

09/08/99

See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

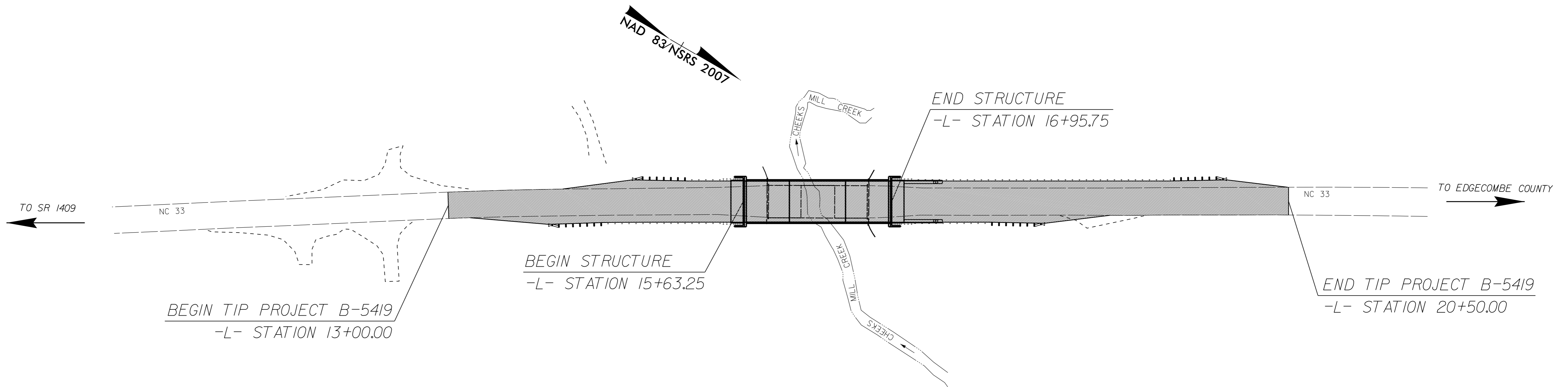
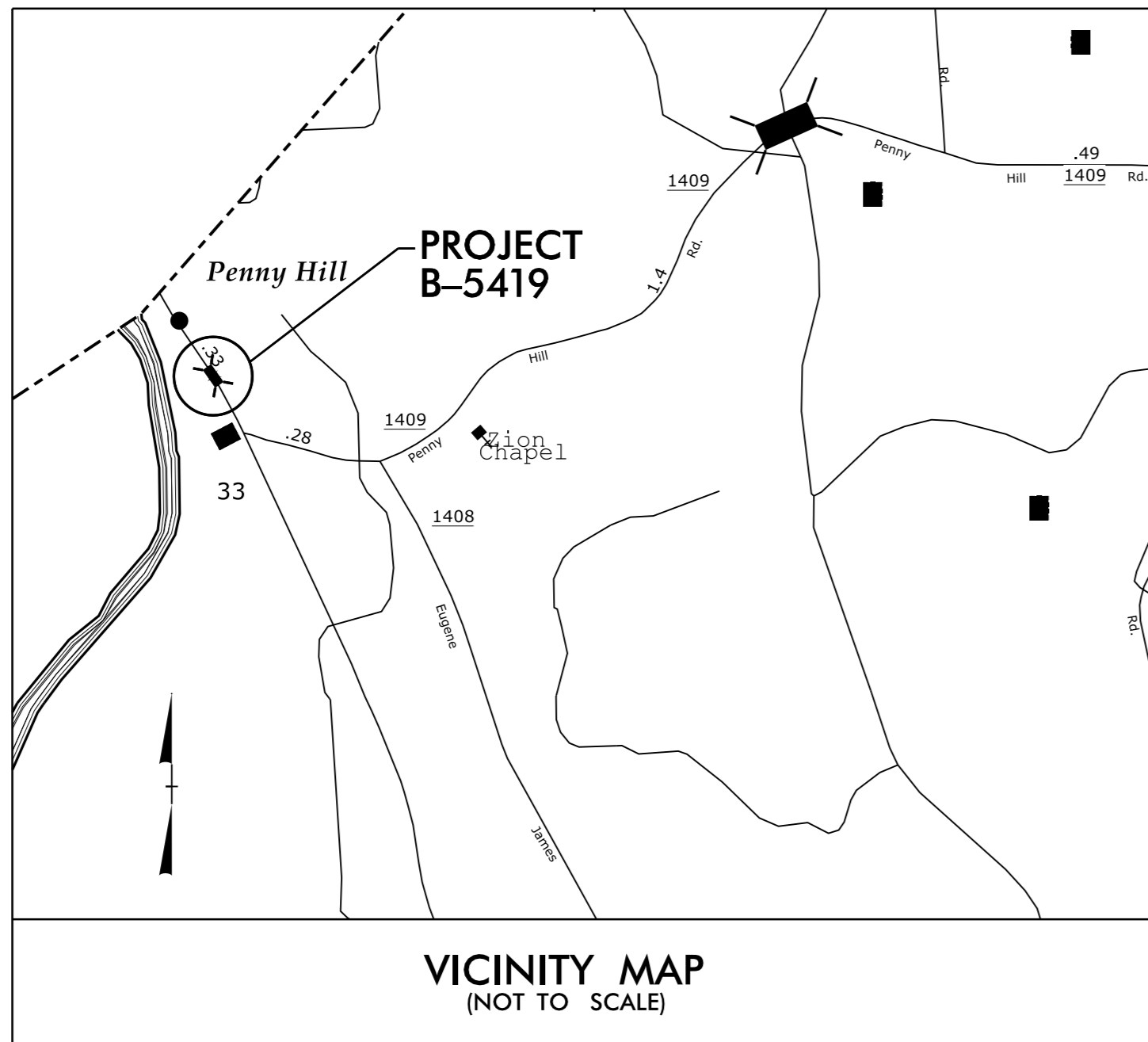
PITT COUNTY

**LOCATION: BRIDGE #7 OVER CHEEKS MILL
CREEK ON NC 33**

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

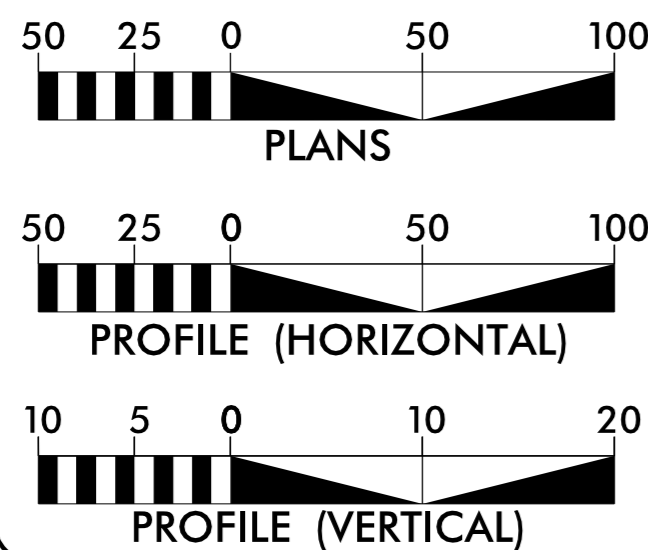
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5419	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45480.1.1	BRSTP-0033(10)	PE	
45480.2.1	BRSTP-0033(10)	RW	
45480.3.1	BRSTP-0033(10)	CONST	

TIP PROJECT: B-5419



CONTRACT:

GRAPHIC SCALES



PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5419 = 0.117 MILE
 LENGTH STRUCTURE TIP PROJECT B-5419 = 0.025 MILE
 TOTAL LENGTH TIP PROJECT B-5419 = 0.142 MILE

Prepared in the Office of:
DIVISION OF HIGHWAYS
 1704 N. Greene St., Greenville NC, 27834

2012 STANDARD SPECIFICATIONS

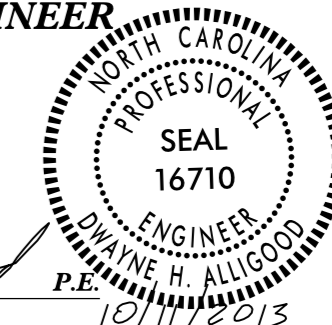
RIGHT OF WAY DATE:
DECEMBER 2012

LETTING DATE:
NOVEMBER 2013

DWAYNE H. ALLIGOOD, PE
PROJECT ENGINEER

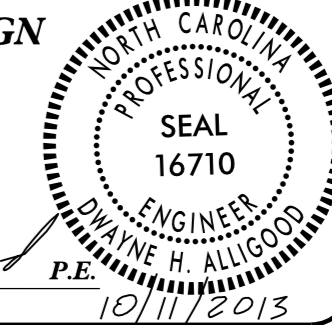
LANG JONES
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

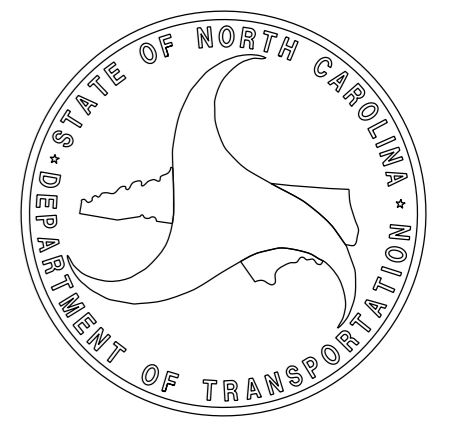


Signature: *Dwayne H. Alligood*
 P.E. 10/11/2013

ROADWAY DESIGN
ENGINEER



Signature: *Dwayne H. Alligood*
 P.E. 10/11/2013



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 \$\$\$USERNAME\$\$\$

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Property Corner	----->
Property Monument	□ ECM
Parcel/Sequence Number	⑫③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-RLB-
Proposed Wetland Boundary	RLB
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	□
Jurisdictional Stream	----- JS
Buffer Zone 1	----- BZ 1
Buffer Zone 2	----- BZ 2
Flow Arrow	←
Disappearing Stream	----->
Spring	○
Wetland	⊥
Proposed Lateral, Tail, Head Ditch	-----
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	○ R W
Proposed Right of Way Line with Iron Pin and Cap Marker	○ R W ▲
Proposed Right of Way Line with Concrete or Granite Marker	○ R W ▲
Existing Control of Access	○ C A
Proposed Control of Access	○ C A
Existing Easement Line	----- E
Proposed Temporary Construction Easement	----- E
Proposed Temporary Drainage Easement	----- TDE
Proposed Permanent Drainage Easement	----- PDE
Proposed Permanent Utility Easement	----- PUE
Proposed Temporary Utility Easement	----- TUE
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	----- C
Proposed Slope Stakes Fill	----- F
Proposed Wheel Chair Ramp	○ WCR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	⊗

VEGETATION:

Single Tree	○
Single Shrub	⊗
Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	□ Vineyard

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

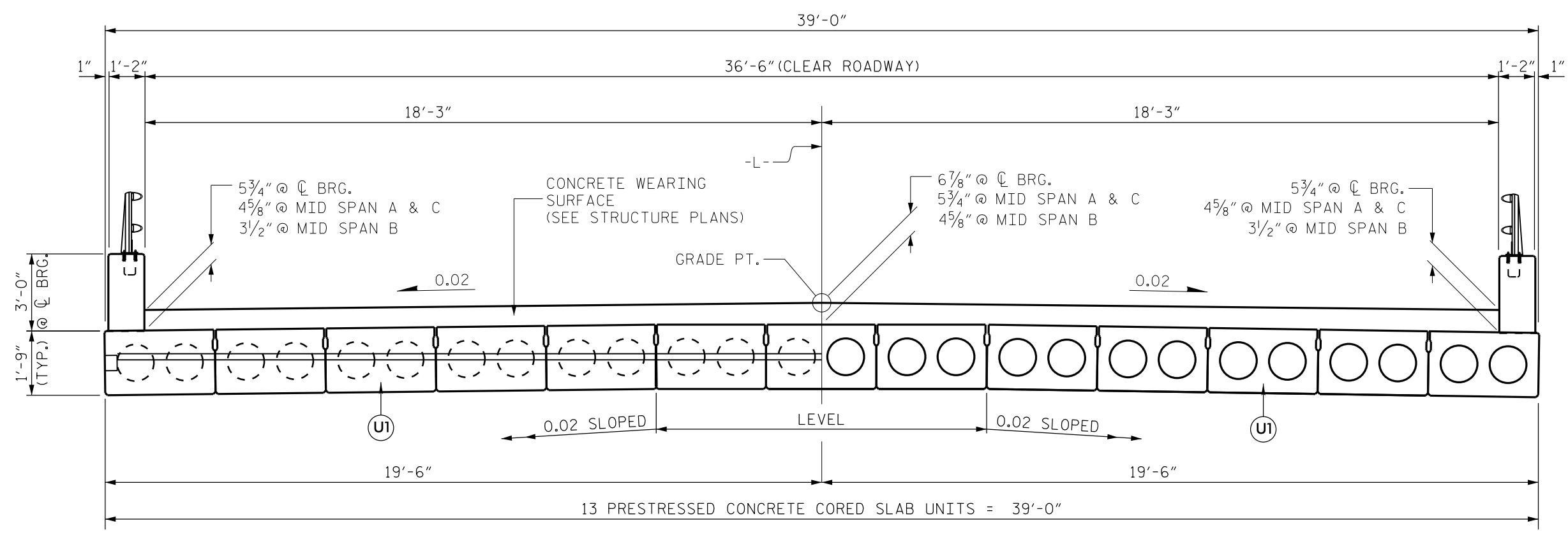
MISCELLANEOUS:

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

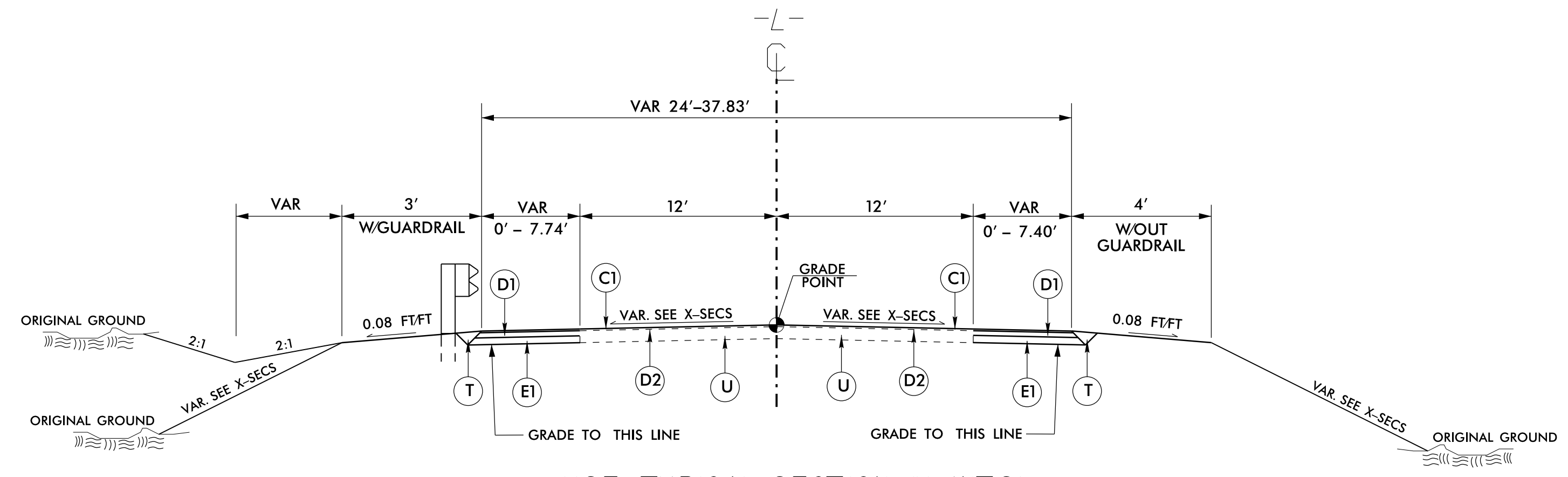
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C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 336 LBS. PER SQ.YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
D2	PROPOSED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

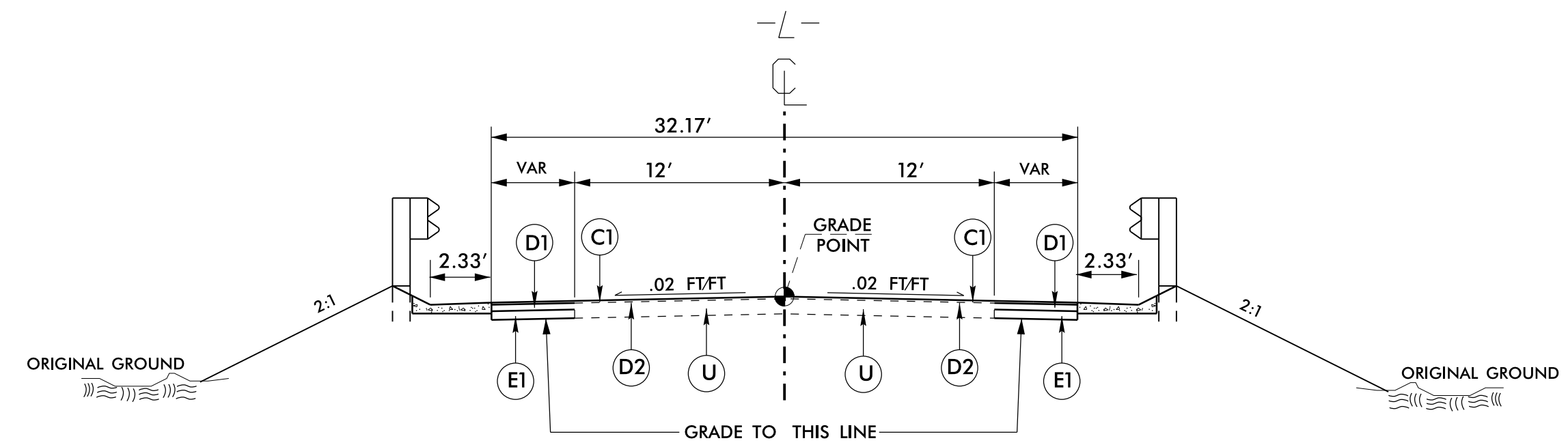
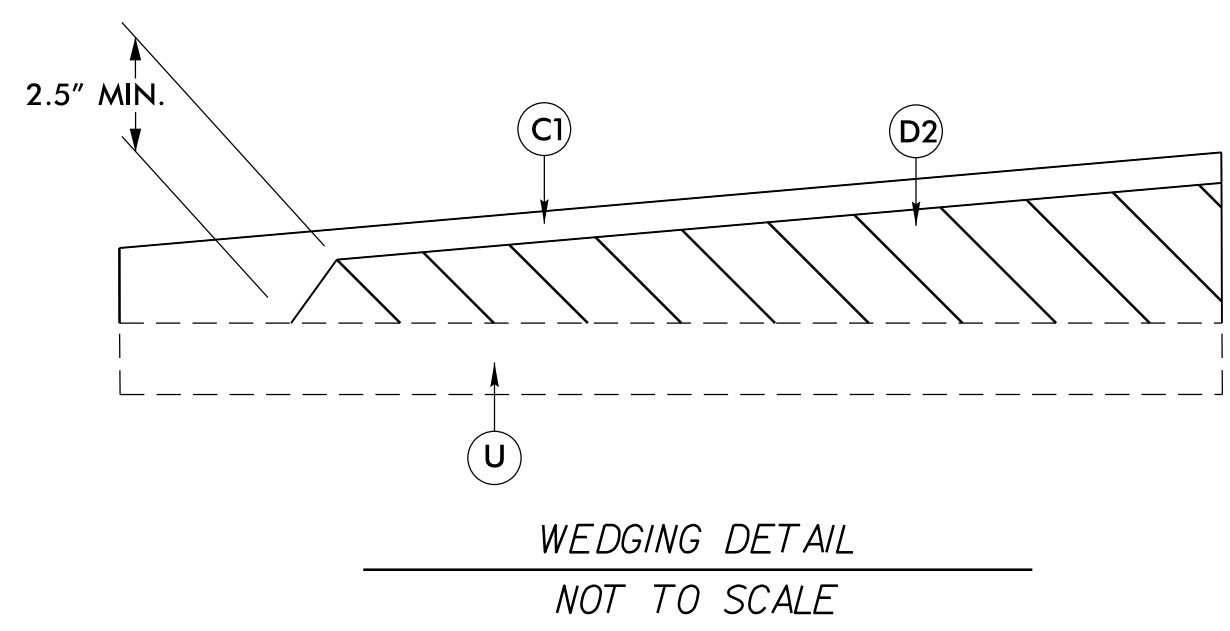
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL BRIDGE SECTION (NTS)
-L- STA 15+64.25 TO -L- STA 16+94.75



USE TYPICAL SECTION #1 (NTS)
-L- 13+00.00 - 15+52.25
-L- 17+41.00 - 20+50.00



USE TYPICAL SECTION #2
-L- 17+06.75 - 17+41.00

REVISIONS

8/17/99

4-0617-2013-05-01
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

ITEM	SECT	QUANTITY	UNIT	ITEM DESCRIPTION	ITEM	SECT	QUANTITY	UNIT	ITEM DESCRIPTION
1	800	1	LS	MOBILIZATION	32	1622	200	LF	TEMPORARY SLOPE DRAINS
2	801	1	LS	CONSTRUCTION SURVEYING	33	SP	400	LF	SAFETY FENCE
3	SP	1	LS	REINFORCED BRIDGE APPROACH FILL, -L- STA 16+29.50	34	1630	5	CY	SILT EXCAVATION
4	226	1	LS	GRADING	35	1631	1000	SY	MATTING FOR EROSION CONTROL
5	226	200	CY	UNDERCUT EXCAVATION	36	1632	80	LF	1/4" HARDWARE CLOTH
6	300	10	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	37	SP	100	SY	FLOATING TURBIDITY CURTAIN
7	300	30	SY	FOUNDATION CONDITIONING GEOTEXTILE	38	SP	180	LF	WATTLE
8	305	40	LF	15' DRAINAGE PIPE	39	SP	5	LB	POLYACRYLAMIDE (PAM)
9	305	2	EA	15' DRAINAGE PIPE ELBOWS	40	1660	1	ACRE	SEEDING AND MULCHING
10	310	34	LF	15" R.C. PIPE CULVERTS, CLASS IV	41	1661	50	LB	SEED FOR REPAIR SEEDING
11	340	14	LF	PIPE REMOVAL	42	1661	0.2	TON	FERTILIZER FOR REPAIR SEEDING
12	610	145	TON	ASPHALT CONCRETE BASE COURSE, TYPE B25.0B					
13	610	245	TON	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B					
14	610	410	TON	ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B	43	402	1	LS	REMOVAL OF EXISTING STRUCTURE AT -L- STA 16+29.50
15	620	45	TON	ASPHALT BINDER FOR PLANT MIX	44	450	2	EA	PDA TESTING
16	840	2	EA	MASONRY DRAINAGE STRUCTURES	45	412	1	LS	UNCLASSIFIED STRUCTURE EXCAVATION AT -L- STA 16+29.50
17	840	2	EA	FRAME WITH GRATE, STD 840.29	46	SP	4754	SF	CONCRETE WEARING SURFACE
18	846	70	LF	SHOULDER BERM GUTTER	47	420	5109	SF	GROOVING BRIDGE FLOORS
19	862	438	LF	STEEL BEAM GUARDRAIL	48	420	76.2	CY	CLASS A CONCRETE (BRIDGE)
20	862	10	EA	ADDITIONAL GUARDRAIL POSTS	49	422	1	LS	BRIDGE APPROACH SLABS AT STA 16+29.50
21	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III	50	425	11,000	LB	REINFORCING STEEL (BRIDGE)
22	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350	51	450	770	LF	HP 12 X 53 STEEL PILES
23	876	5	TON	RIP RAP, CLASS I	52	450	960	LF	HP 18 X 0.50 GALVANIZED STEEL PILES
24	876	5	TON	RIP RAP, CLASS B	53	450	16	EA	STEEL PILE POINTS
25	876	15	SY	GEOTEXTILE FOR DRAINAGE	54	460	16	EA	PILE REDRIVES
26	1605	1000	LF	TEMPORARY SILT FENCE	55	460	245.50	LF	TWO BAR METAL RAIL
27	1610	5	TON	STONE FOR EROSION CONTROL, CLASS B	56	460	260.75	LF	1'-2" X 3'-0" CONCRETE PARAPET
28	1610	5	TON	SEDIMENT CONTROL STONE	57	876	629	TON	RIP RAP, CLASS II (2'-0" THICK)
29	1615	1	ACRE	TEMPORARY MULCHING	58	876	698	SY	GEOTEXTILE FOR DRAINAGE
30	1620	50	LB	SEED FOR TEMPORARY SEEDING	59	430	1	LS	ELASTOMETRIC BEARINGS
31	1620	0.2	TON	FERTILIZER FOR TEMPORARY SEEDING	60	430	1690	LF	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS

REVISIONS

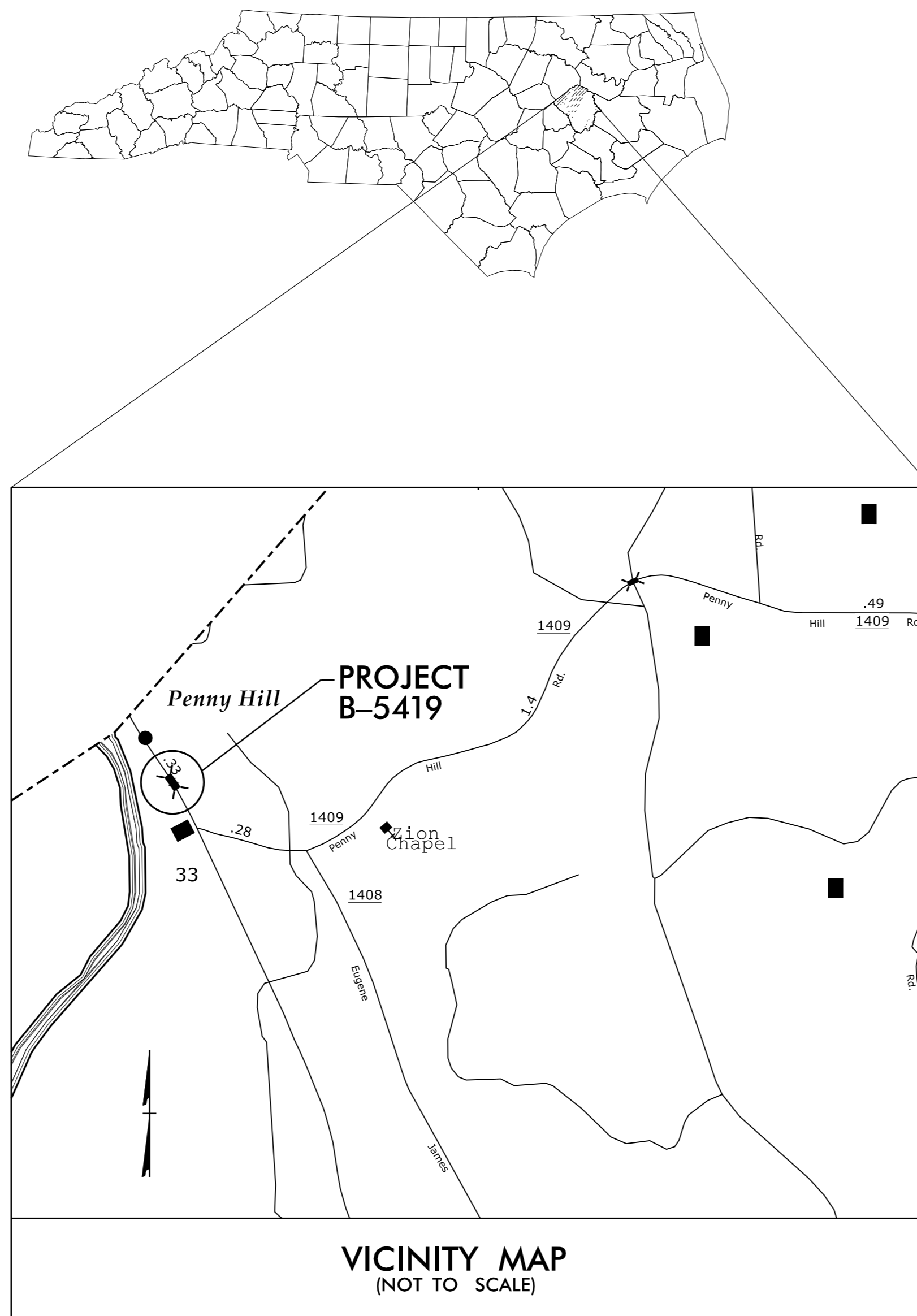
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

PITT COUNTY



INDEX OF SHEETS

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

LEGEND

GENERAL

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

- WORK AREA

TRAFFIC CONTROL DEVICES

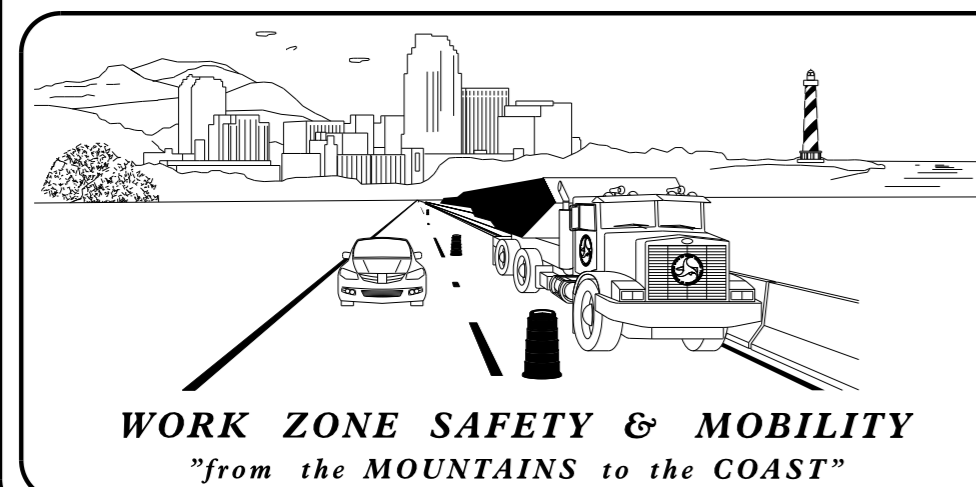
- BARRICADE (TYPE III)

SHEET NO.
TMP-1

B-5419

TIP PROJECT:

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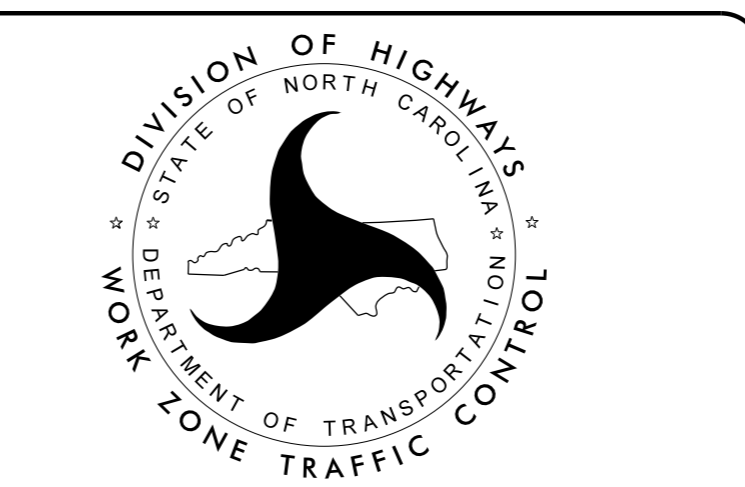
N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
P.O. BOX 1587, GREENVILLE, NC 27835
105 PACTOLUS HWY. (NC 33), GREENVILLE, NC 27835
PHONE: (252) 830-3490 FAX: (252) 830-3352

STEVEN HAMILTON, PE **TRAFFIC ENGINEER**

D. H. ALLIGOOD, PE **TRAFFIC CONTROL PROJECT ENGINEER**

D. H. ALLIGOOD, PE **TRAFFIC CONTROL PROJECT DESIGN ENGINEER**

LANG JONES **TRAFFIC CONTROL DESIGN ENGINEER**



APPROVED: *Dwayne H. Alligood*
DATE: 10/11/2013

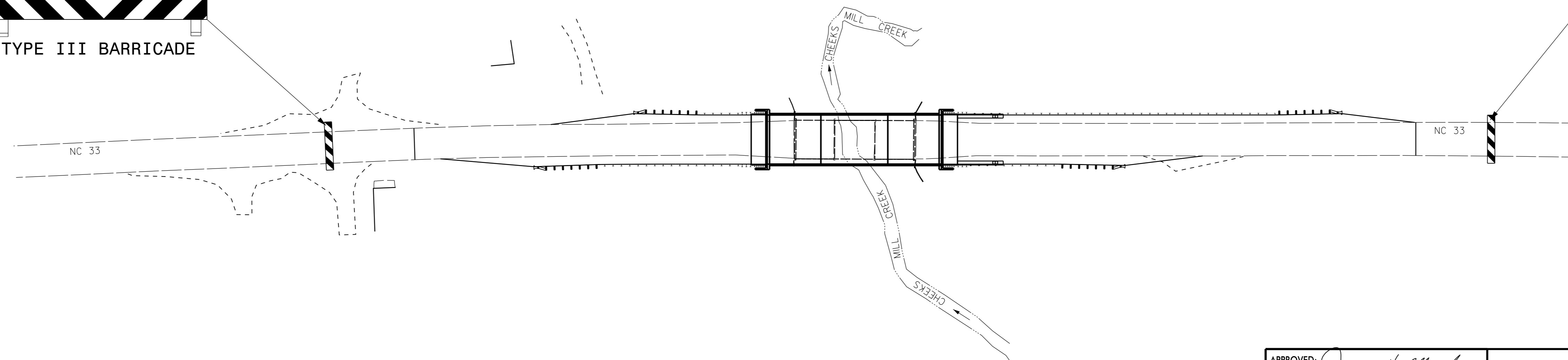
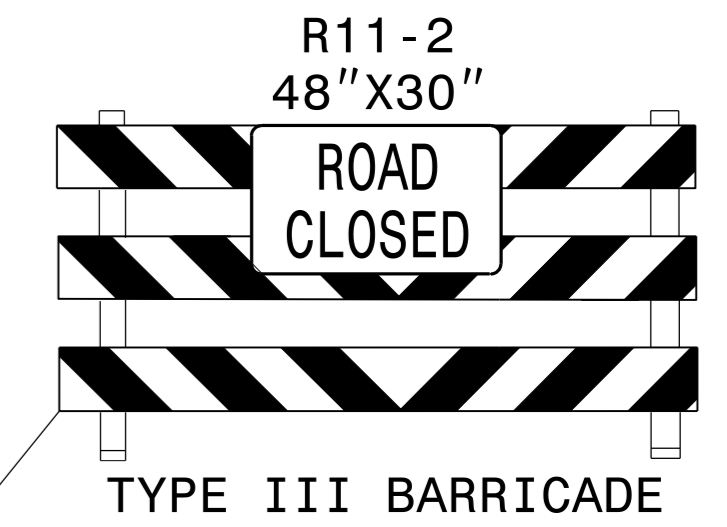
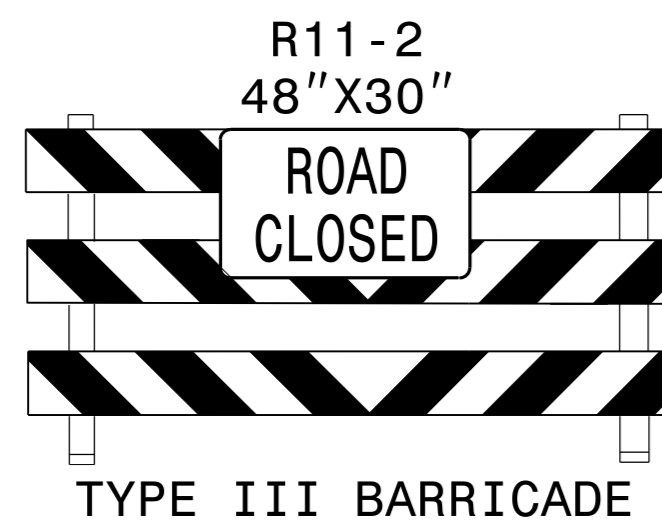
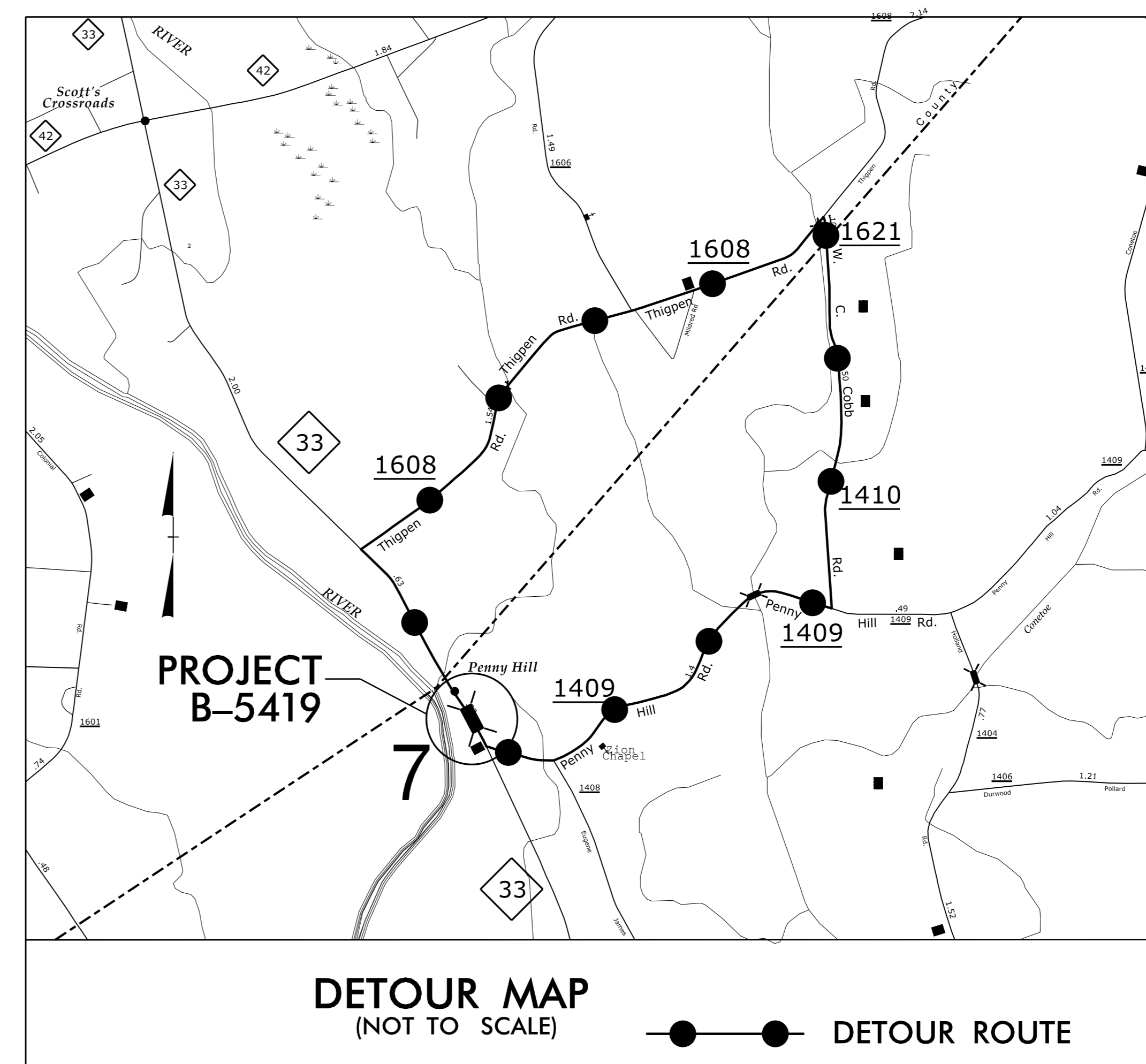
SEAL

GENERAL NOTES

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

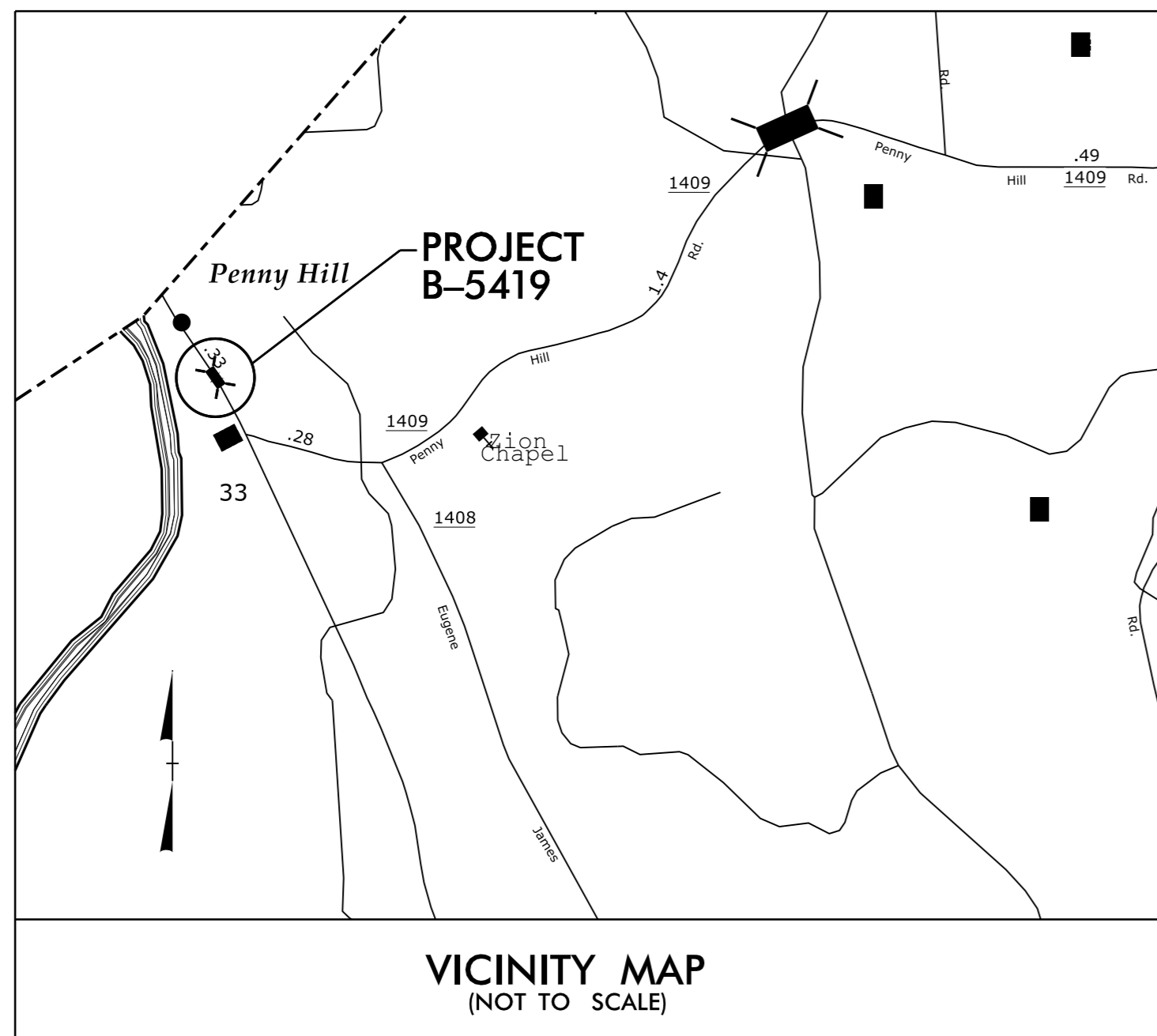
CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS, OR RESULT IN DUPLICATE, OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED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

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



APPROVED: <i>Wayne H. Allgood</i>	PROJECT NOTES, DETOUR AND PLANS								
SCALE: NONE	<table border="1"> <thead> <tr> <th colspan="2">REVISIONS</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS							
REVISIONS									
DATE: 2/4/2013									
DWG. BY: VT									
DESIGN BY: LJ									
REVIEWED BY: DA	CADD FILE								

TIP PROJECT: B-5419



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

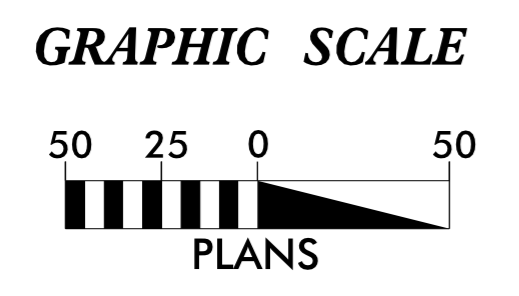
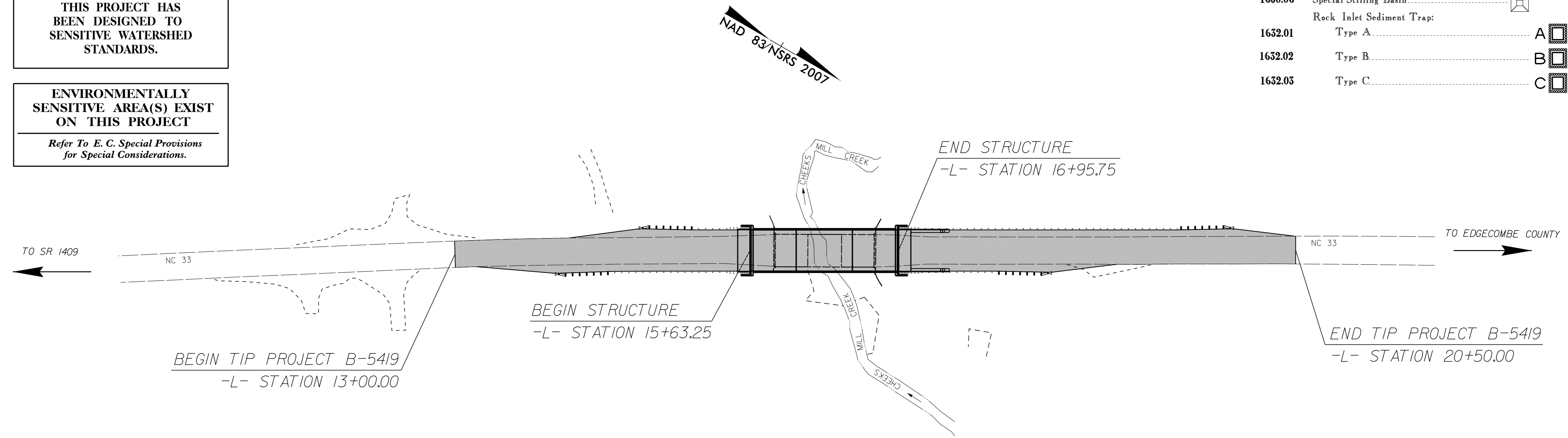
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5419	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45480.1.1	BRSTP-0033(10)	PE	
45480.2.1	BRSTP-0033(10)	RW	
45480.3.1	BRSTP-0033(10)	CONST	

EROSION AND SEDIMENT CONTROL MEASURES

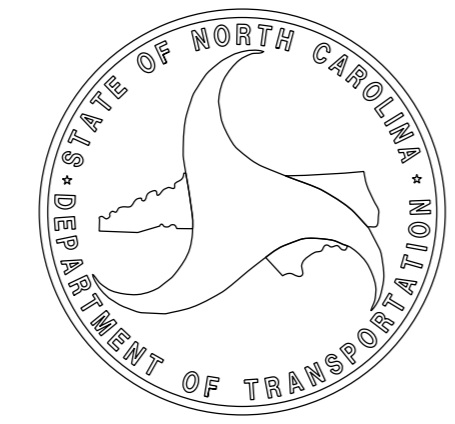
Std. #	Description	Symbol
1630.05	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	▲▲▲▲▲
1622.01	Temporary Berms and Slope Drains	— T —
1630.02	Silt Basin Type B	▨
1633.01	Temporary Rock Silt Check Type-A	▩
	Temporary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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

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



DIVISION 2 - DDC UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



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

Prepared in the Office of:
ROADSIDE ENVIRONMENTAL UNIT
1704 N. Greene St.
Greenville, NC 27834
2012 STANDARD SPECIFICATIONS

Lang Jones, DDC Engineer
Level III
Certification #276

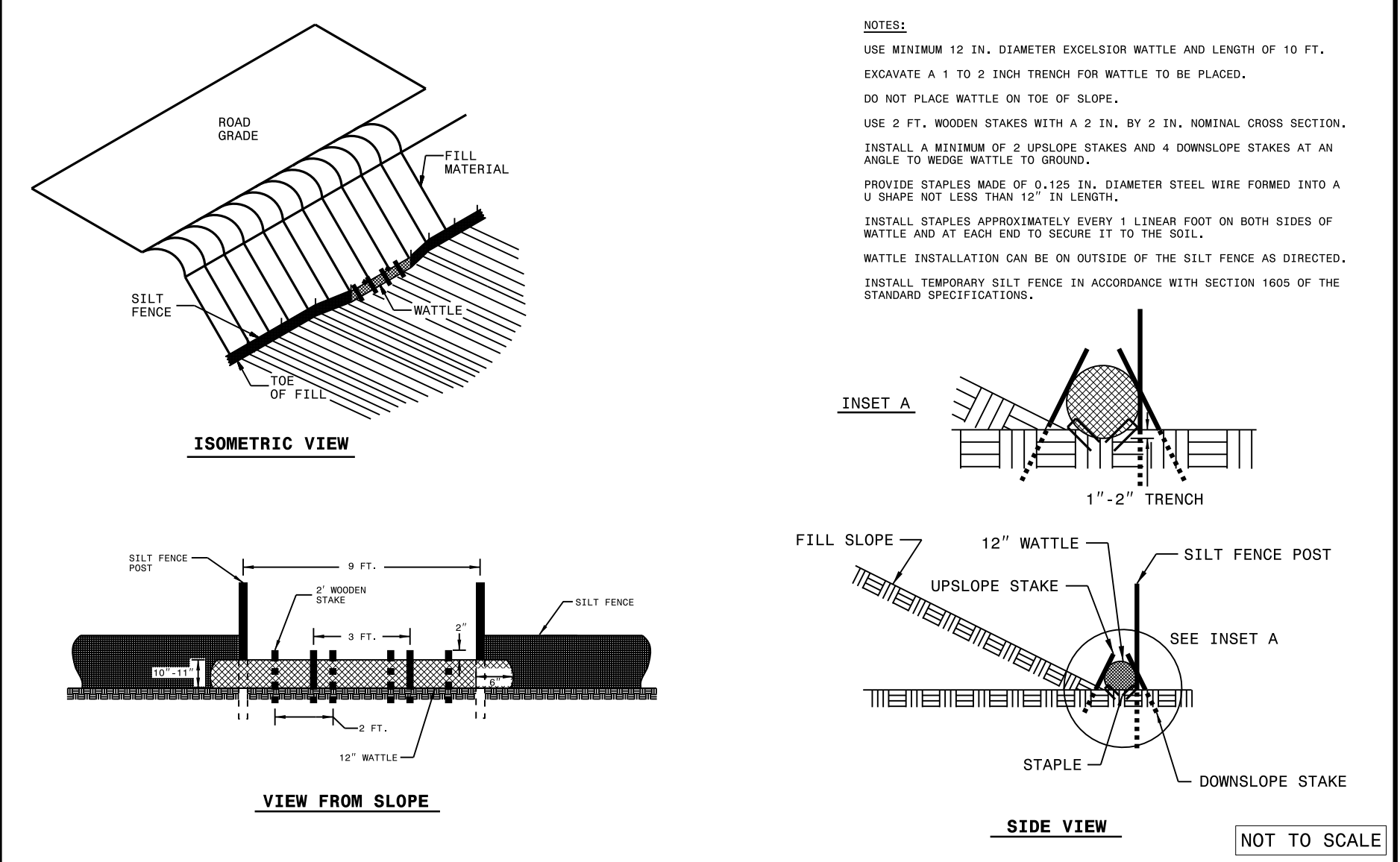
Roadway Standard Drawings

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

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

8/17/99

SILT FENCE WATTLE BREAK DETAIL

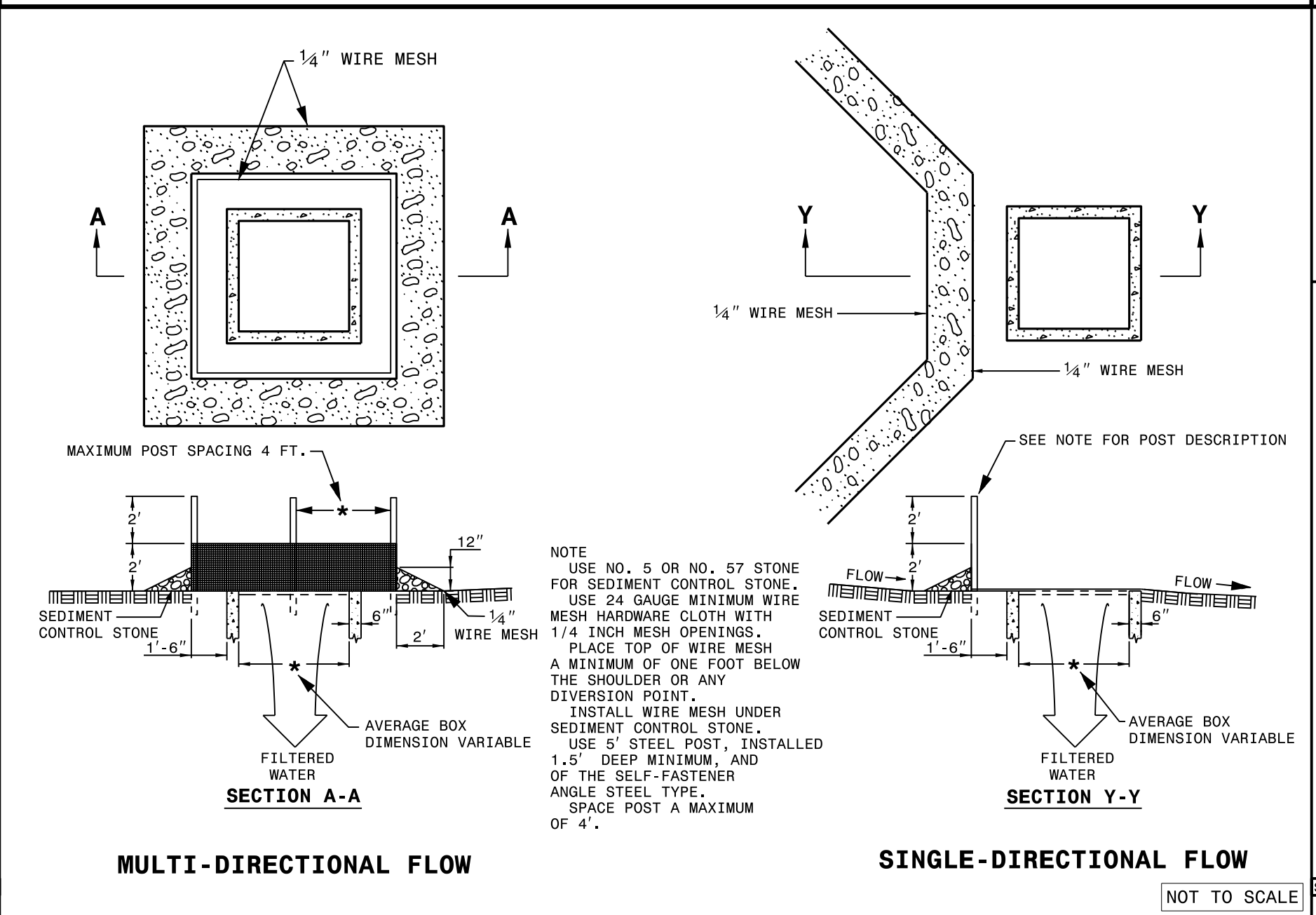


STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROCK INLET SEDIMENT TRAP TYPE 'C'

ENGLISH STANDARD DRAWING FOR

SHEET 1 OF 1
1632.03

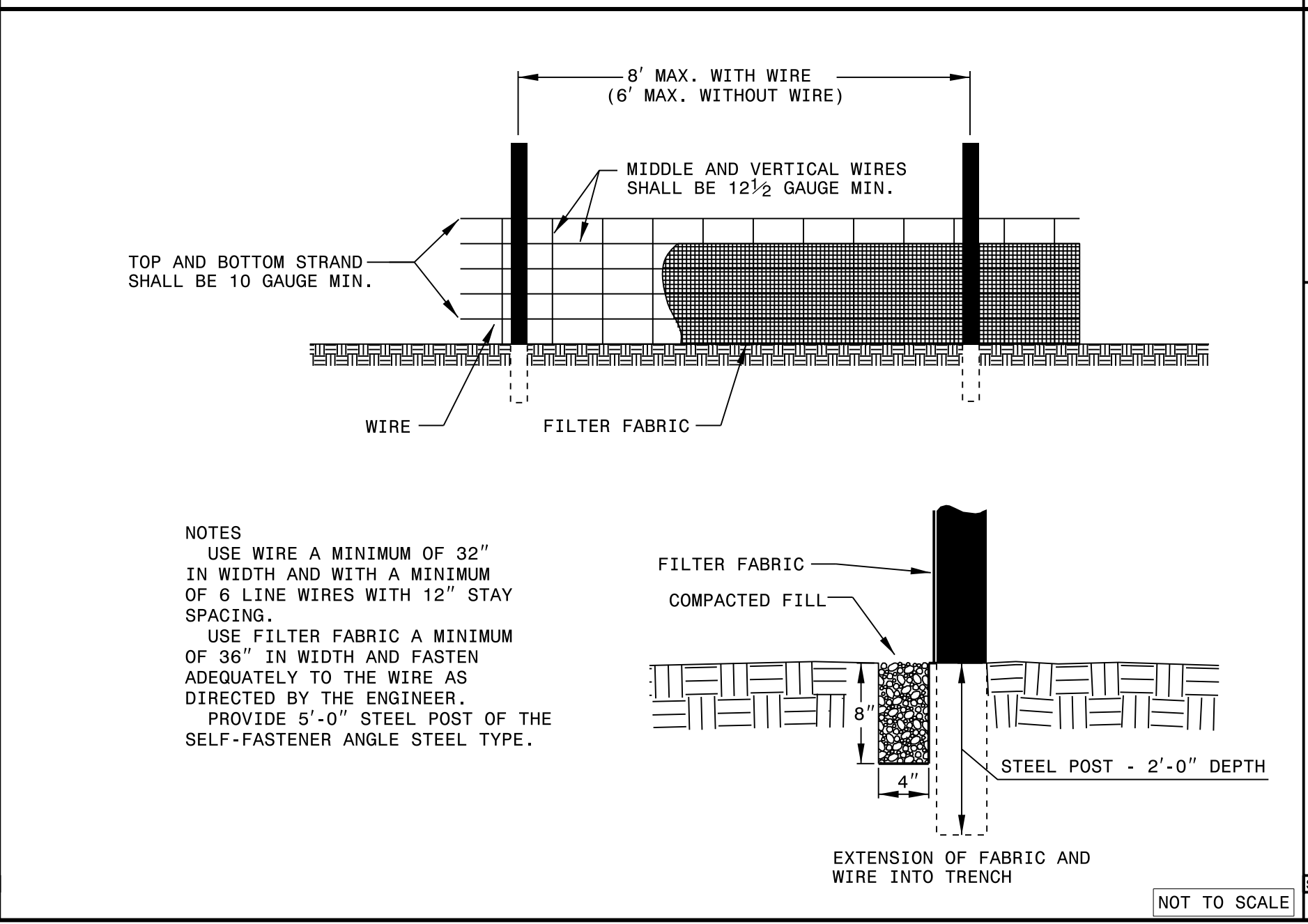


STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

TEMPORARY SILT FENCE

ENGLISH STANDARD DRAWING FOR

SHEET 1 OF 1
1605.01



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROCK INLET SEDIMENT TRAP TYPE 'C'

ENGLISH STANDARD DRAWING FOR

SHEET 1 OF 1
1632.03

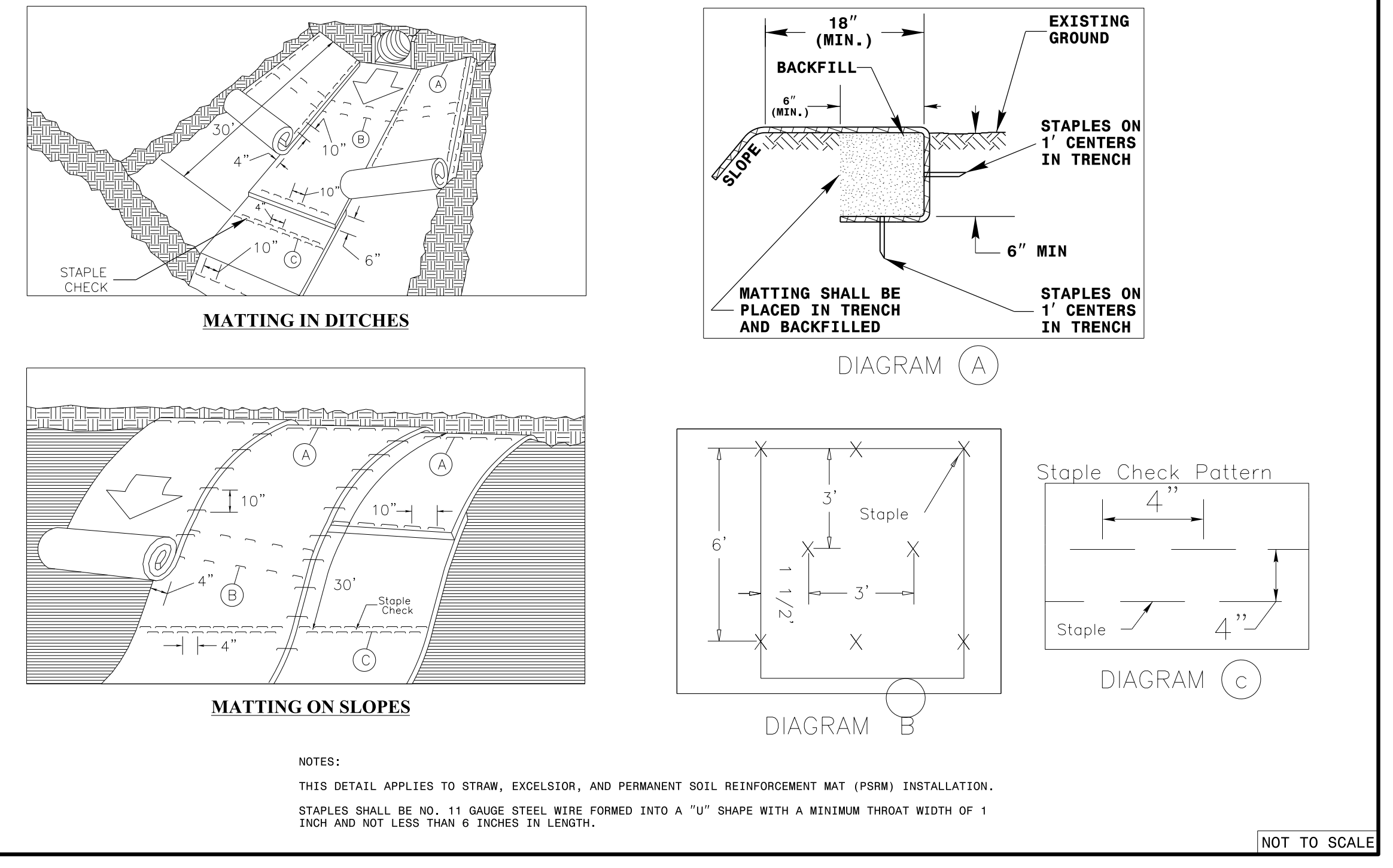
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

TEMPORARY SILT FENCE

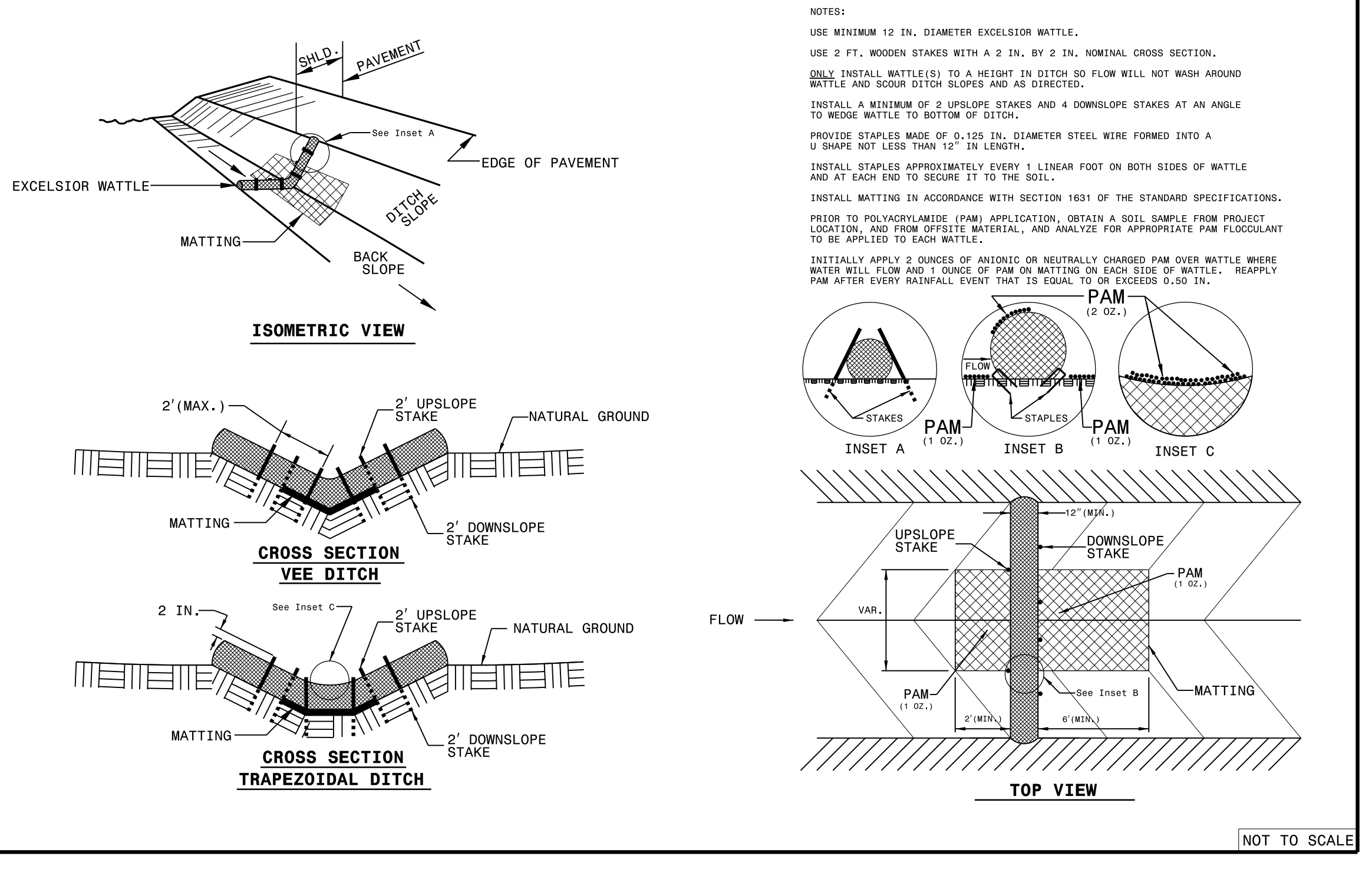
ENGLISH STANDARD DRAWING FOR

SHEET 1 OF 1
1605.01

MATting INSTALLATION DETAIL

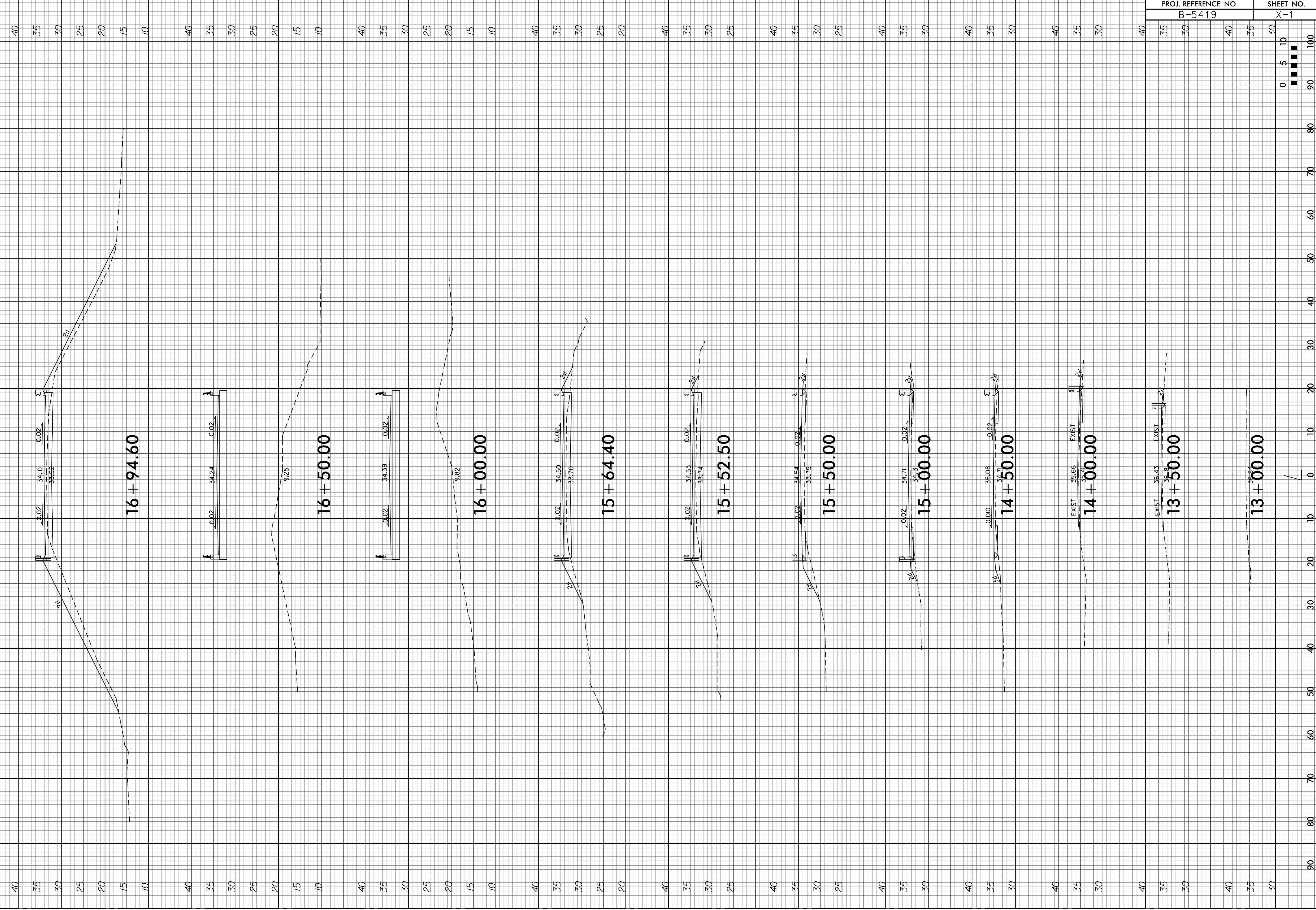


WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

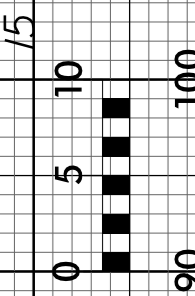
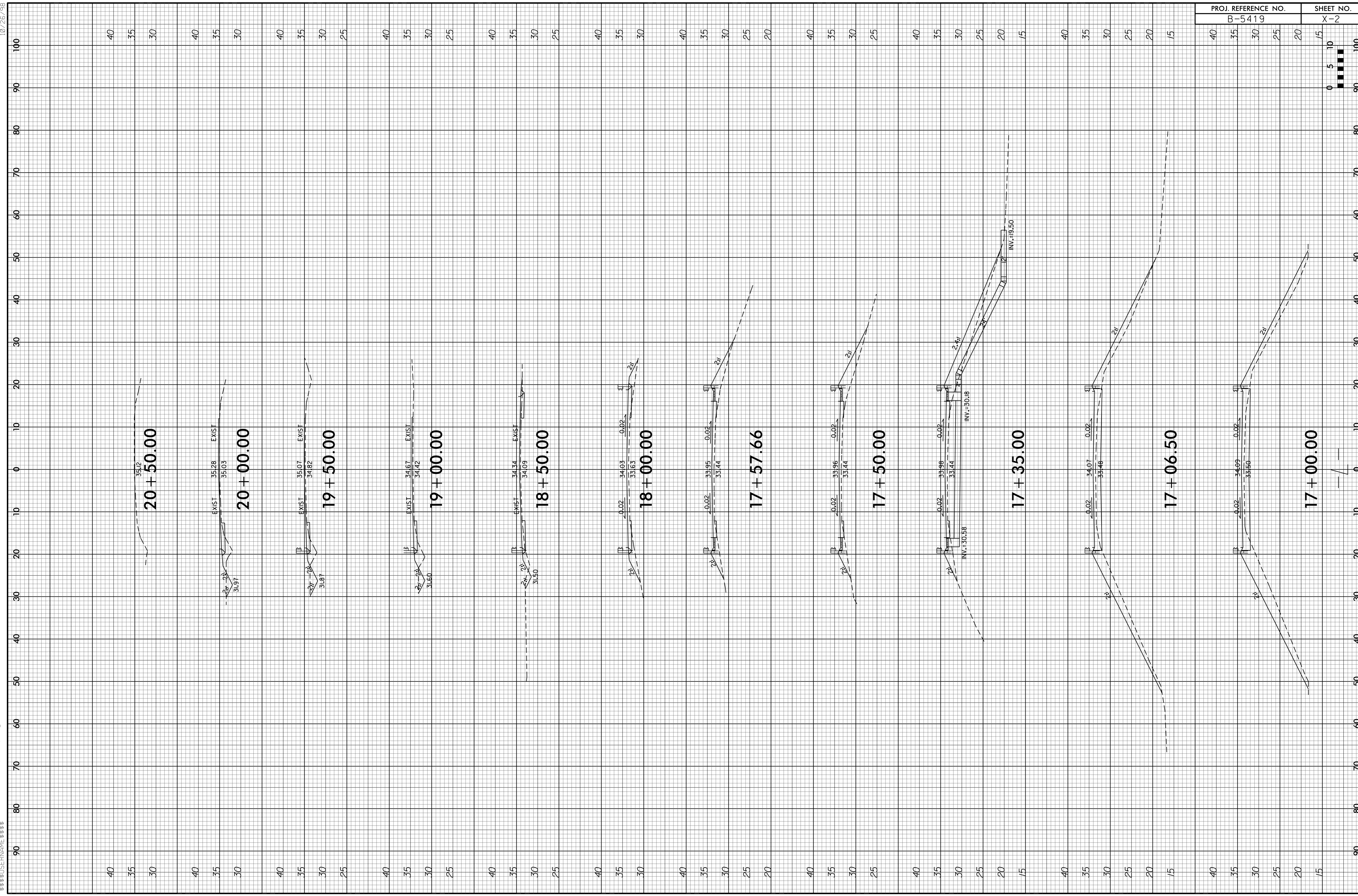


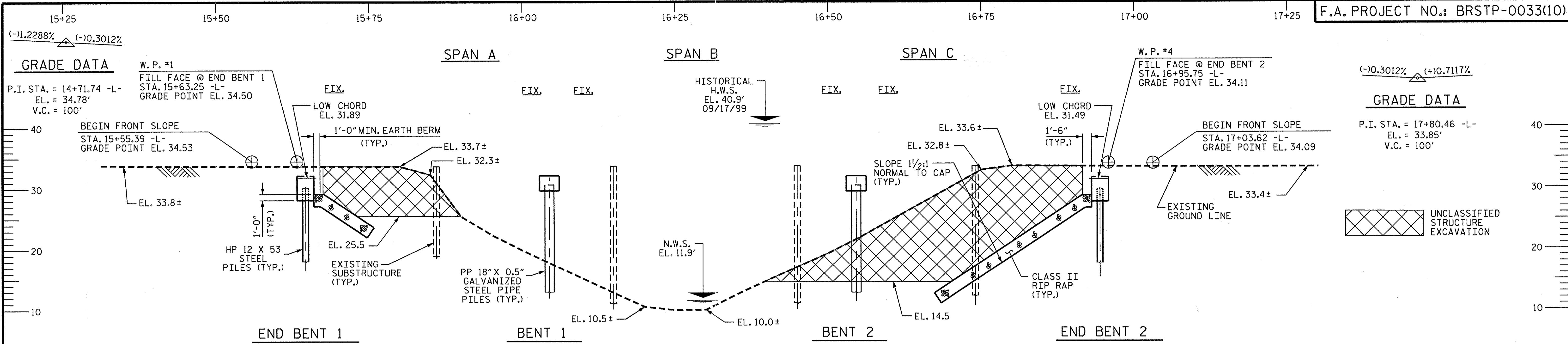
REVISIONS

14-0616 2013 05/13
 9:58 AM
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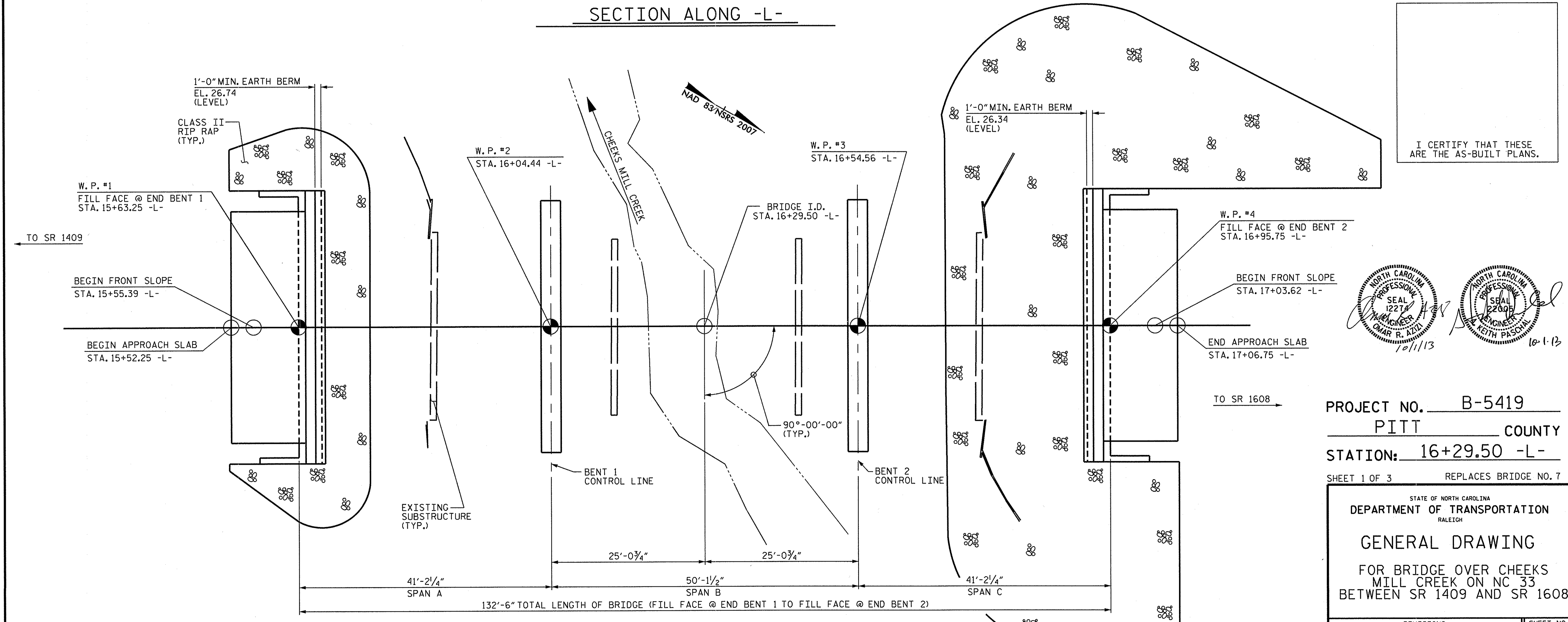
PROJ. REFERENCE NO.	SHEET NO.
B-5419	X-1





UNCLASSIFIED STRUCTURE EXCAVATION

I CERTIFY THAT THESE ARE THE AS-BUILT PLANS.



NORTH CAROLINA PROFESSIONAL SEAL 12277
 ENGINEER OMAR R. AZIZ 12/11/13

NORTH CAROLINA PROFESSIONAL SEAL 12208
 ENGINEER KEITH PASCHAL 10-1-13

PROJECT NO. B-5419
PITT COUNTY
 STATION: 16+29.50 -L-

SHEET 1 OF 3 REPLACES BRIDGE NO. 7

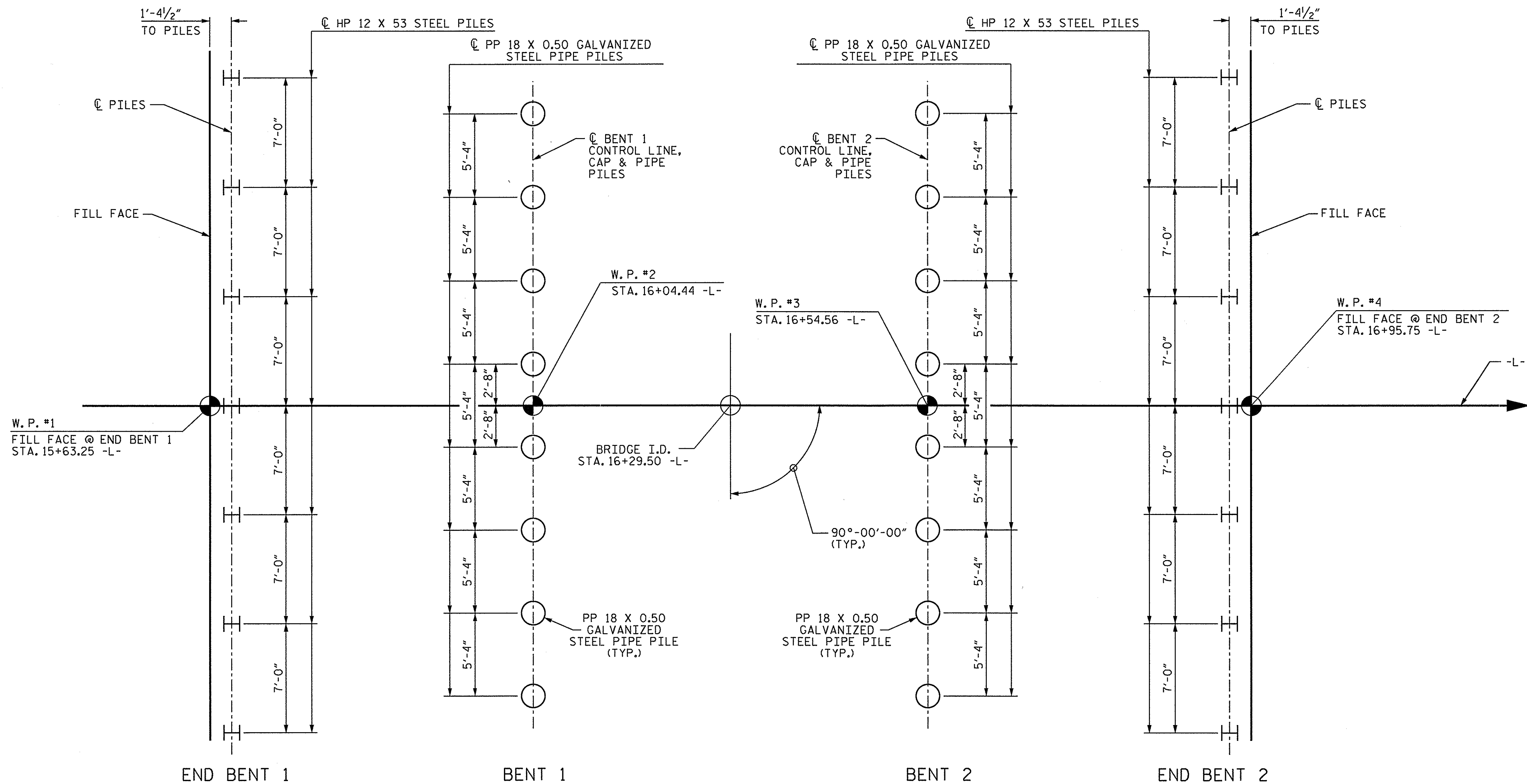
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER CHEEK'S
 MILL CREEK ON NC 33
 BETWEEN SR 1409 AND SR 1608

DRAWN BY: PEGGY ADKINS DATE: 8-16-13
 CHECKED BY: A. K. PASCHAL DATE: 8-27-13
 DESIGN ENGINEER OF RECORD: A. M. LEE DATE: 8-27-13

PILES NOT SHOWN FOR CLARITY.

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			24



FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE.

NOTES:

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENTS 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 65 TONS PER PILE.

DRIVE PILES AT END BENTS 1 AND 2 TO A REQUIRED DRIVING RESISTANCE OF 110 TONS PER PILE.

PILES AT BENTS 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 100 TONS PER PILE.

DRIVE PILES AT BENTS 1 AND 2 TO A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDED ADDITIONAL RESISTANCE FOR DOWNDRAW OR SCOUR.

INSTALL PILES AT BENTS 1 AND 2 TO A TIP ELEVATION NO HIGHER THAN -15.0 FT.

STEEL PIPE PILE CUTTING SHOES ARE REQUIRED FOR STEEL PIPE PILES AT BENTS 1 AND 2. USE "INSIDE FIT" PIPE PILE CUTTING SHOES, I.E. CUTTING SHOES WITH AN OUTSIDE DIAMETER EQUAL TO THE PIPE PILE DIAMETER. FOR STEEL PIPE POINTS, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

THE SCOUR CRITICAL ELEVATION FOR BENTS 1 AND 2 IS ELEVATION 3.0 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

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

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 40 TO 60 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BOTH BENTS 1 AND 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

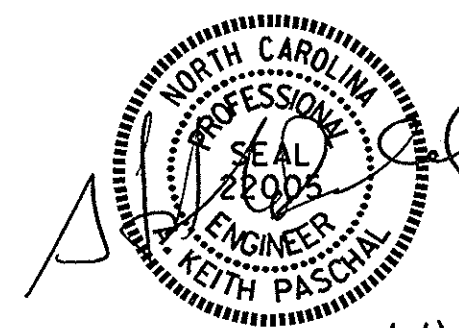
TESTING PILES WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING MAY BE REQUIRED. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS AND FOR PILE DRIVING CRITERIA, SEE PILE DRIVING CRITERIA PROVISION.

PROJECT NO. B-5419
PITT COUNTY
 STATION: 16+29.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING

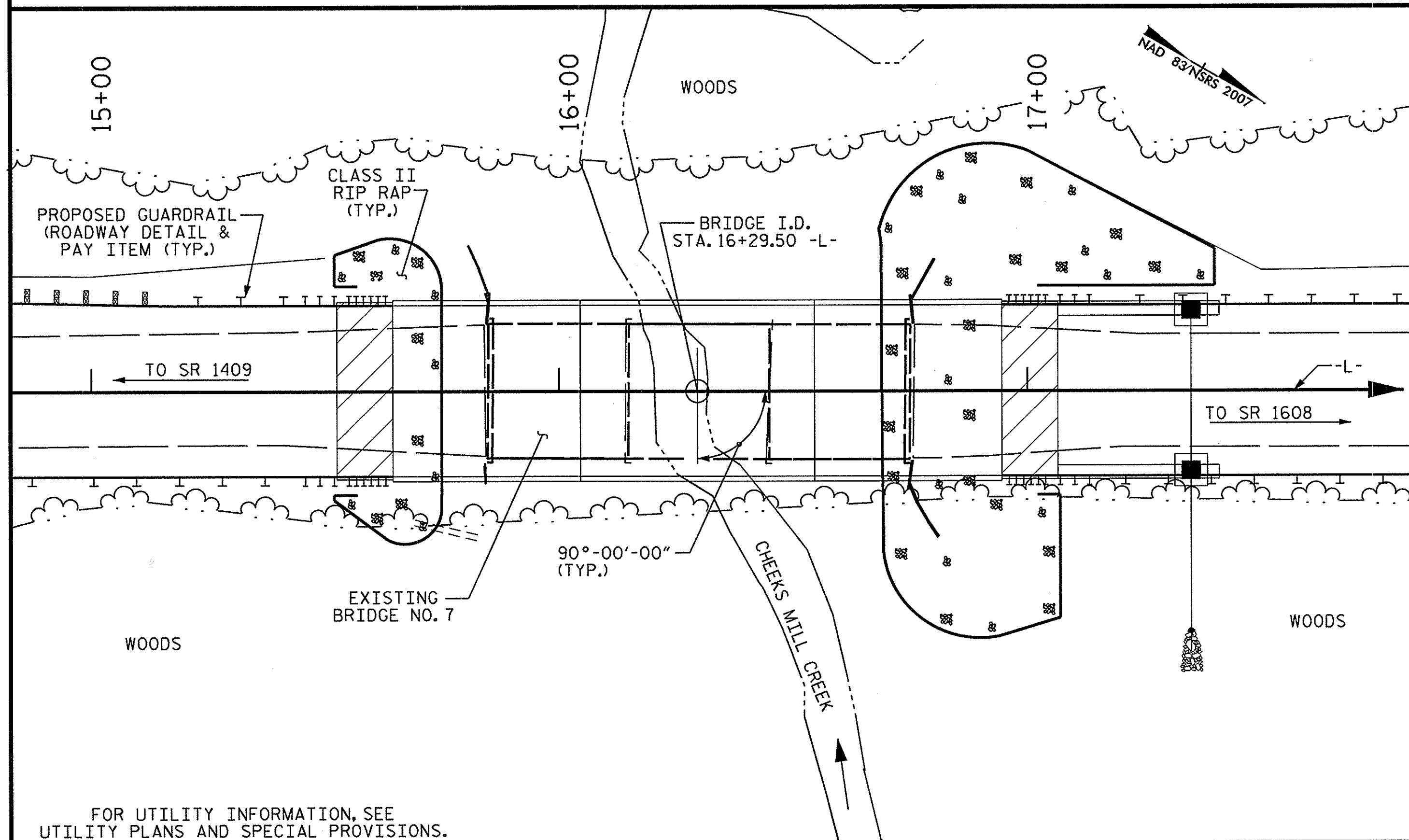
FOR BRIDGE OVER CHEEKS
 MILL CREEK ON NC 33
 BETWEEN SR 1409 AND SR 1608



DRAWN BY: PEGGY ADKINS DATE: 8-21-13
 CHECKED BY: A.K. PASCHAL DATE: 8-27-13
 DESIGN ENGINEER OF RECORD: A.M. LEE DATE: 8-27-13

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			24

CONTROL POINT #8: N 735853.936 E 2440218.589 ELEV. 34.69', NAVD 88.



FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH

NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE 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.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 35 FT LEFT AND 30 FT RIGHT OF CENTERLINE ROADWAY AT END BENT 1 AND 70 FT LEFT AND 50 FT RIGHT OF CENTERLINE ROADWAY AT END BENT 2 AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

THE EXISTING STRUCTURE CONSISTING OF 1 SPAN @ 30'-6", 1 SPAN @ 30'-1" AND 1 SPAN @ 30'-7", WITH A CLEAR ROADWAY WIDTH OF 29.2 FT, PPC CHANNELS, STD. BMD-13-29-90 ON PPC CAPS ON TIMBER PILES @ 5'-8" CTS. AT END BENTS AND BENTS AND LOCATED AT PROPOSED STRUCTURE SHALL BE REMOVED.

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

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

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

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

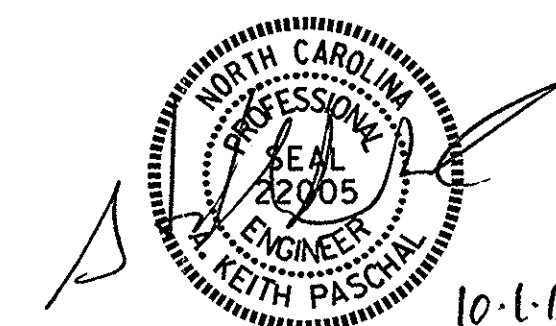
FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.

HYDRAULIC DATA

DESIGN DISCHARGE = 750 CFS
 FREQUENCY OF DESIGN FLOOD = 50 YR.
 DESIGN HIGH WATER ELEVATION = 16.6'
 DRAINAGE AREA = 4.4 SQ. MILES
 BASE DISCHARGE (Q100) = 900 CFS
 BASE HIGH WATER ELEVATION = 17.56'

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 1300+ CFS
 FREQUENCY OF OVERTOPPING FLOOD = 500 YR.+
 OVERTOPPING FLOOD ELEVATION = 34.0'



TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CONCRETE WEARING SURFACE	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 STEEL PILES	PP 18 X 0.50 GALVANIZED STEEL PILES	STEEL PILE POINTS	PILE REDRIVES	TWO BAR METAL RAIL	1'-2" X 3'-0" CONCRETE PARAPET	CLASS II RIP RAP (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS			
	LUMP SUM	EACH	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	EACH	EACH	LIN. FT.	LIN. FT.	TONS	SQ. YD.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE				4754	5109		LUMP SUM						245.50	260.75					LUMP SUM	39	1690.00
END BENT 1			LUMP SUM			25.0		2967	7	420		4					104	115			
BENT 1						13.1		2533			8	480	8	4							
BENT 2						13.1		2533			8	480	8	4							
END BENT 2			LUMP SUM			25.0		2967	7	350		4					525	583			
TOTAL	LUMP SUM	2	LUMP SUM	4754	5109	76.2	LUMP SUM	11000	14	770	16	960	16	16	245.50	260.75	629	698	LUMP SUM	39	1690.00

DRAWN BY : PEGGY ADKINS DATE : 8-16-13
 CHECKED BY : A. K. PASCHAL DATE : 8-27-13
 DESIGN ENGINEER OF RECORD : A. M. LEE DATE : 8-27-13

01-001-2013 12:44 S:\DPI\Keith\B-5419\podklns\B-5419_SD.GD_01.dgn

PROJECT NO. B-5419
 PITT COUNTY
 STATION: 16+29.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 FOR BRIDGE OVER CHEEKS
 MILL CREEK ON NC 33
 BETWEEN SR 1409 AND SR 1608

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			24

LOAD FACTORS:

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

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

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	MOMENT						
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inrv)	N/A	1	1.31	--	1.75	0.278	1.53	B	EL	24.5	0.549	1.31	A	EL	1.95	0.80	0.278	1.38	B	EL	24.500		
	HL-93(0pr)	N/A	--	1.70	--	1.35	0.278	1.98	B	EL	24.5	0.549	1.70	A	EL	1.95	N/A	--	--	--	--	--		
	HS-20(Inrv)	36.000	2	1.53	55.080	1.75	0.278	1.89	B	EL	24.5	0.549	1.53	A	EL	1.95	0.80	0.278	1.71	B	EL	24.500		
	HS-20(0pr)	36.000	--	1.98	71.280	1.35	0.278	2.46	B	EL	24.5	0.549	1.98	A	EL	1.95	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.47	46.845	1.4	0.278	4.82	B	EL	24.5	0.549	4.10	A	EL	1.95	0.80	0.284	3.47	A	EL	19.500	
		SNGARBS2	20.000	--	2.75	55.000	1.4	0.278	3.81	B	EL	24.5	0.549	3.05	A	EL	1.95	0.80	0.278	2.75	B	EL	24.500	
		SNAGRIS2	22.000	--	2.67	58.740	1.4	0.278	3.68	B	EL	19.6	0.549	2.88	A	EL	1.95	0.80	0.278	2.67	B	EL	24.500	
		SNCOTTS3	27.250	--	1.73	47.143	1.4	0.278	2.40	B	EL	24.5	0.549	2.06	A	EL	1.95	0.80	0.284	1.73	A	EL	19.500	
		SNAGGRS4	34.925	--	1.51	52.737	1.4	0.278	2.09	B	EL	24.5	0.549	1.80	A	EL	1.95	0.80	0.278	1.51	B	EL	24.500	
		SNS5A	35.550	--	1.47	52.259	1.4	0.278	2.04	B	EL	24.5	0.549	1.88	A	EL	1.95	0.80	0.278	1.47	B	EL	24.500	
		SNS6A	39.950	--	1.38	55.131	1.4	0.278	1.91	B	EL	24.5	0.549	1.76	A	EL	1.95	0.80	0.278	1.38	B	EL	24.500	
	SNS7B	42.000	--	1.31	55.020	1.4	0.278	1.82	B	EL	24.5	0.549	1.79	A	EL	1.95	0.80	0.278	1.31	B	EL	24.500		
	TTST	TNAGRIT3	33.000	--	1.69	55.770	1.4	0.278	2.33	B	EL	24.5	0.549	2.06	A	EL	1.95	0.80	0.278	1.69	B	EL	24.500	
		TNT4A	33.075	--	1.70	56.228	1.4	0.278	2.35	B	EL	24.5	0.549	1.96	A	EL	1.95	0.80	0.278	1.70	B	EL	24.500	
		TNT6A	41.600	--	1.42	59.072	1.4	0.278	1.96	B	EL	24.5	0.549	1.92	A	EL	1.95	0.80	0.278	1.42	B	EL	24.500	
		TNT7A	42.000	--	1.44	60.480	1.4	0.278	1.99	B	EL	24.5	0.549	1.77	A	EL	1.95	0.80	0.278	1.44	B	EL	24.500	
		TNT7B	42.000	--	1.50	63.000	1.4	0.278	2.08	B	EL	24.5	0.549	1.70	A	EL	1.95	0.80	0.278	1.50	B	EL	24.500	
		TNAGRIT4	43.000	--	1.43	61.490	1.4	0.278	1.97	B	EL	24.5	0.549	1.63	A	EL	1.95	0.80	0.278	1.43	B	EL	24.500	
TNAGT5A		45.000	--	1.33	59.850	1.4	0.278	1.84	B	EL	24.5	0.549	1.70	A	EL	1.95	0.80	0.278	1.33	B	EL	24.500		
TNAGT5B	45.000	3	1.30	58.500	1.4	0.278	1.80	B	EL	24.5	0.549	1.55	A	EL	1.95	0.80	0.278	1.30	B	EL	24.500			

NOTES:

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

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

COMMENTS:

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

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

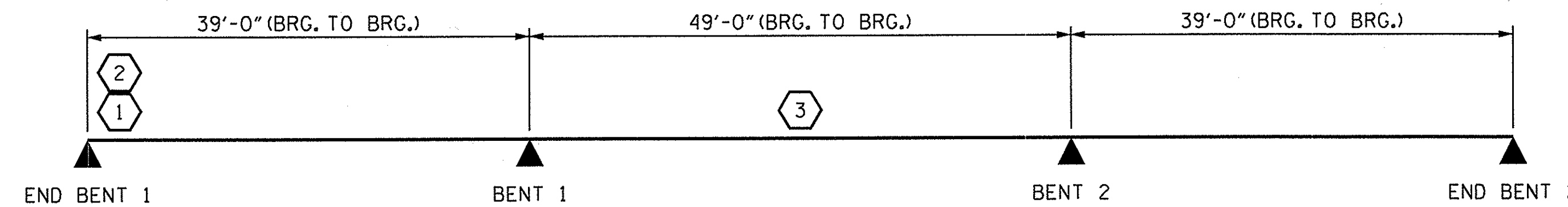
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

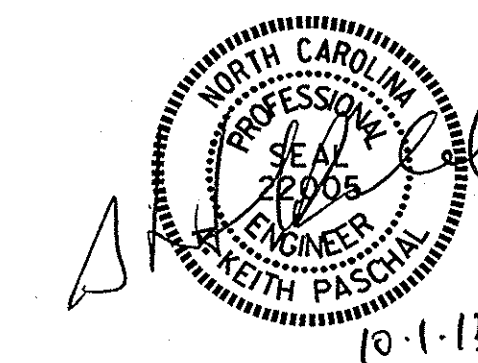
I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER



LRFR SUMMARY

PROJECT NO. B-5419
PITT COUNTY
 STATION: 16+29.50 -L-

ASSEMBLED BY : A.M. LEE, PE DATE : 6/12/13
 CHECKED BY : REZA KOUCHEKI DATE : 6/24/13
 DESIGN ENGINEER OF RECORD:
 A.M. LEE, PE DATE : 8/12/13
 DRAWN BY : MAA 1/08 REV. 11/12/08RR MAA/GM
 CHECKED BY : GM/DI 2/08 REV. 10/1/11 MAA/GM

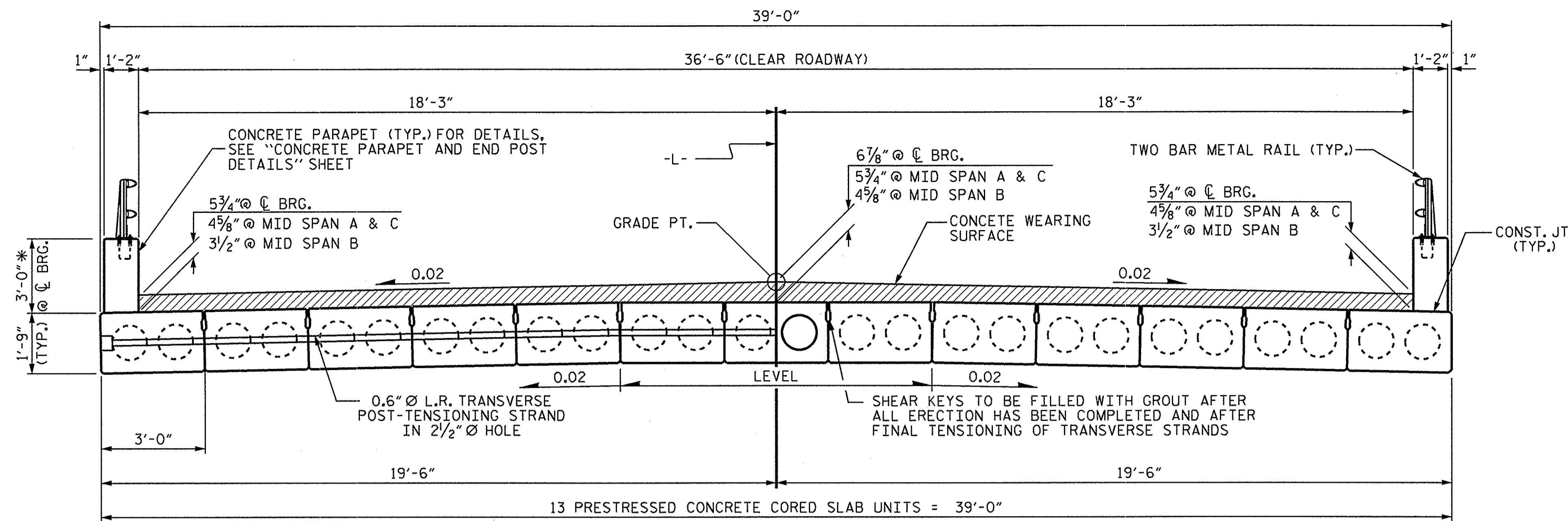


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 LRFR SUMMARY FOR
 PRESTRESSED
 CONCRETE GIRDERS
 (NON-INTERSTATE TRAFFIC)

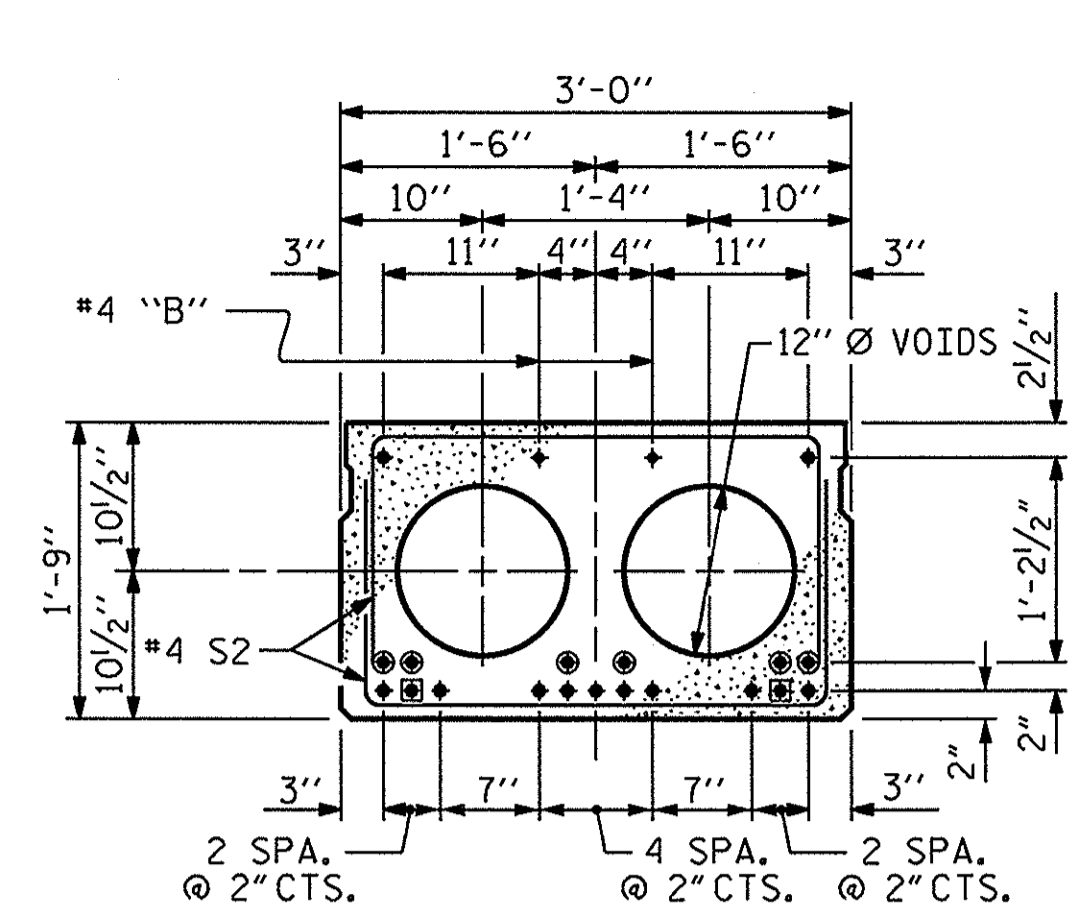
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			24

10-1-13

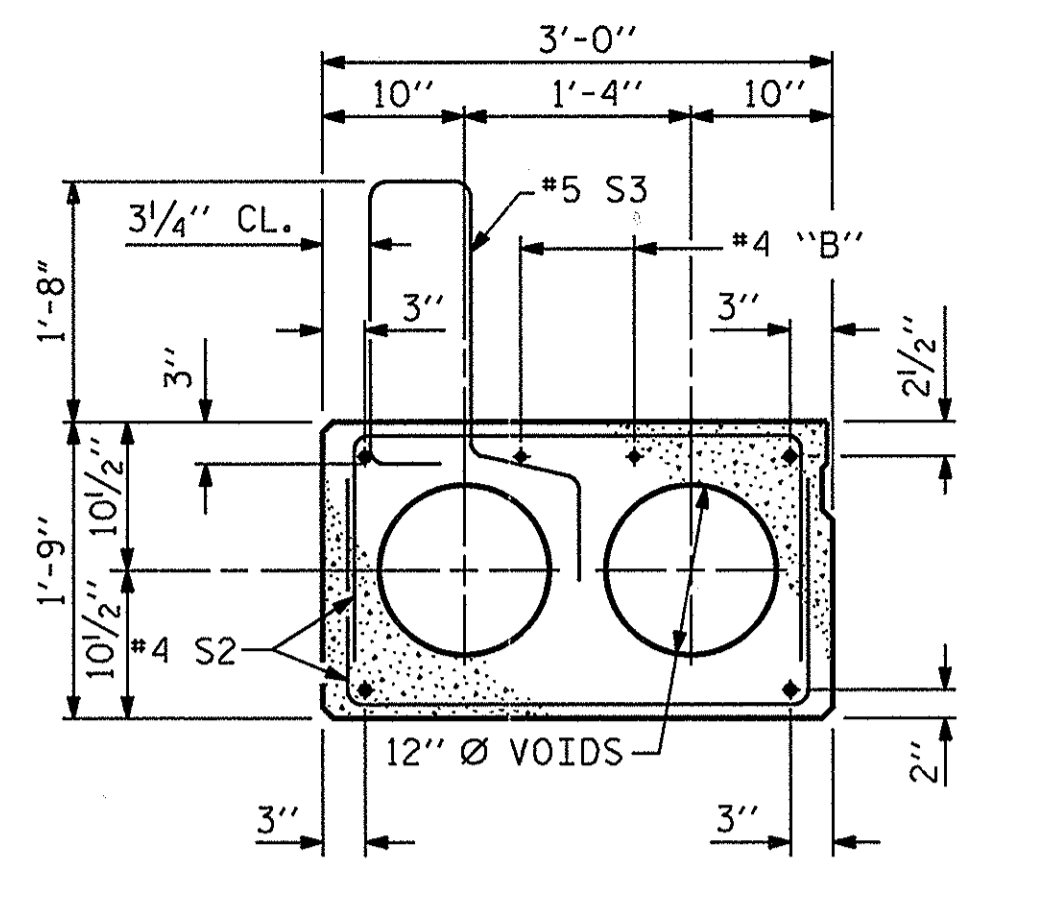


TYPICAL SECTION
 HALF SECTION AT INTERMEDIATE DIAPHRAGMS HALF SECTION THROUGH VOIDS

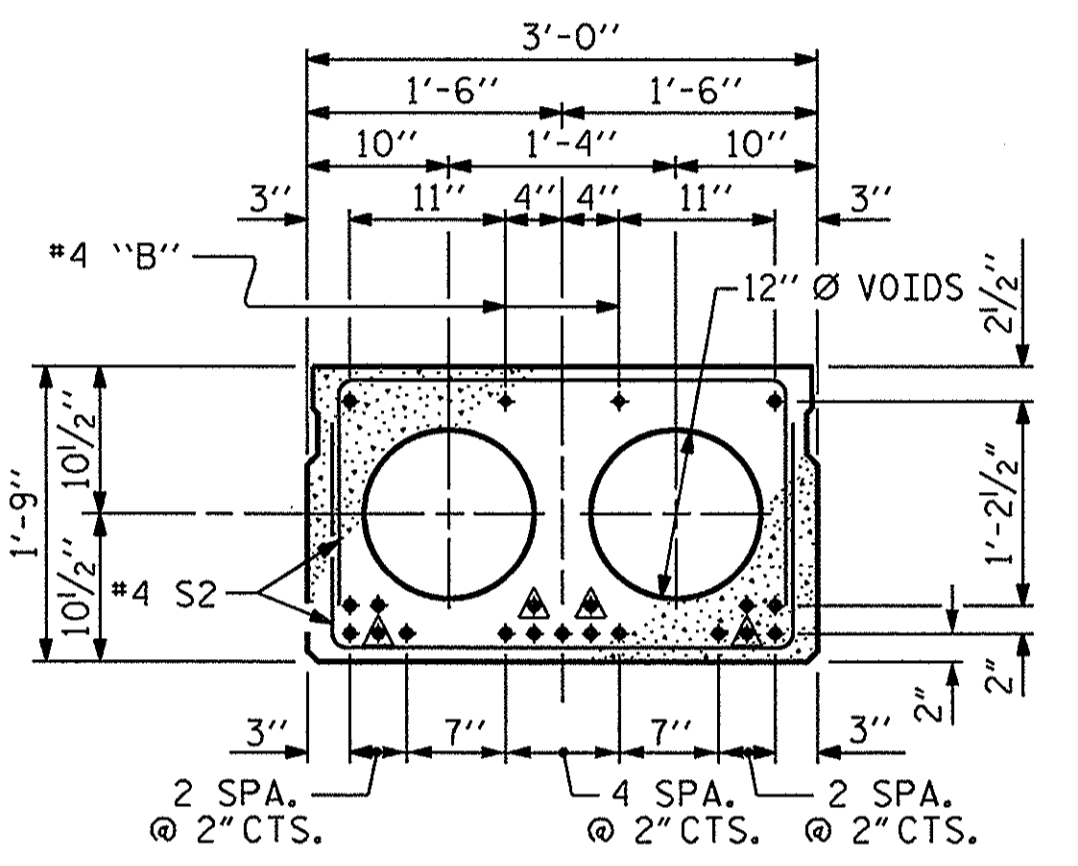
* -THE MAXIMUM CONCRETE PARAPET HEIGHT AND CONCRETE OVERLAY THICKNESS IS SHOWN. THE HEIGHT OF THE CONCRETE PARAPET AND CONCRETE OVERLAY THICKNESS VARIES WHILE THE TOP OF THE CONCRETE PARAPET FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR CONCRETE PARAPET HEIGHT DETAILS AND CONCRETE OVERLAY THICKNESS SEE "SHEET 5 OF 5."



INTERIOR SLAB SECTION (40' UNIT)
(13 STRANDS REQUIRED)

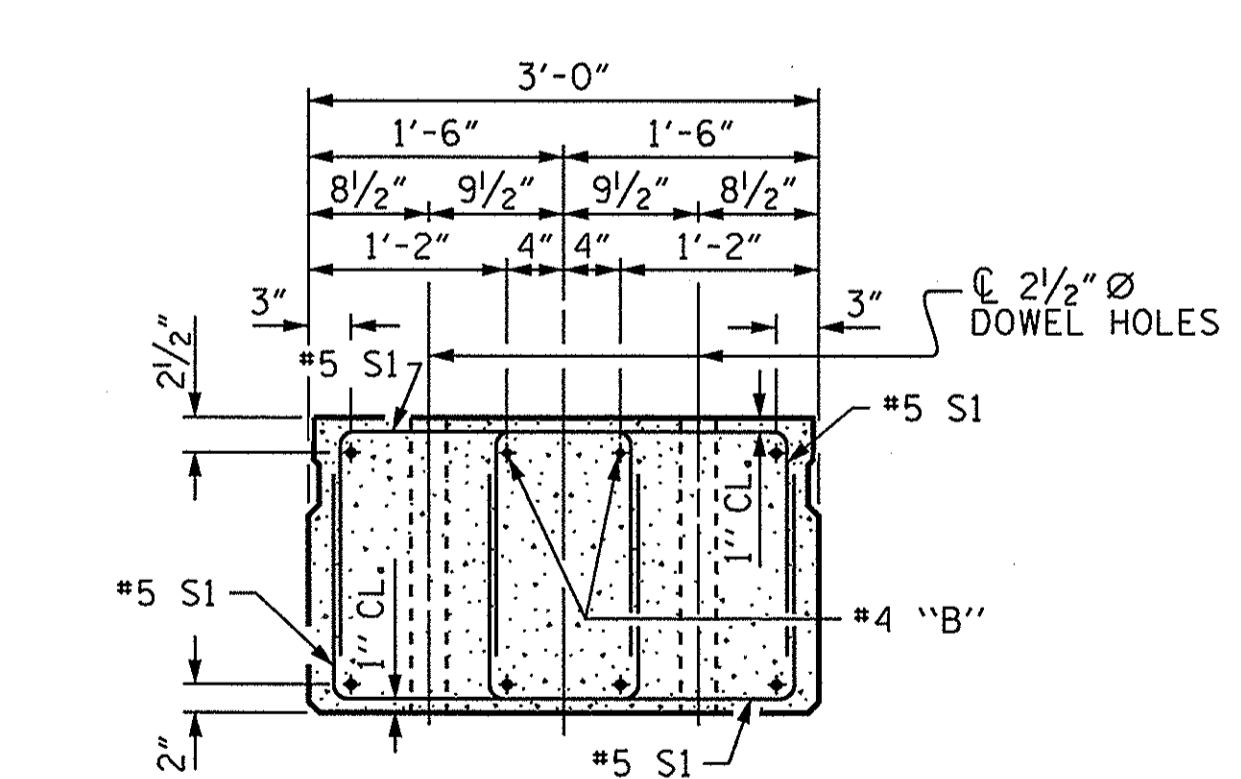


EXT. SLAB SECTION
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



INTERIOR SLAB SECTION (50' UNIT)
(19 STRANDS REQUIRED)

0.6" Ø LOW RELAXATION STRAND LAYOUT

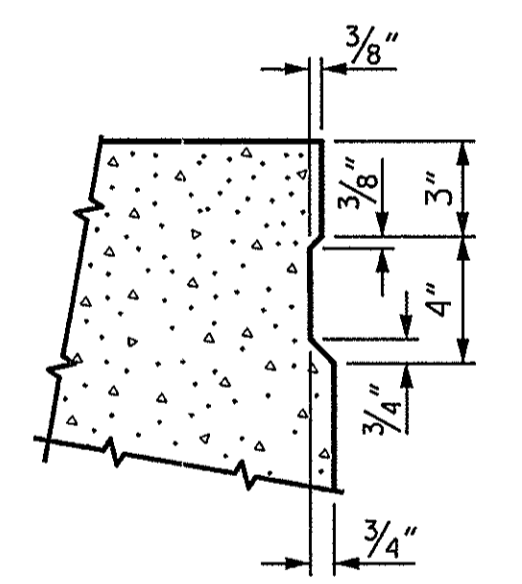


END ELEVATION

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.

- ▲ 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



SHEAR KEY DETAIL

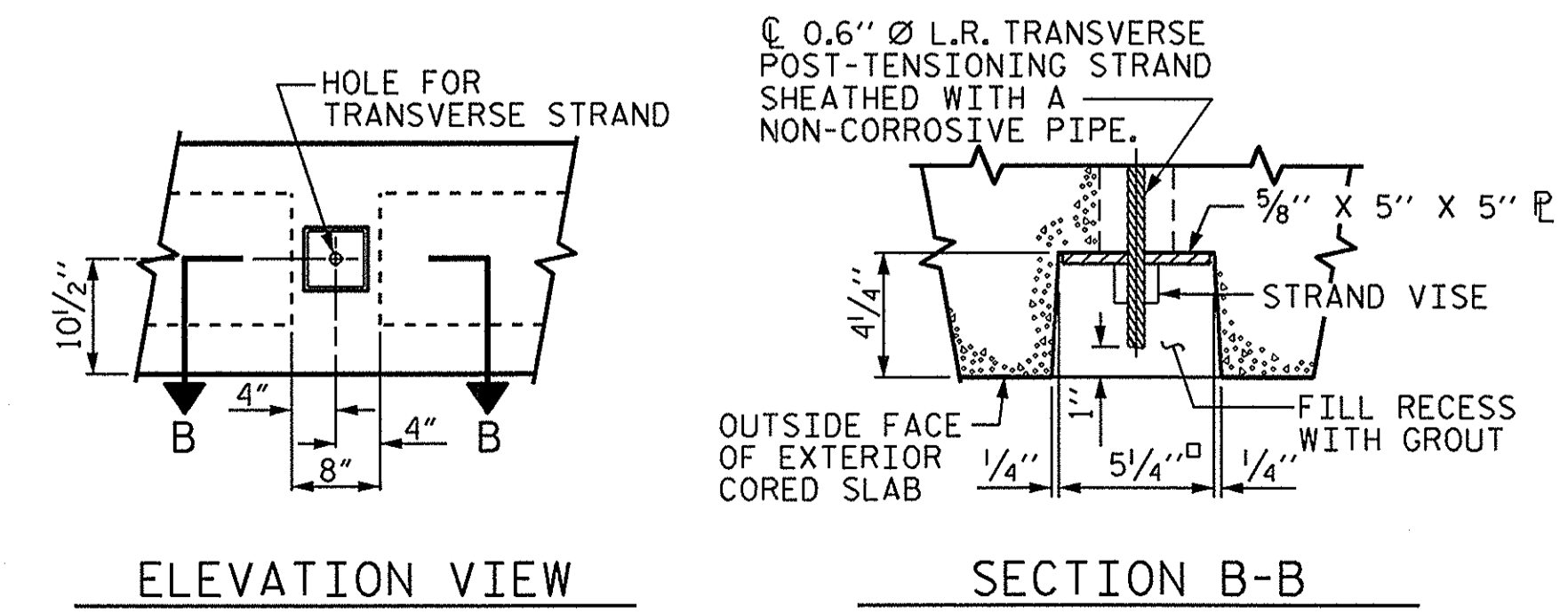
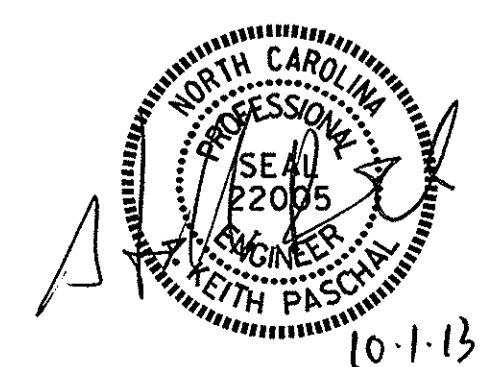
NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.

PROJECT NO. B-5419
PITT COUNTY
 STATION: 16+29.50 -L-

SHEET 1 OF 5

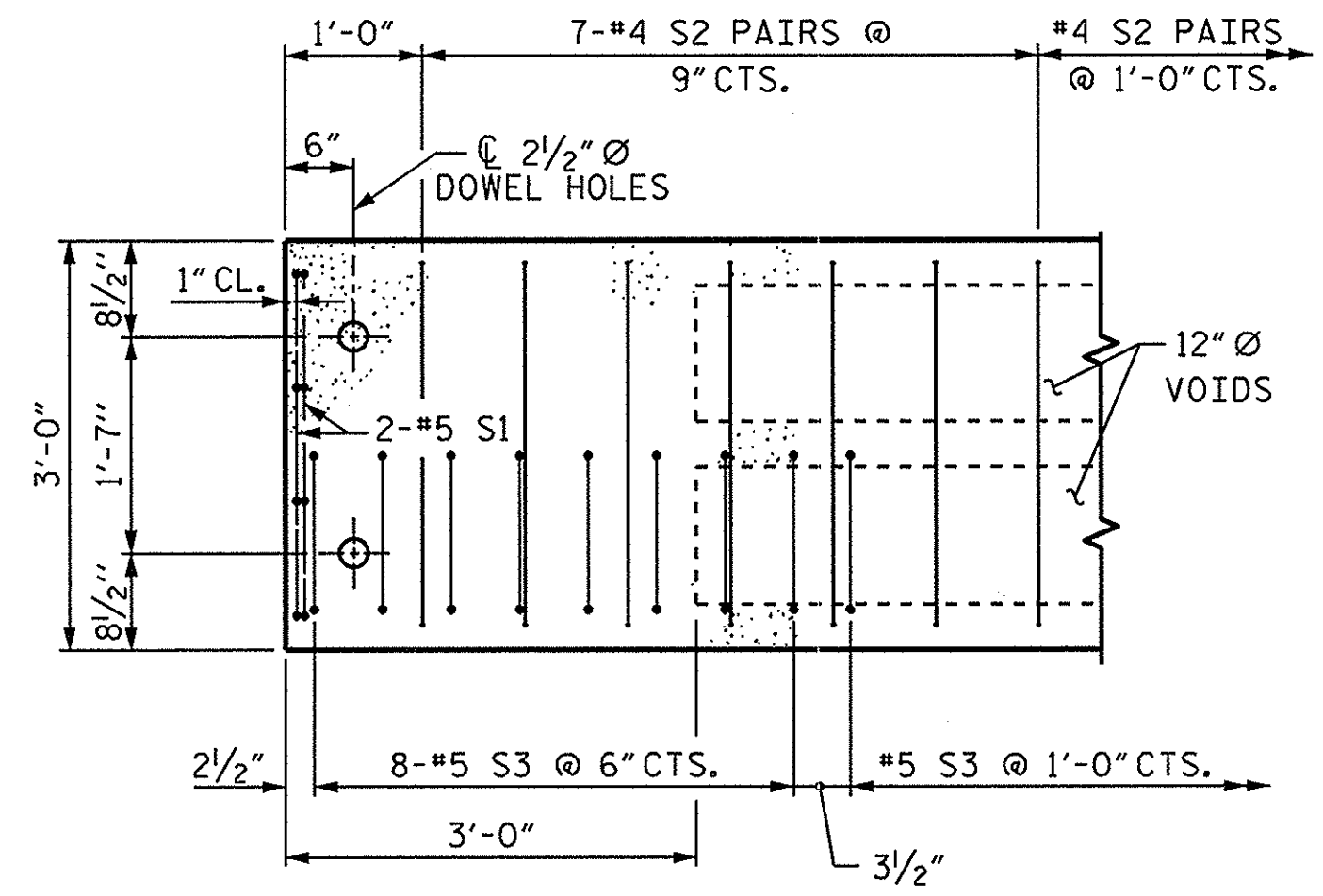
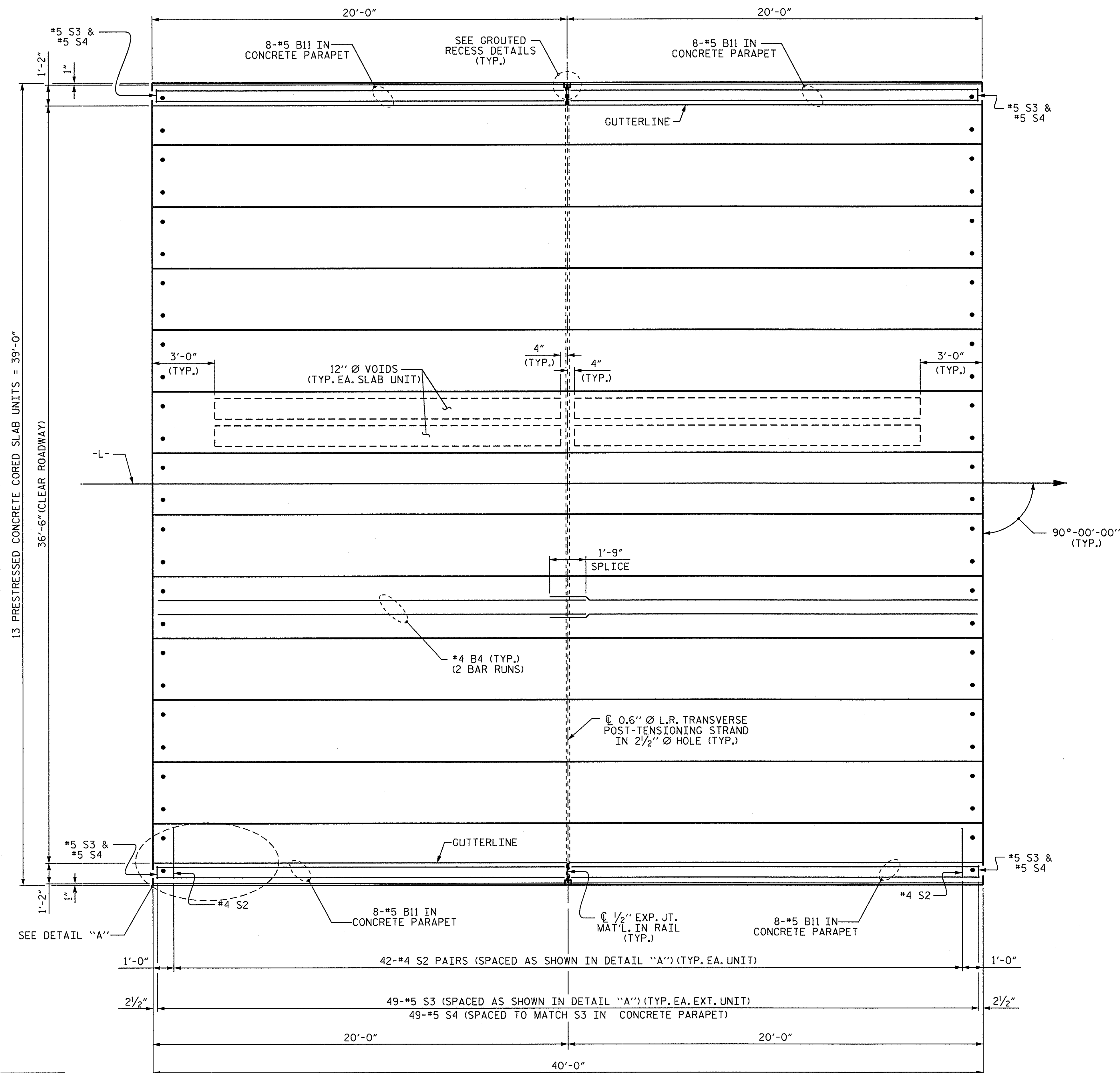
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 3'-0" X 1'-9"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT
 90° SKEW

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5	
1			3			TOTAL SHEETS	24
2			4				



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

DRAWN BY: A.M. LEE, PE DATE: 6/7/2013
 CHECKED BY: R. KOUCHEKI DATE: 7/1/2013
 DESIGN ENGINEER OF RECORD: A.M. LEE, PE DATE: 8/12/13

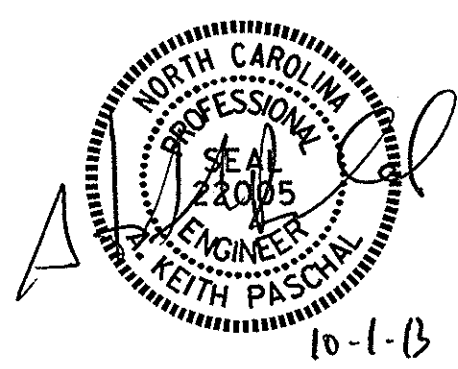


DETAIL "A"
 NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

PLAN OF UNIT

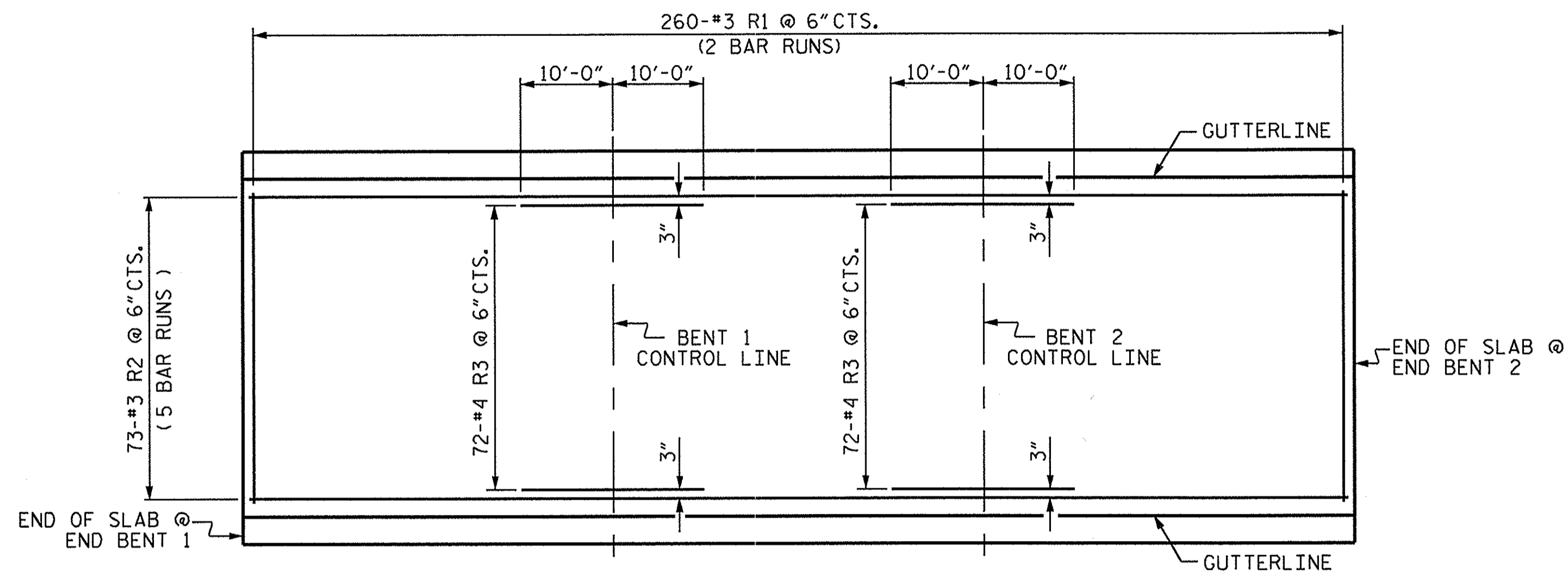
PROJECT NO. B-5419
 PITT COUNTY
 STATION: 16+29.50 -L-

SHEET 2 OF 5
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PLAN OF 40' UNIT
 36'-6" CLEAR ROADWAY
 90° SKEW
 SPANS A & C



ASSEMBLED BY : A.M. LEE, PE	DATE : 6/7/2013
CHECKED BY : R. KOUCHEKI	DATE : 7/1/2013
DRAWN BY : DGE 6/09	REV. 12/5/11 MAA/AAC
CHECKED BY: BCH 6/09	

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			24

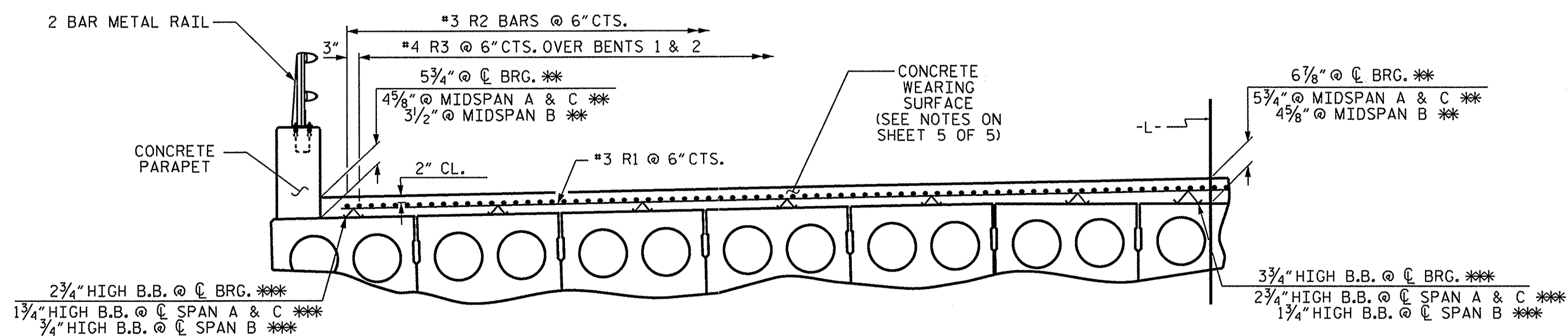


PLAN SHOWING CONCRETE WEARING SURFACE REINFORCING STEEL

BILL OF MATERIAL FOR CONCRETE WEARING SURFACE						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*R1	520	#3	STR	18'-9"	3666	
*R2	365	#3	STR	27'-0"	3705	
*R3	144	#4	STR	20'-0"	1924	
* EPOXY COATED REINFORCING STEEL					LBS.	9295
CONCRETE WEARING SURFACE					SQ. FT.	4754

GROOVING BRIDGE FLOORS	
APPROACH SLABS	757 SQ.FT.
BRIDGE DECK	4352 SQ.FT.
TOTAL	5109 SQ.FT.

SPLICE LENGTH CHART	
BAR SIZE	EPOXY COATED
#3	1'-3"
#4	1'-8"



REINFORCING FOR CONCRETE WEARING SURFACE

** BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATIONS
 *** BEAM BOLSTERS (B.B.) SHALL BE SPACED AT 2'-0" MAX. CENTERS SET 1'-0" FROM GUTTERLINE.

PROJECT NO. B-5419
PITT COUNTY
 STATION: 16+29.50 -L-

SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONCRETE WEARING SURFACE DETAILS



DRAWN BY: A.M. LEE, PE DATE: 6/7/2013
 CHECKED BY: R. KOUCHEKI DATE: 7/2/2013
 DESIGN ENGINEER OF RECORD: A.M. LEE, PE DATE: 8/12/2013

01-OCT-2013 12:41
 S:\DPG1\catt\B-5419\omlee\Plans\B5419_SD_CS.gdn
 emurray

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8	
1			3			TOTAL SHEETS	24
2			4				

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 SIDWAYS. 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.

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.

ALL REINFORCING STEEL IN THE CONCRETE PARAPET 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.

PLACEMENT OF THE CONCRETE WEARING SURFACE SHALL OCCUR AFTER CASTING THE CONCRETE PARAPET. THE COST OF THE REINFORCING STEEL CAST WITH THE CONCRETE WEARING SURFACE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE WEARING SURFACE. FOR CONCRETE WEARING SURFACE, SPECIAL PROVISIONS.

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.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

BILL OF MATERIAL FOR ONE 40' CORED SLAB UNIT							
				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B4	4	#4	STR	20'-9"	55	20'-9"	55
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	84	#4	3	5'-4"	299	5'-4"	299
*S3	49	#5	1	6'-3"	319		
REINFORCING STEEL				LBS.	389		389
*EPOXY COATED REINFORCING STEEL				LBS.	319		
5000 P.S.I. CONCRETE				CU. YDS.	5.8		5.8
0.6" Ø L.R. STRANDS				No.	13		13

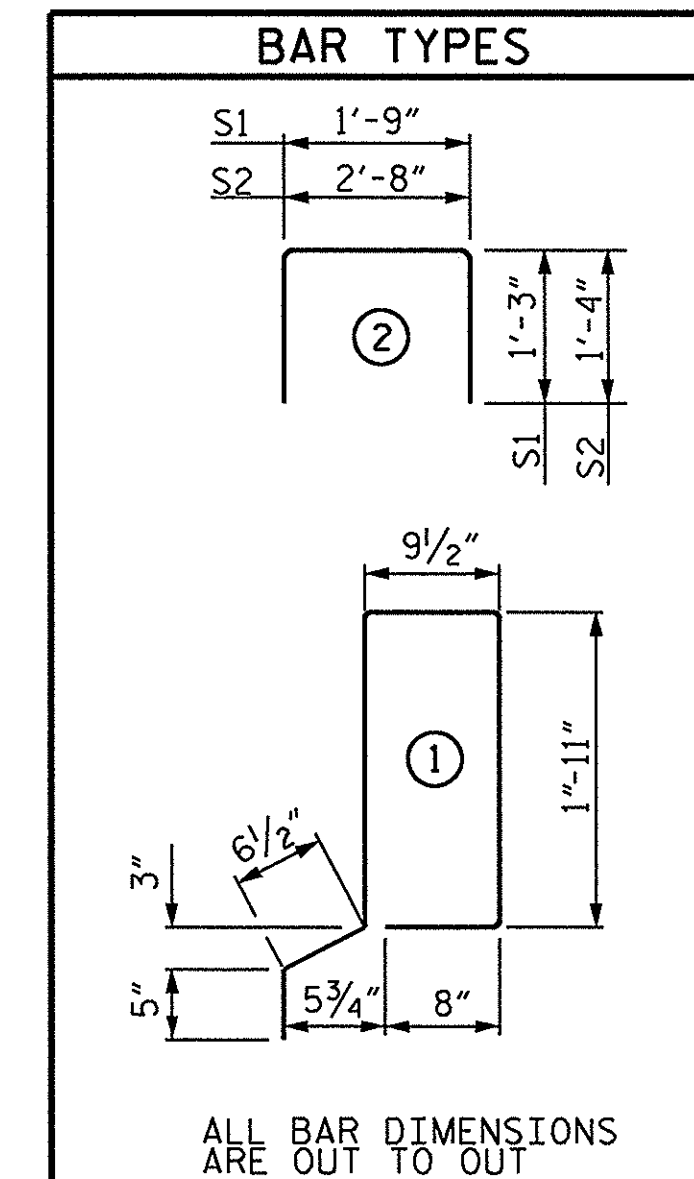
BILL OF MATERIAL FOR ONE 50' CORED SLAB UNIT							
				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B6	4	#4	STR	25'-9"	69	25'-9"	69
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	104	#4	3	5'-4"	371	5'-4"	371
*S3	59	#5	1	6'-3"	385		
REINFORCING STEEL				LBS.	475		475
*EPOXY COATED REINFORCING STEEL				LBS.	385		
6500 P.S.I. CONCRETE				CU. YDS.	7.1		7.1
0.6" Ø L.R. STRANDS				No.	19		19

CORED SLABS REQUIRED			
40' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	4	40'-0"	160'-0"
INTERIOR C.S.	22	40'-0"	880'-0"
TOTAL	26		1040'-0"

CORED SLABS REQUIRED			
50' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	50'-0"	100'-0"
INTERIOR C.S.	11	50'-0"	550'-0"
TOTAL	13		650'-0"

CONCRETE RELEASE STRENGTH	
UNIT	PSI
40' UNITS	4000
50' UNITS	4900

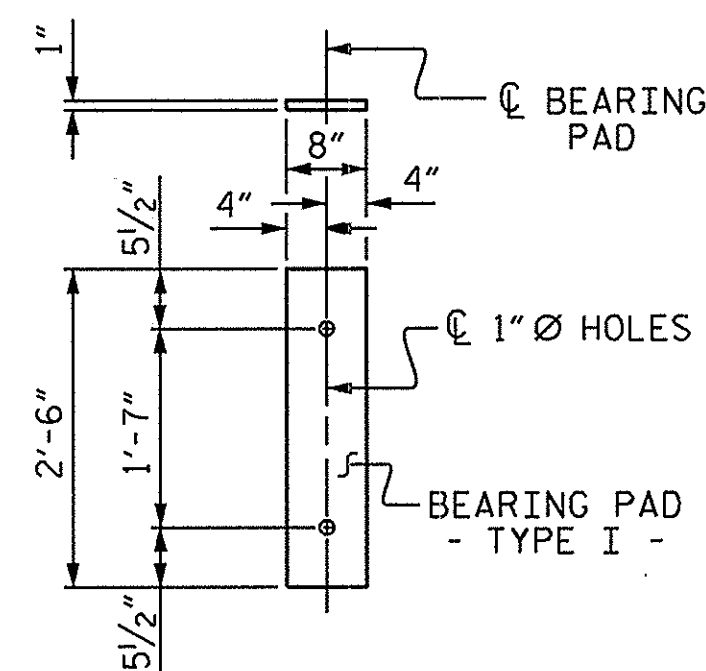
GRADE 270 STRANDS	
AREA (SQUARE INCHES)	0.6" Ø L.R.
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950



DEAD LOAD DEFLECTION AND CAMBER	
40' CORED SLAB UNIT	3'-0" x 1'-9" 0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1/4" ↑
DEFLECTION DUE TO CONCRETE WEARING SURFACE	1/8" ↓
FINAL CAMBER	1/8" ↑

DEAD LOAD DEFLECTION AND CAMBER	
50' CORED SLAB UNIT	3'-0" x 1'-9" 0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	2/16" ↑
DEFLECTION DUE TO CONCRETE WEARING SURFACE	3/16" ↓
FINAL CAMBER	2/4" ↑

GUTTERLINE CONCRETE THICKNESS & RAIL HEIGHT		
36'-10" CLEAR ROADWAY	CONCRETE OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
	NORMAL CROWN SECTION	
40' UNITS	4 5/8"	2'-10 5/8"
50' UNITS	3 1/2"	2'-9 1/2"



FIXED END
(TYPE I - 78 REQ'D)

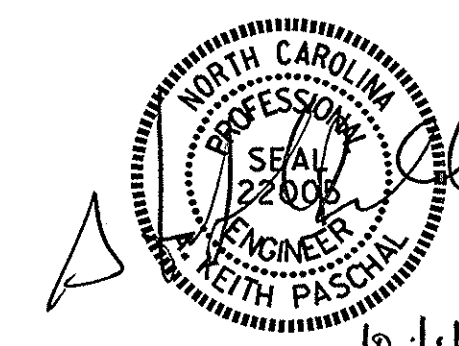
ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

PROJECT NO. B-5419
PITT COUNTY
 STATION: 16+29.50 -L-

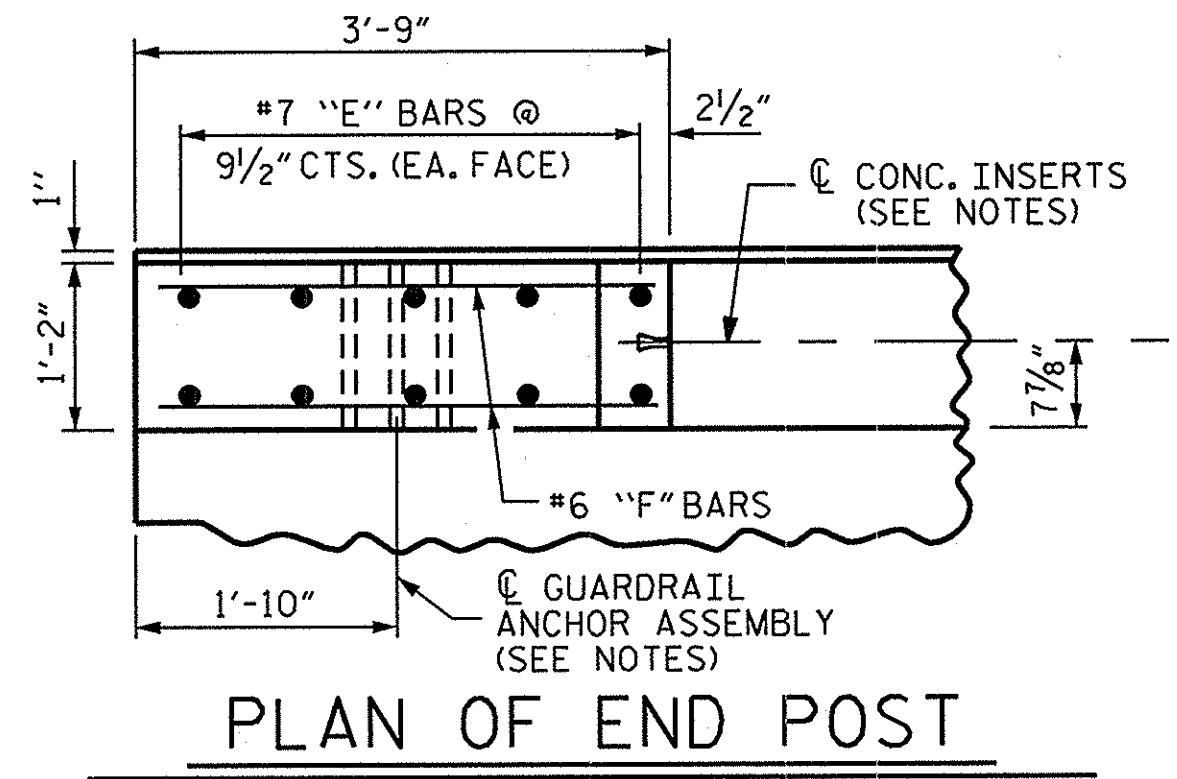
SHEET 5 OF 5

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
STANDARD					
3'-0" X 1'-9"					
PRESTRESSED CONCRETE					
CORED SLAB UNIT					
90° SKEW					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO.
					S-9
					TOTAL SHEETS
					24

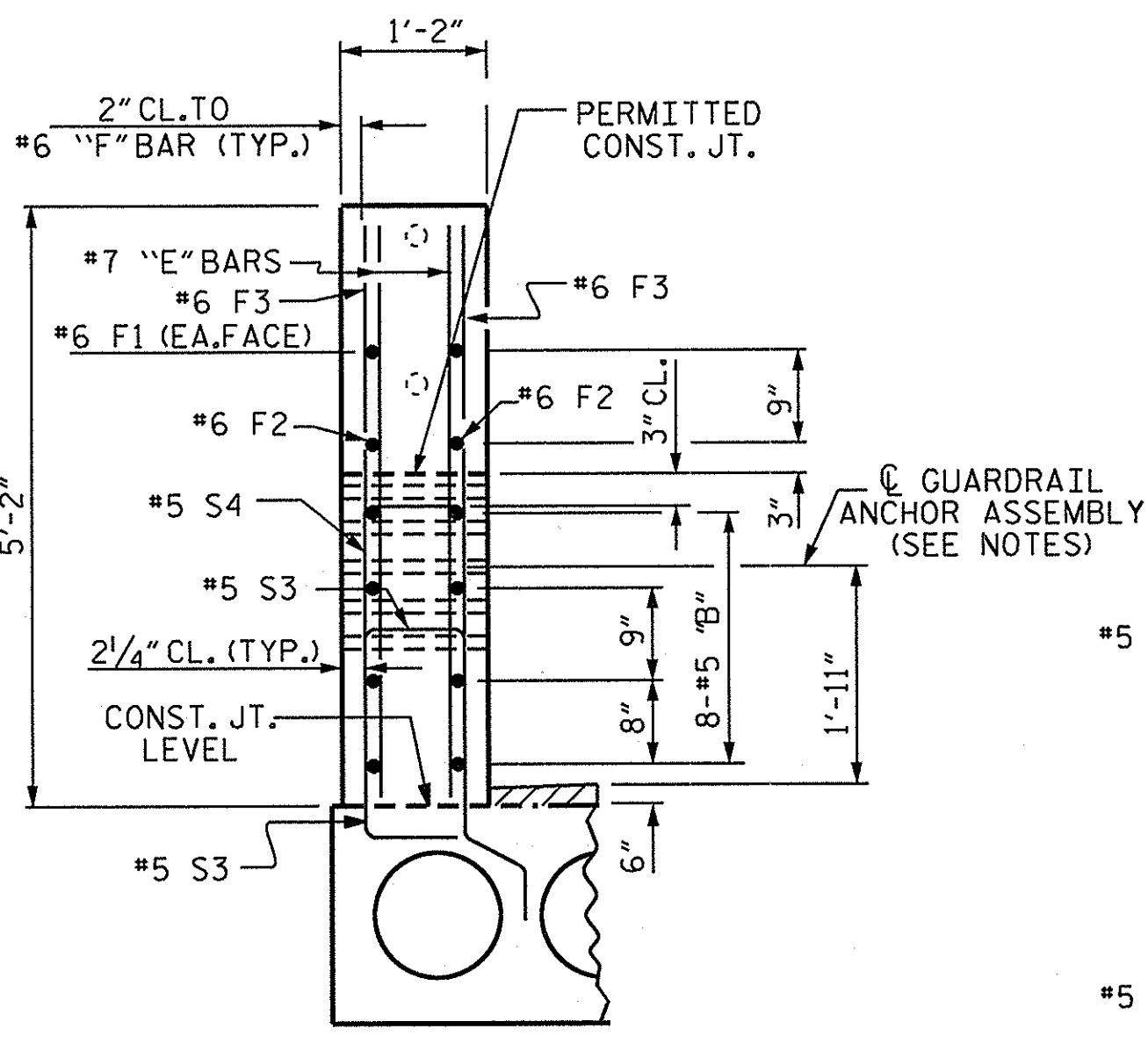


ASSEMBLED BY : A.M. LEE, PE DATE : 6/7/2013
 CHECKED BY : R. KOUCHEKI DATE : 7/2/2013
 DRAWN BY : DGE 5/09 REV. 12/11 MAA/AAC
 CHECKED BY : BCH 6/09

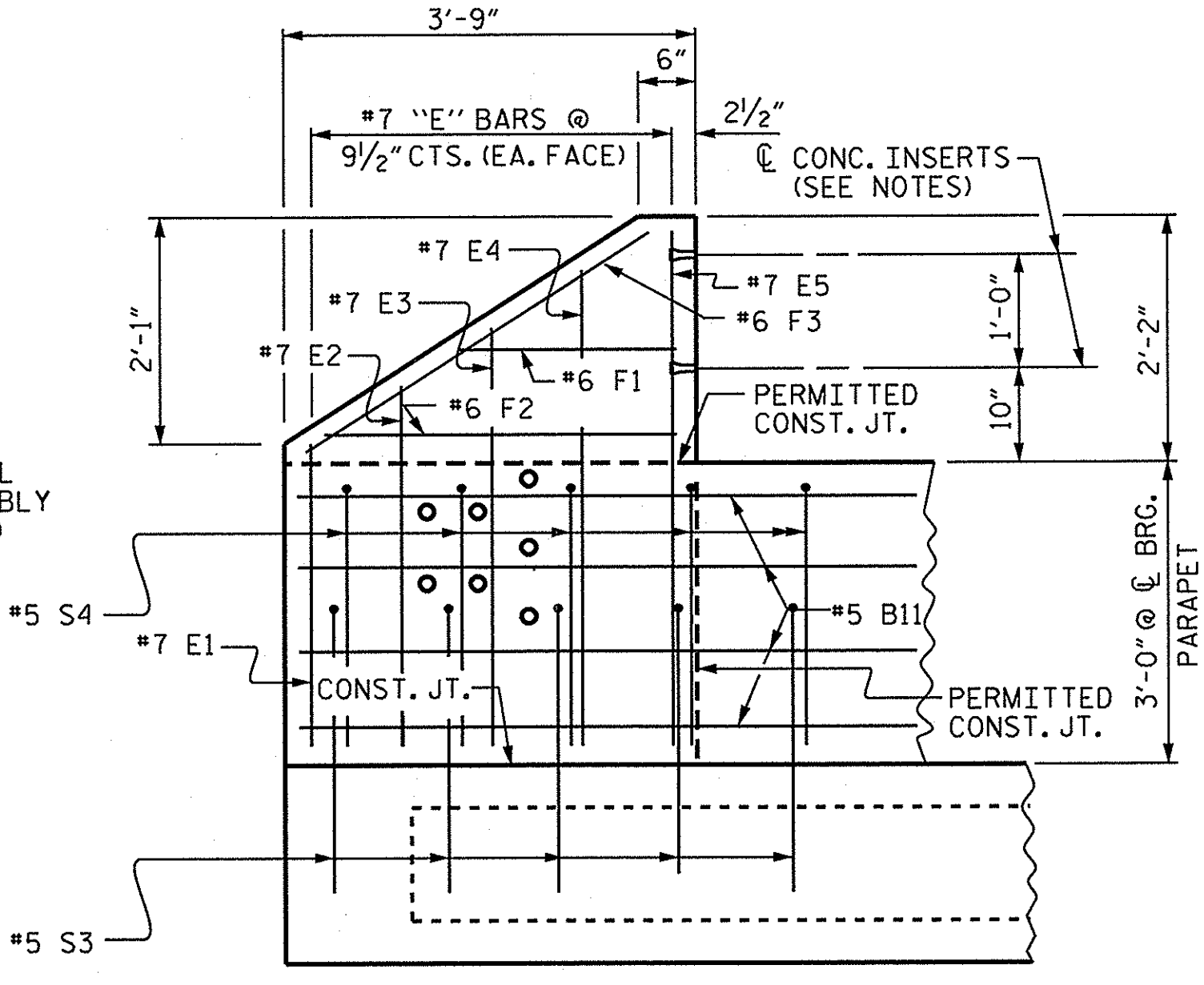
DESIGN ENGINEER OF RECORD:
 A.M. LEE, PE DATE : 8/12/2013



PLAN OF END POST

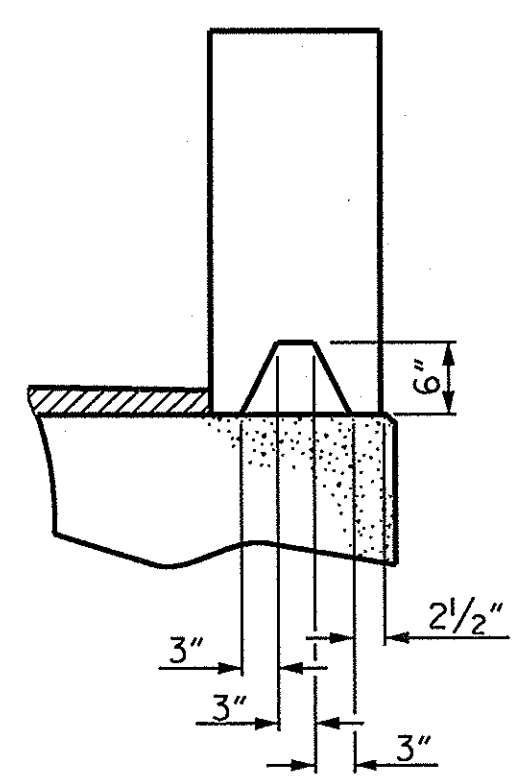


END VIEW

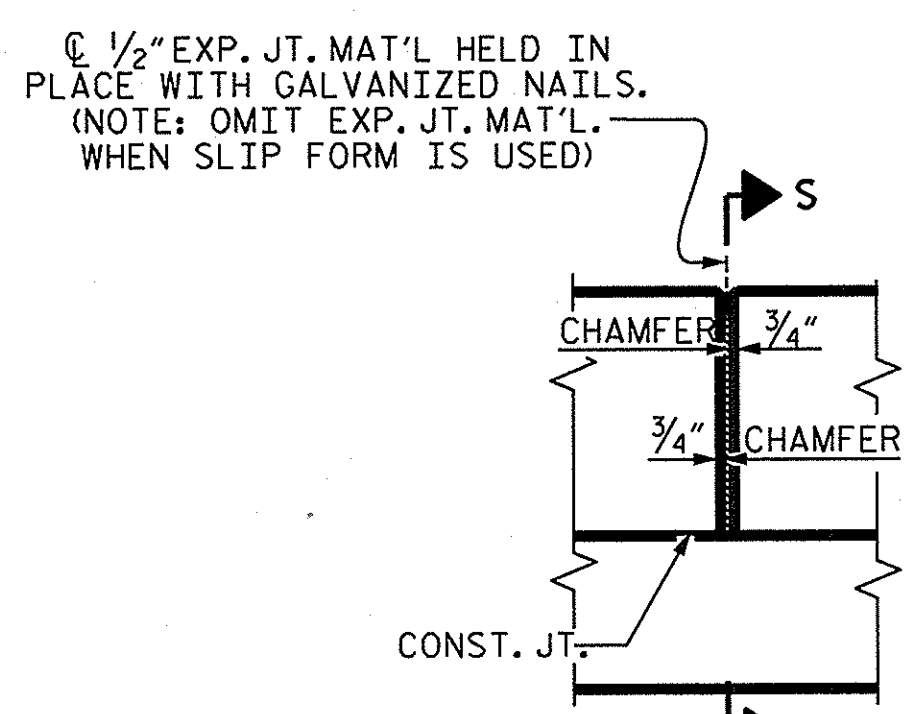


ELEVATION

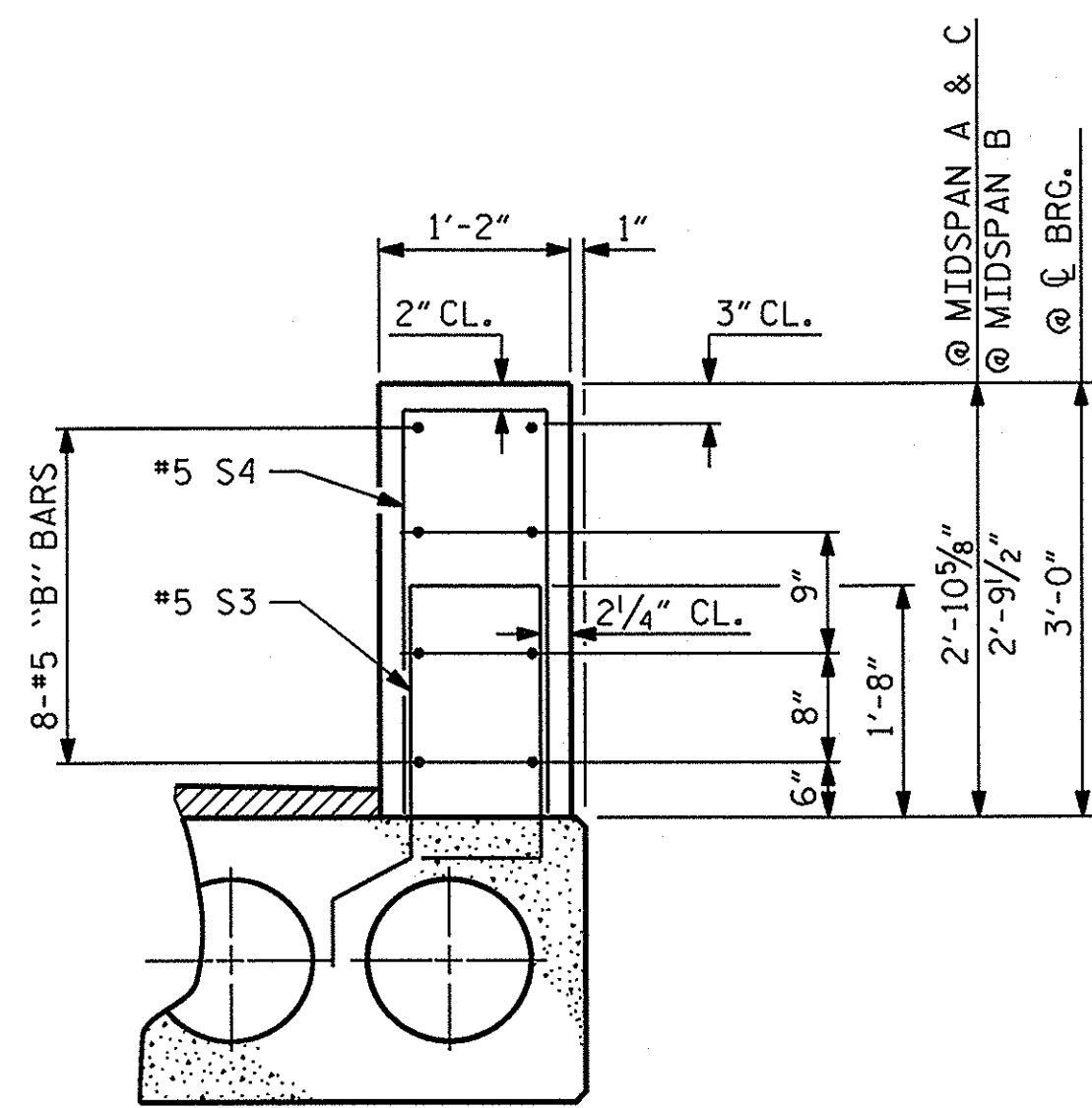
PARAPET AND END POST FOR TWO-BAR RAIL



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



ELEVATION AT
EXPANSION JOINTS



TWO BAR METAL
RAIL PARAPET SECTION

NOTES

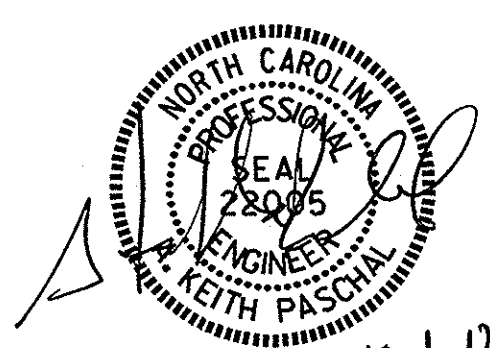
ALL REINFORCING STEEL IN THE PARAPETS AND END POSTS SHALL BE EPOXY COATED.
 FOR DETAILS OF CONCRETE INSERT AND GUARDRAIL ANCHOR ASSEMBLY, SEE "RAIL POST SPACINGS AND END OF RAIL DETAILS" SHEET 4 OF 5 AND "GUARDRAIL ANCHORAGE DETAILS" SHEET 5 OF 5.
 #5 S3 BARS ARE INCLUDED IN THE BILL OF MATERIAL FOR CORED SLAB UNITS.
 GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE PARAPET AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN PARAPET EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF PARAPET SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.
 ALL BAR SUPPORTS USED IN THE PARAPET AND ALL INCIDENTAL REINFORCING STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

BAR TYPE		BILL OF MATERIAL PARAPETS AND END POSTS				
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*B11	64	#5	STR	19'-7"	1307	
*B13	32	#5	STR	24'-7"	820	
*E1	8	#7	STR	2'-11"	48	
*E2	8	#7	STR	3'-5"	56	
*E3	8	#7	STR	3'-11"	64	
*E4	8	#7	STR	4'-5"	72	
*E5	8	#7	STR	4'-10"	79	
*F1	8	#6	STR	1'-10"	22	
*F2	8	#6	STR	3'-0"	36	
*F3	8	#6	STR	3'-7"	43	
*S4	314	#5	1	5'-9"	1883	
*EPOXY COATED REINFORCING STEEL LBS.					4430	
CLASS AA CONCRETE				CU.YDS.	34.2	
CONCRETE PARAPET				LIN.FT.	260.75	

ALL BAR DIMENSIONS
ARE OUT TO OUT

PROJECT NO. B-5419
PITT COUNTY
 STATION: 16+29.50 -L-
 SHEET 1 OF 5

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
CONCRETE PARAPET AND END POST DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		



ASSEMBLED BY : M.D.PISO DATE : 09-11-13
 CHECKED BY : A.K.PASCHAL DATE : 09-21-13
 DRAWN BY : DGE 5/09
 CHECKED BY : BCH 6/09

NOTES

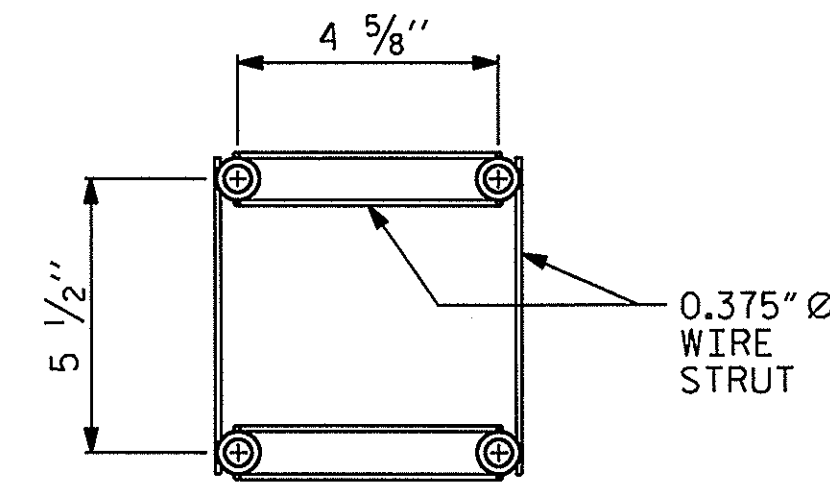
STRUCTURAL CONCRETE ANCHOR ASSEMBLY

THE STRUCTURAL CONCRETE ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS :

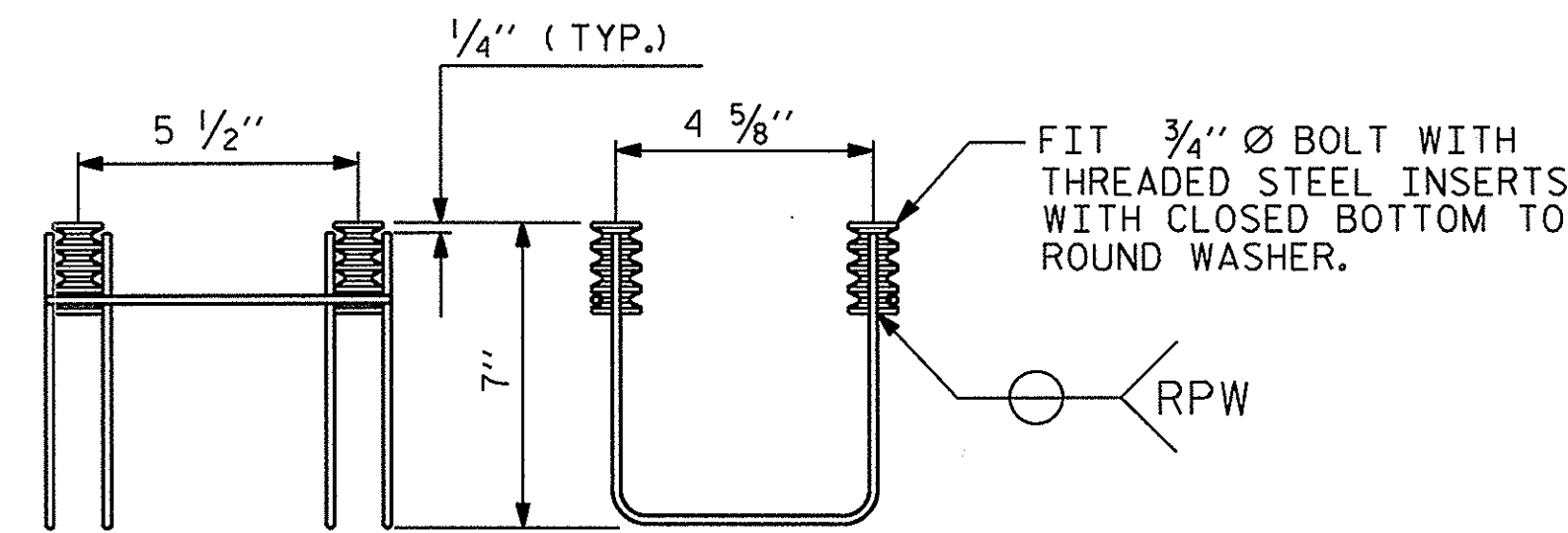
- A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2" FOR 3/4" FERRULES.
- B. 4 - 3/4" Ø X 2 1/2" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø X 2 1/2" GALVANIZED BOLTS 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.
- C. WIRE STRUT SHOWN IN THE CONCRETE ANCHOR ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 1/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.
- D. THE METAL RAIL ANCHOR ASSEMBLIES TO BE HOT DIPPED GALVANIZED TO CONFORM TO REQUIREMENTS OF AASHTO M111.
- E. THE COST OF THE METAL RAIL ANCHOR ASSEMBLY WITH BOLTS AND WASHERS COMPLETE IN PLACE SHALL BE INCLUDED IN THE PRICE BID FOR LINEAR FEET OF METAL RAIL.
- F. BOLTS TO BE TIGHTENED ONE-HALF TURN WITH A WRENCH FROM A FINGER-TIGHT POSITION.

THE CONTRACTOR MAY USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF THE METAL RAIL ANCHOR ASSEMBLY. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 10 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE THE STANDARD SPECIFICATIONS.

WHEN ADHESIVELY ANCHORED ANCHOR BOLTS ARE USED, BOLTS SHALL MEET THE REQUIREMENTS OF ASTM F593 ALLOY 304 STAINLESS STEEL WITH MINIMUM 75,000 PSI ULTIMATE STRENGTH. NUTS SHALL MEET THE REQUIREMENTS OF ASTM F594 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.



PLAN

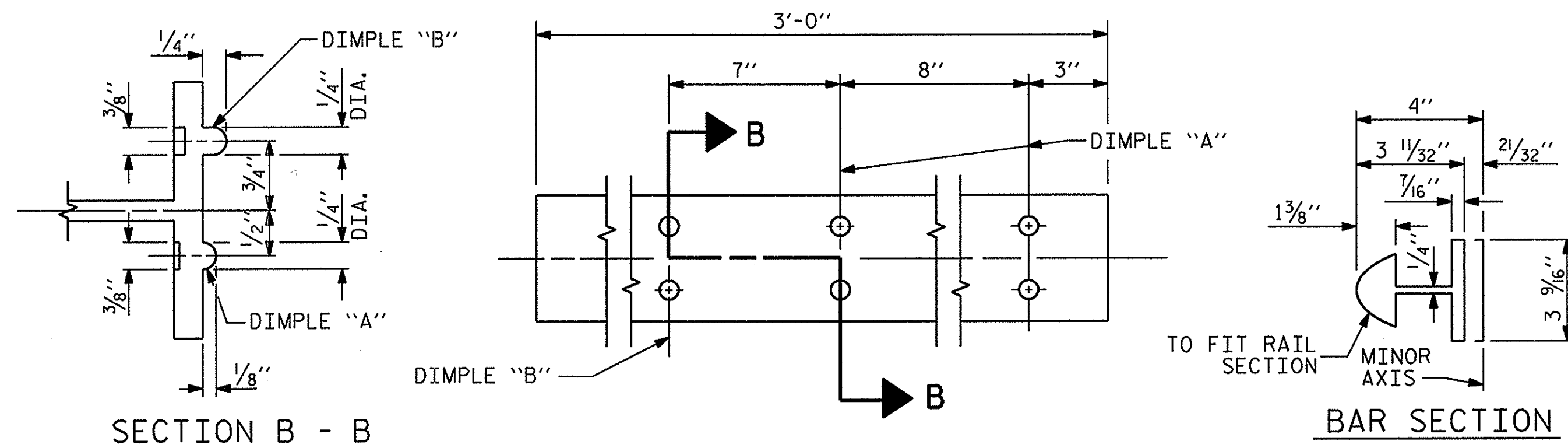


SIDE VIEW

ELEVATION

4-BOLT METAL RAIL ANCHOR ASSEMBLY

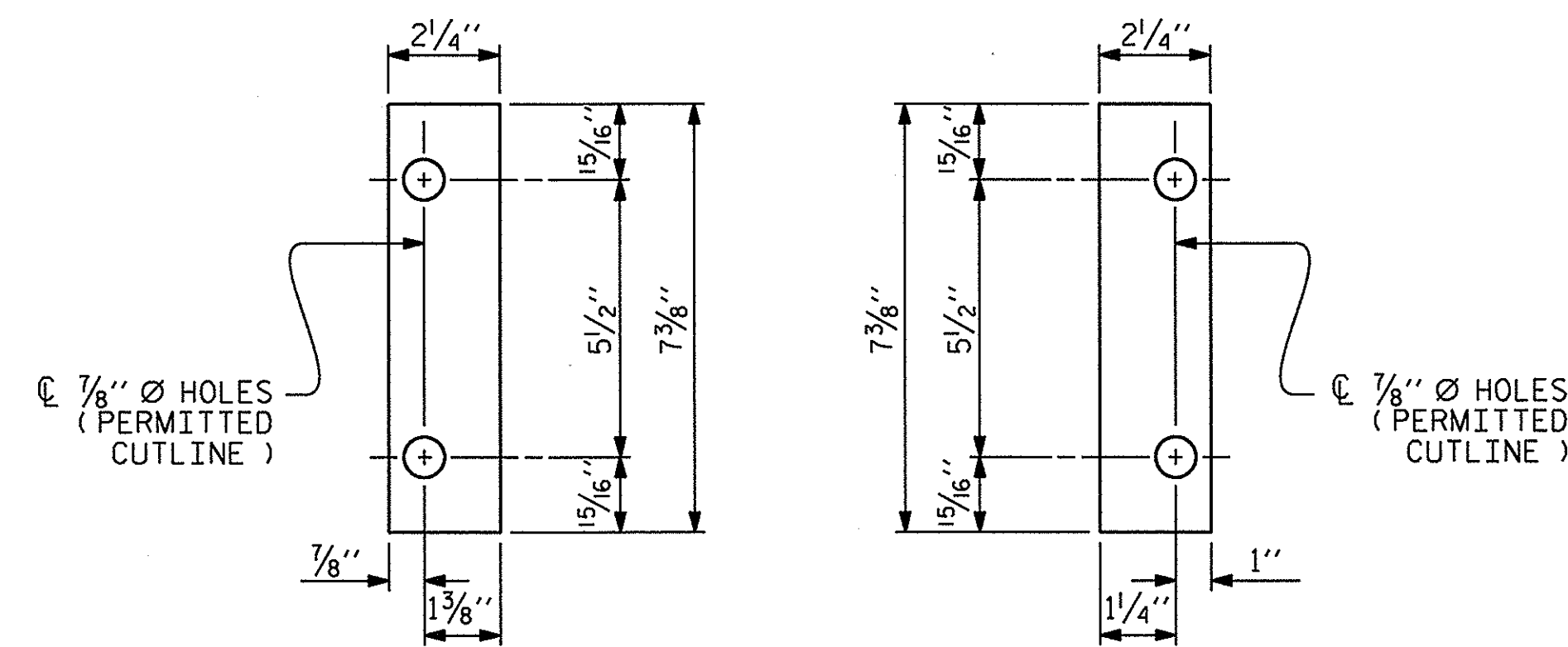
(44 ASSEMBLIES REQUIRED)



SECTION B - B

EXPANSION BAR DETAILS

BAR SECTION

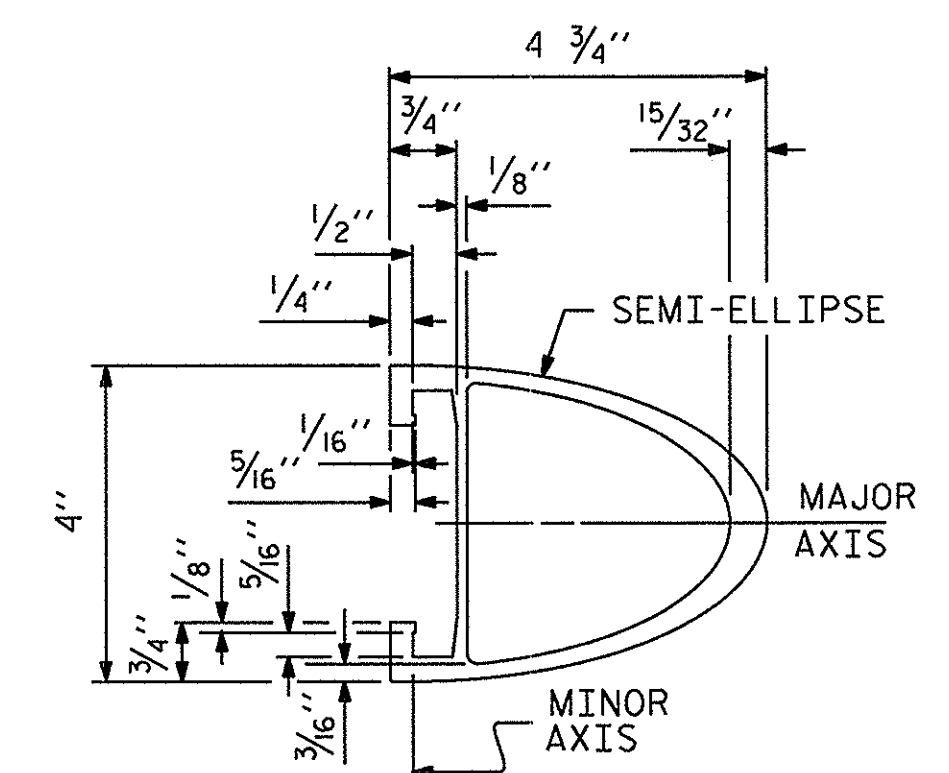


FRONT PLATE

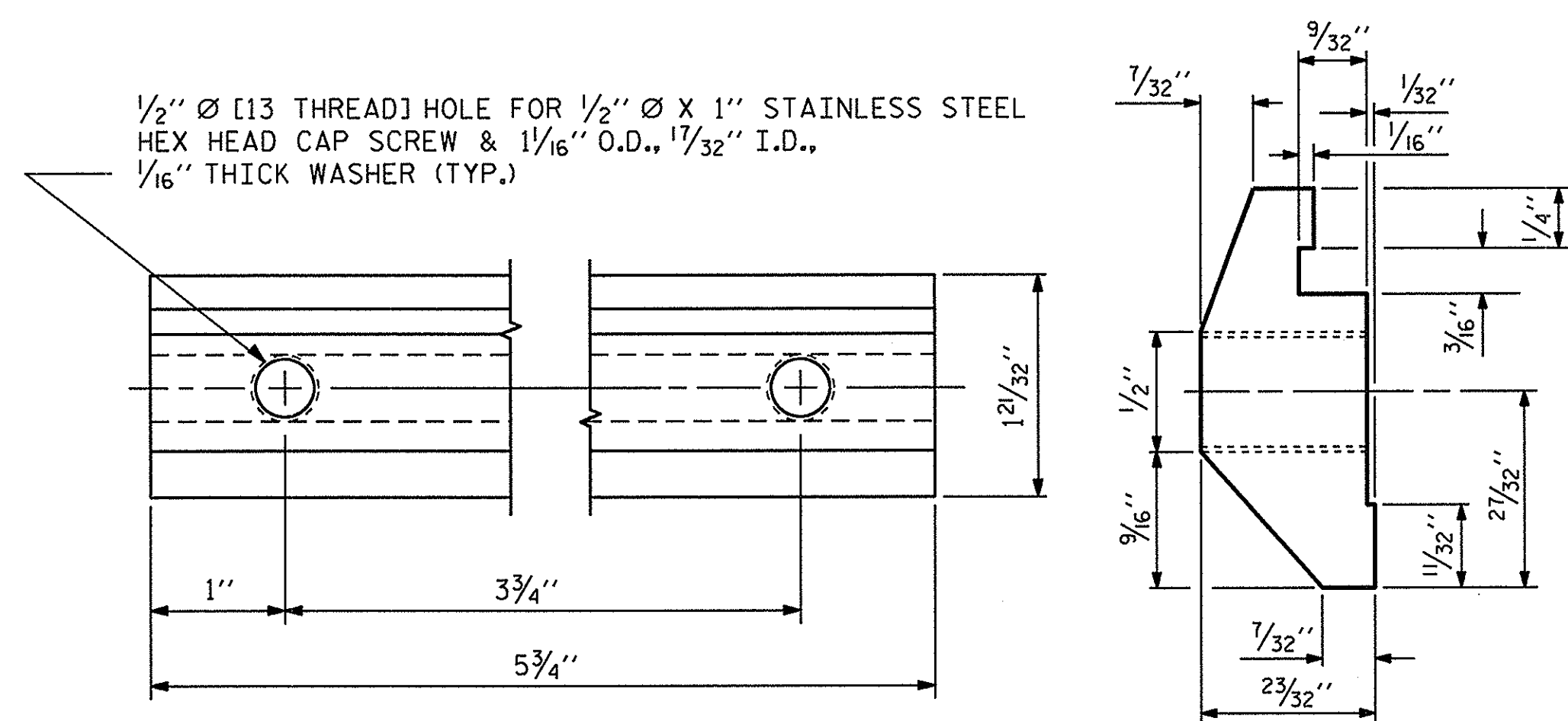
REAR PLATE

SHIM DETAILS

NOTE : SHIMS MAY BE CUT ALONG PERMITTED CUTLINE OR SLOTTED TO EDGE OF PLATE TO FACILITATE PLACEMENT.

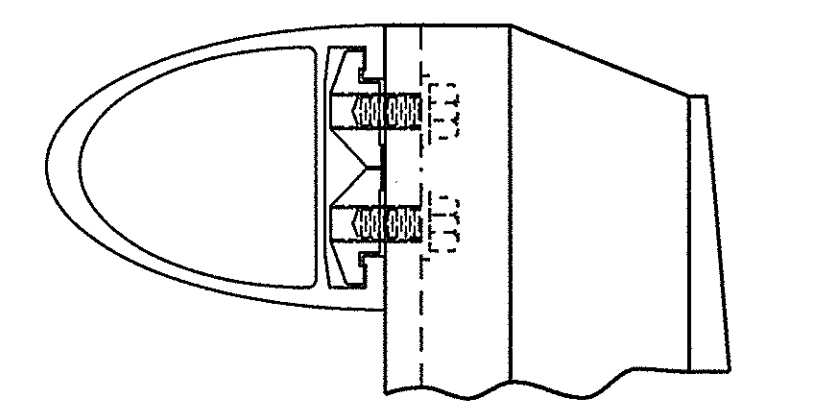


RAIL SECTION

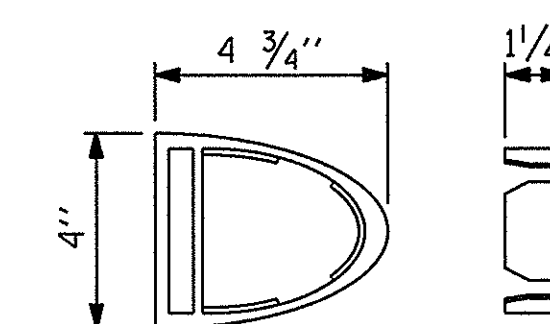


CLAMP BAR DETAIL

(4 REQUIRED PER POST)



CLAMP ASSEMBLY



RAIL CAP

PROJECT NO. B-5419
PITT COUNTY
STATION: 16+29.50 -L-

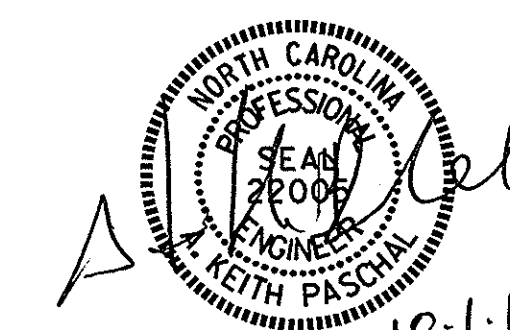
SHEET 3 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

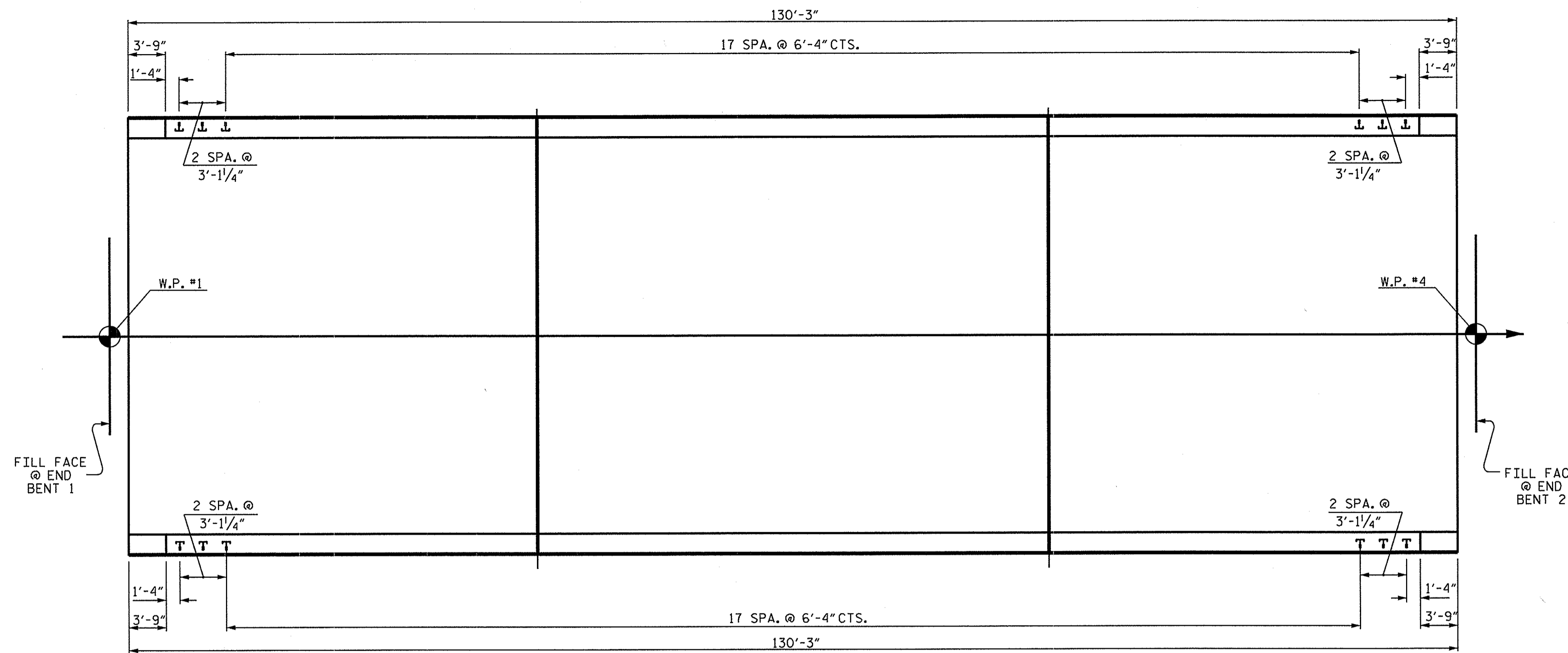
2 BAR METAL RAIL

ASSEMBLED BY : M.D.PISO	DATE : 09-07-13
CHECKED BY : A.K.PASCHAL	DATE : 09-21-13
DRAWN BY : EEM 6/94	REV. 8/16/99 MAB/LES
CHECKED BY : RCW 6/94	REV. 5/1/06R KMM/GM
	REV. 10/1/11 MAA/GM



REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	24
1			3			24
2			4			24

STD. NO. BMR4



NOTES

STRUCTURAL CONCRETE INSERT

THE STRUCTURAL CONCRETE INSERT ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:

- FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 1 1/2".
- 1 - 3/4" Ø X 1 5/8" BOLT WITH WASHER, BOLT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307, BOLT AND WASHER SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLT AND WASHER MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø X 1 5/8" GALVANIZED BOLT AND WASHER, THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)
- WIRE STRUT SHOWN IN THE CONCRETE INSERT ASSEMBLY DETAILS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 1/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.

NOTES

METAL RAIL TO END POST CONNECTION

THE METAL RAIL TO END POST CONNECTION SHALL CONSIST OF THE FOLLOWING COMPONENTS:

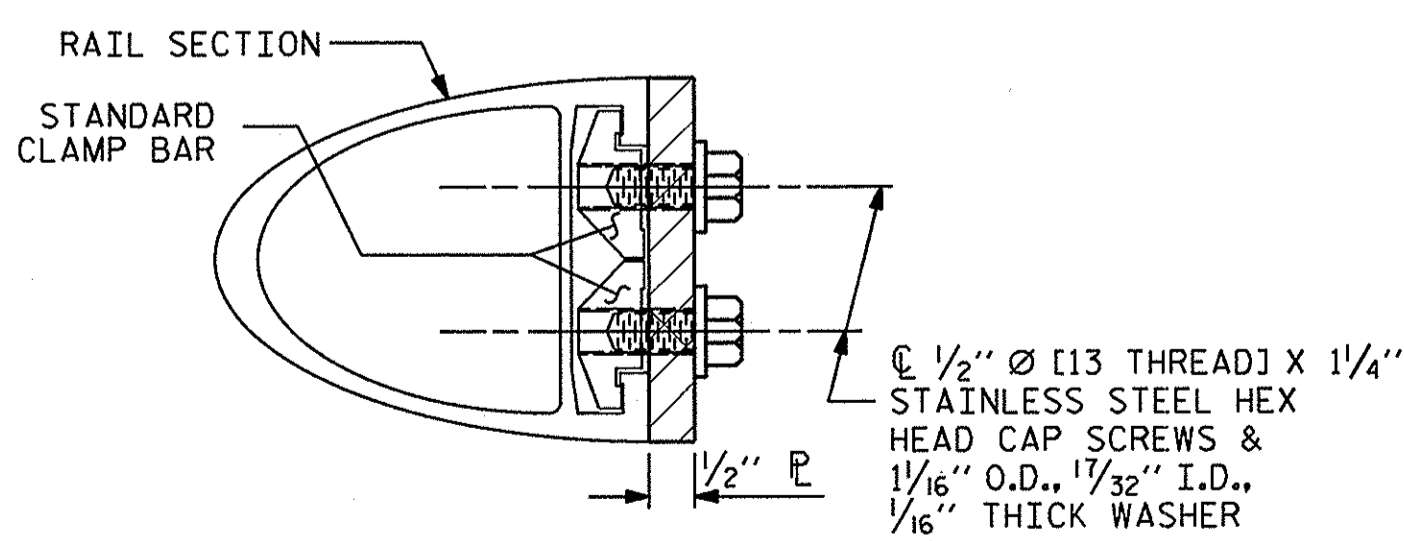
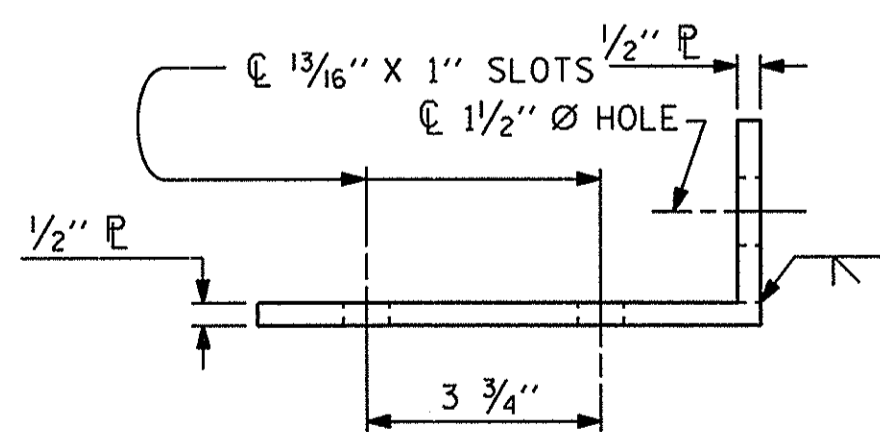
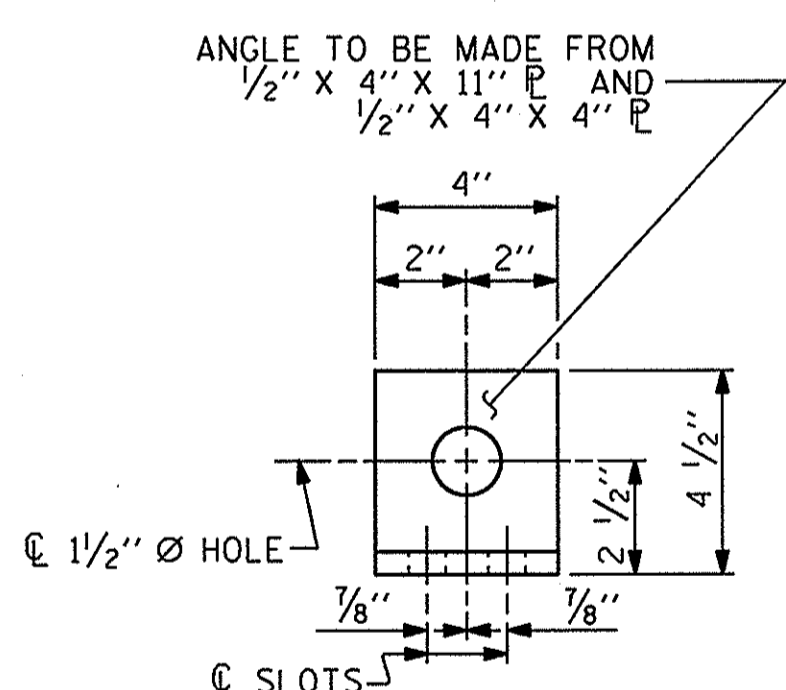
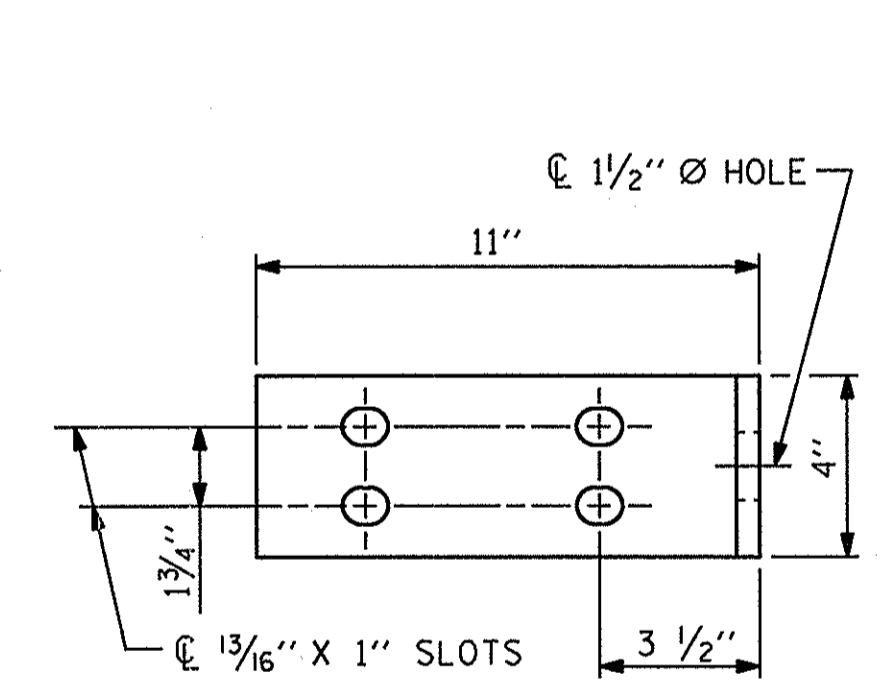
- 1/2" PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 AND SHALL BE GALVANIZED AFTER FABRICATION.
- 1-3/4" STRUCTURAL CONCRETE INSERT SHALL HAVE A WORKING LOAD SHEAR CAPACITY OF 4800 LBS. THE FERRULES SHALL ENGAGE A 3/4" Ø X 1 5/8" BOLT WITH 2" O.D. WASHER IN PLACE. THE 3/4" Ø X 1 5/8" BOLT SHALL HAVE N. C. THREADS.
- CAP SCREWS FOR RAIL ATTACHMENT TO ANGLE SHALL CONFORM TO THE REQUIREMENTS OF ASTM F593 ALLOY 305 STAINLESS STEEL. CAP SCREWS TO BE CENTERED IN SLOTS AT 60°F.
- STANDARD CLAMP BARS (SEE METAL RAIL SHEET).
- 1/2" Ø PIPE SLEEVES (IF REQUIRED) TO BE GALVANIZED.

THE COST OF THE STANDARD CLAMP BARS AND CAP SCREWS USED IN THE METAL RAIL TO END POST CONNECTION SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR LINEAR FEET OF 1 OR 2 BAR METAL RAILS.

THE 3/4" STRUCTURAL CONCRETE INSERT WITH BOLT SHALL BE ASSEMBLED IN THE SHOP. THE COST OF THE 3/4" STRUCTURAL CONCRETE INSERT ASSEMBLY, AND THE 1/2" PLATES COMPLETE IN PLACE SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

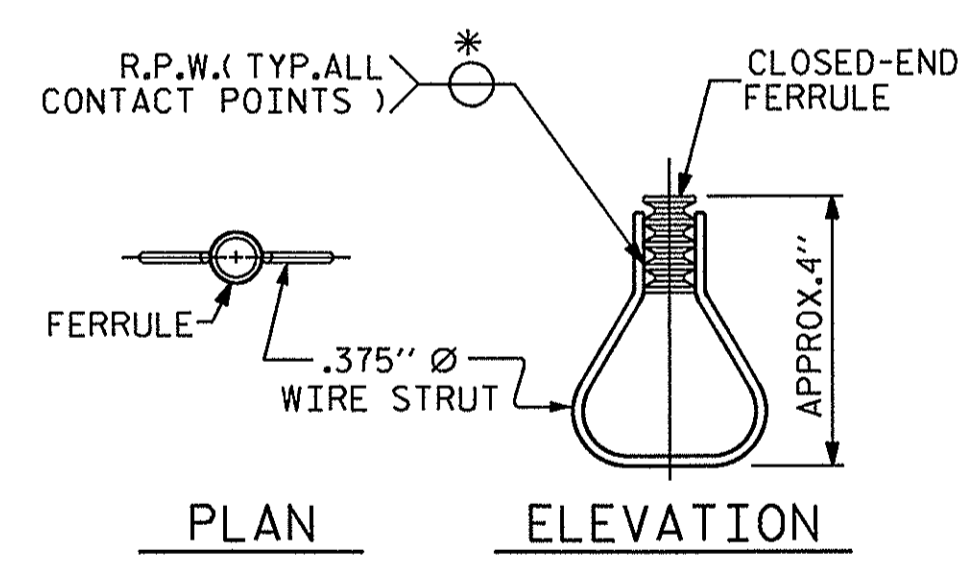
THE CONTRACTOR, AT HIS OPTION, MAY USE AN ADHESIVE BONDING SYSTEM IN LIEU OF THE STRUCTURAL CONCRETE INSERT EMBEDDED IN THE END POST. IF THE ADHESIVE BONDING SYSTEM IS USED, THE 3/4" Ø X 1 5/8" BOLT WITH WASHER SHALL BE REPLACED WITH A 3/4" Ø X 6 1/2" BOLT AND 2" O.D. WASHER. ALL SPECIFICATIONS THAT APPLY TO THE 3/4" Ø X 1 5/8" BOLT SHALL APPLY TO THE 3/4" Ø X 6 1/2" BOLT. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

PLAN OF RAIL POST SPACINGS



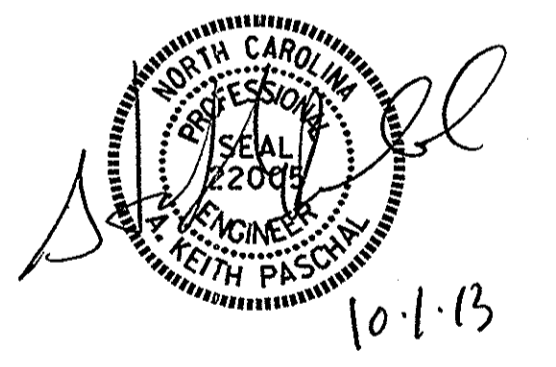
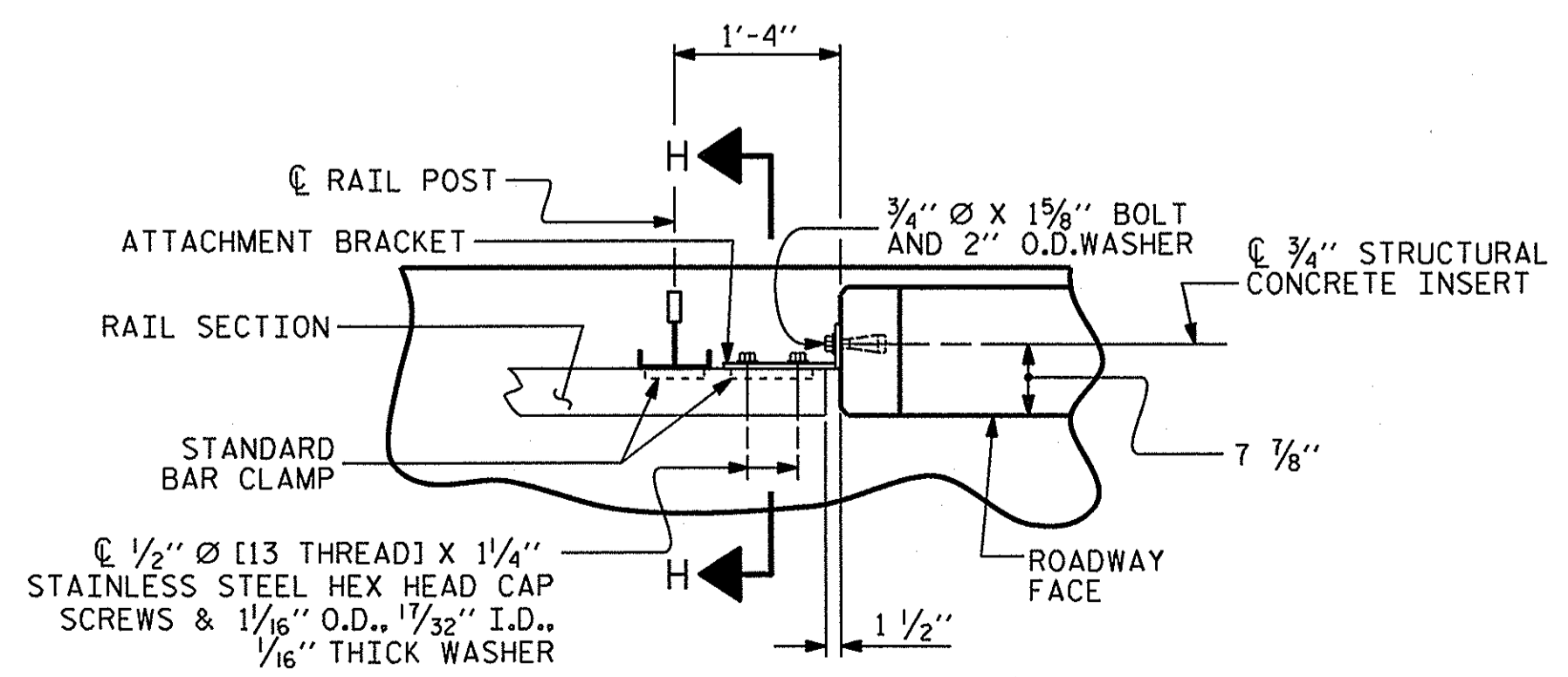
FIXED

DETAILS FOR ATTACHING METAL RAIL TO END POST



STRUCTURAL CONCRETE INSERT

* EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.



PROJECT NO. B-5419
PITT COUNTY
 STATION: 16+29.50 -L-
 SHEET 4 OF 5

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD					
RAIL POST SPACINGS AND END OF RAIL DETAILS					
SHEET NO. S-13					
TOTAL SHEETS 24					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

ASSEMBLED BY : M.D.PISO DATE : 09-07-13
 CHECKED BY : A.K.PASCHAL DATE : 09-21-13
 DRAWN BY : FCJ 1/88 REV. 5/7/03 RWW/JTE
 CHECKED BY : CRK 3/89 REV. 5/1/06 TLA/GM
 REV. 10/1/11 MAA/GM

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.

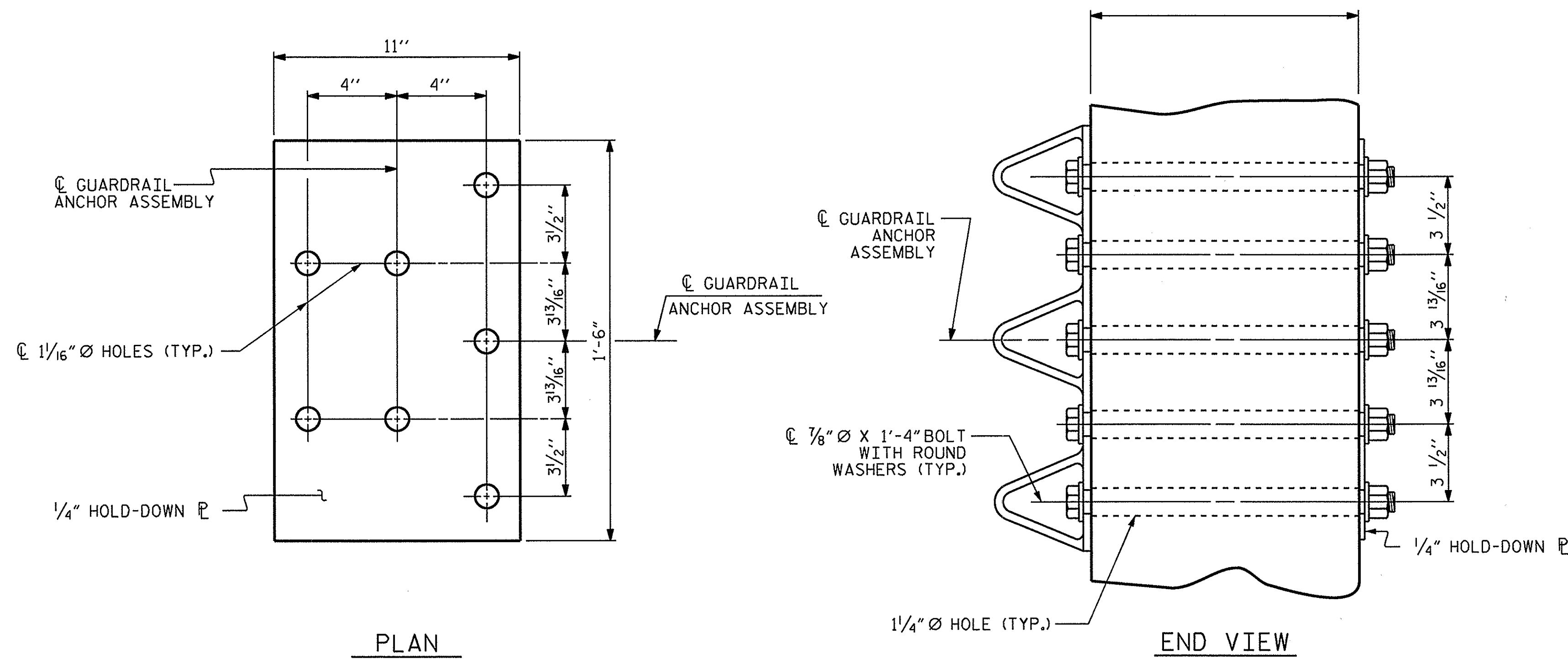
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF THE PARAPET. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLIES WITH BOLTS, NUTS AND WASHERS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE END POST TO CLEAR ASSEMBLY BOLTS.

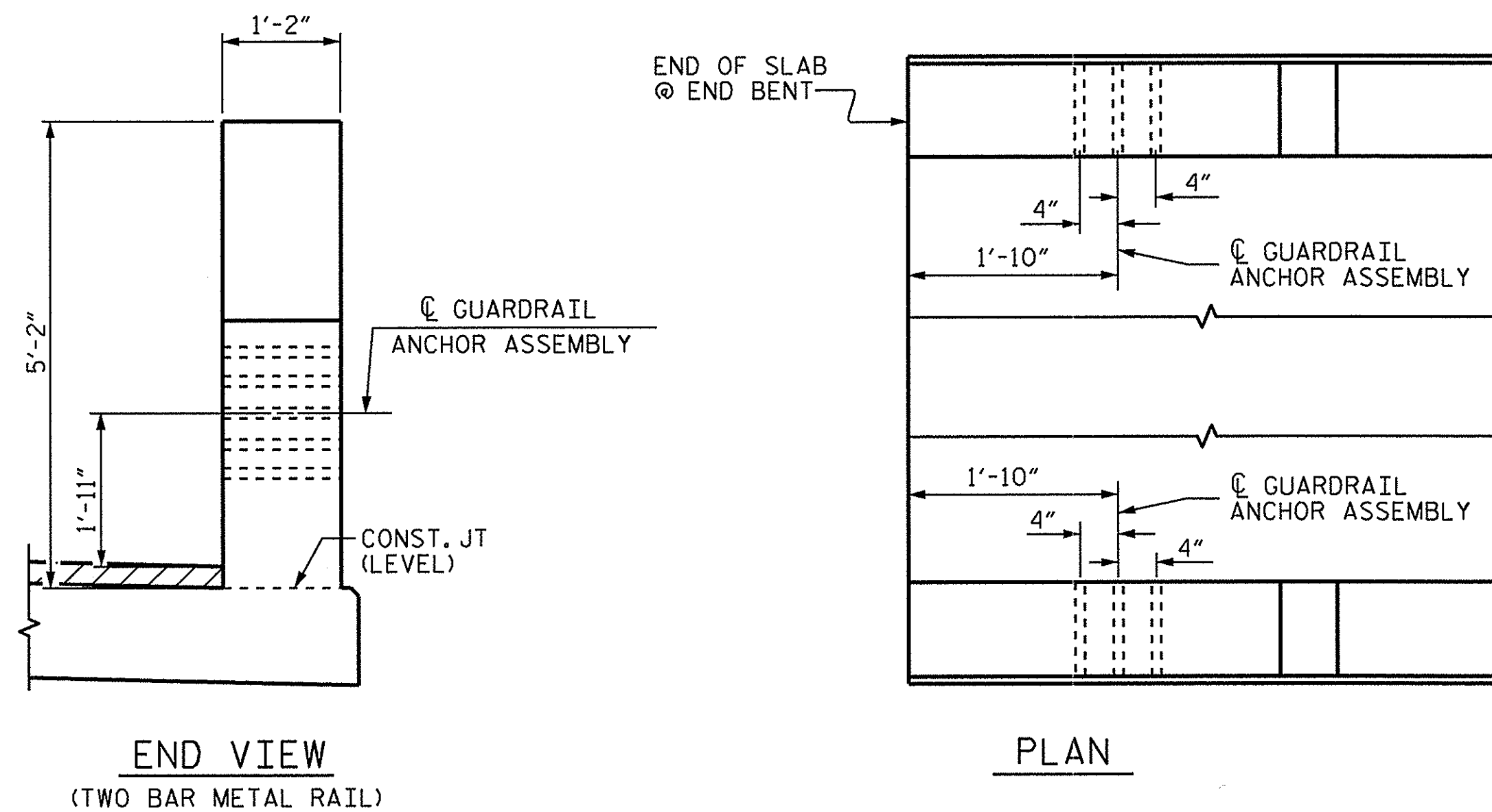
THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



PLAN

END VIEW

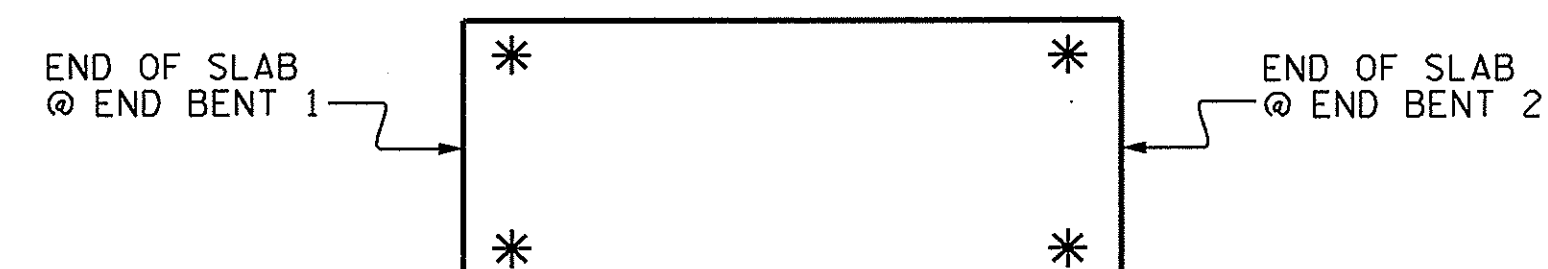
GUARDRAIL ANCHOR ASSEMBLY DETAILS



END VIEW

PLAN

LOCATION OF GUARDRAIL ANCHOR AT END POST



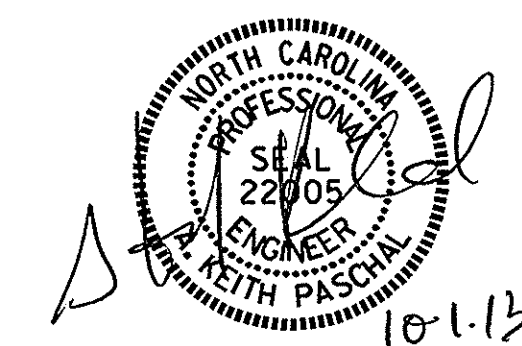
SKETCH SHOWING POINTS OF ATTACHMENT

* LOCATION OF GUARDRAIL ATTACHMENT

PROJECT NO. B-5419
PITT COUNTY
 STATION: 16+29.50 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD GUARDRAIL ANCHORAGE DETAILS FOR METAL RAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-14
					TOTAL SHEETS 24



ASSEMBLED BY : M.D.PISO	DATE : 09-11-13
CHECKED BY : A.K.PASCHAL	DATE : 09-21-13
DRAWN BY : MAA 5/10	REV. 10/1/11 MAA/GM
CHECKED BY : GM 5/10	REV. 12/5/11 MAA/GM
	REV. 6/13 MAA/GM

NOTES

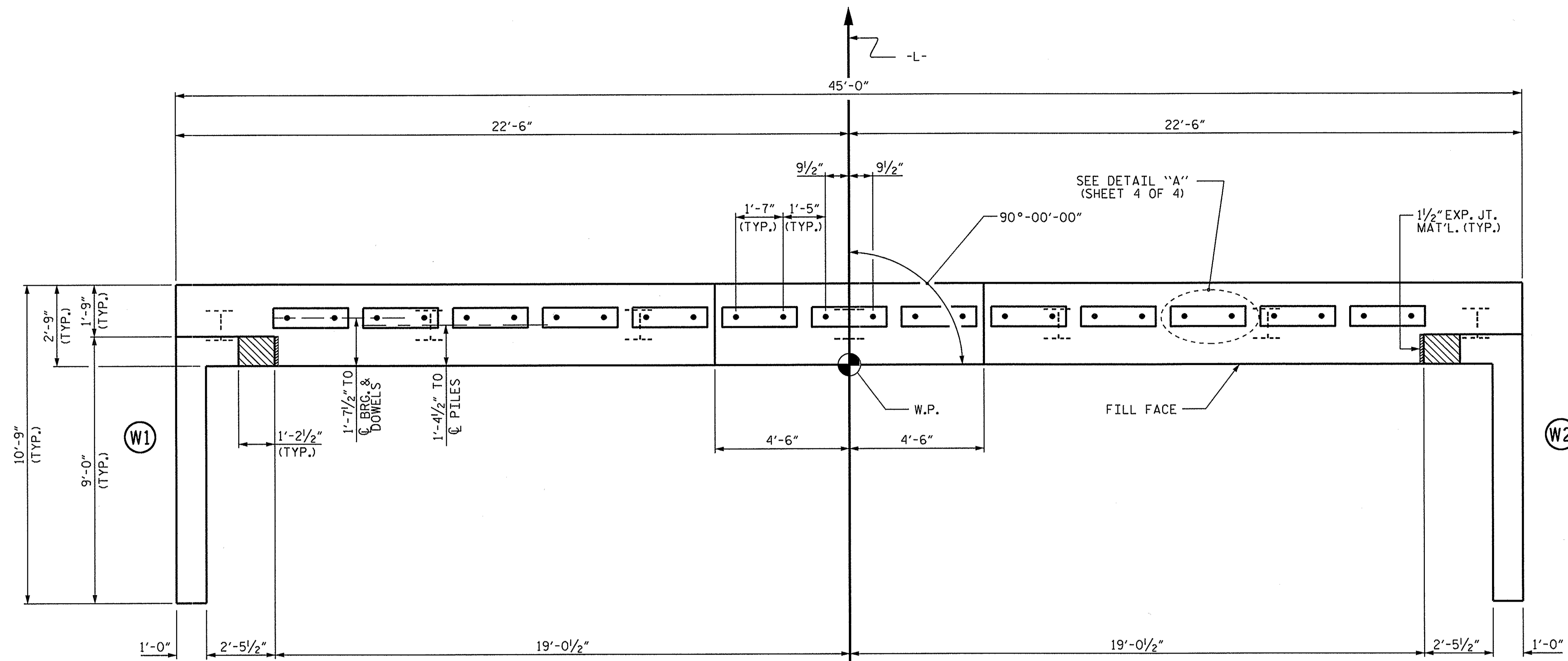
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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.

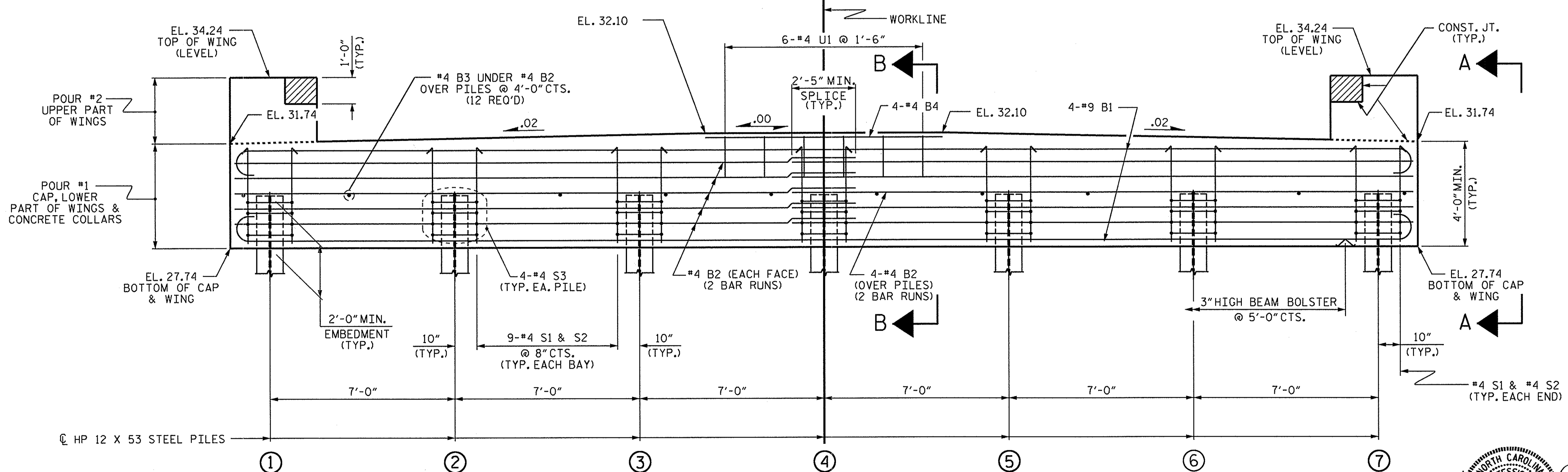
INSTALL THE 4" DIA. DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS. SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN



ELEVATION

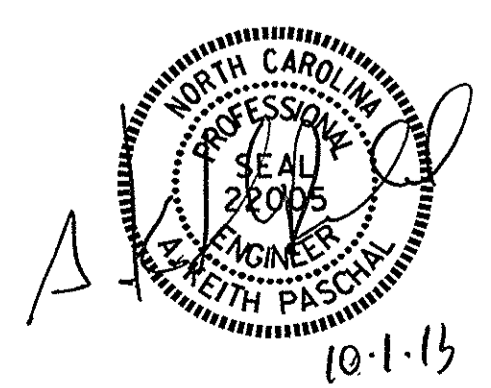
WINGS NOT SHOWN FOR CLARITY.
 FOR SECTION A-A & SECTION B-B, SEE SHEET 4 OF 4.
 CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
 SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

PROJECT NO. B-5419
PITT COUNTY
 STATION: 16+29.50 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 1



ASSEMBLED BY : A.M. LEE, PE	DATE : 6/13/13
CHECKED BY : R. KOUCHEKI	DATE : 8/16/13
DESIGN ENGINEER OF RECORD: A.M. LEE, PE	DATE : 8/16/13
DRAWN BY : WJH 12/11	
CHECKED BY : AAC 12/11	

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			24
2			4			24

NOTES

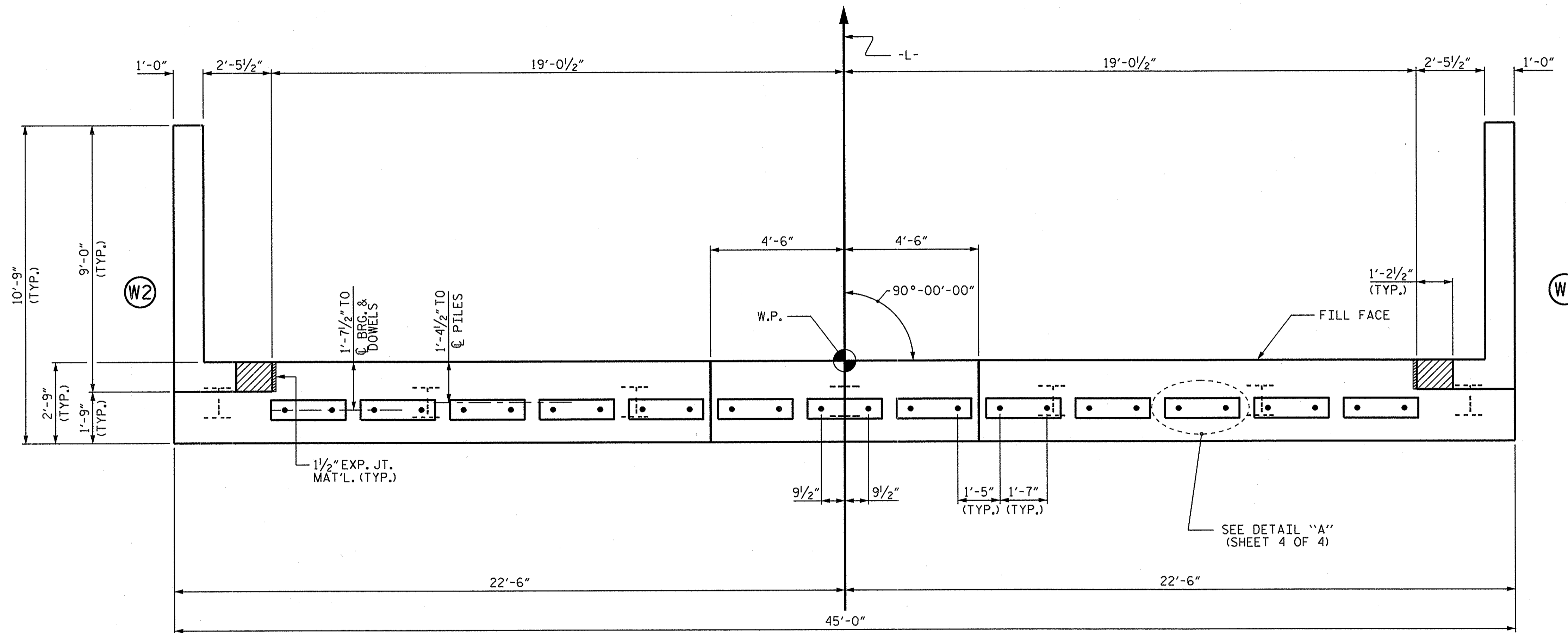
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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.

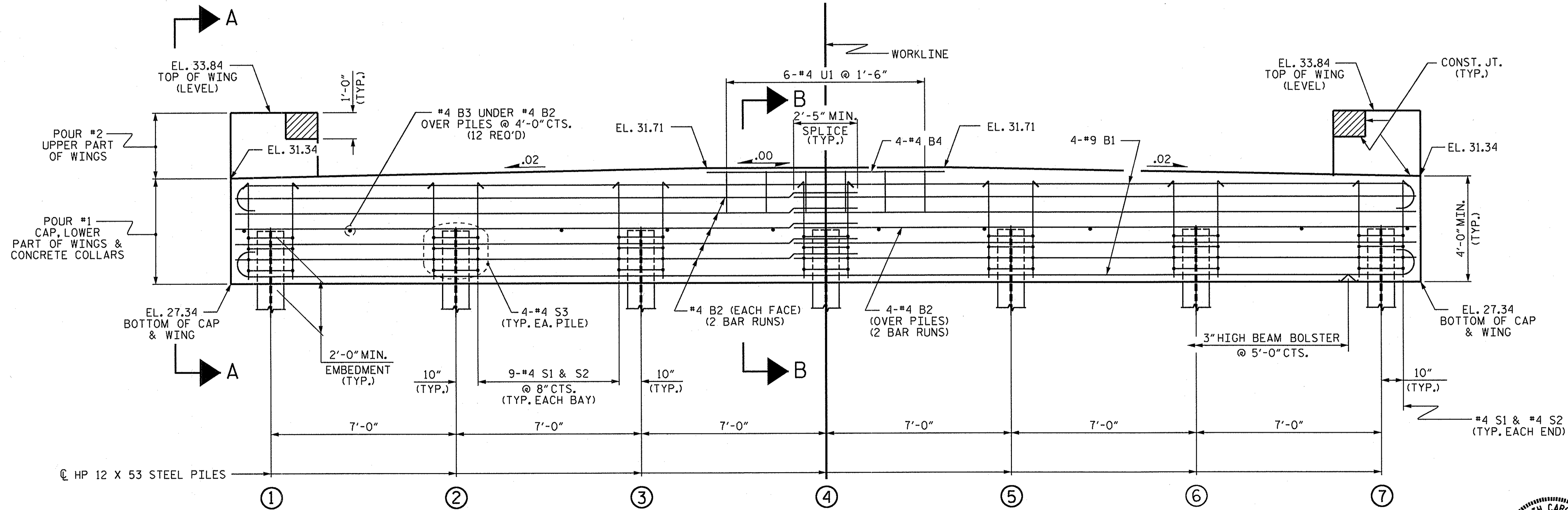
INSTALL THE 4" DIA. DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS. SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN



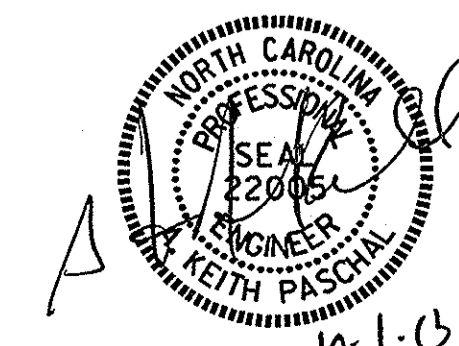
ELEVATION

PROJECT NO. B-5419
PITT COUNTY
 STATION: 16+29.50 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

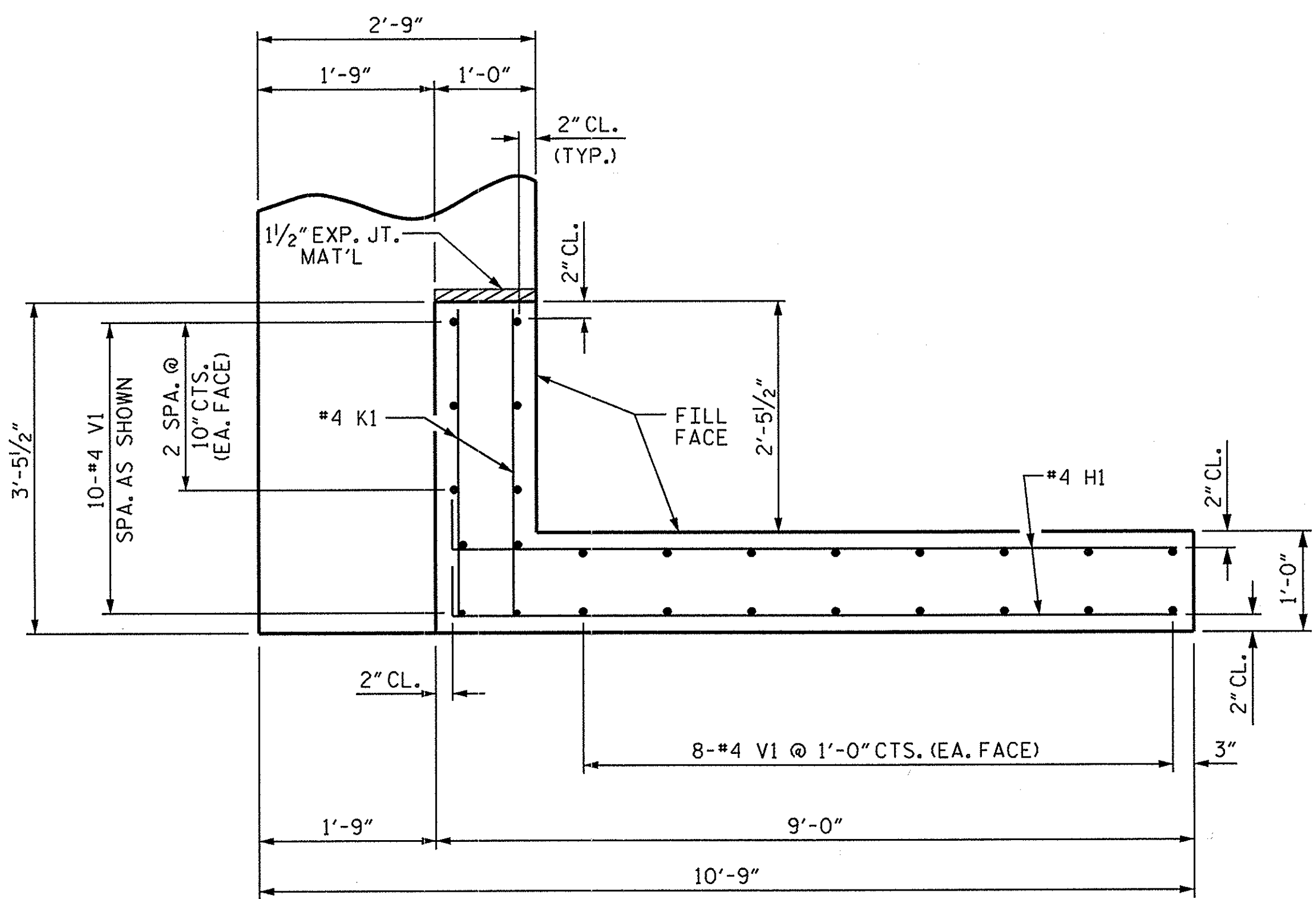
SUBSTRUCTURE
 END BENT No. 2



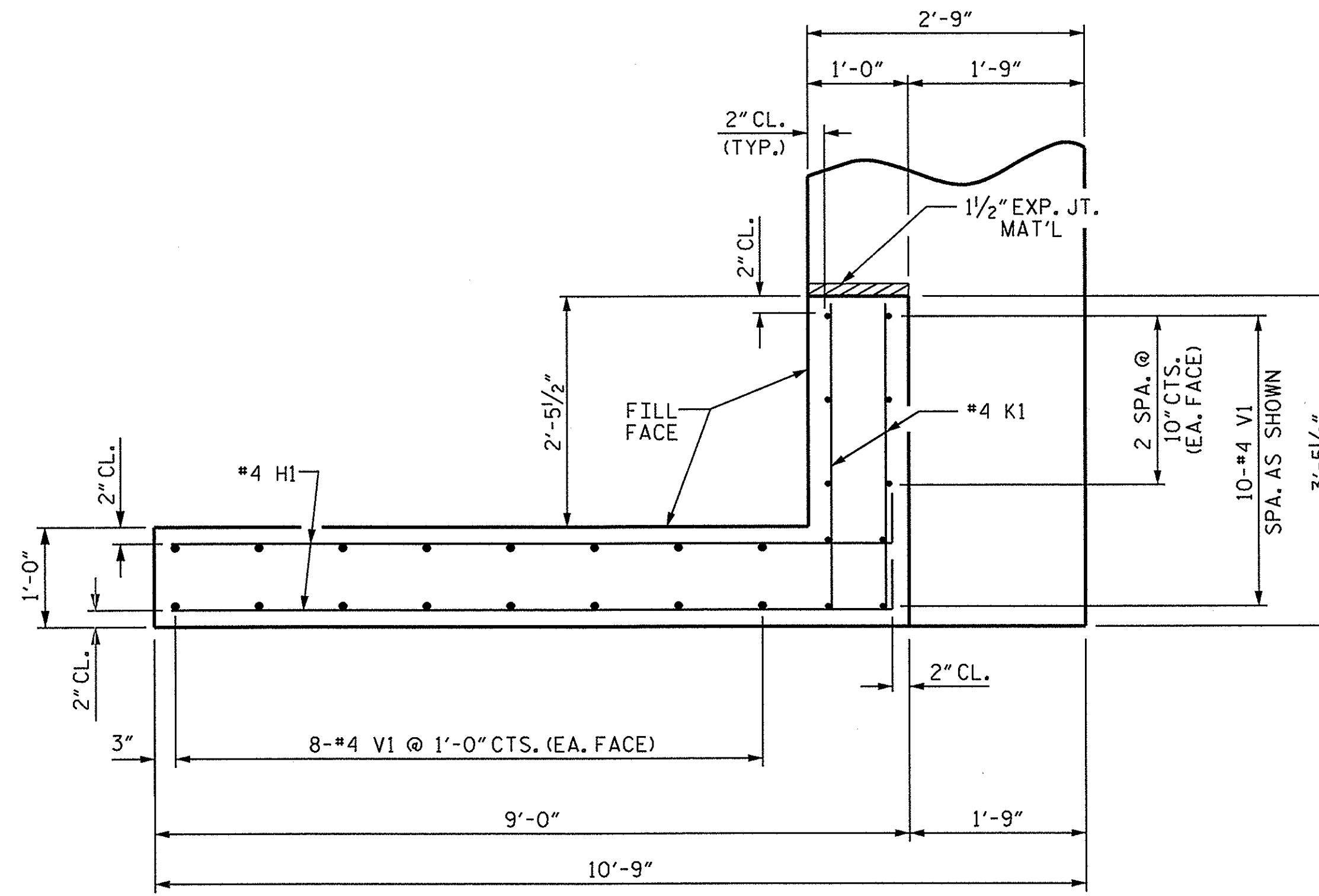
ASSEMBLED BY : A.M. LEE, PE	DATE : 6/13/13
CHECKED BY : R. KOUČEKI	DATE : 8/16/13
DESIGN ENGINEER OF RECORD: A.M. LEE, PE	DATE : 8/16/13
DRAWN BY : WJH 12/11	
CHECKED BY : AAC 12/11	

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

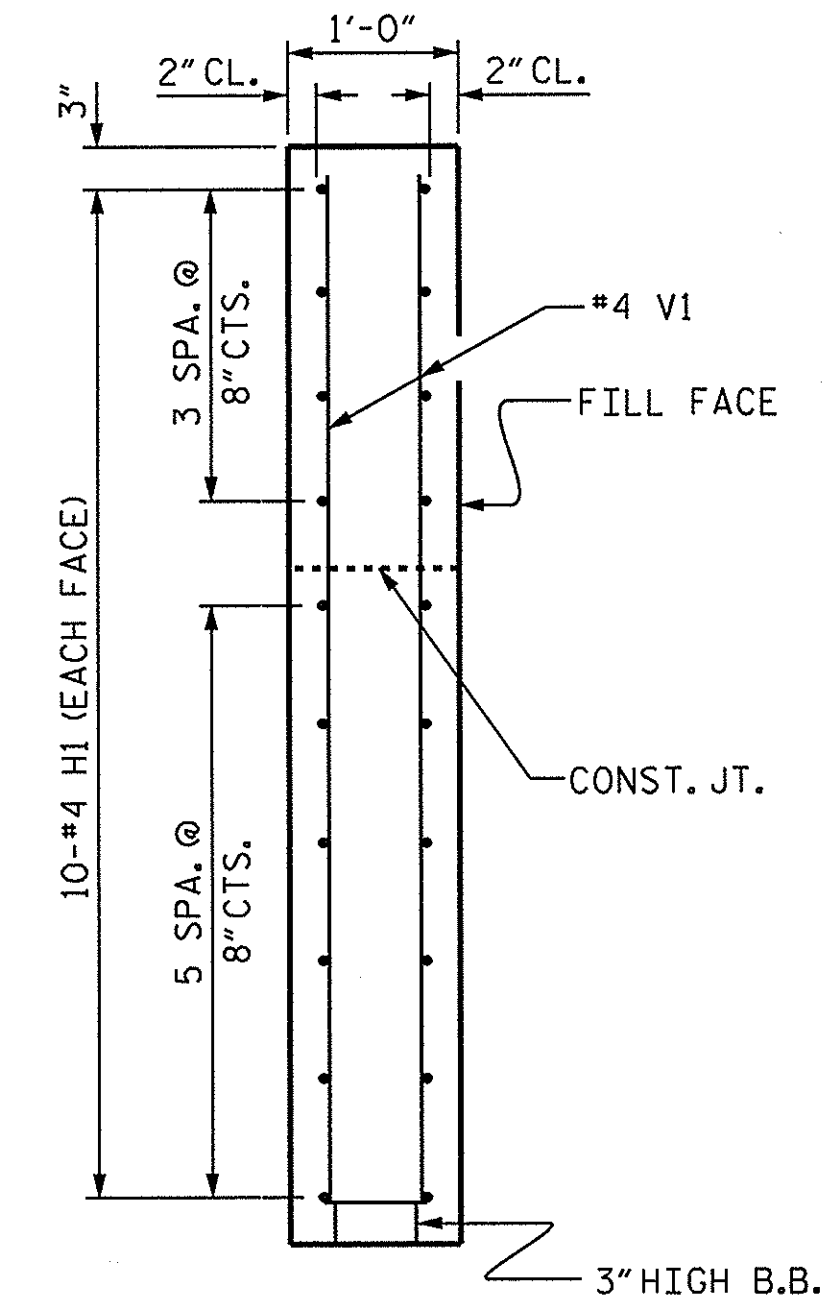
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			24



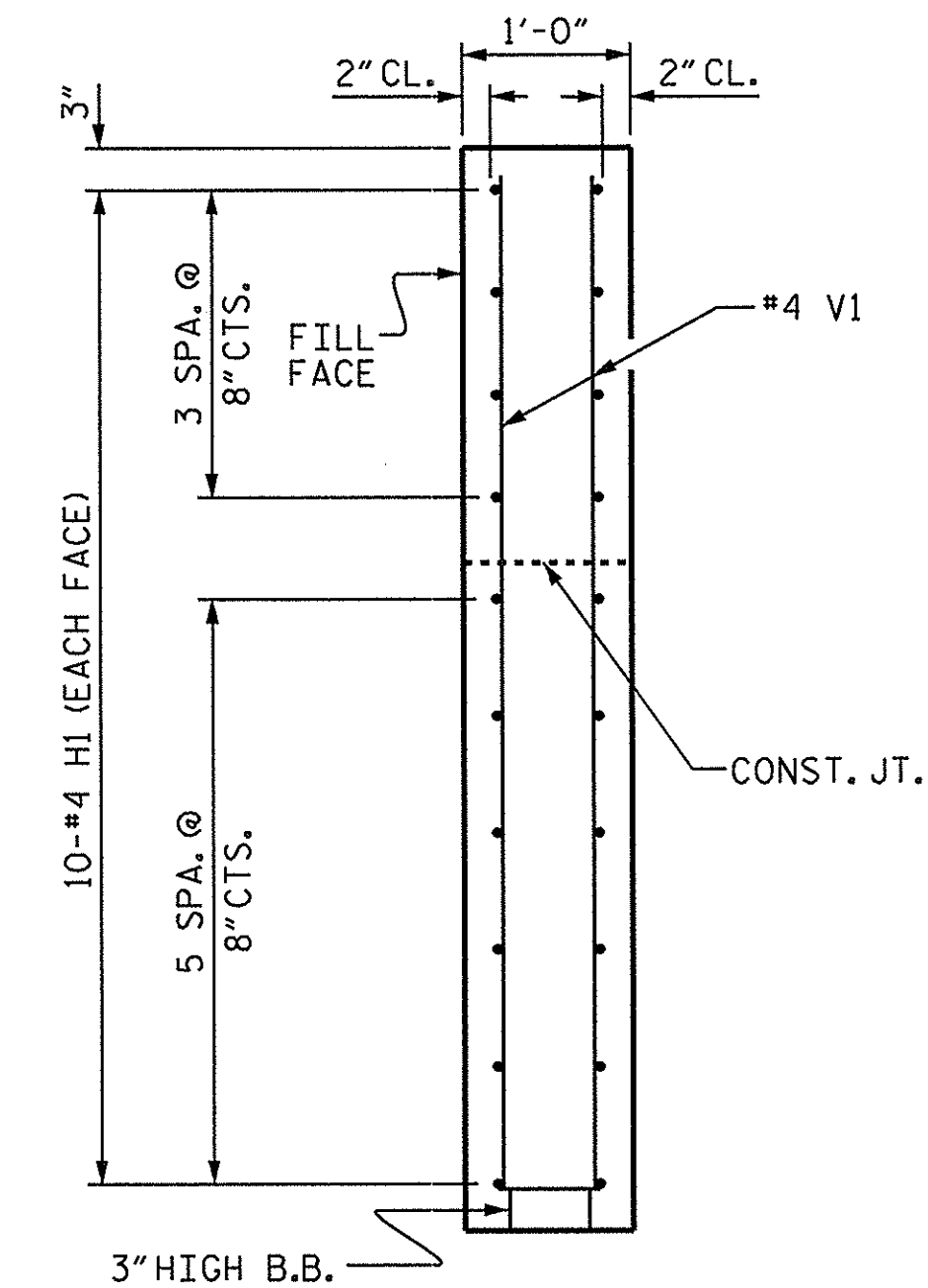
PLAN OF WING (W1)



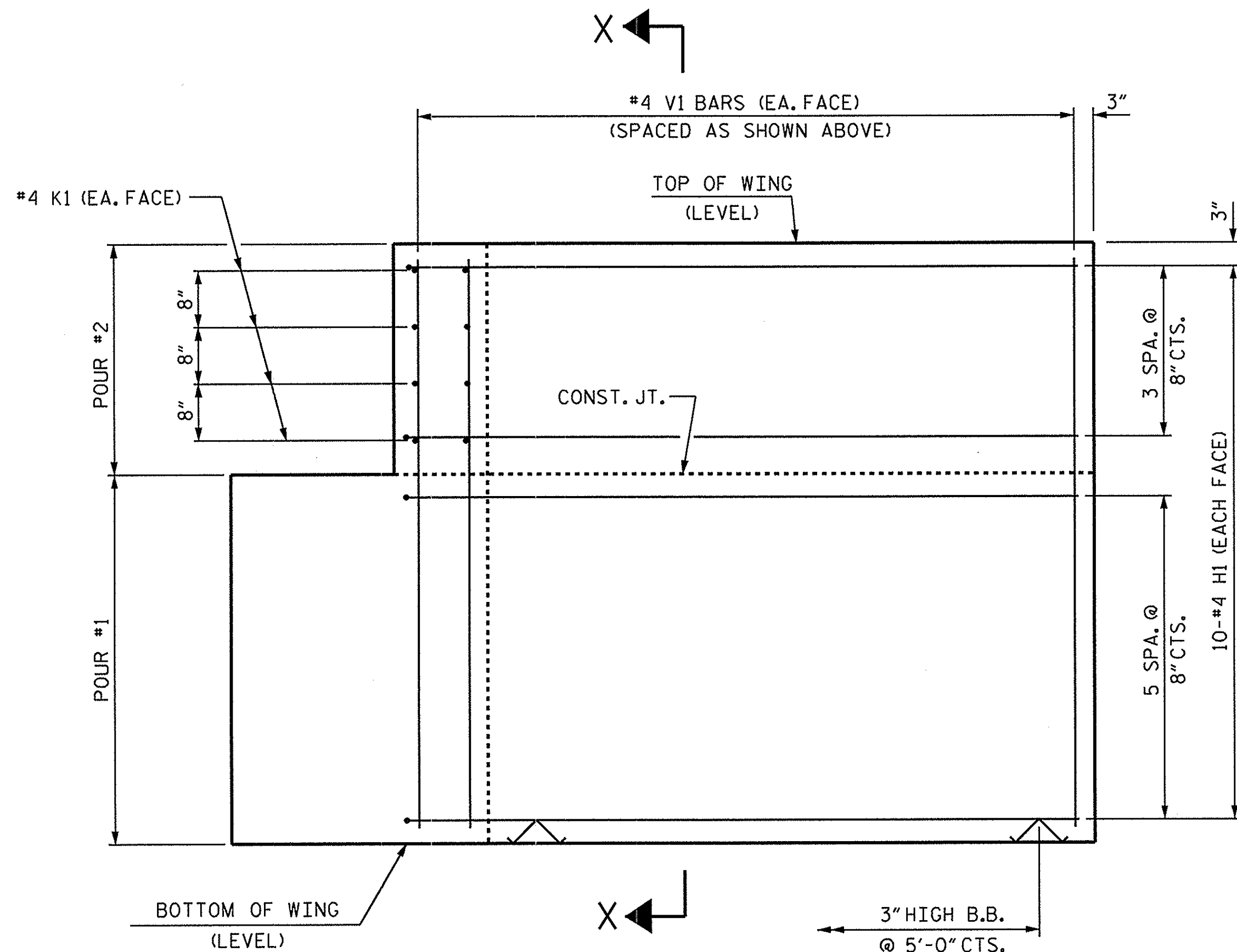
PLAN OF WING (W2)



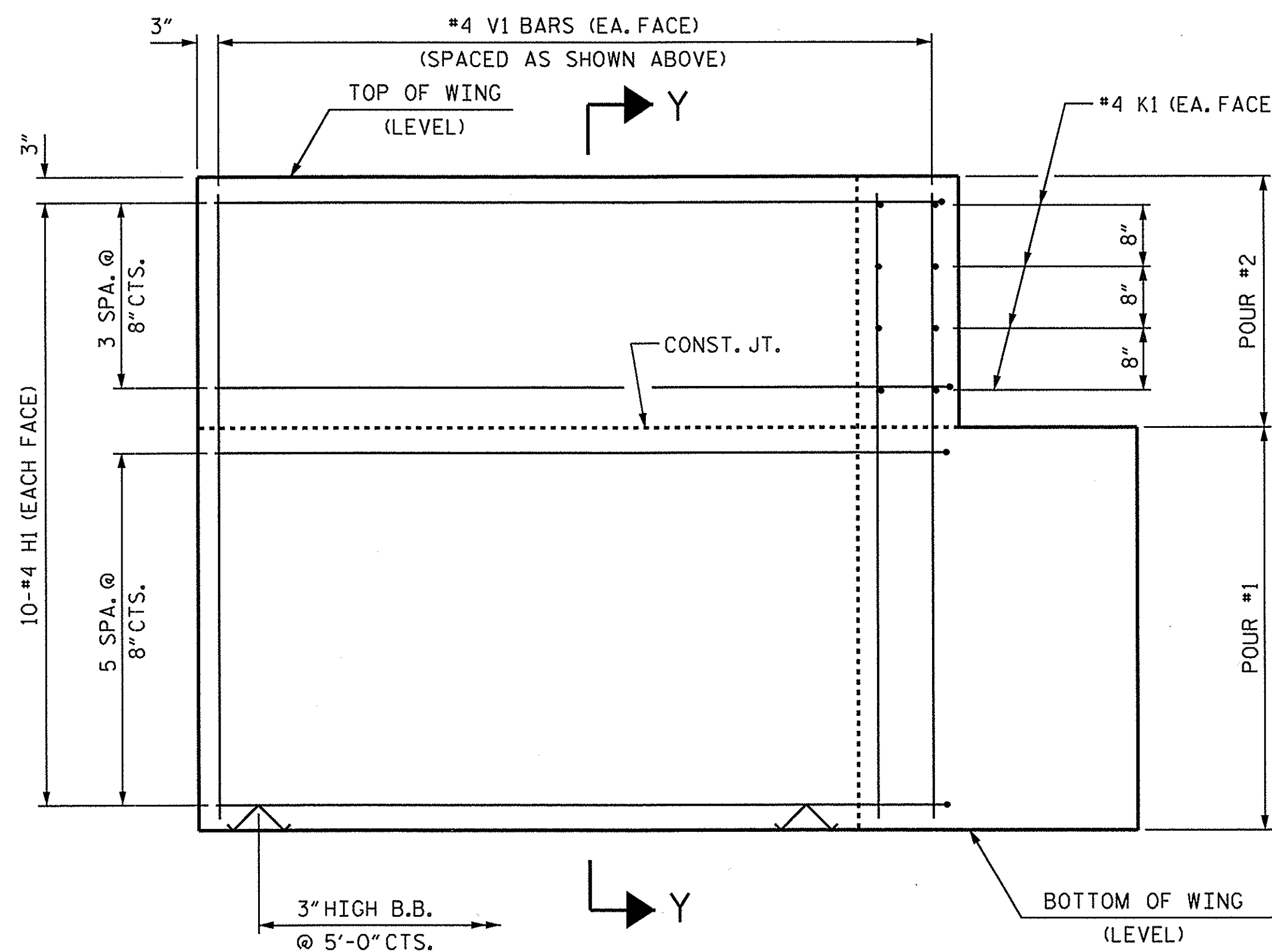
SECTION X-X



SECTION Y-Y



ELEVATION OF WING (W1)



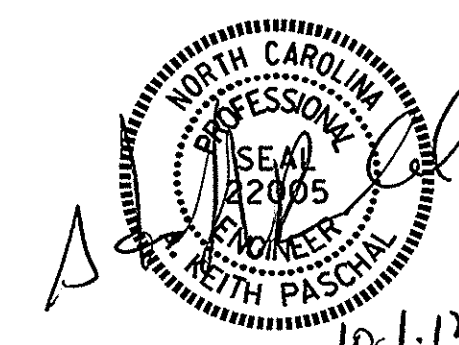
ELEVATION OF WING (W2)

WING DETAILS

PROJECT NO. B-5419
 PITT COUNTY
 STATION: 16+29.50 -L-

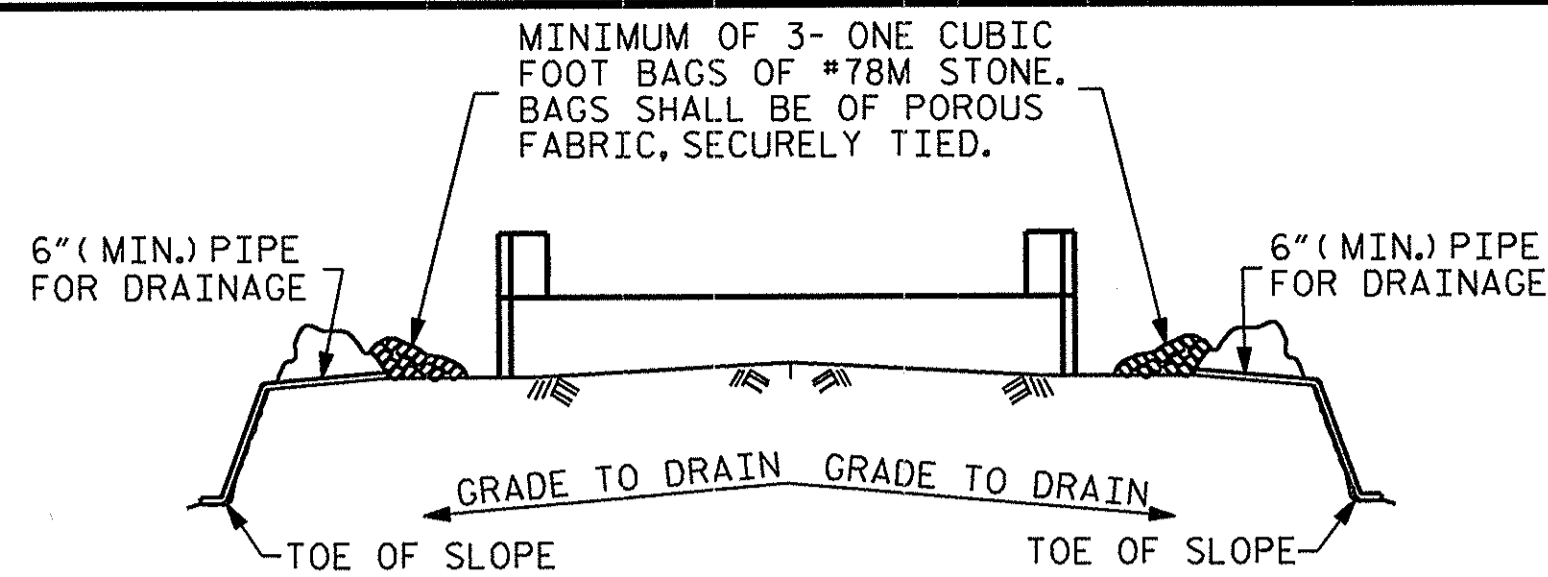
SHEET 3 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT WING DETAILS					
SHEET NO. S-17					
TOTAL SHEETS 24					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		



ASSEMBLED BY : A.M. LEE, PE DATE : 6/13/13
 CHECKED BY : R. KOUCHEKI DATE : 7/3/13
 DRAWN BY : WJH 12/11
 CHECKED BY : AAC 12/11

01-OCT-2013 12:37
 S:\DTPG1\kalfit\B-5419\amlee\Plans\B5419_SD_E*.dgn
 emurray

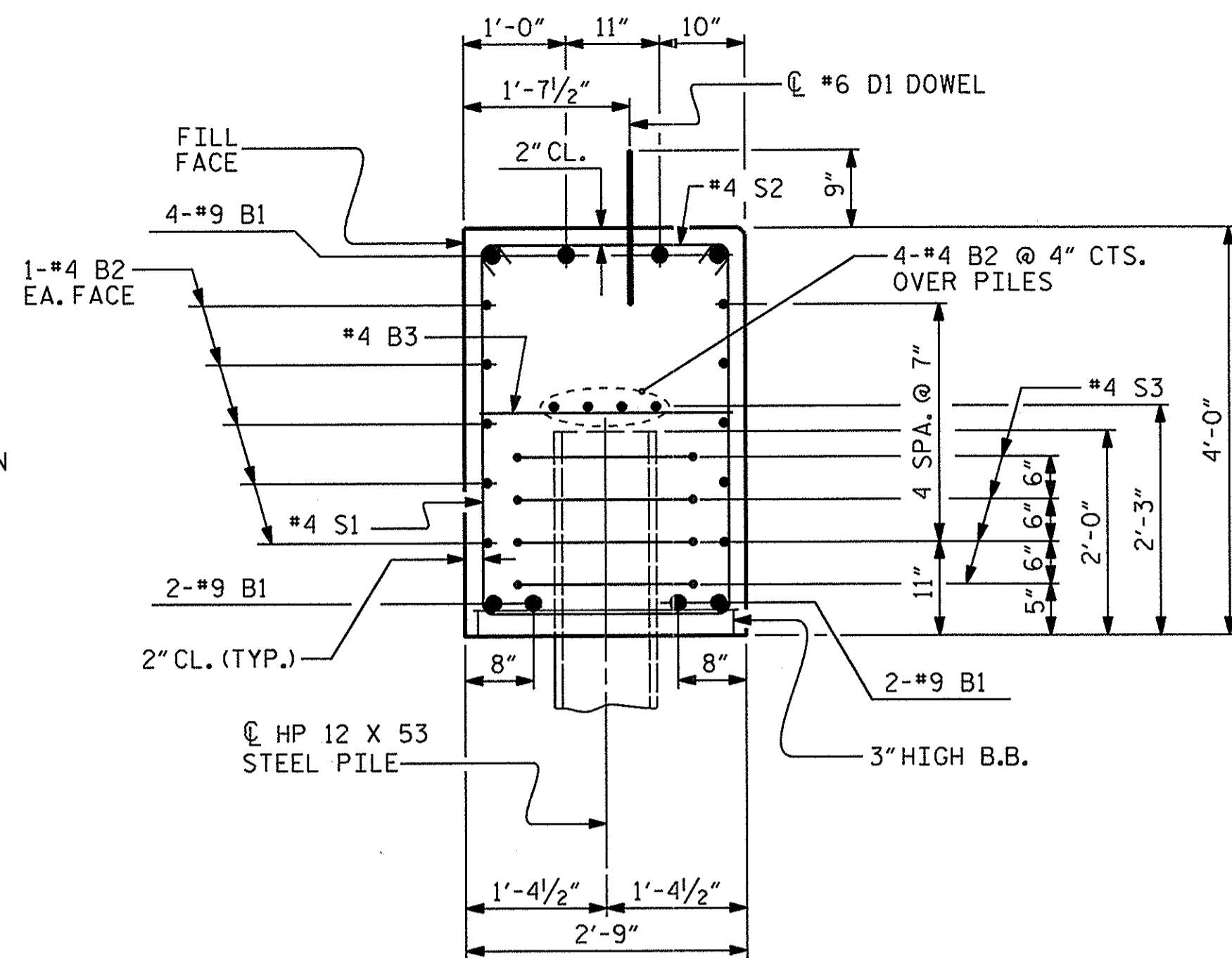


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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



SECTION A-A

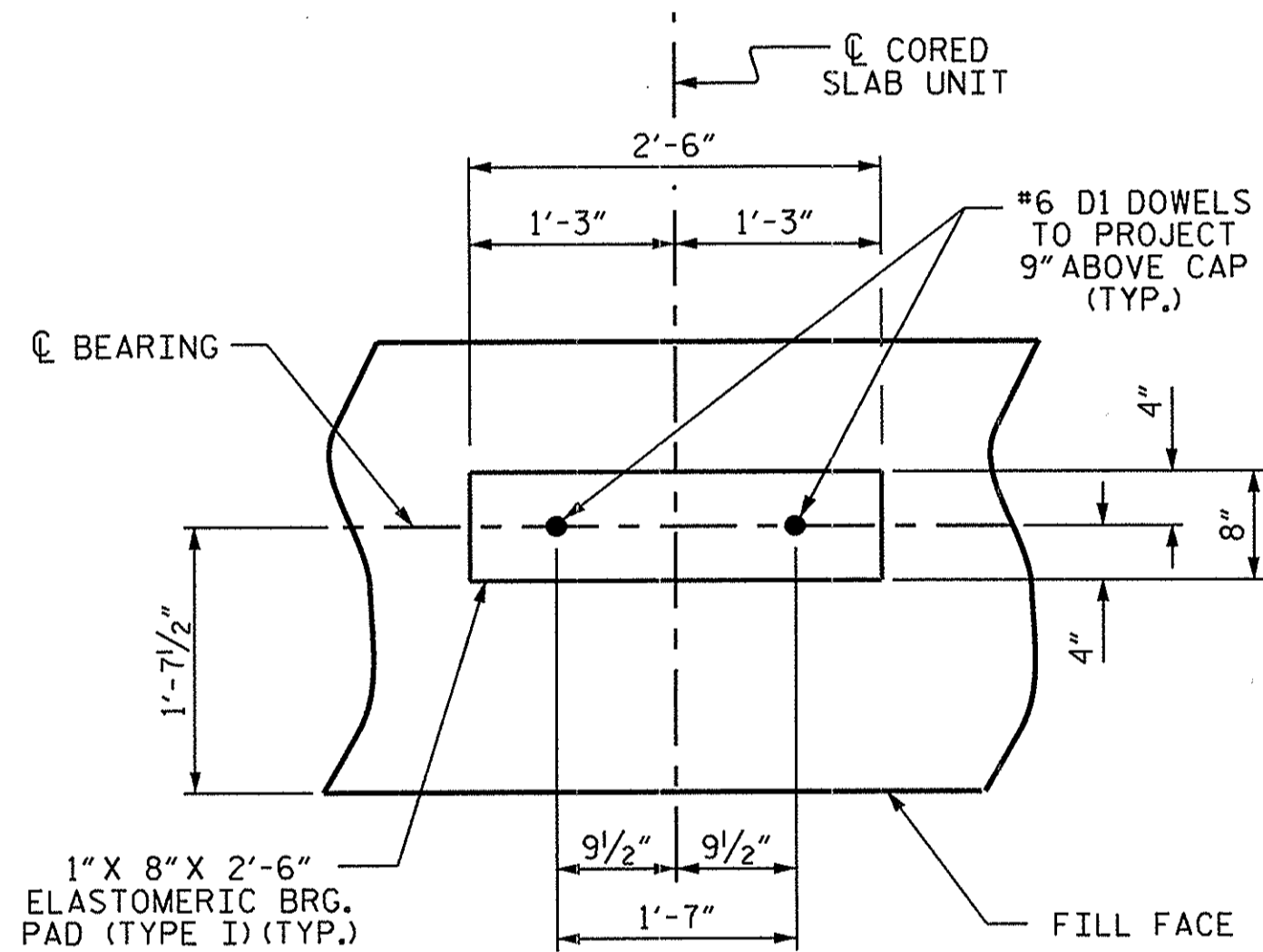
(CONCRETE COLLAR NOT SHOWN FOR CLARITY. SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL.")

BAR TYPES	

ALL BAR DIMENSIONS ARE OUT TO OUT.

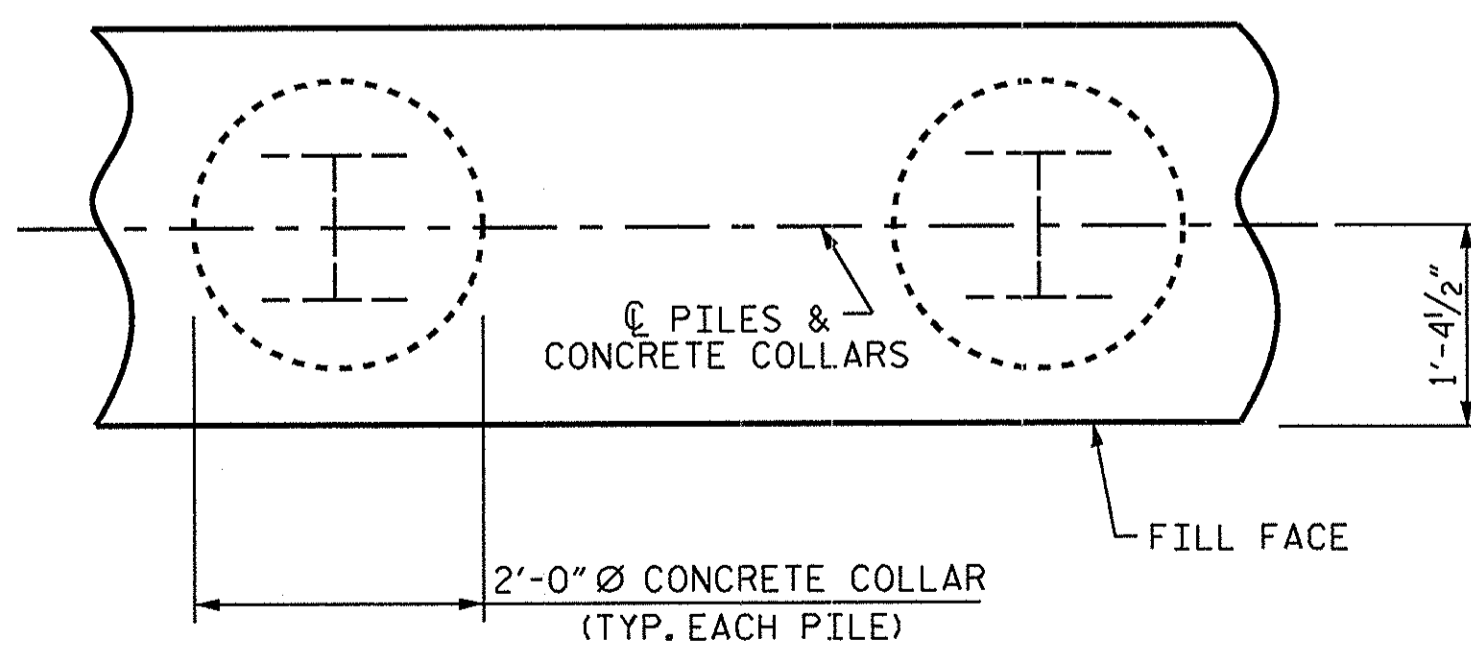
END BENT No. 1	END BENT No. 2
HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES
NO: 7 LIN. FT. = 420.0	NO: 7 LIN. FT. = 350.0
PILE REDRIVES NO. = 4	PILE REDRIVES NO. = 4

BILL OF MATERIAL FOR ONE END BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		47'-0"	1278
B2	28	#4	STR	23'-7"	441
B3	12	#4	STR	2'-5"	19
B4	4	#4	STR	9'-0"	24
D1	26	#6	STR	1'-6"	59
H1	40	#4		9'-4"	249
K1	16	#4	STR	2'-11"	31
S1	56	#4		10'-5"	390
S2	56	#4		3'-2"	118
S3	28	#4		6'-6"	122
U1	6	#4		5'-5"	22
V1	52	#4	STR	6'-2"	214
REINFORCING STEEL (FOR ONE END BENT)					2967 LBS.
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)					
POUR #1 CAP, LOWER PART OF WINGS & COLLARS					22.9 C.Y.
POUR #2 UPPER PART OF WINGS					2.1 C.Y.
TOTAL CLASS A CONCRETE					25.0 C.Y.



DETAIL "A"

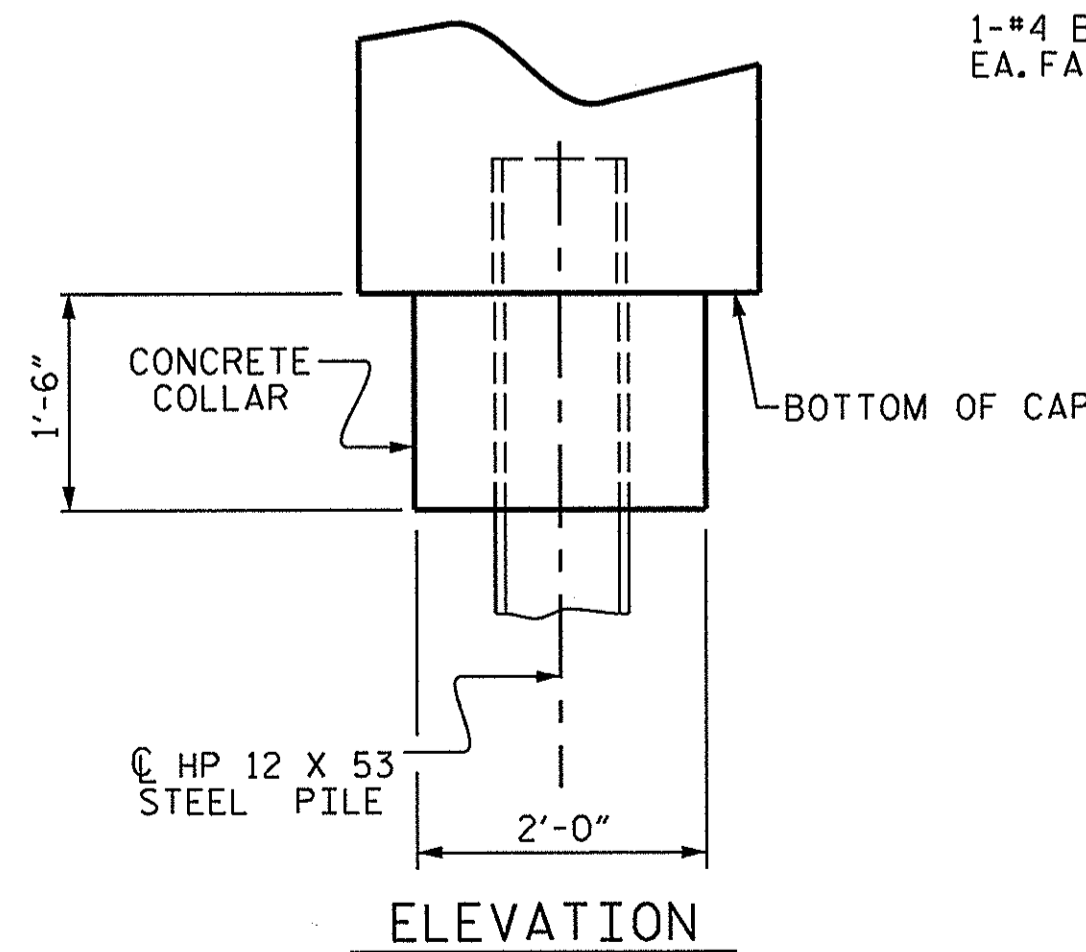
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



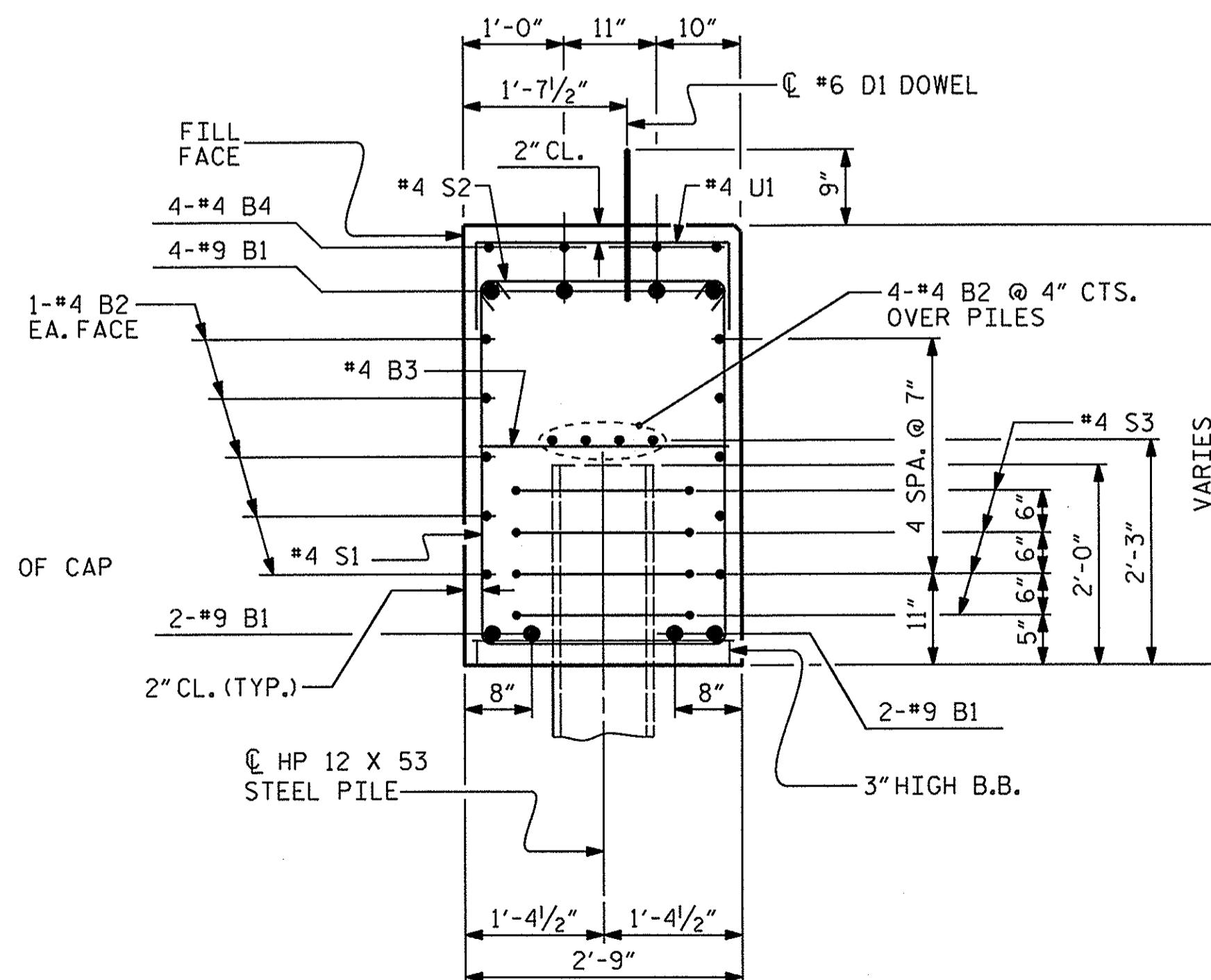
PLAN

CORROSION PROTECTION FOR STEEL PILES DETAIL

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

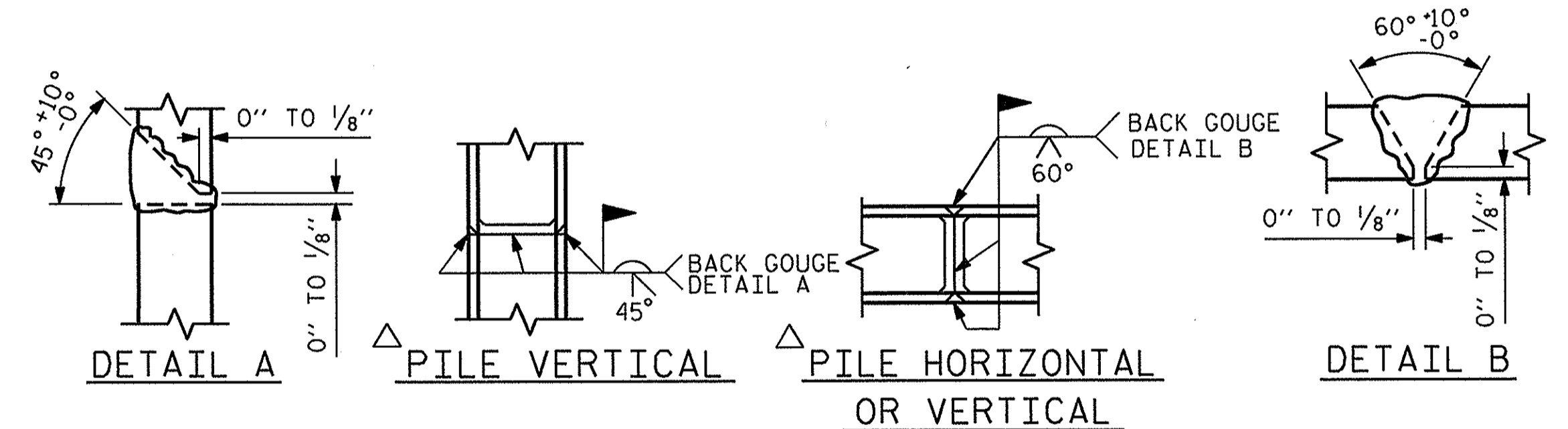


ELEVATION



SECTION B-B

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



PILE SPLICE DETAILS

POSITION OF PILE DURING WELDING.

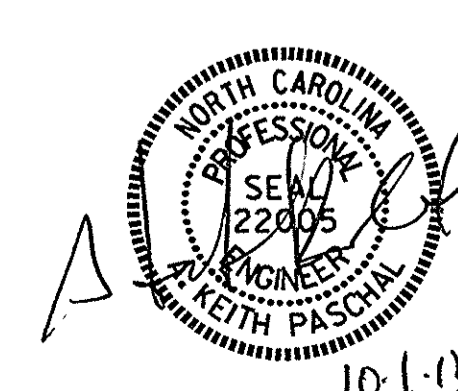
PROJECT NO. B-5419
PITT COUNTY
STATION: 16+29.50 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 1 & 2
DETAILS

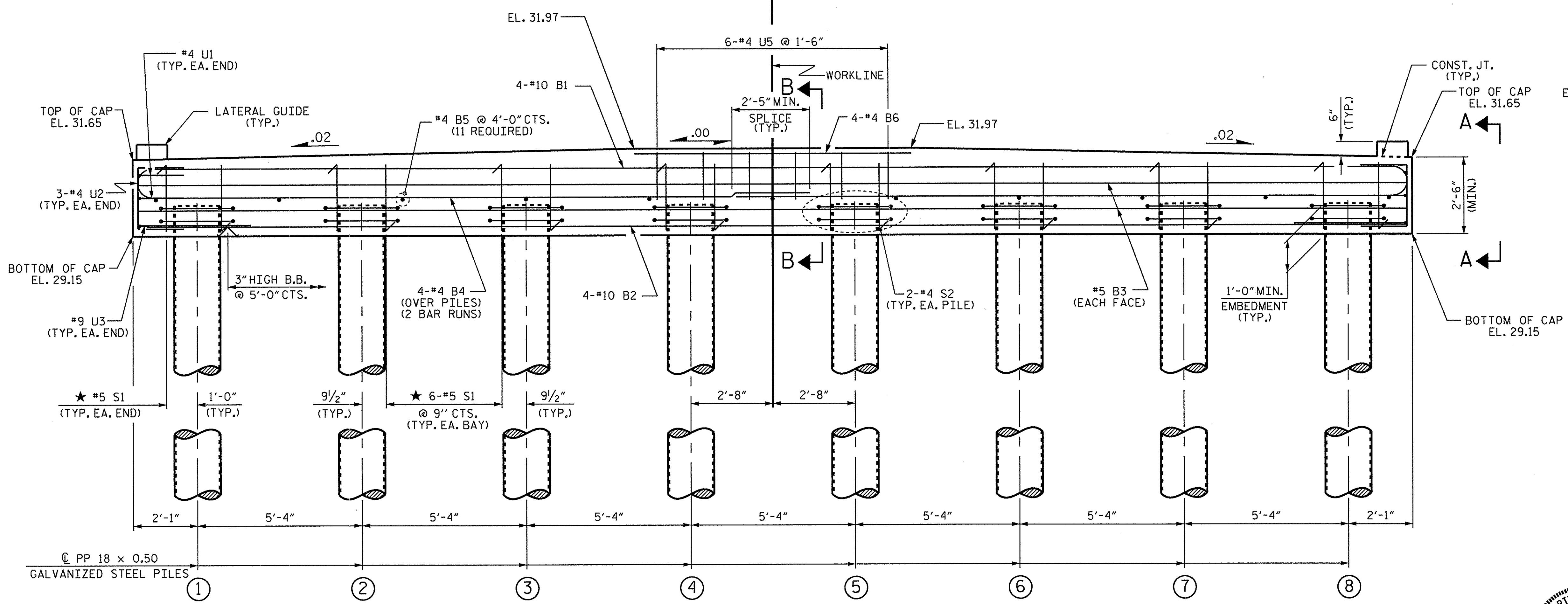
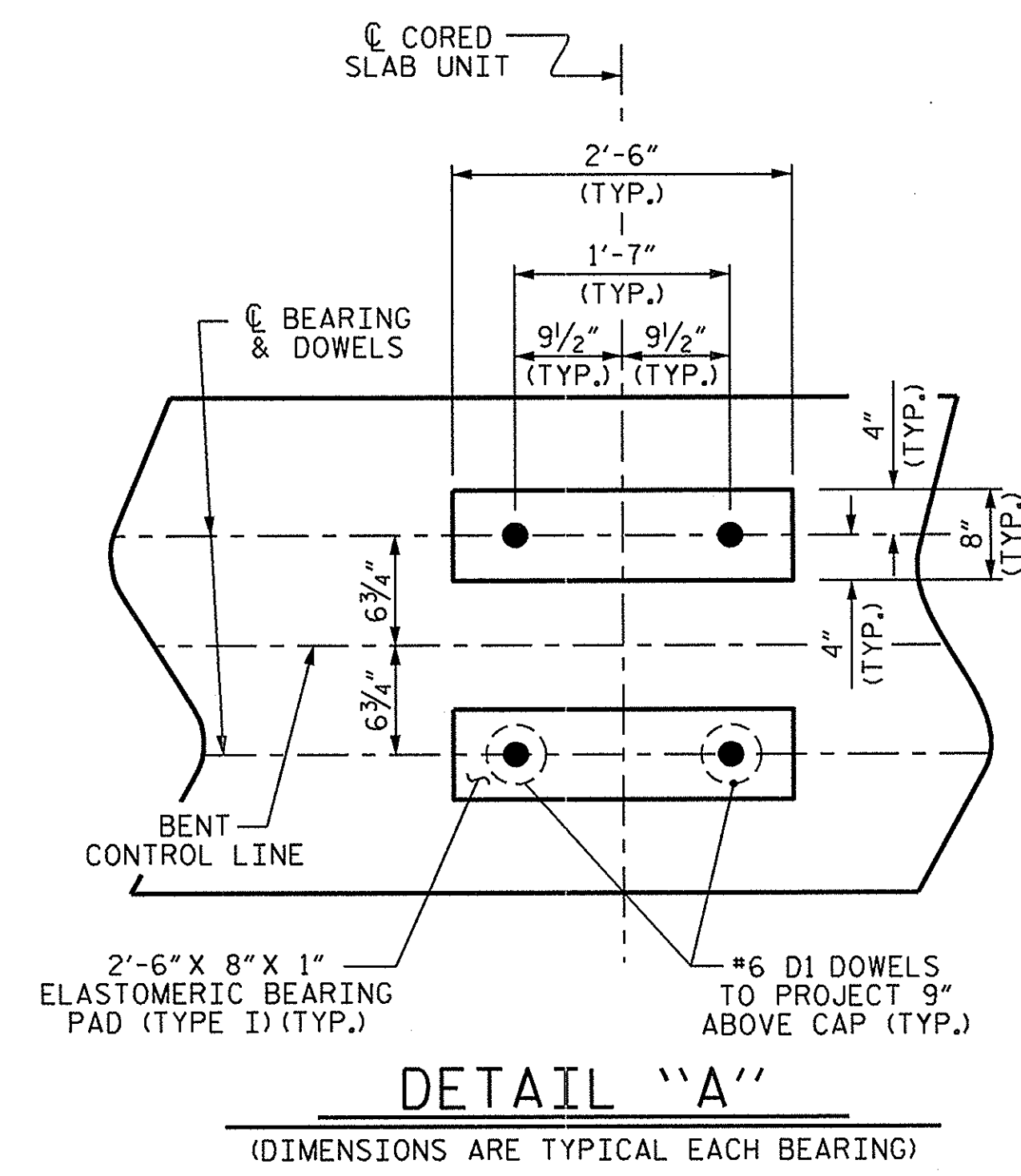
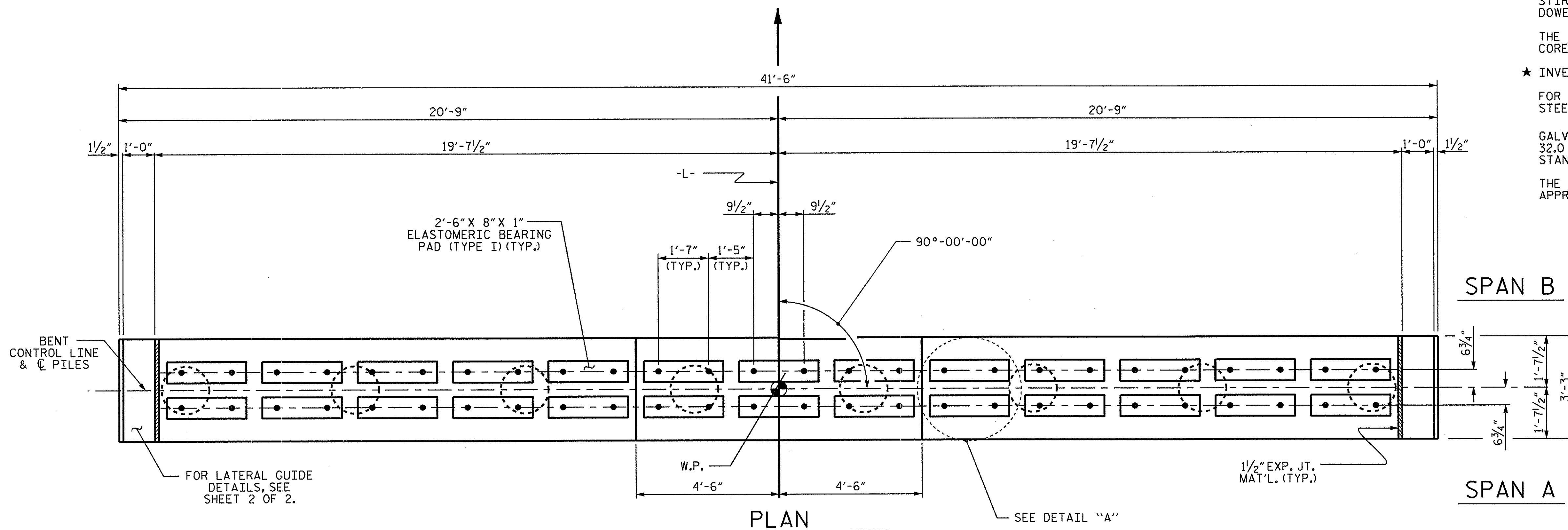
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			24



ASSEMBLED BY: A.M. LEE, PE	DATE: 6/13/13
CHECKED BY: R. KOUCHEKI	DATE: 8/16/13
DRAWN BY: WJH 12/11	
CHECKED BY: AAC 12/11	

NOTES

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
- THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.
- ★ INVERT ALTERNATE STIRRUPS.
- FOR ADDITIONAL REINFORCING STEEL IN PP 18 x 0.50 GALVANIZED STEEL PILES, SEE SHEET 4 OF 4.
- GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 32.0 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.



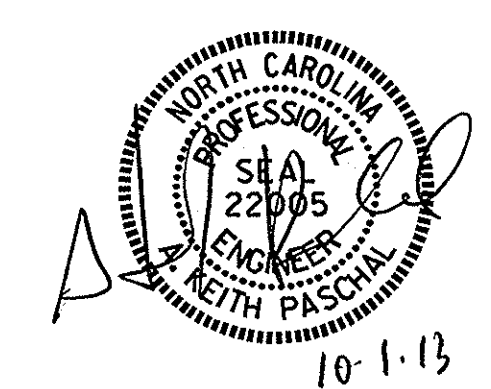
PROJECT NO. B-5419

PITT COUNTY

STATION: 16+29.50 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT No. 1					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 24



ASSEMBLED BY: A.M. LEE, PE DATE: 8/5/13

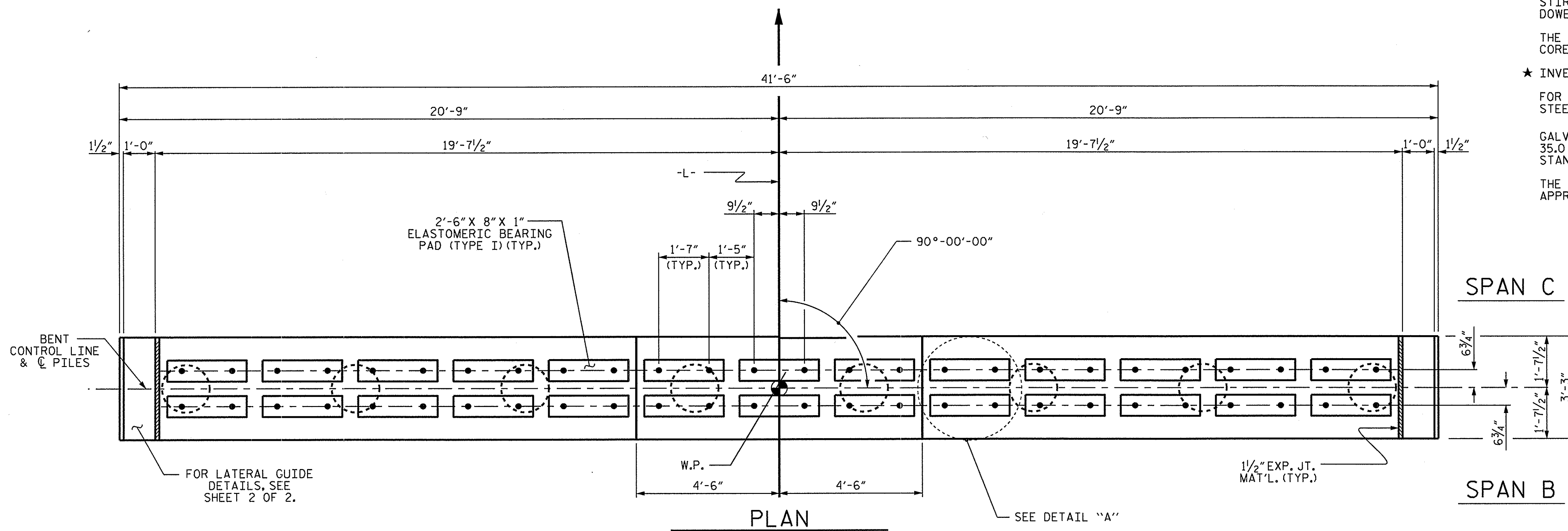
CHECKED BY: REZA KOUCHEKI DATE: 8/6/13

DRAWN BY: DGE 06/10

CHECKED BY: MKT 06/10

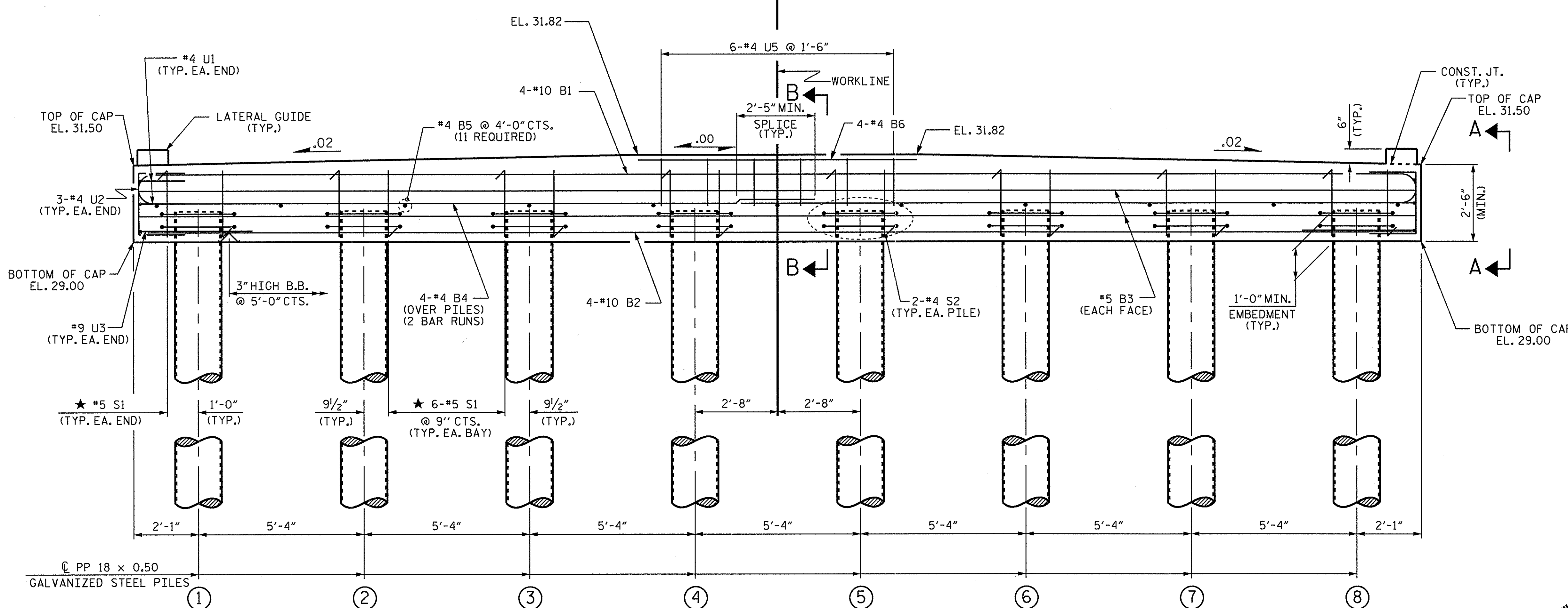
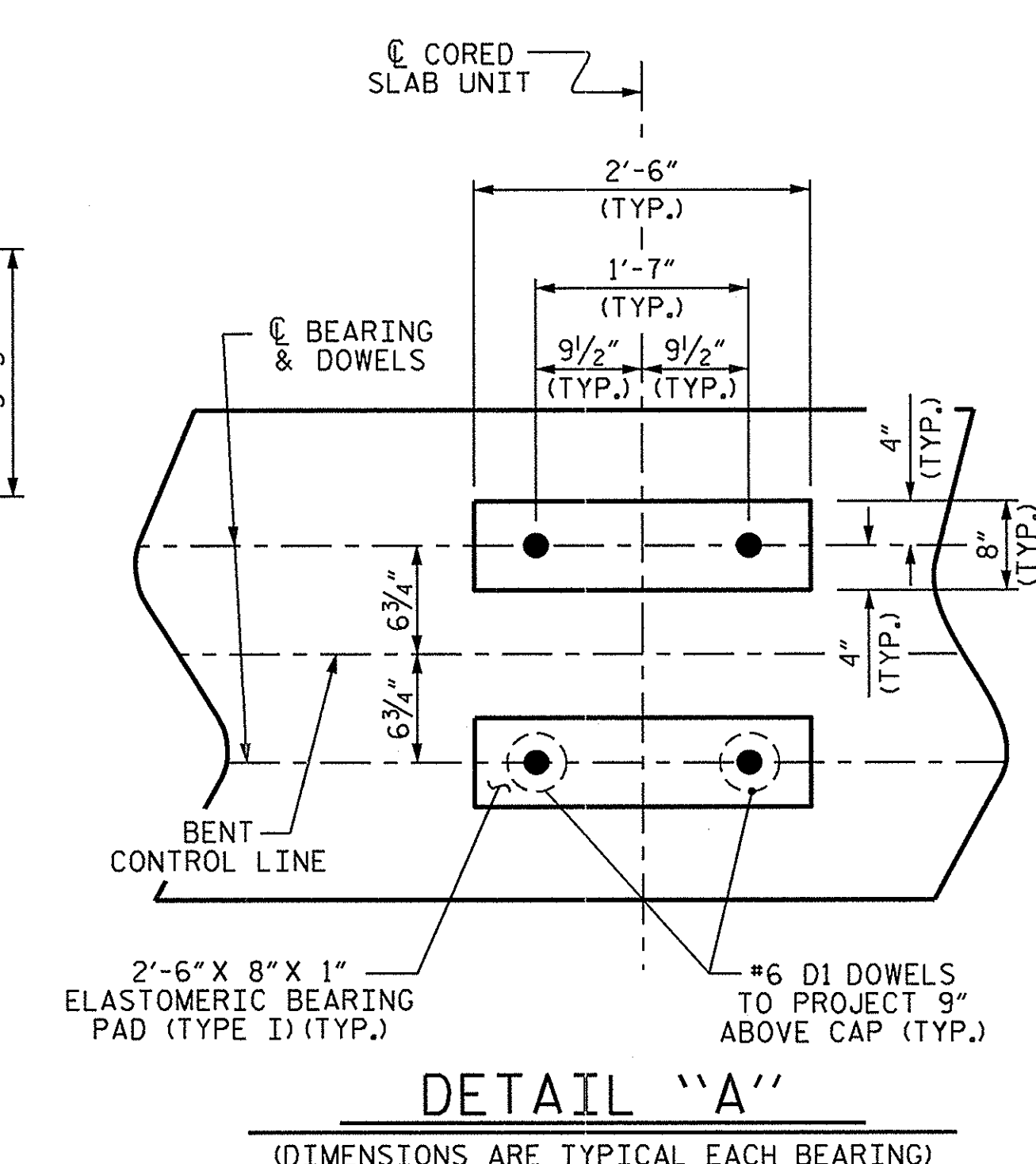
NOTES

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
- THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.
- ★ INVERT ALTERNATE STIRRUPS.
- FOR ADDITIONAL REINFORCING STEEL IN PP 18 x 0.50 GALVANIZED STEEL PILES, SEE SHEET 4 OF 4.
- GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 35.0 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.



SPAN C

SPAN B



PROJECT NO. B-5419

PITT COUNTY

STATION: 16+29.50 -L-

SHEET 2 OF 4

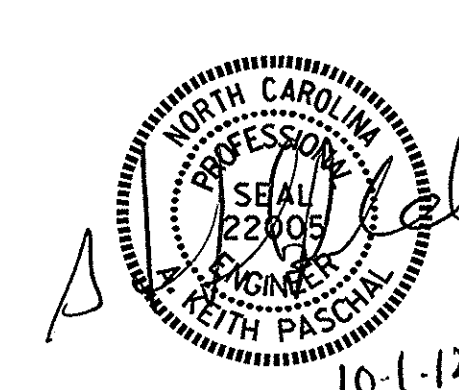
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT No. 2					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-20 TOTAL SHEETS 24

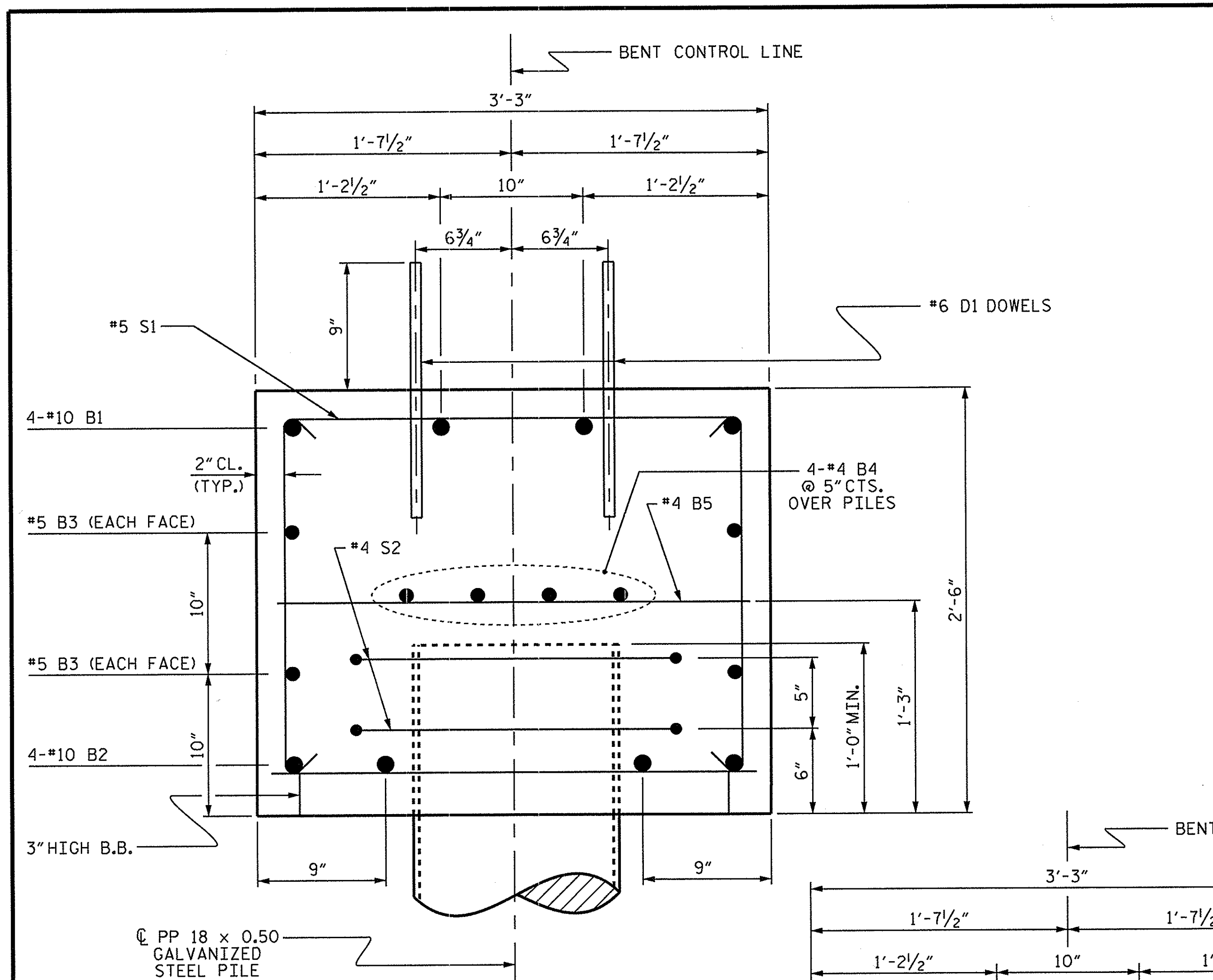
ASSEMBLED BY: A.M. LEE, PE DATE: 8/5/13

CHECKED BY: REZA KOUCHEKI DATE: 8/6/13

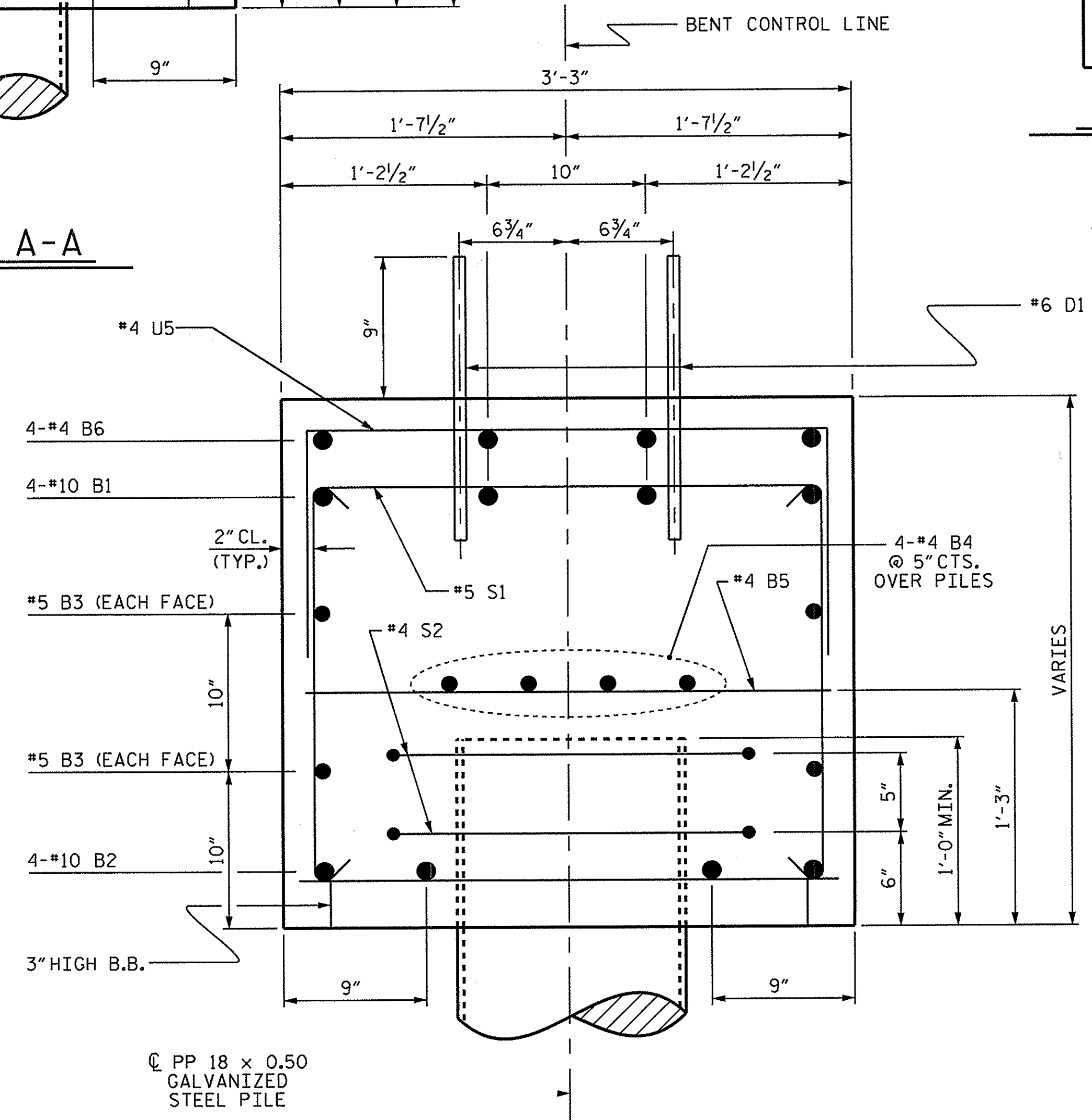
DRAWN BY: DCE 06/10

CHECKED BY: MKT 06/10

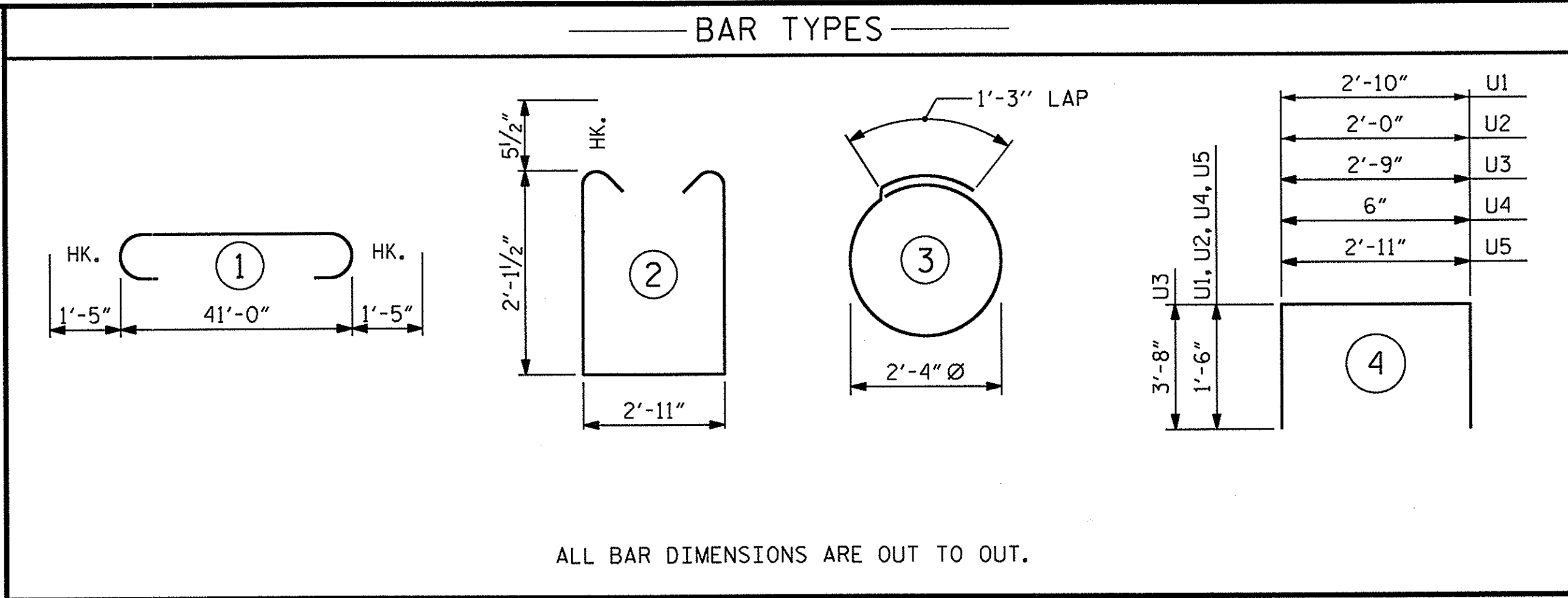




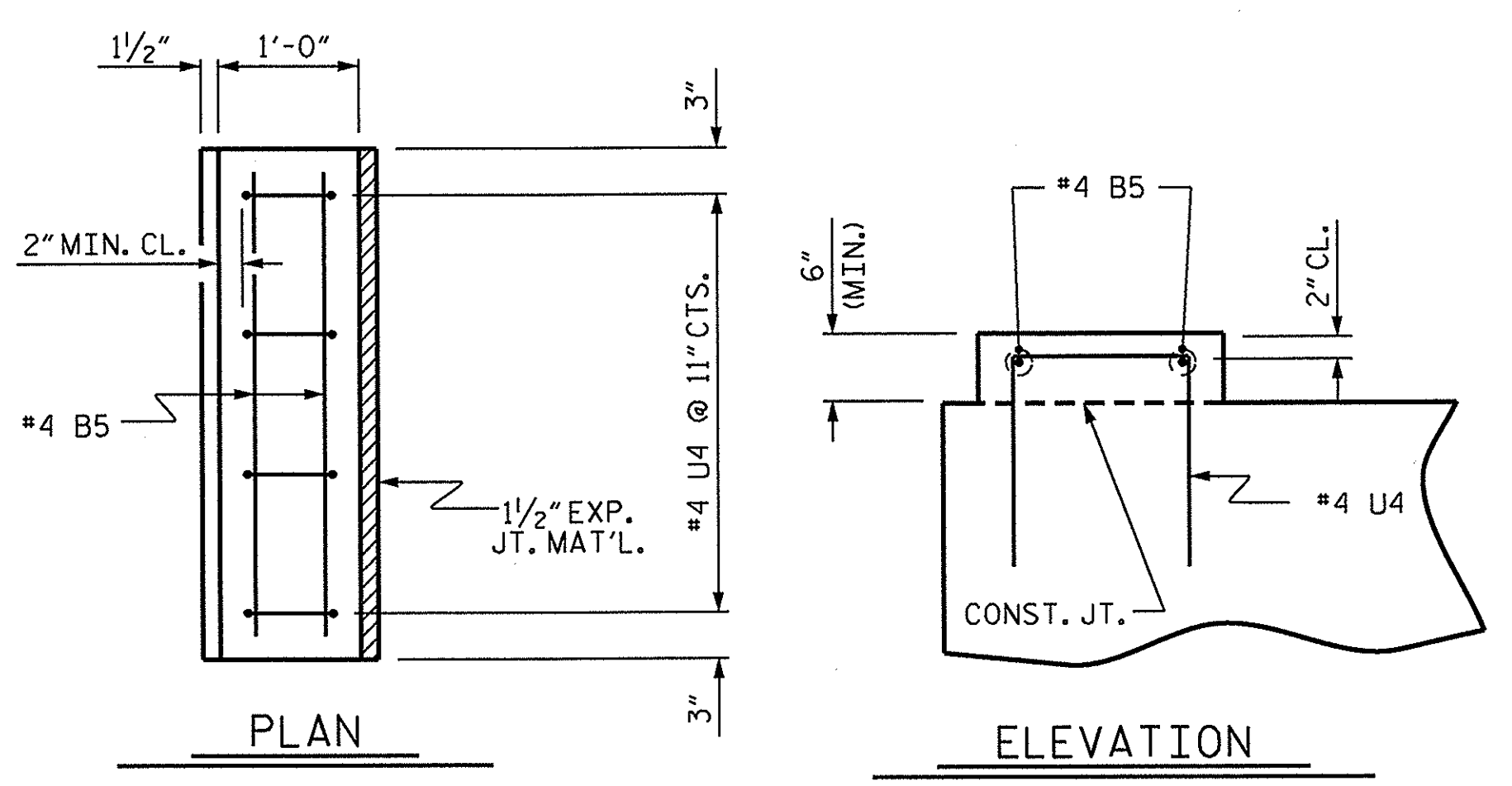
SECTION A-A



SECTION B-B

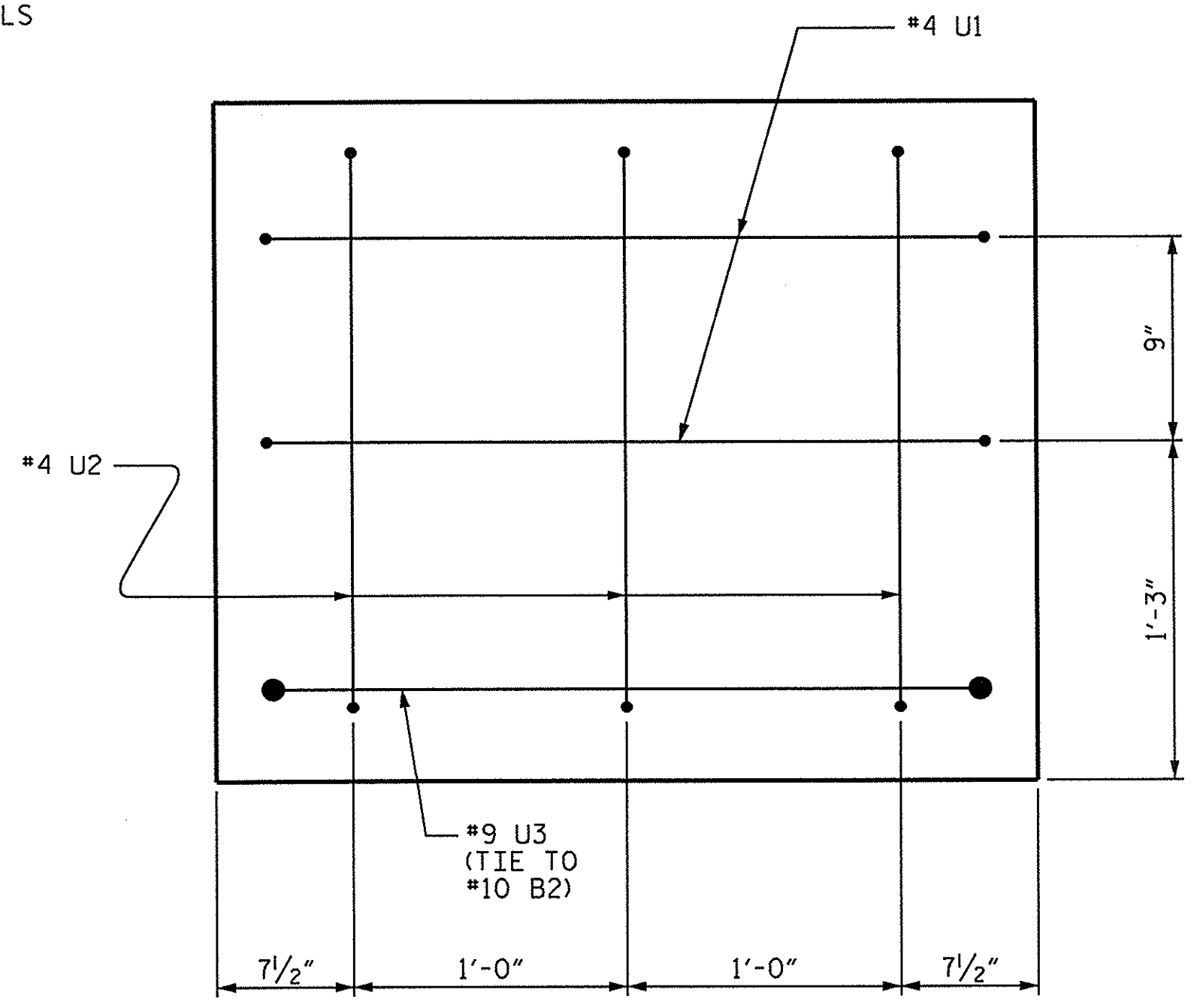


ALL BAR DIMENSIONS ARE OUT TO OUT.



LATERAL GUIDE DETAILS

(LEFT LATERAL GUIDE SHOWN, RIGHT SIDE SIMILAR)



END OF CAP VIEW

(TYPICAL BOTH ENDS)

BILL OF MATERIAL

FOR ONE BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	43'-10"	754
B2	4	#10	STR	41'-2"	709
B3	4	#5	STR	41'-2"	172
B4	8	#4	STR	21'-10"	117
B5	15	#4	STR	2'-11"	29
B6	4	#4	STR	9'-0"	24
D1	52	#6	STR	1'-6"	117
S1	44	#5	2	8'-1"	371
S2	16	#4	3	8'-7"	92
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
U4	8	#4	4	3'-6"	19
U5	6	#4	4	5'-11"	24

REINFORCING STEEL (FOR ONE BENT) 2533 LBS

CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)
 POUR #1 (CAP) ▲ 13.0 C.Y.
 POUR #2 (LATERAL GUIDES) 0.1 C.Y.
 TOTAL CLASS A CONCRETE 13.1 C.Y.

PP 18 x 0.50 GALVANIZED STEEL PILES (FOR ONE BENT)
 No. 8 LIN. FT. 480.0

PILE REDRIVES No. = 4
 STEEL PILE POINTS No. = 8

▲ CONCRETE DISPLACED BY THE PP 18 x 0.50 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE CONCRETE QUANTITY.

PROJECT NO. B-5419
 PITT COUNTY
 STATION: 16+29.50 -L-

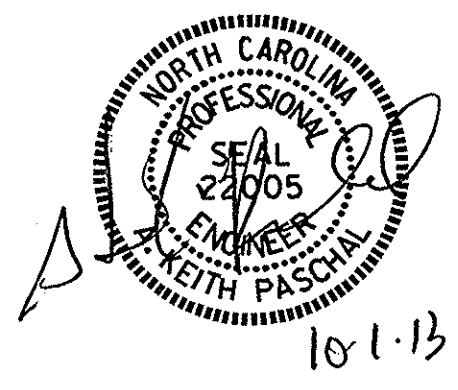
SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

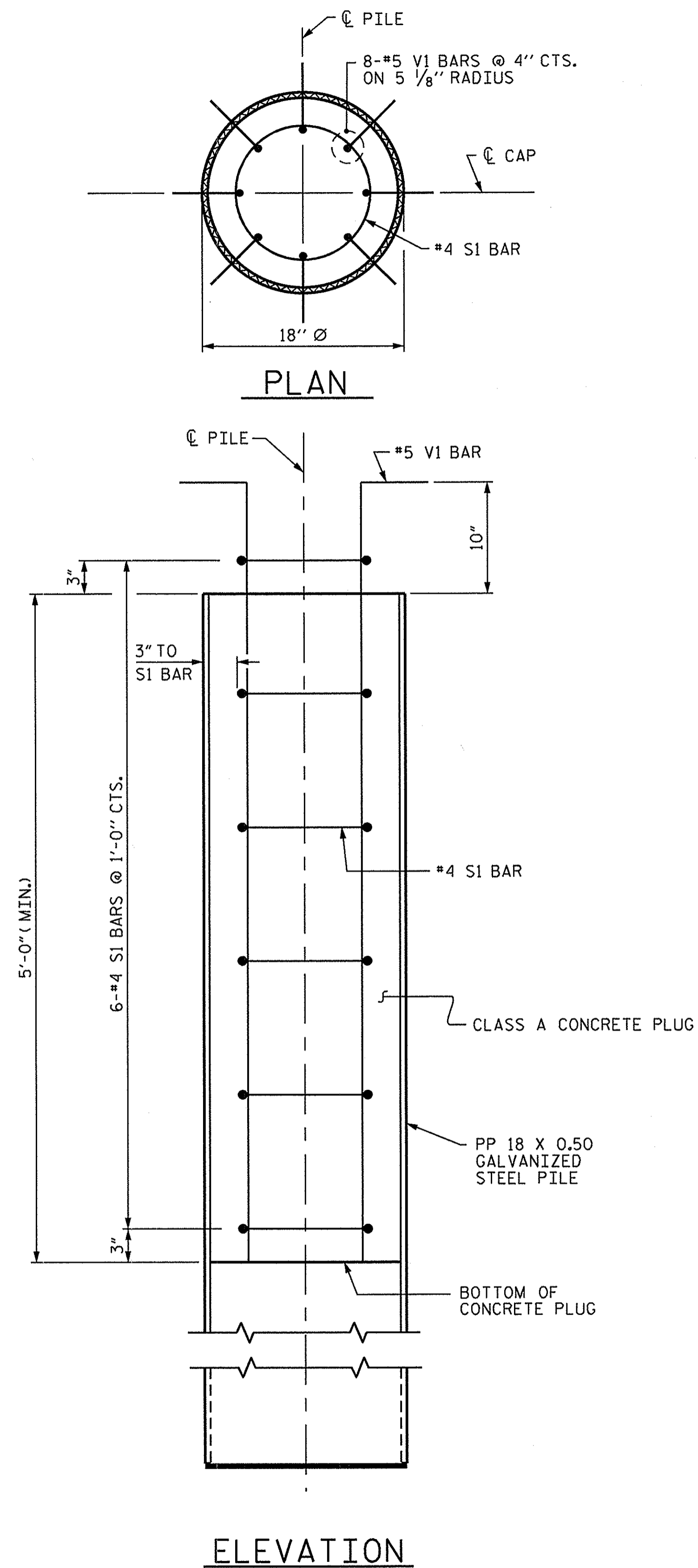
SUBSTRUCTURE
 BENT No. 1 & 2

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

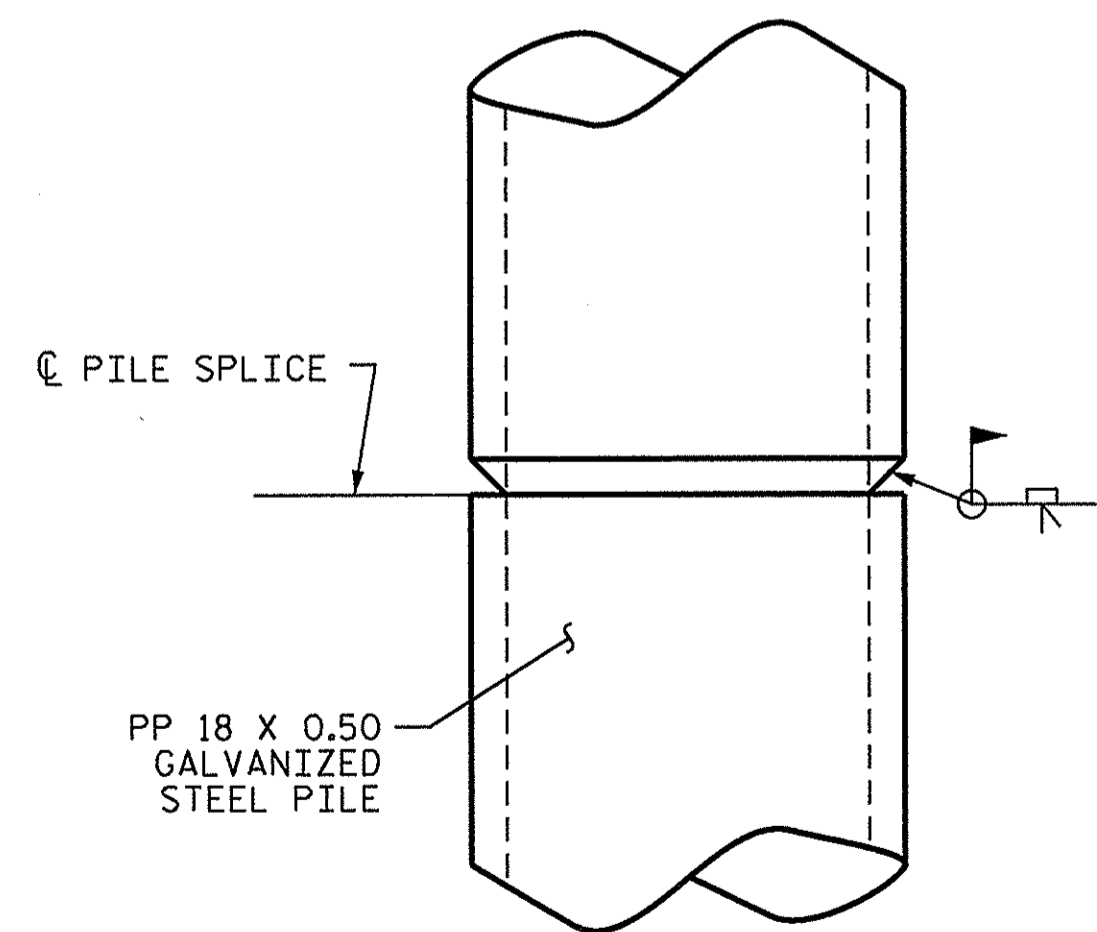
TOTAL SHEETS 24



DRAWN BY: A.M. LEE, PE DATE: 8/5/13
 CHECKED BY: REZA KOUCHEKI DATE: 8/6/13
 DRAWN BY: DGE 06/10
 CHECKED BY: MKT 06/10



PP 18 X 0.50 GALVANIZED STEEL PILE
(OPEN END)



PIPE PILE SPLICE DETAIL

NOTES

PIPE PILES SHALL BE IN ACCORDANCE WITH SECTION 1084 OF THE STANDARD SPECIFICATIONS.

GALVANIZE STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS UNLESS METALLIZING IS REQUIRED. GALVANIZING OR METALLIZING PIPE PILE PLATES IS NOT REQUIRED.

PIPE PILE PLATES, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.

REMOVE AND REPLACE OR REPAIR TO THE SATISFACTION OF THE ENGINEER PILES THAT ARE DAMAGED, DEFORMED OR COLLAPSED DURING INSTALLATION OR DRIVING.

PILE SPLICES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND AWS D1.1.

FOR OPEN END PIPE PILES, REMOVE ENOUGH SOIL AND WATER FROM INSIDE THE PILES TO CONSTRUCT THE CONCRETE PLUG WITHOUT FOULING THE CONCRETE.

FORM THE CONCRETE PLUG SUCH THAT THE REINFORCING STEEL OR CONCRETE DOES NOT MOVE AND THE CLEARANCE FROM THE REINFORCING STEEL TO THE INSIDE OF THE PILE IS MAINTAINED AFTER CONCRETE PLACEMENT. DO NOT PLACE CONCRETE IN THE BENT CAP UNTIL THE CONCRETE PLUG HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

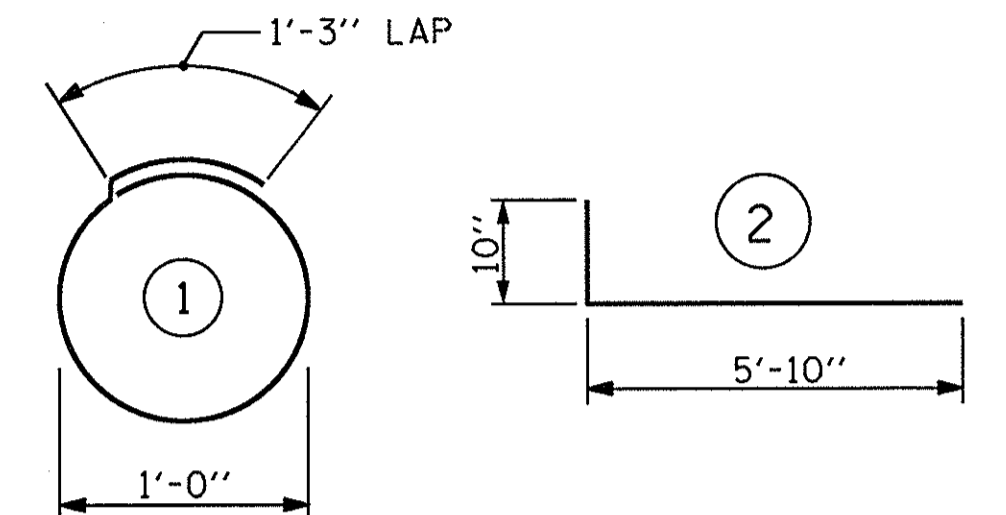
THE REINFORCING STEEL, CLASS A CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 18 X 0.50 GALVANIZED STEEL PILES.

BILL OF MATERIAL FOR ONE
PP 18 X 0.50 GALVANIZED STEEL PILE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	6	#4	1	4'-5"	18
V1	8	#5	2	6'-8"	56
REINFORCING STEEL =				74	lbs

CLASS A CONCRETE
5'-0" MINIMUM PLUG 0.3 CY

BAR TYPES

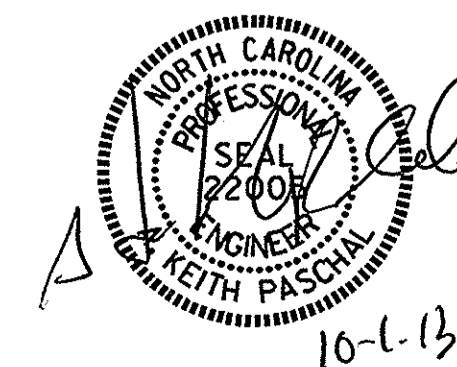


ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. B-5419
PITT COUNTY
STATION: 16+29.50 -L-

SHEET 4 OF 4

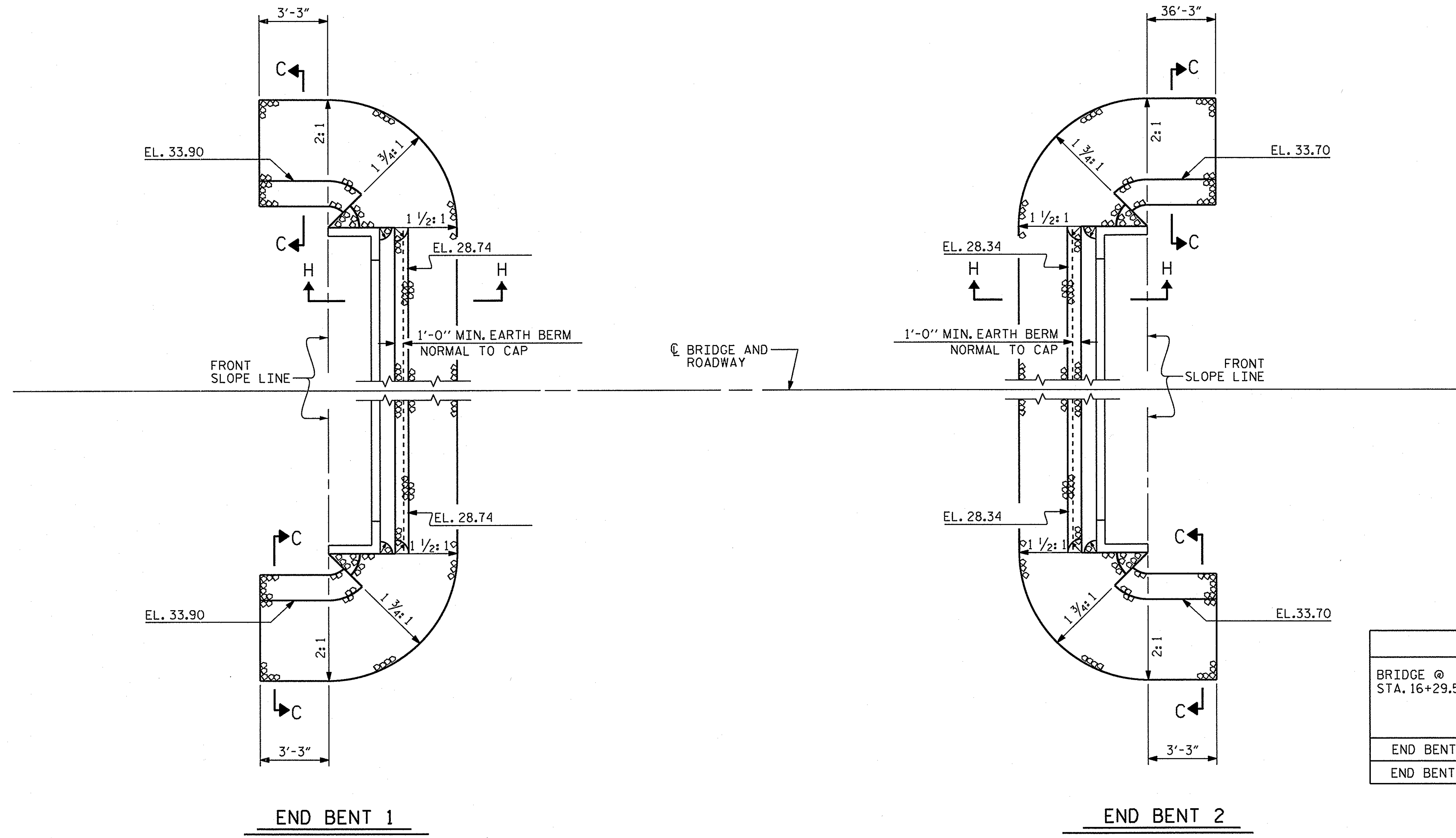
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
18" STEEL PIPE PILE



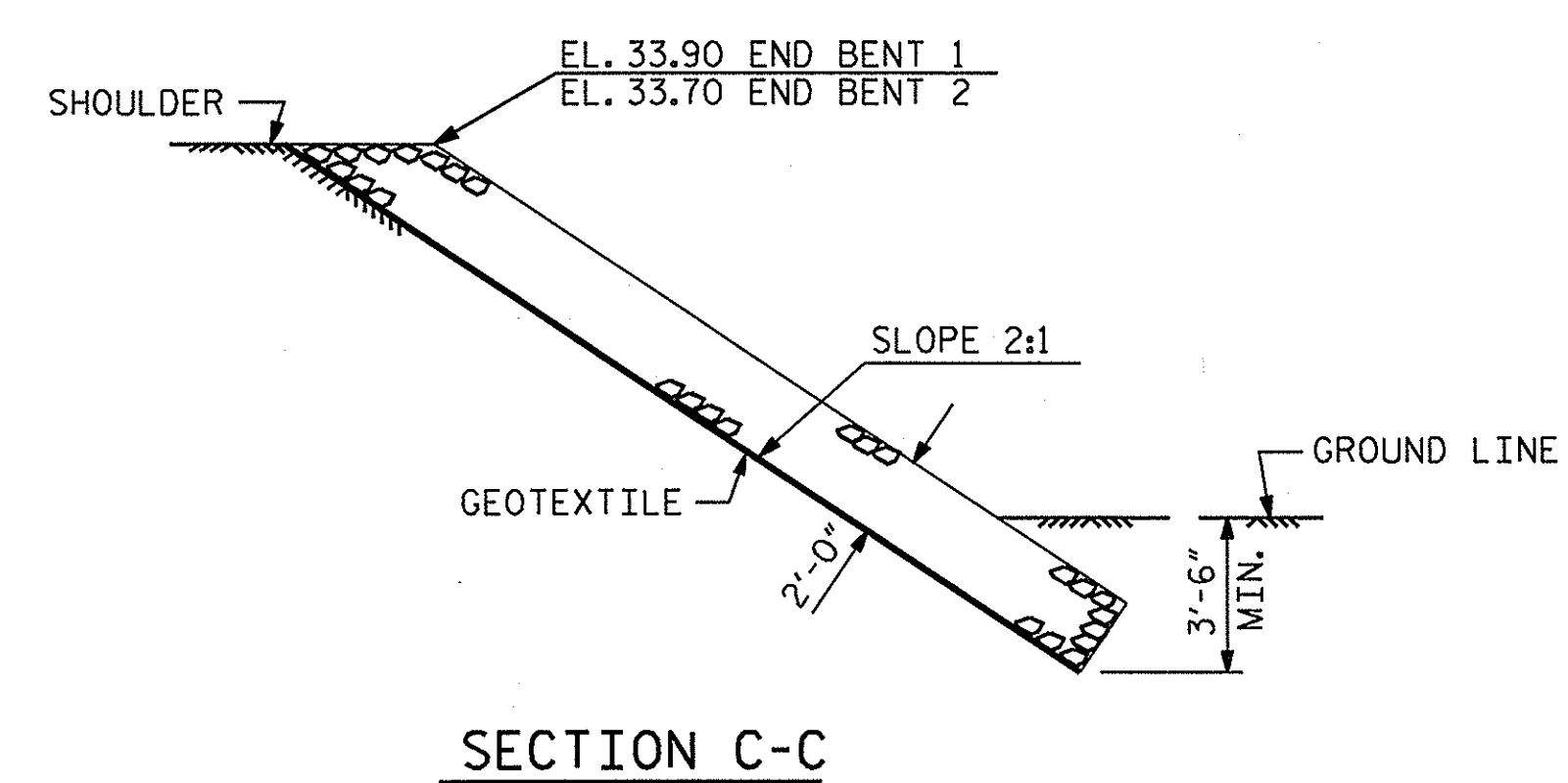
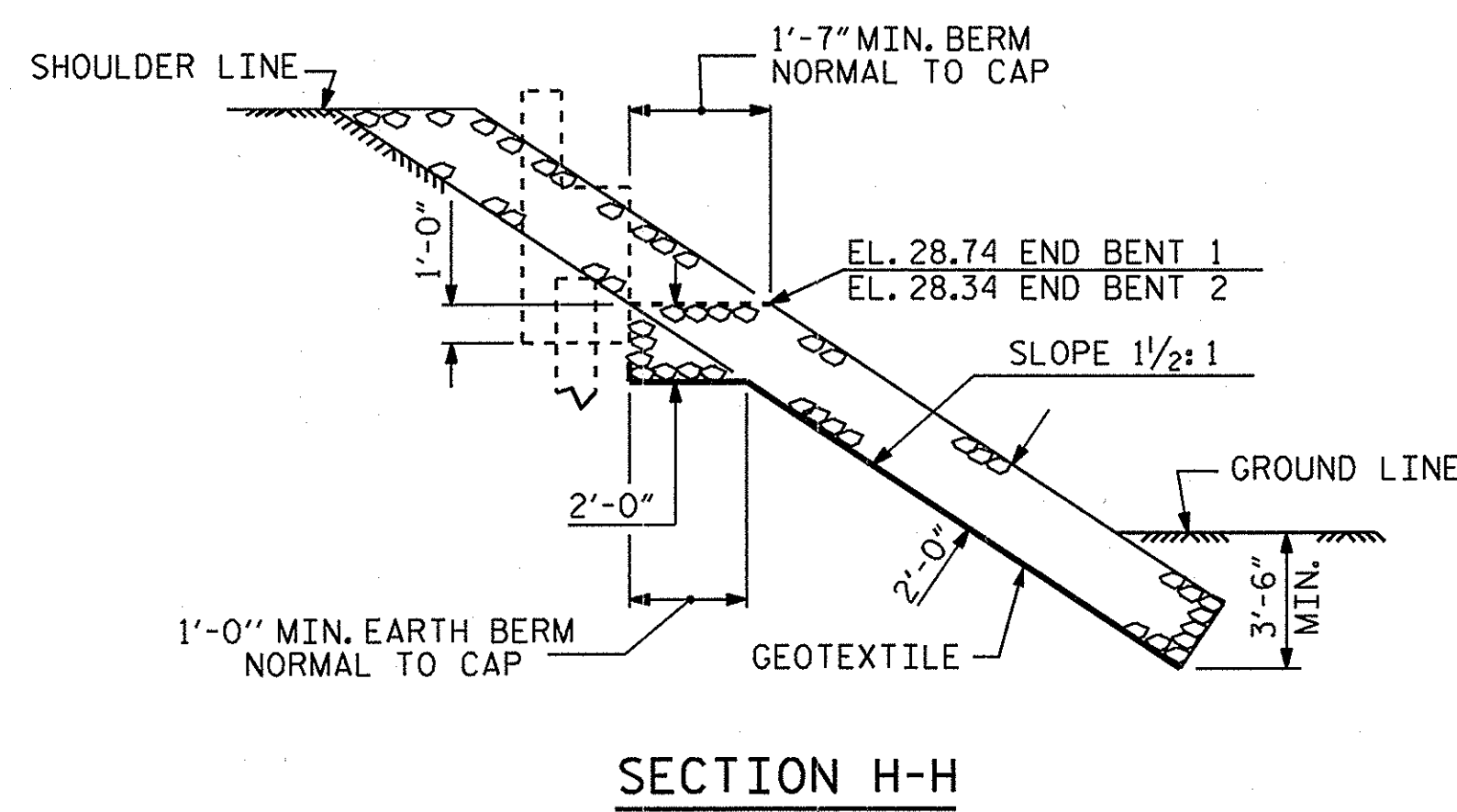
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			24

ASSEMBLED BY : A.M. LEE, PE DATE : 8/5/13
CHECKED BY : REZA KOUCHEKI DATE : 8/6/13
DRAWN BY : RWW 1/01 REV. 10/1/05 LBG/TLA
CHECKED BY : LES 1/01 REV. 5/1/06R MAA/KMM
REV. 10/1/11 MAA/GM

NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.



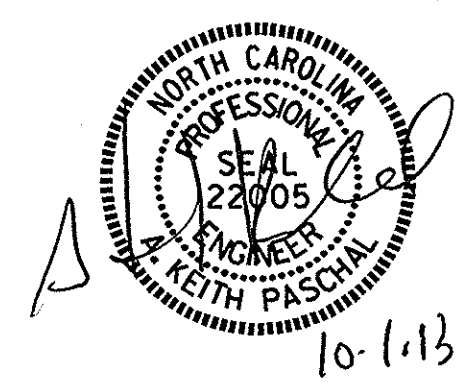
ESTIMATED QUANTITIES		
BRIDGE @ STA. 16+29.50 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	104	115
END BENT 2	525	583



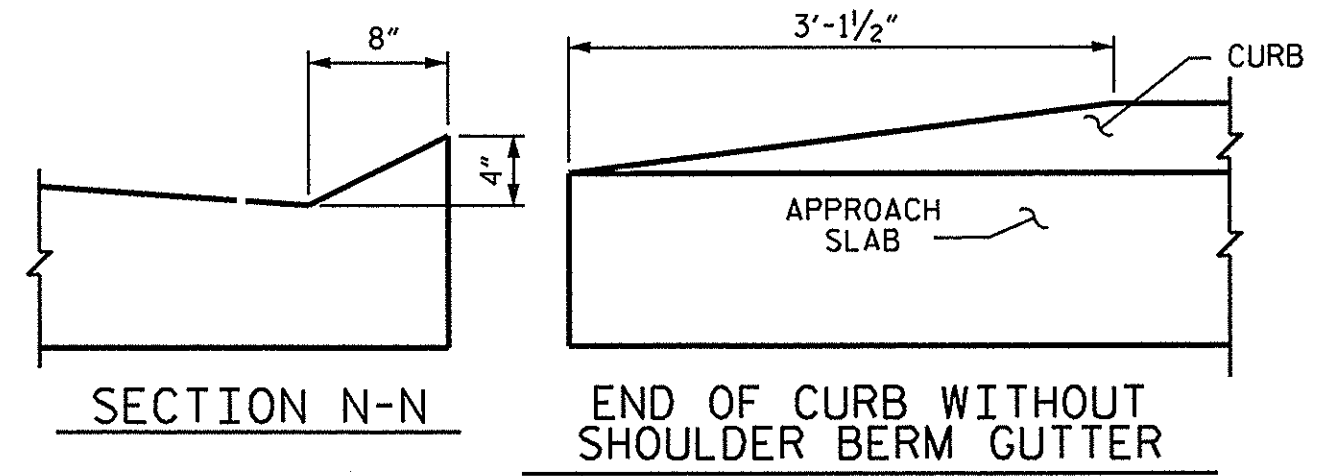
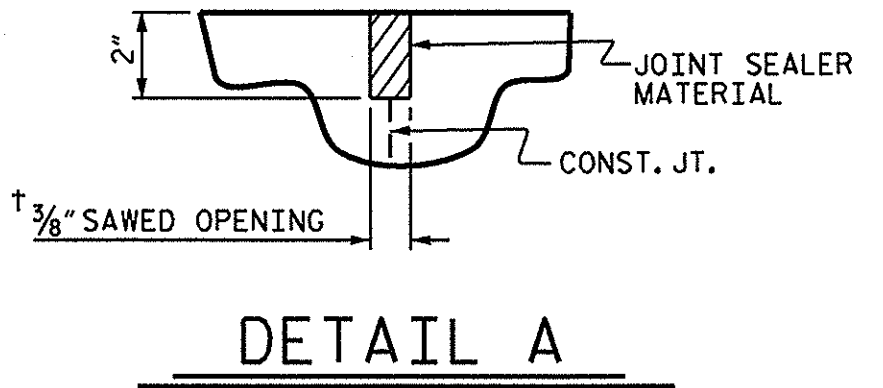
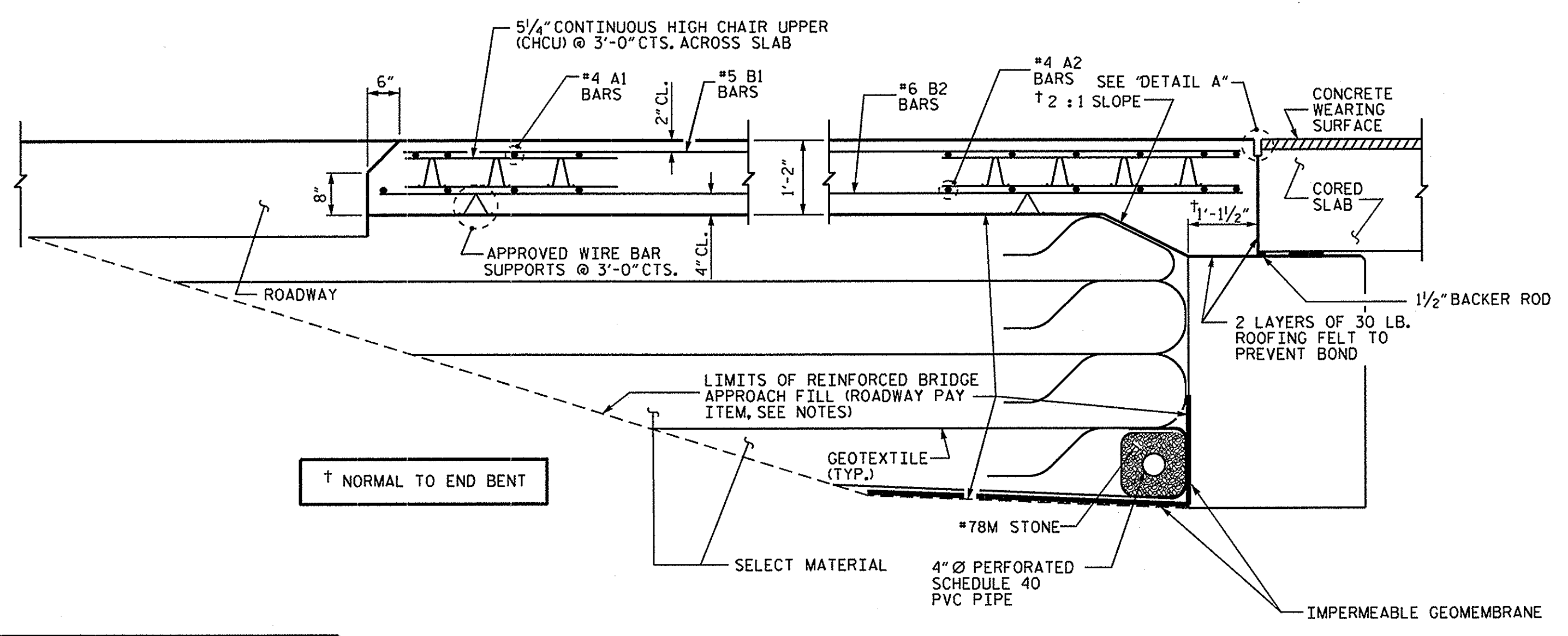
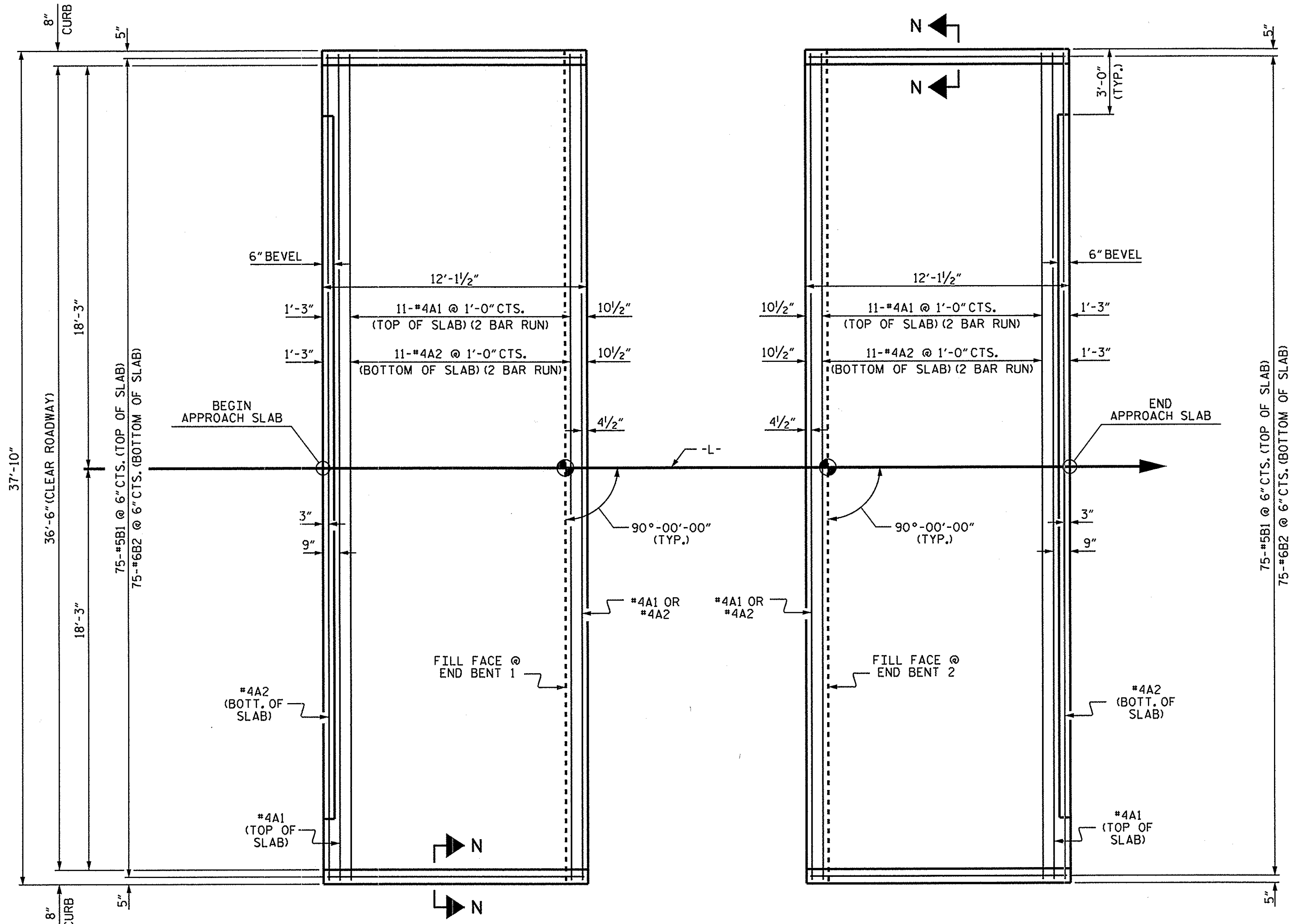
PROJECT NO. B-5419
PITT COUNTY
STATION: 16+29.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
RIP RAP DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			24
2			4			



ASSEMBLED BY : A.M. LEE, PE DATE : 6/14/13
CHECKED BY : REZA KOUCHEKI DATE : 8/6/13
DRAWN BY : REK 1/84 REV. 5/1/06R TLA/GM
CHECKED BY : RDU 1/84 REV. 10/1/11 MAA/GM
REV. 12/21/11 MAA/GM



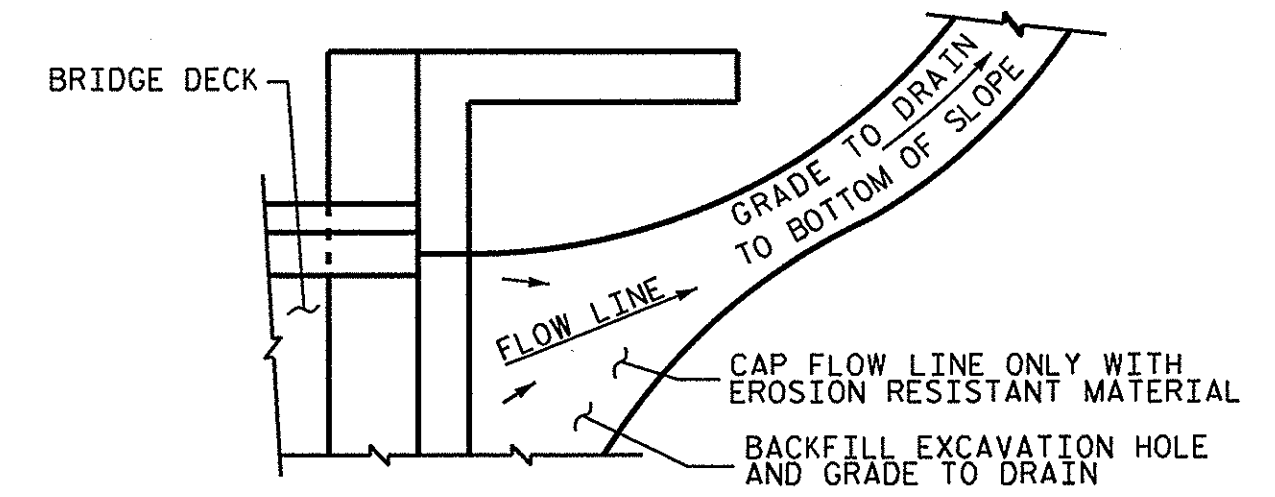
SPLICE LENGTHS

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

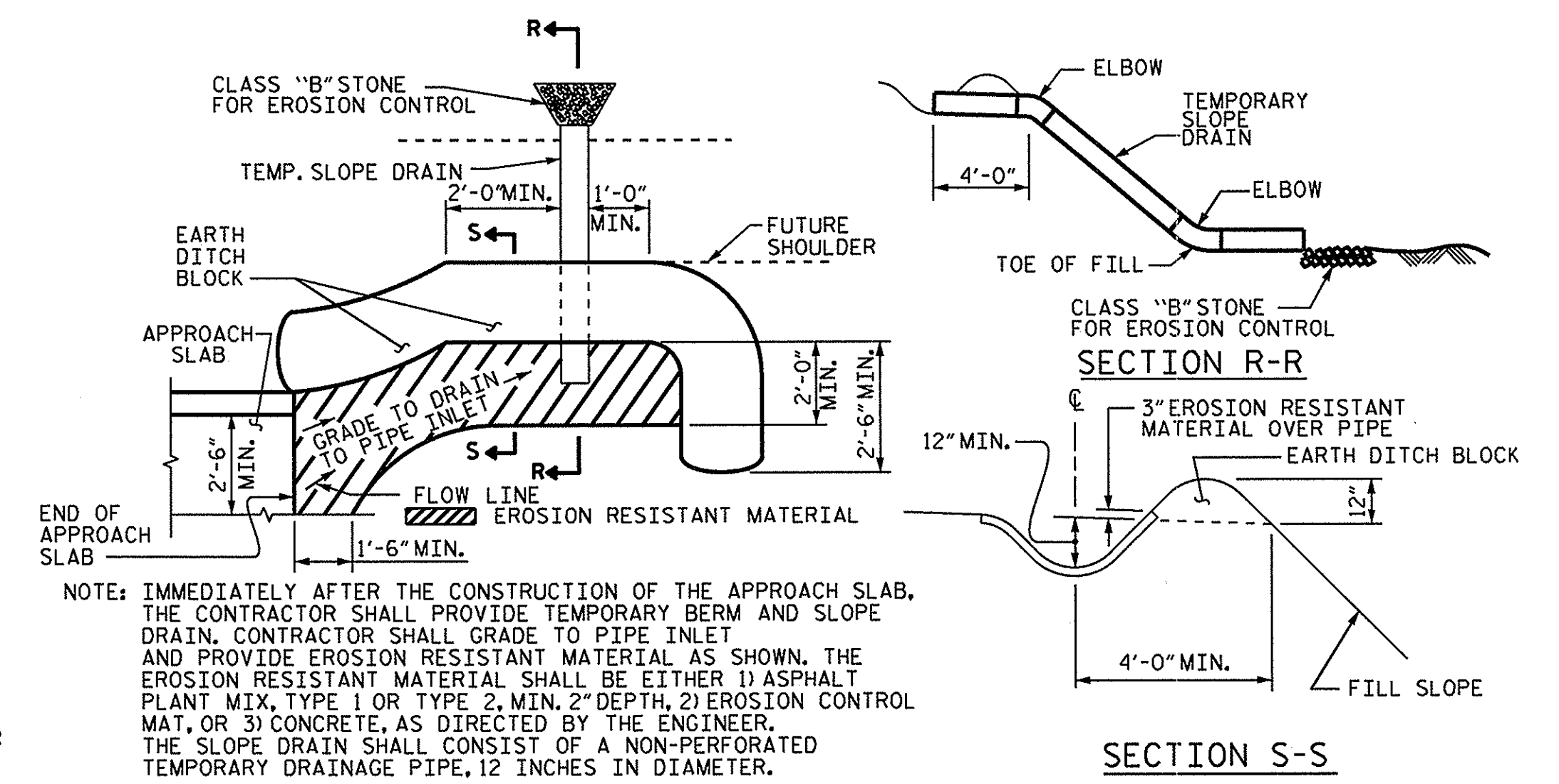
NOTES

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

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



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.



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

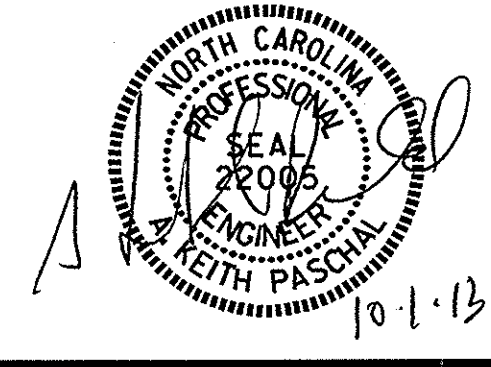
BILL OF MATERIAL

APPROACH SLAB AT EB #1						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
* A1	26	#4	STR	19'-11"	346	
A2	26	#4	STR	19'-10"	344	
* B1	76	#5	STR	11'-2"	885	
B2	76	#6	STR	11'-8"	1332	
REINFORCING STEEL					LBS.	1676
* EPOXY COATED REINFORCING STEEL					LBS.	1231
CLASS AA CONCRETE					C. Y.	22.0

APPROACH SLAB AT EB #2						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
* A1	26	#4	STR	19'-11"	346	
A2	26	#4	STR	19'-10"	344	
* B1	76	#5	STR	11'-2"	885	
B2	76	#6	STR	11'-8"	1332	
REINFORCING STEEL					LBS.	1676
* EPOXY COATED REINFORCING STEEL					LBS.	1231
CLASS AA CONCRETE					C. Y.	22.0

ASSEMBLED BY: A.M. LEE, PE DATE: 6/13/13
 CHECKED BY: REZA KOUICHEKI DATE: 8/6/13
 DRAWN BY: SHS/MAA 5-09 REV. 12-11 MAA/AAC
 CHECKED BY: BCH 5-09

01-OCT-2013 12:34
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PROJECT NO. B-5419
 PITT COUNTY
 STATION: 16+29.50 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB UNIT

90° SKEW

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

SHEET NO. S-24
 TOTAL SHEETS 24

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 WILL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990