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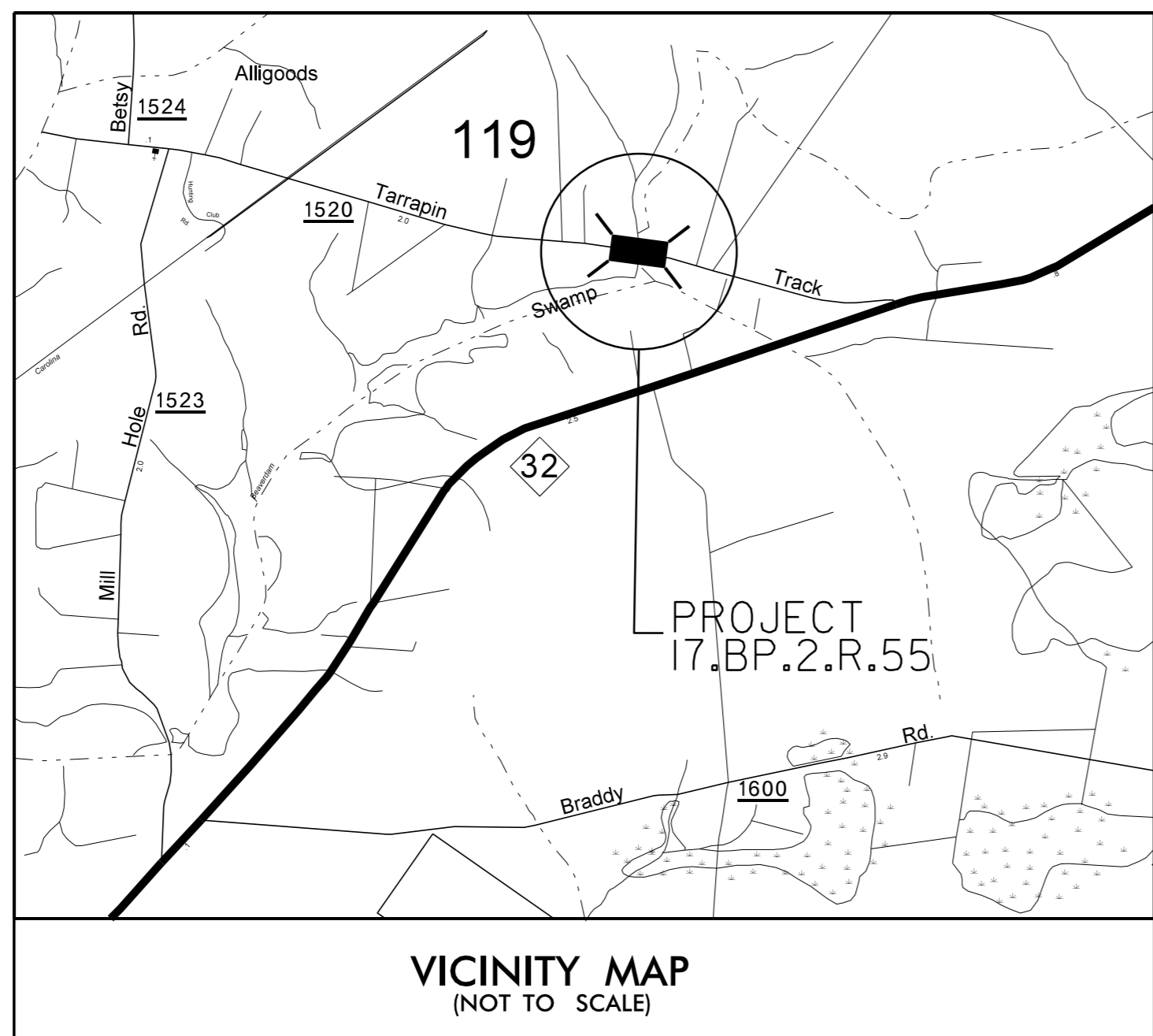
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09/08/99

TIP PROJECT: 17BP.2.R.55

CONTRACT: DB00253

See Sheet 1-A For Index of Sheets



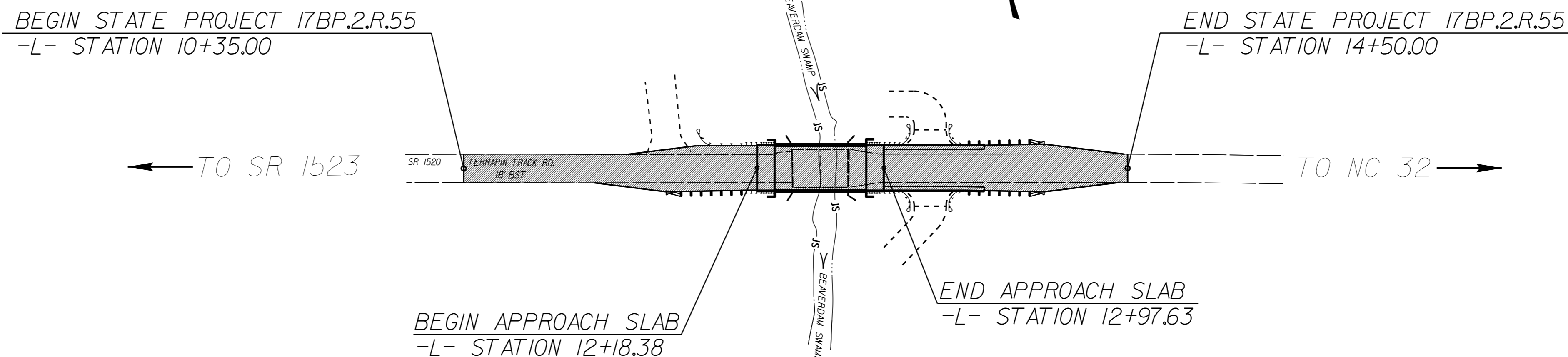
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BEAUFORT COUNTY

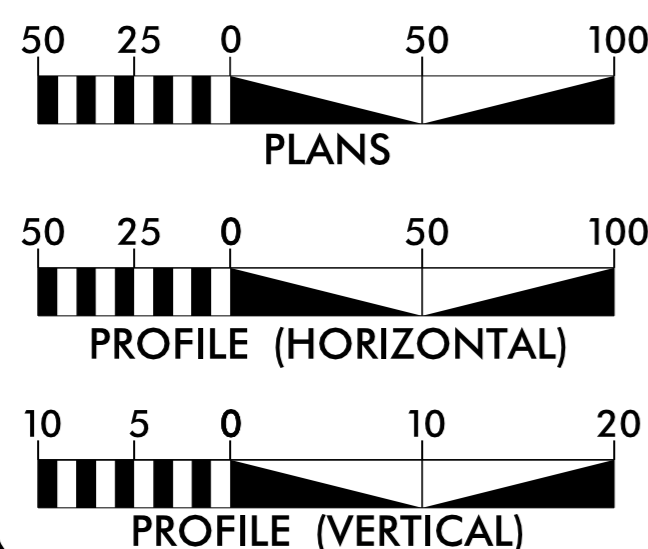
**LOCATION: BRIDGE NO. 119 OVER BEAVERDAM SWAMP CREEK
ON SR 1520 (TERRAPIN TRACK RD)**

**TYPE OF WORK: BRIDGE REPLACEMENT,
GUARDRAIL, PAVING,
GRADING, AND DRAINAGE.**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.2.R.55	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	



GRAPHIC SCALES



PROJECT LENGTH

LENGTH ROADWAY PROJECT 17BP.2.R.55 = 0.064 MILE
LENGTH STRUCTURE PROJECT 17BP.2.R.55 = 0.015 MILE
TOTAL LENGTH PROJECT 17BP.2.R.55 = 0.079 MILE

Prepared in the Office of:
DIVISION OF HIGHWAYS
1704 N. GREENE ST, GREENVILLE NC 27834

2012 STANDARD SPECIFICATIONS

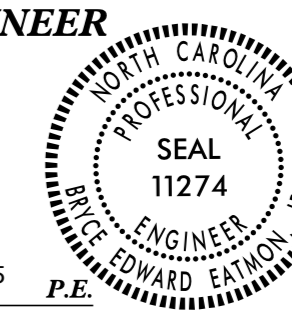
RIGHT OF WAY DATE:
JUNE 2014

LETTING DATE:
APRIL 2016

EDWARD EATMON, PE
PROJECT ENGINEER

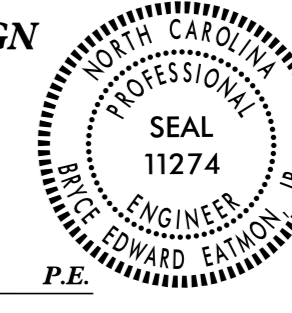
LANG JONES
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

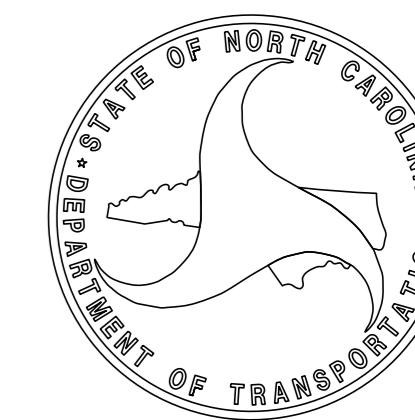


DocuSigned by:
Edward Eatmon
11/23/2015 P.E.

ROADWAY DESIGN ENGINEER



DocuSigned by:
Lang Jones
11/23/2015 P.E.



10-NOV-2015 11:55
G:\PROJECTS\BEAUFORT\Beaufort_119\Beaufort119_ddc2_psh_1.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

INDEX OF SHEETS

1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2	TYPICAL SECTIONS
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF DRAINAGE, GUARDRAIL AND EARTHWORK QUANTITIES
4	PLAN AND PROFILE SHEET
4A	RIGHT OF WAY SHEET
TMP1-TMP2	TRAFFIC MANAGEMENT PLANS
EC1-EC5	EROSION CONTROL SHEETS
UC1-UC4	UTILITY CONSTRUCTION SHEETS
X1A	CROSS-SECTION SUMMARY
X1-X2	CROSS-SECTIONS
S1-S15	STRUCTURE PLANS (BRIDGE)

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 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	
815.03	Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet
840.45	Precast Drainage Structure
840.66	Drainage Structure Steps
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 07/30/12

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.

UNDERDRAINS:

UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.03 AT LOCATIONS DIRECTED BY 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.

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:

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 OTHERS.

12/05/11

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
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	--- MLB ---
Proposed Wetland Boundary	--- MLB ---
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	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□ †
Building	□
School	□
Church	□
Dam	□

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	□
Jurisdictional Stream	--- JS ---
Buffer Zone 1	--- BZ 1 ---
Buffer Zone 2	--- BZ 2 ---
Flow Arrow	←
Disappearing Stream	----->
Spring	○
Wetland	--- MLB ---
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	○ R/W ▲
Proposed Right of Way Line with Concrete or Granite R/W Marker	○ R/W ▲
Proposed Control of Access Line with Concrete CA Marker	○ C/A
Existing Control of Access	○ C/A
Proposed Control of Access	○ C/A
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	⊕
Storm Sewer	--- S ---

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	--- 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	⊕
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:

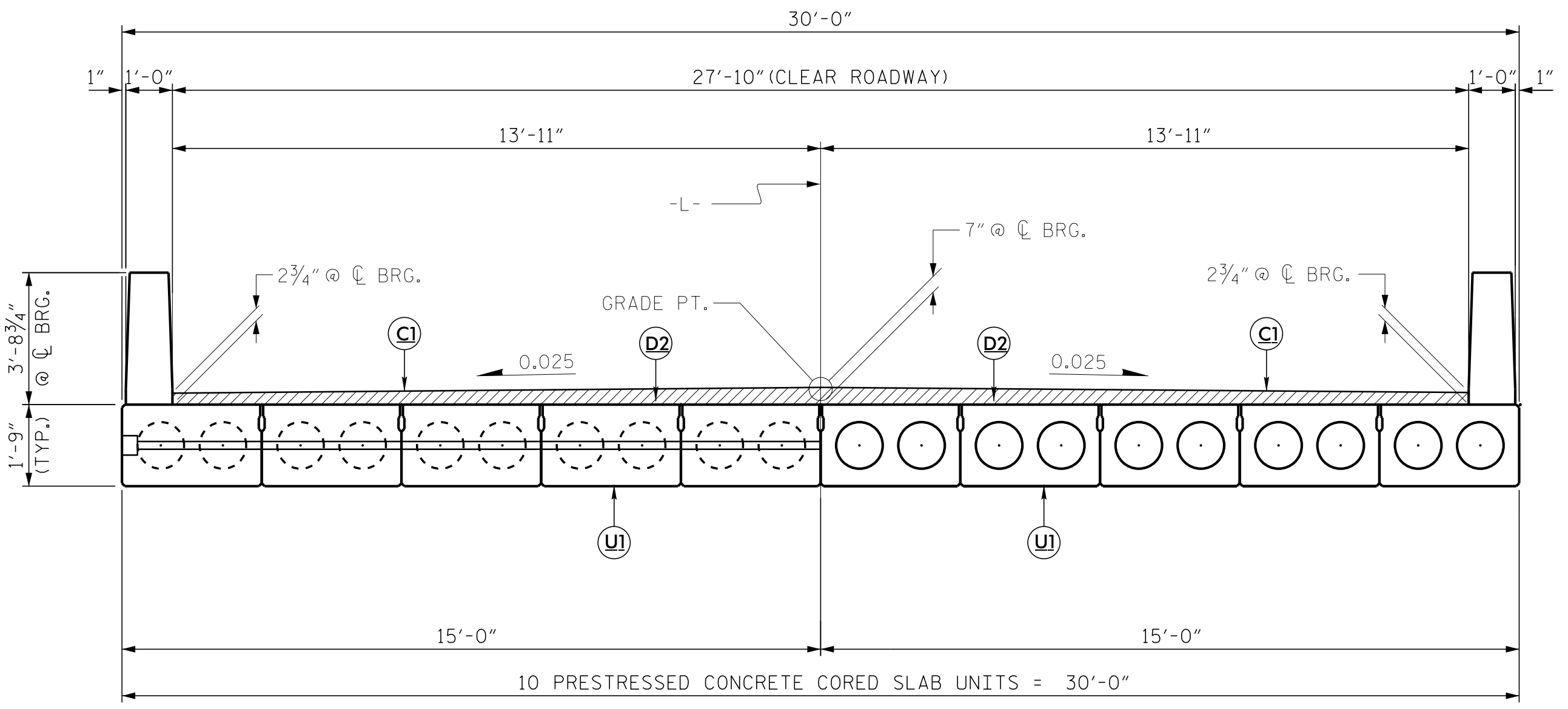
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	--- SS ---
Above Ground Sanitary Sewer	--- A/G Sanitary Sewer ---
Recorded SS Forced Main Line	--- FSS ---
Designated SS Forced Main Line (S.U.E.*)	--- FSS ---

MISCELLANEOUS:

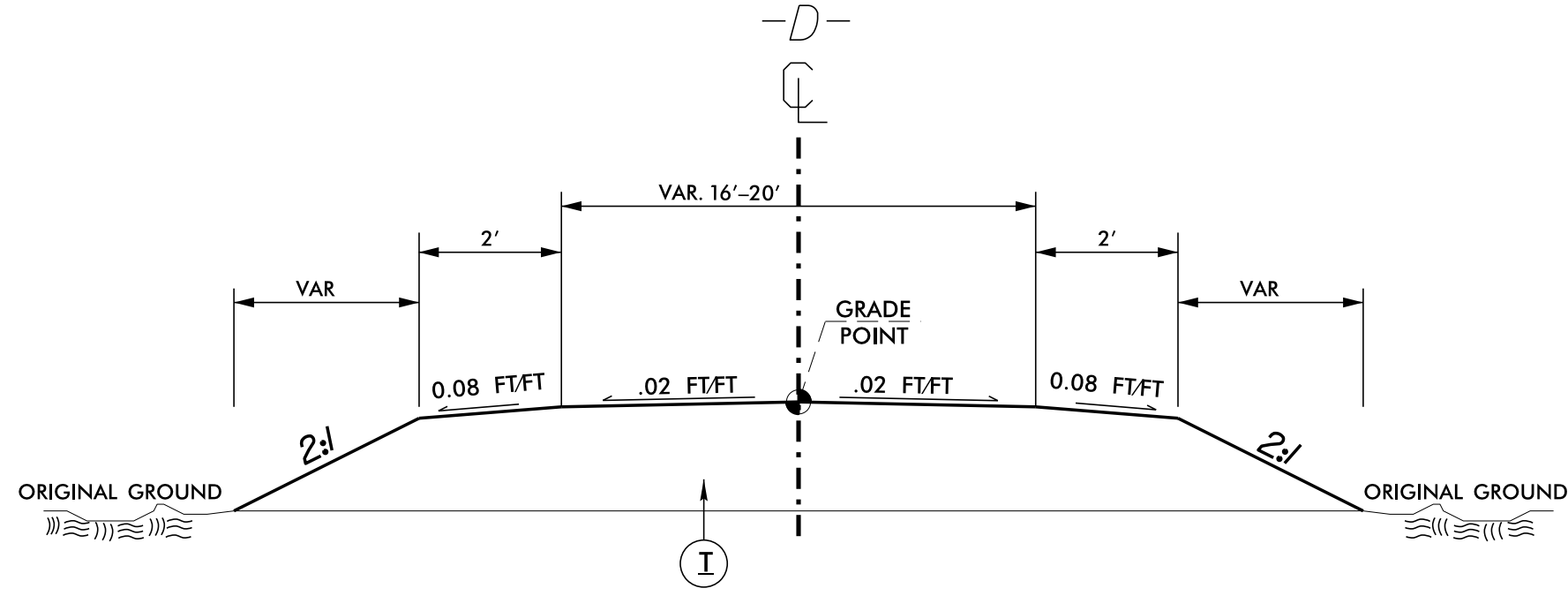
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	--- ?U/L ---
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole (S.U.E.*)	⊕
Abandoned According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

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 336 LBS. PER SQ.YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
D2	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
U1	CONCRETE CORED SLAB

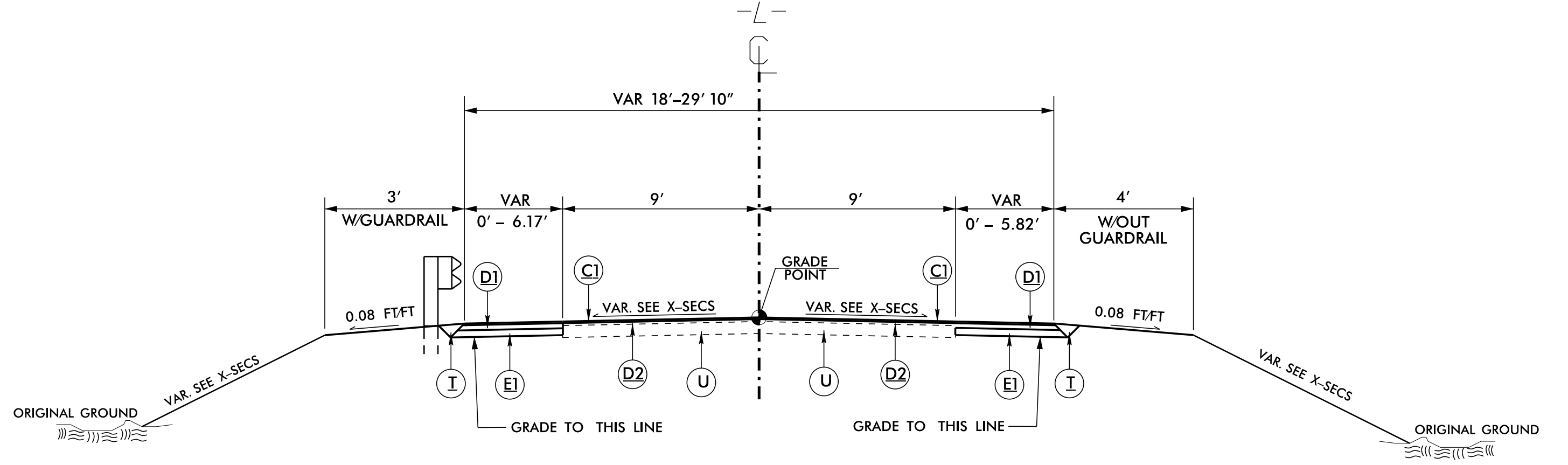
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



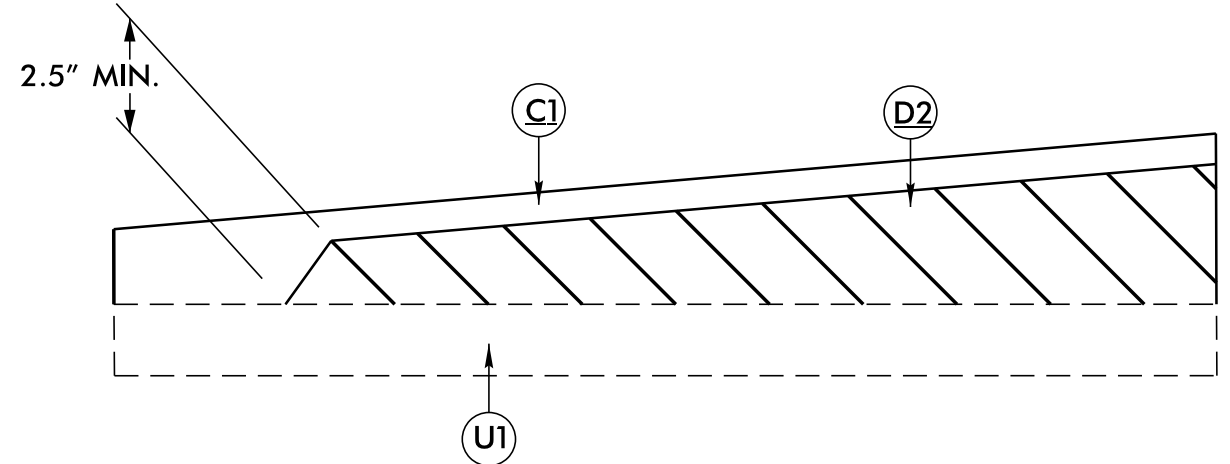
TYPICAL BRIDGE SECTION (NTS)
-L- 12+29.38 - 12+86.63



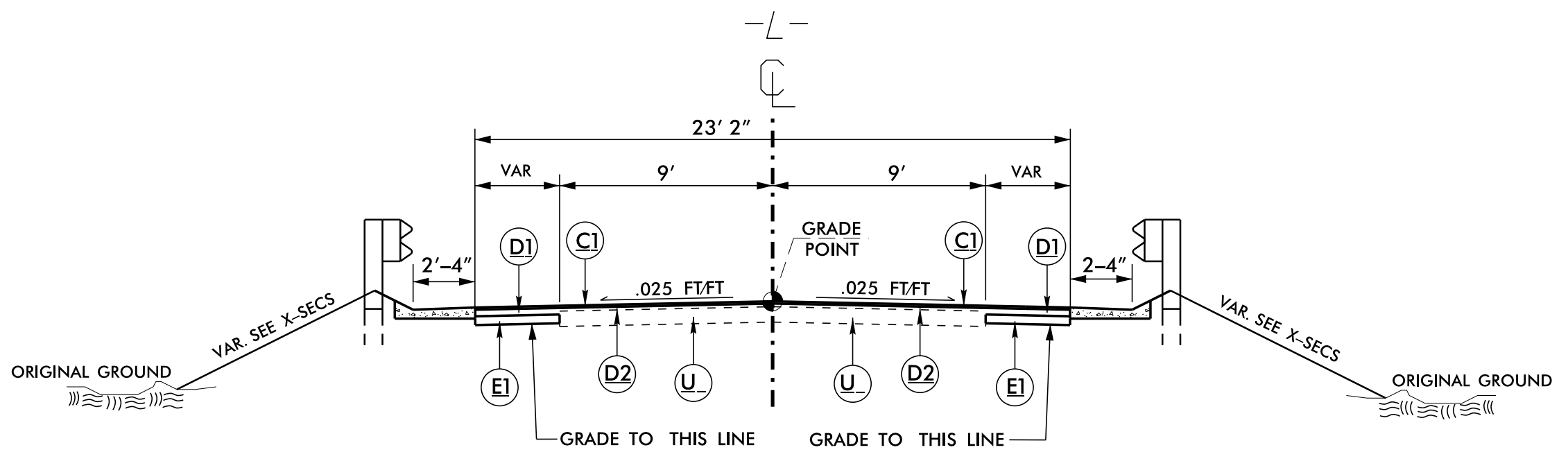
USE TYPICAL SECTION #3
-D- 10+22.17 - 10+62.26
-D- 11+10.09 - 11+46.07



USE TYPICAL SECTION #1 (NTS)
-L- 10+35.00 - 12+18.38
-L- 13+60.48 - 14+50.00



WEDGING DETAIL FOR BRIDGE
NOT TO SCALE



USE TYPICAL SECTION #2
-L- 12+97.63 - 13+60.48
SHOULDER BERM GUTTER

REVISIONS

8/17/99
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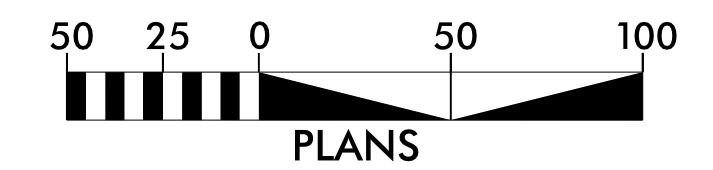
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

ITEM	SECT	QUANTITY	UNIT	ITEM DESCRIPTION	ITEM	SECT	QUANTITY	UNIT	ITEM DESCRIPTION
1	800	1	LS	MOBILIZATION	32	SP	625	LF	SAFETY FENCE
2	801	1	LS	CONSTRUCTION SURVEYING	33	1630	5	CY	SILT EXCAVATION
3	SP	1	LS	REINFORCED BRIDGE APPROACH FILL, -L- STA 12+58.00	34	1631	250	SY	MATTING FOR EROSION CONTROL
4	226	1	LS	GRADING	35	1632	50	LF	1/4" HARDWARE CLOTH
5	226	200	CY	UNDERCUT EXCAVATION	36	SP	100	SY	FLOATING TURBIDITY CURTAIN
6	300	30	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	37	SP	50	LF	WATTLE
7	300	80	SY	FOUNDATION CONDITIONING GEOTEXTILE	38	1660	0.50	ACRE	SEEDING AND MULCHING
8	305	120	LF	15" DRAINAGE PIPE	39	1661	50	LB	SEED FOR REPAIR SEEDING
9	305	72	LF	18" DRAINAGE PIPE	40	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
10	310	40	LF	15" R.C. PIPE CULVERTS, CLASS IV	41	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
11	610	70	TON	ASPHALT CONCRETE BASE COURSE, TYPE B25.0B	42	1665	0.50	TON	FERTILIZER TOPDRESSING
12	610	100	TON	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 119.0B	43	1675	13	EA	RESPONSE FOR EROSION CONTROL
13	610	220	TON	ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5A	44	SP	1	LS	RELOCATE EXISTING 8" WATER MAIN
14	620	25	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG64-22					
15	840	2	EA	MASONRY DRAINAGE STRUCTURES	45	402	1	LS	REMOVAL OF EXISTING STRUCTURE AT -L- STA 12+58.00
16	840	2	EA	FRAME WITH TWO GRATE, STD 840.29	46	412	1	LS	UNCLASSIFIED STRUCTURE EXCAVATION
17	846	126	LF	SHOULDER BERM GUTTER	47	SP	2	EA	PDA TESTING
18	862	20	LF	STEEL BEAM GUARDRAIL	48	420	37.6	CY	CLASS A CONCRETE (BRIDGE)
19	862	70	LF	STEEL BEAM GUARDRAIL, SHOP CURVED	49	422	1	LS	BRIDGE APPROACH SLABS
20	862	10	EA	ADDITIONAL GUARDRAIL POSTS	50	425	4898	LB	REINFORCING STEEL (BRIDGE)
21	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III	51	450	550	LF	12" PRESTRESSED CONCRETE PILES
22	862	3	EA	GUARDRAIL ANCHOR UNITS, TYPE 350	52	450	10	EA	PILE REDRIVES
23	862	5	EA	GUARDRAIL ANCHOR UNITS, AT-1	53	SP	110.25	LF	VERTICAL CONCRETE BARRIER RAIL
24	876	30	TON	RIP RAP, CLASS I	54	876	54	TON	RIP RAP, CLASS II (3'-0" THICK)
25	876	14	TON	RIP RAP, CLASS B	55	876	150	SY	GEOTEXTILE FOR DRAINAGE
26	876	90	SY	GEOTEXTILE FOR DRAINAGE	56	430	1	LS	ELASTOMETRIC BEARINGS
27	1605	825	LF	TEMPORARY SILT FENCE	57	430	550	LF	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS
28	1610	10	TON	SEDIMENT CONTROL STONE					
29	1615	0.5	ACRE	TEMPORARY MULCHING					
30	1620	50	LB	SEED FOR TEMPORARY SEEDING					
31	1620	0.25	TON	FERTILIZER FOR TEMPORARY SEEDING					
32	1622	200	LF	TEMPORARY SLOPE DRAINS					

REVISIONS

8/17/99

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DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS-2"

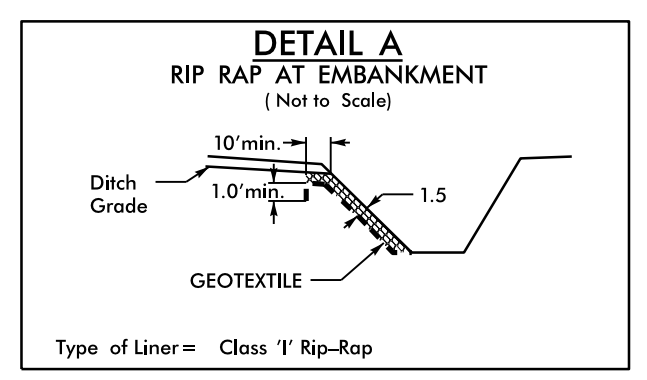
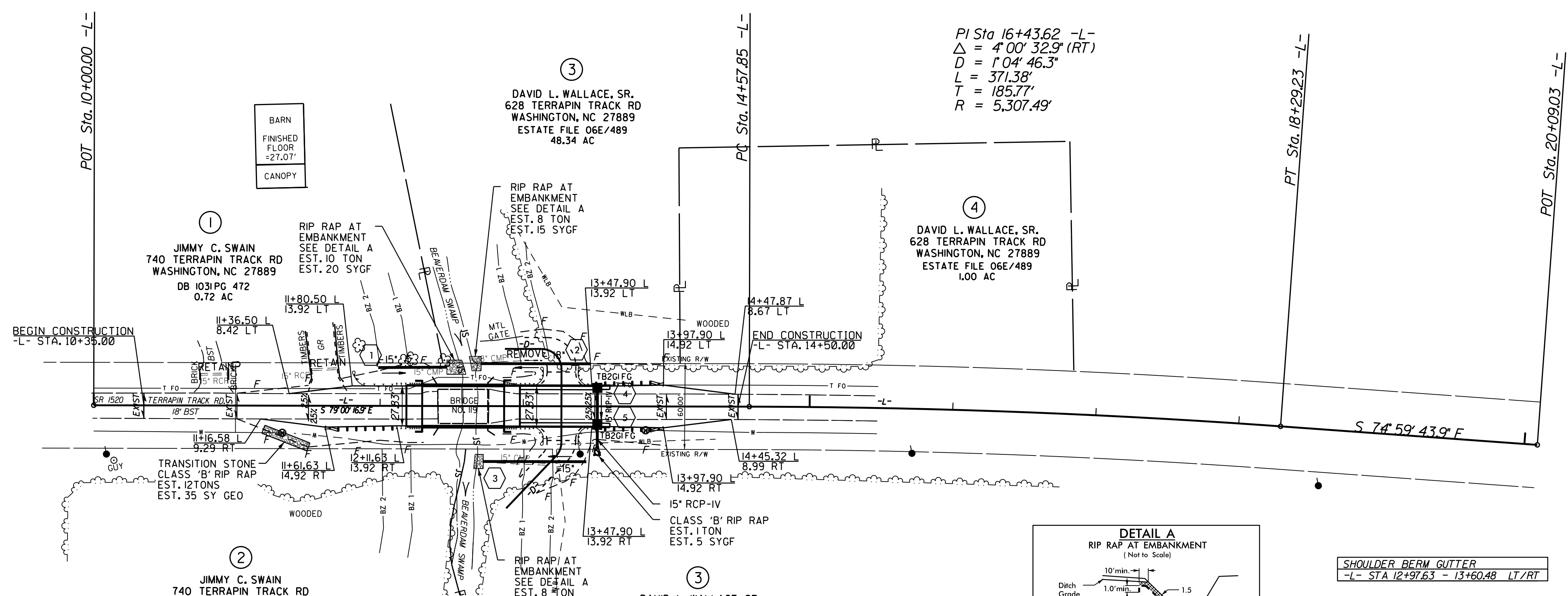
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
 NORTHING: 663579.332(ft) EASTING: 2617451.194(ft)
 ELEVATION: 33.62(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989076

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-2" TO -L- STATION 10+00 IS
 S 77° 54' 58.03" E 361.26'

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

PI Sta 16+43.62 -L-
 $\Delta = 4' 00'' 32.9''$ (RT)
 $D = 1' 04'' 46.3''$
 $L = 371.38'$
 $T = 185.77'$
 $R = 5,307.49'$



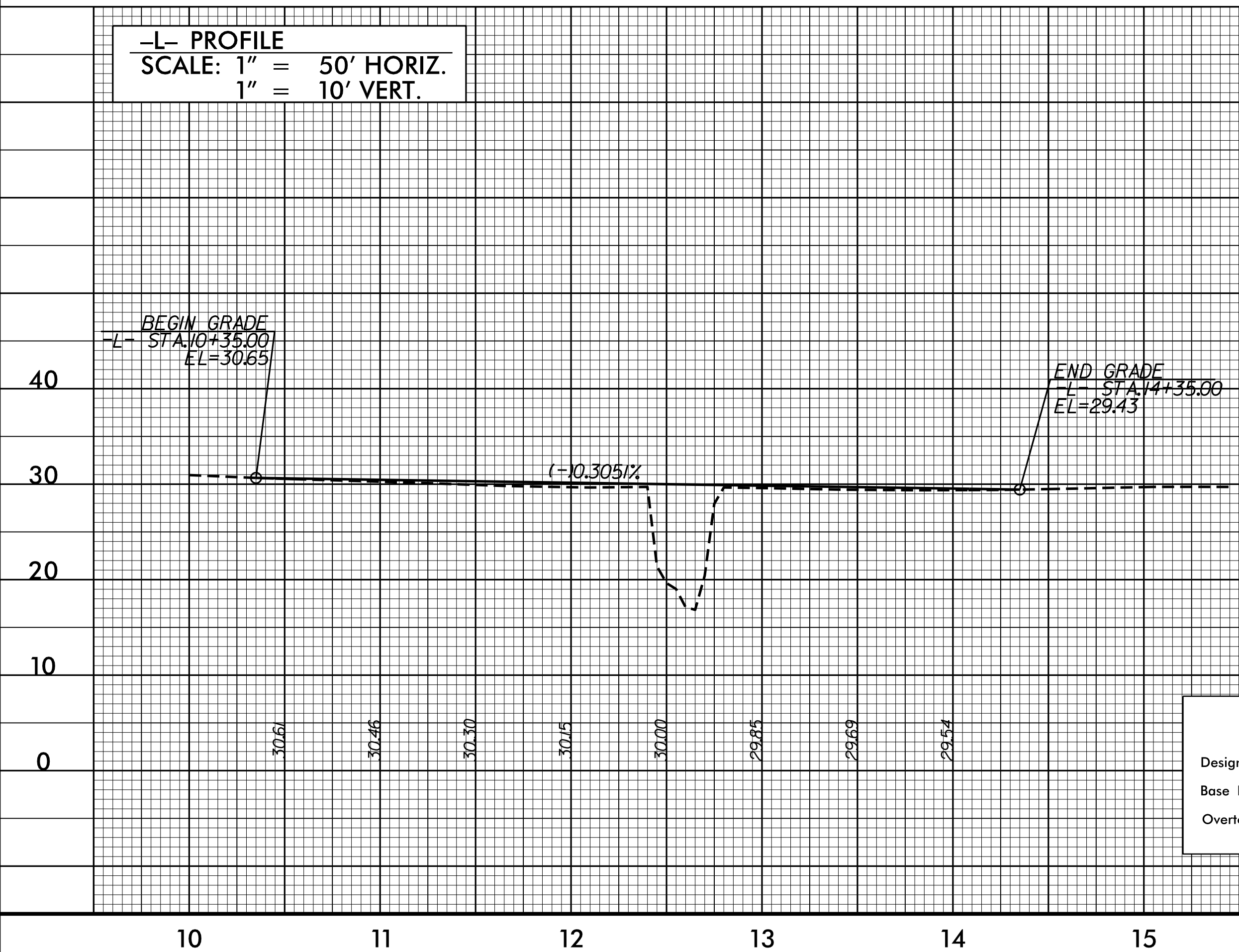
SHOULDER BERM GUTTER
 -L- STA 12+97.63 - 13+60.48 LT/RT

WORK POINT DESCRIPTION	
WORK POINT #1	-L- STATION 12+29.38 CL
WORK POINT #2	-L- STATION 12+86.63 CL

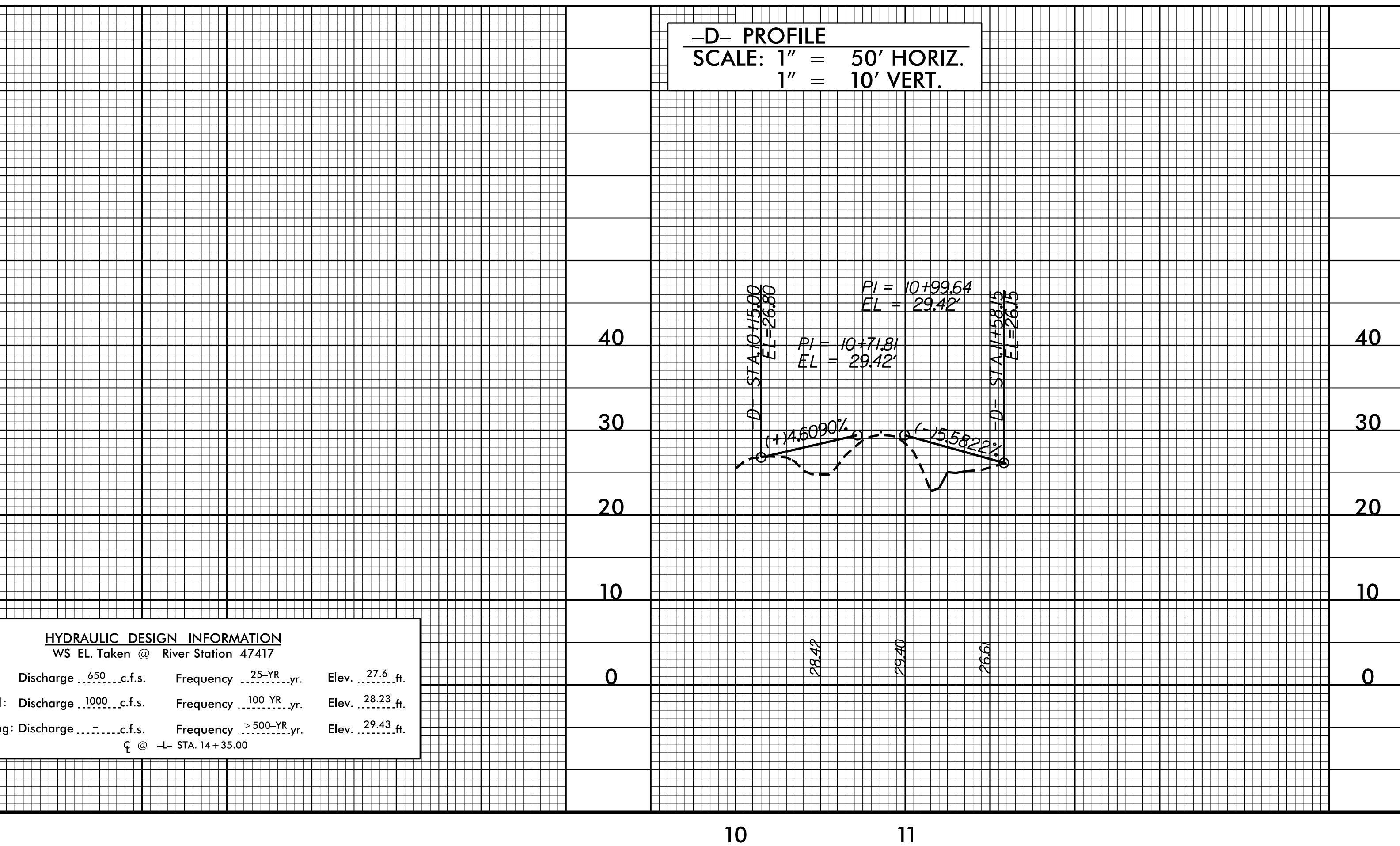
Point	North	East	Elevation	Description
3	663432.3670	2618082.4690	28.4500	BL-3
4	663384.0560	2618339.6830	28.3000	BL-4
100	663492.7630	2618038.4140	25.1300	NCGS "V212"-1979
GPS2	663579.3320	2617451.1940	33.6200	06-0119 GPS-2

NOTE:
 ALL 2:1 SLOPES ARE TO BE MATTED.

-L- PROFILE
 SCALE: 1" = 50' HORIZ.
 1" = 10' VERT.



-D- PROFILE
 SCALE: 1" = 50' HORIZ.
 1" = 10' VERT.



HYDRAULIC DESIGN INFORMATION
 WS EL Taken @ River Station 47417

Design:	Discharge .650 c.f.s.	Frequency .25-YR.	Elev. 27.6 ft.
Base Flood:	Discharge .1000 c.f.s.	Frequency 100-YR.	Elev. 28.23 ft.
Overtopping:	Discharge . c.f.s.	Frequency >500-YR.	Elev. 29.43 ft.

☉ @ -L- STA. 14+35.00

REVISIONS

8/17/99

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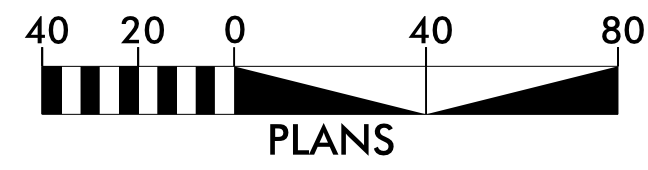
RIGHT OF WAY AREA SUMMARY

PARCEL NO.	PROPERTY OWNER NAME	LOCATION	TOTAL PARCEL AREA [ACRES]	AREA TO BE DEDICATED (CONST. EASEMENT) [ACRES]	AREA TO BE PURCHASED (P.U.E.) [ACRES]	PARCEL AREA REMAINING [ACRES]
3	DAVID L. WALLACE, SR.	LT	48.34	0.075		48.17
		RT		0.091		

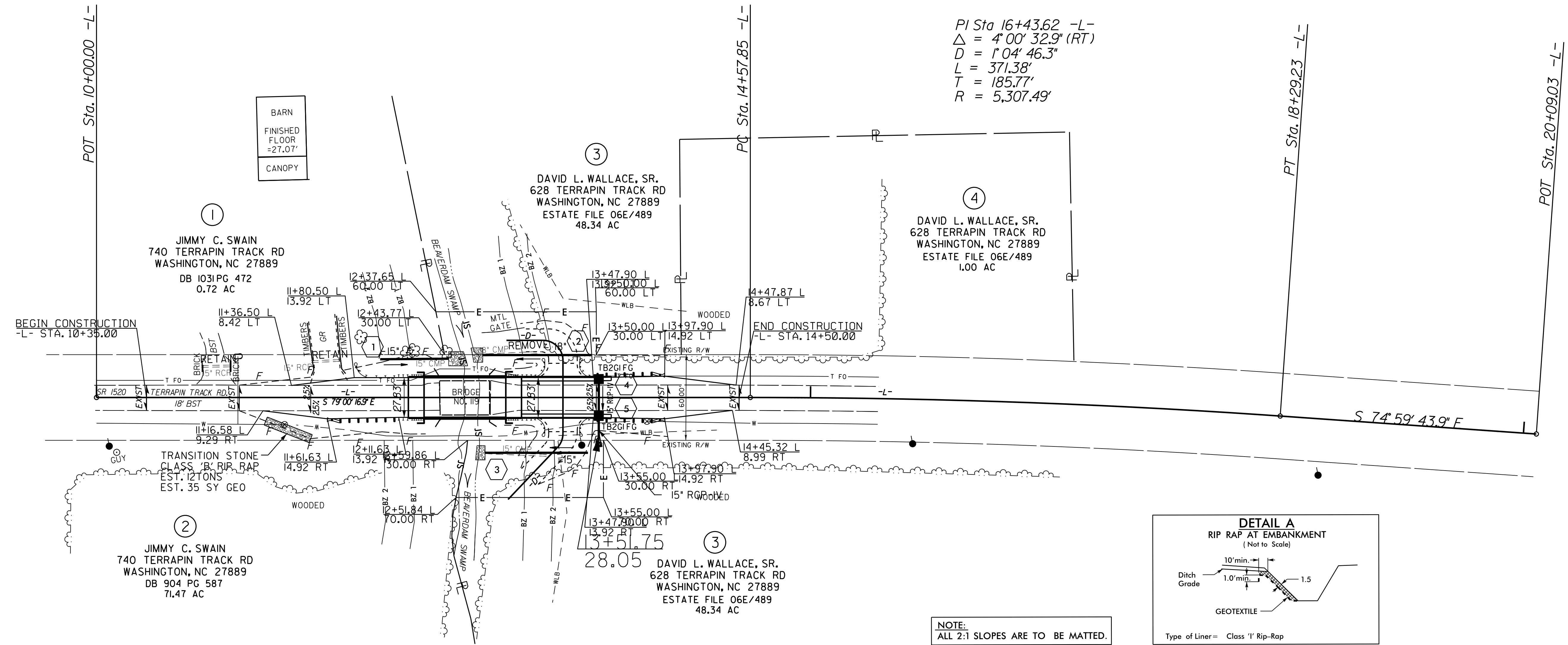
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS-2" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 663579.332(ft) EASTING: 2617451.194(ft) ELEVATION: 33.62(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989076
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-2" TO -L- STATION 10+00 IS
 S 77° 54' 58.03" E 361.26'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

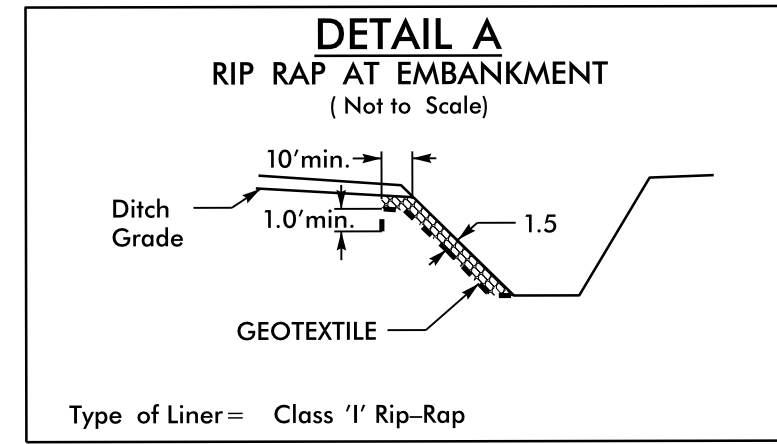
PROJECT REFERENCE NO. 17BP.2.R.55	SHEET NO. 4A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER



REVISIONS



NOTE:
ALL 2:1 SLOPES ARE TO BE MATTED.

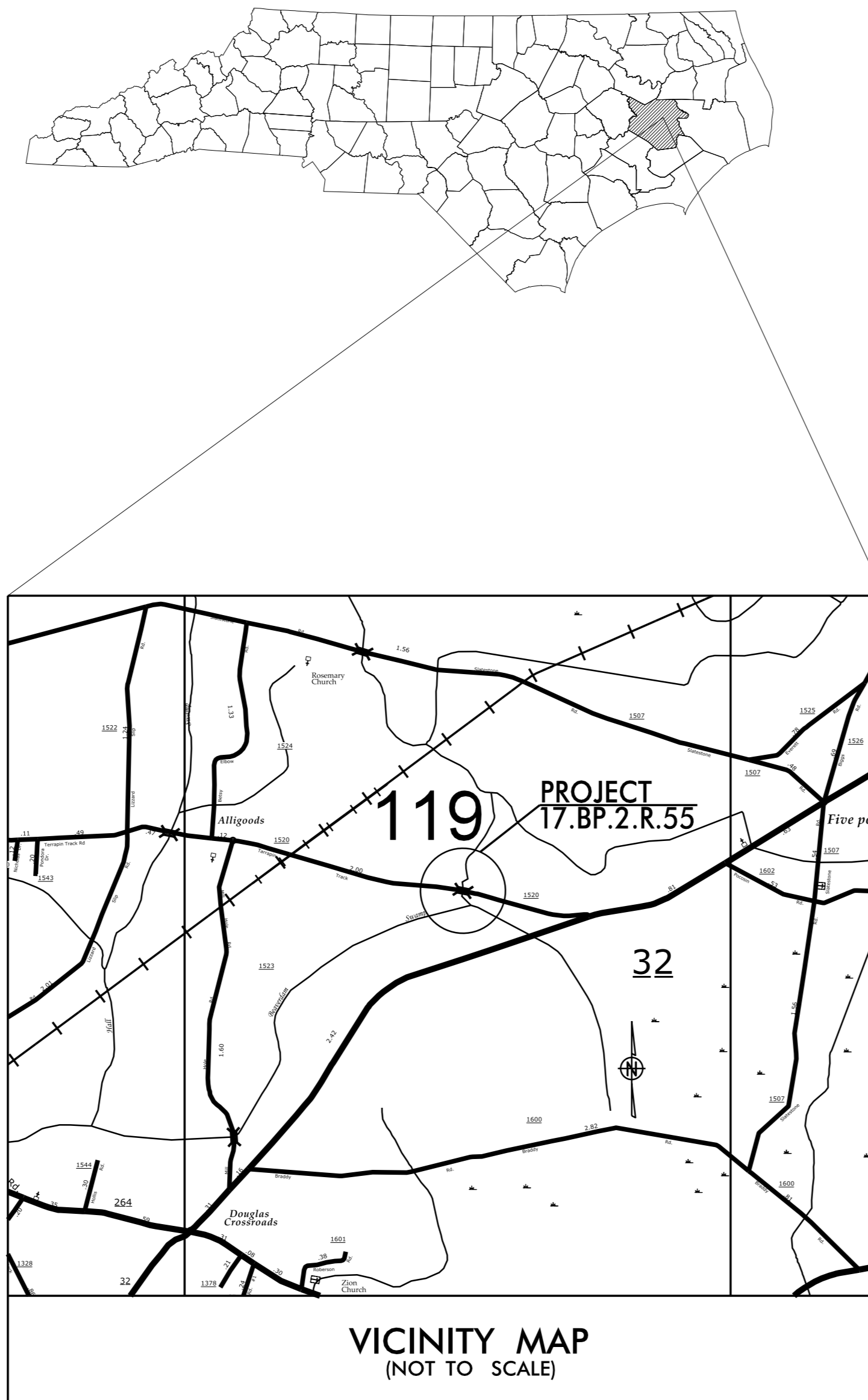


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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

BEAUFORT COUNTY



VICINITY MAP
(NOT TO SCALE)

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET WITH VICINITY MAP & INDEX OF SHEETS, LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND.
TMP-2	PROJECT NOTES, DETOUR AND PLANS.

ROADWAY 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
1101.03 (SHT. 1 OF 9)	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES (TYPE III)

LEGEND

GENERAL

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

TRAFFIC CONTROL DEVICES

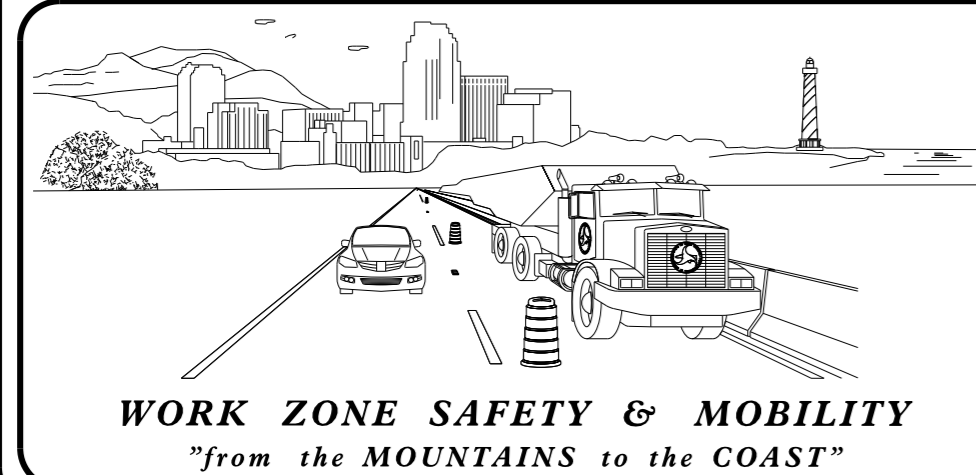
- BARRICADE (TYPE III)

SHEET NO.
TMP-1

17.BP.2.R.55

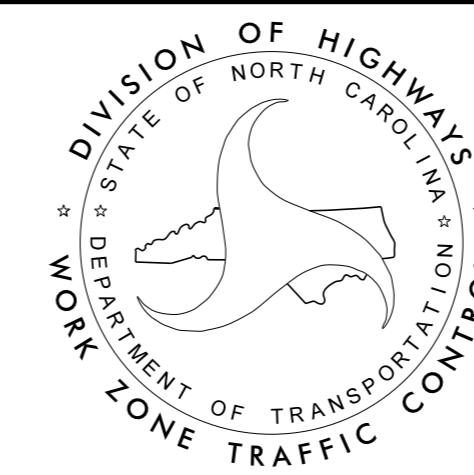
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N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
P.O. BOX 1587, GREENVILLE, NC 27835
105 PACTOLUS HWY. (NC 33), GREENVILLE, NC 27835
PHONE: (252) 830-3490 FAX: (252) 830-3352

STEVE HAMILTON, PE **TRAFFIC ENGINEER**
EDWARD EATMON, PE **TRAFFIC CONTROL PROJECT ENGINEER**
LANG JONES **TRAFFIC CONTROL PROJECT DESIGN ENGINEER**
LANG JONES **TRAFFIC CONTROL DESIGN ENGINEER**



APPROVED:
DATE: 11/16/2015 10:17

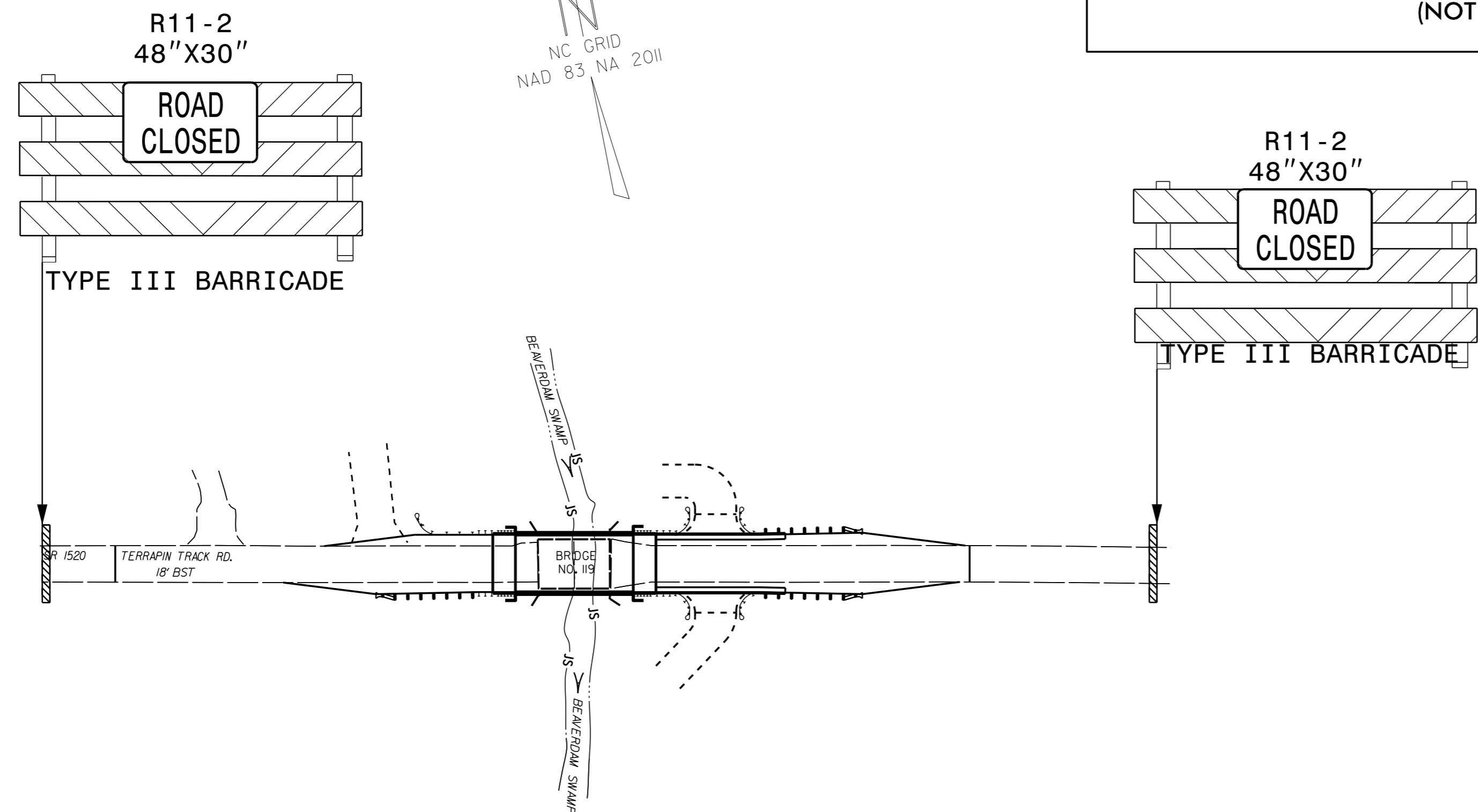
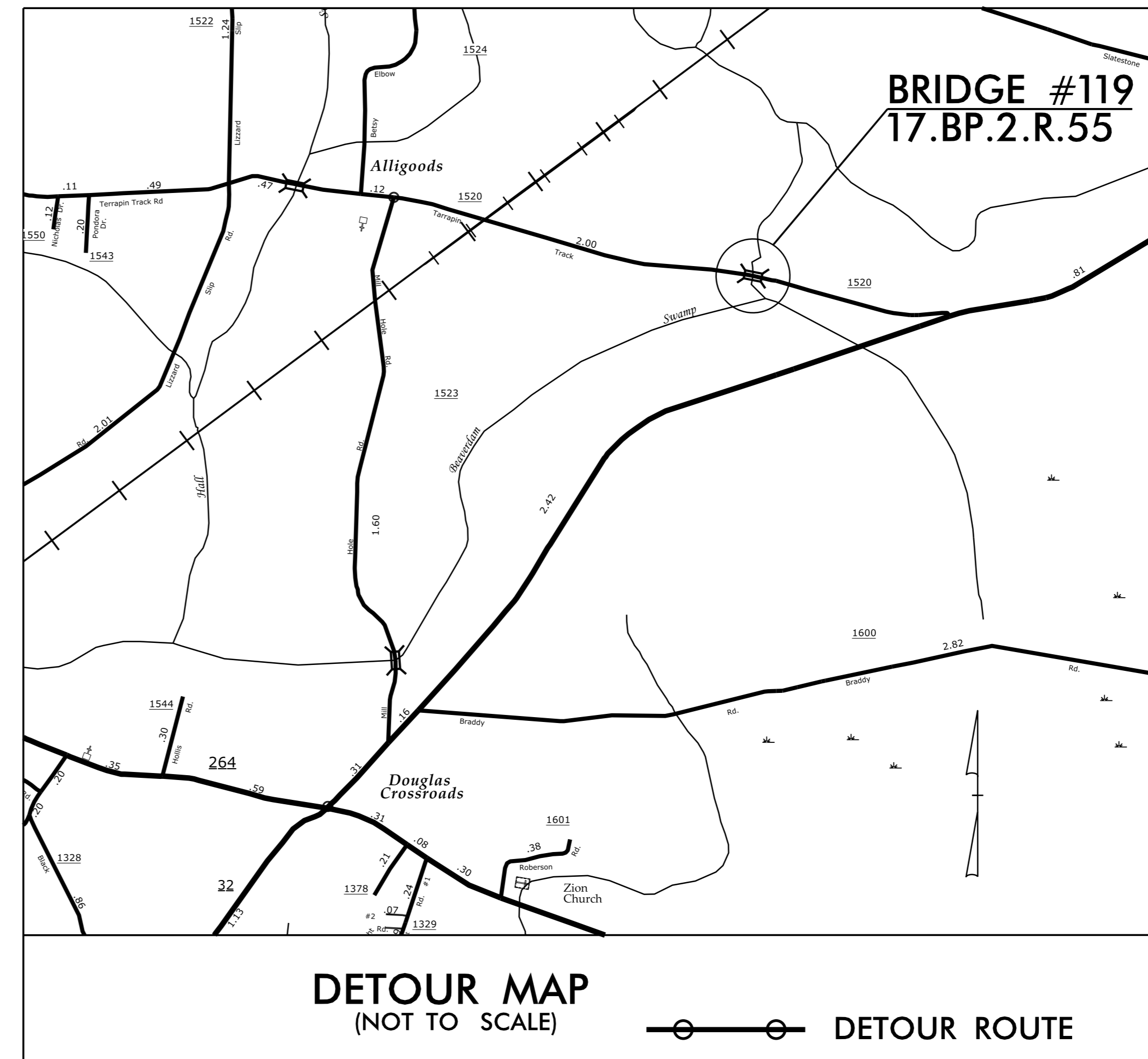
SEAL

GENERAL NOTES

IMPLEMENT TRAFFIC CONTROL IN ACCORDANCE WITH THE ROADWAY STANDARD DRAWINGS LISTED ON TMP-1.

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

STATE FORCES WILL INSTALL AND MAINTAIN THE PROJECT DETOUR AND THE TYPE III BARRICADES AT THE PROJECT LIMITS. STATE FORCES WILL INSTALL PAINT AND MARKERS ON THE FINISHED PROJECT. CALL JIM EVANS AT 252-830-3493 FOR COORDINATION.



APPROVED: <i>Erna Estman</i> 3701078984EC407 SEAL 11/16/2015	PROJECT NOTES, DETOUR AND PLANS							
	SCALE: NONE DATE: 5/5/14 DWG. BY: TP DESIGN BY: LJ REVIEWED BY: VT	REVISIONS <table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>						

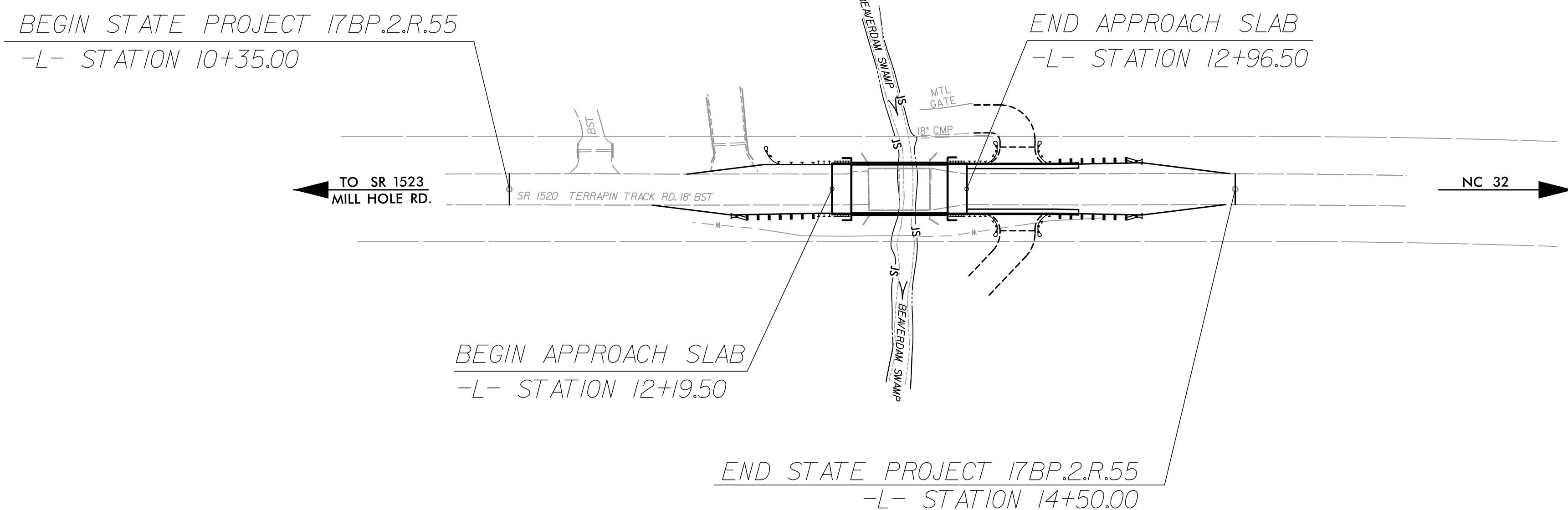
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TIP PROJECT: 17BP.2.R.55

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

**LOCATION: BEAUFORT COUNTY BRIDGE #119 OVER BEAVERDAM
SWAMP CREEK ON SR 1520 (TERRAPIN TRACK RD.)**

**TYPE OF WORK: BRIDGE REPLACEMENT WITH CORED SLAB BRIDGE,
GUARDRAIL, PAVING, GRADING, AND DRAINAGE**



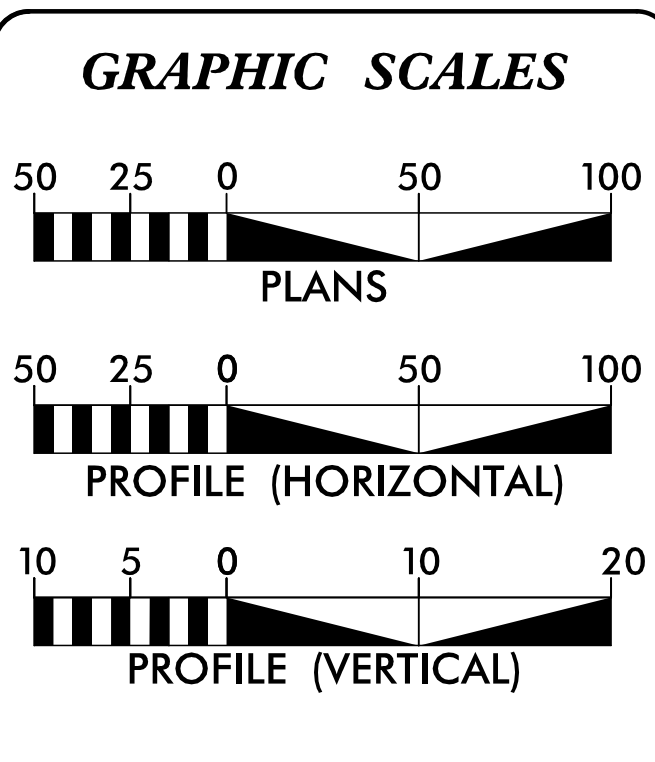
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.2.R.55	EC-1	5
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	TSF
1606.01	Special Sediment Control Fence	SCF
1622.01	Temporary Berms and Slope Drains	TBSD
1630.01	Silt Basin Type B	SB
1633.01	Temporary Rock Silt Check Type-A	TRSCA
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	TRSCA-PAM
	Temporary Rock Silt Check Type-B	TRSCB
	Wattle / Coir Fiber Wattle	W
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	W-PAM
1634.01	Temporary Rock Sediment Dam Type-A	TRSDA
1634.02	Temporary Rock Sediment Dam Type-B	TRSDB
1635.01	Rock Pipe Inlet Sediment Trap Type-A	RPISTRA
1635.02	Rock Pipe Inlet Sediment Trap Type-B	RPISTRB
1630.04	Stilling Basin	SB
1630.06	Special Stilling Basin	SSB
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	SKB
	Tiered Skimmer Basin	TSKB
	Infiltration Basin	IB

**THIS PROJECT HAS
BEEN DESIGNED TO
SENSITIVE WATERSHED
STANDARDS.**

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



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

ALLEN T. HODGES, EI
EROSION CONTROL
LEVEL III
CERTIFICATION #3633

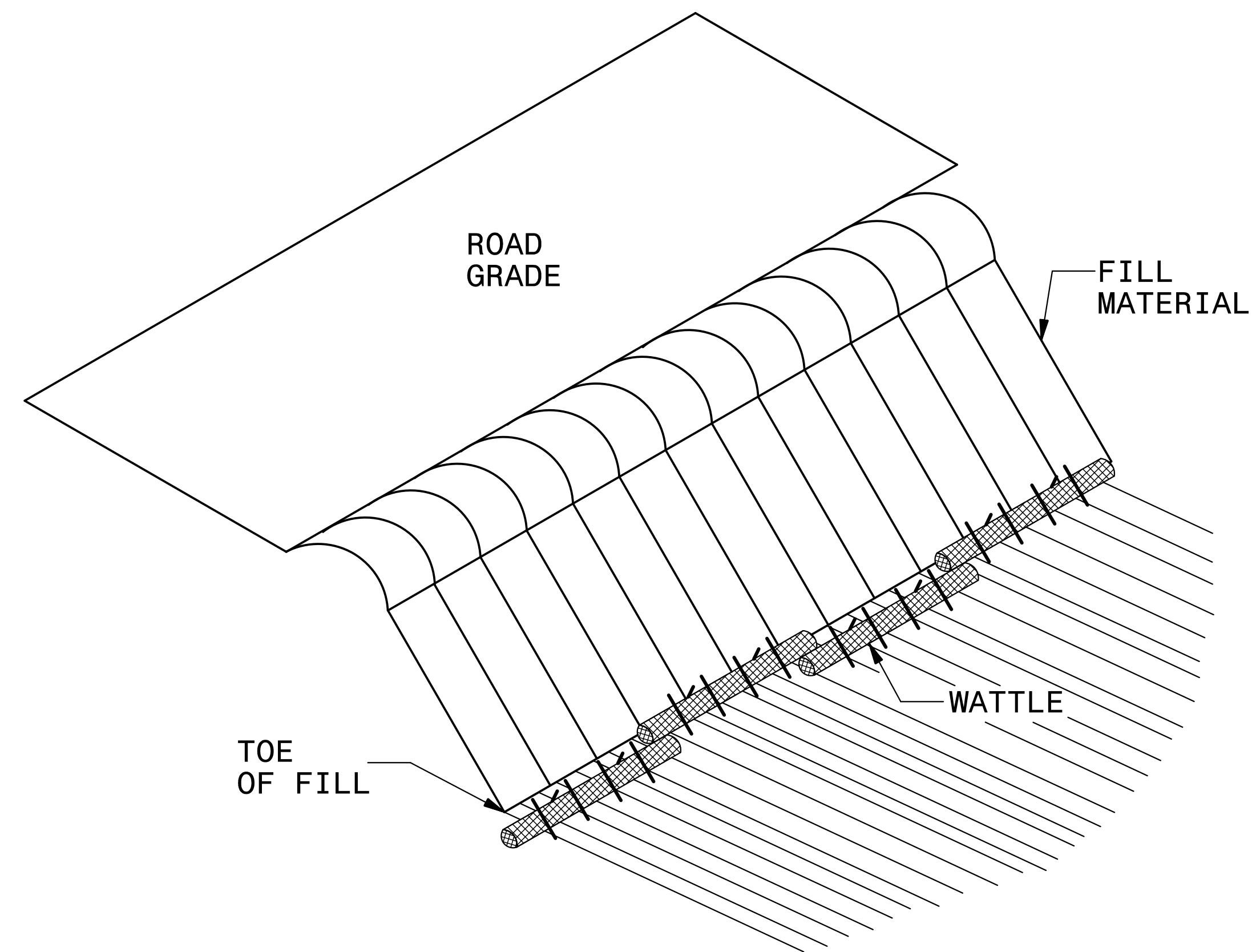
Roadway Standard Drawings

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.

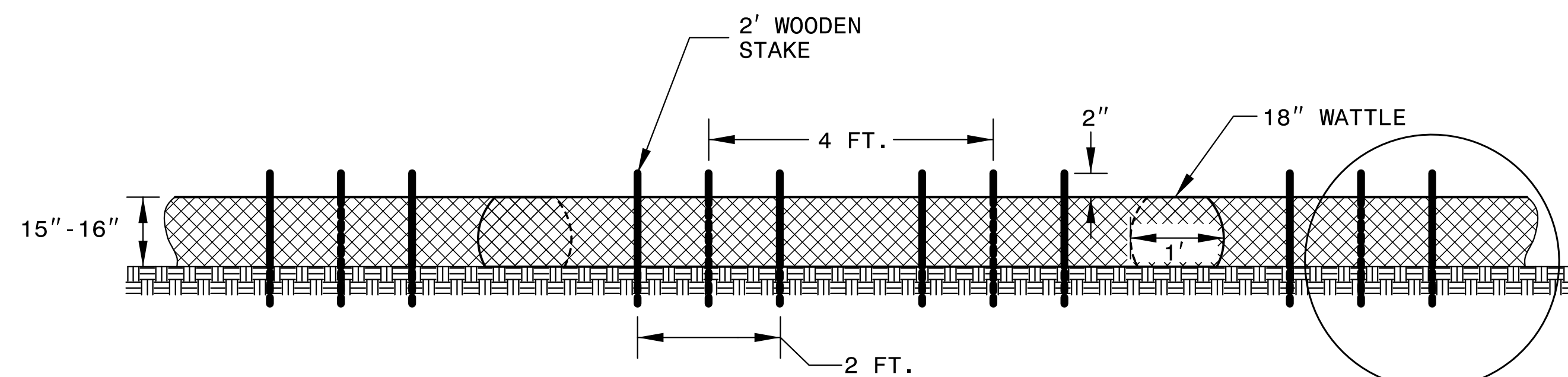
1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type 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	

10/13/13 17BP.2.R.55.ec_tsh.dgn *****USERNAME*****

COIR FIBER WATTLE BARRIER DETAIL



ISOMETRIC VIEW



FRONT VIEW

NOTES:

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

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

DO NOT PLACE WATTLES ON TOE OF SLOPE.

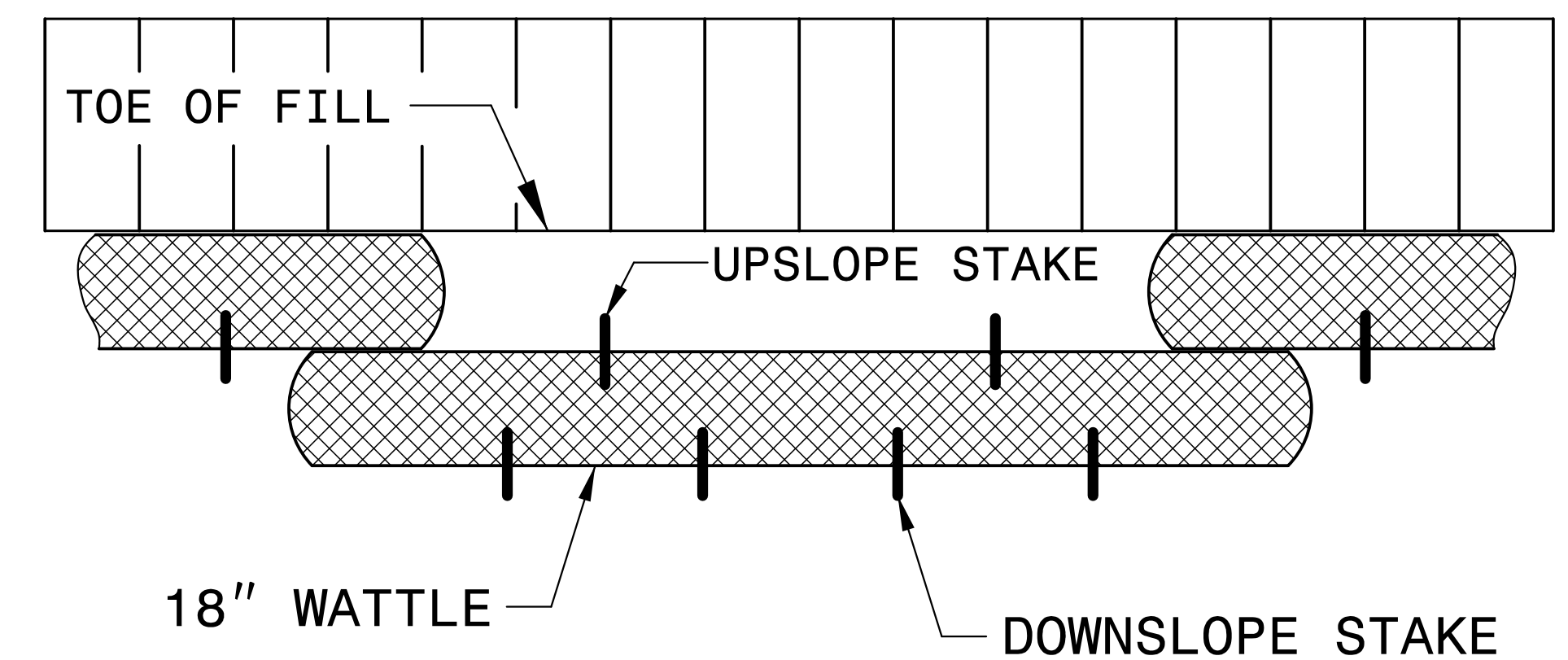
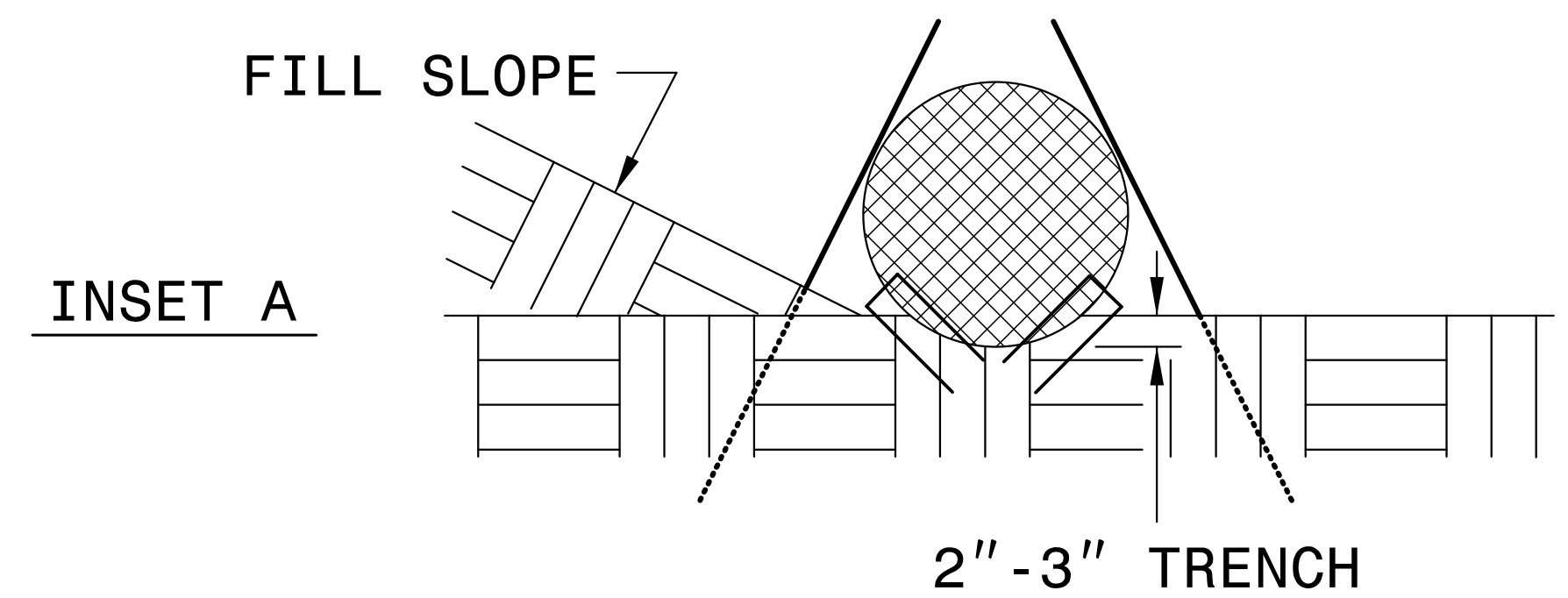
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

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

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

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 20 FT.



TOP VIEW

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

PLAN

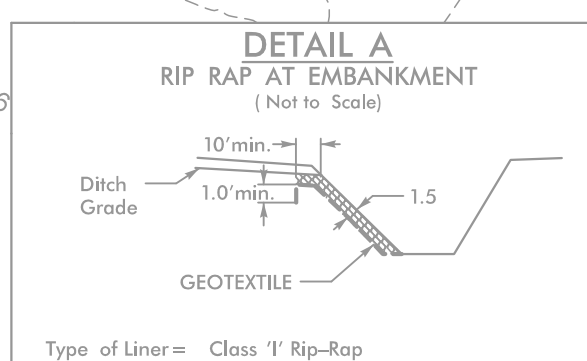
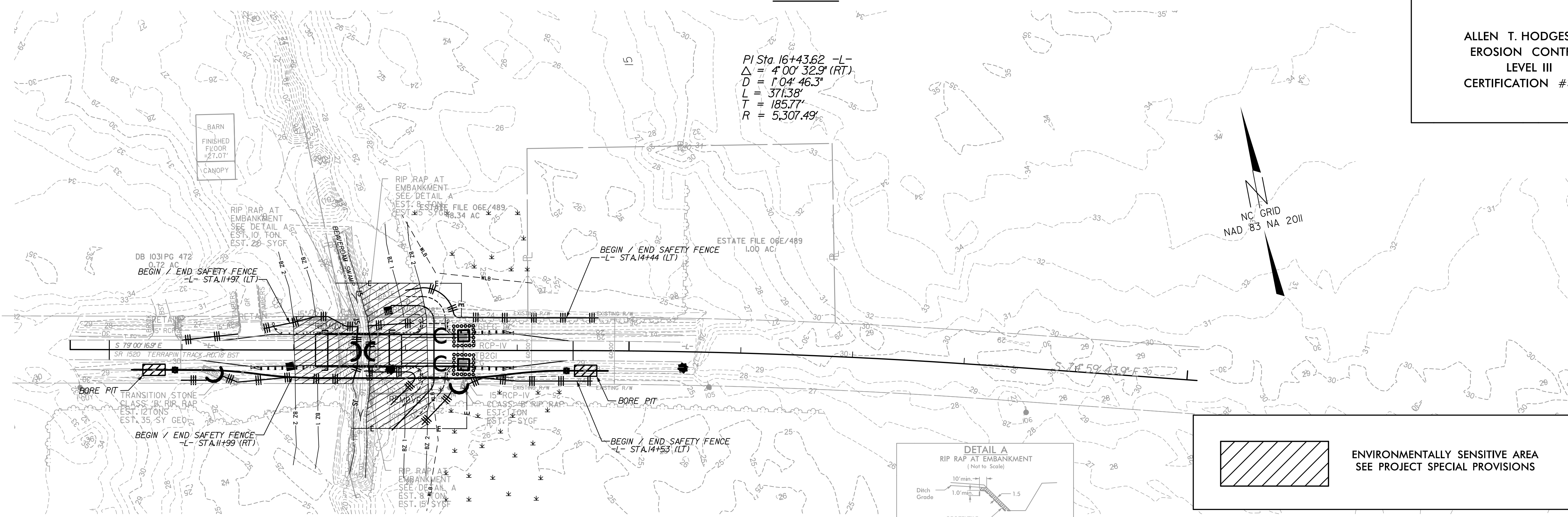


HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
17BP.2.R.55	EC-5
RW SHEET NO.	

ALLEN T. HODGES, E.I.
EROSION CONTROL
LEVEL III
CERTIFICATION #3633

PI Sta 16+43.62 -L-
 $\Delta = 4'00''32.9''$ (RT)
 $D = 1'04''46.3''$
 $L = 371.38'$
 $T = 185.77'$
 $R = 5,307.49'$



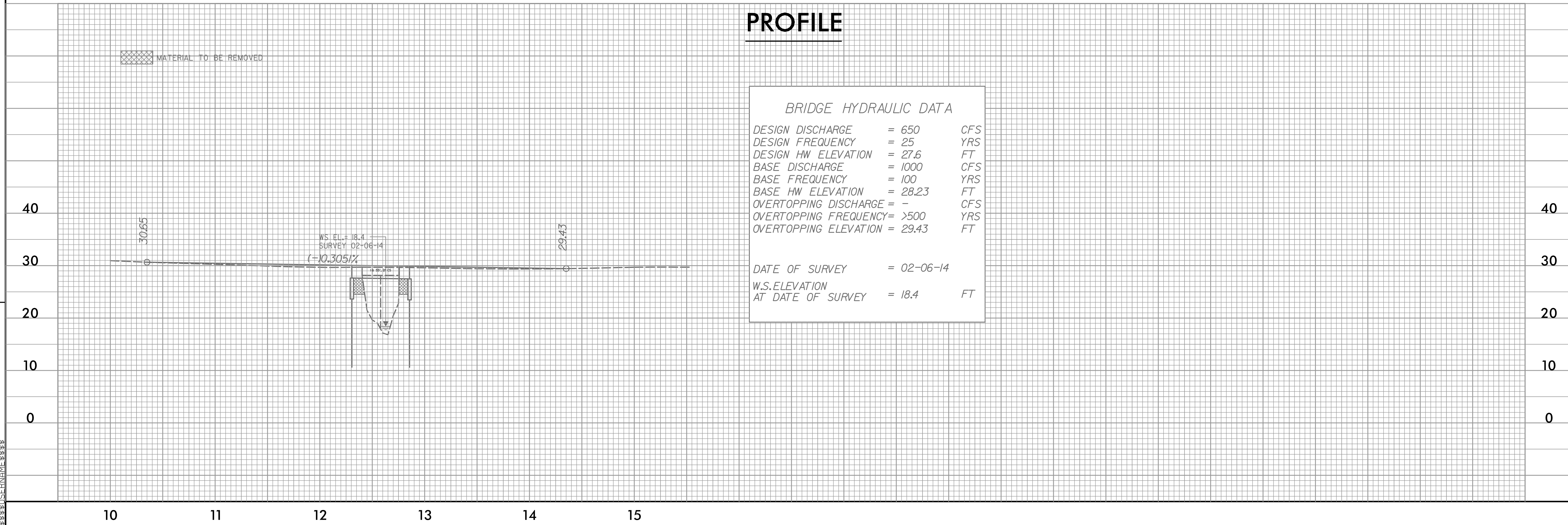
ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

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.

NOTE: ALL 2:1 SLOPES ARE TO BE MATTED.

REVISIONS

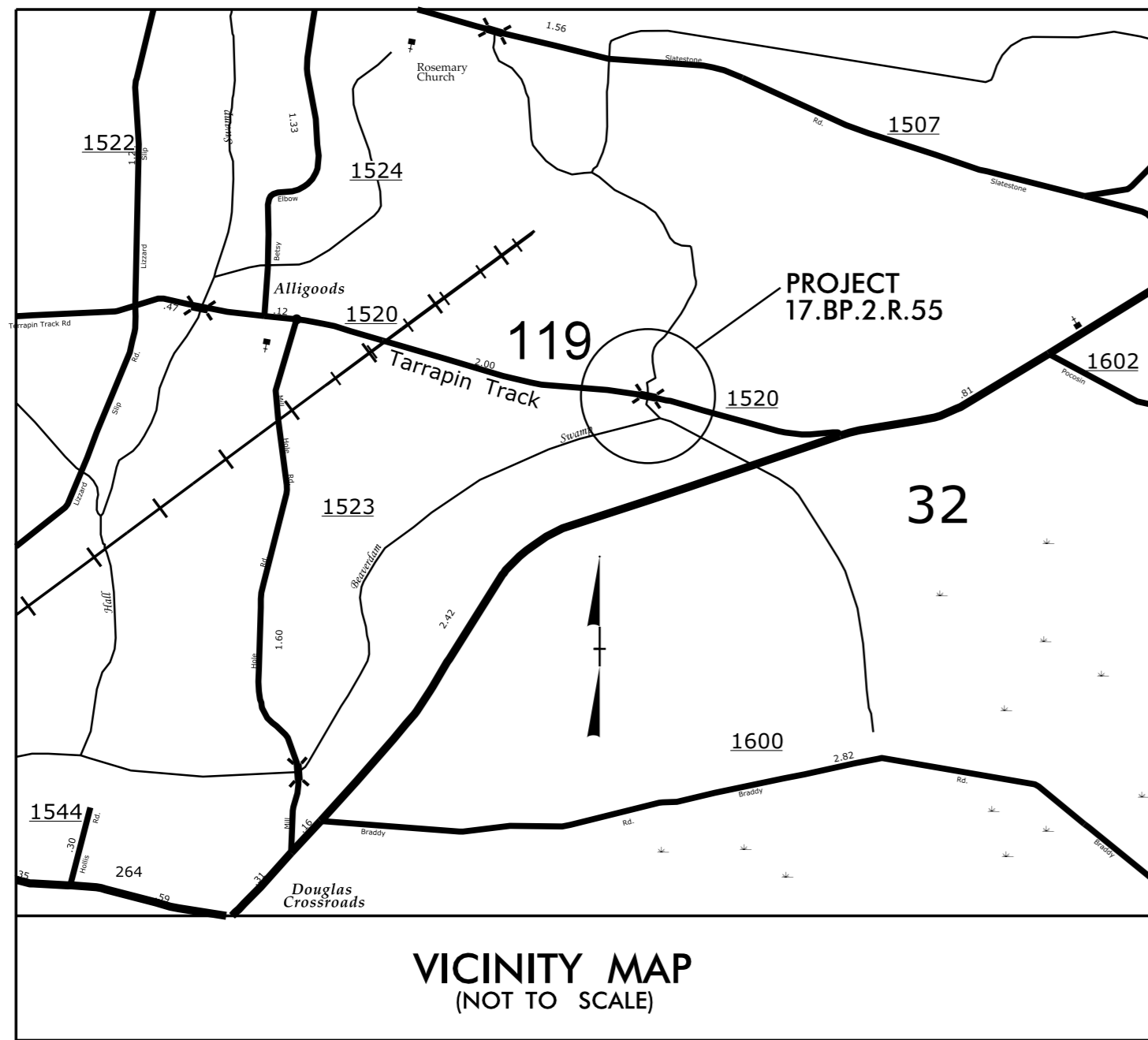
PROFILE



BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 650	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 27.6	FT
BASE DISCHARGE	= 1000	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 28.23	FT
OVERTOPPING DISCHARGE	= -	CFS
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING ELEVATION	= 29.43	FT
DATE OF SURVEY	= 02-06-14	
W.S. ELEVATION AT DATE OF SURVEY	= 18.4	FT

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USER:NAME

TIP PROJECT: 17.BP.2.R.55



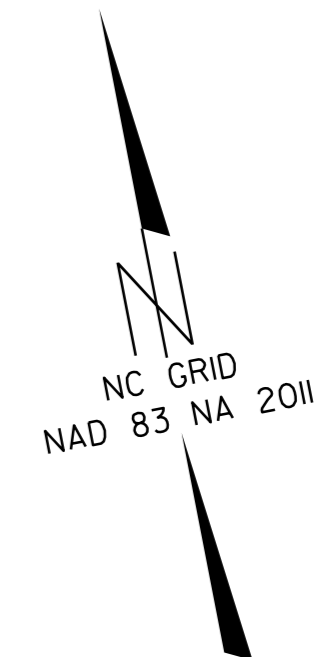
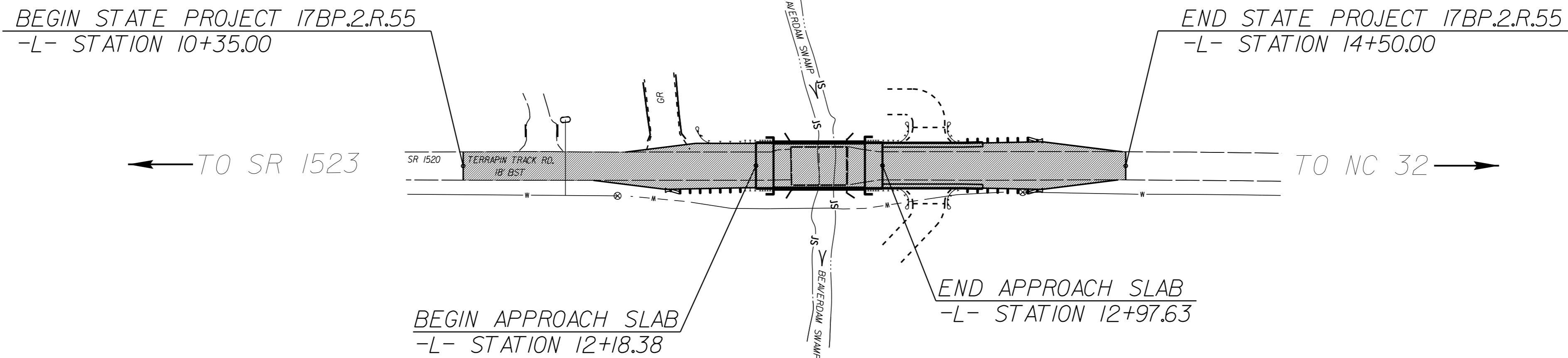
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS BEAUFORT COUNTY

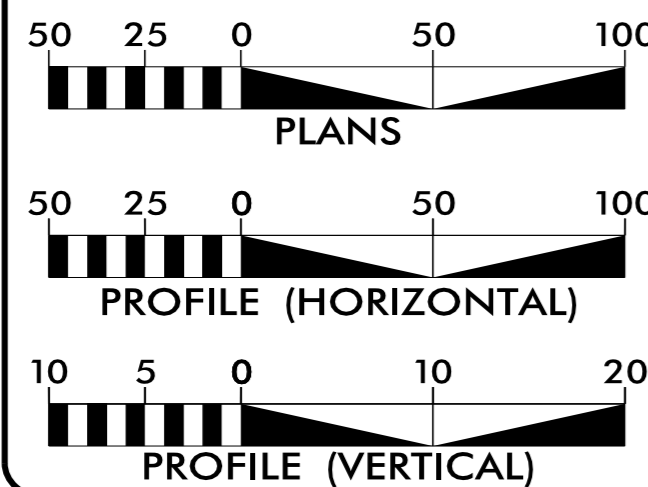
**LOCATION: BRIDGE #119 OVER BEAVERDAM SWAMP
ON SR 1520 TERRAPIN TRACK RD**

TYPE OF WORK: WATER MAIN RELOCATION

T.I.P. NO.	SHEET NO.
17.BP.2.R.55	UC-1



GRAPHIC SCALES



INDEX OF SHEETS

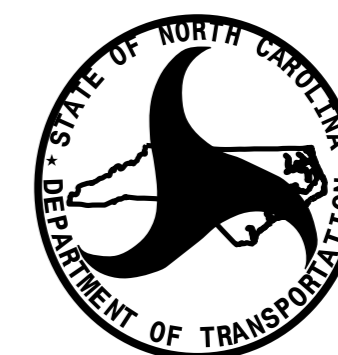
SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	SUMMARY OF QUANTITIES
UC-3	UTILITY CONSTRUCTION SHEET
UC-4	DETAILS SHEET

WATER OWNER ON PROJECT
(1) BEAUFORT COUNTY - WATER (NORTHSIDE)

SEAL



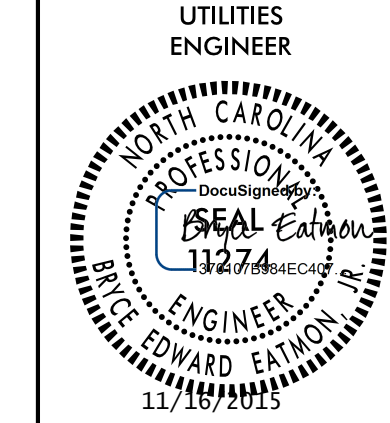
11/16/2015



PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
DIVISION 2 - DDC

P.O. BOX 1587
GREENVILLE, NC 27835
PHONE (252) 439-2800
FAX (252) 830-3352

EDWARD EATMON, P.E. UTILITIES ENGINEER
VAN TRAN, E.I. UTILITIES PROJECT DESIGNER



UTILITY CONSTRUCTION

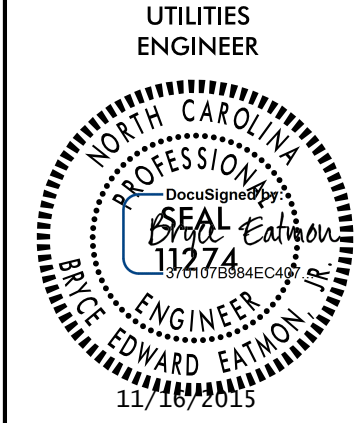
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS SUMMARY OF QUANTITIES

<i>WATER MAIN</i>	<i>QUANTITY</i>	<i>UNIT</i>	<i>ITEM DESCRIPTION</i>
	120	LF	8" DI PIPE - PC 350 (AWWA C600)
	370	LF	10" HDPE PIPE - DR9 (AWWA C906)
	2	EA	8" GATE VALVE AND VALVE BOX
	2	EA	DI PIPE TO HDPE TRANSITION REDUCERS
	6	EA	MECHANICAL JOINT WITH GRIPPING RING RESTRAINT
	488	LF	ABANDON 8" UTILITY PIPE
	200	LF	TEMPORARY SILT FENCE
	0.2	ACRES	SEEDING AND MULCHING

REVISIONS

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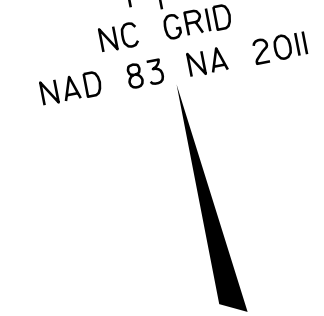
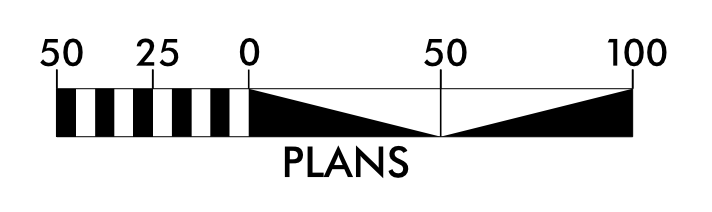
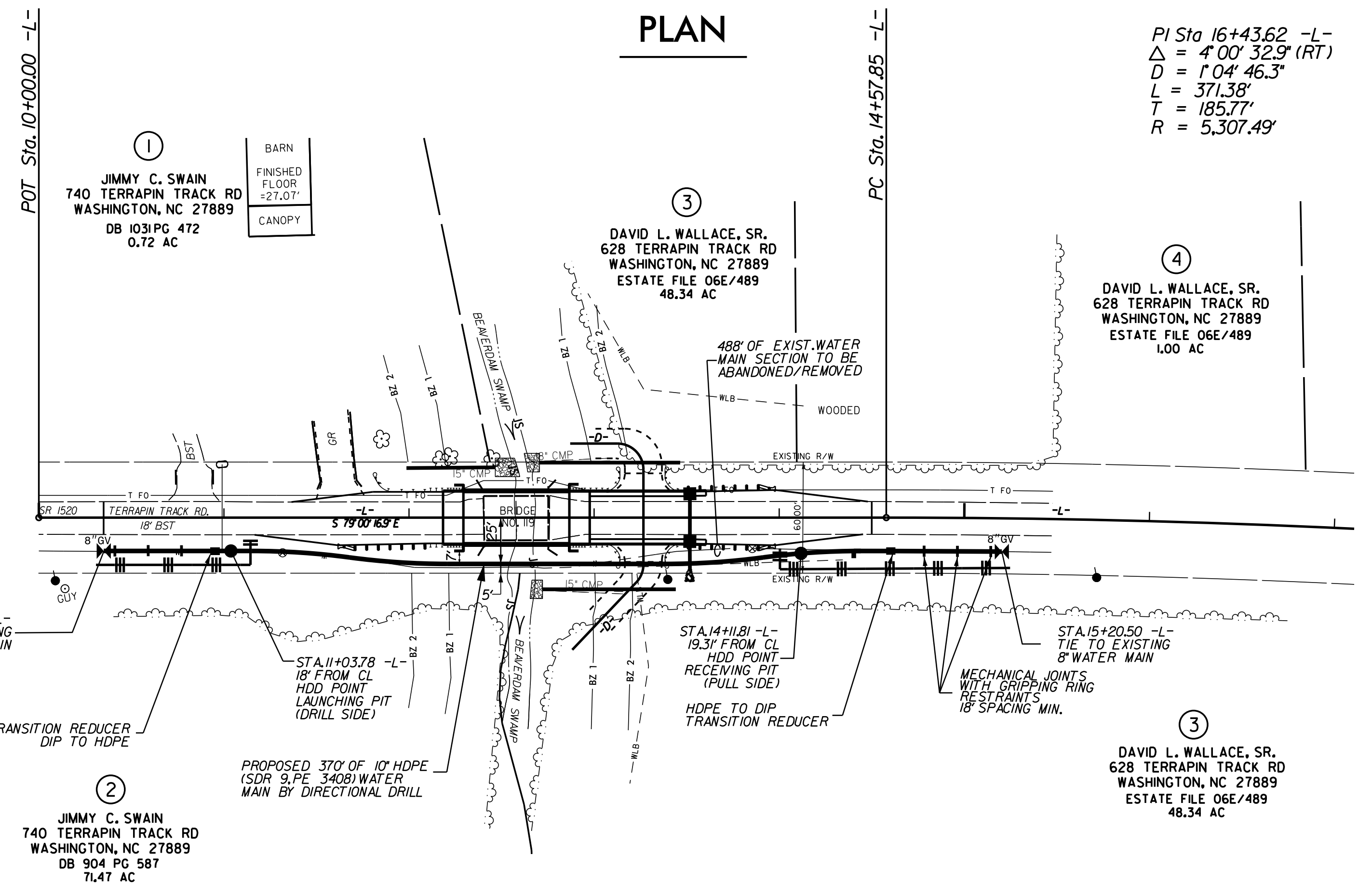
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UTILITY CONSTRUCTION PLAN

- NOTES:**
- 10" HDPE WATER MAIN TO CONFORM TO THE FOLLOWING: AWWA C906, AWWA M55, PRESSURE CLASS 200, DR9, DUCTILE IRON PIPE SIZE (DIPS) DIMENSIONS, AND MATERIAL DESIGNATION PE 3408 AND NSF APPROVED FOR POTABLE WATER.
 - THE PROPOSED WATER LINE RELOCATION DOES NOT IMPACT ANY ENVIRONMENTALLY SENSITIVE AREAS AND NO ENVIRONMENTAL PERMITS ARE REQUIRED.
 - LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHALL BE FIELD VERIFIED BY CONTRACTOR AND MAINTAIN 18" MINIMUM VERTICAL SEPARATION.
 - RECONNECT ALL WATER SERVICE LINES AS NECESSARY.
 - BEAUFORT COUNTY WATER WILL COLLECT ALL BACTERIOLOGICAL WATER SAMPLES.
 - A BEAUFORT COUNTY EMPLOYEE WILL HAVE TO BE PRESENT FOR THE PRESSURE TEST.
 - A MINIMUM 48 HOUR NOTICE IS REQUIRED BEFORE ANY SECTION OF THE WATER MAIN CAN BE SHUT DOWN.
 - TRACER WIRE NEEDS TO BE ADDED TO ALL NEWLY INSTALLED PIPE AS REQUIRED BY NORTH CAROLINA GENERAL STATUTES CHAPTER 87-12IG
 - A TEMPORARY BLOW OFF ASSEMBLY WILL NEED TO BE INSTALLED FOR THE PURPOSE OF FLUSHING THE NEW WATER LINE.
 - THE SERVICE LINE TAP FOR PARCEL I WILL NEED TO BE RELOCATED TO THE WEST SIDE OF THE PROPOSED 8" GATE VALVE ON THE EXISTING 8" PVC WATER LINE BEFORE CONSTRUCTION BEGINS AS NOT TO DISRUPT THE CUSTOMERS SERVICE.

$PI\ Sta\ 16+43.62\ -L-$
 $\Delta = 4'00''\ 32.9''\ (RT)$
 $D = 1'04''\ 46.3''$
 $L = 371.38'$
 $T = 185.77'$
 $R = 5,307.49'$



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS-2" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 663579.3321(ft) EASTING: 2617451.1941(ft) ELEVATION: 33.621(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989076

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-2" TO -L- STATION 10+00 IS S 77° 54' 58.03" E 361.26'

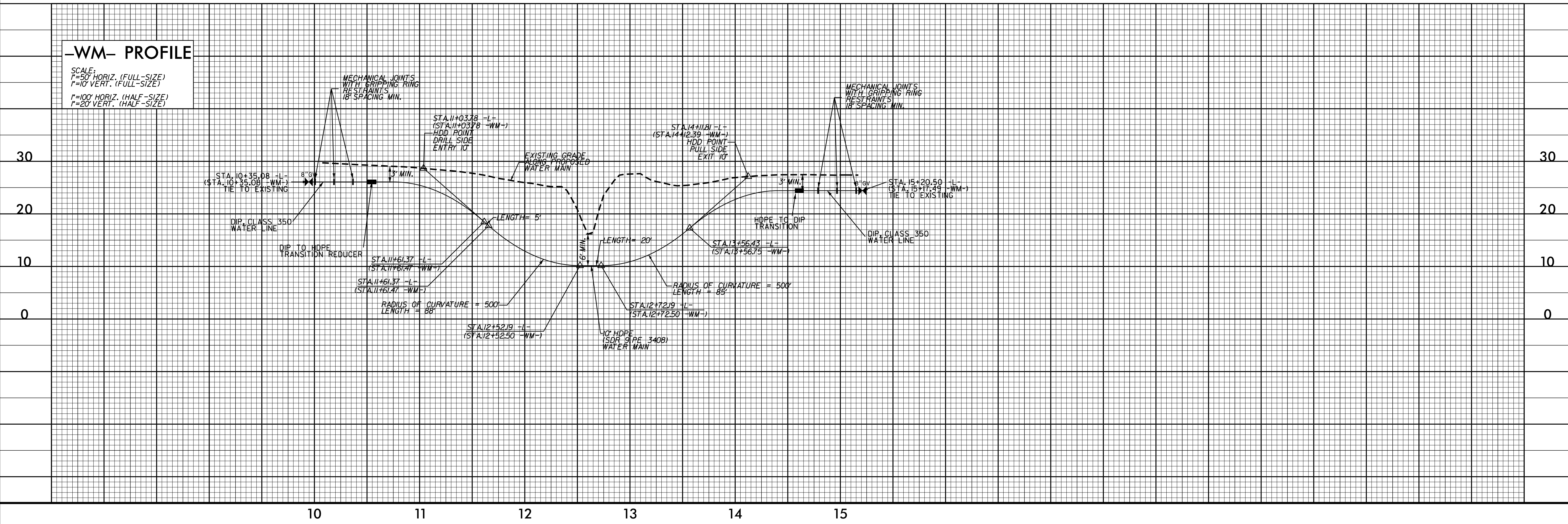
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

Point	North	East	Elevation	Description
3	663432.3670	2618082.4690	28.4500	BL-3
4	663384.0560	2618339.6830	28.3000	BL-4
100	663492.7630	2618038.4140	25.1300	NCGS "V212"-1979
GPS2	663579.3320	2617451.1940	33.6200	06-0119 GPS-2

- LEGEND:**
- Temporary Silt Fence
 - Gate Valve
 - HDPE to DIP Transition
 - Mechanical Joint with Gripping Ring Restraint

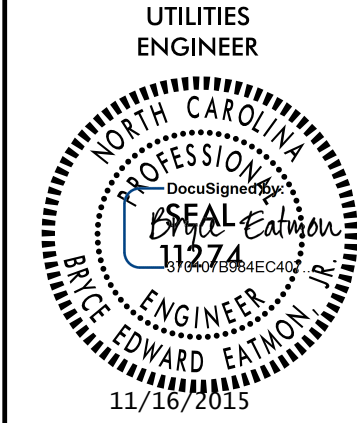
-WM- PROFILE

SCALE:
 1"=50' HORIZ. (FULL-SIZE)
 1"=10' VERT. (FULL-SIZE)
 1"=100' HORIZ. (HALF-SIZE)
 1"=20' VERT. (HALF-SIZE)

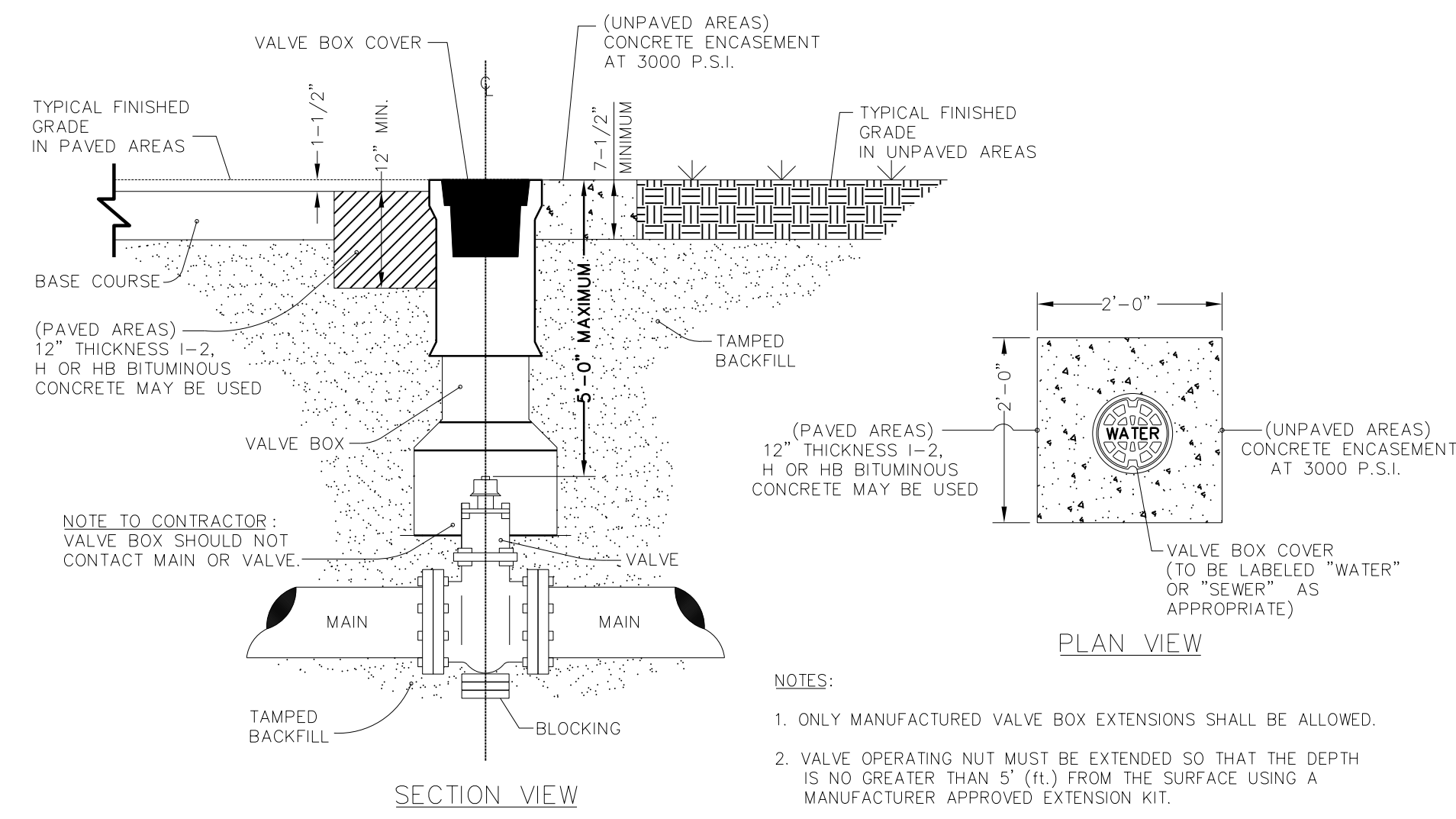


REVISIONS

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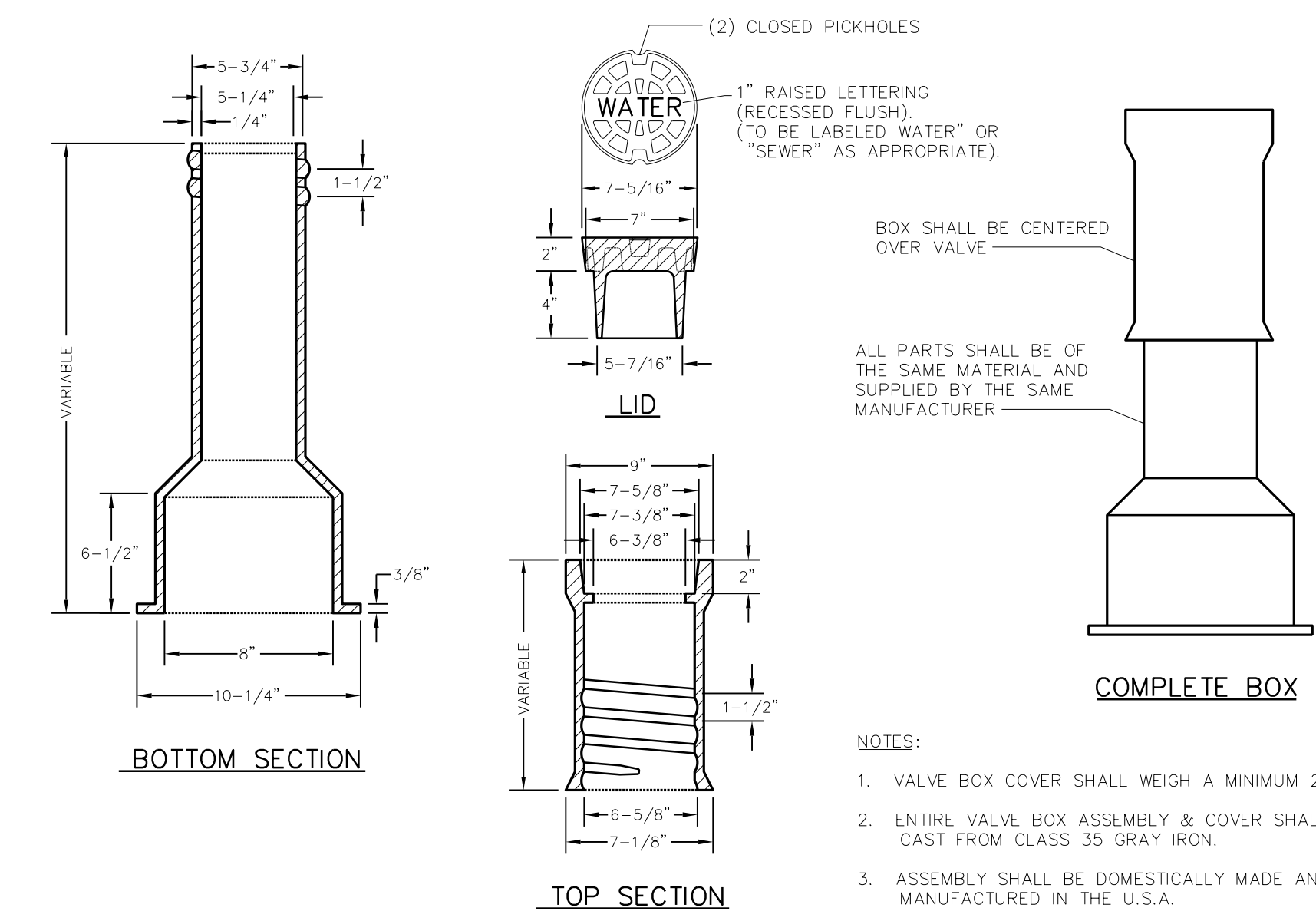


UTILITY CONSTRUCTION DETAILS SHEET



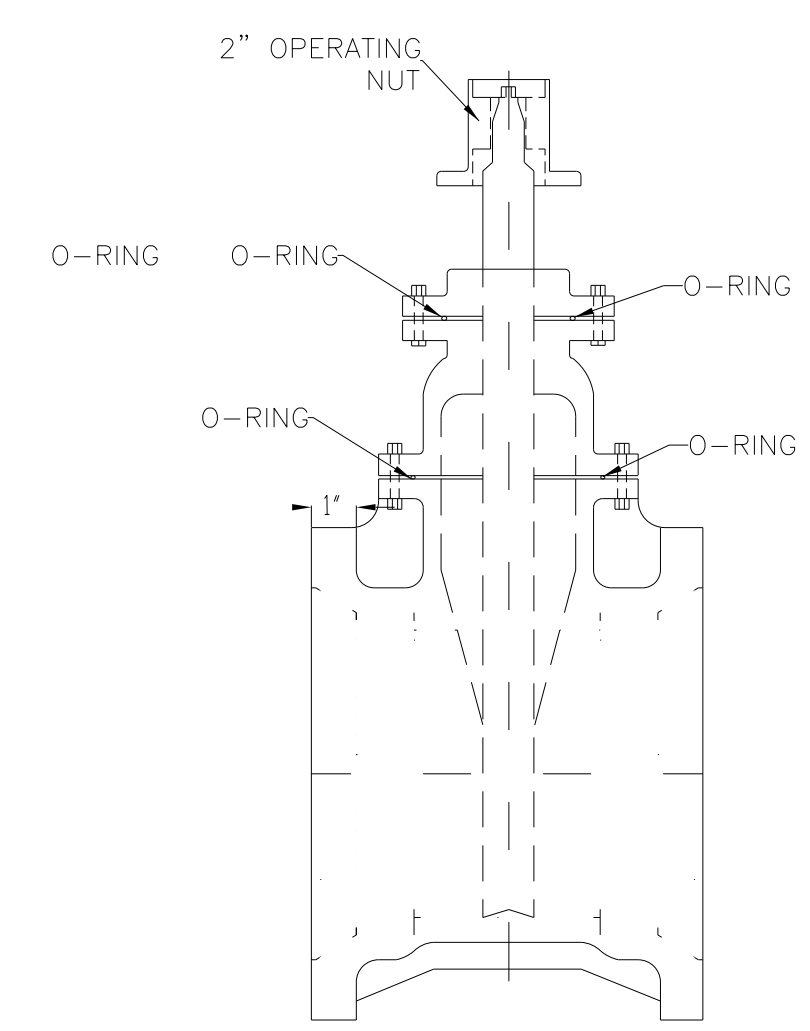
- NOTES:
1. ONLY MANUFACTURED VALVE BOX EXTENSIONS SHALL BE ALLOWED.
 2. VALVE OPERATING NUT MUST BE EXTENDED SO THAT THE DEPTH IS NO GREATER THAN 5' (ft.) FROM THE SURFACE USING A MANUFACTURER APPROVED EXTENSION KIT.
 3. PRECAST CONCRETE ENCASMENT IS ALLOWED OUTSIDE OF PAVED AREAS.

TYPICAL VALVE BOX
NTS

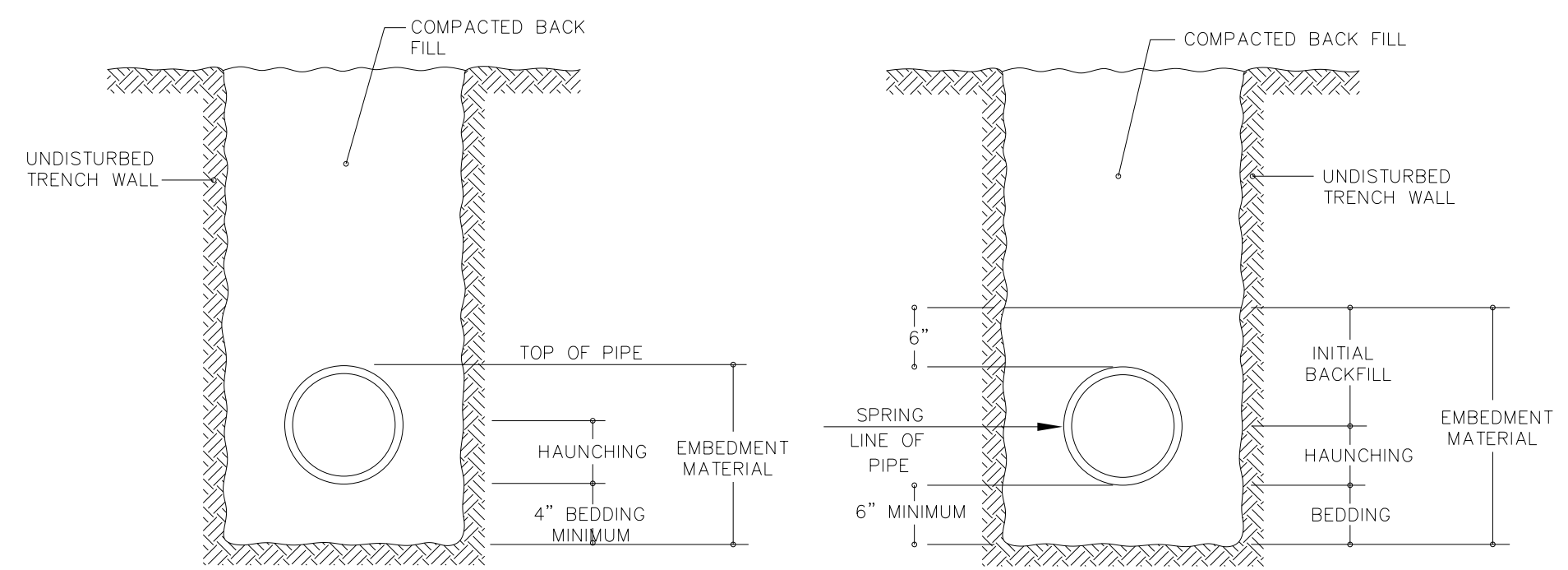


- NOTES:
1. VALVE BOX COVER SHALL WEIGH A MINIMUM 26 lbs.
 2. ENTIRE VALVE BOX ASSEMBLY & COVER SHALL BE CAST FROM CLASS 35 GRAY IRON.
 3. ASSEMBLY SHALL BE DOMESTICALLY MADE AND MANUFACTURED IN THE U.S.A.

TYPICAL VALVE BOX
NTS

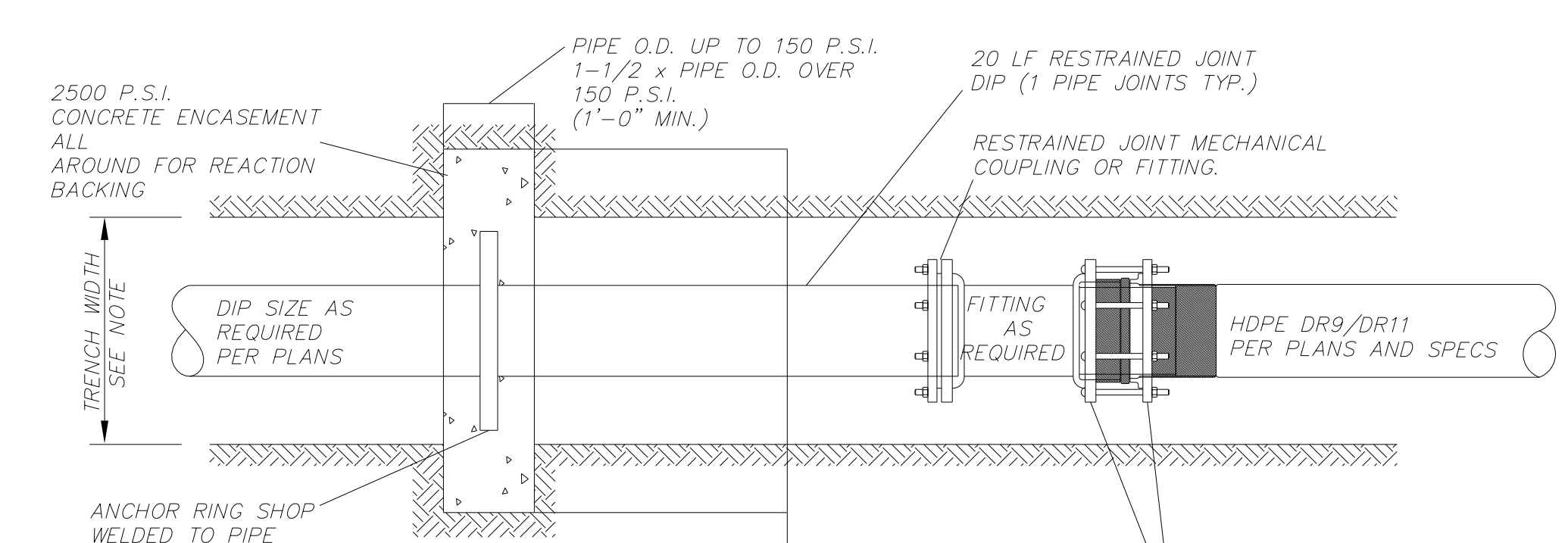


TYPICAL RESILIENT MECHANICAL
JOINT GATE VALVE DETAIL
NTS



- NOTES:
1. EMBEDMENT MATERIAL MUST BE CLASS I (NO. 67 OR NO. 78M WASHED STONE IS TYPICALLY USED).
 2. EMBEDMENT MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY FOR CLASS I MATERIAL.
 3. STANDARD BEDDING SHALL BE UTILIZED FOR ALL CASES WHERE TRENCH BOTTOMS ARE UNSTABLE DUE TO SOIL TYPE, OR MOISTURE CONDITIONS.

TYPICAL BEDDING FOR FLEXIBLE & SEMI-RIGID PIPE
NTS



ANCHOR RING DIMENSIONS		
NOMINAL PIPE SIZE	O.D. OF RINGS	THICKNESS
4" - 12"	PIPE O.D. + 6"	1/2"
16" - 24"	PIPE O.D. + 7"	3/4"
30" & 36"	PIPE O.D. + 8"	1"

TYPICAL DIP TO HDPE TRANSITION DETAIL WITH THRUST COLLAR
NTS

8/17/99

29-061_2015_0812_AUFQRT\beaufort\119\Beaufort\119_dbc2.psh_uc4.dgn

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

NOTE: Approximate quantities only. Unclassified excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, Removal of Existing Pavement and Breaking of Existing Pavement will be paid for at the contract Lump Sum price for "Grading".

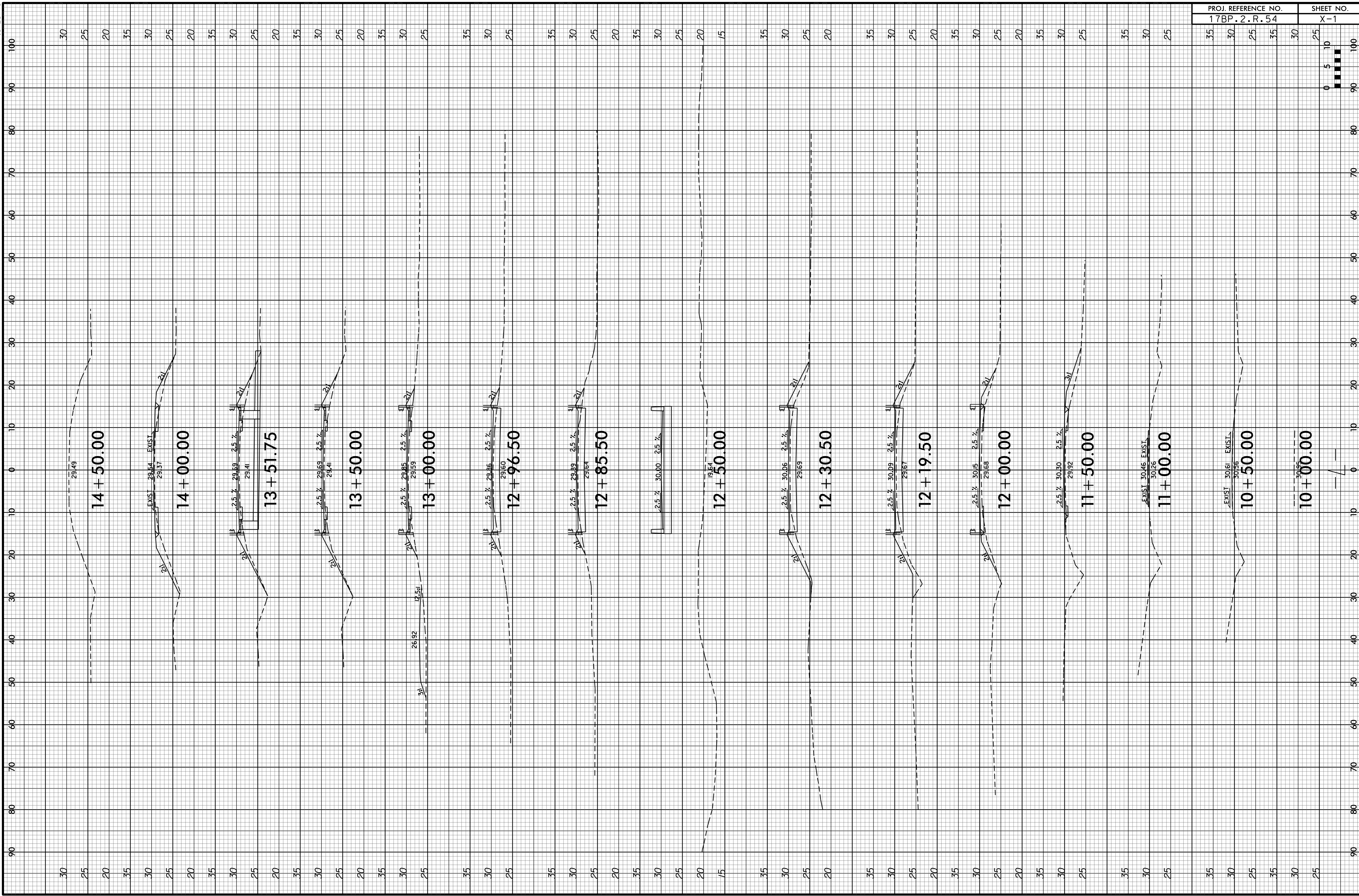
CROSS-SECTION SUMMARY

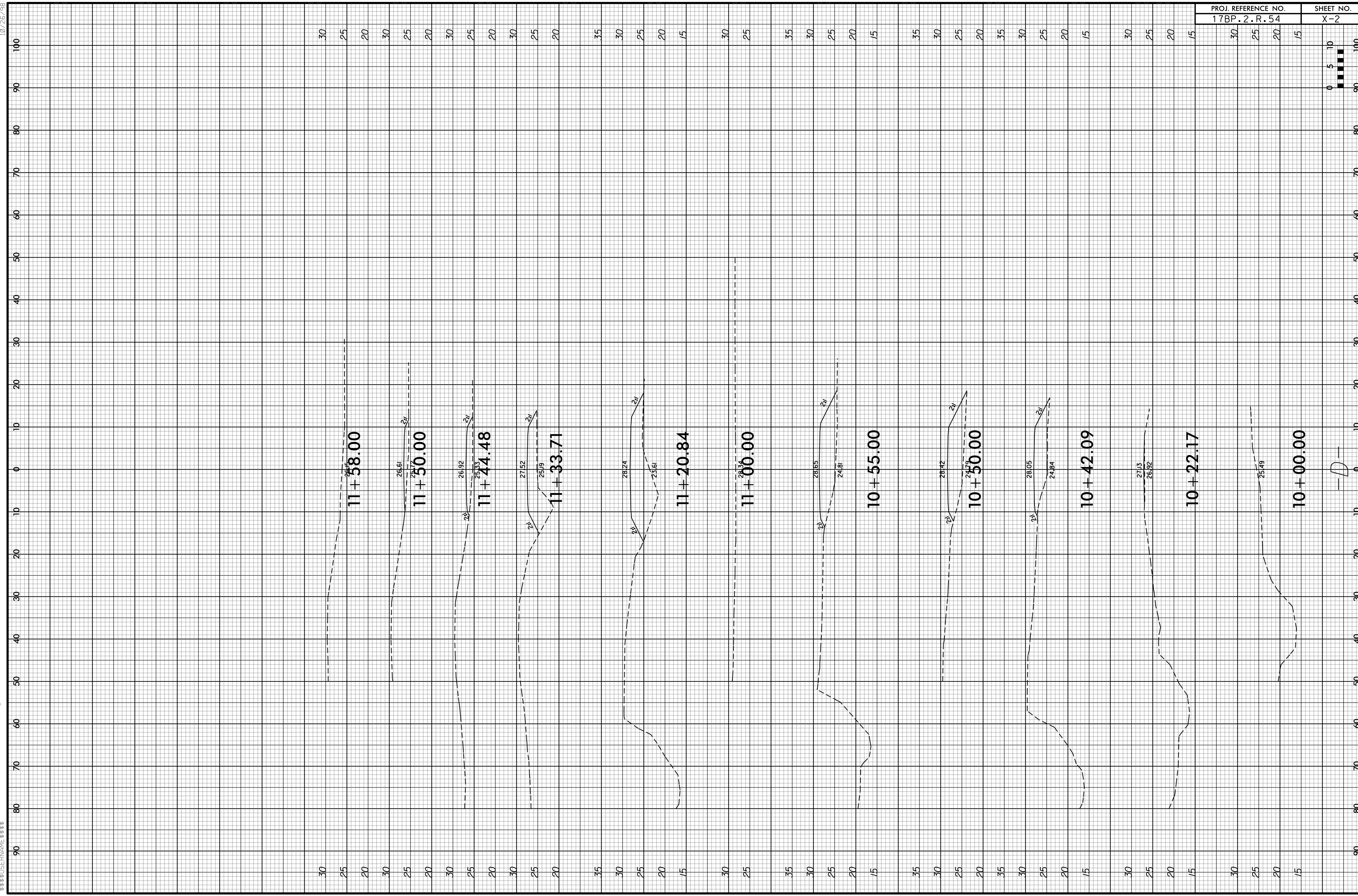
IN CUBIC YARDS

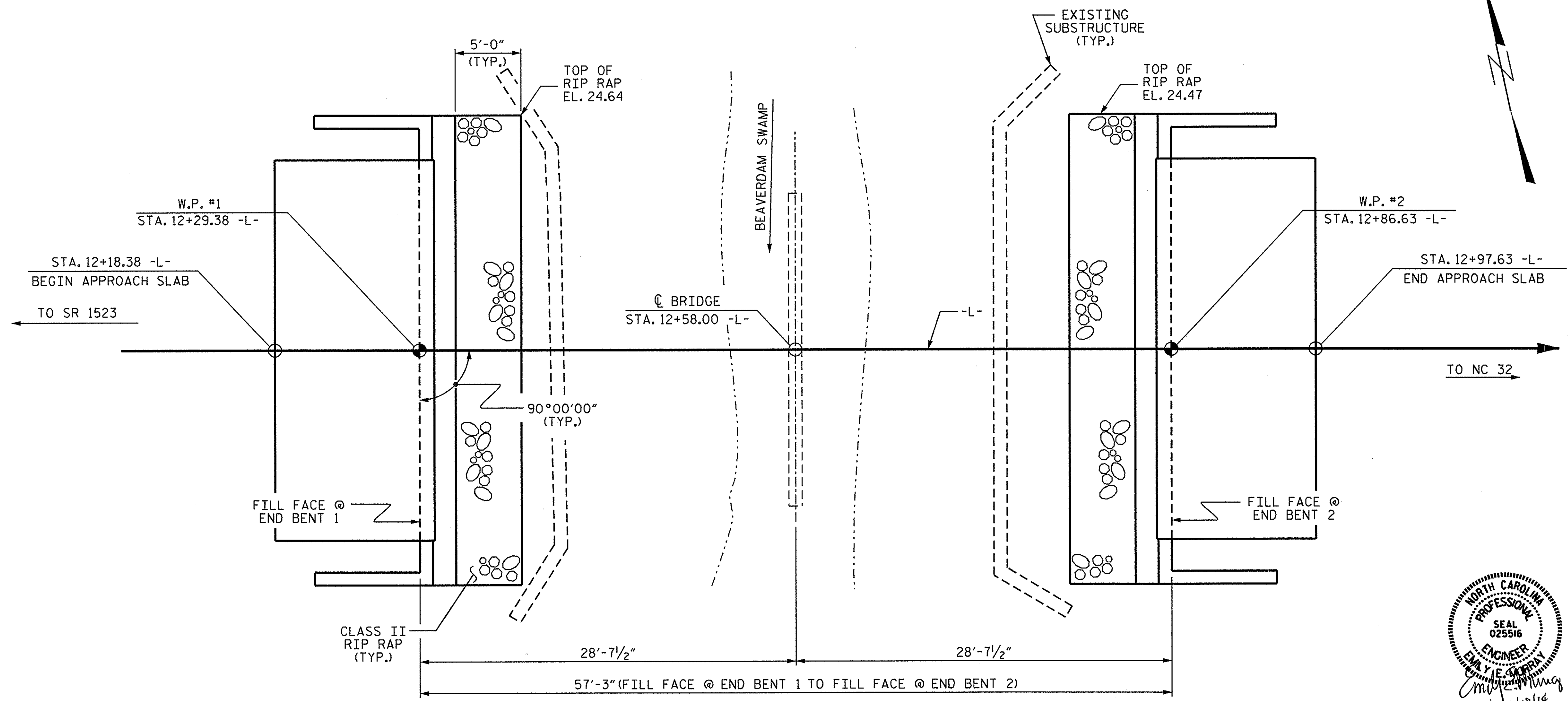
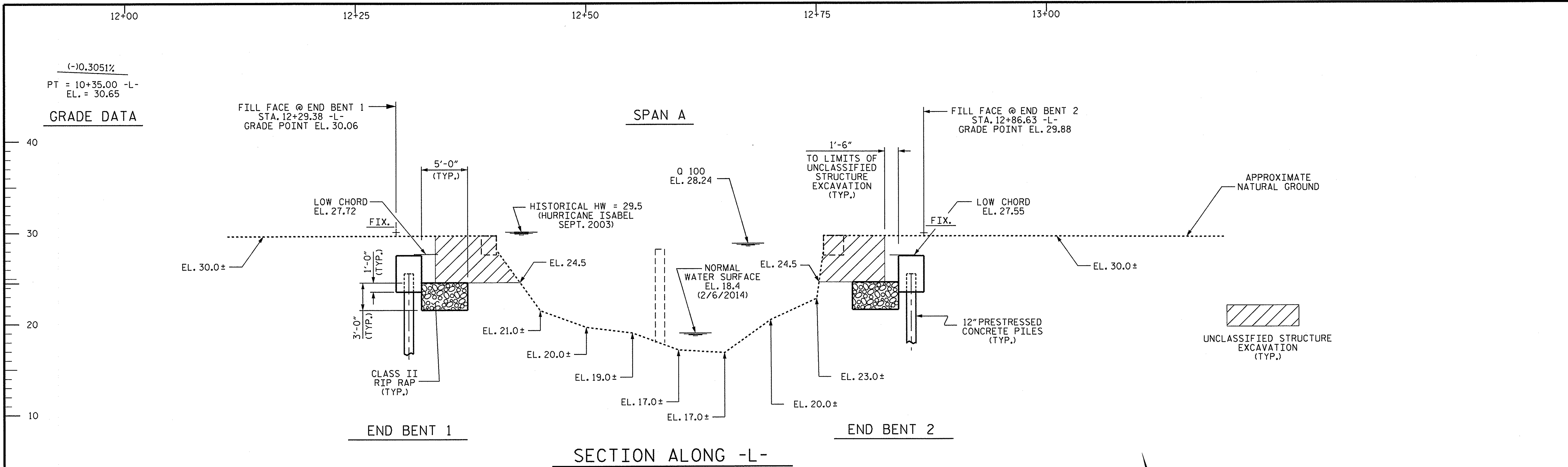
NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT.

LOCATION (-L-)	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT
11 + 50.00	0	0	0
12 + 00.00	3	0	34
12 + 19.50	14	0	20
12 + 30.50	15	0	14
BRIDGE			
12 + 85.50	0	0	0
12 + 96.50	17	0	4
13 + 00.00	3	0	4
13 + 50.00	4	0	67
13 + 51.75	0	0	2
14 + 00.00	5	0	48

LOCATION (-D-)	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT
10 + 22.17	0	0	0
10 + 42.09	0	0	28
10 + 50.00	0	0	26
10 + 55.00	0	0	20
-L- ROADWAY			
11 + 20.84	0	0	0
11 + 33.71	0	0	58
11 + 44.48	0	0	25
11 + 50.00	0	0	5





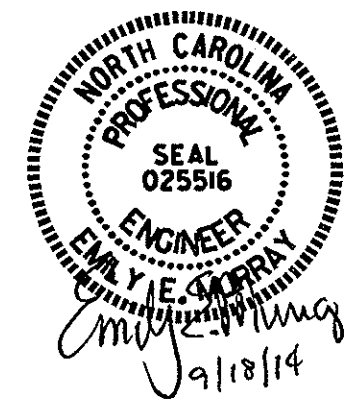


I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. 17BP.2.R.55
 BEAUFORT COUNTY
 STATION: 12+58.00 -L-

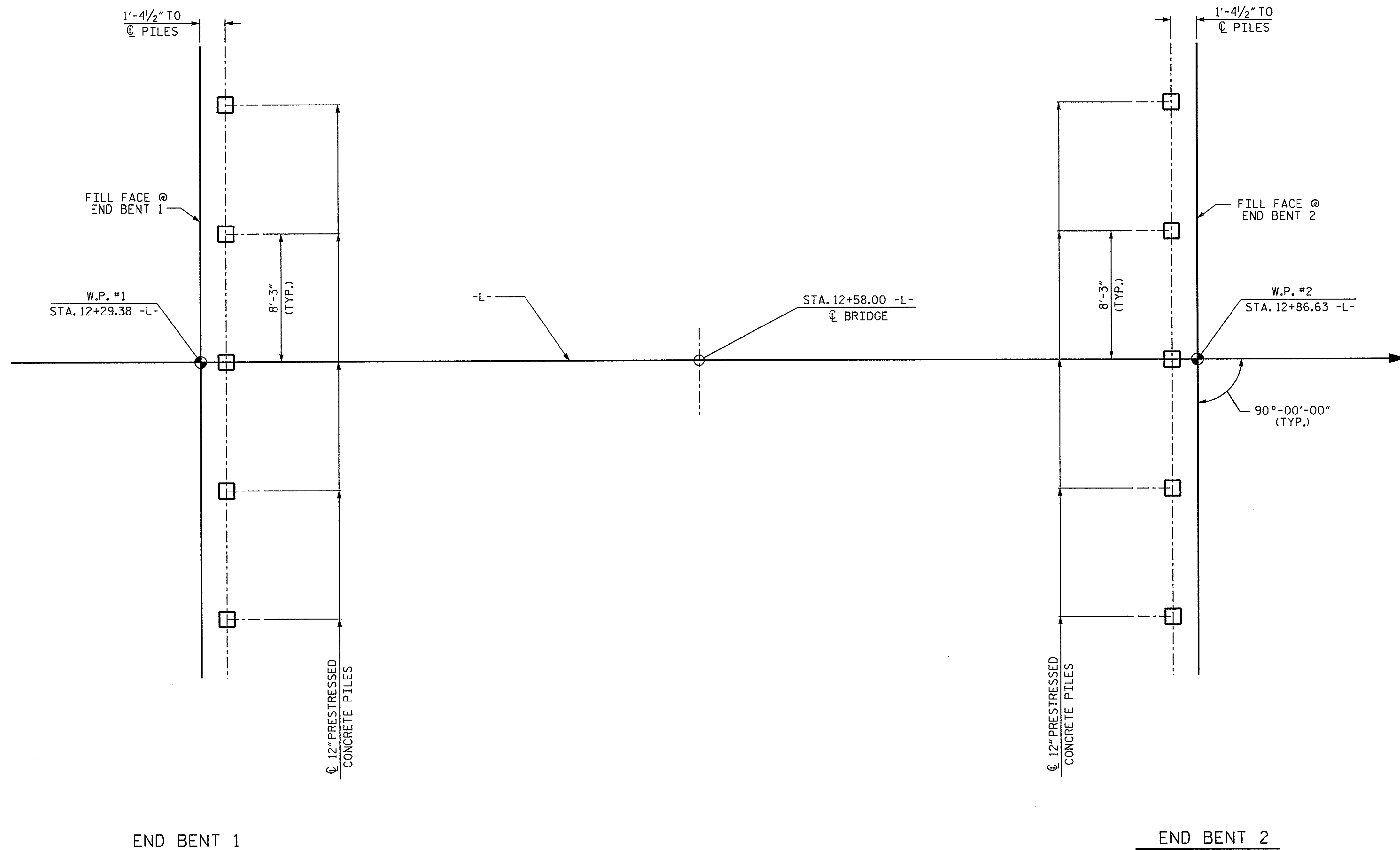
SHEET 1 OF 3 REPLACES BRIDGE NO. 119

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 FOR BRIDGE OVER
 BEAVERDAM SWAMP
 ON SR 1523 AND NC 32



DRAWN BY: D. G. ELY DATE: 7/8/14
 CHECKED BY: A. K. PATEL DATE: 7/10/14
 DESIGN ENGINEER OF RECORD: A. K. PASCHAL DATE: 7/25/14

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



FOUNDATION LAYOUT

ALL DIMENSIONS LOCATING PILES ARE TO THE PILE CENTERLINE

NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 85 TONS PER PILE.

DRIVE PILES AT END BENT 1 AND 2 TO A REQUIRED DRIVING RESISTANCE OF 115 TONS PER PILE.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 30 TO 45 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT 1 AND END BENT 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

TESTING THE FIRST PRODUCTION PILE AT EACH END BENT WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS AND FOR PILE DRIVING CRITERIA, SEE PILE DRIVING CRITERIA PROVISION.

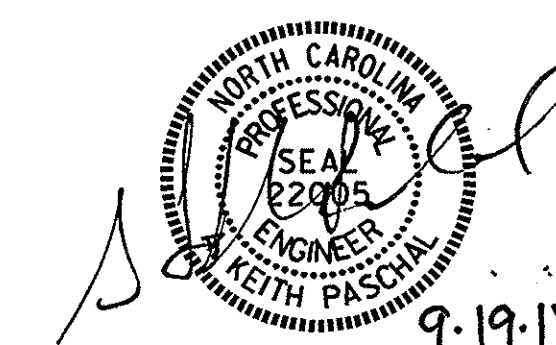
PROJECT NO. 17BP.2.R.55
BEAUFORT COUNTY
 STATION: 12+58.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

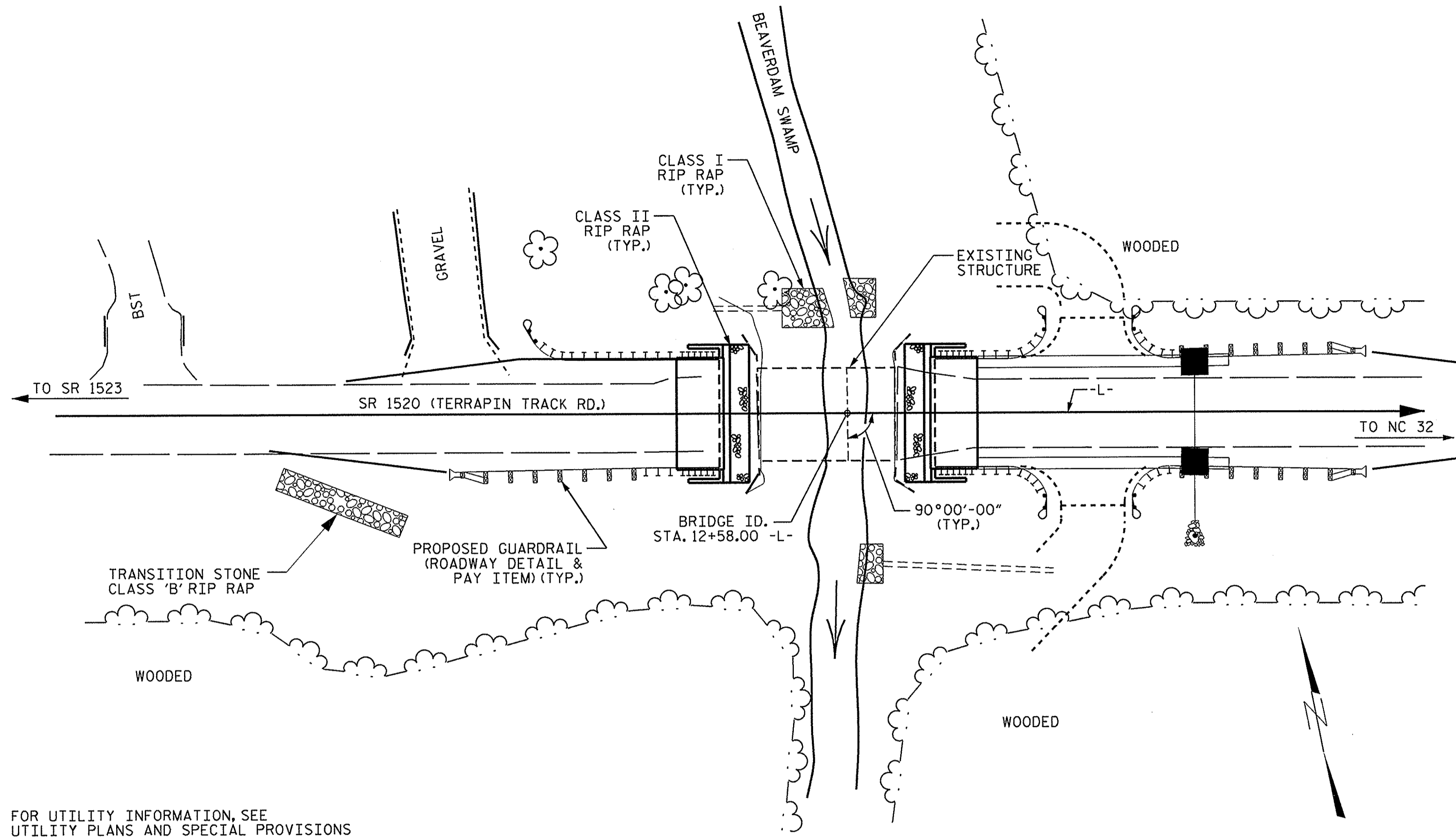
FOR BRIDGE OVER
 BEAVERDAM SWAMP
 ON SR 1523 BETWEEN
 SR 1523 AND NC 32



DRAWN BY : D. G. ELY DATE : 7/9/14
 CHECKED BY : A. K. PATEL DATE : 7/10/14
 DESIGN ENGINEER OF RECORD: A. K. PASCHAL DATE : 7/25/14

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

BENCH MARK: NCGS MON. "V 212", 34' LT OF -L- STA. 12+31.75, EL. 25.13, DATUM: NAVD 88



LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE = 650 CFS.
 FREQUENCY OF DESIGN FLOOD = 25 YRS.
 DESIGN HIGH WATER ELEVATION = 27.6
 DRAINAGE AREA = 5.3 SQ. MI.
 BASE DISCHARGE (0100) = 1,000 CFS.
 BASE HIGH WATER ELEVATION = 28.23

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = - CFS.
 FREQUENCY OF OVERTOPPING FLOOD = 500 YRS.+
 OVERTOPPING FLOOD ELEVATION = 29.43
 @ STA. 14+35.00 -L-

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
 THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
 THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE MATERIAL SHOWN IN THE HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 20 FEET EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

THE EXISTING STRUCTURE CONSISTING OF 2 SPANS @ 17'-9" WITH A CLEAR ROADWAY WIDTH OF 24' WITH 5" RC/.25 AWS ON TIMBER DECK SUPPORTED BY TIMBER JOISTS ON TIMBER CAPS AND TIMBER PILES LOCATED AT THE SAME LOCATION AS THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, THE LOAD LIMIT MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT. FOR REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18-EVALUATING SCOUR AT BRIDGES."

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	12" PRESTRESSED CONCRETE PILES		PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (3'-0" THICK)	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	
							NO.	LIN. FT.					NO.	LIN. FT.
	LUMP SUM	EA.	LUMP SUM	CU. YDS.	LUMP SUM	LBS.				LIN. FT.	TONS	LUMP SUM		
SUPERSTRUCTURE					LUMP SUM					110.25		LUMP SUM	10	550.00
END BENT 1				18.8		2449	5	275	5		27			
END BENT 2				18.8		2449	5	275	5		27			
TOTAL	LUMP SUM	2	LUMP SUM	37.6	LUMP SUM	4898	10	550	10	110.25	54	LUMP SUM	10	550.00

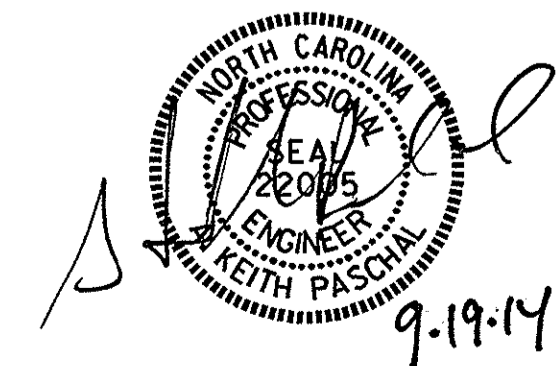
PROJECT NO. 17BP.2.R.55
 BEAUFORT COUNTY
 STATION: 12+58.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER
 BEAVERDAM SWAMP
 ON SR 1520 BETWEEN
 SR 1523 AND NC 32



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

DRAWN BY: D. G. ELY DATE: 7/9/14
 CHECKED BY: A. K. PATEL DATE: 7/14
 DESIGN ENGINEER OF RECORD: A. K. PASCHAL DATE: 7/25/14

LOAD FACTORS:

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

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	1.055	--	1.75	0.275	1.23	55'	EL	27	0.523	1.23	55'	EL	5.4	0.80	0.275	1.05	55'	EL	27		
	HL-93(0pr)	N/A	--	1.591	--	1.35	0.275	1.59	55'	EL	27	0.523	1.59	55'	EL	5.4	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.322	47.585	1.75	0.275	1.54	55'	EL	27	0.523	1.47	55'	EL	5.4	0.80	0.275	1.32	55'	EL	27		
	HS-20(0pr)	36.000	--	1.9	68.396	1.35	0.275	1.99	55'	EL	27	0.523	1.90	55'	EL	5.4	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.776	37.476	1.40	0.275	4.04	55'	EL	27	0.523	4.17	55'	EL	5.4	0.80	0.275	2.78	55'	EL	27	
		SNGARBS2	20.000	--	2.155	43.095	1.40	0.275	3.14	55'	EL	27	0.523	3.02	55'	EL	5.4	0.80	0.275	2.15	55'	EL	27	
		SNAGRIS2	22.000	--	2.079	45.734	1.40	0.275	3.03	55'	EL	27	0.523	2.83	55'	EL	5.4	0.80	0.275	2.08	55'	EL	27	
		SNCOTTS3	27.250	--	1.384	37.708	1.40	0.275	2.01	55'	EL	27	0.523	2.09	55'	EL	5.4	0.80	0.275	1.38	55'	EL	27	
		SNAGGRS4	34.925	--	1.189	41.527	1.40	0.275	1.73	55'	EL	27	0.523	1.77	55'	EL	5.4	0.80	0.275	1.19	55'	EL	27	
		SNS5A	35.550	--	1.16	41.255	1.40	0.275	1.69	55'	EL	27	0.523	1.82	55'	EL	5.4	0.80	0.275	1.16	55'	EL	27	
		SNS6A	39.950	--	1.079	43.102	1.40	0.275	1.57	55'	EL	27	0.523	1.68	55'	EL	5.4	0.80	0.275	1.08	55'	EL	27	
	SNS7B	42.000	--	1.028	43.175	1.40	0.275	1.50	55'	EL	27	0.523	1.67	55'	EL	5.4	0.80	0.275	1.03	55'	EL	27		
	TTST	TNAGRIT3	33.000	--	1.32	43.556	1.40	0.275	1.92	55'	EL	27	0.523	1.98	55'	EL	5.4	0.80	0.275	1.32	55'	EL	27	
		TNT4A	33.075	--	1.33	43.979	1.40	0.275	1.94	55'	EL	27	0.523	1.91	55'	EL	5.4	0.80	0.275	1.33	55'	EL	27	
		TNT6A	41.600	--	1.101	45.811	1.40	0.275	1.60	55'	EL	27	0.523	1.83	55'	EL	5.4	0.80	0.275	1.10	55'	EL	27	
		TNT7A	42.000	--	1.114	46.804	1.40	0.275	1.62	55'	EL	27	0.523	1.71	55'	EL	5.4	0.80	0.275	1.11	55'	EL	27	
		TNT7B	42.000	--	1.163	48.848	1.40	0.275	1.69	55'	EL	27	0.523	1.62	55'	EL	5.4	0.80	0.275	1.16	55'	EL	27	
		TNAGRIT4	43.000	--	1.101	47.33	1.40	0.275	1.60	55'	EL	27	0.523	1.56	55'	EL	5.4	0.80	0.275	1.10	55'	EL	27	
TNAGT5A		45.000	--	1.031	46.405	1.40	0.275	1.50	55'	EL	27	0.523	1.58	55'	EL	5.4	0.80	0.275	1.03	55'	EL	27		
TNAGT5B	45.000	3	1.013	45.582	1.40	0.275	1.47	55'	EL	27	0.523	1.48	55'	EL	5.4	0.80	0.275	1.01	55'	EL	27			

NOTES:

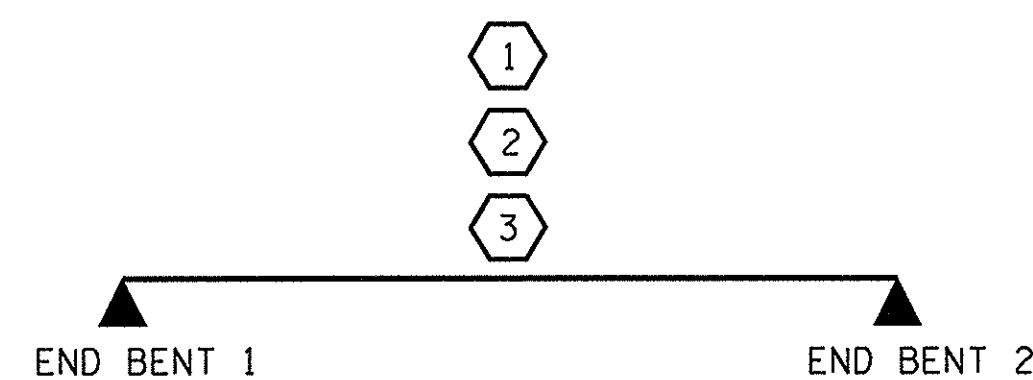
MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

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

COMMENTS:

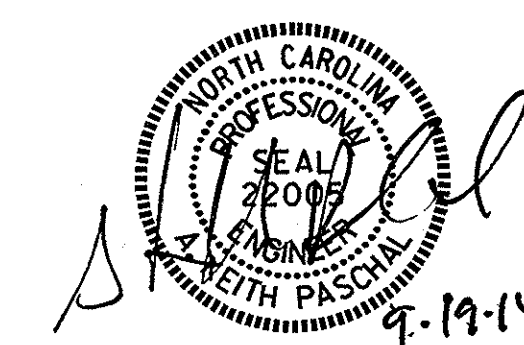
- 1.
- 2.
- 3.
- 4.

#	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	



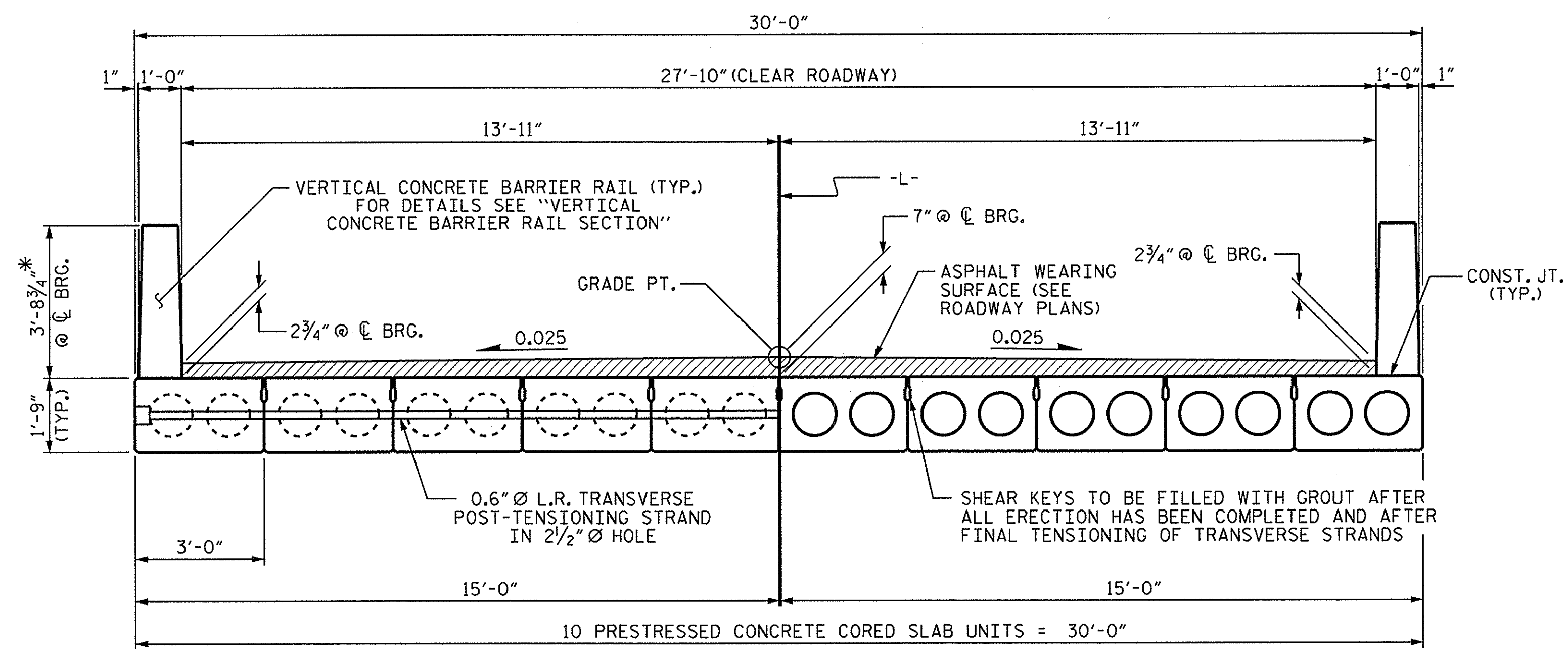
LRFR SUMMARY
FOR SPAN 'A'

PROJECT NO. 17BP.2.R.55
BEAUFORT COUNTY
 STATION: 12+58.00 -L-



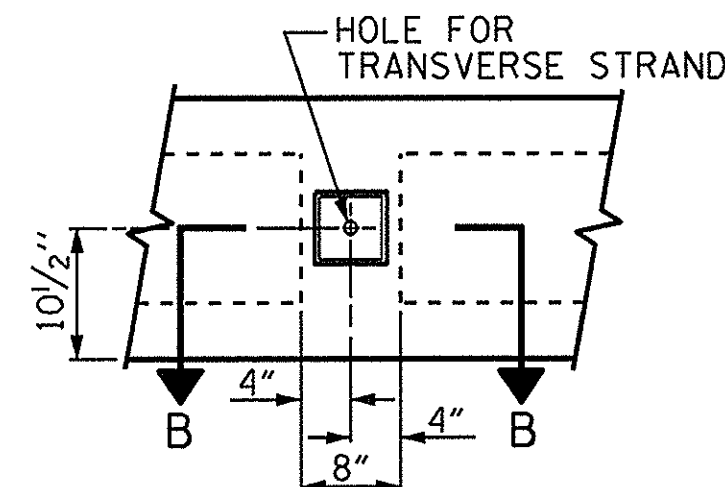
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD LRFR SUMMARY FOR 55' CORED SLAB UNIT 90° SKEW (NON-INTERSTATE TRAFFIC)					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-4					TOTAL SHEETS 14

ASSEMBLED BY : W. DEBREW	DATE : 5/14
CHECKED BY : S. STRICKLAND	DATE : 5/14
DRAWN BY : CVC	6/10
CHECKED BY : DNS	6/10

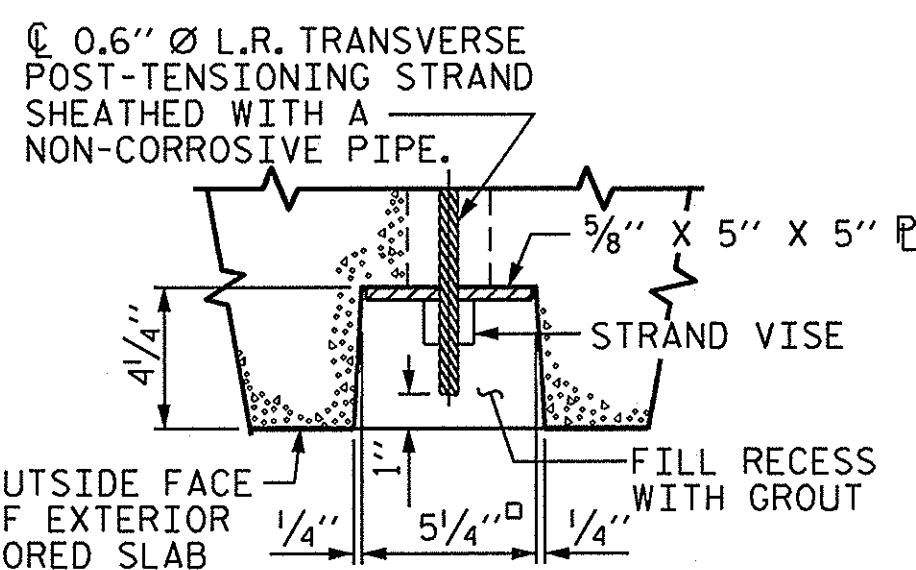


HALF SECTION AT INTERMEDIATE DIAPHRAGMS
 HALF SECTION THROUGH VOIDS
TYPICAL SECTION

* - 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.

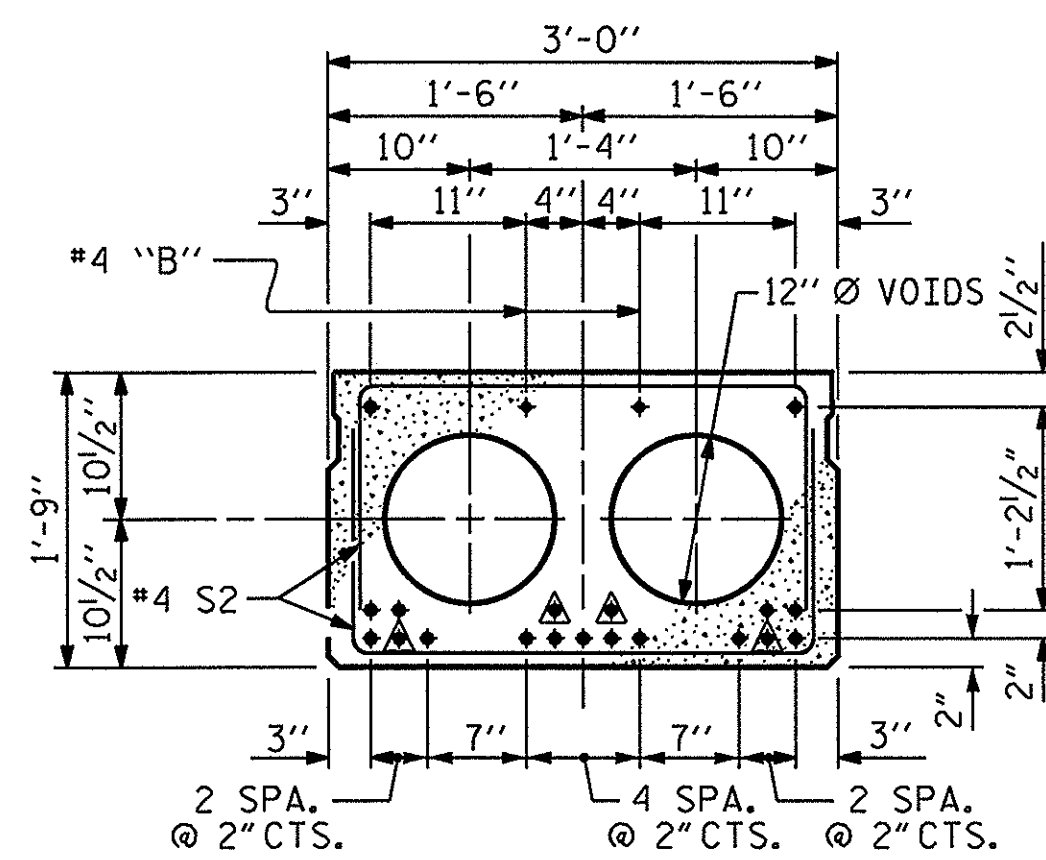


ELEVATION VIEW



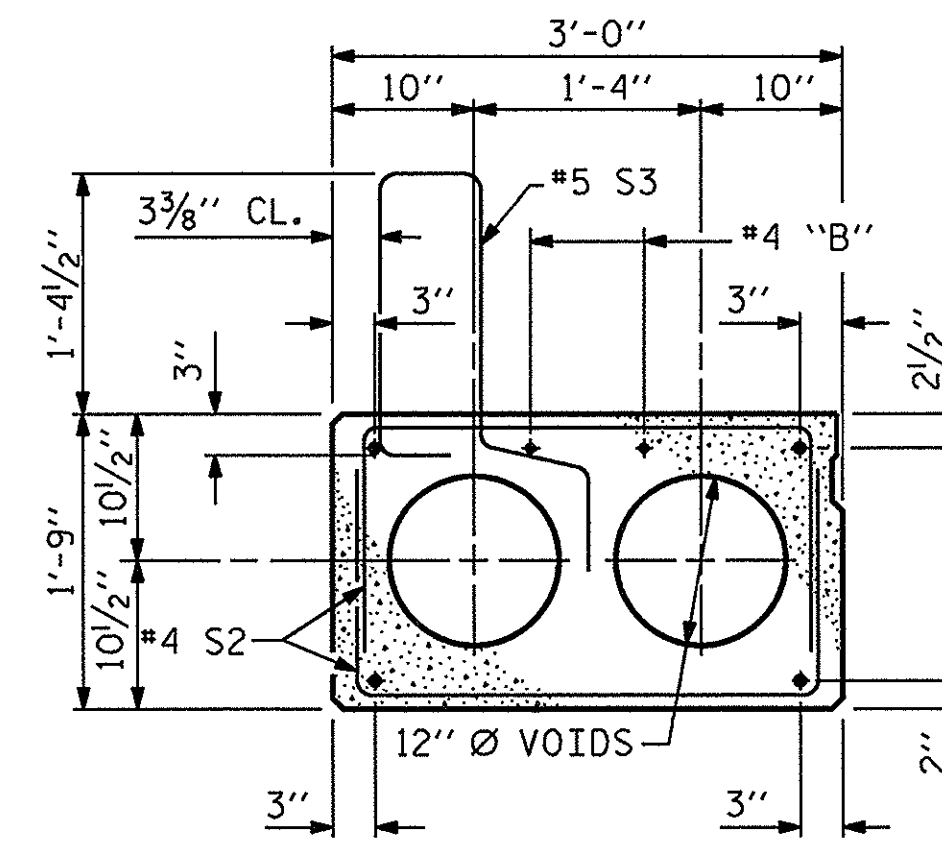
SECTION B-B

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



INTERIOR SLAB SECTION (55' UNIT)
 (19 STRANDS REQUIRED)

0.6" Ø LOW RELAXATION STRAND LAYOUT

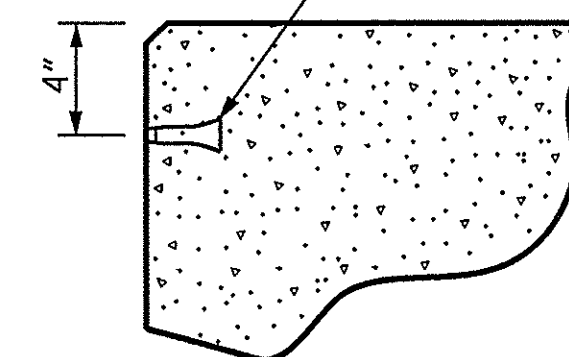


EXT. SLAB SECTION
 (FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)

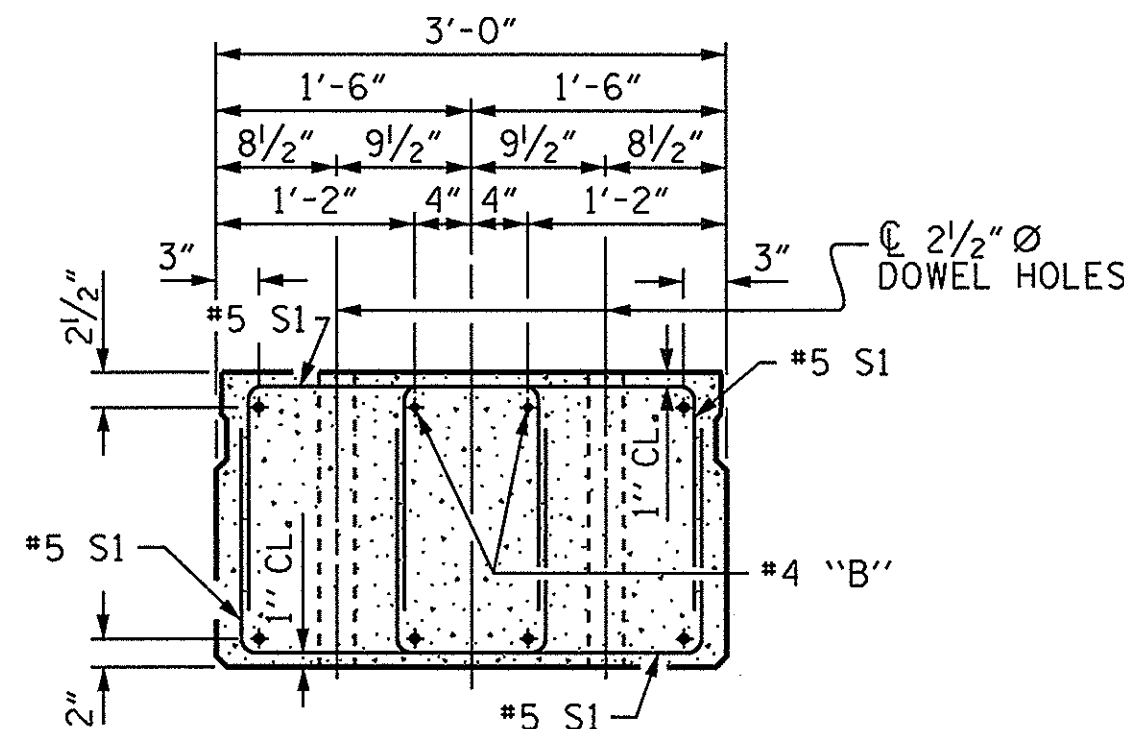
▲ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND

PERMITTED THREADED INSERT CAST IN OUTSIDE FACE OF EXTERIOR UNIT AND RECESSED 3/4" SIZE TO BE DETERMINED BY CONTRACTOR.

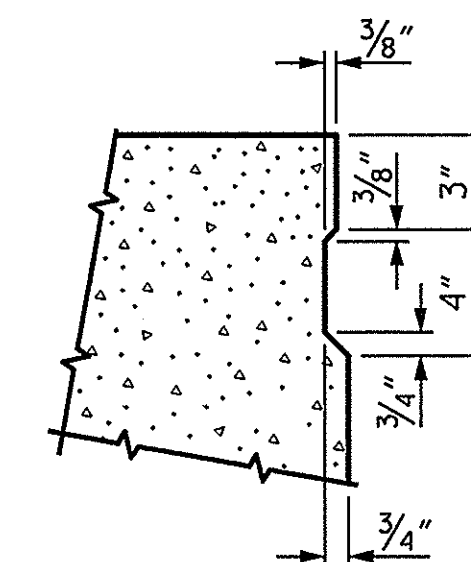


THREADED INSERT DETAIL



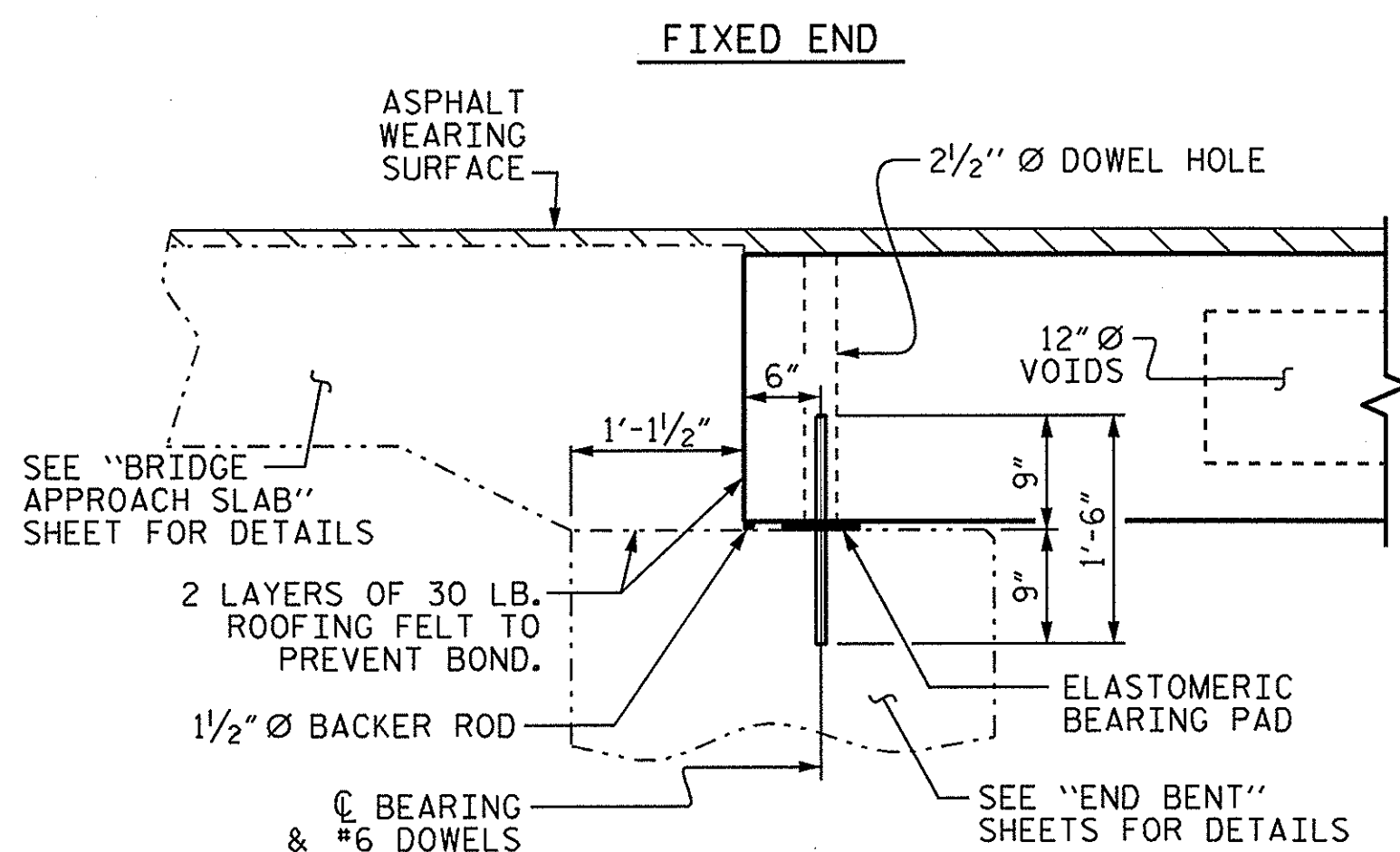
END ELEVATION

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.



SHEAR KEY DETAIL

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



SECTION AT END BENT

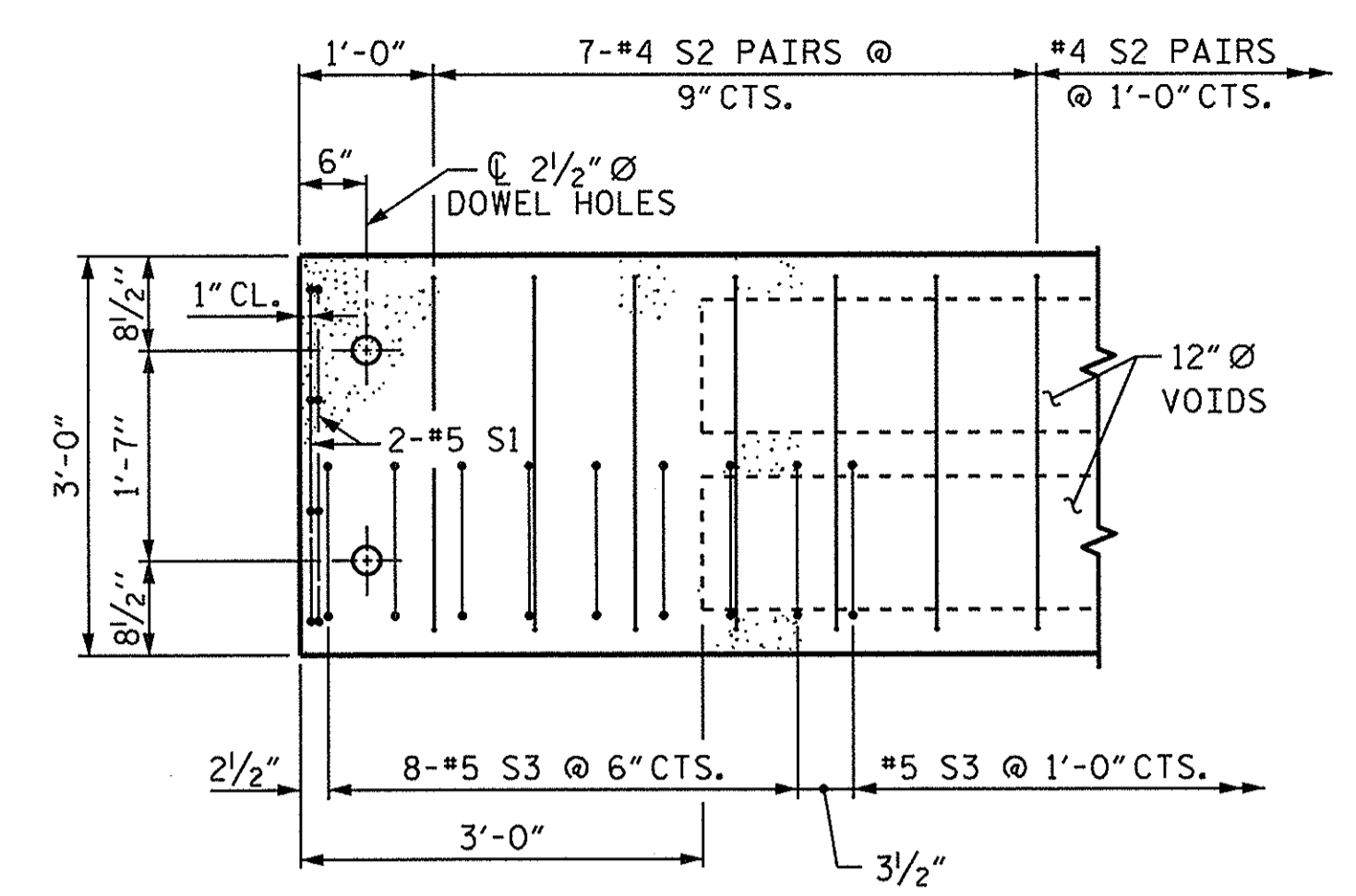
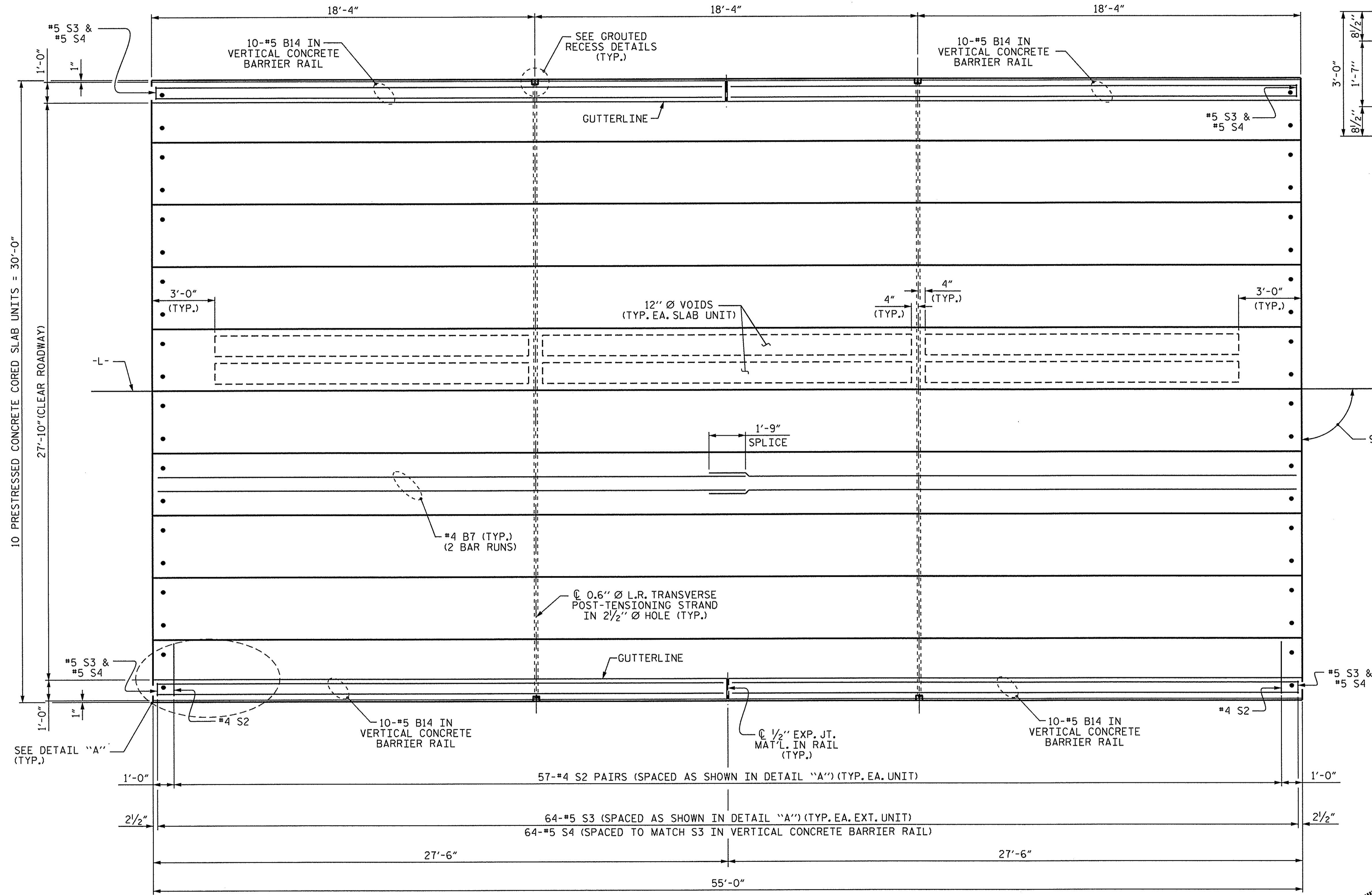
ASSEMBLED BY : W. DEBREW	DATE : 5/14
CHECKED BY : S. STRICKLAND	DATE : 5/14
DRAWN BY : DGE 5/09	REV. 12/11 MAA/AAC
CHECKED BY : BCH 6/09	REV. 8/14 MAA/TMG

PROJECT NO. 17BP.2.R.55
BEAUFORT COUNTY
 STATION: 12+58.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 3'-0" X 1'-9"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT
 90° SKEW

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

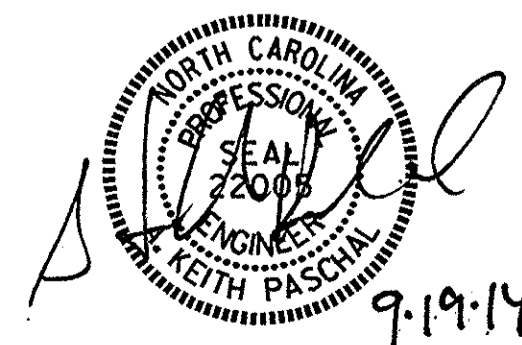


DETAIL "A"
 (TYPICAL EACH END OF UNIT)
 NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

PLAN OF UNIT

PROJECT NO. 17BP.2.R.55
BEAUFORT COUNTY
 STATION: 12+58.00 -L-

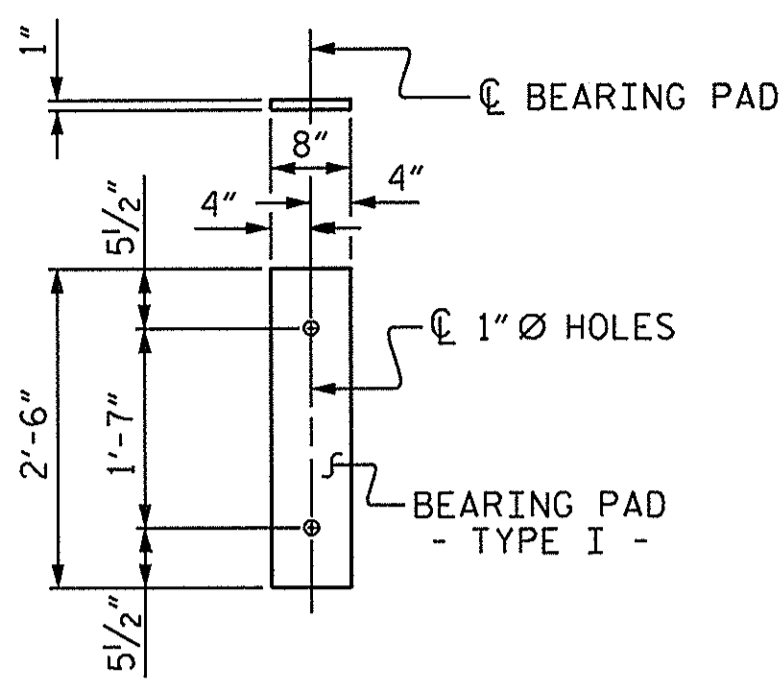
SHEET 2 OF 3
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PLAN OF 55' UNIT
 27'-10" CLEAR ROADWAY
 90° SKEW



ASSEMBLED BY : W. DEBREW	DATE : 5/14
CHECKED BY : S. STRICKLAND	DATE : 5/14
DRAWN BY : DGE 3/09	REV. 12/5/11 MAA/AAC
CHECKED BY : BCH 3/09	REV. 8/14 MAA/TMG

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6	
1			3			TOTAL SHEETS	
2			4			14	

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 kpaschal



FIXED END
(TYPE I - 20 REQ'D)

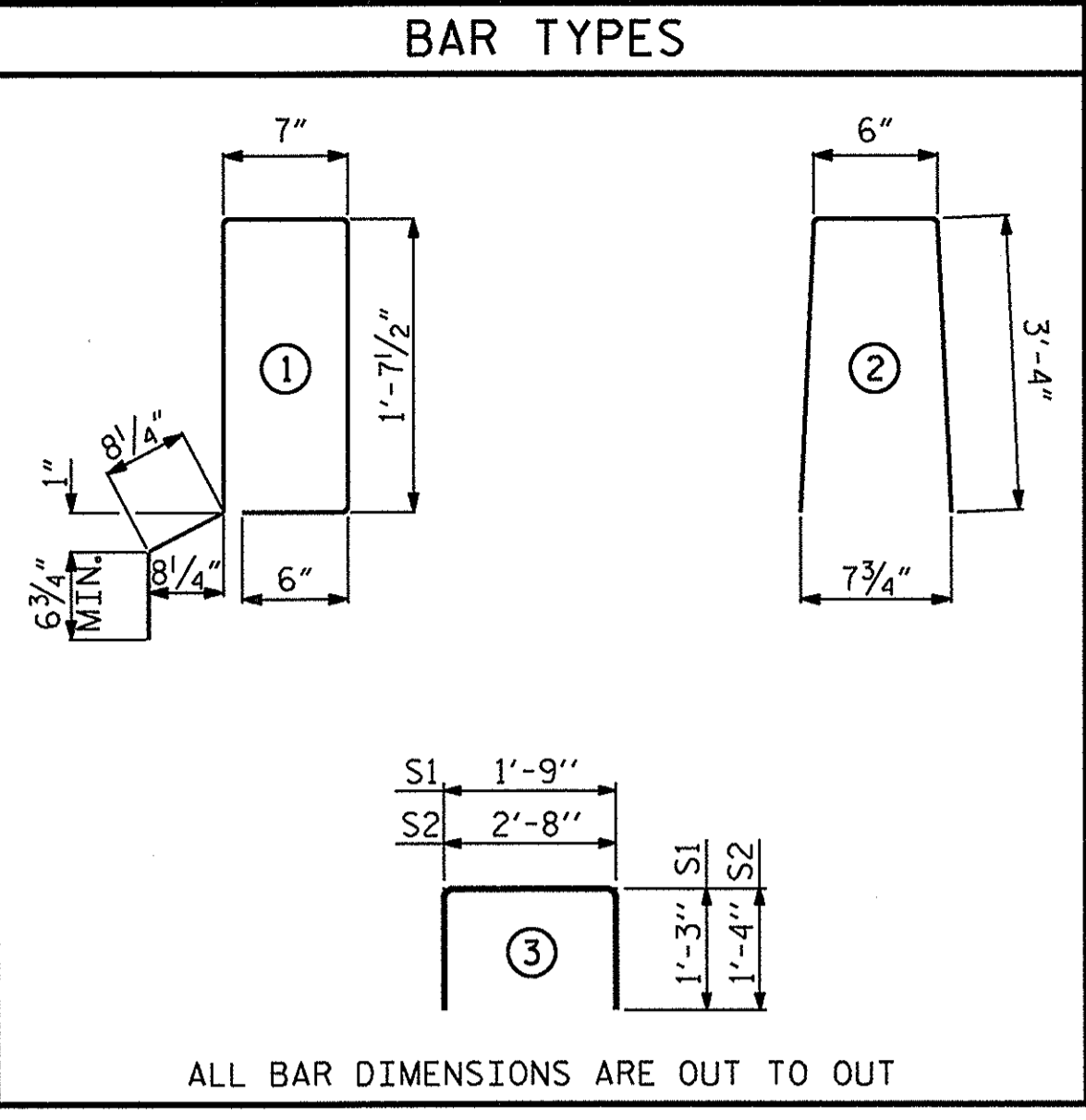
ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
27'-10" CLEAR ROADWAY	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
55' UNITS	1 5/8"	3'-7 5/8"

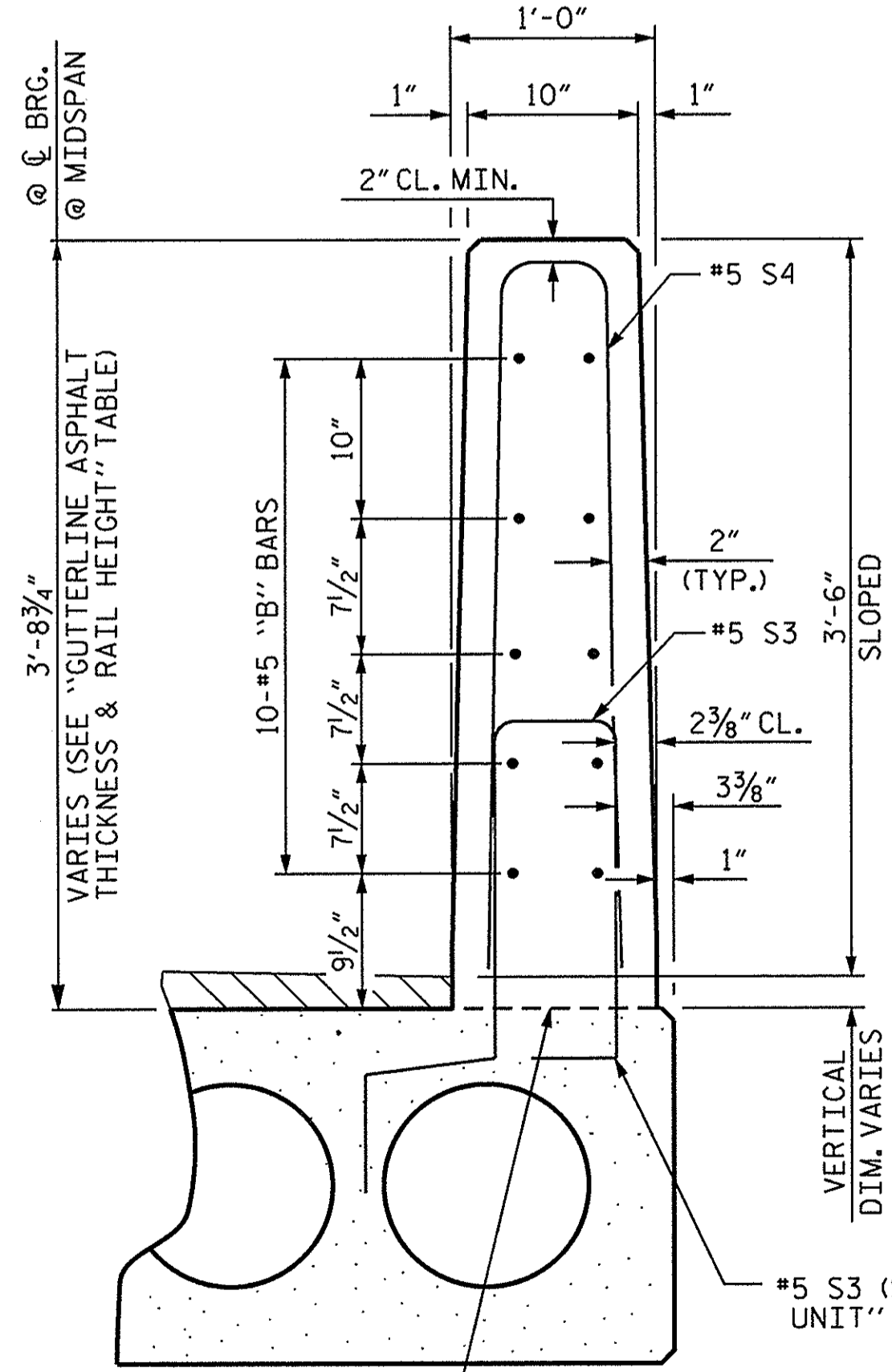
BILL OF MATERIAL FOR ONE 55' CORED SLAB UNIT						
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH
B7	4	#4	STR	28'-3"	75	28'-3"
S1	8	#5	3	4'-3"	35	4'-3"
S2	114	#4	3	5'-4"	406	5'-4"
* S3	64	#5	1	5'-7"	373	
REINFORCING STEEL				LBS.	516	516
* EPOXY COATED REINFORCING STEEL				LBS.	373	
6500 P.S.I. CONCRETE				CU. YDS.	7.8	7.8
0.6" Ø L.R. STRANDS				No.	19	19

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
55' UNIT			
EXTERIOR C.S.	2	55'-0"	110'-0"
INTERIOR C.S.	8	55'-0"	440'-0"
TOTAL	10		550'-0"



DEAD LOAD DEFLECTION AND CAMBER	
55' CORED SLAB UNIT	3'-0" x 1'-9" 0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1/2" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	3/8" ↓
FINAL CAMBER	1/8" ↑

** INCLUDES FUTURE WEARING SURFACE

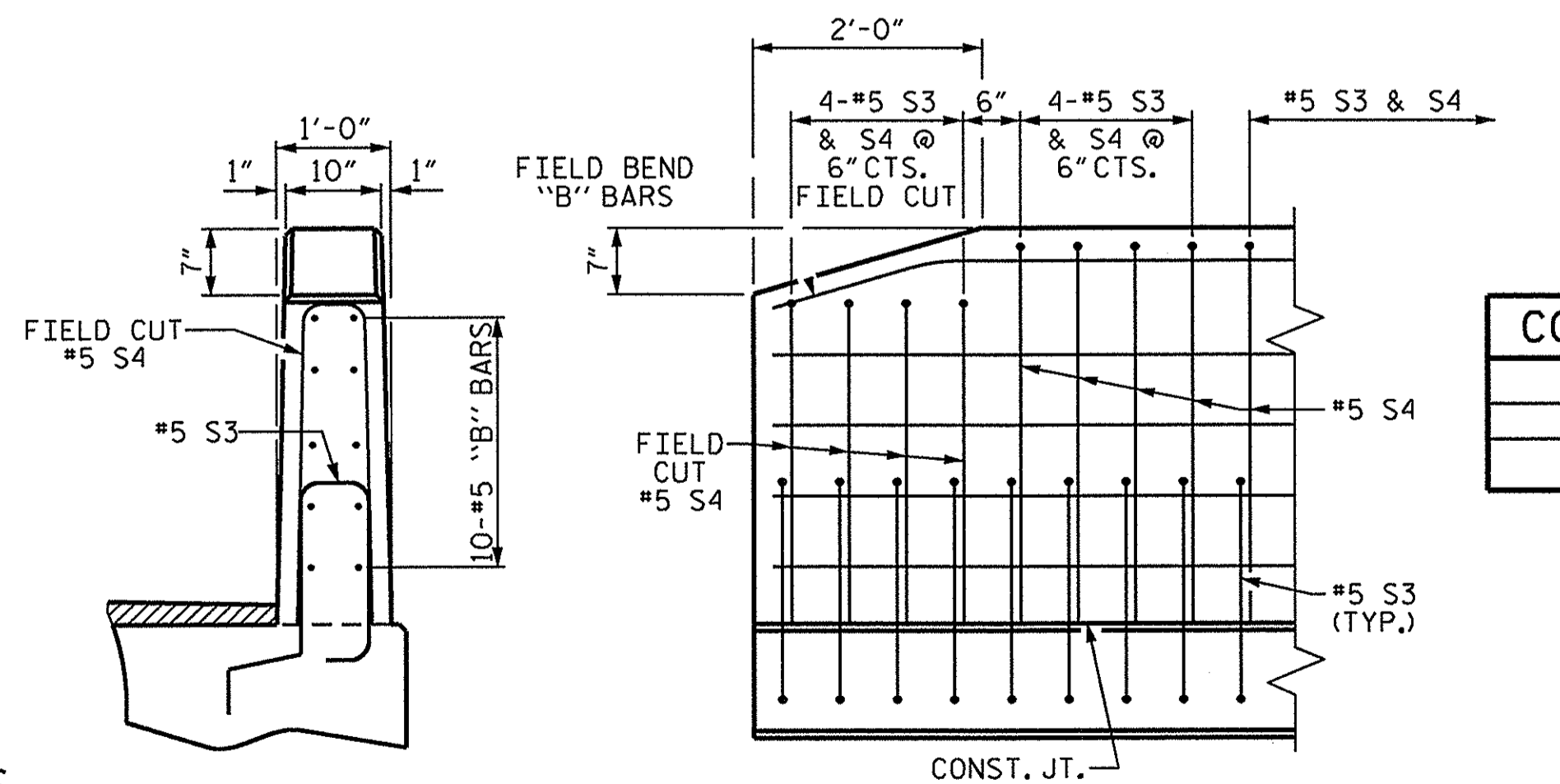


SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)

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

ELEVATION AT EXPANSION JOINTS

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
55' UNIT						
* B14	40	40	#5	STR	27'-1"	1130
* S4	128	128	#5	2	7'-2"	957
* EPOXY COATED REINFORCING STEEL				LBS.		2087
CLASS AA CONCRETE				CU. YDS.		14.1
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		110.25



END OF RAIL DETAILS

CONCRETE RELEASE STRENGTH	
UNIT	PSI
55' UNITS	4900

GRADE 270 STRANDS	
AREA (SQ. INCHES)	0.6" Ø L.R.
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

NOTES

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 AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT 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.

FLAME CUTTING OF THE TRANSVERSE POST-TENSIONING STRAND IS NOT ALLOWED.

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.

THE PERMITTED THREADED INSERTS ARE DETAILED AS AN OPTION FOR THE CONTRACTOR TO ATTACH FALSEWORK AND FORMWORK DURING CONSTRUCTION.

THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

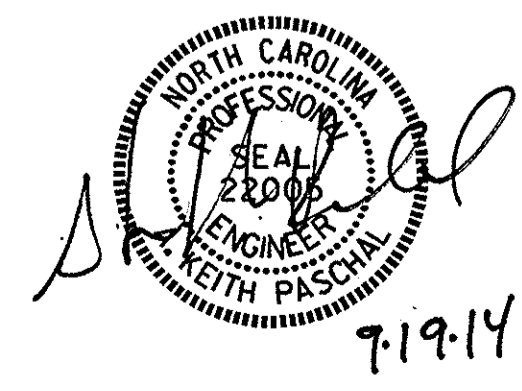
THE PERMITTED THREADED INSERTS SHALL BE GROUTED BY THE CONTRACTOR IMMEDIATELY FOLLOWING REMOVAL OF THE FALSEWORK.

THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

PROJECT NO. 17BP.2.R.55
BEAUFORT COUNTY
STATION: 12+58.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
90° SKEW



ASSEMBLED BY : W DEBREW	DATE : 5/14
CHECKED BY : S. STRICKLAND	DATE : 5/14
DRAWN BY : DGE 5/09	REV. 12/11 MAA/AAC
CHECKED BY : BCH 6/09	REV. 8/14 MAA/TMG

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.)

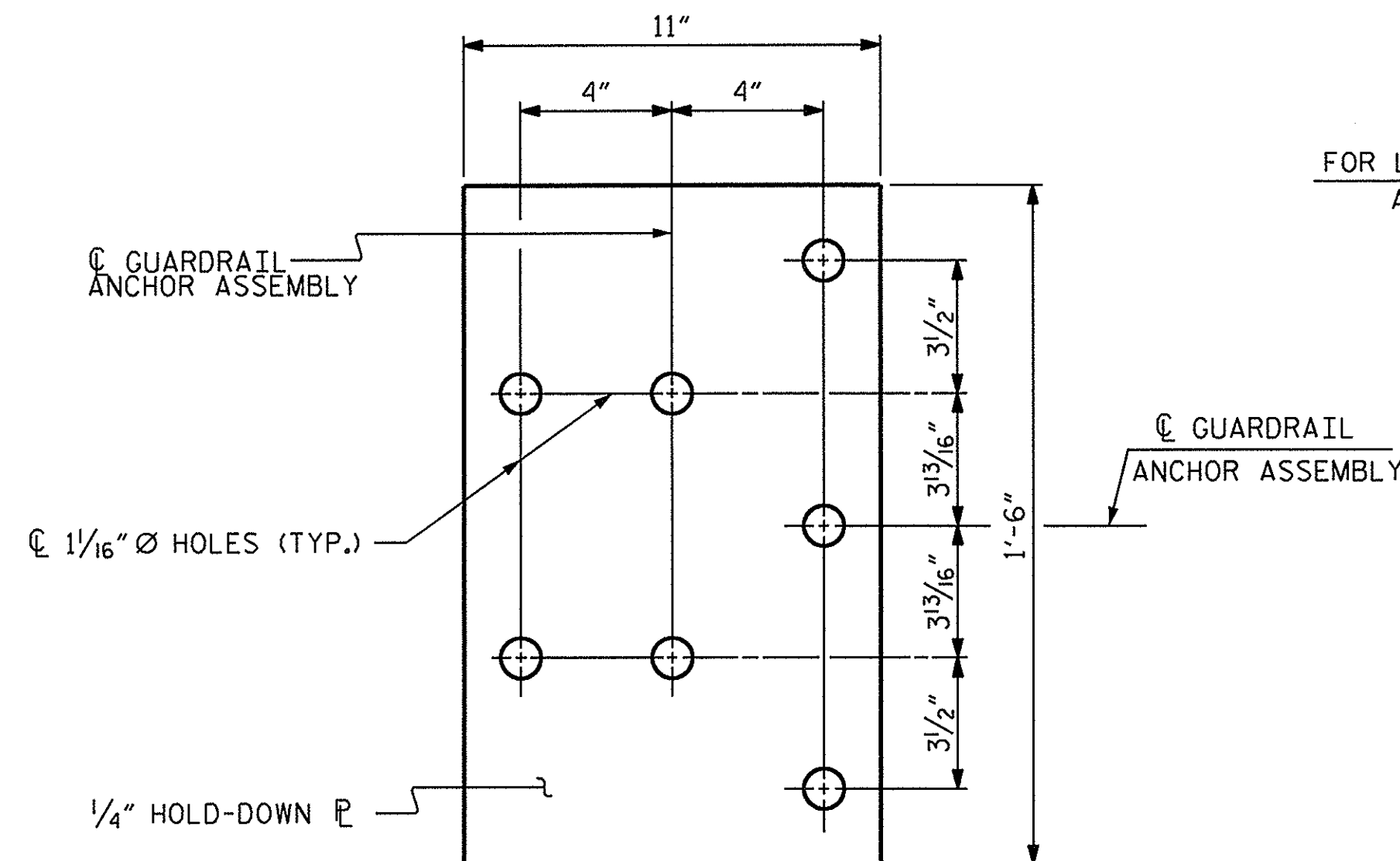
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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.

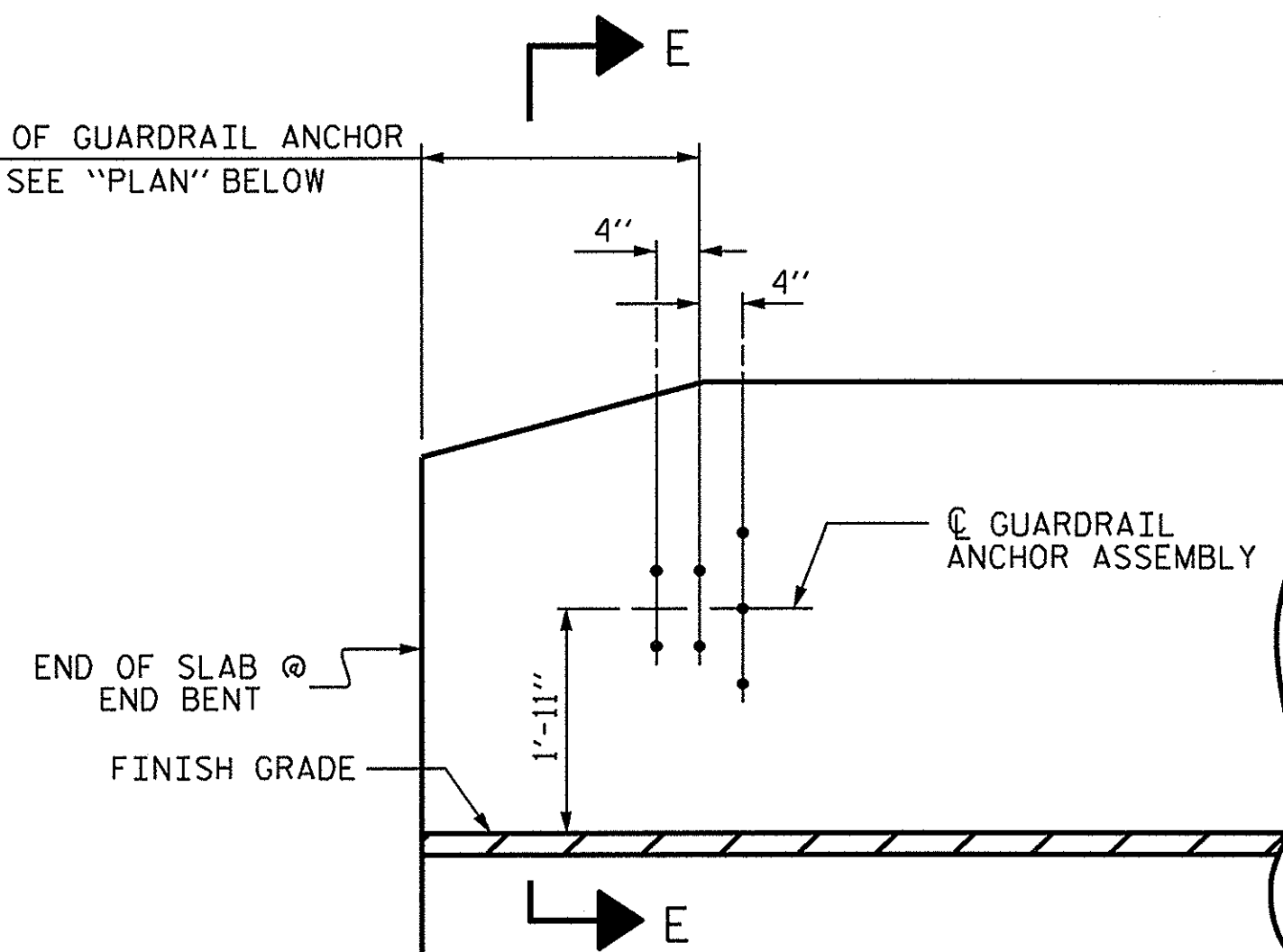
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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.

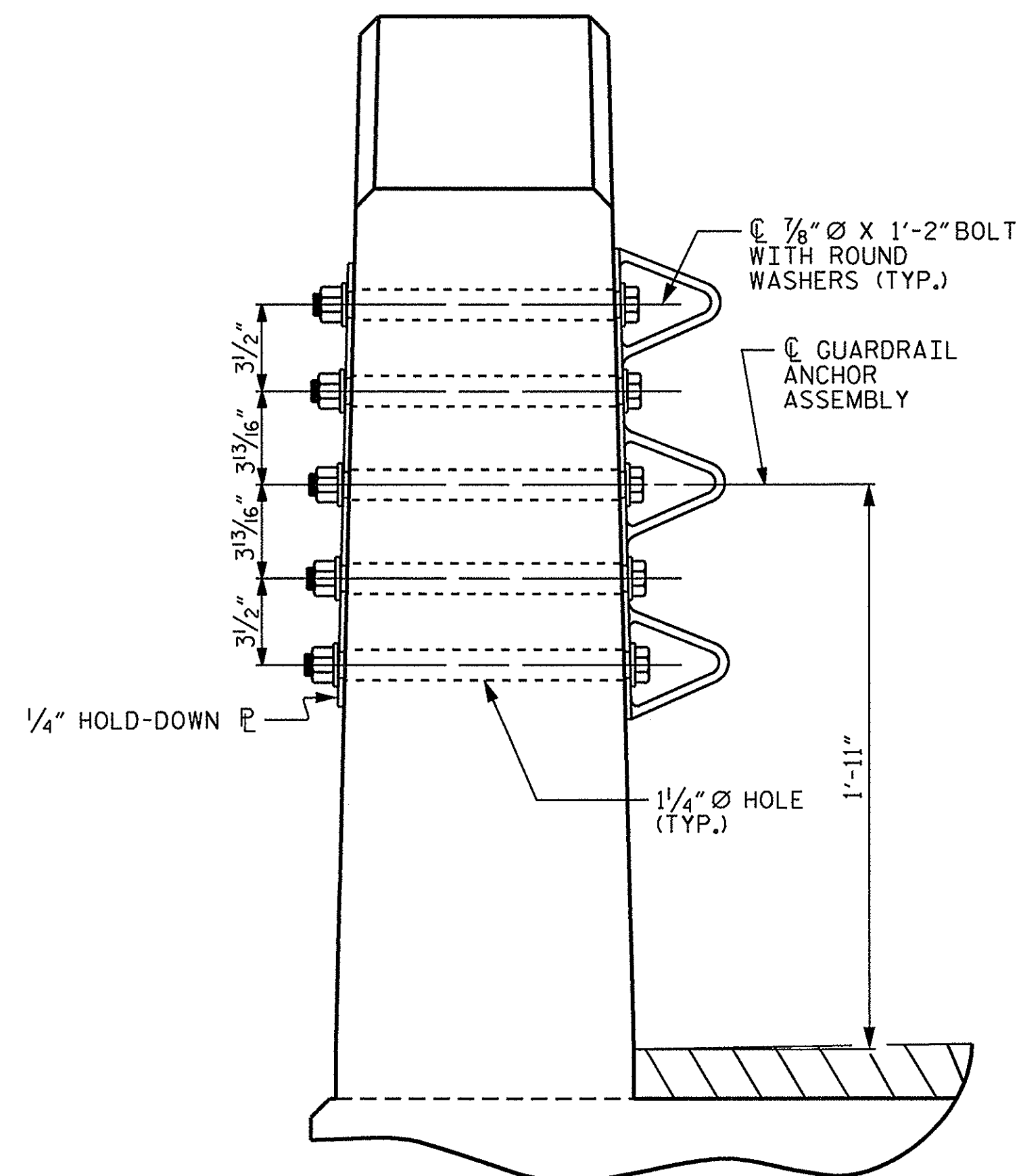


PLAN

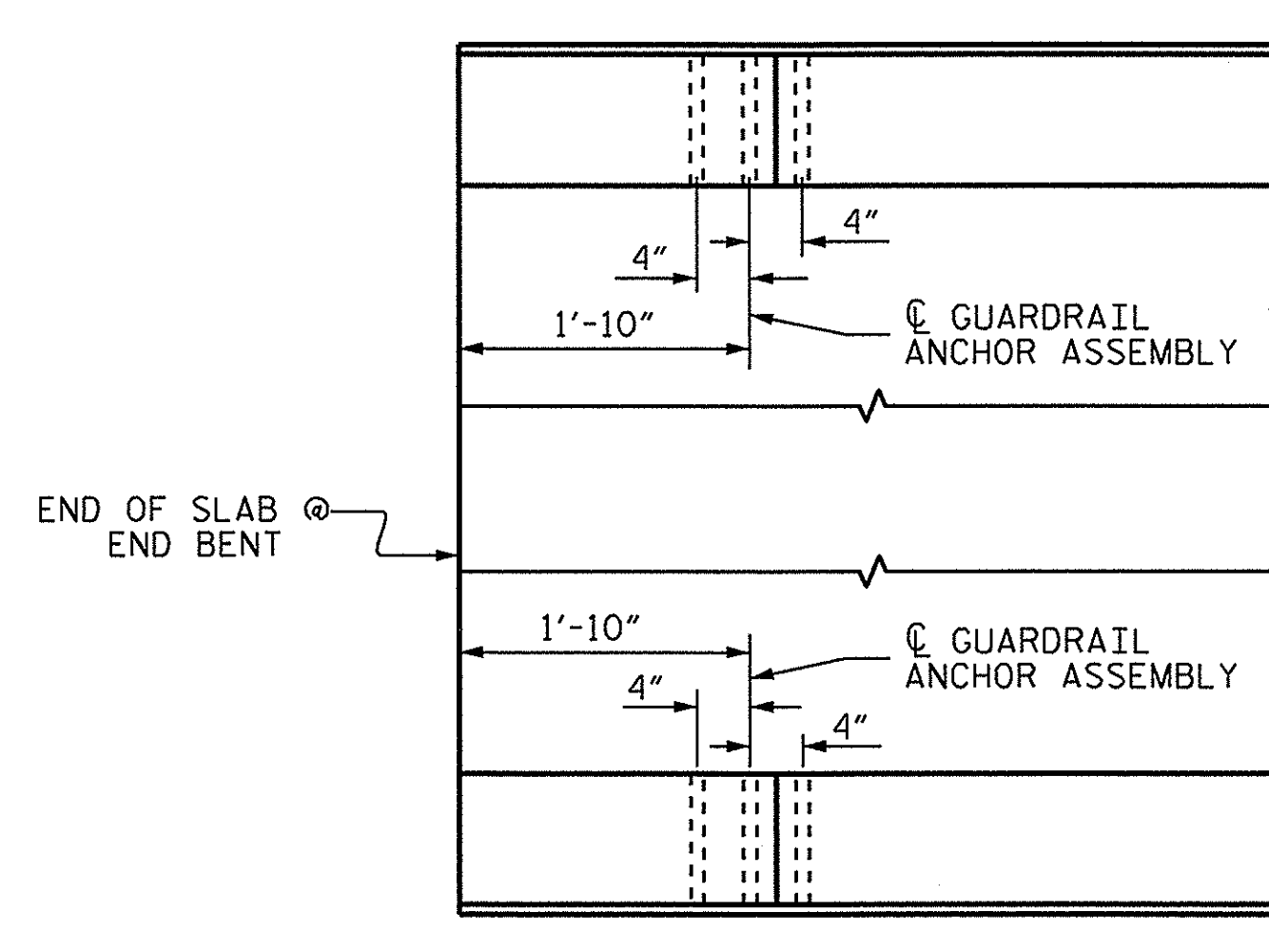
FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW



ELEVATION



SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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



SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. 17BP.2.R.55
BEAUFORT COUNTY
 STATION: 12+58.00 -L-

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

Professional Engineer Seal
 NORTH CAROLINA PROFESSIONAL ENGINEER
 5542
 12/05
 KEITH PASCHAL
 9-19-14

ASSEMBLED BY : S. STRICKLAND	DATE : 4/14
CHECKED BY : P. N. HOLDER	DATE : 4/14
DRAWN BY : MAA	5/10
CHECKED BY : GM	5/10
REV. 10/1/11	MAA/GM
REV. 12/5/11	MAA/GM
REV. 6/13	MAA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			14

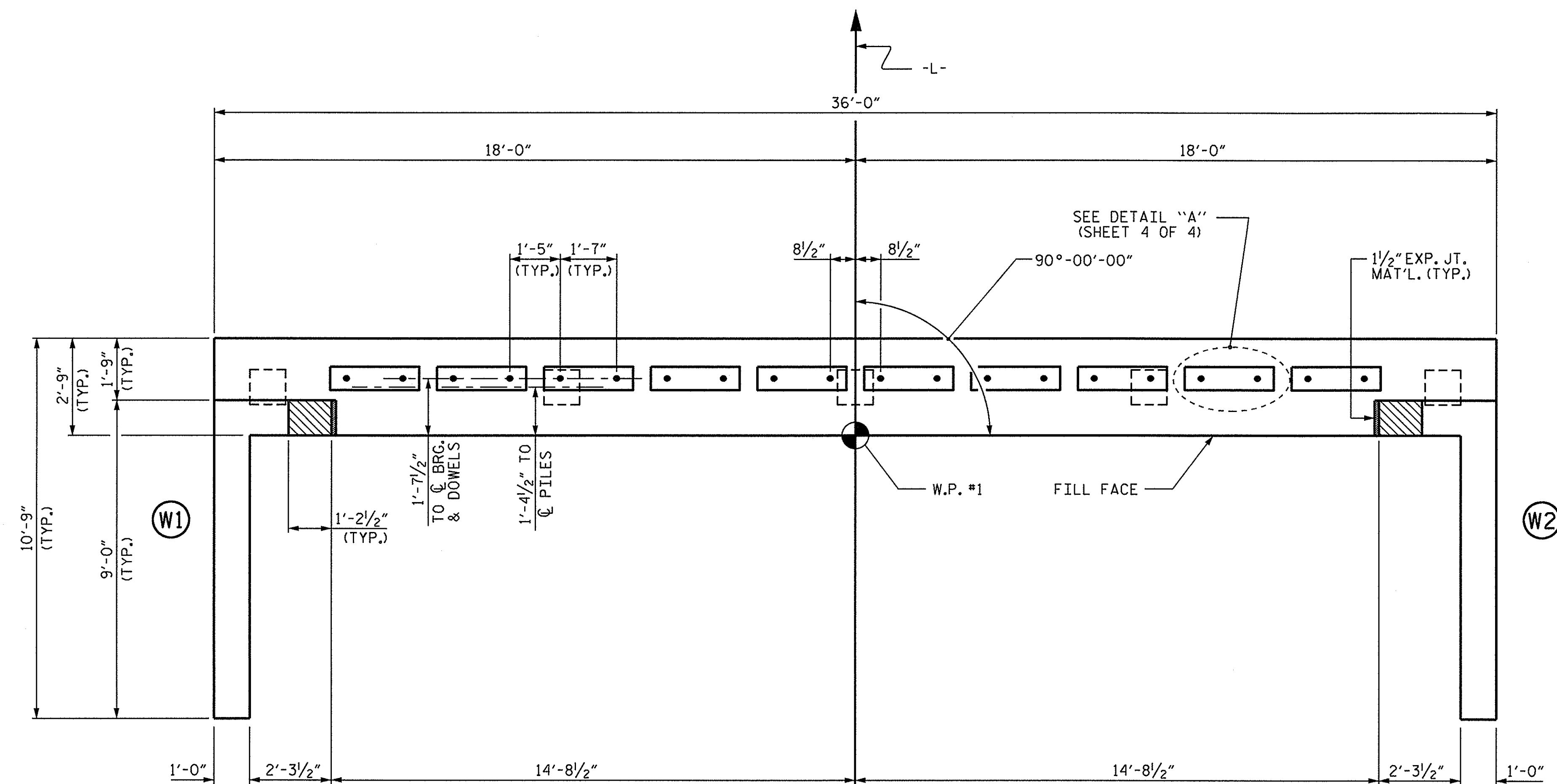
NOTES

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

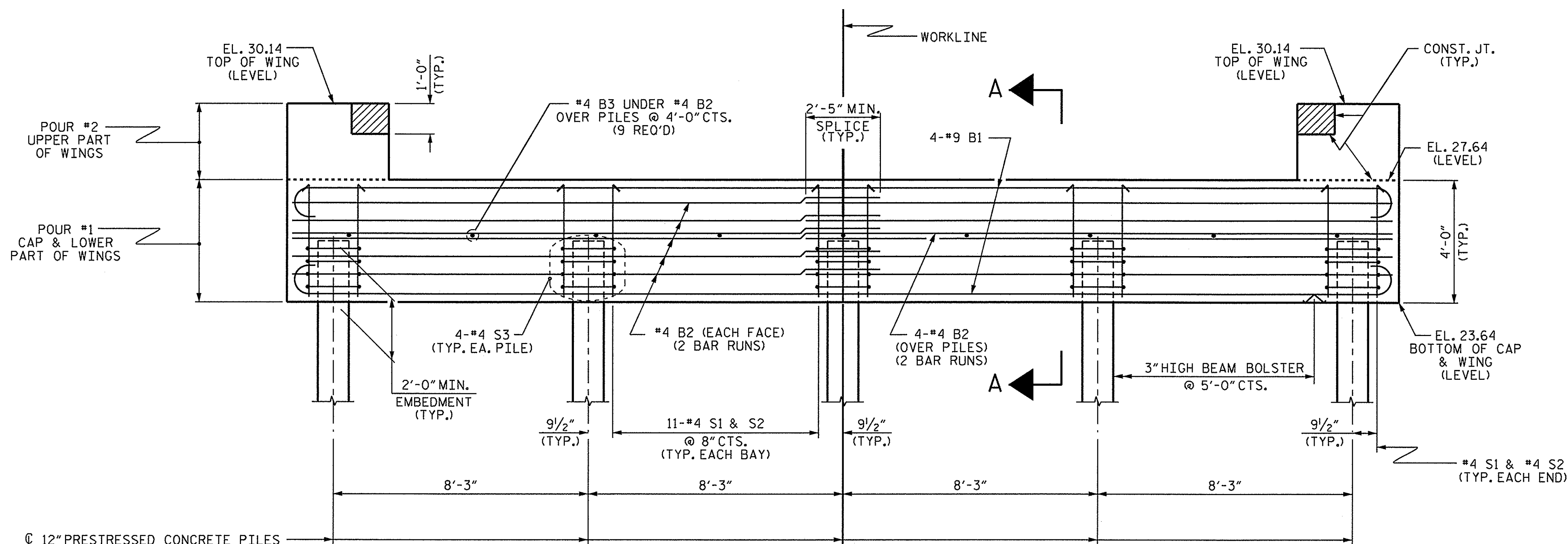
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR WING DETAILS, SEE SHEET 3 OF 4.

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



PLAN



ELEVATION

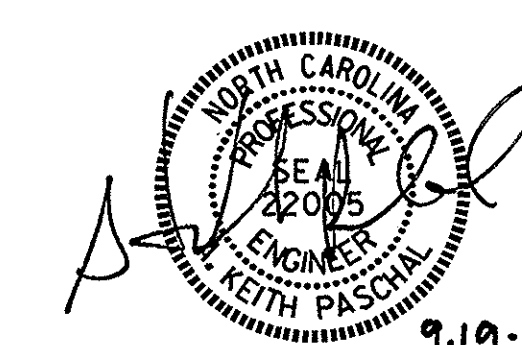
WINGS NOT SHOWN FOR CLARITY. FOR SECTION A-A, SEE SHEET 4 OF 4.

PROJECT NO. 17BP.2.R.55
 BEAUFORT COUNTY
 STATION: 12+58.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT 1



ASSEMBLED BY :	D. G. ELY	DATE :	7/8/14
CHECKED BY :	A. K. PATEL	DATE :	7/14
DRAWN BY :	WJH 12/11		
CHECKED BY :	AAC 12/11		

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			14

STD. NO. EB_30_90S4

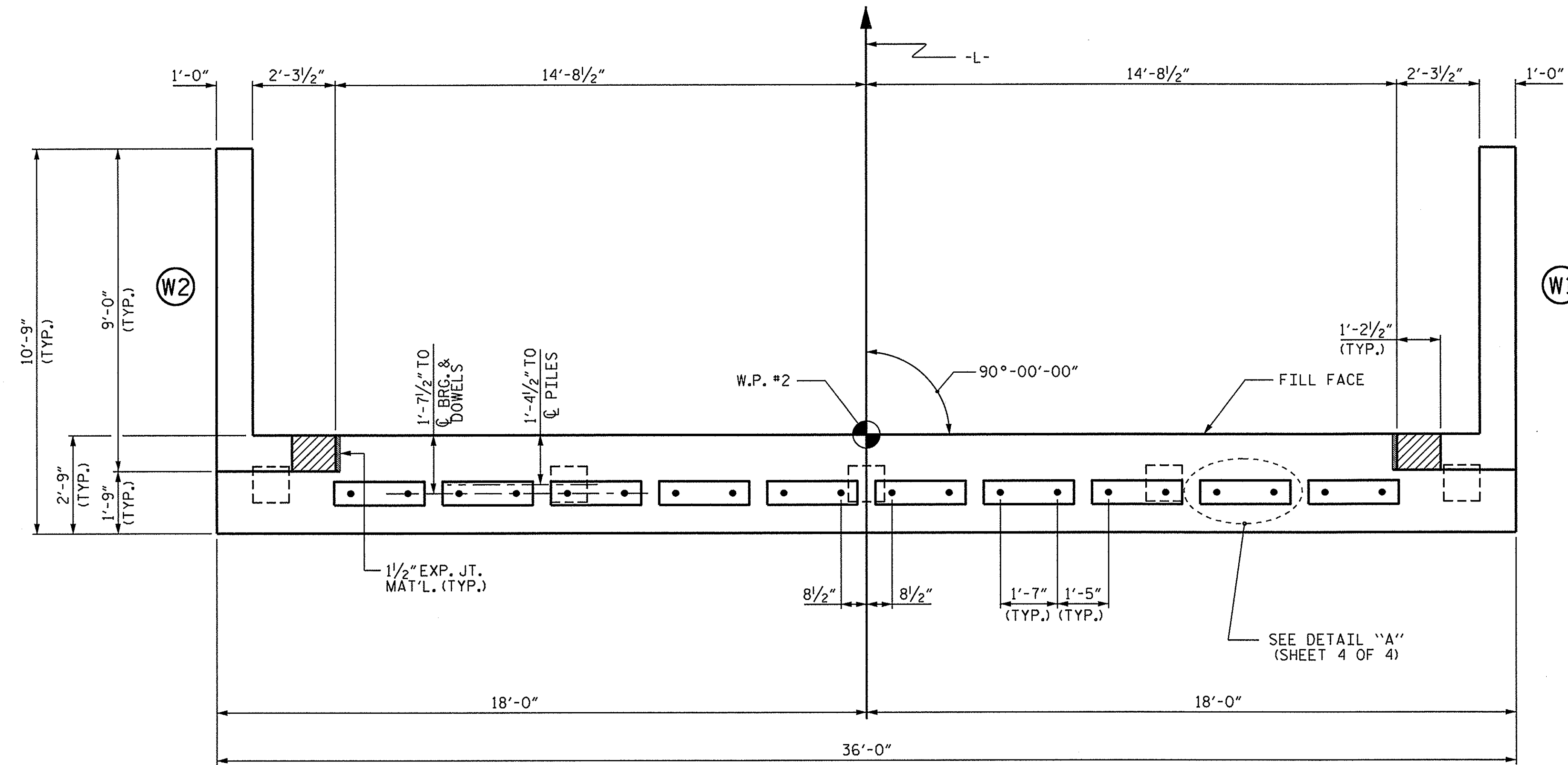
NOTES

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

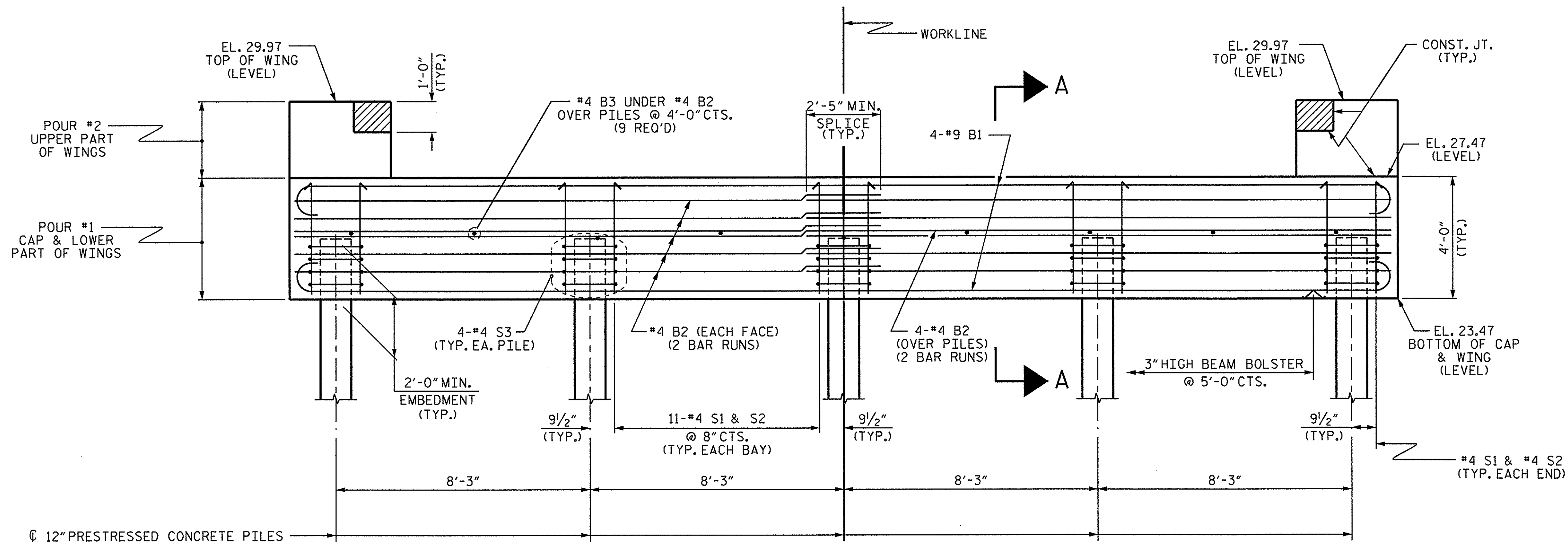
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR WING DETAILS, SEE SHEET 3 OF 4.

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



PLAN



ELEVATION

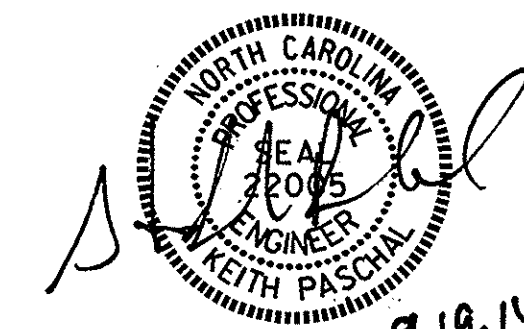
WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.

PROJECT NO. 17BP.2.R.55
BEAUFORT COUNTY
STATION: 12+58.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2



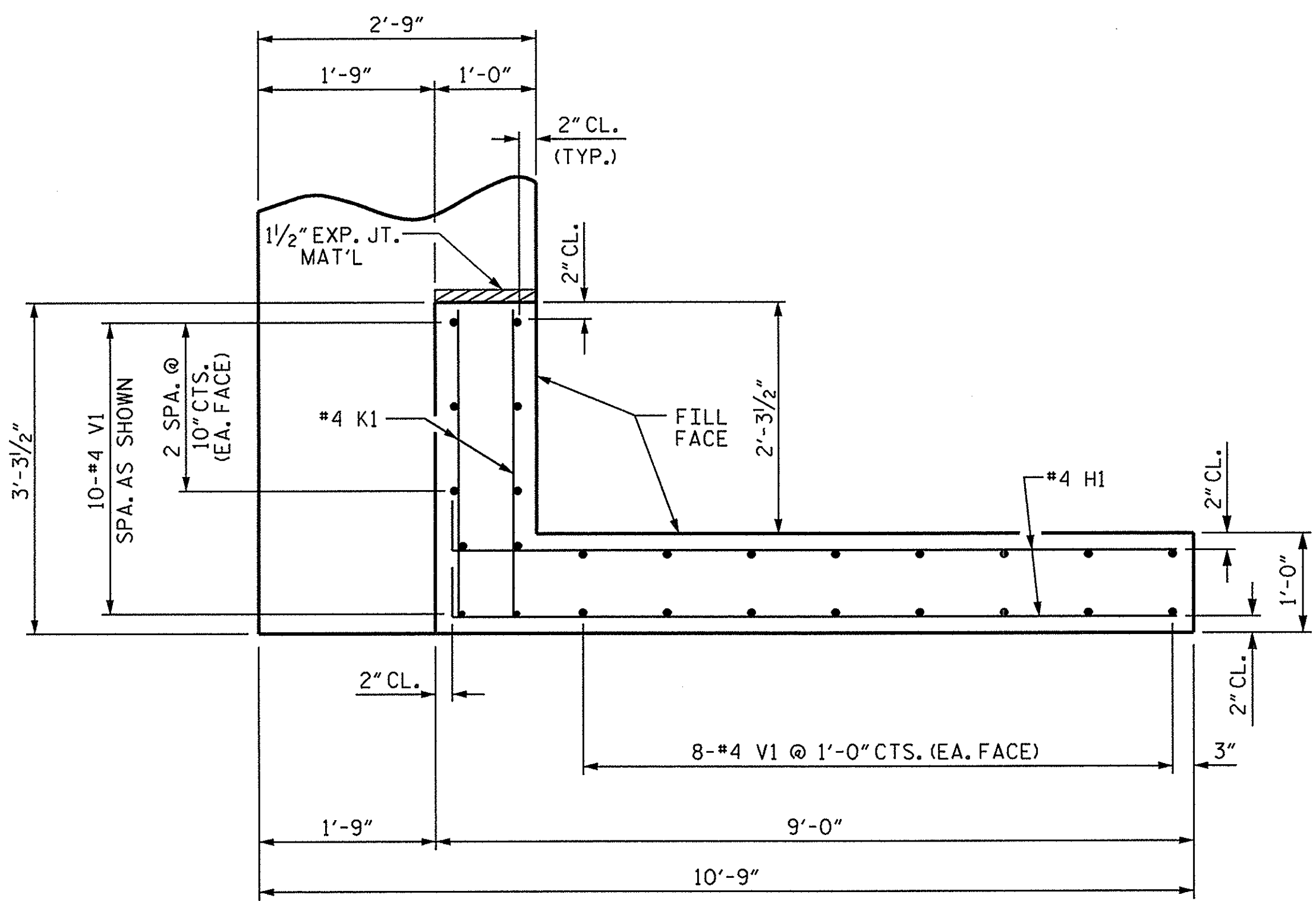
9.19.14

ASSEMBLED BY :	D. G. ELY	DATE :	7/8/14
CHECKED BY :	A. K. PATEL	DATE :	7/14
DRAWN BY :	WJH	DATE :	12/11
CHECKED BY :	AAC	DATE :	12/11

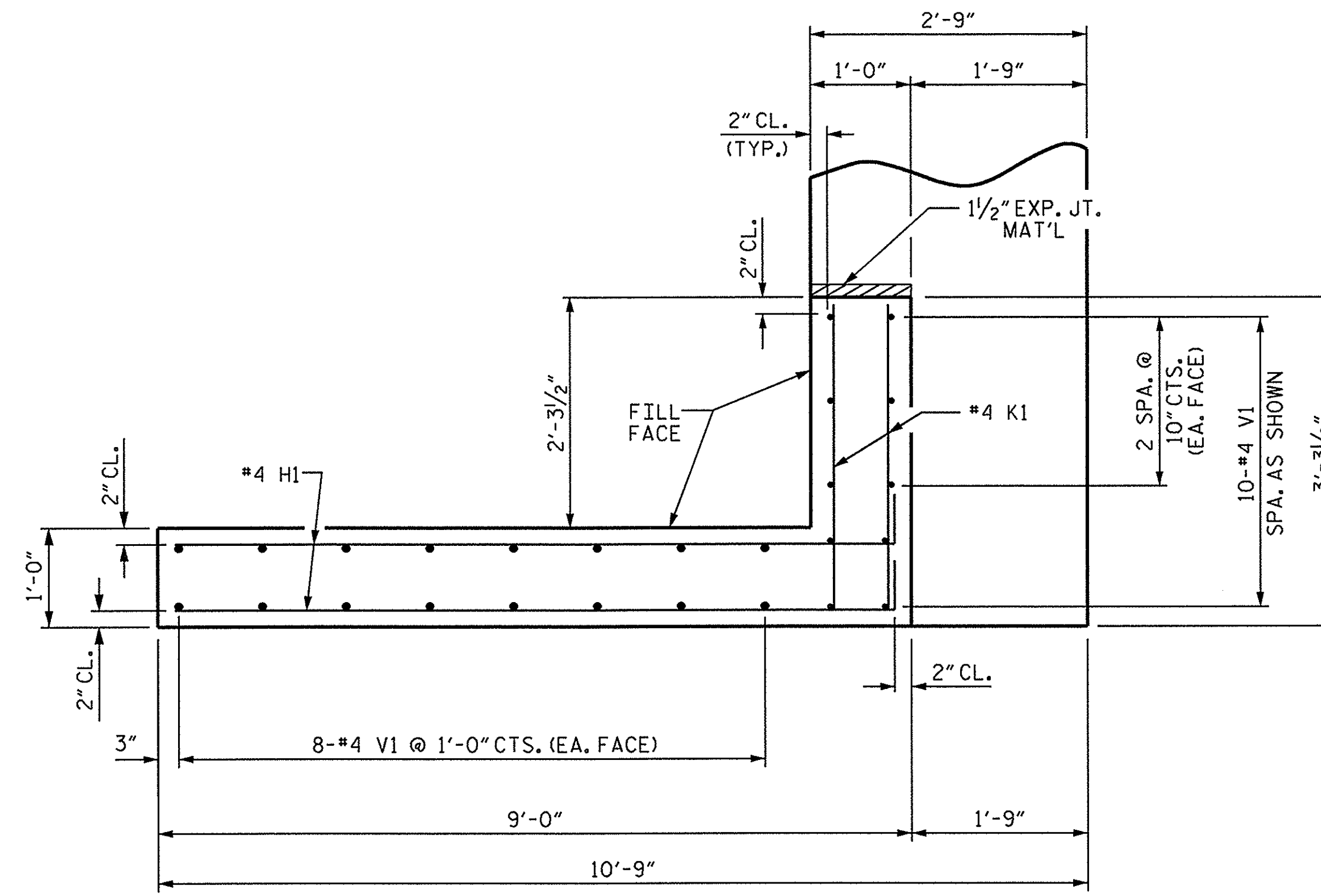
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1			3			TOTAL SHEETS
2			4			14

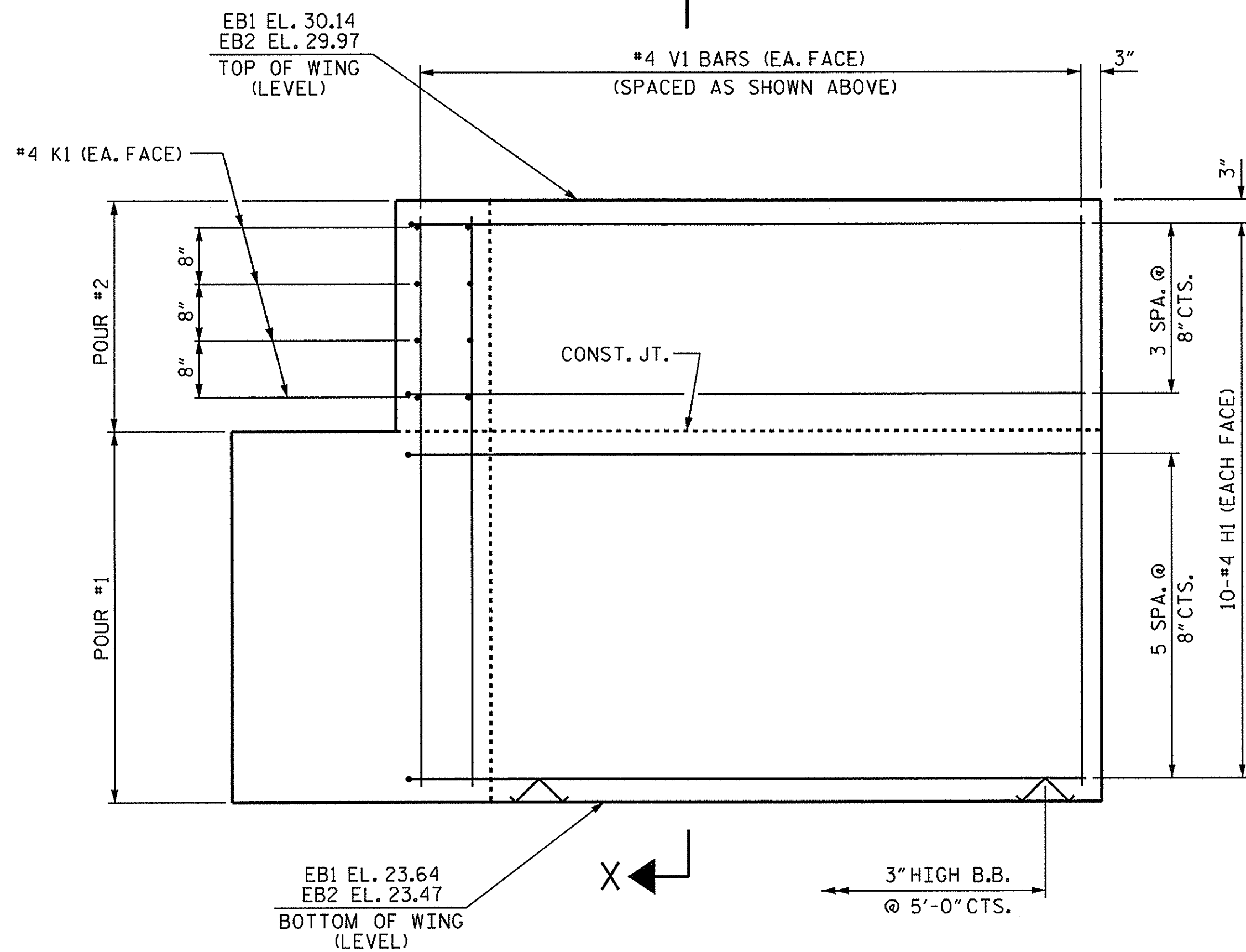
STD. NO. EB_30_90S4



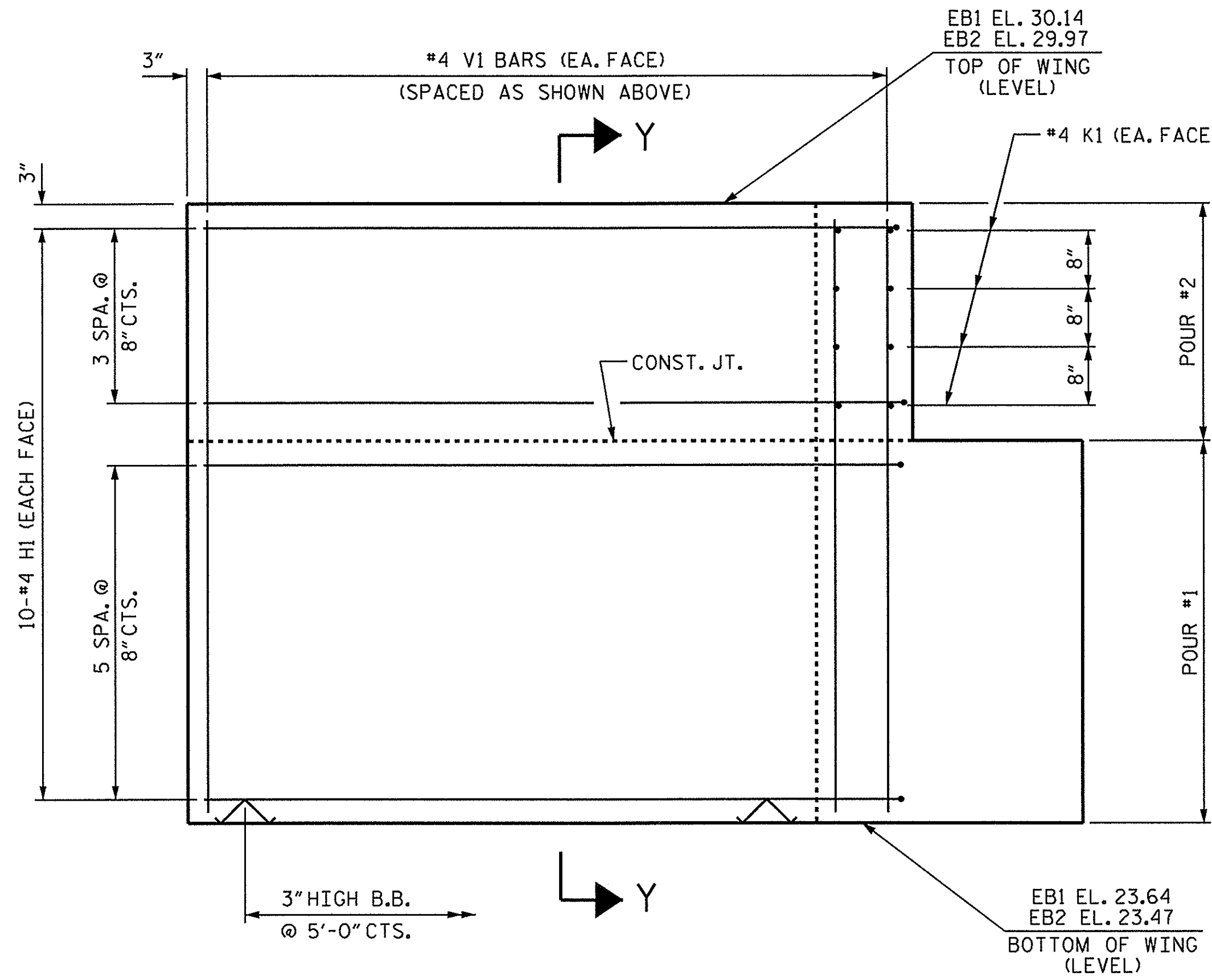
PLAN OF WING (W1)



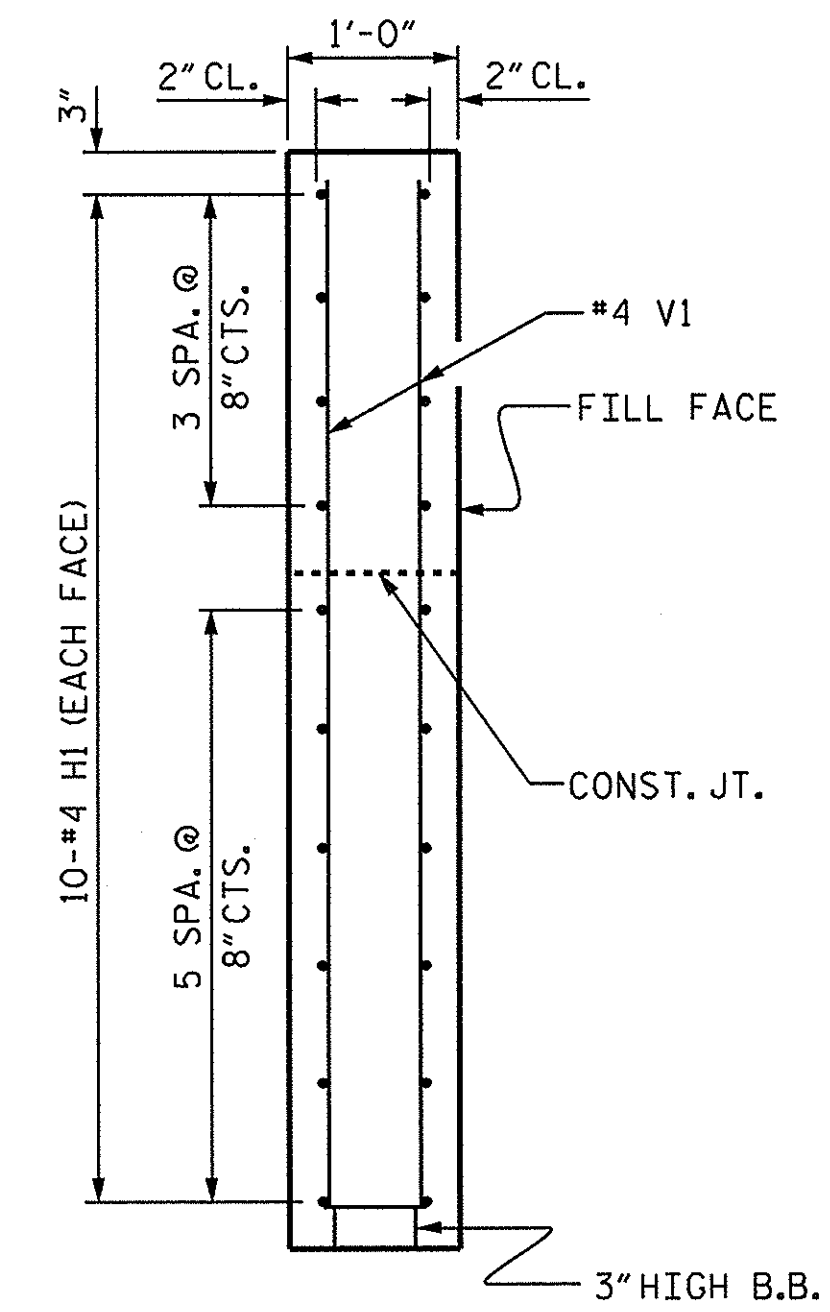
PLAN OF WING (W2)



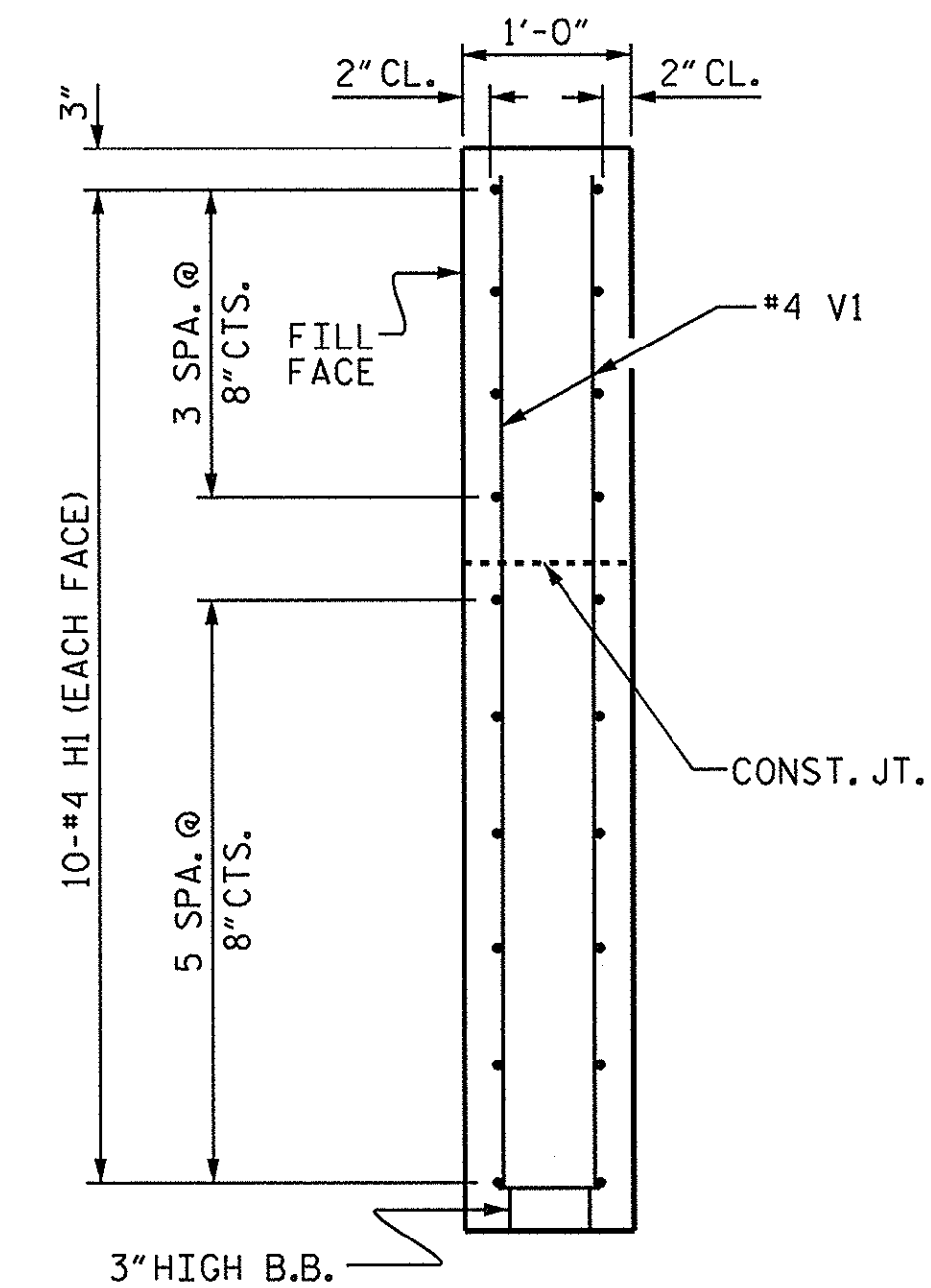
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X



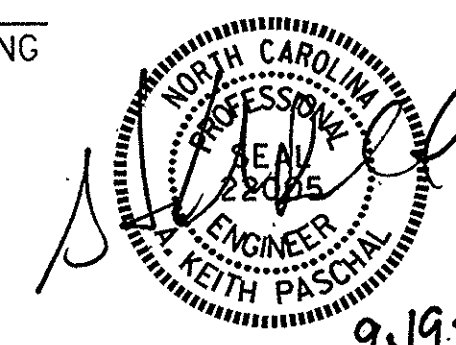
SECTION Y-Y

PROJECT NO. 17BP.2.R.55
 BEAUFORT COUNTY
 STATION: 12+58.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT
 WING DETAILS



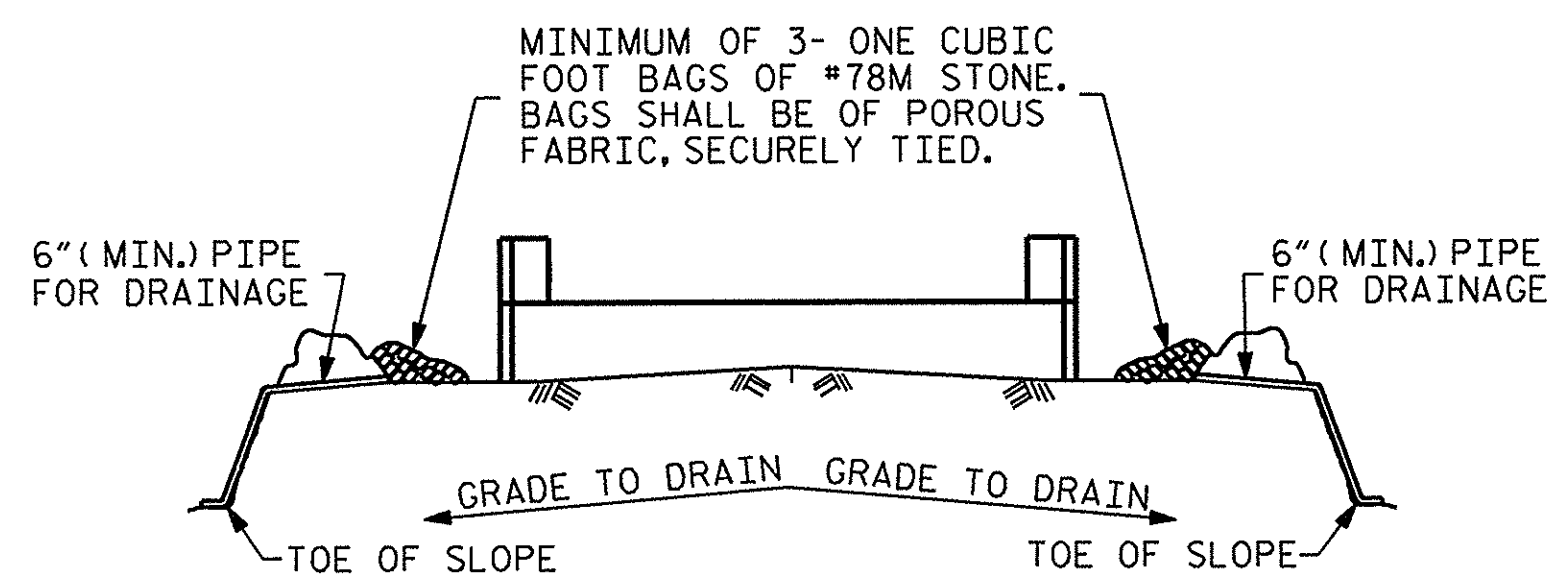
ASSEMBLED BY : W. DEBREW DATE : 5/14
 CHECKED BY : S. STRICKLAND DATE : 5/14
 DRAWN BY : WJH 12/11
 CHECKED BY : AAC 12/11

19-SEP-2014 08:44
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 kpaschal

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11	
1			3			TOTAL SHEETS	14
2			4				

STD. NO. EB_30_90S4

WING DETAILS

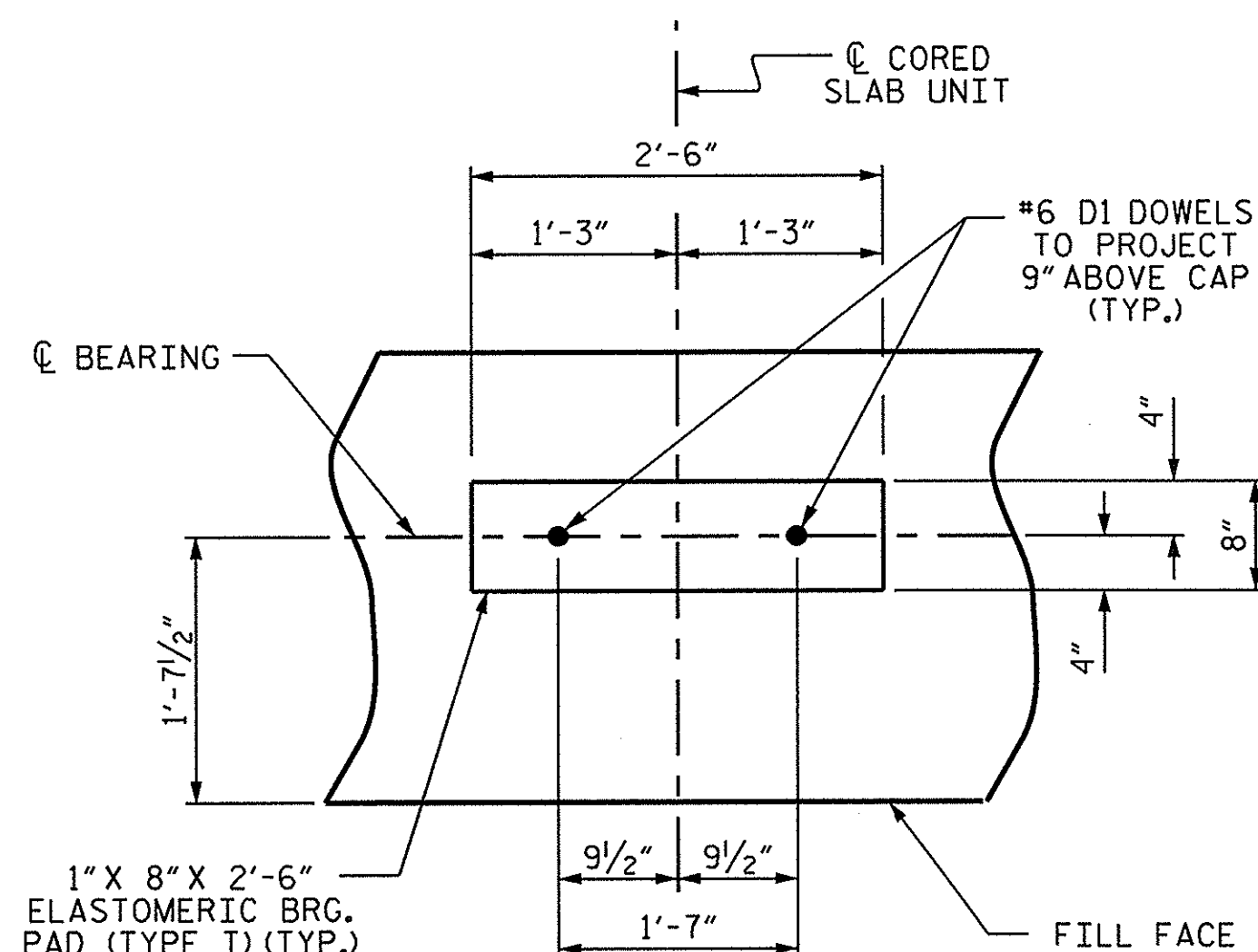


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

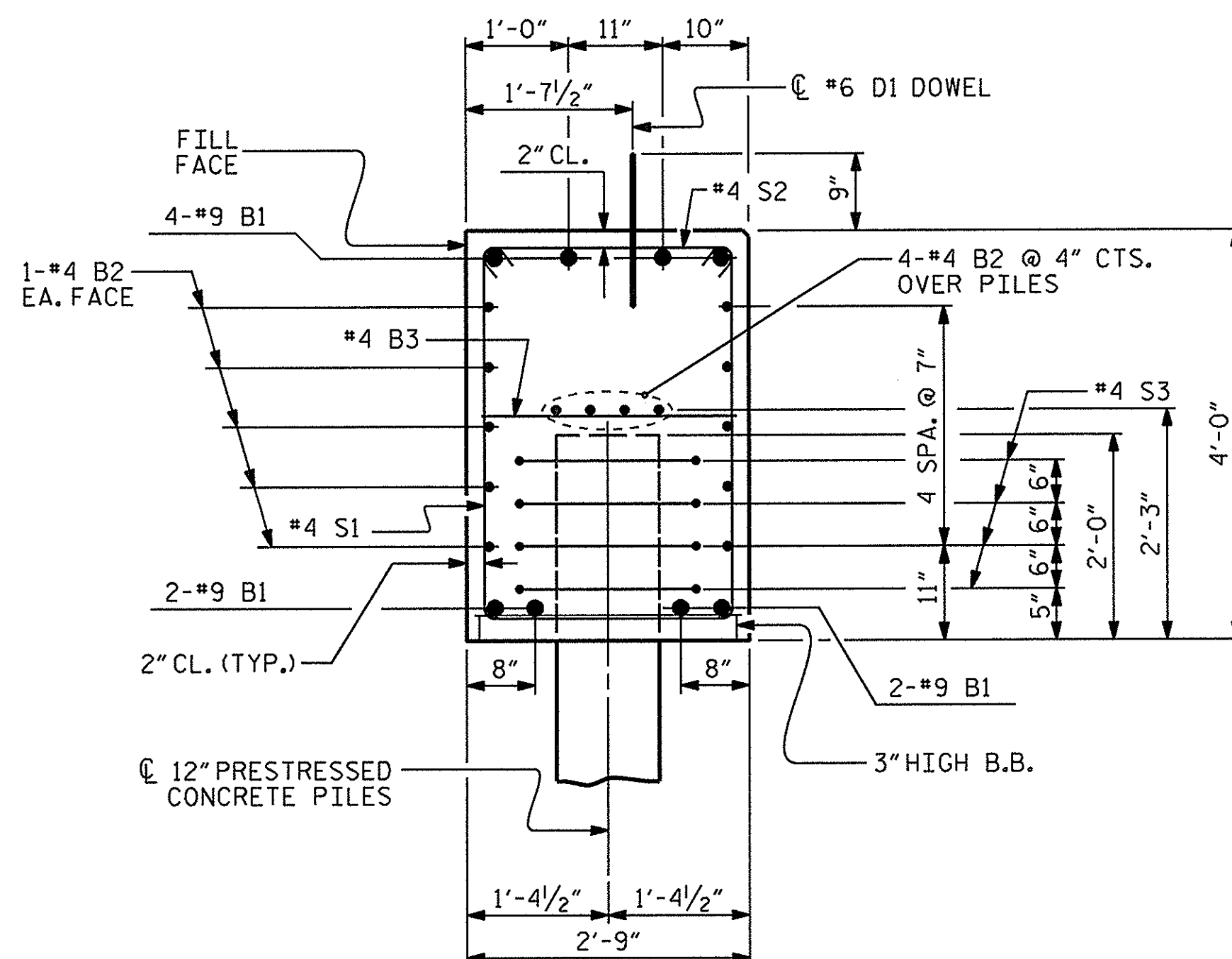
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

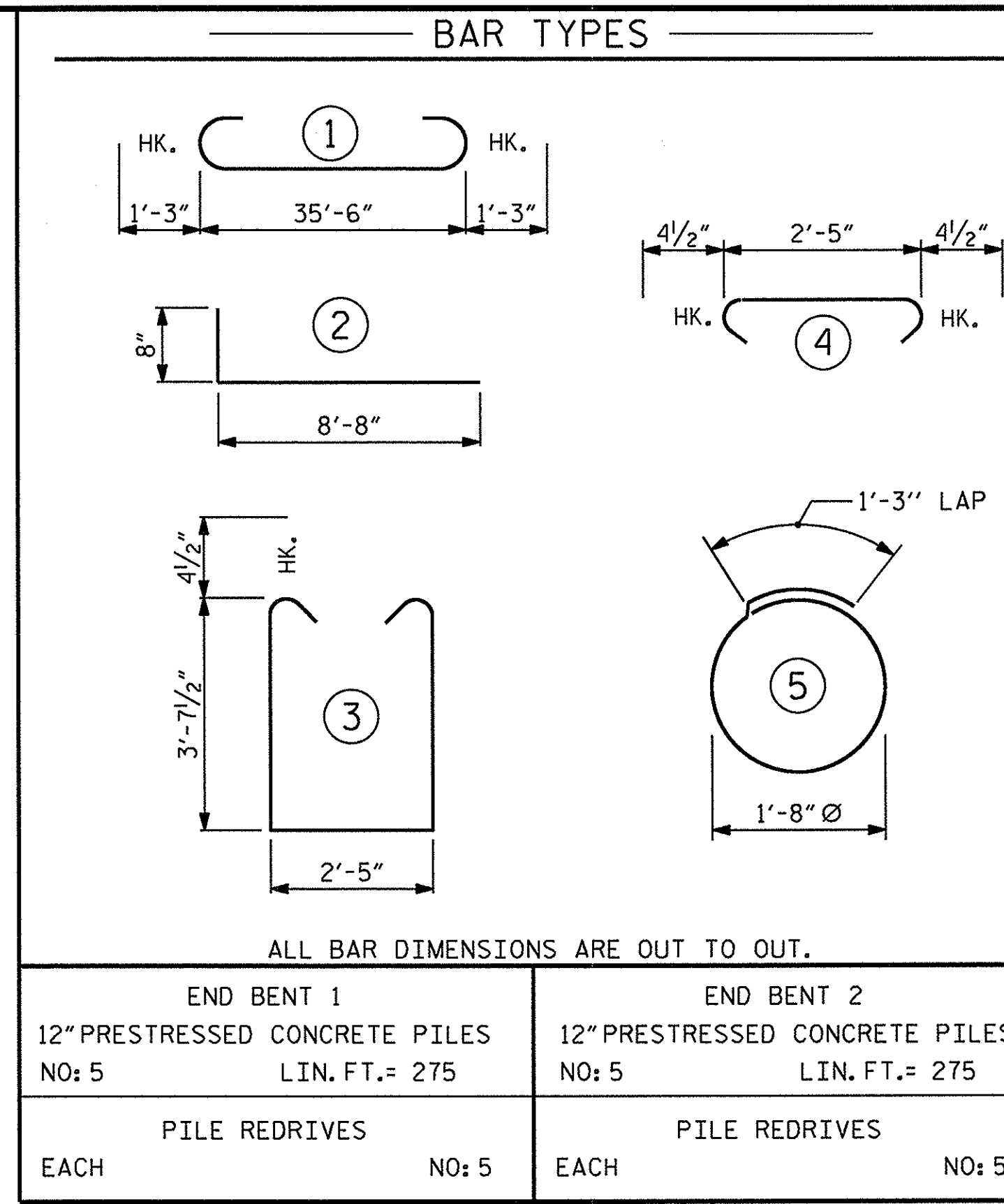


DETAIL "A"

(END BENT 1 SHOWN, END BENT 2 SIMILAR BY ROTATION)



SECTION A-A



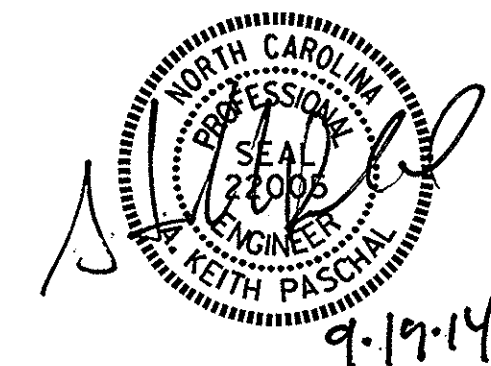
END BENT 1		END BENT 2	
12" PRESTRESSED CONCRETE PILES	NO: 5	12" PRESTRESSED CONCRETE PILES	NO: 5
LIN. FT. = 275		LIN. FT. = 275	
PILE REDRIVES	NO: 5	PILE REDRIVES	NO: 5
EACH		EACH	

BILL OF MATERIAL FOR ONE END BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	38'-0"	1034
B2	28	#4	STR	19'-1"	357
B3	9	#4	STR	2'-5"	15
D1	20	#6	STR	1'-6"	45
H1	40	#4	2	9'-4"	249
K1	16	#4	STR	2'-11"	31
S1	46	#4	3	10'-5"	320
S2	46	#4	4	3'-2"	97
S3	20	#4	5	6'-6"	87
V1	52	#4	STR	6'-2"	214
REINFORCING STEEL (FOR ONE END BENT)					2449 LBS.
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)					
POUR #1	CAP & LOWER PART OF WINGS				▲ 16.7 C.Y.
POUR #2	UPPER PART OF WINGS				2.1 C.Y.
TOTAL CLASS A CONCRETE					18.8 C.Y.

▲ CONCRETE DISPLACED BY THE 12" PRESTRESSED CONCRETE PILES HAS BEEN DEDUCTED FROM THE CONCRETE QUANTITY.

ASSEMBLED BY : D. G. ELY DATE : 7/8/14
 CHECKED BY : A. K. PATEL DATE : 7/14
 DRAWN BY : WJH 12/11
 CHECKED BY : AAC 12/11

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 kpaschal



PROJECT NO. 17BP.2.R.55
 BEAUFORT COUNTY
 STATION: 12+58.00 -L-

SHEET 4 OF 4
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 1 & 2
 DETAILS

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12	
1			3			TOTAL SHEETS	14
2			4				

STD. NO. EB_30_90S4

NOTES

PRESTRESSED CONCRETE STRENGTH : $f'_c = 7,500$ PSI
 BUILD-UP CONCRETE STRENGTH : $f'_c = 7,500$ PSI

STRAND DATA:

SIZE	GRADE	AREA	ULTIMATE STRENGTH	APPLIED PRESTRESS FORCE
1/2"	270 L.R.	0.153	41,300* PER STRAND	30,980* PER STRAND
0.6"	270 L.R.	0.217	58,600* PER STRAND	43,940* PER STRAND

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS CONFORMING TO AASHTO M203. STRAND SAMPLING REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

AT THE CONTRACTOR'S OPTION, 1/2" OR 0.6" STRANDS MAY BE USED IN EITHER THE 4 OR 5 STRAND CONFIGURATION SHOWN IN THE TYPICAL SECTION DETAIL. MIXING OF STRAND SIZE IS NOT ALLOWED.

THE SLIP-FORM METHOD OF CASTING PILES WILL NOT BE PERMITTED.

TRANSFER THE LOAD FROM THE ANCHORAGES TO THE PILE AFTER THE CONCRETE HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI.

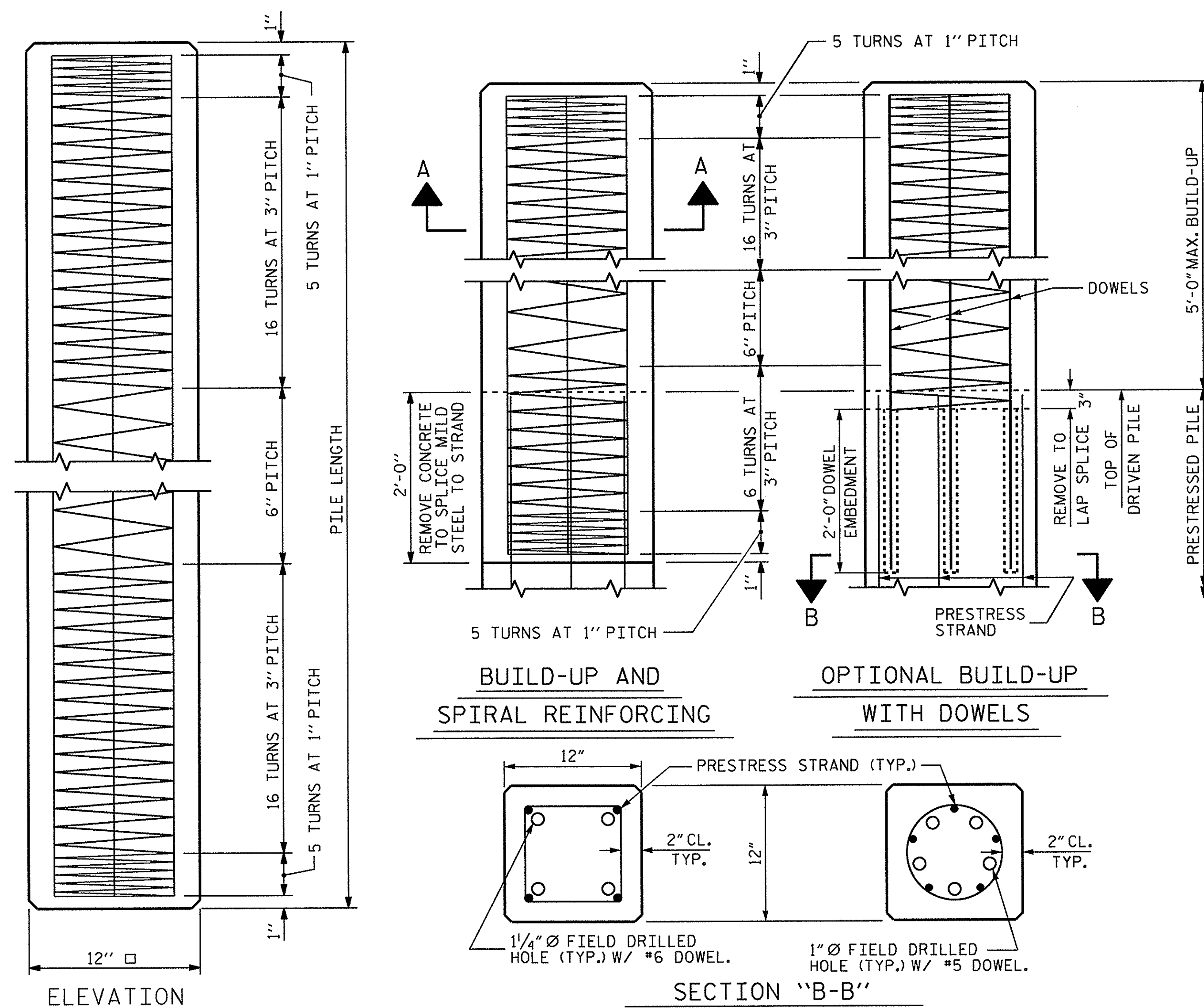
IF STRAND STRESS IS RELIEVED BY BURNING, THE STRANDS SHALL BE BURNED IN PAIRS, EXCEPT WHERE 5 STRANDS ARE USED, THE LAST STRAND MAY BE BURNED SINGLY ACCORDING TO BURNING PATTERNS SHOWN. NOT MORE THAN 4 STRANDS MAY BE BURNED AT ANY ONE SECTION BEFORE THE SAME STRANDS ARE BURNED AT BOTH ENDS OF THE BED AND BETWEEN EACH PAIR OF PILES IN THE BED.

PROPOSED DEVICES FOR LIFTING PILES, RECESS DETAILS, AND PATCHING MATERIAL SHALL BE DETAILED IN SHOP DRAWINGS. AFTER ATTACHMENTS HAVE BEEN REMOVED, OPENINGS SHALL BE REPAIRED SUCH THAT THE APPEARANCE OF THE PILE IS UNIFORM.

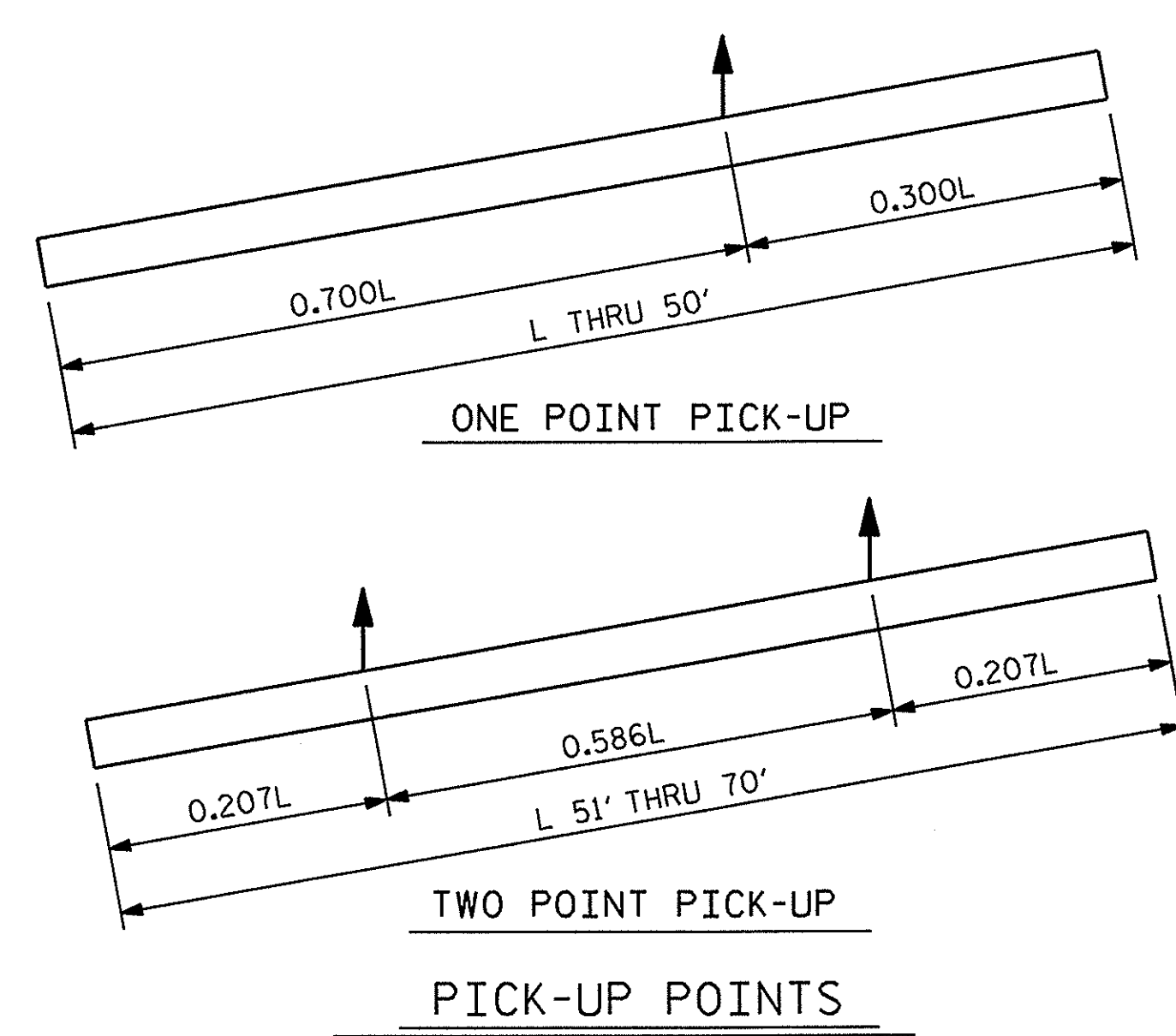
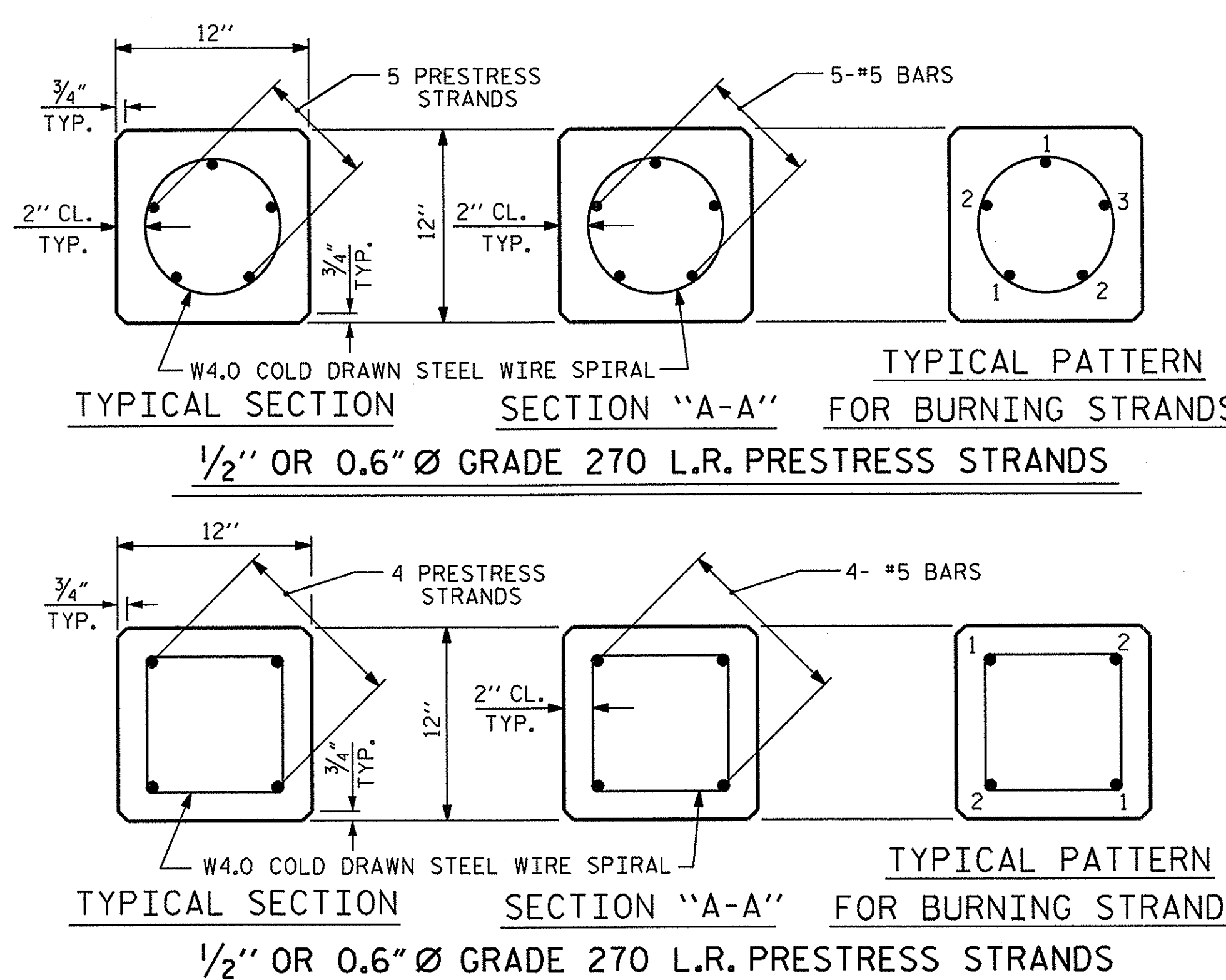
WHERE CAST-IN-PLACE LIFTING DEVICES ARE NOT USED, PICK-UP POINTS ARE TO BE INDICATED WITH A 2" WIDE BLACK MARK.

DRIVE PILES USING A METHOD APPROVED BY THE ENGINEER, WHEREBY THE HEAD OF THE PILE IS NOT DAMAGED.

DRIVING OF THE BUILT-UP PILE WILL NOT BE PERMITTED UNTIL THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF 5,000 PSI AND UNTIL A PERIOD OF SEVEN DAYS HAS ELAPSED SINCE CASTING OF THE BUILD-UP.



(AT THE CONTRACTOR'S OPTION, PILE BUILD-UP MAY BE CONSTRUCTED WITH DOWELS.)



DOWEL INSTALLATION FOR OPTIONAL BUILD-UP

GROUT COMPRESSIVE STRENGTH: $f'_c = 5,000$ PSI

BEFORE DRILLING DOWEL HOLES, REMOVE THE UPPER 3" OF CONCRETE FROM THE TOP OF THE PILE WITHOUT DAMAGE TO THE REINFORCING STEEL. THE REMOVAL PLANE SHOULD BE NORMAL TO THE EDGE OF THE PILE.

DOWEL HOLES SHALL BE POSITIONED TO MAINTAIN 1/2" CLEAR TO ALL EXISTING PRESTRESSING STRANDS IN THE CONCRETE PILE.

FIELD DRILLED HOLES SHALL BE CLEAN AND FREE OF ANY OBSTRUCTIONS BEFORE GROUTING OF DOWELS. DOWEL BARS SHALL BE INSTALLED AND GROUTED WITH AN APPROVED NON-SHRINK GROUT.

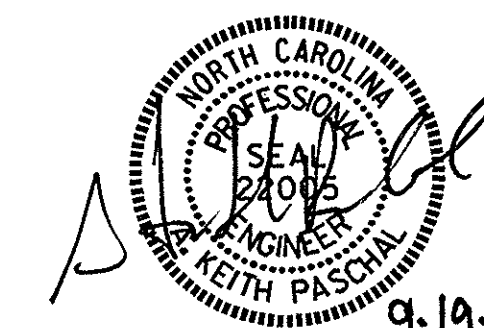
THE SPIRAL REINFORCING IN ALL BUILD-UPS SHALL BE W4.0 COLD DRAWN WIRE WHICH SHALL BE SECURED TO THE LONGITUDINAL REINFORCEMENT TO MAINTAIN PITCH.

THE SPIRAL REINFORCING IN THE BUILD-UP AND THE PRESTRESSED CONCRETE PILE SHALL BE SPLICED BY OVERLAPPING A MIN. OF ONE TURN.

QUANTITIES FOR ONE 12" PRESTRESSED PILE

LENGTH	CONCRETE CU. YDS.	PILE WT. TONS	ONE POINT PICK-UP		TWO POINT PICK-UP	
			0.300L	0.700L	0.207L	0.586L
25'-0"	0.91	1.85	7'-6"	17'-6"		
30'-0"	1.10	2.22	9'-0"	21'-0"		
35'-0"	1.28	2.59	10'-6"	24'-6"		
40'-0"	1.46	2.96	12'-0"	28'-0"		
45'-0"	1.64	3.33	13'-6"	31'-6"		
50'-0"	1.83	3.72	15'-0"	35'-0"		
55'-0"	2.01	4.09			11'-4 1/2"	32'-3"
60'-0"	2.19	4.46			12'-5"	35'-2"
65'-0"	2.38	4.81			13'-5 1/2"	38'-1"
70'-0"	2.57	5.18			14'-6"	41'-0"

PROJECT NO. 17BP.2.R.55
BEAUFORT COUNTY
 STATION: 12+58.00 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 12" PRESTRESSED
 CONCRETE PILE

REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			14
2			4			

ASSEMBLED BY : D. G. ELY	DATE : 7/9/14
CHECKED BY : A. K. PATEL	DATE : 7/14
DRAWN BY : FCJ 7/88	REV. 5/1/06R TLA/GM
CHECKED BY : CRK 3/89	REV. 11/30/10 WMC/GM
	REV. 10/1/11 MAA/GM

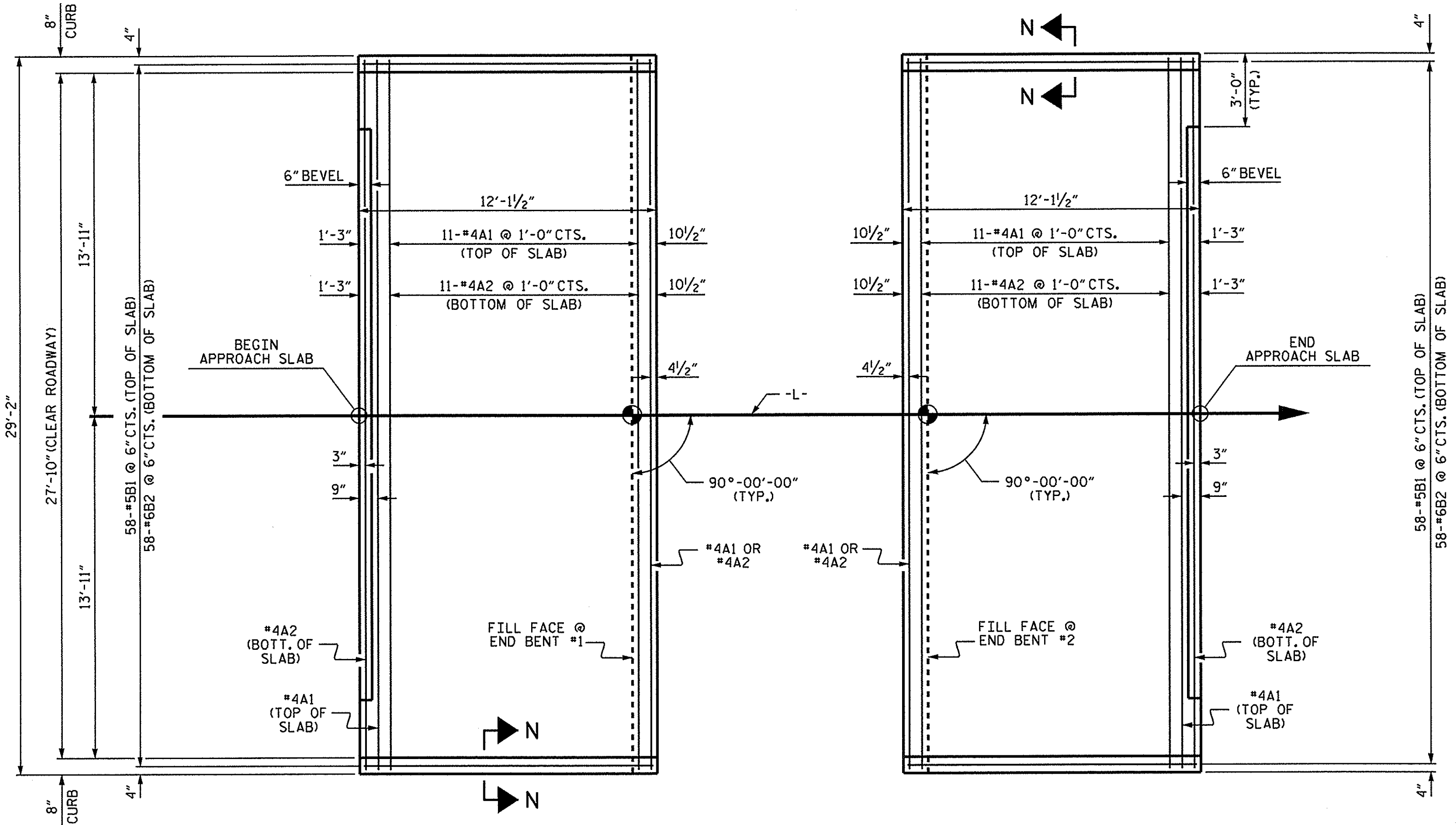
NOTES

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

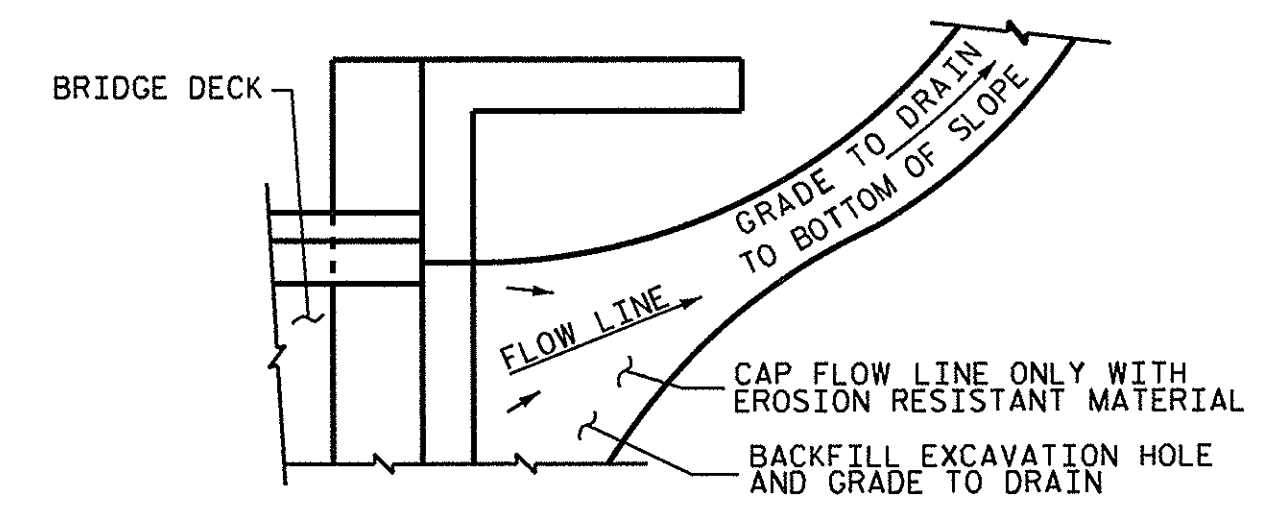
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

BILL OF MATERIAL						
APPROACH SLAB AT EB #1						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
* A1	13	#4	STR	28'-10"	250	
A2	13	#4	STR	28'-10"	250	
* B1	58	#5	STR	11'-2"	676	
B2	58	#6	STR	11'-8"	1016	
REINFORCING STEEL					LBS.	1266
* EPOXY COATED REINFORCING STEEL					LBS.	926
CLASS AA CONCRETE					C. Y.	16.8
APPROACH SLAB AT EB #2						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
* A1	13	#4	STR	28'-10"	250	
A2	13	#4	STR	28'-10"	250	
* B1	58	#5	STR	11'-2"	676	
B2	58	#6	STR	11'-8"	1016	
REINFORCING STEEL					LBS.	1266
* EPOXY COATED REINFORCING STEEL					LBS.	926
CLASS AA CONCRETE					C. Y.	16.8

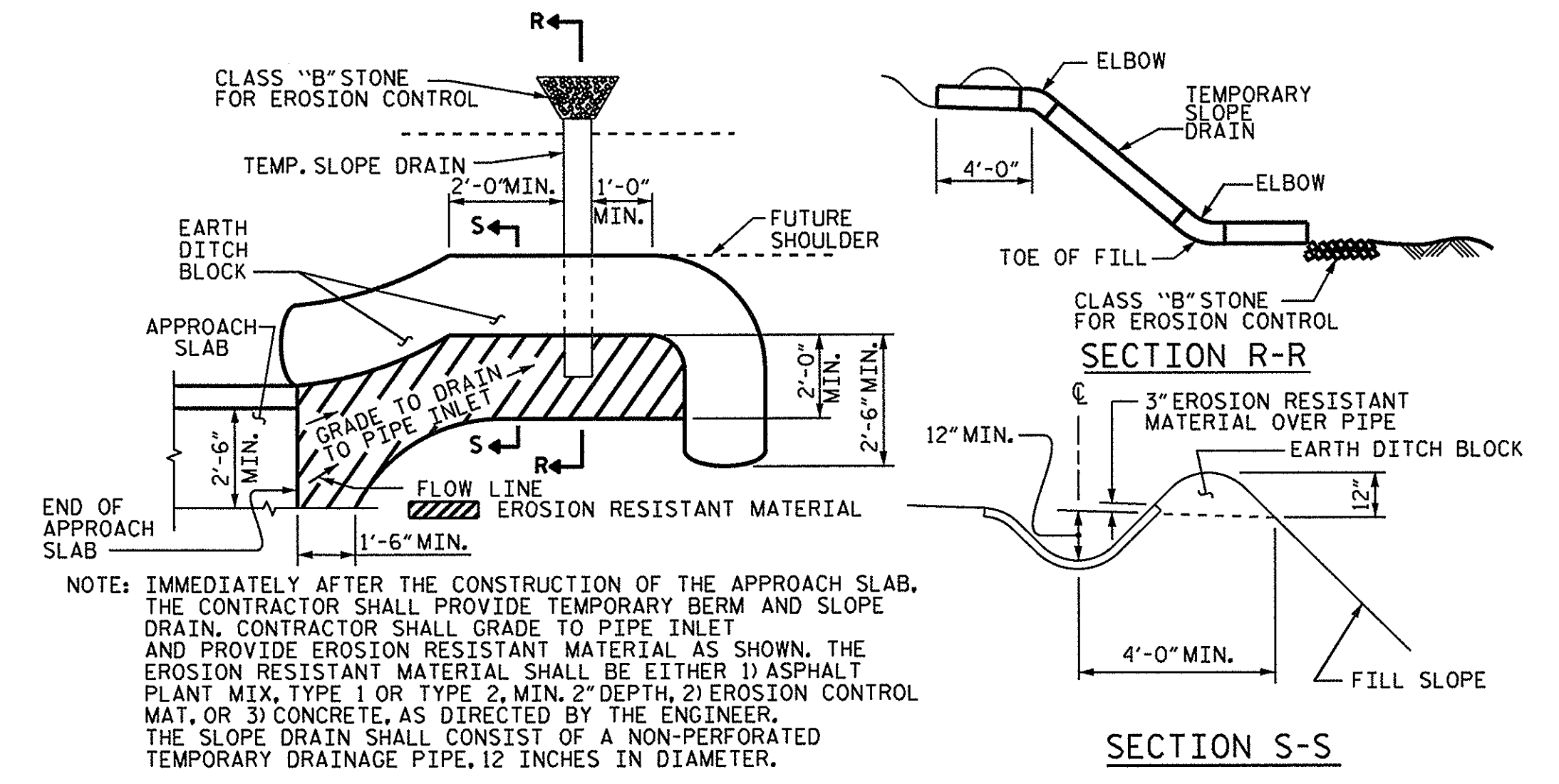


PLAN @ END BENT #1 **PLAN @ END BENT #2**
 DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

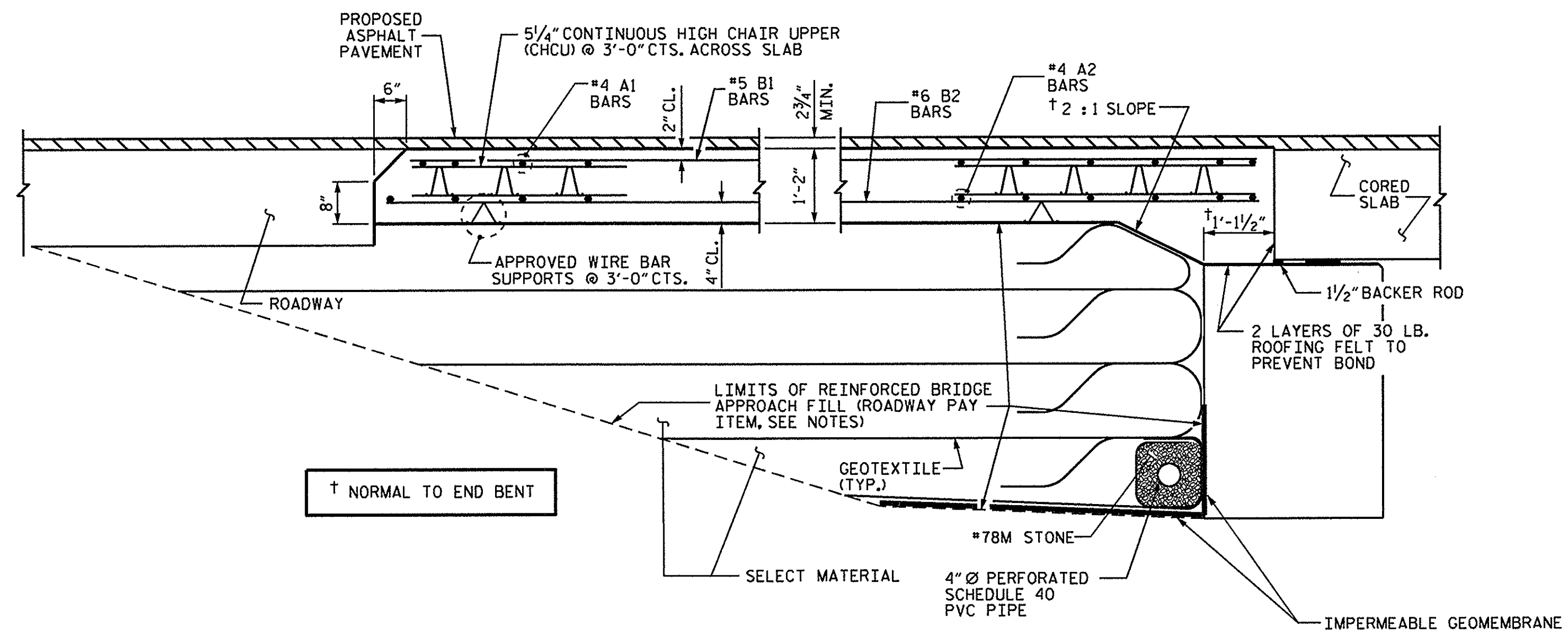


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

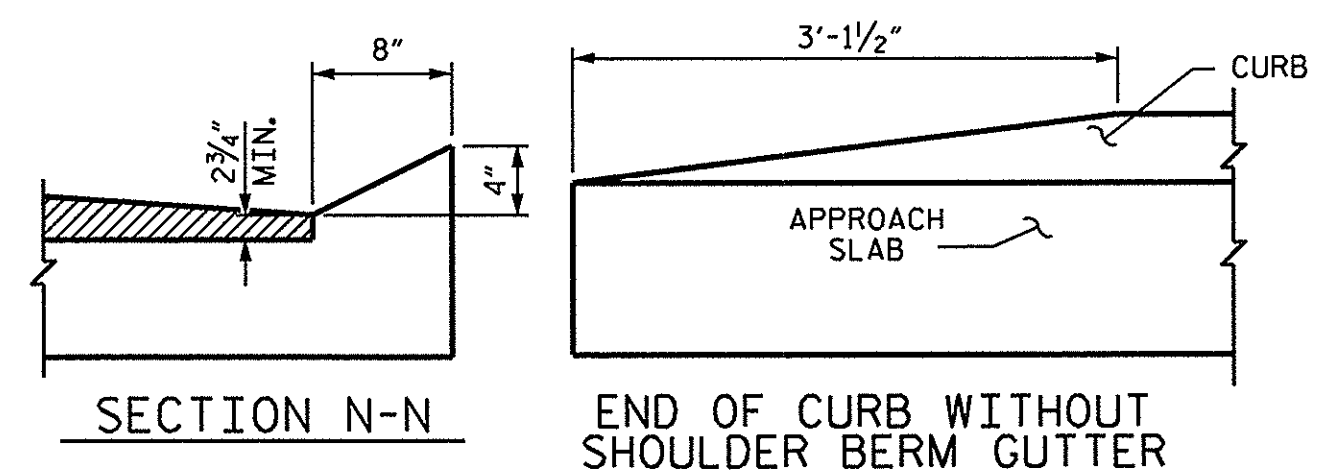
TEMPORARY DRAINAGE DETAIL



PLAN VIEW
TEMPORARY BERM AND SLOPE DRAIN DETAILS
 (TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

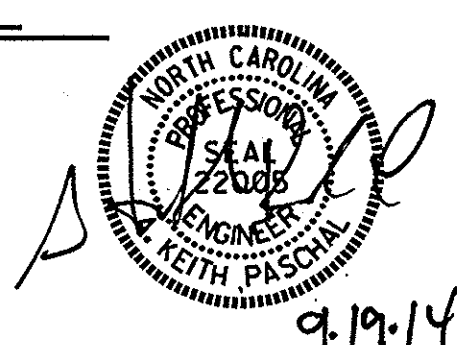


SECTION THRU SLAB



CURB DETAILS

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



PROJECT NO. 17BP.2.R.55
 BEAUFORT COUNTY
 STATION: 12+58.00 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB UNIT 90° SKEW					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-14
 TOTAL SHEETS 14

ASSEMBLED BY : W. DEBREW DATE : 5/14
 CHECKED BY : S. STRICKLAND DATE : 5/14
 DRAWN BY : SHS/MAA 5-09 REV. 12-11 MAA/AAC
 CHECKED BY : BCH 5-09 REV. 8-14 MAA/TMG

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

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

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

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990

STD. NO. SN