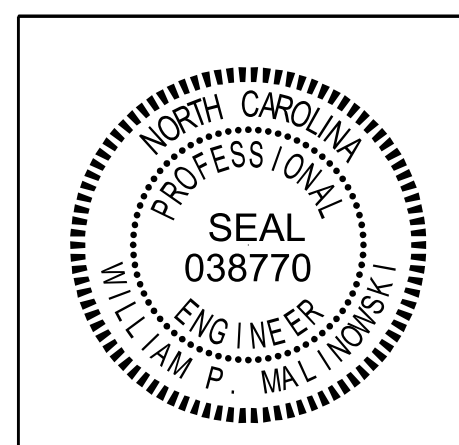
TOTAL STRUCTURE QUANTITIES

REMOVAL OF EXISTING STRUCTURE	LUMP SUM
PRECAST REINFORCED CONCRETE THREE-SIDED CULVERT @ STA. 12+08.46 -L-	LUMP SUM
CLASS A CONCRETE	65.6 CU. YDS.

PROJECT NO. 17BP.10.R.5
 UNION COUNTY
 STATION: 12+08.46 -L-

SHEET 1 OF 3 REPLACES BR. NO. 201

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 PRECAST REINFORCED CONCRETE
 THREE-SIDED CULVERT
 SR 1149 (DOSTER ROAD)
 OVER TWELVE MILE CREEK
 110° SKEW

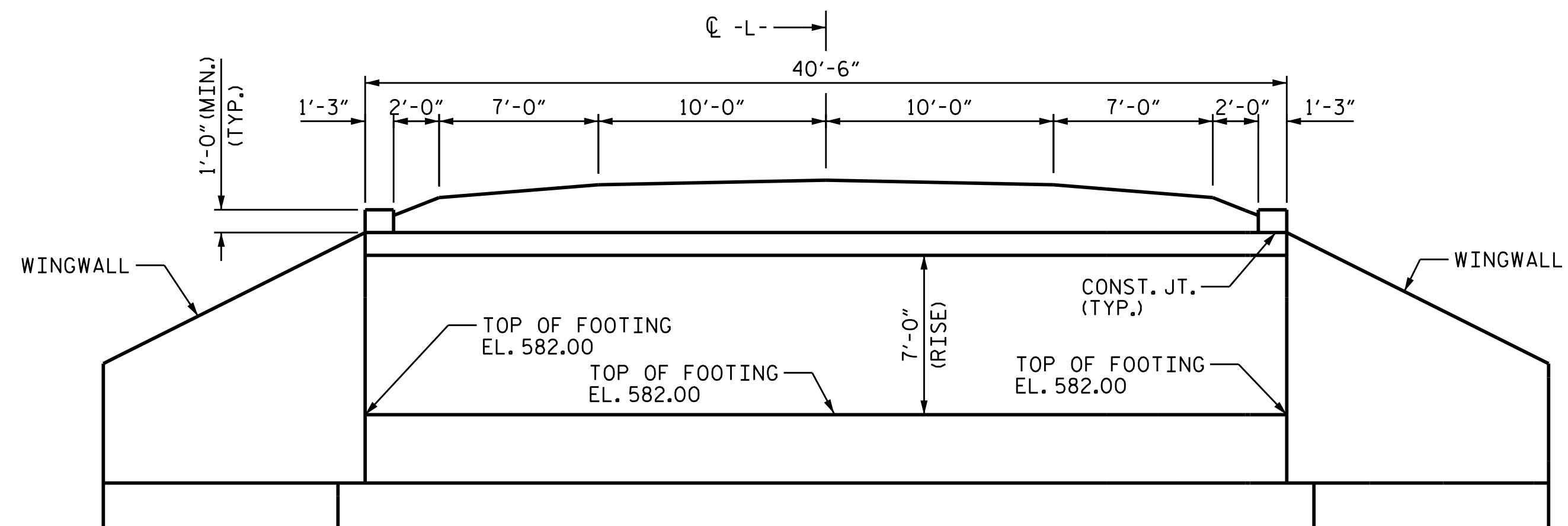


PROFILE ALONG CULVERT

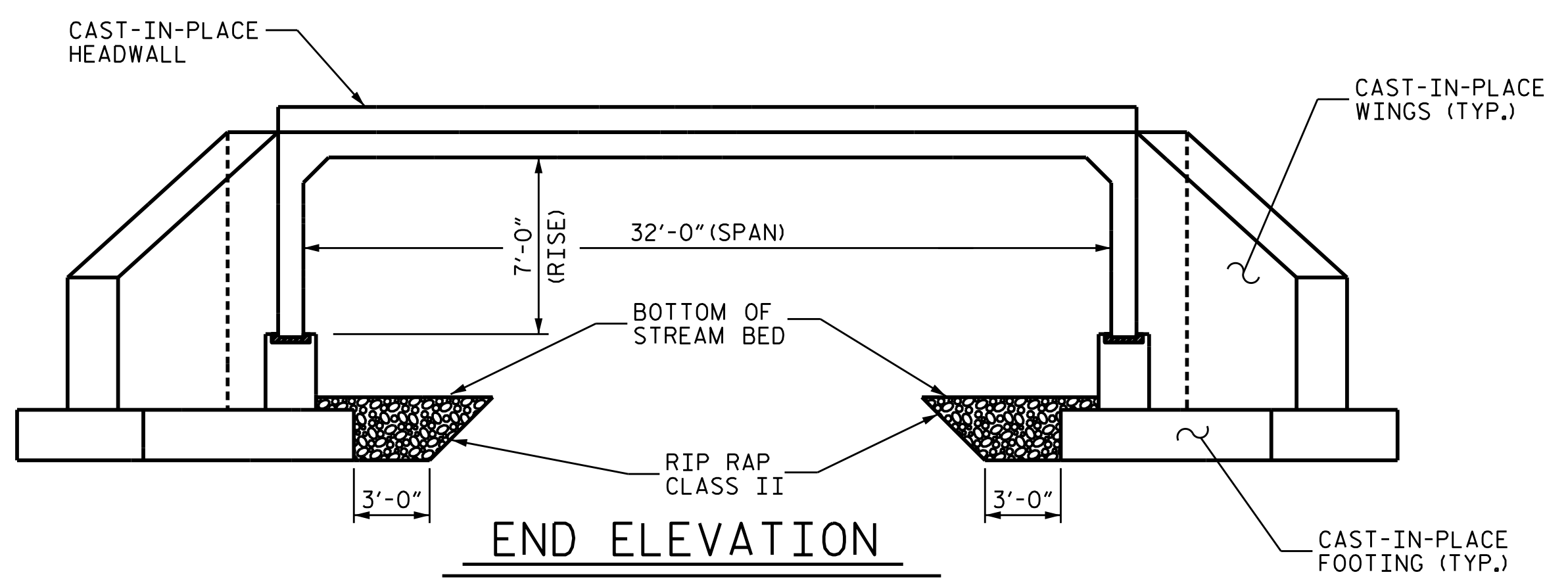
DRAWN BY : JY DATE : 06/22/12
 CHECKED BY : WPM DATE : 06/29/12

PREPARED IN THE OFFICE OF:
 AMEC Environment & Infrastructure, Inc.
 4021 Stirrup Creek Drive, Suite 100
 Durham, North Carolina, 27703
 NC Eng. License #: F-1253
 Tel. (919) 381-9900
 Fax. (919) 381-9901
 www.amec.com

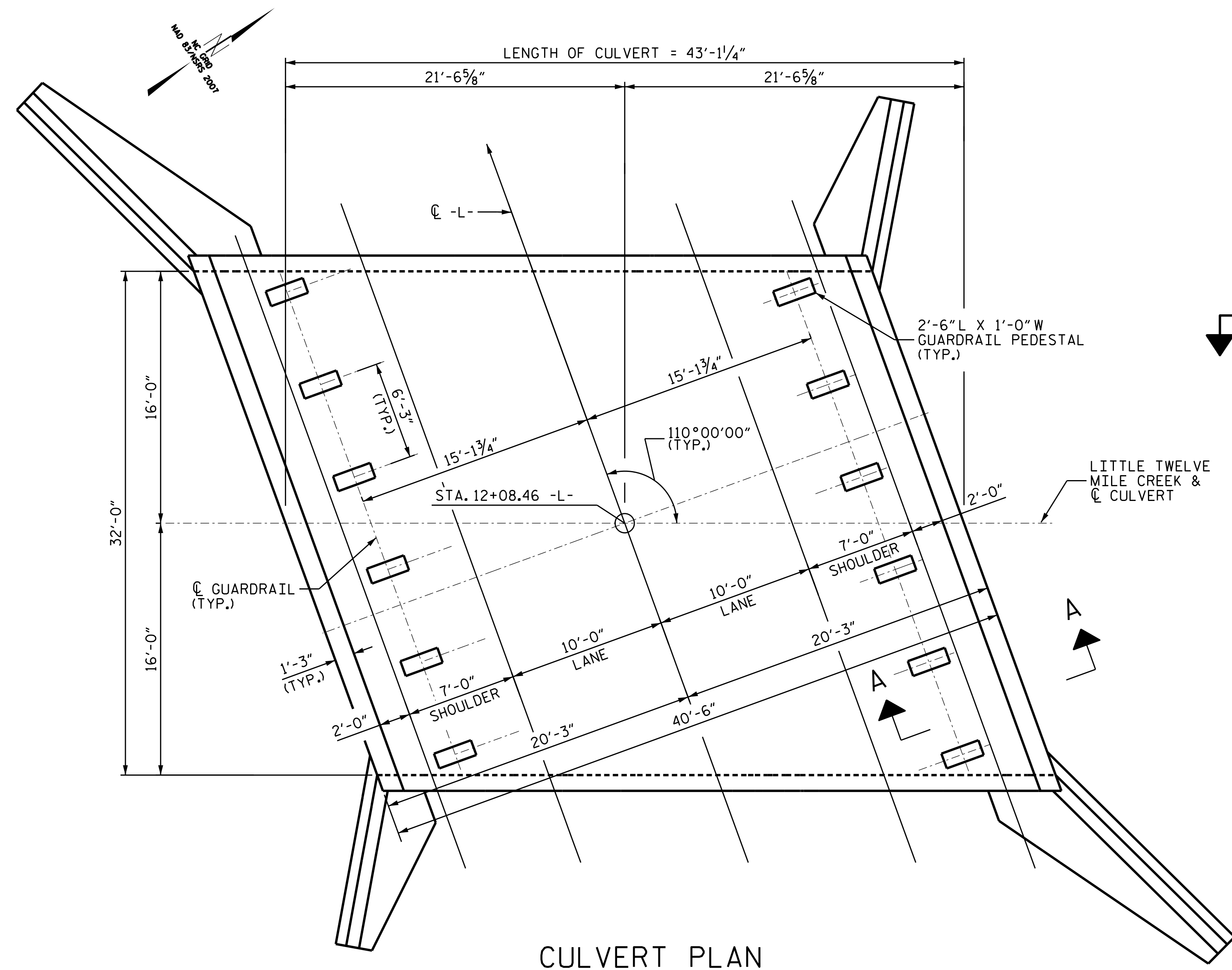
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NO.	BY:	DATE:	NO.	BY:	DATE:	C-1
1			3			TOTAL SHEETS
2			4			3



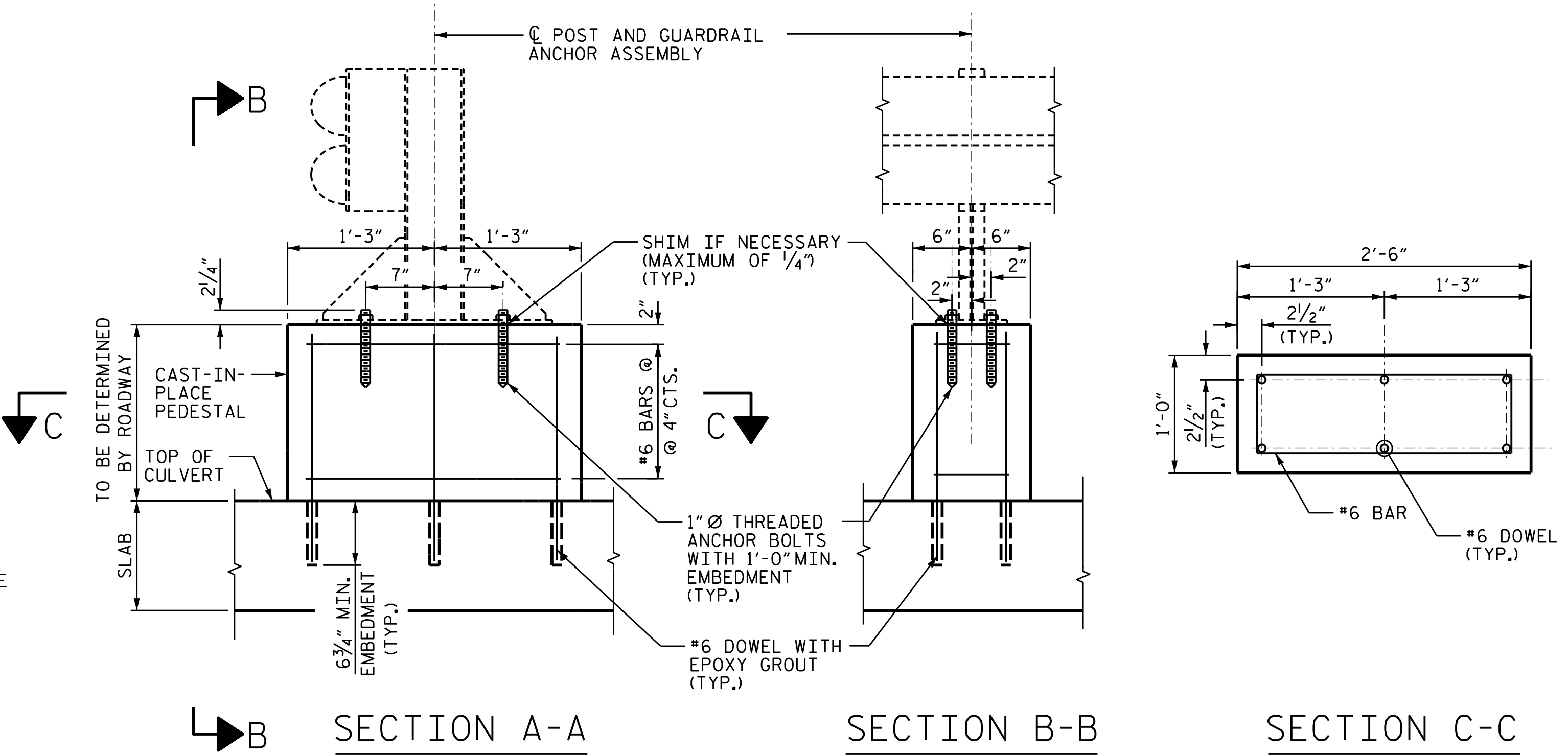
CULVERT SECTION NORMAL TO ROADWAY



END ELEVATION



CULVERT PLAN



GUARDRAIL PEDESTAL DETAILS

NOTES

- ALL GUARDRAIL ATTACHMENTS SHALL BE MADE USING ADHESIVELY ANCHORED ANCHOR BOLTS, LEVEL TWO FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 1" Ø BOLT IS 21.8 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS.
- ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE 1" Ø AND MEET THE REQUIREMENTS OF ASTM A307, BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.
- GUARDRAIL PEDESTALS AND DOWELS MUST CLEAR ALL JOINTS OF PRECAST CONCRETE CULVERT UNITS.
- PAYMENT FOR GUARDRAIL, POSTS, AND POST BASE PLATES IS INCLUDED IN ROADWAY PAY ITEMS.
- COST OF GUARDRAIL PEDESTALS IS INCLUDED IN THE LUMP SUM FOR PRECAST REINFORCED CONCRETE THREE-SIDED CULVERT.

PROJECT NO. 17BP.10.R.5
 UNION COUNTY
 STATION: 12+08.46 -L-

SHEET 2 OF 3 REPLACES BR. NO. 201

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PLAN, SECTION & ELEVATION
 PRECAST REINFORCED CONCRETE
 THREE-SIDED CULVERT
 SR 1149 (DOSTER ROAD)
 OVER TWELVE MILE CREEK
 110° SKEW

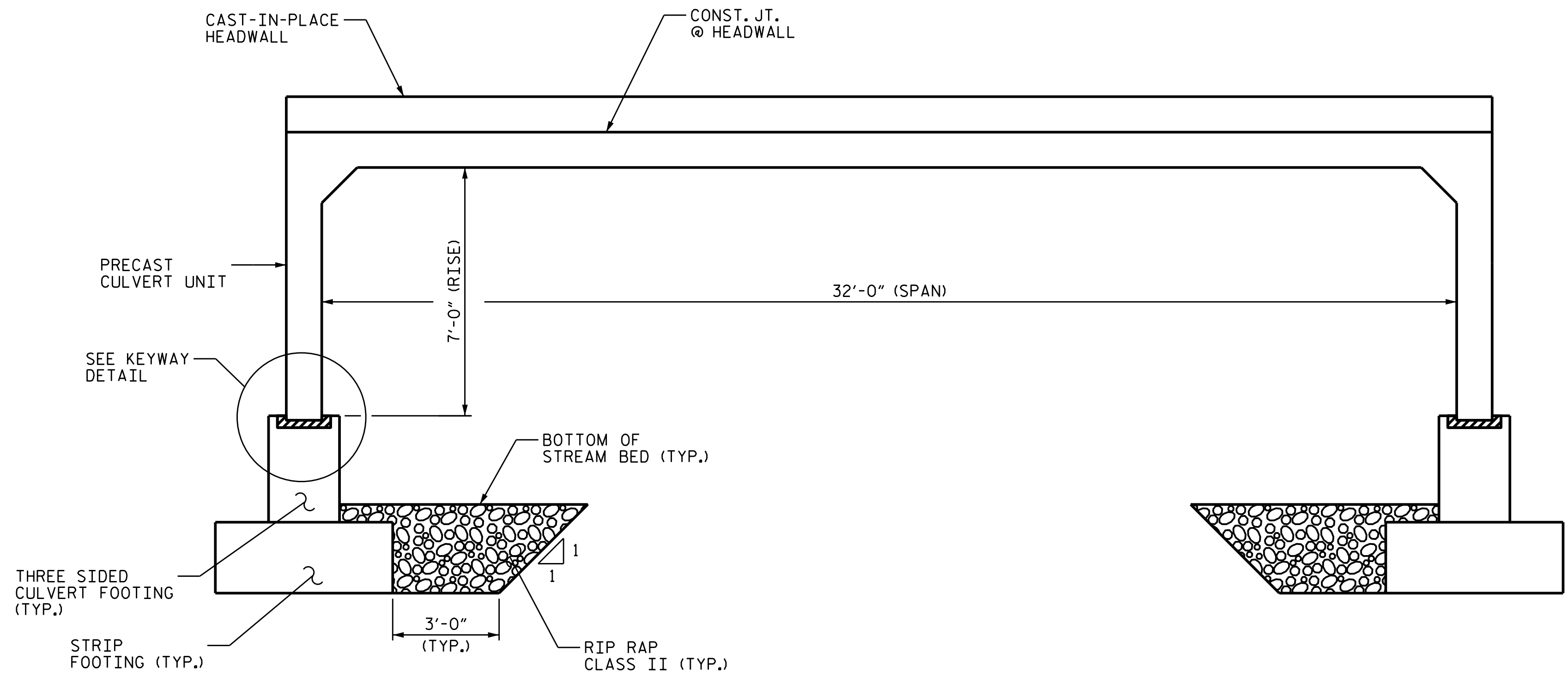


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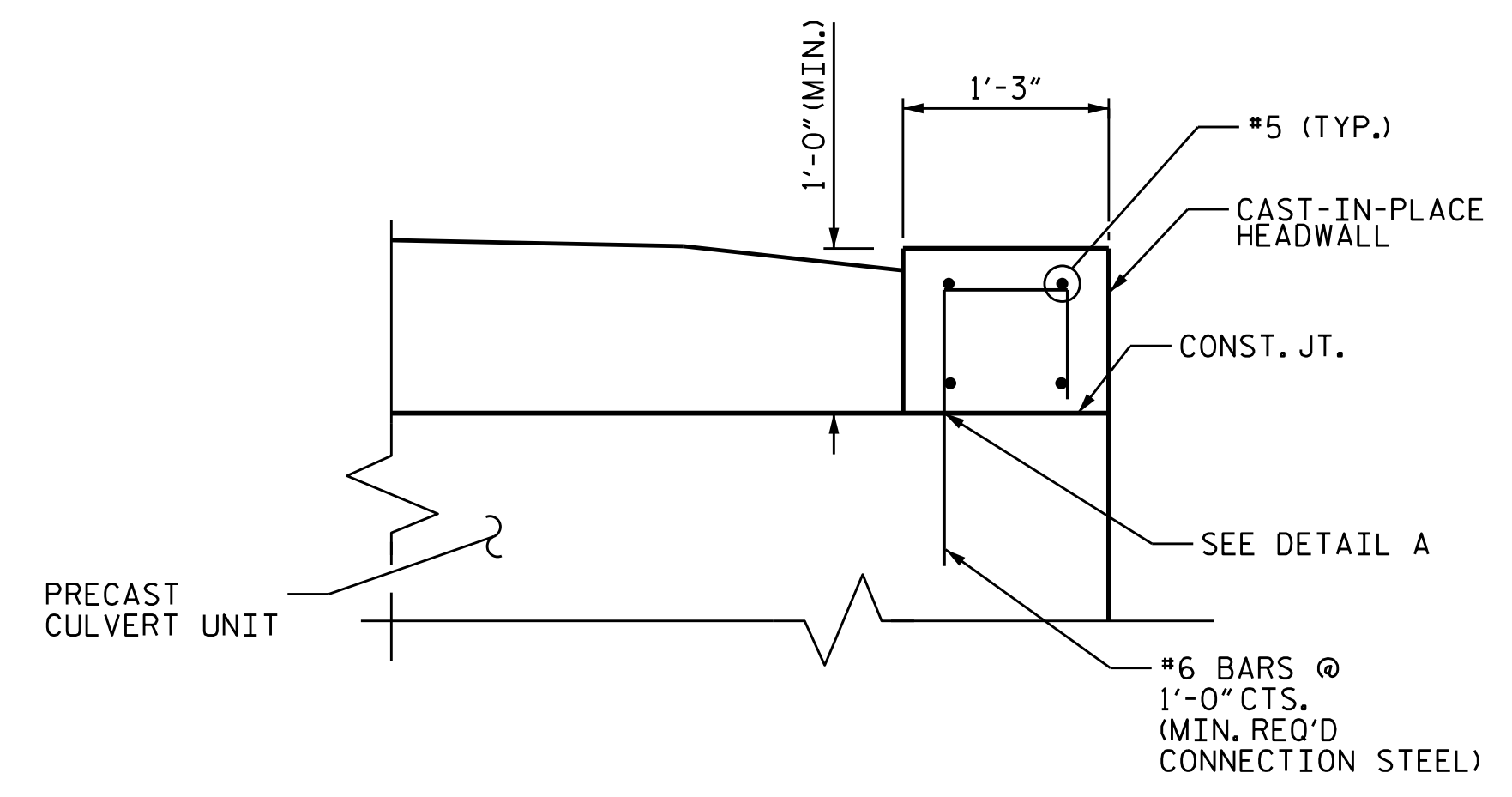
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 CHECKED BY : WPM DATE : 06/29/12

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2			4			

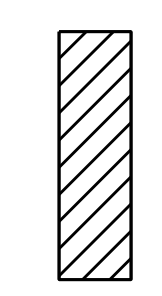
*****SYSTEM*****
 *****DCN*****
 *****USERNAME*****



RIGHT ANGLE SECTION OF
PRECAST CONCRETE THREE-SIDED CULVERT

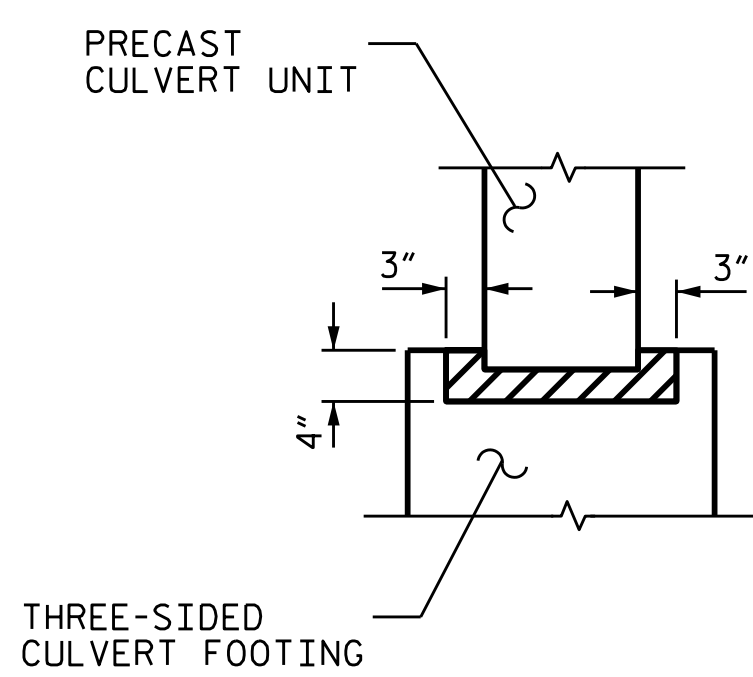


SECTION THRU HEADWALL

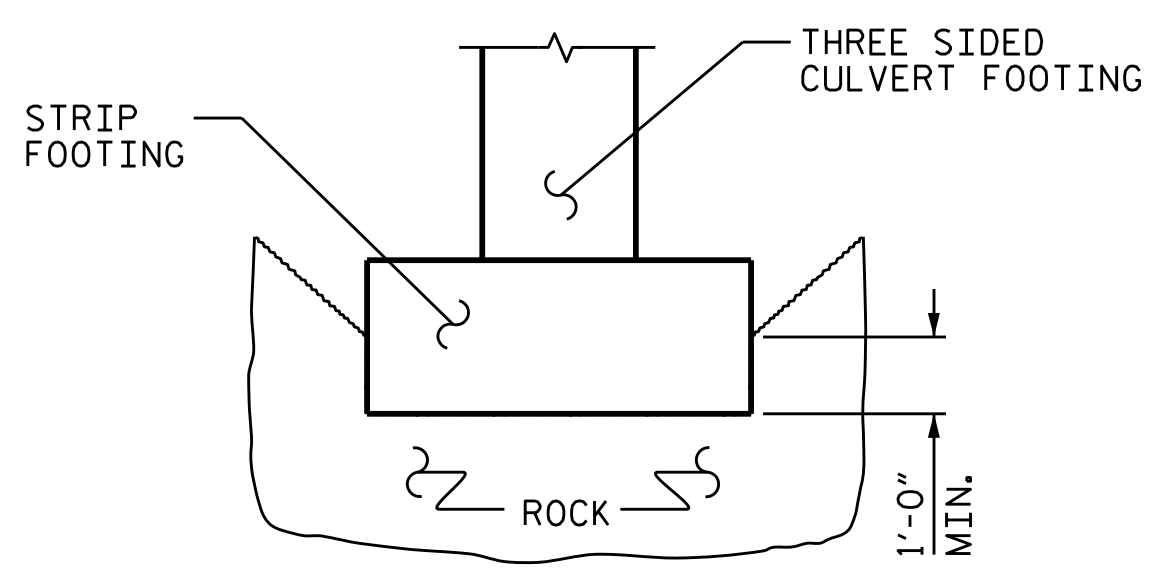


DETAIL A

APPROVED GALVANIZED CONCRETE INSERTS HAVING A MINIMUM WORKING LOAD TENSION CAPACITY OF 2.5 KIPS. DIA. = 3/4"



KEYWAY DETAIL



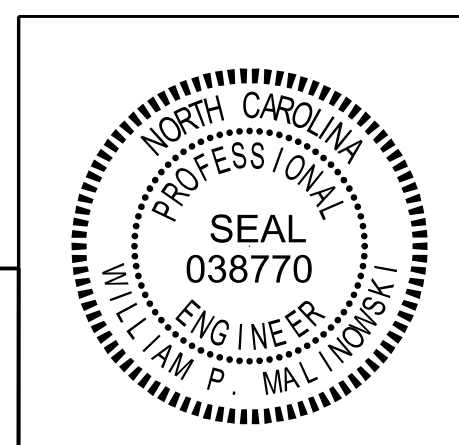
KEYED FOOTING DETAIL

SIDES OF FOOTING SHALL BE IN CONTACT WITH UNDISTURBED MATERIAL FOR MINIMUM DIMENSION SHOWN

PROJECT NO. 17BP.10.R.5
UNION COUNTY
STATION: 12+08.46 -L-

SHEET 3 OF 3 REPLACES BR. NO. 201

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
DETAILS
PRECAST REINFORCED CONCRETE
THREE-SIDED CULVERT
SR 1149 (DOSTER ROAD)
OVER TWELVE MILE CREEK
110° SKEW



PREPARED IN THE OFFICE OF:
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Durham, North Carolina 27703
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Fax. (919) 381-9901
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amec
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY : JY DATE : 06/22/12
CHECKED BY : WPM DATE : 06/29/12

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

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

09/08/99

PROJECT: WBS 17BP.10.R.5

CONTRACT:

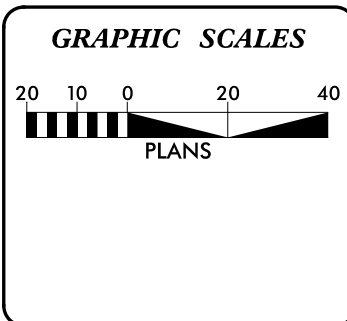
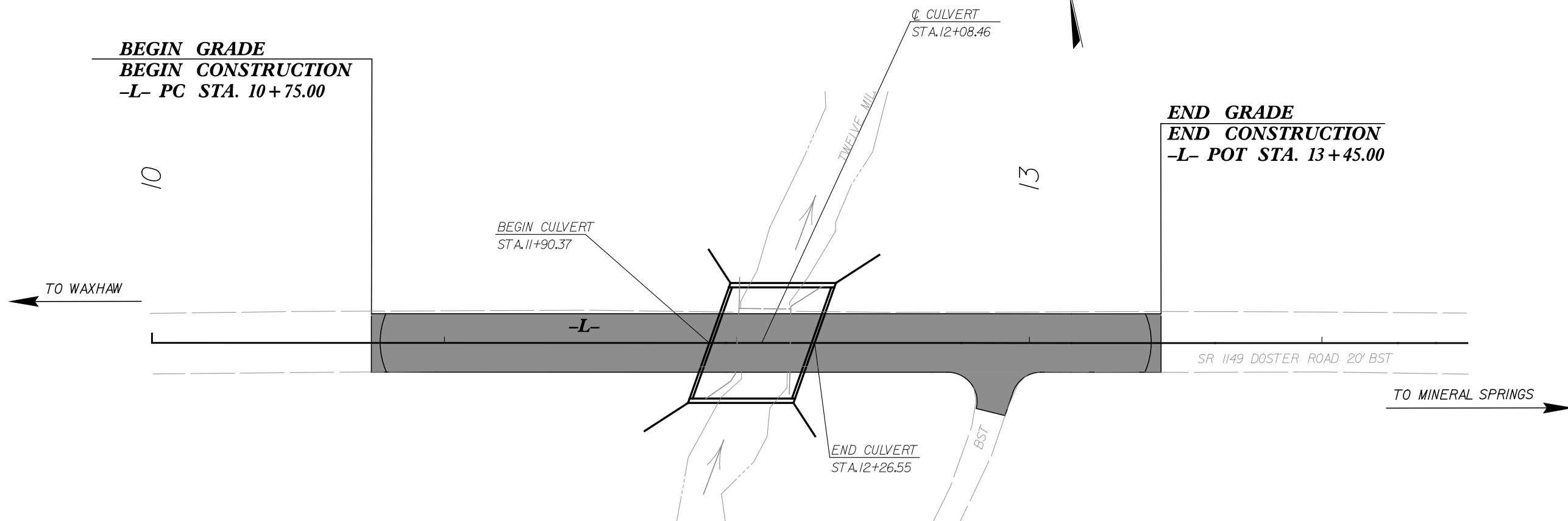
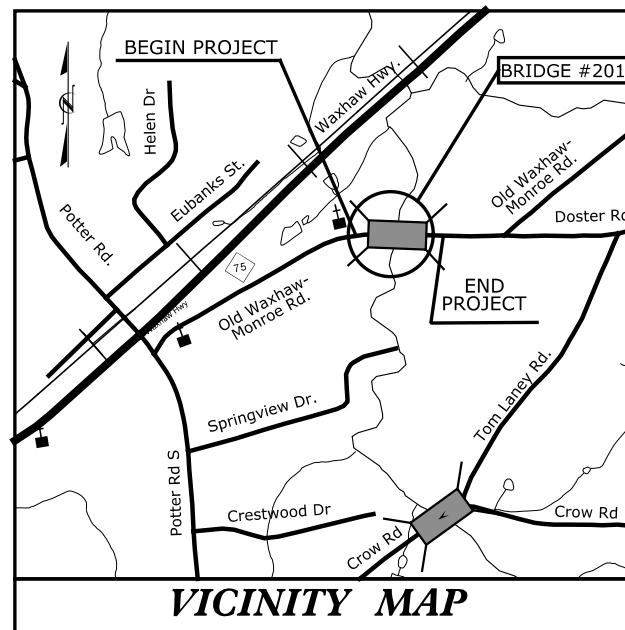
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
17BP.10.R.5	UO-1

UTILITIES BY OTHERS PLANS UNION COUNTY

**LOCATION: BRIDGE NO. 201 ON SR 1149 (DOSTER ROAD)
OVER TWELVE MILE CREEK**

TYPE OF WORK: CABLE AND TELEPHONE



SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UTILITY BY OTHERS PLAN SHEET

UTILITY OWNERS ON PROJECT

(1) TELEPHONE - WINDSTREAM
(2) CABLE - TIME WARNER CABLE



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

1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 250-4128
FAX (919) 250-4119

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Xxxxx Xxxxx, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Reece Schuler, PE UTILITIES PROJECT DESIGNER

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DDON\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

