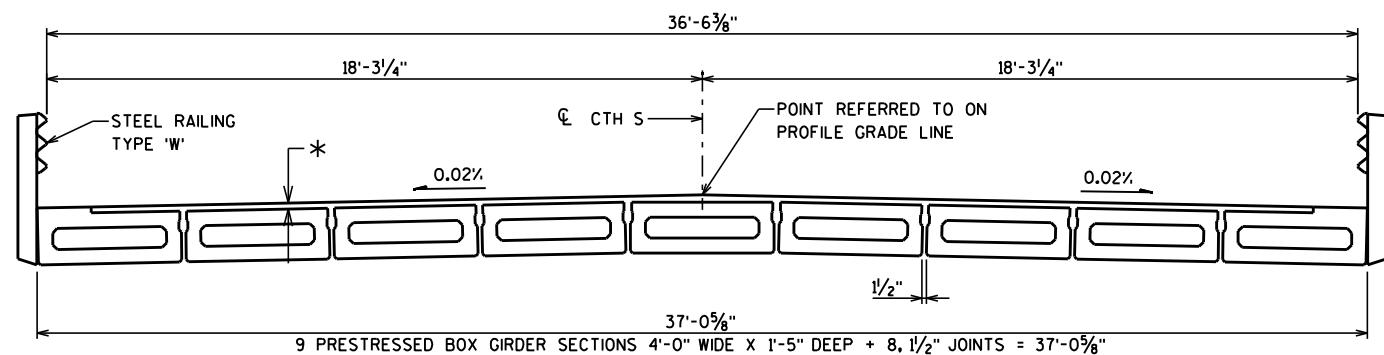


PROFILE GRADE LINE



CROSS SECTION THRU ROADWAY

* 2" MIN. ASPHALT OVERLAY & SHEET MEMBRANE WATERPROOFING

NOTES:
* 2" MIN. ASPHALT OVERLAY & SHEET MEMBRANE WATERPROOFING
BOX GIRDERS DESIGN AND DETAILS BY OTHERS

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

THE EXISTING STRUCTURE IS A SINGLE SPAN BRIDGE WITH A CONCRETE SLAB SUPPORTED ON CONCRETE ABUTMENTS. IT WAS BUILT IN 1917 AND WIDENED IN 1977.

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

AT THE BACKFACE OF ABUTMENTS, ALL EXCAVATED VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE.

THE EXISTING GROUND LINE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION.

CONSULTANT CONTACT

KRISTOFER OLSON
OMNI ASSOCIATES, INC.
(920) 735-6900

BENCH MARKS

NO.	DESCRIPTION	ELEV.
BM1	60d SPIKE IN 15"Ø BOX ELDER TREE, STA. 15+92, 42' LT	779.18
BM2	60d SPIKE IN 20"Ø ASH TREE, STA. 19+26, 44' LT	779.01
BM3	WEST MOST BOLT ON S.E. CORNER OF STRUCT. STA. 20+12, 19.5' RT	780.35

DESIGN DATA

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SUPERSTRUCTURE $f'_c = 4,000$ PSI

ALL OTHER $f'_c = 3,500$ PSI

HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 $f_y = 60,000$ PSI

17" PRESTRESSED GIRDERS CONCRETE MASONRY $f'_c = 5,000$ PSI

STRANDS, 0.5"Ø ULTIMATE TENSILE STRENGTH $f_y = 270,000$ PSI

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
OMNI ASSOCIATES			
STRUCTURE P-44-57			
CTH S OVER BR. BEAR CREEK			
COUNTY	OUTAGAMIE	TOWN	ELLINGTON
DESIGN SPEC.	AASHTO LRFD DESIGN SPEC. 4th EDITION		LOAD HL-93
DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
GENERAL PLAN			SHEET 1 OF 3

LIST OF DRAWINGS

1. GENERAL PLAN
2. ABUTMENTS
3. STEEL RAILING TYPE "W"

TOTAL ESTIMATED QUANTITIES

BID ITEMS	UNIT	SUPER.	WEST ABUT.	EAST ABUT.	TOTALS
203.0600.S REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STA 20+00)	LS	—	—	—	1
206.1000 EXCAVATION FOR STRUCTURES BRIDGES (P-44-057)	LS	—	—	—	1
210.0100 BACKFILL STRUCTURE	CY	—	45	45	90
502.0100 CONCRETE MASONRY BRIDGES	CY	—	9	10	19
502.6102 MASONRY ANCHORS TYP S 1/2-INCH	EACH	—	126	126	252
505.0405 BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	—	1100	1150	2250
513.7050 RAILING STEEL TYPE W (P-44-057)	LS	—	—	—	1
516.0500 RUBBERIZED MEMBRANE WATERPROOFING	SY	—	19	19	38
516.0610.S SHEET MEMBRANE WATERPROOFING	SY	101	—	—	101
NON-BID ITEMS					
FILLER	SIZE	—	—	—	1/2" & 3/4"

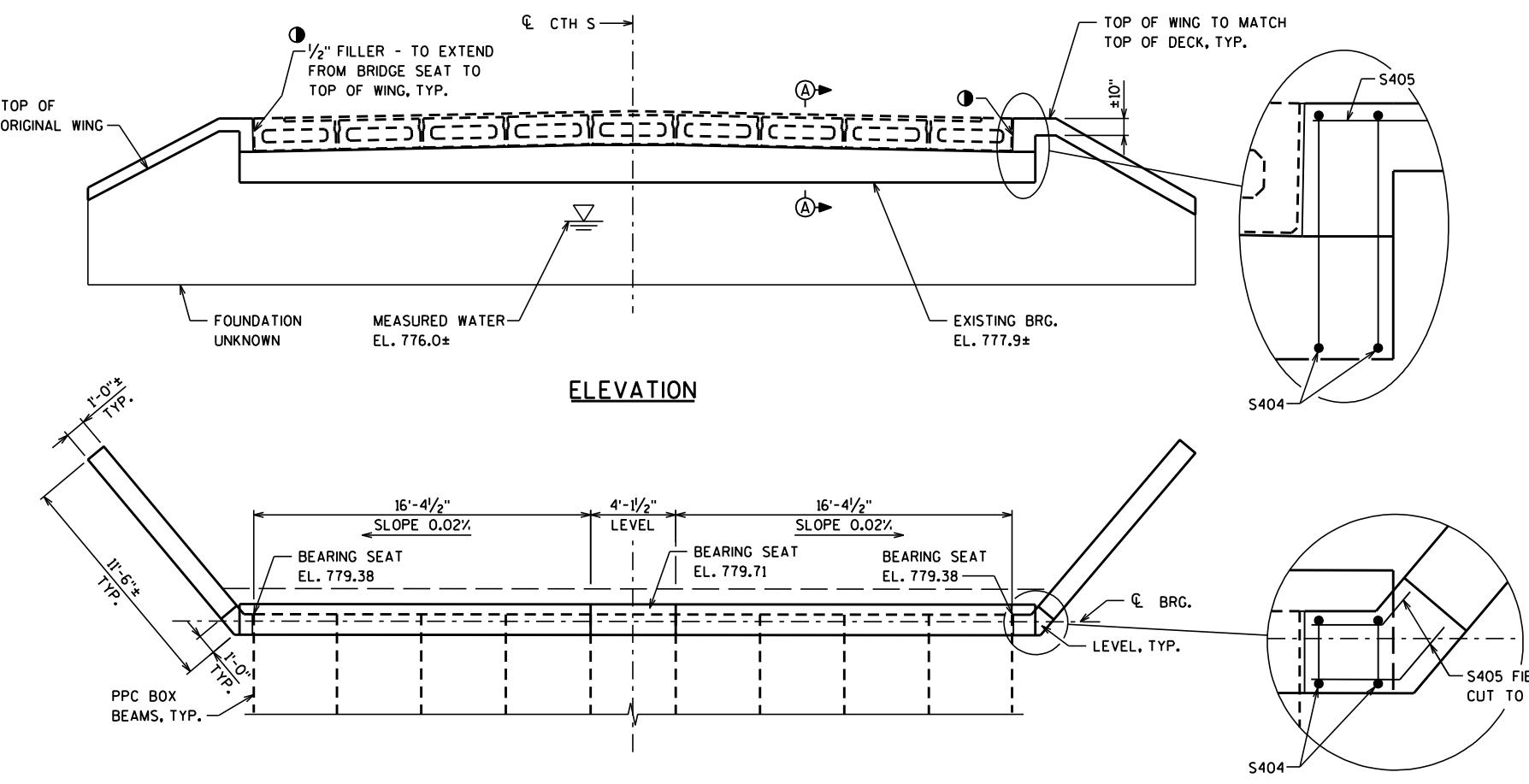
NOTES

● SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF $\frac{1}{2}$ " FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD $\frac{1}{8}$ " BELOW SURFACE OF CONCRETE.)

■ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

★ WIDTH OF ABUTMENT IS UNKNOWN. CONTACT DESIGNER IF THE BODY WIDTH IS NOT 1'-6" OR GREATER. SOME DETAILS MAY NEED TO BE REVISED.

EXISTING WING LENGTH & HEIGHT VARIES. CONTRACTOR TO VERIFY DIMENSIONS PRIOR TO CONSTRUCTION.

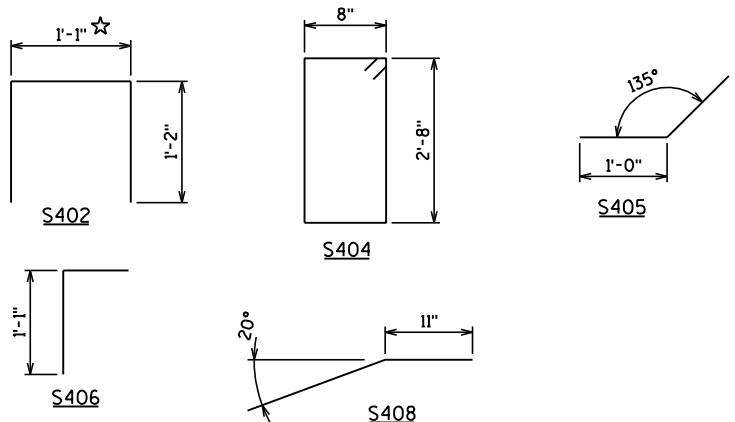


BILL OF BARS

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

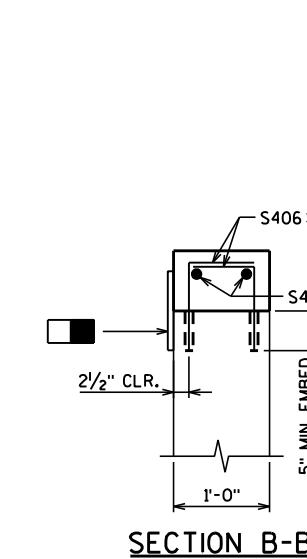
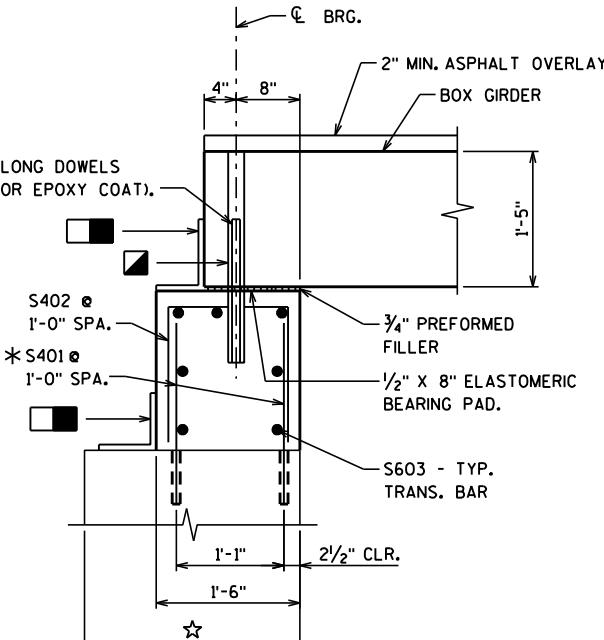
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
S401	X	78	1'-9"		BODY - VERTICAL DOWEL EACH FACE
S402	X	39	3'-3"	X	BODY - VERTICAL
S603	X	7	38'-4"		BODY - HORIZONTAL
S404	X	4	7'-2"	X	BODY CORNER - VERTICAL
S405	X	4	2'-0"	X	WINGS - CORNER
S406	X	48	1'-6"	X	WINGS - VERTICAL DOWEL
S407	X	4	9'-6"		WINGS -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

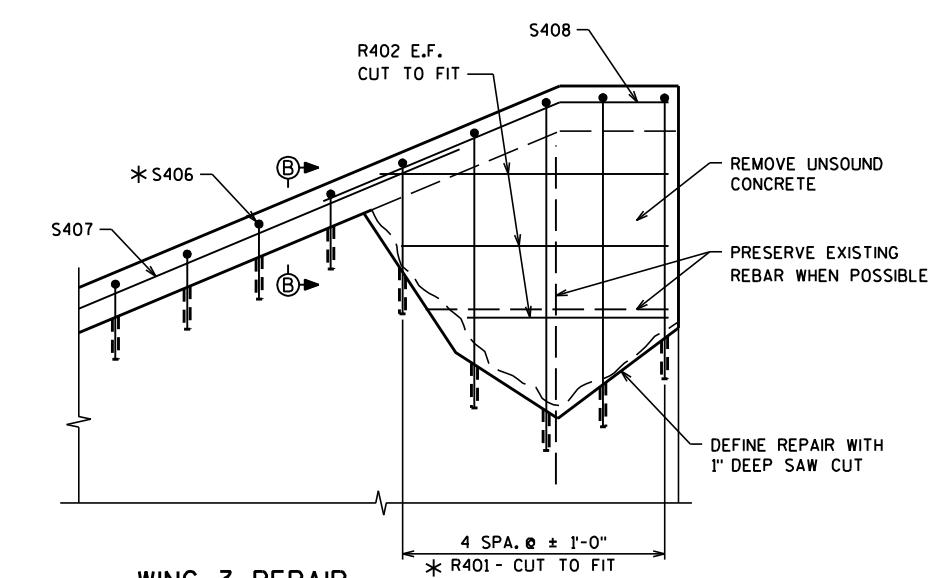
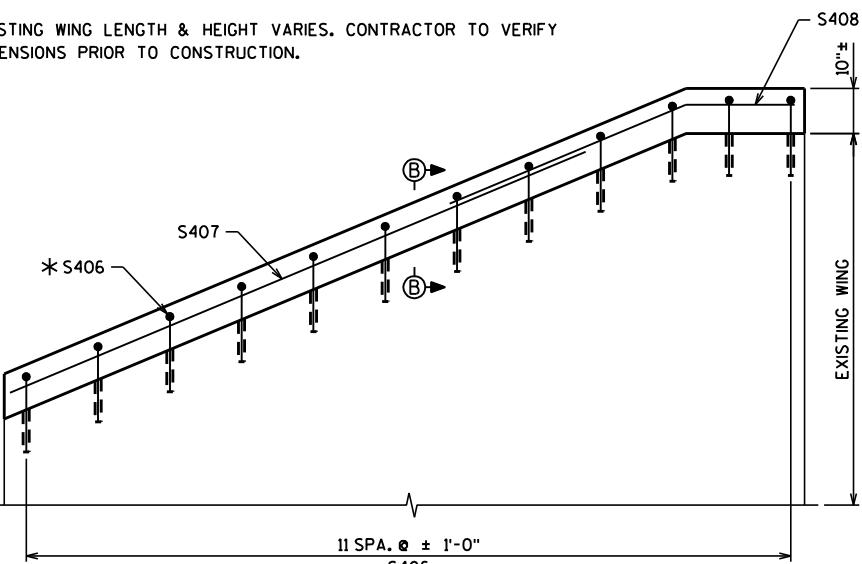
SECTION A-A



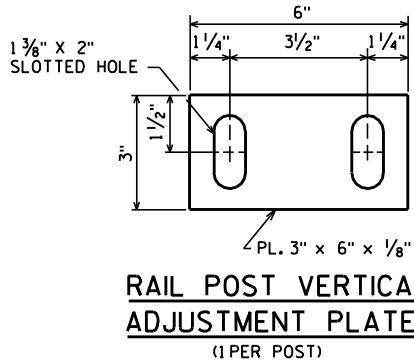
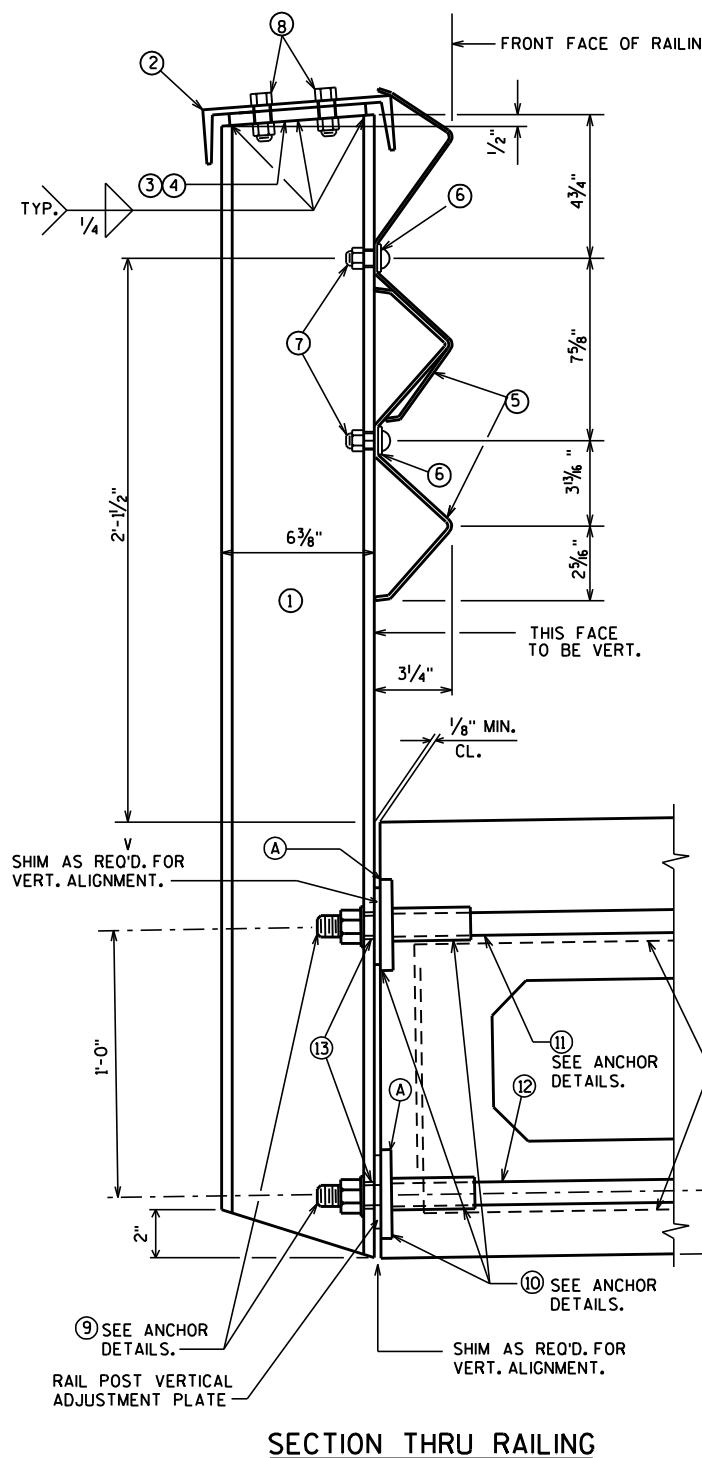
WING REPAIR BILL OF BARS

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

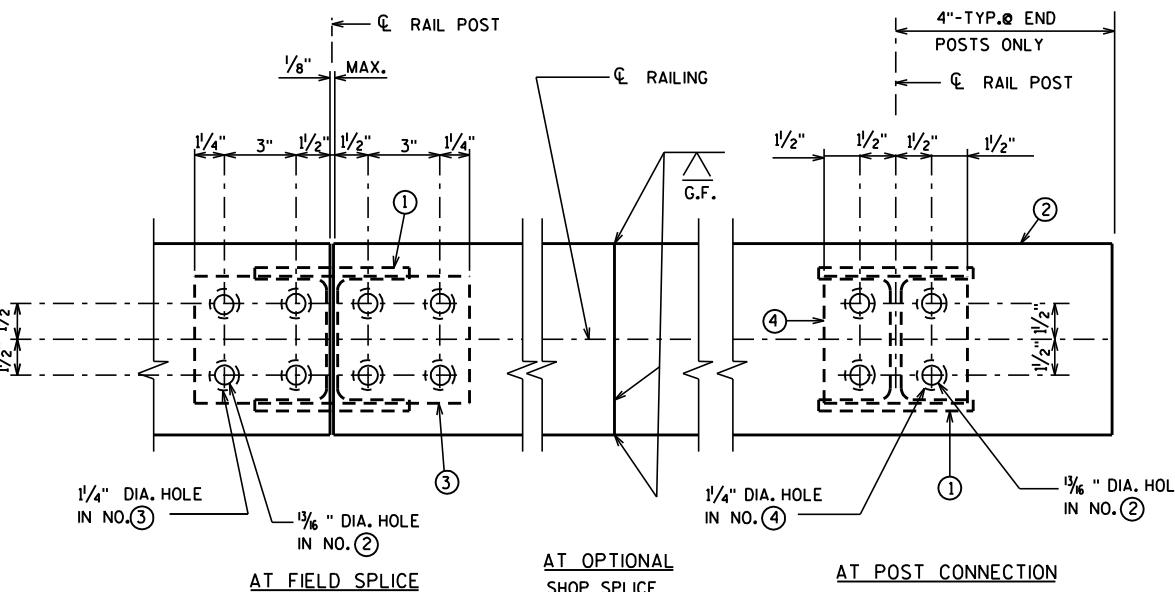
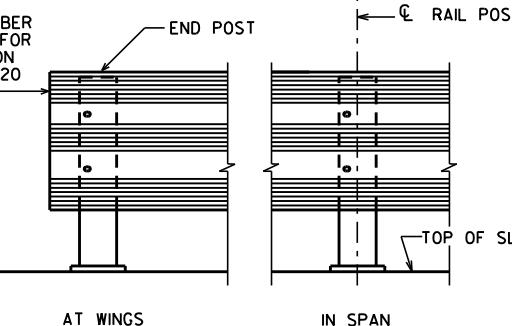
* NOTE: CONCRETE MASONRY ANCHORS, TYPE S, EMBED A MINIMUM OF 5"



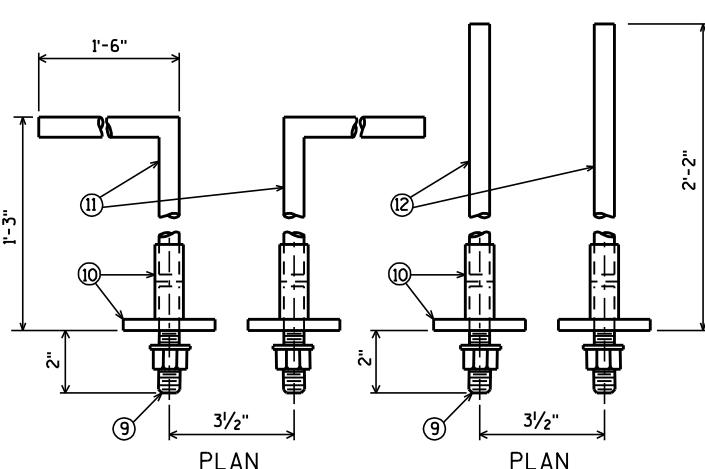
NO.	DATE	REVISION	BY
STRUCTURE P-44-057			
DRAWN BY	BRE	PLANS CK'D.	KRO
ABUTMENTS			SHEET 2 OF 3



AT END POSTS, RAIL MEMBER SHALL HAVE PROVISIONS FOR A THREE BEAM CONNECTION AS SHOWN ON SDD 14 B 20 STANDARDS.

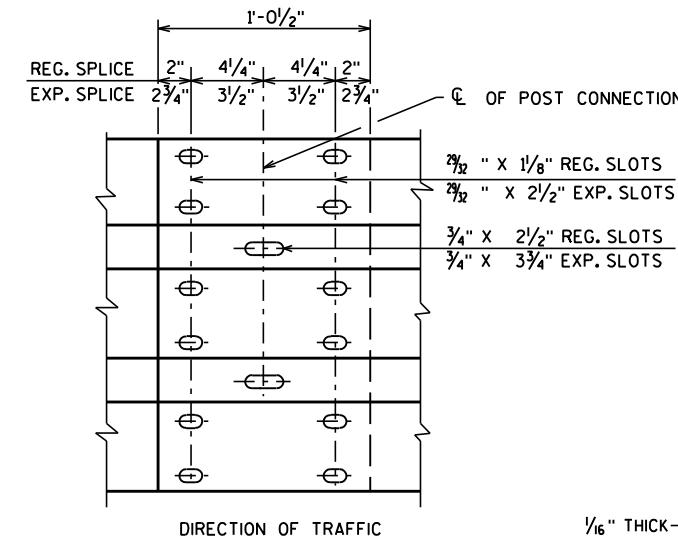


CHANNEL MEMBER DETAILS

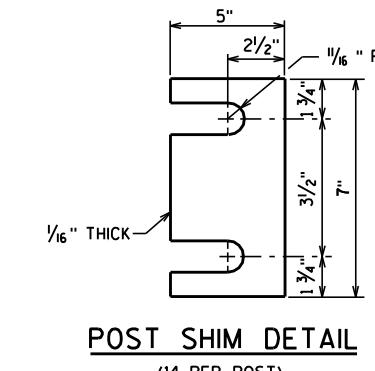


ANCHOR DETAILS

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



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



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 1/2" 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. THREE 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.

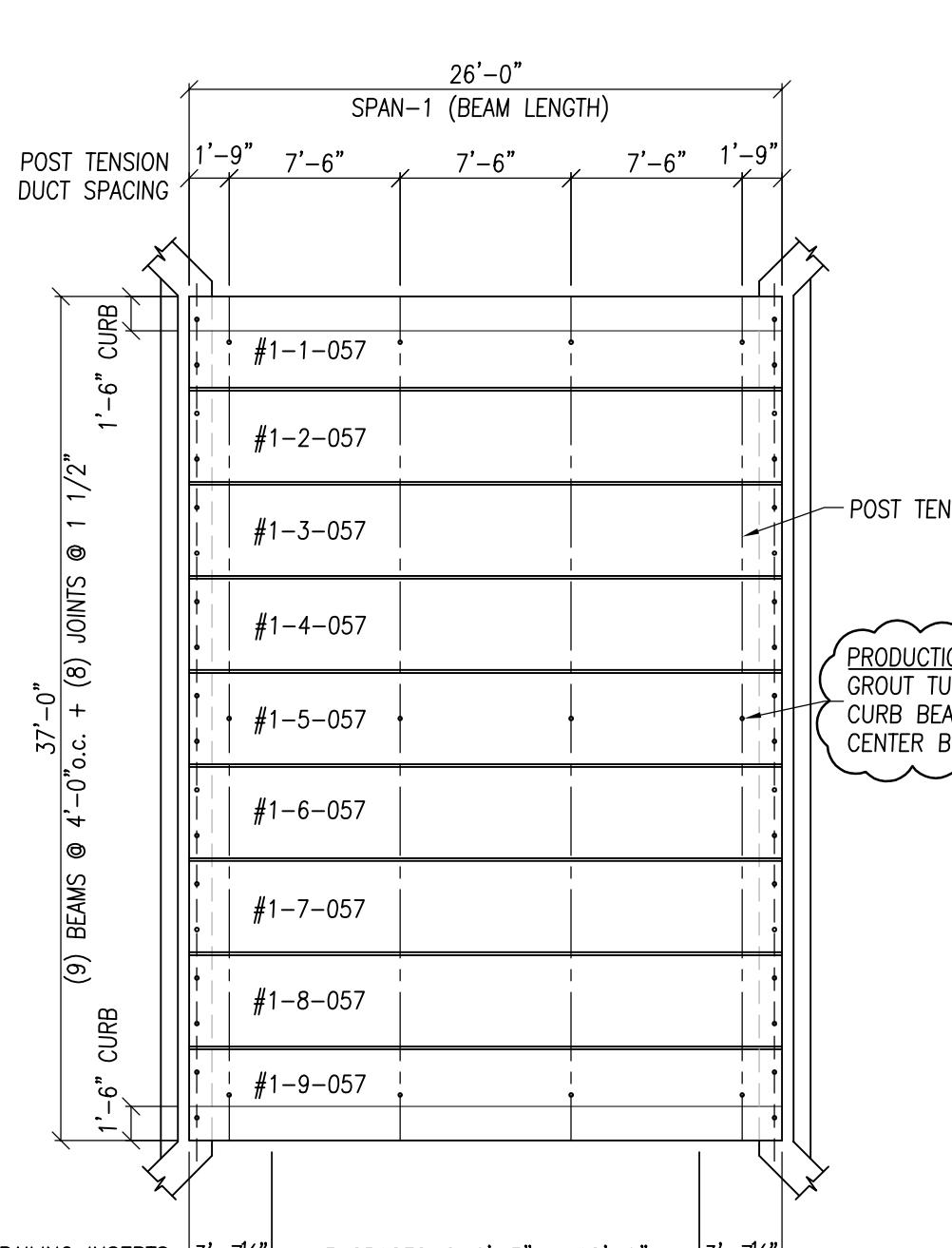
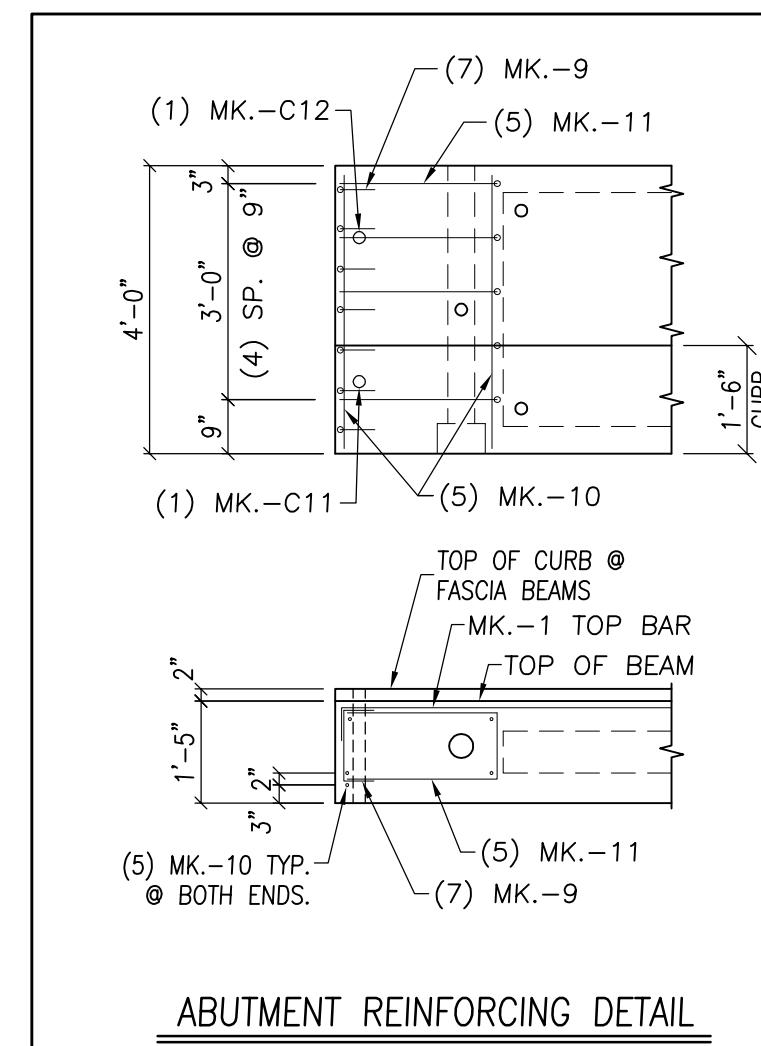
SHIM PLATES 6"x 1*16" x 6" MAY BE USED BETWEEN TOP OF POST AND CHANNEL MEMBER TO ACHIEVE VERTICAL ALIGNMENT.

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

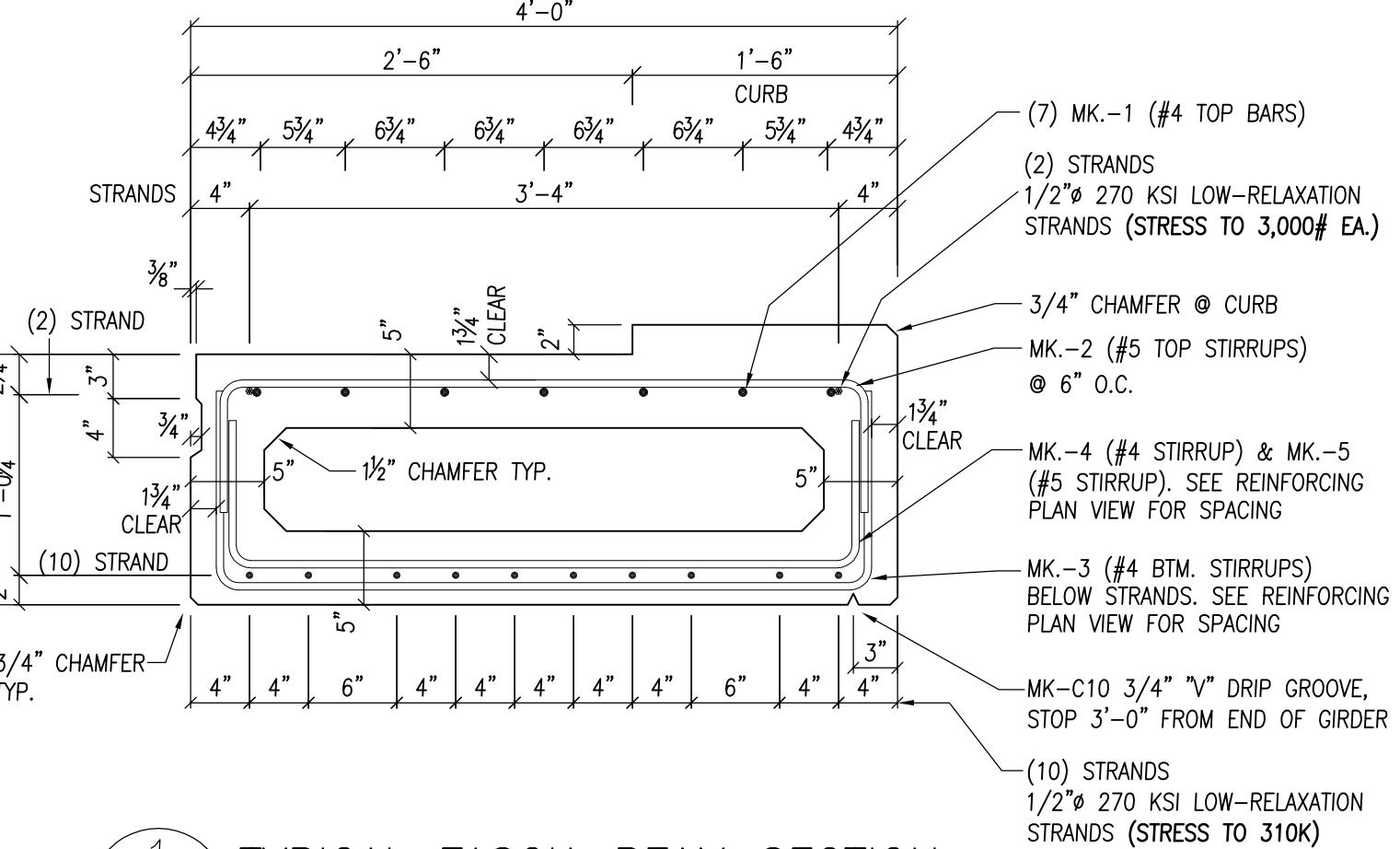
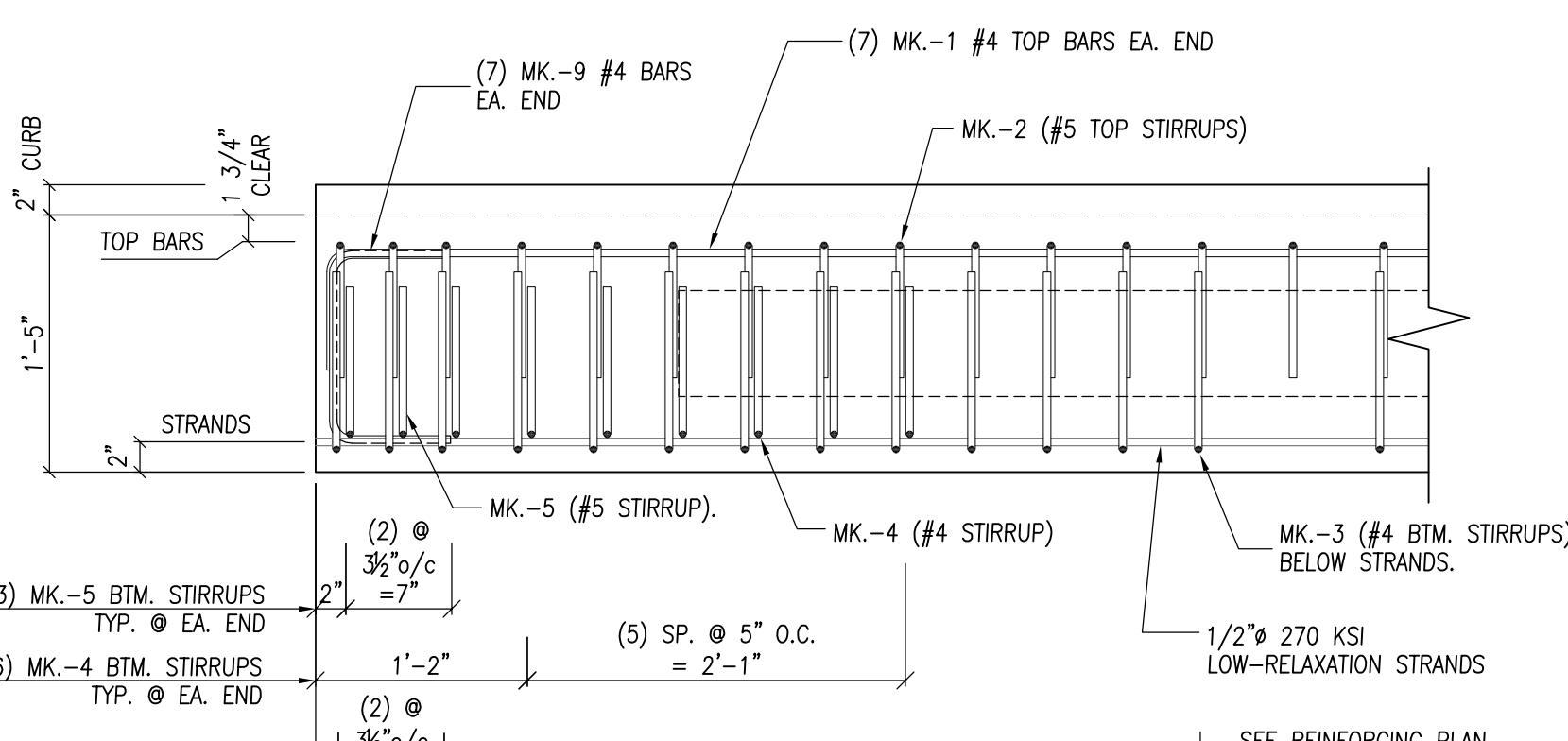
PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & CHANNELS SHALL BE GIVEN A NO. 6 COMMERCIAL BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

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.

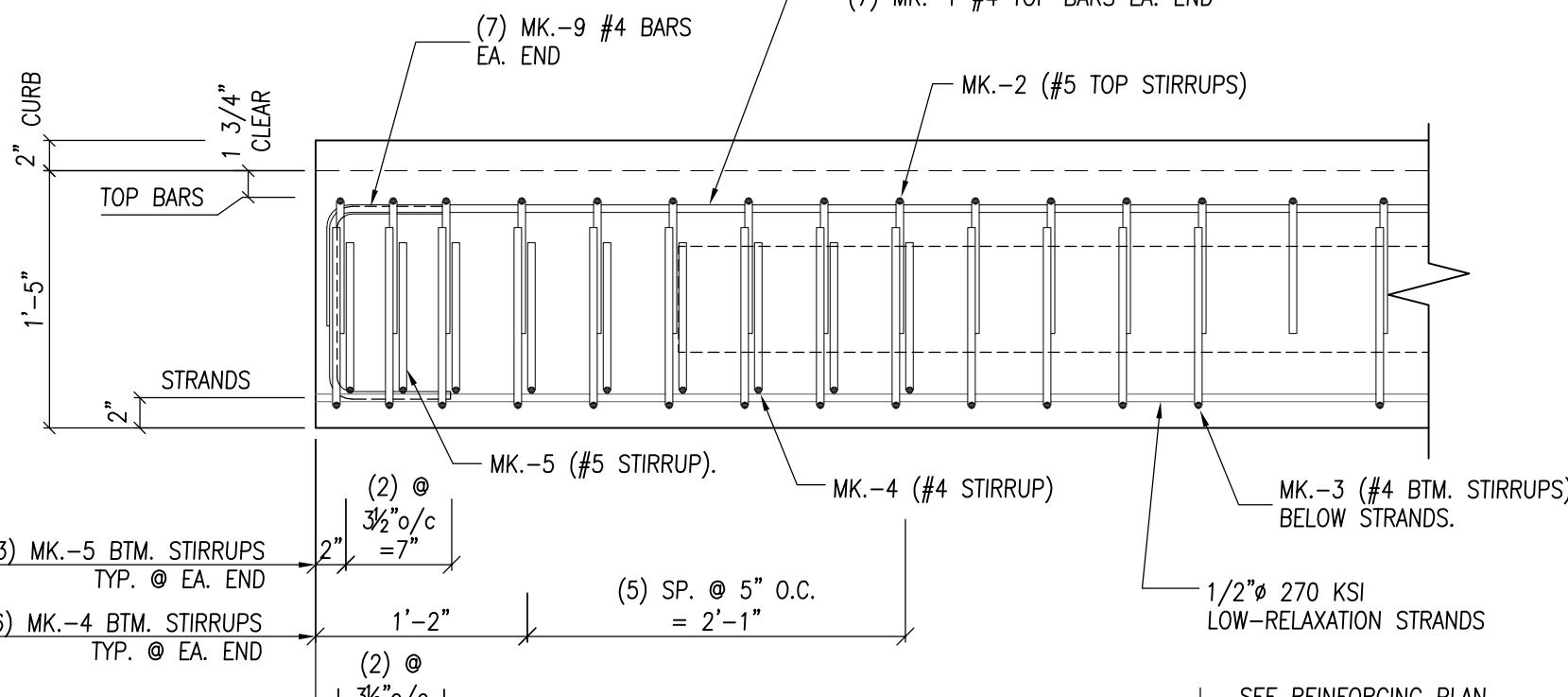
NO.	DATE	REVISION	BY
STRUCTURE P-44-057			
		DRAWN BY BRE	PLANS CK'D. KRO
TYPE 'W' RAIL			
SHEET 3 OF 3			



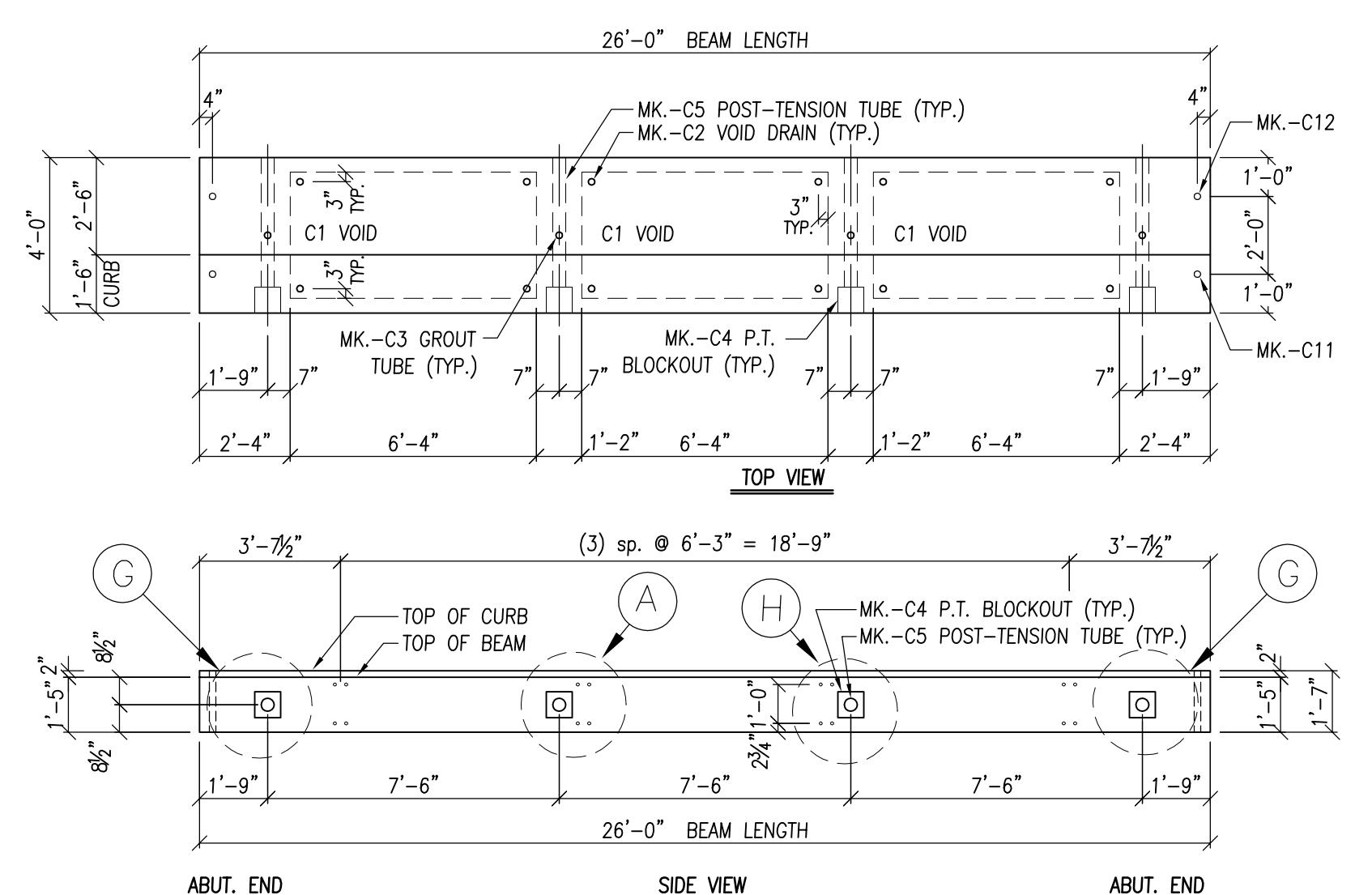
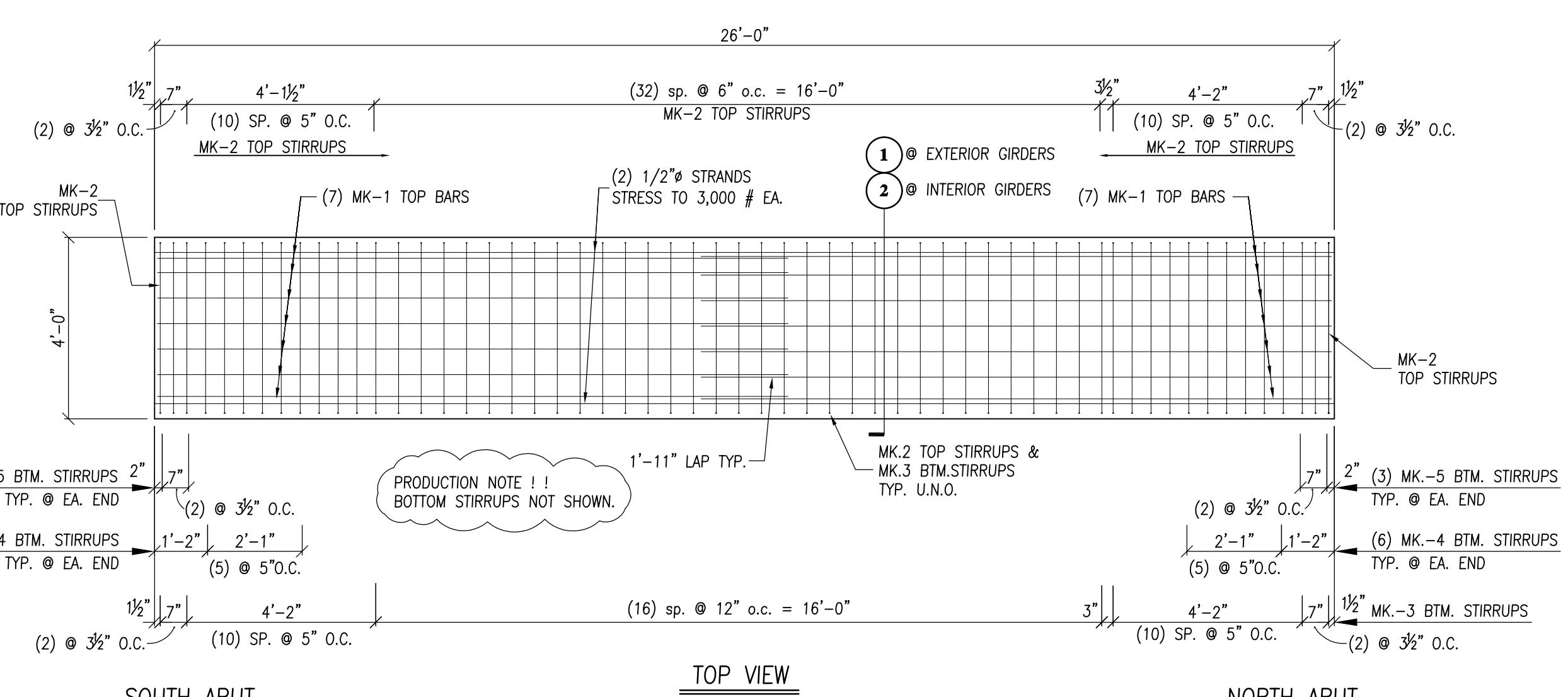
SPANCRETE BOX BEAM MATERIAL LIST						SHEET#: 001
PC. #	QTY.	SIZE	LENGTH	WEIGHT	CONCRETE CU./YD.	SPAN#
1-1-057	1	48" x 17"	26'-0"	19,100	4.42	1
1-9-057	1	48" x 17"	26'-0"	19,100	4.42	1



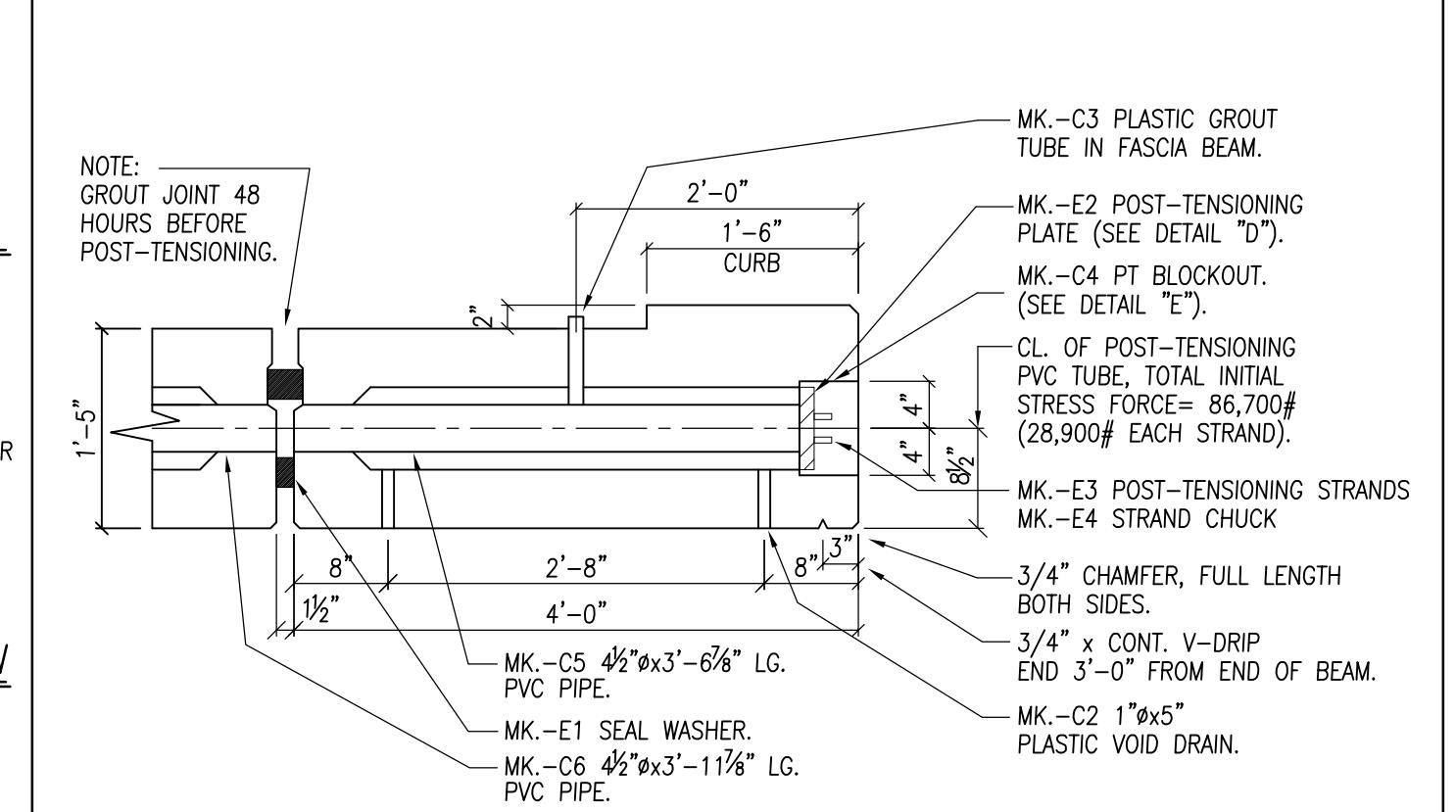
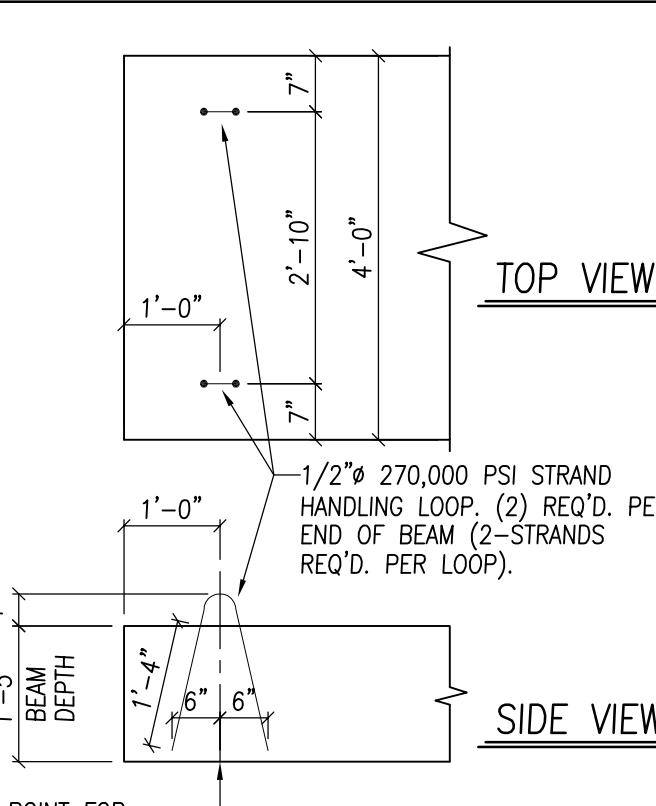
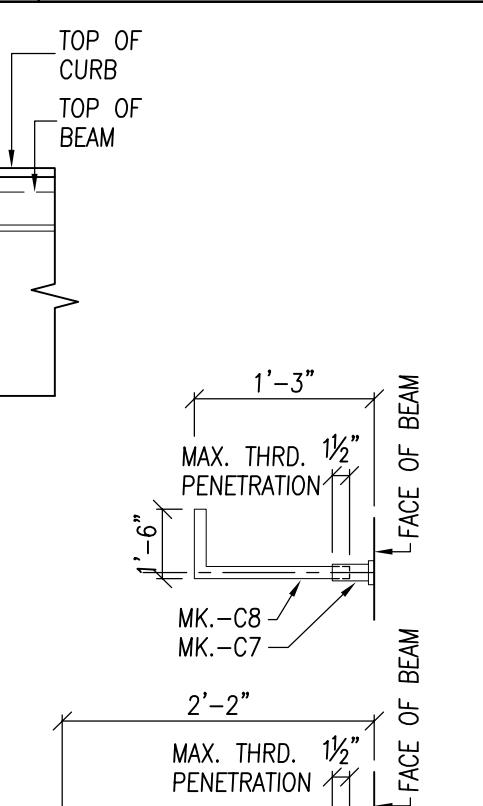
1 TYPICAL FASCIA BEAM SECTION — @ SPAN 1



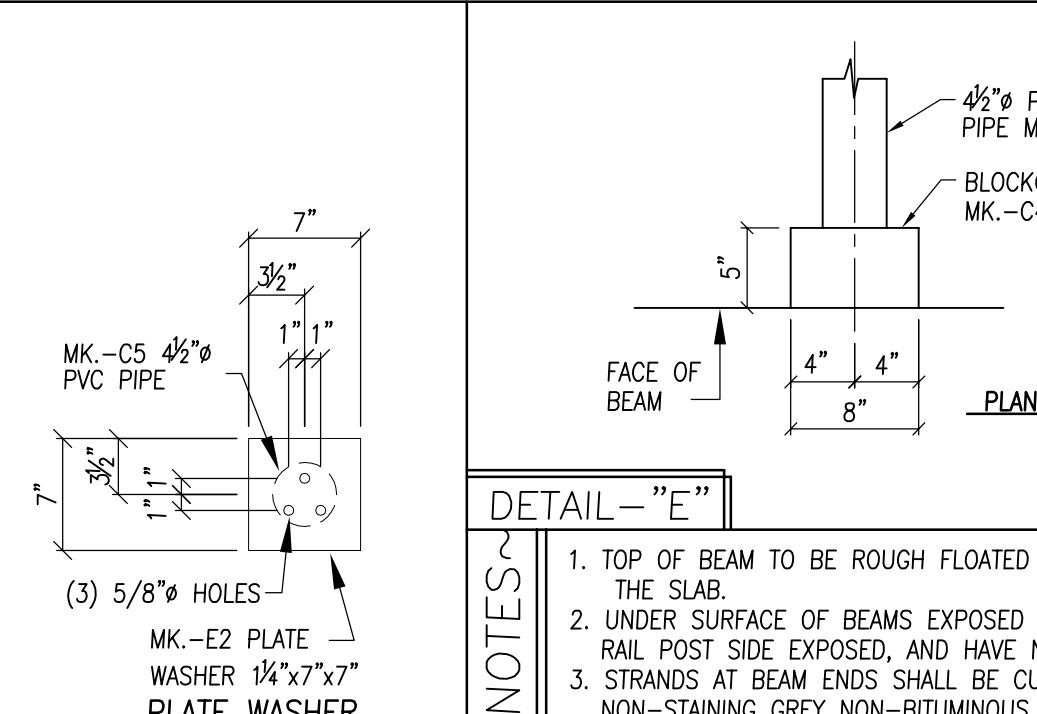
A diagram showing a circular end cap with a diameter of 4 inches. A horizontal line is drawn below the center of the circle.



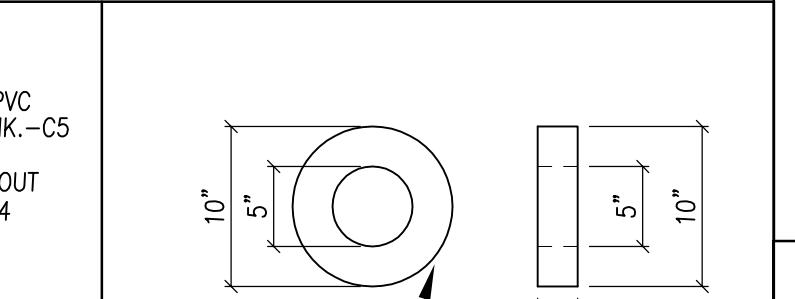
STIRRUP\REINFORCING DESIGN~SPAN #1



FASCIA BEAM POST-TENSIONING DETAIL



DETAIL—"D"



VIEW

DETAIL - "F"

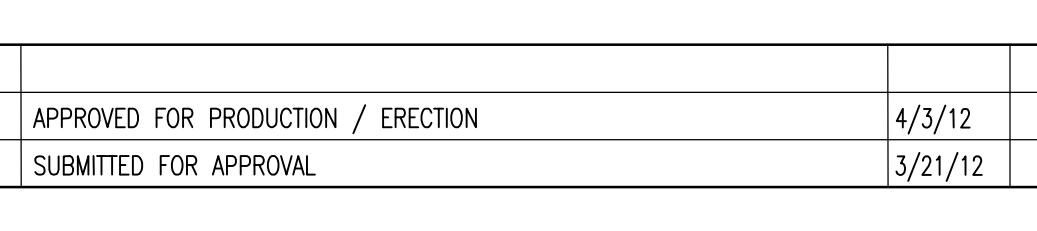
AND BROOMED TRANSVERSILY FOR BONDING TO
IN DECK. BEAMS WITH RAIL POSTS HAVE
NO KEYWAY ON EXPOSED SIDE.
UT FLUSH & PAINTED WITH
JOINT SEALER.

I. LOW-RELAXATION STRANDS (STRESS TO 310K)
4,000 PSI
5,000 PSI
TING FACTOR = 1.58 / OPR. RATING FACTOR = 2.0

CAST IN HARDWARE (48" x 17" BEAMS)				
QTY.	LENGTH	SIZE	SHAPE	REMARKS
28	15'-0"	#4	8"	TOP BAR
112	5'-2"	#5	9"	TOP STIRRUP
84	5'-8"	#4	12"	BOTTOM STIRRUP
24	5'-4"	#4	10"	BOTTOM STIRRUP
12	5'-4"	#5	10"	BOTTOM STIRRUP
24	2'-9 1/2"	#4		SEE DETAIL
16	2'-2"	#4	2'-2"	SEE DETAIL "A"
28	2'-5"	#4	8"	SEE DETAIL "G"
20	3'-10"	#4	3'-10"	SEE DETAIL "G"
20	5'-0"	#4	2'-1"	SEE DETAIL "G"
40	2'-6"	#4	10"	SEE DETAIL "H"
16	3'-5"	#4	3'-5"	SEE DETAIL "H"
6	6'-4"		7" x 38"	VOID
24	5"	1"Ø		PVC VOID DRAIN
8	8 1/2"	1"Ø		PVC GROUT TUBE
8	5" x 8" x 8"		(SEE DETAIL - "E")	P.T. BLOCKOUT
8	3'-6 7/8" LG.	4 1/2"Ø		PVC POST-TENSIONING PIPE
32	3 1/2"	1"Ø	DAYTON-SUPERIOR	THREADED BAR COUPLER (ELECTROPLATED)
16	2'-7 1/2"	1"Ø	1'-6"	PLAIN BLACK BENT ANCHOR BAR w/2" THREAD
16	2'-0 1/2"	1"Ø	2'-0 1/2"	PLAIN BLACK STRAIGHT ANCHOR BAR w/2" THREAD
2	20'-0"	3/4" x 3/4"	(SEE DETAIL - "C")	3/4" "V"-DRIP G
4	1'-7"			2"Ø DOWEL HOLE
4	1'-5"			2"Ø DOWEL HOLE
624 LF 1/2"Ø 270 KSI (7) WIRE LOW-LAX STRANDS				

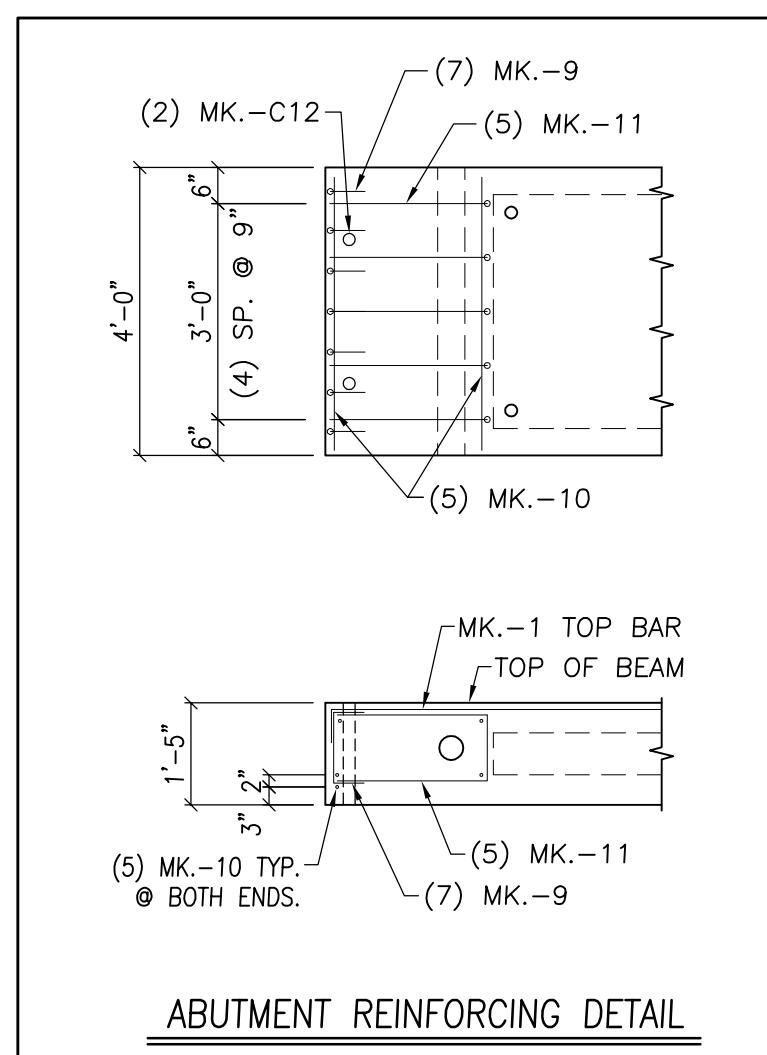
1/2" & 27/32" RSP (7) WIRE LOW ERECTION HARDWARE

32		10"Ø	(SEE DETAIL "F")	SEAL WASHER GRADE I ASTM C509
8	1 1/4" x 7" x 7"		(SEE DETAIL "D")	POST-TENSIONING PLATE
12	42'-0"	1/2"Ø	42'-0"	POST-TENSIONING STRANDS
24		1/2"Ø	PSI MODEL No. 1265	STRAND CHUCKS
36	1'-6"	1"Ø	1'-6"	GALV. OR EPOXY COATED DOWEL PINS
18	1/2" x 8" x 4'-0"			NEOPRENE BRG. PAD



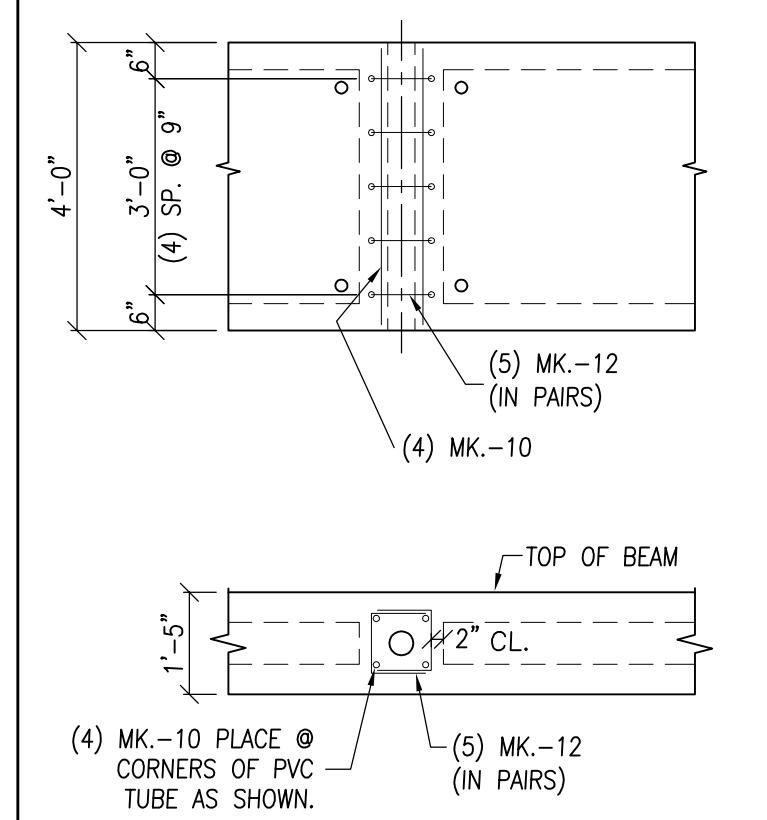
APPROVED FOR ERECTION

4/3/12



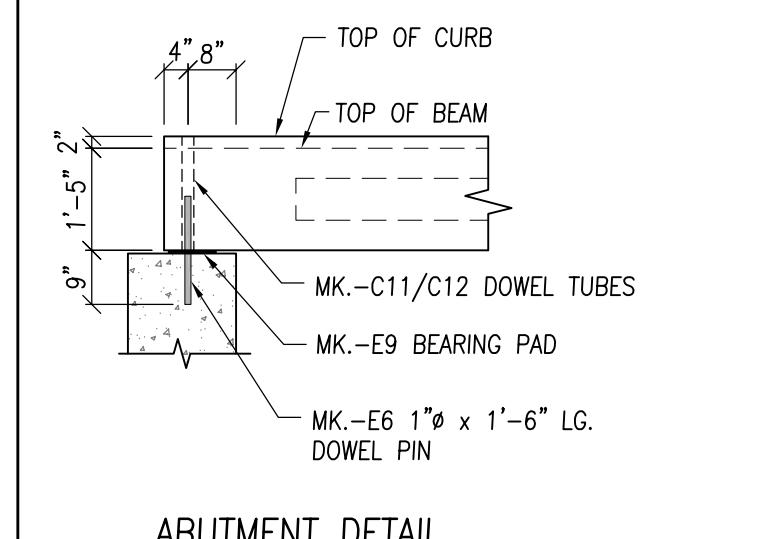
ABUTMENT REINFORCING DETAIL

DETAIL - "G1"

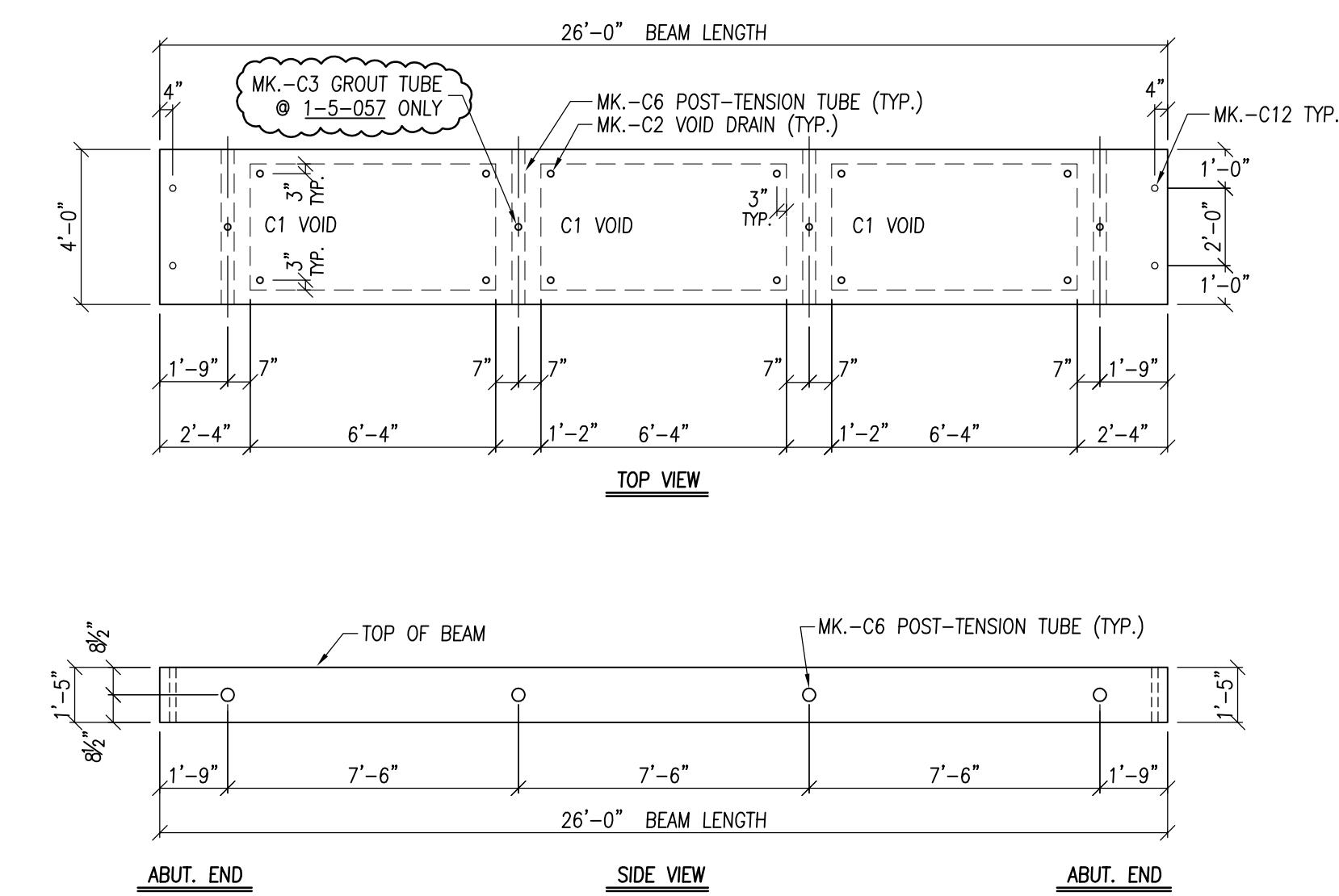


IN SPAN REINFORCING DETAIL
@ POST-TENSIONING TUBE / INTERIOR BEAMS

DETAIL - "H1"



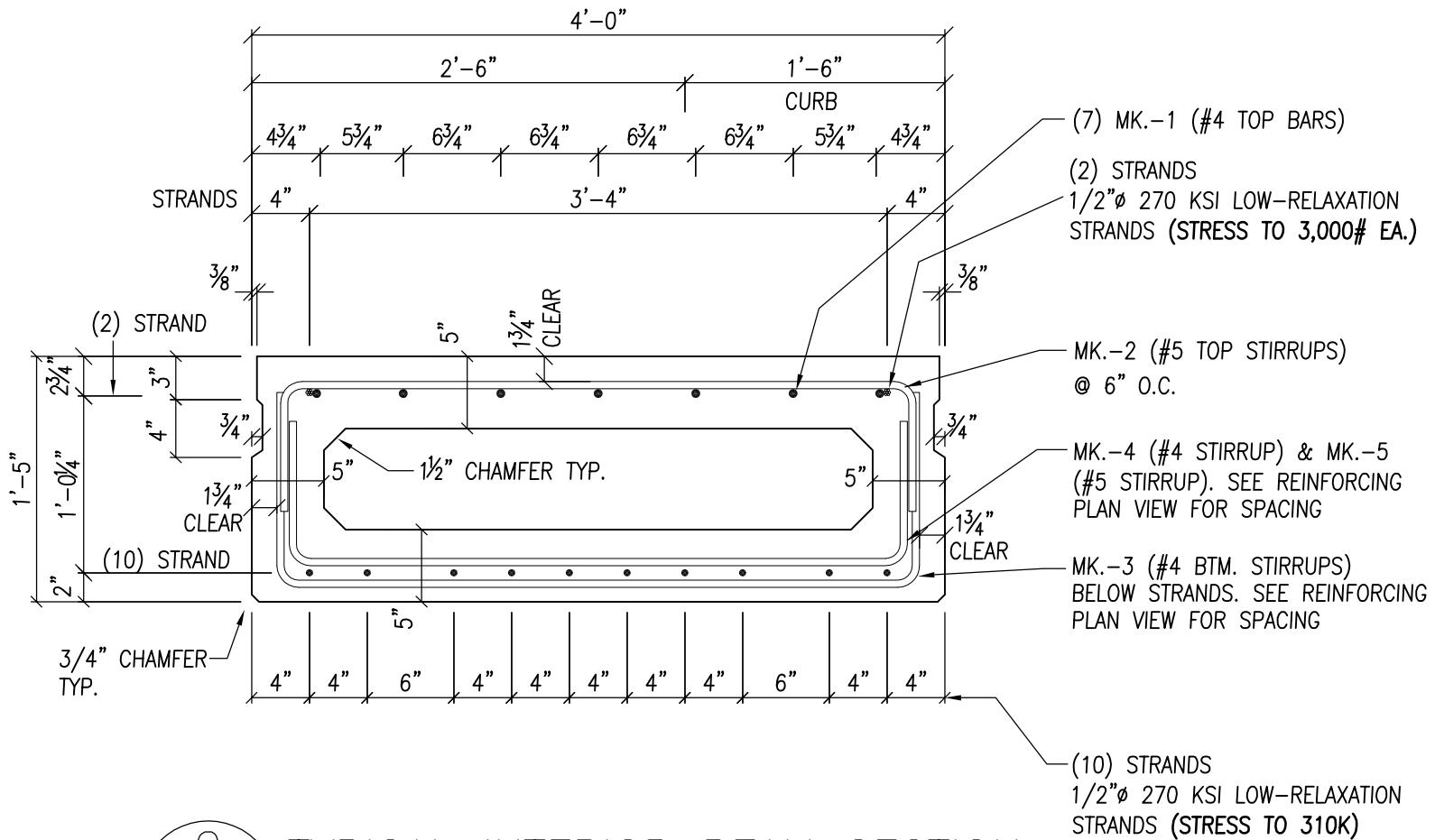
ABUTMENT DETAIL



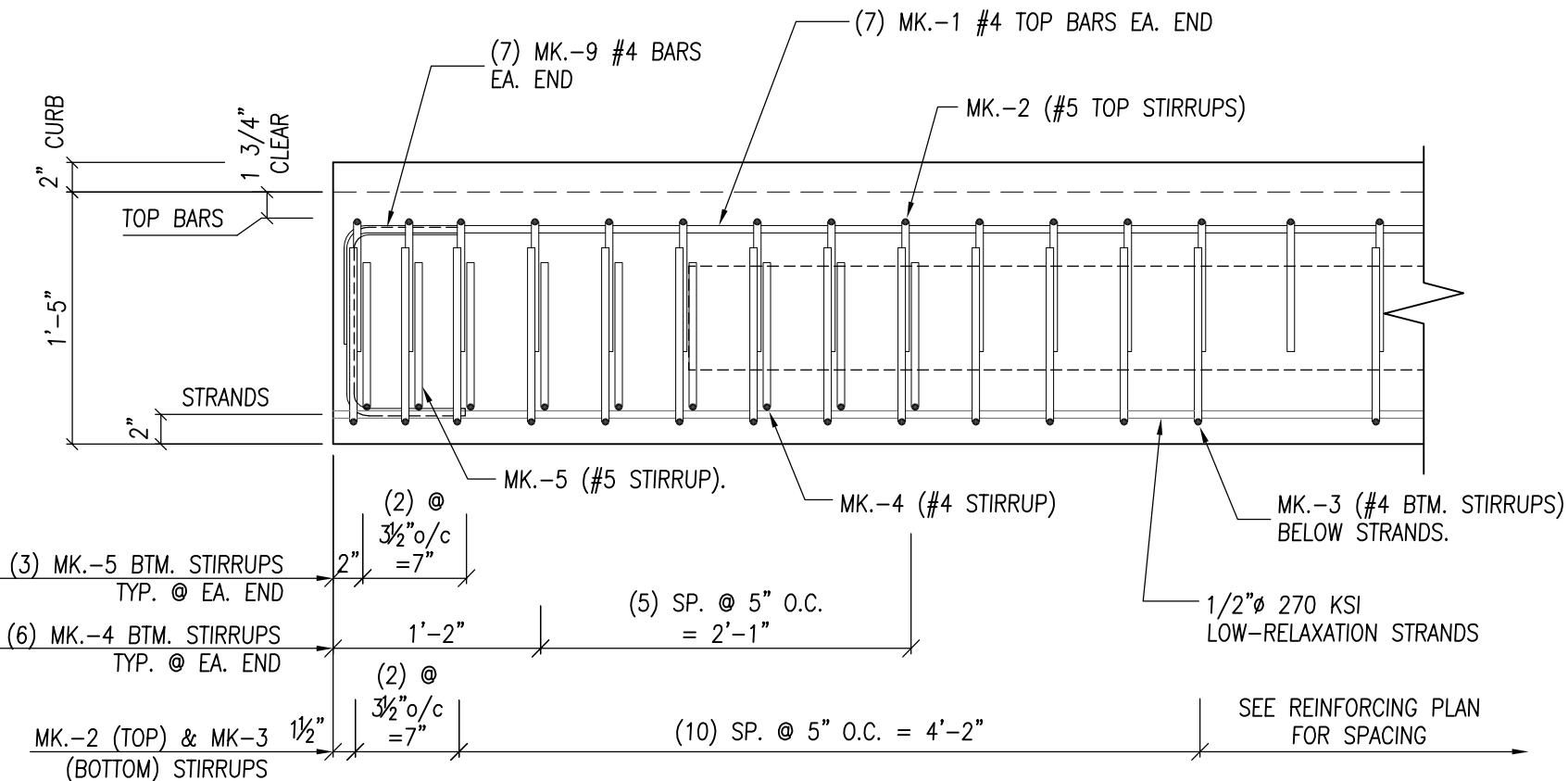
ABUT. END

SIDE VIEW

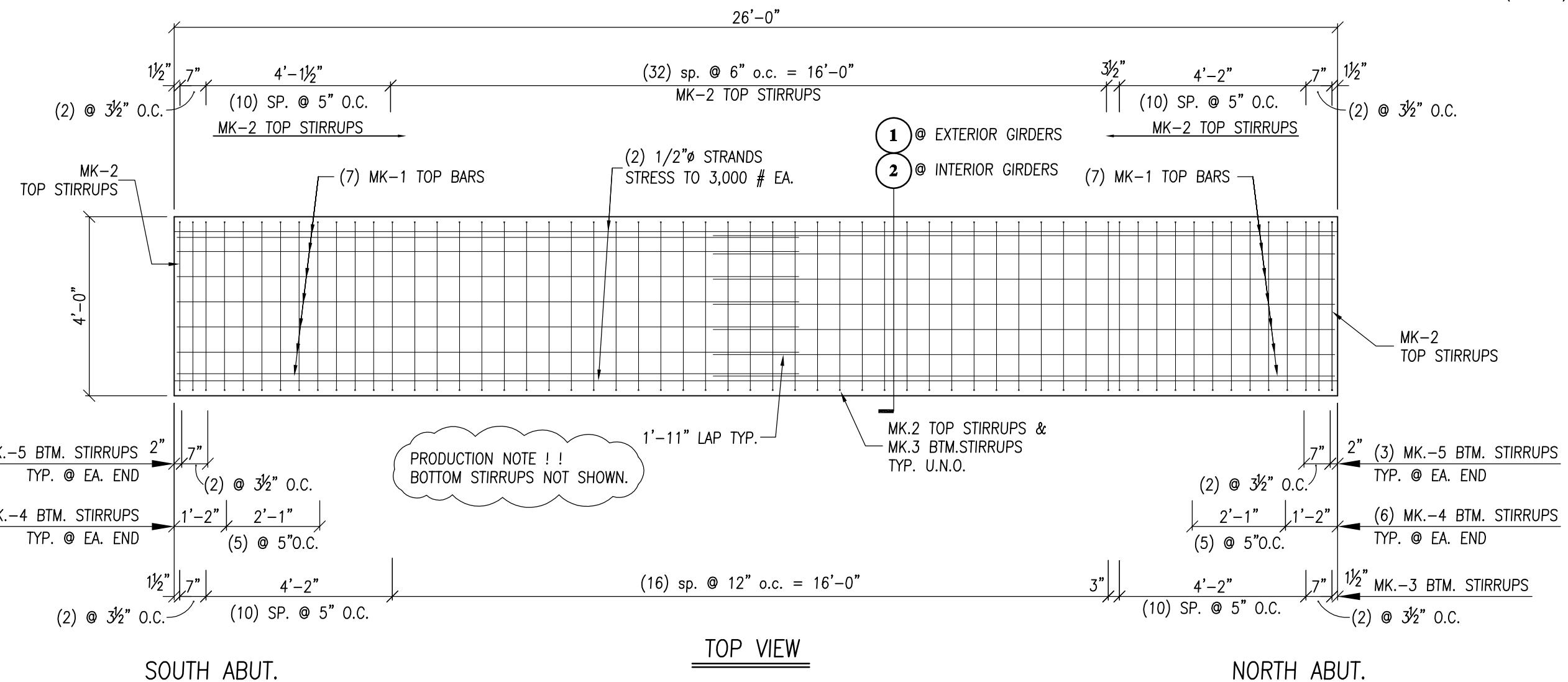
ABUT. END



2 TYPICAL INTERIOR BEAM SECTION
@ SPAN 1



4 TYPICAL BEAM END



SOUTH ABUT.

NORTH ABUT.

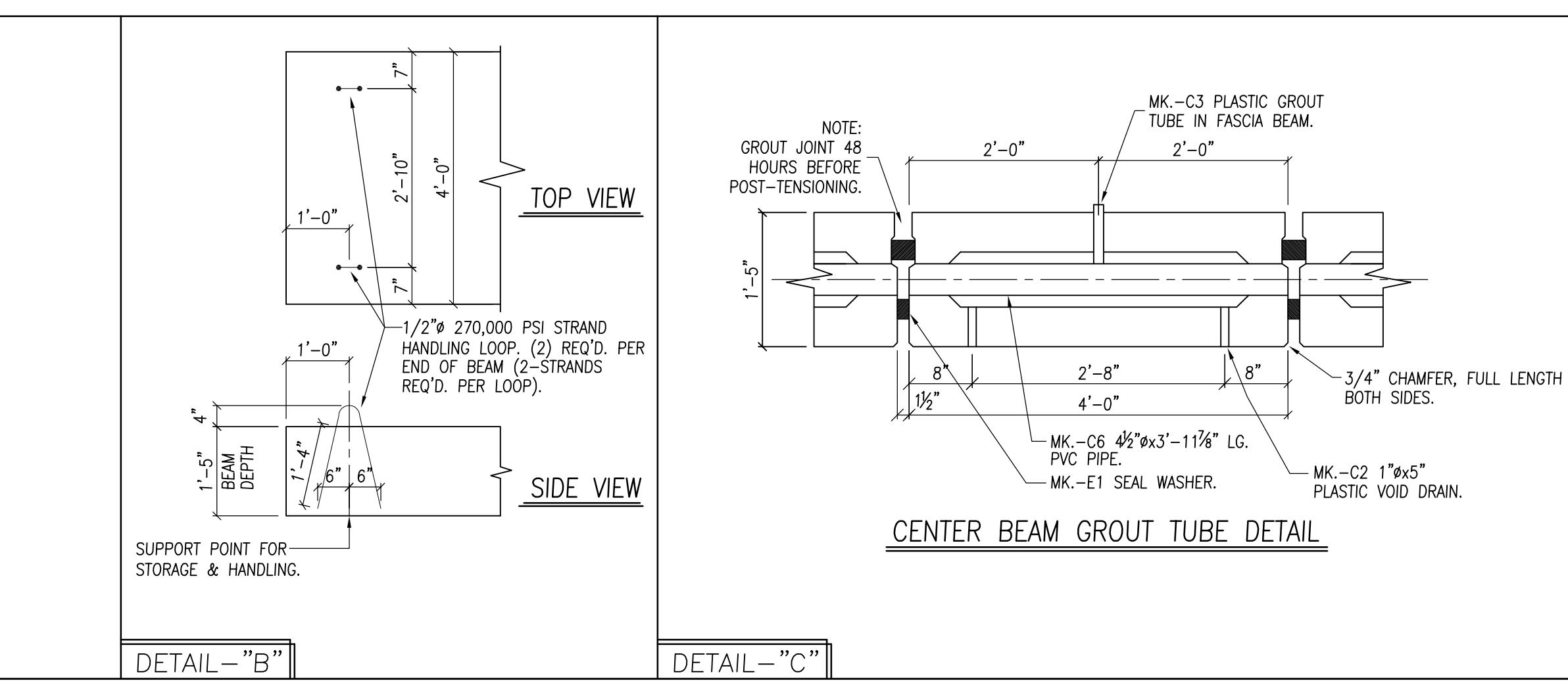
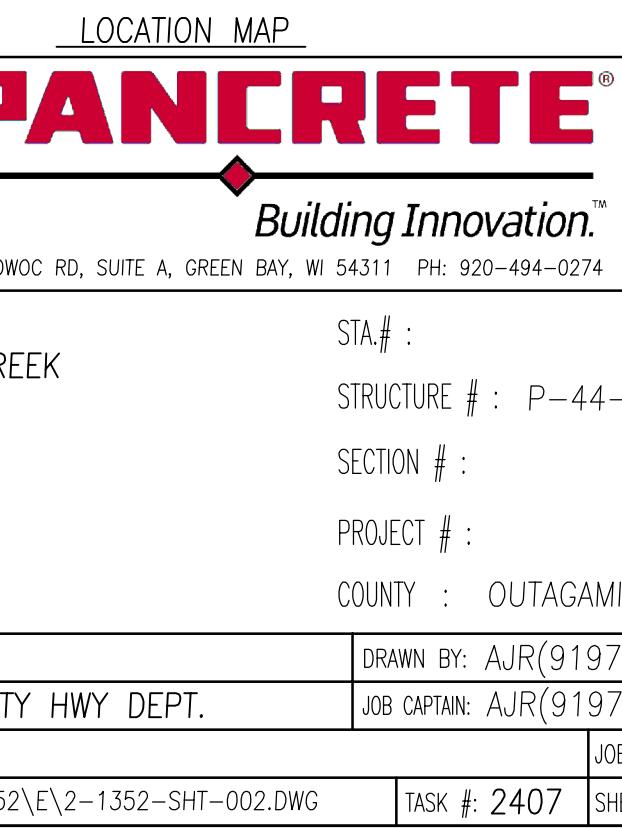
STIRRUP\REINFORCING DESIGN~SPAN #1

SPANCRETE BOX BEAM MATERIAL LIST						
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

CAST IN HARDWARE (48" x 17" BEAMS)					
MK.#	QTY.	LENGTH	SIZE	SHAPE	REMARKS
(04-1500)	98	15'-0"	#4	8" L 14'-4"	TOP BAR
(05-0502)	399	5'-2"	#5	9" L 3'-8" 9"	TOP STIRRUP
(04-0508)	294	5'-8"	#4	12" L 3'-8" 12"	BOTTOM STIRRUP
(04-0504)	84	5'-4"	#4	10" L 3'-8" 10"	BOTTOM STIRRUP
(05-0504)	42	5'-4"	#5	10" L 3'-8" 10"	BOTTOM STIRRUP
(04-0205)	98	2'-5"	#4	8" L 13" 8"	SEE DETAIL "G1"
(04-0310)	126	3'-10"	#4	3'-10"	SEE DETAIL "G1" & "H1"
(04-0500)	70	5'-0"	#4	2'-1" L 10" 2'-1"	SEE DETAIL "G1"
(04-0206)	140	2'-6"	#4	10" L 10" 10"	SEE DETAIL "H1"
C1	21	6'-4"		7" x 38"	VOID
C2	84	5"	1"		PVC VOID DRAIN
C3	4	8 1/2"	1"		PVC GROUT TUBE
C5	28	3'-11 7/8" LG.	4 1/2" Ø	3'-11 7/8" LG.	PVC POST-TENSIONING PIPE
C12	28	1'-5"			2" Ø DOWEL HOLES
481603	1,820	LF	1/2" Ø	270 KSI (7) WIRE LOW-LAX STRANDS	

	APPROVED FOR PRODUCTION / ERECTION	4/3/12	AJR
	SUBMITTED FOR APPROVAL	3/21/12	AJR

APPROVED
FOR ERECTION
4/3/12



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