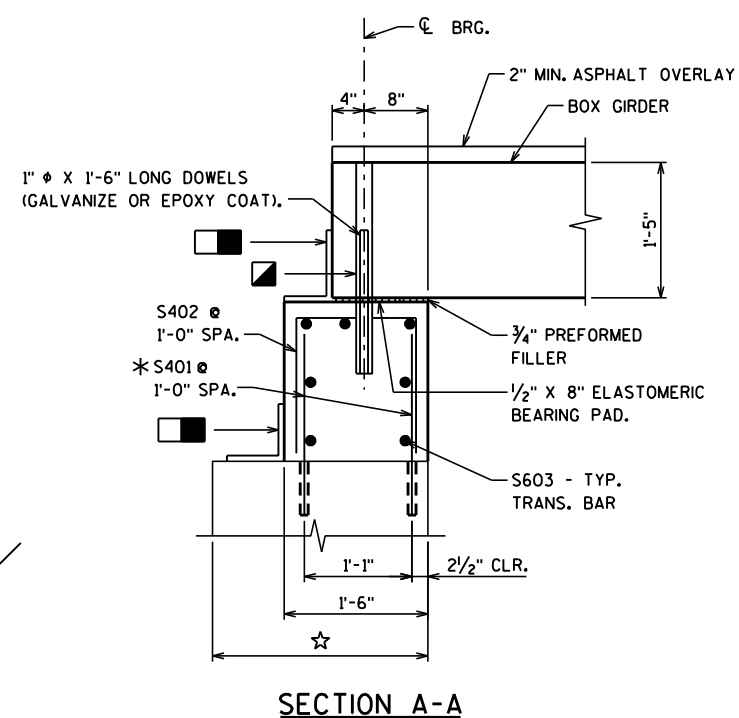
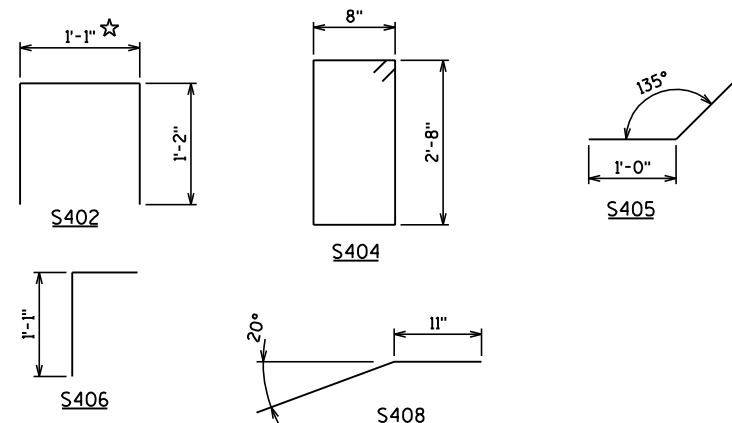


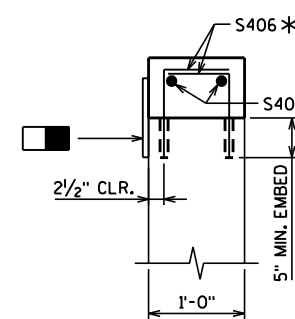
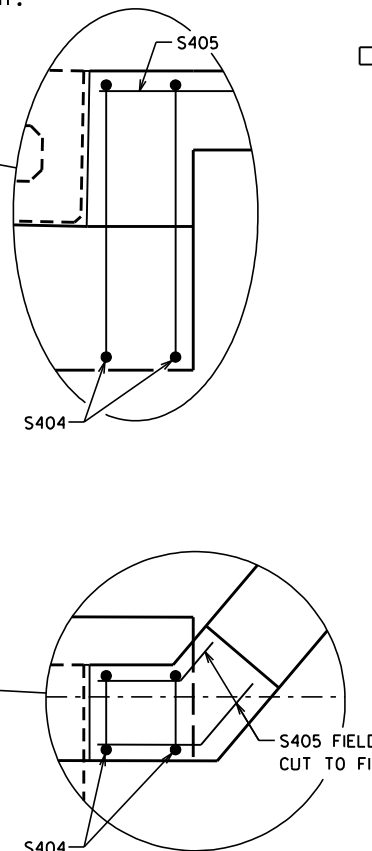
BILL OF BARS (BAR TABLE APPLIES TO ONE
ABUT. - 2 ABUTS. REQ'D.)

	BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
*	S401	X	78	1'-9"		BODY - VERTICAL DOWEL EACH FACE
	S402	X	39	3'-3"	X	BODY - VERTICAL
	S603	X	7	38'-4"		BODY - HORIZONTAL
	S404	X	4	7'-2"	X	BODY CORNER - VERTICAL
	S405	X	4	2'-0"	X	WINGS - CORNER
*	S406	X	48	1'-6"	X	WINGS - VERTICAL DOWEL
	S407	X	4	9'-6"		WINGS - DIAGONAL, TOP
	S408	X	2	4'-3"	X	WINGS - TOP

* NOTE: CONCRETE MASONRY ANCHORS, TYPE S, EMBED A MINIMUM OF 5"



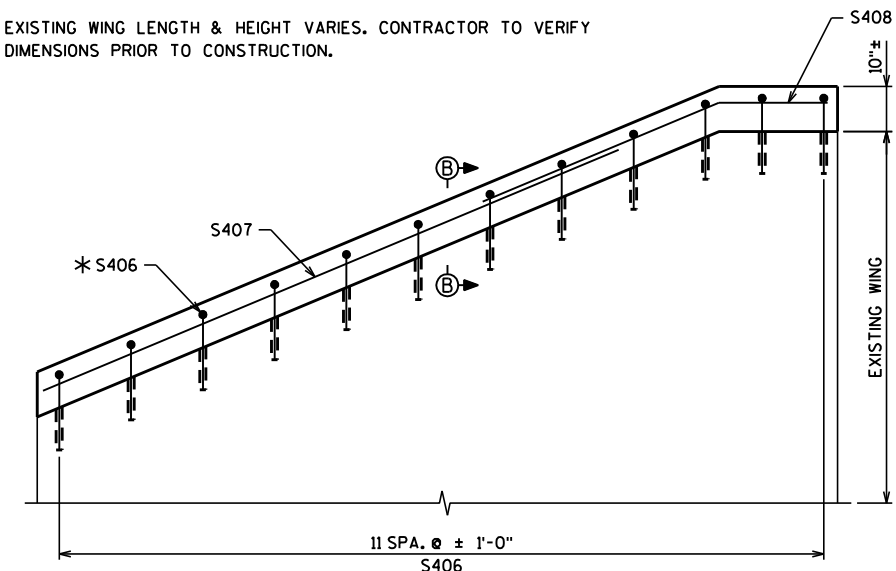
2" ± DOWEL HOLES. (2 HOLES PER BEAM). AFTER BEAMS ARE ERECTED AND POST - TENSIONED, DRILL HOLES IN PIER FOR DOWELS. INSERT DOWEL AND FILL HOLE WITH NON-SHRINK GROUT.



WING REPAIR BILL OF BARS

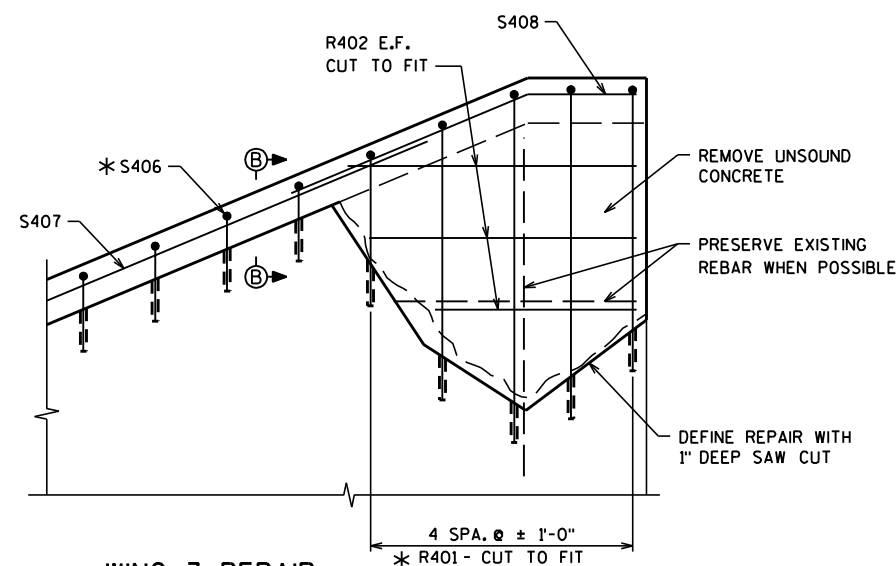
	BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
*	R401	X	10	5'-2"	X	WING 3 REPAIR - VERTICAL DOWEL
	R402	X	6	3'-0"		WING 3 REPAIR - HORIZONTAL

* NOTE: CONCRETE MASONRY ANCHORS, TYPE S, EMBED A MINIMUM OF 5"

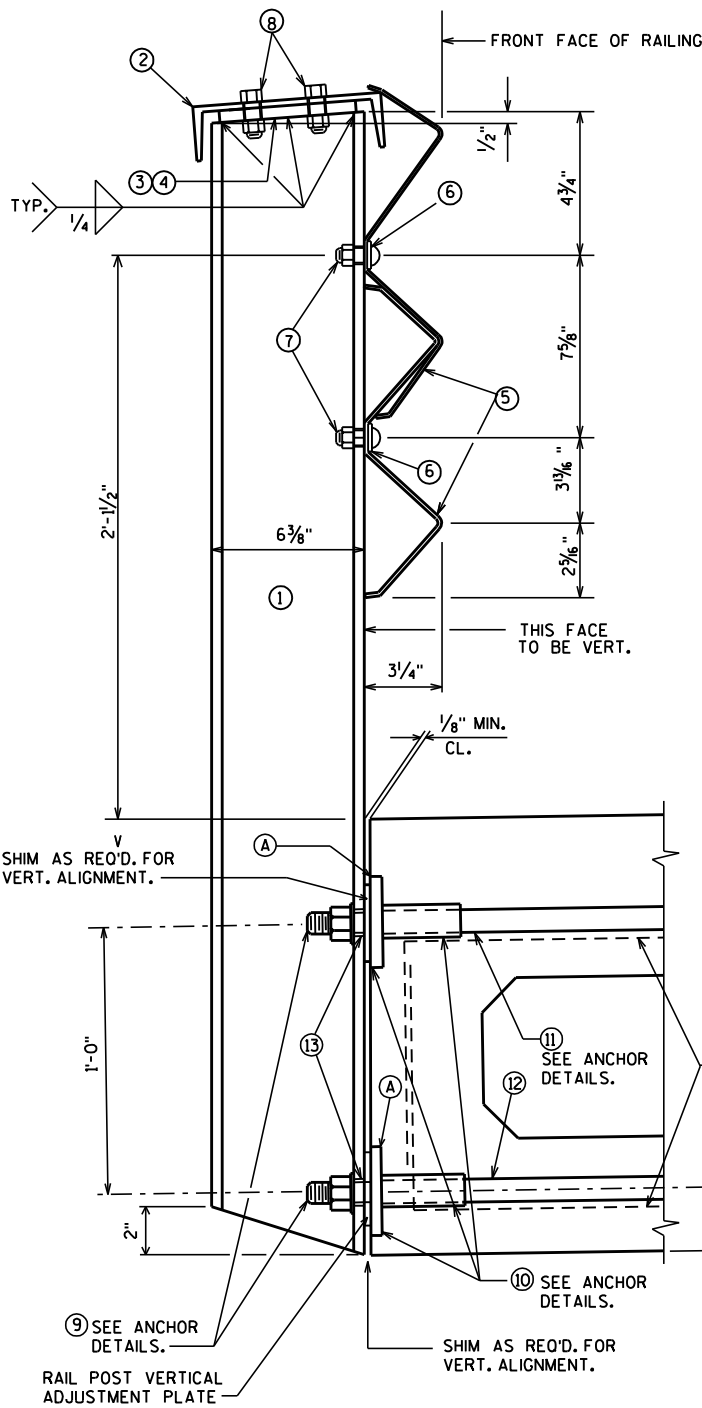


TYPICAL WING ELEVATION

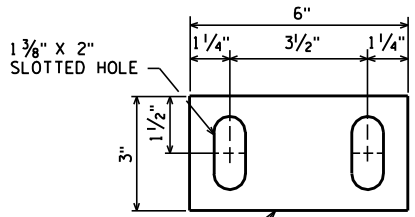
ALL WING BARS ARE EACH FACE



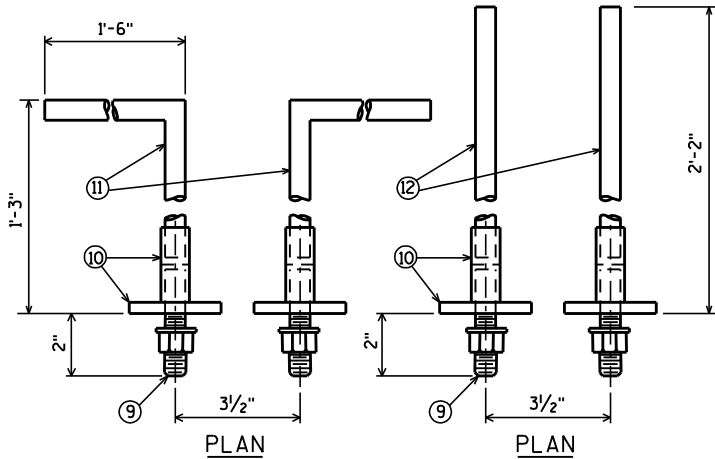
NO.	DATE	REVISION	BY
STRUCTURE P-44-057			
		DRAWN BY	BRE PLANS CK'D. KRO
ABUTMENTS		SHEET 2 OF 3	



SECTION THRU RAILING

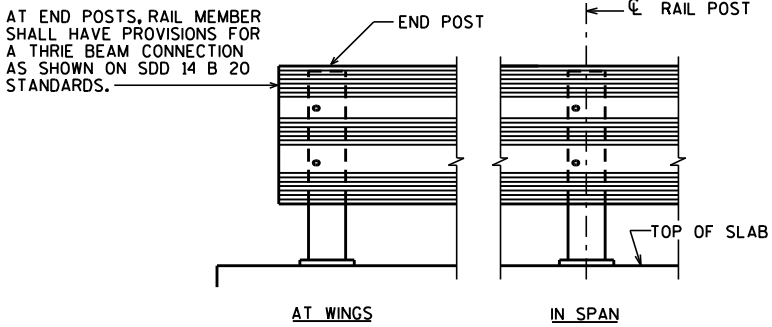


RAIL POST VERTICAL ADJUSTMENT PLATE
(1 PER POST)

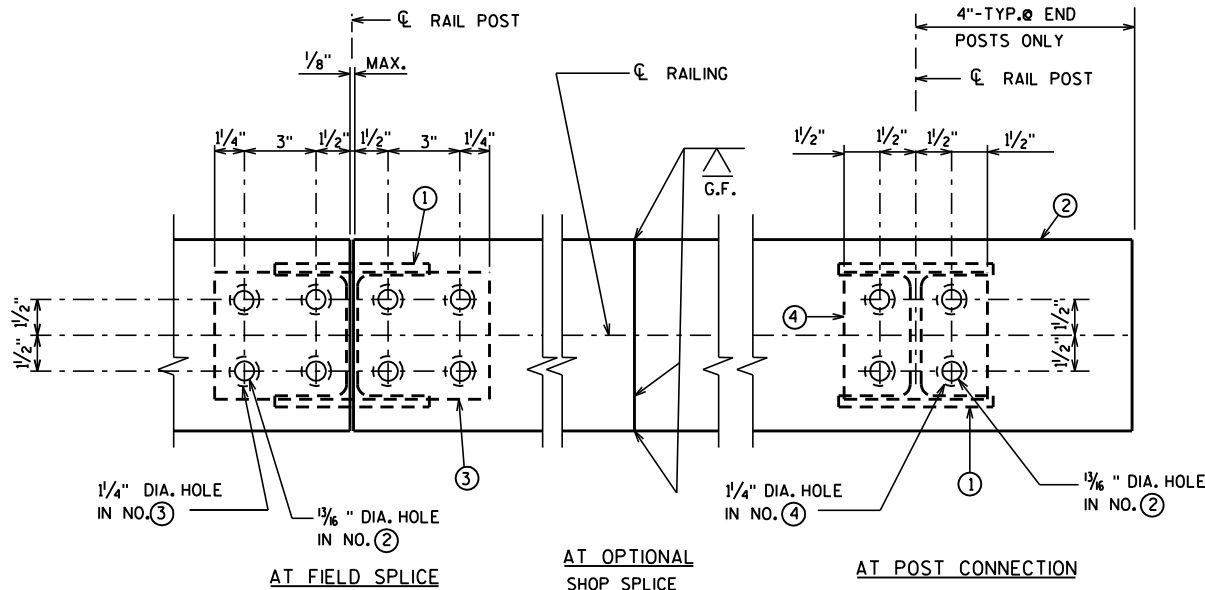


ANCHOR DETAILS

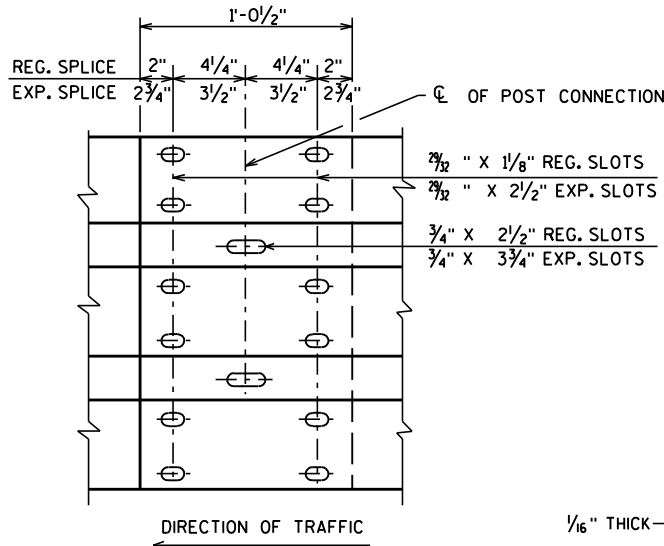
ANCHORS MAY BE FABRICATED IN A CAGE IF OPTED BY THE MFG'R.



ELEVATION

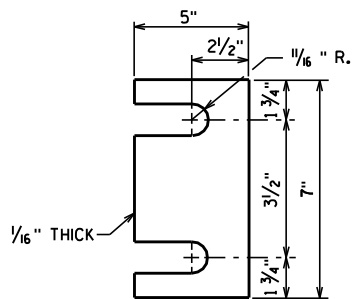


CHANNEL MEMBER DETAILS



RAIL MEMBER SPLICE

5/8" DIA. BUTTON HEAD OVAL SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS.



POST SHIM DETAIL

(14 PER POST)

LEGEND

- ① W6x25 WITH 2 - 3/4" x 2 1/2" VERTICAL SLOTS ON ONE SIDE OF POST FOR BOLT NO.7. PLACE POSTS VERTICAL AND NORMAL TO GRADE LINE.
 - ② C8 x 11.5, WITH 13*16" DIA. HOLES, ATTACH TO NO.4 WITH BOLTS NO.8. ATTACH CONTINUOUSLY TO A MIN. OF FOUR POSTS AND A MAX. OF EIGHT POSTS.
 - ③ PLATE, 1*2" x 53*4" x 11*2" WITH 11*4" DIA. HOLES FOR BOLTS NO.8. WELD THE SAME AS NO.4.
 - ④ PLATE 1*2" x 53*4" x 6", WITH 11*4" DIA. HOLE FOR BOLTS NO.8. WELD TO NO.1 AS SHOWN.
 - ⑤ CORRUGATED SHEET BEAM, CONFORMING TO A.A.S.H.T.O. DESIGNATION M 180-CLASS A, TYPE 2. 'THRIE ' GUARD RAIL OR EQUAL MAY BE USED IN LIEU OF THE DOUBLE UNIT PLATE BEAM SHOWN. ATTACH TO NO.1 WITH BOLTS NO.7.
 - ⑥ 1 3/4" x 3" MOUNTING BOLT WASHER. EIGHT GAGE GALVANIZED.
 - ⑦ 5*8" DIA. BUTTON HEAD RAIL MOUNTING BOLT WITH ROUND WASHER AND NUT. 2 PER POST REQ'D.
 - ⑧ 5*8" DIA. x 2" LG. HEX. BOLTS WITH NUT AND TWO WASHERS EACH. 4 REQ'D. PER POST CONNECTION, 8 REQ'D. PER SPLICE.
 - ⑨ 1" DIA. STUD WITH NUT & WASHER. FOUR REQ'D. PER POST, A325.*
 - ⑩ THREADED BAR COUPLER FOR 1" Ø STUD. ACCEPTABLE PRODUCTS ARE WILLIAMS REBAR FLANGE COUPLERS BY WILLIAMS FORM ENGINEERING CORP. OR DOWEL BAR REPLACEMENTS BY DAYTON SUPERIOR. FOUR REQ'D. PER POST. EXPOSED FLANGE TO BE GALVANIZED.*
 - ⑪ ANCHOR BAR 1" DIA. THREADED REINFORCEMENT BAR BENT AS SHOWN IN ANCHOR DETAILS, GRADE 60. TWO REQ'D. PER POST. (TOP)**
 - ⑫ ANCHOR BAR, 1" DIA. THREADED REINFORCEMENT BAR (STRAIGHT), GRADE 60. TWO REQ'D. PER POST. (BOTTOM)**
 - ⑬ 11*4" x 13*4" SLOTTED HOLES IN POST FOR STUD NO.9. LONG DIMENSION OF SLOTTED HOLE TO BE VERTICAL.
- *SHALL BE MECHANICALLY GALVANIZED OR ELECTRO-PLATED.
**NOT GALVANIZED OR ELECTRO-PLATED.

GENERAL NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE W P-37-116 WHICH SHALL INCLUDE ALL ITEMS SHOWN.

ALL MATERIAL, EXCEPT ANCHORAGE DETAIL (NO. 11 & 12) SHALL BE GALVANIZED AFTER FABRICATION.

FILL BOLT SLOT OPENINGS IN POST SHIMS AND POST WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

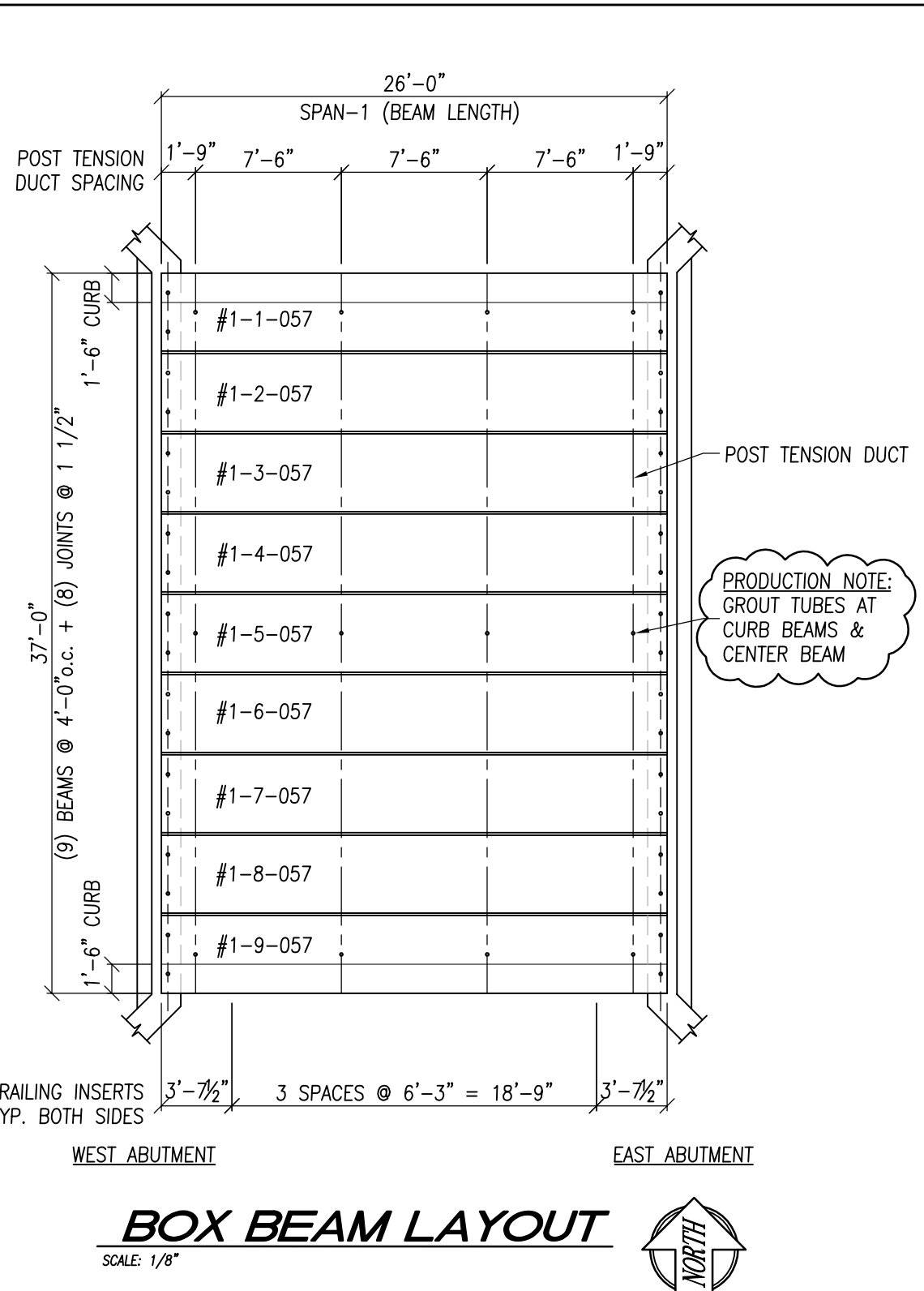
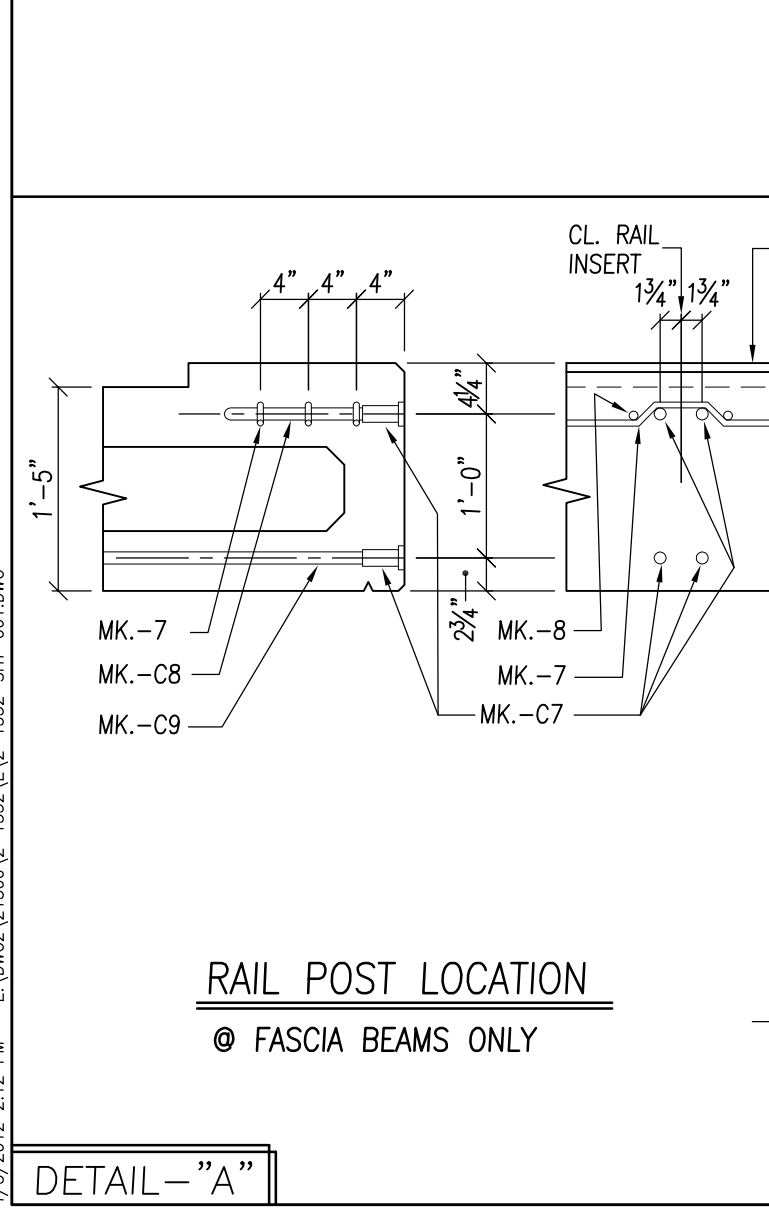
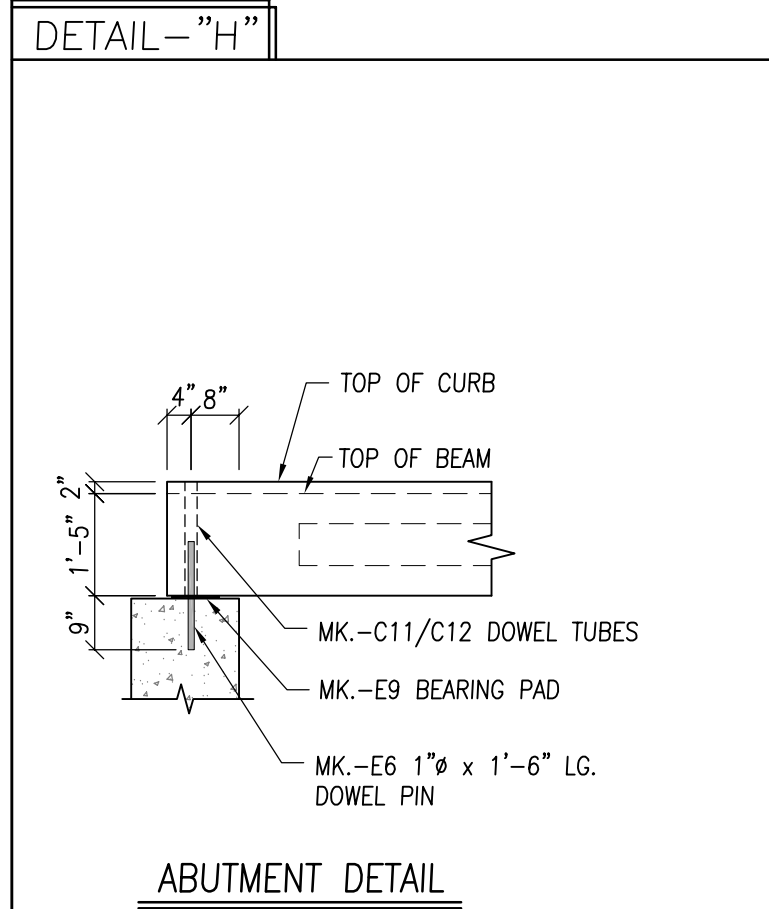
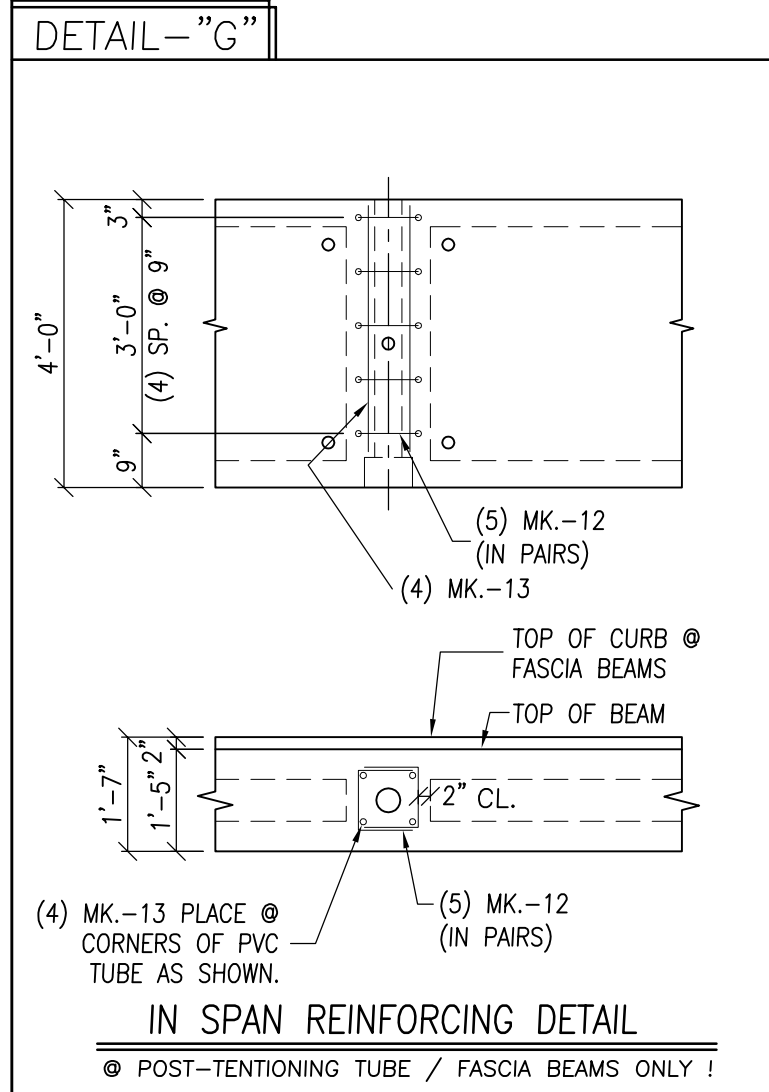
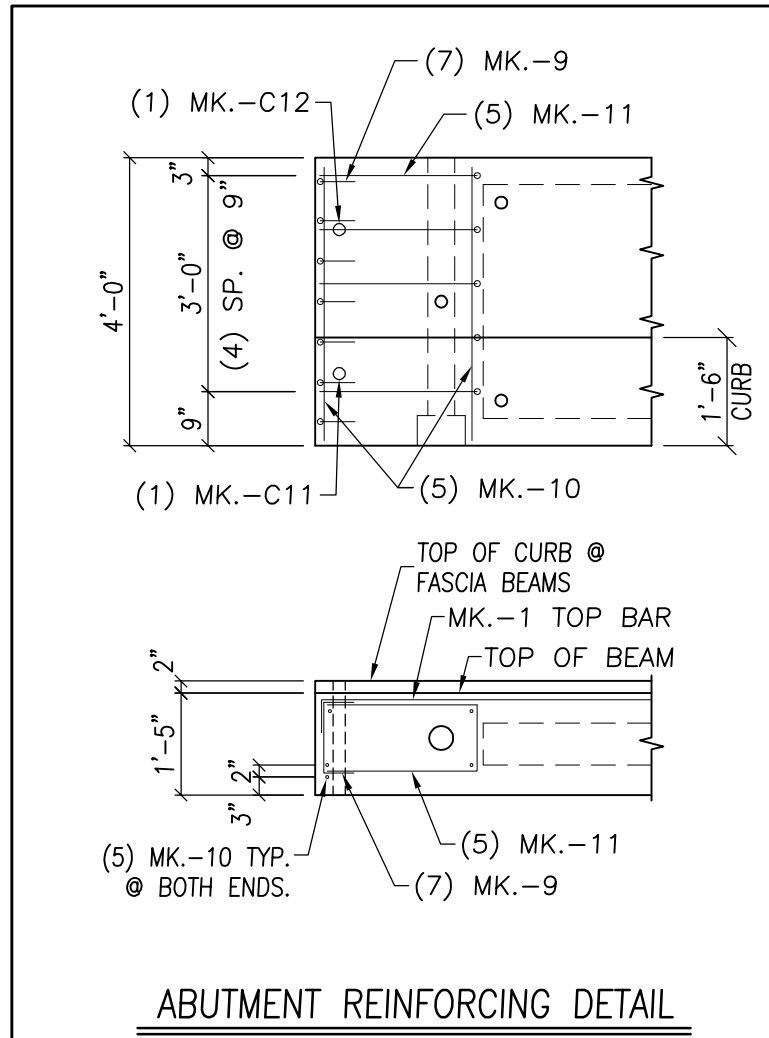
SHIM PLATES 6" x 1*16" x 6" MAY BE USED BETWEEN TOP OF POST AND CHANNEL MEMBER TO ACHIEVE VERTICAL ALIGNMENT.

STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQUIRED FOR ALIGNMENT.

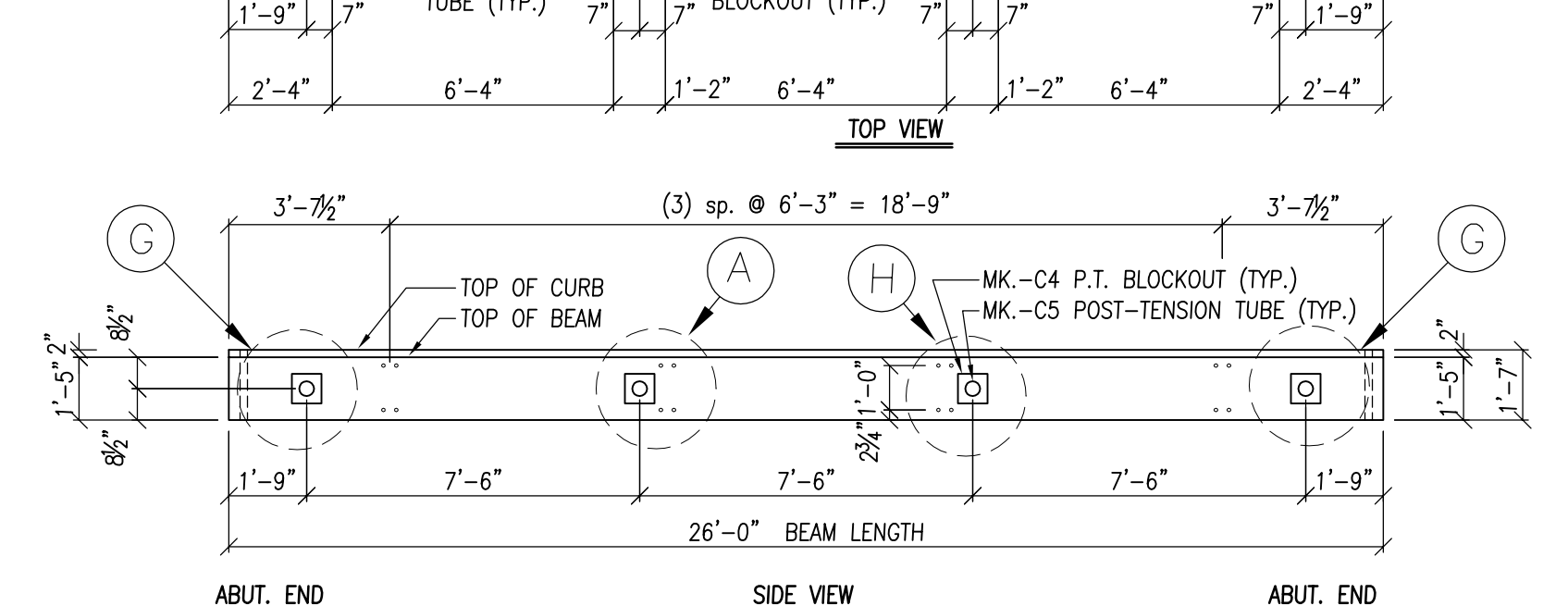
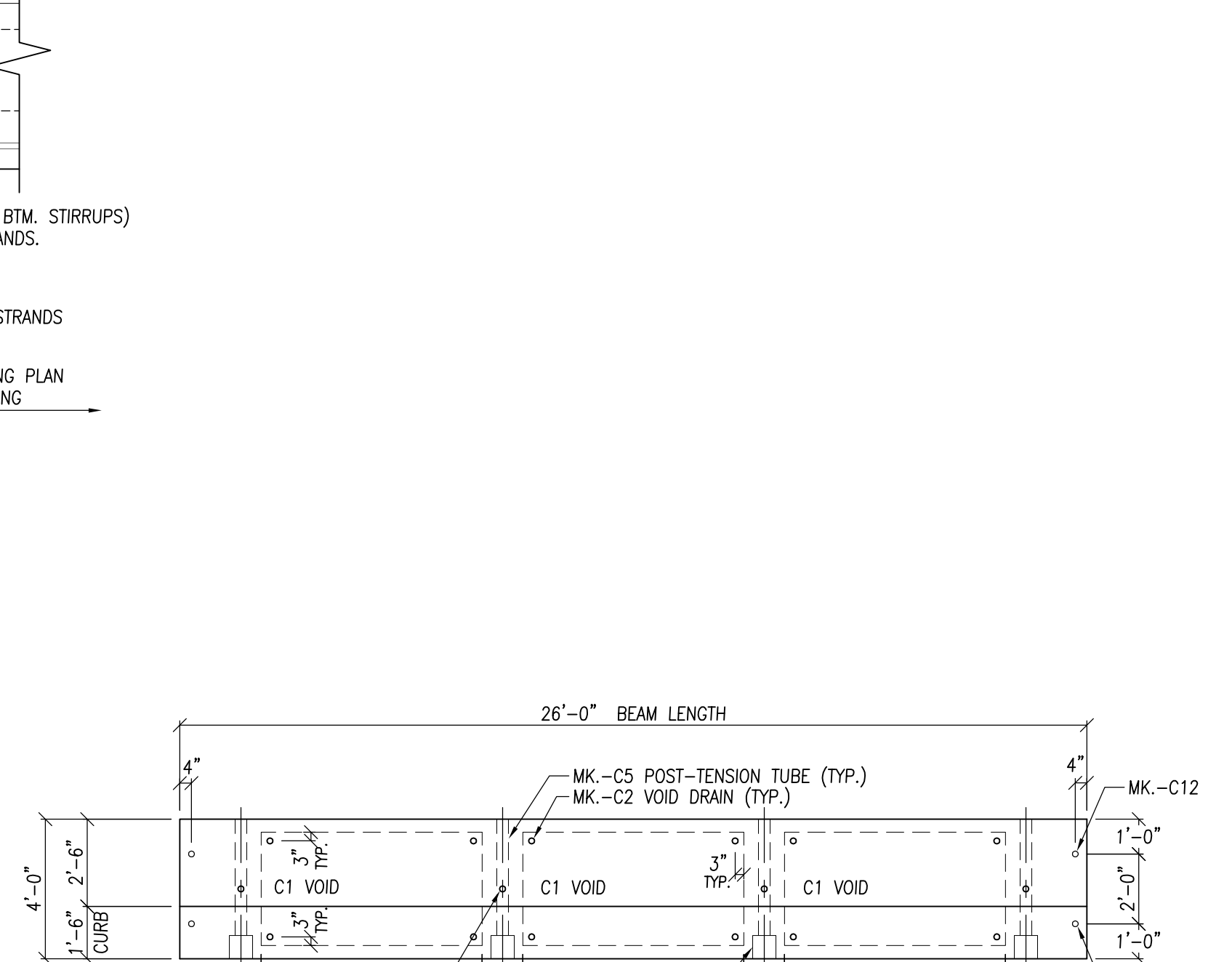
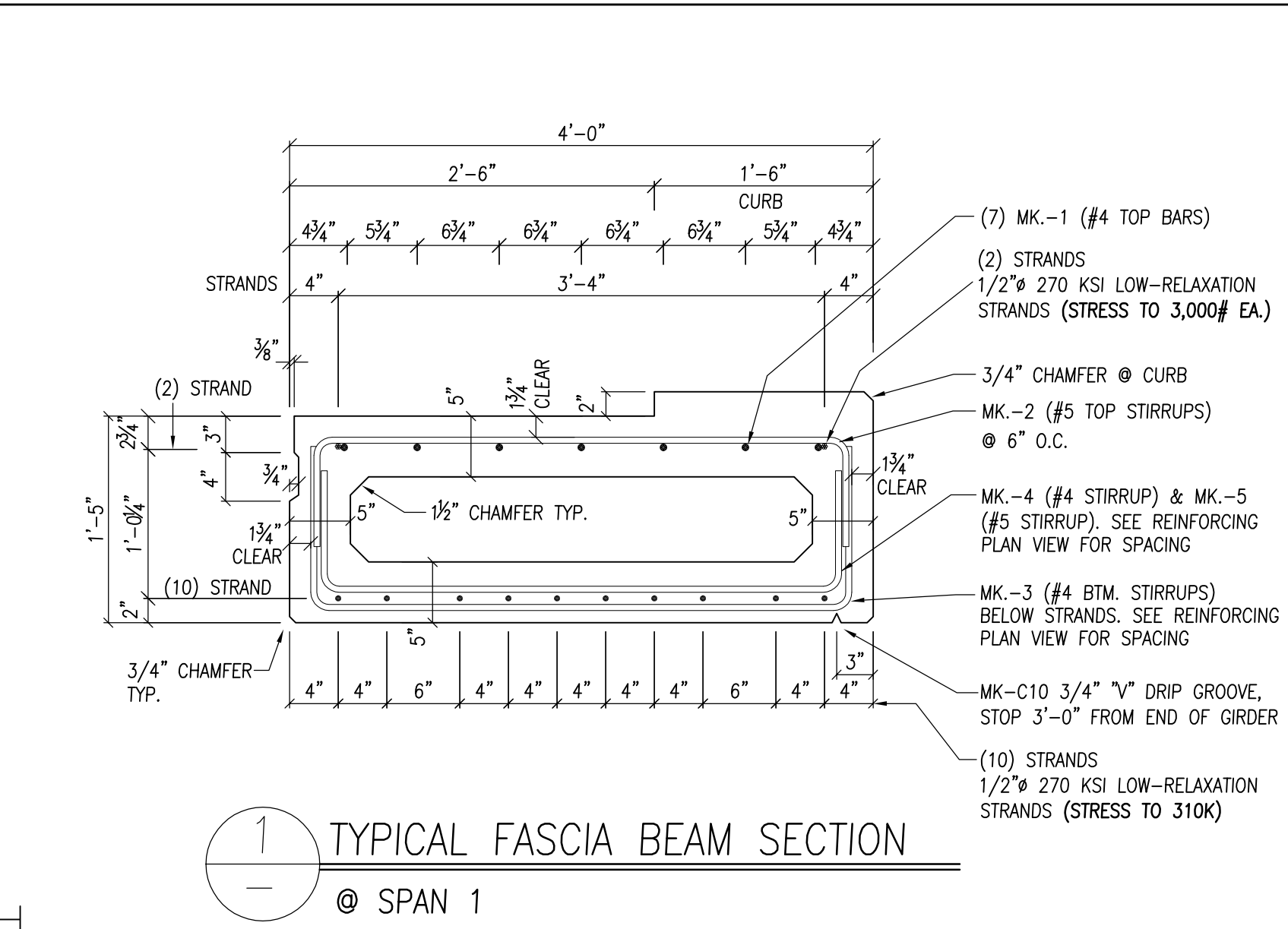
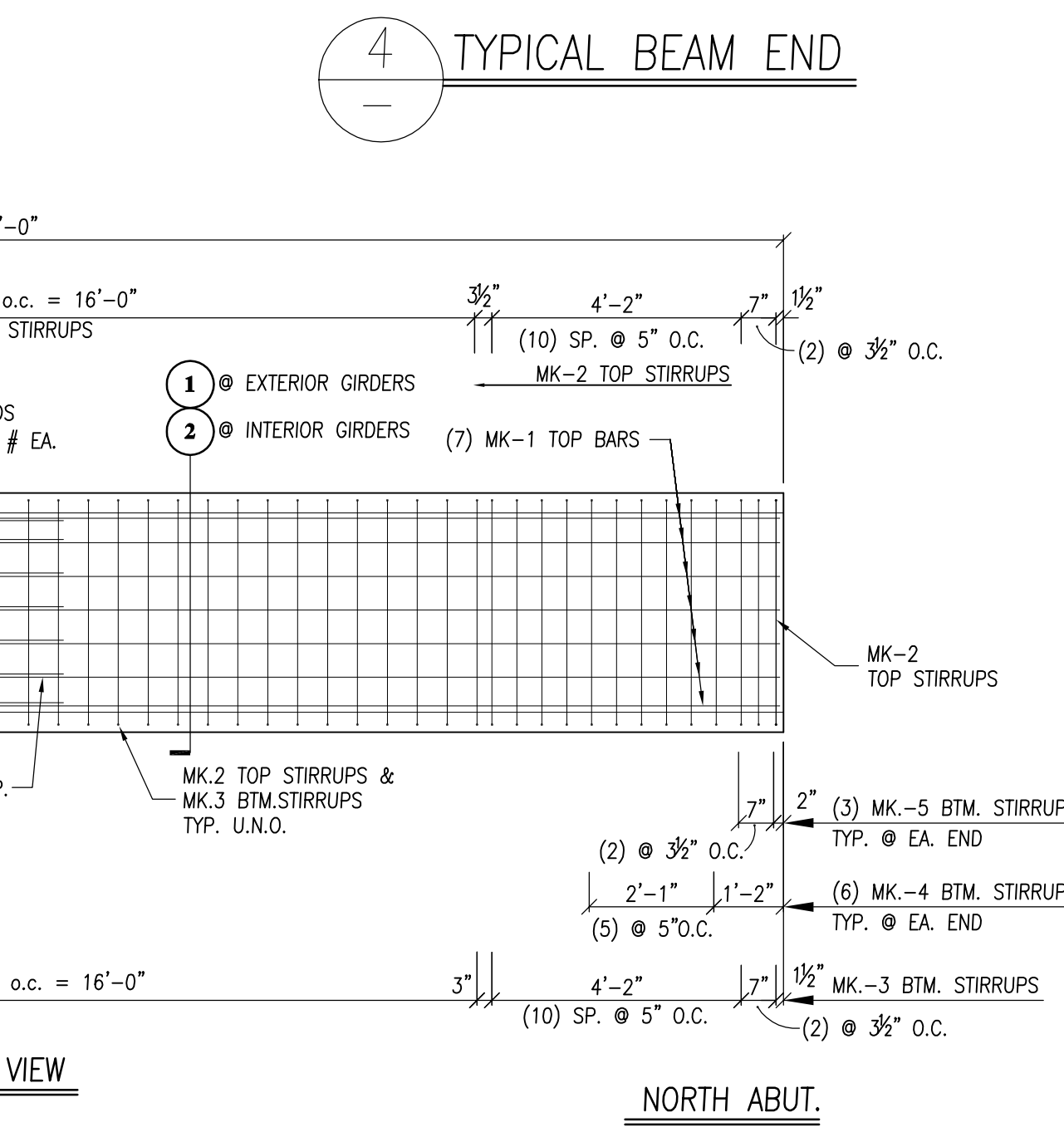
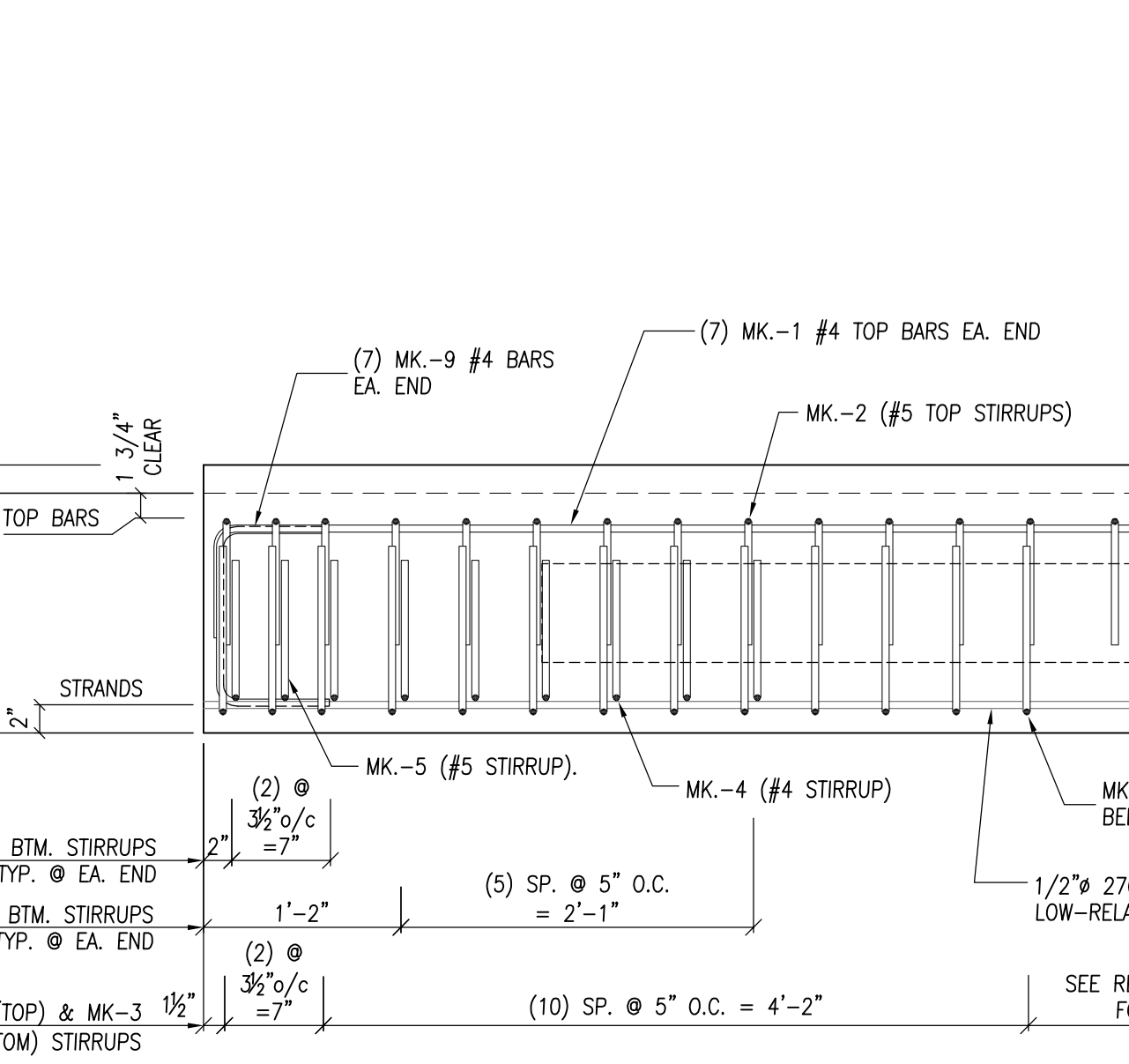
PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & CHANNELS SHALL BE GIVEN A NO. 6 COMMERCIAL BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

AT EXPANSION SLOTS IN RAIL AND CHANNEL MEMBERS, TIGHTEN BOLTS, BACK OFF ONE HALF TURN AND BURR THREADS. RAIL MEMBERS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC AND THE UPPER RAIL SHALL LAP THE LOWER RAIL.

NO.	DATE	REVISION		BY
STRUCTURE P-44-057				
DRAWN BY		BRE	PLANS CK'D.	KRO
TYPE 'W' RAIL			SHEET 3 OF 3	



SPANCRETE BOX BEAM MATERIAL LIST							SHEET #: 001	
PC. #	QTY.	SIZE	LENGTH	WEIGHT	CONCRETE	SPAN#		
1-1-057	1	48" x 17"	26'-0"	19,100	4.42	1		
1-9-057	1	48" x 17"	26'-0"	19,100	4.42	1		



CAST IN HARDWARE (48" x 17" BEAMS)						
MK.#	QTY.	LENGTH	SIZE	SHAPE	REMARKS	
1 (04-1500)	28	15'-0"	#4	8"	14'-4"	TOP BAR
2 (05-0502)	112	5'-2"	#5	9"	3'-8"	TOP STIRRUP
3 (04-0508)	84	5'-8"	#4	12"	3'-8"	BOTTOM STIRRUP
4 (04-0504)	24	5'-4"	#4	10"	3'-8"	BOTTOM STIRRUP
5 (05-0504)	12	5'-4"	#5	10"	3'-8"	BOTTOM STIRRUP
7 (04-0210)	24	2'-9 1/2"	#4	1'-3"	3'-8"	SEE DETAIL "A"
8 (04-0202)	16	2'-2"	#4	2'-2"		SEE DETAIL "A"
9 (04-0205)	28	2'-5"	#4	8"	13"	SEE DETAIL "G"
10 (04-0310)	20	3'-10"	#4	3'-10"		SEE DETAIL "G"
11 (04-0500)	20	5'-0"	#4	2'-1"	10"	SEE DETAIL "G"
12 (04-0206)	40	2'-6"	#4	10"	10"	SEE DETAIL "H"
13 (04-0305)	16	3'-5"	#4	3'-5"		SEE DETAIL "H"
C1	6	6'-4"		7" x 38"		VOID
C2	24	5"	1"Ø			PVC VOID DRAIN
C3	8	8 1/2"	1"Ø			PVC GROUT TUBE
C4	8	5"x8"x8"			(SEE DETAIL-"E")	P.T. BLOCKOUT
C5	8	3'-6 7/8" LG.	4 1/2"Ø	3'-6 7/8" LG.		PVC POST-TENSIONING PIPE
C7	32	3 1/2"	1"Ø	DAYTON-SUPERIOR	THREADED BAR COUPLER (ELECTROPLATED)	
C8	16	2'-7 1/2"	1"Ø	1'-6"	1'-1 1/2"	PLAIN BLACK BENT ANCHOR BAR w/2" THREAD
C9	16	2'-0 1/2"	1"Ø	2'-0 1/2"		PLAIN BLACK STRAIGHT ANCHOR BAR w/2" THREAD
C10	2	20'-0"	3/4"x 3/4"	(SEE DETAIL-"C")		3/4" "V"-DRIP GROOVE
C11	4	1'-7"				2"Ø DOWEL HOLES
C12	4	1'-5"				2"Ø DOWEL HOLES
481603	624 LF			1/2"Ø 270 KSI (7) WIRE LOW-LAX STRANDS		

ERECTION HARDWARE			
E1	32	10"Ø	(SEE DETAIL "F")
E2	8	1 1/4"x7"x7"	(SEE DETAIL "D")
E3	12	42'-0"	42'-0"
E4	24	1/2"Ø	PSI MODEL No. 1265
E6	36	1'-6"	1'-6"
E9	18	1/2" x 8" x 4'-0"	

APPROVED FOR ERECTION
4/3/12

LOCATION MAP
SPANCRETE
Building Innovation.
2763 MANITOWOC RD, SUITE A, GREEN BAY, WI 54311 PH: 920-494-0274

CTH S
OVER BRANCH BEAR CREEK
OUTAGAMIE COUNTY, WI

STRUCTURE # : P-44-57

SECTION # :

PROJECT # :

COUNTY : OUTAGAMIE

ENGINEER: OMNI ASSOCIATES
CONTRACTOR: OUTAGAMIE COUNTY HWY DEPT.

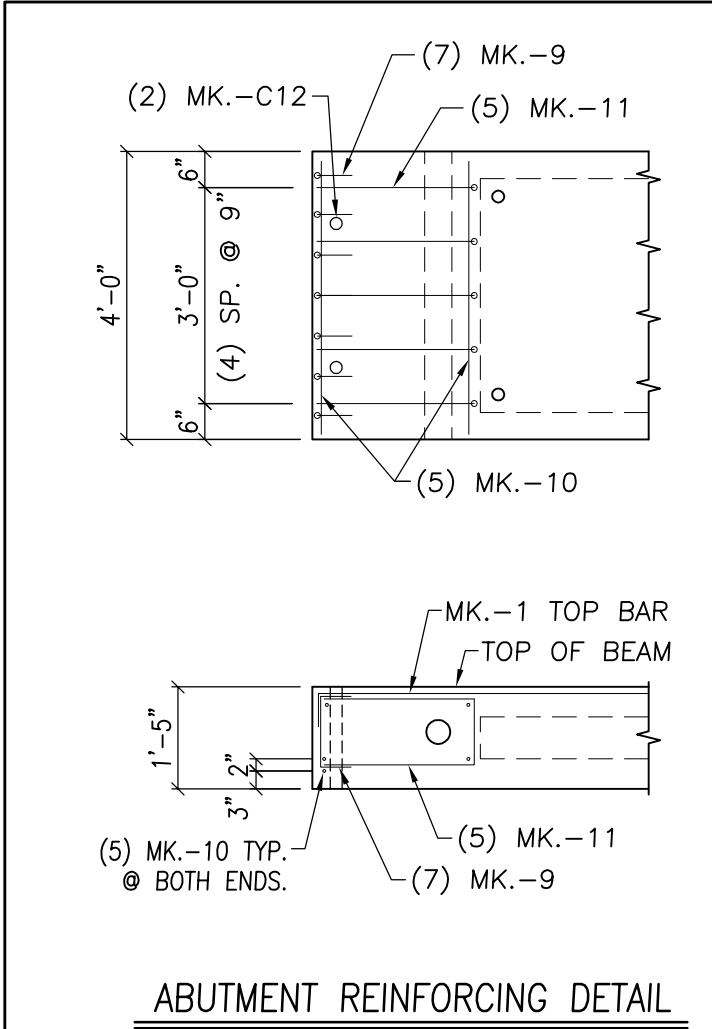
DRAWN BY: AJR(9197)
JOB CAPTAIN: AJR(9197)

DATE: 3/21/12
CHECKED:

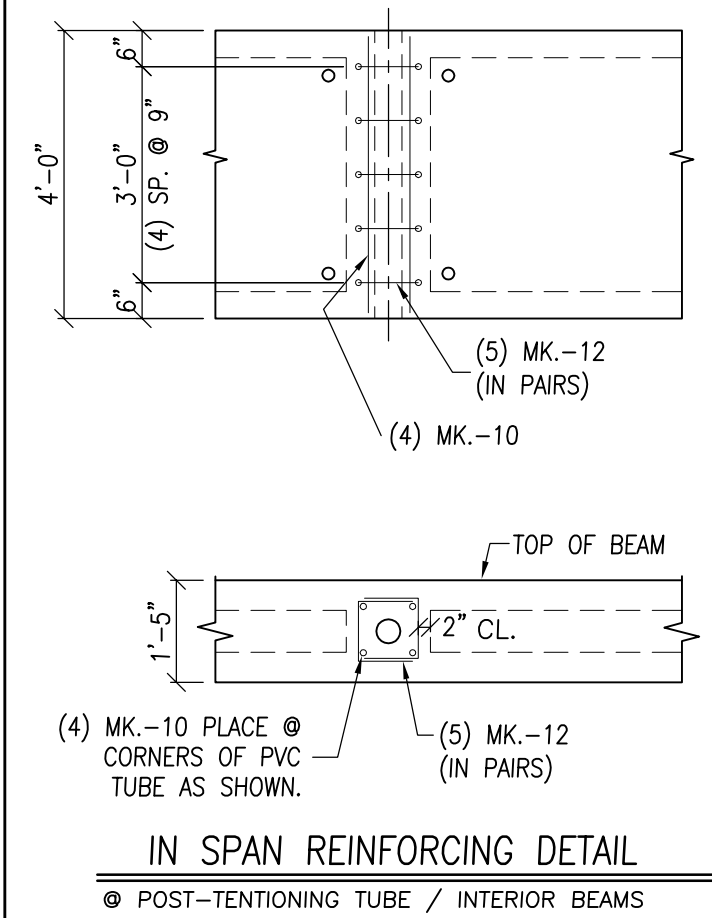
APPROVED: REVISED: JOB NO.: 2-1352

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SHEET: 001

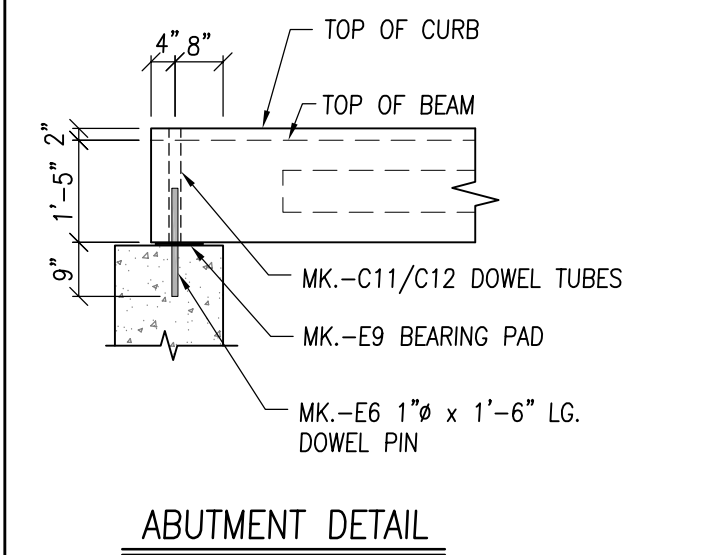
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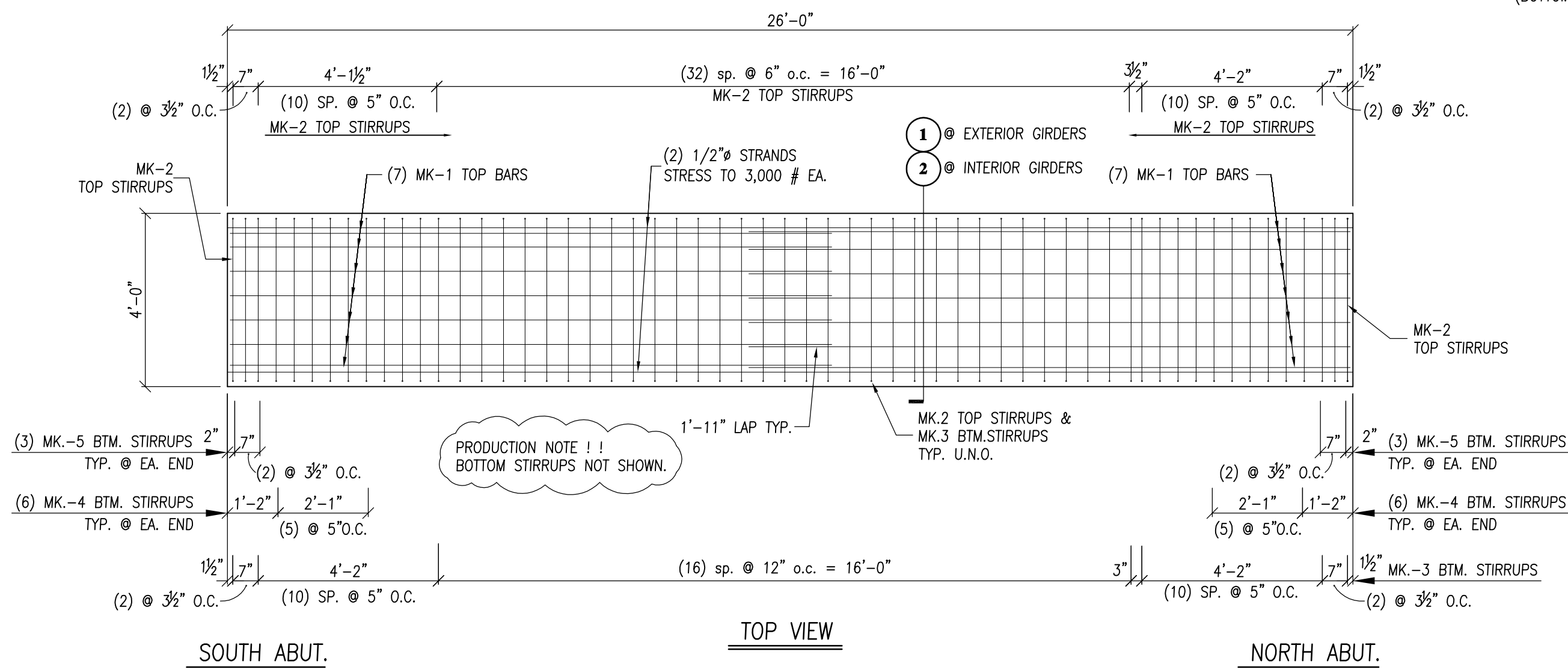
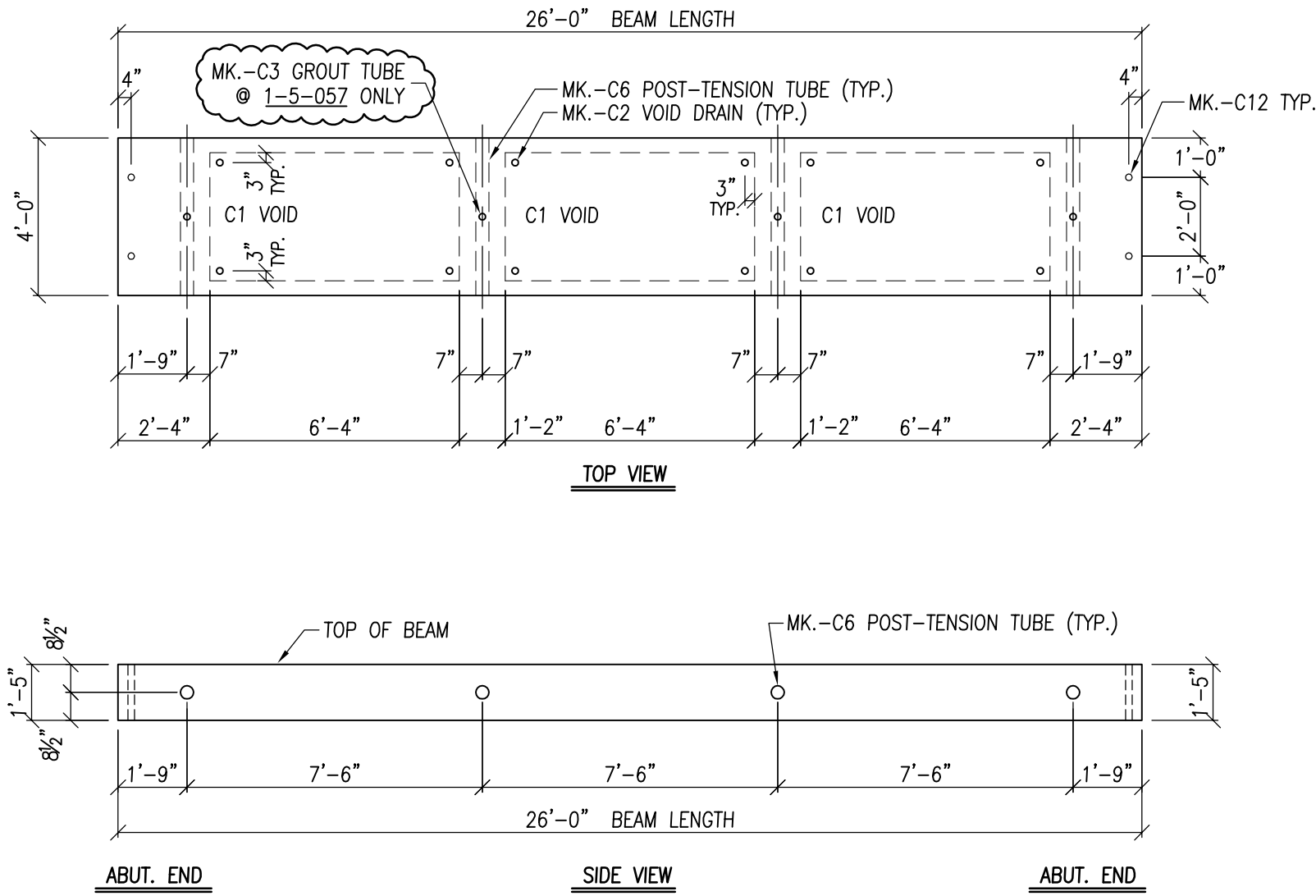
DETAIL—"G1"



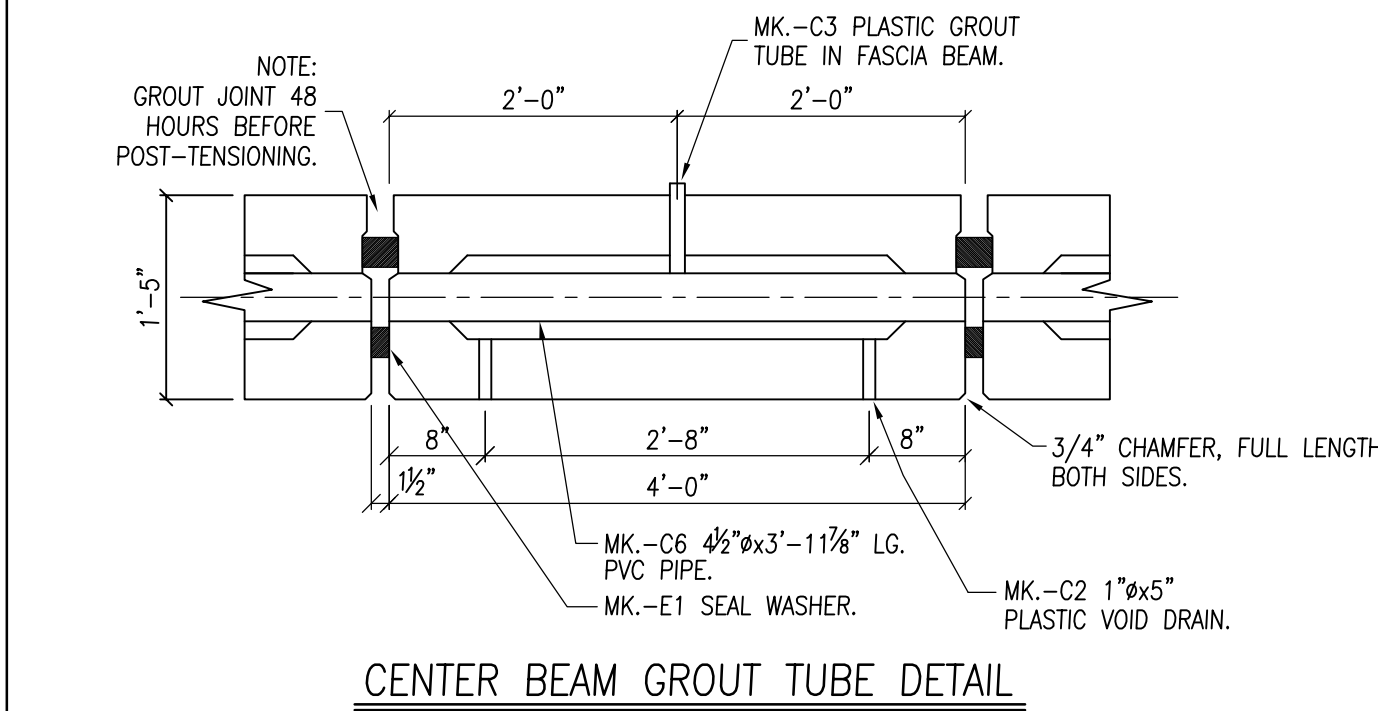
DETAIL—"H1"



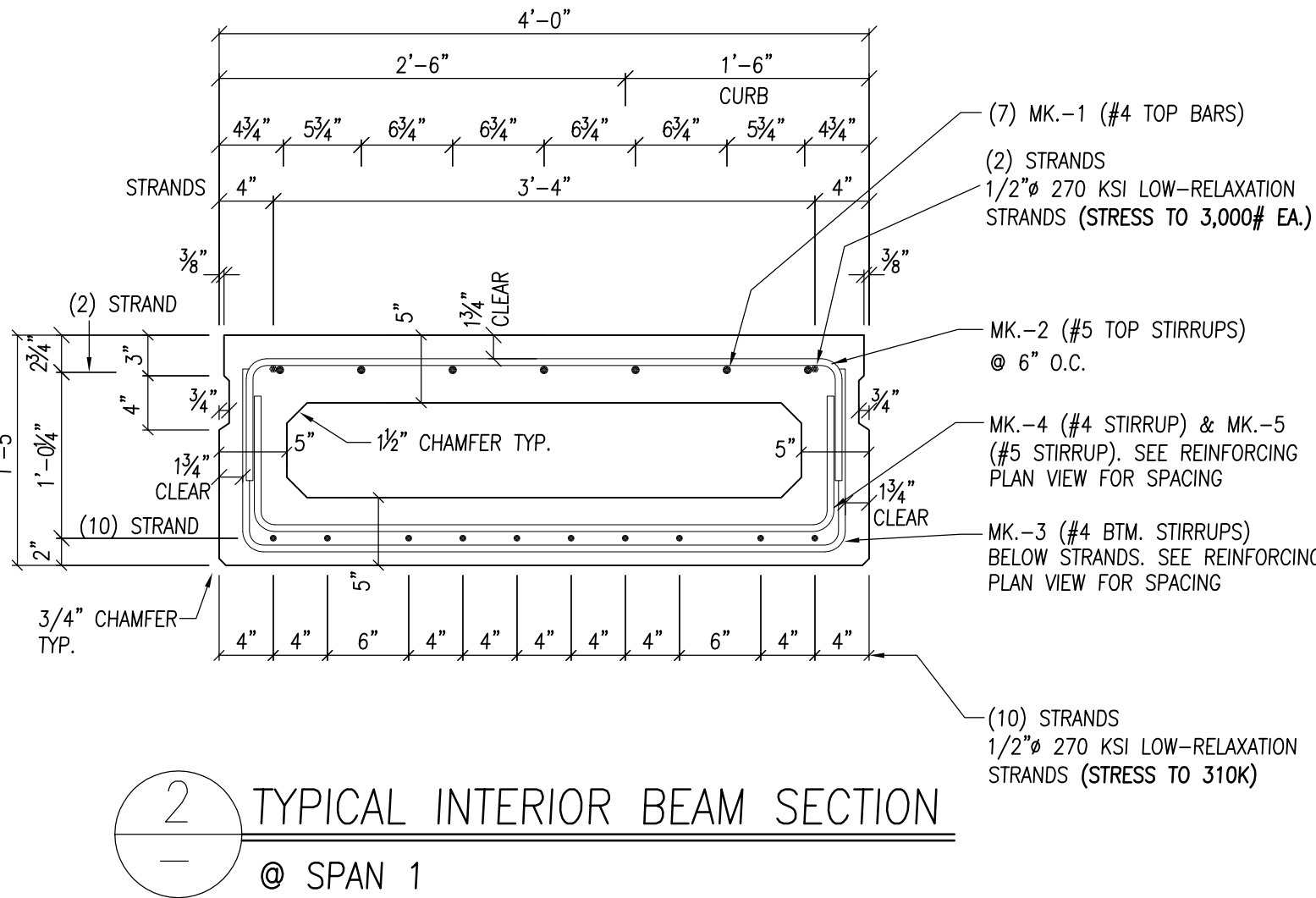
DETAIL—"A"



DETAIL—"B"



DETAIL—"C"



4 TYPICAL BEAM END

SPANCRETE BOX BEAM MATERIAL LIST						SHEET#: 002	
PC. #	QTY.	SIZE	LENGTH	WEIGHT	CONCRETE cu./yd.	SPAN#	
1-2-057	1	48" x 17"	26'-0"	18,100	4.18	1	
1-3-057	1	48" x 17"	26'-0"	18,100	4.18	1	
1-4-057	1	48" x 17"	26'-0"	18,100	4.18	1	
1-5-057	1	48" x 17"	26'-0"	18,100	4.18	1	
1-6-057	1	48" x 17"	26'-0"	18,100	4.18	1	
1-7-057	1	48" x 17"	26'-0"	18,100	4.18	1	
1-8-057	1	48" x 17"	26'-0"	18,100	4.18	1	

DETAIL—"E"

- GENERAL NOTES:
- TOP OF BEAM TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BONDING TO THE SLAB.
 - UNDER SURFACE OF BEAMS EXPOSED IN DECK. BEAMS WITH RAIL POSTS HAVE RAIL POST SIDE EXPOSED, AND HAVE NO KEYWAY ON EXPOSED SIDE.
 - STRANDS AT BEAM ENDS SHALL BE CUT FLUSH & PAINTED WITH NON-STAINING GREY NON-BITUMINOUS JOINT SEALER.
 - GIRDER DATA:
 - ~ STRANDS: (10) 1/2" 270,000 P.S.I. LOW-RELAXATION STRANDS (STRESS TO 310K)
 - ~ LONG BARS: F_y = 60KSI (A-615)
 - ~ STIRRUPS: F_y = 60KSI (A-615)
 - ~ CONCRETE STRENGTH: RELEASE = 4,000 PSI
 - 28-DAYS = 5,000 PSI
 - DESIGN DATA:
 - DESIGN LOAD = HL-93 / INV. RATING FACTOR = 1.58 / OPR. RATING FACTOR = 2.05 / STD. PERMIT = 250K

DETAIL—"D"

CAST IN HARDWARE (48" x 17" BEAMS)

MK.#	QTY.	LENGTH	SIZE	SHAPE	REMARKS
1 (04-1500)	98	15'-0"	#4	8" x 14'-4"	TOP BAR
2 (05-0502)	399	5'-2"	#5	9" x 3'-8" x 9"	TOP STIRRUP
3 (04-0508)	294	5'-8"	#4	12" x 3'-8" x 12"	BOTTOM STIRRUP
4 (04-0504)	84	5'-4"	#4	10" x 3'-8" x 10"	BOTTOM STIRRUP
5 (05-0504)	42	5'-4"	#5	10" x 3'-8" x 10"	BOTTOM STIRRUP
9 (04-0205)	98	2'-5"	#4	8" x 13" x 8"	SEE DETAIL "G1"
10 (04-0310)	126	3'-10"	#4	3'-10"	SEE DETAIL "G1"&"H1"
11 (04-0500)	70	5'-0"	#4	2'-1" x 10" x 2'-1"	SEE DETAIL "G1"
12 (04-0206)	140	2'-6"	#4	10" x 10" x 10"	SEE DETAIL "H1"
C1	21	6'-4"		7" x 38"	VOID
C2	84	5"	1" 0		PVC VOID DRAIN
C3	4	8 1/2"	1" 0		PVC GROUT TUBE
C5	28	3'-11 7/8" LG.	4 1/2" 0	3'-11 7/8" LG.	PVC POST-TENSIONING PIPE
C12	28	1'-5"			2" 0 DOWEL HOLES
481603	1,820 LF		1/2" 0 270 KSI (7) WIRE LOW-LAX	STRANDS	

APPROVED
FOR ERECTION
4/3/12

LOCATION MAP
SPANCRETE
Building Innovation.
2763 MANITOWOC RD, SUITE A, GREEN BAY, WI 54311 PH: 920-494-0274

CTH S OVER BRANCH BEAR CREEK OUTAGAMIE COUNTY, WI		STA.# : STRUCTURE # : P-44-57	
OUTAGAMIE COUNTY HIGHWAY DEPARTMENT		PROJECT # : COUNTY : OUTAGAMIE	
ENGINEER: OMNI ASSOCIATES	DRAWN BY: AJR(9197)	DATE: 3/21/12	
CONTRACTOR: OUTAGAMIE COUNTY HWY DEPT.	JOB CAPTAIN: AJR(9197)	CHECKED:	
APPROVED:	REVISED:	JOB NO.: 2-1352	
DWG FILE: E:\DWG2\21300\2-1352\E\2-1352-SHT-002.DWG	TASK #: 2407	SHEET: 002	