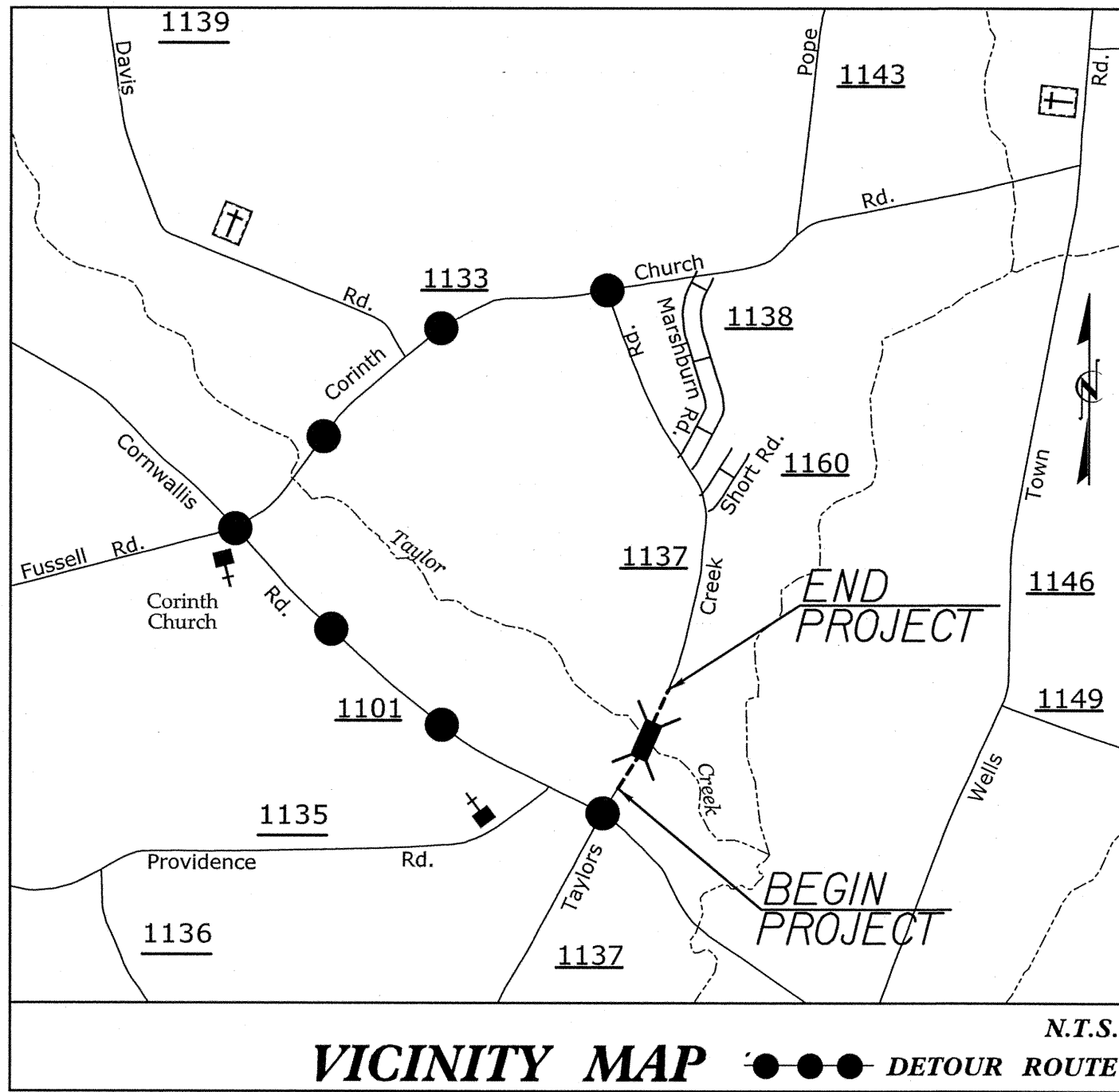


PROJECT: 17BP.3.R.7

CONTRACT:

See Sheet 1-A For Index of Sheets



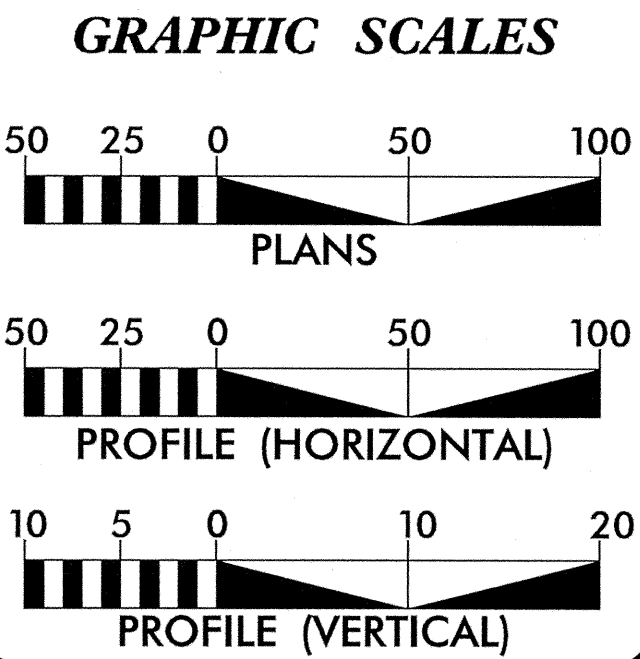
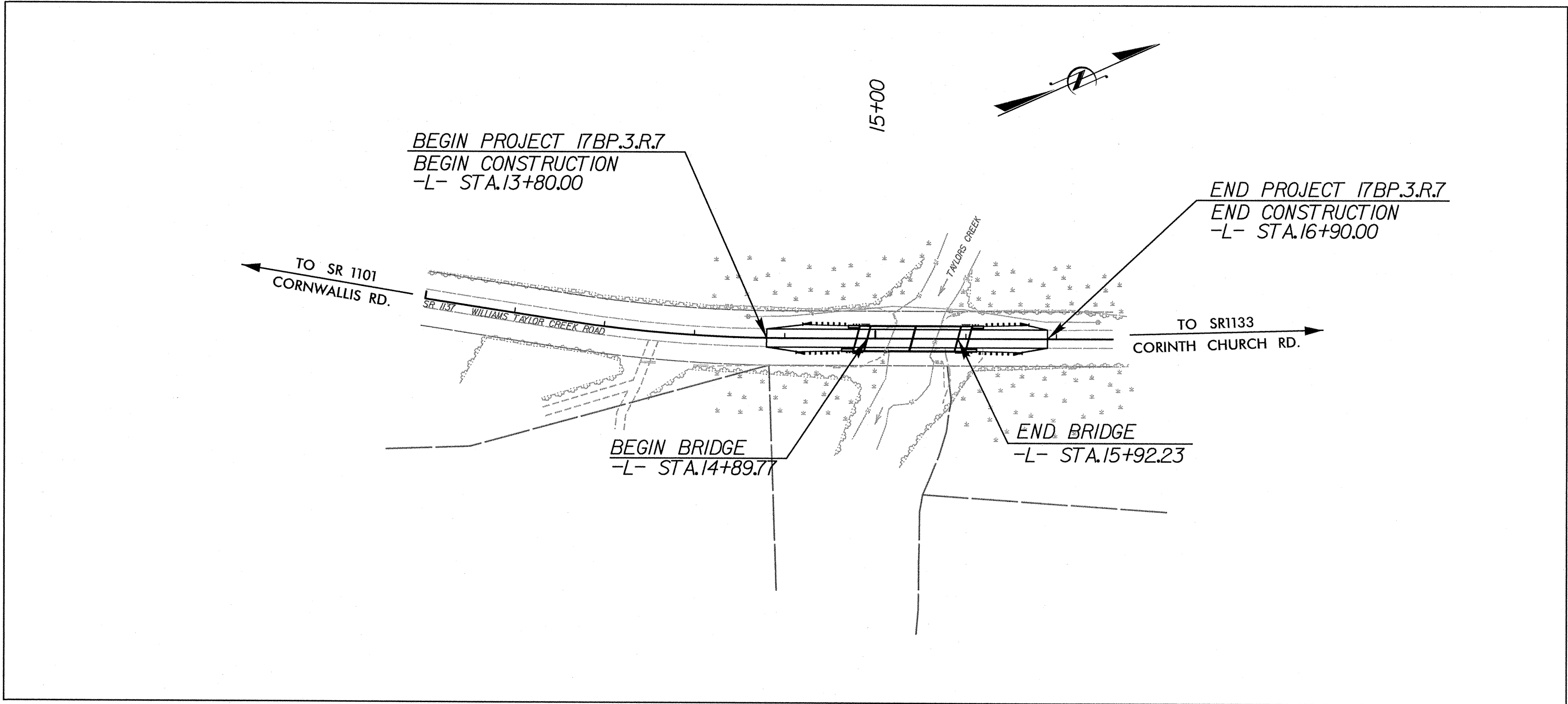
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

DUPLIN COUNTY

LOCATION: BRIDGE NO.057 OVER TAYLORS CREEK
ON SR 1137 WILLIAMS TAYLOR CREEK RD.

TYPE OF WORK: BRIDGE REPLACEMENT

STATE	PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
NC	17BP.3.R.7	1	X
STATE PROJ.NO.	F.A.PROJ.NO.	DESCRIPTION	
17BP.3.R.7		CONST	



DESIGN DATA	
ADT 2008 =	200
ADT 2035 =	400
DHV =	10%
D =	60%
T =	6% *
STATUTORY =	55 MPH
* TTST 2%	DUAL 4%

PROJECT LENGTH	
LENGTH OF ROADWAY PROJECT 17BP.3.R.7 =	0.04 MI.
LENGTH OF STRUCTURE PROJECT 17BP.3.R.7 =	0.02 MI.
TOTAL LENGTH OF PROJECT 17BP.3.R.7 =	0.06 MI.

Prepared In the Office of:

HNTB HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 15, 2012

LETTING DATE:
JUNE 27, 2013

ENRICO A. ROQUE, P.E.
PROJECT ENGINEER

ANTHONY THOMPSON, P.E.
PROJECT DESIGNER

AMANDA GLYNN, P.E.
NCDOT CONTACT

HYDRAULICS ENGINEER

SEAL 15764

ENGINEER JAMES A. ROQUE

ROADWAY DESIGN ENGINEER

SEAL 19824

ENGINEER ENRICO A. ROQUE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

P.E.

REVISIONS

INDEX OF SHEETS

SHEET NUMBER	SHEET
I	TITLE SHEET
I-A	INDEX OF SHEETS, GENERAL NOTES & LIST OF STANDARDS
I-B	SYMBOLOLOGY SHEET
2	TYPICAL SECTION SHEET
3	EARTHWORK, PAVEMENT REMOVAL, GUARDRAIL SUMMARY, & ROW SUMMARY
4	PLAN & PROFILE SHEET
TMP-1 THRU TMP-2	TRAFFIC CONTROL PLANS
EC-1	EROSION CONTROL TITLE SHEET
EC-2	EROSION CONTROL - COIR FIBER WATTLE DETAIL
EC-3	EROSION CONTROL- WATTLE / SILT FENCE BREAK DETAIL
EC-4	EROSION CONTROL - SOIL STABILIZATION TIME FRAMES
EC-5	EROSION CONTROL SHEET
X-1 THRU X-3	-L- CROSS SECTION SHEETS
S-1 THRU S-16	BRIDGE PLANS
U0-1 THRU U0-2	UTILITY PLANS BY OTHERS

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 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
846.01	Concrete Curb, Gutter and Curb & Gutter
848.02	Driveway Turnout - Radius Type
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units

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343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
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PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.7	I-A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	

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. 848.02 USING 3' RADIUS OR RADIUS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

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

TEMPORARY SHORING:
SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

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

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE Water - Duplin County Water
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

CENTERLINE COORDINATE LIST

POINT	STATION	NORTHING	EASTING
POT	10+00.00	373,998.4306	2,283,253.7380
PC	11+57.30	374,130.5490	2,283,339.1006
BEG	13+80.00	374,325.3998	2,283,446.5723
PT	14+00.52	374,344.0726	2,283,455.0915
END	16+90.00	374,608.1984	2,283,573.5552
POT	17+62.15	374,674.0339	2,283,603.0833

NOTE: SEE SHEET NO. 4 FOR DATUM DESCRIPTION

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

PROJECT REFERENCE NO.	SHEET NO.
17BP-3.R.7	1-B

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	

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 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 Utility Easement	

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Wheel Chair Ramp	
Proposed Wheel Chair Ramp Curb Cut	
Curb Cut for Future Wheel Chair 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:

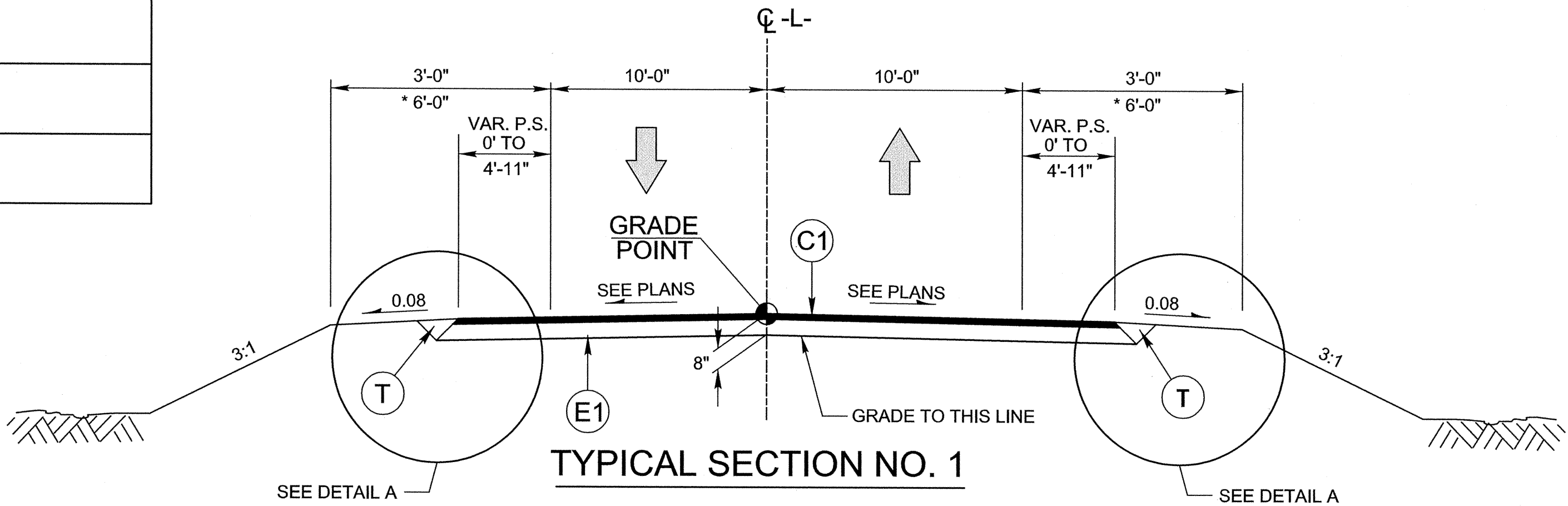
Sanitary Sewer Manhole	
Sanitary Sewer Cleanout	
U/G Sanitary Sewer Line	
Above Ground Sanitary Sewer	
Recorded SS Forced Main Line	
Designated SS Forced Main Line (S.U.E.*)	

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	
A/G Tank; Water, Gas, Oil	
U/G Test Hole (S.U.E.*)	
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

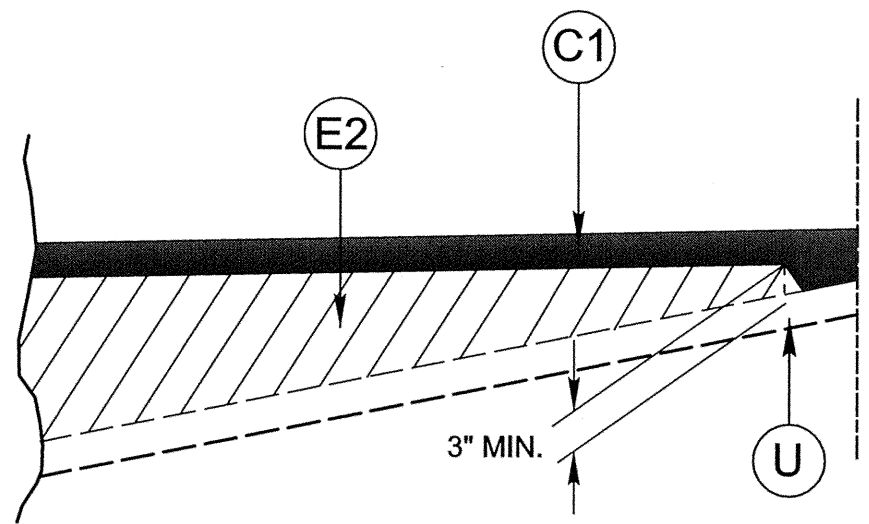
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD IN EACH OF TWO LAYERS.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YARD.
E2	PROP. VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER INCH. DEPTH TO BE PLACED IN LAYERS NOT GREATER THAN 5.5" IN DEPTH OR LESS THAN 3" IN DEPTH.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING (SEE DETAIL)

ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

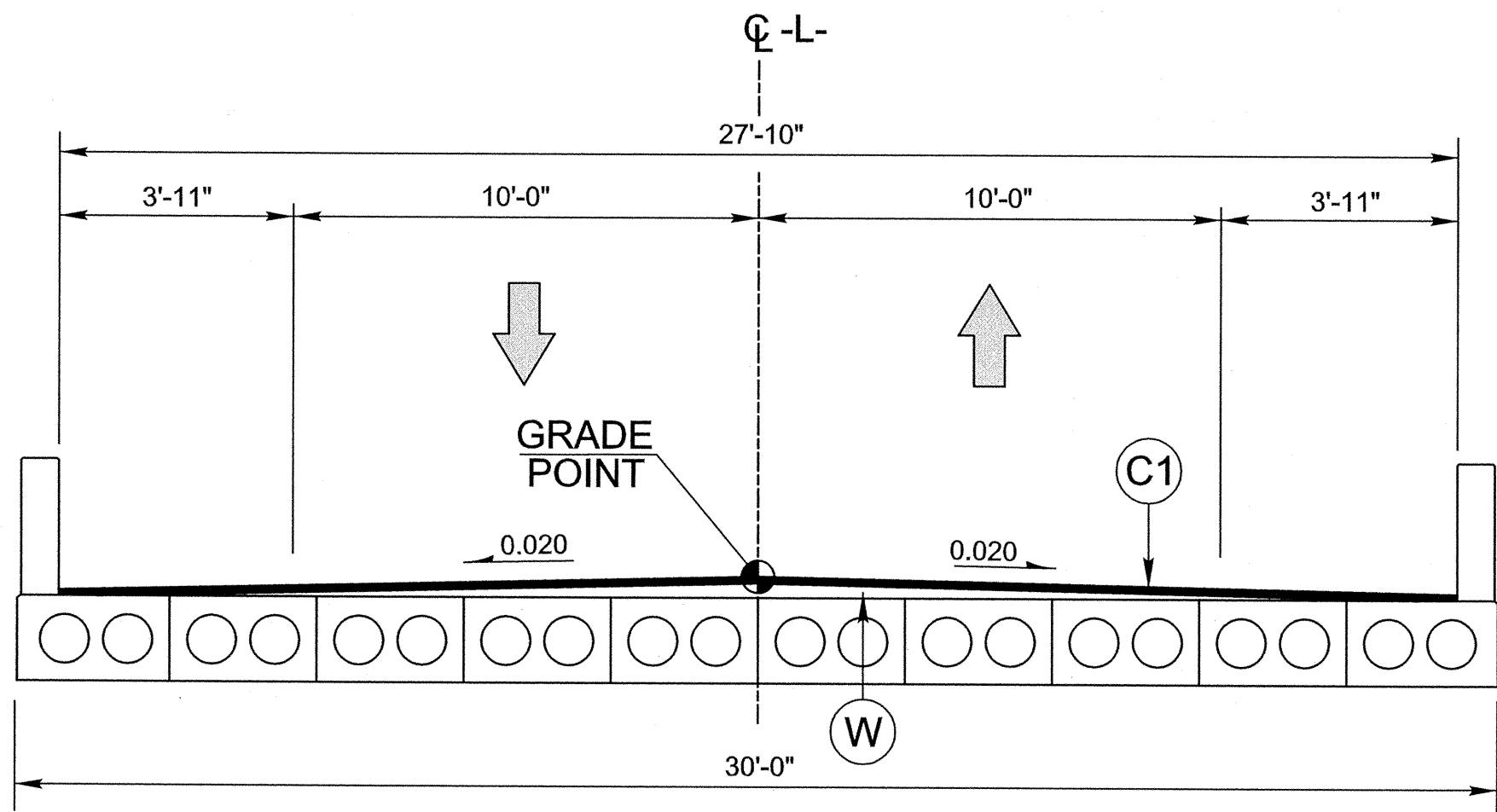


USE TYPICAL SECTION NO. 1 FROM:

-L- STA. 13+80.00 TO -L- STA. 14+89.77 (BEGIN BRIDGE)
-L- STA. 15+92.23 (END BRIDGE) TO -L- STA. 16+90.00



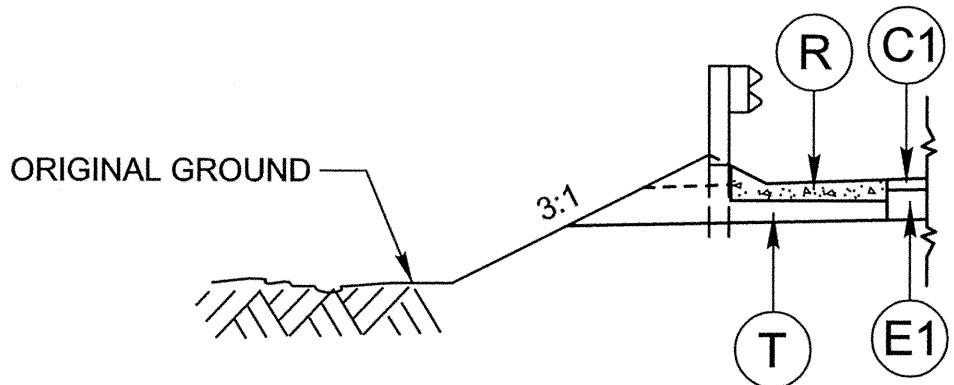
DETAIL SHOWING METHOD OF WEDGING
SEE TYPICAL SECTIONS



TYPICAL SECTION NO. 2
CORED SLAB BRIDGE OVERLAY

USE TYPICAL SECTION NO. 2 FROM:

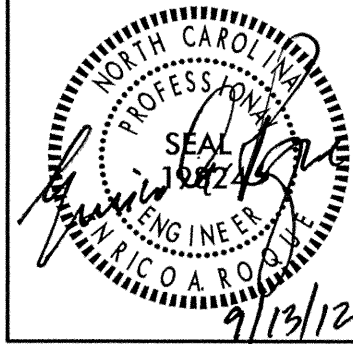
-L- STA. 14+89.77 TO -L- STA. 15+92.23



DETAIL A
SHOULDER BERM GUTTER LOCATIONS

-L- STA. 14+62.6 TO -L- STA. 14+75.1 RT
-L- STA. 15+99.5 TO -L- STA. 16+12.0 RT
-L- STA. 14+70.0 TO -L- STA. 14+82.5 LT
-L- STA. 16+06.9 TO -L- STA. 16+19.4 LT

NOTES: * SHOULDER WIDTH INCREASED 3' WITH THE USE OF GUARDRAIL

[illegible]

LOCATION	REMOVAL OF ASPHALT PAVEMENT	BREAKING OF ASPHALT PAVEMENT
-L- STA. 13+80 TO 15+20	303	
-L- STA. 15+63 TO 16+90	274	
GRAND TOTAL	577	
SAY	580	

STATION	STATION	UNCLASSIFIED EXCAVATION	EMBANK. + %	BORROW	WASTE
-L- STA. 13 + 80.00	-L- STA. 15 + 15.00	411	10		401
-L- STA. 15 + 68.00	-L- STA. 17 + 13.00	261	10		251
GRAND TOTALS:		672	20		652
SAY:		680	20		660

[illegible]

-L-
PI Sta. 12+79.15
Δ = 8' 42' 35.9" (LT)
D = 3' 34' 51.6"
L = 243.23'
T = 121.85'
R = 1,600.00'

PLAN

HNTB

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.
17BP.3.R.7

SHEET NO.
4

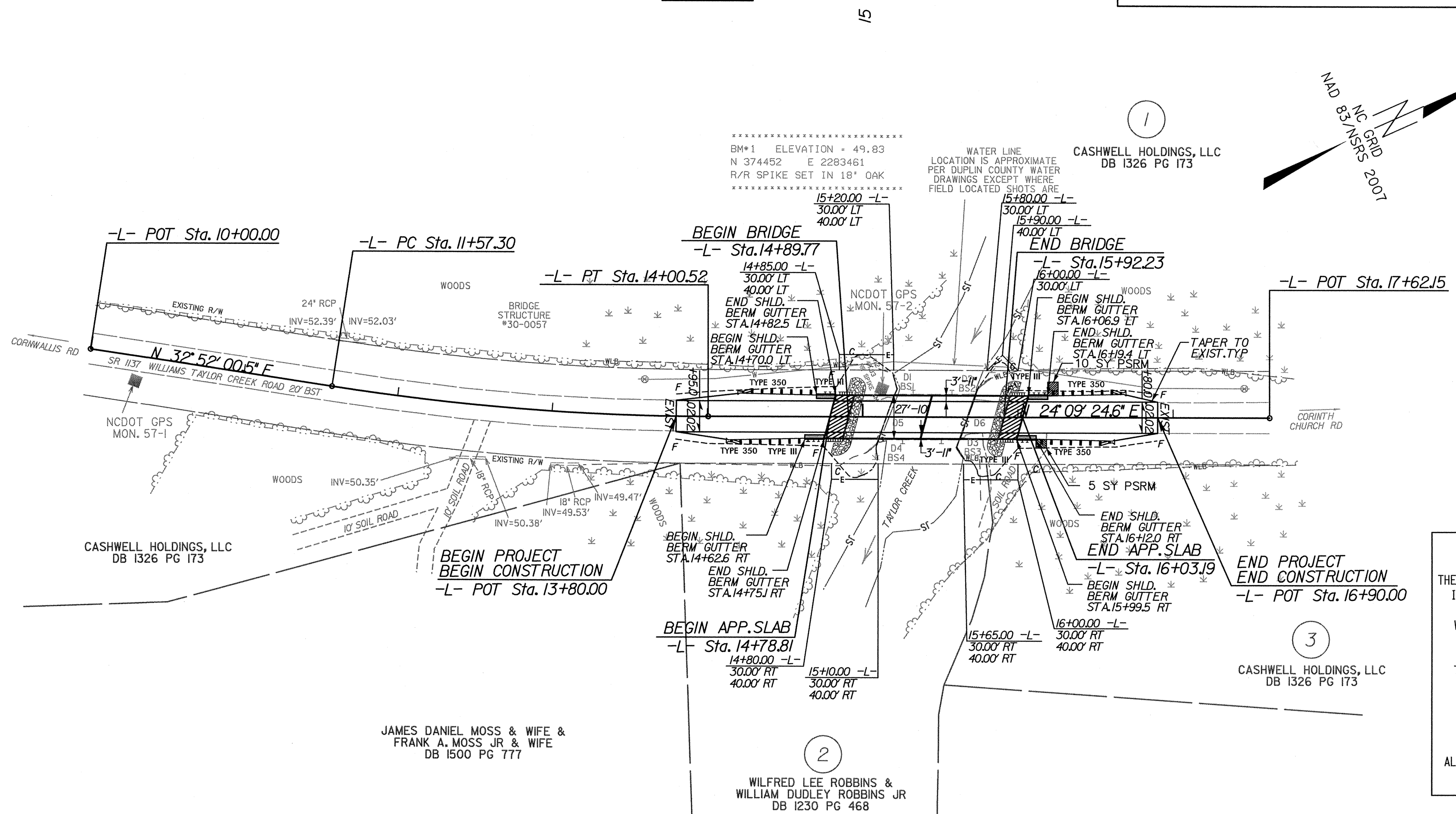
R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

9/13/12

1-13-12



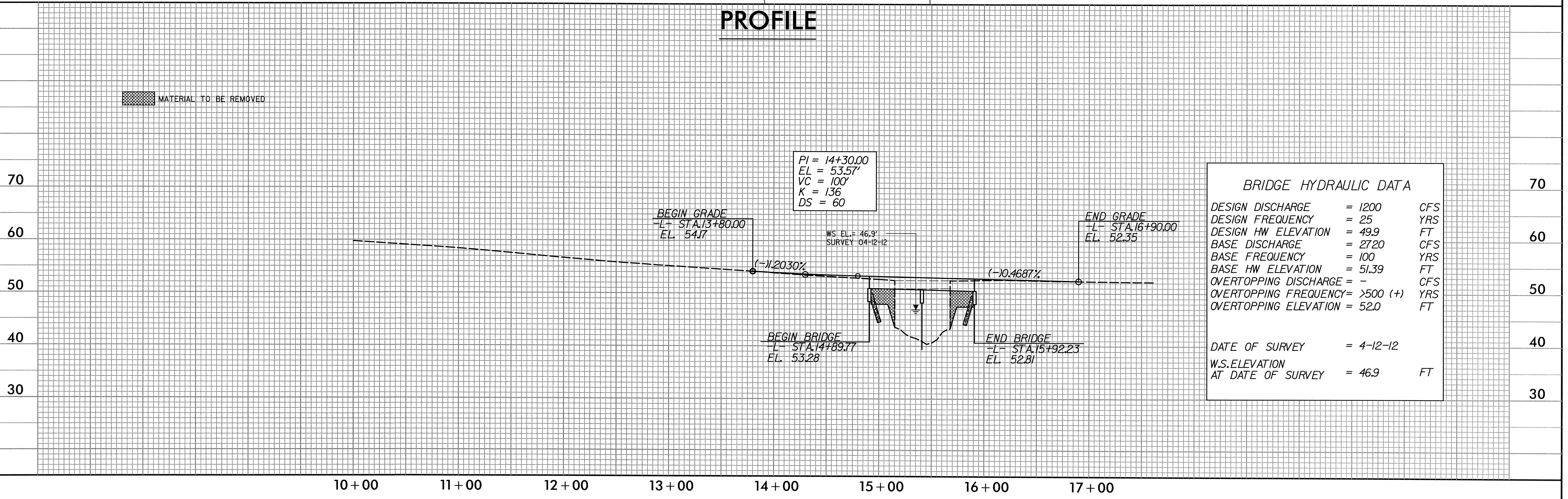
Point	North	East	Elevation
57-1	374016.2220	2283284.2480	58.4160
57-2	374453.4500	2283484.5050	51.7830
57-3	374983.9630	2283724.6240	51.8890

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "57-2" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 374453.450(±ft) EASTING: 2283484.505(±ft) ELEVATION: 51.78(±ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999910109 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "57-2" TO -L- STATION 10+00.00 IS S 26°53'44.00" W 510.20'

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

PROFILE

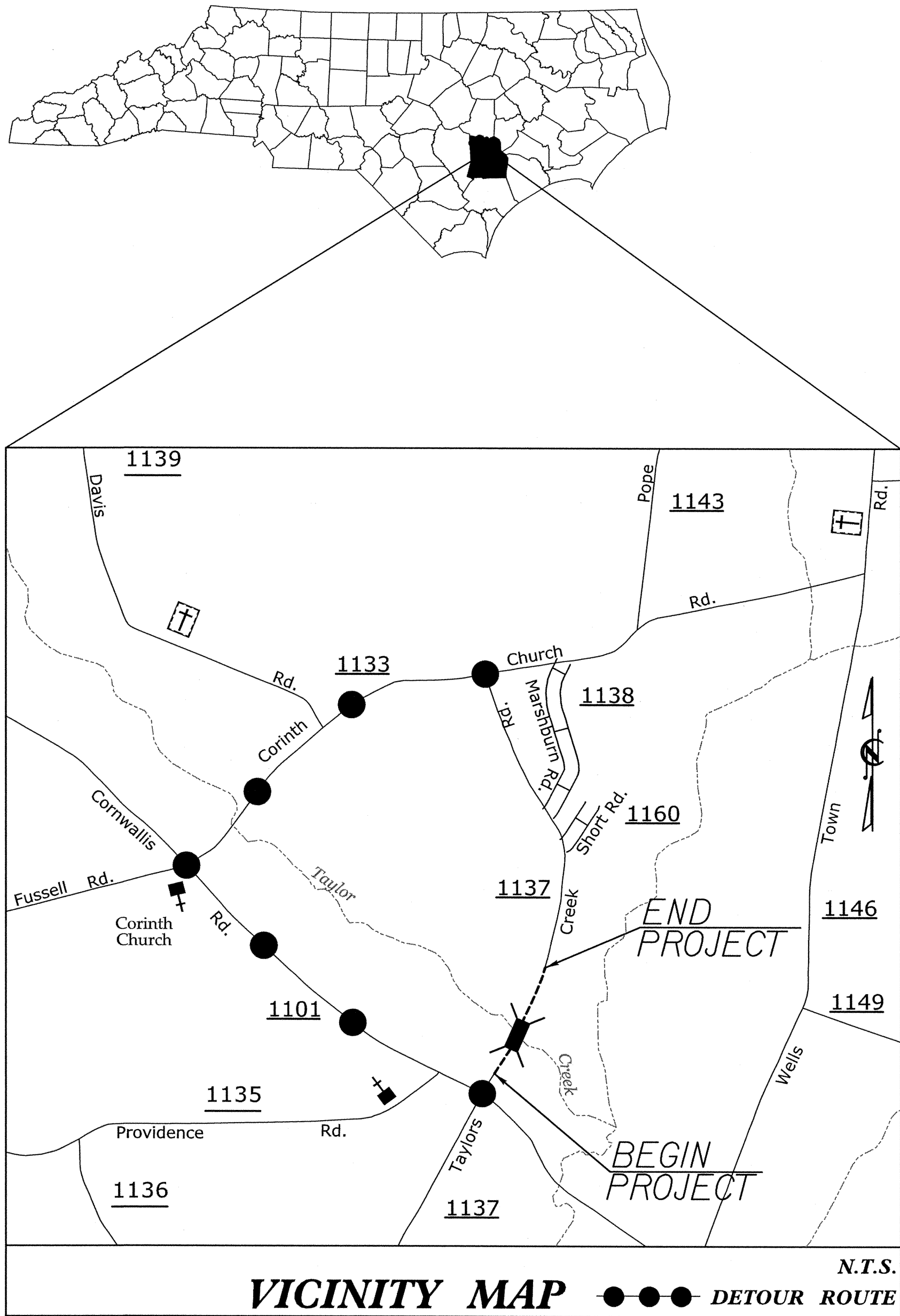


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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

DUPLIN COUNTY



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, INDEX OF SHEETS AND LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS
TMP-1A	PHASING, GENERAL NOTES AND LOCAL NOTES
TMP-2	DETOUR SIGNING

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 JAN 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
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPE
1262.01	GUARDRAIL END DELINEATION

HNTB HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

R. B. EARLY, PE **TRAFFIC CONTROL PROJECT ENGINEER**
J. A. PHILLIPS **TRAFFIC CONTROL DESIGN ENGINEER**

APPROVED: *[Signature]*
DATE: 9.12.12

SEAL

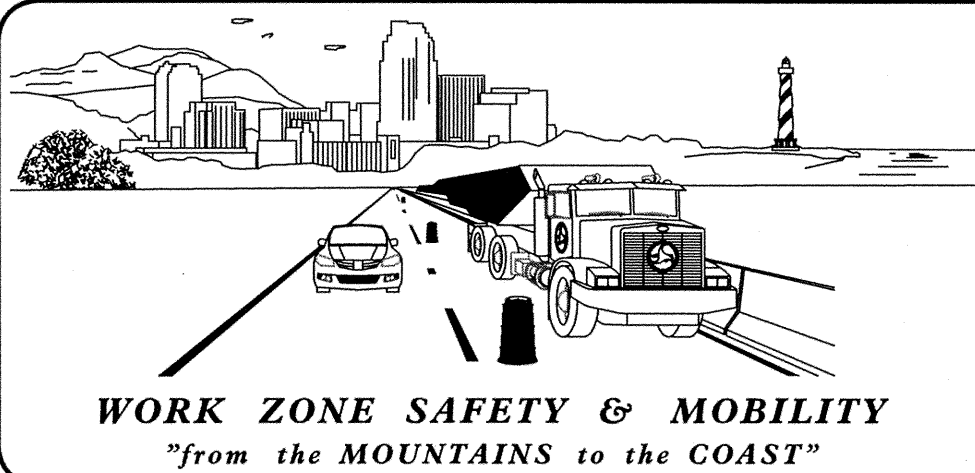


17BP.3.R.7

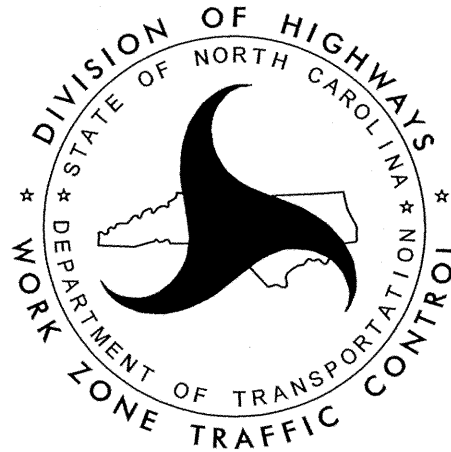
TIP PROJECT:

SHEET NO.
TMP-1

SYSTEMTIME: 2012-09-12 10:10:10
USER: JPHILLIPS



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



PHASING

PHASE I

PRIOR TO ANY CONSTRUCTION OPERATIONS, PLACE AND COVER OFF-SITE DETOUR SIGNS AS SHOWN ON TMP-2 AND IN ACCORDANCE WITH RSD 1101.03 (SHEET 1 OF 9). PLACE CMS AND ACTIVATE ON EACH SIDE OF THE BRIDGE TO BE CLOSED.

PHASE II

USING OFF-SITE DETOUR, UNCOVER DETOUR SIGNS, RELOCATE CMS BOARDS AS SHOWN ON TMP-2 AND CLOSE -L- (SR 1137 / WILLIAMS TAYLOR CREEK RD.) TO TRAFFIC AND CONSTRUCT BRIDGE, APPROACHES AND ROADWAY UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE.

PHASE III

UPON COMPLETION OF BRIDGE, APPROACHES AND ROADWAY, PLACE FINAL PAVEMENT MARKINGS AND MARKERS IN ACCORDANCE WITH ROADWAY STANDARD DRAWINGS. REMOVE BARRICADES AND DETOUR SIGNS AND OPEN -L- (SR 1137 / WILLIAMS TAYLOR CREEK RD.) TO TRAFFIC.

GENERAL NOTES

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

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

LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- D) 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.

- E) 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 ON SHEET TMP-2.

- F) 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.

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

TRAFFIC CONTROL DEVICES

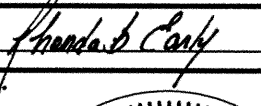
- H) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

- I) INSTALL AND ACTIVATE CMS BOARDS 2 WEEKS PRIOR TO ROAD CLOSURE.

PAVEMENT MARKINGS AND MARKERS

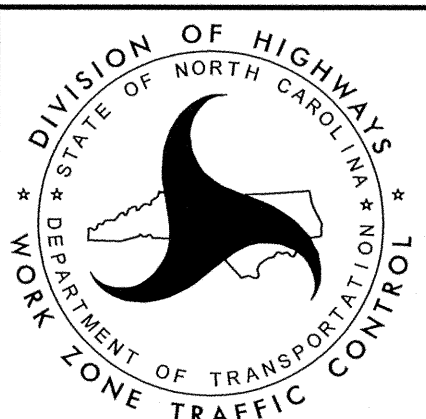
- J) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE AS FOLLOWS:
- | ROAD NAME | MARKING | MARKERS |
|-------------------------------------|---------|---------|
| SR 1137 (WILLIAMS TAYLOR CREEK RD.) | PAINT | RAISED |
- K) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- L) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS.
- M) PASSING ZONE WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

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

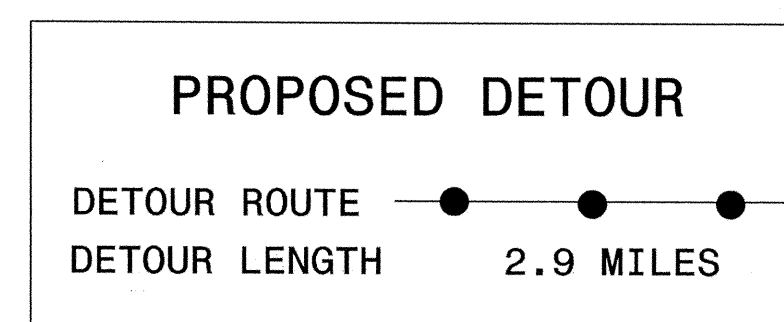
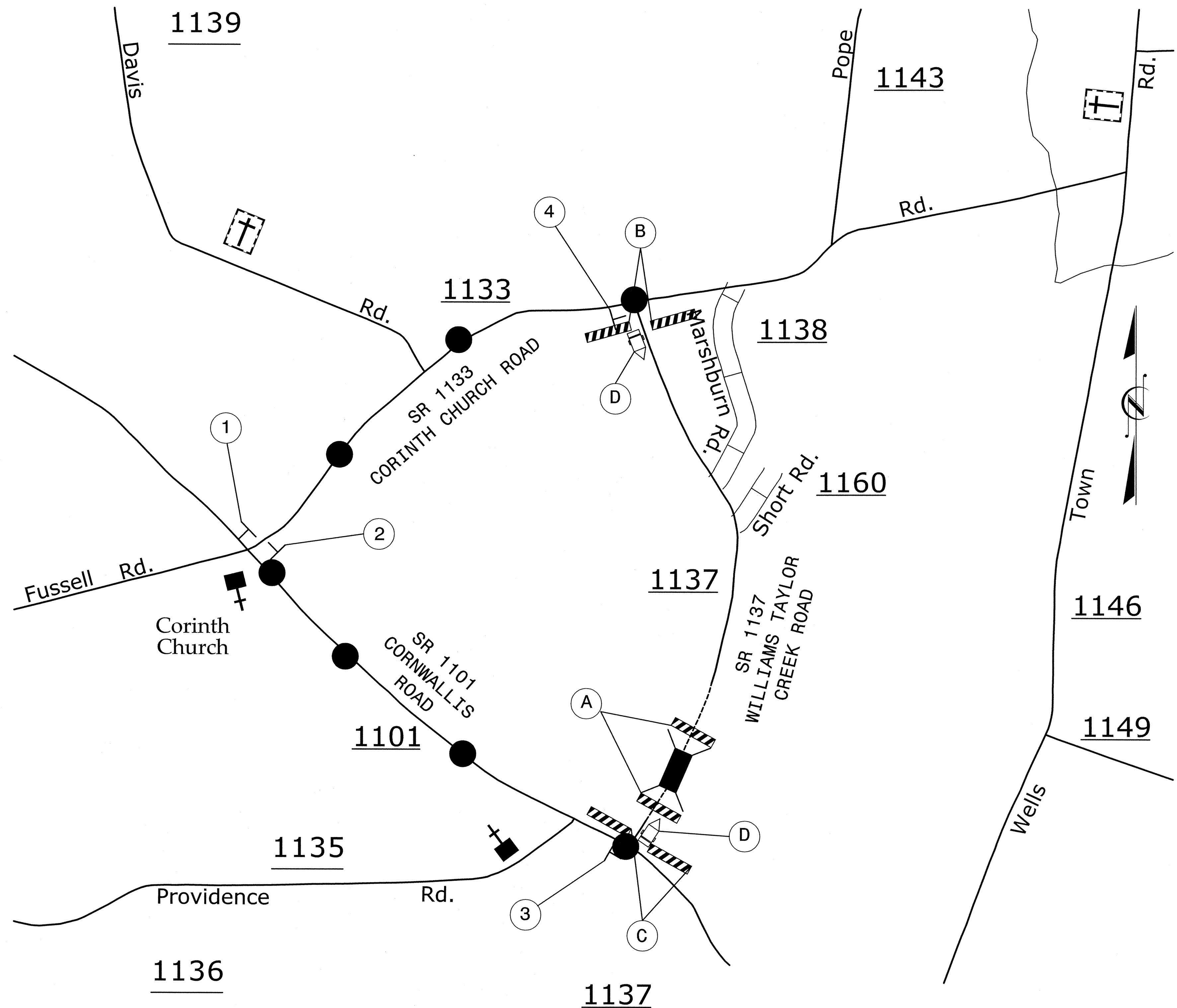
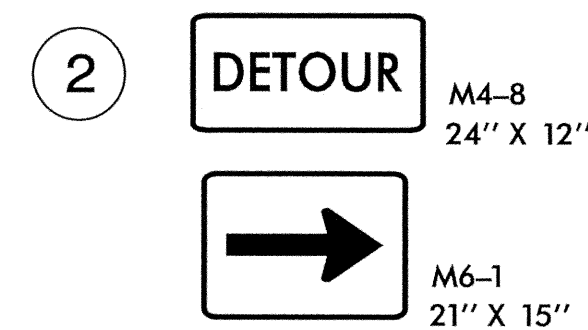
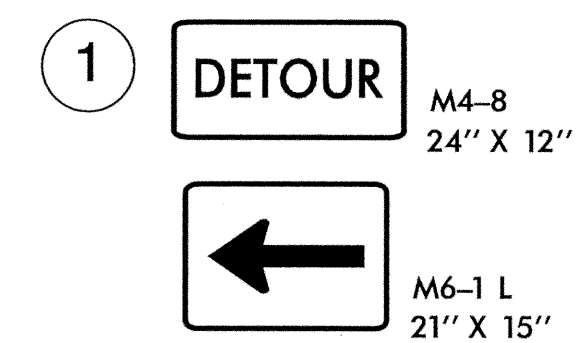
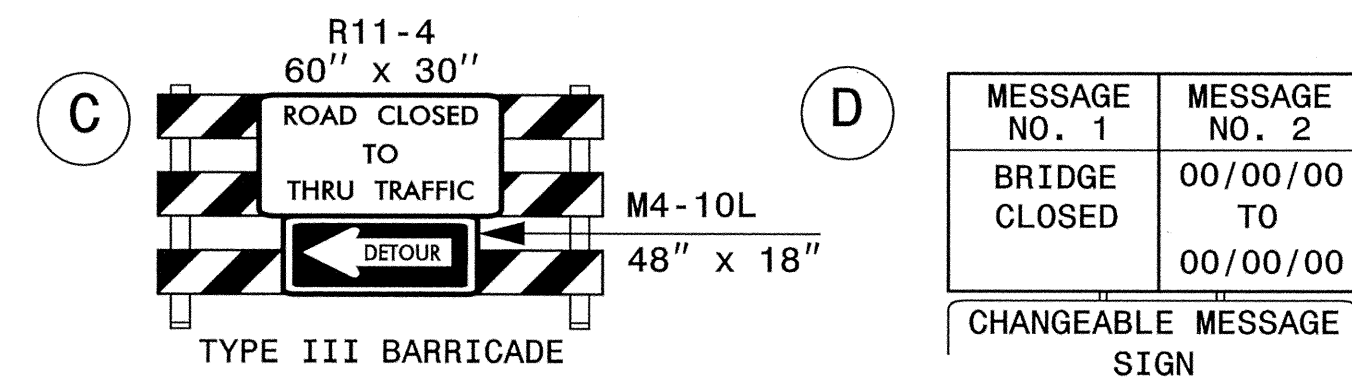
APPROVED:  DATE: 9-12-12

SEAL

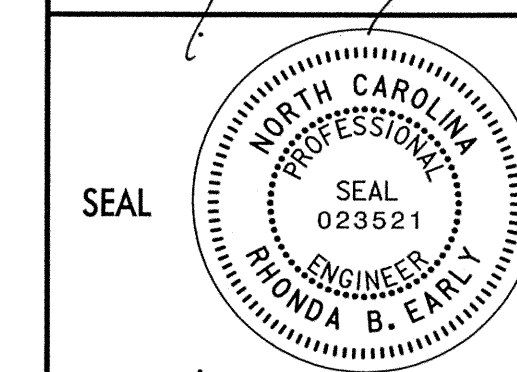




TRANSPORTATION
OPERATIONS
PLAN

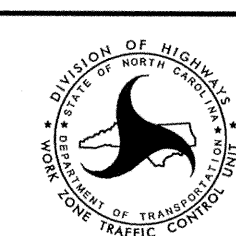


APPROVED: Charles S. Early DATE: 9.12.12



DETOUR SIGNING

SCALE:	NONE
DATE:	08/08/12
DWG. BY:	JAP
DESIGN BY:	JAP
REVIEWED BY:	RBE



REVISIONS

CADD	
FILE	

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.R.7	EC-1	5
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

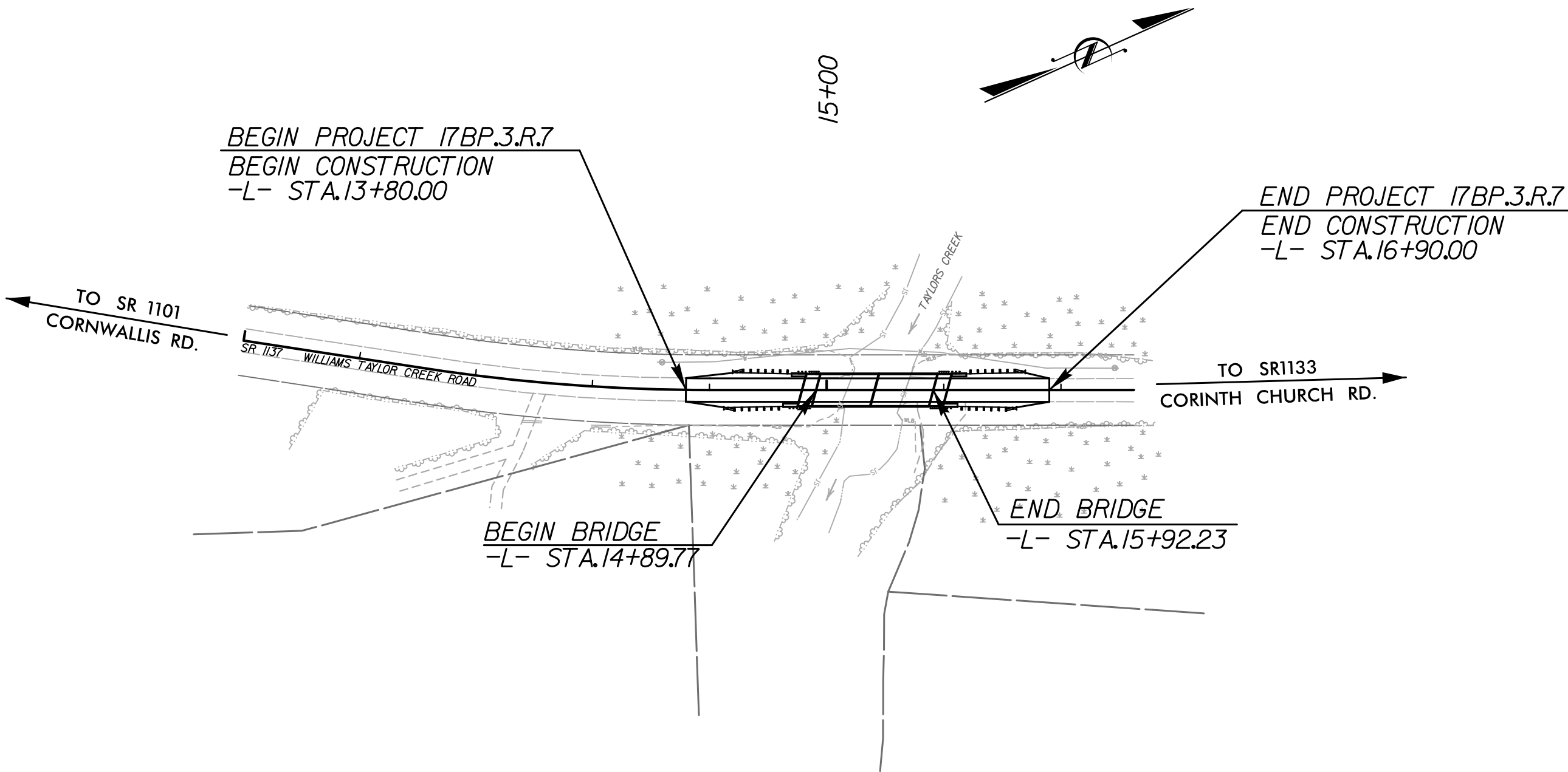
EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch.....	TD
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.....	△△△△△△△△
1633.01	Silt Basin Type B.....	△△△△△△△△
1633.01	Temporary Rock Silt Check Type-A.....	△△△△△△△△
1633.01	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM).....	△△△△△△△△
1633.01	Temporary Rock Silt Check Type-B.....	△△△△△△△△
1633.01	Wattle / Coir Fiber Wattle.....	△△△△△△△△
1633.01	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.....	△△△△△△△△
1632.01	Rock Inlet Sediment Trap: Type A.....	△△△△△△△△
1632.02	Type B.....	△△△△△△△△
1632.03	Type C.....	△△△△△△△△
1632.01	Skimmer Basin.....	△△△△△△△△
1632.01	Tiered Skimmer Basin.....	△△△△△△△△
1632.01	Infiltration Basin.....	△△△△△△△△

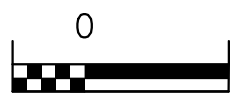
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

LOCATION: DUPLIN COUNTY BRIDGE NO. 057 OVER TAYLORS CREEK ON SR 1137 TAYLORS CREEK RD.

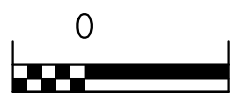
TYPE OF WORK: BRIDGE REPLACEMENT



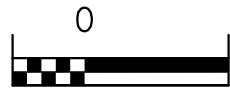
GRAPHIC SCALE



PLANS



PROFILE (HORIZONTAL)



PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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

Prepared In the Office of:

HNTB HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

2012 STANDARD SPECIFICATIONS

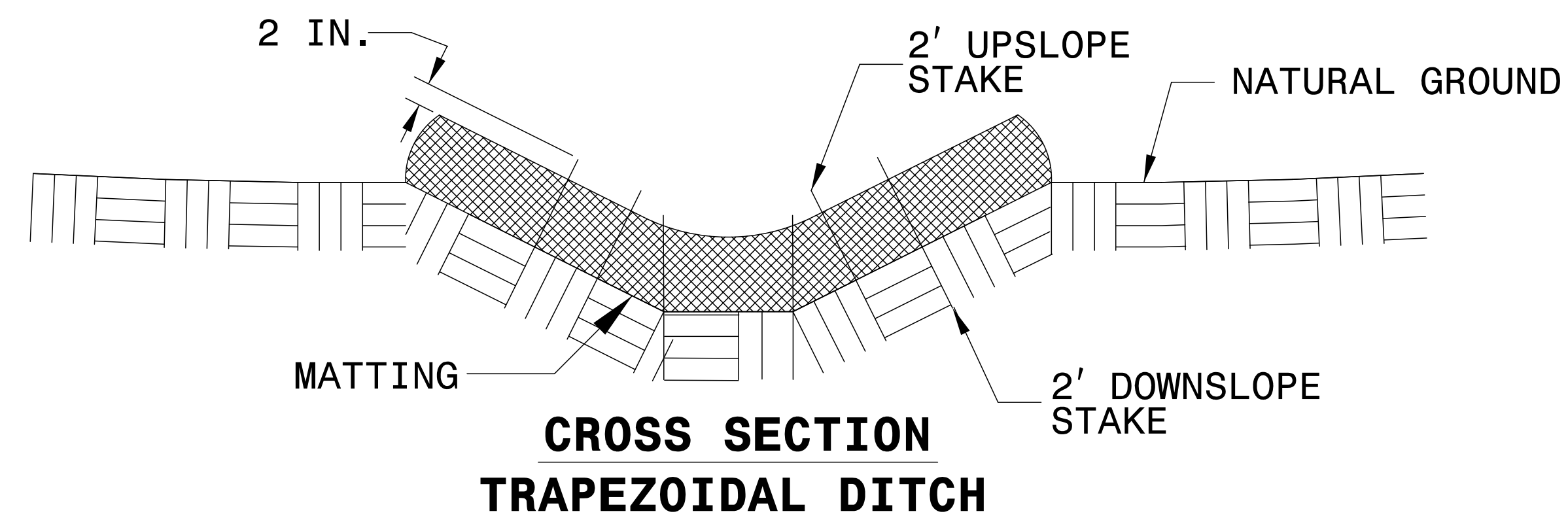
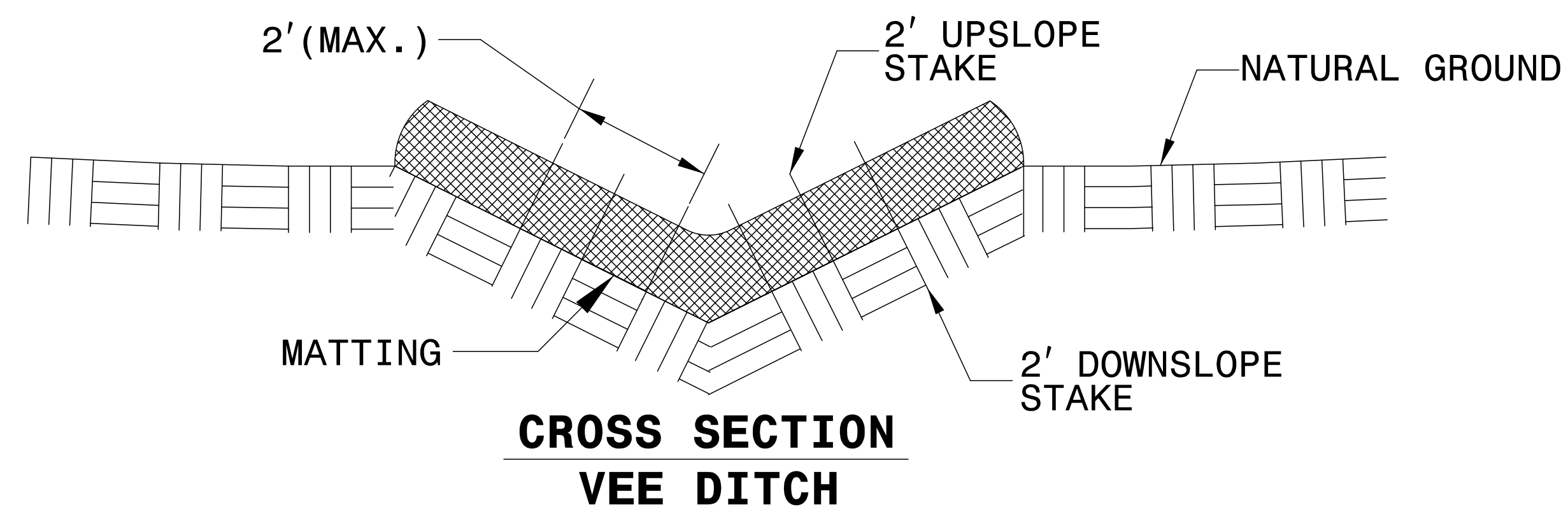
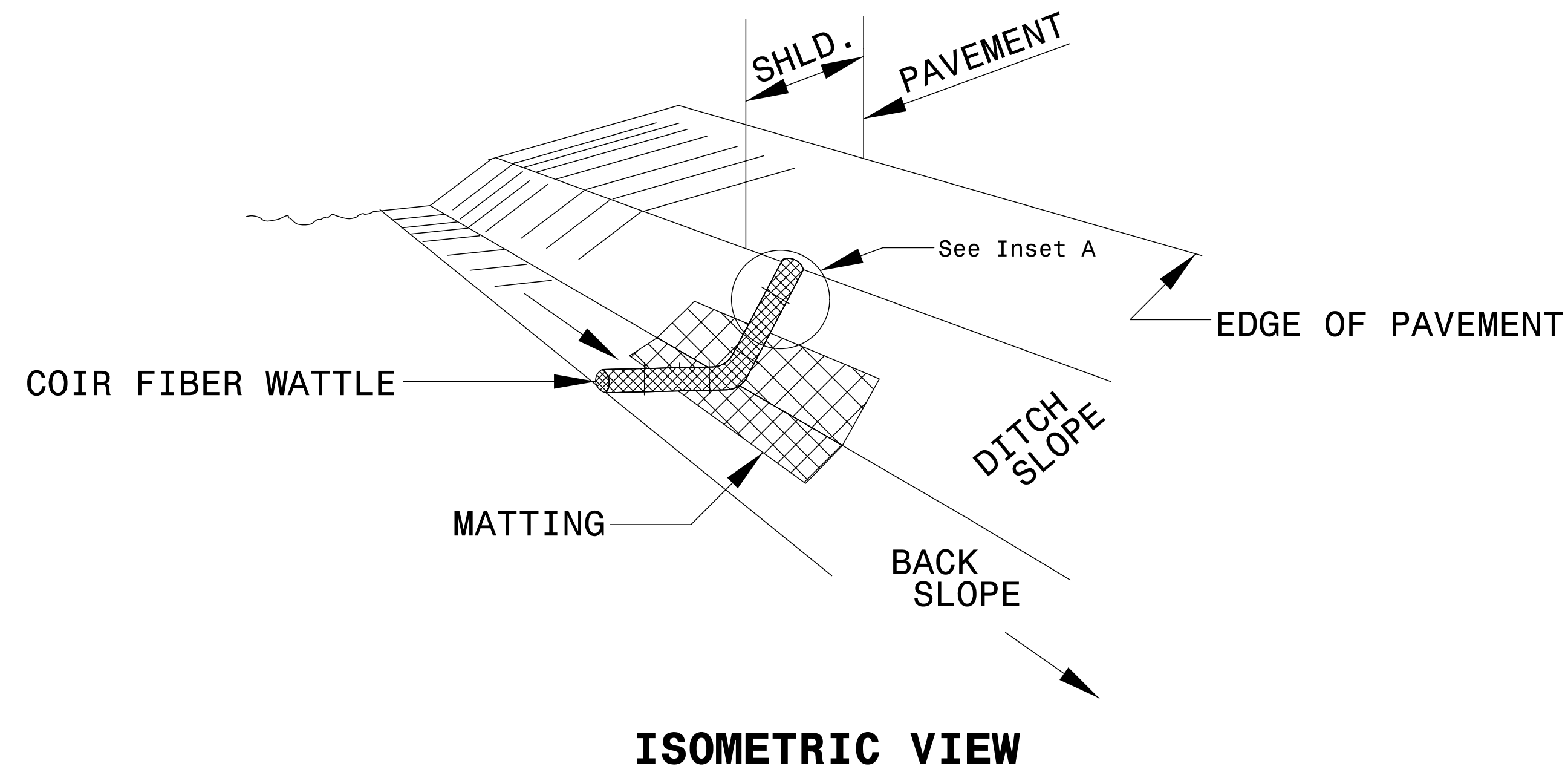
PHILLIP E. ROGERS, P.E.
EROSION CONTROL
LEVEL III-A
CERTIFICATION #330

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	

COIR FIBER WATTLE 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.

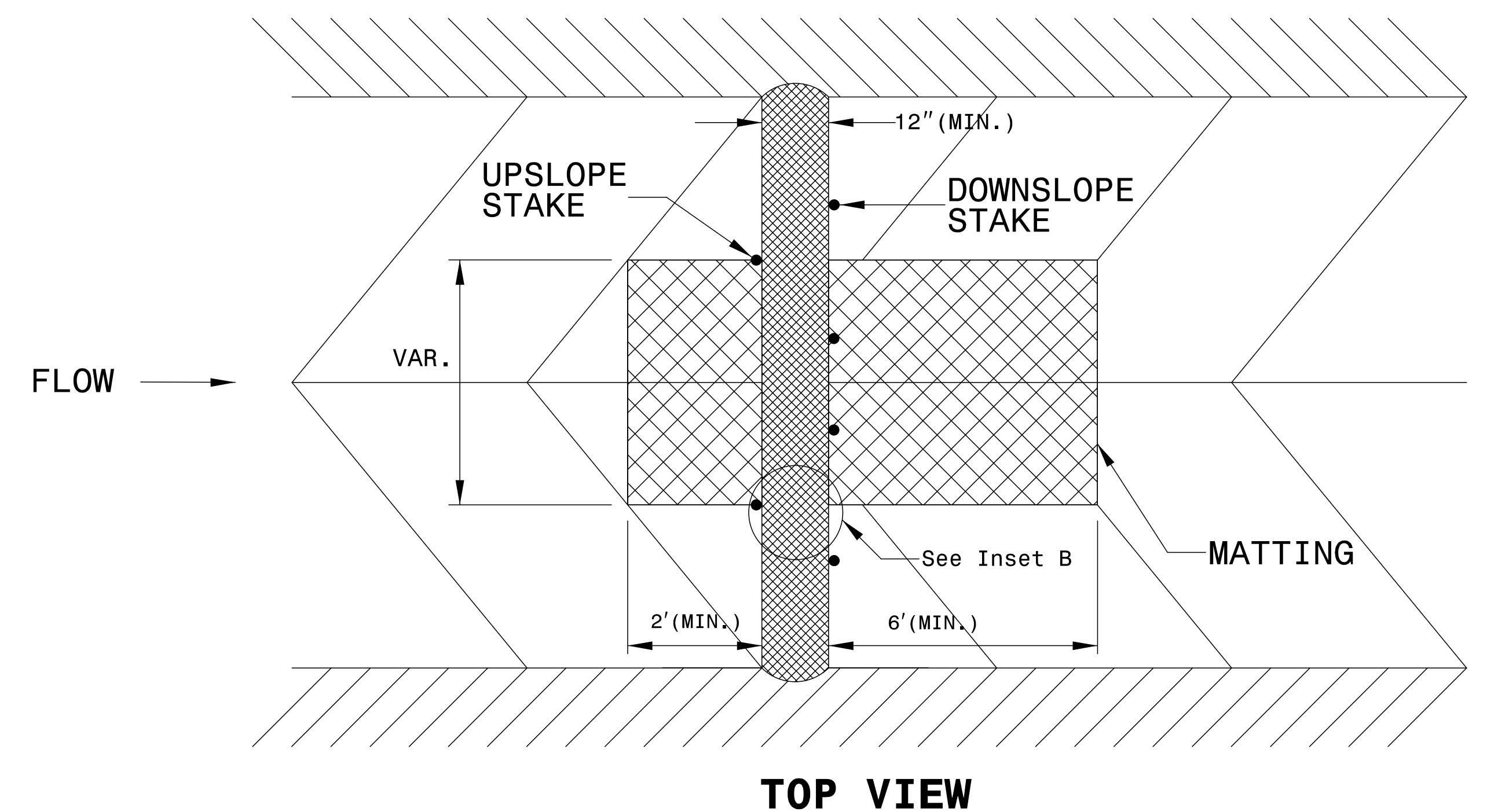
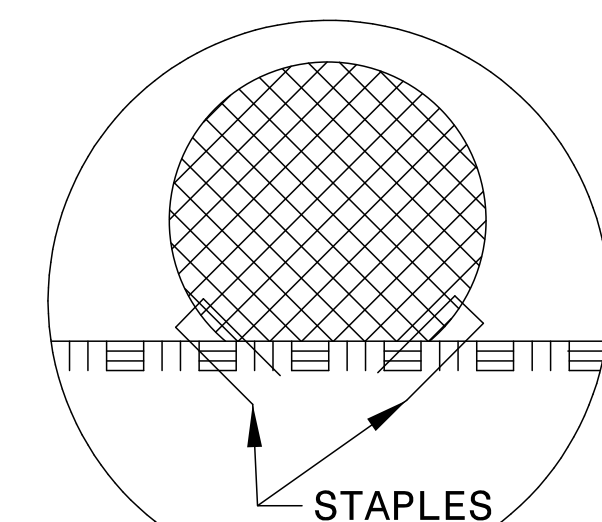
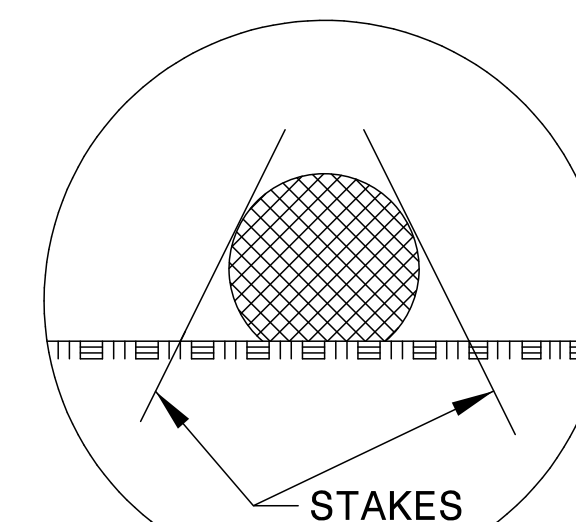
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

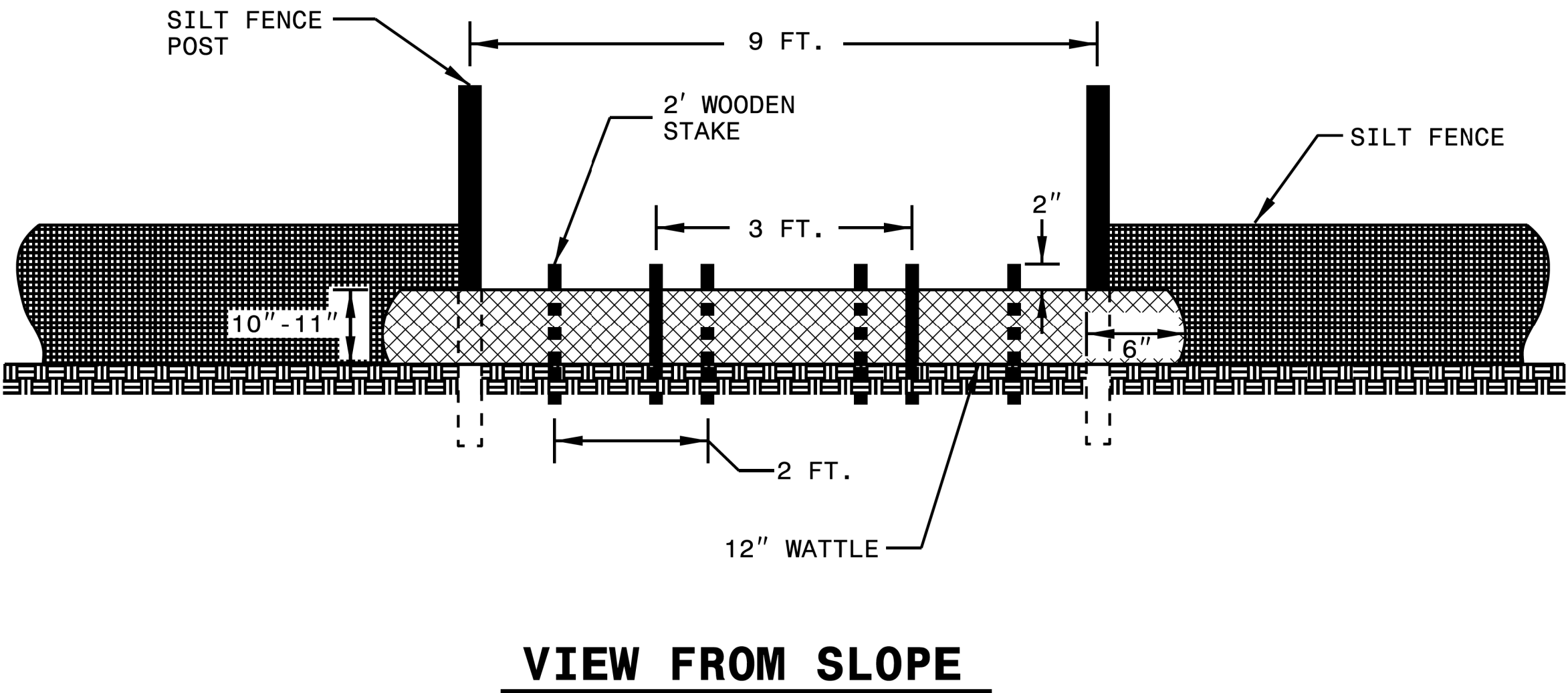
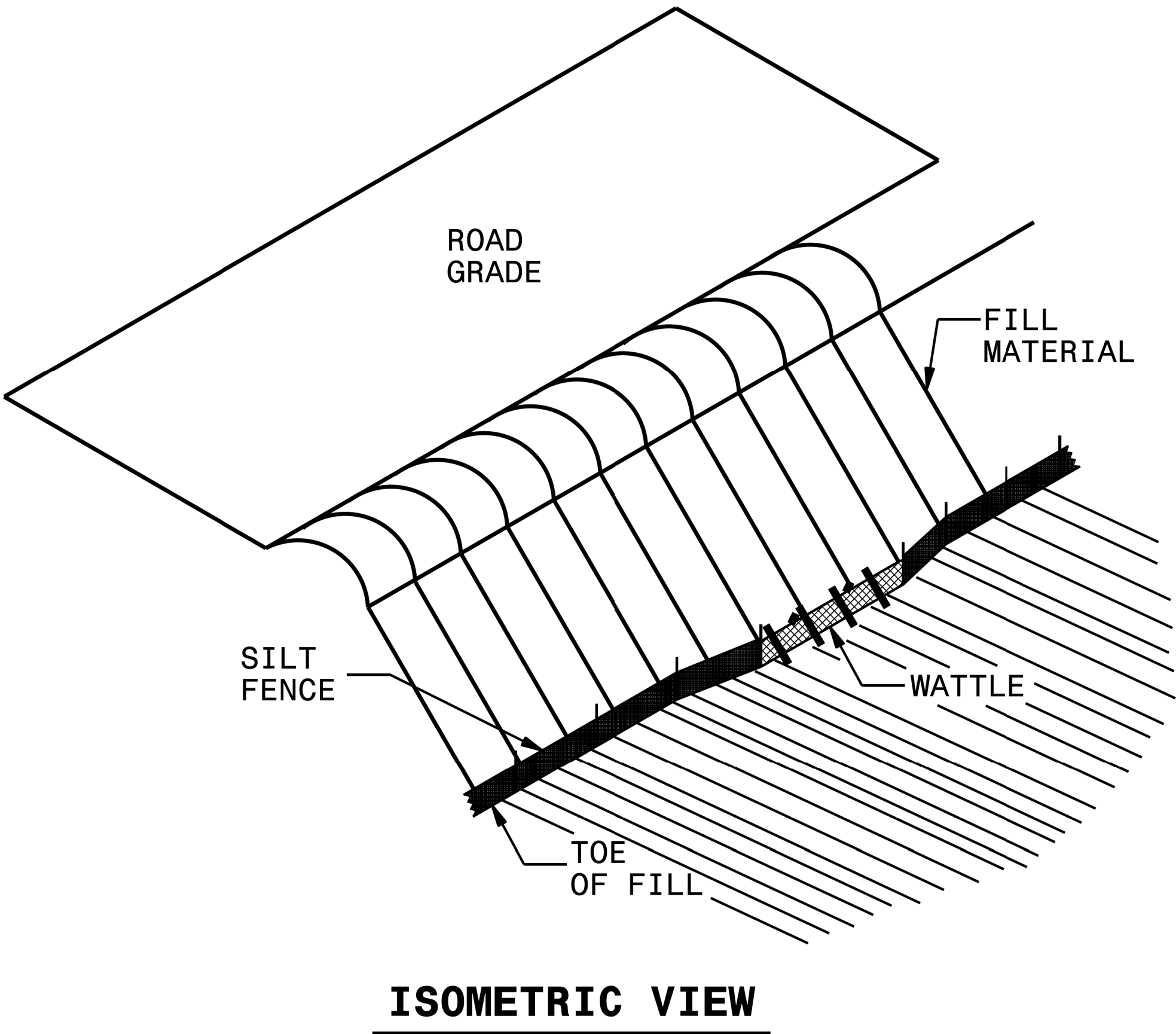
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.



SILT FENCE COIR FIBER WATTLE BREAK DETAIL



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.

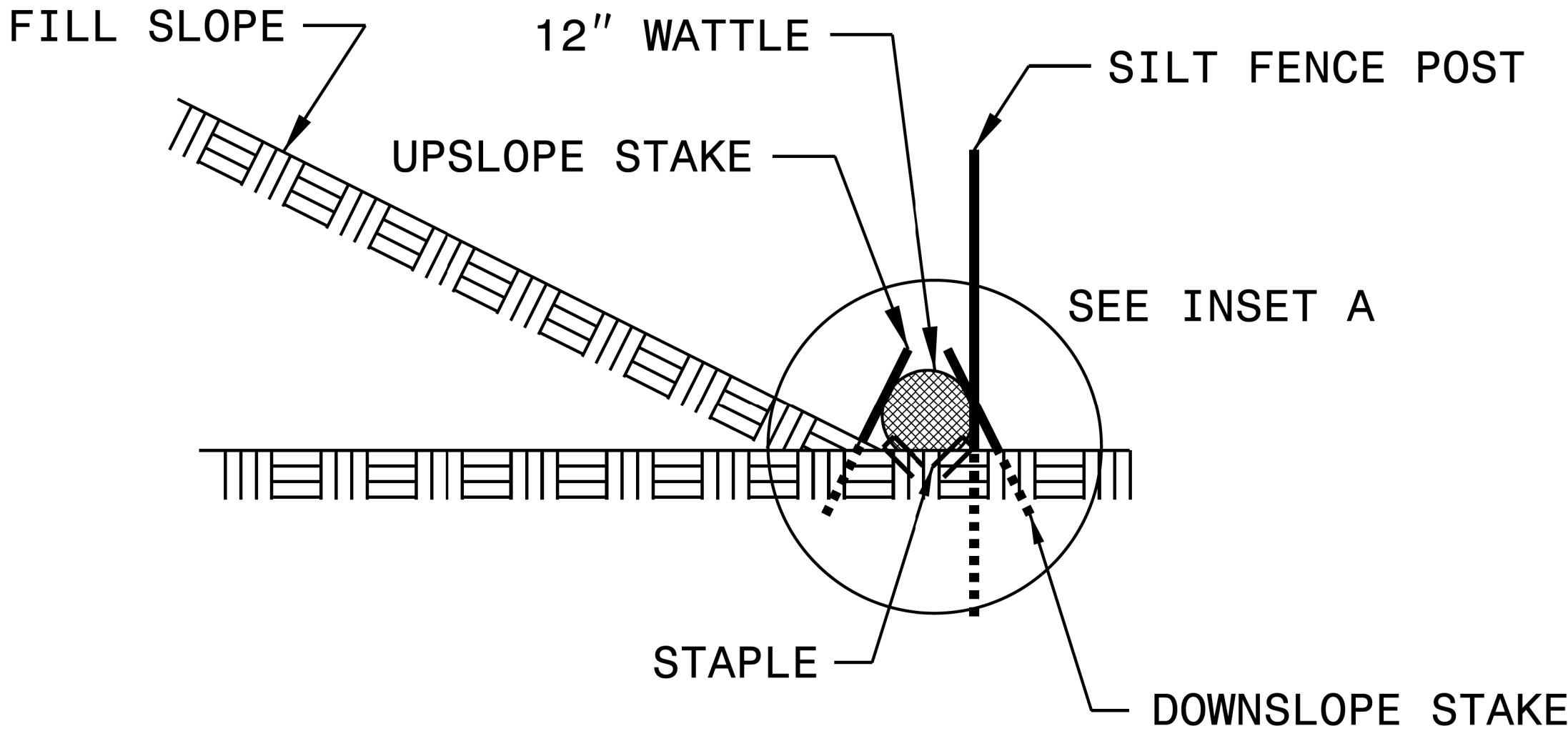
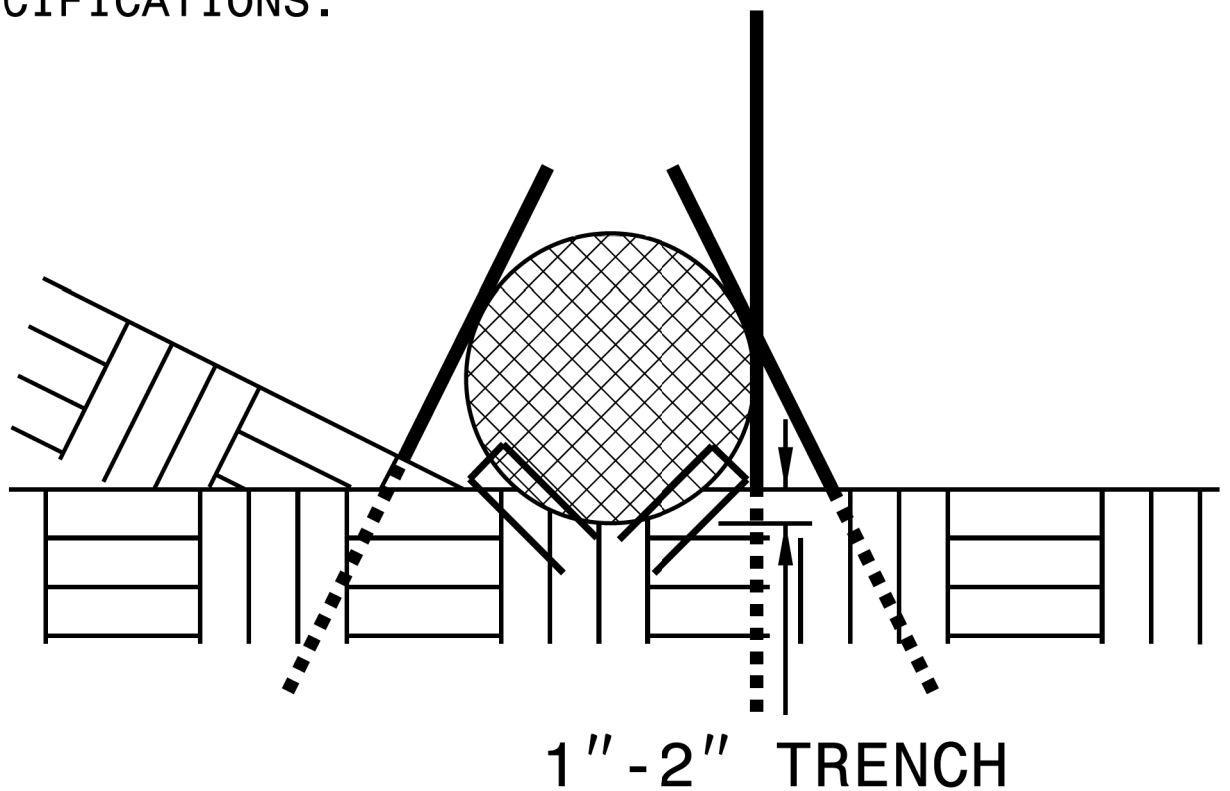
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

SOIL STABILIZATION TIMEFRAMES

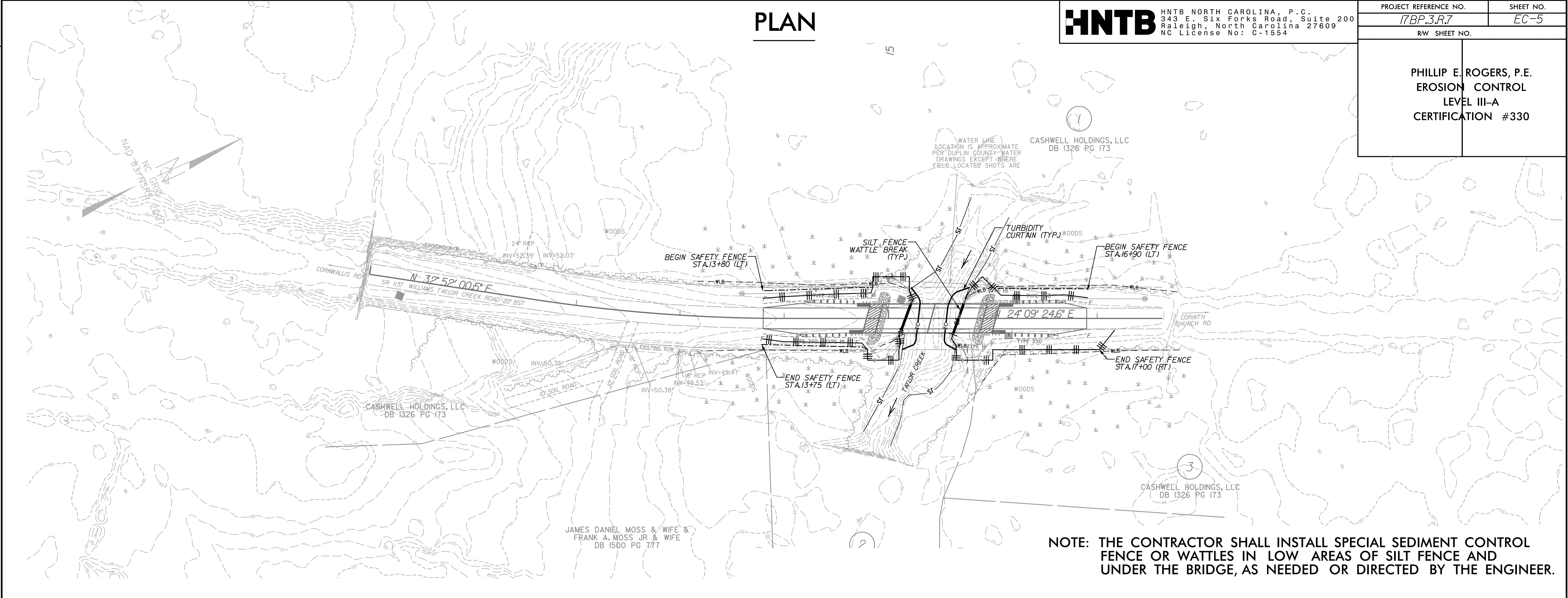
SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	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.

PLAN



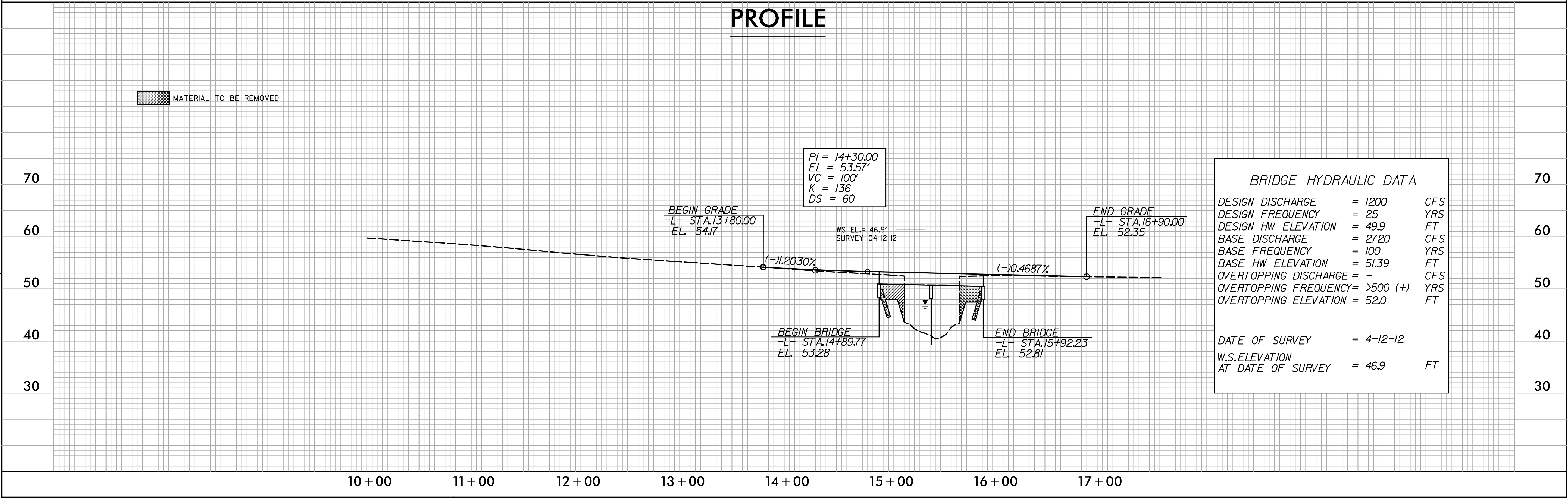
HNTB NORTH CAROLINA, P.C.
3443 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.7	EC-5
RW SHEET NO.	
PHILLIP E. ROGERS, P.E. EROSION CONTROL LEVEL III-A CERTIFICATION #330	



NOTE: THE CONTRACTOR SHALL INSTALL SPECIAL SEDIMENT CONTROL FENCE OR WATTLES IN LOW AREAS OF SILT FENCE AND UNDER THE BRIDGE, AS NEEDED OR DIRECTED BY THE ENGINEER.

PROFILE

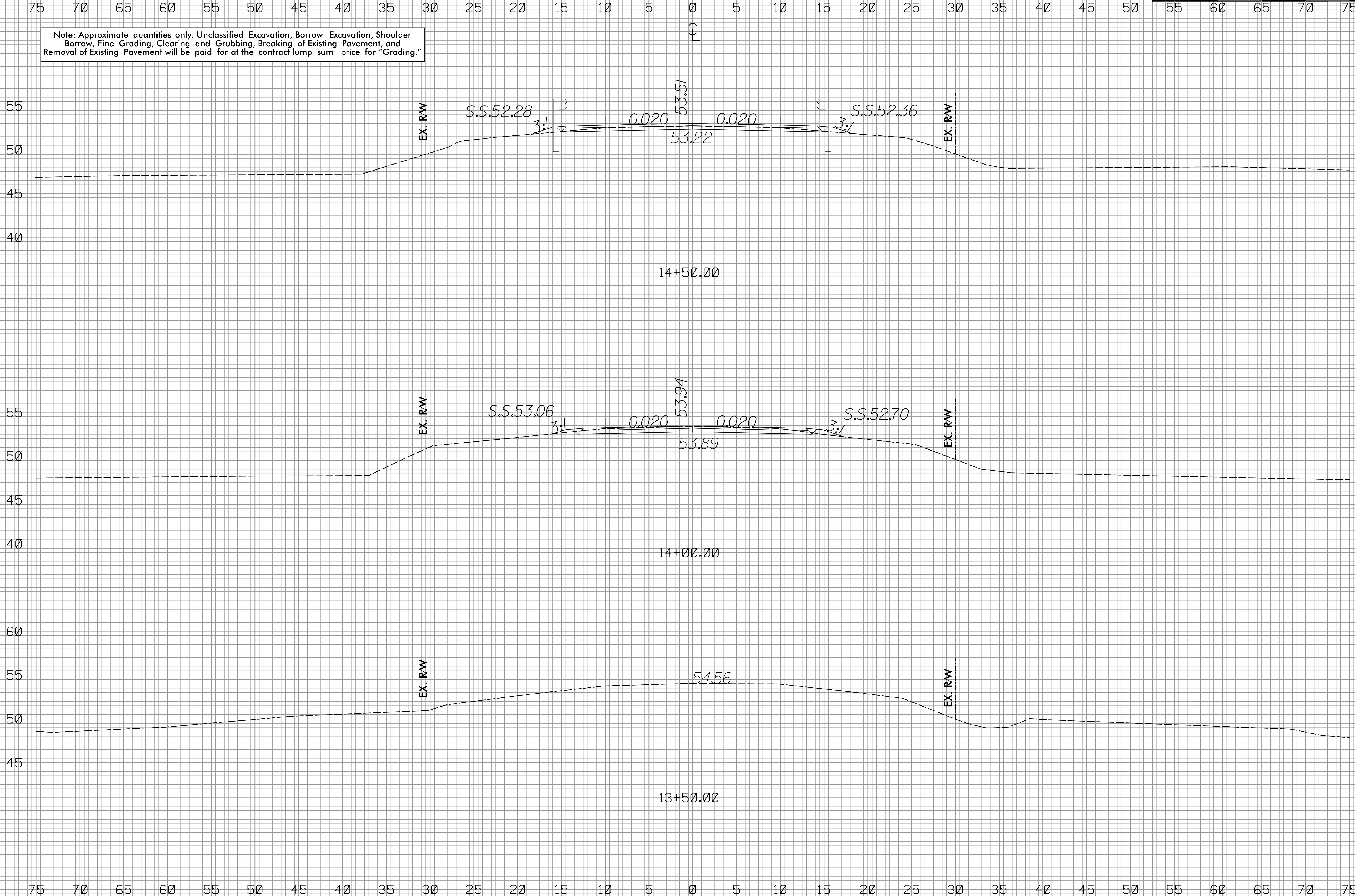


REVISIONS

02/03/98

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
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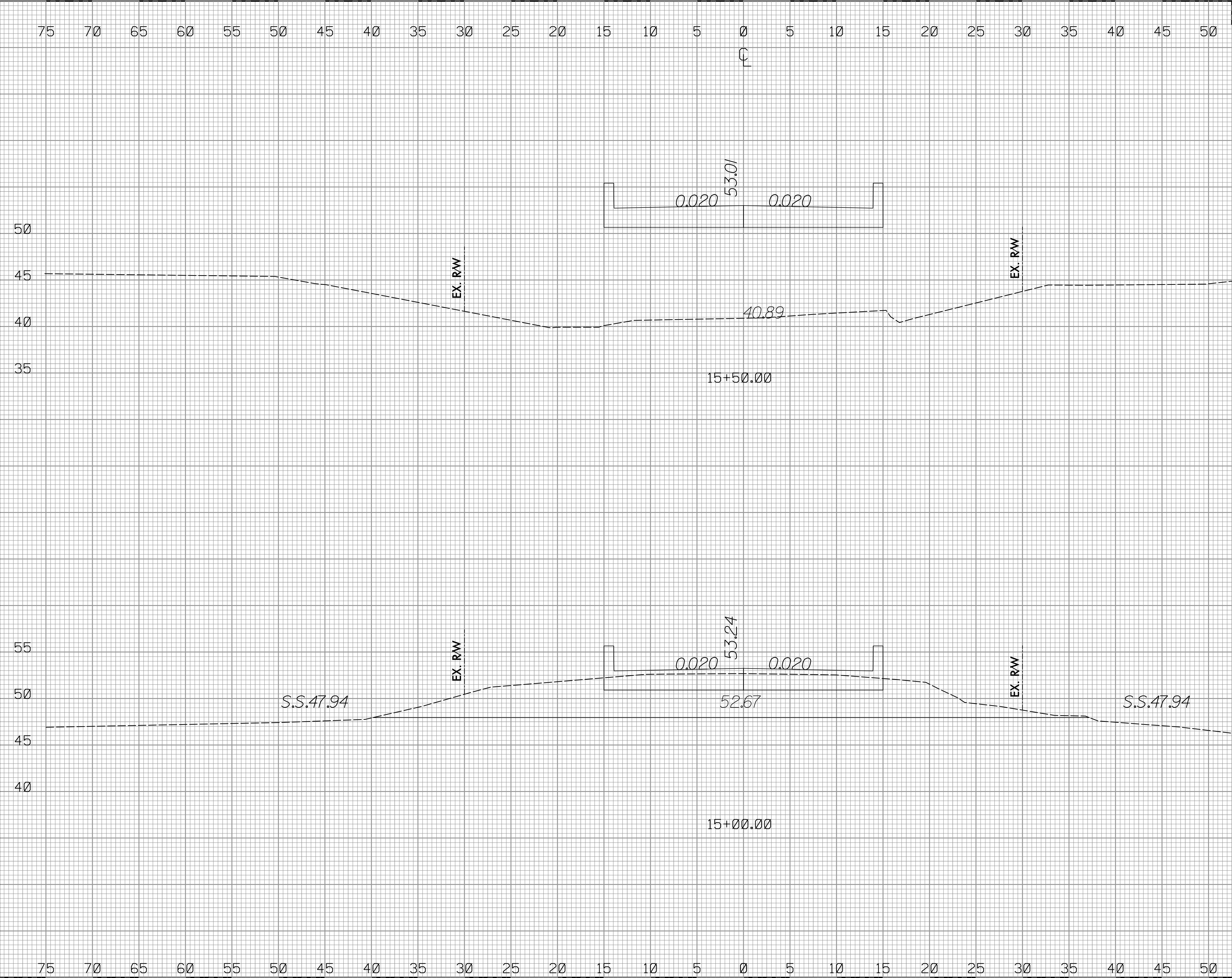
Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Shoulder Borrow, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."



14657_P1.dwg 0057_rdy.xpl.dgn
\$\$\$\$USFRN2\$\$\$\$

02/03/98

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
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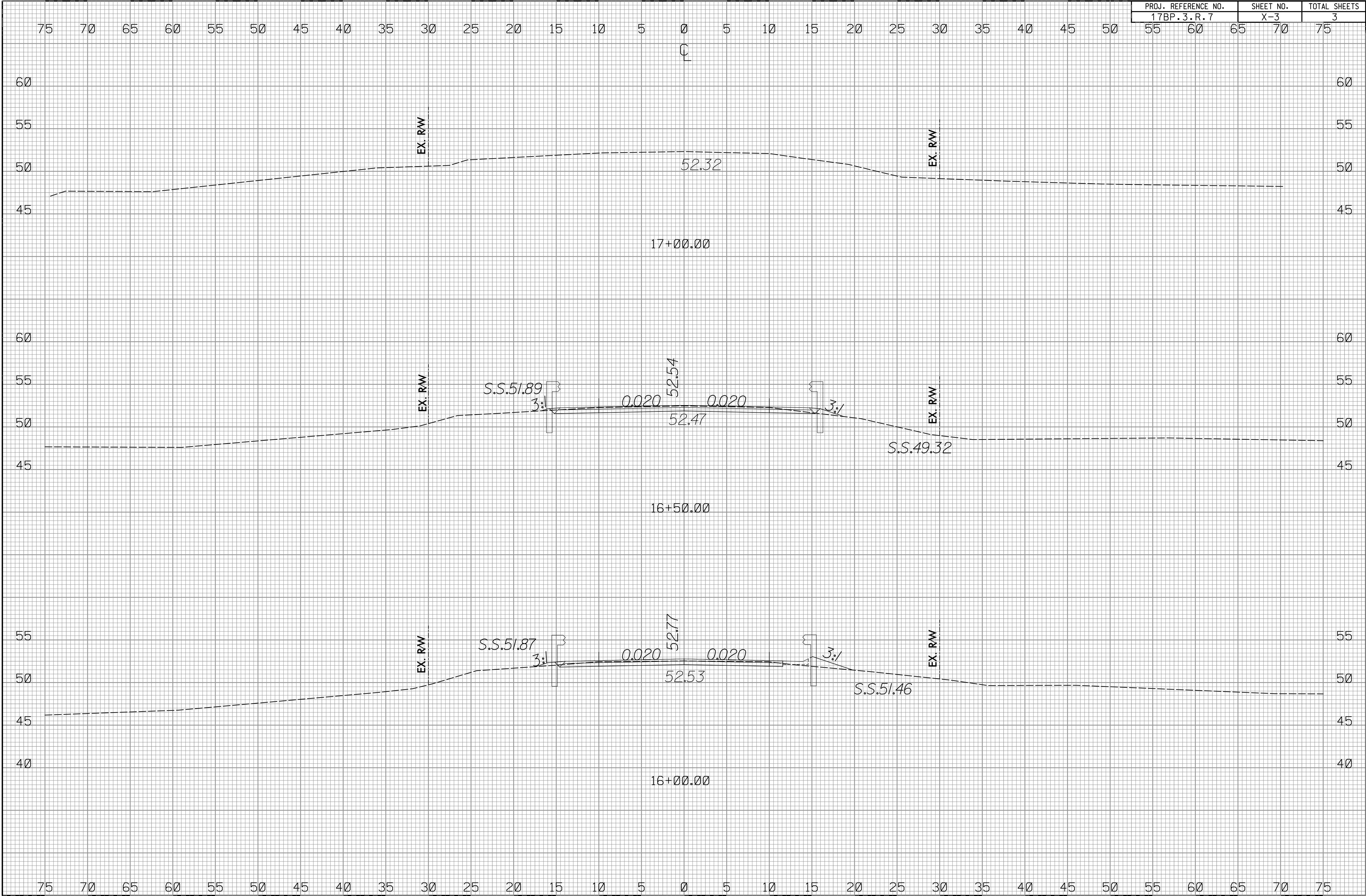


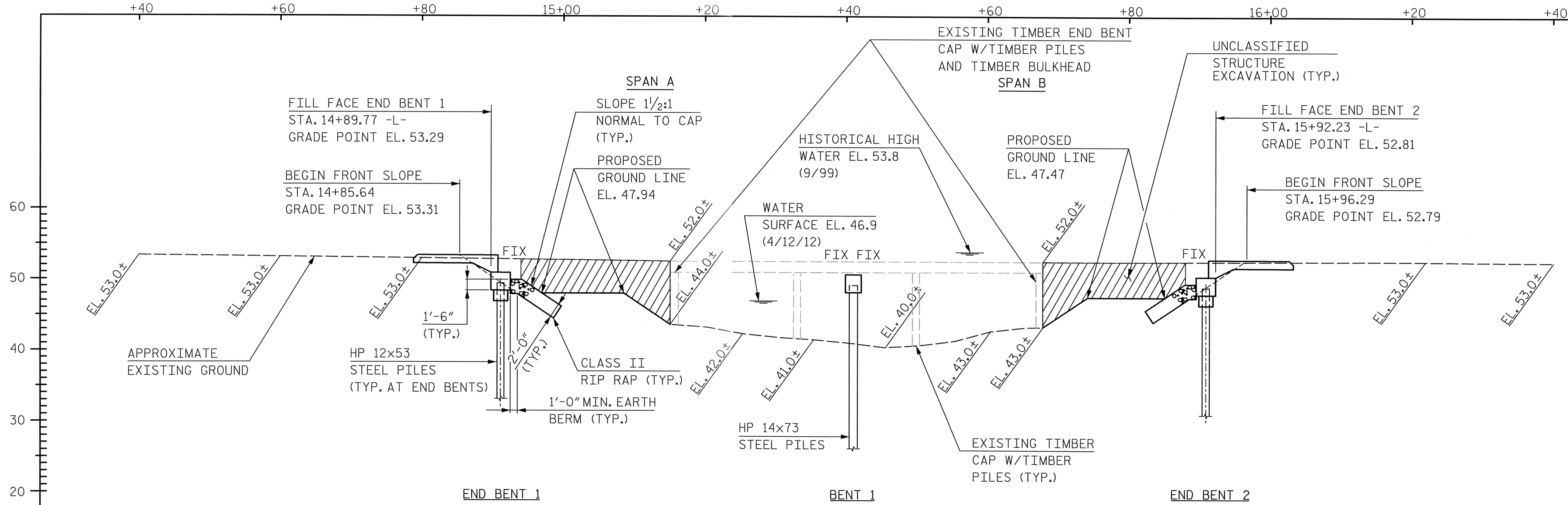
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02/03/98

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
17BP.3.R.7	X-3	3

147122_P\17BP.3.R.7_0057_rdy.xpl.dgn
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FOR GENERAL NOTES, SEE SHEET 2.

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	1200 CFS
FREQUENCY OF DESIGN FLOOD	=	25 YR
DESIGN HIGH WATER ELEVATION	=	49.9 FT.
DRAINAGE AREA	=	13.3 SQ. MI.
BASIC DISCHARGE (Q100)	=	2720 CFS
BASIC HIGH WATER ELEVATION	=	51.39 FT.

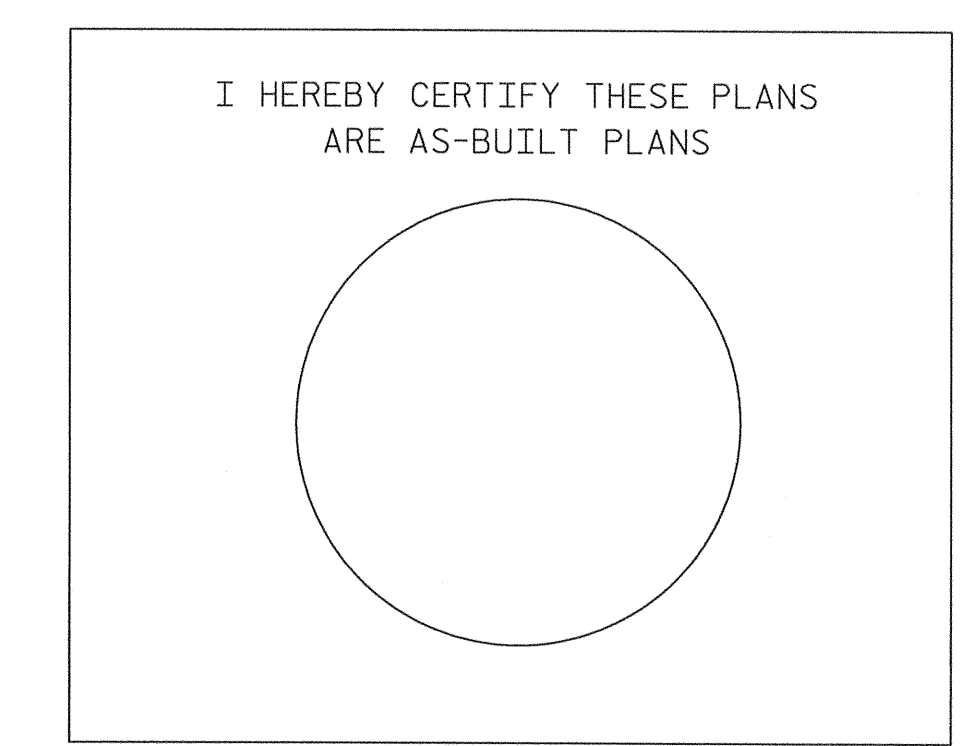
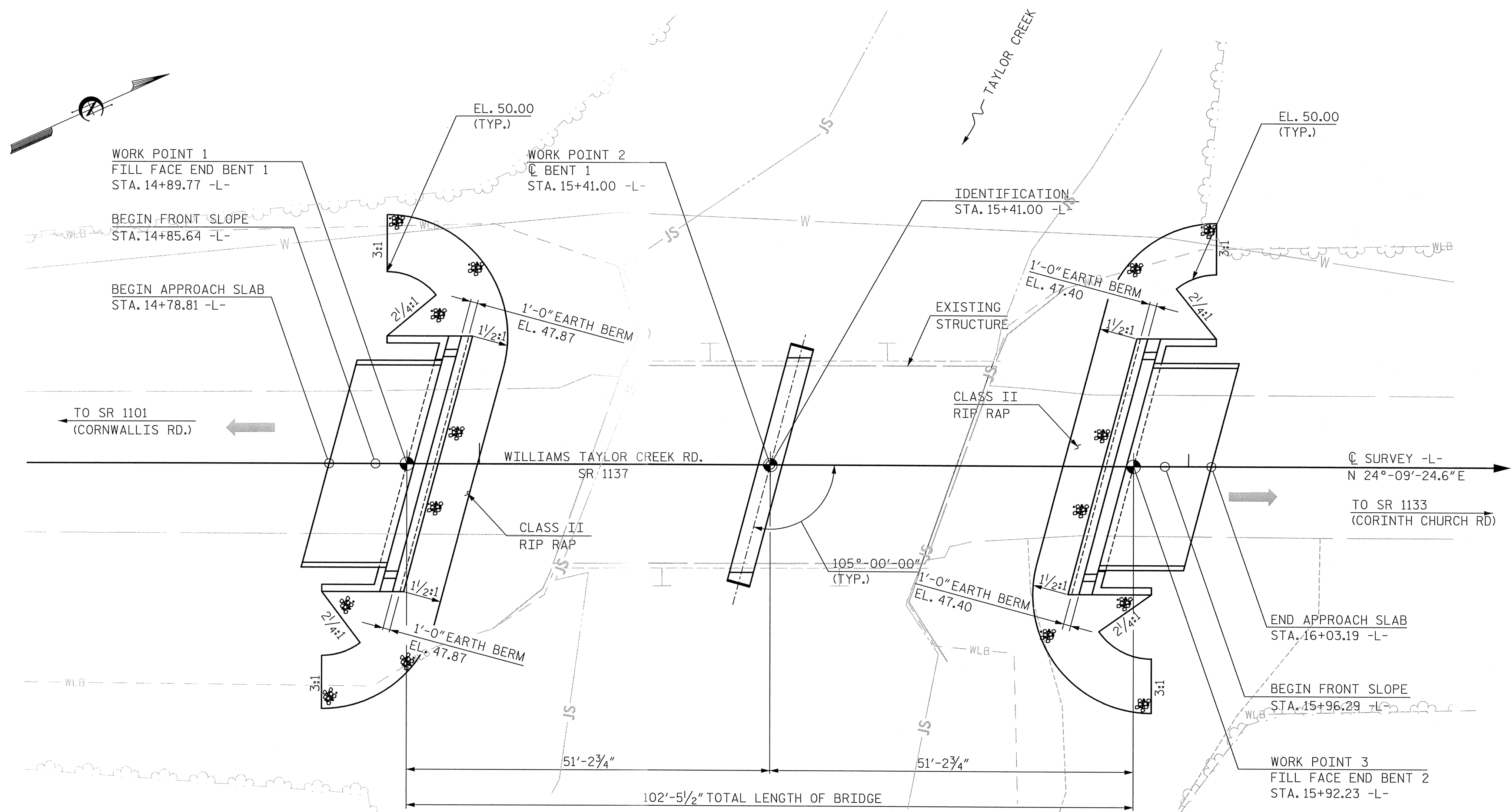
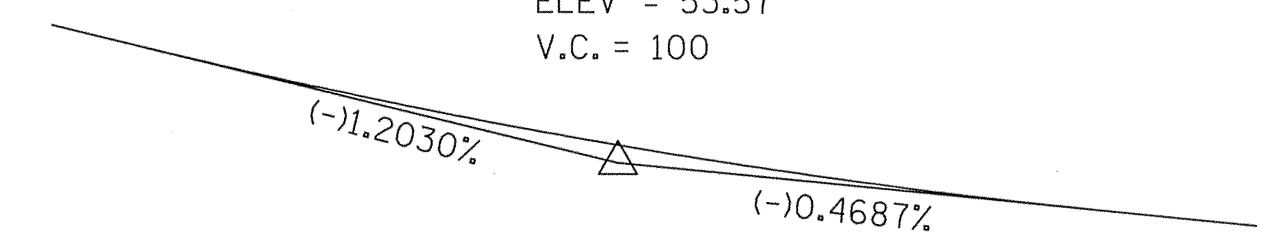
OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	=	NA
FREQUENCY OF OVERTOPPING FLOOD	=	> 500 YR (+)
OVERTOPPING FLOOD ELEVATION	=	52.0 FT.

NOTE: ROADWAY OVERTOPS AT STA. 17+90± -L- PRIOR TO BRIDGE OVERTOPPING.

PI STA. = 14+30.00
ELEV = 53.57
V.C. = 100

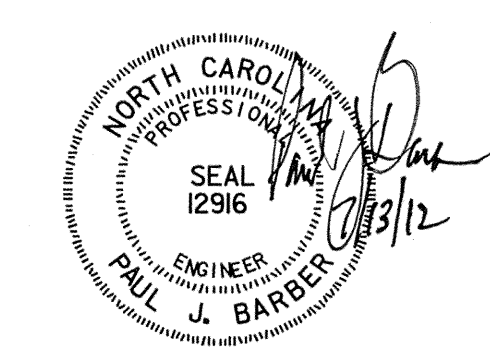
GRADE DATA -L-



PROJECT NO. 17BP.3.R.7
DUPLIN COUNTY
STATION: 15+41.00 -L-

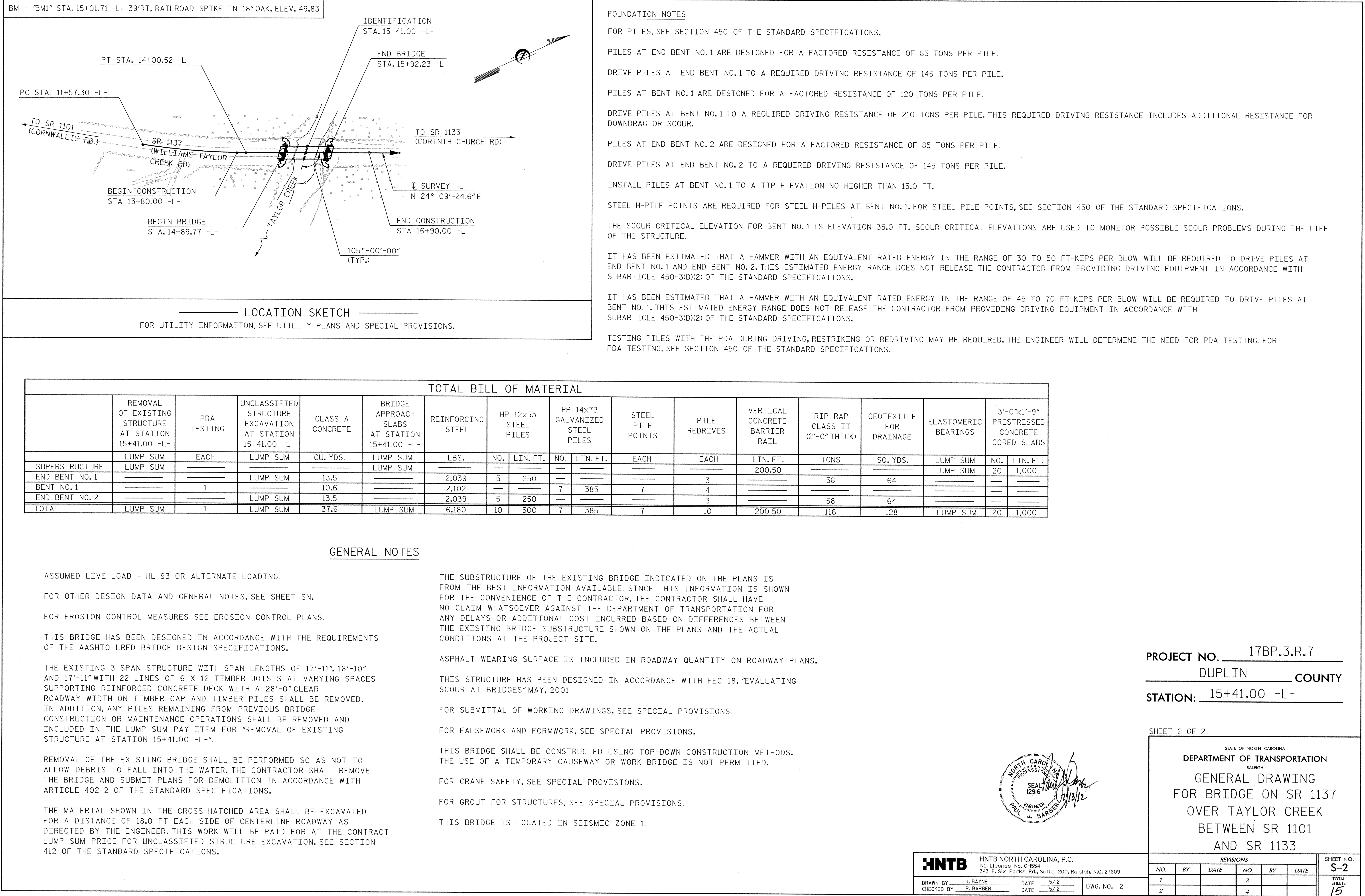
SHEET 1 OF 2 REPLACES BRIDGE NO. 57

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
FOR BRIDGE ON SR 1137
OVER TAYLOR CREEK
BETWEEN SR 1101
AND SR 1133



HNTB		HNTB NORTH CAROLINA, P.C. NC License No. C-1554 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609	
DRAWN BY	J. BAYNE	DATE	5/12
CHECKED BY	P. BARBER	DATE	5/12
DWG. NO. 1			

REVISIONS						SHEET NO. S-1
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 15
2			4			



+

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{DW}
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

- 1.
- 2.
- 3.
- 4.

#	CONTROLLING LOAD RATING
1	DESIGN LOAD RATING (HL-93)
2	DESIGN LOAD RATING (HS-20)
3	LEGAL LOAD RATING **
** SEE CHART FOR VEHICLE TYPE	
GIRDER LOCATION	
I - INTERIOR GIRDER EL - EXTERIOR LEFT GIRDER ER - EXTERIOR RIGHT GIRDER	

PROJECT NO. 17BP.3.R.7
DUPLIN COUNTY
STATION: 15+41.00 -L-

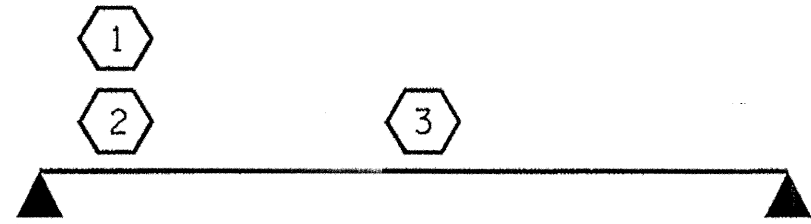


STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD LRFR SUMMARY FOR 50' CORED SLAB UNIT 105° SKEW (NON-INTERSTATE TRAFFIC)					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					5-3
					15

STD. NO. 21LRFR1_75&105S_50L

LOAD AND RESISTANCE FACTOR RATING (LRFD) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LOAD AND RESISTANCE FACTOR RATING (LRFD) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																								
LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER	
							LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	MOMENT					
								DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)
DESIGN LOAD RATING		HL-93(Inv)	N/A	1	1.205	--	1.75	0.271	1.59	50'	EL	24.482	0.616	1.2	50'	EL	4.896	0.80	0.271	1.46	50'	EL	24.482	
		HL-93(0pr)	N/A	--	1.562	--	1.35	0.271	2.06	50'	EL	24.482	0.616	1.56	50'	EL	4.896	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.434	51.614	1.75	0.271	1.97	50'	EL	24.482	0.616	1.43	50'	EL	4.896	0.80	0.271	1.81	50'	EL	24.482	
		HS-20(0pr)	36.000	--	1.859	66.906	1.35	0.271	2.56	50'	EL	24.482	0.616	1.86	50'	EL	4.896	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.678	49.655	1.4	0.271	5.02	50'	EL	24.482	0.616	4	50'	EL	4.896	0.80	0.271	3.68	50'	EL	24.482	
		SNGARBS2	20.000	--	2.905	58.101	1.4	0.271	3.97	50'	EL	24.482	0.616	2.93	50'	EL	4.896	0.80	0.271	2.91	50'	EL	24.482	
		SNAGRIS2	22.000	--	2.748	60.456	1.4	0.271	3.83	50'	EL	19.586	0.616	2.75	50'	EL	4.896	0.80	0.271	2.81	50'	EL	24.482	
		SNCOTTS3	27.250	--	1.835	49.998	1.4	0.271	2.5	50'	EL	24.482	0.616	2.01	50'	EL	4.896	0.80	0.271	1.83	50'	EL	24.482	
		SNAGGRS4	34.925	--	1.595	55.714	1.4	0.271	2.18	50'	EL	24.482	0.616	1.72	50'	EL	4.896	0.80	0.271	1.60	50'	EL	24.482	
		SNS5A	35.550	--	1.556	55.303	1.4	0.271	2.12	50'	EL	24.482	0.616	1.77	50'	EL	4.896	0.80	0.271	1.56	50'	EL	24.482	
		SNS6A	39.950	--	1.455	58.112	1.4	0.271	1.99	50'	EL	24.482	0.616	1.64	50'	EL	4.896	0.80	0.271	1.45	50'	EL	24.482	
		SNS7B	42.000	--	1.386	58.224	1.4	0.271	1.89	50'	EL	24.482	0.616	1.65	50'	EL	4.896	0.80	0.271	1.39	50'	EL	24.482	
	TTST	TNAGRIT3	33.000	--	1.782	58.809	1.4	0.271	2.43	50'	EL	24.482	0.616	1.94	50'	EL	4.896	0.80	0.271	1.78	50'	EL	24.482	
		TNT4A	33.075	--	1.798	59.458	1.4	0.271	2.45	50'	EL	24.482	0.616	1.86	50'	EL	4.896	0.80	0.271	1.80	50'	EL	24.482	
		TNT6A	41.600	--	1.497	62.293	1.4	0.271	2.04	50'	EL	24.482	0.616	1.8	50'	EL	4.896	0.80	0.271	1.50	50'	EL	24.482	
		TNT7A	42.000	--	1.52	63.842	1.4	0.271	2.08	50'	EL	24.482	0.616	1.67	50'	EL	4.896	0.80	0.271	1.52	50'	EL	24.482	
		TNT7B	42.000	--	1.585	66.559	1.4	0.271	2.16	50'	EL	24.482	0.616	1.59	50'	EL	4.896	0.80	0.271	1.58	50'	EL	24.482	
		TNAGRIT4	43.000	--	1.504	64.667	1.4	0.271	2.05	50'	EL	24.482	0.616	1.53	50'	EL	4.896	0.80	0.271	1.50	50'	EL	24.482	
		TNAGT5A	45.000	--	1.405	63.217	1.4	0.271	1.92	50'	EL	24.482	0.616	1.56	50'	EL	4.896	0.80	0.271	1.40	50'	EL	24.482	
		TNAGT5B	45.000	3	1.376	61.936	1.4	0.271	1.88	50'	EL	24.482	0.616	1.45	50'	EL	4.896	0.80	0.271	1.38	50'	EL	24.482	

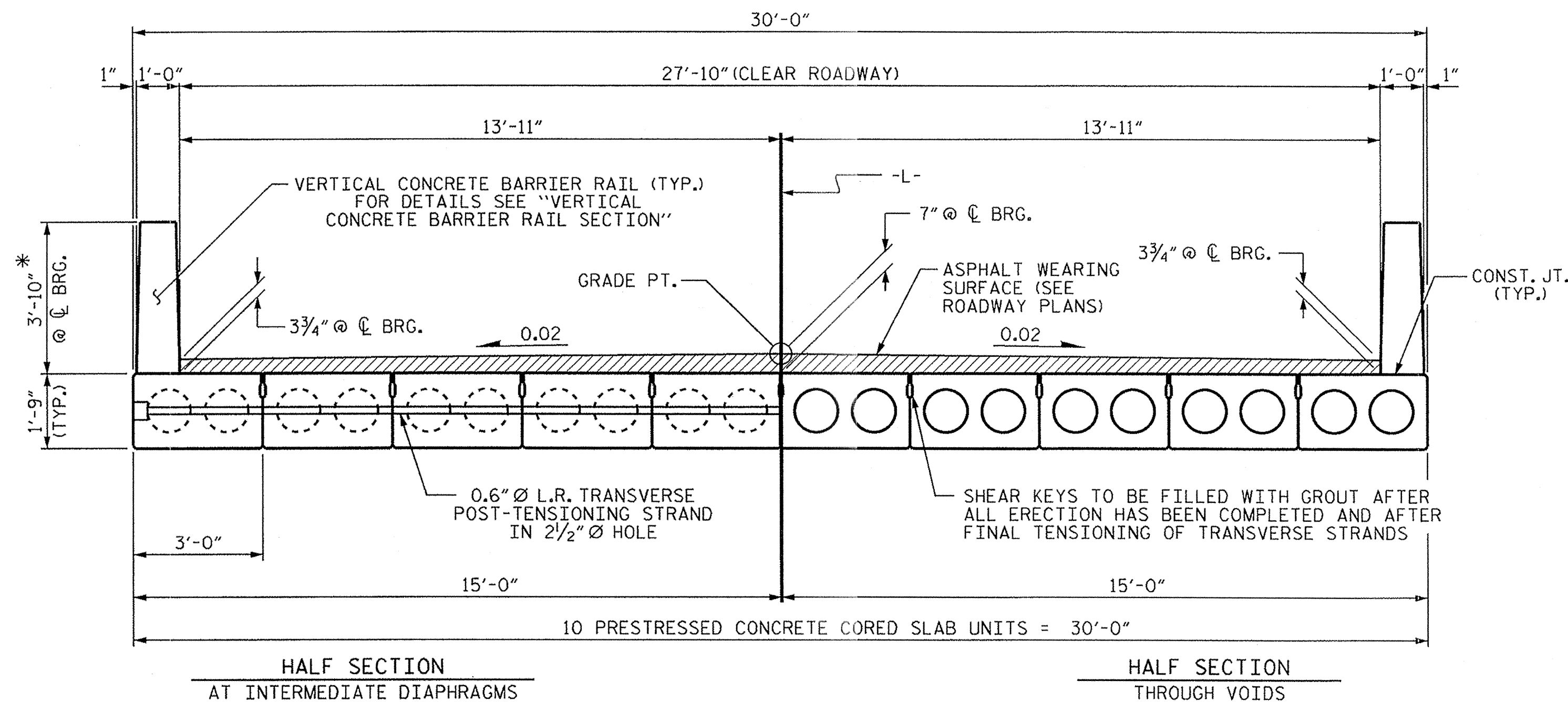


LRFR SUMMARY
FOR SPANS 'A' AND 'B'

ASSEMBLED BY :	M.L. RORIE	DATE :	5-18-12
CHECKED BY :	E.E. MURRAY	DATE :	6-21-12
DRAWN BY :	CVC	6/10	
CHECKED BY :	DNS	6/10	

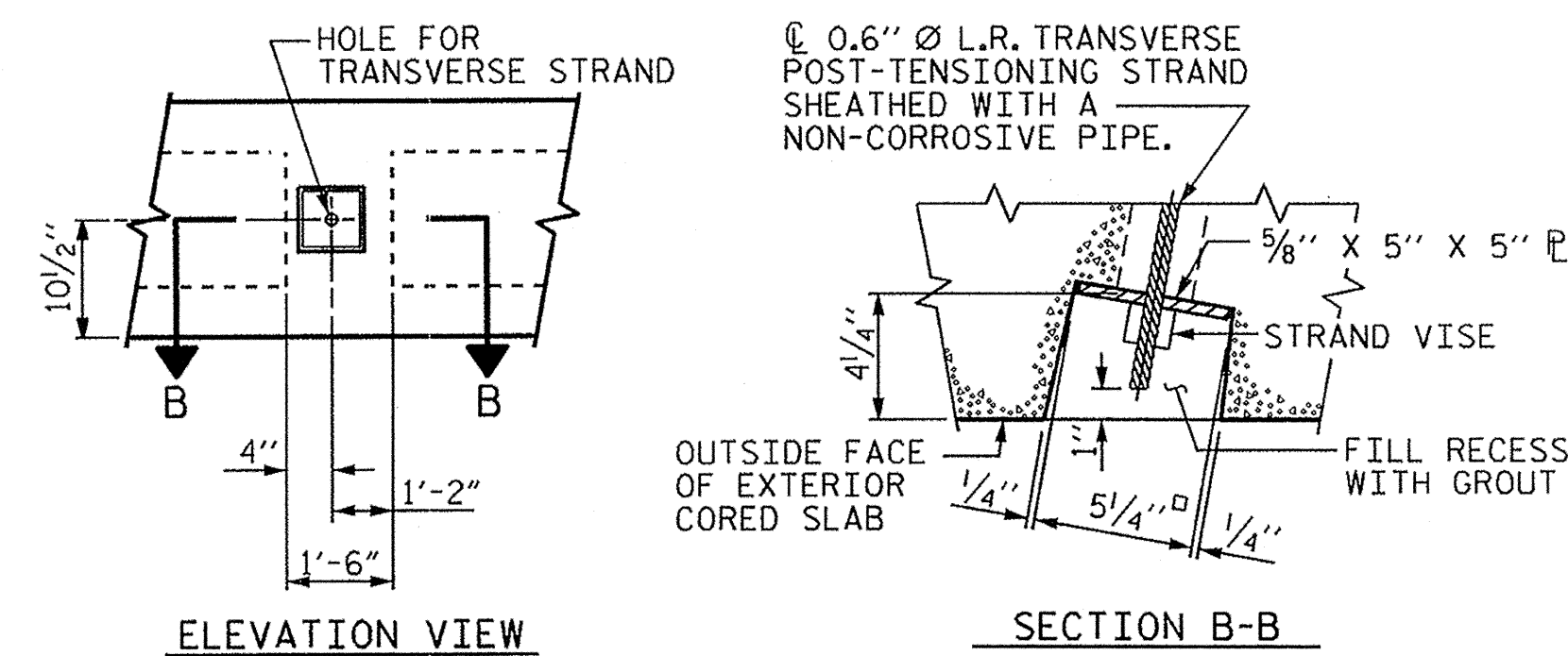
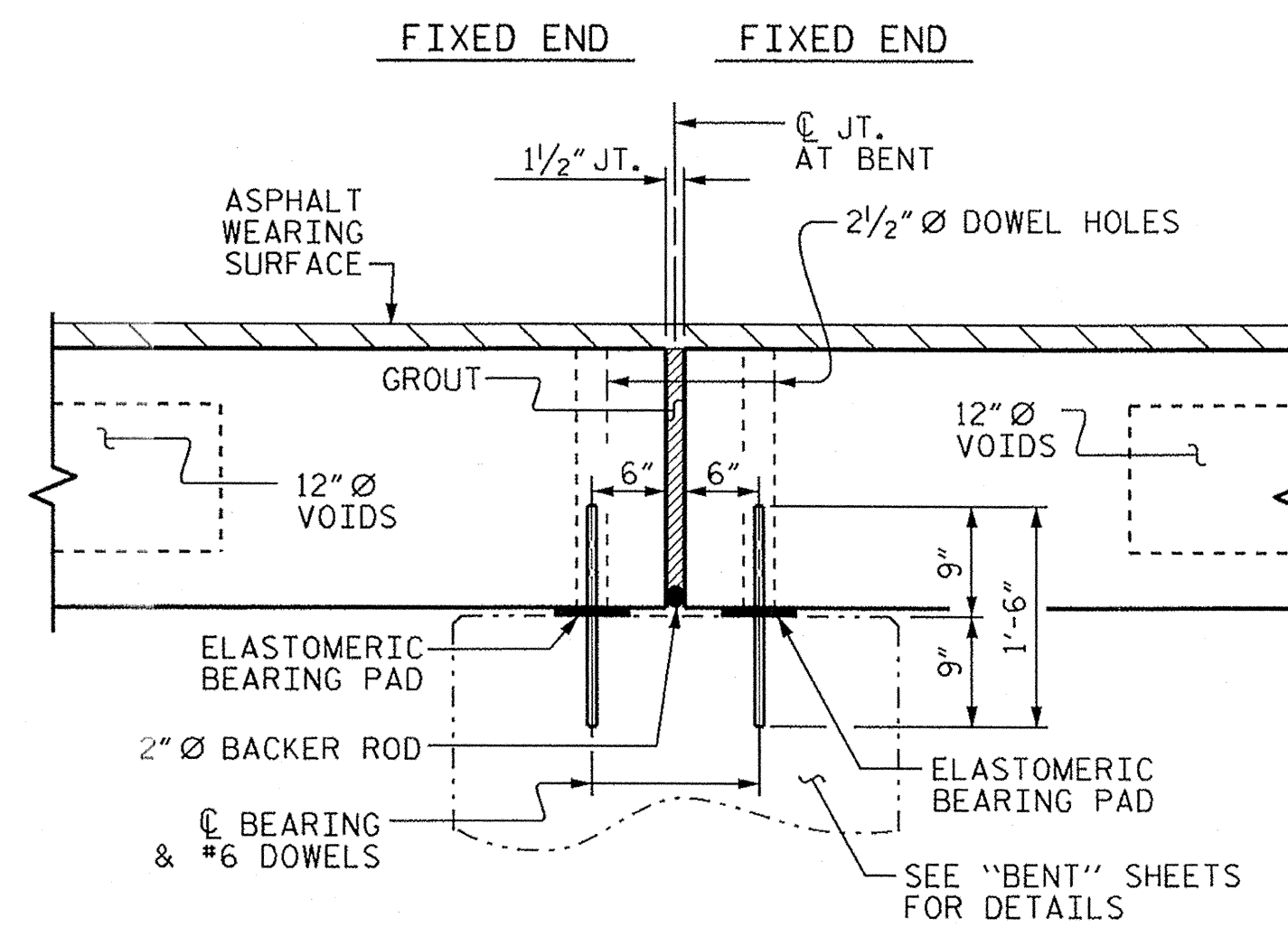
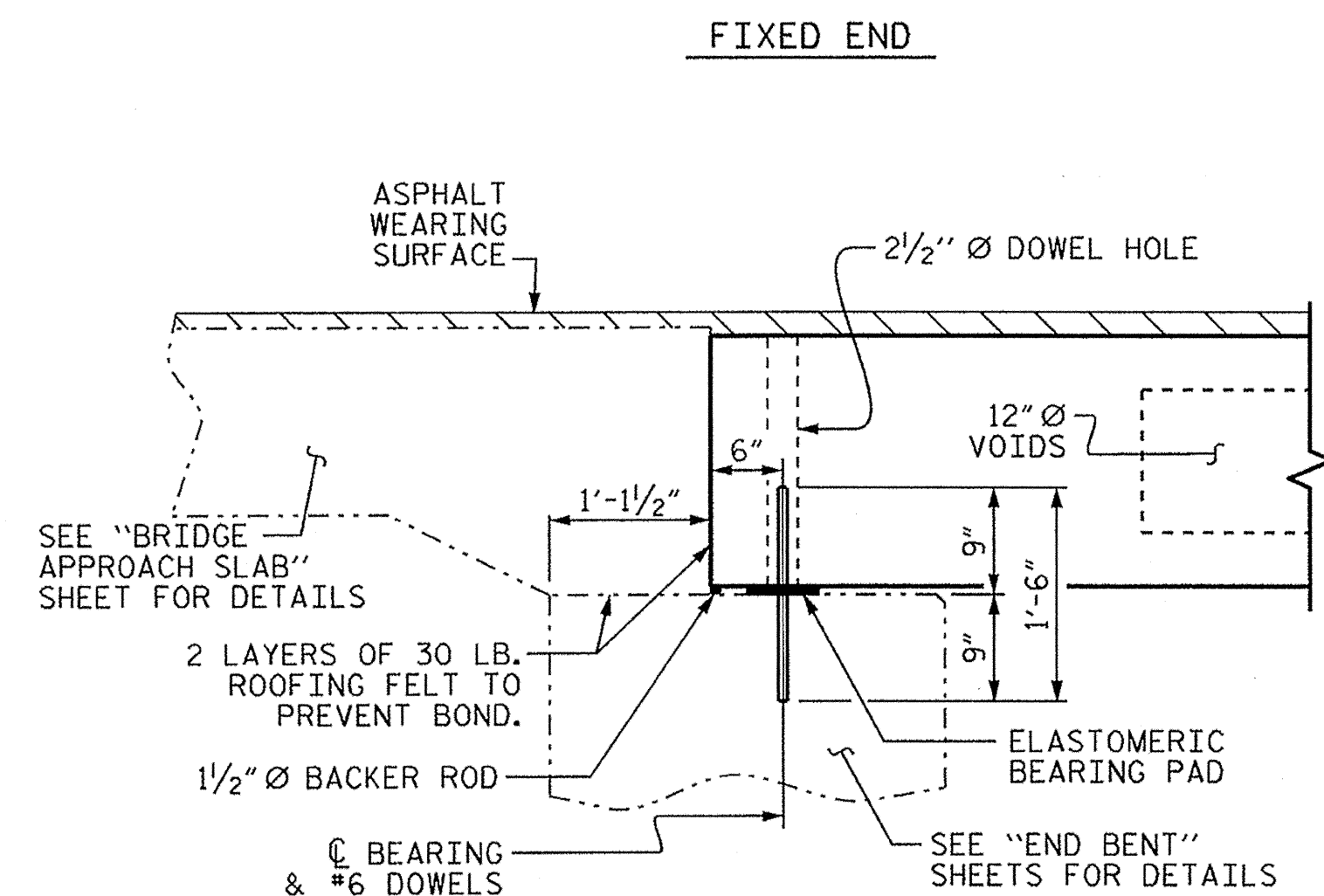
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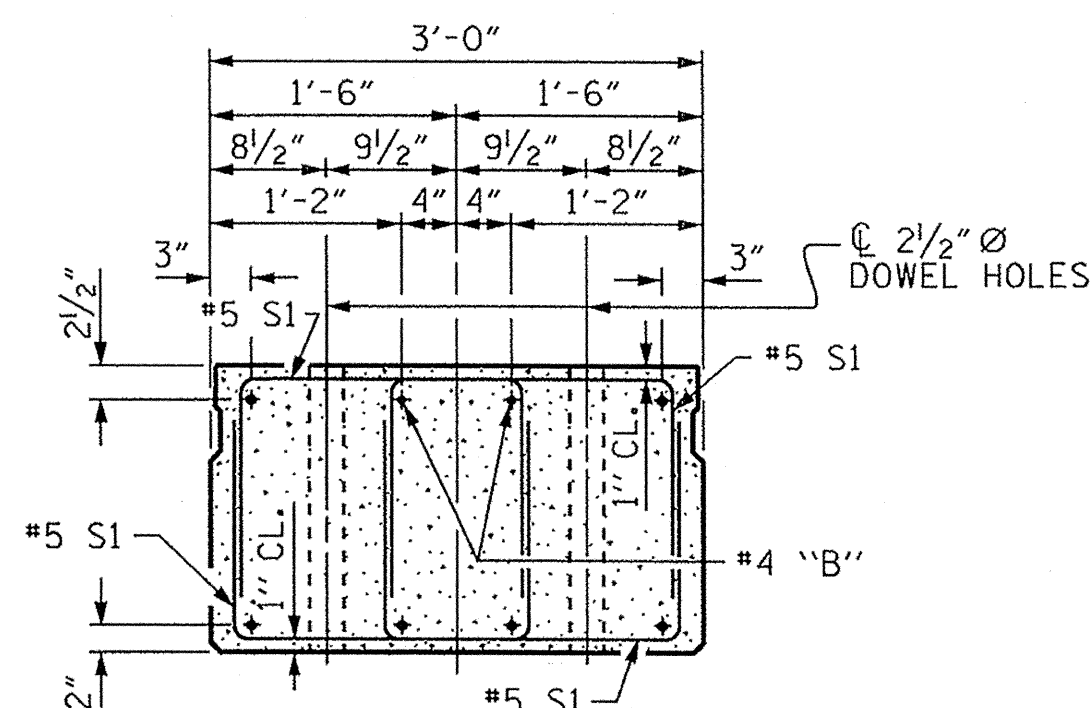


TYPICAL SECTION

* - THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.

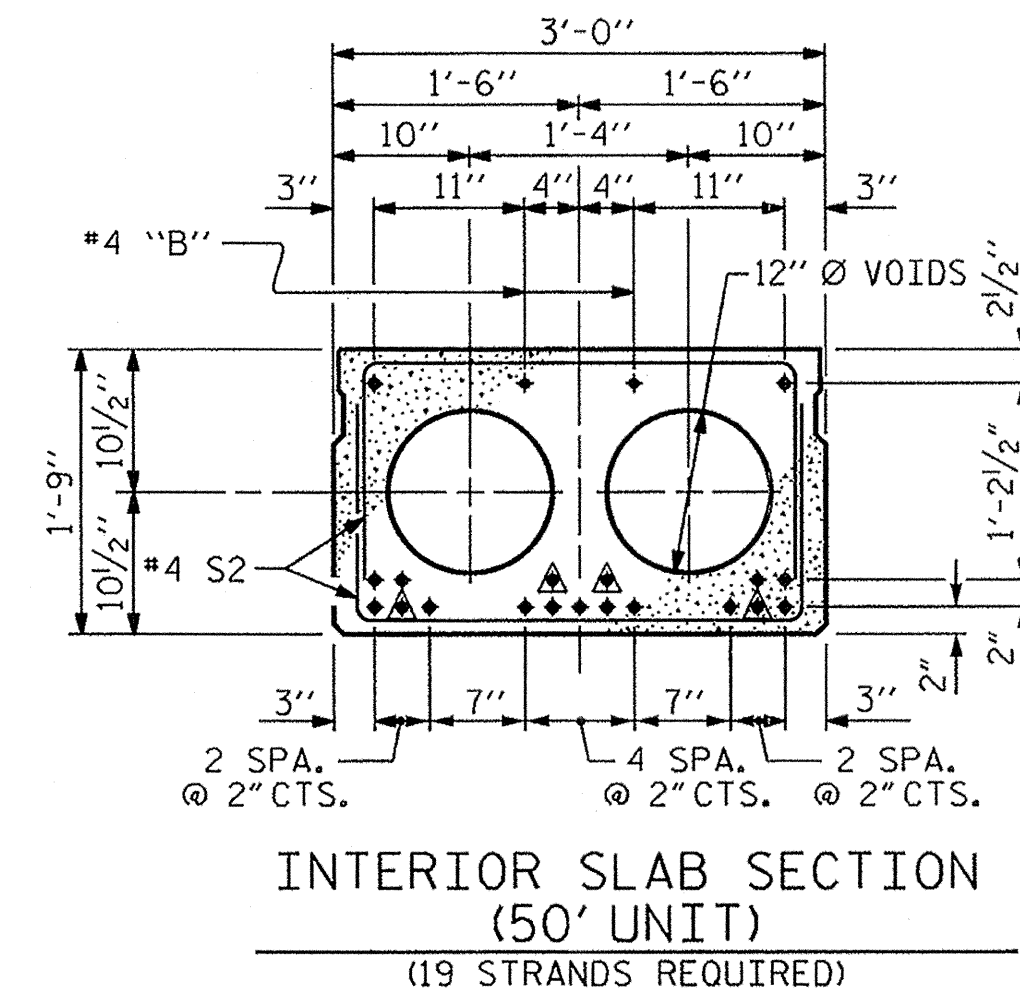


GROUTED RECESS AT END OF POST-TENSIONED STRAND OF CORED SLABS

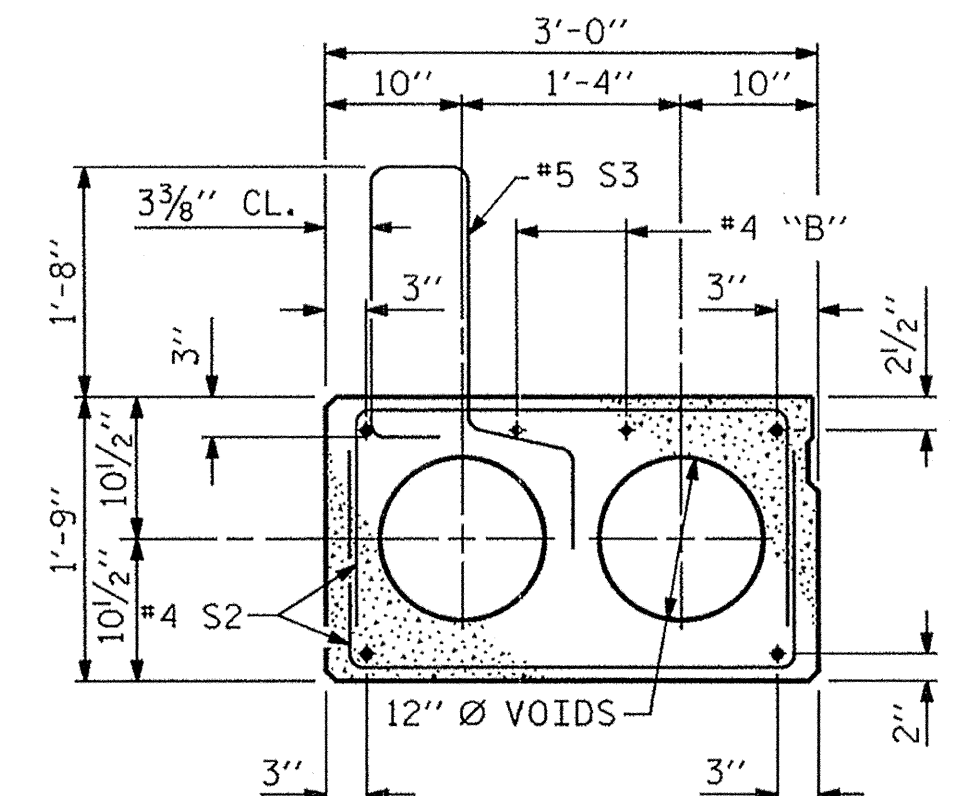


END ELEVATION

SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN). INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



0.6" Ø LOW RELAXATION STRAND LAYOUT

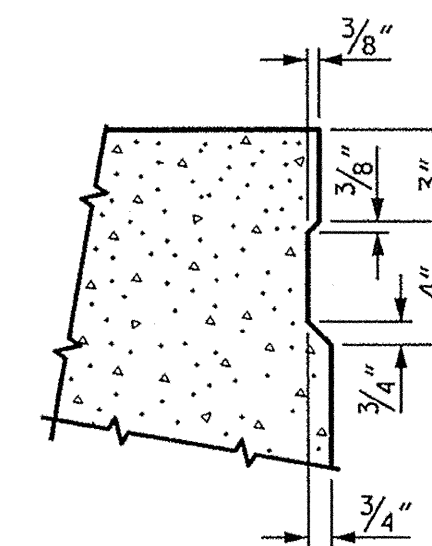


EXT. SLAB SECTION

(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)

▲ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND



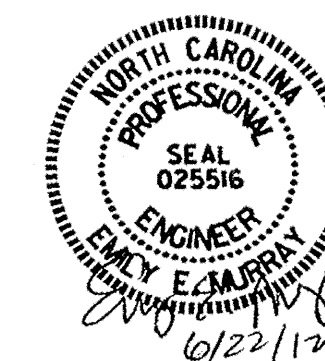
NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.

PROJECT NO. 17BP.3.R.7
DUPLIN COUNTY
STATION: 15+41.00 -L-

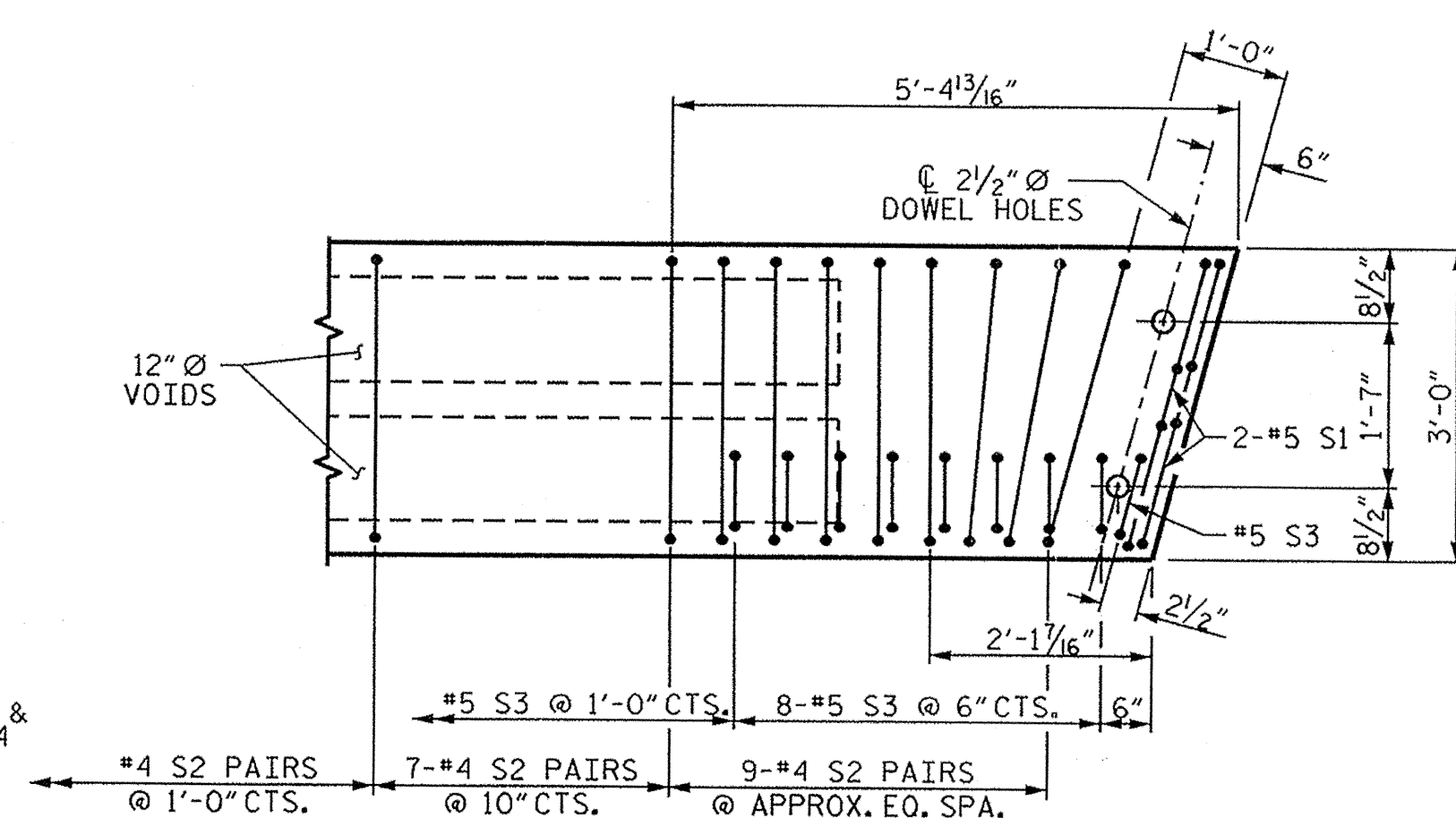
SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
105° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			54
2			4			15



ASSEMBLED BY: M.L. RORIE	DATE: 5-18-12
CHECKED BY: E.E. MURRAY	DATE: 6-21-12
DRAWN BY: DGE	5/09
CHECKED BY: BCH	6/09



NOTE: EXTERIOR UNIT SHOWN - INTERIOR
UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

DECK DRAINS ARE TO BE INSTALLED AT THE
FOLLOWING LOCATIONS:
LT: 15+00, 15+10, 15+80, 15+90
RT: 14+92, 15+02, 15+72, 15+82

PROJECT NO. 17BP.3.R.7
DUPLIN COUNTY
 STATION: 15+41.00 -L-

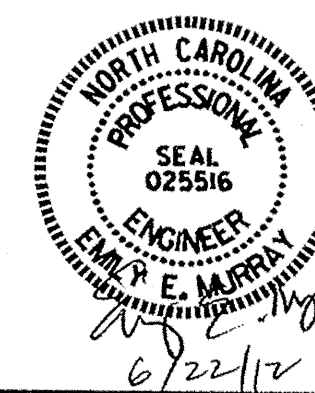
SHEET 2 OF 3

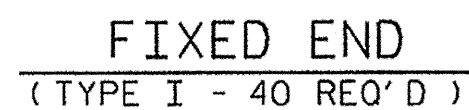
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 50' UNIT
27'-10" CLEAR ROADWAY
105° SKEW

REVISIONS						SHEET NO. 5-5
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 15
2			4			

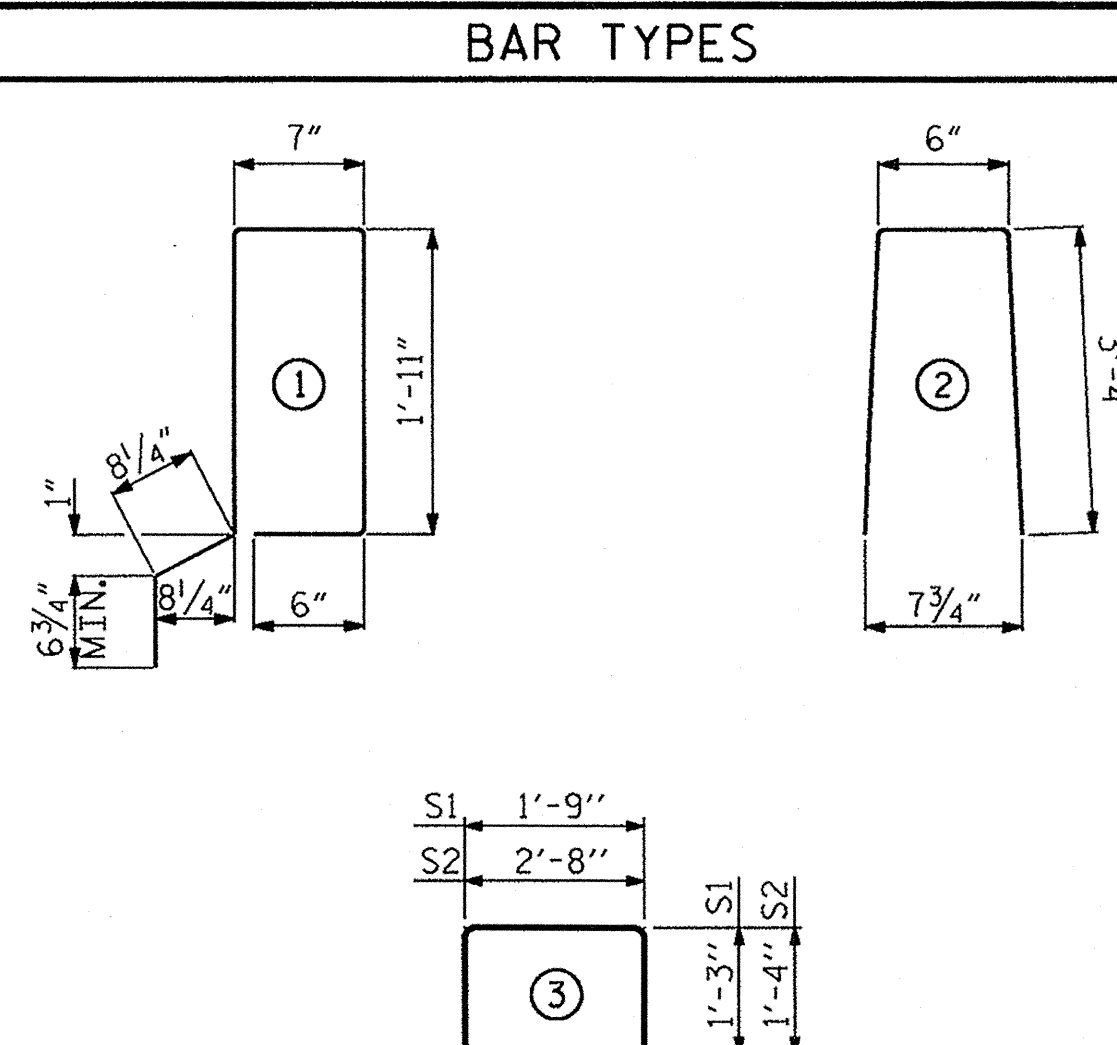
STD. NO. 21" PCS_30_105S_50L





ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
50' UNIT			
EXTERIOR C.S.	4	50'-0"	200'-0"
INTERIOR C.S.	16	50'-0"	800'-0"
TOTAL	20		1000'-0"



ALL BAR DIMENSIONS ARE OUT TO OUT

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE
FILLED WITH NON-SHRINK GROUT.

THE BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. AT LEAST SIX WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

ALL REINFORCING STEEL IN THE VERTICAL CONCRETE BARRIER RAIL
SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

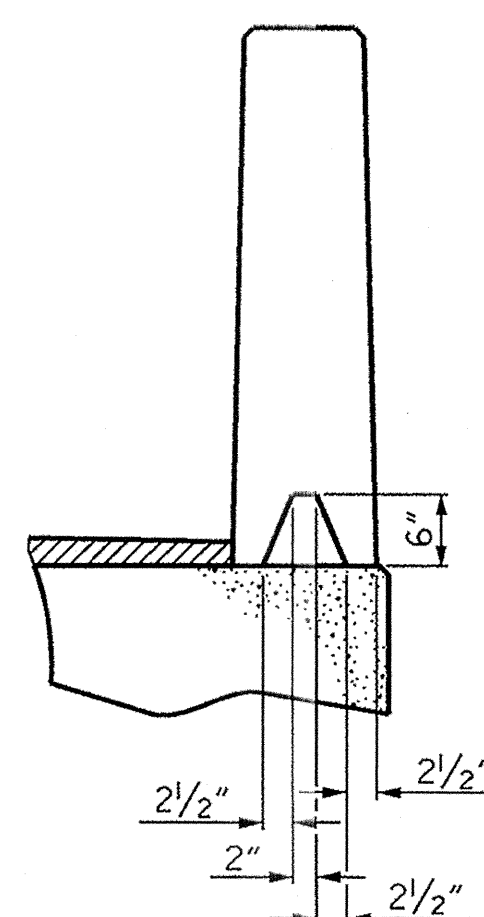
APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL IN ACCORDANCE WITH ARTICLE 802 OF THE STANDARD SPECIFICATIONS. CONTRACTION JOINTS SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

TRANSVERSE POST TENSIONING OF THE CORED SLAB UNITS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

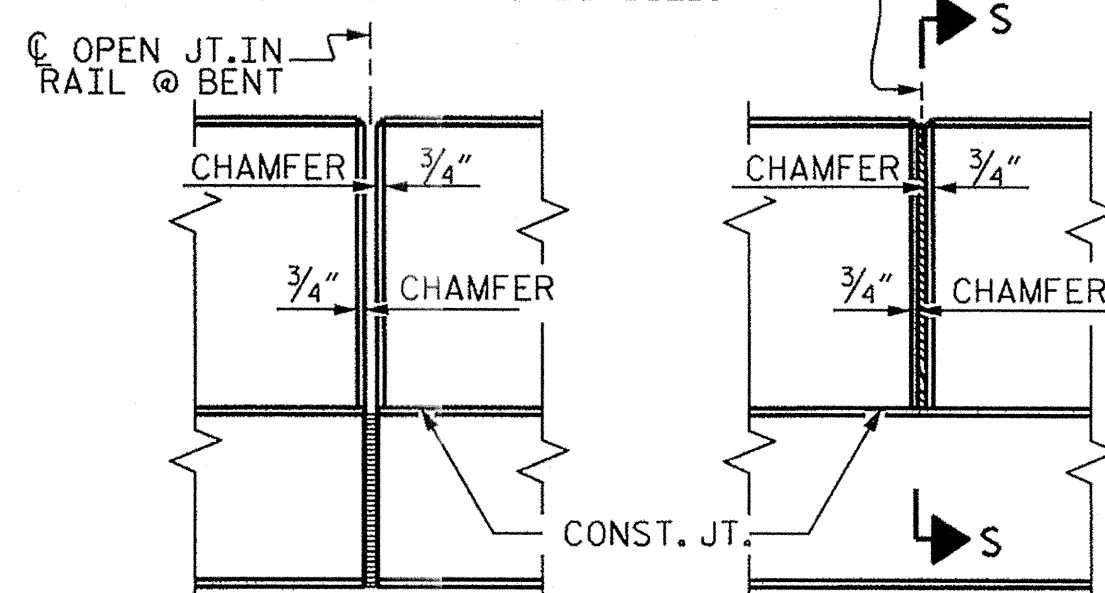
THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.



AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)

④ 1/2" EXP. JT. MAT'L HELD IN
PLACE WITH GALVANIZED NAILS.
(NOTE: OMIT EXP. JT. MAT'L
WHEN SLIP FORM IS USED.)



VERTICAL CONCRETE BARRIER RAIL SECTION

R VERTICAL CONCRETE BARRIER RAIL					
FOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	160	#5	STR	14'-2"	2364
	236	#5	2	7'-2"	1764
L			LBS.	4128	
			CU.YDS.	26.2	
RATI			N. FT.	200.50	

DEAD LOAD DEFLECTION AND CAMBER	
50' CORED SLAB UNIT	3'-0" x 1'-9" 0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	2 1/2" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/4" ↓
FINAL CAMBER	2 1/4" ↑

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466
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BILL OF MATERIAL FOR ONE 50' CORED SLAB UNIT							
				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B6	4	#4	STR	25'-9"	69	25'-9"	69
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	118	#4	3	5'-4"	420	5'-4"	420
* S3	59	#5	1	6'-2"	379		
REINFORCING STEEL				LBS.	524		524
* EPOXY COATED							
REINFORCING STEEL				LBS.	379		
6500 P.S.I. CONCRETE				CU. YDS.	7.3		7.3
0.6" Ø L.R. STRANDS				No.	19		19

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
27'-10" CLEAR ROADWAY	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
	NORMAL CROWN SECTION	
50' UNITS	1½"	3'-7¾"

CONCRETE RELEASE STRENGTH	
UNIT	PSI
50' UNITS	4900

PROJECT NO. 17BP.3.R.7
DUPLIN COUNTY
 STATION: 15+41.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

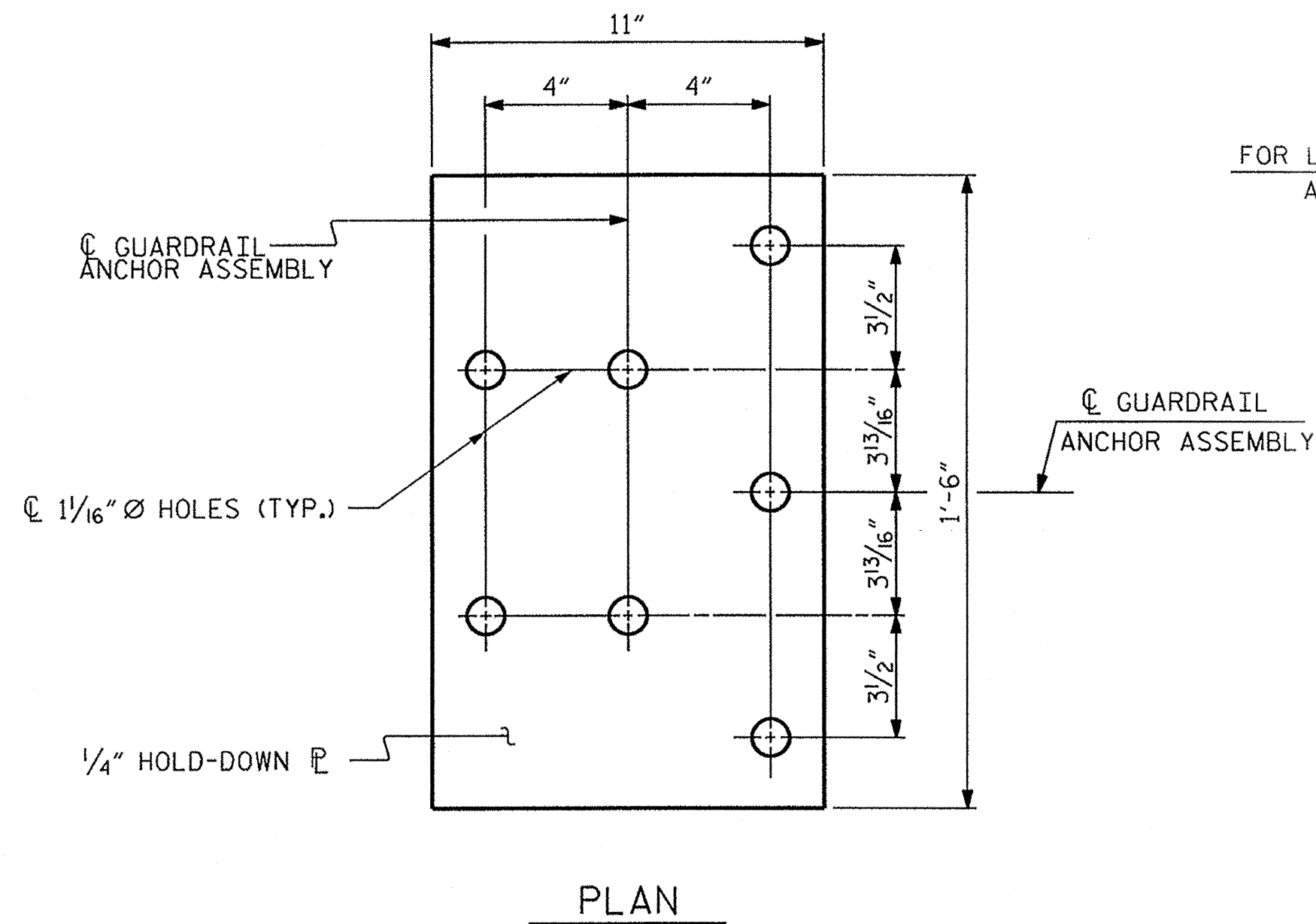
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
105° SKEW

REVISIONS						SHEET NO. 5-6 TOTAL SHEETS 15
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

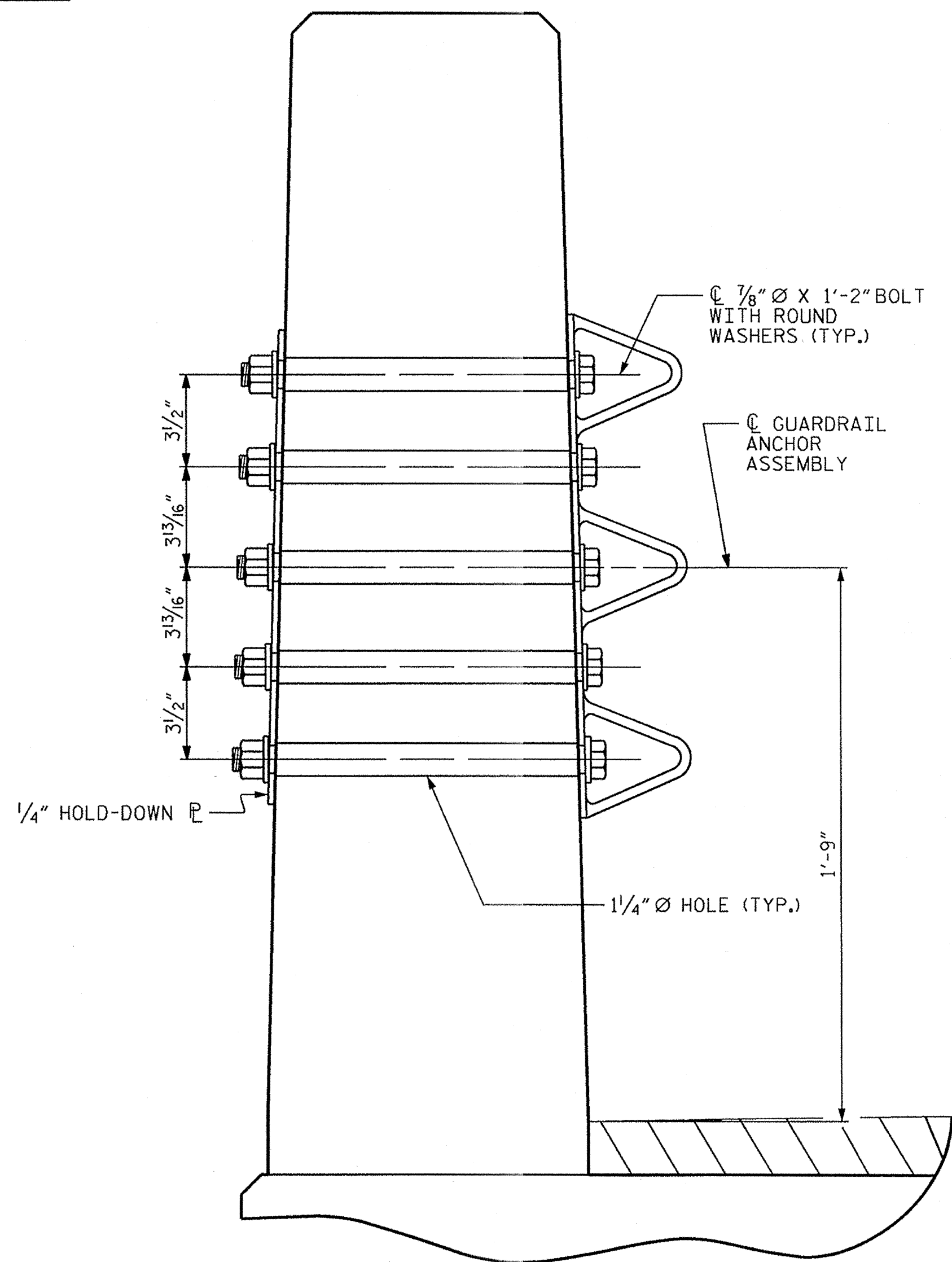
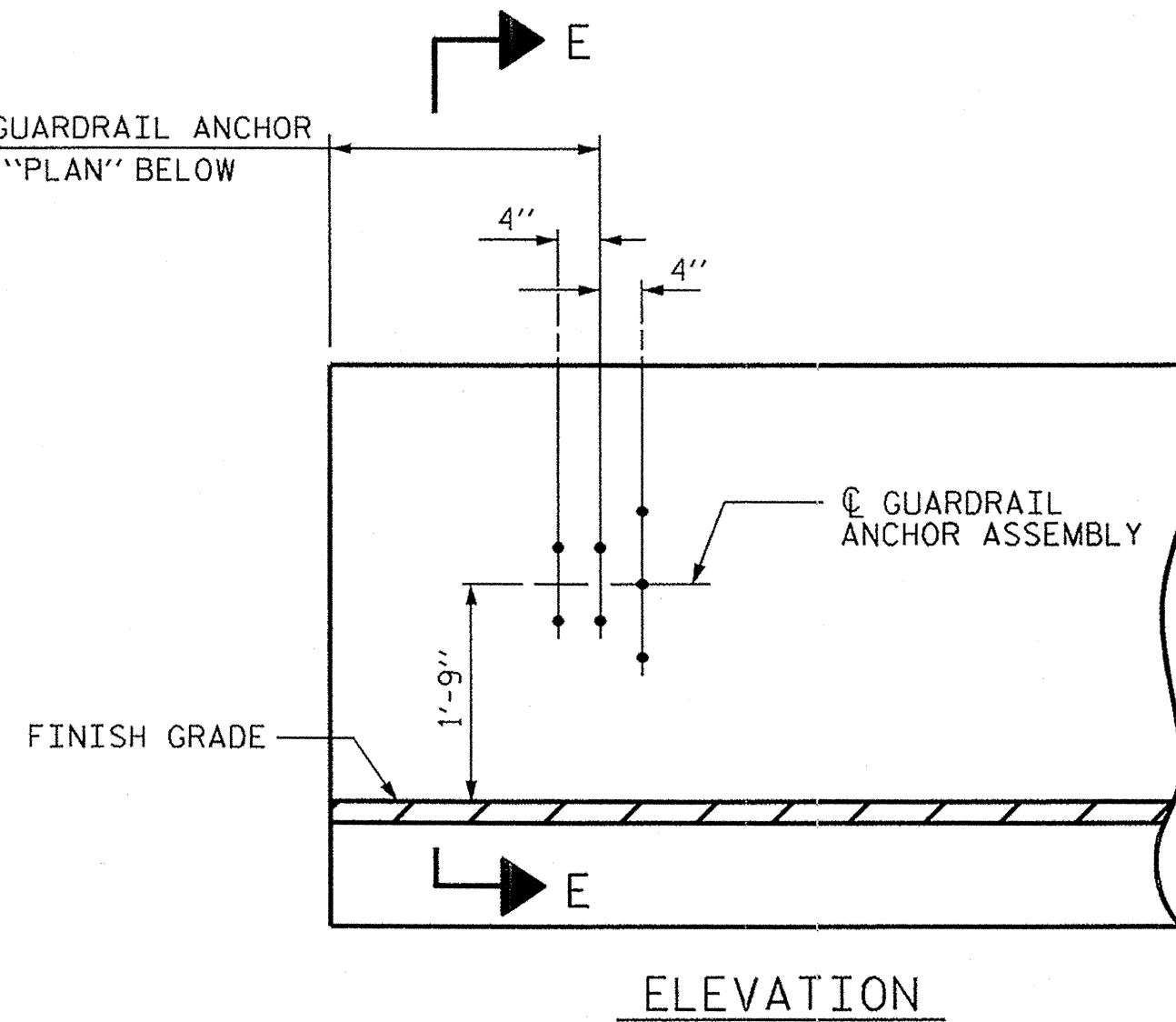
STD. NO. 21" PCS3_30_105S

ASSEMBLED BY : M.L. RORIE	DATE : 5-18-12
CHECKED BY : E.E. MURRAY	DATE : 6-21-12
DRAWN BY : DGE 5/09	REV. 12/11 MAA/AAC
CHECKED BY : BCH 6/09	

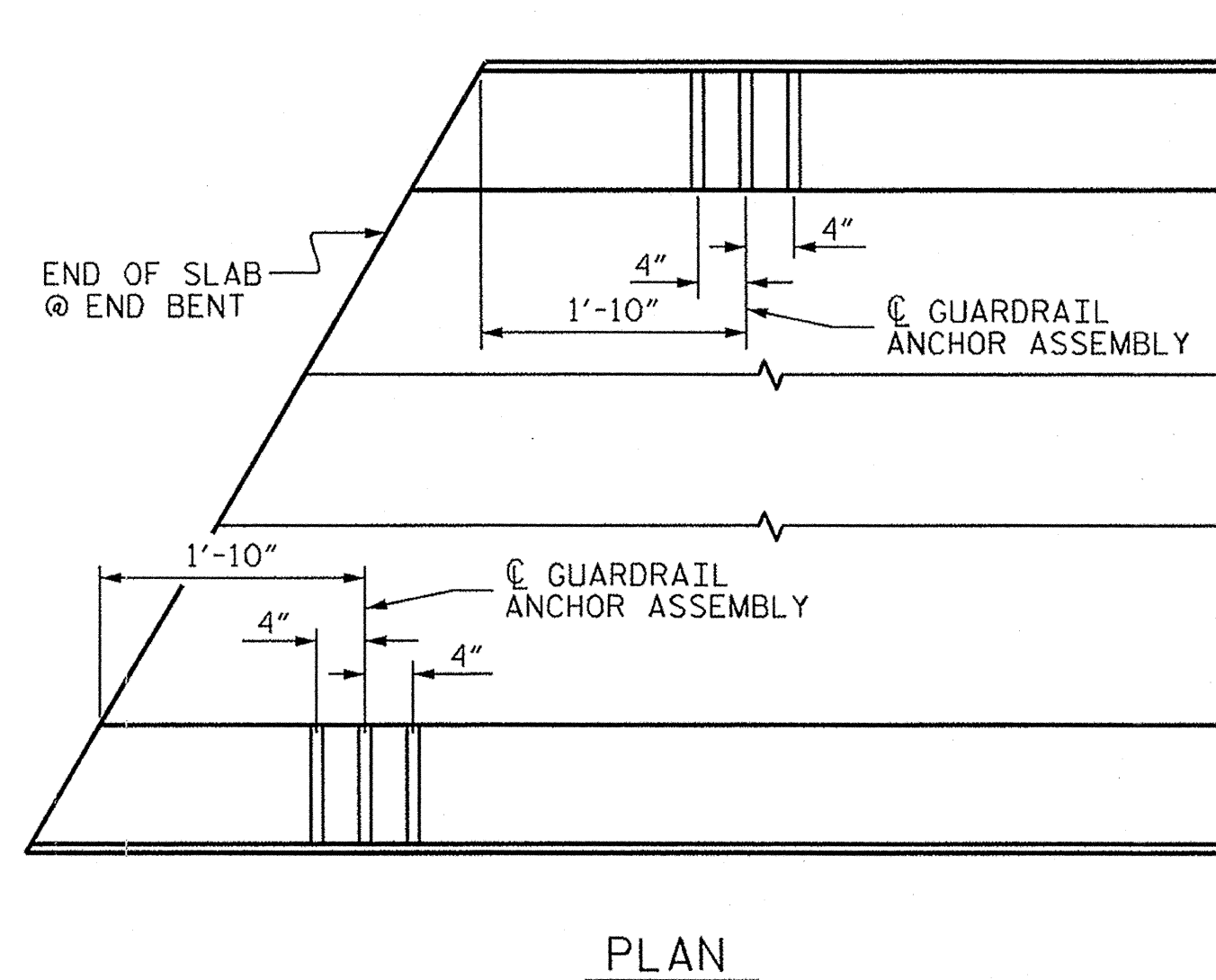
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mrorie



FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW



GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR.

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 7/8" Ø BOLTS WITH NUTS AND WASHERS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.

THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. 17BP.3.R.7
DUPLIN COUNTY
STATION: 15+41.00 -L-

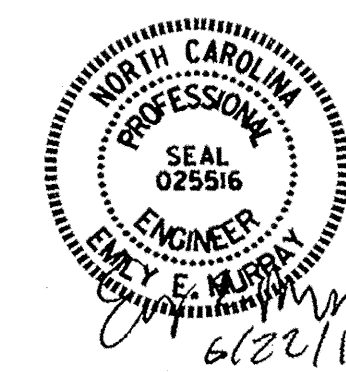
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
GUARDRAIL ANCHORAGE
FOR VERTICAL CONCRETE
BARRIER RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-7
2			4			TOTAL SHEETS 15

(SHT 2) STD. NO. GRA3

ASSEMBLED BY :	M.L. RORIE	DATE :	5-18-12
CHECKED BY :	E.E. MURRAY	DATE :	6-21-12
DRAWN BY :	MAA 5/10	ADDED 5/6/10	
CHECKED BY :	GM 5/10	REV. 10/1/11	MAA/GM
		REV. 12/5/11	MAA/GM

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mrorie



STIRRUPS IN CAP MAY BE SHIFTED AS
NECESSARY TO CLEAR DOWELS.

THE LATERAL GUIDES ARE NOT TO BE
POURED UNTIL AFTER THE CORED SLAB
UNITS ARE IN PLACE.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.

INSTALL THE 4"DIA. DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

ASSEMBLED BY : M.L. RORIE	DATE : 5-18-12
CHECKED BY : E.E. MURRAY	DATE : 6-21-12
DRAWN BY : DGE 02/10 CHECKED BY : MKT 02/10	

21-JUN-2012 16:32
S:\DPG\Emily\BDPProjects\17BP3R7\mrorie\17BP3R7_SD_CS.dgn
mrorie



PROJECT NO. 17BP.3.R.7
DUPLIN COUNTY
 STATION: 15+41.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 1

REVISIONS						SHEET NO. 5-8
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 15
2			4			

STD. NO. EB_30_105S

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

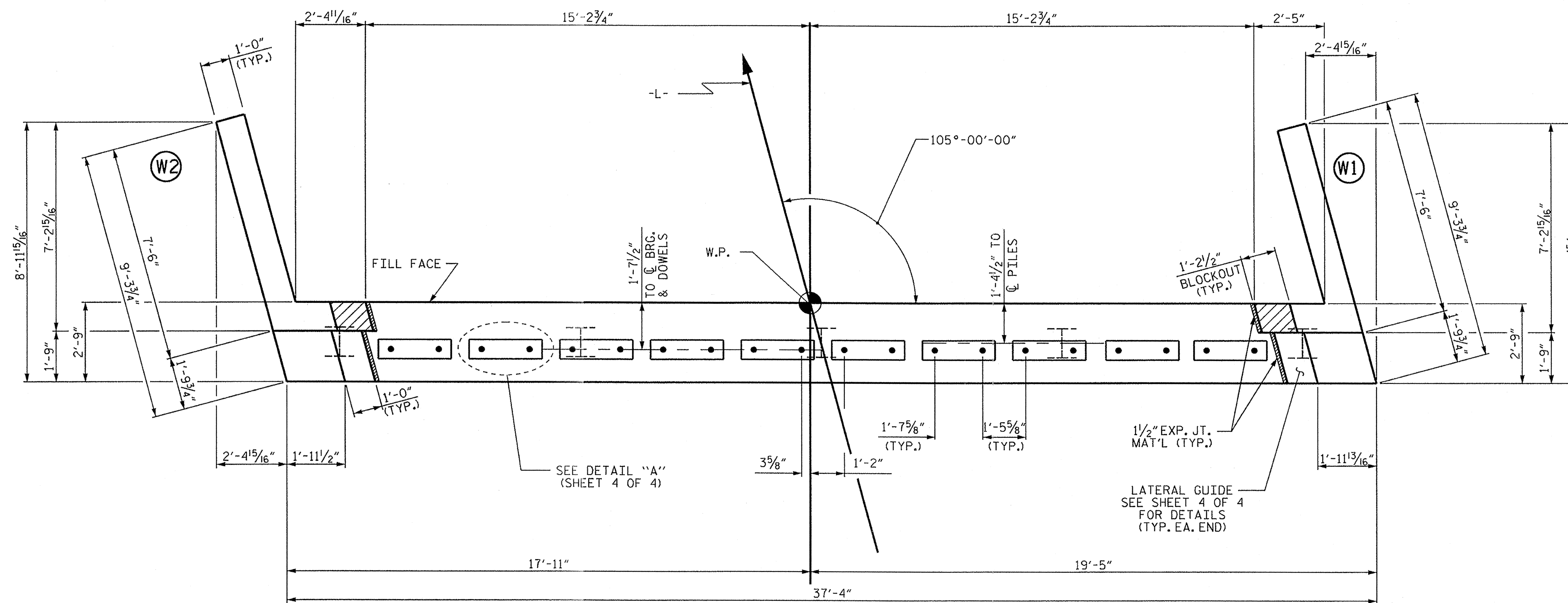
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

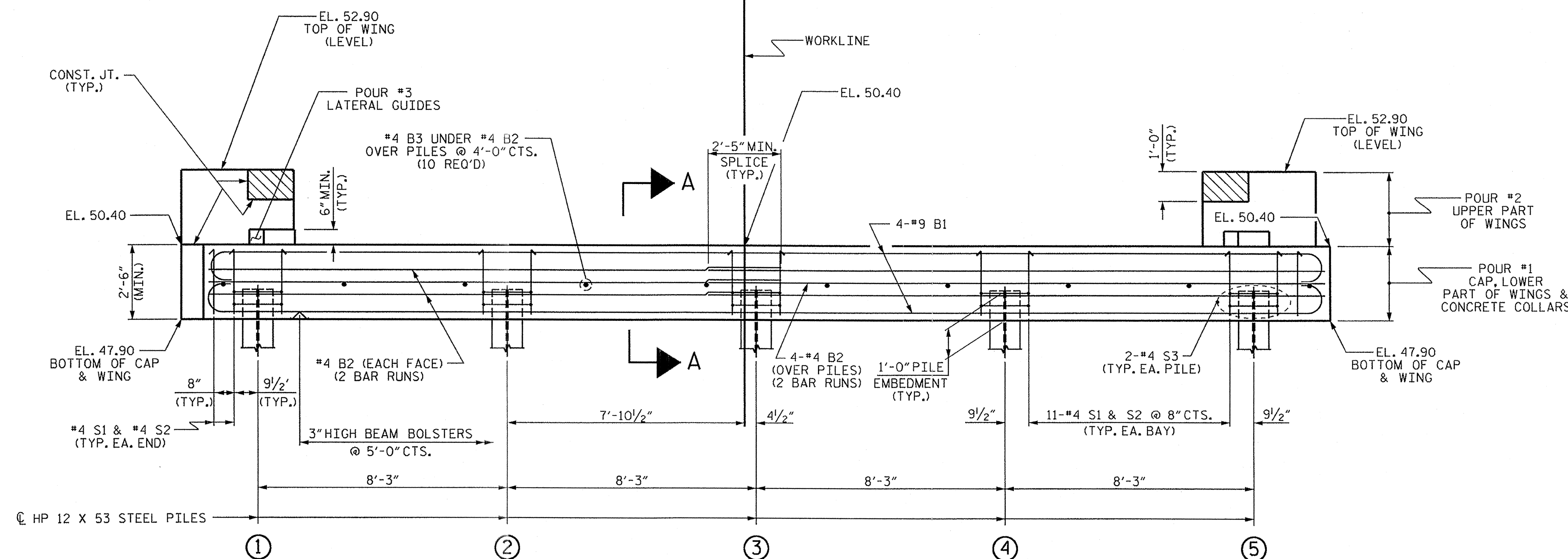
FOR WING DETAILS, SEE SHEET 3 OF 4.

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.

INSTALL THE 4" DIA. DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS. SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



PLAN

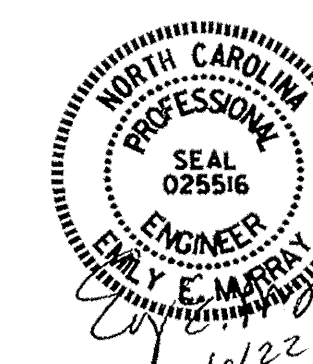


ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

ASSEMBLED BY : M.L. RORIE DATE : 5-18-12
CHECKED BY : E.E. MURRAY DATE : 6-21-12
DRAWN BY : DGE 02/10
CHECKED BY : MKT 02/10

21-JUN-2012 16:33
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mrorie



PROJECT NO. 17BP.3.R.7
DUPLIN COUNTY
STATION: 15+41.00 -L-

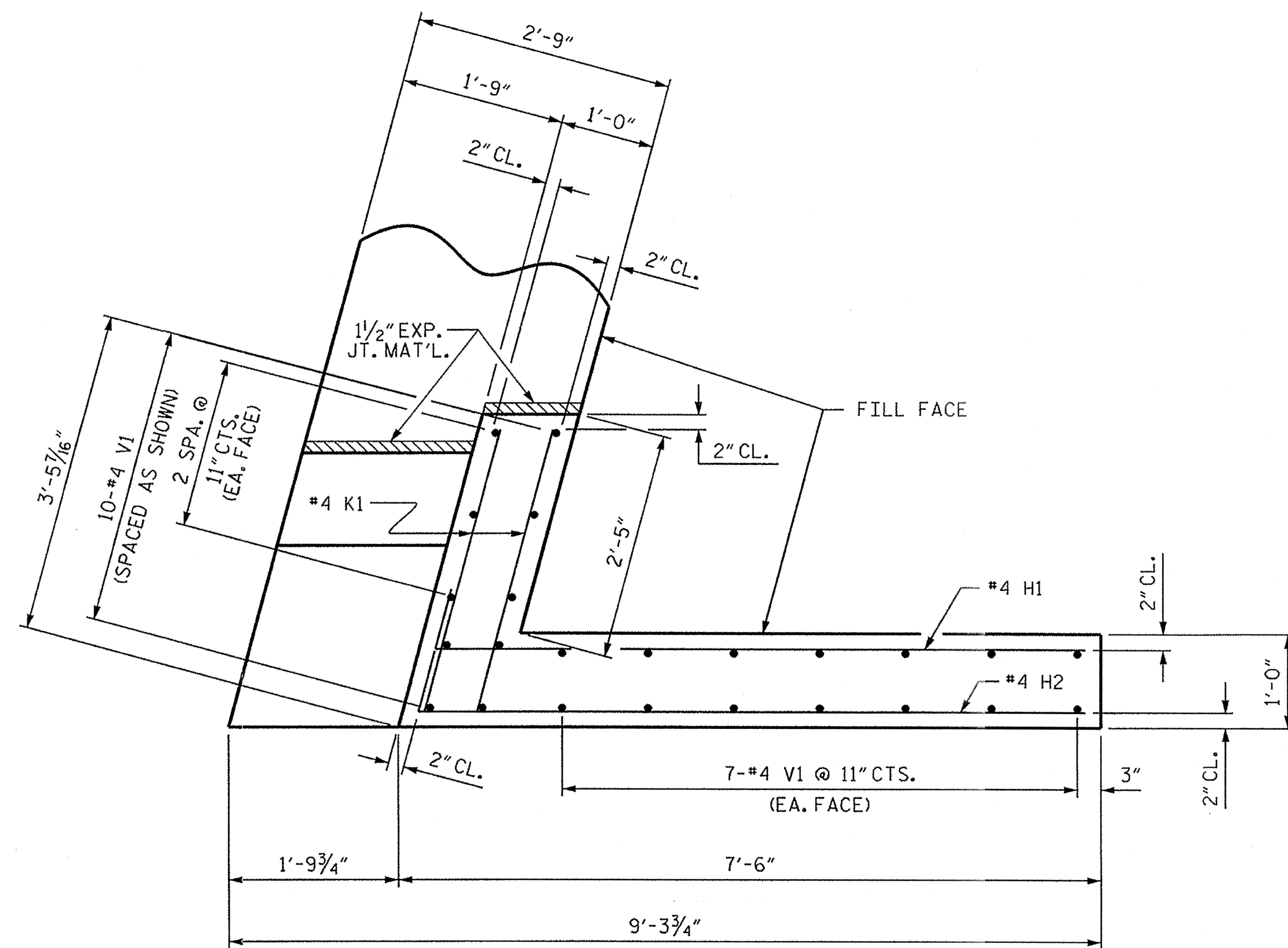
SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

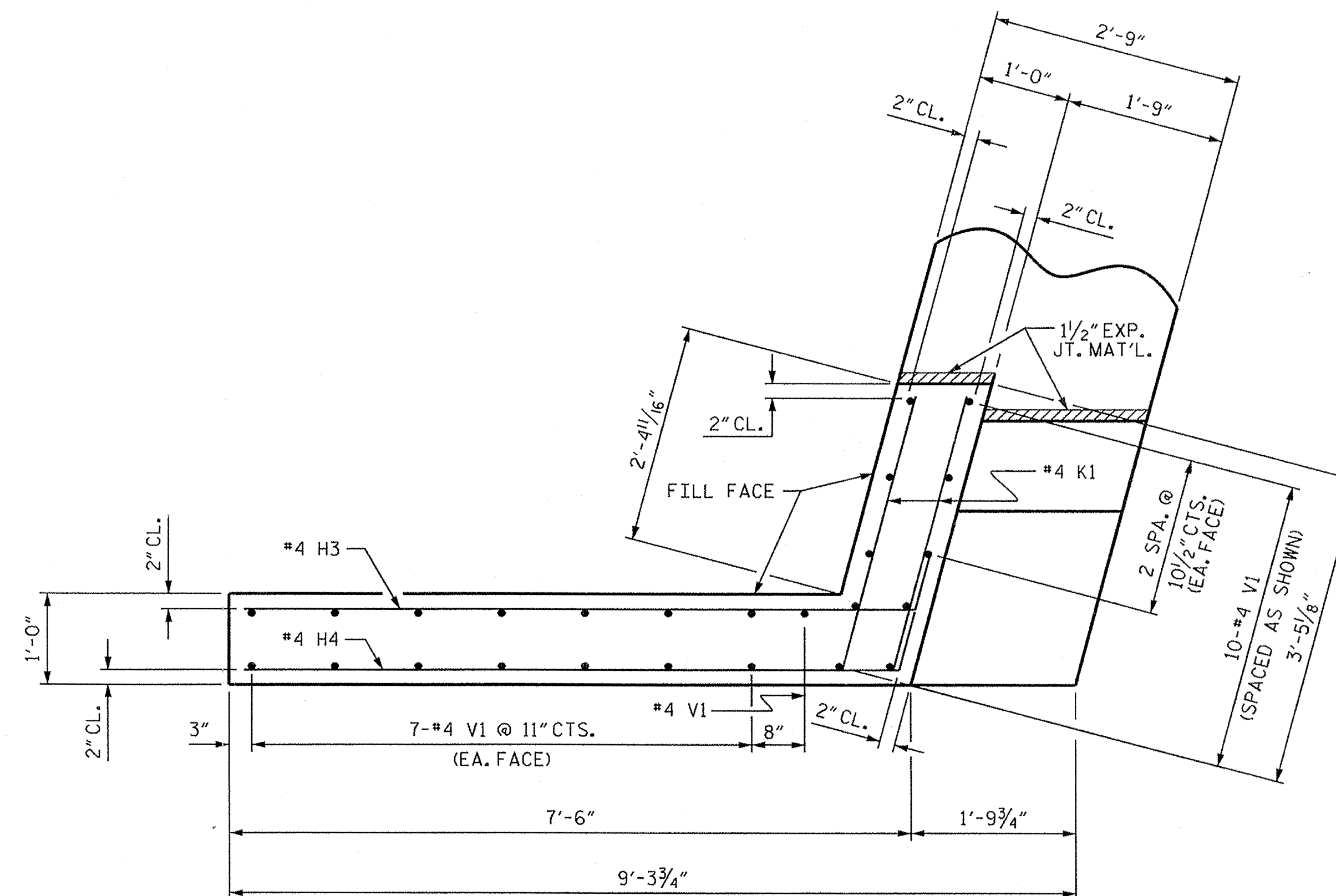
SUBSTRUCTURE
END BENT No. 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-9
2			4			TOTAL SHEETS 15

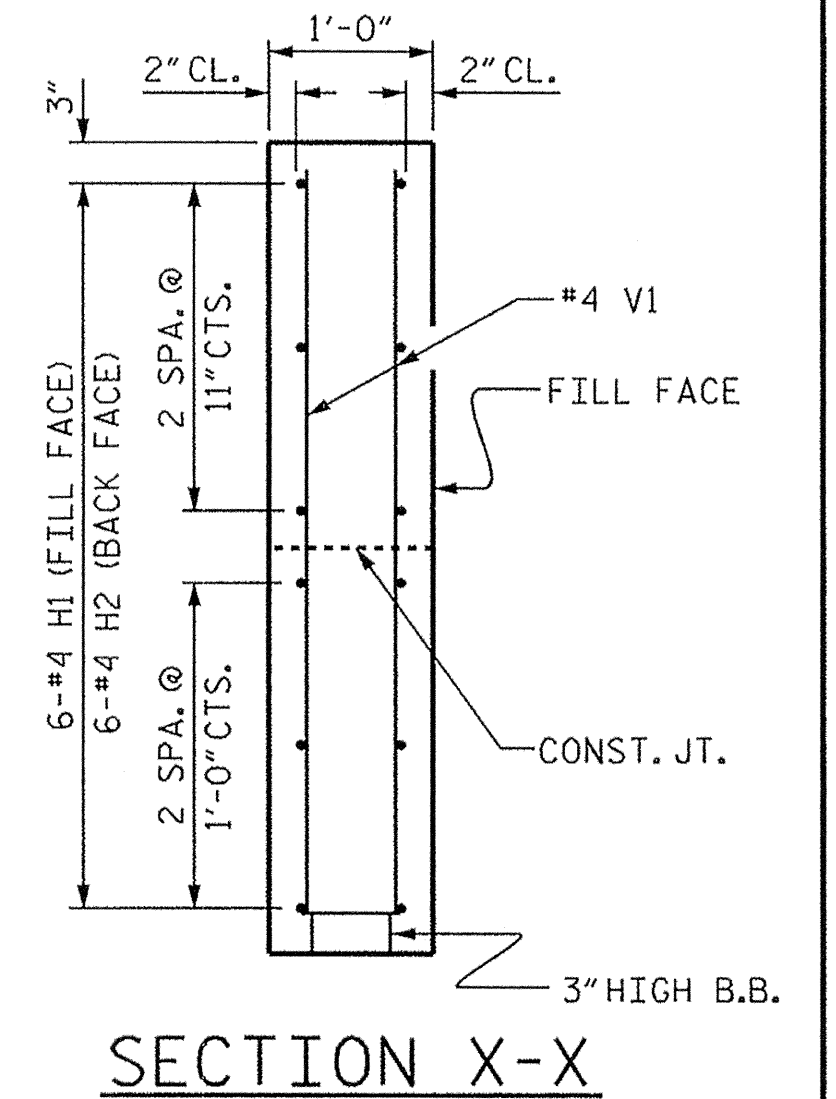
STD. NO. EB_30_105S



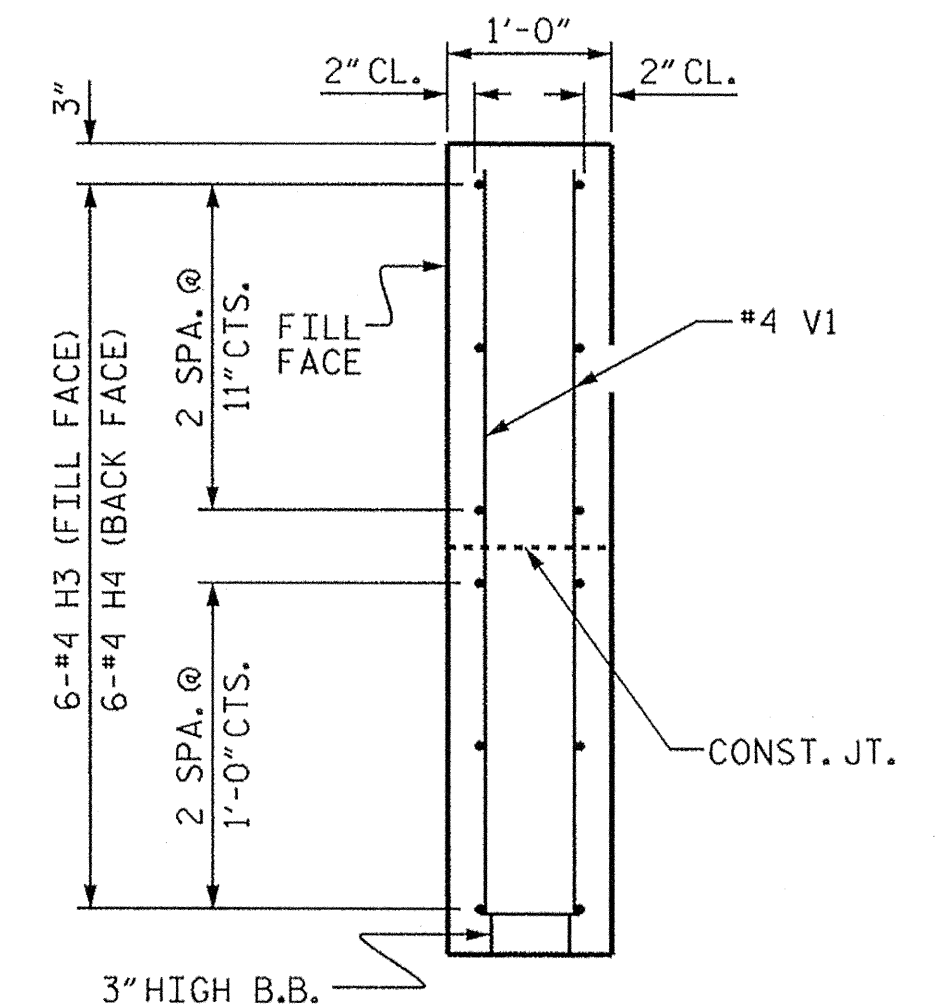
PLAN OF WING (W1)



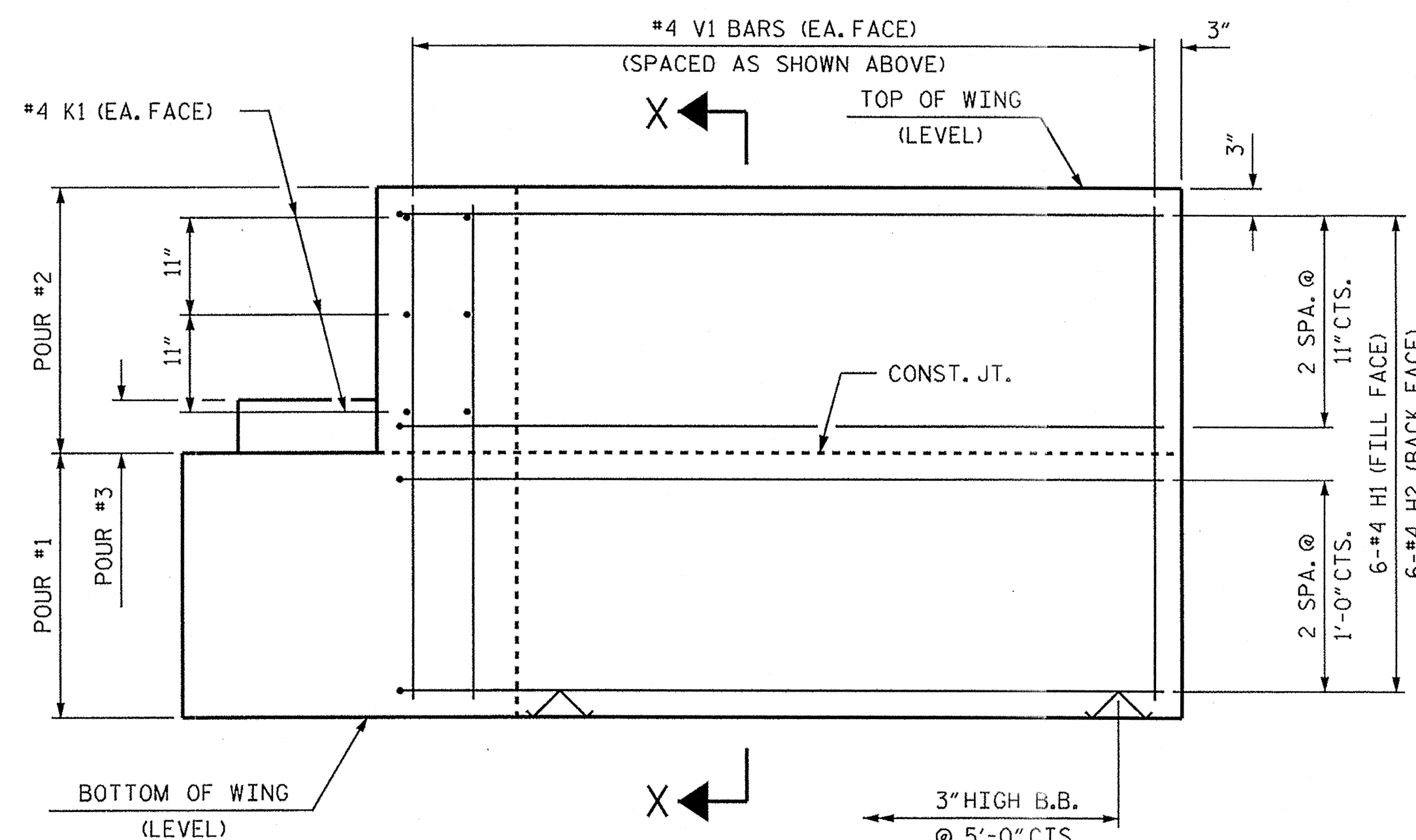
PLAN OF WING (W2)



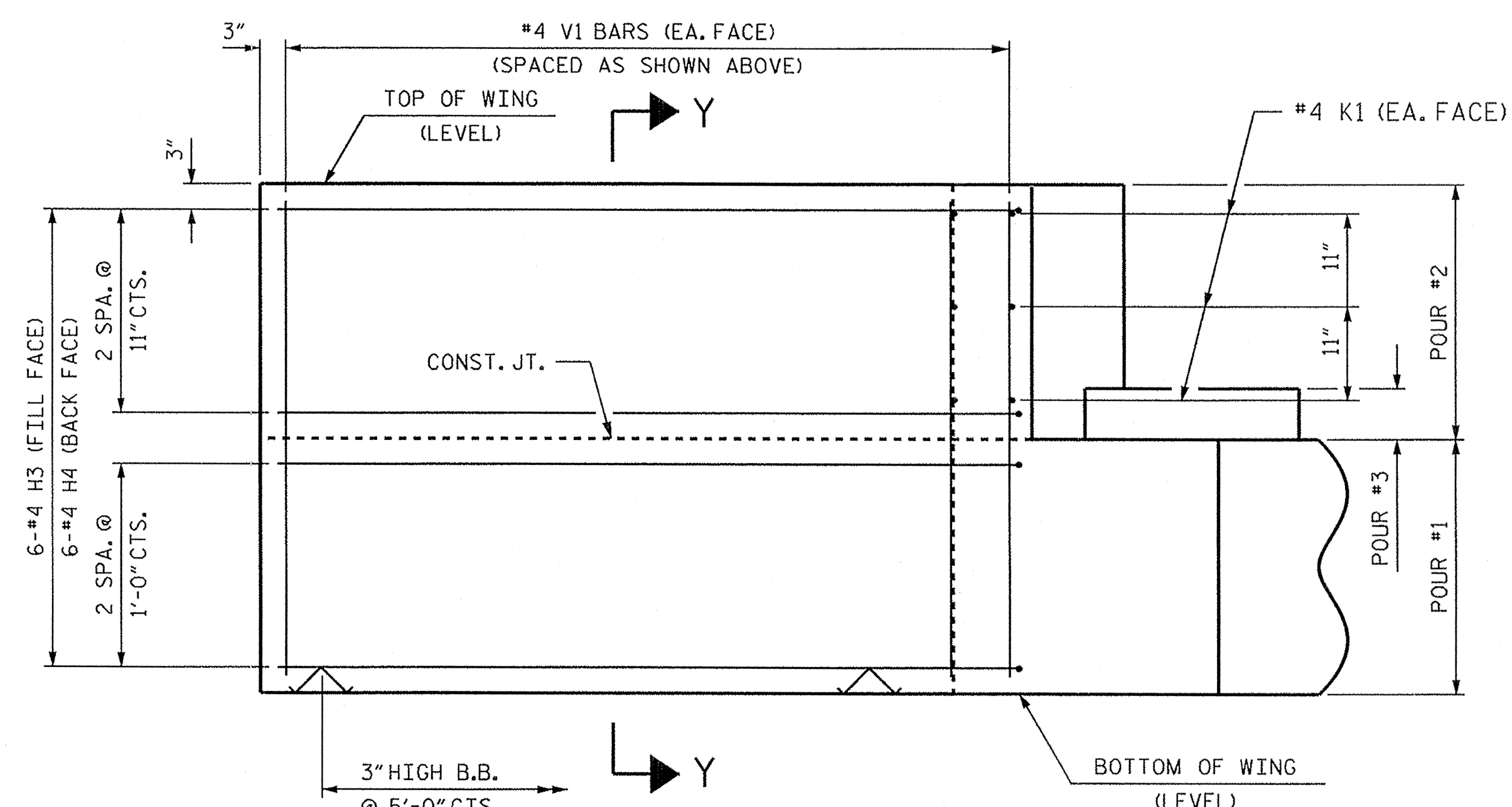
SECTION X-X



SECTION Y-Y



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)

WING DETAILS

ASSEMBLED BY : M.L. RORIE DATE : 5-18-12
 CHECKED BY : E.E. MURRAY DATE : 6-21-12
 DRAWN BY : DGE 03/10
 CHECKED BY : MKT 03/10

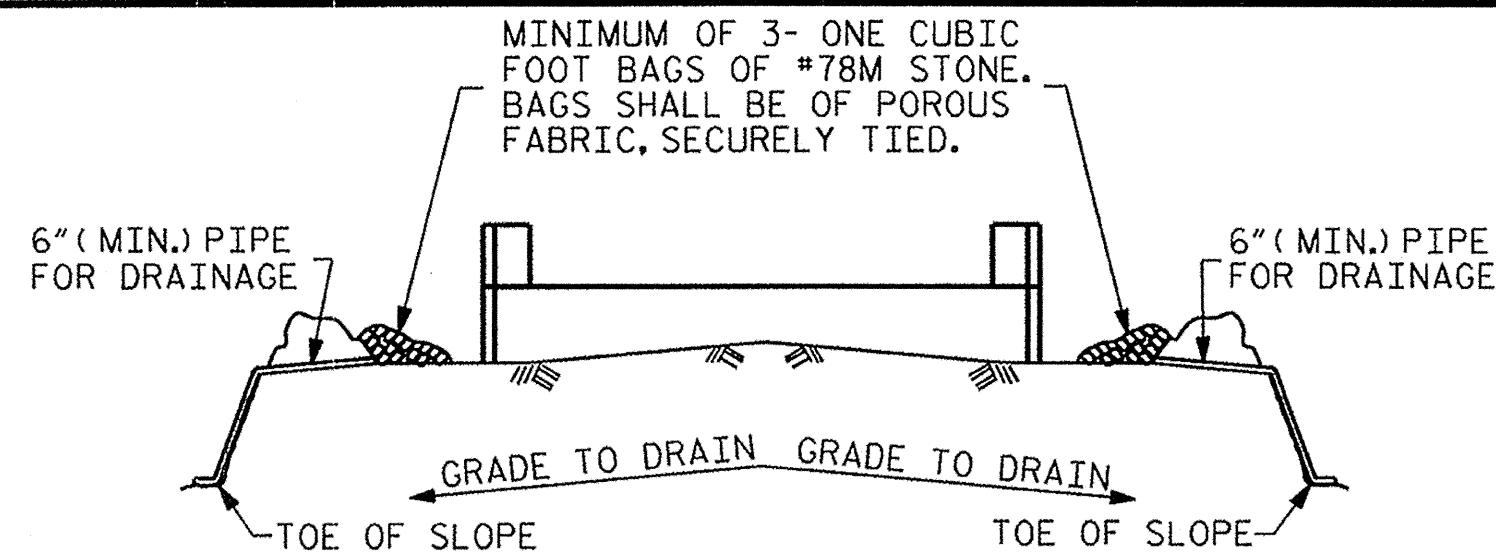
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PROJECT NO. 17BP.3.R.7
 DUPLIN COUNTY
 STATION: 15+41.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT WING DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					5-10
					15

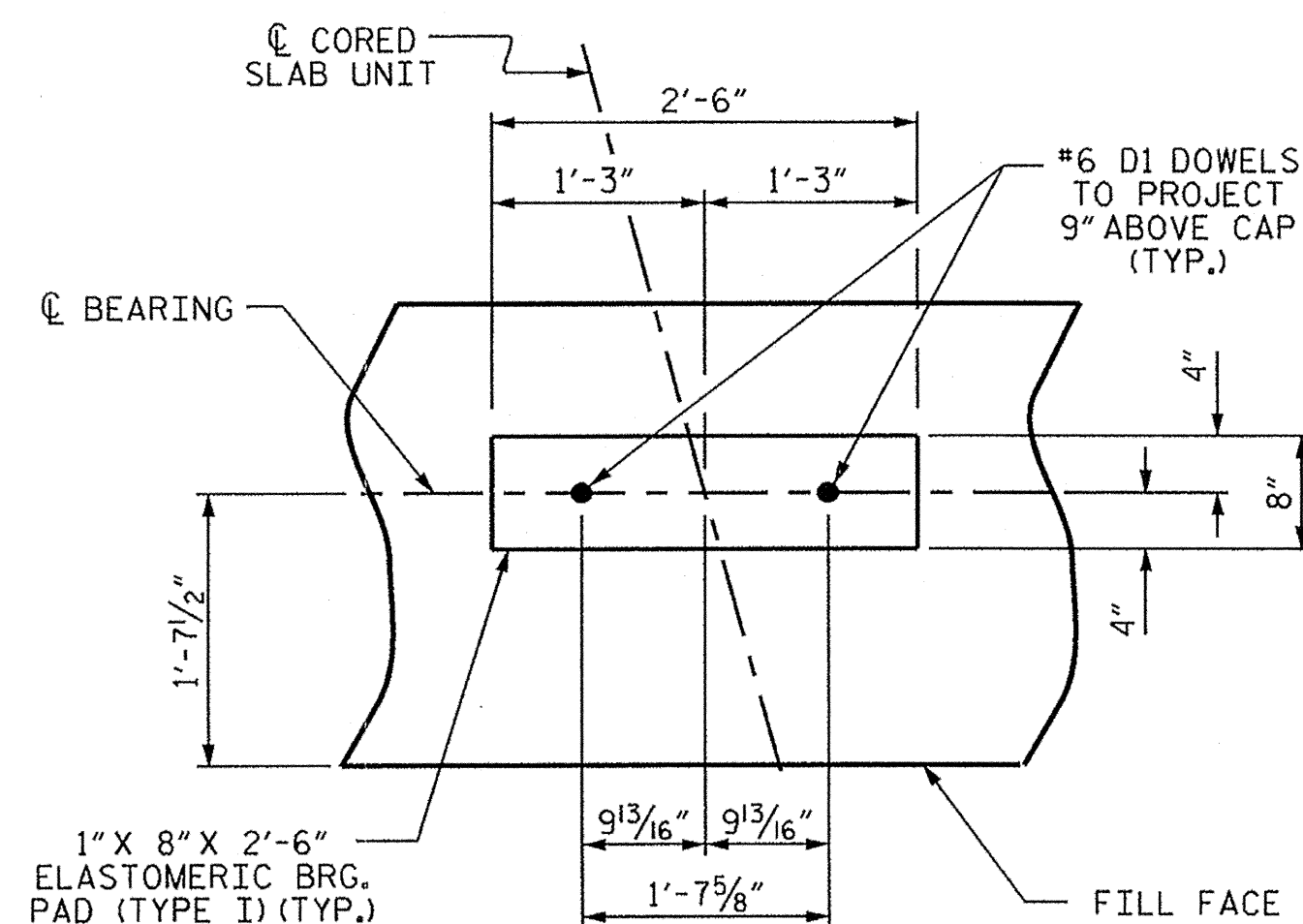


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

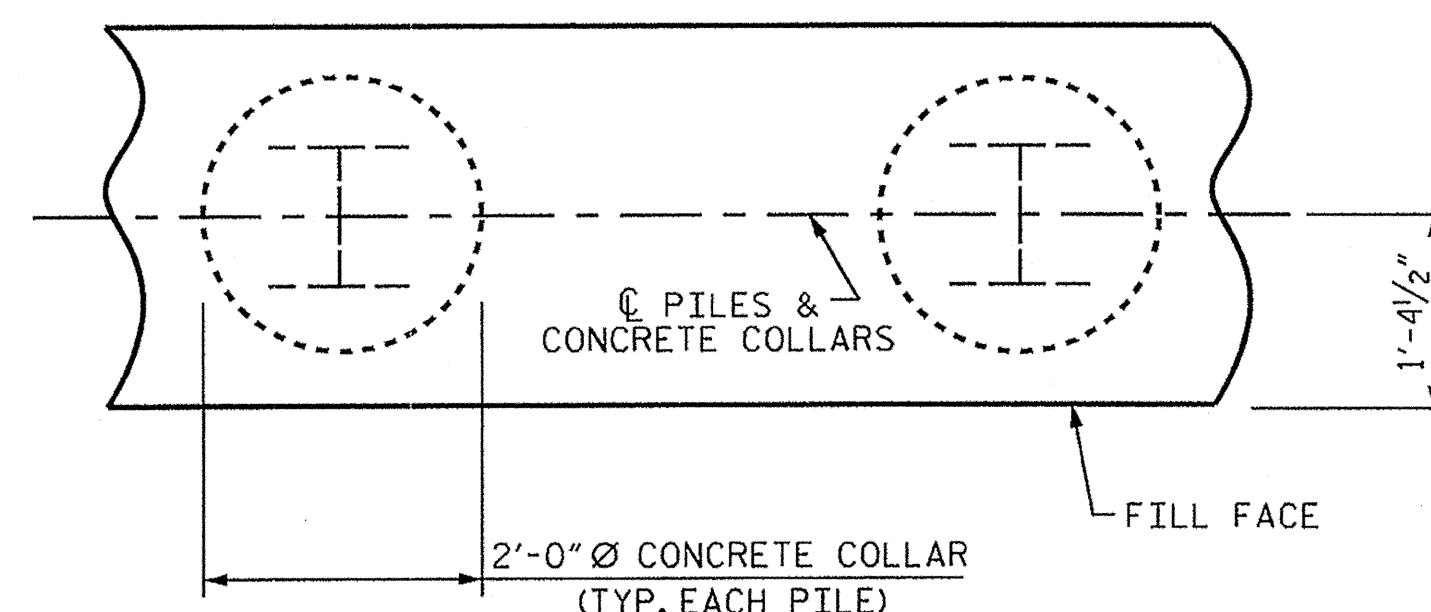
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



DETAIL "A"

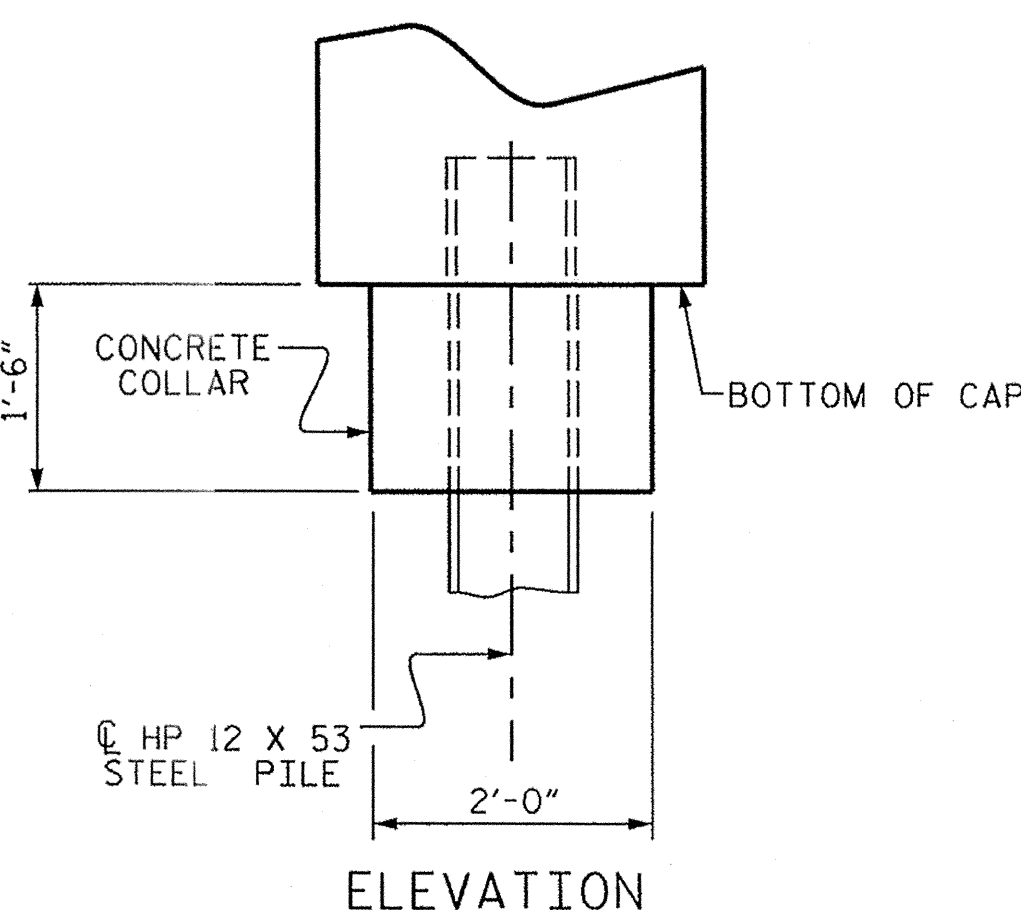
(END BENT No.1 SHOWN, END BENT No.2 SIMILAR BY ROTATION)



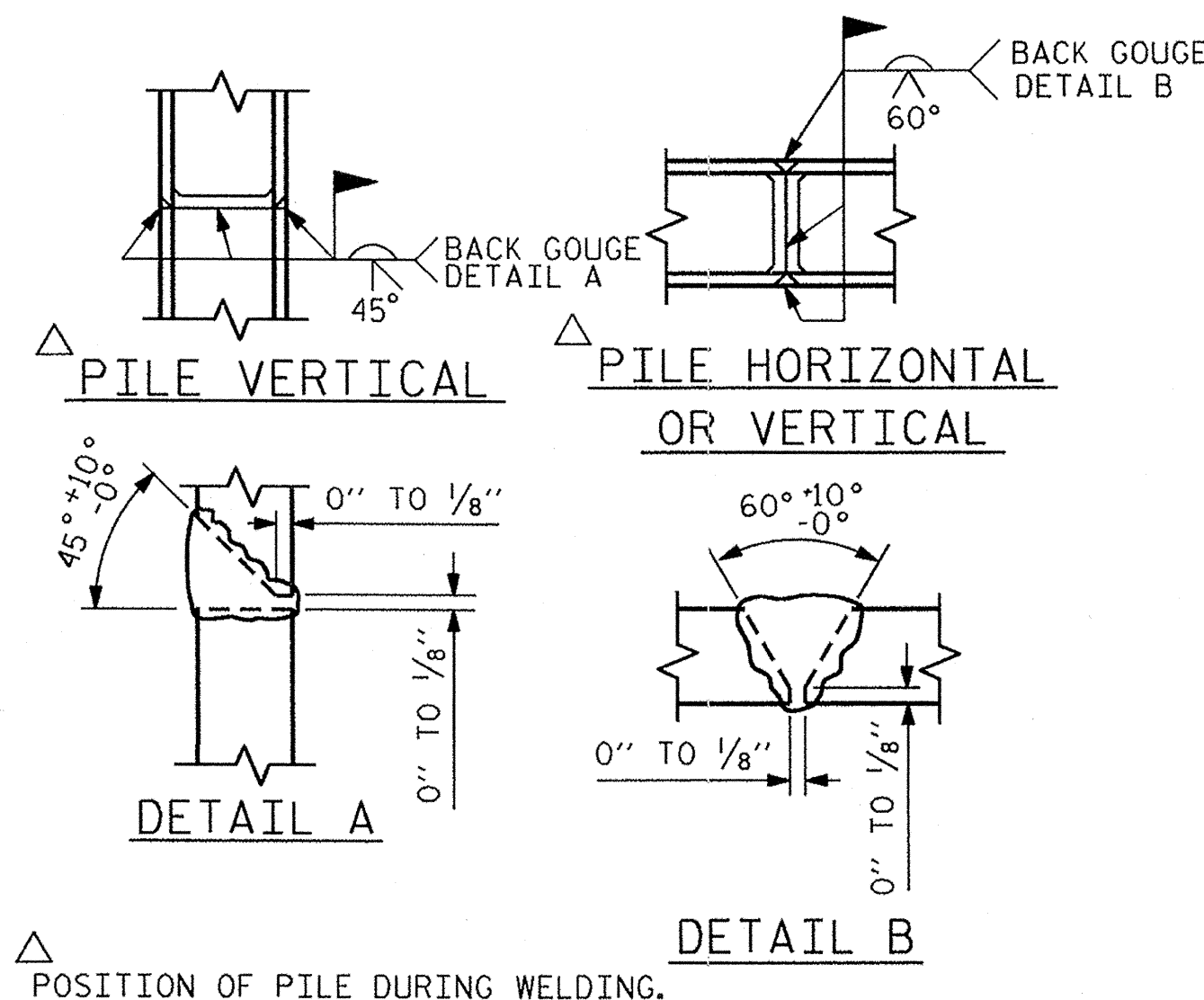
PLAN

CORROSION PROTECTION FOR STEEL PILES DETAIL

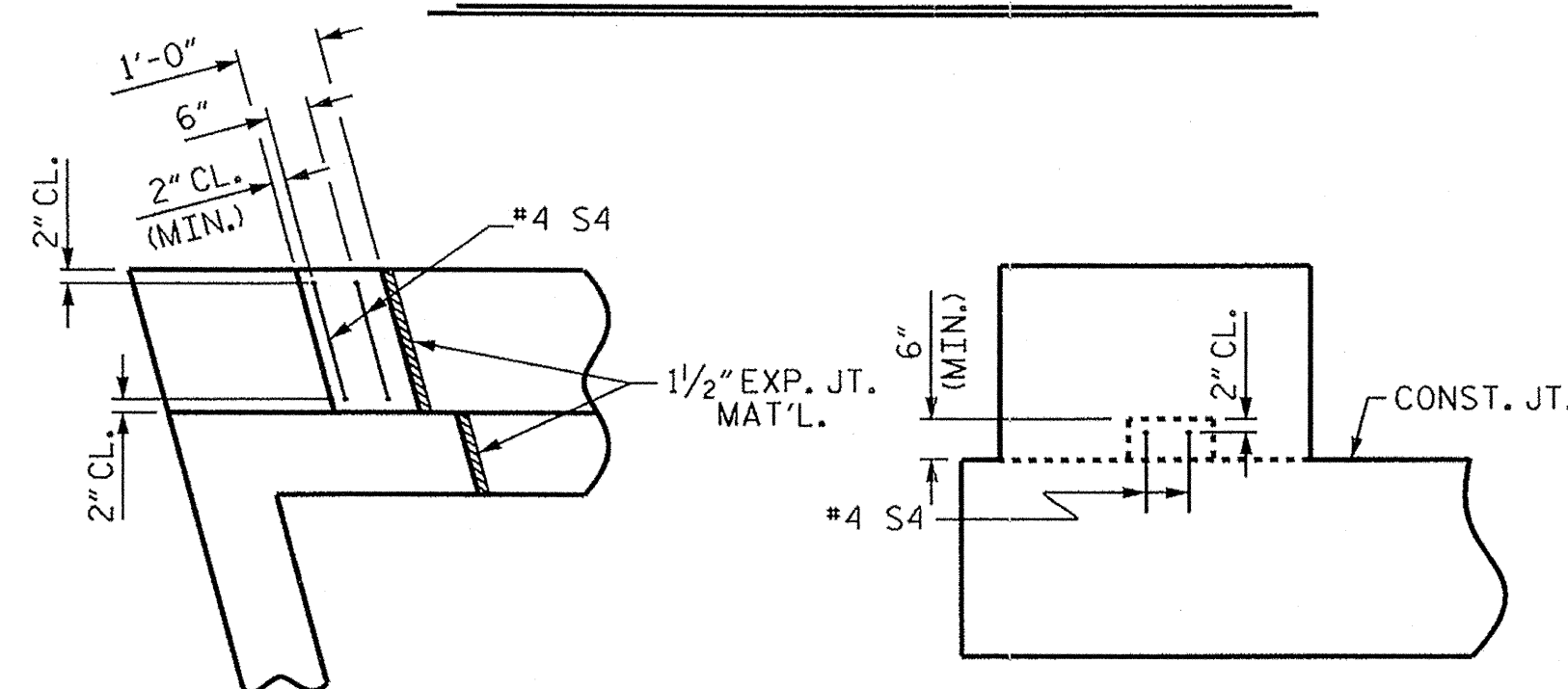
(END BENT No.1 SHOWN, END BENT No.2 SIMILAR BY ROTATION)



ELEVATION



PILE SPLICE DETAILS

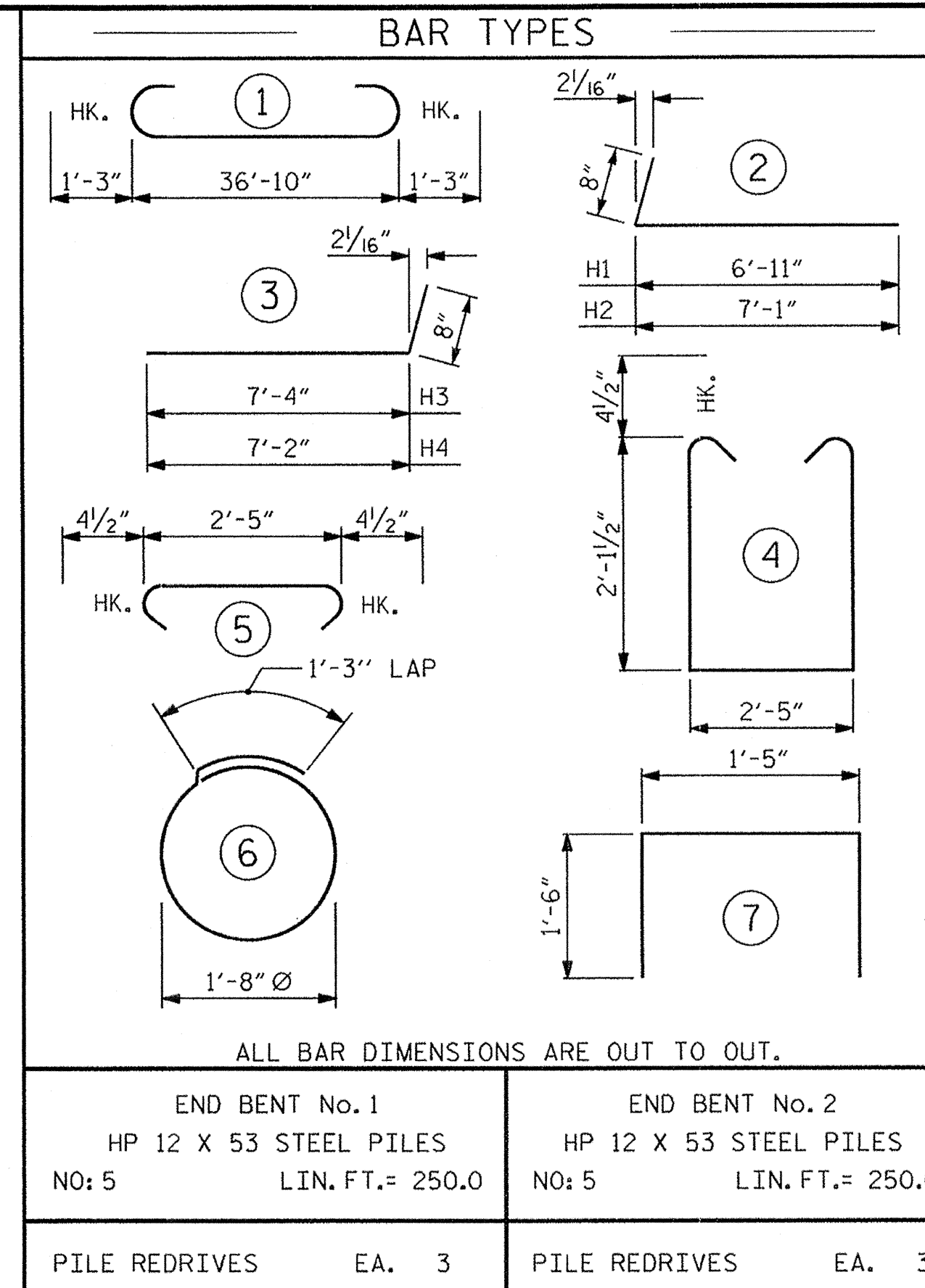


PLAN

ELEVATION

LATERAL GUIDE DETAILS

(END BENT No.1, LEFT LATERAL GUIDE SHOWN, RIGHT END SIMILAR)
(END BENT No.2 SIMILAR BY ROTATION)



END BENT No. 1				END BENT No. 2			
HP 12 X 53 STEEL PILES				HP 12 X 53 STEEL PILES			
NO: 5				NO: 5			
LIN. FT.= 250.0				LIN. FT.= 250.0			
PILE REDRIVES	EA.	3		PILE REDRIVES	EA.	3	

BILL OF MATERIAL					
FOR ONE END BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		39'-4"	1070
B2	16	#4	STR	19'-9"	211
B3	10	#4	STR	2'-5"	16
D1	20	#6	STR	1'-6"	45
H1	6	#4	2	7'-7"	30
H2	6	#4	2	7'-9"	31
H3	6	#4	3	8'-0"	32
H4	6	#4	3	7'-10"	31
K1	12	#4	STR	3'-1"	25
S1	48	#4	4	7'-5"	238
S2	48	#4	5	3'-2"	102
S3	10	#4	6	6'-6"	43
S4	4	#4	7	4'-5"	12
V1	49	#4	STR	4'-8"	153
REINFORCING STEEL (FOR ONE END BENT)					2039 LBS.
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)					
POUR #1 CAP, LOWER PART OF WINGS & COLLARS					11.6 C.Y.
POUR #2 UPPER PART OF WINGS					1.8 C.Y.
POUR #3 LATERAL GUIDES					0.1 C.Y.
TOTAL CLASS A CONCRETE					13.5 C.Y.

PROJECT NO. 17BP.3.R.7
DUPLIN COUNTY
STATION: 15+41.00 -L-

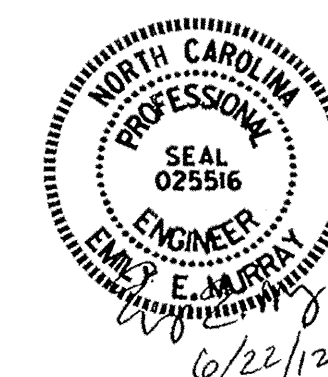
SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No.1 & 2
DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-11
2			4			TOTAL SHEETS 15



ASSEMBLED BY : M.L. RORIE	DATE : 5-18-12
CHECKED BY : E.E. MURRAY	DATE : 6-21-12
DRAWN BY : DGE 03/10	
CHECKED BY : MKT 03/10	

21-JUN-2012 16:33
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mrorie

STD. NO. EB-30-105S

NOTES

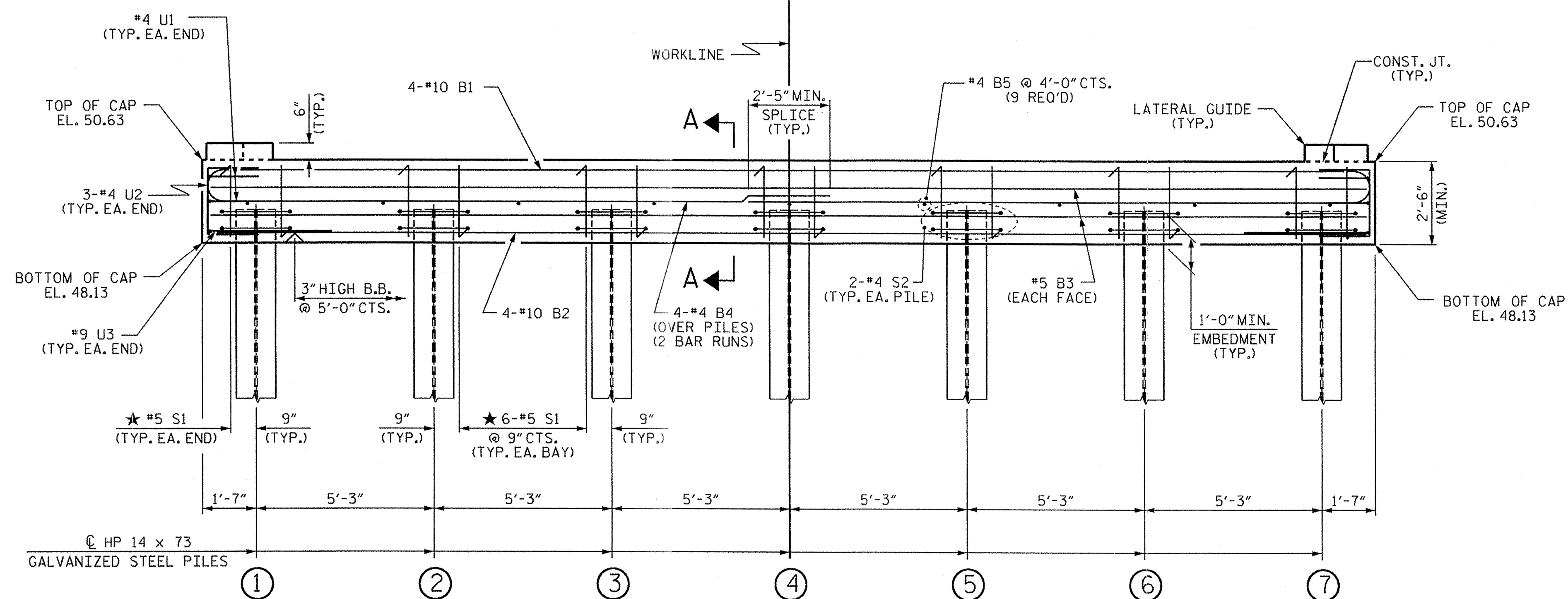
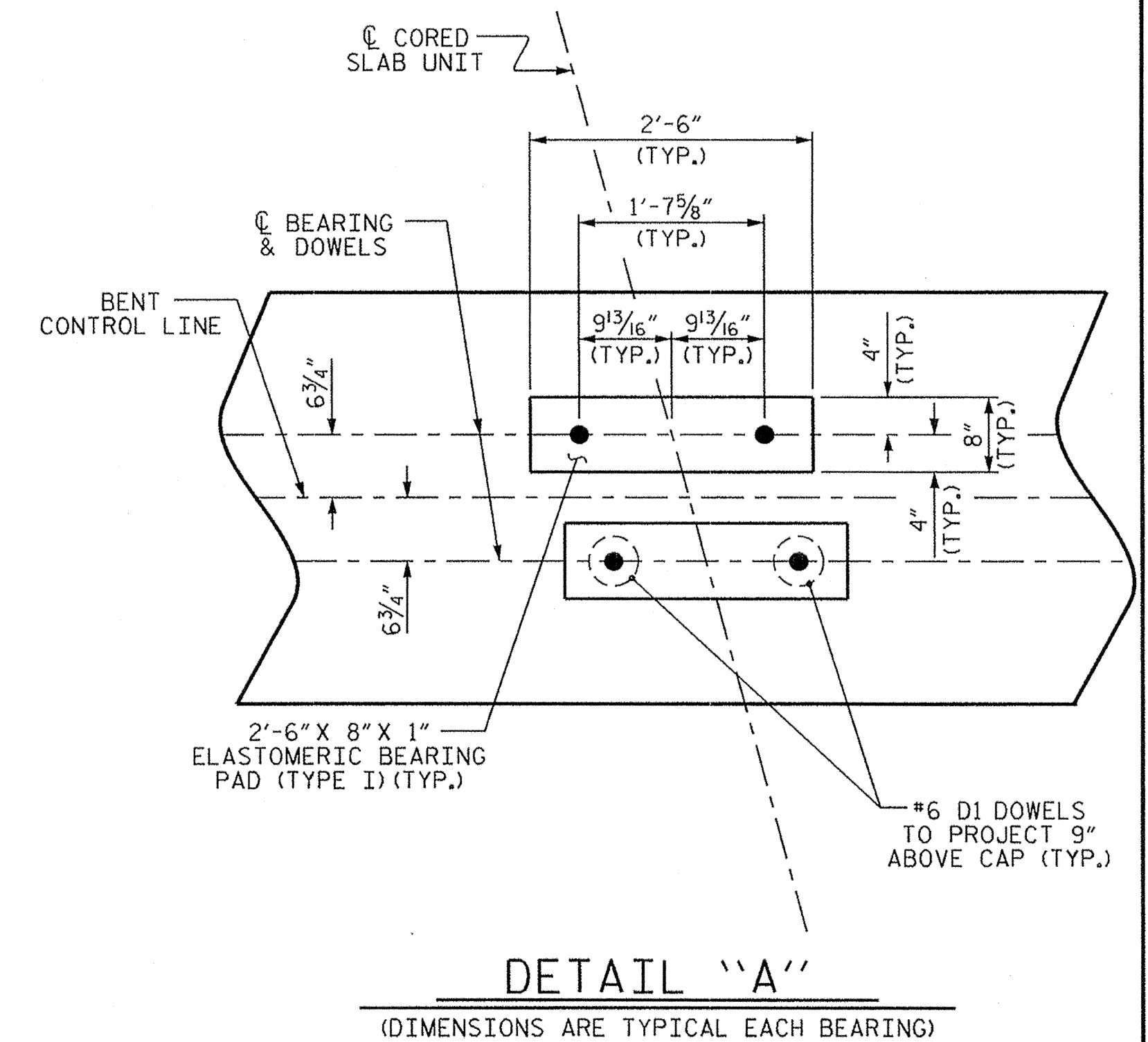
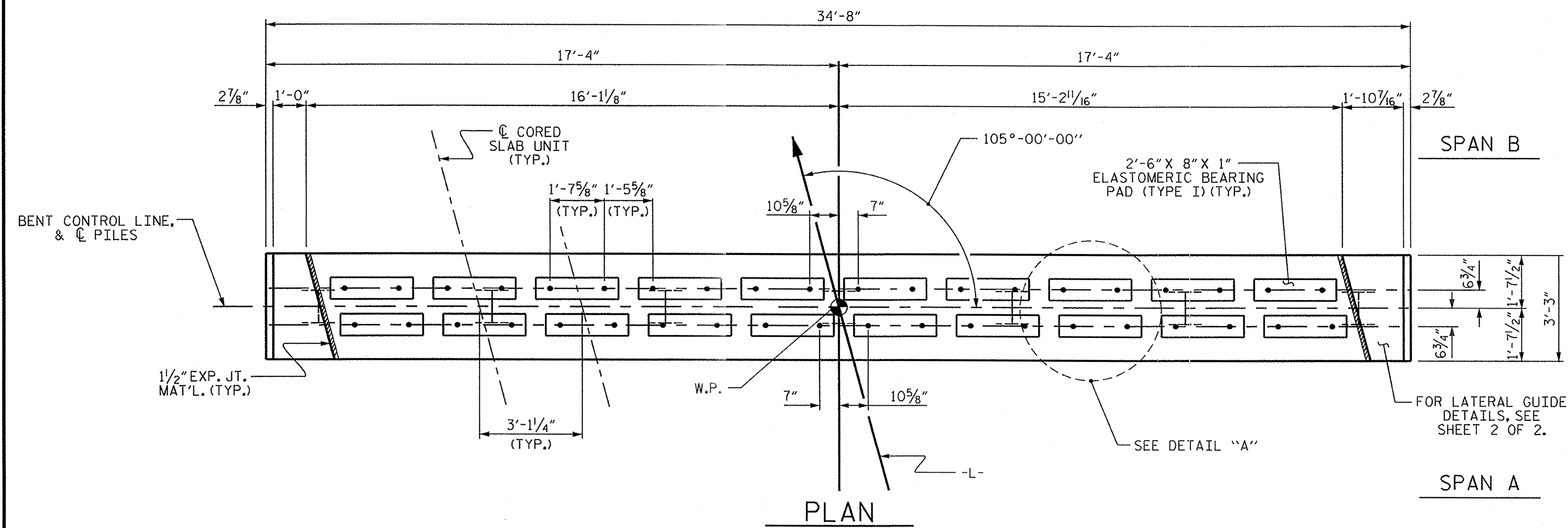
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY
TO CLEAR DOWELS.

THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

INVERT ALTERNATE STIRRUPS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE
A MINIMUM OF 28 FEET. GALVANIZE IN ACCORDANCE
WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.



ELEVATION

FOR SECTION A-A, SEE SHEET 2 OF 2

ASSEMBLED BY :	M.L. RORIE	DATE :	5-18-12
CHECKED BY :	E.E. MURRAY	DATE :	6-21-12
DRAWN BY :	DGE	5/10	
CHECKED BY :	MKT	5/10	

21-JUN-2012 16:37
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mrorie

PROJECT NO. 17BP.3.R.7
DUPLIN COUNTY
 STATION: 15+41.00 -L-

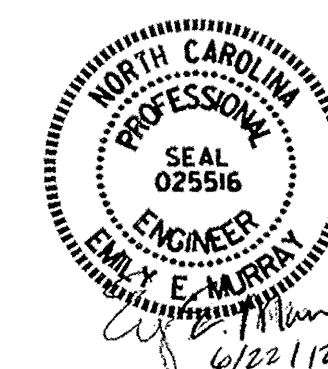
SHEET 1 OF 2

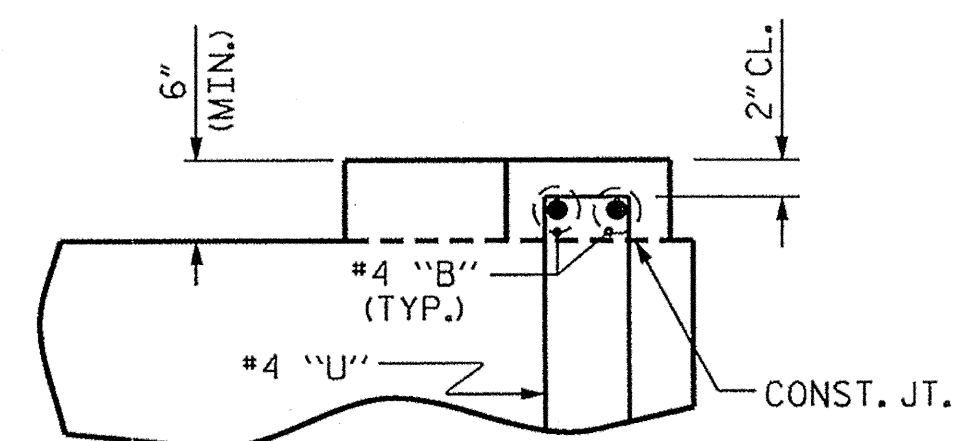
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT No. 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-12 TOTAL SHEETS 15
1			3			
2			4			

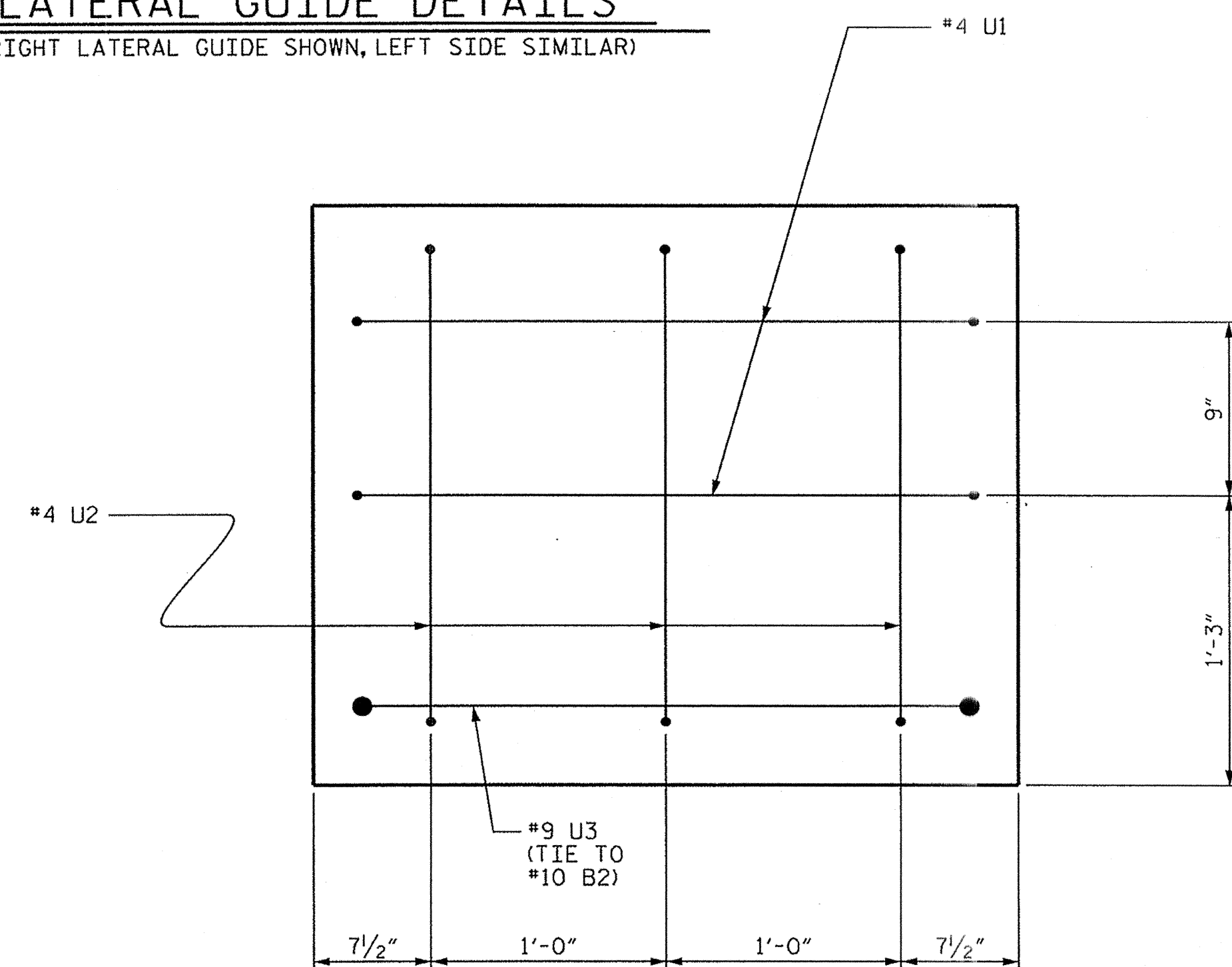
STD. NO. 14" HP_BT_30_105S_<60'





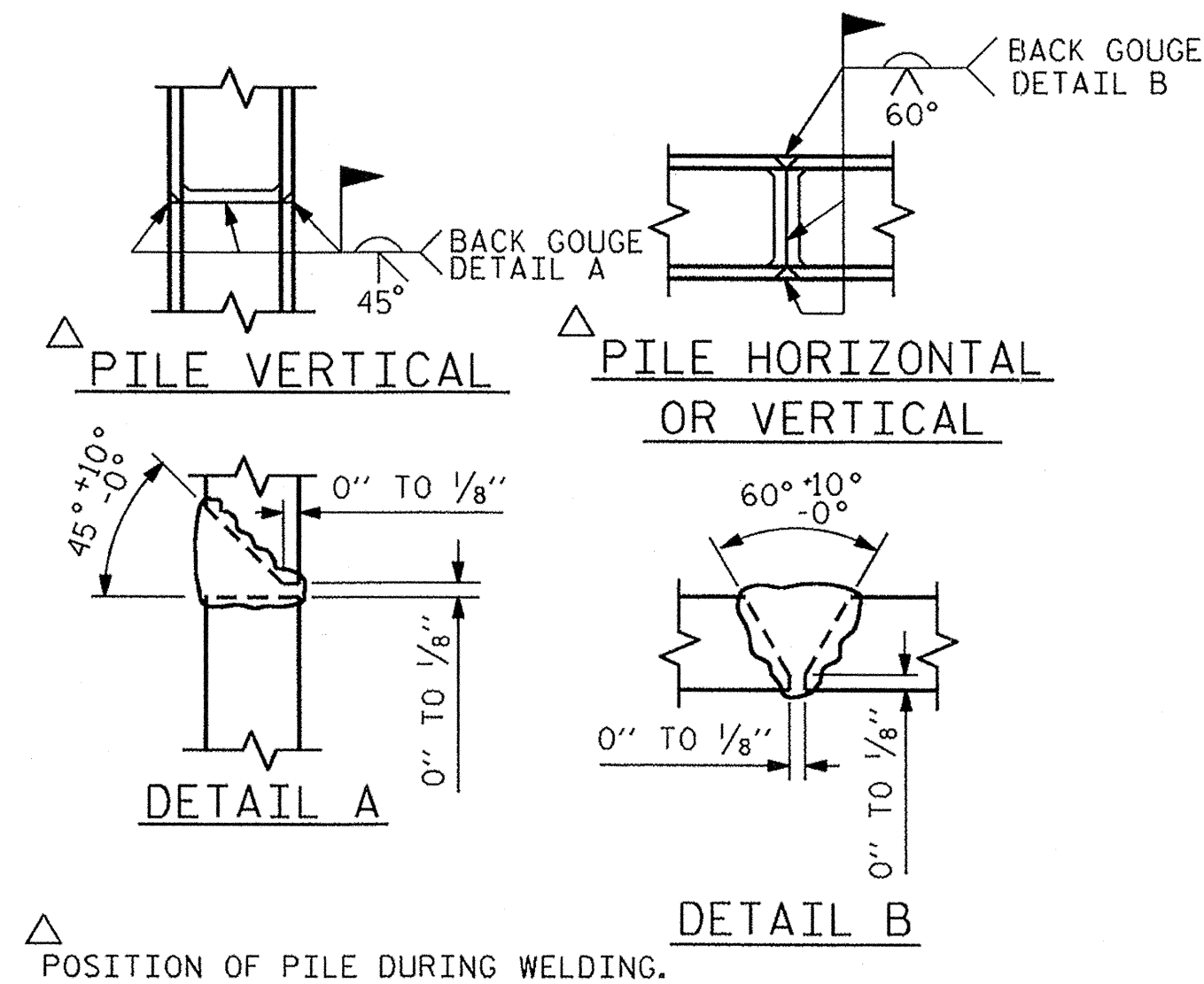
LATERAL GUIDE DETAILS

(RIGHT LATERAL GUIDE SHOWN, LEFT SIDE SIMILAR)

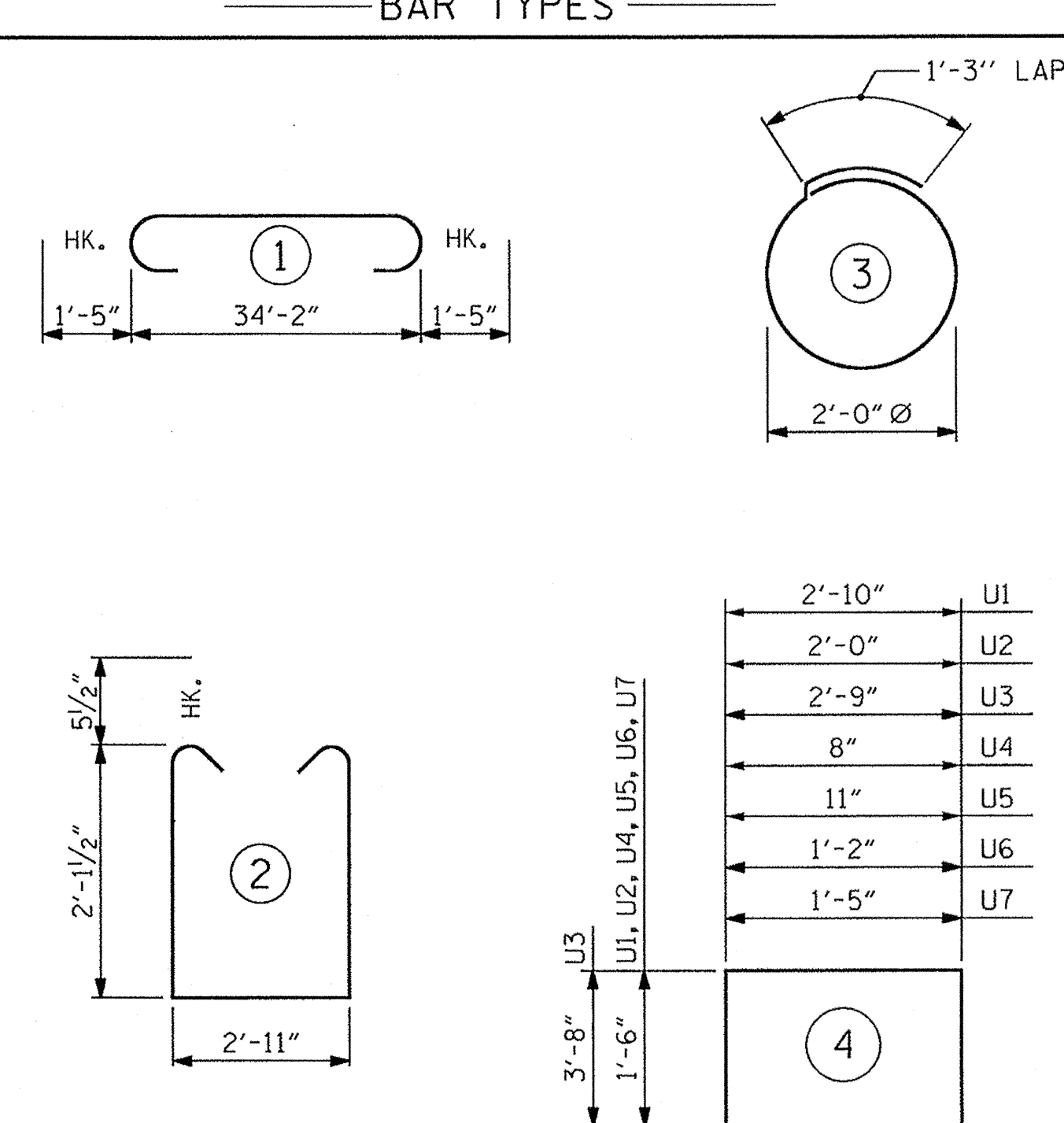


END OF CAP VIEW

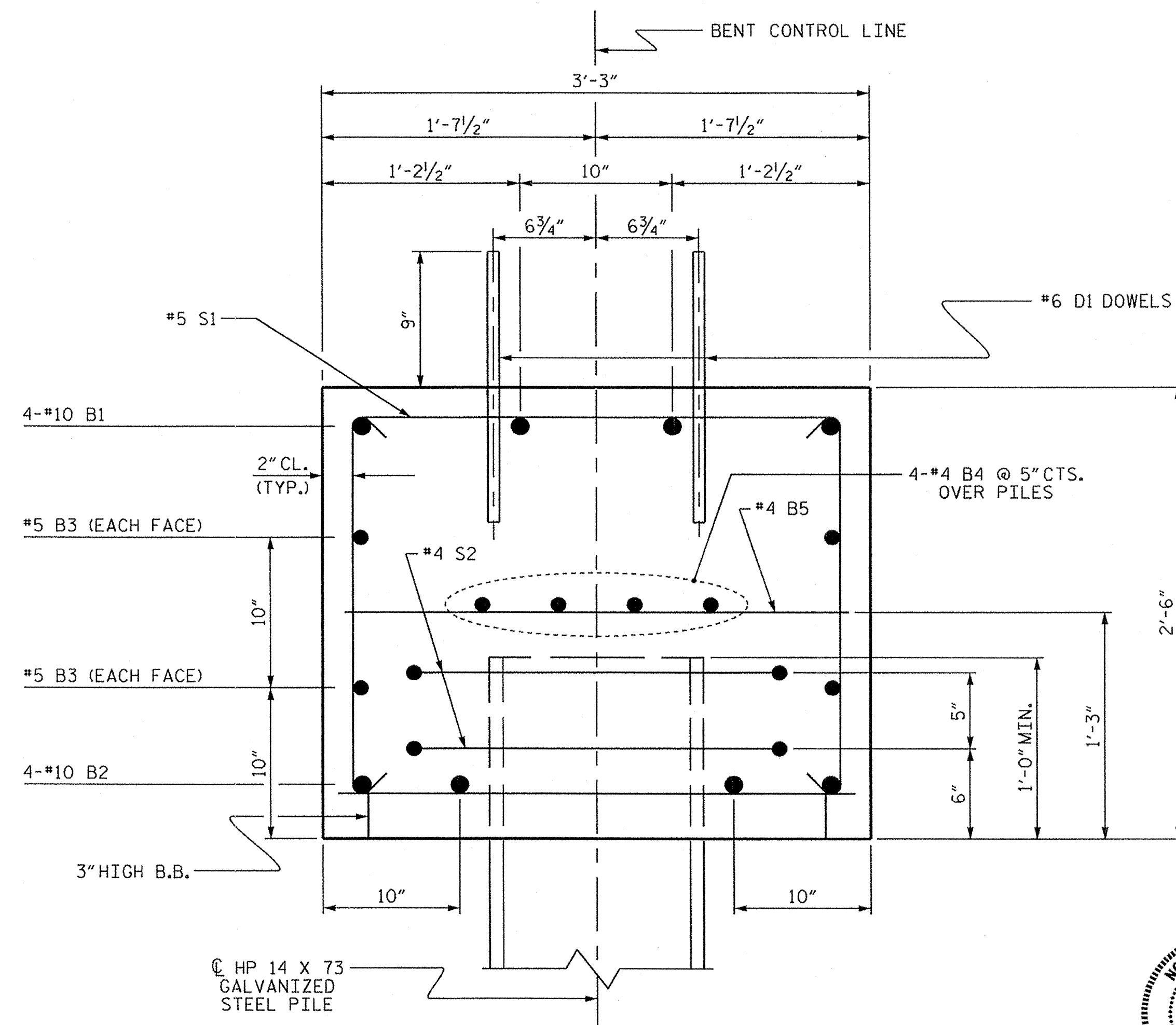
(TYPICAL BOTH ENDS)



PILE SPLICE DETAILS



ALL BAR DIMENSIONS ARE OUT TO OUT.



SECTION A-A

PDA TESTING EA. 1

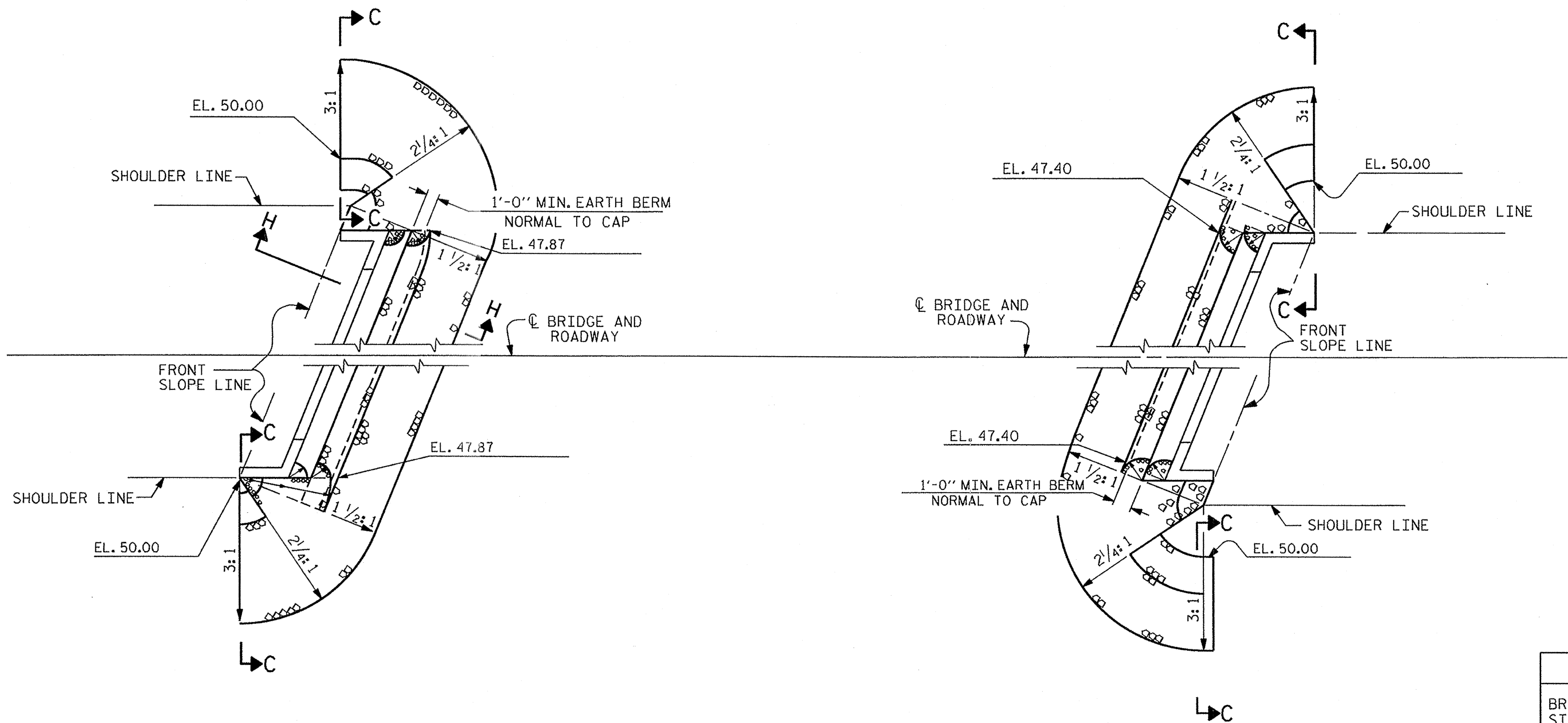
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13 TOTAL SHEETS 15
1			3			
2			4			

STD. NO. 14" HP_BT_30_105S_<60'

DRAWN BY : DGE 05/10
CHECKED BY : MKT 05/10

21-JUN-2012 16:49
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mrorie

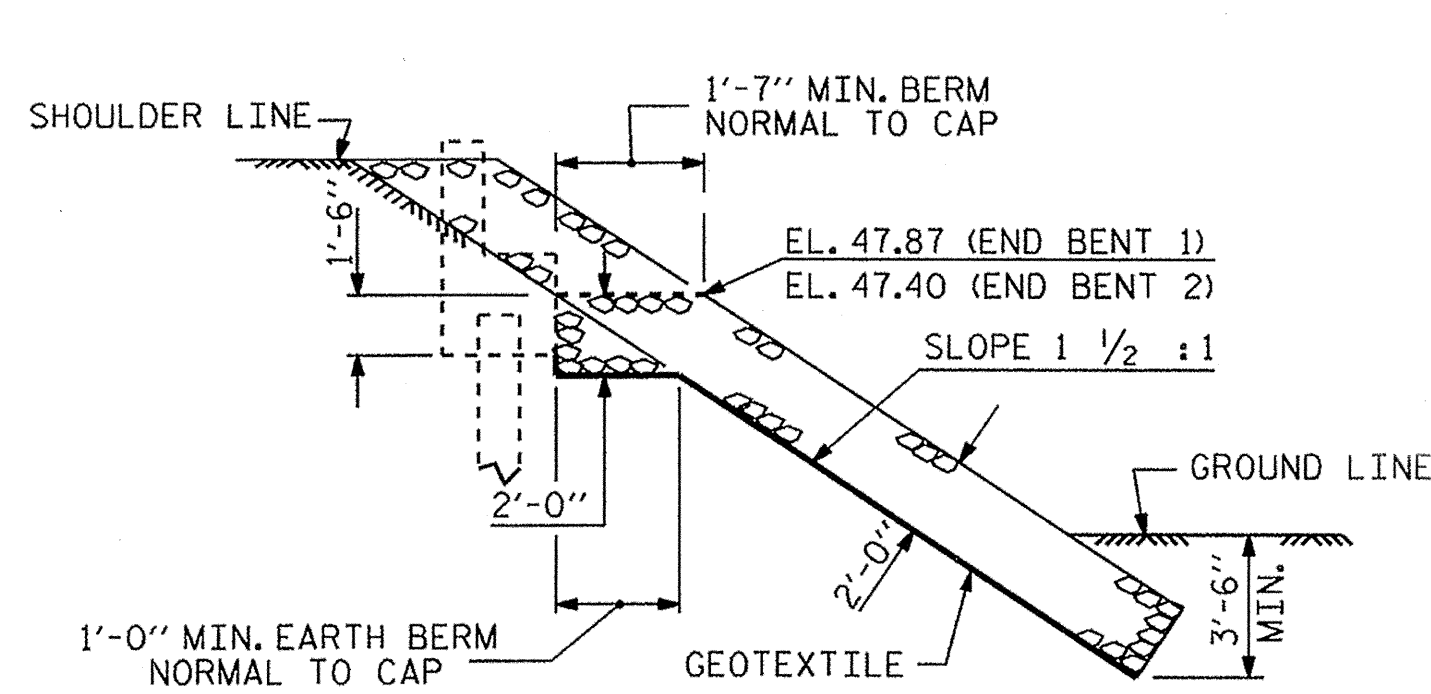
NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.



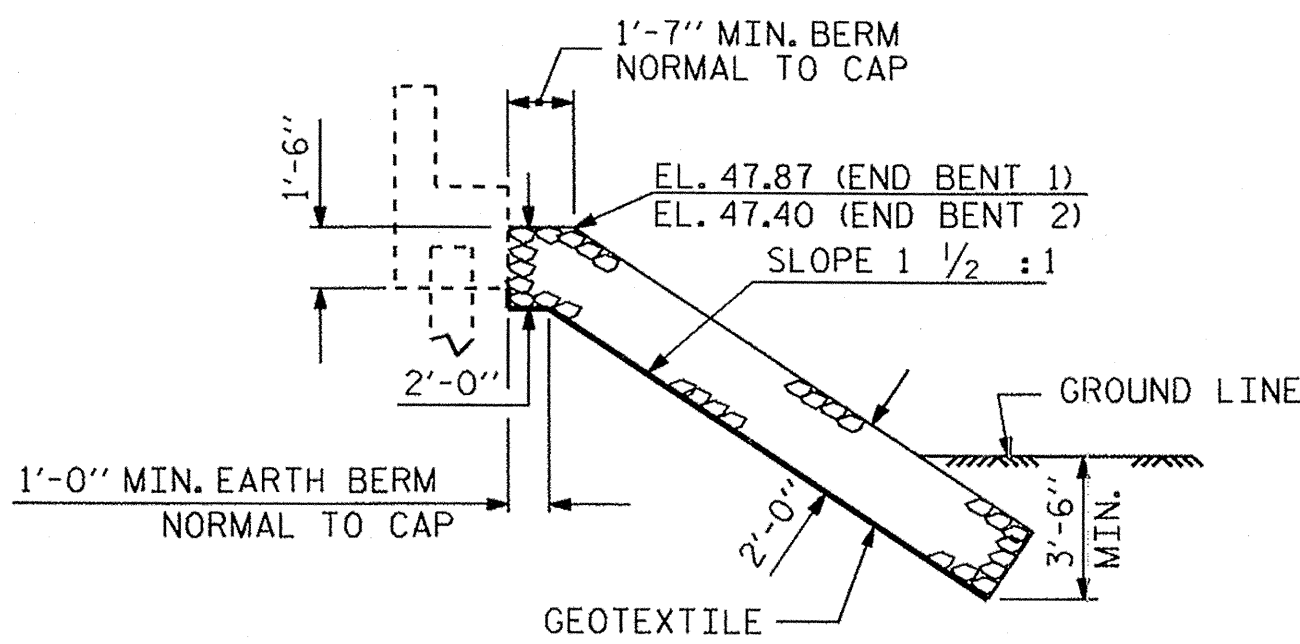
SHOULDER RIP RAP IS HIGHER THAN BERM RIP RAP

BERM RIP RAPPED

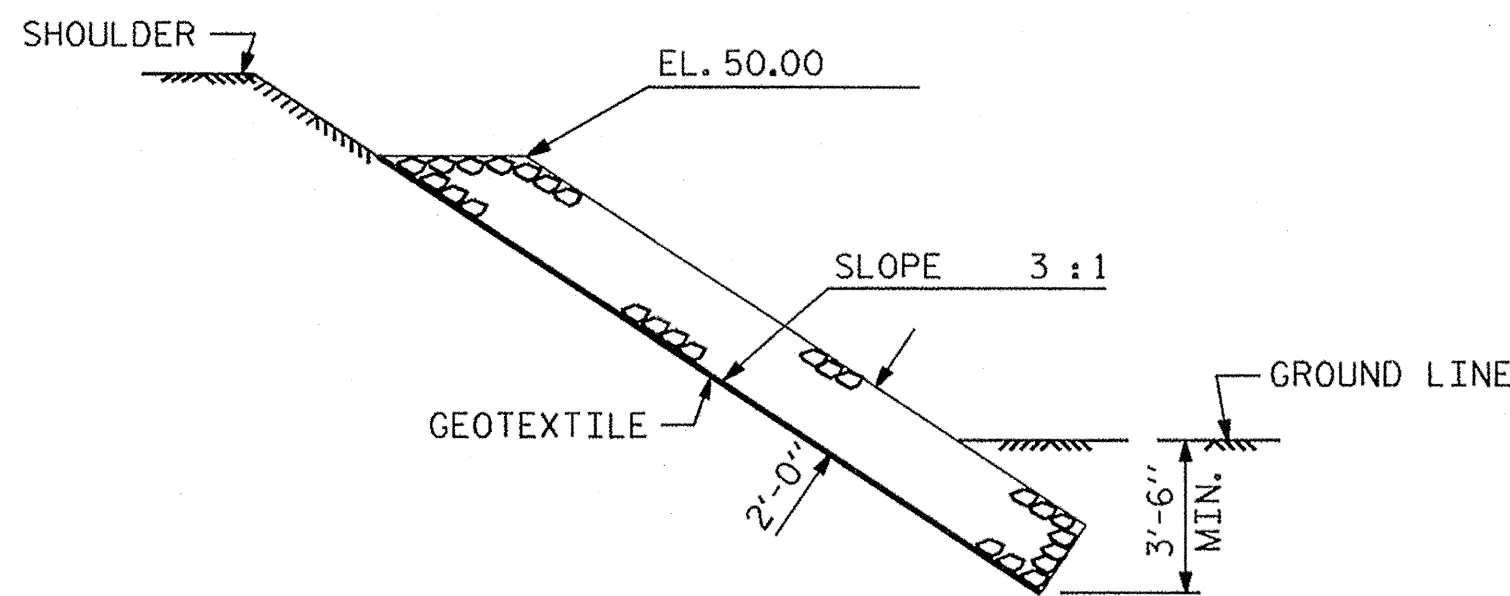
ESTIMATED QUANTITIES		
BRIDGE @ STA. 15+41.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	58	64
END BENT 2	58	64



SECTION H-H



SECTION C-C
BERM RIP RAPPED



SECTION C-C

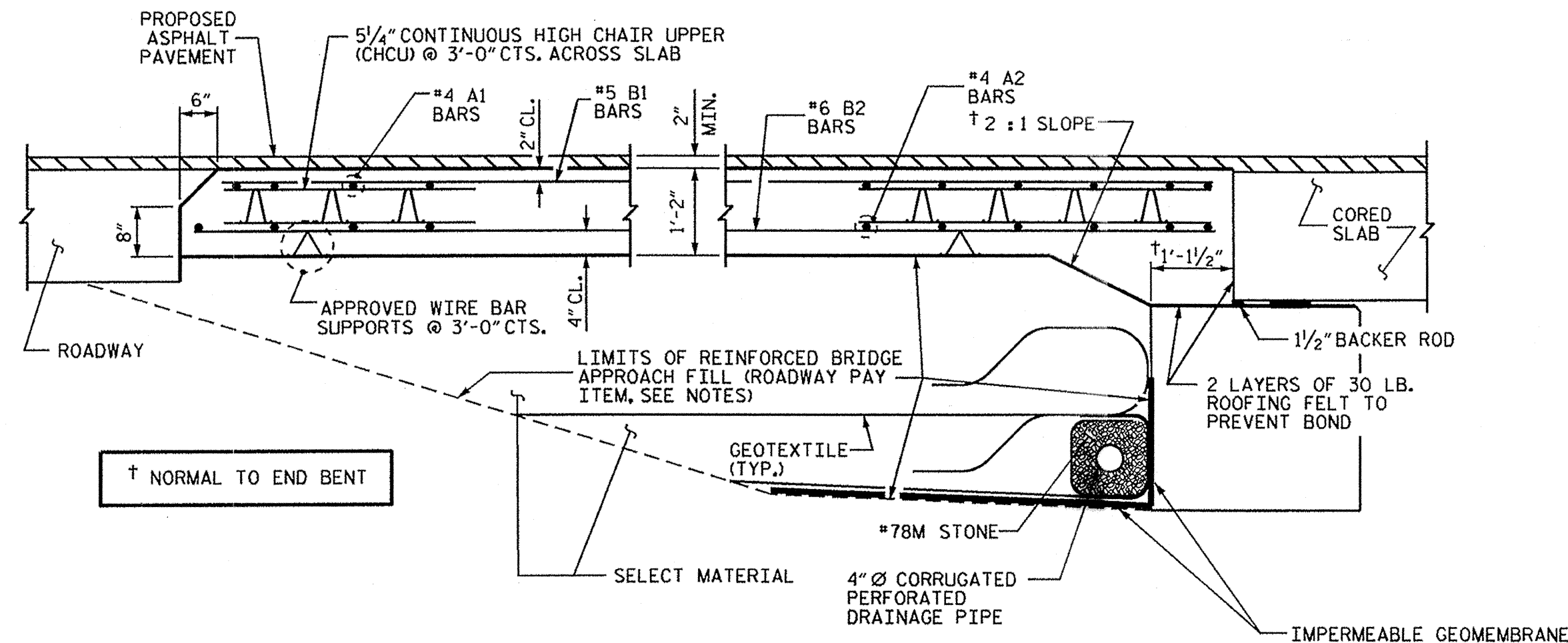
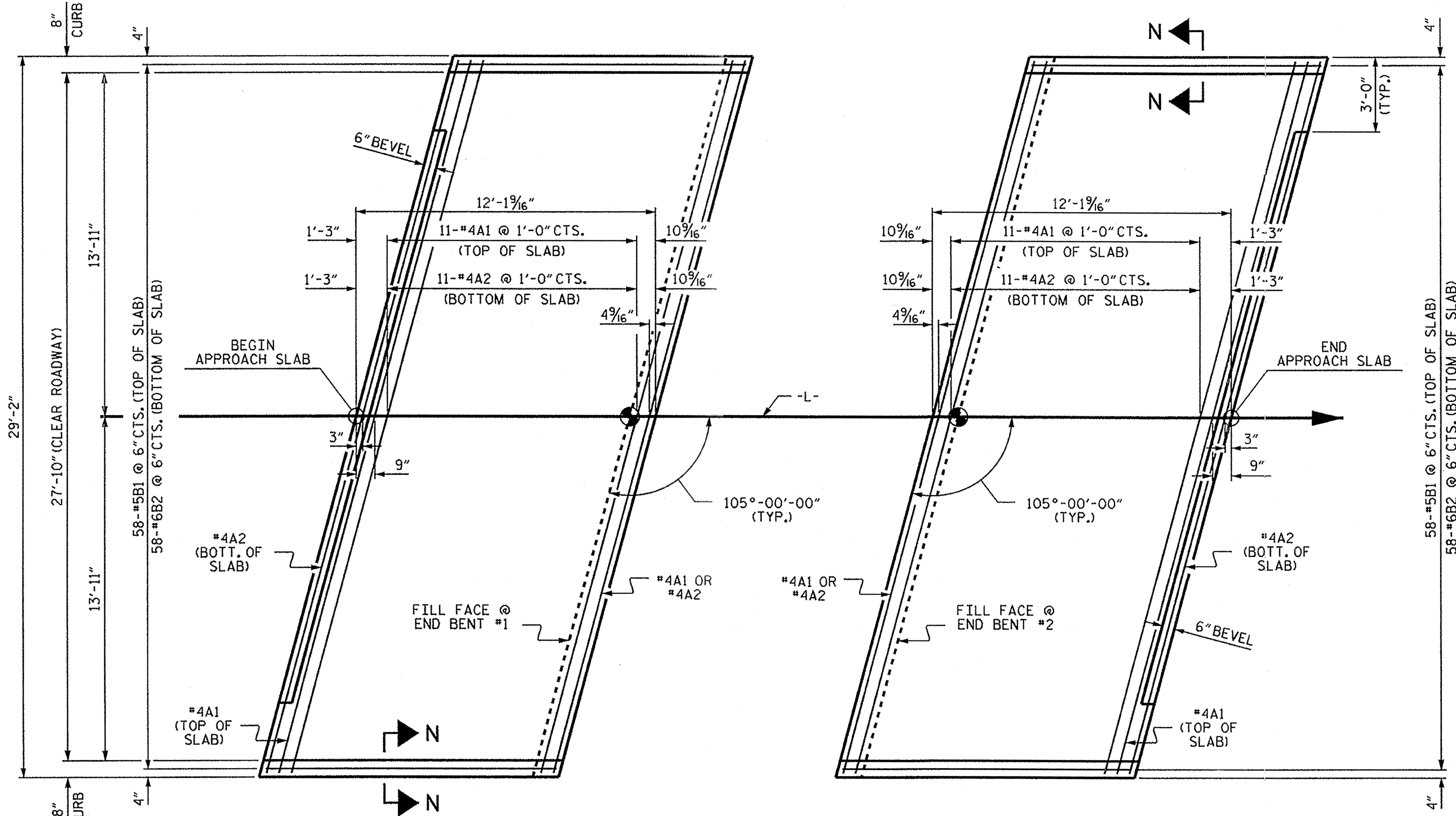
PROJECT NO. 17BP.3.R.7
DUPLIN COUNTY
STATION: 15+41.00 -L-



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-14
2			4			TOTAL SHEETS 15

ASSEMBLED BY : M.L. RORIE	DATE : 5-18-12
CHECKED BY : E.E. MURRAY	DATE : 6-21-12
DRAWN BY : REK 1/84	REV. 5/1/06R TLA/GM
CHECKED BY : RDU 1/84	REV. 10/1/11 MAA/GM
	REV. 12/21/11 MAA/GM

21-JUN-2012 16:44
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murray



ASSEMBLED BY : M.L. RORIE DATE : 5-18-12
 CHECKED BY : E.E. MURRAY DATE : 6-21-12
 DRAWN BY : SHS/MAA 5-09 REV. 12-11 MAA/AAC
 CHECKED BY : BCH 5-09

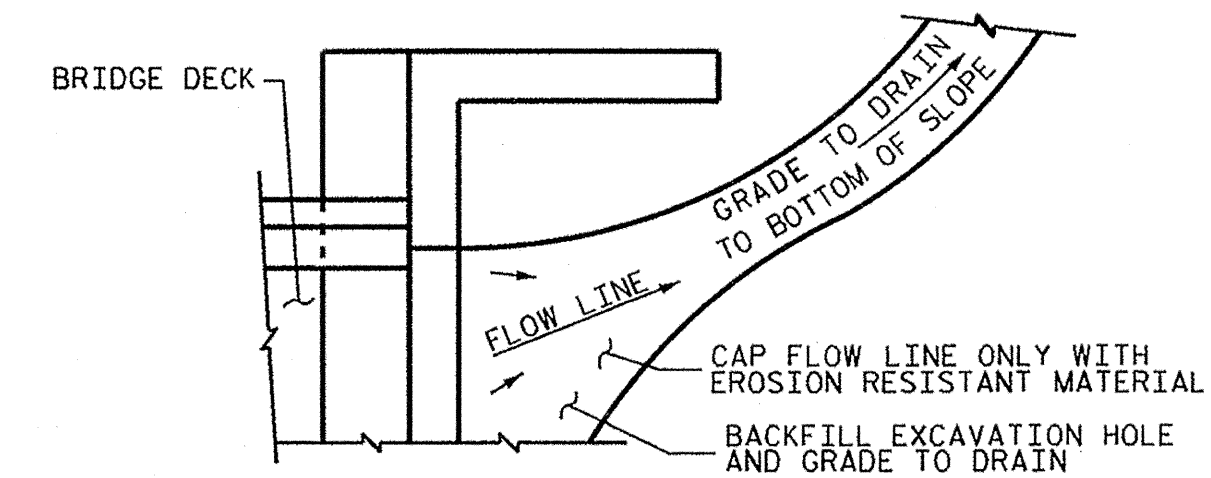
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 mrorie

NOTES

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.

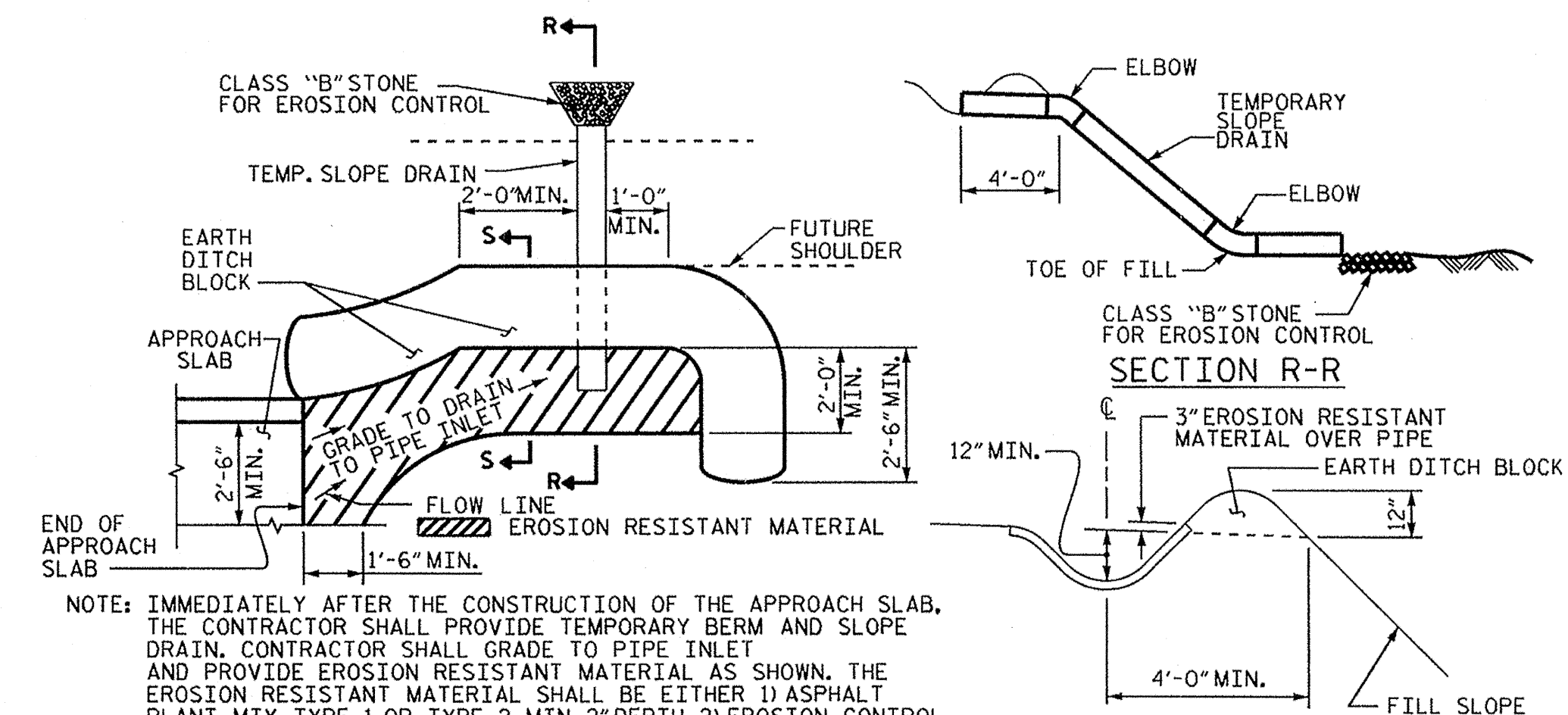
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.



NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

TEMPORARY DRAINAGE DETAIL

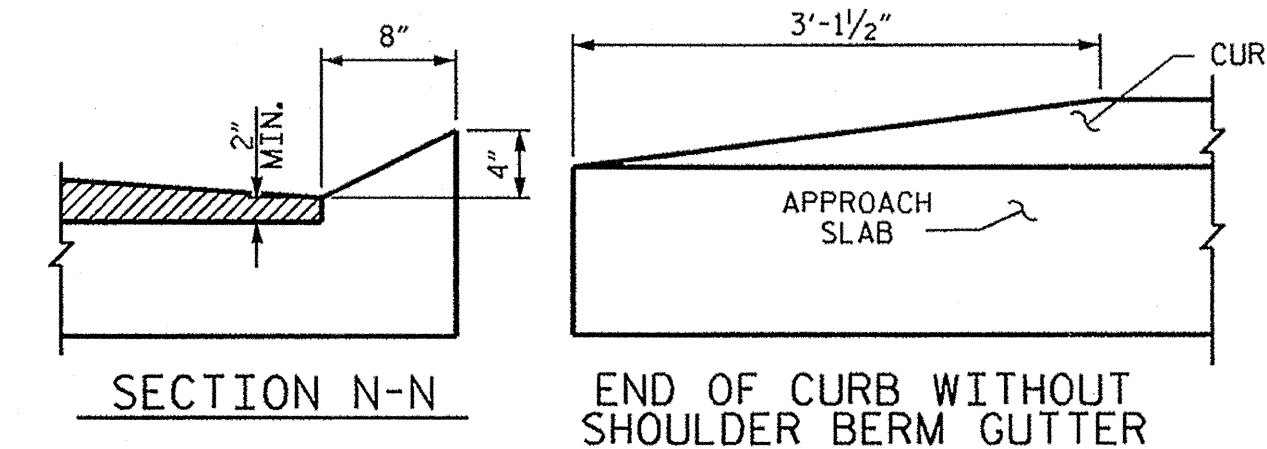


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH; 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

PLAN VIEW

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



CURB DETAILS

SPlice LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-10"	2'-7"



BILL OF MATERIAL

APPROACH SLAB AT EB #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	13	#4	STR	29'-10"	259
A2	13	#4	STR	29'-10"	259
* B1	58	#5	STR	11'-1"	670
B2	58	#6	STR	11'-7"	1009

REINFORCING STEEL LBS. 1268

* EPOXY COATED REINFORCING STEEL LBS. 929

CLASS AA CONCRETE C. Y. 16.9

APPROACH SLAB AT EB #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	13	#4	STR	29'-10"	259
A2	13	#4	STR	29'-10"	259
* B1	58	#5	STR	11'-1"	670
B2	58	#6	STR	11'-7"	1009

REINFORCING STEEL LBS. 1268

* EPOXY COATED REINFORCING STEEL LBS. 929

CLASS AA CONCRETE C. Y. 16.9

PROJECT NO. 17BP.3.R.7
 DUPLIN COUNTY
 STATION: 15+41.00 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR PRESTRESSED CONCRETE
 CORED SLAB UNIT

105° SKEW

REVISIONS			SHEET NO.		
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

5-15
 TOTAL SHEETS
 15

STD. NO. BAS-30-1055

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. FINISHES 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.

ENGLISH

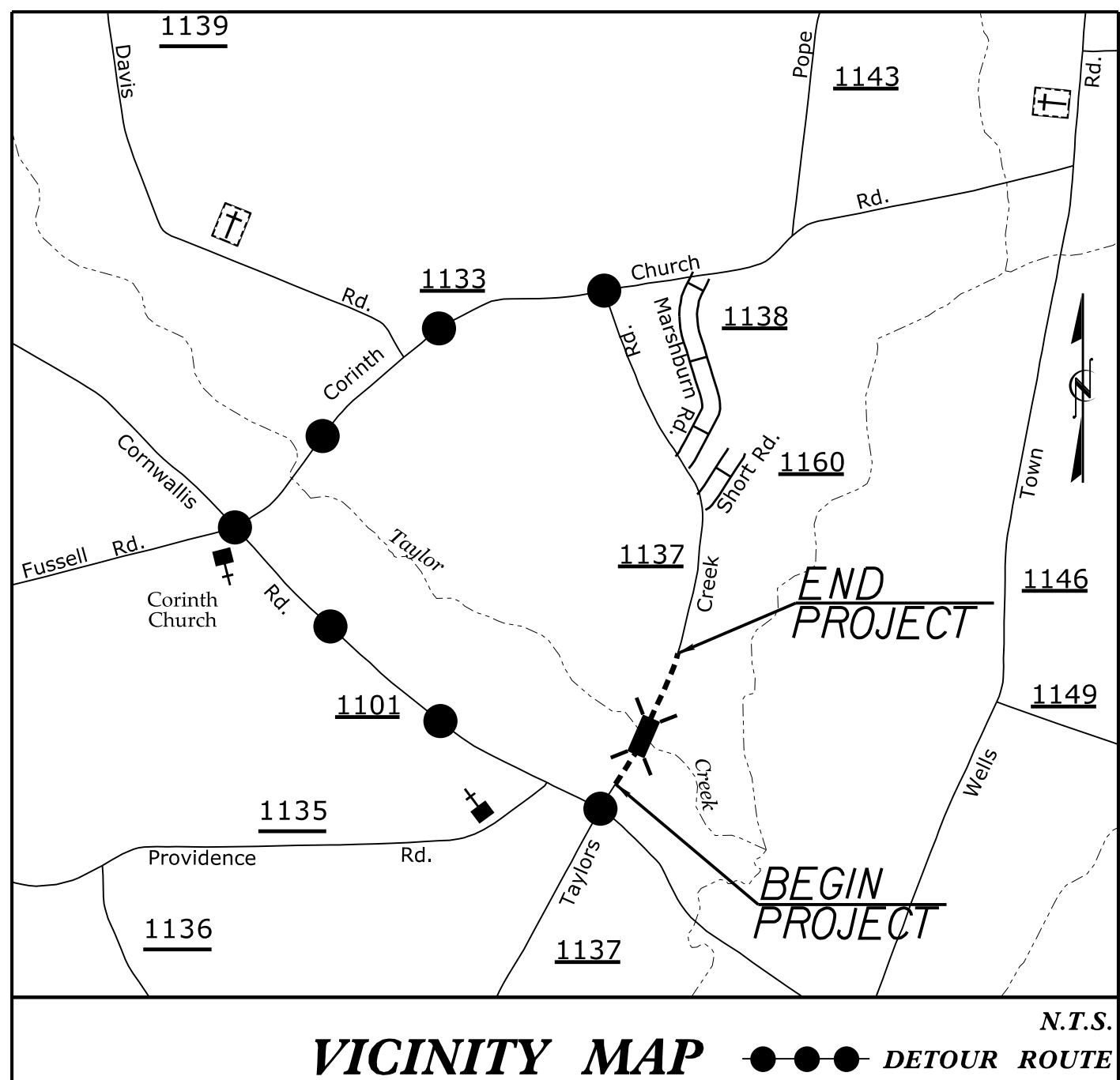
JANUARY, 1990

STD. NO. SN

09/08/09

TIP PROJECT: 17BP.3.R.7

CONTRACT:



STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS DUPLIN COUNTY

LOCATION: BRIDGE NO. 057 OVER TAYLORS CREEK
ON SR 1137 TAYLORS CREEK RD.

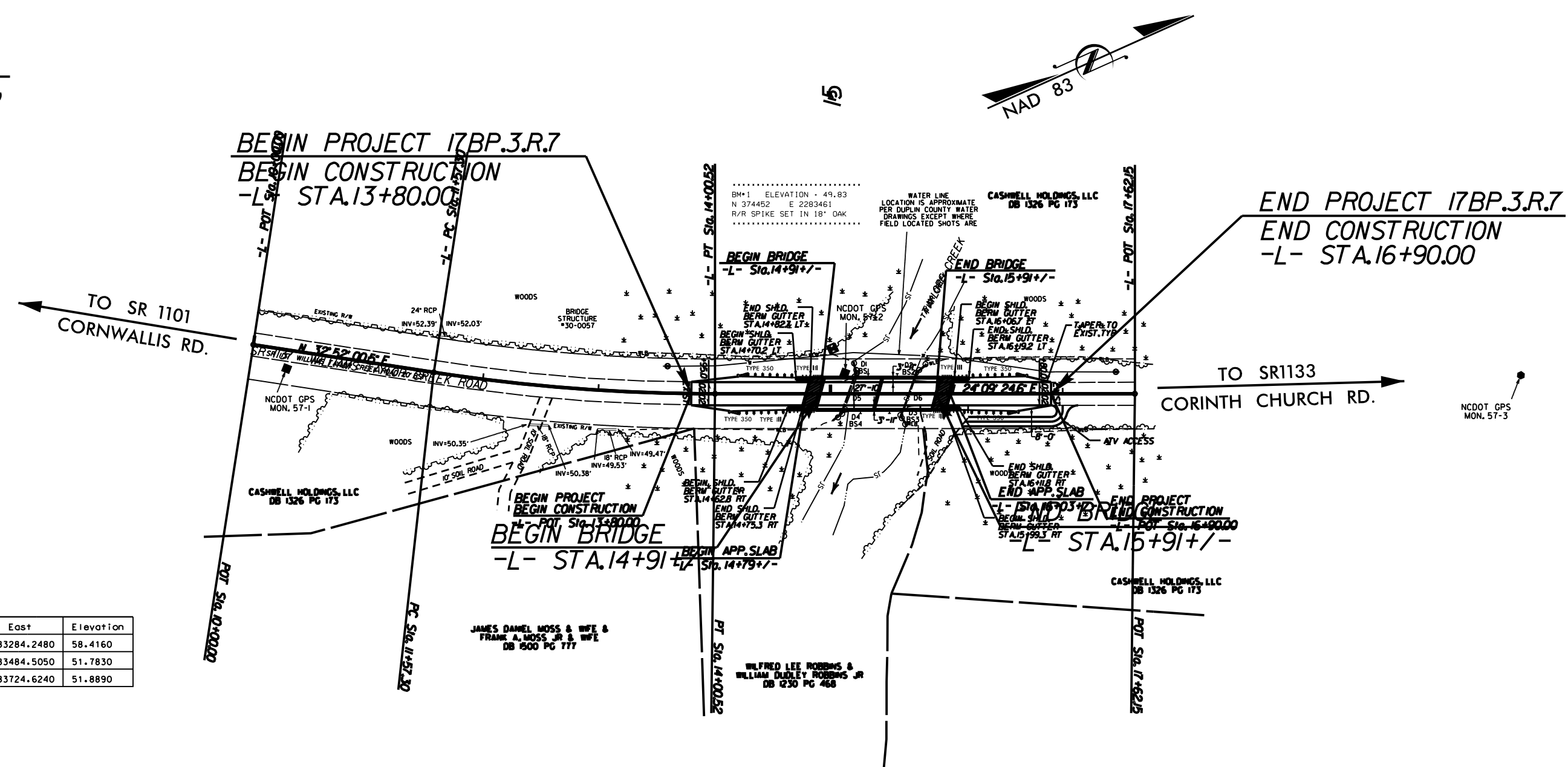
TYPE OF WORK: UTILITY BY OTHERS RELOCATION

T.I.P. NO.	SHEET NO.
17BP.3.R.7	UO-1

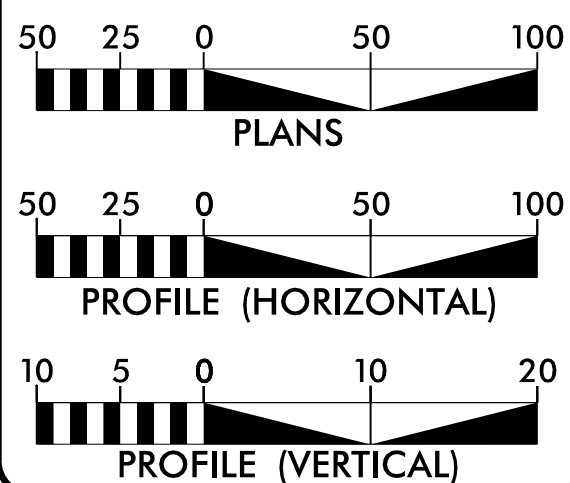
0 50 100

PT STA 12+79.05
Δ = 8° 42' 35.9" (LT)
D = 3' 14" 24.6
L = 243.23
T = 10.87
R = 1500.00

Point	North	East	Elevation
ST-1	374016.2220	2283284.2480	58.4160
ST-2	374453.4500	2283484.5050	51.7830
ST-3	374985.9030	2283724.6240	51.8890



GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	PLAN SHEET

UTILITY OWNERS ON PROJECT

(1) WATER - DUPLIN COUNTY WATER - DENNIS WILLIAMS - (910) 296-2123

UTILITY DESIGN BY:

MA Engineering
CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919 297 0220 Fax: 919 297 0221

NCDOT PROJECT ENGINEER:
AMANDA GLYNN, P.E.
PREPARED FOR:
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION BRIDGE PROGRAM

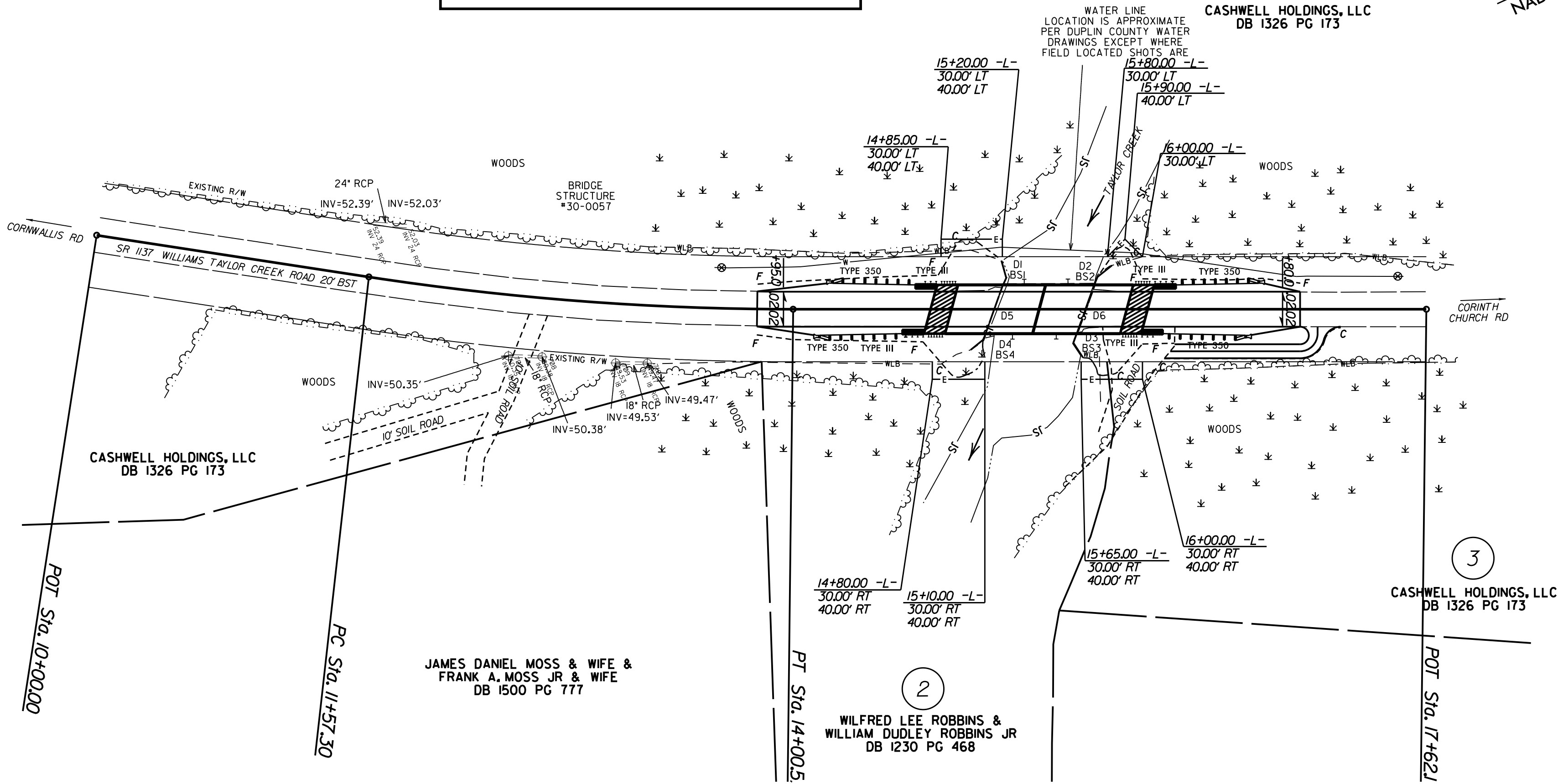
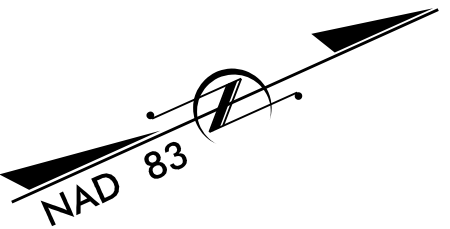
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UTILITIES BY OTHERS

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

MA Engineering
CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

EXISTING WATER LINE DOES NOT
APPEAR TO BE IN CONFLICT WITH
PROPOSED ROADWAY CONSTRUCTION



PLAN

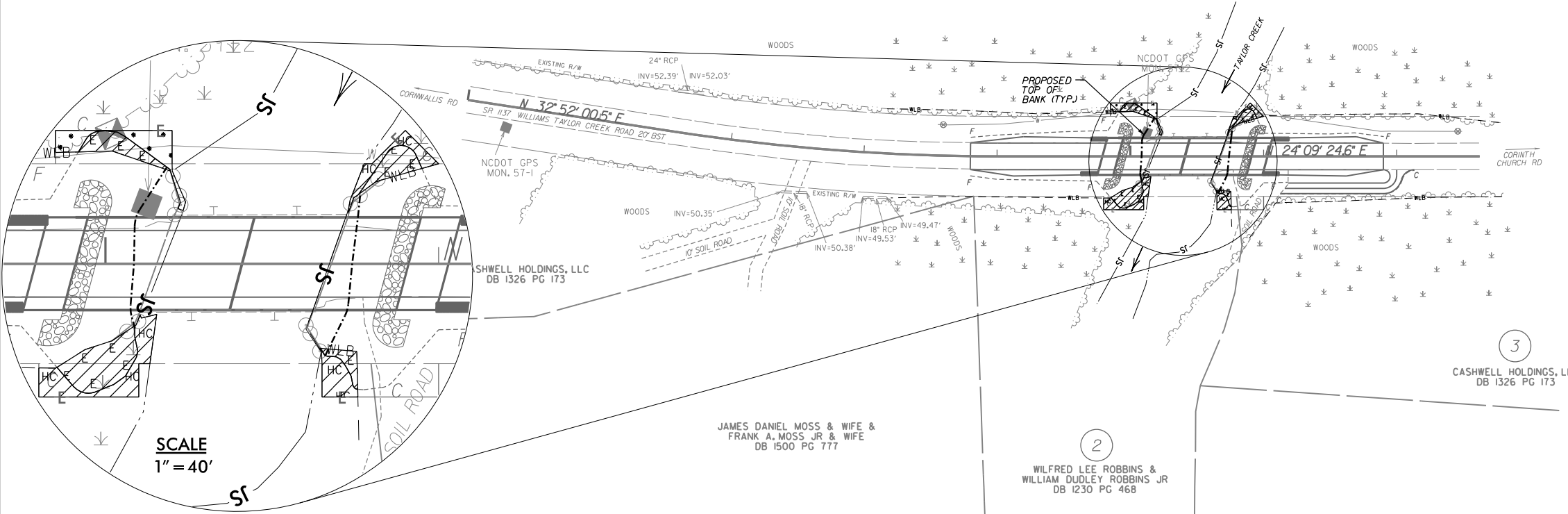
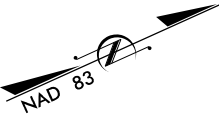
HNTB

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

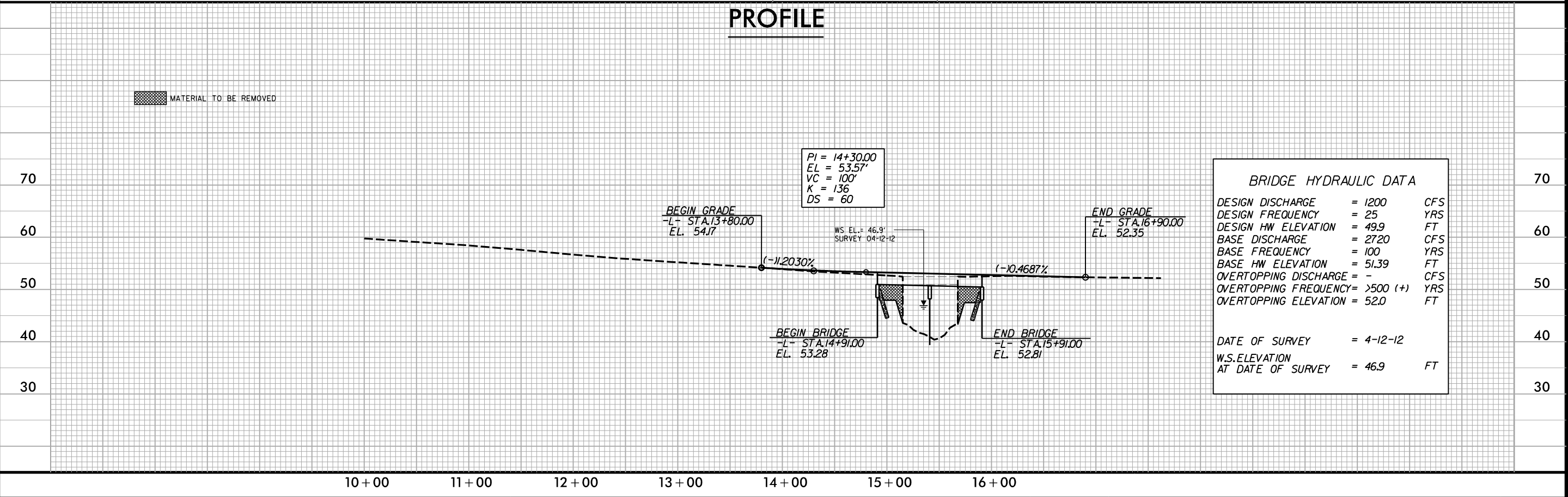
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17BP.3.R.7		4	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

BM=1 ELEVATION = 49.83
N 374452 E 2283461
R/R SPIKE SET IN 18" OAK

CASHWELL HOLDINGS, LLC
DB 1326 PG 173



PROFILE



LEGEND	
	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING
	DENOTES HAND CLEARING

BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 1200	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 49.9	FT
BASE DISCHARGE	= 2720	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 51.39	FT
OVERTOPPING DISCHARGE	= -	CFS
OVERTOPPING FREQUENCY	= >500 (+)	YRS
OVERTOPPING ELEVATION	= 52.0	FT
DATE OF SURVEY	= 4-12-12	
W.S.ELEVATION AT DATE OF SURVEY	= 46.9	FT

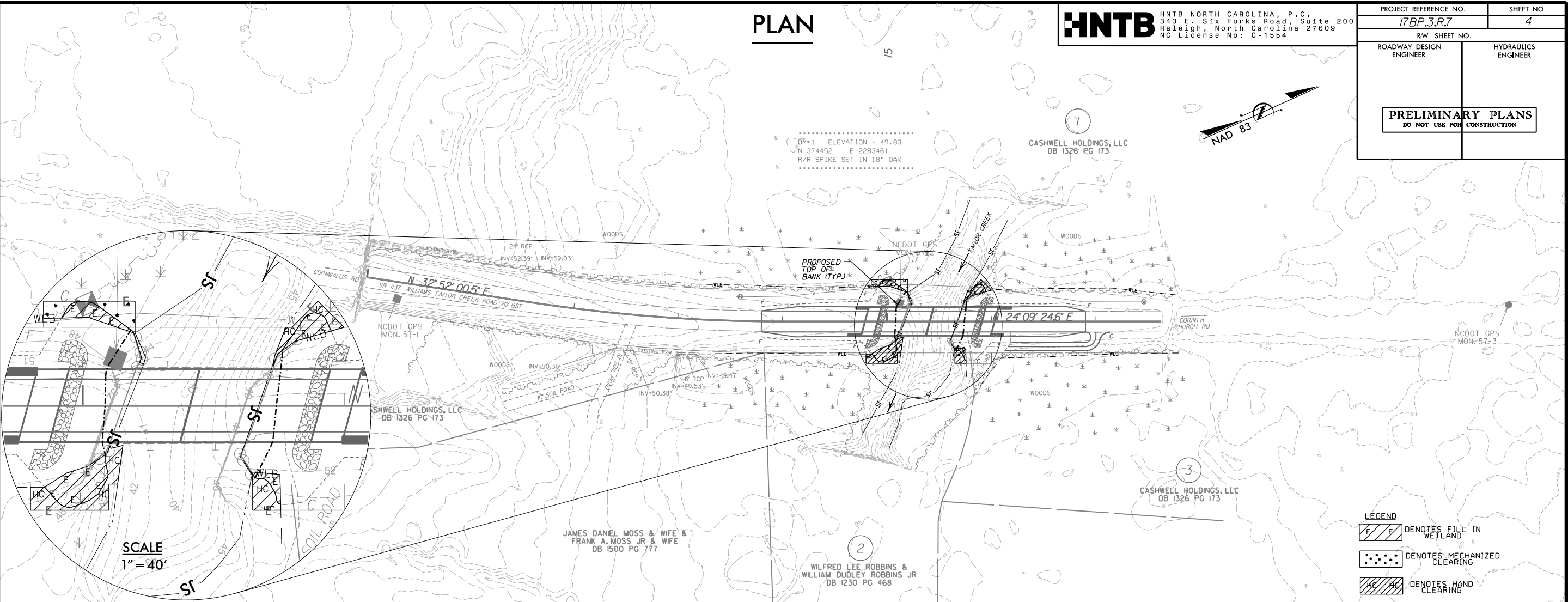
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PLAN

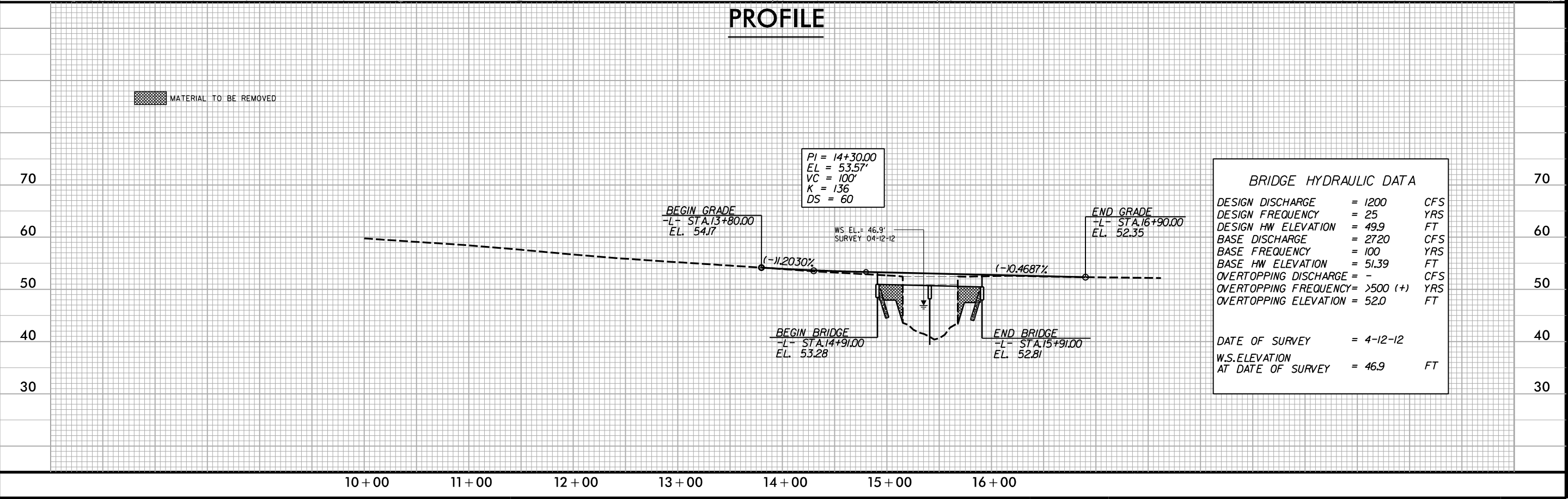
HNTB

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.		SHEET NO.	
17BP.3.R.7		4	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			



PROFILE



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

STRUCTURE
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 17BP.3.R.7 (SF-300057) F.A. PROJ. _____
COUNTY DUPLIN
PROJECT DESCRIPTION BRIDGE NO. 57 ON SR 1137 (WILLIAMS
TAYLOR CREEK RD.) OVER TAYLOR CREEK AT -L- STA. 15+41

CONTENTS

SHEET	DESCRIPTION
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4	PROFILE
5	BORE LOGS

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN FIELD OR BY CONSULTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT 1901 TOL-6050. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BORING. THE LABORATORY SAMPLE DATA AND THE IN SITU UNPLACED TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH THE ACCORDANCE TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION, AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BODDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR RECORDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THE PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BODDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

PERSONNEL
C.M. WRIKE

J.R. SWARTLEY

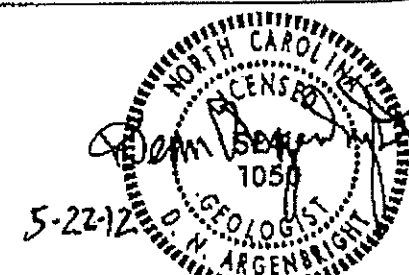
R.B. SMITH

INVESTIGATED BY D.N. ARGENBRIGHT

CHECKED BY D.N. ARGENBRIGHT

SUBMITTED BY D.N. ARGENBRIGHT

DATE MAY 2012



PROJECT: 17BP.3.R.7 ID: SF-300057

DRAWN BY: C.P. TURNER

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE PART OF THE PLANS.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

PROJECT REFERENCE NO.
SF-300057

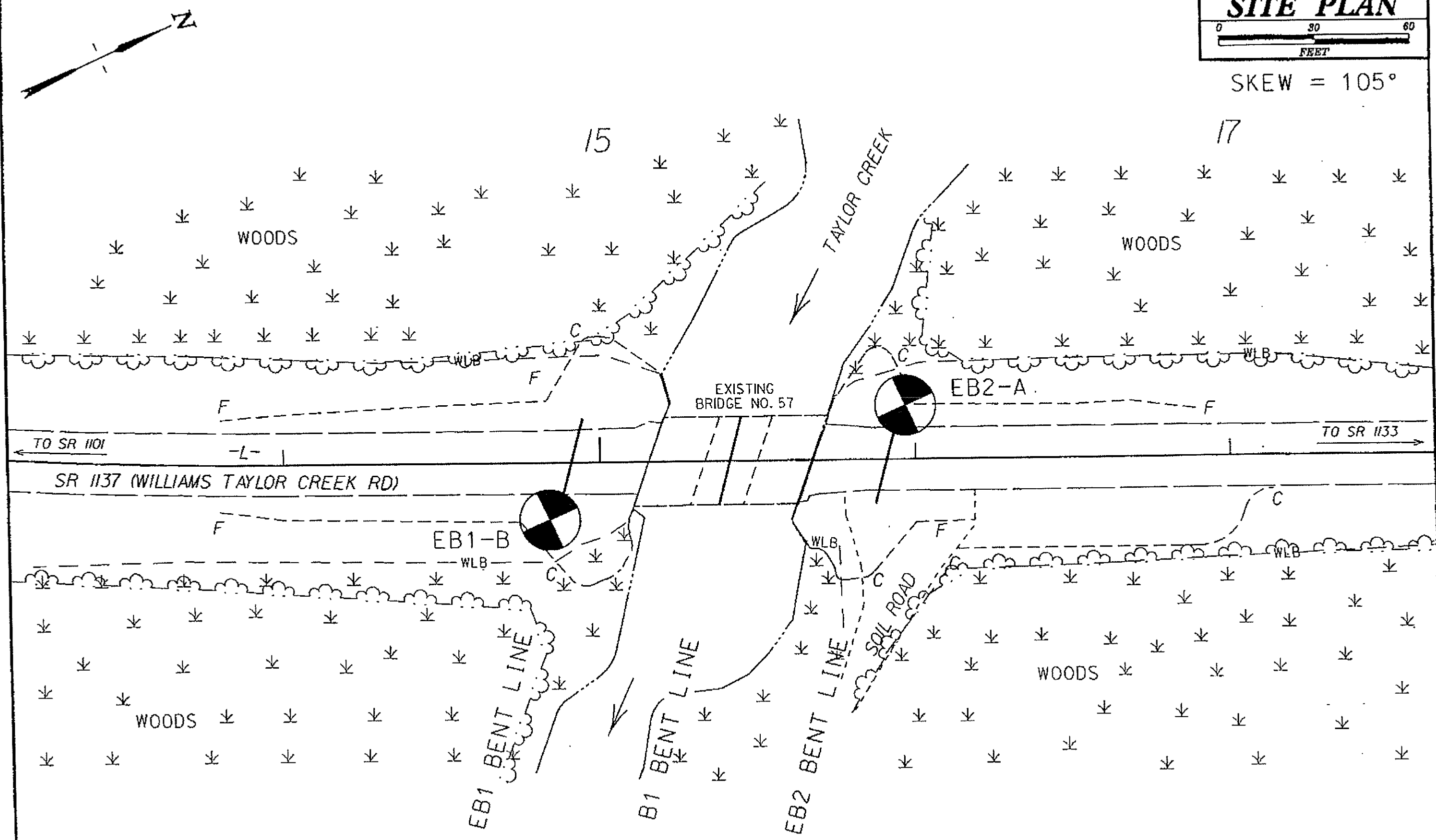
SHEET NO.
2 OF 5

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS									
SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLES: VERY STIFF, BROWN CLAY, ROOTS INTERFERED, FINE SAND, LATERAL ROOTS, ETC.										WELL-GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. ALSO POORLY GRADED. POORLY GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES. THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERM: ANGULAR, SUBANGULAR, SUBROUND, OR ROUND.										HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT YIELDS YIELD SPT REFUSAL, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL YIELDS SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPON SAMPLER EQUAL TO OR LESS THAN 50 BLOWS PER FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: WEATHERED ROCK (W) CRYSTALLINE ROCK (C) NON-CRYSTALLINE ROCK (N) COASTAL PLAIN SEDIMENTARY ROCK (CP)										ALLUVIUM (ALLU) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCULUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL, DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FACILITY - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FILLITE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOADED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (F) - A Mappable geologic unit that can be recognized and traced in the field. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHAL-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LESS - A BODY OF SOIL OR ROCK THAT TENDS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS, NOTING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PENETRATED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SEDIMENTOSITY OF THE INTRUSIVE ROCKS. SLICKENSLIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS ON OR BY OF A 140 LB. HAMMER FALLING 30 INCHES DESIGNED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPT-11 SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 50 BLOWS PER FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SCREC) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. SURFICIAL (SUR) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.									
GENERAL CLASS. GROUP CLASS. SYMBOL PERCENT PASSING USUAL TYPES OF MAJOR MATERIALS GENERALIZING AS A SUBGRADE										MINERALOGICAL COMPOSITION COMPRESSIBILITY PERCENTAGE OF MATERIAL GROUND WATER MISCELLANEOUS SYMBOLS ABBREVIATIONS EQUIPMENT USED ON SUBJECT PROJECT										WEATHERING FRESH VERY SLIGHT (V SL) SLIGHT MODERATE MODERATELY SEVERE SEVERE VERY SEVERE COMPLETE VERY HARD HARD MODERATELY HARD HARD MODERUM SOFT VERY SOFT FRACTURE SPACING BEEDING INDURATION										SOIL LEGEND AND AASHTO CLASSIFICATION GENERAL CLASS. GROUP CLASS. SYMBOL PERCENT PASSING USUAL TYPES OF MAJOR MATERIALS GENERALIZING AS A SUBGRADE PL OF A-7-5 SUBGROUP IS LL - 30 IF PI OF A-7-5 SUBGROUP IS > LL - 30 CONSISTENCY OR DENSENESS TEXTURE OR GRAIN SIZE SOIL MOISTURE - CORRELATION OF TERMS PLASTICITY COLOR									

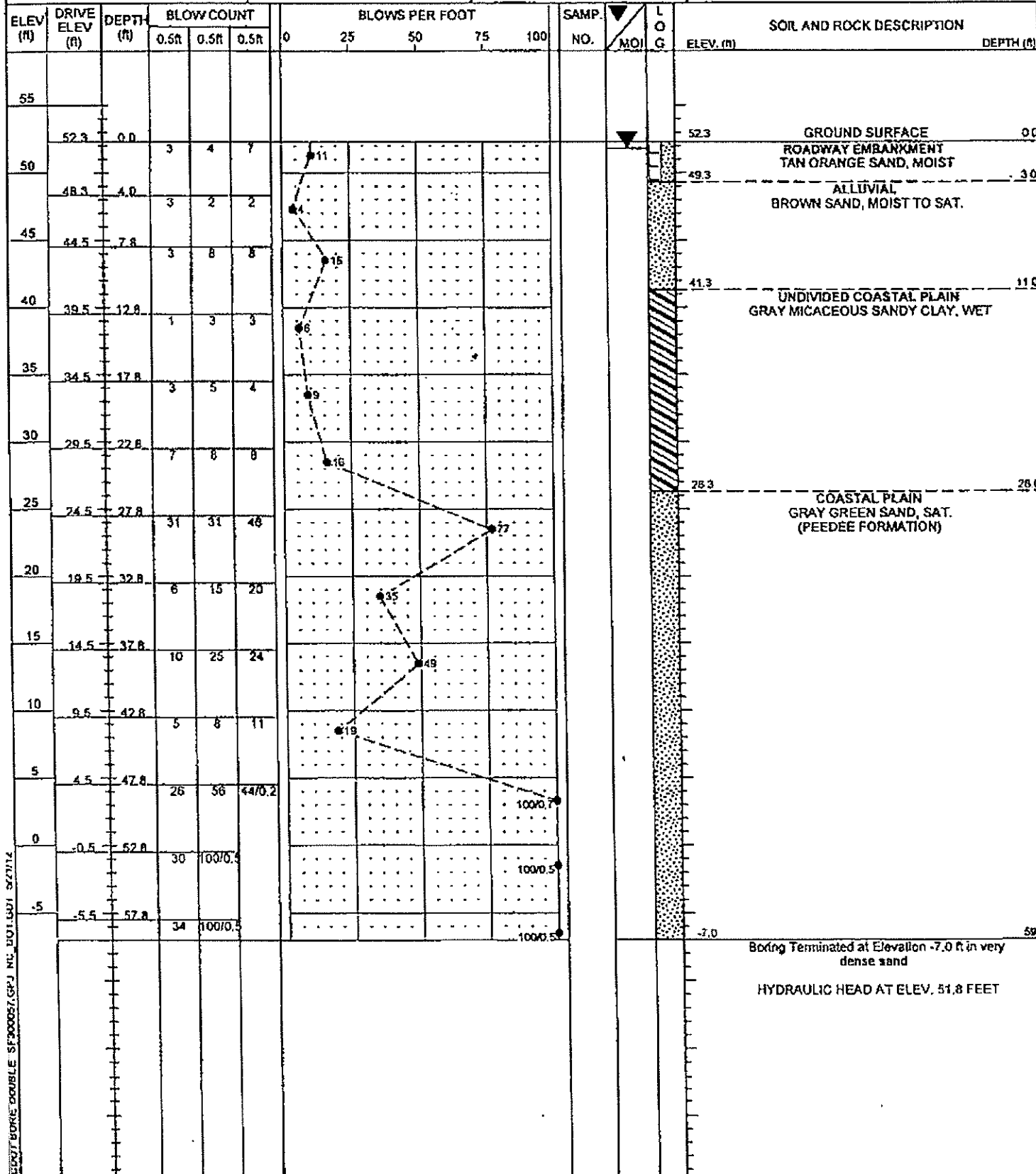
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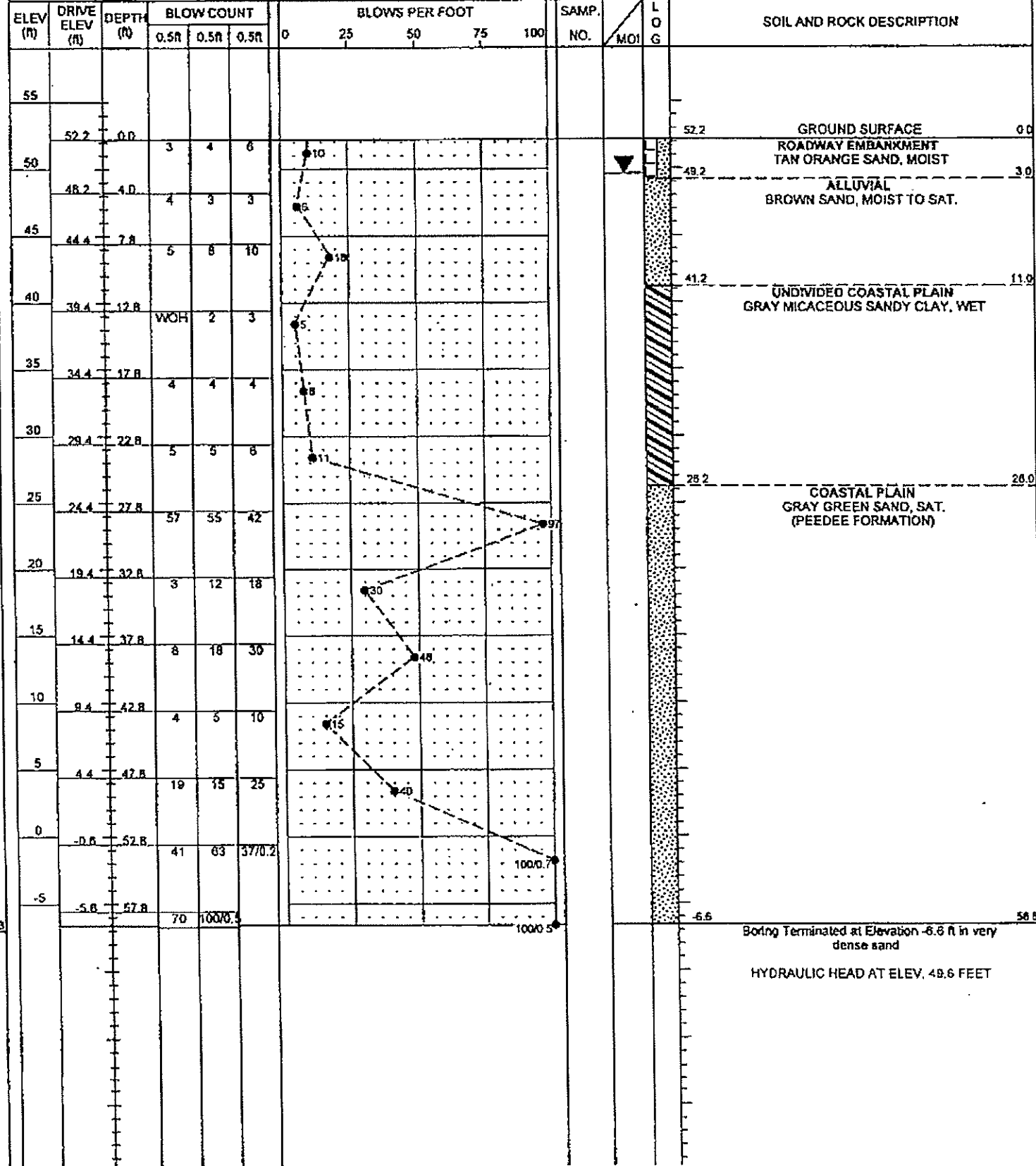
NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET 3 OF 3

WBS 17BP.3.R.7	TIP SF-300057	COUNTY DUPLIN	GEOLOGIST Wrike, C. M.
SITE DESCRIPTION BRIDGE NO. 57 ON -L- (SR 1137) OVER TAYLOR CREEK			
BORING NO. EB1-B	STATION 14+84	OFFSET 18 ft RT	ALIGNMENT -L-
COLLAR ELEV. 52.3 ft	TOTAL DEPTH 59.3 ft	NORTHING 374,413	EASTING 2,283,506
DRILL RIG/HAMMER EFF/DATE GFO1042 CME-550 87% 09/03/2009		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER Smith, R. E.	START DATE 05/15/12	COMP. DATE 05/15/12	SURFACE WATER DEPTH N/A



WBS 17BP.3.R.7	TIP SF-300057	COUNTY DUPLIN	GEOLOGIST Wrike, C. M.
SITE DESCRIPTION BRIDGE NO. 57 ON -L- (SR 1137) OVER TAYLOR CREEK			
BORING NO. EB2-A	STATION 15+97	OFFSET 17 ft LT	ALIGNMENT -L-
COLLAR ELEV. 52.2 ft	TOTAL DEPTH 58.8 ft	NORTHING 374,530	EASTING 2,283,520
DRILL RIG/HAMMER EFF/DATE GFO1042 CME-550 87% 09/03/2009		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER Smith, R. E.	START DATE 05/16/12	COMP. DATE 05/16/12	SURFACE WATER DEPTH N/A



17BP.3.R.7 EB1-B 05/15/12 09/03/2009

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PROFILE THROUGH BORINGS PROJECTED ALONG -L-

PROJECT REFERENCE NO.	SHEET NO.
5F-300057	4 OF 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR S/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

VE = 2.0 70

