

See Sheet 1-A For Index of Sheets

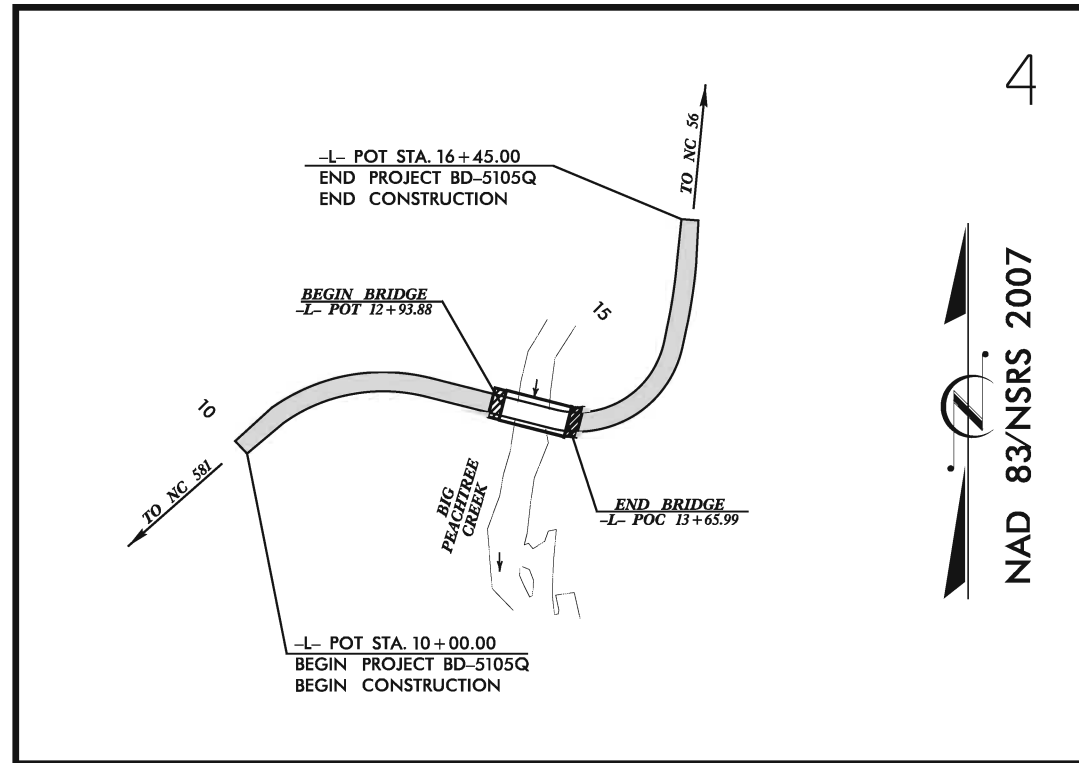
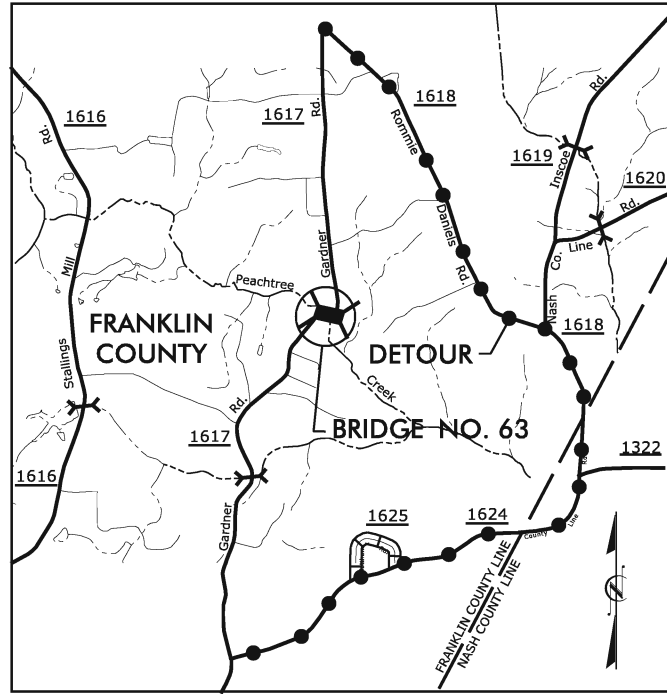
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FRANKLIN COUNTY

LOCATION: BRIDGE NO. 63 ON SR 1617 (GARDNER RD.)
OVER BIG PEACHTREE CREEK

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE

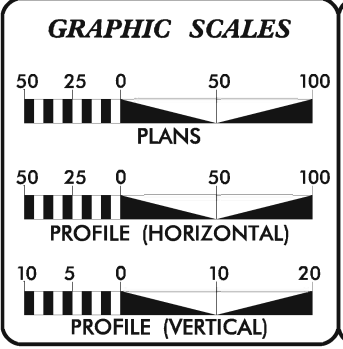
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BD-5105Q	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45351.1.17	BRZ-1617 (2)	P.E.	
45351.2.17	BRZ-1617 (2)	RW	
45351.3.17	BRZ-1617 (2)	CONST.	



CONTRACT: 45351.1.17 TIP PROJECT: BD-5105Q

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III

DESIGN EXCEPTION REQUIRED FOR HORIZONTAL & VERTICAL CURVES



DESIGN DATA

ADT 2011	=	240
ADT 2031	=	480
DHV	=	10 %
D	=	50 %
T	=	6 % *
V	=	55 MPH
* TTST = N/A DUAL N/A		
FUNC CLASS	=	LOCAL
SUB-REGIONAL TIER		

PROJECT LENGTH

LENGTH ROADWAY STATE PROJECT BD-5105Q	=	0.108 MILES
LENGTH STRUCTURES STATE PROJECT BD-5105Q	=	0.014 MILES
TOTAL LENGTH STATE PROJECT BD-5105Q	=	0.122 MILES

PREPARED FOR THE NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
IN THE OFFICE OF:

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 2011

LETTING DATE:
JULY 2012

Florence & Hutcheson
CONSULTING ENGINEERS
1122 Kingston Way, Suite 100 Raleigh, NC 27607
N.C. License No. 7-02218

DENNIS MORY, PE
PROJECT ENGINEER

HENRY BARE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

James Mory
SIGNATURE: JAMES MORY P.E. 6/15/12

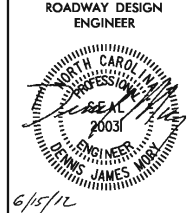
ROADWAY DESIGN ENGINEER

Dennis Mory
SIGNATURE: DENNIS MORY P.E. 6/15/12

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER

\$\$\$\$\$ SYSTEMS\$\$\$\$\$
\$\$\$\$\$ USER\$\$\$\$\$
\$\$\$\$\$ DN\$\$\$\$\$
\$\$\$\$\$ USER\$\$\$\$\$



GENERAL NOTES

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-12

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.

GUARDRAIL:

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

END BENTS:

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

UTILITIES:

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

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

ROADWAY STANDARD DRAWINGS

2012 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.11	Bridge Approach Fills - Sub Regional Tier
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
840.20	Frames and Wide Slot Flat Grates
840.46	Traffic Bearing Precast Drainage Structure
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS GENERAL NOTES LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
3	DRAINAGE SUMMARY GUARDRAIL SUMMARY SUMMARY OF EARTHWORK SUMMARY OF PAVEMENT REMOVAL SUMMARY OF SHOULDER BERM GUTTER
4	PLAN & PROFILE TYPICAL SECTIONS & PAVEMENT SCHEDULE PARCEL INDEX DRAINAGE DITCH DETAILS
TCP-1 THRU TCP-2	TRAFFIC CONTROL PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL SHEET
X-1 THRU X-3	CROSS-SECTIONS
S-1 THRU S-17	STRUCTURE PLANS
SN	STANDARD NOTES

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	_____
County Line	_____
Township Line	_____
City Line	_____
Reservation Line	_____
Property Line	_____
Existing Iron Pin	○
Property Corner	✕
Property Monument	□
Parcel/Sequence Number	⑫③
Existing Fence Line	× × × ×
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	ALB
Proposed Wetland Boundary	PLB
Existing Endangered Animal Boundary	EAB
Existing Endangered Plant Boundary	EPB

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or UG Tank Cap	○
Sign	⊙
Well	⊙
Small Mine	⚡
Foundation	□
Area Outline	□
Cemetery	⊕
Building	□
School	□
Church	⊕
Dam	▬

HYDROLOGY:

Stream or Body of Water	_____
Hydro, Pool or Reservoir	□
Jurisdictional Stream	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	○
Switch	□
RR Abandoned	_____
RR Dismantled	_____

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	_____
Proposed Right of Way Line	_____
Proposed Right of Way Line with Iron Pin and Cap Marker	_____
Proposed Right of Way Line with Concrete or Granite Marker	_____
Existing Control of Access	⊙
Proposed Control of Access	⊙
Existing Easement Line	E
Proposed Temporary Construction Easement	E
Proposed Temporary Drainage Easement	TDE
Proposed Permanent Drainage Easement	PDE
Proposed Permanent Drainage / Utility Easement	DUE
Proposed Permanent Utility Easement	PUE
Proposed Temporary Utility Easement	TUE
Proposed 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	WCHR
Existing Metal Guardrail	_____
Proposed Guardrail	_____
Existing Cable Guiderail	_____
Proposed Cable Guiderail	_____
Equality Symbol	⊕
Pavement Removal	▨

VEGETATION:

Single Tree	⊕
Single Shrub	⊙
Hedge	_____
Woods Line	_____
Orchard	⊕
Vineyard	Vineyard

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

TV Satellite Dish	⊕
TV Pedestal	⊕
TV Tower	⊕
UG TV Cable Hand Hole	⊕
Recorded UG TV Cable	_____
Designated UG TV Cable (S.U.E.*)	_____
Recorded UG Fiber Optic Cable	_____
Designated UG Fiber Optic Cable (S.U.E.*)	_____

GAS:

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

SANITARY SEWER:

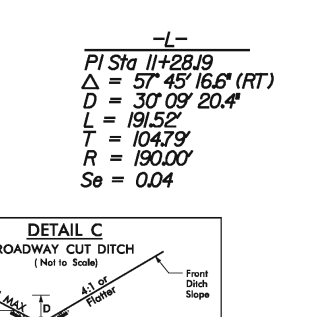
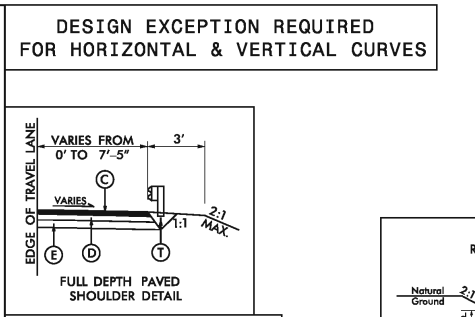
Sanitary Sewer Manhole	⊙
Sanitary Sewer Cleanout	⊙
UG Sanitary Sewer Line	SS
Above Ground Sanitary Sewer	A/G Sanitary Sewer
Recorded SS Forced Main Line	_____
Designated SS Forced Main Line (S.U.E.*)	_____

MISCELLANEOUS:

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

8/17/2010
 PROJECT NO. BD-5105Q
 COUNTY: FRANKLIN
 STATION: 13+30.00 -L- (90 SKEW)
 REPLACES BRIDGE NO. 63
 BRIDGE NO. 63 ON SR 1617 OVER BIG PEACHTREE CREEK
 SHEET NO. 4
 TOTAL SHEETS 4

DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "GPS-4"
 WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 843653.253(ft) EASTING: 2259486.452(ft) ELEVATION: 240.95(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99996721
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-4" TO -L- STATION IS
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88



-L- COORDINATE LIST

STATION	NORTH	EAST
10+00	N 843250.55	E 2259002.23
11+00	N 843306.99	E 2259083.71
12+00	N 843316.24	E 2259182.13
13+00	N 843292.27	E 2259279.20
14+00	N 843279.97	E 2259377.17
15+00	N 843344.35	E 2259448.44
16+00	N 843442.63	E 2259465.95

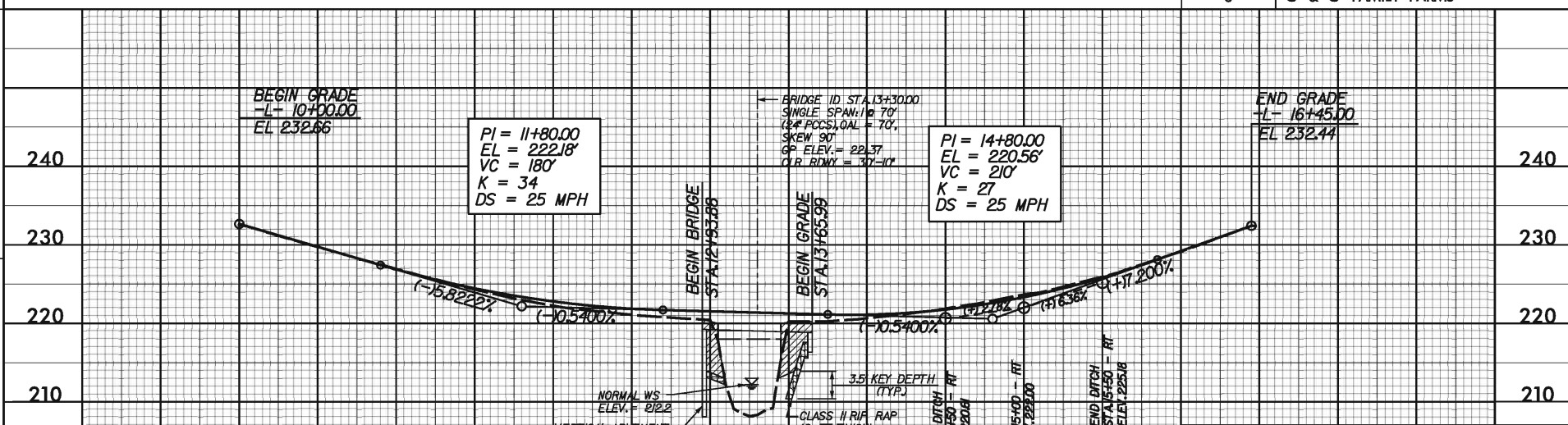
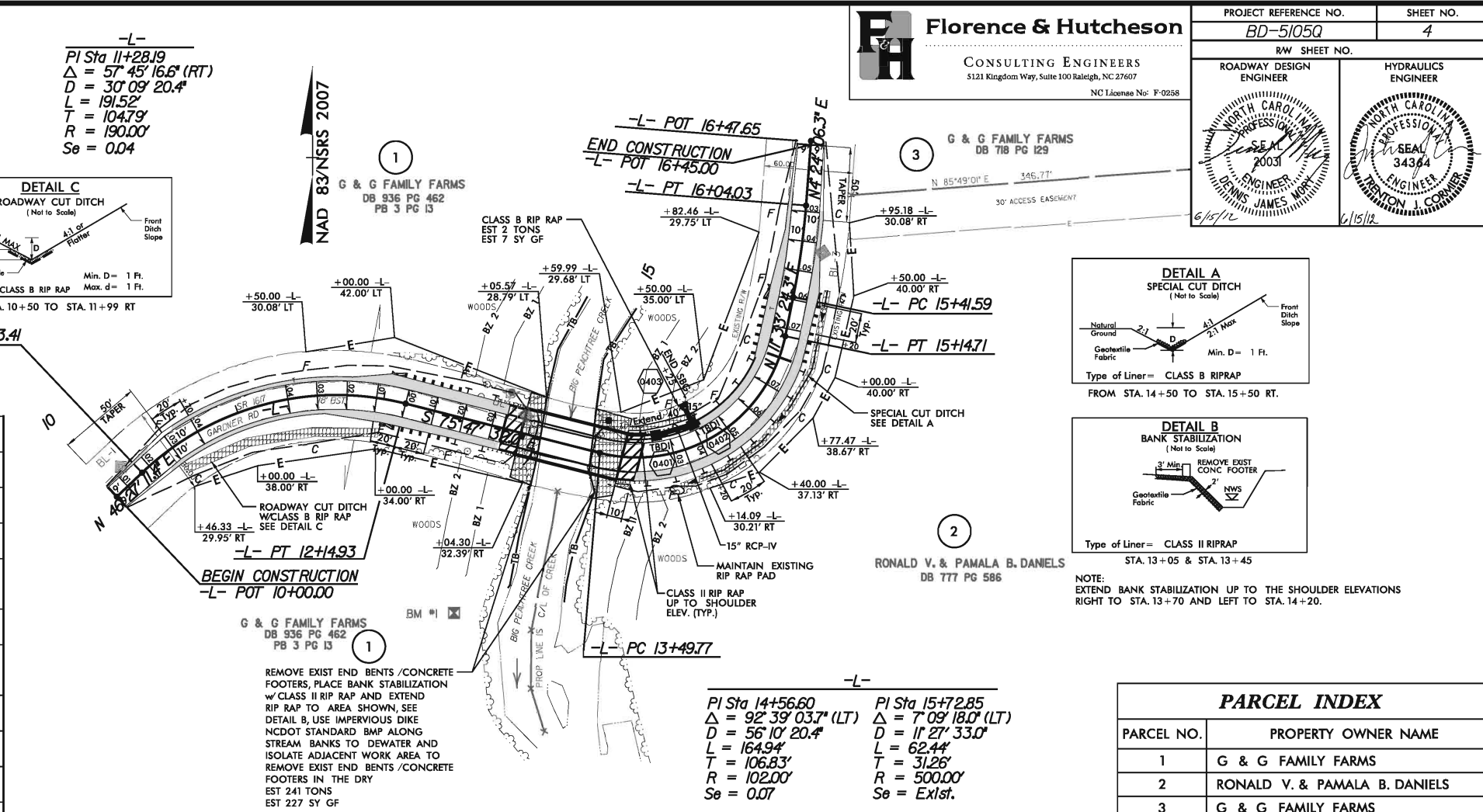
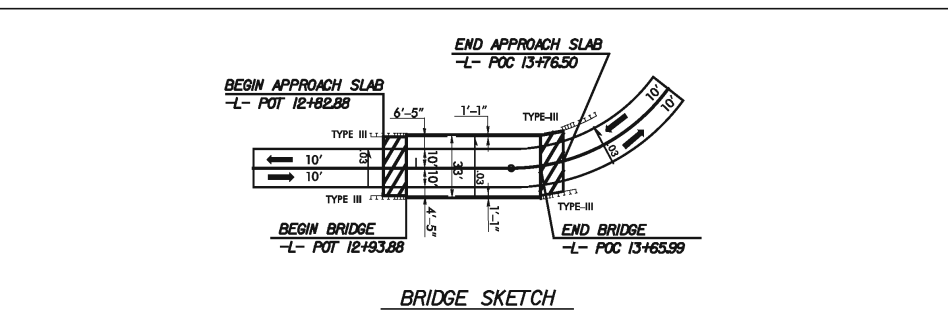
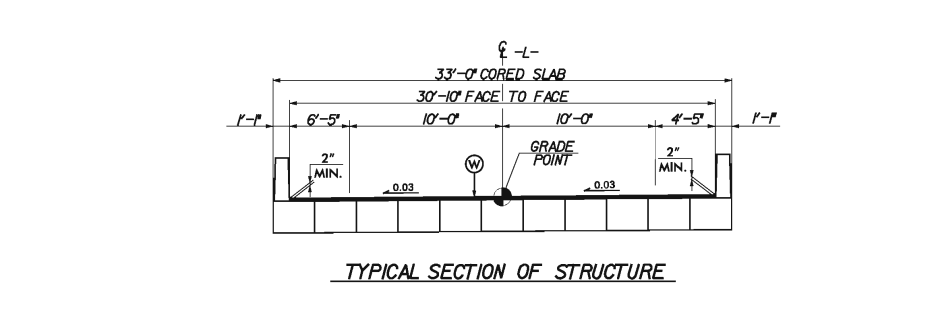
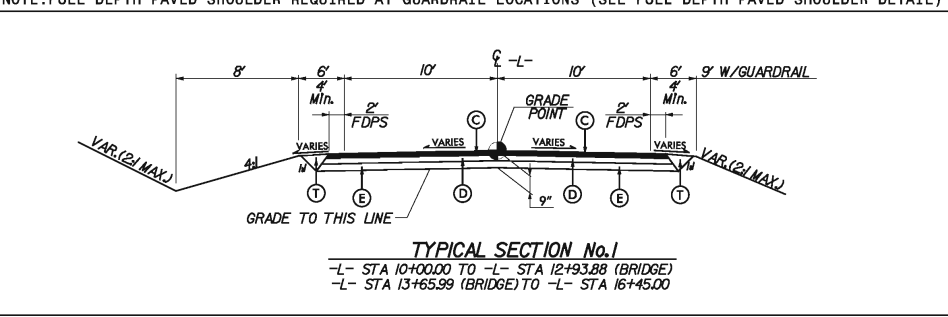
Wedging Detail For Resurfacing

BL NO.	NORTH	EAST	ELEVATION	-L- STATION	OFFSET	BM#1
BL-1	N 843270.6610	E 2259004.9580	231.45'	10+15.83	12.70' LT.	-L- STA 12+81.35 128.82' RT
BL-2	N 843305.5840	E 2259277.7230	219.39'	12+95.30	12.54' LT.	ELEV = 218.68
BL-3	N 843414.8180	E 2259477.7020	227.28'	15+74.03	14.57' RT.	

PAVEMENT SCHEDULE

(C)	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
(CI)	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
(D)	PROP. APPROX. 3 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
(DI)	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
(E)	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
(EI)	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
(T)	EARTH MATERIAL
(U)	EXISTING PAVEMENT
(W)	PAVEMENT WEDGING

NOTE: FULL DEPTH PAVED SHOULDER REQUIRED AT GUARDRAIL LOCATIONS (SEE FULL DEPTH PAVED SHOULDER DETAIL)



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	1600	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	219.4	FT
BASE DISCHARGE	=	2415	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	2207	FT
OVERTOPPING DISCHARGE	=	4250	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	2211	FT

DATE OF SURVEY = 9-05-2011
 W.S. ELEVATION AT DATE OF SURVEY 212.2 FT

BRIDGE NO. 63 ON SR 1617 OVER BIG PEACHTREE CREEK

PROJECT NO. BD-5105Q
 COUNTY: FRANKLIN
 STATION: 13+30.00 -L- (90 SKEW)
 REPLACES BRIDGE NO. 63

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

REVISIONS

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

SHEET NO. **4**
 TOTAL SHEETS 4



GENERAL NOTES

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

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

LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

TRAFFIC PATTERN ALTERATIONS

- B) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

- C) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

- D) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

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

TRAFFIC CONTROL DEVICES

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

PAVEMENT MARKING AND MARKERS

- G) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
SR 1617 (GARDNER RD)	PAINT	PERMANENT RAISED

- H) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE ACCORDING TO THE ROADWAY STANDARDS.

- I) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

MISCELLANEOUS

- J) MAINTAIN ACCESS TO ALL RESIDENCES AND BUSINESSES BETWEEN THE CLOSURE POINTS AT ALL TIMES DURING CONSTRUCTION.

ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1110.02	PORTABLE WORK ZONE SIGNS
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

PHASING

STEP 1

USING ROADWAY STANDARD DRAWING NUMBER 1101.04, SHEET 1 OF 1, INSTALL ALL DETOUR SIGNING KEEPING SIGNS COVERED.

STEP 2

PRIOR TO CLOSING SR 1617 (GARDNER RD.), UNCOVER ALL DETOUR SIGNING AND OPEN DETOUR TO TRAFFIC.

USING ROADWAY STANDARD DRAWING NUMBER 1101.03, SHEET 1 OF 9, CLOSE SR 1617 (GARDNER RD.).

STEP 3

DISMANTLE AND REMOVE EXISTING BRIDGE.

STEP 4

COMPLETE CONSTRUCTION OF PROPOSED STRUCTURE, APPROACH ROADWAY TIE-INS, AND ASSOCIATED ITEMS.

STEP 5

PLACE FINAL PAVEMENT MARKINGS ON SR 1617 (GARDNER RD.) AND OPEN TO TRAFFIC.

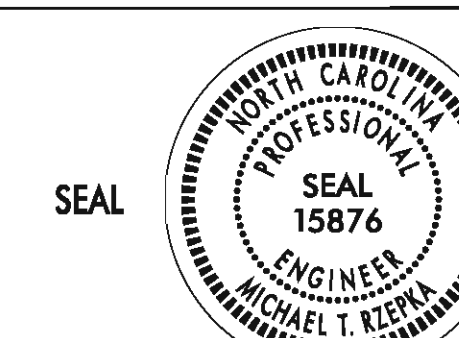
STEP 6

USING ROADWAY STANDARD DRAWING NUMBER 1101.04, SHEET 1 OF 1, REMOVE ALL DETOUR SIGNING AND ALL TRAFFIC CONTROL DEVICES.

FINAL PAVEMENT MARKING SCHEDULE

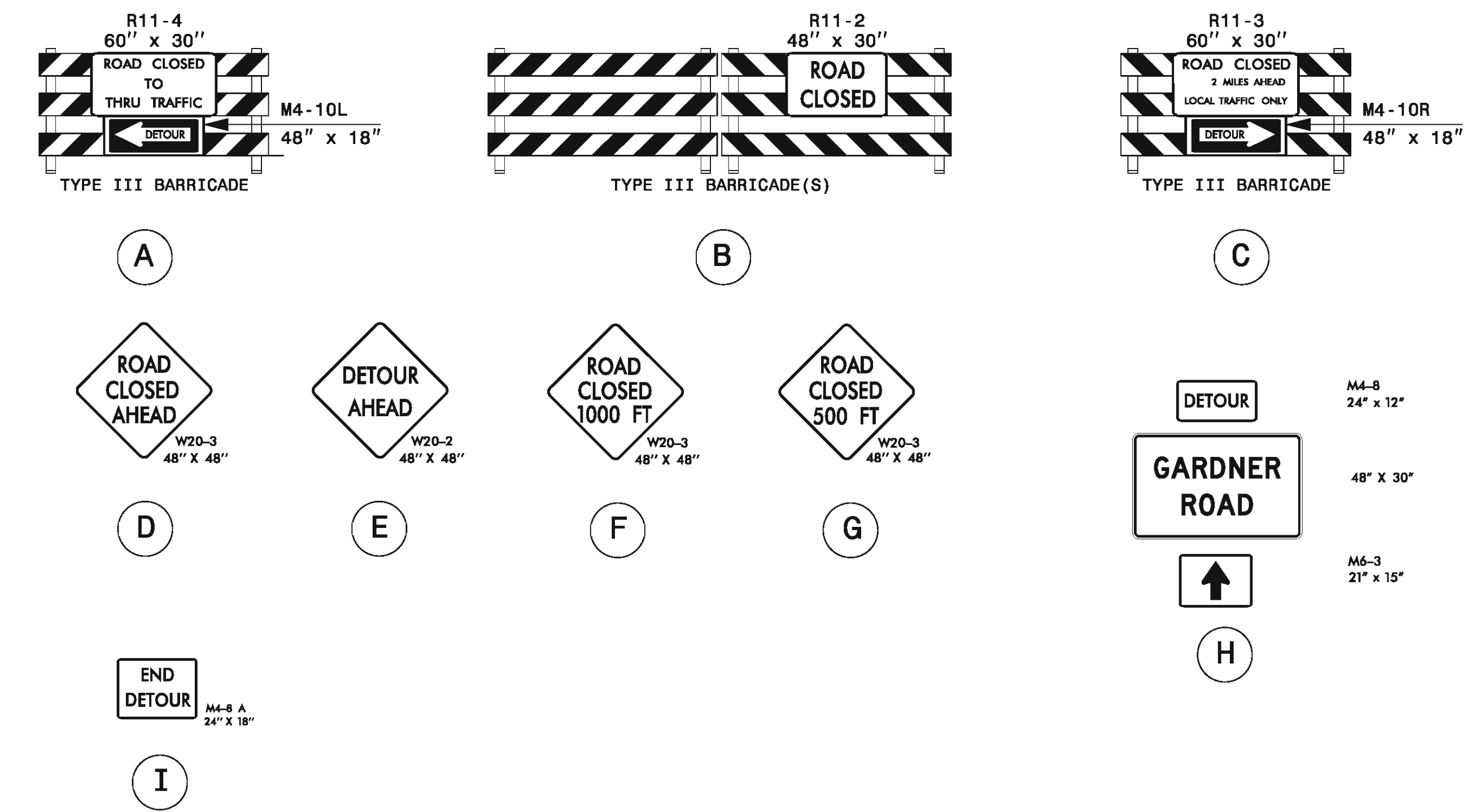
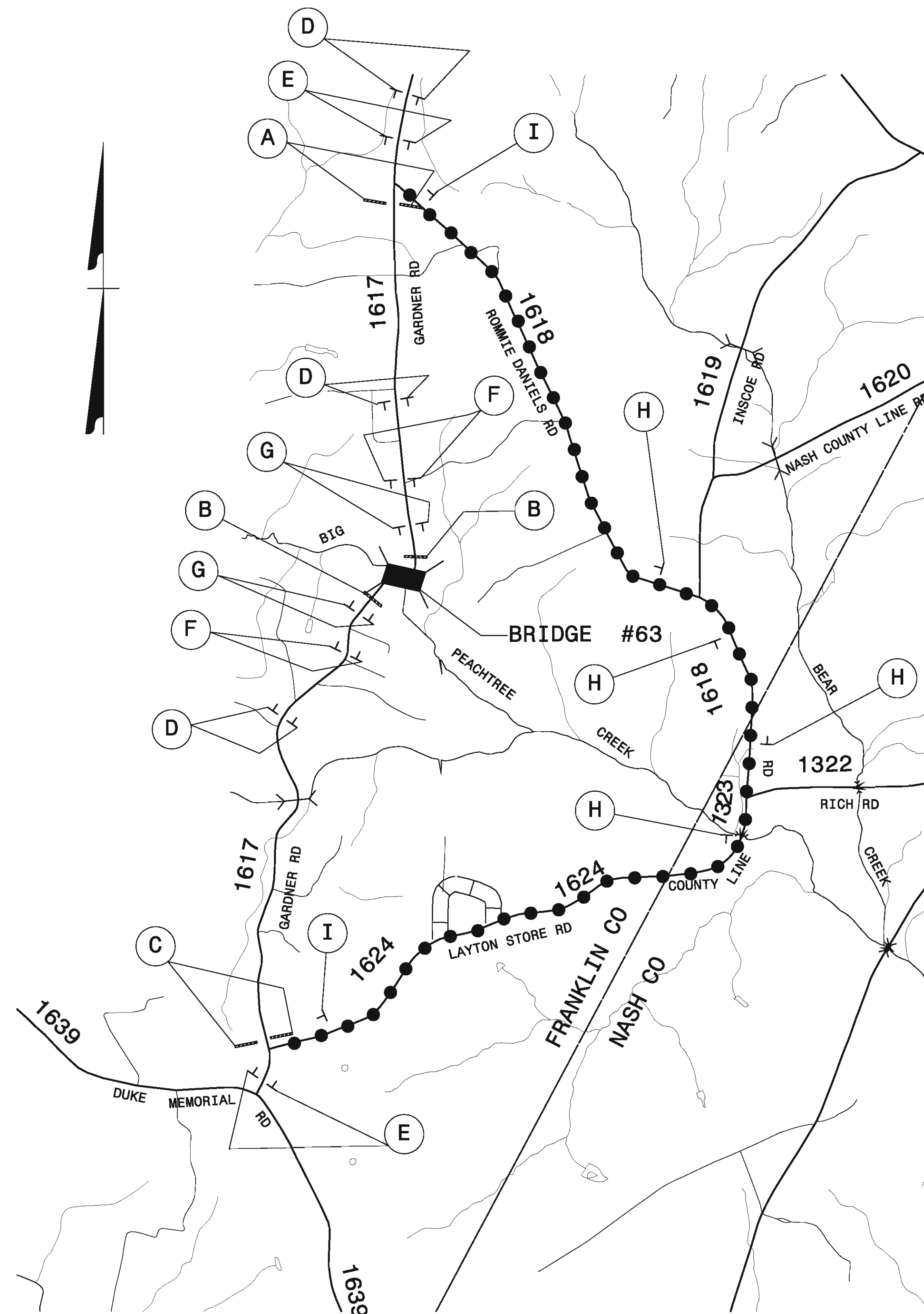
DESCRIPTION	PAY ITEM
WHITE EDGELINE (2X)	PAINT (4")
DOUBLE YELLOW CENTER LINE (2X)	PAINT (4")
YELLOW/YELLOW	PERMANENT RAISED MARKER

APPROVED: *Michael T. Riehma* DATE: 6-8-12



GENERAL NOTES, PHASING, ROADWAY STANDARD DRAWINGS FINAL PAVEMENT MARKING SCHEDULE

SCALE: NONE		REVISIONS
DATE: JUNE '12		
DWG. BY: GEP		
DESIGN BY: MTR		
REVIEWED BY: MTR		



SIGN NUMBER: name **BACKG COLOR: Fluorescent Orange**
 TYPE: STATIONARY COPY COLOR: Black
 QUANTITY: SEE PLANS
 SIGN WIDTH: 4'-0"
 HEIGHT: 2'-6"
 TOTAL AREA: 10.0 Sq.Ft.
 BORDER TYPE: RECESS
 RECESS: 0.50"
 WIDTH: 0.75"
 RADII: 1.875"
 NO. Z BARS: MAT'L: 0.080" (2.0 mm) ALUMINUM
 LENGTH:

DESIGN BY: GEP
 PROJECT ID: BD-5105Q
 CHECKED BY: F & H
 DIV: 5
 DATE: Dec 29, 2011

SYMBOL	X	Y	WID	HT

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

GARDNER ROAD

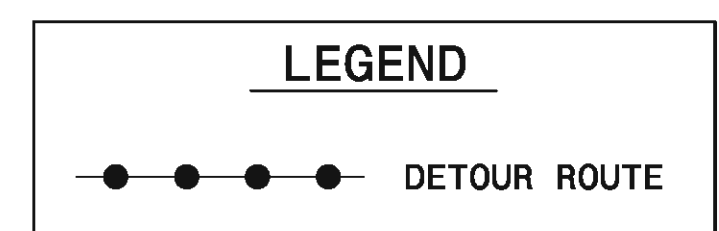
BORDER
 R=1.875"
 TH=0.75"
 IN=0.50"

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter locations are panel edge to lower left corner

G	A	R	D	N	E	R	Series/Size	Text Length
6.2	11	17	22.1	27.5	33	37.8	D 2000	35.7
R	O	A	D				D 2000	20.1
14	18.9	24	30					



APPROVED: *Michael T. Rzepka* DATE: 6-8-12

SEAL

DETOUR FOR GARDNER RD CLOSURE

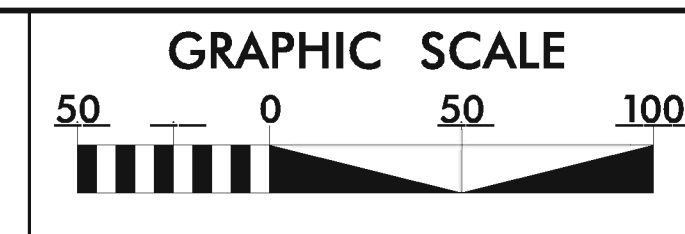
SCALE: NONE
 DATE: JUNE '12
 DWG. BY: GEP
 DESIGN BY: MTR
 REVIEWED BY: MTR

REVISIONS

NO.	DESCRIPTION

CADD FILE

6/15/2012 P:\LIBR\Projects\Div05\BD-5105Q\Traffic\Traffic\CP\bd5105q_tcp_detour.dgn

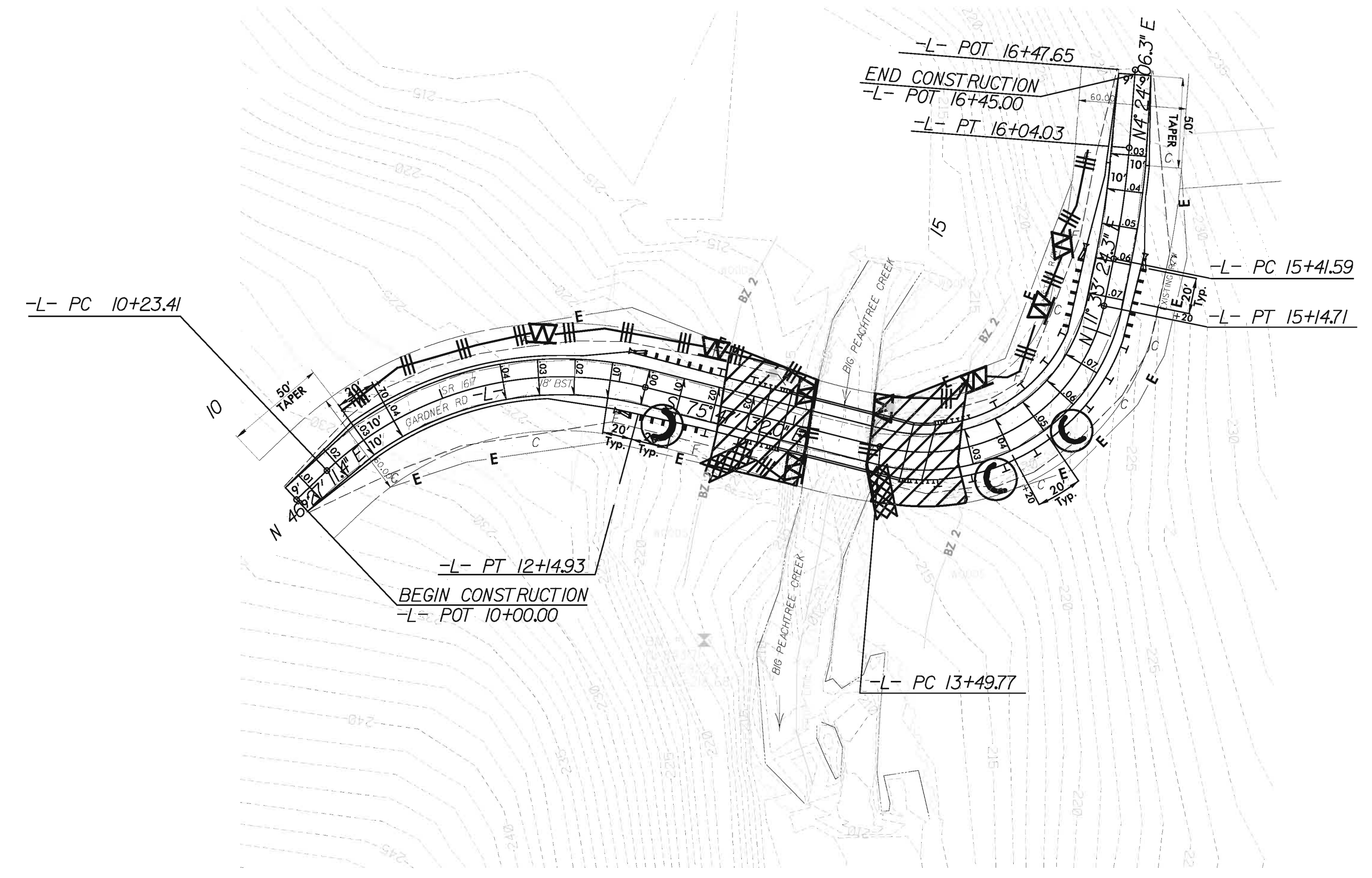


PROJECT REFERENCE NO.	SHEET NO.
BD-51050	EC-1/CONST.4
RW SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
ALEXANDER SNIDER, E.I.
CERTIFICATION NUMBER: 3064
ISSUED: JUNE 27, 2012



**CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4**



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	△△△△△△△△
1633.01	Temporary Rock Silt Check Type-A	XXXXXX
1633.02	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	⊙

ALEXANDER SNIDER, E.I.
ROADSIDE ENVIRONMENTAL ENGINEER
3064
LEVEL III CERTIFICATION NUMBER
TRENTON J. CORMIER, P.E.
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER
118
LEVEL III CERTIFICATION NUMBER

 ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING RW OR EASEMENT.

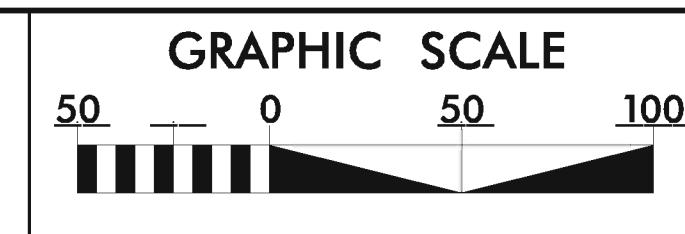
THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared in the Office of:
FLORENCE & HUTCHESON
5121 KINGDOM WAY, SUITE 100
RALEIGH NC 27607
NC License No: F-0258
2012 STANDARD SPECIFICATIONS

- Roadway Standard Drawings**
- The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.
- | | |
|--|--|
| 1604.01 Railroad Erosion Control Detail | 1632.01 Rock Inlet Sediment Trap Type A |
| 1605.01 Temporary Silt Fence | 1632.02 Rock Inlet Sediment Trap Type B |
| 1606.01 Special Sediment Control Fence | 1632.03 Rock Inlet Sediment Trap Type C |
| 1607.01 Gravel Construction Entrance | 1633.01 Temporary Rock Silt Check Type A |
| 1622.01 Temporary Berms and Slope Drains | 1633.02 Temporary Rock Silt Check Type B |
| 1630.01 Riser Basin | 1634.01 Temporary Rock Sediment Dam Type A |
| 1630.02 Silt Basin Type B | 1634.02 Temporary Rock Sediment Dam Type B |
| 1630.03 Temporary Silt Ditch | 1635.01 Rock Pipe Inlet Sediment Trap Type A |
| 1630.04 Stilling Basin | 1635.02 Rock Pipe Inlet Sediment Trap Type B |
| 1630.05 Temporary Diversion | 1640.01 Coir Fiber Baffle |
| 1630.06 Special Stilling Basin | 1645.01 Temporary Stream Crossing |
| 1631.01 Matting Installation | |



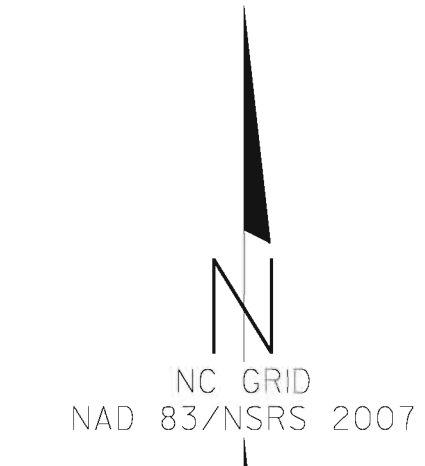
6/27/2012 R:\Hydro\Projects\Erosion_Control\cadd\bd51050\eq_hyd_ercoston_cs.g.dgn K. & Associates, P.C.



PROJECT REFERENCE NO. BD-51050 SHEET NO. EC-2/CONST.4
 RW SHEET NO. _____
 ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

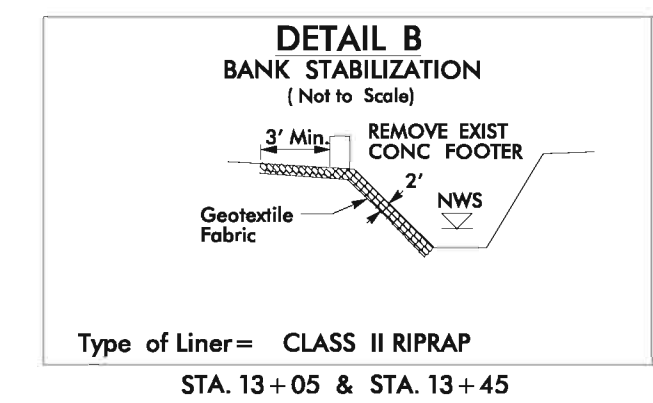
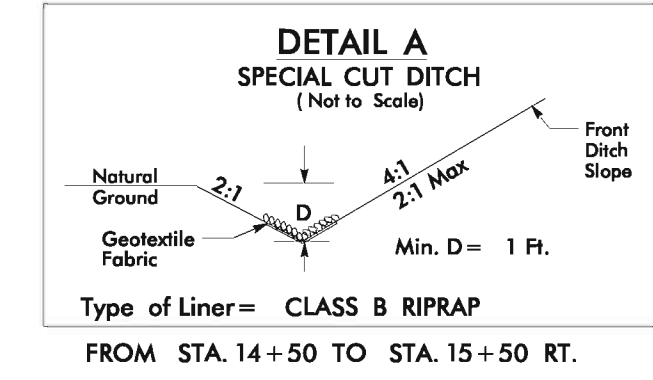
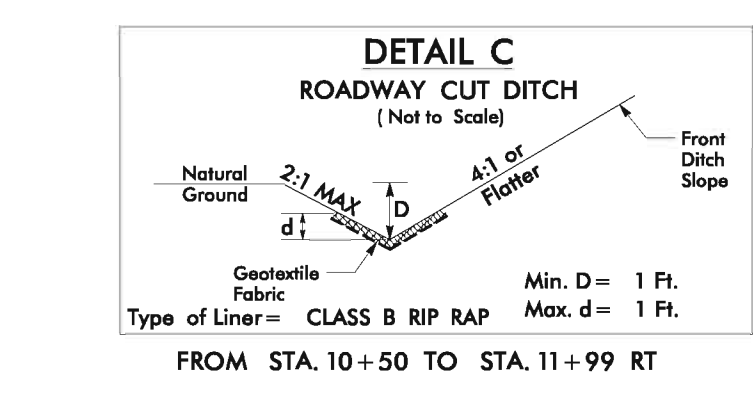
LEVEL III CERTIFIED BY:
 ALEXANDER SNIDER, E.I.
 CERTIFICATION NUMBER: 3064
 ISSUED: JUNE 27, 2012

FINAL EROSION CONTROL FOR
 CONSTRUCTION SHEET 4

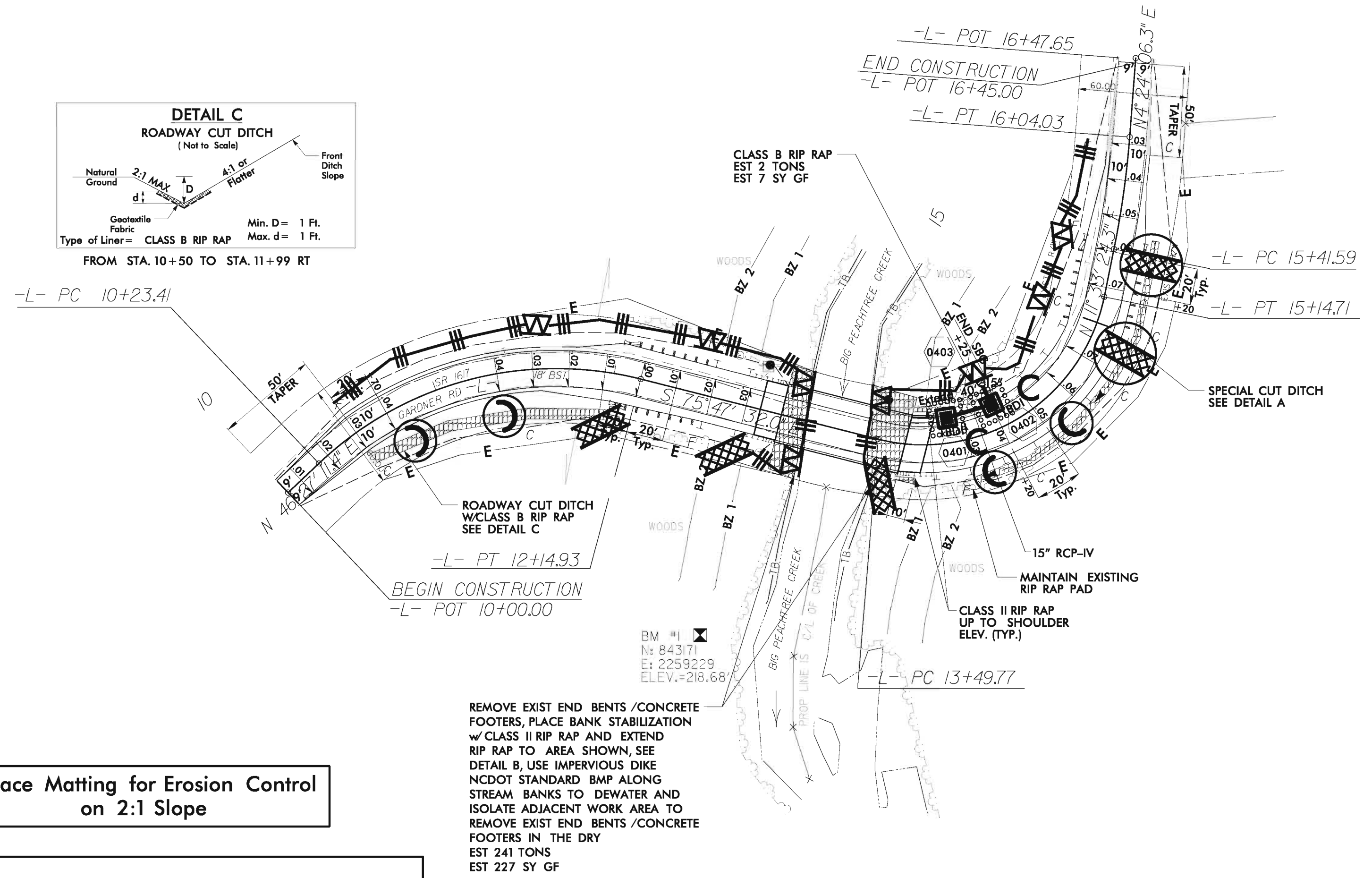


EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	~ ~ ~ ~ ~
1632.03	Rock Inlet Sediment Trap: Type C	C
1633.01	Temporary Rock Silt Check Type-A	⊗
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	⊗
1635.02	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	⊂



NOTE:
 EXTEND BANK STABILIZATION UP TO THE SHOULDER ELEVATIONS
 RIGHT TO STA. 13+70 AND LEFT TO STA. 14+20.



Place Matting for Erosion Control
 on 2:1 Slope

Contractor will install impervious dike to
 dewater both streambanks to allow for removal of
 existing concrete footers in the dry
 Use "NCDOT Best Management Practices" manual
 for isolation and dewatering operations

REMOVE EXIST END BENTS /CONCRETE
 FOOTERS, PLACE BANK STABILIZATION
 w/ CLASS II RIP RAP AND EXTEND
 RIP RAP TO AREA SHOWN, SEE
 DETAIL B, USE IMPERVIOUS DIKE
 NCDOT STANDARD BMP ALONG
 STREAM BANKS TO DEWATER AND
 ISOLATE ADJACENT WORK AREA TO
 REMOVE EXIST END BENTS /CONCRETE
 FOOTERS IN THE DRY
 EST 241 TONS
 EST 227 SY GF

NOTE: IMPERVIOUS DIKE SHALL BE
 CONSIDERED INCIDENTAL TO THE
 REMOVAL OF THE EXISTING STRUCTURE.

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:
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2012 STANDARD SPECIFICATIONS

Roadway Standard Drawings

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

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

NOTE:
 ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED
 WITHIN EXISTING RW OR EASEMENT.

ALEXANDER SNIDER, E.I.
 ROADSIDE ENVIRONMENTAL ENGINEER
 3064
 LEVEL III CERTIFICATION NUMBER
 TRENTON J. CORMIER, P.E.
 ROADSIDE ENVIRONMENTAL PROJECT ENGINEER
 118
 LEVEL III CERTIFICATION NUMBER



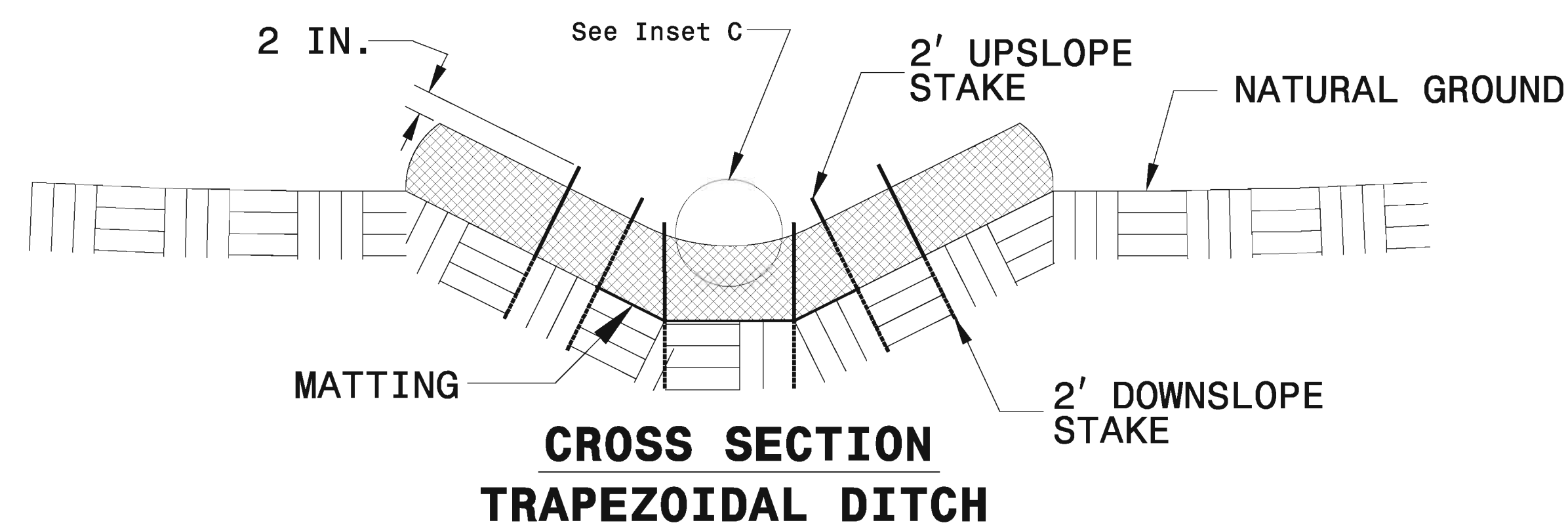
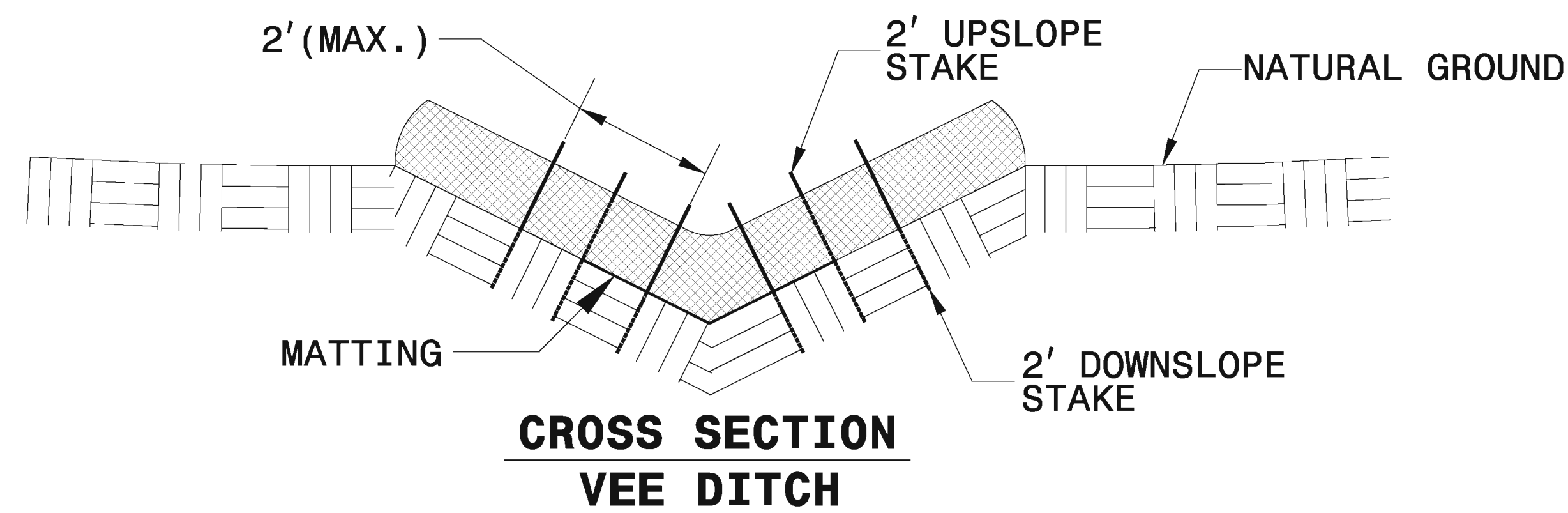
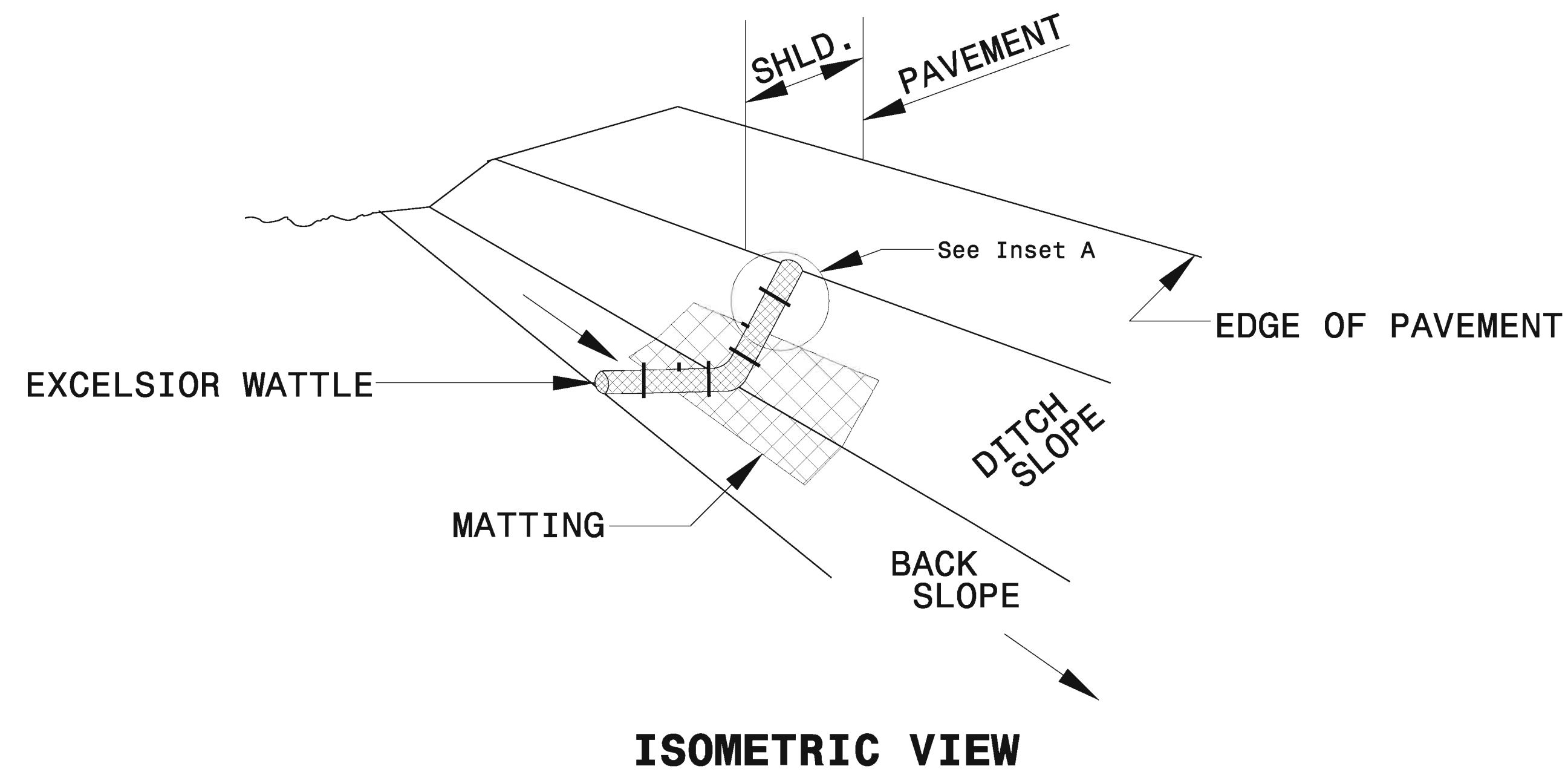
6/27/2012 R:\Hydro\Projects\Erosion_Control\ecadd\ecadd105eq_hyd_erosion_fm.dgn K. & Associates, P.C.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

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

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

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

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

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

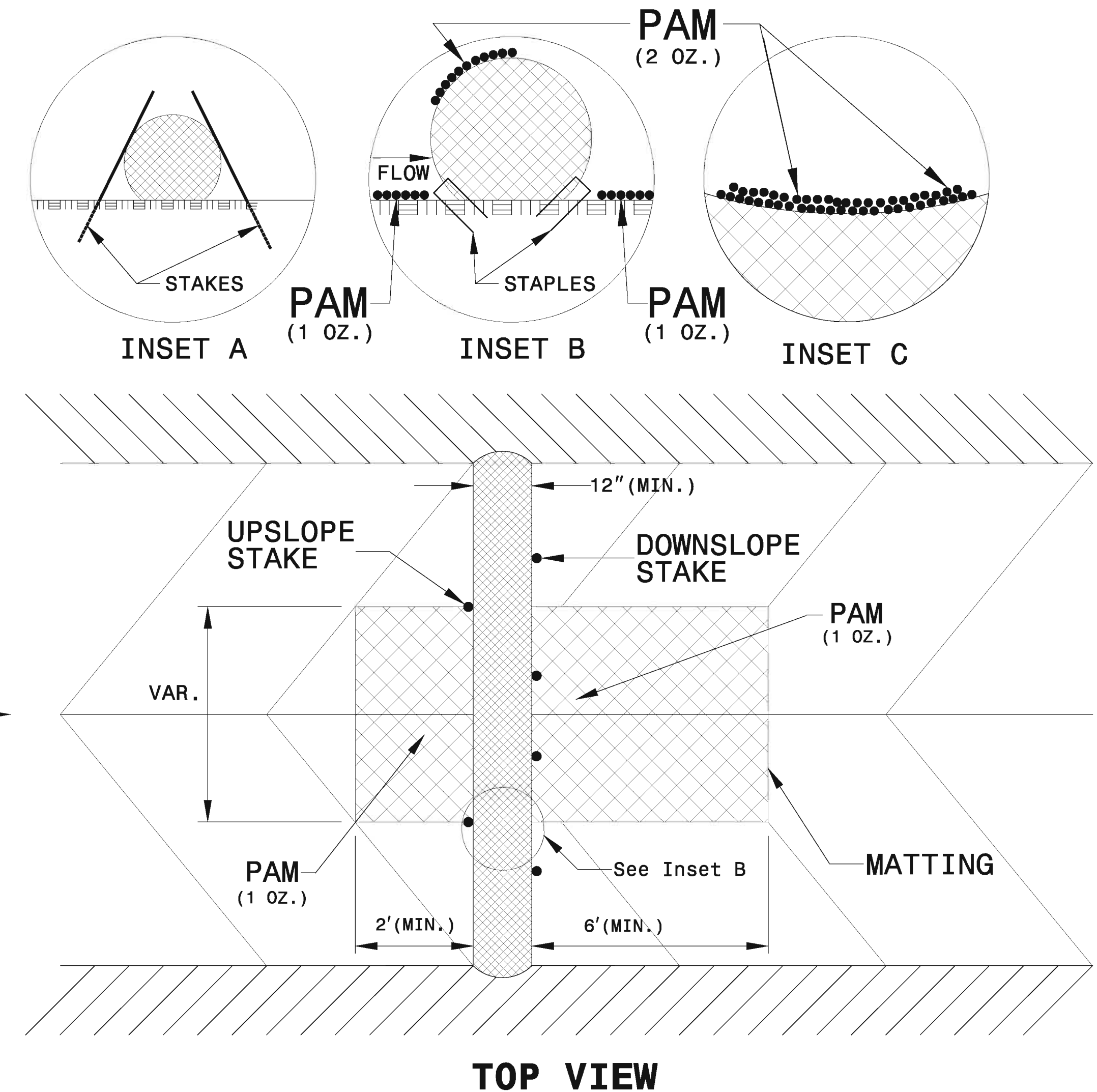
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

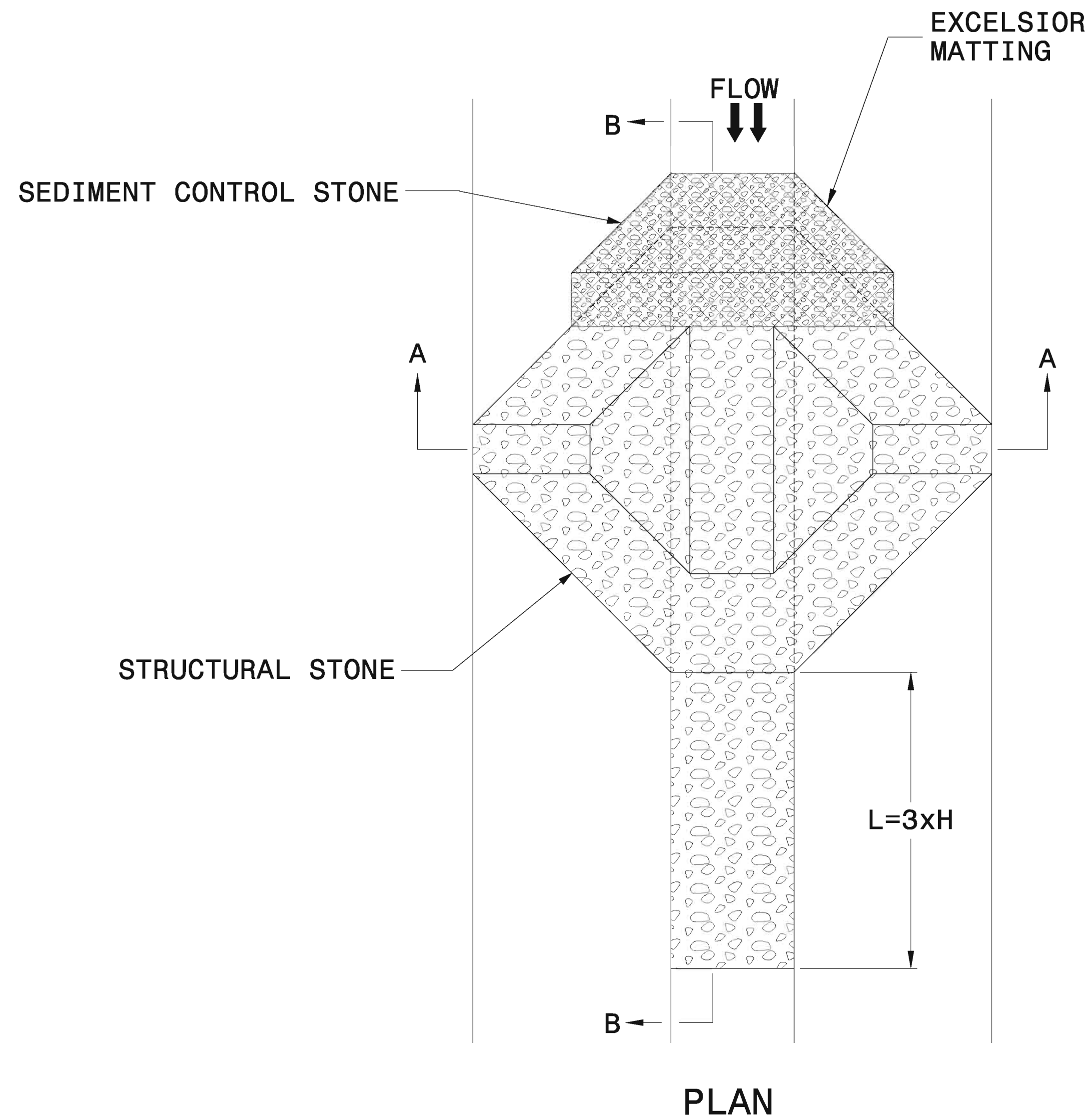
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

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

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



TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)

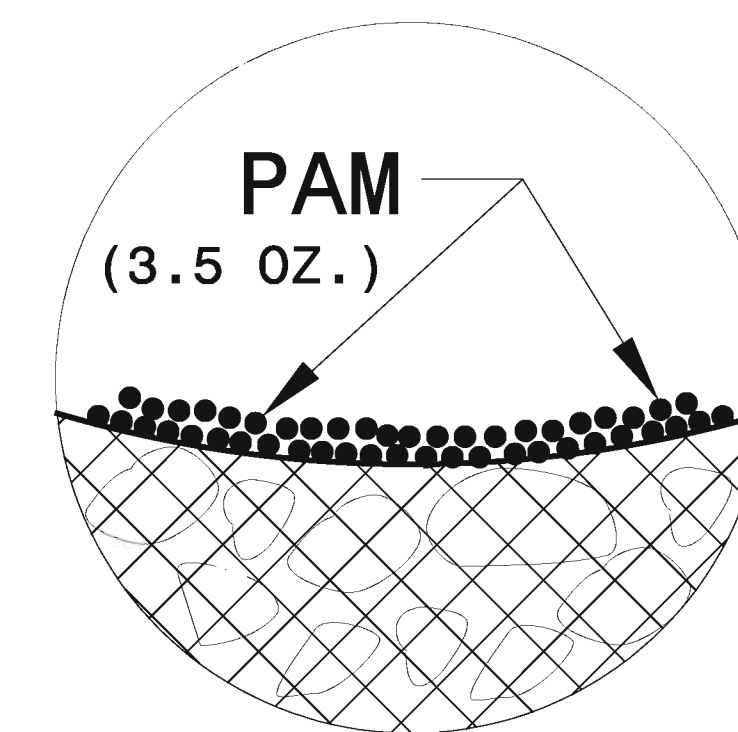


NOTES

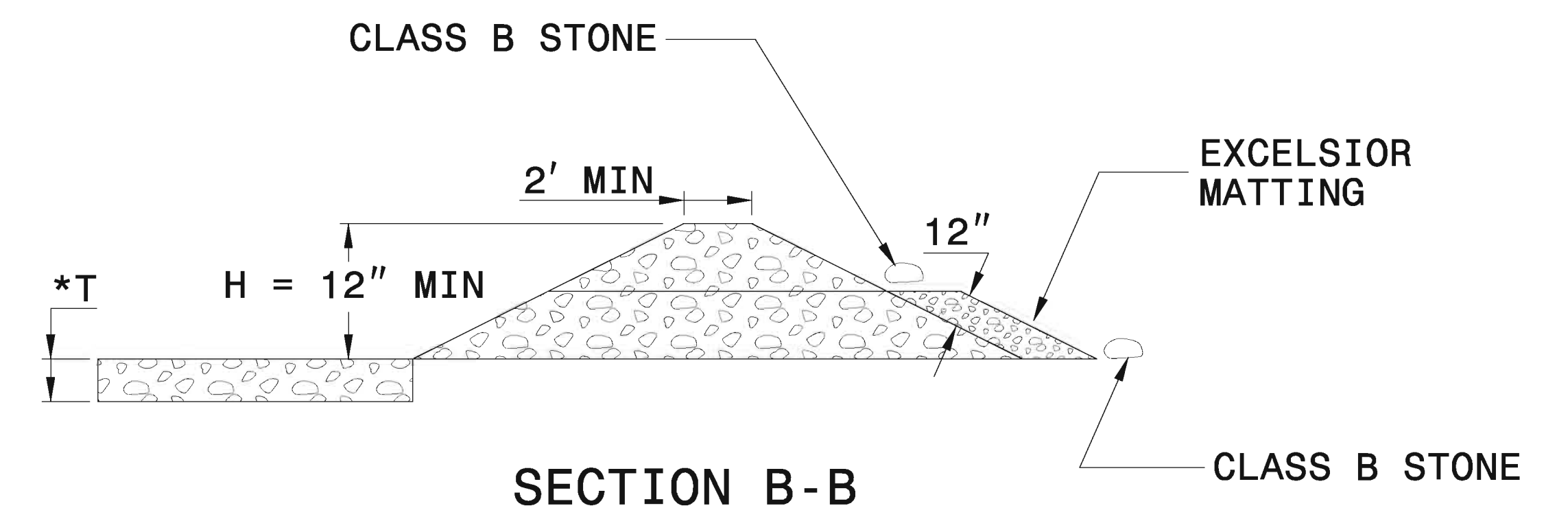
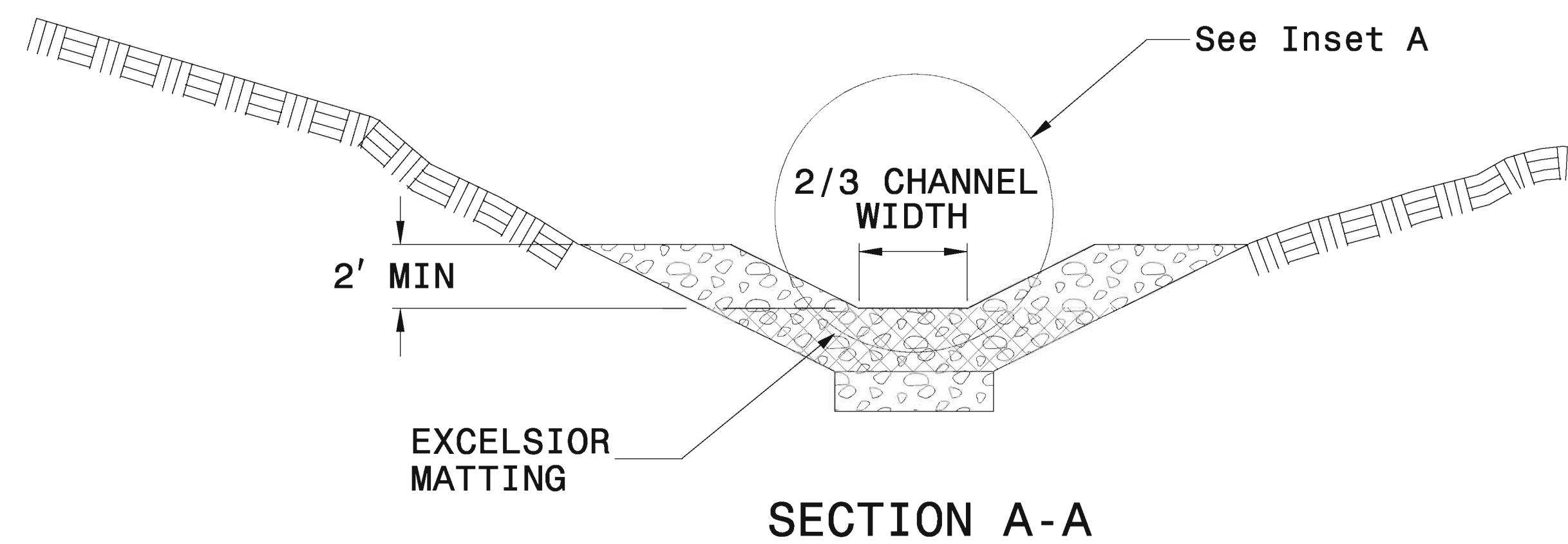
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

INITIALLY APPLY 3.5 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



*T = 12" MIN., 18" MAX.

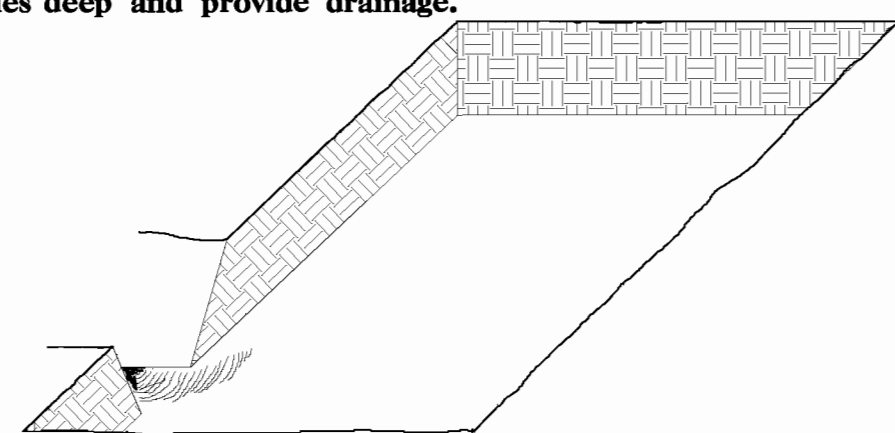
NOT TO SCALE

PLANTING DETAILS

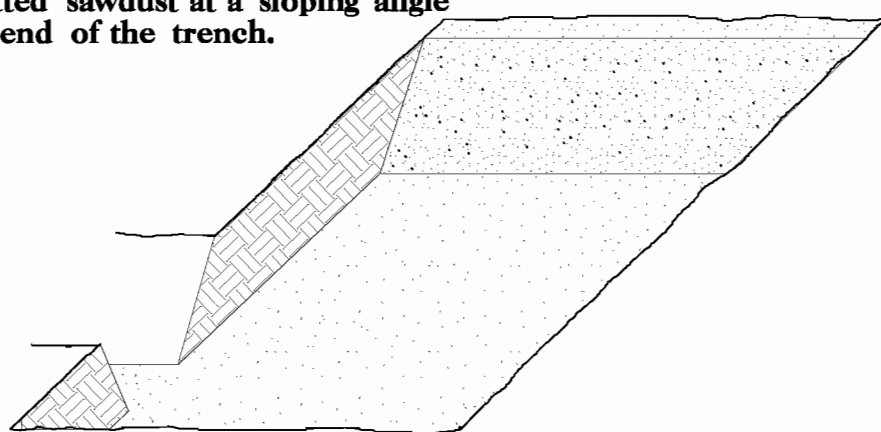
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

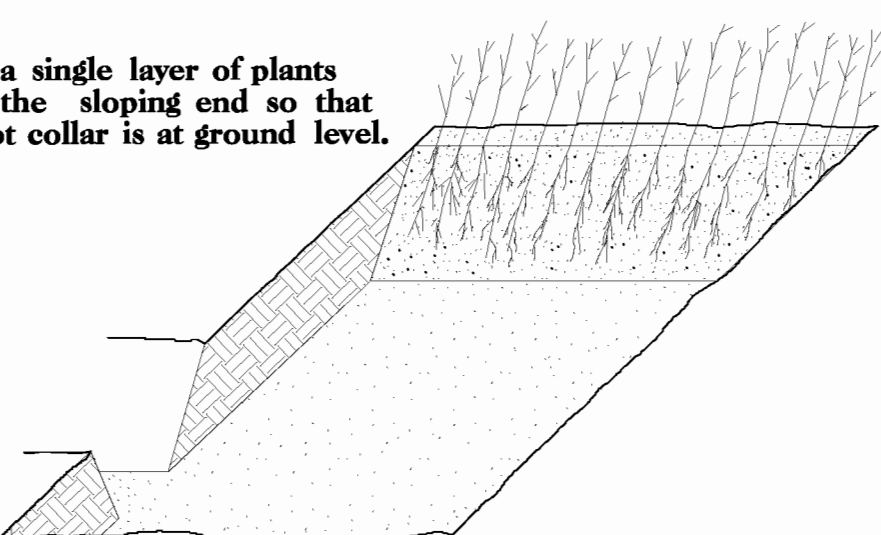
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



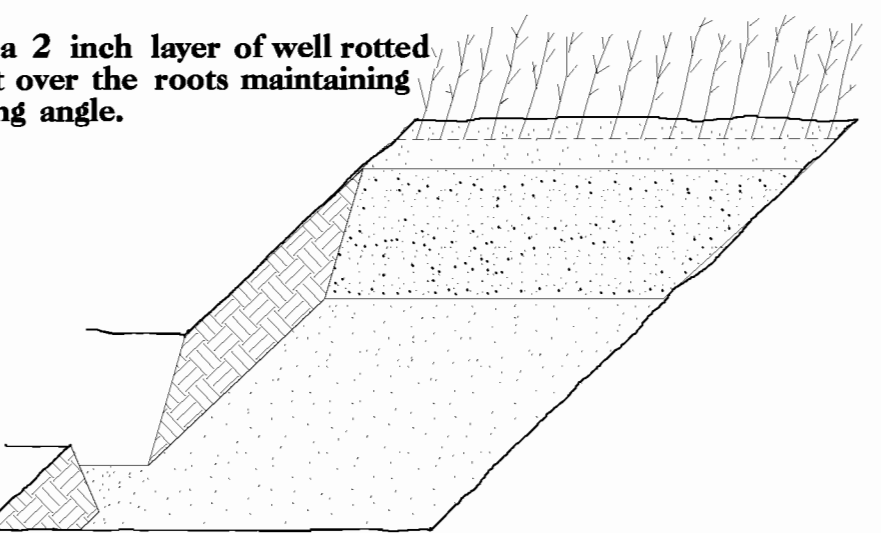
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

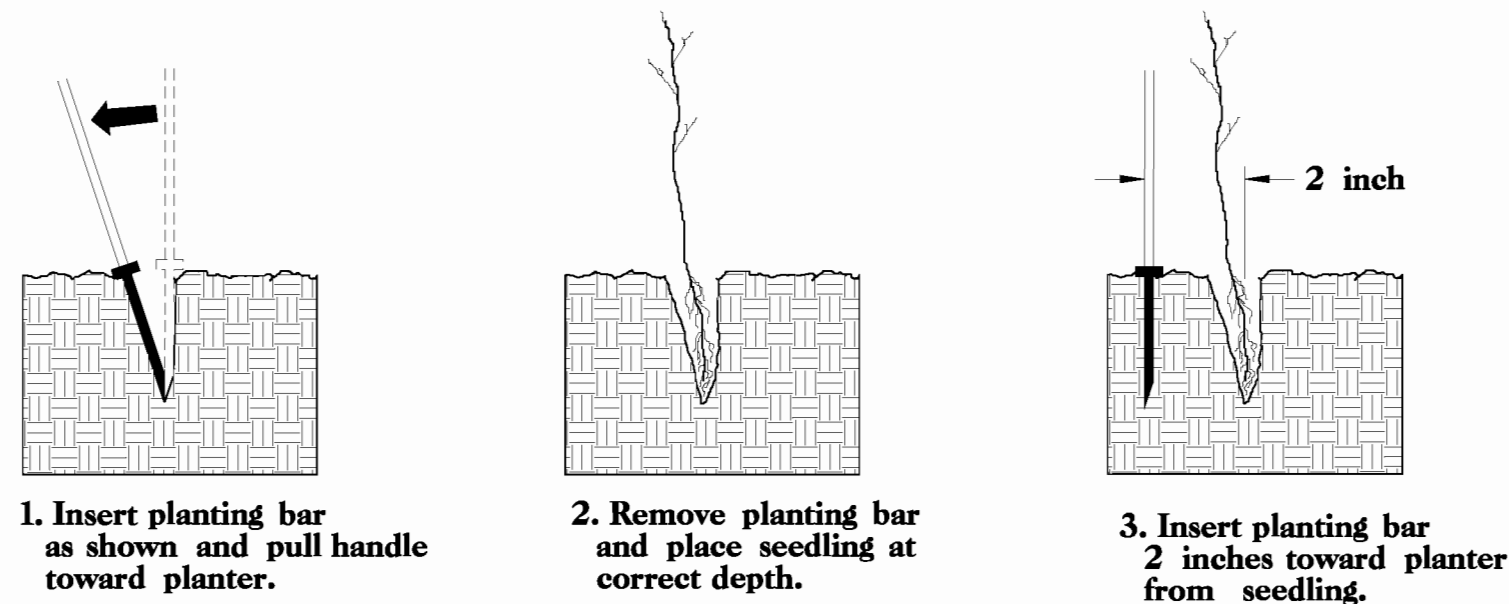


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

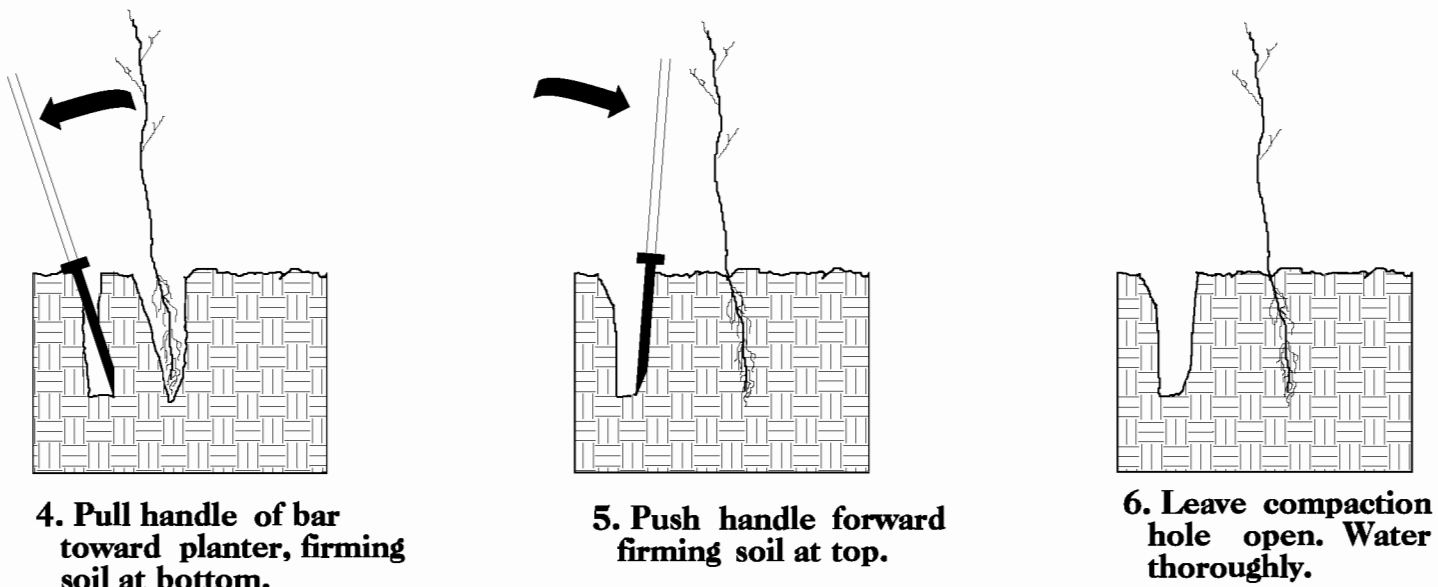


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



1. Insert planting bar as shown and pull handle toward planter.
2. Remove planting bar and place seedling at correct depth.
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.
5. Push handle forward firming soil at top.
6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.



KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION FOR BUFFERS

- TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

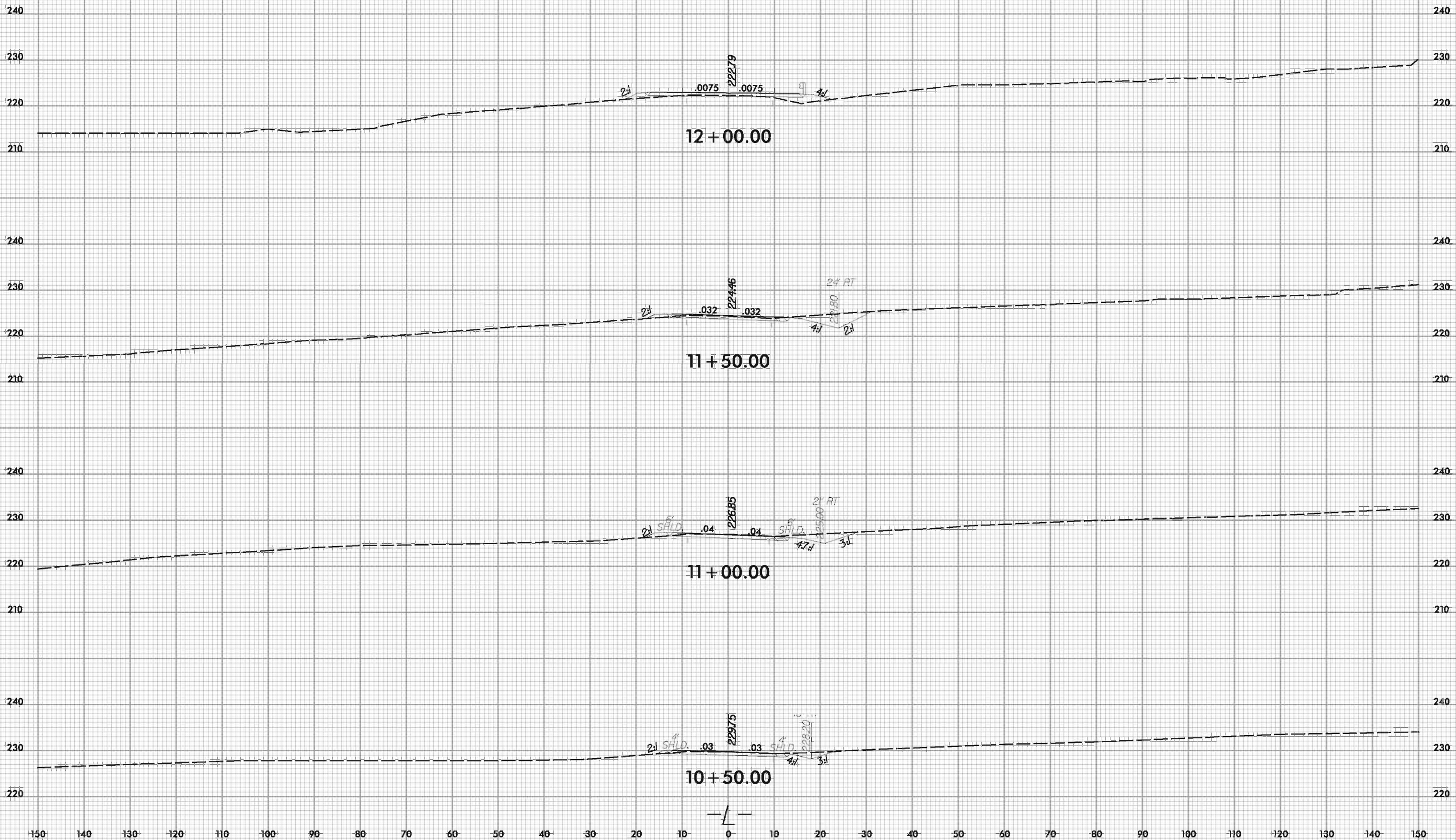
MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

25% LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
25% PLATANUS OCCIDENTALIS	SYCAMORE	12 in - 18 in BR
25% FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in BR
25% BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

REFORESTATION DETAIL SHEET

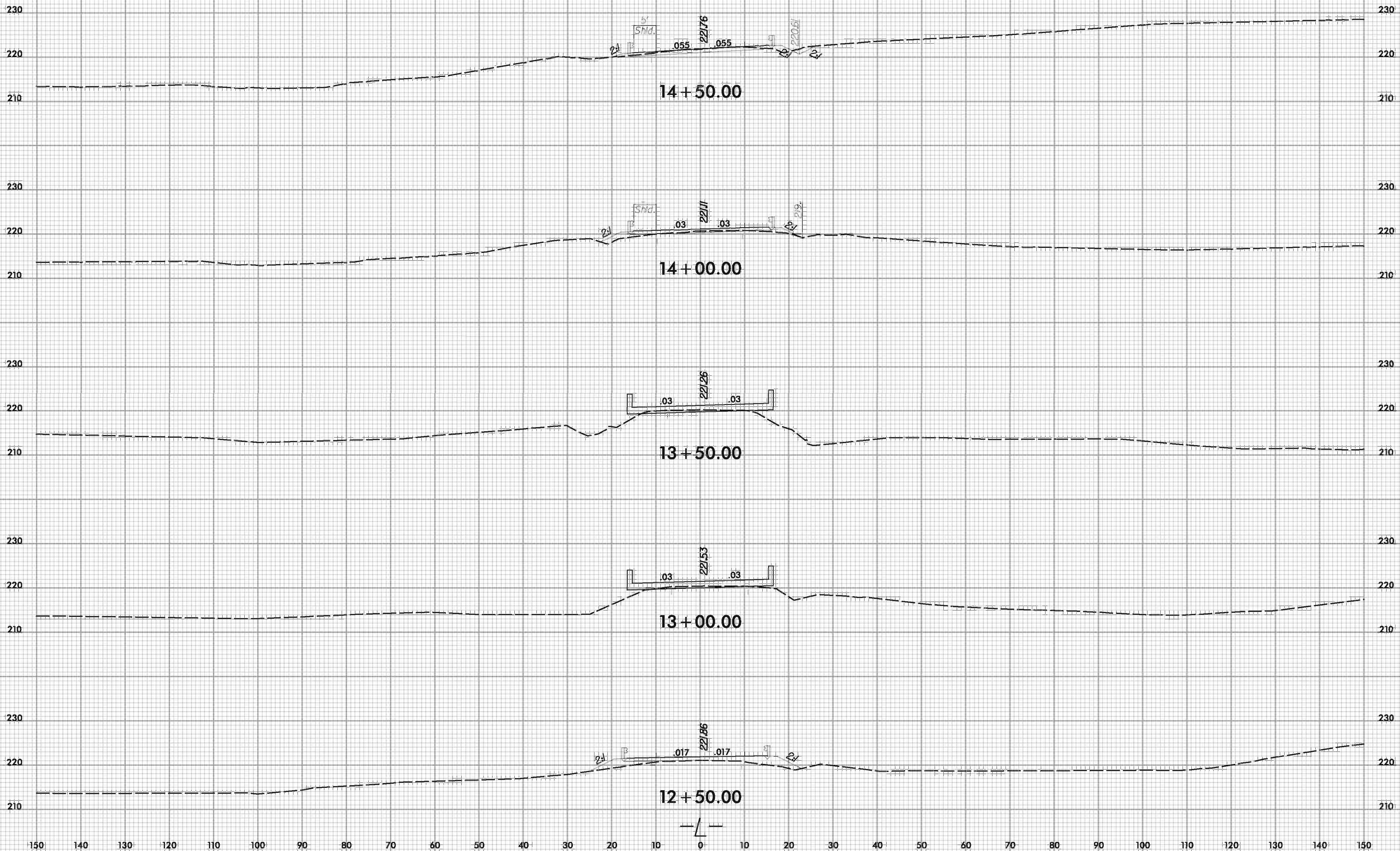
N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

8/23/98



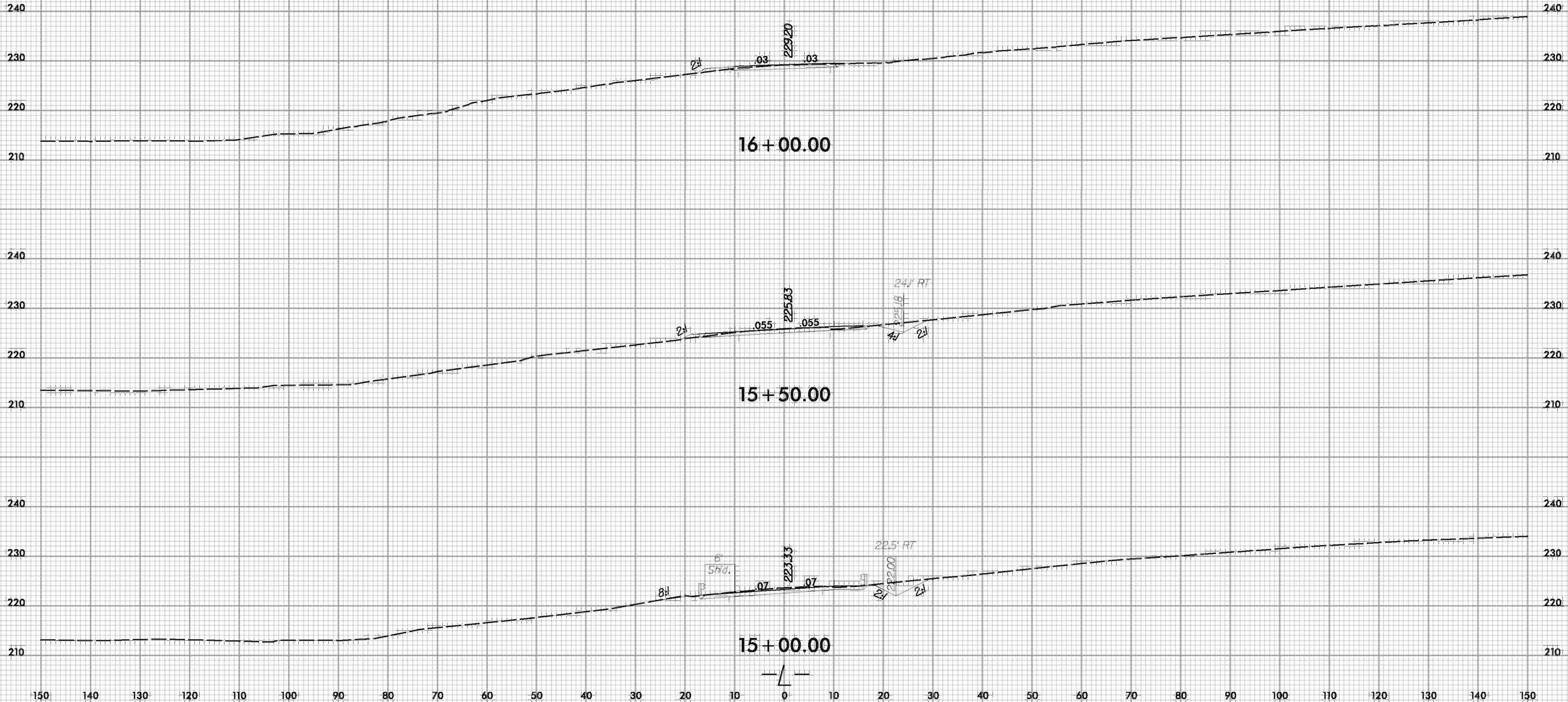
SYSTEM MESSAGE

8/23/98

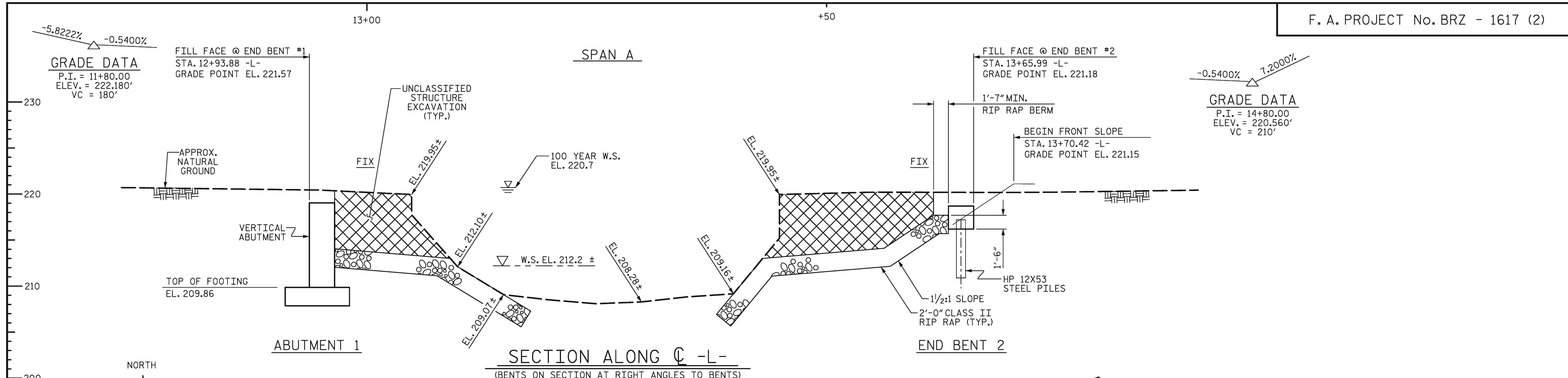


SYSTEMS INCORPORATED
1000 W. 10TH AVENUE
DENVER, CO 80202

8/23/98

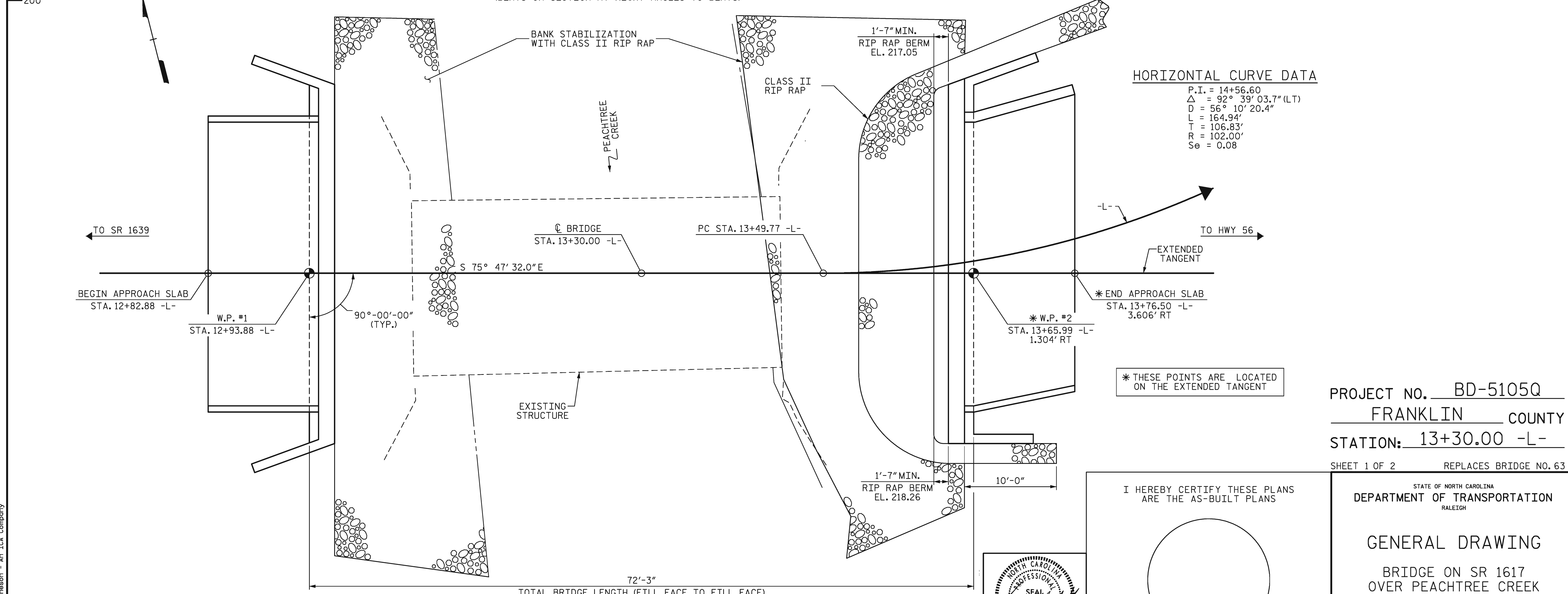


SYSTEM MESSAGE
CONSULT THE DRAWING FOR ALL DIMENSIONS AND NOTES



HORIZONTAL CURVE DATA

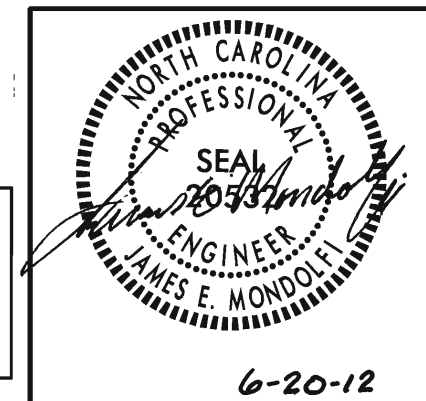
P.I. = 14+56.60
 $\Delta = 92^\circ 39' 03.7''$ (LT)
 D = 56° 10' 20.4"
 L = 164.94'
 T = 106.83'
 R = 102.00'
 Se = 0.08



6/26/2012 10:48:00 AM C:\Users\jgilland\Documents\Florence & Hutcheson - An ICA Company\Projects\1617\BRZ-1617\Drawings\1617-1617-02-01.dwg

DRAWN BY : G. M. GILLAND DATE : 5/12
 CHECKED BY : J. E. MONDOLFI DATE : 5/12

Florence & Hutcheson
 An ICA Company
 5121 Kingsgate Way, Suite 100 Raleigh, NC 27607
 NC License No. F-0958



I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. BD-5105Q
FRANKLIN COUNTY
 STATION: 13+30.00 -L-
 SHEET 1 OF 2 REPLACES BRIDGE NO. 63

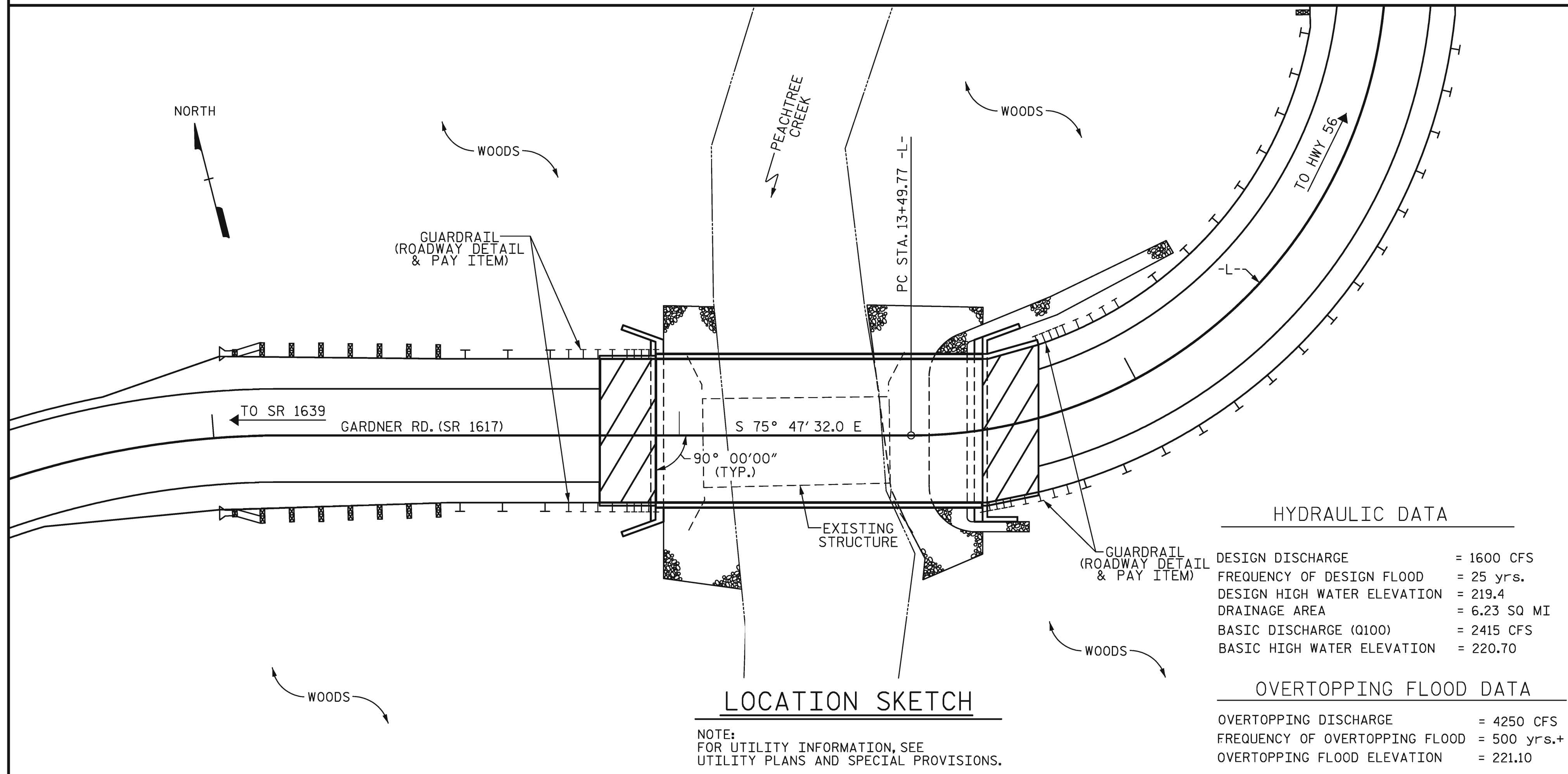
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

BRIDGE ON SR 1617
 OVER PEACHTREE CREEK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			17

BENCH MARK : BL-2, STA. 12+95 -L-, 3.82' LT



LOCATION SKETCH

NOTE:
FOR UTILITY INFORMATION, SEE
UTILITY PLANS AND SPECIAL PROVISIONS.

HYDRAULIC DATA

DESIGN DISCHARGE	= 1600 CFS
FREQUENCY OF DESIGN FLOOD	= 25 yrs.
DESIGN HIGH WATER ELEVATION	= 219.4
DRAINAGE AREA	= 6.23 SQ MI
BASIC DISCHARGE (Q100)	= 2415 CFS
BASIC HIGH WATER ELEVATION	= 220.70

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 4250 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 500 yrs.+
OVERTOPPING FLOOD ELEVATION	= 221.10

NOTES

- ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
- THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
- 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 THEM 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 IN THE CROSS HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 30 FEET EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AS "UNCLASSIFIED STRUCTURE EXCAVATION", LUMP SUM.
- THE LOWER LIMIT OF THE UNCLASSIFIED STRUCTURE EXCAVATION IS APPROXIMATE ELEVATION 212.0 IN THE CHANNEL.
- THE EXISTING STRUCTURE CONSISTING OF ONE, 40.5' STEEL I-BEAM SPAN; 2 1/2" ASPHALT WEARING SURFACE ON TIMBER FLOOR ON TIMBER END BENT CAPS ON TIMBER PILES LOCATED ON THE PROPOSED ALIGNMENT SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.
- 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.
- THE SPREAD FOOTING AT END BENT NO.1 IS DESIGNED FOR A FACTORED RESISTANCE OF 10 TSF, CHECK FIELD CONDITIONS FOR THE REQUIRED RESISTANCE OR 15 TSF JUST BEFORE PLACING CONCRETE.
- CARRY IN SPREAD FOOTING AT END BENT NO.1 AT LEAST 12" INTO ROCK WITH MINIMUM THICKNESS AS SHOWN ON THE PLANS.
- FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- PILES AT END BENT NO. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 81 TONS PER PILE.
- DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 135 TONS PER PILE.
- STEEL H PILE POINTS ARE REQUIRED FOR STEEL H PILES AT END BENT NO. 2. FOR STEEL PILE POINTS, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
- ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES", MAY, 2001.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR VERTICAL CONCRETE BARRIER RAIL, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR BRIDGE APPROACH FILLS, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	FOUNDATION EXCAVATION FOR END BENT 1 AT STA. 13+30.00	BRIDGE APPROACH FILL SUBREGIONAL TIER	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 STEEL PILES	STEEL PILE POINTS	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLAB UNITS		
	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	NO.	LN. FT.	NO.	LN. FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LN. FT.
SUPERSTRUCTURE	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM										LUMP SUM	11	770
END BENT NO. 1					68.8		10,083									
END BENT NO. 2					14.8		2,169	7	70	7	12.53	124	140			
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	83.6	LUMP SUM	12,252	7	70	7	152.83	124	140	LUMP SUM	11	770

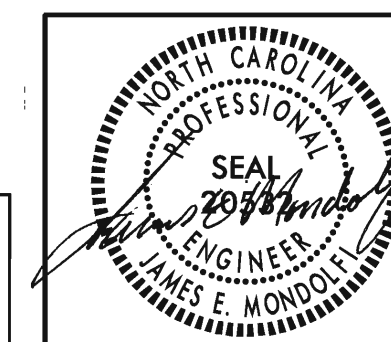
PROJECT NO. BD-5105Q
FRANKLIN COUNTY
 STATION: 13+30.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

BRIDGE ON SR 1617
 OVER PEACHTREE CREEK



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			17

DRAWN BY : G. M. GILLAND DATE : 5/12
 CHECKED BY : J. E. MONDOLFI DATE : 5/12

7/3/2012 1:38:11 PM C:\Users\jgilland\Documents\Projects\BD-5105Q\Drawings\BD-5105Q.dwg
 J. E. Mondolfi, Professional Engineer, State of North Carolina, License No. 10000

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			
						MOMENT					SHEAR					MOMENT								
						LIVELOAD FACTORS	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)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.006	--	1.75	0.273	1.03	70'	EL	34.5	0.507	1.32	70'	EL	6.9	0.80	0.273	1.01	70'	EL	34.5		
	HL-93(0pr)	N/A	--	1.341	--	1.35	0.273	1.34	70'	EL	34.5	0.507	1.72	70'	EL	6.9	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.306	47.02	1.75	0.273	1.34	70'	EL	34.5	0.507	1.65	70'	EL	6.9	0.80	0.273	1.31	70'	EL	34.5		
	HS-20(0pr)	36.000	--	1.74	62.64	1.35	0.273	1.74	70'	EL	34.5	0.507	2.14	70'	EL	6.9	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.917	39.379	1.4	0.273	3.75	70'	EL	34.5	0.507	4.87	70'	EL	6.9	0.80	0.273	2.92	70'	EL	34.5	
		SNGARBS2	20.000	--	2.187	43.741	1.4	0.273	2.81	70'	EL	34.5	0.507	3.47	70'	EL	6.9	0.80	0.273	2.19	70'	EL	34.5	
		SNAGRIS2	22.000	--	2.077	45.69	1.4	0.273	2.67	70'	EL	34.5	0.507	3.23	70'	EL	6.9	0.80	0.273	2.08	70'	EL	34.5	
		SNCOTTS3	27.250	--	1.452	39.565	1.4	0.273	1.87	70'	EL	34.5	0.507	2.43	70'	EL	6.9	0.80	0.273	1.45	70'	EL	34.5	
		SNAGGRS4	34.925	--	1.218	42.554	1.4	0.273	1.57	70'	EL	34.5	0.507	2.03	70'	EL	6.9	0.80	0.273	1.22	70'	EL	34.5	
		SNS5A	35.550	--	1.191	42.346	1.4	0.273	1.53	70'	EL	34.5	0.507	2.06	70'	EL	6.9	0.80	0.273	1.19	70'	EL	34.5	
		SNS6A	39.950	--	1.095	43.747	1.4	0.273	1.41	70'	EL	34.5	0.507	1.88	70'	EL	6.9	0.80	0.273	1.10	70'	EL	34.5	
	SNS7B	42.000	--	1.043	43.801	1.4	0.273	1.34	70'	EL	34.5	0.507	1.85	70'	EL	6.9	0.80	0.273	1.04	70'	EL	34.5		
	TTST	TNAGRIT3	33.000	--	1.336	44.087	1.4	0.273	1.72	70'	EL	34.5	0.507	2.23	70'	EL	6.9	0.80	0.273	1.34	70'	EL	34.5	
		TNT4A	33.075	--	1.342	44.401	1.4	0.273	1.72	70'	EL	34.5	0.507	2.17	70'	EL	6.9	0.80	0.273	1.34	70'	EL	34.5	
		TNT6A	41.600	--	1.1	45.746	1.4	0.273	1.41	70'	EL	34.5	0.507	1.98	70'	EL	6.9	0.80	0.273	1.10	70'	EL	34.5	
		TNT7A	42.000	--	1.106	46.462	1.4	0.273	1.42	70'	EL	34.5	0.507	1.94	70'	EL	6.9	0.80	0.273	1.11	70'	EL	34.5	
		TNT7B	42.000	--	1.147	48.18	1.4	0.273	1.47	70'	EL	34.5	0.507	1.8	70'	EL	6.9	0.80	0.273	1.15	70'	EL	34.5	
		TNAGRIT4	43.000	--	1.089	46.838	1.4	0.273	1.4	70'	EL	34.5	0.507	1.74	70'	EL	6.9	0.80	0.273	1.09	70'	EL	34.5	
TNAGT5A		45.000	--	1.026	46.175	1.4	0.273	1.32	70'	EL	34.5	0.507	1.74	70'	EL	6.9	0.80	0.273	1.03	70'	EL	34.5		
TNAGT5B	45.000	3	1.013	45.579	1.4	0.273	1.3	70'	EL	34.5	0.507	1.66	70'	EL	6.9	0.80	0.273	1.01	70'	EL	34.5			

LOAD FACTORS:

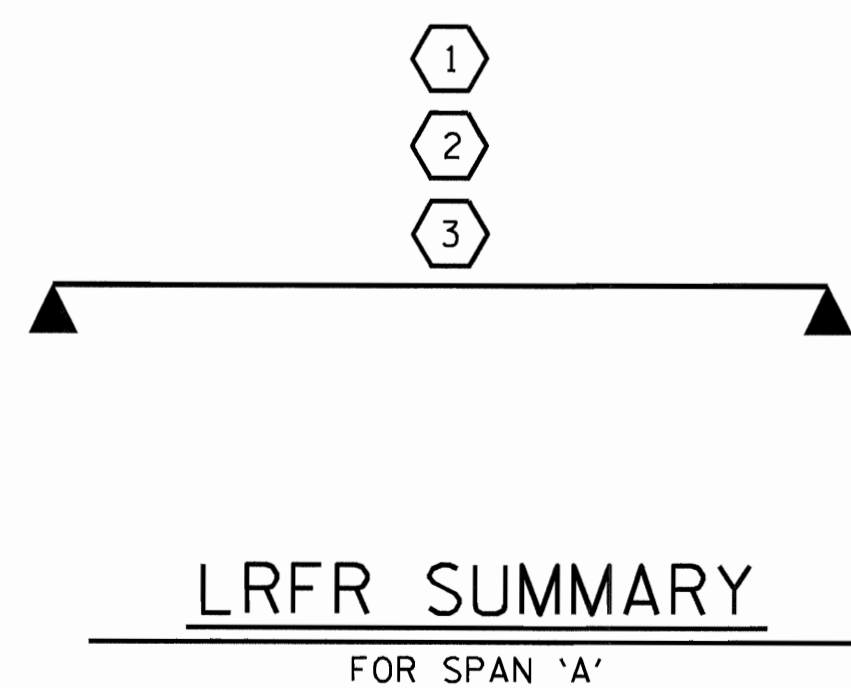
DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{DW}
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

NOTES:

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

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

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



PROJECT NO. BD-5105Q
FRANKLIN COUNTY
 STATION: 13+30.00 -L-

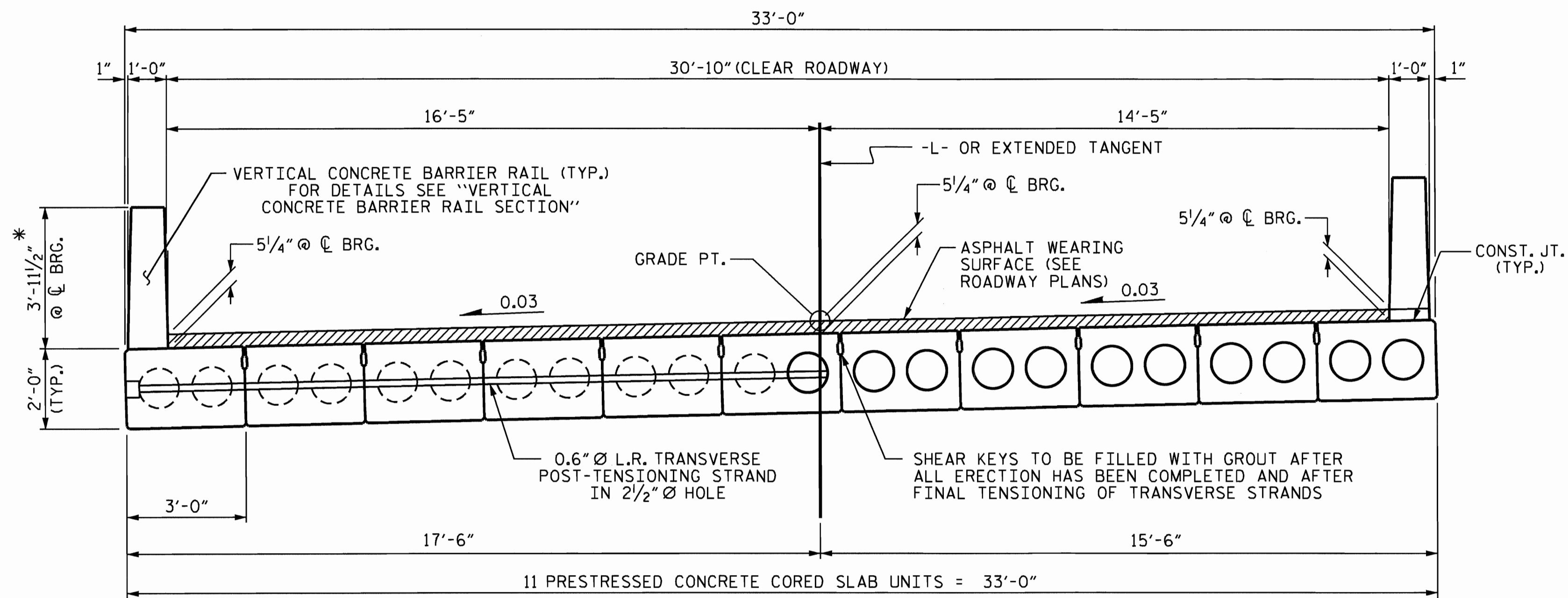


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 LRFR SUMMARY FOR
 70' CORED SLAB UNIT
 90° SKEW
 (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			17

ASSEMBLED BY : A.C. OUTLAW DATE : 2/21/12
 CHECKED BY : K. W. ALFORD DATE : 3/12
 DRAWN BY : CVC 6/10
 CHECKED BY : DNS 6/10

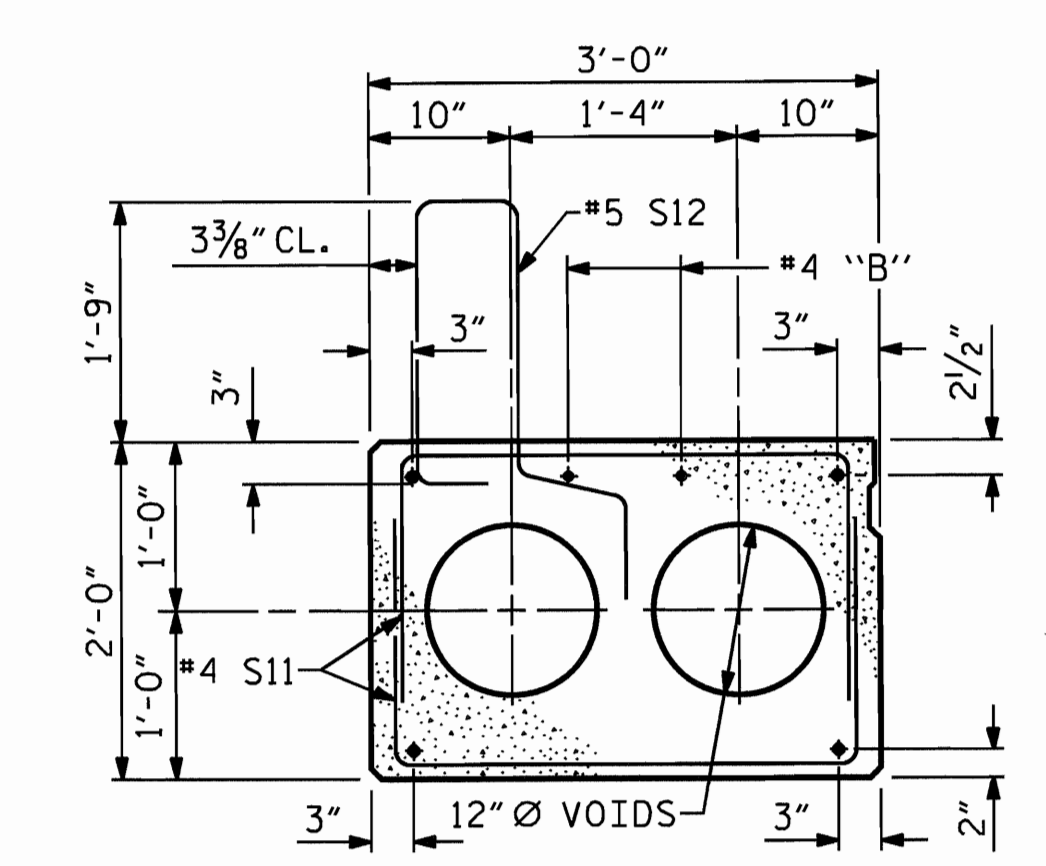


HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

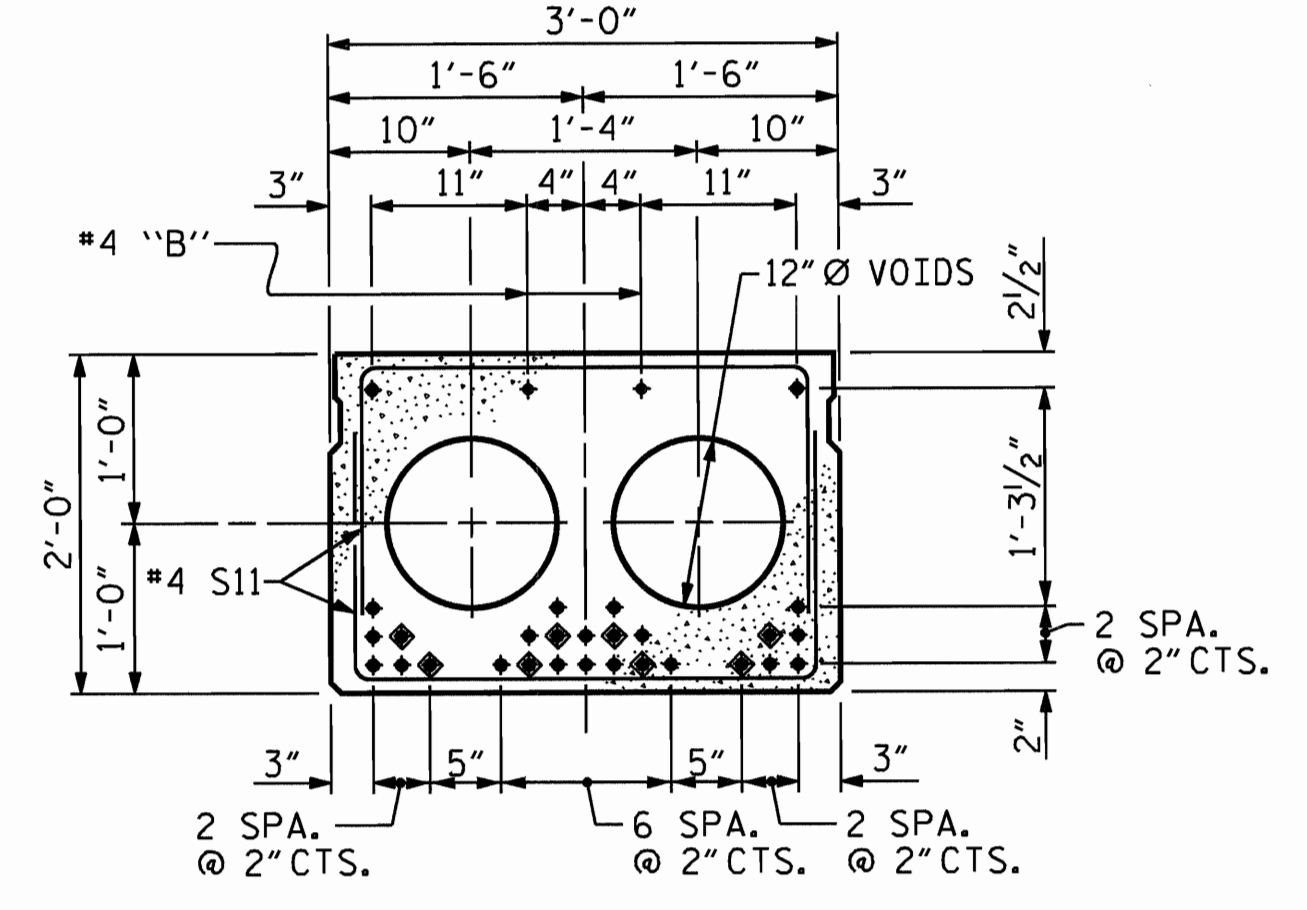
HALF SECTION
THROUGH VOIDS

TYPICAL SECTION

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



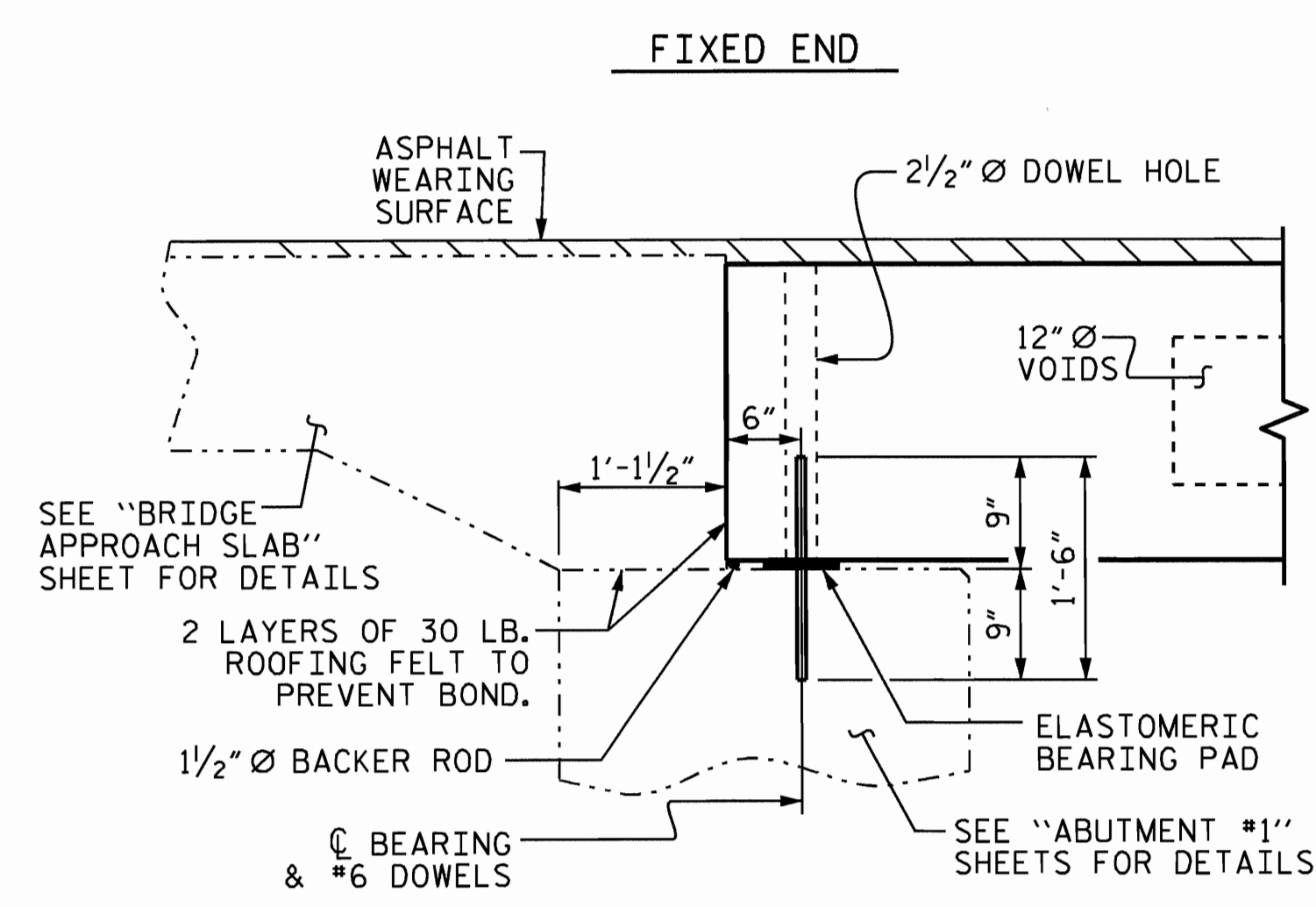
EXTERIOR SLAB SECTION
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



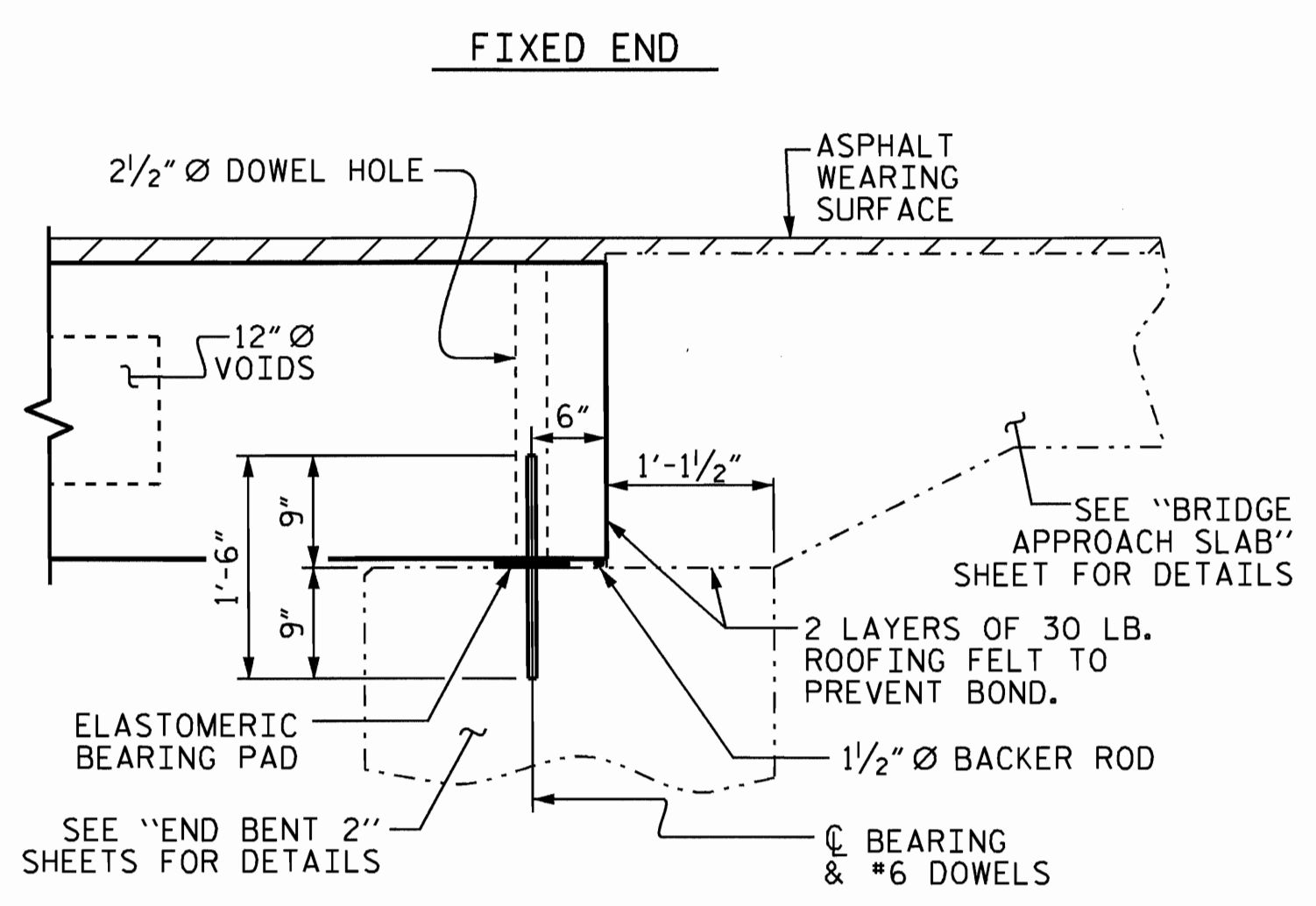
INTERIOR SLAB SECTION (70' UNIT)
(28 STRANDS REQUIRED)
0.6" Ø LOW RELAXATION STRAND LAYOUT

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

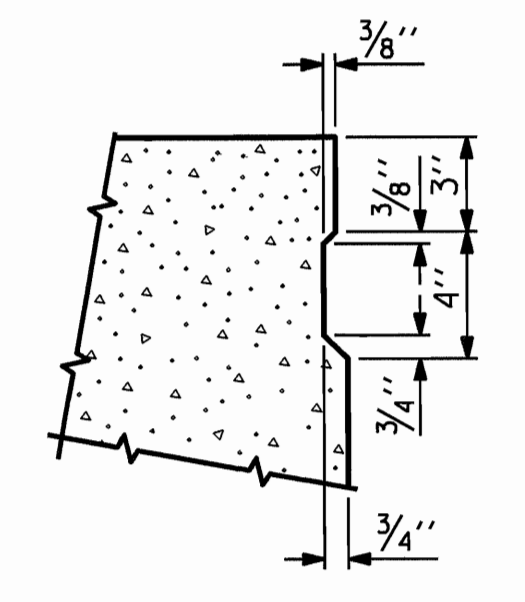
DEBONDING LEGEND



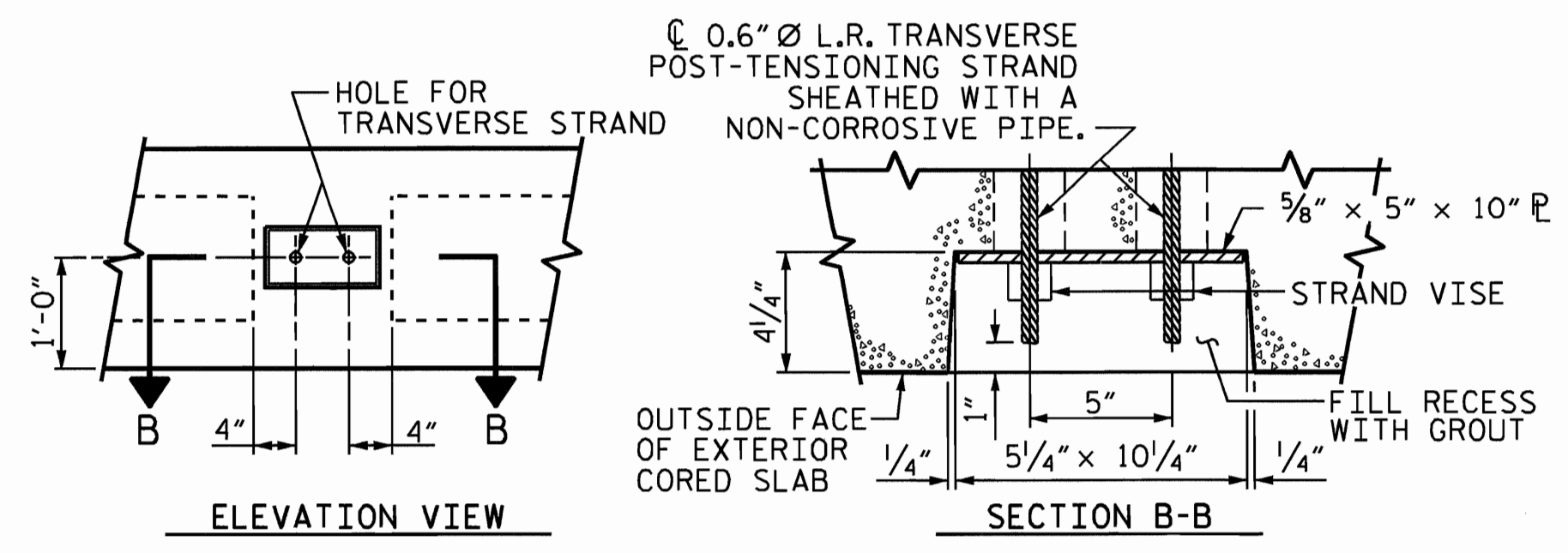
SECTION AT ABUTMENT



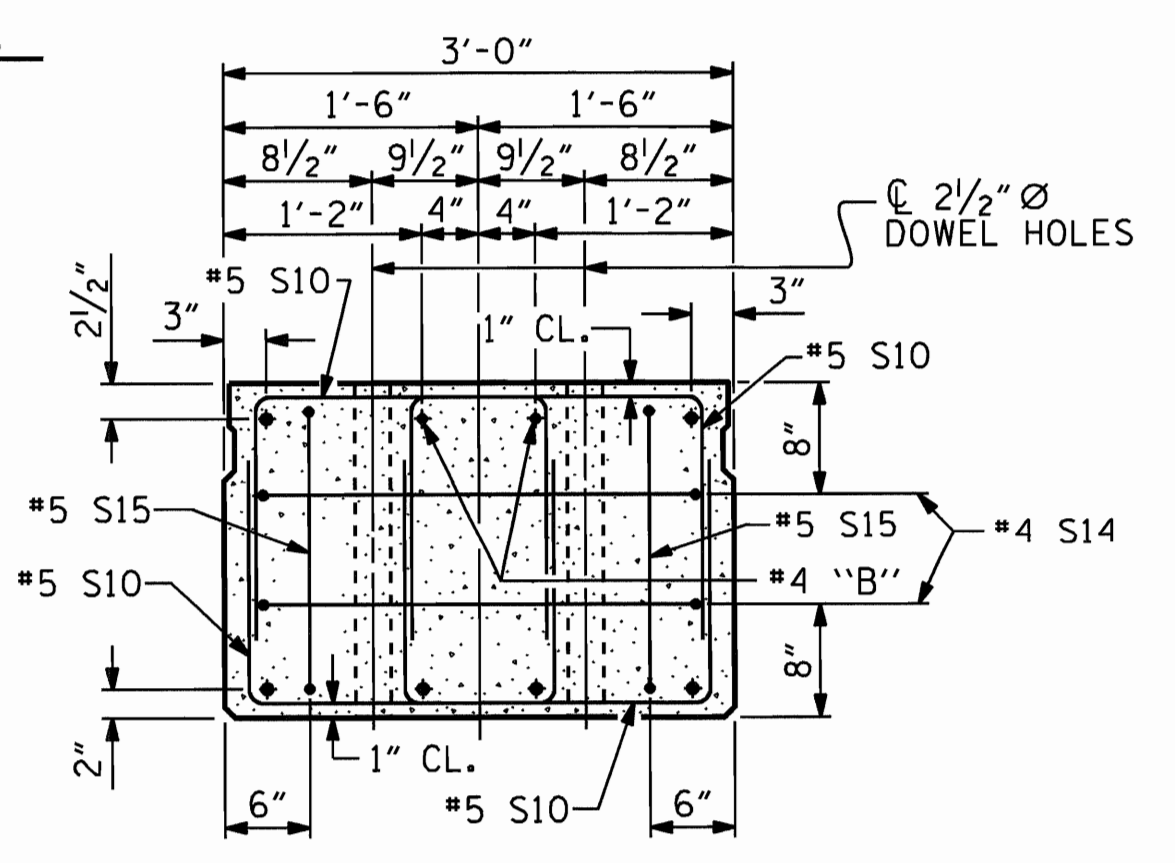
SECTION AT END BENT



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



GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS



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

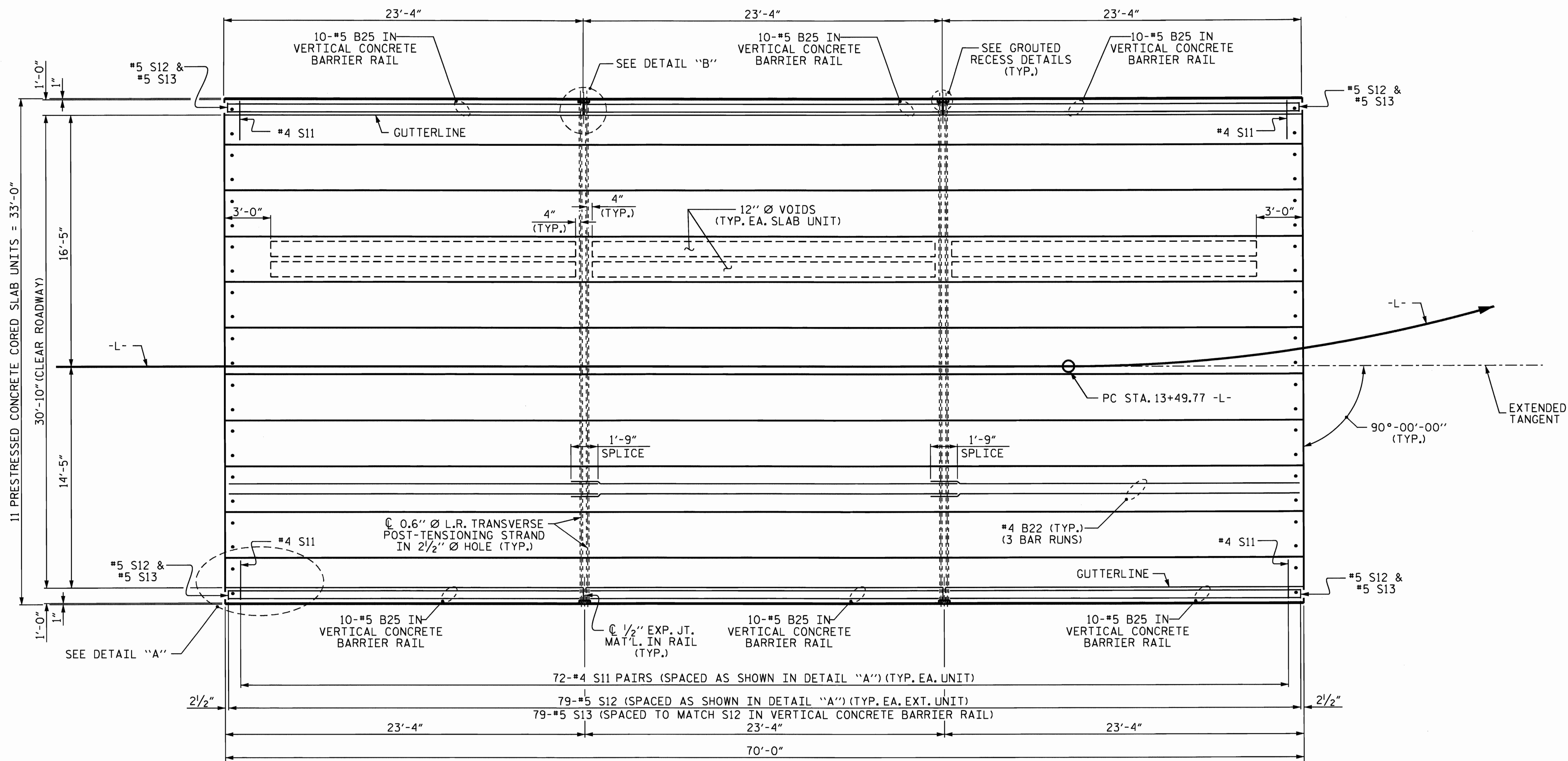
PROJECT NO. BD-51050
FRANKLIN COUNTY
STATION: 13+30.00 -L-

SHEET 1 OF 3

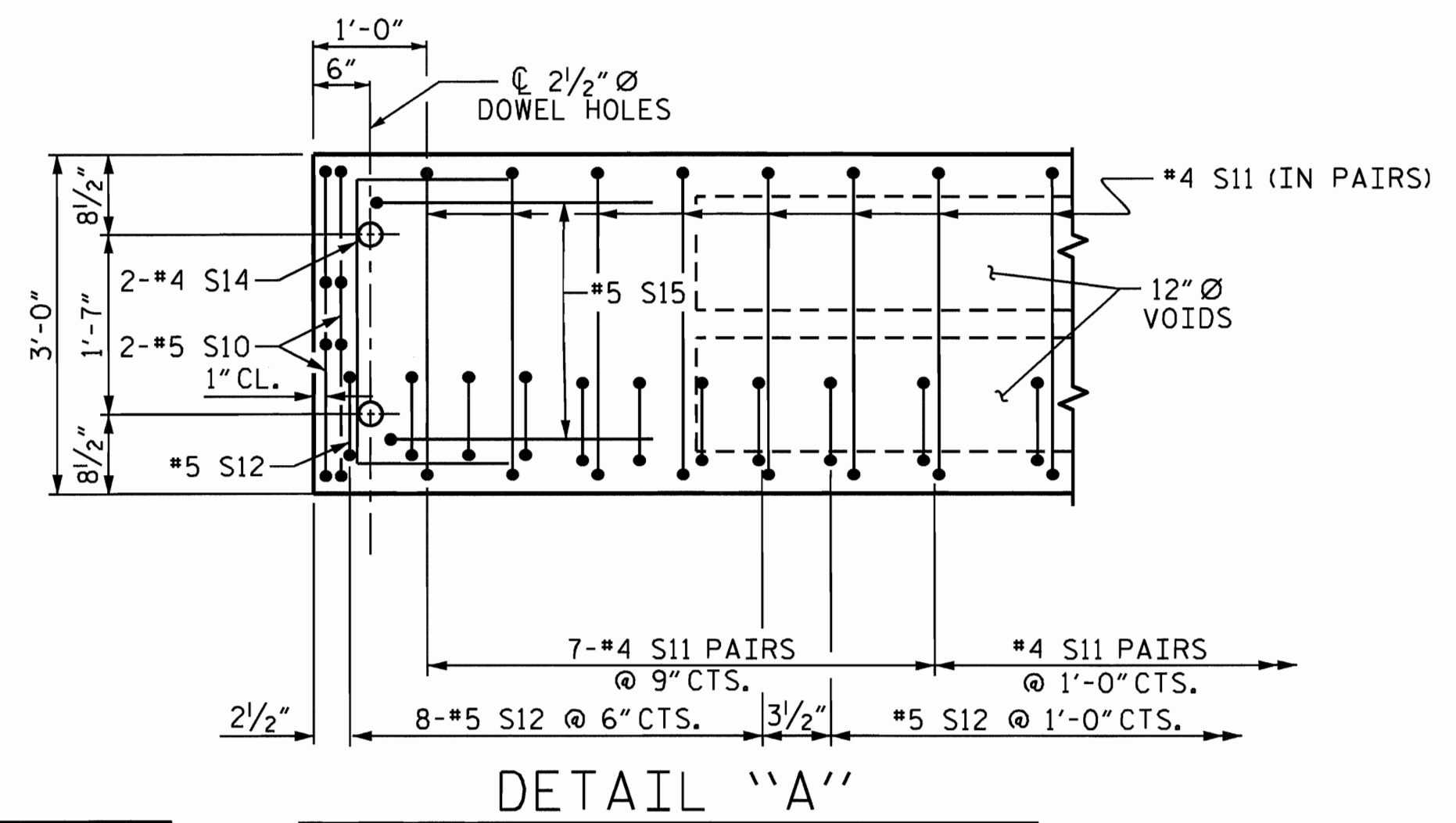
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-4
STANDARD						
3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLAB UNIT						TOTAL SHEETS 17
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



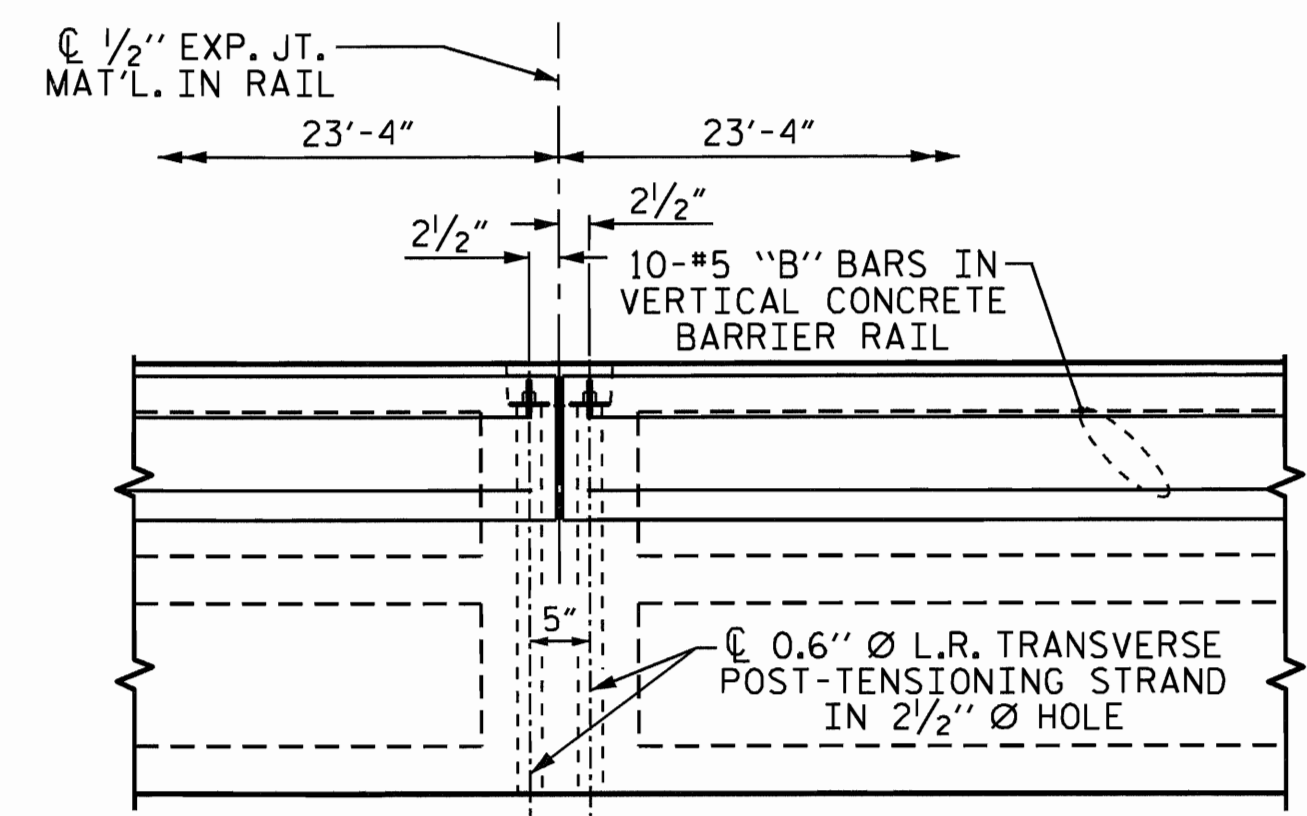
ASSEMBLED BY: A.C. OUTLAW DATE: 2/21/12
CHECKED BY: K.W. ALFORD DATE: 3/12
DRAWN BY: MAA 6/10 REV. 12/11 MAA/AAC
CHECKED BY: MKT 7/10



PLAN OF UNIT



DETAIL "A"



DETAIL "B"

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

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

ASSEMBLED BY :	A.C. OUTLAW	DATE :	2/21/12
CHECKED BY :	K. W. ALFORD	DATE :	3/12
DRAWN BY :	MAA	6/10	REV. 12/5/11
CHECKED BY :	MKT	7/10	MAA/AAC

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kalford

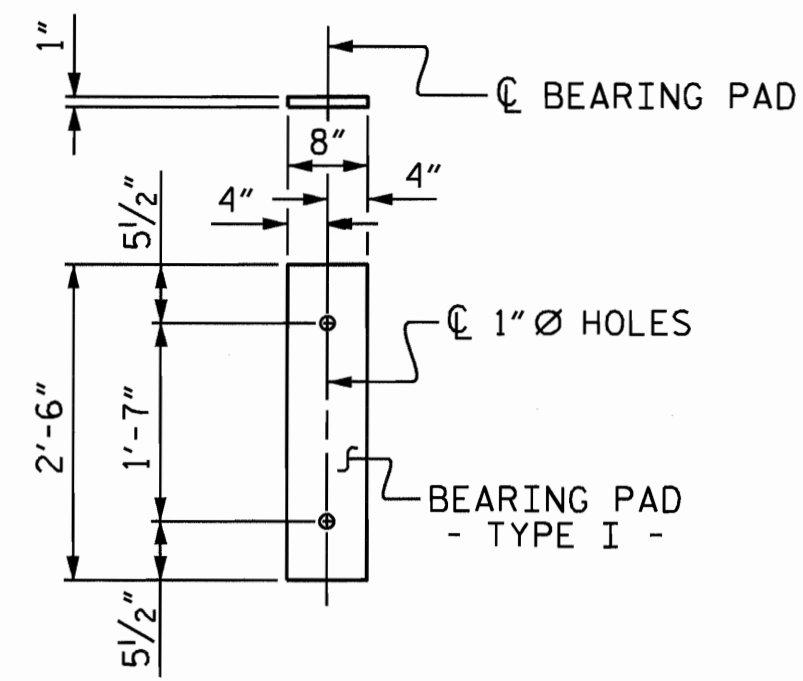
PROJECT NO. BD-5105Q
FRANKLIN COUNTY
 STATION: 13+30.00 -L-
 SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PLAN OF 70' UNIT
 30'-10" CLEAR ROADWAY
 90° SKEW



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			17

STD. NO. 24PCS_33_90S_70L



FIXED END
(TYPE I - 22 REQ'D)

ELASTOMERIC BEARING DETAILS

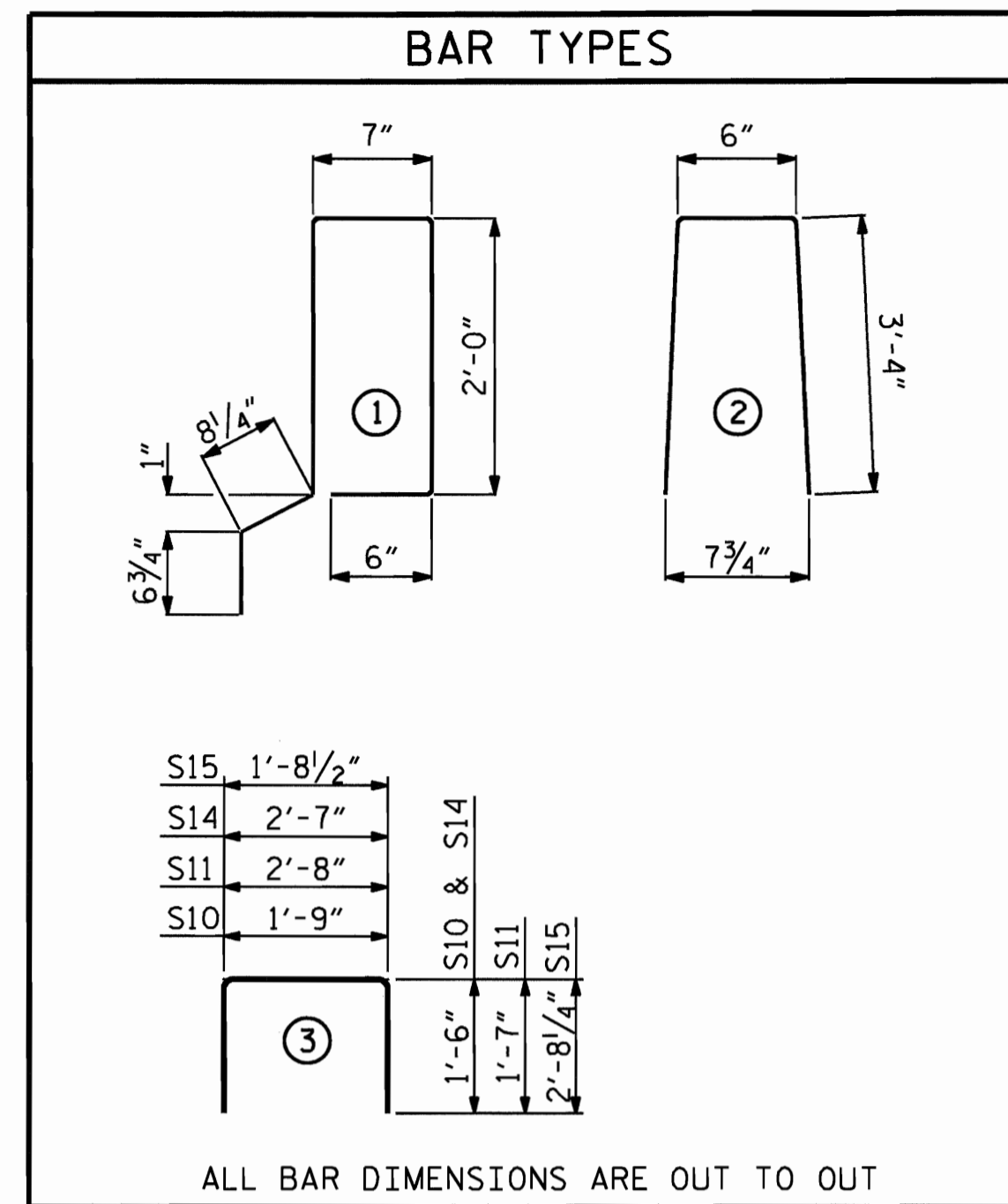
ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

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

CORED SLABS REQUIRED			
70' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	70'-0"	140'-0"
INTERIOR C.S.	9	70'-0"	630'-0"
TOTAL	11	70'-0"	770'-0"

DEAD LOAD DEFLECTION AND CAMBER	
70' CORED SLAB UNIT	3'-0" x 2'-0"
CAMBER (SLAB ALONE IN PLACE)	0.6" Ø L.R. STRAND
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	4 5/16" ↑
FINAL CAMBER	1 3/16" ↓
	3 1/2" ↑

** INCLUDES FUTURE WEARING SURFACE



ALL BAR DIMENSIONS ARE OUT TO OUT

NOTES

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

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

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

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

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

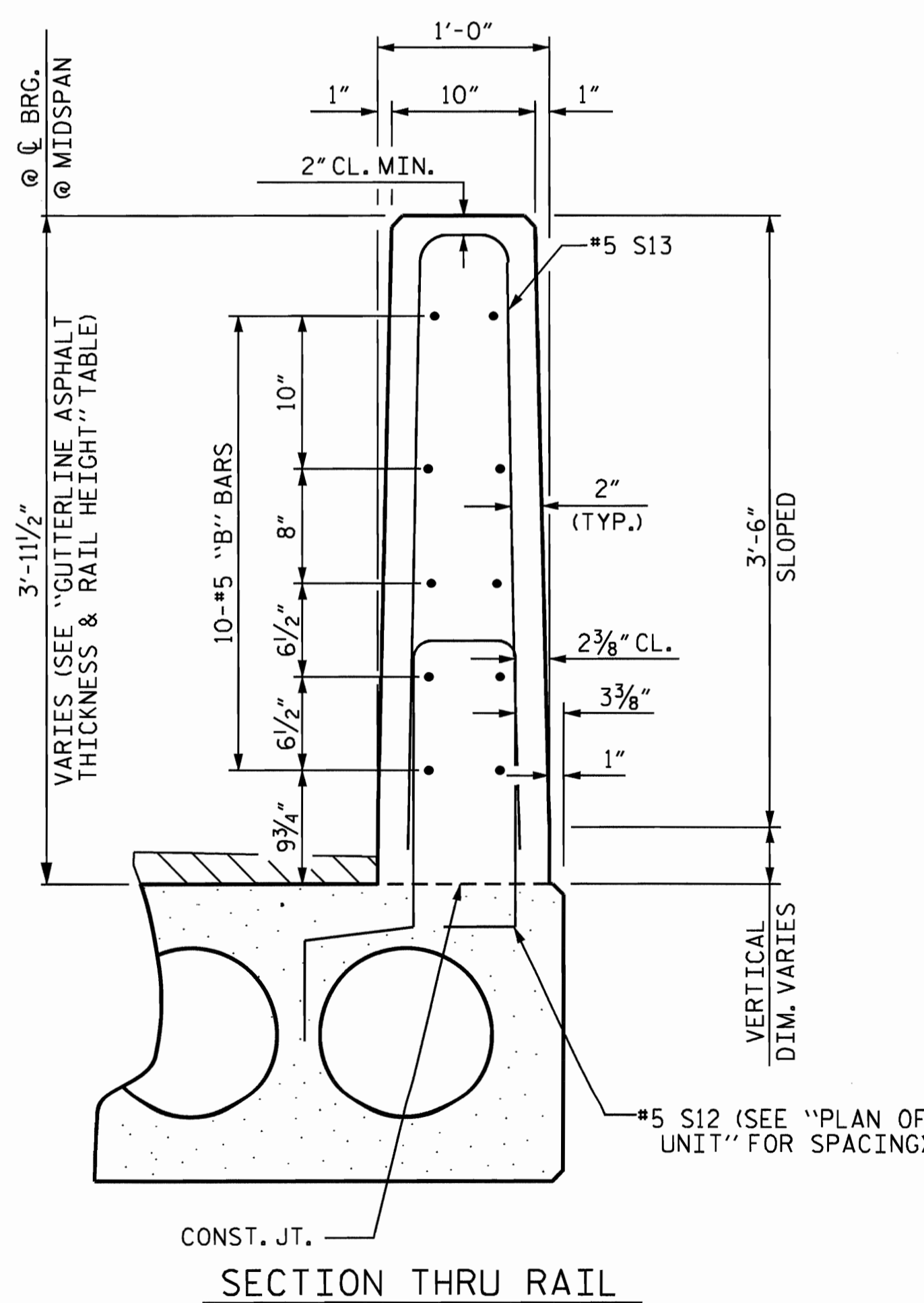
WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. AT LEAST SIX WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION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

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.

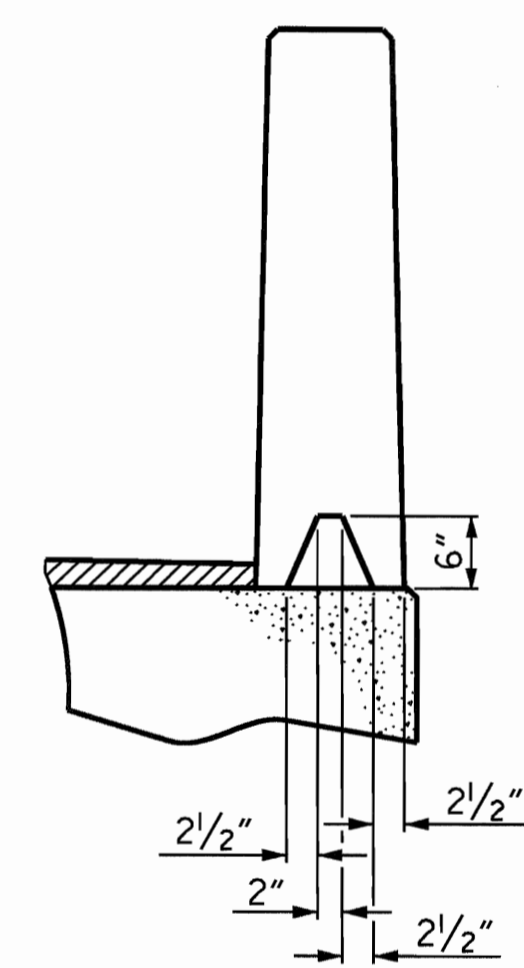
ALL REINFORCING STEEL IN VERTICAL CONCRETE BARRIER RAILS SHALL BE EPOXY COATED.

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

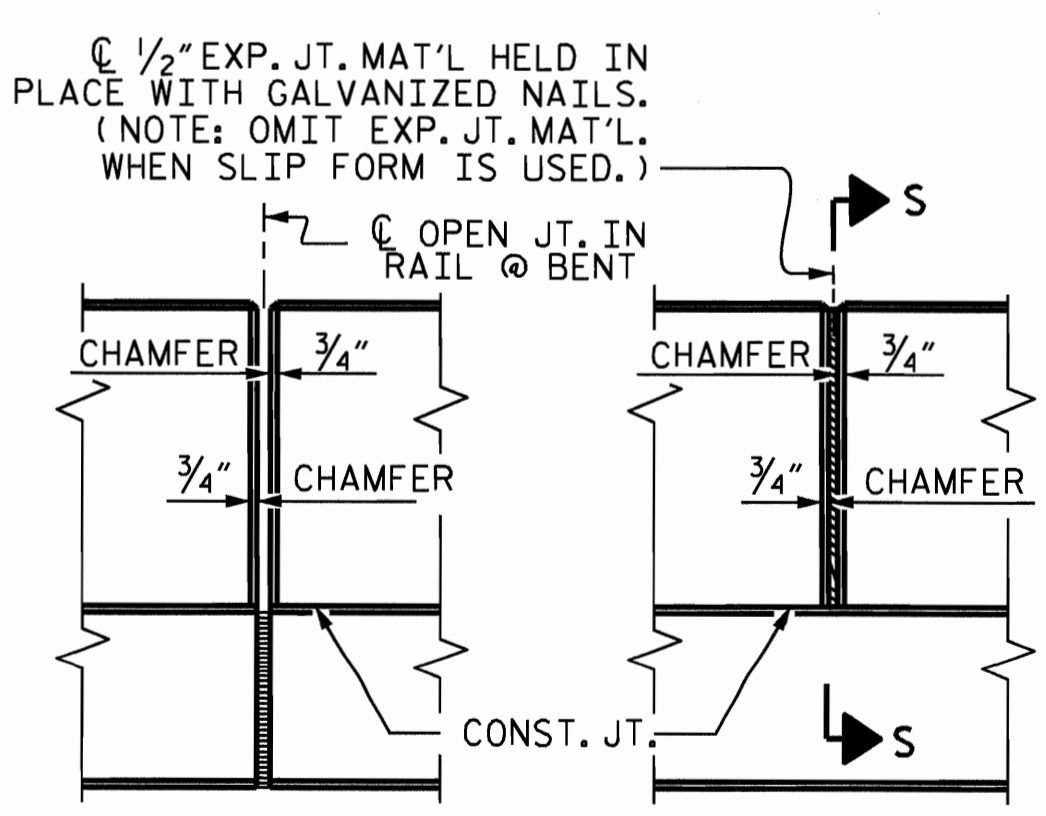
APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.



SECTION THRU RAIL



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



ELEVATION AT EXPANSION JOINTS

BILL OF MATERIAL FOR ONE 70' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
B22	6	#4	STR	24'-6"	98	24'-6"	98
S10	8	#5	3	4'-9"	40	4'-9"	40
S11	144	#4	3	5'-10"	561	5'-10"	561
*S12	79	#5	1	6'-4"	522		
S14	4	#4	3	5'-7"	15	5'-7"	15
S15	4	#5	3	7'-1"	30	7'-1"	30
REINFORCING STEEL				LBS.	744		744
* EPOXY COATED REINFORCING STEEL				LBS.	522		
7000 P.S.I. CONCRETE				CU. YDS.	11.8		11.8
0.6" Ø L.R. STRANDS				No.	28		28

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
*B25	60	60	#5	STR	22'-11"	1434
*S13	158	158	#5	2	7'-2"	1181
* EPOXY COATED REINFORCING STEEL					LBS.	2615
CLASS AA CONCRETE					CU. YDS.	18.9
TOTAL VERTICAL CONCRETE BARRIER RAIL					LN. FT.	140.25

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
	ASPHALT OVERLAY THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
70' UNITS	1 3/4"	3'-8"

CONCRETE RELEASE STRENGTH	
UNIT	PSI
70' UNITS	5500

PROJECT NO. BD-5105Q
FRANKLIN COUNTY
 STATION: 13+30.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 3'-0" X 2'-0"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-6
2			4			TOTAL SHEETS 17



ASSEMBLED BY : A.C. OUTLAW DATE : 2/21/12
 CHECKED BY : K. W. ALFORD DATE : 3/12
 DRAWN BY : MAA 6/10 REV. 12/11 MAA/AAC
 CHECKED BY : MKT 7/10

NOTES

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

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

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

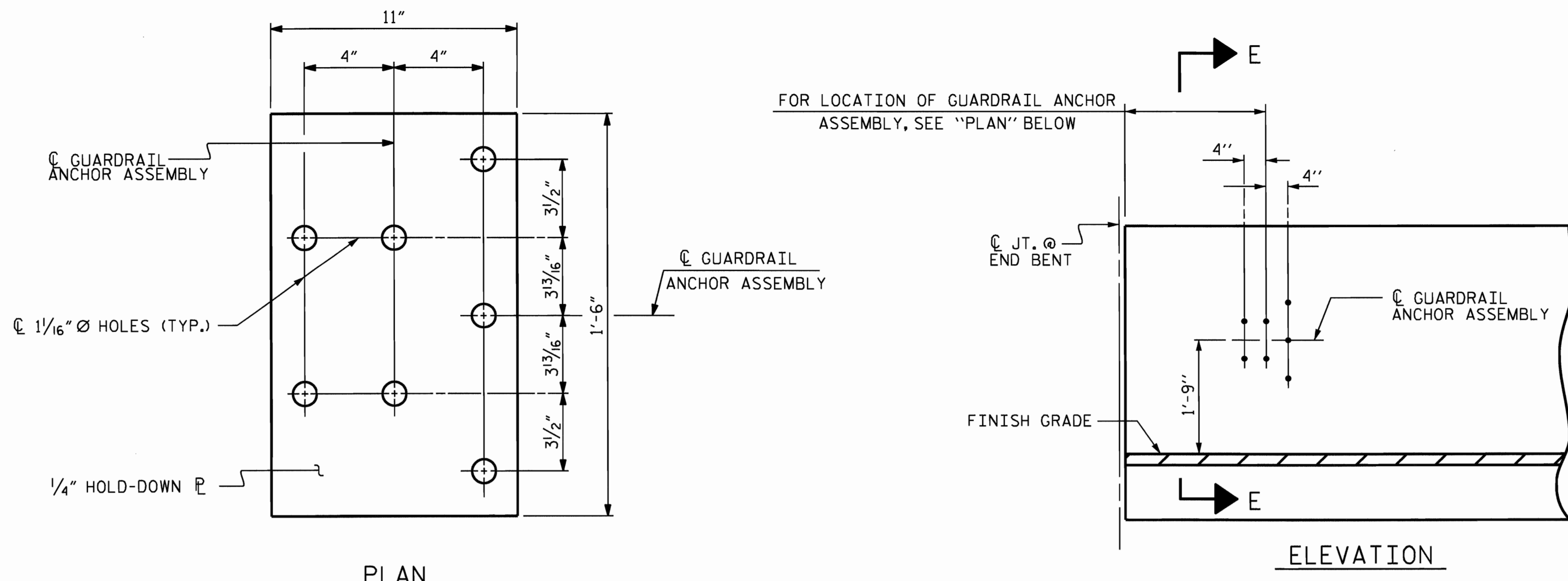
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

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

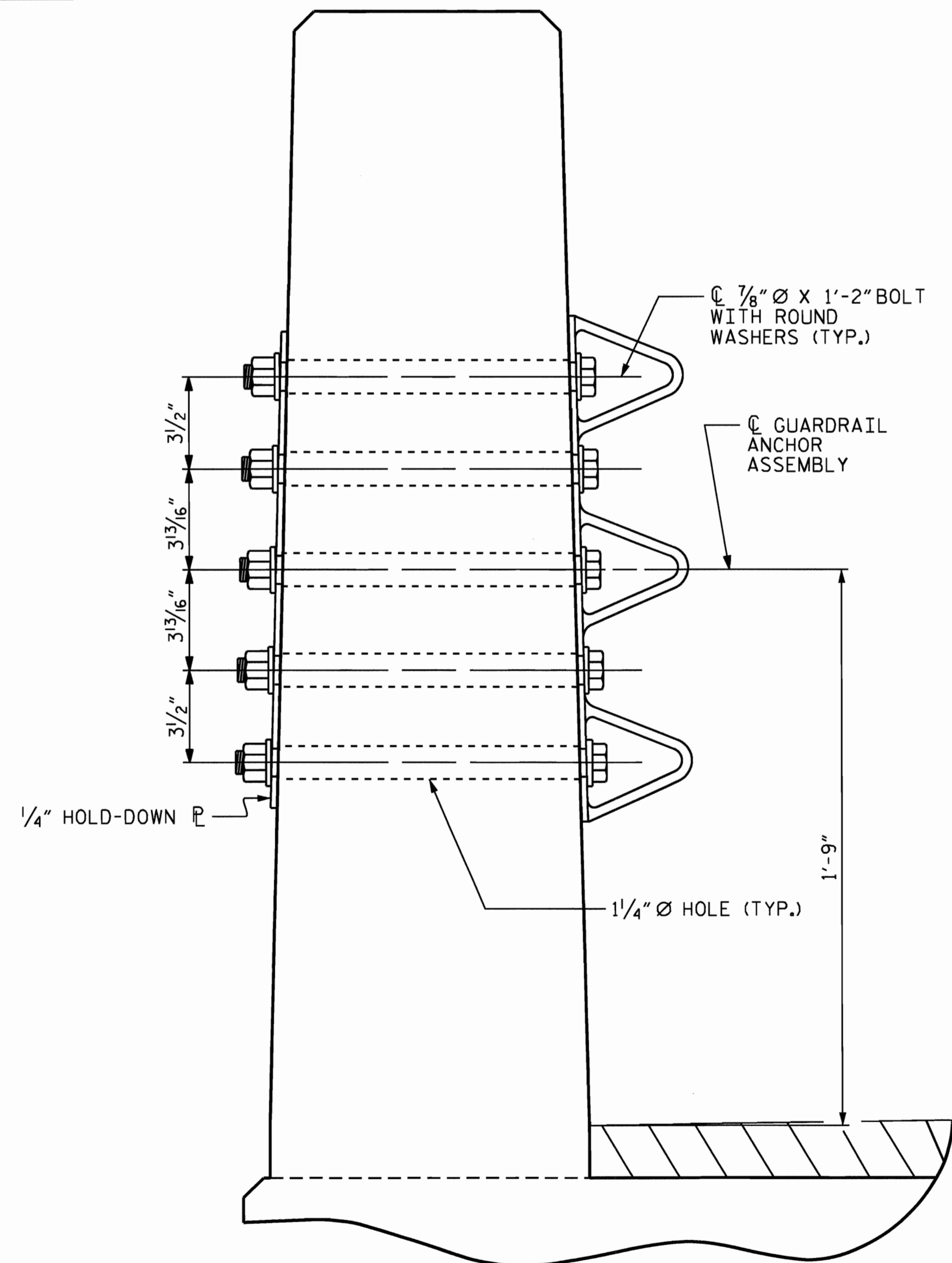
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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

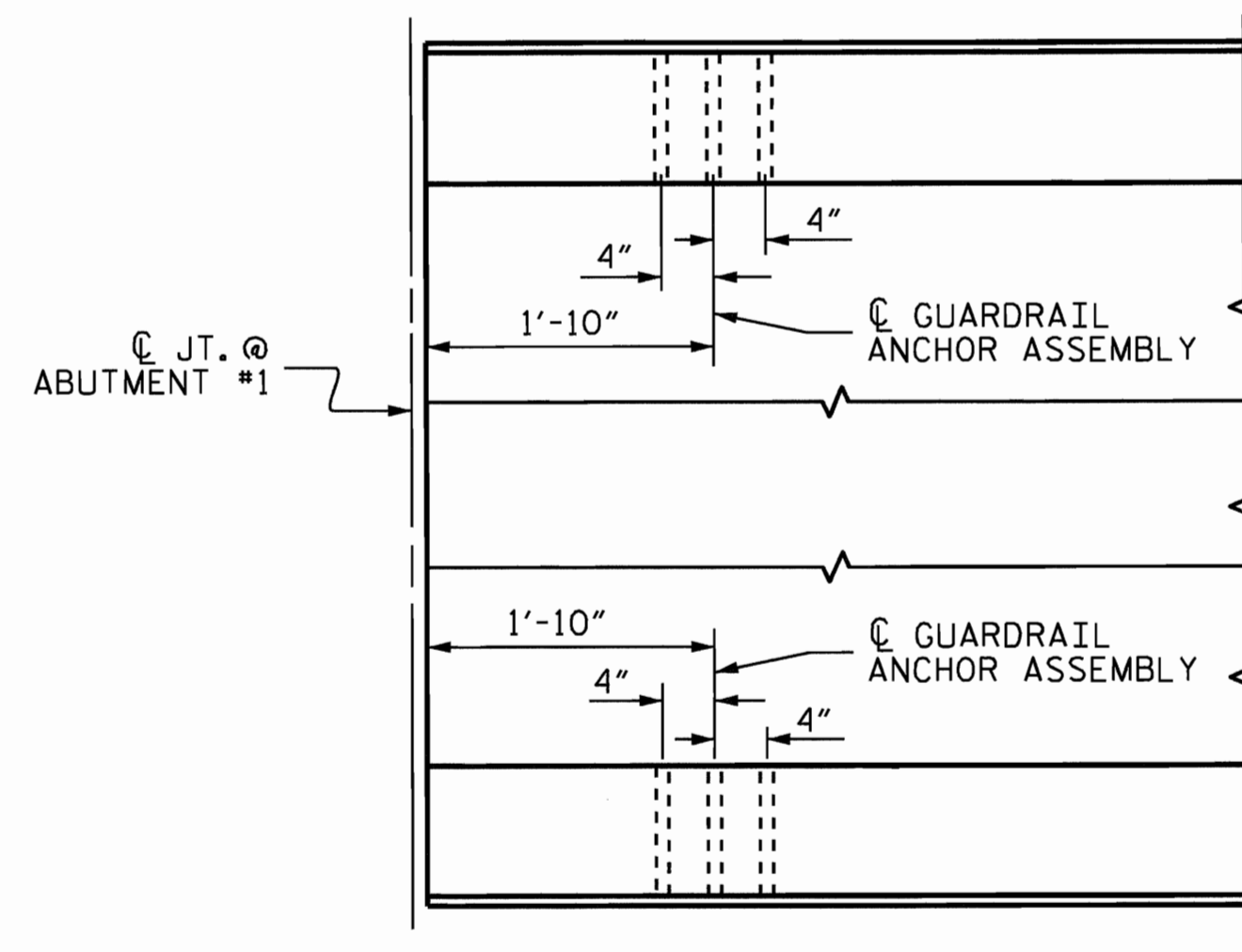


PLAN

ELEVATION

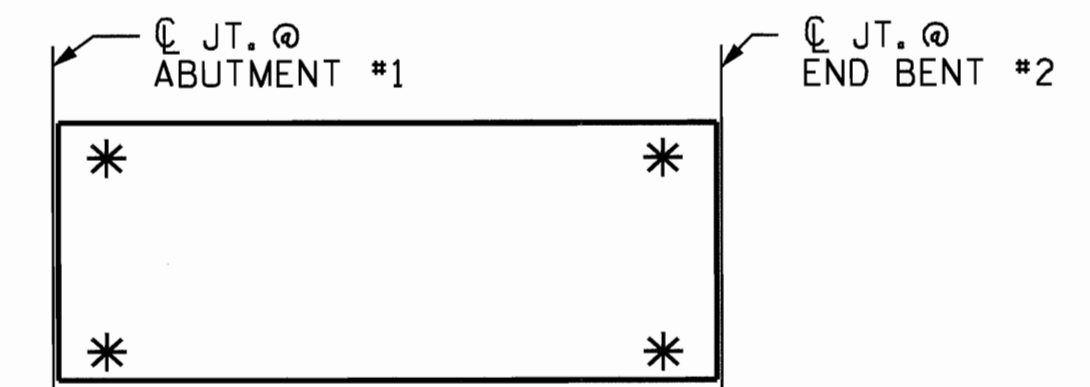


SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL

ABUTMENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. BD-51050
FRANKLIN COUNTY
STATION: 13+30.00 -L-

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



ASSEMBLED BY : A.C. OUTLAW	DATE : 2/21/12
CHECKED BY : K. W. ALFORD	DATE : 3/12
DRAWN BY : MAA 5/10	ADDED 5/6/10
CHECKED BY : GM 5/10	REV. 10/1/11
	REV. 12/5/11
	MAA/GM
	MAA/GM

19-JUN-2012 11:08
S:\DPO2\KRISTY\DivisionProjects\BD51050\drafting\Miscellaneous\BD51050.SD.GR.01.dgn
KAlford

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			17

(SHT 1) STD. NO. GRA3

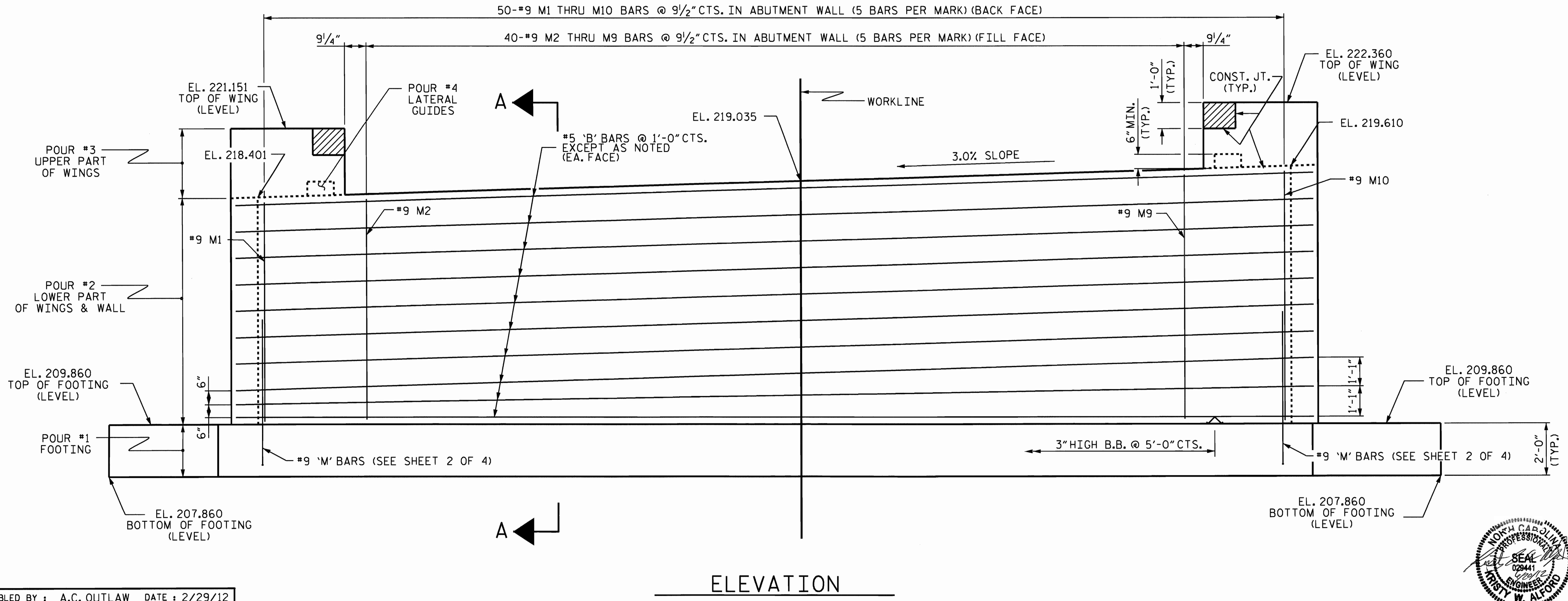
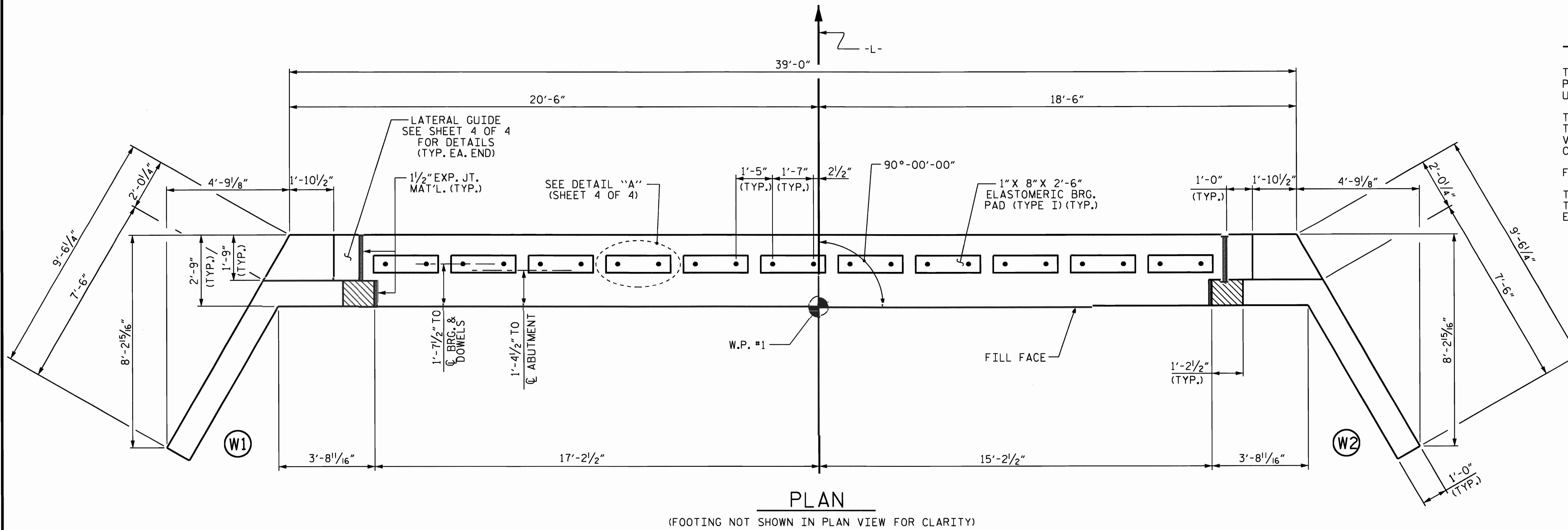
NOTES

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

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

FOR WING DETAILS, SEE SHEET 3 OF 4.

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

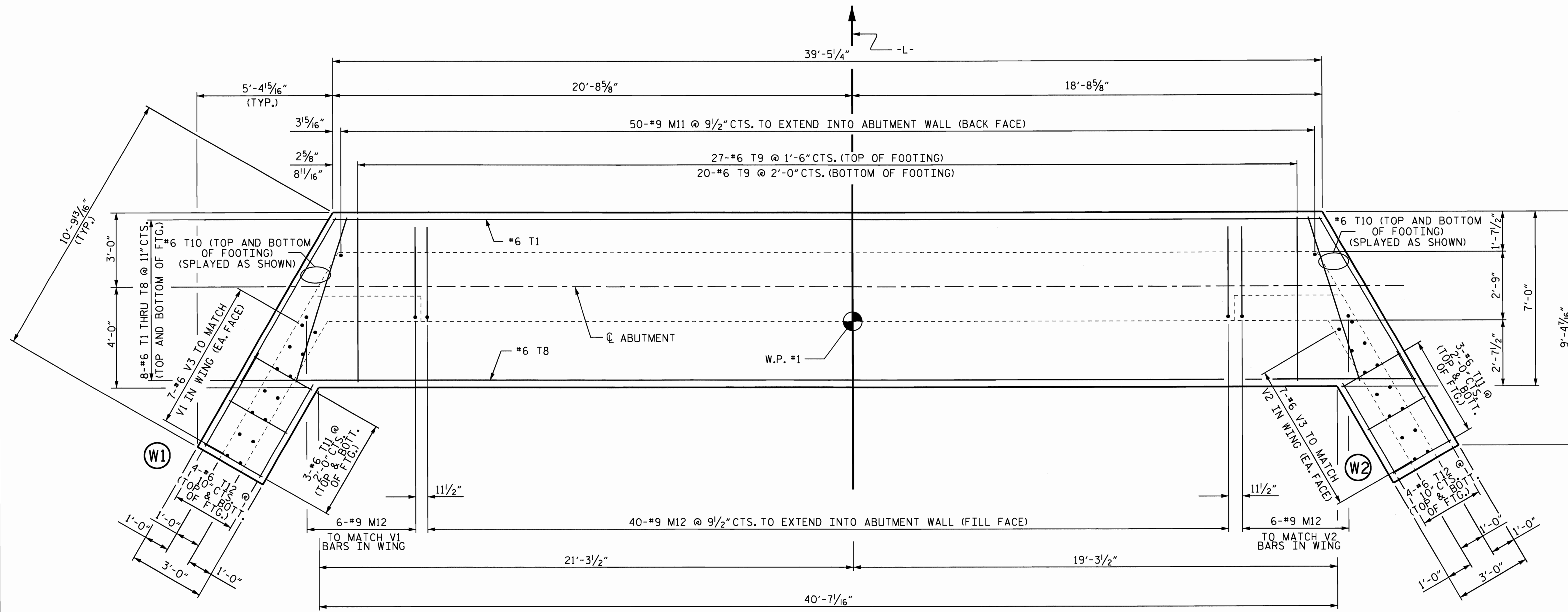


PROJECT NO. BD-51050
FRANKLIN COUNTY
 STATION: 13+30.00 -L-
 SHEET 1 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE ABUTMENT No. 1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-8 TOTAL SHEETS 17



ASSEMBLED BY: A.C. OUTLAW DATE: 2/29/12
 CHECKED BY: K.W. ALFORD DATE: 3/12
 DRAWN BY: DGE 02/10
 CHECKED BY: MKT 02/10



PLAN OF FOOTING

PROJECT NO. BD-5105Q
FRANKLIN COUNTY
 STATION: 13+30.00 -L-

SHEET 2 OF 4

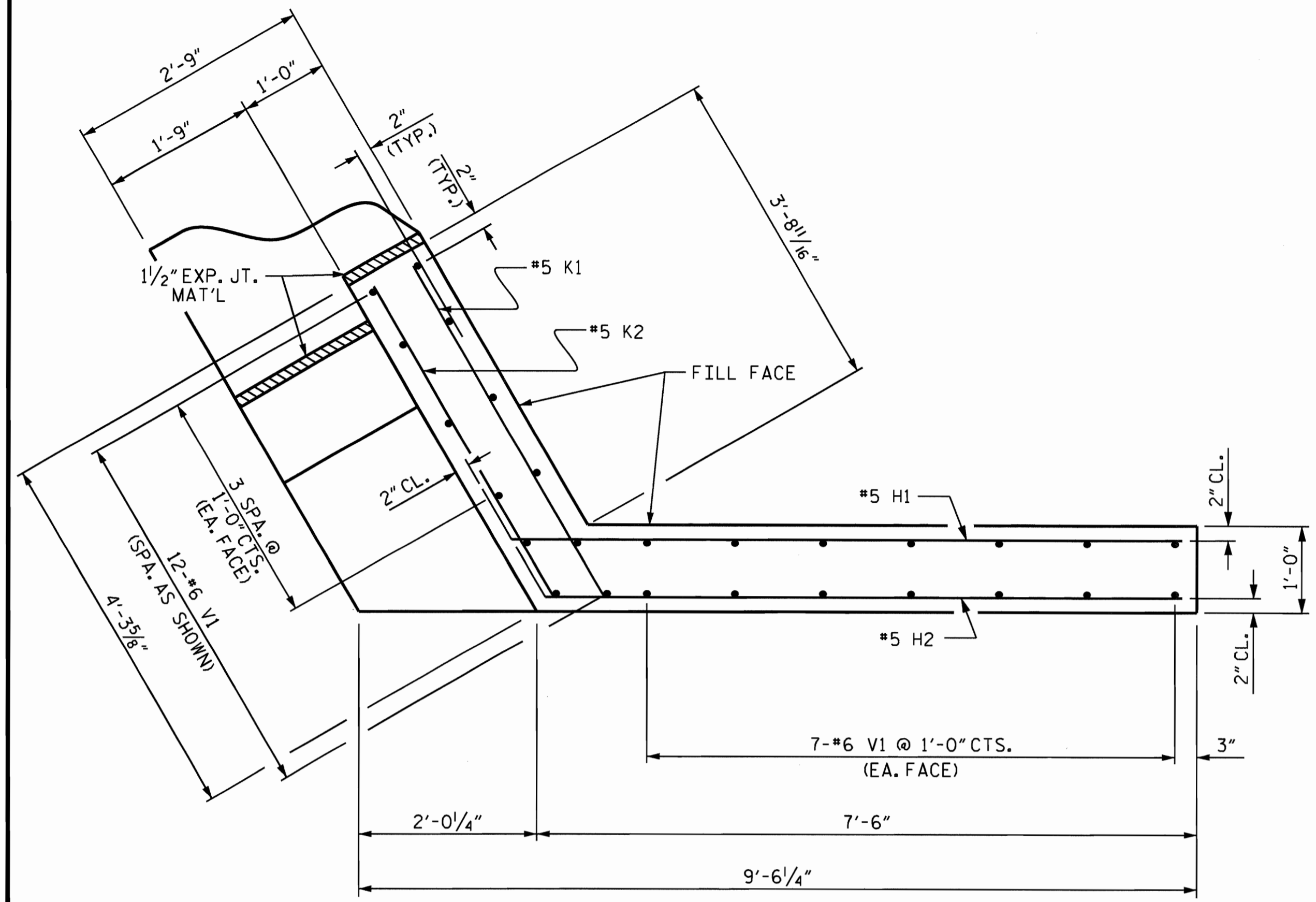
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 ABUTMENT No. 1



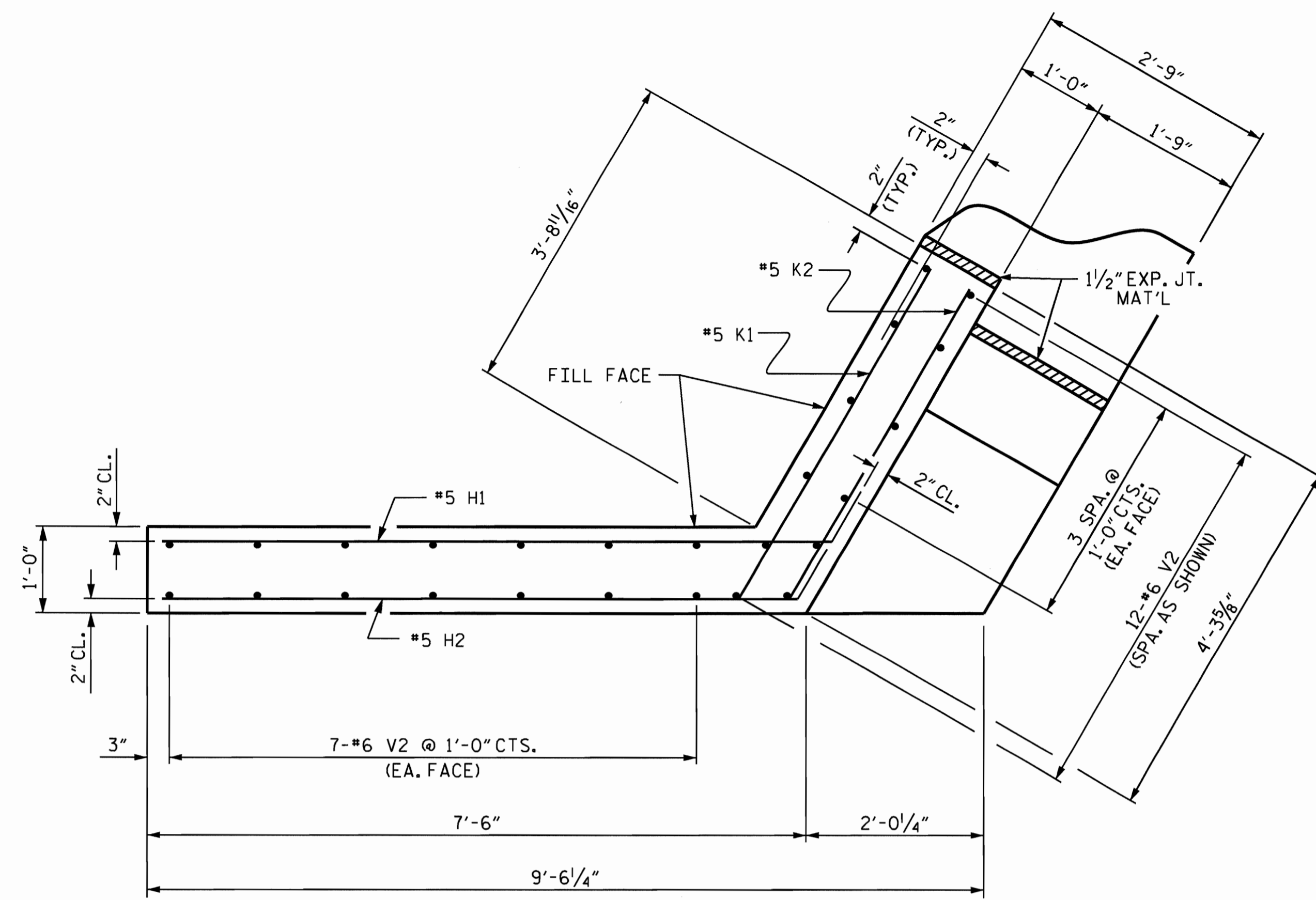
DRAWN BY : A.C. OUTLAW DATE : 2/29/12
 CHECKED BY : K. W. ALFORD DATE : 3/12

19-JUN-2012 11:07
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 kdFord

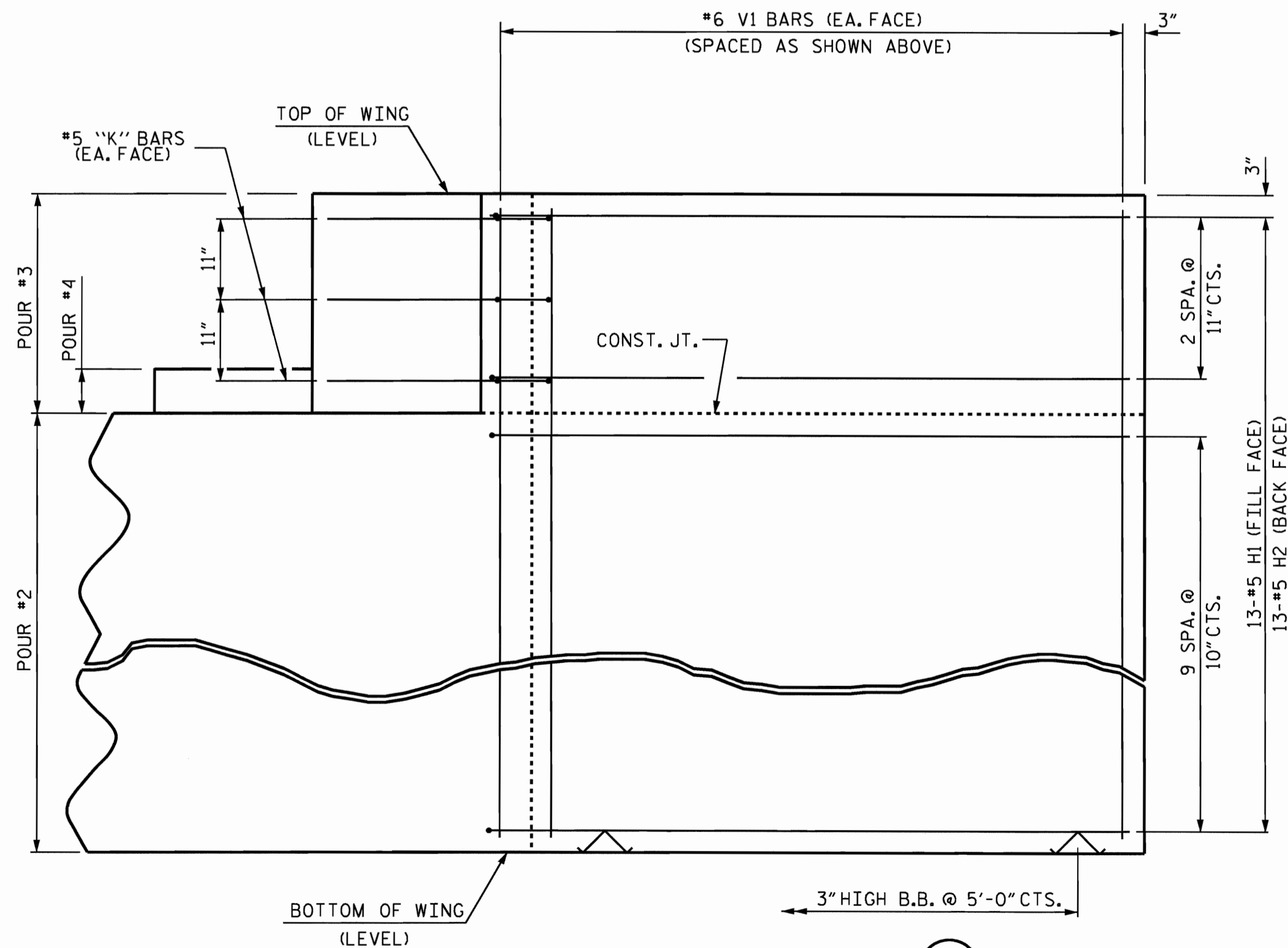
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			17



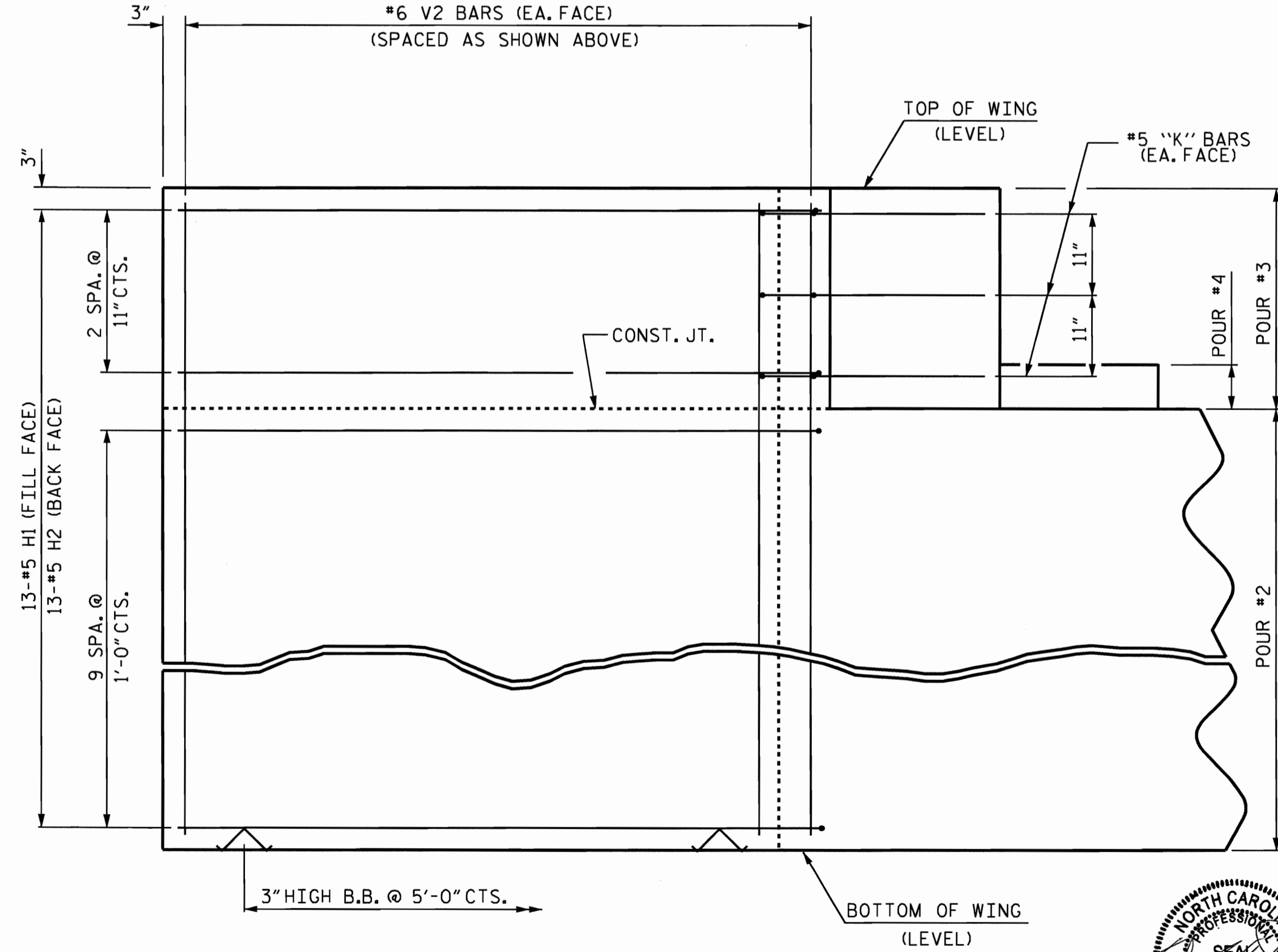
PLAN OF WING (W1)



PLAN OF WING (W2)



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)

WING DETAILS

FOOTINGS NOT SHOWN FOR CLARITY, SEE SHEET 4 OF 4

ASSEMBLED BY : A.C. OUTLAW DATE : 2/29/12
 CHECKED BY : K.W. ALFORD DATE : 3/12
 DRAWN BY : DGE 12/09
 CHECKED BY : MKT 01/10

19-JUN-2012 11:07
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 kaiford

PROJECT NO. BD-5105Q
FRANKLIN COUNTY
 STATION: 13+30.00 -L-

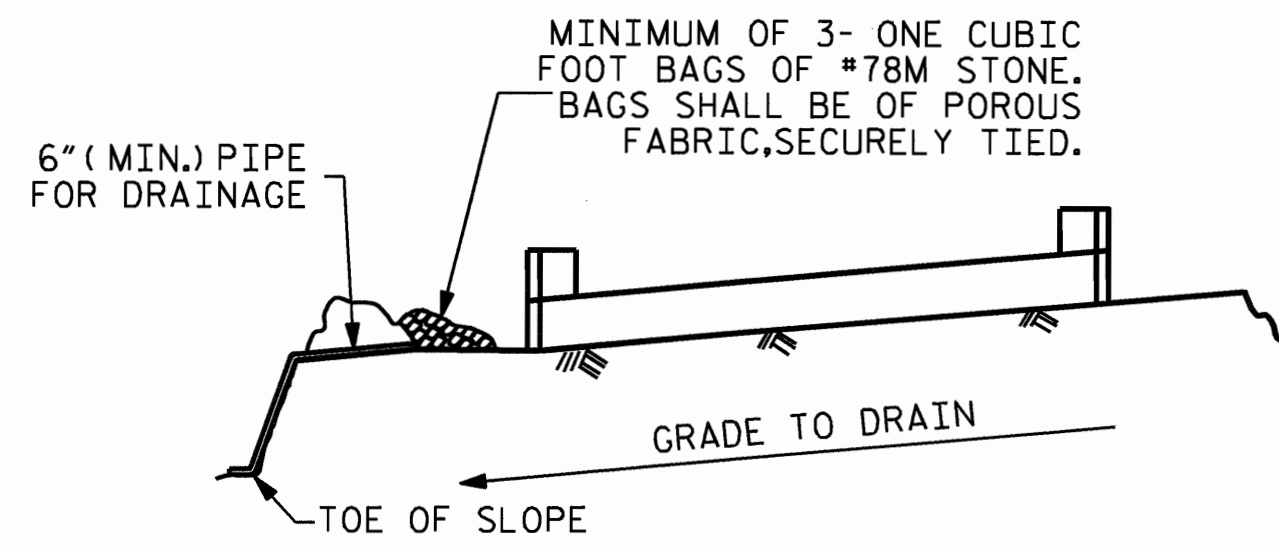
SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 ABUTMENT No. 1
 WING DETAILS



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			17

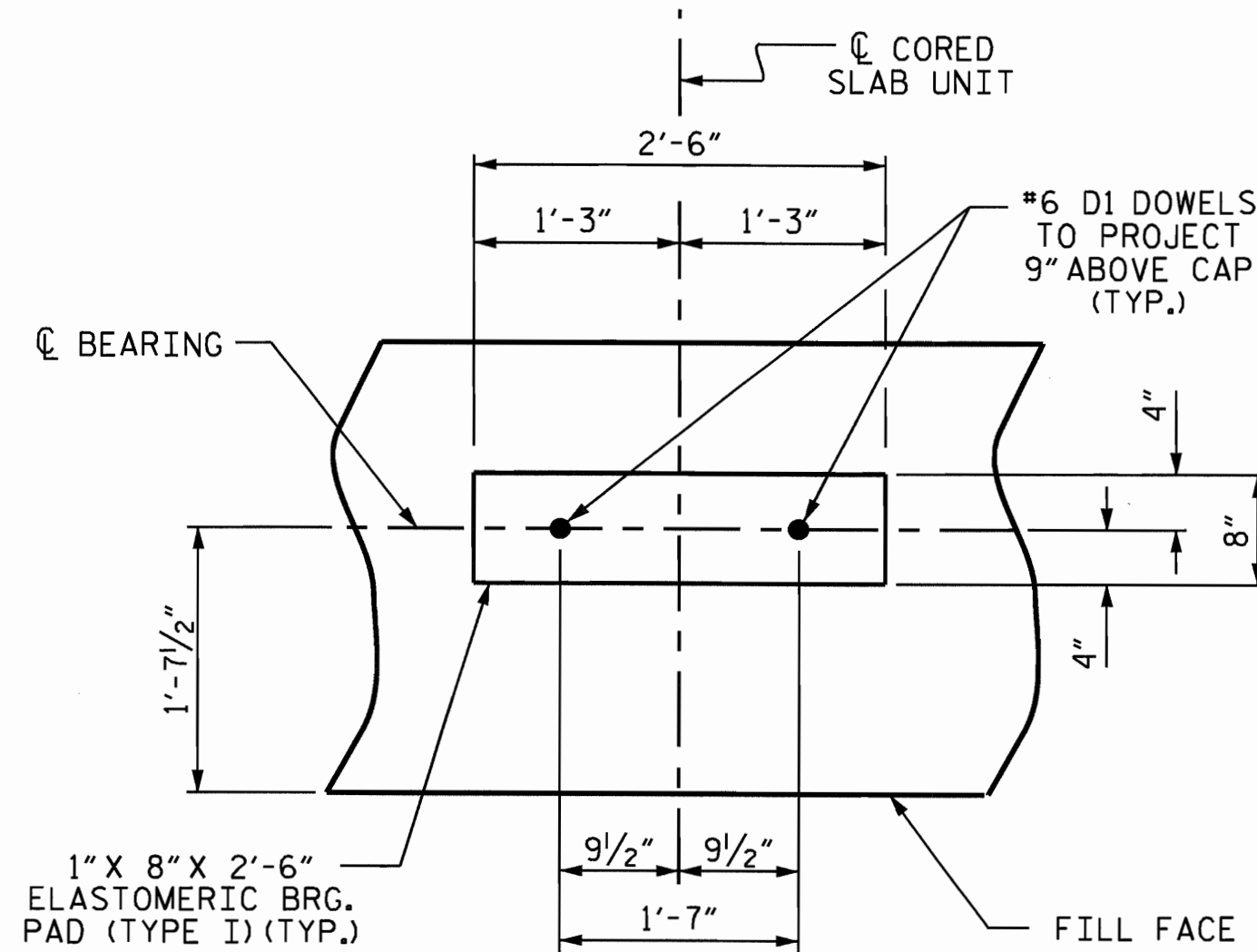


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

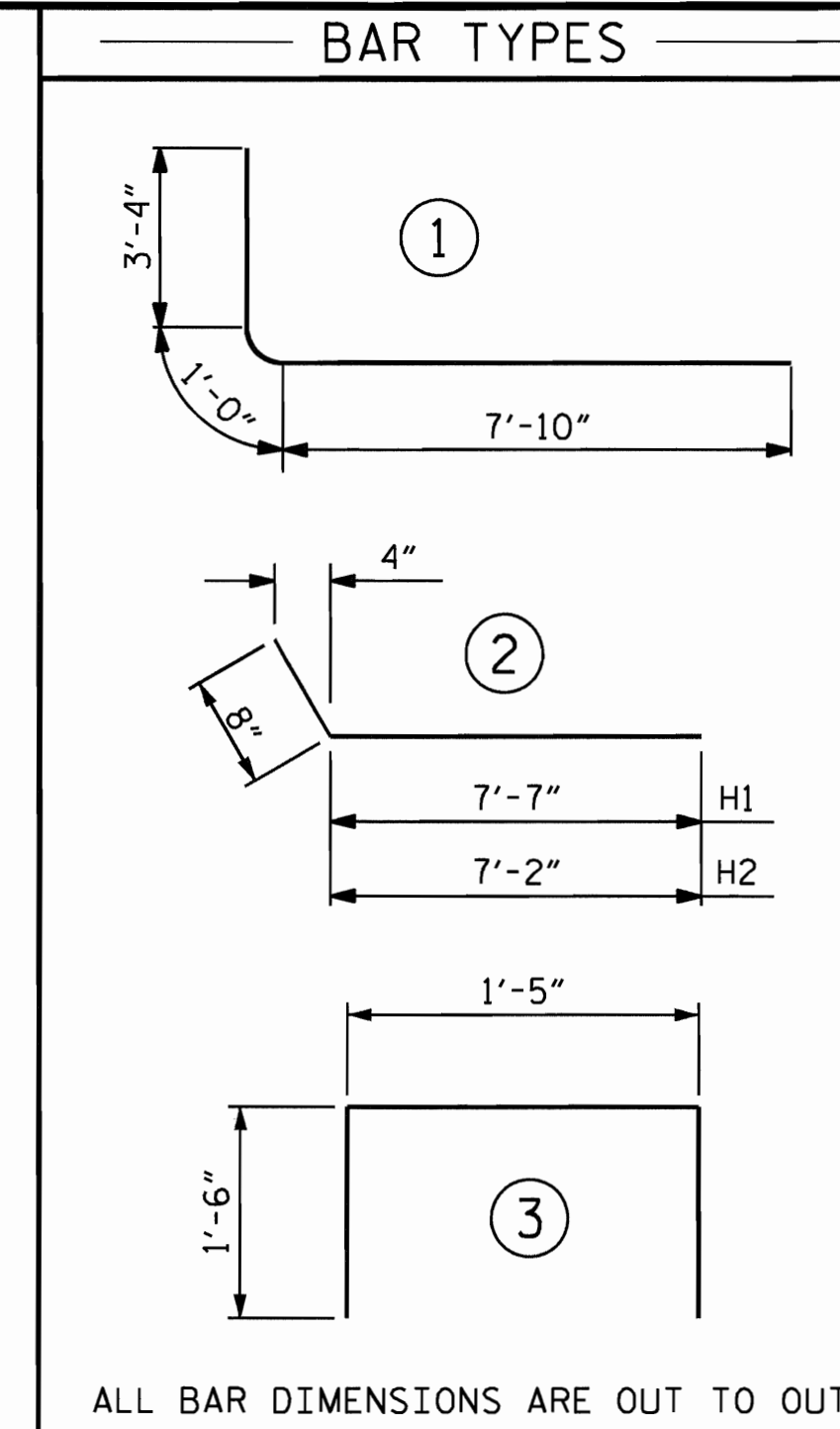
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



DETAIL "A"

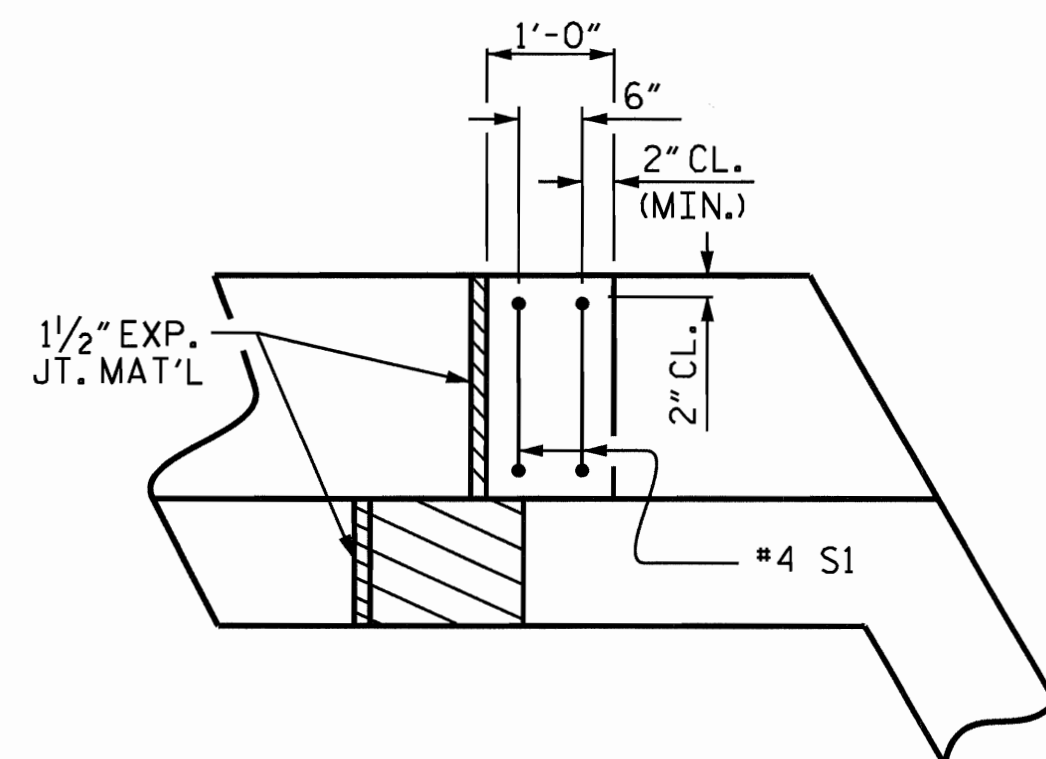
ABUTMENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION



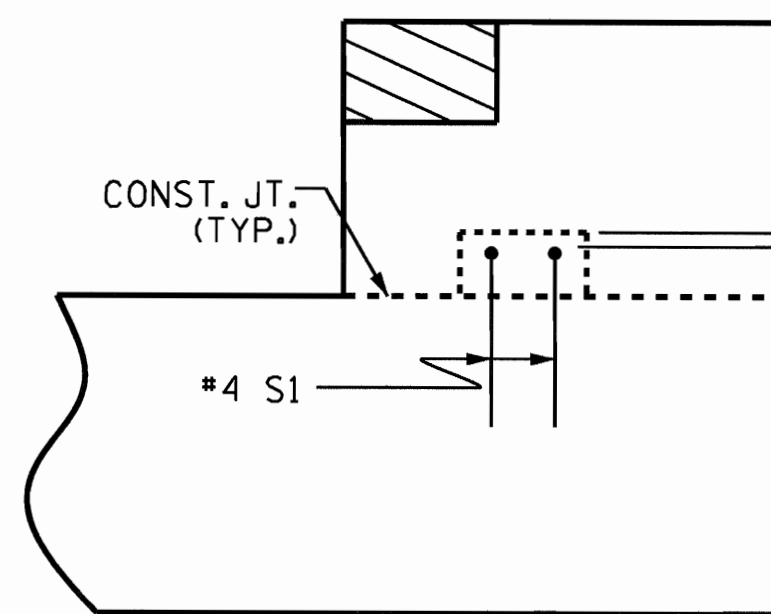
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL										FOR ABUTMENT No. 1									
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT		
B1	10	#5	STR	41'-4"	431	T1	2	#6	STR	39'-2"	118								
B2	10	#5	STR	38'-10"	405	T2	2	#6	STR	40'-3"	121								
						T3	2	#6	STR	41'-3"	124								
D1	22	#6	STR	1'-6"	50	T4	2	#6	STR	42'-4"	127								
						T5	2	#6	STR	43'-5"	130								
H1	26	#5	2	8'-3"	224	T6	2	#6	STR	44'-5"	133								
H2	26	#5	2	7'-10"	212	T7	2	#6	STR	45'-6"	137								
						T8	2	#6	STR	46'-7"	140								
K1	6	#5	STR	4'-6"	28	T9	47	#6	STR	6'-8"	471								
K2	6	#5	STR	4'-0"	25	T10	8	#6	STR	7'-6"	90								
						T11	12	#6	STR	2'-8"	48								
M1	5	#9	STR	8'-3"	140	T12	16	#6	STR	4'-4"	104								
M2	10	#9	STR	8'-4"	283														
M3	10	#9	STR	8'-5"	286	V1	26	#6	STR	10'-11"	426								
M4	10	#9	STR	8'-7"	292	V2	26	#6	STR	12'-0"	469								
M5	10	#9	STR	8'-8"	295	V3	28	#6	STR	4'-0"	168								
M6	10	#9	STR	8'-10"	300														
M7	10	#9	STR	8'-11"	303														
M8	10	#9	STR	9'-0"	306														
M9	10	#9	STR	9'-2"	312														
M10	5	#9	STR	9'-4"	159														
M11	50	#9	STR	6'-3"	1063														
M12	52	#9	1	12'-2"	2151														
S1	4	#4	3	4'-5"	12														
REINFORCING STEEL										10083 LBS.									
CLASS A CONCRETE BREAKDOWN (FOR ABUTMENT No. 1)																			
POUR #1 FOOTING																24.1 C.Y.			
POUR #2 LOWER PART OF WINGS & WALL																42.3 C.Y.			
POUR #3 UPPER PART OF WINGS																2.3 C.Y.			
POUR #4 LATERAL GUIDES																0.1 C.Y.			
TOTAL CLASS A CONCRETE																68.8 C.Y.			
FOUNDATION EXCAVATION																L.S.			

* FOR SPACING OF #5 H1 & #5 H2 BARS, SEE SHEET 3 OF 4.



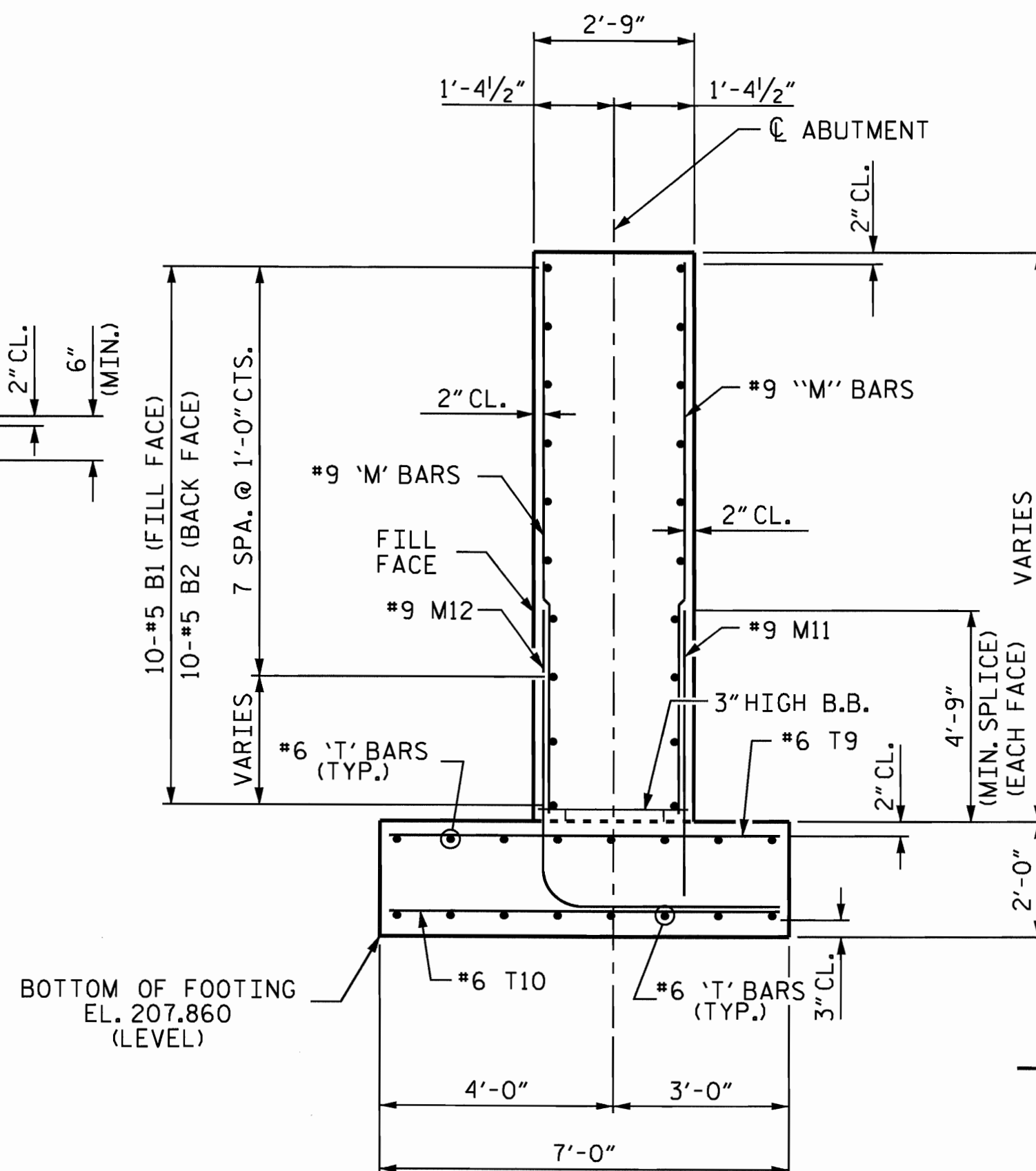
PLAN



ELEVATION

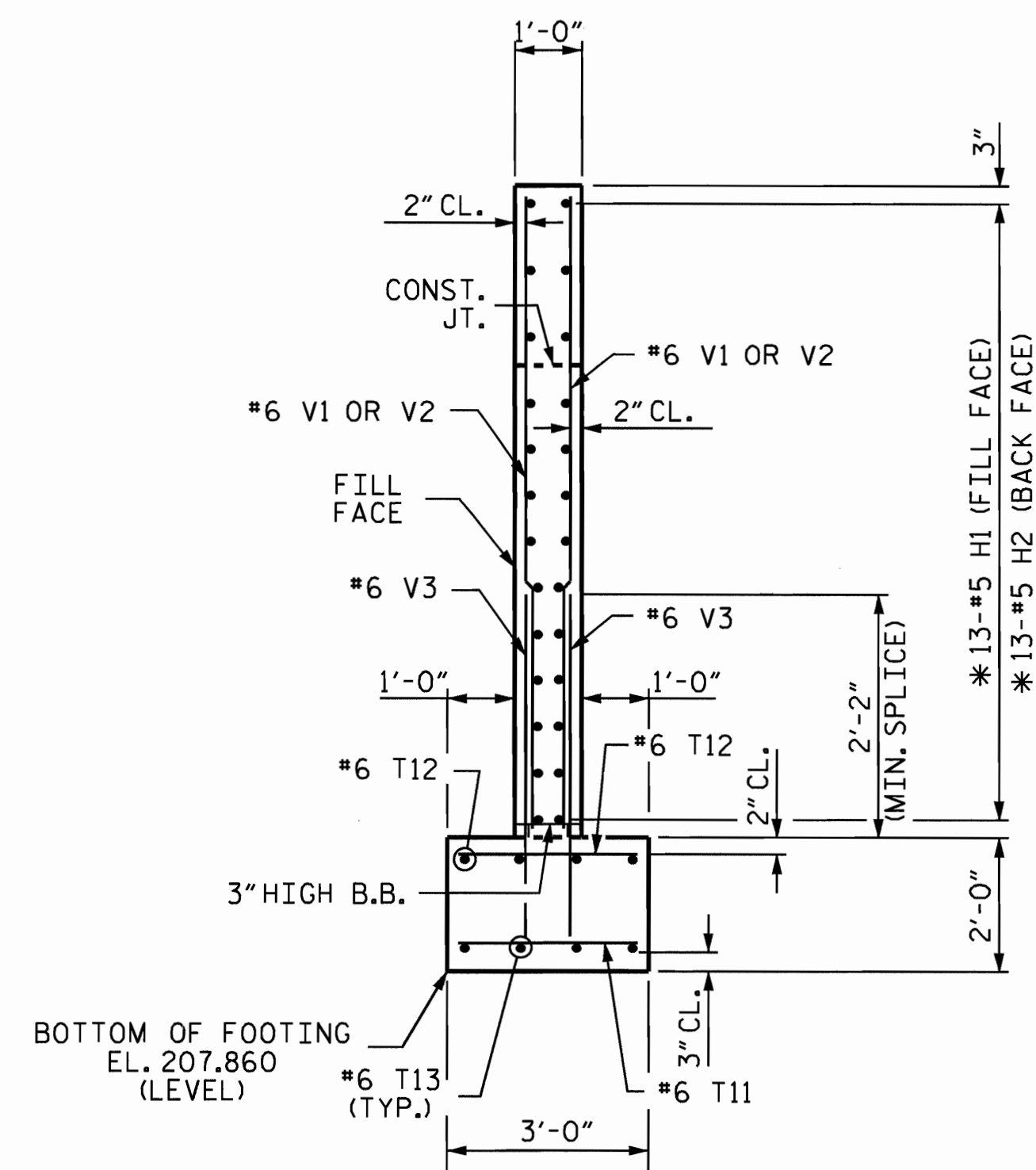
LATERAL GUIDE DETAILS

RIGHT LATERAL GUIDE SHOWN, LEFT END SIMILAR



SECTION A-A

SHOWING ABUTMENT WALL



SECTION THRU WING AND FOOTING

PROJECT NO. BD-5105Q
FRANKLIN COUNTY
 STATION: 13+30.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

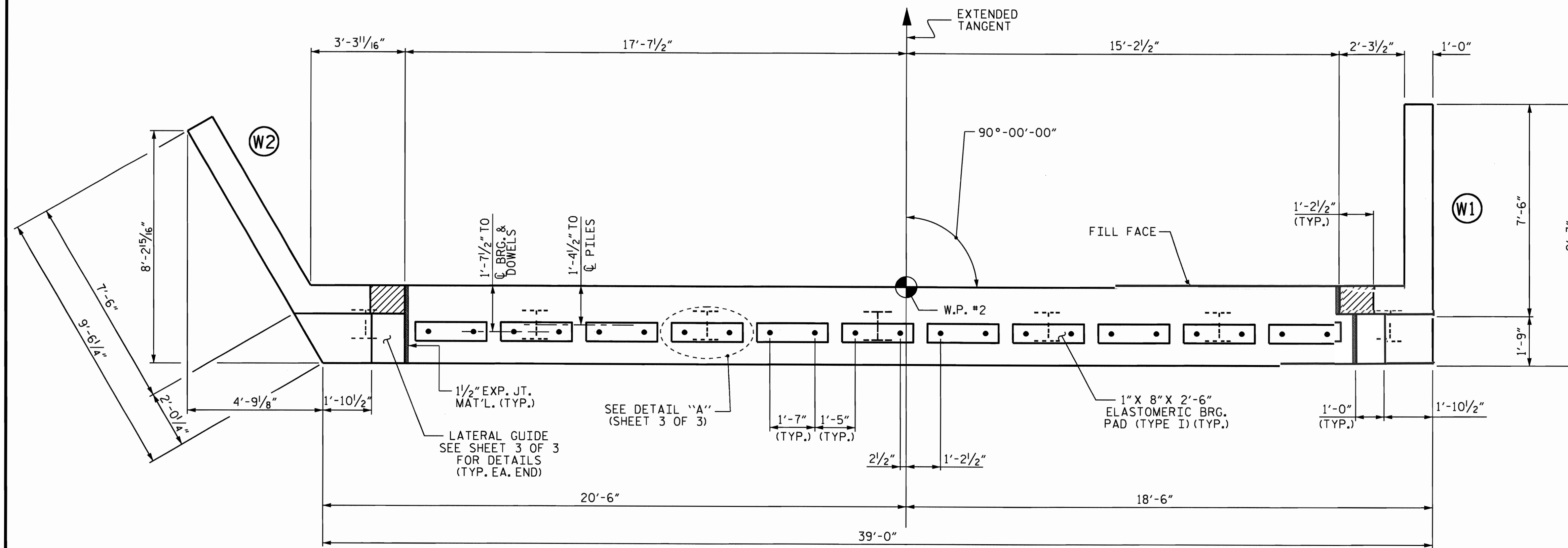
SUBSTRUCTURE

ABUTMENT No. 1
 DETAILS

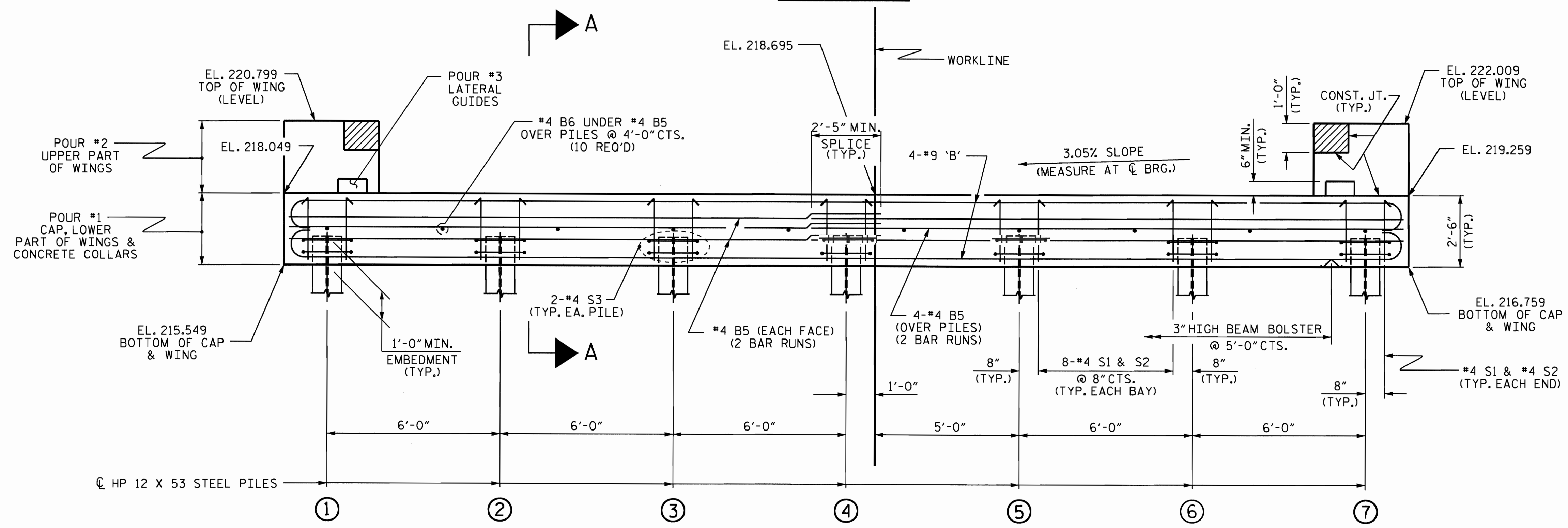


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			17

ASSEMBLED BY : A.C. OUTLAW	DATE : 2/29/12
CHECKED BY : K.W. ALFORD	DATE : 3/12
DRAWN BY : DGE	02/10
CHECKED BY : MKT	02/10



PLAN



ELEVATION

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

NOTES

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
- THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.
- THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.
- FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.
- FOR WING DETAILS, SEE SHEET 2 OF 3.
- THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.

TOP OF PILE ELEVATIONS

①	216.630
②	216.813
③	216.996
④	217.179
⑤	217.362
⑥	217.545
⑦	217.728

PROJECT NO. BD-5105Q
FRANKLIN COUNTY
 STATION: 13+30.00 -L-

SHEET 1 OF 3

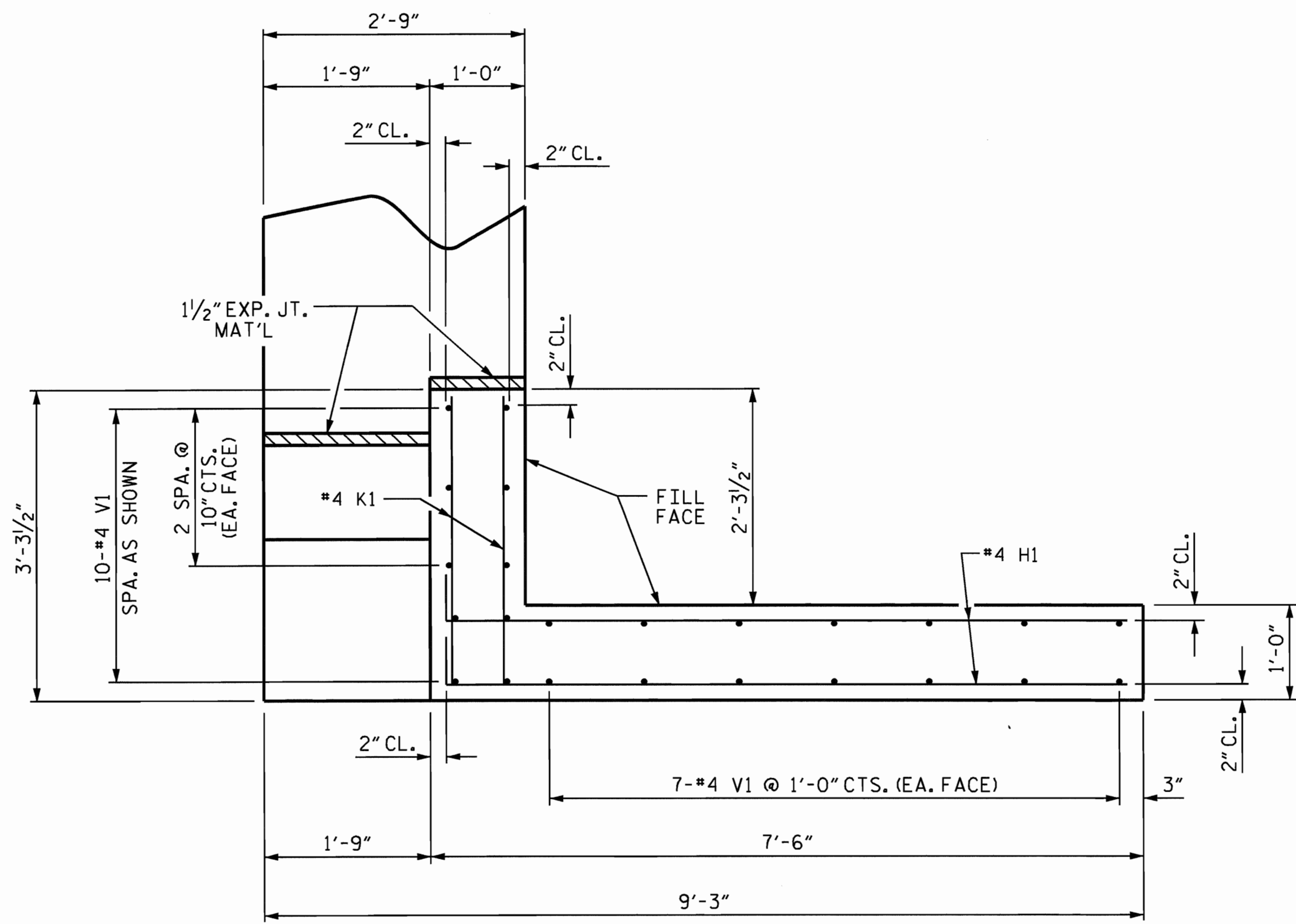
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 2

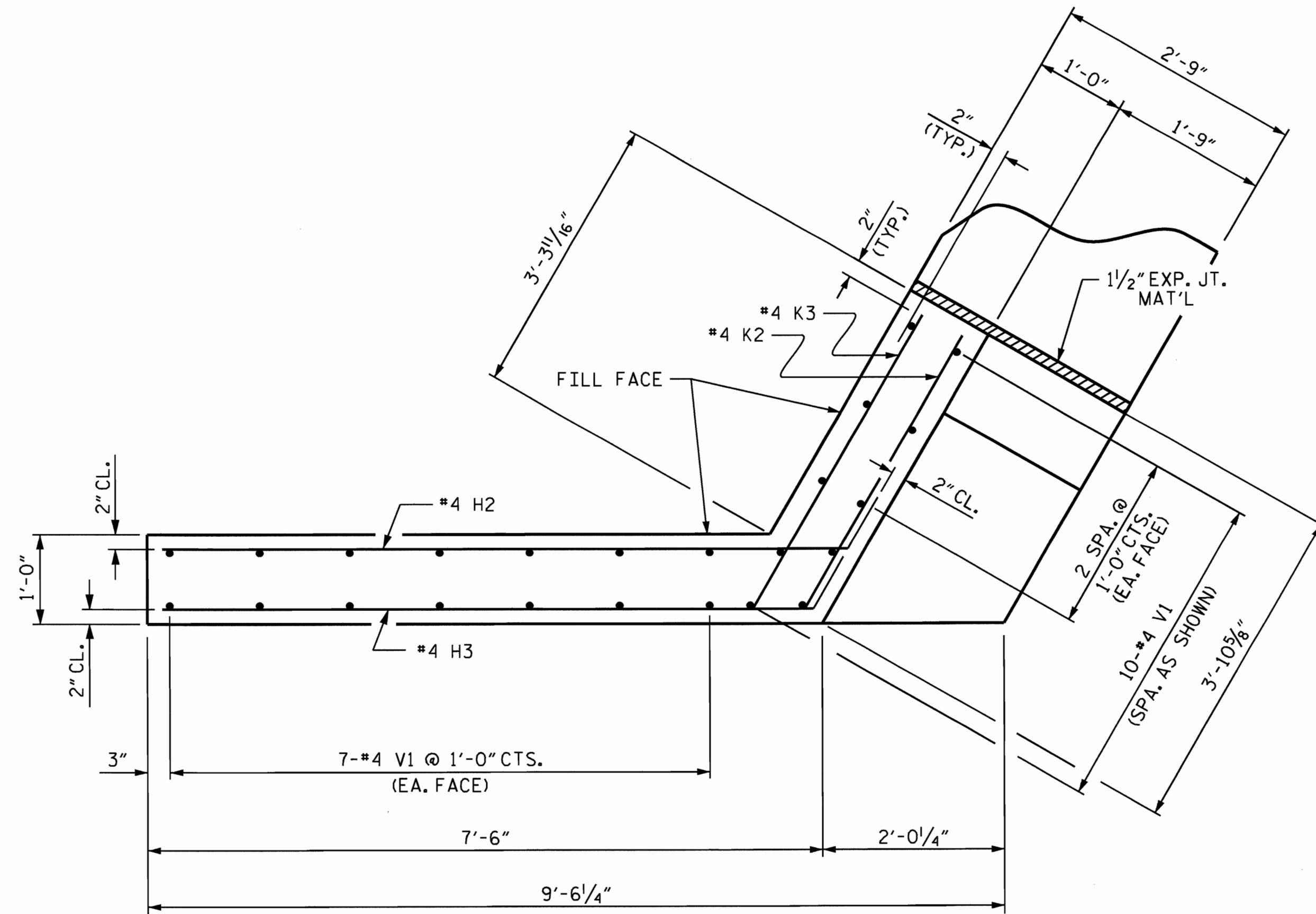
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS 17
2			4			



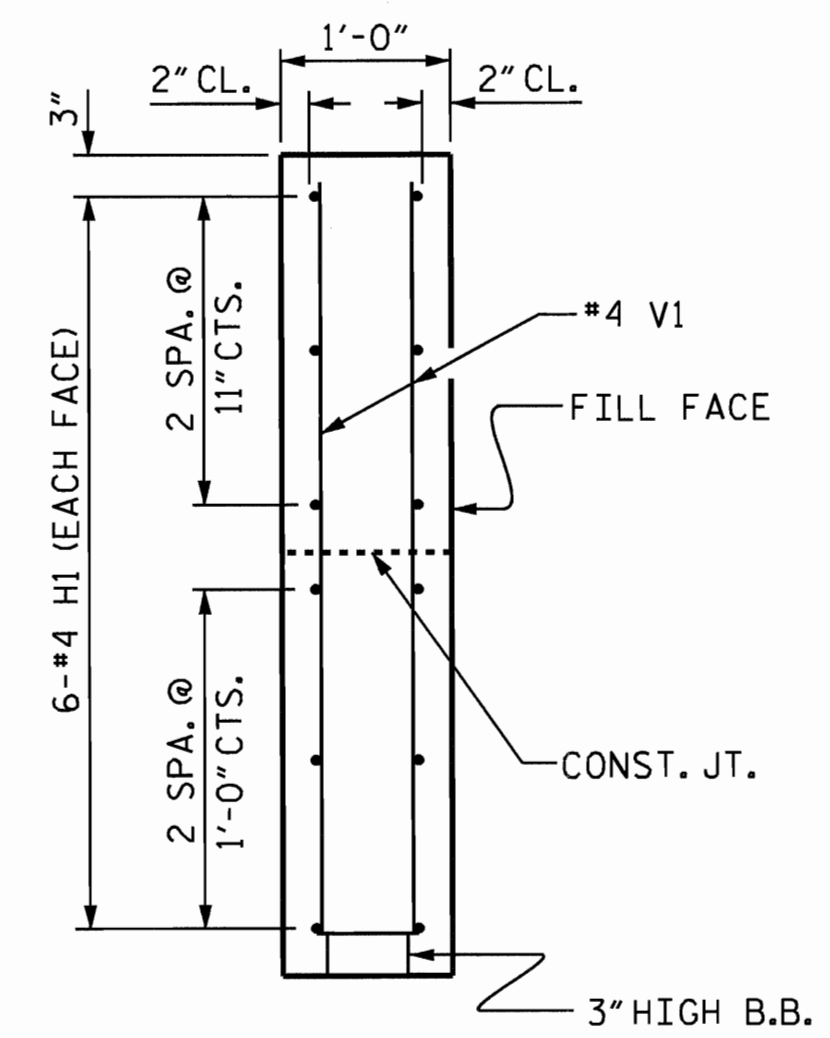
ASSEMBLED BY : A.C. OUTLAW DATE : 6/12/12
 CHECKED BY : K. W. ALFORD DATE : 6/12
 DRAWN BY : DGE 02/10
 CHECKED BY : MKT 02/10



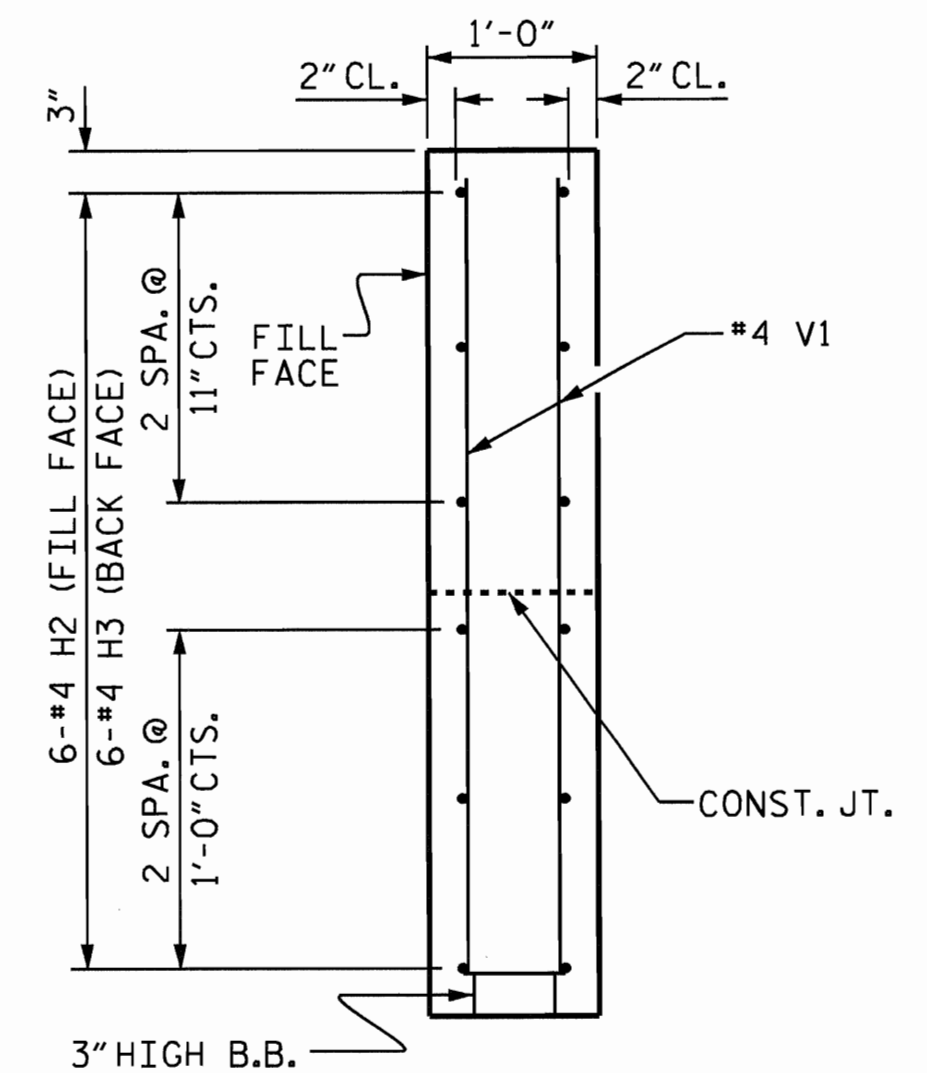
PLAN OF WING (W1)



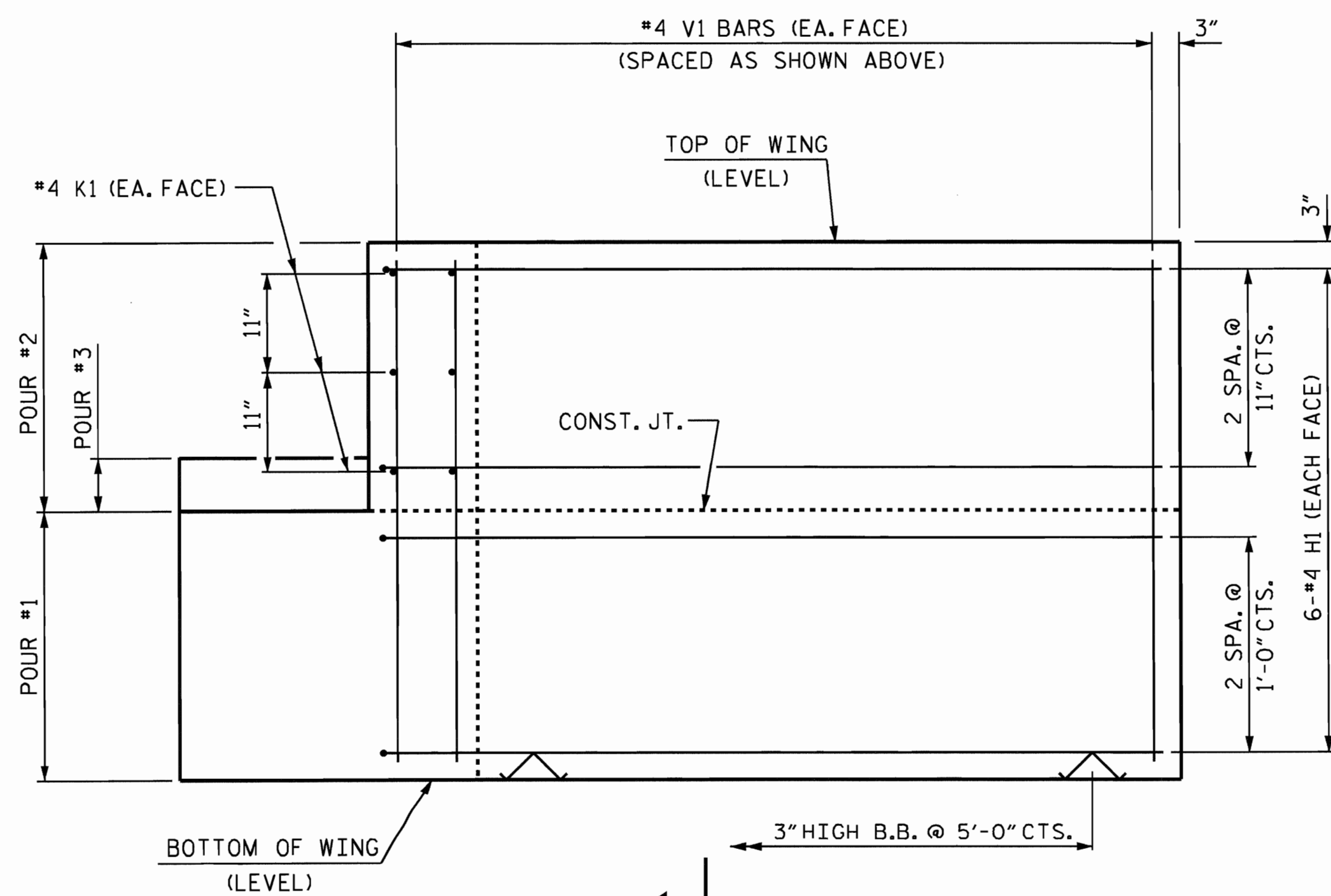
PLAN OF WING (W2)



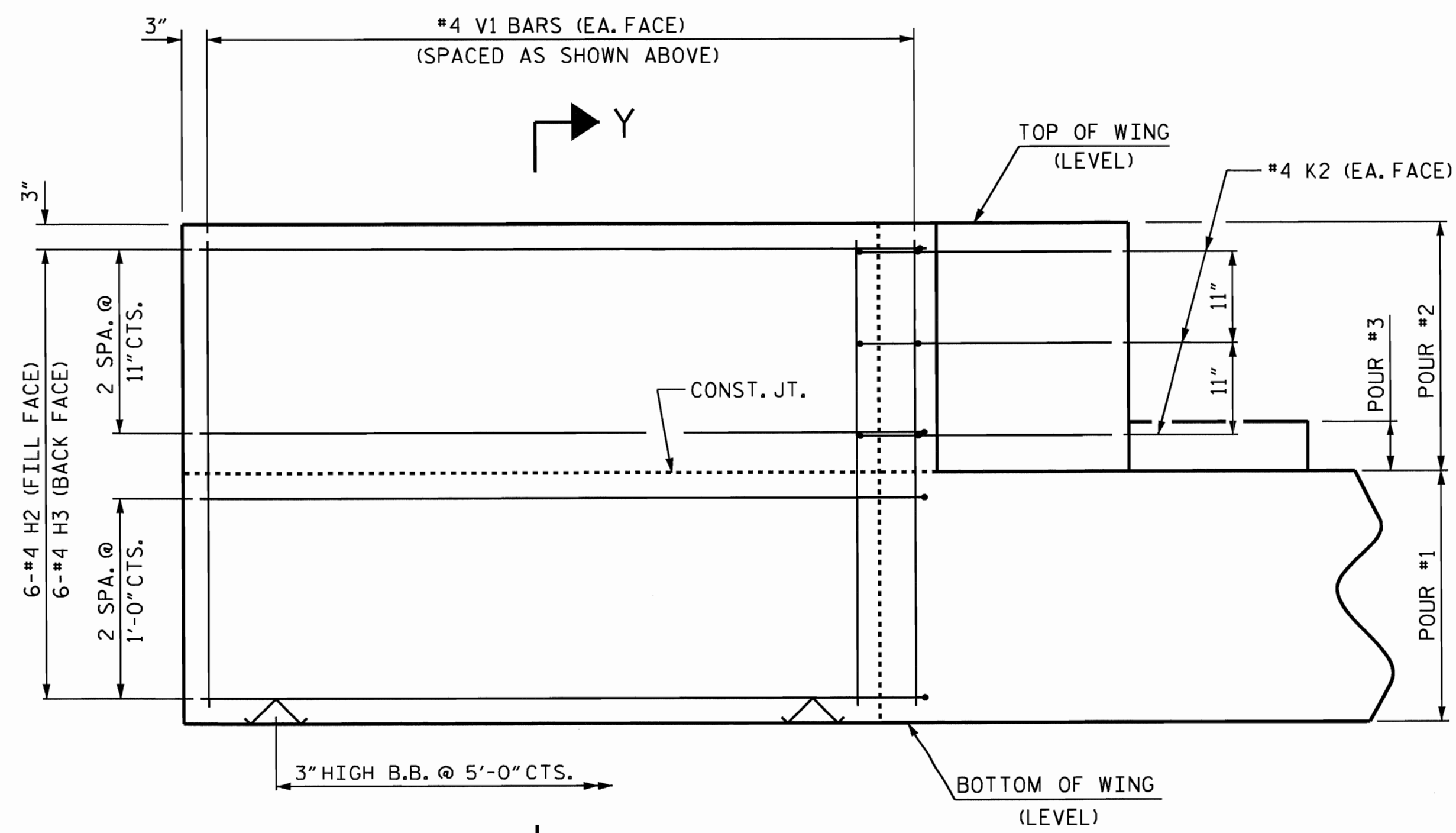
SECTION X-X



SECTION Y-Y



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)

WING DETAILS

PROJECT NO. BD-51050
FRANKLIN COUNTY
 STATION: 13+30.00 -L-

SHEET 2 OF 3

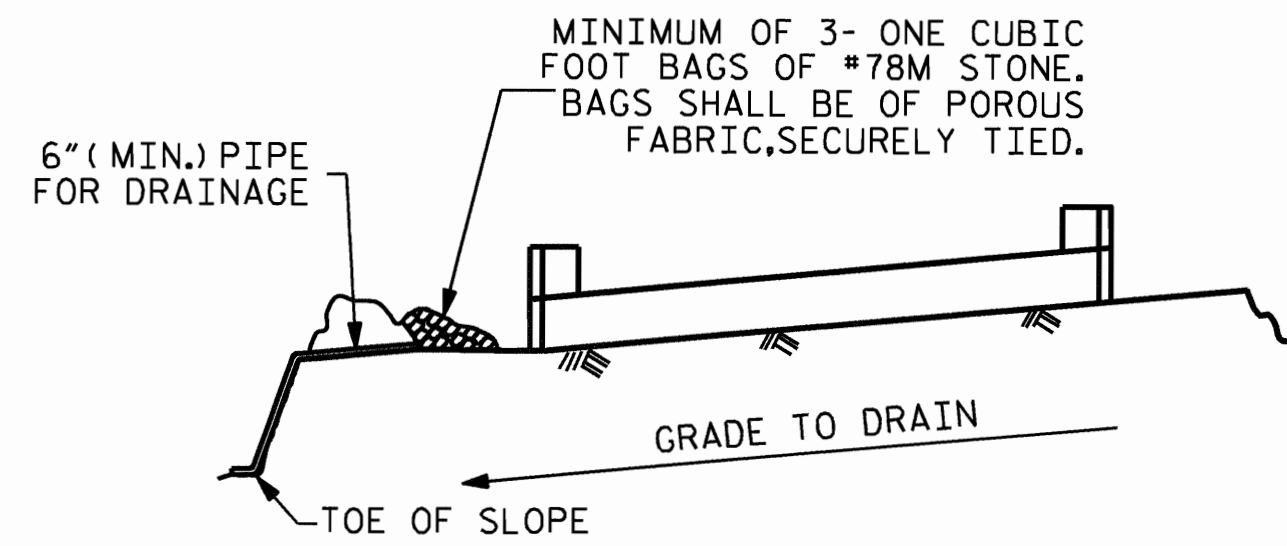
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 2
 WING DETAILS



ASSEMBLED BY: A.C. OUTLAW DATE: 6/12/12
 CHECKED BY: K.W. ALFORD DATE: 6/12
 DRAWN BY: DGE 02/10
 CHECKED BY: MKT 02/10

REVISIONS						SHEET NO. S-13
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 17
2			4			

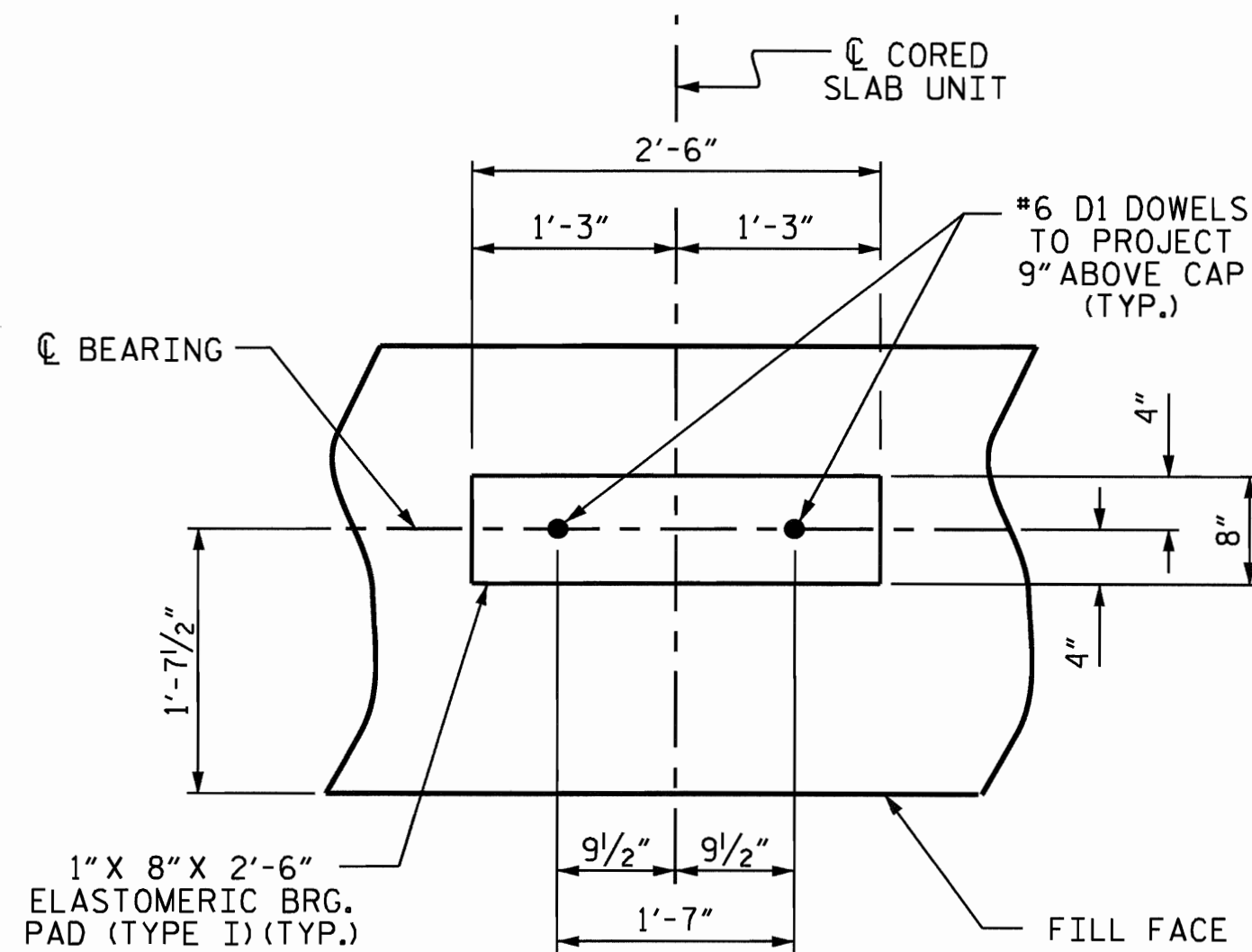


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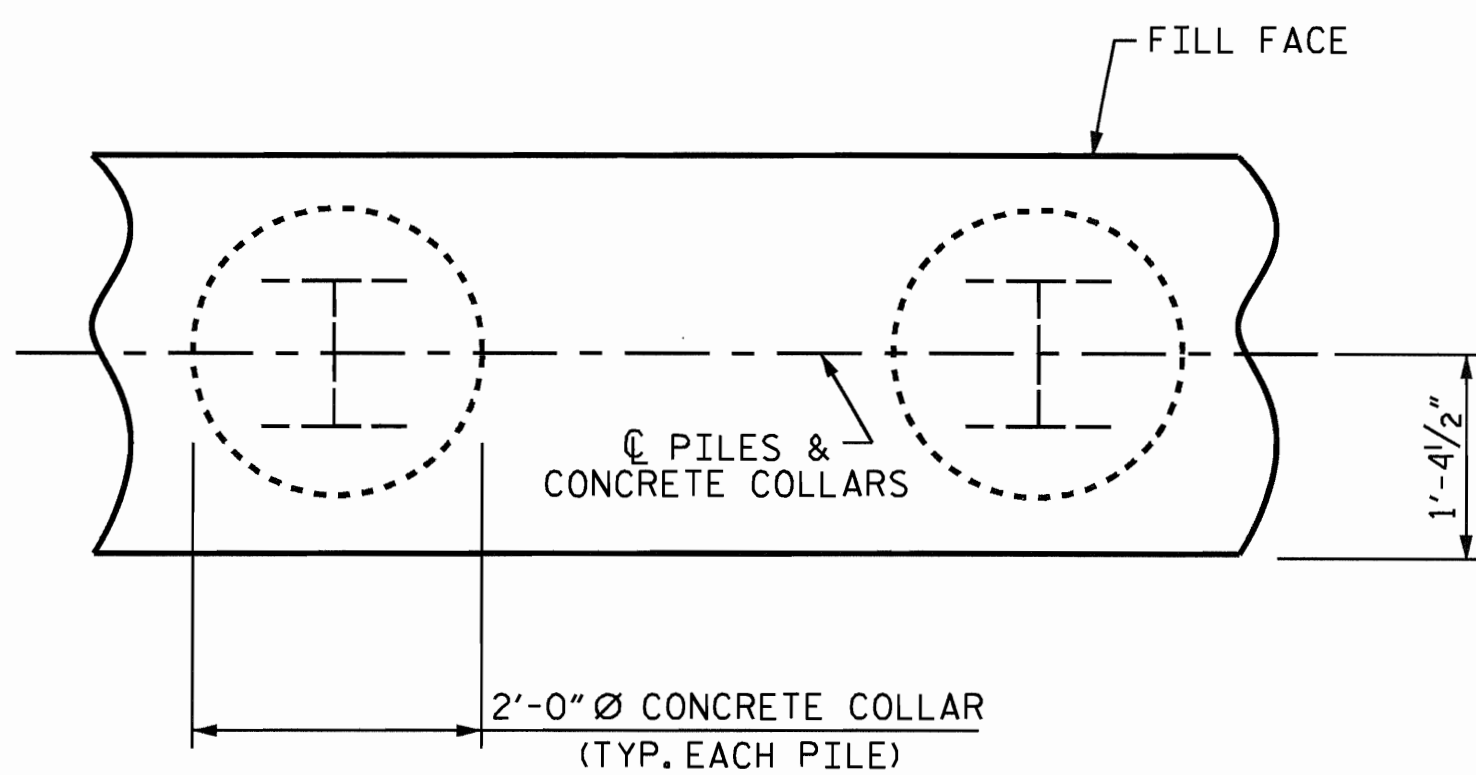
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



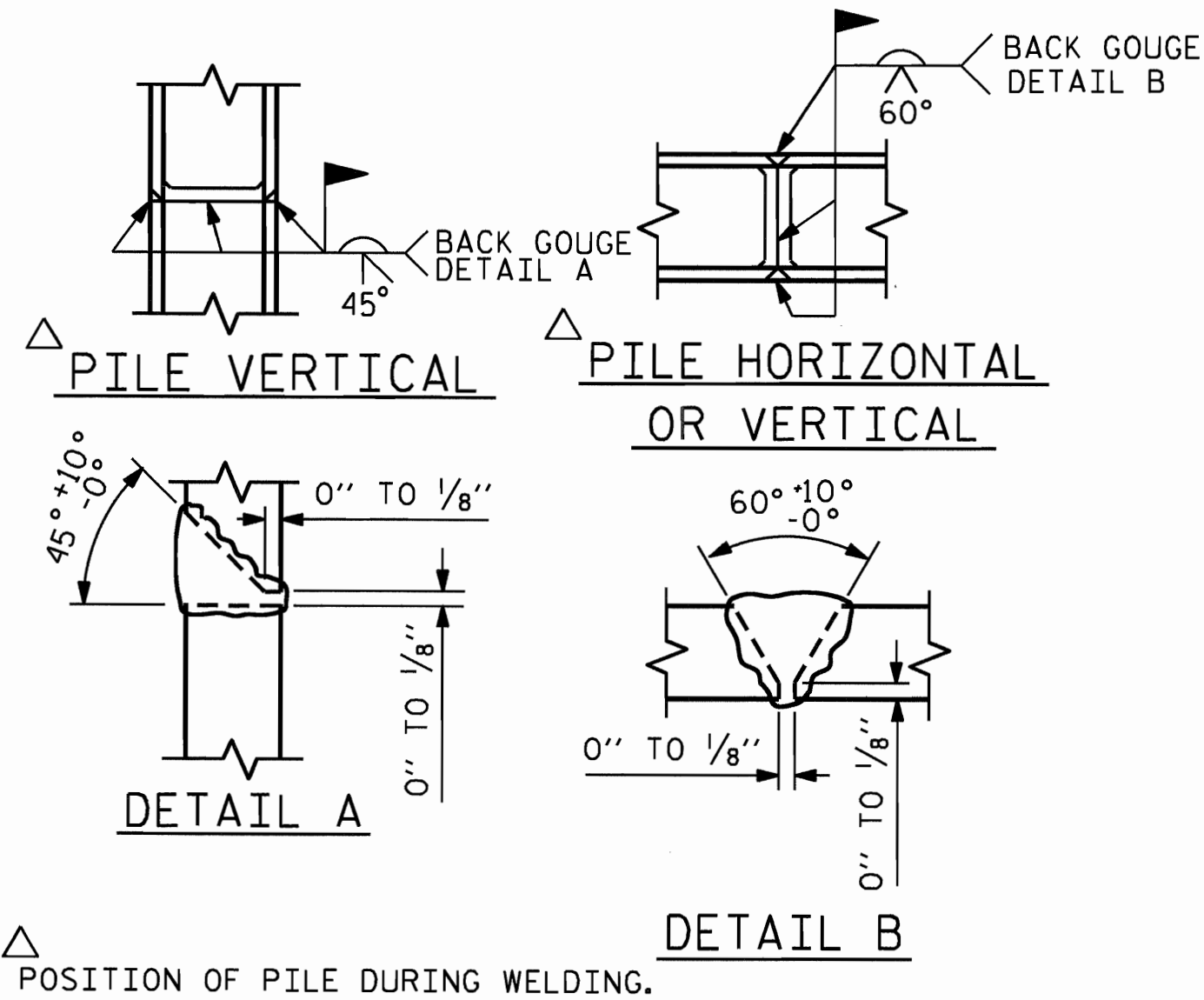
DETAIL "A"

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



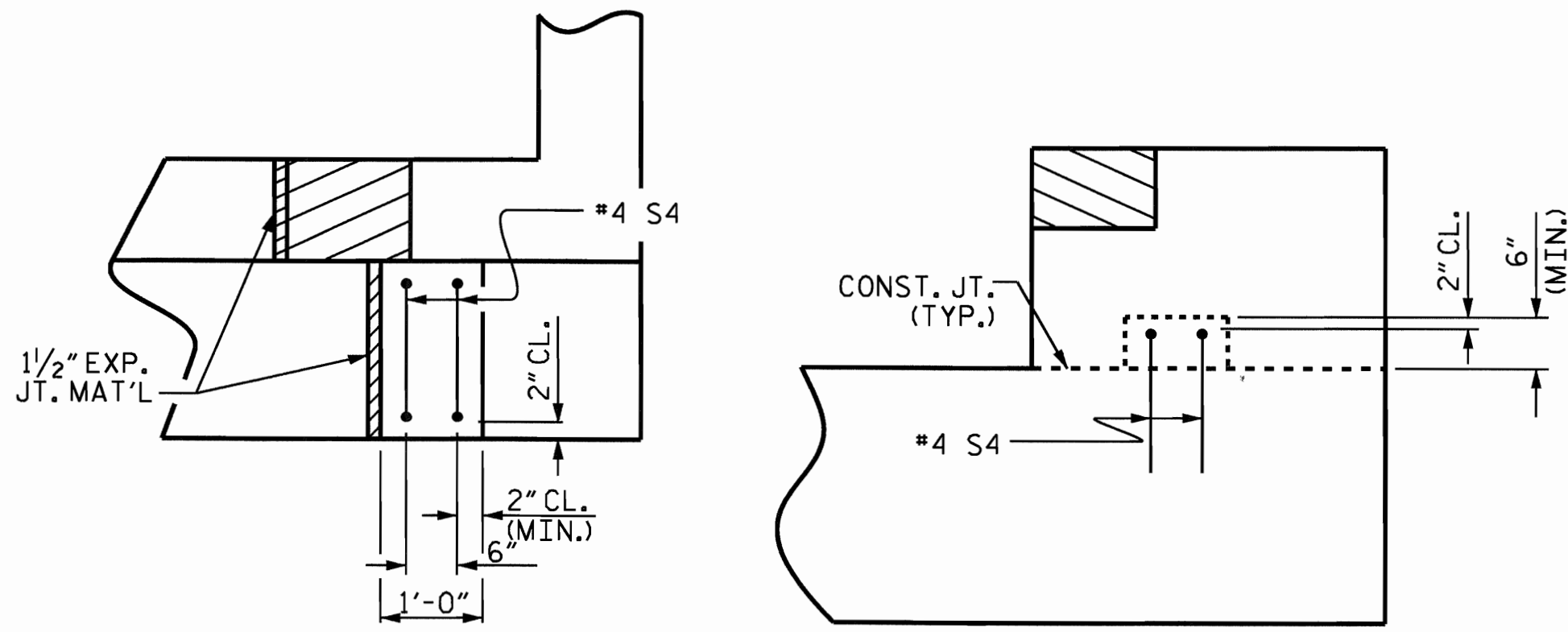
PLAN

CORROSION PROTECTION FOR STEEL PILES DETAIL



PILE SPLICE DETAILS

POSITION OF PILE DURING WELDING.

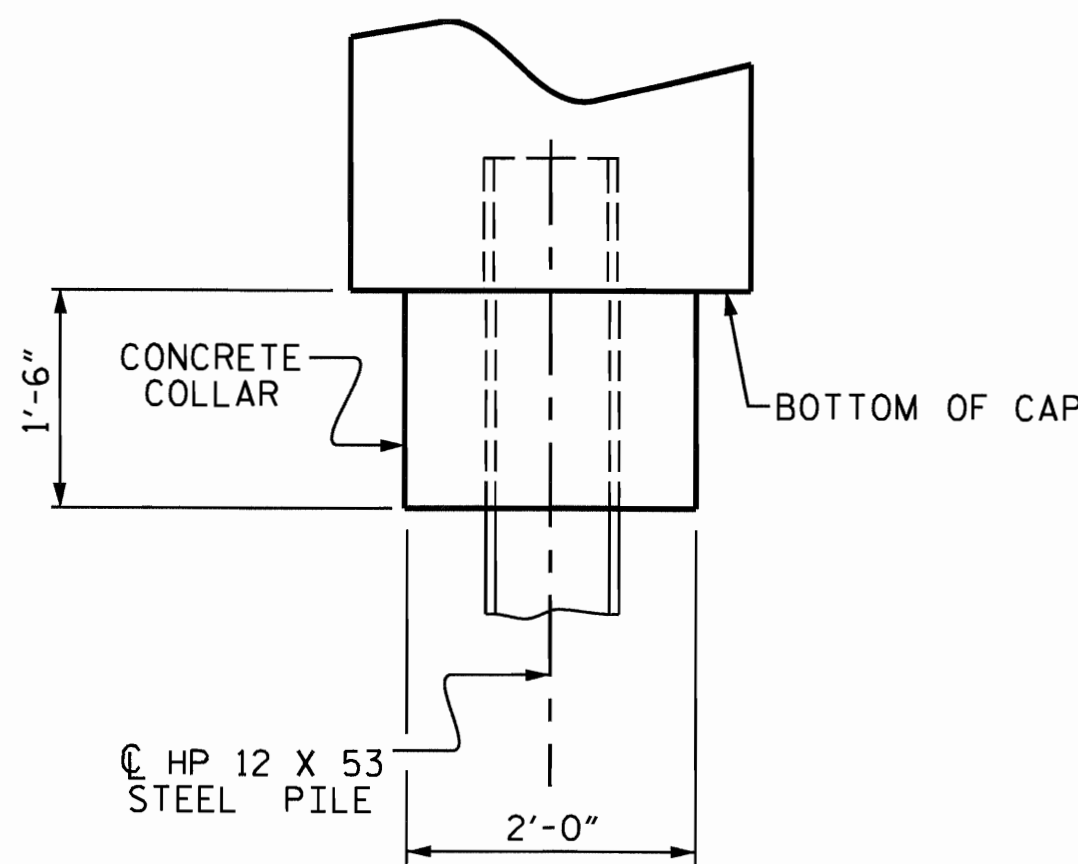


PLAN

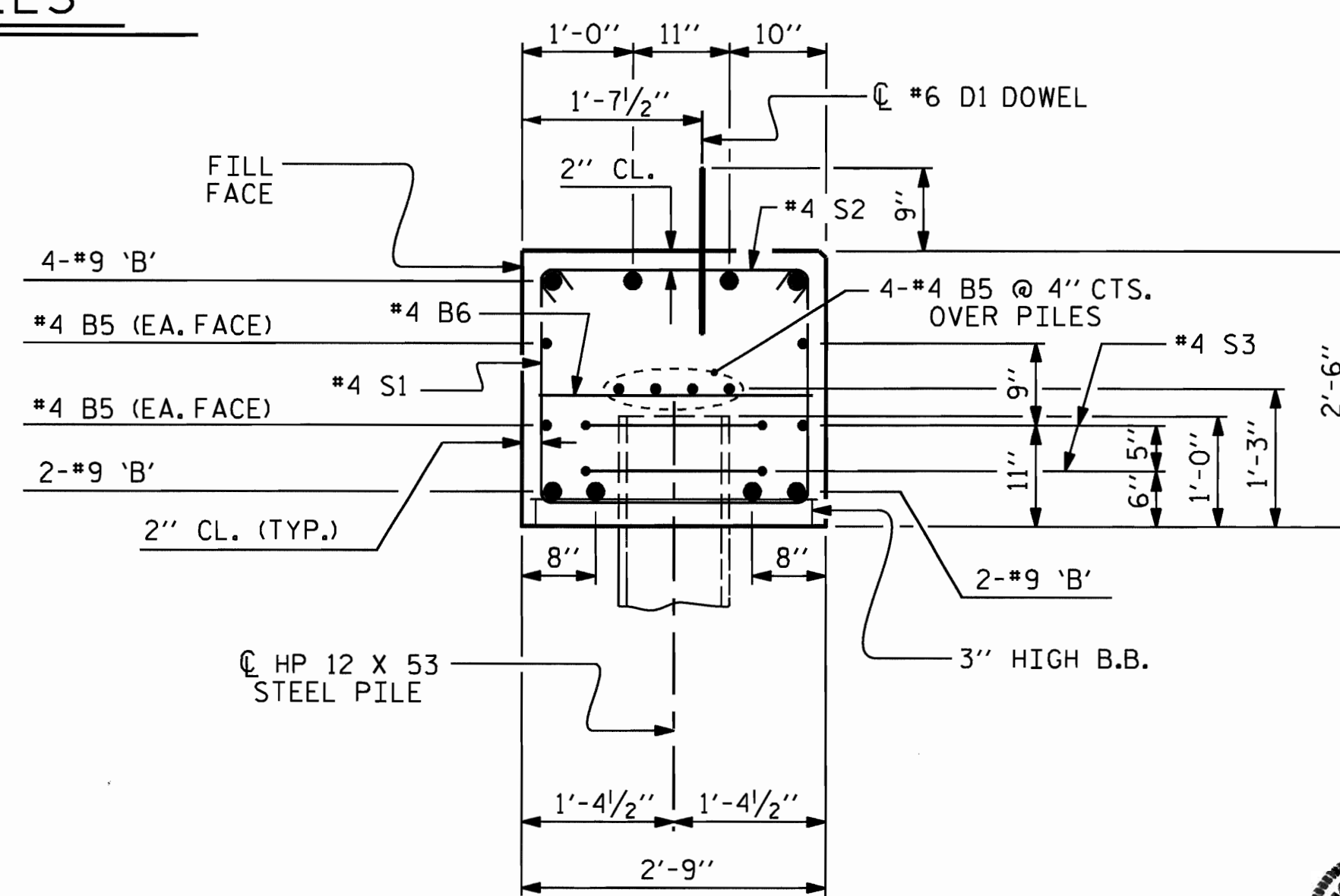
ELEVATION

LATERAL GUIDE DETAILS

(RIGHT LATERAL GUIDE SHOWN ONLY)



ELEVATION

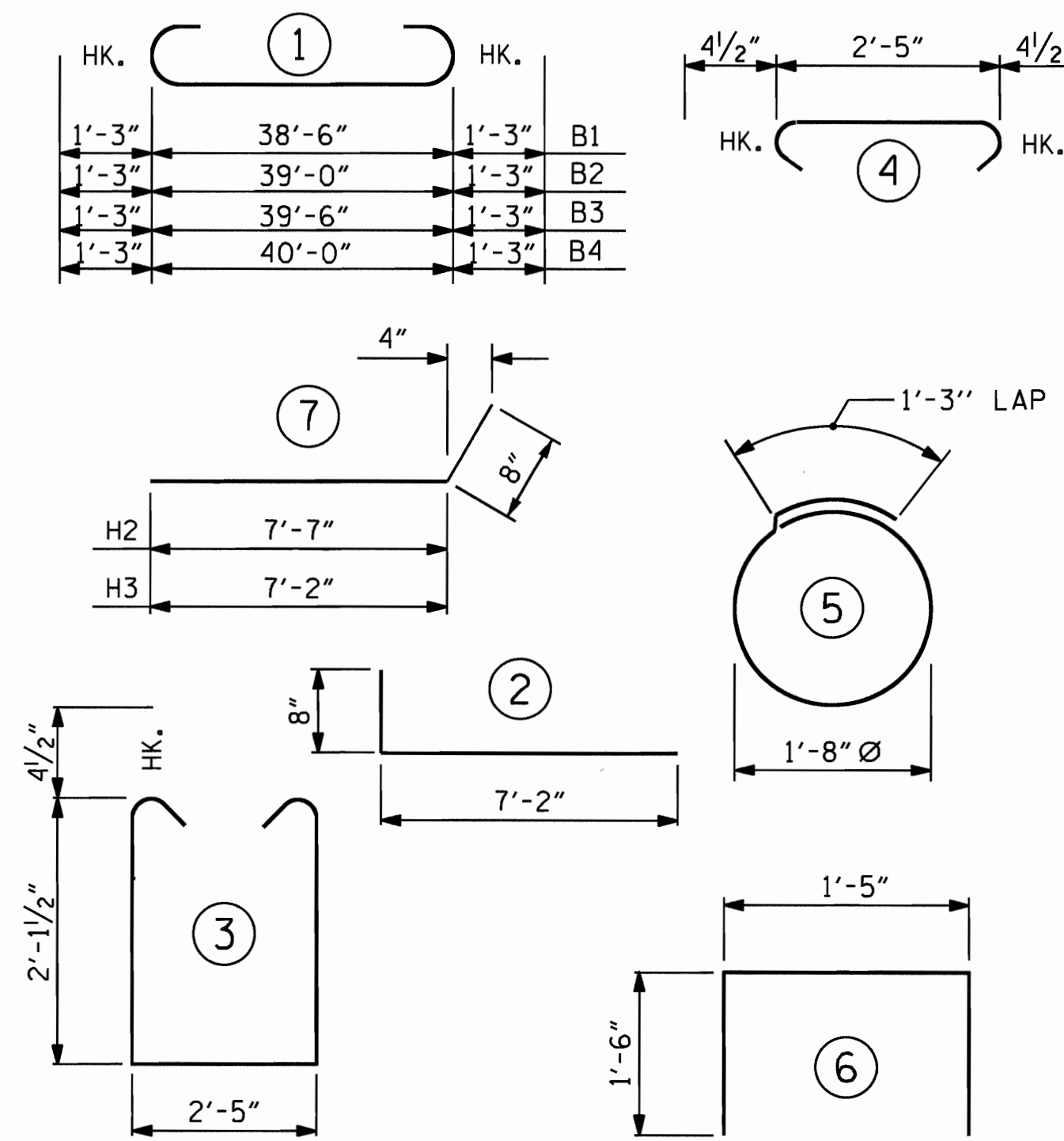


SECTION A-A

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



BAR TYPES



HP 12 X 53 STEEL PILES
NO: 7
LIN. FT. = 70

STEEL PILE POINTS
NO: 7
EACH

ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

FOR END BENT No. 2

BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	2	#9	1	41'-0"	279
B2	2	#9	1	41'-6"	282
B3	2	#9	1	42'-0"	286
B4	2	#9	1	42'-6"	289
B5	16	#4	STR	20'-7"	220
B6	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	12	#4	2	7'-10"	63
H2	6	#4	7	8'-3"	33
H3	6	#4	7	7'-10"	31
K1	6	#4	STR	2'-11"	12
K2	3	#4	STR	3'-7"	7
K3	3	#4	STR	3'-11"	8
S1	50	#4	3	7'-5"	248
S2	50	#4	4	3'-2"	106
S3	14	#4	5	6'-6"	61
S4	4	#4	6	4'-5"	12
V1	48	#4	STR	4'-11"	158

REINFORCING STEEL 2161 LBS.

CLASS A CONCRETE BREAKDOWN

POUR #1	CAP, LOWER PART OF WINGS & COLLARS	12.6 C.Y.
POUR #2	UPPER PART OF WINGS	2.1 C.Y.
POUR #3	LATERAL GUIDES	0.1 C.Y.
TOTAL CLASS A CONCRETE		14.8 C.Y.

PROJECT NO. BD-5105Q
FRANKLIN COUNTY
 STATION: 13+30.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE

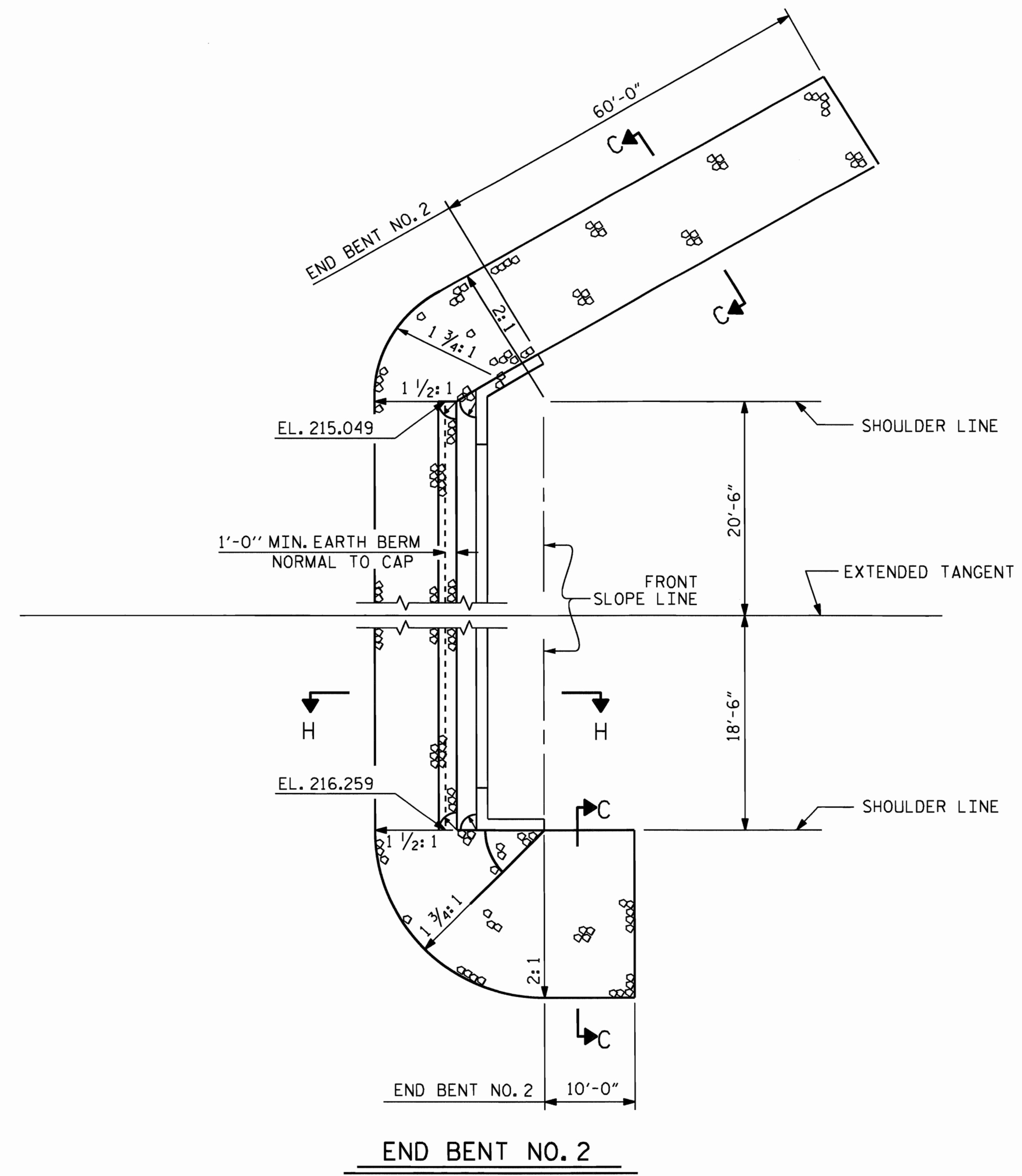
END BENT No. 2
 DETAILS

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

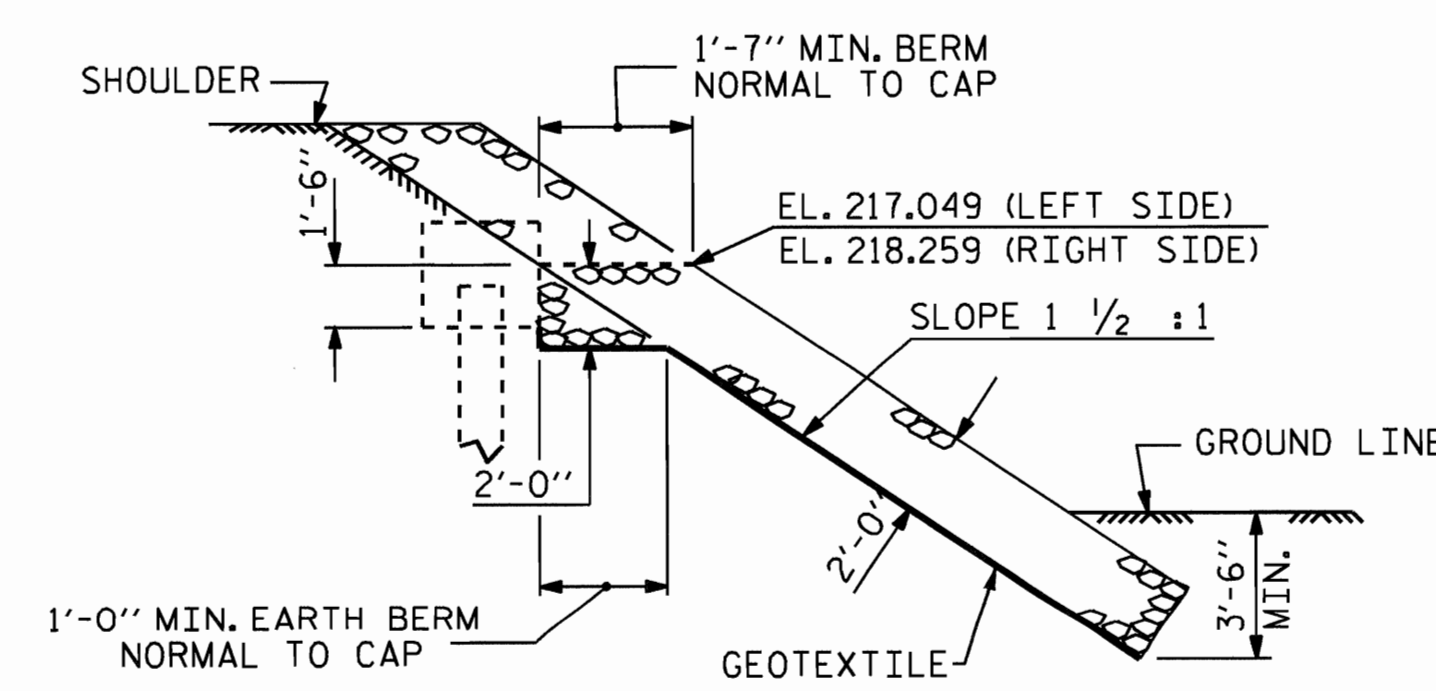
TOTAL SHEETS
17

ASSEMBLED BY : A.C. OUTLAW DATE : 6/12/12
 CHECKED BY : K. W. ALFORD DATE : 6/12
 DRAWN BY : DGE 02/10
 CHECKED BY : MKT 02/10

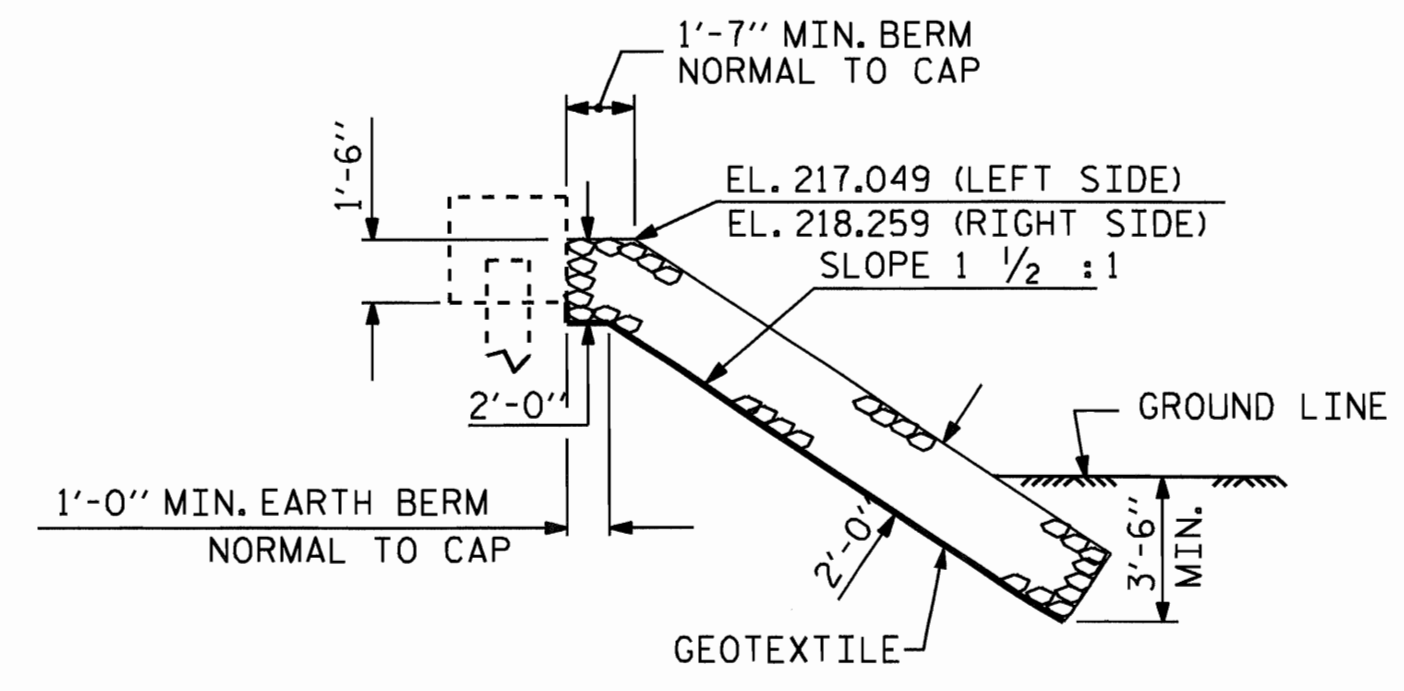
NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.



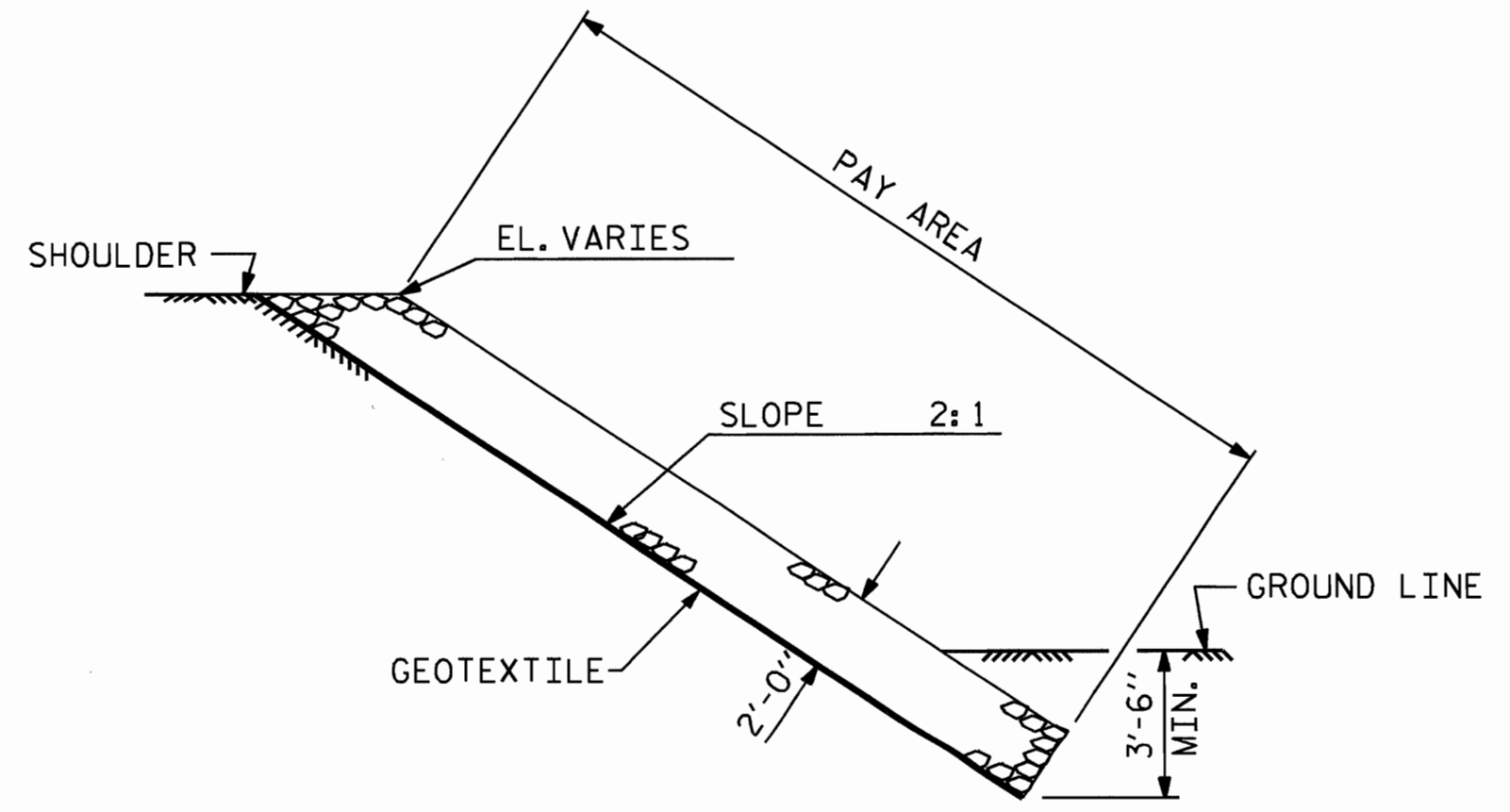
ESTIMATED QUANTITIES		
BRIDGE @ STA. 13+30.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 2	124	140



SECTION H-H



SECTION C-C
BERM RIP RAPPED



SECTION C-C

PROJECT NO. BD-51050
FRANKLIN COUNTY
STATION: 13+30.00 -L-

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

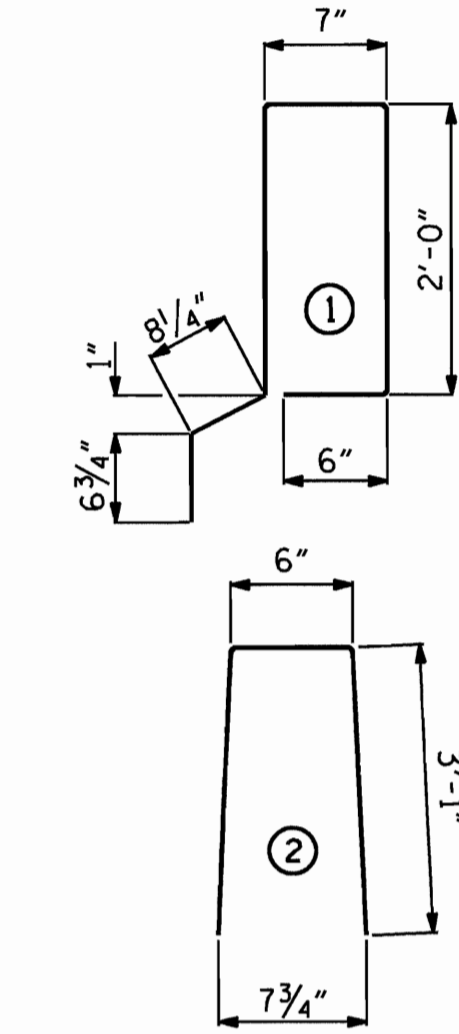


ASSEMBLED BY : A.C. OUTLAW DATE : 2/29/12
CHECKED BY : K.W. ALFORD DATE : 3/12
DRAWN BY : FCJ 2/88 REV. 8/16/99 RWW/LES
CHECKED BY : ARB 8/88 REV. 10/17/00 RWW/LES
REV. 5/1/06R TLA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			17

BILL OF MATERIAL

APPROACH SLAB AT ABUT. #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	26	#4	STR	16'-11"	294
A2	26	#4	STR	16'-9"	291
* B1	64	#5	STR	11'-2"	745
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1412
* EPOXY COATED REINFORCING STEEL				LBS.	1039
CLASS AA CONCRETE				C. Y.	19.9
APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A3	26	#4	STR	17'-2"	298
A4	26	#4	STR	17'-0"	295
* B3	65	#5	STR	11'-7"	785
B4	65	#6	STR	12'-1"	1180
B5	10	#5	STR	12'-2"	127
* S1	13	#5	1	6'-4"	86
* S2	13	#5	2	6'-8"	90
REINFORCING STEEL				LBS.	1602
* EPOXY COATED REINFORCING STEEL				LBS.	1259
CLASS AA CONCRETE				C. Y.	20.3
VERTICAL CONCRETE BARRIER RAIL				12.53 LIN. FT.	
CLASS AA CONCRETE				1.6 C. Y.	



ALL BAR DIMENSIONS ARE OUT TO OUT.

NOTES

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

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

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

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

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

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

APPROACH SLAB GROOVING IS NOT REQUIRED.

PROJECT NO. BD-51050

FRANKLIN COUNTY

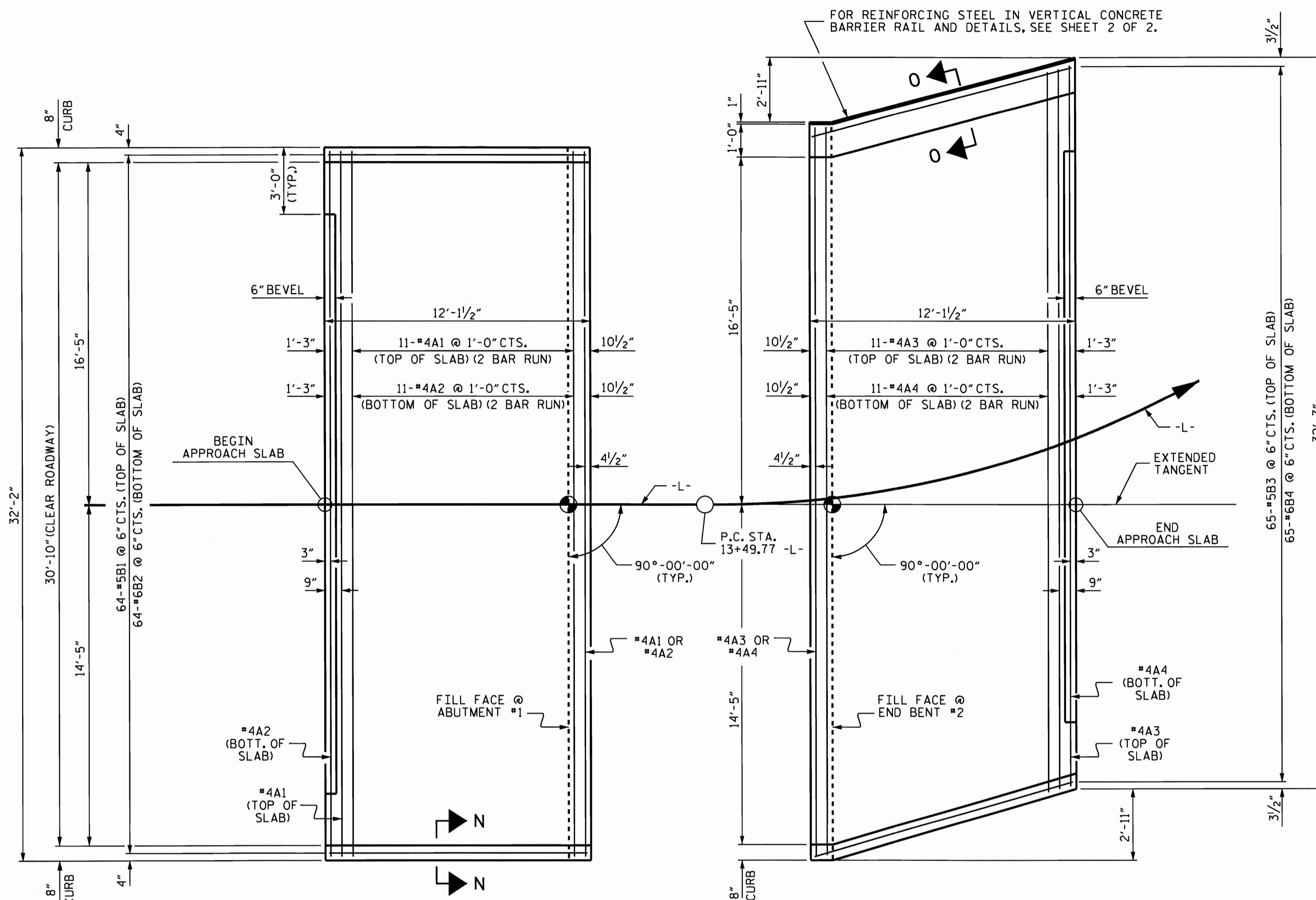
STATION: 13+30.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR PRESTRESSED CONCRETE
 CORED SLAB UNIT
 (SUB-REGIONAL TIER)
 90° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			17

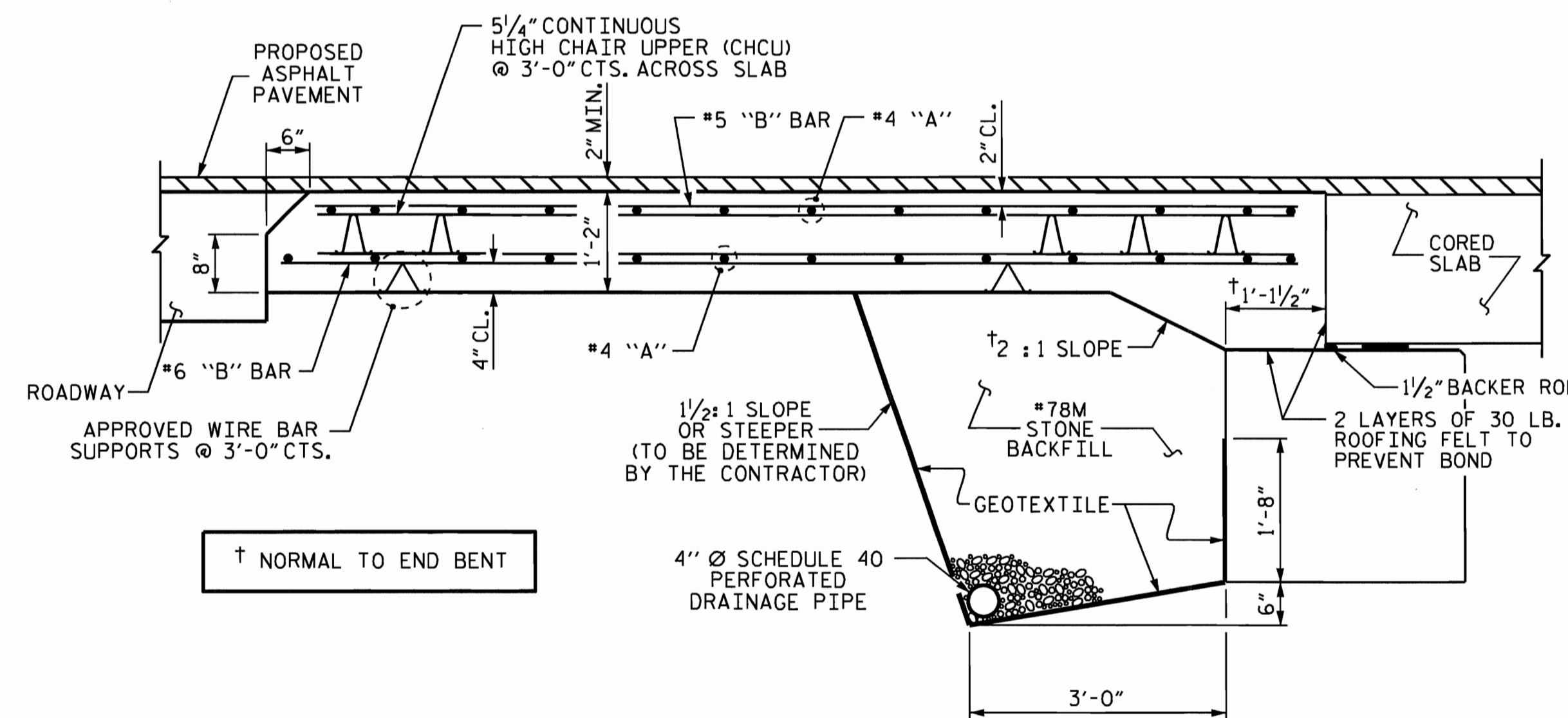
STD. NO. BAS.33.90S



PLAN @ ABUTMENT #1

PLAN @ END BENT #2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



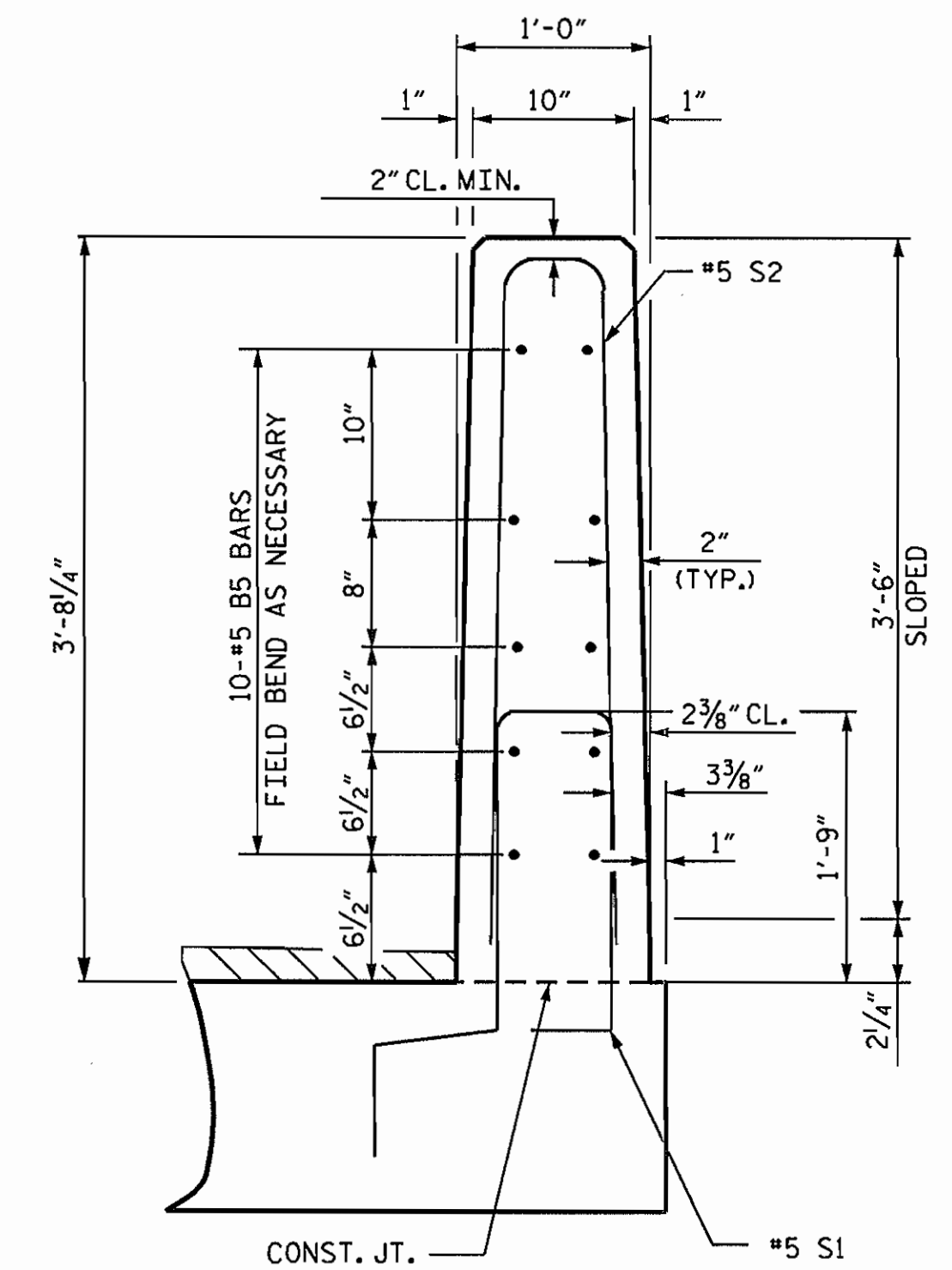
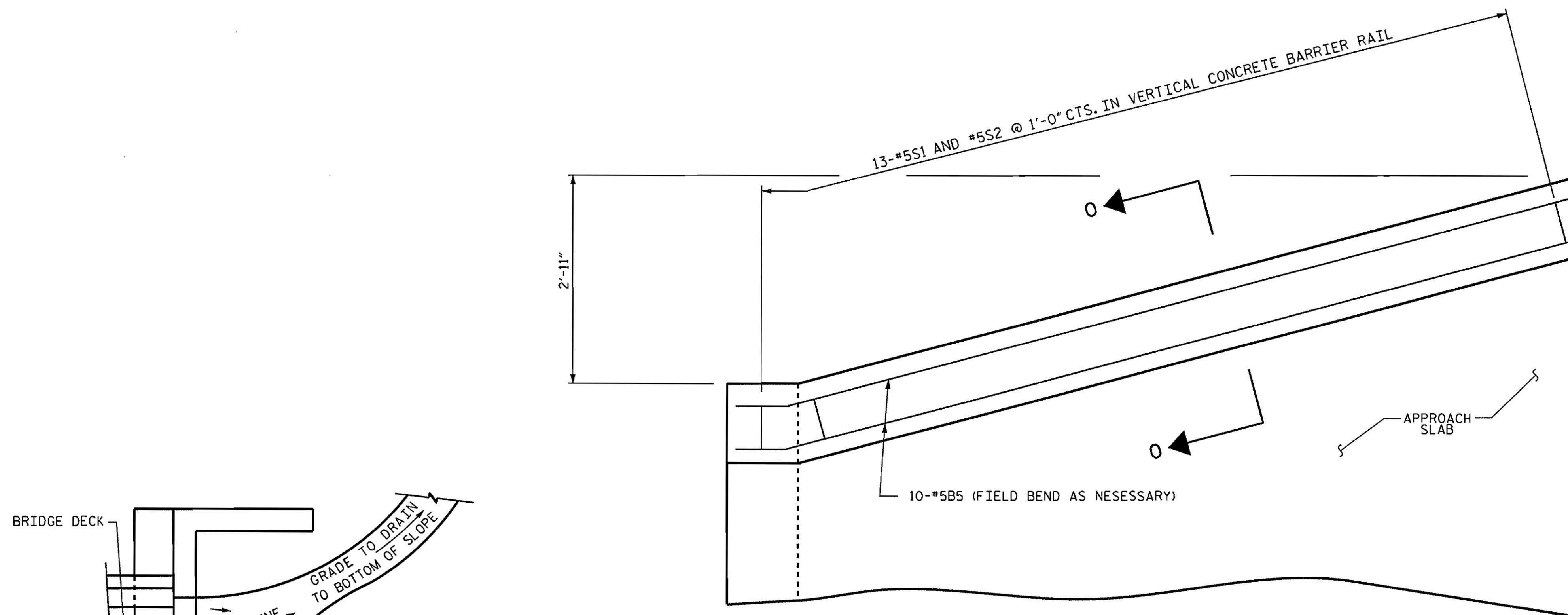
SECTION THRU SLAB

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

DRAWN BY: A.C. OUTLAW DATE: 6/12/12
 CHECKED BY: K.W. ALFORD DATE: 6/12

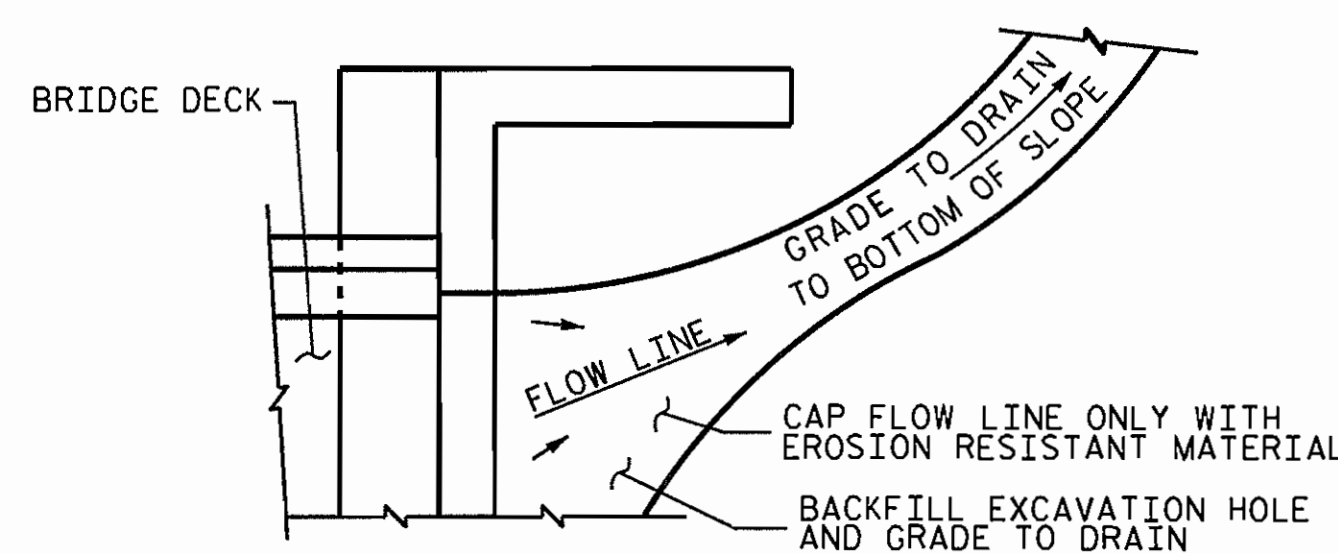
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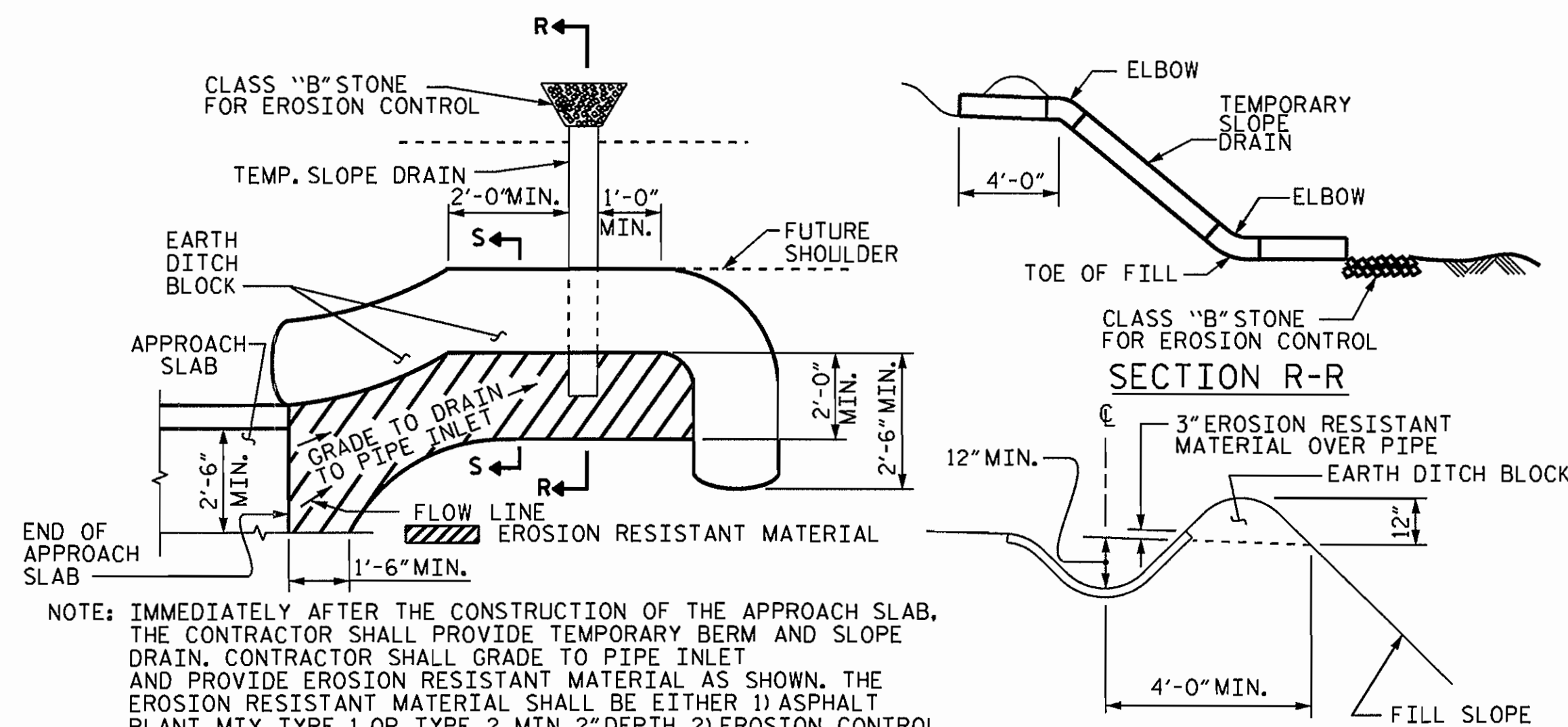
PARTIAL PLAN

SECTION 0-0



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

TEMPORARY DRAINAGE DETAIL

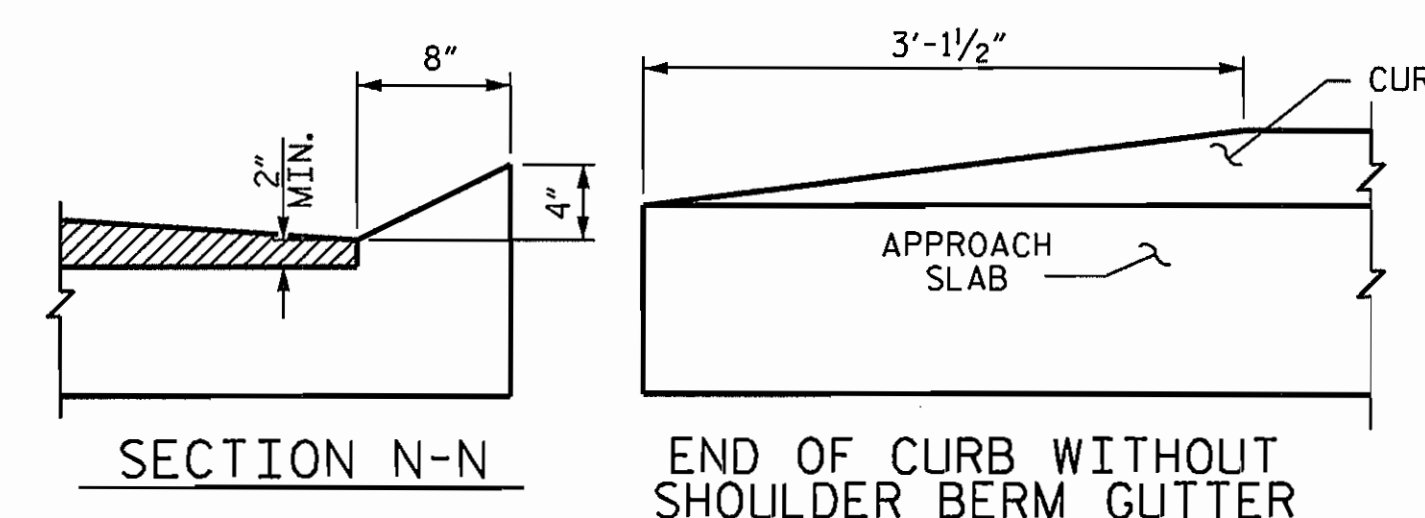


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

PLAN VIEW

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



CURB DETAILS

PROJECT NO. BD-51050
FRANKLIN COUNTY
 STATION: 13+30.00 -L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR PRESTRESSED CONCRETE
 CORED SLAB UNIT
 (SUB-REGIONAL TIER)
 90° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			17

DRAWN BY : A.C. OUTLAW DATE : 6/12/12
 CHECKED BY : K. W. ALFORD DATE : 6/12

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

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

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

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990