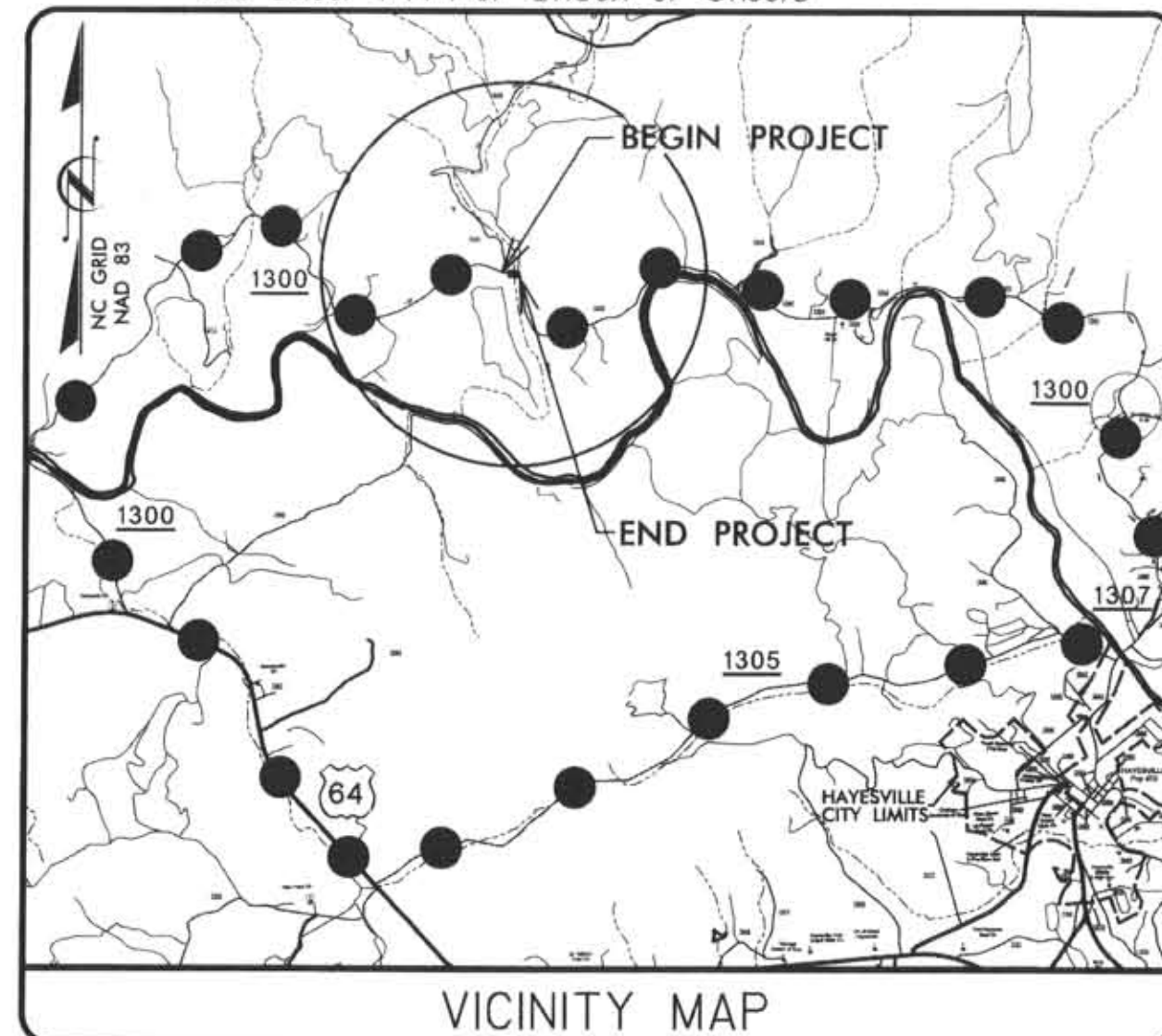


08/17/11

TIP PROJECT: BD-5114E

CONTRACT: DN00073

See Sheet 1-A For Index of Sheets



VICINITY MAP

● — ● — ● — DETOUR ROUTE

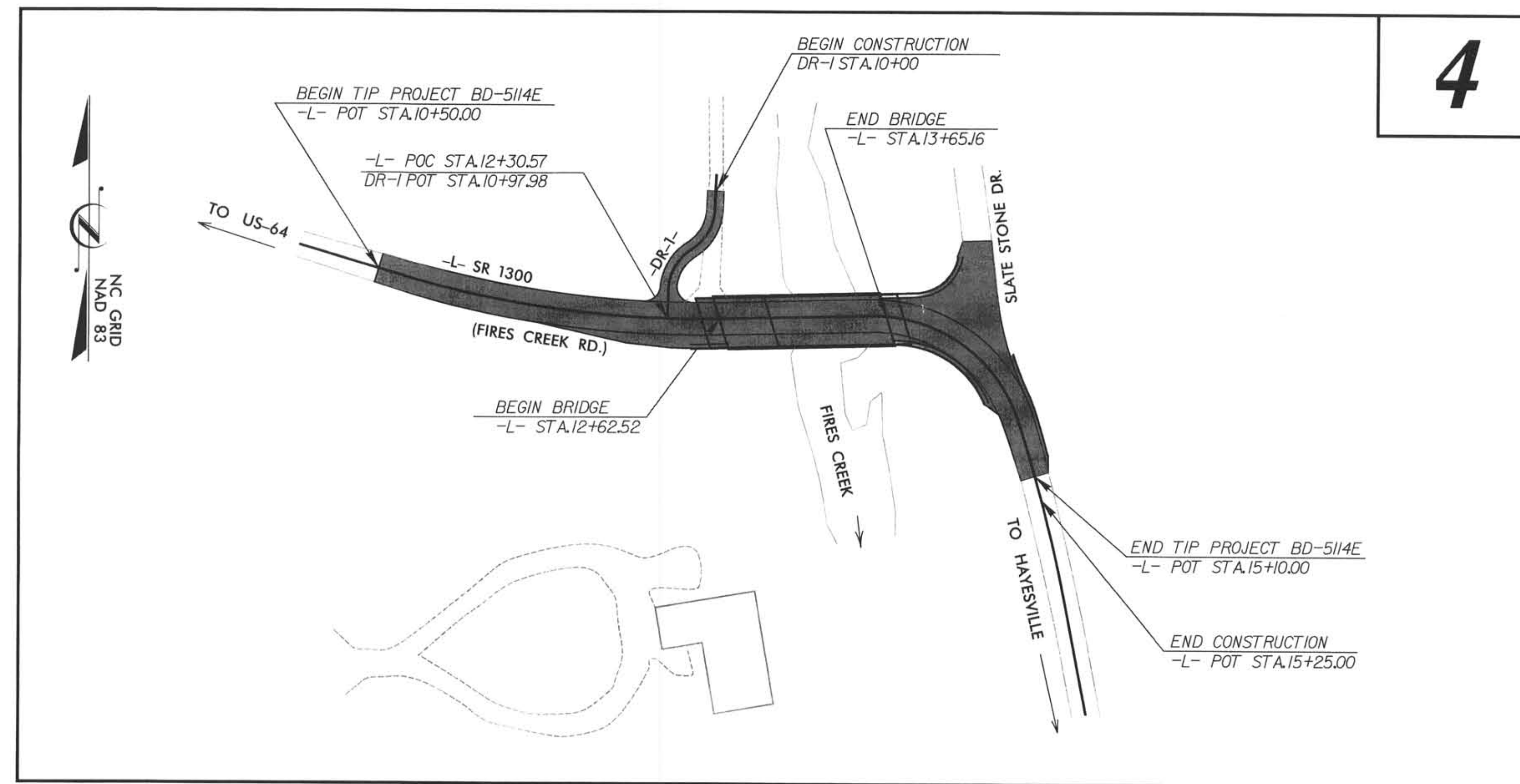
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CLAY COUNTY

LOCATION: BRIDGE NO. 07 OVER FIRES CREEK
ON SR 1300

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BD-5114E	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45360.1.5	BRSTP-1300(11)	P.E.	
45360.2.5	BRSTP-1300(11)	R/W	
45360.3.5	BRSTP-1300(11)	CONST.	

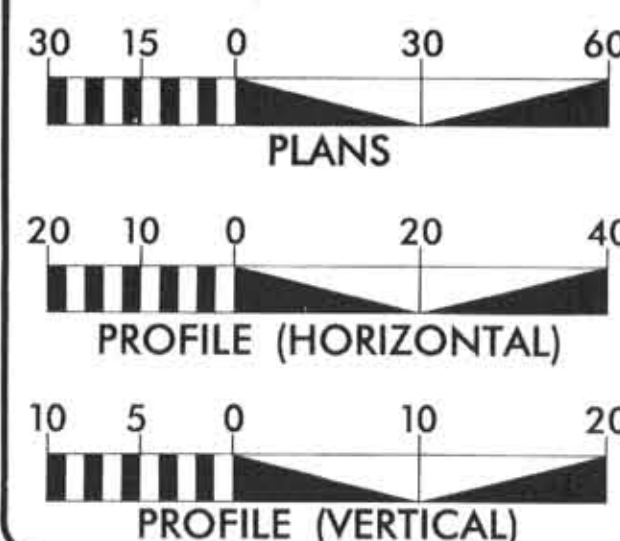


V&M
Vaughn & Melton
Consulting Engineers

Charlotte, NC
104-357-0488
Tri-Cities, TN
423-867-1400
Knoxville, TN
865-548-8800
Middlesboro, KY
606-248-1609
Asheville, NC
828-253-2796
Spartanburg, SC
864-574-4775

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GRAPHIC SCALES



DESIGN DATA

ADT 2009 = 970
ADT 2030 = N/A
DHV =
D =
T =
V = 30 MPH
FUNCT. CLASS = RURAL LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT BD-5114E = 0.068 MI
LENGTH STRUCTURE TIP PROJECT BD-5114E = 0.019 MI
TOTAL LENGTH OF TIP PROJECT BD-5114E = 0.087 MI

Prepared In the Office of:
VAUGHN & MELTON

1318-F PATTON AVE.
ASHEVILLE, NC, 28806
FOR THE NORTH CAROLINA DIVISION OF HIGHWAYS

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
December 8, 2011

LETTING DATE:
February 12, 2013

REECE SCHULER, PE
PROJECT ENGINEER

AARON CARVER, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACT:
JOSH DEYTON, PE
PROJECT ENGINEER - ROADWAY DESIGN

HYDRAULICS ENGINEER

Signature: Anne D. Gamber, P.E.
9/20/12

ROADWAY DESIGN
ENGINEER

Signature: Josh Deyton, P.E.
9/20/12

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line	
Existing Iron Pin	
Property Corner	
Property Monument	
Parcel/Sequence Number	
Existing Fence Line	
Proposed Woven Wire Fence	
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wetland Boundary	
Proposed Wetland Boundary	
Existing Endangered Animal Boundary	
Existing Endangered Plant Boundary	

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

Stream or Body of Water	
Hydro, Pool or Reservoir	
Jurisdictional Stream	
Buffer Zone 1	
Buffer Zone 2	
Flow Arrow	
Disappearing Stream	
Spring	
Swamp Marsh	
Proposed Lateral, Tail, Head Ditch	
False Sump	

RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY:

Baseline Control Point	
Existing Right of Way Marker	
Existing Right of Way Line	
Proposed Right of Way Line	
Proposed Right of Way Line with Iron Pin and Cap Marker	
Proposed Right of Way Line with Concrete or Granite Marker	
Existing Control of Access	
Proposed Control of Access	
Existing Easement Line	
Proposed Temporary Construction Easement	
Proposed Temporary Drainage Easement	
Proposed Permanent Drainage Easement	
Proposed Permanent Utility Easement	

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Wheel Chair Ramp	
Proposed Wheel Chair Ramp Curb Cut	
Curb Cut for Future Wheel Chair Ramp	
Existing Metal Guardrail	
Proposed Guardrail	
Existing Cable Guiderail	
Proposed Cable Guiderail	
Equality Symbol	
Pavement Removal	

VEGETATION:

Single Tree	
Single Shrub	
Hedge	
Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line	
U/G Tank; Water, Gas, Oil	
A/G Tank; Water, Gas, Oil	
U/G Test Hole (S.U.E.*)	
Abandoned According to Utility Records	
End of Information	

6/2/99

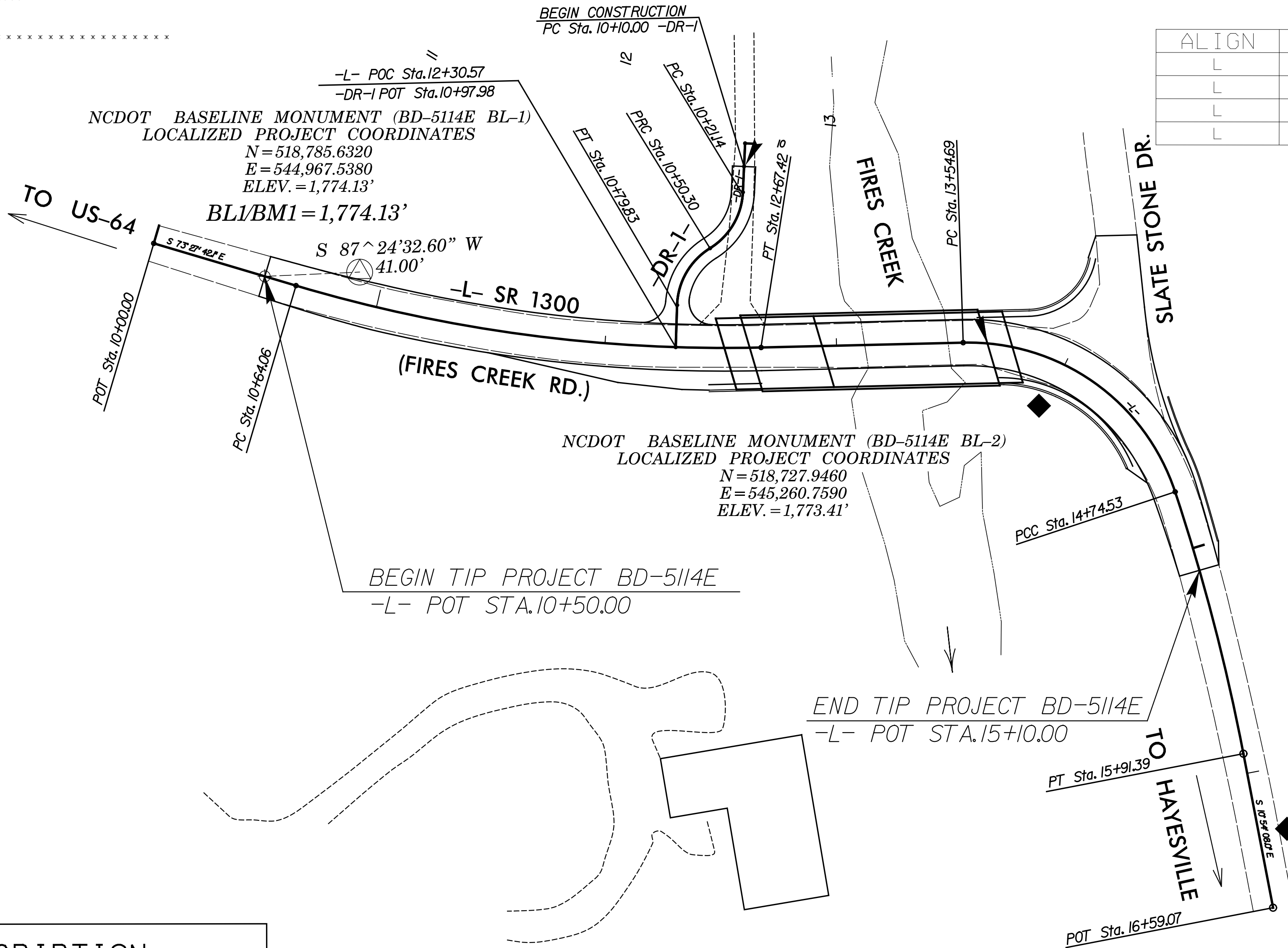
6/2/99

SURVEY CONTROL SHEET BD-5114E
-FINAL-

PROJECT REFERENCE NO.	SHEET NO.
BD-5114E	1C
Location and Surveys	

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1		BL-1	518785.6320	544967.5380	1774.13	10+89.25	12.96 LT
2		BL-2	518727.9460	545260.7590	1773.41	13+97.17	20.67 RT
3		BL-3	518545.3750	545367.8190	1779.82	16+26.78	12.30 LT

BM1 ELEVATION = 1774.13
N 518786 E 544968
BL STATION 5+00.00 0 RIGHT
BM1 IS EQUAL TO BL-1



-FIANL- ROW MARKER IRON PIN AND CAP-E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	13+84.87	-30.00	518779.7934	545266.6152
L	13+84.87	-65.00	518813.2642	545276.8479
L	14+10.00	-75.00	518804.0281	545320.7088
L	14+45.00	-30.00	518734.7004	545330.2237
L	14+43.42	30.00	518700.0077	545281.2474
L	12+00.00	50.00	518705.0972	545069.4848
L	11+40.00	50.00	518713.1926	545005.4017
L	11+40.00	30.00	518732.8981	545008.8211

-FINAL- ROW MARKER PERMANENT EASEMENT-E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	11+86.39	50.00	518706.9305	545054.9396
L	11+89.81	64.08	518692.0372	545057.2147
L	13+00.73	88.63	518665.2780	545176.2664
L	13+10.00	51.79	518702.3317	545184.6416

FINAL -L-			
TYPE	STATION	NORTH	EAST
POT	10+00.00	518798.0113	544878.6462
PC	10+64.06	518779.7766	544940.0548
PT	12+67.42	518753.0765	545140.8212
PC	13+54.69	518755.1897	545228.0663
PCC	14+74.53	518690.7973	545319.5671
PT	15+91.39	518577.8048	545349.0455
POT	16+59.07	518511.3445	545361.8464

FIANL -DR-1			
TYPE	STATION	NORTH	EAST
POT	10+00.00	518841.1836	545133.9220
PC	10+21.14	518820.0686	545132.9688
PRC	10+50.30	518795.9041	545118.7748
PT	10+79.83	518771.3608	545104.5660
POT	10+97.98	518753.2286	545103.9770

DATUM DESCRIPTION
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "210007 BL-1"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 518785.632(±) EASTING: 544967.538(±)
ELEVATION: 1774.13(±)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999796949
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "210007 BL-1" TO -L- STATION 10+50.00 IS
S 87°24'32.60" W 41.00'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

GEOIDAL MODEL — G09NC
NOTE: DRAWING NOT TO SCALE

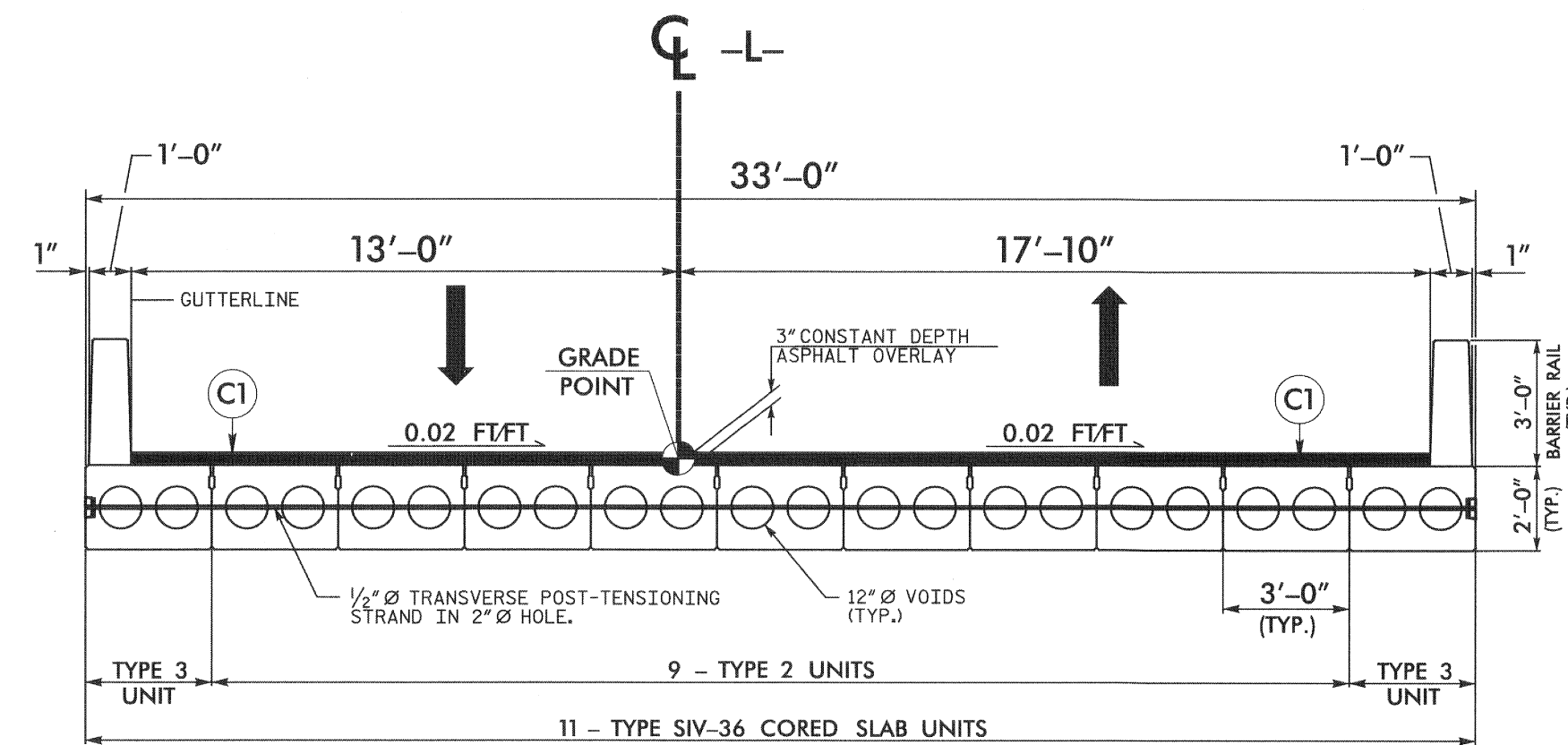
NOTES:

PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
BD5114E_LS_CONTROL.TXT

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

[illegible]

CL -DR-1

2'-0" 2'-0" 5'-0" 5'-0" 2'-0"

GRADE POINT

C1

VARIES

VARIES

0.08

2:1 2:1

EXIST. GROUND

9"

T

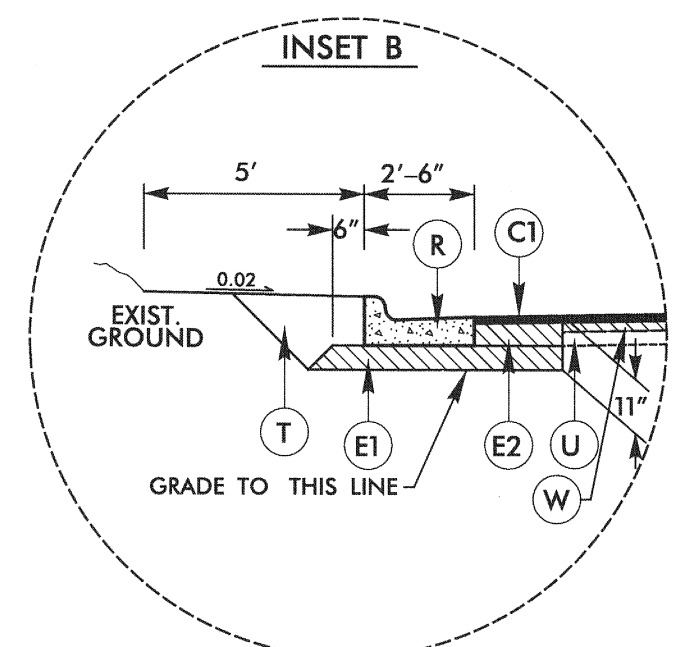
J1

GRADE TO THIS LINE

TYPICAL SECTION NO. 4

GRADE TO THIS LINE

EXIST. GROUND



USE INSET B



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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

Line Item	Sec No.	Quantity	Unit	Description
0000100000-N	800	1	LS	Mobilization
0000400000-N	801	1	LS	Construction Surveying
0030000000-N	SP	1	LS	Reinforced Bridge Approach Fill - Sub Regional Tier
0043000000-N	226	1	LS	Grading
0057000000-E	226	50	CY	Undercut Excavation
0134000000-E	240	45	CY	Drainage Ditch Excavation
0195000000-E	265	50	CY	Select Granular Material
0196000000-E	270	50	SY	Geotextile for Soil Stabilization
0318000000-E	300	16	Tons	Foundation Conditioning Material, Minor Strs
0335400000-E	305	12	LF	24" Drainage Pipe
0366000000-E	310	36	LF	15" RCP Class III
0448400000-E	310	48	LF	24" RCP Class IV
0582000000-E	310	48	LF	15" CS Culvert, 0.064" Thick
0636000000-E	310	4	EA	15" CS Pipe Elbows, 0.064" Thick
1099700000-E	505	50	Tons	Class IV Subgrade Stabilization
1121000000-E	520	35	Tons	Aggregate Base Course
1489000000-E	610	240	Tons	Asphalt Conc Base Course Type B25.0B
1519000000-E	610	200	Tons	Asphalt Conc Surface Course Type S9.5B
1575000000-E	620	25	Tons	Asphalt Binder for Plant Mix
2286000000-N	840	4	EA	Masonry Drainage Structures
2365000000-N	840	1	EA	Steel Frame with Two Gates, STD 840.22
2367000000-N	840	3	EA	Frame with Two Gates, STD 840.29
2549000000-E	846	70	LF	2'-6" Conc. Curb and Gutter
2556000000-E	846	140	LF	Shoulder Berm Gutter
3045000000-E	862	112.5	LF	Steel BM Guardrail (SHOP CURVED)
3150000000-N	862	5	EA	Additional Guardrail Posts
3165000000-N	SP	1	EA	Guardrail Anchor Units, Type 350 TL-2
3180000000-N	862	2	EA	Guardrail Anchor Units, TYPE III (SHOP CURVED)
3195000000-N	862	2	EA	Guardrail Anchor Units, AT-1
3215000000-N	862	2	EA	Guardrail Anchor Units, TYPE III
3270000000-N	SP	1	EA	Guardrail Anchor Units, Type 350
3635000000-E	876	27	Tons	Rip Rap, Class II
3649000000-E	876	5	Tons	Rip Rap, Class B
3656000000-E	876	52	SY	Geotextile for Drainage
4400000000-E	1110	562	SF	Work Zone Signs (Stationary)
4410000000-E	1110	94	SF	Work Zone Signs (Barricade Mounted)
4445000000-E	1145	96	LF	Barricades (Type III)
4810000000-E	1205	1,630	LF	Paint Pavement Marking Lines (4")
6000000000-E	1605	500	LF	TEMP SILT FENCE
6009000000-E	1610	50	TON	STONE FOR EROS CNTRL, B
6012000000-E	1610	30	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	0.5	ACRES	TEMPORARY MULCHING
6018000000-E	1620	50	LBS	SEED FOR TEMP SEEDING
6021000000-E	1620	0.25	TON	FERTILIZER FOR TEMP SEED
6030000000-E	1630	50	CY	SILT EXCAVATION
6036000000-E	1631	290	SY	MATTING FOR EROSION CONTROL
6042000000-E	1632	80	LF	1/4" HARDWARE CLOTH
6071012000-E	SP	170	LF	COIR FIBER WATTLE
6071020000-E	SP	5	LBS	POLYACRYLAMIDE (PAM)
6071030000-E	1640	150	LF	COIR FIBER BAFFLE
6084000000-E	1660	0.3	Acre	SEEDING & MULCHING
6090000000-E	1661	50	LBS	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	Ton	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	50	LBS	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	0.5	Ton	FERTILIZER TOPDRESSING
6111000000-E	SP	107.5	LF	IMPERVIOUS DIKE
6117000000-E	SP	4.0	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	0.1	ACR	REFORESTATION
				STRUCTURAL ITEMS
8035000000-N	402	1.0	LS	Removal Of Existing Structure
8096000000-E	450	182.0	LF	Pile Excavation in Soil
8097000000-E	450	27.0	LF	Pile Excavation Not in Soil
8105520000-E	411	27.0	LF	3'-0" Drilled Piers in Soil
8105620000-E	411	21.0	LF	3'-0" Drilled Piers Not in Soil
8111200000-E	411	8.7	LF	Permanent Steel Castings For 3'-0" Dia. Drilled Pier
8113000000-N	411	1.0	EA	SID Inspection
8114000000-N	411	1.0	EA	SPT Testing
8115000000-N	411	1.0	EA	CSL Testing
8121000000-N	412	1.0	LS	Unclassified Structure Excavation
8182000000-E	420	53.1	CY	Class A Concrete
8210000000-N	422	1.0	LS	Bridge Approach Slabs
8217000000-E	425	12,957.0	LBS	Reinforcing Steel
8238000000-E	425	1,168.0	LBS	Spiral Column Reinforcing Steel
8364000000-E	450	210.0	LF	HP 12X53 Steel Piles
8430000000-E	452	685.0	SF	Sheet Pile Retaining Wall
8505000000-E	460	200.5	LF	Vertical Concrete Barrier Rail
8608000000-E	876	155.0	TONS	Rip Rap Class II (2'-0" Thick)
8622000000-E	876	172.0	SY	Geotextile For Drainage
8657000000-N	430	1.0	LS	Elastomeric Bearings
8762000000-E	430	330.0	LF	3'-0" X 1'-9" Prestressed Concrete Cored Slab Unit
8763000000-E	430	770.0	LF	3'-0" X 2'-0" Prestressed Concrete Cored Slab Unit

PAVEMENT REMOVAL SUMMARY

PARCEL NO.	PROPERTY OWNERS NAMES	TOTAL ACREAGE	AREA TAKEN (sf)	AREA REMAINING RT. (Acre)	AREA REMAINING LT. (Acre)	CONST. EASE. (sf)	PERM. DRAIN. EASE. (sf)	PERM. UTIL. EASE. (sf)		IN SQUARE YARDS					
										LINE	LOCATION	ASPHALT REMOVAL	ASPHALT BREAK-UP	CONCRETE REMOVAL	CONCRETE REMOVAL
1	DIANE B. DAY	1.478				5910				-L-	11+70 TO 13+00	261.30			
2	BEN ZAMARRON	-	2821			1342		3192		-L-	13+60 TO 14+30	160.25			
3	BARLOW FIELDS HOMEOWNERS	.027	1179	0.000											
4	FIRES CREEK LAND CO., LLC	-	792			3070									
5	FIRES CREEK LAND CO., LLC	-	3071												
										TOTAL		421.55			
										SAY		430			

Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the contract lump sum price for "grading".

***SUB-REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)***

[illegible]

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
 G = GATING IMPACT ATTENUATOR TYPE 350
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

[illegible]

SYSTEMS DESIGN

DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
SUMMARY NO.1					
-L- STA. 10+50 TO STA. 12+62.52 (BEG. BRIDGE)	65		438	373	
SUBTOTAL SUMMARY NO.1	65		438	373	
SUMMARY NO.2					
-DR-1- STA. 10+10 TO STA. 10+87.98	21		35	14	
SUBTOTAL SUMMARY NO.2	21		35	14	
SUMMARY NO.3					
-L- STA. 13+65.16 (END BRIDGE) TO STA. 15+10	30		183	153	
SUBTOTAL SUMMARY NO.2	30		183	153	
PROJECT SUBTOTAL	116		656	540	
EST. 5% FOR REPLACING TOP SOIL ON BORROW PITS				27	
GRAND TOTAL	116		656	567	
SAY	120			570	
EST. DDE = 45 CY					

CONTINGENCY ITEMS:

INCIDENTAL STONE = 50 TONS

UNDERCUT EXCAVATION = 50 CY

SELECT GRANULAR MATERIAL = 50 CY

CLASS IV SUBGRADE STABILIZATION = 50 TONS

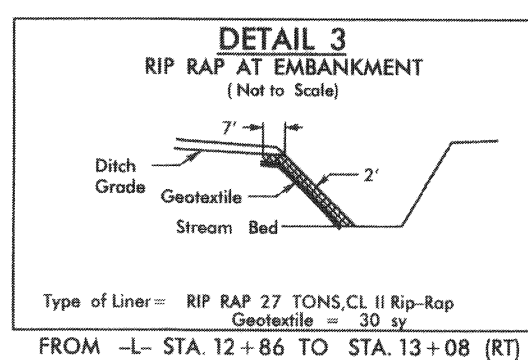
GEOTEXTILE FOR SOIL STABILIZATION = 50 SY

Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the contract lump sum price for "grading".

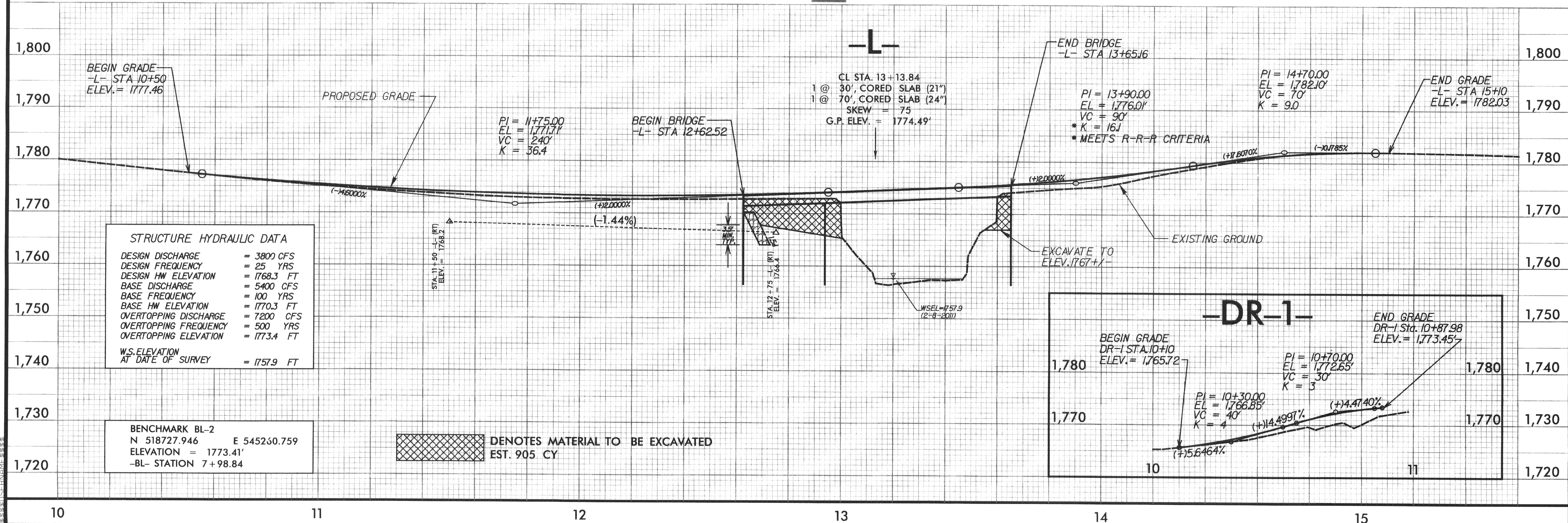
**** MEETS R-R-R CRITERIA**

-DR-1- CURVE DATA

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "210007 BL-1"
WITH NAD 83/NRSR 2002 STATE PLANE GRID COORDINATES OF
NORTHING: 518785.632(±) EASTING: 544967.538(±)
ELEVATION: 1774.13(±)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999796949
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"210007 BL-1" TO L- STATION 10+00.00 IS
N 82° 04' 19" W 89.75'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88



FULL DEPTH PAVED SHOULDER



TIP PROJECT: BD-5114E

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
TRAFFIC CONTROL

BRIDGE 07 – CLAY COUNTY

ROADWAY STANDARD DRAWINGS

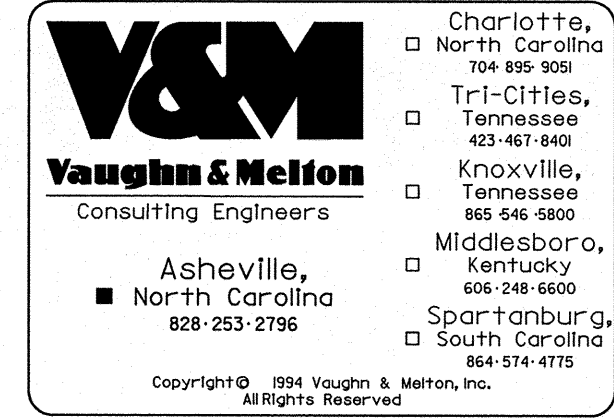
THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

INDEX OF SHEETS

SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, INDEX OF SHEETS
TCP-2	PROJECT NOTES AND PHASING
TCP-3	OFFSITE DETOUR SIGNING AND ROAD CLOSURE SIGNING
TCP-4	SPECIAL SIGN DESIGN

STATE PROJECT REFERENCE NO.	SHEET NO.
BD-5114E	TCP-1



STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

LEGEND

GENERAL

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

TRAFFIC CONTROL DEVICES

- TYPE I BARRICADE
- TYPE II BARRICADE
- TYPE III BARRICADE
- CONE
- DRUM SKINNY DRUM
- FLASHING ARROW PANEL (TYPE C)
- STATIONARY SIGN
- PORTABLE SIGN
- STATIONARY OR PORTABLE SIGN
- CRASH CUSHION
- CHANGEABLE MESSAGE SIGN
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- POLICE
- FLAGGER

PAVEMENT MARKINGS

- CRYSTAL/CRYSTAL PAVEMENT MARKER
- YELLOW/YELLOW PAVEMENT MARKER
- CRYSTAL/RED PAVEMENT MARKER
- PAVEMENT MARKING SYMBOLS

APPROVED:
DATE: 4/17/12



PLAN PREPARED FOR N.C.D.O.T. BY:
STV/RALPH WHITEHEAD ASSOCIATES

KIT A. PERSIANI, PE PROJECT ENGINEER
CHRIS S. PARKER DESIGN ENGINEER
CHRIS S. PARKER DESIGN TECHNICIAN



V&M
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Charlotte,
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704-895-9095

Tri-Cities,
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Kentucky
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South Carolina
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Asheville,
North Carolina
828-253-2796

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 **STV / Ralph Whitehead Associates, Inc.**
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

GENERAL NOTES

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

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- B) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS. PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.
- C) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION. COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.
- D) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

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

PHASING NOTES

- STEP 1: USING RSD1101.03 SHEET 1 OF 9, AND TCP-3, INSTALL DETOUR SIGNS AND PLACE TYPE III BARRICADES TO CLOSE SR 1300 (FIRES CREEK RD.) TO THRU TRAFFIC AND DETOUR ONTO PROPOSED DETOUR.

- STEP 2: AWAY FROM TRAFFIC, PERFORM THE FOLLOWING:

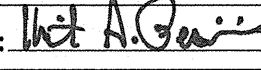
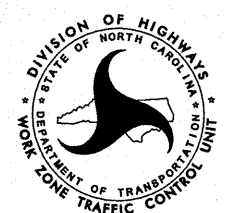
REMOVE EXISTING STRUCTURE 07 AND CONSTRUCT PROPOSED STRUCTURE FROM -L- STATION 12+70.17 TO -L- STATION 13+64.73. SEE ROADWAY AND STRUCTURE PLANS.

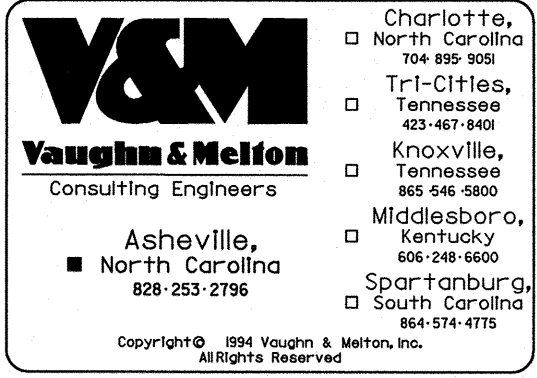
CONSTRUCT PROPOSED -L- UP TO AND INCLUDING FINAL LAYER OF SURFACE COURSE.

PLACE FINAL PAVEMENT MARKINGS FROM -L- STATION 10+50 +/- TO -L- STATION 15+10 +/-, AND TIE TO EXISTING MARKINGS.

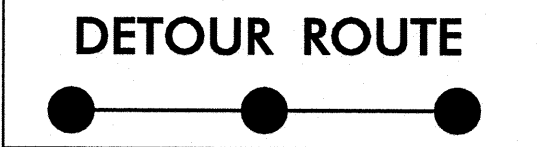
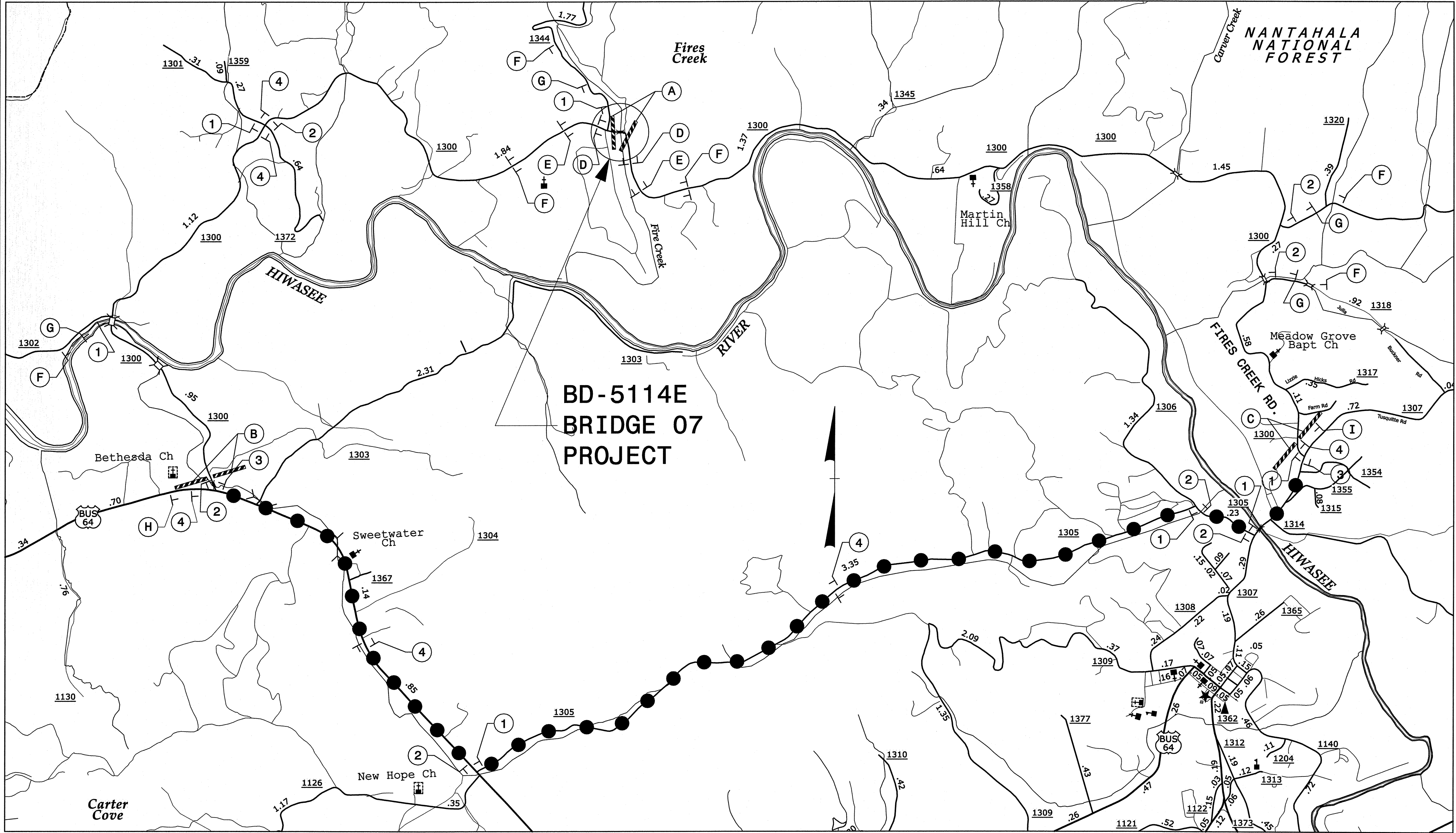
- STEP 3: REMOVE ALL TRAFFIC CONTROL DEVICES, SIGNING AND DETOUR ROUTE SIGNING.

OPEN SR 1300 TO FINAL TRAFFIC PATTERN.

APPROVED:  DATE: 4/17/12		PROJECT NOTES AND PHASING	
	SCALE: NONE		REVISIONS
	DATE: 4/16/12		
	DWG. BY: CSP		
	DESIGN BY: CSP		
REVIEWED BY: KAP			CADD FILE



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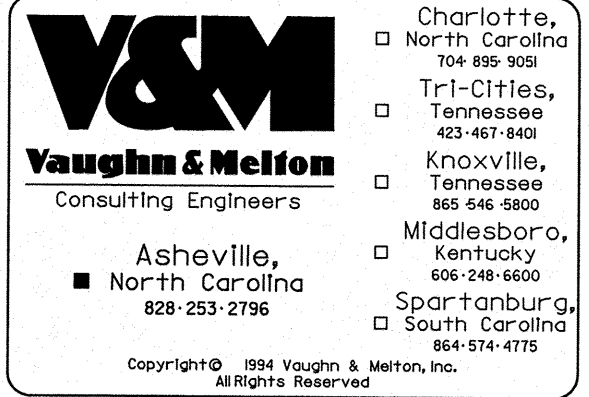
 R11-2 48" X 30" ROAD CLOSED TYPE III BARRICADE(S) A	 R11-3 60" X 30" ROAD CLOSED 4 MILES AHEAD LOCAL TRAFFIC ONLY DETOUR TYPE III BARRICADE B	 R11-3 60" X 30" ROAD CLOSED 4 MILES AHEAD LOCAL TRAFFIC ONLY DETOUR TYPE III BARRICADE C	 ROAD CLOSED 500 FT W20-3 48" X 48" D	 ROAD CLOSED 1000 FT W20-3 48" X 48" E	 ROAD CLOSED AHEAD W20-3 48" X 48" F	 DETOUR AHEAD W20-2 48" X 48" G	 ROAD CLOSED AHEAD W20-3 48" X 48" NEXT LEFT SP-4L 42" X 12" H	 ROAD CLOSED AHEAD W20-3 48" X 48" NEXT RIGHT SP-4R 42" X 12" I	 Fires Creek Rd DETOUR M4-8 24" X 12" M6-1 21" X 15" 1	 Fires Creek Rd DETOUR M4-8 24" X 12" M6-1 L 21" X 15" 2	 Fires Creek Rd END DETOUR M4-8 A 24" X 18" 3	 Fires Creek Rd DETOUR M4-8 24" X 12" M6-3 21" X 15" 4
--	--	--	---	--	--	---	---	--	--	--	--	--

NOTES:
TRAFFIC CONTROL DEVICES **(A)** THRU **(I)** SHALL BE INSTALLED ACCORDING TO ROADWAY STANDARD DRAWING 1101.03, SHEET 1 OF 9.
TRAFFIC CONTROL DEVICES **(1)** THRU **(4)** SHALL BE INSTALLED AS PER ENGINEER'S INSTRUCTION.

APPROVED: DATE: 4/19/12

OFFSITE DETOUR SIGNING AND ROAD CLOSURE SIGNING		
SCALE: NONE		REVISIONS
DATE: 4/16/12		
DWG. BY: CSP		
DESIGN BY: CSP		
REVIEWED BY: KAP		

4/18/2012 R:\Traffic\TrafficControl\TCP\BD5114E_TC_top3.dgn
parkercs



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NC License Number F-0991

SIGN NUMBER:		BACKG COLOR: Fluorescent Orange				
TYPE: STATIONARY		COPY COLOR: Black				
QUANTITY: SEE PLANS		SYMBOL	X	Y	WID	HT

[illegible]

SIGN WIDTH: 4'-4"
HEIGHT: 1'-0"
TOTAL AREA: 4.3 Sq.Ft.

BORDER TYPE: INSERT
RECESS: 0.5"
WIDTH: 0.5"
RADII: 3"

NO. Z BARS: MAT'L: 0.080" (2.0 mm) ALUMINUM
LENGTH: 0.079" (2.0 mm) COMPOSITE

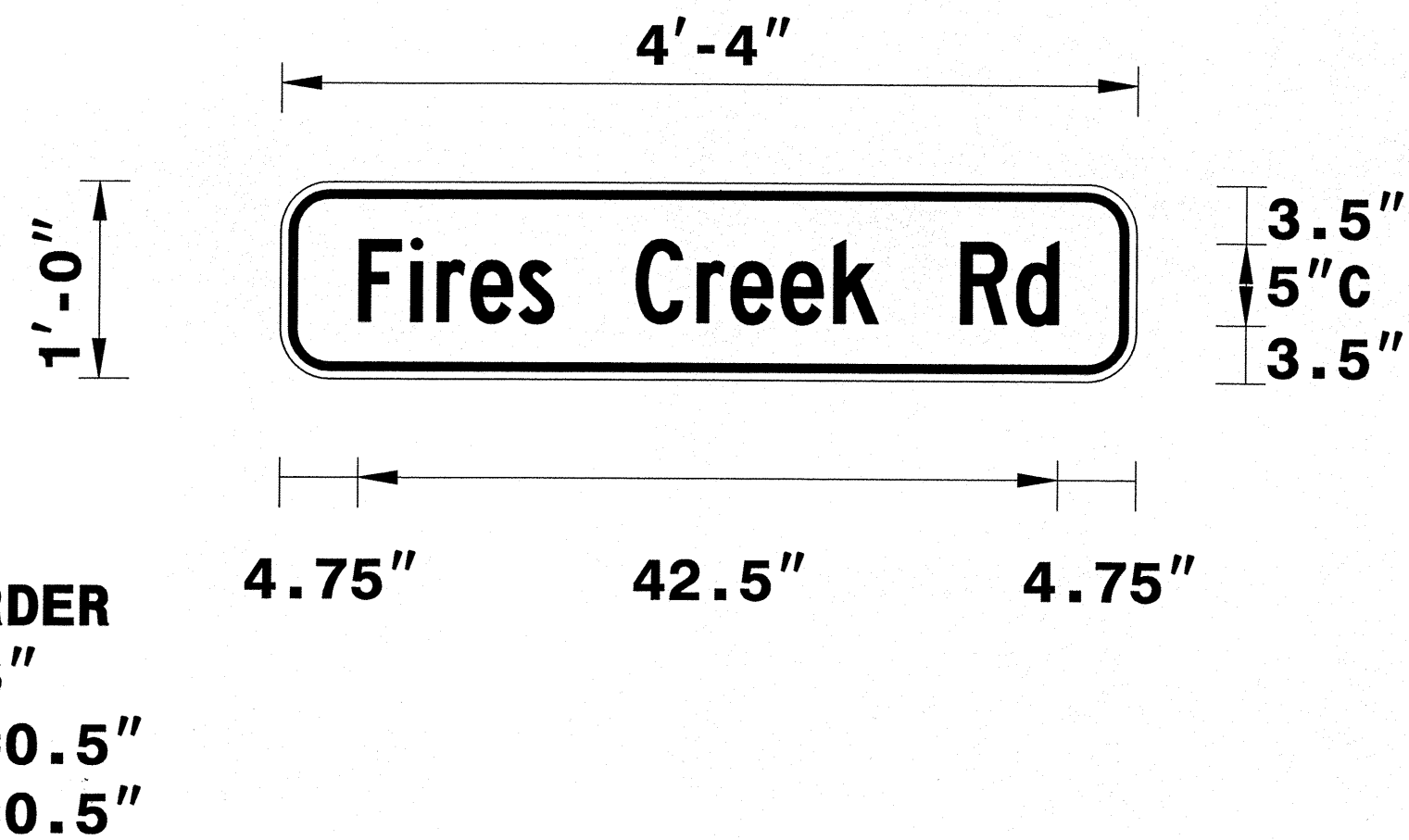
USE NOTES: 1,2

1. Legend and border shall be direct applied black non-reflective sheeting.
2. Background shall be Type VII, VIII, or IX (prismatic) fluorescent orange retroreflective sheeting.

DESIGN BY: KXT
PROJECT ID: BD-5114E

CHECKED BY: KAP
DIV: 14

DATE: Jul 20, 2011



Spacing Factor is 1 unless specified otherwise

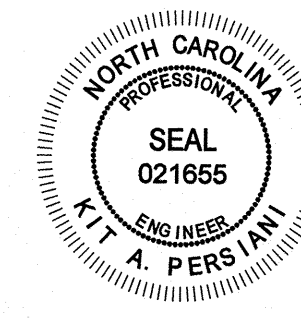
LETTER POSITIONS

Letter spacings are to start of next letter																											Series/Size	
		F	i	r	e	s		C	r	e	e	k		R	d													Text Length
	4.75"	3.2"	1.6"	2"	3"	2.1"	5"	3.7"	2"	3"	3.2"	2.7"	5"	3.4"	2.6"	4.75"												C 2000 42.5"

FILENAME: Fires Creek Rd

NORTH CAROLINA D.O.T. SIGN DETAIL

APPROVED: Kit A. Green DATE: 4/17/12



SPECIAL SIGN DESIGN

SCALE:	NONE
DATE:	4/16/12
DWG. BY:	CSP
DESIGN BY:	CSP
REVIEWED BY:	KAP



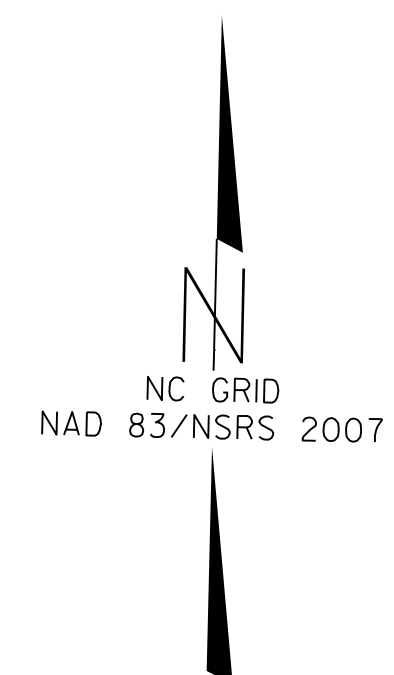
REVISIONS

ADD	
E	

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

2012 STANDARD SPECIFICATIONS

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.



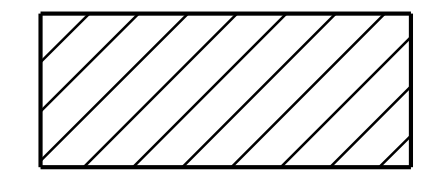
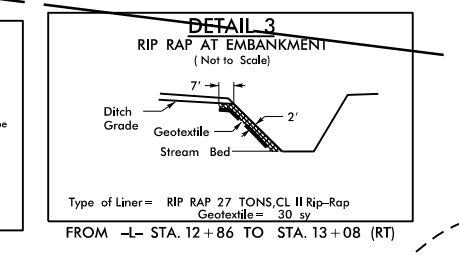
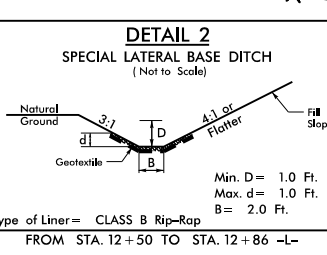
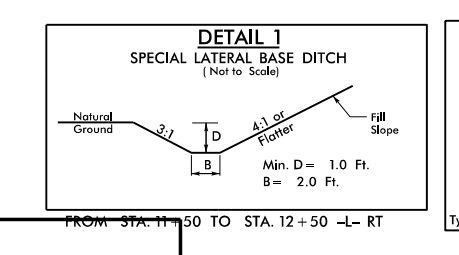
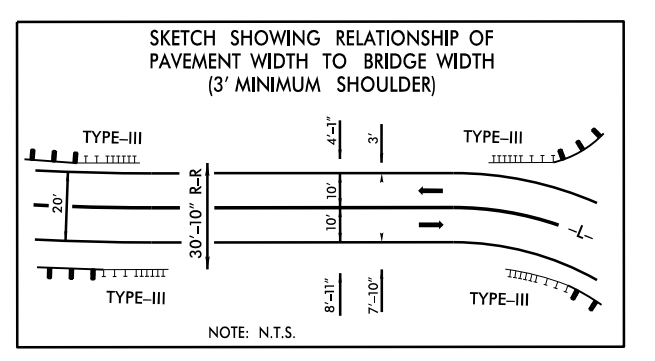
EROSION CONTROL PLAN

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

PROJECT REFERENCE NO. BD-5114E	SHEET NO. EC-1/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
ANNE GAMBER	
LEVEL III NAME	
3022	
LEVEL III CERTIFICATION NO.	

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE
INSTALLED DURING CLEARING AND GRUBBING PHASE.

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



ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

Std. #	Description	Symbol
1605.01	Temporary Silt Fence.....	
	Coir Fiber Wattle Segment.....	-CFW-
	Coir Fiber Wattle with Polyacrylamide (PAM).....	C
1632.03	Rock Inlet Sediment Trap Type C.....	□
1633.01	Temporary Rock Silt Check Type-A.....	⊗
1633.02	Temporary Rock Silt Check Type-B.....	➔
1635.01	Rock Pipe Inlet Sediment Trap Type-A.....	⊕

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY
NEED TO BE INSTALLED AS DIRECTED BY THE
ENGINEER.

2012 STANDARD DRAWINGS

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		

CONSTRUCTION SEQUENCE FOR REMOVAL OF EXISTING EMBANKMENT AND INTERIOR BENT

IMPERVIOUS DIKE

- 1.) INSTALL IMPERVIOUS DIKE(S).
- 2.) DEWATER SITE UTILIZING SPECIAL STILLING BASINS(S).
- 3.) SAW CUT INTERIOR BENTS AT FOOTING AND REMOVE.
- 4.) EXCAVATE AND REMOVE EXISITING EMBANKMENT(S).

PROJECT NO. BD-5114E
COUNTY CLAY
STATION: 13+18
REPLACES BRIDGE NO. 07

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE #07 ON SR 1300
OVER FIRES CREEK

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

COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

PROJECT REFERENCE NO.		SHEET NO.
BD-5114E		EC-3
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

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

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

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

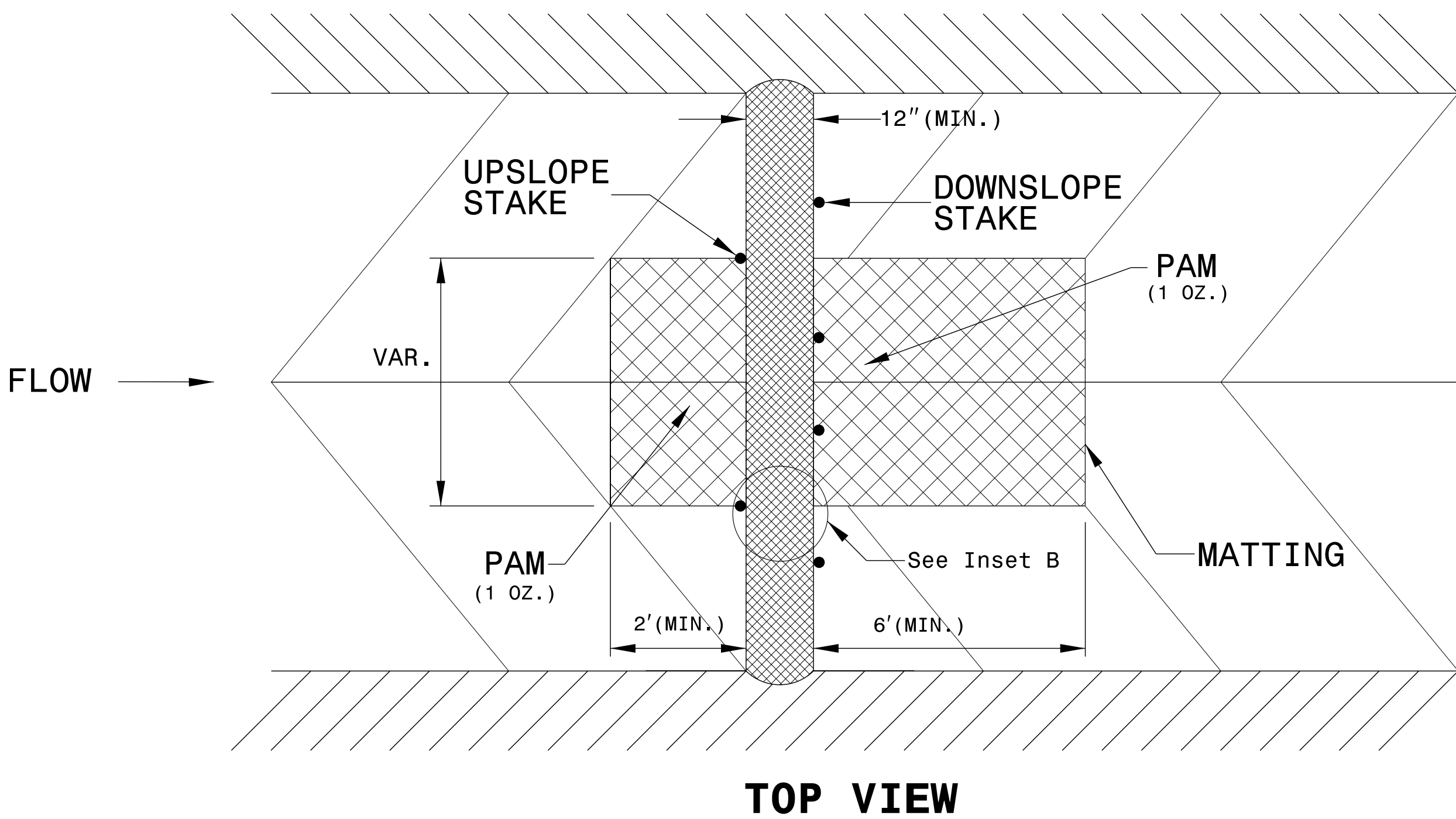
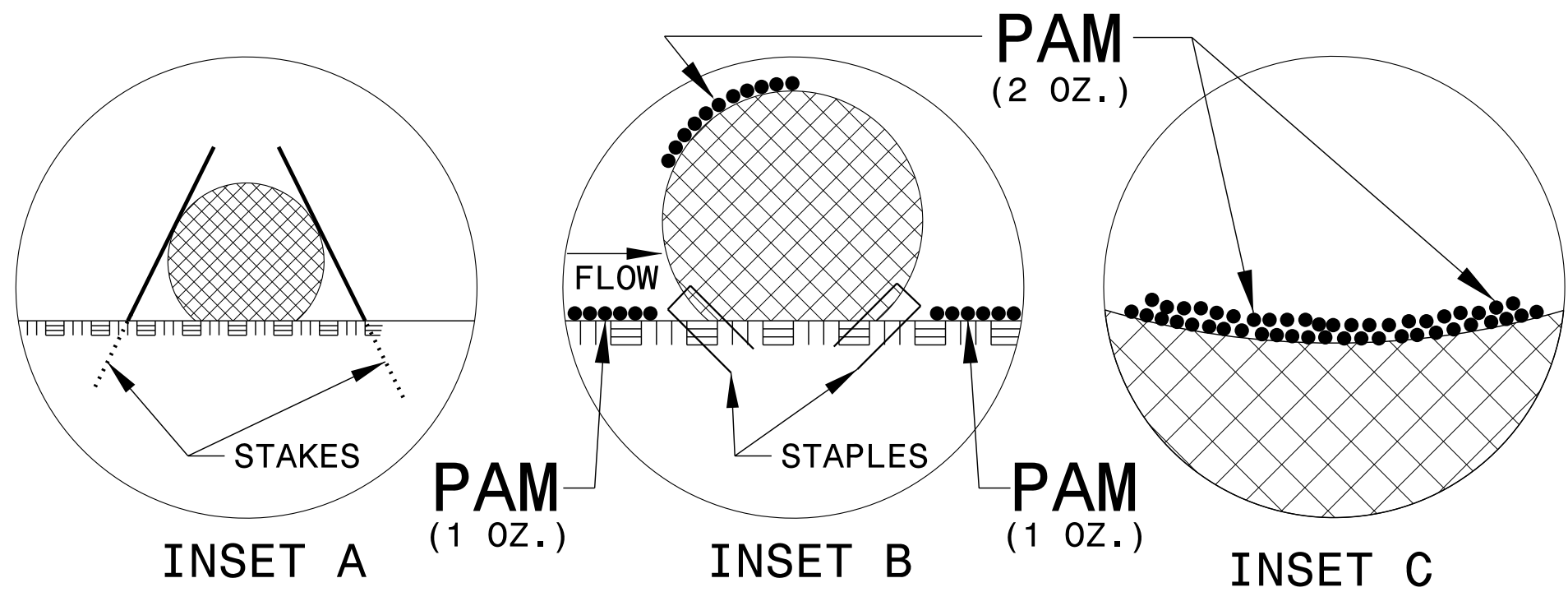
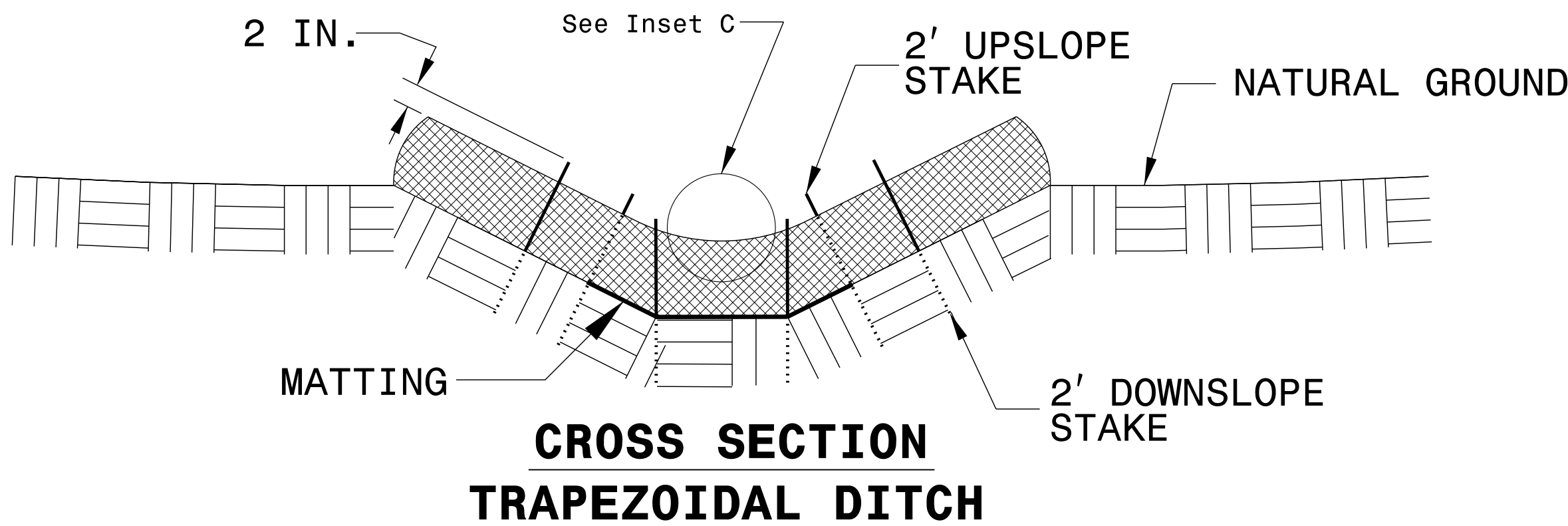
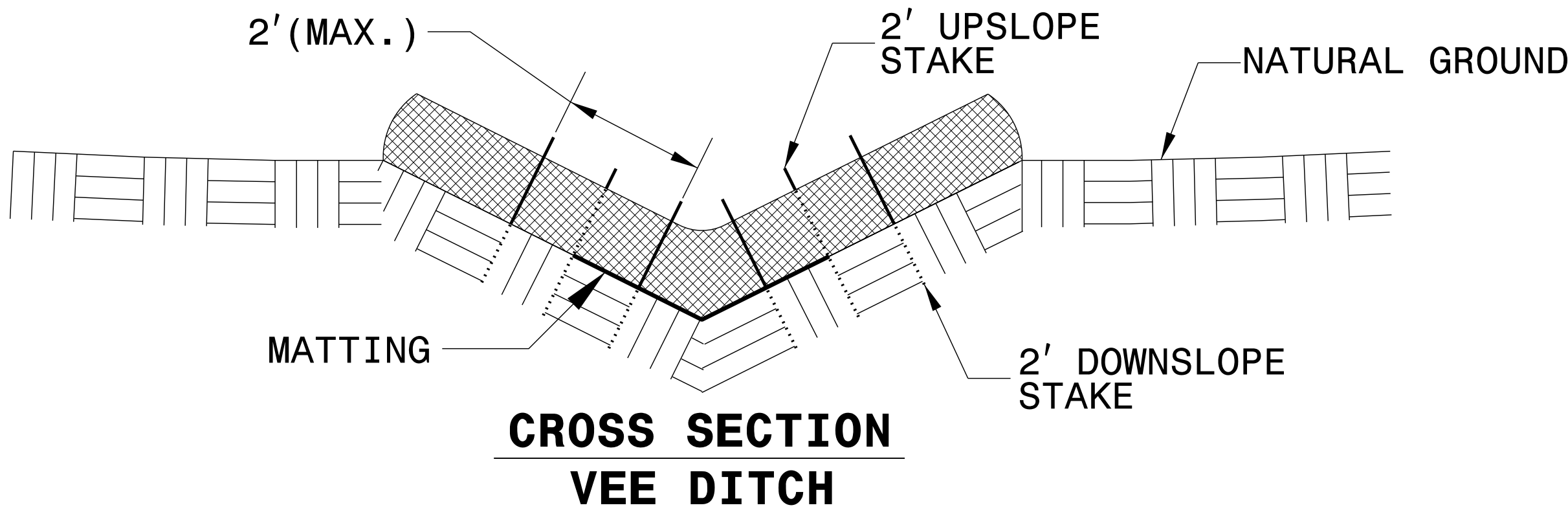
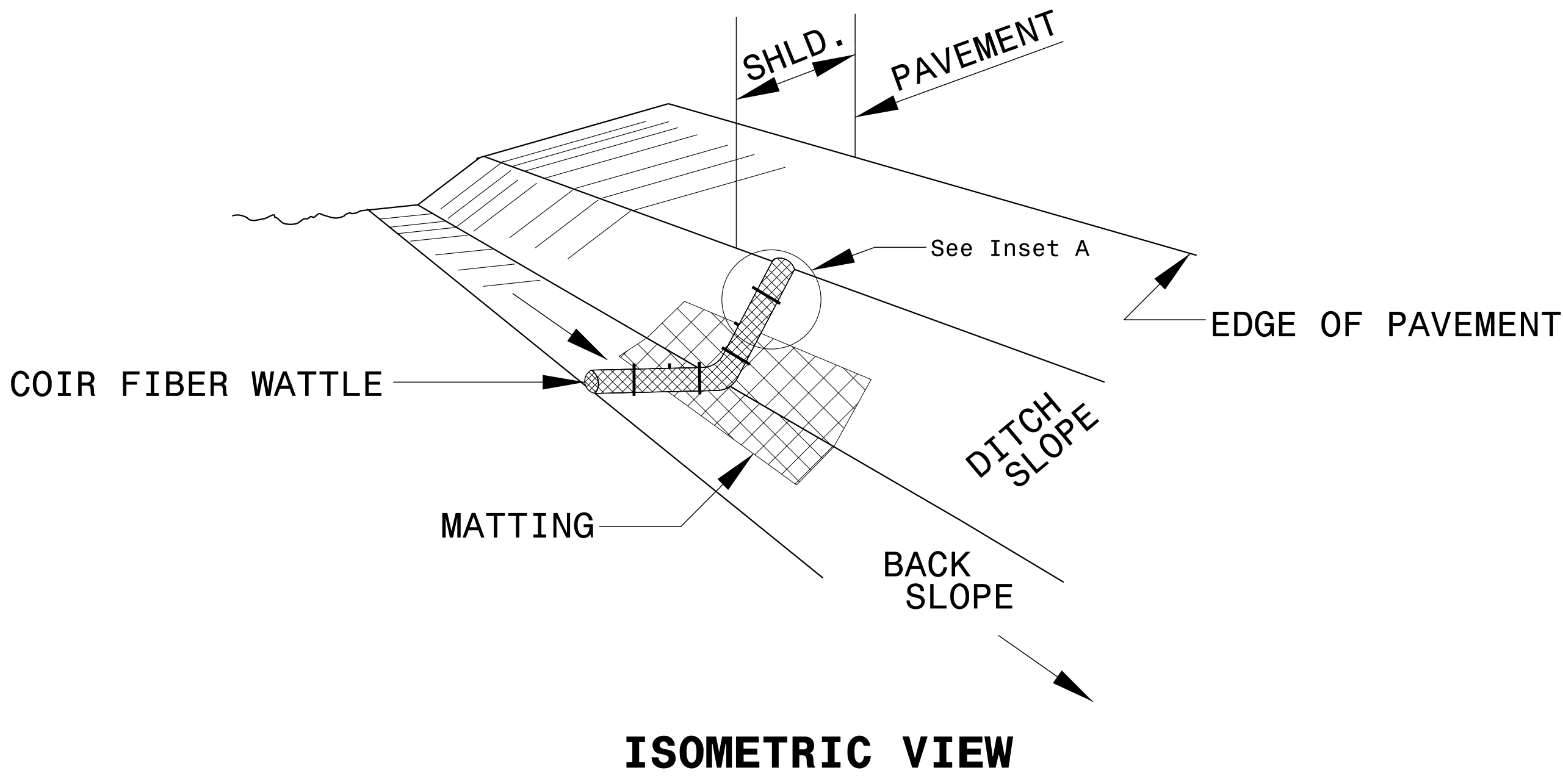
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



PROJECT REFERENCE NO.	SHEET NO.
BD-5114E	EC-4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



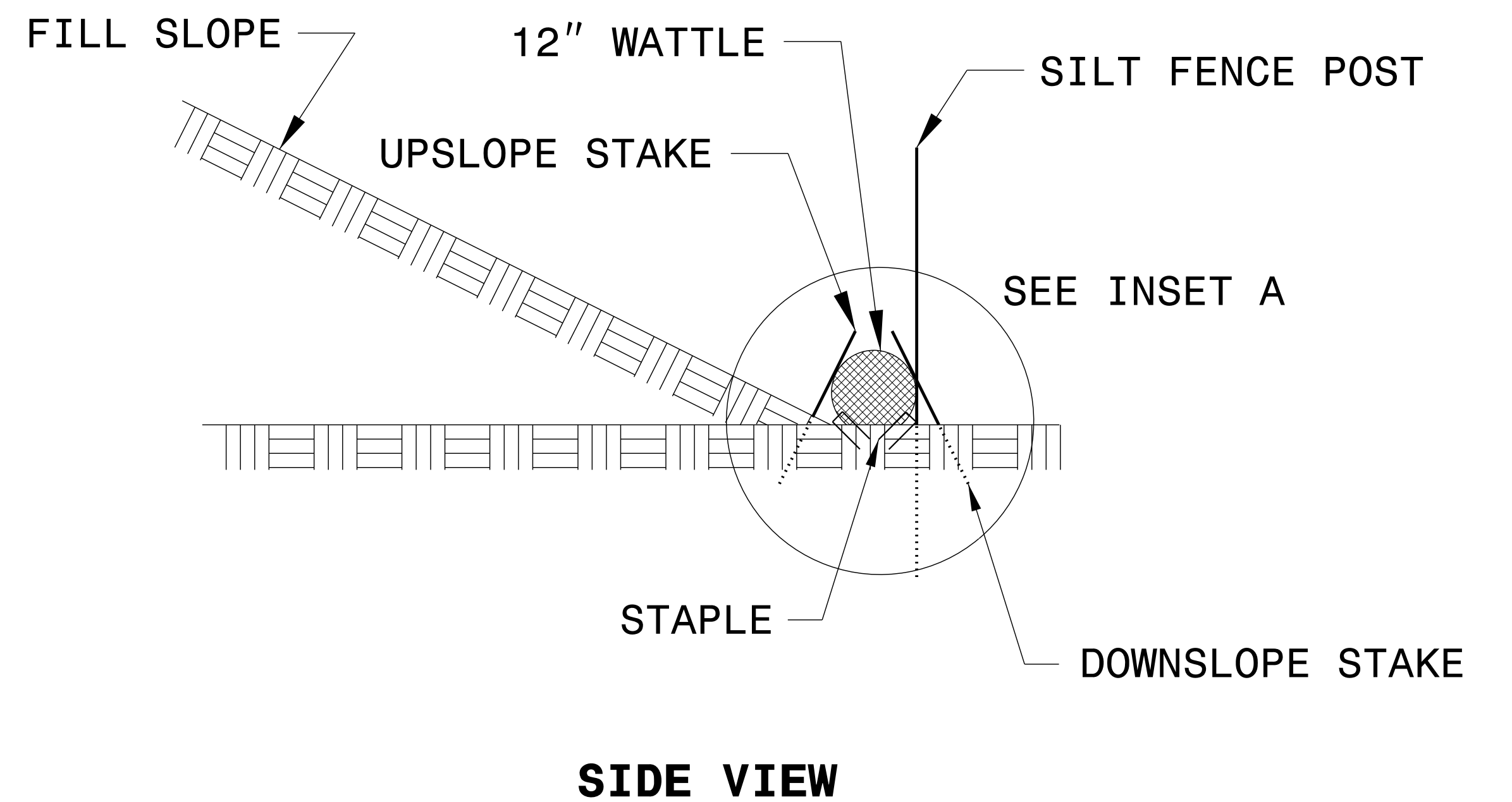
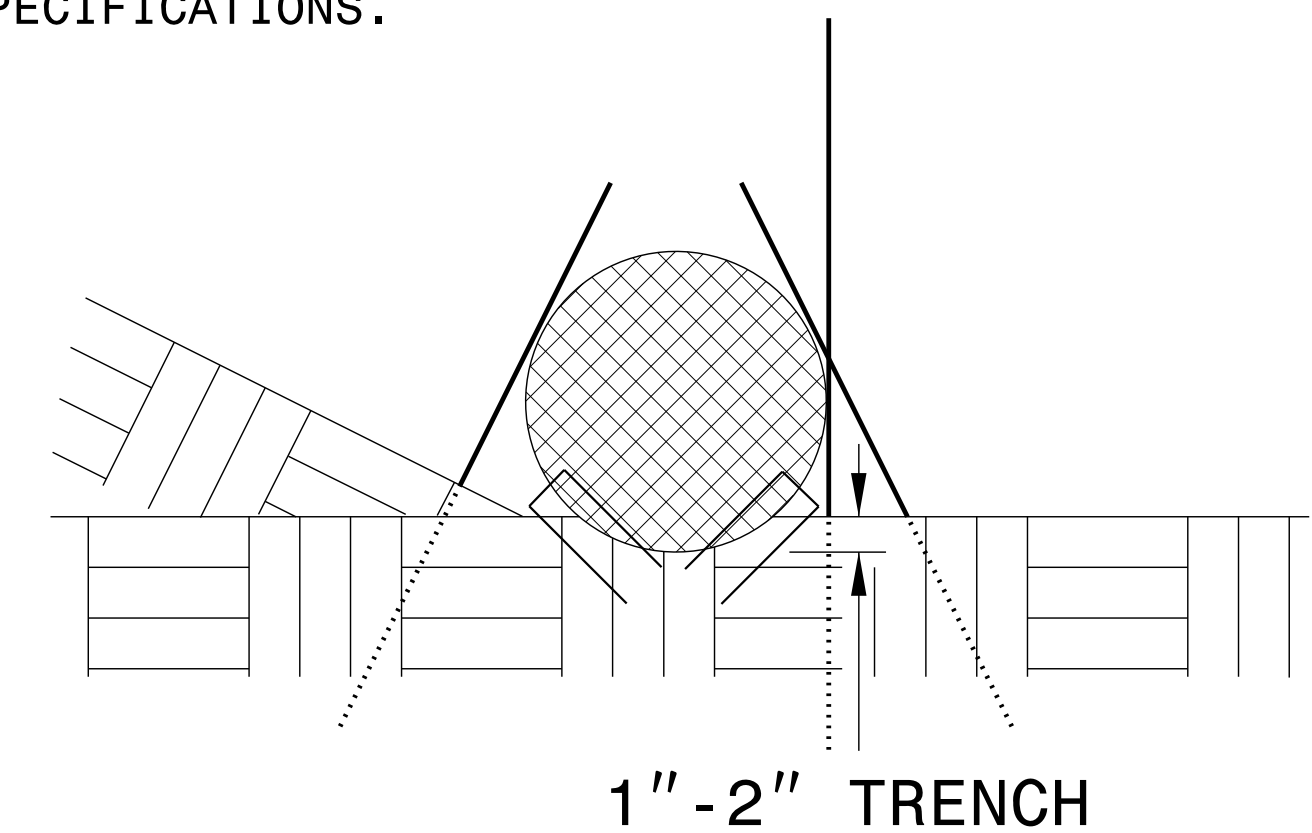
EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

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

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

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE
STANDARD SPECIFICATIONS.



DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
BD-5114E	EC-5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL (SLOPES)

[illegible]

MATTING FOR EROSION CONTROL

[illegible]

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.		SHEET NO.	
BD-5114E		EC-6	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

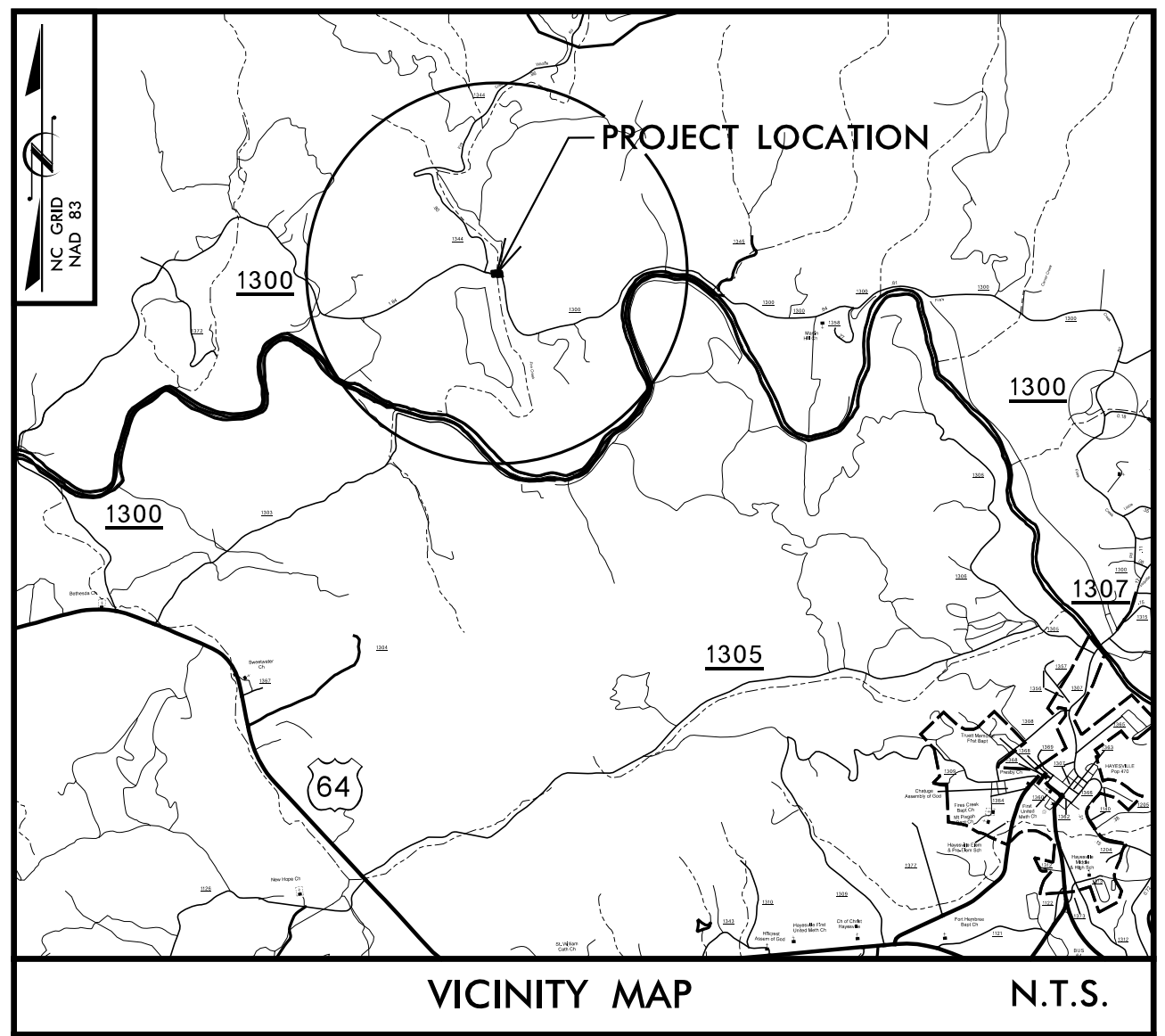
SOIL STABILIZATION TIMEFRAMES

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

09/08/95
\$\$\$\$\$SYTIME\$\$\$\$\$DON\$\$\$\$\$USERNAME\$\$\$\$\$

TIP PROJECT: **BD-5114E**

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



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

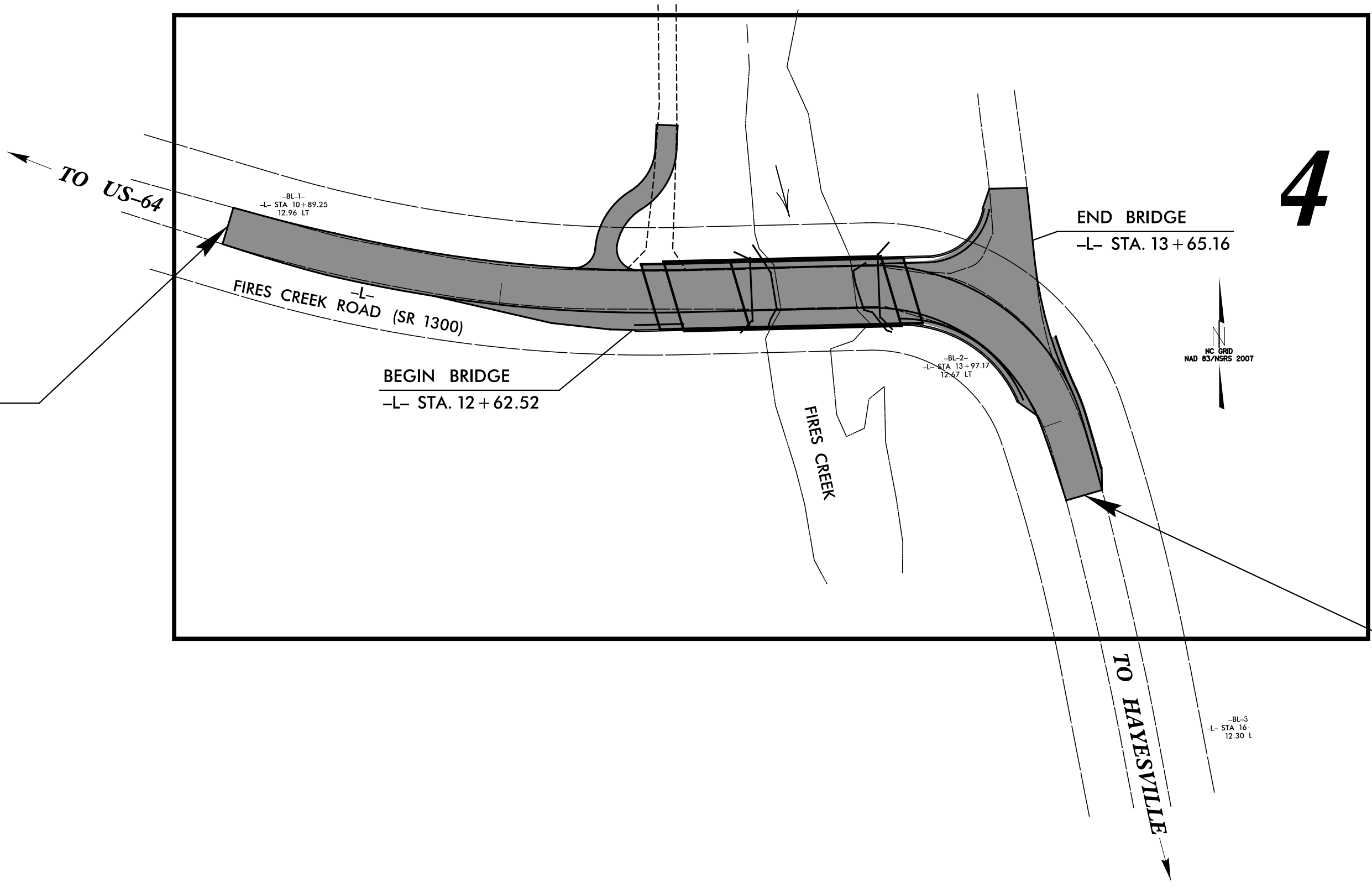
**UTILITIES BY OTHERS PLANS
CLAY COUNTY**

**LOCATION: BRIDGE NO. 07 OVER FIRES CREEK
ON SR 1300 (FIRES CREEK ROAD)**

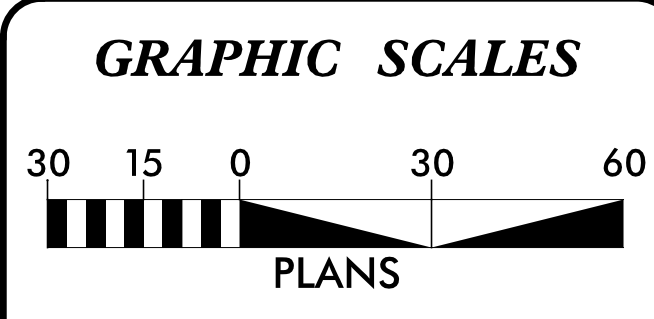
TYPE OF WORK: TELEPHONE & POWER

T.I.P.NO.	SHEET NO.
BD-5114E	UO-1

BEGIN TIP PROJECT BD-5114E
-L- STA. 10 + 50.00



END TIP PROJECT BD-5114E
-L- STA. 15 + 10.00



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

UTILITY OWNERS ON PROJECT

(1) TELEPHONE - FRONTIER COMMUNICATIONS
(2) POWER DISTRIBUTION - BLUE RIDGE MTN. E.M.C.

Seal of the State of North Carolina, Department of Transportation, Engineer, R. M. Schuler, 9/19/12.

V&M
Vaughan & Melton
Consulting Engineers
3089-L Beam Road
Charlotte, NC 28217
704-357-0488

Seal of the State of North Carolina, Department of Transportation.

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

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

<u>Roger Worthington, P.E.</u>	UTILITIES SECTION ENGINEER
<u>Xxxxx Xxxxx, P.E.</u>	UTILITIES SQUAD LEADER PROJECT ENGINEER
<u>Rreece Schuler, PE</u>	UTILITIES PROJECT DESIGNER

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

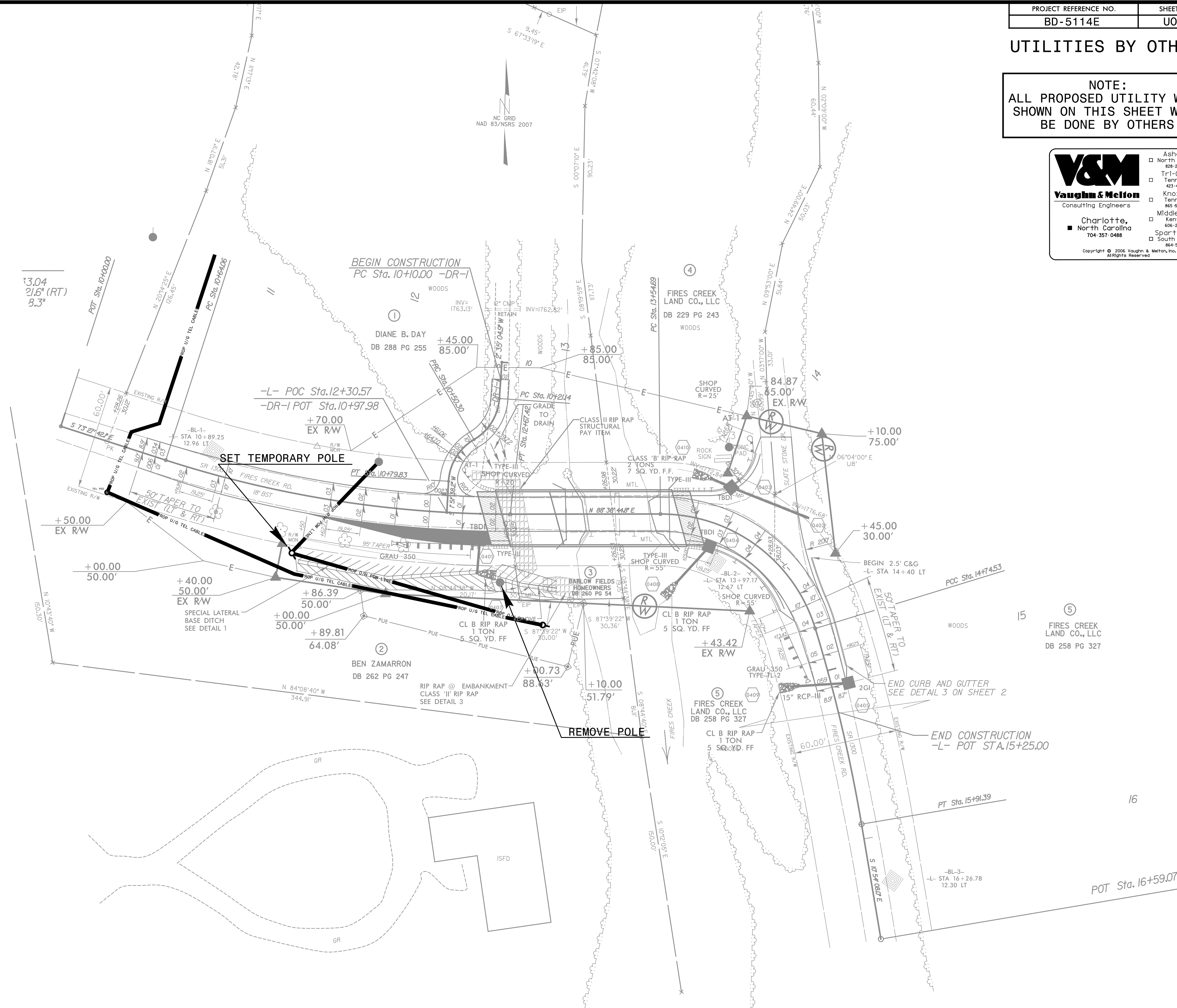


Charlotte,
■ North Carolina
704-357-0488

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☐ Tennessee
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 Knoxville,
☐ Tennessee
 865-546-5800
 Middlesboro,
☐ Kentucky
 606-248-6600
 Spartanburg,
☐ South Carolina
 864-574-4775

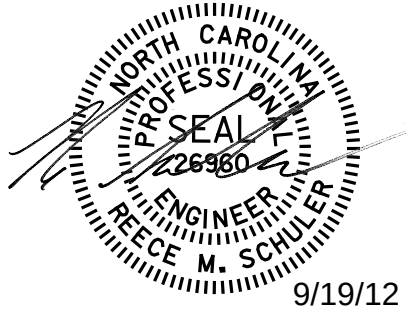
& Melton, Inc.
 and



REVISIONS

8/17/99

\$\$\$\$SYTIME\$\$\$\$\$
 \$\$\$LOG\$\$\$\$\$



DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

CROSS SECTION SUMMARY

IN CUBIC YARDS

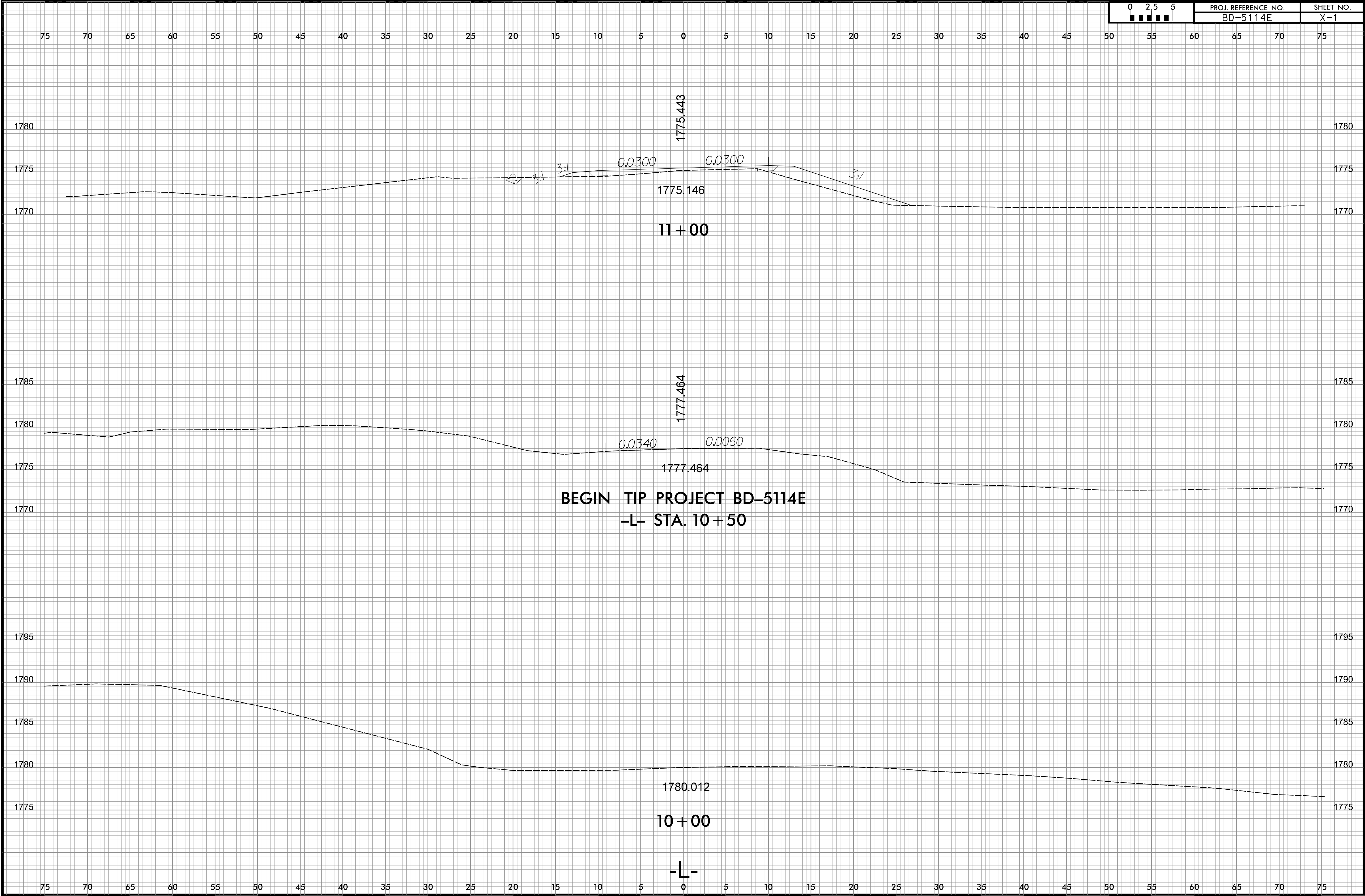
-L- LOCATION	UNCLASSIFIED EXCAVATION	EMBT
10 + 50	0	0
11 + 00	26	5
11 + 50	13	73
12 + 00	15	130
12 + 50	10	143
12 + 62.52 BEGIN BRIDGE	1	30
13 + 65.16 END BRIDGE	0	0
14 + 00	0	67
14 + 50	7	61
15 + 00	19	26
15 + 10	4	5

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT.

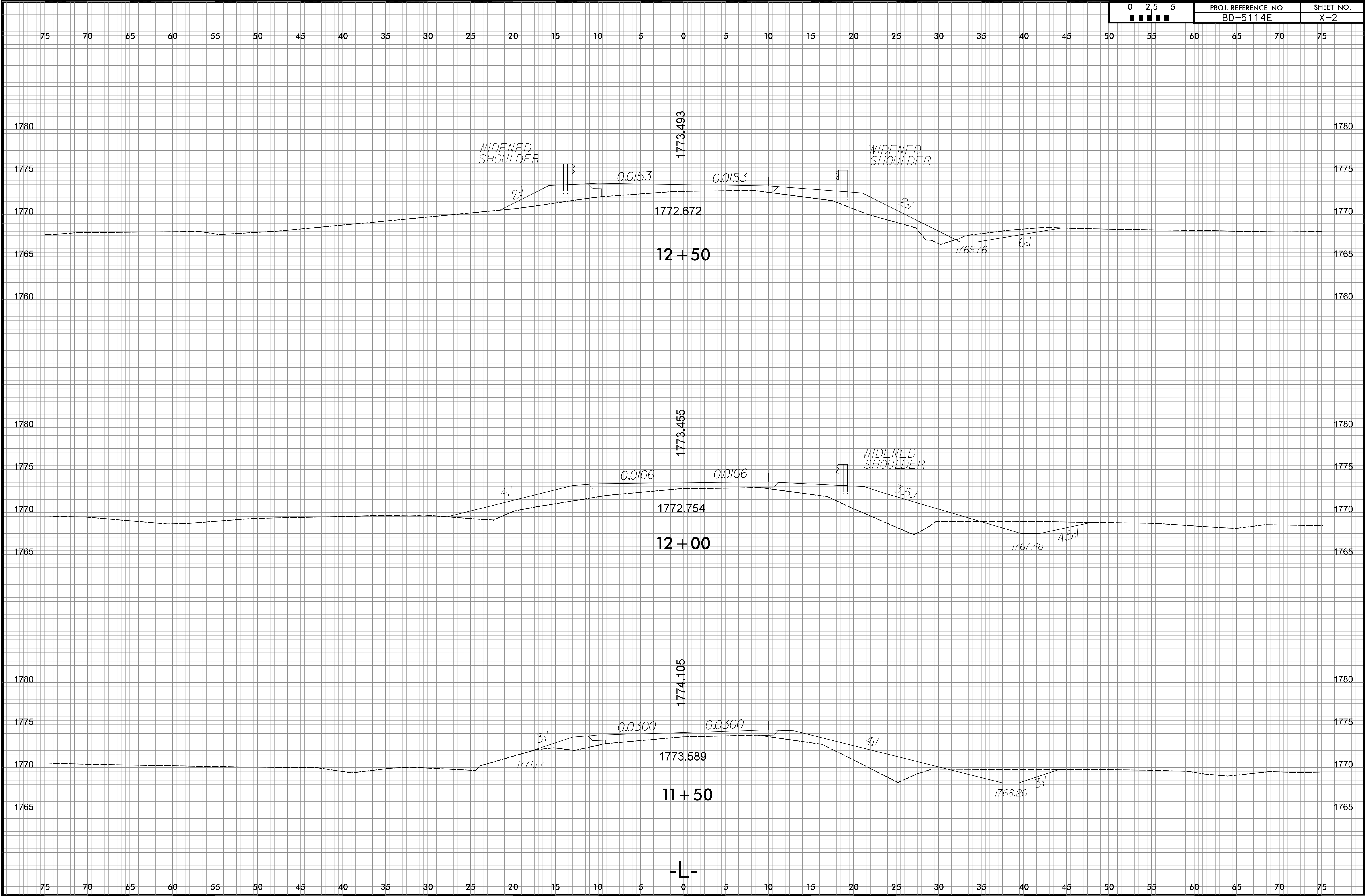
-DR-1- LOCATION	UNCLASSIFIED EXCAVATION	EMBT
10 + 10	0	0
10 + 20	9	0
10 + 30	7	0
10 + 40	4	0
10 + 50	1	1
10 + 60	0	5
10 + 70	0	10
10 + 80	0	10
10 + 87.98	0	5

Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the contract lump sum price for "grading".

8/23/99



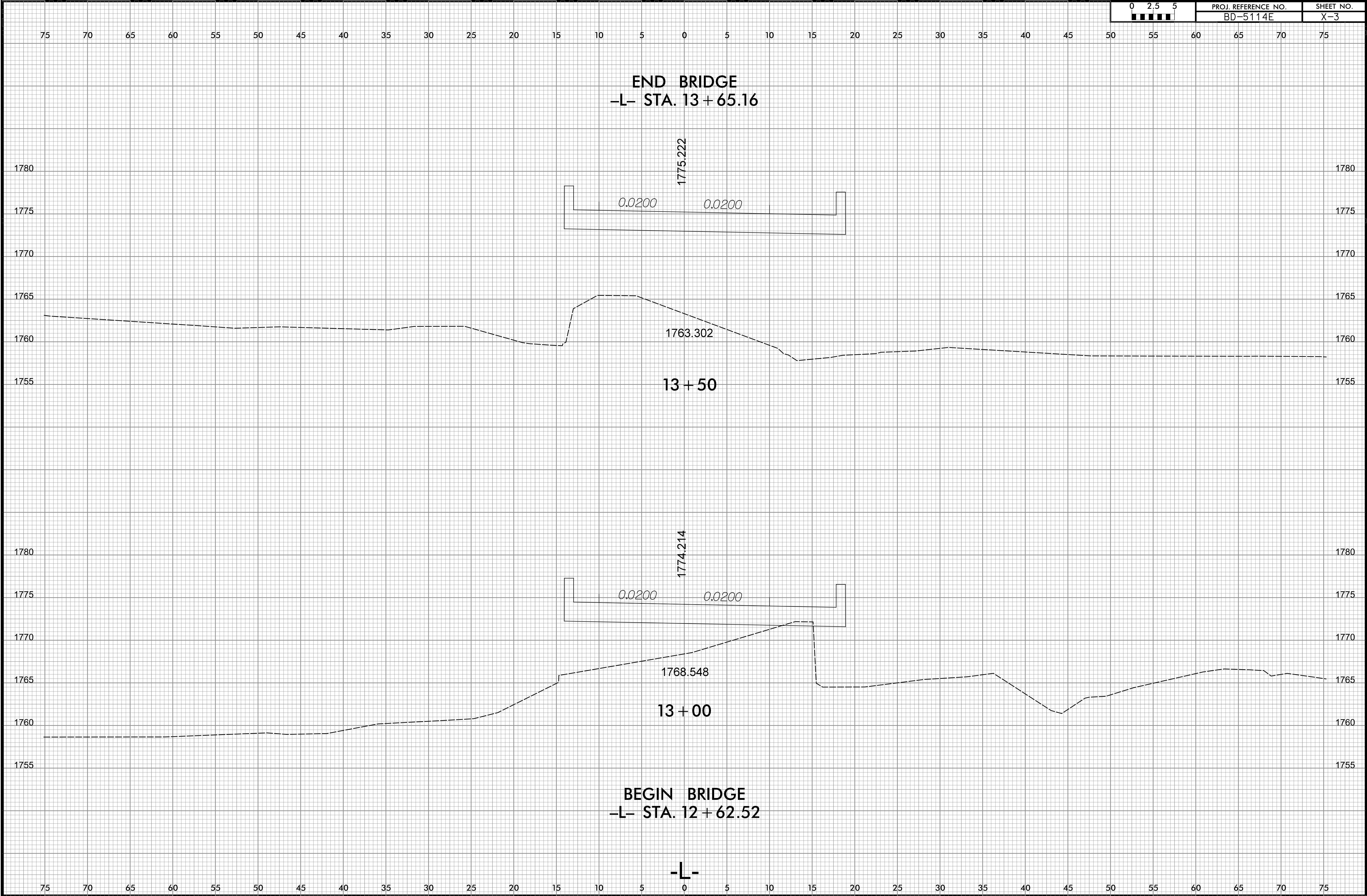
8/23/99



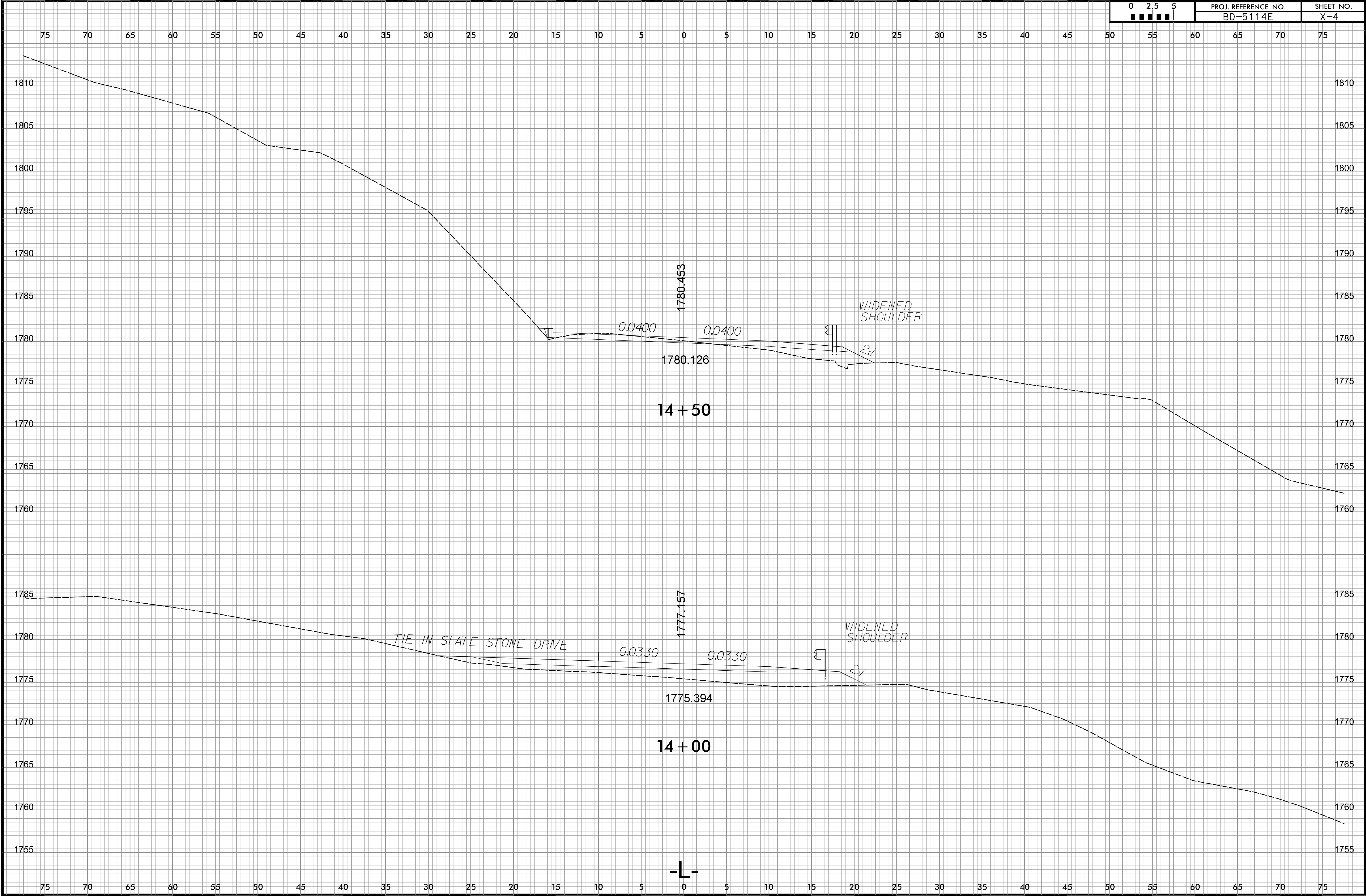
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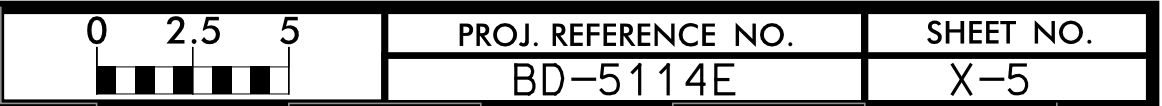
SYTIME\$UN\$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BD-5114E	X-3



8/23/99





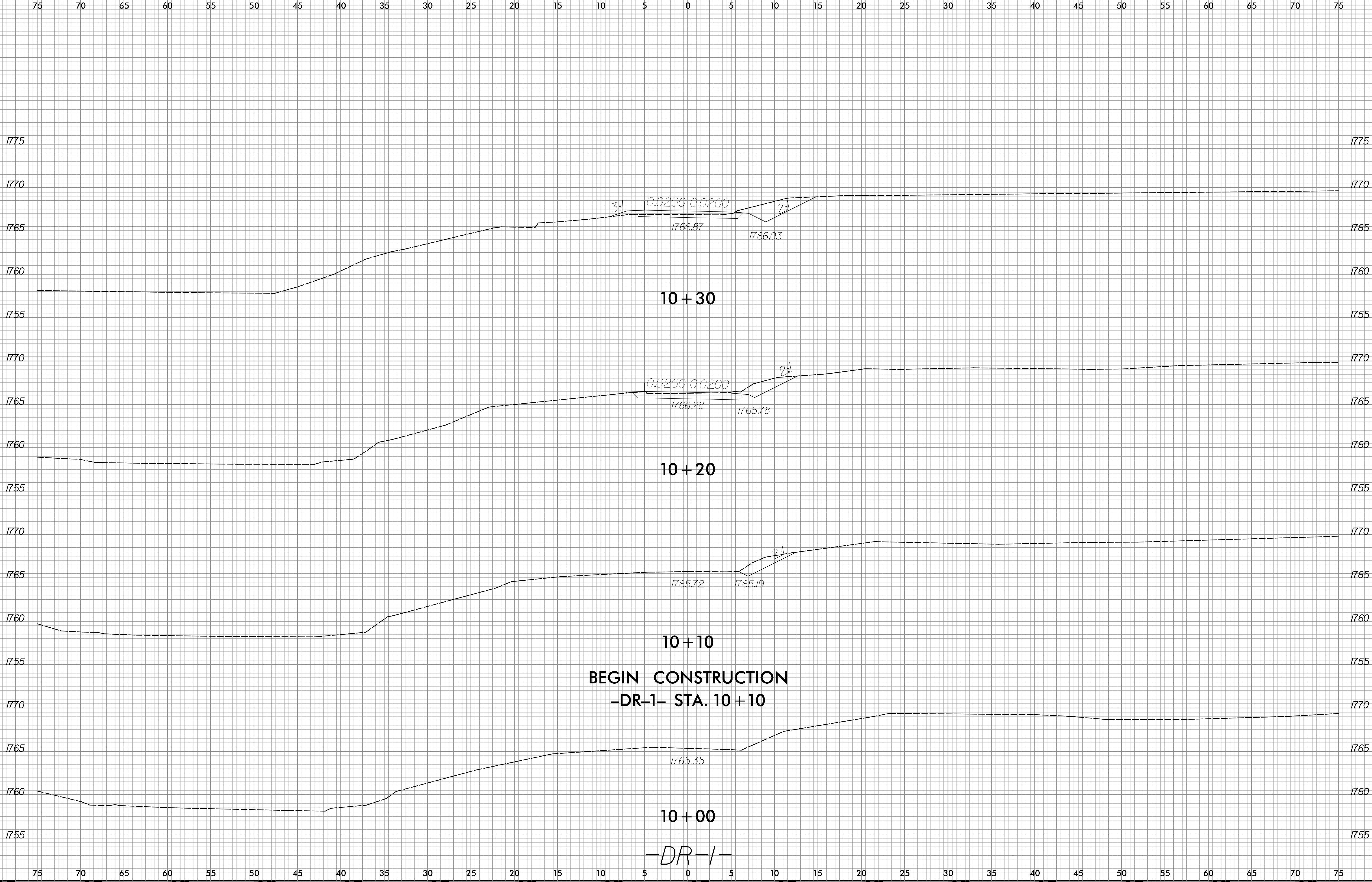
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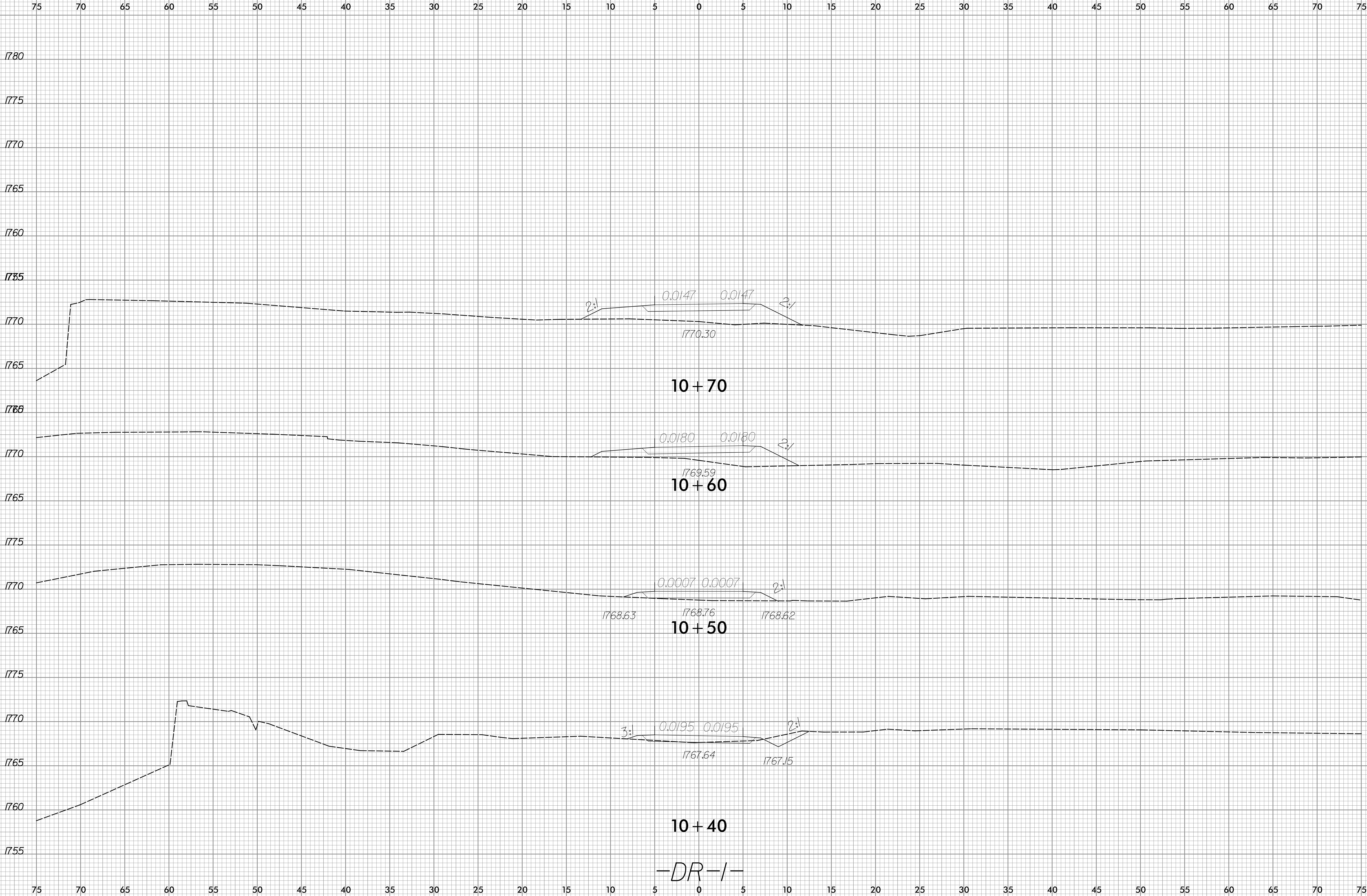
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	BD-5114E	X-6



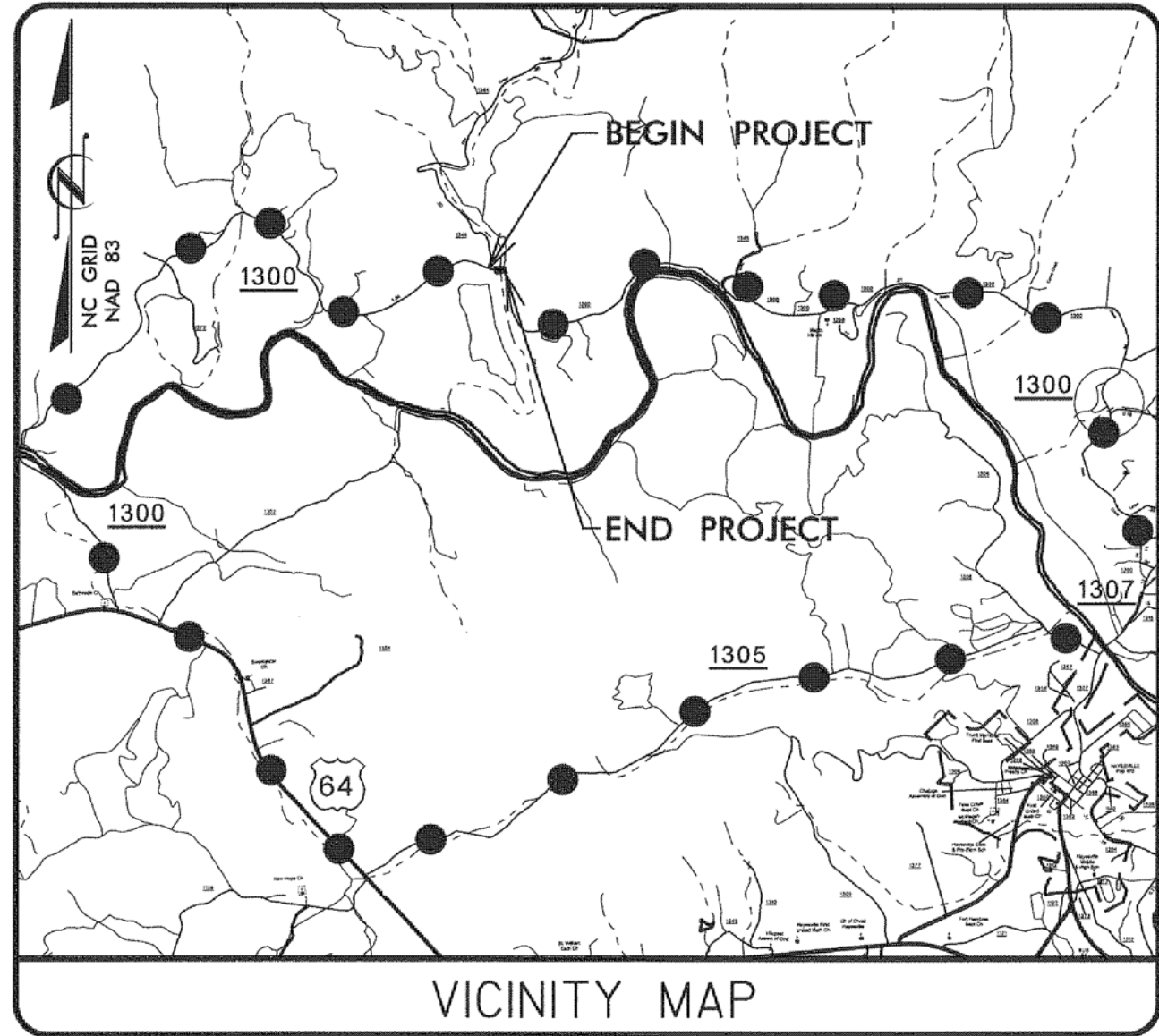
8/23/99



8/23/99



CONTRACT: DN00073 TIP NO: BD-5114E

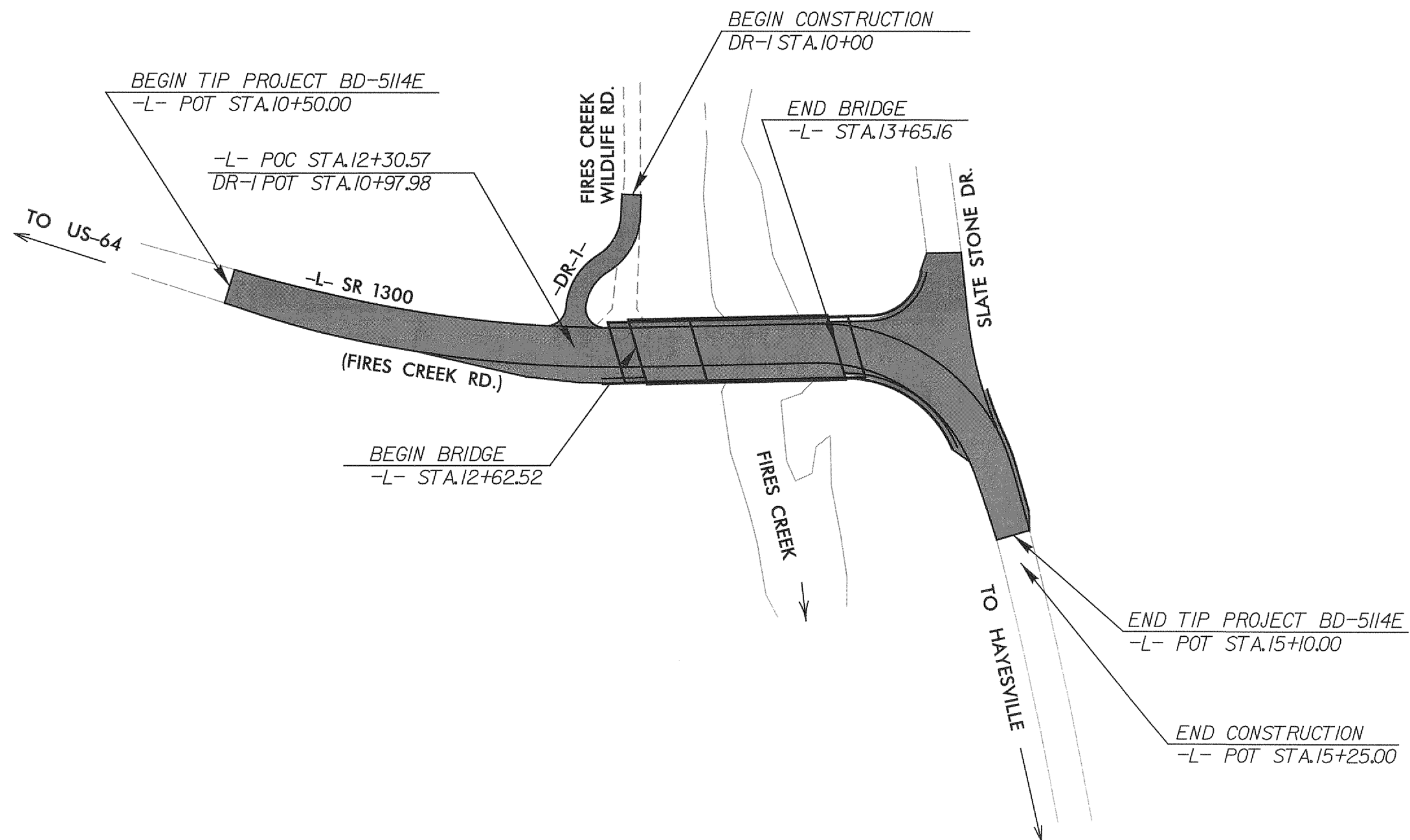


VICINITY MAP

● — ● — ● — DETOUR ROUTE

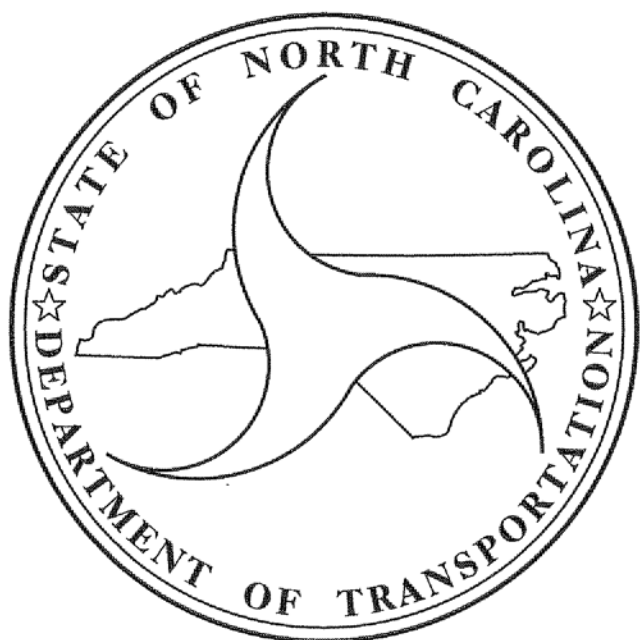
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
CLAY COUNTY

LOCATION: BRIDGE NO. 07 OVER FIRES CREEK
ON SR 1300



STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BD-5114E		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45360.1.5	BRSTP-1300(11)	P.E.	
45360.2.5	BRSTP-1300(11)	R/W	
45360.3.5	BRSTP-1300(11)	CONST.	



DESIGN DATA

ADT 2009 = 970
ADT 2030 = N/A
DHV =
D =
T =
V = 30 MPH
FUNCT. CLASS = RURAL LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT BD-5114E = 0.068 MI
LENGTH STRUCTURE TIP PROJECT BD-5114E = 0.019 MI
TOTAL LENGTH OF TIP PROJECT BD-5114E = 0.087 MI

Prepared In the Office of:
VAUGHN & MELTON
1318-F PATTON AVE.
ASHEVILLE, NC, 28806

FOR THE NORTH CAROLINA DIVISION OF HIGHWAYS

2012 STANDARD SPECIFICATIONS

LETTING DATE :
FEBRUARY 12, 2013

REECE SCHULER, PE
PROJECT ENGINEER

HARDY WILLIS, PE
PROJECT DESIGN ENGINEER

STRUCTURES MANAGEMENT UNIT
1000 BIRCH RIDGE DR.
RALEIGH, N.C. 27610

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

JOSH DEYTON P.E.
STATE DESIGN ENGINEER
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

Charlotte,
North Carolina
704-357-0488

Tri-Cities,
Tennessee
423-467-8401

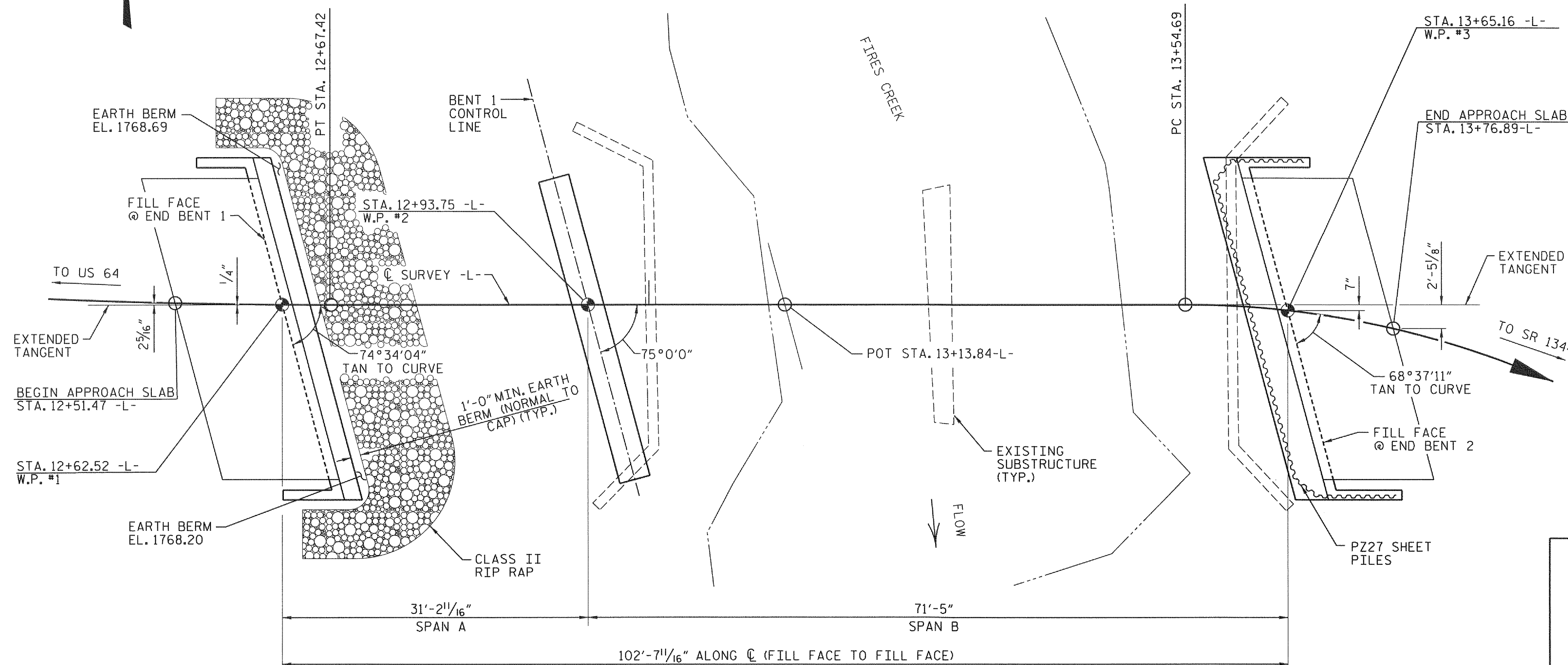
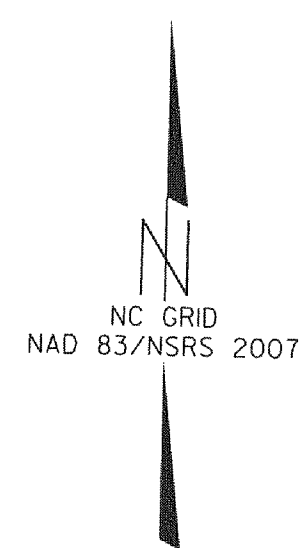
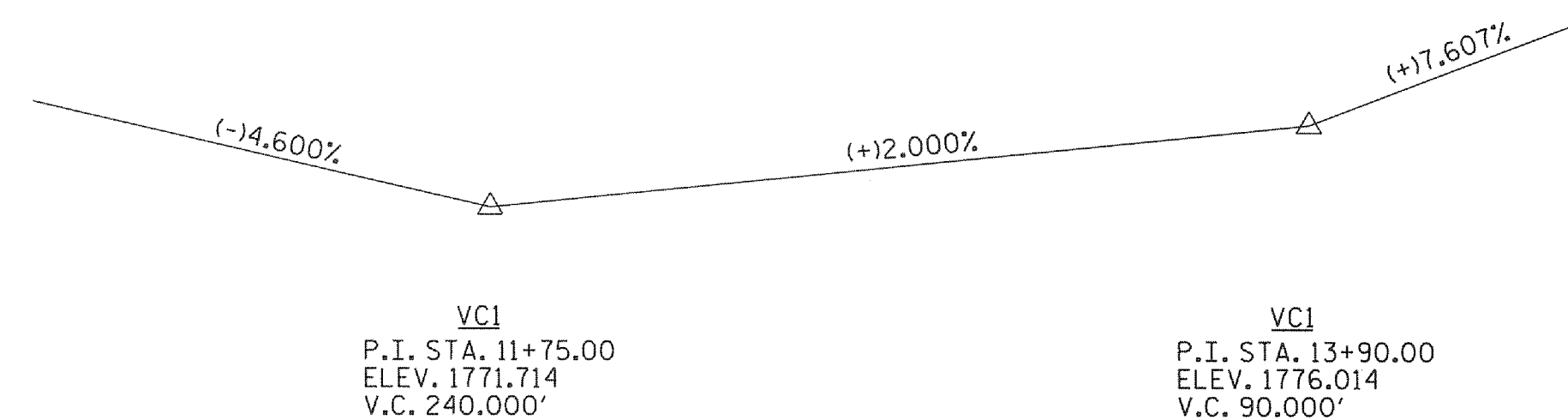
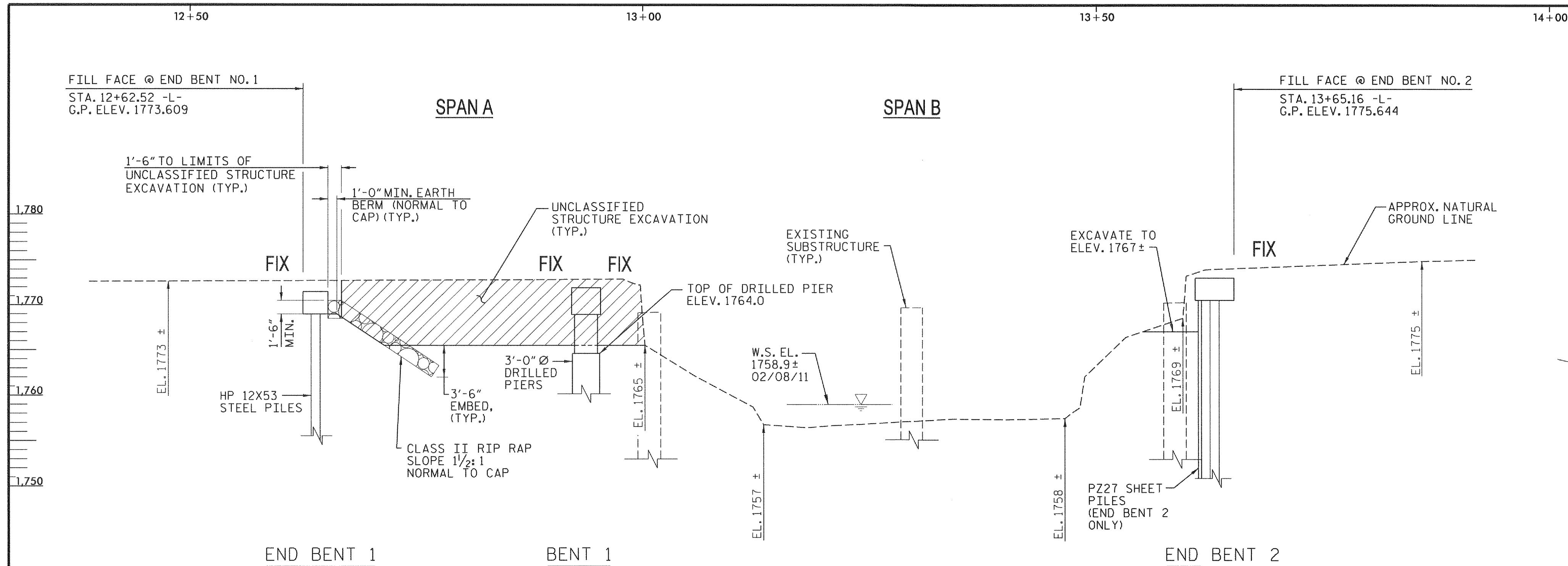
Knoxville,
Tennessee
865-546-5800

Middlesboro,
Kentucky
606-248-6600

Spartanburg,
South Carolina
864-574-4775

Asheville,
North Carolina
828-253-2796

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



PROJECT NO. BD-5114E
CLAY COUNTY
STATION: 13+13.84 -L-
SHEET 1 OF 3 REPLACES BRIDGE NO. 7

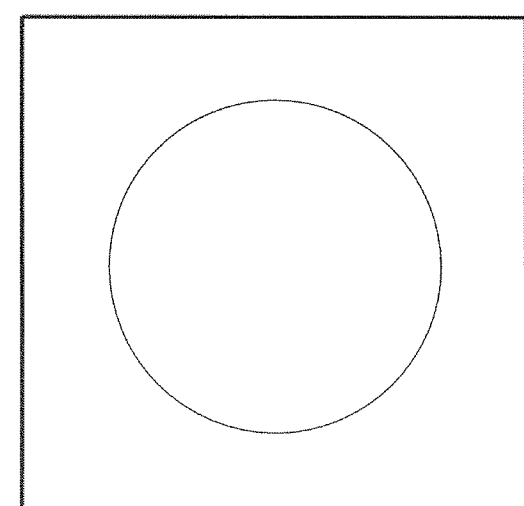
V&M
Vaughn & Melton
Consulting Engineers

Charlotte, North Carolina 704-351-0456
Tri-Cities, Tennessee 423-467-8401
Knoxville, Tennessee 865-546-5800
Asheville, North Carolina 828-253-2196
Spartanburg, South Carolina 864-574-4775

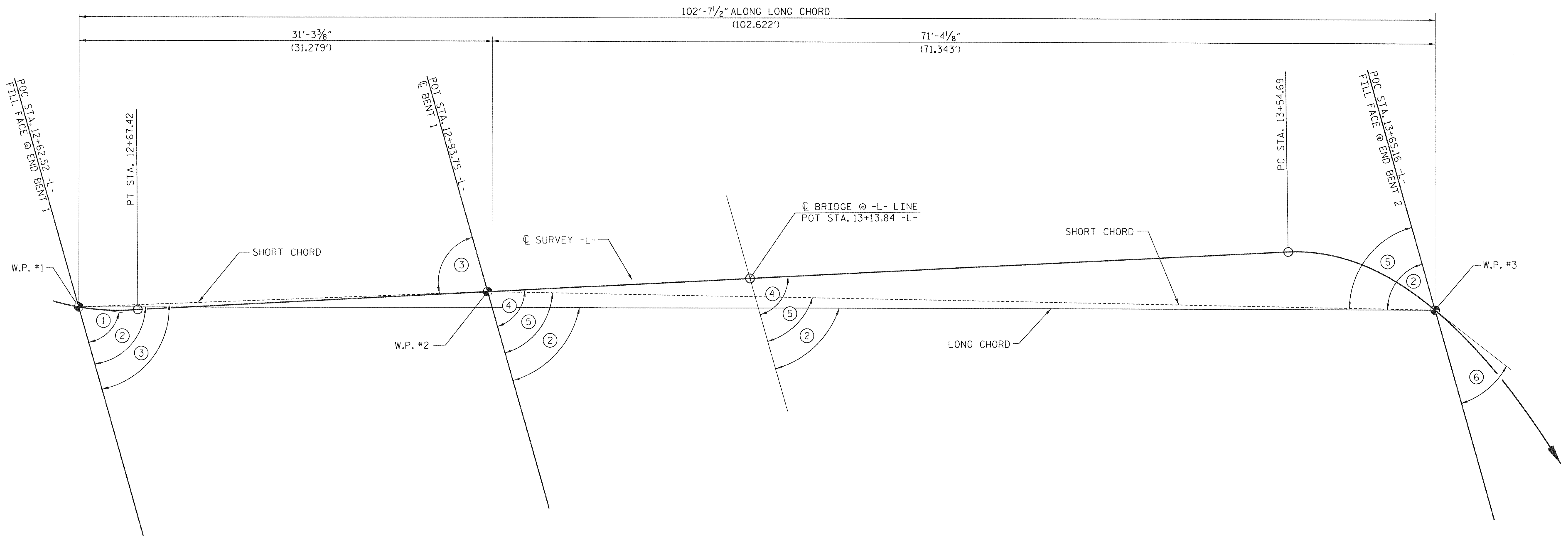
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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING FOR BRIDGE on SR 1300 over FIRES CREEK BETWEEN US 64 AND SR 1344					
AUGUST			2012		
REVISIONS			SHEET NO.		
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
			S-1		
			TOTAL SHEETS 22		

DWN. BY: MAF DATE: AUG. 2012
CHKD. BY: HLW DATE: AUG. 2012

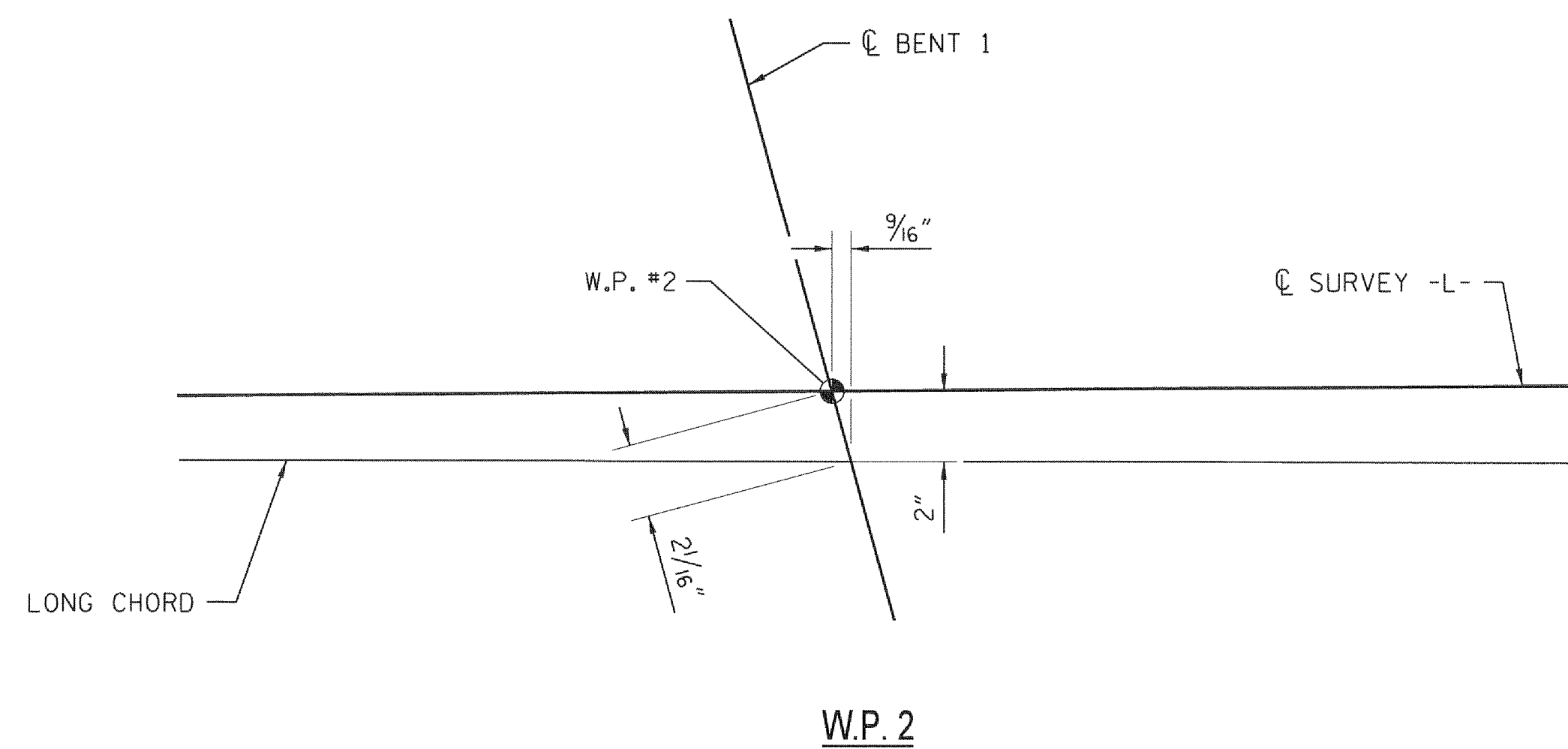


NOTES: END BENTS ARE PARALLEL.
CORED SLABS ARE PARALLEL TO TANGENT PORTION OF CL SURVEY.
PILES NOT SHOWN IN PLAN VIEW FOR CLARITY.



LONG CHORD LAYOUT
NOTE: SCALE IS EXAGGERATED FOR CLARITY.

- ① 74°34'04" TAN TO CURVE, CL SURVEY -L-
- ② 74°39'53" TO LONG CHORD
- ③ 74°57'58" TO SHORT CHORD
- ④ 75°0'0" TO CL SURVEY -L-
- ⑤ 74°31'58" TO SHORT CHORD
- ⑥ 68°37'11" TAN TO CURVE, CL SURVEY -L-

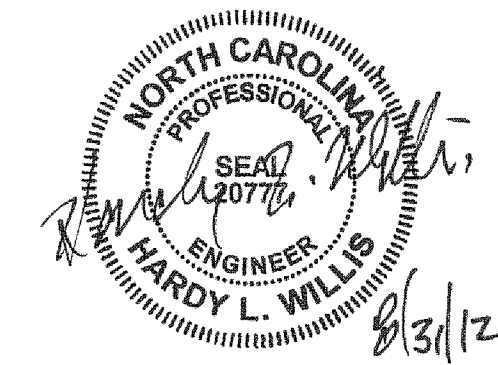


<i>PI Sta. 11+66.58</i>	<i>PI Sta. 14+24.31</i>
$\Delta = 17^{\circ}55'33.1''$ (LT)	$\Delta = 73^{\circ}02'45.7''$ (RT)
$D = 8^{\circ}48'53.0''$	$D = 60^{\circ}57'10.6''$
$L = 203.36'$	$L = 119.84'$
$T = 102.52'$	$T = 69.61'$
$R = 650.00'$	$R = 94.00'$

HORIZONTAL CURVE DATA -L-

PROJECT NO. BD-5114E
CLAY COUNTY
STATION: 13+13.84 -L-

SHEET 2 OF 3



V&M
Vaughn & Melton
Consulting Engineers

Asheville, North Carolina 828-253-2796

Charlotte, North Carolina 704-351-0488

Tri-Cities, Tennessee 423-467-9400

Knoxville, Tennessee 865-546-5800

Middlesboro, Kentucky 606-248-6600

Spartanburg, South Carolina 864-514-4175

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE on SR 1300
over FIRES CREEK
BETWEEN US 64 AND SR 1344

AUGUST 2012

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:		
1			3			S-2	
2			4			TOTAL SHEETS 22	

DWN. BY: MAF
CHKD. BY: HLW

DATE: AUG. 2012
DATE: AUG. 2012

NC GRID
NAD 83/NGRS 2007

12

13

FIRES CREEK

C BRIDGE AT -L- LINE
POT STA. 13+13.84 -L-

EXISTING STRUCTURE

14

TO US 64

-L-

PROPOSED BRIDGE

PROPOSED GUARDRAIL (TYP.)
(ROADWAY PAY ITEM)

TO SR 134A

FOR UTILITY INFORMATION,
SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE "STANDARD NOTES" SHEET.

THE EXISTING STRUCTURE, CONSISTING OF A TWO SPAN BRIDGE, 60-FOOT LONG TIMBER DECK ON STEEL I-BEAMS, 22-FEET WIDE, ON TIMBER END BENTS AND TIMBER INTERIOR BENT ON CONCRETE FOOTING, AND LOCATED AT THE PROPOSED STRUCTURE, SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

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.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 25 FT. 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 LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT 1 FT. BELOW THE GROUND LINE.

	REMOVAL OF EXISTING STRUCTURE	PILE EXCAVATION IN SOIL	PILE EXCAVATION NOT IN SOIL	3'-0" Ø DRILLED PIERS IN SOIL	3'-0" Ø DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASINGS FOR 3'-0" DIA. DRILLED PIER	CSL TESTING	SID INSPECTION	SPT TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL
	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	LUMP SUM	CU. YARDS	LUMP SUM		
SUPERSTRUCTURE												LUMP SUM		
END BENT 1		84.0									14.5		2,181	
BENT 1				27.0	21.0	8.7	1	1	1		16.6		7,676	1,168
END BENT 2		98.0	27.0								22.0		2,740	
TOTAL	LUMP SUM	182.0	27.0	27.0	21.0	8.7	1	1	1	LUMP SUM	53.1	LUMP SUM	12,957	1,168

HP 12 X 53 STEEL PILES		18" STEEL SHEET PILES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" x 1'-9" PRESTRESSED CONCRETE CORED SLABS		3'-0" x 2'-0" PRESTRESSED CONCRETE CORED SLABS	
NO.	LIN. FT.	SO. FT.	LIN. FT.	TONS	SO. YARDS	LUMP SUM	NO.	LIN. FT.	NO.	LIN. FT.
			200.51			LUMP SUM	11	330.0	11	770.0
7	105			155	172					
7	105	685								
14	210	685	200.51	155	172	LUMP SUM	11	330.0	11	770.0

DESIGN DISCHARGE	= 3800 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 1768.3 FT
BASE DISCHARGE	= 5400 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 1770.3 FT

OVERTOPPING DISCHARGE = >7200 CFS
OVERTOPPING FREQUENCY = 500+ YRS
OVERTOPPING ELEVATION = 1773.4 FT
DRAINAGE AREA = 22.8 SQ. MI.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED, THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPlice OF THIRTY BAR DIAMETERS, PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.



DWN. BY: MAF	DATE: AUG. 2012
CHKD. BY: HLW	DATE: AUG. 2012

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	1.223	--	1.75	0.278	1.87	30'	EL	14.482	0.629	1.22	30'	EL	1.448	0.80	0.278	1.60	30'	EL	14.482	
		HL-93(0pr)	N/A	--	1.586	--	1.35	0.278	2.42	30'	EL	14.482	0.629	1.59	30'	EL	1.448	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.396	50.263	1.75	0.278	2.57	30'	EL	11.586	0.629	1.4	30'	EL	1.448	0.80	0.278	2.23	30'	EL	11.586	
		HS-20(0pr)	36.000	--	1.81	65.156	1.35	0.278	3.34	30'	EL	11.586	0.629	1.81	30'	EL	1.448	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.415	46.108	1.4	0.278	5.27	30'	EL	14.482	0.629	3.42	30'	EL	1.448	0.80	0.278	3.61	30'	EL	14.482	
		SNGARBS2	20.000	--	2.643	52.856	1.4	0.278	4.6	30'	EL	11.586	0.629	2.64	30'	EL	1.448	0.80	0.278	3.19	30'	EL	11.586	
		SNAGRIS2	22.000	--	2.546	56.012	1.4	0.278	4.68	30'	EL	11.586	0.629	2.55	30'	EL	1.448	0.80	0.278	3.25	30'	EL	11.586	
		SNCOTTS3	27.250	--	1.725	47.014	1.4	0.278	2.64	30'	EL	14.482	0.629	1.73	30'	EL	1.448	0.80	0.278	1.81	30'	EL	14.482	
		SNAGGRS4	34.925	--	1.588	55.465	1.4	0.278	2.55	30'	EL	14.482	0.629	1.59	30'	EL	1.448	0.80	0.278	1.74	30'	EL	14.482	
		SNS5A	35.550	--	1.684	59.866	1.4	0.278	2.46	30'	EL	14.482	0.629	1.68	30'	EL	1.448	0.80	0.278	1.69	30'	EL	14.482	
		SNS6A	39.950	--	1.583	63.244	1.4	0.278	2.33	30'	EL	14.482	0.629	1.58	30'	EL	1.448	0.80	0.278	1.60	30'	EL	14.482	
	TTST	SNS7B	42.000	--	1.552	65.191	1.4	0.278	2.26	30'	EL	14.482	0.629	1.62	30'	EL	1.448	0.80	0.278	1.55	30'	EL	14.482	
		TNAGRIT3	33.000	--	1.881	62.062	1.4	0.278	3.02	30'	EL	14.482	0.629	1.88	30'	EL	1.448	0.80	0.278	2.07	30'	EL	14.482	
		TNT4A	33.075	--	1.75	57.88	1.4	0.278	2.86	30'	EL	14.482	0.629	1.75	30'	EL	1.448	0.80	0.278	1.97	30'	EL	14.482	
		TNT6A	41.600	--	1.691	70.356	1.4	0.278	2.6	30'	EL	14.482	0.629	1.69	30'	EL	1.448	0.80	0.278	1.78	30'	EL	14.482	
		TNT7A	42.000	--	1.609	67.589	1.4	0.278	2.69	30'	EL	14.482	0.629	1.61	30'	EL	1.448	0.80	0.278	1.84	30'	EL	14.482	
		TNT7B	42.000	--	1.571	66.001	1.4	0.278	2.53	30'	EL	14.482	0.629	1.57	30'	EL	1.448	0.80	0.278	1.74	30'	EL	14.482	
		TNAGRIT4	43.000	--	1.52	65.345	1.4	0.278	2.62	30'	EL	14.482	0.629	1.52	30'	EL	1.448	0.80	0.278	1.80	30'	EL	14.482	
		TNAGT5A	45.000	--	1.63	73.366	1.4	0.278	2.55	30'	EL	14.482	0.629	1.63	30'	EL	1.448	0.80	0.278	1.75	30'	EL	14.482	
		TNAGT5B	45.000	3	1.431	64.38	1.4	0.278	2.45	30'	EL	11.586	0.629	1.43	30'	EL	1.448	0.80	0.278	1.69	30'	EL	11.586	

LOAD FACTORS:

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

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.
ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

-
-
-
-

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

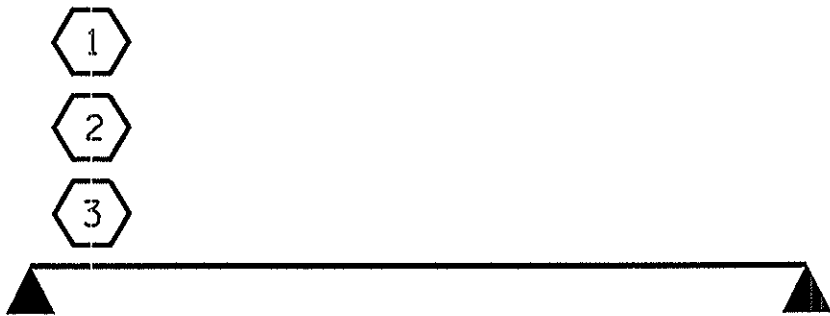
2 DESIGN LOAD RATING (HS-20)

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. BD-5114E
CLAY COUNTY
STATION: 13+13.84 -L-

SHEET 1 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
30' CORED SLAB UNIT
75° SKEW
(NON-INTERSTATE TRAFFIC)

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

ASSEMBLED BY :	A. SORSENGINH	DATE :	8/12/2011
CHECKED BY :	H. KIM	DATE :	2/2012
DRAWN BY :	CVC	6/10	
CHECKED BY :	DNS	6/10	

LOAD FACTORS:

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

NOTES:

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

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

COMMENTS:

1.

2.

3.

4.

1

2

3

CONTROLLING LOAD RATING

DESIGN LOAD RATING (HL-93)

DESIGN LOAD RATING (HS-20)

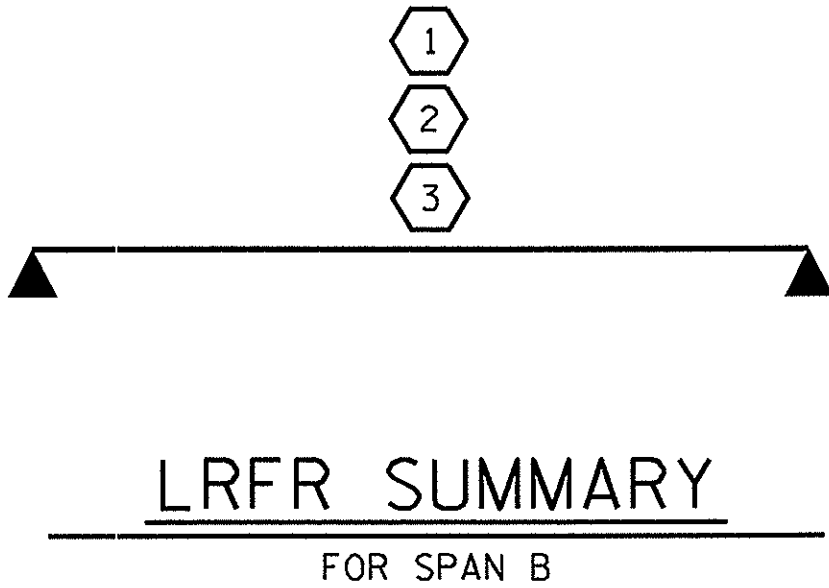
LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER

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	1.014	--	1.75	0.269	1.04	70'	EL	34.482	0.608	1.1	70'	EL	3.448	0.80	0.269	1.01	70'	EL	34.482		
	HL-93(0pr)	N/A	--	1.355	--	1.35	0.269	1.35	70'	EL	34.482	0.608	1.43	70'	EL	3.448	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.315	47.356	1.75	0.269	1.36	70'	EL	34.482	0.608	1.38	70'	EL	3.448	0.80	0.269	1.32	70'	EL	34.482		
	HS-20(0pr)	36.000	--	1.757	63.236	1.35	0.269	1.76	70'	EL	34.482	0.608	1.79	70'	EL	3.448	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.938	39.656	1.4	0.269	3.78	70'	EL	34.482	0.608	4.12	70'	EL	3.448	0.80	0.269	2.94	70'	EL	34.482	
		SNGARBS2	20.000	--	2.203	44.052	1.4	0.269	2.84	70'	EL	34.482	0.608	2.93	70'	EL	3.448	0.80	0.269	2.20	70'	EL	34.482	
		SNAGRIS2	22.000	--	2.092	46.016	1.4	0.269	2.69	70'	EL	34.482	0.608	2.72	70'	EL	3.448	0.80	0.269	2.09	70'	EL	34.482	
		SNCOTTS3	27.250	--	1.462	39.844	1.4	0.269	1.88	70'	EL	34.482	0.608	2.06	70'	EL	3.448	0.80	0.269	1.46	70'	EL	34.482	
		SNAGGRS4	34.925	--	1.227	42.856	1.4	0.269	1.58	70'	EL	34.482	0.608	1.71	70'	EL	3.448	0.80	0.269	1.23	70'	EL	34.482	
		SNS5A	35.550	--	1.2	42.646	1.4	0.269	1.54	70'	EL	34.482	0.608	1.73	70'	EL	3.448	0.80	0.269	1.20	70'	EL	34.482	
		SNS6A	39.950	--	1.103	44.058	1.4	0.269	1.42	70'	EL	34.482	0.608	1.58	70'	EL	3.448	0.80	0.269	1.10	70'	EL	34.482	
		SNS7B	42.000	--	1.05	44.113	1.4	0.269	1.35	70'	EL	34.482	0.608	1.55	70'	EL	3.448	0.80	0.269	1.05	70'	EL	34.482	
	TTST	TNAGRIT3	33.000	--	1.345	44.401	1.4	0.269	1.73	70'	EL	34.482	0.608	1.88	70'	EL	3.448	0.80	0.269	1.35	70'	EL	34.482	
		TNT4A	33.075	--	1.352	44.717	1.4	0.269	1.74	70'	EL	34.482	0.608	1.83	70'	EL	3.448	0.80	0.269	1.35	70'	EL	34.482	
		TNT6A	41.600	--	1.108	46.073	1.4	0.269	1.43	70'	EL	34.482	0.608	1.65	70'	EL	3.448	0.80	0.269	1.11	70'	EL	34.482	
		TNT7A	42.000	--	1.114	46.794	1.4	0.269	1.43	70'	EL	34.482	0.608	1.62	70'	EL	3.448	0.80	0.269	1.11	70'	EL	34.482	
		TNT7B	42.000	--	1.155	48.526	1.4	0.269	1.49	70'	EL	34.482	0.608	1.51	70'	EL	3.448	0.80	0.269	1.16	70'	EL	34.482	
		TNAGRIT4	43.000	--	1.097	47.174	1.4	0.269	1.41	70'	EL	34.482	0.608	1.46	70'	EL	3.448	0.80	0.269	1.10	70'	EL	34.482	
TNAGT5A	45.000	--	1.033	46.505	1.4	0.269	1.33	70'	EL	34.482	0.608	1.45	70'	EL	3.448	0.80	0.269	1.03	70'	EL	34.482			
TNAGT5B	45.000	3	1.02	45.905	1.4	0.269	1.31	70'	EL	34.482	0.608	1.39	70'	EL	3.448	0.80	0.269	1.02	70'	EL	34.482			



ASSEMBLED BY :	A. SORSENGINH	DATE :	8/12/2011
CHECKED BY :	H. KIM	DATE :	2/2012
DRAWN BY :	CVC	6/10	
CHECKED BY :	DNS	6/10	

31-JUL-2012 11:21
R:\structures\Final Plans\BD-5114E..SD_LRFR.dgn
jduggins

PROJECT NO. BD-5114E
CLAY COUNTY
STATION: 13+13.84 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR
70' CORED SLAB UNIT
75° SKEW
(NON-INTERSTATE TRAFFIC)

REVISIONS

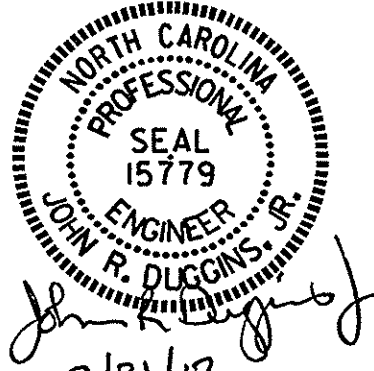
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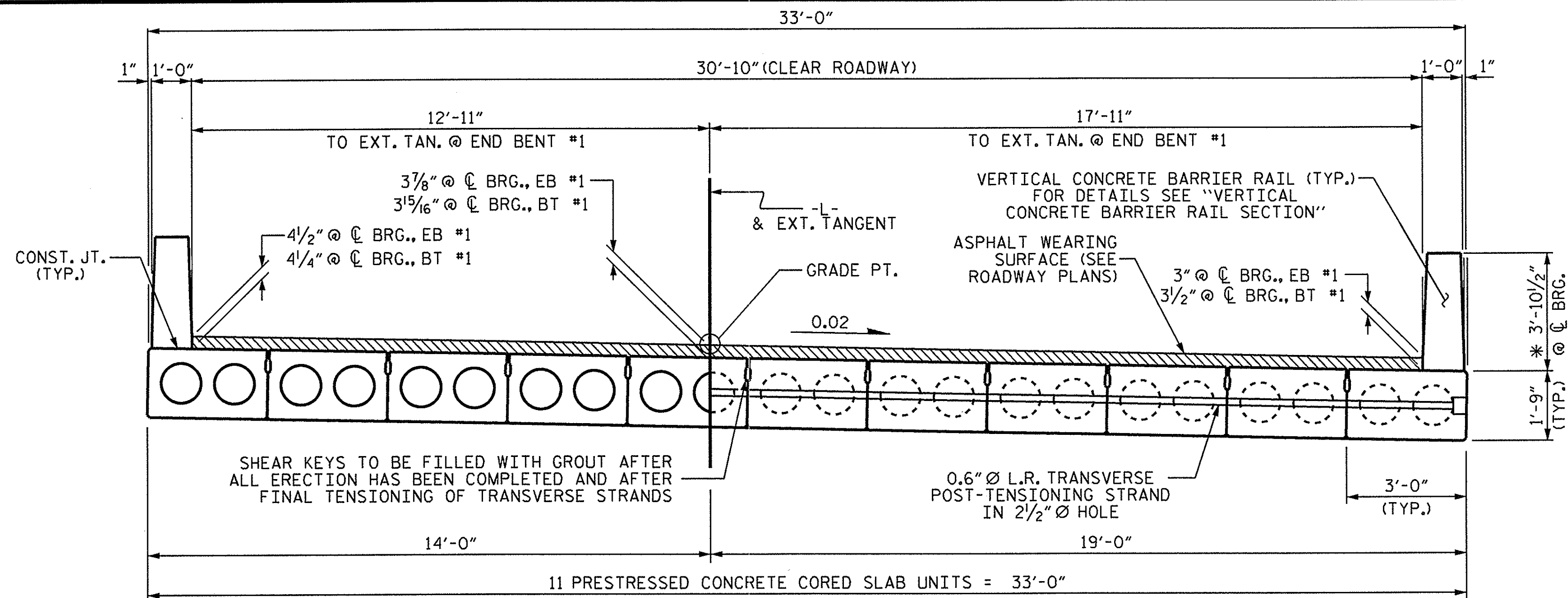
SHEET NO.

S-5

TOTAL SHEETS

22



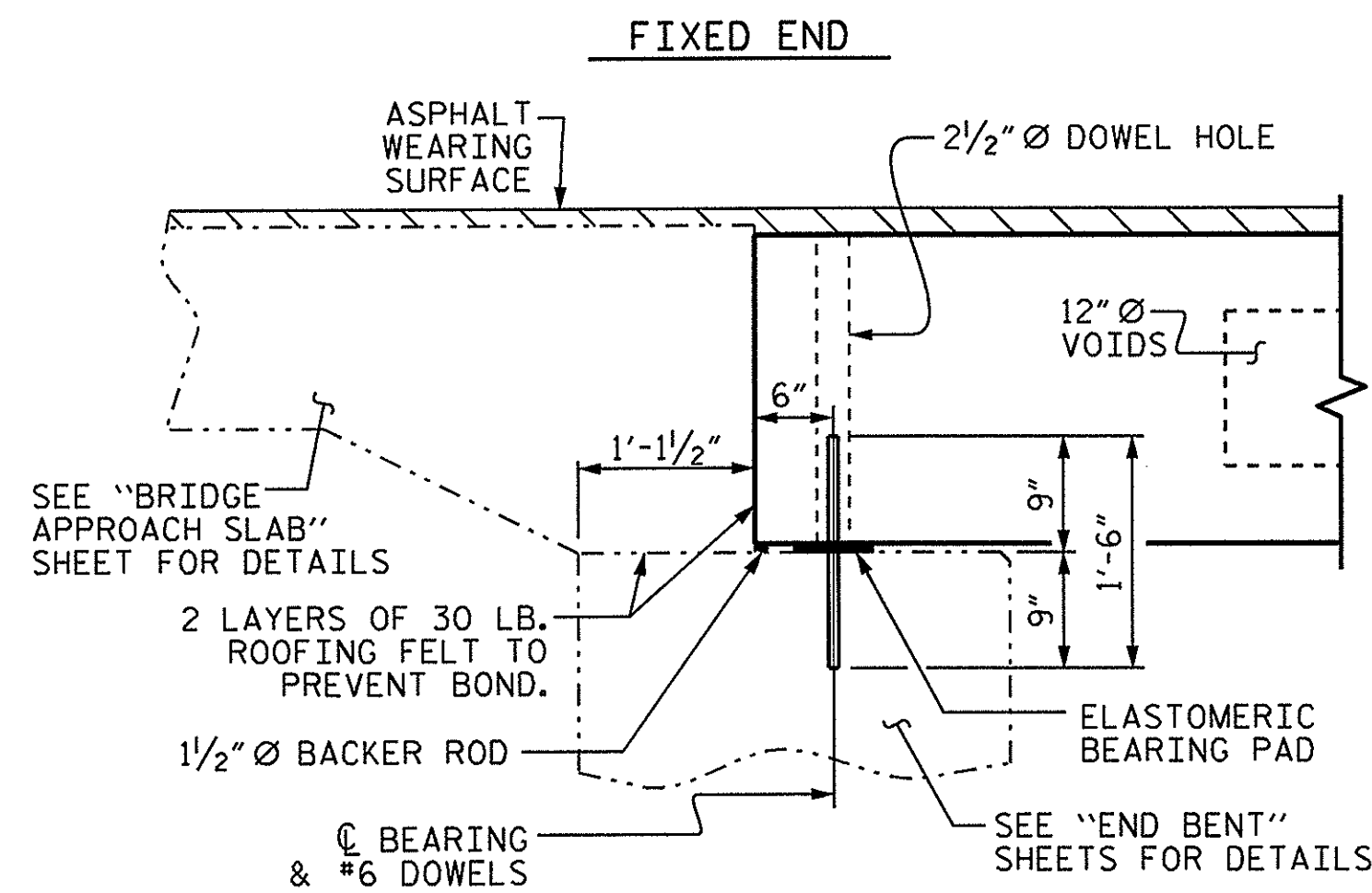


HALF SECTION
THROUGH VOIDS

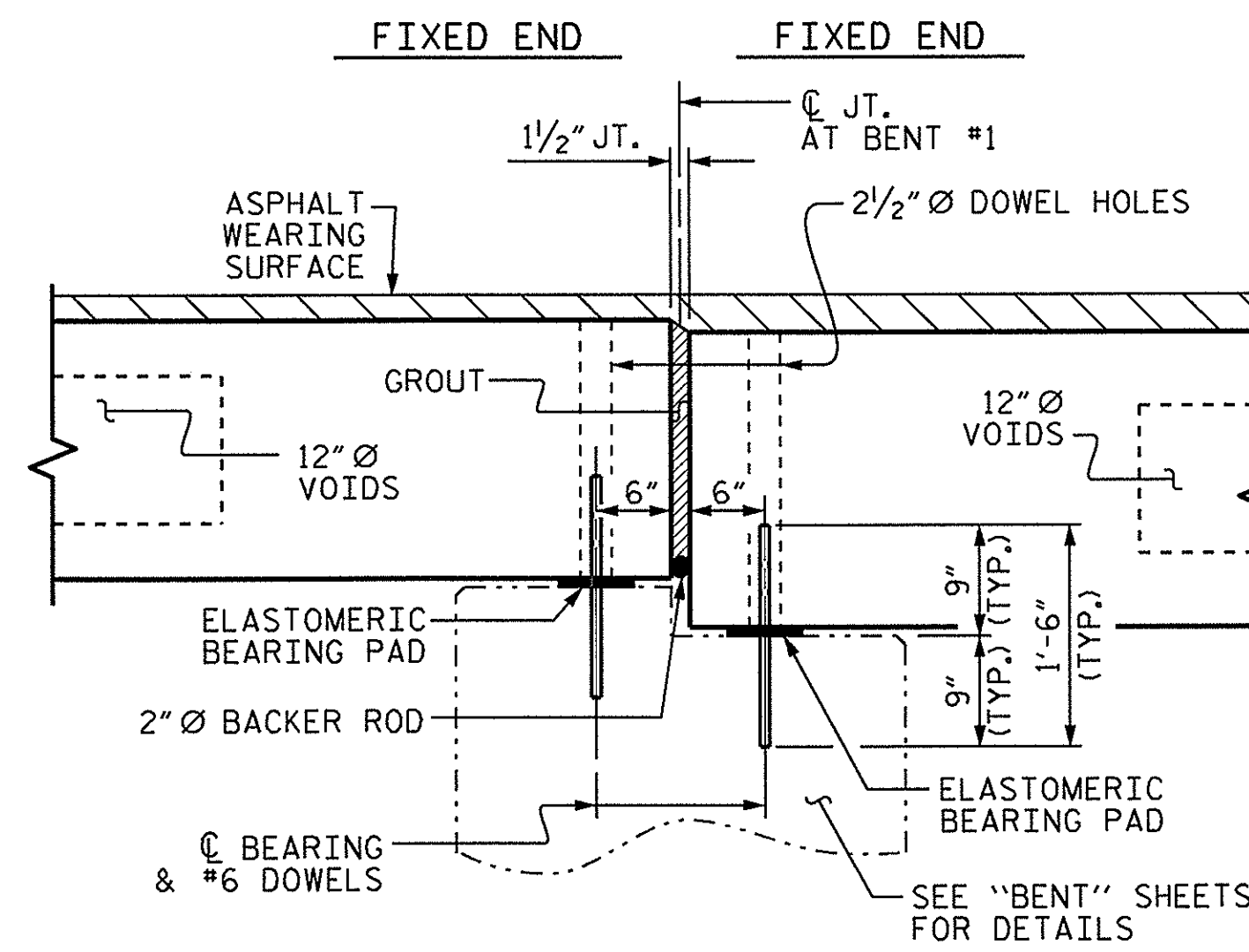
HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

TYPICAL SECTION

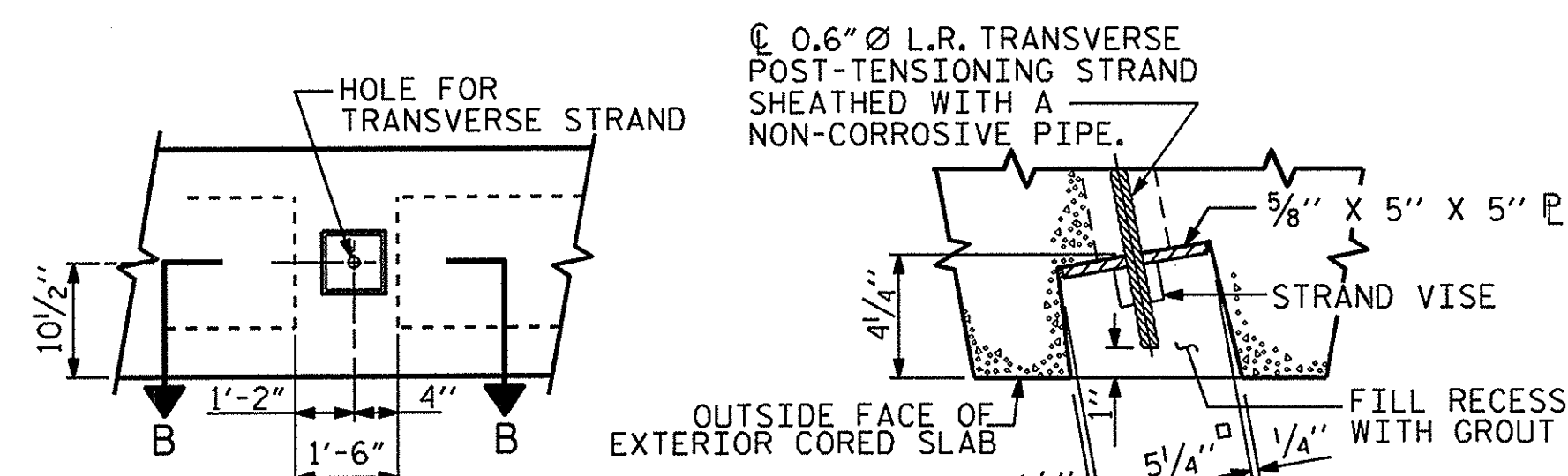
* - THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.



SECTION AT END BENT



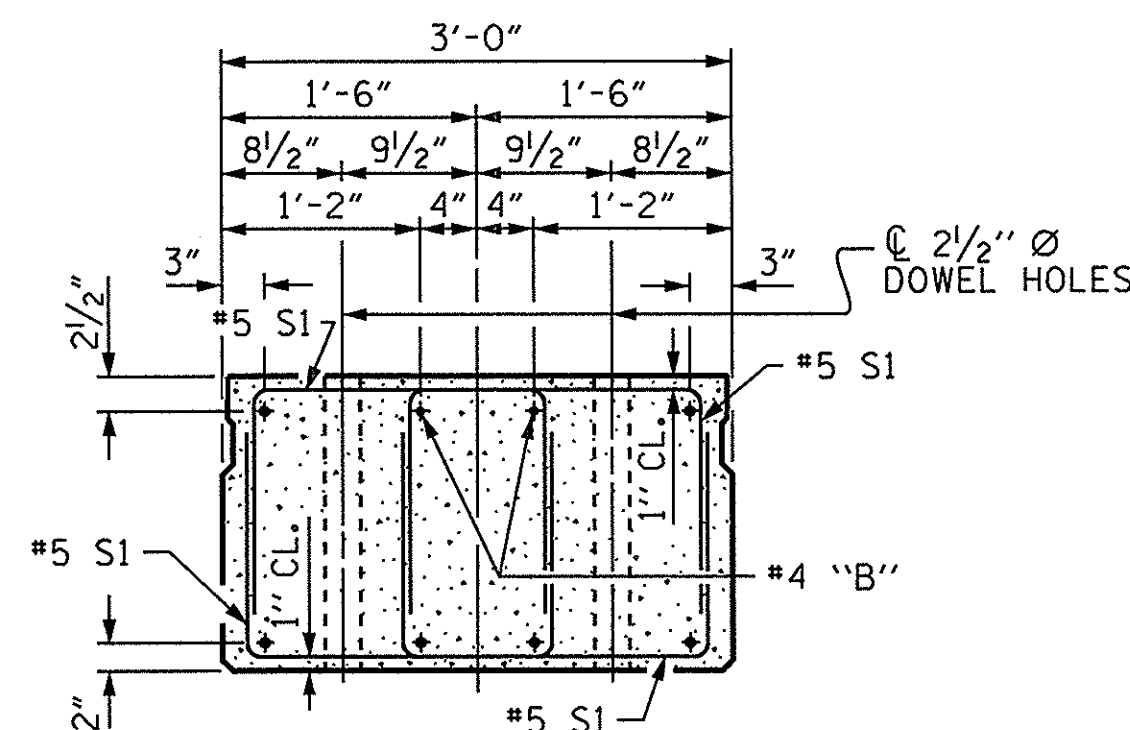
SECTION AT BENT No. 1



ELEVATION VIEW

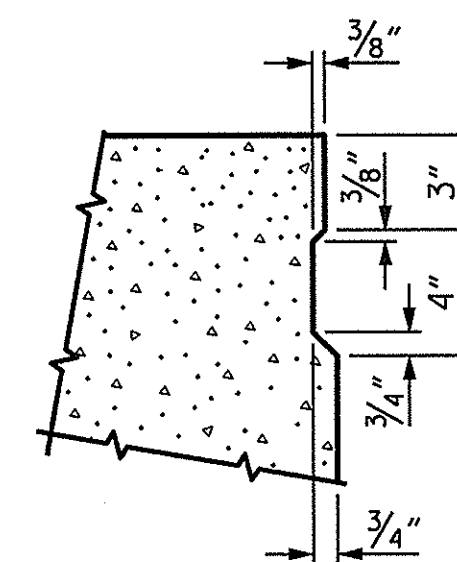
SECTION B-B

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



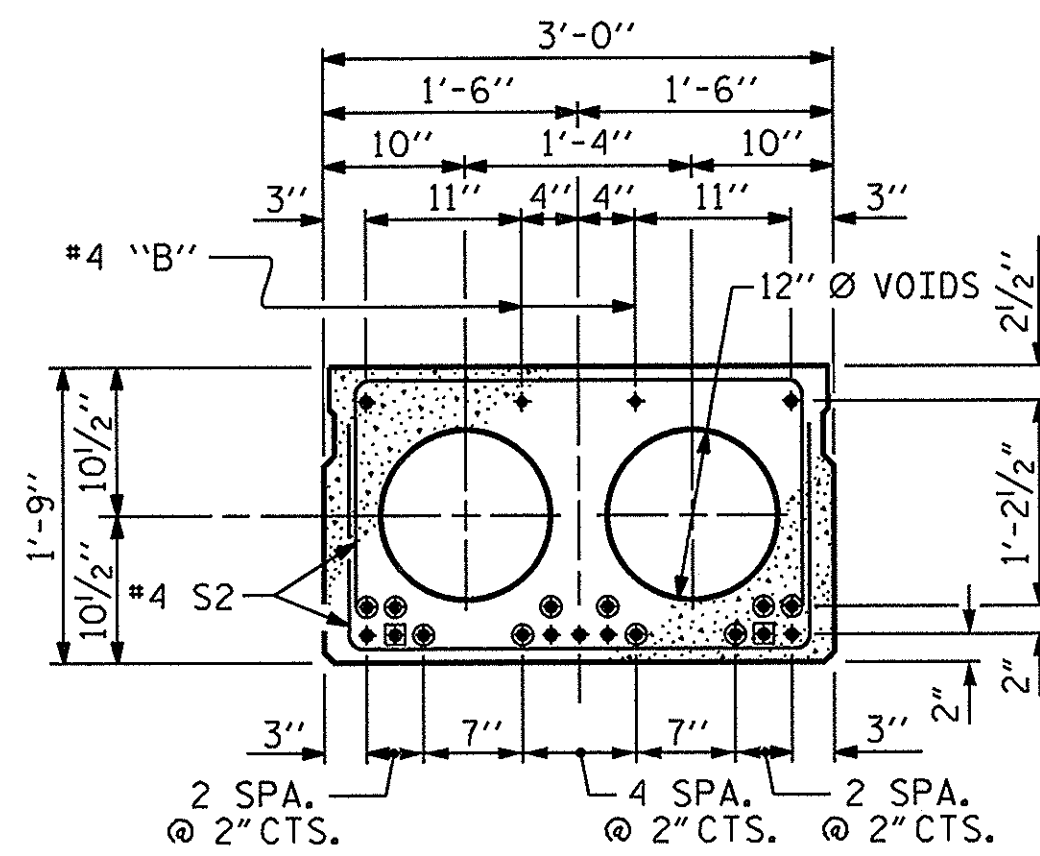
END ELEVATION

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

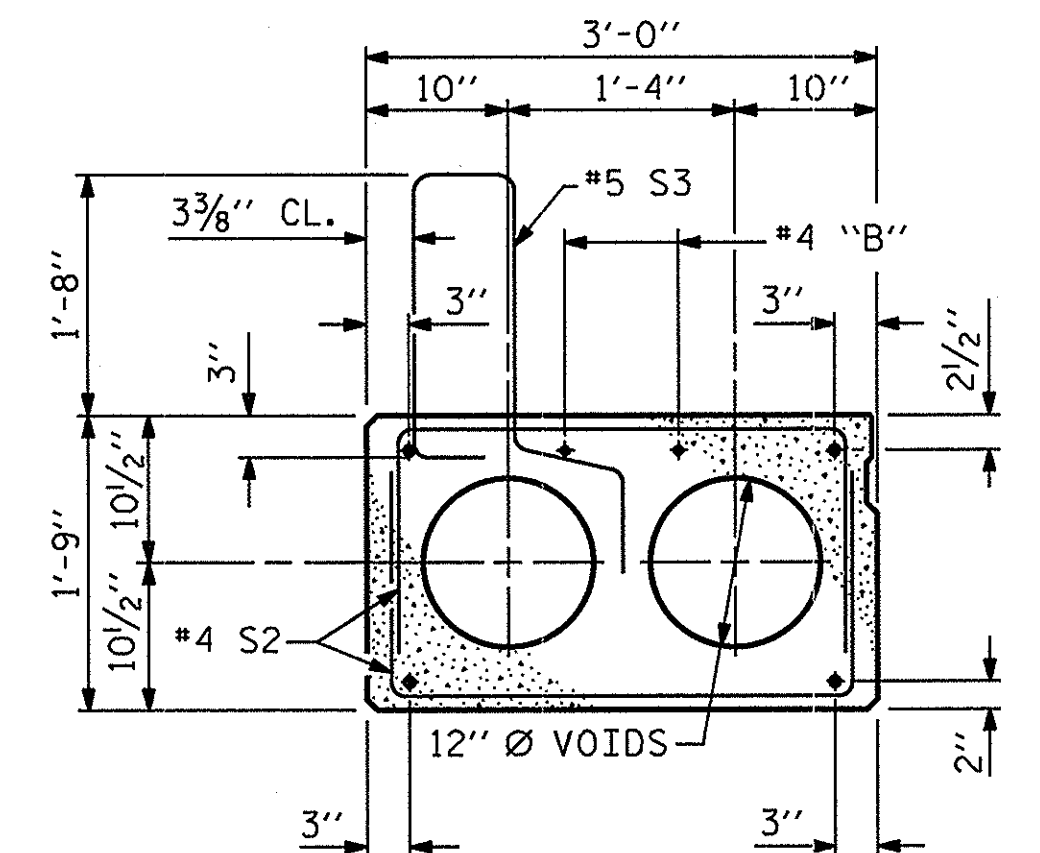


SHEAR KEY DETAIL

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



INTERIOR SLAB SECTION (30' UNIT)
(9 STRANDS REQUIRED)



EXTERIOR 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.
- BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 2'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND

PROJECT NO. BD-5114E
CLAY COUNTY
STATION: 13+13.84 -L-

SHEET 1 OF 3

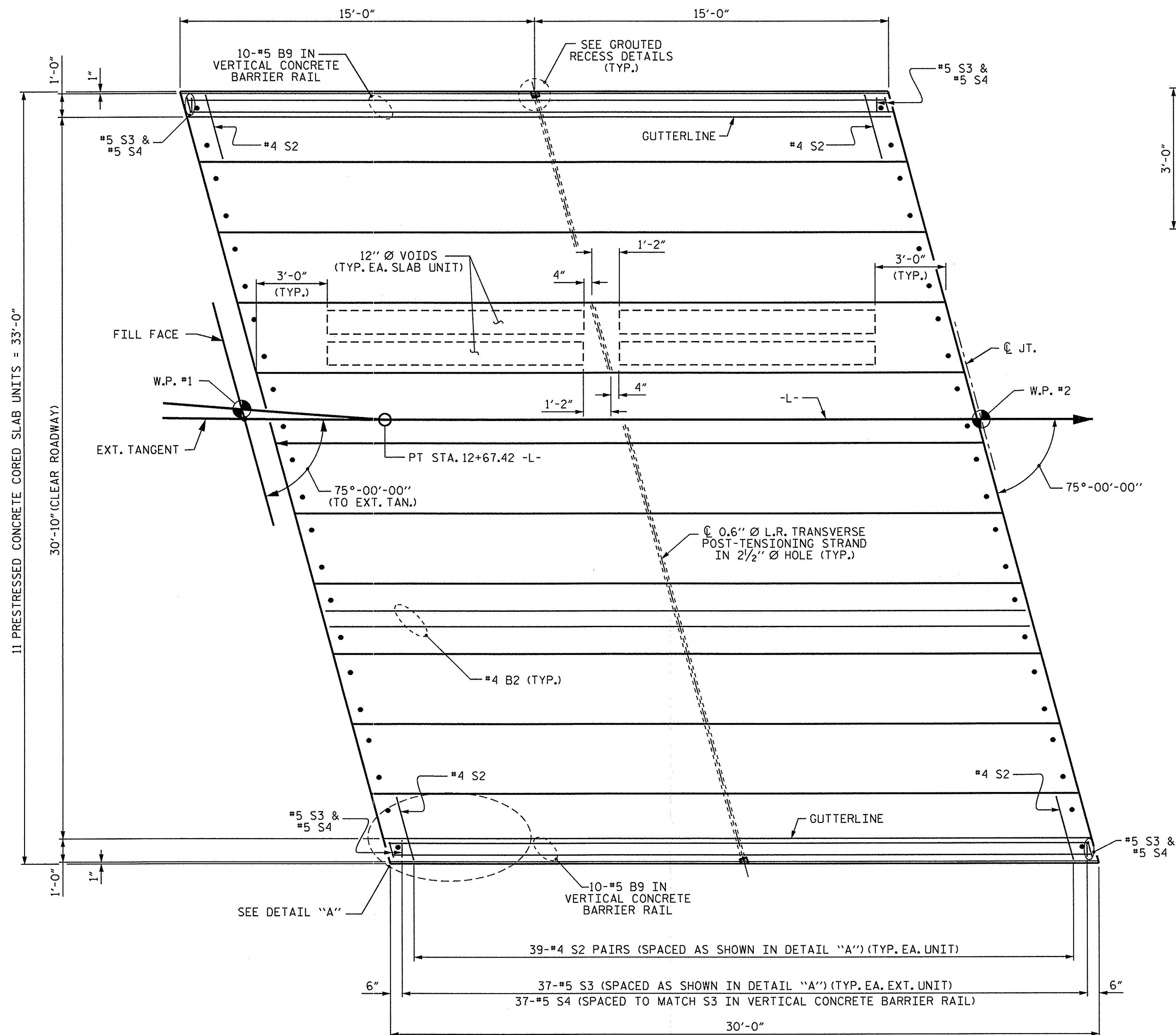
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
SPAN A

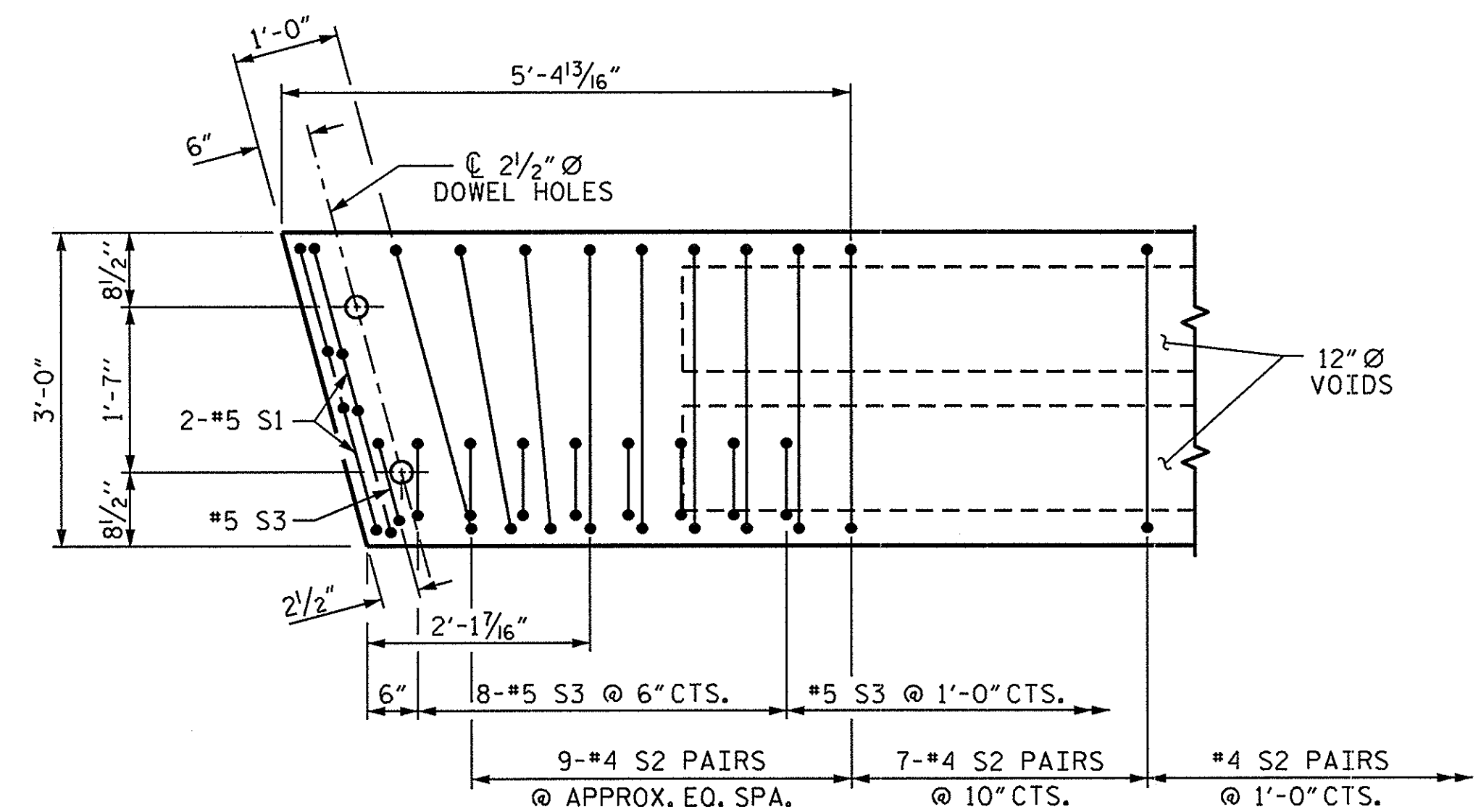
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-6
2			4			TOTAL SHEETS 22

NORTH CAROLINA
PROFESSIONAL
SEAL
15779
ENGINEER
JOHN R. DUGGINS JR.
7/31/12

ASSEMBLED BY: A. SORSENGINH DATE: 8/11/2011
CHECKED BY: H. KIM DATE: 2/2012
DRAWN BY: DGE 3/09
CHECKED BY: BCH 3/09

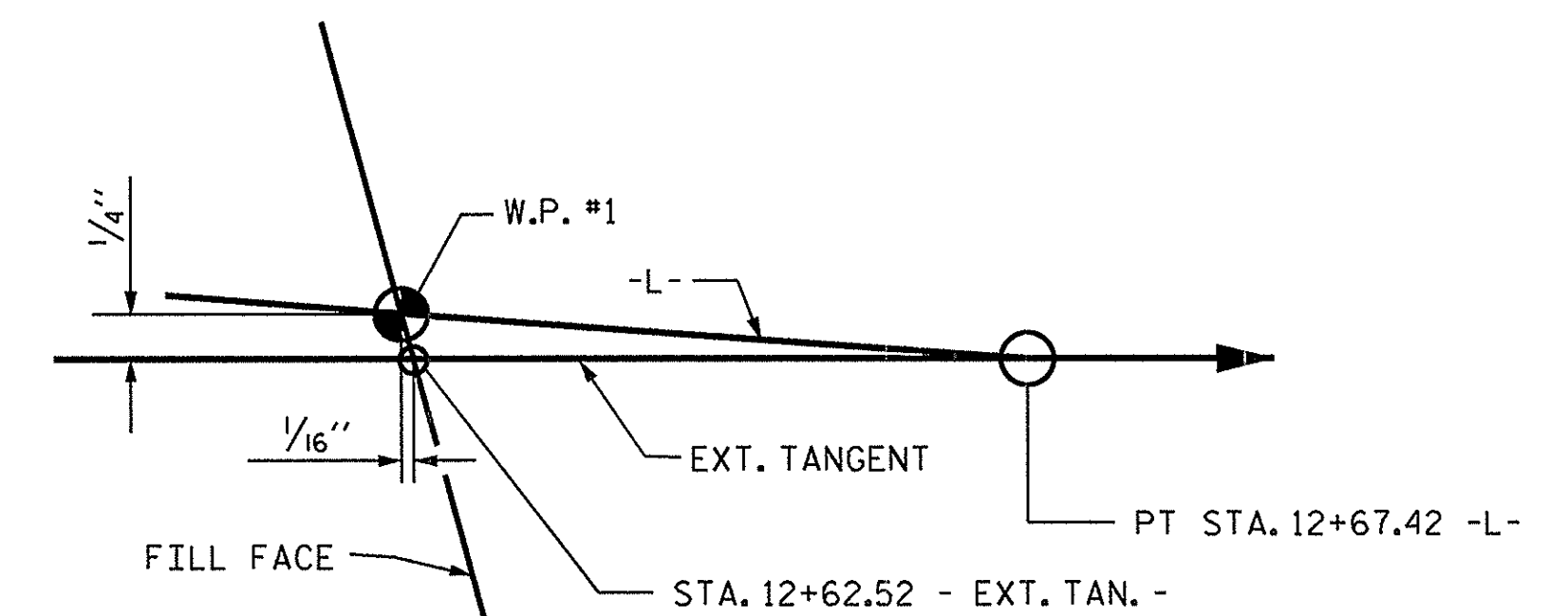


PLAN OF UNIT



DETAIL "A"

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



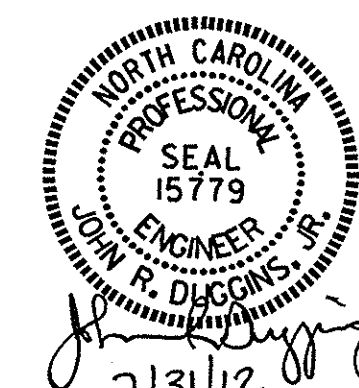
EXTENDED TANGENT LAYOUT

PROJECT NO. BD-5114E
CLAY COUNTY
 STATION: 13+13.84 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

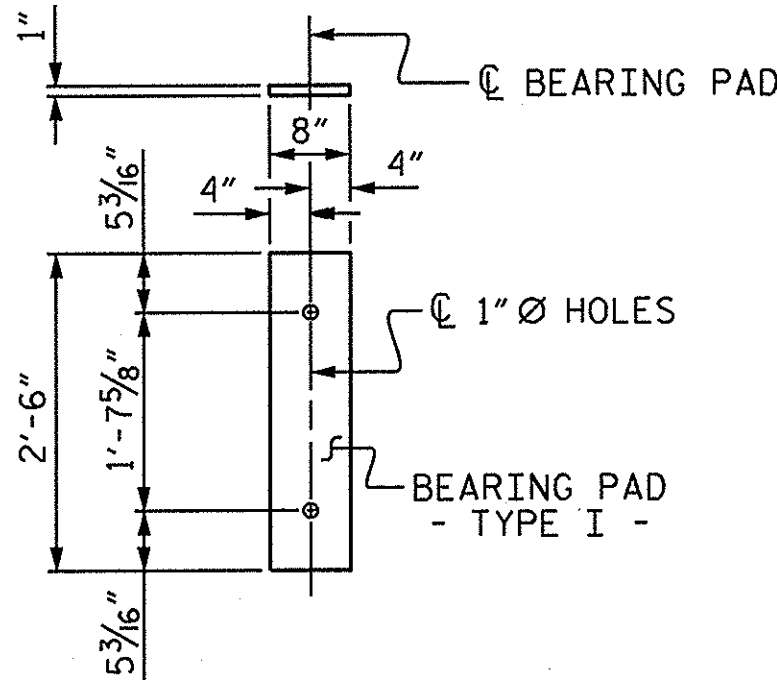
PLAN OF 30' UNIT
 30'-10" CLEAR ROADWAY
 75° SKEW



ASSEMBLED BY : A. SORSENGINH DATE : 8/11/2011
 CHECKED BY : H. KIM DATE : 2/2012
 DRAWN BY : DGE 3/09
 CHECKED BY : BCH 3/09

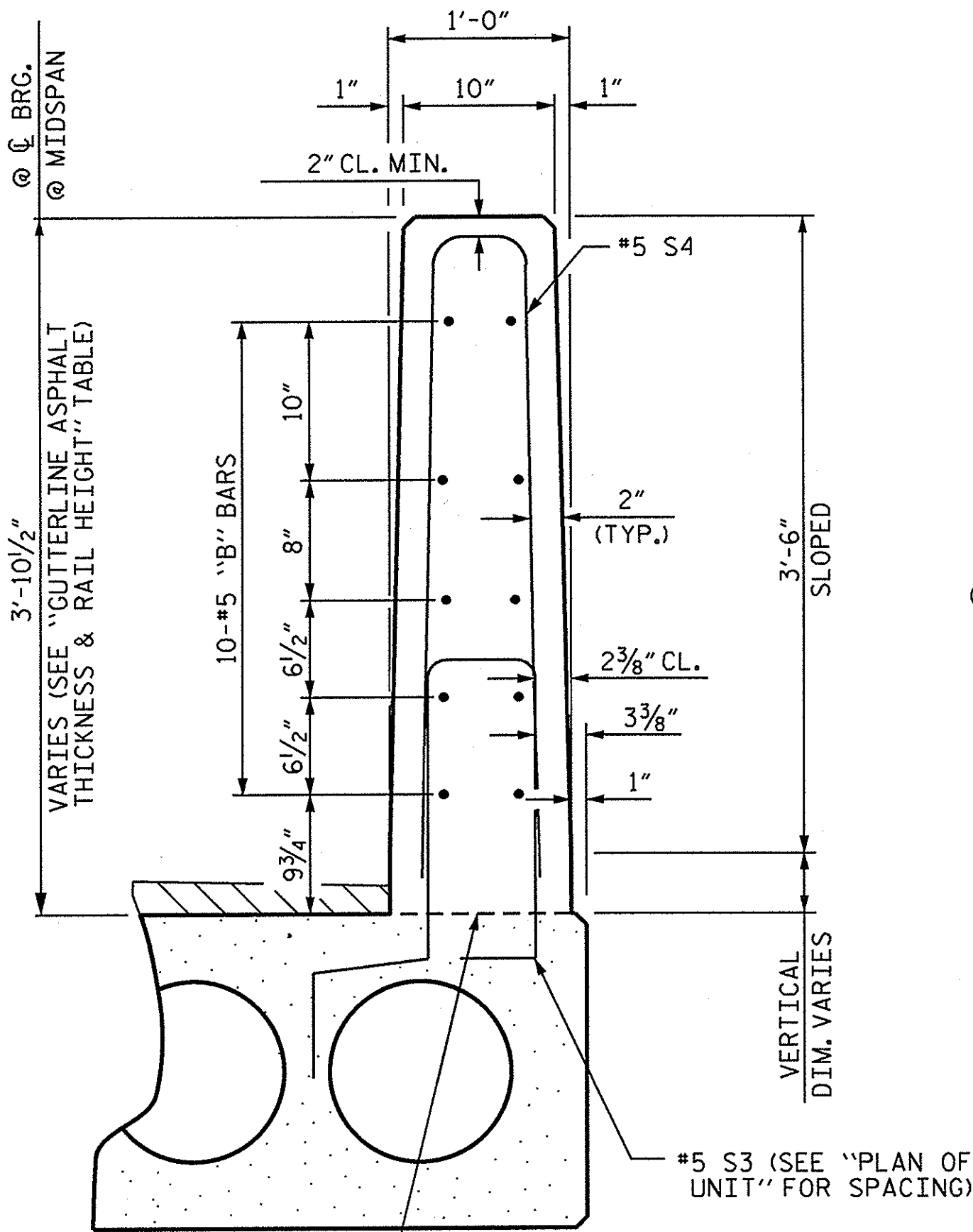
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-7
2			4			TOTAL SHEETS 22

GRADE 270 STRANDS	
0.6" Ø L.R.	
AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950



ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

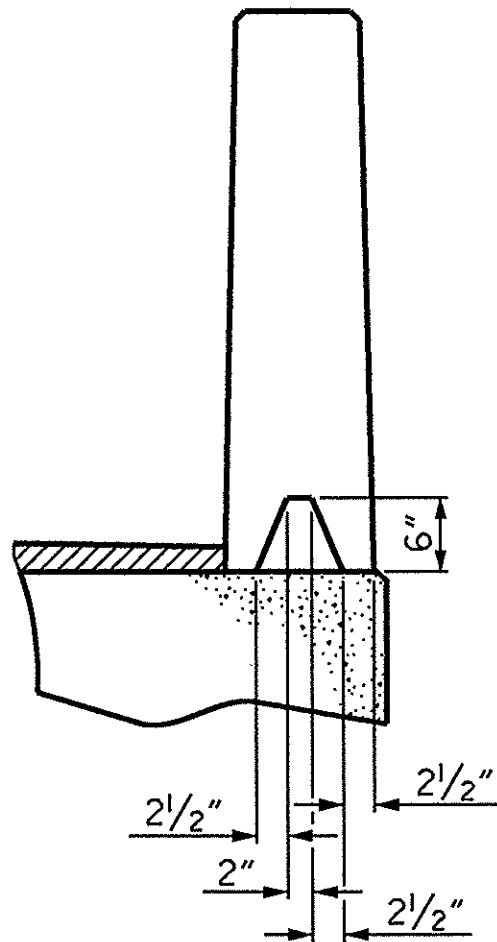


SECTION THRU RAIL

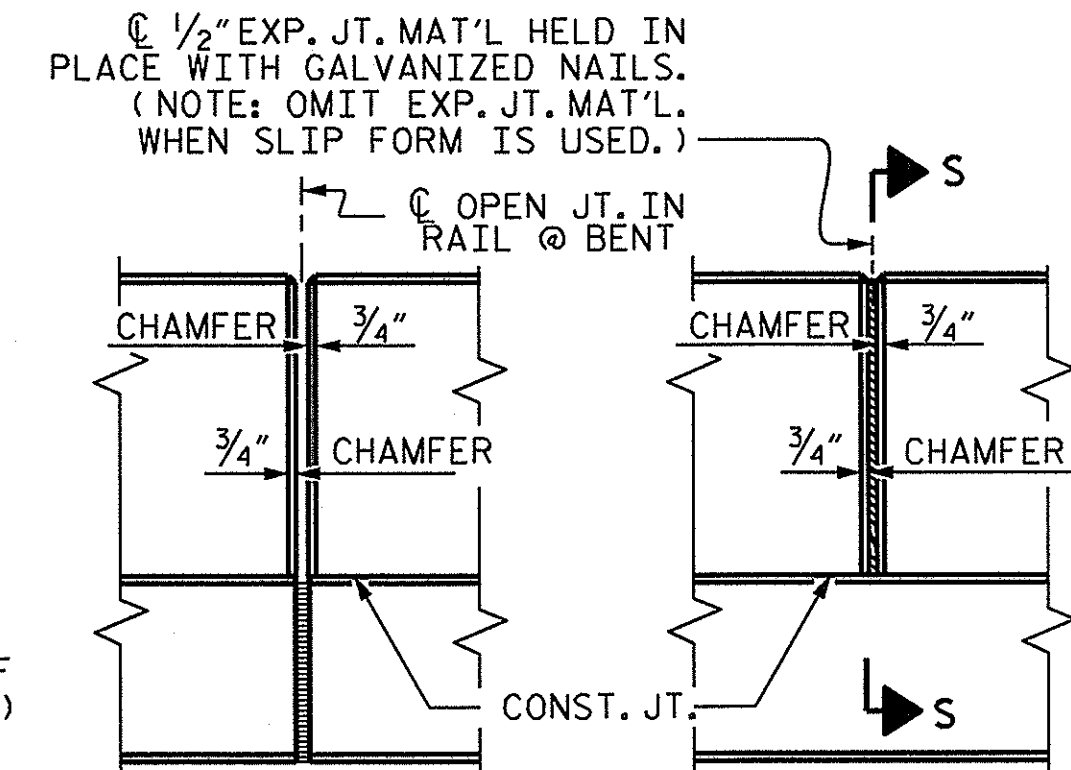
BILL OF MATERIAL FOR ONE 30' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
B2	2	#4	STR	29'-7"	40	29'-7"	40
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	78	#4	3	5'-4"	278	5'-4"	278
* S3	39	#5	1	6'-2"	251		
REINFORCING STEEL				LBS.	353		353
* EPOXY COATED REINFORCING STEEL				LBS.	251		
5000 P.S.I. CONCRETE				CU. YDS.	4.5		4.5
0.6" Ø L.R. STRANDS				No.	9		9

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

** INCLUDES FUTURE WEARING SURFACE

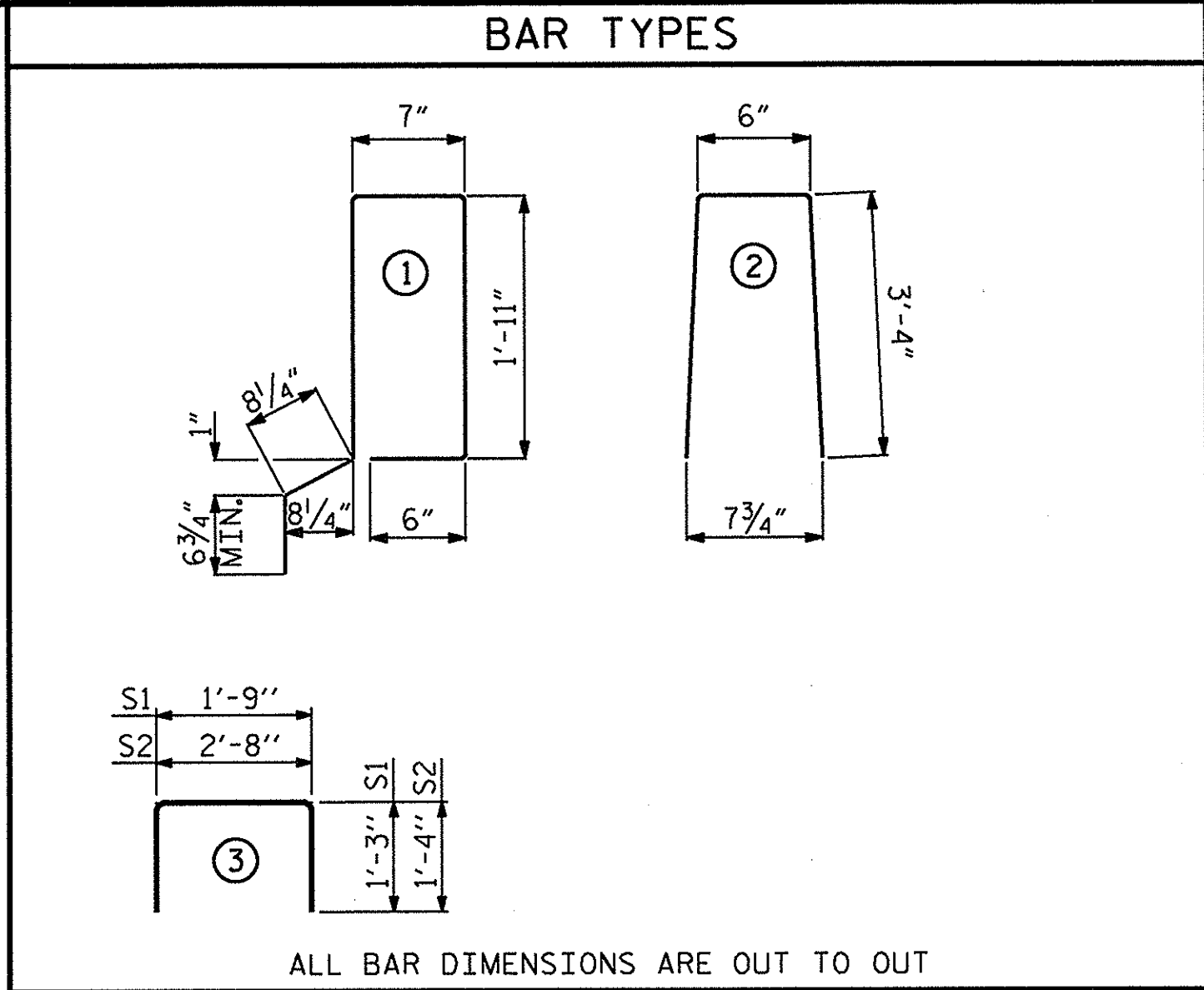


SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS

VERTICAL CONCRETE BARRIER RAIL DETAILS



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	30' UNIT					
* B9	20	20	#5	STR	29'-6"	615
* S4	78	78	#5	2	7'-2"	583
* EPOXY COATED REINFORCING STEEL				LBS.		1198
CLASS AA CONCRETE				CU. YDS.		7.9
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		60.25

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
30'-10" CLEAR ROADWAY	ASPHALT OVERLAY THICKNESS:	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
	SUPERED SECTION	
30' UNITS	3 1/2"	3'-10"

CONCRETE RELEASE STRENGTH	
UNIT	PSI
30' UNITS	4000

CORED SLABS REQUIRED			
SPAN A			
	NUMBER	LENGTH	TOTAL LENGTH
30' UNIT			
EXTERIOR C.S.	2	30'-0"	60'-0"
INTERIOR C.S.	9	30'-0"	270'-0"
TOTAL	11		330'-0"

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.

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

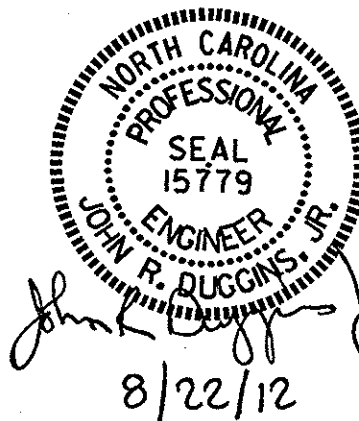
THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

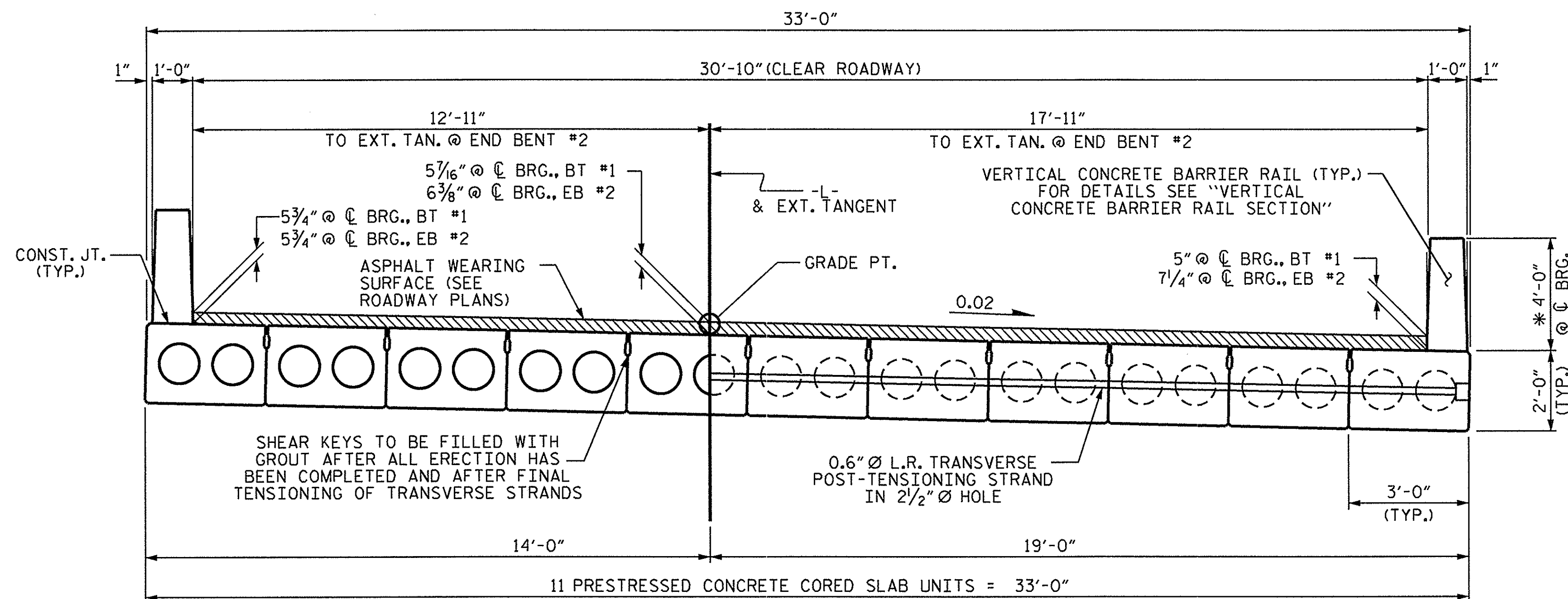
PROJECT NO. BD-5114E
CLAY COUNTY
STATION: 13+13.84 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT 75° SKEW					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					S-8
					22



ASSEMBLED BY :	A. SORSENGINH	DATE :	8/11/2011
CHECKED BY :	H. KIM	DATE :	2/2/2012
DRAWN BY :	DGE 5/09		
CHECKED BY :	BCH 6/09		

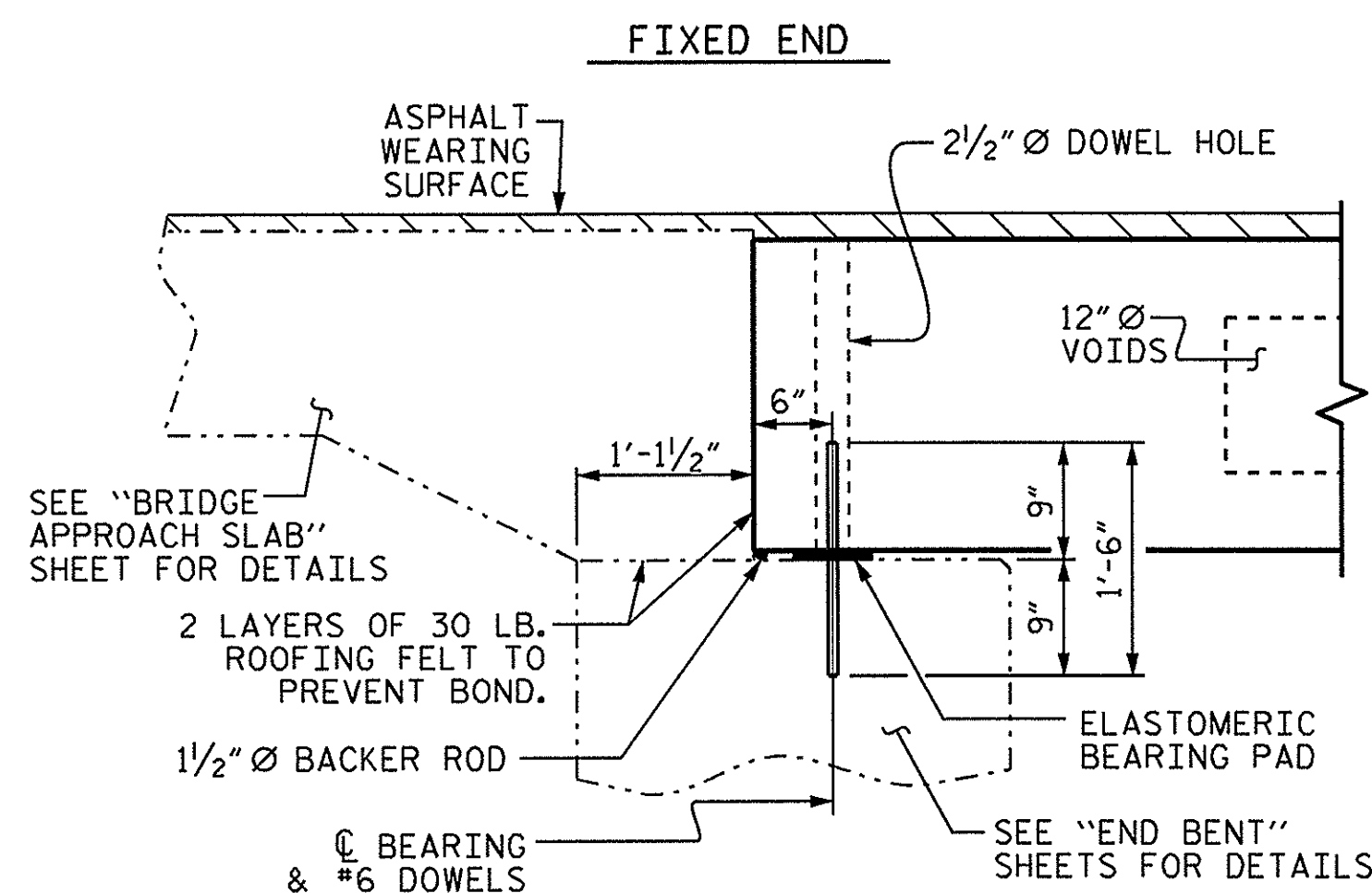


HALF SECTION
THROUGH VOIDS

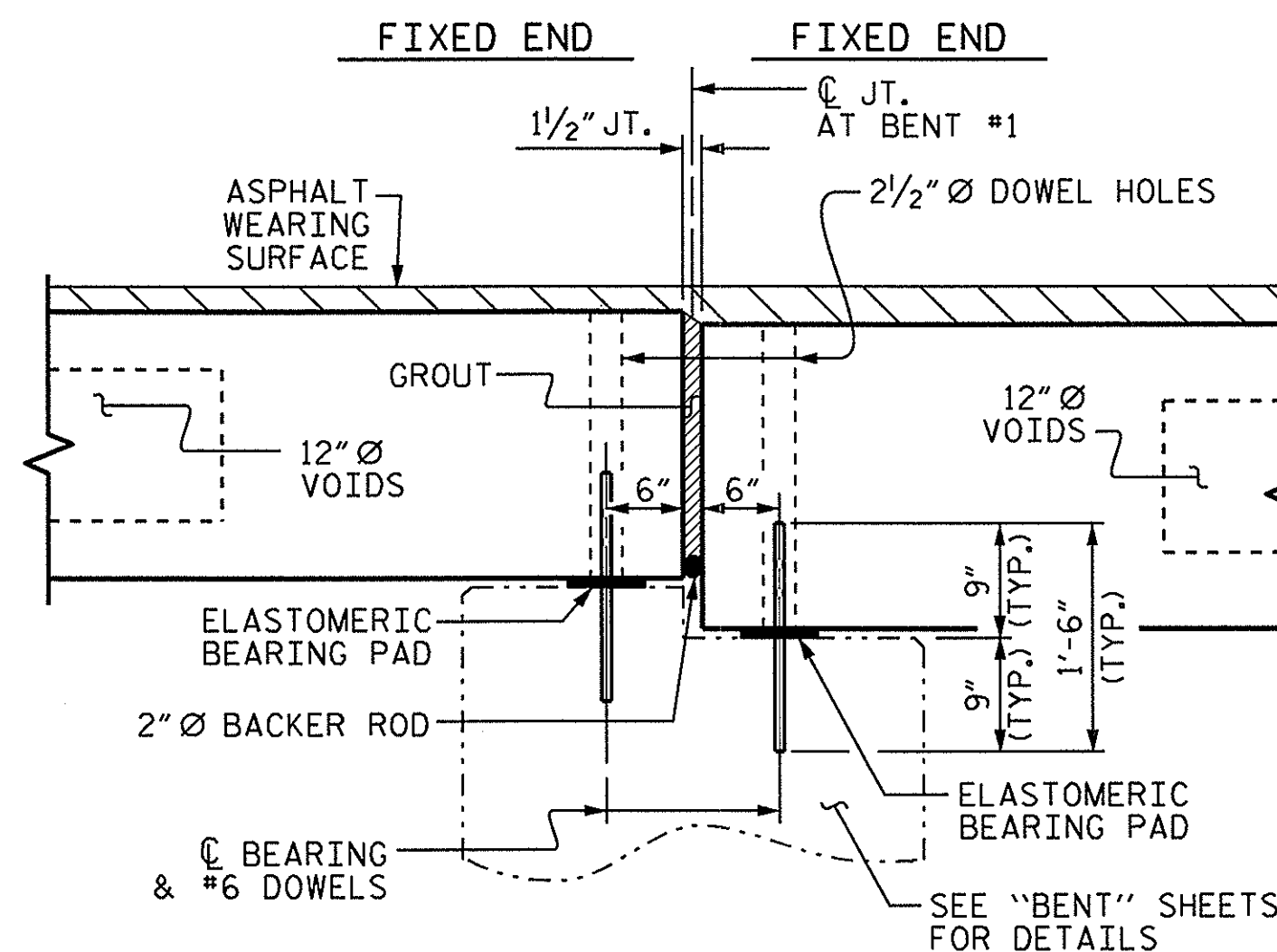
HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

TYPICAL SECTION

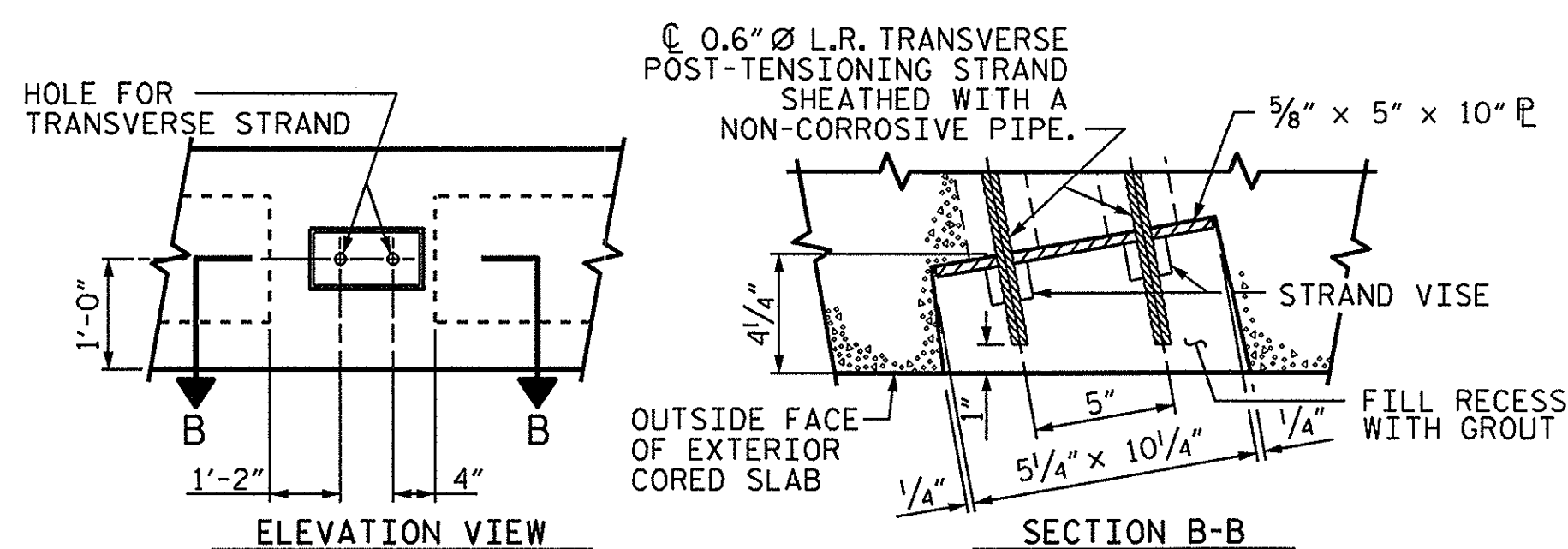
* - THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS, SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.



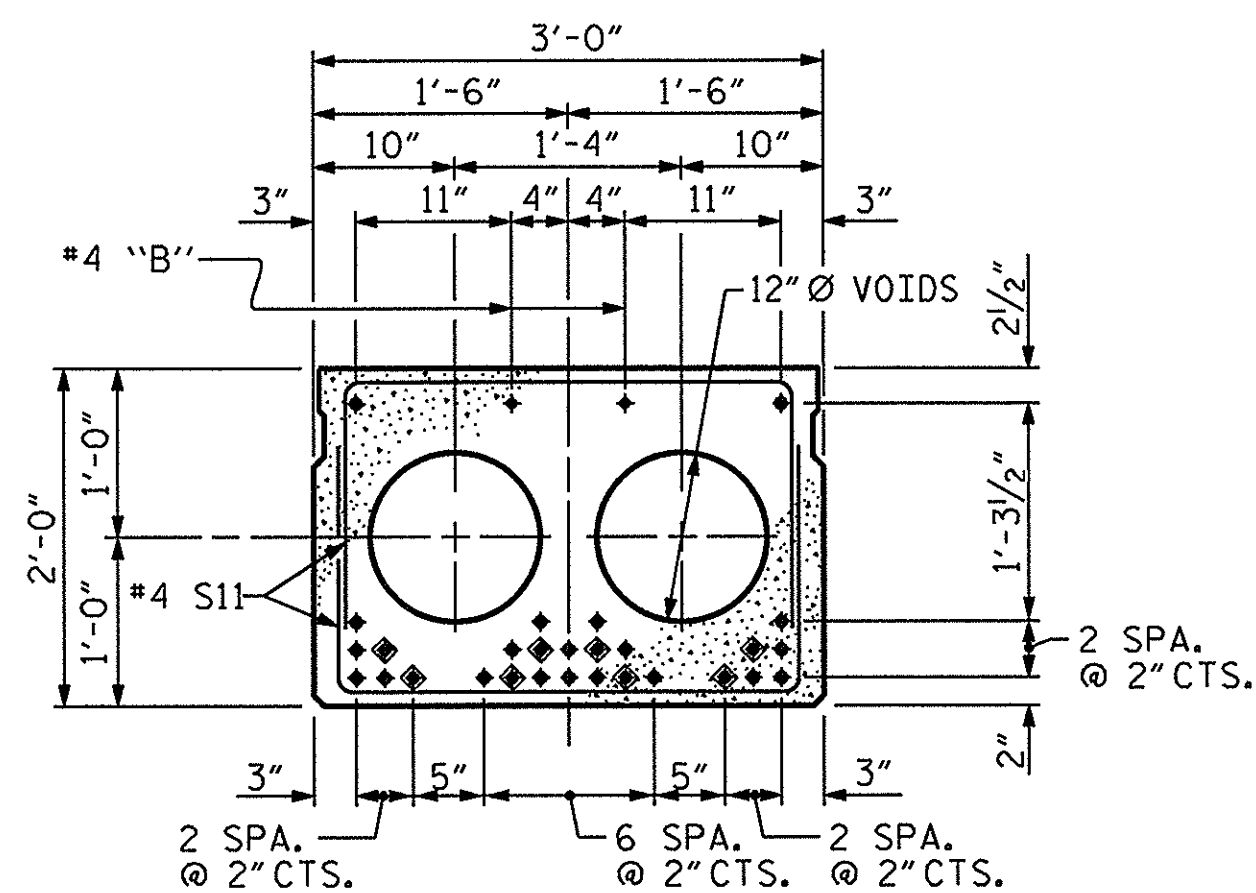
SECTION AT END BENT



SECTION AT BENT No. 1



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

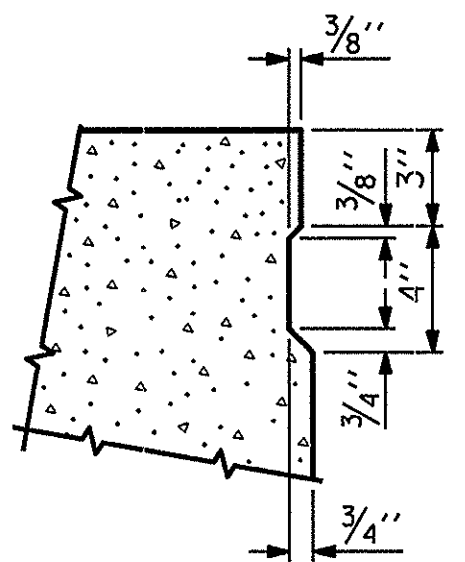


INTERIOR SLAB SECTION (70' UNIT)
(28 STRANDS REQUIRED)

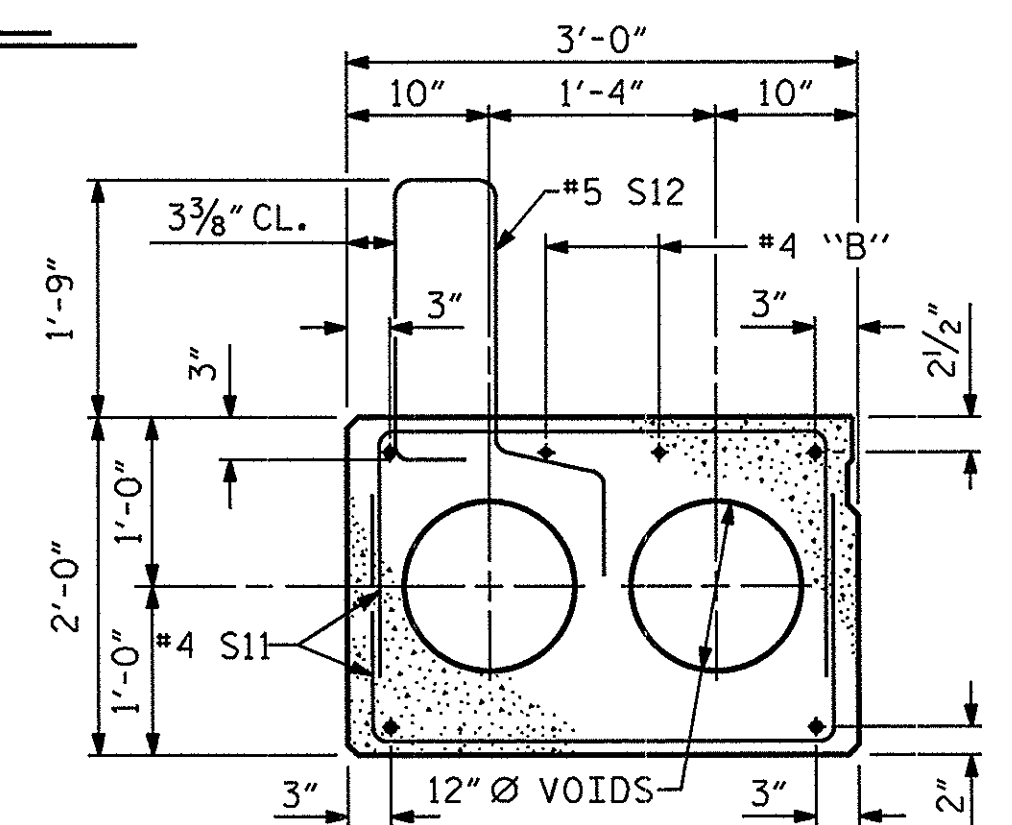
0.6" Ø LOW RELAXATION STRAND LAYOUT

- ◆ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 12'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

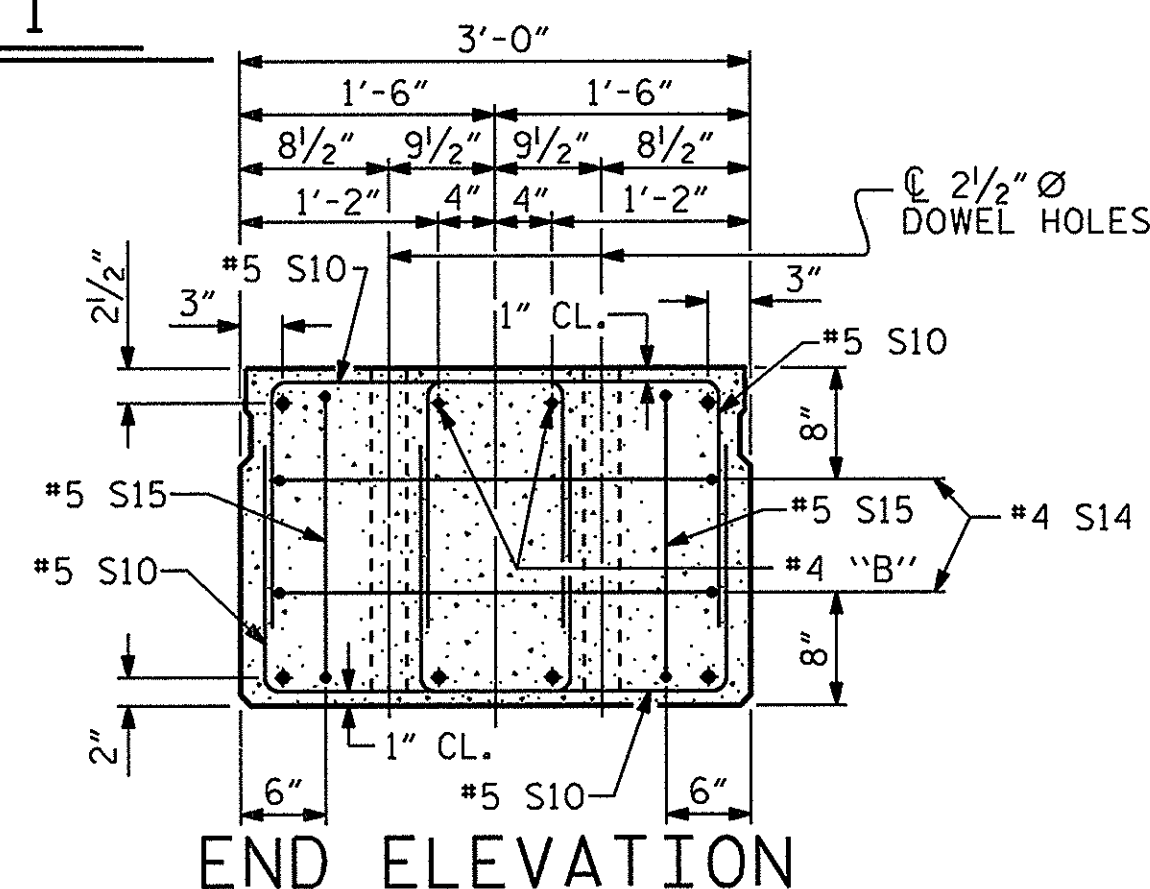
DEBONDING LEGEND



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



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



END ELEVATION

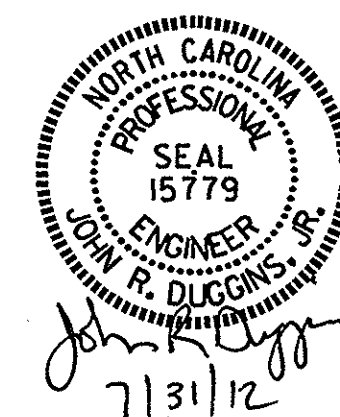
SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.

PROJECT NO. BD-5114E
CLAY COUNTY
STATION: 13+13.84 -L-

SHEET 1 OF 3

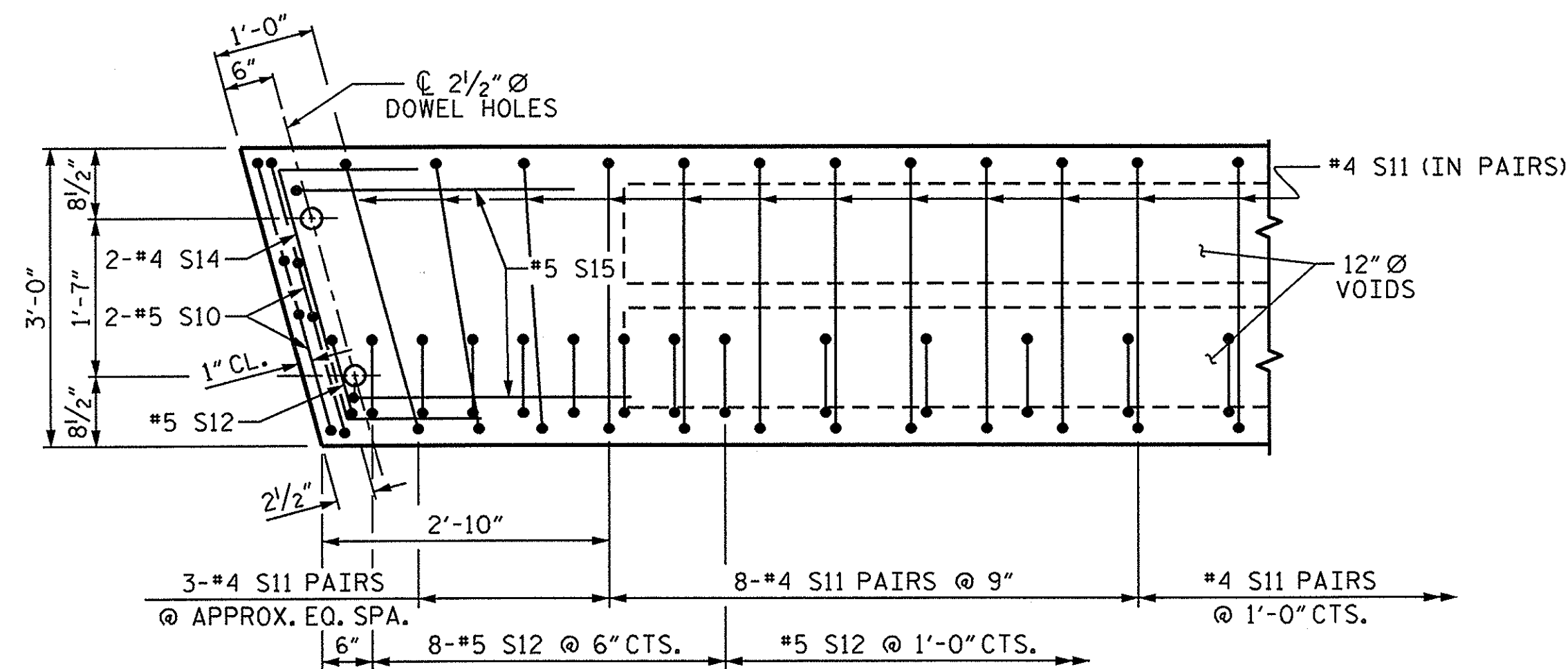
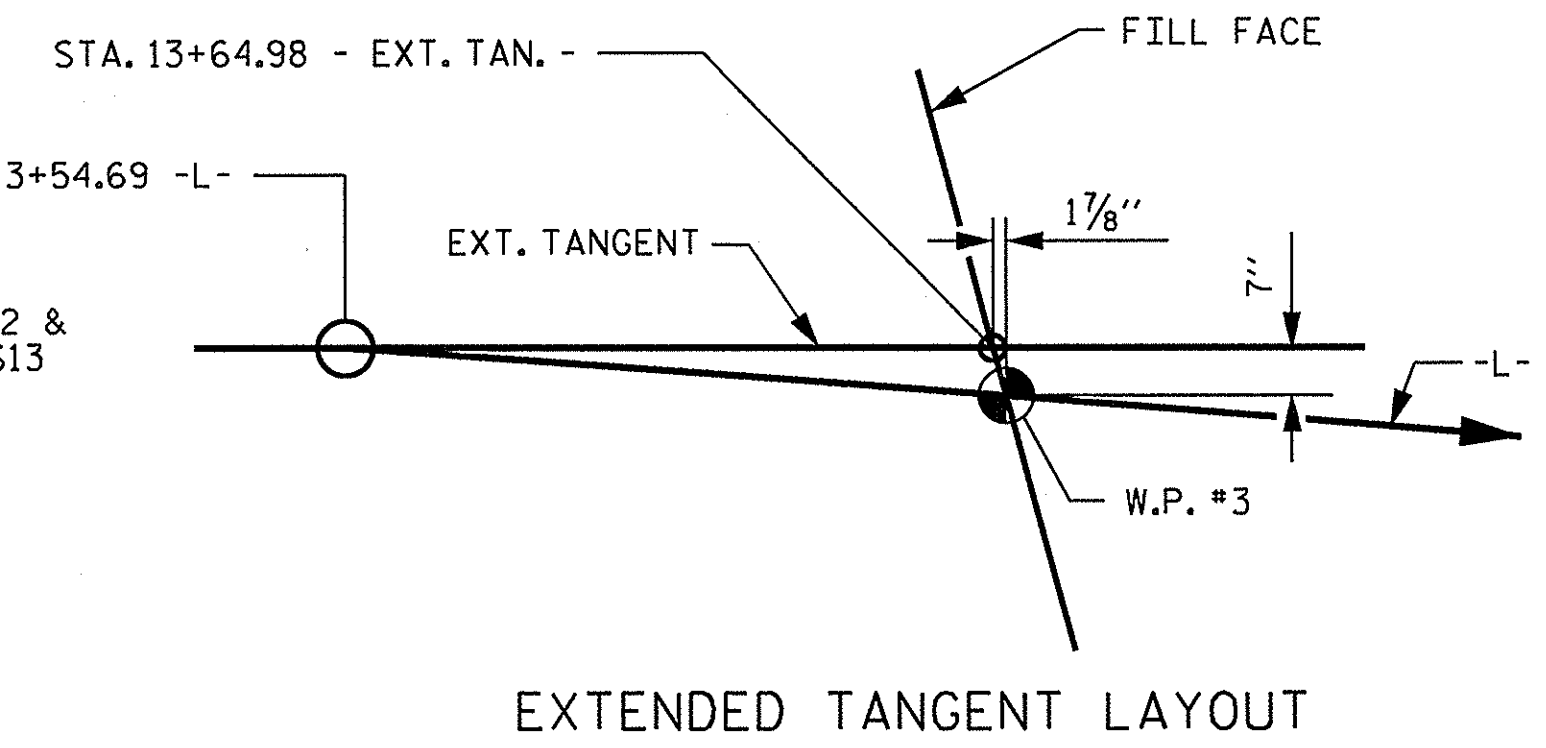
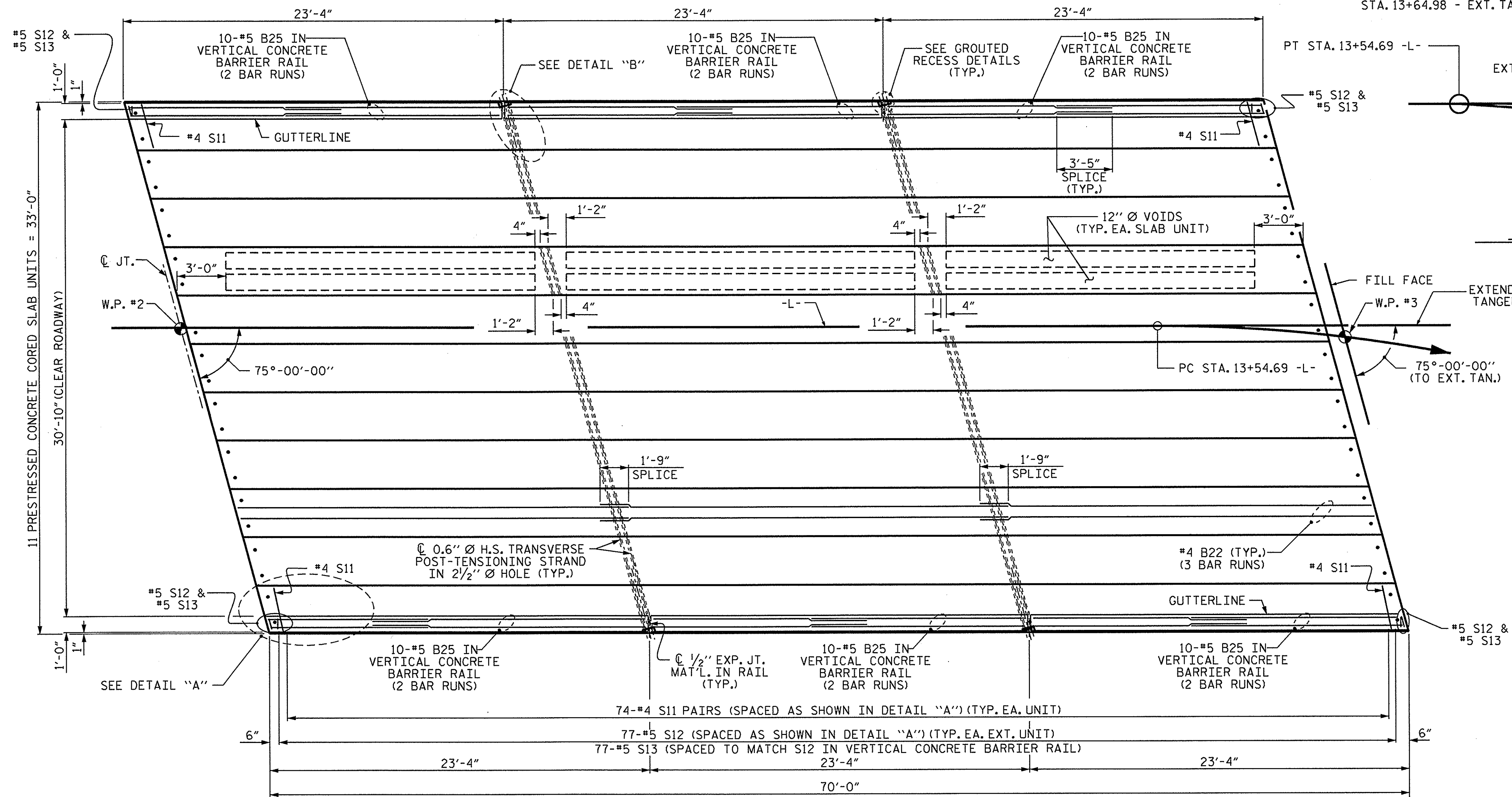
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

3'-0" X 2'-0"
PRESTRESSED CONCRETE
CORED SLAB UNIT
SPAN B



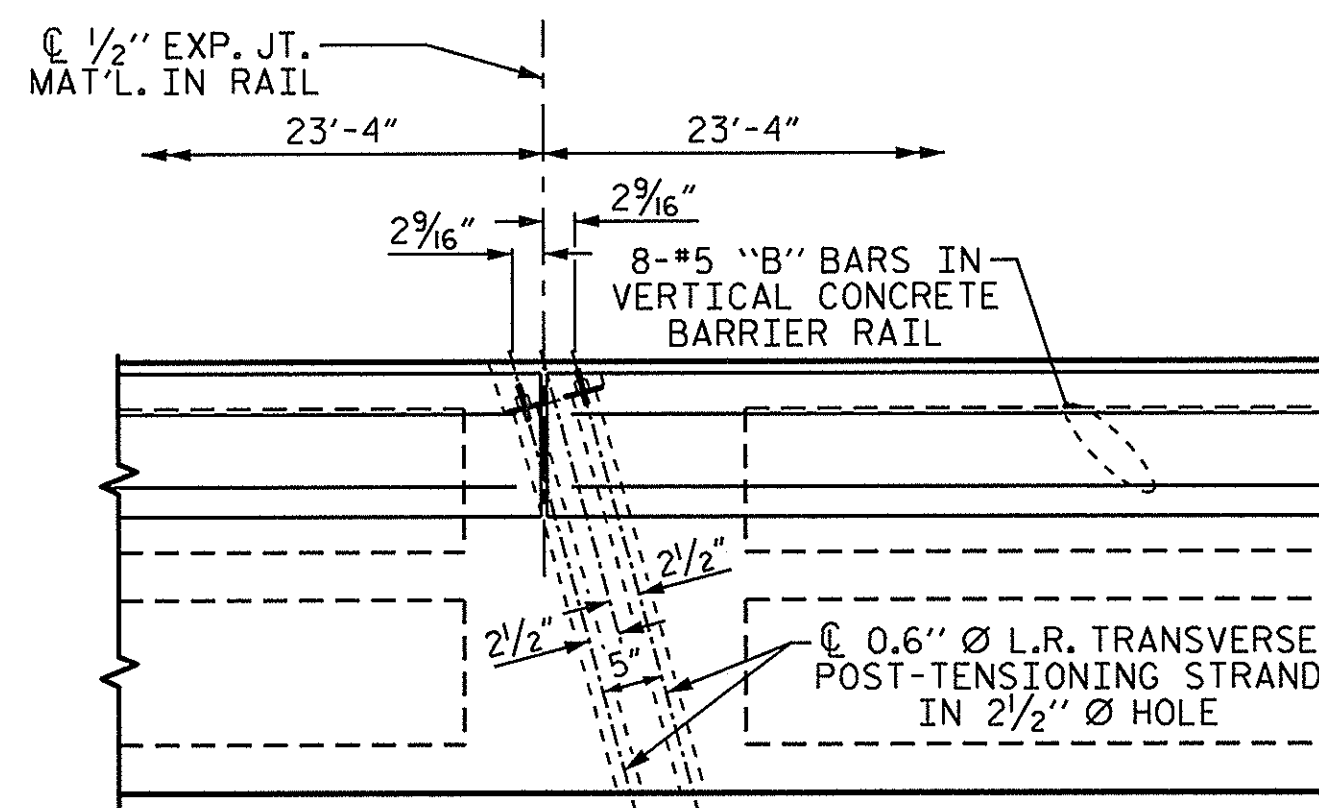
ASSEMBLED BY : A. SORSENGINH DATE : 8/2011
CHECKED BY : H. KIM DATE : 2/2012
DRAWN BY : MAA 6/10
CHECKED BY : MKT 7/10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-9
2			4			TOTAL SHEETS 22



DETAIL "A"

NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S12 BARS.



DETAIL "B"

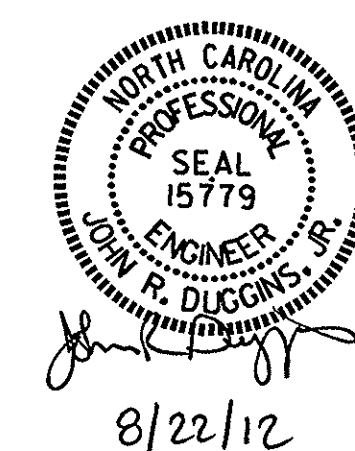
#4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO GROUDED RECESS AND 2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES

PROJECT NO. BD-5114E
CLAY COUNTY
STATION: 13+13.84

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 70' UNIT
30'-10" CLEAR ROADWAY
75° SKEW



ASSEMBLED BY : A. SORSENGINH DATE : 8/11/2011
CHECKED BY : H. KIM DATE : 2/2012
DRAWN BY : MAA 6/10
CHECKED BY : MKT 7/10

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jduggins

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-10
2			4			
TOTAL SHEETS						22

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.)

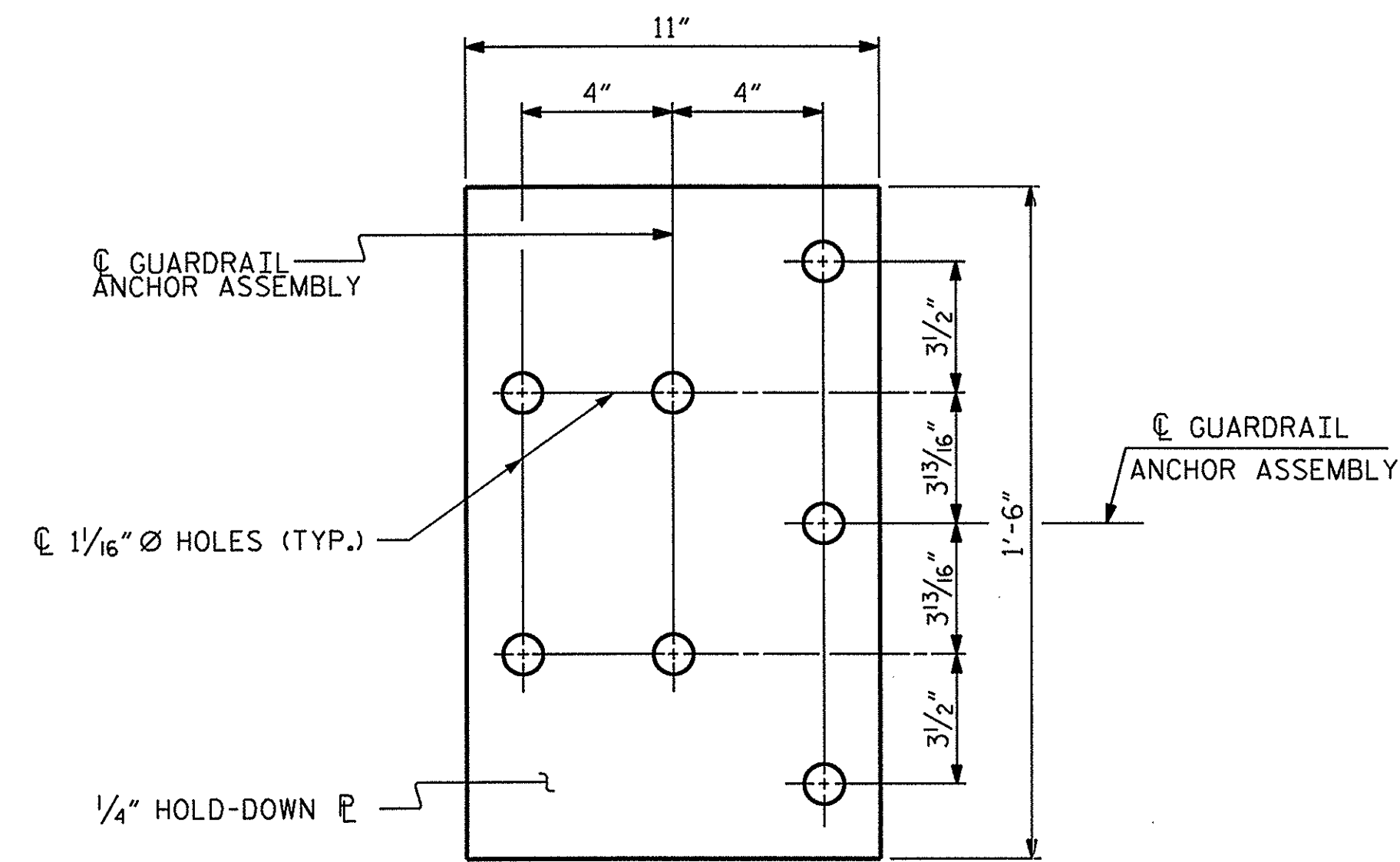
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

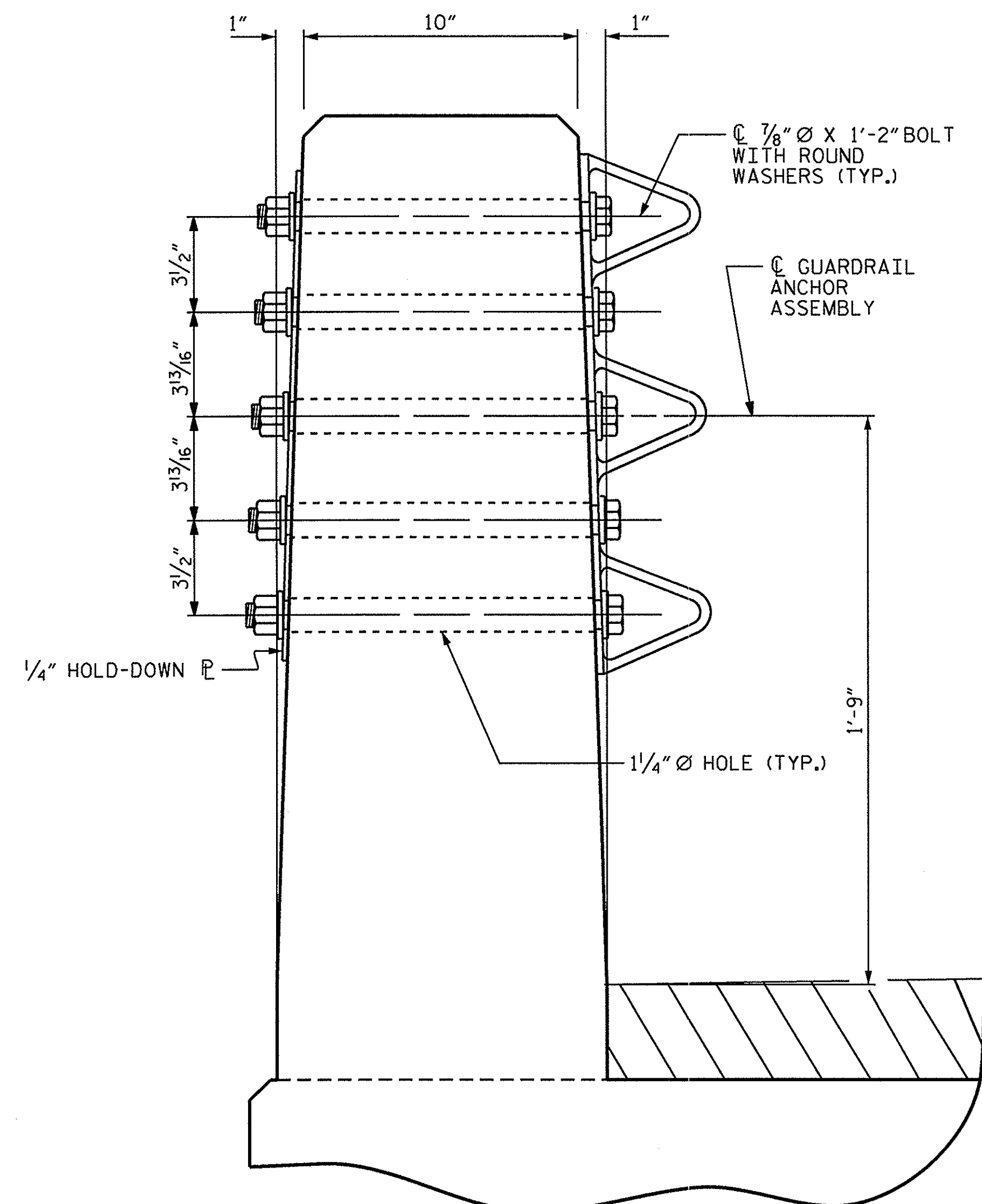
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.

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.

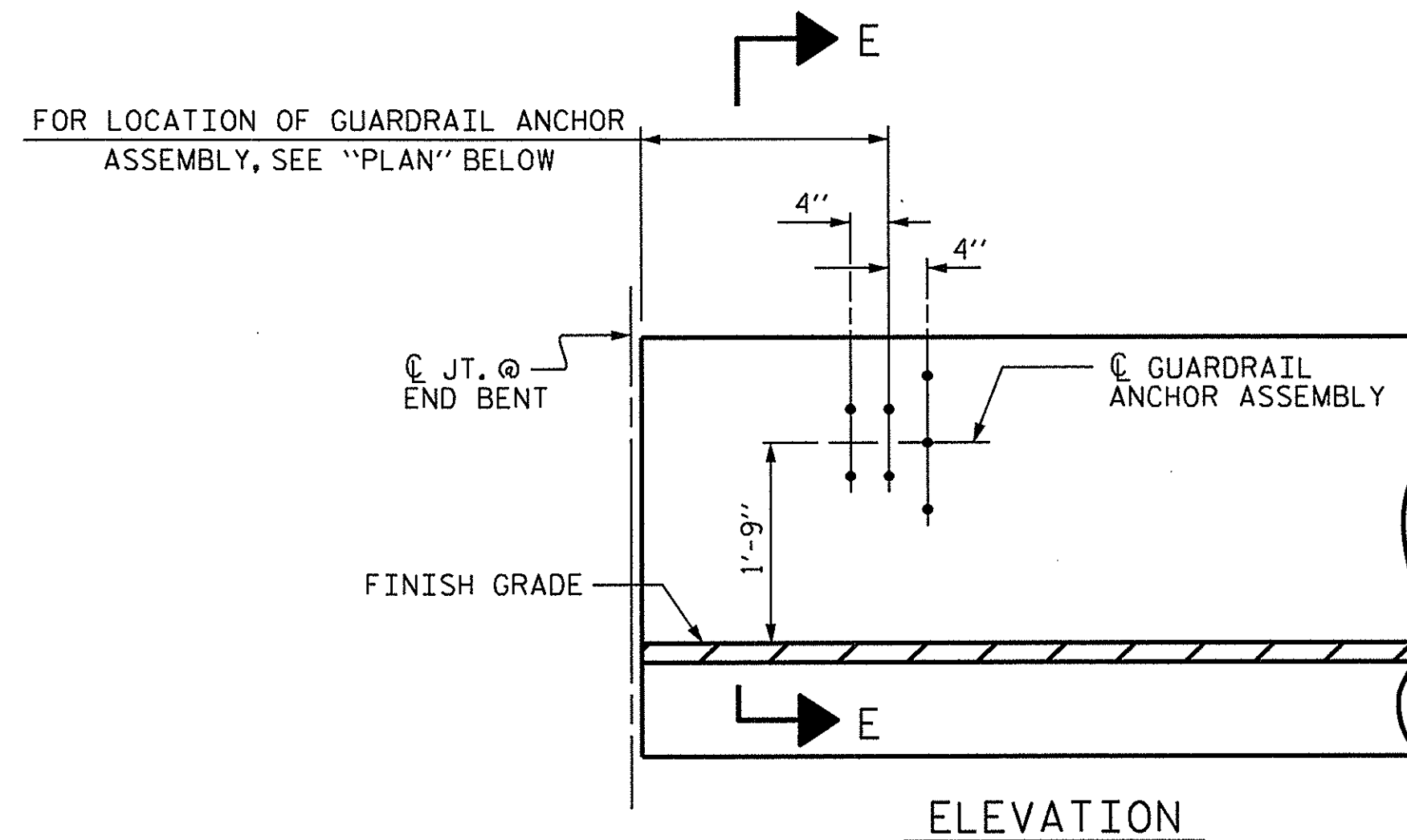


PLAN

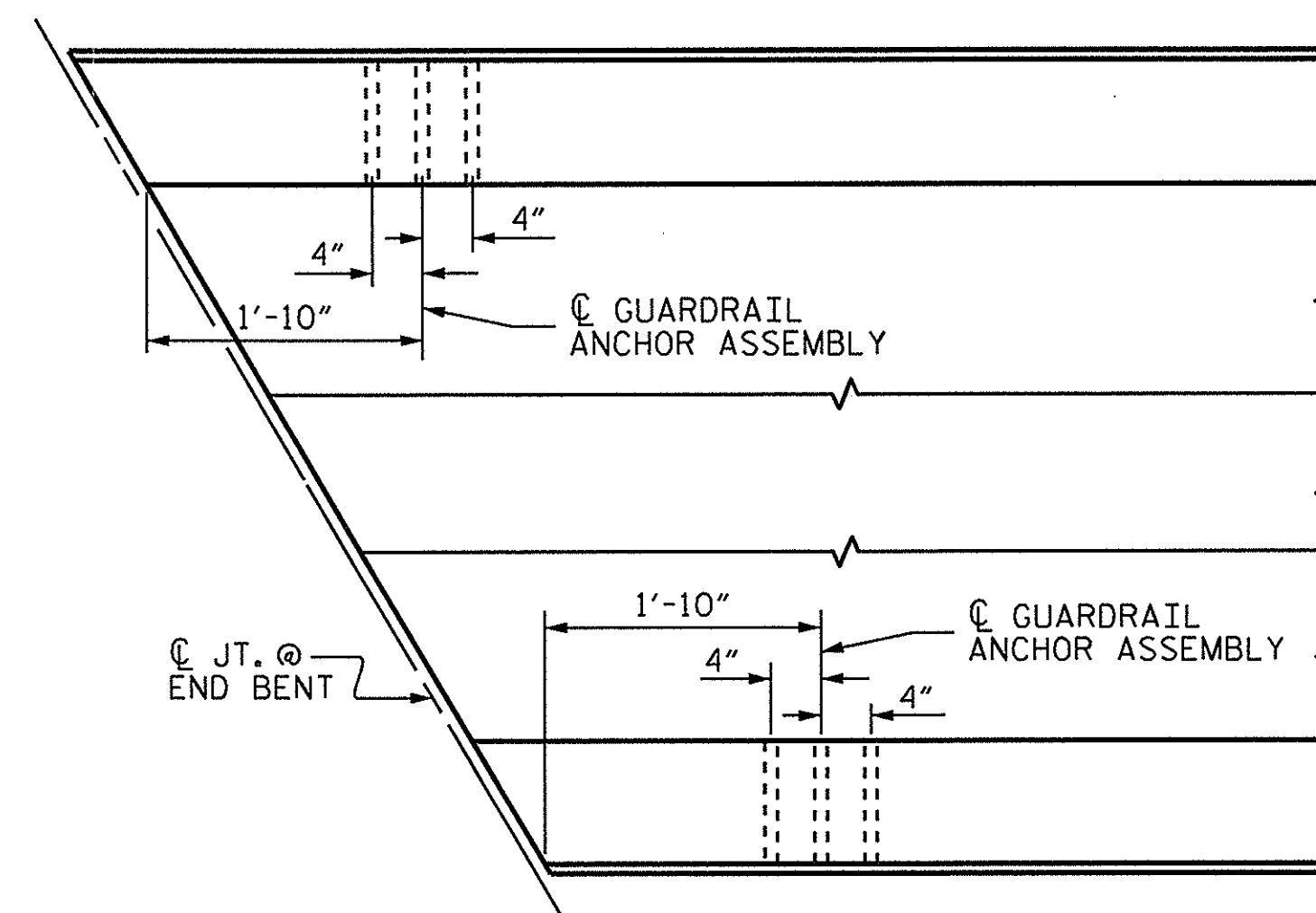


SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



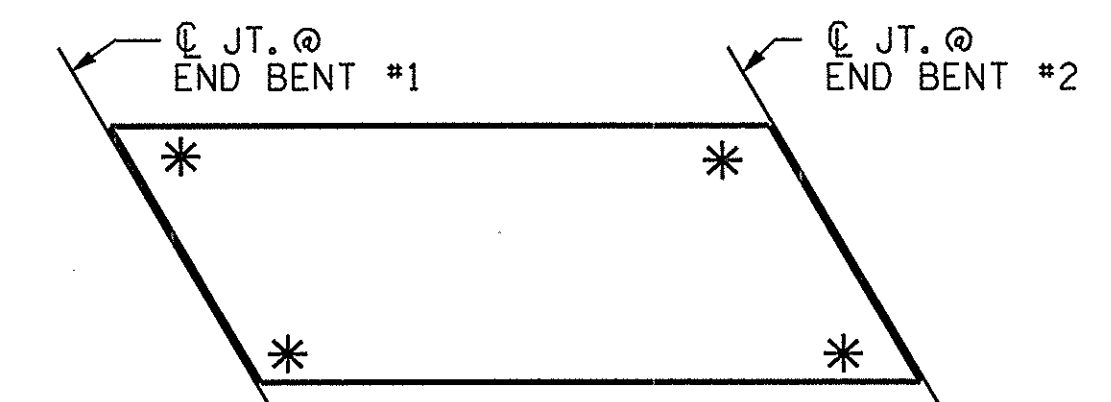
ELEVATION



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. BD-5114E
CLAY COUNTY
STATION: 13+13.84 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD GUARDRAIL ANCHORAGE FOR VERTICAL CONCRETE BARRIER RAIL



7/31/12

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

TOTAL
SHEETS
22

ASSEMBLED BY : A. SORSENGIN	DATE : 8/2011
CHECKED BY : H. KIM	DATE : 2/2012
DRAWN BY : MAA	5/10
CHECKED BY : GM	5/10

ADDED 5/6/10

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

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.

[illegible]

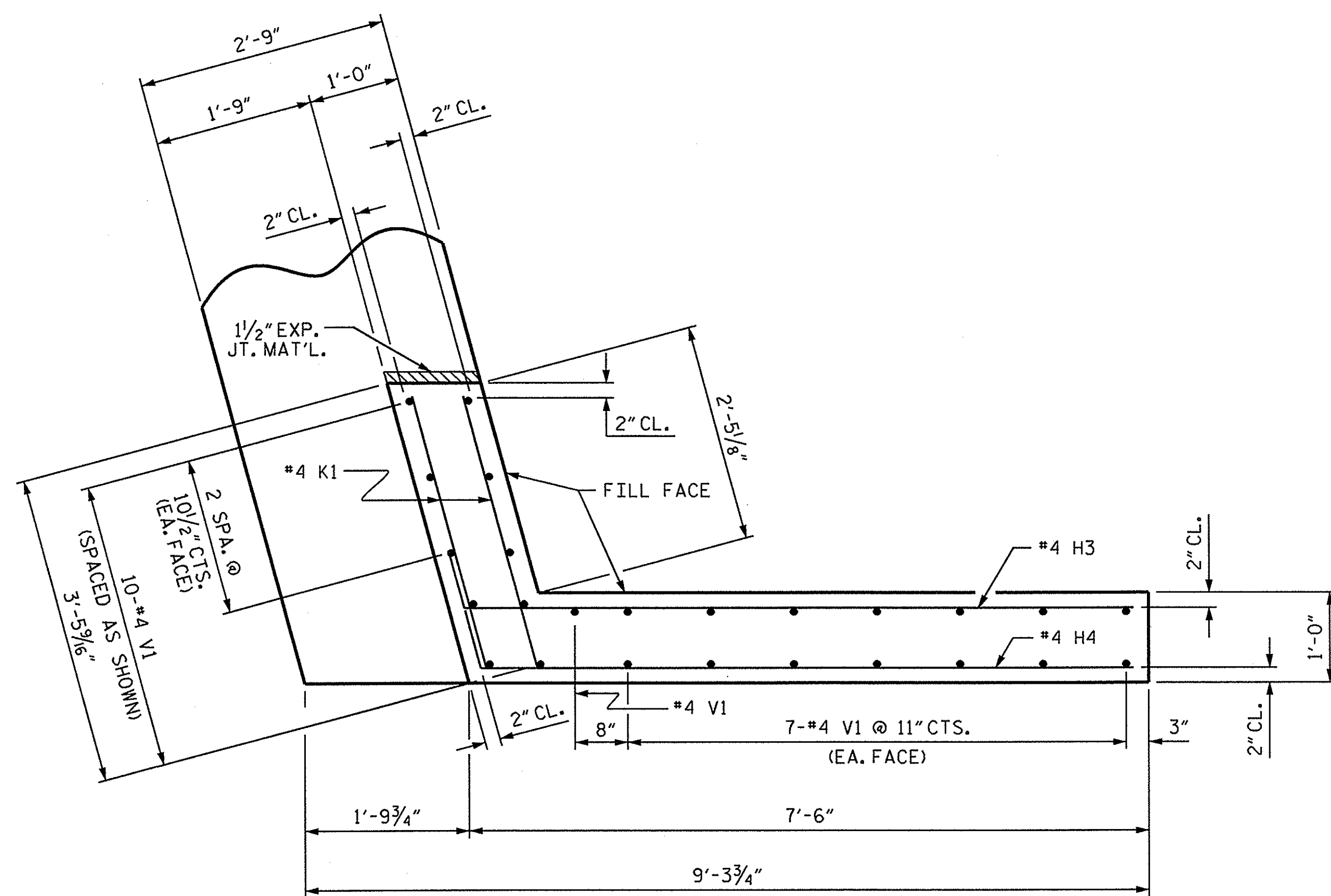
WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 3 OF 3.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 3 OF 3.

PROJECT NO. BD-5114E
CLAY COUNTY
 STATION: 13+13.84 -L-

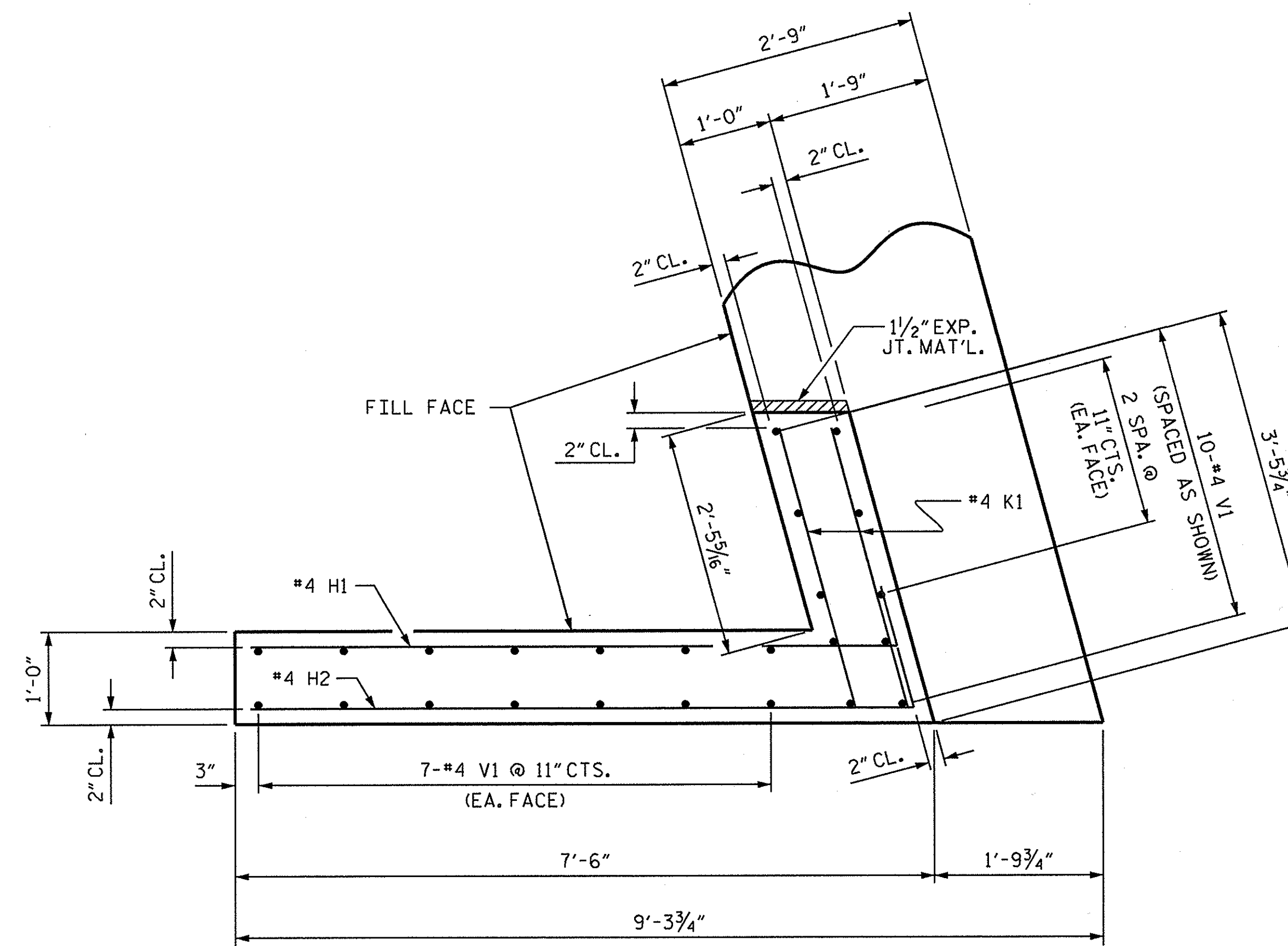
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

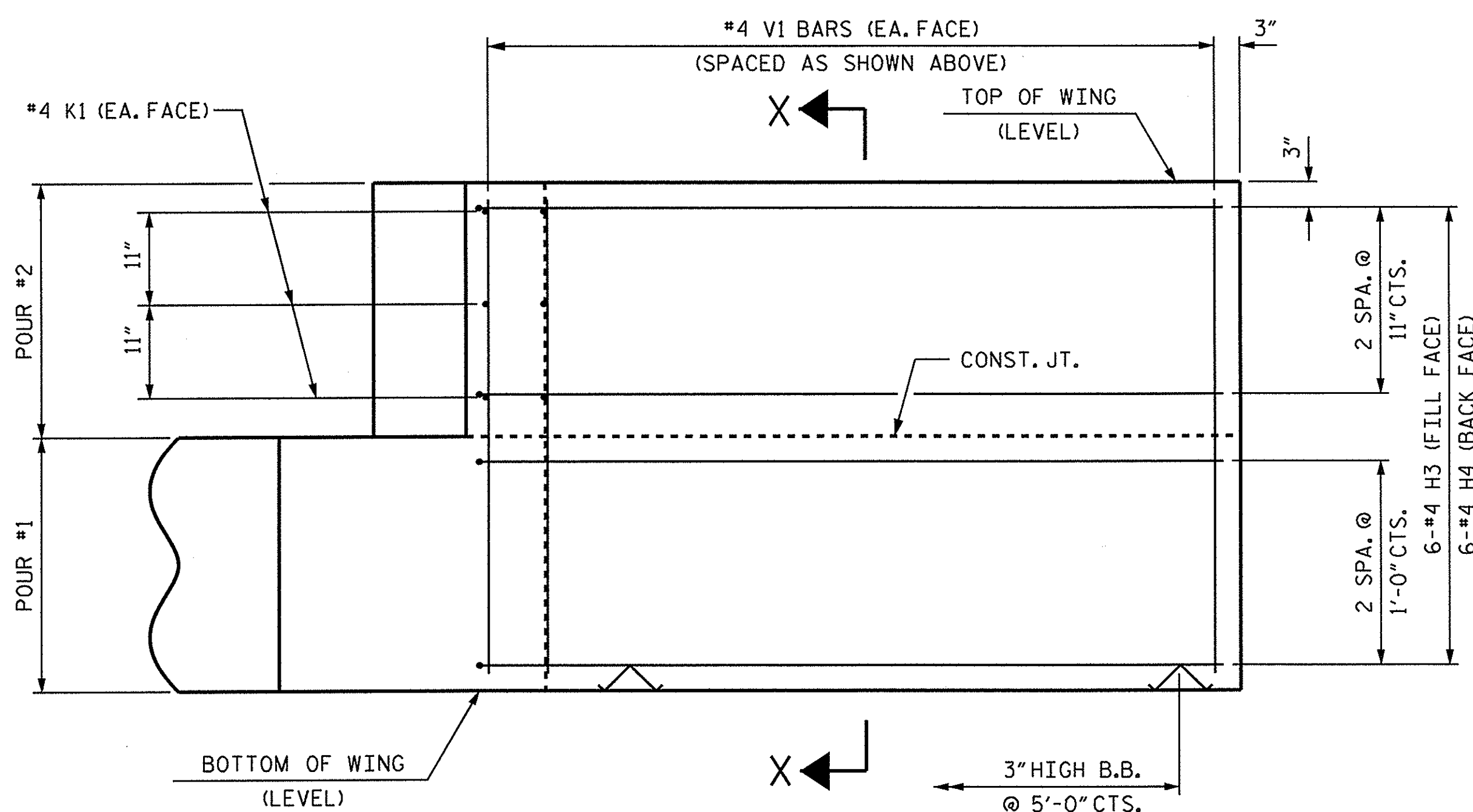
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jduggins



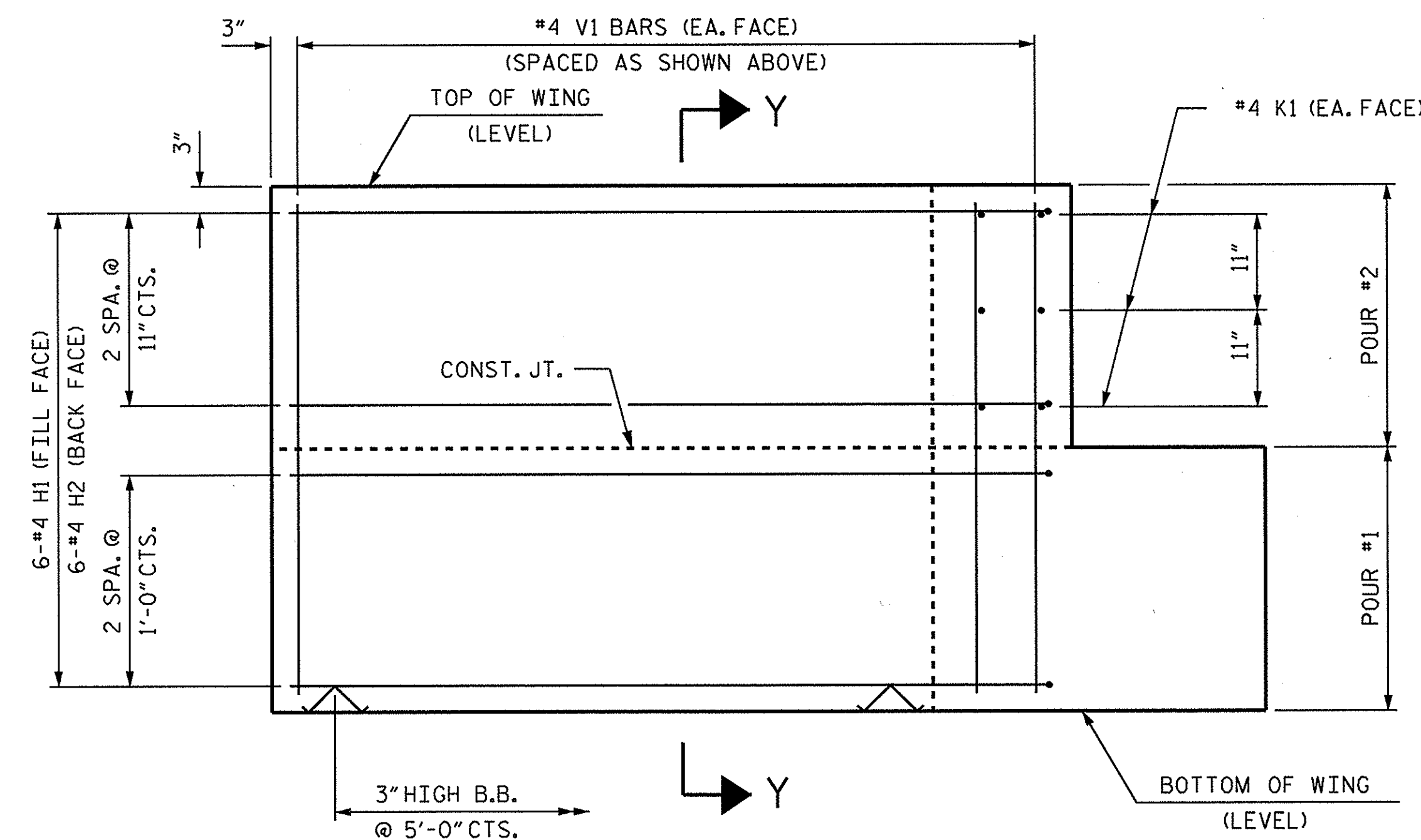
PLAN OF WING (W1)



PLAN OF WING (W2)

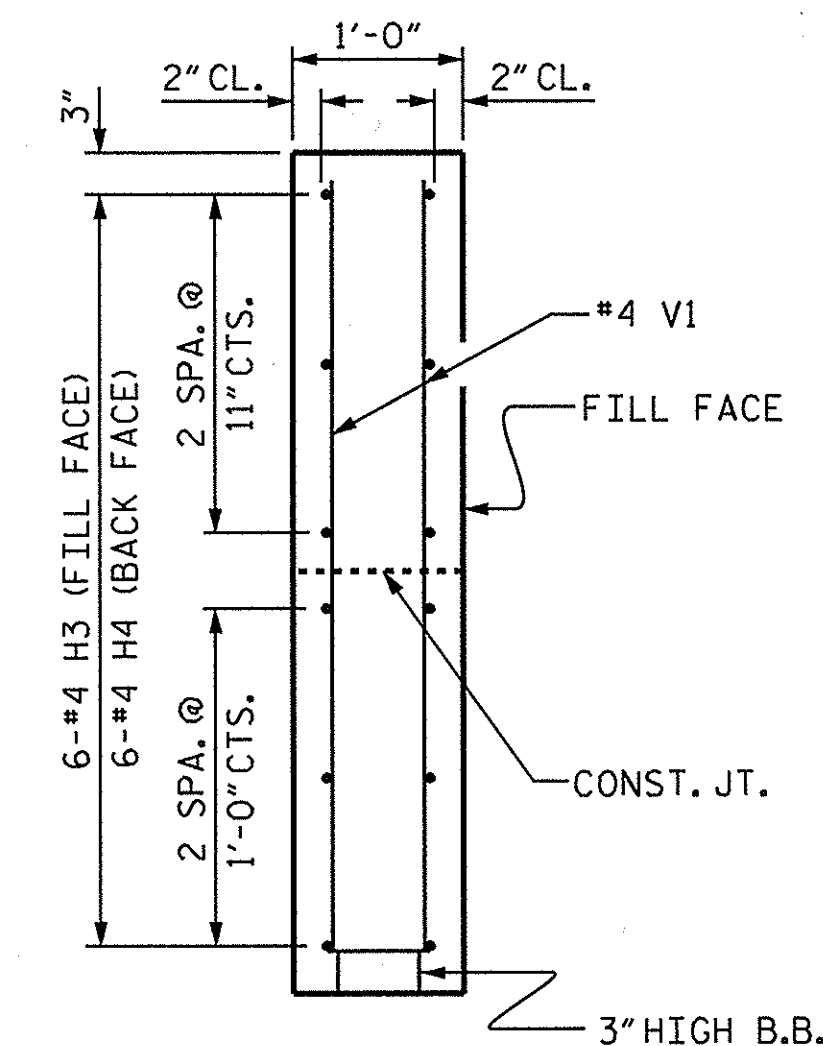


ELEVATION OF WING (W1)

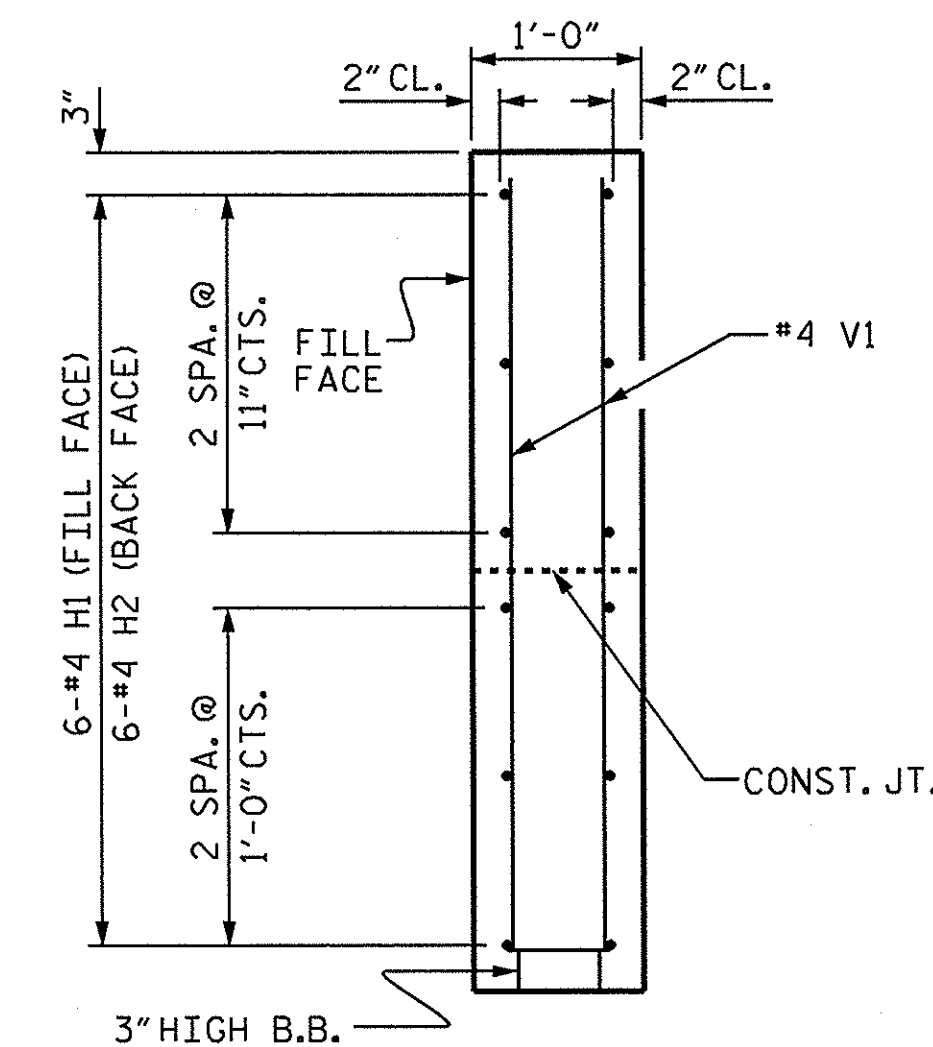


ELEVATION OF WING (W2)

WING DETAILS



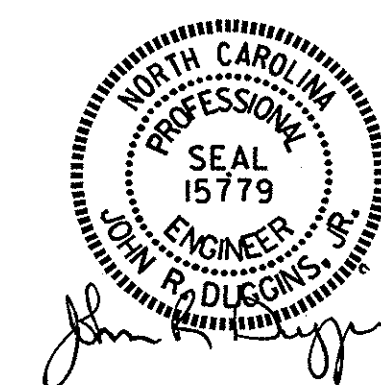
SECTION X-X



SECTION Y-Y

PROJECT NO. BD-5114E
CLAY COUNTY
STATION: 13+13.84 -L-

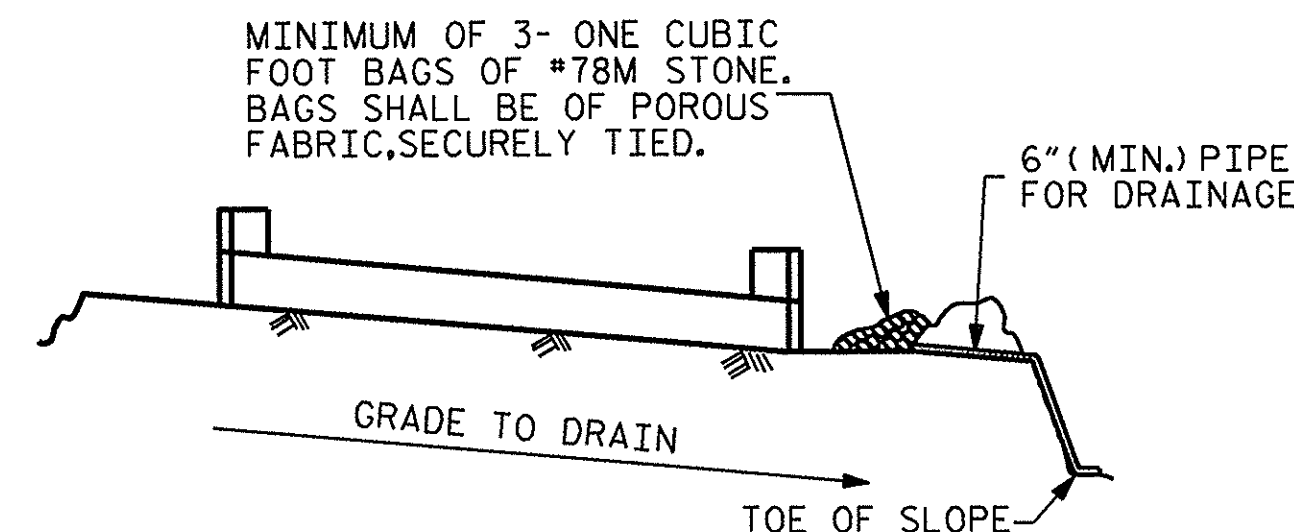
SHEET 2 OF 3



ASSEMBLED BY : H. T. BARBOUR DATE : 4-02-12
CHECKED BY : J. R. DUGGINS DATE : 7-12
DRAWN BY : DGE 03/10
CHECKED BY : MKT 03/10

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			3-14
2			4			TOTAL SHEETS 22

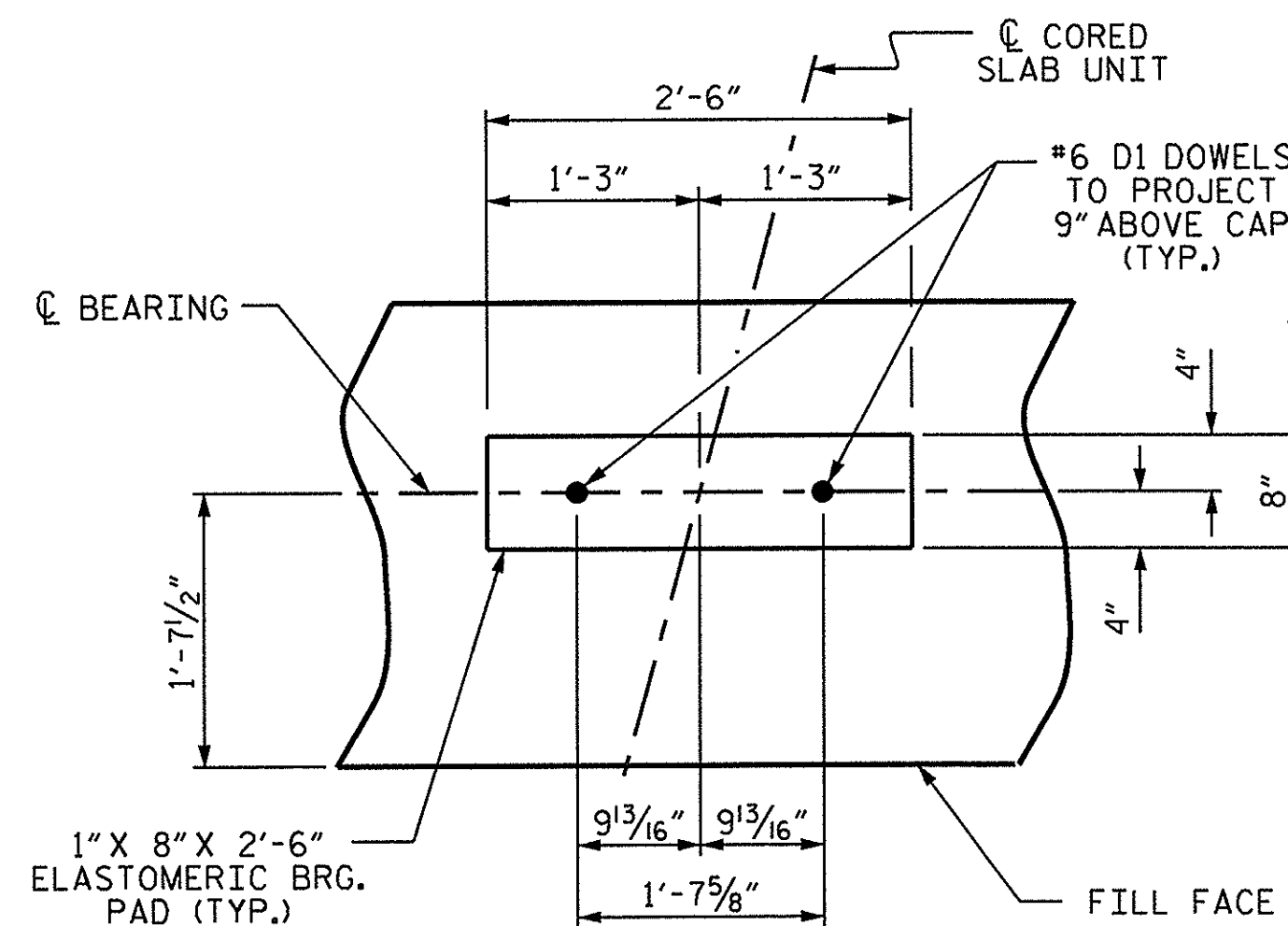


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

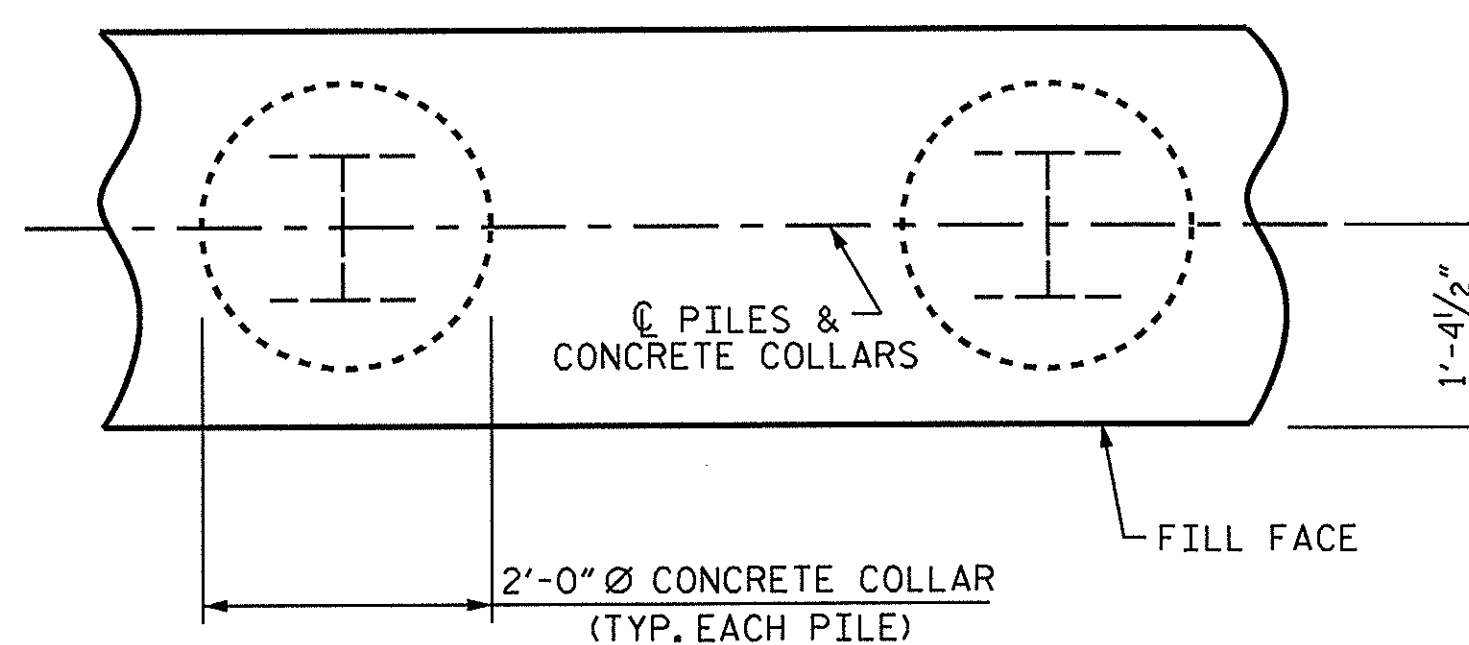
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

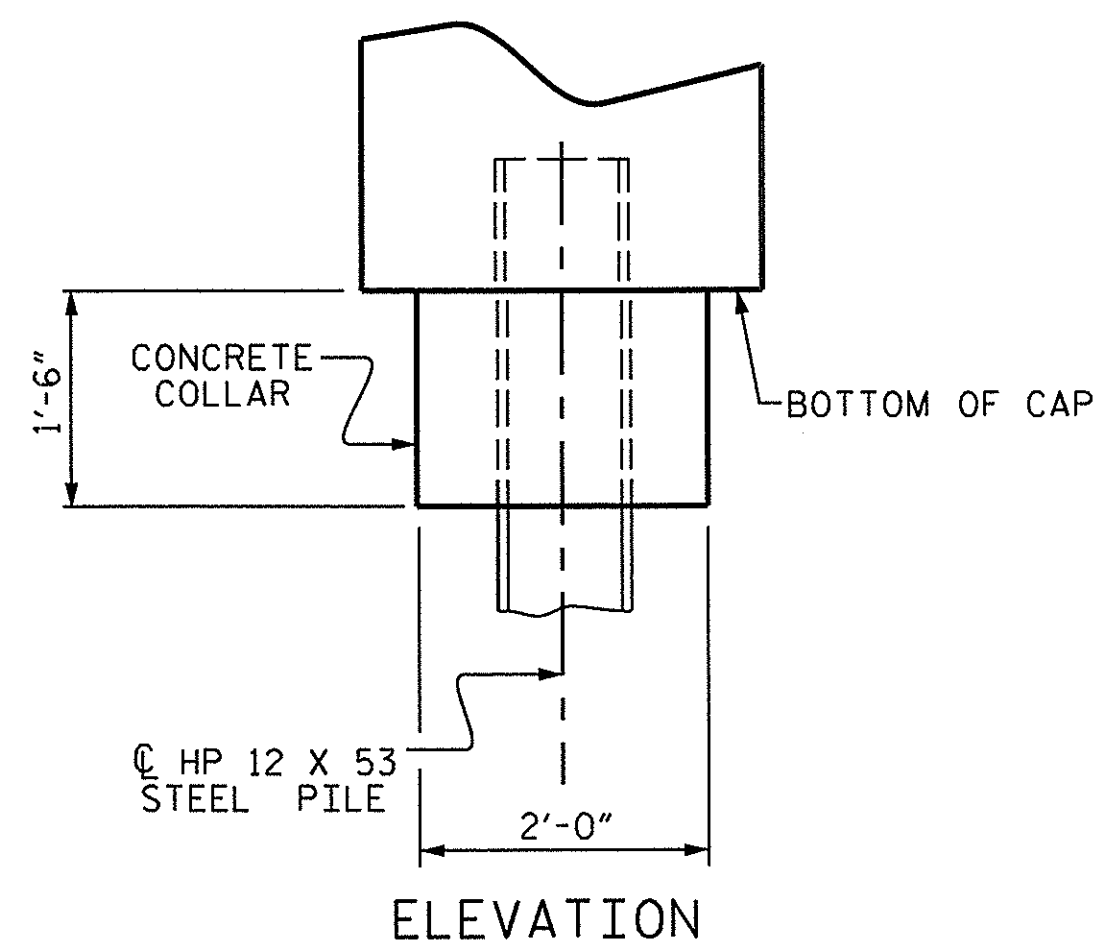
TEMPORARY DRAINAGE AT END BENT



DETAIL "A"

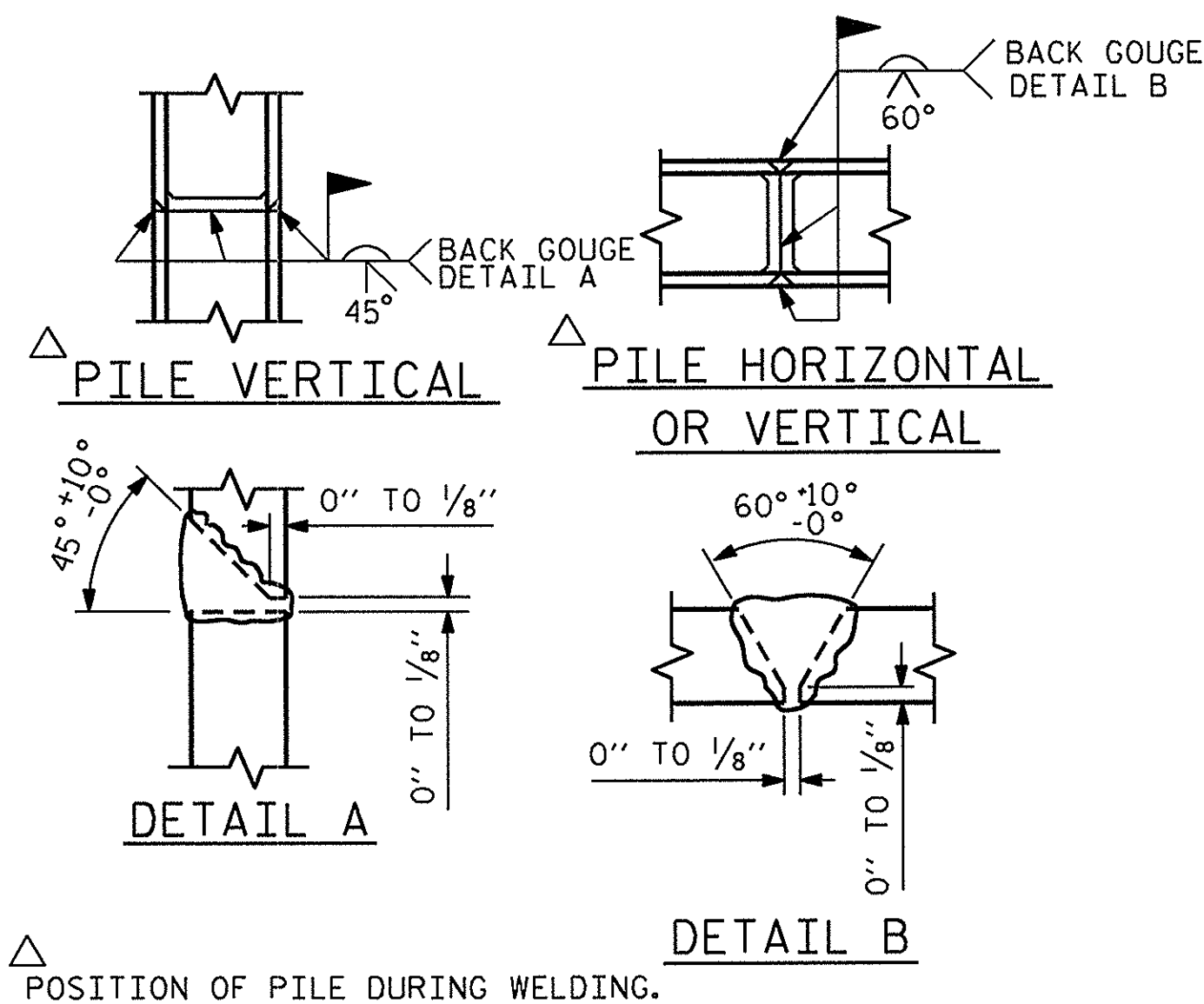


PLAN

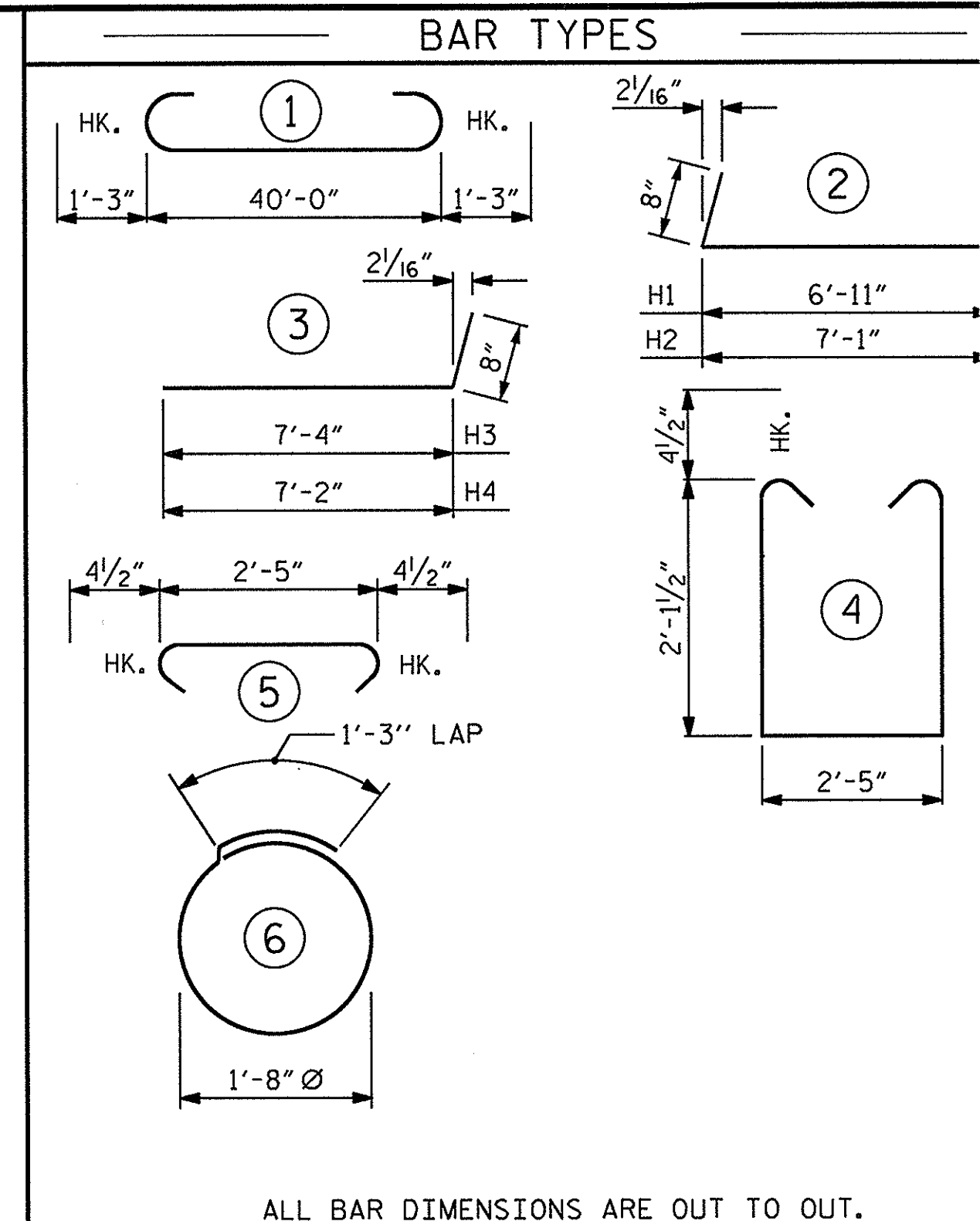


ELEVATION

CORROSION PROTECTION FOR STEEL PILES DETAIL



PILE SPLICE DETAILS



BILL OF MATERIAL

END BENT No. 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	42'-6"	1156
B2	16	#4	STR	21'-4"	228
B3	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	6	#4	2	7'-7"	30
H2	6	#4	2	7'-9"	31
H3	6	#4	3	8'-0"	32
H4	6	#4	3	7'-10"	31
K1	12	#4	STR	3'-1"	25
S1	52	#4	4	7'-5"	258
S2	52	#4	5	3'-2"	110
S3	14	#4	6	6'-6"	61
V1	49	#4	STR	4'-8"	153

REINFORCING STEEL (FOR ONE END BENT) 2181 LBS.

END BENT #1

CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

POUR #1 CAP, LOWER PART OF WINGS & COLLARS 12.7 C.Y.

POUR #2 UPPER PART OF WINGS 1.8 C.Y.

TOTAL CLASS A CONCRETE 14.5 C.Y.

END BENT No. 1

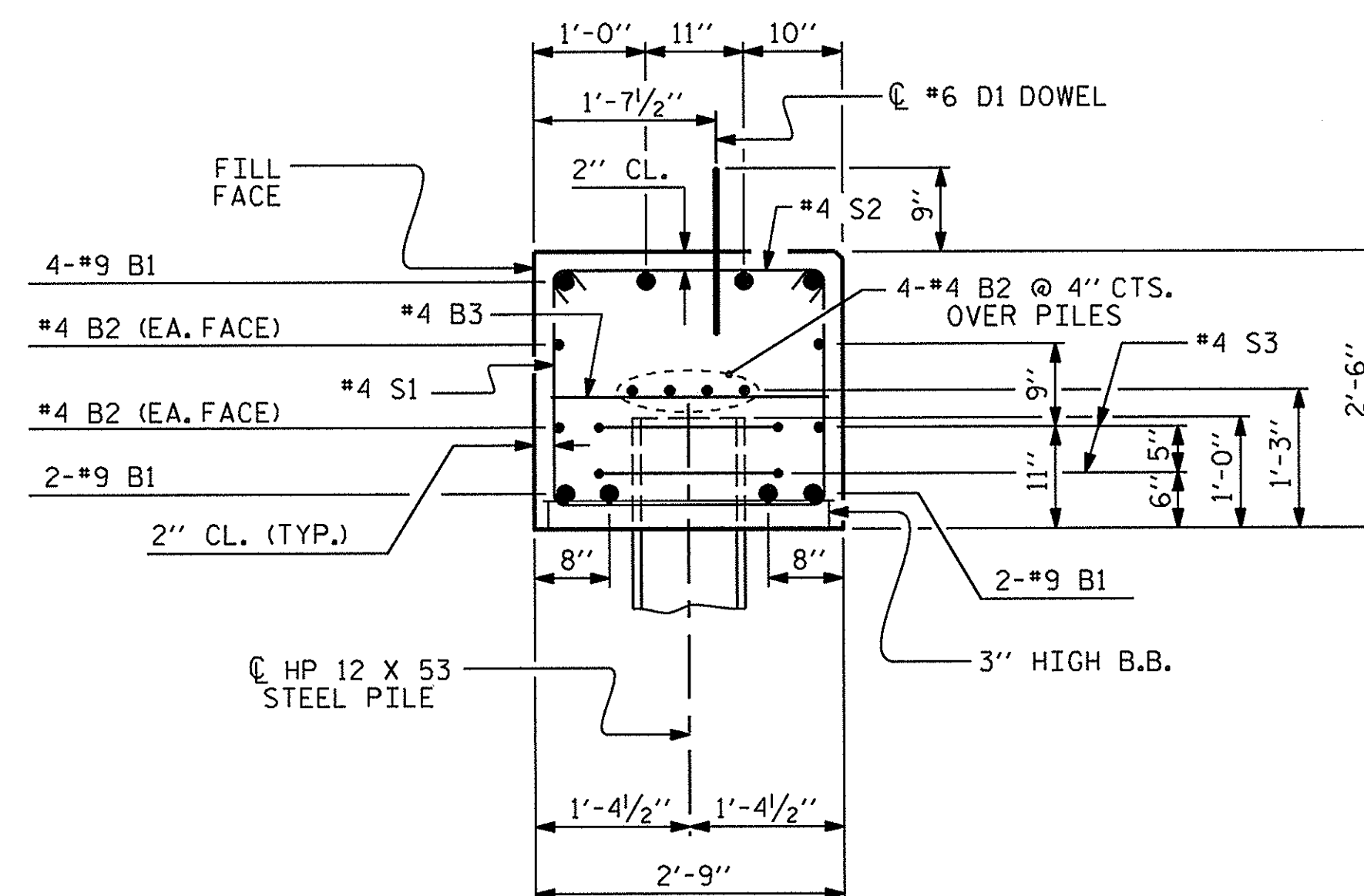
HP 12 X 53 STEEL PILES

NO: 7 LIN. FT. = 105

PILE EXCAVATION

IN SOIL LIN. FT. = 84

NOT IN SOIL LIN. FT. = 0



SECTION A-A

(CONCRETE COLLAR NOT SHOWN FOR CLARITY. SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL.")

PROJECT NO. BD-5114E

CLAY COUNTY

STATION: 13+13.84 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA

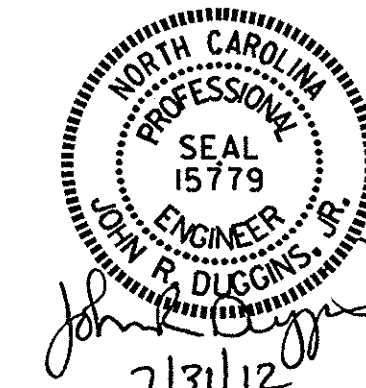
DEPARTMENT OF TRANSPORTATION

RALEIGH

SUBSTRUCTURE

END BENT No. 1

DETAILS



ASSEMBLED BY : H. T. BARBOUR DATE : 4-02-12

CHECKED BY : J. R. DUGGINS DATE : 7-12

DRAWN BY : DGE 03/10

CHECKED BY : MKT 03/10

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

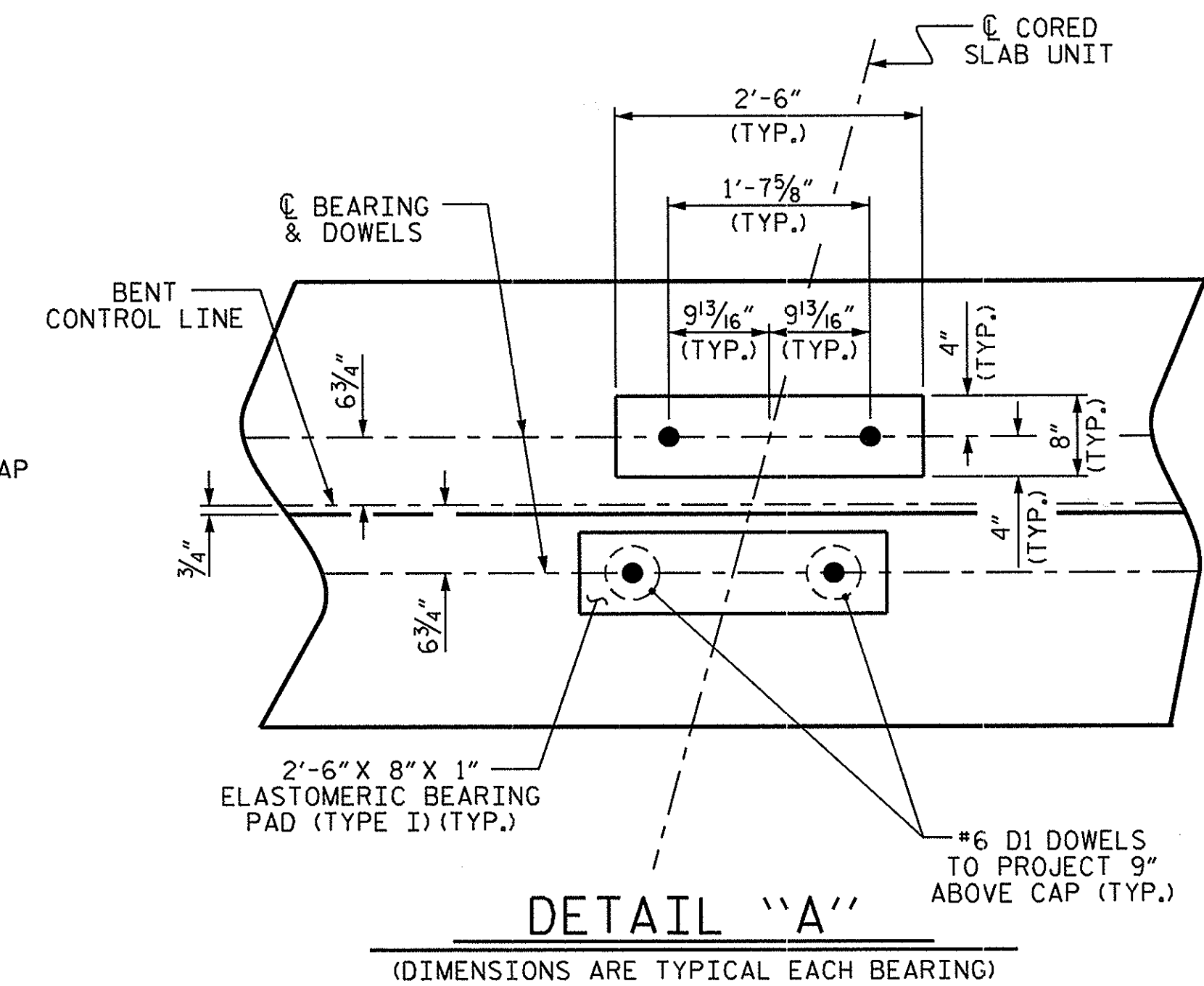
HOOKS ON "W" BARS MAY BE TURNED AS NECESSARY
FOR PLACING REINFORCING STEEL.

FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD
SPECIFICATIONS.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE
PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL
COLUMN REINFORCING STEEL."

THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND LINE ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT ONE FOOT BELOW THE GROUND LINE.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.



ASSEMBLED BY :	A. SORSENGINH	DATE :	8/12/2011
CHECKED BY :	H. KIM	DATE :	2/2012
DRAWN BY :	DGE 04/10		
CHECKED BY :	MKT 04/10		

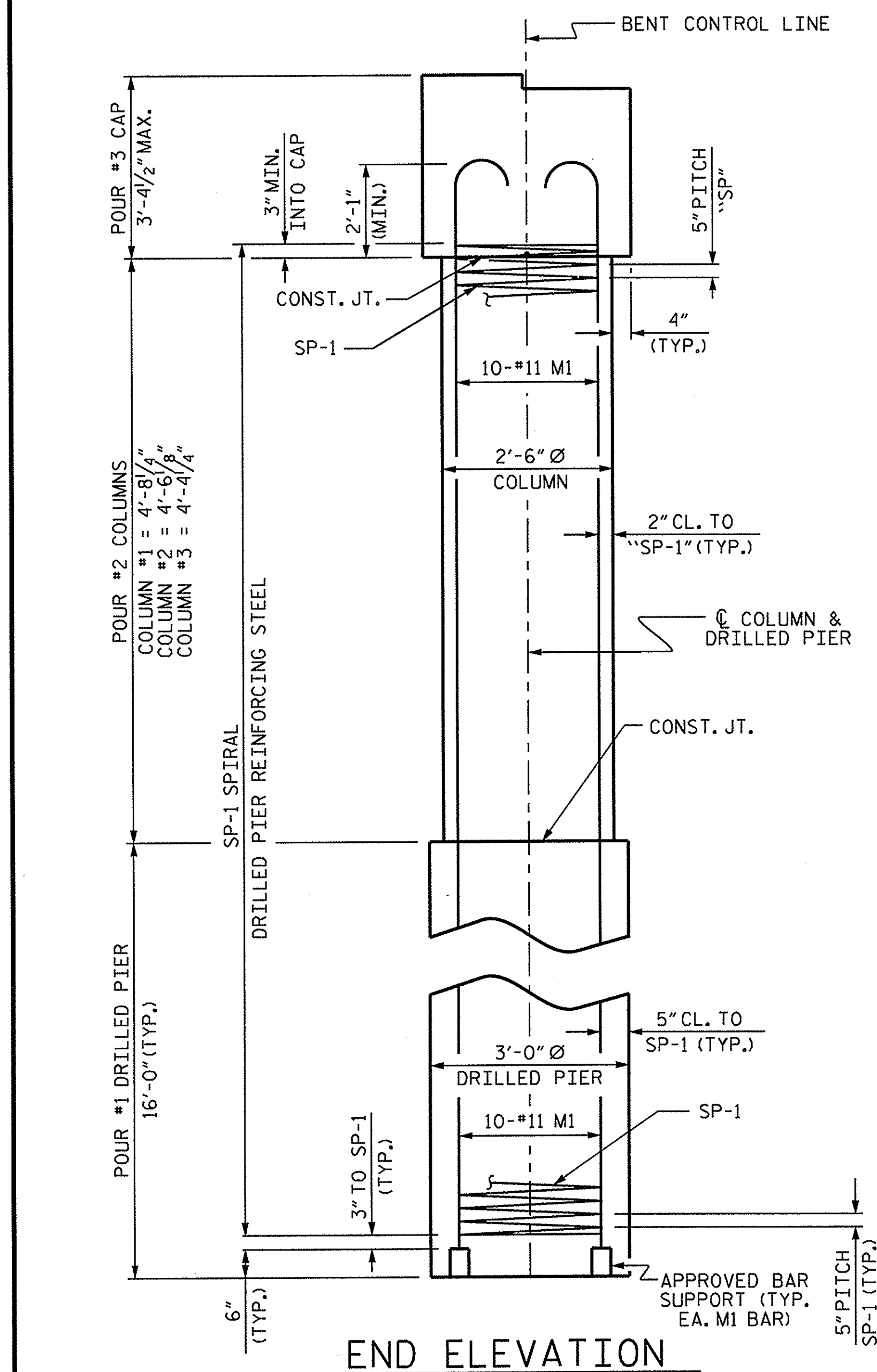
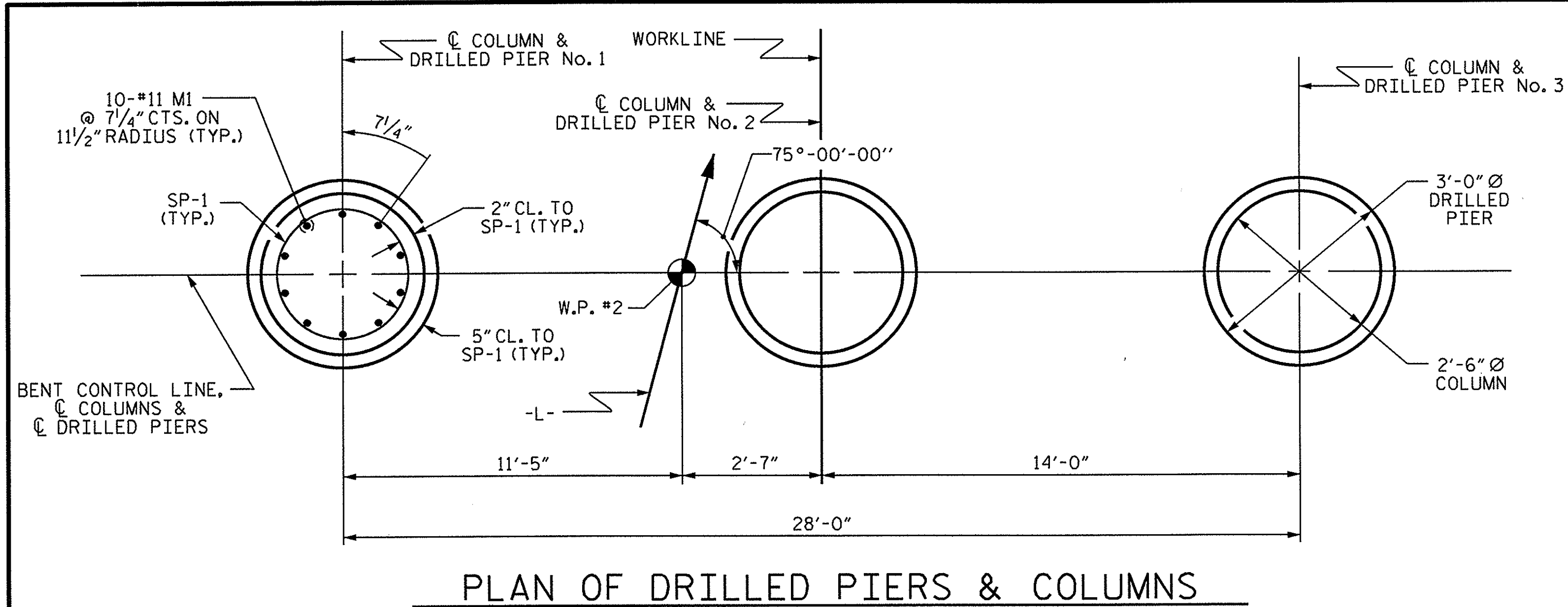
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SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

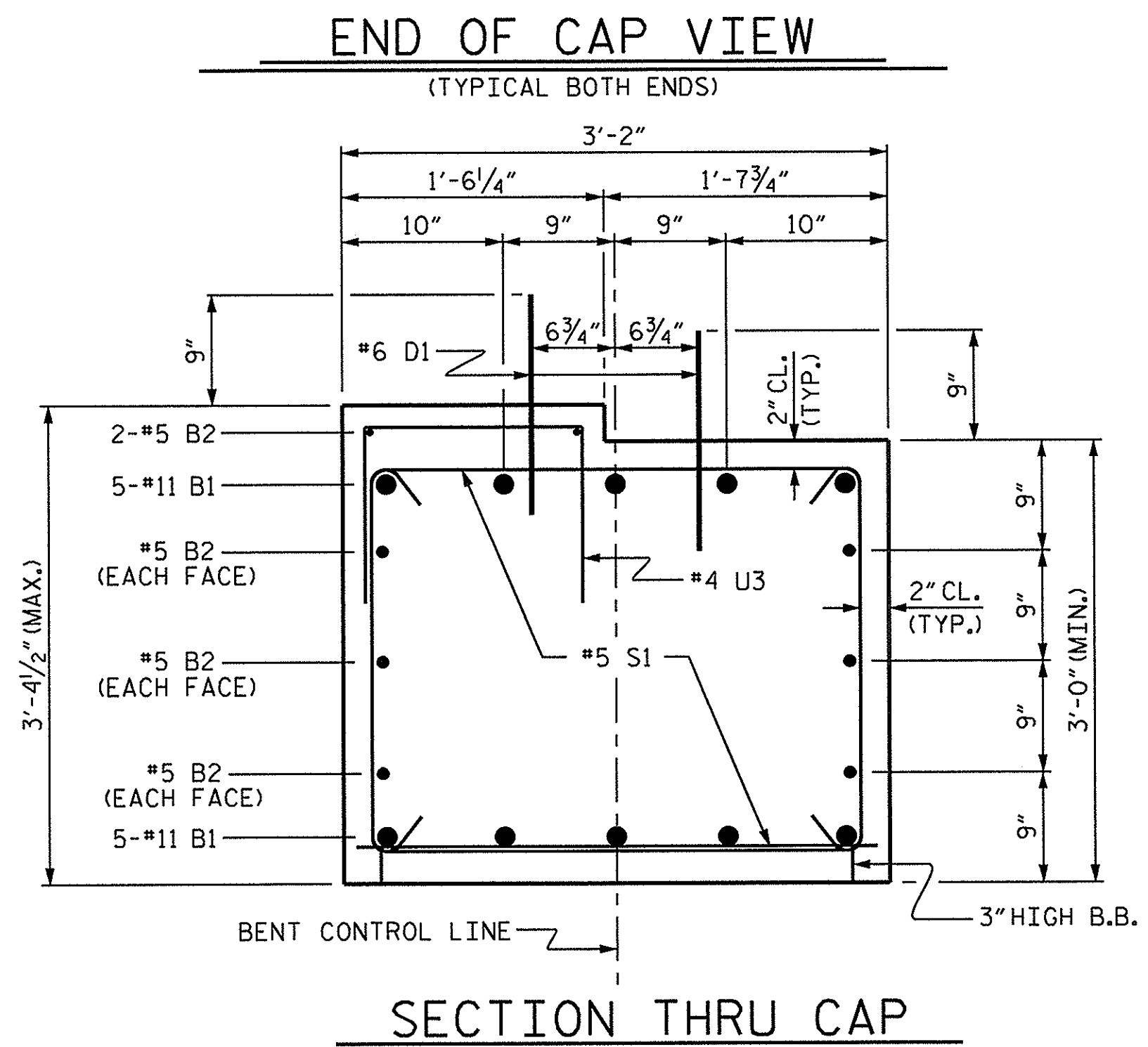
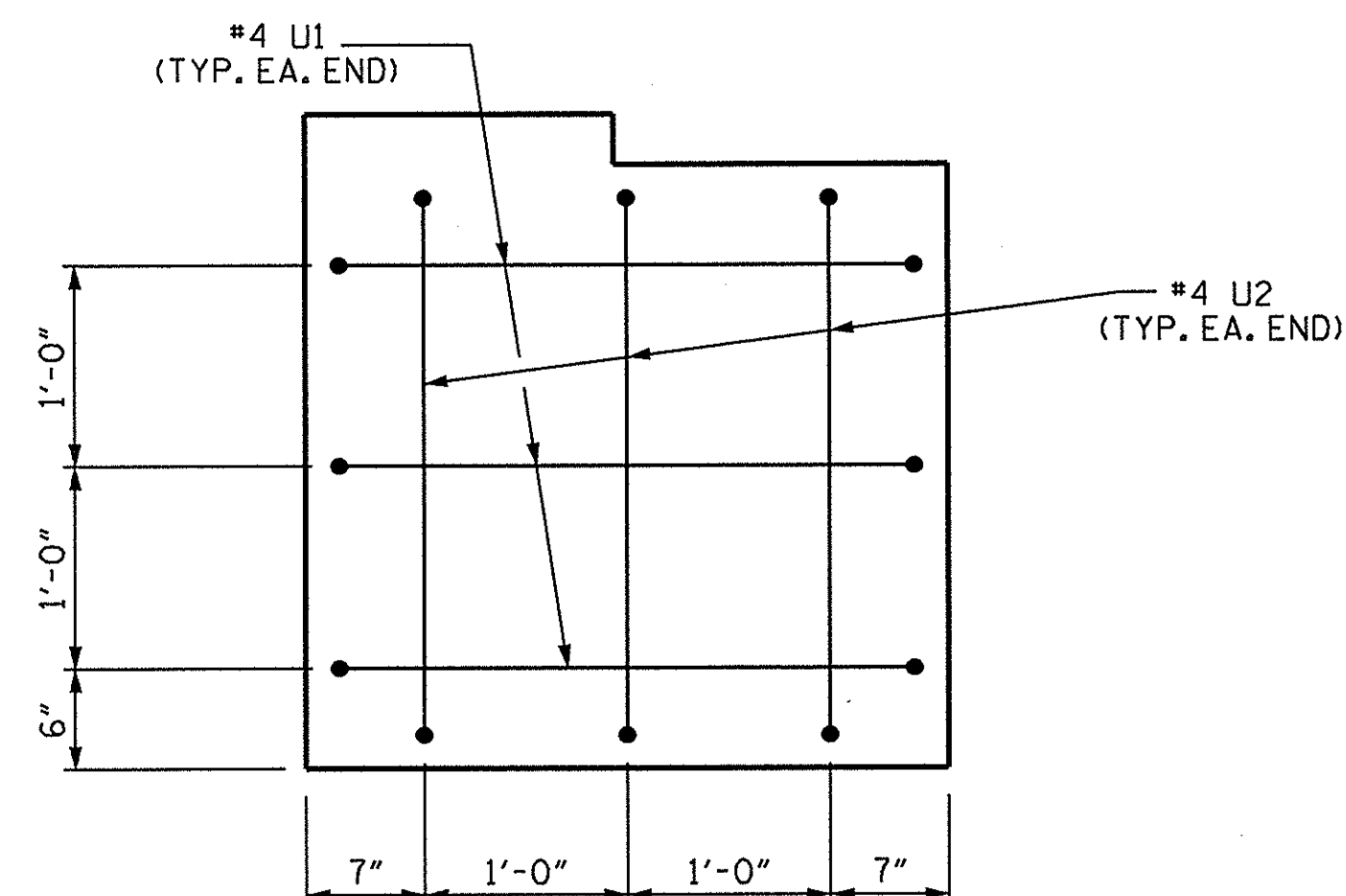
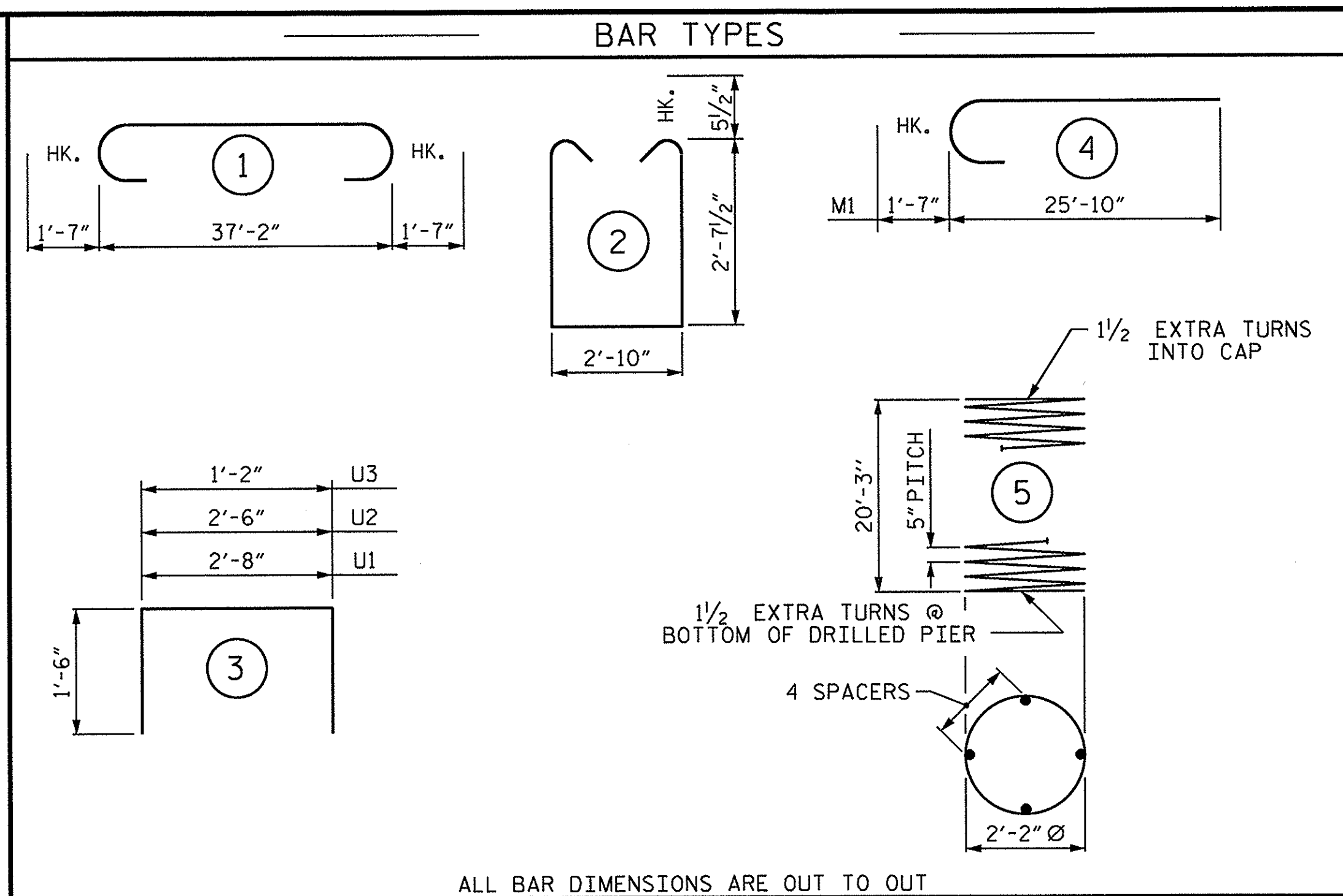
Professional Engineer Seal for John R. Diggins, Jr., North Carolina, Seal 15779, expires 7/31/12.

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 22
1			3			
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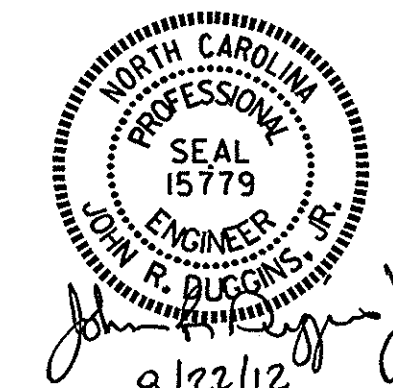
ASSEMBLED BY : A. SORSENGINH DATE : 8/12/2011
 CHECKED BY : H. KIM DATE : 2/2012
 DRAWN BY : DGE 03/10
 CHECKED BY : MKT 03/10

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 jduggins



BILL OF MATERIAL						
FOR ONE BENT						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	10	#11	1	40'-4"	2143	
B2	8	#5	STR	37'-4"	312	
D1	44	#6	STR	1'-6"	99	
M1	30	#11	4	27'-5"	4370	
S1	64	#5	2	9'-0"	601	
U1	6	#4	3	5'-8"	23	
U2	6	#4	3	5'-6"	22	
U3	38	#4	3	4'-2"	106	
REINFORCING STEEL (FOR ONE BENT)					7676 LBS.	
SP-1	3	*	5	373'-4"	1168	
SPIRAL COLUMN REINFORCING STEEL (FOR ONE BENT)					1168 LBS.	
* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR						
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)						
POUR #2 (COLUMNS)					2.5 C.Y.	
POUR #3 (CAP)					14.1 C.Y.	
TOTAL CLASS A CONCRETE					16.6 C.Y.	
DRILLED PIERS: (FOR ONE BENT)						
DRILLED PIER CONCRETE					12.6 C.Y.	
POUR #1 (DRILLED PIERS)					21.00 LIN. FT.	
3'-0" Ø DRILLED PIER NOT IN SOIL					21.00 LIN. FT.	
3'-0" Ø DRILLED PIER IN SOIL					27.00 LIN. FT.	
PERMANENT STEEL CASING FOR 3'-0" Ø DRILLED PIER					8.70 LIN. FT.	
CSL TUBES					210 LIN. FT.	

PROJECT NO. BD-5114E
 CLAY COUNTY
 STATION: 13+13.84 -L-
 SHEET 2 OF 2



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT No. 1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-17					TOTAL SHEETS 22

NOTES

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

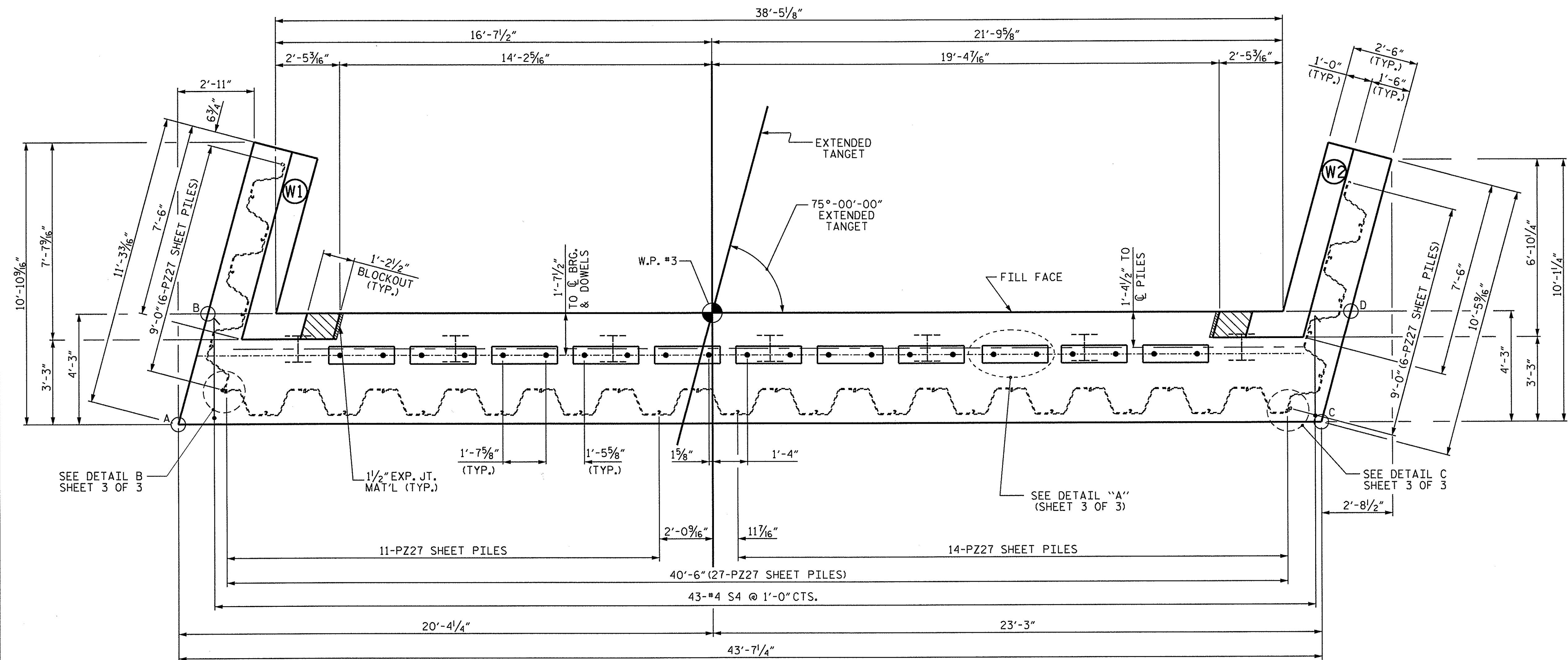
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPICE DETAILS, SEE SHEET 3 OF 3.

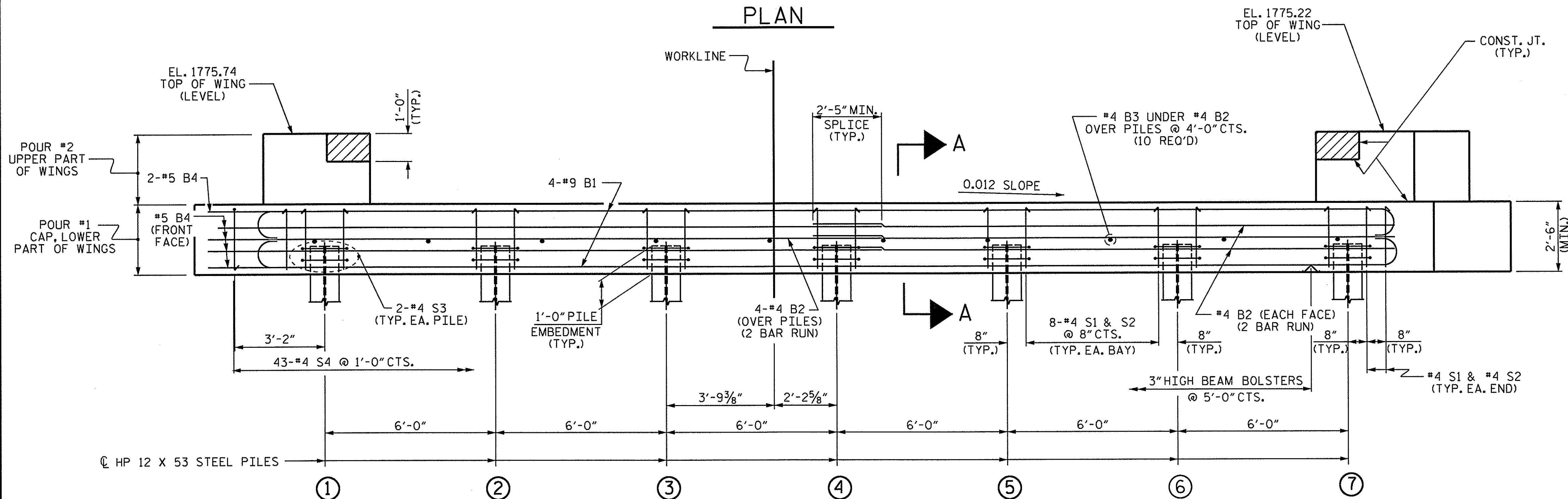
FOR WING DETAILS, SEE SHEET 2 OF 3.

ELEVATIONS OF NOTED POINTS		
	TOP OF CAP	BOTTOM OF CAP
POINT A	1773.26	1770.76
POINT B	1773.24	1770.74
POINT C	1772.74	1770.24
POINT D	1772.72	1770.22

TOP OF PILE ELEVATIONS	
①	1771.71
②	1771.64
③	1771.57
④	1771.50
⑤	1771.43
⑥	1771.35
⑦	1771.28



PLAN



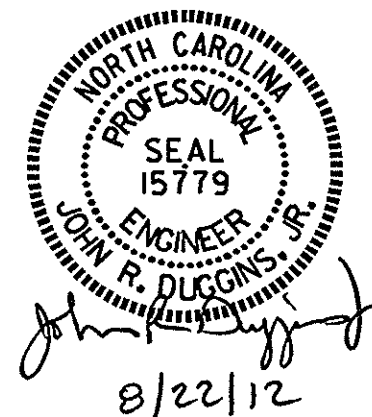
ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 3 OF 3.

SHEET PILES NOT SHOWN IN
ELEVATION VIEW FOR CLARITY.

ASSEMBLED BY : H. T. BARBOUR DATE : 3-28-12
CHECKED BY : J. R. DUGGINS DATE : 7-12
DRAWN BY : DCE 03/10
CHECKED BY : MKT 03/10

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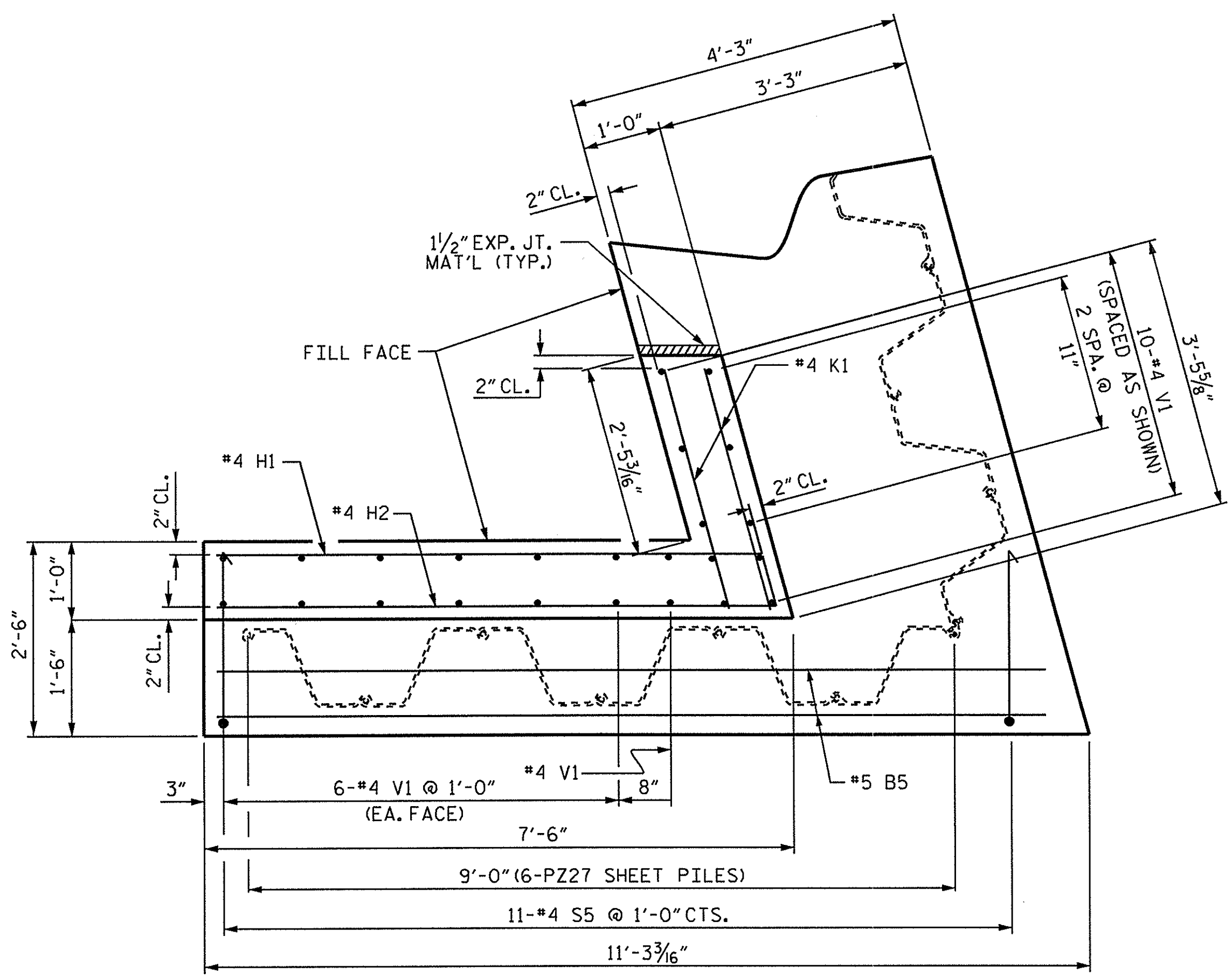
PROJECT NO. BD-5114E
CLAY COUNTY
STATION: 13+13.84 -L-

SHEET 1 OF 3

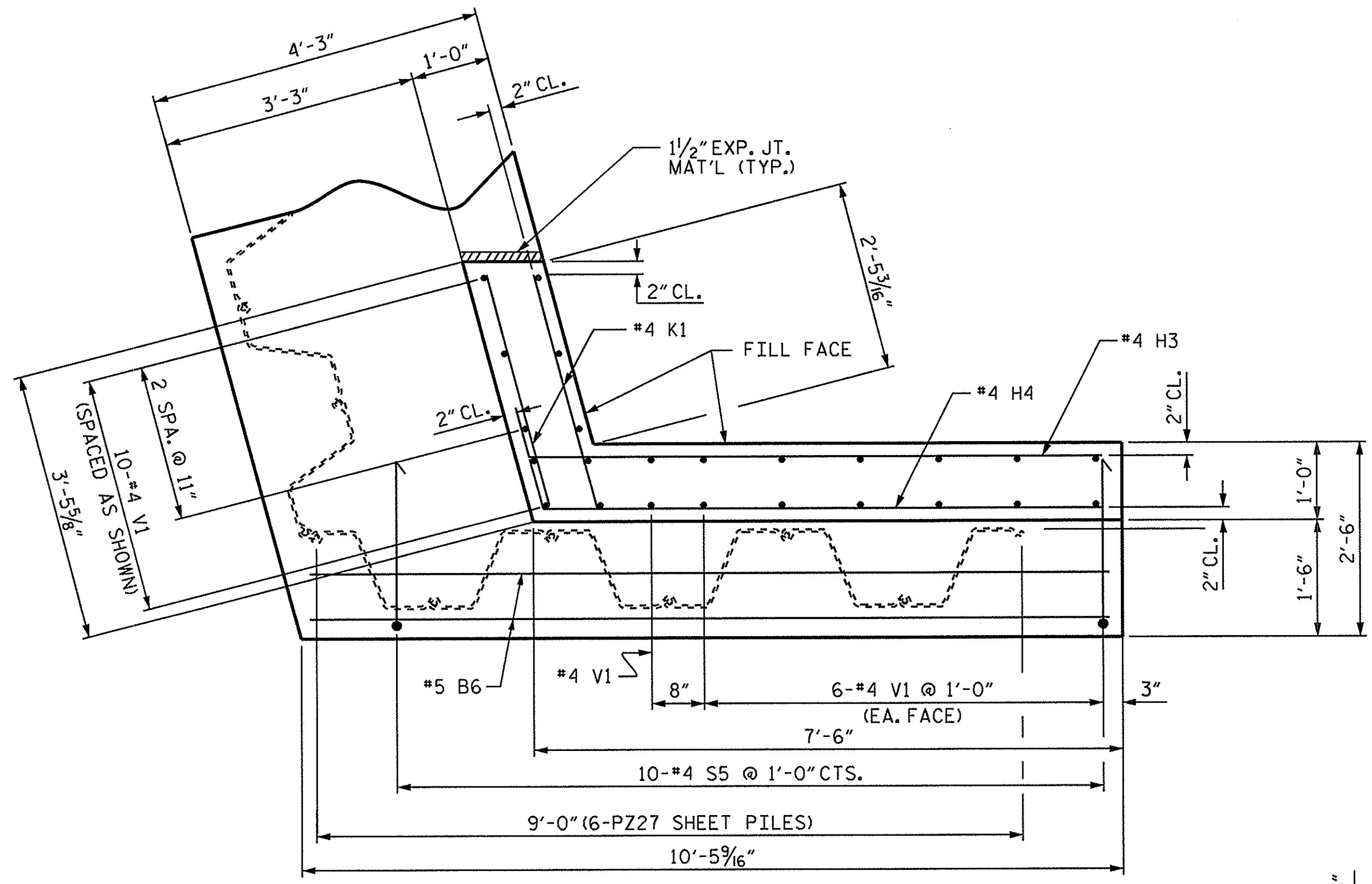
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 2

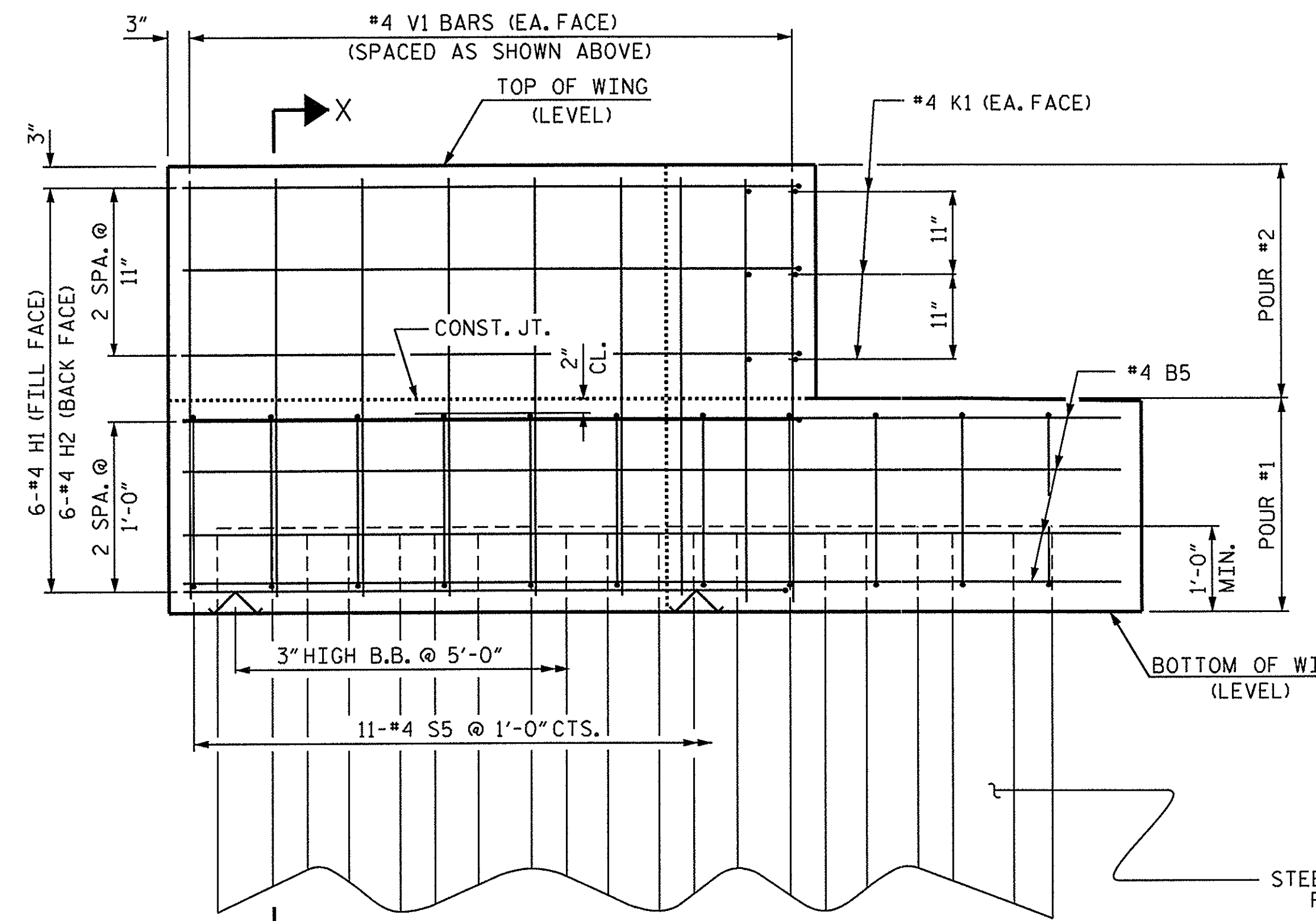
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			



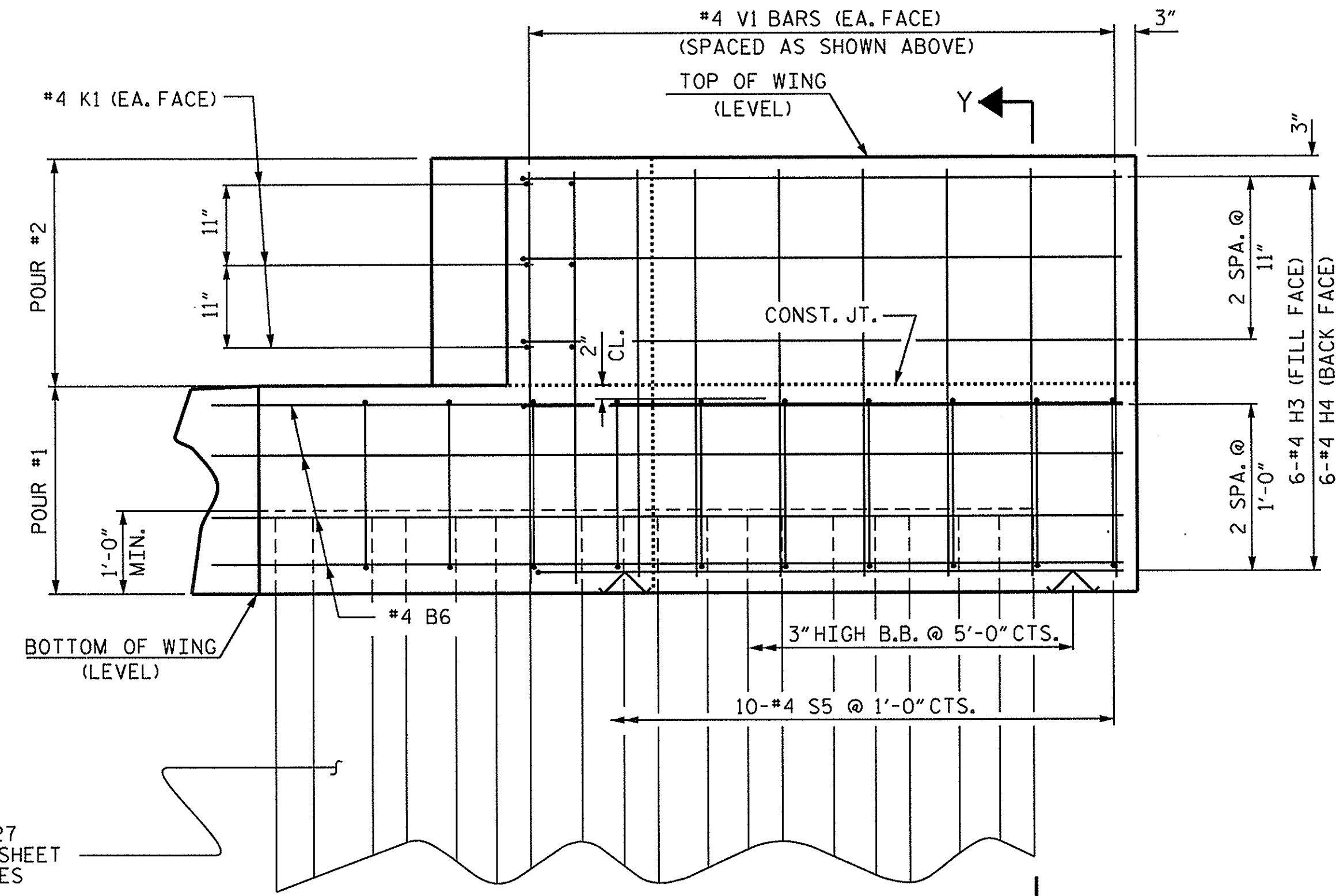
PLAN OF WING (W1)



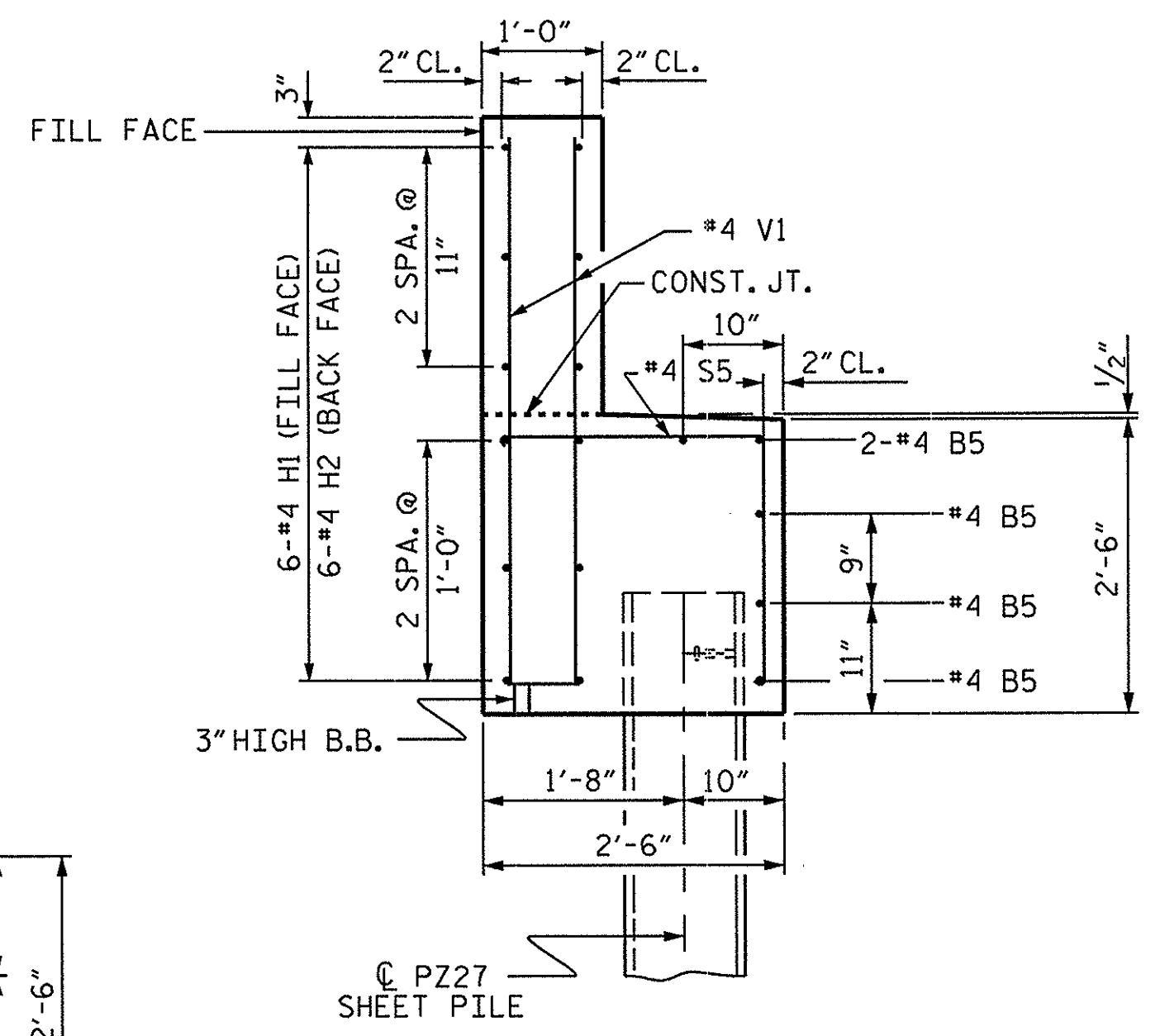
PLAN OF WING (W2)



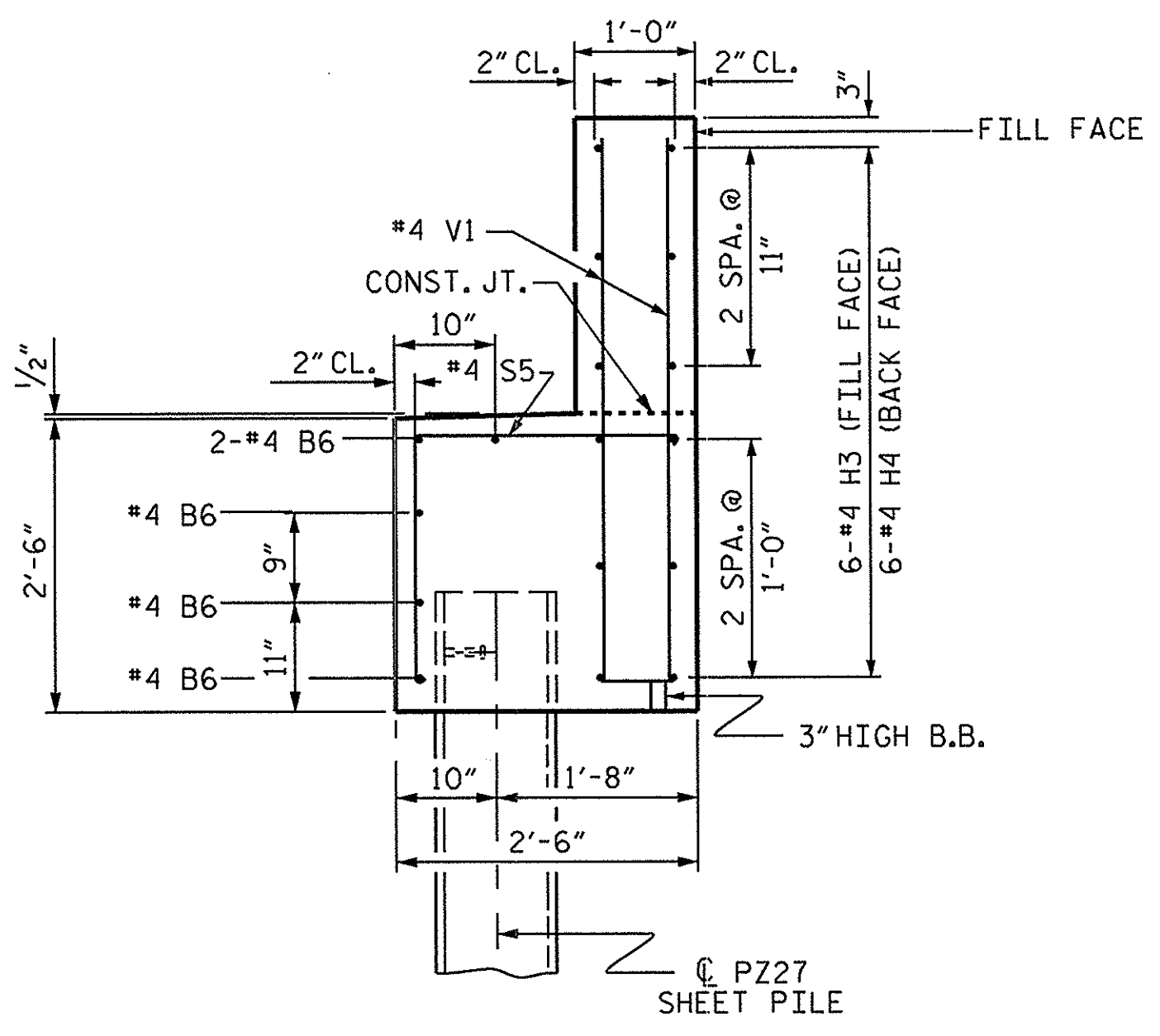
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X

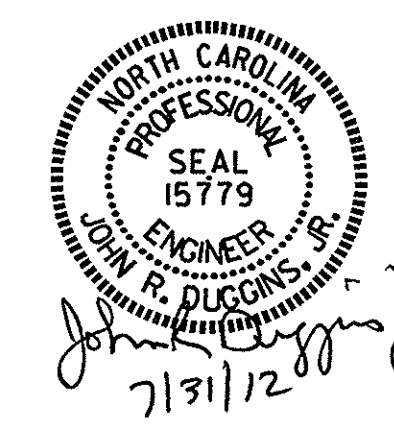


SECTION Y-Y

PROJECT NO. BD-5114E
CLAY COUNTY
STATION: 13+13.84 -L-

SHEET 2 OF 3

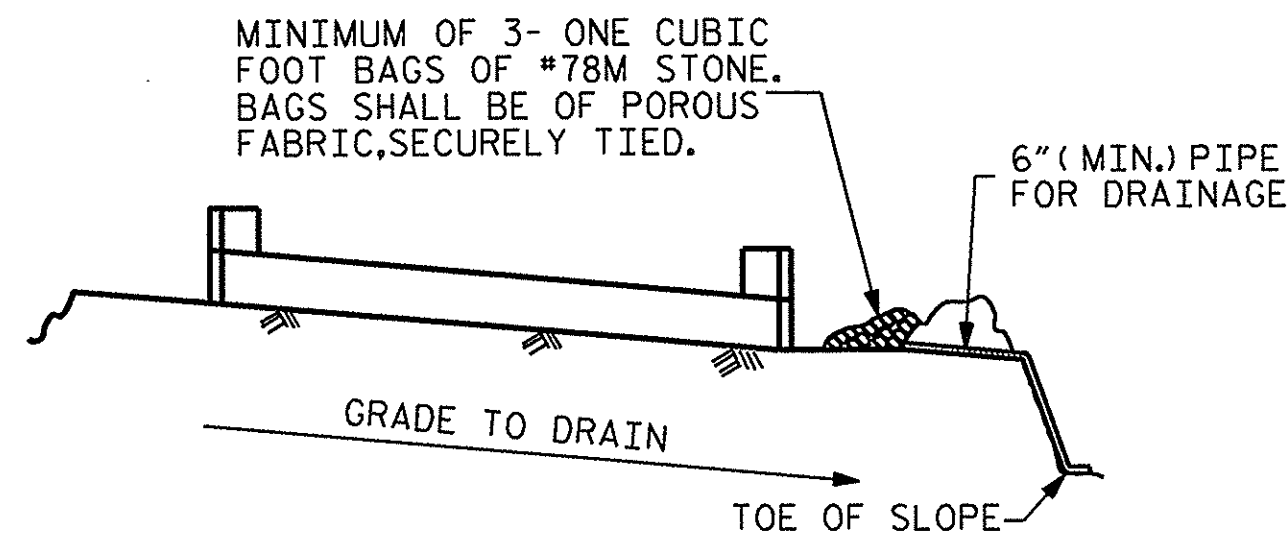
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS	
1			3			S-19	
2			4			22	



DRAWN BY: H. T. BARBOUR DATE: 3-29-12
CHECKED BY: J. R. DUGGINS DATE: 7-12

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jduggins

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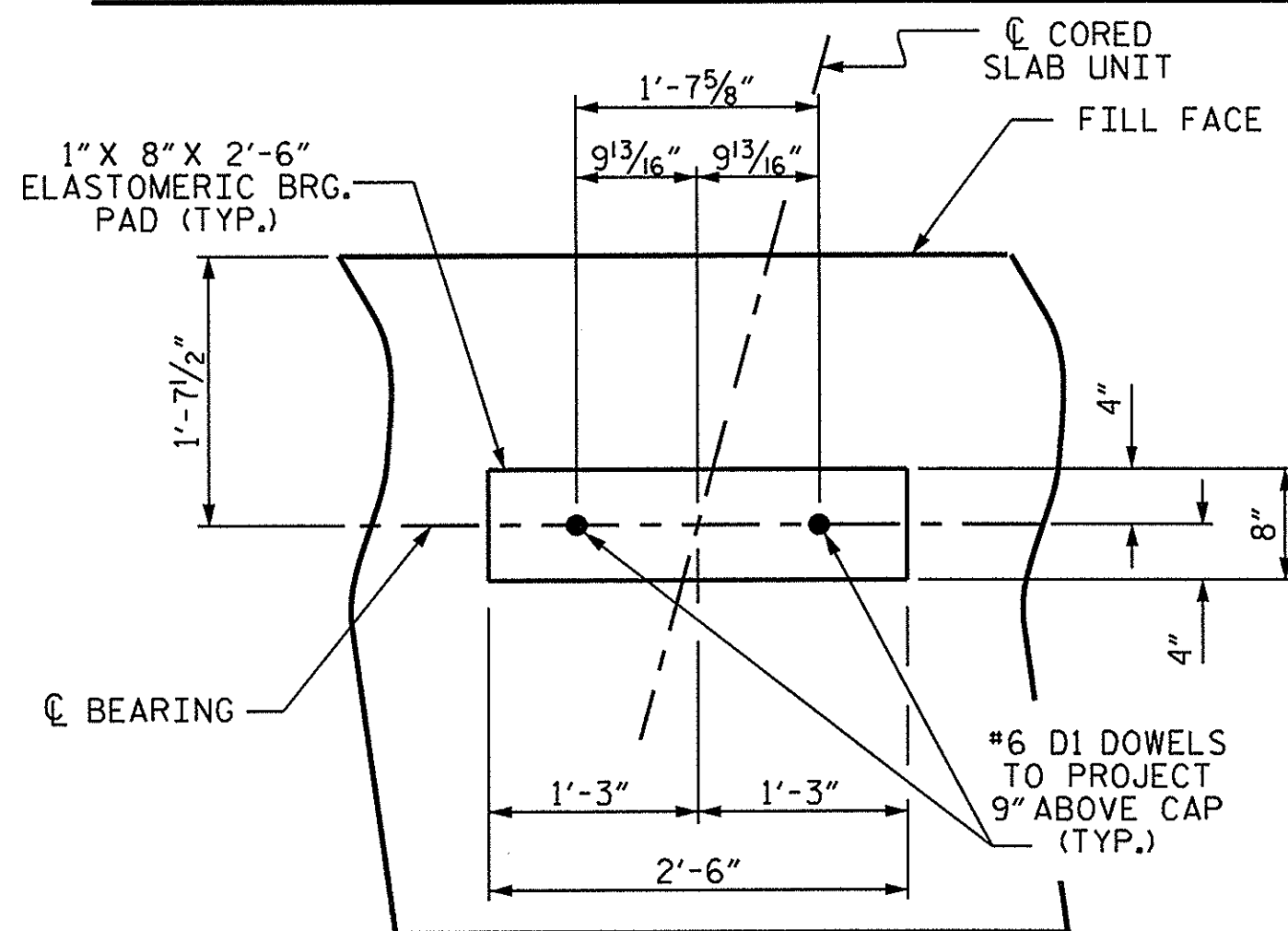


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

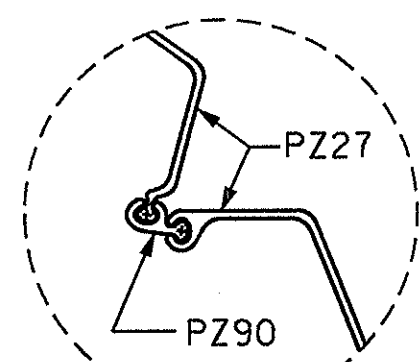
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NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

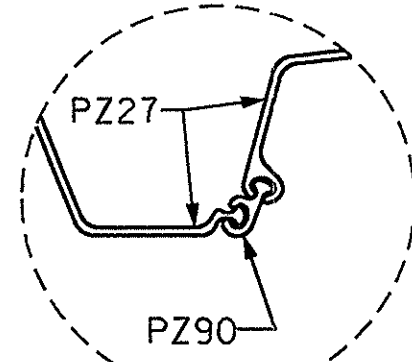
TEMPORARY DRAINAGE AT END BENT



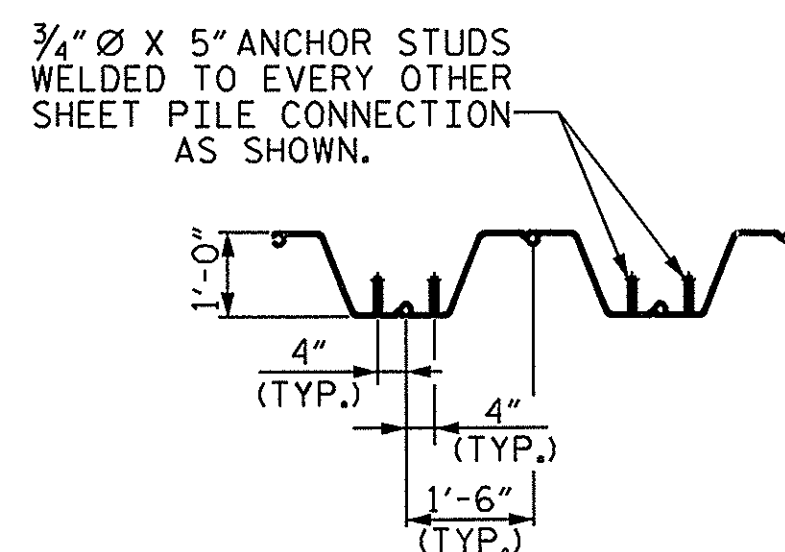
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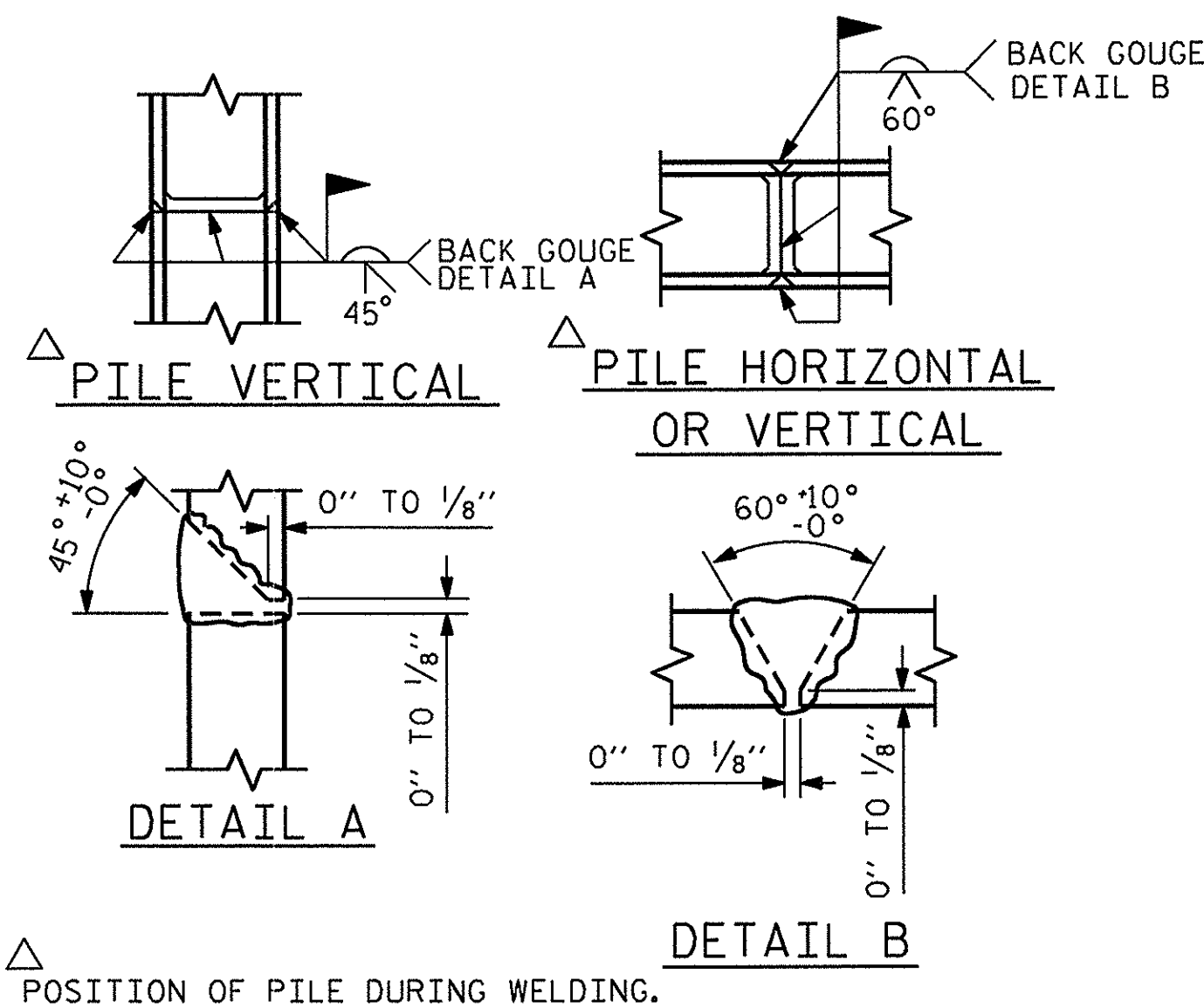
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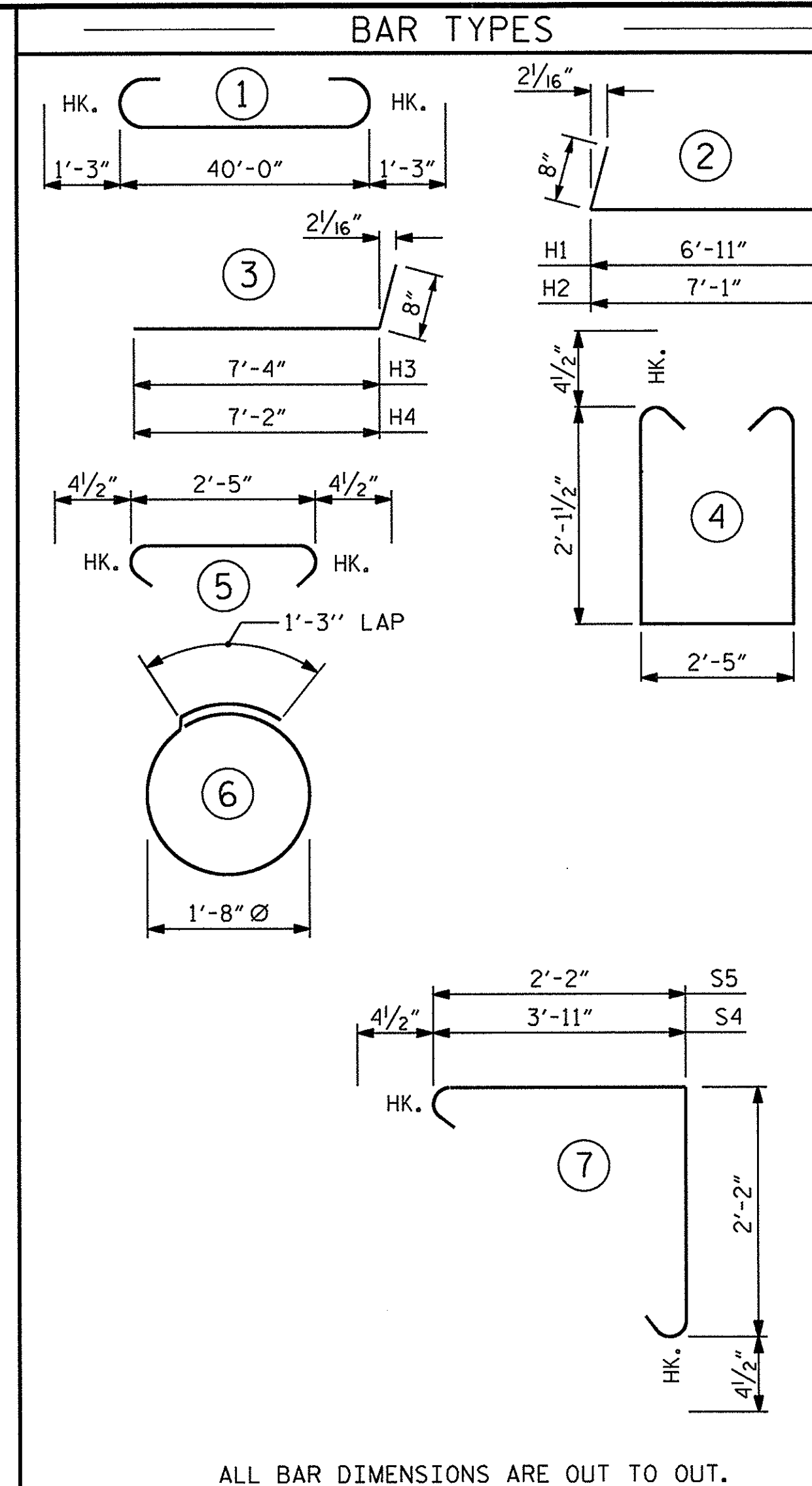
DETAIL "C"



ANCHOR STUD DETAIL



PILE SPLICE DETAILS



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT No. 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	42'-6"	1156
B2	16	#4	STR	21'-4"	228
B3	10	#4	STR	2'-5"	16
B4	5	#5	STR	43'-3"	226
B5	5	#4	STR	10'-8"	36
B6	5	#4	STR	9'-10"	33
D1	22	#6	STR	1'-6"	50
H1	6	#4	2	7'-7"	30
H2	6	#4	2	7'-9"	31
H3	6	#4	3	8'-0"	32
H4	6	#4	3	7'-10"	31
K1	12	#4	STR	3'-1"	25
S1	52	#4	4	7'-5"	258
S2	52	#4	5	3'-2"	110
S3	14	#4	6	6'-6"	61
S4	43	#4	7	6'-10"	196
S5	21	#4	7	5'-1"	71
V1	48	#4	STR	4'-8"	150

REINFORCING STEEL (FOR END BENT No. 2) 2740 LBS.

END BENT No. 2

CLASS A CONCRETE BREAKDOWN (FOR END BENT No. 2)	
POUR #1 CAP, LOWER PART OF WINGS	20.2 C.Y.
POUR #2 UPPER PART OF WINGS	1.8 C.Y.
TOTAL CLASS A CONCRETE	22.0 C.Y.

END BENT No. 2

HP 12 X 53 STEEL PILES
NO: 7 LIN. FT. = 105

18" STEEL SHEET PILES

No. PZ27 = 39
No. PZ90 = 2
TOTAL No. = 41 673 SQ. FT.

PILE EXCAVATION	
IN SOIL	LIN. FT. = 98
NOT IN SOIL	LIN. FT. = 27

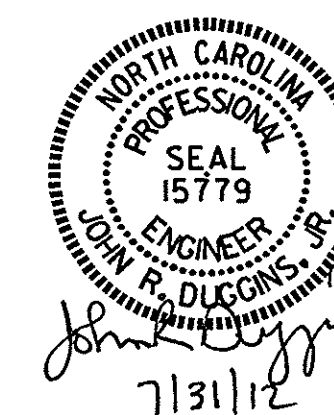
PROJECT NO. BD-5114E
CLAY COUNTY
STATION: 13+13.84 -L-

SHEET 3 OF 3

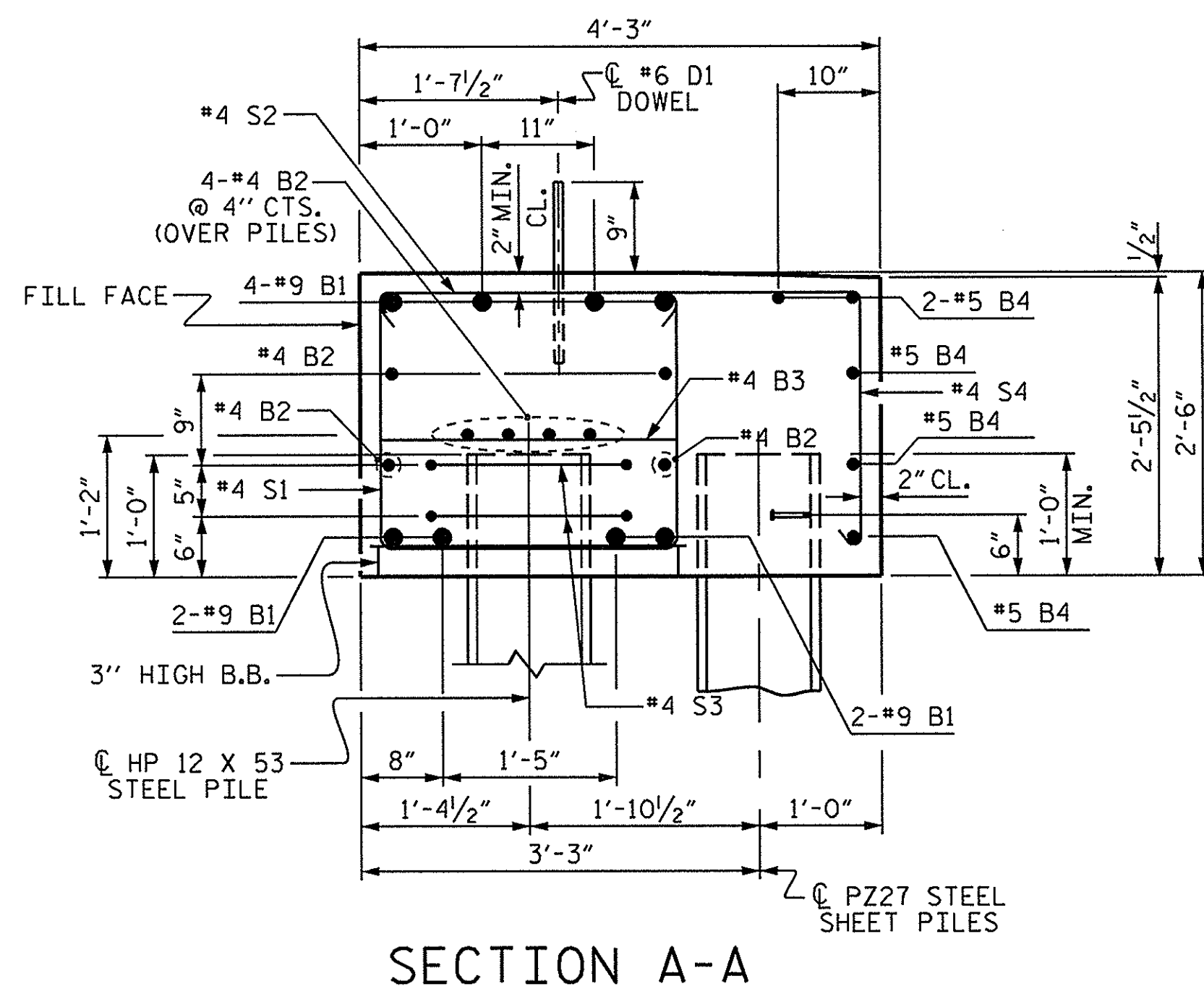
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 2
DETAILS

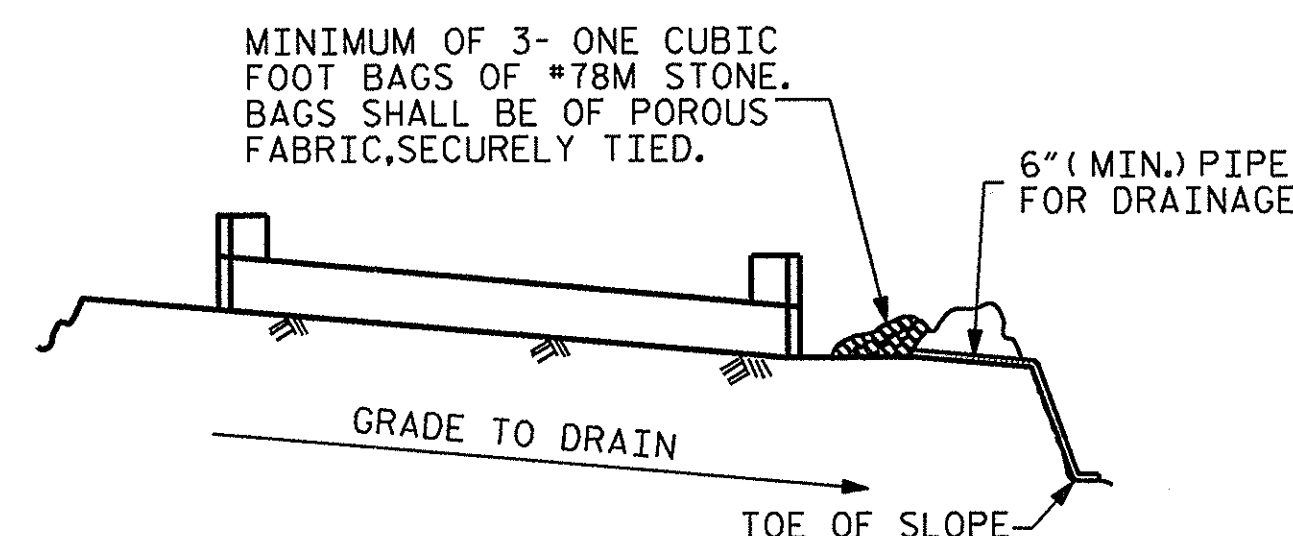


ASSEMBLED BY :	H. T. BARBOUR	DATE :	3-30-12
CHECKED BY :	J. R. DUGGINS	DATE :	7-12
DRAWN BY :	DGE	03/10	
CHECKED BY :	MKT	03/10	



SECTION A-A

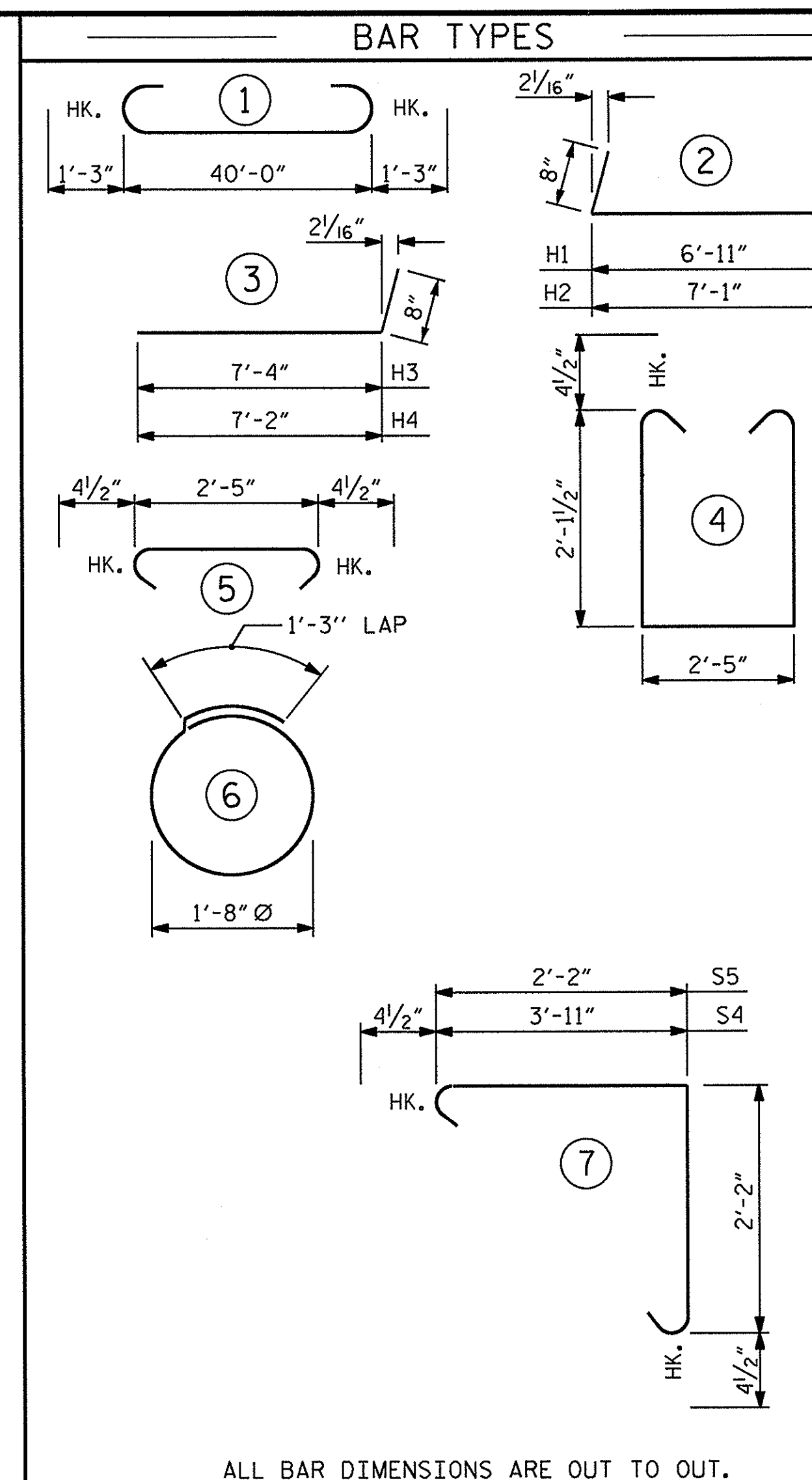
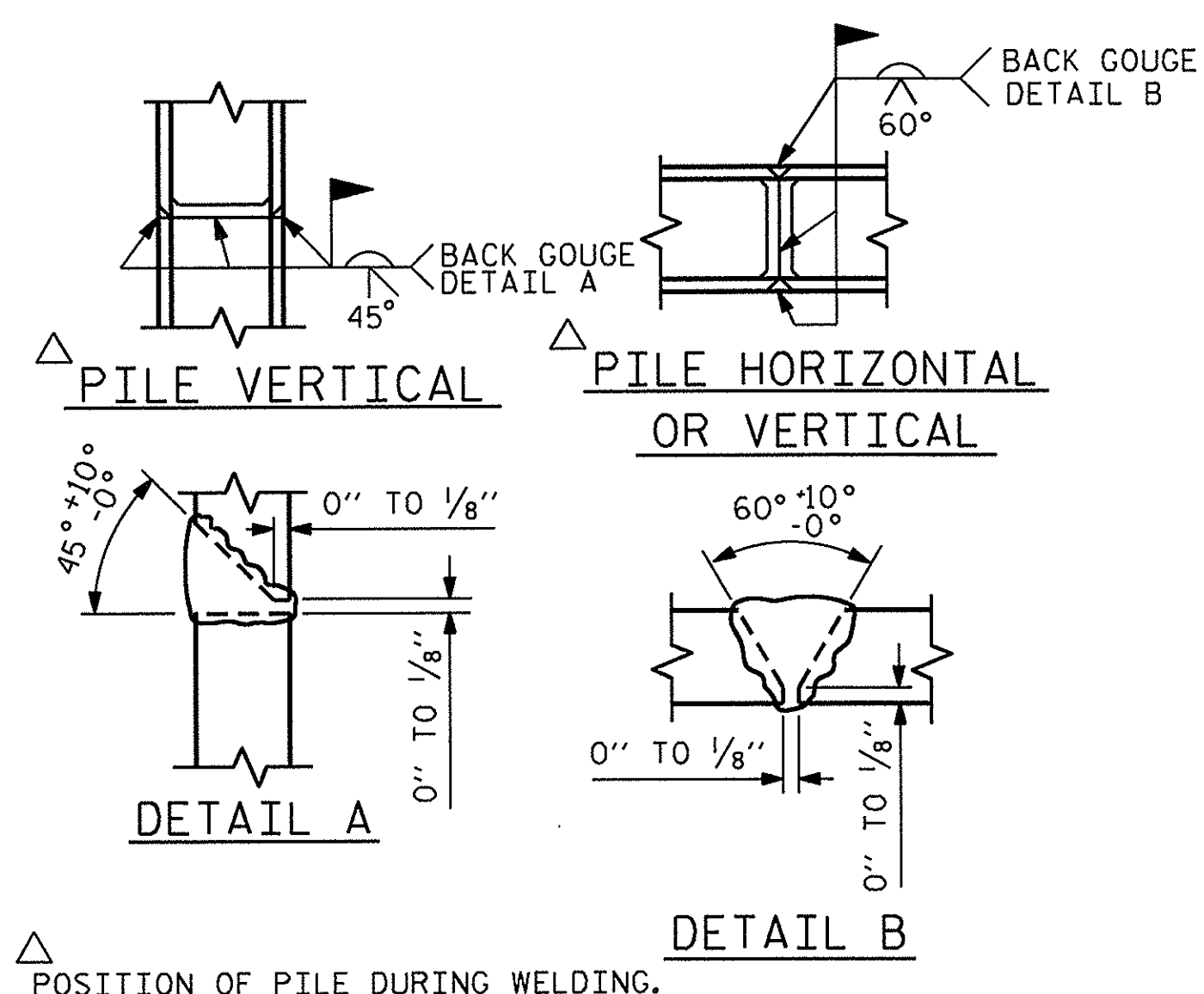
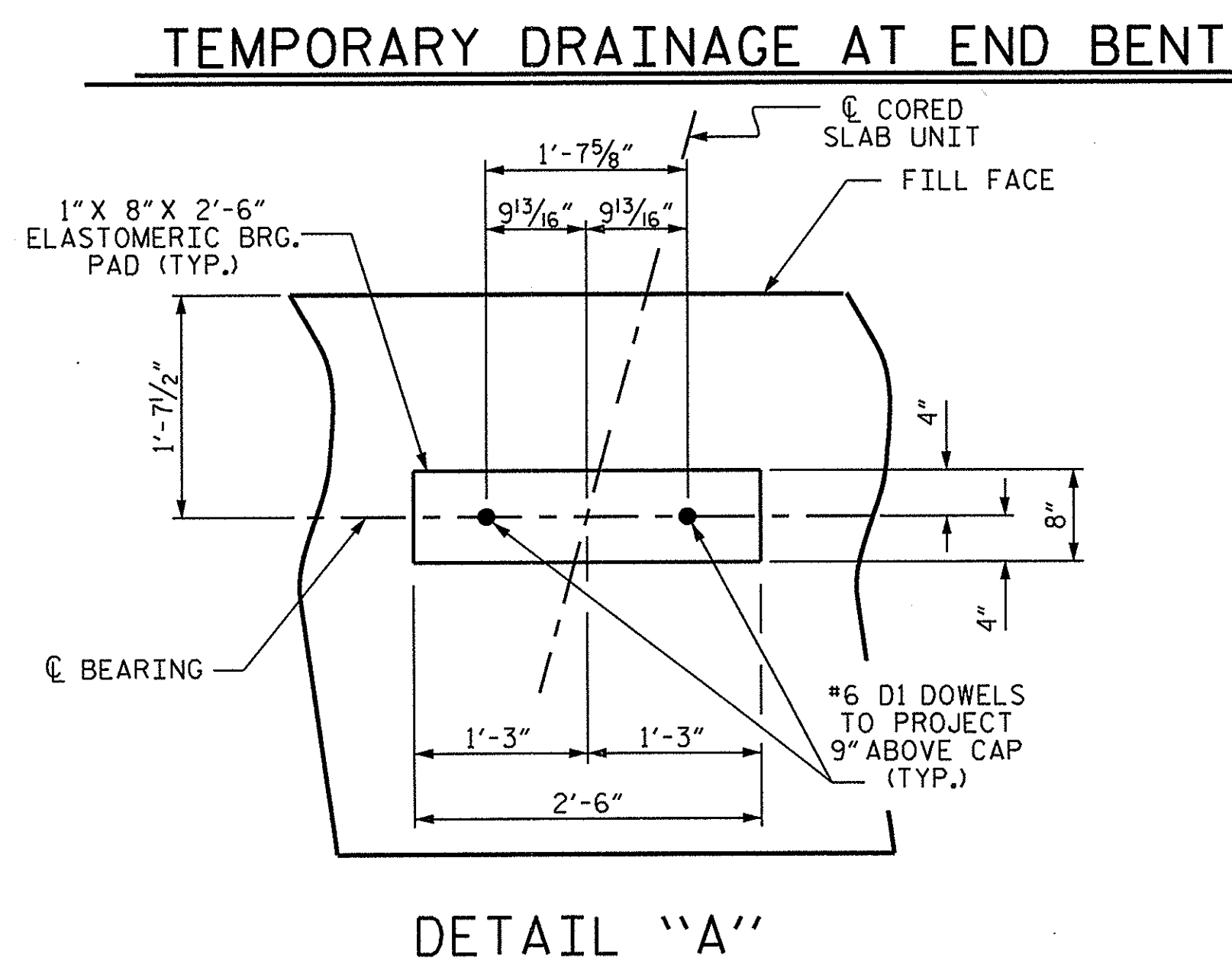
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-20
2			4			TOTAL SHEETS 22



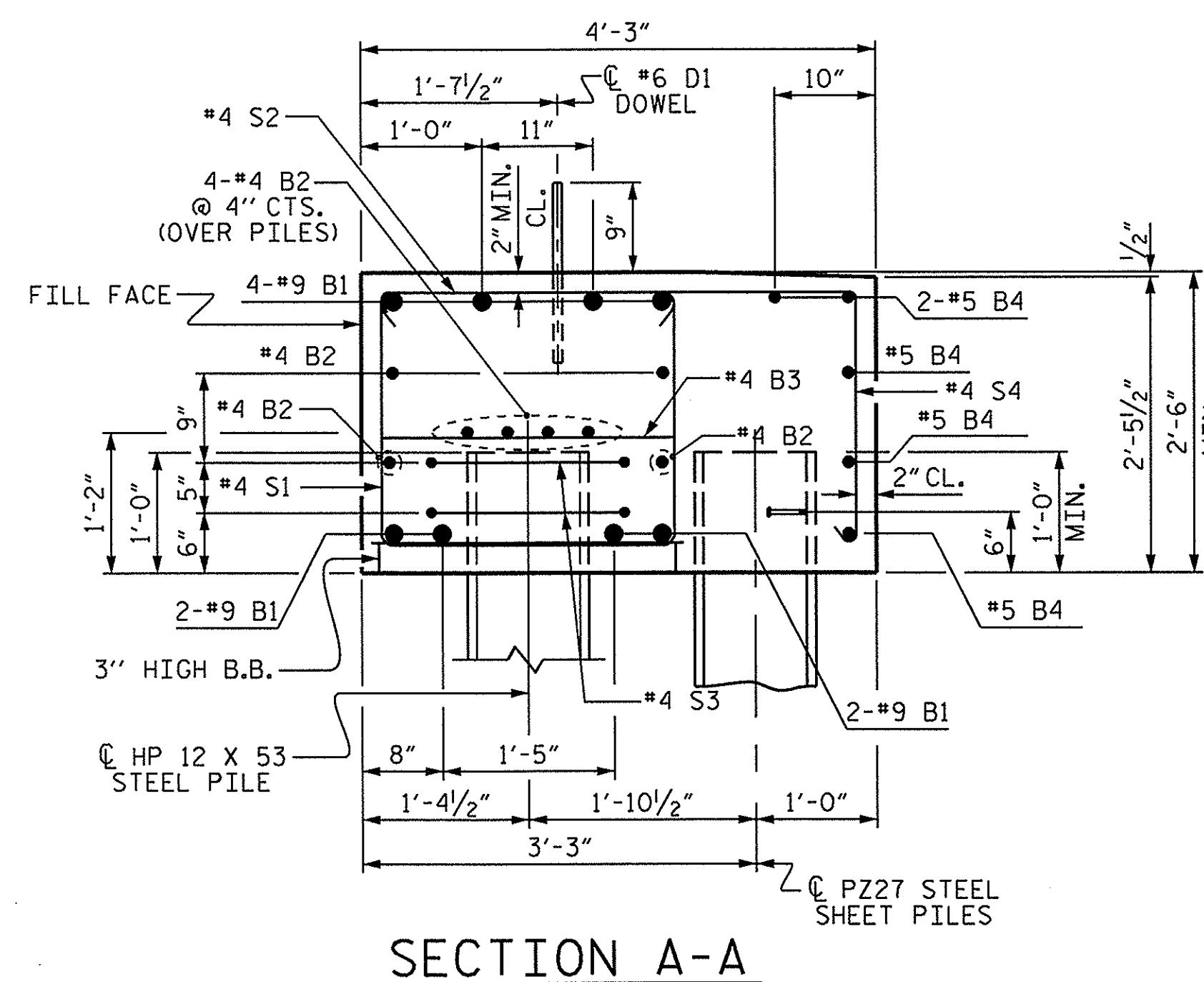
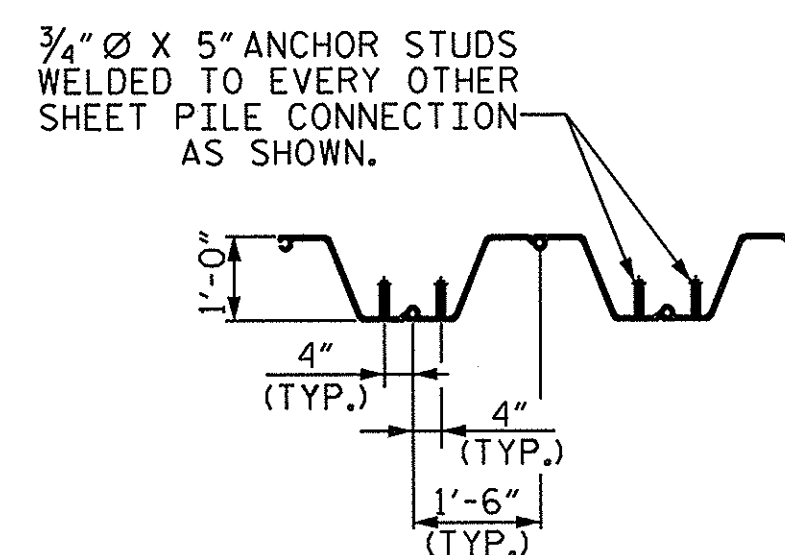
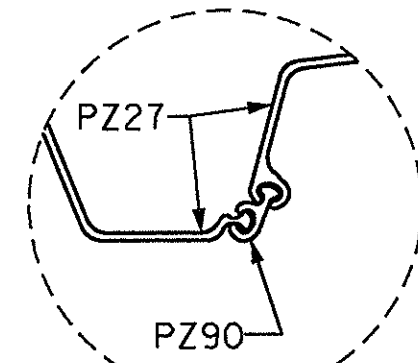
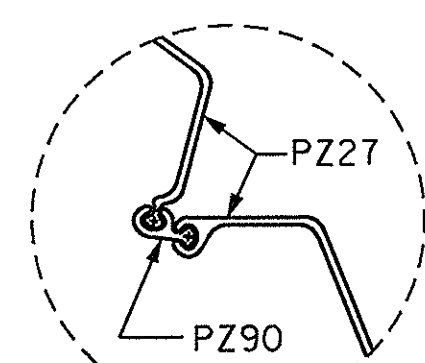
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BILL OF MATERIAL					
END BENT No. 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	42'-6"	1156
B2	16	#4	STR	21'-4"	228
B3	10	#4	STR	2'-5"	16
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S1	52	#4	4	7'-5"	258
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S3	14	#4	6	6'-6"	61
S4	43	#4	7	6'-10"	196
S5	21	#4	7	5'-1"	71
V1	48	#4	STR	4'-8"	150
REINFORCING STEEL (FOR END BENT No. 2)					2740 LBS.
END BENT No. 2					
CLASS A CONCRETE BREAKDOWN (FOR END BENT No. 2)					
POUR #1	CAP, LOWER PART OF WINGS				20.2 C.Y.
POUR #2	UPPER PART OF WINGS				1.8 C.Y.
TOTAL CLASS A CONCRETE					22.0 C.Y.
END BENT No. 2					
HP 12 X 53 STEEL PILES					
NO: 7		LIN. FT. = 105			
18" STEEL SHEET PILES					
No. PZ27 = 39					
No. PZ90 = 2					
TOTAL NO. = 41		685 SQ. FT.			
PILE EXCAVATION					
IN SOIL		LIN. FT. = 98			
NOT IN SOIL		LIN. FT. = 27			



PROJECT NO. BD-5114E
CLAY COUNTY
 STATION: 13+13.84 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

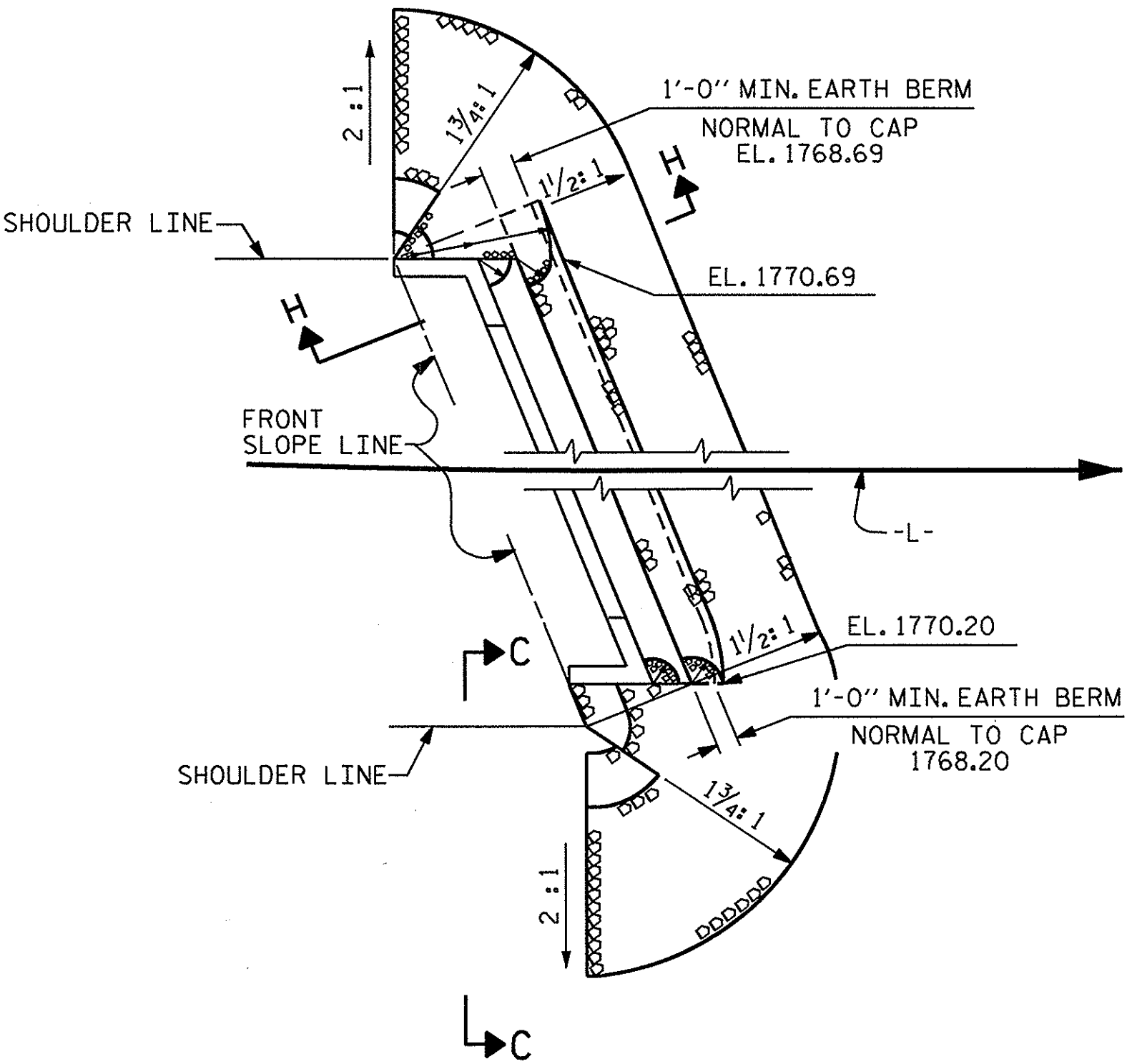
END BENT No. 2
DETAILS

REVISIONS						SHEET NO. 5-20
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS ??
2			4			

ASSEMBLED BY :	H. T. BARBOUR	DATE :	3-30-12
CHECKED BY :	J. R. DUGGINS	DATE :	7-12
DRAWN BY :	DGE	03/10	
CHECKED BY :	MKT	03/10	

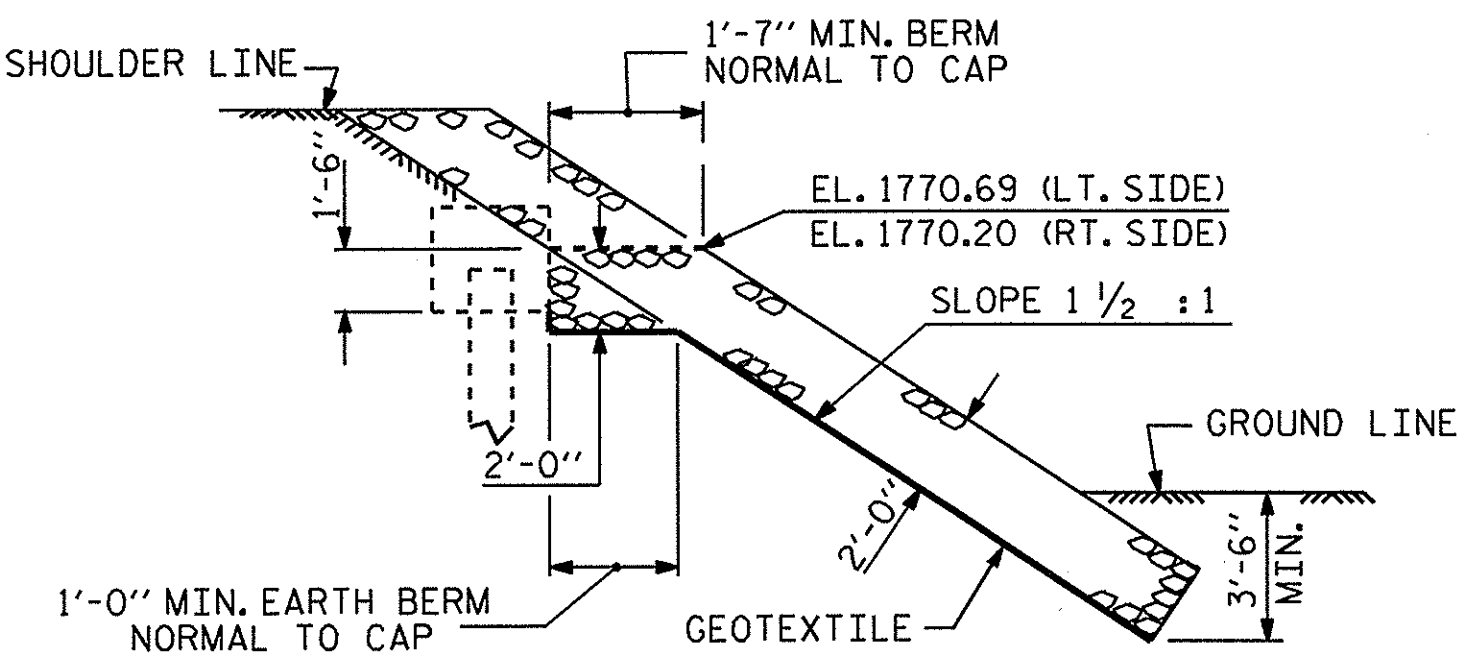
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Jduggins

ESTIMATED QUANTITIES		
BRIDGE @ STA. 13+13.84 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	155	172

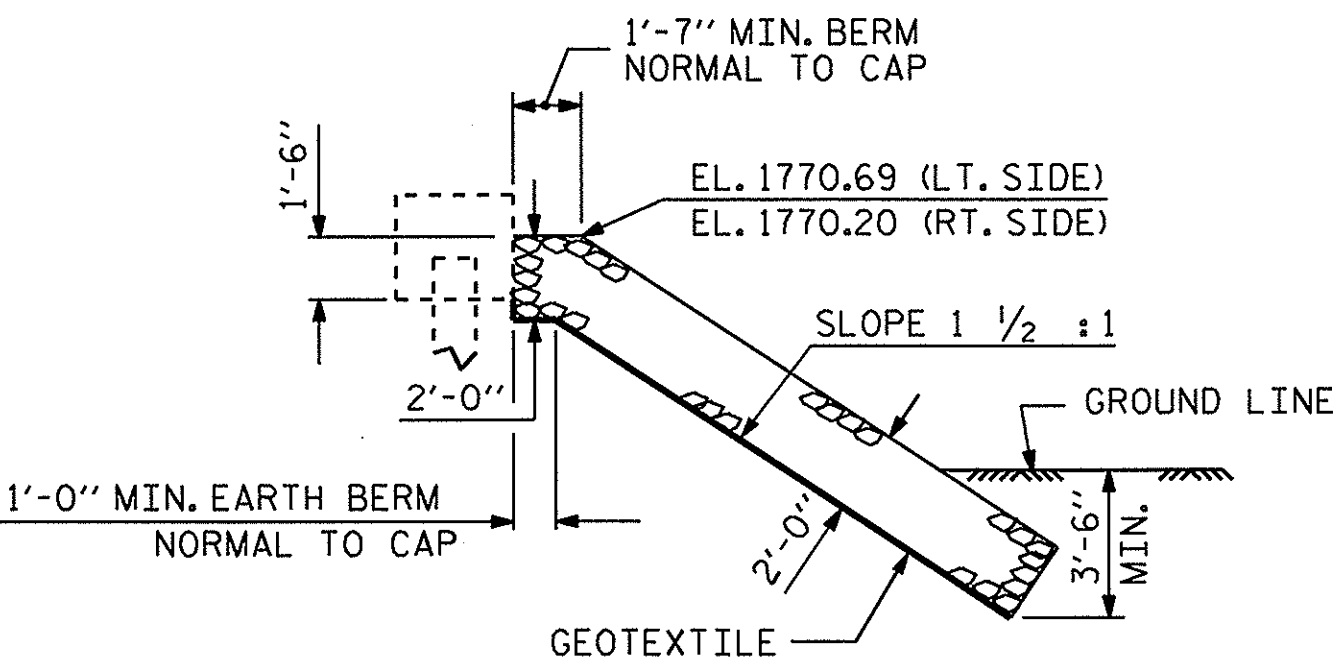


END BENT #1

PLAN

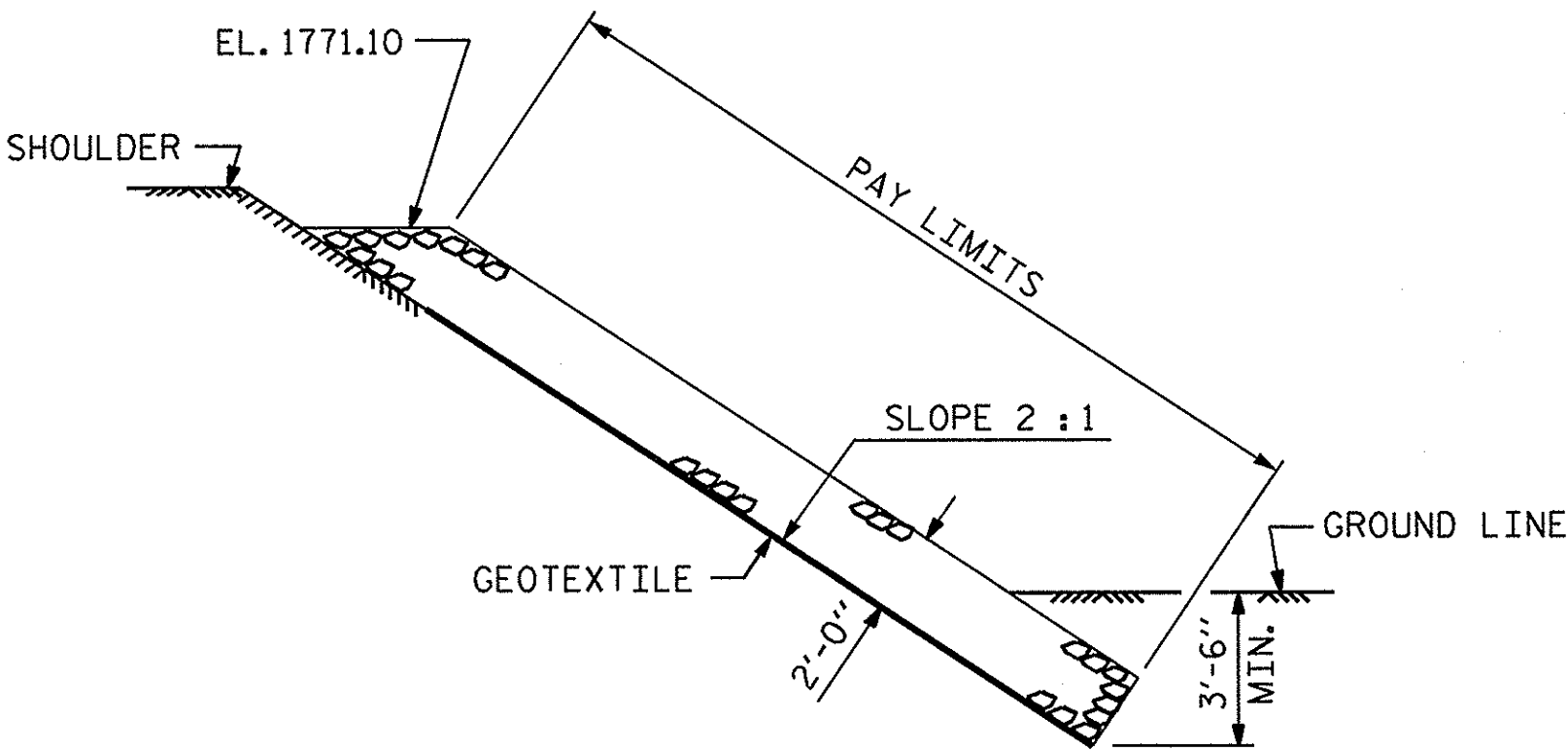


SECTION H-H



C SECTION

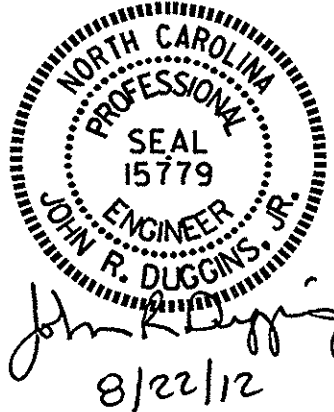
BERM RIP RAPPED



SECTION C-C

PROJECT NO. BD-5114E
CLAY COUNTY
STATION: 13+13.84 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD					
=RIP RAP DETAILS=					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					22



ASSEMBLED BY :	A. SORSENGIH	DATE :	9/2011
CHECKED BY :	H. KIM	DATE :	2/2012
DRAWN BY :	REK 1/84	REV. 8/16/99	RWW/LES
CHECKED BY :	RDU 1/84	REV. 10/17/00	RWW/LES
		REV. 5/1/06R	TLA/GM

NOTES

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 4" Ø DRAINAGE PIPE, AND #78M STONE BACKFILL, SEE ROADWAY PLANS.

GEOTEXTILE SHALL BE TYPE 1 IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

#78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

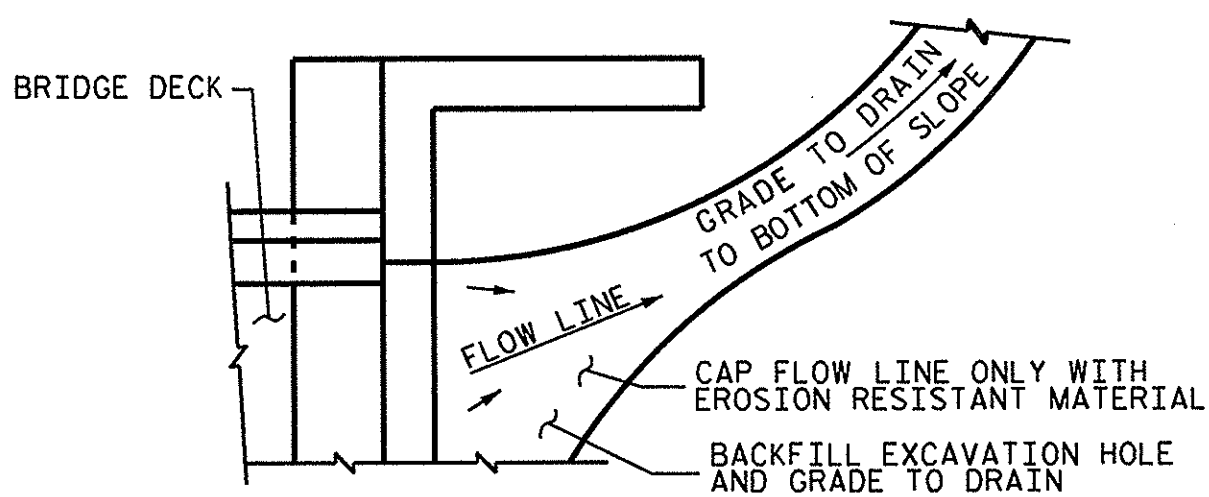
#78M STONE BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

FOR THE 4" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

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.

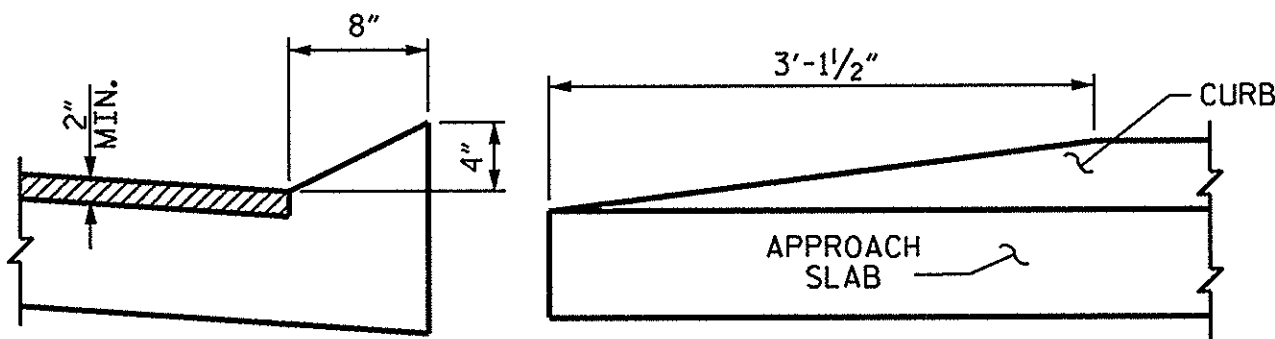
APPROACH SLAB GROOVING IS NOT REQUIRED.

BILL OF MATERIAL						
APPROACH SLAB AT EB #1						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A1	26	#4	STR	17'-6"	304	
A2	26	#4	STR	17'-5"	302	
*B1	64	#5	STR	11'-1"	740	
B2	64	#6	STR	11'-7"	1113	
REINFORCING STEEL					LBS.	1415
*EPOXY COATED REINFORCING STEEL					LBS.	1044
CLASS AA CONCRETE					C. Y.	18.7
APPROACH SLAB AT EB #2						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A1	26	#4	STR	17'-6"	304	
A2	26	#4	STR	17'-5"	302	
*B1	64	#5	STR	11'-1"	740	
B2	64	#6	STR	11'-7"	1113	
REINFORCING STEEL					LBS.	1415
*EPOXY COATED REINFORCING STEEL					LBS.	1044
CLASS AA CONCRETE					C. Y.	18.7



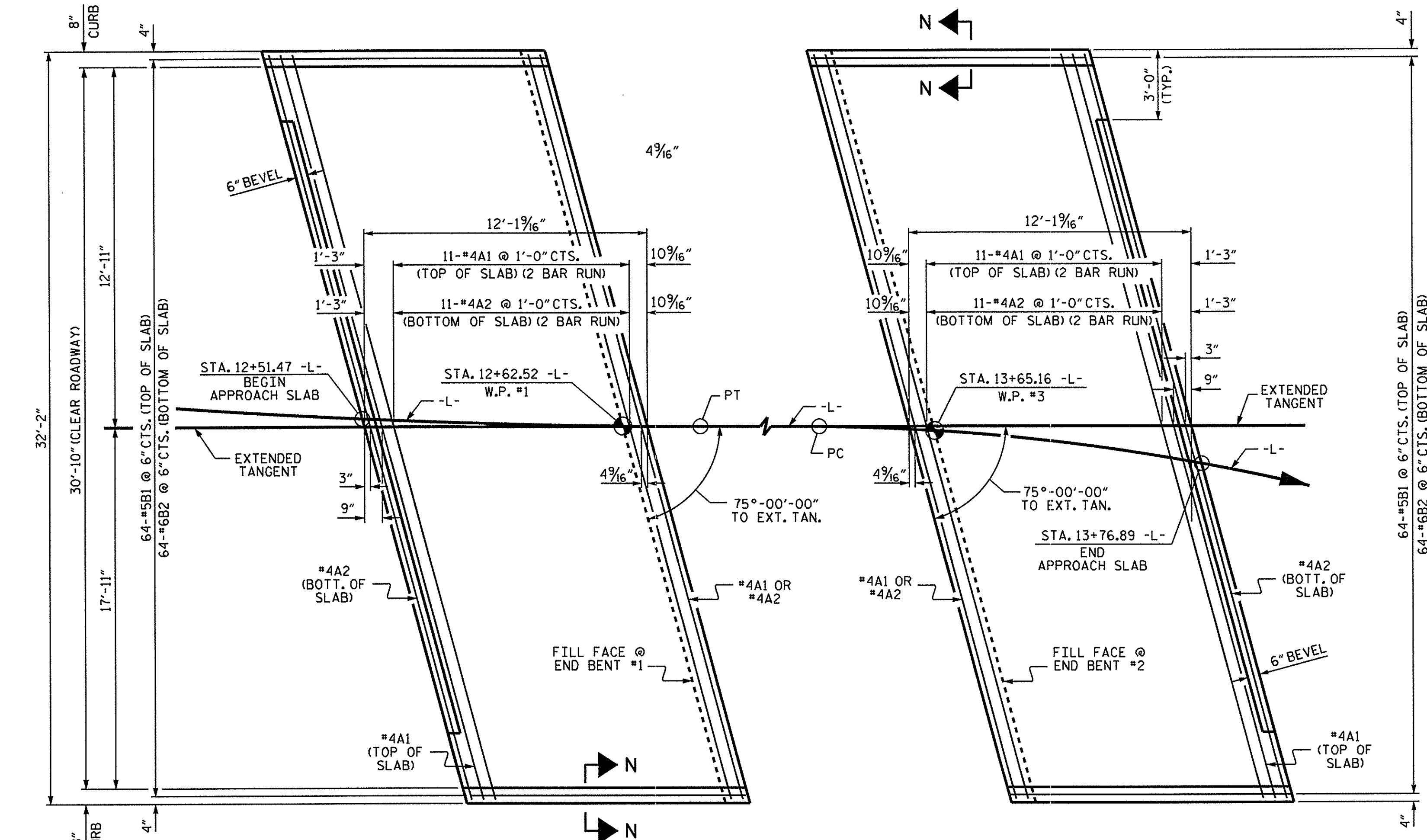
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL



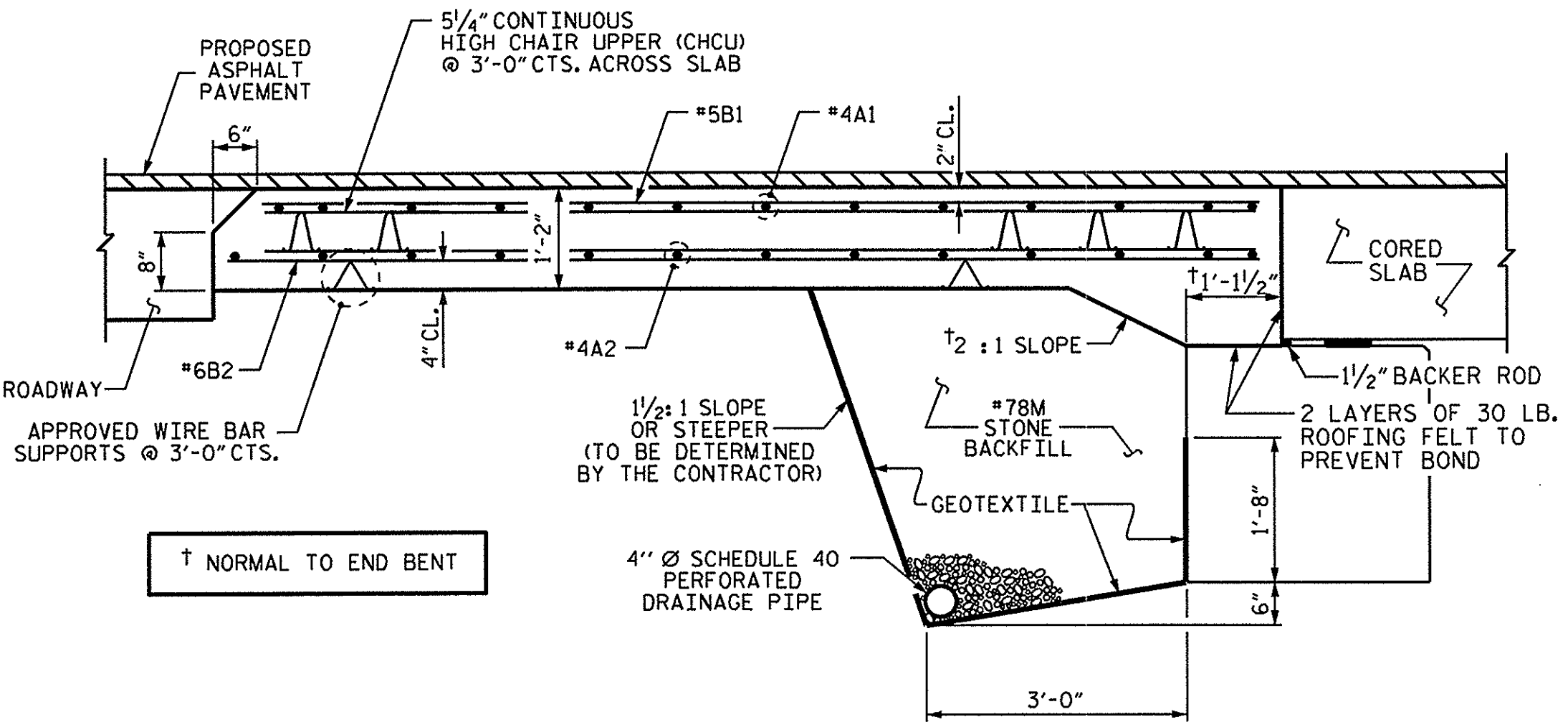
SECTION N-N END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

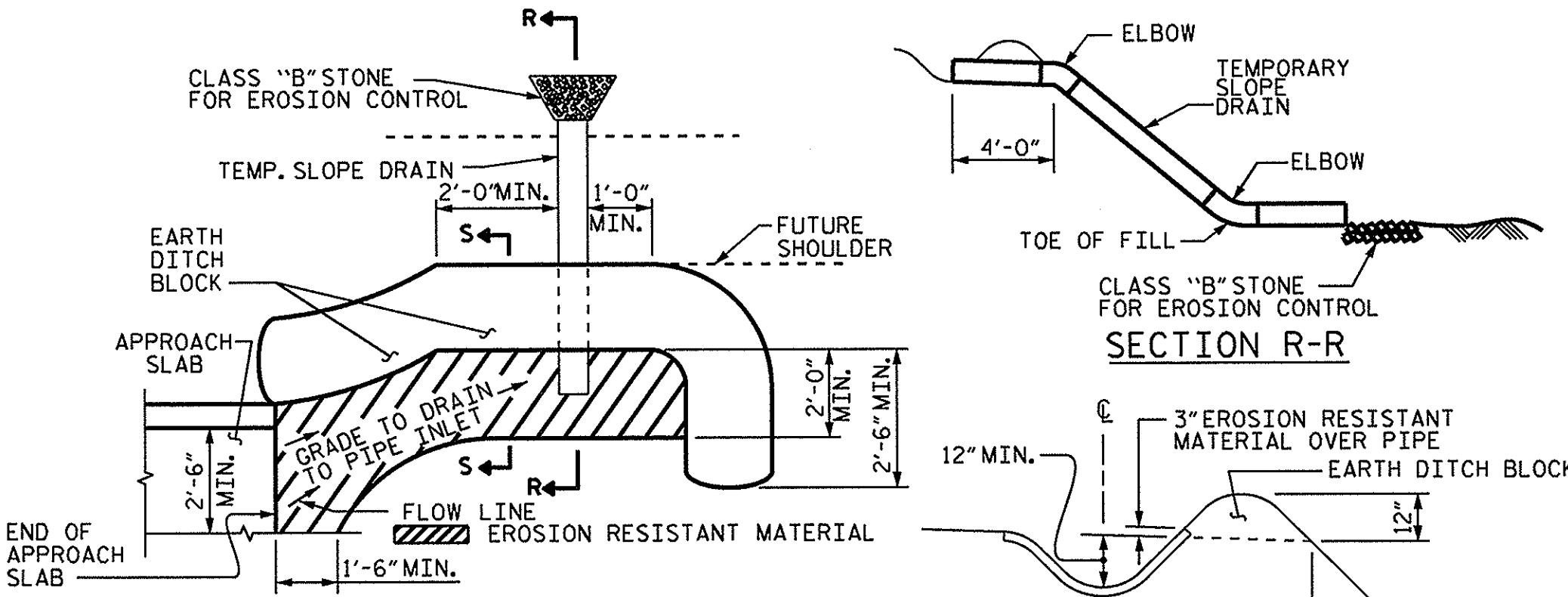


PLAN @ END BENT #1 PLAN @ END BENT #2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB



NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2\"/>

PLAN VIEW

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

BRIDGE NO. BD-5114E
CLAY COUNTY
STATION: 13+13.84 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						
STANDARD BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB UNIT (SUB-REGIONAL TIER) 75° SKEW						
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			
SHEET NO. <u>S-22</u>						TOTAL SHEETS <u>22</u>

ASSEMBLED BY: A. SORSENGINH	DATE: 8/12/2011
CHECKED BY: H. KIM	DATE: 2/2012
DRAWN BY: SHS/MAA 5-09	
CHECKED BY: BCH 5-09	

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.