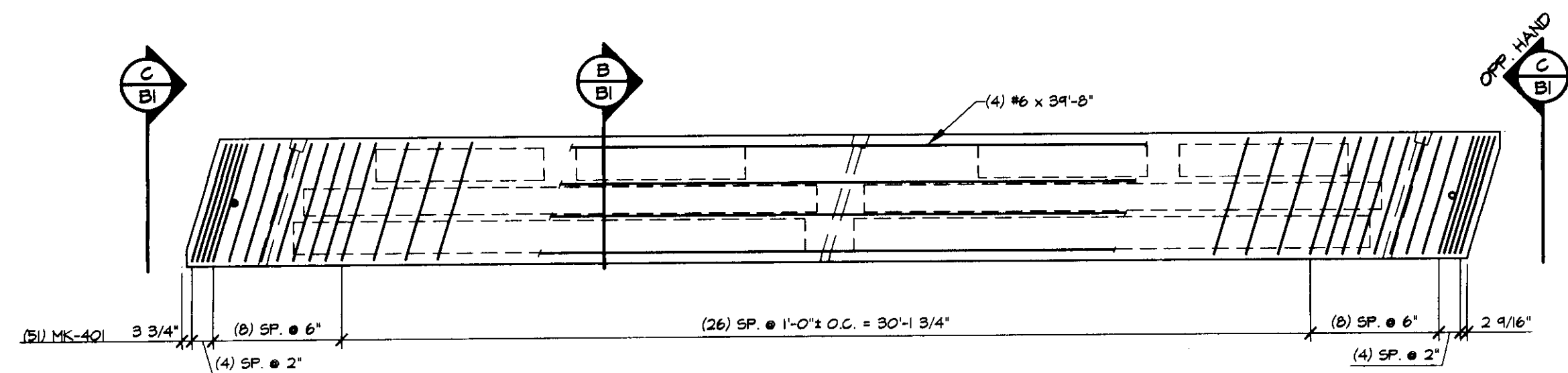
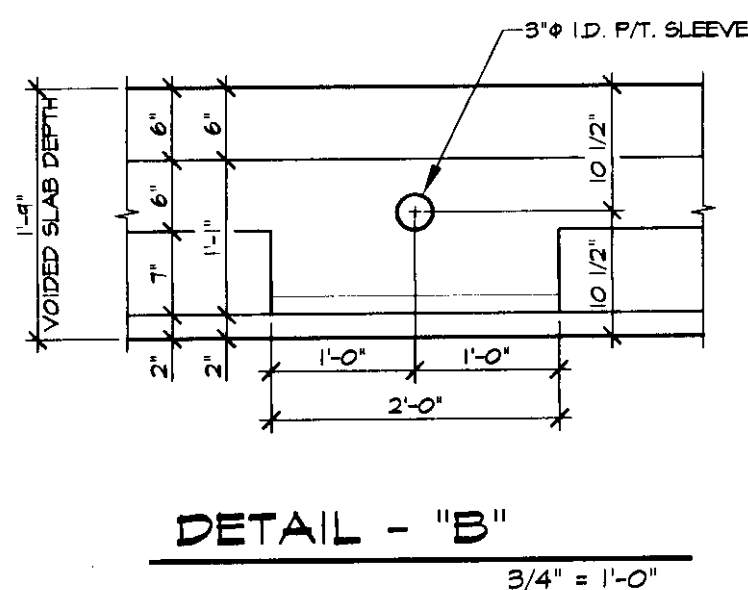
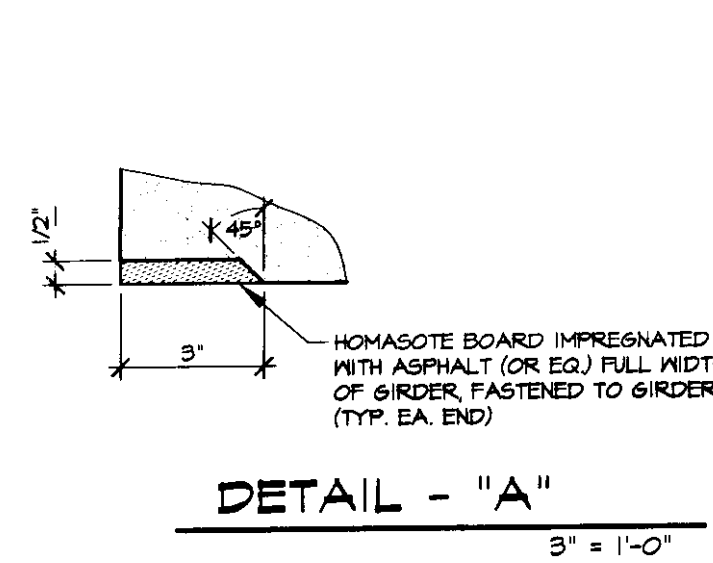


1 DIMENSIONAL PLAN
1/4" = 1'-0"



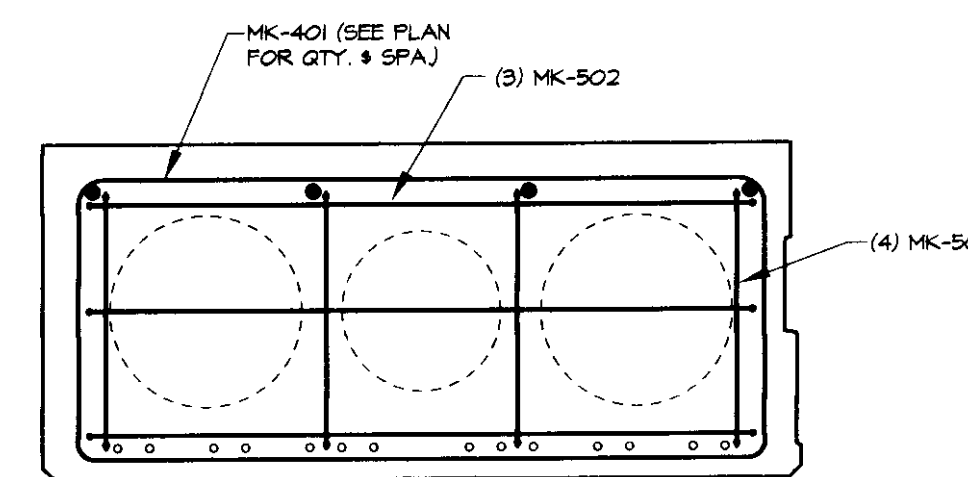
2 REINFORCING PLAN
1/4" = 1'-0"

SHOP NOTE:
ADJUST REINFORCING AS REQUIRED TO CLEAR TRANSVERSE TENDONS, ETC.

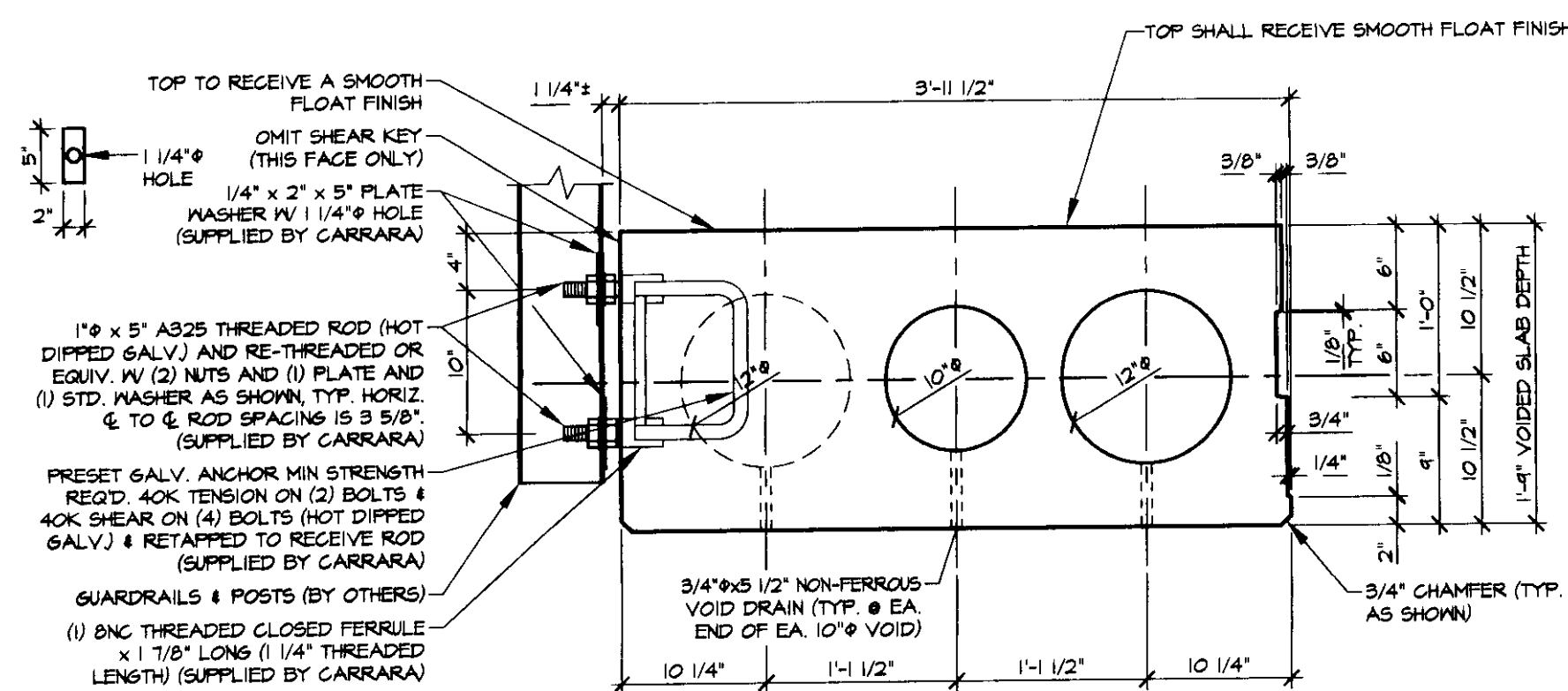


DETENSIONING SCHEDULE
N.T.S.

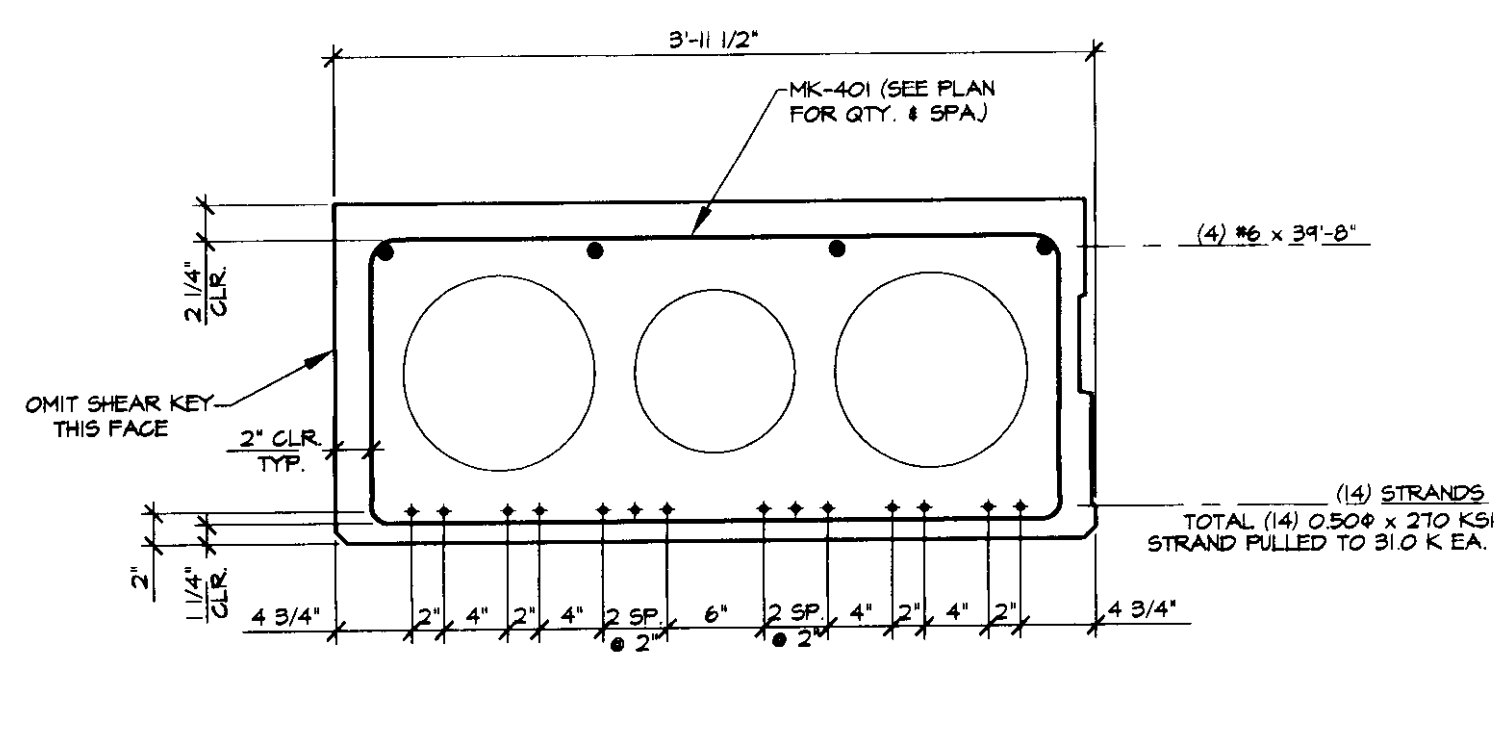
1	3	5	7	9	11	13	14	2	10	8	6	4	2
---	---	---	---	---	----	----	----	---	----	---	---	---	---



C END BLOCK REINFORCING ELEV.
3/4" = 1'-0"



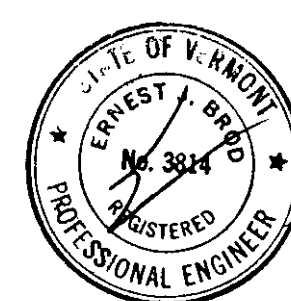
A DIMENSIONAL SECTION
1" = 1'-0"



B REINFORCING SECTION
1" = 1'-0"

MARK: B-1	QTY.: 2	WT./TONS: 15.70	CU. YDS.: 7.75
MATERIAL LIST / VOIDED SLAB			
ITEM	MARK	DESCRIPTION	QTY.
1	401	#4 BENT BAR	51
2			
3	501	#5 BENT BAR	8
4	502	#5 BENT BAR	6
5			
6		#6 x 39'-8"	4
7			
8		12" x 5'-3" VOID	4
9		10" x 16'-0" VOID	2
10		12" x 16'-0" VOID	2
11		3/4" x 4 1/2" NON-FERROUS VOID DRAIN	16
12		DOUBLE 1/2" STRAND LIFTING LOOP	4
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			

APPROVAL STAMP:



J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05751 Phone: (802) 388-6361 Fax: (802) 388-9010

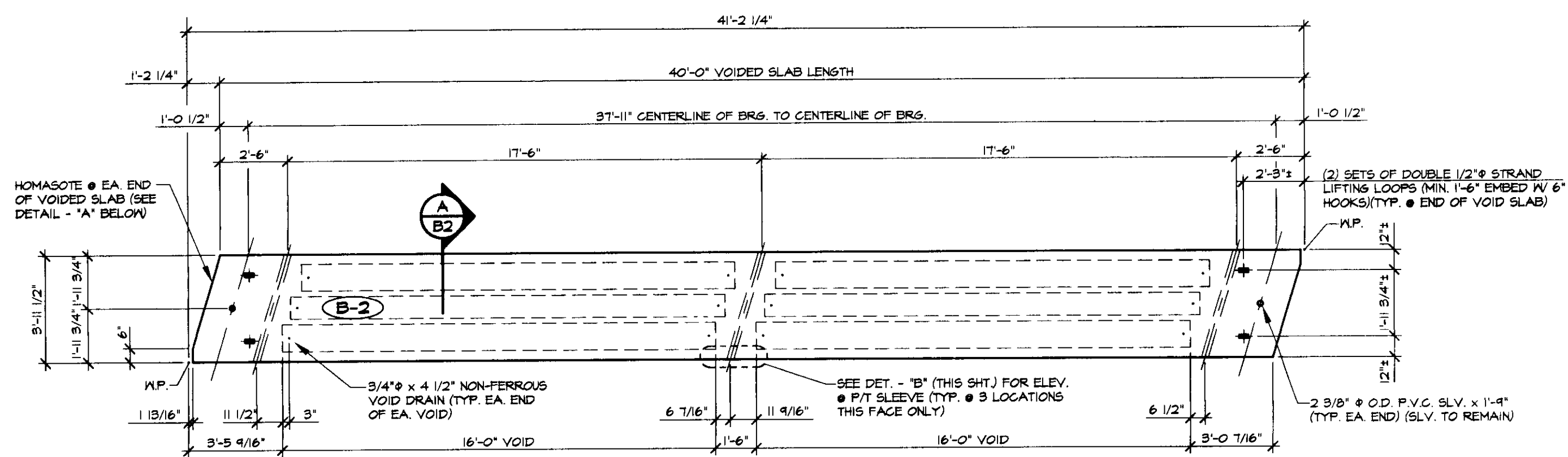
J.P. CARRARA & SONS INC.
CONTRACTOR
MIDDLEBURY, VERMONT

BRIDGEWATER #46 BRIDGE
BRIDGEWATER, VT

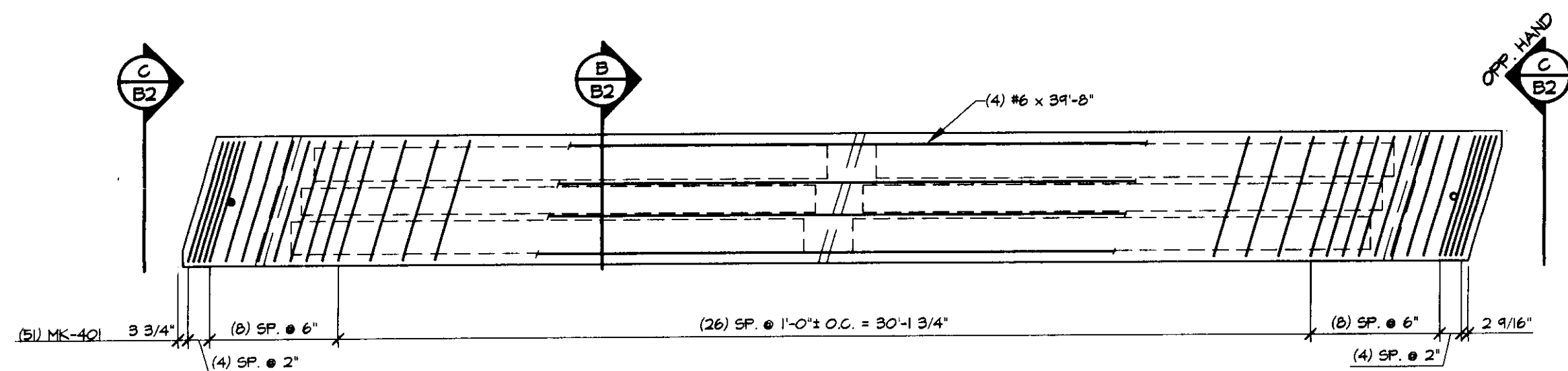
TOWN OF BRIDGEWATER
P.O. BOX 14 SOUTH GATEHOUSE
BRIDGEWATER, VT 05034

P/S VOIDED SLAB DETAILS

DATE: JUNE 18, 2001
SCALE: NOTED
CHKD: - DFTM: K.B.
JOB NO: 23162-02
DWG. NO: B1

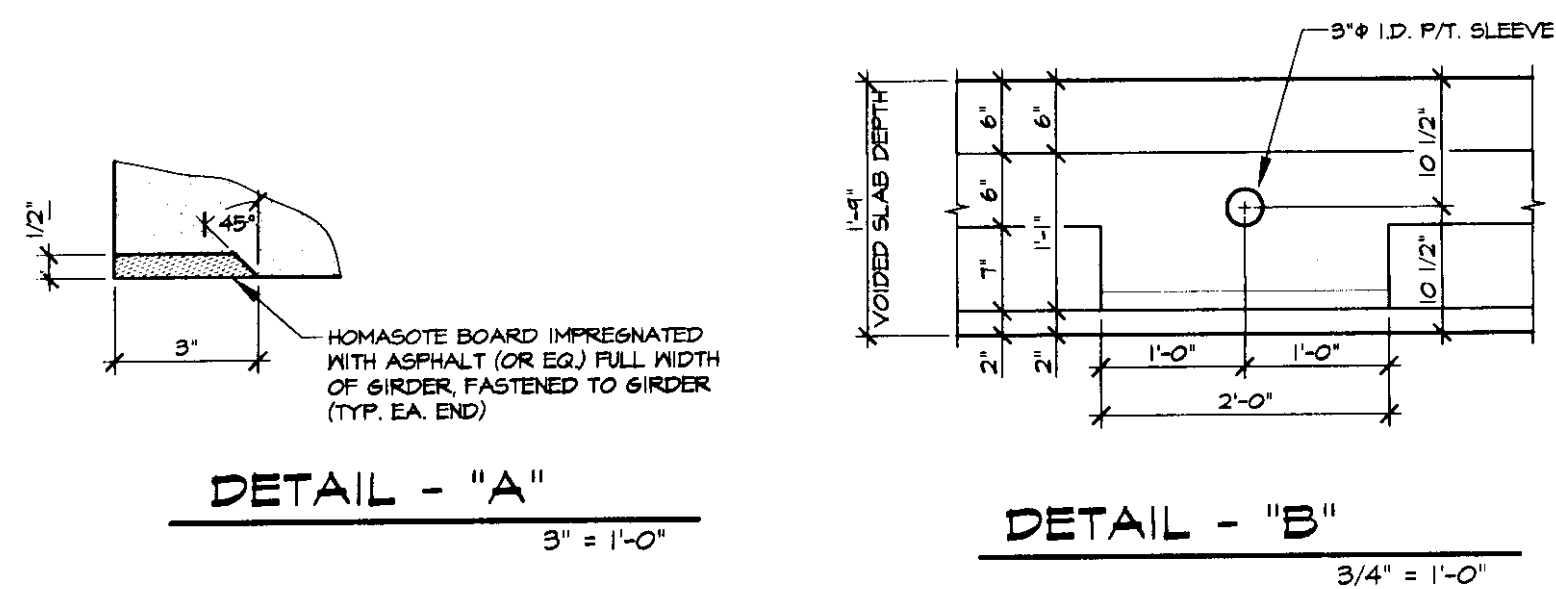


1 DIMENSIONAL PLAN
B2
1/4" = 1'-0"



2 REINFORCING PLAN
B2
1/4" = 1'-0"

SHOP NOTE:
ADJUST REINFORCING AS REQUIRED
TO CLEAR TRANSVERSE TENDONS, ETC.

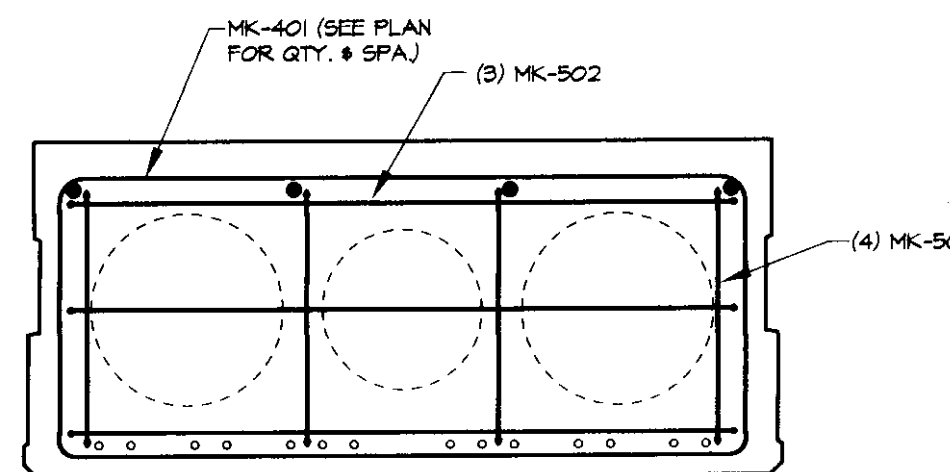


DETAIL - "A"
3" = 1'-0"

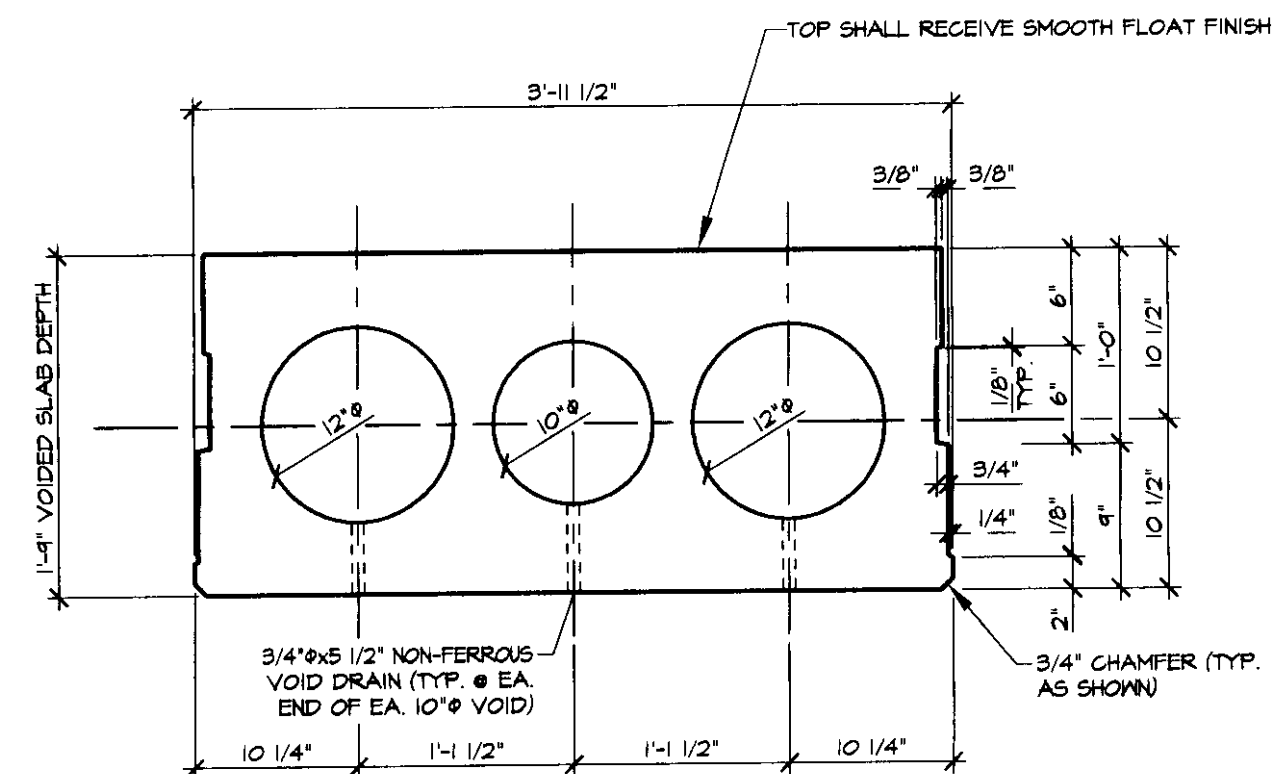
DETAIL - "B"
3/4" = 1'-0"

DETENSING SCHEDULE
N.T.S.

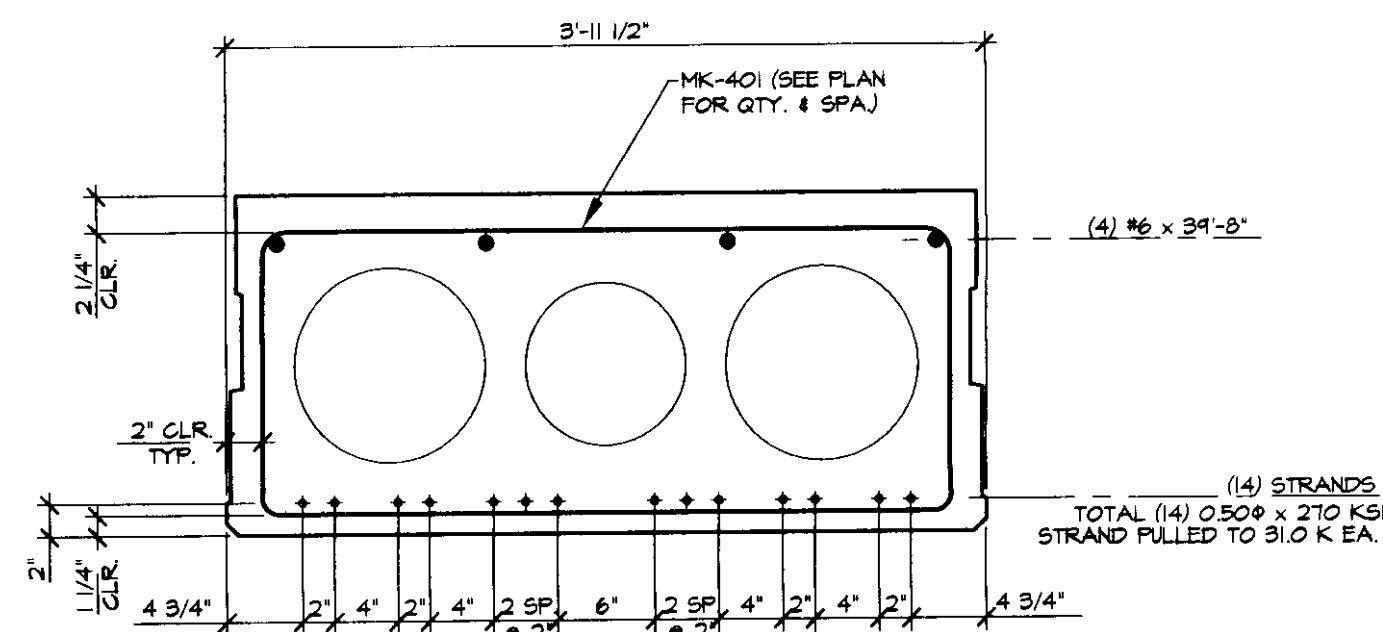
1	3	5	7	9	11	13	14	12	10	8	6	4	2
---	---	---	---	---	----	----	----	----	----	---	---	---	---



C END BLOCK REINFORCING ELEV.
B2
3/4" = 1'-0"



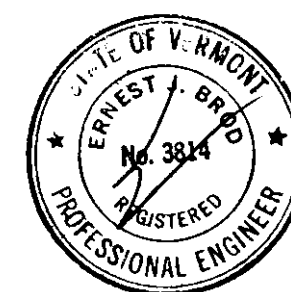
A DIMENSIONAL SECTION
B2
1" = 1'-0"



B REINFORCING SECTION
B2
1" = 1'-0"

MARK: B-2	QTY.: 2	WT./TONS: 15.79	CU. YDS.: 7.65
MATERIAL LIST / VOIDED SLAB			
ITEM	MARK	DESCRIPTION	QTY.
1	401	#4 BENT BAR	51
2			
3	501	#5 BENT BAR	8
4	502	#5 BENT BAR	6
5			
6		#6 x 39'-8"	4
7			
8			
9		10" x 16'-0" VOID	2
10		12" x 16'-0" VOID	4
11		3/4" x 4 1/2" NON-FERROUS VOID DRAIN	12
12		DOUBLE 1/2" STRAND LIFTING LOOP	4
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			

APPROVAL STAMP:



J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer 2444 CASE STR., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010		J.P. CARRARA & SONS INC. CONTRACTOR MIDDLEBURY, VERMONT	
BRIDGEWATER #46 BRIDGE BRIDGEWATER, VT		DATE: JUNE 18, 2001	
TOWN OF BRIDGEWATER P.O. BOX 14 SOUTH GATEHOUSE BRIDGEWATER, VT 05034		SCALE: NOTED	
P/S VOIDED SLAB DETAILS		CHKD: - DFTM: K.B. JOB NO: 23162-02	
		DWG. NO: B2	

Needs Load

GENERAL NOTES

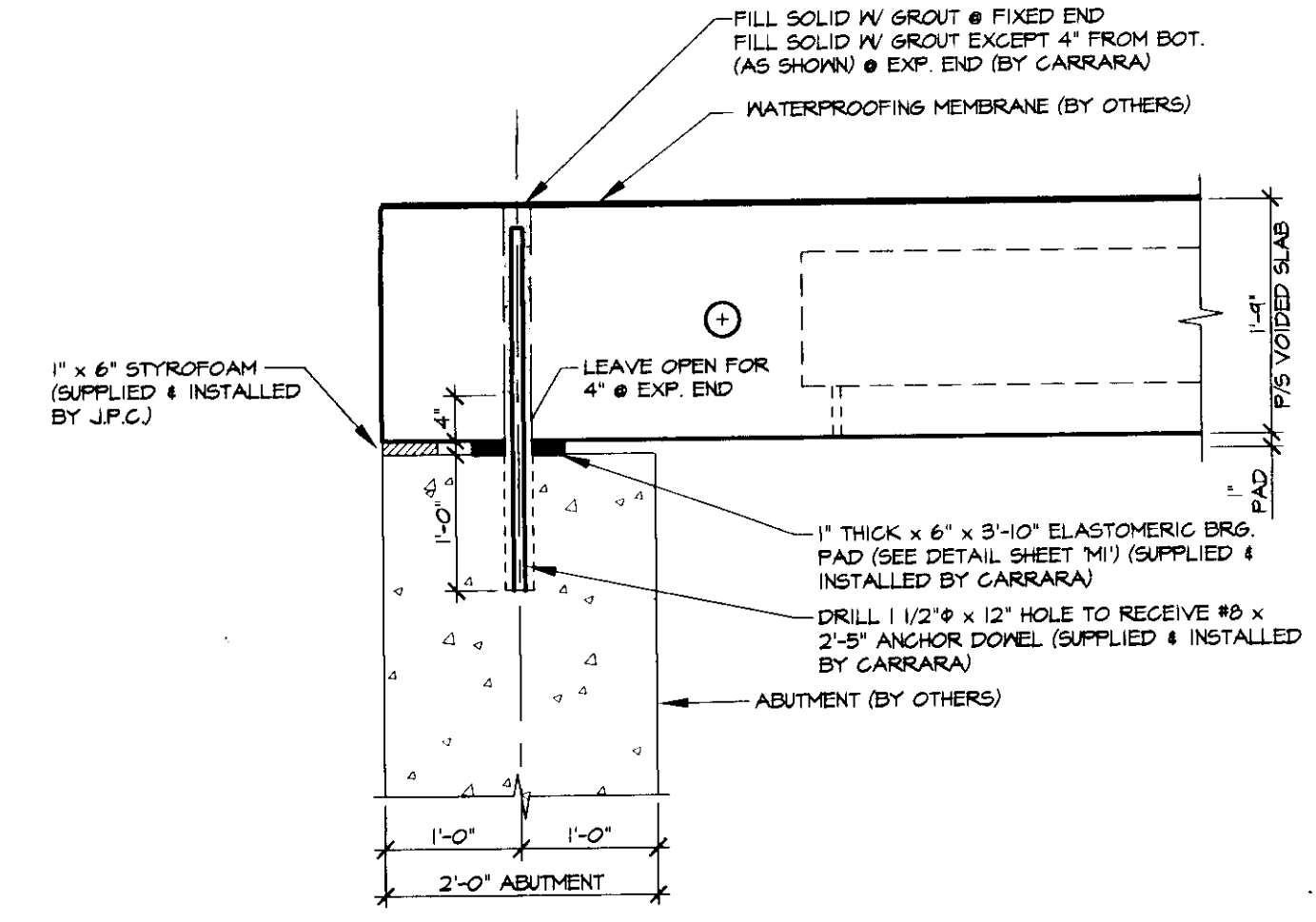
- MIN. CONCRETE STRENGTH AT 28 DAYS: $f_c = 5,000$ PSI
MIN. CONCRETE STRENGTH AT STRESS TRANSFER: $f_{ci} = 4,000$ PSI
- REINFORCING STEEL SHALL BE GR-60, ASTM A-615 (AASHTO M31) AND SHALL BE BLACK STEEL OR EPOXY COATED (AS NOTED).
- PRESTRESSING STRANDS SHALL CONFORM TO ASTM A-416 (AASHTO M203) AND SHALL CONSIST OF 0.500" ϕ x 270 KSI, 7-WIRE LOW RELAXATION STRANDS.
- PRESTRESSING STRANDS SHALL EACH BE PULLED TO HAVE A NET TENSION OF 31.0 K AFTER ACCOUNTING FOR CHUCK SLIPPAGE. TENSION SHALL BE VERIFIED BY MEASURING STRAND ELONGATION. SEE EXAMPLE ELONGATION CALCULATION AND TENSIONING PROCEDURE, (THIS SHEET).
- END OF PRESTRESSING STRANDS SHALL BE CUT FLUSH & PAINTED.
- THE TOP OF THE BEAMS SHALL RECEIVE A FLOAT FINISH.
- BEAMS SHALL BE HANDLED AND ERRECTED USING THE LIFTING LOOPS ONLY. THE MINIMUM SLING ANGLE FROM THE HORIZONTAL SHALL BE 60°. BEAMS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS WITHIN 2'-0" OF THE BEAM ENDS, UNLESS APPROVED BY J.P. CARRARA & SONS, INC.
- SHEAR KEY SURFACES SHALL BE BLAST CLEANED.
- MATERIAL SPECIFICATION AND MIX DESIGN SHALL CONFORM TO VERMONT SPEC. PS10.02 AND PS10.05 RESPECTIVELY.
DESIGN MIX: J.P.C. BRIDGE MIX #450
752 LBS. TYPE III CEMENT - GLENS FALLS CEMENT
1215 LBS. FINE AGGREGATE
1650 LBS. COARSE AGGREGATE
28 GAL. WATER - 233 LBS.
7% ($\pm 2\%$) AIR CONTENT (55 OZ. DAREX II) ADJUST AS REQUIRED
6.0 OZ. ADVA PER 100 LBS. CEMENT, MAX. 1" SLUMP
3 OZ. DARACEM PER 100 LBS. CEMENT
51.2 OZ. DCI
- QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS. J.P. CARRARA & SONS, INC. IS A PCI CERTIFIED PLANT.
- THE ENGINEER OF RECORD WILL BE NOTIFIED IN A TIMELY MANNER SO THAT ALL PRECAST OPERATIONS MAY BE WITNESSED.
- THE VOIDS MUST BE VENTED DURING THE CURING PERIOD.
- CURING METHOD: AS SOON AS THE TOP OF THE BEAM IS FINISHED, A COVER OF POLY AND A LAYER OF HOMASOTE (OR BLUE BOARD) WILL BE PLACED OVER THE BEAM. THE DESIRED CURING TEMPERATURE RANGE SHALL NOT DROP BELOW 10°F. THE TEMPERATURE SHALL BE RECORDED BY AUTOMATIC SENSOR INSTRUMENTS ON GRAPH CHARTS, SPACED NOT MORE THAN 100' APART AND WILL CONTINUE UNTIL RELEASE STRENGTH IS ACHIEVED (NATURAL CURE WITH NO EXTERNAL HEAT APPLIED). EACH CHART SHALL BE MARKED.
- NO INSERTS SHALL BE FIELD INSTALLED IN BEAMS WITHOUT APPROVAL OF J.P. CARRARA & SONS, INC.
- TRANSVERSE POST-TENSIONING SEQUENCE:
A. ERECT VOIDED SLABS.
B. GROUT SHEAR KEYS.
C. ONCE SHEAR KEY GROUT HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI, POST-TENSION TENDONS TO 30,000 LBS.

EXAMPLE PRESTRESSING STRAND ELONGATION CALCULATION AND TENSIONING
(NOT TO BE USED FOR CONSTRUCTION)

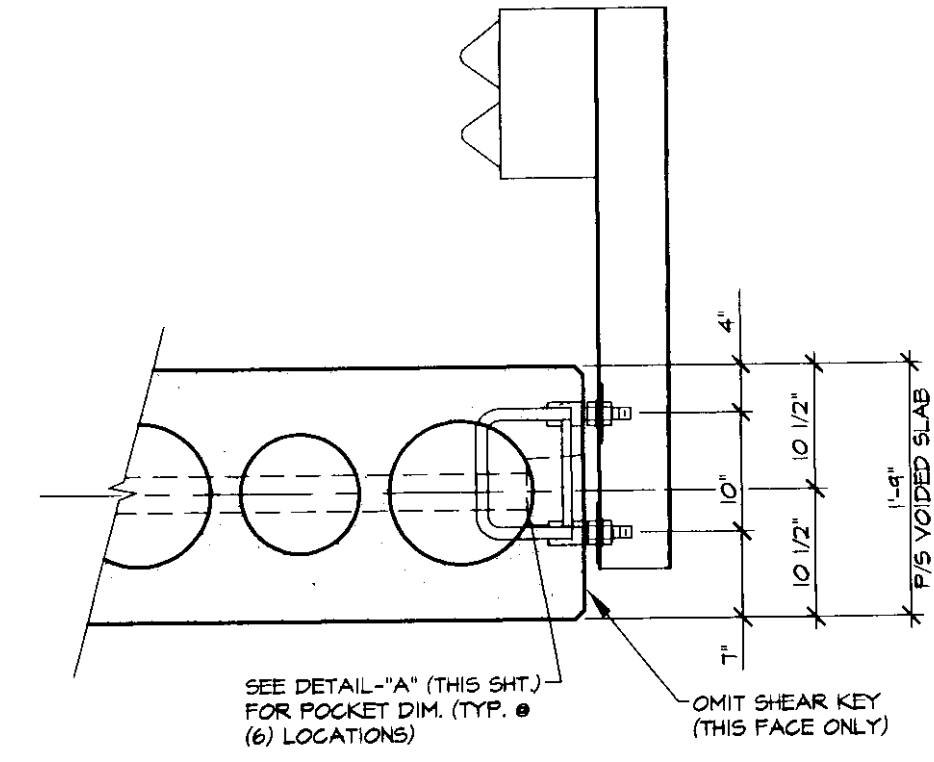
SIZE & GRADE: 0.600" ϕ x 270 KSI
AREA: 0.217 IN²
TENSION: 43,200 LBS. EACH STRAND
GRIP TO GRIP: 142'-9 3/4" = 142.813'
 $E_s = 28,600,000$ PSI (ASSUMED FOR THESE CALCULATIONS, VALUE TO BE OBTAINED FOR STRAND SPECIALLY USED)
EXAMPLE: $\Delta = \frac{P_L}{AE} = \frac{(43,200 \times 3,000) \times 142.813 \times 12}{0.217 \times 28,600,000} = 15.21"$
THEREFORE: TOLERANCES: $\pm 5\%$
 Δ UPPER LIMIT = $1.05 \times 15.21" = 15.97" = 16"$
 Δ LOWER LIMIT = $0.95 \times 15.21" = 14.45" = 14 7/16"$
EXTRA FORCE REQUIRED TO COMPENSATE FOR 1/2" CHUCK SLIPPAGE:
 $\Delta P = 0.5 \times 40,800 = 1,341$ LBS.
TOTAL TENSIONING FORCE = 43,200 + 1,341 = 44,541 LBS.

STRAND TENSIONING PROCEDURE

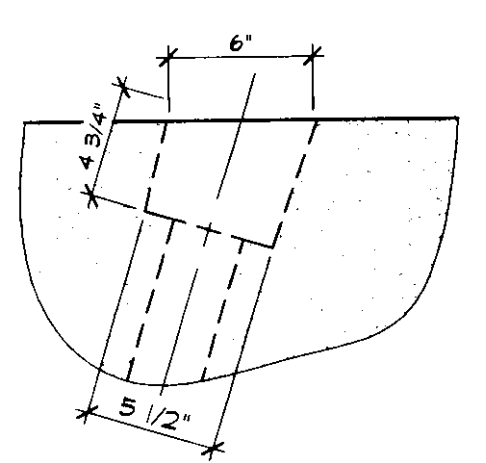
- PULL EACH STRAND INITIALLY TO 3,000* LBS. AND MARK STRAND.
 - THE PULL EACH STRAND TO A TOTAL TENSION OF 45141* LBS. AND MEASURE ELONGATION AFTER SEATING. IT MUST BE BETWEEN 14 7/16" AND 16".
- * NOTE: FORCES READ ON STRESSING JACK GAUGES MUST BE MADE TO CORRESPOND TO ABOVE VALUES BASED ON CALIBRATION DATA FOR SPECIFIC JACK USED.



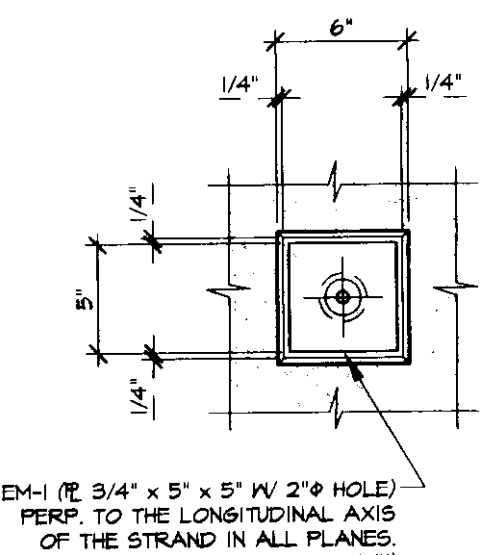
A BEARING SECTION
3/4" = 1'-0"



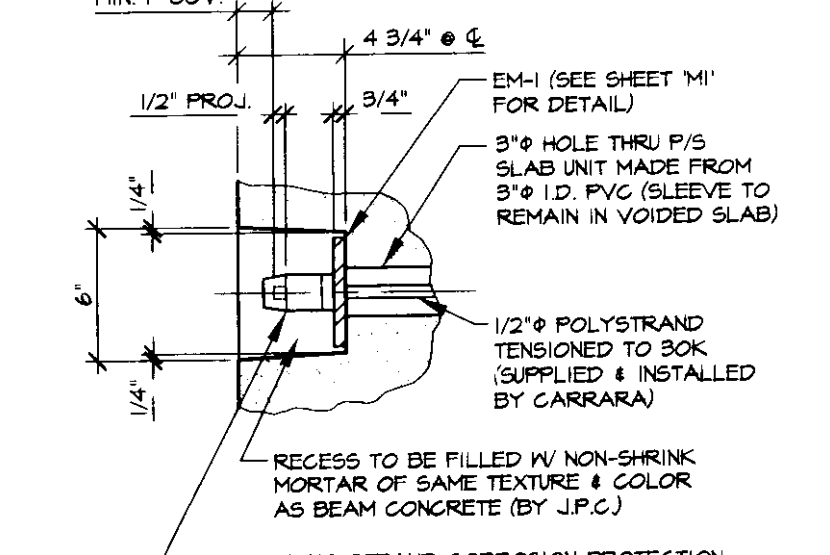
B CONNECTION SECTION
3/4" = 1'-0"



PLAN OF POCKET

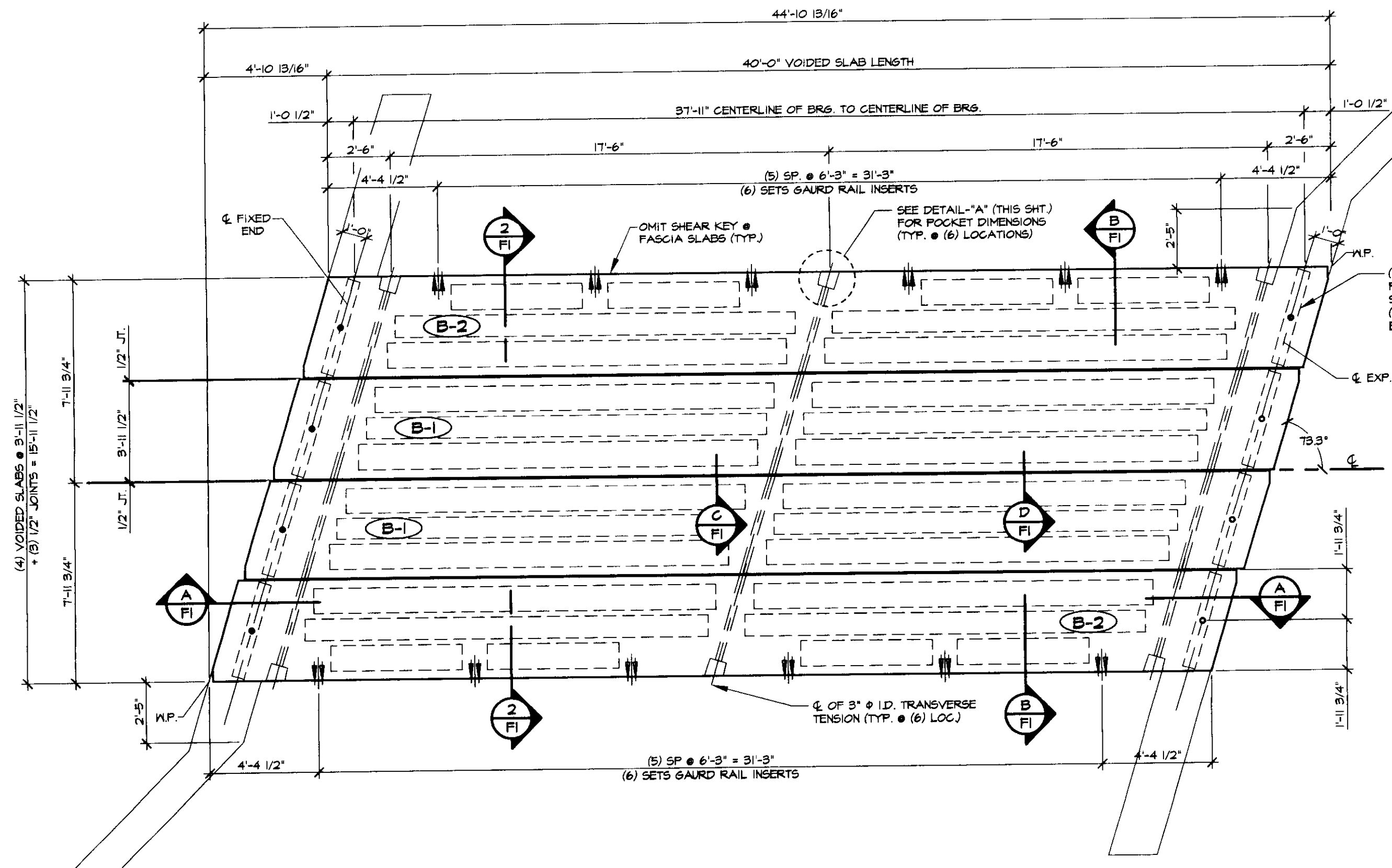


FASCIA ELEVATION



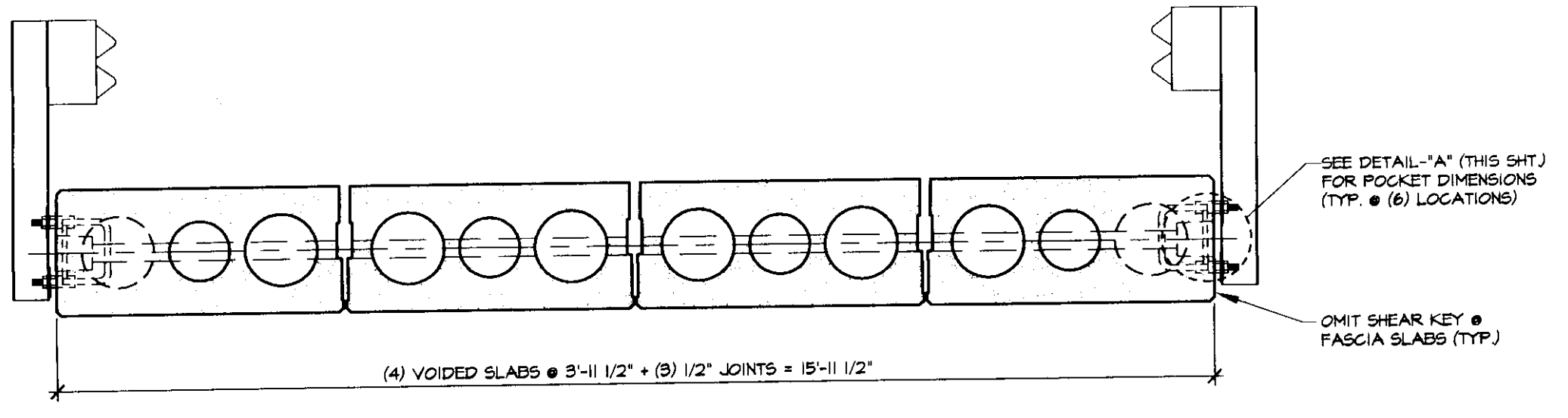
SECTION AT CENTERLINE

DETAIL - "A"
1 1/2" = 1'-0"

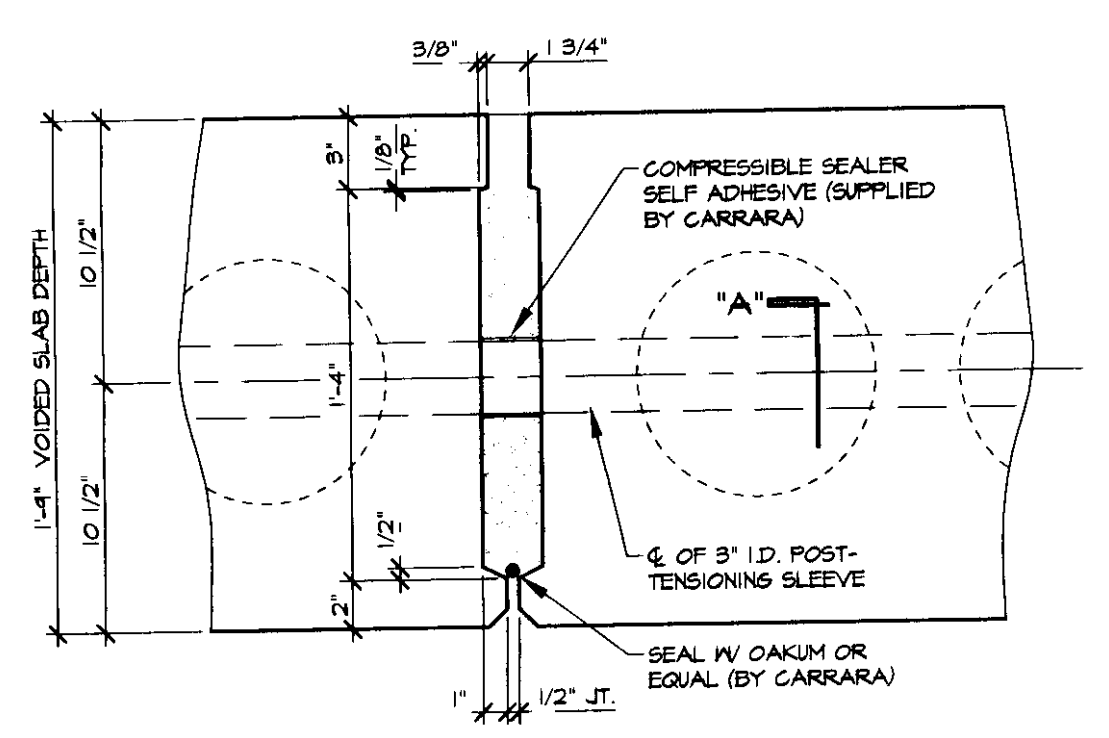


1 PRESTRESSED VOIDED SLAB LAYOUT
1/4" = 1'-0"

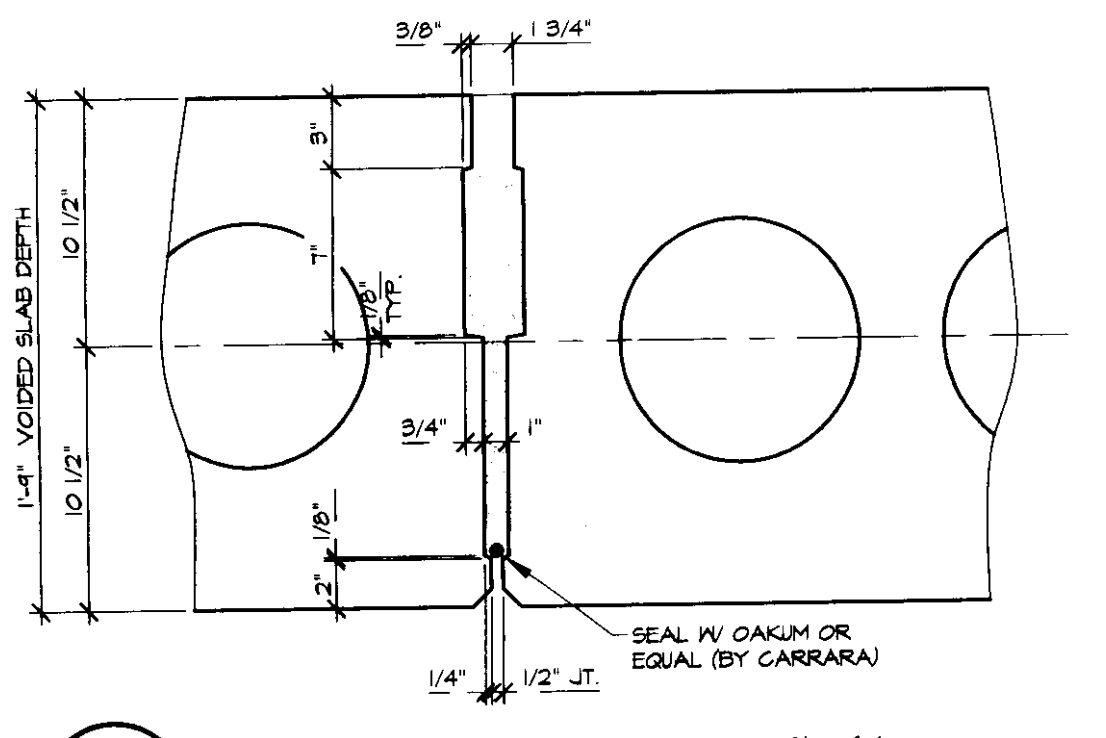
DESIGN LOAD: HS-25-44



2 TRANSVERSE SECTION
1/2" = 1'-0"

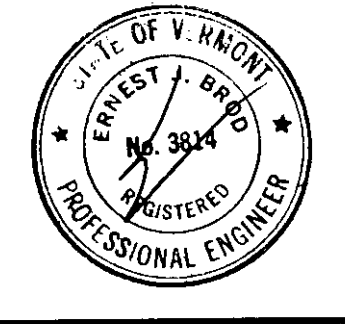


C SHEAR KEY SECTION @ P.T. SLEEVE
1 1/2" = 1'-0"



D TYP. SHEAR KEY SECTION
1 1/2" = 1'-0"

APPROVAL STAMP:



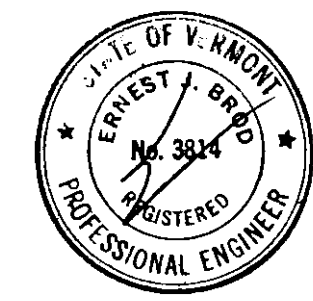
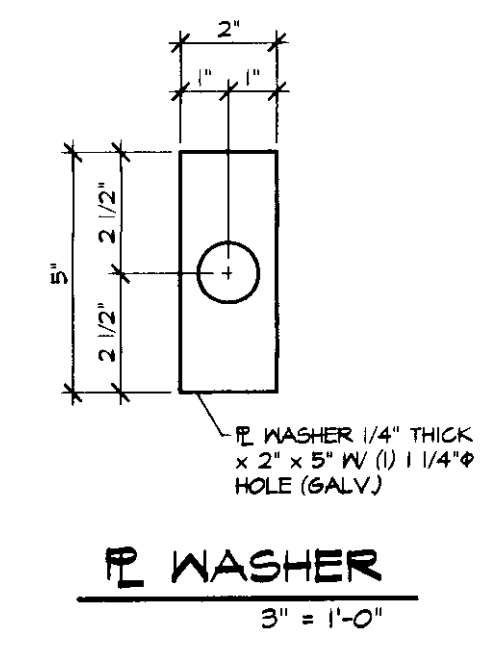
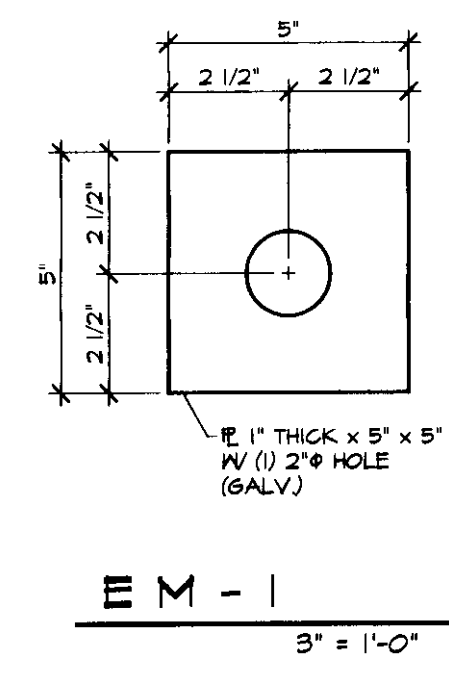
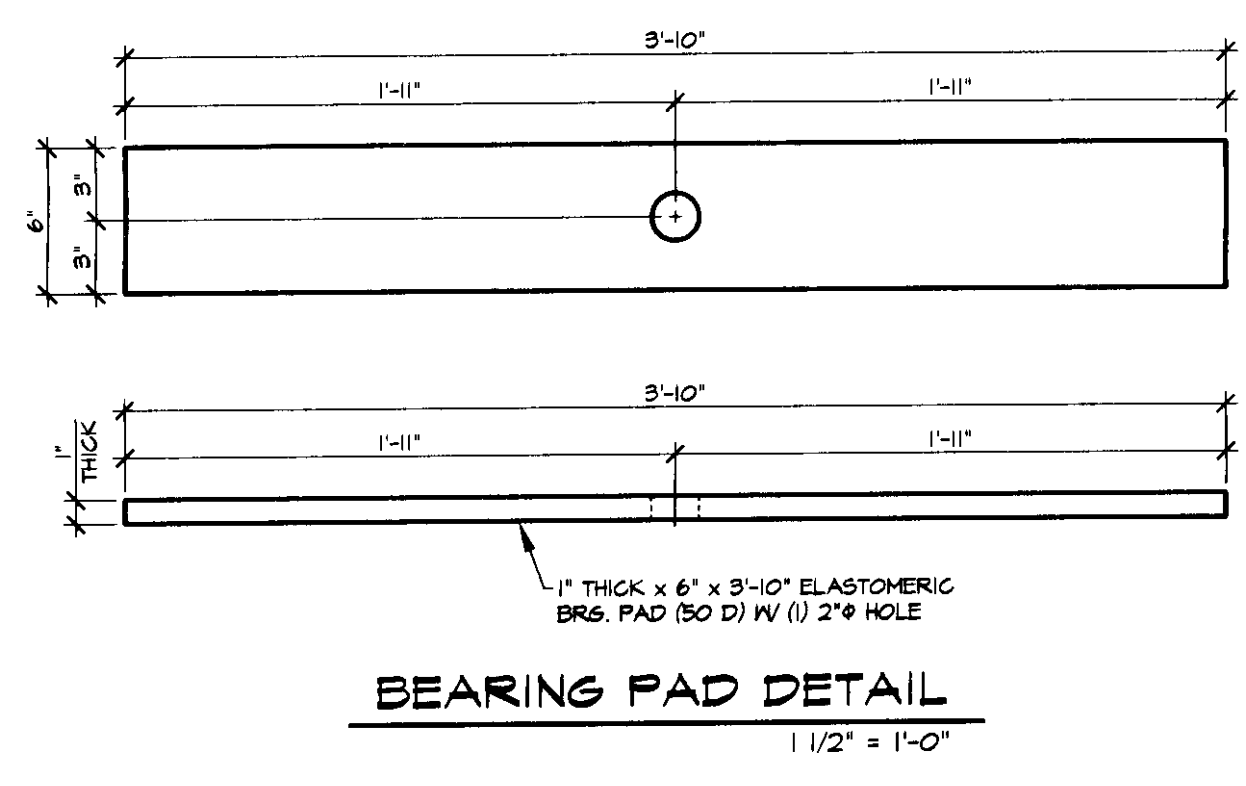
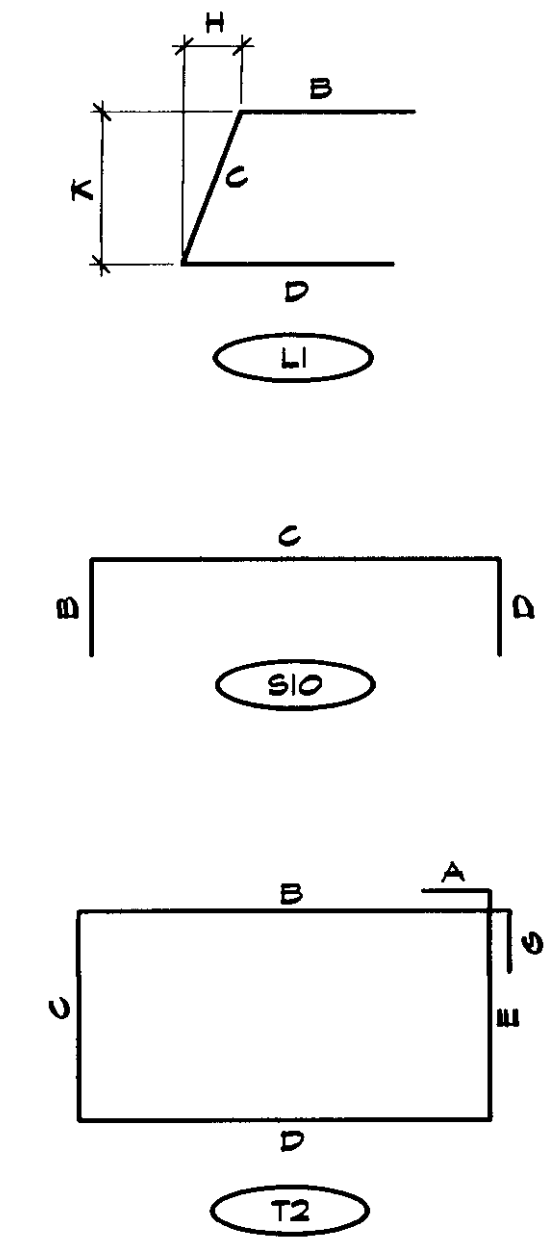
J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer 2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010		J.P. CARRARA & SONS INC. CONTRACTOR MIDDLEBURY, VERMONT	
BRIDGEWATER # 46 BRIDGE BRIDGEWATER, VT		DATE: JULY 30, 2002	
TOWN OF BRIDGEWATER P.O. BOX 14 SOUTH GATEHOUSE BRIDGEWATER, VT 05034		SCALE: NOTED	CHKD: -- DFTM: K.B.
SUPERSTRUCTURE PLAN & DETAILS		JOB NO: 23162-02	DWG. NO: FI

BENT BARS, TIES, & STIRRUPS

ITEM	MARK	QTY.	SIZE	LENGTH	TYPE	A	B	C	D	E	F/R	G	H	J	K	O	GRADE	REMARKS
1	401	204	#4	11'-1"	T2	6"	3'-9 1/2"	1'-5 1/2"	3'-9 1/2"	1'-5 1/2"		6"						
2																		
3	501	32	#5	7'-2"	S10		3'-0"	1'-4"	3'-0"									60
4	502	24	#5	9'-5 1/8"	L1		3'-0"	3'-7 1/8"	3'-0"				1'-0 5/8"		3'-6"			60
5																		
6		16	#6	34'-8"	STR.													
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		
16																		
17																		
18																		
19																		
20																		
21																		
22																		
23																		
24																		
25																		
26																		
27																		
28																		
29																		

MISCELLANEOUS MATERIALS

ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1		8	12"φ x 5'-3" VOID	
2		8	10"φ x 16'-0" VOID	
3		12	12"φ x 16'-0" VOID	
4		56	3/4"φ x 4 1/2" NON-FERROUS VOID DRAIN	
5		16	DOUBLE 1/2"φ STRAND LIFTING LOOP	
6		8	1" THICK x 6" x 3'-10" BEARING PAD	
7				
8				
9	EM-1	6	1/2"φ x 5" x 5" W/ (1) 2"φ HOLE (GALV.)	FOR ERECTION
10		6	SINGLE USE STRESSING CHUCK	FOR ERECTION
11		3	1/2"φ POLYSTRAND x 18'-4 1/2"	FOR ERECTION
12		8	1" THICK x 6" x 3'-10" ELASTOMERIC BRG. PAD W/ (1) 2"φ HOLE	FOR ERECTION
13				
14		96	1"φ NUTS (GALV.)	
15		48	STANDARD WASHER (GALV.)	
16		48	1/4" x 2" x 5" W/ (1) 1/4"φ HOLE (GALV.)	SEE DETAIL, THIS SHEET
17		48	1"φ x 5" A325 THREADED ROD	HOT DIPPED GALV.
18		12	RAILING ANCHOR CLUSTERS (GALV.)	
19		48	BNC THREADED CLOSED FERRULE x 1 7/8" LONG (1 1/4" THREAD LENGTH)	
20		8	#8 REBAR x 2'-5" LG. (BLACK)	
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				



APPROVAL STAMP:	J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer <small>2464 CASE STR., MIDDLEBURY, VERMONT 05751 Phone:(802)388-6361 Fax:(802)388-9010</small>		J.P. CARRARA & SONS INC. CONTRACTOR MIDDLEBURY, VERMONT	
	BRIDGEWATER #46 BRIDGE BRIDGEWATER, VT		DATE: JUNE 18, 2001	
	TOWN OF BRIDGEWATER P.O. BOX 14 SOUTH GATEHOUSE BRIDGEWATER, VT 05034		CHKD: -	DFTM: K.B.
	MATERIALS LIST		JOB NO: 23162-02	DWG. NO: M1