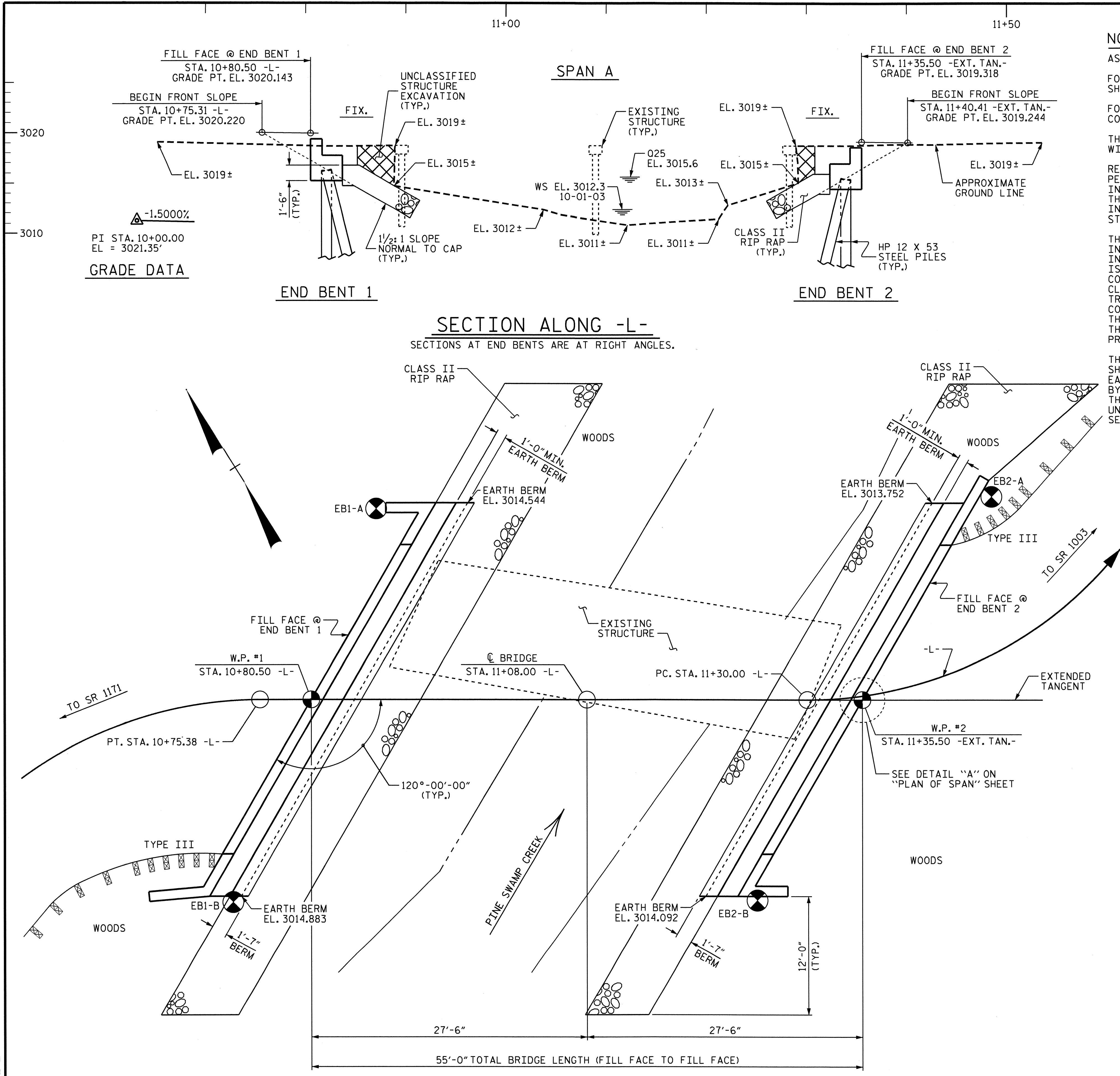




NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

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

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 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.

THE MATERIAL SHOWN IN THE CROSS HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 25 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES", MAY, 2001.

PILES AT END BENTS 1 & 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 11+08.00 -L-."

SEE SPECIAL PROVISIONS FOR:

- SUBMITTAL OF WORKING DRAWINGS
- FALSEWORK AND FORMWORK
- CRANE SAFETY
- GROUT FOR STRUCTURES
- PRESTRESSED CONCRETE MEMBERS.
- CURING CONCRETE
- VERTICAL CONCRETE BARRIER RAIL PILES

	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	65	70
END BENT 2	60	65

EXISTING BRIDGE NO. 229

(TO BE REMOVED)

11.0' CLEAR ROADWAY, 2 SPANS @ 20'-4"

SUPERSTRUCTURE: TIMBER DECK ON CONTINUOUS

STEEL I-BEAMS

SUBSTRUCTURE: TIMBER CAPS ON TIMBER

POSTS AND SILLS

BM #1: 8" SPIKE IN

ROOT OF 15" RED OAK,

59.0' RT. OF

STA. 11+35.59 -L-,

EL. 3030.99

PROJECT NO. 33258

ASHE COUNTY

STATION: 11+08.00 -L-

REPLACES BRIDGE NO. 229

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

GENERAL DRAWING

BRIDGE OVER PINE SWAMP

CREEK ON SR 1169 BETWEEN

SR 1171 AND SR 1003

REVISIONS

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

SHEET NO.

1

TOTAL SHEETS

22

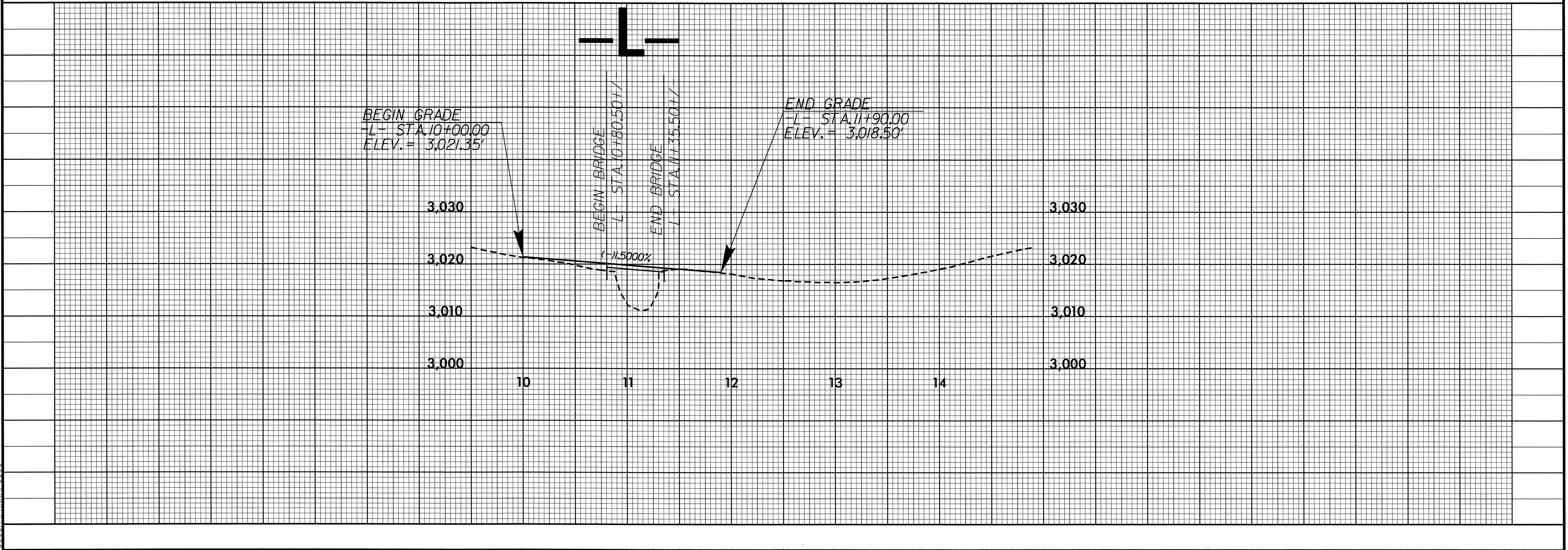
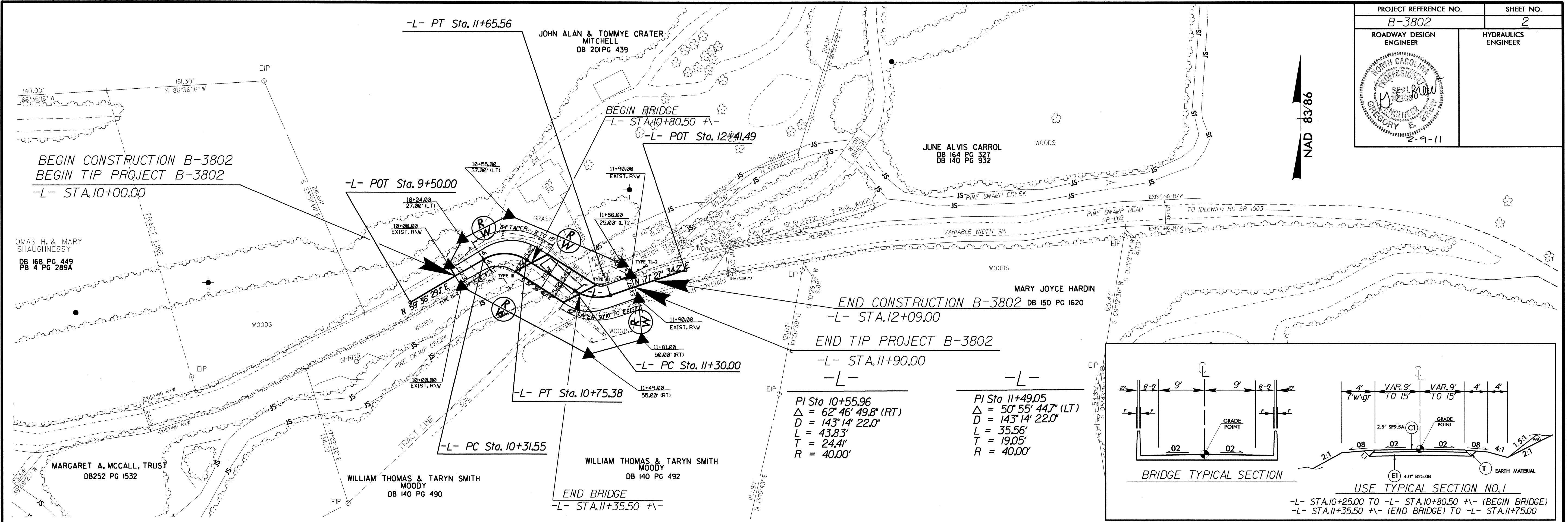
DRAWN BY : E.C. LOCKLEAR

DATE : 12-23-10

CHECKED BY : J.A. YANNACCONE

DATE : 1-03-11

5/28/11



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

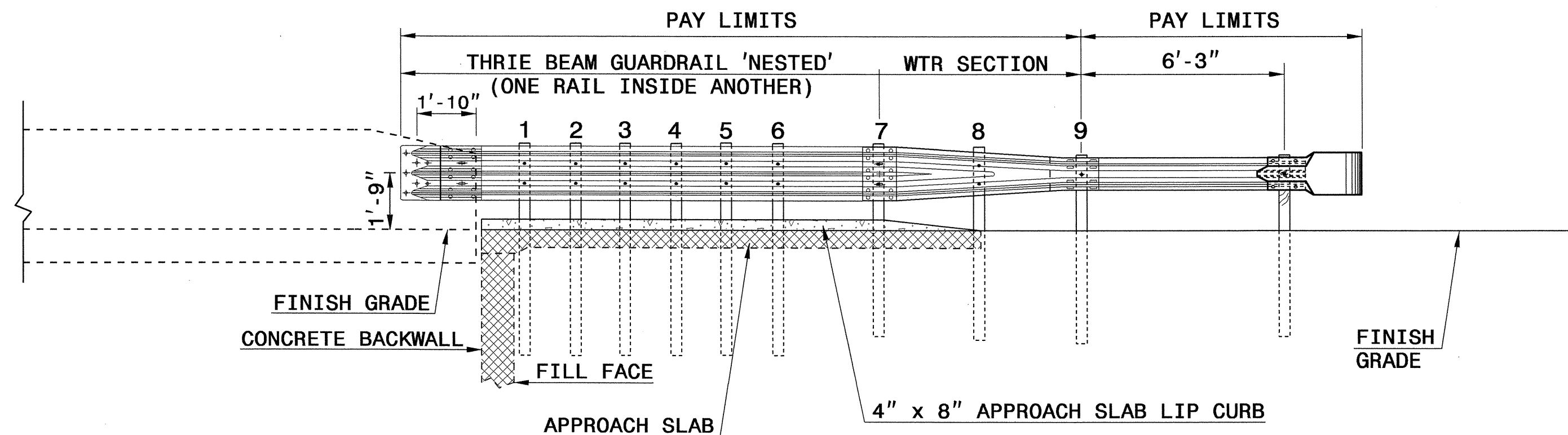
ENGLISH DETAIL DRAWING FOR
TYPE III - SHOP CURVED
STRUCTURE ANCHOR UNIT

SHEET 1 OF 1
TYPE III SC

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

ENGLISH DETAIL DRAWING FOR
TYPE III - SHOP CURVED
STRUCTURE ANCHOR UNIT

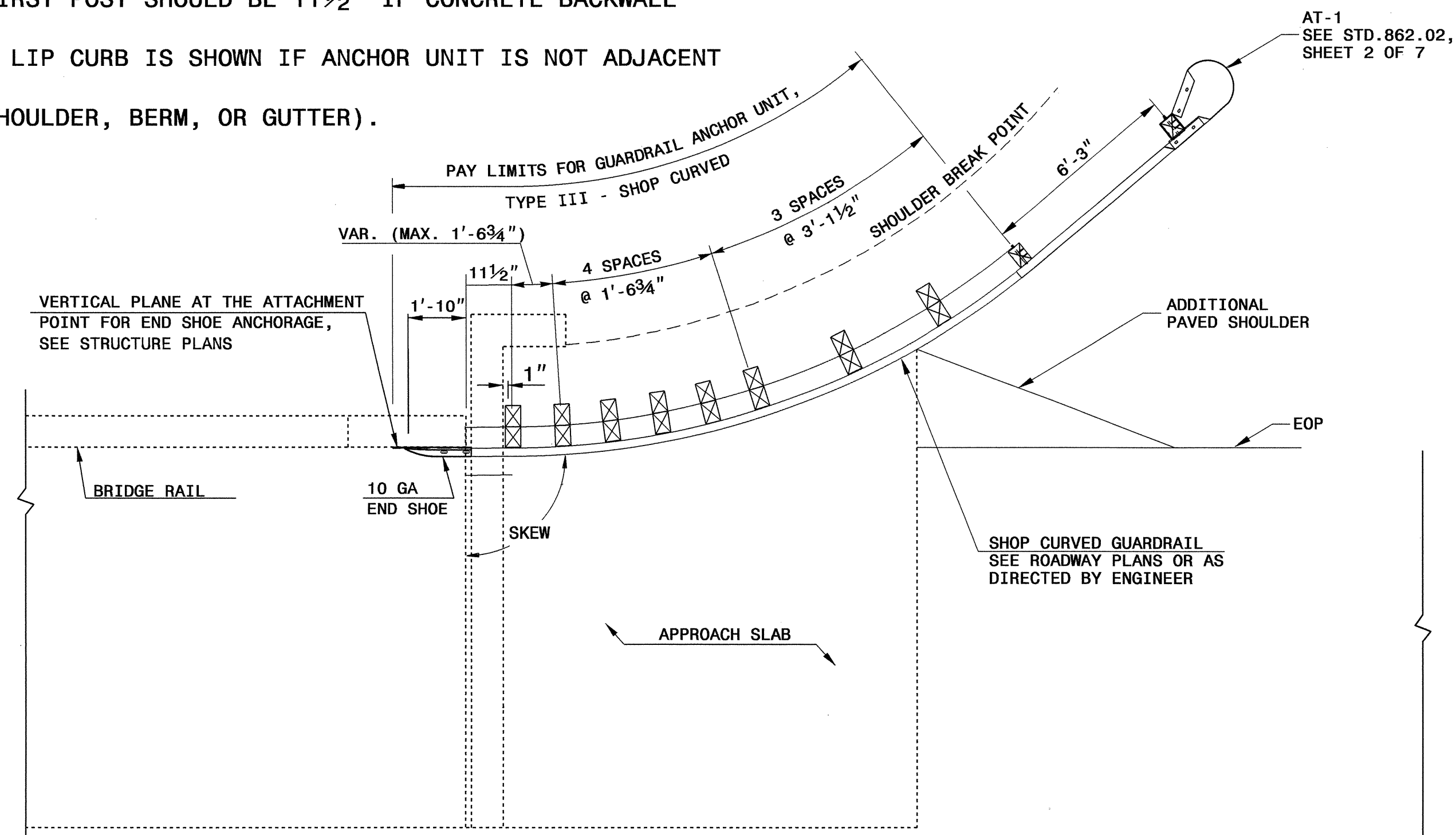
SHEET 1 OF 1
TYPE III SC



ELEVATION

NOTE:

- **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
- SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
- MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
- USE NO STEEL POSTS WITHIN THE GUARDRAIL ANCHOR UNIT LIMITS.
- LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
- SEE STANDARD 862.03 SHEET 4 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

GUARDRAIL ANCHOR UNIT, TYPE III - SHOP CURVED
FOR ATTACHMENT TO RAIL ON BRIDGE

CONTRACT STANDARDS
AND DEVELOPMENT UNIT
Office 919-250-4128 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: E.E.Ward	DATE: 4-4-02
MODIFIED BY: T.S.Spell	DATE: 5-29-09
CHECKED BY: [Signature]	DATE: 7/7/11
FILE SPEC.: vusr\details\stand\862stds\typeiiiisc.dgn	

LOAD FACTORS:

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

NOTES:

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

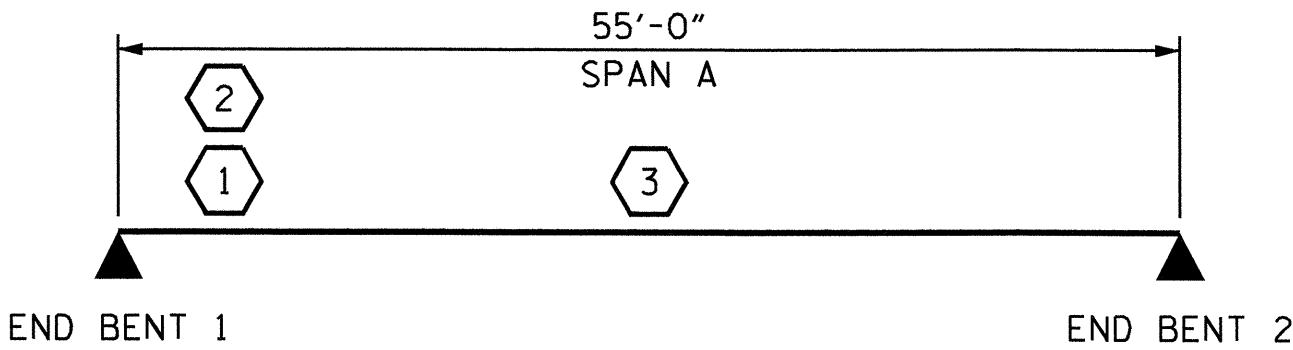
ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

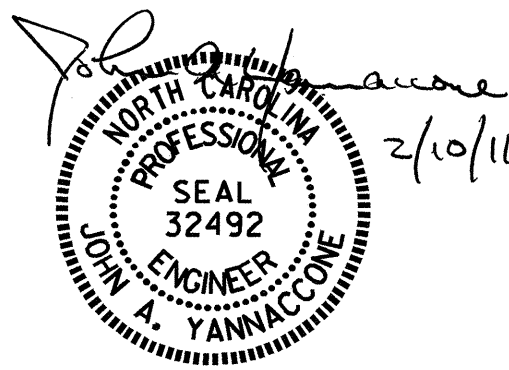
1.
2.
3.
4.

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

LOAD AND RESISTANCE FACTOR RATING (LRFD) SUMMARY FOR PRESTRESSED CONCRETE CORED SLAB UNITS																								
LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER		
						LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	MOMENT						
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.041	--	1.75	0.252	1.56	A	EL	25.624	0.658	1.04	A	EL	5.125	0.80	0.252	1.10	A	EL	25.624		
	HL-93(0pr)	N/A	--	1.349	--	1.35	0.252	2.03	A	EL	25.624	0.658	1.35	A	EL	5.125	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.244	44.788	1.75	0.252	1.95	A	EL	25.624	0.658	1.24	A	EL	5.125	0.80	0.252	1.37	A	EL	25.624		
	HS-20(0pr)	36.000	--	1.613	58.058	1.35	0.252	2.52	A	EL	25.624	0.658	1.61	A	EL	5.125	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500	--	2.835	38.272	1.40	0.252	5.03	A	EL	25.624	0.658	3.50	A	EL	5.125	0.80	0.252	2.83	A	EL	25.624	
		SNGARBS2	20.000	--	2.220	44.409	1.40	0.252	3.94	A	EL	25.624	0.658	2.55	A	EL	5.125	0.80	0.252	2.22	A	EL	25.624	
		SNAGRIS2	22.000	--	2.151	47.330	1.40	0.252	3.82	A	EL	25.624	0.658	2.39	A	EL	5.125	0.80	0.252	2.15	A	EL	25.624	
		SNCOTTS3	27.250	--	1.414	38.524	1.40	0.252	2.51	A	EL	25.624	0.658	1.76	A	EL	5.125	0.80	0.252	1.41	A	EL	25.624	
		SNAGGRS4	34.925	--	1.222	42.685	1.40	0.252	2.17	A	EL	25.624	0.658	1.50	A	EL	5.125	0.80	0.252	1.22	A	EL	25.624	
		SNS5A	35.550	--	1.192	42.387	1.40	0.252	2.11	A	EL	25.624	0.658	1.54	A	EL	5.125	0.80	0.252	1.19	A	EL	25.624	
		SNS6A	39.950	--	1.112	44.416	1.40	0.252	1.97	A	EL	25.624	0.658	1.43	A	EL	5.125	0.80	0.252	1.11	A	EL	25.624	
		SNS7B	42.000	--	1.059	44.497	1.40	0.252	1.88	A	EL	25.624	0.658	1.43	A	EL	5.125	0.80	0.252	1.06	A	EL	25.624	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000	--	1.361	44.918	1.40	0.252	2.41	A	EL	25.624	0.658	1.68	A	EL	5.125	0.80	0.252	1.36	A	EL	25.624	
		TNT4A	33.075	--	1.372	45.385	1.40	0.252	2.43	A	EL	25.624	0.658	1.62	A	EL	5.125	0.80	0.252	1.37	A	EL	25.624	
		TNT6A	41.600	--	1.140	47.415	1.40	0.252	2.02	A	EL	25.624	0.658	1.57	A	EL	5.125	0.80	0.252	1.14	A	EL	25.624	
		TNT7A	42.000	--	1.155	48.521	1.40	0.252	2.05	A	EL	25.624	0.658	1.45	A	EL	5.125	0.80	0.252	1.16	A	EL	25.624	
		TNT7B	42.000	--	1.205	50.612	1.40	0.252	2.14	A	EL	25.624	0.658	1.37	A	EL	5.125	0.80	0.252	1.21	A	EL	25.624	
		TNAGRIT4	43.000	--	1.142	49.108	1.40	0.252	2.03	A	EL	25.624	0.658	1.32	A	EL	5.125	0.80	0.252	1.14	A	EL	25.624	
		TNAGT5A	45.000	--	1.068	48.076	1.40	0.252	1.89	A	EL	25.624	0.658	1.34	A	EL	5.125	0.80	0.252	1.07	A	EL	25.624	
		TNAGT5B	45.000	3	1.048	47.161	1.40	0.252	1.86	A	EL	25.624	0.658	1.26	A	EL	5.125	0.80	0.252	1.05	A	EL	25.624	



LRFR SUMMARY

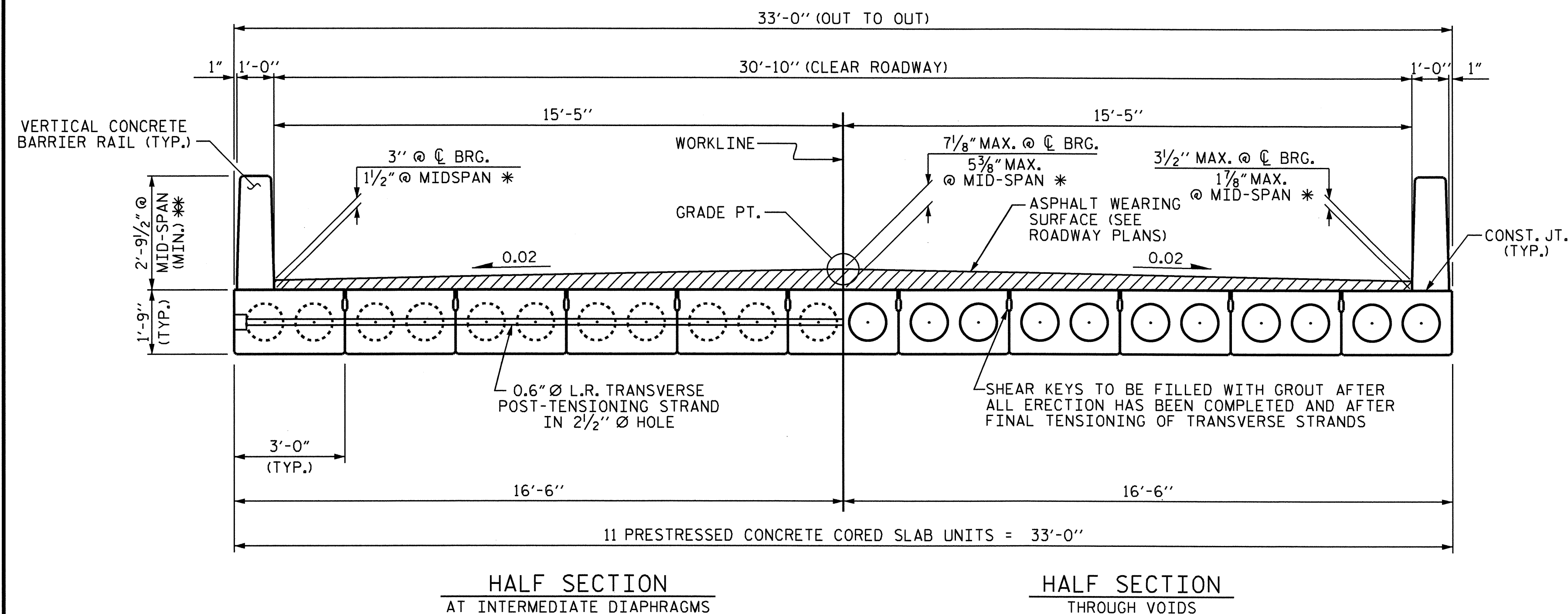


PROJECT NO. 33258
ASHE COUNTY
STATION: 11+08.00 -L-

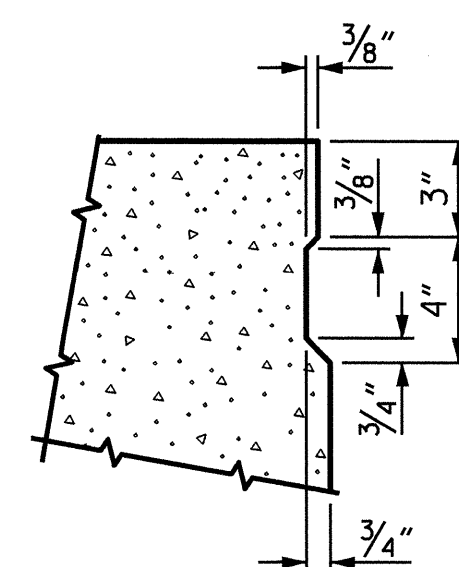
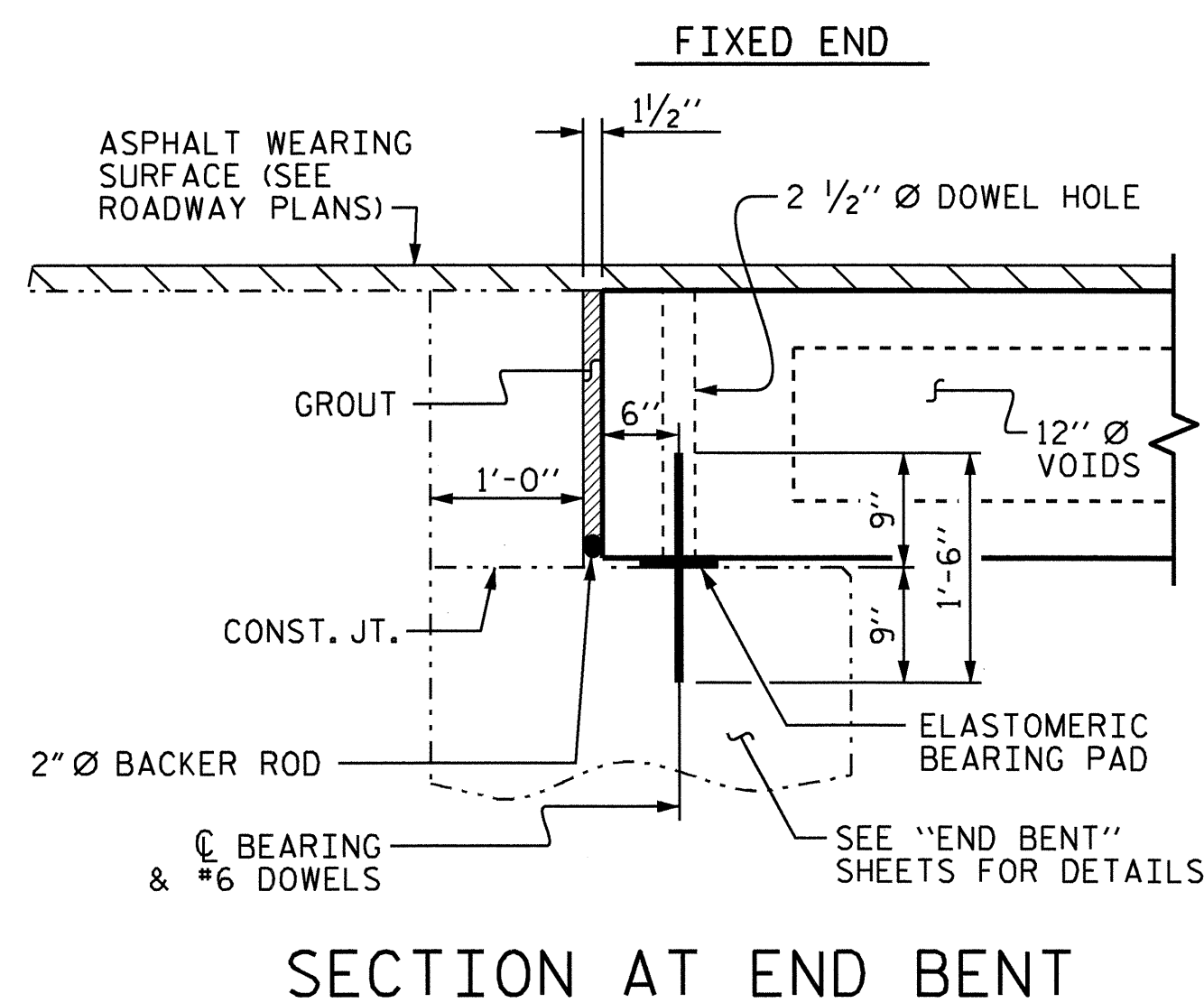
REPLACES BRIDGE NO. 229

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD LRFR SUMMARY FOR PRESTRESSED CONCRETE CORED SLAB UNITS (NON-INTERSTATE TRAFFIC)					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. 4					TOTAL SHEETS 22

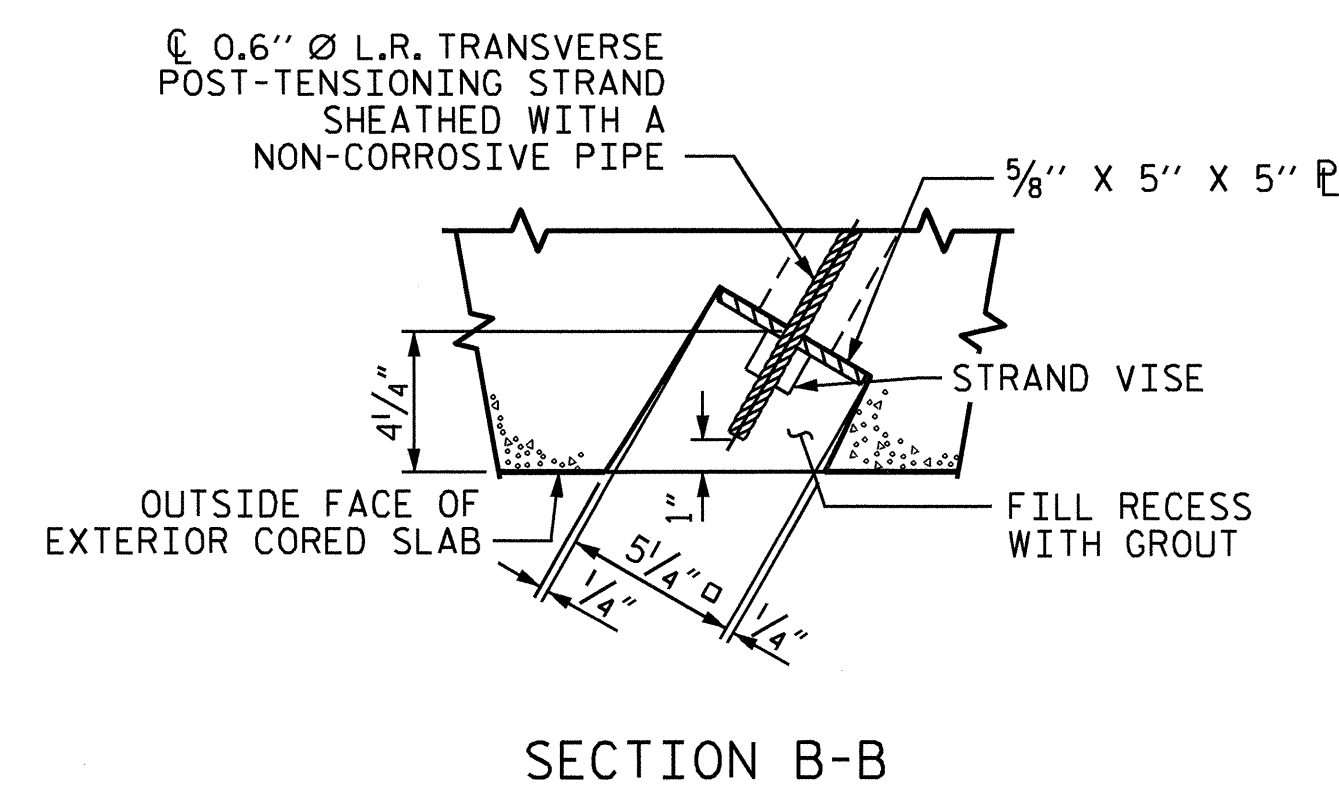
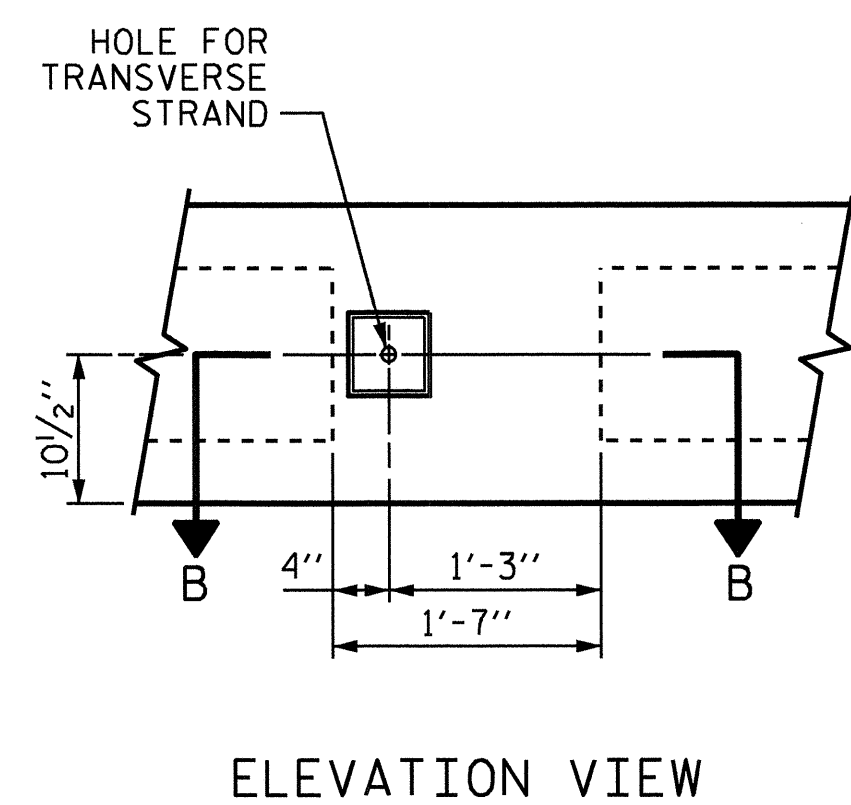
ASSEMBLED BY : J.A. YANNACONE	DATE : 1/19/11
CHECKED BY : P.K. NEWTON	DATE : 1/25/11
DRAWN BY : MAA 1/08	REV. 11/12/08R MAA/GM
CHECKED BY : GM/DI 2/08	



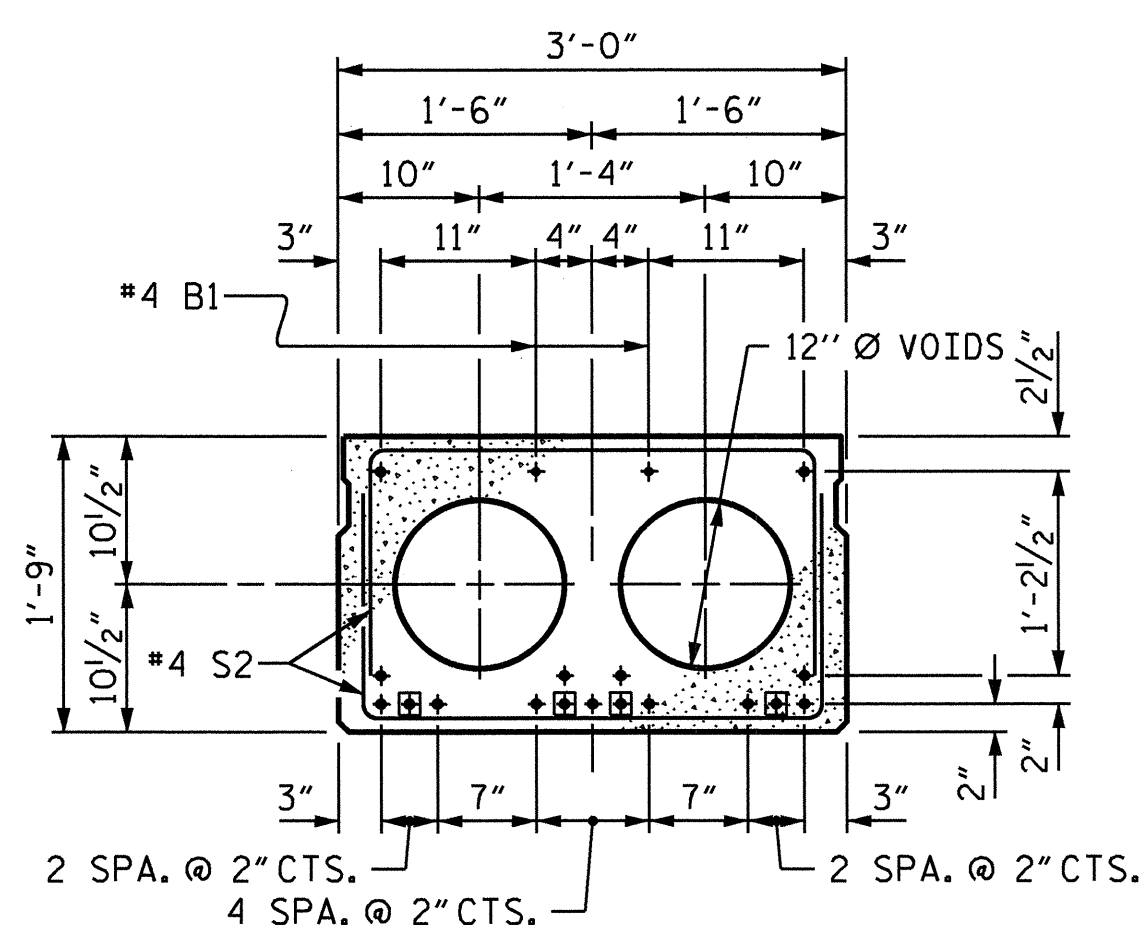
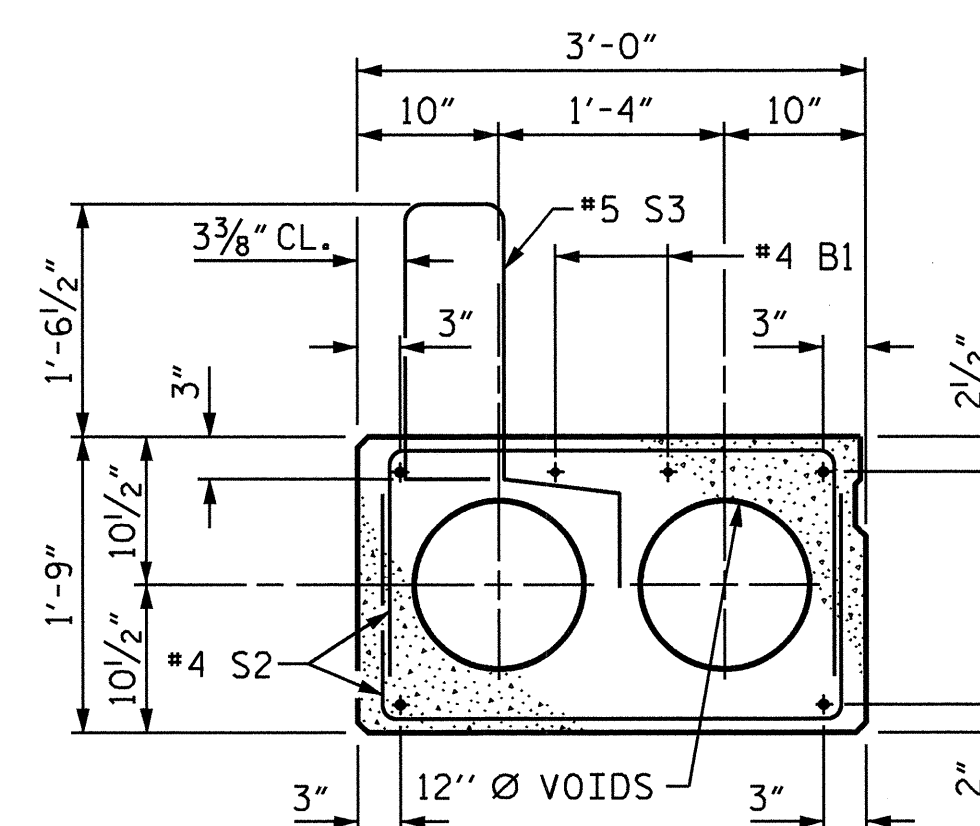
* MIDSPAN DIMENSIONS ARE BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATIONS.
** THE MINIMUM HEIGHT OF THE BARRIER RAIL IS SHOWN. THE HEIGHT OF THE BARRIER RAIL VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE.



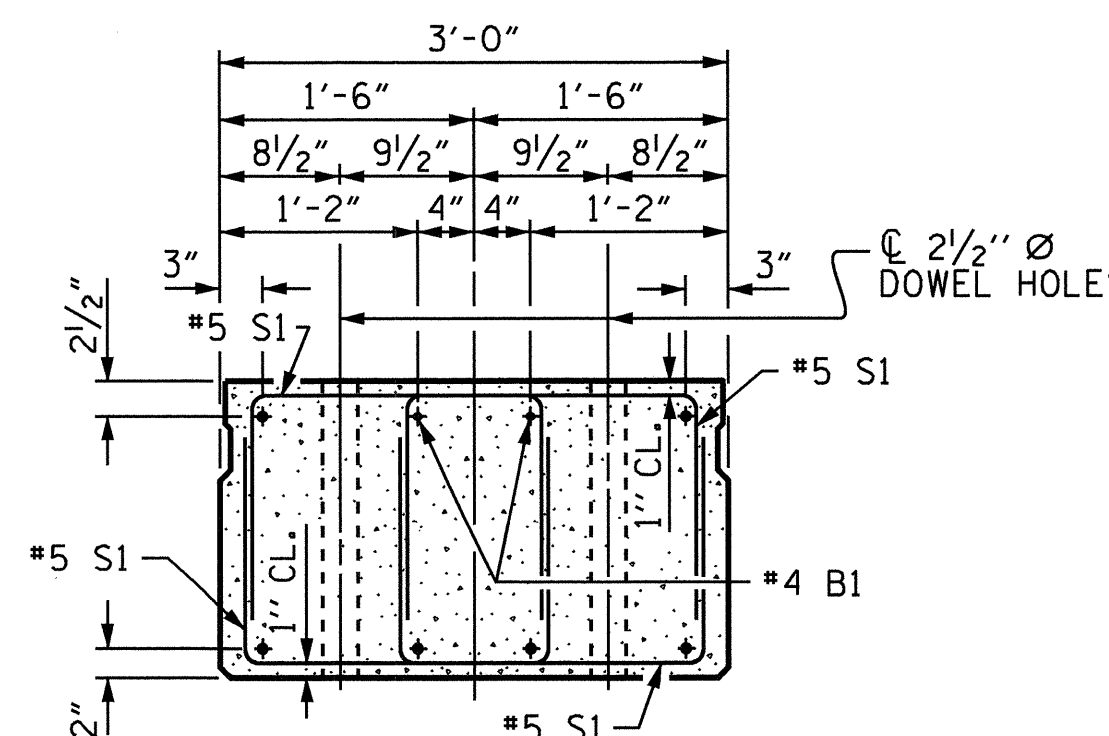
NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.



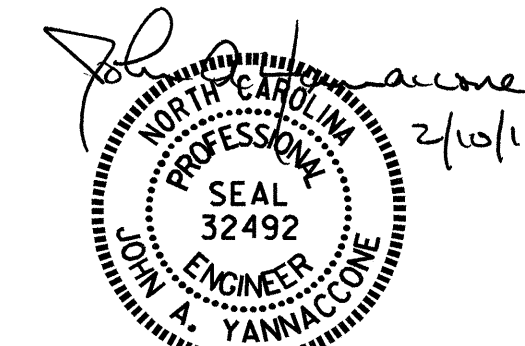
GROUTED RECESS AT END OF POST-TENSIONED STRAND OF CORED SLABS



THE BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 4'-0" FROM END OF THE CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.



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



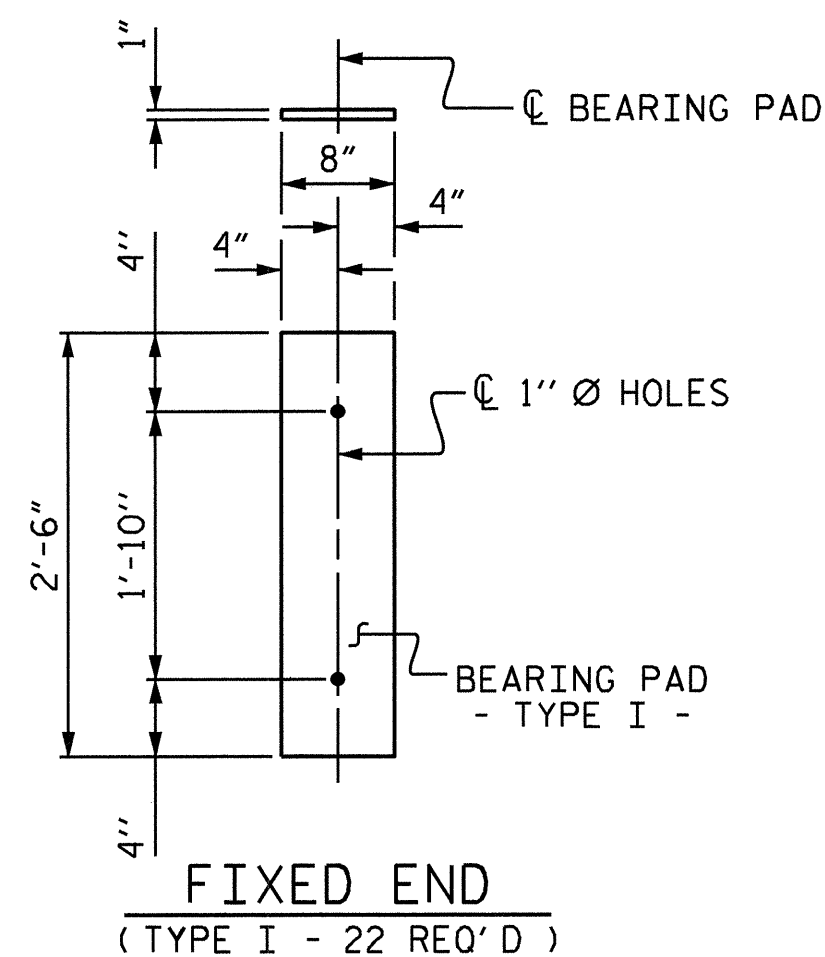
PROJECT NO. 33258
ASHE COUNTY
STATION: 11+08.00 -L-

REPLACES BRIDGE NO. 229

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
120° SKEW

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

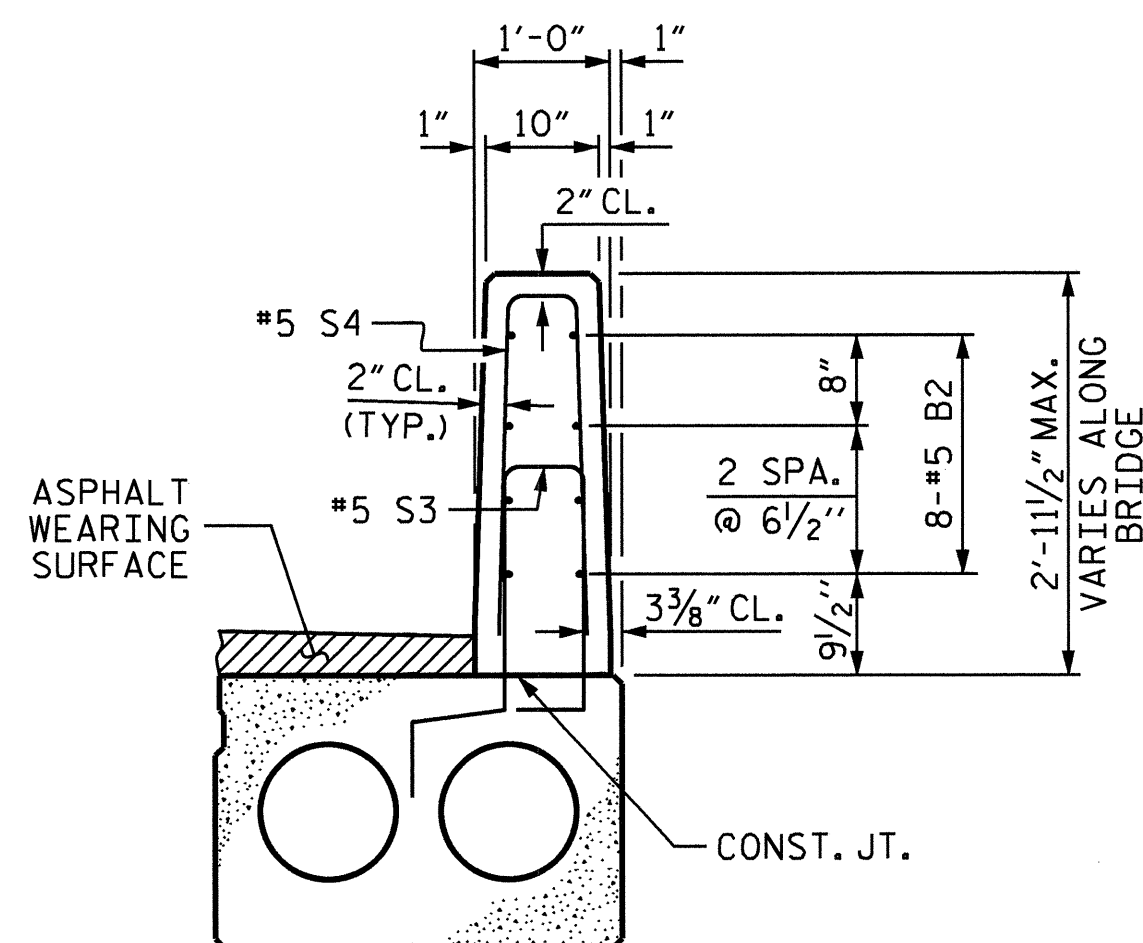
ASSEMBLED BY : A.S. CALLAWAY	DATE : 2/25/10
CHECKED BY : B. MATHEW	DATE : 3/10/10
DRAWN BY : WJH 4/89	REV. 10/17/00 RWW/LES
CHECKED BY : FCJ 5/89	REV. 7/10/01RR RWW/LES
	REV. 5/1/06 TLA/GM



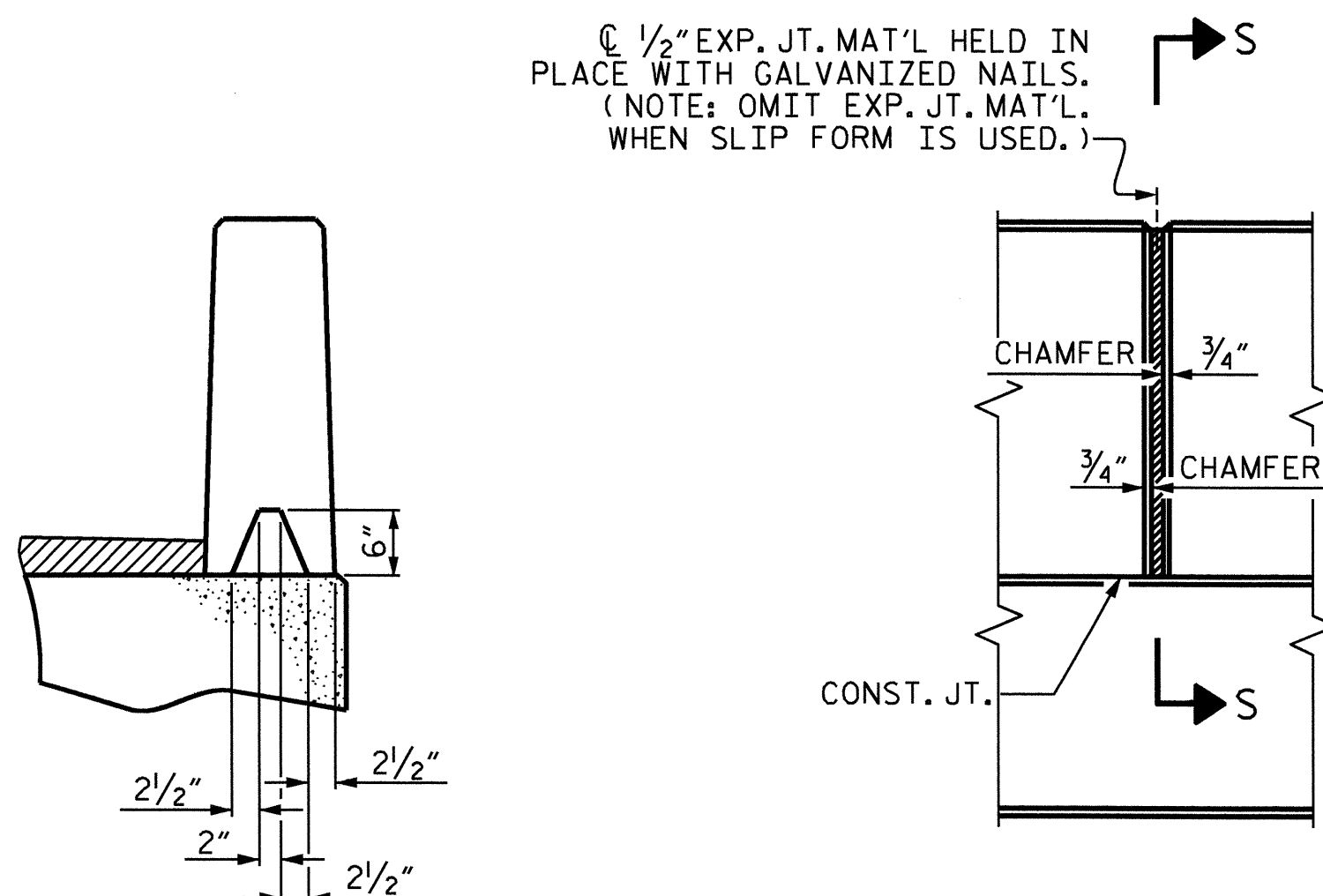
ELASTOMERIC BEARING DETAILS

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

CORED SLAB UNITS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	52'-4 13/16"	104'-9 5/8"
INTERIOR C.S.	9	52'-4 13/16"	471'-7 5/16"
TOTAL	11	—	576.41'



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

VERTICAL CONCRETE BARRIER RAIL DETAILS

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL					
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
* B2	64	#5	STR	14'-8"	979
* S4	122	#5	2	5'-6"	700
*EPOXY COATED REINFORCING STEEL				LBS.	1,679
CLASS AA CONCRETE				CU.YDS.	10.3
TOTAL VERTICAL CONCRETE BARRIER RAIL				LIN.FT.	104.80

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.

Diagram 1: A cross-section of a bar with dimensions 7" top width, 1'-9 1/2" height, 6" bottom width, and 8 1/4" spacing between bars.

Diagram 2: A cross-section of a bar with dimensions 2'-0" top width, 2'-8" height, 2'-9" spacing, 2'-11" spacing, and 3'-1" spacing between bars.

Diagram 3: A cross-section of a bar with dimensions 6" top width, 2'-6" height, and 7 3/4" spacing between bars.

BILL OF MATERIAL FOR ONE CORED SLAB UNIT

BAR	NO.	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
				LENGTH	WEIGHT	LENGTH	WEIGHT
B1	4	#4	STR	26'-11"	72	26'-11"	72
S1	8	#5	3	4'-6"	38	4'-6"	38
S2	106	#4	3	5'-4"	378	5'-4"	378
* S3	61	#5	1	5'-11"	376	—	—
S5	4	#4	3	5'-5"	14	5'-5"	14
S6	4	#4	3	5'-7"	15	5'-7"	15
S7	4	#4	3	5'-9"	15	5'-9"	15
REINFORCING STEEL				LBS.	532	LBS.	532
*EPOXY COATED REINFORCING STEEL				LBS.	376	—	—
8000 P.S.I. CONCRETE				CU. YDS.	7.6	CU. YDS.	7.6
0.6" Ø L.R. STRANDS				NO.	17	NO.	17

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 1'-9" 0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1 7/8"
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD **	3/8"
FINAL CAMBER	1 1/2"

** INCLUDES FUTURE WEARING SURFACE.

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 GROUT.

THE 2" Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER, SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. THIS SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNTIL THE CONCRETE HAS REACHED RELEASE STRENGTH. AT LEAST THREE WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

ALL REINFORCING STEEL IN 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.

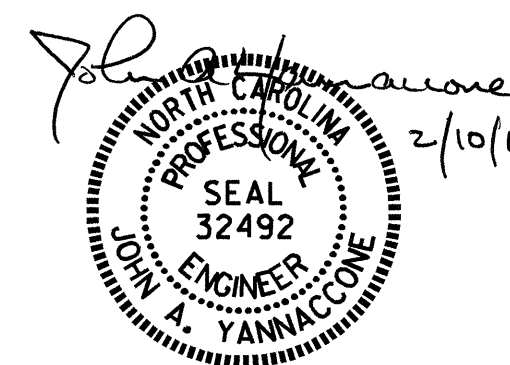
GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED 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, EXCEPT THAT THE STRANDS SHALL BE 0.6" Ø AND TENSIONED TO 43,950 LBS.

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 4400 PSI.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR VERTICAL CONCRETE BARRIER RAIL, SEE SPECIAL PROVISIONS.



PROJECT NO. 33258

ASHE COUNTY

STATION: 11+08.00 -L-

REPLACES BRIDGE NO. 229

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
120° SKEW

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

STD. NO. PCS3

ASSEMBLED BY : A.S. CALLAWAY	DATE : 2/25/10
CHECKED BY : B. MATHEW	DATE : 3/10/10
DRAWN BY : WJH 4/89	REV. 7/10/01 RWW/LJS
CHECKED BY : FCJ 5/89	REV. 5/7/03RRR RWW/JTE
	REV. 5/1/06R TLA/GM

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JYANNACCONI

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A $\frac{1}{4}$ " HOLD DOWN PLATE AND 7 - $\frac{7}{8}$ " $\varnothing$ 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 $\frac{7}{8}$ " $\varnothing$ 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.)

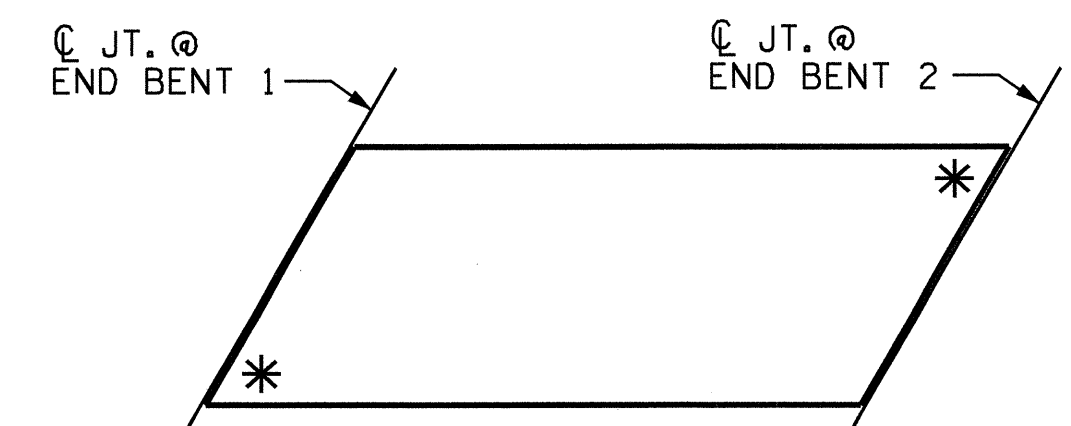
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF VERTICAL CONCRETE BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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.

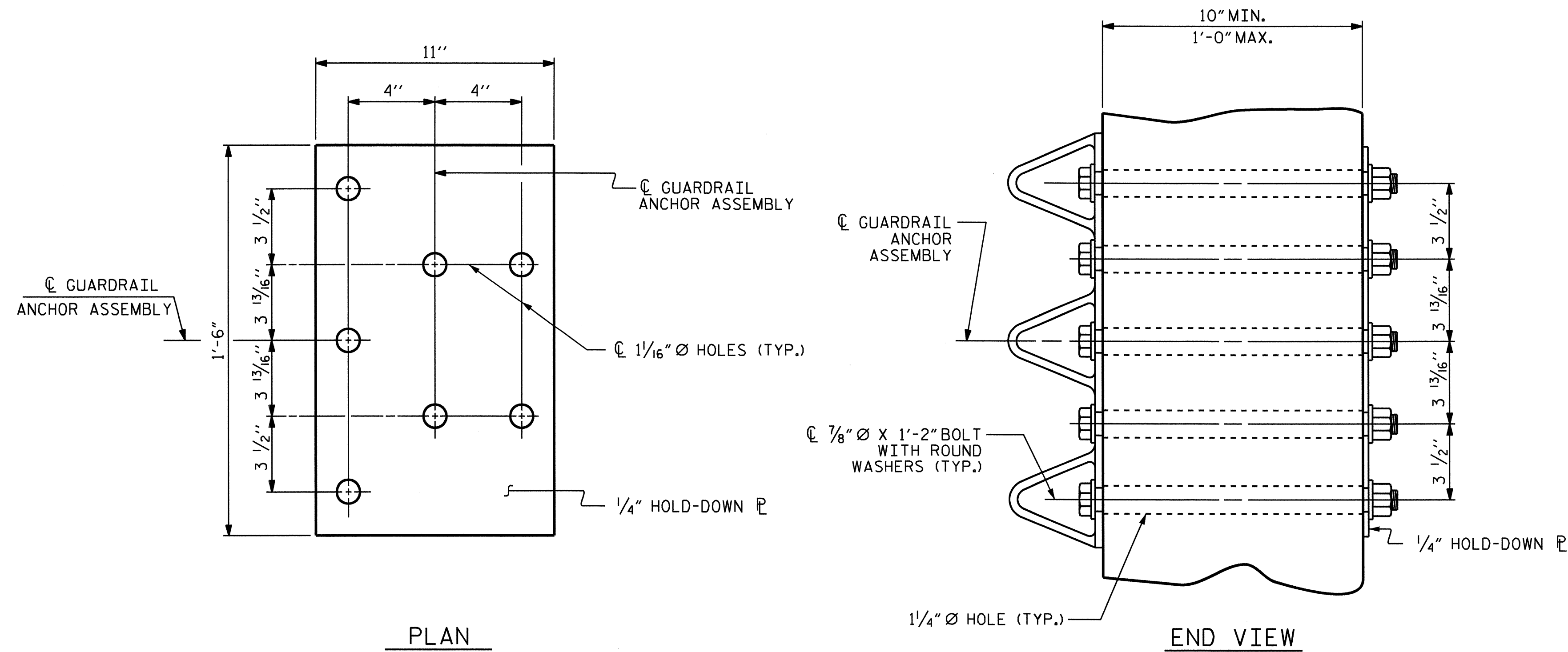
THE $\frac{1}{4}$ " $\varnothing$ HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

REINFORCING BARS IN THE VERTICAL CONCRETE BARRIER RAIL MAY BE SHIFTED SLIGHTLY TO CLEAR ANCHOR ASSEMBLIES.

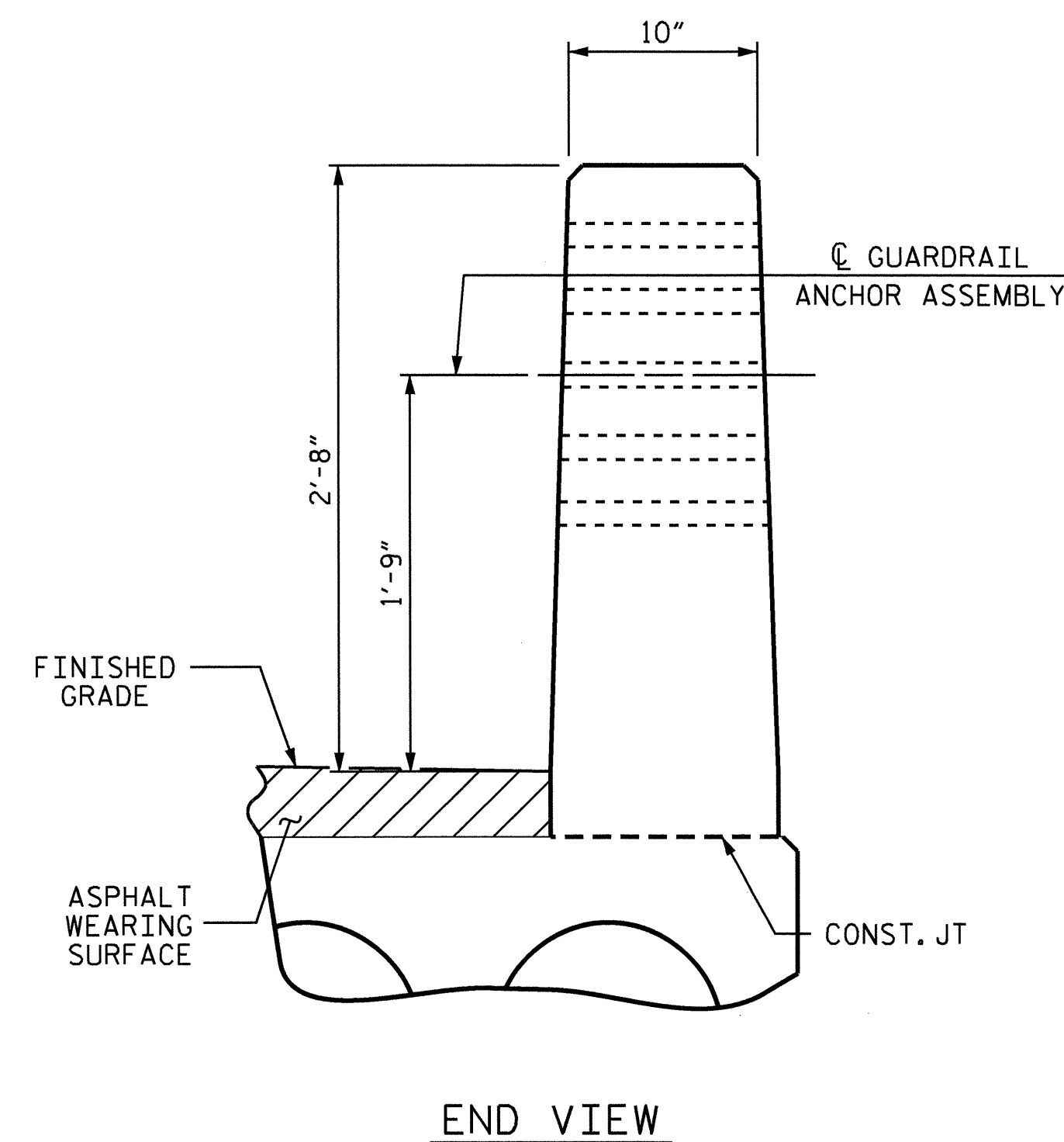


SKETCH SHOWING POINTS OF ATTACHMENT

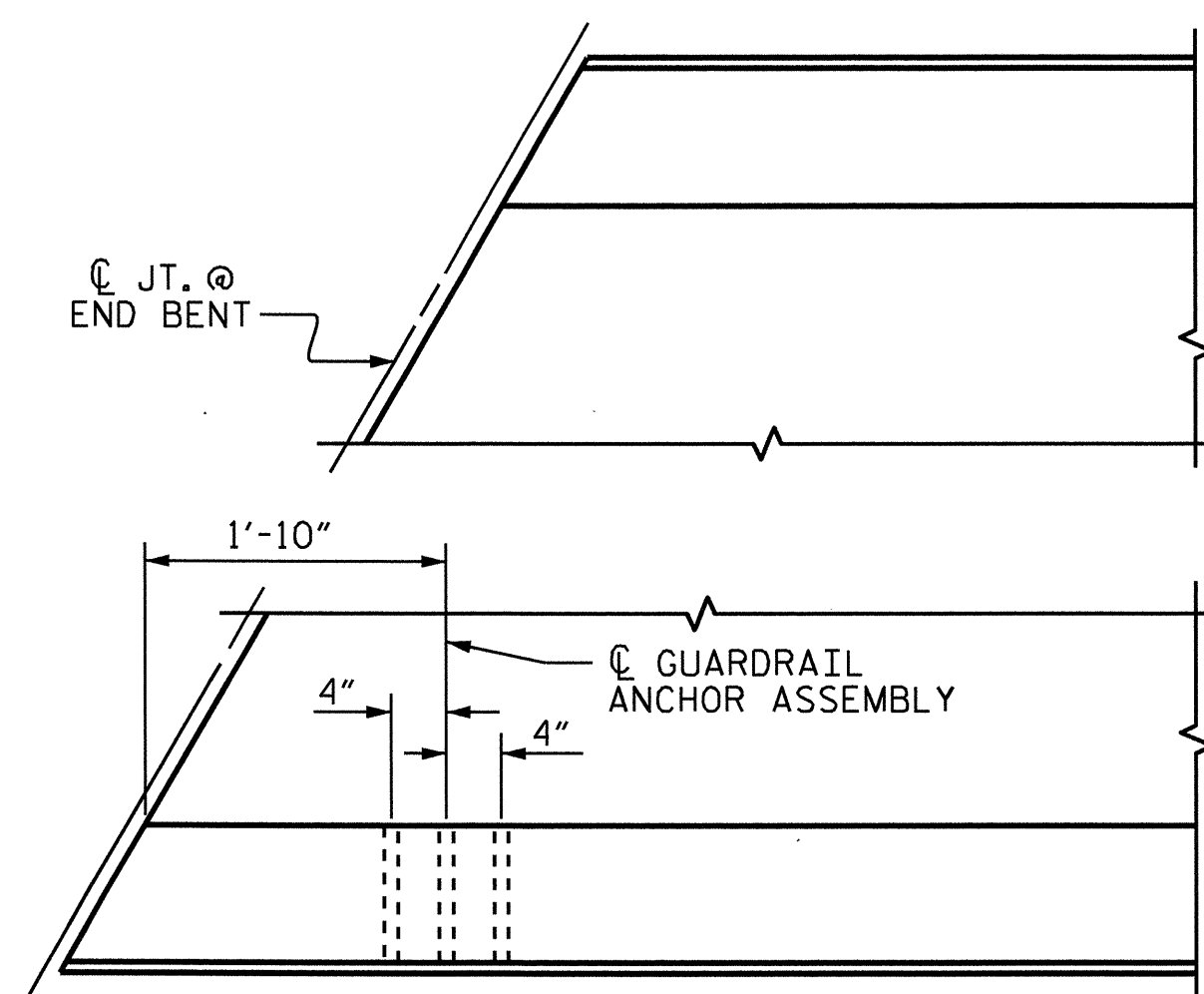
* DENOTES GUARDRAIL ANCHOR ASSEMBLY



GUARDRAIL ANCHOR ASSEMBLY DETAILS



END VIEW



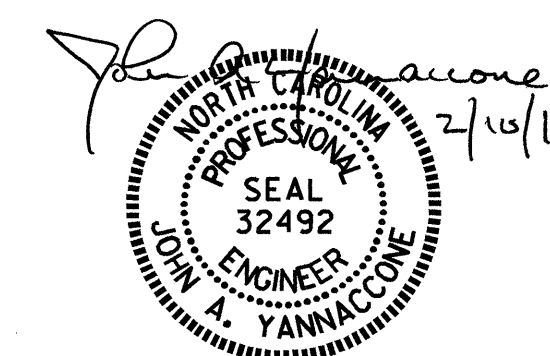
PLAN

END BENT 1 SHOWN, END BENT 2 SIMILAR.

LOCATION OF ANCHORS FOR GUARDRAIL

DRAWN BY : A.S. CALLAWAY DATE : 2/25/10
CHECKED BY : B. MATHEW DATE : 3/10/10

10-FEB-2011 08:41
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joynnaccone



PROJECT NO. 33258

ASHE COUNTY

STATION: 11+08.00 -L-

REPLACES BRIDGE NO. 229

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

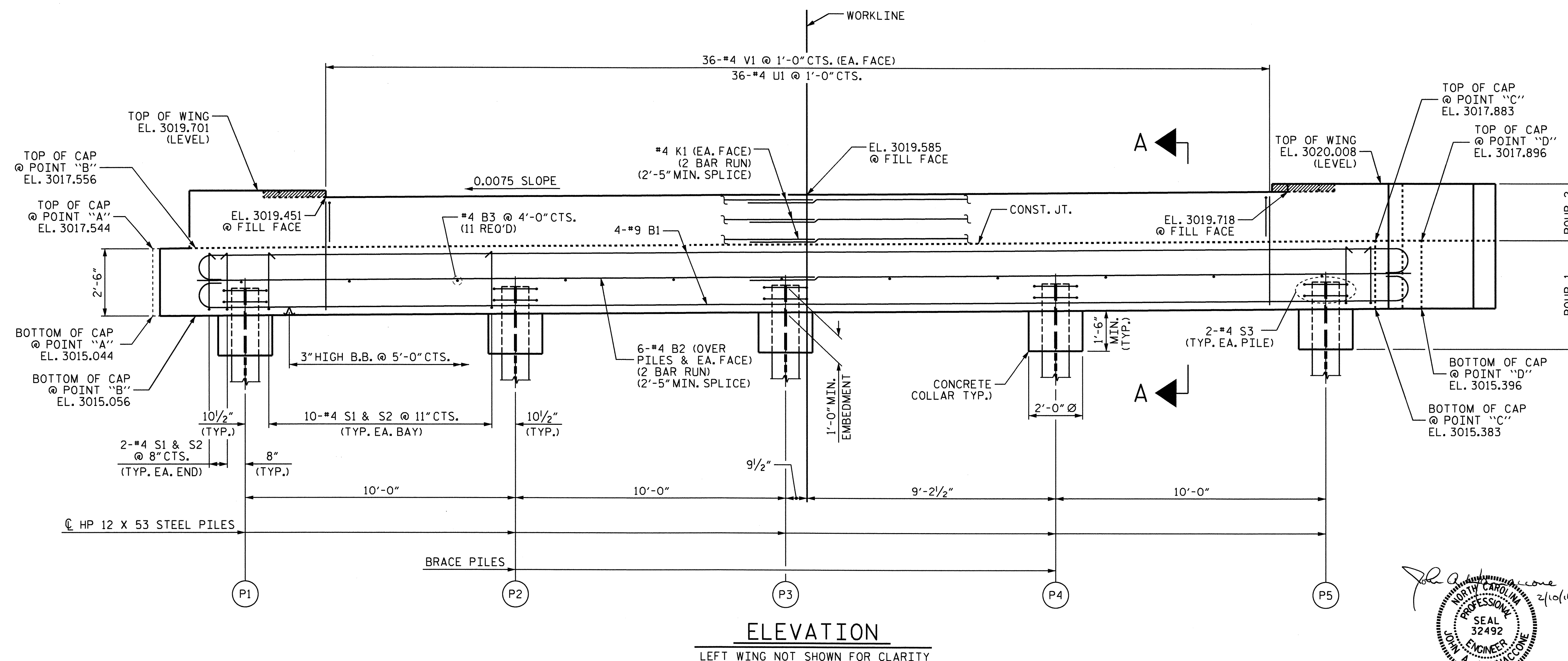
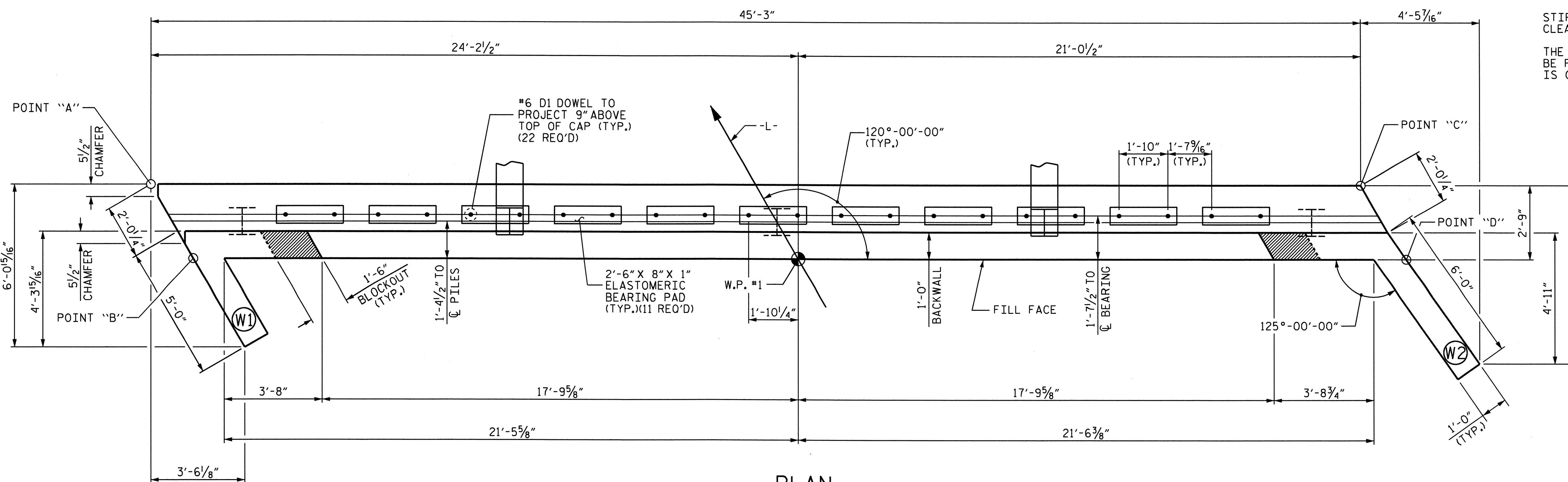
GUARDRAIL ANCHORAGE
FOR VERTICAL CONC.
BARRIER RAIL
120° SKEW

REVISIONS						SHEET NO. 8
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6 D1 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.



TOP OF PILE ELEVATIONS	
(P1)	3016.070
(P2)	3016.145
(P3)	3016.220
(P4)	3016.295
(P5)	3016.370

PROJECT NO. 33258
 ASHE COUNTY
 STATION: 11+08.00 -L-

REPLACES BRIDGE NO. 229

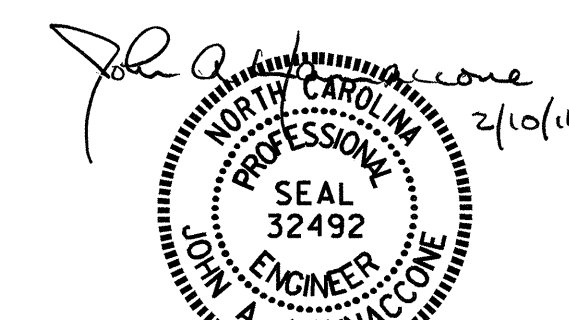
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

END BENT 1

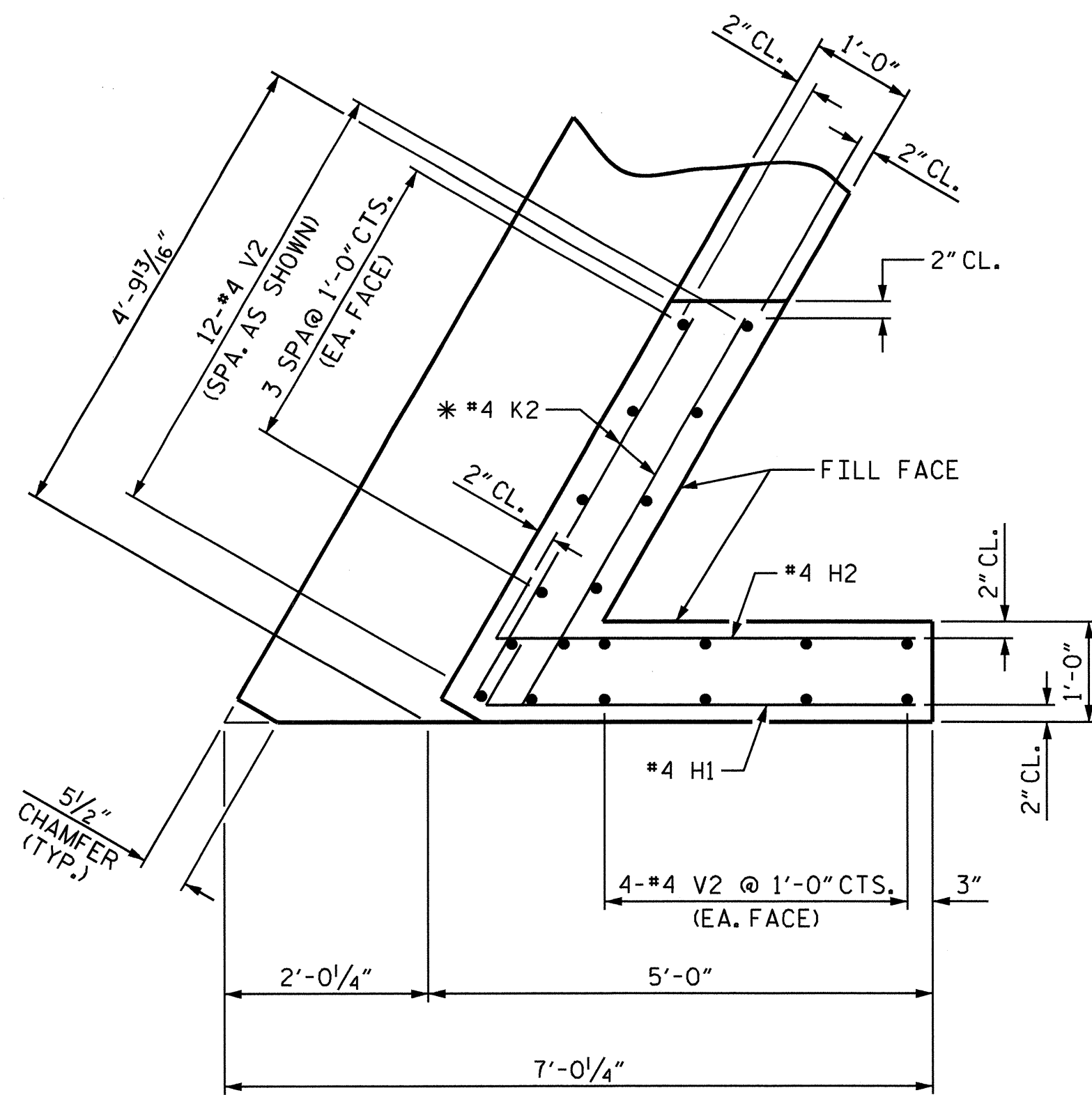
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DRAWN BY: J.A. YANNACCONE DATE: 11/15/10
 CHECKED BY: P.K. NEWTON DATE: 1/10/11

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 jayannacccone

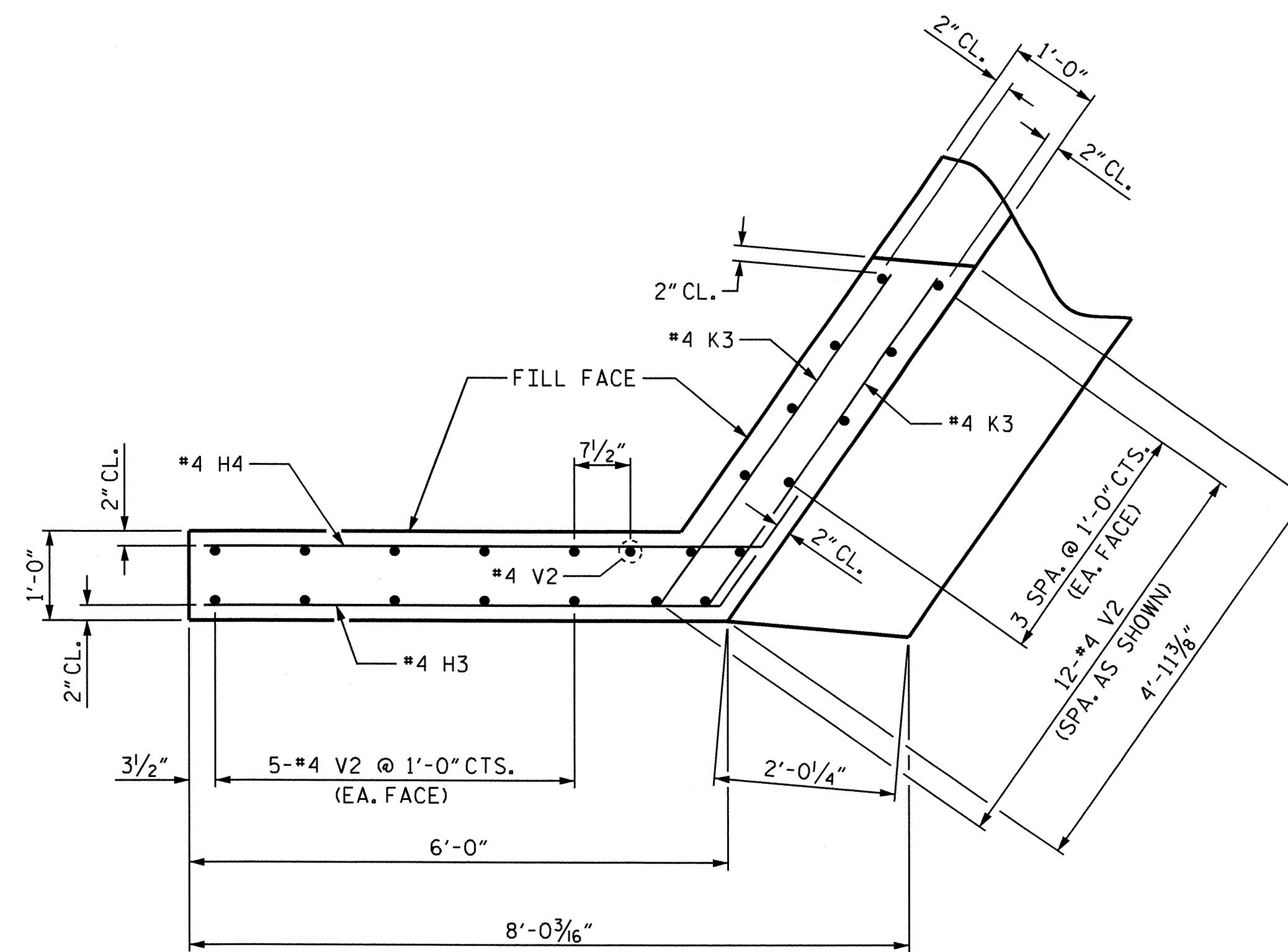


NC005

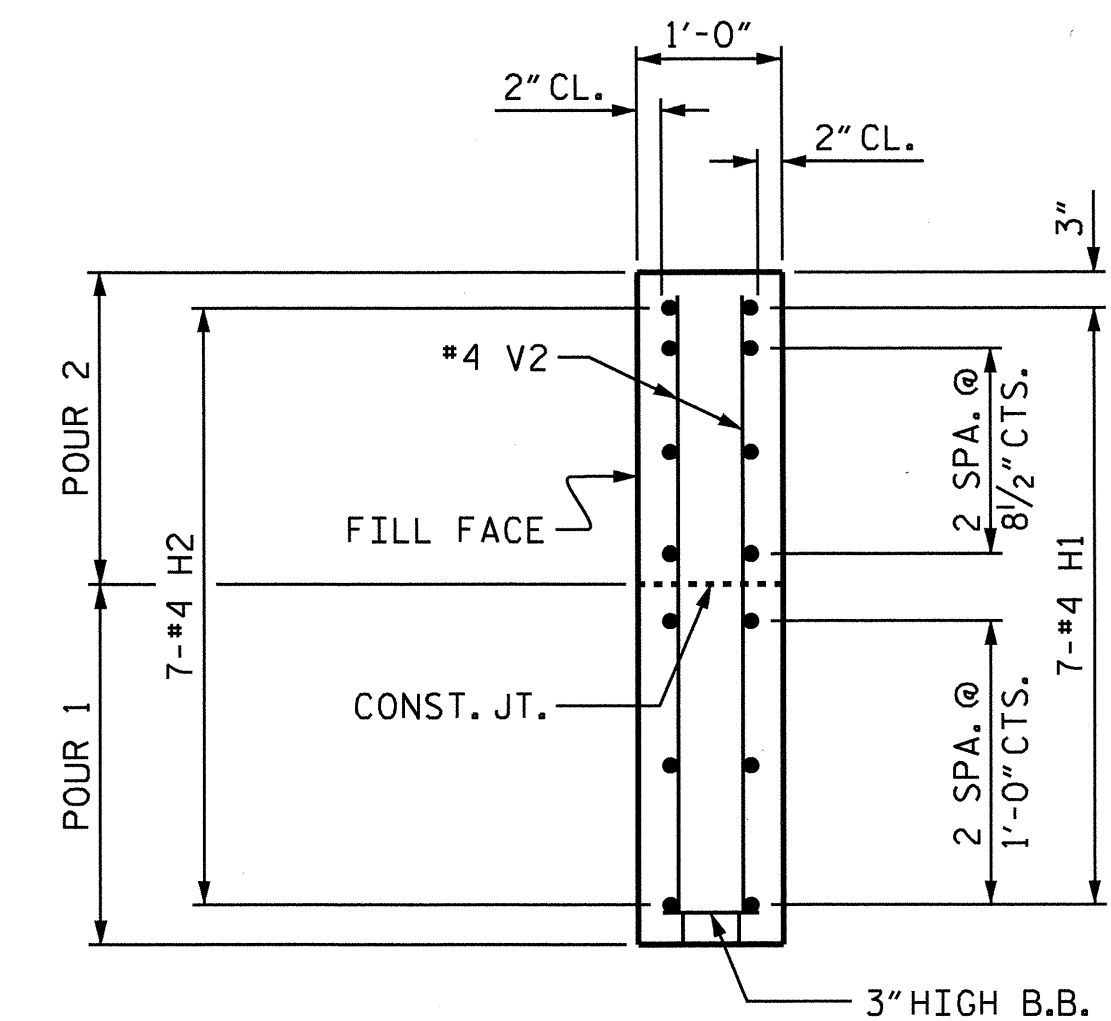


PLAN OF WING W1

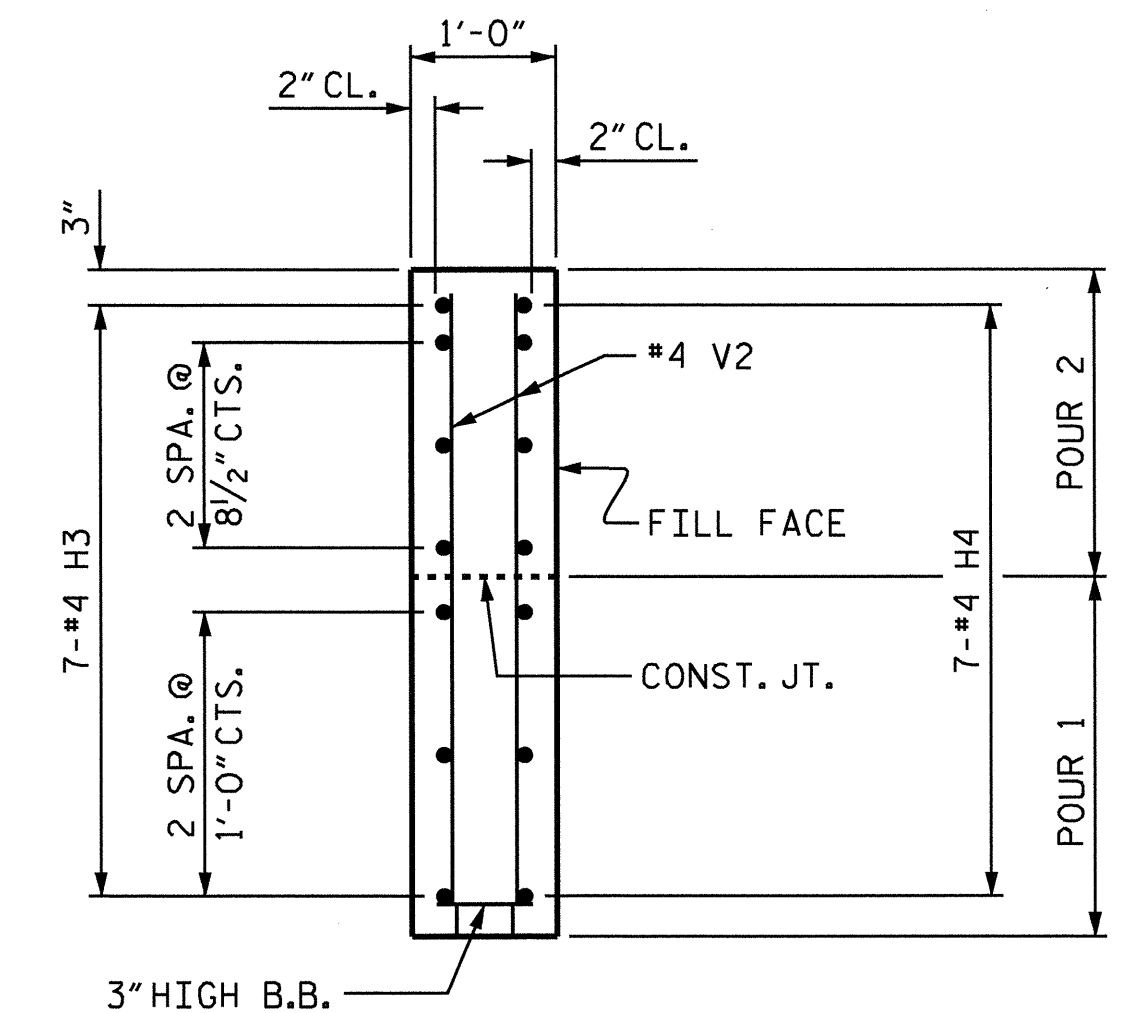
* #4 K2 FIELD CUT AS NECESSARY TO GIVE 2" MIN. CLEARANCE FROM CHAMFER.



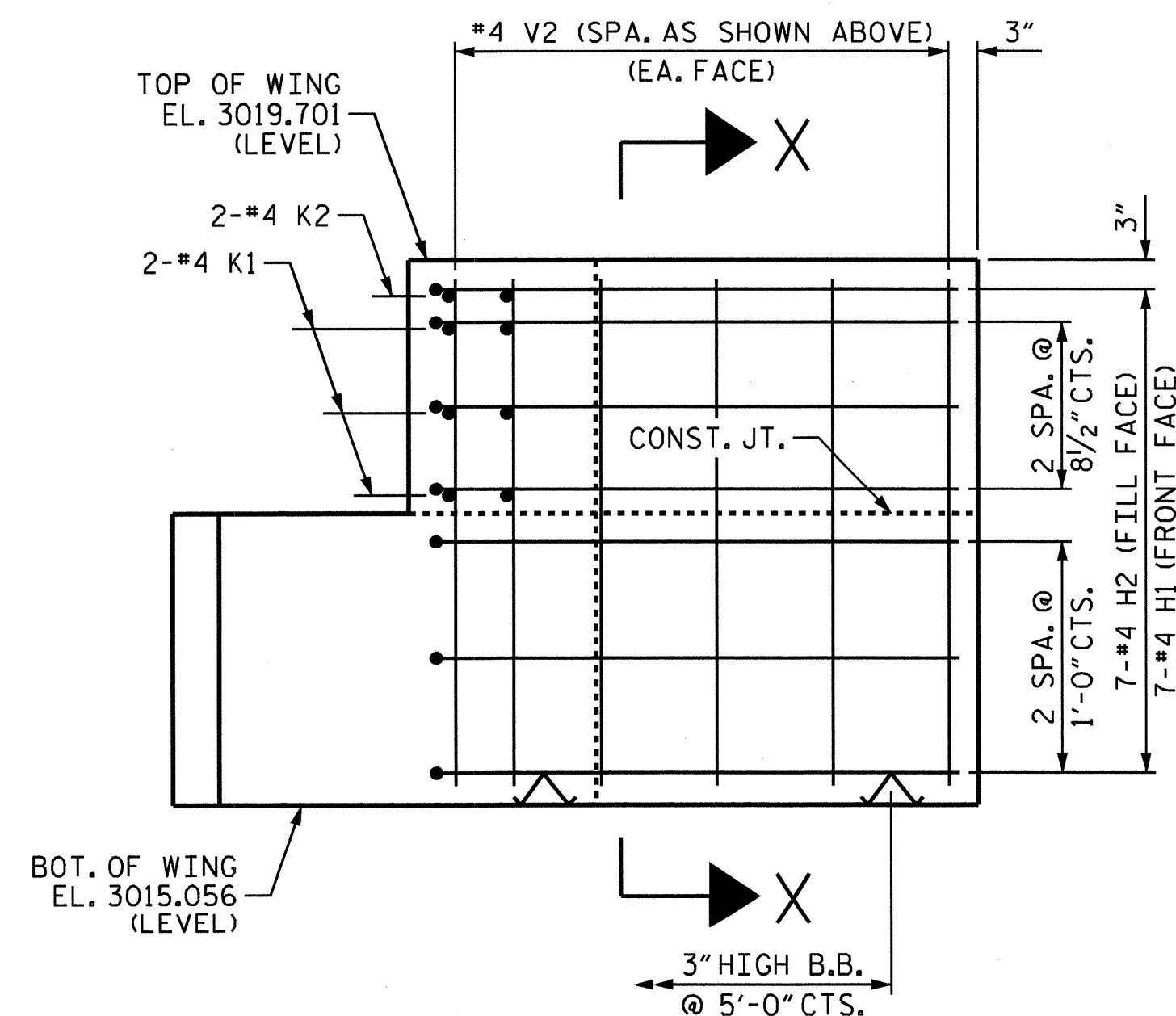
PLAN OF WING W2



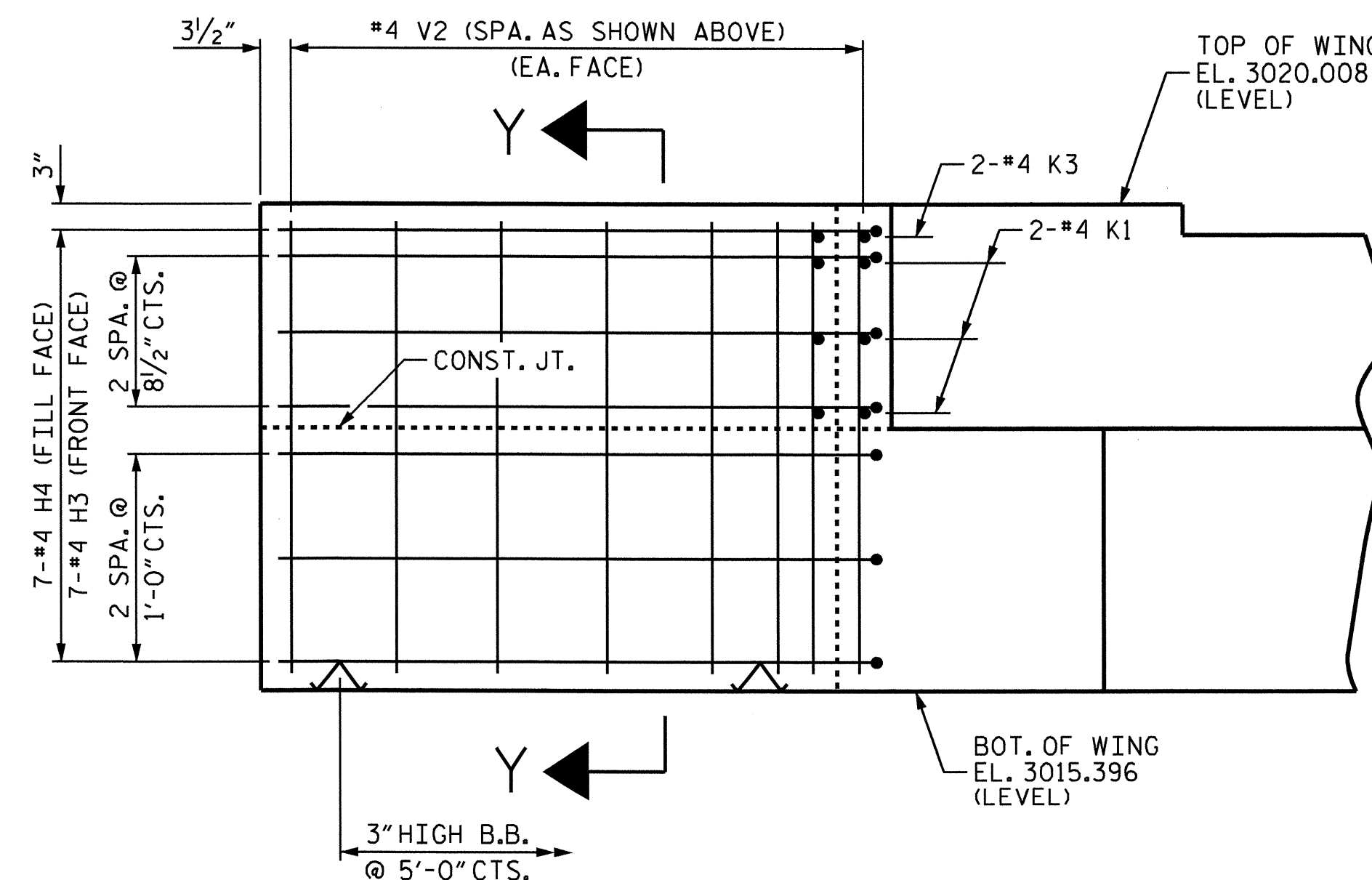
SECTION X-X



SECTION Y-Y



ELEVATION OF WING W1



ELEVATION OF WING W2

PROJECT NO. 33258

ASHE COUNTY

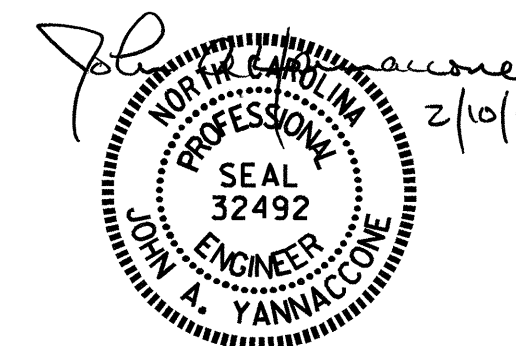
STATION: 11+08.00 -L-

REPLACES BRIDGE NO. 229

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1



DRAWN BY : J.A. YANNACCONI DATE : 11/15/10
CHECKED BY : P.K. NEWTON DATE : 1/10/11

10-FEB-2011 08:41
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jyannaccone

REVISIONS						SHEET NO.
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1			3			10
2			4			TOTAL SHEETS 22

NC006

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6 DI 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.



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layannqcone

TOP OF PILE ELEVATIONS	
(P1)	3015.266
(P2)	3015.341
(P3)	3015.416
(P4)	3015.491
(P5)	3015.566

PROJECT NO. 33258
ASHE COUNTY
 STATION: 11+08.00 -L-

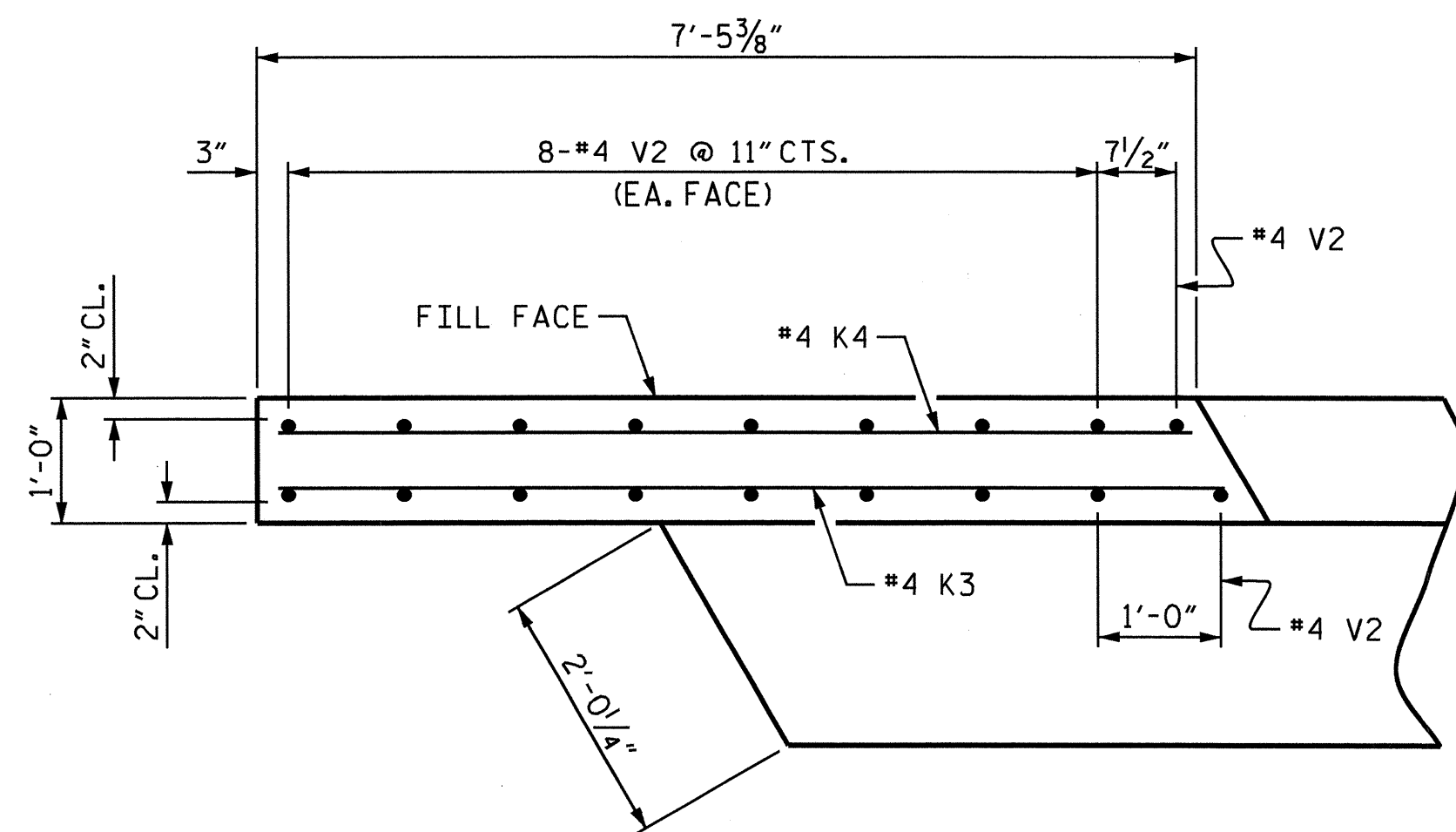
REPLACES BRIDGE NO. 229

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

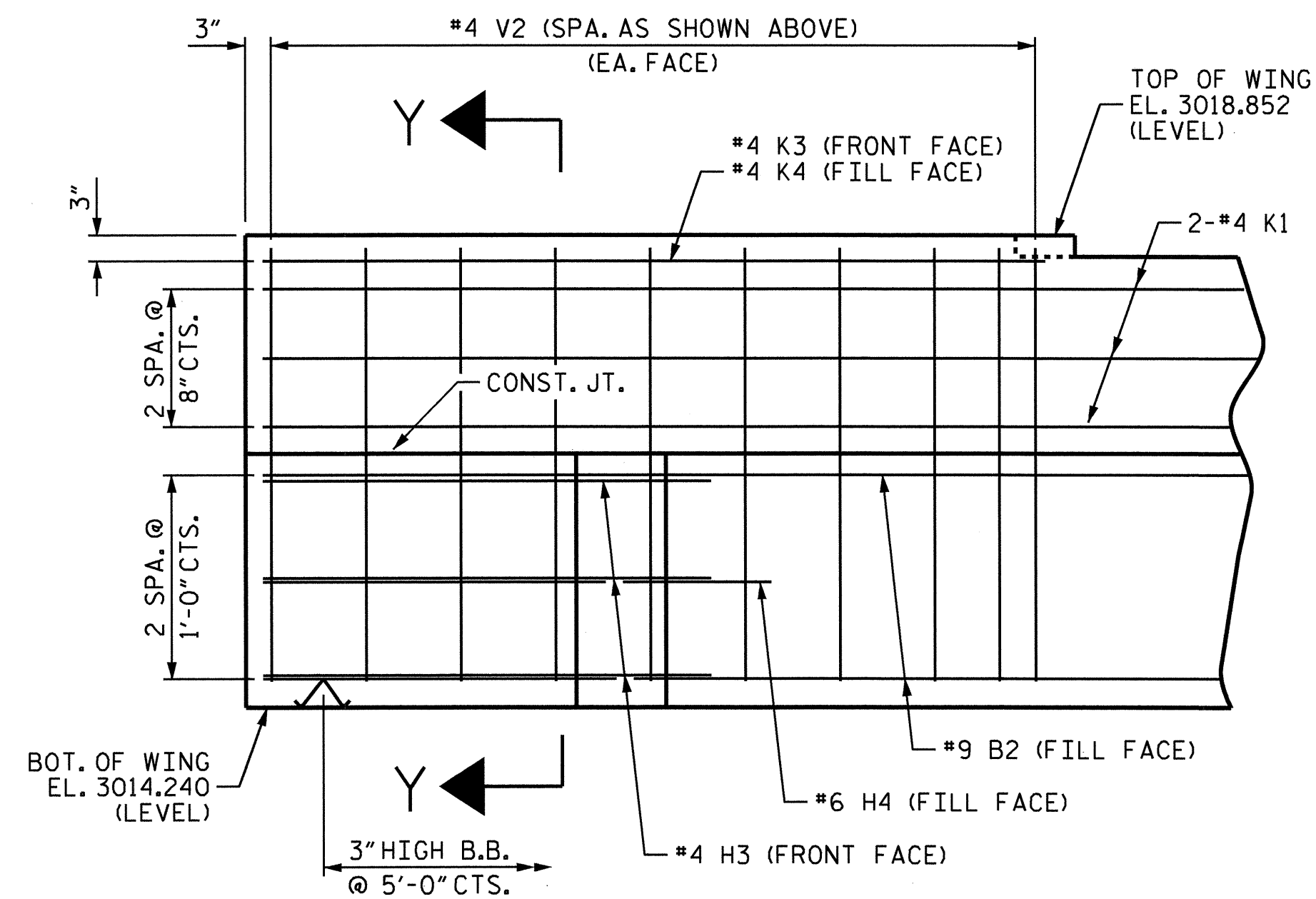
END BENT 2

REVISIONS						SHEET NO. 12
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			

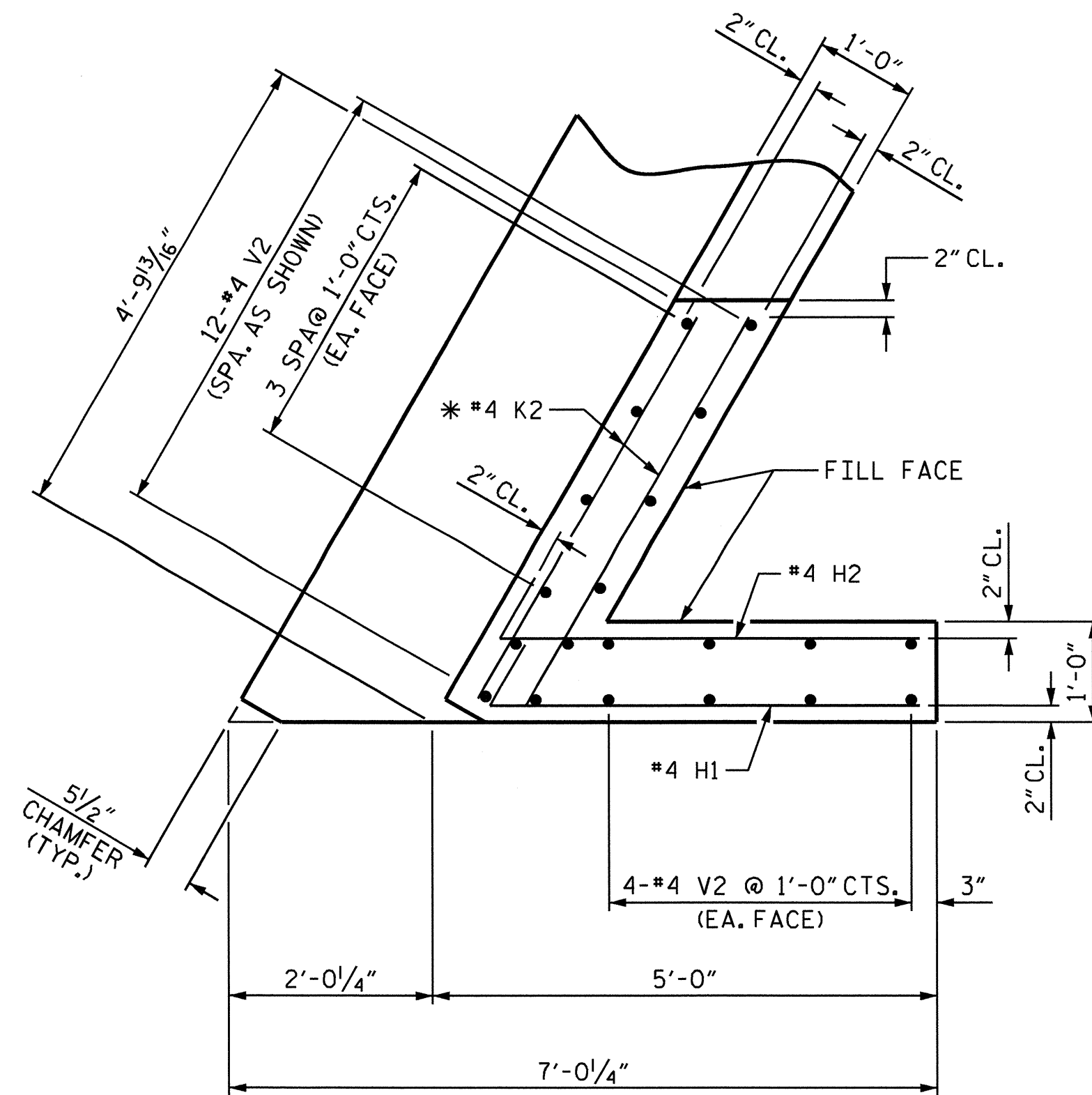
NCBDS



PLAN OF WING W3

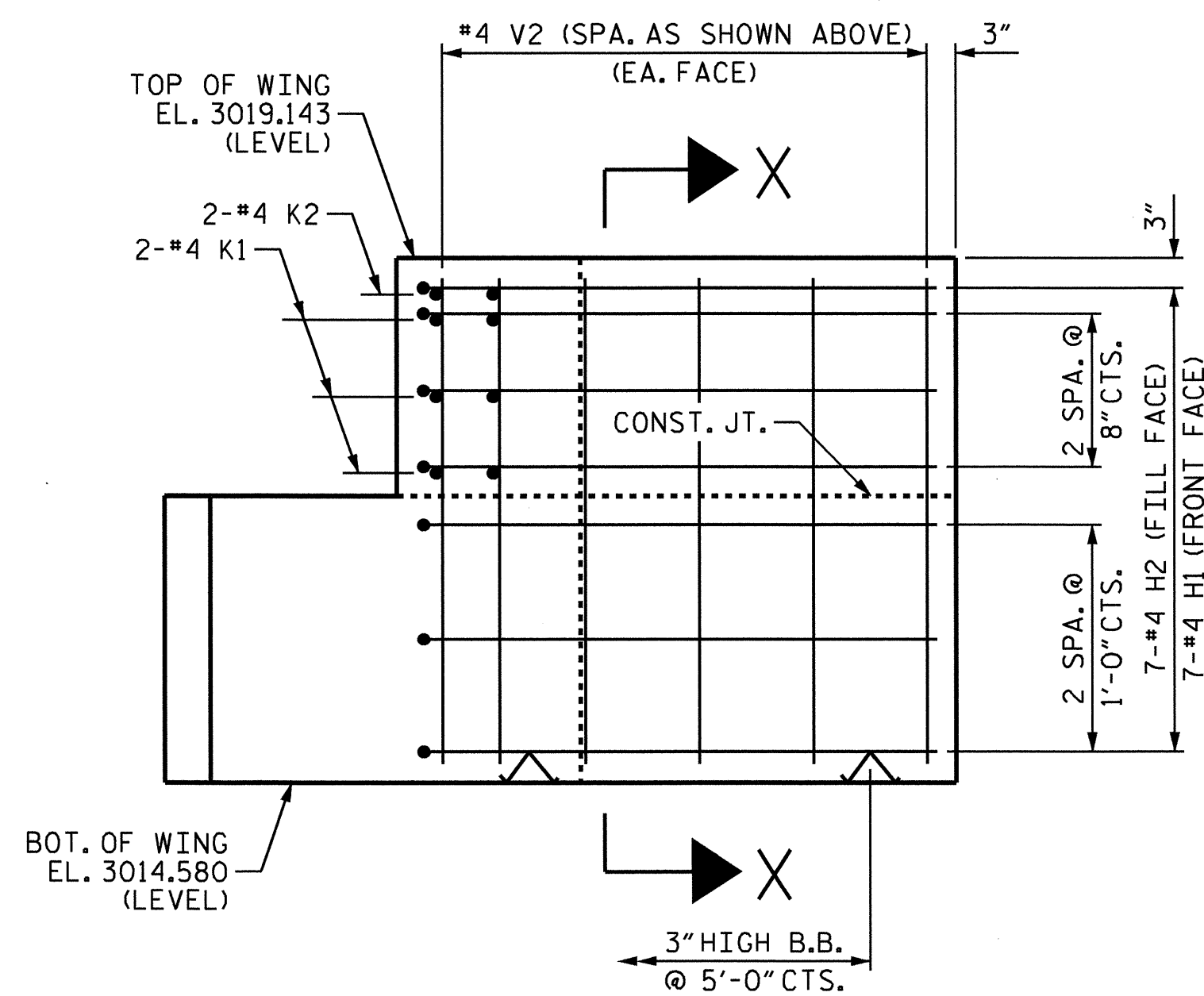


ELEVATION OF WING W3

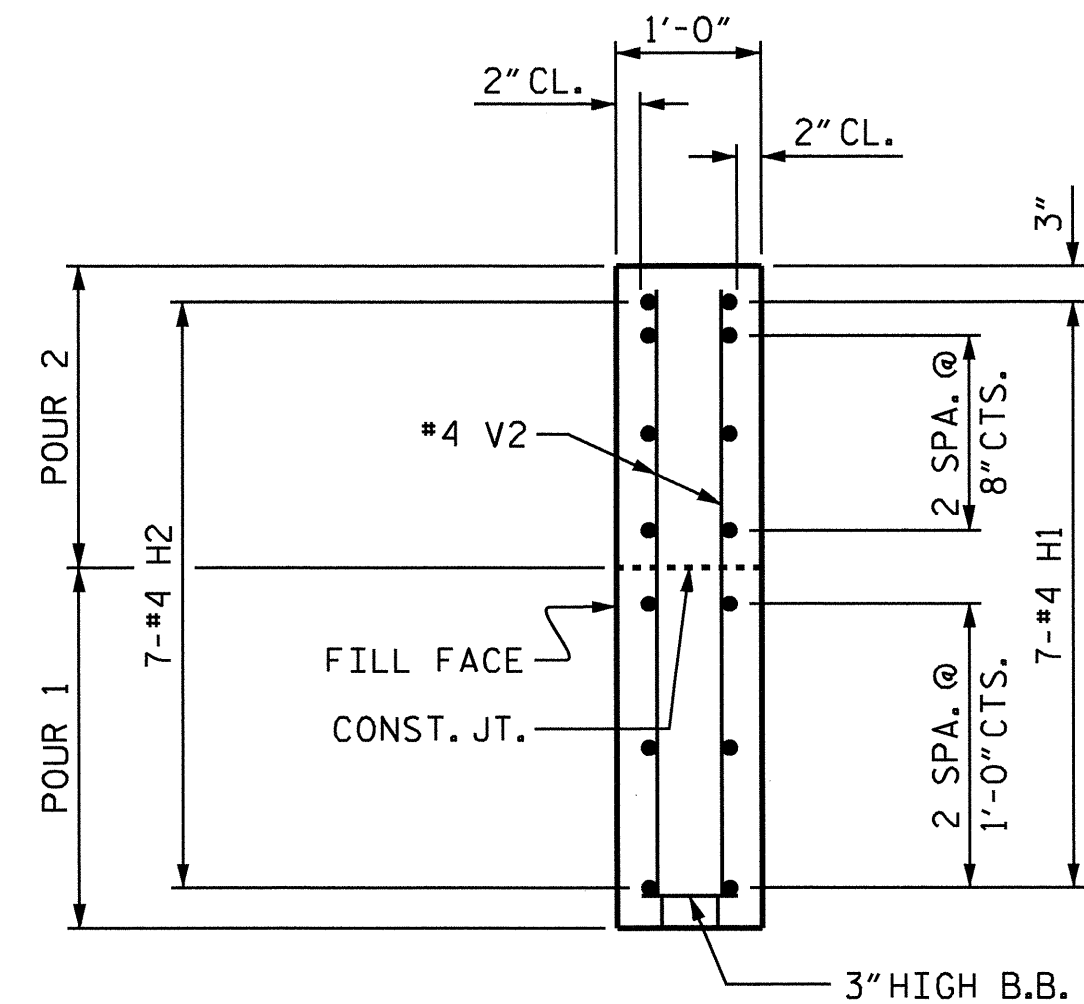


PLAN OF WING W4

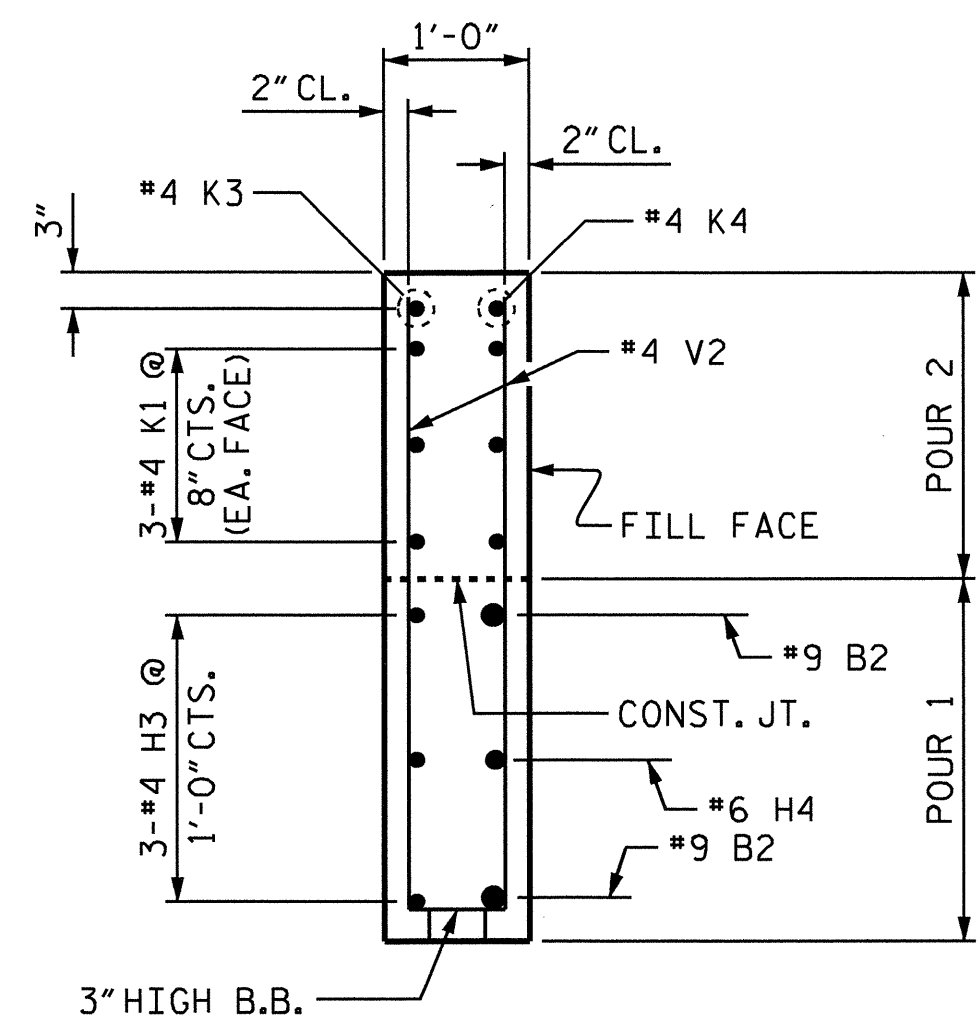
* #4 K2 FIELD CUT AS NECESSARY TO GIVE 2" MIN. CLEARANCE FROM CHAMFER.



ELEVATION OF WING W4



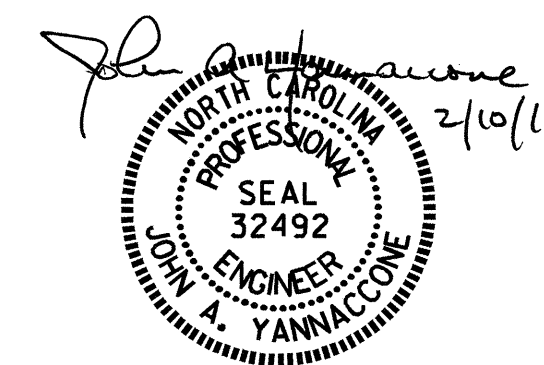
SECTION X-X



SECTION Y-Y

PROJECT NO. 33258
ASHE COUNTY
STATION: 11+08.00 -L-

REPLACES BRIDGE NO. 229



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

END BENT 2

DRAWN BY : J.A. YANNACCONI DATE : 11/17/10
CHECKED BY : P.K. NEWTON DATE : 1/10/11

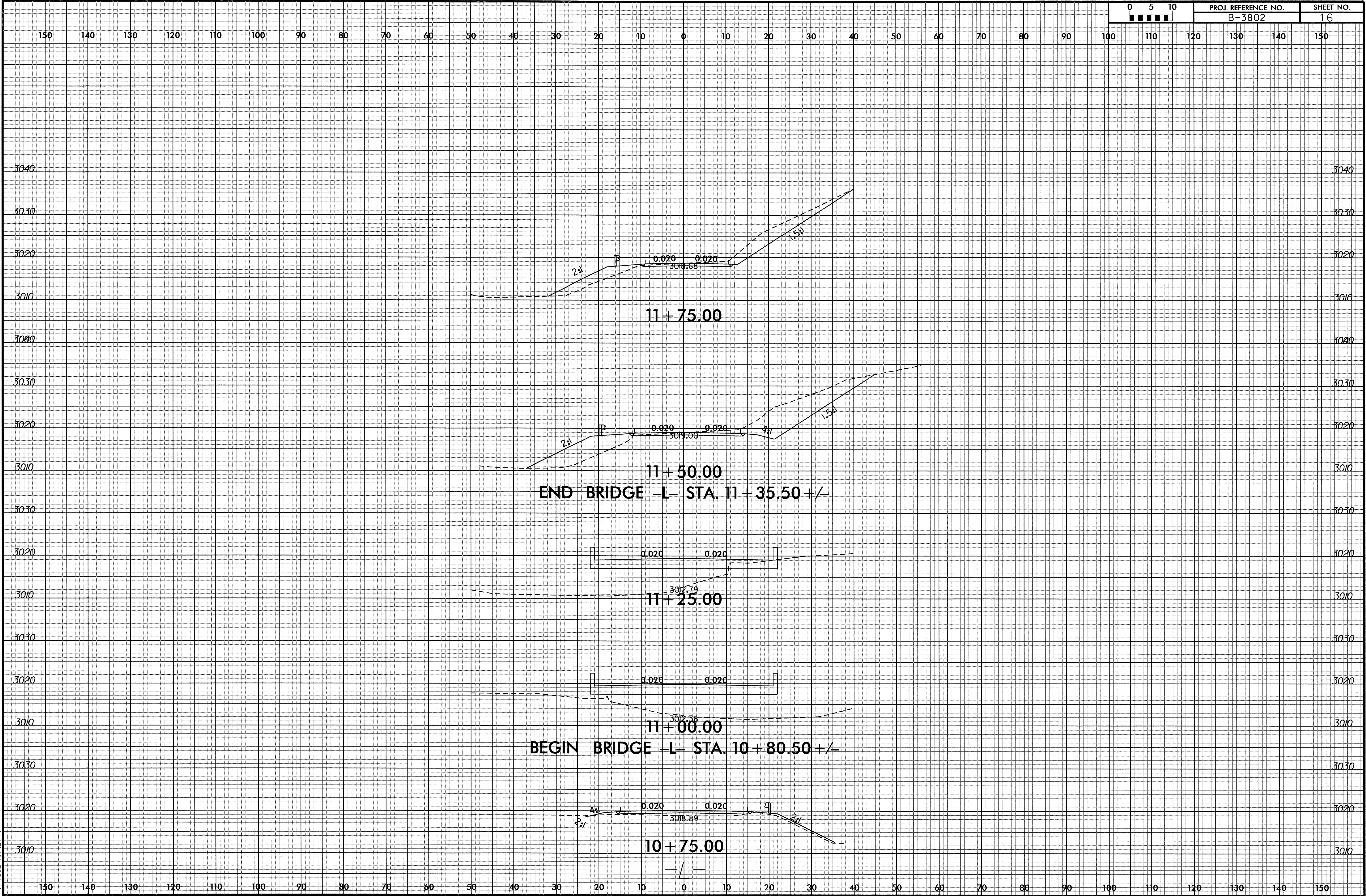
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JYannaccone

REVISIONS						SHEET NO.
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1			3			13
2			4			TOTAL SHEETS
						22

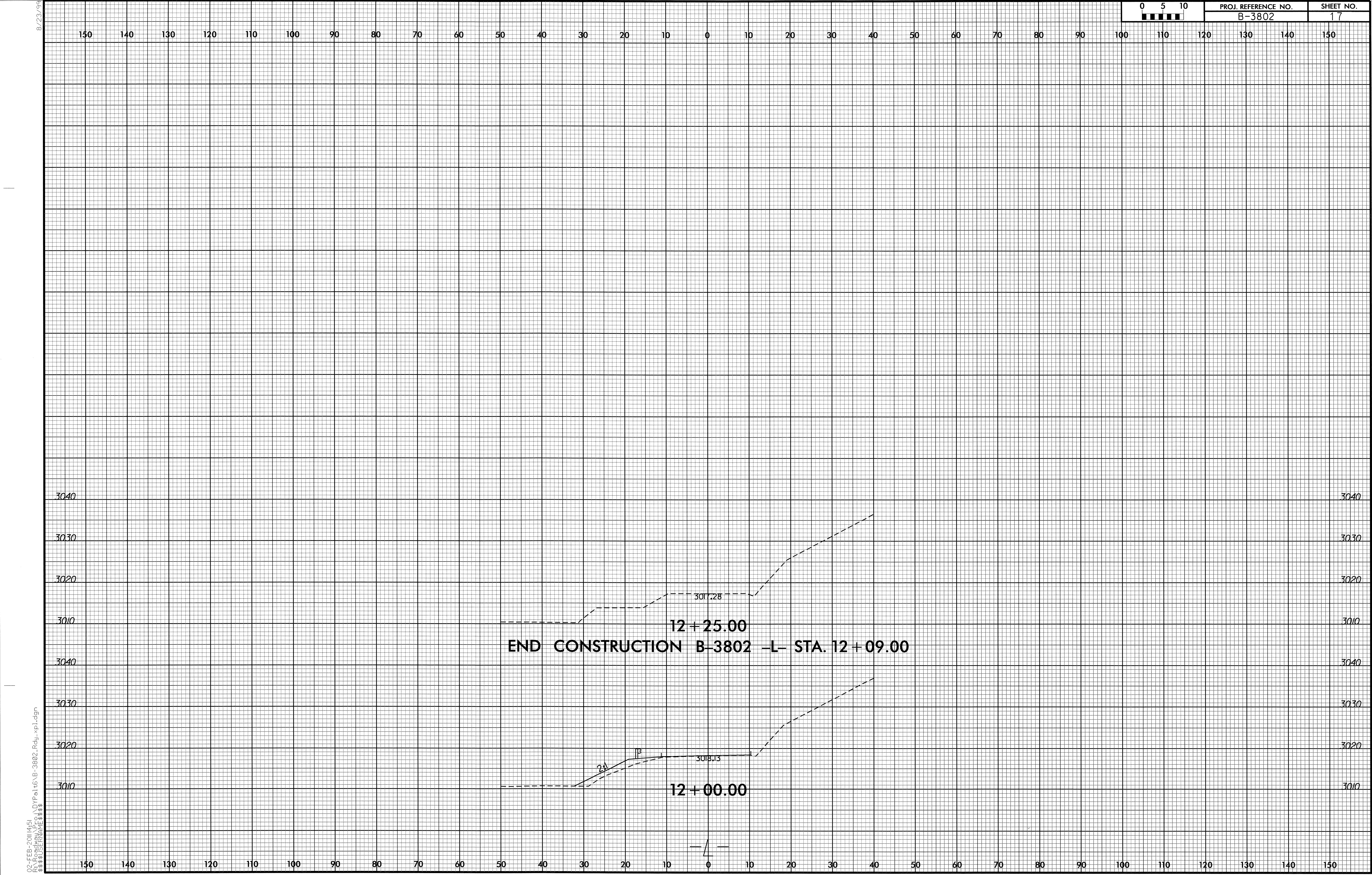
NC005

8/23/99

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\$\$\$\$\$PRNAME\$\$\$\$\$



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0	5	10	B-3802	16



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\$\$\$\$\$SERNAME\$\$\$\$

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 2006 "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:

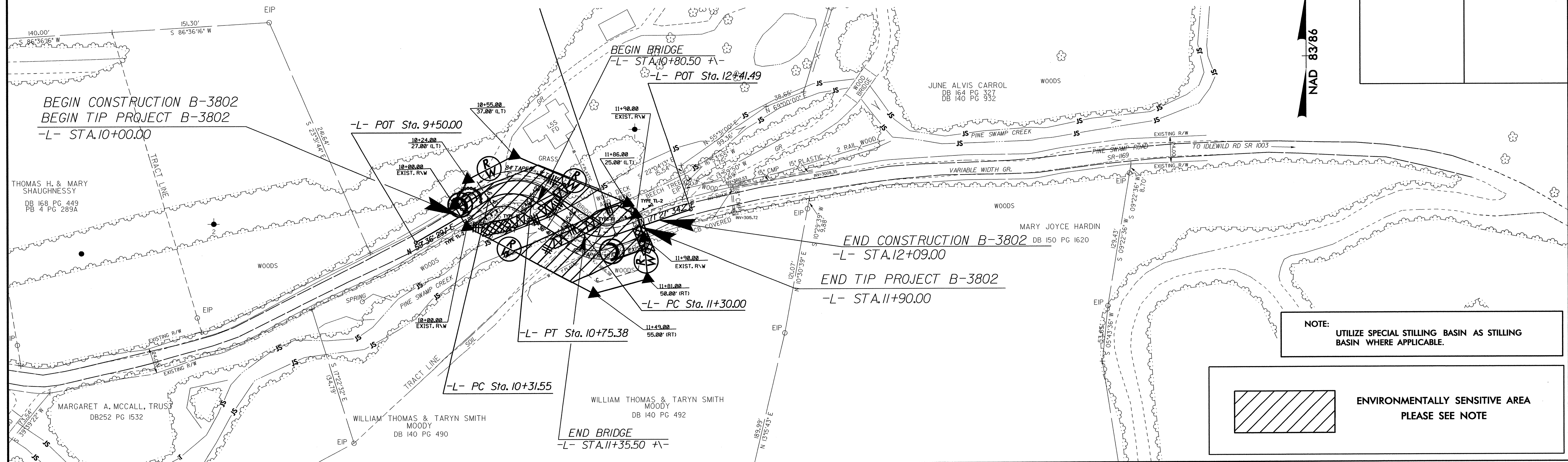
METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB. METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS 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.

EROSION CONTROL PLAN

PROJECT REFERENCE NO.	SHEET NO.
B-3802	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

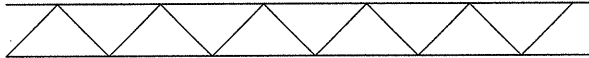
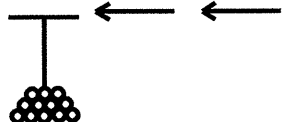
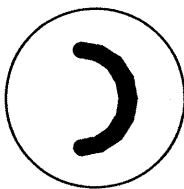


ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

2006 STANDARD SPECIFICATIONS

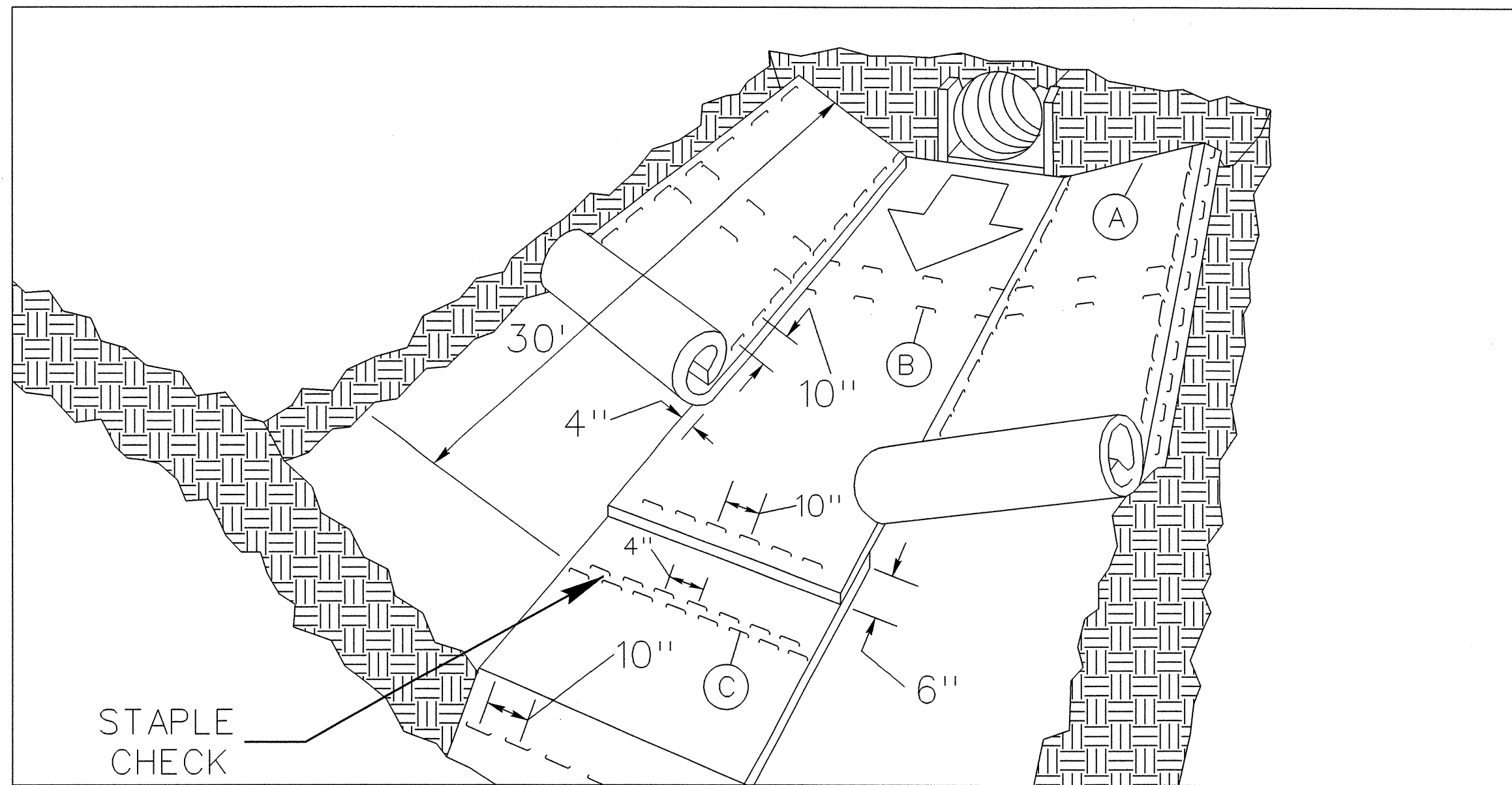
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL
REQUIRE PRIOR APPROVAL BY ENGINEER.

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

<u>Std. #</u>	<u>Description</u>	<u>Symbol</u>
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1607.01	Gravel Construction Entrance	
1630.06	Special Stilling Basin	
1622.01	Temporary Berms and Slope Drains.....	
1633.01	Temporary Rock Silt Check Type-A.....	
	Wattle with Polyacrylamide (PAM).....	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	

PROJECT REFERENCE NO. B-3802	SHEET NO. 20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

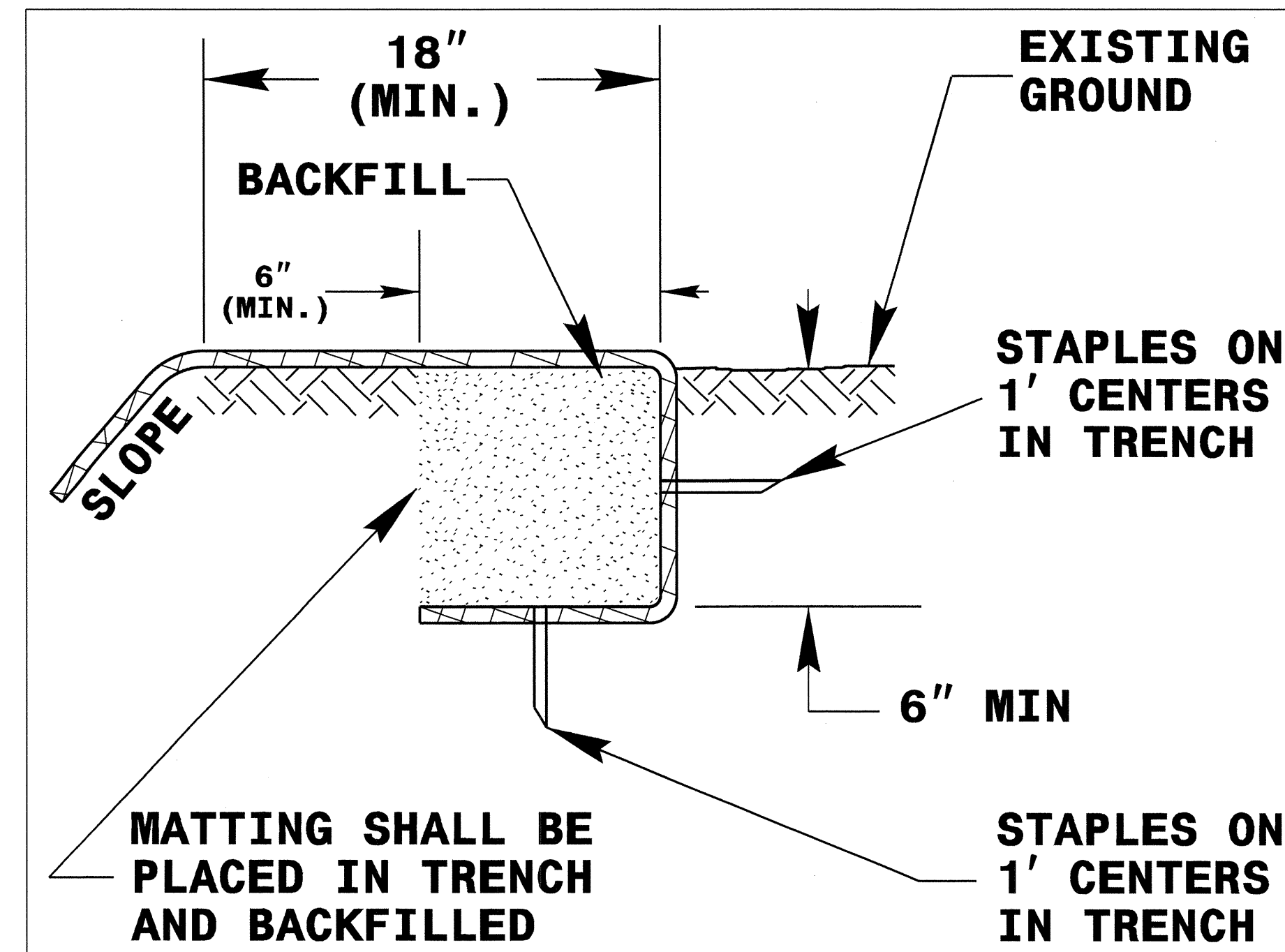
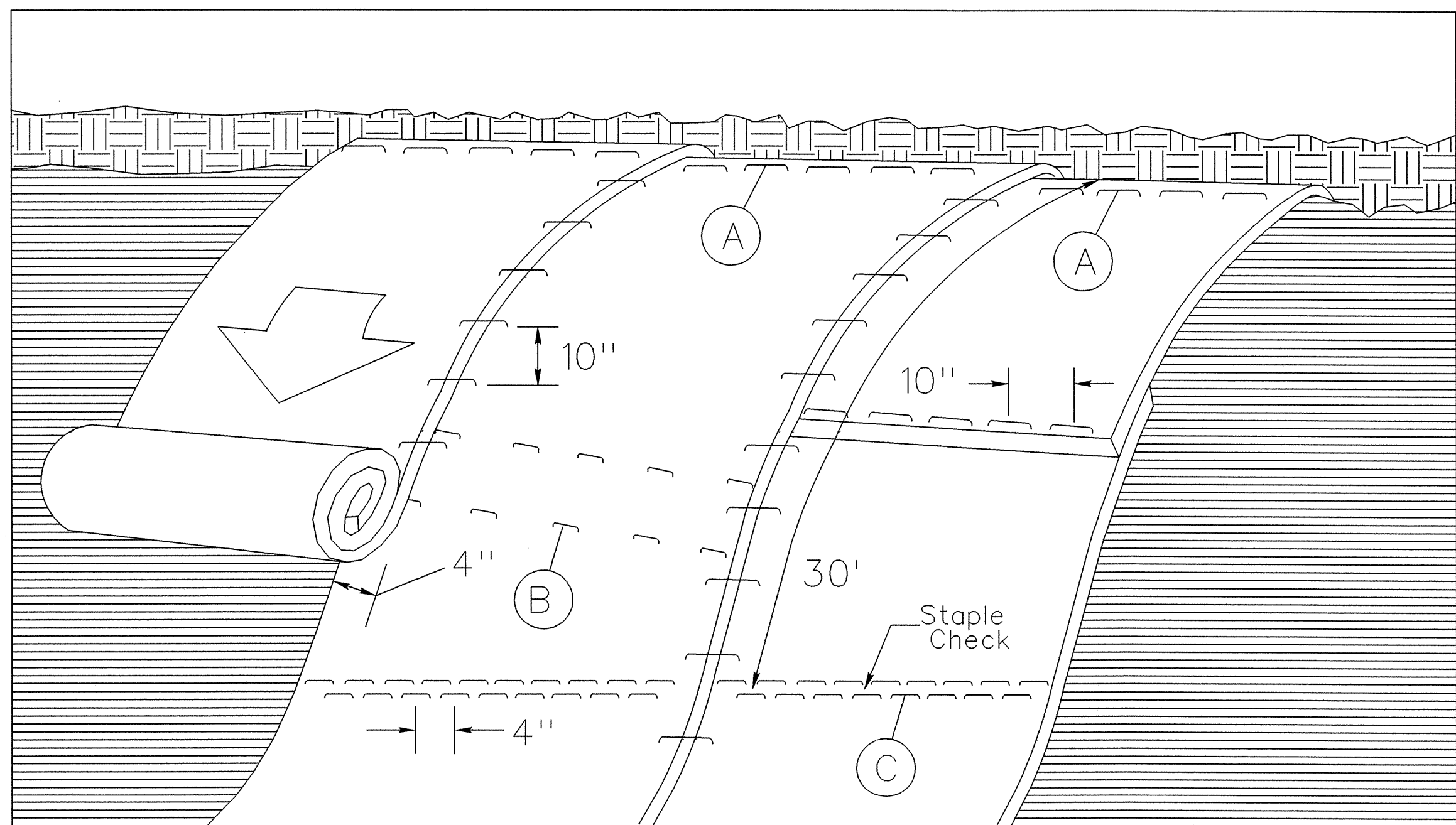


DIAGRAM (A)



MATTING ON SLOPES

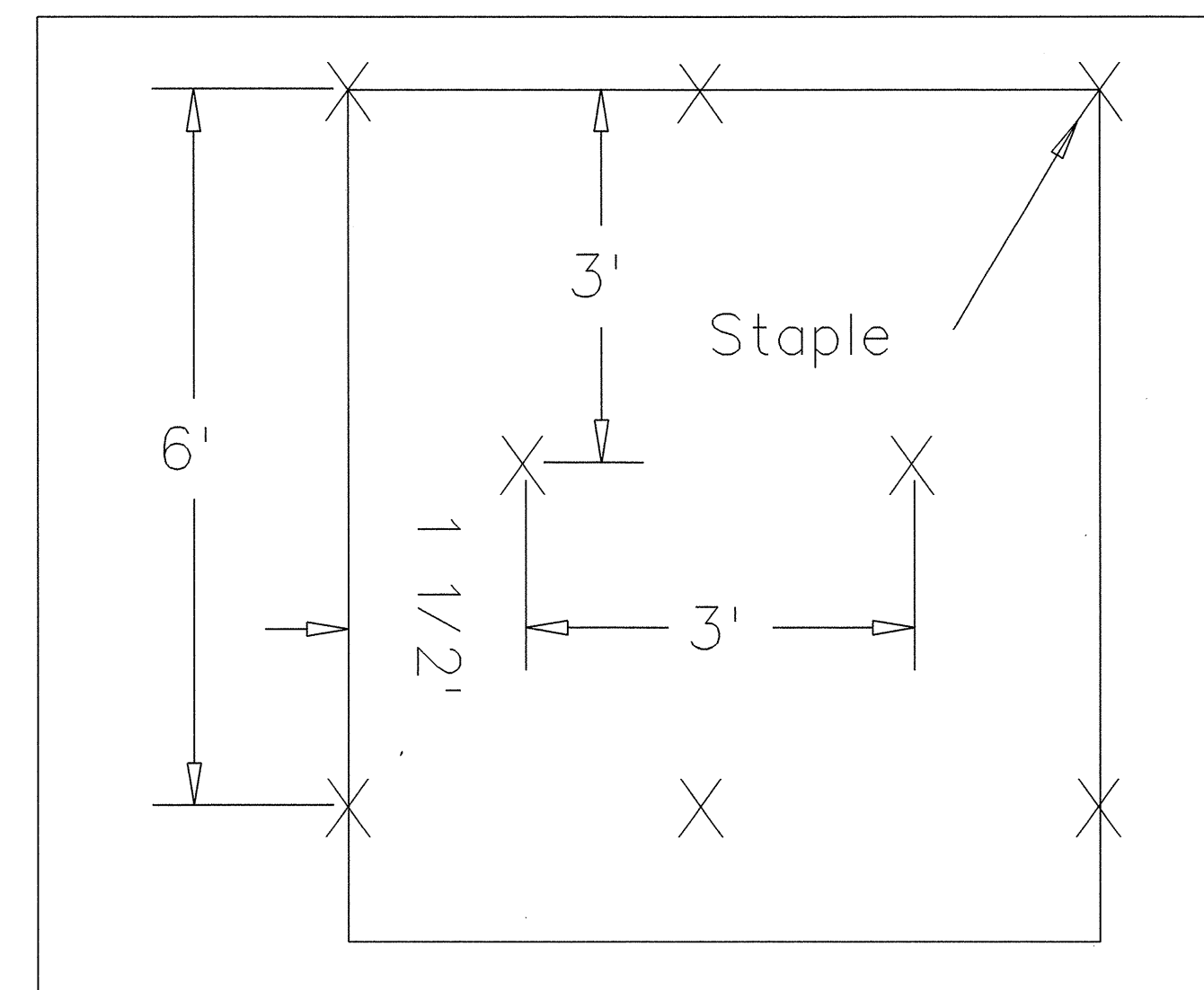


DIAGRAM (B)

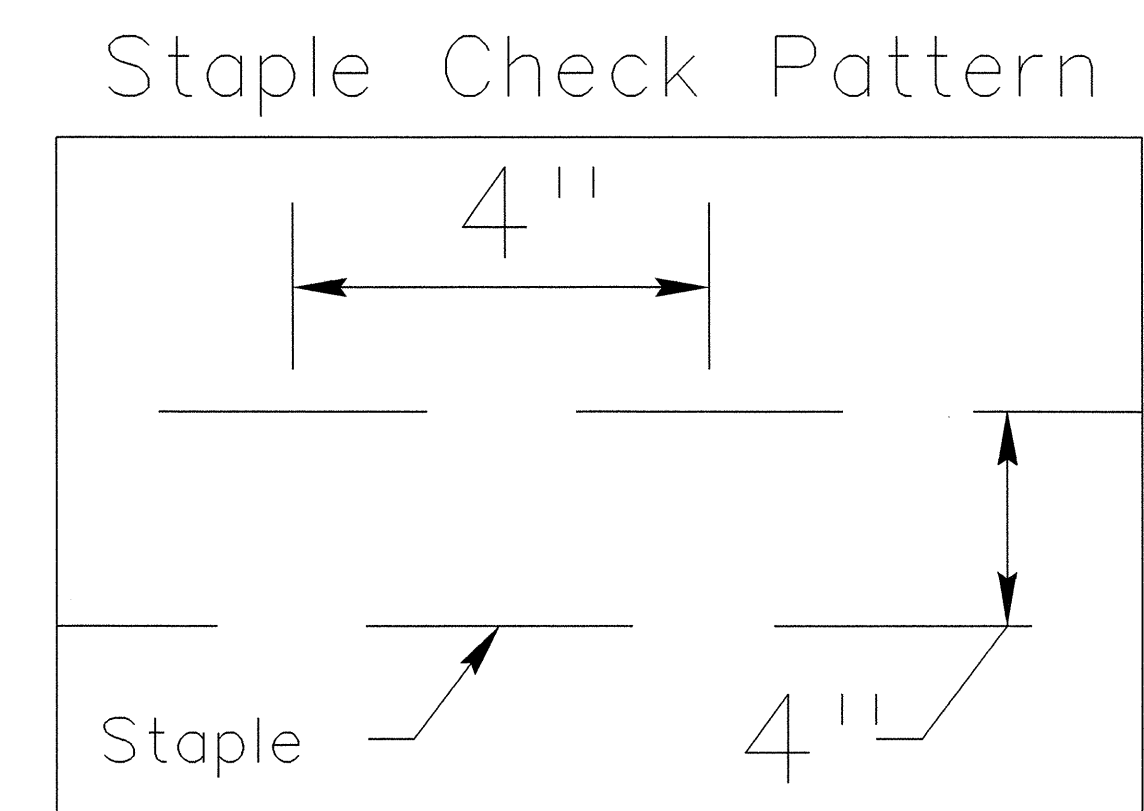


DIAGRAM (C)

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
2006 STANDARD SPECIFICATIONS

NOTES:

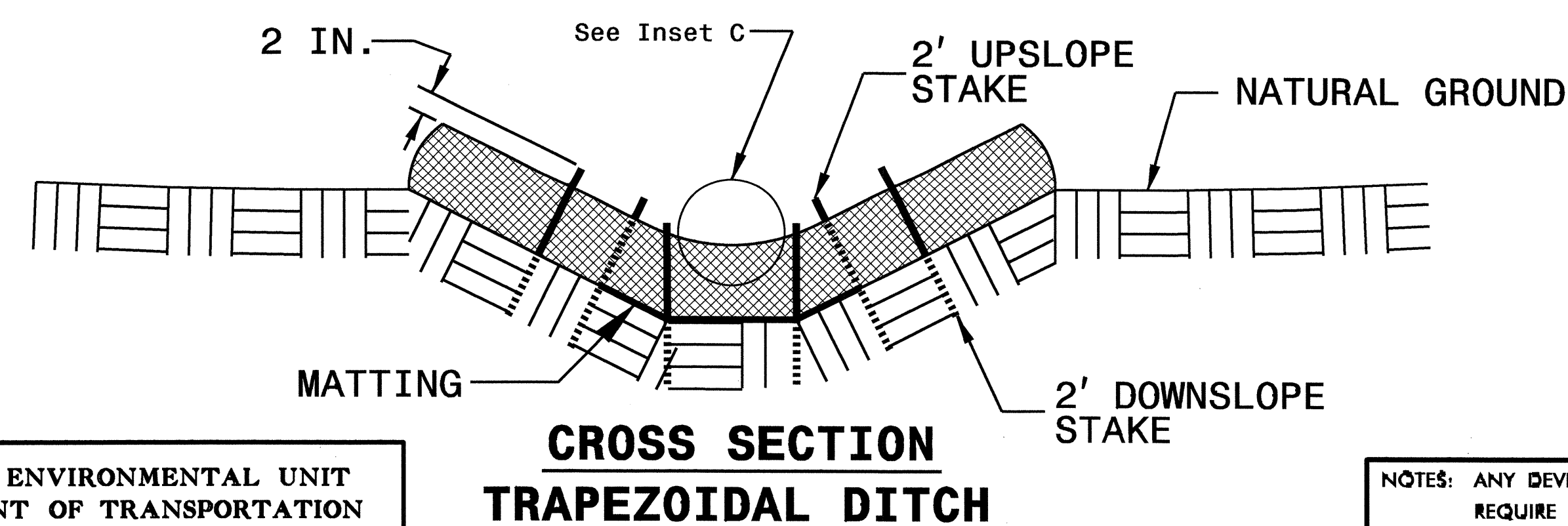
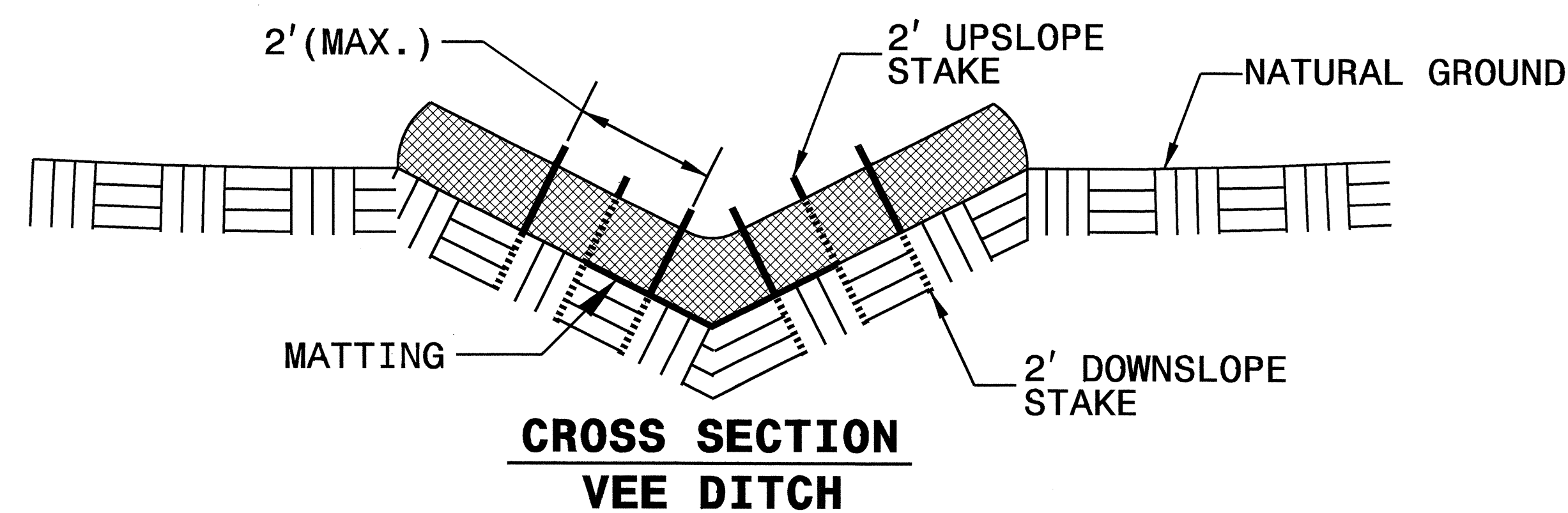
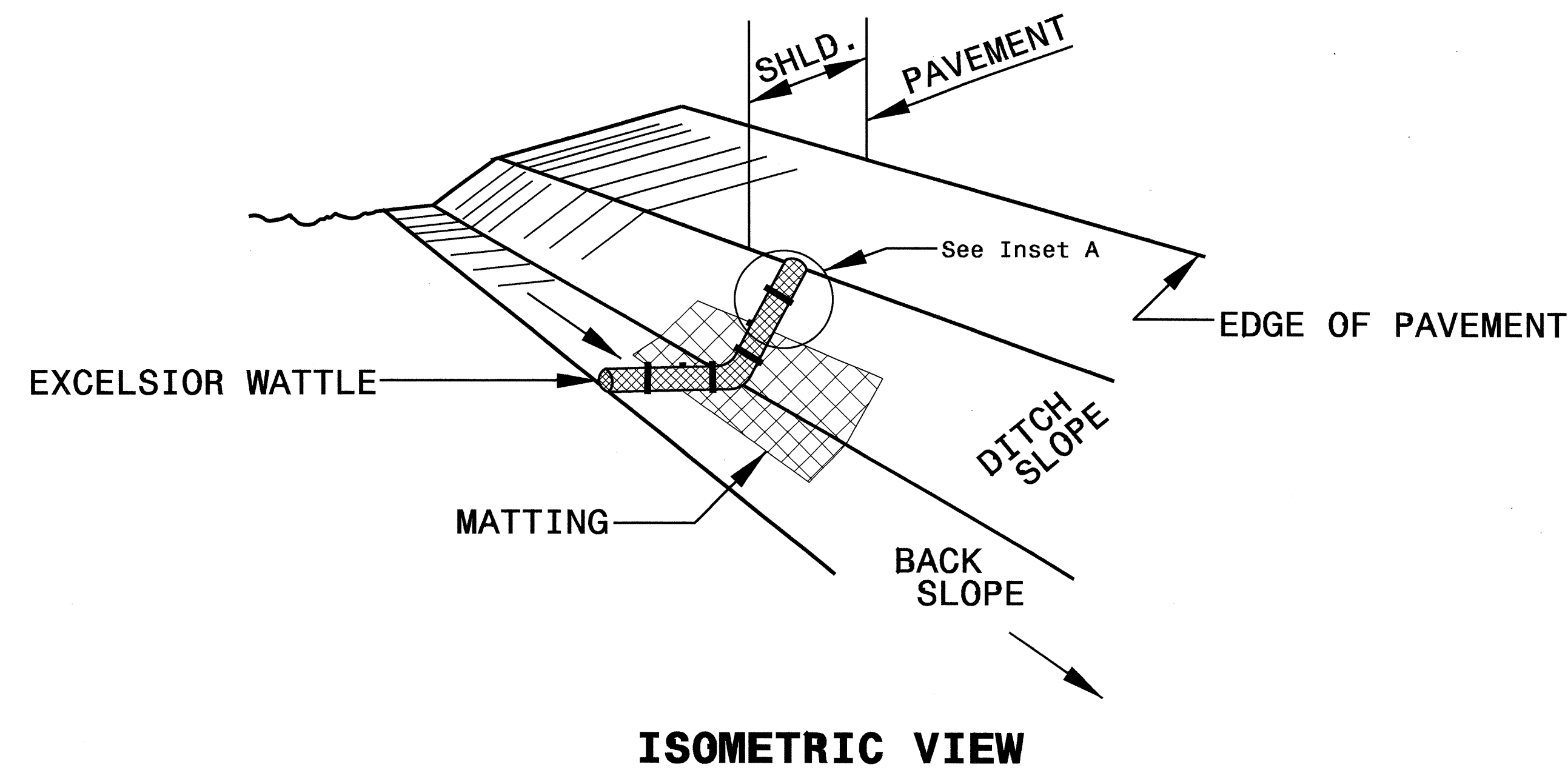
THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.
STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

NOT TO SCALE

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

PROJECT REFERENCE NO.	SHEET NO.
B-3802	21
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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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.

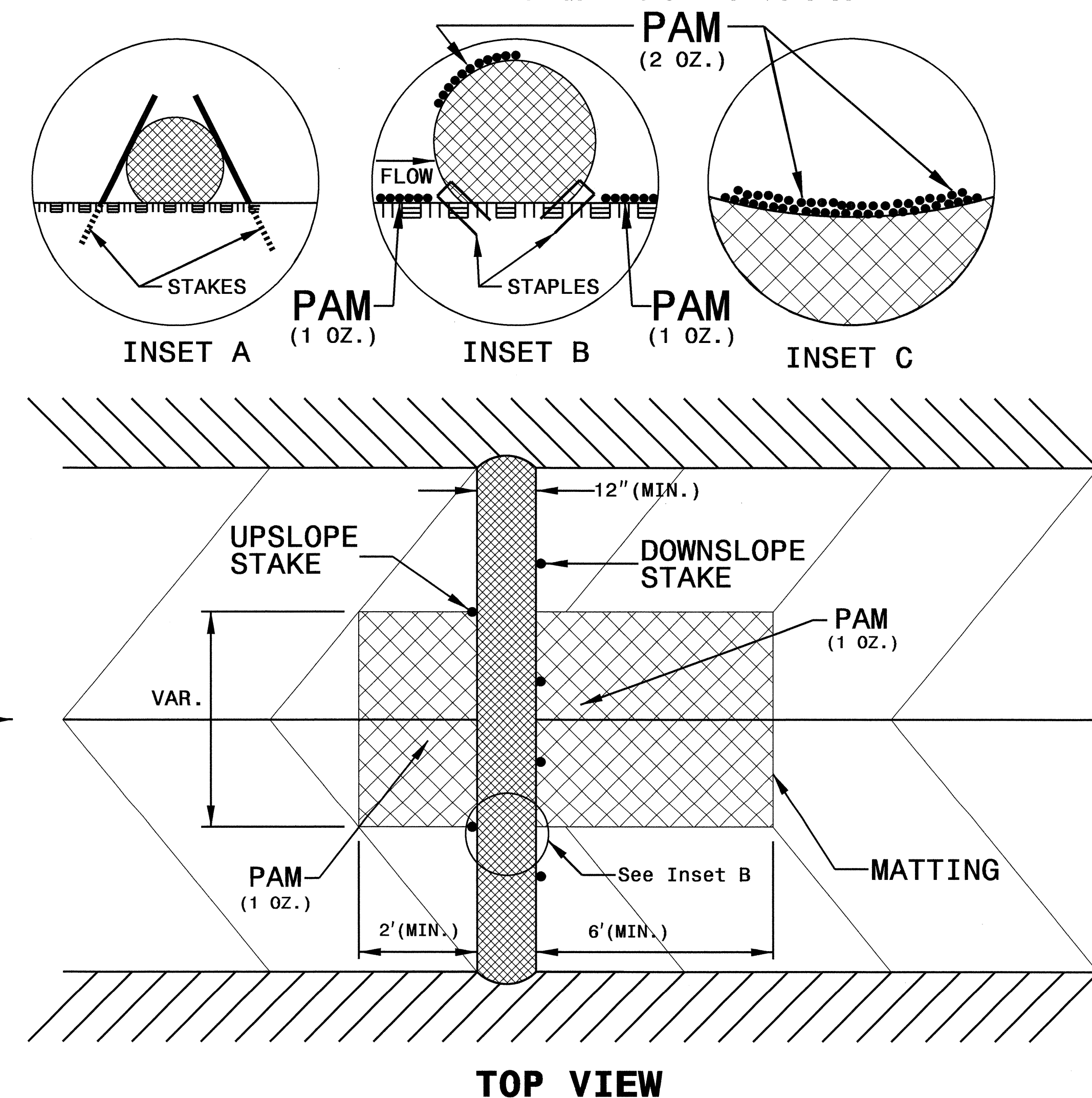
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

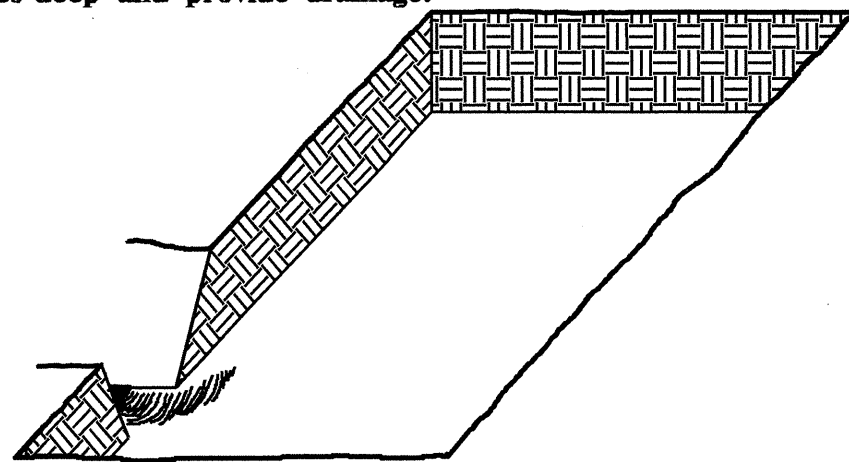
INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



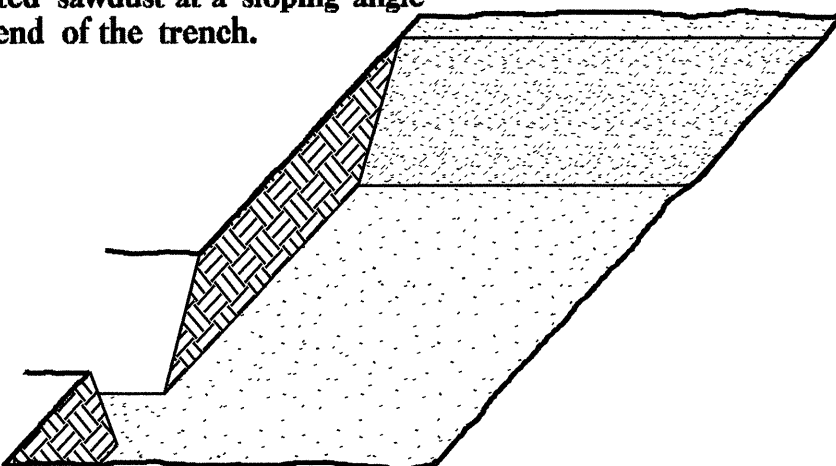
PLANTING DETAILS
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

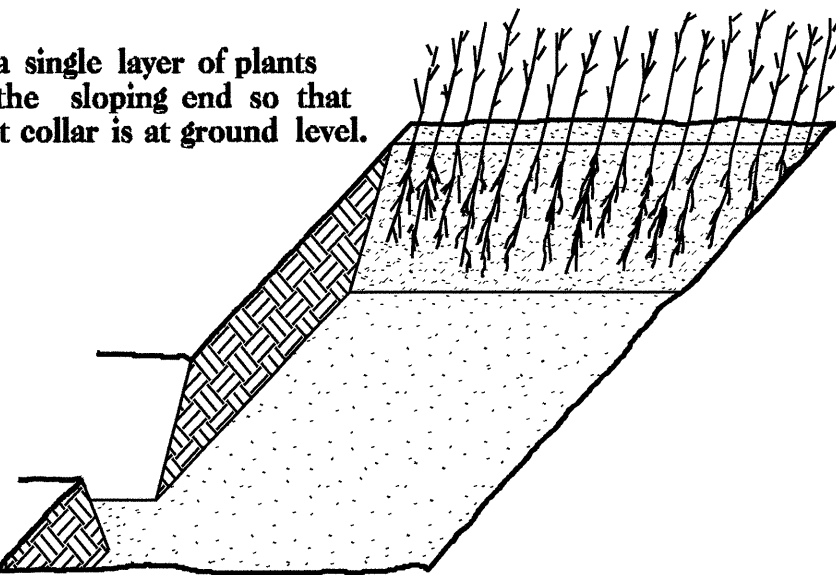
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



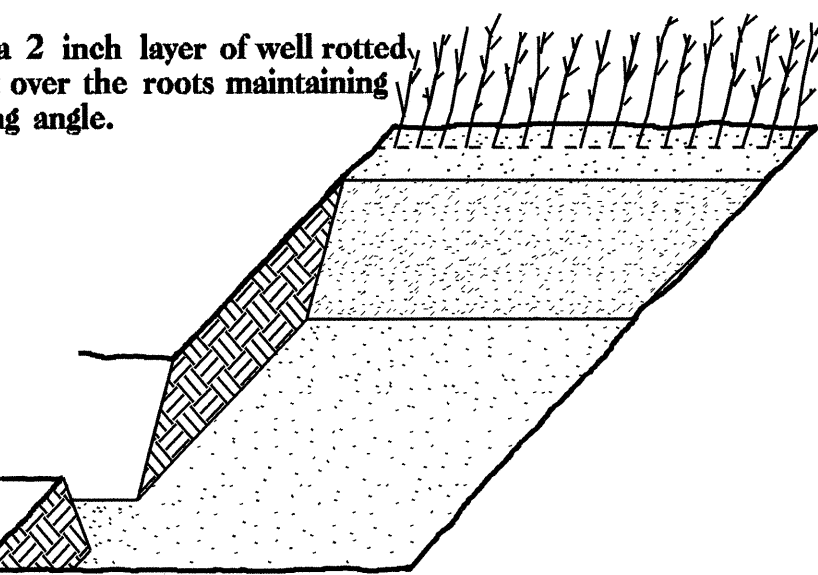
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

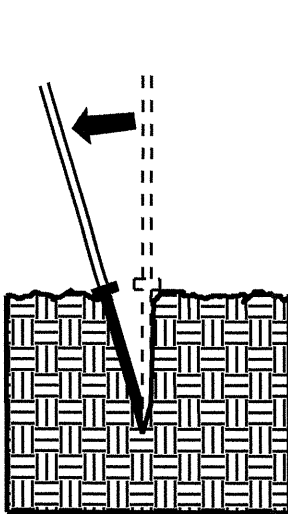


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

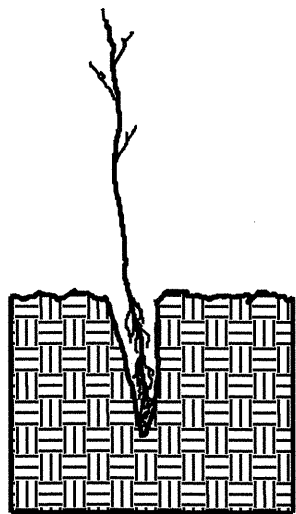


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

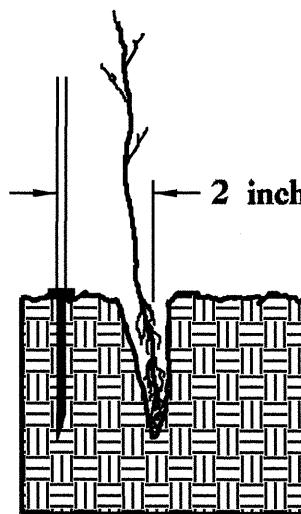
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



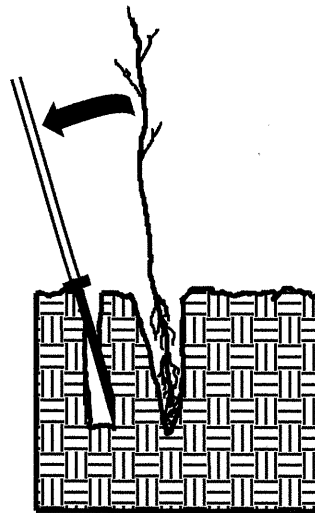
1. Insert planting bar as shown and pull handle toward planter.



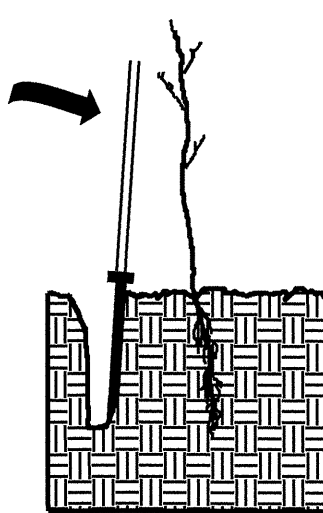
2. Remove planting bar and place seedling at correct depth.



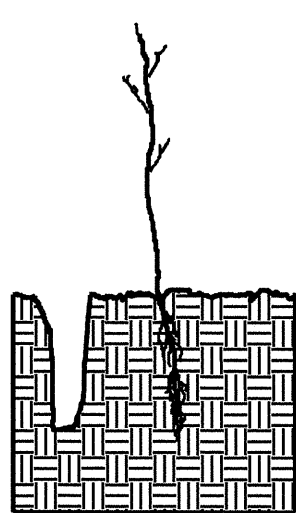
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.



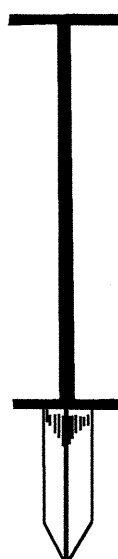
6. Leave compaction hole open. Water thoroughly.

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

- 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:

30% PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in - 18 in BR
30% FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in BR
40% QUERCUS ALBA	WHITE OAK	12 in - 18 in BR

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REFORESTATION DETAIL SHEET

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