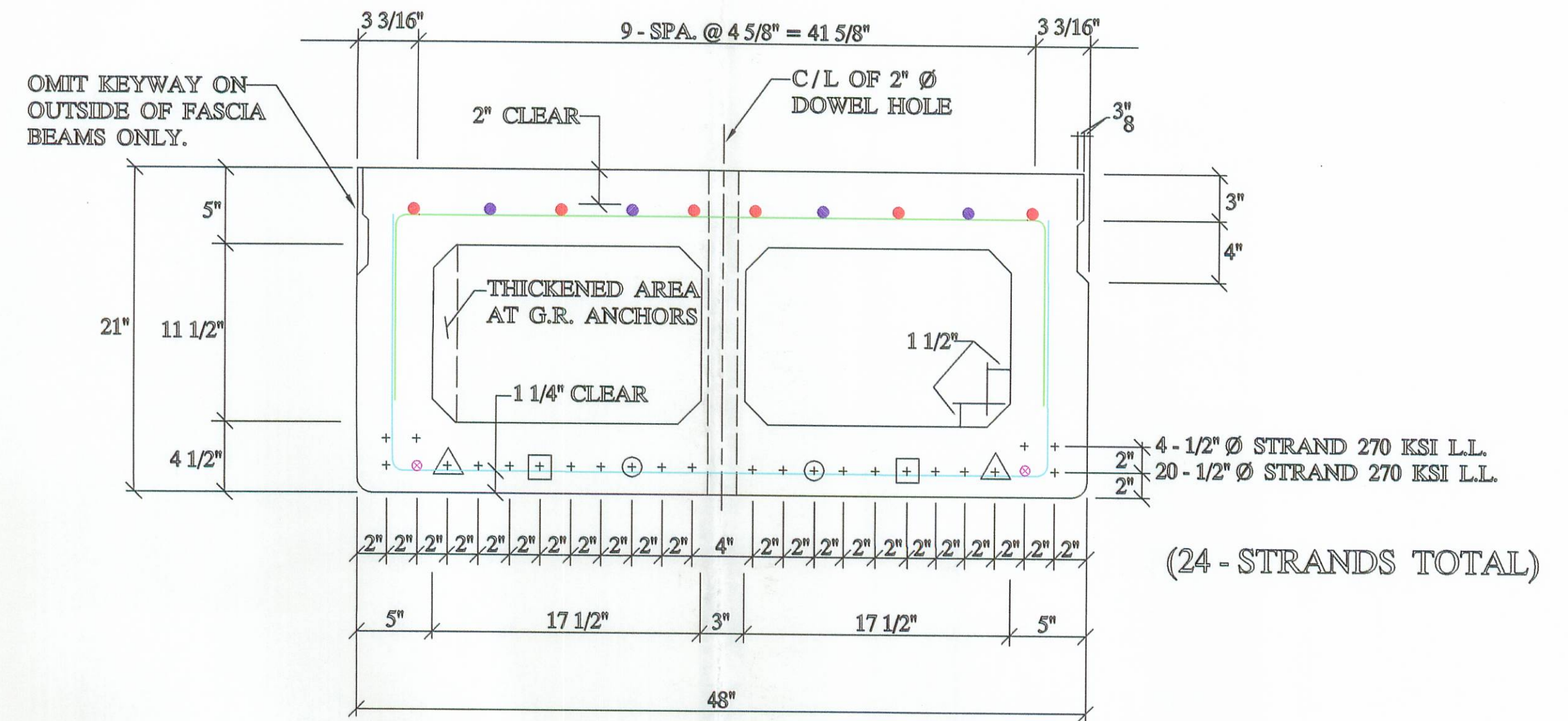
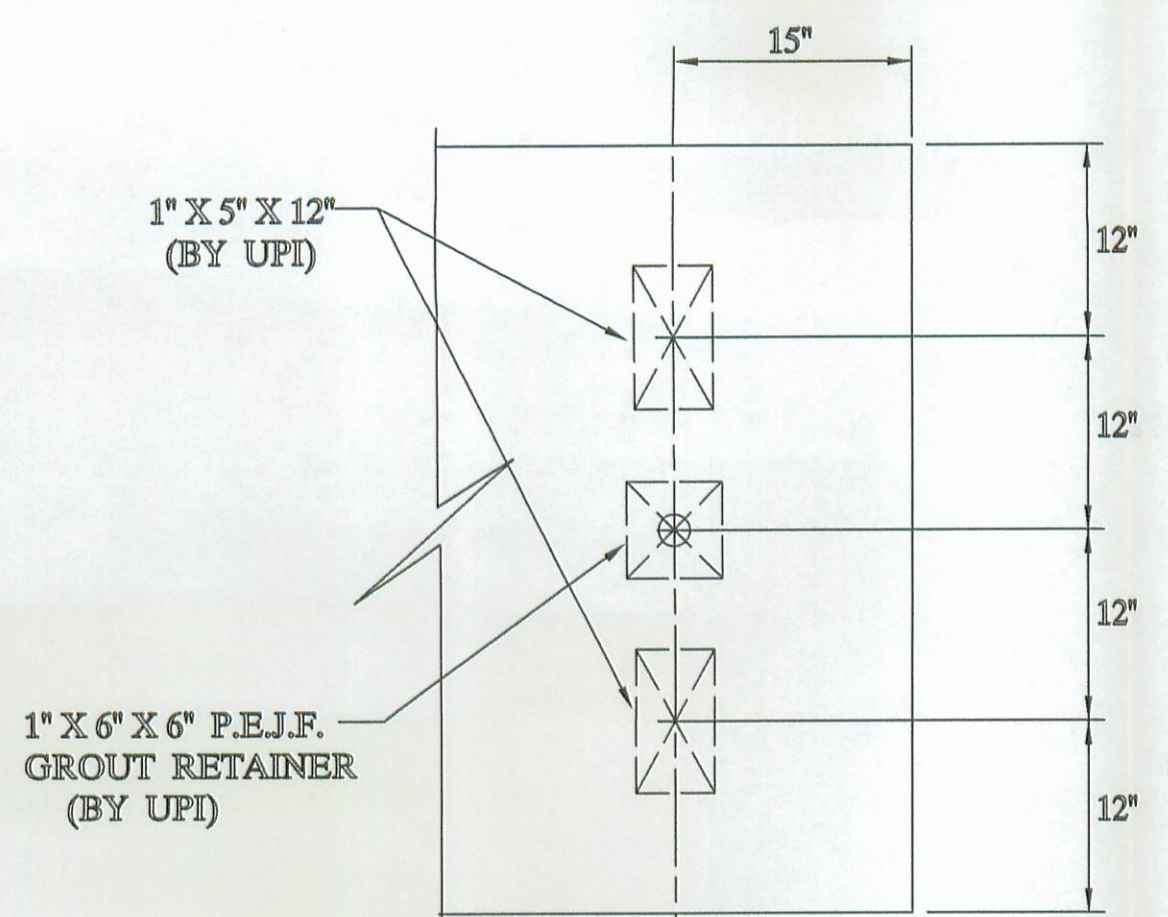


**DECK PLAN**



**B21-48**

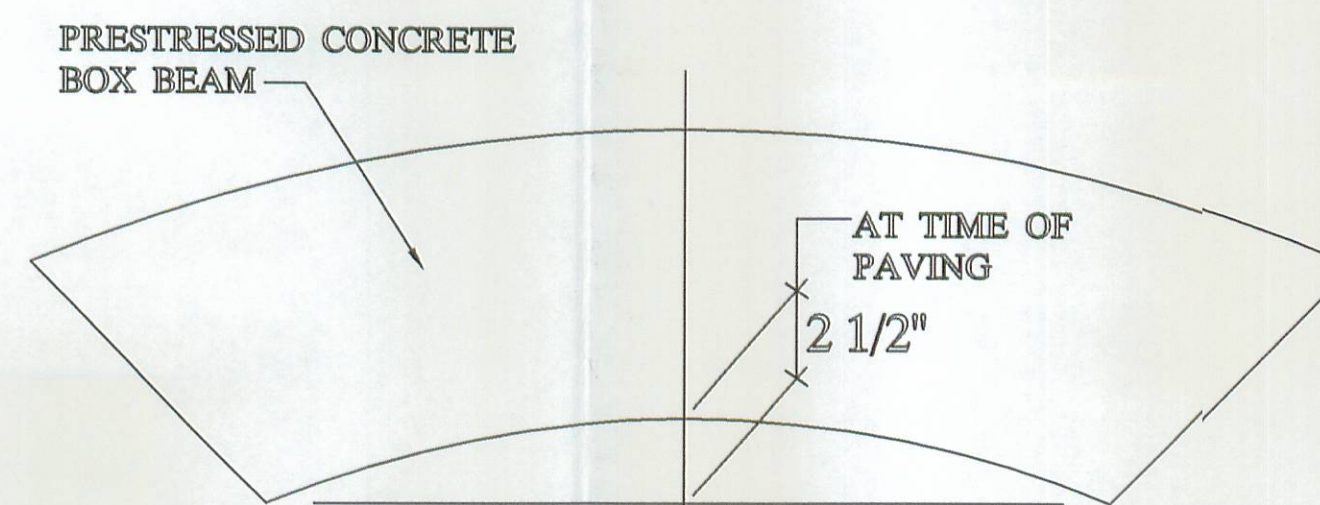
- 6 - #4 BARS FULL LENGTH RUN (TOP) MKB402 MKB403 (BUTT SPLICE BAR)
- 4 - #4 ADDITIONAL BARS 11'-0" LONG AT EACH END OF BEAM (TOP) MKB404.
- ⊗ 2 - #5 BARS FULL LENGTH RUN (BOTTOM) MKB501 MKB502 (BUTT SPLICE BAR)
- ⊕ DEBOND STRAND 1'-6" AT EACH END OF BEAM
- ⊕ DEBOND STRAND 5'-6" AT EACH END OF BEAM
- ⊕ DEBOND STRAND 2'-6" AT EACH END OF BEAM



**BEARING PAD LAYOUT**

**QUALITY CONTROL NOTE**

- STRAND AREA IS .153 IN. SQ.
- INITIAL LOAD IS 30,982 # / STRAND.
- STRAND IS LOW LAX.
- REBAR IS ALL GRADE - 60.
- STIRRUPS UNDER STRAND.



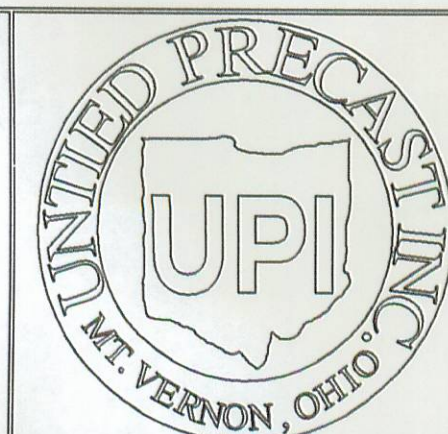
**CAMBER DETAIL**

**BILL OF MATERIALS**

NO	ITEM	QTY / BEAM	NOTES	TOTAL
1	BEAM WEIGHT		41,653 #	
2	CONCRETE	10 CY.		60 CY.
3	CALCIUM NITRITE	40 GAL.	(D.C.I.) 4 - GAL. / CY.	240 GAL.
4	STRAND		1/2" Ø STRAND 270 KSI L.L. GRADE - 60	10,560 L.F.
5	RE - STEEL		11 1/2" X 17 1/2"	6,168 #
6	VOID		3/4" Ø NON FERROUS	588 L.F.
7	VOID DRAINS		1" Ø STEEL ROD	72 EA.
8	TIE RODS	12'-0" 8'-0"	1" Ø STEEL ROD	8 EA.
			1" Ø STEEL ROD	4 EA.
9	TIE ROD SLEEVES			128 L.F.
10	TYPE - B - ANCHORS			36 EA.
11	TYPE - C - ANCHORS			18 EA.
12	DOWELS & SLEEVES			12 EA.
13	INTERTUF - 132			0.5 GAL.
14	SILANE			2.6 GAL.
15	JUTE			288 L.F.
16	BEARING PADS			24 EA.
17	GUARDRAIL POST			18 EA.
18	GUARDRAIL POST		(OFF THE DECK)	4 EA.
19	GUARDRAIL ELEMENT			150 L.F.
20	TUBULAR BACK UP			150 L.F.
21	P.E.J.F.			12 S.F.
22	NON SHRINK GROUT ADDITIVE		(ESTIMATED 1 1/2 CY. GROUT)	13.5 LBS.

APPROVED BY LOGAN ENGINEER 4-24-03

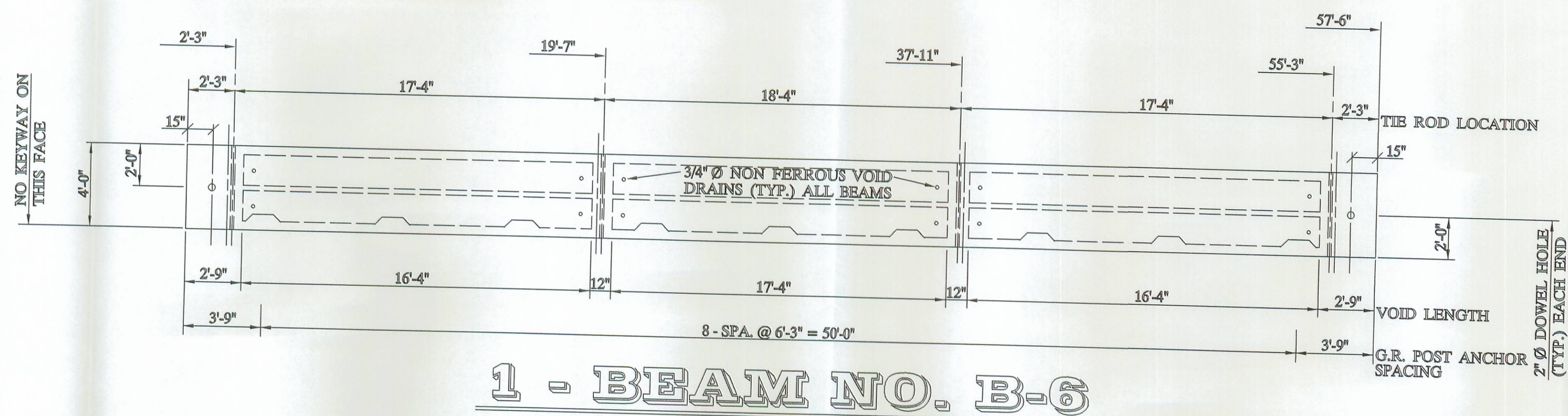
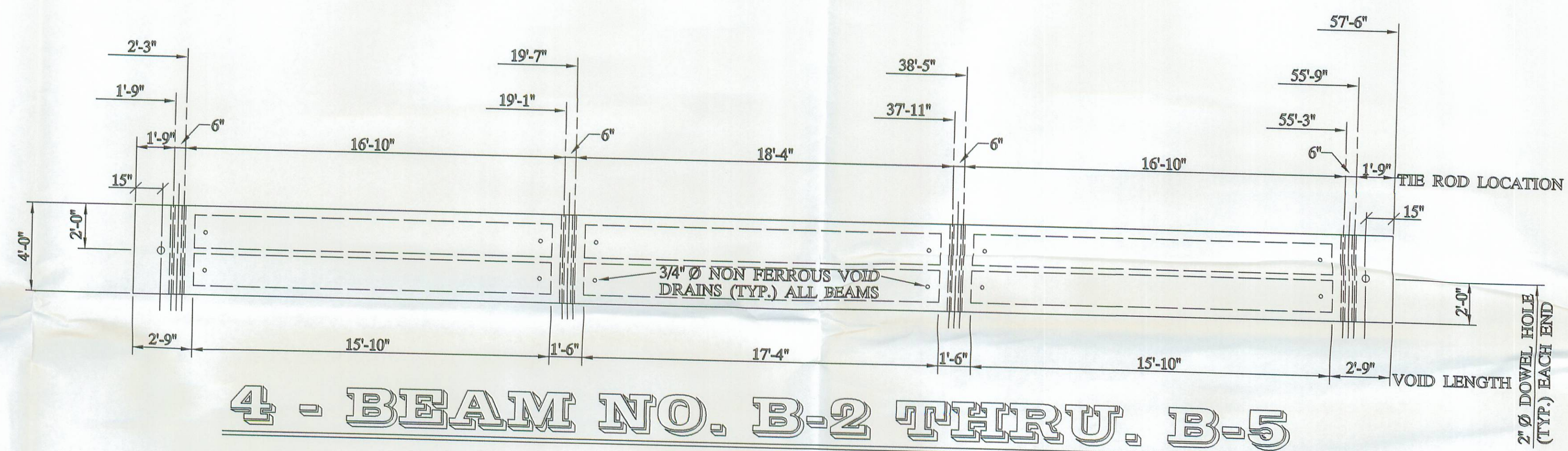
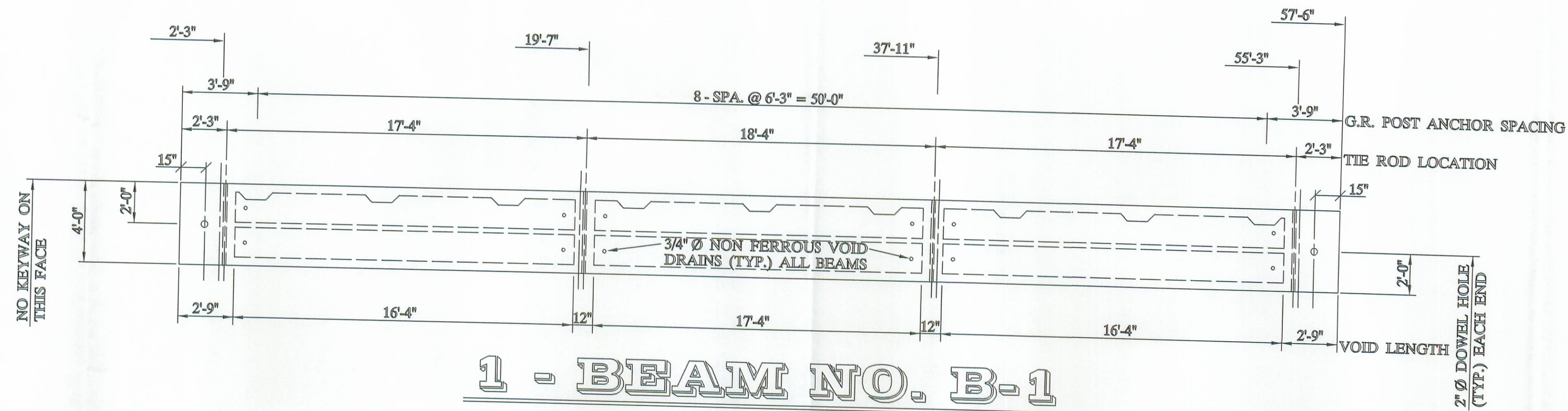
non perform

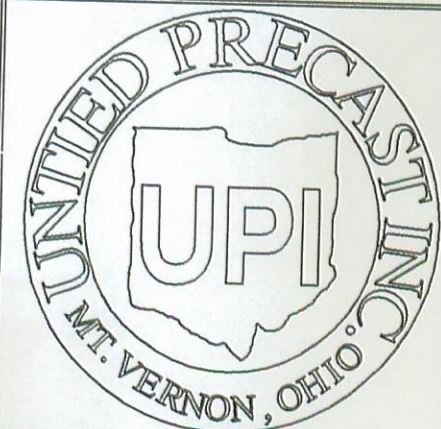


**UNITED PRECAST INC.**

ADDRESS : ROUNDHOUSE LANE  
MOUNT VERNON, OHIO 43050  
PHONE : (740) 393-1121  
FAX : (740) 393-0044

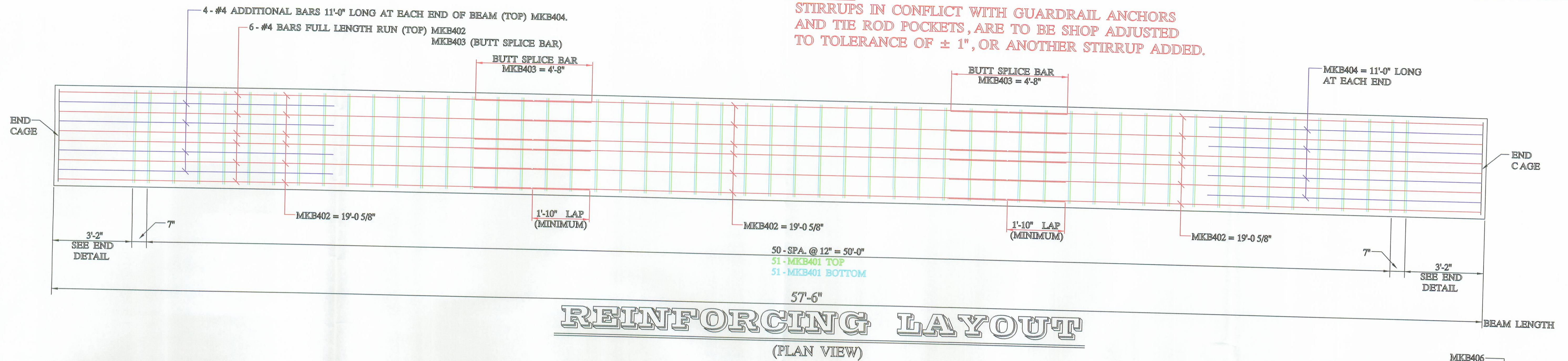
DESCRIPTION:	BOX BEAM DETAILS		SCALE:	DRAWN BY:
JOB NAME:	ITEM 515	BRIDGE NO. LOG - 286 - 0.46		PHIL
DATE:	APRIL 2003	LOGAN COUNTY	PROJECT NO. STOKES TOWNSHIP C.R. 286	REVISIED:
		APPROVED BY:	E.O.C. 4/21/03	DRAWING NO. 1 OF 4



	<b>UNITED PRECAST INC.</b>	<b>DESCRIPTION:</b> BOX BEAM DETAILS		<b>SCALE:</b>	<b>DRAWN BY:</b>	
	ADDRESS: ROUNDHOUSE LANE MOUNT VERNON, OHIO 43050		<b>JOB NAME:</b> ITEM 515 BRIDGE NO. LOG - 286 - 046 LOGAN COUNTY	PROJECT NO. STOKES TOWNSHIP C.R. 286		
	PHONE: (740) 393-1121 FAX: (740) 393-0044		<b>DATE:</b> APRIL 2003	<b>APPROVED BY:</b> E.O.C.	<b>DRAWING NO.:</b> 4/21/03	
					2 OF 4	

**NOTE:**

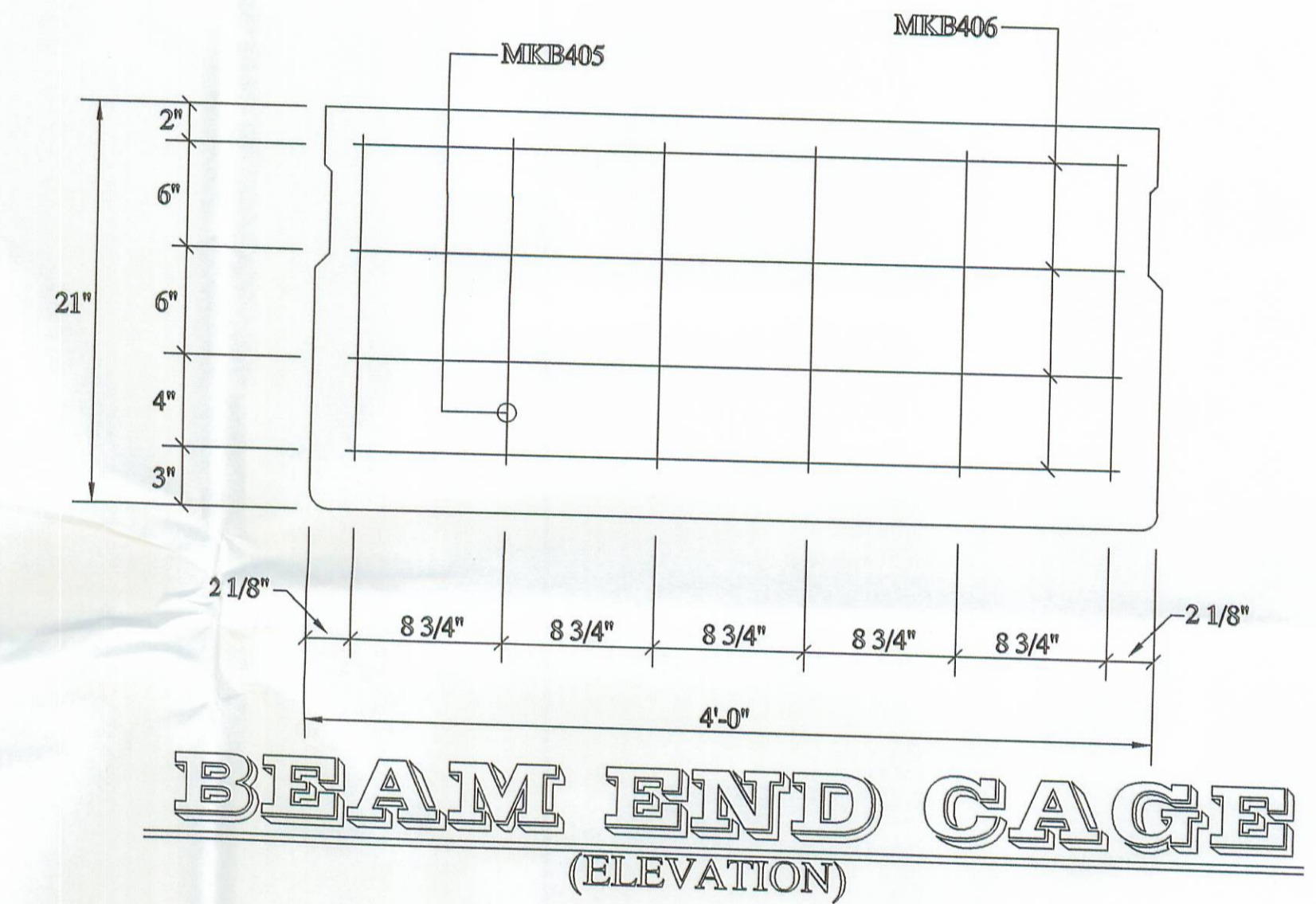
STIRRUPS IN CONFLICT WITH GUARDRAIL ANCHORS AND TIE ROD POCKETS, ARE TO BE SHOP ADJUSTED TO TOLERANCE OF ± 1", OR ANOTHER STIRRUP ADDED.



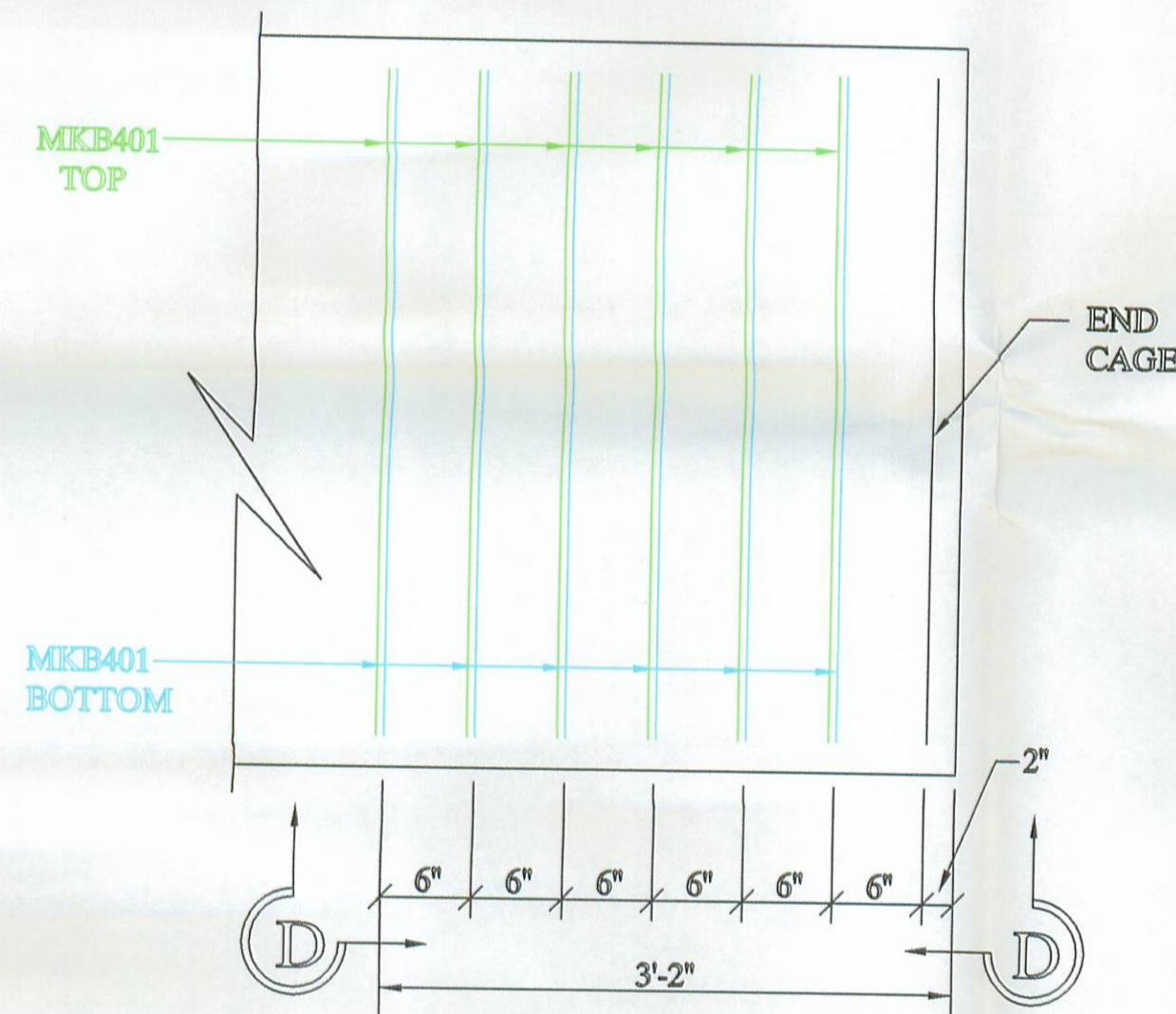
**REINFORCING LAYOUT**  
(PLAN VIEW)

**NOTE:**

MINIMUM BUTT SPLICE LENGTH REQUIRED IF CAGE FIT UP IS PERFECT IS AS FOLLOWS:  
#4, UNCOATED 44" (22" EACH SIDE)  
#5, UNCOATED 58" (29" EACH SIDE)

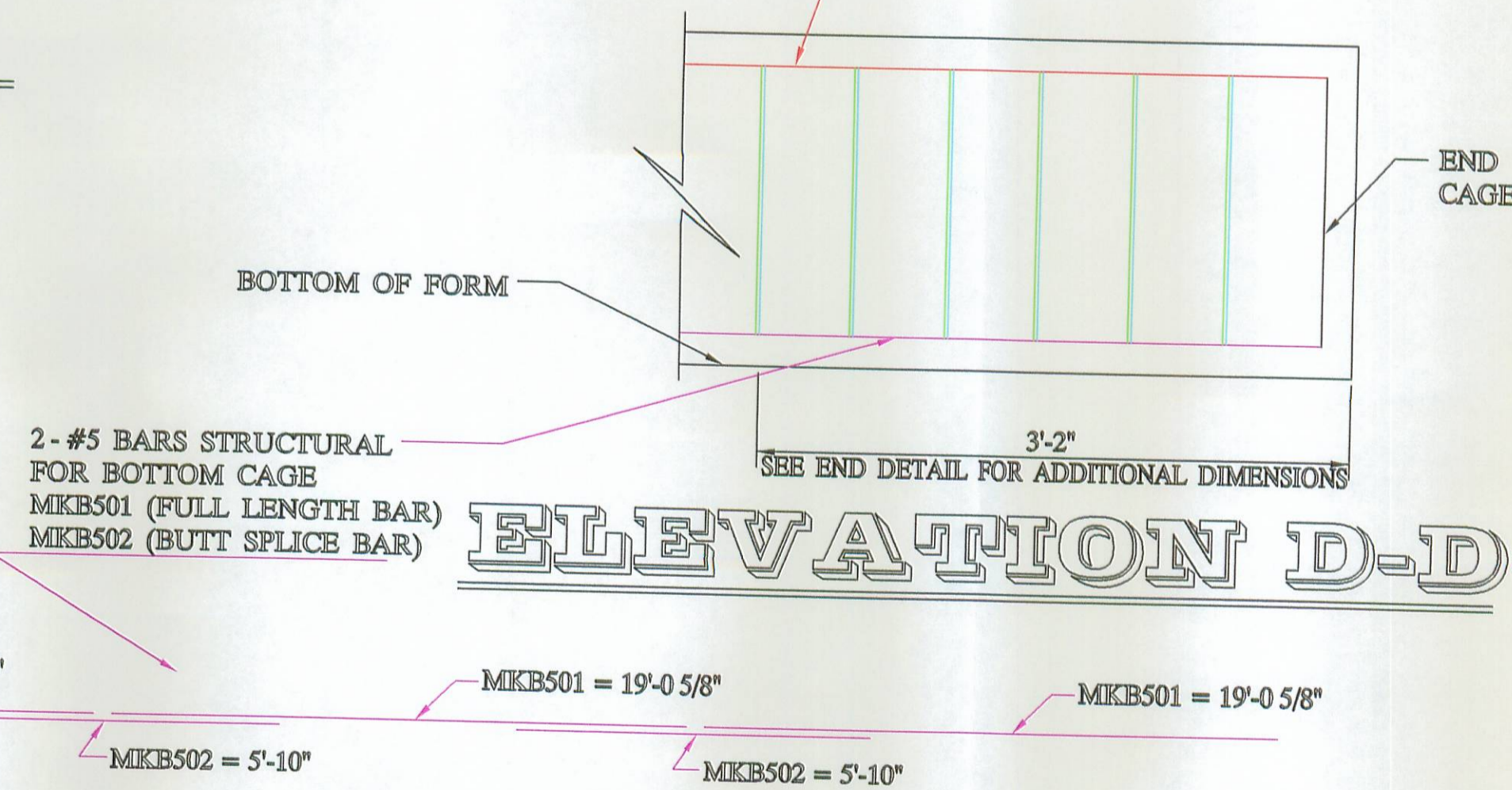


**BEAM END CAGE**  
(ELEVATION)

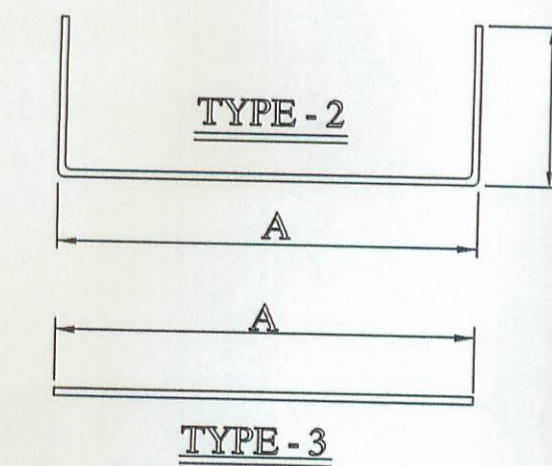


**(TYP.) END DETAIL**  
(PLAN VIEW)

TOP LONGITUDINAL BARS & TOP STIRRUPS ASSEMBLED IN TOP CAGE & PLACED IN BED IN UNITS OF VARIOUS LENGTH WITH TOP BARS BUTT SPICED AT INTERSECTIONS.

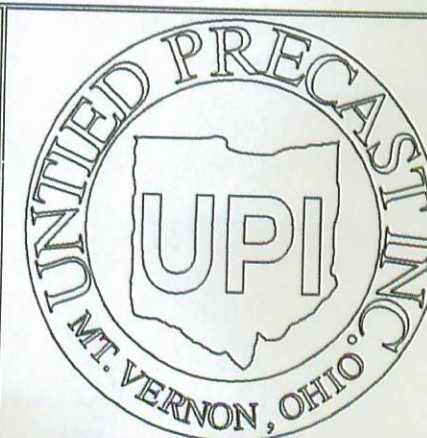


**ELEVATION D-D**



6 - B21-48 X 57'-6" WITH NO SKEW  
**BAR LIST**

MARK	SIZE	LENGTH	QUANTITY	SHAPE	A	B	C	D	E
B401	4	6'-2 1/2"	756	TYPE - 2	43"	17"			
B402	4	19'-0 5/8"	108	TYPE - 3	19'-0 5/8"				
B403	4	4'-8"	72	TYPE - 3	4'-8"				
B404	4	11'-0"	48	TYPE - 3	11'-0"				
B405	4	1'-5"	72	TYPE - 3	17"				
B406	4	3'-8 3/4"	48	TYPE - 3	44 3/4"				
B501	5	19'-0 5/8"	36	TYPE - 3	19'-0 5/8"				
B502	5	5'-10"	24	TYPE - 3	5'-10"				

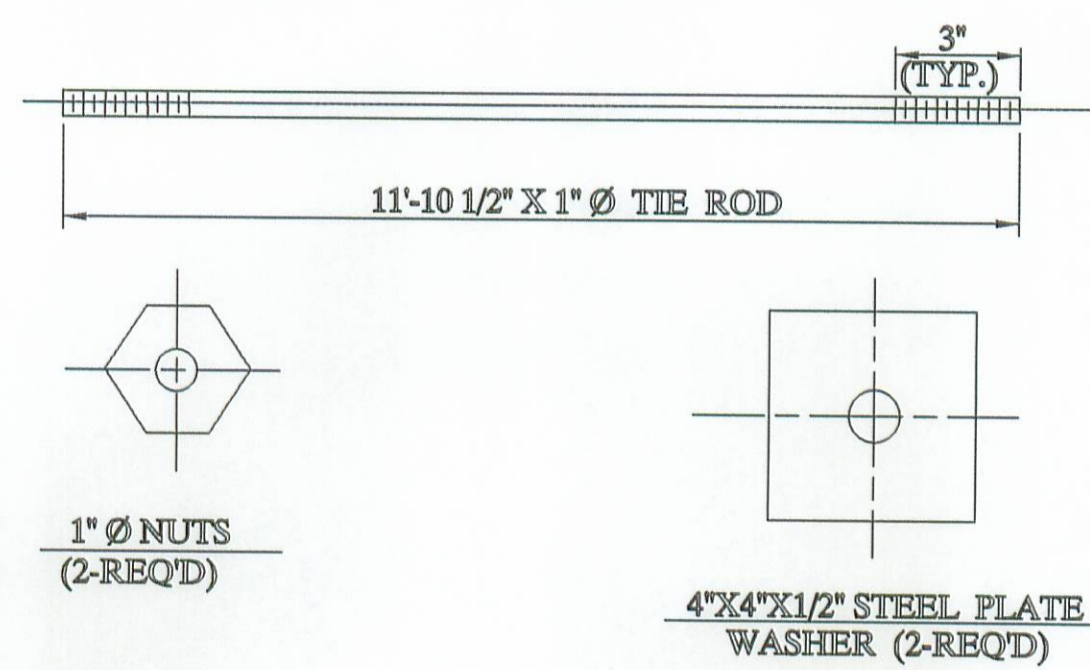


**UNITED PRECAST INC.**

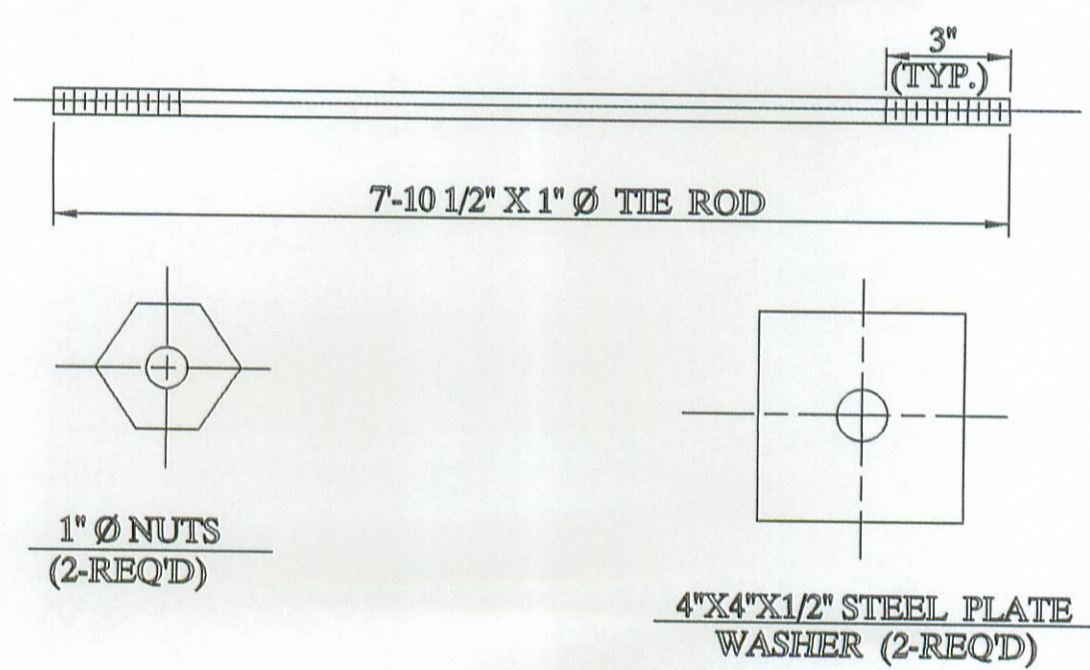
ADDRESS : ROUNDHOUSE LANE  
MOUNT VERNON, OHIO 43050  
PHONE : (740) 393-1121  
FAX : (740) 393-0044

DESCRIPTION :	REINFORCING LAYOUT		SCALE :	DRAWN BY :
JOB NAME :	ITEM 515	BRIDGE NO. LOG - 286 - 046		PHIL
DATE :	APRIL 2003	LOGAN COUNTY	PROJECT NO. STOKES TOWNSHIP C.R. 286	REVISED :
APPROVED BY :	E.O.C.	4/21/03		DRAWING NO. 3 OF 4

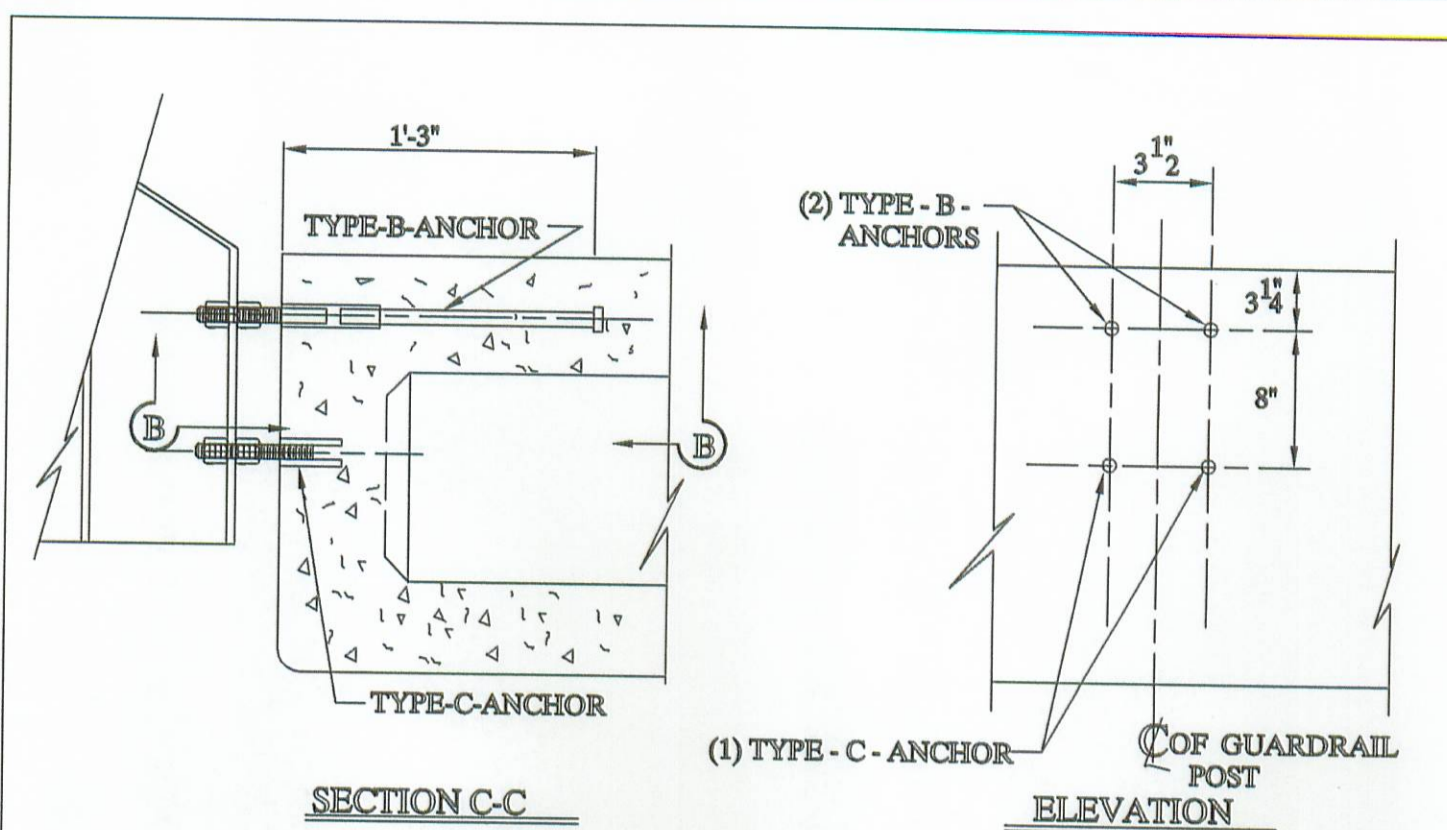
**12'-0" TIE ROD ASS'Y**



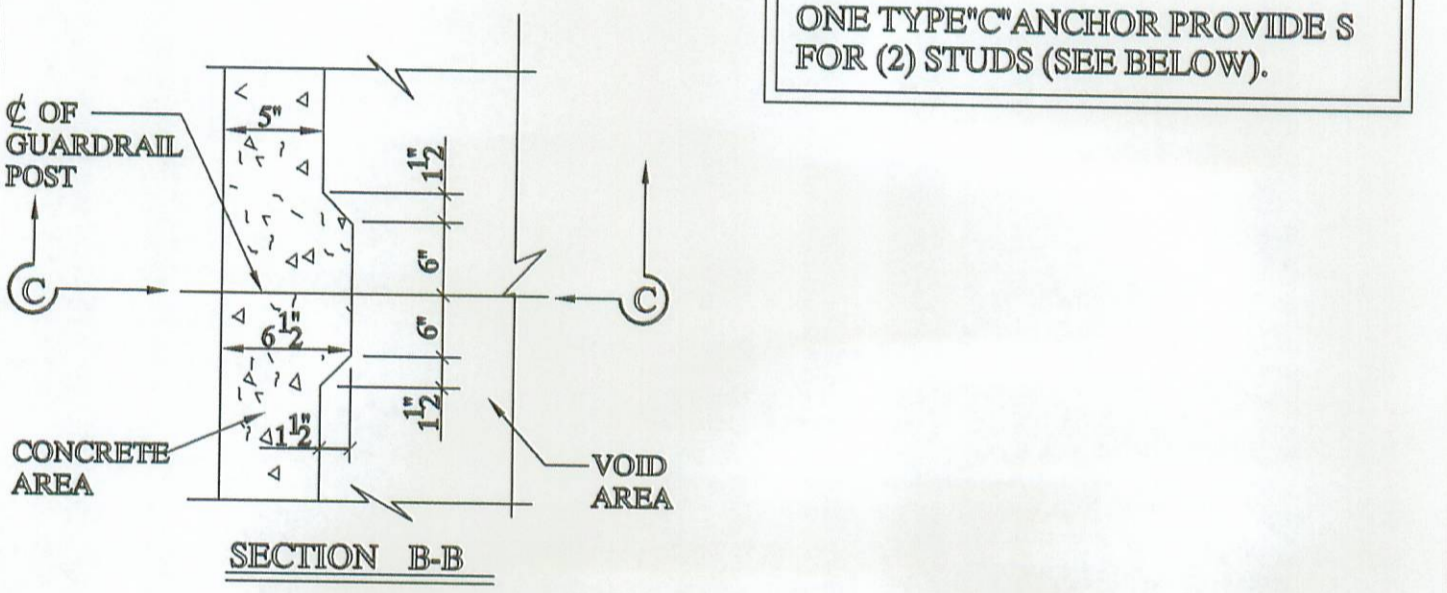
**8'-0" TIE ROD ASS'Y**



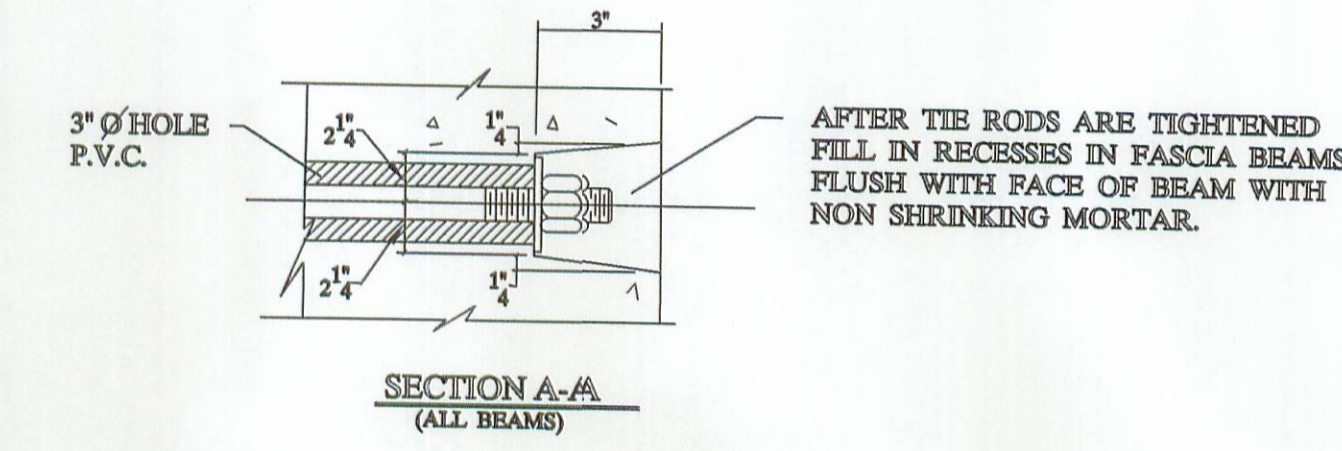
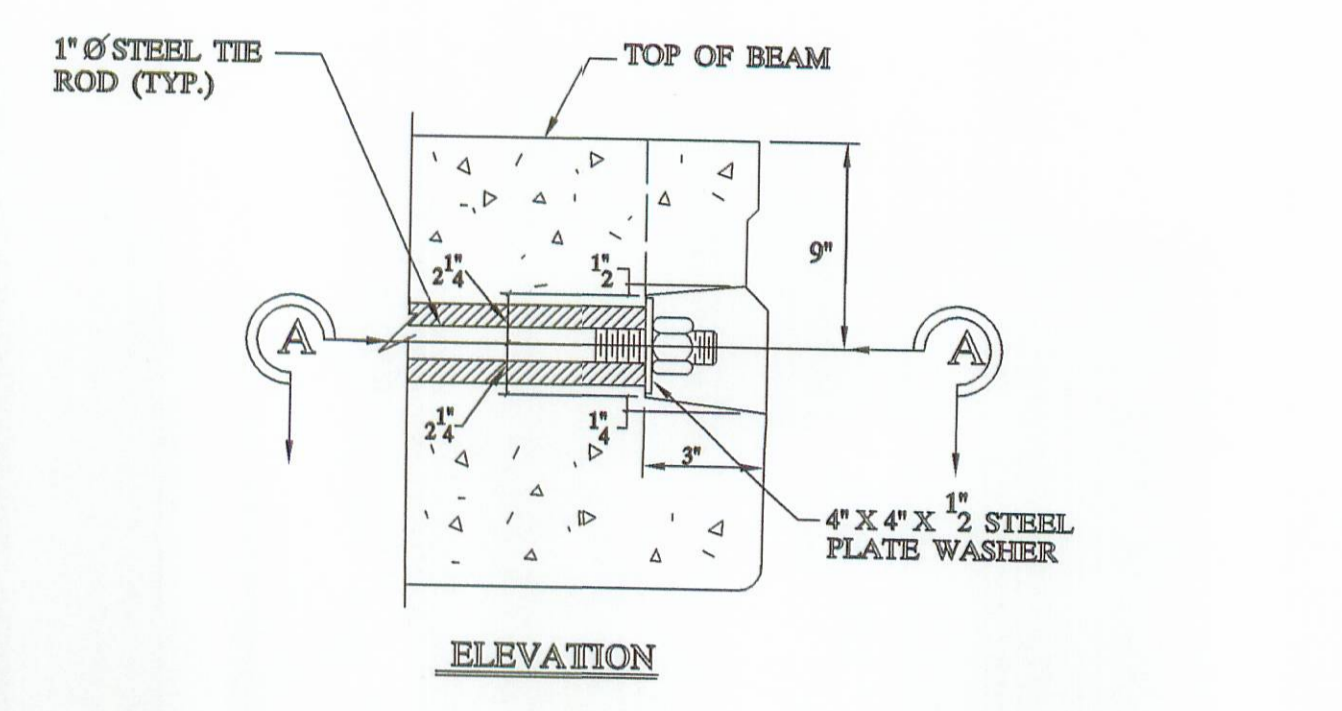
NOTE:  
ALL ITEMS INCLUDING TIE RODS ACCESSORIES SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM-123 OR 153. PER CMS 711.02, UNLESS OTHERWISE NOTED.



NOTE:  
ONE TYPE-C ANCHOR PROVIDES FOR (2) STUDS (SEE BELOW).



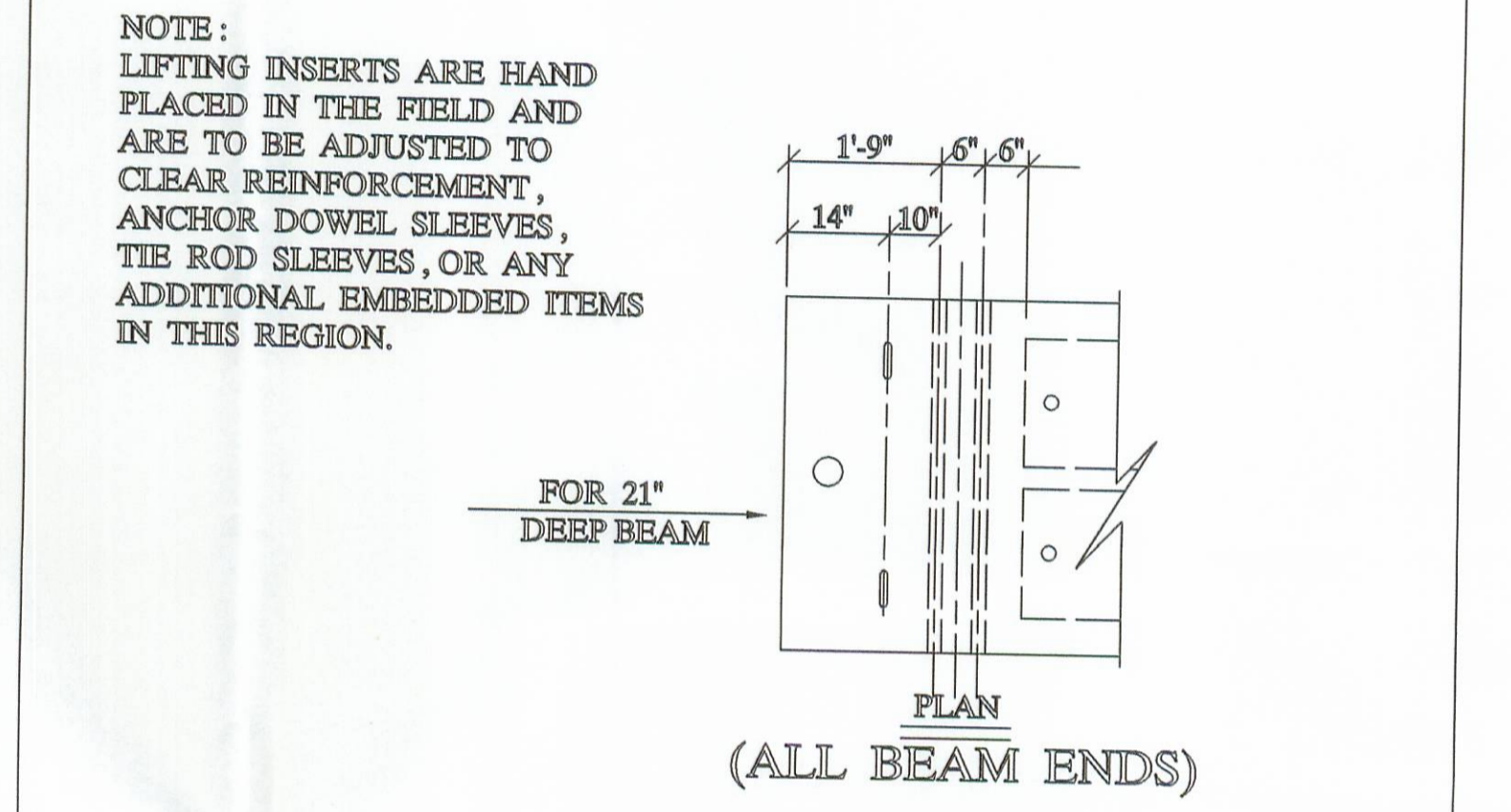
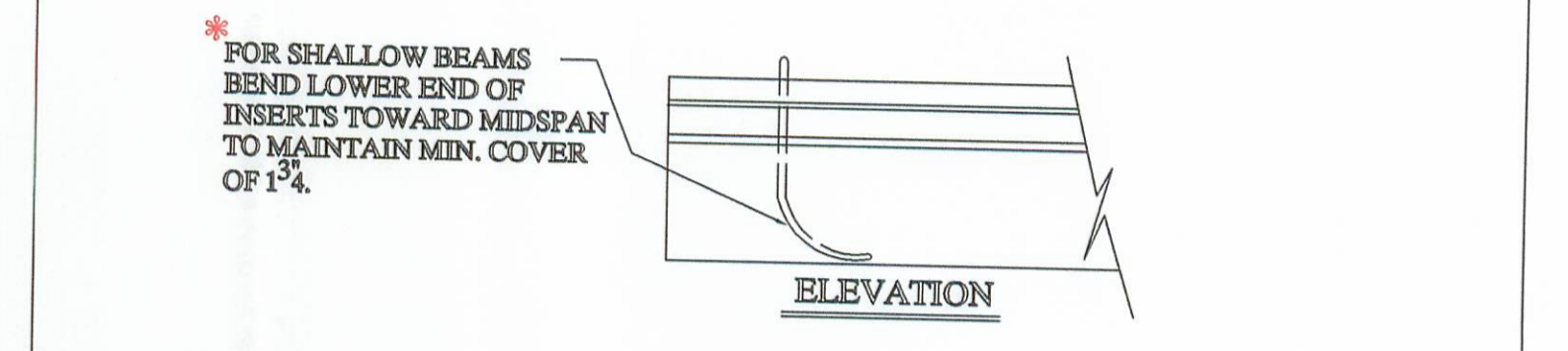
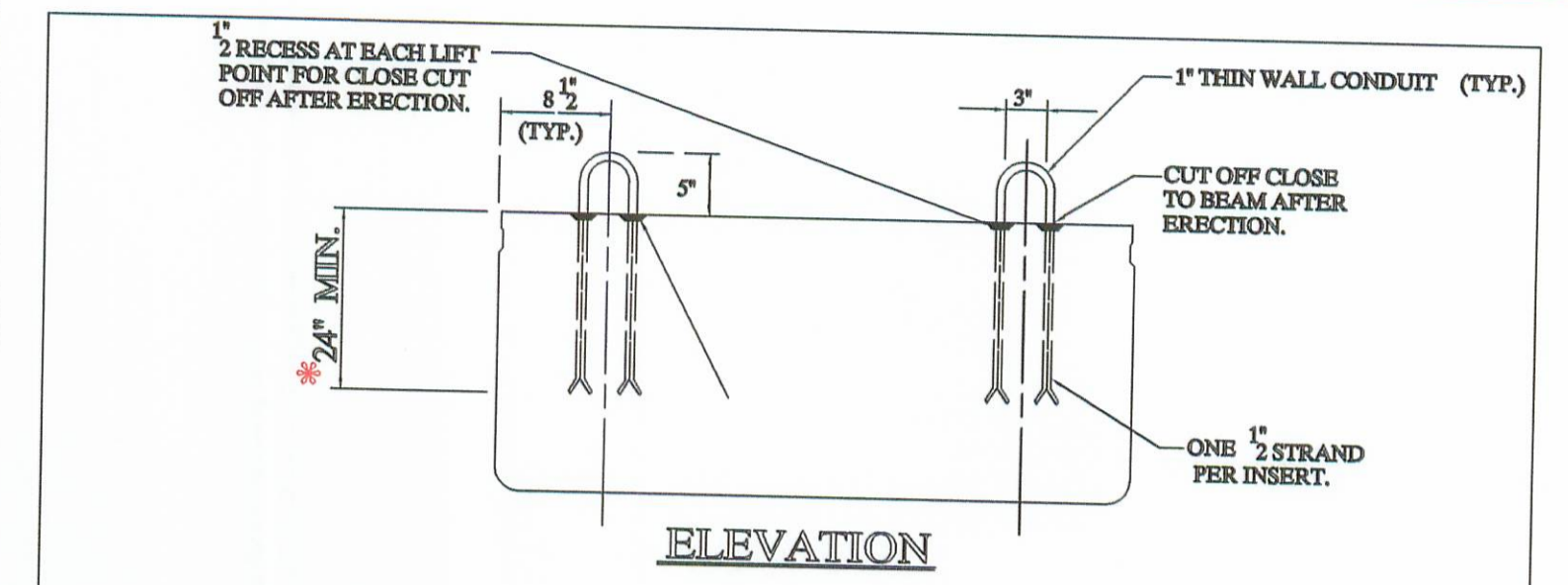
NOTE:  
TYPE B&C ANCHOR ASSEMBLIES SHALL CONFORM TO PHYSICAL PROPERTIES OF ASTM-A-325. EXCEPT MIN. ELONGATION SHALL BE 10%. THE CHEMICAL PROPERTIES ARE WAIVED.



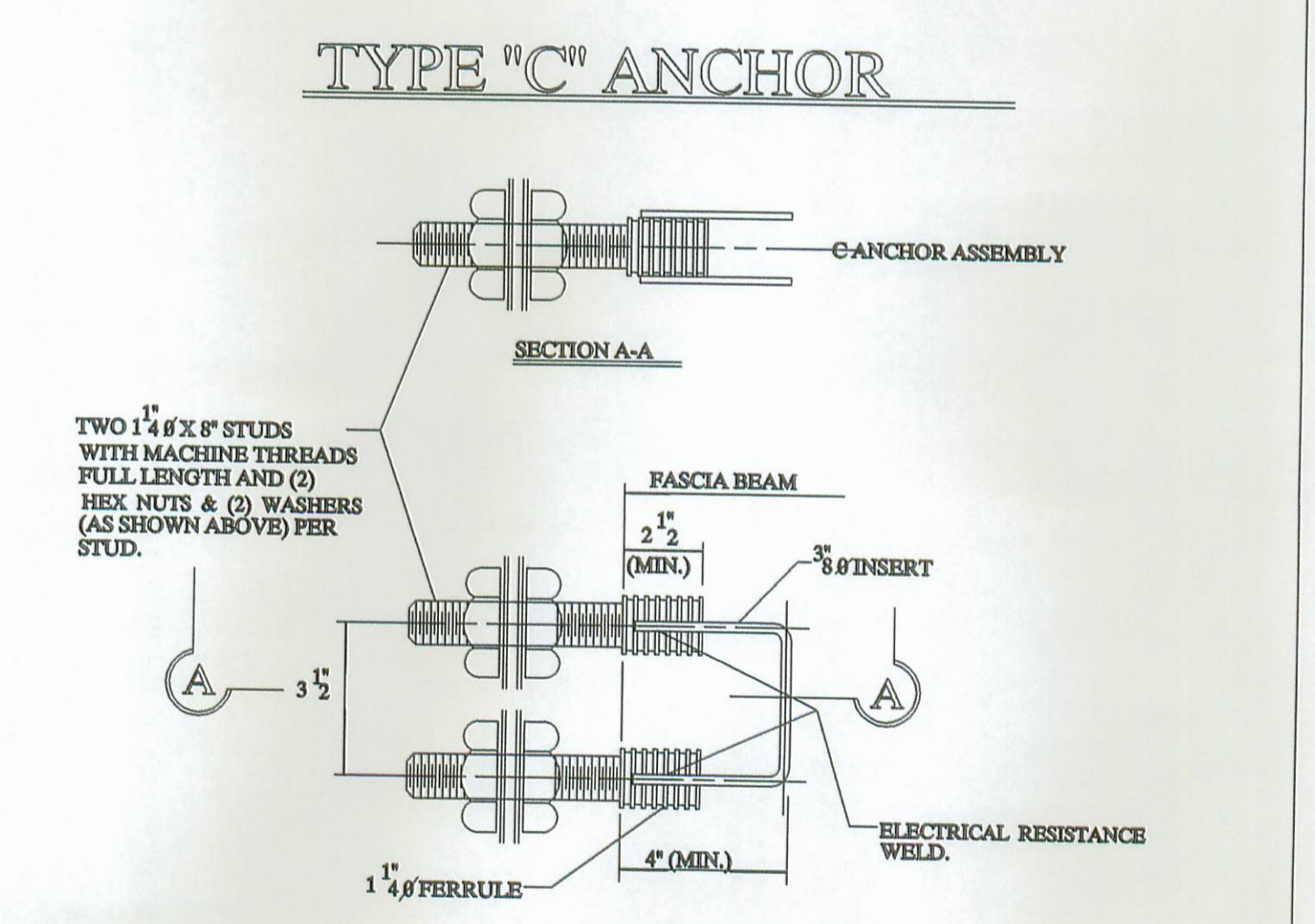
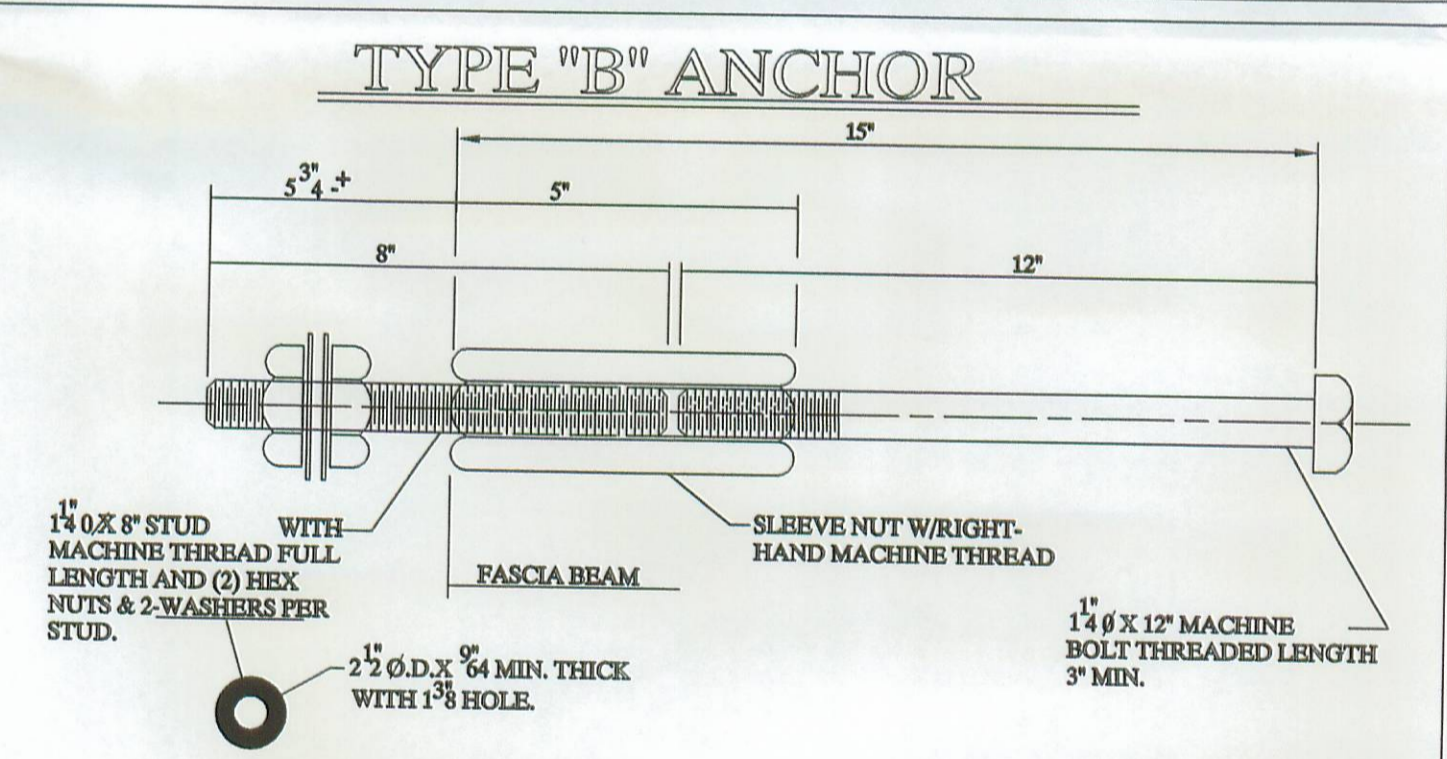
NOTE:  
TIE RODS SHALL BE A311 - G1018 STEEL, OR A - 36 MODIFIED.

**END DETAIL OF TRANSVERSE TIE ROD ANCHORAGE**

NOTE:  
1) GALVANIZE ALL HARDWARE PER CMS. 711.02.  
2) PROVIDE A BROOM FINISH ON TOP SURFACE OF BEAM SUITABLE FOR WATERPROOFING.  
3) ADD D.C.I. TO CONCRETE (4 - GAL. / CUBIC YARD).  
4) WATERPROOF BEAM ENDS.  
5) DETENSION STRAND SYMETRICALLY ABOUT CENTERLINE.



**LIFTING INSERT DETAIL**



**"B" & "C" ANCHOR DETAILS**

**SPECIFICATIONS**

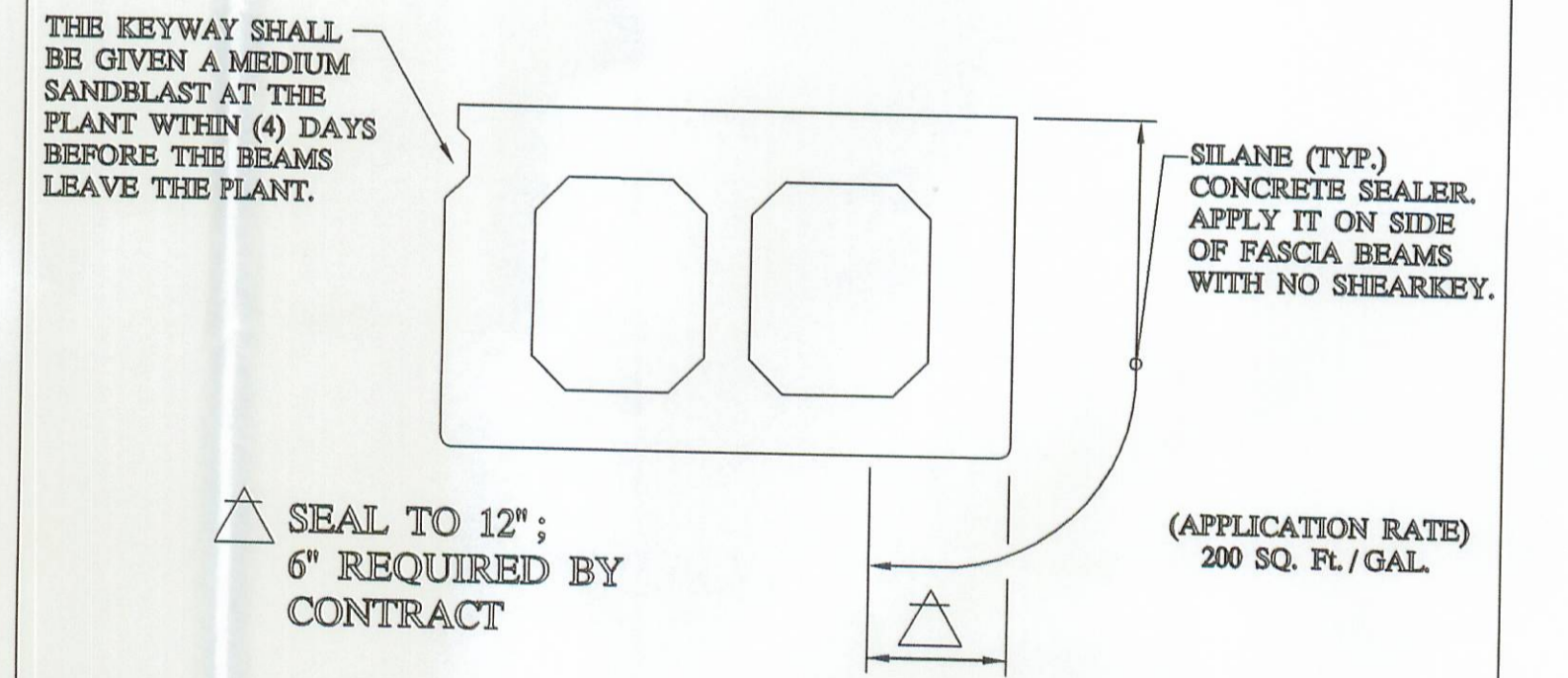
DESIGN LOADING: HS20 - 44 AND ALTERNATE MILITARY LOADING. FUTURE WEARING SURFACE (FWS) OF 60 PSF

CONCRETE: COMPRESSIVE STRENGTH,  $f_c = 5500$  PSI @ 28 DAYS (SHIPPING).  $f_c = 4000$  PSI @ RELEASE.

PRESSURE STRAND: ASTM A - 416 GRADE 270, 1/2" DIAMETER, SEVEN WIRE, UNCOATED LOW RELAXATION STRAND,  $A_s = 153$  in.  $f_s = 270$  KSI. INITIAL STRESS:  $0.75 f_s = 202.5$  KSI.

REINFORCING STEEL: GRADE - 60: ASTM A - 615, ASTM A - 616, ASTM A - 617. UNIT STRESS 24,000 PSI.

NOTE:  
PRESTRESSED CONCRETE BEAMS AND APPURTENANCES CONFORM TO O.D.O.T. STANDARD BRIDGE DRAWINGS PSBD - 1 - 93 SHEETS ONE, TWO, THREE, & FOUR.



**TYPICAL FASCIA BEAM**

BRIDGE NO. LOG - 286 - 0.46	LOGAN COUNTY	ITEM 515
PROJECT NO. STOKES TOWNSHIP		C.R. 286
<b>UNITED PRECAST INC.</b>		
ROUNDHOUSE LANE MT. VERNON, OHIO 43050 PHONE: (740)393-1121, FAX: (740)392-9708	SCALE -----	DRAWN BY: PHIL REVISED
DATE APRIL 2003	APPROVED BY: E.O.C.	4 / 21 / 03
		DRAWING NO. 4 OF 4