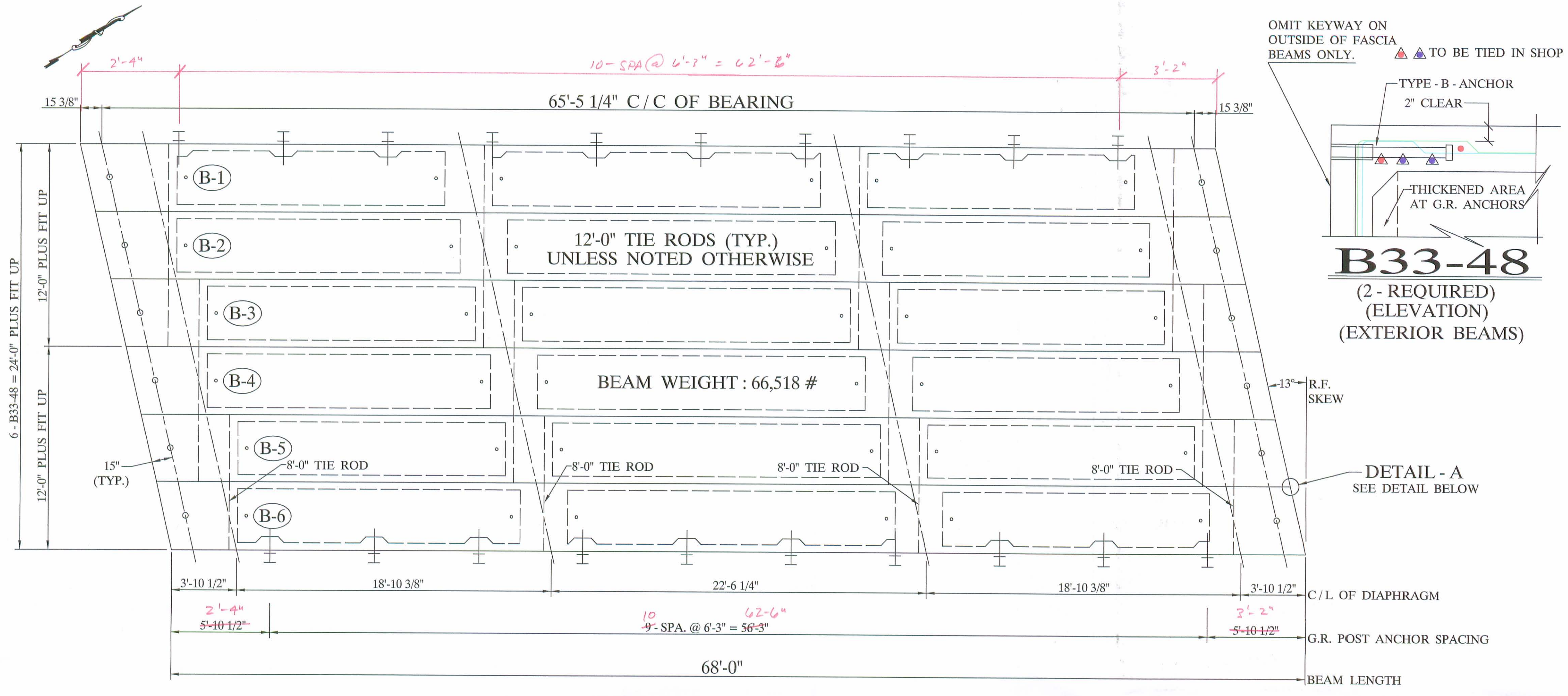
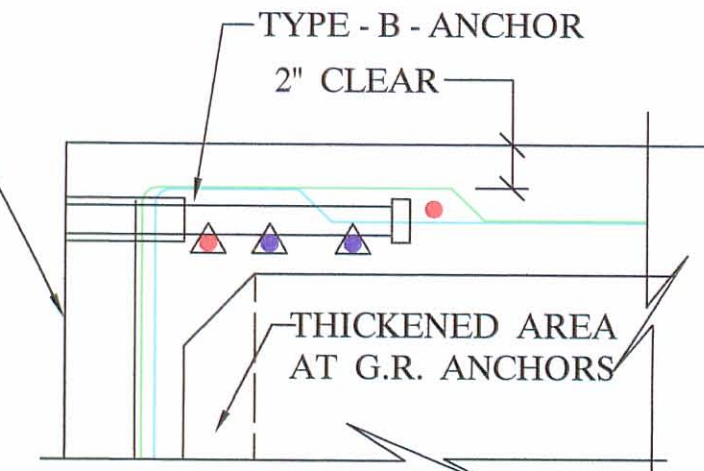


**SPO. # 2017**

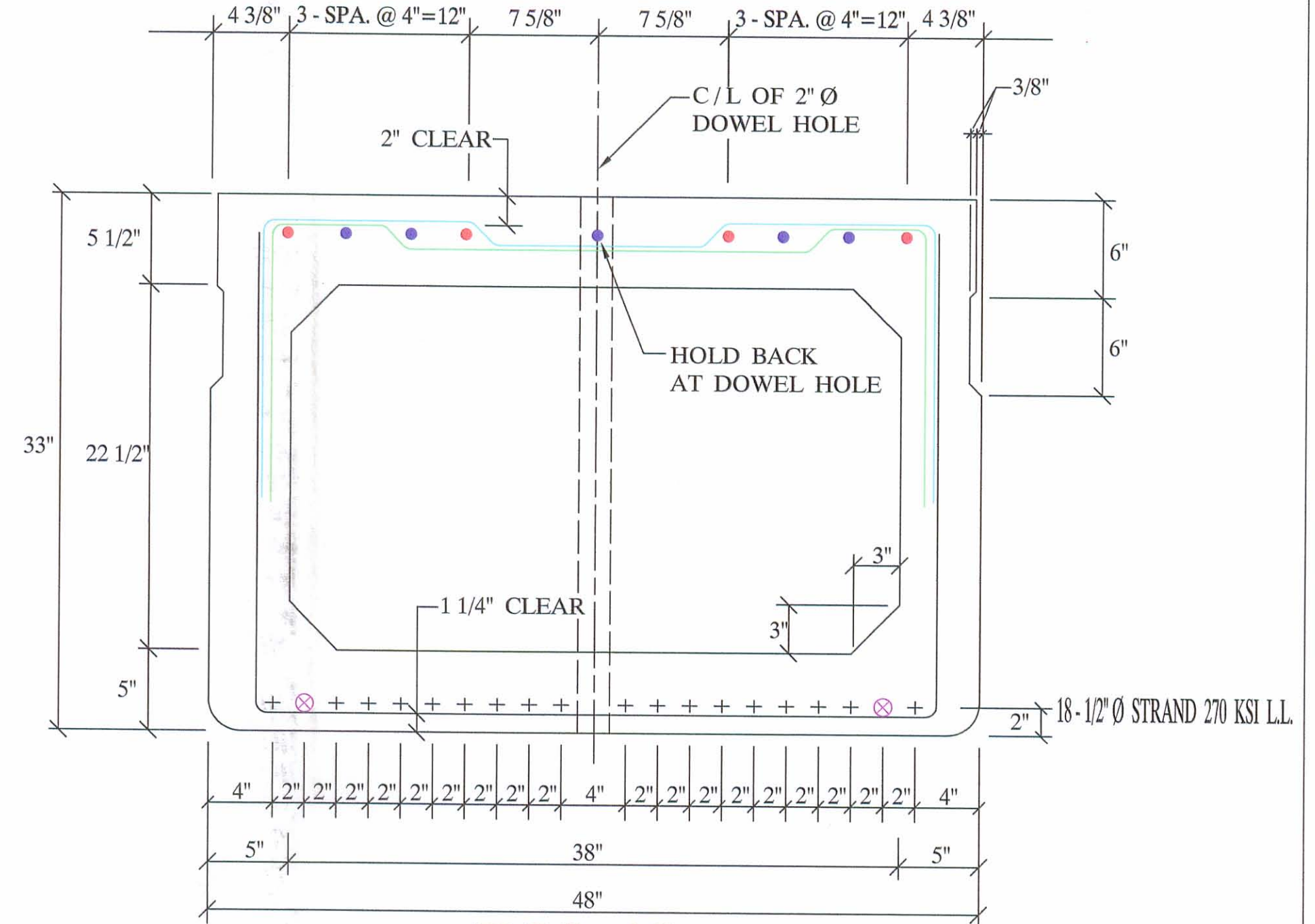
PLEASE MARK SPO. # ON TOP OF ALL BEAMS ALONG WITH COUNTY NAME



OMIT KEYWAY ON OUTSIDE OF FASCIA BEAMS ONLY. ▲ TO BE TIED IN SHOP



**B33-48**  
(2 - REQUIRED)  
(ELEVATION)  
(EXTERIOR BEAMS)



**B33-48**  
(5 - REQUIRED)  
(INTERIOR BEAMS)

- 4 - #5 BARS FULL LENGTH RUN (TOP)
- 5 - #5 ADDITIONAL BARS 8'-3" LONG AT EACH END OF BEAM (TOP)
- ⊗ 2 - #6 BARS FULL LENGTH RUN (BOTTOM)

**DECK PLAN**

**QUALITY CONTROL NOTE :**

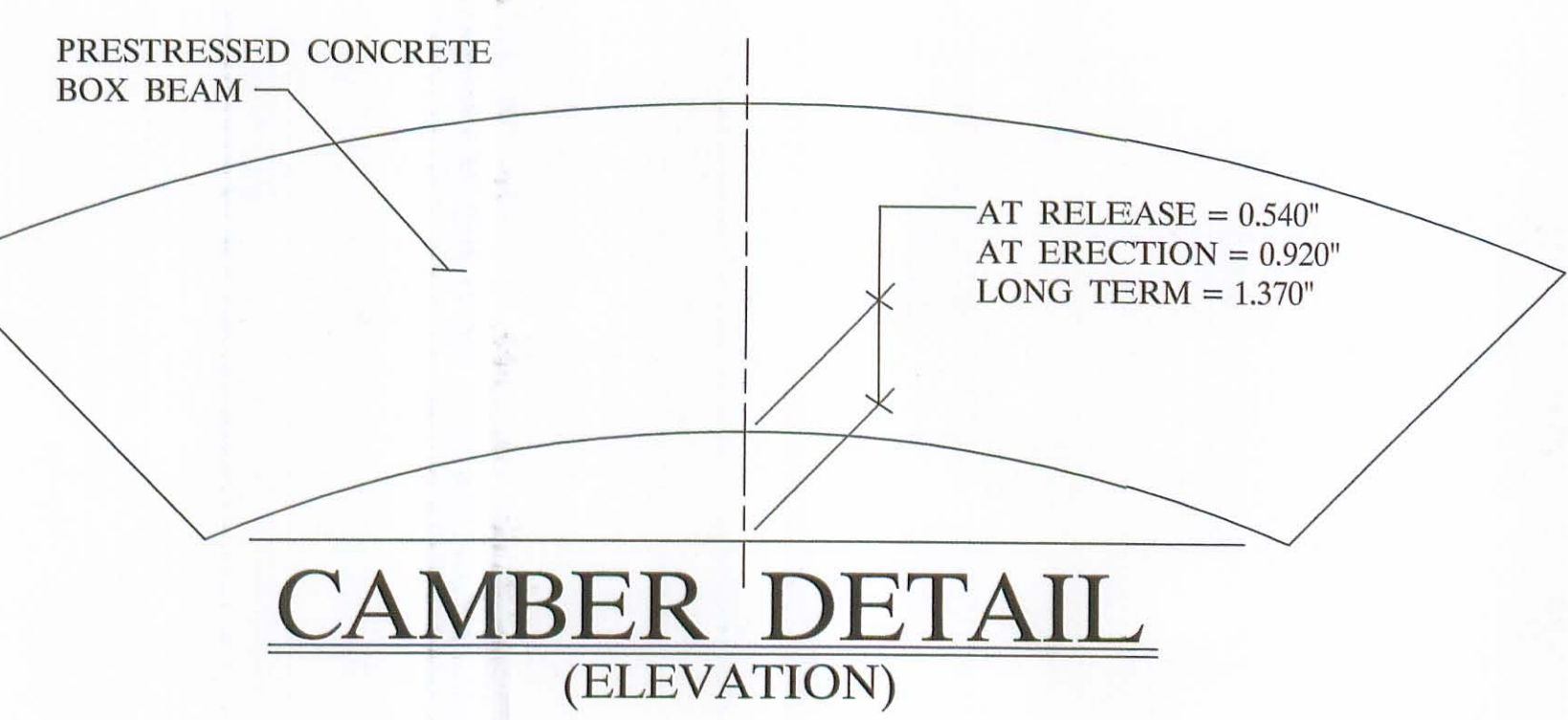
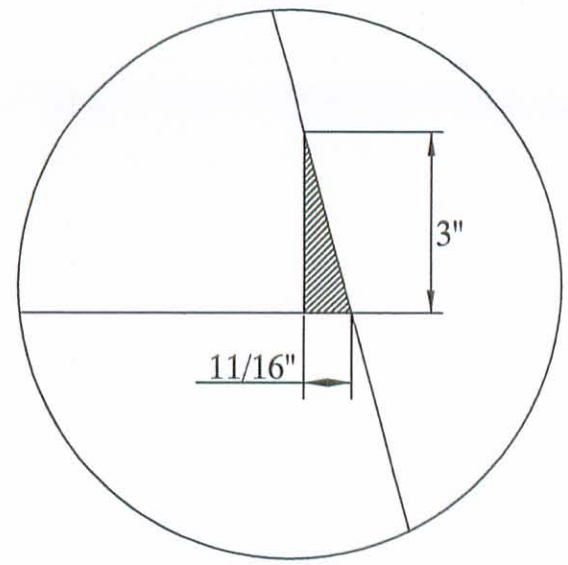
- STRAND AREA IS .153 IN. SQ.
- STRAND IS LOW LAX.
- INITIAL LOAD IS 30,982 # / STRAND.
- STIRRUPS UNDER STRAND.
- REBAR IS ALL GRADE - 60.
- CONCRETE STRENGTHS : 5500 PSI AT 28 DAYS  
4000 PSI AT RELEASE
- ODOT 2005 SPECIFICATION.

APPROVED AS NOTED  
BY LOGAN CO. ENGINEER  
E.O.C. 7/1/07

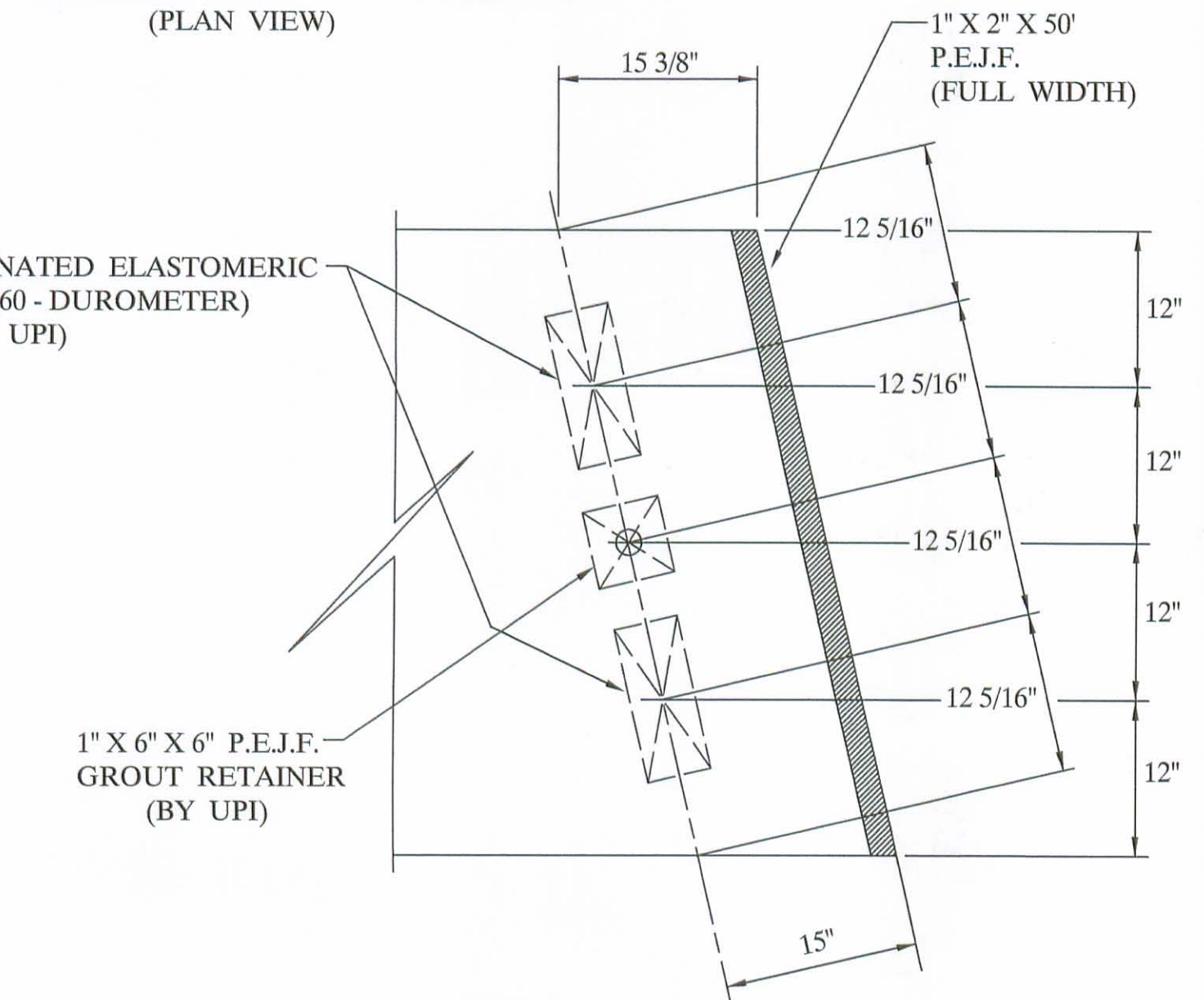
**BILL OF MATERIALS**

NO	ITEM	QTY / BEAM	NOTES	TOTAL
1	BEAM WEIGHT		66,518 #	
2	CONCRETE	15.9 CY.		95.4 CY.
3	CALCIUM NITRITE (D.C.I.)	63.6 GAL.		381.6 GAL.
4	STRAND		4 - GAL. / CY.	9,360 L.F.
5	RE - STEEL		1/2" Ø STRAND 270 KSI L.L. GRADE - 60	10,573 #
6	VOID		22 1/2" X 38"	329 L.F.
7	VOID DRAINS		3/4" Ø NON FERROUS	36 EA.
8	TIE ROD	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			40 EA.
11	TYPE - C - ANCHORS			20 EA.
12	DOWELS & SLEEVES			12 EA.
13	WASSER		MC - TAR	0.9 GAL.
14	SILANE			4.3 GAL.
15	JUTE			340 L.F.
16	BEARING PADS		1" X 5" X 12" , 1 - lam.	24 EA.
17	GUARDRAIL POST		TYPE - 2	20 EA.
18	NON SHRINK GROUT ADDITIVE		1 3/4 CY. GROUT , BY OTHERS (SHIP LOOSE)	15.75 LBS.
19	OFF DECK POST			8 EA.
20	GUARDRAIL ELEMENT			150 L.F.
21	TUBULAR BACK-UP			150 L.F.
22	P.E.J.F.		1" X 2" X 50'	8.5 S.F.

**DETAIL - A (TYP.) ACUTE CORNER (PLAN VIEW)**



**CAMBER DETAIL (ELEVATION)**



**BEARING PAD LAYOUT (PLAN VIEW)**

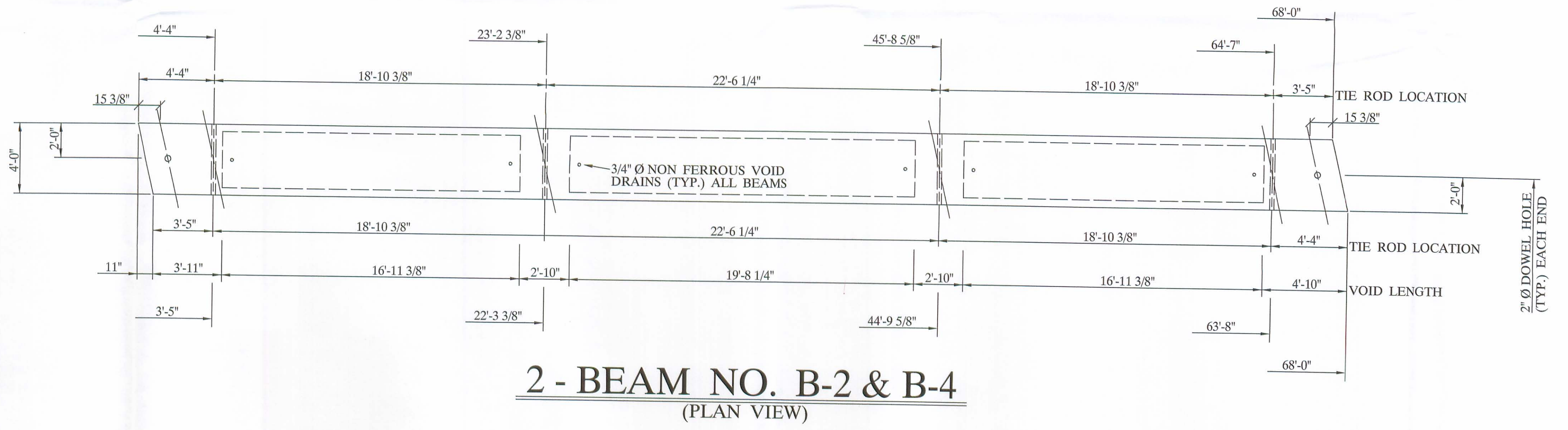
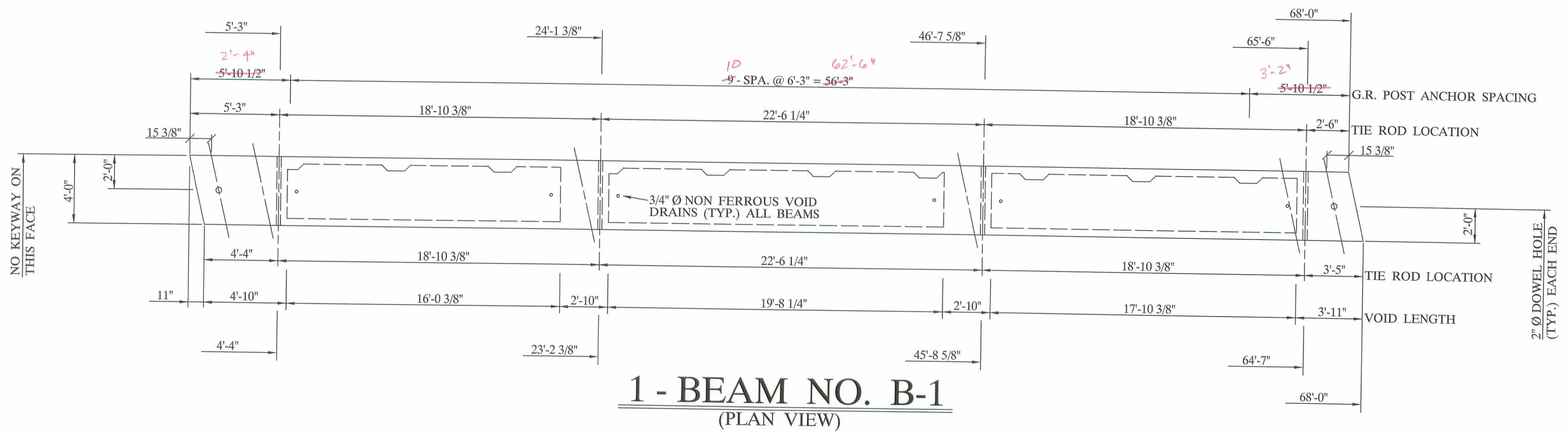


**UNITED PRECAST INC.**  
 ROUNDHOUSE LANE  
 MOUNT VERNON , OHIO 43050  
 PHONE : (740) 393-1121  
 FAX : (740) 393-0044

DESCRIPTION:	<b>BOX BEAM DETAILS</b>	SCALE:	DRAWN BY:
JOB NAME:	ITEM 515 BRIDGE NO. LOG - BR221 - 020 LOGAN COUNTY PROJECT NO. T.R. 221	-----	PHIL
DATE:	JULY 2007	APPROVED BY:	REVISED:
		E.O.C. 8/24/07	
			DRAWING NO. 1 OF 5

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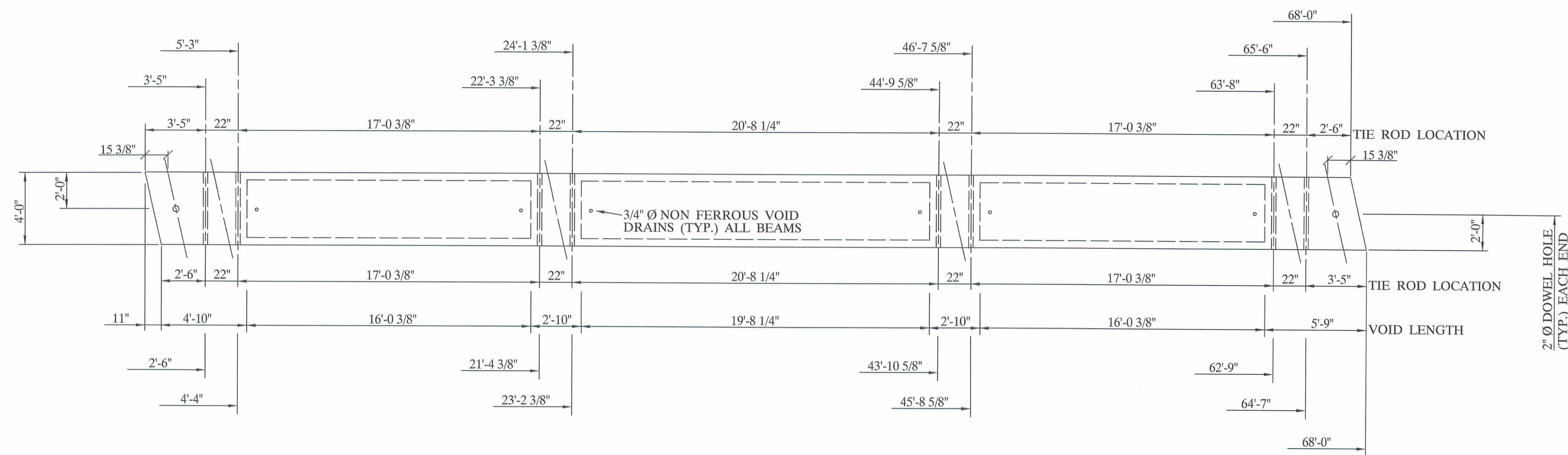




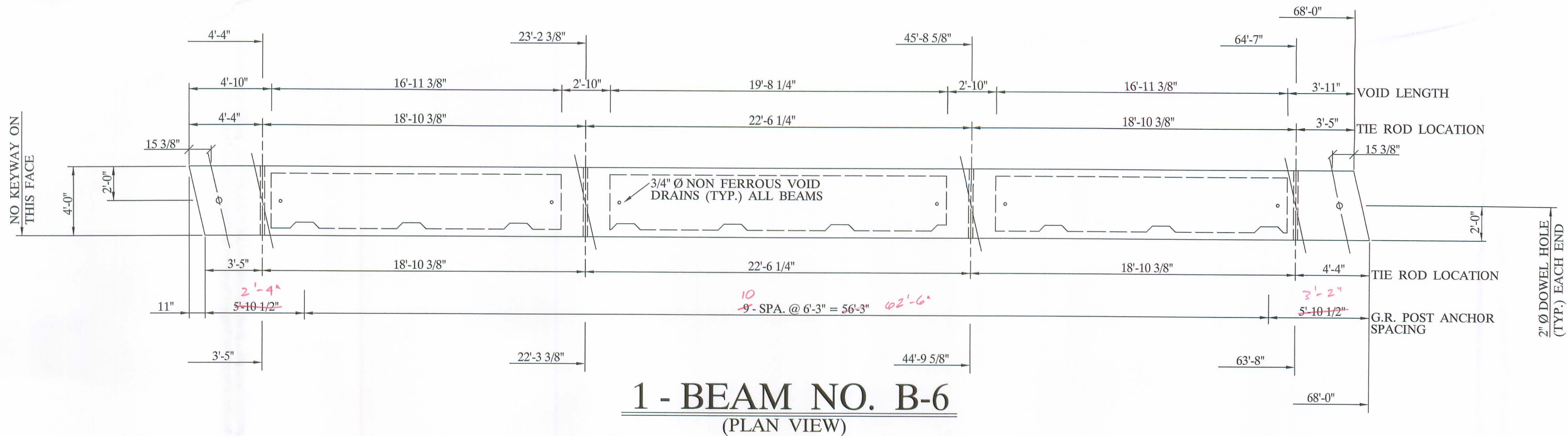
	<b>UNITED PRECAST INC.</b>	DESCRIPTION: <b>BOX BEAM DETAILS</b>	SCALE: _____	DRAWN BY: PHIL
	<b>ROUNDHOUSE LANE</b> <b>MOUNT VERNON, OHIO 43050</b> <b>PHONE: (740) 393-1121</b> <b>FAX: (740) 393-0044</b>	JOB NAME: ITEM 515 BRIDGE NO. LOG - BR221 - 0.20 LOGAN COUNTY PROJECT NO. T.R. 221	REVISED:	
	DATE: JULY 2007	APPROVED BY: <b>E.O.C. 8/23/07</b>	DRAWING NO. 2 OF 5	

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**2 - BEAM NO. B-3 & B-5**  
(PLAN VIEW)



**1 - BEAM NO. B-6**  
(PLAN VIEW)



**UNITED PRECAST INC.**  
**ROUNDHOUSE LANE**  
**MOUNT VERNON, OHIO 43050**  
**PHONE : (740) 393-1121**  
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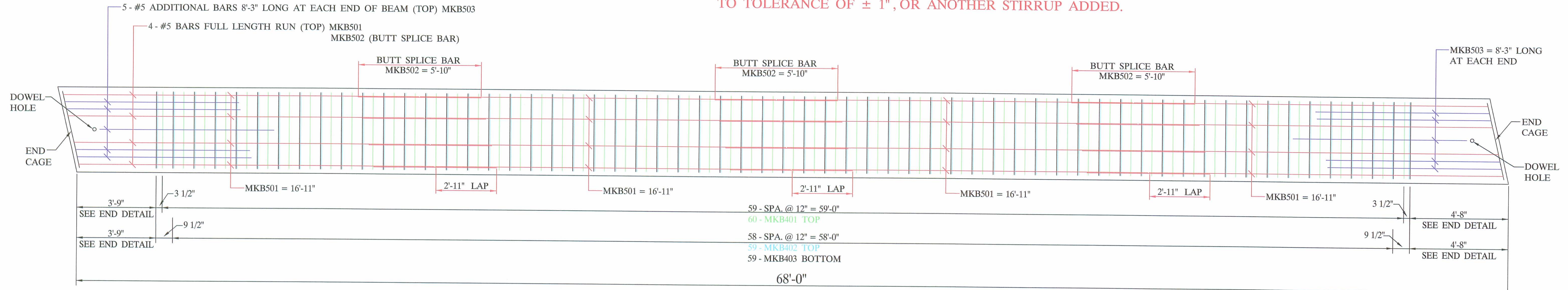
DESCRIPTION: <b>BOX BEAM DETAILS</b>		SCALE: -----	DRAWN BY: PHIL
JOB NAME: ITEM 515 BRIDGE NO. LOG - BR221 - 0.20 LOGAN COUNTY PROJECT NO. T.R. 221		REVISED:	
DATE: JULY 2007	APPROVED BY: E.O.C.	8/23/07	DRAWING NO. 3 OF 5

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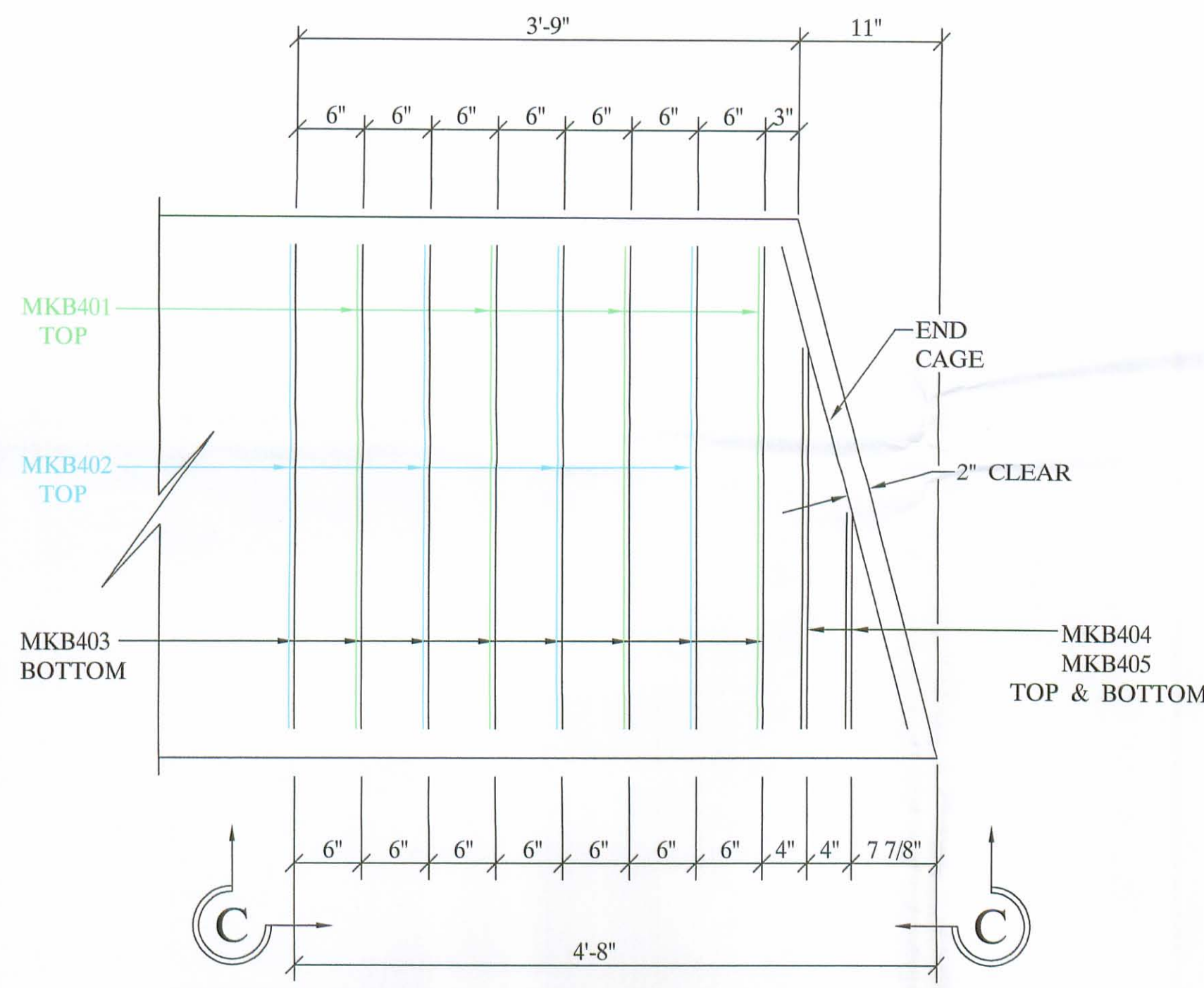


**NOTE:**

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

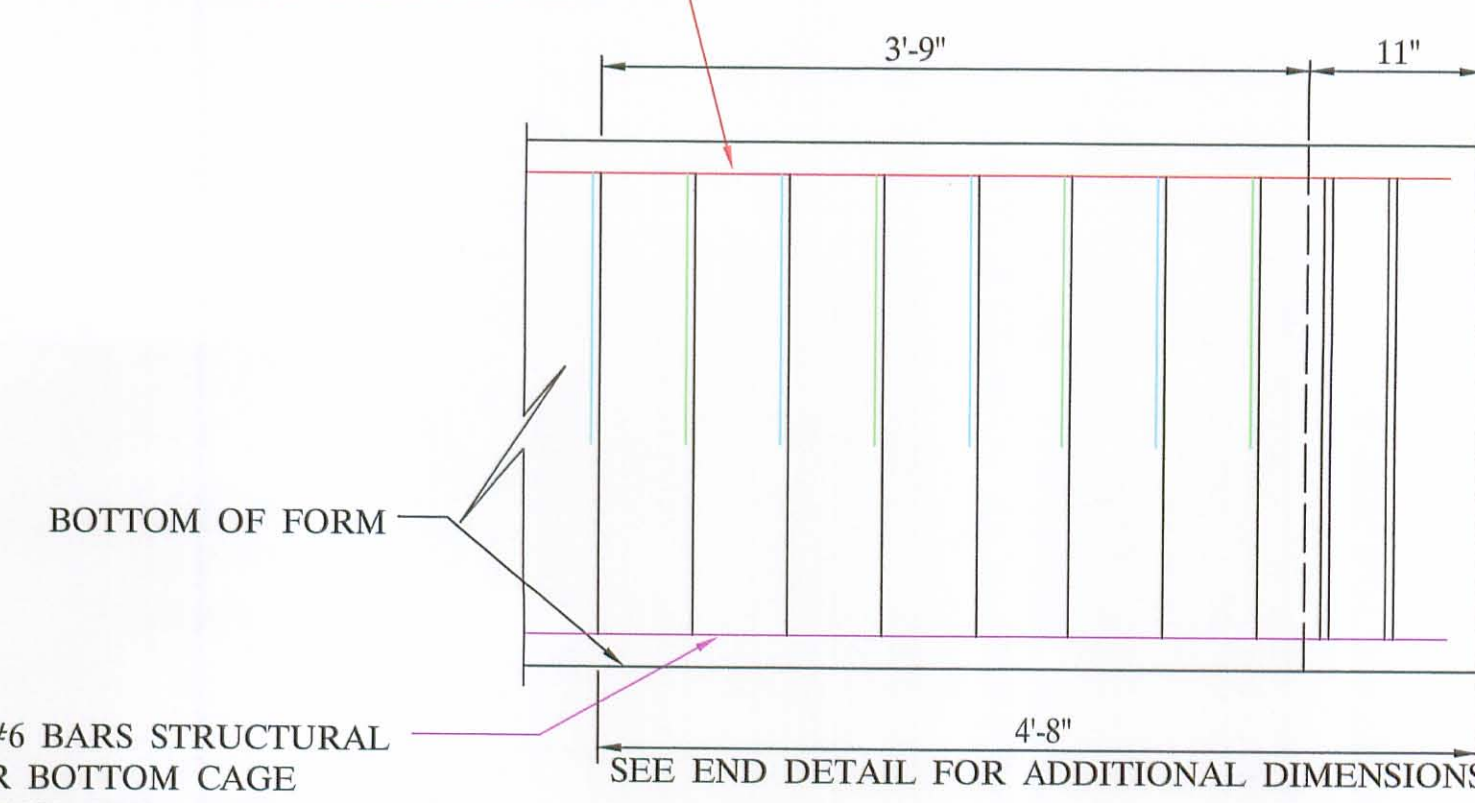


**REINFORCING LAYOUT**  
(PLAN VIEW)

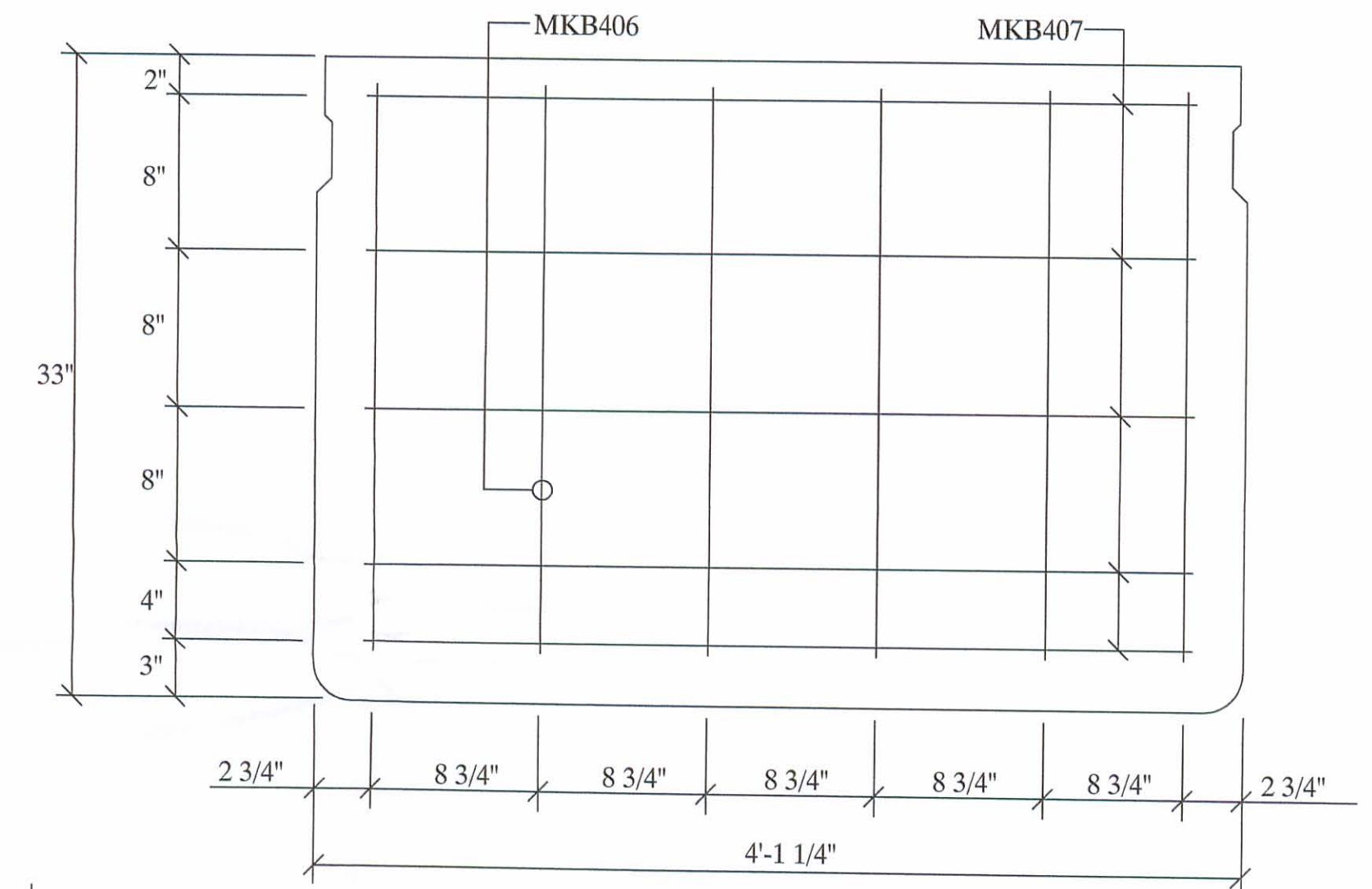


**(TYP.) END DETAIL**  
(WITH SKEW)  
(PLAN VIEW)

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



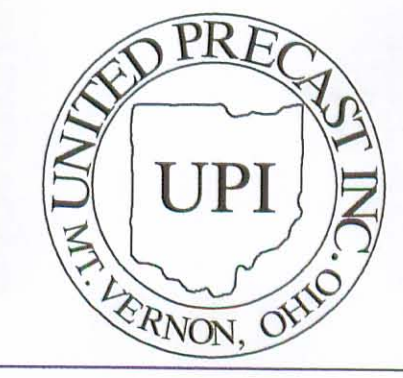
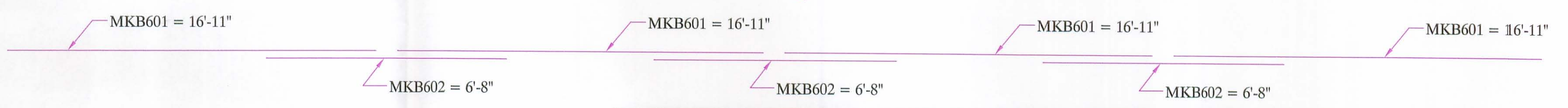
**ELEVATION C-C**



**BEAM END CAGE**  
(WITH SKEW)  
(ELEVATION)

**6 - B33-48 X 68'-0" WITH 13° R.F. SKEW**  
**BAR LIST**

MARK	SIZE	LENGTH	QUANTITY	SHAPE	A	B	C	D	E
B401	4	6'-2 1/2"	408	TYPE - 1	43"	17"	13"	2"	13"
B402	4	6'-2 1/2"	402	TYPE - 1	43"	17"	7"	2"	25"
B403	4	8'-2 1/2"	450	TYPE - 2	43"	29"			
B404	4	5'-9 1/2"	24	TYPE - 2	14"	29"			
B405	4	7'-2 1/2"	24	TYPE - 2	31"	29"			
B406	4	2'-5"	72	TYPE - 3	29"				
B407	4	3'-8 3/4"	60	TYPE - 3	44 3/4"				
B501	5	16'-11"	96	TYPE - 3	16'-11"				
B502	5	5'-10"	72	TYPE - 3	5'-10"				
B503	5	8'-3"	60	TYPE - 3	8'-3"				
B601	5	16'-11"	48	TYPE - 3	16'-11"				
B602	5	6'-8"	36	TYPE - 3	6'-8"				



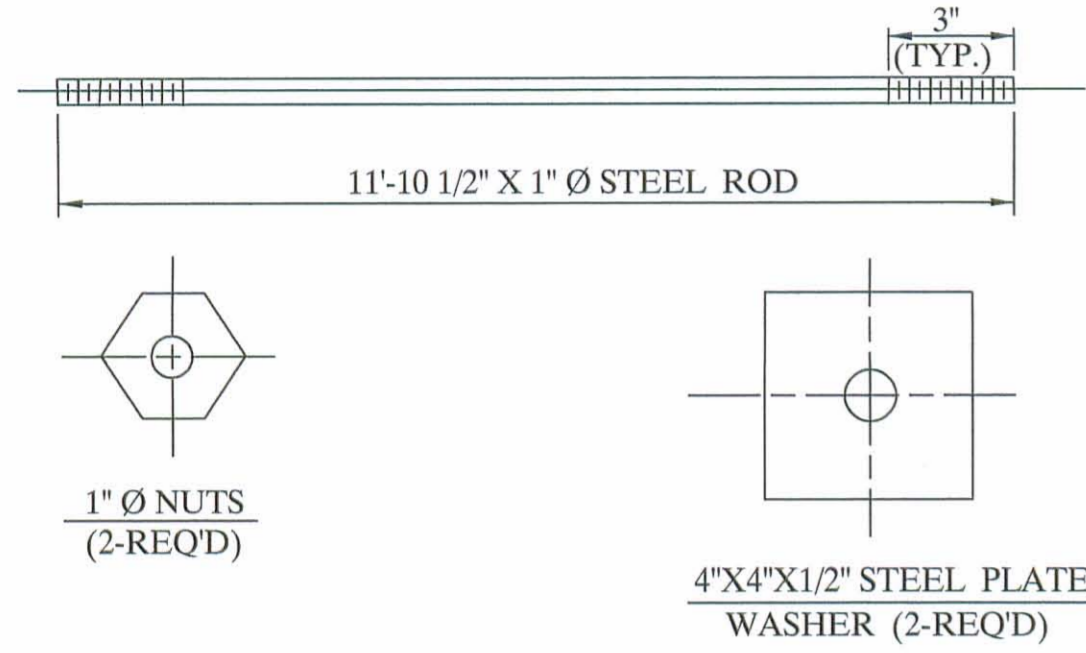
**UNITED PRECAST INC.**  
 ROUNDHOUSE LANE  
 MOUNT VERNON, OHIO 43050  
 PHONE : (740) 393-1121  
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DESCRIPTION:	REINFORCING DETAILS	SCALE:	DRAWN BY:
JOB NAME:	ITEM 515 BRIDGE NO. LOG - BR221 - 0.20 LOGAN COUNTY PROJECT NO. T.R. 221		PHIL
DATE:	APPROVED BY:		REVISED:
JULY 2007	E.O.C. 8/23/07		
			DRAWING NO. 4 OF 5

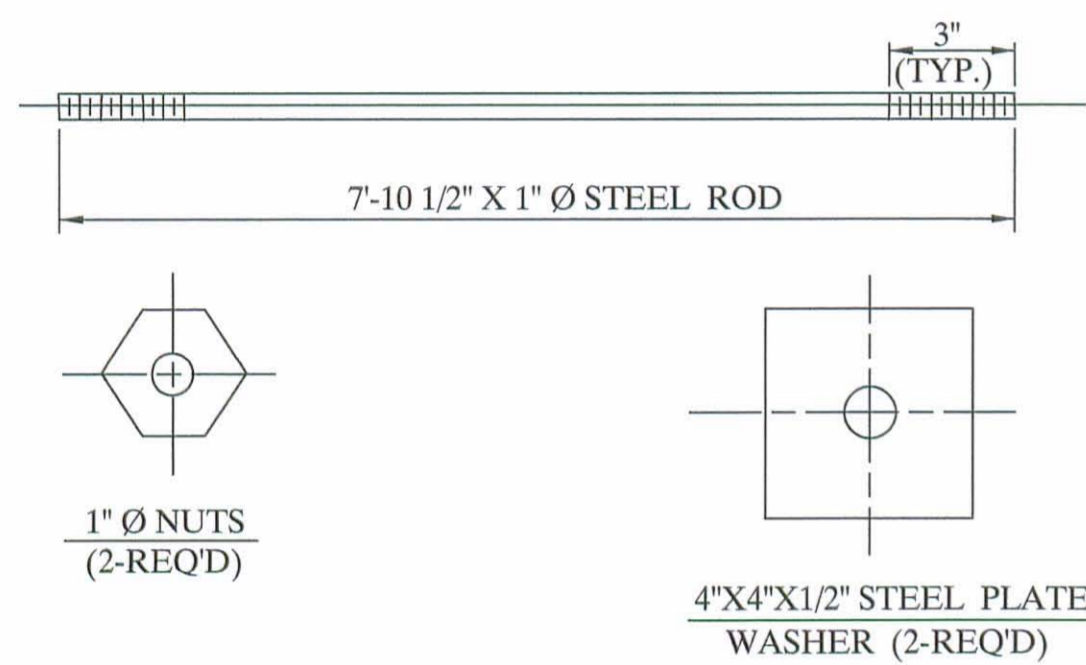
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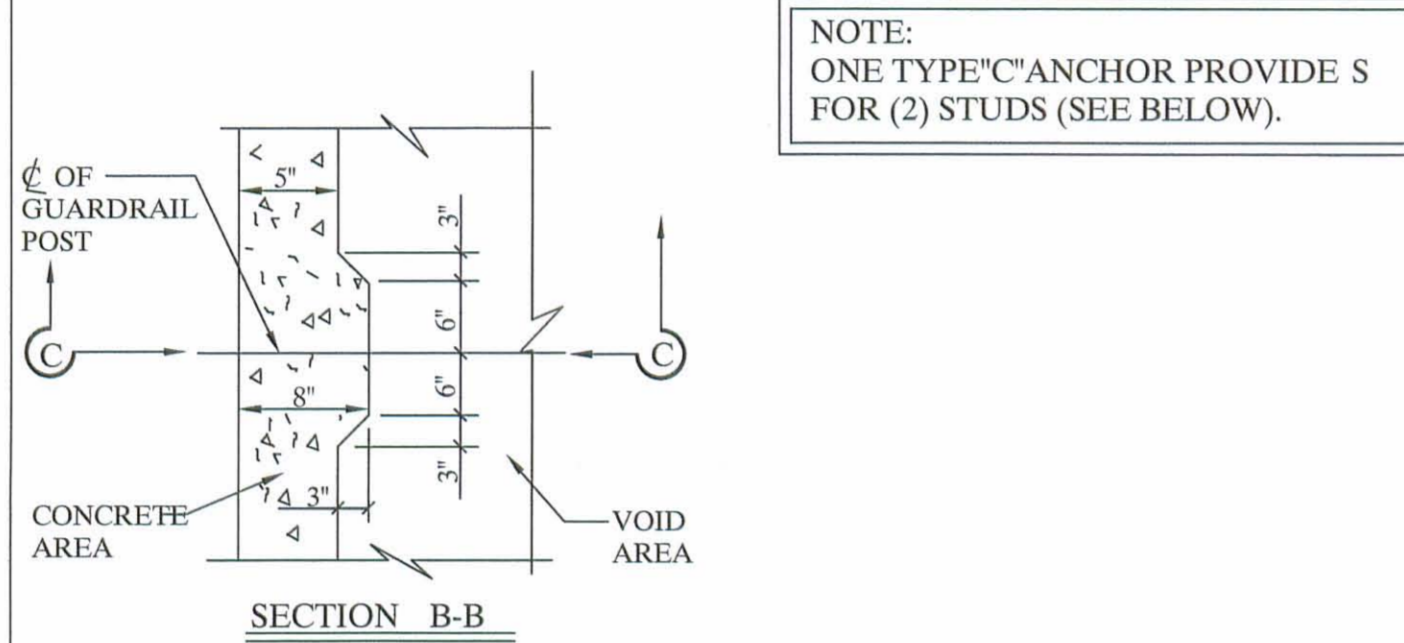
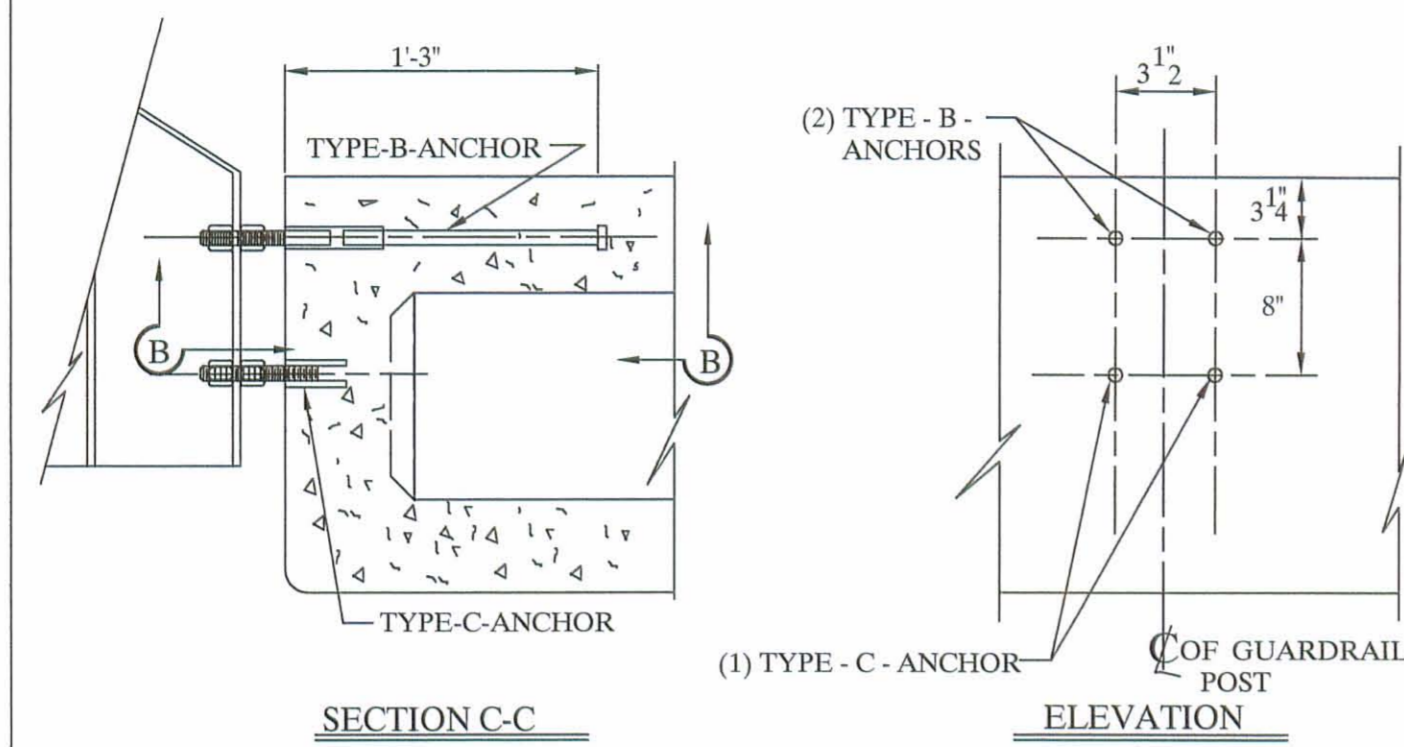
### 12'-0" TIE ROD ASS'Y



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

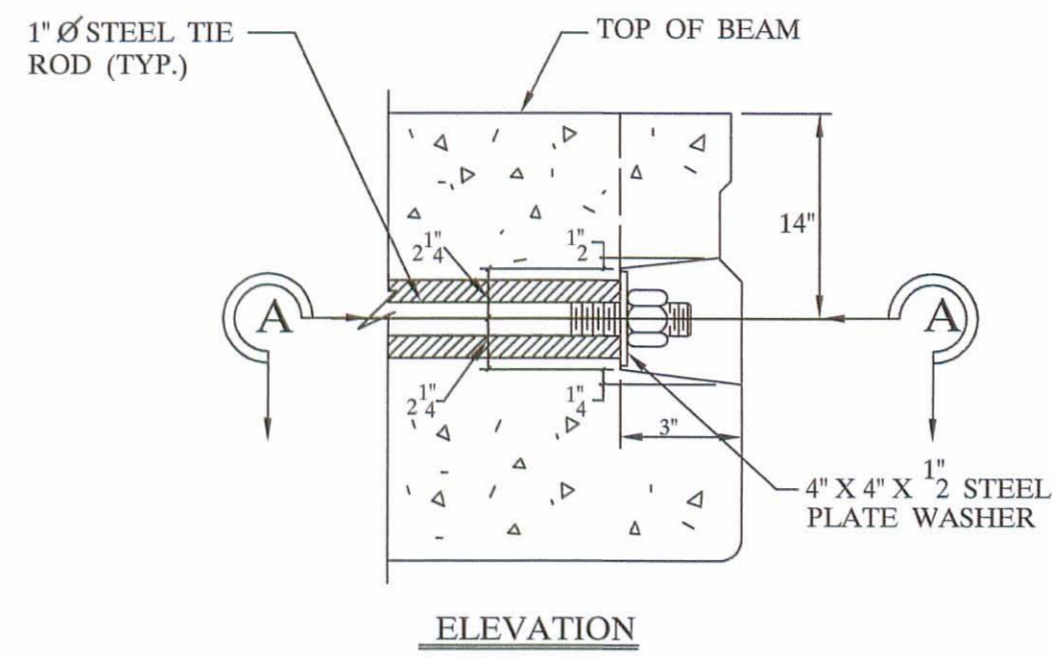


NOTE:  
ALL ITEMS INCLUDING TIE RODS ACCESSORIES SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM-123 OR 153. PER CMS 711.02, UNLESS OTHERWISE NOTED.



NOTE:  
ONE TYPE 'C' ANCHOR PROVIDE S FOR (2) STUDS (SEE BELOW).

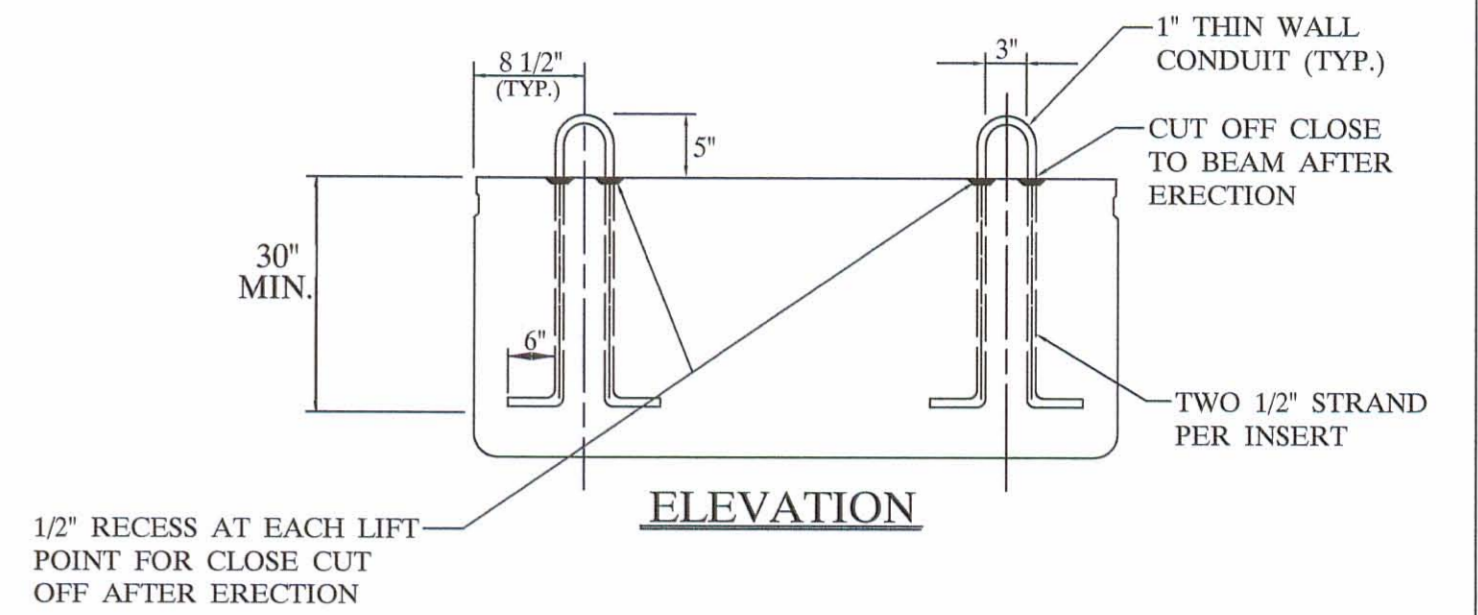
NOTE:  
TYPE B&C ANCHOR ASSEMBLIES SHALL CONFORM TO PHYSICAL PROPERTIES OF ASTM-A-325. EXCEPT MIN. ELONGATION SHALL BE 10%. THE CHEMICAL PROPERTIES ARE WAIVED.



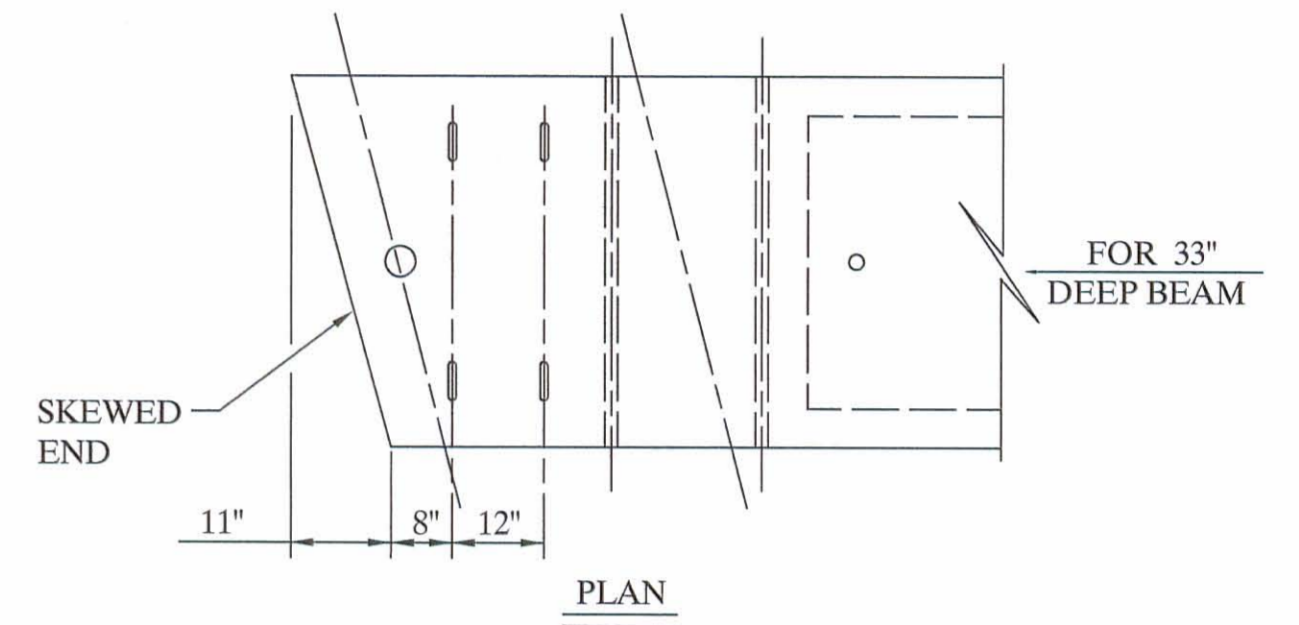
AFTER TIE RODS ARE TIGHTENED FILL IN RECESSES IN FASCIA BEAMS FLUSH WITH FACE OF BEAM WITH NON SHRINKING MORTAR.

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

### END DETAIL OF TRANSVERSE TIE ROD ANCHORAGE



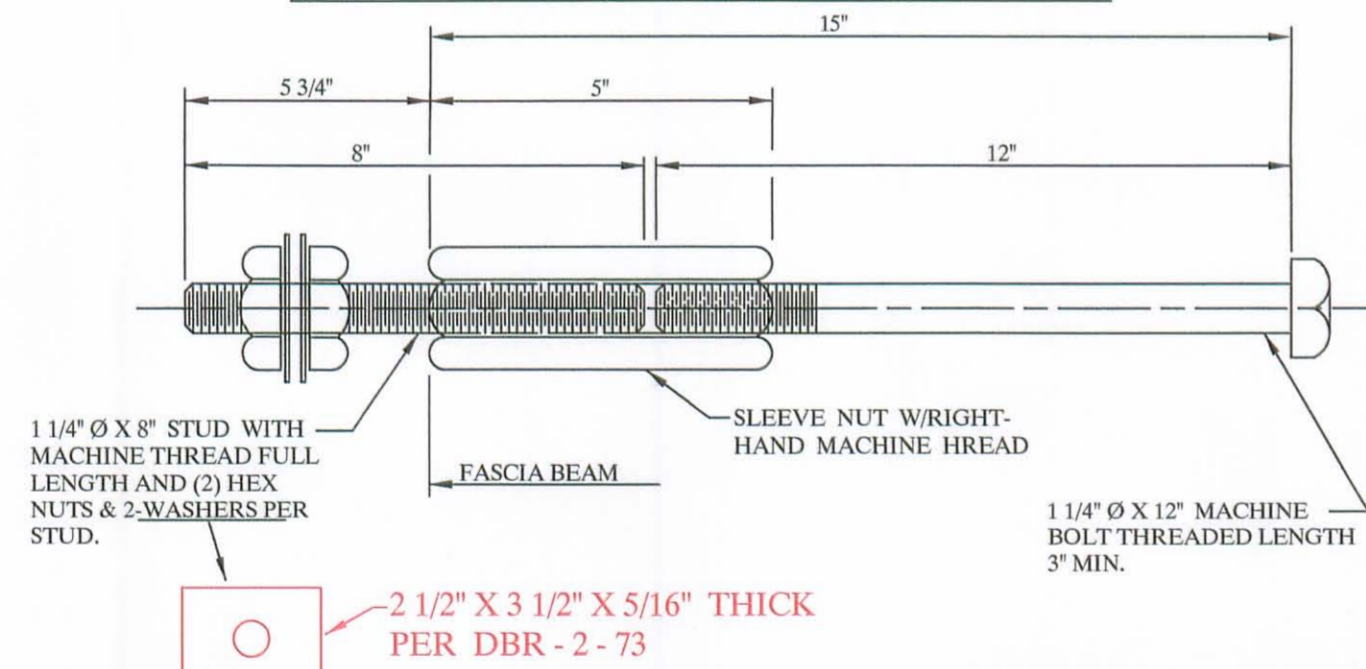
1/2" RECESS AT EACH LIFT POINT FOR CLOSE CUT OFF AFTER ERECTION



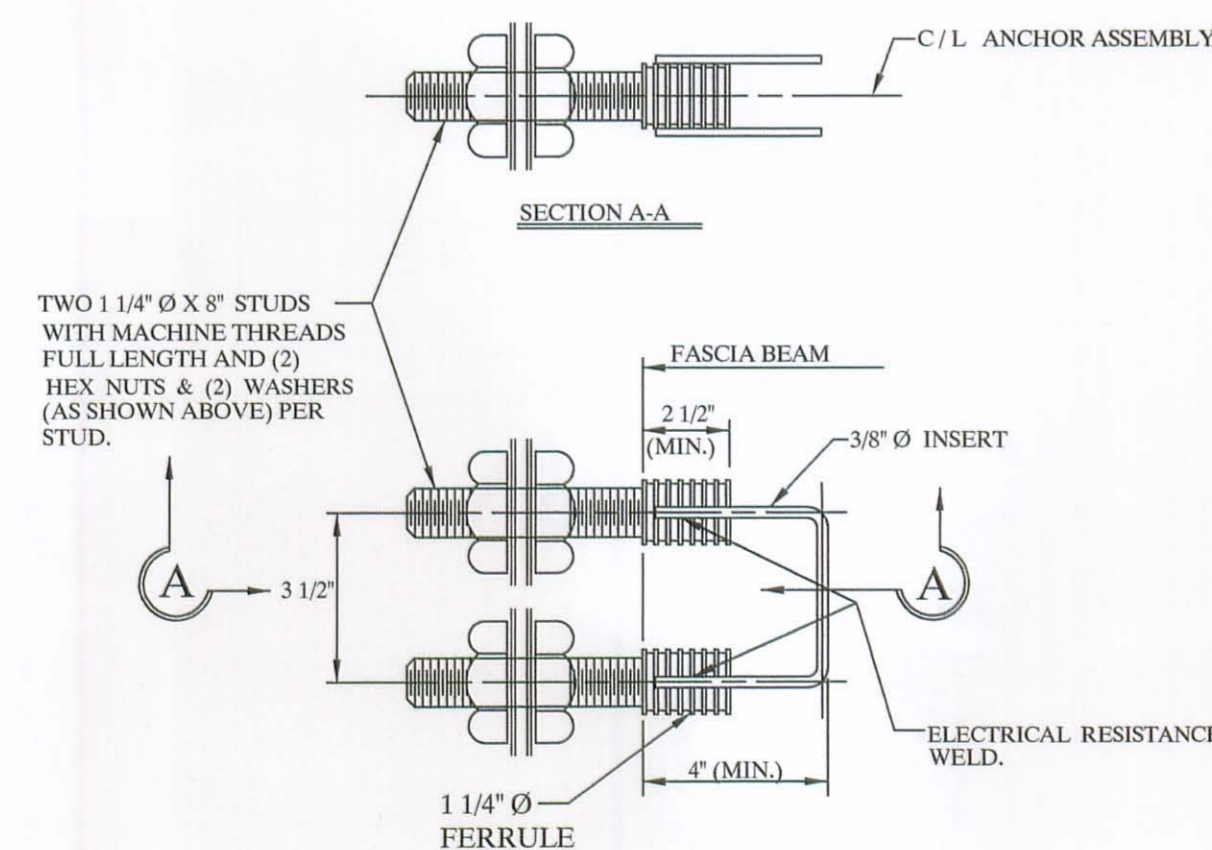
NOTE:  
LIFTING INSERTS ARE HAND PLACED IN THE SHOP AND ARE TO BE ADJUSTED TO CLEAR REINFORCEMENT, ANCHOR DOWEL SLEEVES, TIE ROD SLEEVES, OR ANY ADDITIONAL EMBEDDED ITEMS IN THIS REGION.

### LIFTING INSERT DETAIL

### TYPE "B" ANCHOR



### TYPE "C" ANCHOR



### "B" & "C" ANCHOR DETAILS

### 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 SYMMETRICALLY ABOUT CENTERLINE.

### SPECIFICATIONS

DESIGN LOADING: HS20-44 AND ALTERNATE MILITARY LOADING.

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

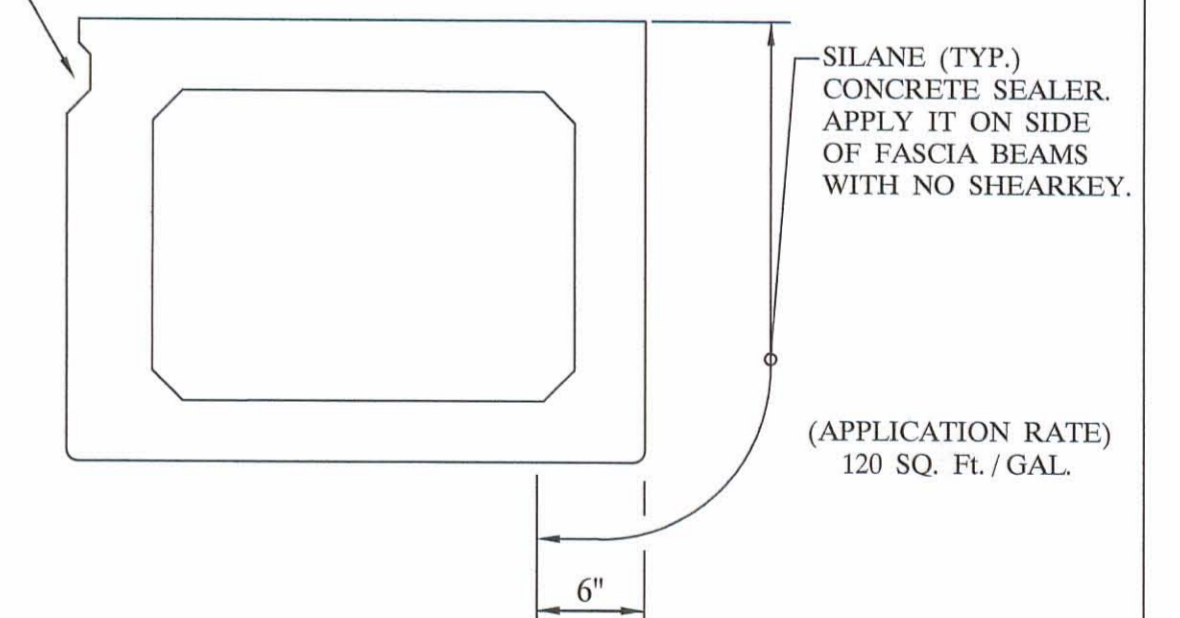
PRESTRESSING STRAND: ASTM A - 416 GRADE 270, 1/2" DIAMETER, SEVEN WIRE, UNCOATED LOW RELAXATION STRAND,  $A_s = .153$  in.;  $f_s = 270$  KSI. INITIAL STRESS:  $0.75 f_s = 202.5$  KSI.

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.

THE KEYWAY SHALL BE GIVEN A MEDIUM SANDBLAST AT THE PLANT WITHIN (4) DAYS BEFORE THE BEAMS LEAVE THE PLANT.



### TYPICAL FASCIA BEAM

BRIDGE NO. LOG - BR221 - 0.20

ITEM 515

LOGAN COUNTY

PROJECT NO. T.R. 221

## UNITED PRECAST INC.

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

SCALE  
DRAWN BY:  
PHIL  
REVISED

DATE  
JULY 2007

APPROVED BY:  
E.O.C. 8/23/07

DRAWING NO.  
5 OF 5