

**PROPOSED WORK: HAM-471-0000 N**

1. REMOVE EXISTING 1 1/2" ± LMC OVERLAY AND 3/4" OF ORIGINAL DECK USING HYDRO DEMOLITION AND OVERLAY WITH 2 1/4" THICK MICRO-SILICA CONCRETE.
  2. REMOVE AND REPLACE FULL WIDTH APPROACH SLAB AND INSTALL TYPE A PRESSURE RELIEF JOINT
  3. PAINT STEEL USING OZEU SYSTEM.
  4. SEAL CONCRETE SURFACES AS DESCRIBED IN THE GENERAL NOTES.
  5. MODIFY DOWN SPOUTS, CLEAN AND UNCLOG SCUPPERS
  6. REMOVE AND RECONSTRUCT FORWARD ABUTMENT BACKWALL DOWN TO APPROACH SLAB SEAT, AND SURFACE PREP, COMPRESSION JOINT CHANNELS PER MFG. RECOMMENDATIONS.
  7. INSTALL SILICONE BASED JOINT SEALER AT COMPRESSION JOINT WITH DOW CORNING 790 SEALER OR EQUAL.
- (IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN THE SEQUENTIAL ORDER LISTED).

**PROPOSED WORK: HAM-471-0000L**

1. REMOVE EXISTING 1 1/2" ± LMC OVERLAY AND 3/4" OF ORIGINAL DECK USING HYDRO DEMOLITION AND OVERLAY WITH 2 1/4" THICK MICRO-SILICA CONCRETE.
  2. REMOVE AND REPLACE FULL WIDTH APPROACH SLAB AND INSTALL TYPE A PRESSURE RELIEF JOINT
  3. MODIFY DOWN SPOUTS, CLEAN AND UNCLOG SCUPPERS
  4. INSTALL VANDAL PROTECTION FENCE FROM C PIER 9 TO C PIER 15.
  5. PAINT STEEL USING OZEU SYSTEM.
  6. SEAL CONCRETE SURFACES AS DESCRIBED IN THE GENERAL NOTES.
  7. RESET ALL OF THE FORWARD ABUTMENT BEARINGS
  8. REMOVE AND RECONSTRUCT FORWARD ABUTMENT BACKWALL DOWN TO APPROACH SLAB SEAT, AND INSTALL NEW STRIP SEAL JOINT.
- (IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN THE SEQUENTIAL ORDER LISTED).

(\*1) VANDAL PROTECTION FENCE WITH POST SECTION PS-4 AT 10'-0" MAX. AND BASE PLATE BP-5 PER ODOT STD. DWG. VPF-1-90.

(\*2) TYPE A DOWNSPOUT MODIFICATIONS

**PROPOSED WORK: HAM-471-0000R**

1. REMOVE EXISTING 1 1/2" ± LMC OVERLAY AND 3/4" OF ORIGINAL DECK USING HYDRO DEMOLITION AND OVERLAY WITH 2 1/4" THICK MICRO-SILICA MODIFIED CONCRETE.
2. REMOVE AND RECONSTRUCT FORWARD ABUTMENT BACKWALL DOWN TO APPROACH SLAB SEAT, AND INSTALL NEW STRIP SEAL JOINT.
3. REPLACE MODULAR JOINT AT PIER 12 WITH NEW STRIP SEAL EXPANSION JOINT.
4. REMOVE AND REPLACE FULL WIDTH APPROACH SLAB AND INSTALL TYPE A PRESSURE RELIEF JOINT
5. MODIFY DOWNSPOUTS, CLEAN AND UNCLOG SCUPPERS.
6. PAINT STEEL USING OZEU SYSTEM.
7. SEAL CONCRETE SURFACES AS DESCRIBED IN THE GENERAL NOTES.
8. INSTALL VANDAL PROTECTION FENCE FROM C PIER 9 TO C PIER 15.
9. RESET ALL OF THE FORWARD ABUTMENT BEARINGS.
10. REMOVE CONCRETE MEDIAN BETWEEN PIER 15 N AND FORWARD ABUTMENT. REPLACE WITH TYPE A REINFORCED BARRIER. INSTALL A QUADGUARD ELITE SYSTEM IMPACT ATTENUATOR AT STA. 128+63.89.

(IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN THE SEQUENTIAL ORDER LISTED).

**EXISTING STRUCTURE**

TYPE: CONTINUOUS WELDED PLATE GIRDER WITH REINFORCED CONCRETE DECK

SPANS: VARIES, SEE TABLE FOR SPAN LENGTHS

ROADWAY: VARIES, SEE PLAN

SKREW: VARIES, SEE PLAN

SURFACE COURSE: 1 1/2" ASPHALT CONCRETE

LIVE LOADING: HS 20-44 CASE 11 AND THE ALTERNATE MILITARY LOADING

APPROACH SLABS: AS-1-67 (25'-0" LONG)

ALIGNMENT: 36°57'54.1" CURVE RIGHT

SUPERELEVATION: .0625 FT. PER FT.

TABLE OF SPAN LENGTHS

NORTHBOUND		SOUTHBOUND	
SPAN	LENGTH	SPAN	LENGTH
9 S	109.75'	9 N	109.75'
10 S	140.00'	10 N	140.00'
11 S	130.67'	11 N	115.14'
12 S	93.94'	12 N	85.56'
13 S	90.50'	13 N	90.5'
14 S	64.25'	14 N	64.25'
15 S	103.25'	15 N	103.25'

**PROPOSED STRUCTURE**

SAME AS EXISTING EXCEPT AS FOLLOWS:

APPROACH SLABS: AS-1-81

WEARING SURFACE: 2 1/4" MICRO-SILICA CONCRETE

DESIGN AGENCY: **BARR ENGINEERING, INC.**  
 FIVE EAST LONG STREET, EIGHTH FLOOR  
 COLUMBUS, OH 43215  
 (614) 224-1941 FAX (614) 224-0907

DATE: 8/2001  
 REVIEWED: GEA  
 DRAWN: FIB  
 DESIGNED: JEP  
 CHECKED: ASB

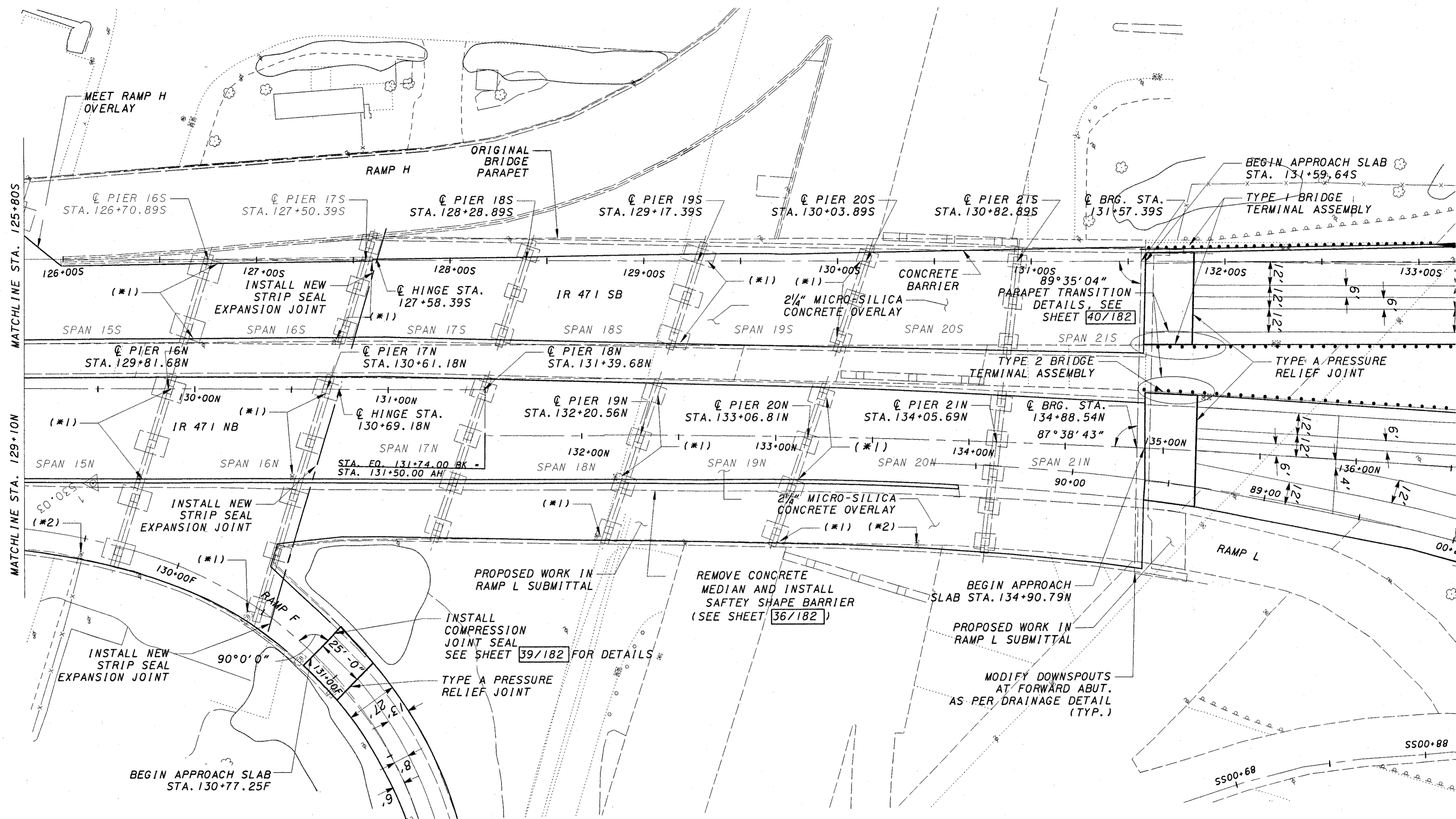
STA. 119+47 S TO STA. 125+80 S  
 STA. 122+75 N TO STA. 129+10 N

GENERAL PLAN  
 BRIDGE NO. HAM-471-0000 L/R  
 OVER THE OHIO RIVER

HAM-471-0.26

1/106

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 182



(\*1) TYPE A DOWNSPOUT MODIFICATION

(\*2) TYPE B DOWNSPOUT MODIFICATION

DESIGN AGENCY  
**BARR ENGINEERING, INC.**  
 FIVE EAST LONG STREET, EIGHTH FLOOR  
 COLUMBUS, OH 43215  
 (614)-224-1941 FAX (614)-224-0907

DATE  
 8/2001  
 REVIEWED  
 GEA  
 STRUCTURE FILE NUMBER  
 3117359  
 REVISED  
 3117367  
 3117391

DRAWN  
 HJM  
 DESIGNED  
 JEP  
 CHECKED  
 ASB

STA. 125+80 S  
 STA. 131+59.64 S  
 STA. 129+10 N  
 STA. 134+90.79 N

GENERAL PLAN  
 BRIDGE NO. HAM-471-0000-L/R  
 OVER THE OHIO RIVER

HAM-471-0.26

2/106

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 182

# STRUCTURE GENERAL NOTES

## PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

### DESCRIPTION:

THIS WORK SHALL CONSIST OF THE REMOVAL OF PORTIONS OF CONCRETE DECKS INCLUDING L.M.C. OVERLAY, SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.) CARE SHALL BE TAKEN DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

### PROTECTION OF TRAFFIC

DURING THE REMOVAL OF ANY PART OF THE EXISTING SUPERSTRUCTURE THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT VEHICULAR AND PEDESTRIAN TRAFFIC ADJACENT TO AND/OR UNDER THE STRUCTURE. THESE PROVISIONS MAY INCLUDE THE USE OF ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

### PROTECTION OF STEEL SUPPORT SYSTEMS

BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 2 INCHES OUTSIDE THESE LINES TO CONFORM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

### REMOVAL METHODS

CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS ABOVE STEEL MEMBERS, A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS MAY BE USED AT THE APPROVAL OF THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND TO PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

### EXTRANEQUS MEMBERS

EXISTING EXTRANEQUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ECT.) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE TOP FLANGES SHALL BE REMOVED AND THE FLANGE SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

### CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEAN OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT ALL PACK AND LOOSE RUST SHALL BE REMOVED. EXISTING CONCRETE SURFACES AGAINST WHICH NEW CONCRETE WILL BE PLACED SHALL BE WET, BUT WITHOUT FREE WATER, AT THE TIME OF CONCRETE PLACEMENT.

### EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.02/863.07.

### BACKWALL CONCRETE

IN ADDITION TO SS 842.08, BACKWALL ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.

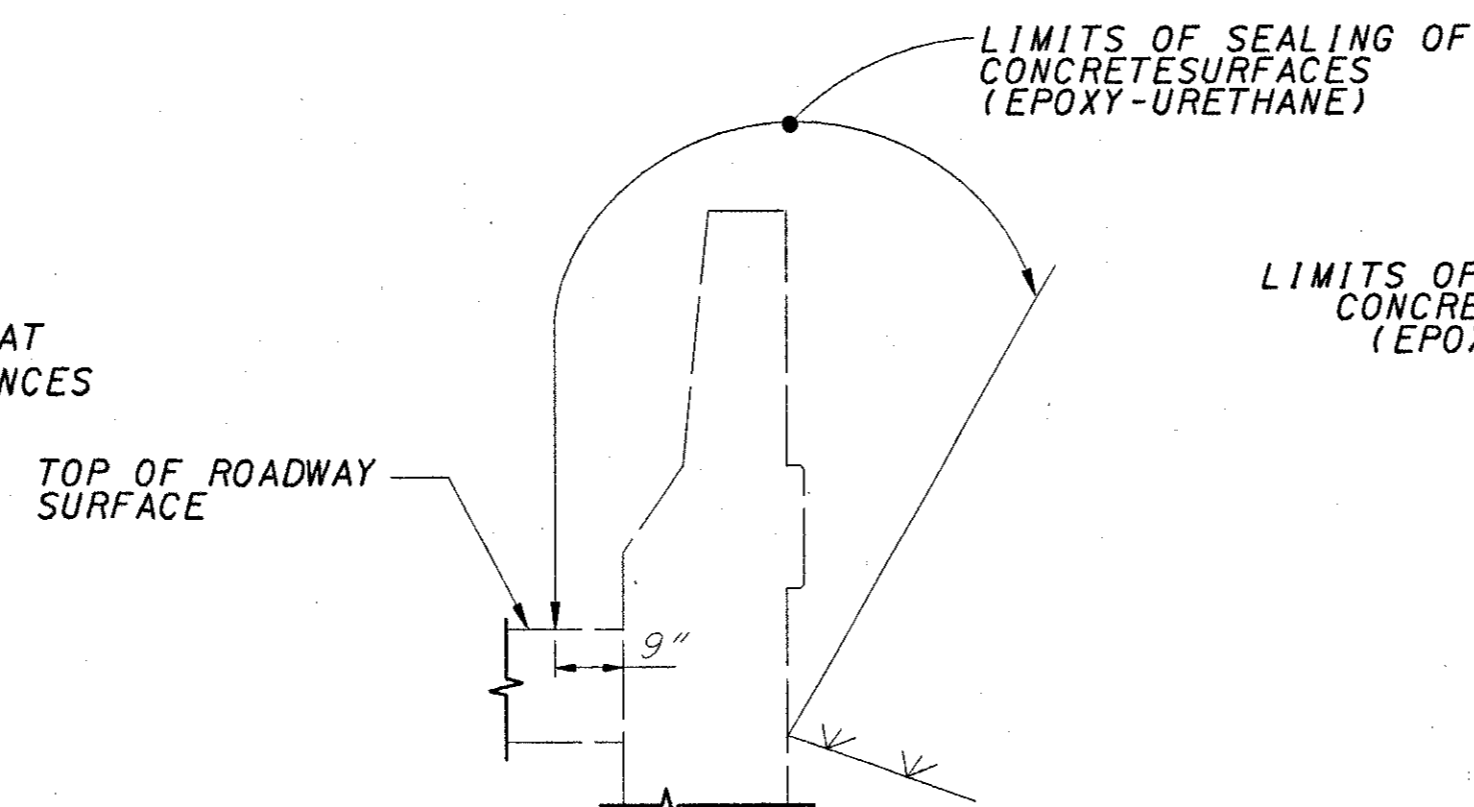
### COMPRESSION JOINT PREPARATION

REMOVE THE COMPRESSION JOINT GLAND, ABRASIVE BLAST THE VERTICAL FACE OF STEEL ANGLES OR CHANNELS AND PREPARE SURFACE AS PER THE MANUFACTURER'S RECOMMENDATION. THE COMPRESSION JOINT SEALER SHALL BE DOW CORNING 790 SEALER OR EQUIVALENT.

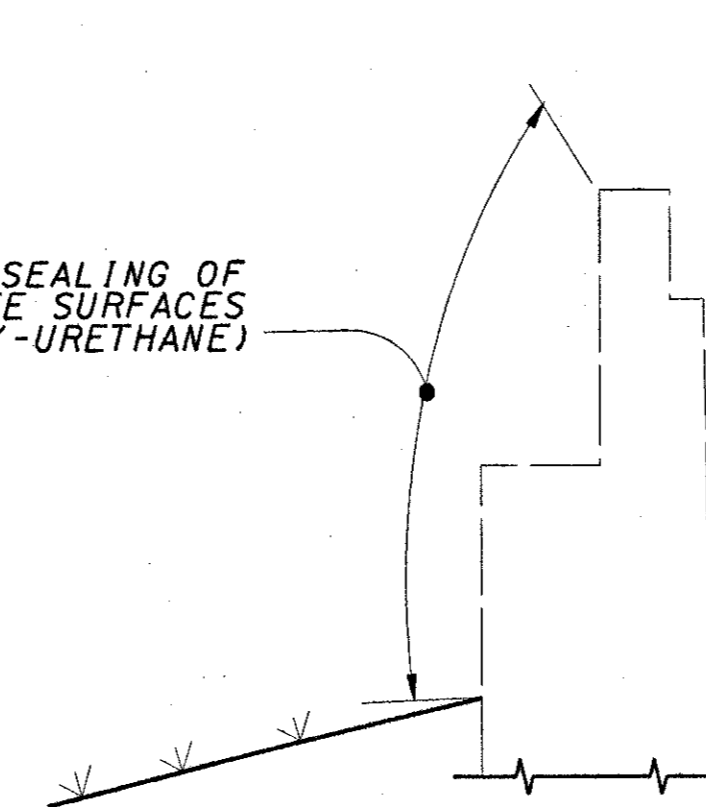
### SEALING OF CONCRETE SURFACES

THE CONCRETE SURFACES SHOULD BE SEALED AS FOLLOWS:

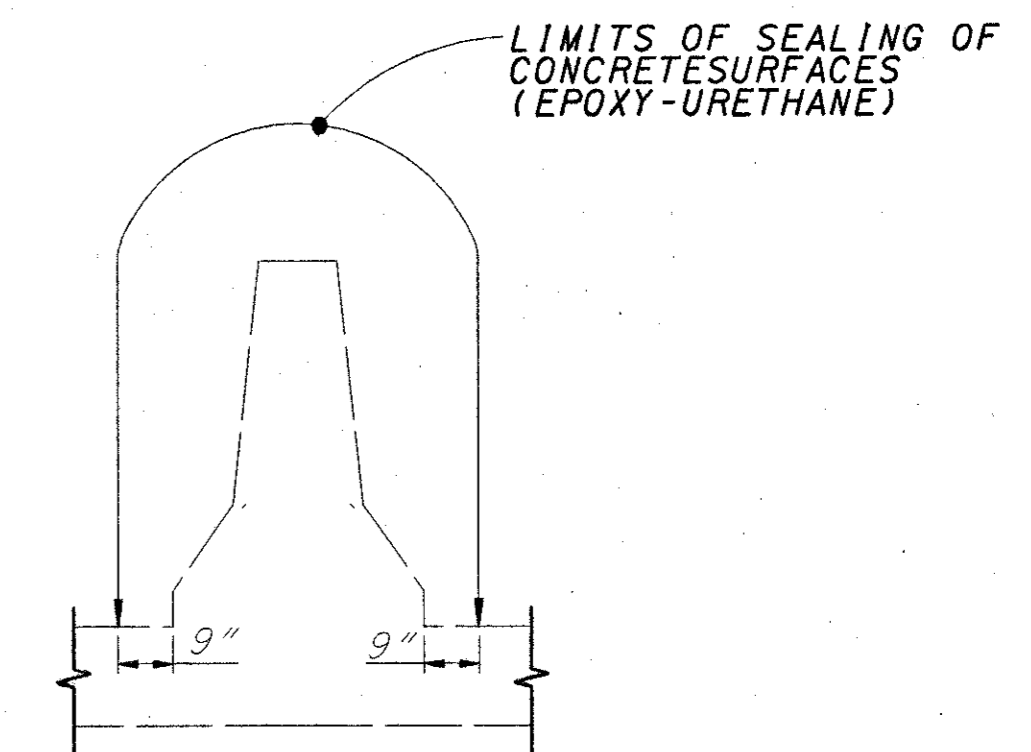
ABUTMENTS & WINGWALLS: ENTIRE LENGTH  
PIERS: ALL EXPOSED SURFACES EXCEPT THE TOP OF PIER CAP  
PARAPETS & MEDIAN BARRIERS: ENTIRE LENGTH OF THE BRIDGE



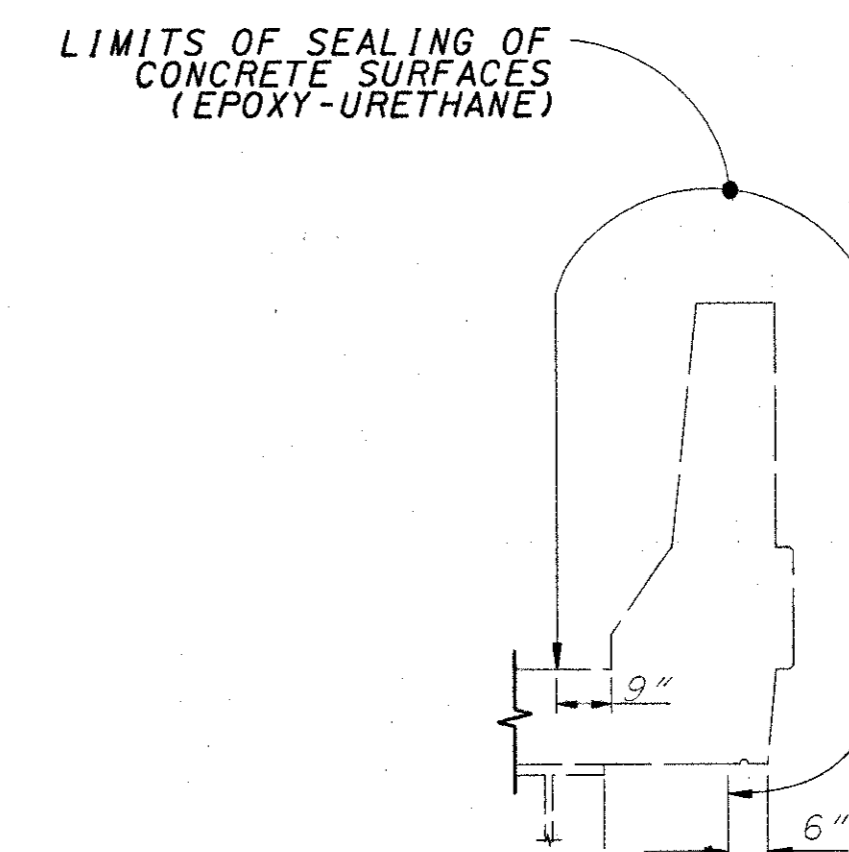
WINGWALL AND RETAINING WALL SECTION



ABUTMENT SECTION



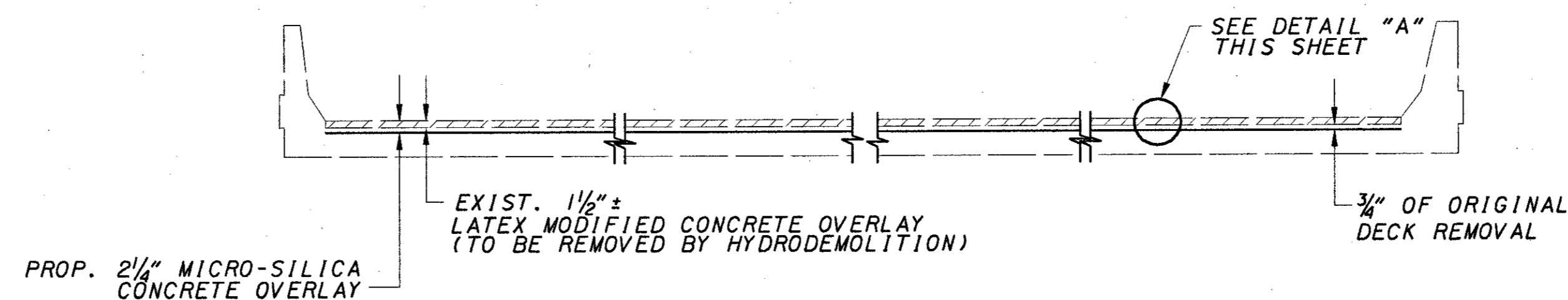
BARRIER SECTION



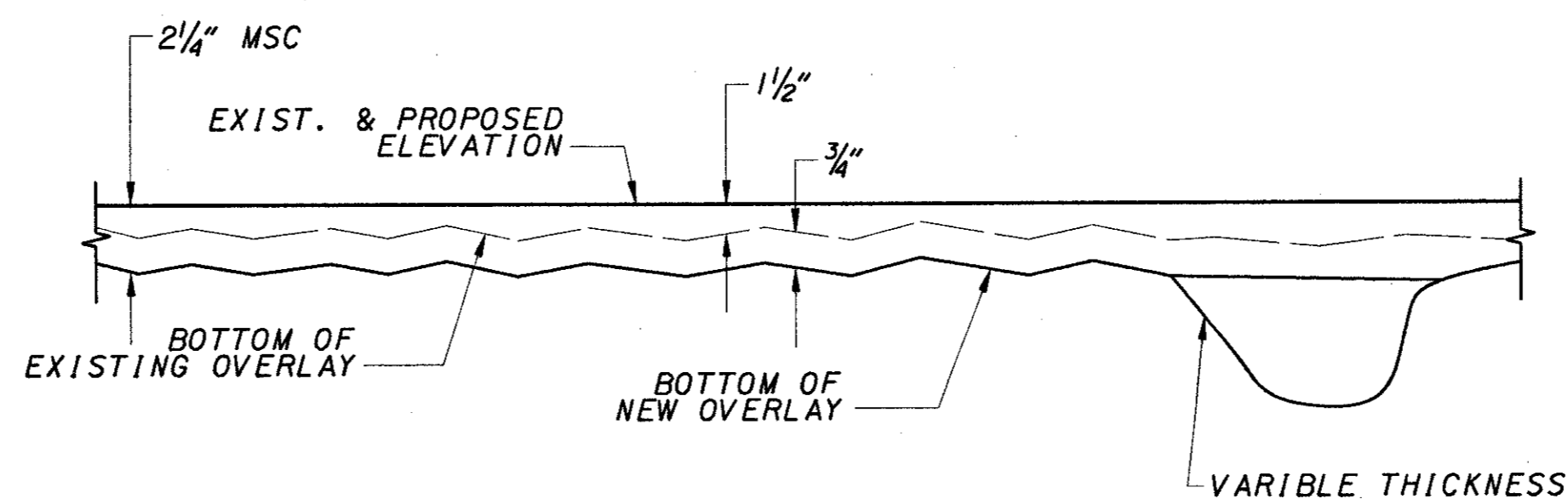
PARAPET SECTION

### MICRO-SILICA CONCRETE OVERLAY

EXISTING DECKS WILL BE OVERLAYED AS PER THE DETAILS SHOWN BELOW AND IN ACCORDANCE WITH ITEM 848.



EXISTING & MODIFIED TYPICAL SECTION  
(TYPICAL FOR BRIDGES WITHOUT MEDIAN BARRIER)

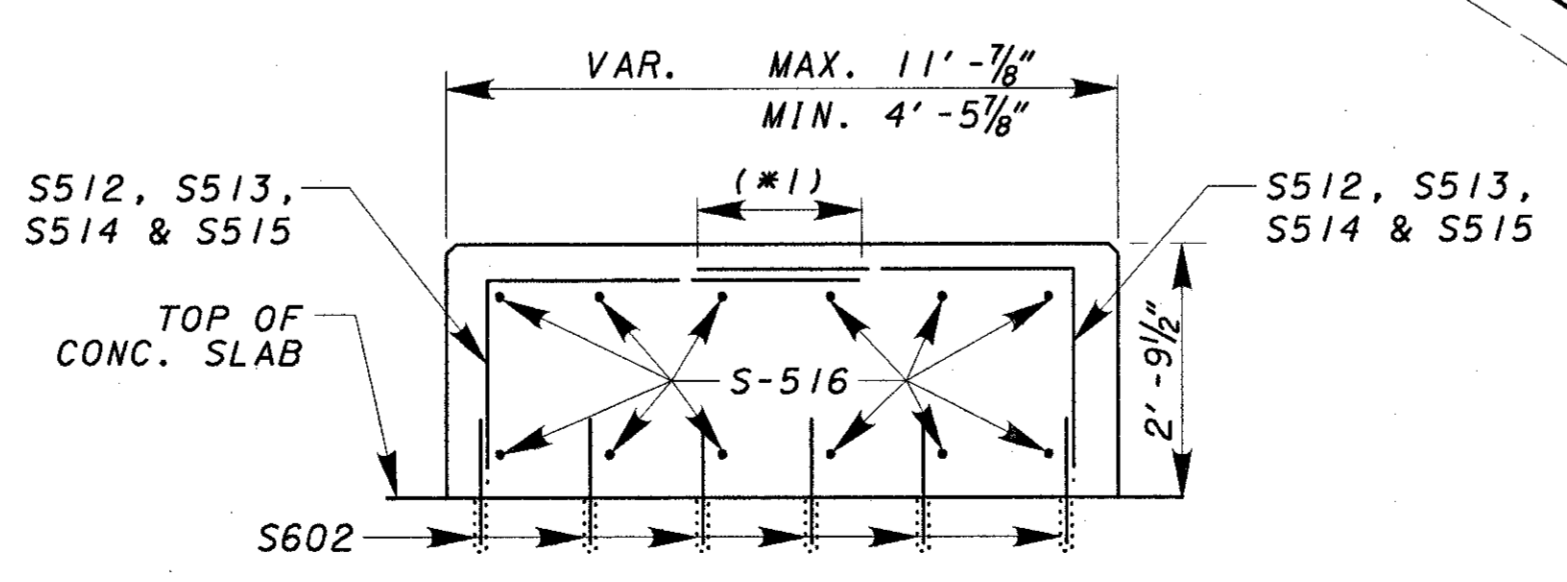
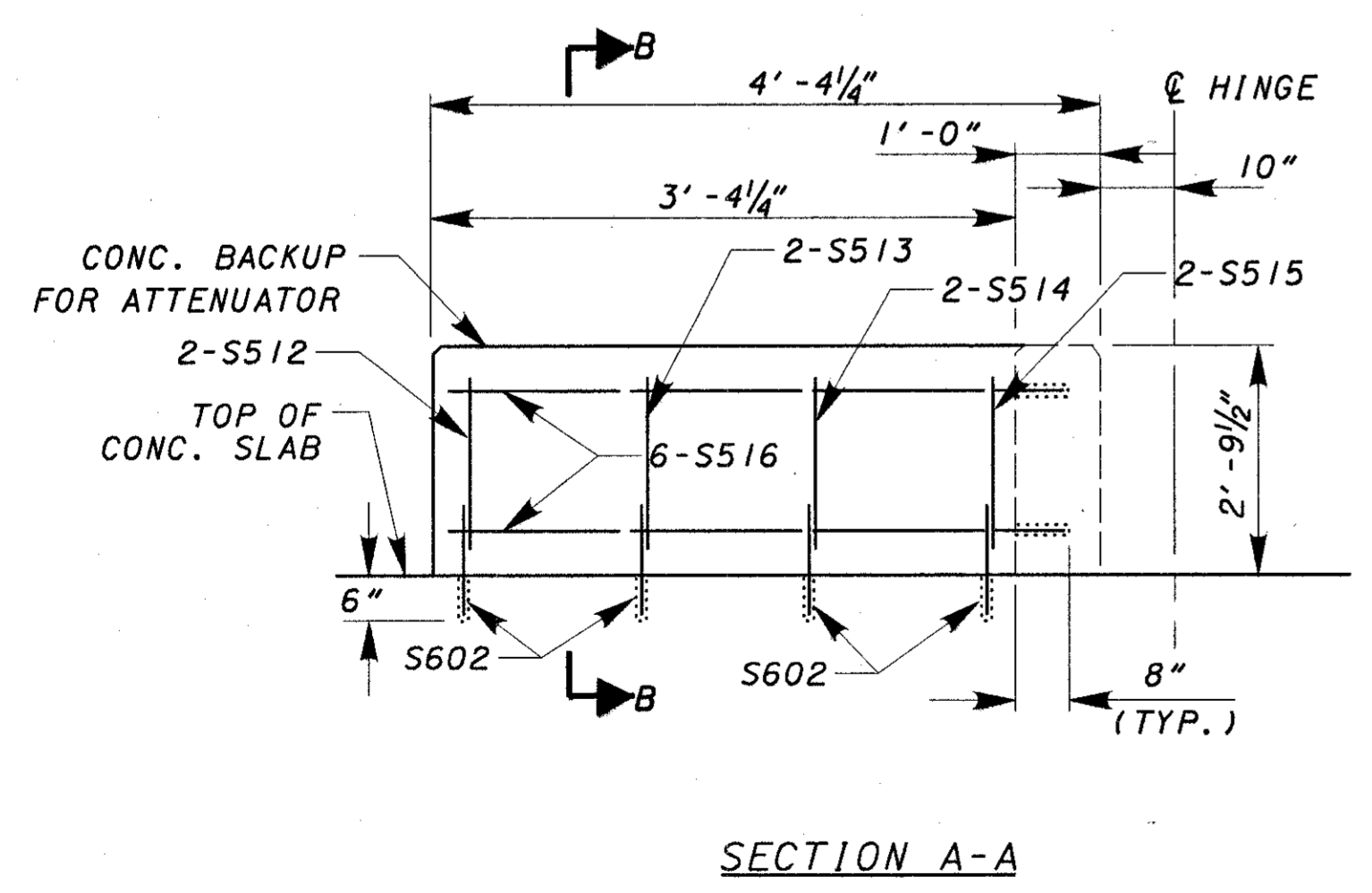
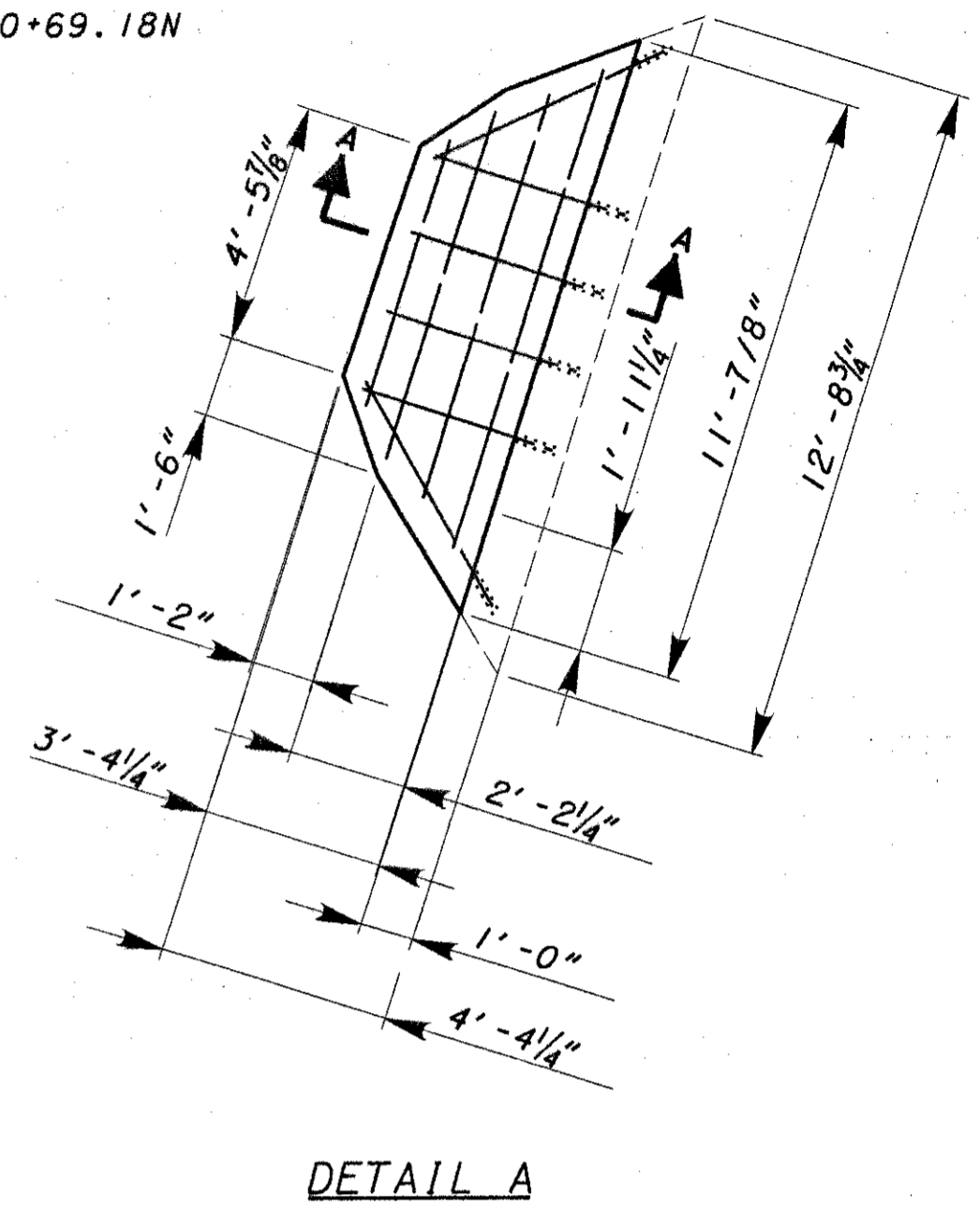
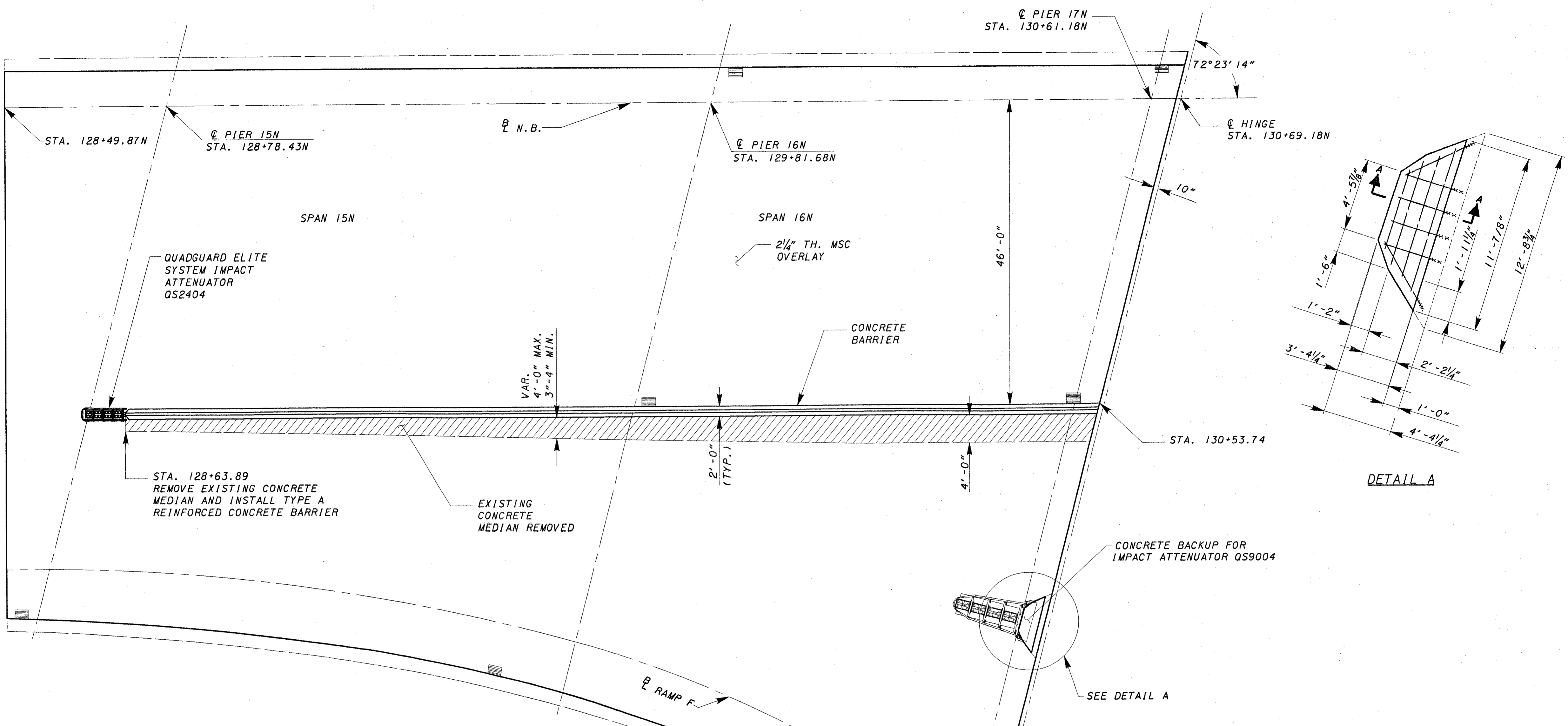


DETAIL A  
(TYPICAL FOR ALL BRIDGES)

### ABBREVIATIONS

ABUT.	-	ABUTMENT	SPA.	-	SPACES
APPR.	-	APPROACH	TBR.	-	TO BE REMOVED
BOT.	-	BOTTOM	TYP.	-	TYPICAL
BRGS.	-	BEARINGS			
CL.	-	CLEAR			
CJ	-	CONTROL JOINT			
DIM.	-	DIMENSION			
ELEV.	-	ELEVATION			
EXP.	-	EXPANSION			
EXIST.	-	EXISTING			
LONG.	-	LONGITUDINAL			
JT.	-	JOINT			
MSC	-	MICRO SILICA CONCRETE			

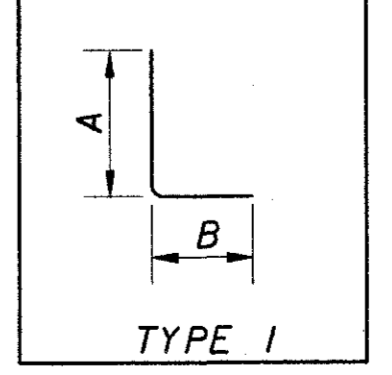
DESIGN AGENCY: BARR ENGINEERING, INC.  
 5 EAST LONG STREET  
 COLUMBUS, OHIO 43215  
 (614) 224-1941, (614) 224-0907 FAX  
 DATE: 6/2001  
 REVIEWED: ASB  
 DRAWN: FIB  
 DESIGNED: JS  
 CHECKED: JEP  
 STRUCTURE FILE NUMBER: 3117359  
 REVISION: 3117367, 3117391  
 STRUCTURE GENERAL NOTES  
 BRIDGE NO. HAM-471-0000 L/R/N  
 HAM-471-0.26  
 3/106  
 35/182



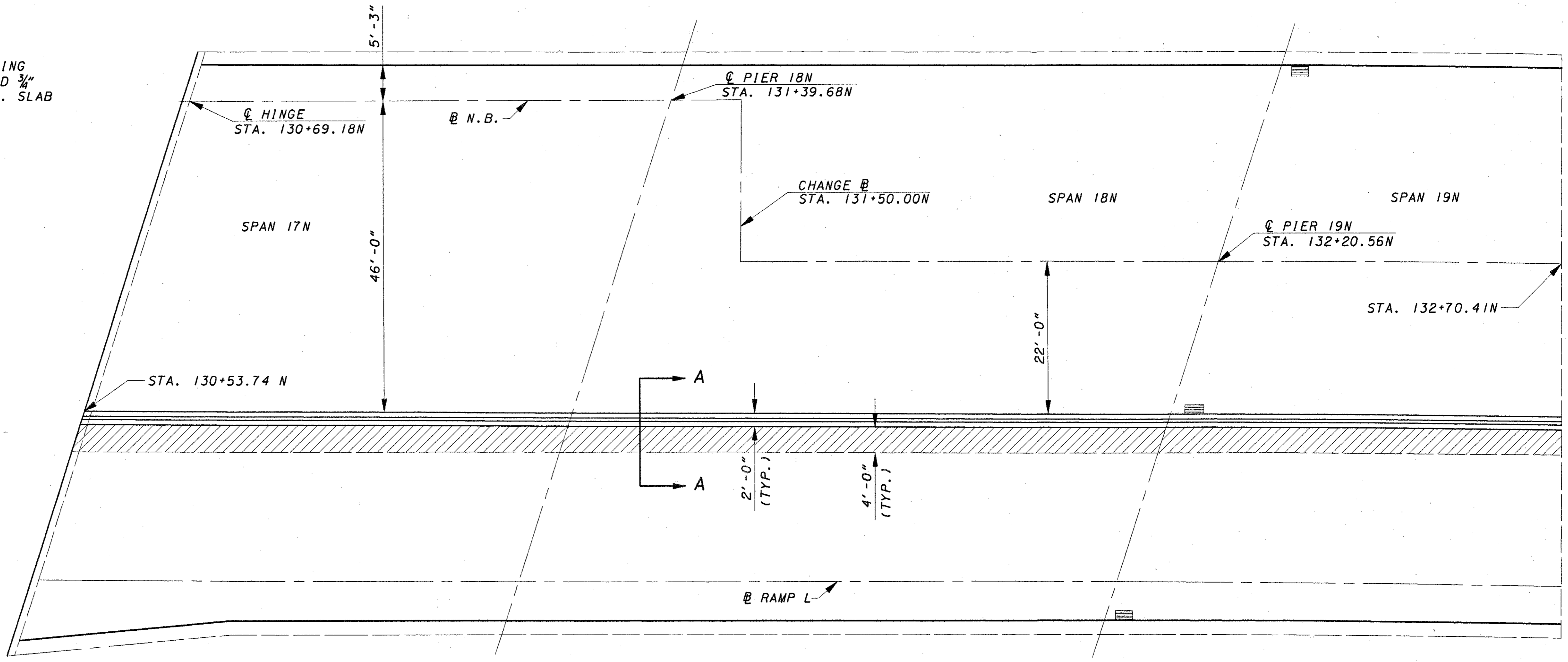
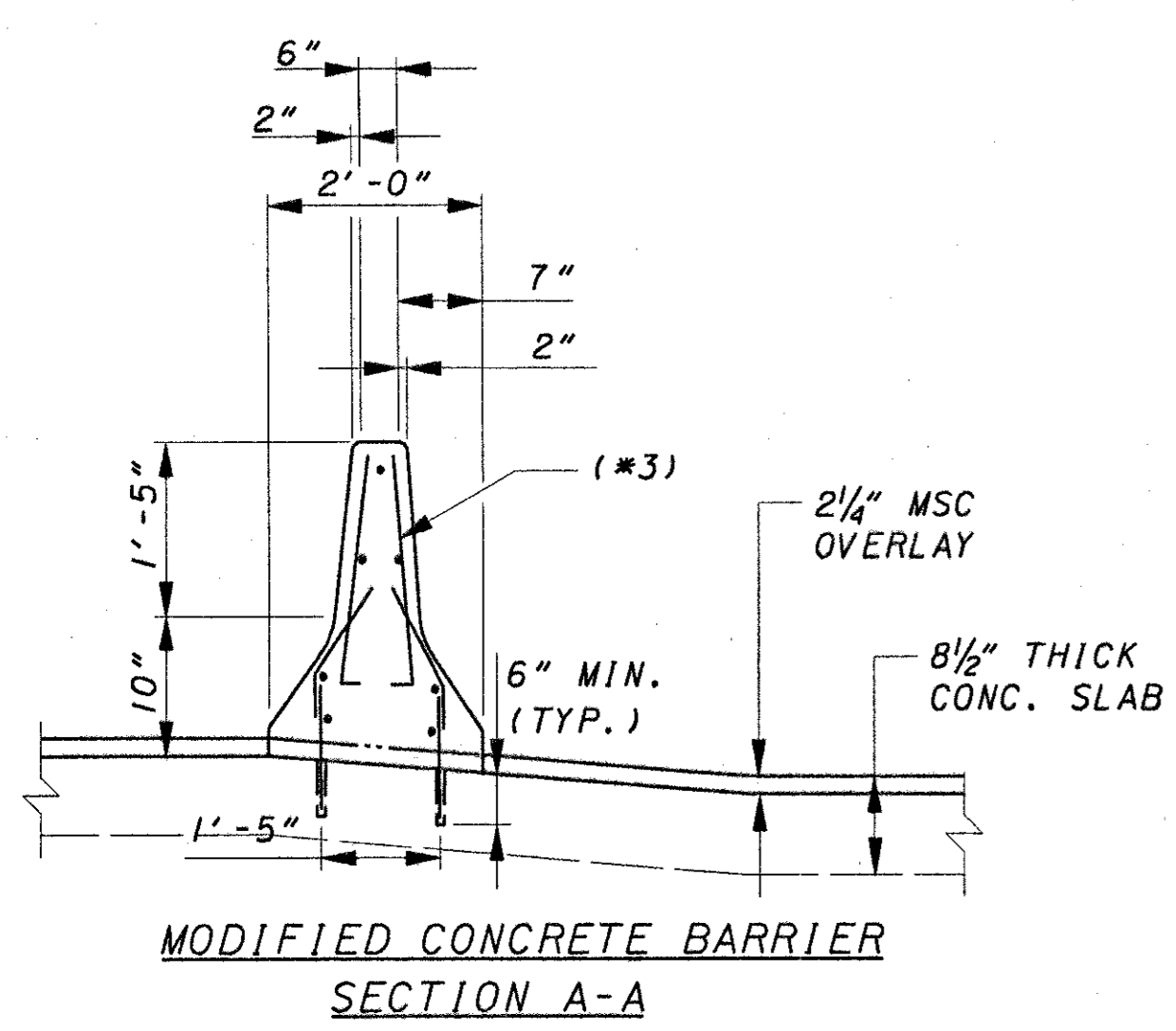
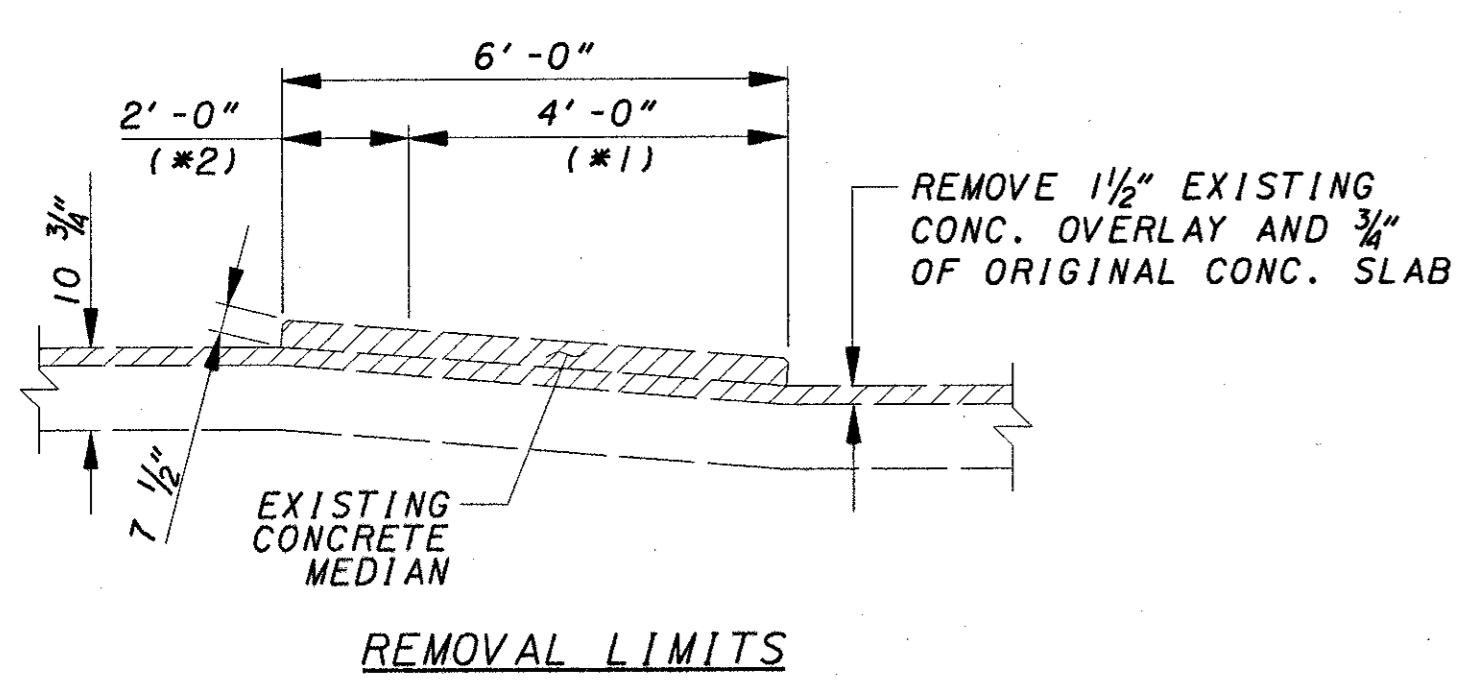
SECTION B-B  
 (\*) - LAP LENGTH  
 #5 BAR - 2'-9"

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
S512	2	6'-5"		I	4'-0"	2'-6"			
S513	2	7'-5"		I	5'-0"	2'-6"			
S514	2	8'-5"		I	6'-0"	2'-6"			
S515	2	9'-5"		I	7'-0"	2'-6"			
S516	12	3'-11"		STR					
S602	20	1'-2"		STR					

BENDING DIAGRAMS



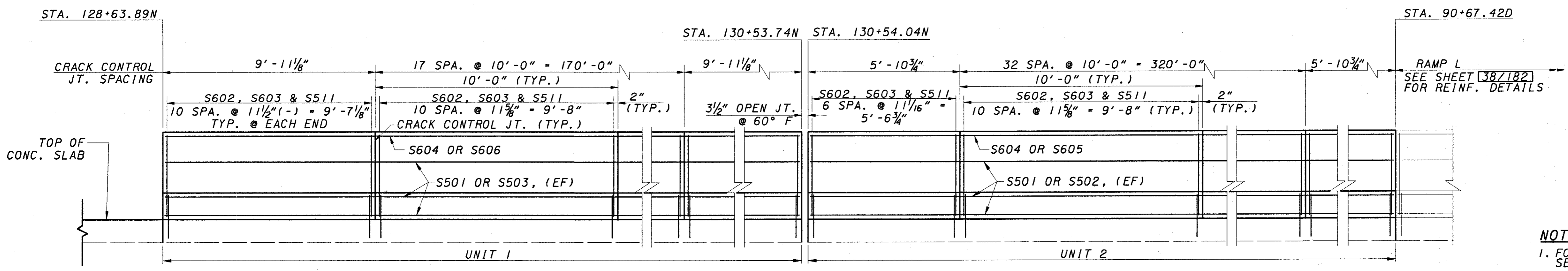
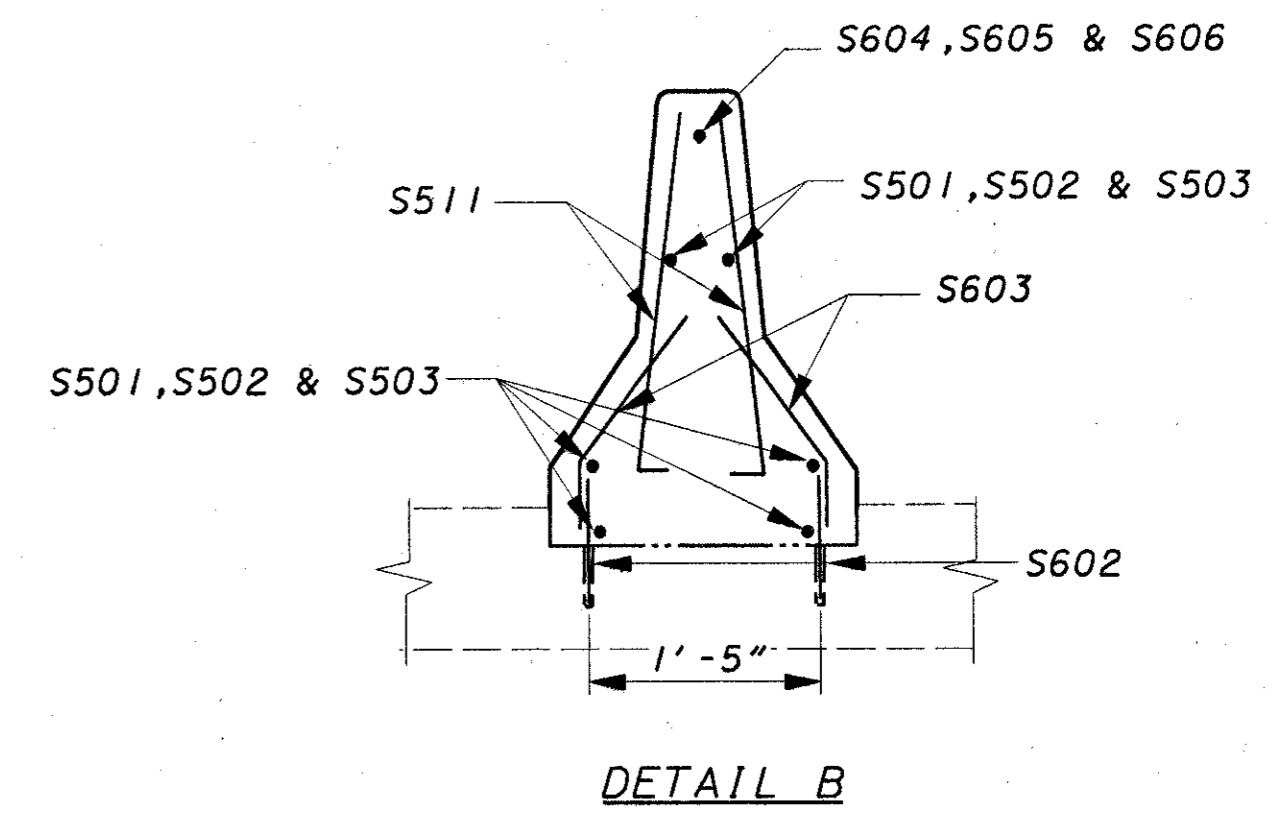
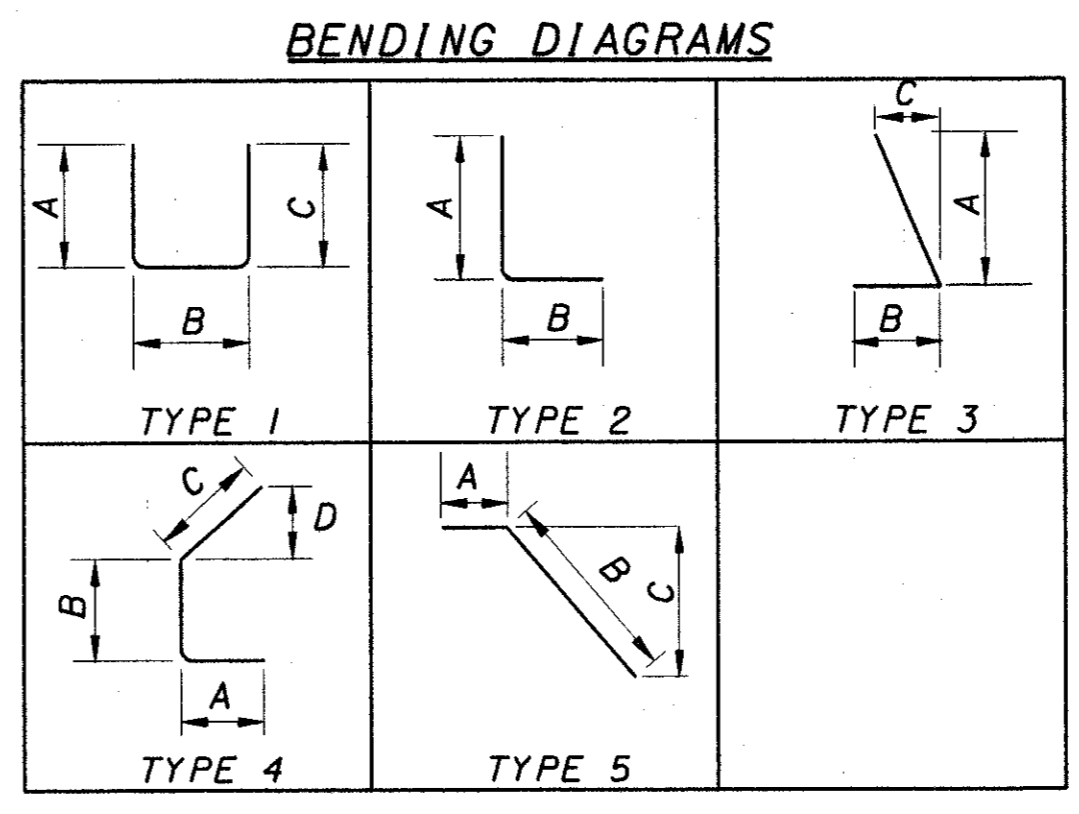
- REMOVAL LIMITS



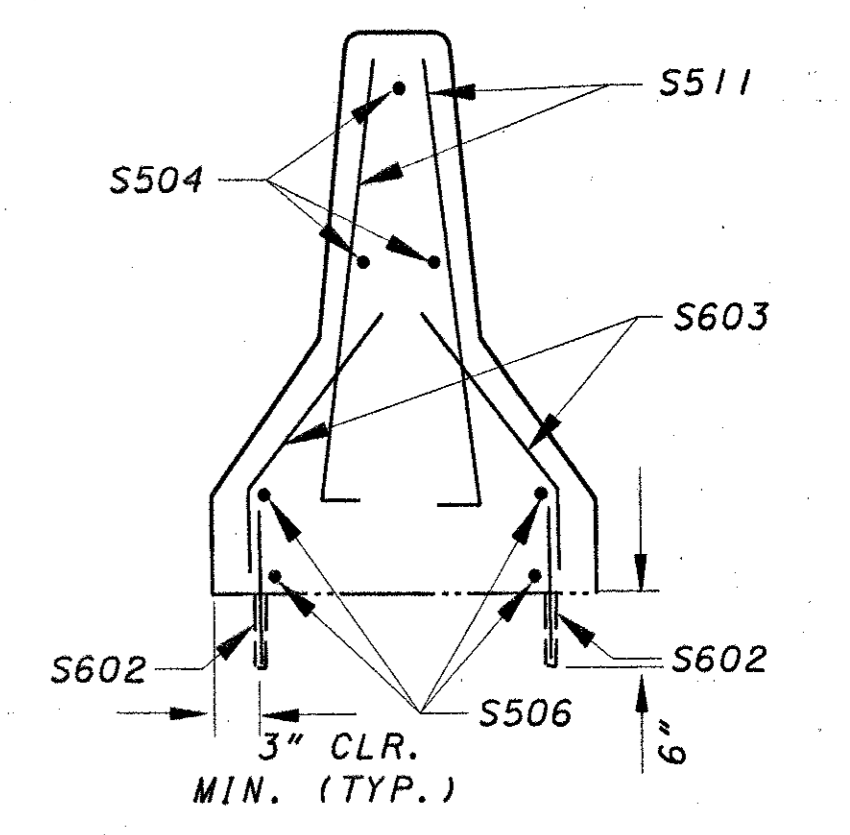
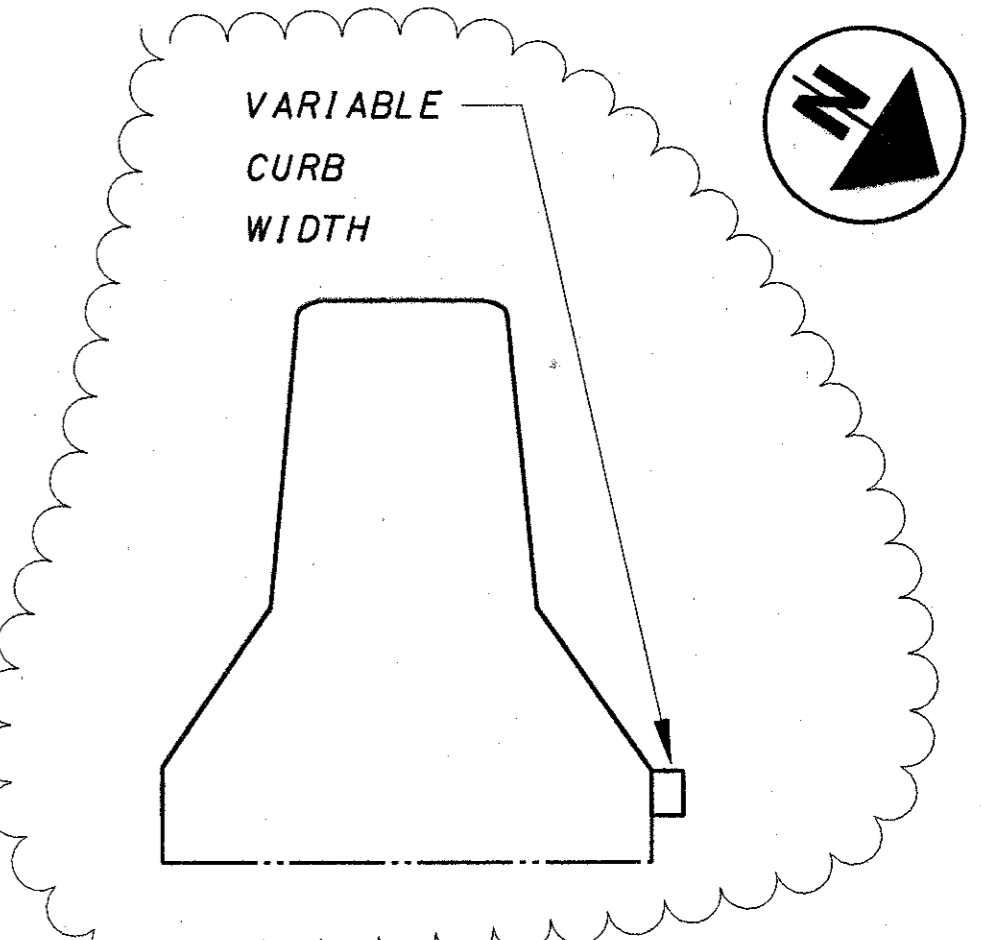
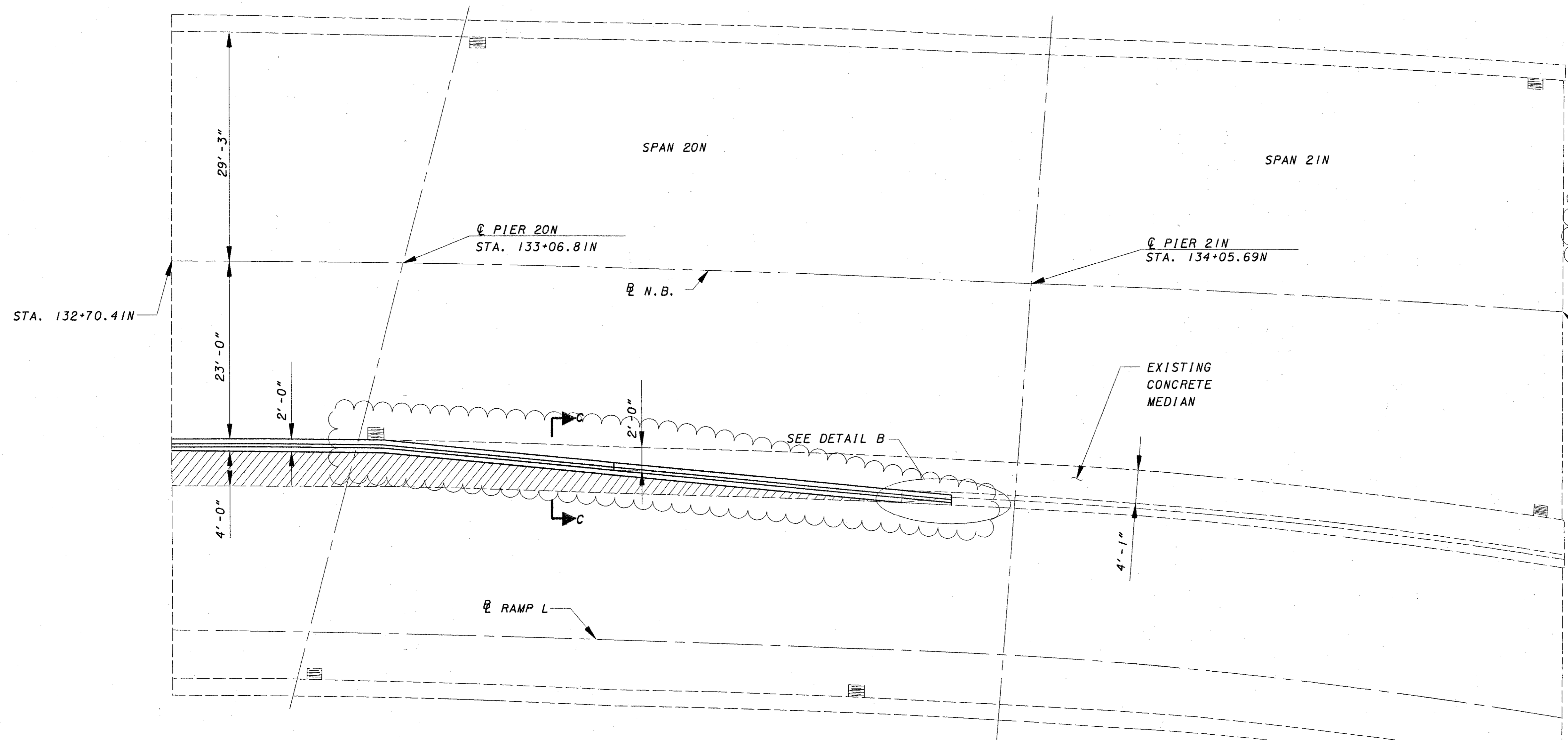
- (\*1) AFTER HYDRO-DEMOLITION PROCEDURE BURN OR CUT EXPOSED VERTICAL REINFORCING STEEL TO ORIGINAL CONCRETE SLAB ELEVATION
- (\*2) VERTICAL REINFORCING STEEL TO REMAIN
- (\*3) FOR STEEL DETAILS SEE DETAIL B

- REMOVAL LIMITS

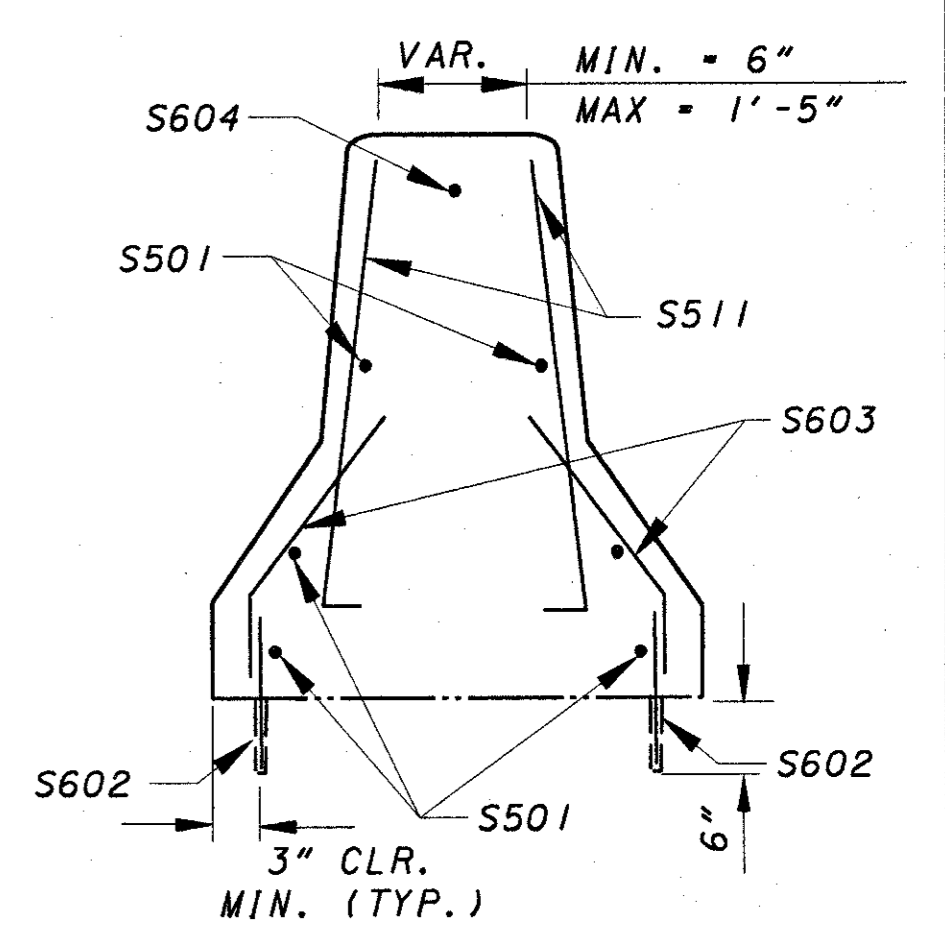
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
S501	108	33'-9"		STR					
S502	12	5'-7"		STR					
S503	12	9'-7"		STR					
S504	3	11'-0"		5	2'-5"	8'-8"	2'-0"		
S505	3	16'-6"		STR					
S506	4	8'-4"		STR					
S507	18	1'-5"		2	1'-2"	4"			
S511	1170	3'-2"		3	2'-6"	10"	2"		
S602	1170	1'-2"		STR					
S603	1170	2'-6"		5	3"	1'-4"	1'-1"		
S604	18	33'-9"		STR					
S605	2	5'-7"		STR					
S606	2	9'-7"		STR					
S608	44	2'-0"		STR					



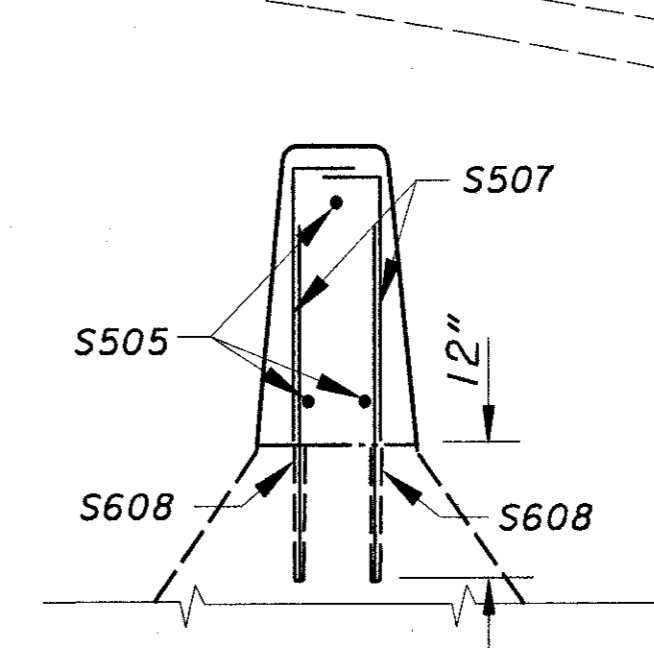
- NOTES:**
1. FOR CRACK CONTROL JOINT DETAILS, SEE STD. DWG. BR-1.
  2. LAP LENGTHS  
 #5 BAR=2'-9"  
 #6 BAR=3'-3"



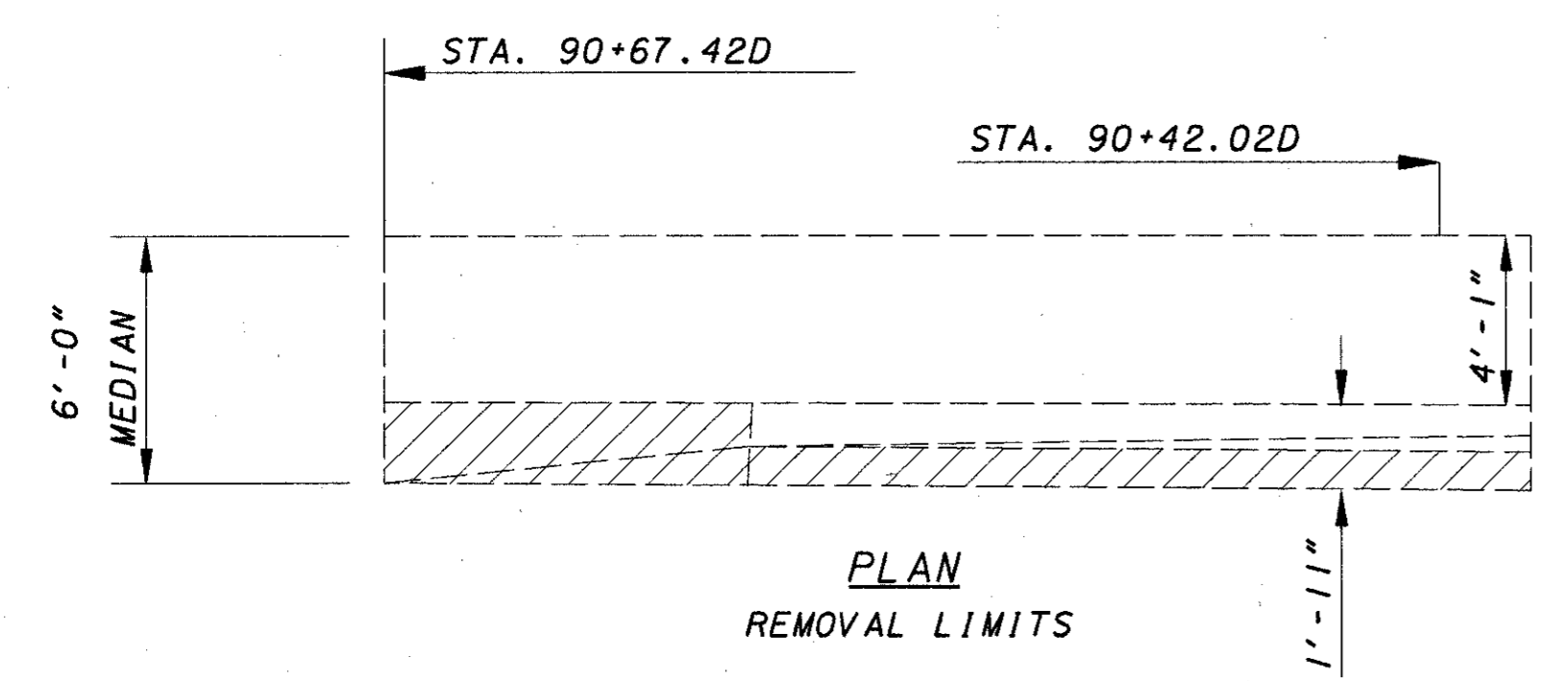
SECTION B-B



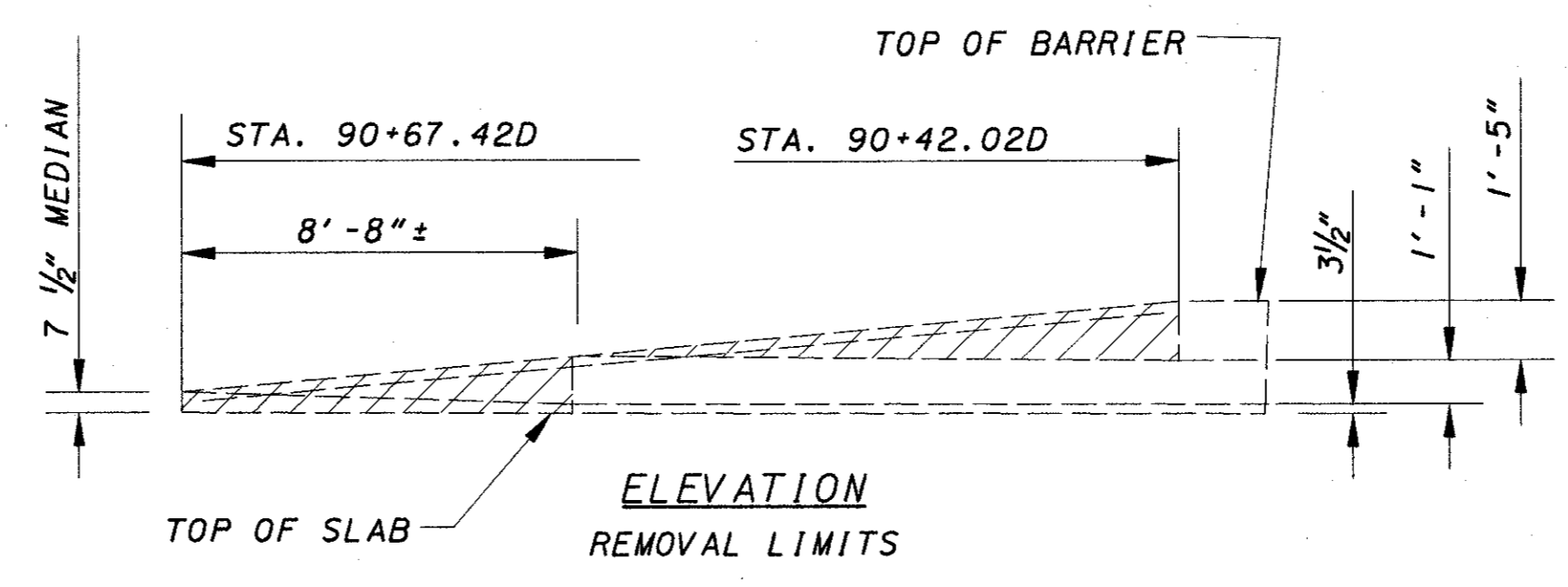
SECTION C-C



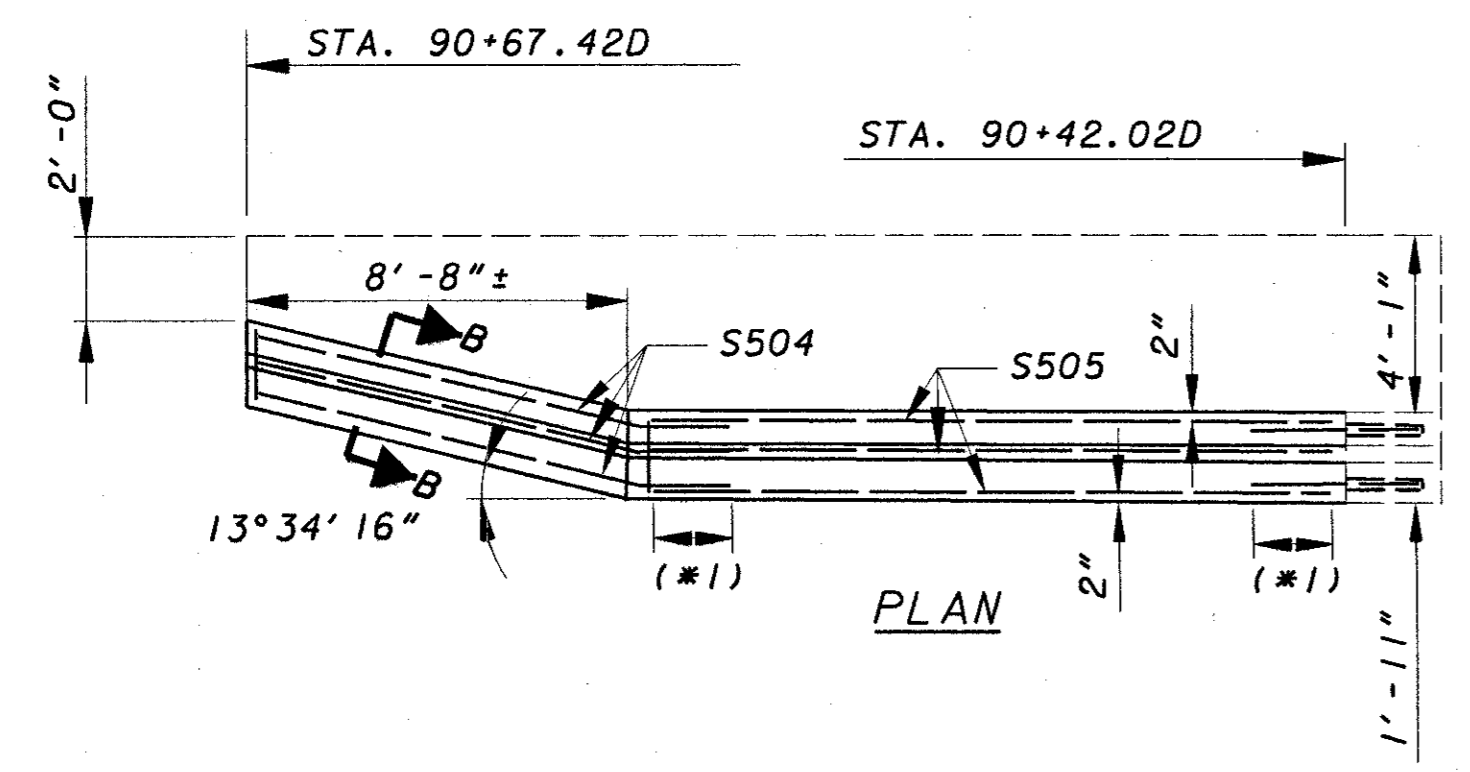
SECTION D-D



PLAN  
REMOVAL LIMITS

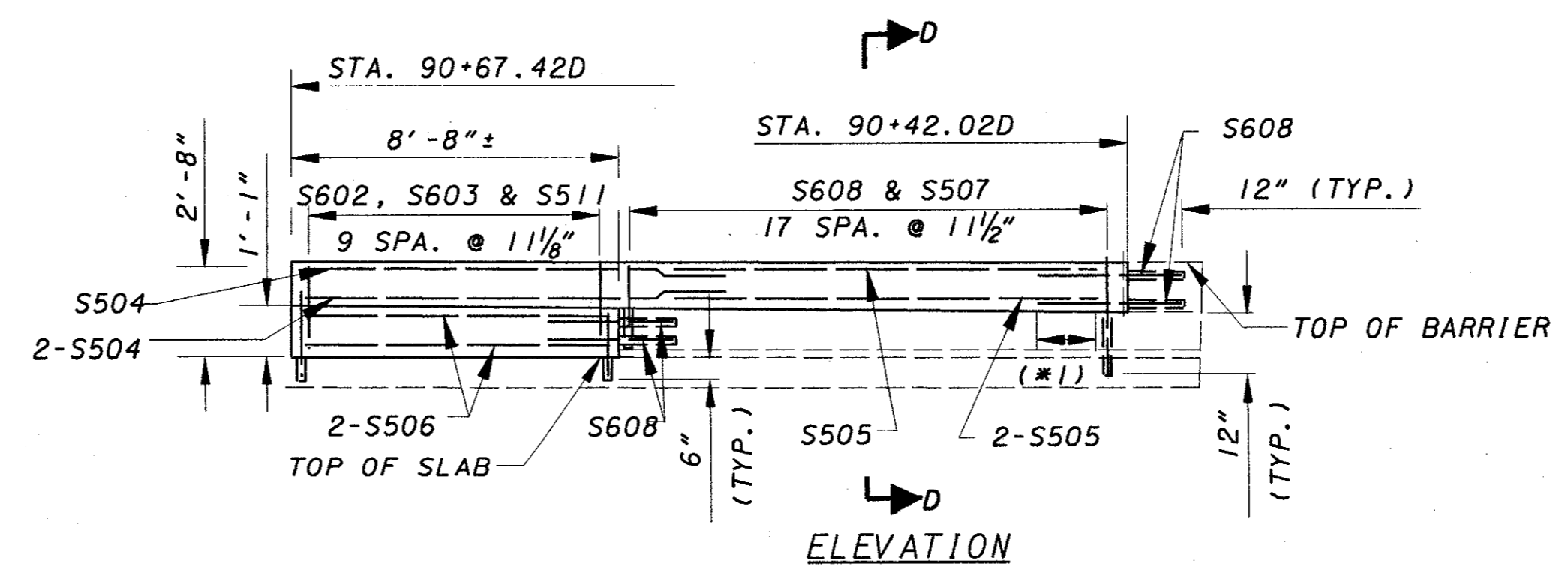


ELEVATION  
REMOVAL LIMITS



PLAN

DETAIL B



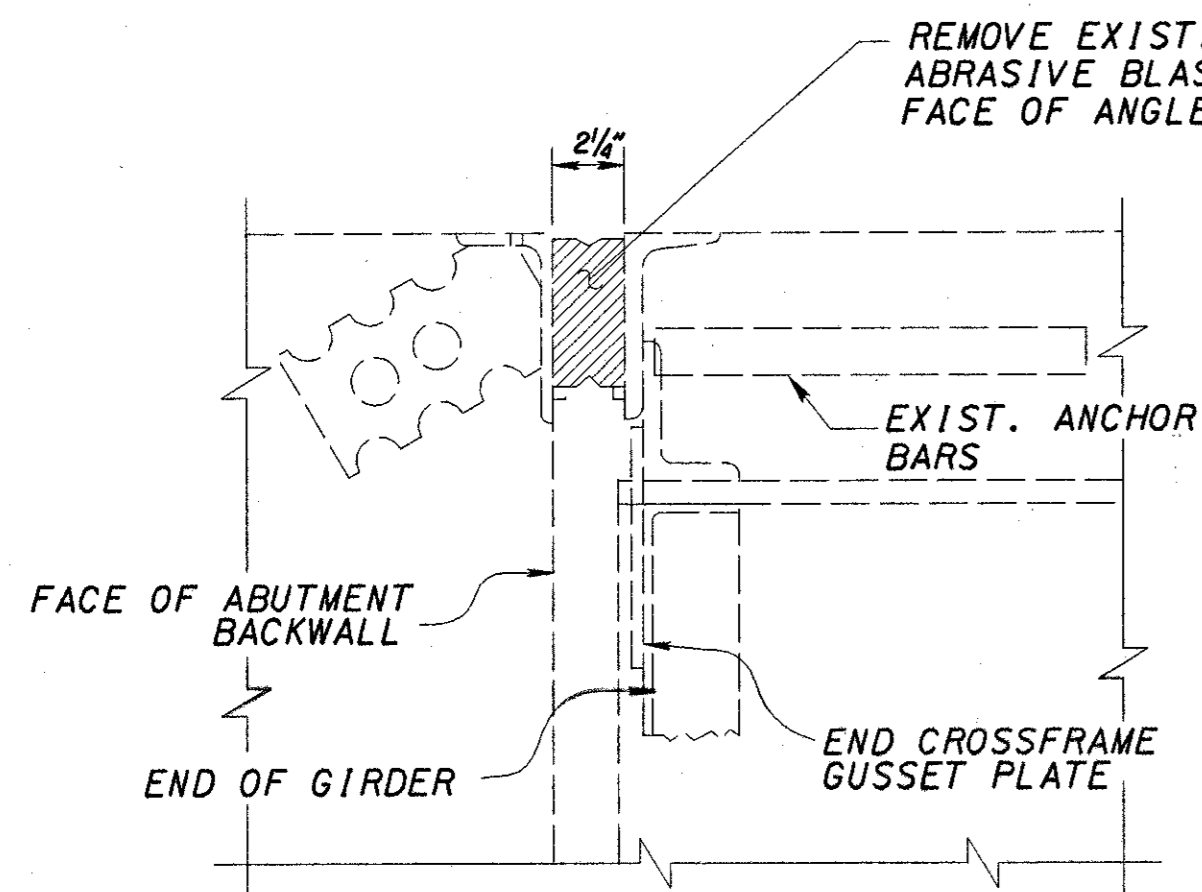
ELEVATION



NOTES

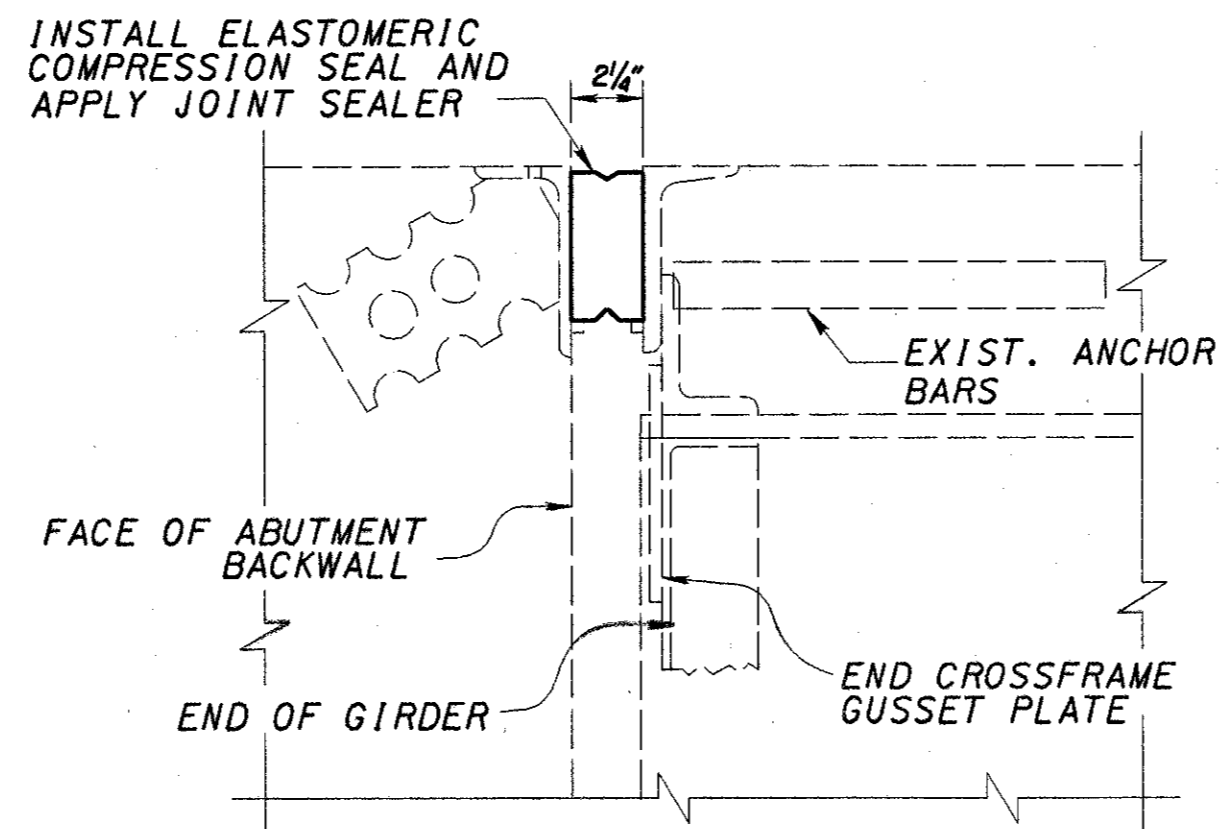
- (\*1) - LAP LENGTH
- #5 BAR - 2'-5"
- #6 BAR - 2'-11"

DESIGNED JEP	CHECKED KVB	DESIGNED AGENCY <b>BARR ENGINEERING, INC.</b>
		DATE 8/2001
		REVIEWED GEA
		STRUCTURE FILE NUMBER 3/17367
STA. 132+70.41 N	STA. 134+89.12 N	DESIGNED HJM
STA. 134+89.12 N	STA. 134+89.12 N	REVISOR REVISED
SUPERSTRUCTURE NORTHBOUND HAM-471-0000R		
HAM -471-0.26		
6/106		
38/182		



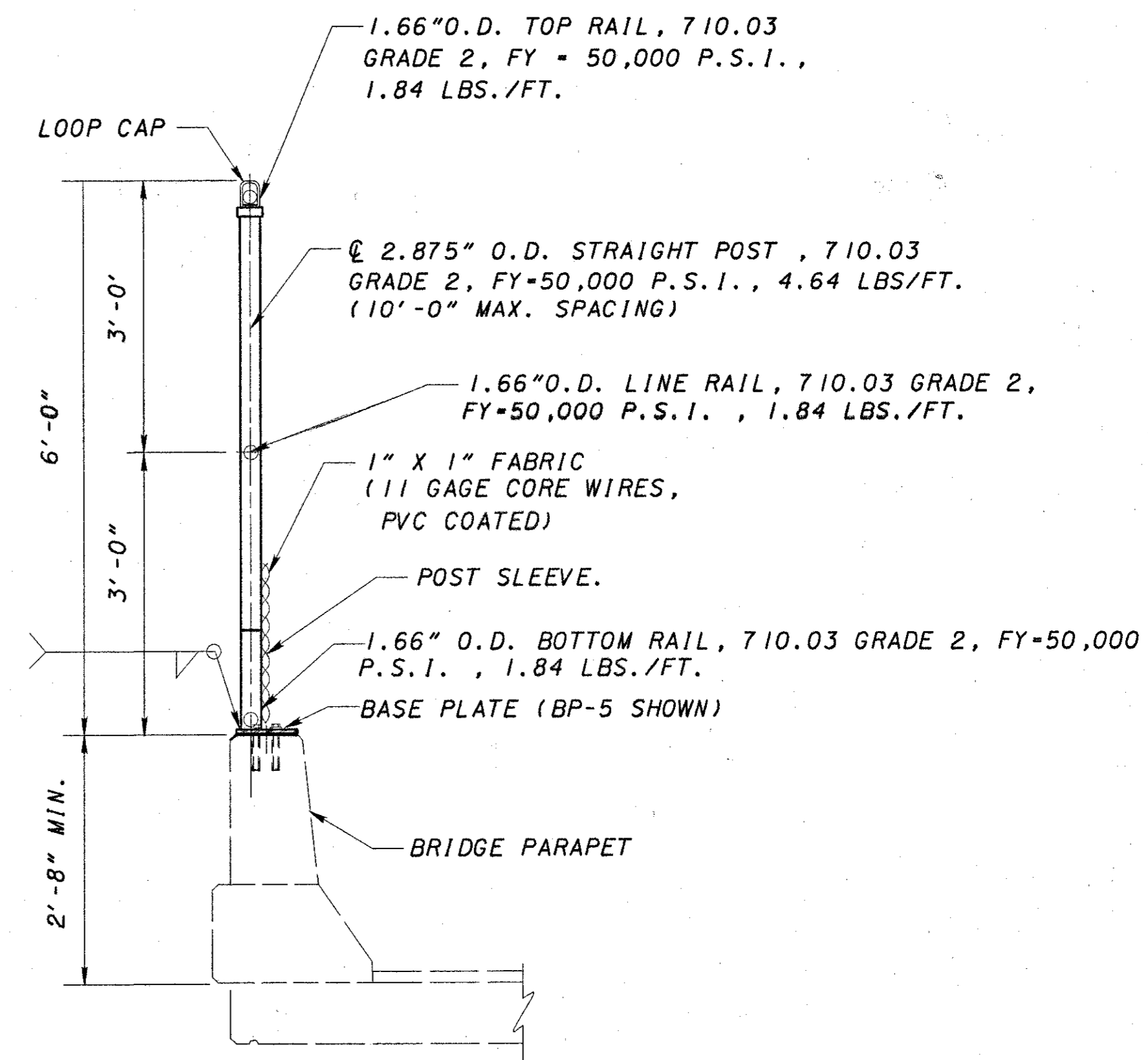
REMOVAL DETAILS FOR COMPRESSION JOINT GLAND

(HAM-471-0000N)

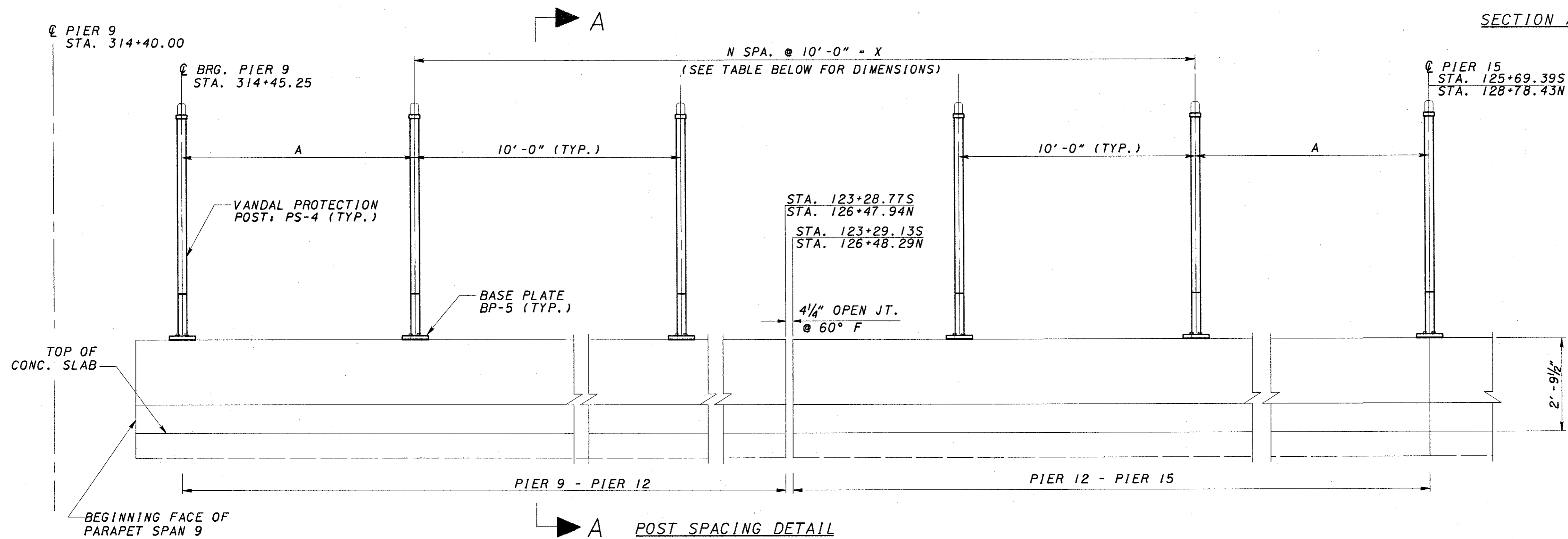


INSTALLATION DETAILS FOR COMPRESSION JOINT GLAND

(HAM-471-0000N)



SECTION A-A



POST SPACING DETAIL

TABLE A

HAM-471-0000	N	X	A
SOUTHBOUND - L	62	620'-0"	5'-8 1/4"
SOUTHBOUND - R	59	590'-0"	7'-0 1/4"
NORTHBOUND - L	58	580'-0"	9'-3 1/4"
NORTHBOUND - R	56	560'-0"	6'-9 1/4"

DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, OH 43215  
PH: (614) 224-1941

DATE  
8/2001  
REVIEWED  
GEA  
STRUCTURE FILE NUMBER  
3117391, 3117359,  
3117361

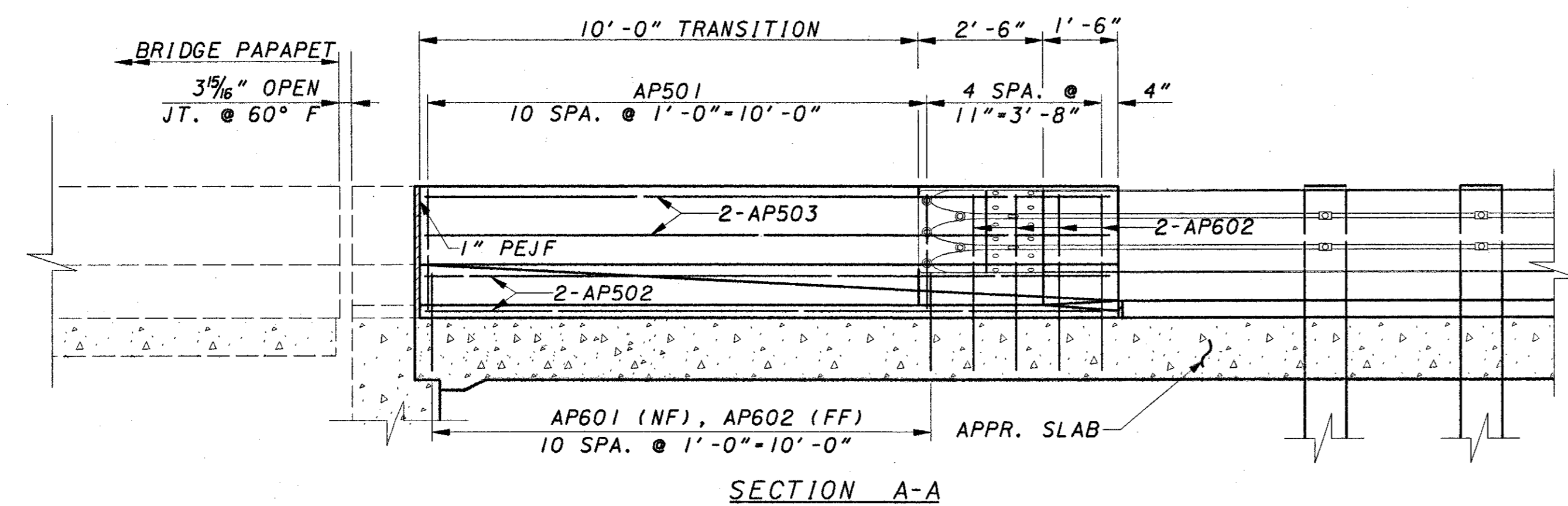
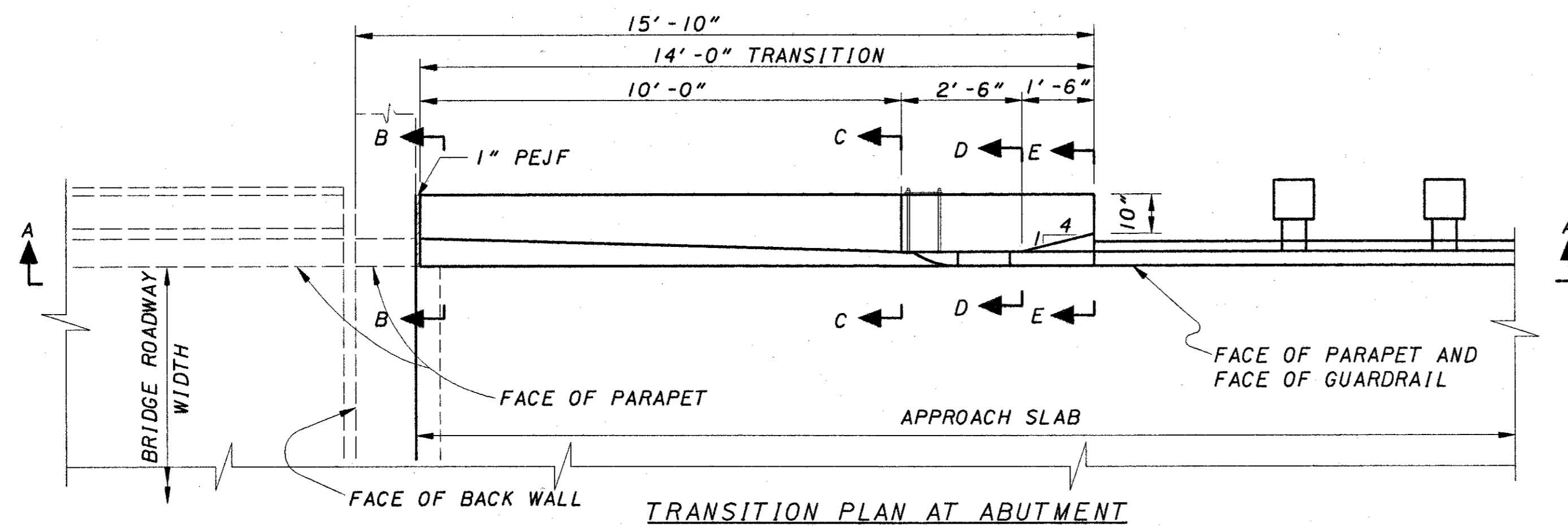
DRAWN  
FIB  
CHECKED  
JEP  
ASB

SUPERSTRUCTURE DETAILS  
BRIDGE NO. HAM-471-0000 L/R/W

HAM-471-0.26

7/106

39  
182

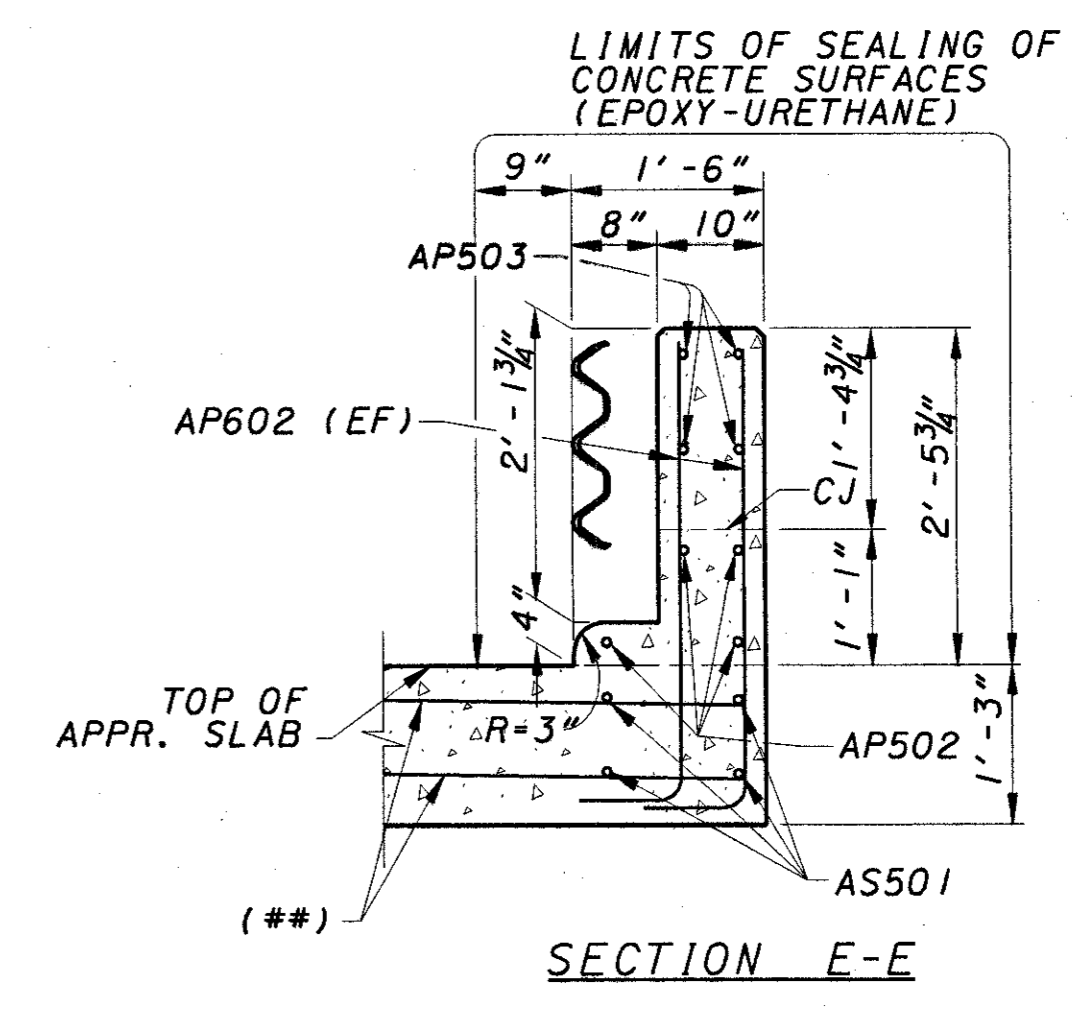
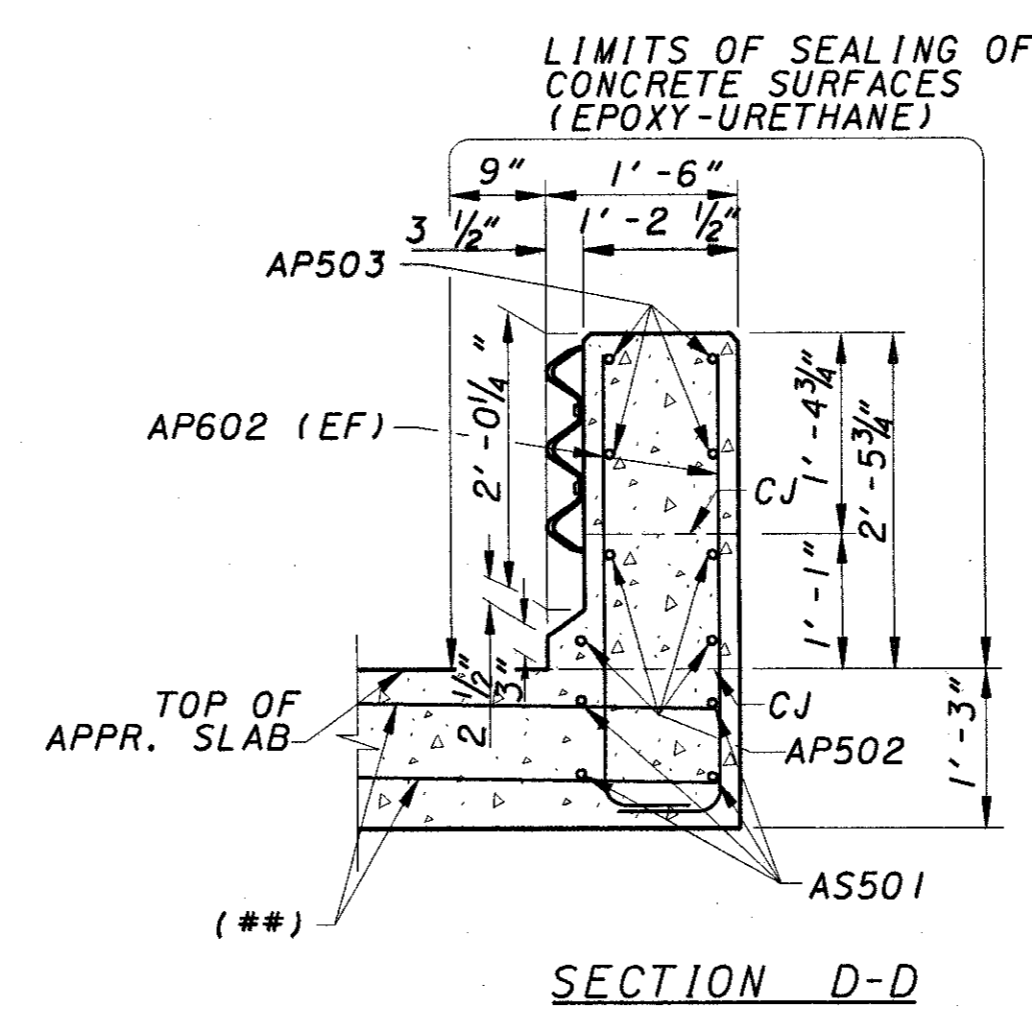
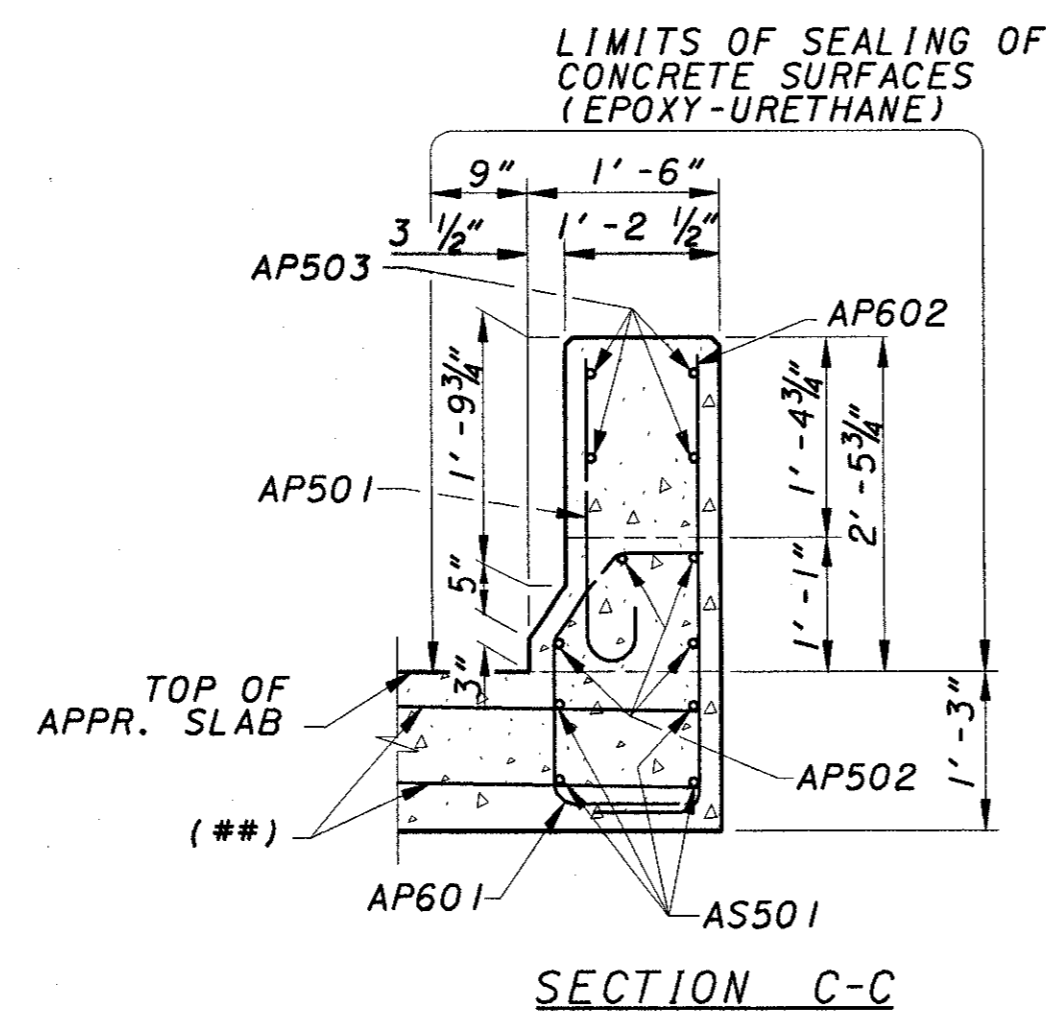
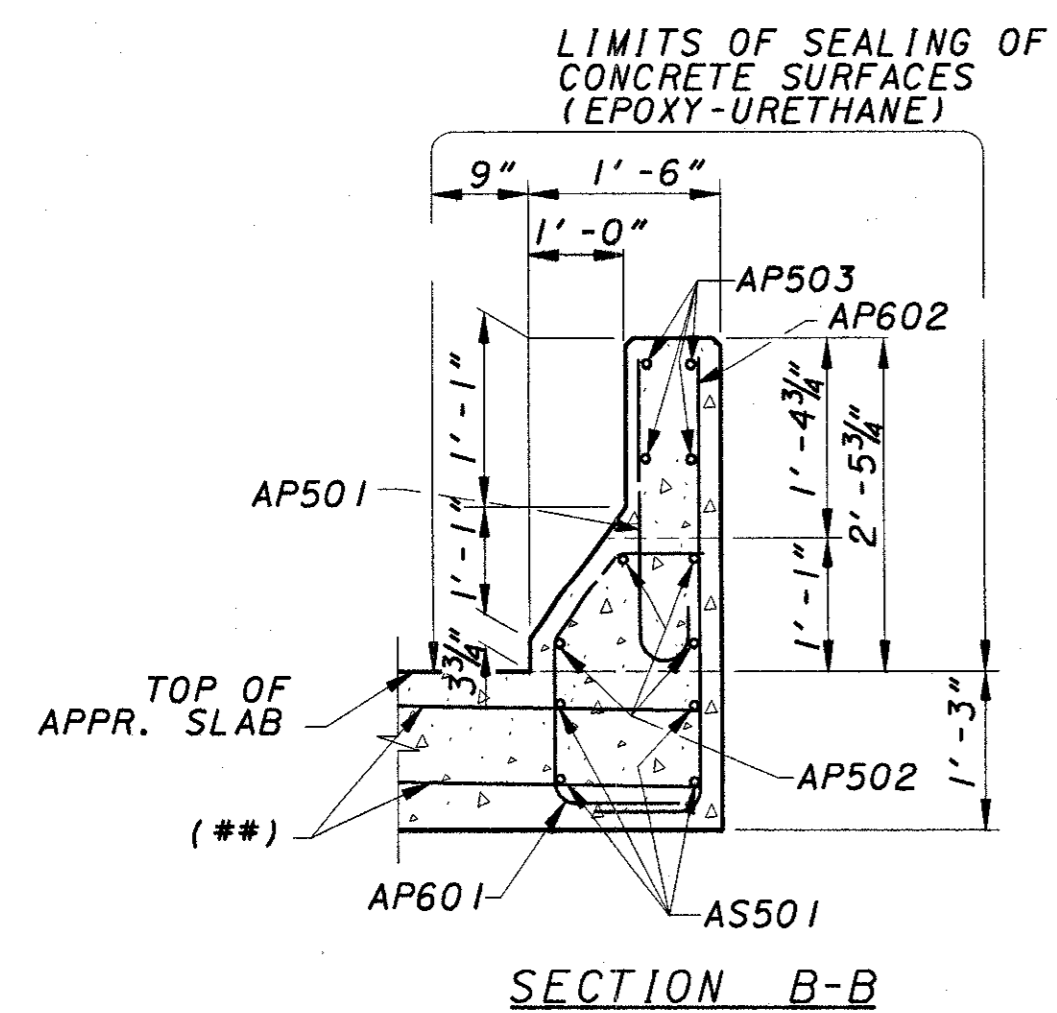
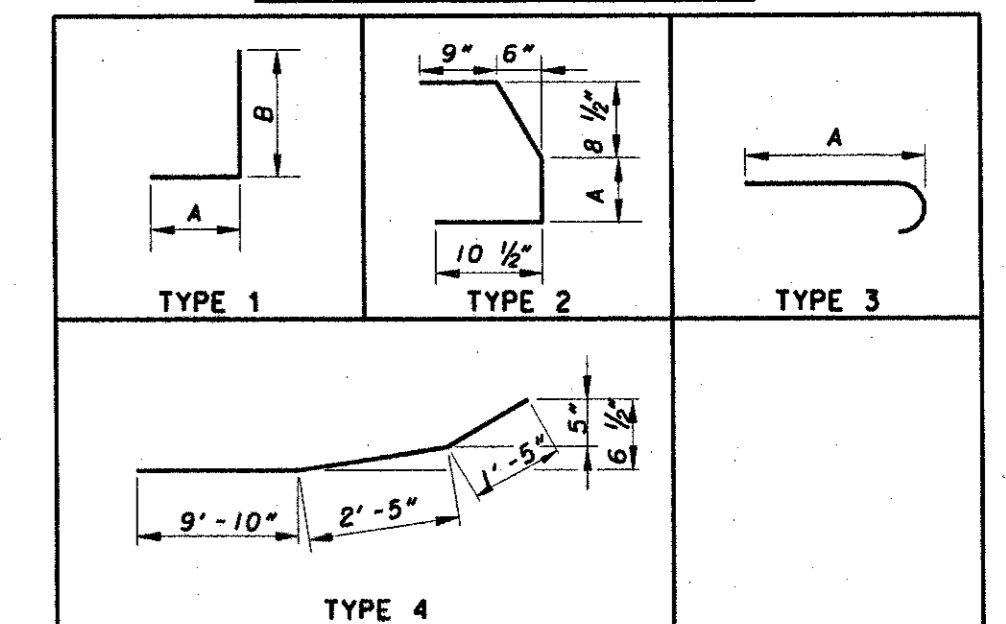


**NOTES:**

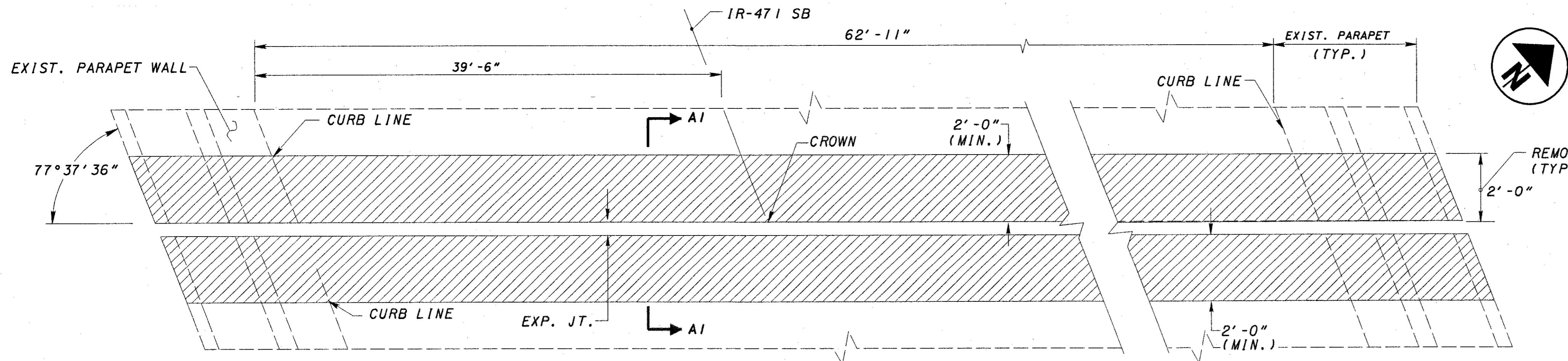
1. SEE SECTIONS FOR SEALING OF CONCRETE SURFACES LIMITS.
  2. ALL REINFORCEMENT CLEARANCE SHALL BE 2" MINIMUM.
  3. AS501 BARS IN APPROACH SLAB BELOW PARAPET SHALL BE 13'-8" LONG.
  4. WIDTH OF APPROACH SLAB NARROWS TO 47'-11 1/2" FOR HAM-471-000 L AND 55'-5 3/8" FOR HAM-471-000 R BEYOND THE PARAPET TRANSITION.
- \*\* EXTEND APPROACH SLAB TRANSVERSE BARS AS REQUIRED.

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
APPROACH PARAPET									
AP501	11	2'-10"		3	2'-3"				
AP502	4	13'-8"		STR					
AP503	4	13'-7"		4					
AP601	11	3'-4"		2	1'-2"				
AP602	19	4'-3"		1	11"	3'-5"			

**BENDING DIAGRAMS**

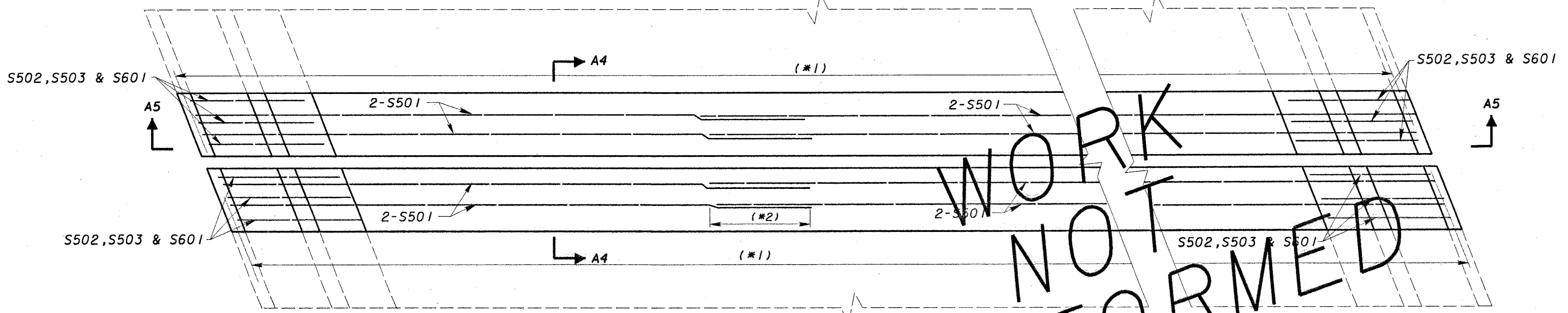
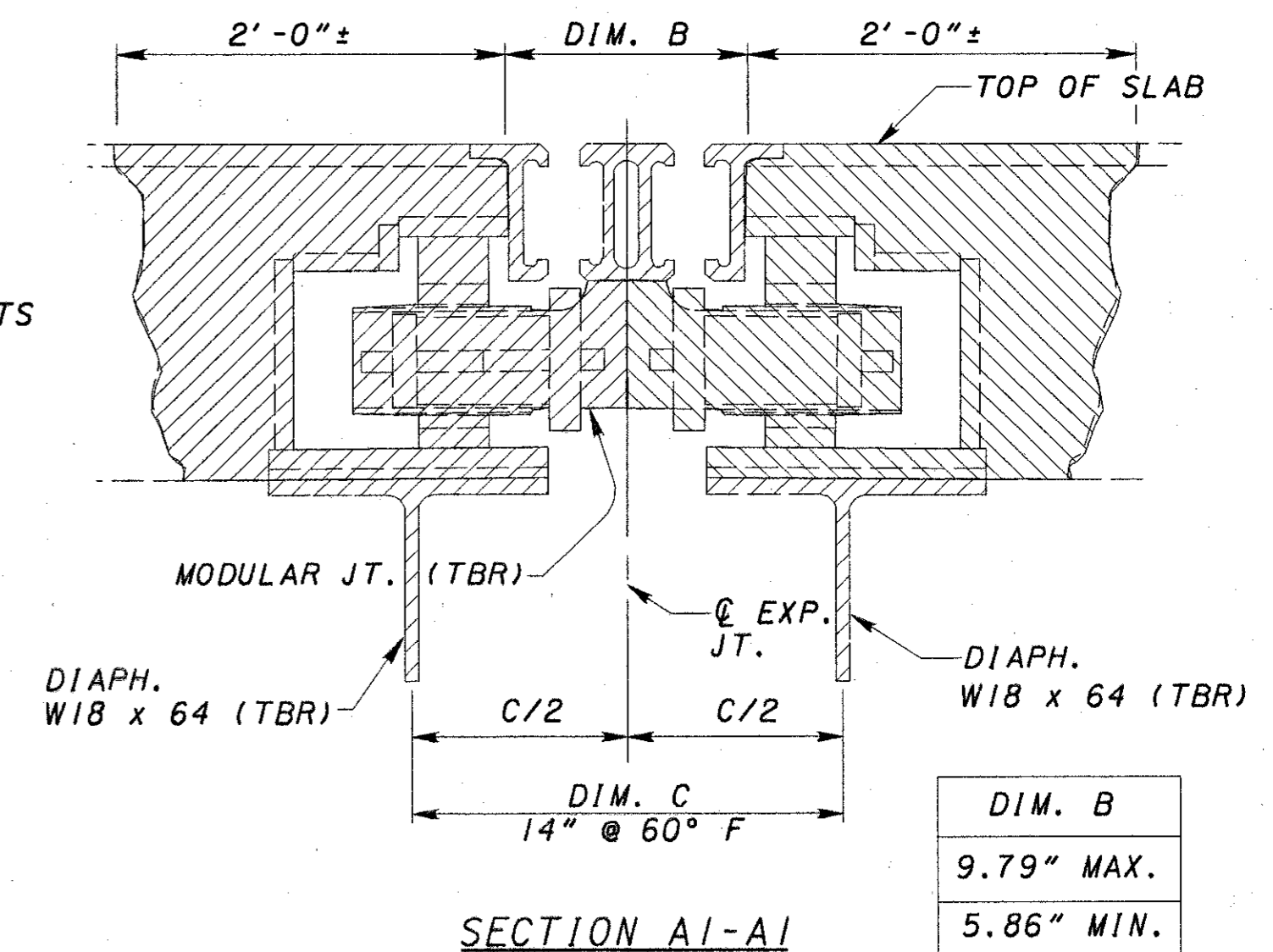






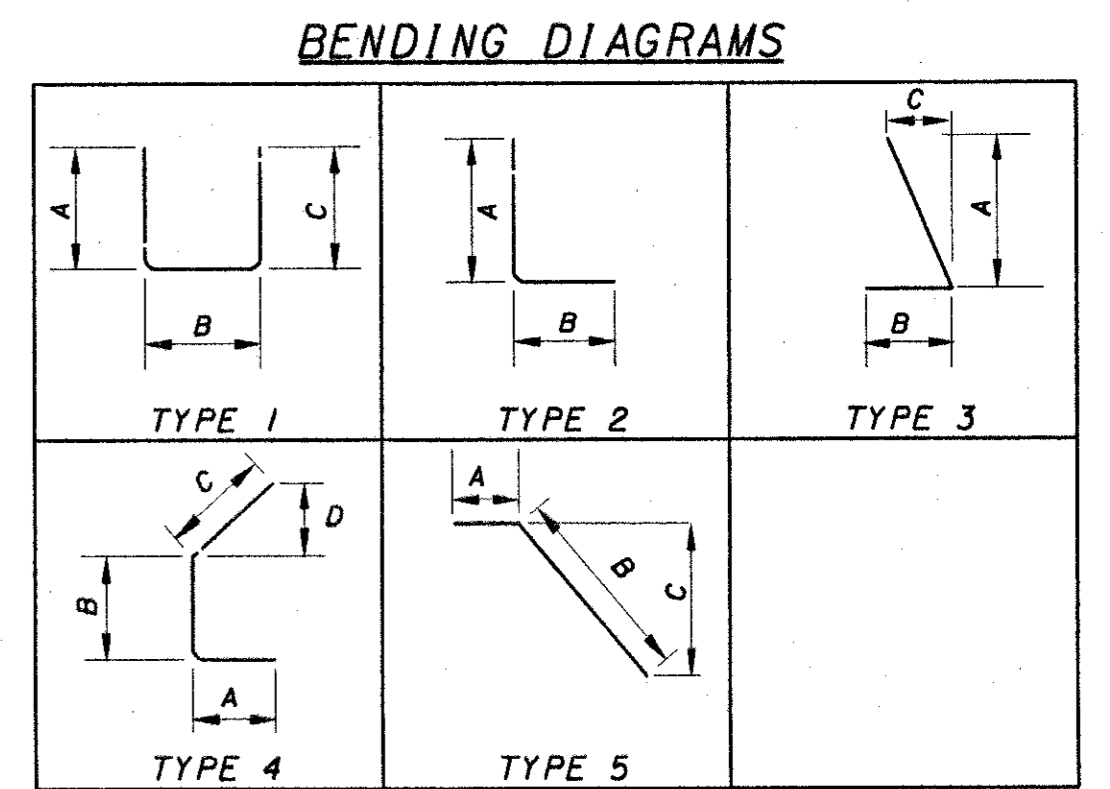
PRESERVE ALL LONG. REINFORCING BARS IN PARAPETS & DECK SLAB REMOVAL AREAS

EXISTING DECK SLAB & PARAPET REMOVAL PLAN

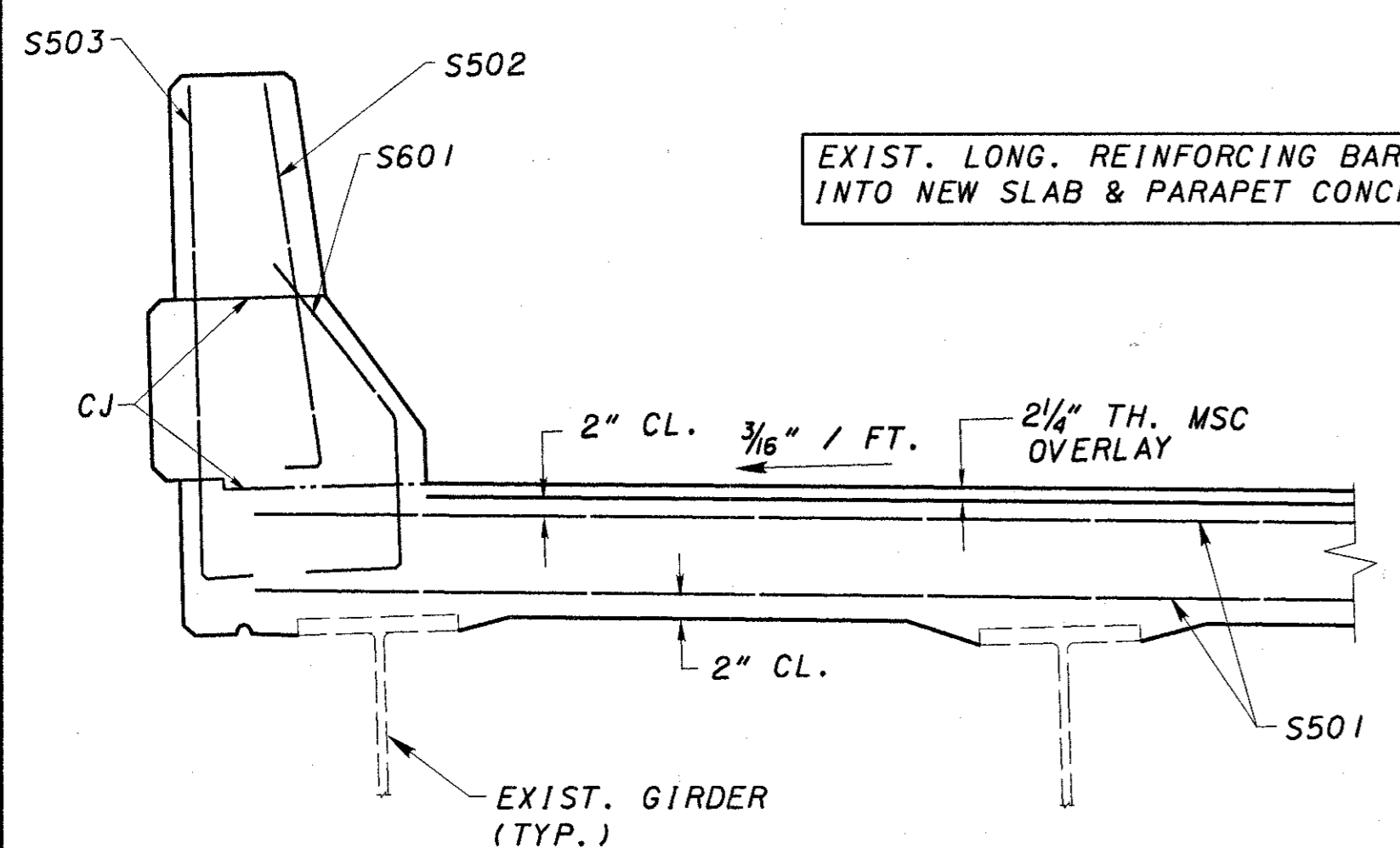


(\*1) EXIST. DECK SLAB & PARAPET LONG. BARS PROTRUDE INTO NEW CONCRETE AREA  
 (\*2) LAP LENGTHS #5 BAR=2'-5"

MODIFIED DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

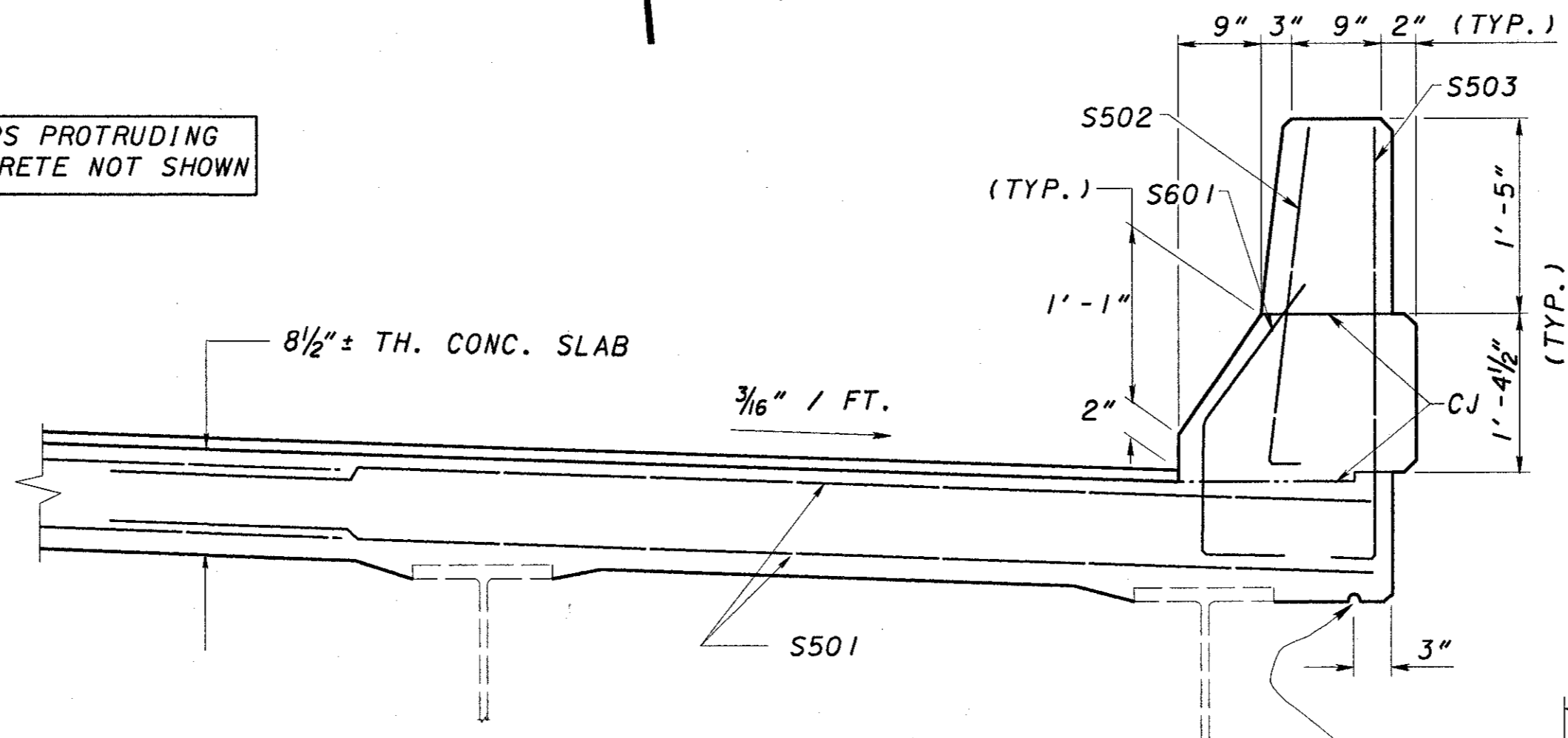


MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
SUPERSTRUCTURE									
S501	16	34'-6"		STR					
S502	12	3'-2"		3	2'-6"	10"	2"		
S503	8	3'-8"		2	3'-0"	10"			
S601	12	3'-5"		4	1'-0"	8"	2'-0"	1'-7"	

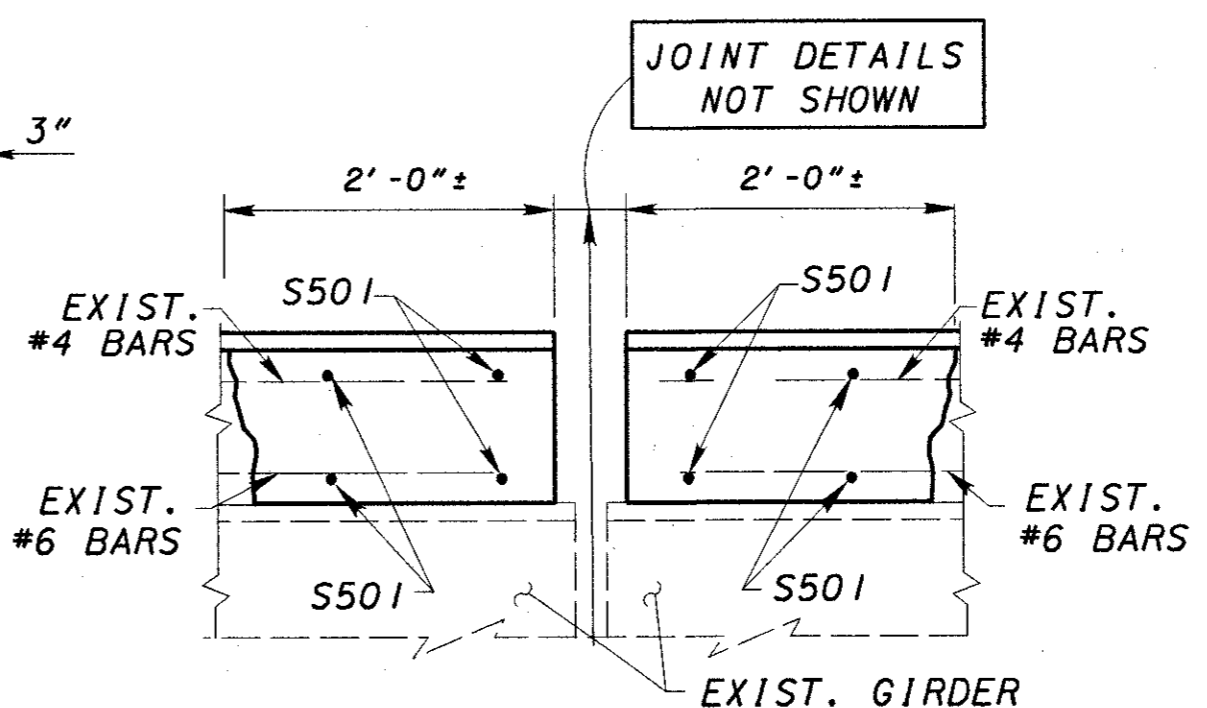


EXIST. LONG. REINFORCING BARS PROTRUDING INTO NEW SLAB & PARAPET CONCRETE NOT SHOWN

SECTION A5-A5

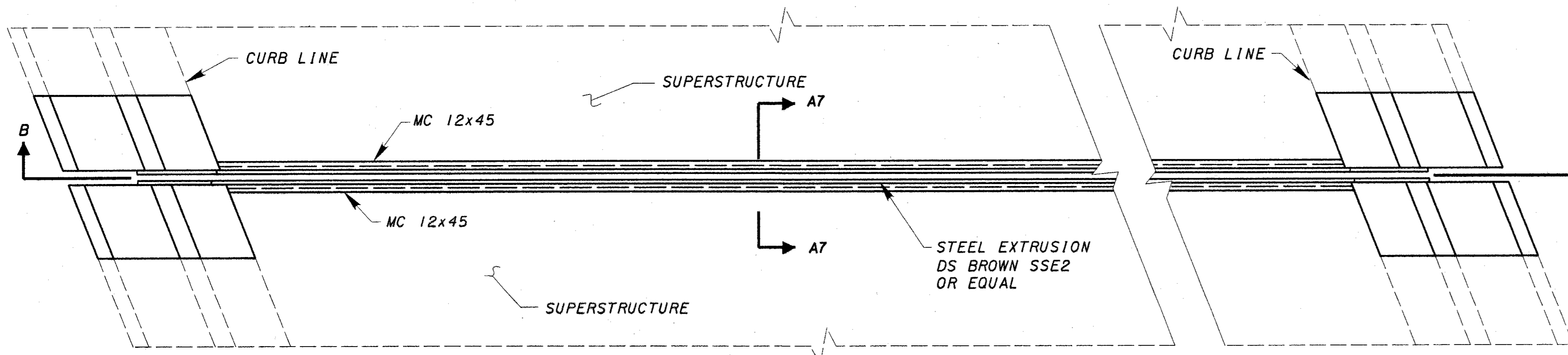


SECTION A4-A4

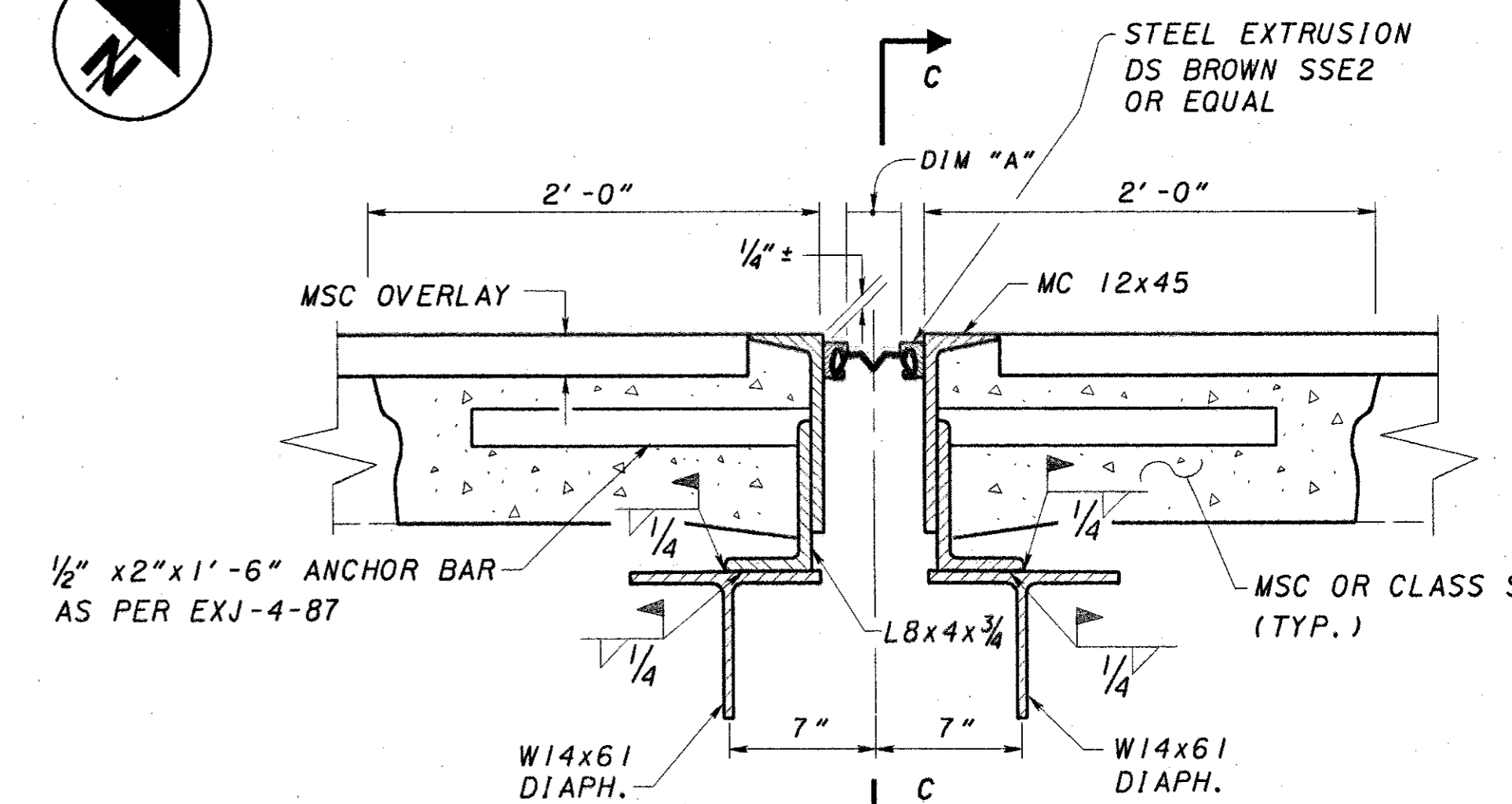


SECTION A4-A4

LEGEND  
 [Hatched Box] - REMOVAL LIMITS  
 NOTES  
 REFER TO EXIST. PLANS FOR DETAILS NOT SHOWN



PIER 12 EXPANSION JOINT

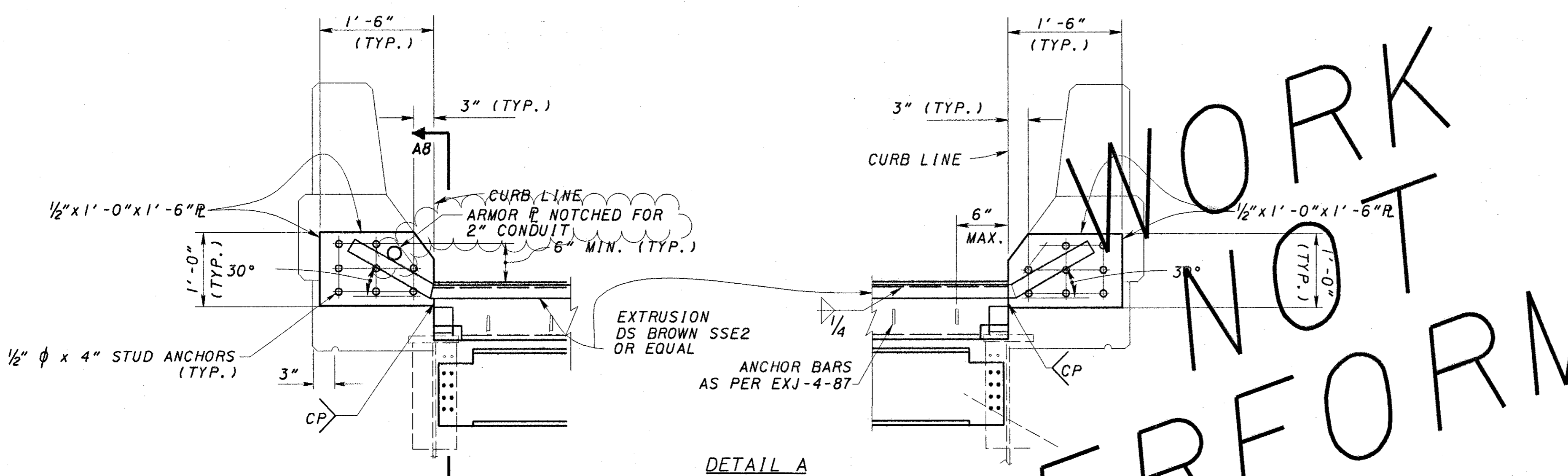


SECTION A7-A7

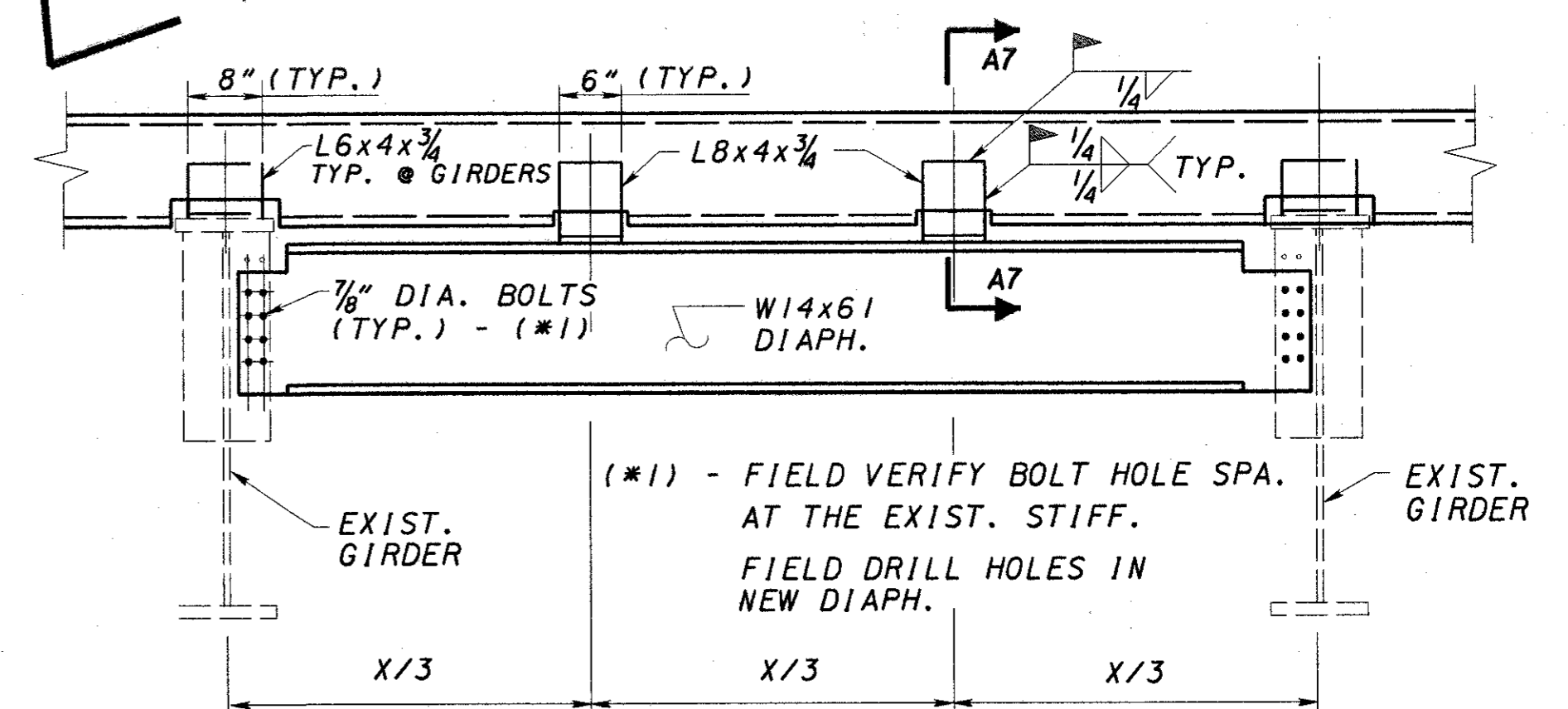
5" STRIP SEAL GLAND  
D.S. BROWN NO. A2R

TEMPERATURE (F)	DIMENSION "A"
30°	3 1/4"
40°	2 7/8"
50°	2 5/8"
60°	2 1/4"
70°	1 15/16"
80°	1 11/16"
90°	1 3/8"

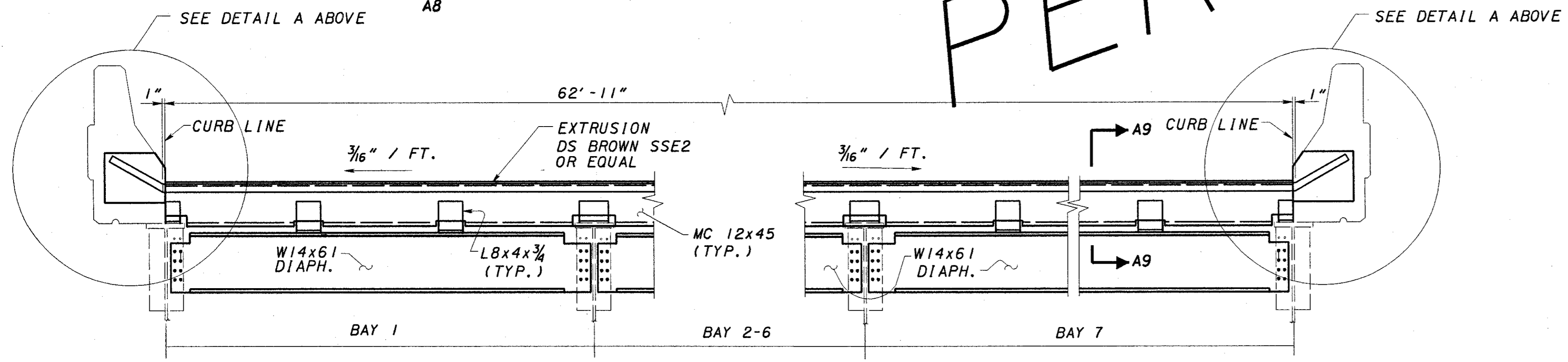
EXPANSION LENGTH = 395'-0" ±



DETAIL A



SECTION C-C



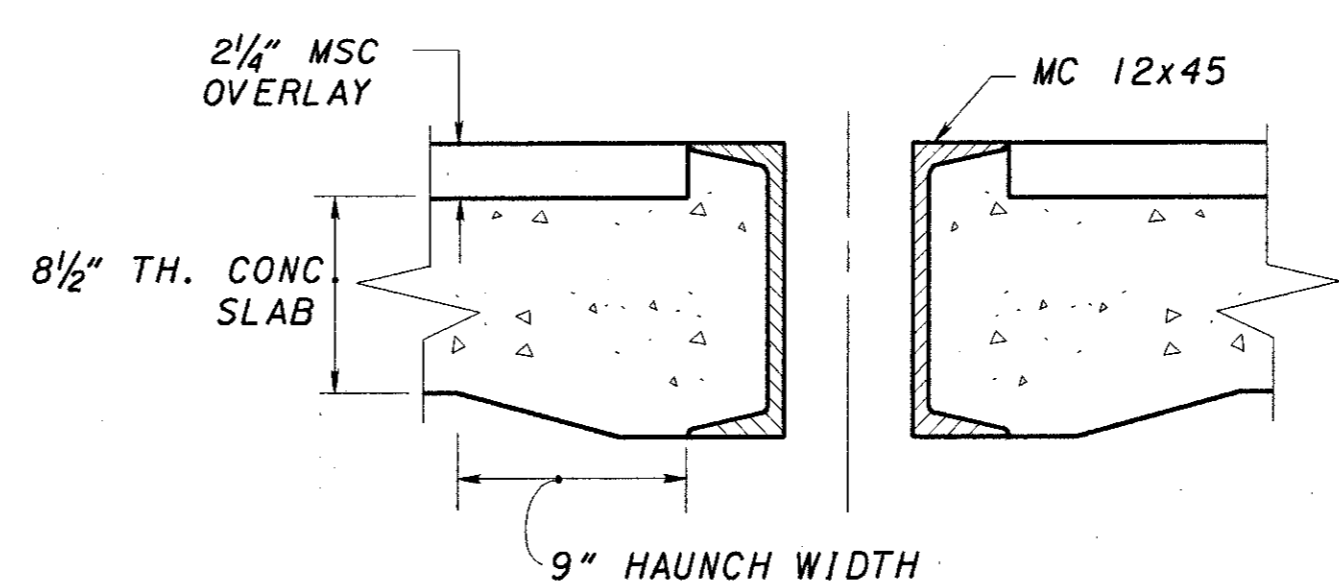
(SEE TABLE A FOR DIMENSION X)  
SECTION B-B

TABLE A

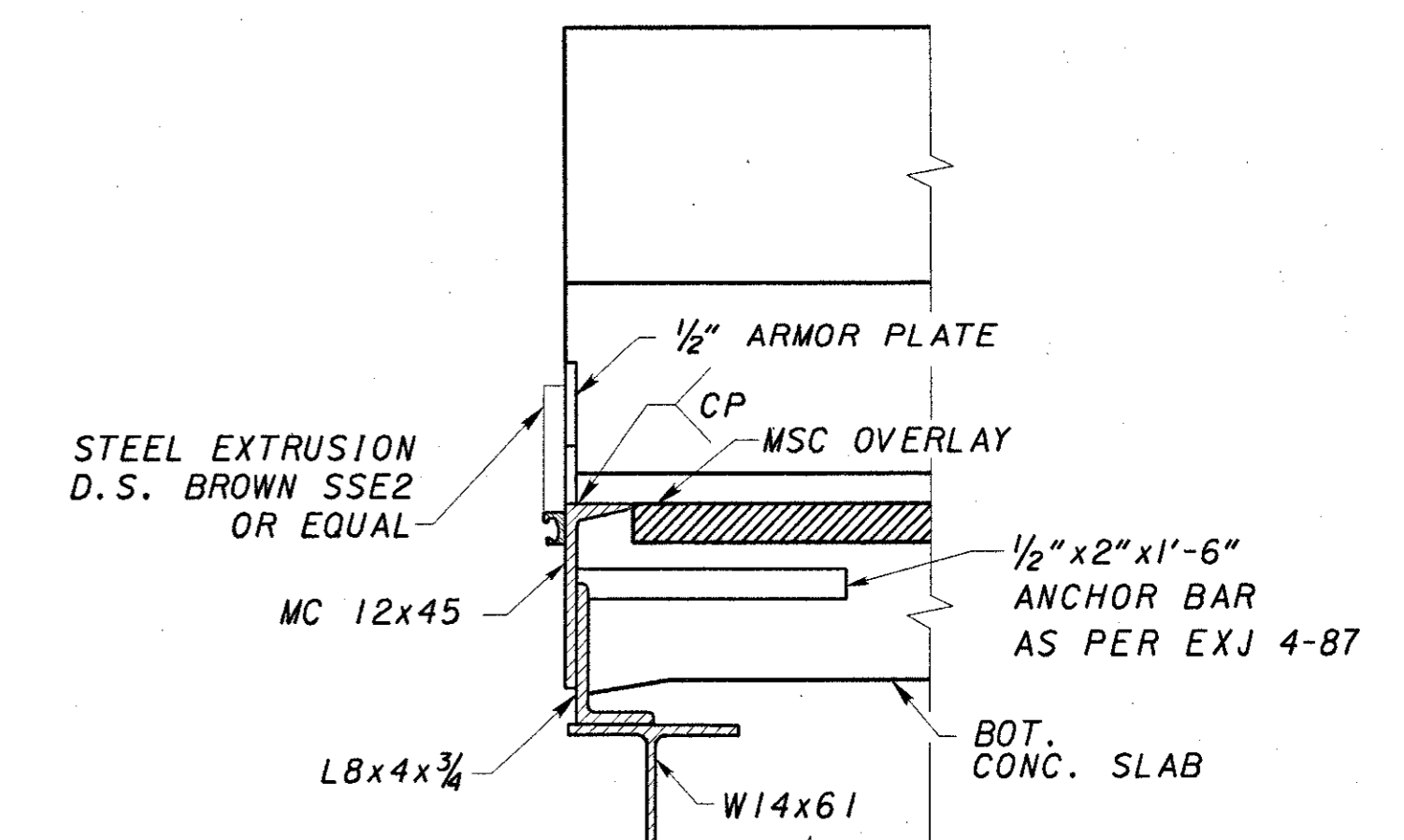
BAY NO.	DIM. C/C OF GIRDER
1	3' - 2 1/8"
2	7' - 6 1/2"
3	10' - 2 1/8"
4	10' - 5 3/16"
5	10' - 5 3/16"
6	10' - 5 3/16"
7	10' - 5 3/16"

NOTE:  
ALL EXISTING DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO STARTING THE FABRICATION OF THE JOINT.

WORK NOT PERFORMED

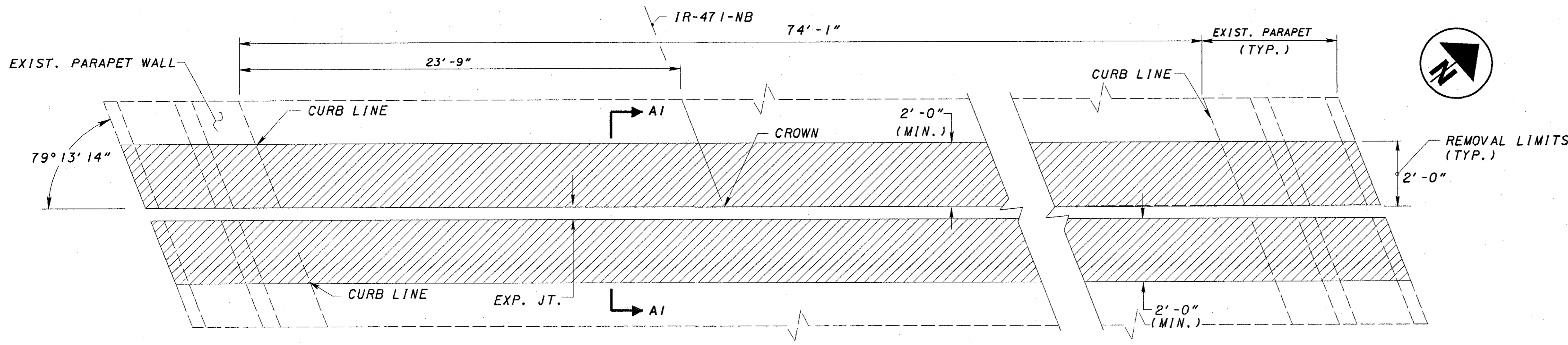


SECTION A9-A9



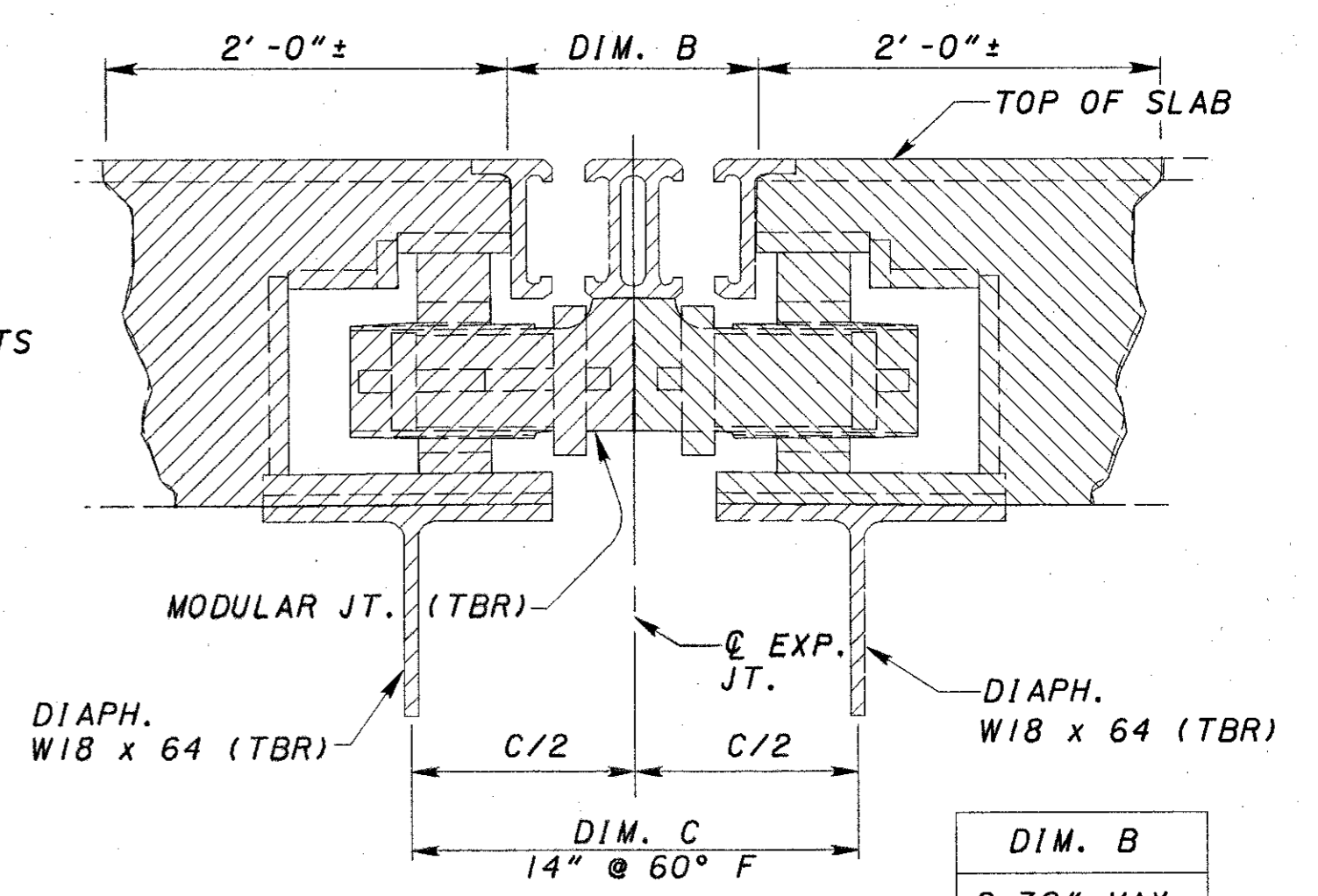
SECTION A8-A8

DESIGN AGENCY: BARR ENGINEERING, Five East Long Street, Columbus, Ohio 43215, Ph: (614) 224-1941  
 DATE: 8/2001  
 REVIEWED: GEA, JEP  
 CHECKED: JEP, ASB  
 STRUCTURE FILE NUMBER: 3117359  
 PIER 12 EXPANSION JOINT DETAILS  
 BRIDGE NO. HAM-471-0000 L  
 HAM-471-0.26  
 10/106  
 42/182



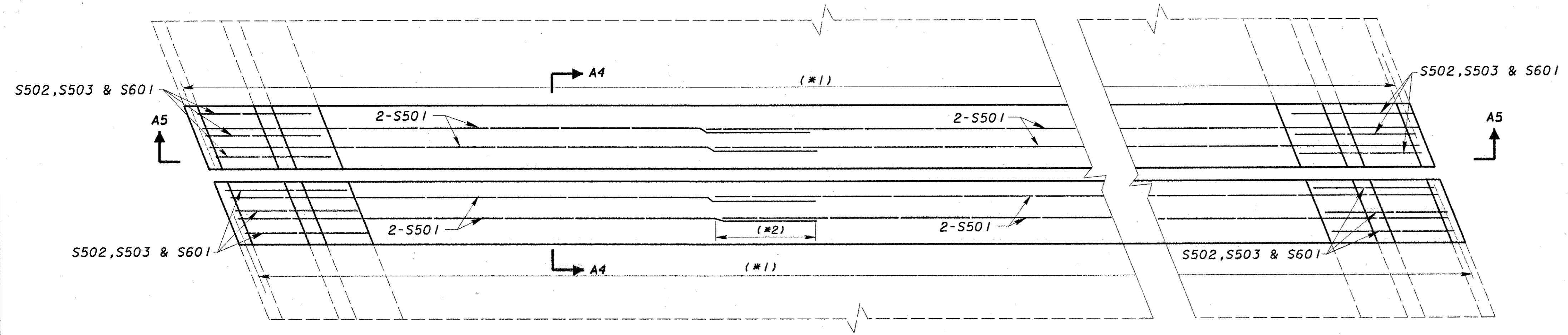
PRESERVE ALL LONG. REINFORCING BARS IN PARAPETS & DECK SLAB REMOVAL AREAS

EXISTING DECK SLAB & PARAPET REMOVAL PLAN

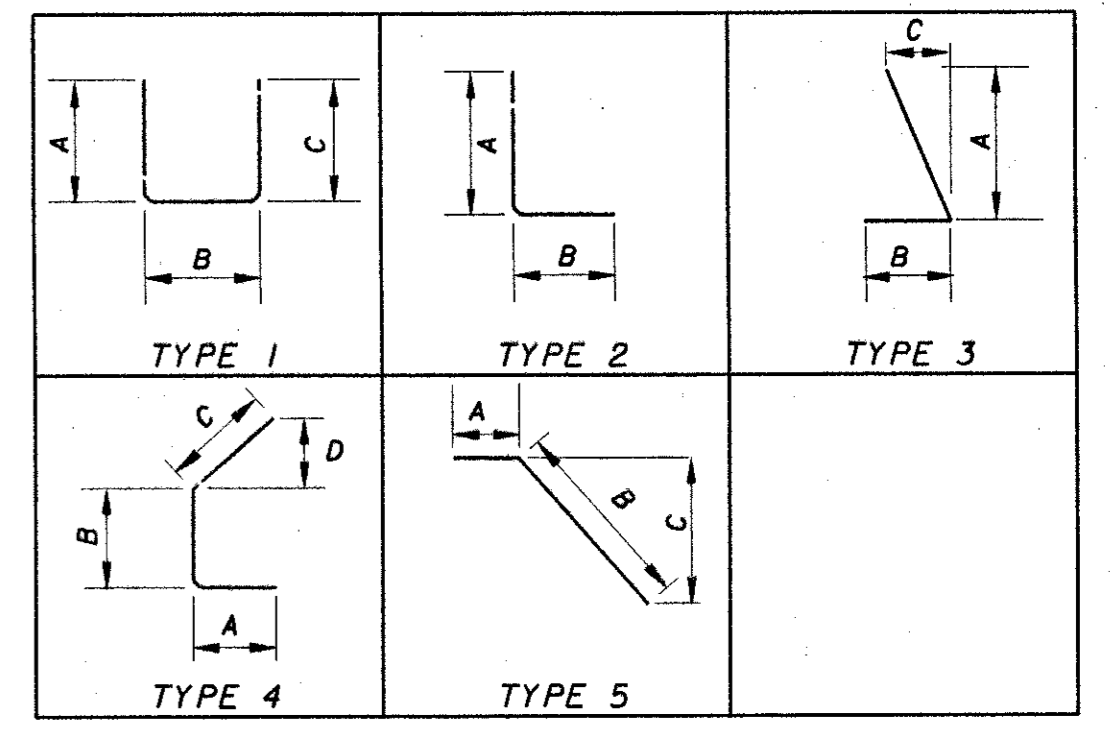


DIM. B  
9.79" MAX.  
5.86" MIN.

SECTION A1-A1



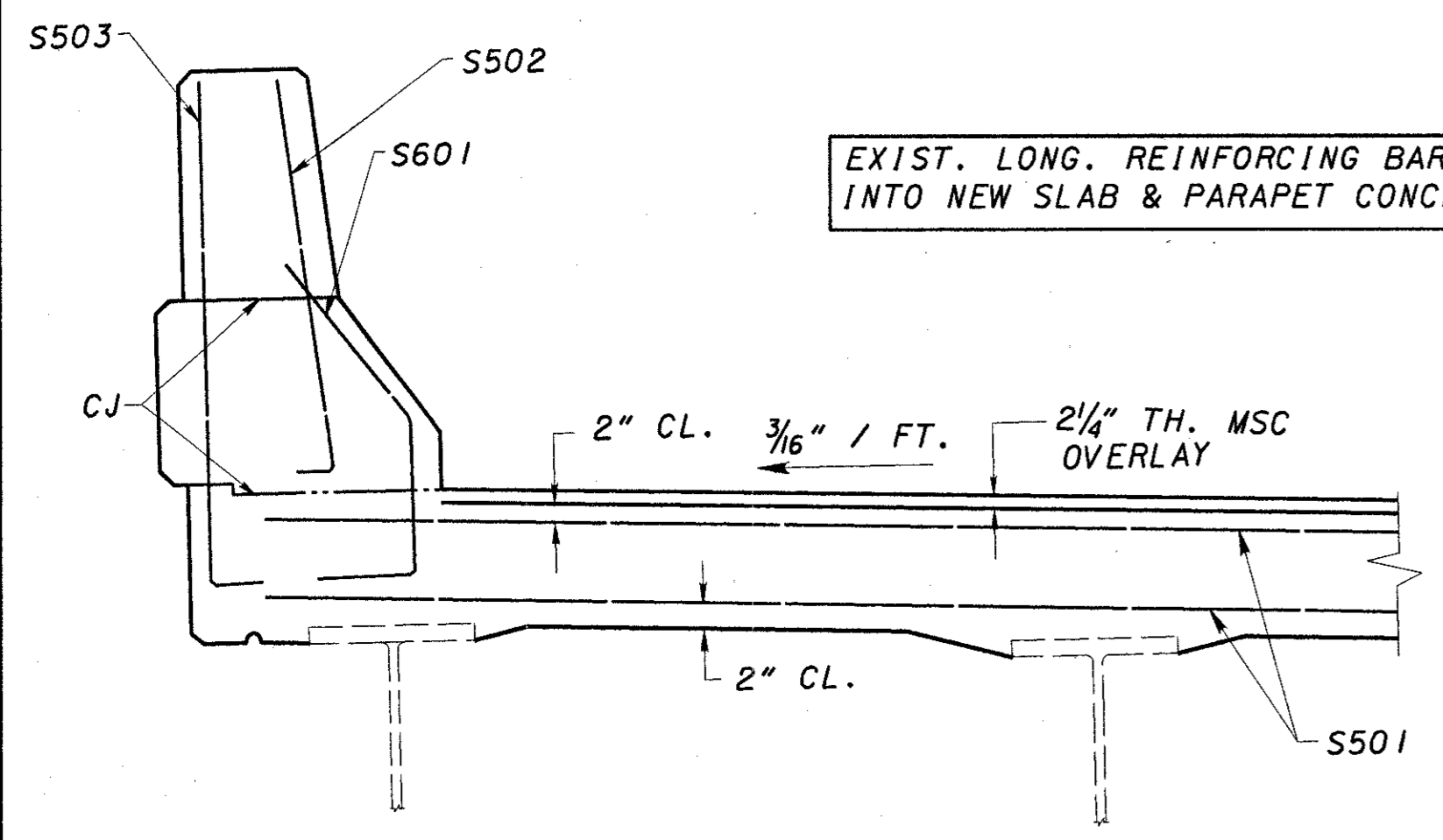
BENDING DIAGRAMS



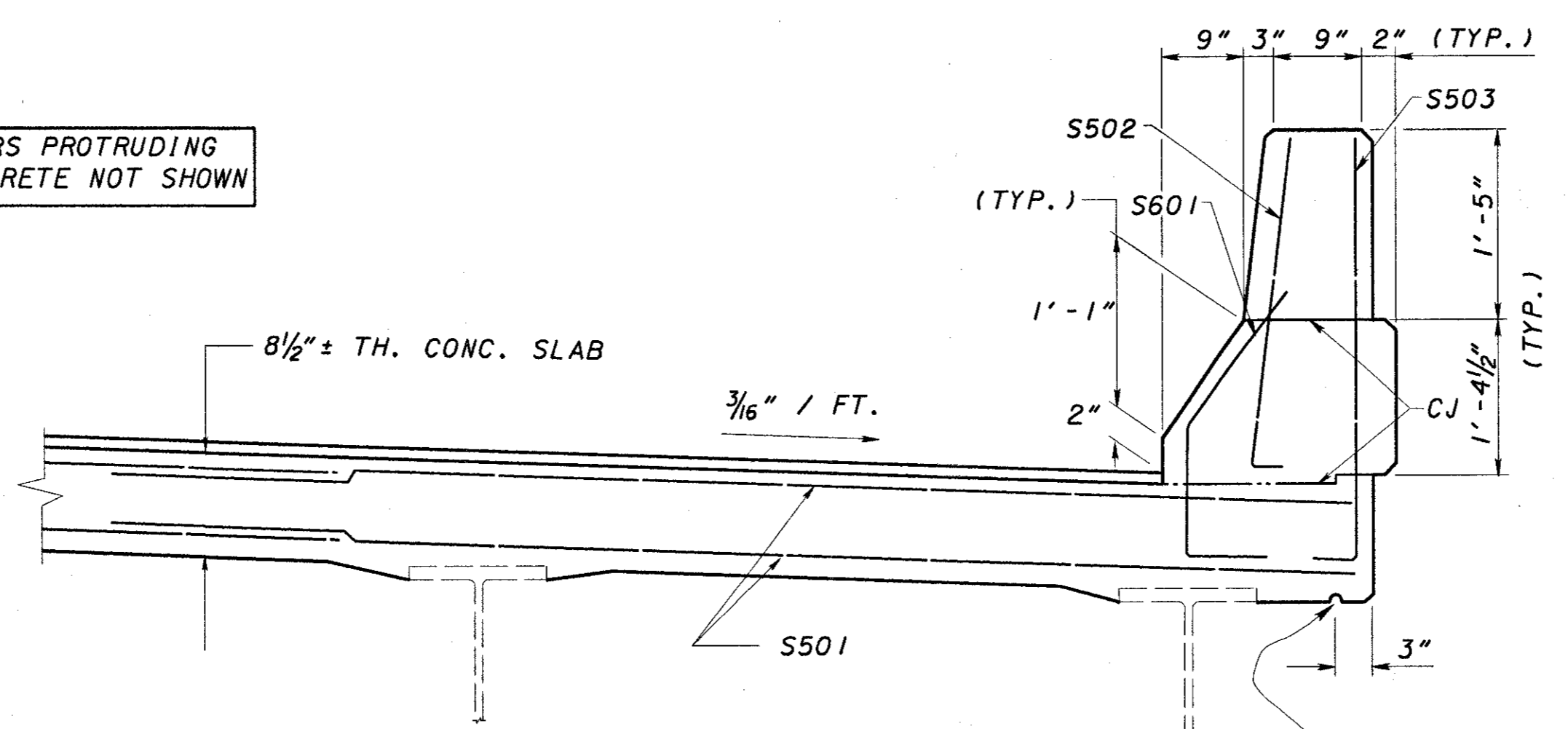
- (\*1) EXIST. DECK SLAB & PARAPET LONG. BARS PROTRUDE INTO NEW CONCRETE AREA
- (\*2) LAP LENGTHS #5 BAR=2'-5"

MODIFIED DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

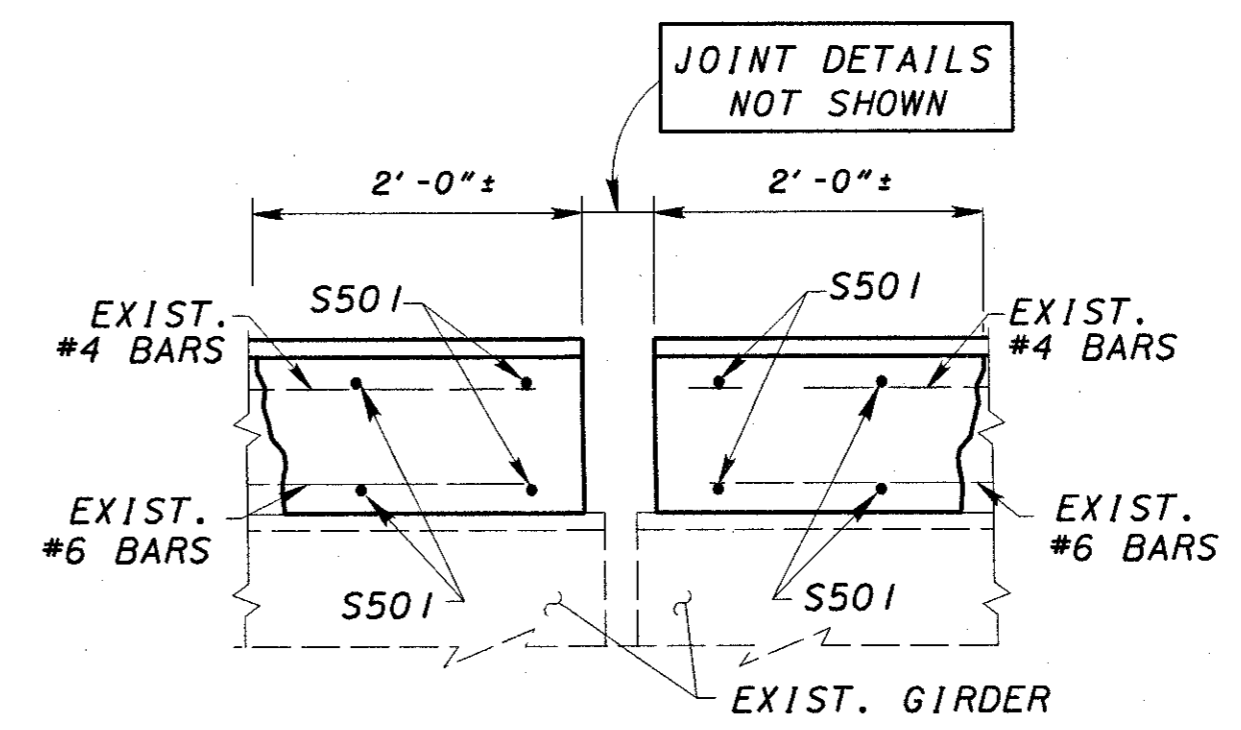
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
SUPERSTRUCTURE									
S501	16	40'-0"		STR					
S502	12	3'-2"		3	2'-6"	10"	2"		
S503	12	3'-8"		2	3'-0"	10"			
S601	12	3'-5"		4	1'-0"	8"	2'-0"	1'-7"	



SECTION A5-A5



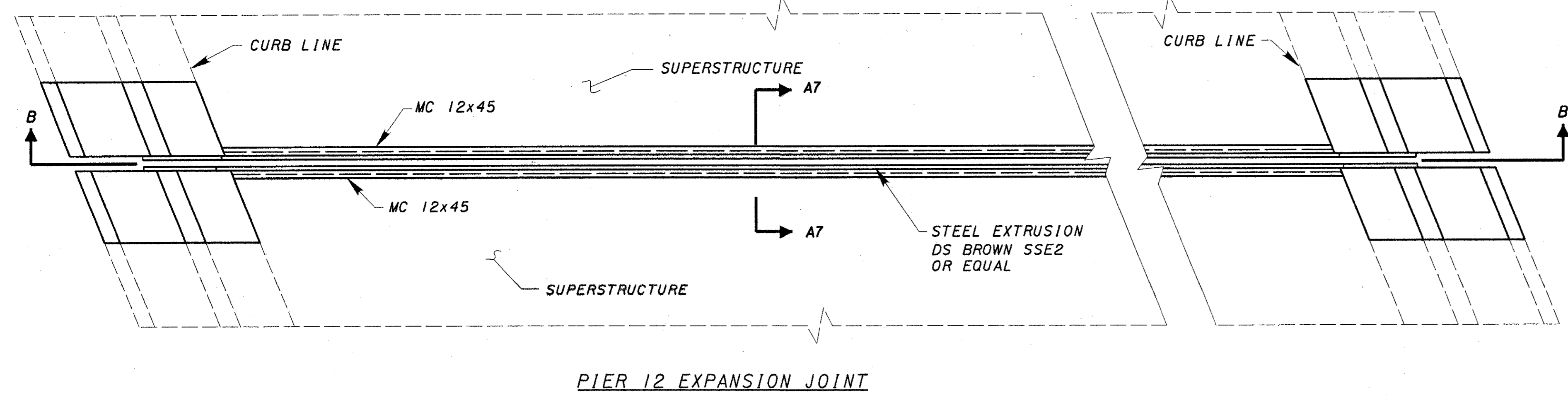
SECTION A4-A4



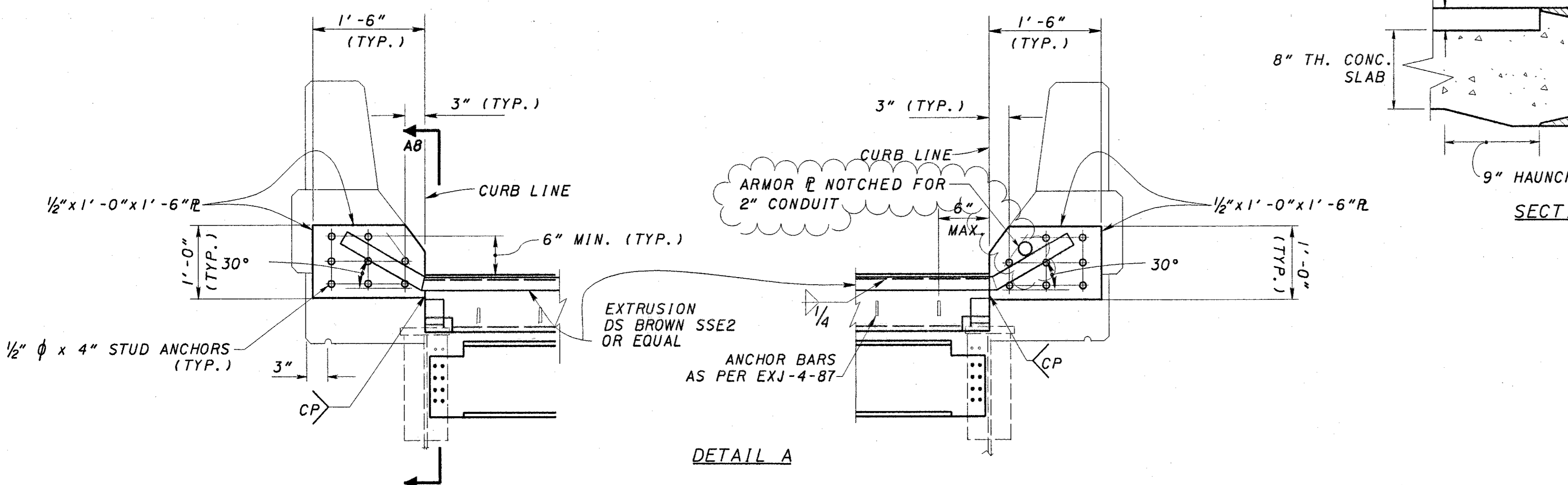
LEGEND

- CONCRETE REMOVAL

NOTES  
REFER TO EXIST. PLANS FOR DETAILS NOT SHOWN



PIER 12 EXPANSION JOINT



DETAIL A

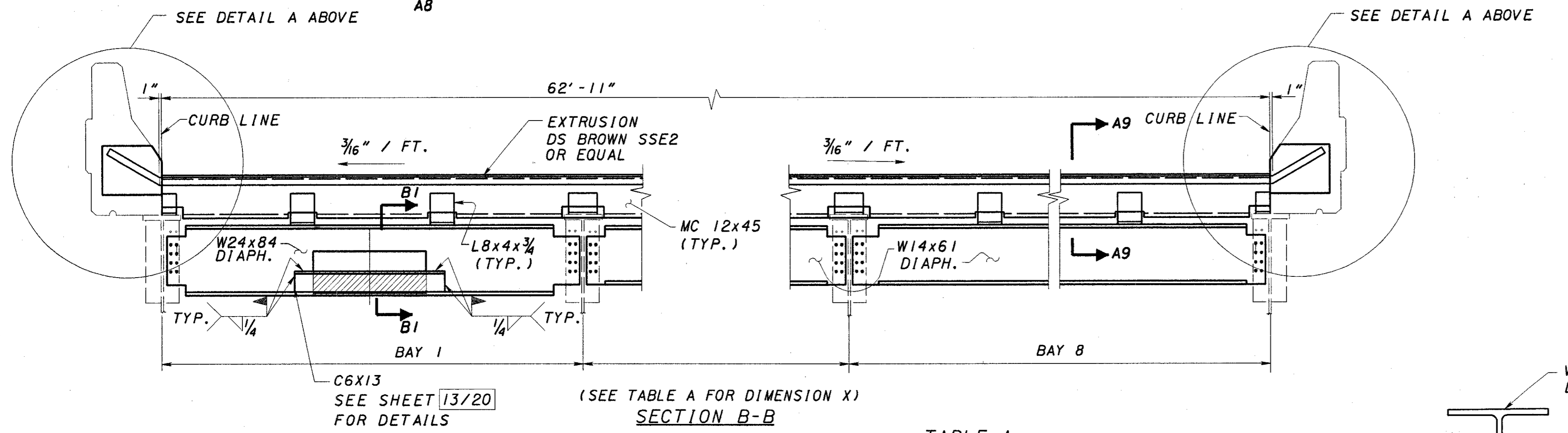
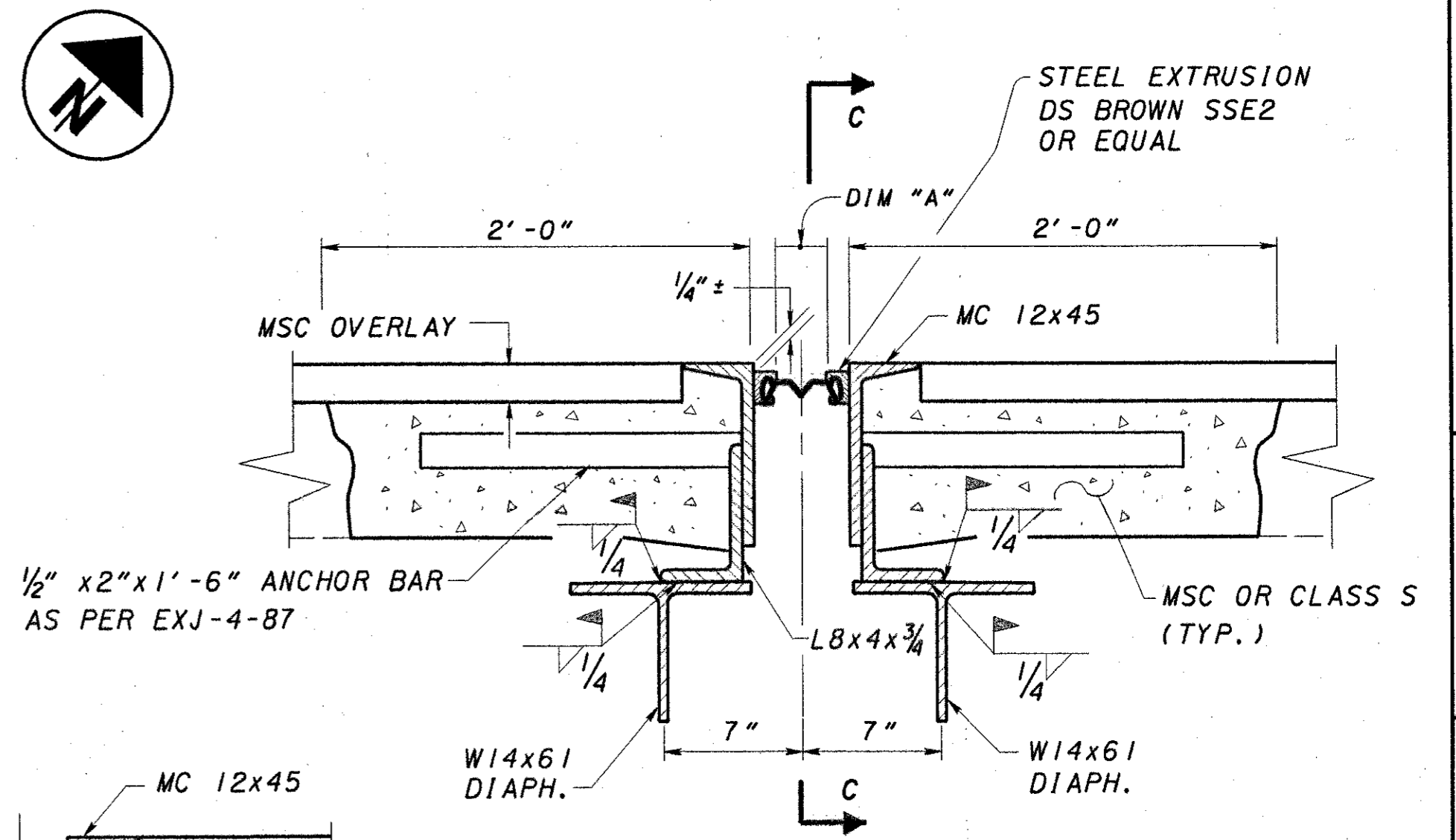


TABLE A

BAY NO.	DIM. X C/C OF GIRDER
1	10' - 5 5/16"
2	10' - 5 5/16"
3	10' - 5 5/16"
4	10' - 5 5/16"
5	10' - 5 5/16"
6	10' - 5 5/16"
7	6' - 1 3/8"
8	5' - 1 3/16"

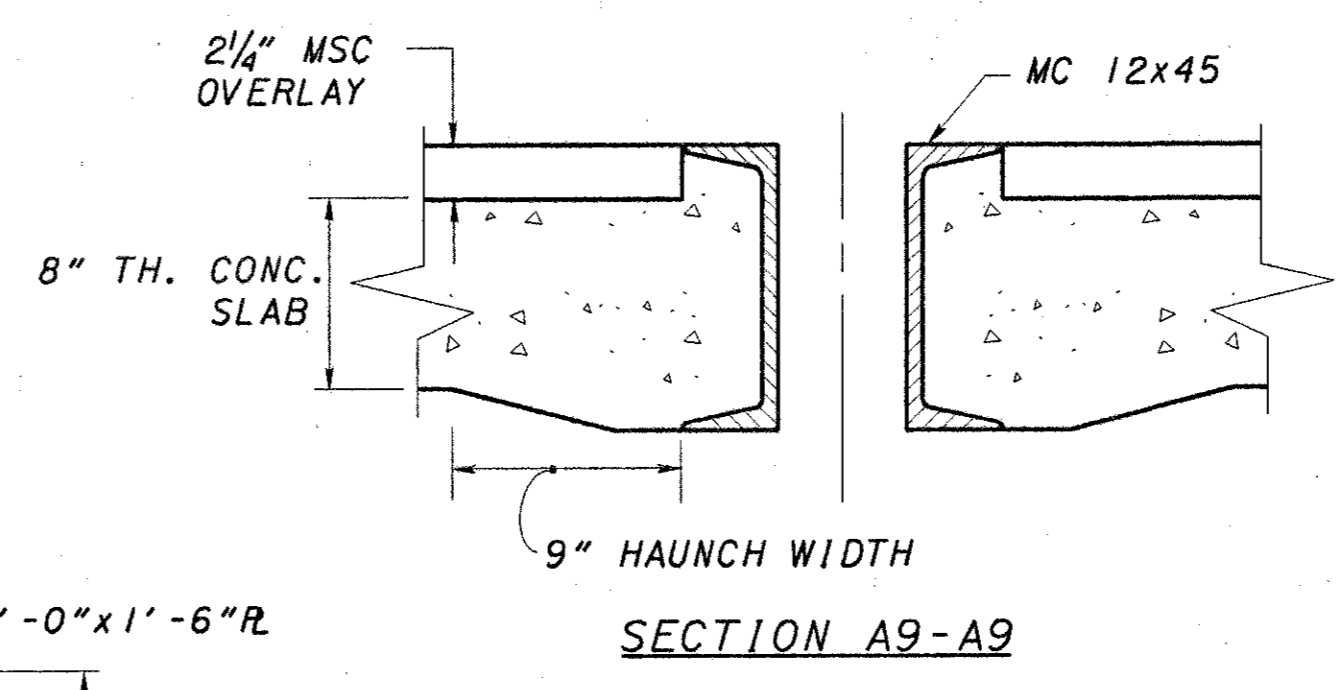
NOTE:  
ALL EXISTING DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO STARTING THE FABRICATION OF THE JOINT.



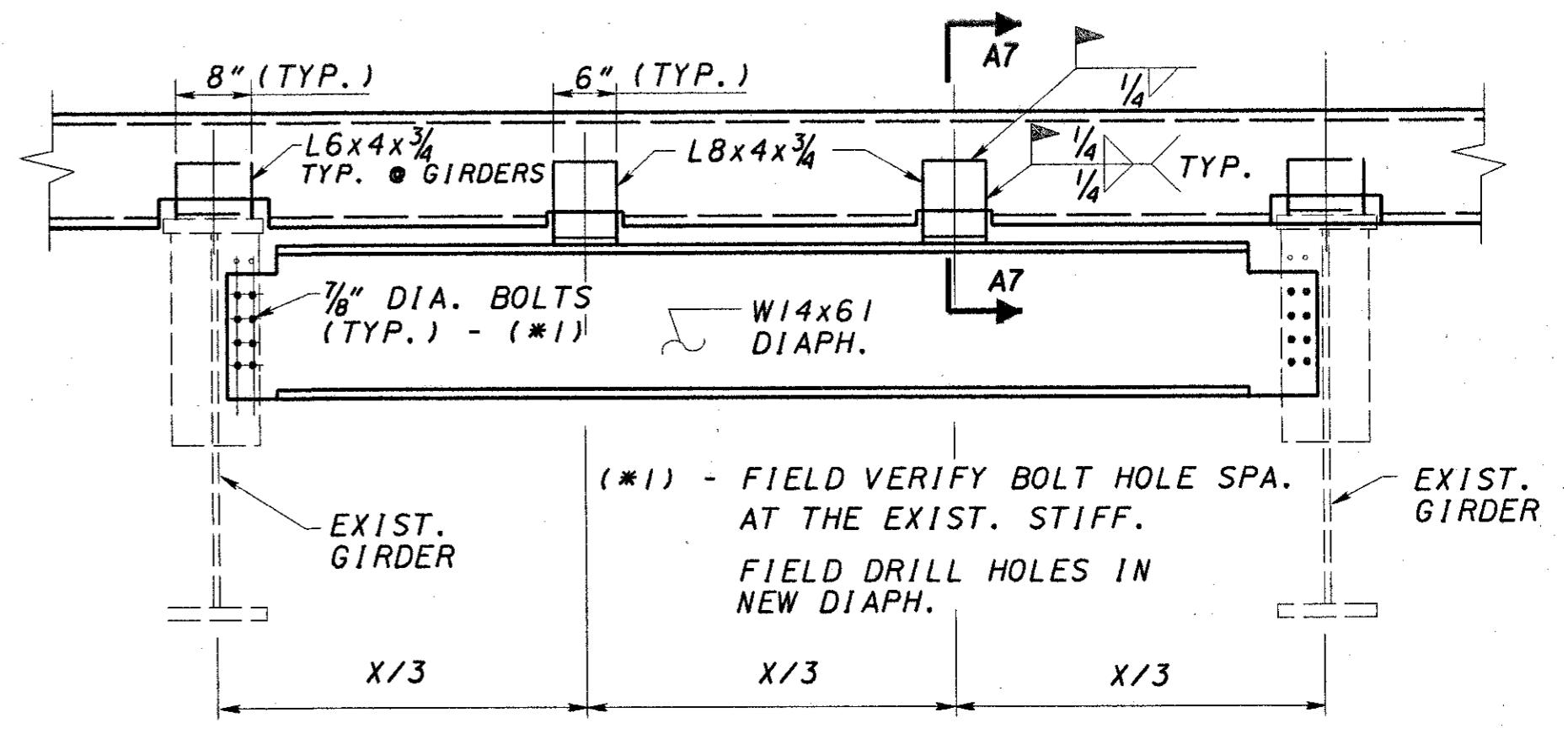
SECTION A7-A7  
5" STRIP SEAL GLAND  
D.S. BROWN NO. A2R

TEMPERATURE (F)	DIMENSION "A"
30°	3 1/4"
40°	2 7/8"
50°	2 5/8"
60°	2 1/4"
70°	1 15/16"
80°	1 1/16"
90°	1 3/8"

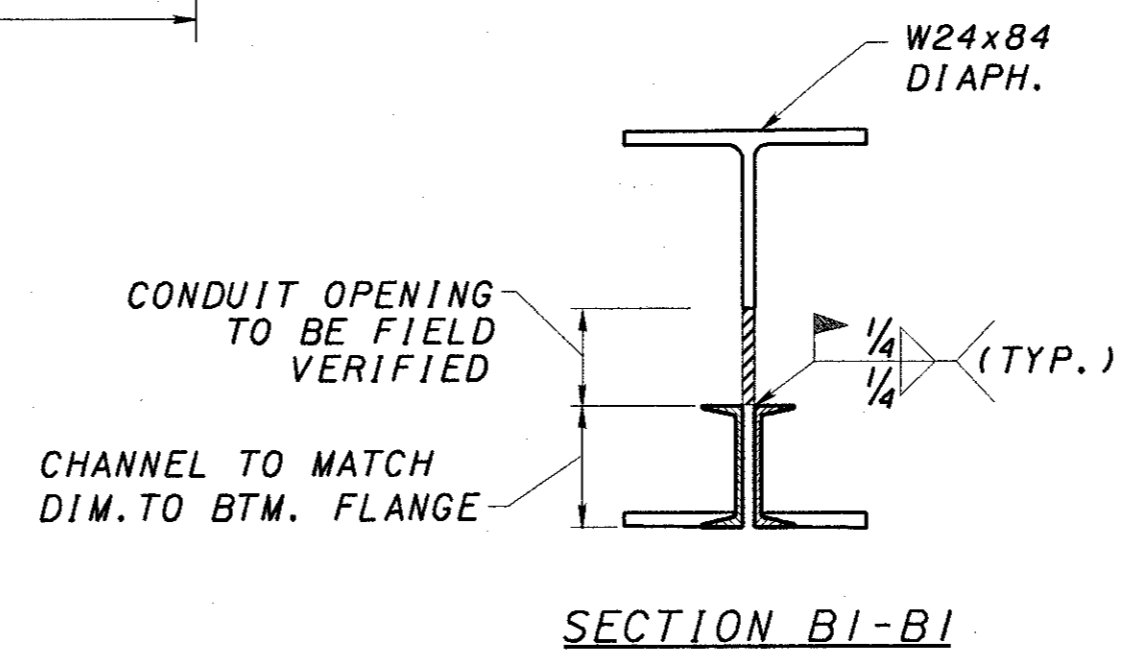
EXPANSION LENGTH = 395' - 0" ±



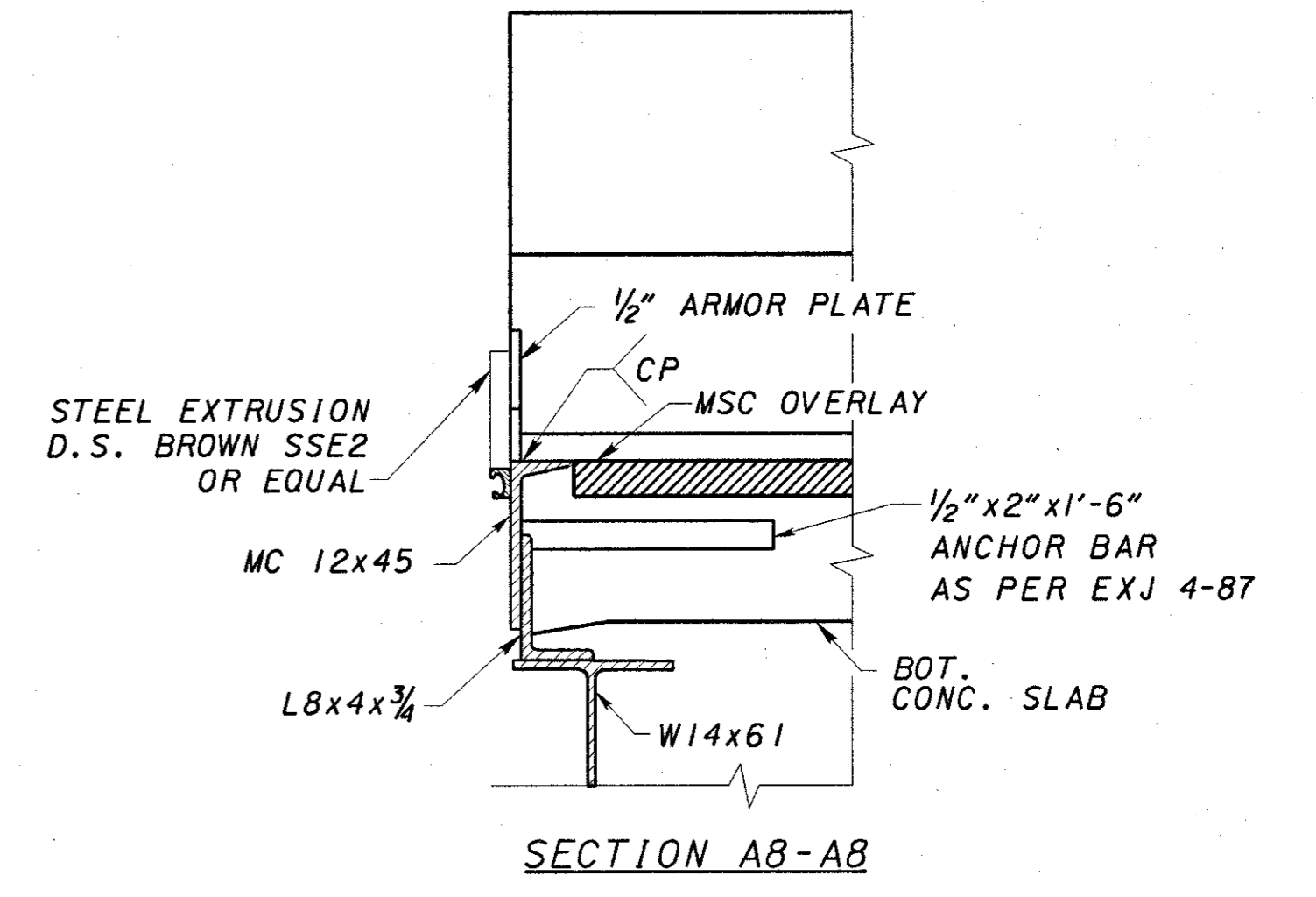
SECTION A9-A9



SECTION C-C

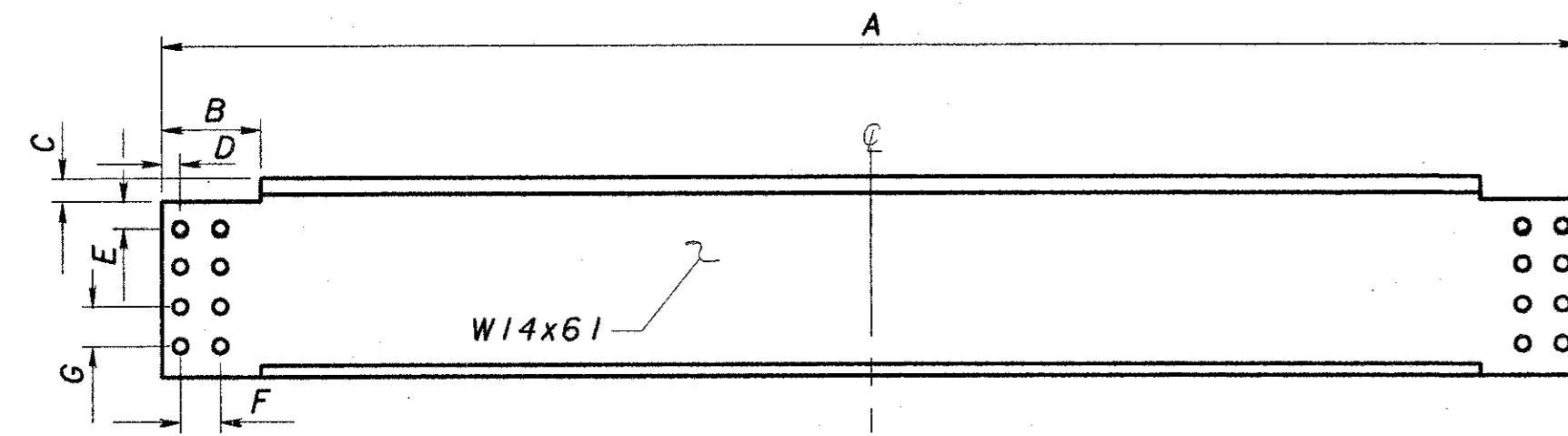


SECTION B1-B1



SECTION A8-A8

DESIGN AGENCY: BARR ENGINEERING, Five East Long Street, Columbus, Ohio 43215, PH: (614) 224-1951  
 DATE: 4/2001  
 REVIEWED: GEA, JEP, ASB  
 DRAWN: JEP, ASB  
 STRUCTURE FILE NUMBER: 3117367  
 BRIDGE NO. HAM-471-0000 R  
 PIER 12 EXPANSION JOINT DETAILS  
 HAM-471-0.26  
 12/106  
 44  
 182

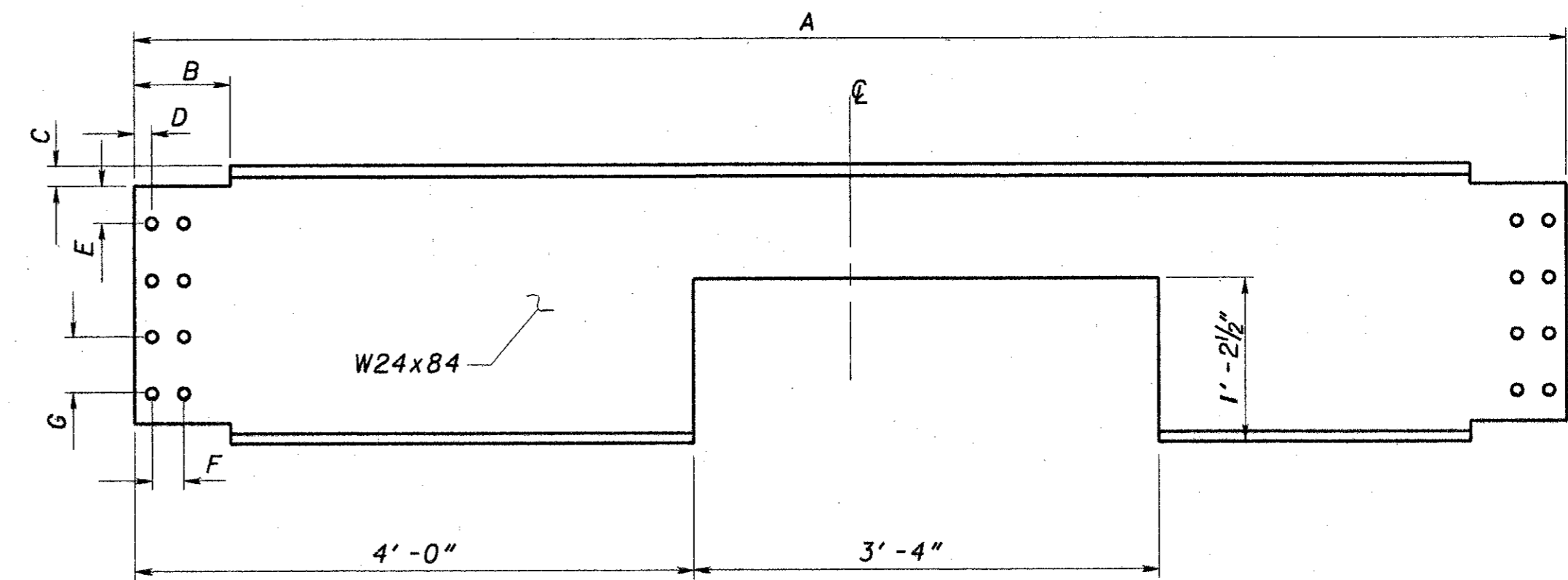


EXPANSION JOINT DIAPHRAGMS

HAM-471-0000 R DIAPHRAGM DIMENSIONS

BAY NO.	DIM. A	DIM. B	DIM. C	DIM. D	DIM. E	DIM. F	DIM. G
* 1-NORTH	10' - 3"	8 1/4"	1 3/4"	1 1/2"	3 1/4"	2 3/4"	2 3/4"
* 1-SOUTH	10' - 3 1/2"	9 3/4"	1 3/4"	1 1/2"	1 1/2"	3"	5"
2-6-NORTH	10' - 3"	7"	1 11/16"	1 1/2"	1 13/16"	2 3/4"	2 3/4"
2-6-SOUTH	10' - 3 1/2"	7 1/2"	1 11/16"	1 1/2"	1 3/8"	3"	3"
7-NORTH	5' - 10 3/4"	7 1/2"	1 13/16"	1 3/8"	1 1/16"	2 3/4"	2 3/4"
7-SOUTH	5' - 10 5/8"	7 1/2"	1 13/16"	1 5/16"	1 3/8"	3"	3"
8-NORTH	4' - 10 1/2"	6 7/8"	1 5/8"	1 1/4"	1 7/8"	2 3/4"	2 3/4"
8-SOUTH	4' - 11"	7 9/16"	1 5/8"	1 1/2"	1 3/8"	3"	3"

DIMENSIONS SYMMETRICAL ABOUT \varnothing



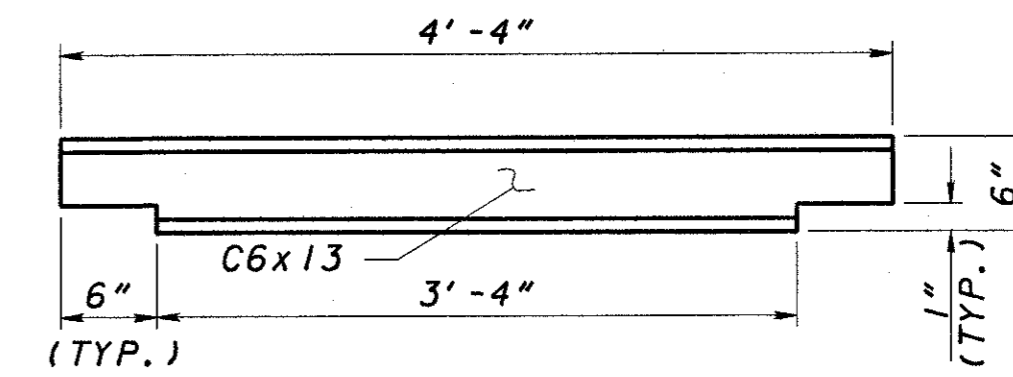
EXPANSION JOINT DIAPHRAGM

\* - (FOR HAM-471-0000R BAY 1 ONLY)

HAM-471-0000 L DIAPHRAGM DIMENSIONS

BAY NO.	DIM. A	DIM. B	DIM. C	DIM. D	DIM. E	DIM. F	DIM. G
1-NORTH	3' - 0"	7 1/4"	1 5/8"	1 3/4"	1 7/8"	2 3/4"	2 3/4"
1-SOUTH	3' - 0"	7 1/2"	1 7/8"	1 1/2"	1 5/8"	3"	3"
2-NORTH	7' - 4"	7 1/4"	1 5/8"	1 1/2"	1 7/8"	2 3/4"	2 3/4"
2-SOUTH	7' - 4"	7 1/2"	1 7/8"	1 1/2"	1 5/8"	3"	3"
3-7-NORTH	10' - 2 3/4"	7 3/8"	1 5/8"	1 1/2"	1 7/8"	2 3/4"	2 3/4"
3-7-SOUTH	10' - 3"	7 1/2"	1 7/8"	1 1/2"	1 5/8"	3"	3"

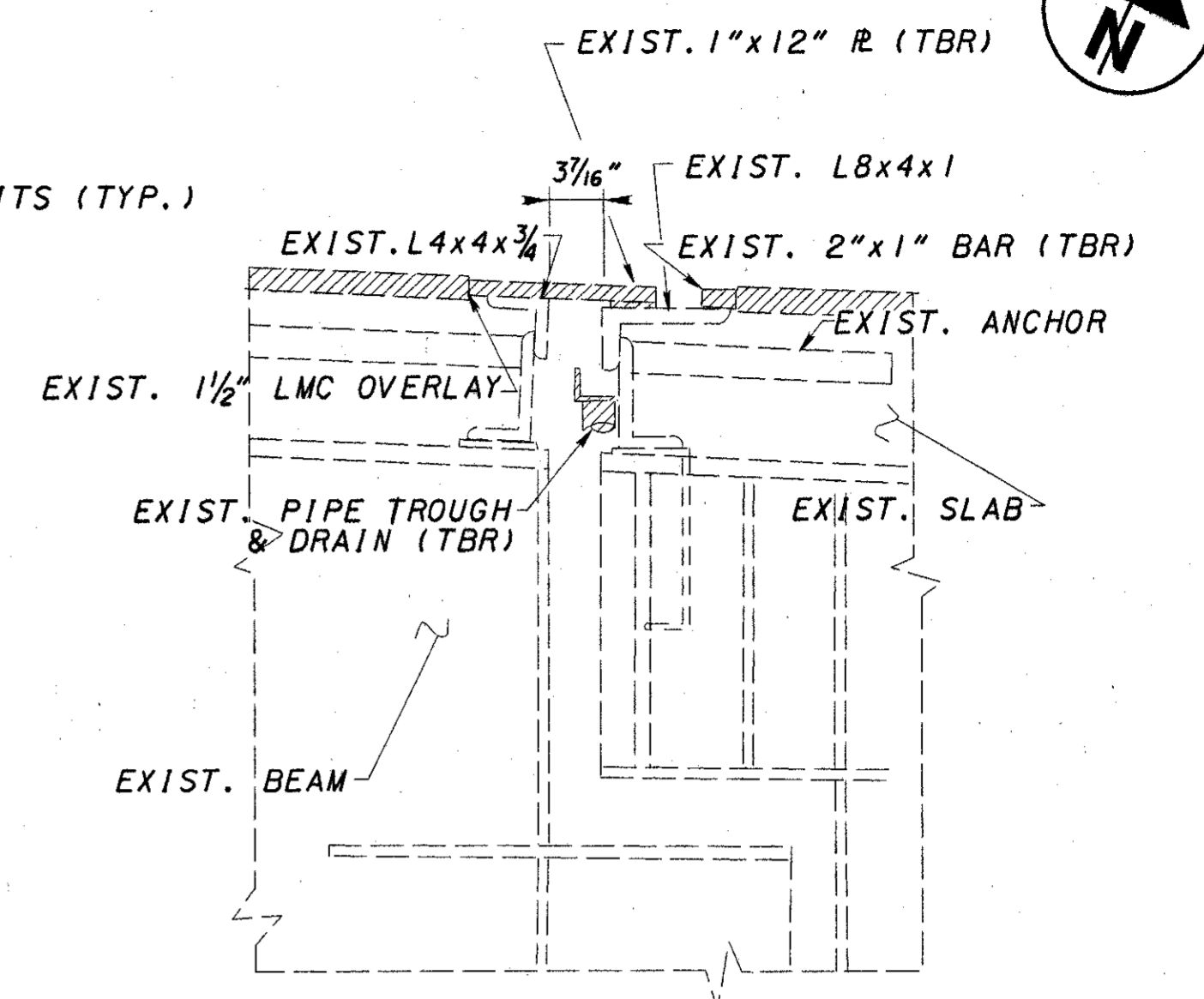
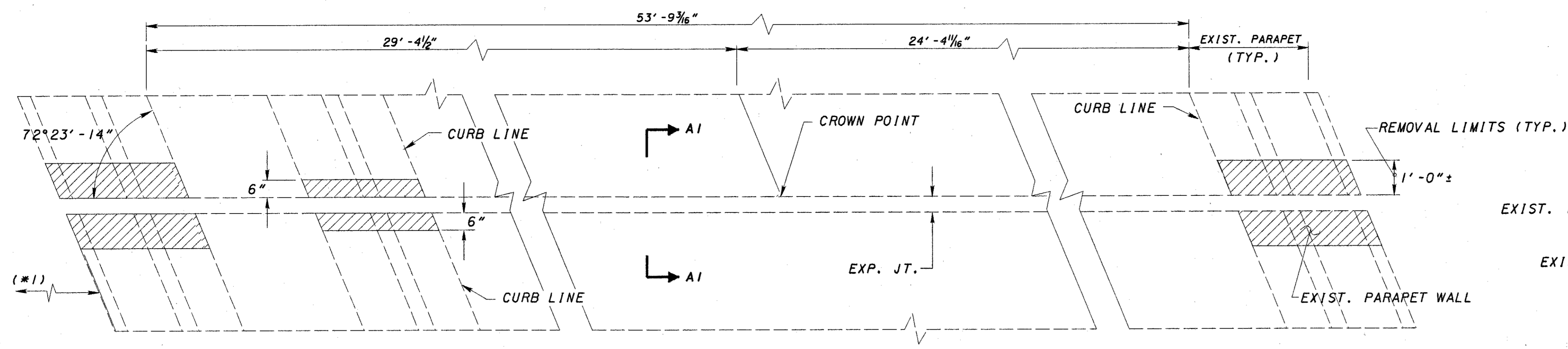
DIMENSIONS SYMMETRICAL ABOUT \varnothing



CHANNEL FOR HAM-471-0000 R BAY 1

(SEE SHEET 44/182)

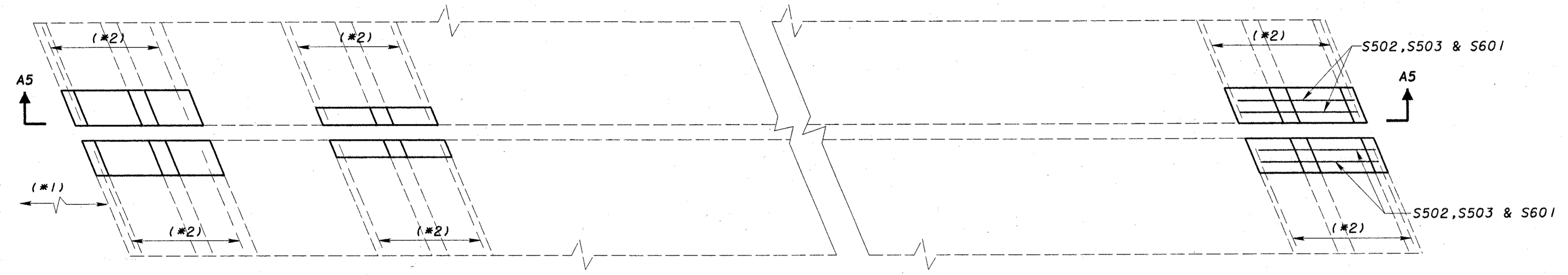
DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 Ph: (614) 224-1941  
 DATE: 4/2001  
 REVIEWED: GEA  
 STRUCTURE FILE NUMBER: 3117359, 3117367  
 DRAWN: FIB  
 DESIGNED: JEP  
 CHECKED: ASB  
 PIER 12 DIAPHRAGM DETAILS  
 BRIDGE NO. HAM-471-0000 L&R  
 HAM-471-0.26  
 13/106  
 45/182



PRESERVE ALL LONG. REINFORCING BARS IN PARAPETS & DECK SLAB REMOVAL AREAS

(\*1) RAMP H BRIDGE

EXISTING DECK SLAB, PARAPET & MEDIAN REMOVAL PLAN

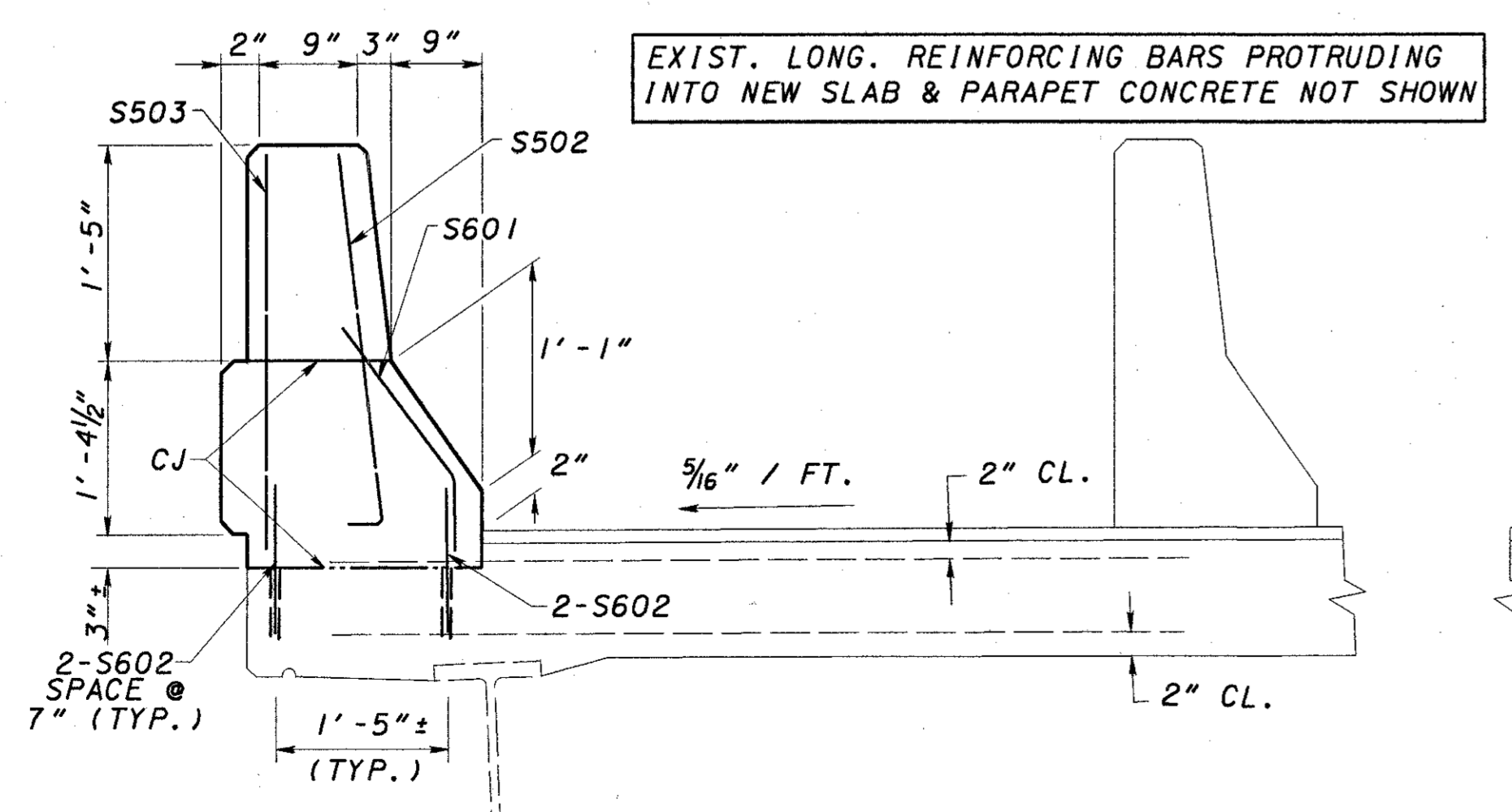


(\*2) EXIST. DECK SLAB & PARAPET LONG. BARS PROTRUDE INTO NEW CONCRETE AREA

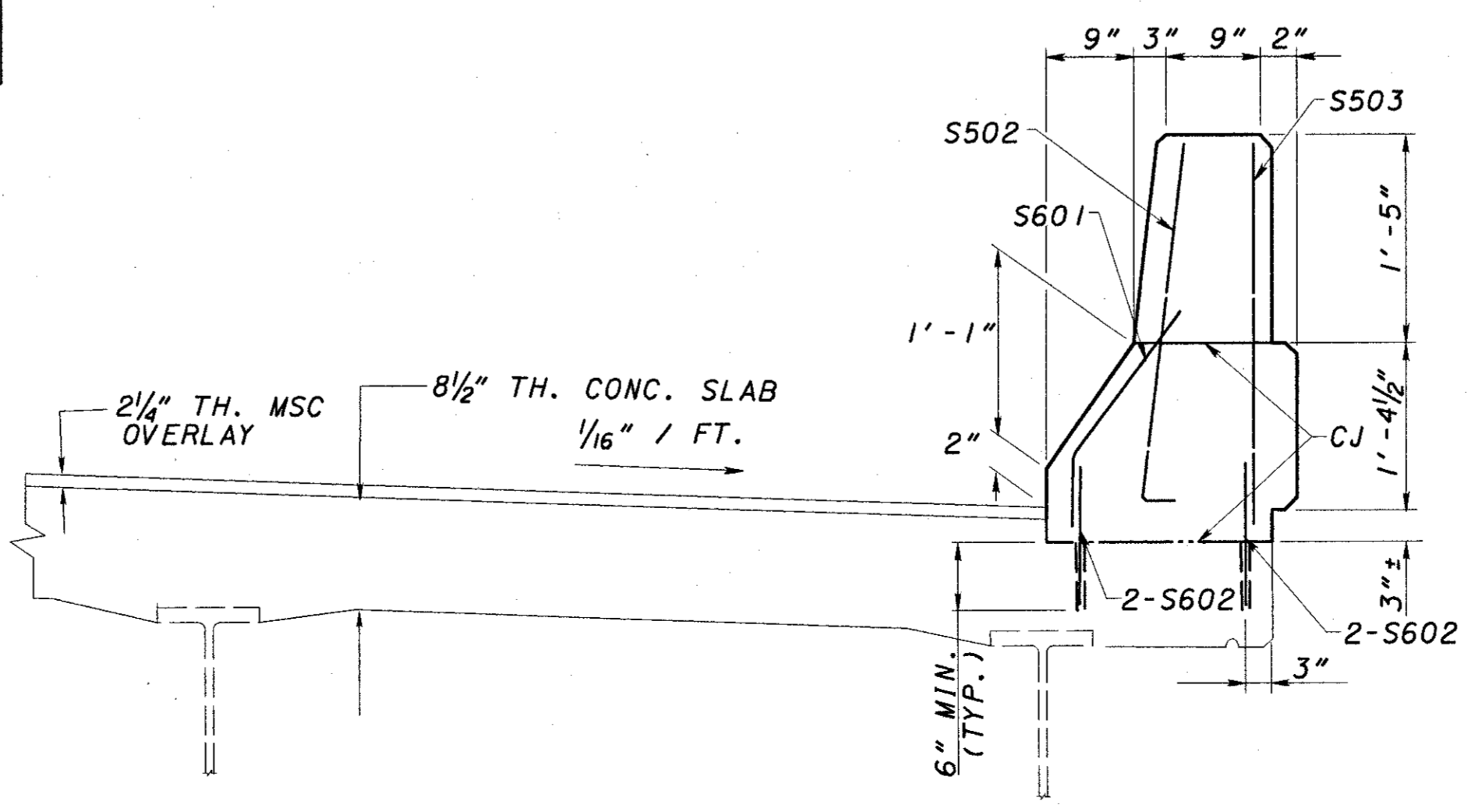
MODIFIED DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
SUPERSTRUCTURE									
S502	8	3'-2"		3	2'-6"	10"	2"		
S503	8	2'-4"		STR					
S601	8	2'-6"		5	3"	1'-4"	1'-1"		
S602	16	1'-6"		STR					

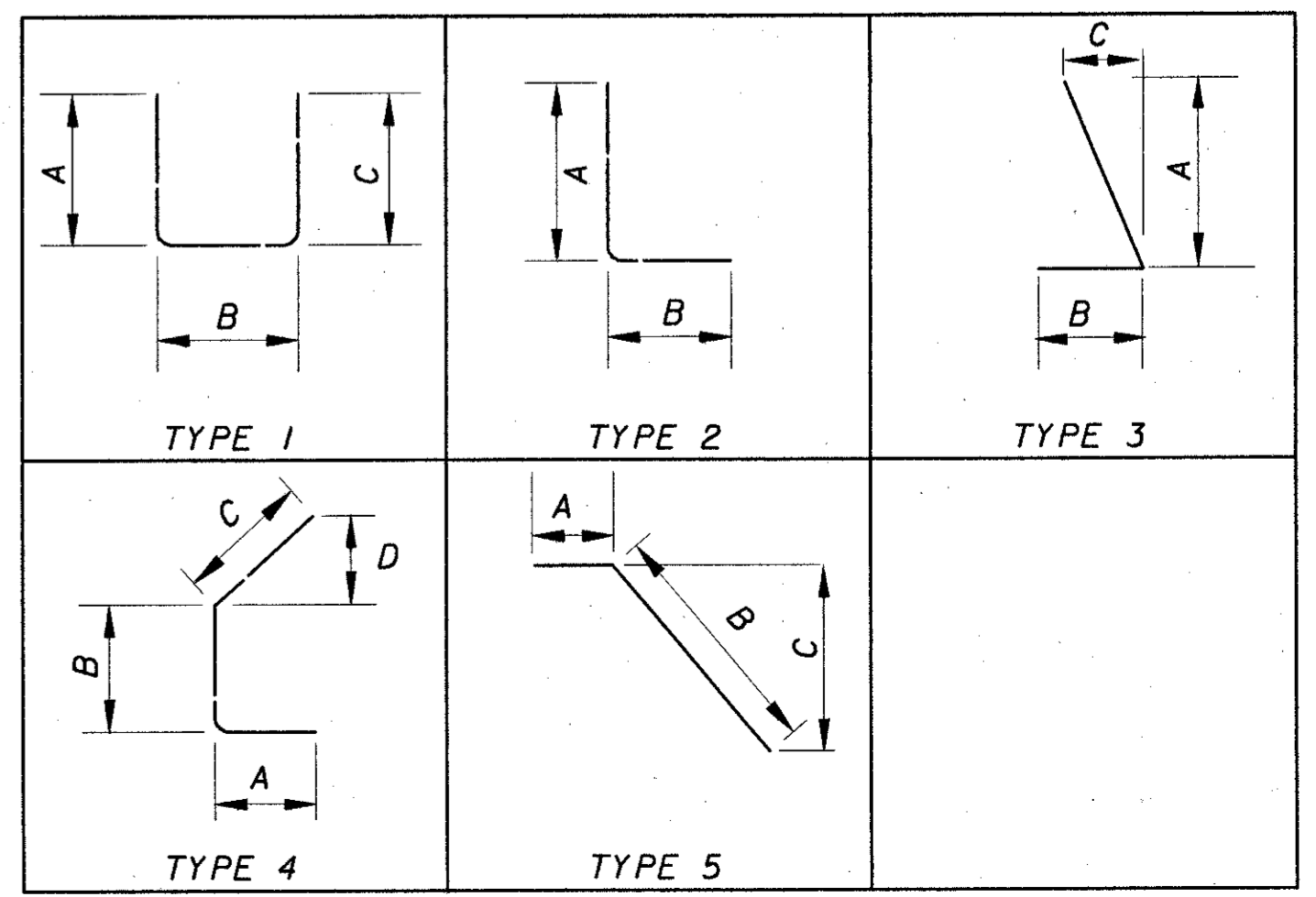
LEGEND



SECTION A5-A5



BENDING DIAGRAMS



DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

DATE  
8/2001

REVIEWED  
GEA

STRUCTURE FILE NUMBER  
3117359

DRAWN  
JEP

DESIGNED  
JEP

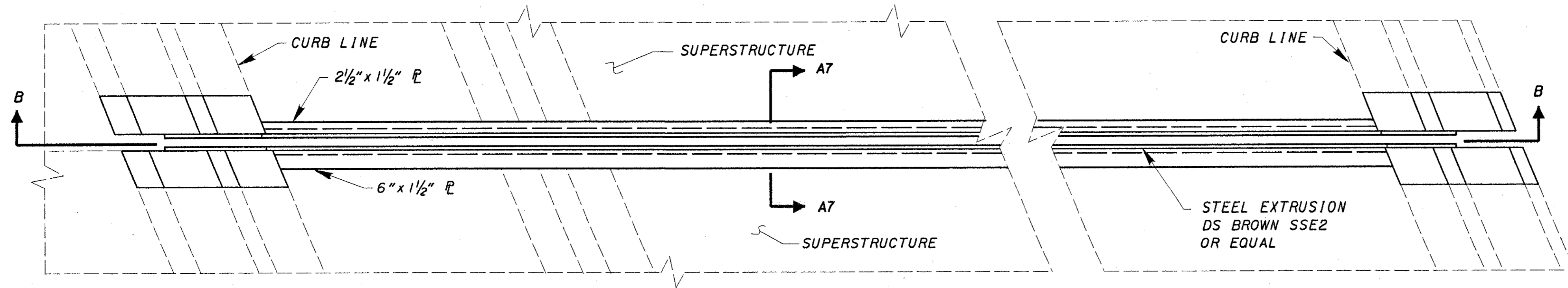
CHECKED  
ASB

PIER 17 EXPANSION JOINT DETAILS &  
REINFORCING STEEL LIST  
BRIDGE NO. HAM-471-0000 L

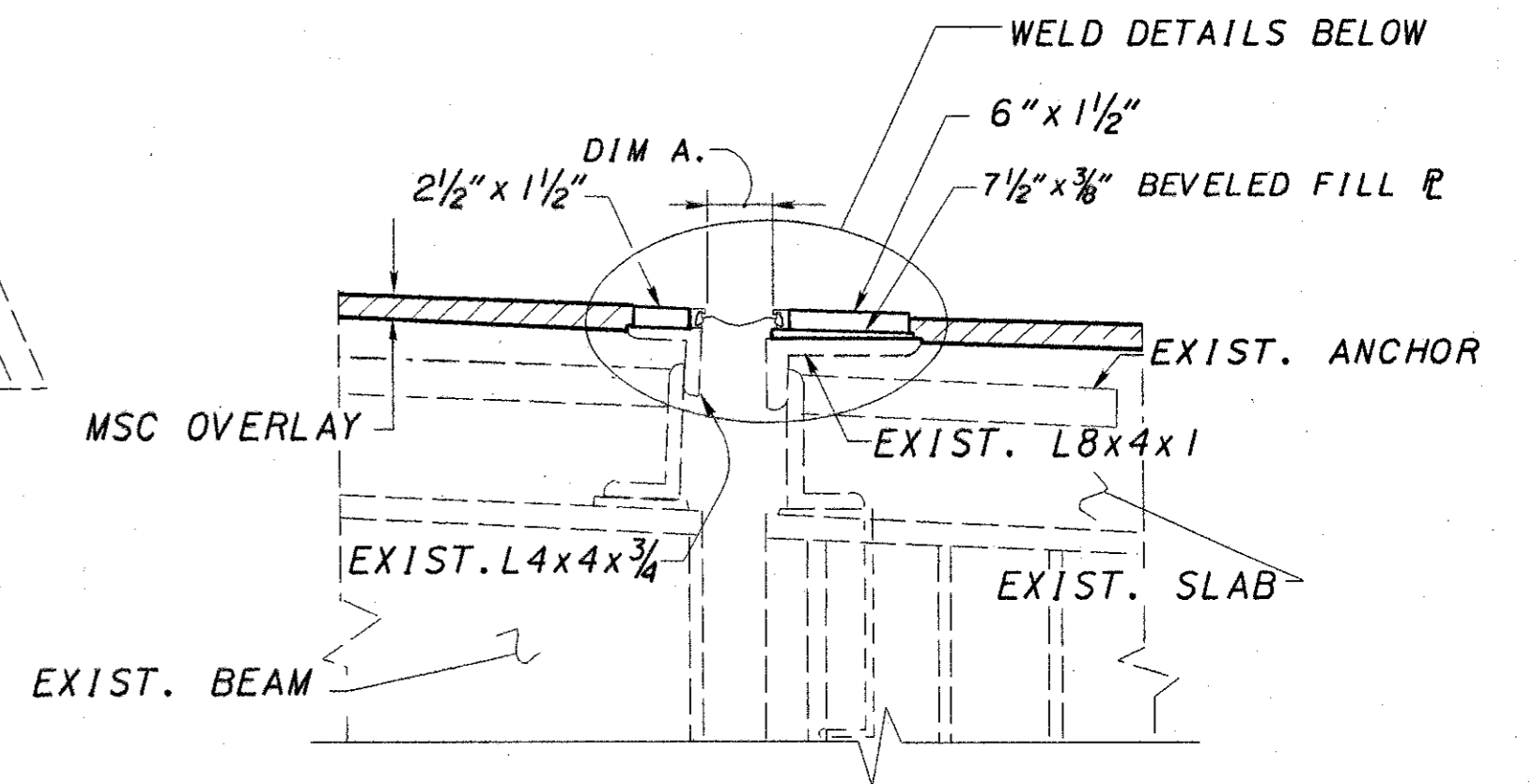
HAM-471-0.26

14/106

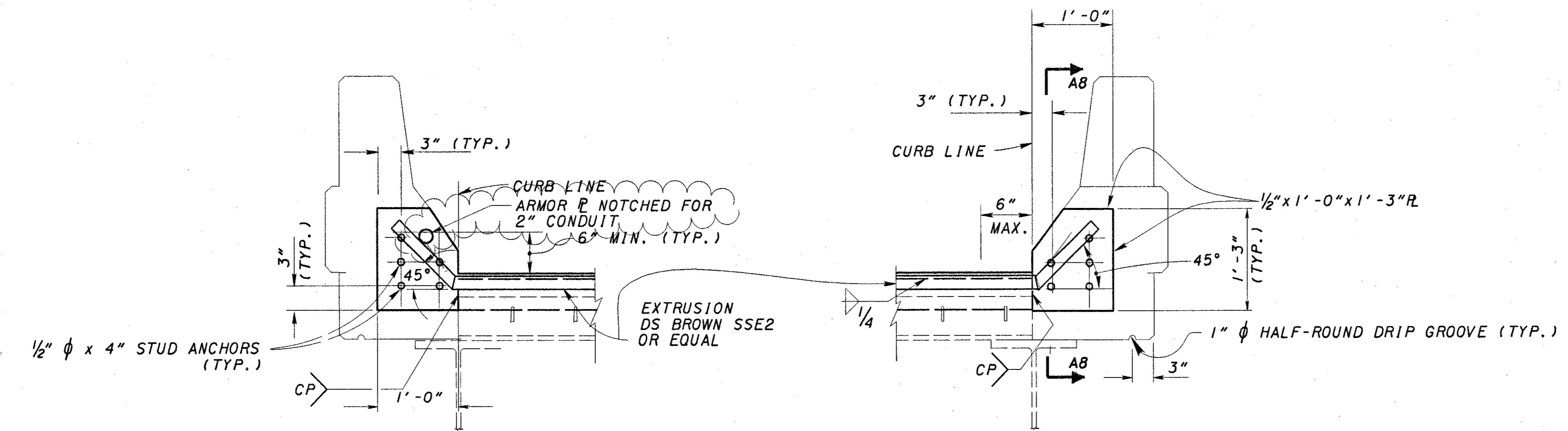
46  
182



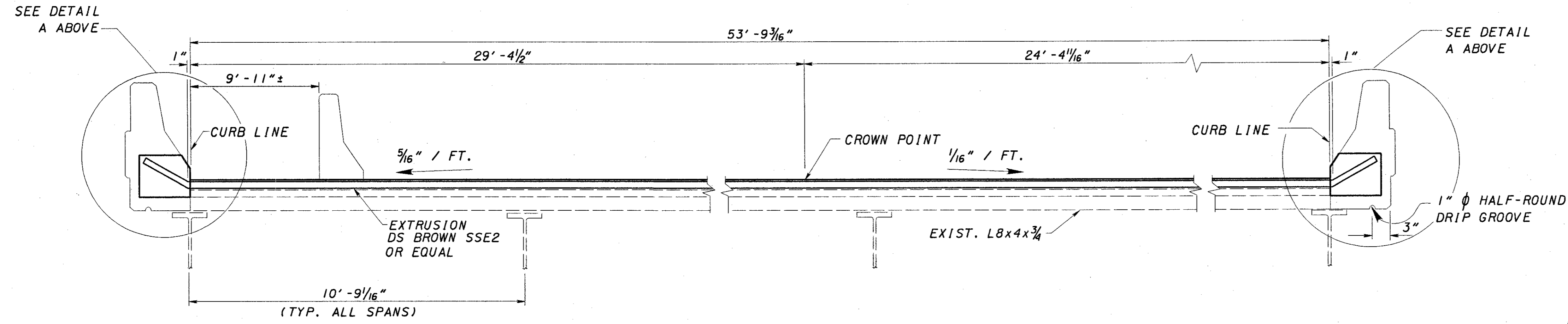
PIER 17 EXPANSION JOINT



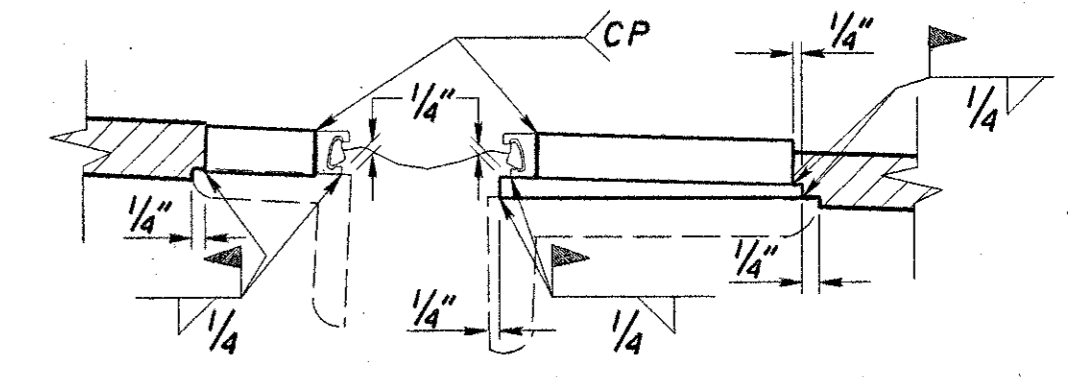
SECTION A7-A7



DETAIL A



SECTION B-B



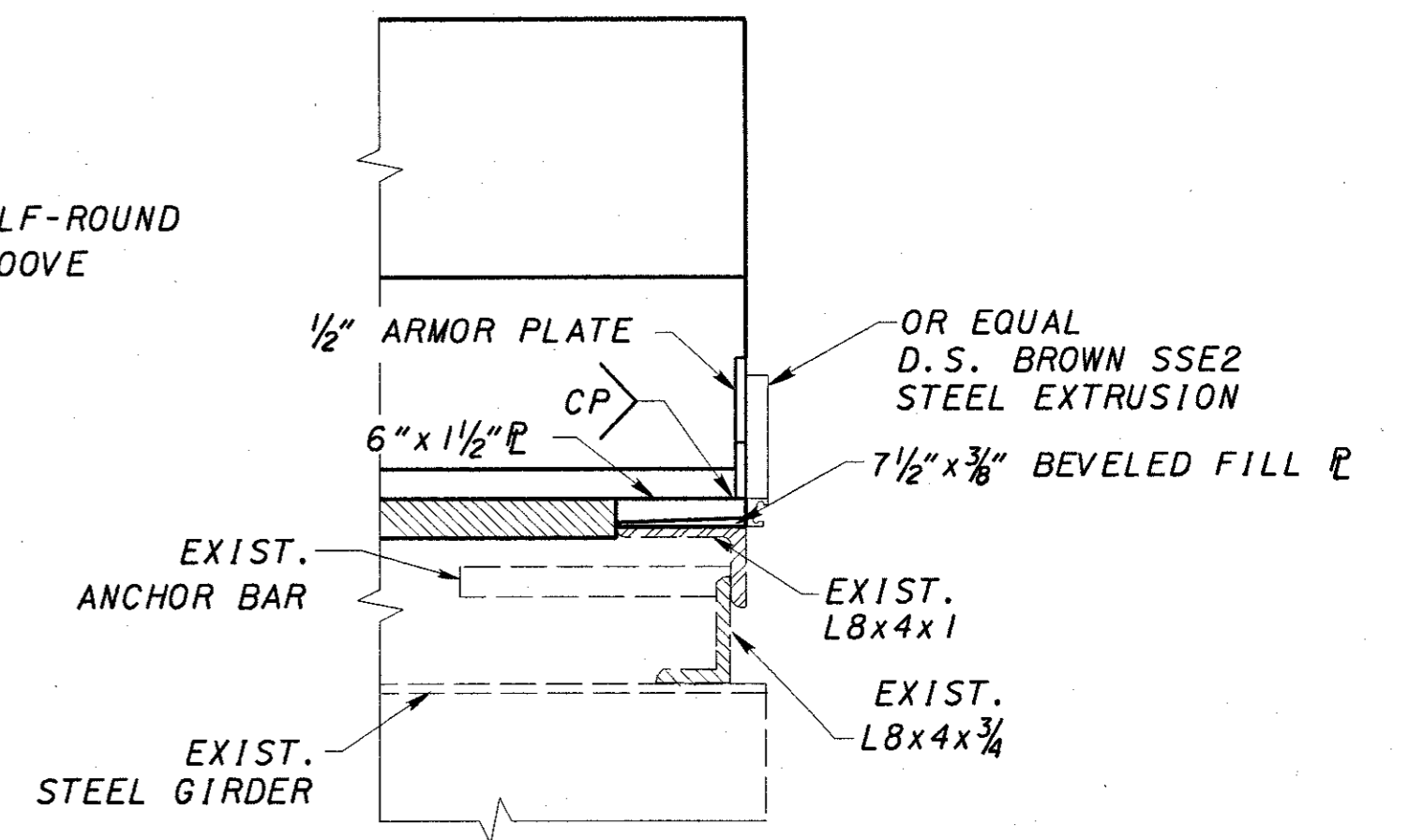
WELD DETAILS

NOTE:  
CONTRACTOR IS TO HAVE EXTRUSIONS SHOP WELDED TO THE PLATES.

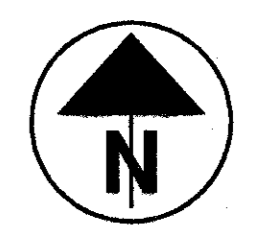
5" STRIP SEAL GLAND

TEMPERATURE (F)	DIMENSION "A"
30°	3 1/8"
40°	2 7/8"
50°	2 5/8"
60°	2 3/8"
70°	2 1/8"
80°	1 7/8"
90°	1 9/16"

EXPANSION LENGTH = 347'-0"±



SECTION A8-A8



DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, OH 43215  
PH: (614) 224-1941

DATE  
4/2001  
REVIEWED  
GEA  
STRUCTURE FILE NUMBER  
3/17359

DRAWN  
JEP  
REVISED

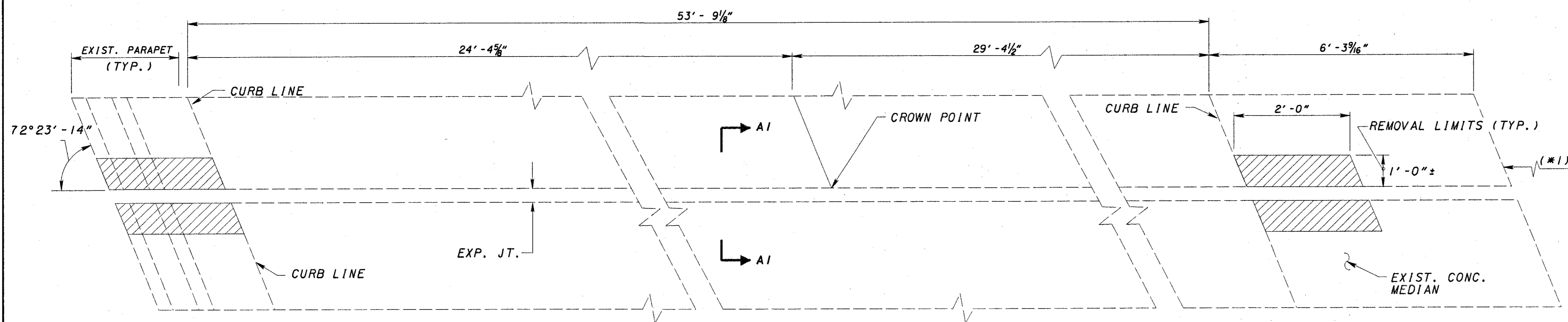
DESIGNED  
JEP  
CHECKED  
ASB

PIER 17 EXPANSION JOINT DETAILS  
BRIDGE NO. HAM-471-0000 L

HAM-471-0.26

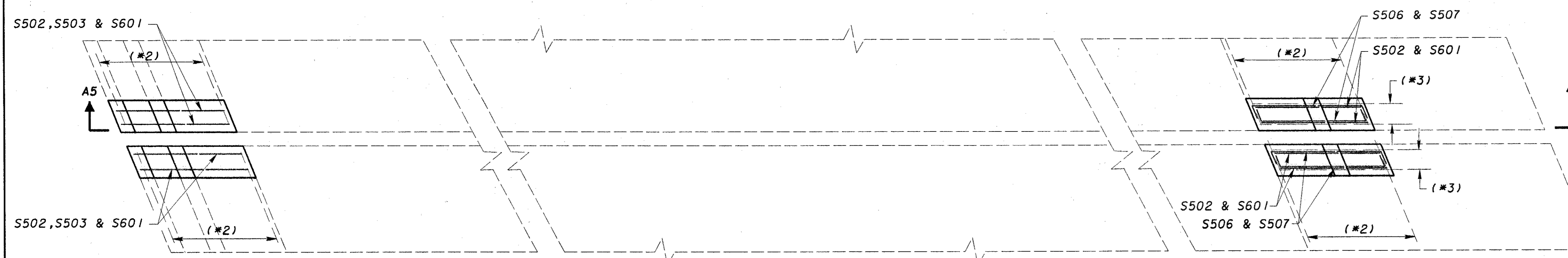
15/106

47  
182



(\*1) RAMP L BRIDGE

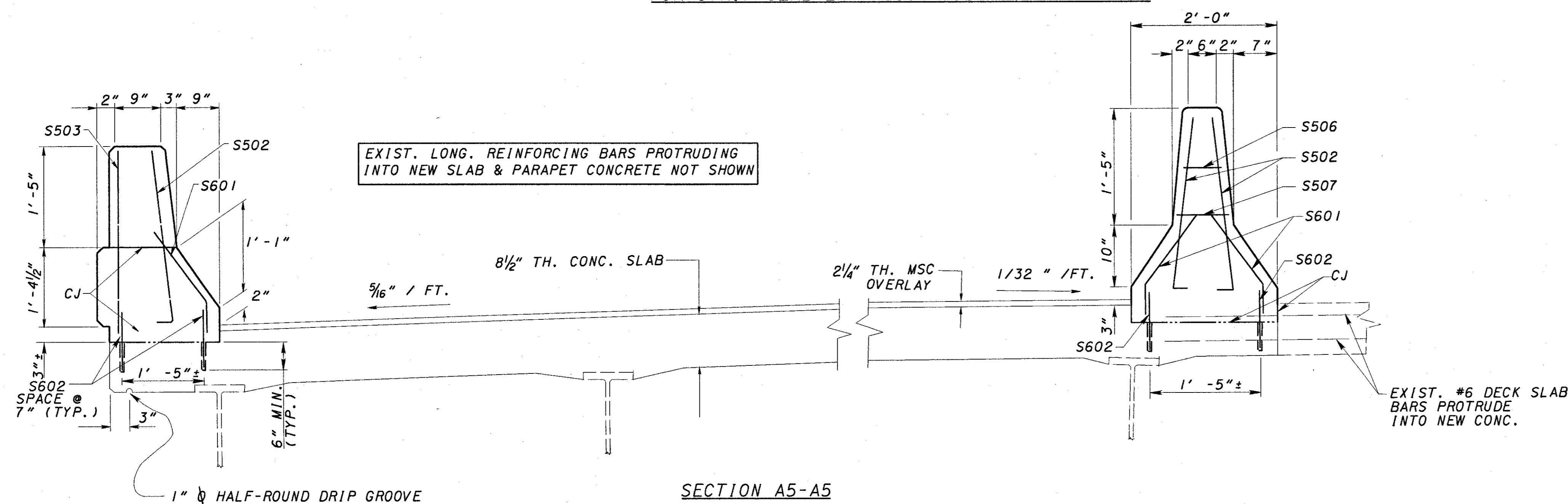
EXISTING DECK SLAB, PARAPET & MEDIAN REMOVAL PLAN



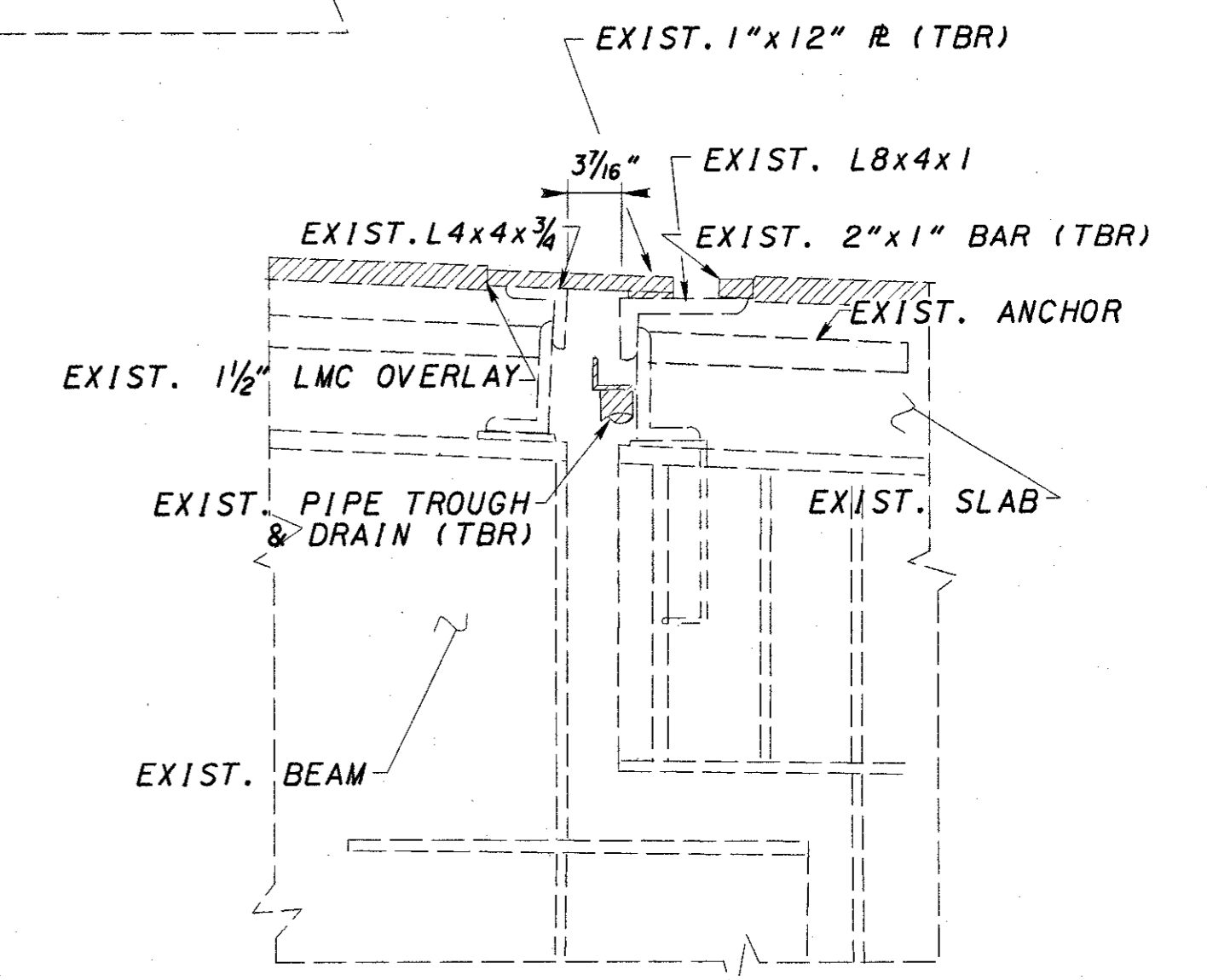
(\*2) EXIST. DECK SLAB & PARAPET LONG. BARS PROTRUDE INTO NEW CONCRETE AREA

(\*3) EXIST. PARAPET WALL & DECK SLAB BARS PROTRUDE INTO NEW CONCRETE AREA

MODIFIED DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION



SECTION A5-A5



SECTION A1-A1

LEGEND

- REMOVAL LIMITS

DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

DATE  
8/2001  
REVIEWED  
GEA  
STRUCTURE FILE NUMBER  
3117367

DRAWN  
JEP  
REVISED

DESIGNED  
JEP  
CHECKED  
ASB

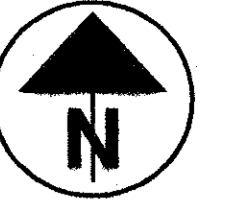
PIER 17 EXPANSION JOINT DETAILS  
BRIDGE NO. HAM-471-0000 R

HAM-471-0.26

16/106

48  
182





DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

DATE  
5/2001  
REVIEWED  
GEA  
STRUCTURE FILE NUMBER  
3117367

DRAWN  
JEP  
REVISED

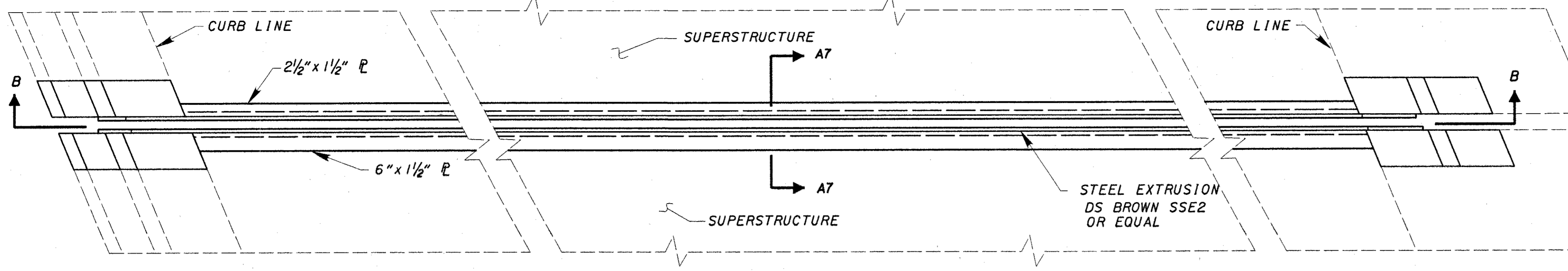
DESIGNED  
JEP  
CHECKED  
ASB

PIER 17 EXPANSION JOINT DETAILS  
BRIDGE NO. HAM-471-0000 R

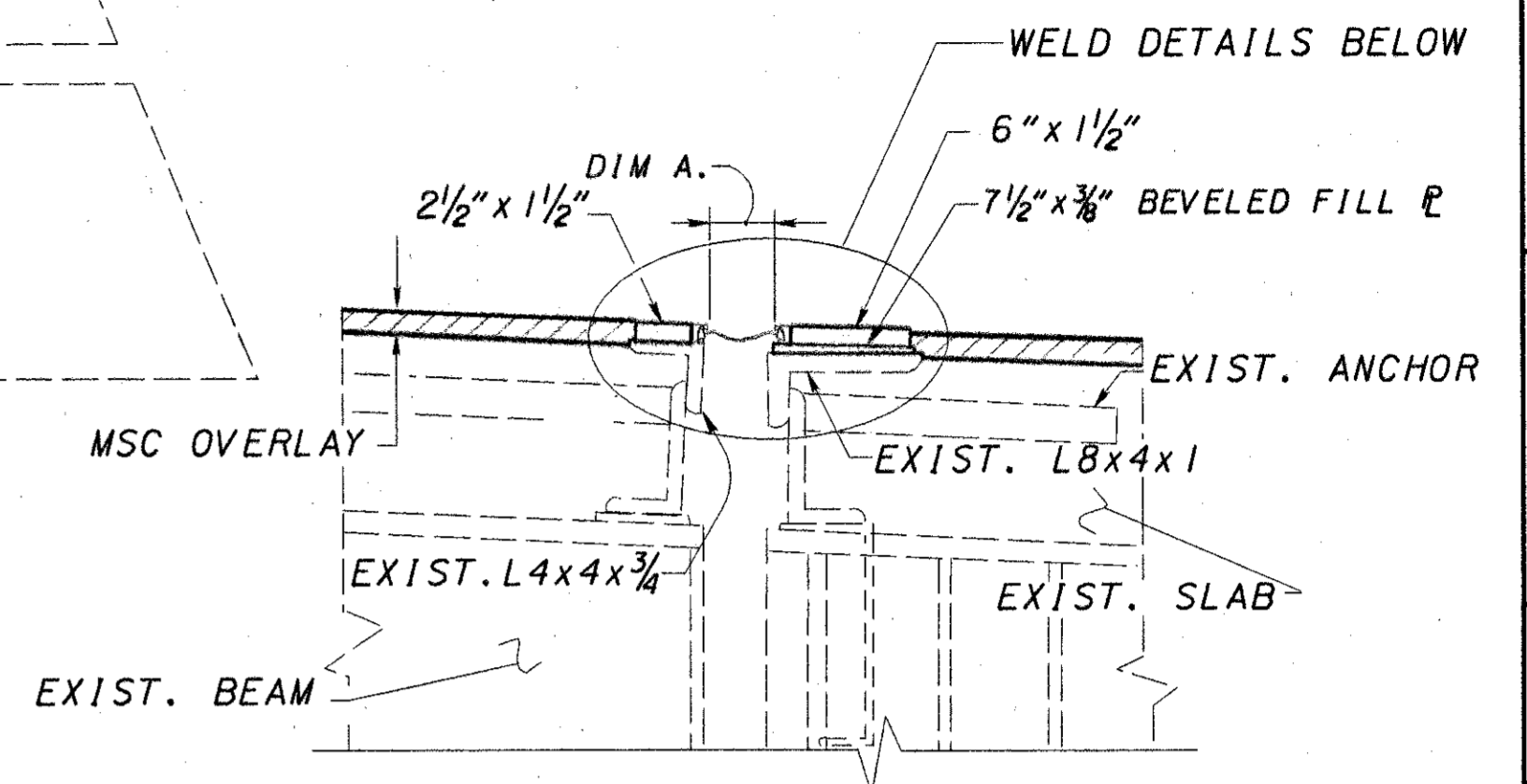
HAM-471-0.26

17/106

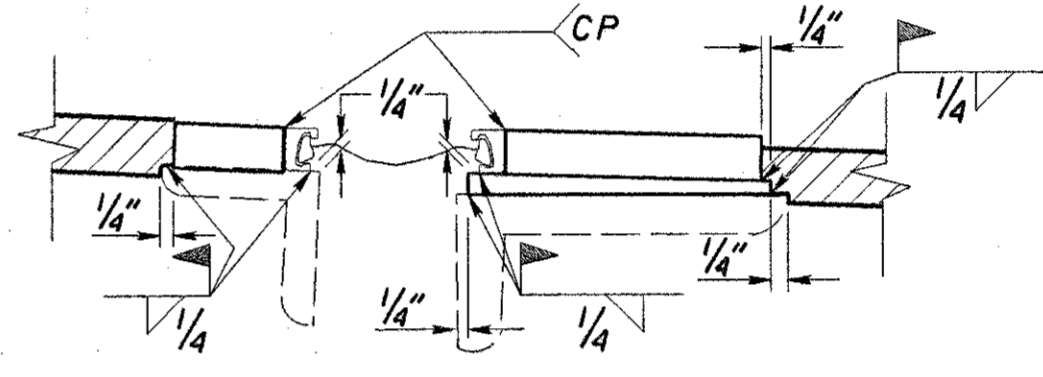
49  
182



PIER 17 EXPANSION JOINT

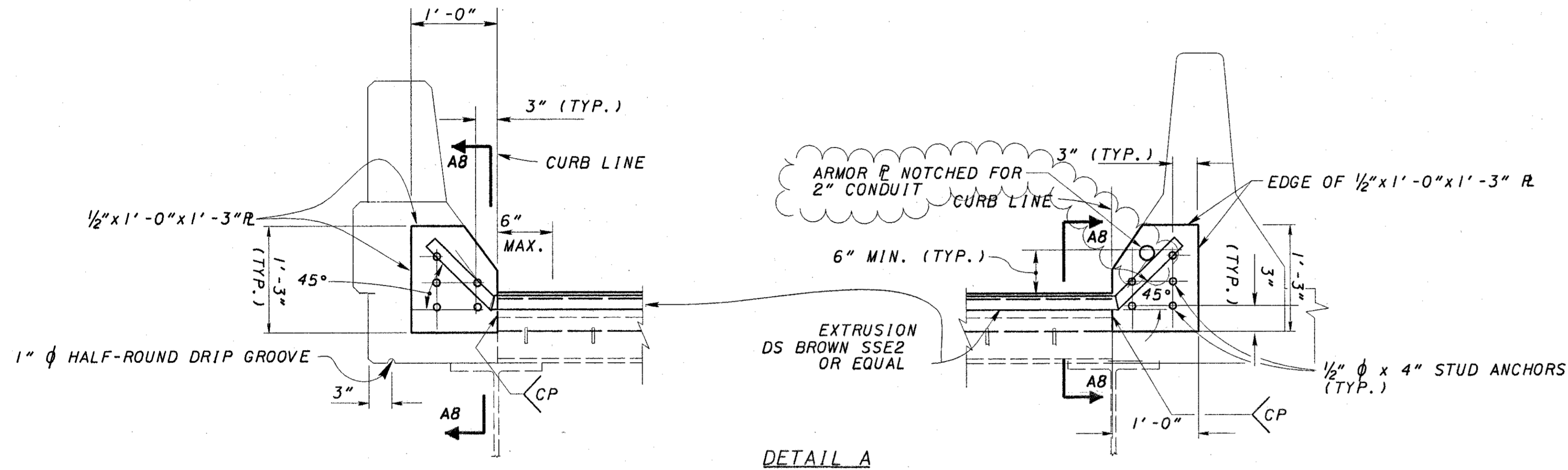


SECTION A7-A7

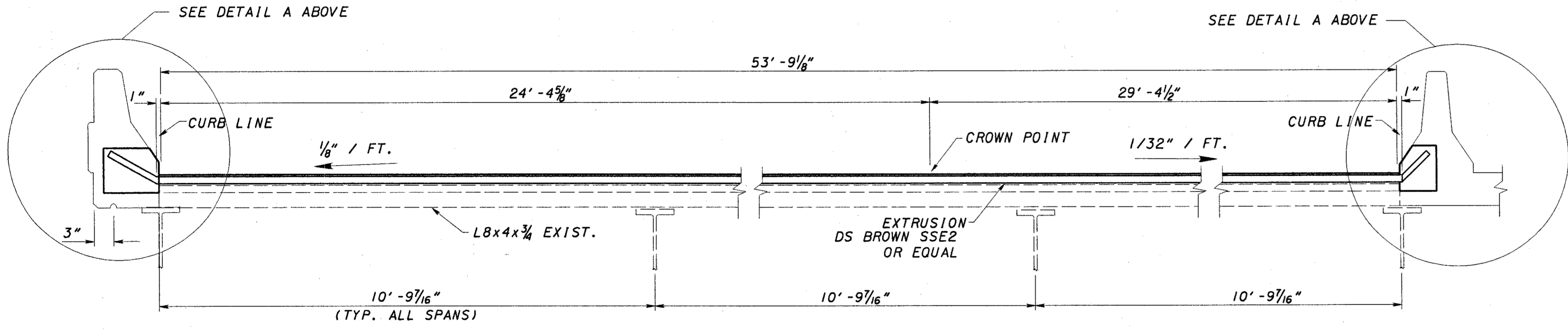


WELD DETAILS

NOTE:  
CONTRACTOR IS TO HAVE EXTRUSIONS SHOP WELDED TO THE PLATES.



DETAIL A



SECTION B-B

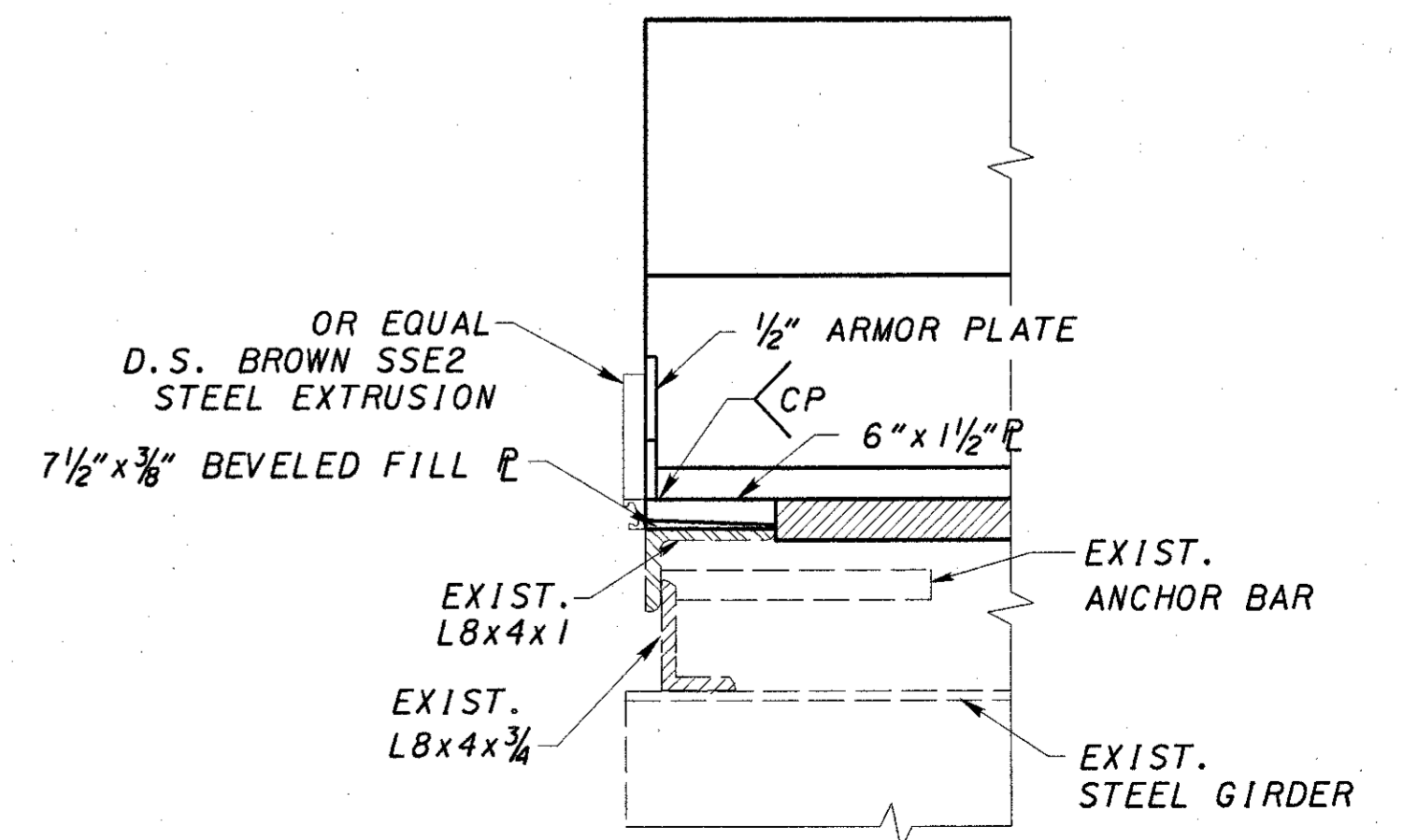
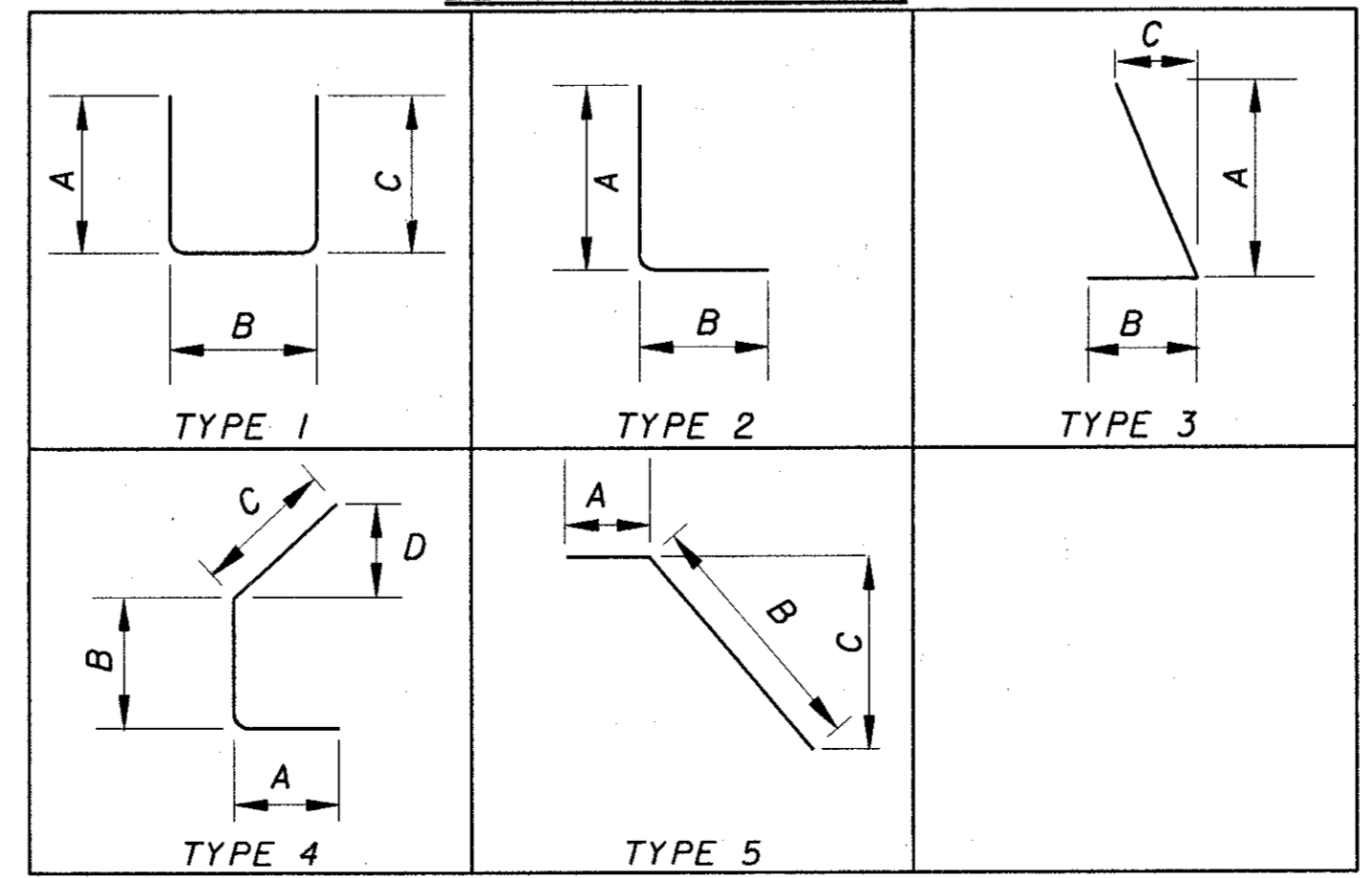
5" STRIP SEAL GLAND

TEMPERATURE (F)	DIMENSION "A"
30°	3 1/8"
40°	2 7/8"
50°	2 3/8"
60°	2 3/8"
70°	2 1/8"
80°	1 3/8"
90°	1 1/8"

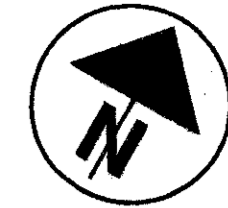
EXPANSION LENGTH = 347' - 0" ±

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
S502	8	3' - 2"		3	2' - 6"	10"	2"		
S503	4	2' - 4"		STR					
S506	4	1' - 7"		1	8"	6"	8"		
S507	4	1' - 9"		1	8"	8"	8"		
S601	8	2' - 6"		5	3"	1' - 4"	1' - 1"		
S602	16	1' - 6"		STR					

BENDING DIAGRAMS



SECTION AB-AB



DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
PH: (614) 224-1941

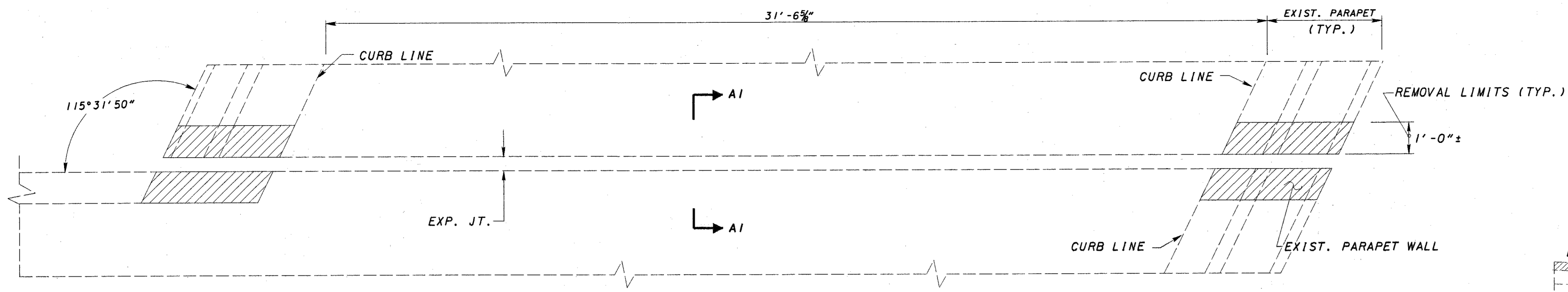
DATE  
8/2001  
REVIEWED  
GEA  
DRAWN  
JEP  
DESIGNED  
JEP  
CHECKED  
ASB

PIER 17 EXPANSION JOINT DETAILS  
RAMP F (BRIDGE NO. HAM-47-1-0000 N)

HAM-471-0.26

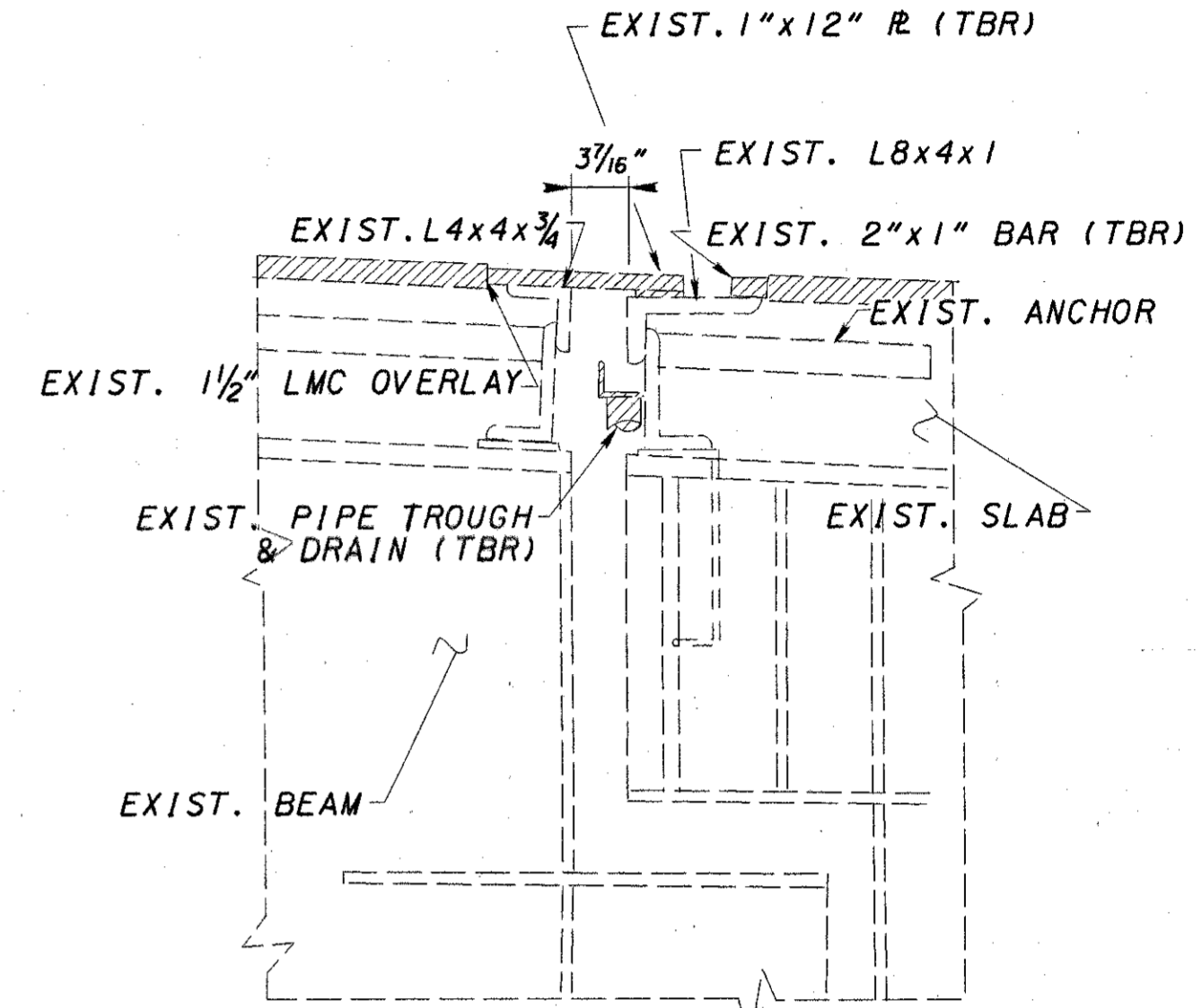
18/106

50  
182

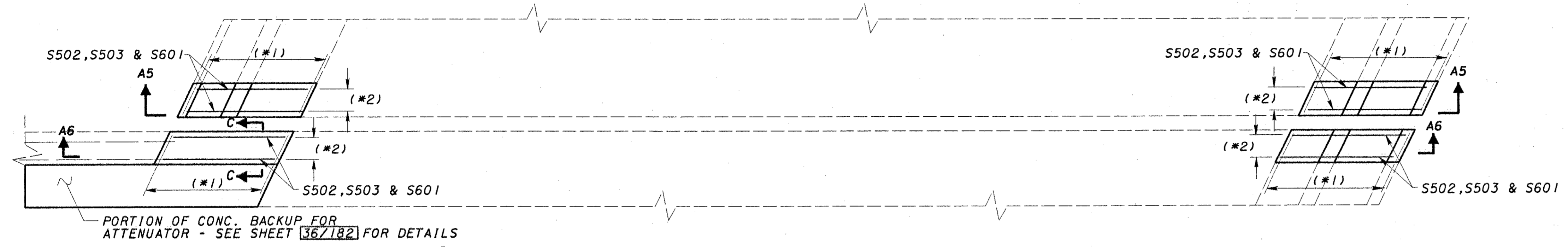


EXISTING DECK SLAB, PARAPET & MEDIAN REMOVAL PLAN

PRESERVE ALL LONG. REINFORCING BARS IN PARAPETS & DECK SLAB REMOVAL AREAS

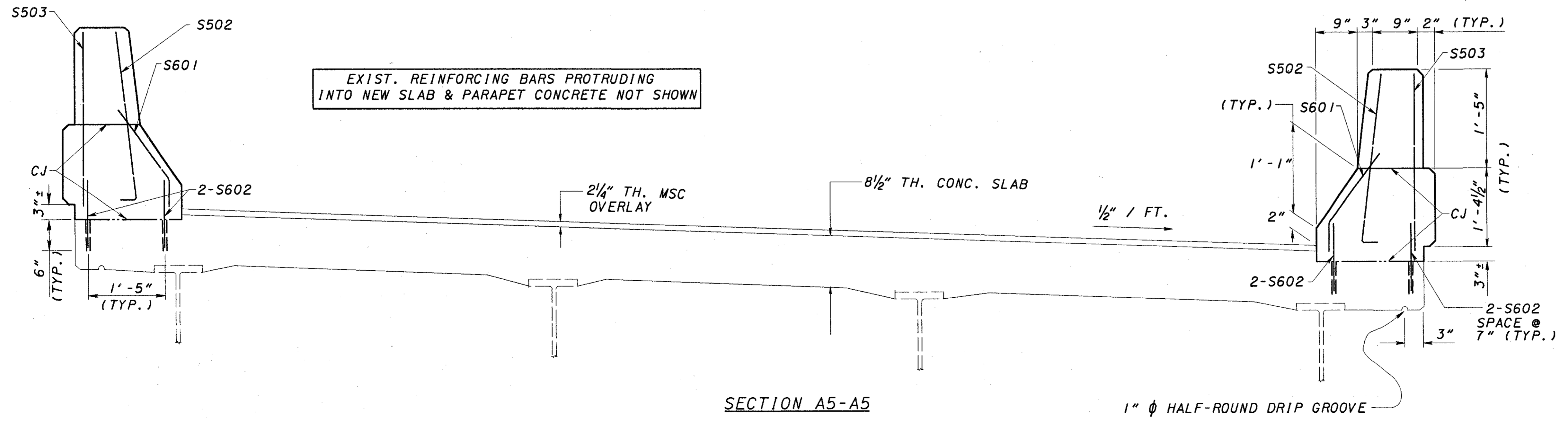


SECTION A1-A1



MODIFIED DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

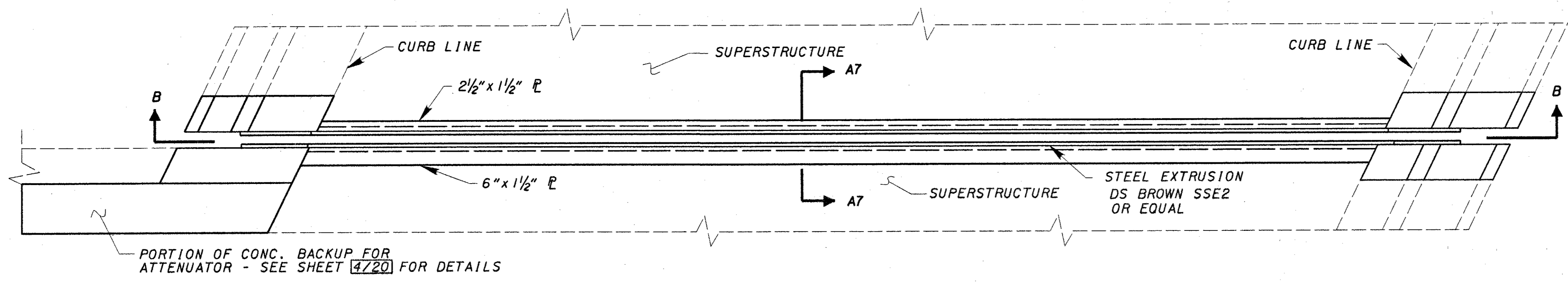
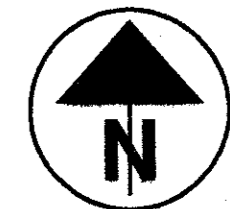
- (\*1) EXIST. DECK SLAB & PARAPET LONG. BARS PROTRUDE INTO NEW CONCRETE AREA
- (\*2) EXIST. PARAPET WALL & DECK SLAB BARS PROTRUDE INTO NEW CONCRETE AREA



SECTION A5-A5

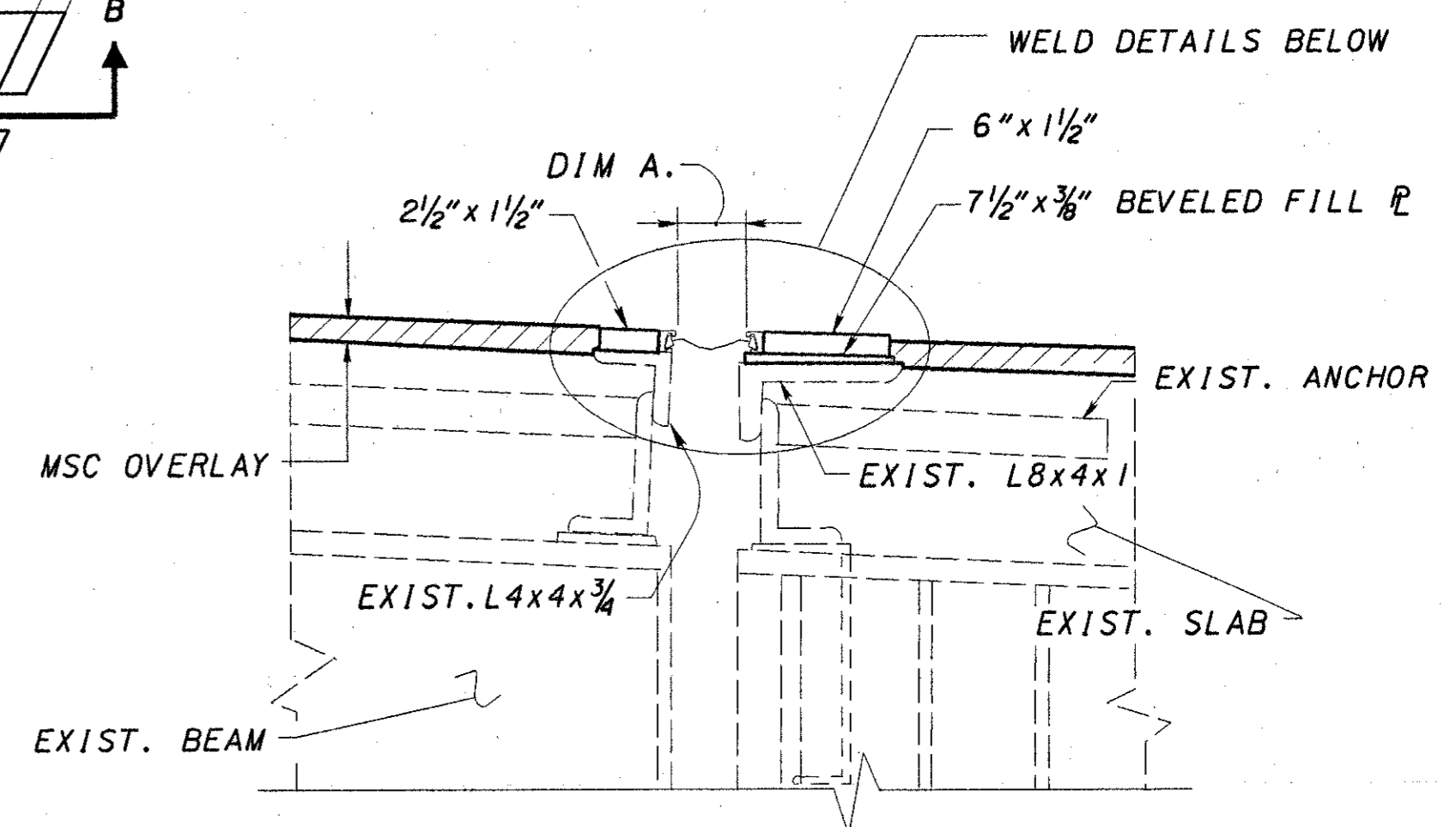
LEGEND

- REMOVAL LIMITS

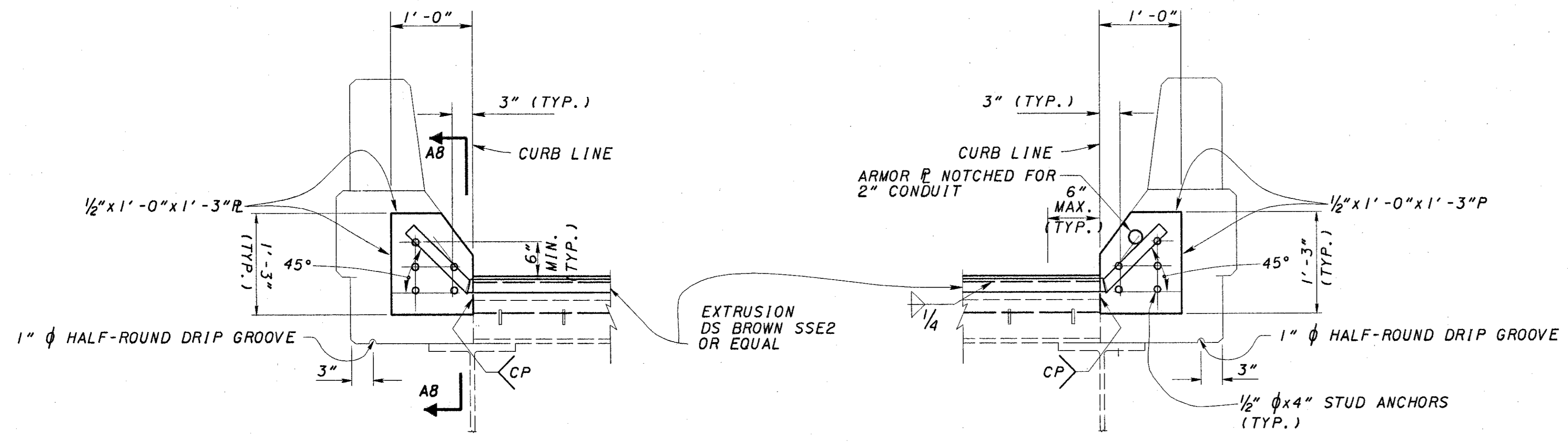


PORTION OF CONC. BACKUP FOR ATTENUATOR - SEE SHEET 4720 FOR DETAILS

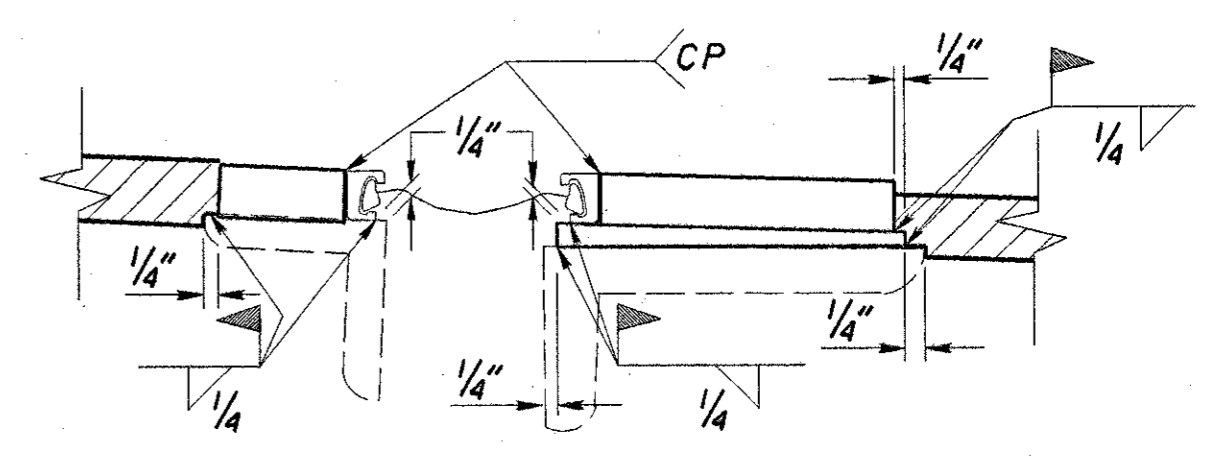
PIER 17 EXPANSION JOINT



SECTION A7-A7

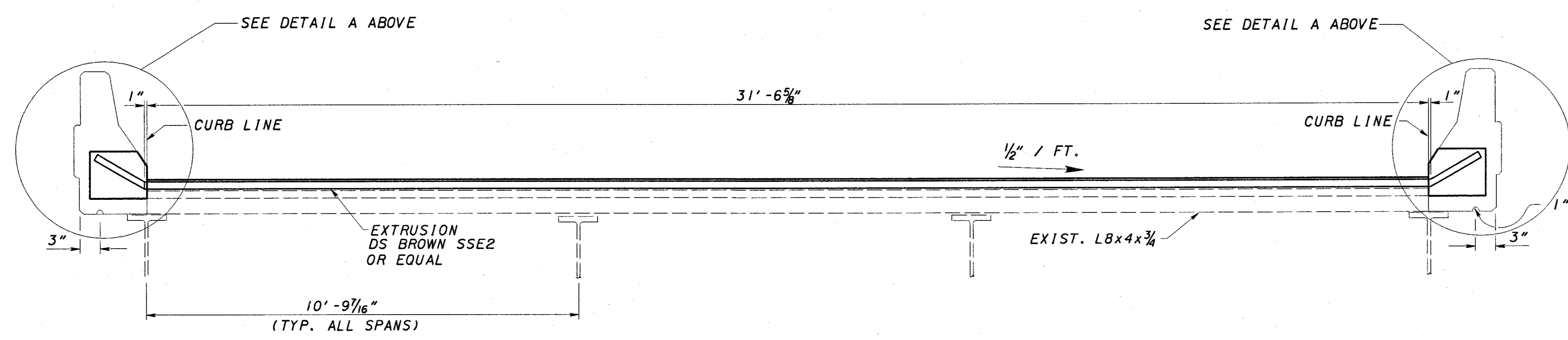


DETAIL A



WELD DETAILS

NOTE:  
CONTRACTOR IS TO HAVE EXTRUSIONS SHOP WELDED TO THE PLATES.

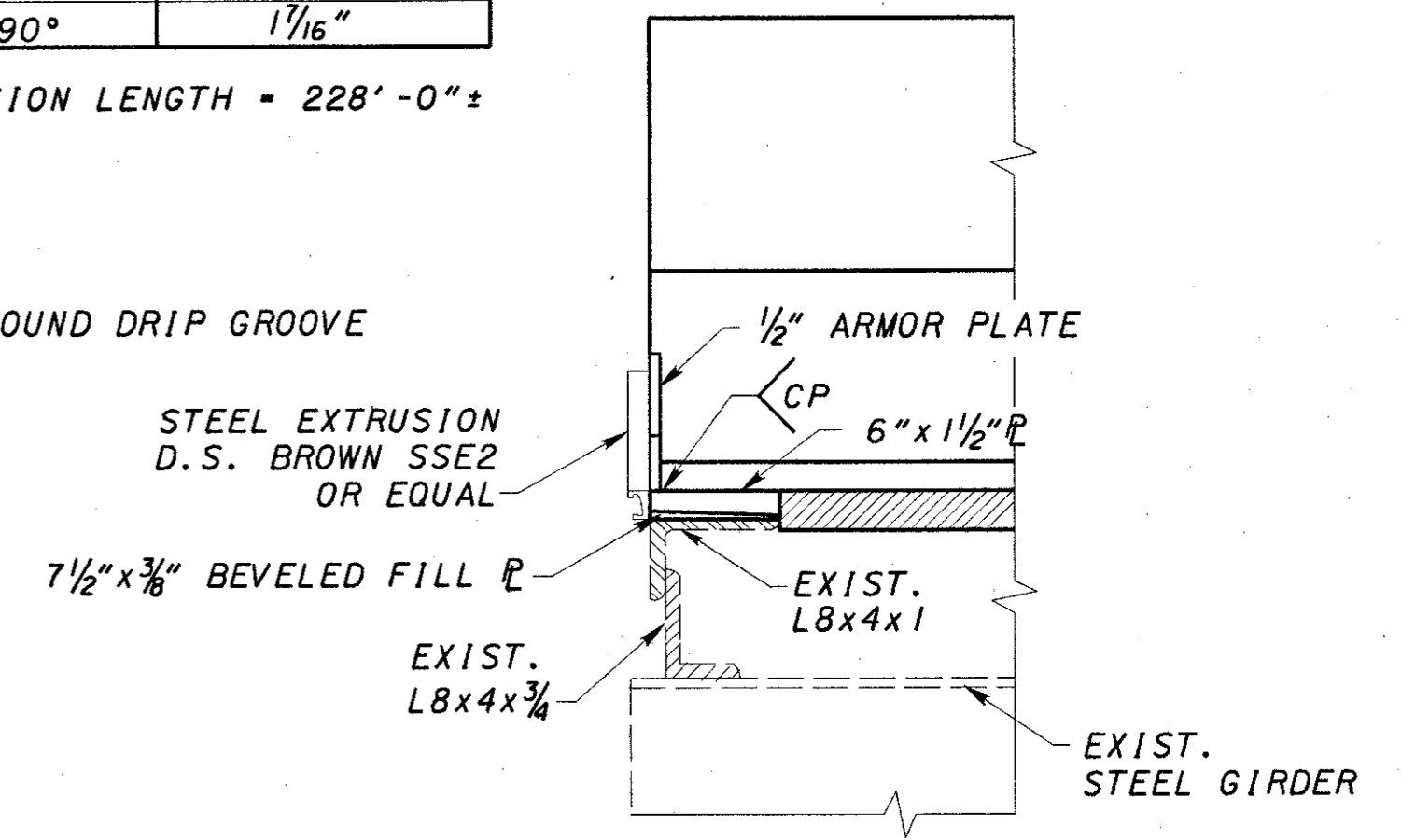


SECTION B-B

4" STRIP SEAL GLAND

TEMPERATURE (F)	DIMENSION "A"
30°	2 1/2"
40°	2 7/16"
50°	2 1/4"
60°	2 1/16"
70°	1 13/16"
80°	1 5/8"
90°	1 1/16"

EXPANSION LENGTH = 228' - 0" ±



SECTION AB-AB

DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
PH: (614) 224-1941

DATE  
5/2001  
REVIEWED  
GEA  
DRAWN  
JEP  
DESIGNED  
JEP  
CHECKED  
ASB

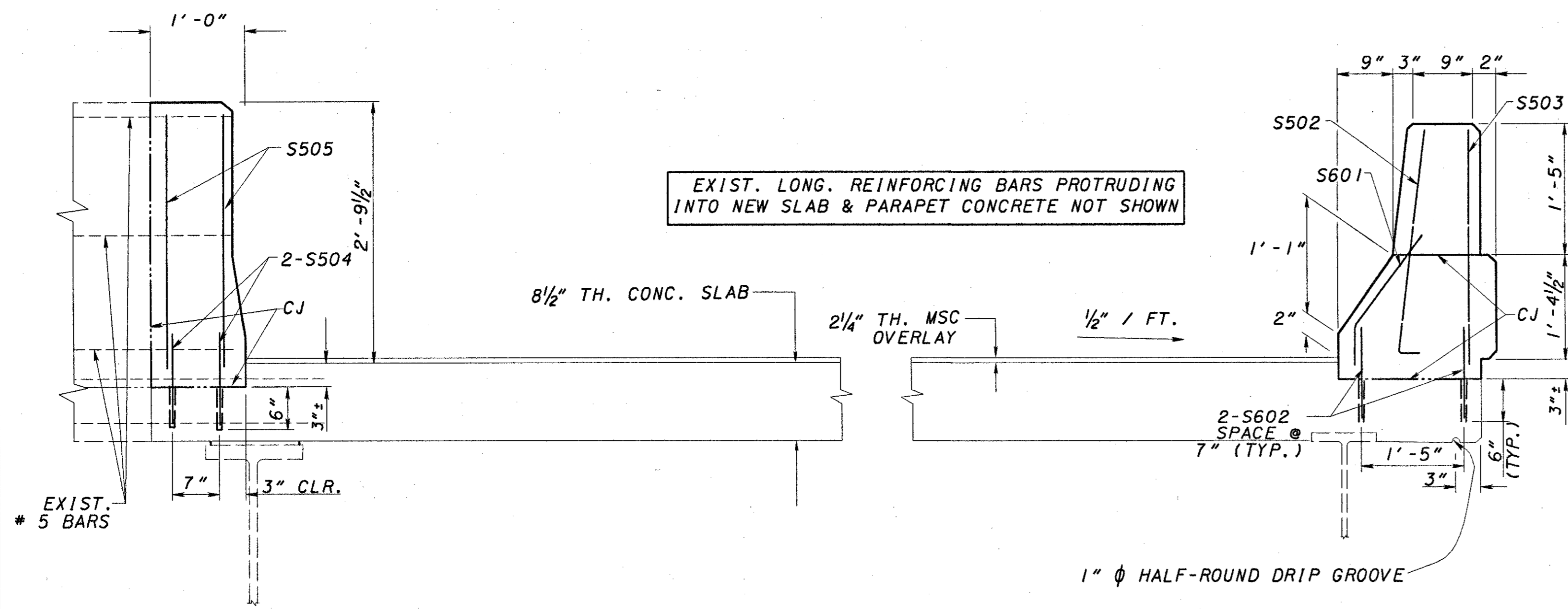
STRUCTURE FILE NUMBER  
3117391

PIER 17 EXPANSION JOINT DETAILS  
RAMP F (BRIDGE NO. HAM-471-0000 N)

HAM-471-0.26

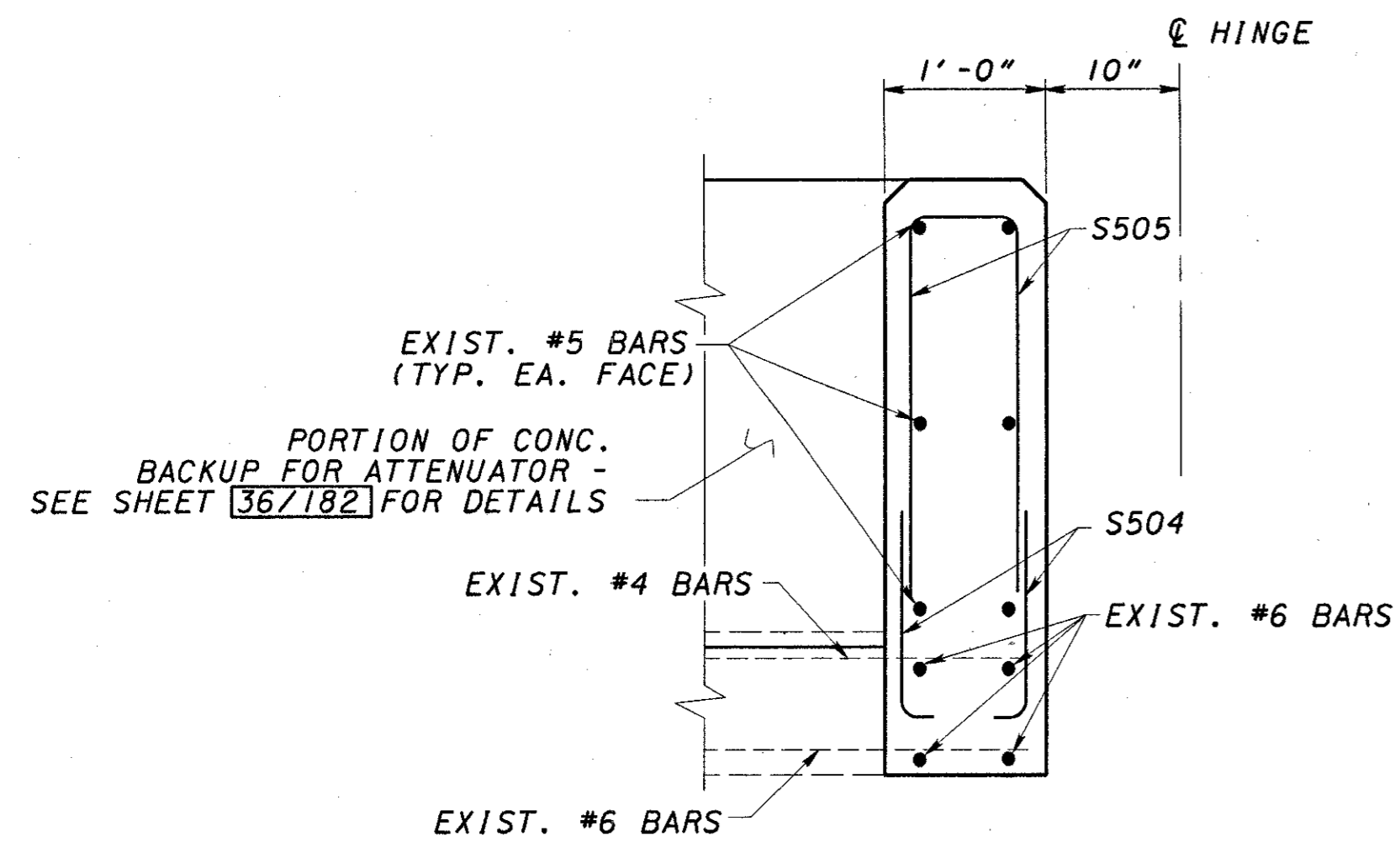
19/106

51  
182



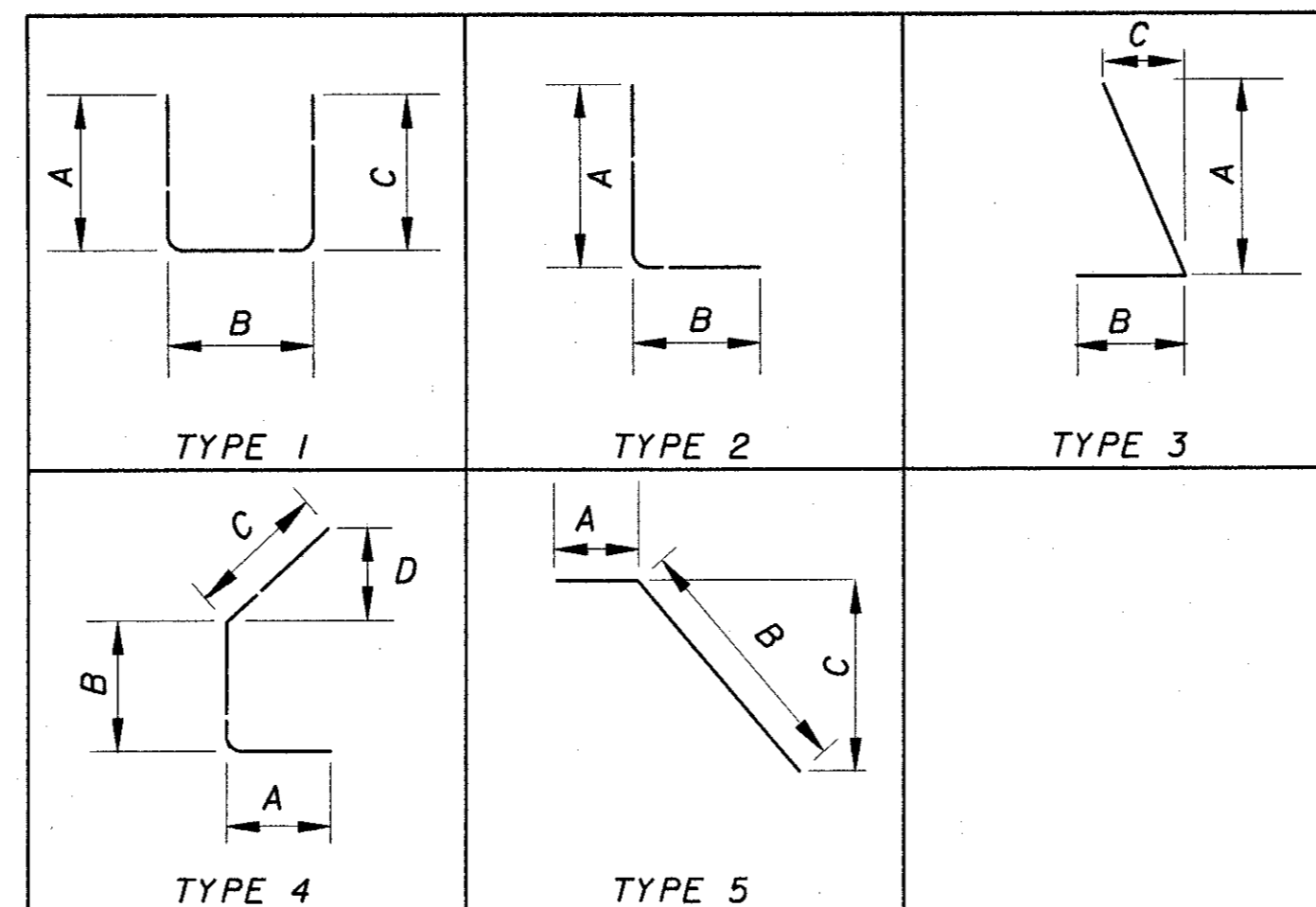
SECTION A6-A6

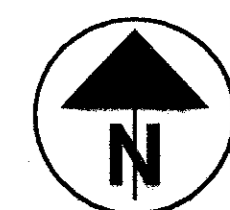
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
S502	6	3'-2"		3	2'-6"	10"	2"		
S503	6	2'-4"		STR					
S504	4	1'-11"		2	1'-6"	3"			
S505	4	5'-3"		1	2'-3"	6"	2'-3"		
S601	6	2'-6"		5	1'-0"	8"	2'-0"	1'-7"	
S602	12	1'-6"		STR					



SECTION C-C

BENDING DIAGRAMS





DESIGN AGENCY  
 BARR ENGINEERING  
 Five East Long Street  
 Columbus, OH 43215  
 PH: (614) 224-1941

DATE  
 4/2001  
 REVIEWED  
 GEA  
 STRUCTURE FILE NUMBER  
 3117367

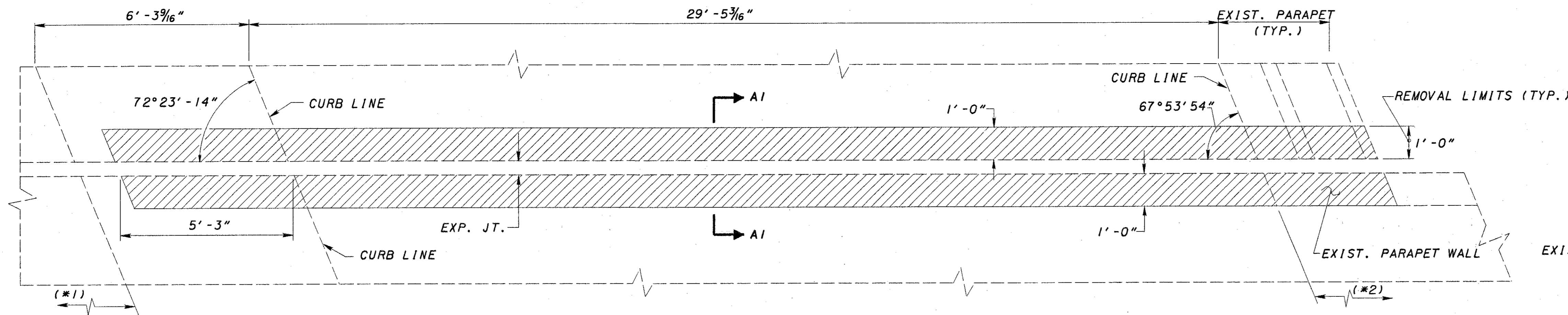
DRAWN  
 JEP  
 REVISED  
 JEP  
 CHECKED  
 ASB

PIER 17 EXPANSION JOINT DETAILS  
 RAMP L (BRIDGE NO. HAM-471-0000 R)

HAM-471-0.26

21/106

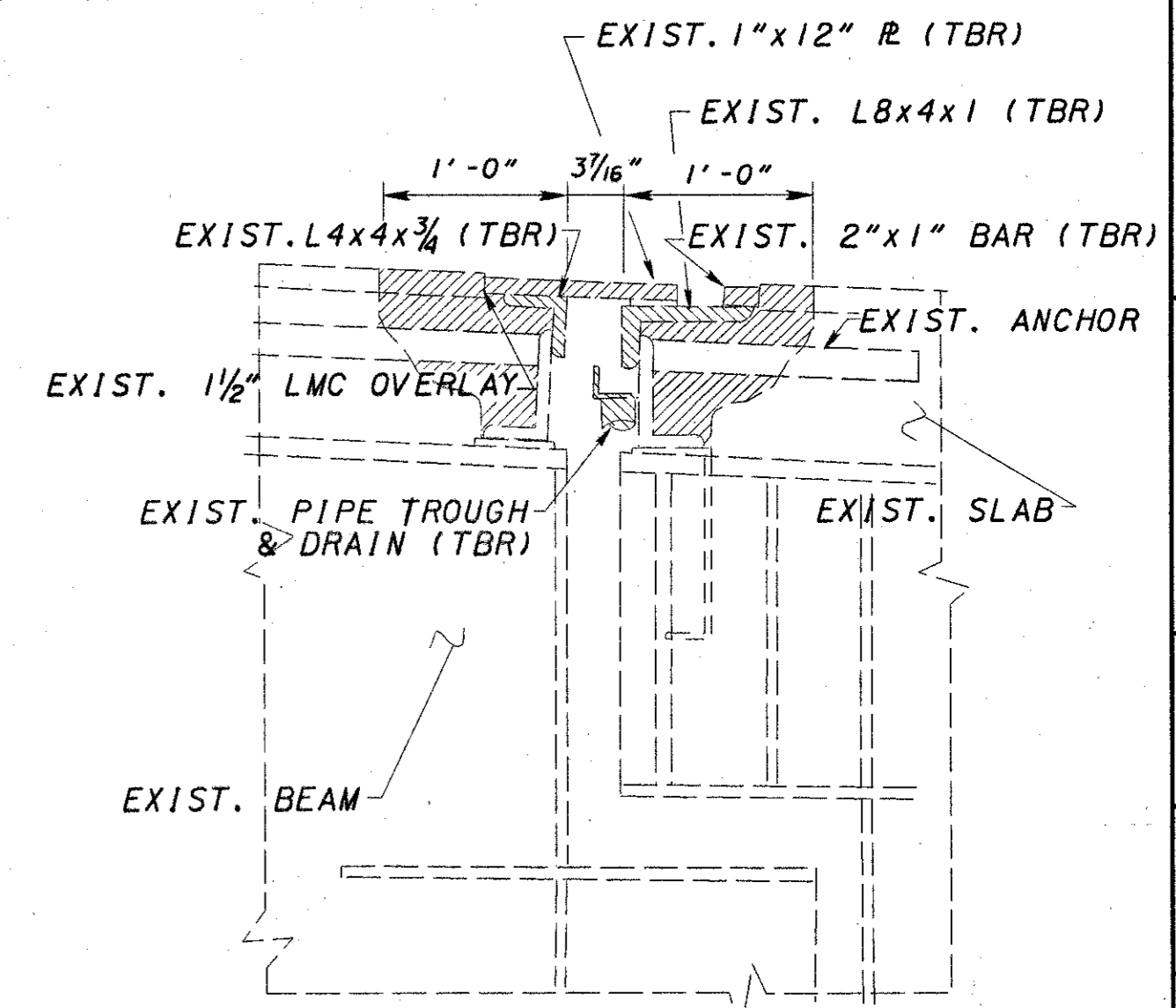
53  
 182



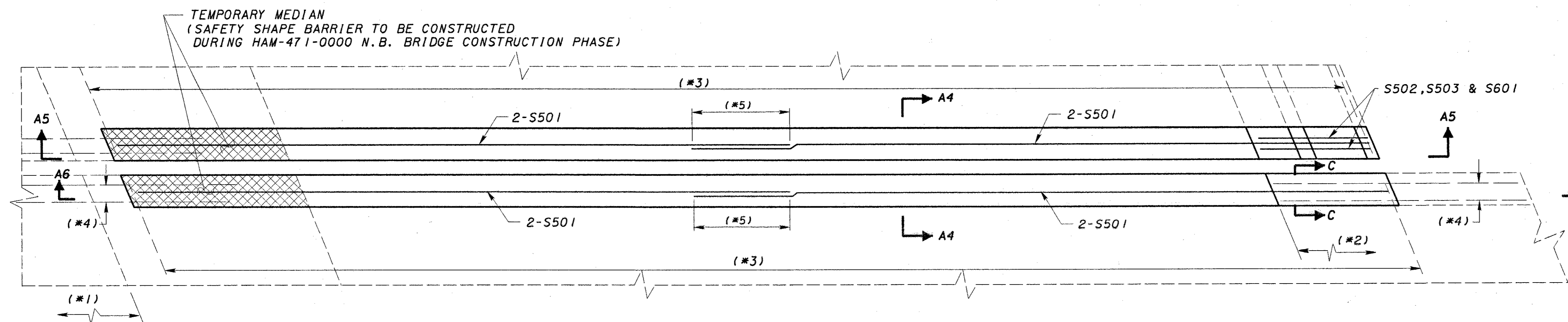
EXISTING DECK SLAB, PARAPET & MEDIAN REMOVAL PLAN

(\*1) NORTHBOUND HAM-471-000R BRIDGE  
 (\*2) RAMP F BRIDGE

PRESERVE ALL LONG. REINFORCING BARS IN  
 PARAPETS & DECK SLAB REMOVAL AREAS



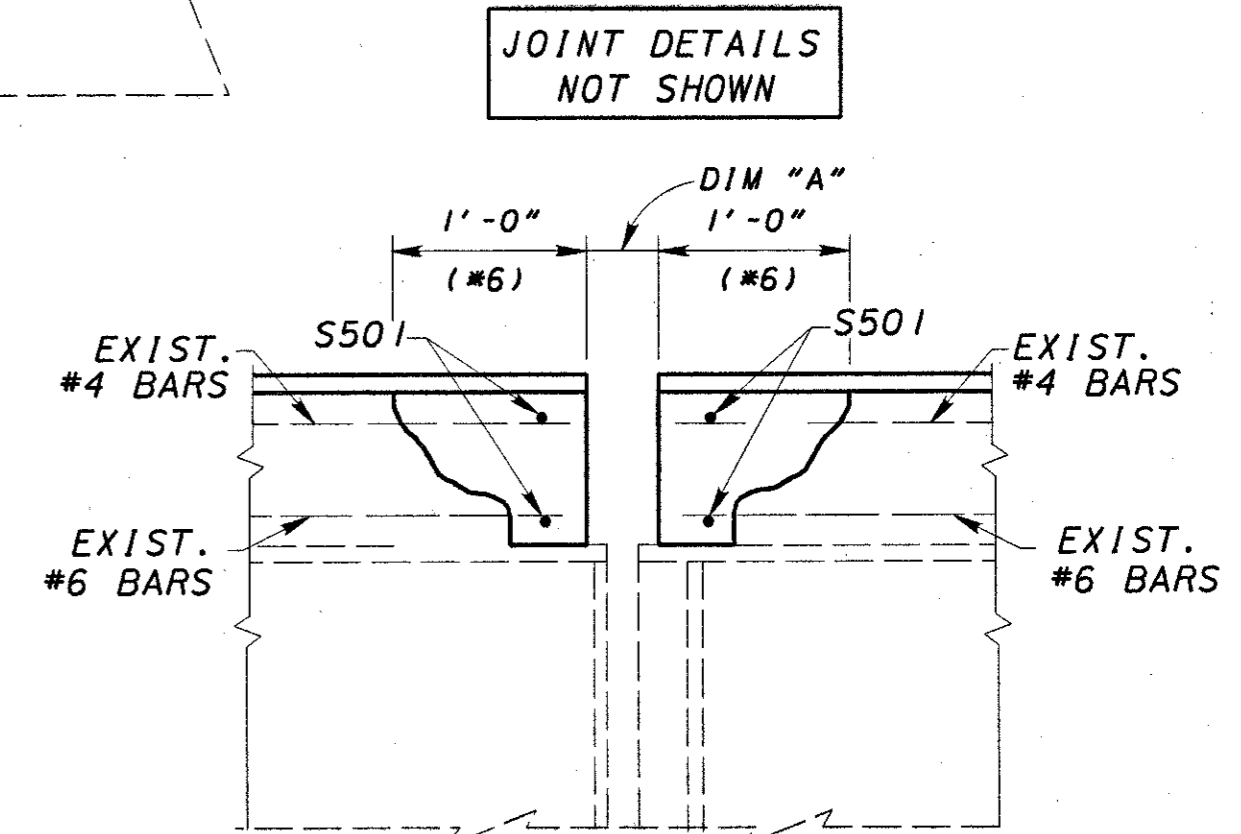
SECTION A1-A1



MODIFIED DECK SLAB & PARAPET PLAN  
 FOR STRIP SEAL EXPANSION JOINT INSTALLATION

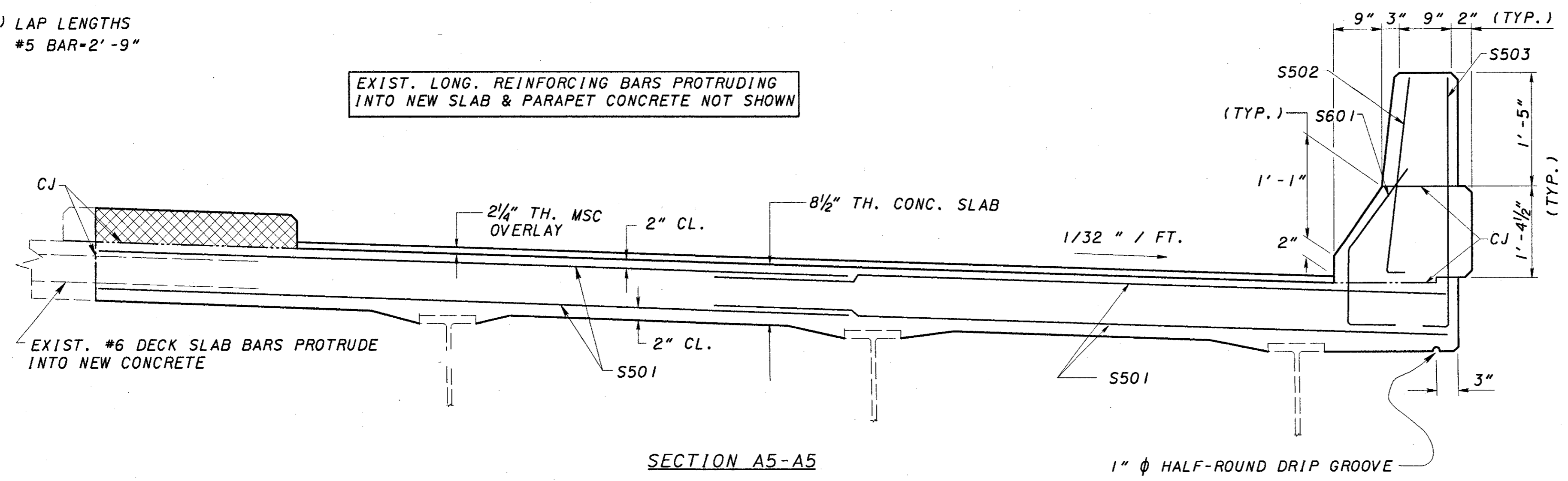
(\*3) EXIST. DECK SLAB & PARAPET LONG. BARS  
 PROTRUDE INTO NEW CONCRETE AREA  
 (\*4) EXIST. PARAPET WALL & DECK SLAB LONG. BARS  
 PROTRUDE INTO NEW CONCRETE AREA  
 (\*5) LAP LENGTHS  
 #5 BAR-2'-9"

EXIST. LONG. REINFORCING BARS PROTRUDING  
 INTO NEW SLAB & PARAPET CONCRETE NOT SHOWN



SECTION A4-A4

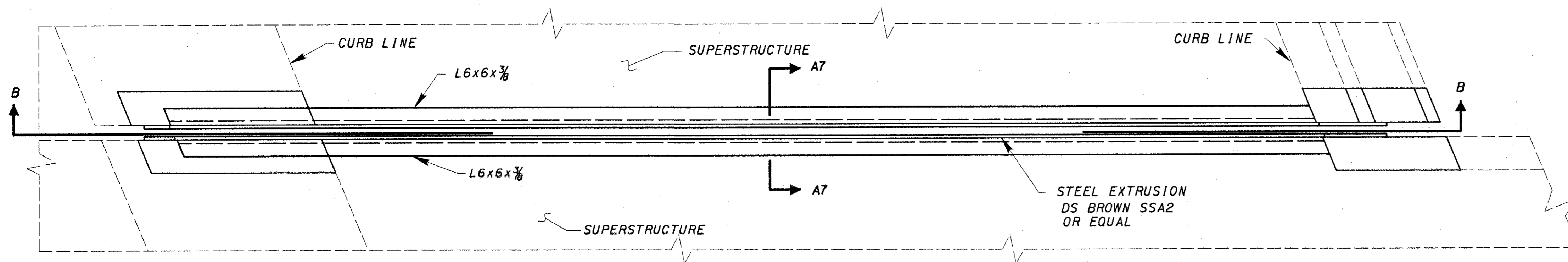
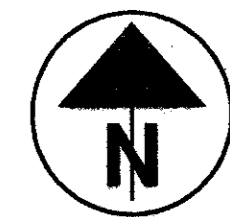
(\*6) SALVAGE EXISTING LONGITUDINAL RESTEEL



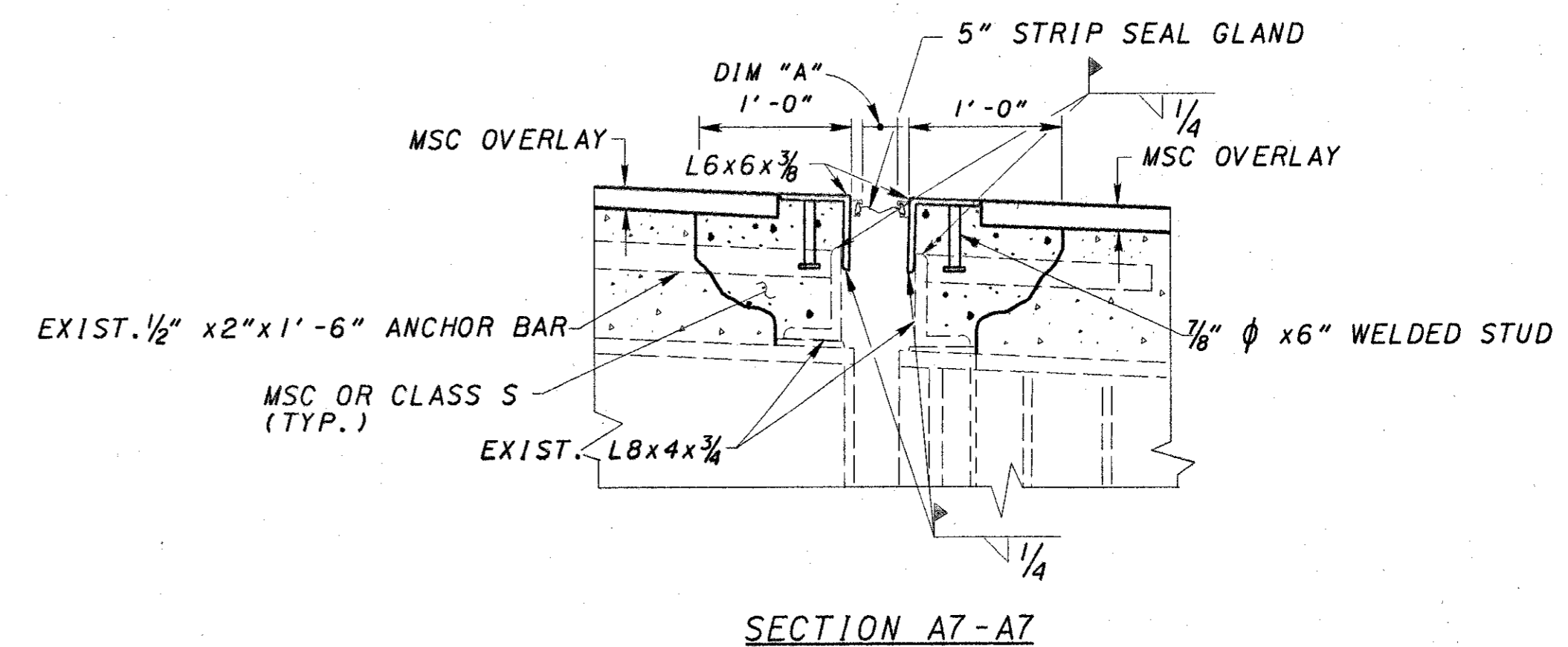
SECTION A5-A5

LEGEND

- CONCRETE REMOVAL
- TEMPORARY CONCRETE OR ASPHALT

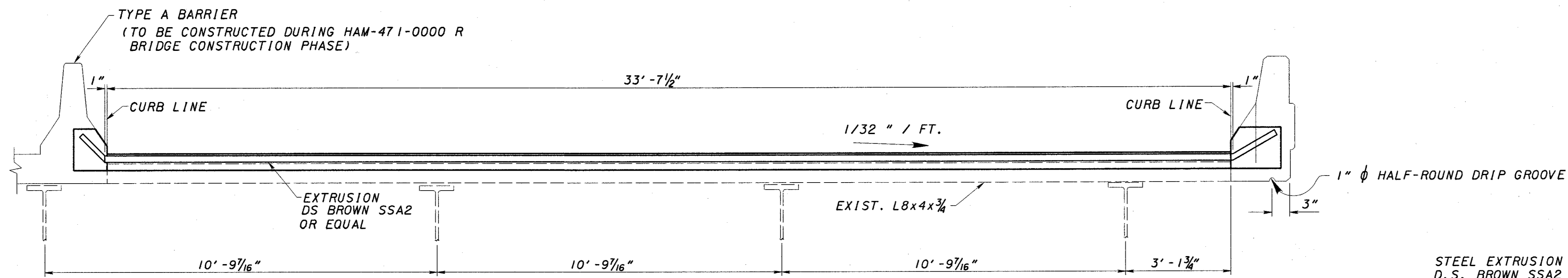
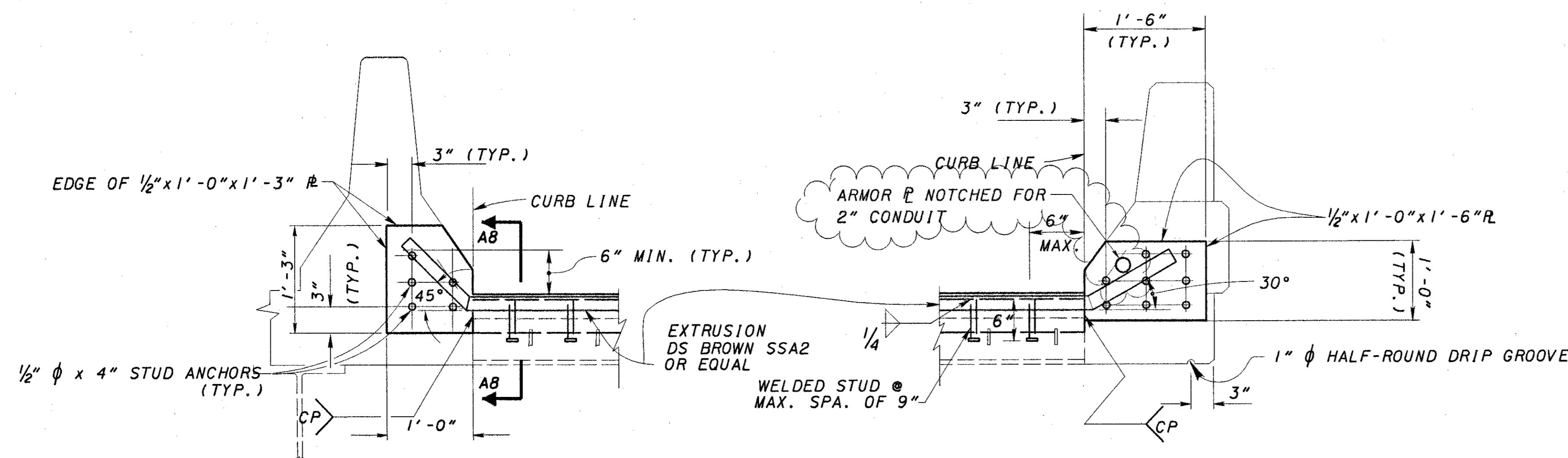


PIER 17 EXPANSION JOINT

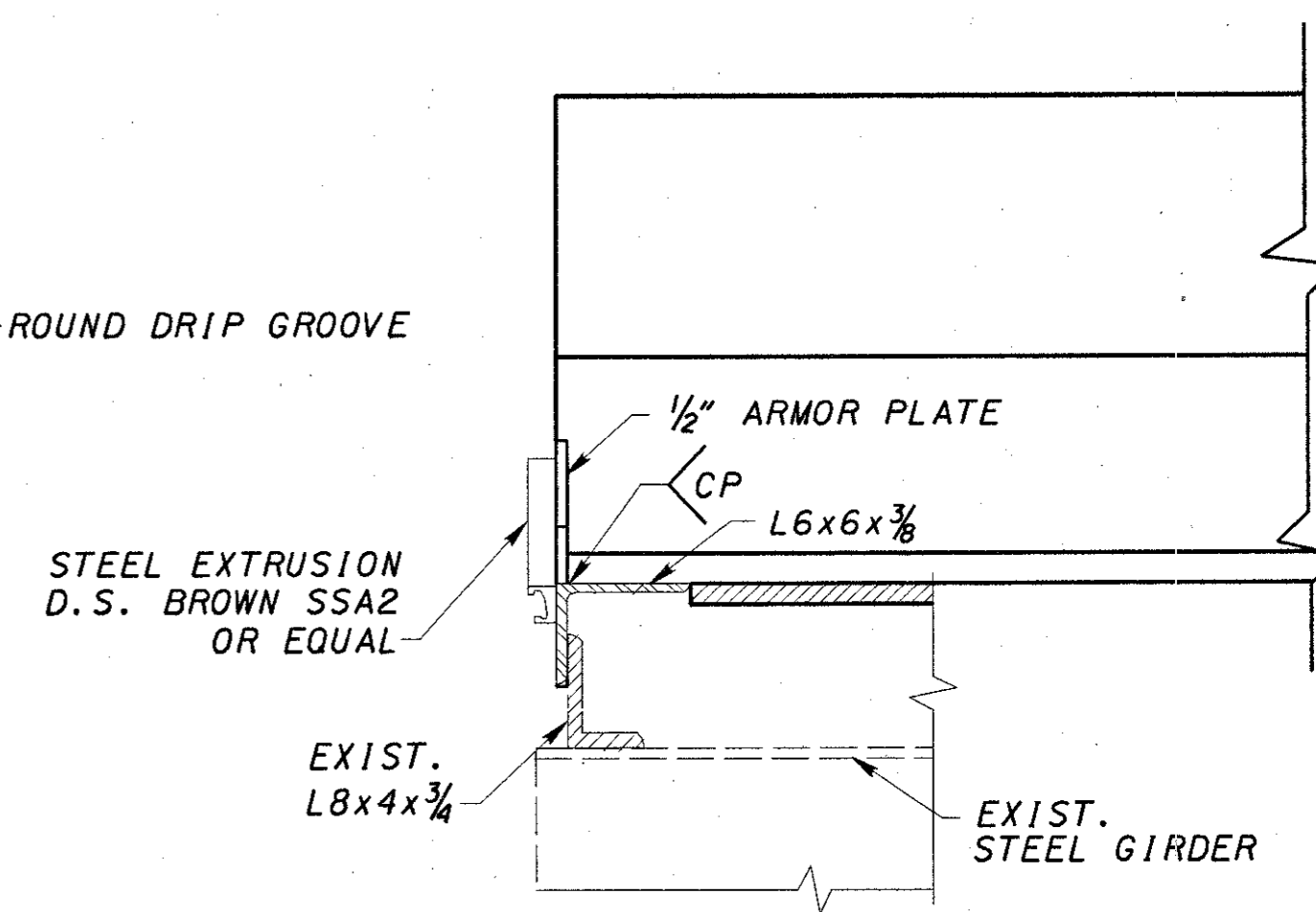


TEMPERATURE (F)	DIMENSION "A"
30°	3 1/8"
40°	2 7/8"
50°	2 5/8"
60°	2 3/8"
70°	2 1/8"
80°	1 13/16"
90°	1 9/16"

EXPANSION LENGTH = 347'-0" ±



SECTION B-B



SECTION A8-A8

DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

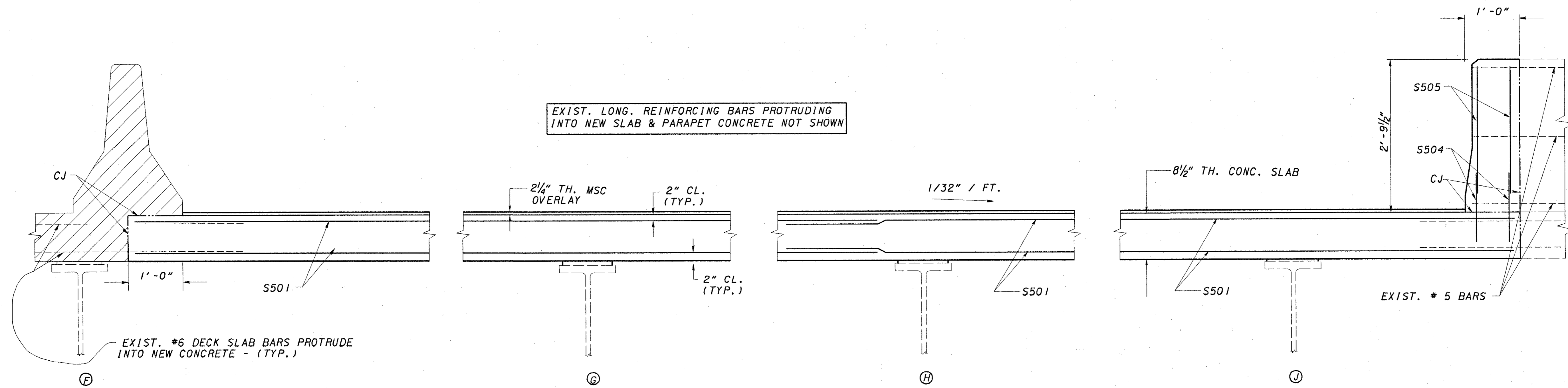
DATE  
4/2001  
REVIEWED  
GEA  
DRAWN  
JEP  
DESIGNED  
JEP  
CHECKED  
ASB

PIER 17 EXPANSION JOINT DETAILS  
RAMP L (BRIDGE NO. HAM-471-0000 R)

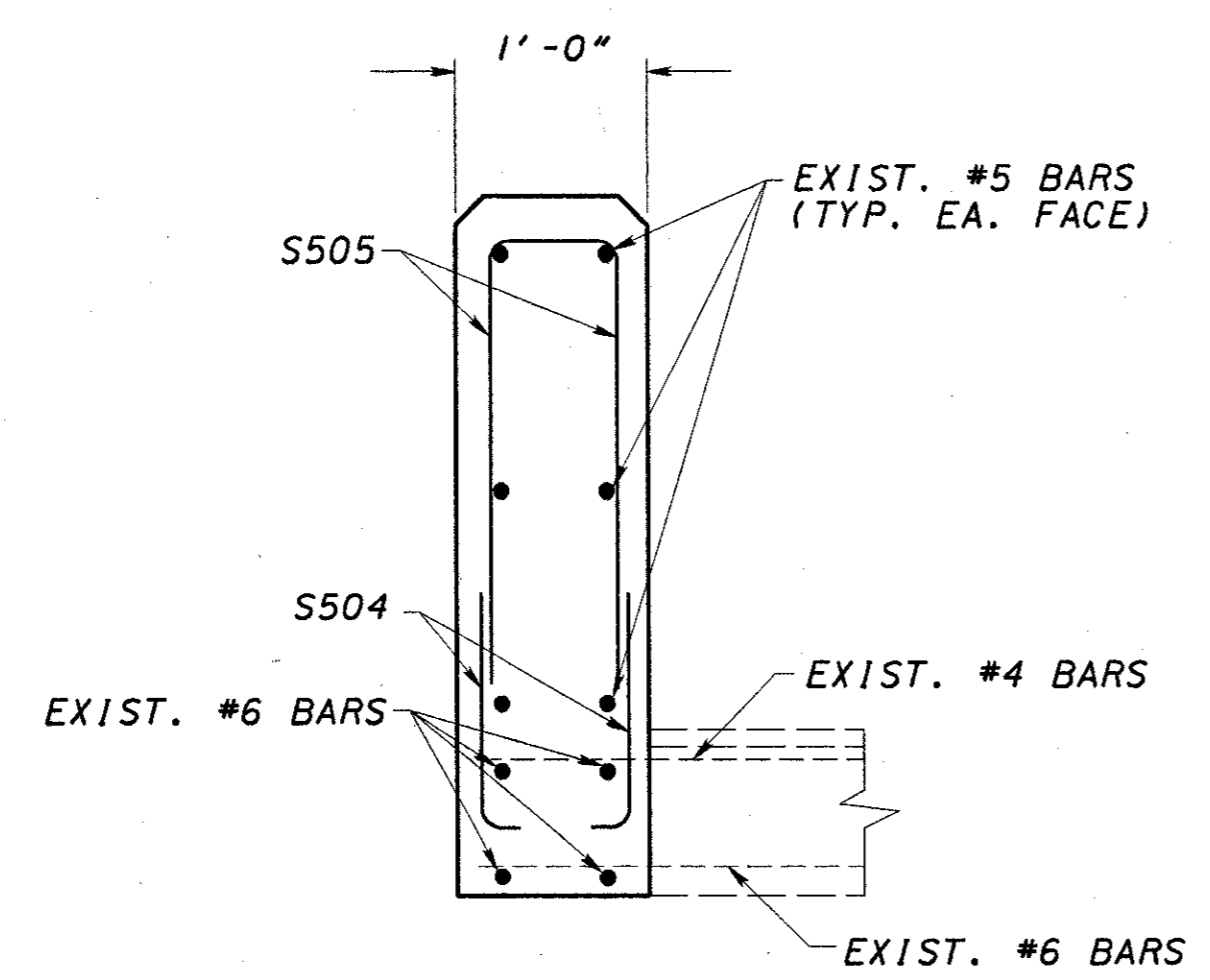
HAM-471-0.26

22/106

54  
182

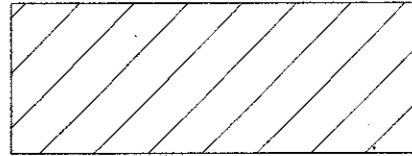


SECTION A6-A6

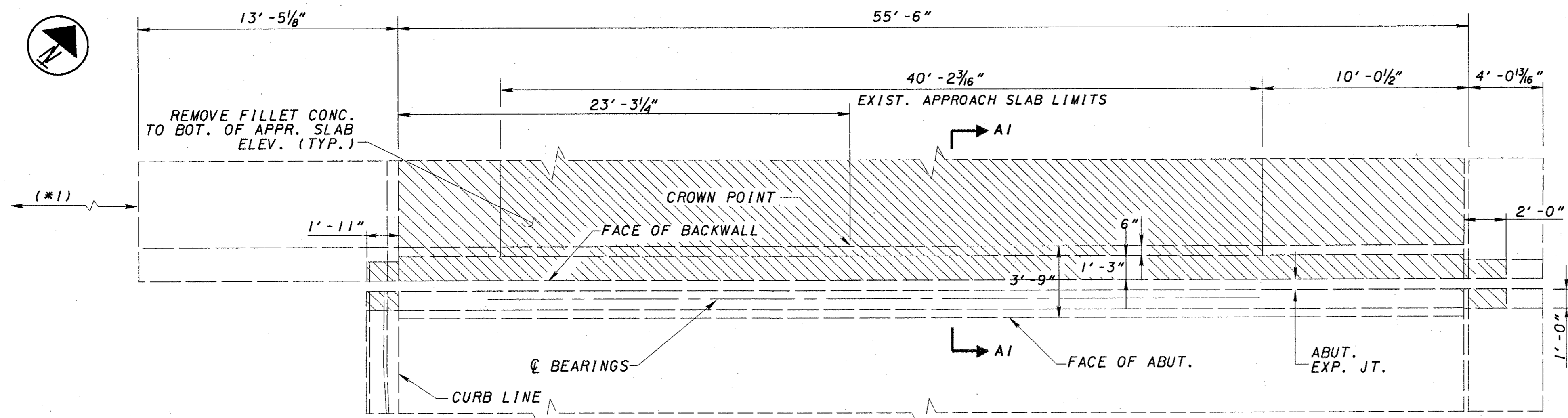
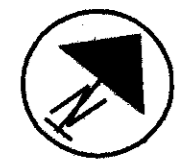


SECTION C-C

LEGEND

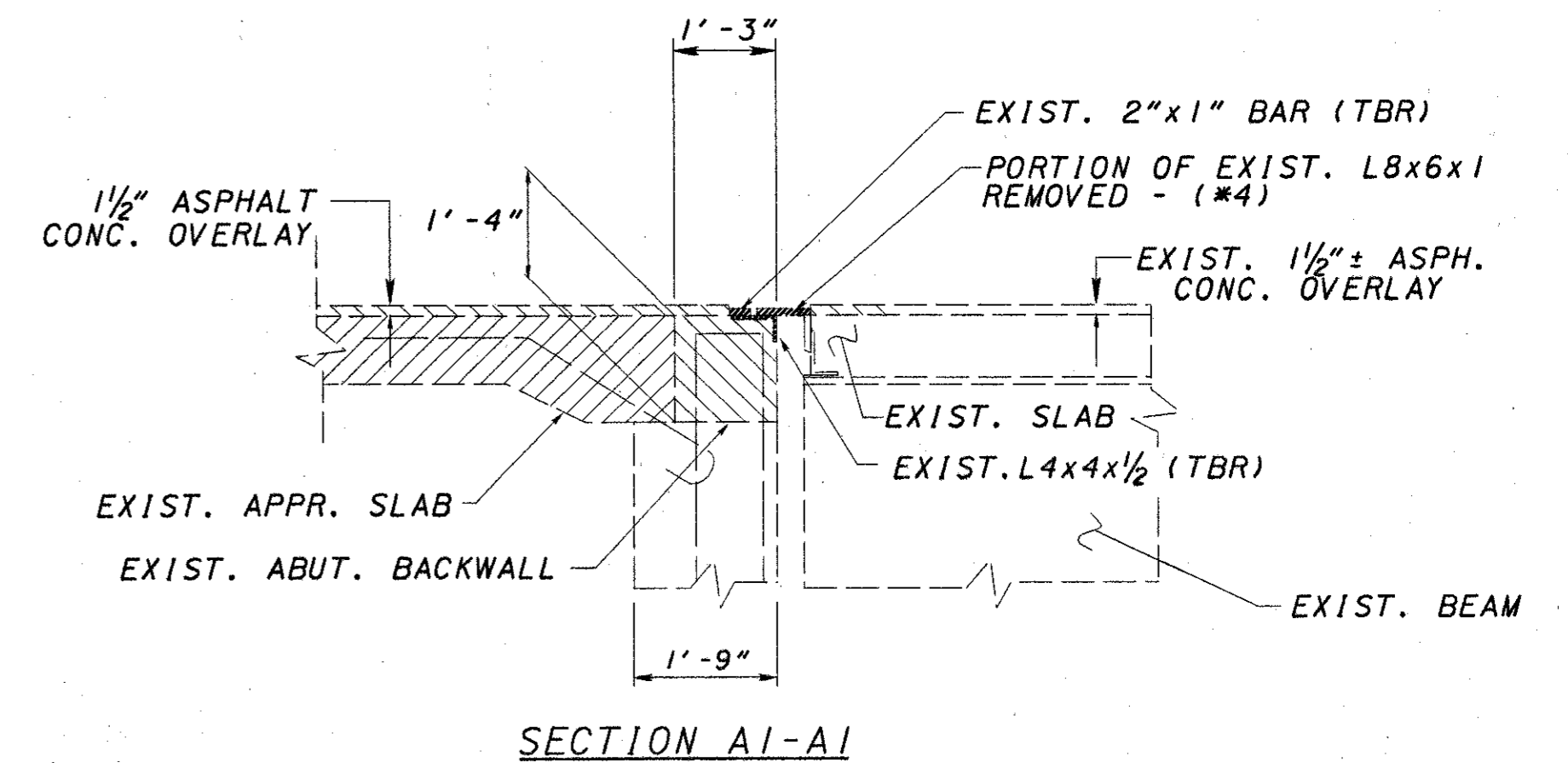
 - HAM-471-0000 R BRIDGE TO BE CONSTRUCTED IN A DIFFERENT PHASE

DESIGN AGENCY BARR ENGINEERING Five East Long Street Columbus, Ohio 43215 PH: (614) 224-1941	DATE 4/2001	REVIEWED GEA	DESIGNED JEP	DRAWN JEP	STRUCTURE FILE NUMBER 117367
PIER 17 EXPANSION JOINT DETAILS RAMP L (BRIDGE NO. HAM-471-0000 R)					
HAM-471-0.26					
23/106					
55 182					

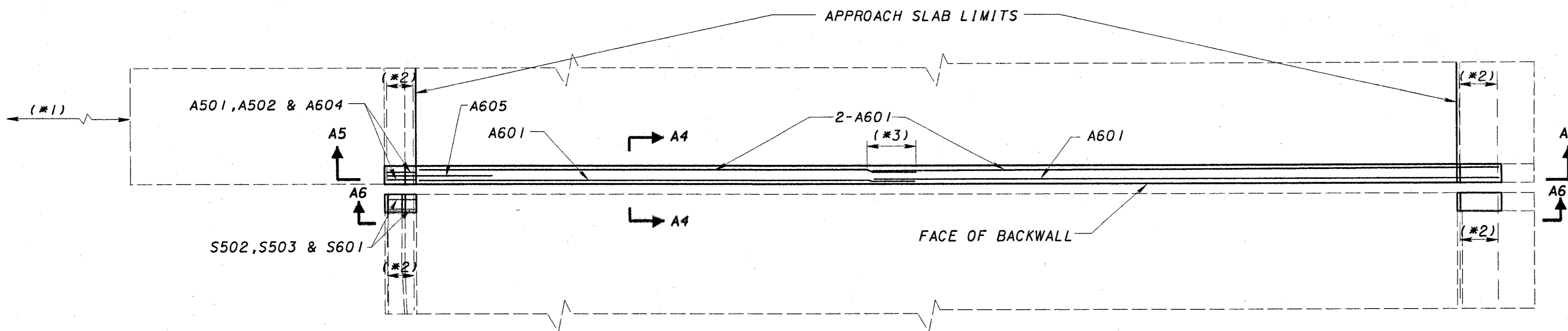


EXISTING ABUTMENT, DECK SLAB, PARAPET & APPROACH SLAB REMOVAL PLAN

(\*1) SOUTHBOUND ABUT. DETAILS NOT SHOWN

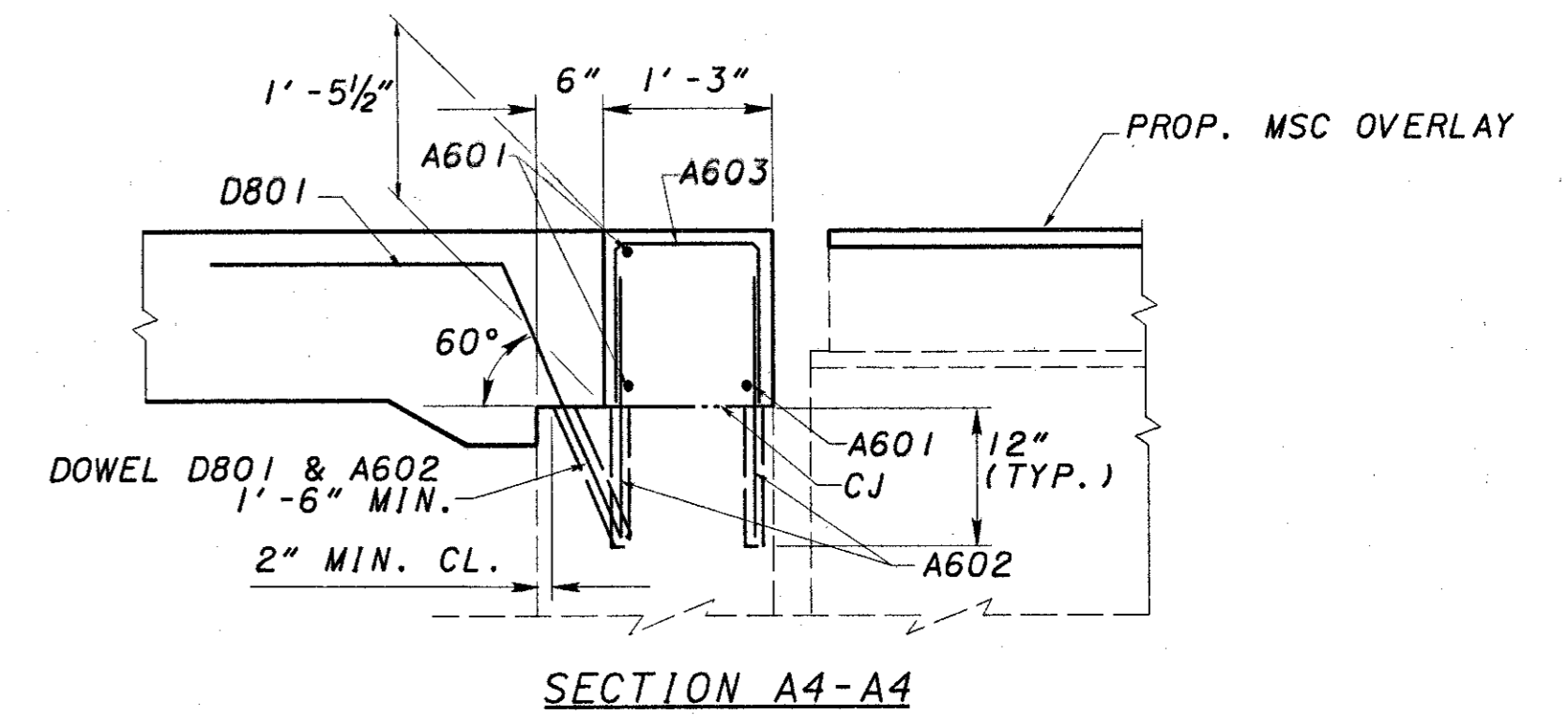


(\*4) REMOVE TOP PORTION OF ANGLE FLUSH WITH ORIGINAL CONCRETE DECK SLAB



MODIFIED ABUTMENT, DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

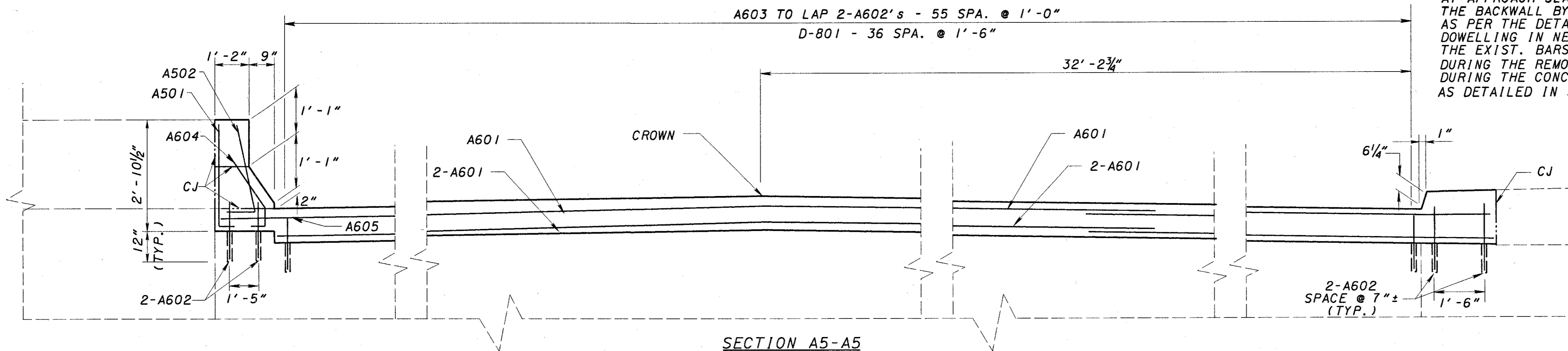
(\*2) EXIST. LONG. BARS TO REMAIN  
 (\*3) LAP LENGTHS  
 #5 BAR=2'-9"  
 #6 BAR=3'-3"



SECTION A4-A4

ALTERNATE TO BACKWALL CONSTRUCTION

PLANS SHOW THE PORTIONS OF BACKWALL REMOVAL BY SAWCUTTING AT APPROACH SLAB SEAL LEVEL (SECTION A1-A1) AND RECONSTRUCTING THE BACKWALL BY DOWELLING INTO THE REMAINING EXISTING BACKWALL AS PER THE DETAILS OF SECTION A4-A4. AS AN ALTERNATE TO DOWELLING IN NEW BARS, THE CONTRACTOR MAY CHOOSE TO PRESERVE THE EXIST. BARS (RUNNING THROUGH THE CONSTRUCTION JOINT) DURING THE REMOVAL OF THE BACKWALL CONCRETE. ANY BAR DAMAGED DURING THE CONCRETE REMOVAL SHALL BE REPLACED BY NEW BARS AS DETAILED IN SECTION A4-A4.



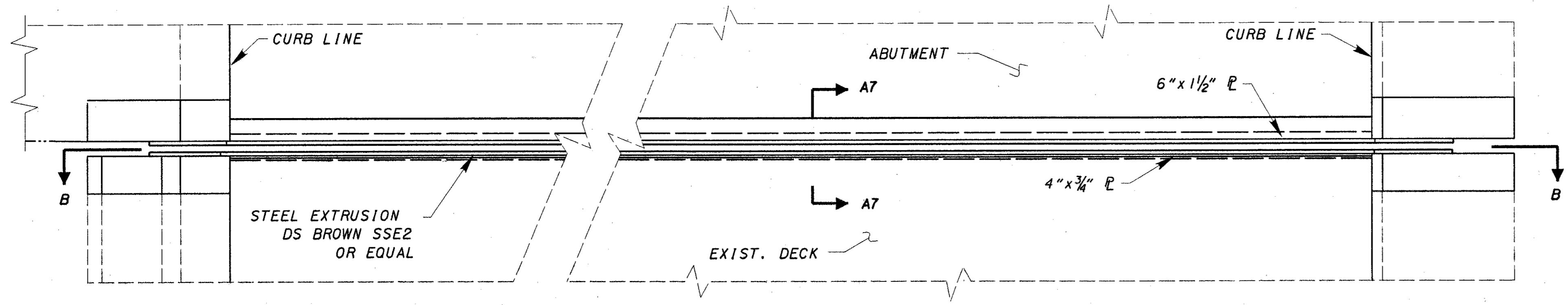
SECTION A5-A5

LEGEND

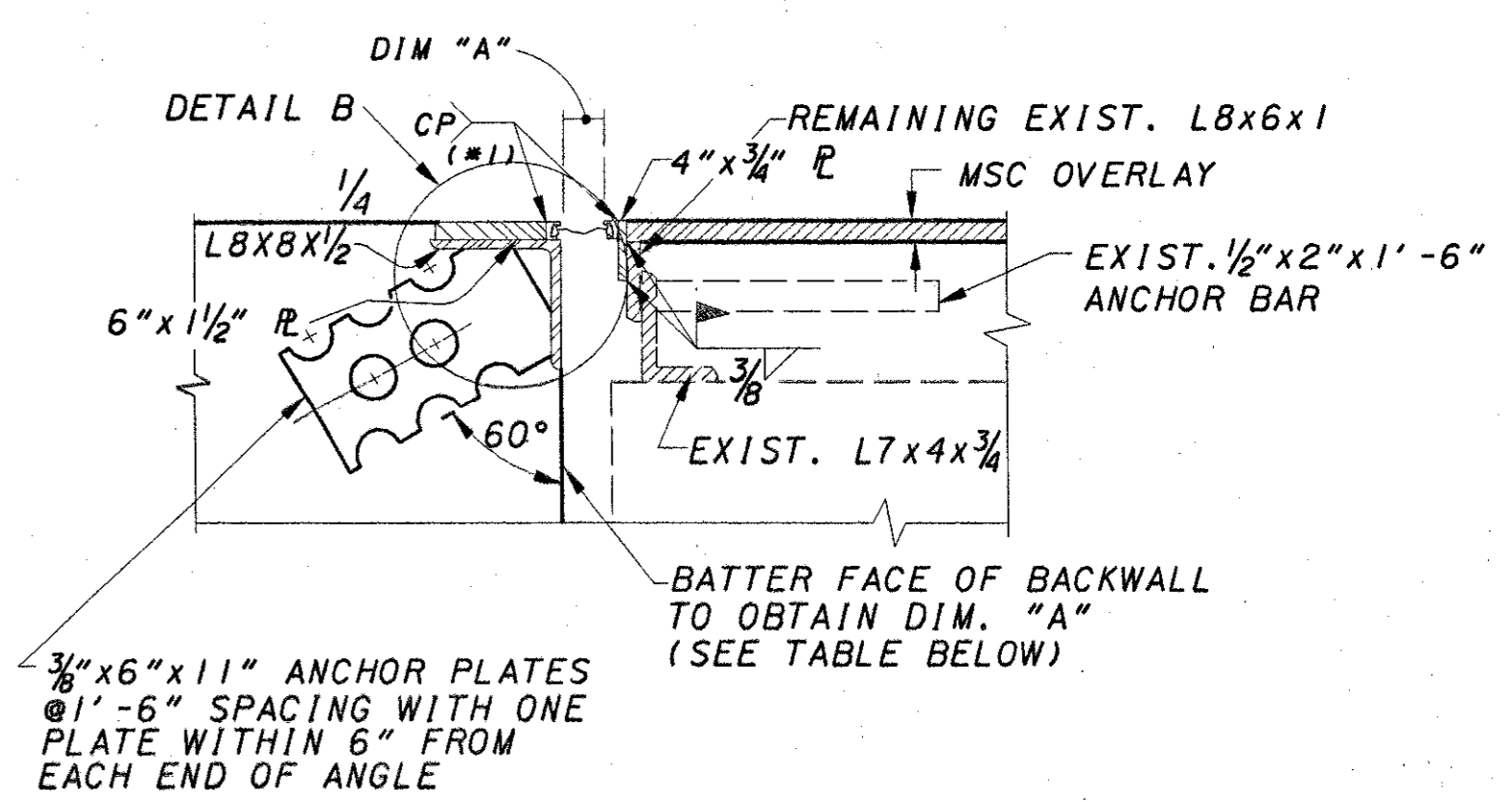
- CONCRETE REMOVAL

DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 PH: (614) 224-1941  
 DATE: 6/2001  
 REVIEWED: GEA  
 DRAWN: JEP  
 DESIGNED: JEP  
 CHECKED: ASB  
 STRUCTURE FILE NUMBER: 3117367  
 FORWARD ABUTMENT EXPANSION JOINT DETAILS  
 BRIDGE NO. HAM-471-0000R  
 HAM 471-0.26  
 24/106  
 56/182



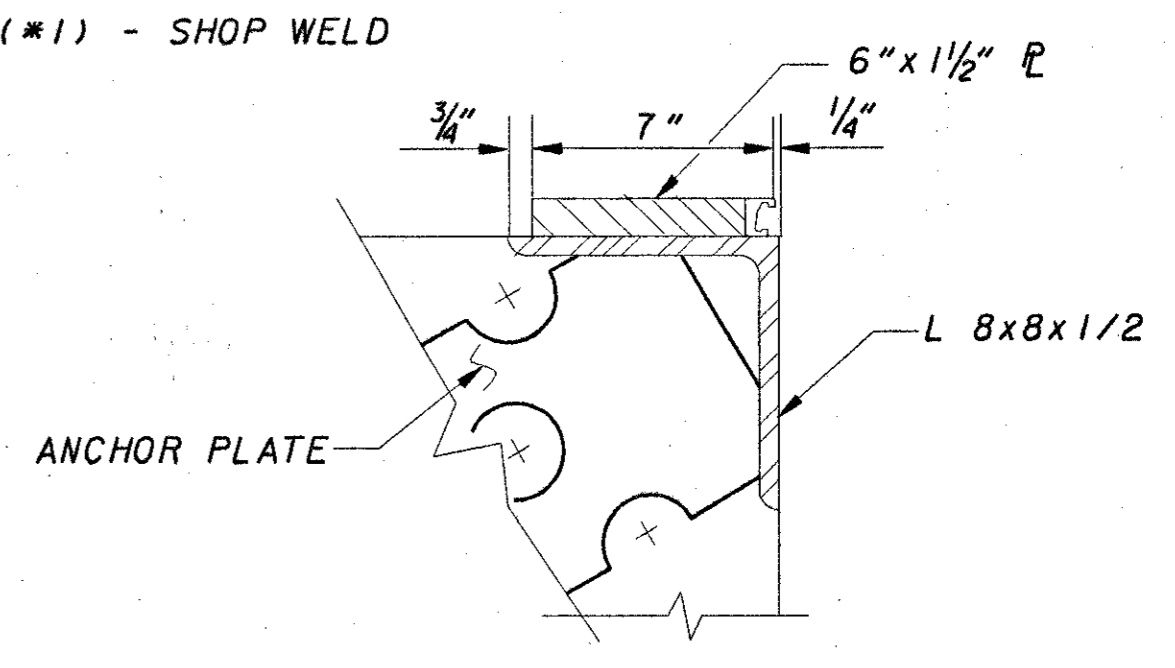


ABUTMENT EXPANSION JOINT



SECTION A7-A7

NOTE:  
(\*1) - SHOP WELD

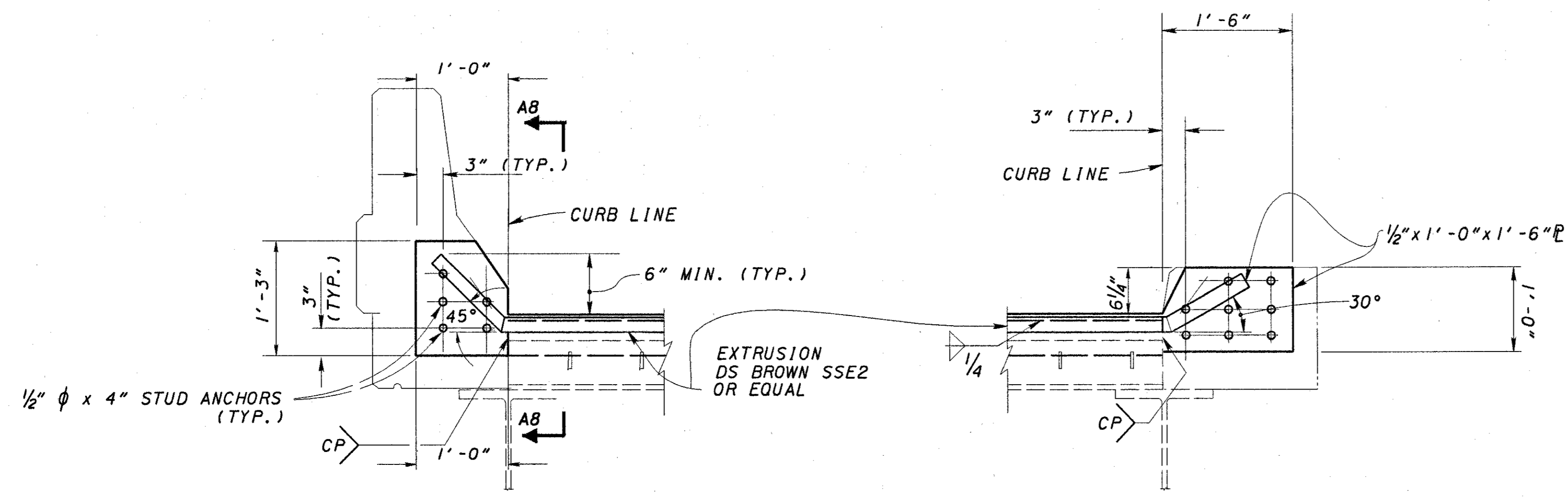


DETAIL B

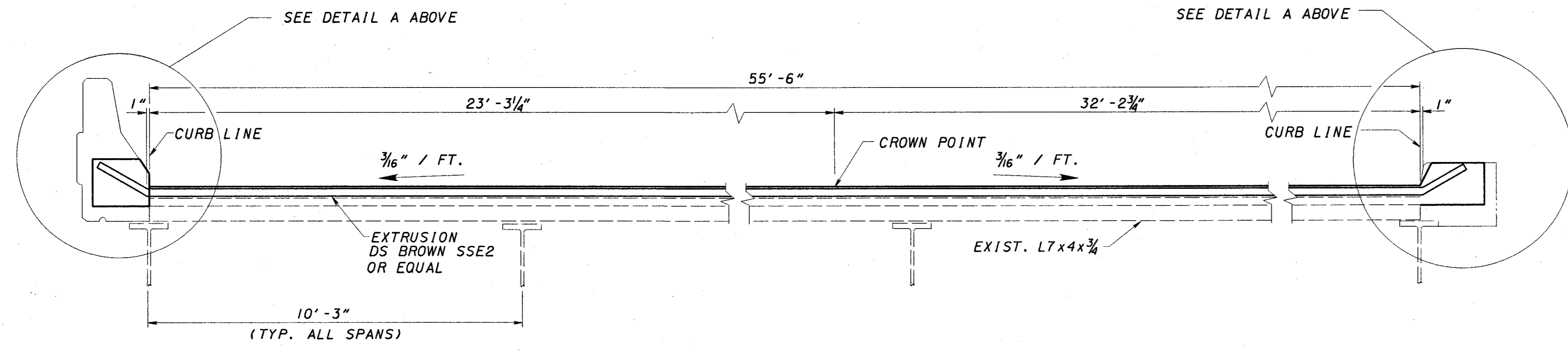
4" STRIP SEAL GLAND

TEMPERATURE (F)	DIMENSION "A"
30°	2 9/16"
40°	2 3/8"
50°	2 1/8"
60°	1 9/16"
70°	1 3/4"
80°	1 1/2"
90°	1 5/16"

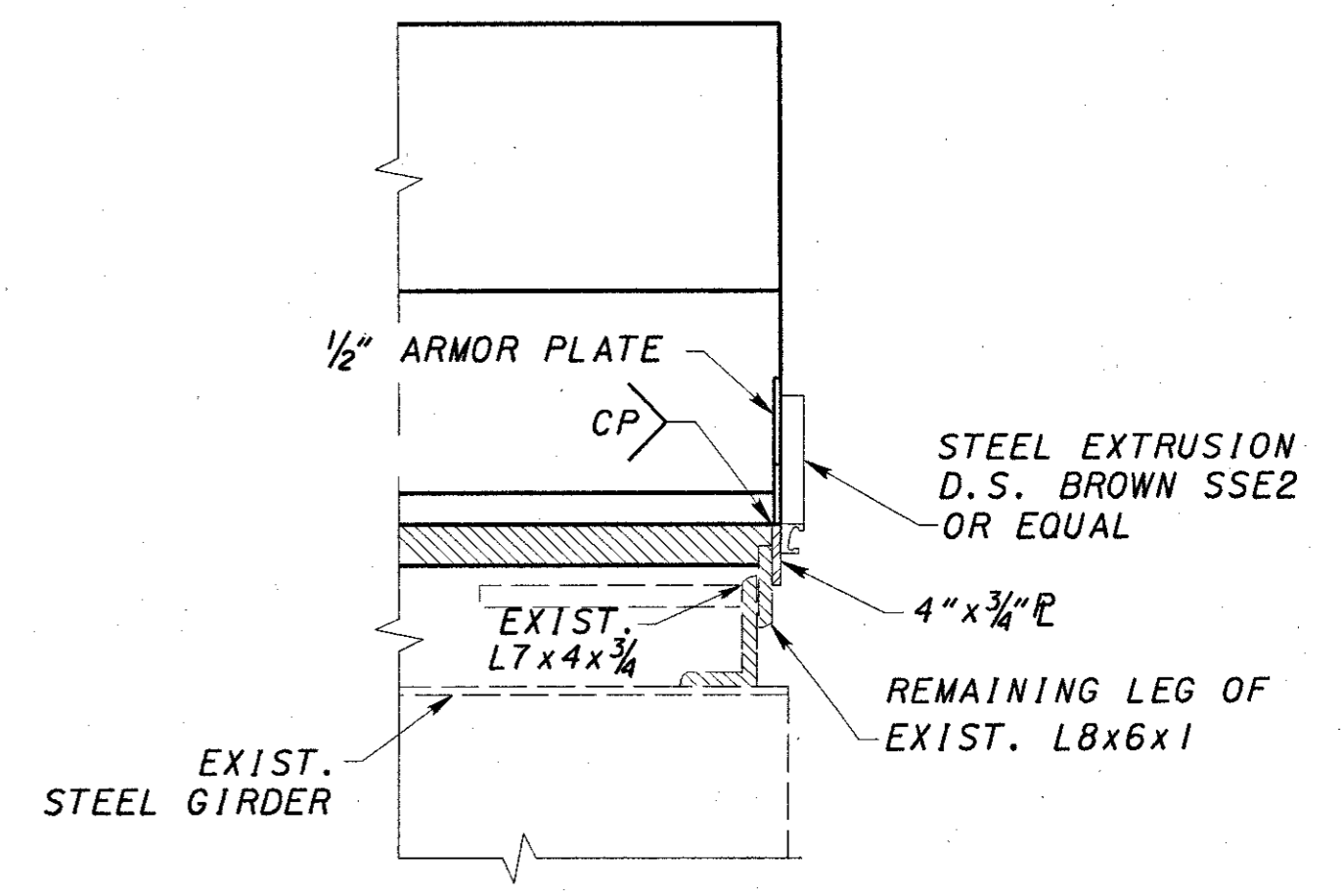
EXPANSION LENGTH = 270' - 0" ±



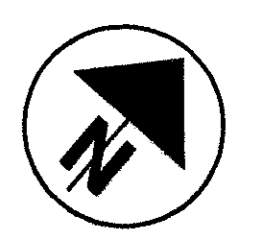
DETAIL A



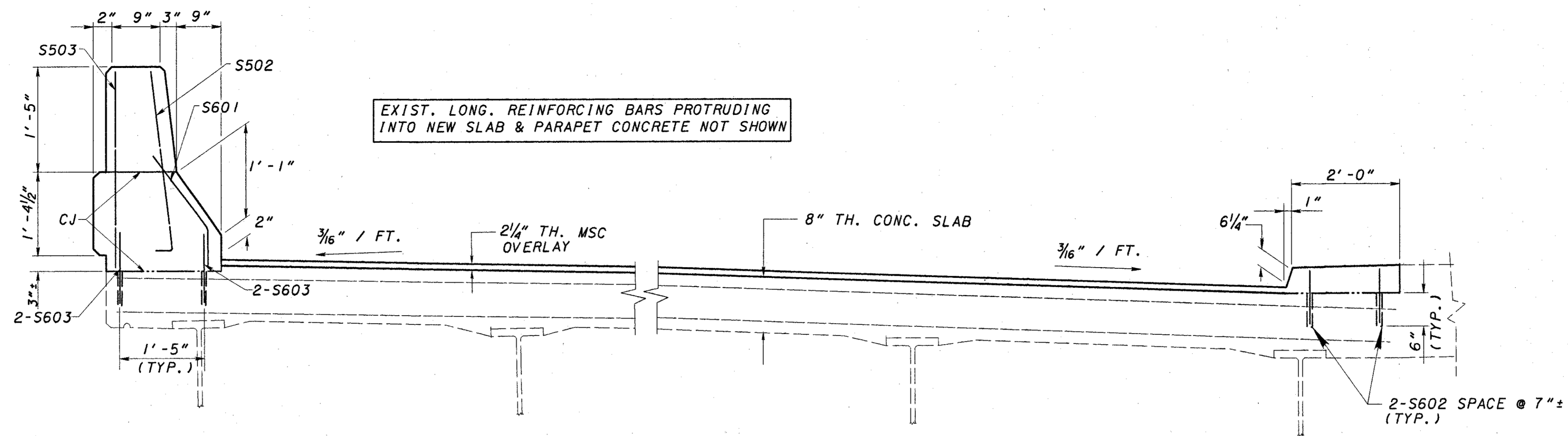
SECTION B-B



SECTION A8-A8



DESIGN AGENCY: BARR ENGINEERING  
 FIVE EAST LONG STREET  
 COLUMBUS, OHIO 43215  
 PH: (614) 224-1941  
 DATE: 8/2001  
 REVIEWED: GEA  
 STRUCTURE FILE NUMBER: 3117367  
 DRAWN: JEP  
 CHECKED: ASB  
 DESIGNED: JEP  
 BRIDGE NO. HAM-471-0000 R  
 HAM-471-0.26  
 25/06  
 57/182

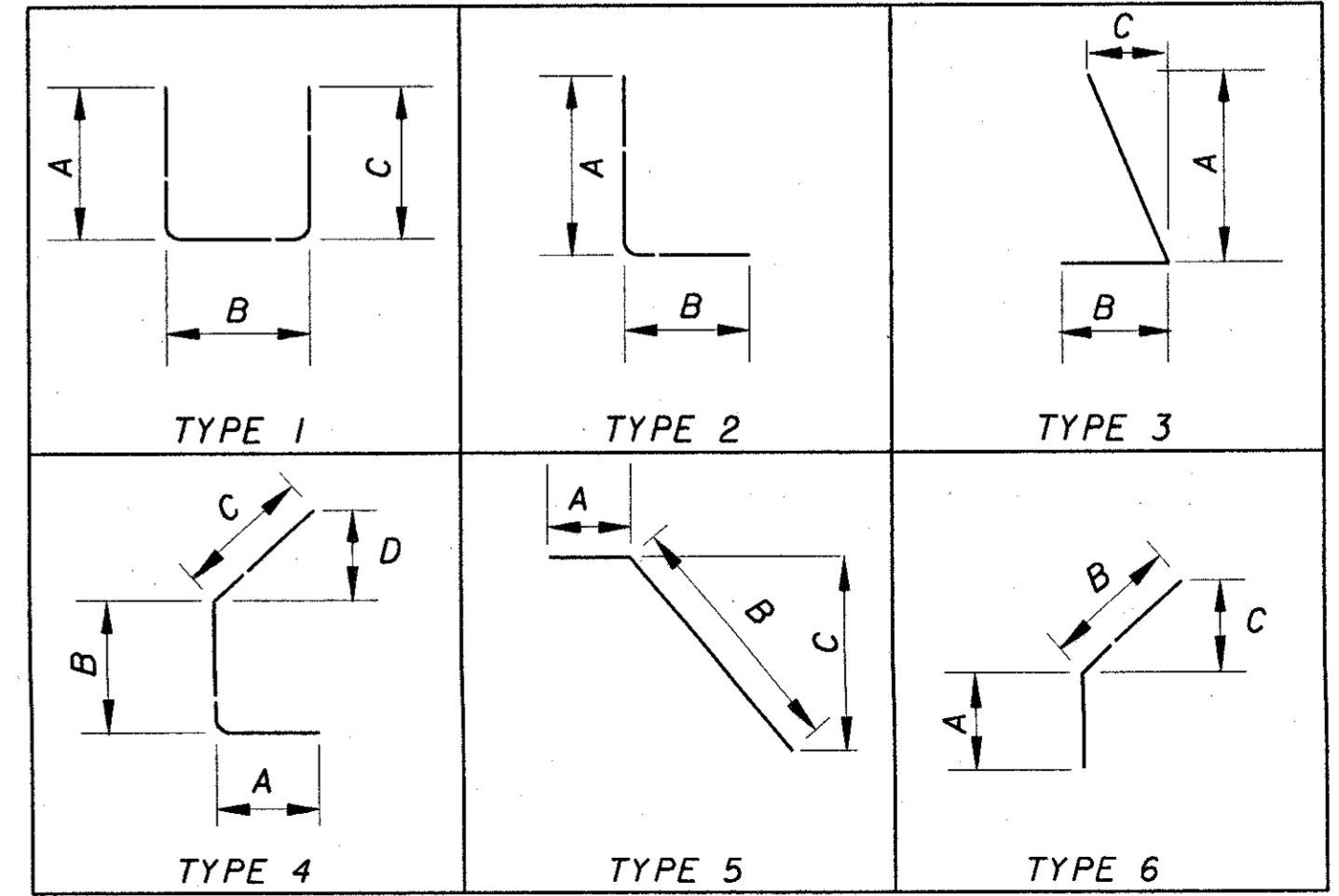


SECTION A6-A6

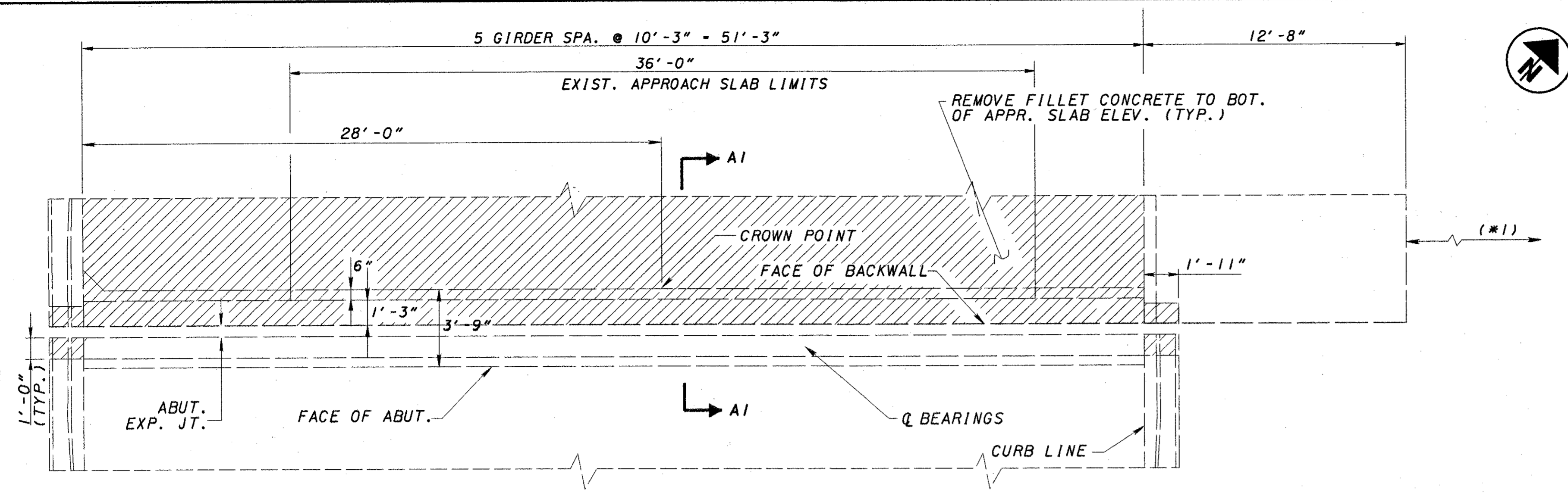
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
SUPERSTRUCTURE									
S502	2	3'-2"		3	2'-6"	10"	2"		
S503	2	2'-6"		STR					
S601	2	3'-0"		6	4"	1'-6"	1'-2"		
S602	4	1'-2"		STR					
S603	4	1'-6"		STR					

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
ABUTMENT									
A501	2	3'-6"		2	2'-10"	10"			
A502	2	3'-2"		3	2'-10"	10"	5"		
A601	6	29'-1"		STR.					
A602	120	2'-0"		STR.					
A603	56	2'-10"		1	1'-2"	10"	1'-2"		
A604	2	3'-3"		4	1'-0"	6"	2'-0"	1'-7"	
A605	1	7'-6"		STR.					
D801	37	3'-8"		5	1'-6"	2'-3"	1'-10"		

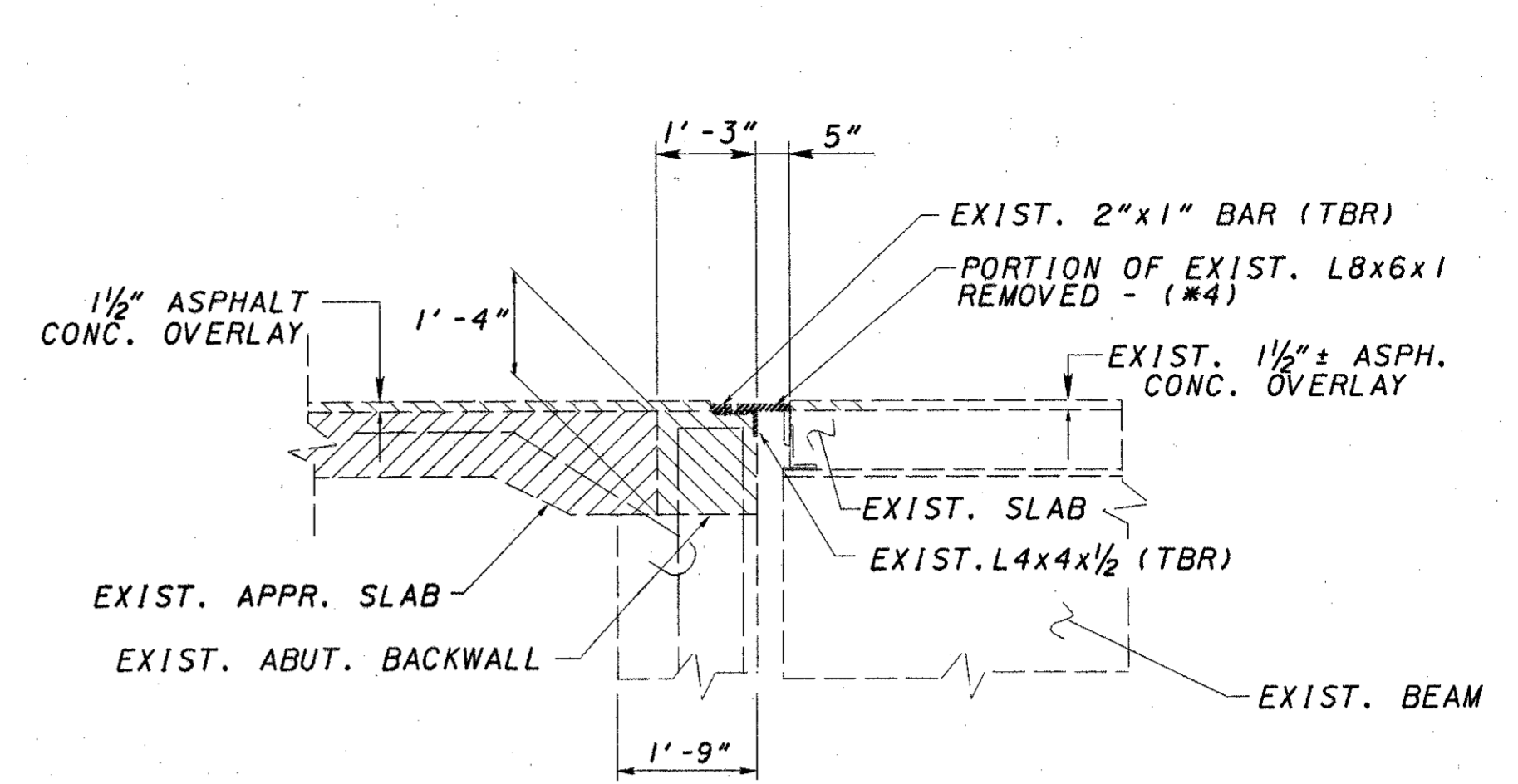
BENDING DIAGRAMS



DESIGN AGENCY: BARR ENGINEERING, Five East Long Street, Columbus, Ohio 43215, PH: (614) 224-1941  
 DATE: 6/2001  
 REVIEWED: GEA, STRUCTURE FILE NUMBER: 3117367  
 DRAWN: JEP, REVISED: JEP  
 DESIGNED: JEP, CHECKED: ASB  
 FORWARD ABUTMENT EXPANSION JOINT DETAILS  
 BRIDGE NO. HAM-47 1-0000 R  
 HAM-47 1-0.26  
 26/106  
 58/182



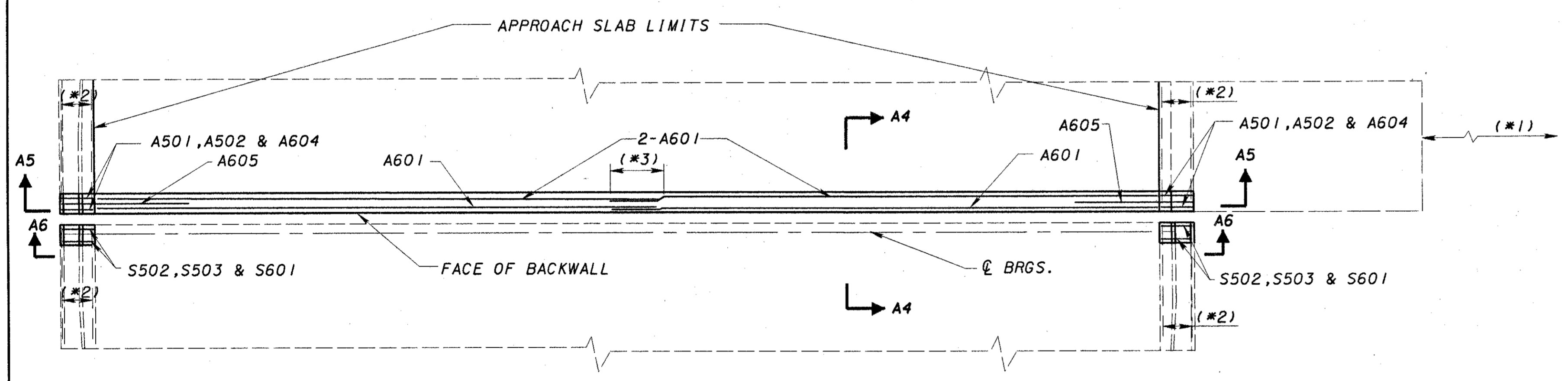
EXISTING ABUTMENT, DECK SLAB, PARAPET & APPROACH SLAB REMOVAL PLAN



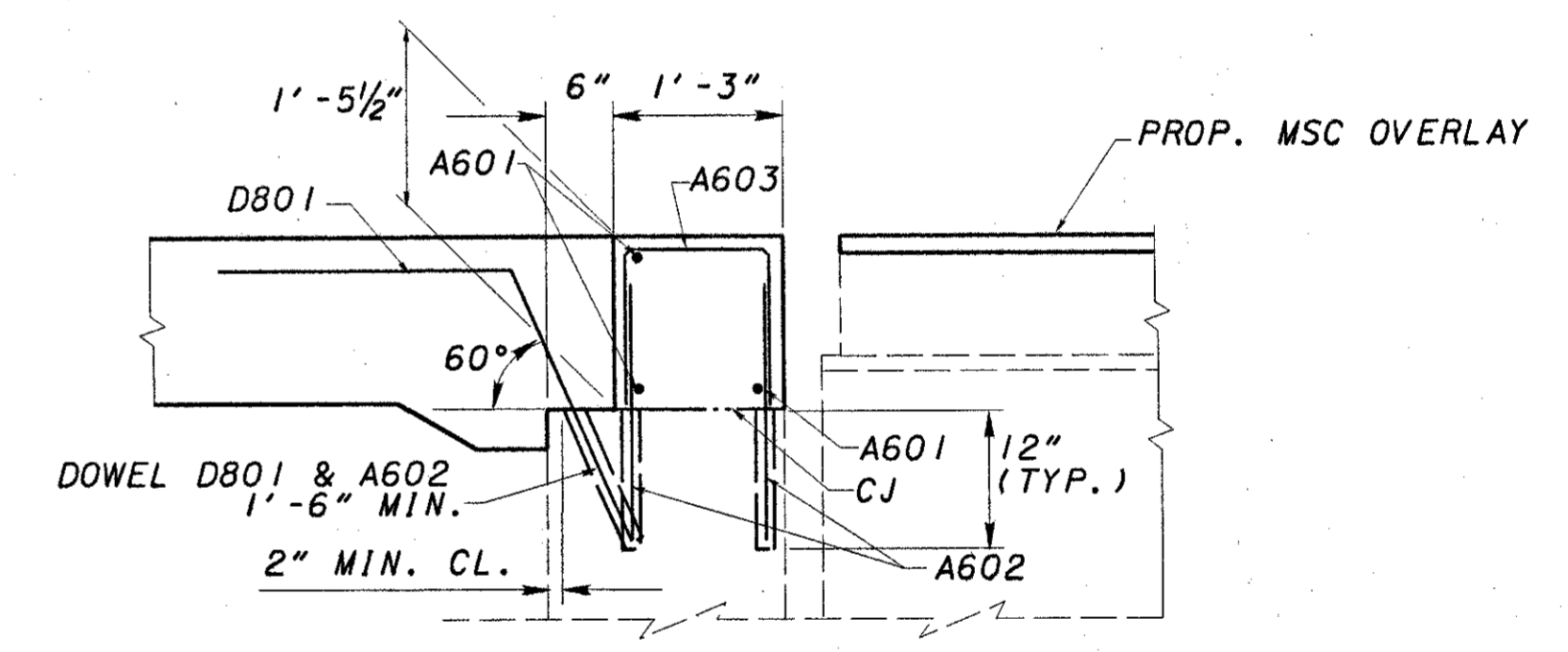
SECTION A1-A1

(\*4) REMOVE TOP PORTION OF ANGLE FLUSH WITH ORIGINAL CONCRETE DECK SLAB

(\*1) NORTHBOUND ABUT. DETAILS NOT SHOWN



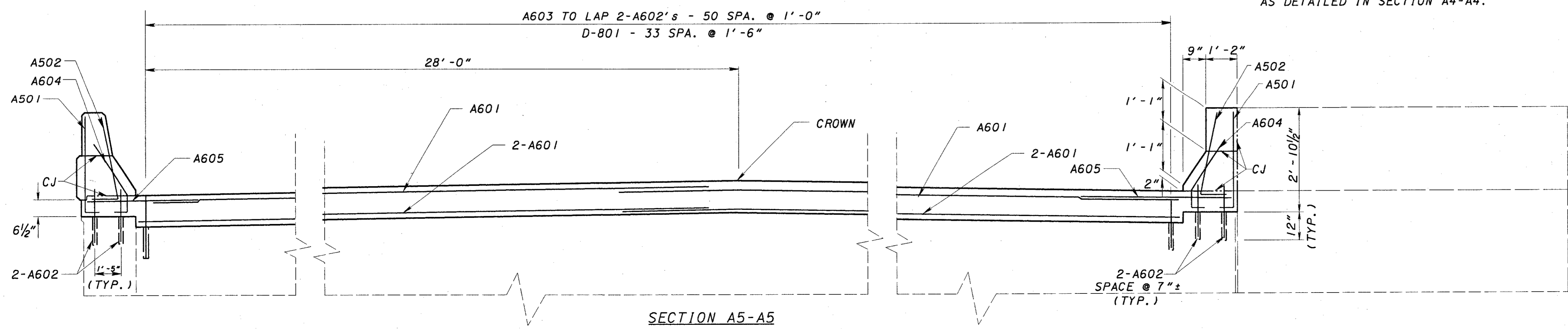
MODIFIED ABUTMENT, DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION



SECTION A4-A4

ALTERNATE TO BACKWALL CONSTRUCTION  
 PLANS SHOW THE PORTIONS OF BACKWALL REMOVAL BY SAWCUTTING AT APPROACH SLAB SEAL LEVEL (SECTION A1-A1) AND RECONSTRUCTING THE BACKWALL BY DOWELLING INTO THE REMAINING EXISTING BACKWALL AS PER THE DETAILS OF SECTION A4-A4. AS AN ALTERNATE TO DOWELLING IN NEW BARS, THE CONTRACTOR MAY CHOOSE TO PRESERVE THE EXIST. BARS (RUNNING THROUGH THE CONSTRUCTION JOINT) DURING THE REMOVAL OF THE BACKWALL CONCRETE. ANY BAR DAMAGED DURING THE CONCRETE REMOVAL SHALL BE REPLACED BY NEW BARS AS DETAILED IN SECTION A4-A4.

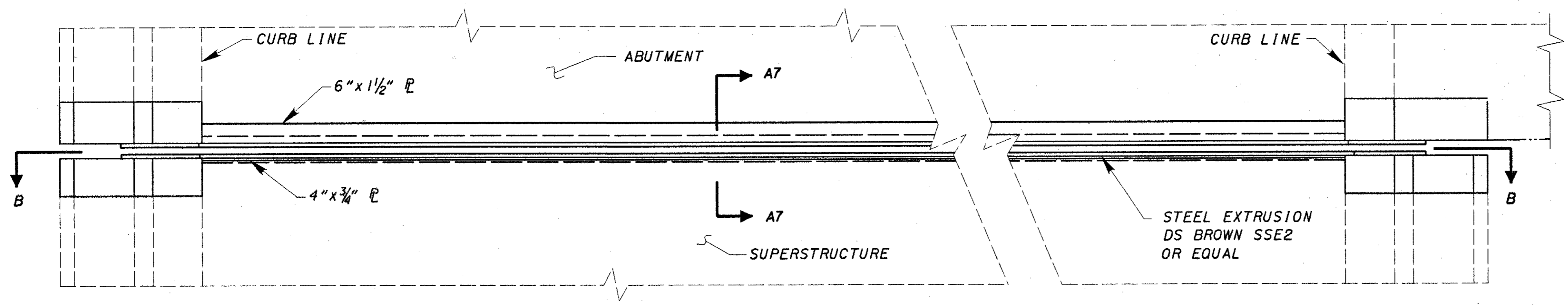
- (\*2) EXIST. LONG. BARS TO REMAIN IN PARAPET
- (\*3) LAP LENGTHS
  - #5 BAR-2'-9"
  - #6 BAR-3'-3"



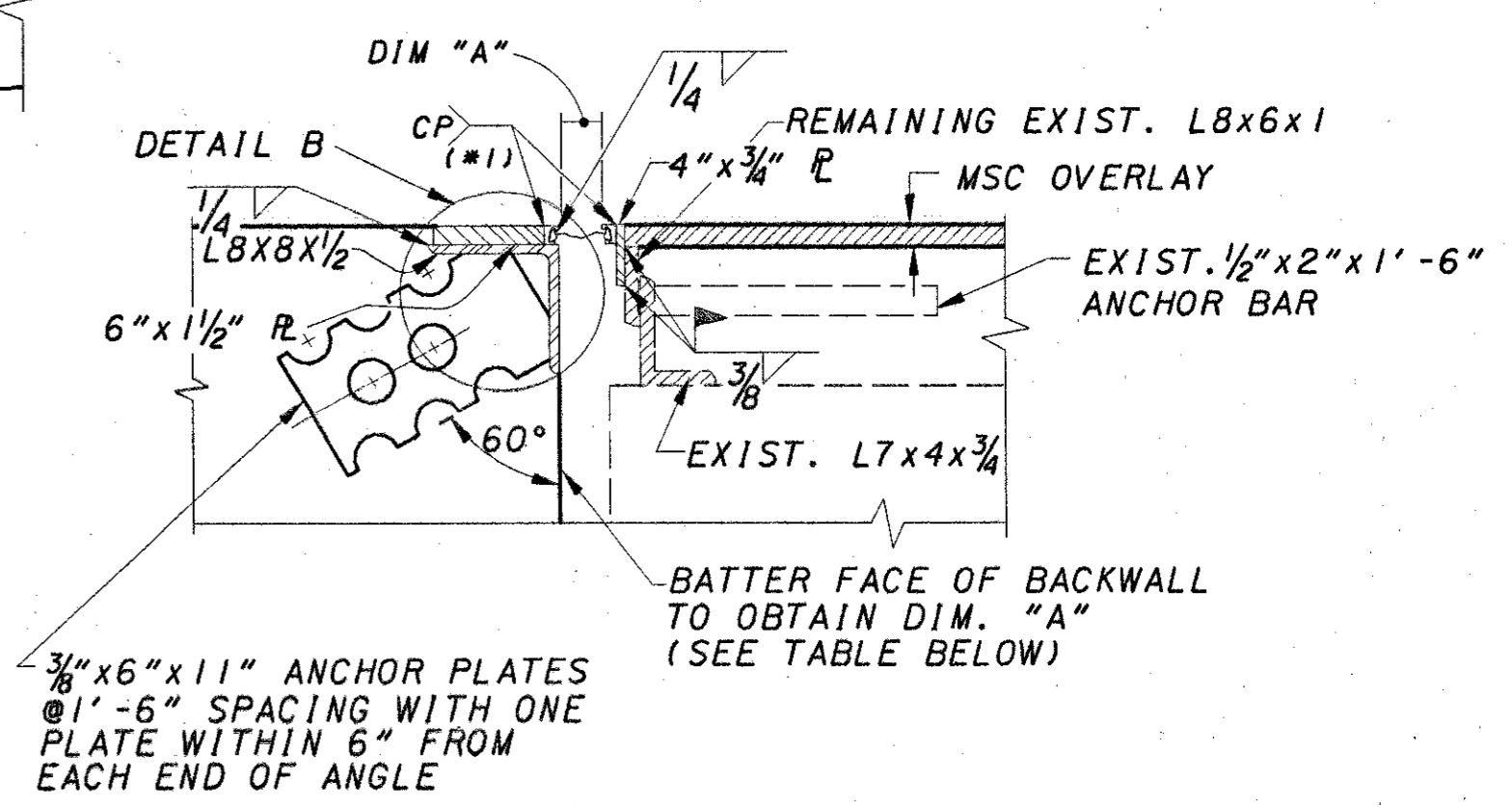
SECTION A5-A5

LEGEND  
 - CONCRETE REMOVAL

DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 Ph: (614) 224-1941  
 DATE: 6/2001  
 REVIEWED: GEA  
 STRUCTURE FILE NUMBER: 3117359  
 DRAWN: JEP  
 CHECKED: ASB  
 DESIGNED: JEP  
 BRIDGE NO. HAM-471-0000L  
 FORWARD ABUTMENT EXPANSION JOINT DETAILS  
 HAM 471-0.26  
 27/106  
 59/182

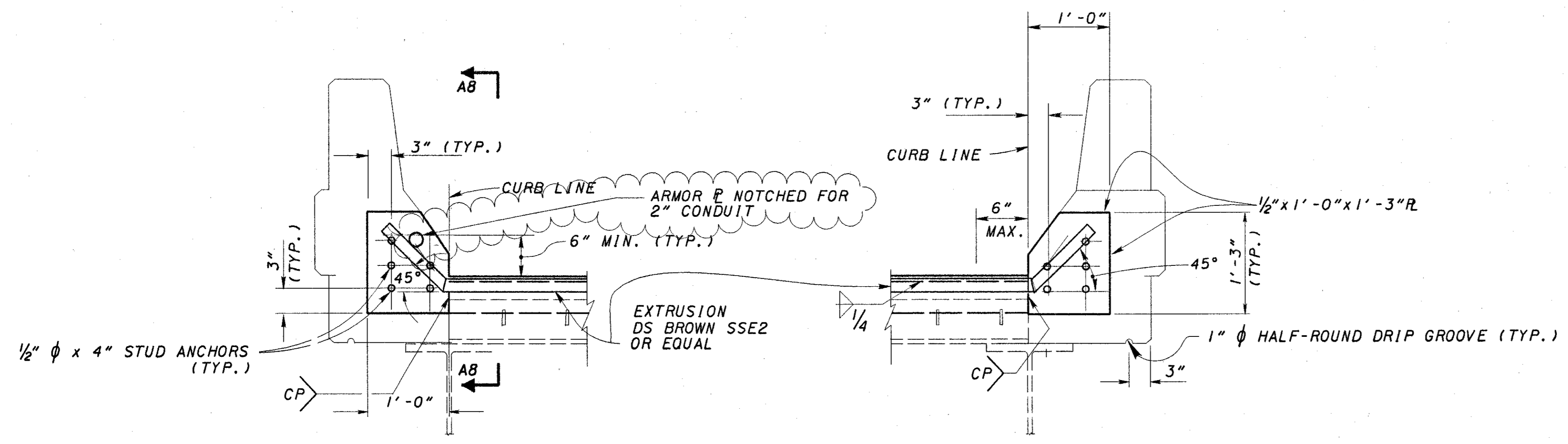


ABUTMENT EXPANSION JOINT

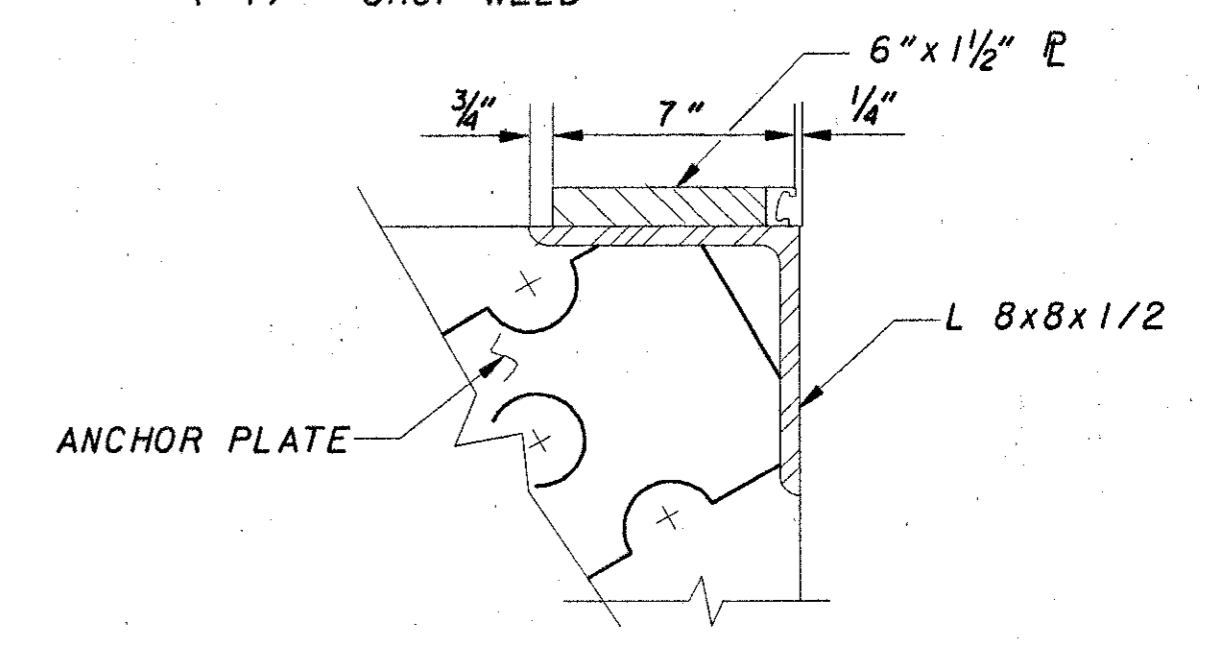


SECTION A7-A7

NOTE:  
(\*1) - SHOP WELD



DETAIL A

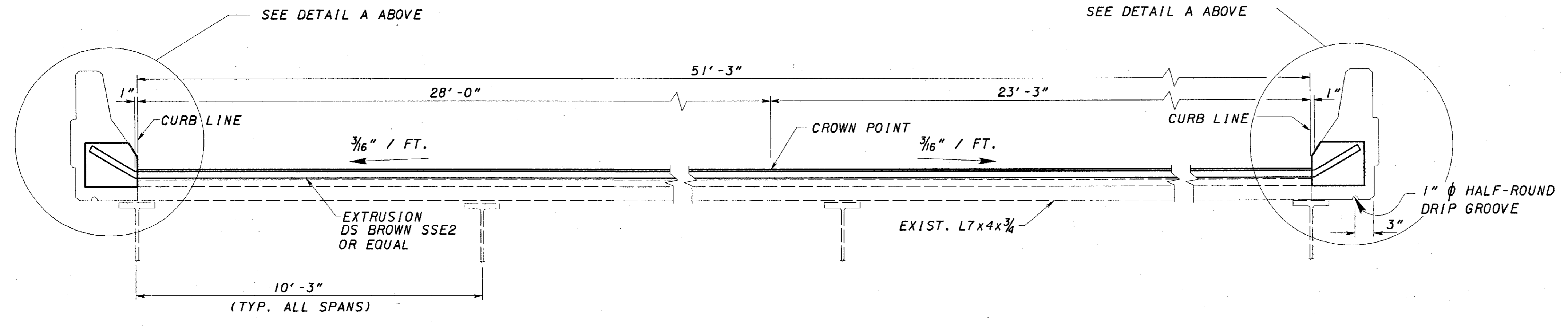


DETAIL B

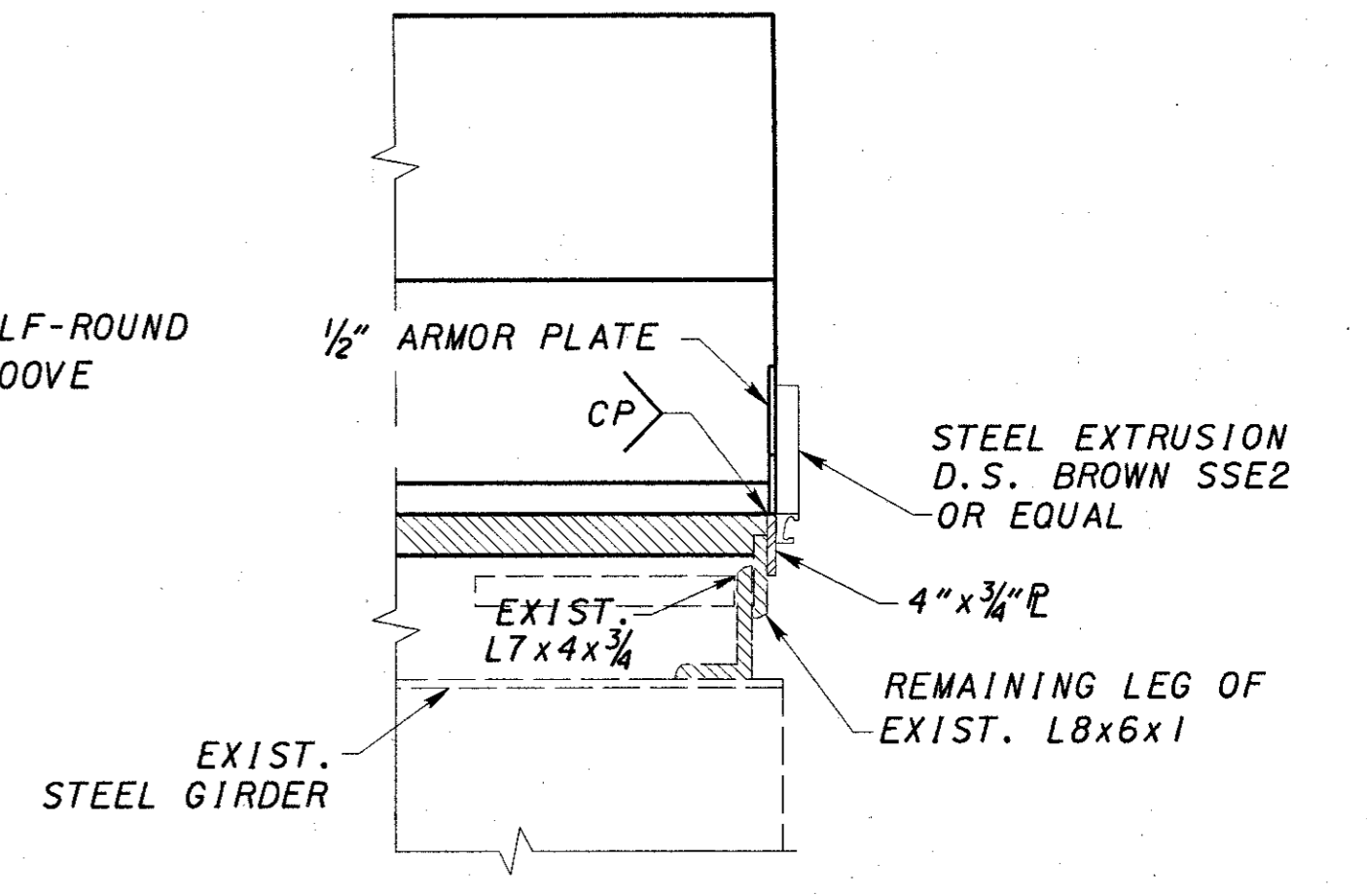
4" STRIP SEAL GLAND

TEMPERATURE (F)	DIMENSION "A"
30°	2 1/2"
40°	2 3/8"
50°	2 1/4"
60°	2 1/16"
70°	1 3/4"
80°	1 5/8"
90°	1 7/16"

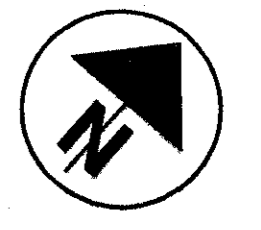
EXPANSION LENGTH = 240'-0" ±



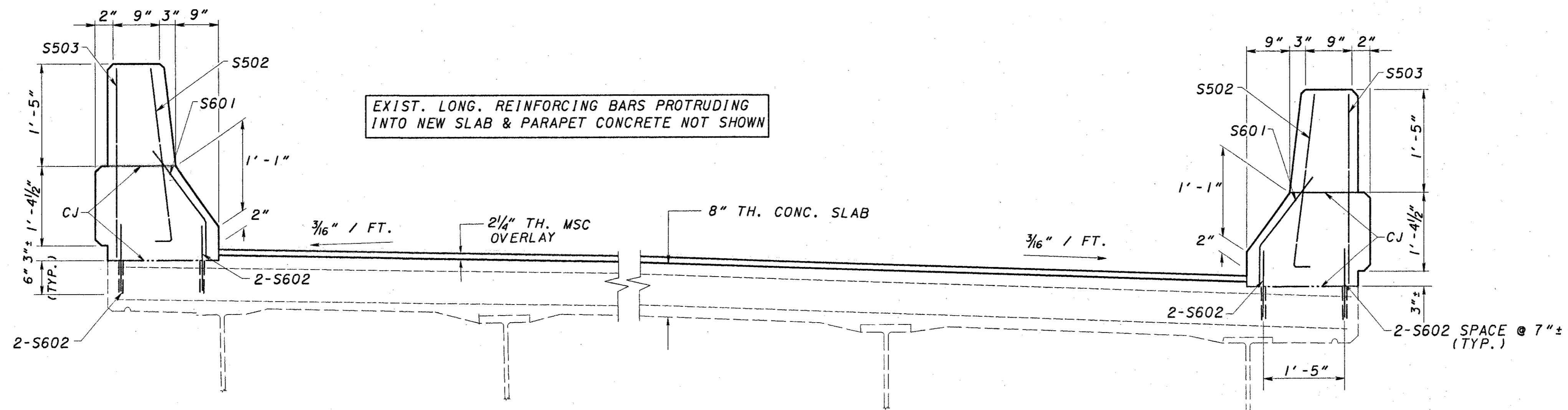
SECTION B-B



SECTION A8-A8



DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 Ph: (614) 224-1941  
 DATE: 6/2001  
 REVIEWED: GEA  
 DRAWN: JEP  
 DESIGNED: JEP  
 CHECKED: ASB  
 STRUCTURE FILE NUMBER: 3117359  
 FORWARD ABUTMENT EXPANSION JOINT DETAILS  
 BRIDGE NO. HAM-471-0000 L  
 HAM-471-0.26  
 28/106  
 60/182

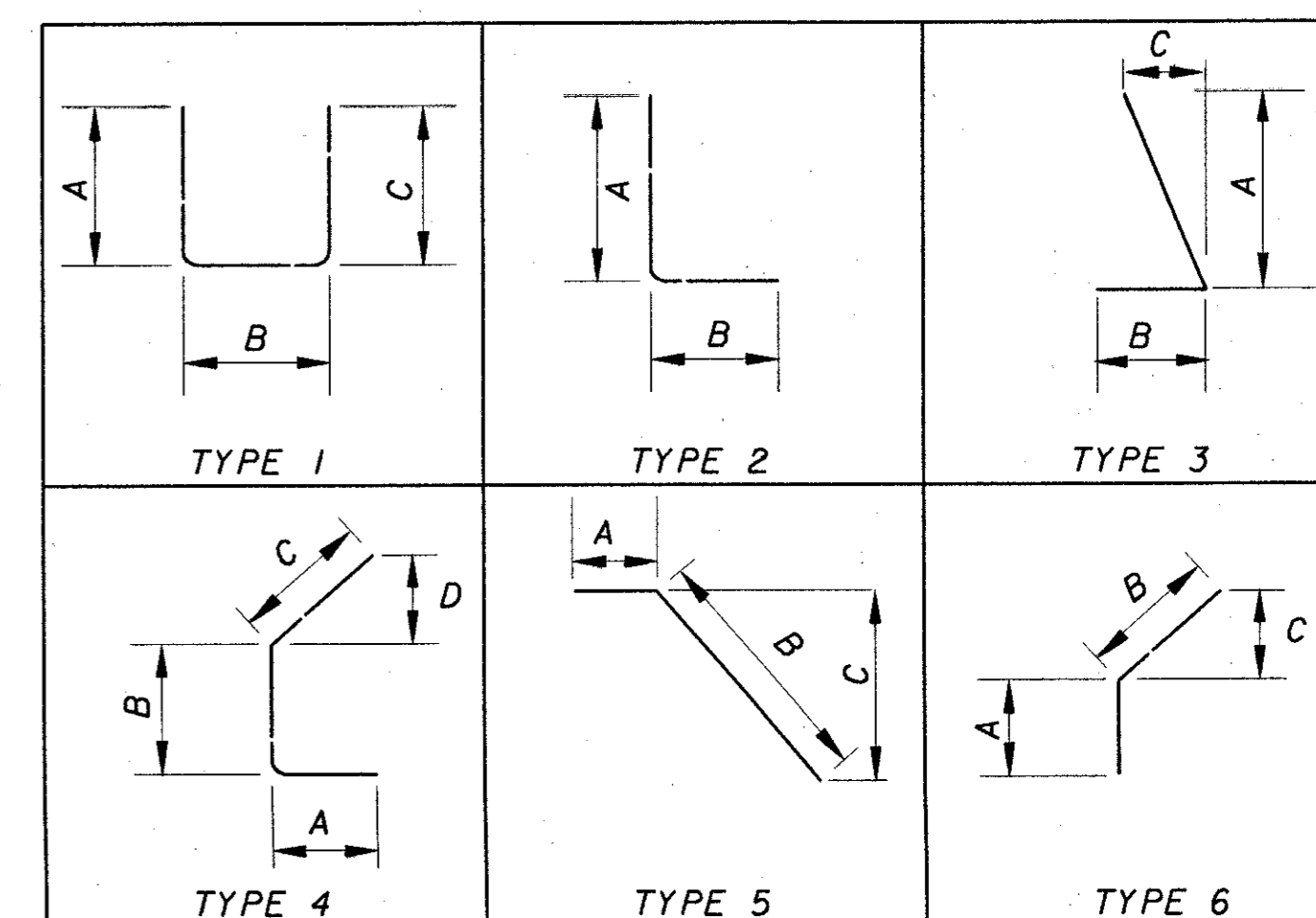


SECTION A6-A6

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
SUPERSTRUCTURE									
S502	4	3'-2"		3	2'-6"	10"	2"		
S503	4	2'-6"		STR					
S601	4	3'-0"		6	4"	1'-6"	1'-2"		
S602	8	1'-6"		STR					

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
ABUTMENT									
A501	4	3'-6"		2	2'-10"	10"			
A502	4	3'-2"		3	2'-6"	10"	4"		
A601	6	27'-0"		STR					
A602	110	2'-0"		STR					
A603	51	2'-10"		1	1'-2"	10"	1'-2"		
A604	4	3'-3"		4	1'-0"	6"	2'-0"	1'-7"	
A605	2	7'-6"		STR					
D801	34	3'-8"		5	1'-6"	2'-3"	1'-10"		

BENDING DIAGRAMS



FORWARD ABUTMENT EXPANSION JOINT DETAILS  
BRIDGE NO. HAM-471-0000 L

HAM-471-0.26

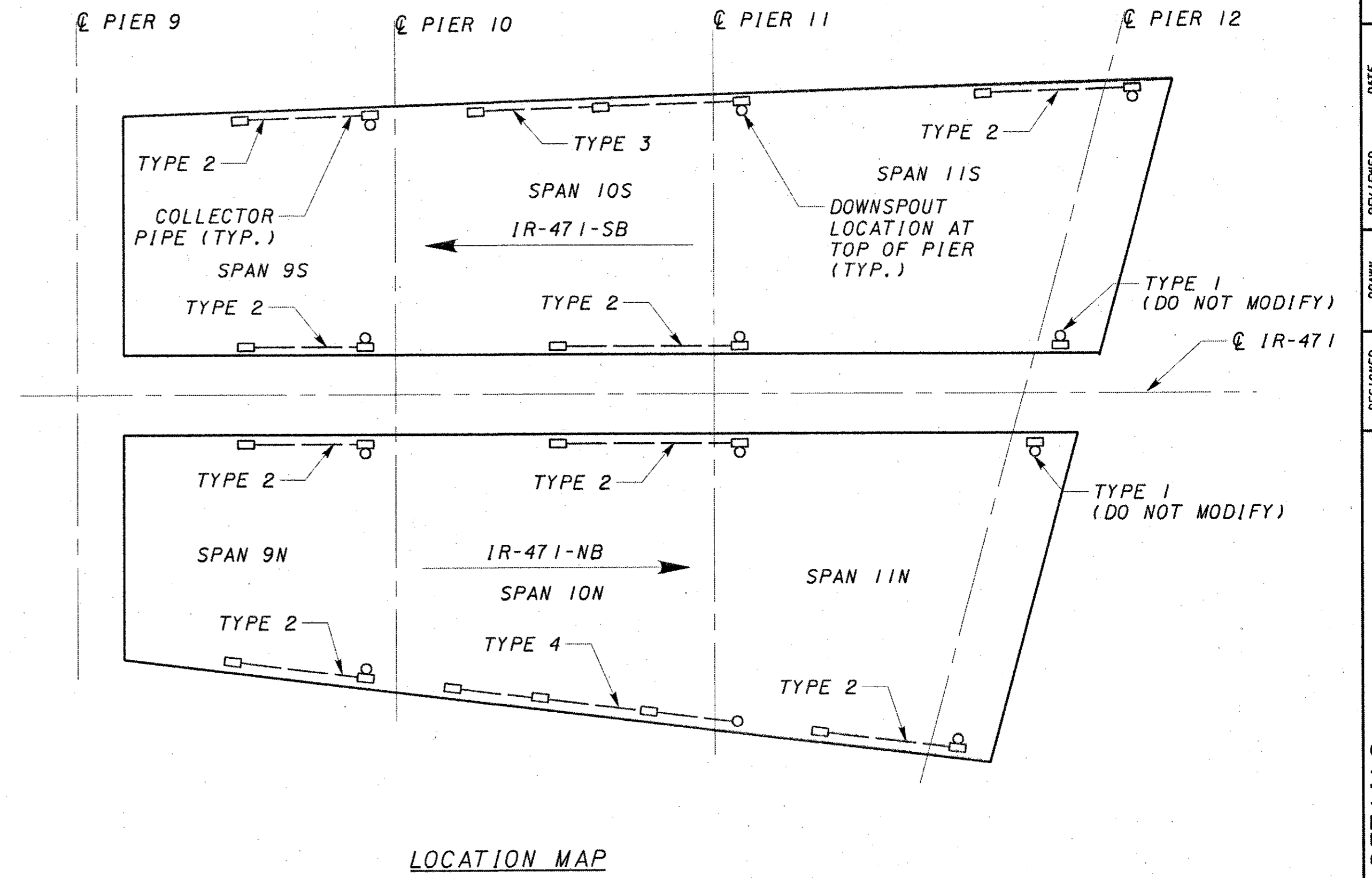
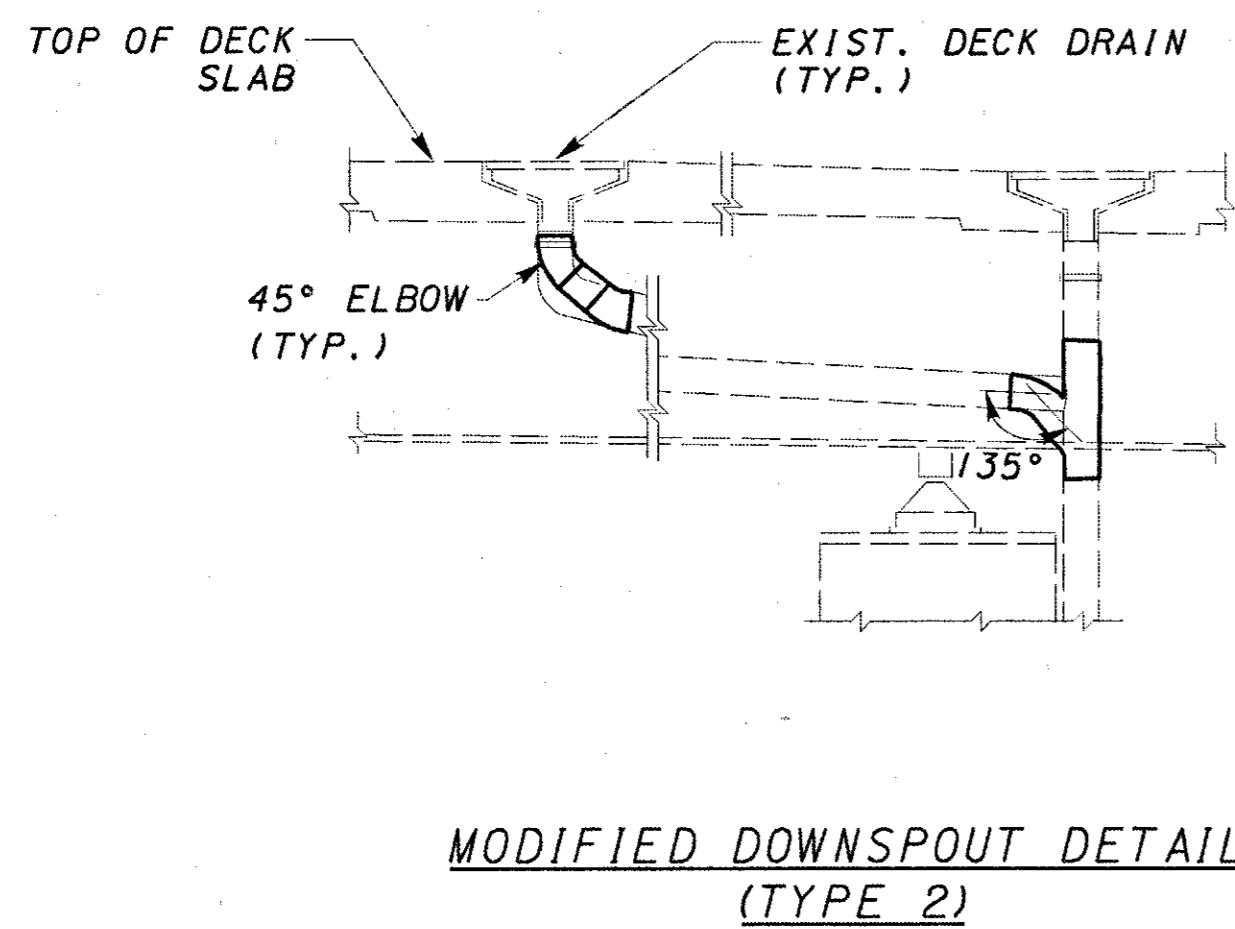
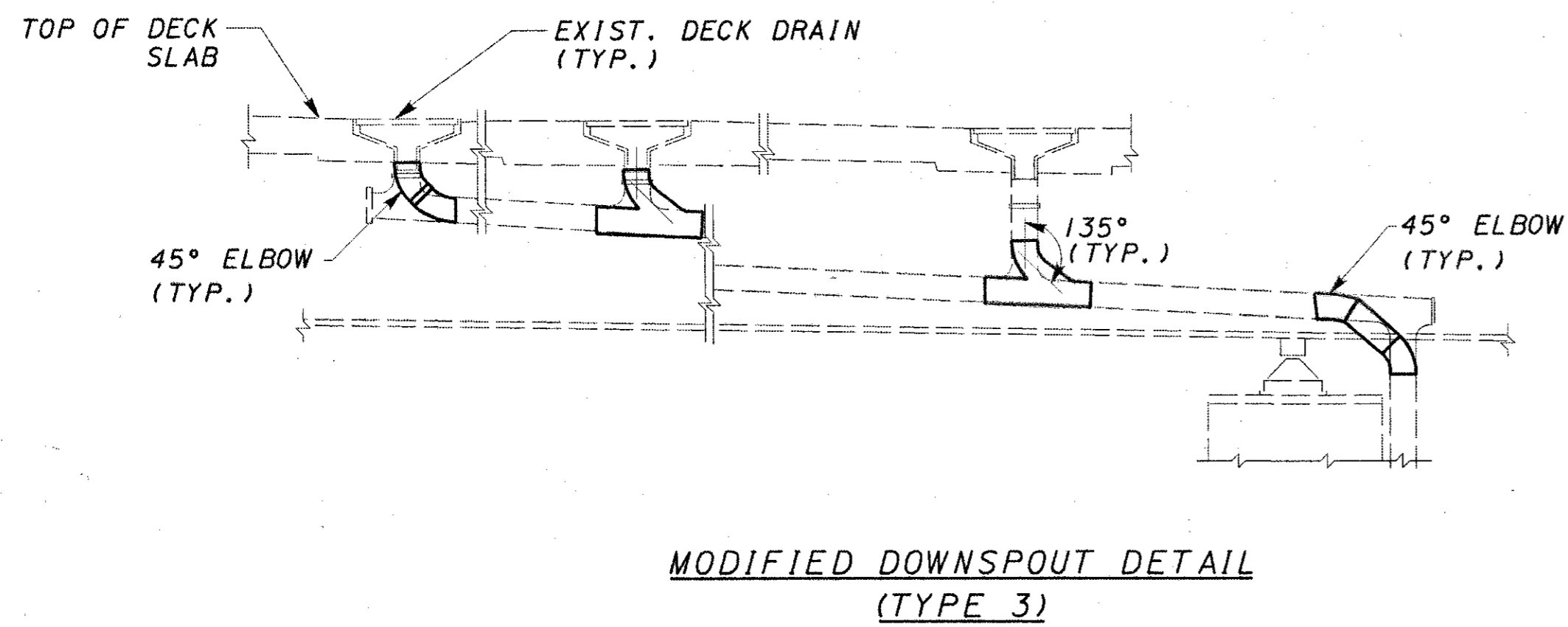
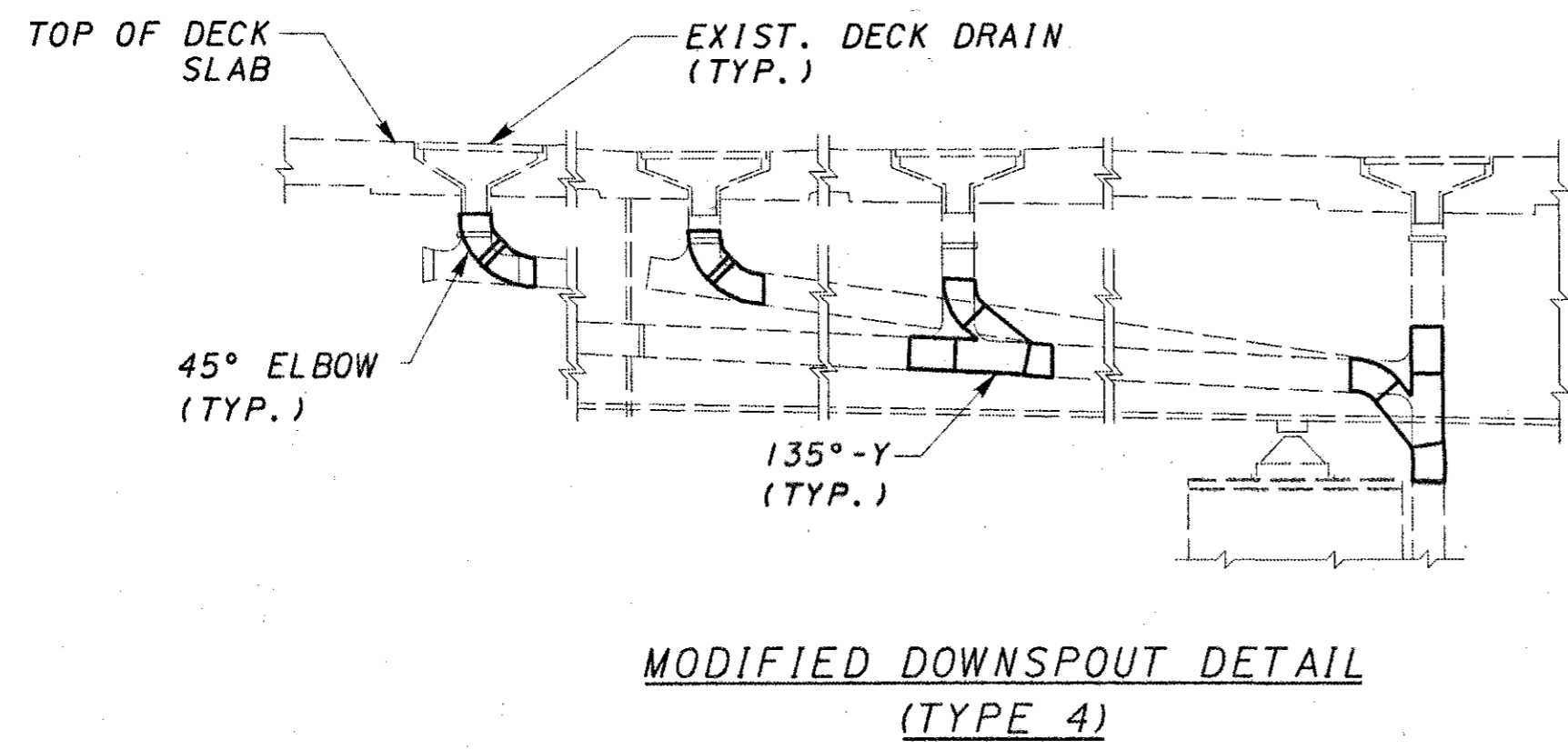
29/06

61/182

DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

DATE  
6/2001  
REVIEWED  
GEA  
STRUCTURE FILE NUMBER  
3117359

DRAWN  
JEP  
DESIGNED  
JEP  
CHECKED  
ASB



**MATERIAL LIST**  
(SPANS 9 - 11 N&S)

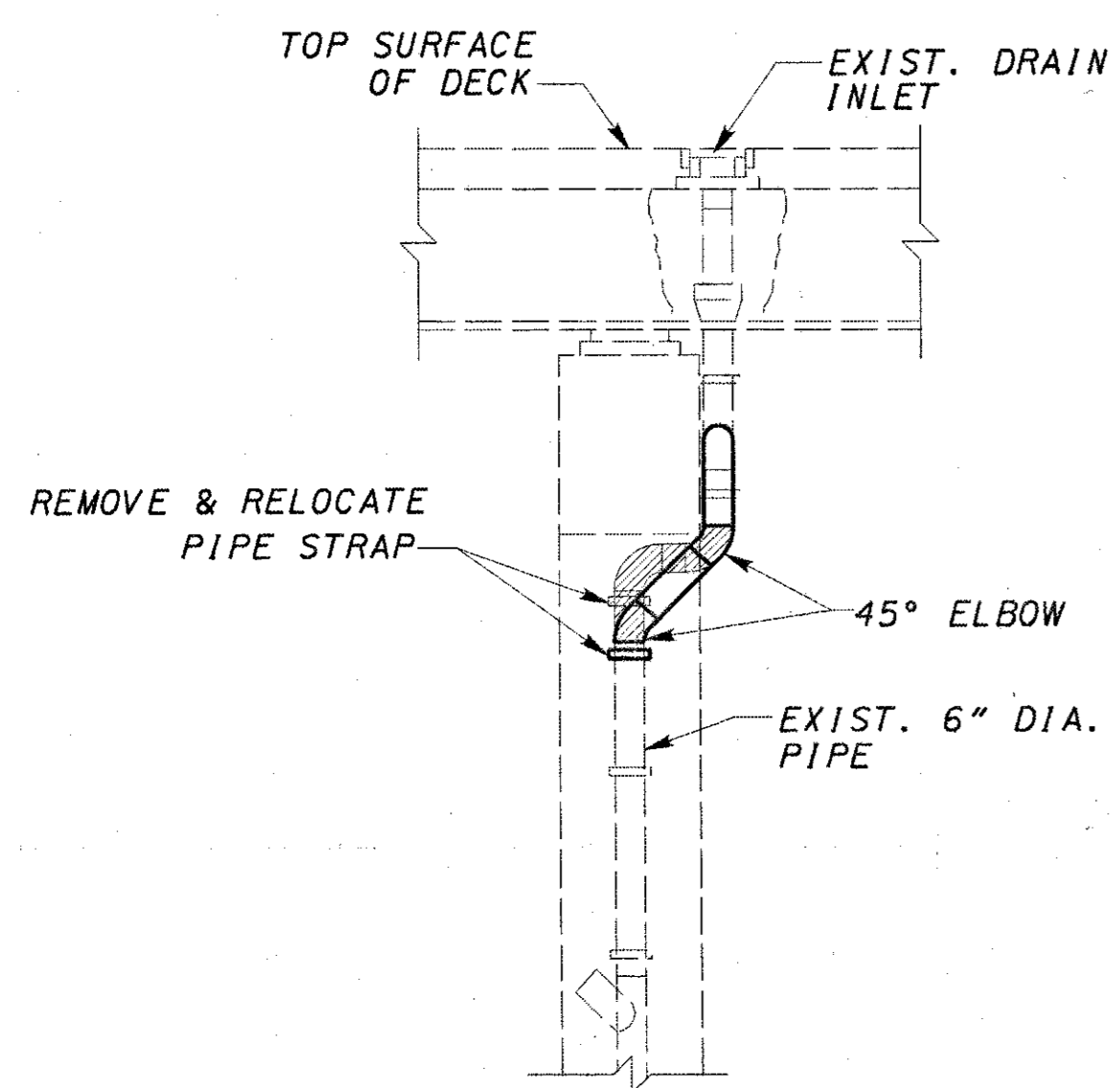
POSITION	45° BEND (EACH)	135° Y (EACH)	LENGTH (FT.)
PIER 10	8	4	4
PIER 11	16	6	16
PIER 12	4	2	2

DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

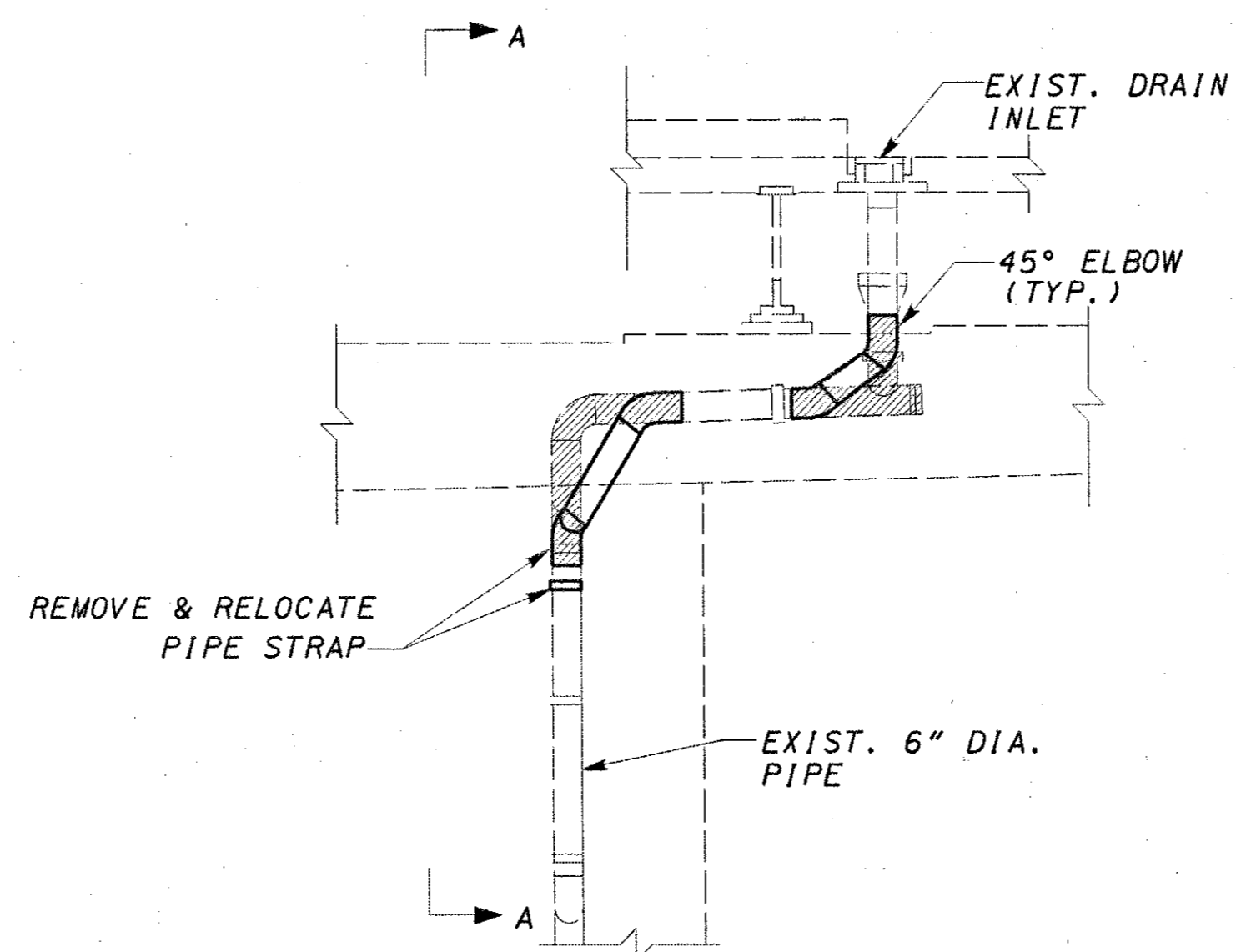
DATE 8/2001  
REVIEWED GEA  
DRAWN FIB  
DESIGNED JEP  
CHECKED ASB

DRAINAGE DETAILS  
BRIDGE NO. HAM-471-0000 L/R

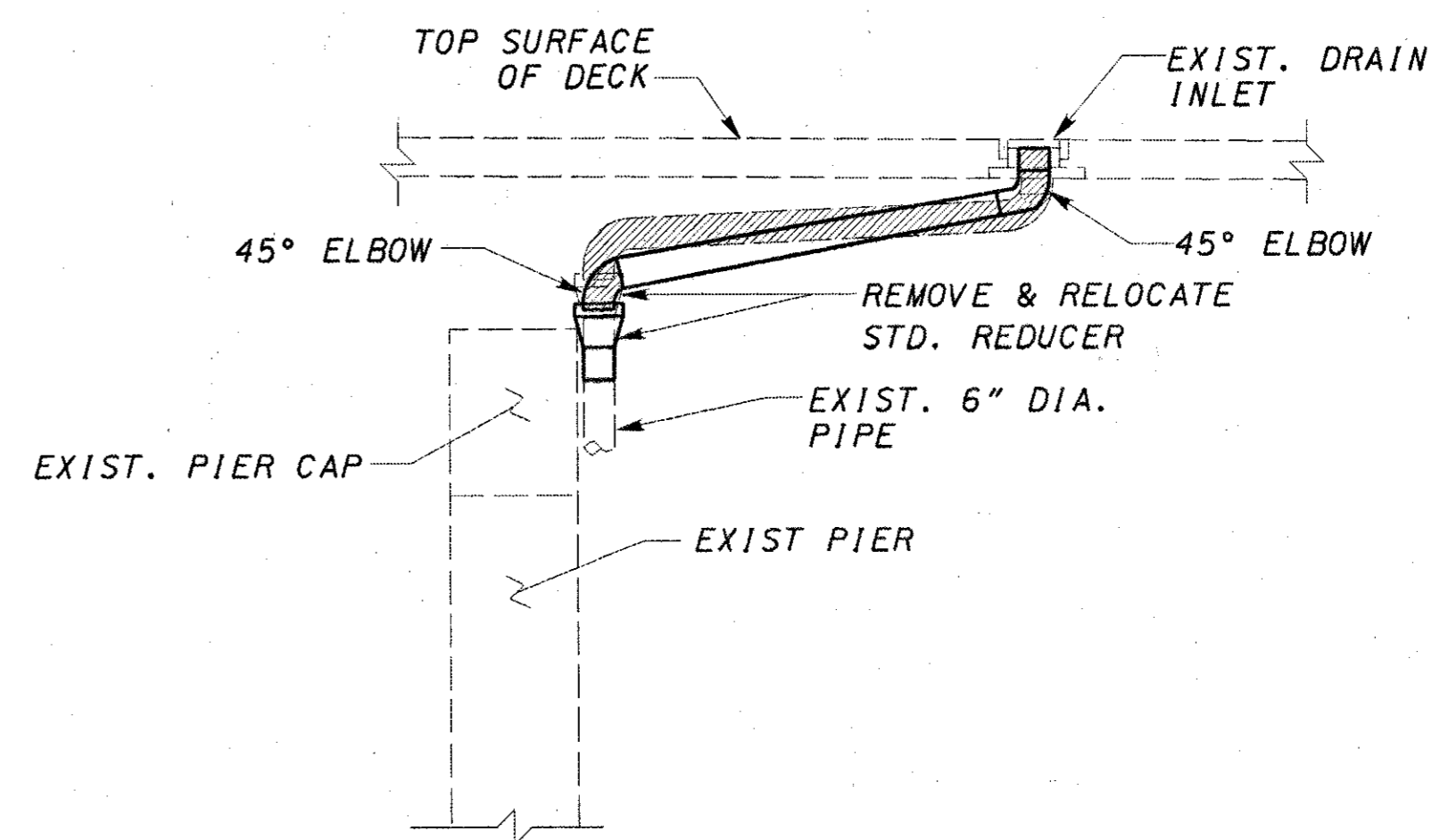
HAM-471-0.26



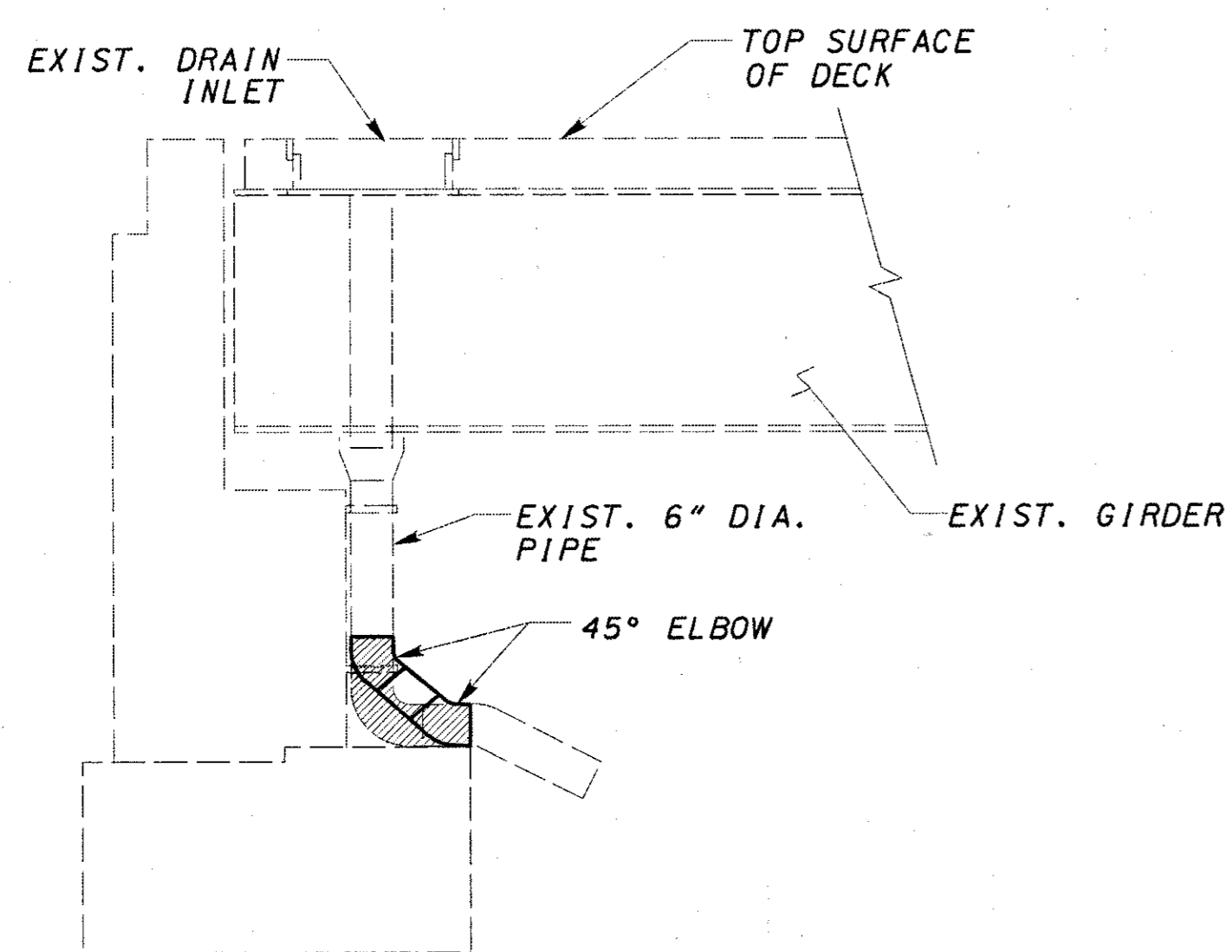
SECTION A-A



DOWNSPOUT UNDER CAP (TYPE A)



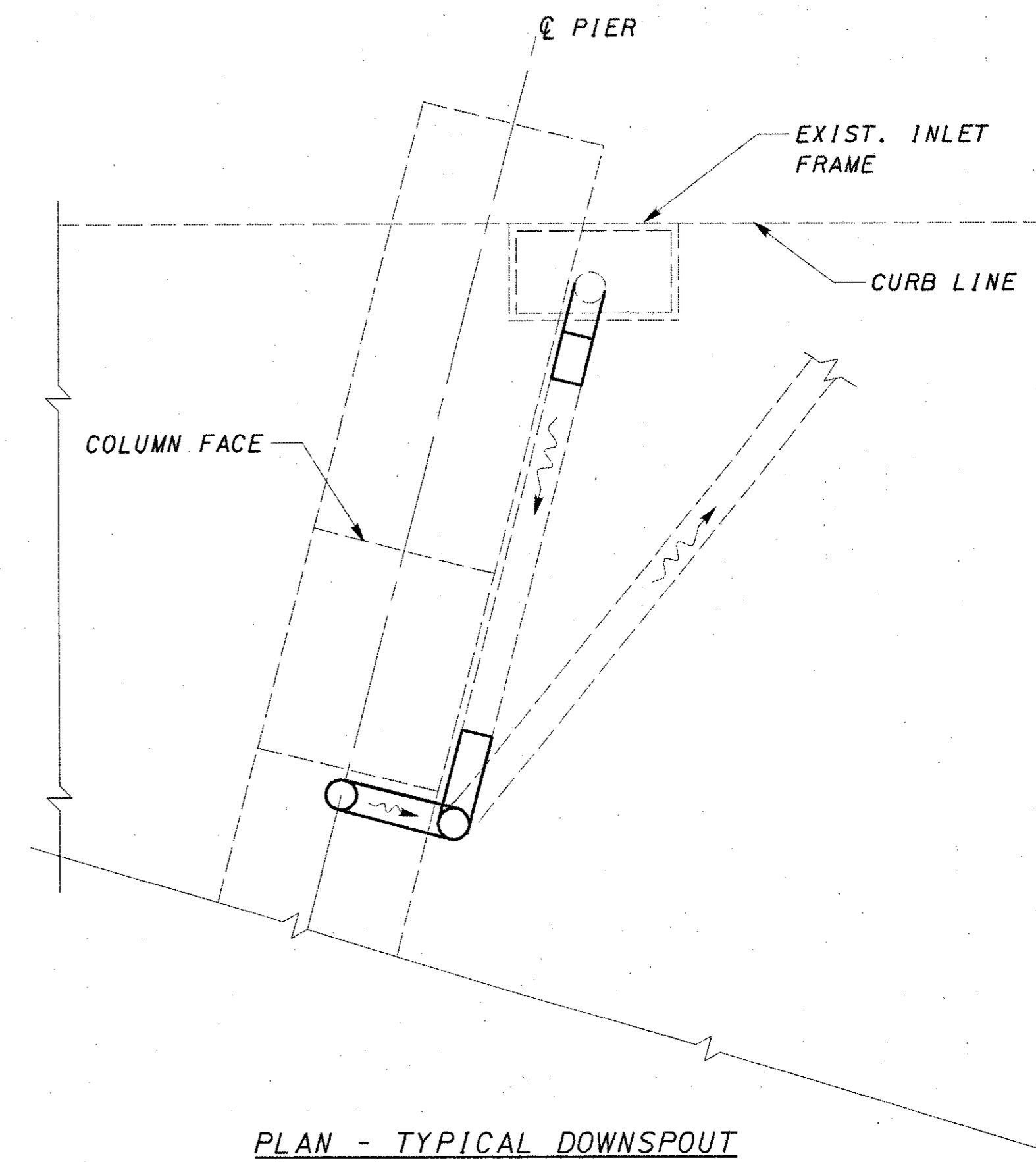
INLET AWAY FROM CAP (TYPE B)



DOWNSPOUT AT FORWARD ABUTMENTS

MATERIAL LIST  
(SPANS 12-21 N&S)

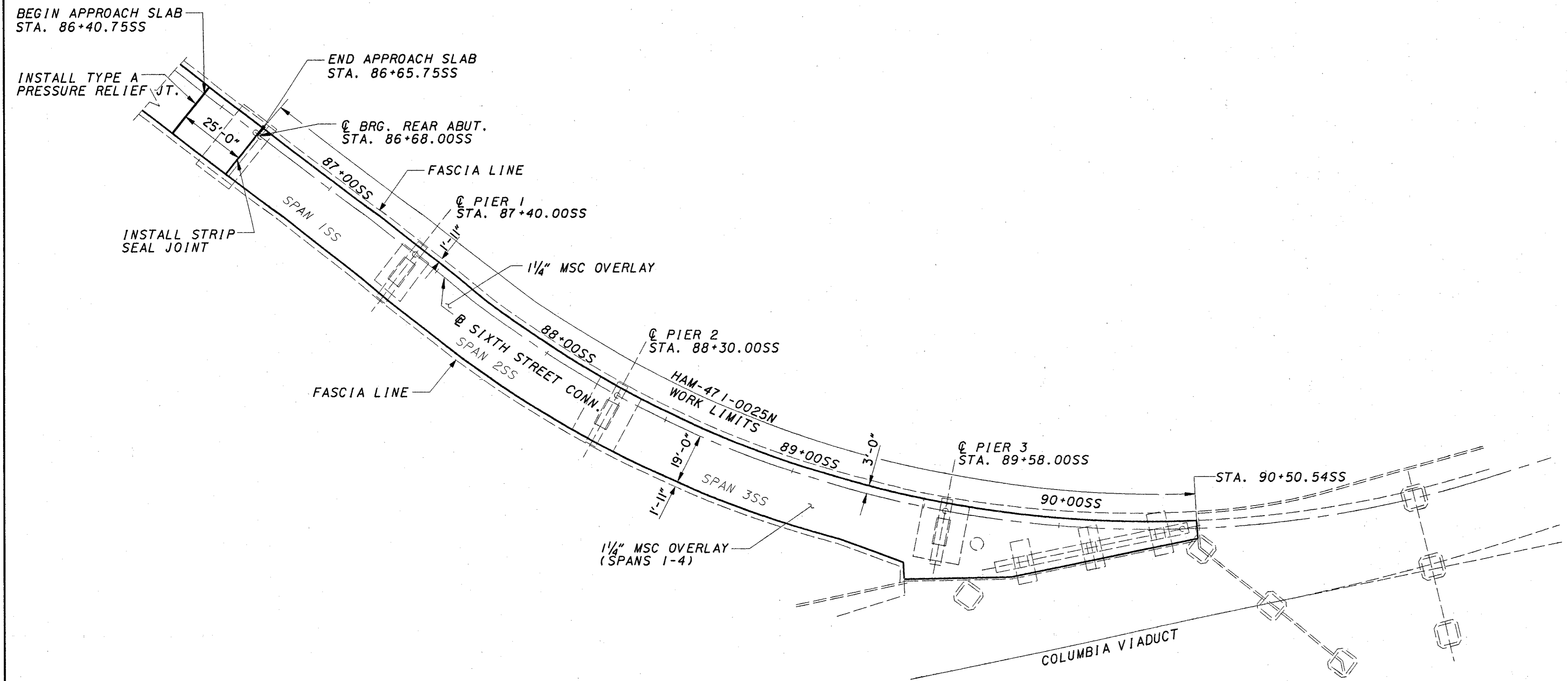
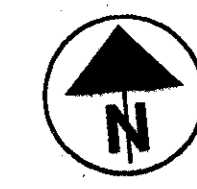
POSITION	45° BEND (EACH)	LENGTH (FT.)	
PIER 13	10	24	
PIER 14	20	48	
PIER 15	10	24	
PIER 16	22	51	
PIER 17	25	60	
PIER 19	25	60	
PIER 20	25	60	
FA	8	8	



PLAN - TYPICAL DOWNSPOUT

- REMOVAL LIMITS

DESIGN AGENCY: BARR ENGINEERING, Five East Long Street, Columbus, Ohio 43215, Ph: (614) 224-1941  
 DATE: 8/2001  
 REVIEWED: GEA, STRUCTURE FILE NUMBER: 3117359, 3117361  
 DRAWN: FIB, REVISED: ASB  
 DESIGNED: JEP, CHECKED: ASB  
 DRAINAGE DETAILS  
 BRIDGE NO. HAM-471-0000 L/R  
 HAM-471-0.26  
 31/106  
 63/182



**PROPOSED WORK: HAM-471-0025N**

1. REMOVE 1 1/4" OF EXISTING DECK USING HYDRO DEMOLITION AND OVERLAY WITH 1 1/4" THICK MICRO-SILICA CONCRETE.
2. REMOVE AND RECONSTRUCT REAR ABUTMENT BACKWALL DOWN TO APPROACH SLAB SEAT AND INSTALL NEW STRIP SEAL JOINT.
3. MODIFY DOWNSPOUTS. CLEAN AND UNCLOG SCUPPERS.
4. PAINT STEEL USING OZEU SYSTEM.
5. SEAL CONCRETE SURFACES (ABUTMENTS, WINGWALLS, BACKWALLS, PIERS, PIER CAPS, DECK EDGES, AND BRIDGE RAILING) AS DESCRIBED IN THE GENERAL NOTES.
6. REMOVE AND REPLACE FULL WIDTH APPROACH SLAB AND INSTALL A TYPE A PRESSURE RELIEF JOINT.
7. SEAL JOINT BETWEEN APPROACH SLAB AND APPROACH CONCRETE RAILING.

(IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN THE SEQUENTIAL ORDER LISTED.)

CURVE DATA													
P.I. STA. 89+80.04	R=410.00'												
P.C. STA. 87+61.49													
P.T. STA. 91+63.07	L=401.58'												
Δ=56°07'09"	T=218.55'												
D=13°58'28.5"													
<b>HAM-471-0025N</b>													
<b>EXISTING STRUCTURE</b>													
TYPE: WELDED PLATE GIRDER (CURVED) WITH REINFORCED CONCRETE DECK													
ROADWAY: 23'-6" F/F OF PARAPETS, RAILING TYPE VARIES													
SKEW: REAR ABUTMENT AND PIER 1 AT 90° TO @ PIERS 2 & 3 RADIAL													
LIVE LOADINGS 20-44 CASE 11 AND THE ALTERNATE MILITARY LOADING													
APPROACH SLABS AS-1-72 (25'-0" LONG)													
ALIGNMENT VARIES, SEE PLAN													
SUPERELEVATION VARIES, SEE PLAN													
SURFACE COURSE MONOLITHIC CONCRETE (SPANS 1, 2 & 3)													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">TABLE OF SPAN LENGTHS</th> </tr> <tr> <th style="text-align: center;">SPAN</th> <th style="text-align: center;">LENGTH</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">72.00'</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">90.00'</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">127.00'</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">86.19'</td> </tr> </tbody> </table>		TABLE OF SPAN LENGTHS		SPAN	LENGTH	1	72.00'	2	90.00'	3	127.00'	4	86.19'
TABLE OF SPAN LENGTHS													
SPAN	LENGTH												
1	72.00'												
2	90.00'												
3	127.00'												
4	86.19'												
C/C BRG. MEASURED ALONG @													
<b>PROPOSED STRUCTURE</b>													
SAME AS EXISTING EXCEPT AS FOLLOWS:													
APPROACH SLABS: AS-1-81 (25'-0" LONG)													
WEARING SURFACE: 1 1/4" MICRO-SILICA CONCRETE													

DESIGN AGENCY: **BARR ENGINEERING, INC.**  
 FIVE EAST LONG STREET, EIGHTH FLOOR  
 COLUMBUS, OH 43215  
 (614)-224-1941 FAX (614)-224-0907

DATE: 8/2001  
 REVIEWED: ASB  
 STRUCTURE FILE NUMBER: 3117553

DRAWN: FIB  
 CHECKED: JEP

DESIGNED: JS

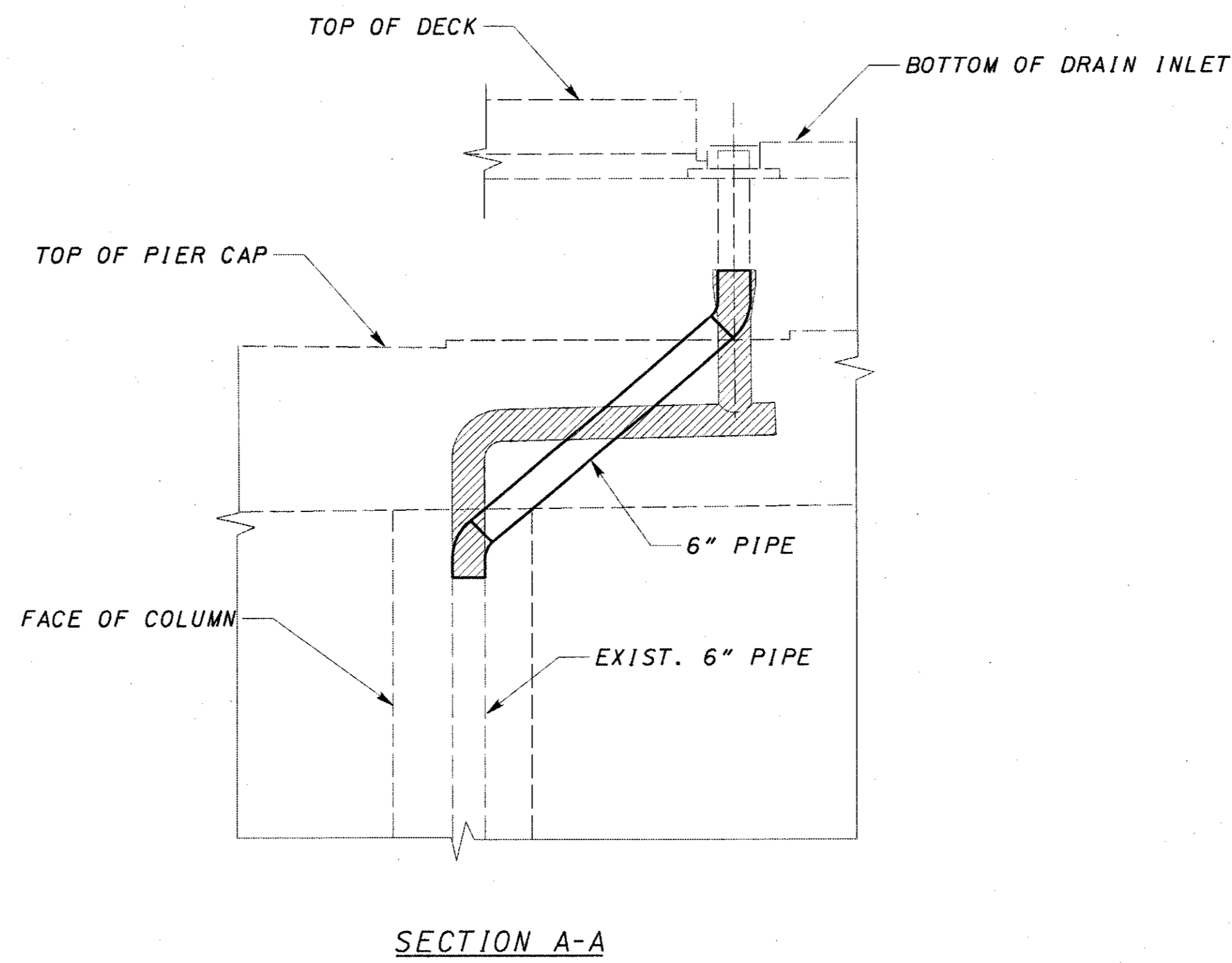
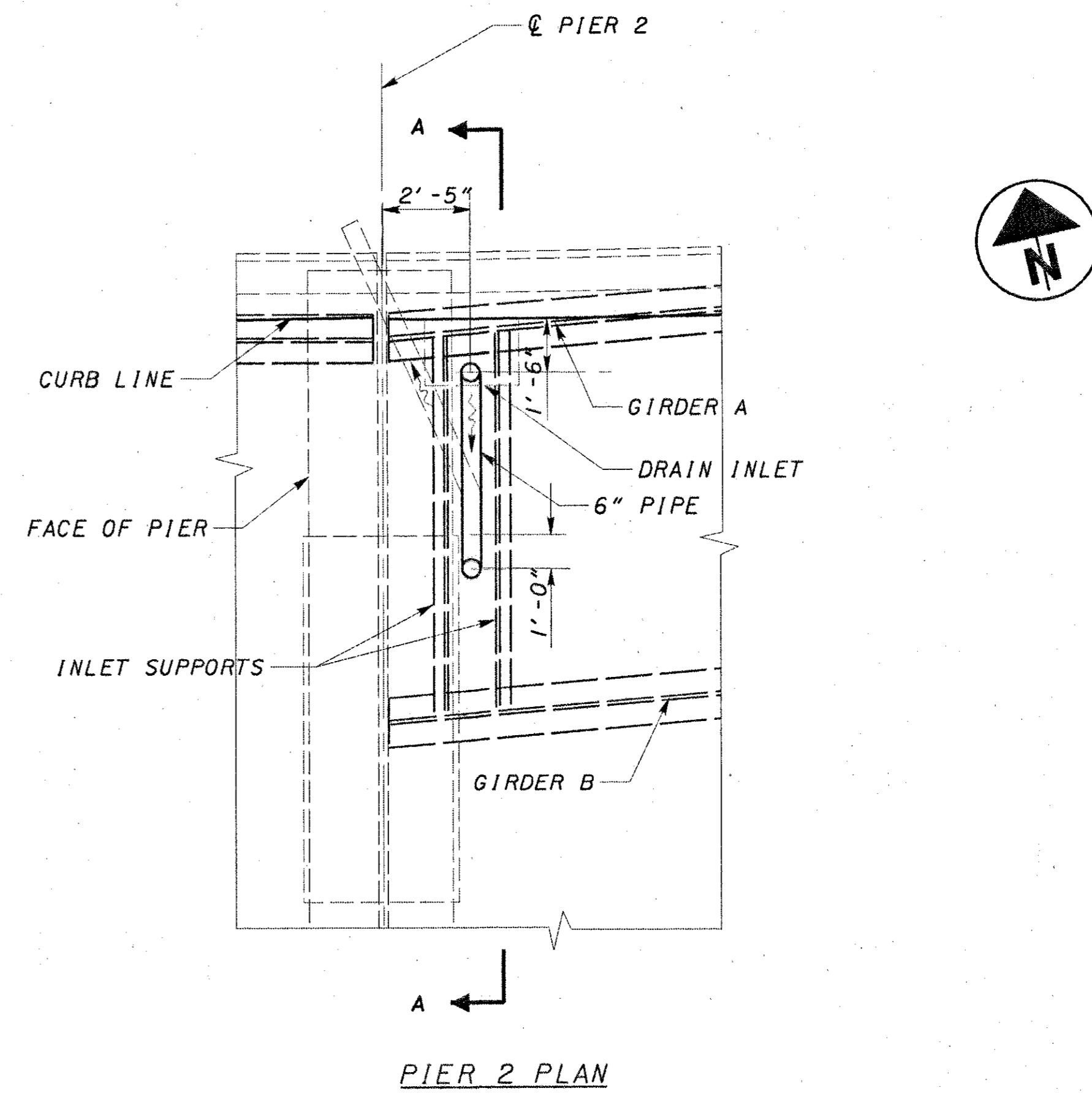
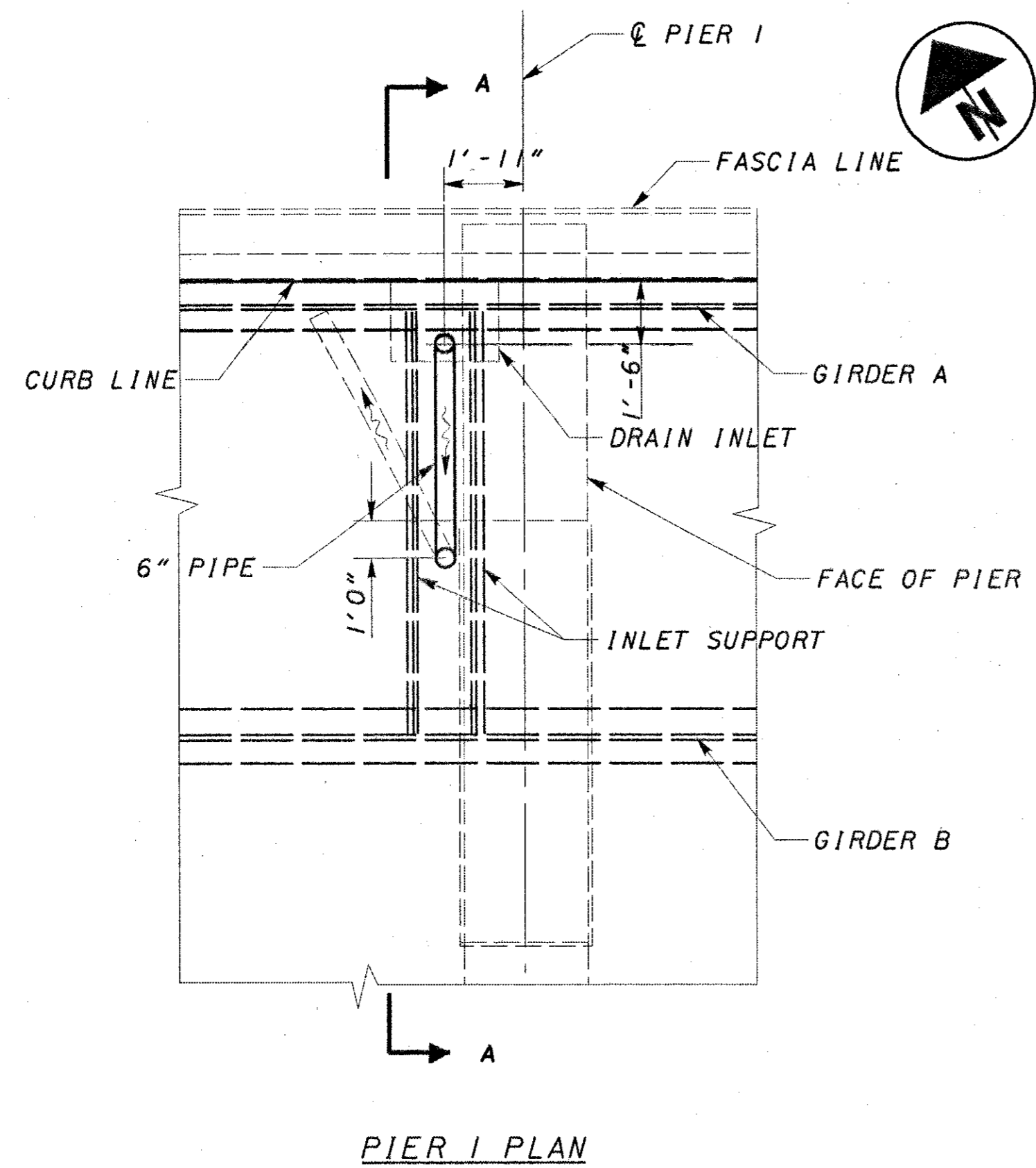
STA. 86+40.75SS  
 STA. 90+50.54SS

GENERAL PLAN  
 SIXTH STREET (BRIDGE NO. HAM-471-0025N)

HAM-471-0.26

32/106  
 64  
 182





MATERIAL LIST

POSITION	45° BEND (EACH)	LENGTH (FT.)
PIER 1	2	10
PIER 3	2	10

# STRUCTURE GENERAL NOTES

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

**DESCRIPTION:**

THIS WORK SHALL CONSIST OF THE REMOVAL OF PORTIONS OF CONCRETE DECKS INCLUDING L.M.C. OVERLAY, SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.) CARE SHALL BE TAKEN DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

**PROTECTION OF TRAFFIC**

DURING THE REMOVAL OF ANY PART OF THE EXISTING SUPERSTRUCTURE THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT VEHICULAR AND PEDESTRIAN TRAFFIC ADJACENT TO AND/OR UNDER THE STRUCTURE. THESE PROVISIONS MAY INCLUDE THE USE OF ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

**PROTECTION OF STEEL SUPPORT SYSTEMS**

BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

**REMOVAL METHODS**

CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS ABOVE STEEL MEMBERS, A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS MAY BE USED AT THE APPROVAL OF THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND TO PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

**EXTRANEQUS MEMBERS**

EXISTING EXTRANEQUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ECT.) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE TOP FLANGES SHALL BE REMOVED AND THE FLANGE SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

**CUT LINE CONSTRUCTION JOINT PREPARATION:**

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE ROUGH CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEAN OF ALL DIRT, DUST, RUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT ALL PACK AND LOOSE RUST SHALL BE REMOVED. EXISTING CONCRETE SURFACES WHICH NEW CONCRETE WILL BE PLACED AGAINST SHALL BE WET, BUT WITHOUT FREE WATER, AT THE TIME OF CONCRETE PLACEMENT.

**EXISTING STRUCTURE VERIFICATION**

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.02/863.07.

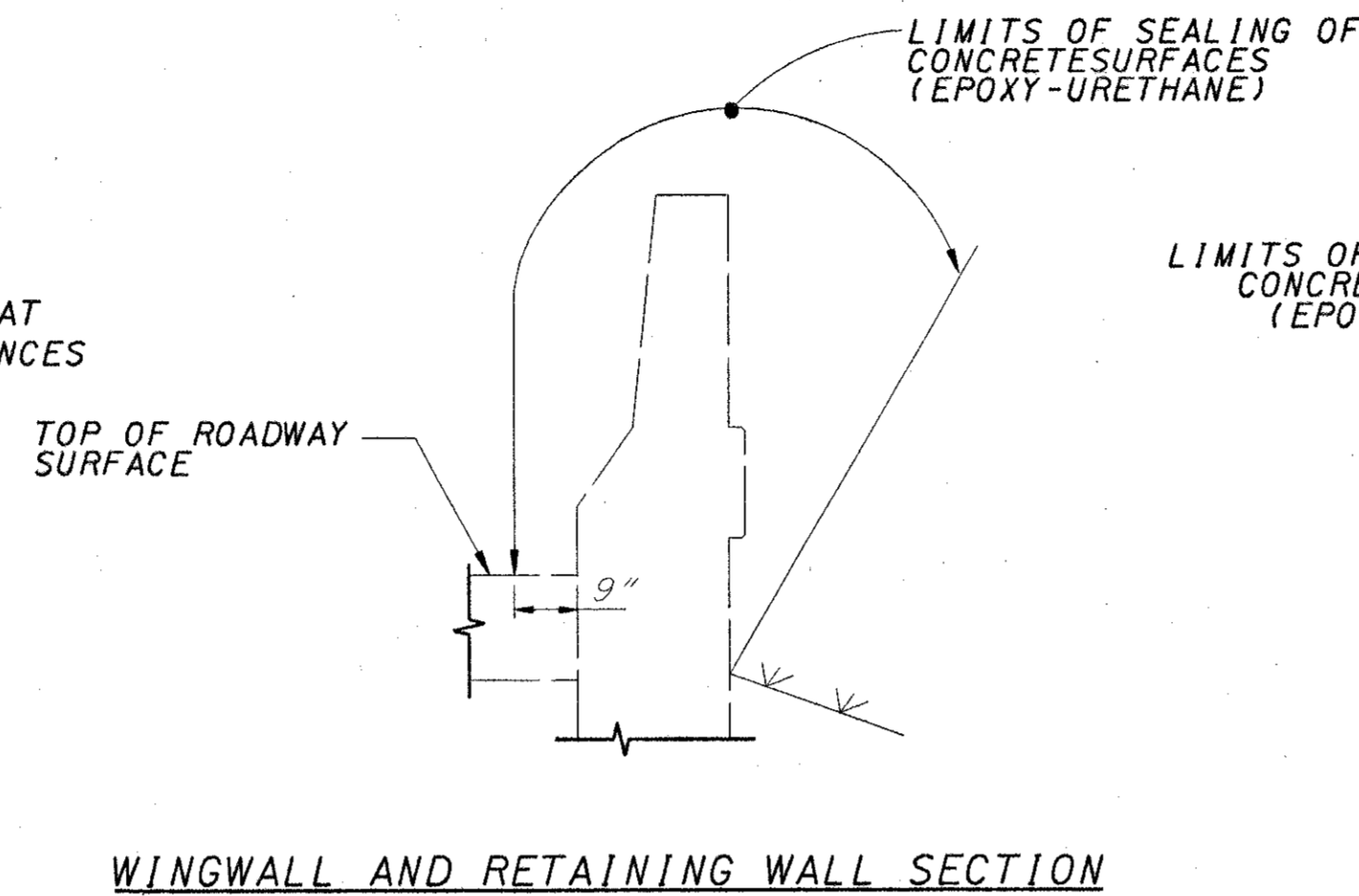
**BACKWALL CONCRETE**

IN ADDITION TO SS 842.08, BACKWALL ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.

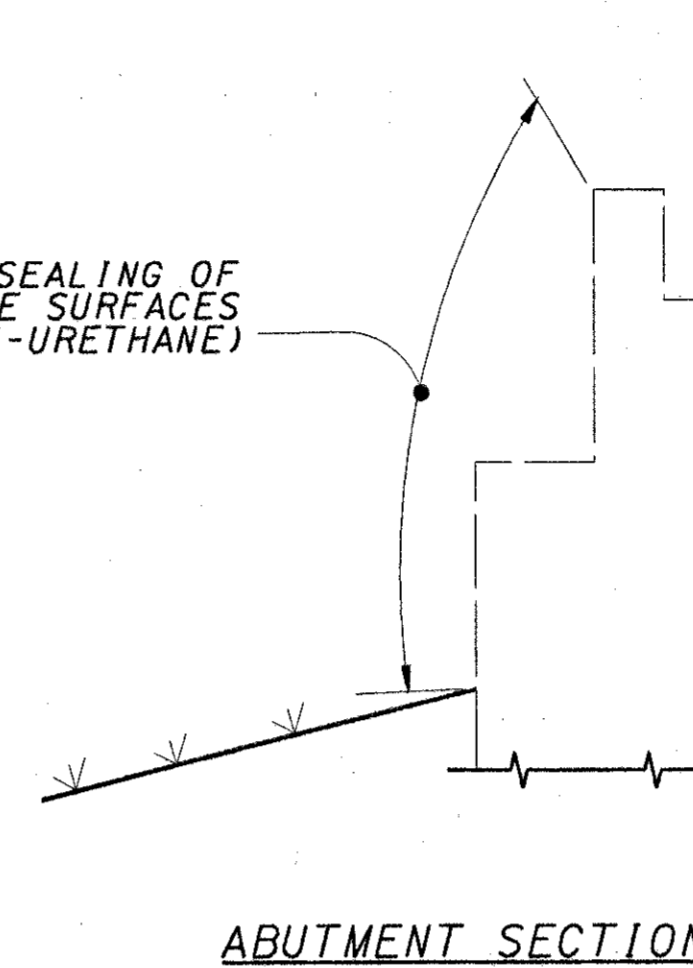
**SEALING OF CONCRETE SURFACES**

THE CONCRETE SURFACES SHOULD BE SEALED AS FOLLOWS:

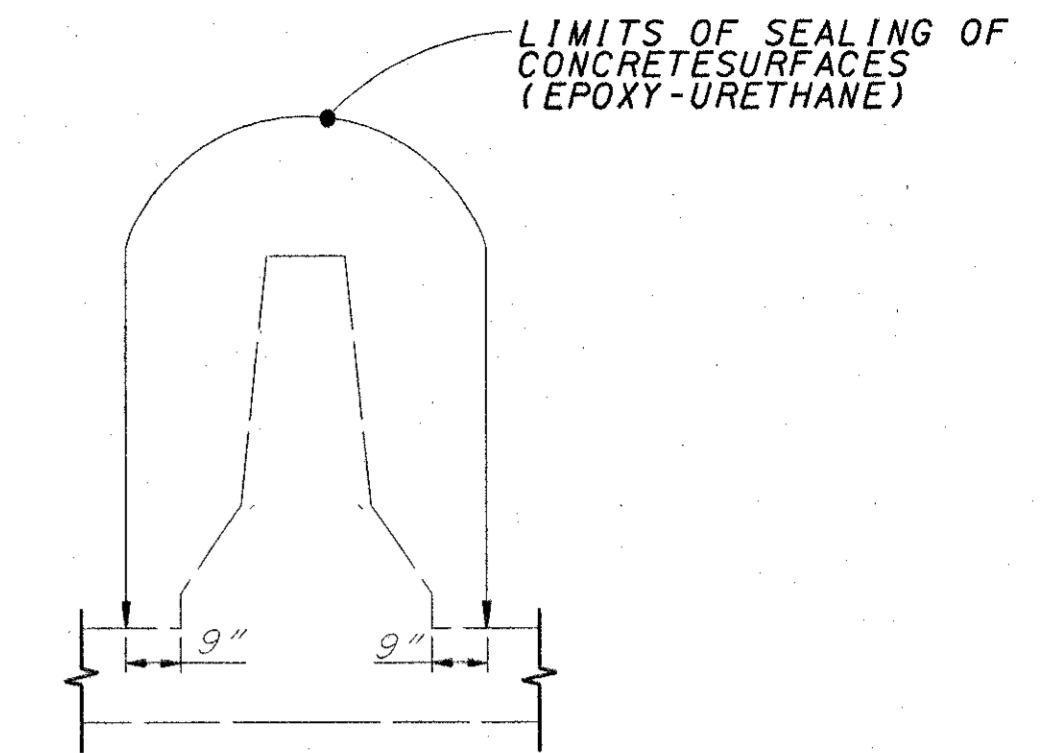
ABUTMENTS & WINGWALLS: ENTIRE LENGTH  
PIERS: ALL EXPOSED SURFACES EXCEPT THE TOP OF PIER CAP  
PARAPETS & MEDIAN BARRIERS: ENTIRE LENGTH OF THE BRIDGE



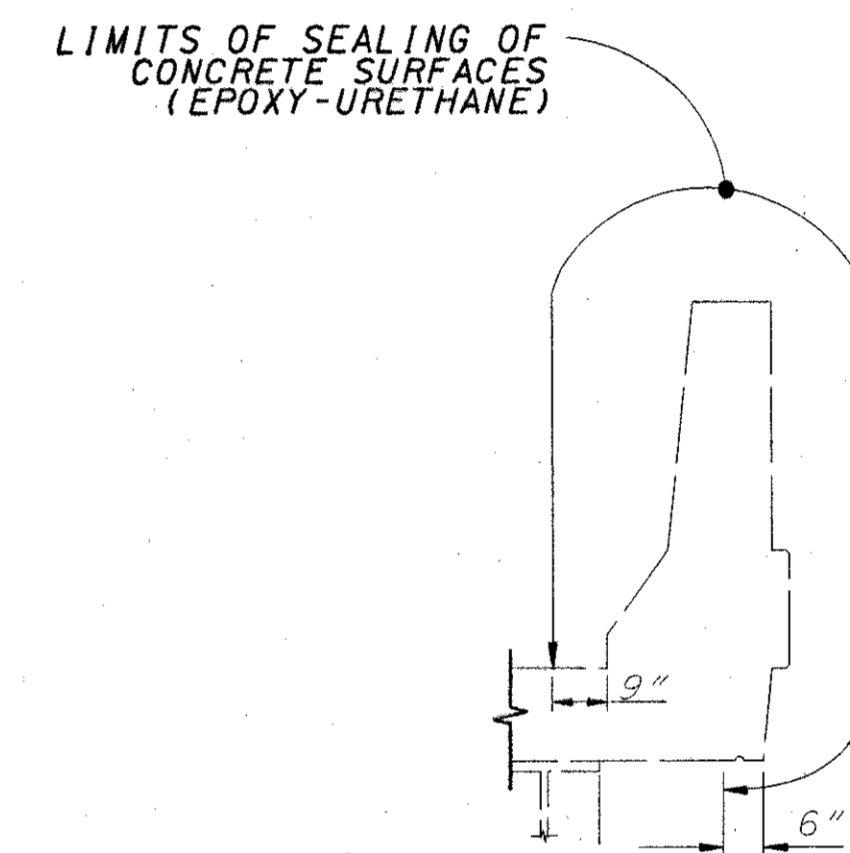
WINGWALL AND RETAINING WALL SECTION



ABUTMENT SECTION



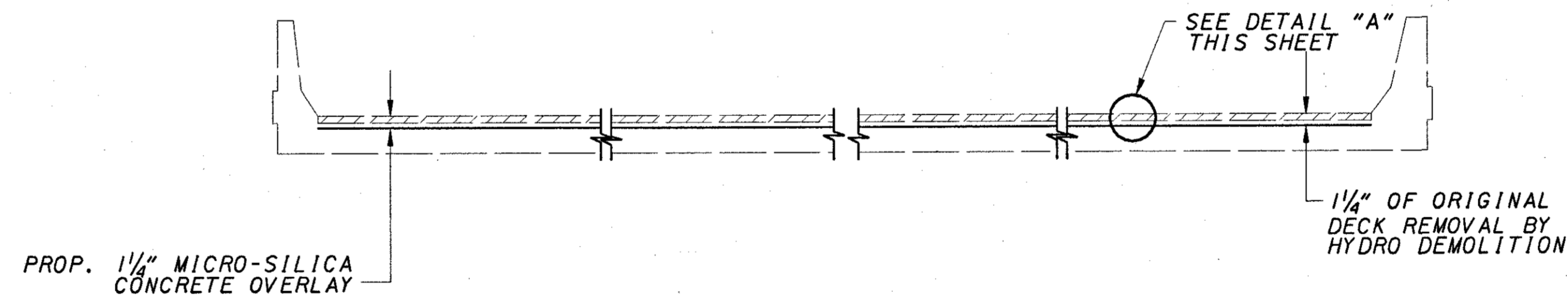
BARRIER SECTION



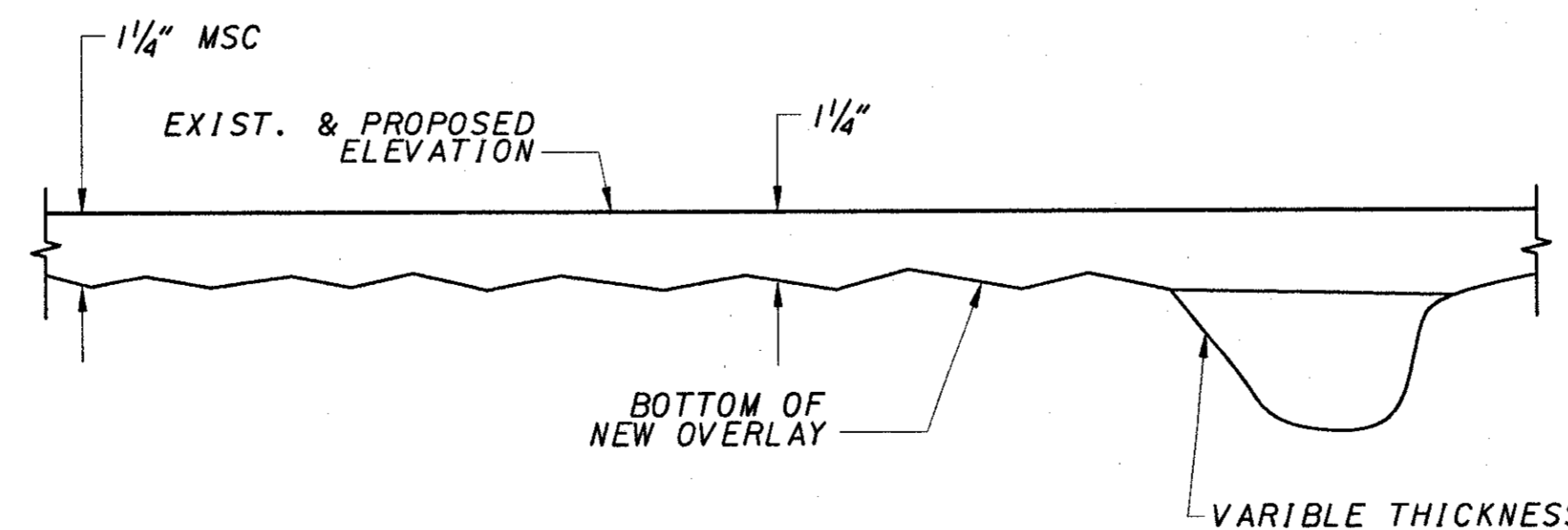
PARAPET SECTION

**MICRO-SILICA CONCRETE OVERLAY**

EXISTING DECKS WILL BE OVERLAYED AS PER THE DETAILS SHOWN BELOW AND IN ACCORDANCE WITH ITEM 848.



EXISTING & MODIFIED TYPICAL SECTION



DETAIL A

**ABBREVIATIONS**

- ABUT. - ABUTMENT
- APPR. - APPROACH
- BOT. - BOTTOM
- BRGS. - BEARINGS
- CL. - CLEAR
- CJ. - CONTROL JOINT
- DIM. - DIMENSION
- ELEV. - ELEVATION
- EXP. - EXPANSION
- EXIST. - EXISTING
- LONG. - LONGITUDINAL
- JT. - JOINT
- MSC - MICRO SILICA CONCRETE
- SPA. - SPACES
- TBR. - TO BE REMOVED
- TYP. - TYPICAL

DESIGN AGENCY: BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1841, (614) 224-0307 FAX

DATE: 8/2001

REVISION: ASB

DRAWN: F/B

DESIGNED: JS

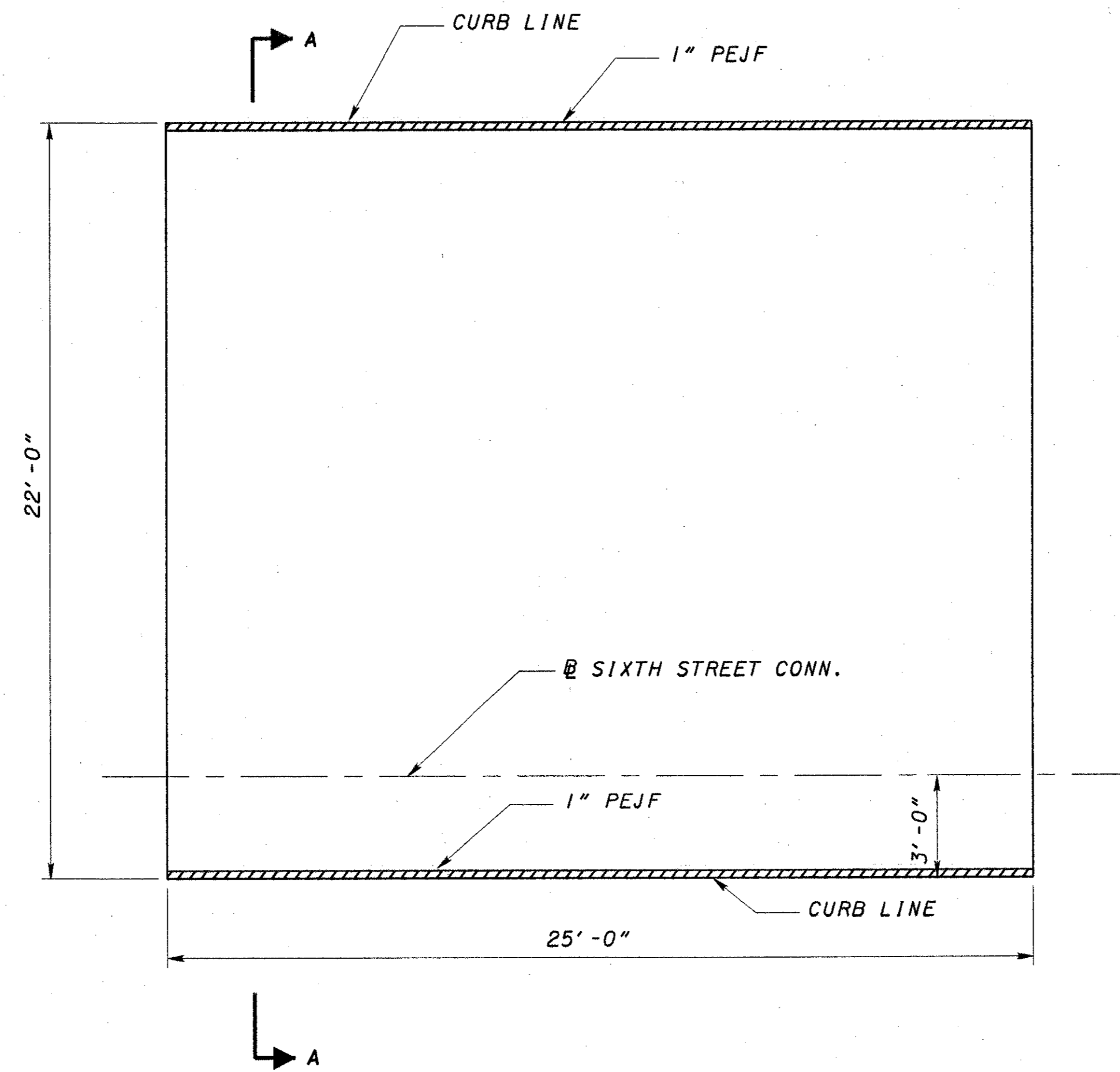
STRUCTURE FILE NUMBER: 3117553

STRUCTURE GENERAL NOTES SIXTH STREET CONN. (BRIDGE NO. HAM-471-0025N)

HAM-471-0.26

34/106

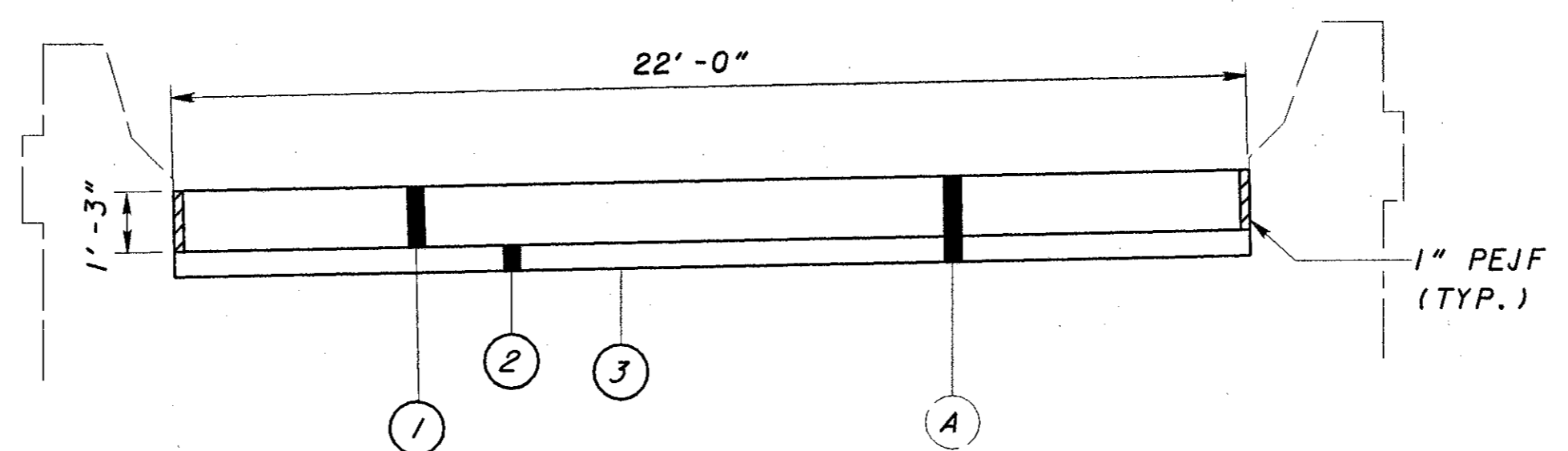
66/182



APPROACH SLAB

(NO SKEW)

STA. 86+40.75 TO STA. 86+65.75 = 25.00 FT.



SECTION A-A

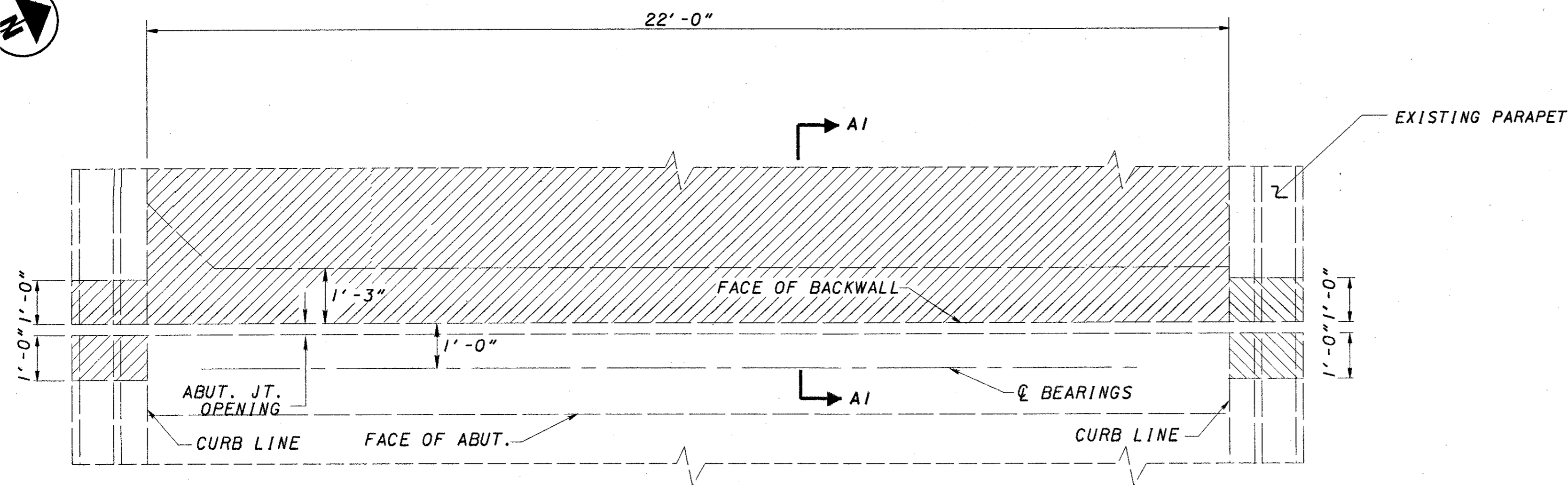
LEGEND

- ① ITEM 611, APPROACH SLAB, (T-15")
- ② ITEM 304, AGGREGATE BASE, (T-6")
- ③ ITEM 203, SUBGRADE COMPACTION
- Ⓐ EXIST. APPROACH SLAB AND BASE

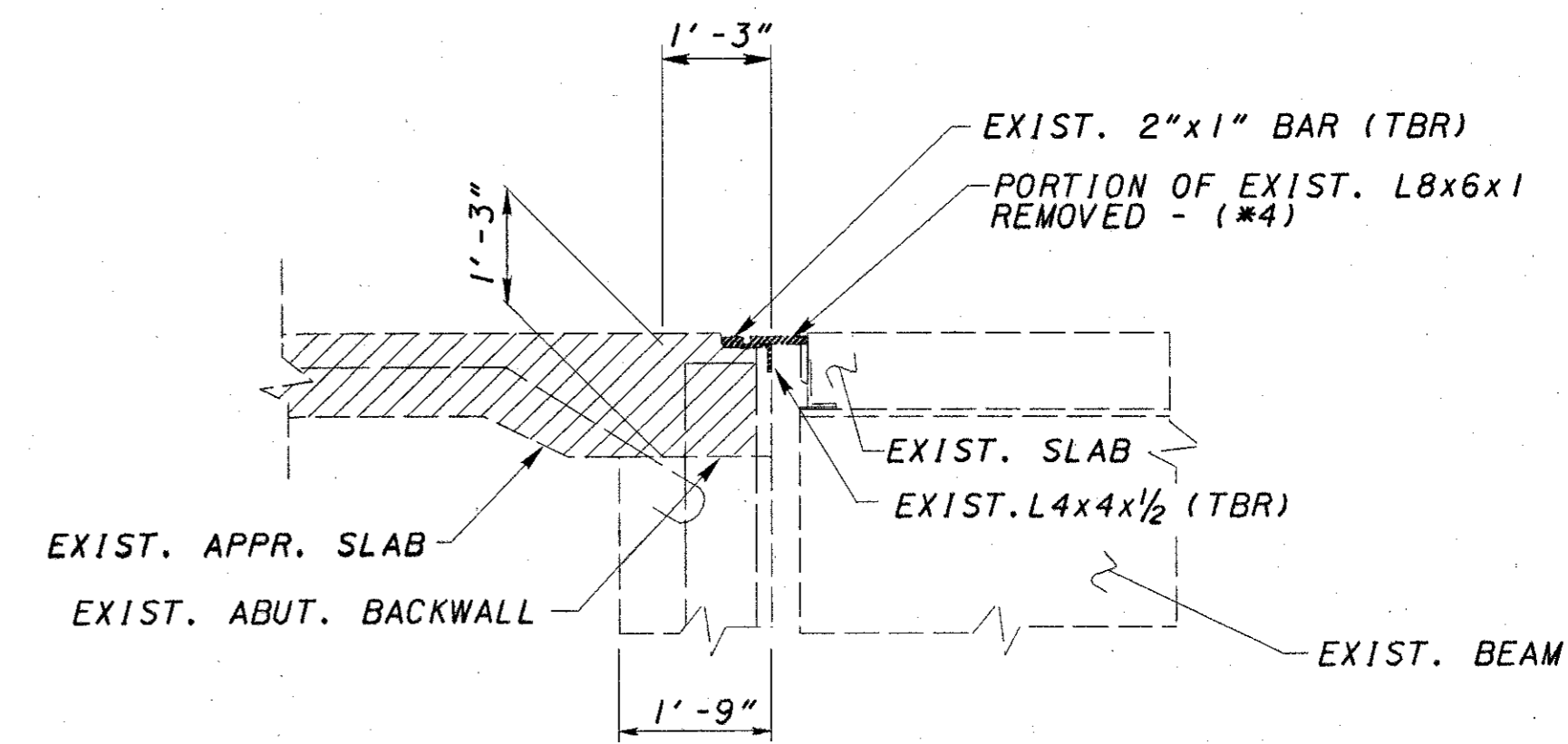
NOTE:

REINFORCEMENT AS PER AS-1-81.  
SECTIONS DEPICTED NORMAL TO BASE LINE.

DESIGN AGENCY BARR ENGINEERING Five East Long Street Columbus, Ohio 43215 PH: (614) 224-1941		DATE 8/2001	REVIEWED GEA	DESIGNED JEP	DRAWN FIB	STRUCTURE FILE NUMBER 3117553
APPROACH SLAB DETAILS SIXTH STREET CONN. (BRIDGE NO. HAM-471-0025N)				CHECKED ASB	REVISED	
HAM-471-0.26						
35/106						
67						
182						

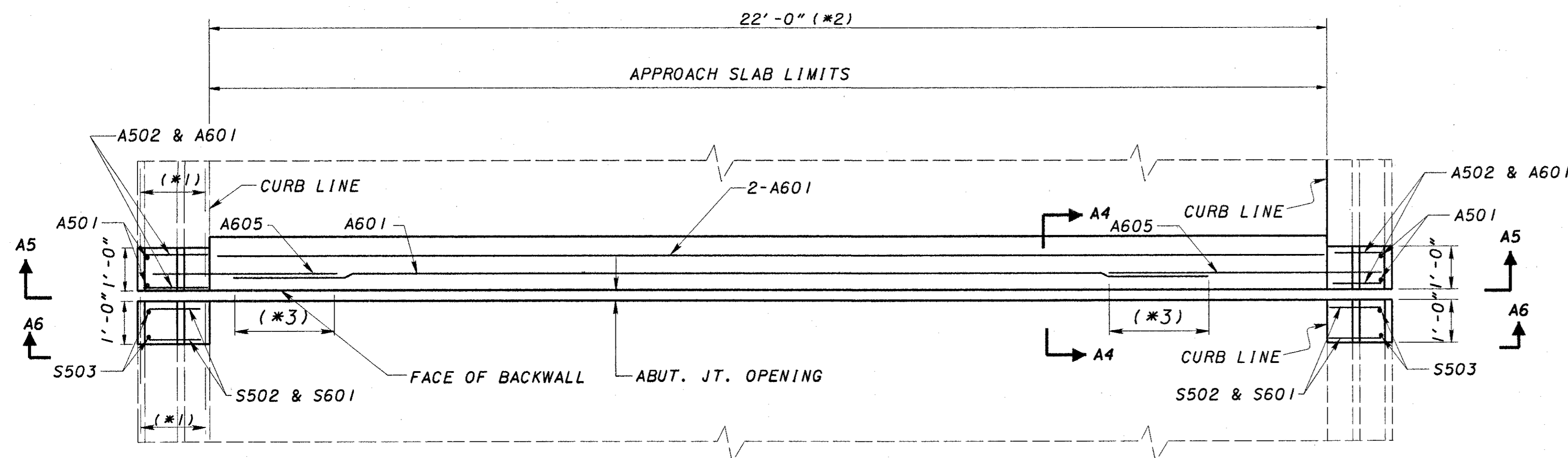


EXISTING ABUTMENT, DECK SLAB, PARAPET & APPROACH SLAB REMOVAL PLAN



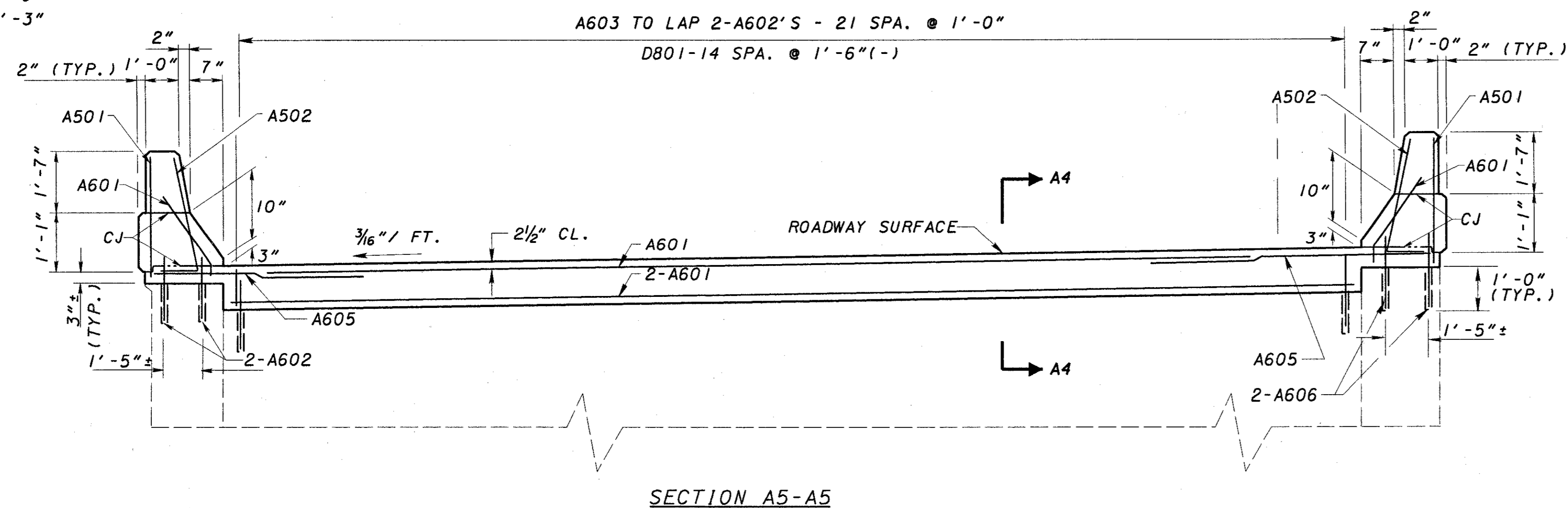
SECTION A1-A1

(\*4) REMOVE TOP PORTION OF ANGLE FLUSH WITH ORIGINAL CONCRETE DECK SLAB AFTER 1/4" OF HYDRO DEMOLITION.

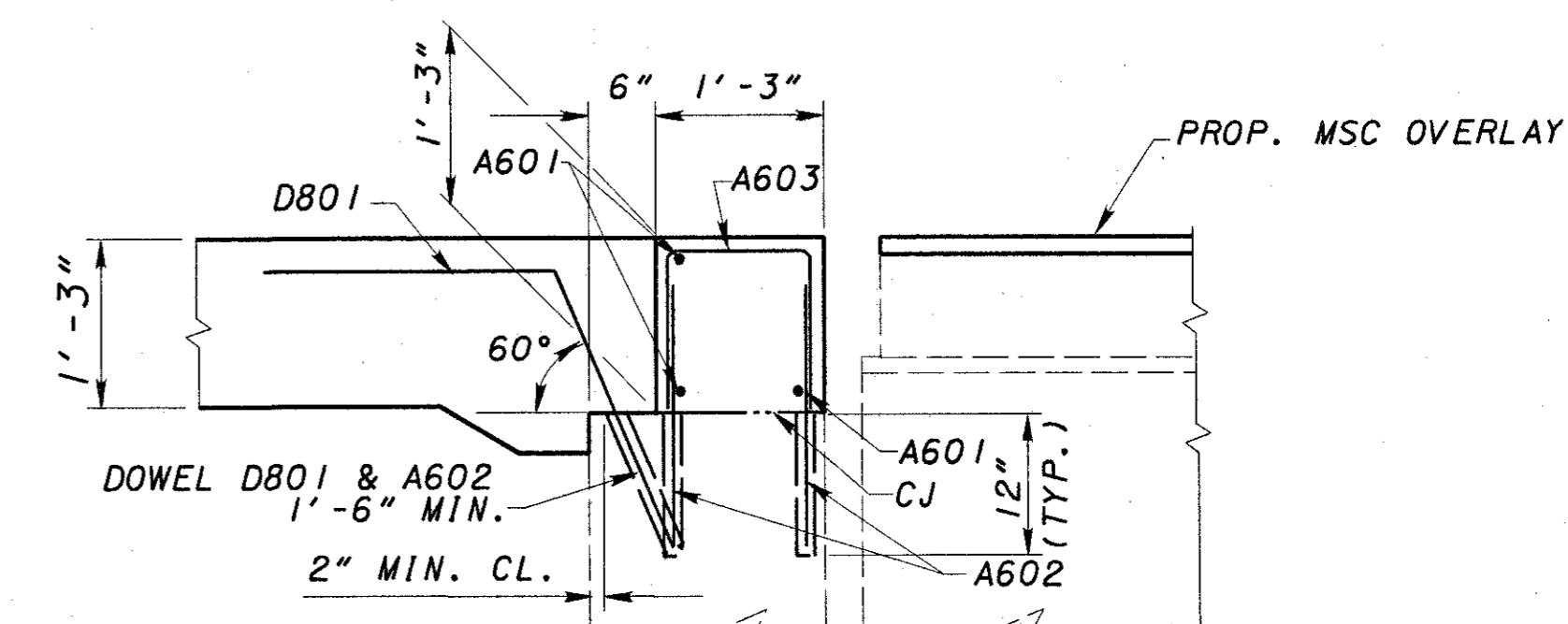


MODIFIED ABUTMENT, DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

- (\*1) EXIST. LONG. BARS TO REMAIN IN PARAPET
- (\*2) EXIST. DECK SLAB LONG. BARS PROTRUDE INTO NEW CONCRETE AREA
- (\*3) LAP LENGTHS
  - #5 BAR-2'-9"
  - #6 BAR-3'-3"



SECTION A5-A5

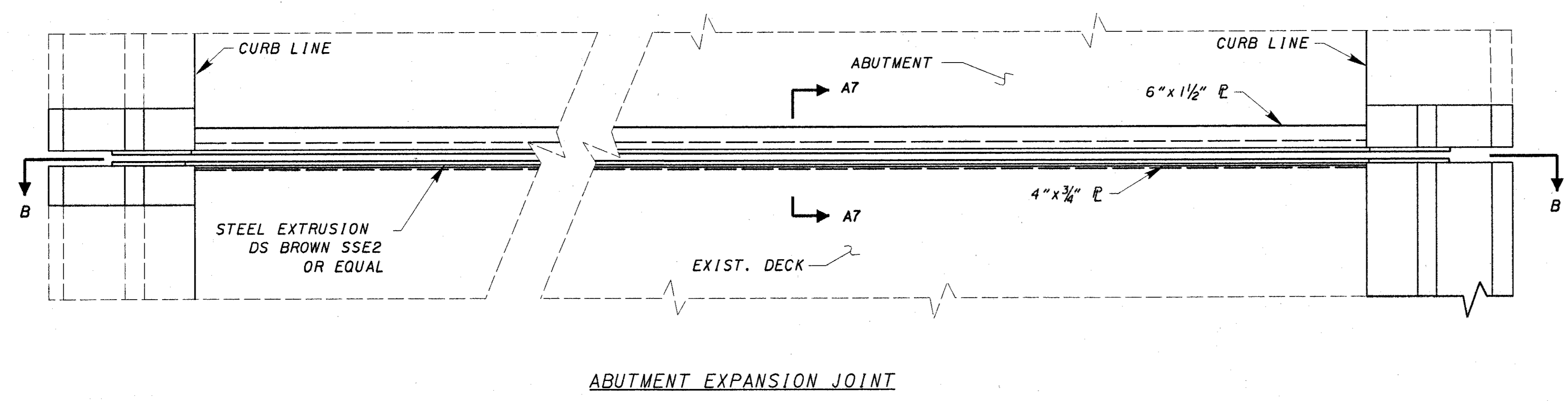
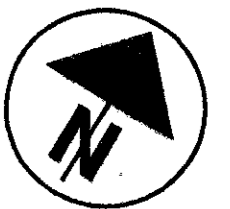


SECTION A4-A4

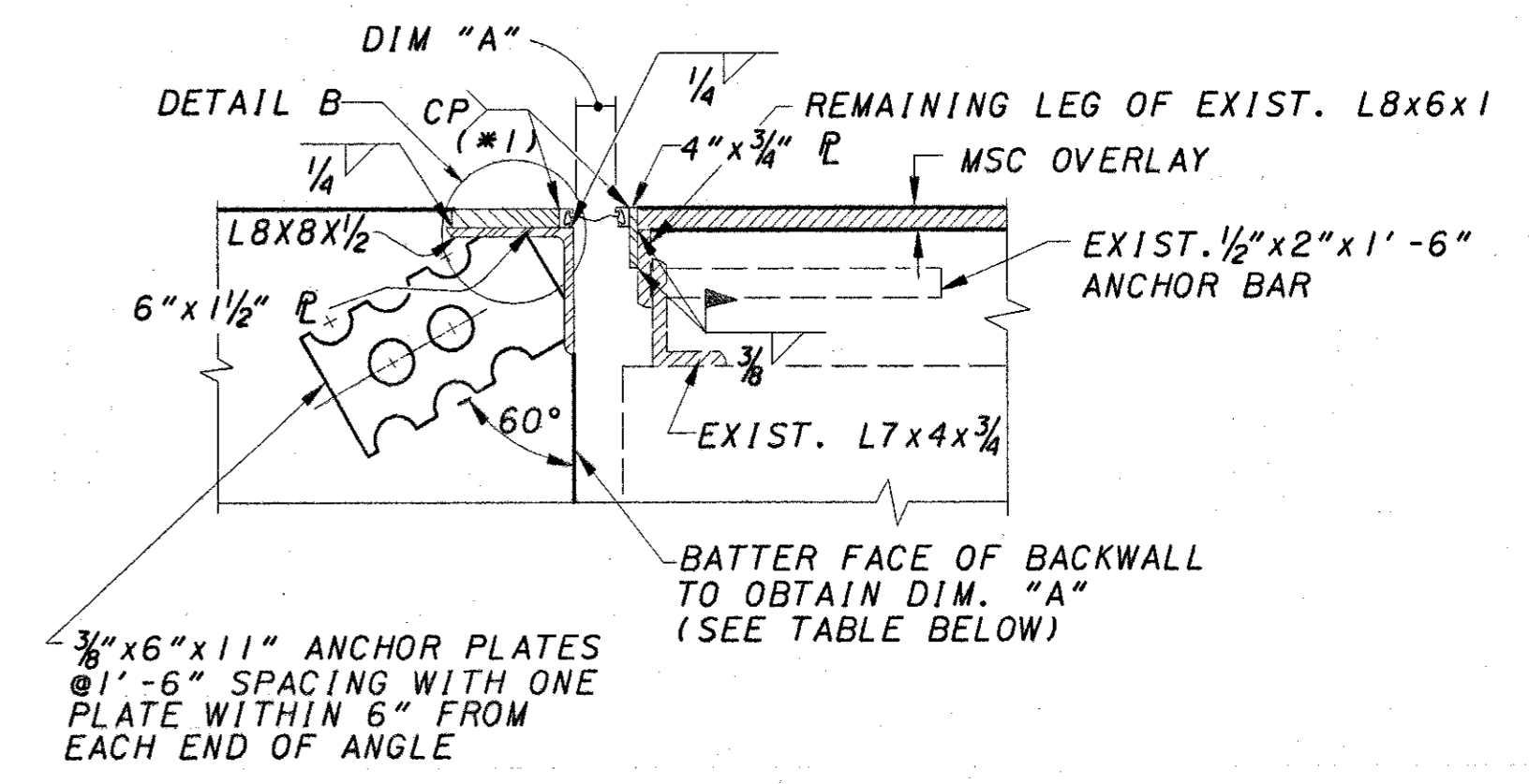
ALTERNATE TO BACKWALL CONSTRUCTION  
 PLANS SHOW THE PORTIONS OF BACKWALL REMOVAL BY SAWCUTTING AT APPROACH SLAB SEAL LEVEL (SECTION A1-A1) AND RECONSTRUCTING THE BACKWALL BY DOWELLING INTO THE REMAINING EXISTING BACKWALL AS PER THE DETAILS OF SECTION A4-A4. AS AN ALTERNATE TO DOWELLING IN NEW BARS, THE CONTRACTOR MAY CHOOSE TO PRESERVE THE EXIST. BARS (RUNNING THROUGH THE CONSTRUCTION JOINT) DURING THE REMOVAL OF THE BACKWALL CONCRETE. ANY BAR DAMAGED DURING THE REMOVAL OF THE CONCRETE SHALL BE REPLACED BY NEW BARS AS DETAILED IN SECTION A4-A4.

LEGEND

- CONCRETE REMOVAL

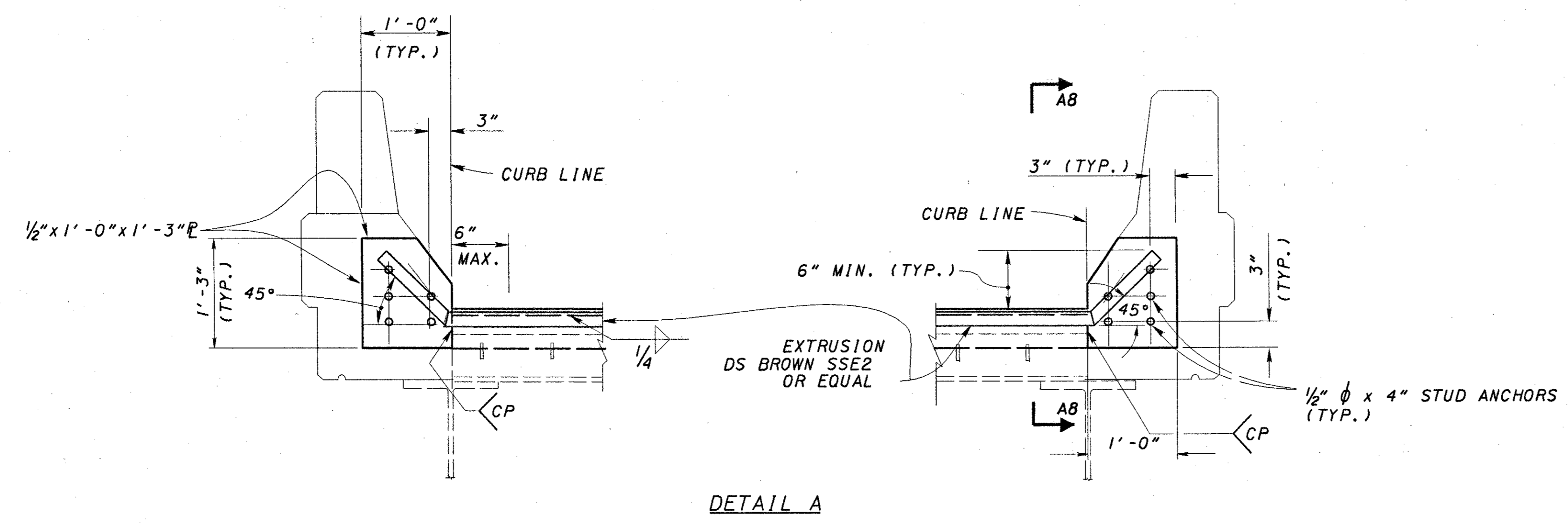


ABUTMENT EXPANSION JOINT

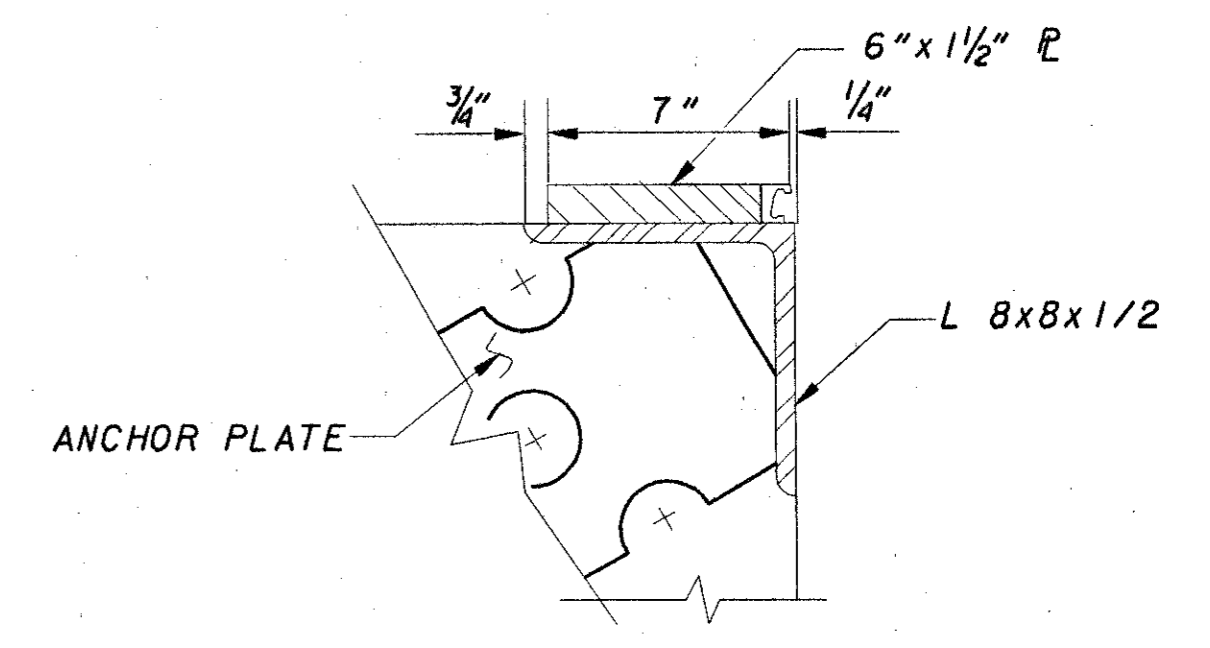


SECTION A7-A7

NOTE:  
(\*1) - SHOP WELD



DETAIL A

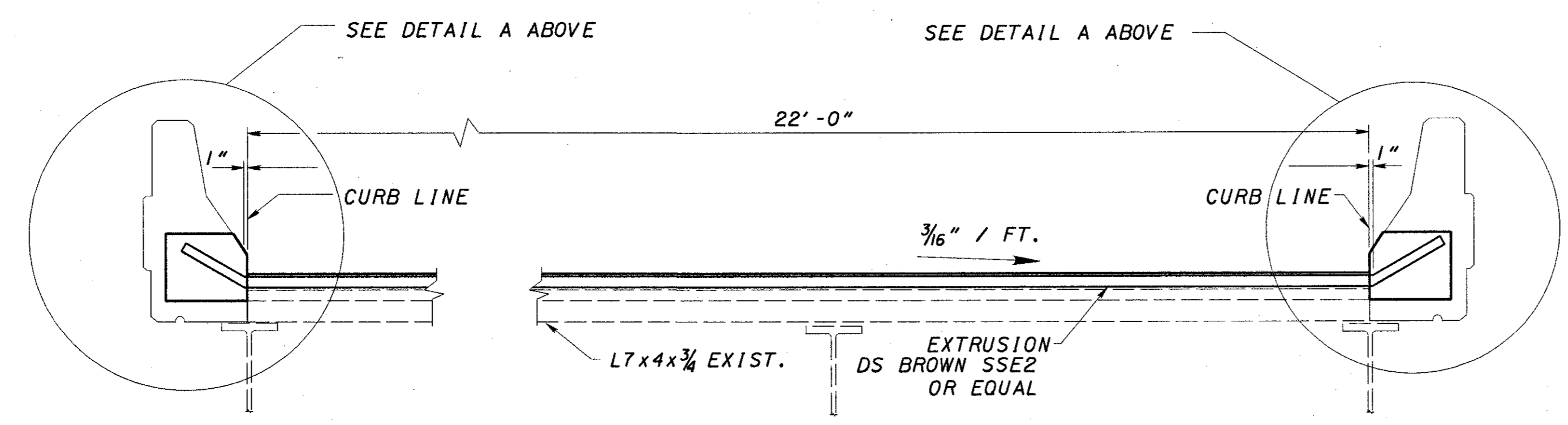


DETAIL B

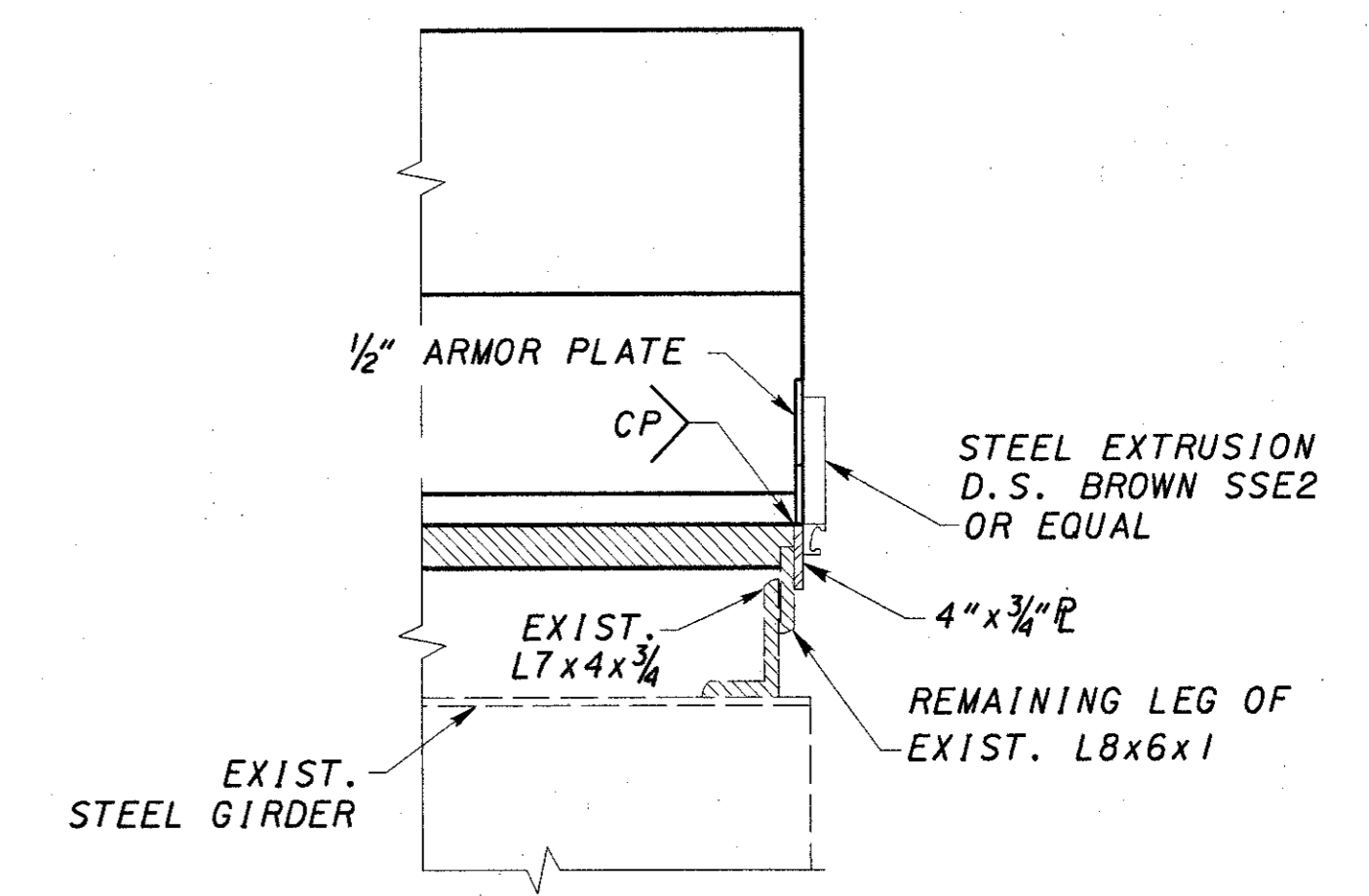
3" STRIP SEAL GLAND

TEMPERATURE (F)	DIMENSION "A"
30°	1 15/16"
40°	1 13/16"
50°	1 11/16"
60°	1 9/16"
70°	1 7/16"
80°	1 5/16"
90°	1 3/16"

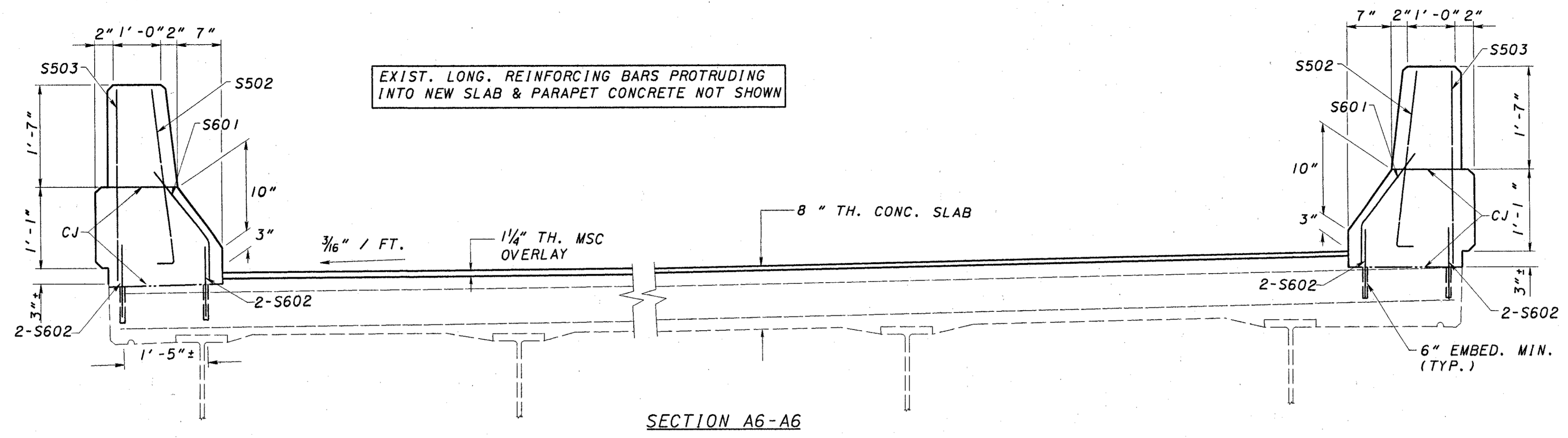
EXPANSION LENGTH = 162'-0" ±



SECTION B-B



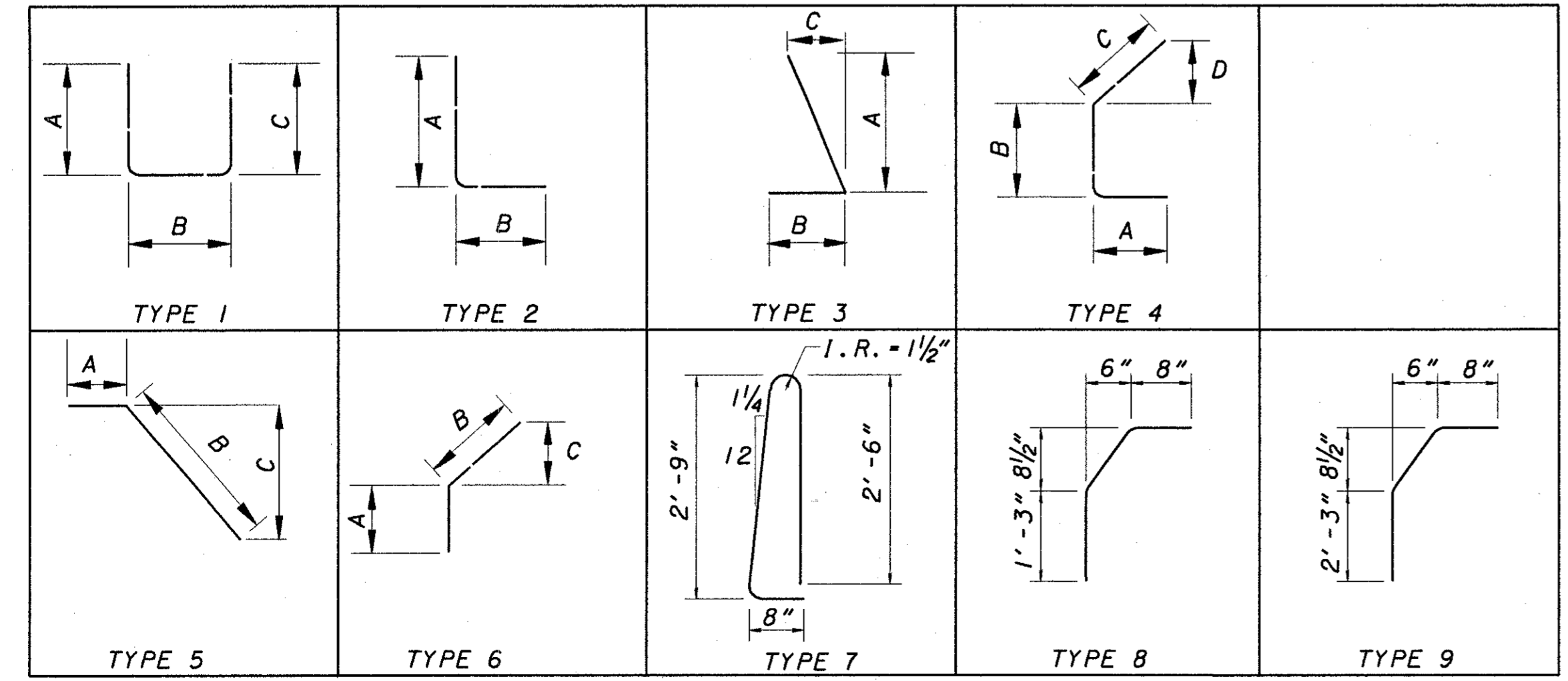
SECTION A8-A8

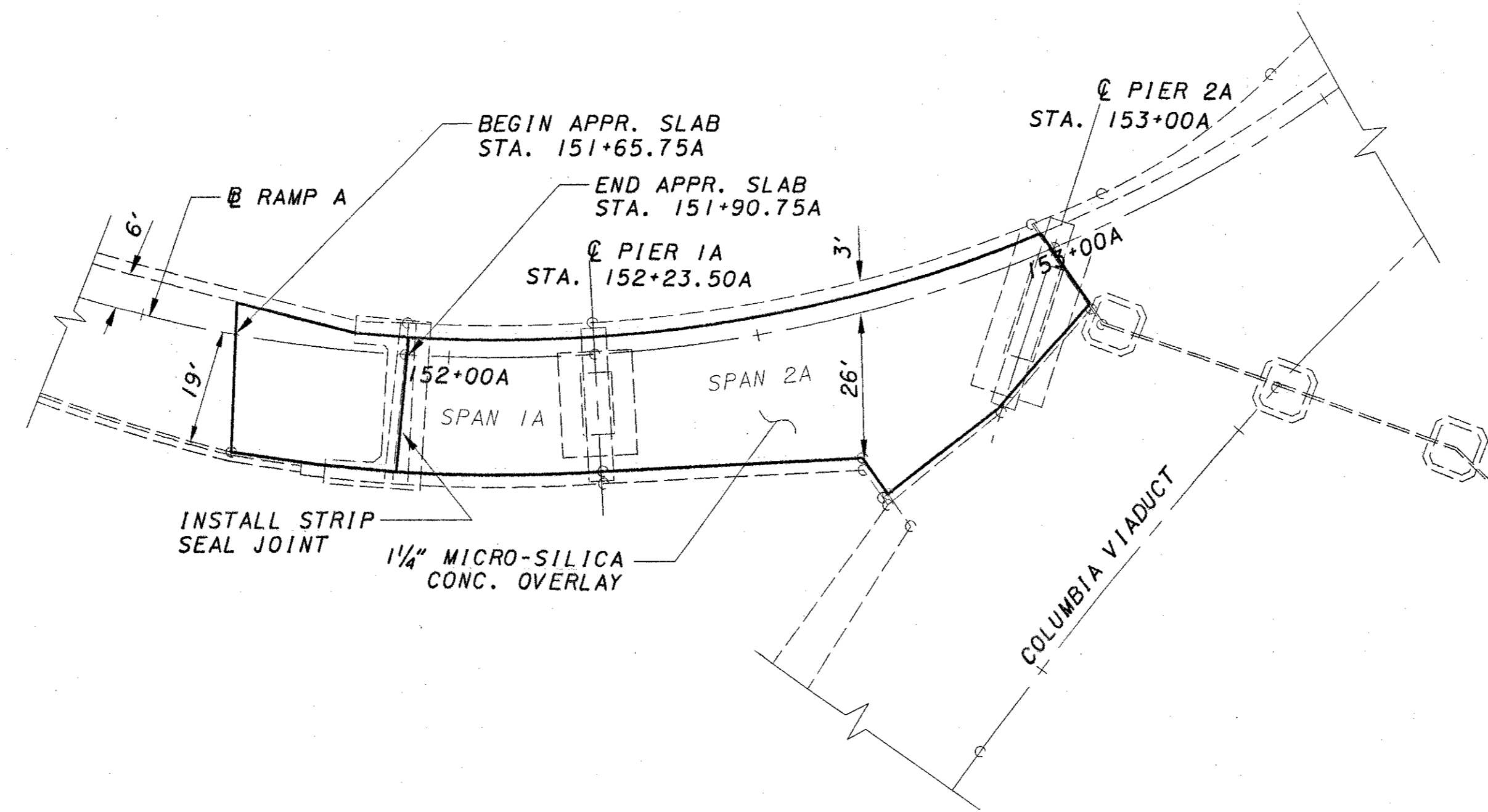
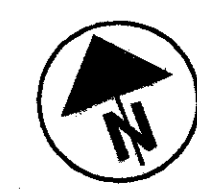


MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
SUPERSTRUCTURE									
S502	4	3'-2"		3	2'-6"	10"	2"		
S503	4	2'-6"		STR					
S601	4	3'-0"		6	4"	1'-6"	1'-2"		
S602	8	1'-6"		STR					

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
ABUTMENT									
A501	4	2'-8"		STR					
A502	4	3'-0"		3	2'-8"	10"	5"		
A601	4	1'-10"		6	4"	1'-6"	1'-2"		
A602	52	2'-0"		STR					
A603	22	3'-0"		1	1'-2"	11"	1'-2"		
A605	2	5'-10"		STR					
DB01	15	4'-3"		5	2'-0"	2'-3"	1'-11"		

BENDING DIAGRAMS





CURVE DATA HAM-471-0025W	
P.C. STA.	= 150+05.21A
P.I. STA.	= 152+47.10A
P.R.C. STA.	= 153+78.08A
$\Delta$	= 92°53'08"
R	= 230'
T	= 241.89'
L	= 372.87'
T	= 24°54'40.4"

**PROPOSED WORK: HAM-471-0025W**

1. REMOVE EXISTING 1/4" OF ORIGINAL DECK CONCRETE USING HYDRO DEMOLITION AND OVERLAY WITH 1/4" THICK MICRO-SILICA CONCRETE.
2. REMOVE AND REPLACE FULL WIDTH APPROACH SLAB.
3. CLEAN AND UNCLOG SCUPPERS. EXTEND DRAIN PIPE AT FORWARD RIGHT ABUTMENT TO DRAIN PIPE IN THE FORWARD SLOPE.
4. PAINT STRUCTURAL STEEL USING OZEU SYSTEM.
5. SEAL CONCRETE SURFACES AS DESCRIBED IN THE GENERAL NOTES.
6. RESET AND REFURBISH ALL ABUTMENT BEARINGS.
7. REPAIR UNDERMINING OF CONCRETE SLOPE PROTECTION AT RIGHT FORWARD.
8. REMOVE AND RECONSTRUCT REAR ABUTMENT BACKWALL DOWN TO APPROACH SLAB SEAT AND INSTALL NEW STRIP SEAL JOINT.
9. INSTALL NEW COMPRESSION JOINT RUBBER SEAL AT THE INTERMEDIATE JOINT, SEE GENERAL NOTES FOR DETAILS.

(IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN THE SEQUENTIAL ORDER LISTED.)

HAM-471-0025W EXISTING STRUCTURE	
TYPE: STEEL PLATE GIRDERS; SPAN 1 SIMPLE SPAN WITH 3'-6" CANTILEVER ARM IN SPAN 2; SPAN 2 & 3 SIMPLE SPANS, REINFORCED CONCRETE DECK AND SUBSTRUCTURE	
ROADWAY: VARIES 23'-6" F/F PARAPET (MIN.)	
SKEW: VARIES, (SEE PLAN)	
WEARING SURFACE: 1" MONOLITHIC CONCRETE	
LIVE LOADING: HS 20-44	
APPROACH SLABS: AS-1-67 (25'-0" LONG)	
ALIGNMENT: VARIES (SEE CURVE DATA)	
SUPERELEVATION VARIES (SEE PLAN)	
TABLE OF SPAN LENGTHS	
SPAN	LENGTH
1	30.5'
2	76.5'
3	85.1'
MEASURED ALONG @ RAMP A	
PROPOSED STRUCTURE	
SAME AS EXISTING EXCEPT AS FOLLOWS:	
APPROACH SLABS: AS-1-81	
WEARING SURFACE: 1/4" MICRO-SILICA CONCRETE	

# STRUCTURE GENERAL NOTES

## PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

### DESCRIPTION:

THIS WORK SHALL CONSIST OF THE REMOVAL OF PORTIONS OF CONCRETE DECKS INCLUDING L.M.C. OVERLAY, SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.) CARE SHALL BE TAKEN DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

### PROTECTION OF TRAFFIC

DURING THE REMOVAL OF ANY PART OF THE EXISTING SUPERSTRUCTURE THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT VEHICULAR AND PEDESTRIAN TRAFFIC ADJACENT TO AND/OR UNDER THE STRUCTURE. THESE PROVISIONS MAY INCLUDE THE USE OF ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

### PROTECTION OF STEEL SUPPORT SYSTEMS

BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

### REMOVAL METHODS

CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS ABOVE STEEL MEMBERS, A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS MAY BE USED AT THE APPROVAL OF THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND TO PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

### EXTRANEOUS MEMBERS

EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ECT.) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE TOP FLANGES SHALL BE REMOVED AND THE FLANGE SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

### CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEAN OF ALL DIRT, RUST, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT ALL PACK AND LOOSE RUST SHALL BE REMOVED. EXISTING CONCRETE SURFACES WHICH NEW CONCRETE WILL BE PLACED AGAINST SHALL BE WET, BUT WITHOUT FREE WATER, AT THE TIME OF CONCRETE PLACEMENT.

### EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.02/863.07.

### BACKWALL CONCRETE

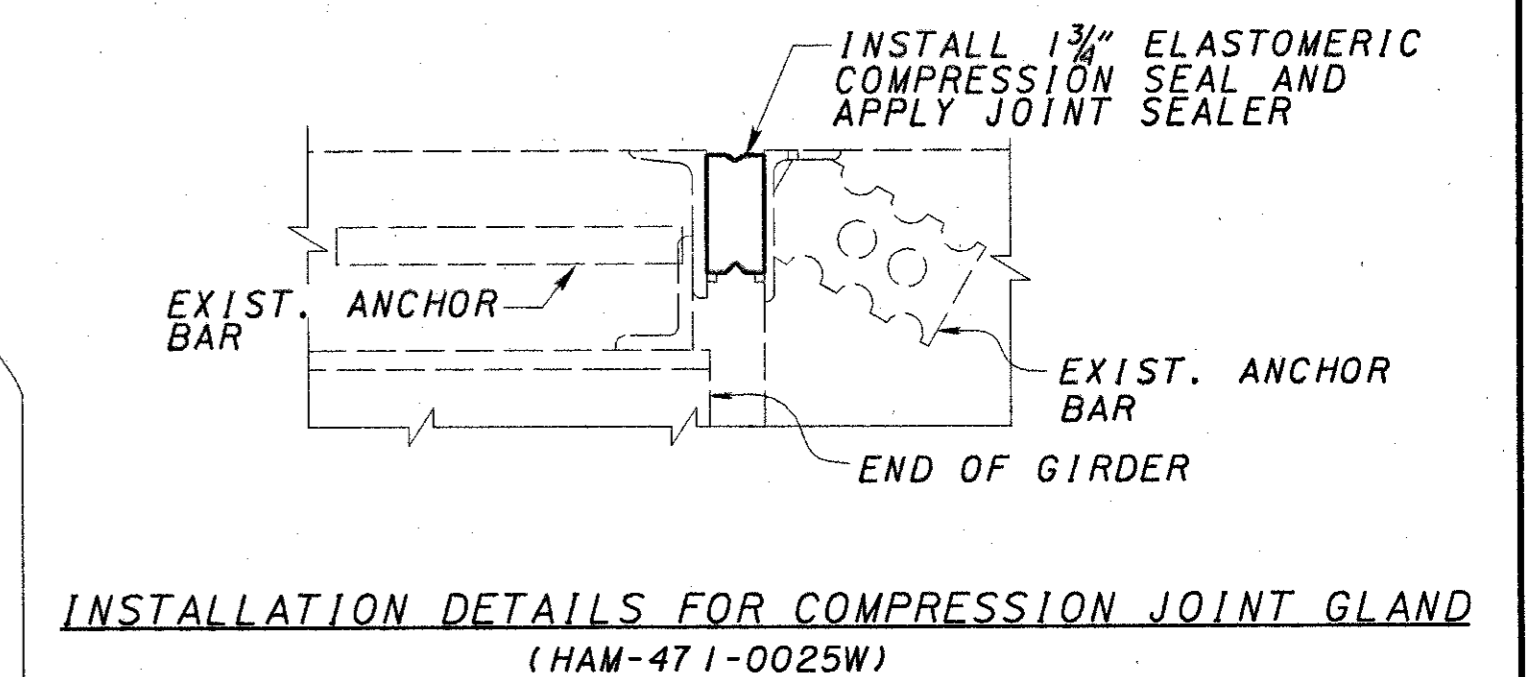
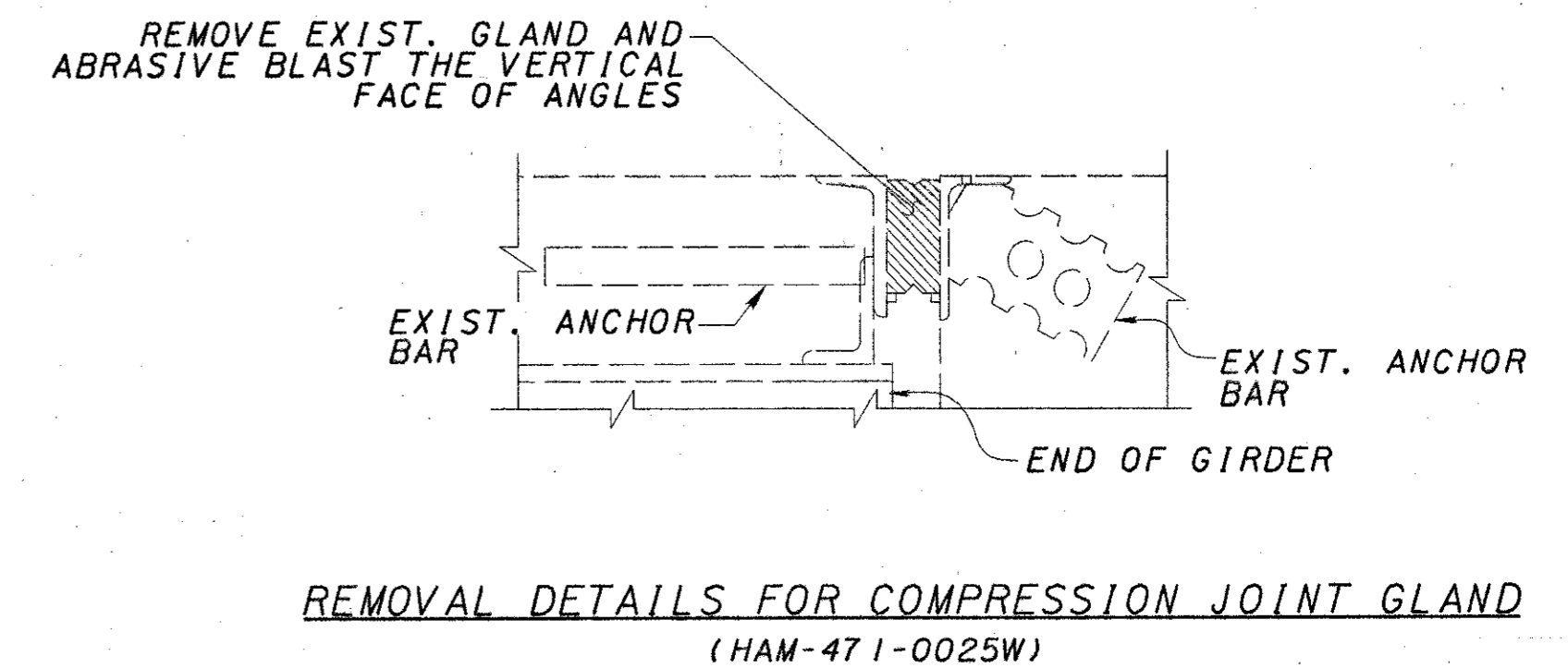
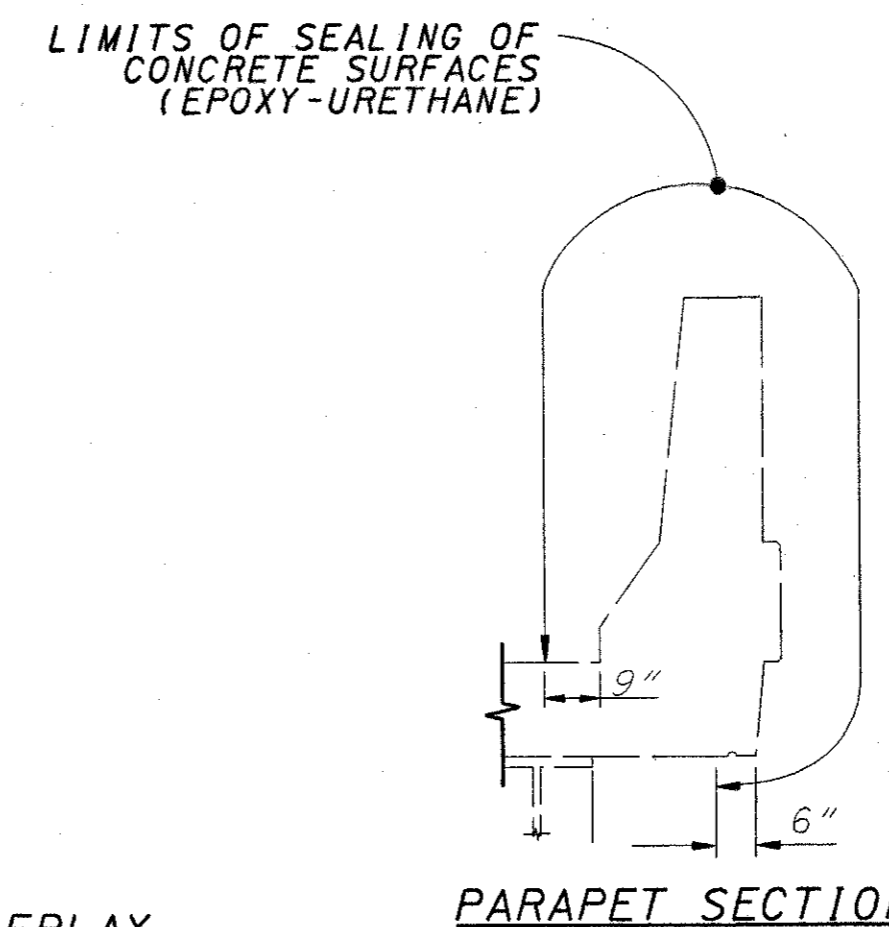
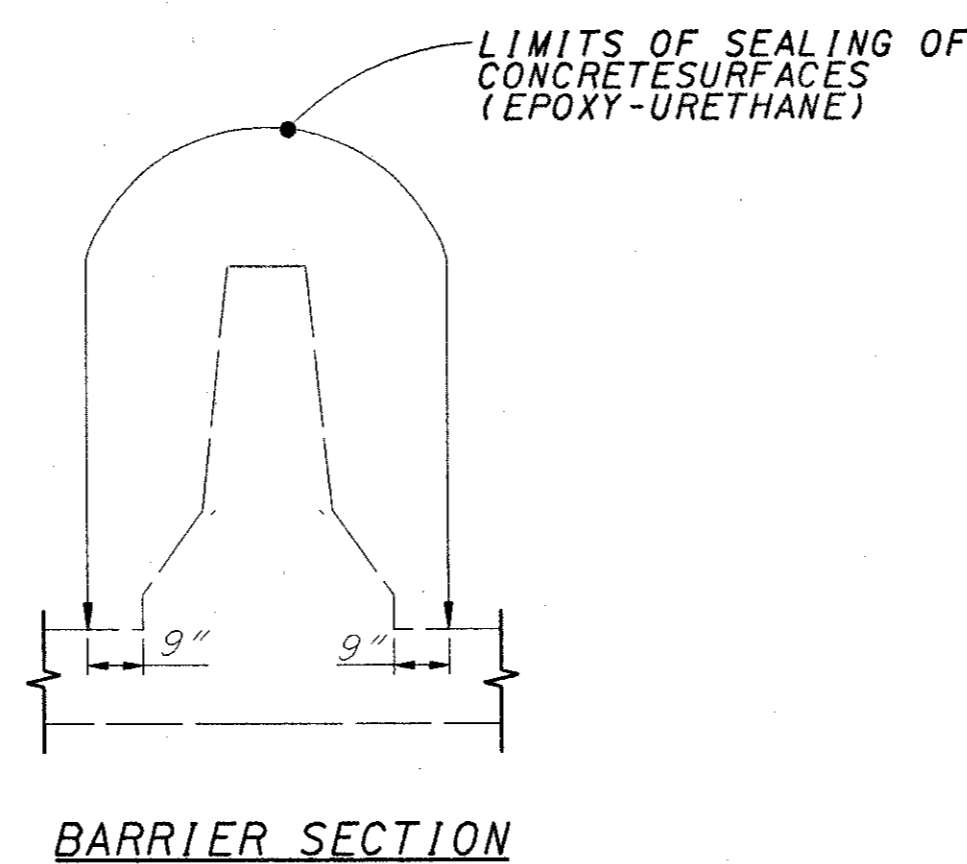
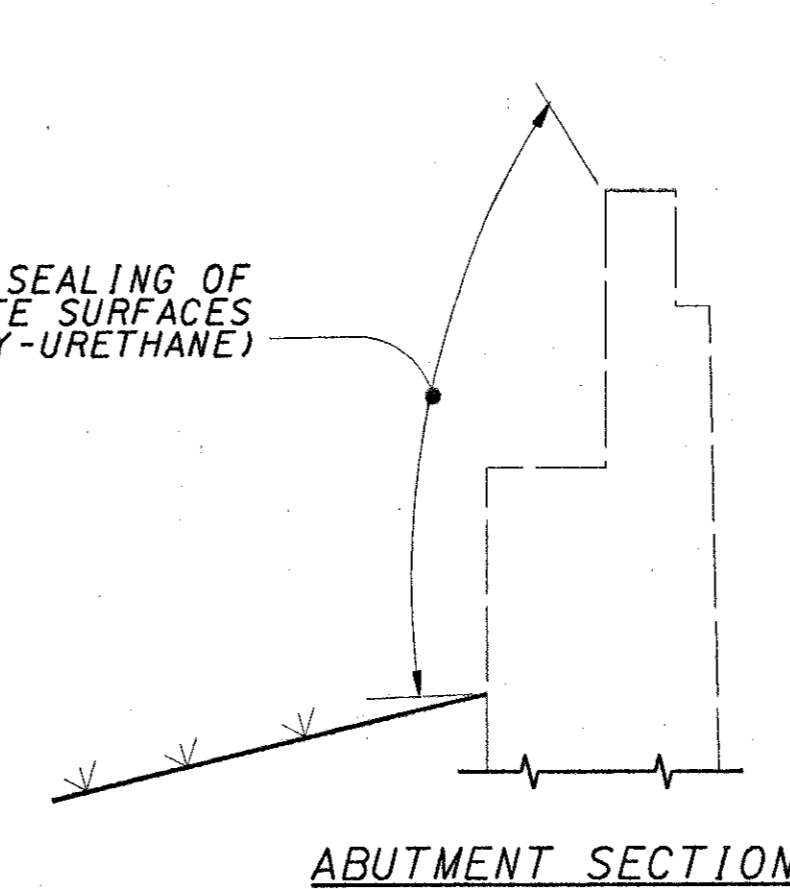
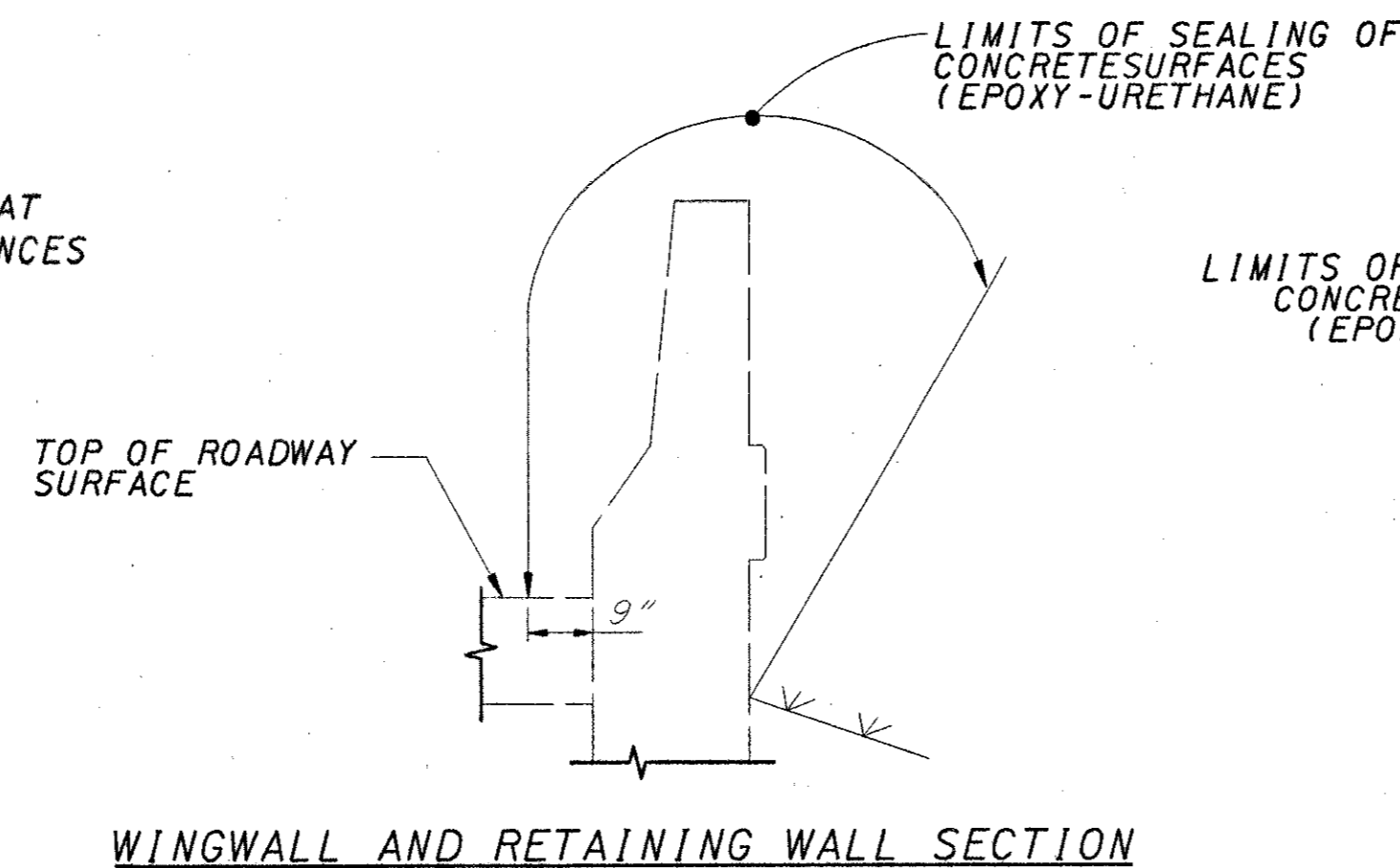
IN ADDITION TO SS 842.08, BACKWALL ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.

### ITEM 516-REFURBISHING BEARING DEVICES, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE BEARINGS AS WELL AS THEIR CLEANING AND PAINTING. INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, HAND TOOL CLEANING (GRINDING IF NECESSARY), PAINTING TO MATCH BRIDGE, REPLACEMENT OF ANY DAMAGED SHEET LEAD WITH PREFORMED BEARING PADS (711.21), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT. REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60° F, LUBRICATING SLIDING SURFACES, AND REASSEMBLY OF THE BEARINGS. THE CONTRACTOR SHALL ASSURE ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE 'FLOATING'. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER.

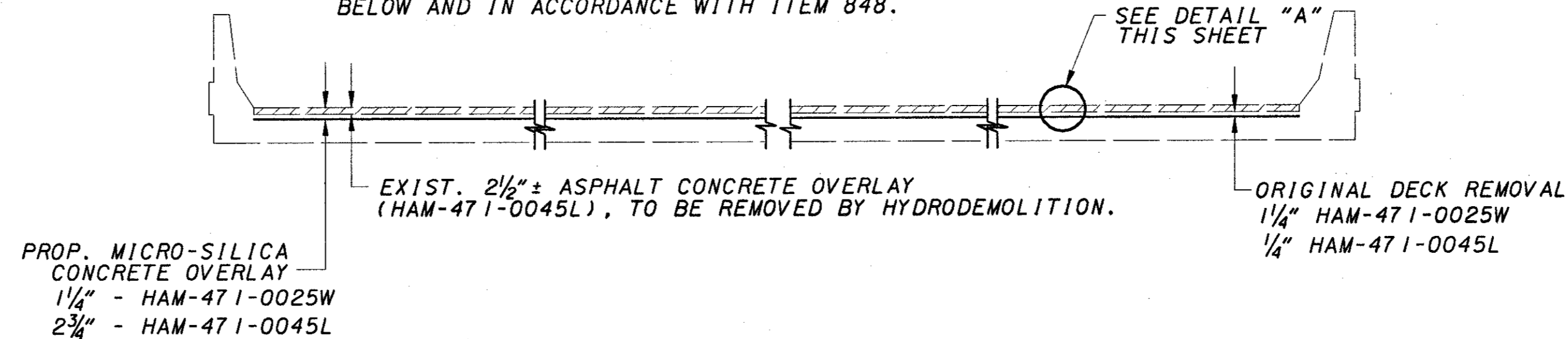
### SEALING OF CONCRETE SURFACES

THE CONCRETE SURFACES SHOULD BE SEALED AS FOLLOWS:  
 ABUTMENTS & WINGWALLS: ENTIRE LENGTH  
 PIERS: ALL EXPOSED SURFACES EXCEPT THE TOP OF PIER CAP  
 PARAPETS & MEDIAN BARRIERS: ENTIRE LENGTH OF THE BRIDGE

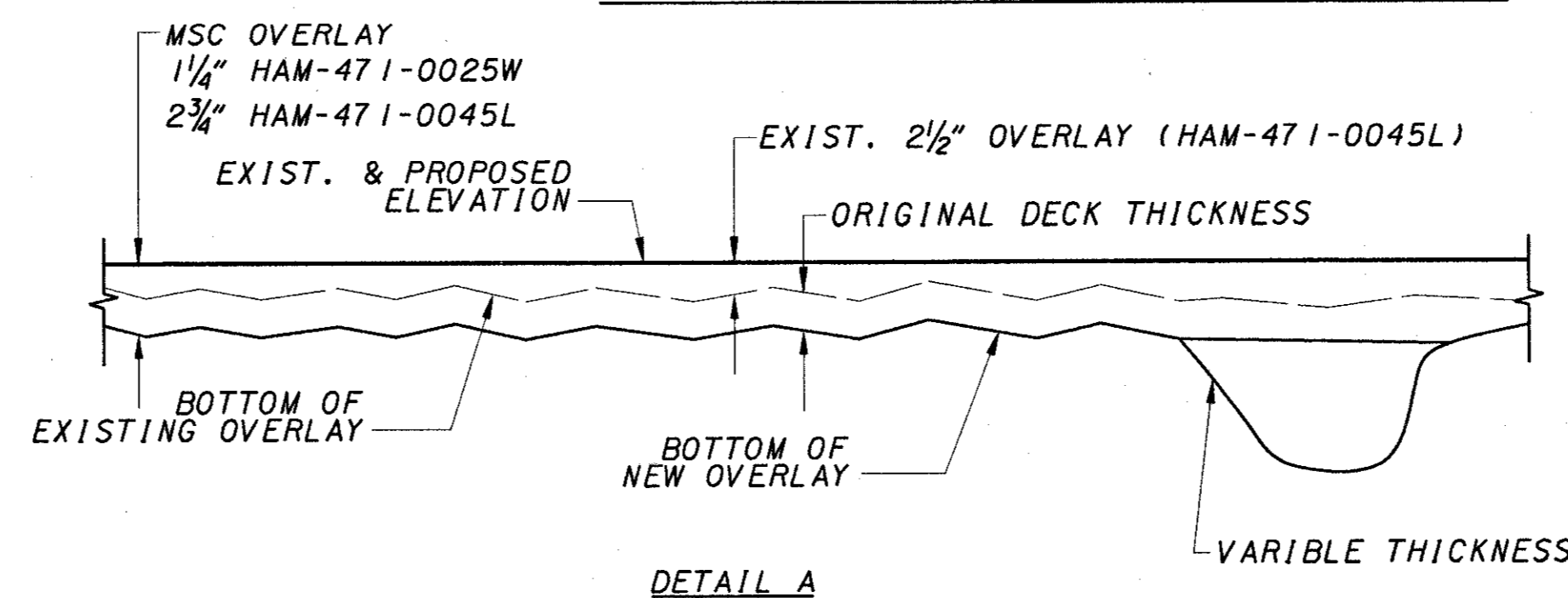


### MICRO-SILICA CONCRETE OVERLAY

EXISTING DECKS WILL BE OVERLAYED AS PER THE DETAILS SHOWN BELOW AND IN ACCORDANCE WITH ITEM 848.



### EXISTING & MODIFIED TYPICAL SECTION



### ABBREVIATIONS

ABUT.	-	ABUTMENT
APPR.	-	APPROACH
BOT.	-	BOTTOM
BRGS.	-	BEARINGS
CL.	-	CLEAR
CJ.	-	CONTROL JOINT
DIM.	-	DIMENSION
ELEV.	-	ELEVATION
EXP.	-	EXPANSION
EXIST.	-	EXISTING
LONG.	-	LONGITUDINAL
JT.	-	JOINT
MSC	-	MICRO SILICA CONCRETE
SPA.	-	SPACES
TBR.	-	TO BE REMOVED
TYP.	-	TYPICAL

DESIGN AGENCY: BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-0907 FAX

DATE: 8/2001

REVIEWED: ASB

STRUCTURE FILE NUMBER: 3103404 & 3117650

DRAWN: FIB

CHECKED: JEP

DESIGNED: JS

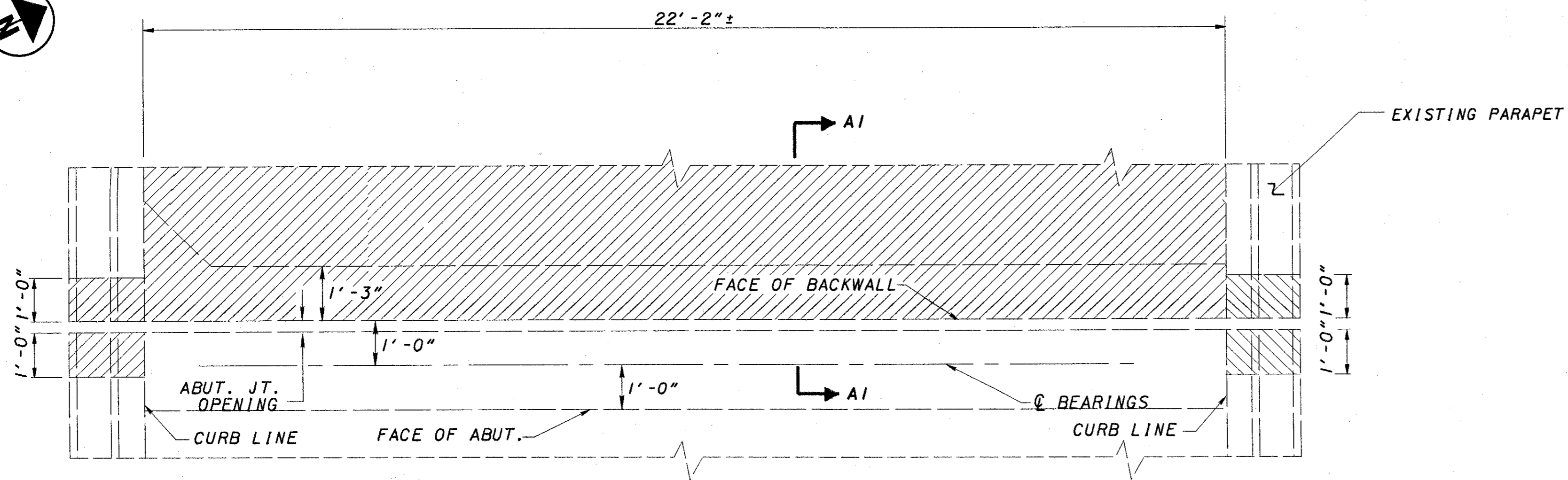
STRUCTURE GENERAL NOTES RAMP A & B (BRIDGE NO. HAM-471-0045L & HAM-471-0025W)

HAM-471-0.26

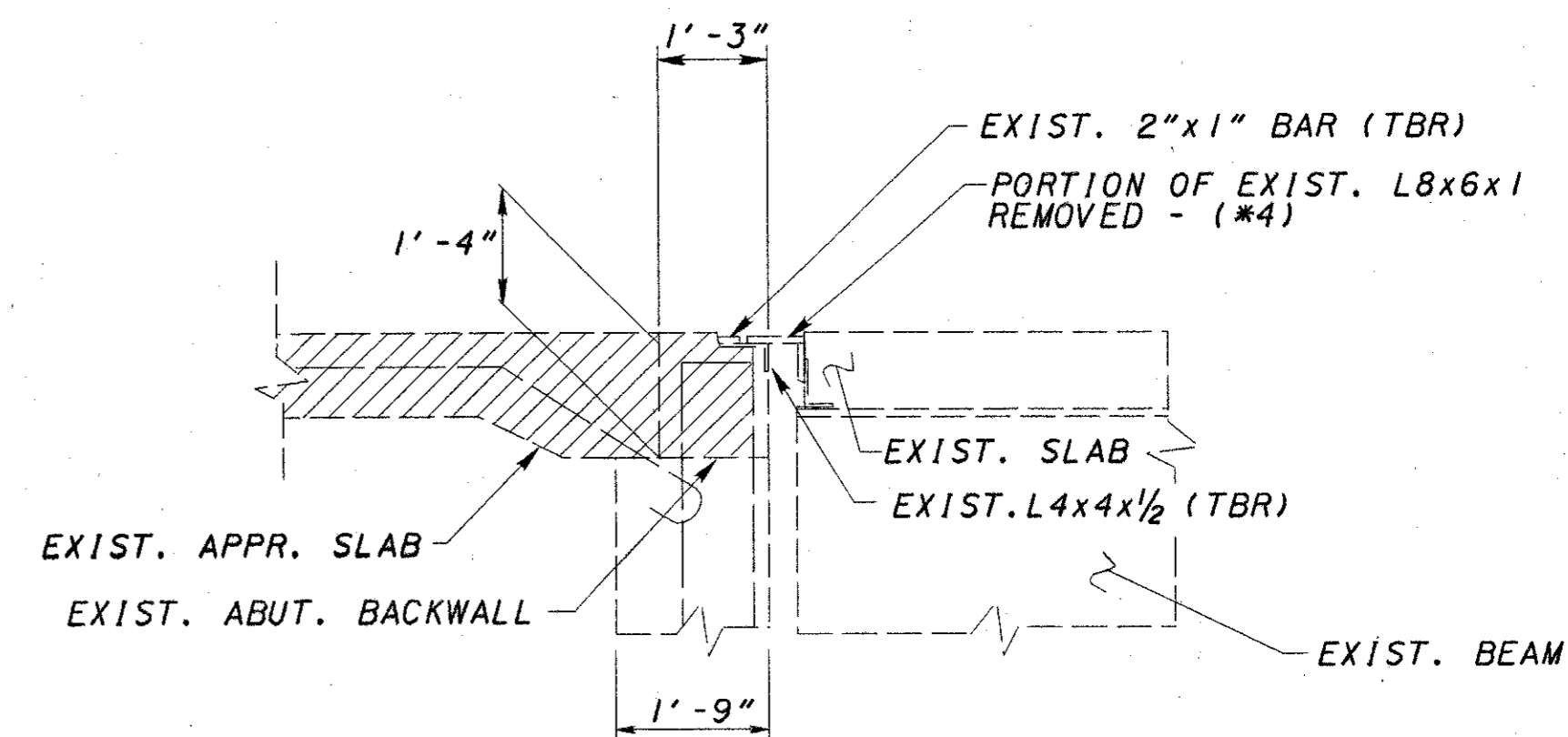
40/106

72/82



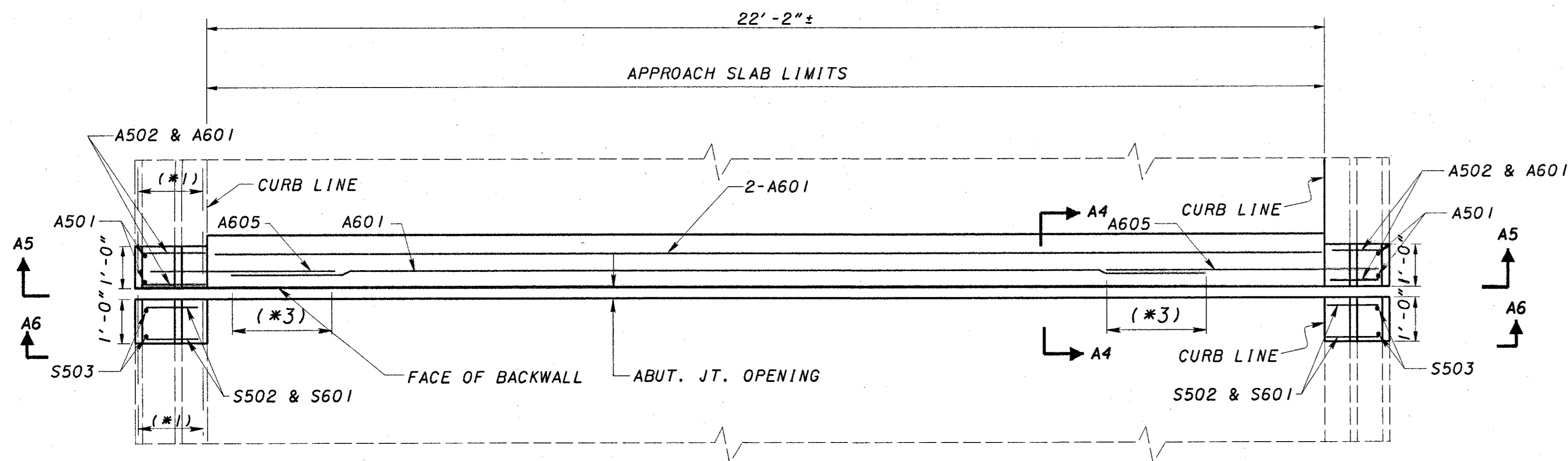


EXISTING ABUTMENT, DECK SLAB, PARAPET & APPROACH SLAB REMOVAL PLAN



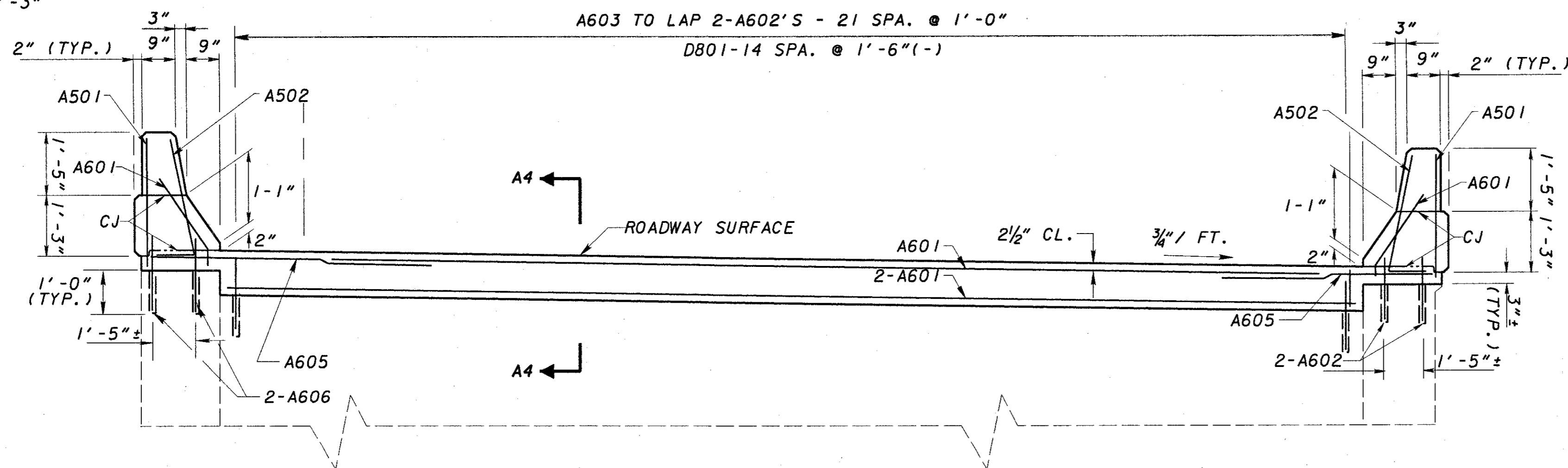
SECTION A1-A1

(\*4) REMOVE TOP PORTION OF ANGLE FLUSH WITH ORIGINAL CONCRETE DECK SLAB AFTER 1/4" OF HYDRO DEMOLITION.

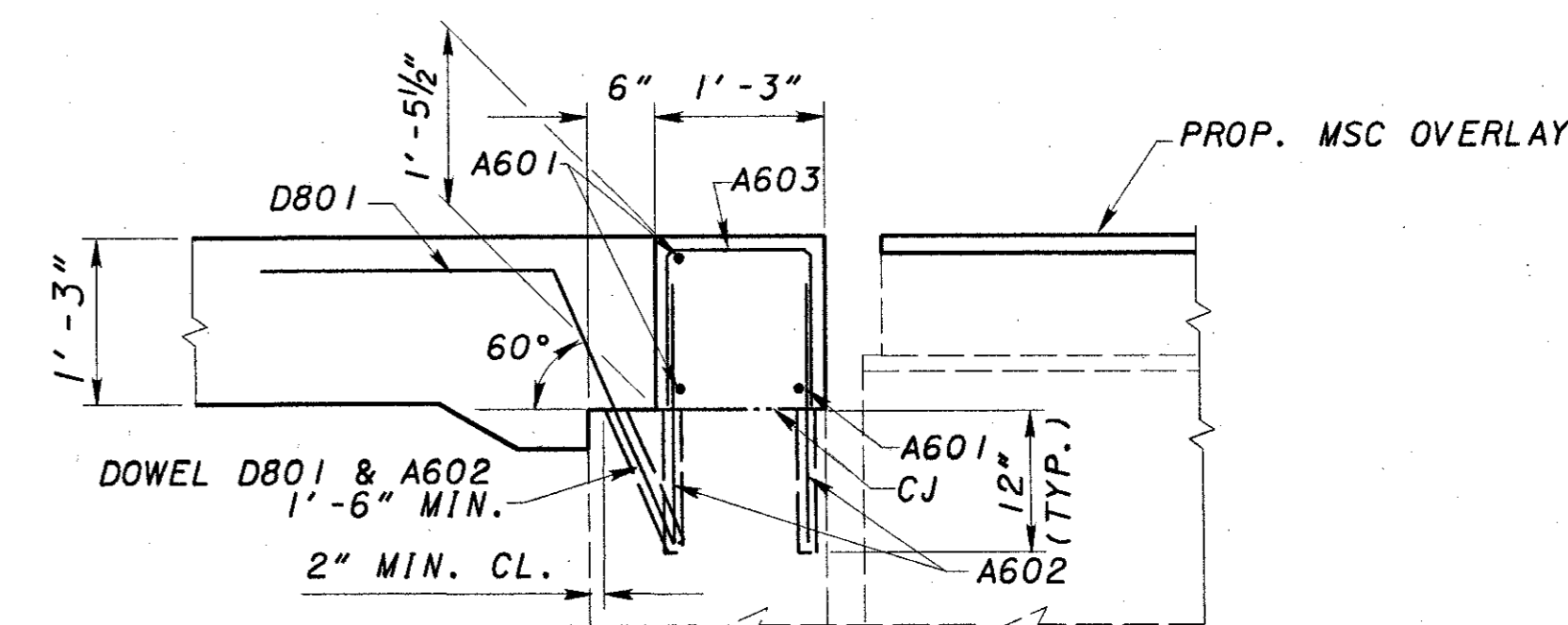


MODIFIED ABUTMENT, DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

- (\*1) EXIST. LONG. BARS TO REMAIN IN PARAPET
- (\*2) EXIST. DECK SLAB & PARAPET LONG. BARS PROTRUDE INTO NEW CONCRETE AREA
- (\*3) LAP LENGTHS
  - #5 BAR=2'-9"
  - #6 BAR=3'-3"



SECTION A5-A5



SECTION A4-A4

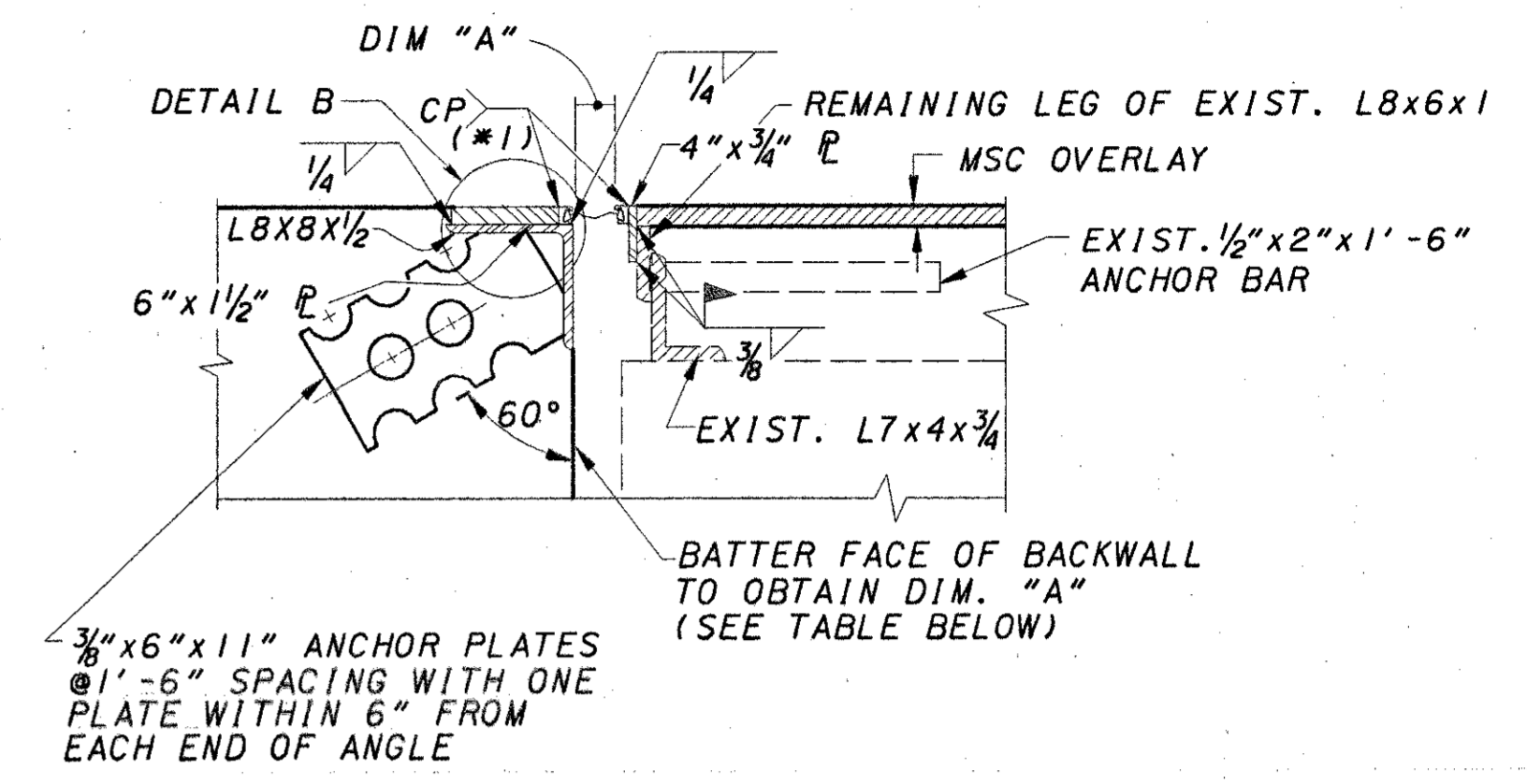
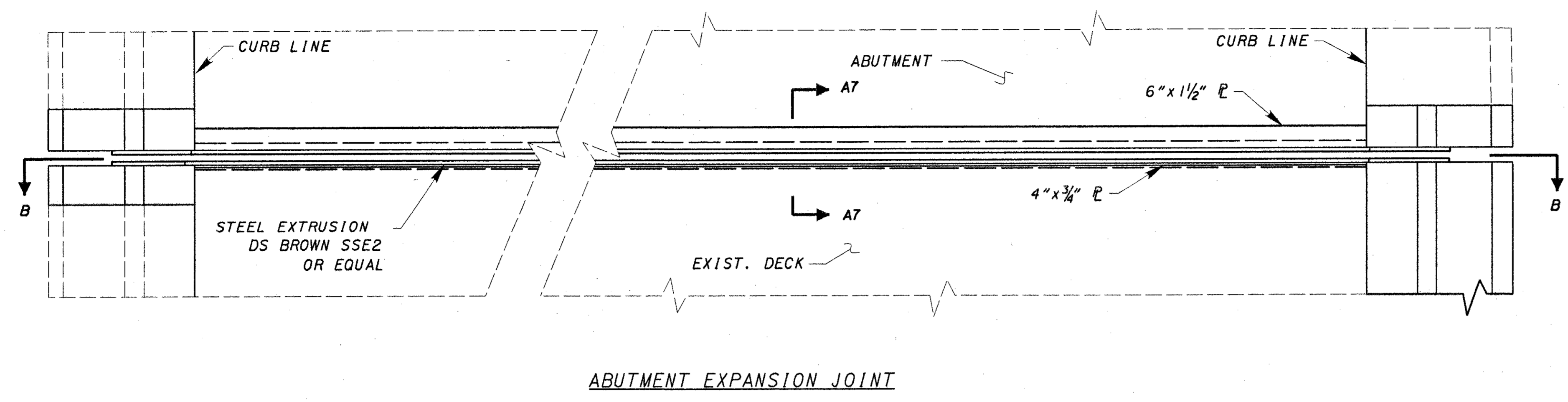
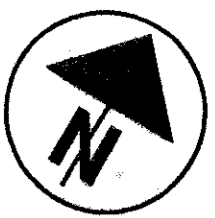
ALTERNATE TO BACKWALL CONSTRUCTION

PLANS SHOW THE PORTIONS OF BACKWALL REMOVAL BY SAWCUTTING AT APPROACH SLAB SEAL LEVEL (SECTION A1-A1) AND RECONSTRUCTING THE BACKWALL BY DOWELLING INTO THE REMAINING EXISTING BACKWALL AS PER THE DETAILS OF SECTION A4-A4. AS AN ALTERNATE TO DOWELLING IN NEW BARS, THE CONTRACTOR MAY CHOOSE TO PRESERVE THE EXIST. BARS (RUNNING THROUGH THE CONSTRUCTION JOINT) DURING THE REMOVAL OF THE BACKWALL CONCRETE. ANY BAR DAMAGED DURING THE CONCRETE REMOVAL SHALL BE REPLACED BY NEW BARS AS DETAILED IN SECTION A4-A4.

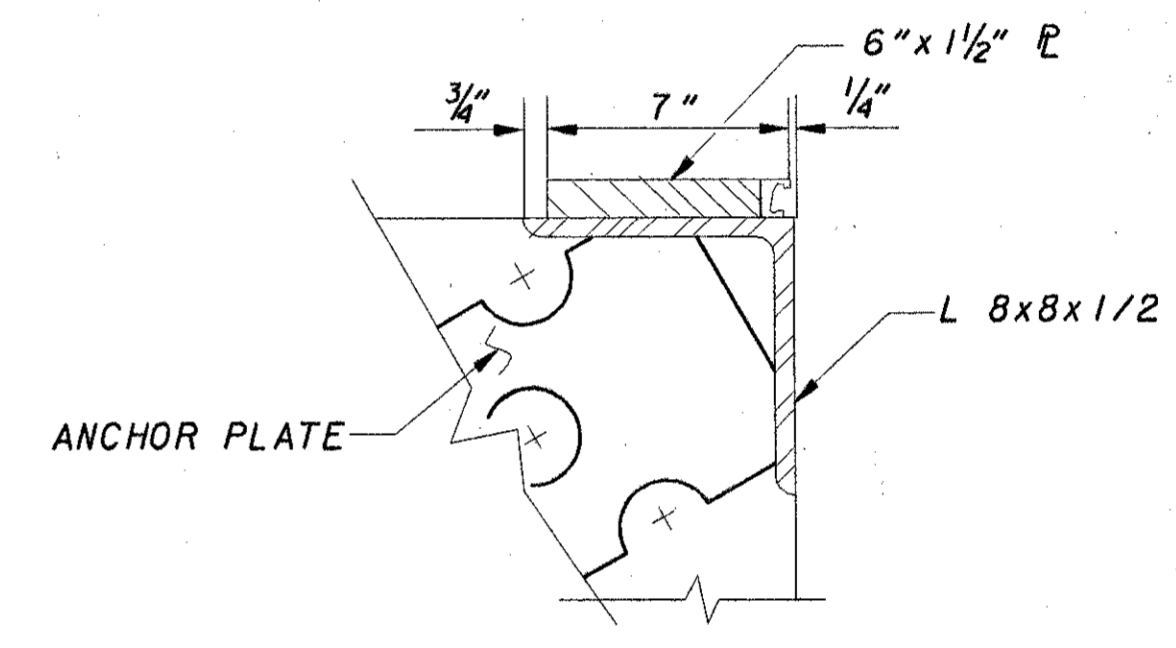
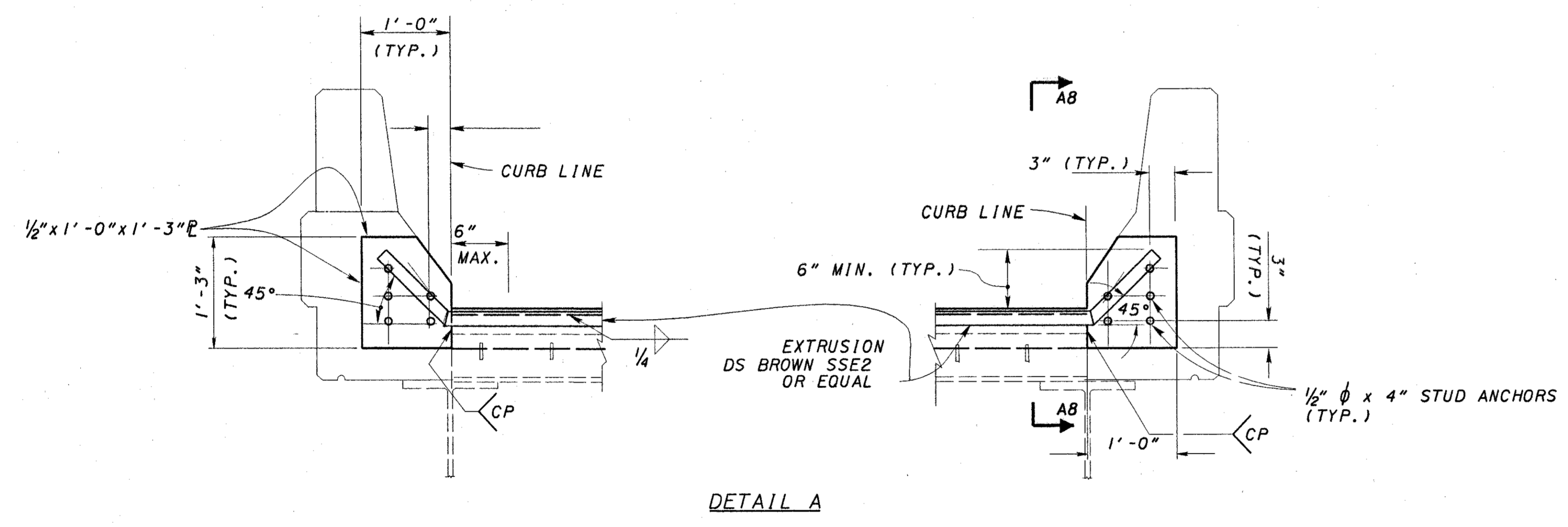
LEGEND

- CONCRETE REMOVAL

DESIGN AGENCY BARR ENGINEERING Five East Long Street Columbus, Ohio 43215 Ph: (614) 224-1941	DATE 8/2001	DESIGNED JEP	DRAWN FIB	REVIEWED KVB	STRUCTURE FILE NUMBER 3103404
REAR ABUTMENT EXPANSION JOINT DETAILS RAMP A. (BRIDGE NO. HAM-471-0025 W)					
HAM 471-0.26					
41/106					
73 182					



SECTION A7-A7  
NOTE:  
(\*1) - SHOP WELD

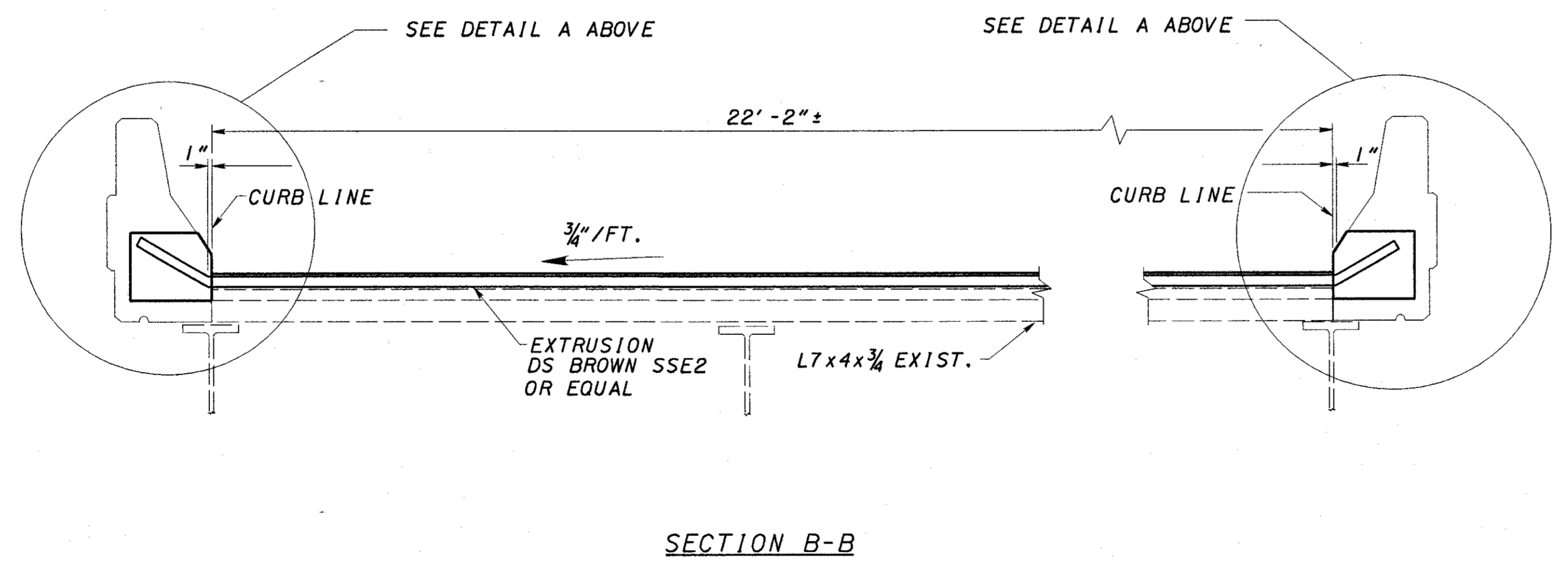


DETAIL B

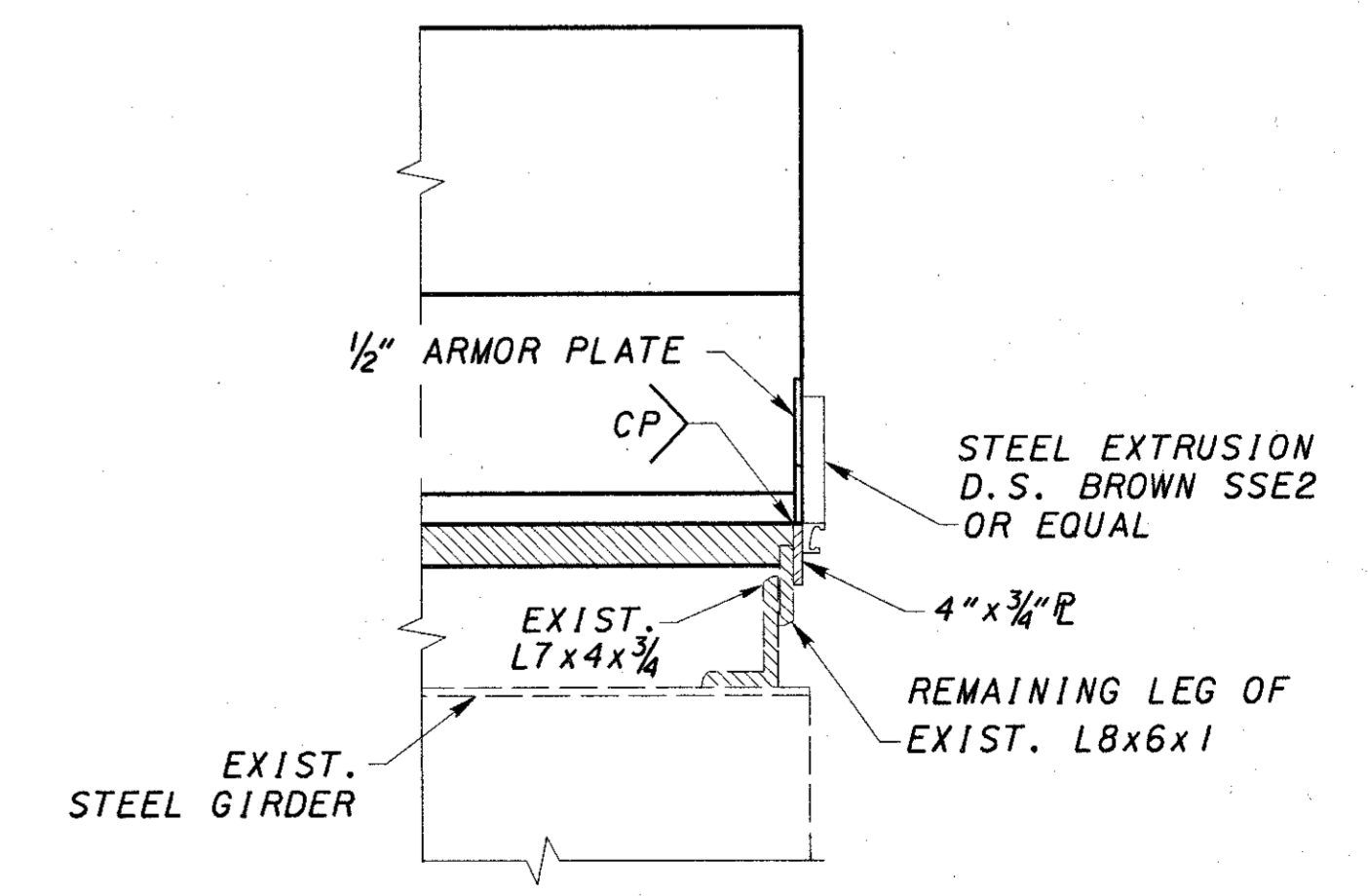
3" STRIP SEAL GLAND

TEMPERATURE (F)	DIMENSION "A"
30°	1 7/8"
40°	1 13/16"
50°	1 11/16"
60°	1 5/8"
70°	1 9/16"
80°	1 7/16"
90°	1 3/8"

EXPANSION LENGTH = 107'-0" ±



SECTION B-B



SECTION A8-A8

DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

DATE  
8/2001  
REVIEWED  
GEA  
STRUCTURE FILE NUMBER  
3103404

DESIGNED  
JEP  
CHECKED  
ASB

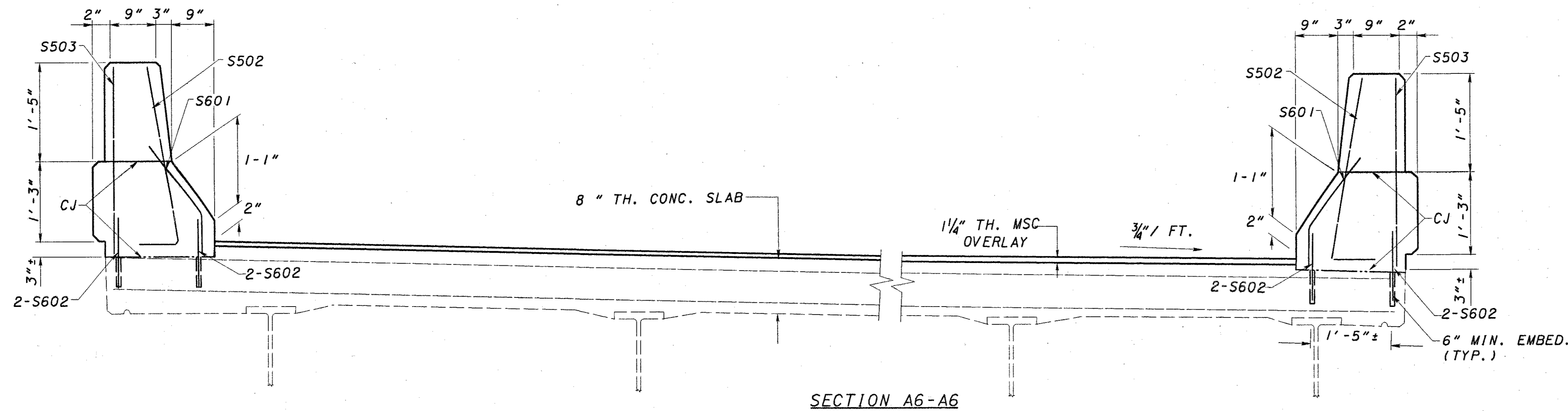
REAR ABUTMENT EXPANSION JOINT DETAILS  
RAMP A (BRIDGE NO. HAM-471-0025W)

HAM-471-0.26

42/106

74  
182

EXIST. LONG. REINFORCING BARS PROTRUDING INTO NEW SLAB & PARAPET CONCRETE NOT SHOWN

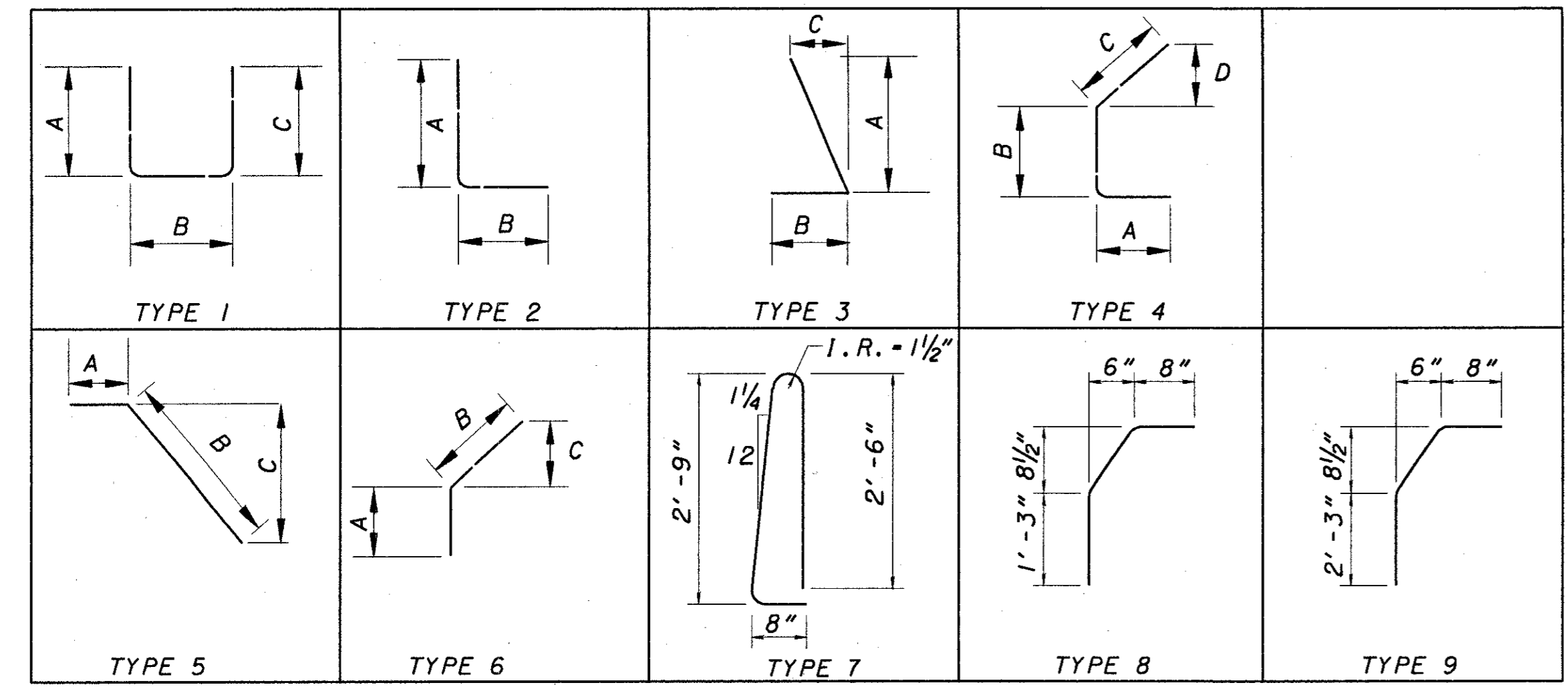


SECTION A6-A6

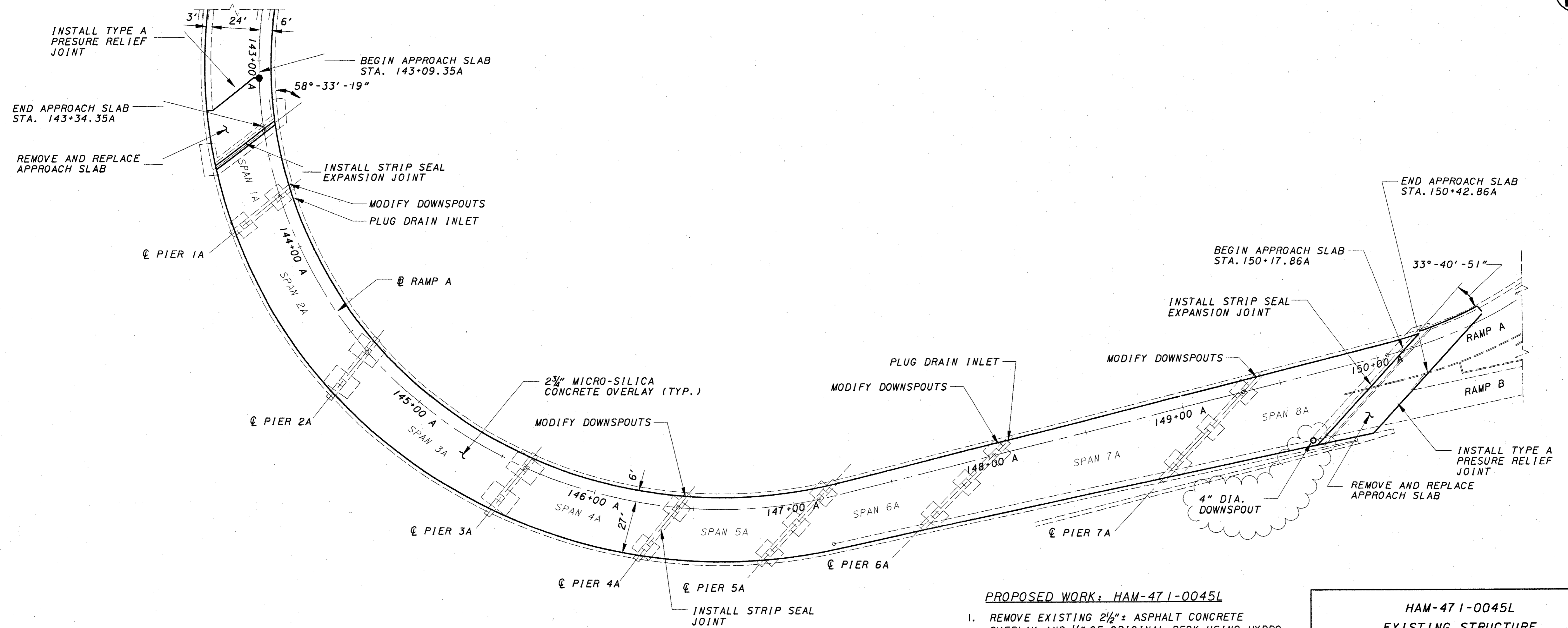
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
SUPERSTRUCTURE									
S502	4	3'-5"		3	2'-8"	10"	5"		
S503	4	2'-8"		STR					
S601	4	1'-10"		6	4"	1'-6"	1'-2"		
S602	8	1'-6"		STR					

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
ABUTMENT									
A501	4	2'-8"		STR					
A502	4	3'-5"		3	2'-8"	10"	5"		
A601	4	1'-10"		6	4"	1'-6"	1'-2"		
A602	52	2'-0"		STR					
A603	22	3'-0"		1	1'-2"	11"	1'-2"		
A605	2	5'-10"		STR					
D801	15	4'-3"		5	2'-0"	2'-3"	1'-11"		

BENDING DIAGRAMS



DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 Ph: (614) 224-1941  
 DATE: 8/2001  
 STRUCTURE FILE NUMBER: 3103404  
 REVIEWED: GEA  
 DRAWN: JEP  
 DESIGNED: JEP  
 CHECKED: ASB  
 REAR ABUTMENT EXPANSION JOINT DETAILS  
 RAMP A (BRIDGE NO. HAM-471-0025 W)  
 HAM-471-0.26  
 43/106  
 75/182



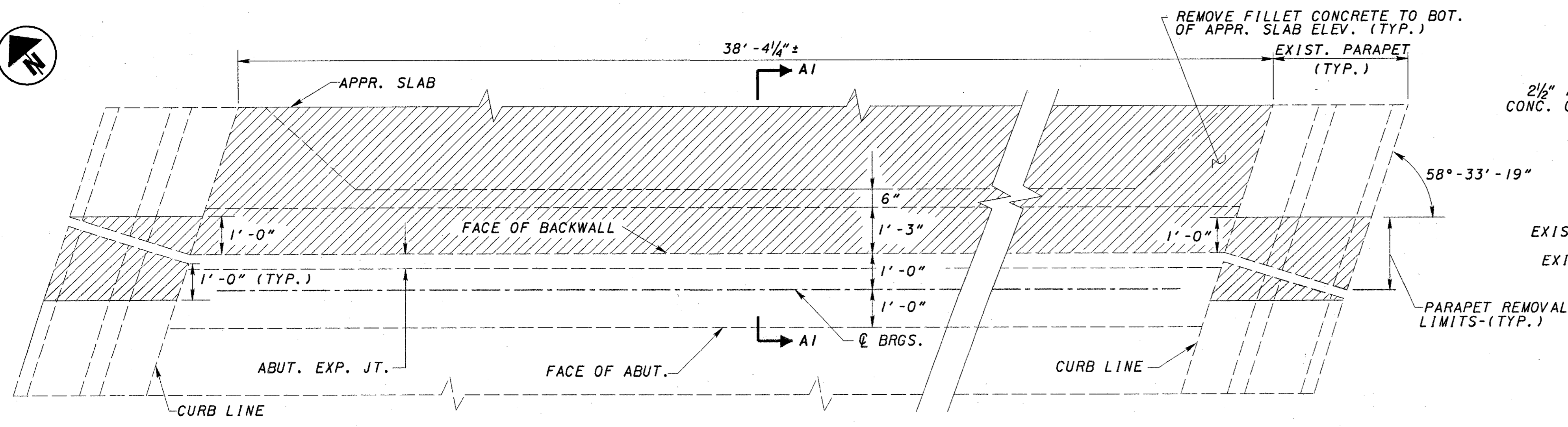
CURVE DATA HAM-471-0045L	
P.C. STA.	= 140+95.80 A
P.I. STA.	= 151+97.38 A
P.T. STA.	= 147+23.68 A
Δ	= 156°24'47"
D	= 24°54'40"
R	= 230.00'
L	= 627.88'
T	= 1101.57'

**PROPOSED WORK: HAM-471-0045L**

1. REMOVE EXISTING 2 1/2" ± ASPHALT CONCRETE OVERLAY AND 1/4" OF ORIGINAL DECK USING HYDRO DEMOLITION AND OVERLAY WITH 2 3/4" THICK MICRO-SILICA CONCRETE.
2. REMOVE AND REPLACE FULL WIDTH APPROACH SLABS AND INSTALL TYPE A PRESSURE RELIEF JOINTS AT EACH APPROACH.
3. CLEAN AND UNCLOG SCUPPERS. REMOVE DOWNSPOUT IN SPAN 5.
4. PAINT STRUCTURAL STEEL USING OZEU SYSTEM IN SPANS 1-5
5. SEAL CONCRETE SURFACES INCLUDING CONCRETE BARRIER & RETAINING WALLS FROM HAM-471-0025W TO HAM-471-0045L AS DESCRIBED IN THE GENERAL NOTES.
6. INSTALL STRIP STEEL JOINT AT PIER 4.
7. REPLACE WARNING CHEVRONS AND REFLECTORS MOUNTED ON THE BRIDGE RAILING WITH NEW SIGNS
8. REMOVE AND RECONSTRUCT REAR ABUTMENT BACKWALL DOWN TO APPROACH SLAB SEAT AND INSTALL NEW STRIP SEAL JOINT.
9. REFURBISH ALL ABUTMENT BEARINGS
10. REPLACE DETERIORATED DIAGONAL AND HORIZONTAL CROSSFRAME MEMBERS WITH L4x4x5/16 TO MATCH THE EXIST. LOCATION AND LENGTH OF MEMBERS IN BAY 2 AT THE FORWARD ABUTMENT.
11. UPGRADE THE BRIDGE TERMINAL ASSEMBLY TO A TYPE 2 AT THE RIGHT REAR WINGWALL, SEE PLAN VIEW OF RAMP A.
12. PROVIDE CONCRETE BARRIER PROTECTION AT PIER 1.

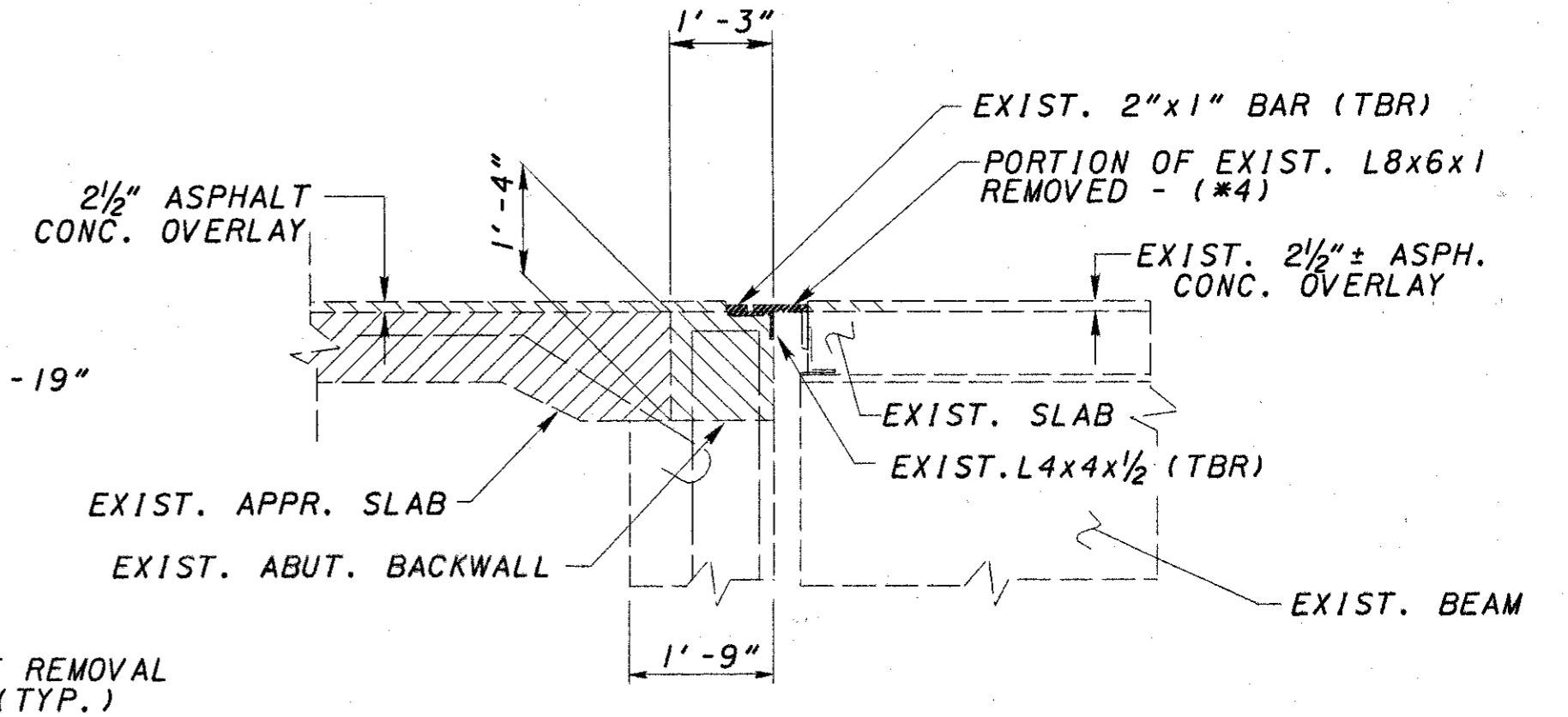
(IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN THE SEQUENTIAL ORDER LISTED.)

HAM-471-0045L EXISTING STRUCTURE																					
TYPE: CONTINUOUS STEEL PLATE GIRDERS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE																					
ROADWAY: VARIES 33'-0" F/F CURBS (MIN.)																					
SKEW: VARIES, (SEE PLAN)																					
SURFACE COURSE: 2 1/2" ASPHALT CONCRETE																					
LIVE LOADING: HS 20-44 AND THE INTERSTATE ALTERNATE LOADING																					
APPROACH SLABS: AS-1-67 (25'-0" LONG)																					
ALIGNMENT: VARIES (SEE PLAN)																					
SUPERELEVATION: VARIES (SEE PLAN)																					
<table border="1"> <thead> <tr> <th colspan="2">TABLE OF SPAN LENGTHS</th> </tr> <tr> <th>SPAN</th> <th>LENGTH</th> </tr> </thead> <tbody> <tr><td>1</td><td>35.0'</td></tr> <tr><td>2</td><td>91.0'</td></tr> <tr><td>3</td><td>100.0'</td></tr> <tr><td>4</td><td>79.31'</td></tr> <tr><td>5</td><td>70.19'</td></tr> <tr><td>6</td><td>90.0'</td></tr> <tr><td>7</td><td>128.5'</td></tr> <tr><td>8</td><td>82.5'</td></tr> </tbody> </table>		TABLE OF SPAN LENGTHS		SPAN	LENGTH	1	35.0'	2	91.0'	3	100.0'	4	79.31'	5	70.19'	6	90.0'	7	128.5'	8	82.5'
TABLE OF SPAN LENGTHS																					
SPAN	LENGTH																				
1	35.0'																				
2	91.0'																				
3	100.0'																				
4	79.31'																				
5	70.19'																				
6	90.0'																				
7	128.5'																				
8	82.5'																				
PROPOSED STRUCTURE																					
SAME AS EXISTING EXCEPT AS FOLLOWS:																					
APPROACH SLABS: AS-1-81																					
WEARING SURFACE: 2 3/4" MICRO-SILICA CONCRETE																					



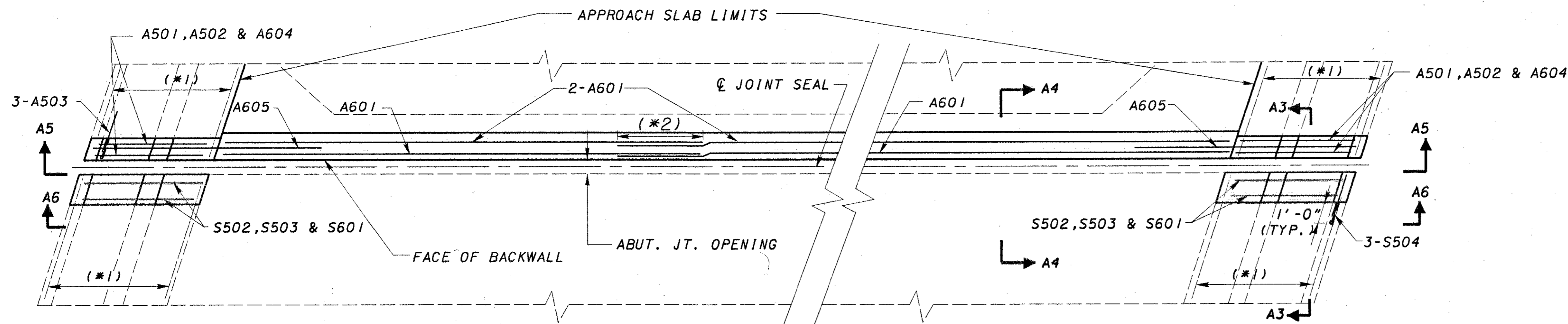
EXISTING ABUTMENT, DECK SLAB, PARAPET & APPROACH SLAB REMOVAL PLAN

PRESERVE ALL LONG. REINFORCING BARS IN PARAPETS & DECK SLAB



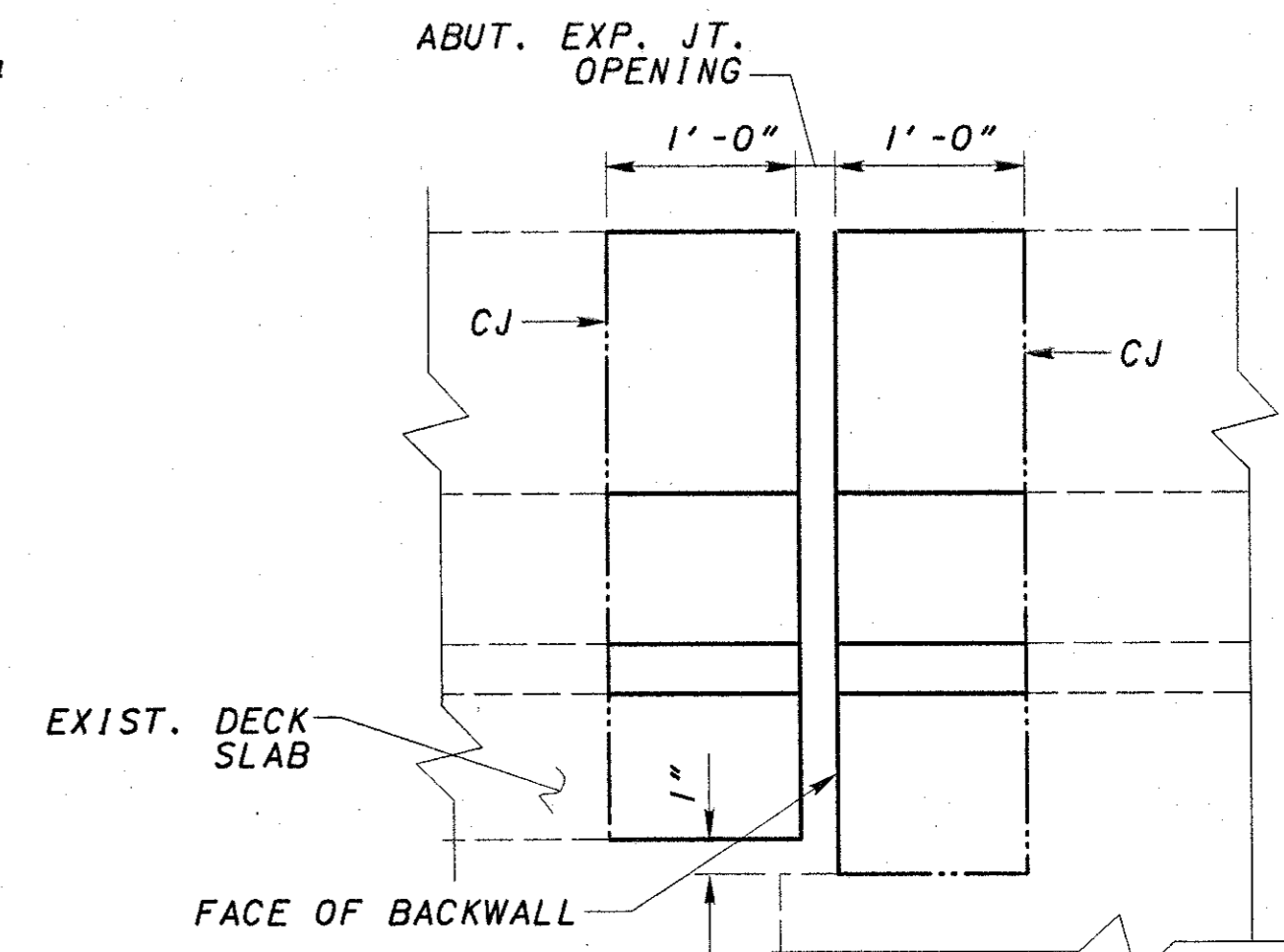
SECTION A1-A1

(#4) REMOVE TOP PORTION OF ANGLE FLUSH WITH ORIGINAL CONCRETE DECK SLAB

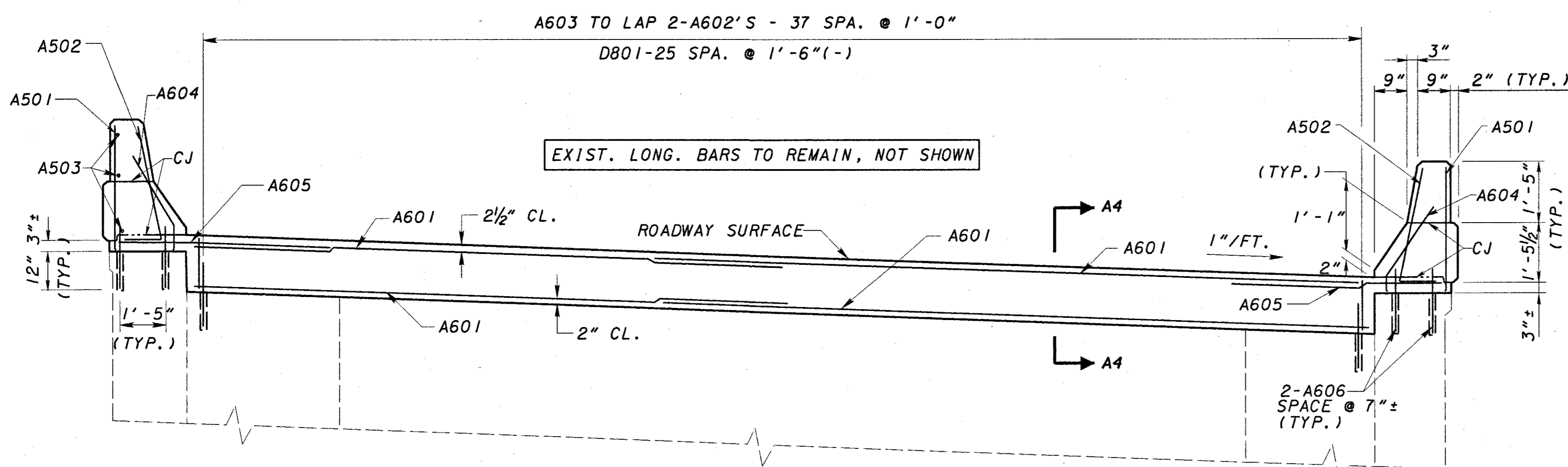


MODIFIED ABUTMENT, DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

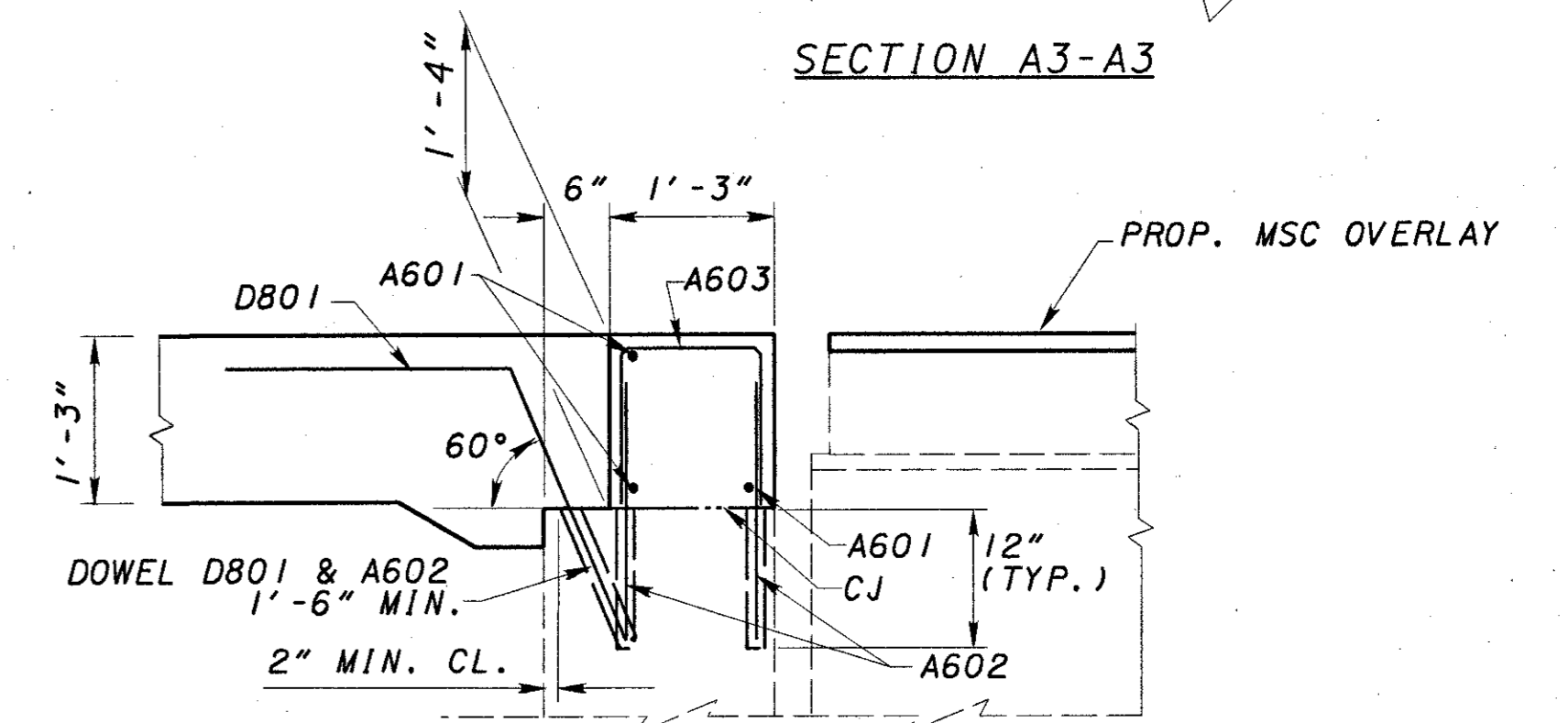
- (\*1) EXIST. LONG. BARS TO REMAIN IN PARAPET
- (\*2) LAP LENGTHS
- #5 BAR=2'-9"
- #6 BAR=3'-3"



SECTION A3-A3



SECTION A5-A5

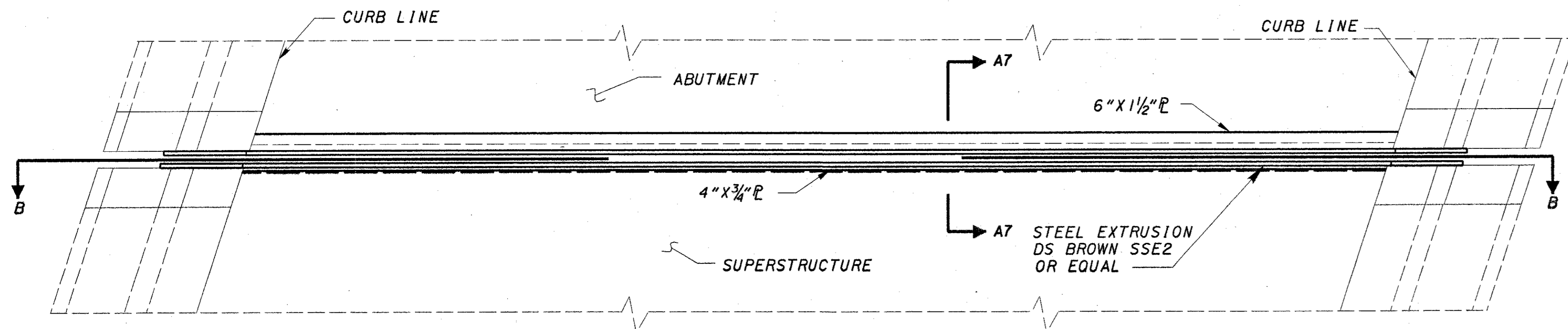
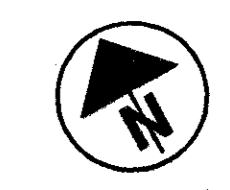


SECTION A4-A4

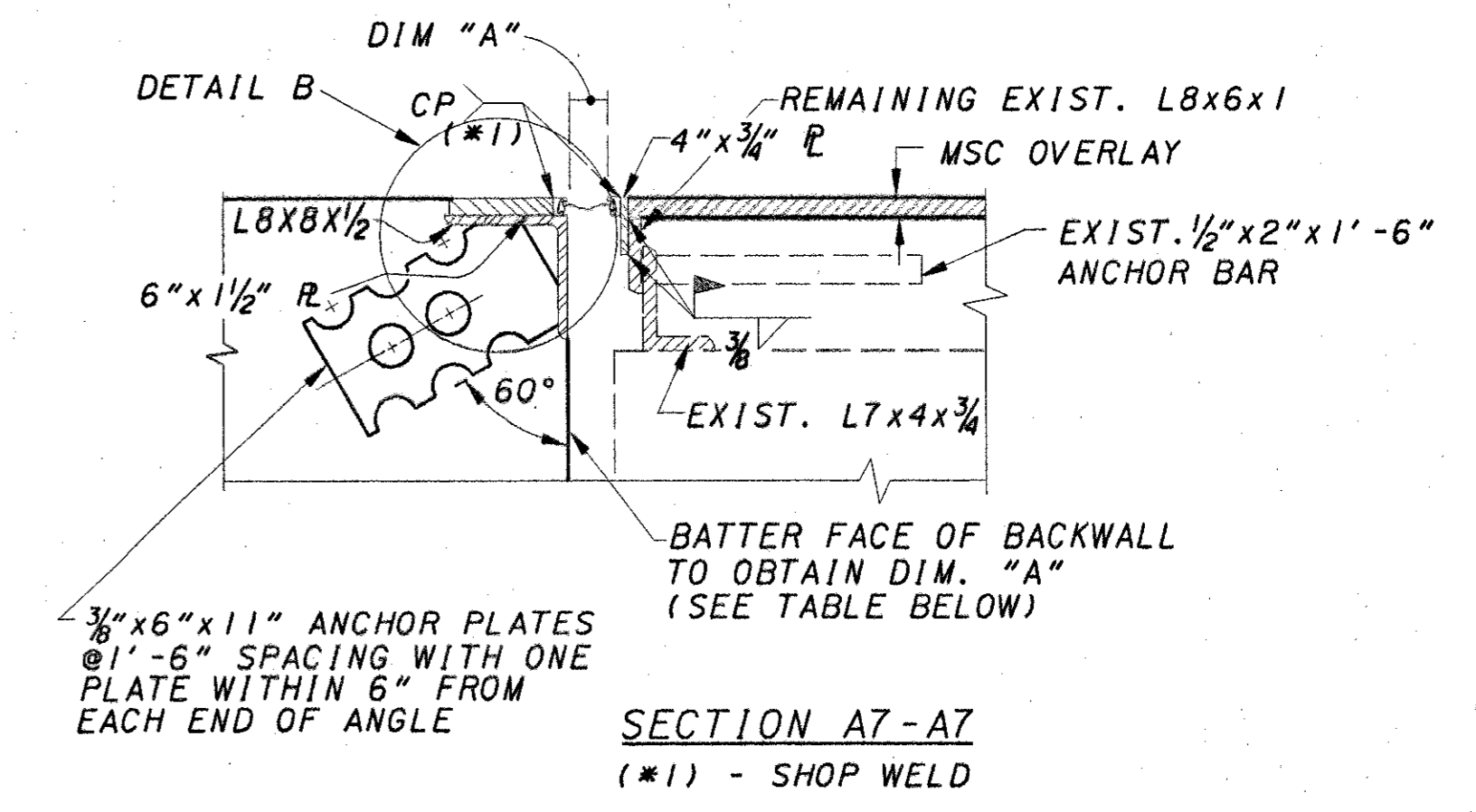
ALTERNATE TO BACKWALL CONSTRUCTION  
 PLANS SHOW THE PORTIONS OF BACKWALL REMOVAL BY SAWCUTTING AT APPROACH SLAB SEAL LEVEL (SECTION A1-A1) AND RECONSTRUCTING THE BACKWALL BY DOWELLING INTO THE REMAINING EXISTING BACKWALL AS PER THE DETAILS OF SECTION A4-A4. AS AN ALTERNATE TO DOWELLING IN NEW BARS, THE CONTRACTOR MAY CHOOSE TO PRESERVE THE EXIST. BARS (RUNNING THROUGH THE CONSTRUCTION JOINT) DURING THE REMOVAL OF THE BACKWALL CONCRETE. ANY BAR DAMAGED DURING THE CONCRETE REMOVAL SHALL BE REPLACED BY NEW BARS AS DETAILED IN SECTION A4-A4.

LEGEND

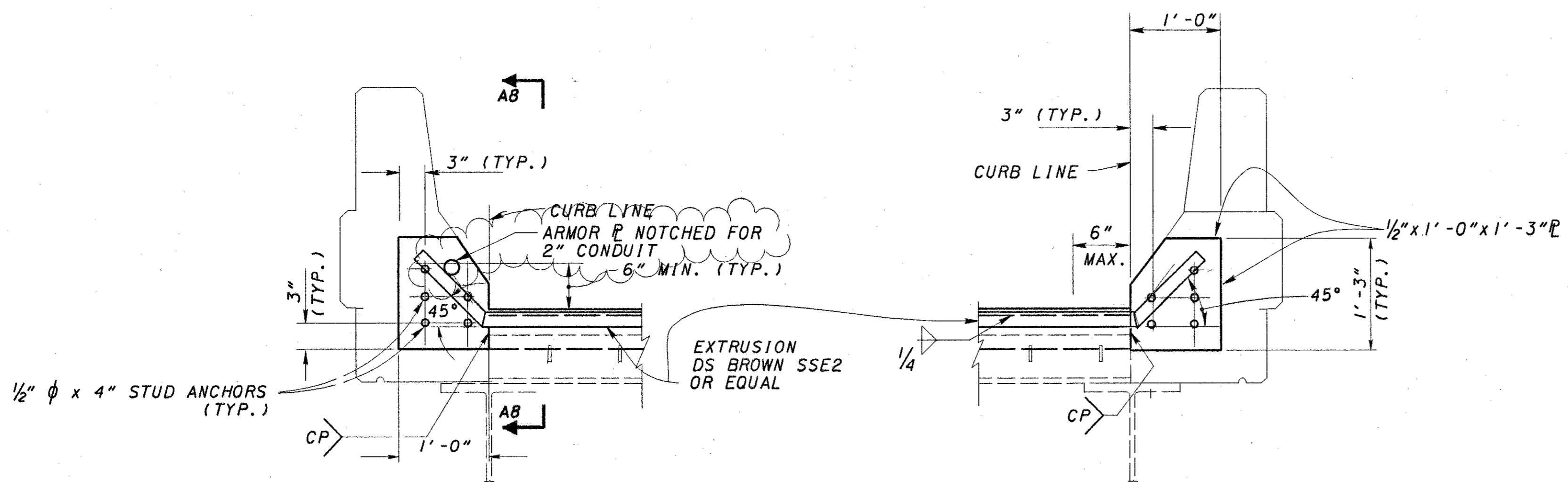
- CONCRETE REMOVAL



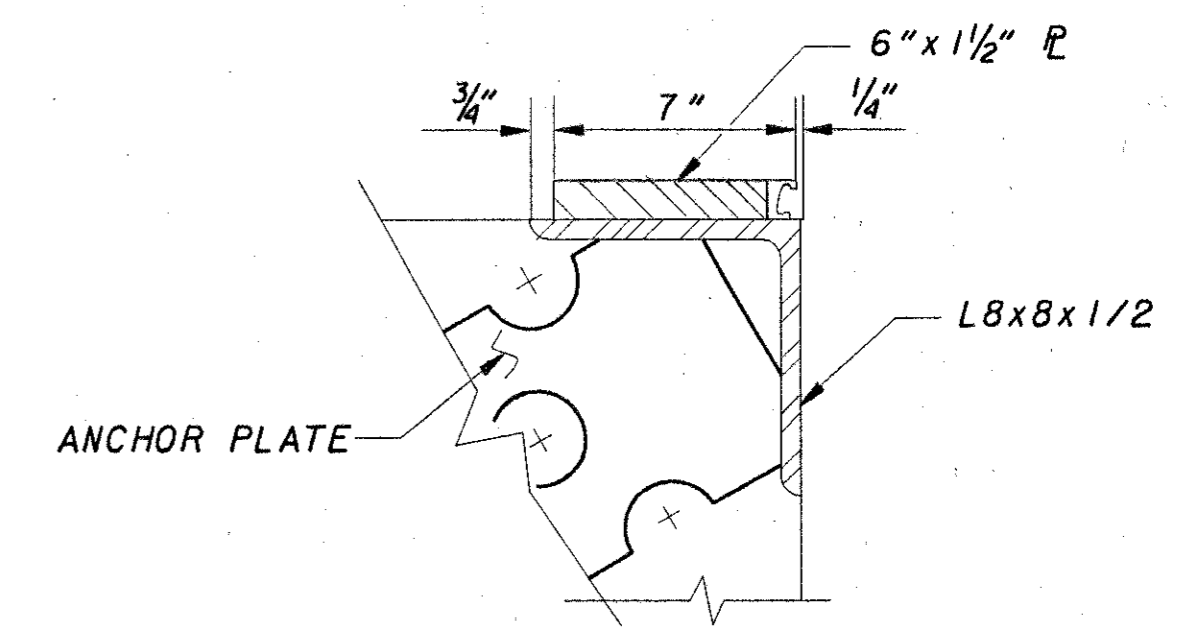
ABUTMENT EXPANSION JOINT



SECTION A7-A7  
(#1) - SHOP WELD



DETAIL A

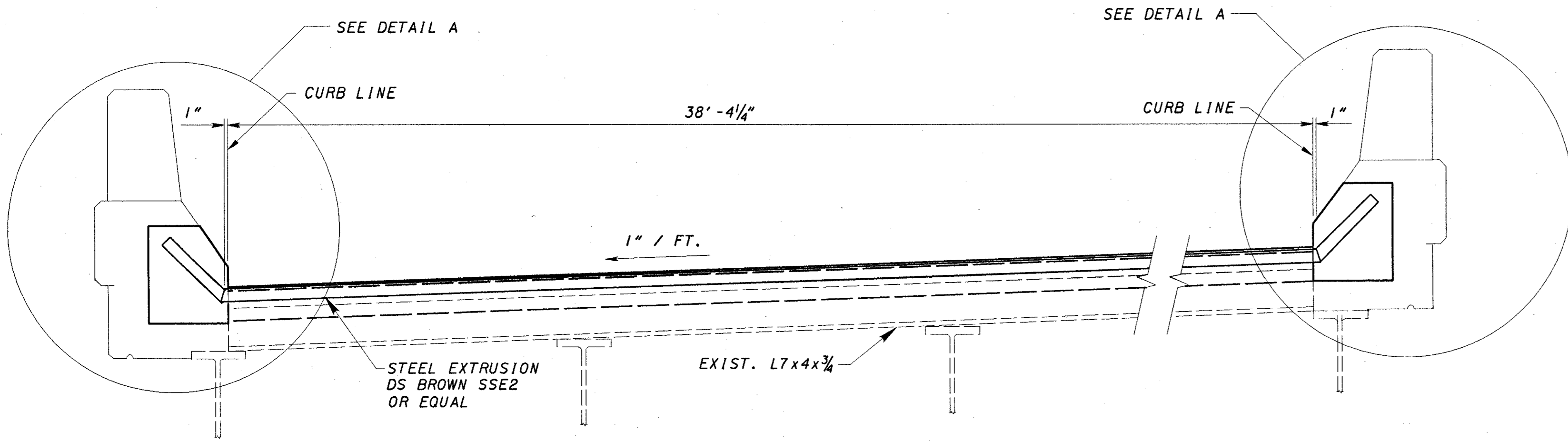


DETAIL B

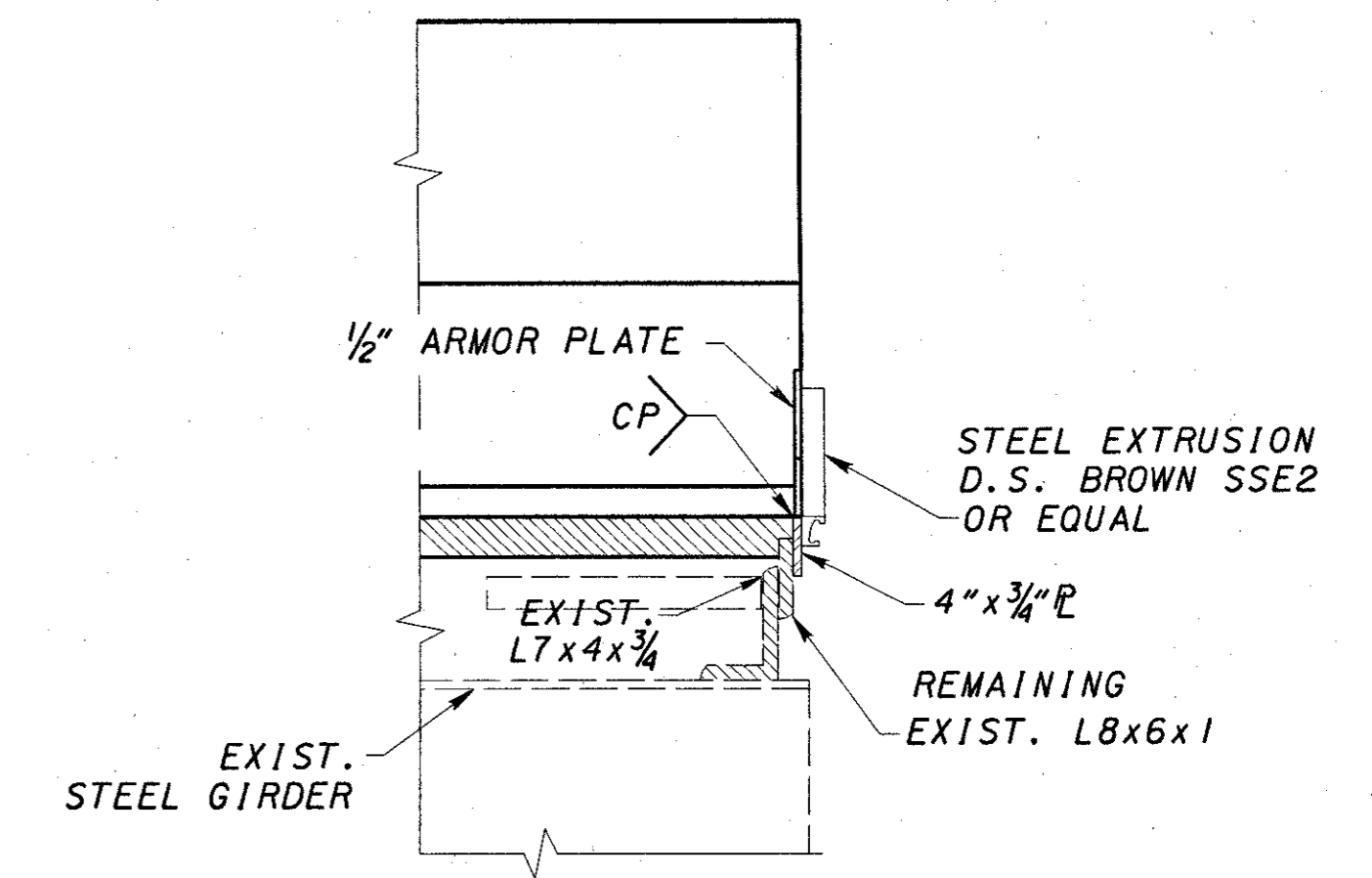
3" STRIP SEAL GLAND

TEMPERATURE (F)	DIMENSION "A"
30°	1 3/16"
40°	1 3/8"
50°	1 3/4"
60°	1 11/16"
70°	1 11/8"
80°	1 5/8"
90°	1 5/4"

EXPANSION LENGTH = 35' - 0" ±



SECTION B-B



SECTION A8-A8

NOTES  
REFER TO STD. DWG. EXJ-4-87  
FOR DETAILS NOT SHOWN

DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

DATE  
8/2001  
REVIEWED  
GEA  
STRUCTURE FILE NUMBER  
3117650

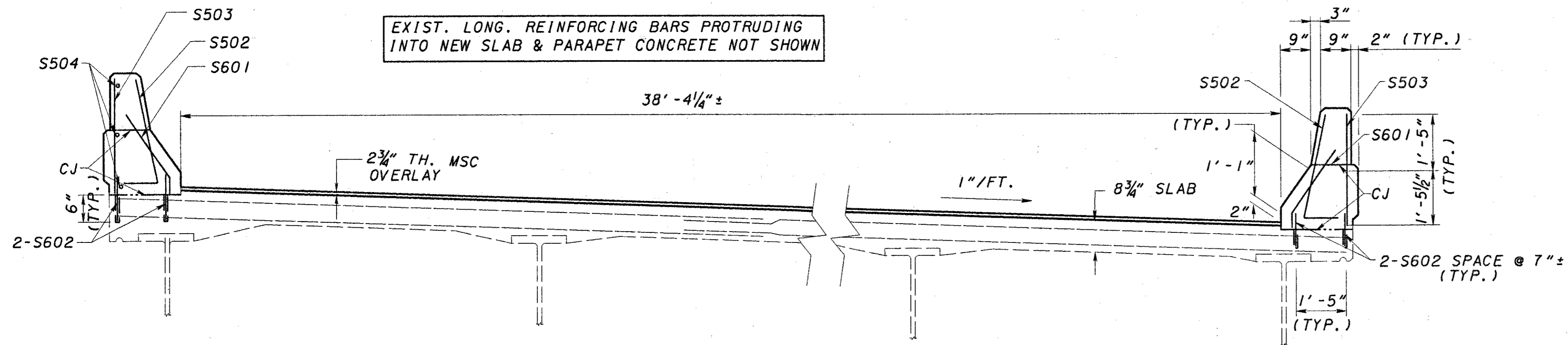
DESIGNED  
JEP  
CHECKED  
ASB

REAR ABUTMENT EXPANSION JOINT DETAILS  
RAMP A (BRIDGE NO. HAM-471-0045L)

HAM 471-0.26

46/106

78  
182



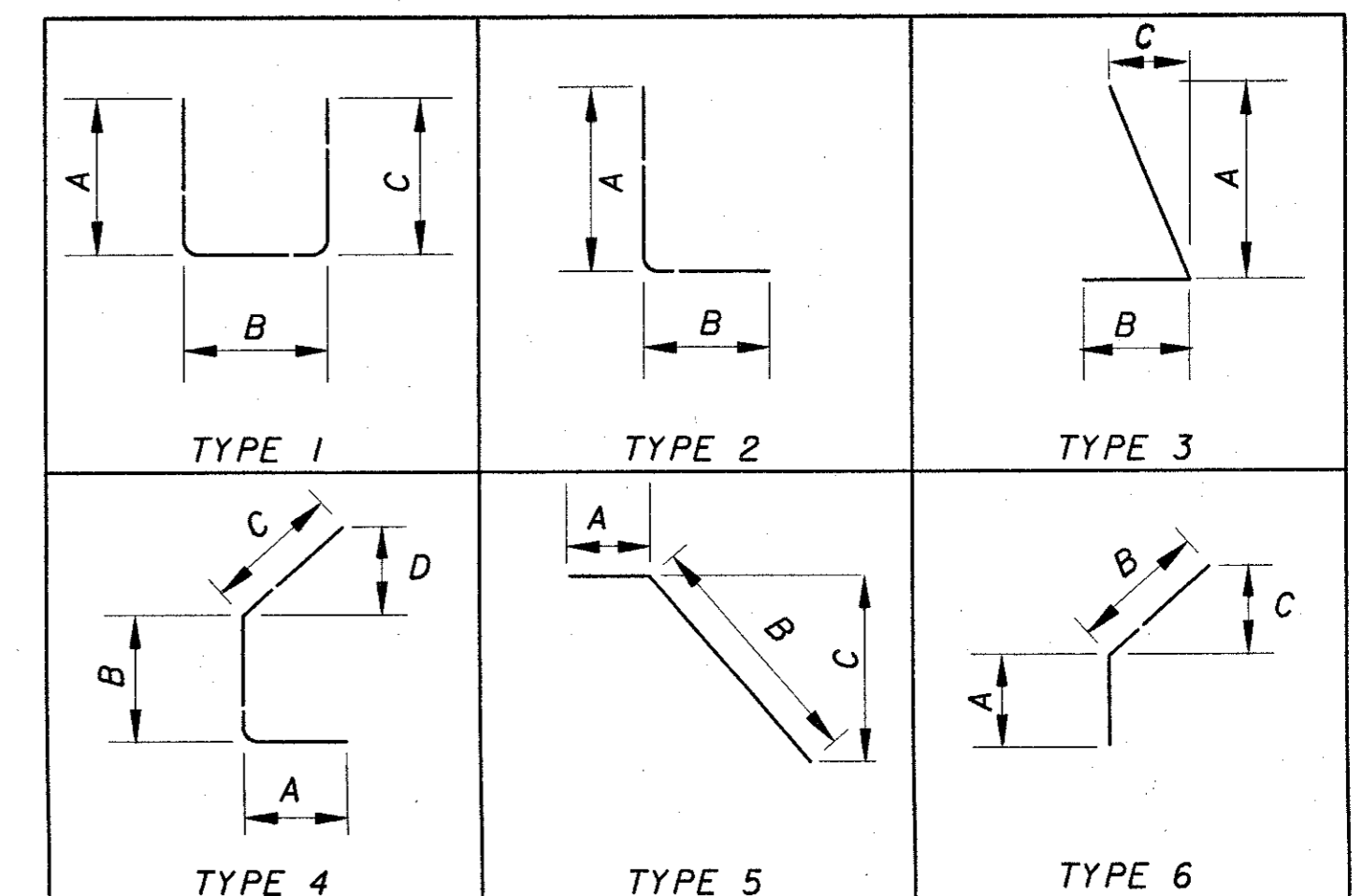
SECTION A6-A6

REINFORCING STEEL LIST

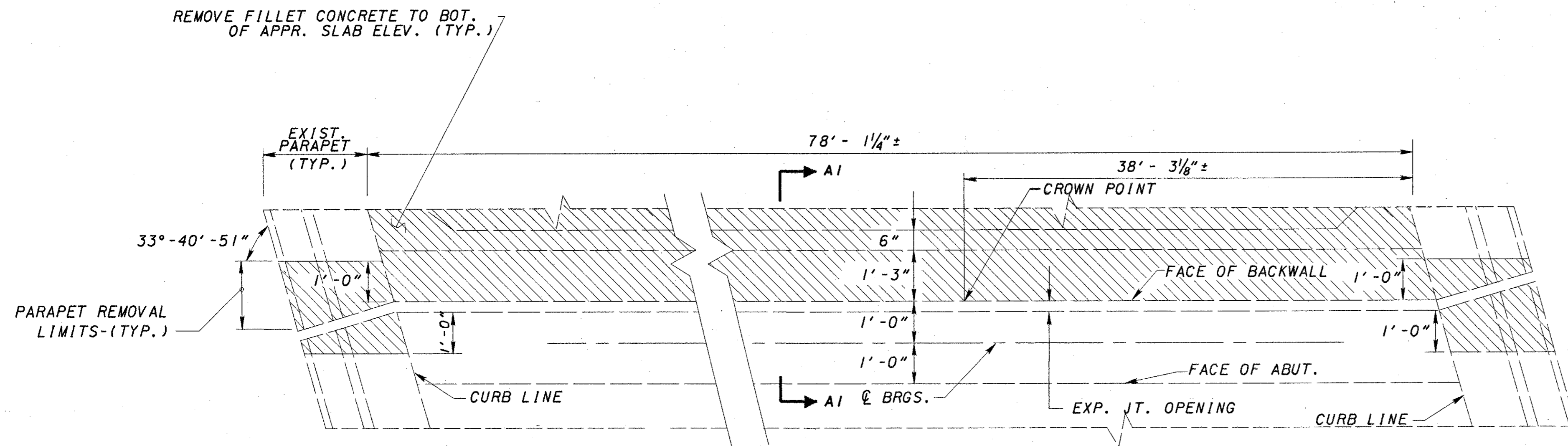
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
<b>ABUTMENT</b>									
A501	4	2'-4"		STR					
A502	4	3'-3"		3	2'-6"	10"	4"		
A503	3	1'-10"		STR					
A601	6	22'-3"		STR					
A602	82	1'-6"		STR					
A603	38	2'-10"		1	1'-2"	10"	1'-2"		
A604	4	1'-10"		6	4"	1'-6"	1'-2"	1'-7"	
A605	2	5'-10"		STR					
D801	26	3'-8"		5	1'-6"	2'-3"	1'-10"		

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
<b>SUPERSTRUCTURE</b>									
S502	4	3'-3"		3	2'-6"	10"	2"		
S503	4	2'-4"		STR					
S504	3	1'-10"		STR					
S601	4	1'-10"		6	4"	1'-6"	1'-2"		
S602	8	1'-6"		STR					

BENDING DIAGRAMS

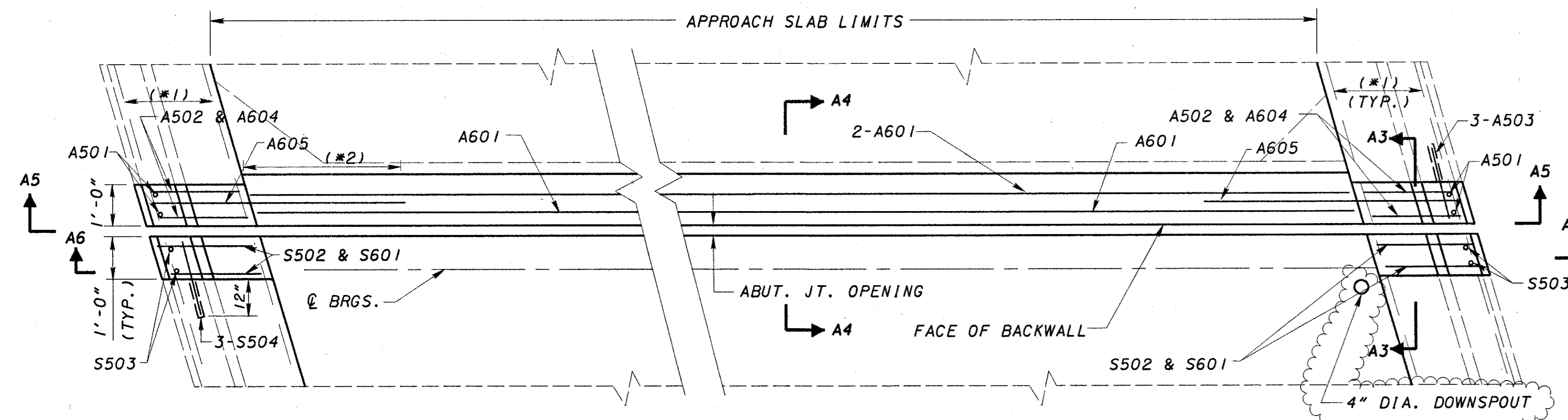


DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 Ph: (614) 224-1941  
 DATE: 8/2001  
 REVISED: GEA  
 STRUCTURE FILE NUMBER: 3117650  
 DRAWN: JEP  
 CHECKED: ASB  
 DESIGNED: JEP  
 REAR ABUTMENT EXPANSION JOINT DETAILS  
 RAMP A (BRIDGE NO. HAM-471-0045L)  
 HAM-471-0.26  
 47/106  
 79/182



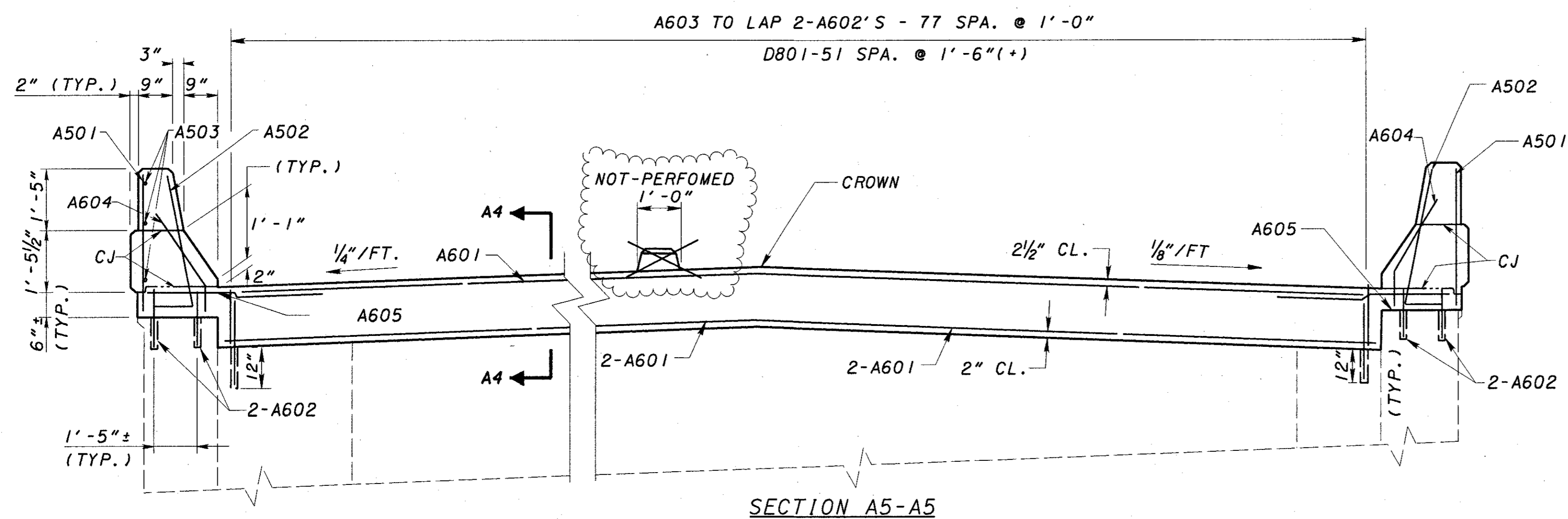
EXISTING ABUTMENT, DECK SLAB, PARAPET & APPROACH SLAB REMOVAL PLAN

PRESERVE ALL LONG. REINFORCING BARS IN PARAPETS & DECK SLAB

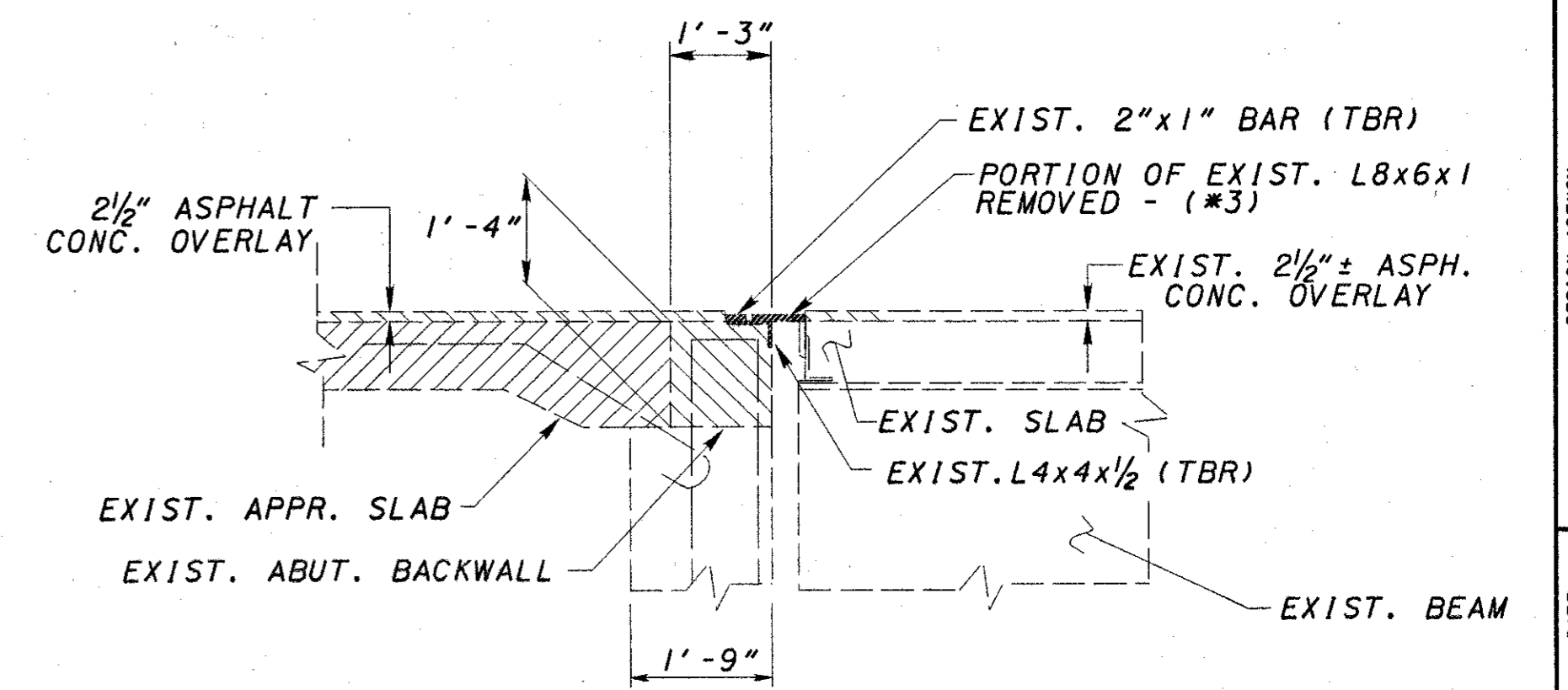


- (\*1) EXIST. LONG. BARS TO REMAIN IN PARAPET
- (\*2) LAP LENGTHS
  - #5 BAR-2'-9"
  - #6 BAR-3'-3"

MODIFIED ABUTMENT, DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

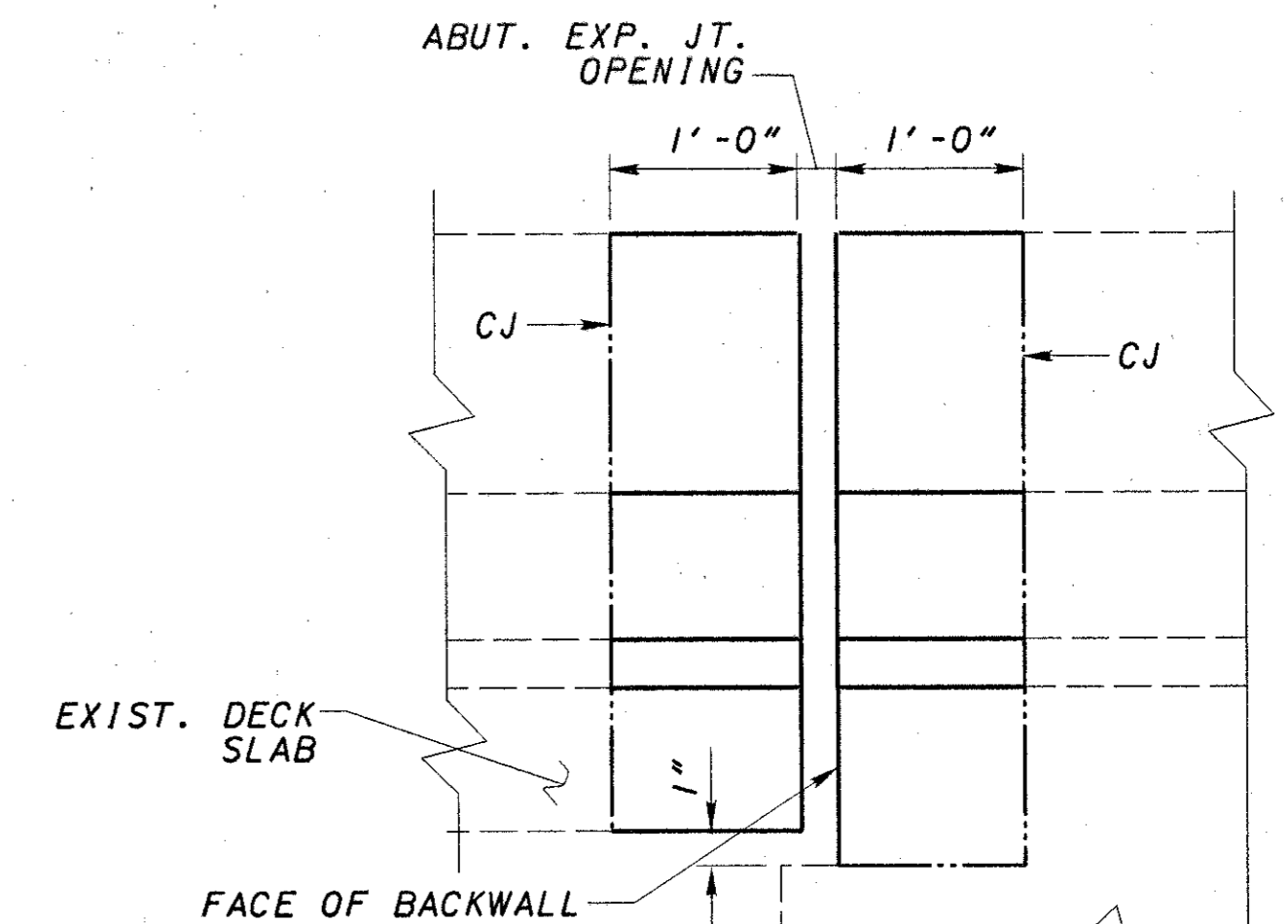


SECTION A5-A5

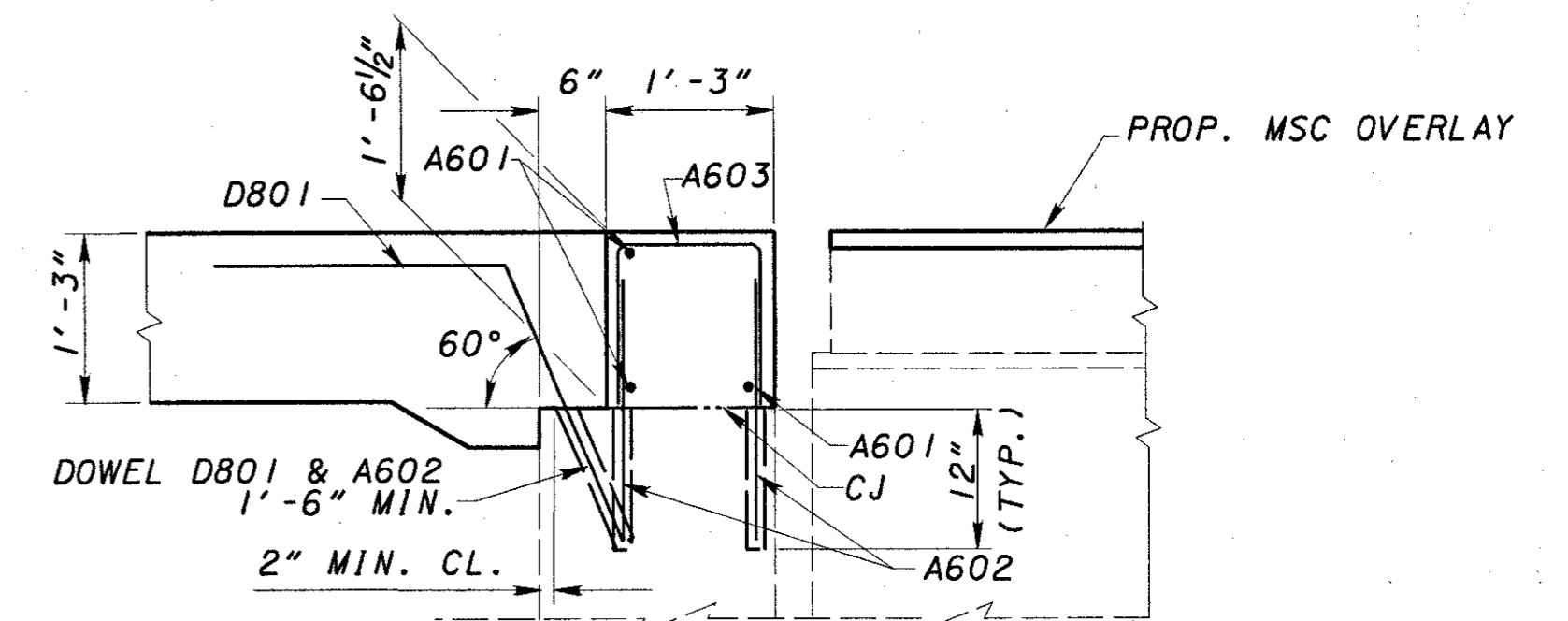


SECTION A1-A1

(\*3) REMOVE TOP PORTION OF ANGLE FLUSH WITH ORIGINAL CONCRETE DECK SLAB



SECTION A3-A3



SECTION A4-A4

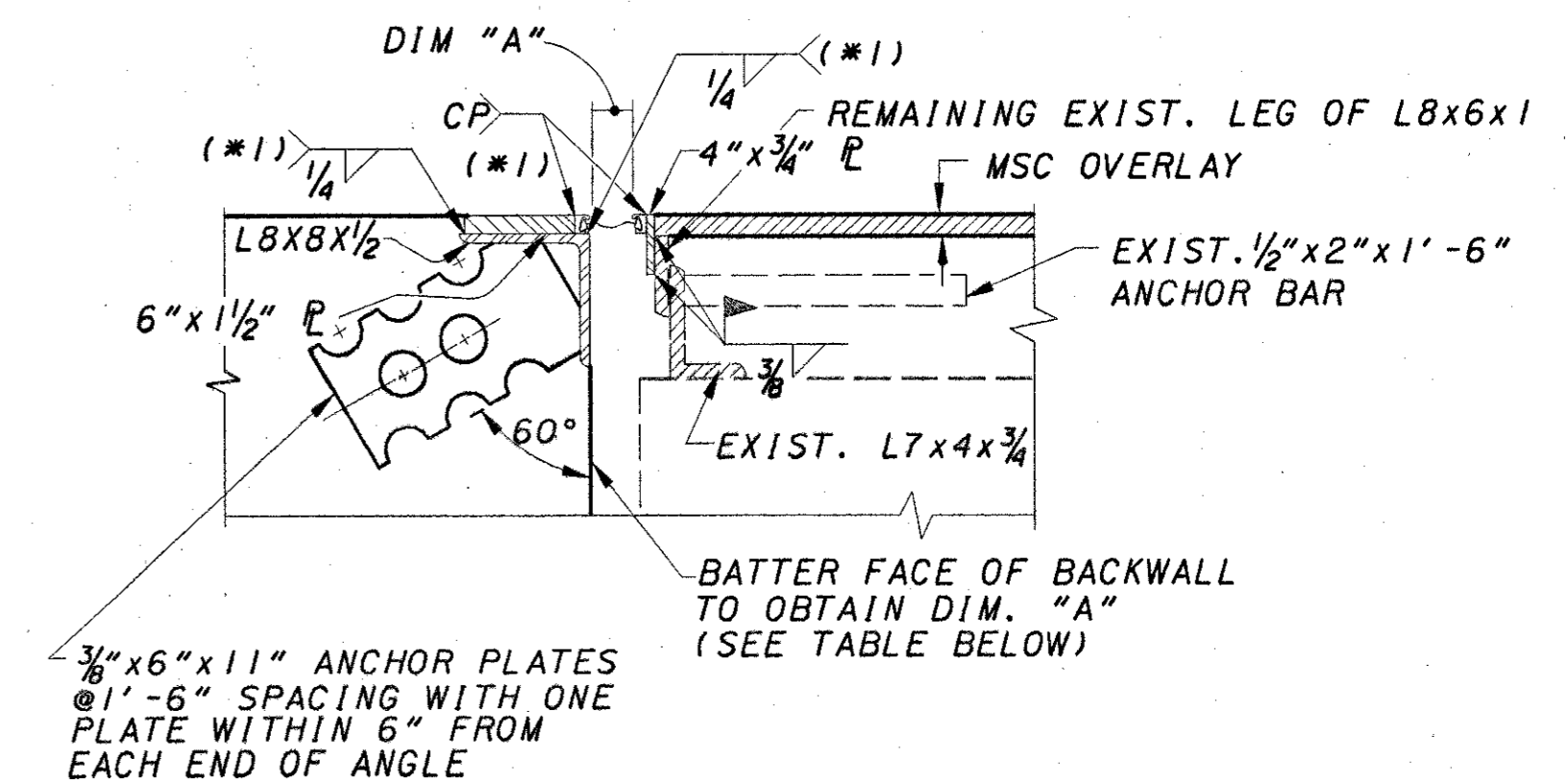
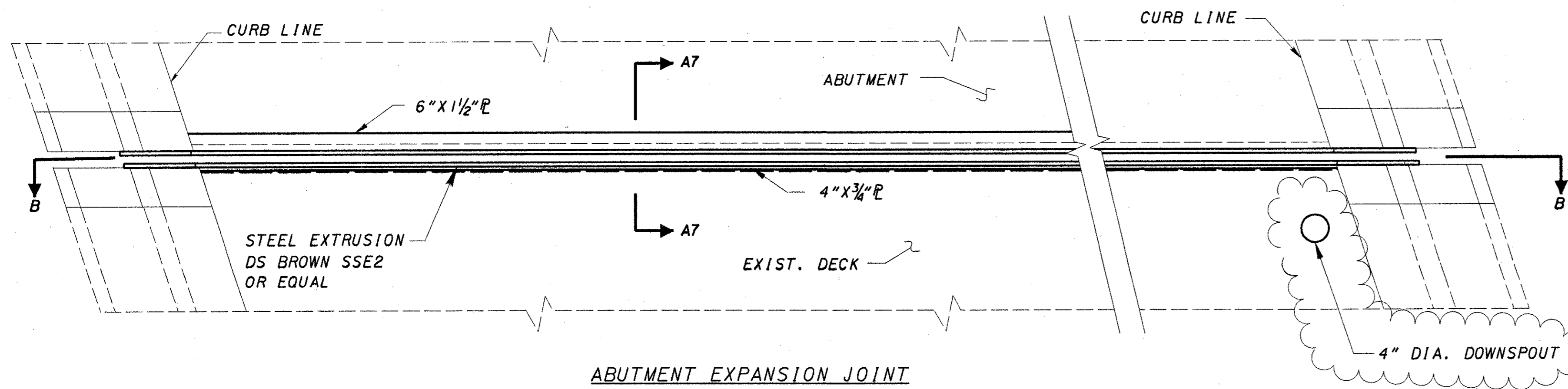
ALTERNATE TO BACKWALL CONSTRUCTION  
 PLANS SHOW THE PORTIONS OF BACKWALL REMOVAL BY SAWCUTTING AT APPROACH SLAB SEAL LEVEL (SECTION A1-A1) AND RECONSTRUCTING THE BACKWALL BY DOWELLING INTO THE REMAINING EXISTING BACKWALL AS PER THE DETAILS OF SECTION A4-A4. AS AN ALTERNATE TO DOWELLING IN NEW BARS, THE CONTRACTOR MAY CHOOSE TO PRESERVE THE EXIST. BARS (RUNNING THROUGH THE CONSTRUCTION JOINT) DURING THE REMOVAL OF THE BACKWALL CONCRETE. ANY BAR DAMAGED DURING THE CONCRETE REMOVAL SHALL BE REPLACED BY NEW BARS AS DETAILED IN SECTION A4-A4.

LEGEND

- CONCRETE REMOVAL

DATE	REVIEWED	DRAWN	DESIGNED
8/2001	KVB	JEP	JEP
	STRUCTURE FILE NUMBER	REVISED	CHECKED
	3117650		ASB



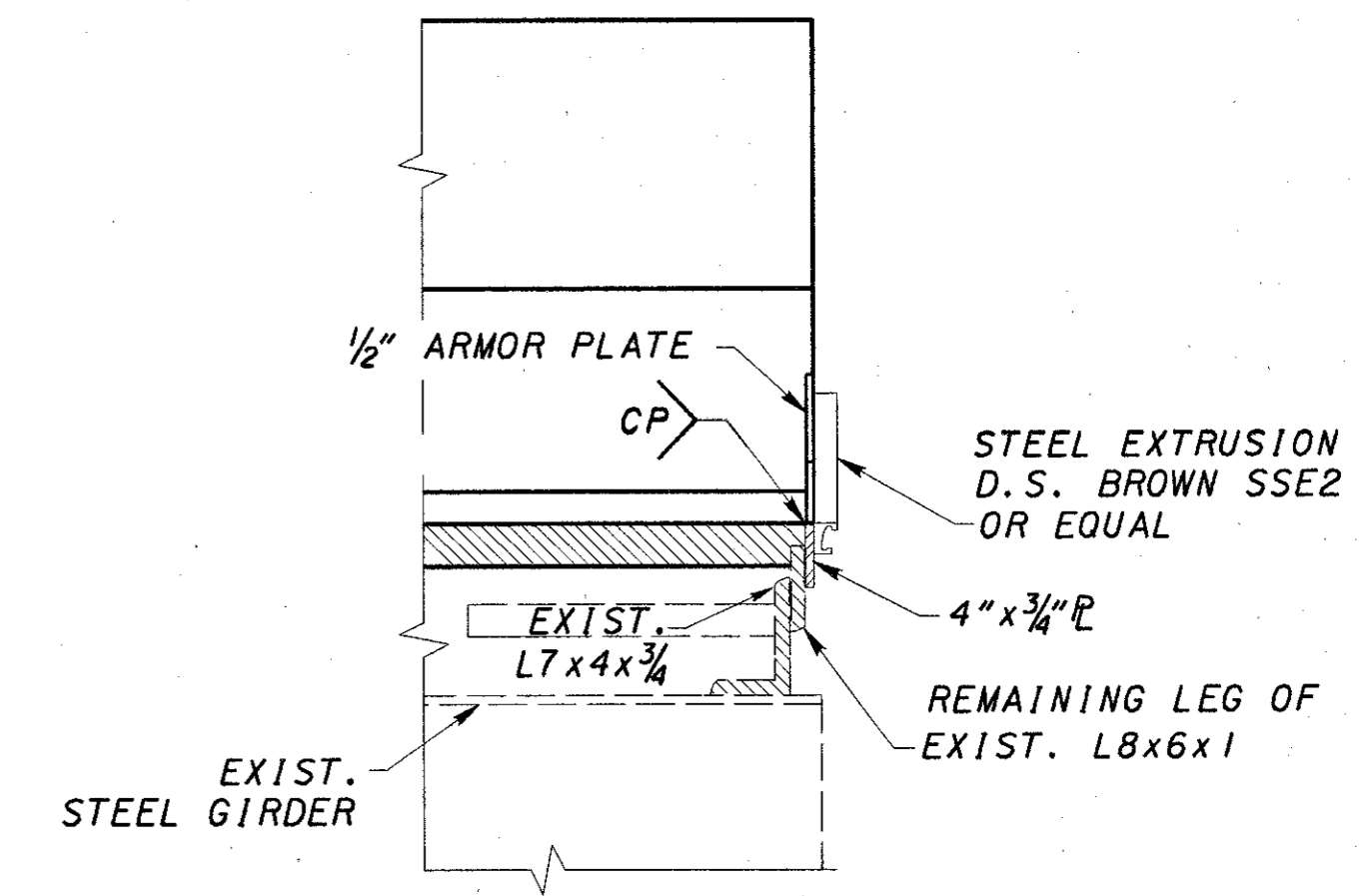
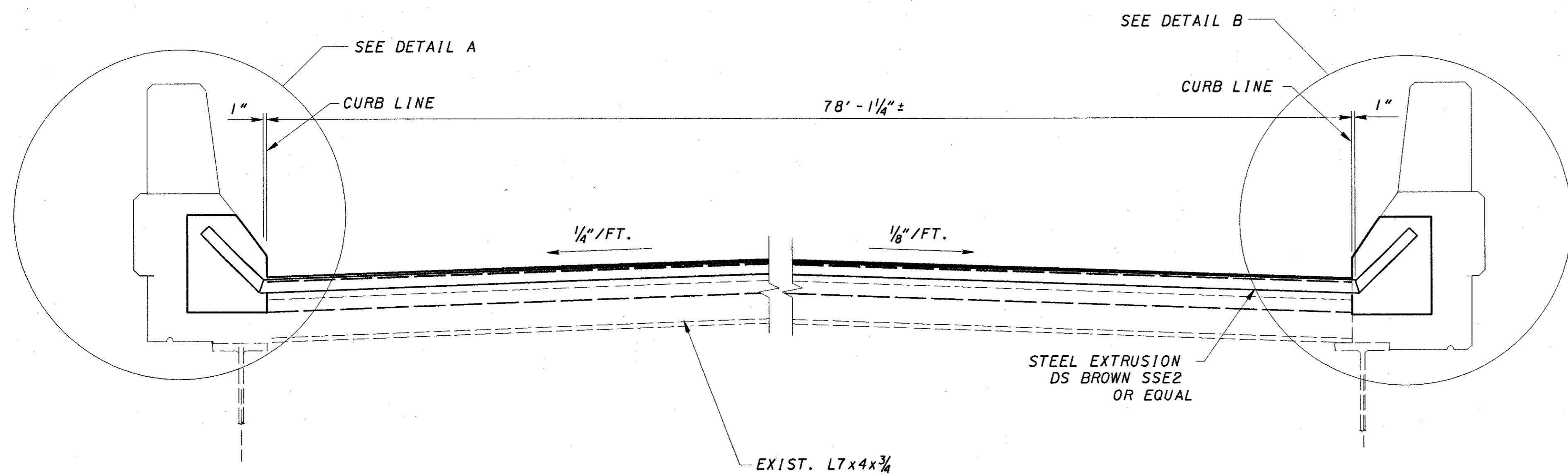
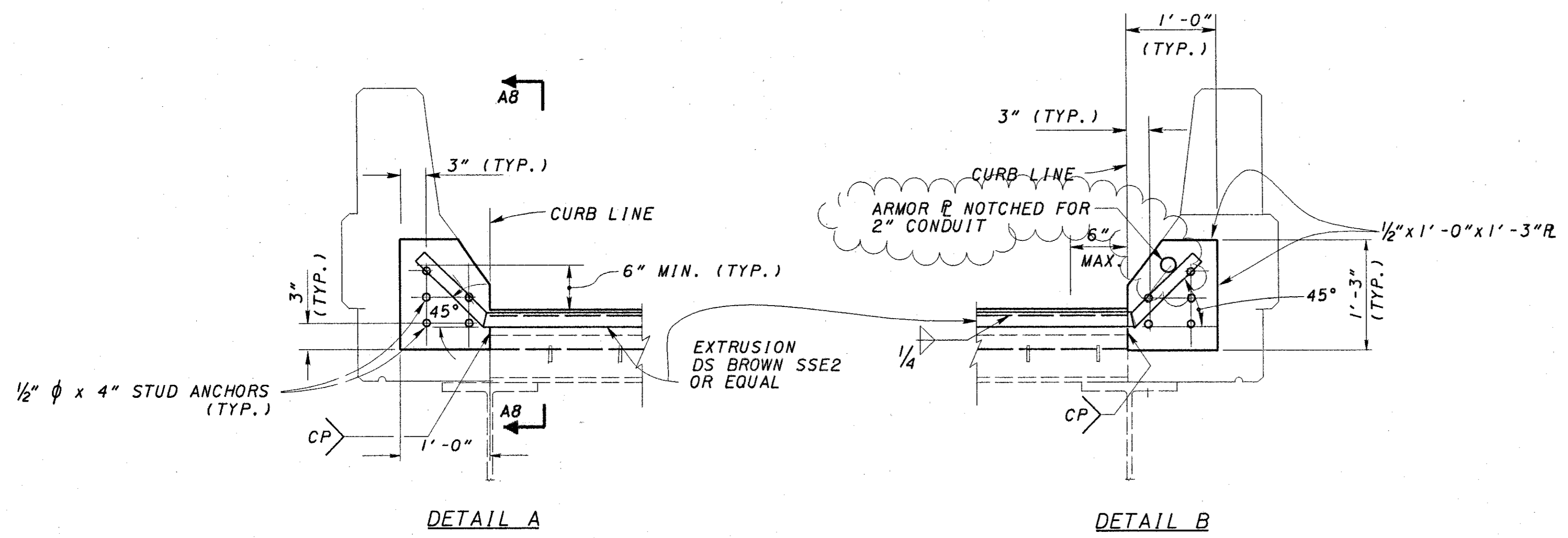


**SECTION A7-A7**  
 (\*1) - SHOP WELD AND PROVIDE 1/4" MIN. SETBACK DIMENSION FROM EDGE OF L8x8x1/2.

4" STRIP SEAL GLAND

TEMPERATURE (F)	DIMENSION "A"
30°	2 3/8"
40°	2 5/16"
50°	2 1/4"
60°	2 1/8"
70°	2"
80°	1 15/16"
90°	1 3/16"

EXPANSION LENGTH = 211'-0" ±

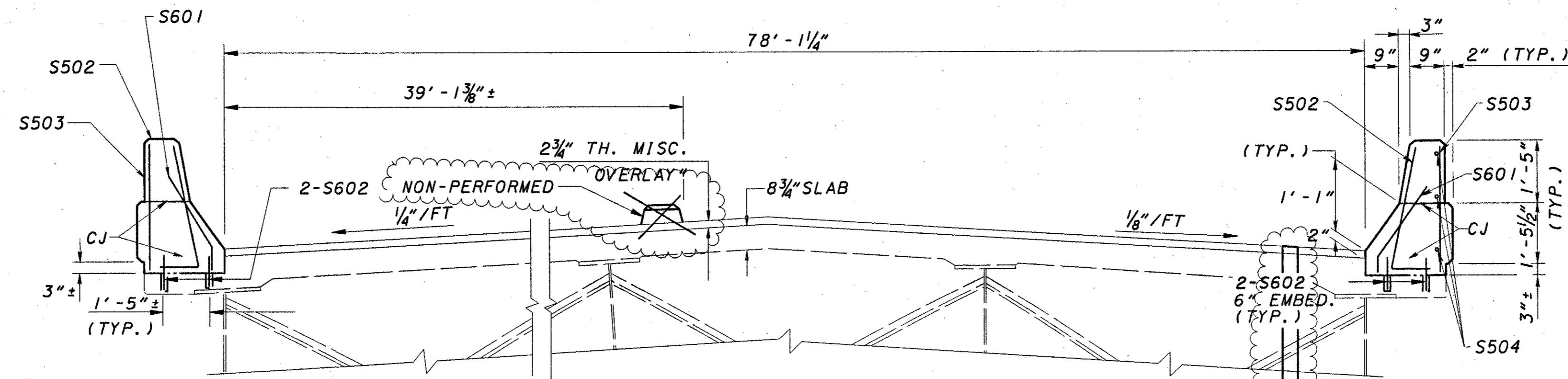


**SECTION A8-A8**

**SECTION B-B**

**NOTES**  
 REFER TO STD. DWG. EXJ-4-87 FOR DETAILS NOT SHOWN

DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 Ph: (614) 224-1941  
 DATE: 8/2001  
 REVIEWED: GEA  
 DRAWN: JEP  
 DESIGNED: JEP  
 CHECKED: ASB  
 STRUCTURE FILE NUMBER: 3117650  
 FORWARD ABUTMENT EXPANSION JOINT DETAILS  
 RAMP A (BRIDGE NO. HAM-47-0045L)  
 HAM 47-1-0.26  
 49/106  
 81/182



SECTION A6-A6

NOTE: EXIST. LONG. AND TRANSVERSE BARS IN DECK NOT SHOWN.

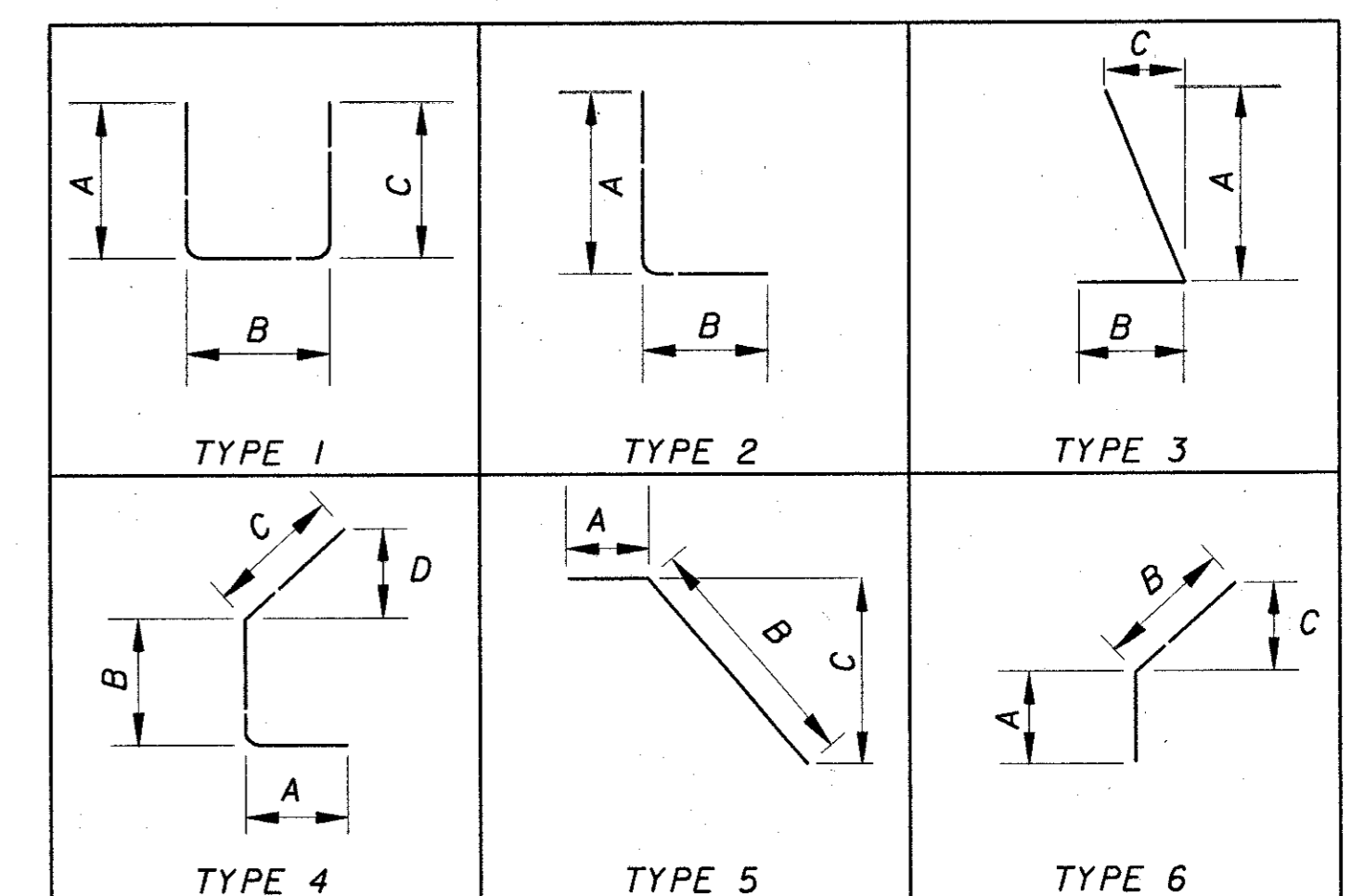
DRAINS TO EX. DOWNSPOUT/  
REDUCER ON BRIDGE NO.  
HAM-71-0154E

REINFORCING STEEL LIST

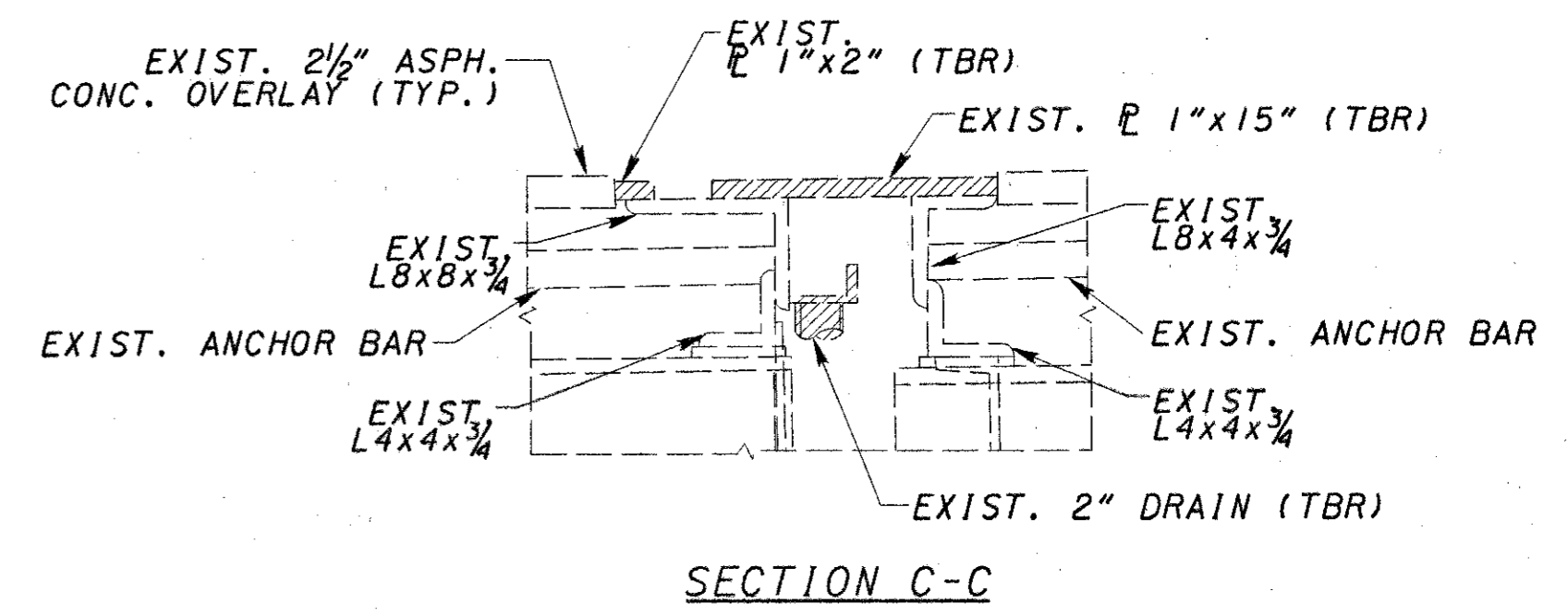
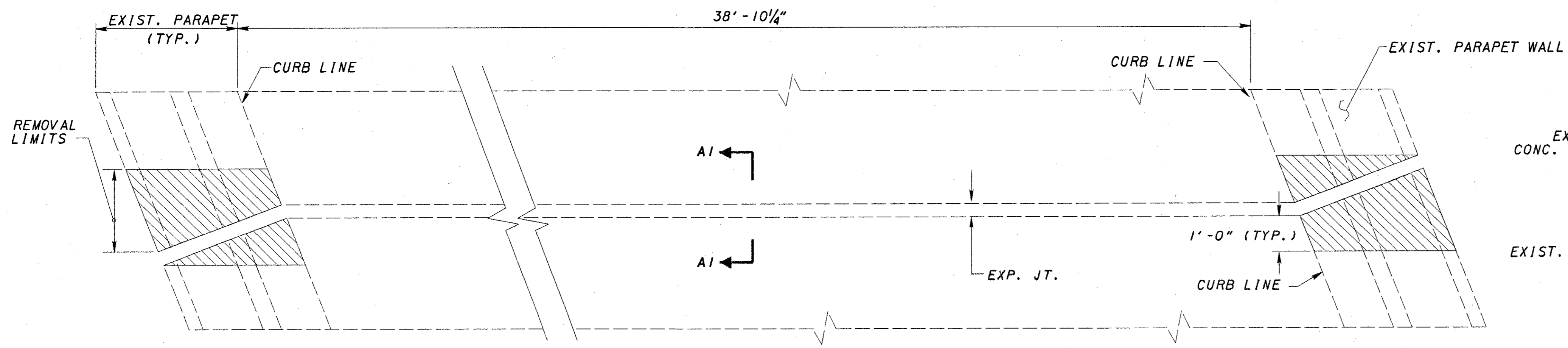
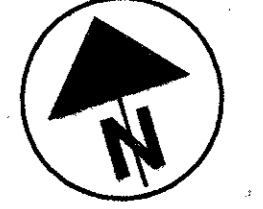
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
ABUTMENT									
A501	4	2'-10"		STR					
A502	4	3'-3"		3	2'-6"	10"	4"		
A503	3	1'-10"		STR					
A601	6	40'-0"		STR					
A602	162	2'-0"		STR					
A603	78	3'-0"		1	1'-2"	11"	1'-2"		
A604	4	1'-10"		6	4"	1'-6"	1'-2"		
A605	2	5'-10"		STR					
D801	52	4'-3"		5	2'-0"	2'-3"	1'-11"		

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
SUPERSTRUCTURE									
S502	4	3'-3"		3	2'-6"	10"	2"		
S503	4	2'-4"		STR					
S504	3	1'-10"		STR					
S601	4	1'-10"		6	4"	1'-6"	1'-2"		
S602	8	1'-6"		STR					

BENDING DIAGRAMS

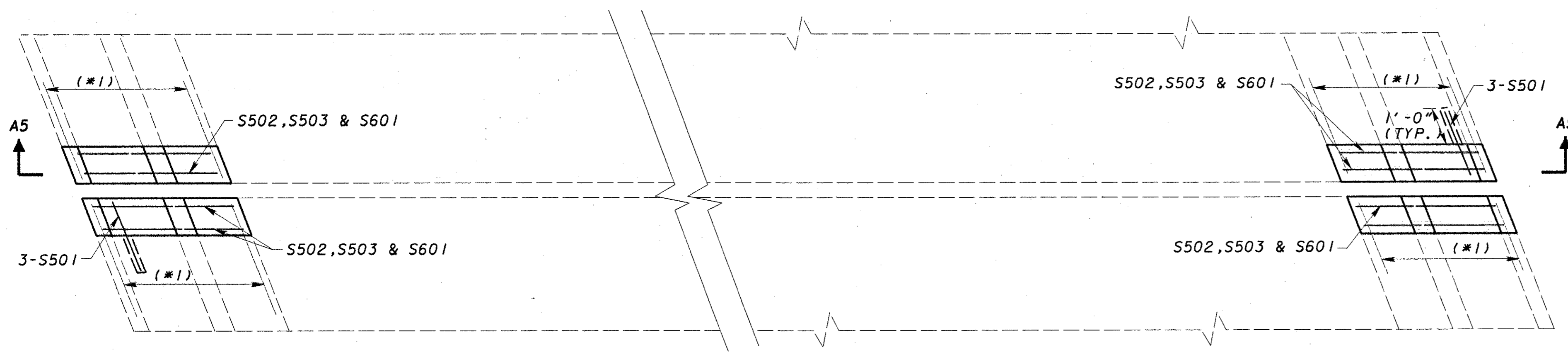


DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 PH: (614) 224-1941  
 DATE: 8/2001  
 GEA: STRUCTURE FILE NUMBER 3117650  
 REVIEWED: JEP  
 DRAWN: JEP  
 DESIGNED: JEP  
 CHECKED: ASB  
 FORWARD ABUTMENT EXPANSION JOINT DETAILS  
 RAMP A (BRIDGE NO. HAM-471-0045L)  
 HAM-471-0.26  
 50/106  
 82/182



PRESERVE ALL LONG. REINFORCING BARS IN PARAPETS & DECK SLAB REMOVAL AREAS

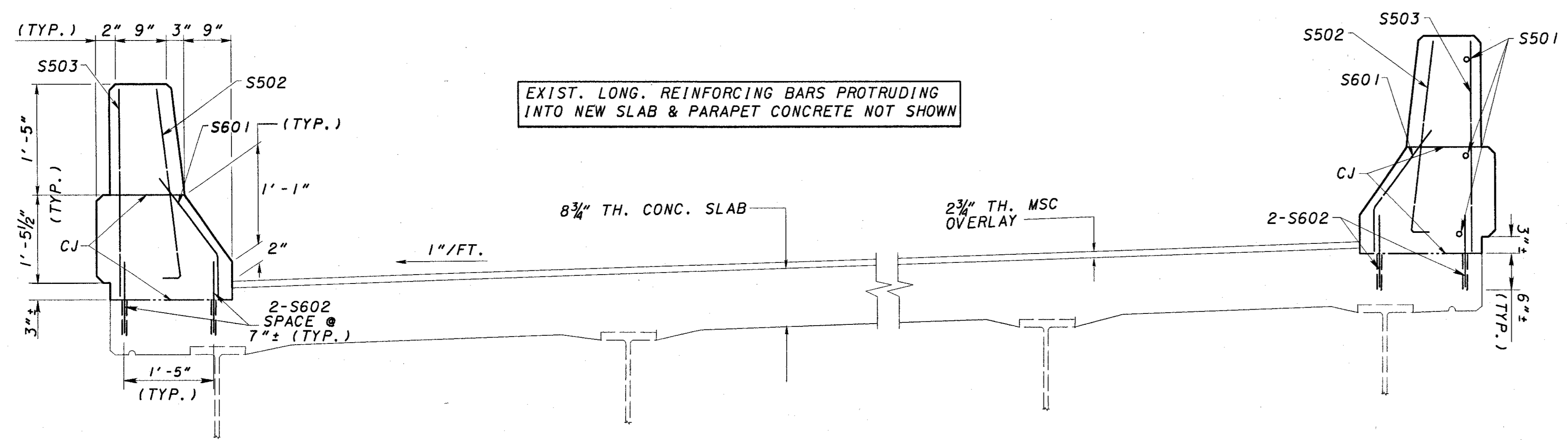
EXISTING DECK SLAB, PARAPET & MEDIAN REMOVAL PLAN



MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
SUPERSTRUCTURE									
S501	6	1'-10"		STR					
S502	8	3'-3"		3	2'-6"	10"	2"		
S503	8	2'-4"		STR					
S601	8	1'-10"		6	4"	1'-6"	1'-2"		
S602	16	1'-6"		STR					

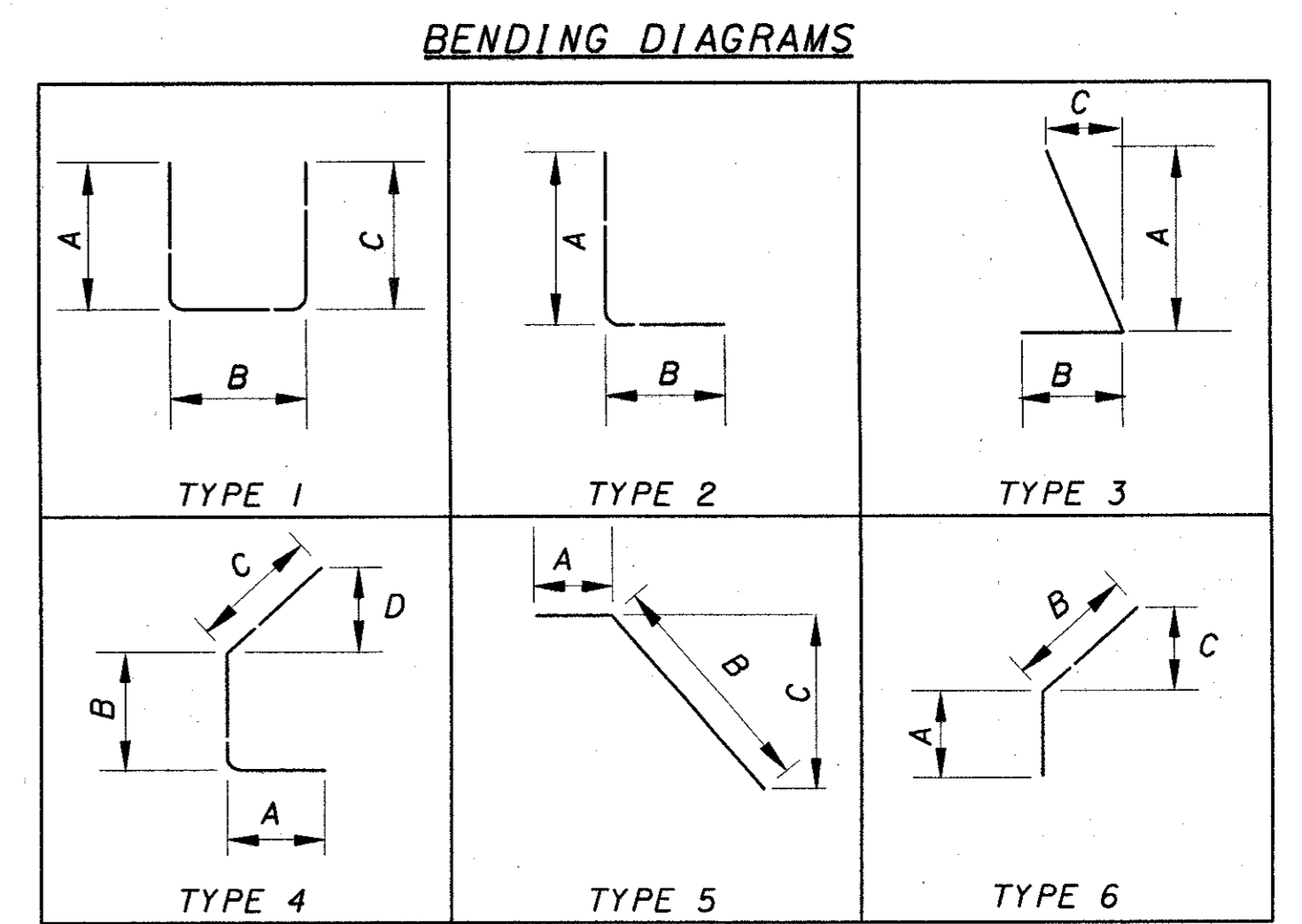
(\*1) EXIST. DECK SLAB & PARAPET LONG. BARS PROTRUDE INTO NEW CONCRETE AREA

MODIFIED DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION



EXIST. LONG. REINFORCING BARS PROTRUDING INTO NEW SLAB & PARAPET CONCRETE NOT SHOWN

SECTION A5-A5



LEGEND

- REMOVAL LIMITS

DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

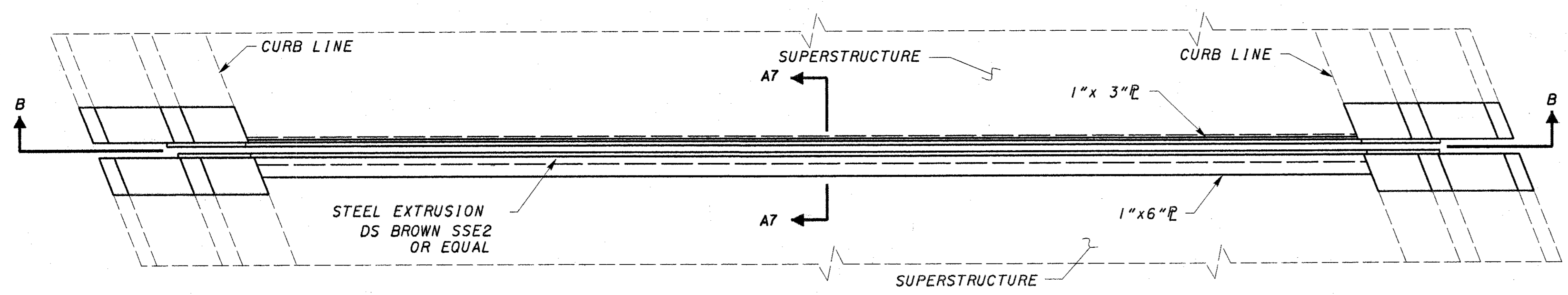
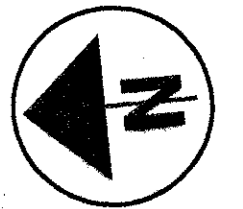
DATE 8/2001  
REVIEWED GEA  
DRAWN JEP  
DESIGNED JEP  
CHECKED ASB

PIER 4 EXPANSION JOINT DETAILS  
RAMP A (BRIDGE NO. HAM-471-0045L)

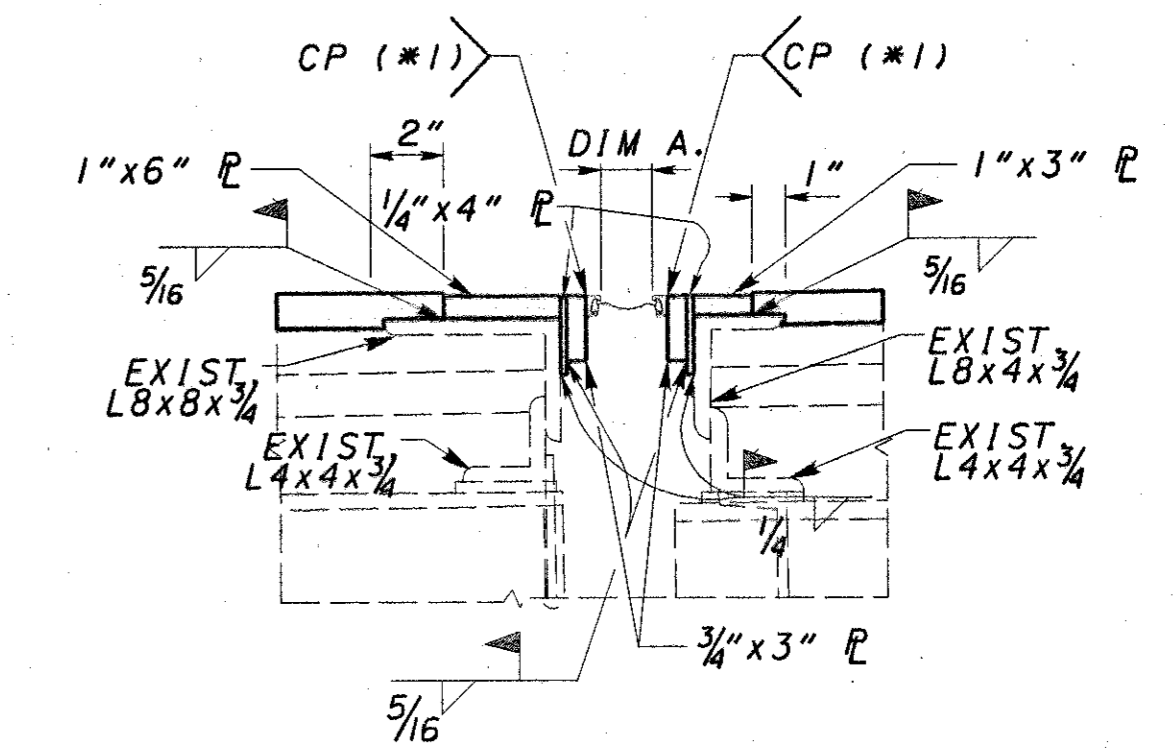
HAM-471-0.26

51/106

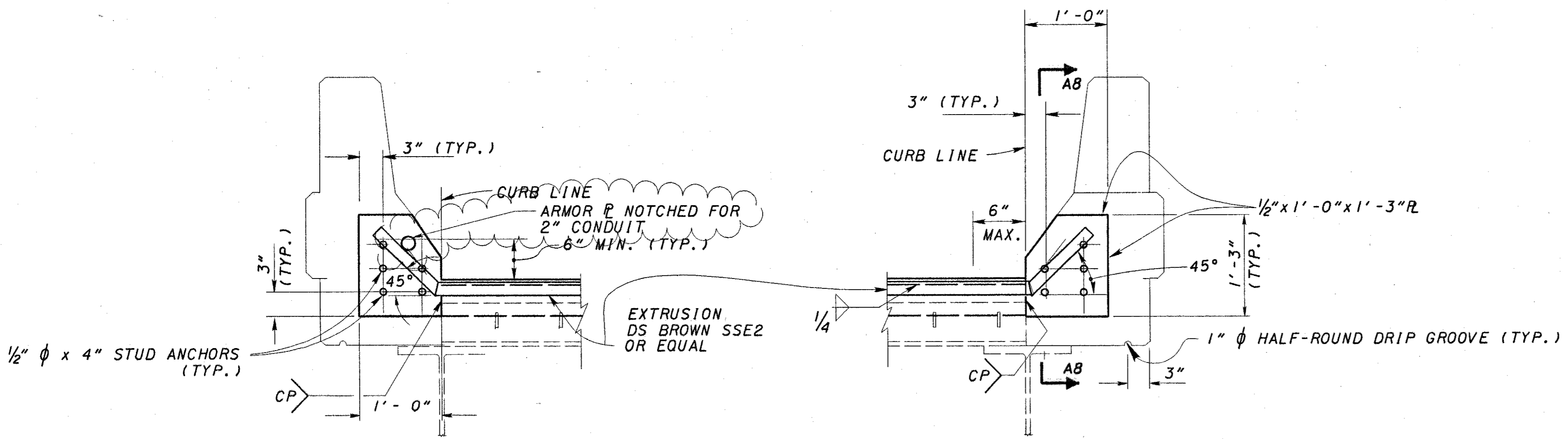
83  
182



PIER 4 EXPANSION JOINT



SECTION A7-A7  
(1) SHOP WELD

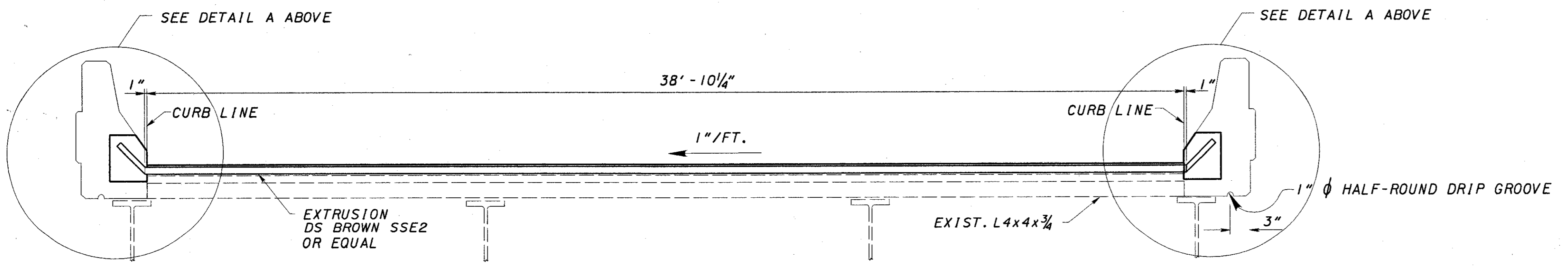


DETAIL A

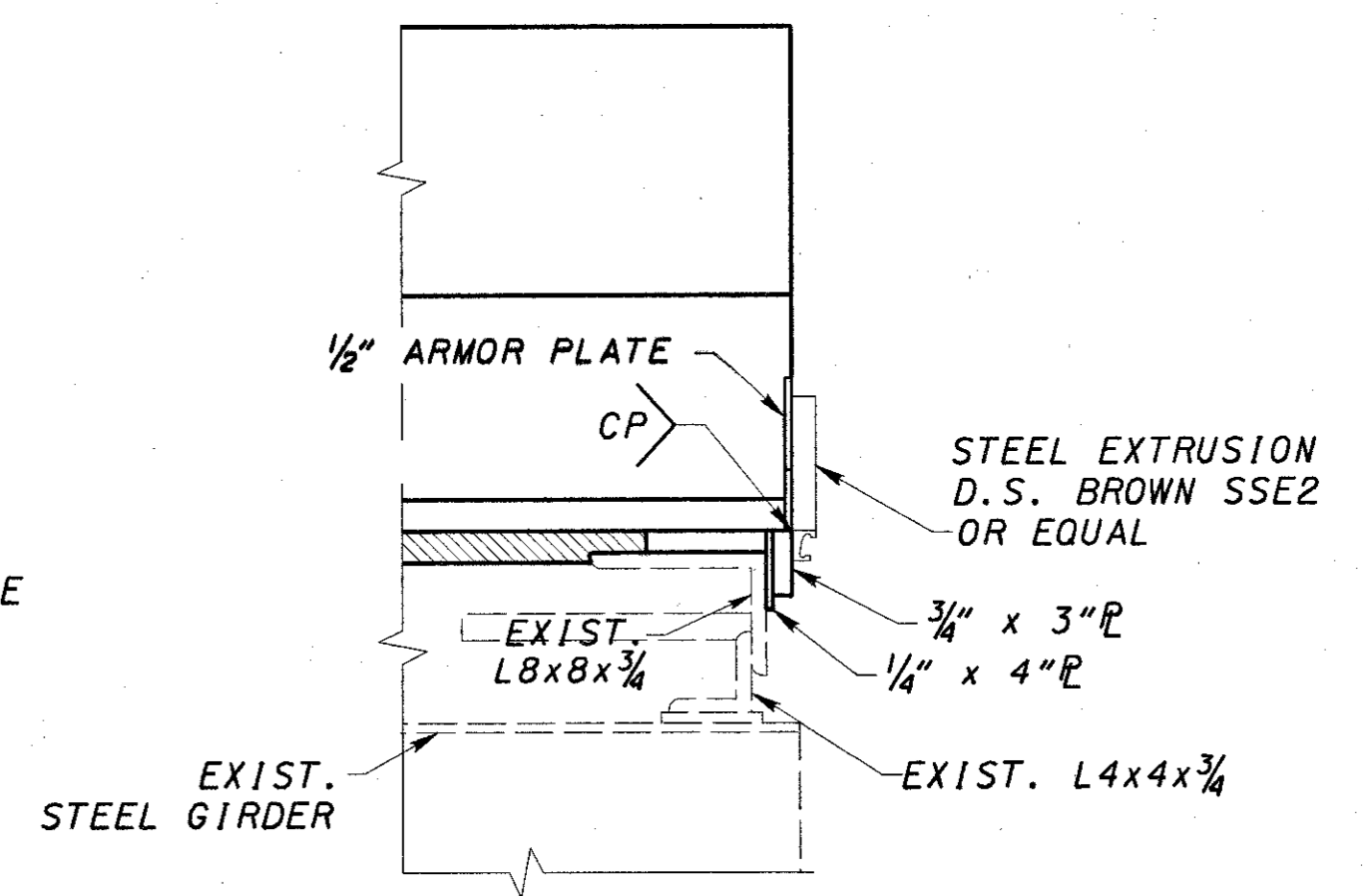
5" STRIP SEAL GLAND

TEMPERATURE (F)	DIMENSION "A"
30°	3 1/8"
40°	2 7/8"
50°	2 5/8"
60°	2 3/8"
70°	2 1/8"
80°	1 9/16"
90°	1 1/16"

EXPANSION LENGTH = 339'-0" ±



SECTION B-B



SECTION A8-A8

DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
PH: (614) 224-1941

DATE 8/2001  
REVIEWED GEA  
STRUCTURE FILE NUMBER 3117650

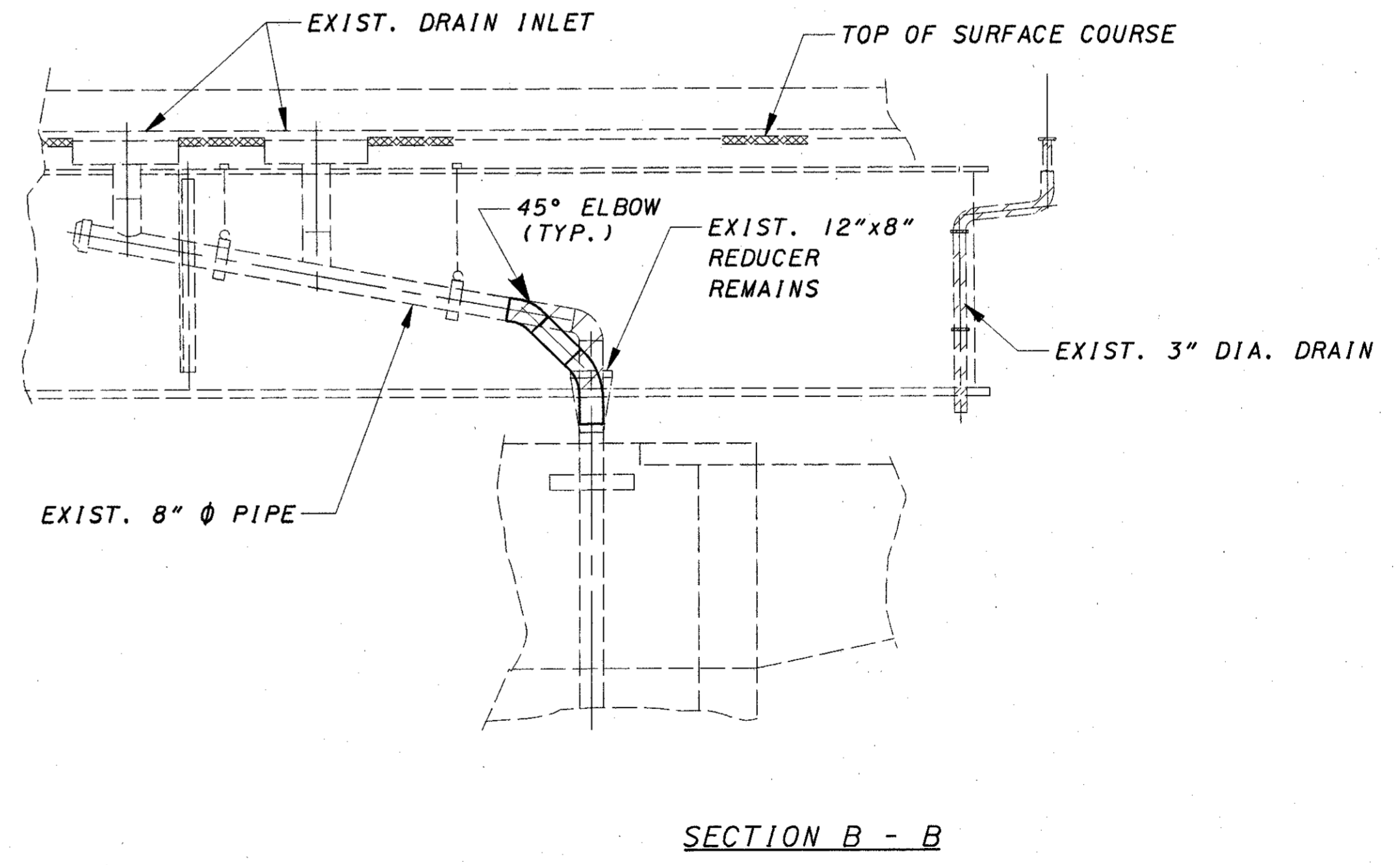
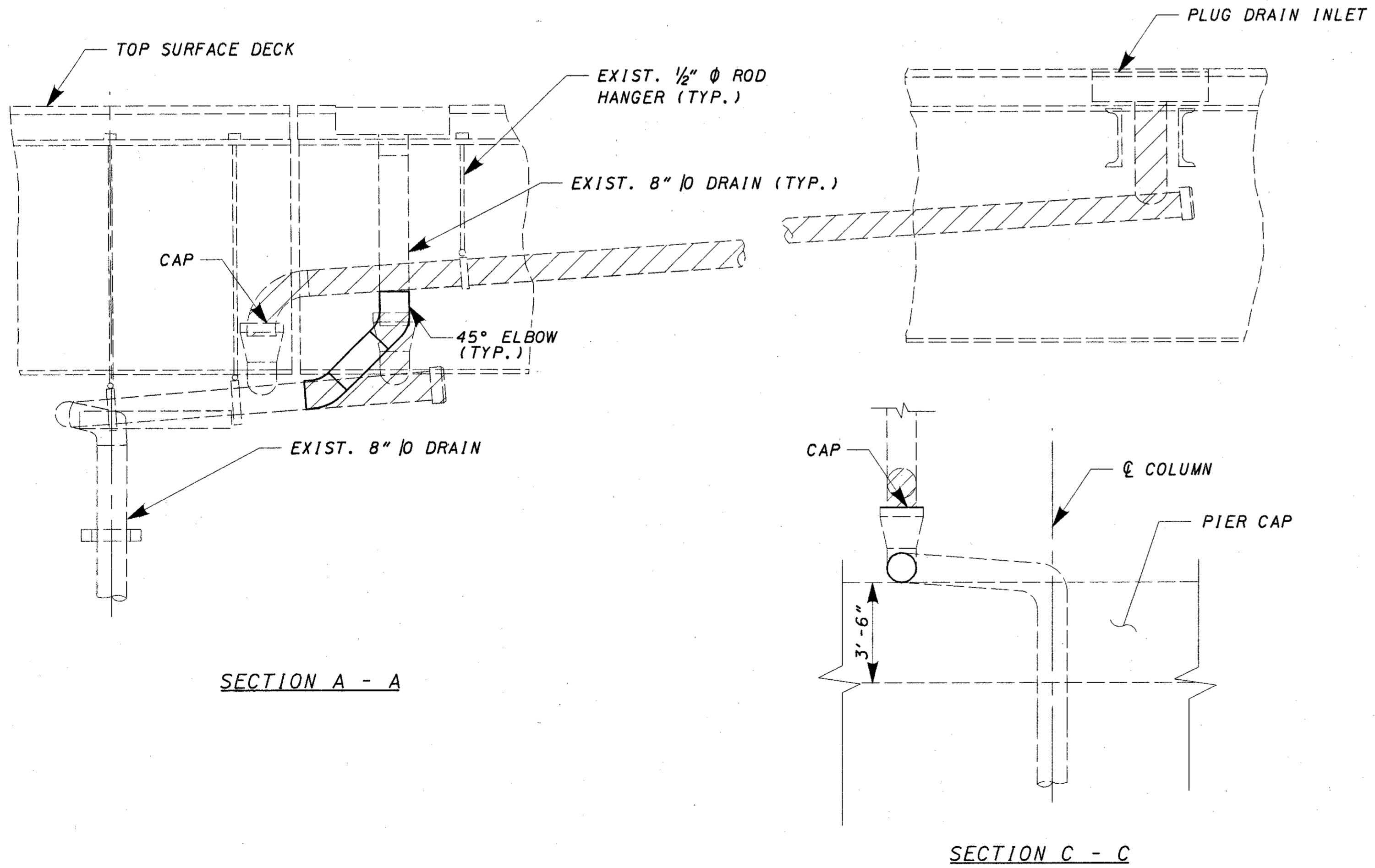
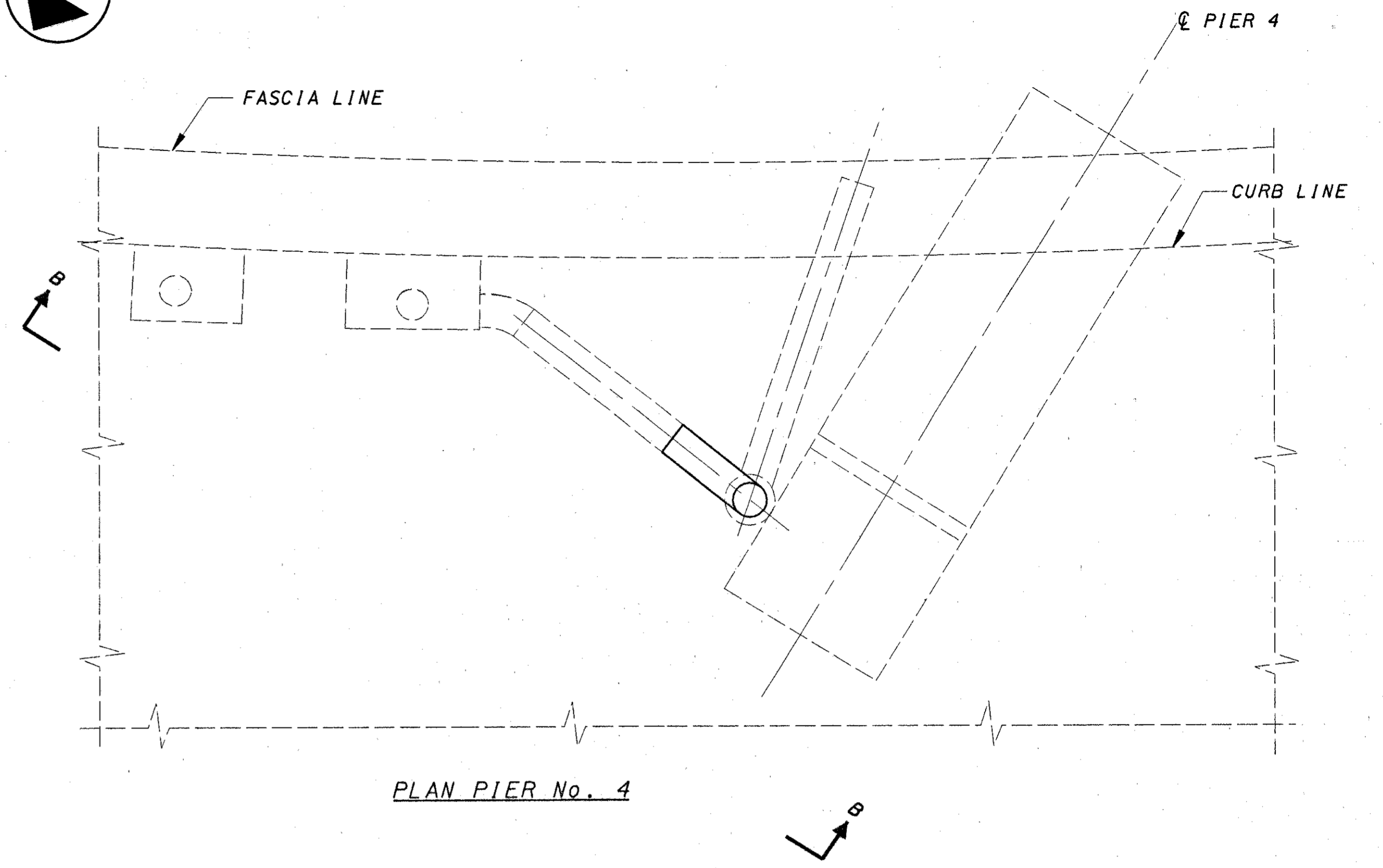
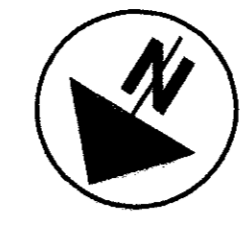
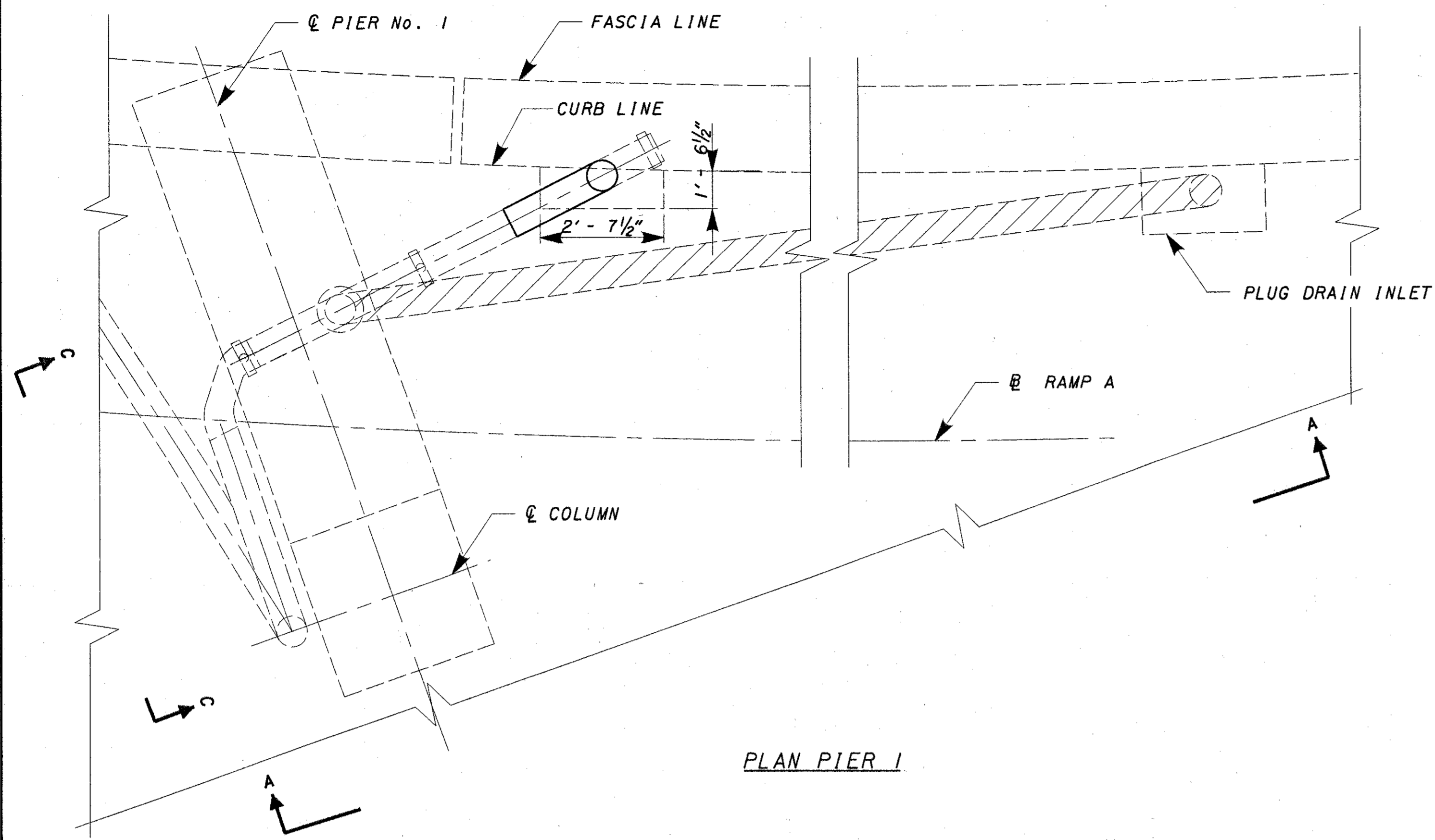
DRAWN JEP  
CHECKED ASB

PIER 4 EXPANSION JOINT DETAILS  
RAMP A (BRIDGE NO. HAM-471-0045L)

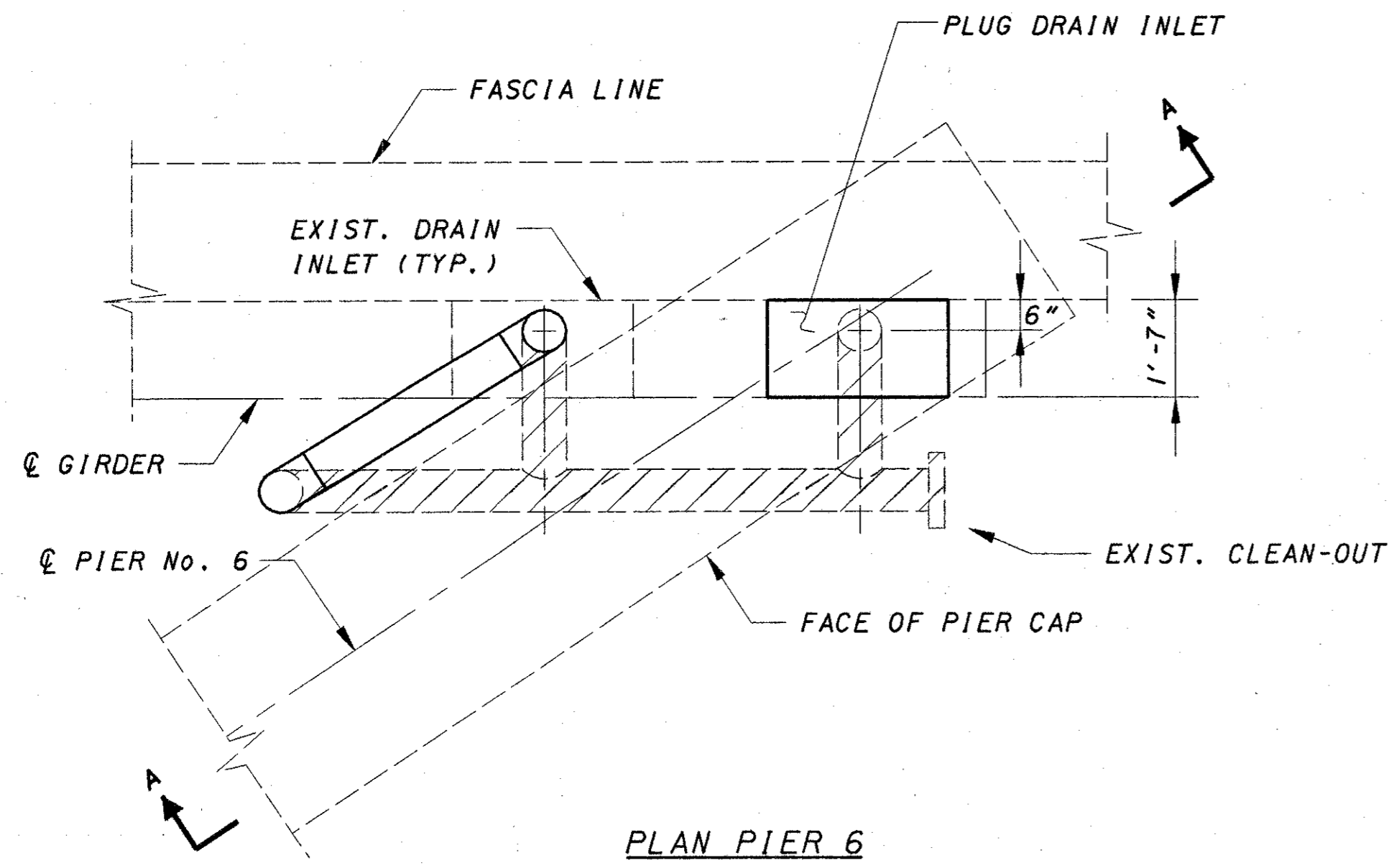
HAM-471-0.26

52/106

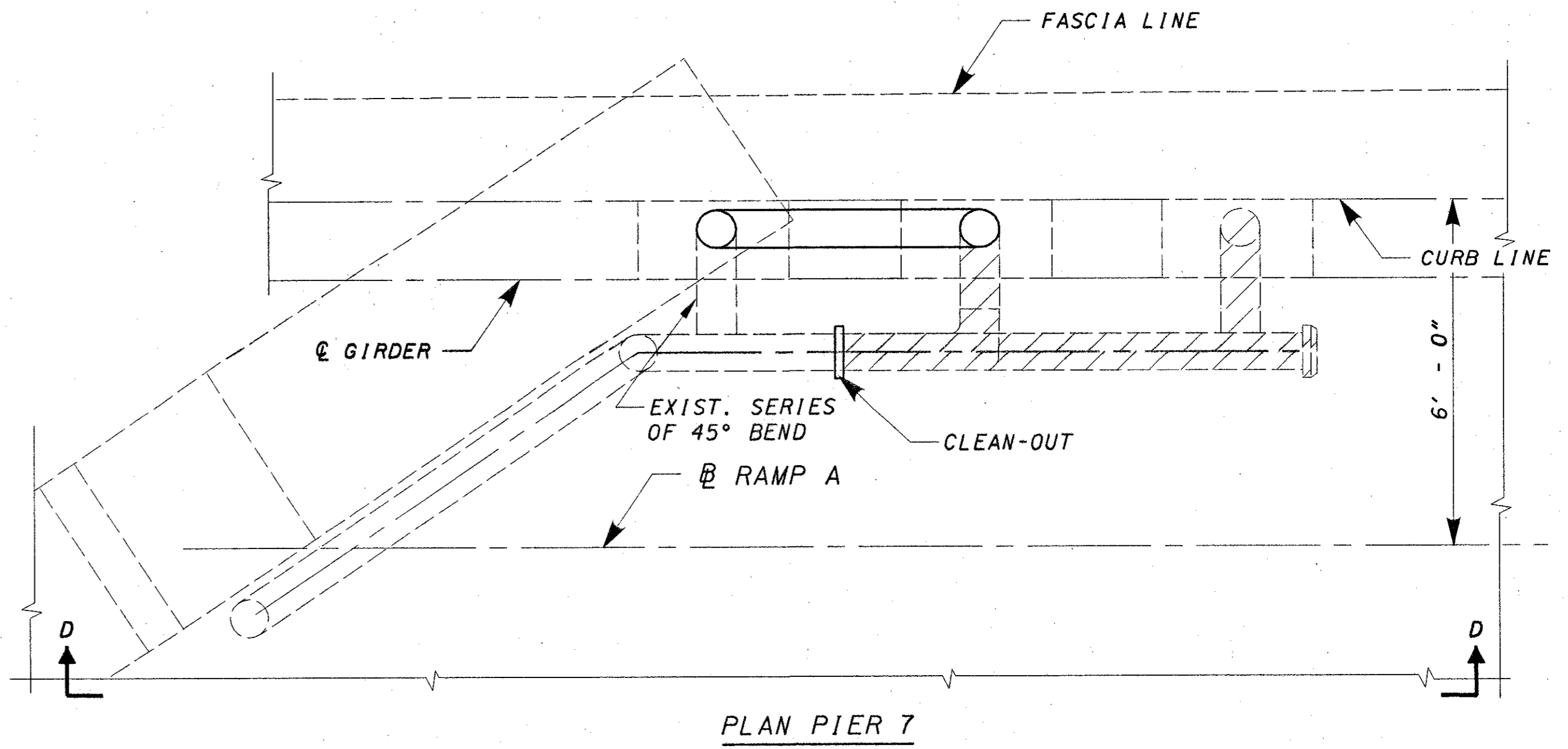
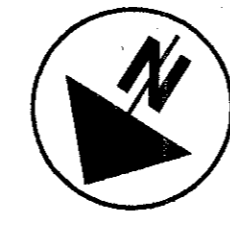
84  
182



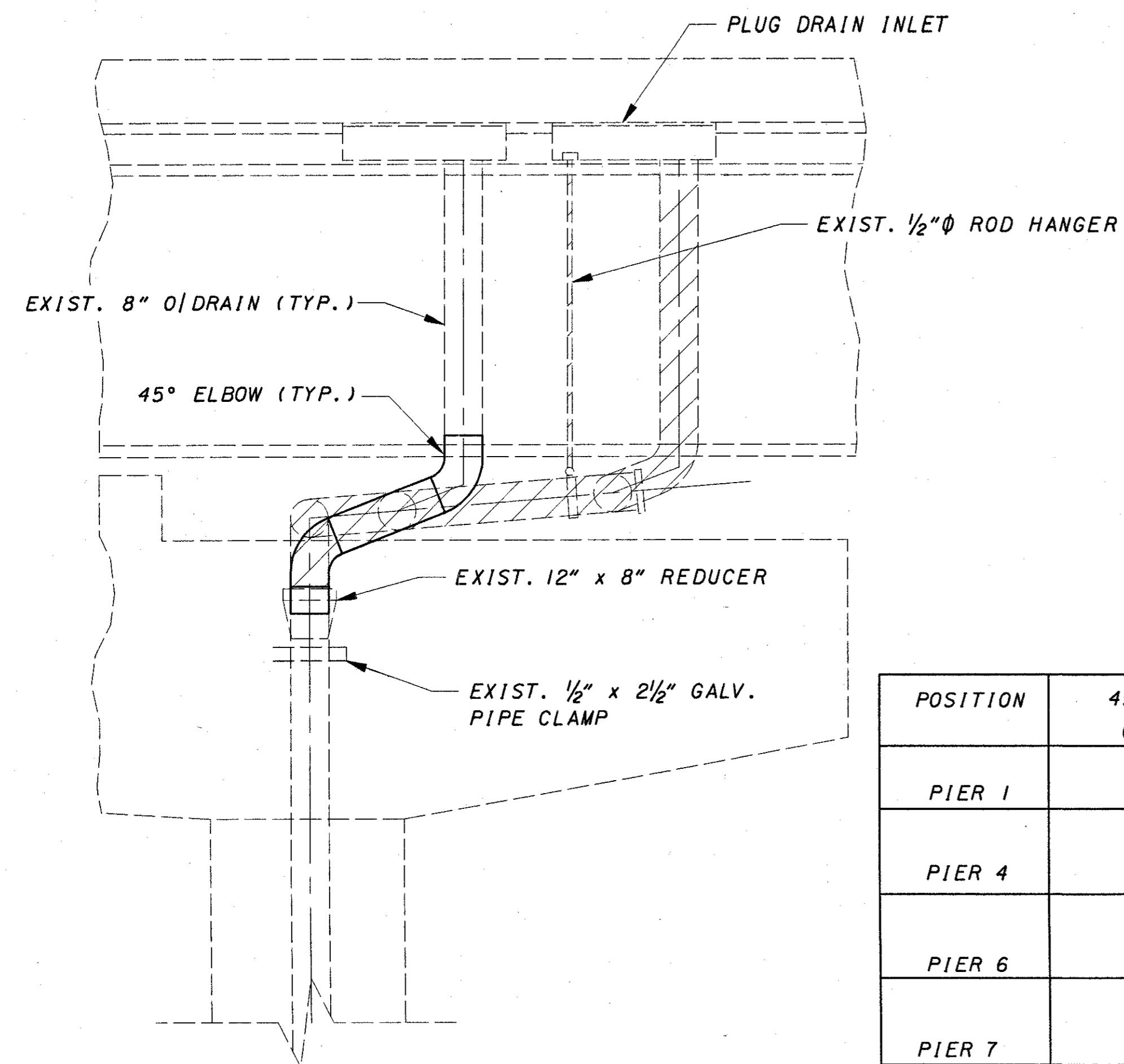
DESIGNED		JEP	CHECKED	ASB
DRAWN		FIB	REVISED	
REVIEWED	GEA	8/2001	STRUCTURE FILE NUMBER	3117650
DATE	8/2001			
DESIGN AGENCY				
BARR ENGINEERING				
Five East Long Street				
Columbus, Ohio 43215				
Ph: (614) 224-1941				
SUPERSTRUCTURE DETAILS				
BRIDGE NO. HAM-471-0045 L				
HAM-471-0.26				
53/106				
85				
182				



PLAN PIER 6



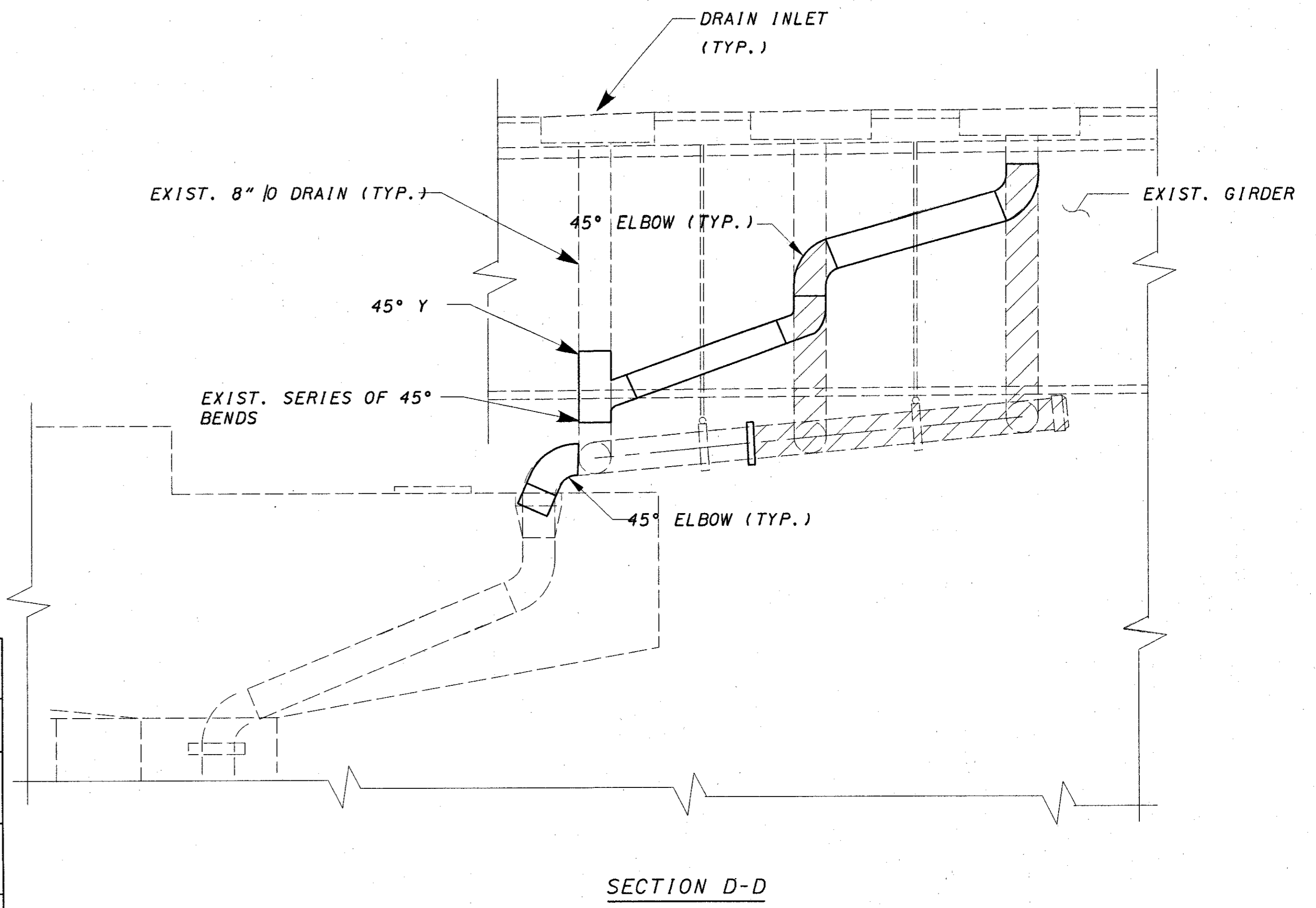
PLAN PIER 7



SECTION A - A

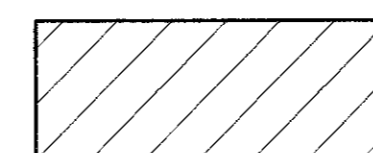
MATERIAL LIST

POSITION	45° BEND (EACH)	45° Y (EACH)	LENGTH (FT.)
PIER 1	2		3
PIER 4	2		3
PIER 6	2		3
PIER 7	2	1	5



SECTION D-D

LEGEND



- REMOVAL LIMITS

DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

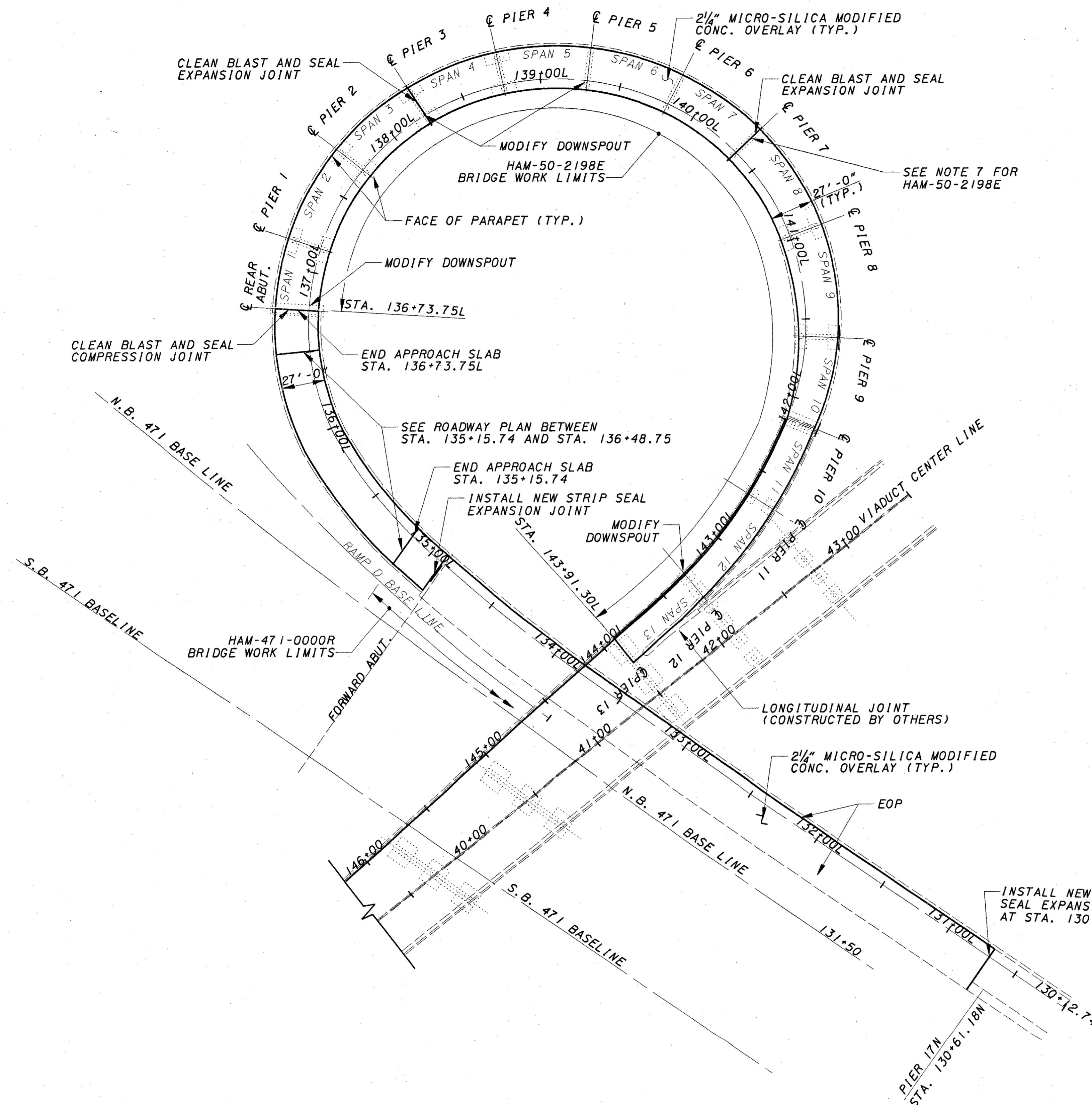
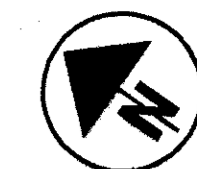
DATE 8/2001  
REVIEWED GEA  
STRUCTURE FILE NUMBER 317650  
DRAWN FIB  
REVISED  
DESIGNED JEP  
CHECKED ASB

DOWNSPOUT DETAILS  
BRIDGE NO. HAM-471-0045L

HAM-471-0.26

54/106

86  
182



**PROPOSED WORK: HAM-50-2198E**

1. REMOVE EXISTING 1 1/2" ± LMC OVERLAY AND 3/4" OF ORIGINAL DECK USING HYDRO DEMOLITION AND OVERLAY WITH 2 1/4" THICK MICRO-SILICA CONCRETE.
  2. REMOVE AND REPLACE FULL WIDTH APPROACH SLAB.
  3. MODIFY DOWN SPOUTS, CLEAN AND UNCLOG SCUPPERS
  4. PAINT STEEL USING OZEU SYSTEM.
  5. SEAL CONCRETE SURFACES AS DESCRIBED IN THE GENERAL NOTES.
  6. ABRASIVE BLAST VERTICAL FACE OF STEEL AT THE INTERMEDIATE EXPANSION JOINTS AND REAR ABUTMENT COMPRESSION JOINT. PLACE SILICONE JOINT SEALER, (DOW CORNING 902 RCS), AT THE INTERMEDIATE EXPANSION JOINTS AND AT THE REAR ABUTMENT COMPRESSION SEAL.
  7. WHILE PERFORMING WORK ON THIS BRIDGE DO NOT DISTURB THE EDM SENSORS AT PIER 7 OR ON THE RETAINING WALL BETWEEN THE TWO BRIDGES.
- (IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN THE SEQUENTIAL ORDER LISTED.)

**PROPOSED WORK: HAM-471-0000R**

1. REMOVE EXISTING 1 1/2" ± LMC OVERLAY AND 3/4" OF ORIGINAL DECK USING HYDRO DEMOLITION AND OVERLAY WITH 2 1/4" THICK MICRO-SILICA MODIFIED CONCRETE.
  2. REMOVE AND RECONSTRUCT FORWARD ABUTMENT BACKWALL DOWN TO APPROACH SLAB SEAT, AND INSTALL NEW STRIP SEAL JOINT.
  3. REPLACE EXPANSION JOINT WITH A NEW STRIP SEAL AT PIER 17.
  4. REMOVE AND REPLACE FULL WIDTH APPROACH SLAB.
  5. MODIFY DOWNSPOUTS, CLEAN AND UNCLOG SCUPPERS.
  6. PAINT STEEL USING OZEU SYSTEM.
  7. SEAL CONCRETE SURFACES AS DESCRIBED IN THE GENERAL NOTES.
- (IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN THE SEQUENTIAL ORDER LISTED.)

**EXISTING STRUCTURE**

TYPE: CONTINUOUS STEEL CURVED PLATE GIRDERS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE

SPANS: VARIES, SEE TABLE FOR SPAN LENGTHS  
 ROADWAY: 28'-2" F/F PARAPETS (SPAN 1 THRU 8)  
 VARIES, 28'-2" F/F PARAPETS TO 19'-6" F/F PARAPETS (SPAN 9 & 10)

SKEW: ALL PIERS AND ABUTMENT ARE RADIAL  
 LIVE LOADING: HS 20-44 CASE 11 AND THE ALTERNATE MILITARY LOADING

WEARING SURFACE: LATEX-MODIFIED CONC. OVERLAY  
 APPROACH SLABS: AS-1-72 (25'-0" LONG) (REAR ABUTMENT ONLY)

ALIGNMENT: 36°57'54.1" CURVE RIGHT  
 SPERELEVATION: .0625 FT. PER FT.

TABLE OF SPAN LENGTHS

SPAN	LENGTH
1	39'-0"
2	56'-3"
3	52'-6"
4 THRU 7	52'-9"
8 & 9	63'-0"
10	52'-6"

**PROPOSED STRUCTURE**

SAME AS EXISTING EXCEPT AS FOLLOWS:  
 APPROACH SLABS: AS-1-81  
 WEARING SURFACE: 2 1/4" MICRO-SILICA CONCRETE

# STRUCTURE GENERAL NOTES

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

## DESCRIPTION:

THIS WORK SHALL CONSIST OF THE REMOVAL OF PORTIONS OF CONCRETE DECKS INCLUDING L.M.C. OVERLAY, SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.) CARE SHALL BE TAKEN DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

## PROTECTION OF TRAFFIC

DURING THE REMOVAL OF ANY PART OF THE EXISTING SUPERSTRUCTURE THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT VEHICULAR AND PEDESTRIAN TRAFFIC ADJACENT TO AND/OR UNDER THE STRUCTURE. THESE PROVISIONS MAY INCLUDE THE USE OF ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

## PROTECTION OF STEEL SUPPORT SYSTEMS

BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 2 INCHES OUTSIDE THESE LINES TO CONFORM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

## REMOVAL METHODS

CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS ABOVE STEEL MEMBERS, A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS MAY BE USED AT THE APPROVAL OF THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND TO PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

## EXTRANEEOUS MEMBERS

EXISTING EXTRANEEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ECT.) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE TOP FLANGES SHALL BE REMOVED AND THE FLANGE SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

## CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEAN OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT ALL PACK AND LOOSE RUST SHALL BE REMOVED. EXISTING CONCRETE SURFACES AGAINST WHICH NEW CONCRETE WILL BE PLACED SHALL BE WET, BUT WITHOUT FREE WATER, AT THE TIME OF CONCRETE PLACEMENT.

## EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.02/863.07.

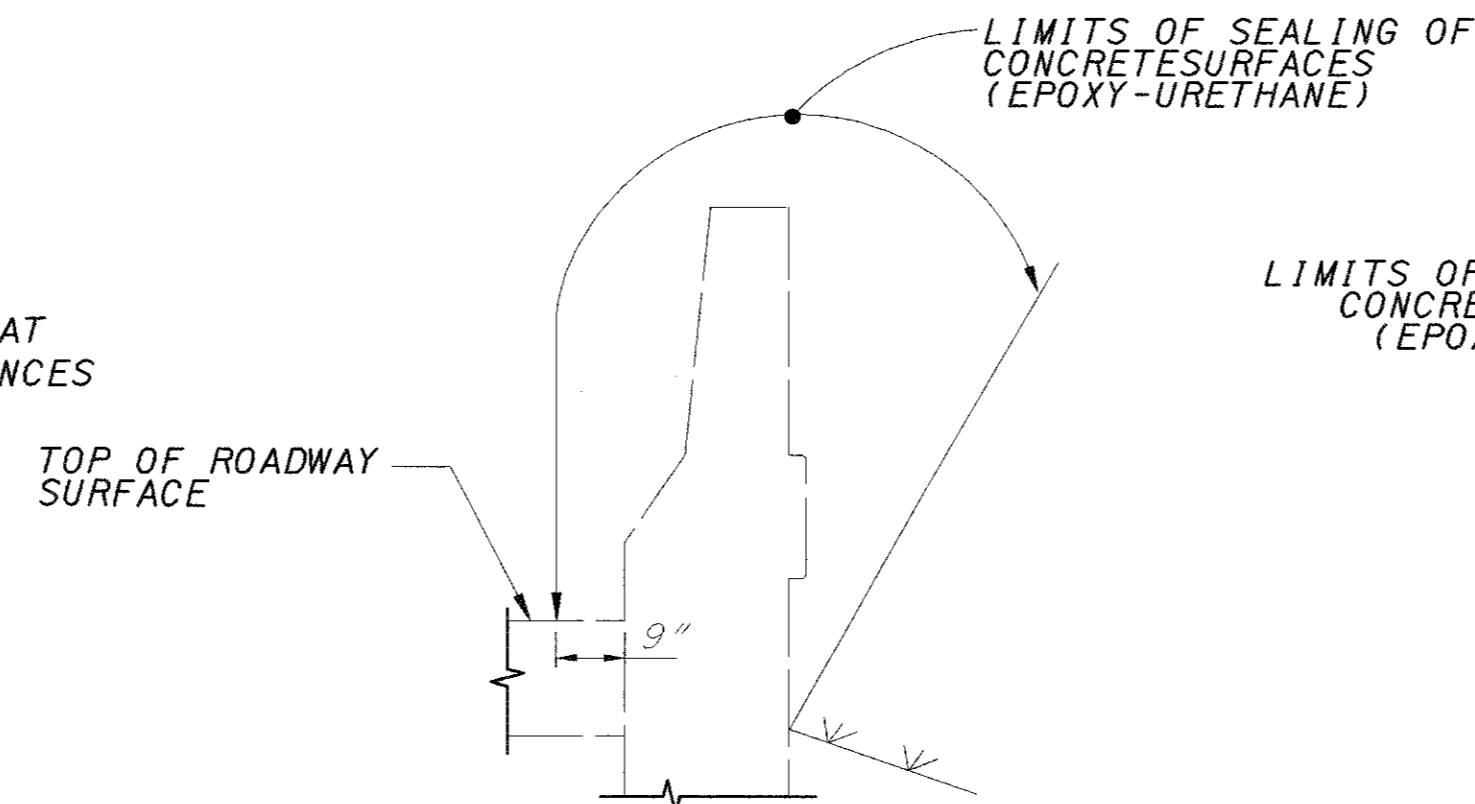
## BACKWALL CONCRETE

IN ADDITION TO SS 842.08, BACKWALL ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.

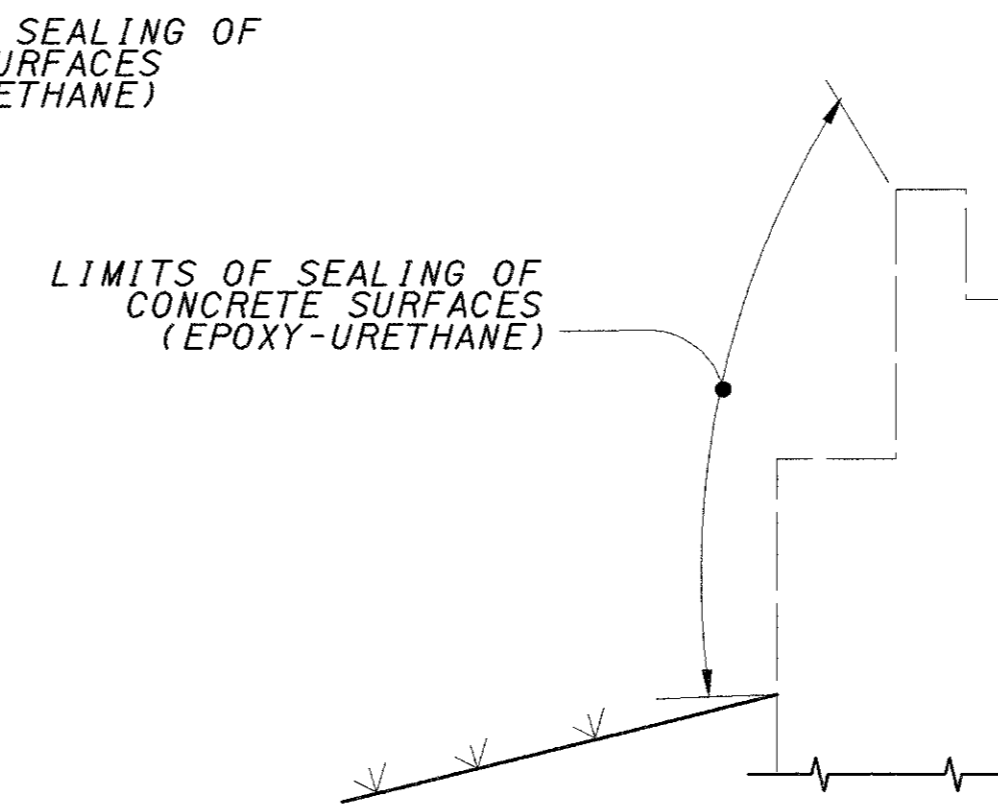
## SEALING OF CONCRETE SURFACES

THE CONCRETE SURFACES SHOULD BE SEALED AS FOLLOWS:

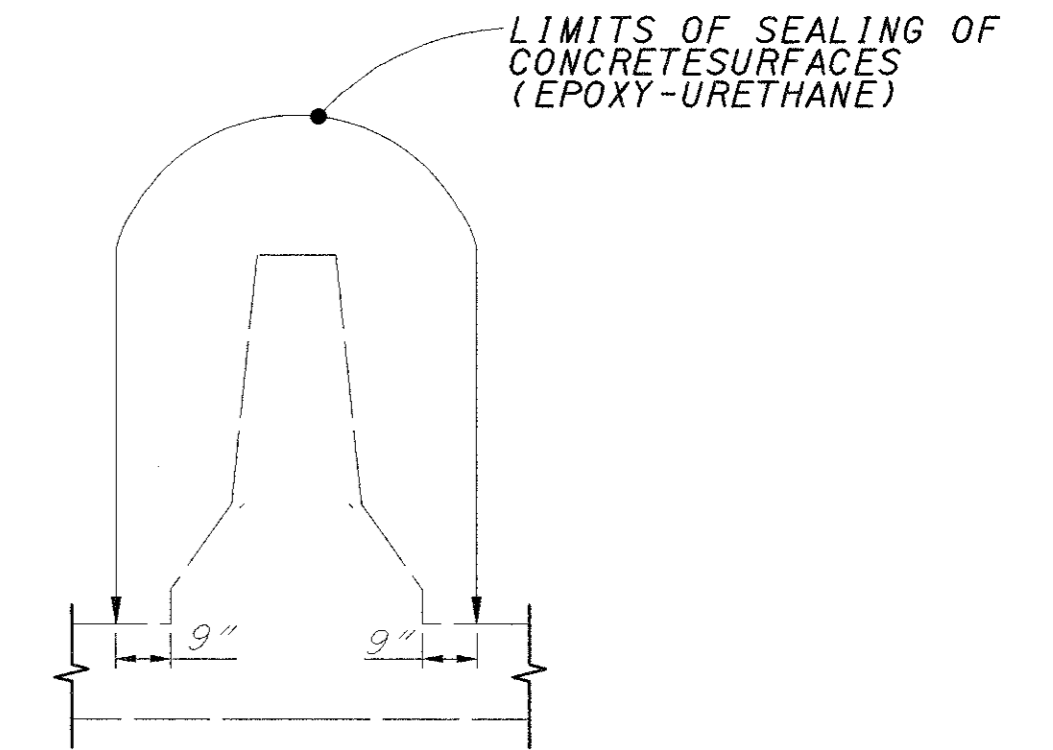
ABUTMENTS & WINGWALLS: ENTIRE LENGTH  
PIERS: ALL EXPOSED SURFACES EXCEPT THE TOP OF PIER CAP  
PARAPETS & MEDIAN BARRIERS: ENTIRE LENGTH OF THE BRIDGE



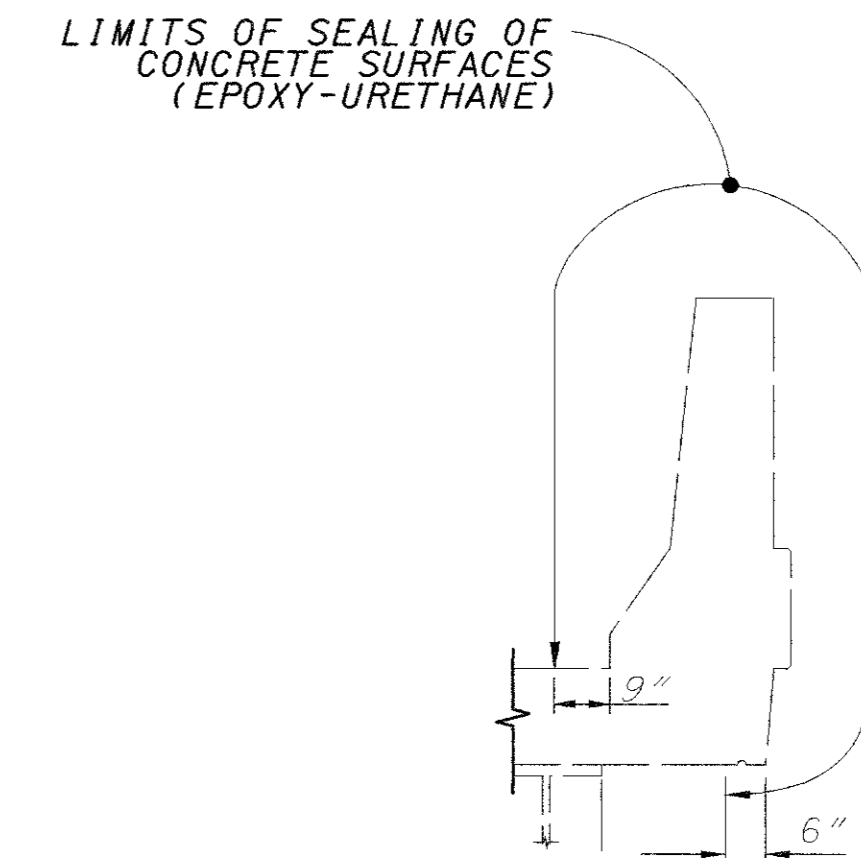
WINGWALL AND RETAINING WALL SECTION



ABUTMENT SECTION



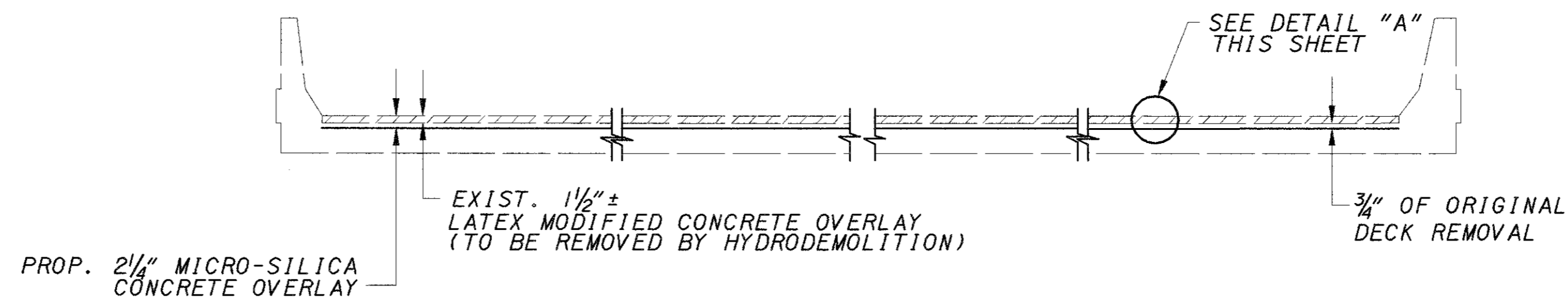
BARRIER SECTION



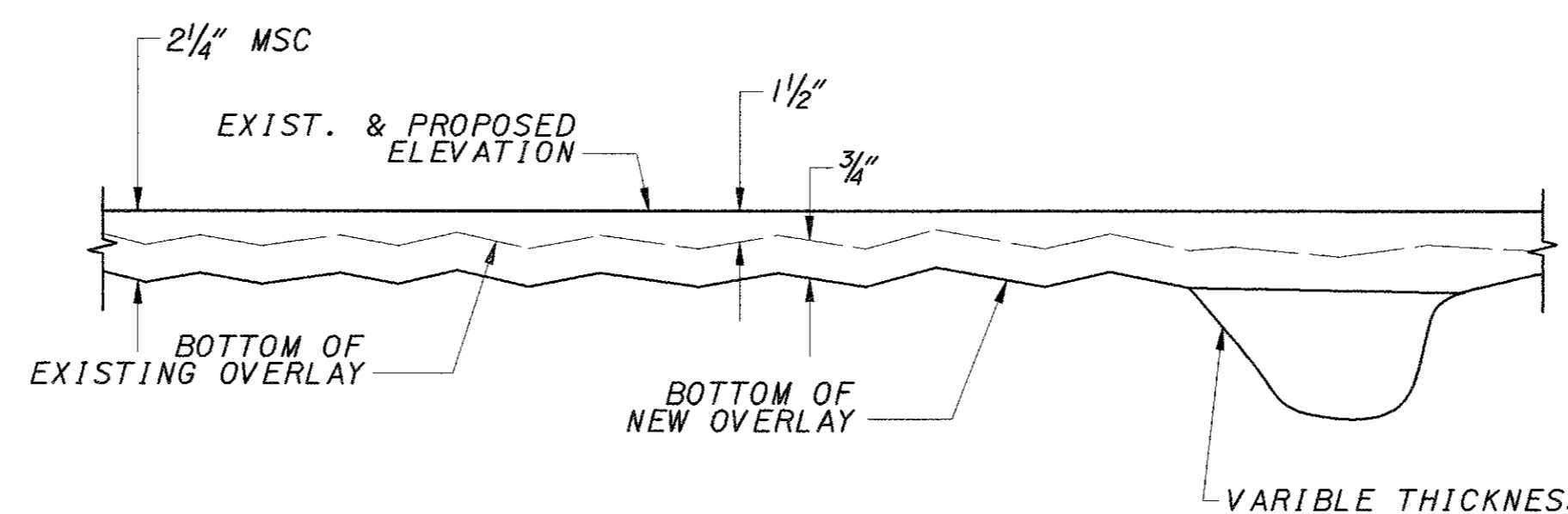
PARAPET SECTION

## MICRO-SILICA CONCRETE OVERLAY

EXISTING DECKS WILL BE OVERLAYED AS PER THE DETAILS SHOWN BELOW AND IN ACCORDANCE WITH ITEM 848.



EXISTING & MODIFIED TYPICAL SECTION  
(TYPICAL FOR BRIDGES WITHOUT MEDIAN BARRIER)



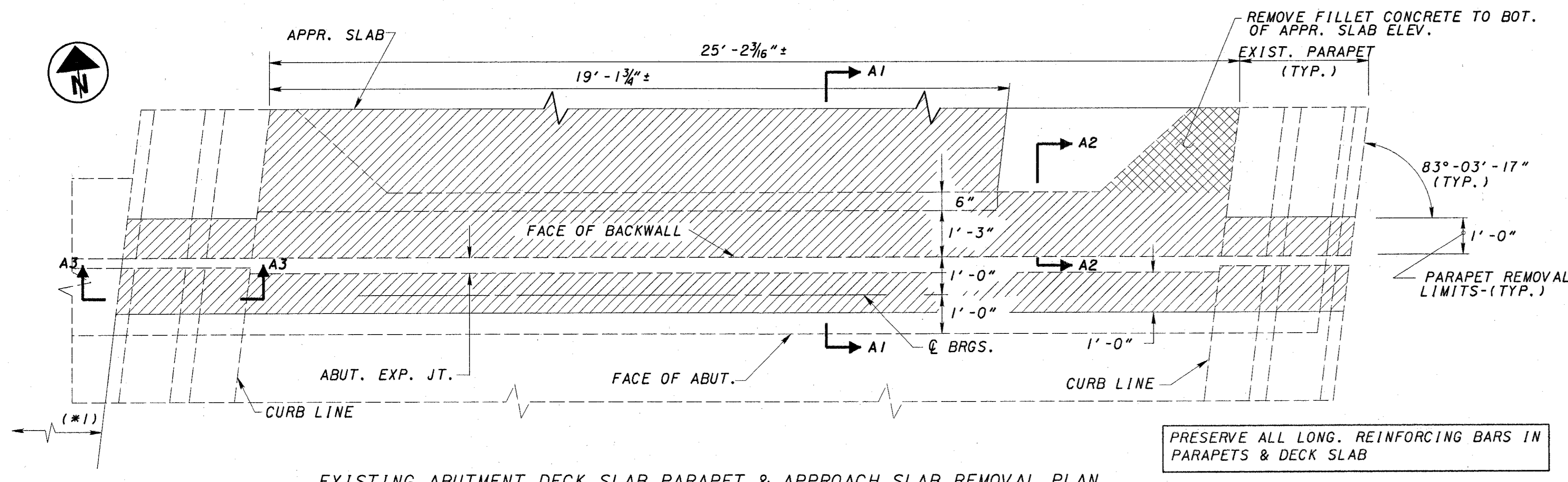
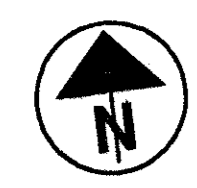
DETAIL A  
(TYPICAL FOR ALL BRIDGES)

## ABBREVIATIONS

ABUT.	-	ABUTMENT	SPA.	-	SPACES
APPR.	-	APPROACH	TBR.	-	TO BE REMOVED
BOT.	-	BOTTOM	TYP.	-	TYPICAL
BRGS.	-	BEARINGS			
CL.	-	CLEAR			
CJ.	-	CONTROL JOINT			
DIM.	-	DIMENSION			
ELEV.	-	ELEVATION			
EXP.	-	EXPANSION			
EXIST.	-	EXISTING			
LONG.	-	LONGITUDINAL			
JT.	-	JOINT			
MSC.	-	MICRO SILICA CONCRETE			

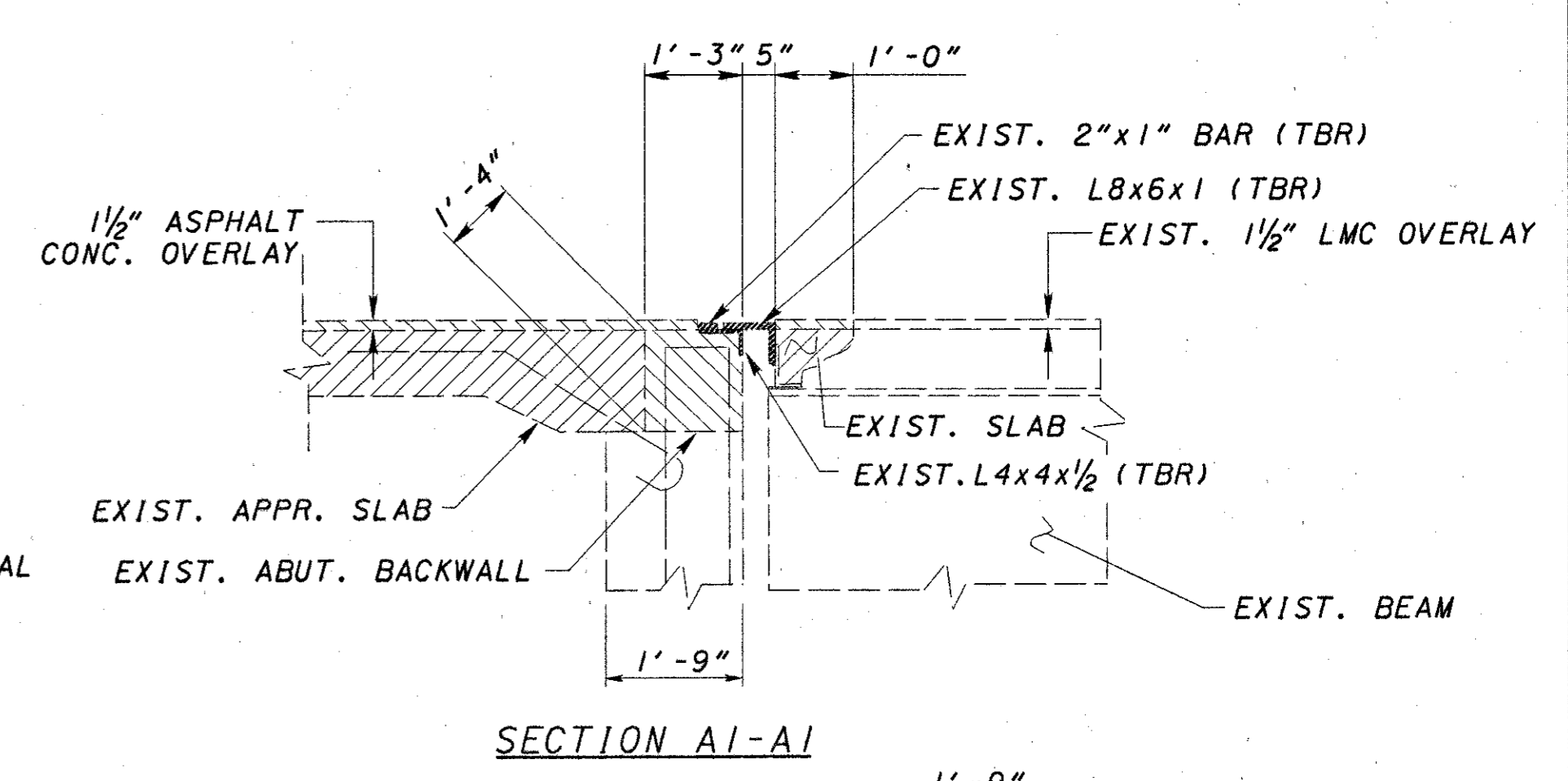
DESIGN AGENCY: BARR ENGINEERING, INC.  
 5 EAST LONG STREET  
 COLUMBUS, OHIO 43215  
 (614) 224-1941, (614) 224-0907 FAX  
 DATE: 4/2001  
 REVIEWED: ASB  
 STRUCTURE FILE NUMBER: 3103374 & 317367  
 DRAWN: FIB  
 CHECKED: JEP  
 DESIGNED: JS  
 STRUCTURE GENERAL NOTES  
 RAMP L (BRIDGE NO. HAM-50-2198E & BRIDGE NO. HAM-471-0000R)  
 HAM-471-0.26  
 56/106  
 88  
 182



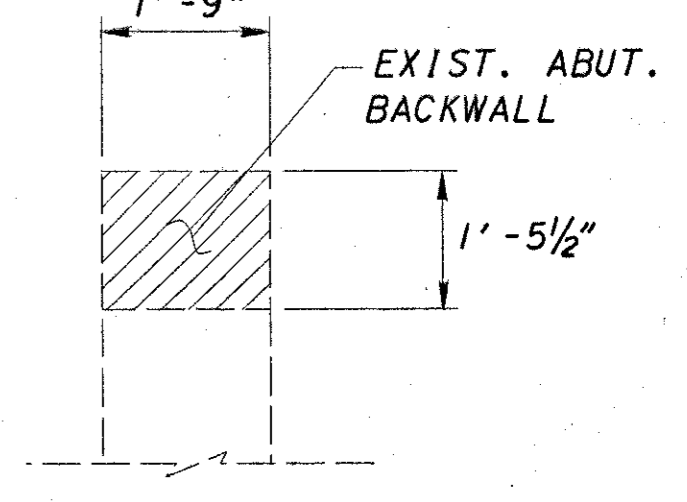


EXISTING ABUTMENT, DECK SLAB, PARAPET & APPROACH SLAB REMOVAL PLAN

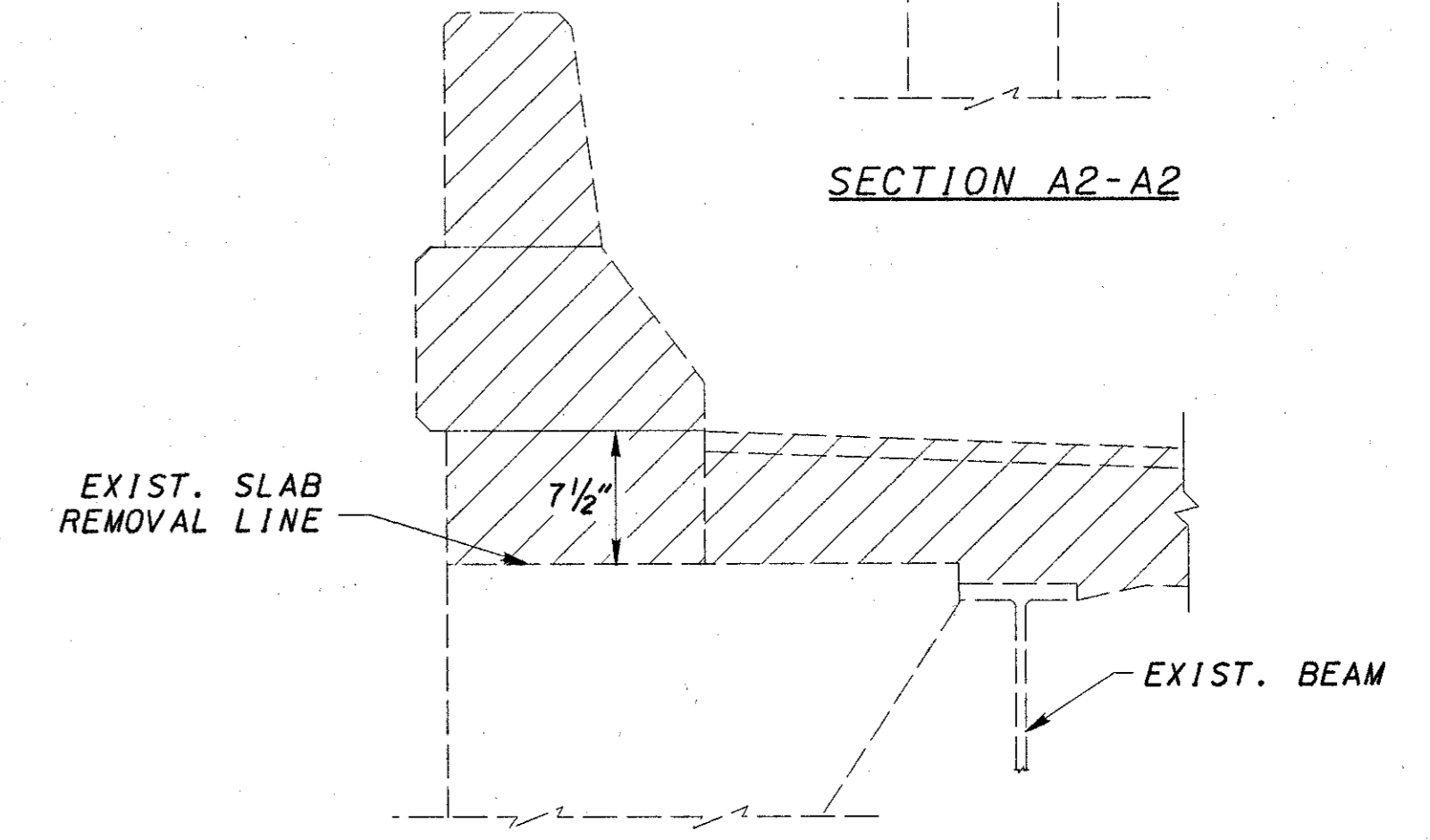
(\*1) NORTHBOUND ABUT. DETAILS NOT SHOWN



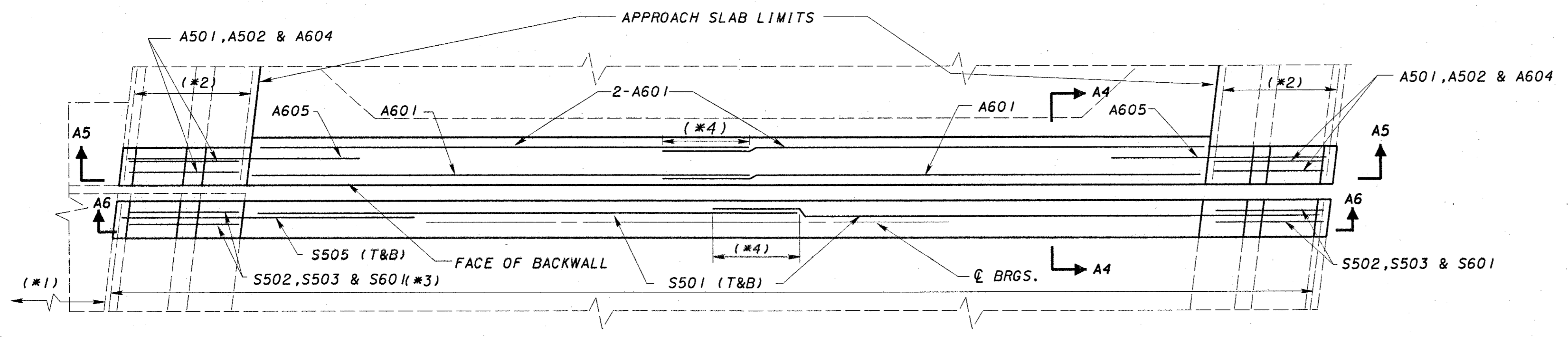
SECTION A1-A1



SECTION A2-A2

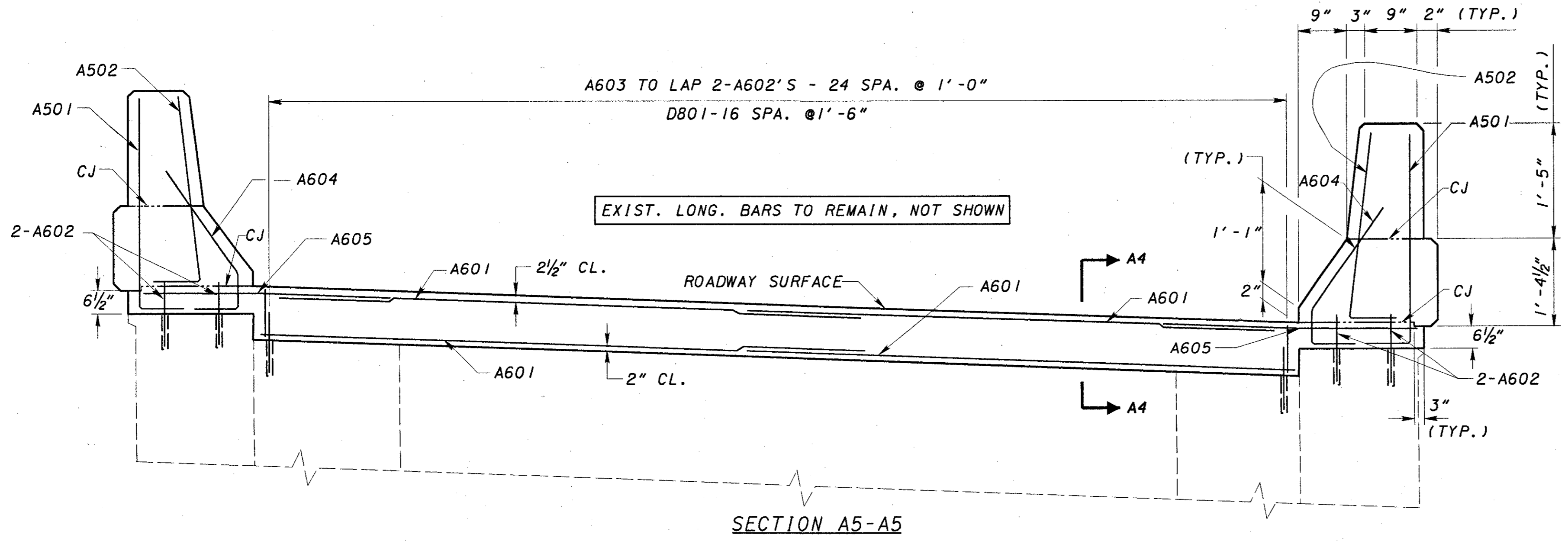


SECTION A3-A3

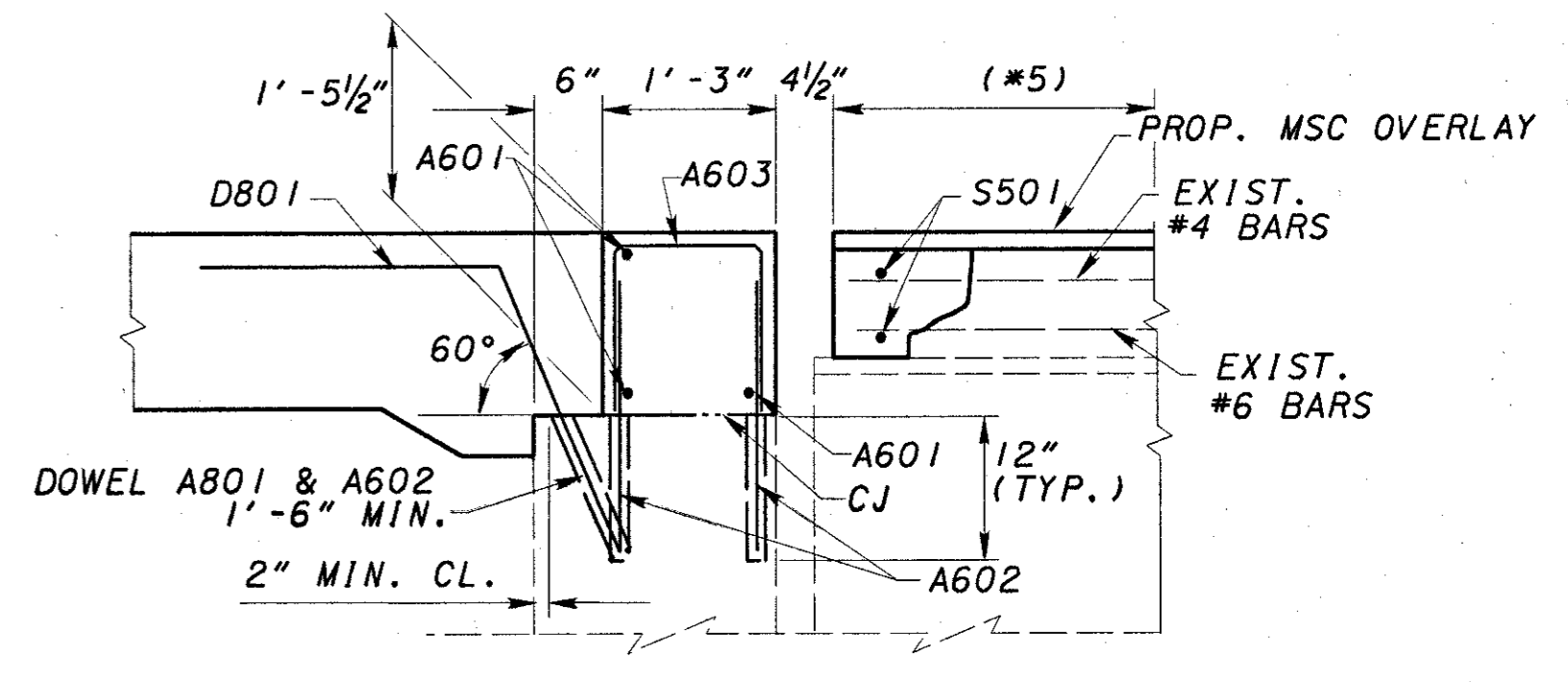


MODIFIED ABUTMENT, DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

- (\*2) EXIST. LONG. BARS TO REMAIN IN PARAPET
- (\*3) EXIST. DECK SLAB & PARAPET LONG. BARS PROTRUDE INTO NEW CONCRETE AREA
- (\*4) LAP LENGTHS
  - \*5 BAR=2'-9"
  - \*6 BAR=3'-3"



SECTION A5-A5

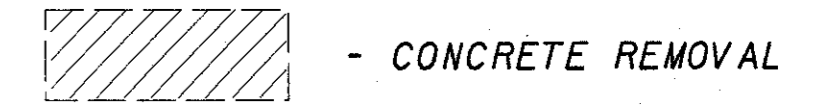


SECTION A4-A4

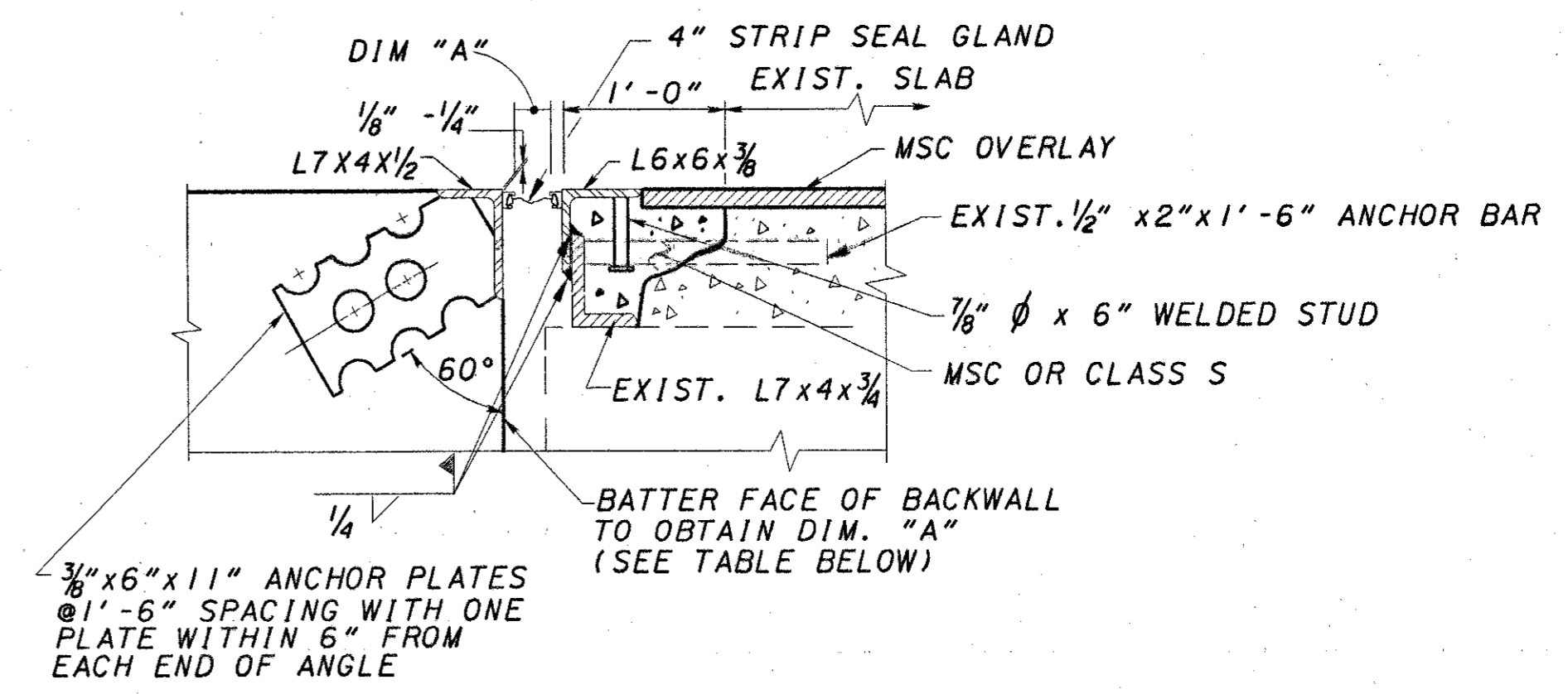
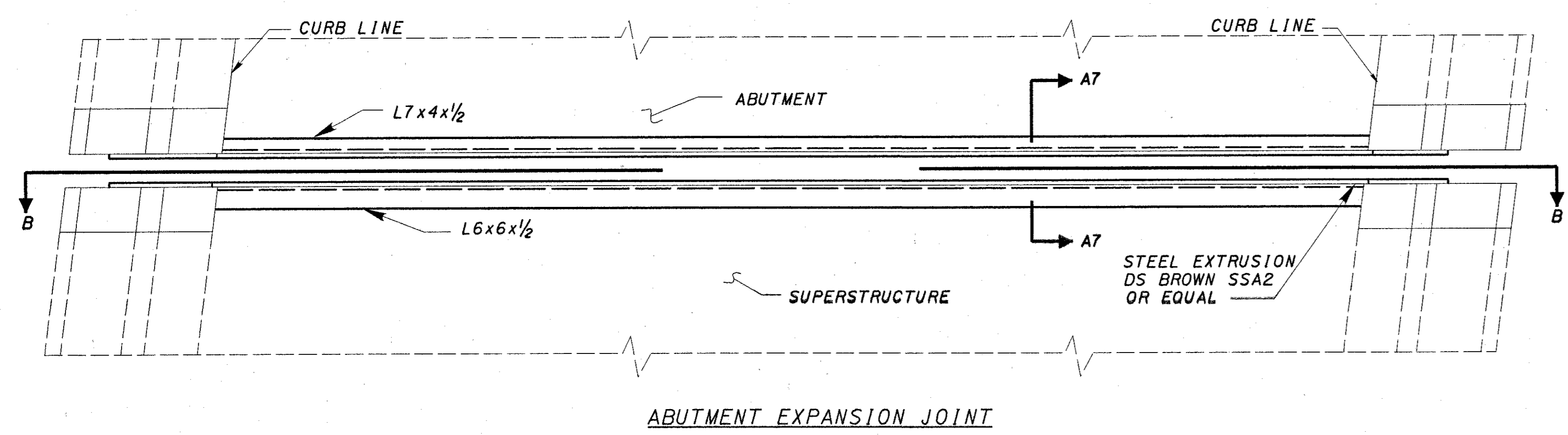
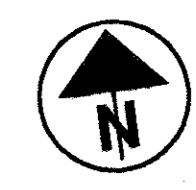
(\*5) - SALVAGE EXISTING LONGITUDINAL RE-STEEL

ALTERNATE TO BACKWALL CONSTRUCTION  
 PLANS SHOW THE PORTIONS OF BACKWALL REMOVAL BY SAWCUTTING AT APPROACH SLAB SEAL LEVEL (SECTION A1-A1) AND RECONSTRUCTING THE BACKWALL BY DOWELLING INTO THE REMAINING EXISTING BACKWALL AS PER THE DETAILS OF SECTION A4-A4. AS AN ALTERNATE TO DOWELLING IN NEW BARS, THE CONTRACTOR MAY CHOOSE TO PRESERVE THE EXIST. BARS (RUNNING THROUGH THE CONSTRUCTION JOINT) DURING THE REMOVAL OF THE BACKWALL CONCRETE. ANY BAR DAMAGED DURING THE CONCRETE REMOVAL SHALL BE REPLACED BY NEW BARS AS DETAILED IN SECTION A4-A4.

LEGEND



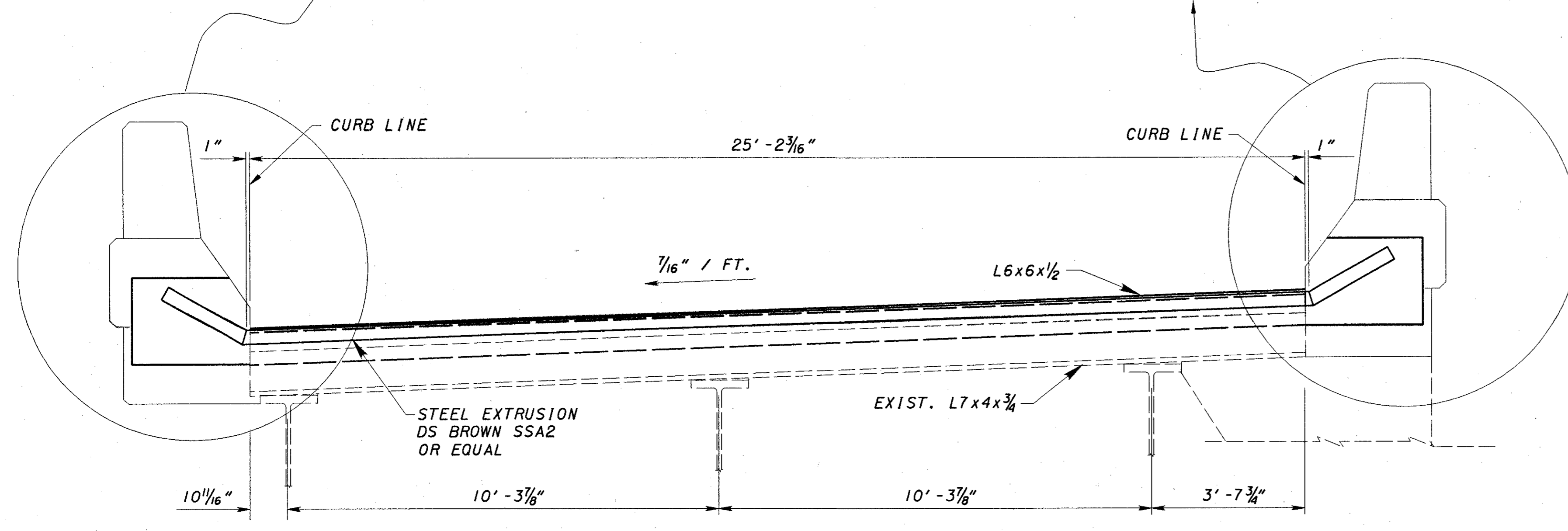
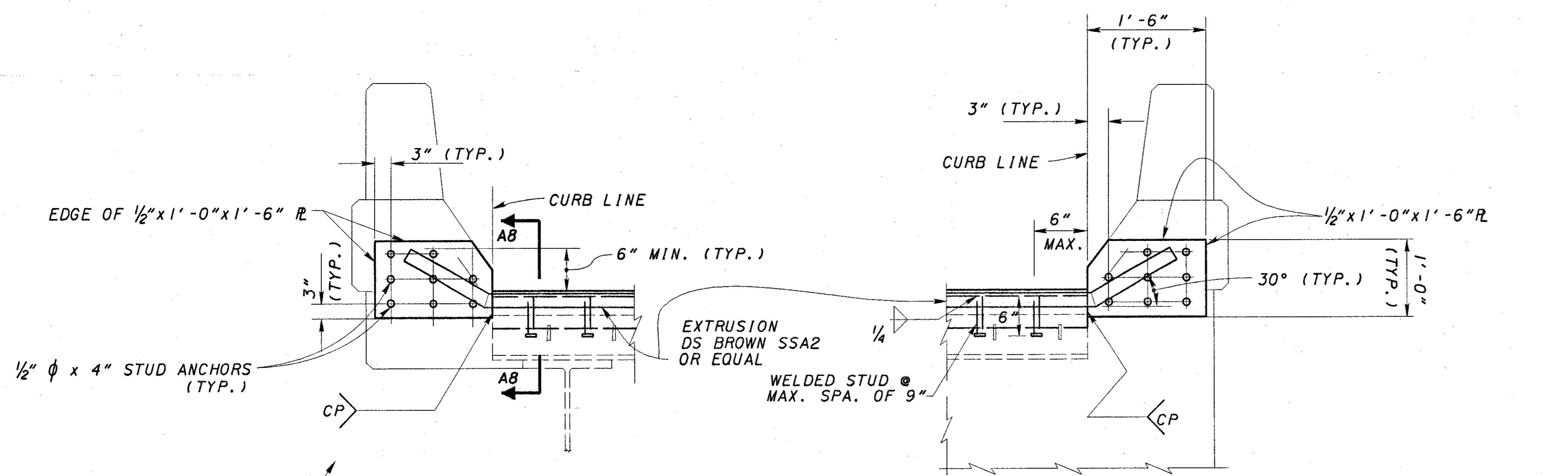
DESIGN AGENCY BAR ENGINEERING Five East Long Street Columbus, Ohio 43215 Ph: (614) 224-1941	DATE 4/2001	DESIGNED JEP	CHECKED ASB
REVISED FILE NUMBER 3117367	REVISED FILE NUMBER ---	DRAWN JEP	REVISED ---
ABUTMENT EXPANSION JOINT DETAILS RAMP L (BRIDGE NO. HAM-471-0000 R)			
HAM 471-0.26			
57/106			
89 182			



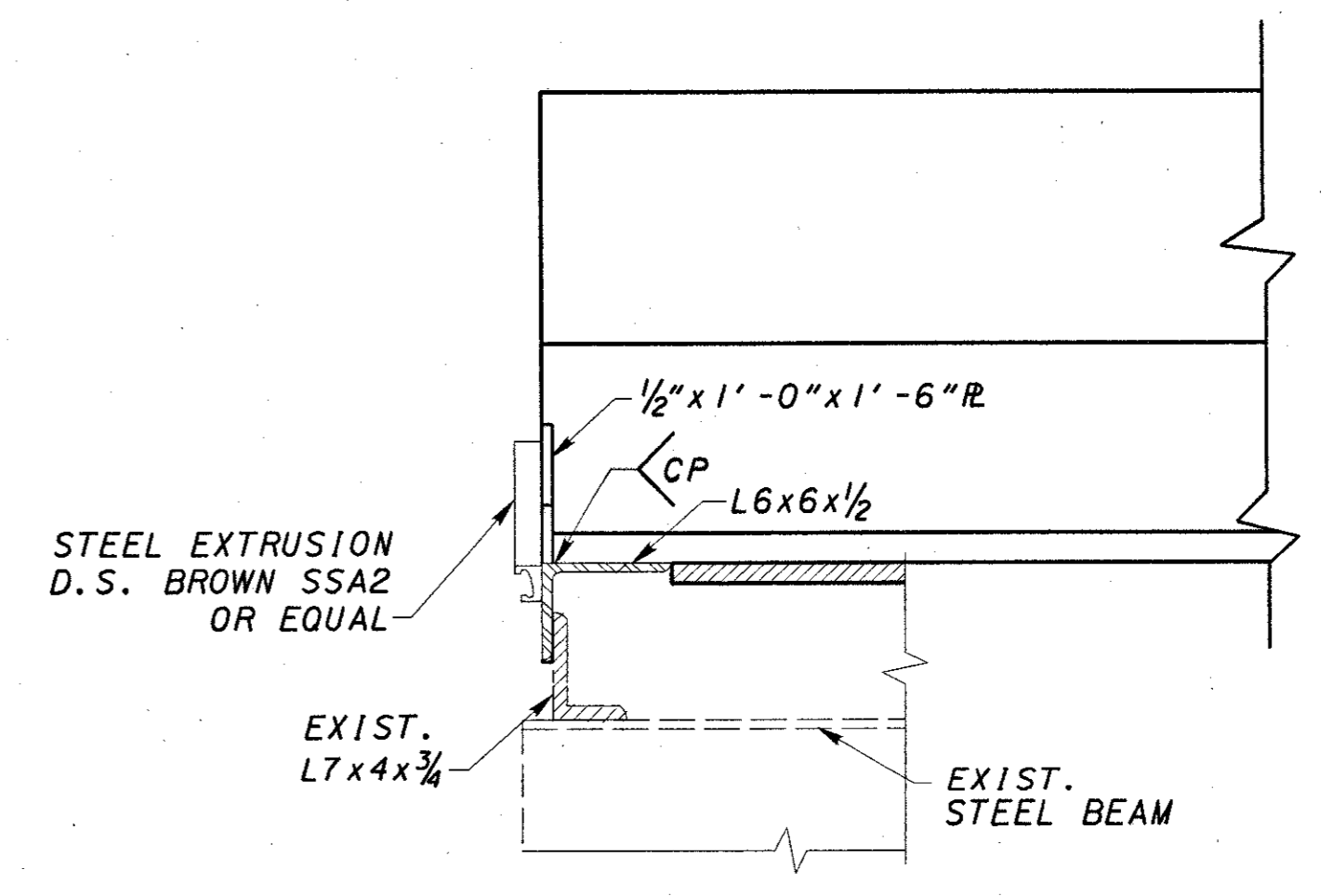
SECTION A7-A7

TEMPERATURE (F)	DIMENSION "A"
30°	2 <sup>9</sup> / <sub>16</sub> "
40°	2 <sup>3</sup> / <sub>8</sub> "
50°	2 <sup>1</sup> / <sub>8</sub> "
60°	1 <sup>5</sup> / <sub>16</sub> "
70°	1 <sup>3</sup> / <sub>8</sub> "
80°	1 <sup>1</sup> / <sub>2</sub> "
90°	1 <sup>7</sup> / <sub>16</sub> "

EXPANSION LENGTH = 270'-0"±



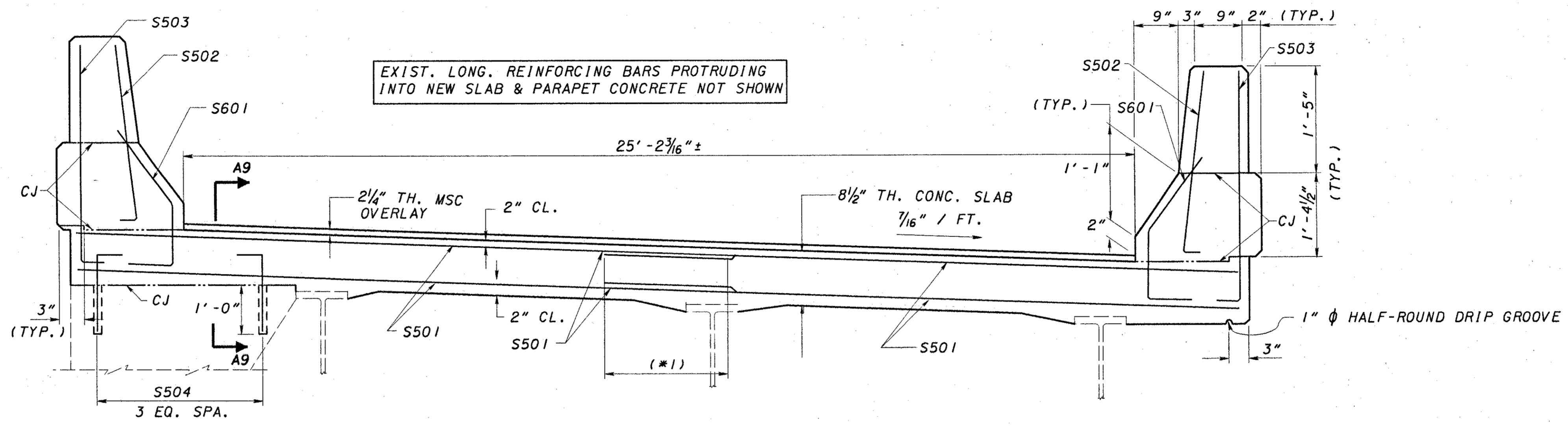
SECTION B-B



SECTION A8-A8

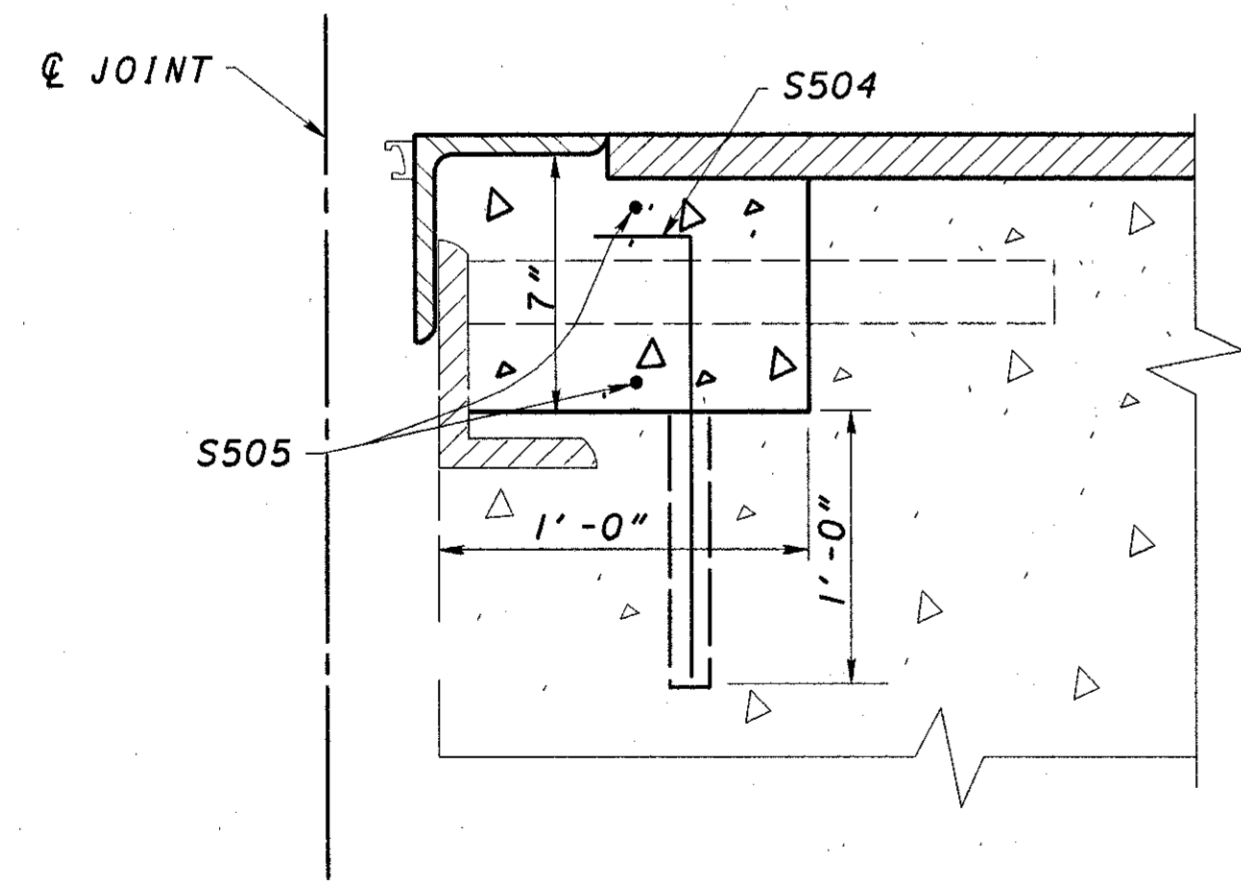
NOTES  
REFER TO STD. DWG. EXJ-4-87  
FOR DETAILS NOT SHOWN

DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 Ph: (614) 224-1941  
 DATE: 4/2001  
 REVIEWED: GEA  
 DRAWN: JEP  
 DESIGNED: JEP  
 CHECKED: ASB  
 STRUCTURE FILE NUMBER: 3117367  
 ABUTMENT EXPANSION JOINT DETAILS  
 RAMP L (BRIDGE NO. HAM-47 1-0000 R)  
 HAM 47 1-0.26  
 58/106  
 90/182



SECTION A6-A6

(\*1) LAP LENGTH  
#5 BAR-2'-9"



SECTION A9-A9

DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

DATE	4/2001
REVIEWED	GEA
DRAWN	JEP
DESIGNED	JEP
CHECKED	ASB
STRUCTURE FILE NUMBER	3117367

ABUTMENT EXPANSION JOINT DETAILS  
RAMP L (BRIDGE NO. HAM-471-0000 R)

HAM-471-0.26

59/06

91  
182

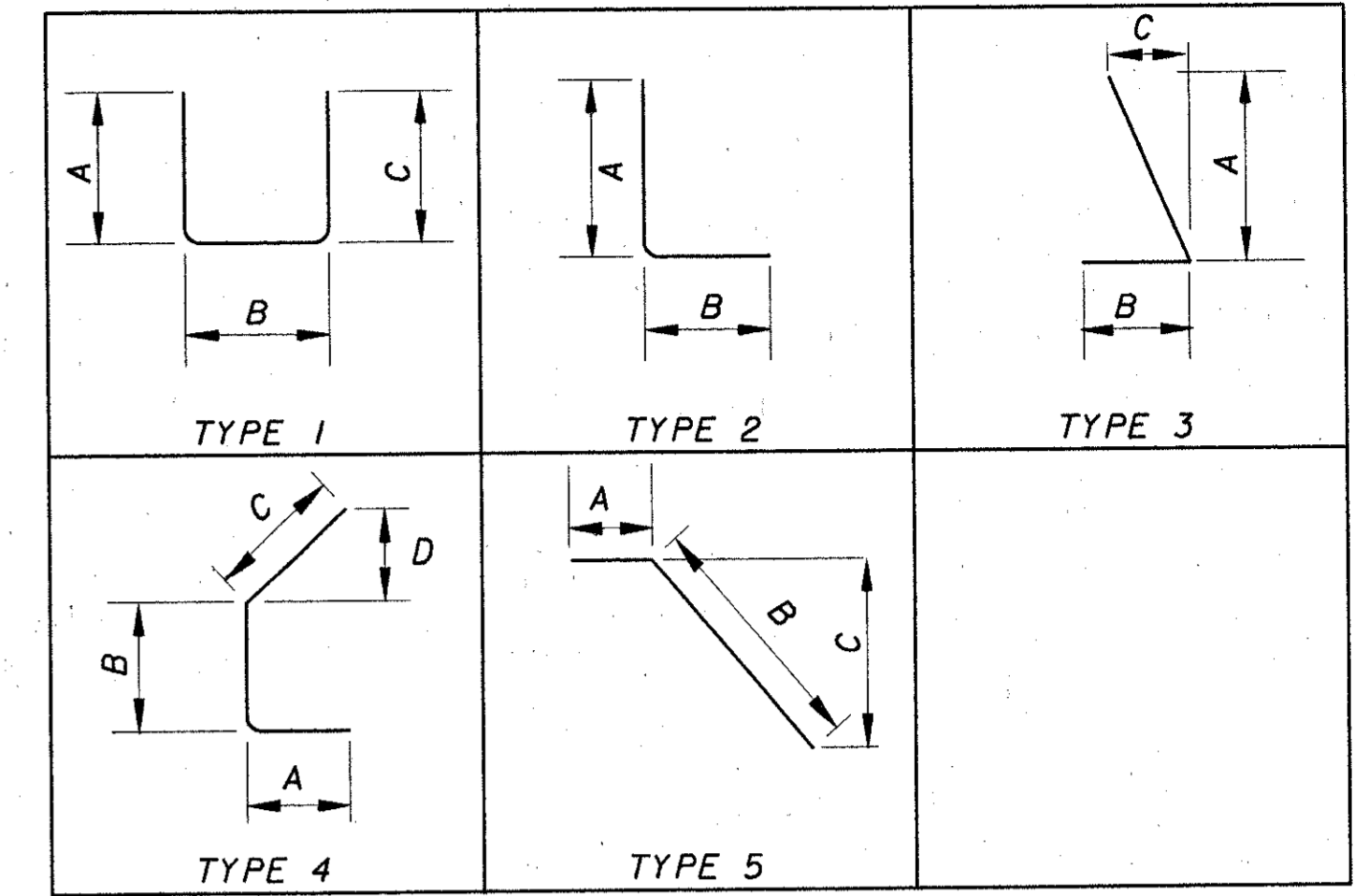
## REINFORCING STEEL LIST

### FORWARD ABUTMENT

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
<b>ABUTMENT</b>									
A501	4	3'-6"		2	2'-10"	10"			
A502	4	3'-2"		3	2'-6"	10"	4"		
A601	6	14'-0"		STR					
A602	58	2'-0"		STR					
A603	25	2'-10"		1	1'-2"	10"	1'-2"		
A604	4	3'-3"		4	1'-0"	6"	2'-0"	1'-7"	
A605	4	5'-10"		STR					
D801	17	3'-8"		5	1'-6"	2'-3"	1'-10"		

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
<b>SUPERSTRUCTURE</b>									
S501	4	14'-10"		STR					
S502	4	3'-2"		3	2'-6"	10"	2"		
S503	4	3'-8"		2	3'-0"	10"			
S504	4	2'-1"		2	1'-5"	10"			
S505	2	7'-6"		STR					
S601	4	3'-5"		4	1'-0"	8"	2'-0"	1'-7"	

### BENDING DIAGRAMS

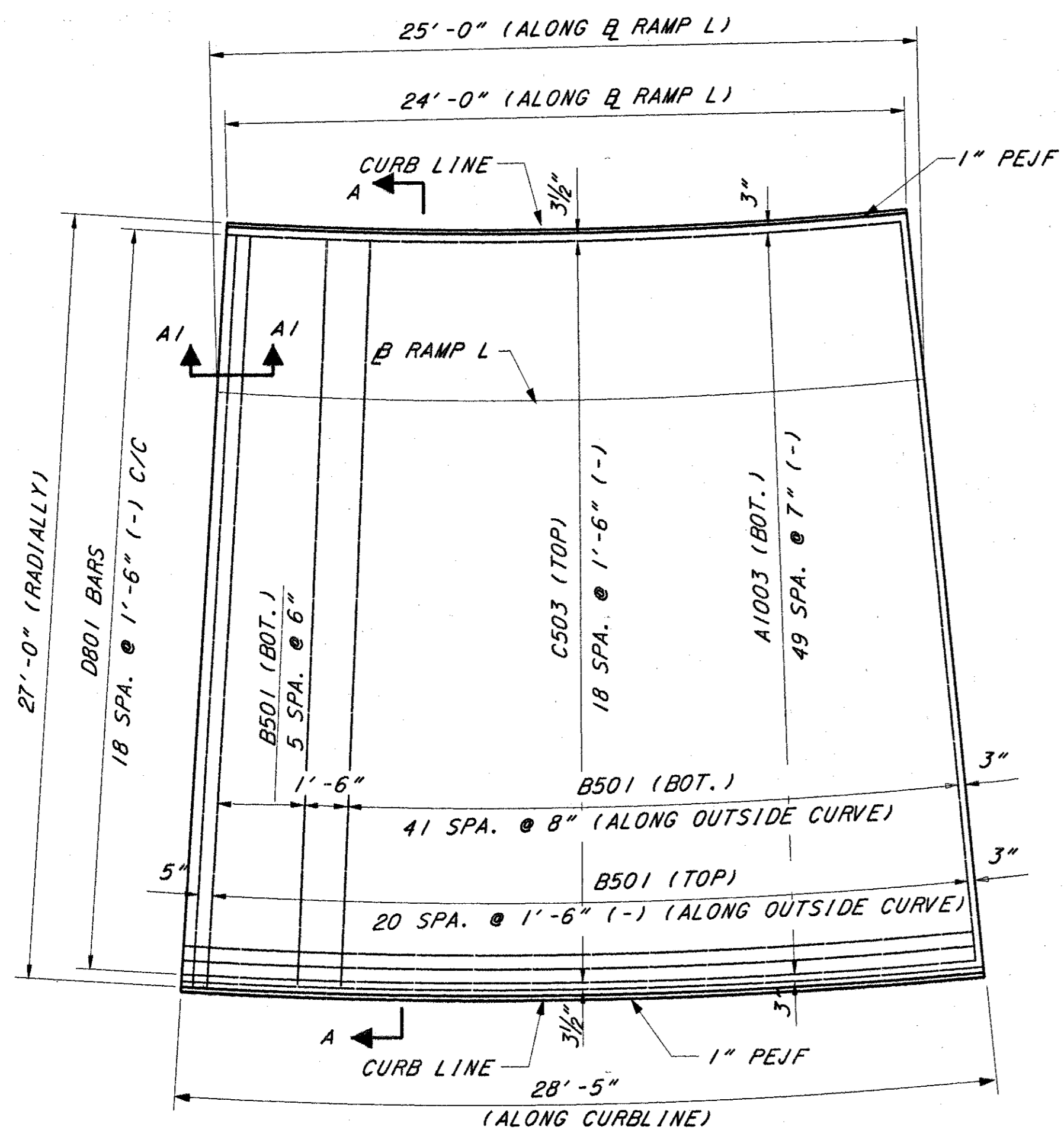
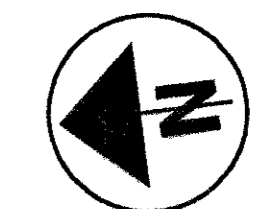


### PIER 17

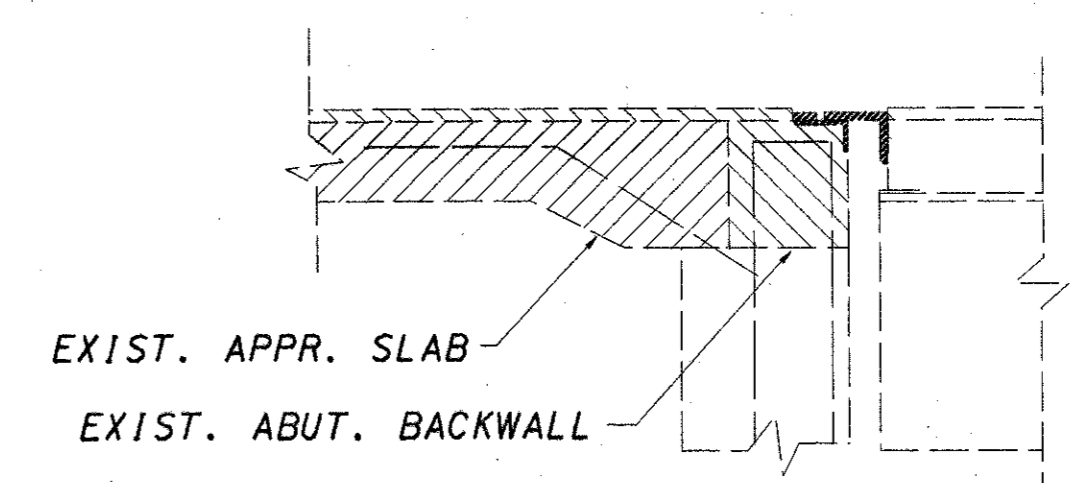
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
<b>SUPERSTRUCTURE</b>									
S501	4	15'-9"		STR					
S502	2	3'-2"		3	2'-6"	10"	2"		
S503	2	3'-8"		2	3'-0"	10"			
S504	4	1'-11"		2	1'-6"	3"			
S601	2	3'-5"		4	1'-0"	8"	2'-0"	1'-7"	

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.

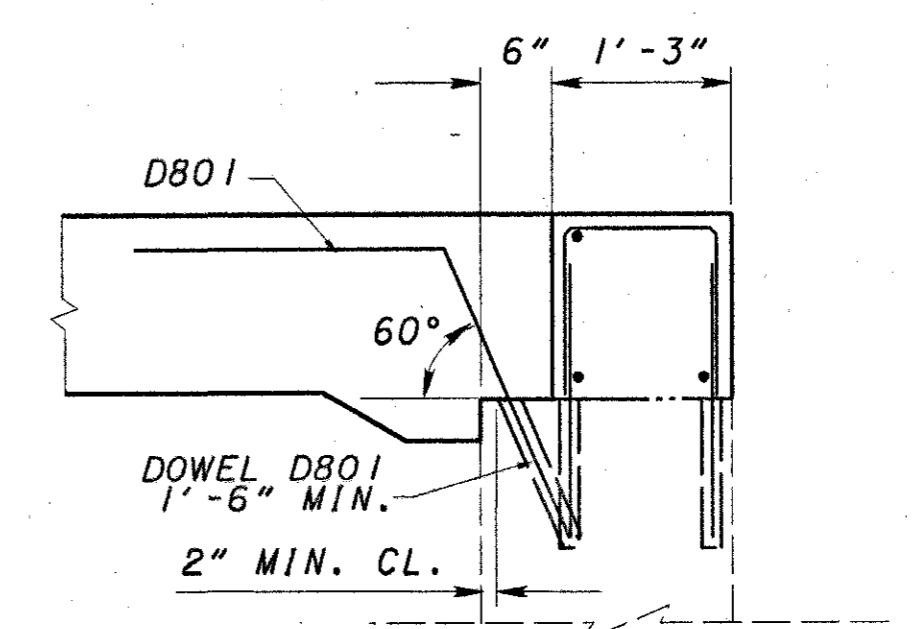
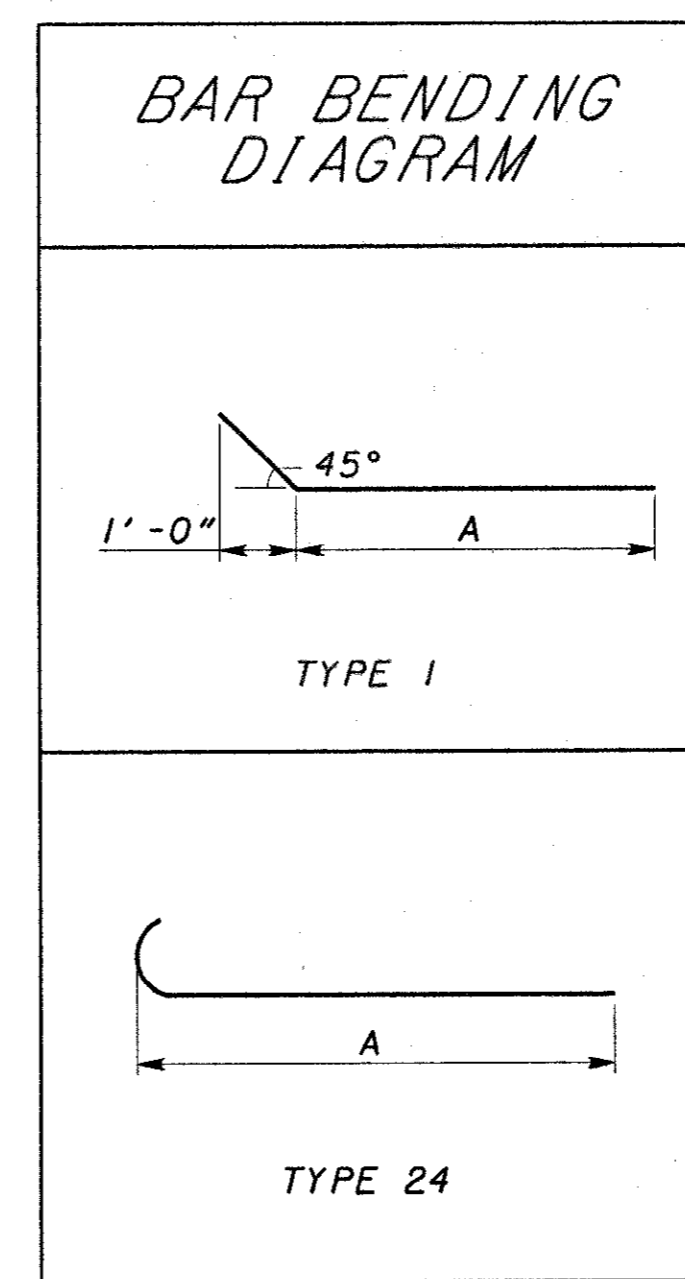
**REINFORCING STEEL LIST**  
 RAMP L (BRIDGE NO. HAM-471-0000 R)  
 HAM-471-0.26  
 60/106  
 92  
 182  
 DESIGN AGENCY: BARR ENGINEERING, INC.  
 5 EAST LONG STREET  
 COLUMBUS, OHIO 43215  
 (614) 224-1941, (614) 224-0907 FAX  
 DATE: 4/2001  
 REVIEWED: GEA  
 DRAWN: JEP  
 CHECKED: ASB  
 STRUCTURE FILE NUMBER: 3117367



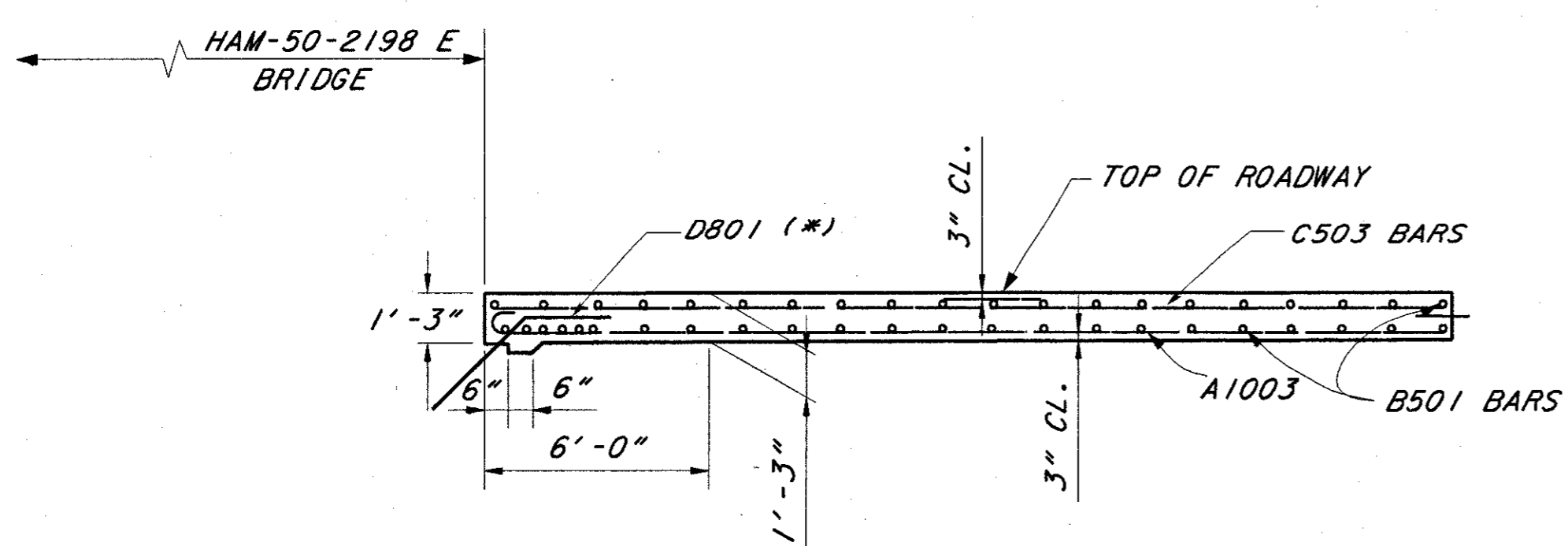
PLAN



SECTION A1-A1  
(REMOVAL)



SECTION A1-A1  
(PROPOSED)



SECTION A-A

(\* ) THE CONTRACTOR HAS THE OPTION TO USE NEW DOWEL BARS OR RE-USE THE EXISTING PER THE NOTE ON SHEET 8 OF 15.

REINFORCING STEEL LIST					
MARK	NUMBER	LENGTH	TYPE	DIM. A	INCR.
A1003	1 SER. OF 50	24'-10" TO 29'-1"	24	23'-7" TO 27'-8"	1"
B501	69	26'-4"	STR.		
C503	1 SER. OF 19	23'-7" TO 27'-8"	STR.		1"
(* ) D801	19	3'-9"	1	2'-8"	

NOTE:  
FOR ADDITIONAL DETAILS,  
SEE STD. DWG. AS-1-81

DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

DATE  
4/2001  
REVIEWED  
GLE  
STRUCTURE FILE NUMBER  
3103374

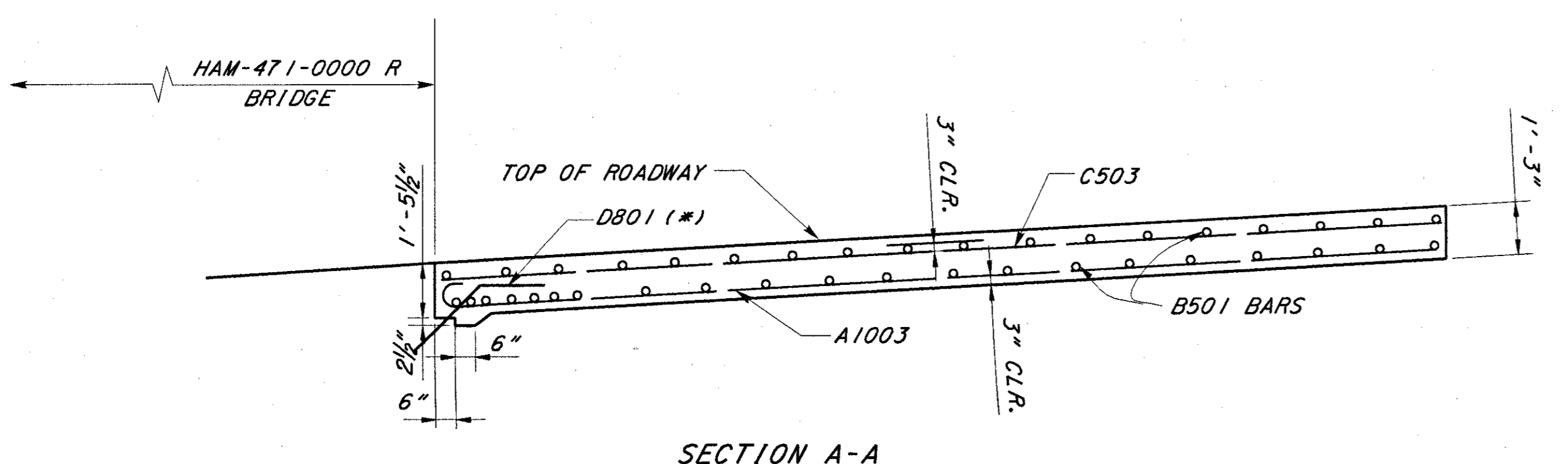
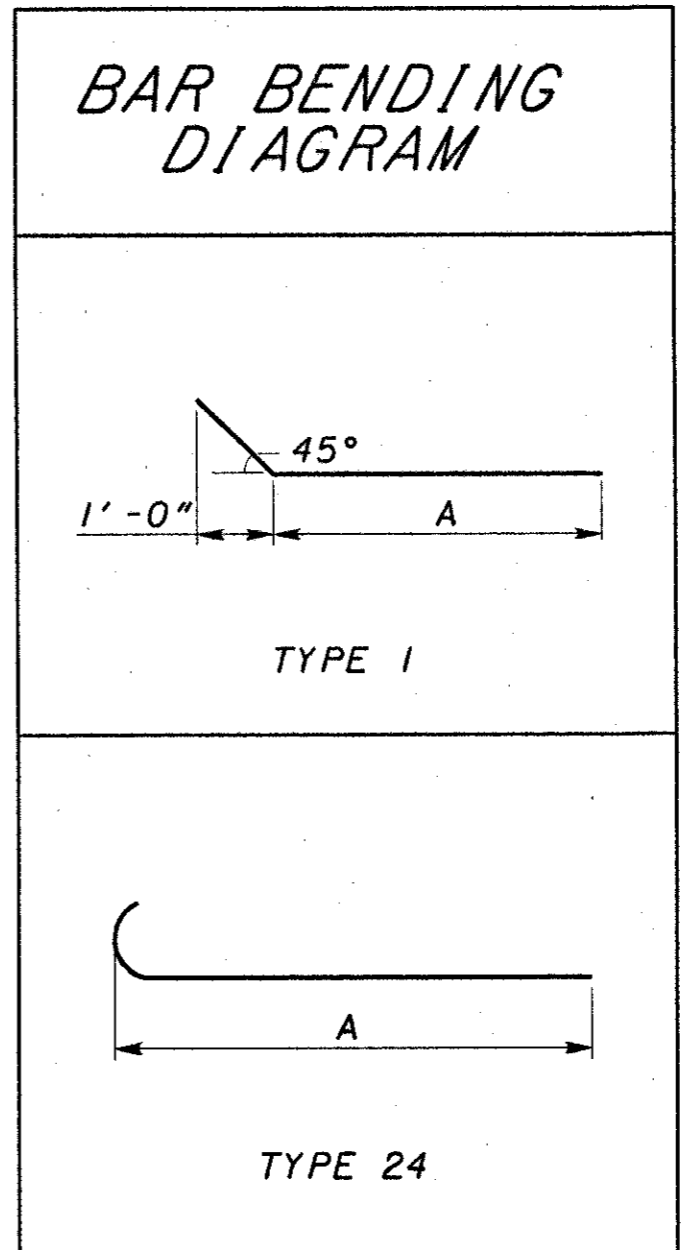
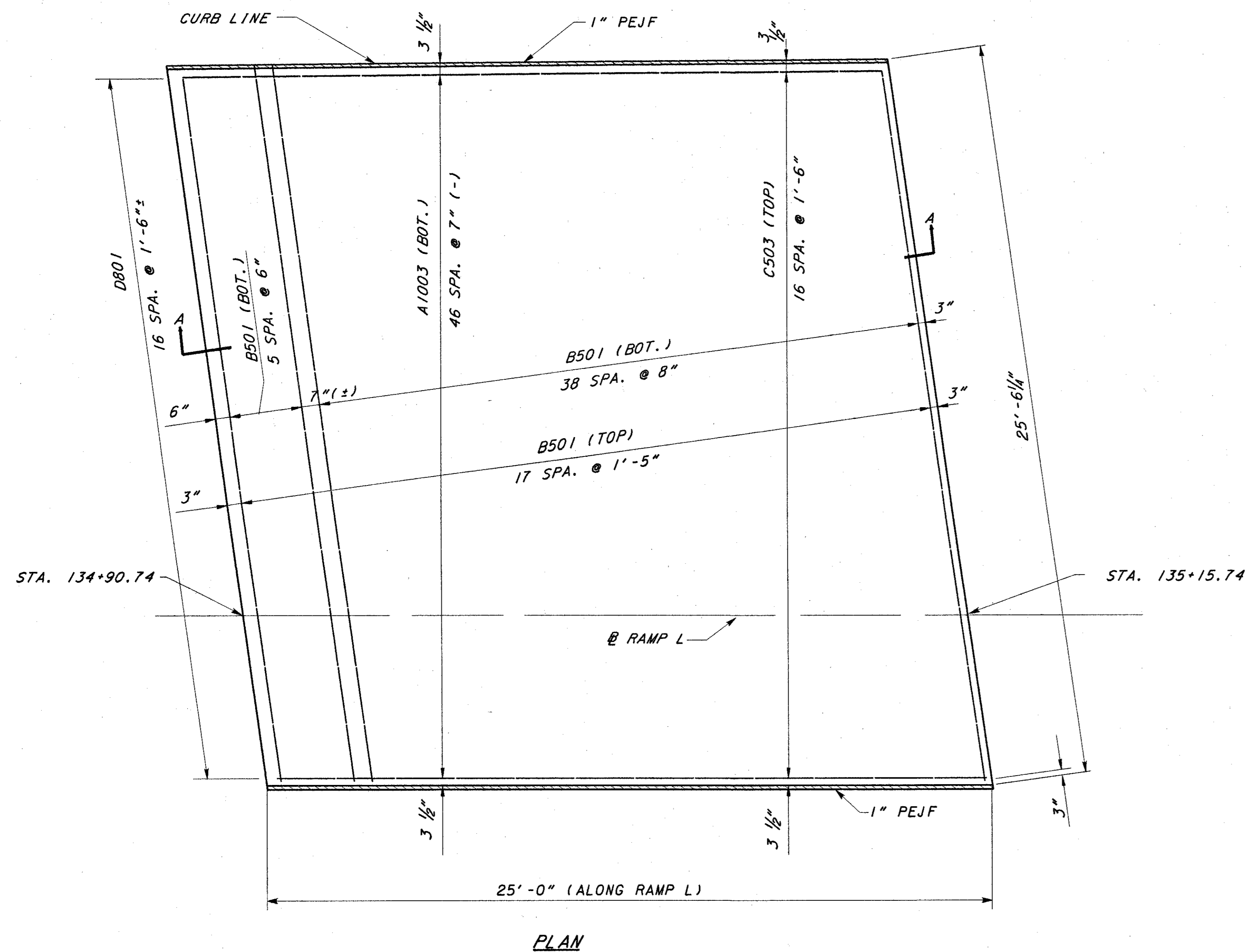
DESIGNED  
JEP  
CHECKED  
ASB  
DRAWN  
JEP  
REVISED  
---

REAR APPROACH SLAB  
RAMP L ( BRIDGE NO. HAM-50-2198 E )

HAM-471-0.26

6/1/06

93  
182



(\* ) - THE CONTRACTOR HAS THE OPTION TO USE NEW DOWEL BARS OR RE-USE THE EXISTING PER THE NOTE ON SHEET 8 OF 15. (INCLUDED WITH ABUT. DETAILS)

MARK	NUMBER	LENGTH	TYPE	DIM. A
A1003	47	25'-11"	24	24'-6"
B501	63	25'-0"	STR.	
C503	17	24'-6"	STR.	
(* ) DB01	17	3'-11"	1	2'-10"

NOTE:  
FOR ADDITIONAL DETAILS,  
SEE STD. DWG. AS-1-81



DESIGN AGENCY  
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Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

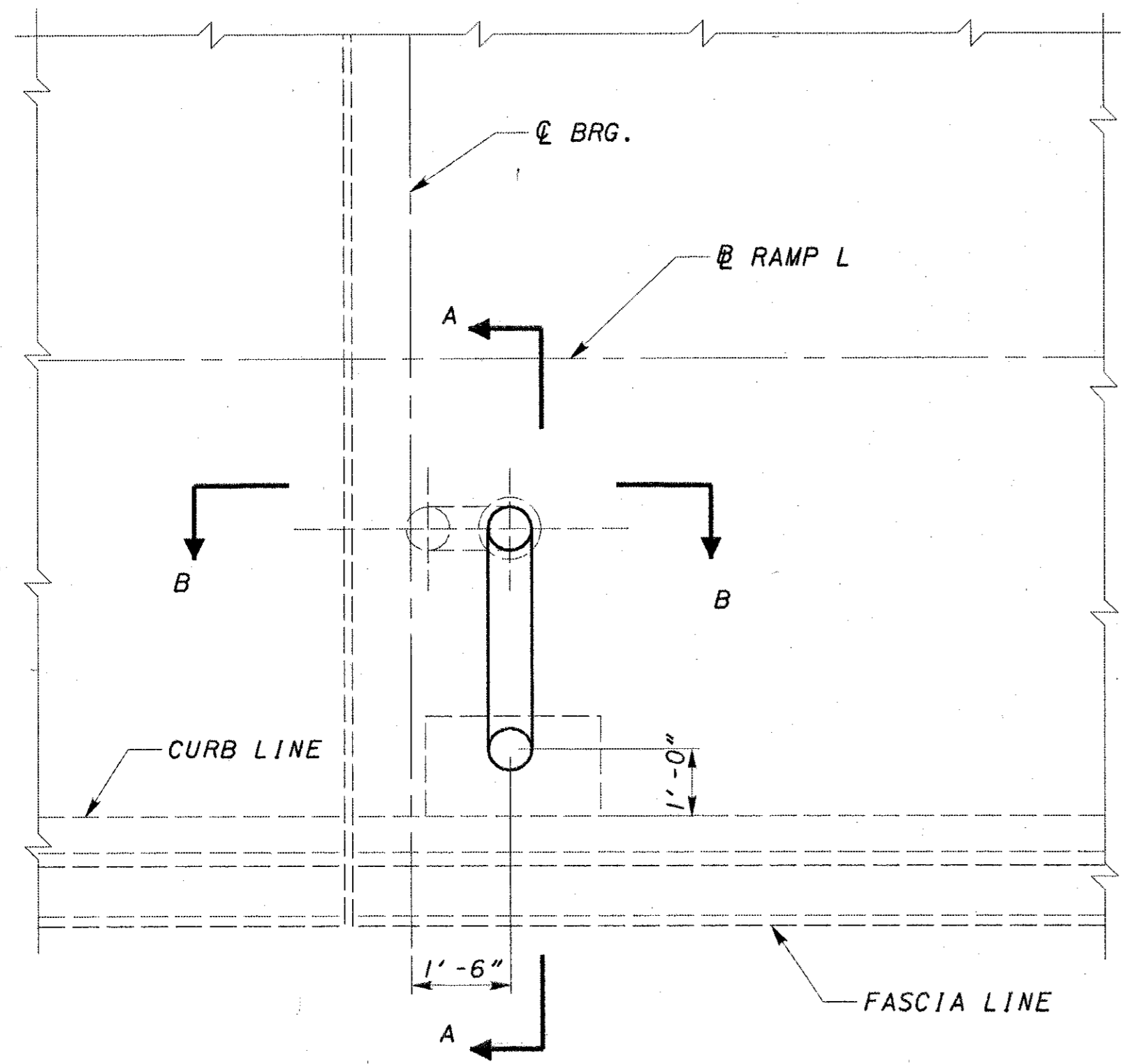
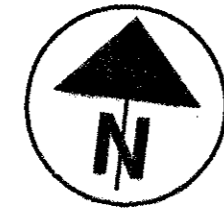
DESIGNED	JEP	CHECKED	ASB
DRAWN	JEP	REVIS	---
REVIEWED	GEA	STRUCTURE FILE NUMBER	3117367
DATE	4/2001		

FORWARD APPROACH SLAB  
RAMP L ( BRIDGE NO. HAM-471-0000 R)

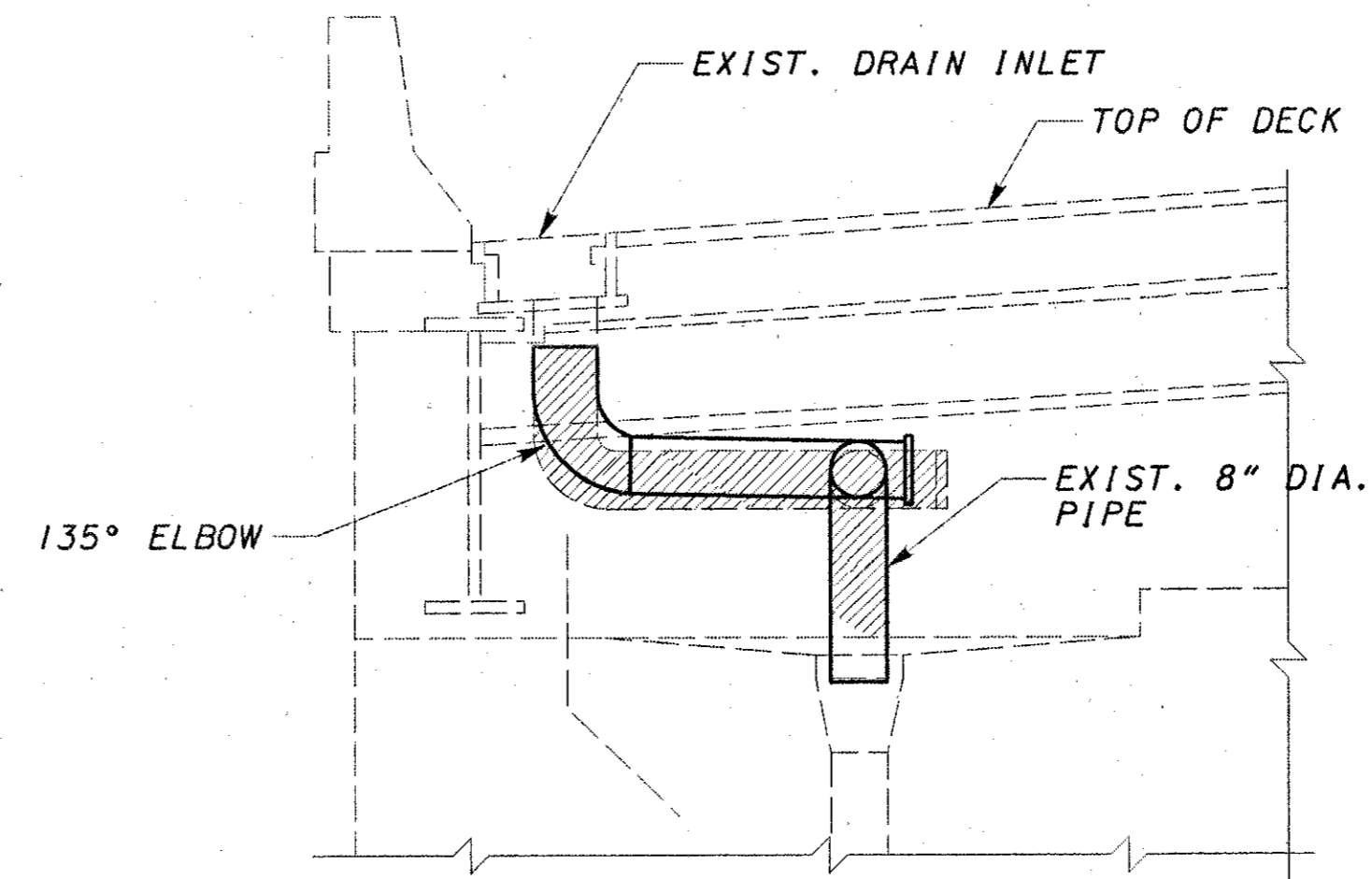
HAM-471-0.26

62/106

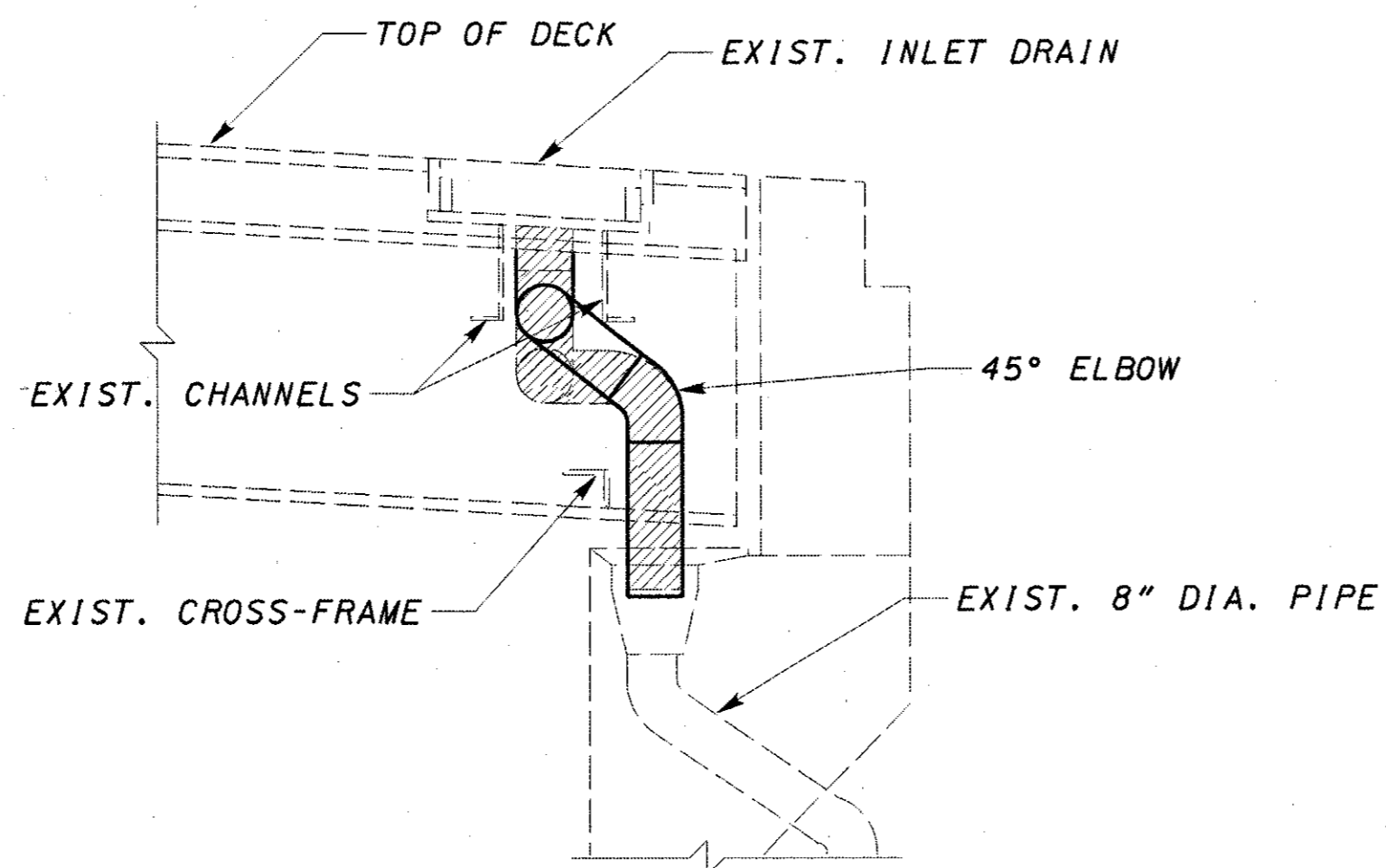
94  
182



PLAN AT REAR ABUTMENT



SECTION A-A



SECTION B-B

MATERIAL LIST

POSITION	45° BEND (EACH)	135° BEND (EACH)	LENGTH (FT.)
RA	1	1	8
PIER 3	2		3
PIER 5	2		2
PIER 12	8		8

DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

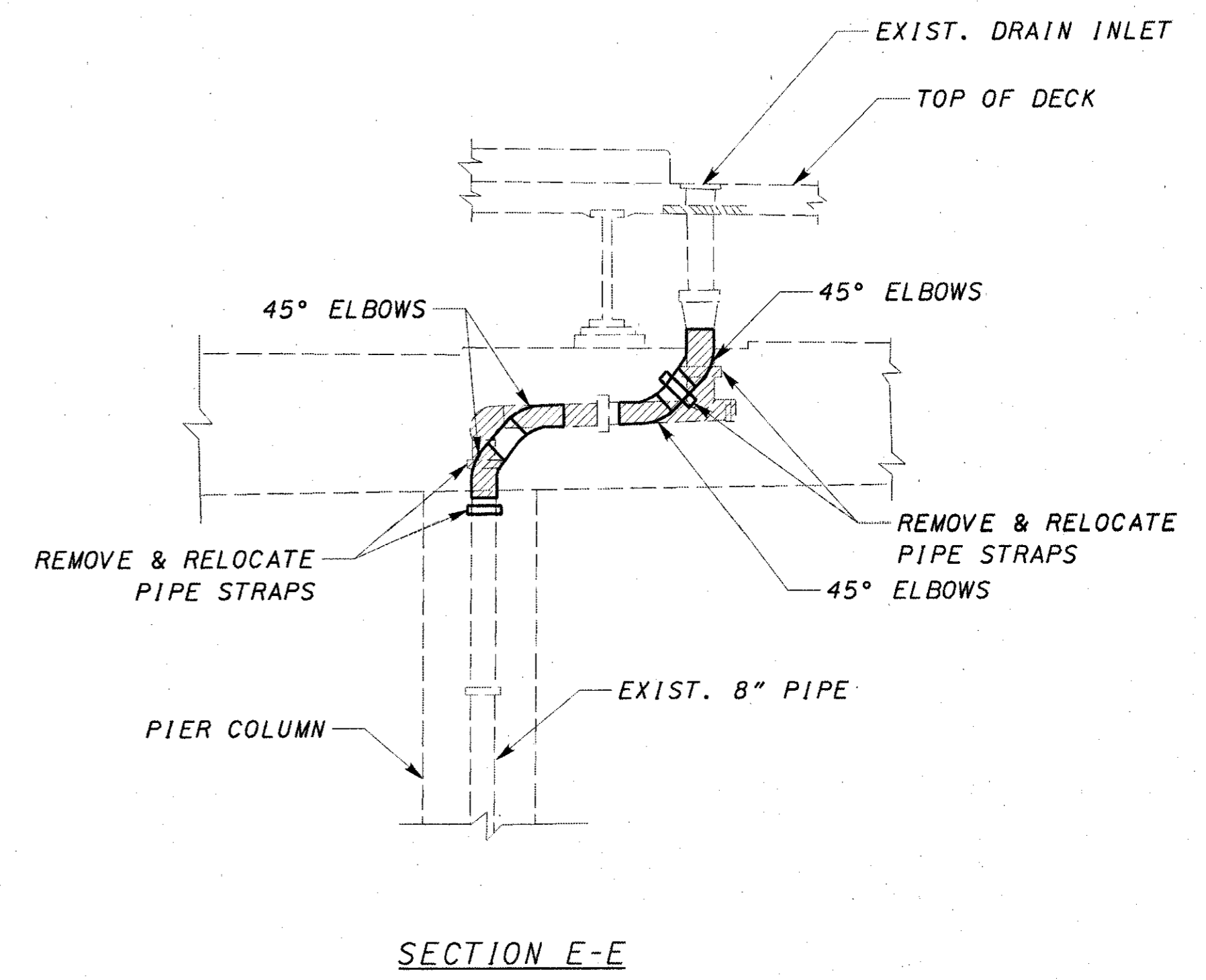
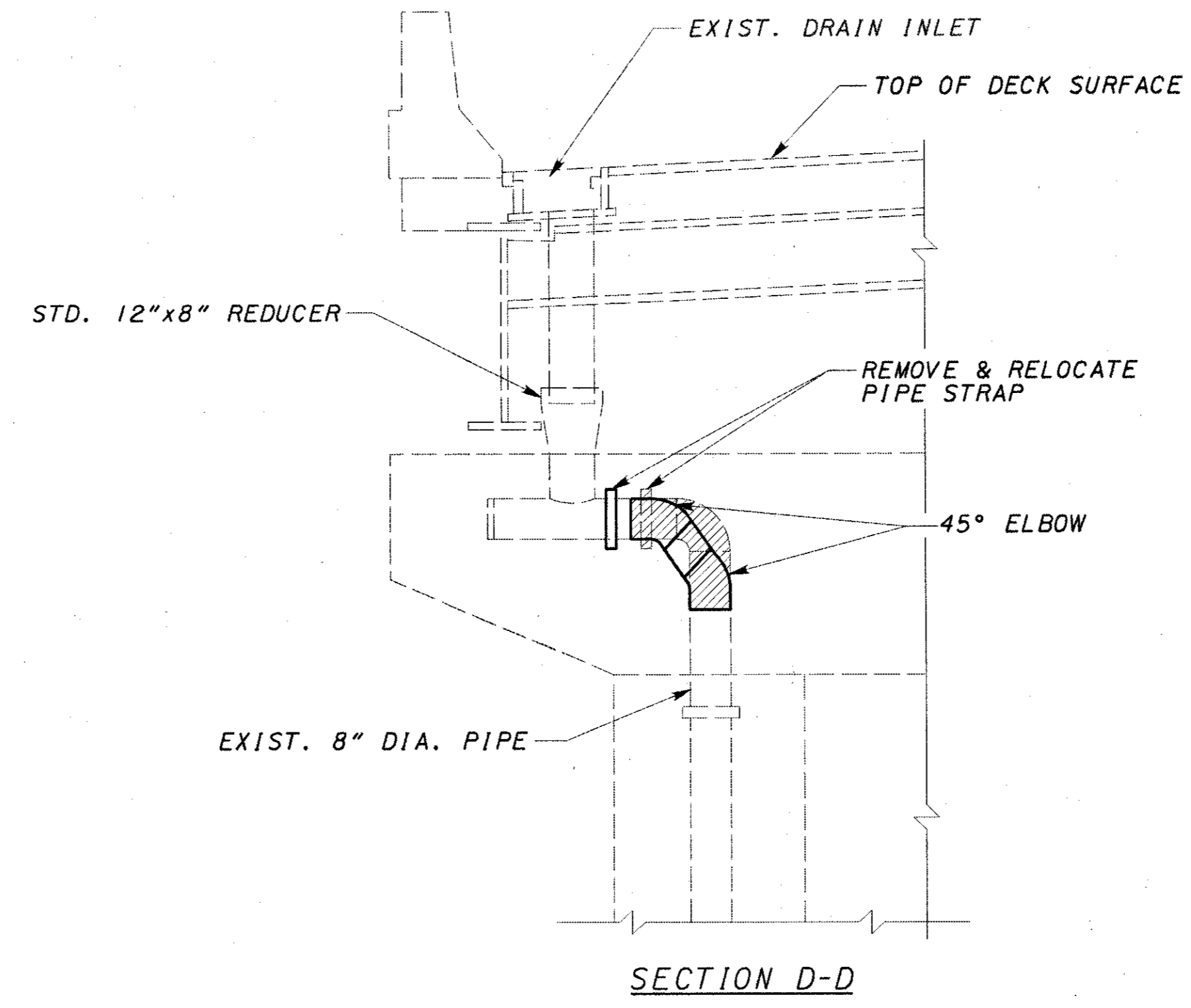
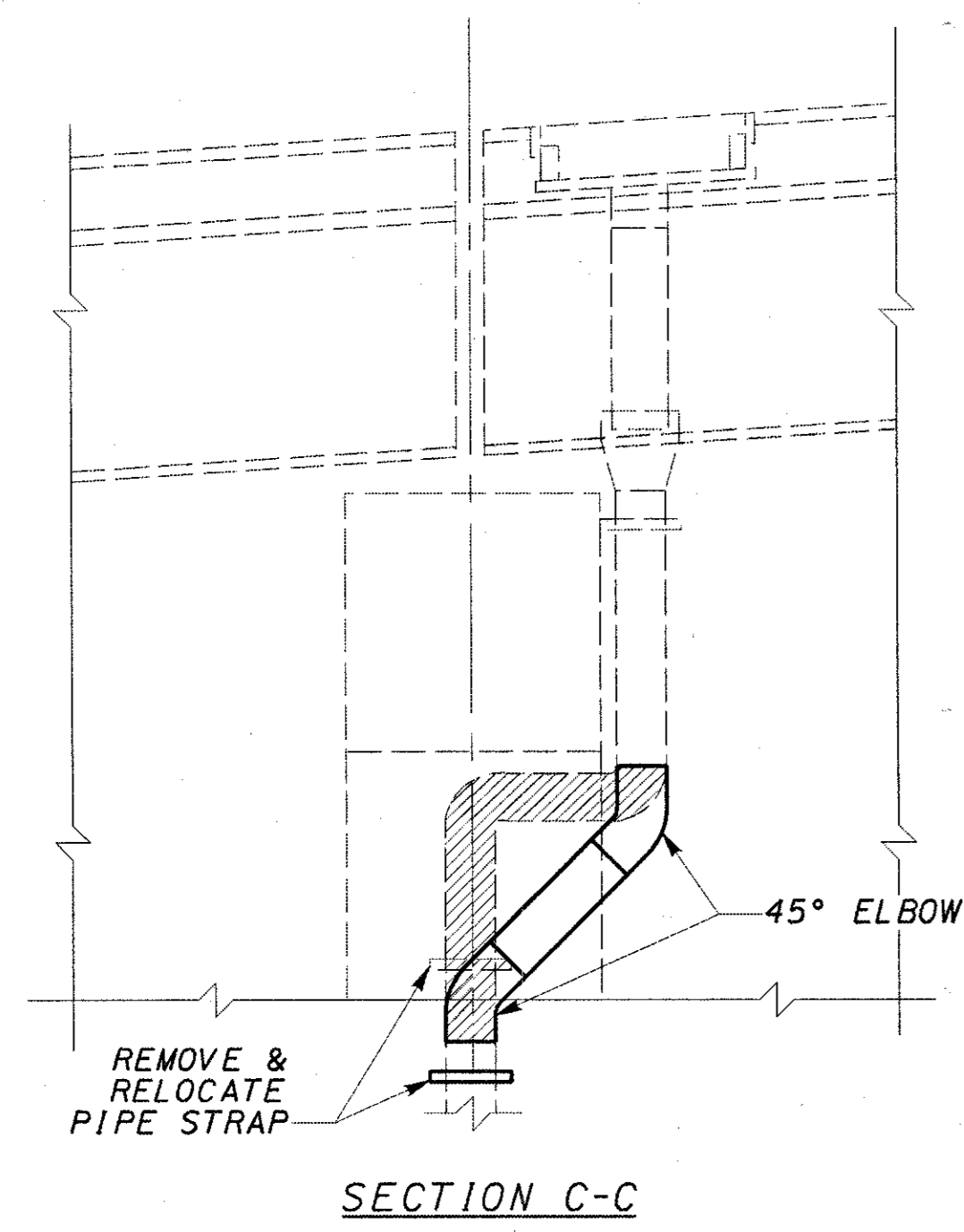
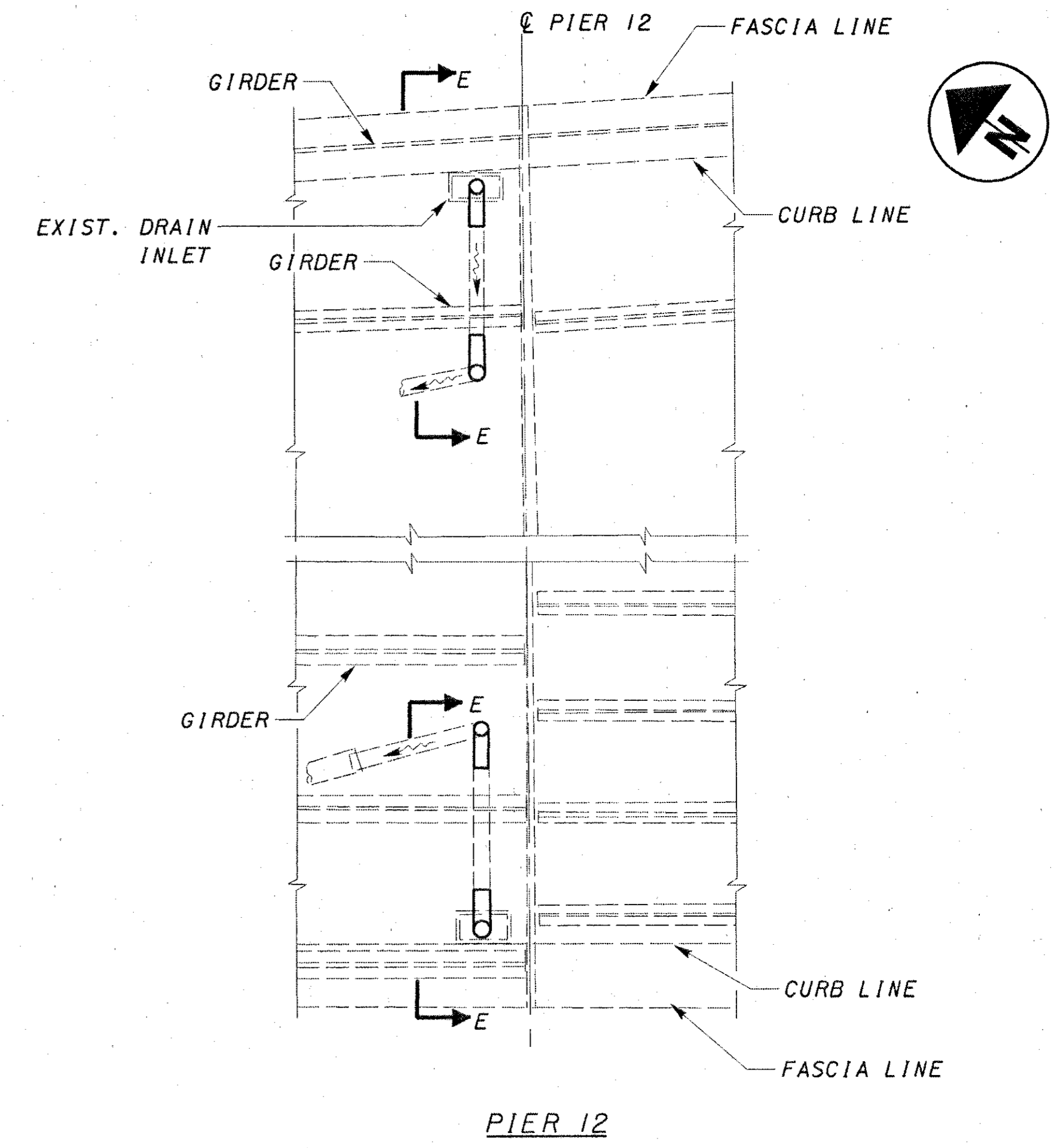
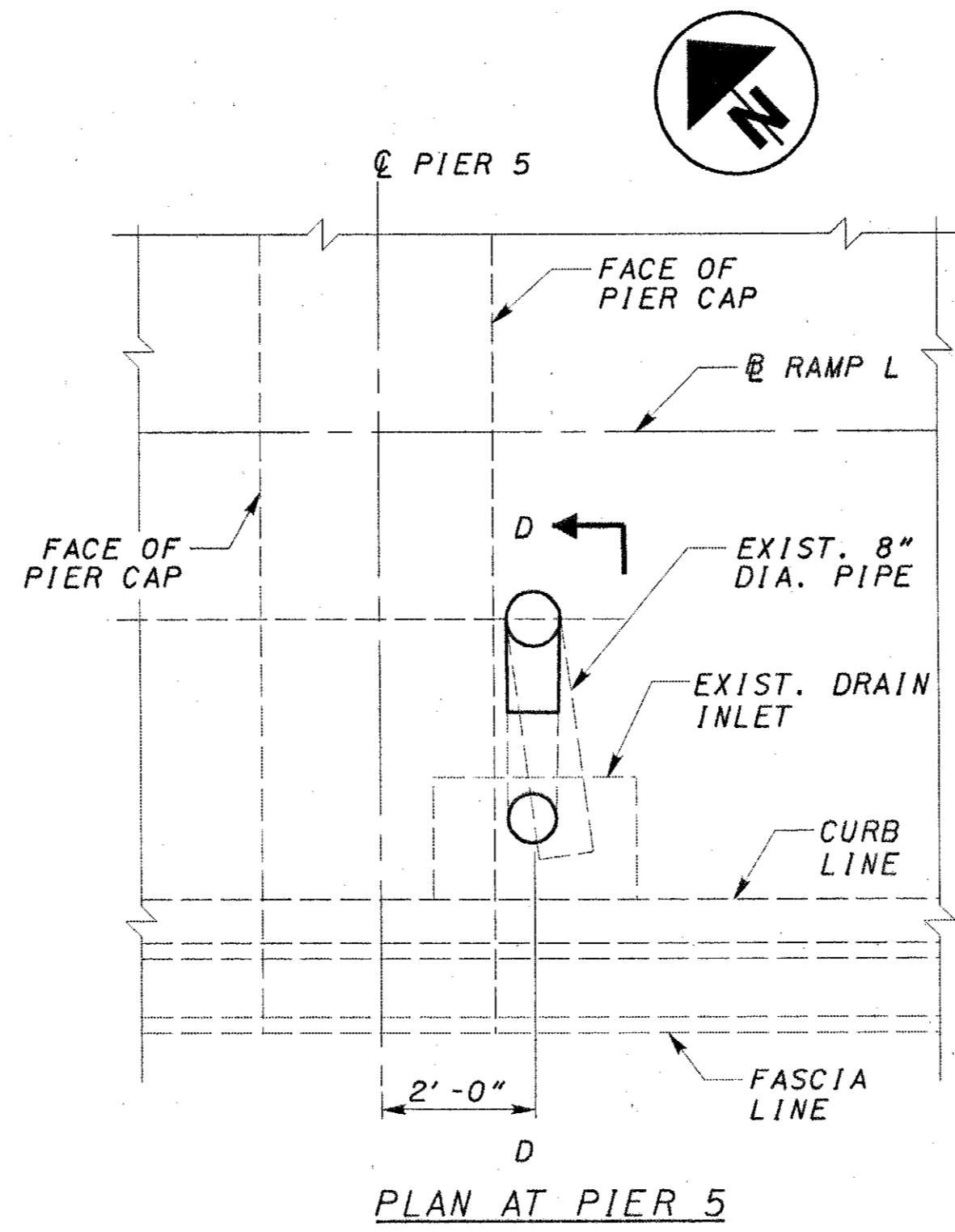
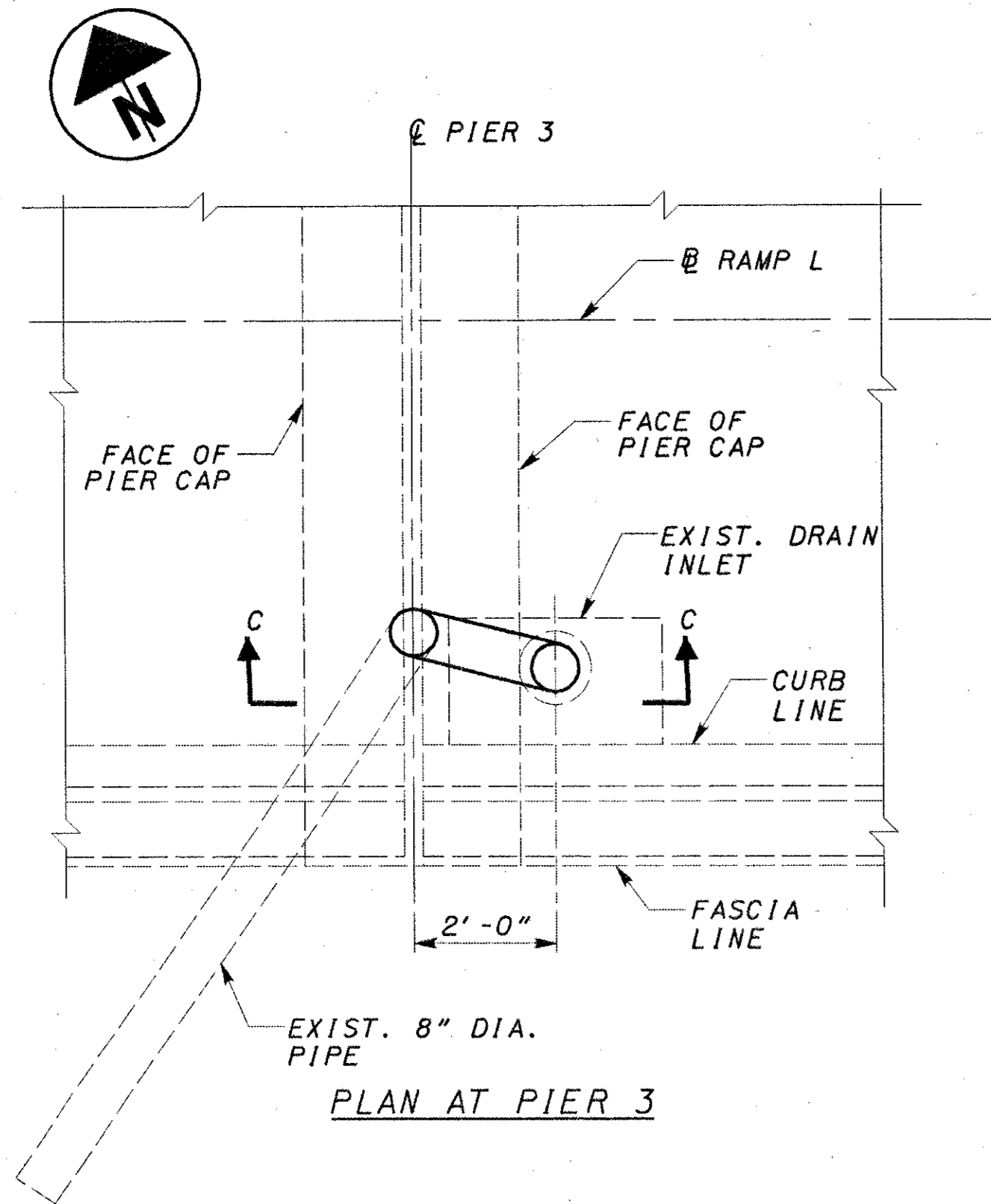
DATE 8/2001  
REVIEWED GEA  
DRAWN FIB  
DESIGNED JEP  
CHECKED ASB  
STRUCTURE FILE NUMBER 3103374

DRAINAGE DETAILS  
RAMP L (BRIDGE NO. HAM-50-2198 E)

HAM-471-0.26

63/106

95  
182



DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

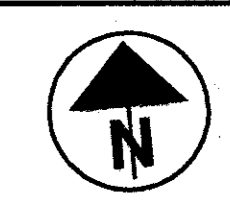
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REVIEWED	GEA
STRUCTURE FILE NUMBER	3103374
DRAWN	FIB
DESIGNED	JEP
CHECKED	ASB

DRAINAGE DETAILS  
RAMP L (BRIDGE NO. HAM-50-2198 E)

HAM-471-0.26

64/106  
96  
182





DESIGN AGENCY  
**BARR ENGINEERING, INC.**  
 FIVE EAST LONG STREET, EIGHTH FLOOR  
 COLUMBUS, OH 43215  
 (614) 224-1841 FAX (614) 224-0907

DATE  
 7/2001  
 REVIEWED  
 ASB  
 STRUCTURE FILE NUMBER  
 3106616

DRAWN  
 FIB  
 DESIGNED  
 JS  
 CHECKED  
 JEP

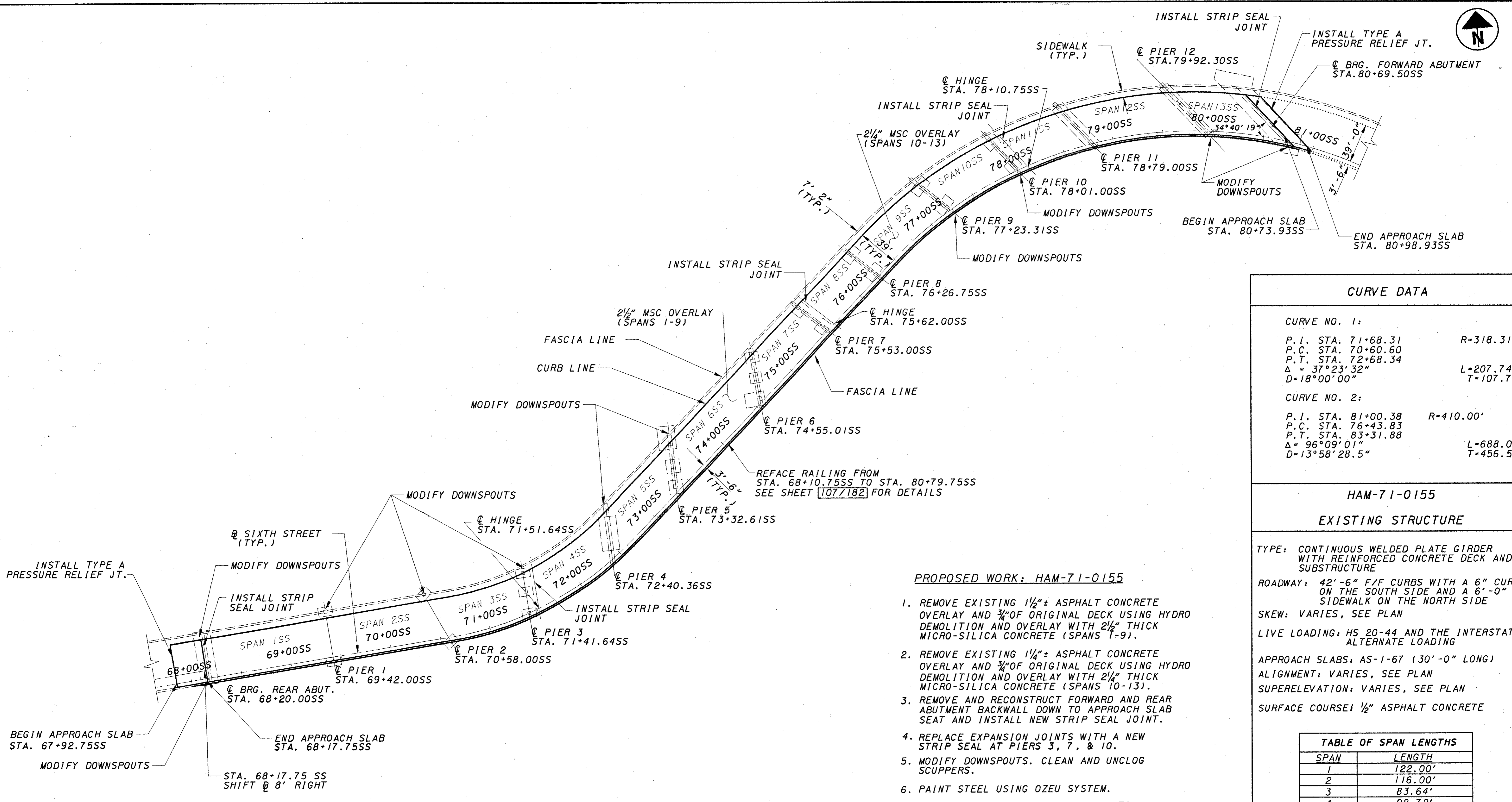
STA. 67+92.75 SS  
 STA. 80+98.93 SS

GENERAL PLAN  
 SIXTH STREET (BRIDGE NO. HAM-71-0155)

HAM-471-0.26

65/106

97  
 182



**CURVE DATA**

CURVE NO. 1:  
 P.I. STA. 71+68.31 R=318.31'  
 P.C. STA. 70+60.60  
 P.T. STA. 72+68.34  
 Δ = 37°23'32" L=207.74'  
 D=18°00'00" T=107.72'

CURVE NO. 2:  
 P.I. STA. 81+00.38 R=410.00'  
 P.C. STA. 76+43.83  
 P.T. STA. 83+31.88  
 Δ = 96°09'01" L=688.04'  
 D=13°58'28.5" T=456.55'

**HAM-71-0155**

**EXISTING STRUCTURE**

TYPE: CONTINUOUS WELDED PLATE GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE  
 ROADWAY: 42'-6" F/F CURBS WITH A 6" CURB ON THE SOUTH SIDE AND A 6'-0" SIDEWALK ON THE NORTH SIDE  
 SKEW: VARIES, SEE PLAN  
 LIVE LOADING: HS 20-44 AND THE INTERSTATE ALTERNATE LOADING  
 APPROACH SLABS: AS-1-67 (30'-0" LONG)  
 ALIGNMENT: VARIES, SEE PLAN  
 SUPERELEVATION: VARIES, SEE PLAN  
 SURFACE COURSE: 1/2" ASPHALT CONCRETE

**TABLE OF SPAN LENGTHS**

SPAN	LENGTH
1	122.00'
2	116.00'
3	83.64'
4	98.72'
5	92.25'
6	122.40'
7	97.99'
8	73.75'
9	96.56'
10	77.69'
11	78.00'
12	113.30'
13	77.20'

**PROPOSED STRUCTURE**

SAME AS EXISTING EXCEPT AS FOLLOWS:  
 APPROACH SLABS: AS-1-81 (25'-0" LONG)  
 WEARING SURFACE: 2 1/2" MICRO-SILICA CONCRETE (SPANS 1-9)  
 2 1/4" MICRO-SILICA CONCRETE (SPANS 10-13)

**PROPOSED WORK: HAM-71-0155**

- REMOVE EXISTING 1 1/2" ± ASPHALT CONCRETE OVERLAY AND 3/4" OF ORIGINAL DECK USING HYDRO DEMOLITION AND OVERLAY WITH 2 1/2" THICK MICRO-SILICA CONCRETE (SPANS 1-9).
  - REMOVE EXISTING 1 1/4" ± ASPHALT CONCRETE OVERLAY AND 3/4" OF ORIGINAL DECK USING HYDRO DEMOLITION AND OVERLAY WITH 2 1/4" THICK MICRO-SILICA CONCRETE (SPANS 10-13).
  - REMOVE AND RECONSTRUCT FORWARD AND REAR ABUTMENT BACKWALL DOWN TO APPROACH SLAB SEAT AND INSTALL NEW STRIP SEAL JOINT.
  - REPLACE EXPANSION JOINTS WITH A NEW STRIP SEAL AT PIERS 3, 7, & 10.
  - MODIFY DOWNSPOUTS. CLEAN AND UNCLOG SCUPPERS.
  - PAINT STEEL USING OZEU SYSTEM.
  - SEAL CONCRETE SURFACES (ABUTMENTS, WING WALLS, BACK WALLS, PIERS, PIER CAPS, DECK EDGES, RAILING, AND THE STAIR CASE IN SPAN 3), AS DESCRIBED IN THE GENERAL NOTES.
  - REFACE THE RIGHT SIDE BRIDGE RAILING AS DEPICTED IN THE PLANS.
  - REPLACE WARNING CHEVRONS AND REFLECTORS MOUNTED ON THE BRIDGE RAILING WITH NEW SIGNS.
  - REMOVE AND REPLACE FULL WIDTH APPROACH SLAB AND INSTALL A TYPE A PRESSURE RELIEF JOINT.
  - SPOT PAINT AREAS OF VPF BASE PLATES USING EEU SYSTEM.
  - PAINT RAILING OF STAIRCASE IN SPAN 3 WITH EEU SYSTEM.
- (IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN THE SEQUENTIAL ORDER LISTED.)

# STRUCTURE GENERAL NOTES

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

## DESCRIPTION:

THIS WORK SHALL CONSIST OF THE REMOVAL OF PORTIONS OF CONCRETE DECKS INCLUDING L.M.C. OVERLAY, SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.) CARE SHALL BE TAKEN DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

## PROTECTION OF TRAFFIC

DURING THE REMOVAL OF ANY PART OF THE EXISTING SUPERSTRUCTURE THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT VEHICULAR AND PEDESTRIAN TRAFFIC ADJACENT TO AND/OR UNDER THE STRUCTURE. THESE PROVISIONS MAY INCLUDE THE USE OF ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

## PROTECTION OF STEEL SUPPORT SYSTEMS

BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

## REMOVAL METHODS

CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS ABOVE STEEL MEMBERS, A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS MAY BE USED AT THE APPROVAL OF THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND TO PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

## EXTRANEOUS MEMBERS

EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ECT.) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE TOP FLANGES SHALL BE REMOVED AND THE FLANGE SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

## CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEAN OF ALL DIRT, RUST, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT ALL PACK AND LOOSE RUST SHALL BE REMOVED. EXISTING CONCRETE SURFACES WHICH NEW CONCRETE WILL BE PLACED AGAINST SHALL BE WET, BUT WITHOUT FREE WATER, AT THE TIME OF CONCRETE PLACEMENT.

## EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.02/863.07.

## ITEM 517 - RAILING FACED AS PER PLAN

REMOVAL: THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING ALUMINUM RAILING, POSTS, CURB, PLATES, AND PORTION OF EXISTING CONCRETE CURB. ALL LOOSE OR UNSOUND CONCRETE SHALL BE REMOVED. ALSO TO BE REMOVED SHALL BE ANY SOUND CONCRETE NECESSARY TO OBTAIN A MINIMUM 4 INCH [ 100 MM ] THICKNESS OF NEW CONCRETE. DOWEL HOLES AND REINFORCED STEEL: DOWEL HOLES SHALL BE DRILLED WHERE SHOWN IN THE PLANS. REINFORCED STEEL SHALL BE INSTALLED USING EPOXY GROUT PER 510 AND (CMS 705.20). ALL EXISTING REINFORCING STEEL BARS IN THE AREA OF THE DOWEL HOLE SHALL BE LOCATED WITH THE AID OF A REINFORCING STEEL BAR LOCATOR (PACHOMETER) PRIOR TO DRILLING THE HOLES. IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, THE DOWEL HOLE SHALL BE MOVED TO EITHER SIDE OF THE EXISTING BAR. SURFACE PREPARATION: THE PARAPET SURFACE IN CONTACT WITH THE REFACING SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING, WITH ENVIRONMENTAL CONTROLS, FOLLOWED BY AN AIR BLAST. USE OF HAND TOOLS MAY BE MADE FREE FROM SPALLS, LATENCE, AND ALL TRACES OF FOREIGN MATERIAL. DETERGENT CLEANING SHALL PRECEDE BLAST CLEANING AS NECESSARY TO ENSURE REMOVAL OF CONTAMINANTS THAT ARE DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND

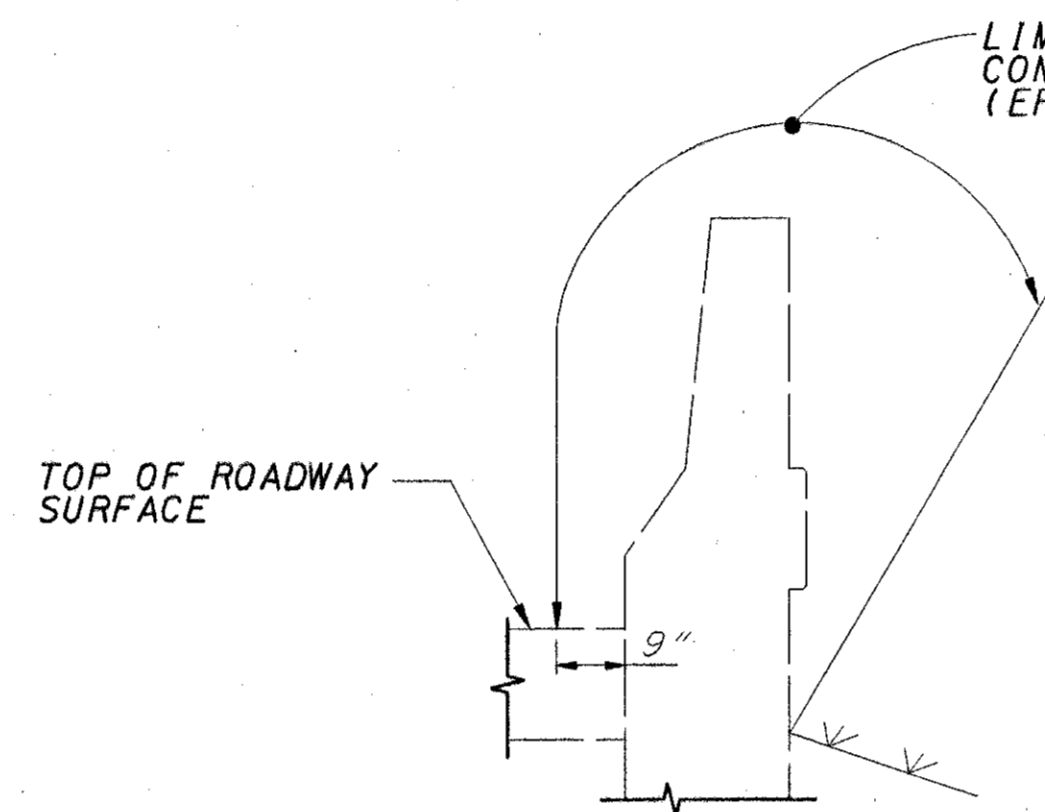
## SEALING OF CONCRETE SURFACES

THE CONCRETE SURFACES SHOULD BE SEALED AS FOLLOWS:

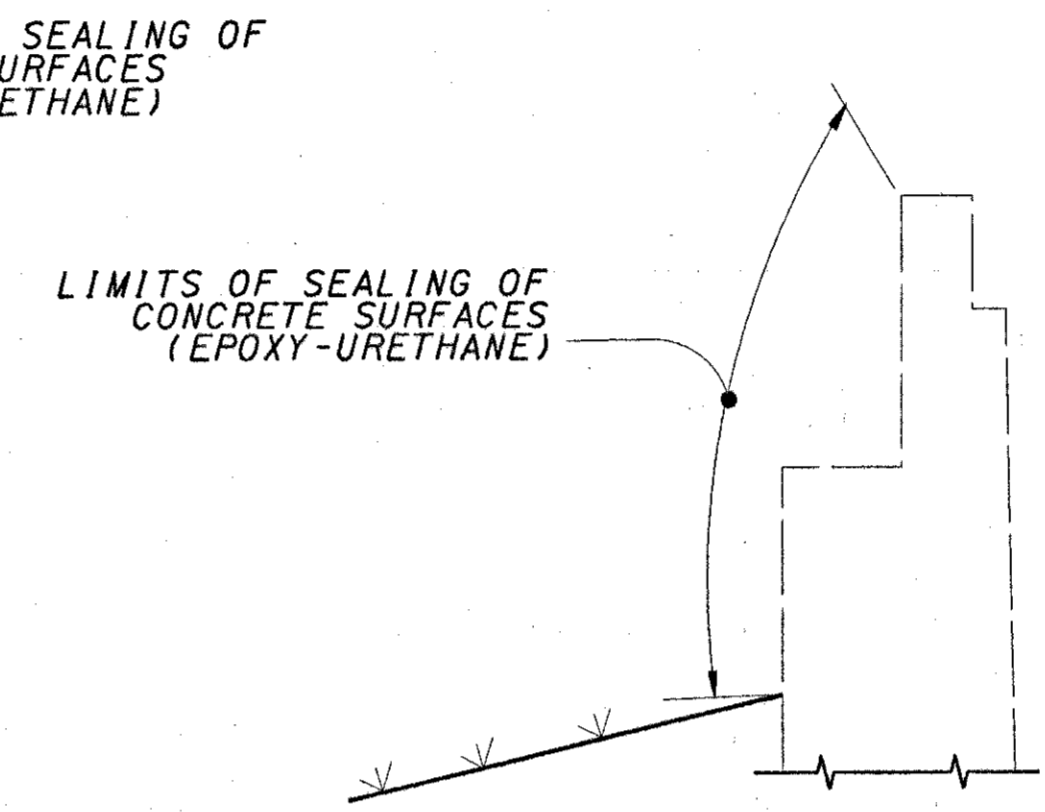
ABUTMENTS & WINGWALLS: ENTIRE LENGTH  
PIERS: ALL EXPOSED SURFACES EXCEPT THE TOP OF PIER CAP  
PARAPETS & MEDIAN BARRIERS: ENTIRE LENGTH OF THE BRIDGE

## BACKWALL CONCRETE

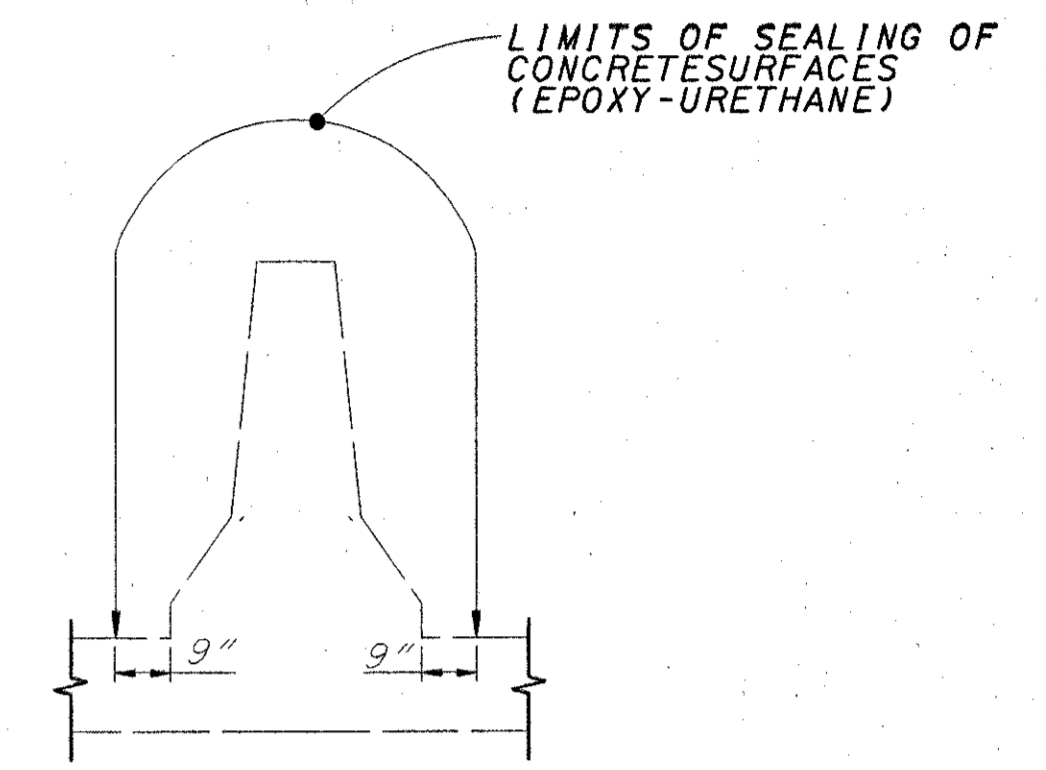
IN ADDITION TO SS 842.08, BACKWALL ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.



WINGWALL AND RETAINING WALL SECTION



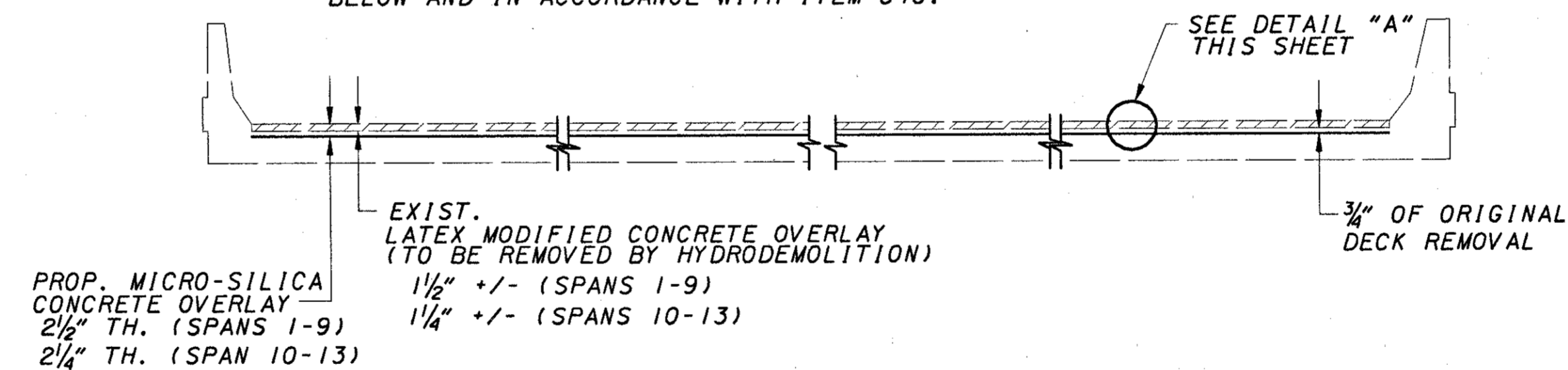
ABUTMENT SECTION



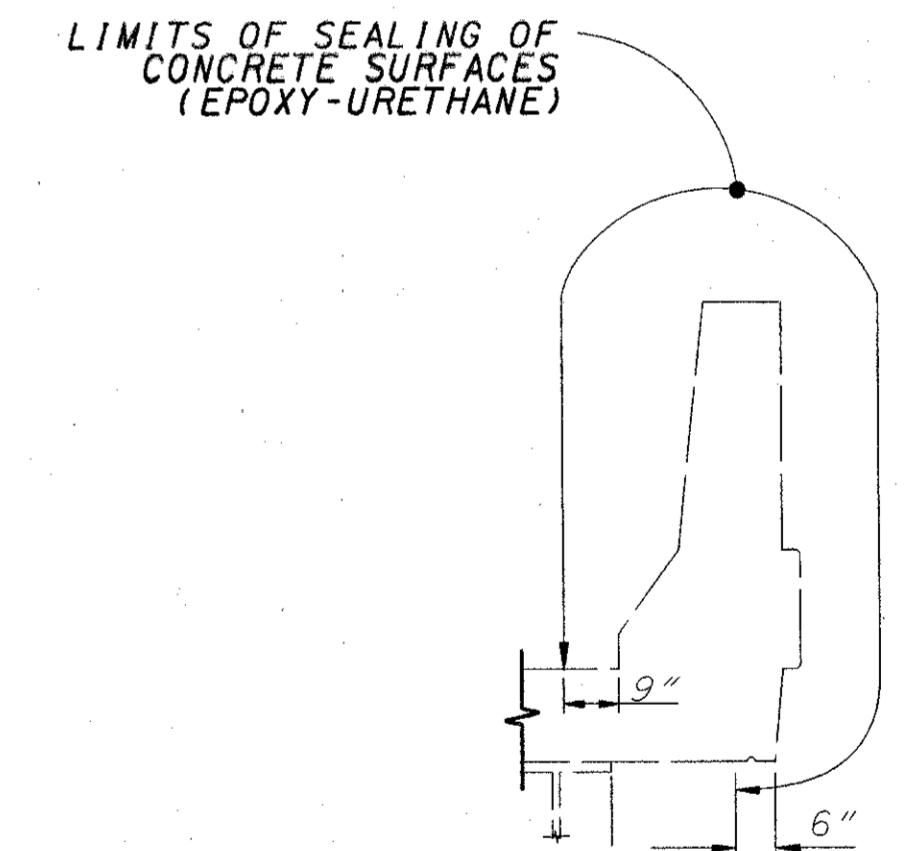
BARRIER SECTION

## MICRO-SILICA CONCRETE OVERLAY

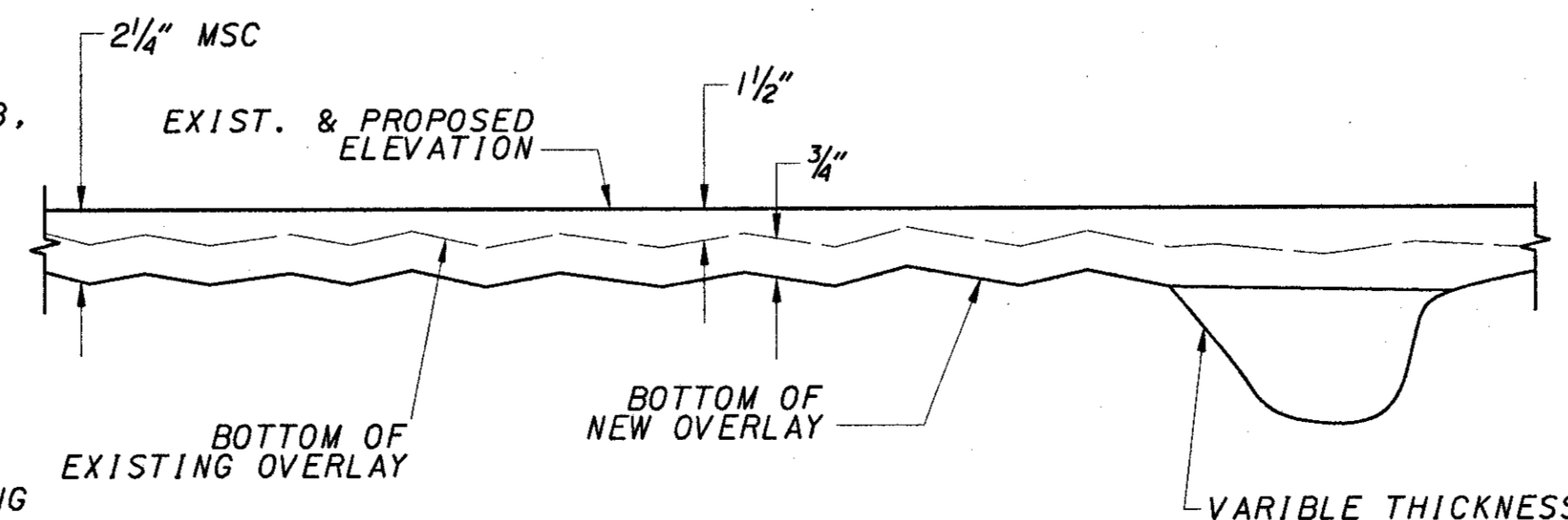
EXISTING DECKS WILL BE OVERLAYED AS PER THE DETAILS SHOWN BELOW AND IN ACCORDANCE WITH ITEM 848.



EXISTING & MODIFIED TYPICAL SECTION  
(TYPICAL FOR BRIDGES WITHOUT MEDIAN BARRIER)



PARAPET SECTION

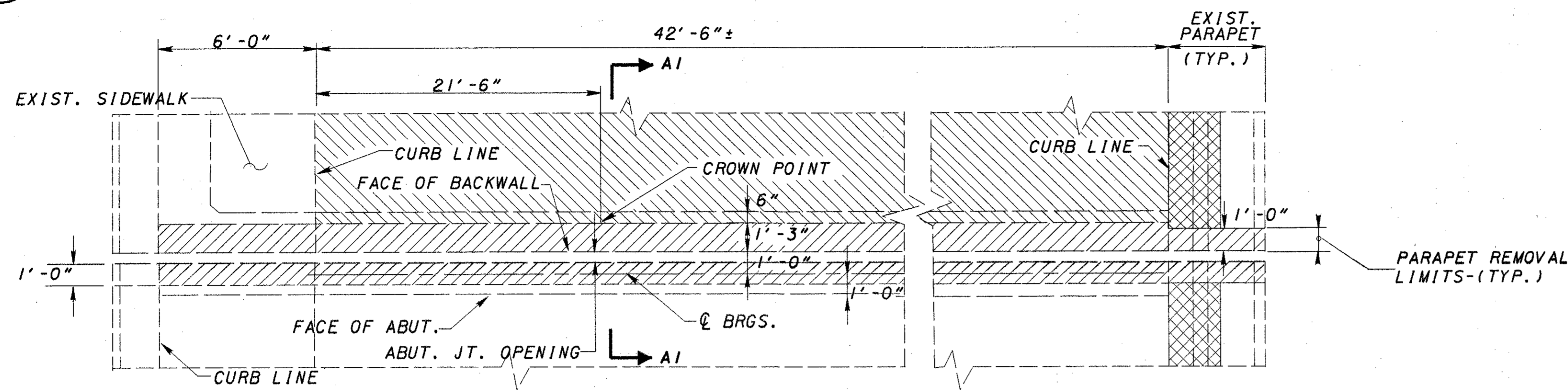
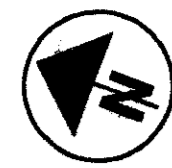


DETAIL A  
(TYPICAL FOR ALL BRIDGES)

## ABBREVIATIONS

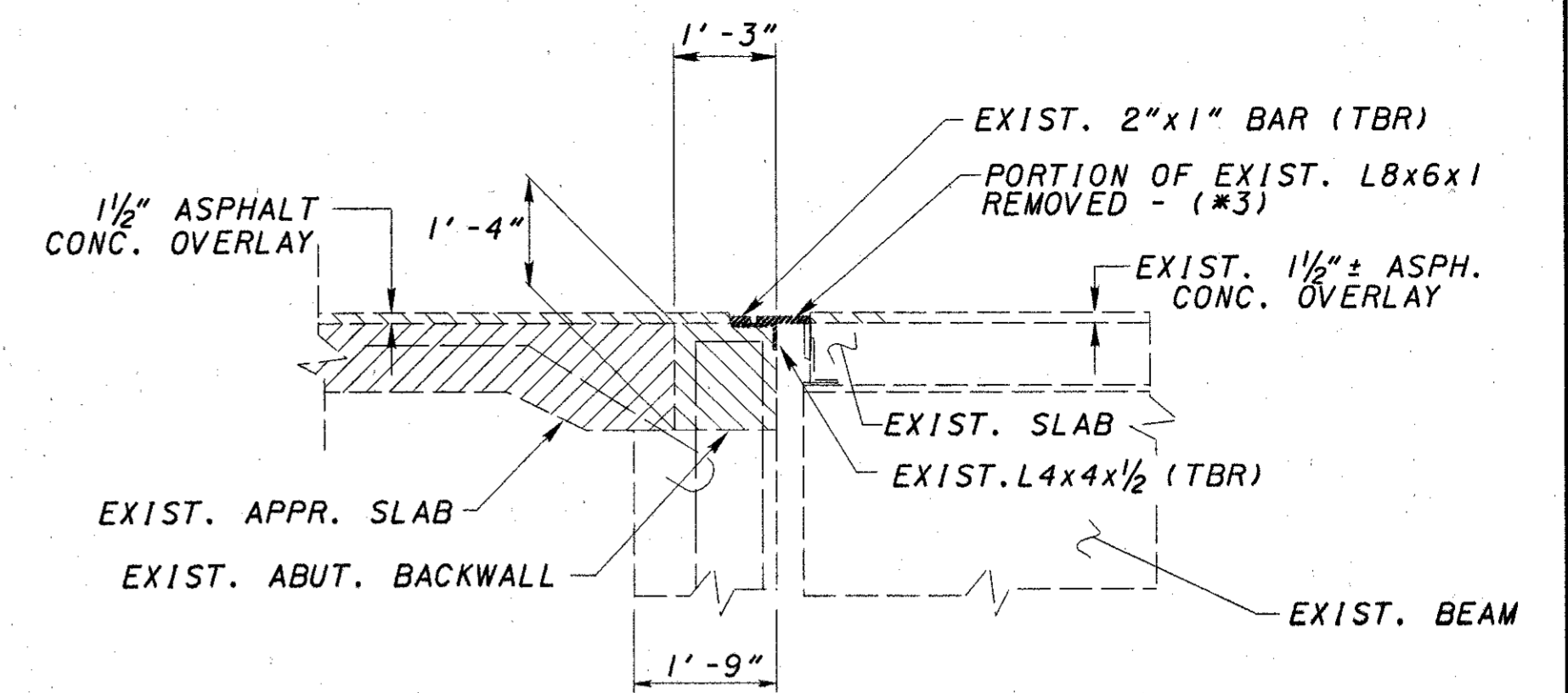
- |        |   |                       |      |   |               |
|--------|---|-----------------------|------|---|---------------|
| ABUT.  | - | ABUTMENT              | SPA. | - | SPACES        |
| APPR.  | - | APPROACH              | TBR. | - | TO BE REMOVED |
| BOT.   | - | BOTTOM                | TYP. | - | TYPICAL       |
| BRGS.  | - | BEARINGS              |      |   |               |
| CL.    | - | CLEAR                 |      |   |               |
| CJ.    | - | CONTROL JOINT         |      |   |               |
| DIM.   | - | DIMENSION             |      |   |               |
| ELEV.  | - | ELEVATION             |      |   |               |
| EXP.   | - | EXPANSION             |      |   |               |
| EXIST. | - | EXISTING              |      |   |               |
| LONG.  | - | LONGITUDINAL          |      |   |               |
| JT.    | - | JOINT                 |      |   |               |
| MSC    | - | MICRO SILICA CONCRETE |      |   |               |

DESIGN AGENCY: BARR ENGINEERING, INC.  
 5 EAST LONG STREET  
 COLUMBUS, OHIO 43215  
 (614) 224-1941, (614) 224-0907 FAX  
 DATE: 8/2001  
 REVIEWED: ASB  
 STRUCTURE FILE NUMBER: 3106616  
 DRAWN: FIB  
 DESIGNED: JS  
 CHECKED: JEP  
 STRUCTURE GENERAL NOTES  
 SIXTH STREET  
 (BRIDGE NO. HAM-71-0155)  
 HAM-471-0.26  
 66/106  
 98/182



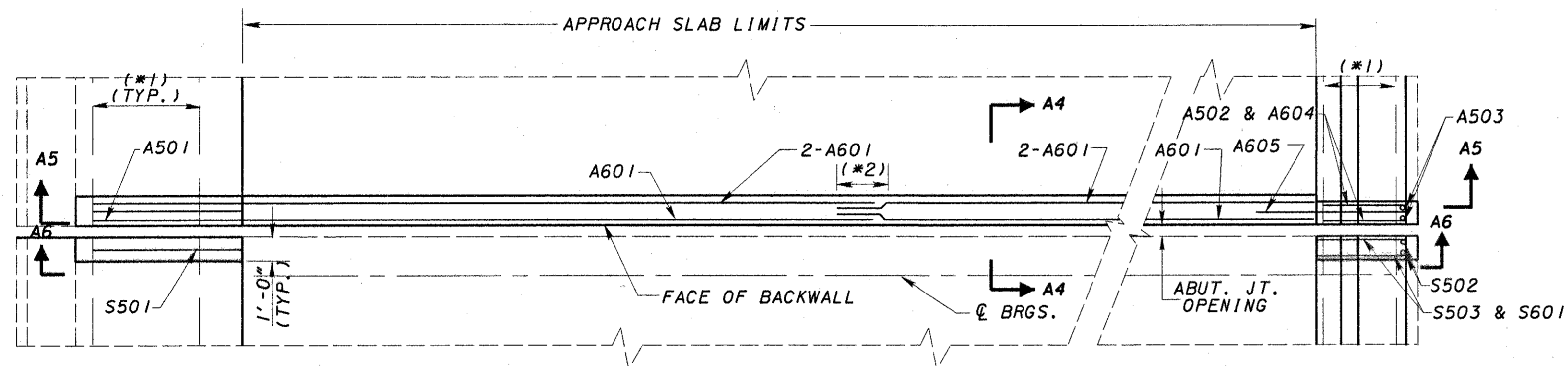
EXISTING ABUTMENT, DECK SLAB, PARAPET & APPROACH SLAB REMOVAL PLAN

PRESERVE ALL LONG. REINFORCING BARS IN PARAPETS & DECK SLAB



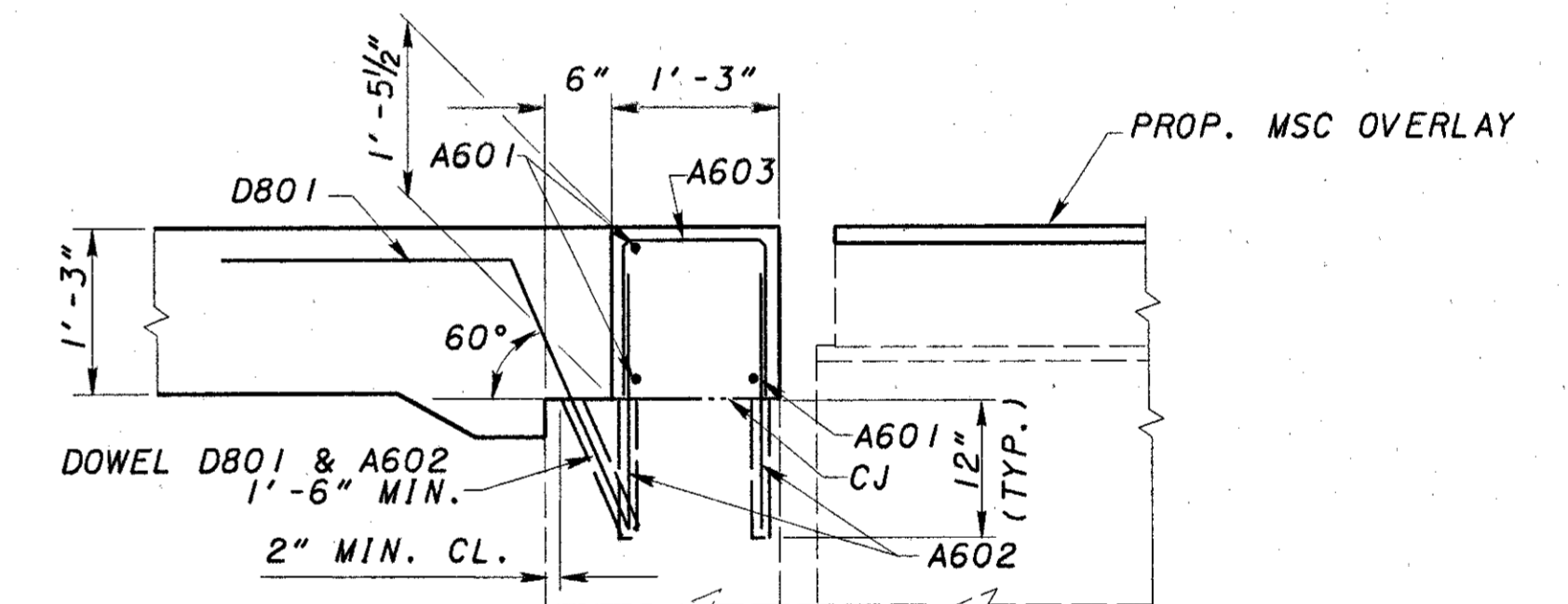
SECTION A1-A1

(\*3) REMOVE TOP PORTION OF ANGLE FLUSH WITH ORIGINAL CONCRETE DECK SLAB



- (\*1) EXIST. LONG. BARS TO REMAIN IN PARAPET
- (\*2) LAP LENGTHS
  - #5 BAR-2'-9"
  - #6 BAR-3'-3"

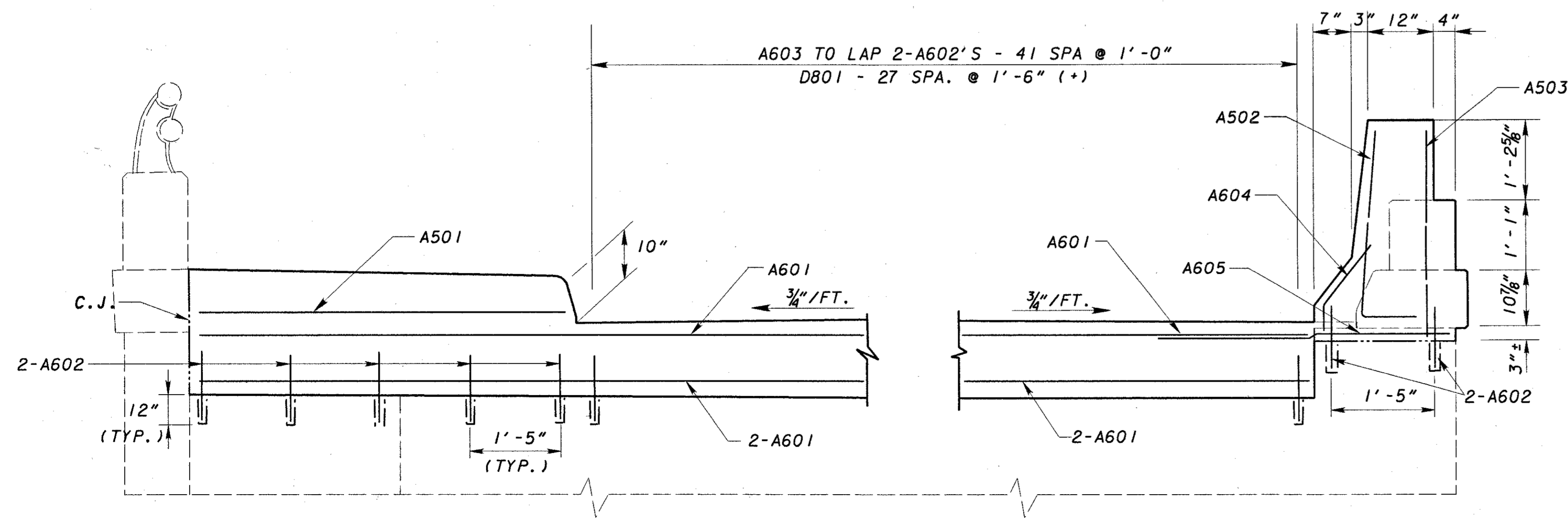
MODIFIED ABUTMENT, DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION



SECTION A4-A4

ALTERNATE TO BACKWALL CONSTRUCTION

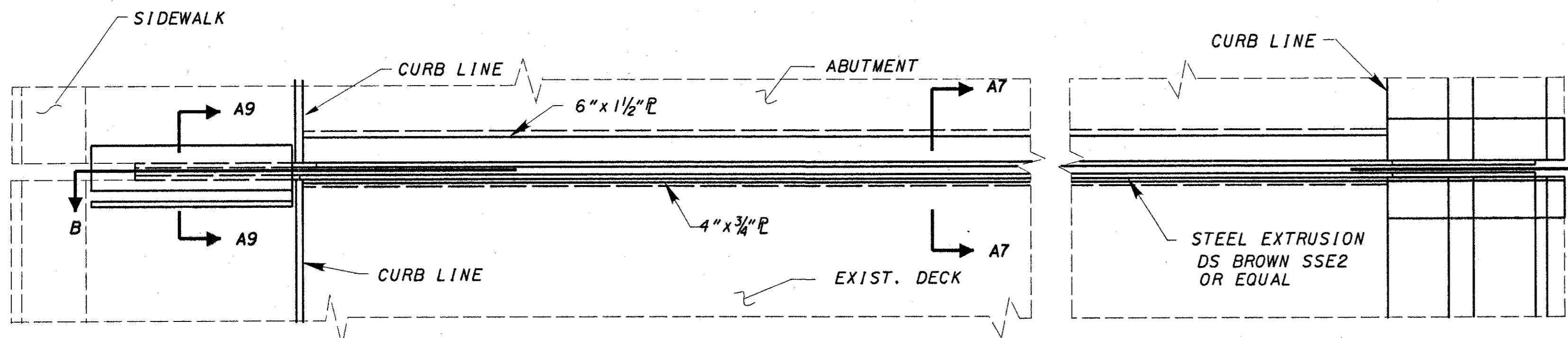
PLANS SHOW THE PORTIONS OF BACKWALL REMOVAL BY SAWCUTTING AT APPROACH SLAB SEAL LEVEL (SECTION A1-A1) AND RECONSTRUCTING THE BACKWALL BY DOWELLING INTO THE REMAINING EXISTING BACKWALL AS PER THE DETAILS OF SECTION A4-A4. AS AN ALTERNATE TO DOWELLING IN NEW BARS, THE CONTRACTOR MAY CHOOSE TO PRESERVE THE EXIST. BARS (RUNNING THROUGH THE CONSTRUCTION JOINT) DURING THE REMOVAL OF THE BACKWALL CONCRETE. ANY BAR DAMAGED DURING THE CONCRETE REMOVAL SHALL BE REPLACED BY NEW BARS AS DETAILED IN SECTION A4-A4.



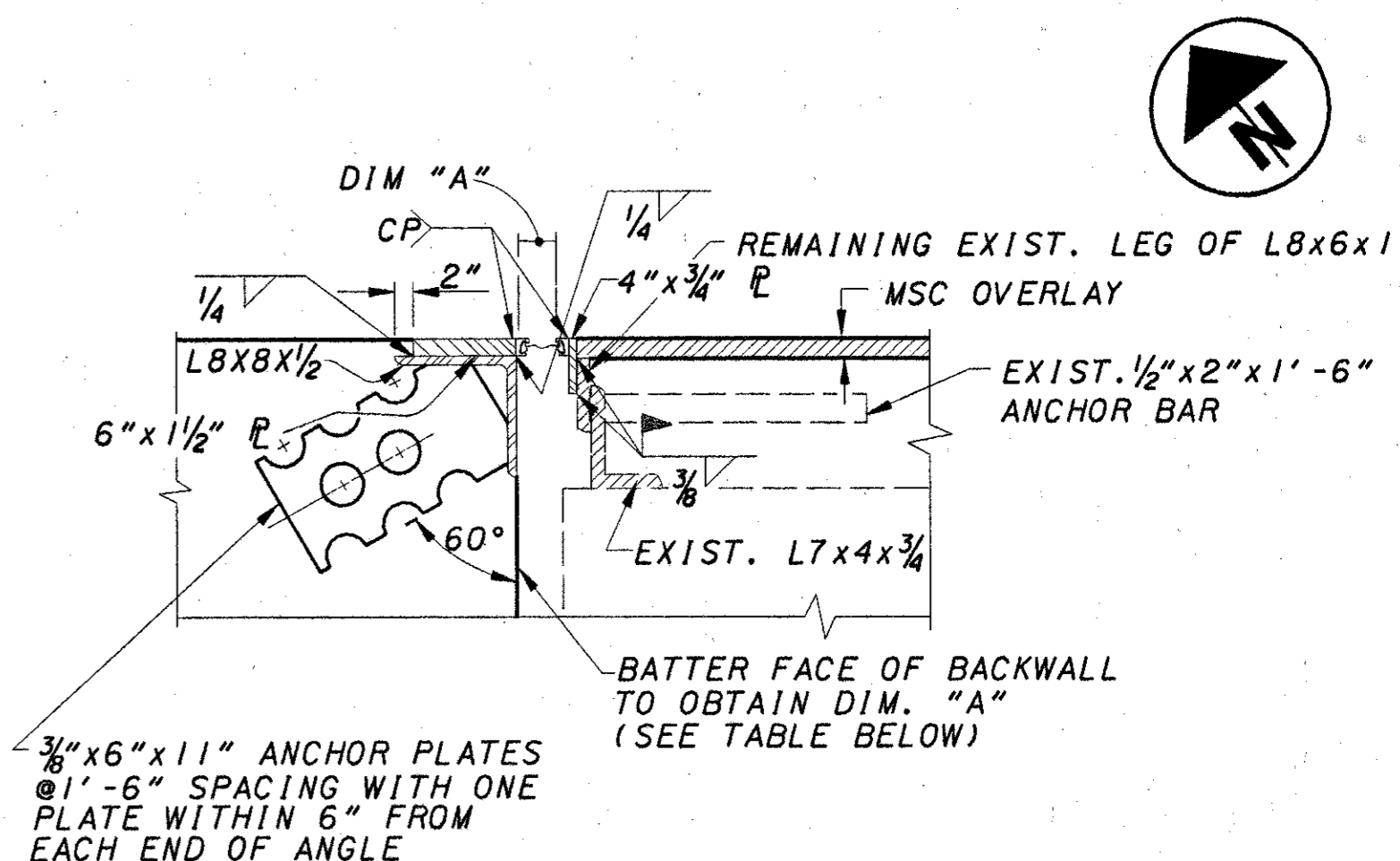
SECTION A5-A5

LEGEND

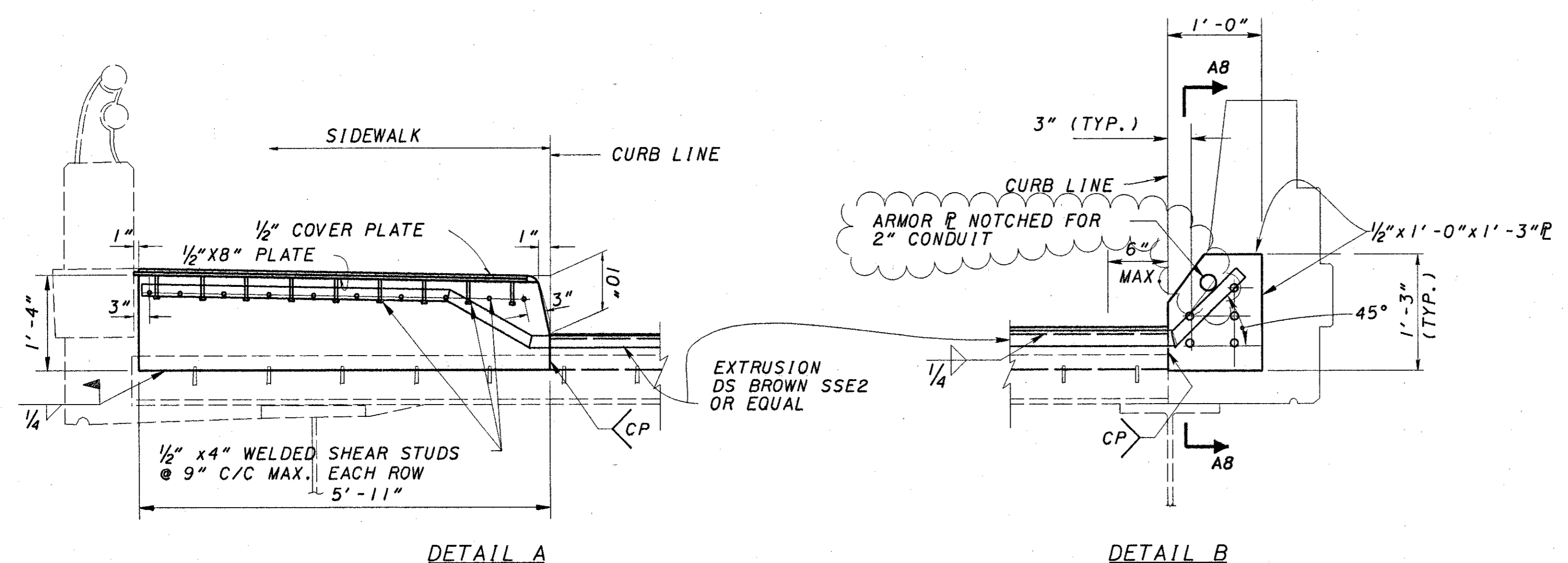
- REMOVAL LIMITS
- REMOVAL FOR PARAPET REFRACING



REAR ABUTMENT



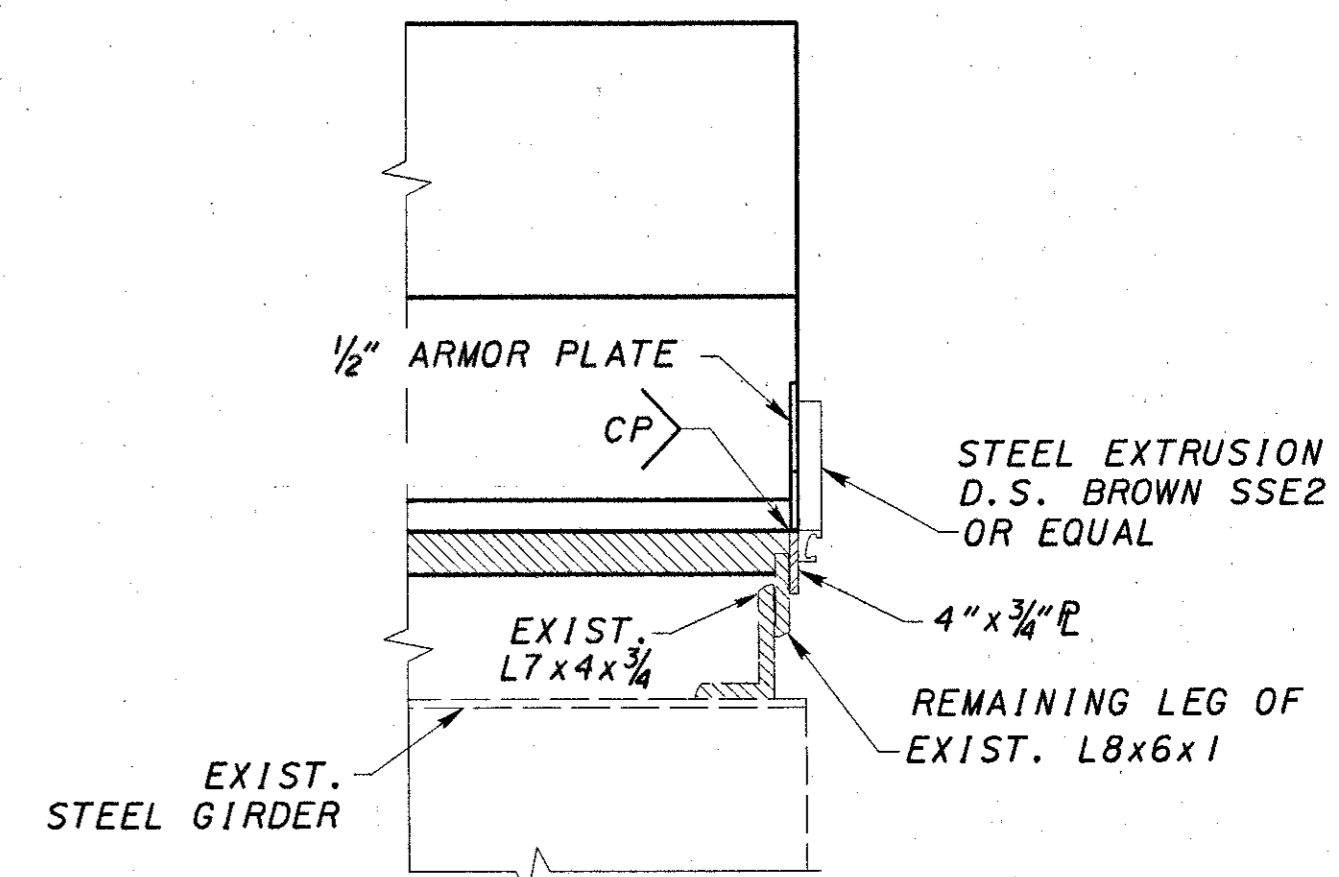
SECTION A7-A7  
NOTE: SHOP WELD EXTRUSIONS TO R



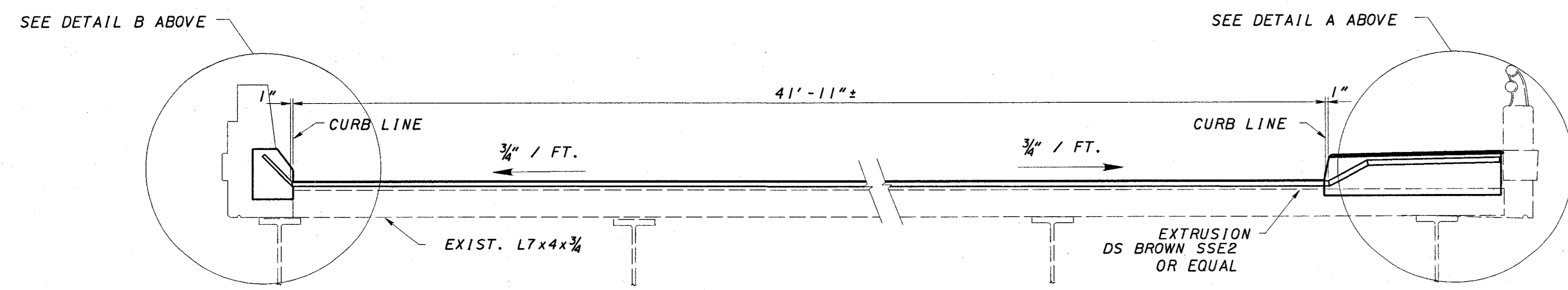
4" STRIP SEAL GLAND

TEMPERATURE (F)	DIAM. A
30°	2 1/2"
40°	2 3/8"
50°	2 1/4"
60°	2 1/16"
70°	1 5/8"
80°	1 5/8"
90°	1 7/16"

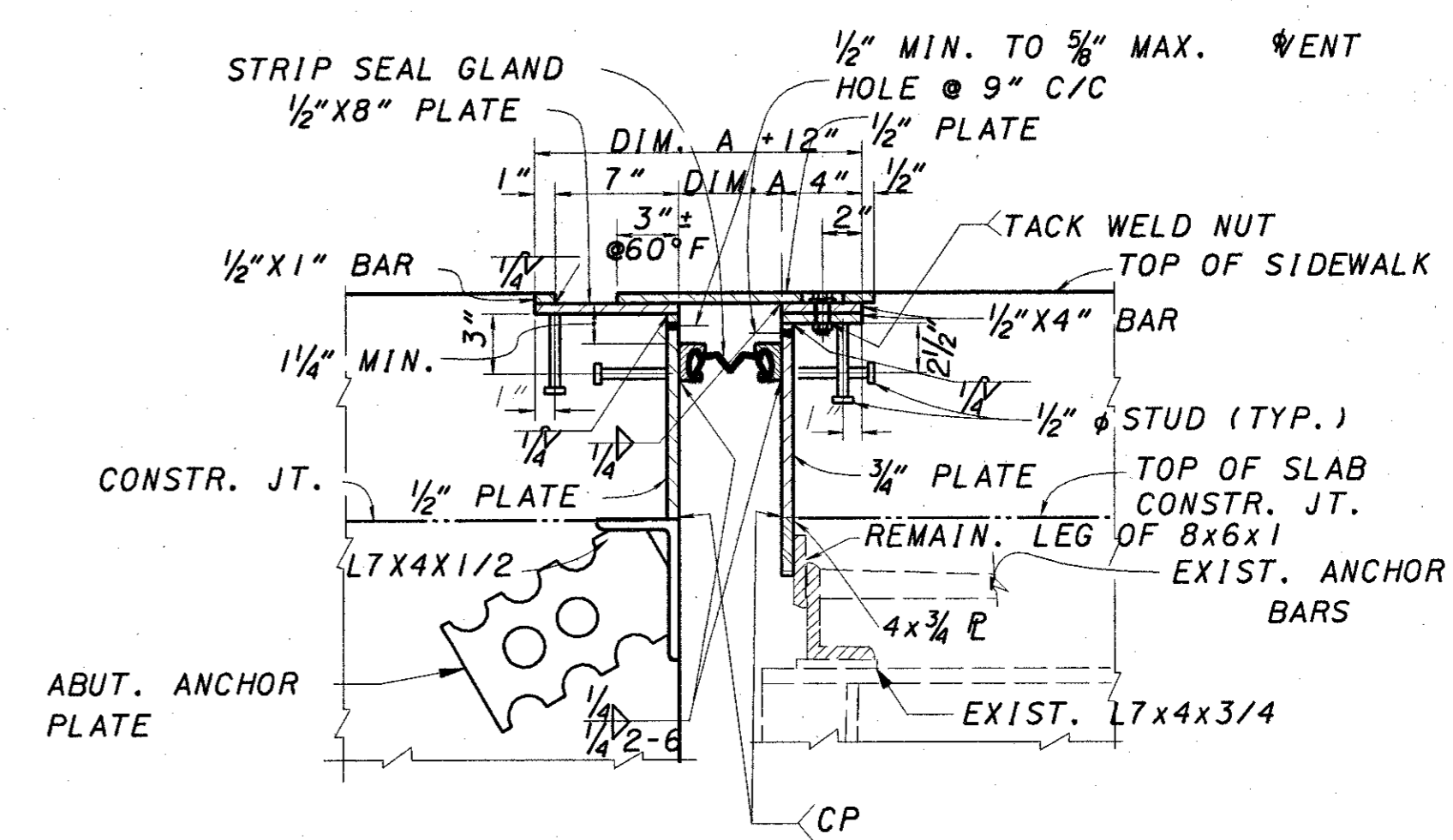
EXPANSION LENGTH = 238'-0"



SECTION A8-A8



SECTION B-B



SECTION A9-A9

DESIGN AGENCY: BARR ENGINEERING, Five East Long Street, Columbus, Ohio 43215, PH: (614) 224-1941

DATE: 7/2001

REVIEWED: KVB

STRUCTURE FILE NUMBER: 3106616

DESIGNED: JEP

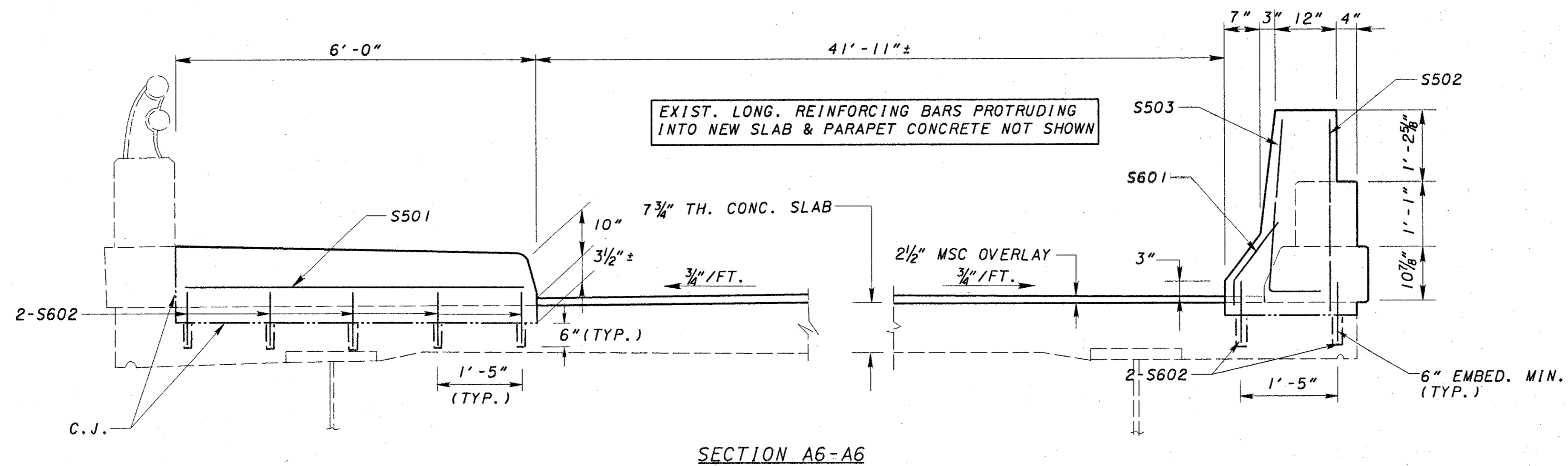
CHECKED: ASB

REAR ABUTMENT EXPANSION JOINT DETAILS  
SIXTH STREET (BRIDGE NO. HAM-71-0155)

HAM-471-0.26

68/106

100  
182

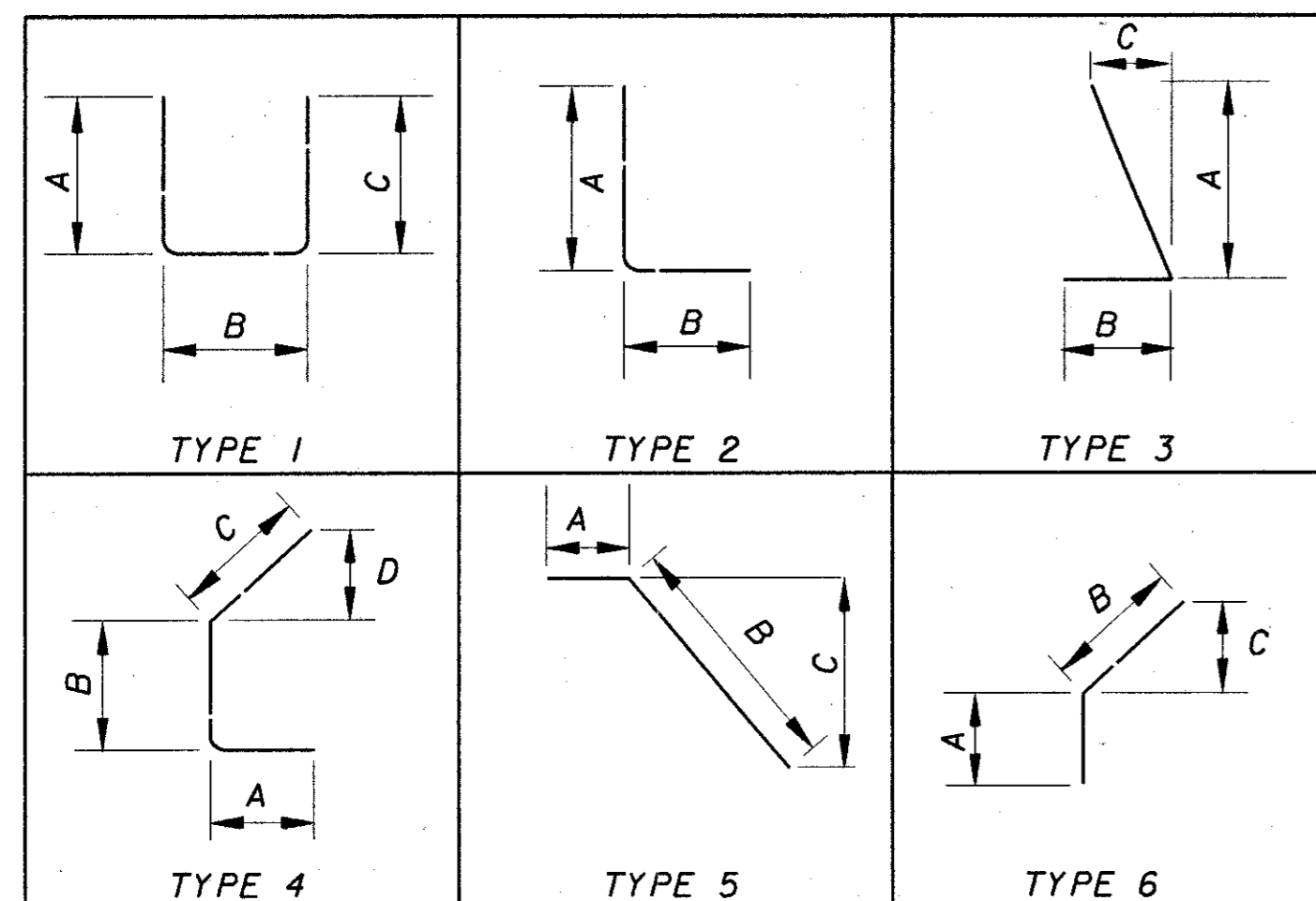


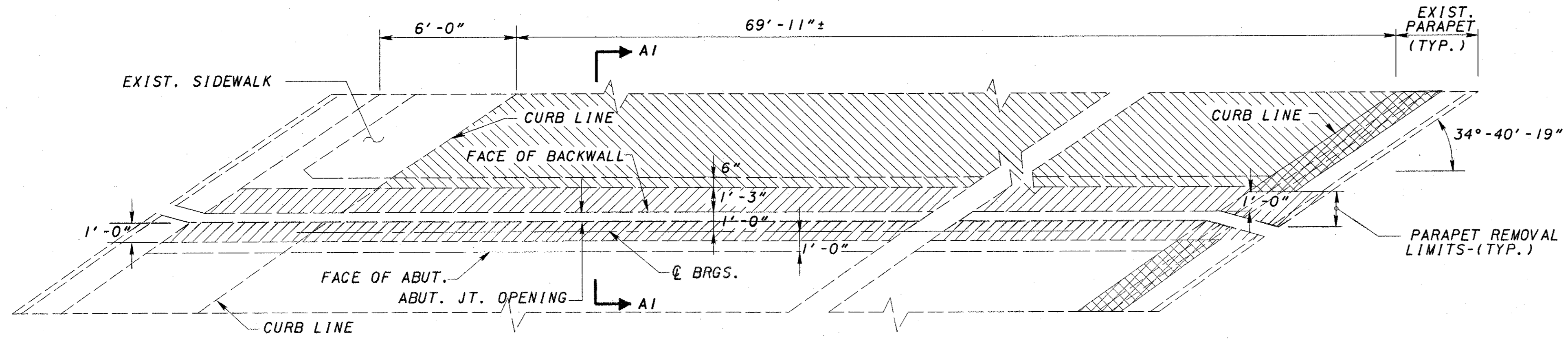
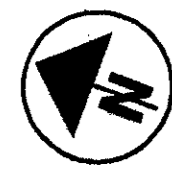
SECTION A6-A6

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
SUPERSTRUCTURE									
S502	2	2'-8"		STR					
S503	2	3'-5"		3	2'-8"	10"	2"		
S601	2	1'-10"		6	4"	1'-6"	1'-2"		
S602	14	1'-6"		STR					

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
ABUTMENT									
A501	1	5'-8"		STR					
A502	2	3'-5"		3	2'-8"	10"	2"		
A503	2	2'-8"		STR					
A601	6	24'-6"		STR					
A602	98	2'-0"		STR					
A603	42	3'-0"		1	1'-2"	11"	1'-2"		
A604	2	1'-10"		6	4"	1'-6"	1'-2"		
A605	1	5'-10"		STR					
D801	28	4'-3"		5	2'-0"	2'-3"	1'-11"		

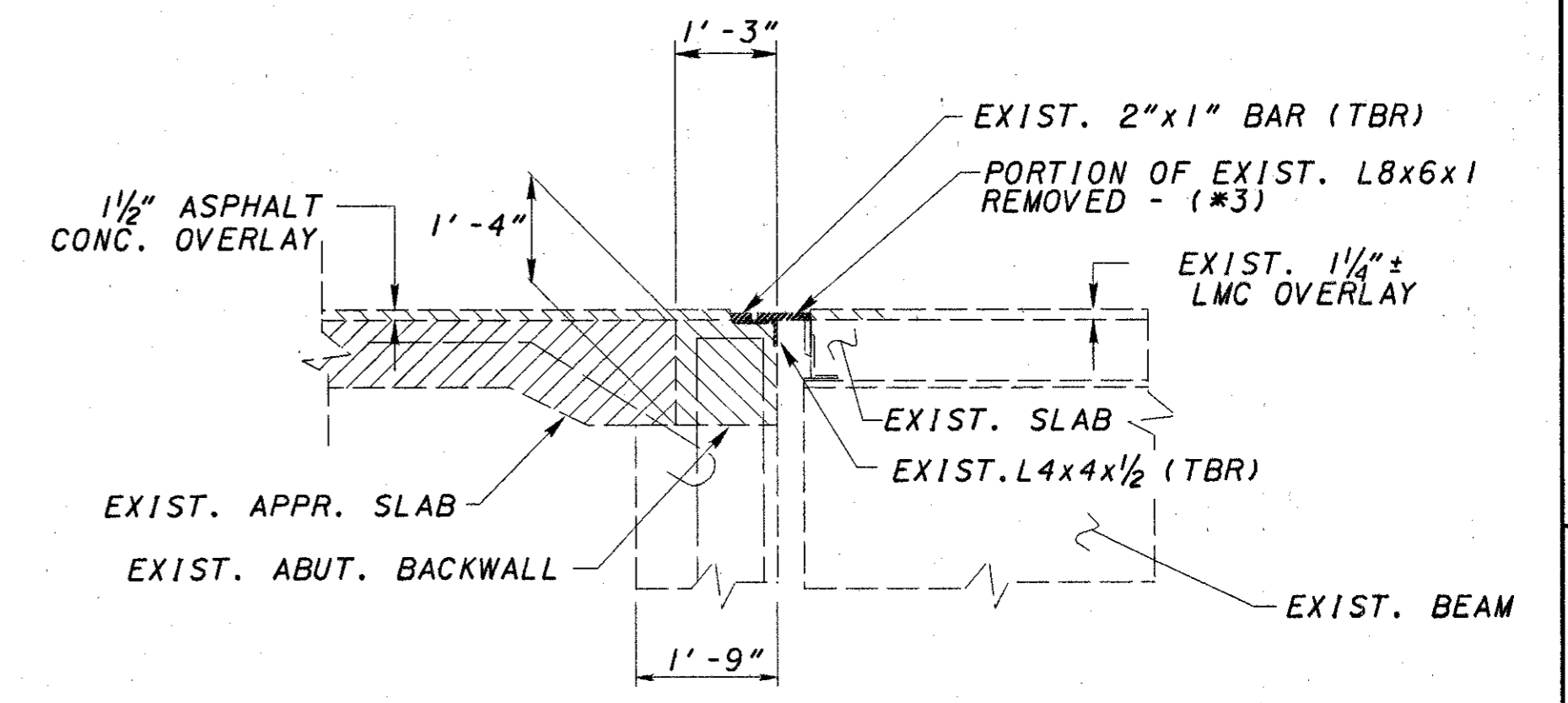
BENDING DIAGRAMS





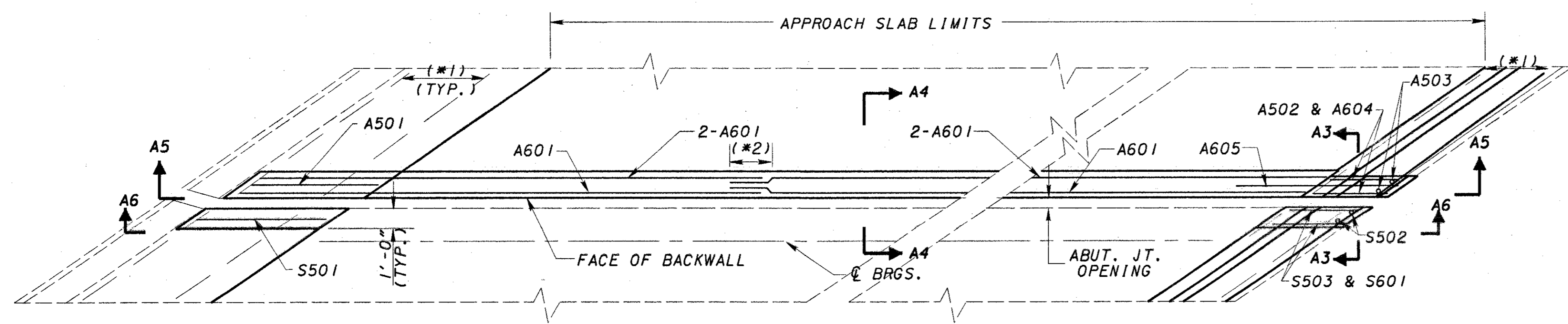
EXISTING ABUTMENT, DECK SLAB, PARAPET & APPROACH SLAB REMOVAL PLAN

PRESERVE ALL LONG. REINFORCING BARS IN PARAPETS & DECK SLAB



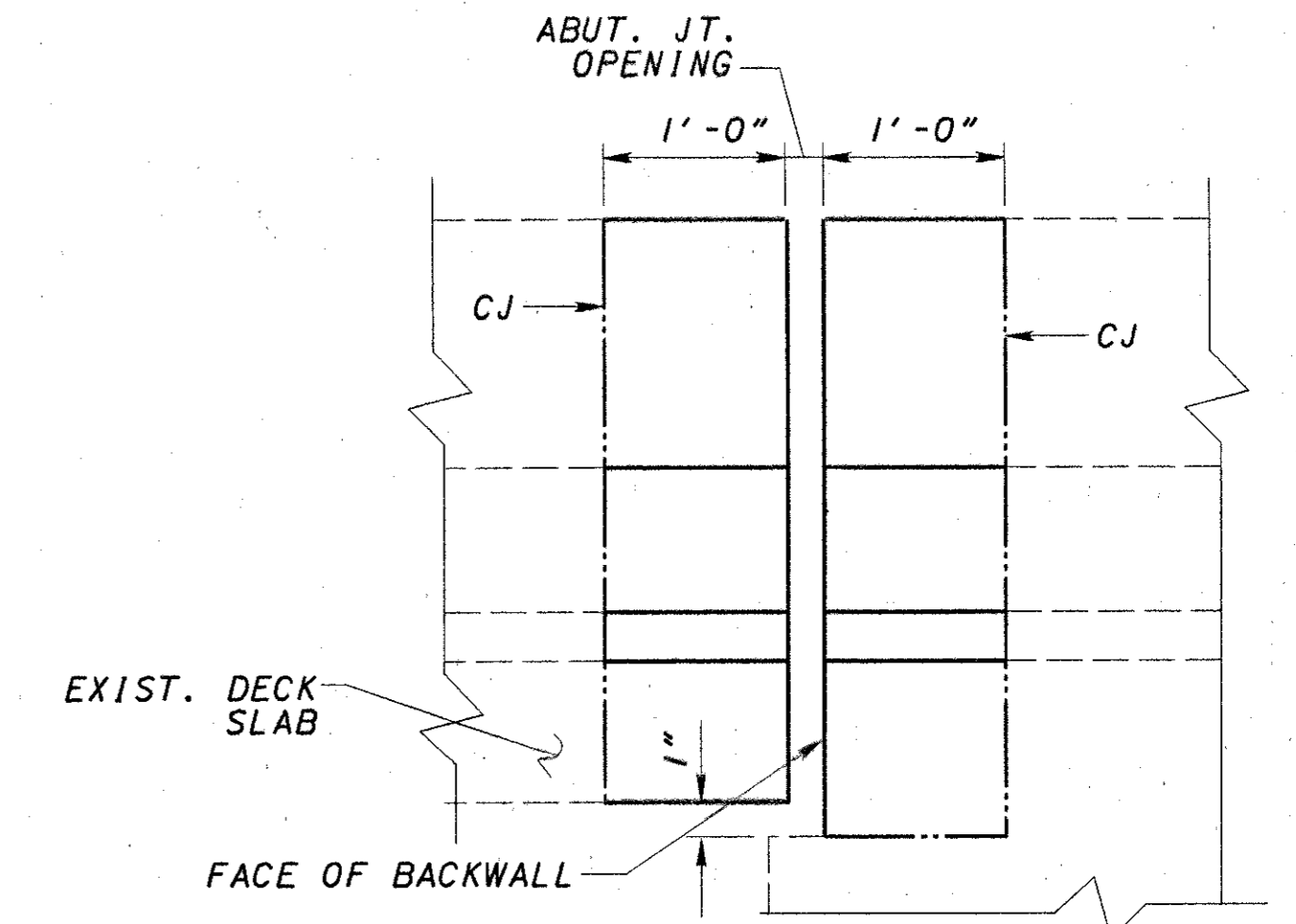
SECTION A1-A1

(\*3) REMOVE TOP PORTION OF ANGLE FLUSH WITH ORIGINAL CONCRETE DECK SLAB

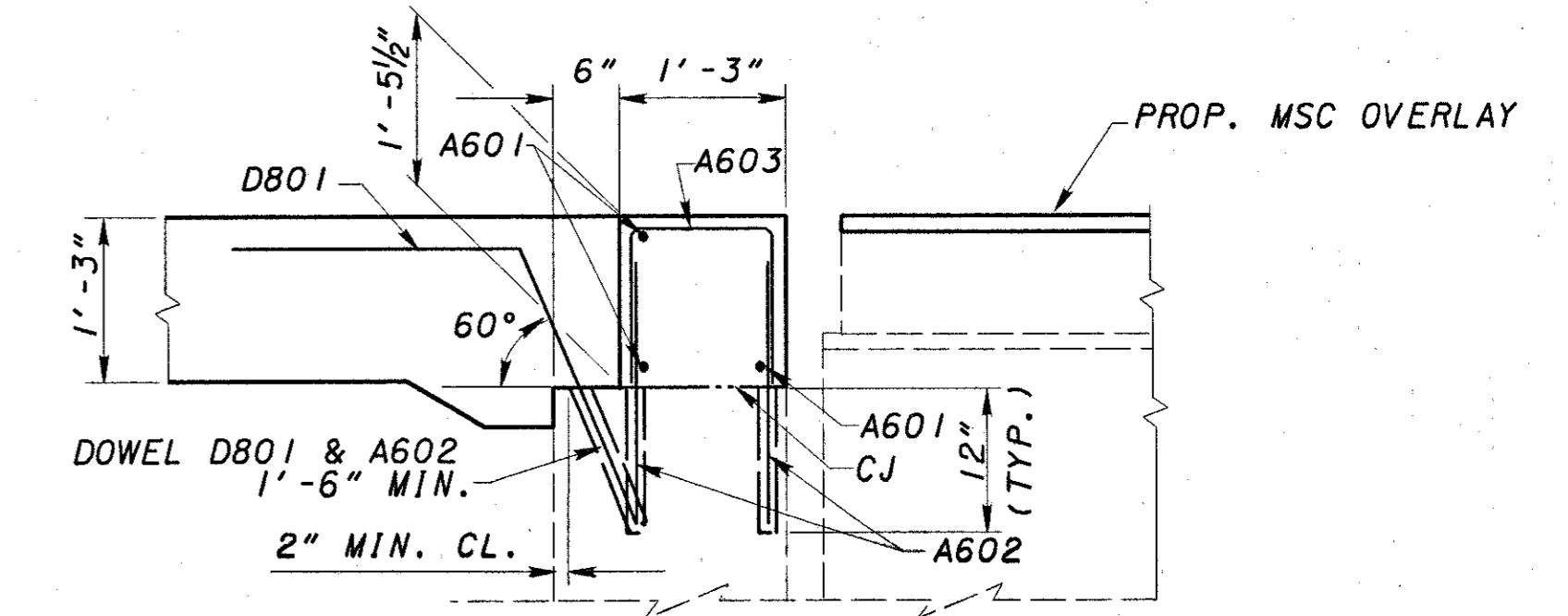


(\*1) EXIST. LONG. BARS TO REMAIN IN PARAPET  
 (\*2) LAP LENGTHS  
 #5 BAR-2'-9"  
 #6 BAR-3'-3"

MODIFIED ABUTMENT, DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

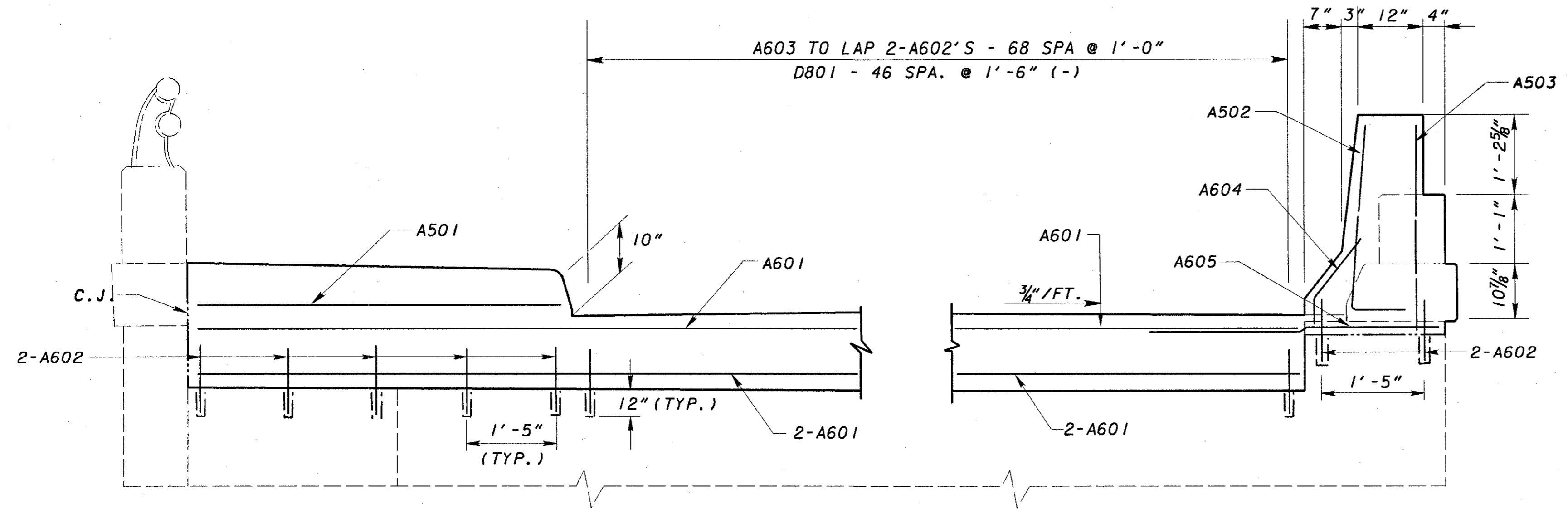


SECTION A3-A3



SECTION A4-A4

ALTERNATE TO BACKWALL CONSTRUCTION  
 PLANS SHOW THE PORTIONS OF BACKWALL REMOVAL BY SAWCUTTING AT APPROACH SLAB SEAL LEVEL (SECTION A1-A1) AND RECONSTRUCTING THE BACKWALL BY DOWELLING INTO THE REMAINING EXISTING BACKWALL AS PER THE DETAILS OF SECTION A4-A4. AS AN ALTERNATE TO DOWELLING IN NEW BARS, THE CONTRACTOR MAY CHOOSE TO PRESERVE THE EXIST. BARS (RUNNING THROUGH THE CONSTRUCTION JOINT) DURING THE REMOVAL OF THE BACKWALL CONCRETE. ANY BAR DAMAGED DURING THE CONCRETE REMOVAL SHALL BE REPLACED BY NEW BARS AS DETAILED IN SECTION A4-A4.



SECTION A5-A5

LEGEND  
 - REMOVAL LIMITS  
 - REMOVAL FOR PARAPET REFINISHING

DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 PH: (614) 224-1971

DATE: 7/2001  
 REVIEWED: KVB  
 DRAWN: JEP  
 DESIGNED: JEP  
 CHECKED: ASB

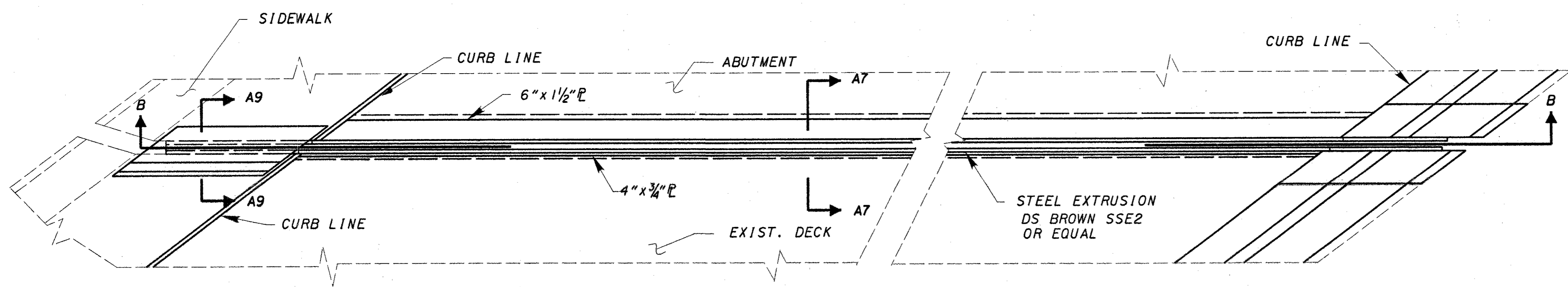
STRUCTURE FILE NUMBER: 3106616

FORWARD ABUTMENT EXPANSION JOINT DETAILS  
 SIXTH STREET (BRIDGE NO. HAM-71-0155)

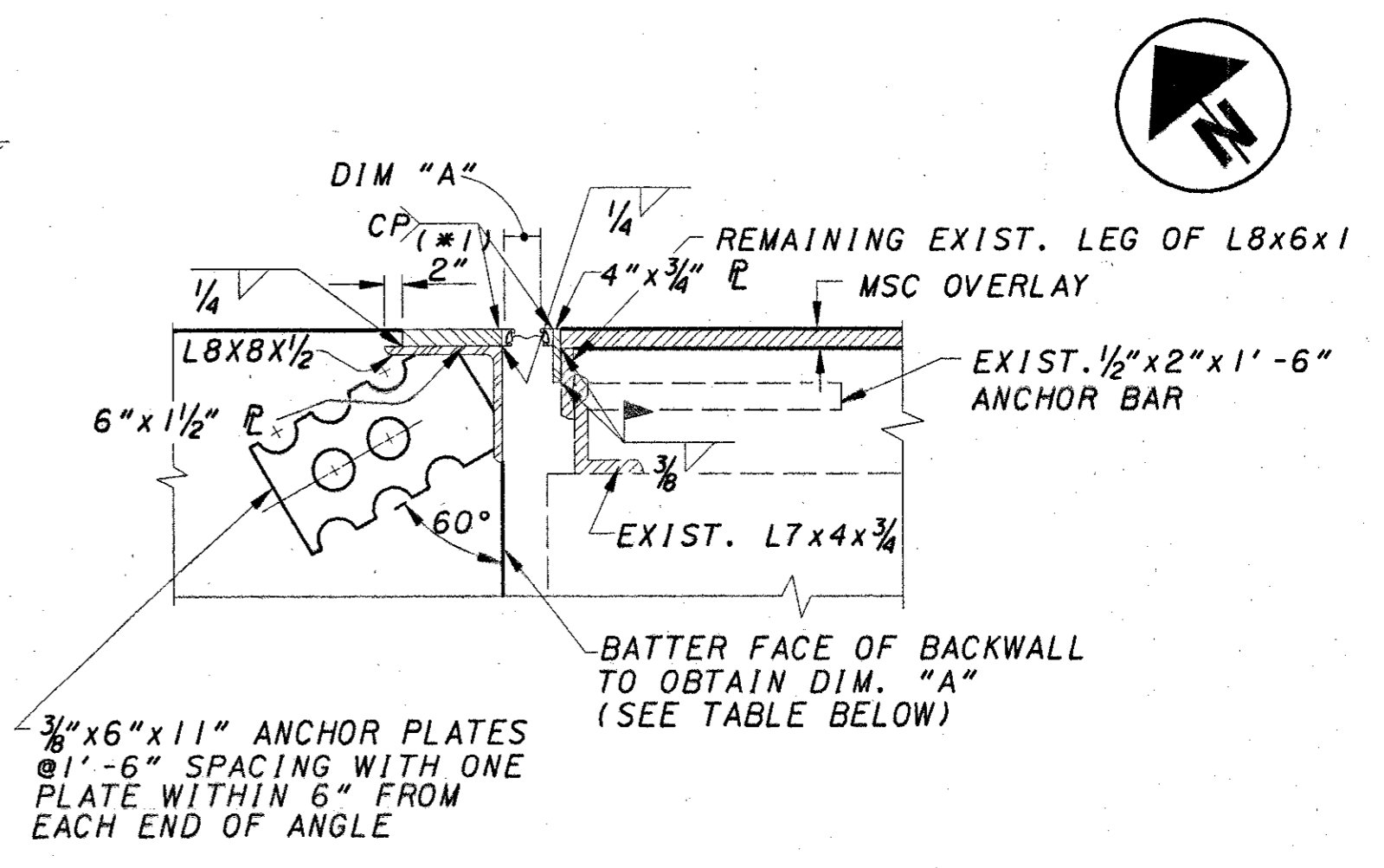
HAM 471-0.26

70/106

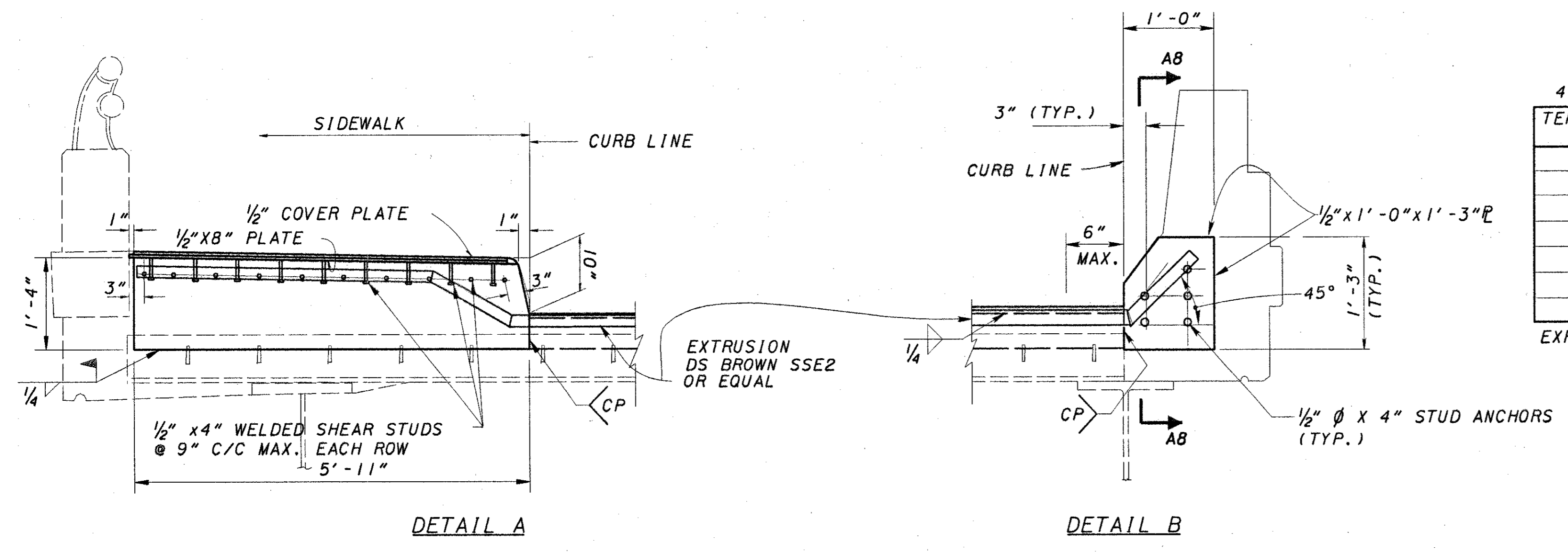
102  
182



FORWARD ABUTMENT EXPANSION JOINT

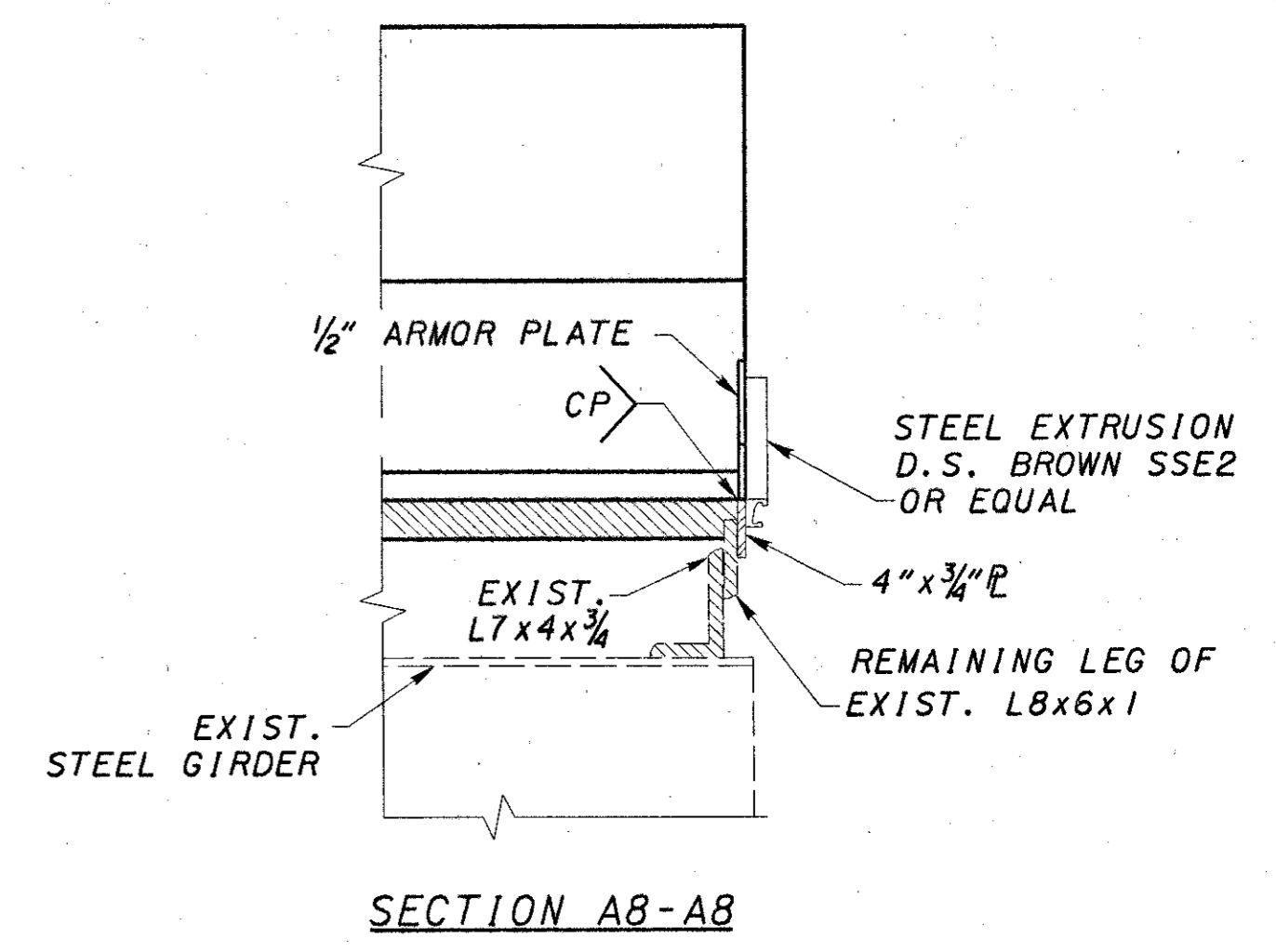


SECTION A7-A7

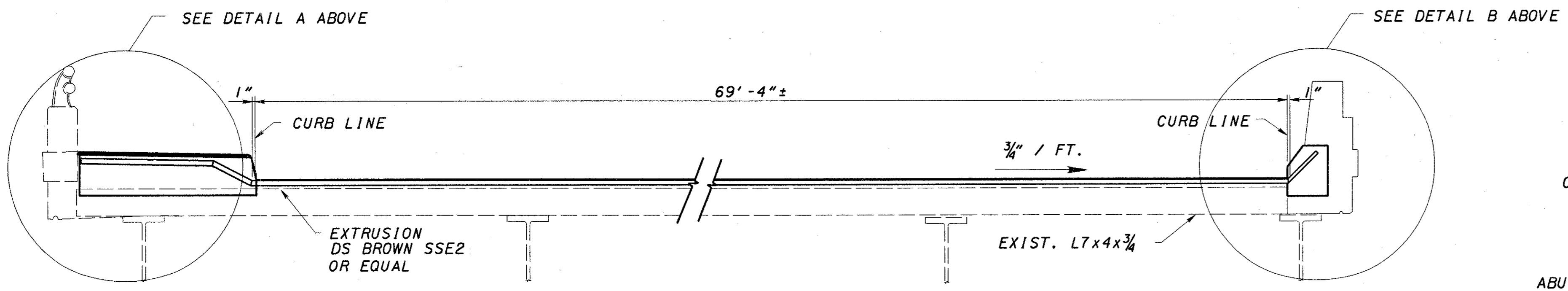


4" STRIP SEAL GLAND	
TEMPERATURE (F)	DIAM. A
30°	2 3/8"
40°	2 7/16"
50°	2 7/16"
60°	2 7/16"
70°	2 1/16"
80°	1 15/16"
90°	1 7/8"

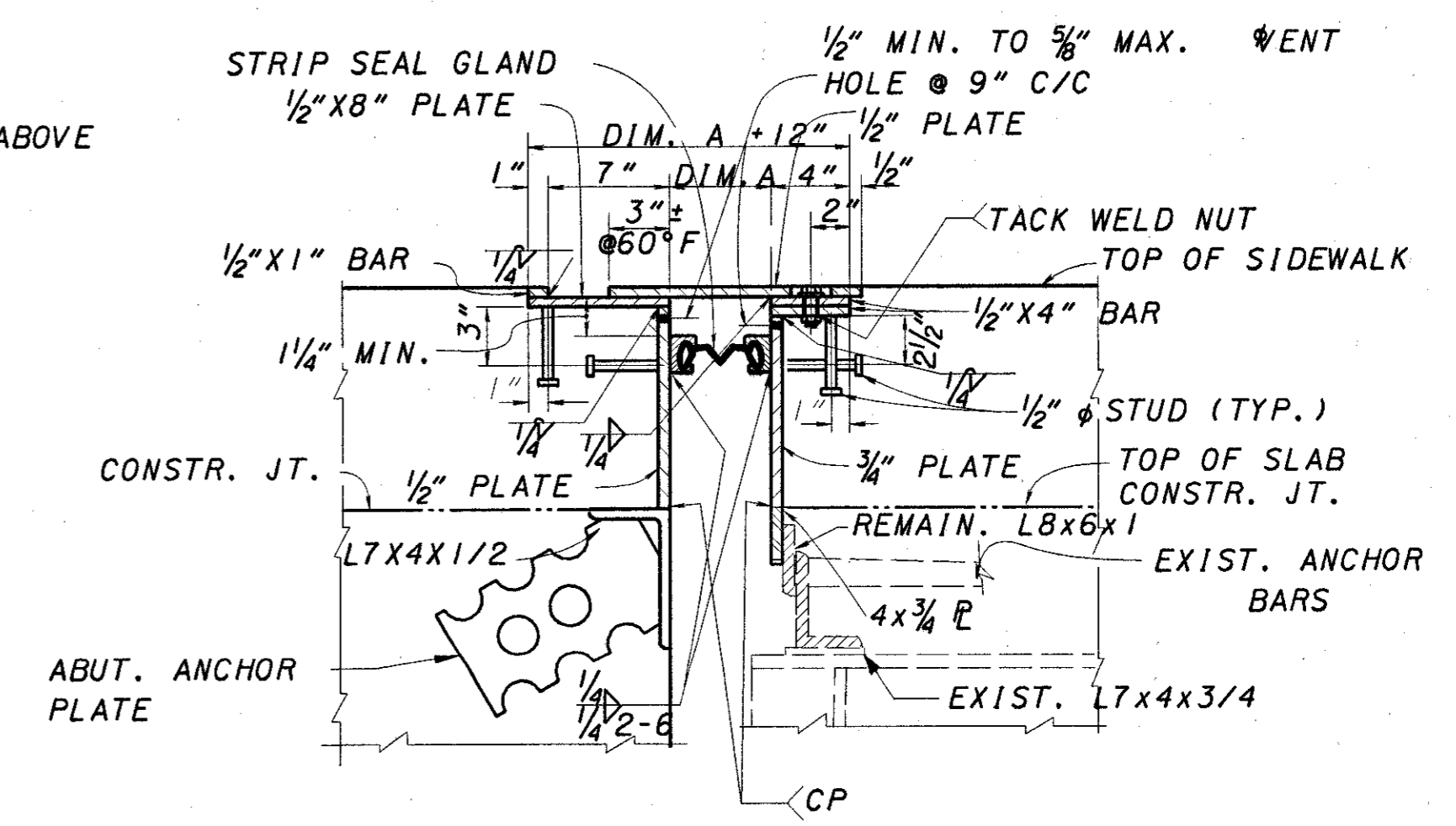
EXPANSION LENGTH = 194'-0"



SECTION A8-A8

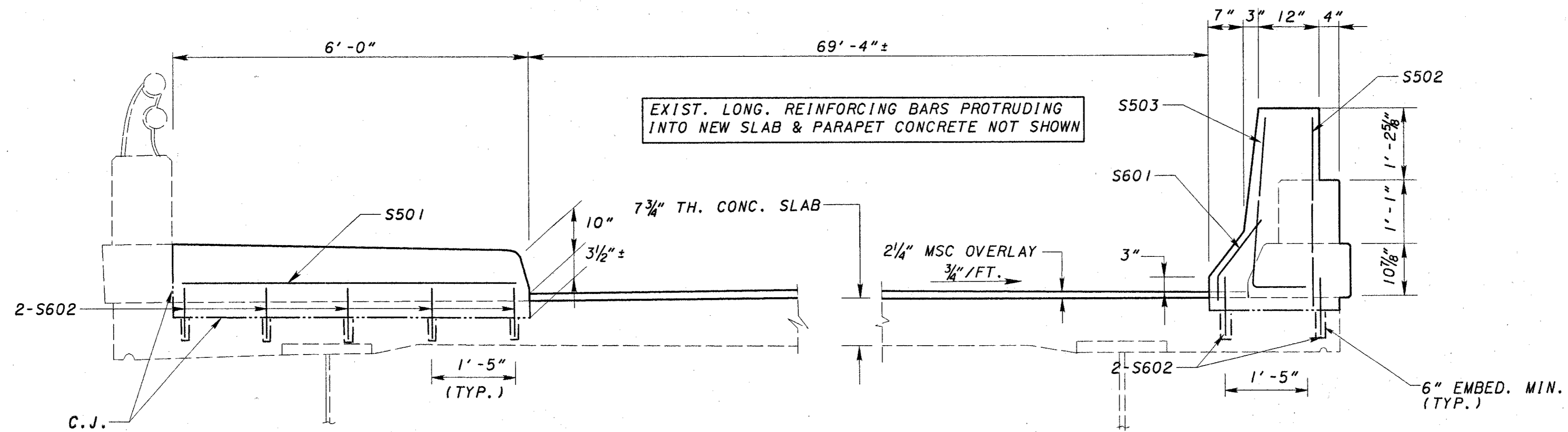


SECTION B-B



SECTION A9-A9

(\*2) SEE TABLE A ON PREVIOUS SHEET FOR DIMENSION



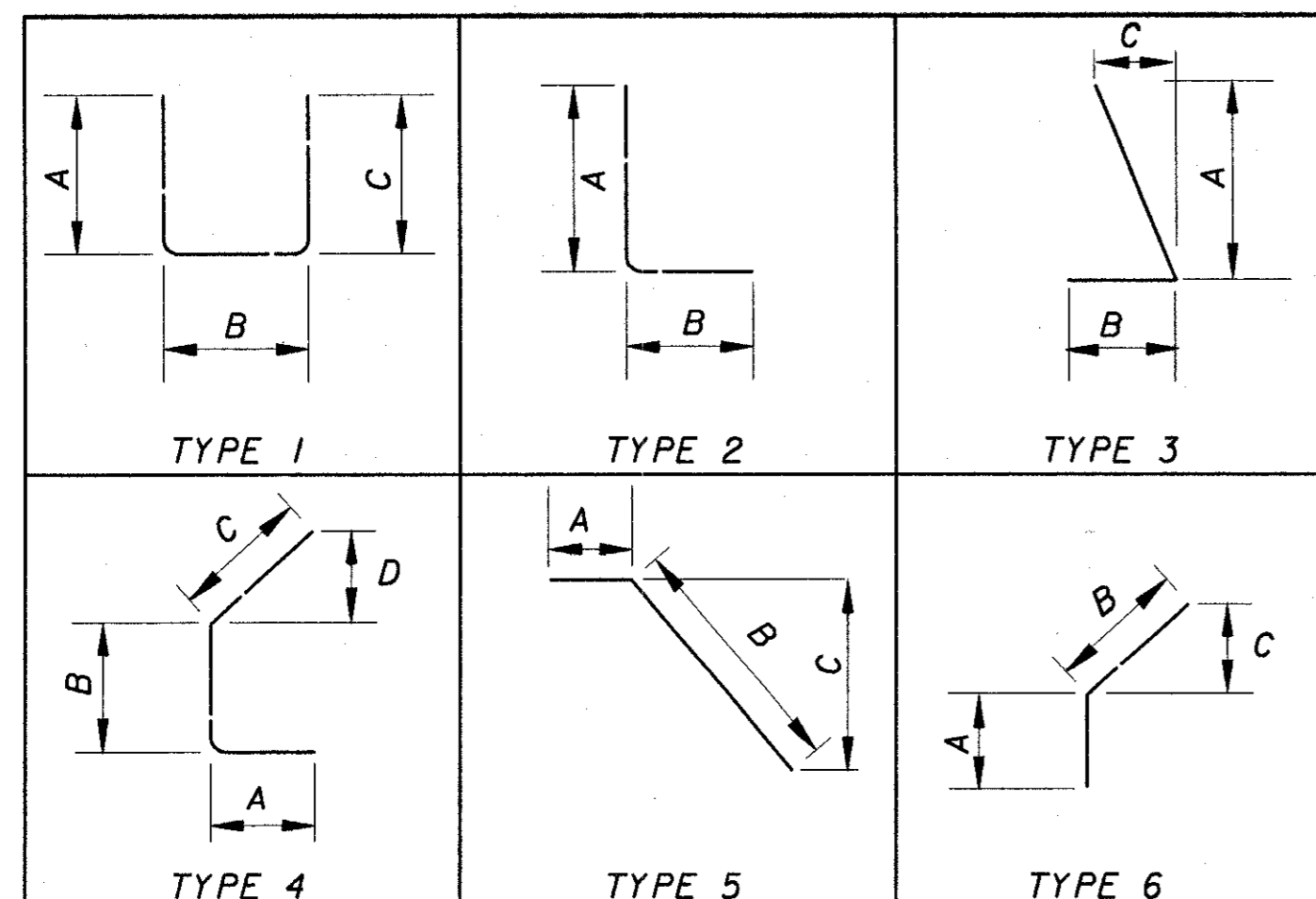
SECTION A6-A6

REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
SUPERSTRUCTURE									
S502	2	2'-8"		STR					
S503	2	3'-5"		3	2'-8"	10"	2"		
S601	2	1'-10"		6	4"	1'-6"	1'-2"		
S602	14	1'-6"		STR					

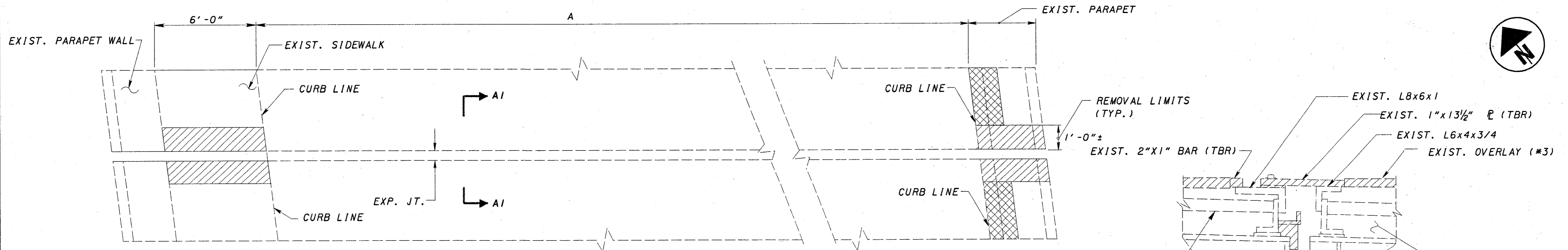
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
ABUTMENT									
A501	1	5'-8"		STR					
A502	2	3'-5"		3	2'-8"	10"	2"		
A601	6	38'-1"		STR					
A602	152	2'-0"		STR					
A603	69	3'-0"		1	1'-2"	11"	1'-2"		
A604	2	1'-10"		6	4"	1'-6"	1'-2"		
A605	1	5'-10"		STR					
D801	47	4'-3"		5	2'-0"	2'-3"	1'-11"		

BENDING DIAGRAMS



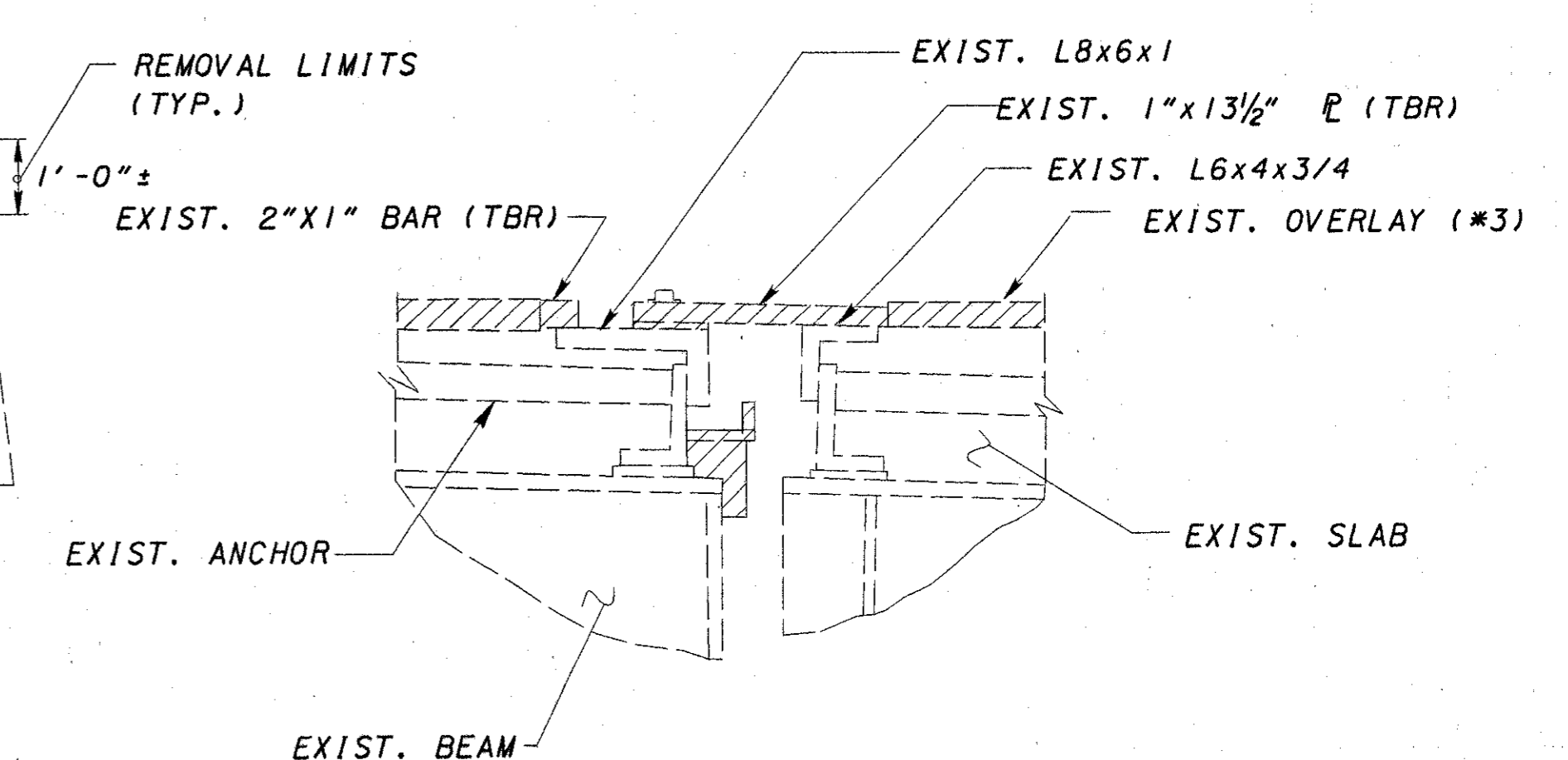
DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 PH: (614) 224-1941  
 DATE: 7/2001  
 REVIEWED: GEA  
 STRUCTURE FILE NUMBER: 3106616  
 DRAWN: JEP  
 CHECKED: ASB  
 DESIGNED: JEP  
 REVISED: ASB  
 FORWARD ABUTMENT EXPANSION JOINT DETAILS  
 SIXTH STREET (BRIDGE NO. HAM-71-0155)  
 HAM-471-0.26  
 72/106  
 104  
 182





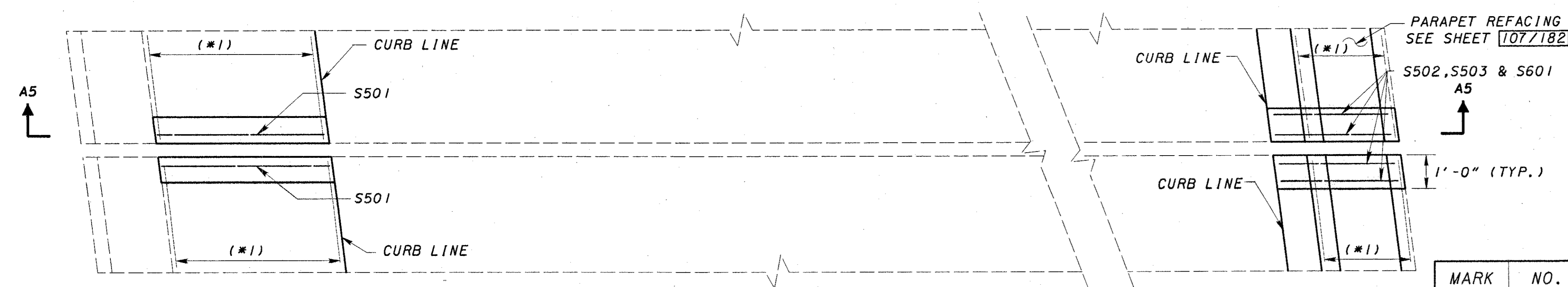
PRESERVE ALL LONG. REINFORCING BARS IN PARAPETS & DECK SLAB REMOVAL AREAS

EXISTING DECK SLAB, PARAPET & MEDIAN REMOVAL PLAN



SECTION A1-A1

(\*3) 1 1/2" ASPHALT OVERLAY (SPAN 1-9)  
1/4" LMC OVERLAY (SPAN 10-13)



MODIFIED DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

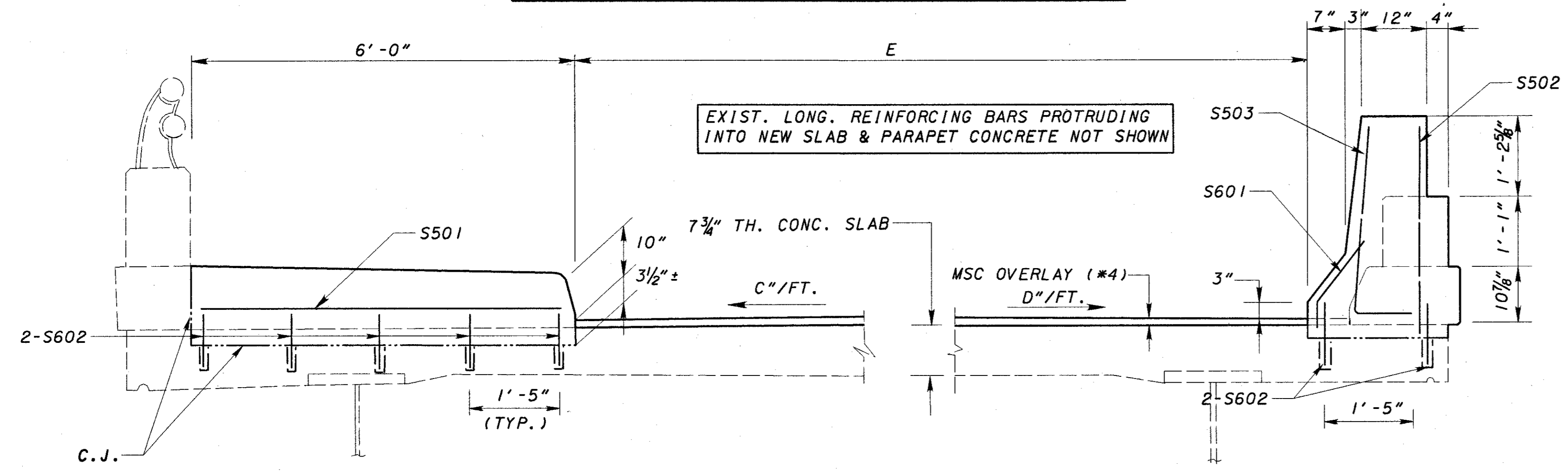
(\*1) EXIST. SIDEWALK & PARAPET LONG. BARS PROTRUDE INTO NEW CONCRETE AREA  
(\*2) LAP LENGTHS  
#5 BAR=2'-9"

REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
S501	6	5'-8"		STR					
S502	12	2'-8"		STR					
S503	12	3'-5"		3	2'-8"	10"	2"		
S601	12	1'-10"		6	4"	1'-6"	1'-2"		
S602	84	1'-6"		STR					

TABLE A-PIER DIMENSIONS

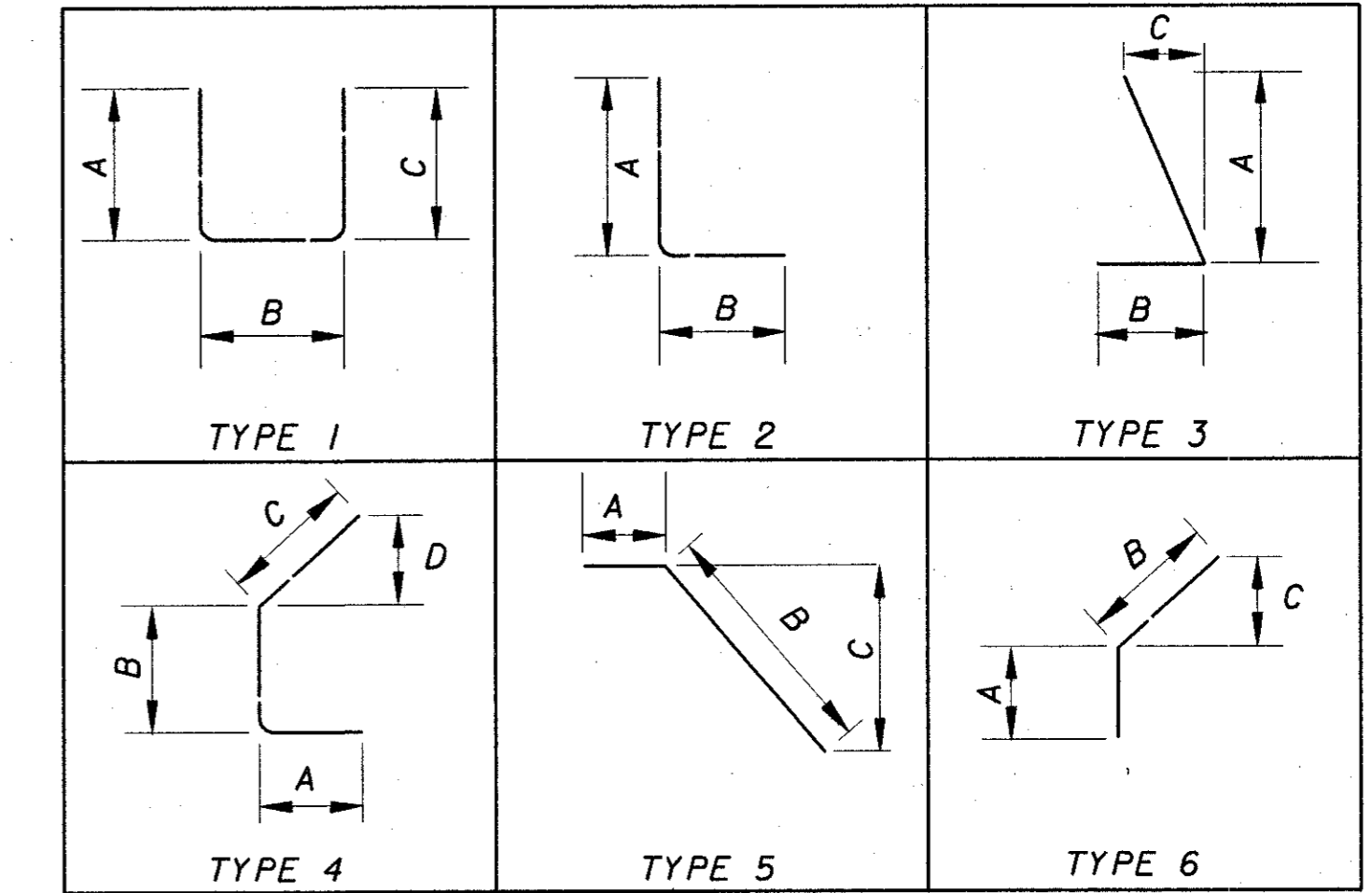
PIER NO	DIM. A	SKEW	C"/FT.	D"/FT.	DIM. E
3	44'-6"	17°	3/8"	N/A	43'-11"
7	42'-8"	5°	N/A	3/16"	42'-1"
10	44'-8"	22°	N/A	1/2"	44'-1"



SECTION A5-A5

(\*4) 2 1/2" THICK MSC OVERLAY (SPAN 1-9)  
2 1/4" THICK MSC OVERLAY (SPAN 10-13)

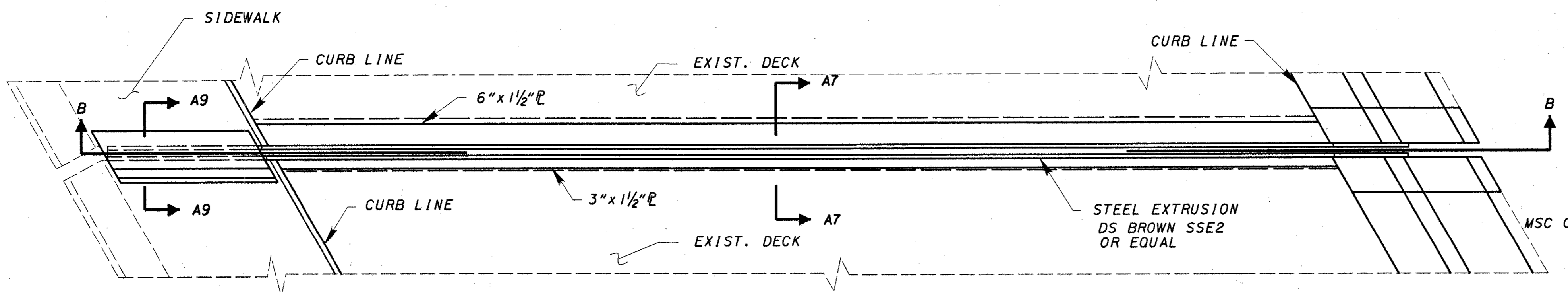
BENDING DIAGRAMS



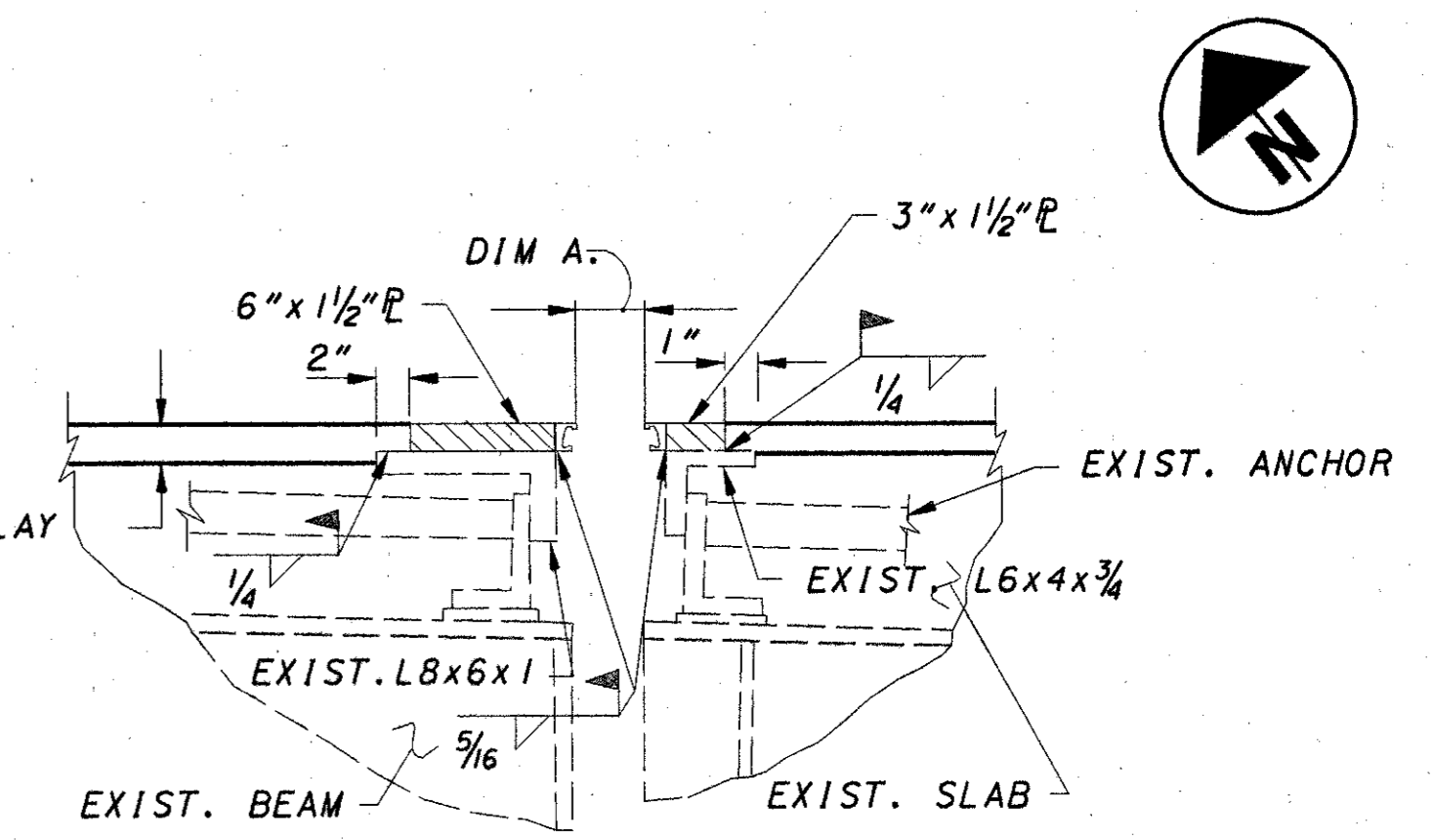
LEGEND

- REMOVAL LIMITS
- CONC. REMOVAL FOR PARAPET REFACING

DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 Ph: (614) 224-1941  
 DATE: 7/2001  
 REVIEWED: GEA  
 DRAWN: JEP  
 CHECKED: JEP  
 STRUCTURE FILE NUMBER: 3106616  
 ASB  
 PIER 3,7&10 EXPANSION JOINT DETAILS  
 SIXTH STREET (BRIDGE NO. HAM-71-0155)  
 HAM-471-0.26  
 73/106  
 105/182

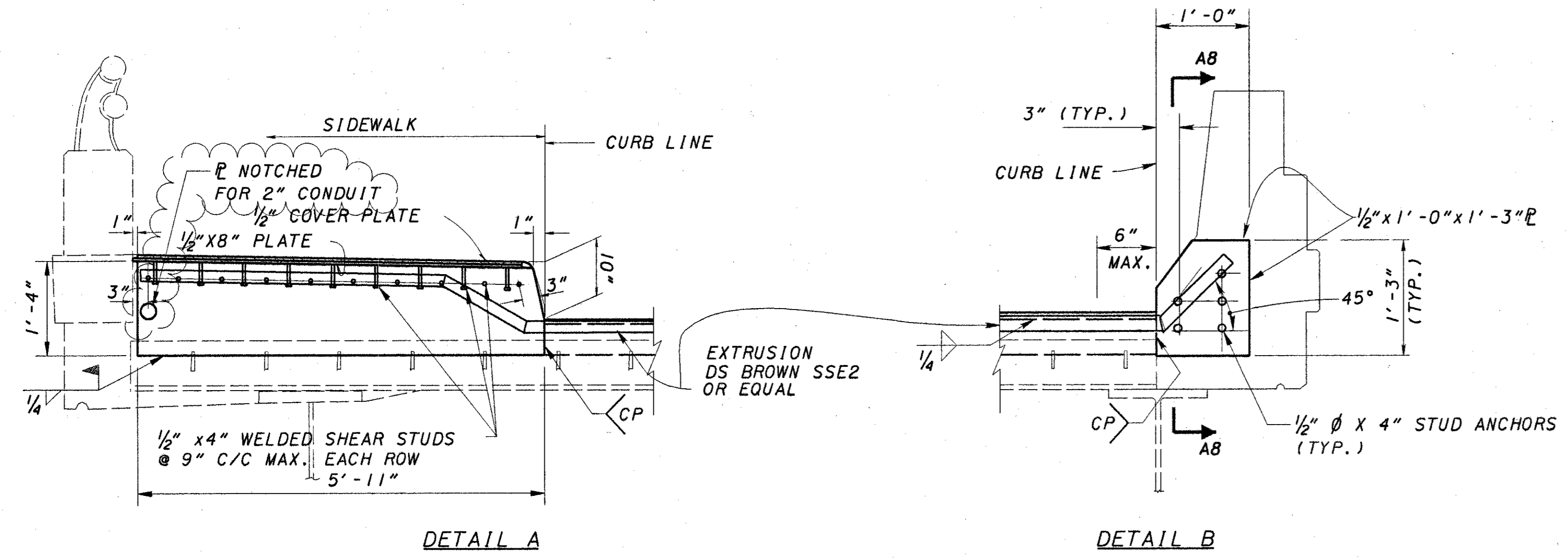


PIER 3,7&10 EXPANSION JOINT



SECTION A7-A7

NOTE: SHOP WELD EXTRUSIONS TO 1/2" E

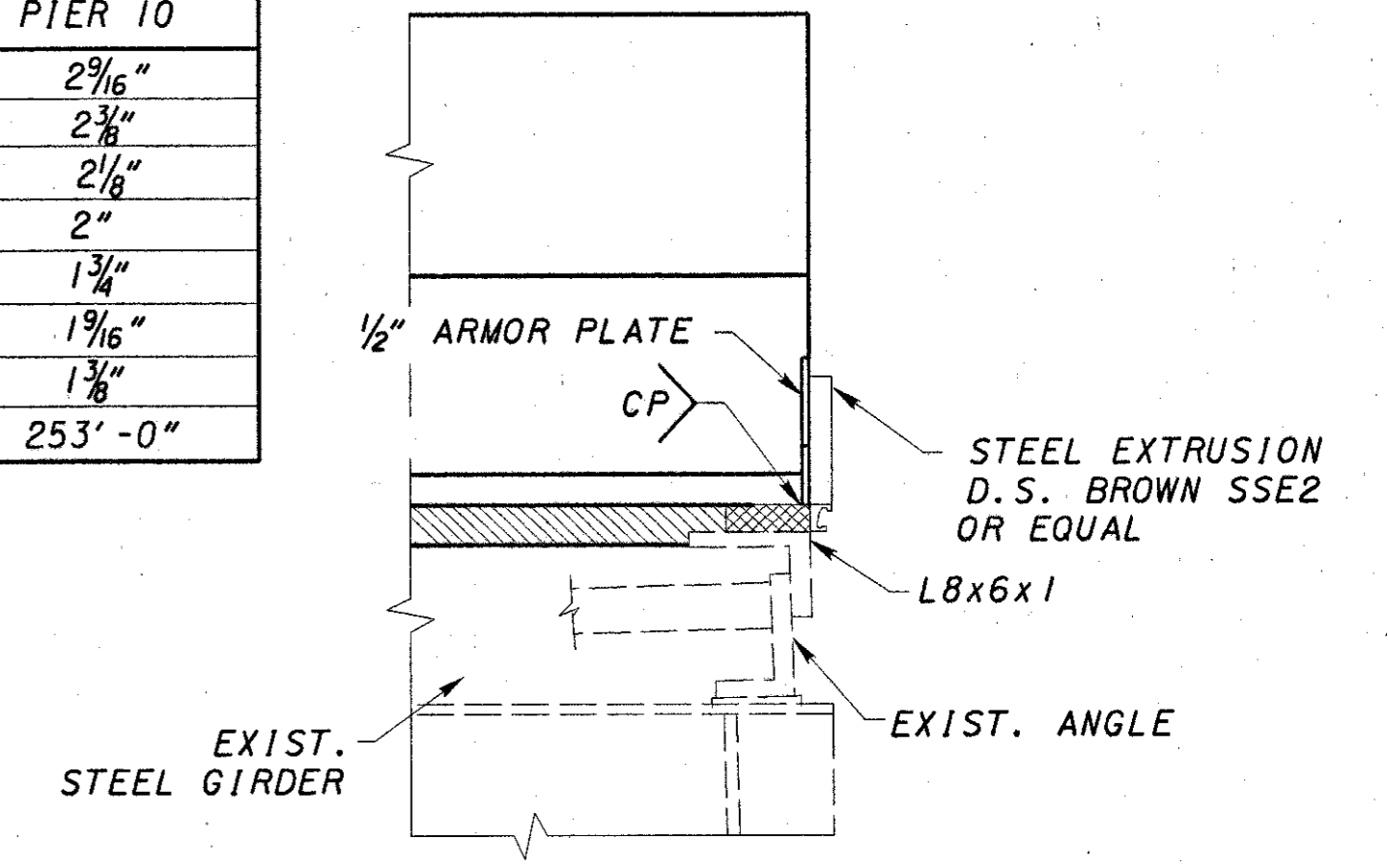


DETAIL A

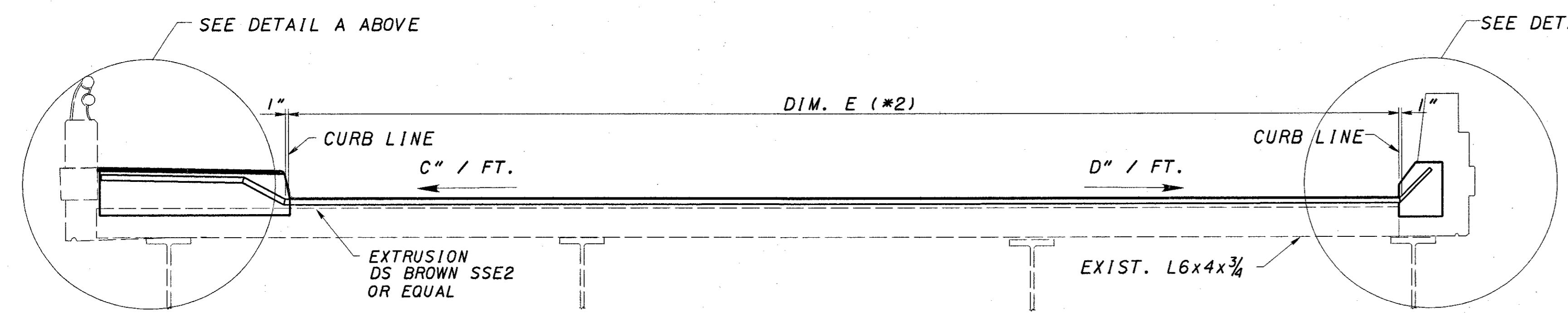
DETAIL B

4" STRIP SEAL GLAND - DIMENSION A

TEMPERATURE (F)	PIER 3	PIER 7	PIER 10
30°	2 9/16"	2 9/16"	2 9/16"
40°	2 3/8"	2 3/8"	2 3/8"
50°	2 1/8"	2 1/8"	2 1/8"
60°	2"	2"	2"
70°	1 11/16"	1 11/16"	1 3/4"
80°	1 1/2"	1 1/2"	1 9/16"
90°	1 5/16"	1 1/4"	1 3/8"
EXP. LENGTH	275'-0"	294'-0"	253'-0"

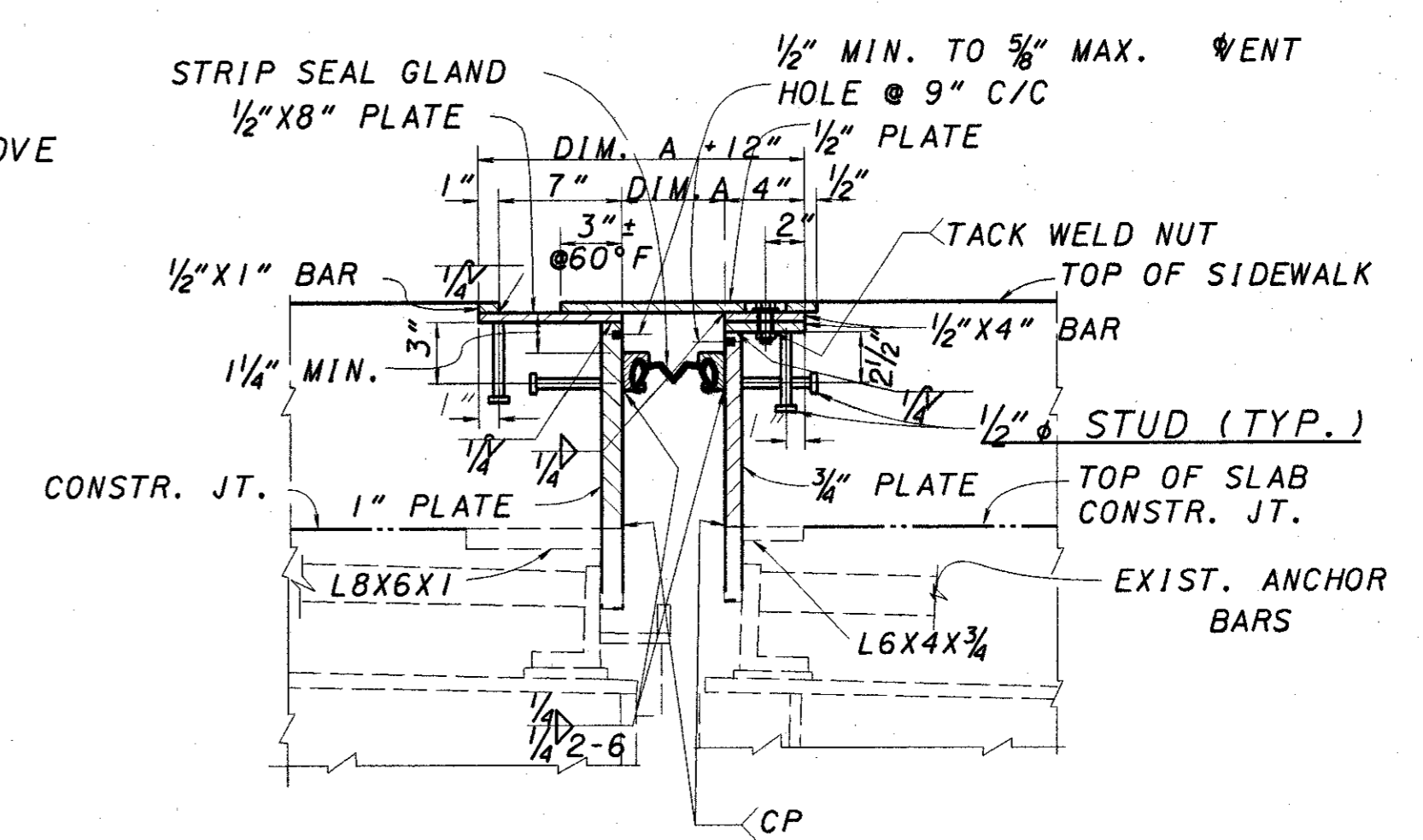


SECTION A8-A8



SECTION B-B

(\*2) SEE TABLE A ON PREVIOUS SHEET FOR DIMENSION



SECTION A9-A9

DESIGN AGENCY: BARR ENGINEERING, Five East Long Street, Columbus, Ohio 43215, Ph: (614) 224-1941

DATE: 7/2001

REVIEWED: KVB

STRUCTURE FILE NUMBER: 3106616

DESIGNED: JEP

CHECKED: ASB

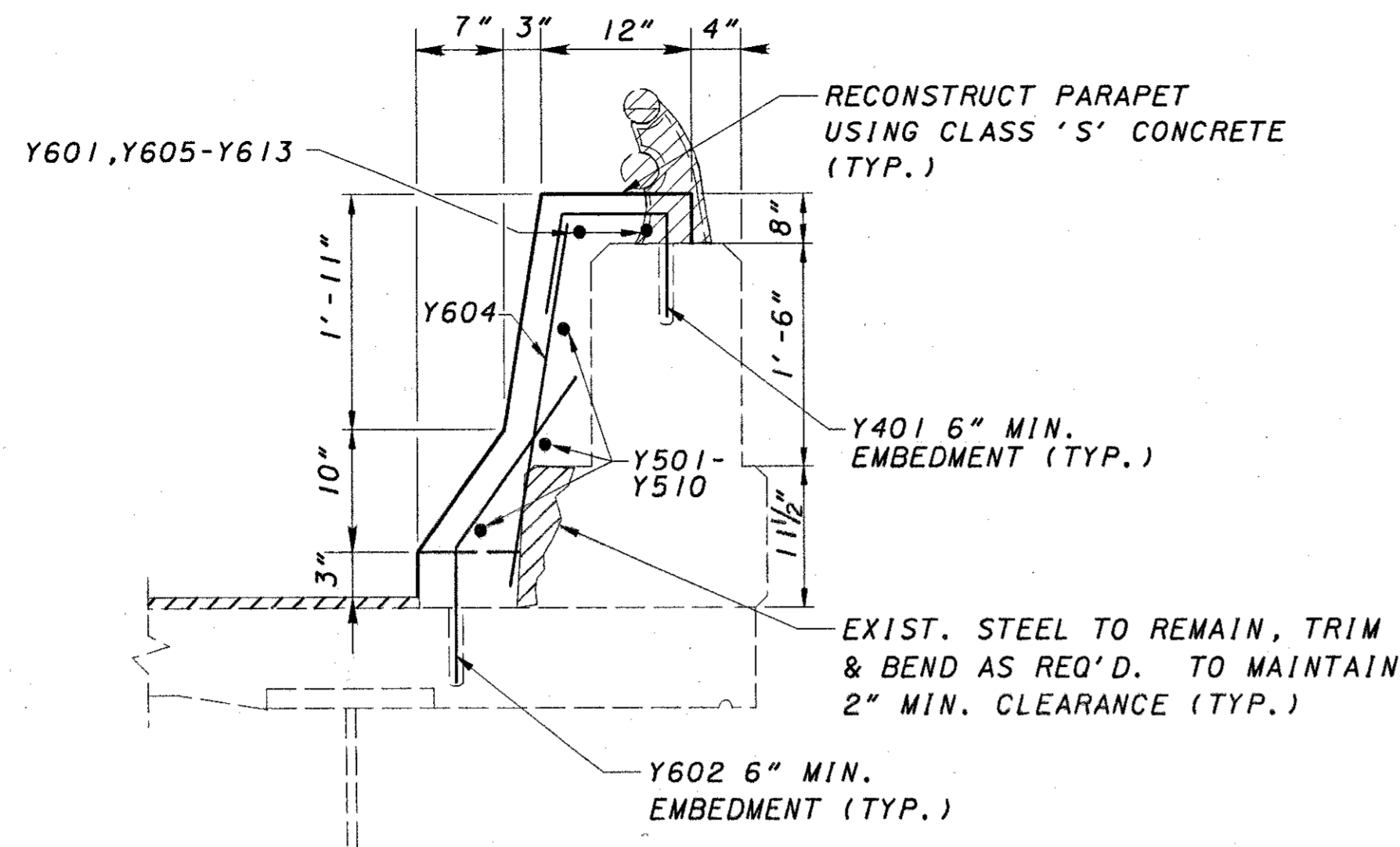
PIER 3,7&10 EXPANSION JOINT DETAILS

SIXTH STREET (BRIDGE NO. HAM-71-0155)

HAM-471-0.26

74/106

106/182

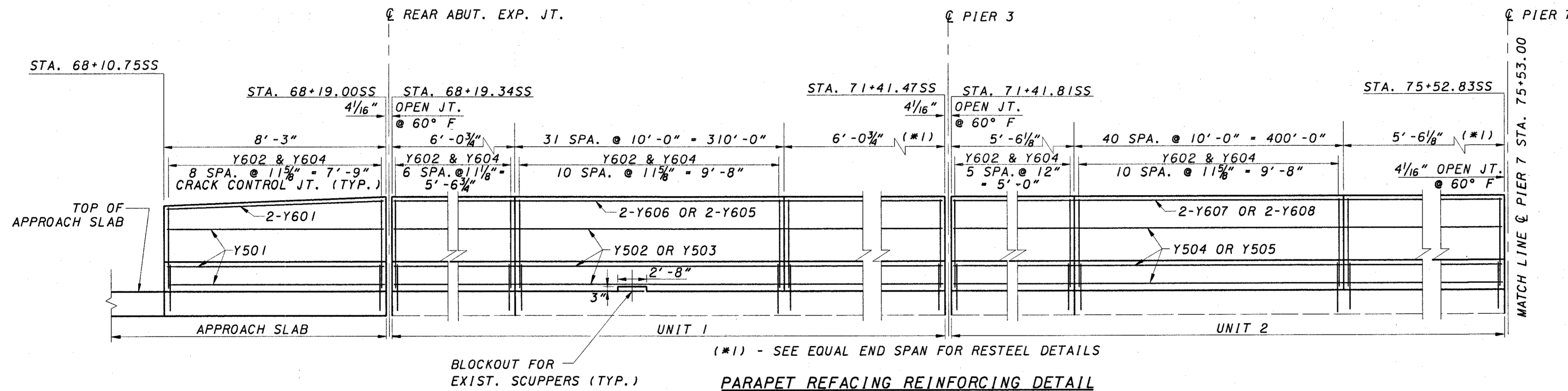


**PARAPET REFACING DETAIL**

NOTE: SCARIFY ALL EXIST. SURFACES TO BE IN CONTACT W/FRESH CONCRETE (TYP.)

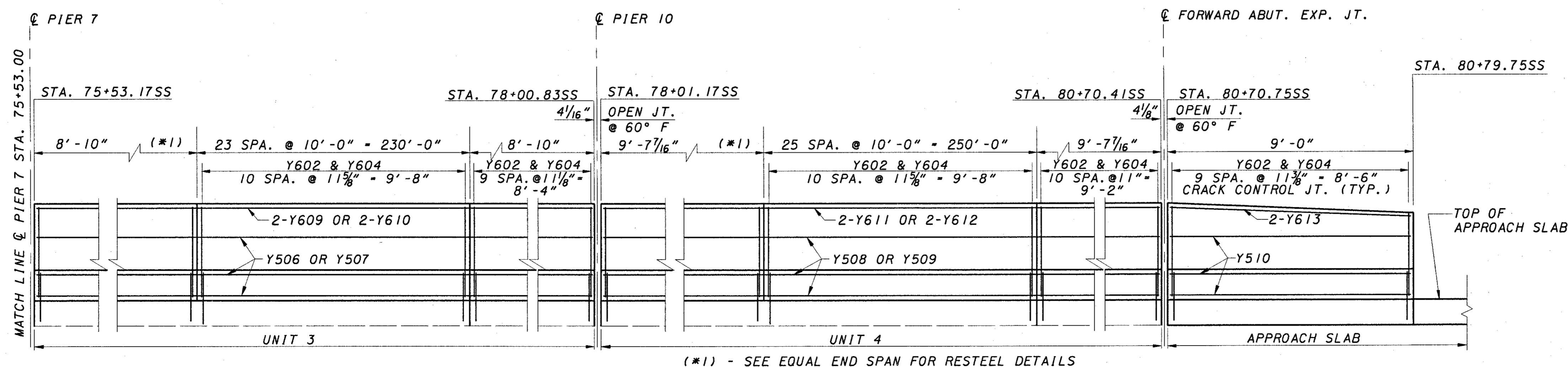
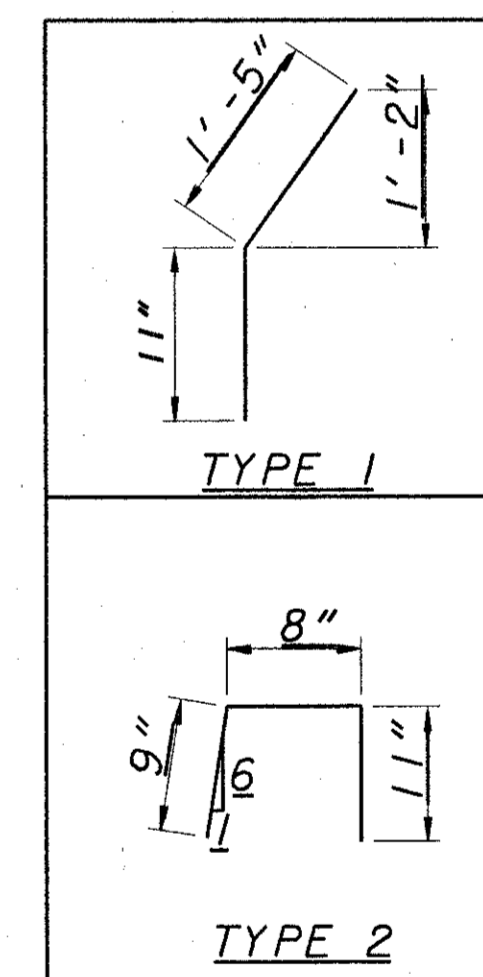
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C
<b>PARAPET</b>							
Y401	1396	1'-11"		2			
Y501	3	7'-9"		STR			
Y502	30	33'-11"		STR			
Y503	6	5'-6"		STR			
Y504	39	33'-9"		STR			
Y505	6	5'-0"		STR			
Y506	24	31'-7"		STR			
Y507	6	8'-4"		STR			
Y508	24	34'-1"		STR			
Y509	6	9'-2"		STR			
Y510	3	8'-6"		STR			
Y601	2	7'-9"		STR			
Y602	1396	2'-3"		1			
Y604	1396	2'-6"		STR			
Y605	4	5'-6"		STR			

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C
<b>PARAPET</b>							
Y606	20	33'-11"		STR			
Y607	4	5'-0"		STR			
Y608	26	33'-9"		STR			
Y609	4	8'-4"		STR			
Y610	16	31'-7"		STR			
Y611	4	9'-2"		STR			
Y612	16	34'-1"		STR			
Y613	4	8'-6"		STR			



**PARAPET REFACING REINFORCING DETAIL**

**BENDING DIAGRAMS**

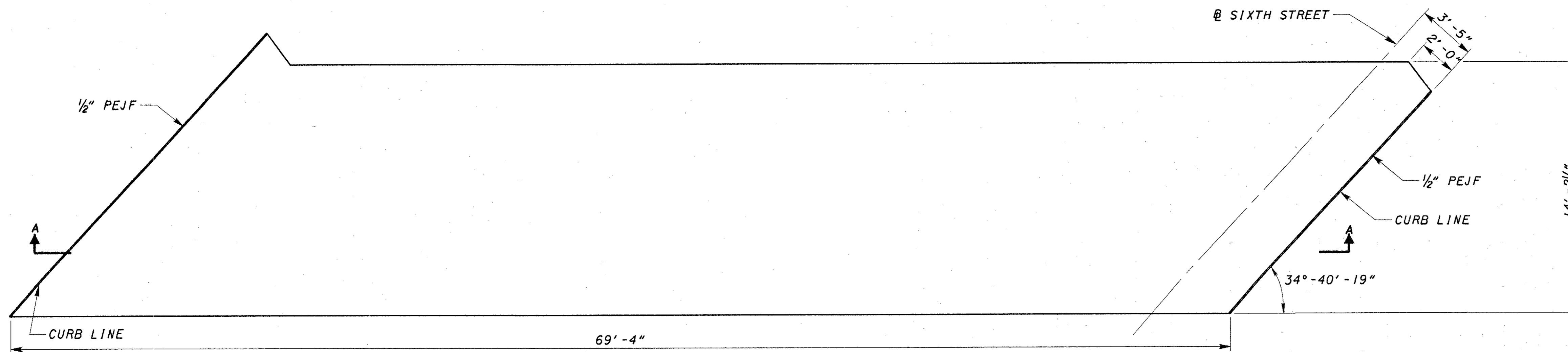


**PARAPET REFACING REINFORCING DETAIL**

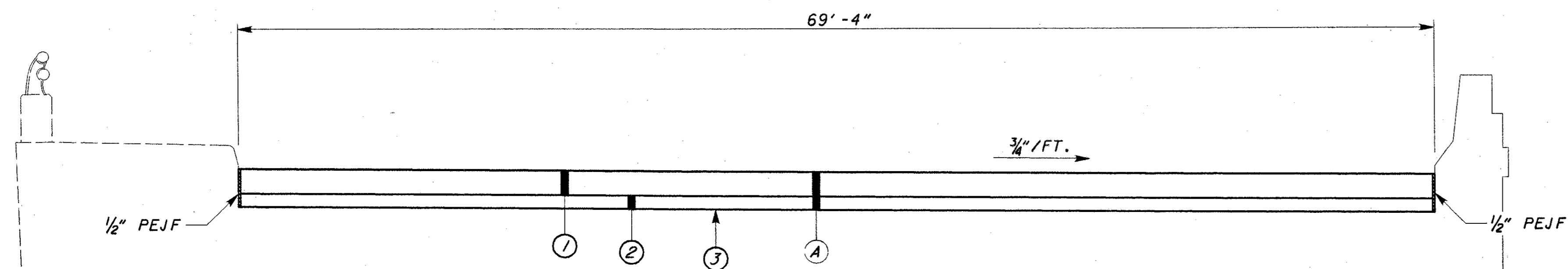
- NOTES:**
- FOR CRACK CONTROL JOINT DETAILS, SEE STD. DWG. BR-1.
  - LAP LENGTHS  
#5 BAR-2'-9"  
#6 BAR-3'-3"

**LEGEND:**  
 - REMOVAL LIMITS

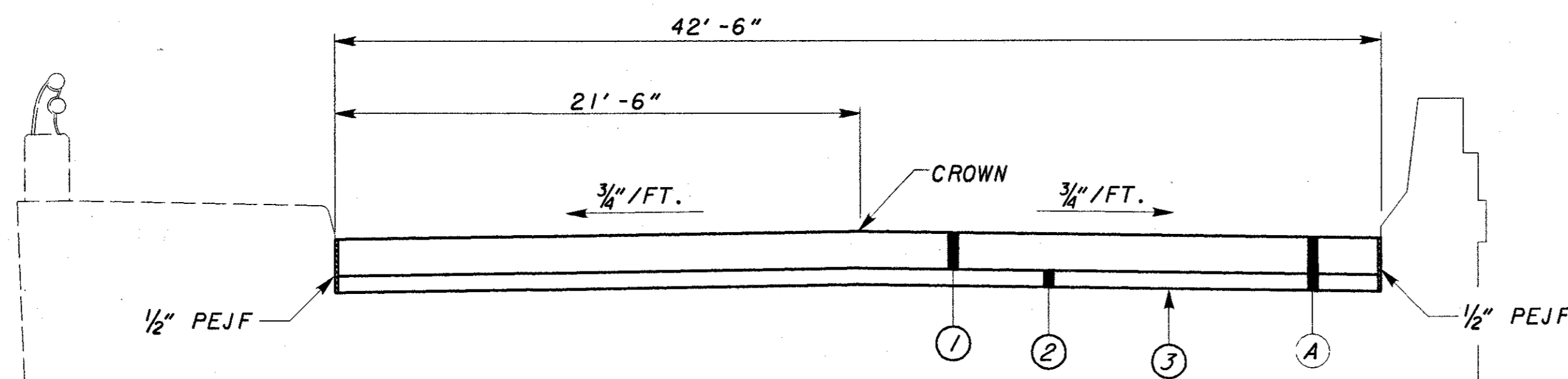
DESIGN AGENCY: BARR ENGINEERING, INC. FIVE EAST LONG STREET, EIGHTH FLOOR COLUMBUS, OH 43215 (614)-224-1941 FAX (614)-224-0907  
 DATE: 8/2001  
 REVIEWED: GEA 8/2001 STRUCTURE FILE NUMBER: 3106616  
 DRAWN: FIB  
 DESIGNED: JEP  
 CHECKED: KVB  
 SUPERSTRUCTURE: SIXTH STREET (BRIDGE NO. HAM-71-0155)  
 HAM-471-0.26  
 75/106  
 107  
 182



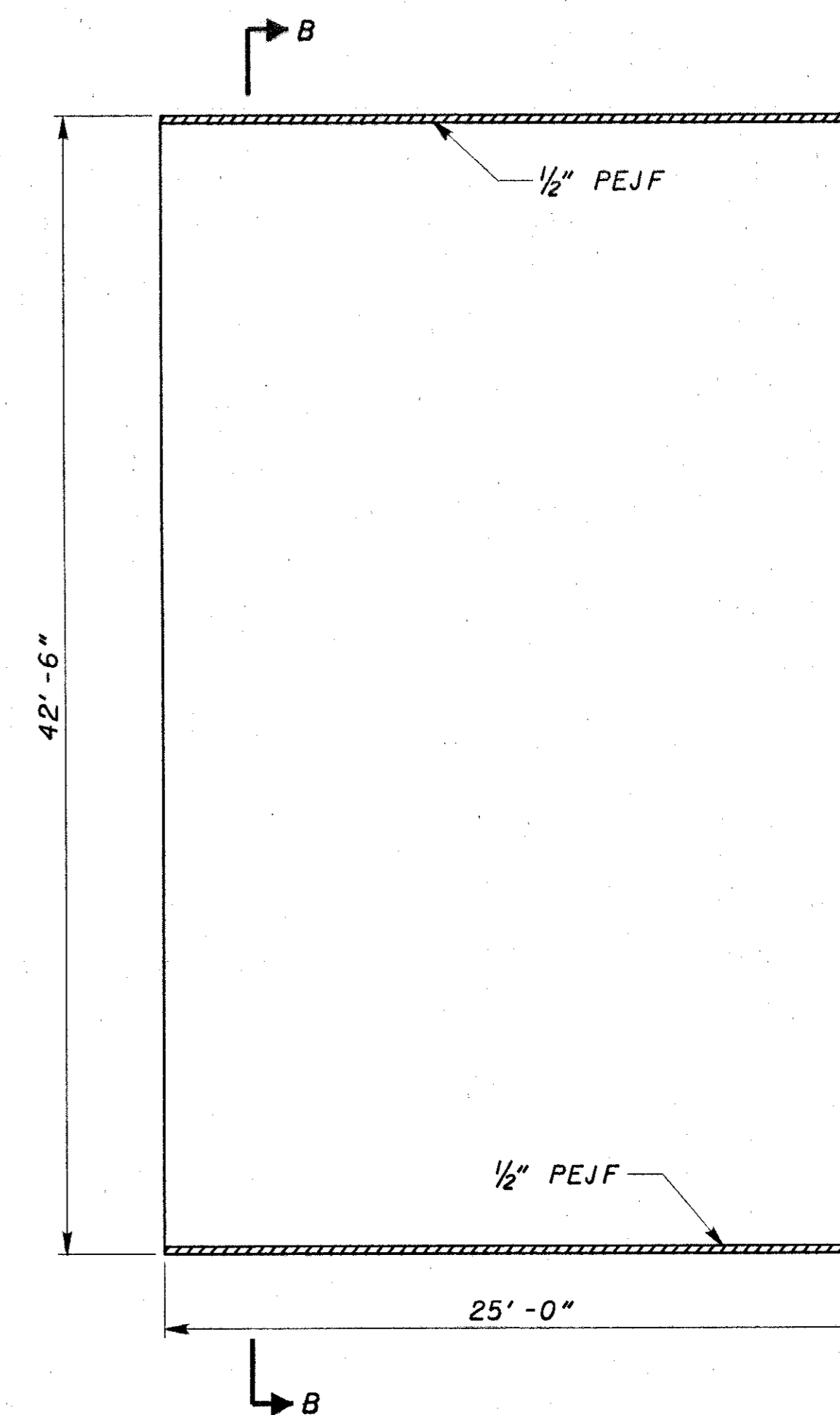
**FORWARD APPROACH SLAB**  
 (SKEW ANGLE = 34°40'19")  
 STA. 80+73.9355 TO STA. 80+98.9355 = 25.00 FT.



**SECTION A-A**



**SECTION B-B**



**REAR APPROACH SLAB**  
 (NO SKEW)  
 STA. 67+92.7555 TO STA. 68+17.7555 = 25.00 FT.

**LEGEND**

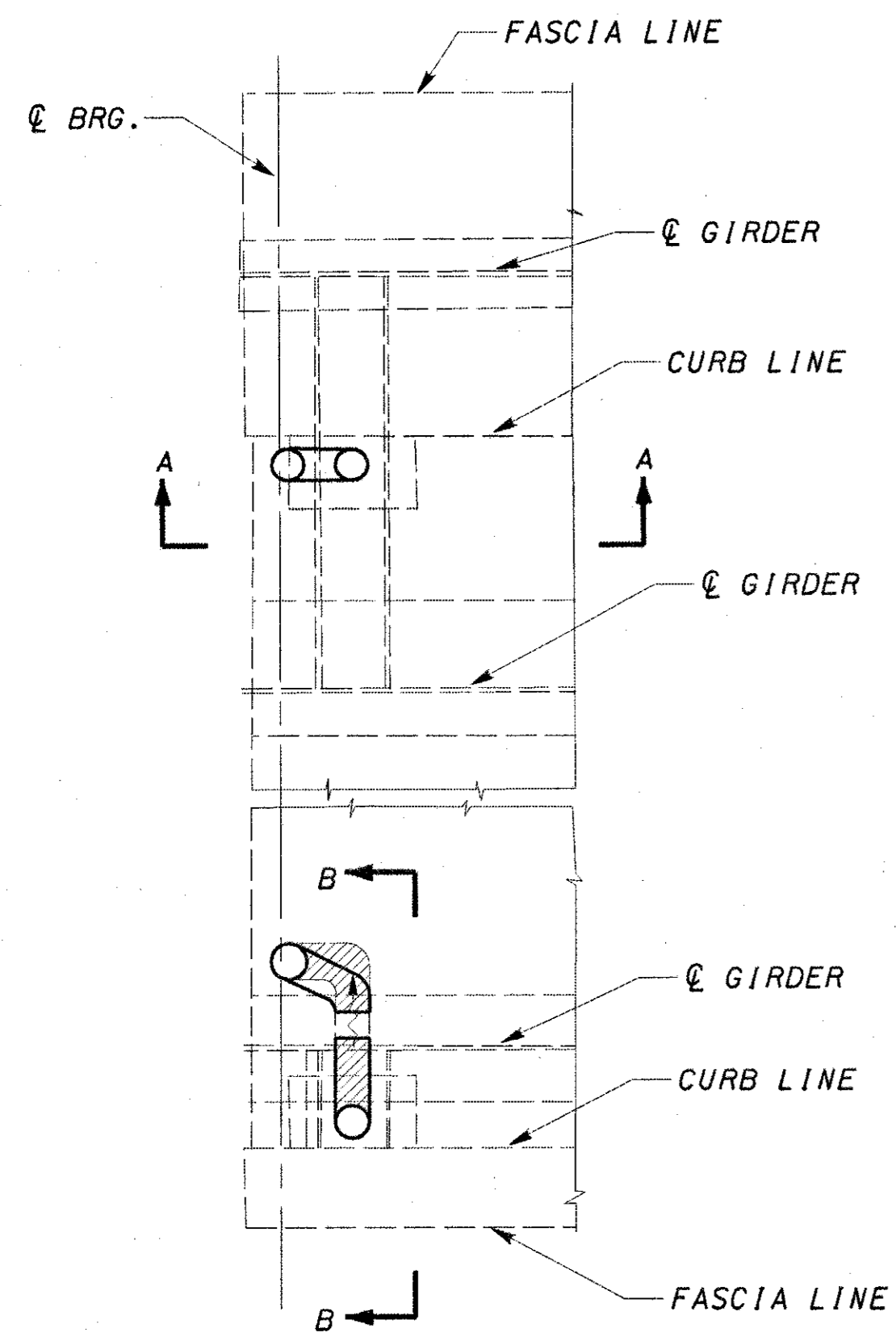
- ① ITEM 611, APPROACH SLAB, (T=15")
- ② ITEM 304, AGGREGATE BASE, (T=6")
- ③ ITEM 203, SUBGRADE COMPACTION
- Ⓐ EXIST. APPROACH SLAB AND BASE

**NOTE:**

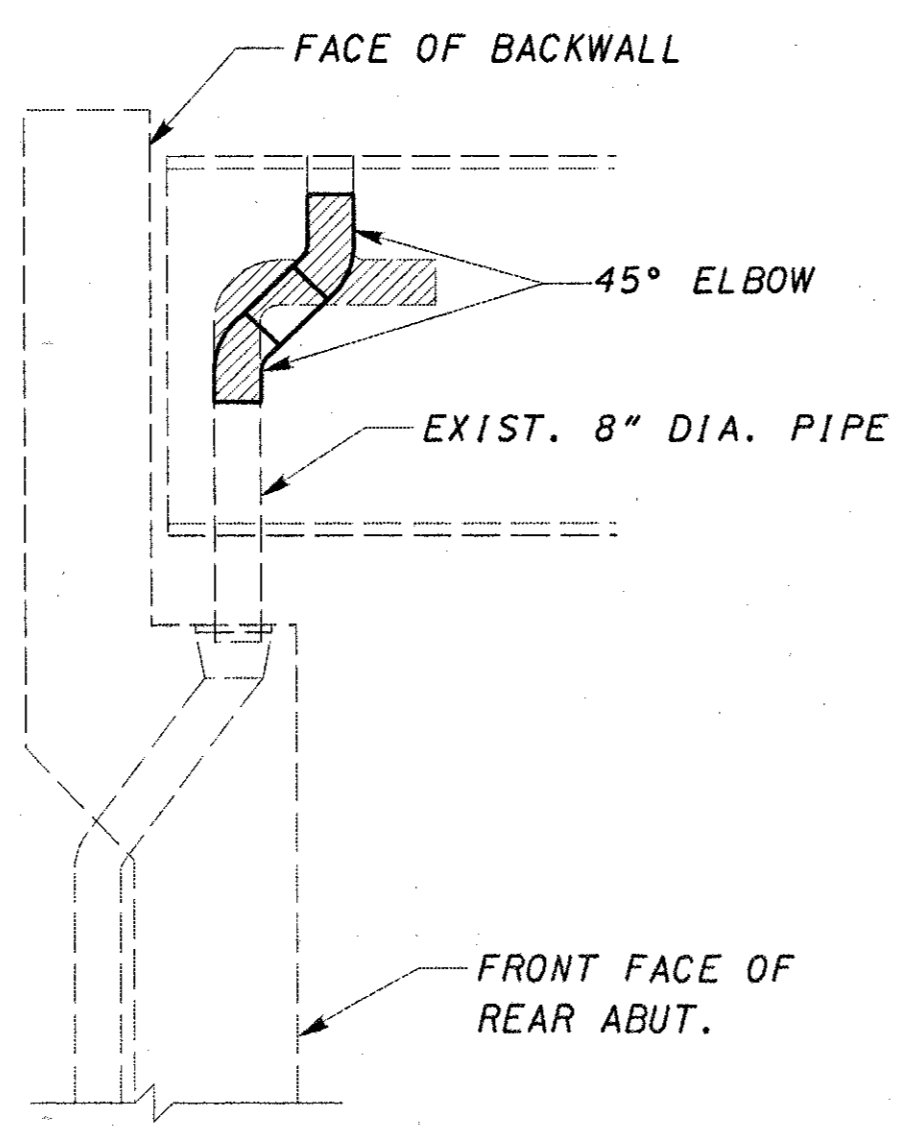
REINFORCEMENT AS PER AS-1-81.  
 SECTIONS DEPICTED NORMAL TO BASE LINE.



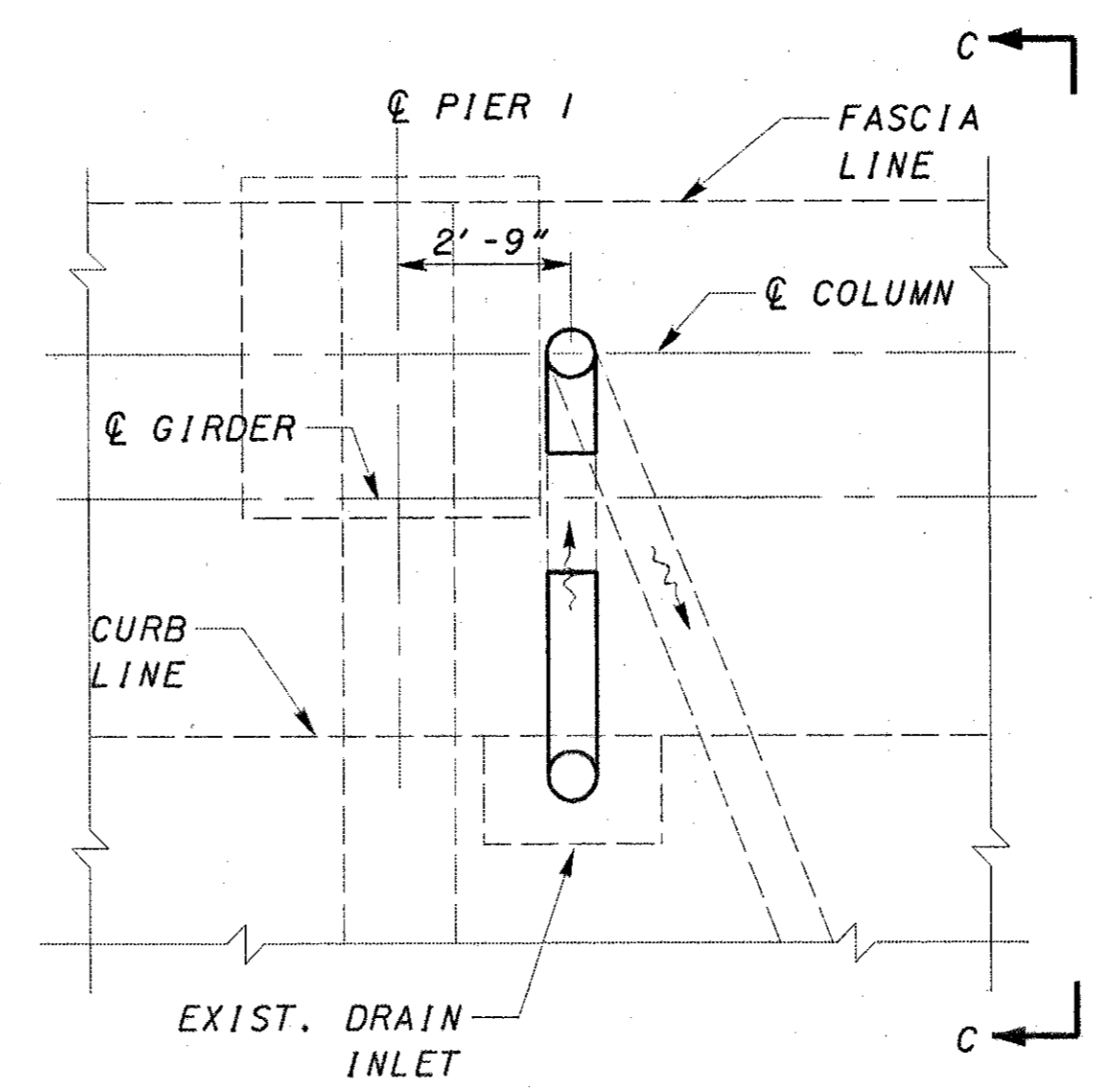
DESIGN AGENCY BARR ENGINEERING Five East Long Street Columbus, Ohio 43215 PH: (614) 224-1941	
DATE 8/2001	REVIEWED GEA
STRUCTURE FILE NUMBER 3106616	REVISOR FIB
DESIGNED JEP	CHECKED ASB
APPROACH SLAB DETAILS SIXTH STREET (BRIDGE NO. HAM-71-0155)	
HAM-471-0.26	
76/106	
108 182	



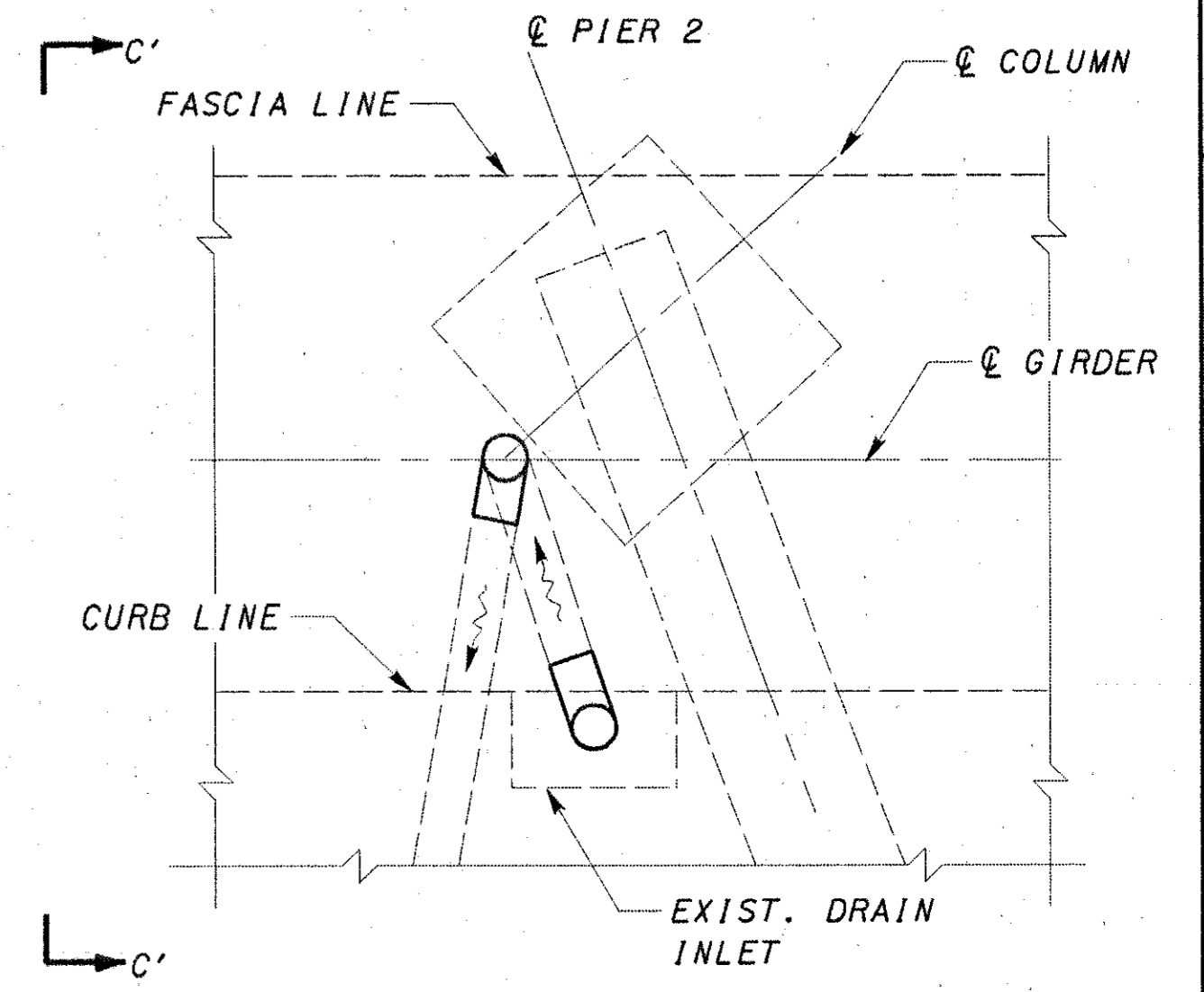
REAR ABUTMENT PLAN



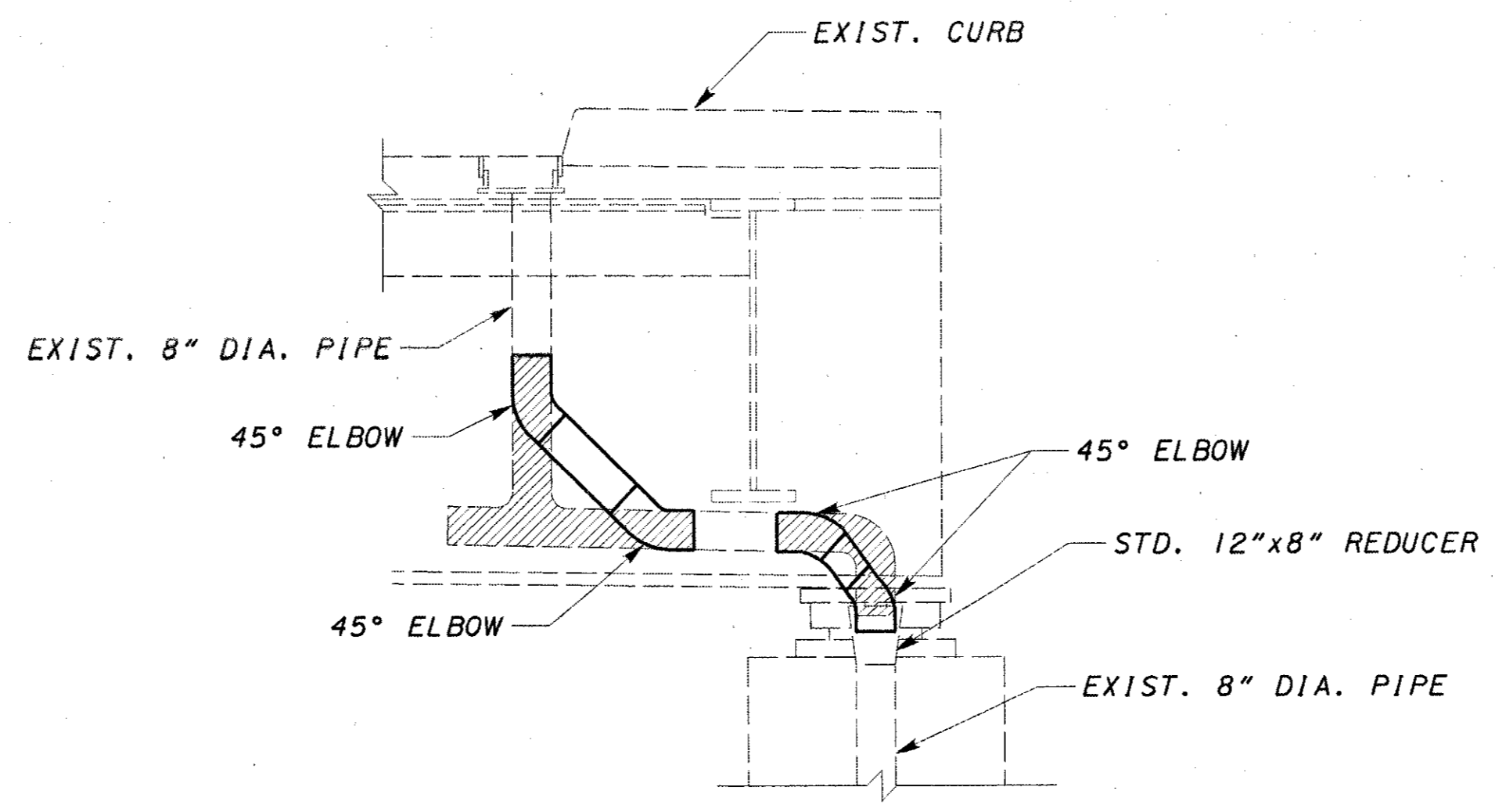
SECTION A-A



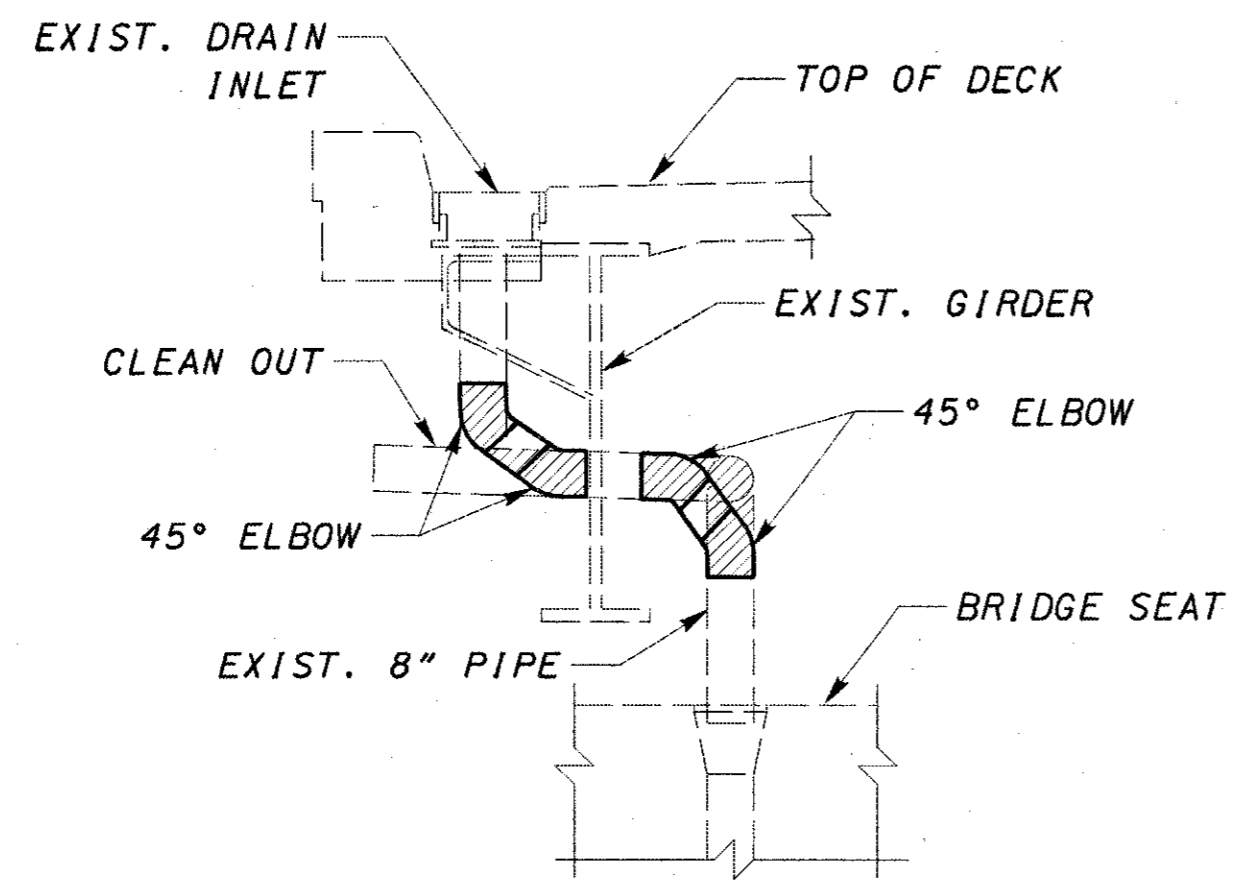
PIER 1 PLAN



PIER 2 PLAN



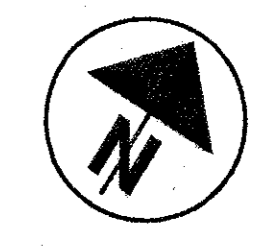
SECTION C-C  
SECTION C'-C' (OPPOSITE HAND)



SECTION B-B

MATERIAL LIST

POSITION	45° BEND (EACH)	LENGTH (FT.)
RA	6	5
PIER 1	4	4
PIER 2	4	4
PIER 3	4	5
PIER 4	4	5
PIER 5	4	5
PIER 9	4	5
PIER 10	4	5
PIER 12	6	13
FA	2	2



DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

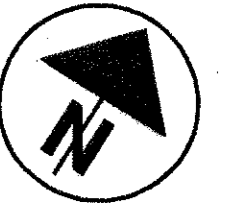
DATE  
8/2001  
REVIEWED  
GEA  
DRAWN  
FIB  
DESIGNED  
JEP  
CHECKED  
ASB

DRAINAGE DETAILS  
BRIDGE NO. HAM-71-0155

HAM-471-0.26

77/106

109  
182



DESIGN AGENCY  
 BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 Ph: (614) 224-1941

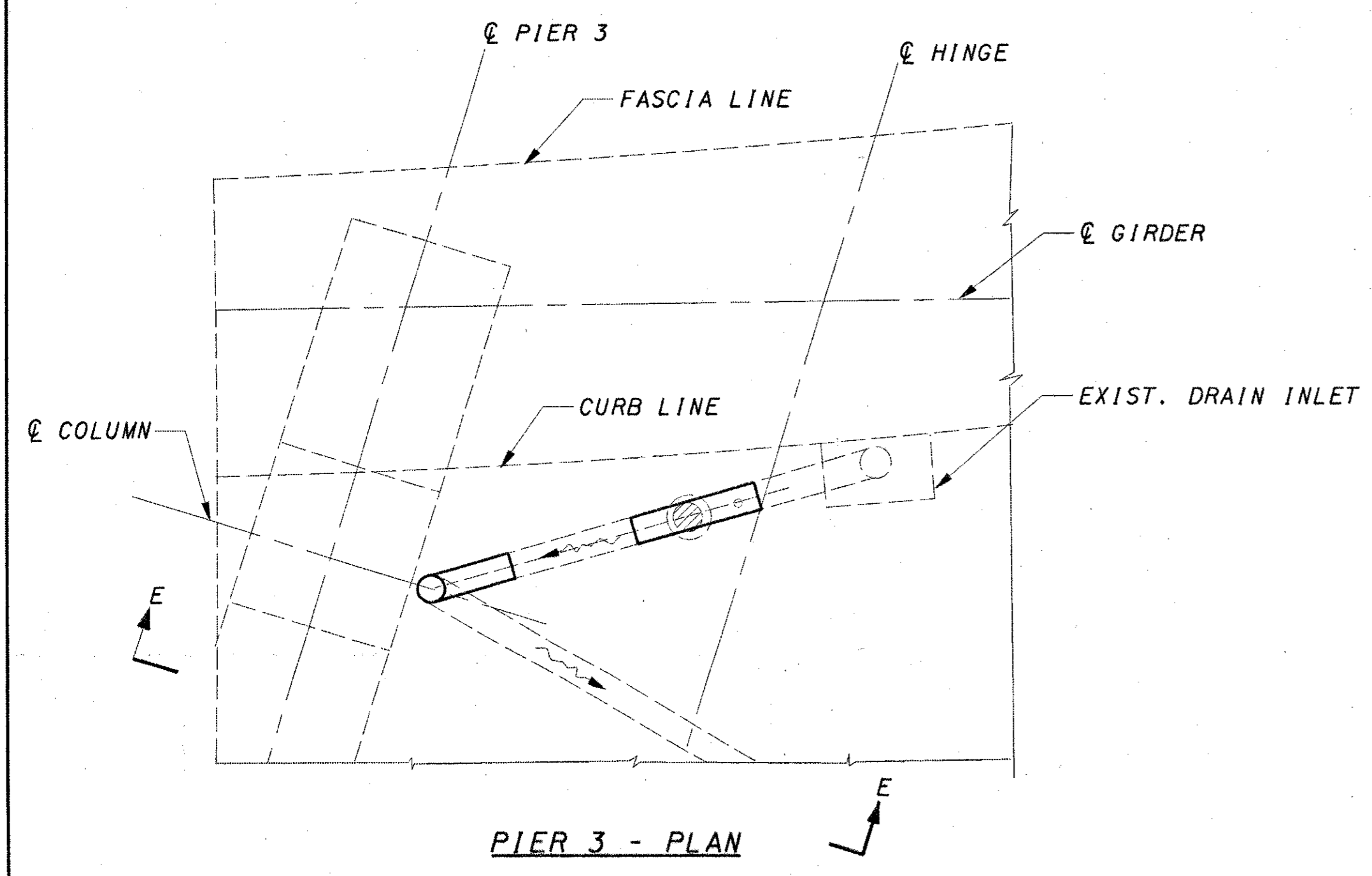
DESIGNED	DATE	REVIEWED	DATE
JEP	8/2001	GEA	8/2001
CHECKED	FILE NUMBER	FIB	STRUCTURE FILE NUMBER
ASB	3106616	REVISED	

DRAINAGE DETAILS  
 BRIDGE NO. HAM-71-0155

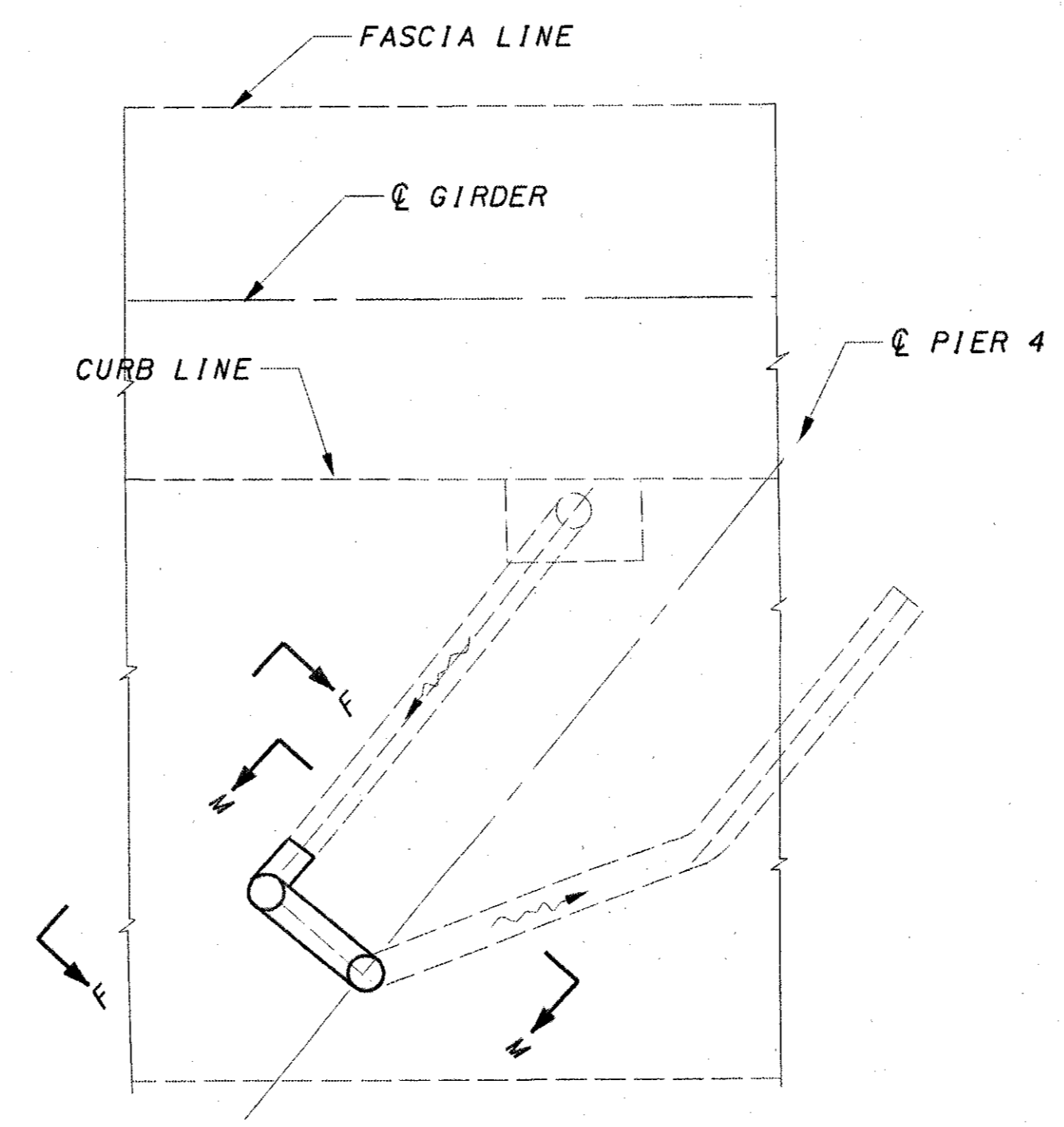
HAM-471-0.26

78/106

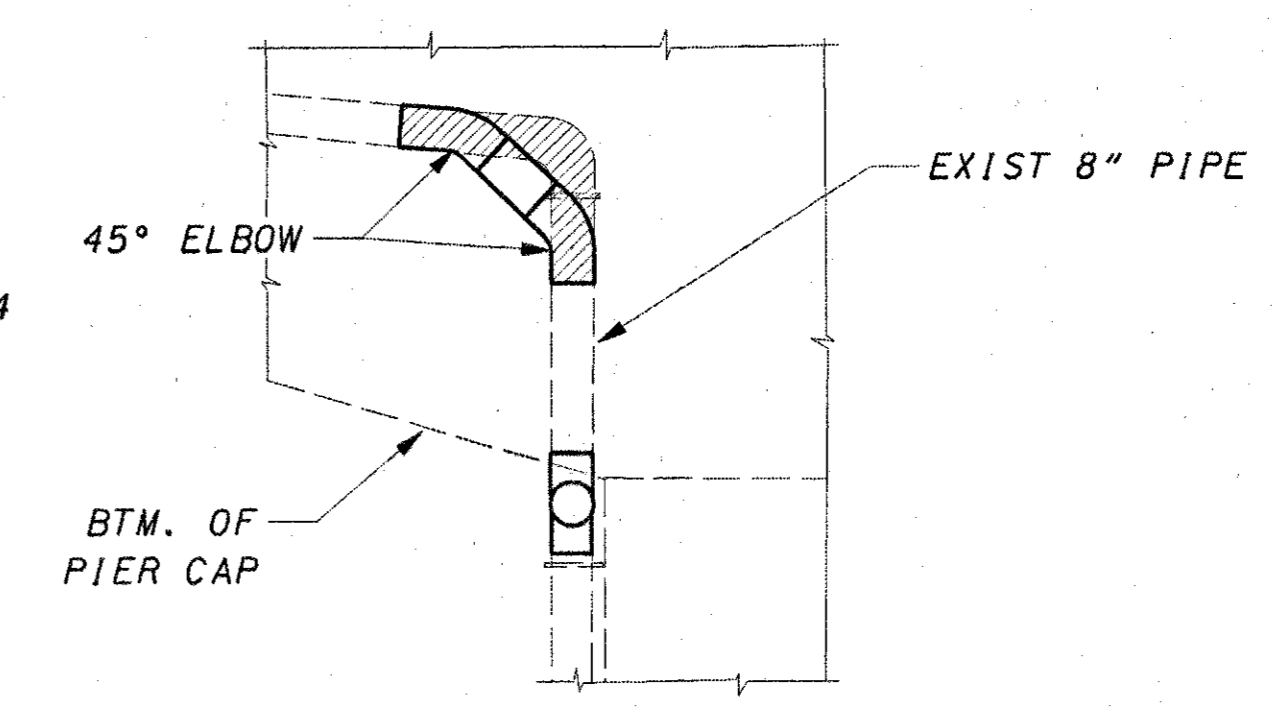
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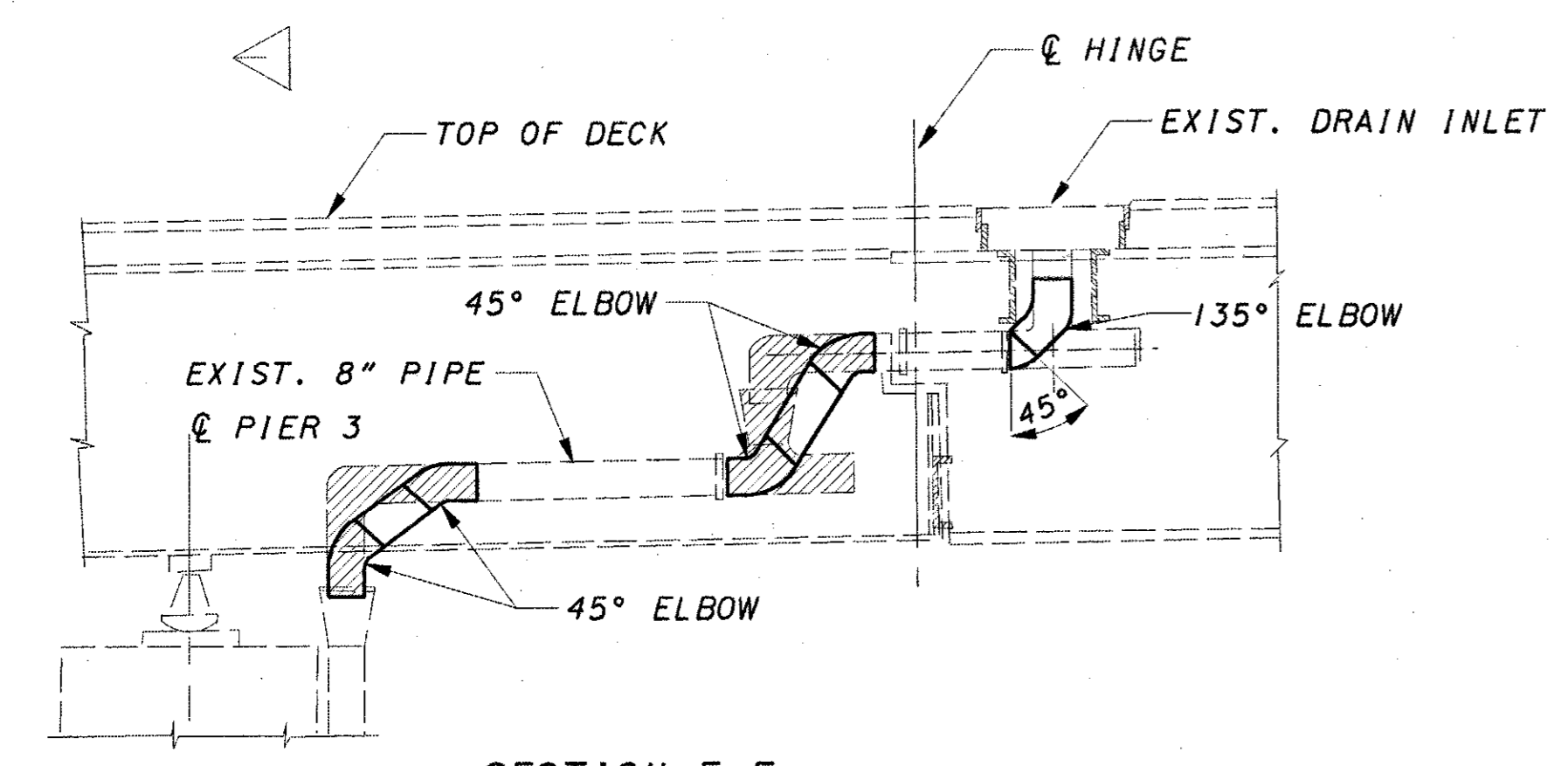
PIER 3 - PLAN



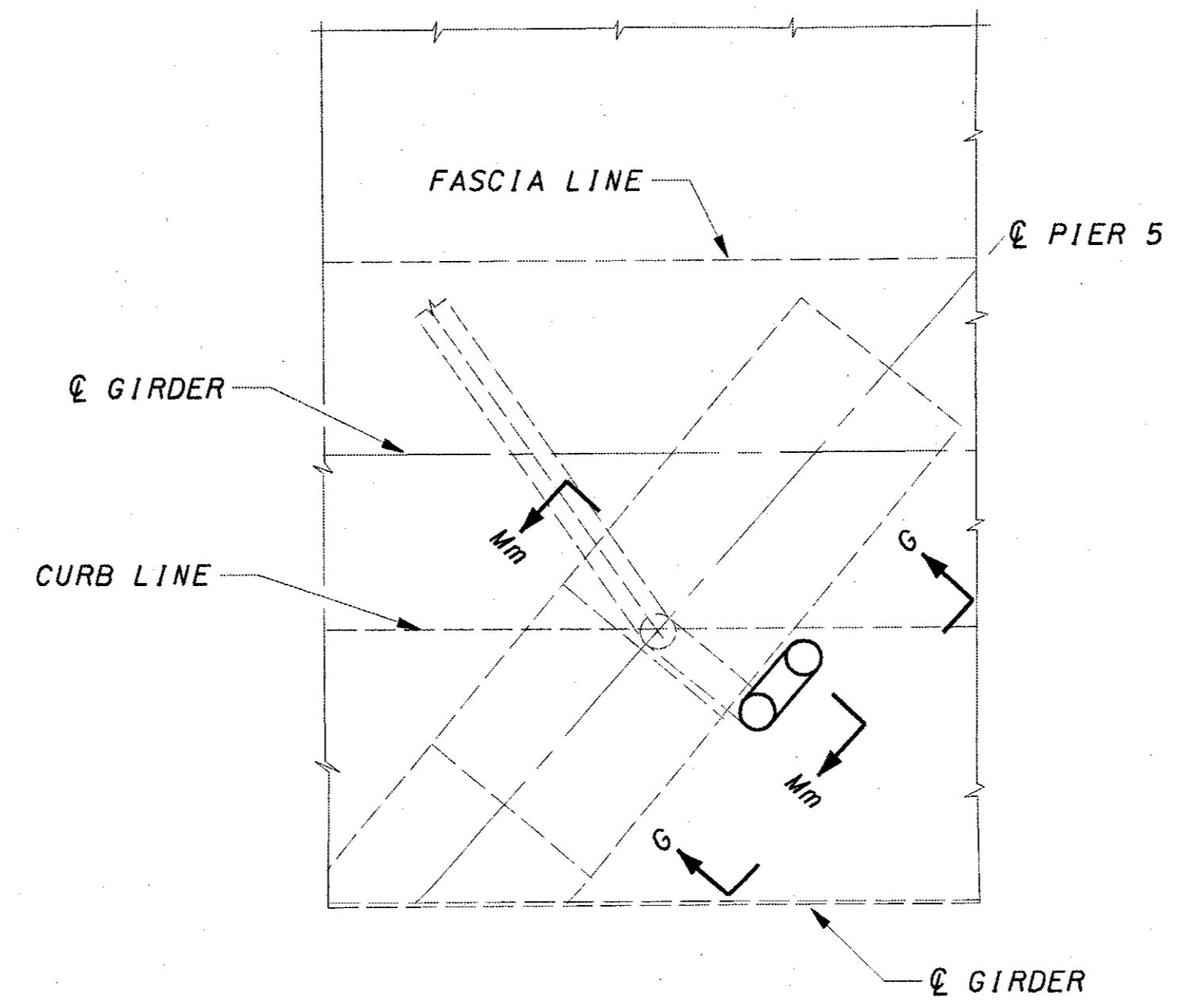
PIER 4 PLAN



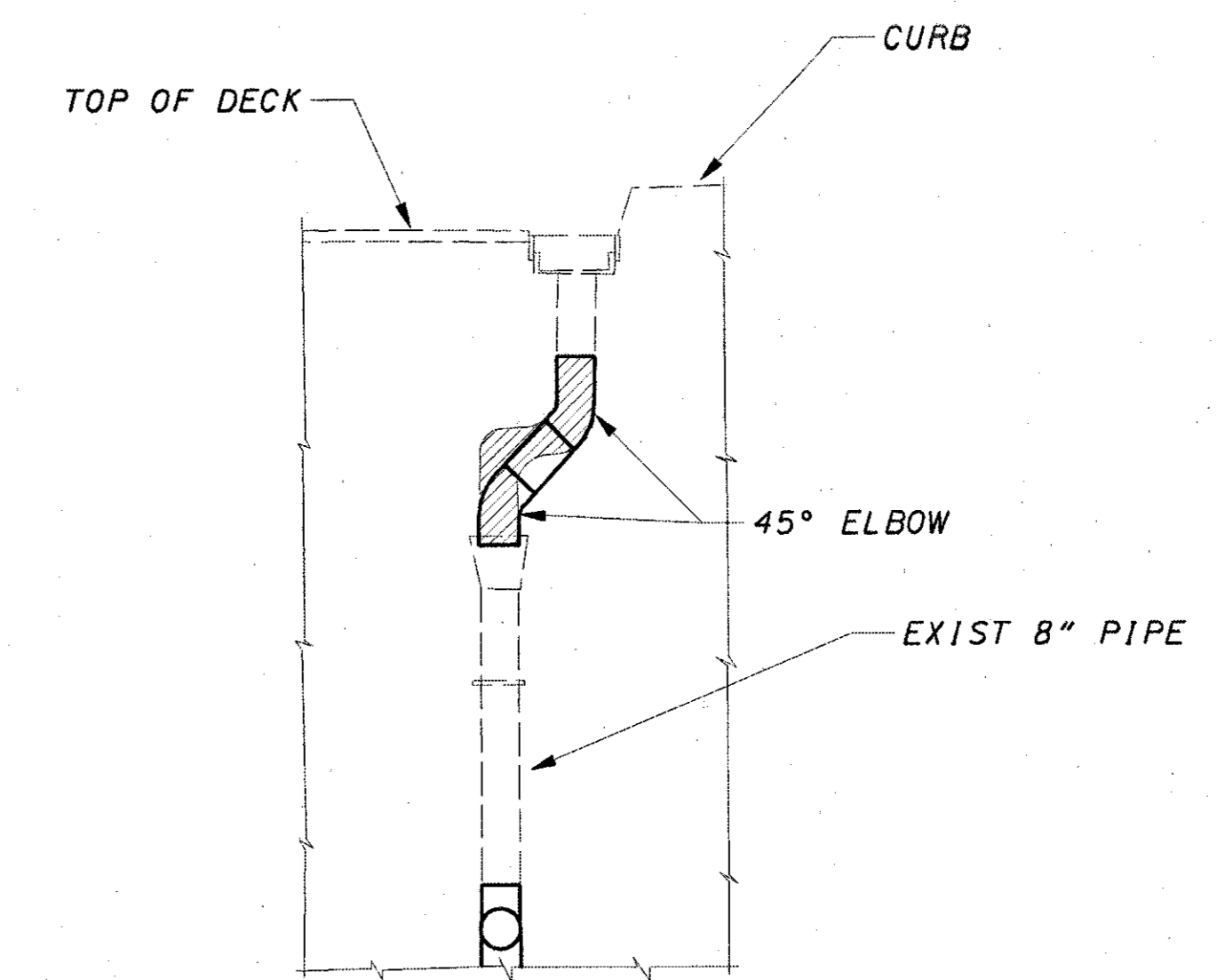
SECTION F-F



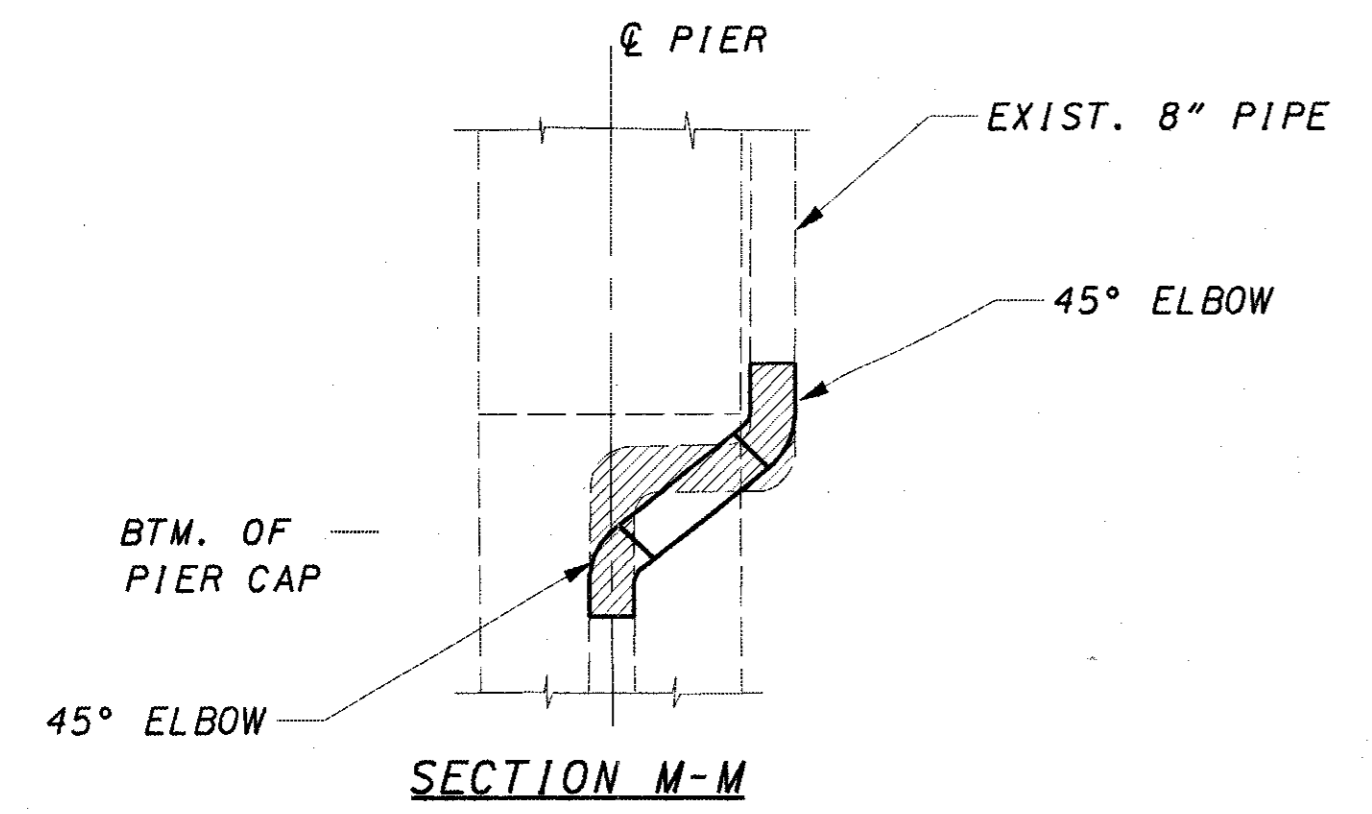
SECTION E-E



PIER 5 - PLAN

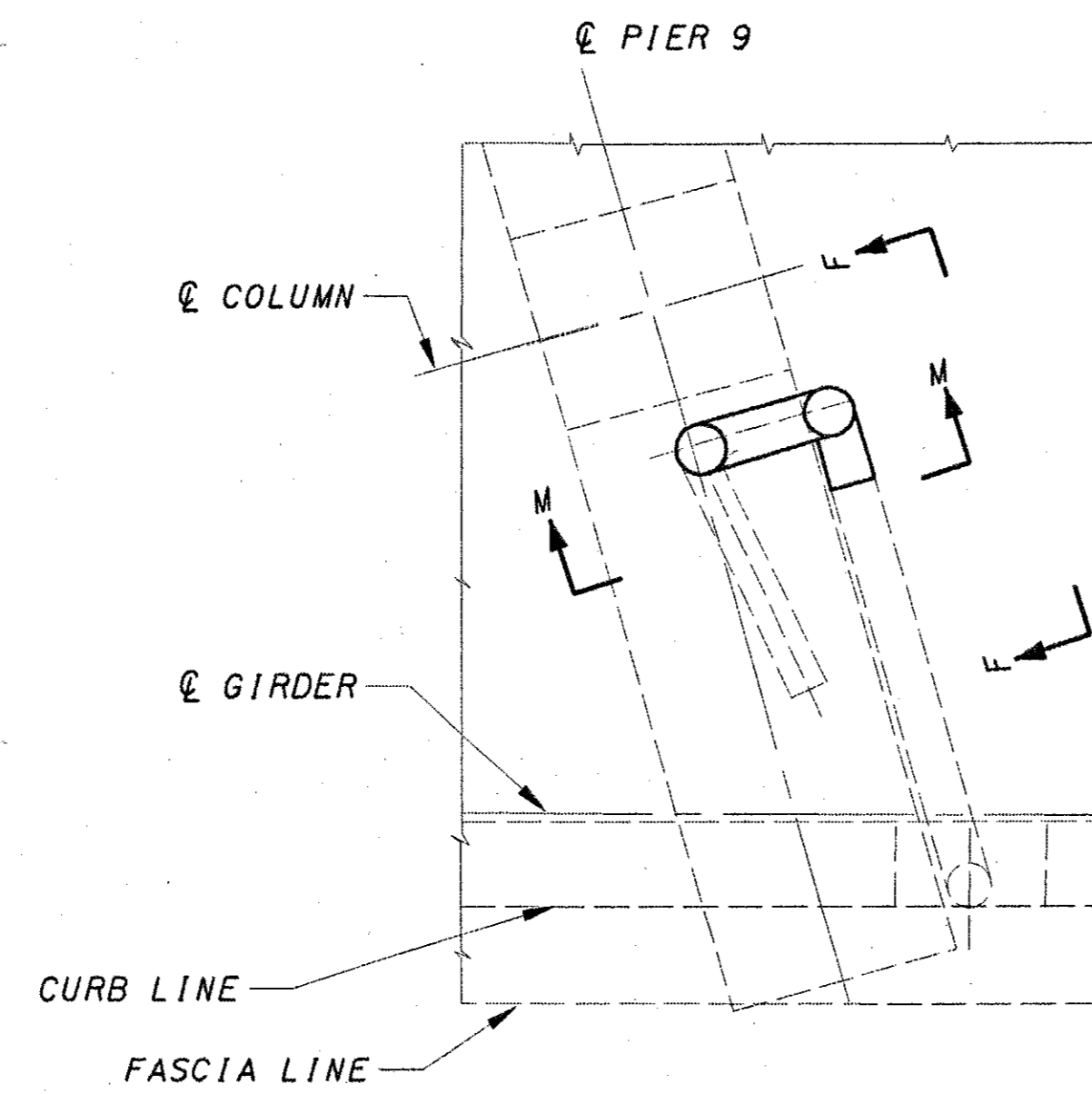
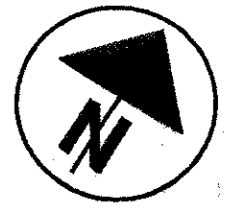


SECTION G-G

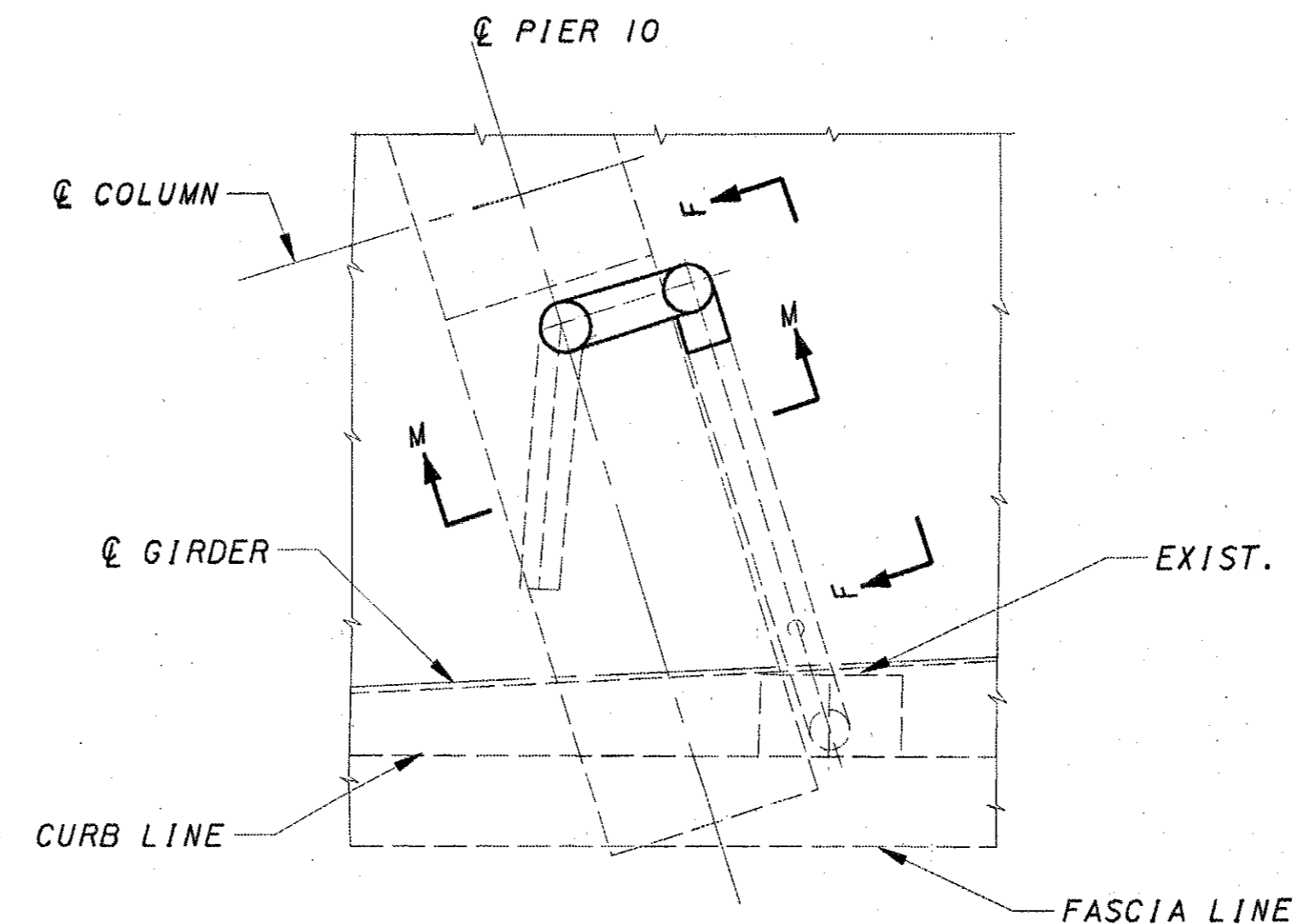


SECTION M-M

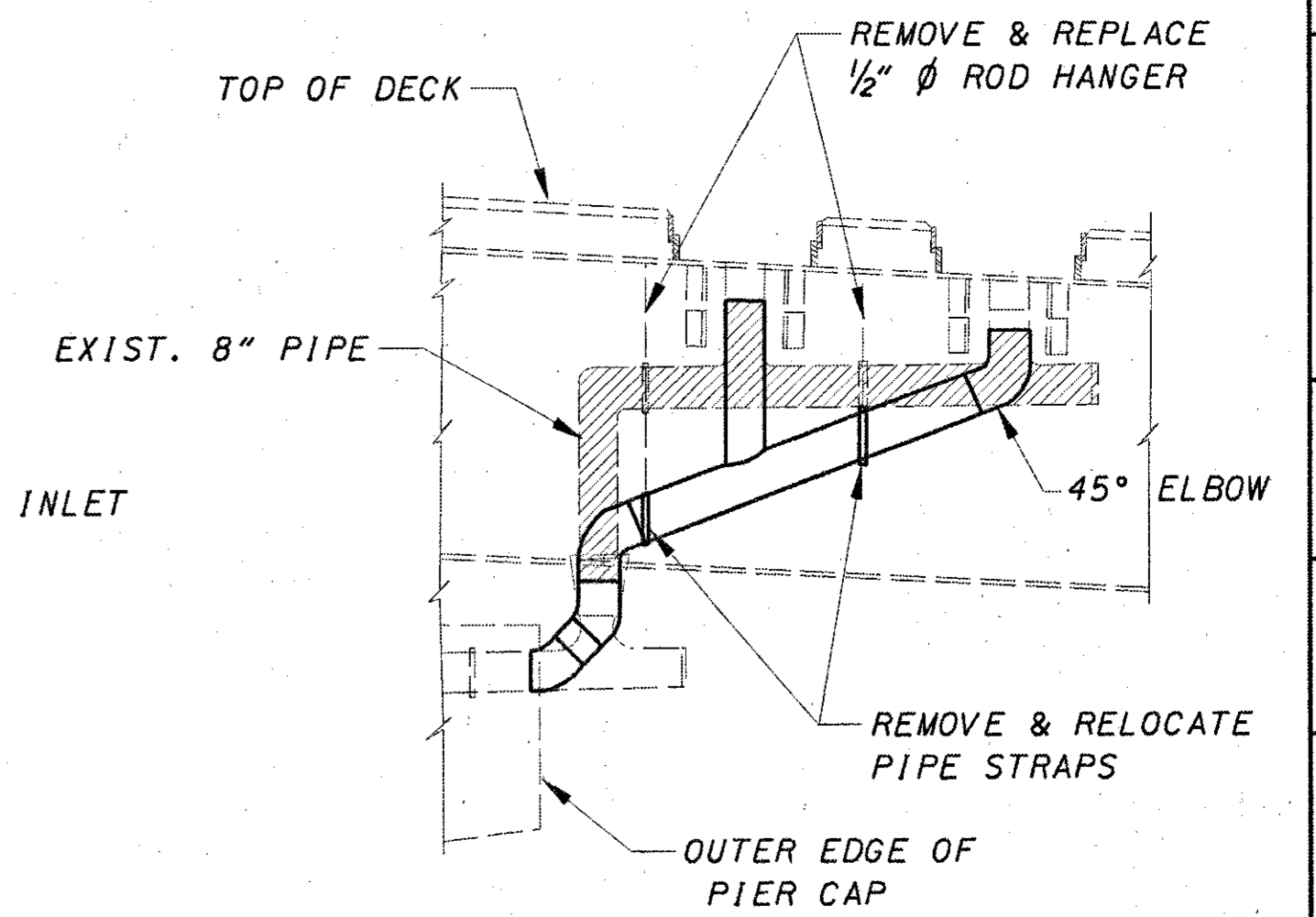
SECTION Mm-Mm (OPPOSITE HAND)



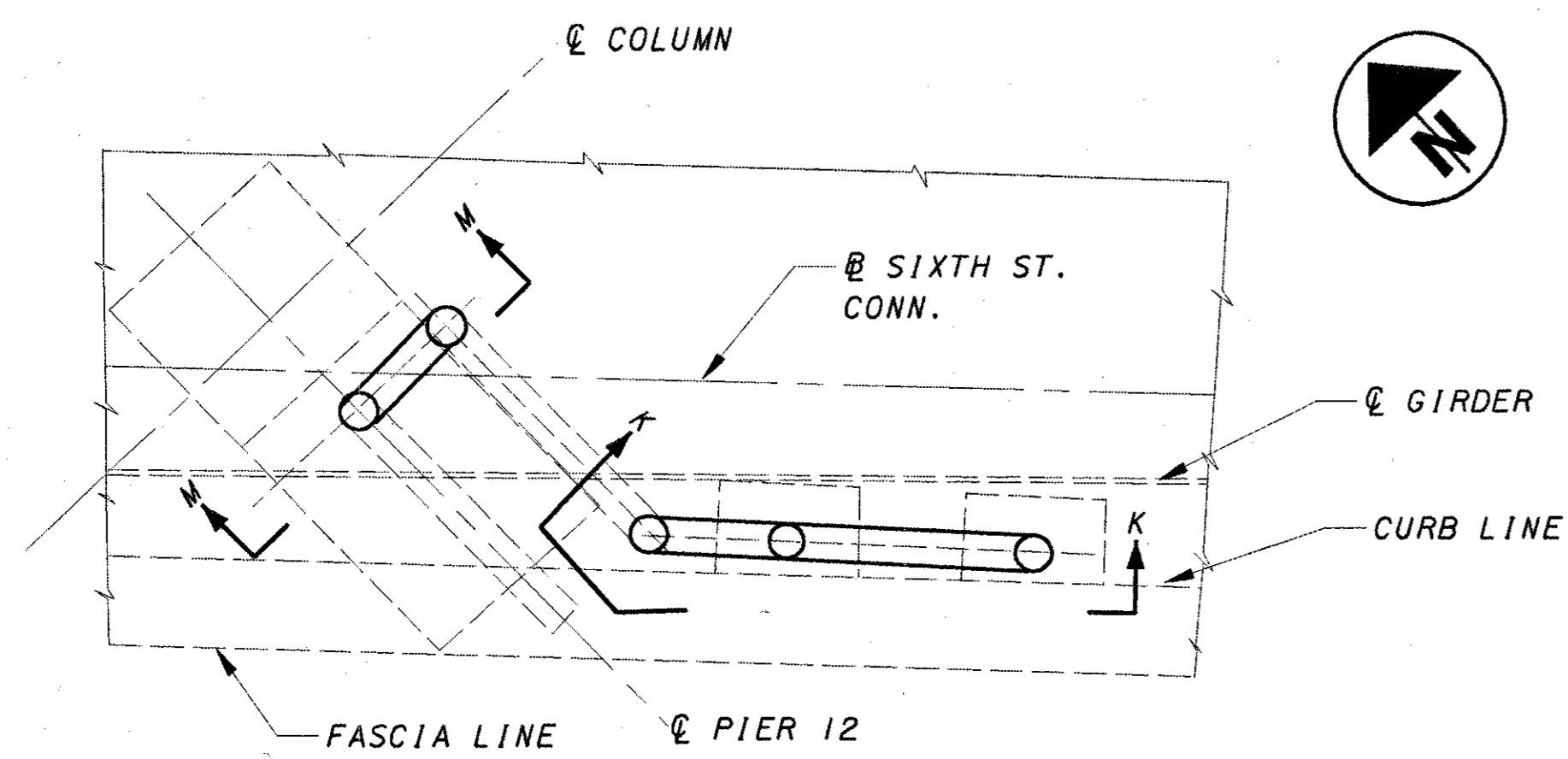
PIER 9 - PLAN



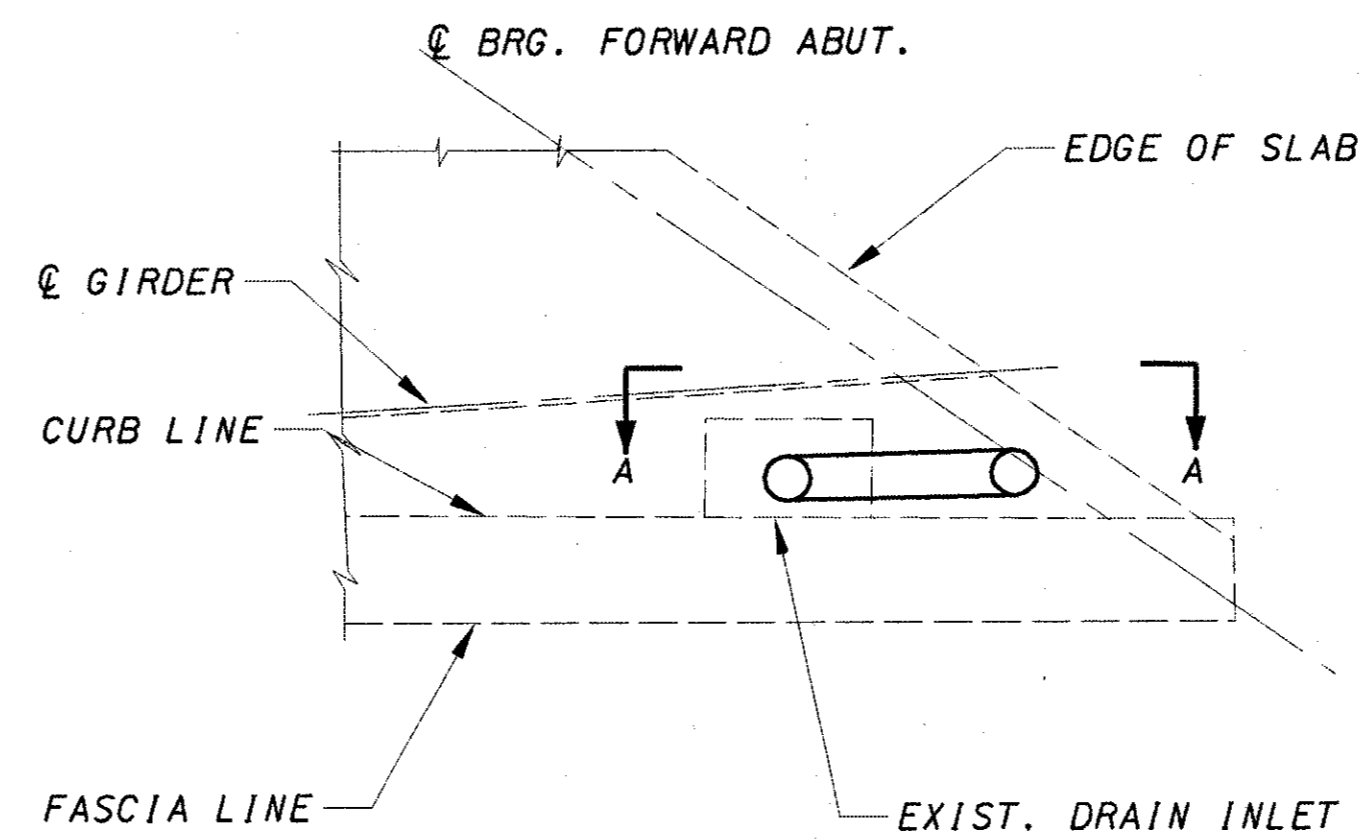
PIER 10 - PLAN



SECTION K-K



PIER 12 PLAN



FORWARD ABUTMENT - PLAN

DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

REVIEWED	DATE
GEA	8/2001

DRAWN	FILE NUMBER
FIB	3106616

DESIGNED	CHECKED
JEP	ASB

DRAINAGE DETAILS  
BRIDGE NO. HAM-71-0155

HAM-471-0.26

79/06

111  
182



**HAM-71-0192N  
 EXISTING STRUCTURE**

TYPE: CONTINUOUS CURVED WELDED PLATE GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE  
 ROADWAY: 26'-6" F/F PARAPETS  
 SKEW: VARIES, (SEE PLAN)  
 SURFACE COURSE: 1/2" ASPHALT CONCRETE  
 LIVE LOADING: HS 20-44 AND THE INTERSTATE ALTERNATE LOADING  
 APPROACH SLABS: AS-1-67 (25'-0" LONG)  
 ALIGNMENT: VARIES, (SEE PLAN)  
 SUPERELEVATION: VARIES, (SEE PLAN)

TABLE OF SPAN LENGTHS	
SPAN	LENGTH
1	87.00'
2	87.75'
3	96.04'
4	114.98'
5	85.73'
6	59.27'

**PROPOSED STRUCTURE**

SAME AS EXISTING EXCEPT AS FOLLOWS:  
 APPROACH SLABS: AS-1-81  
 WEARING SURFACE: 2 1/4" MICRO-SILICA CONCRETE

**HAM-71-0192W  
 EXISTING STRUCTURE**

TYPE: CONTINUOUS PLATE GIRDER (SPAN 1&2) AND SIMPLE SPAN STEEL GIRDER (SPAN 3) WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE  
 ROADWAY: VARIES  
 SKEW: VARIES  
 LIVE LOADING: HS 20-44 AND THE ALTERNATE LOADING  
 APPROACH SLABS: AS-1-67 (25'-0" LONG)  
 ALIGNMENT: VARIES  
 SUPERELEVATION: VARIES, (SEE PLAN)  
 SURFACE COURSE: 1/2" ASPHALT CONCRETE

TABLE OF SPAN LENGTHS	
SPAN	LENGTH
1	103.41'
2	118.50'
3	84.46'

**PROPOSED STRUCTURE**

SAME AS EXISTING EXCEPT AS FOLLOWS:  
 APPROACH SLABS: AS-1-81  
 WEARING SURFACE: 2 1/4" MICRO-SILICA CONCRETE

**PROPOSED WORK: HAM-71-0192N**

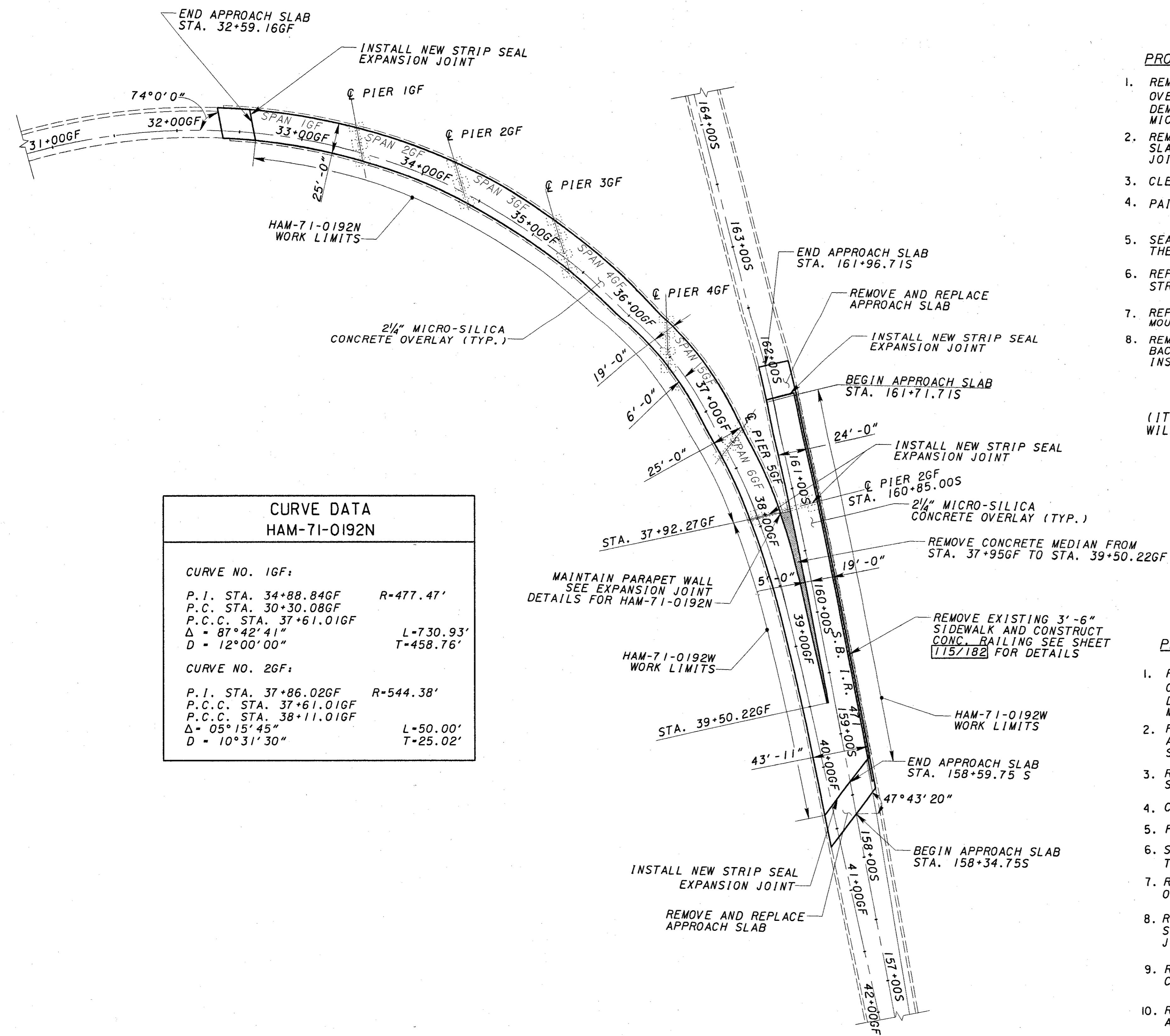
1. REMOVE EXISTING 1 1/2" ± ASPHALT CONCRETE OVERLAY AND 3/4" OF ORIGINAL DECK USING HYDRO DEMOLITION AND OVERLAY WITH 2 1/4" THICK MICRO-SILICA CONCRETE.
2. REMOVE AND REPLACE FULL WIDTH APPROACH SLAB AND INSTALL A TYPE A PRESSURE RELIEF JOINT.
3. CLEAN AND UNCLOG SCUPPERS.
4. PAINT STEEL USING OZEU SYSTEM.
5. SEAL CONCRETE SURFACES AS DESCRIBED IN THE GENERAL NOTES.
6. REPLACE EXPANSION JOINT WITH A NEW STRIP SEAL IN SPAN 6.
7. REPLACE WARNING CHEVRONS AND REFLECTORS MOUNTED ON THE BRIDGE RAILING WITH NEW SIGNS
8. REMOVE AND RECONSTRUCT REAR ABUTMENT BACKWALL DOWN TO APPROACH SLAB SEAT AND INSTALL NEW STRIP SEAL JOINT.

(IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN THE SEQUENTIAL ORDER LISTED.)

**PROPOSED WORK: HAM-71-0192W**

1. REMOVE EXISTING 1 1/2" ± ASPHALT CONCRETE OVERLAY AND 3/4" OF ORIGINAL DECK USING HYDRO DEMOLITION AND OVERLAY WITH 2 1/4" THICK MICRO-SILICA CONCRETE.
2. REMOVE AND RECONSTRUCT FORWARD AND REAR ABUTMENT BACKWALL DOWN TO APPROACH SLAB SEAT AND INSTALL NEW STRIP SEAL JOINT.
3. REPLACE EXPANSION JOINT WITH A NEW STRIP SEAL AT PIER 2.
4. CLEAN AND UNCLOG SCUPPERS.
5. PAINT STEEL USING OZEU SYSTEM.
6. SEAL CONCRETE SURFACES AS DESCRIBED IN THE GENERAL NOTES.
7. REMOVE 6" CONCRETE MEDIAN AS SHOWN ON THE PLAN.
8. REMOVE AND REPLACE FULL WIDTH APPROACH SLAB AND INSTALL A TYPE A PRESSURE RELIEF JOINT.
9. REMOVE EXISTING CONC. CURB AND CONSTRUCT CONC. RAILING AS NOTED ON THE PLAN.
10. REPAIR DAMAGED PORTIONS OF LEFT REAR APPROACH RAILING PER ITEM 519.

(IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN THE SEQUENTIAL ORDER LISTED.)



**CURVE DATA  
 HAM-71-0192N**

CURVE NO. 1GF:	
P.I. STA. 34+88.84GF	R=477.47'
P.C.C. STA. 30+30.08GF	
P.C.C. STA. 37+61.01GF	
Δ = 87°42'41"	L=730.93'
D = 12°00'00"	T=458.76'
CURVE NO. 2GF:	
P.I. STA. 37+86.02GF	R=544.38'
P.C.C. STA. 37+61.01GF	
P.C.C. STA. 38+11.01GF	
Δ = 05°15'45"	L=50.00'
D = 10°31'30"	T=25.02'



# STRUCTURE GENERAL NOTES

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

**DESCRIPTION:**

THIS WORK SHALL CONSIST OF THE REMOVAL OF PORTIONS OF CONCRETE DECKS INCLUDING L.M.C. OVERLAY, SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.) CARE SHALL BE TAKEN DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

**PROTECTION OF TRAFFIC**

DURING THE REMOVAL OF ANY PART OF THE EXISTING SUPERSTRUCTURE THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT VEHICULAR AND PEDESTRIAN TRAFFIC ADJACENT TO AND/OR UNDER THE STRUCTURE. THESE PROVISIONS MAY INCLUDE THE USE OF ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

**PROTECTION OF STEEL SUPPORT SYSTEMS**

BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

**REMOVAL METHODS**

CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS ABOVE STEEL MEMBERS, A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS MAY BE USED AT THE APPROVAL OF THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND TO PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

**EXTRANEOUS MEMBERS**

EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ECT.) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE TOP FLANGES SHALL BE REMOVED AND THE FLANGE SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

**CUT LINE CONSTRUCTION JOINT PREPARATION:**

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEAN OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT ALL PACK AND LOOSE RUST SHALL BE REMOVED. EXISTING CONCRETE SURFACES AGAINST WHICH NEW CONCRETE WILL BE PLACED SHALL BE WET, BUT WITHOUT FREE WATER, AT THE TIME OF CONCRETE PLACEMENT.

**EXISTING STRUCTURE VERIFICATION**

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.02/863.07.

**BACKWALL CONCRETE**

IN ADDITION TO SS 842.08, BACKWALL ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.

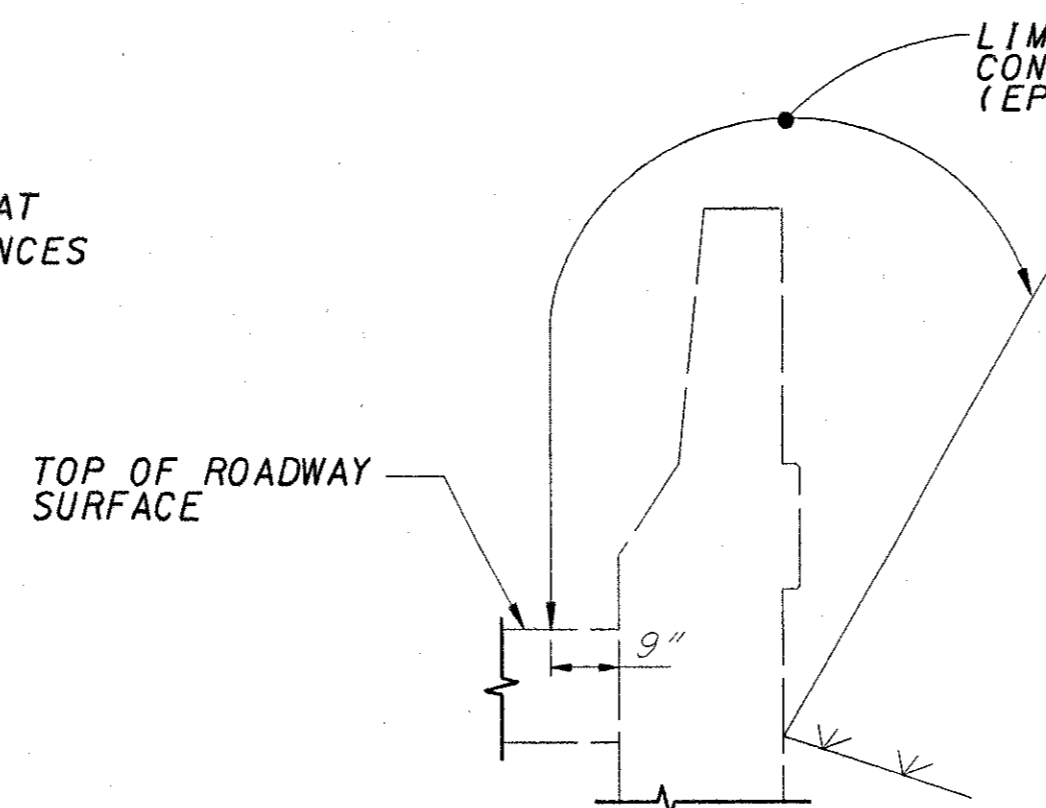
**CONCRETE PARAPETS:**

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 1/4" [32 MM] DEEP CONTROL JOINTS SHALL BE SAWS INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE SAWCUTS SHALL BE PLACED AT A MINIMUM OF 6 FEET [2 METERS] AND A MAXIMUM OF 10 FEET [3 METERS] CENTERS. THE USE OF AN EDGE GUIDE, FENCE, OR JIG IS REQUIRED TO INSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 1/4" [32MM]. THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED BY A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION, TT-S-00227E TO A MINIMUM DEPTH OF 1 INCH [25MM]. THE BOTTOM 1/2" [13 MM] OF THE INSIDE AND OUTSIDE FACE SHOULD BE LEFT UNSEALED TO ALLOW WATER TO ESCAPE.

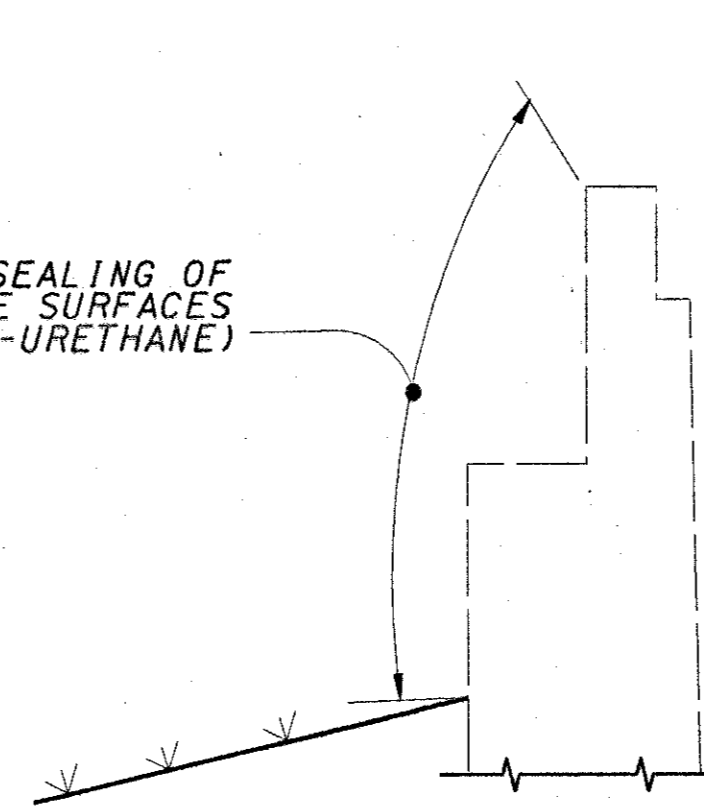
**SEALING OF CONCRETE SURFACES**

THE CONCRETE SURFACES SHOULD BE SEALED AS FOLLOWS:

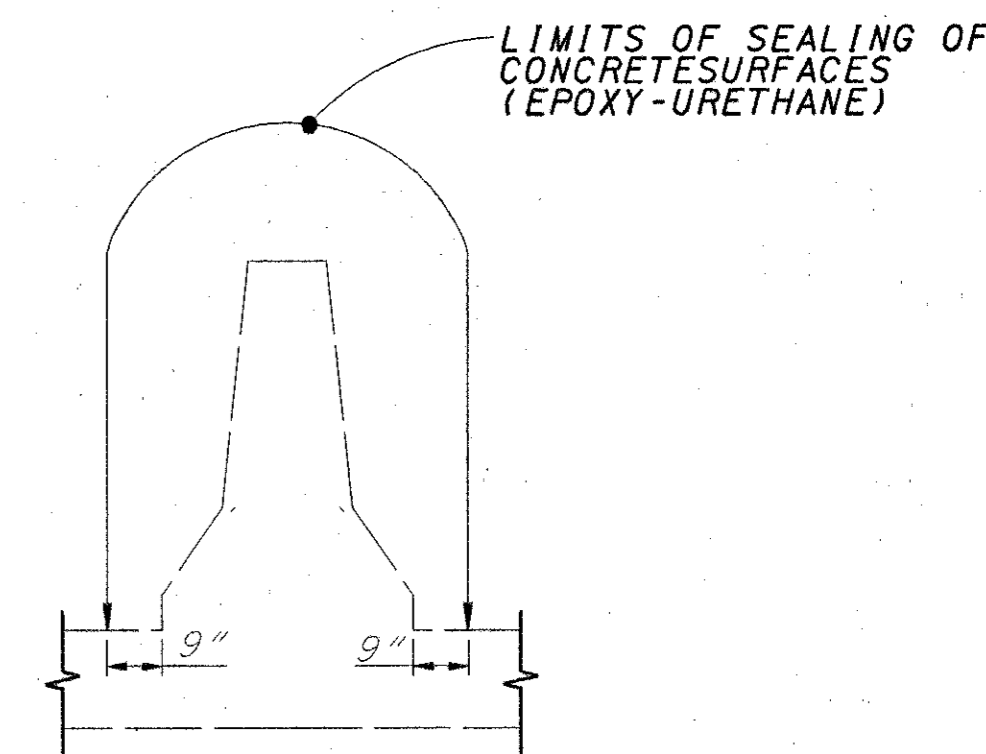
ABUTMENTS & WINGWALLS: ENTIRE LENGTH  
PIERS: ALL EXPOSED SURFACES EXCEPT THE TOP OF PIER CAP  
PARAPETS & MEDIAN BARRIERS: ENTIRE LENGTH OF THE BRIDGE



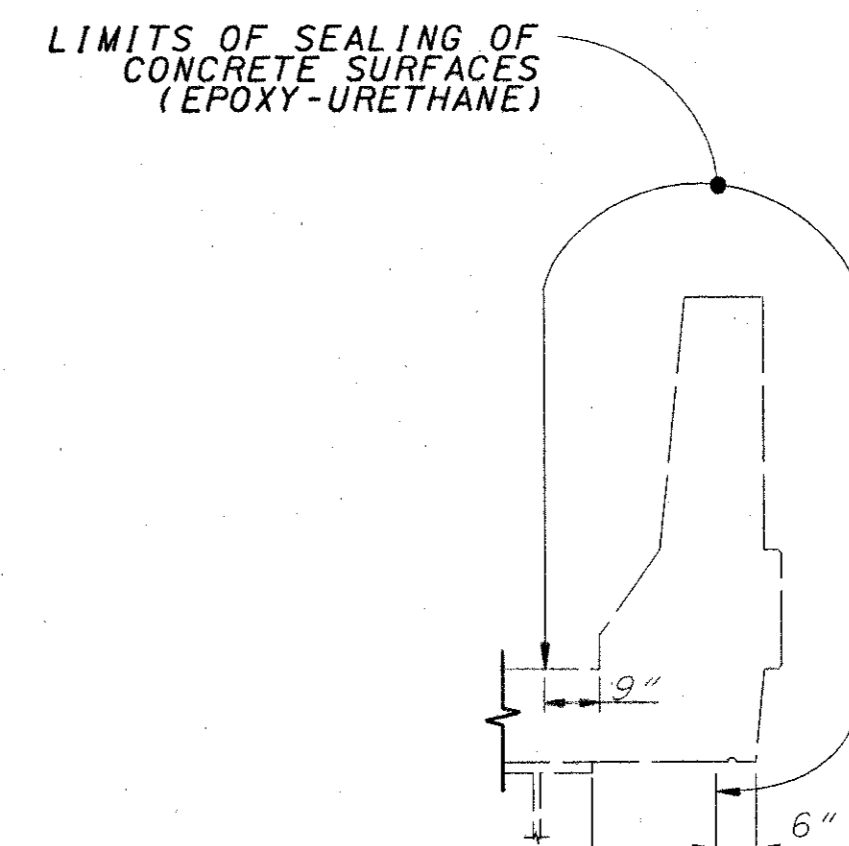
WINGWALL AND RETAINING WALL SECTION



ABUTMENT SECTION



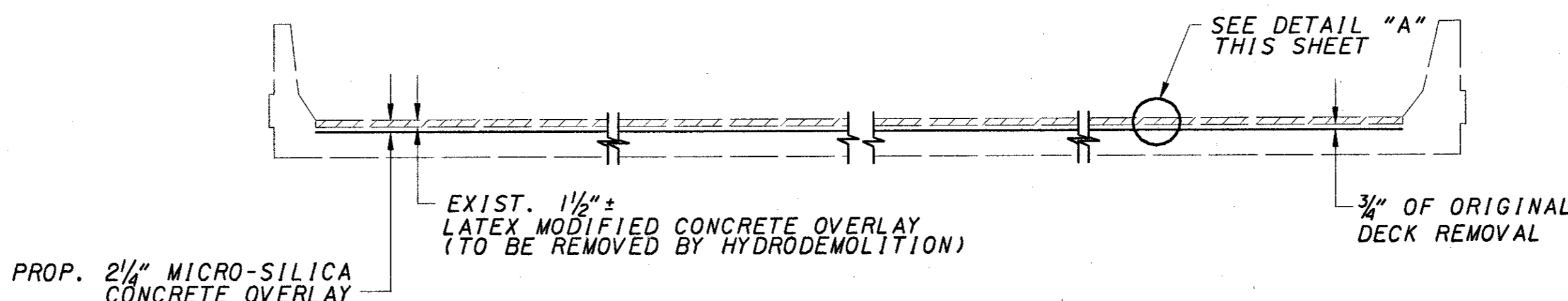
BARRIER SECTION



PARAPET SECTION

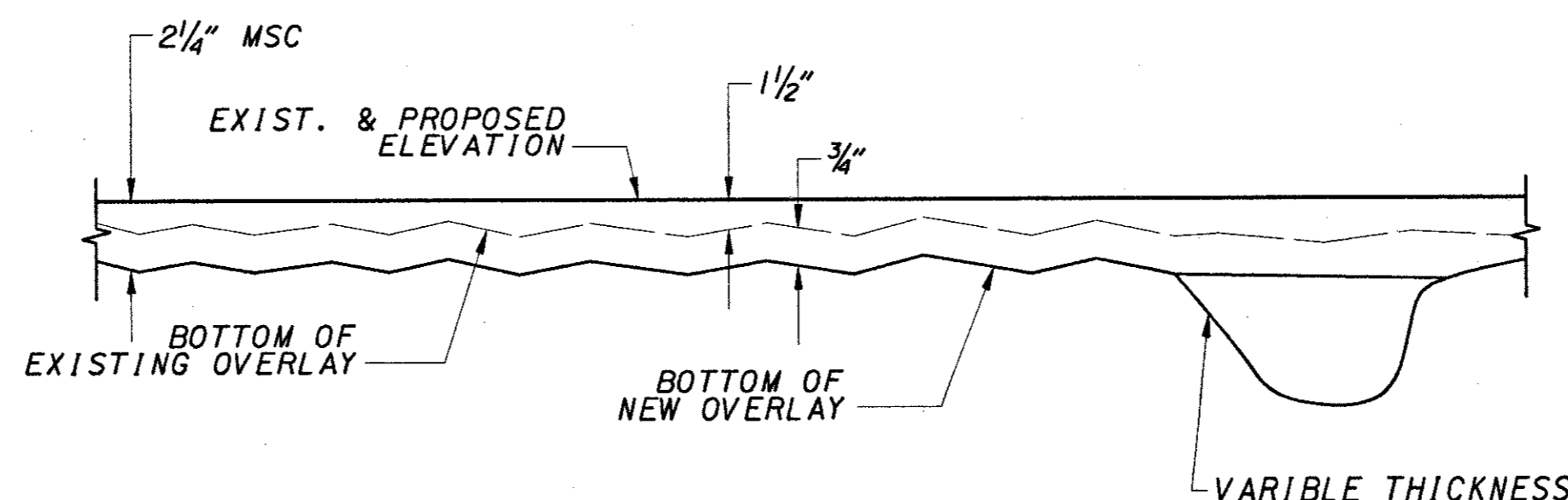
**MICRO-SILICA CONCRETE OVERLAY**

EXISTING DECKS WILL BE OVERLAYED AS PER THE DETAILS SHOWN BELOW AND IN ACCORDANCE WITH ITEM 848.



EXISTING & MODIFIED TYPICAL SECTION

(TYPICAL FOR BRIDGES WITHOUT MEDIAN BARRIER)

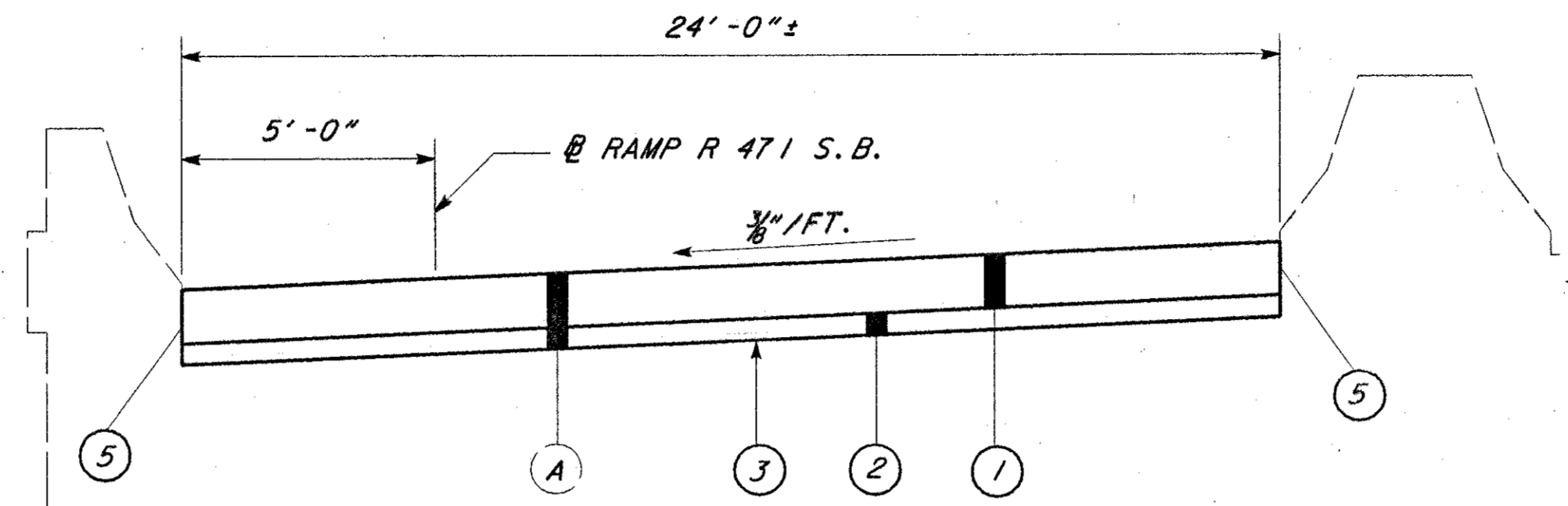


DETAIL A  
(TYPICAL FOR ALL BRIDGES)

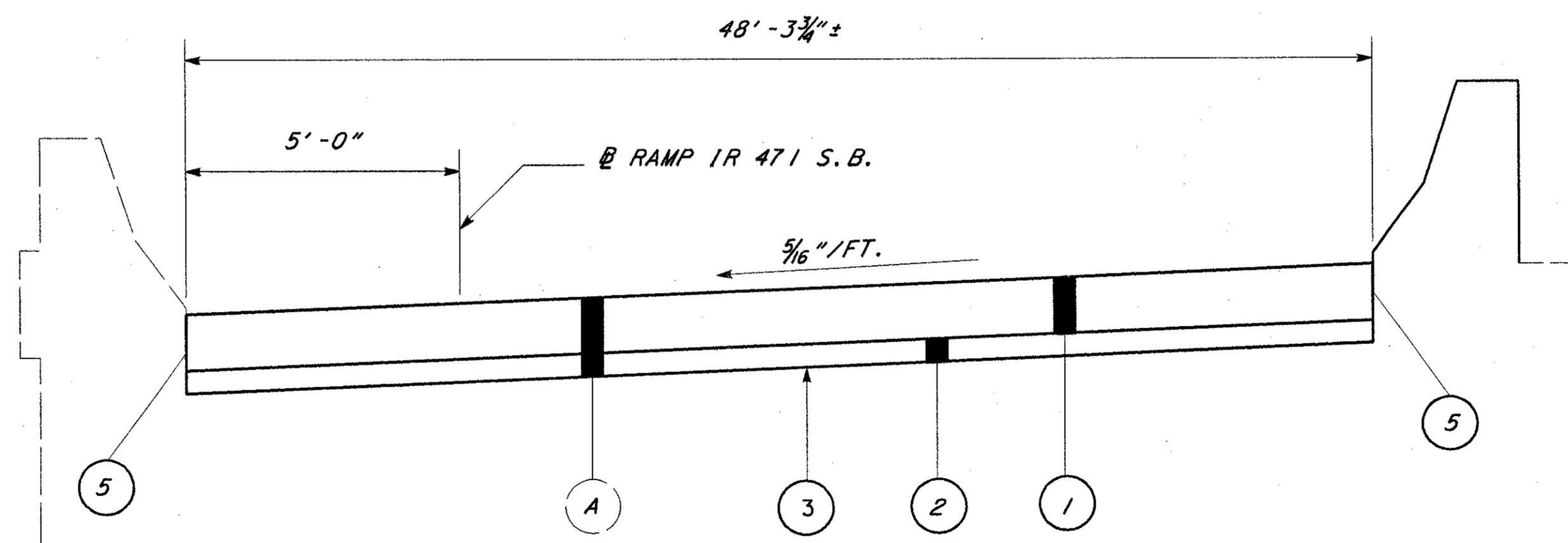
**ABBREVIATIONS**

- |        |   |                       |      |   |               |
|--------|---|-----------------------|------|---|---------------|
| ABUT.  | - | ABUTMENT              | SPA. | - | SPACES        |
| APPR.  | - | APPROACH              | TBR. | - | TO BE REMOVED |
| BOT.   | - | BOTTOM                | TYP. | - | TYPICAL       |
| BRGS.  | - | BEARINGS              |      |   |               |
| CL.    | - | CLEAR                 |      |   |               |
| CJ     | - | CONTROL JOINT         |      |   |               |
| DIM    | - | DIMENSION             |      |   |               |
| ELEV.  | - | ELEVATION             |      |   |               |
| EXP.   | - | EXPANSION             |      |   |               |
| EXIST. | - | EXISTING              |      |   |               |
| LONG.  | - | LONGITUDINAL          |      |   |               |
| JT.    | - | JOINT                 |      |   |               |
| MSC    | - | MICRO SILICA CONCRETE |      |   |               |

DESIGN AGENCY BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0907 FAX	DATE	8/2001
	REVIEWED	ASB
STRUCTURE FILE NUMBER 3100790 & 3106659	DRAWN	FIB
	CHECKED	JEP
STRUCTURE GENERAL NOTES RAMP GF (HAM-71-0192W & HAM-71-0192N)		
HAM-471-0.26		
81/106		
113 182		



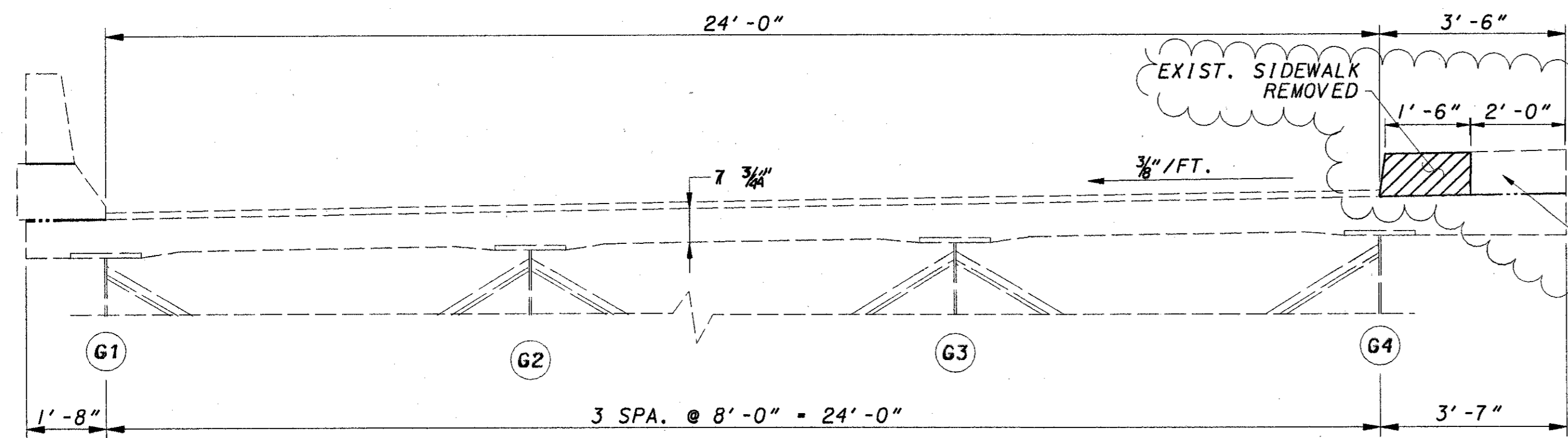
BRIDGE NO. 71-0192-W: FORWARD  
(NO SKEW)  
STA. 161+71.71 TO STA. 161+96.71 = 25.00 FT.



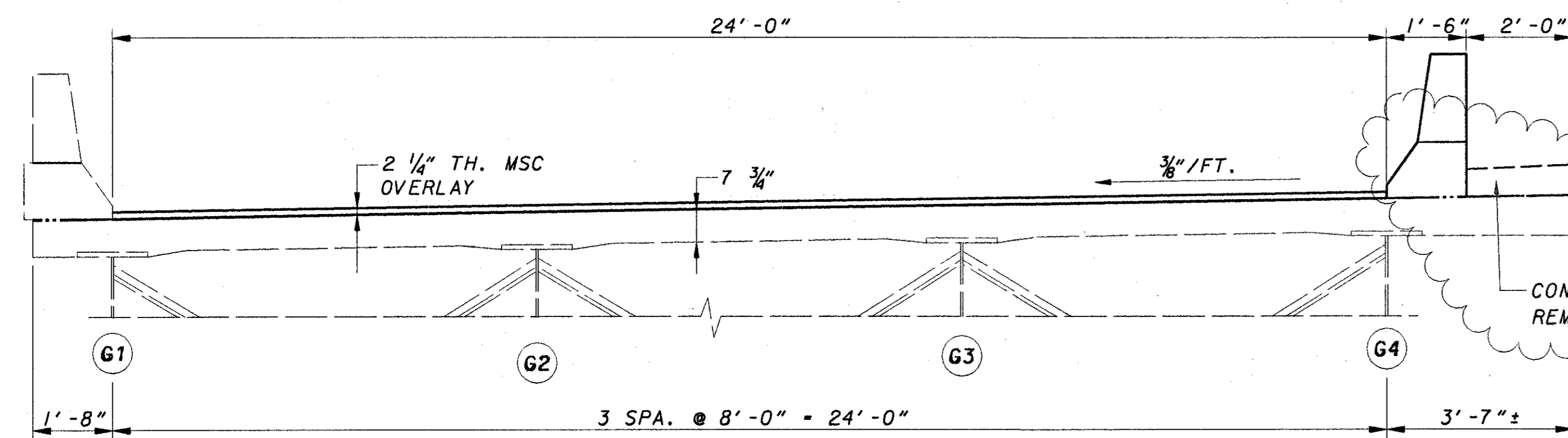
BRIDGE NO. 71-0192-W: REAR  
(SKEW = 42° 16' 40")  
STA. 158+34.75 TO STA. 158+59.75 = 25.00 FT.

- LEGEND**
- ① ITEM 611, APPROACH SLAB, (T-15")
  - ② ITEM 304, AGGREGATE BASE, (T-6")
  - ③ ITEM 203, SUBGRADE COMPACTION
  - ④ ITEM 606, GUARDRAIL, TYPE 5
  - ⑤ ITEM 516, PREFORMED EXPANSION JOINT FILLER
  - Ⓐ EXIST. APPROACH SLAB AND BASE

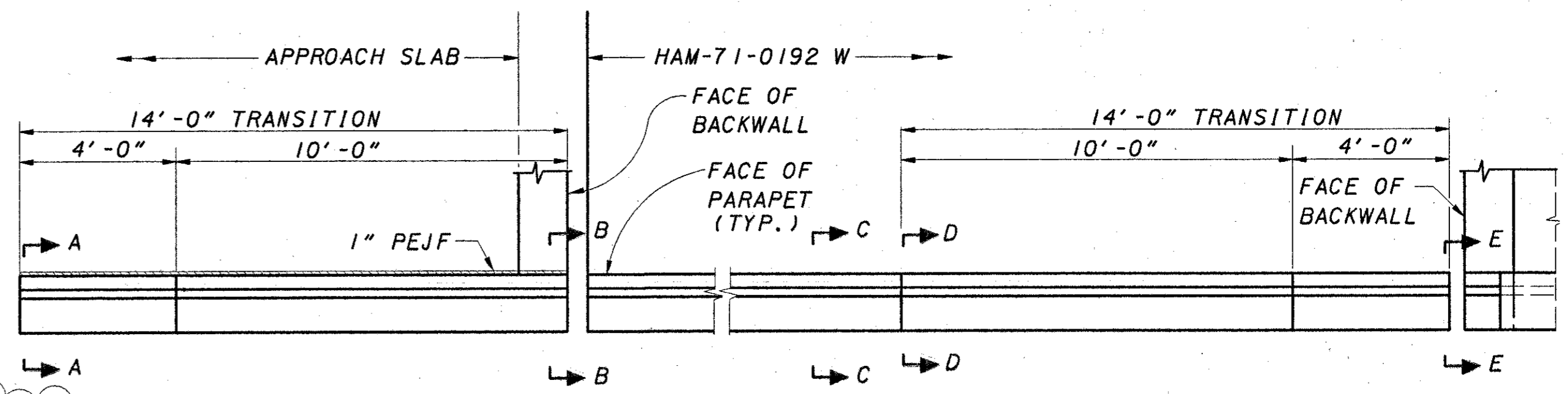
**NOTE:**  
REINFORCEMENT AS PER AS-1-81.  
SECTIONS DEPICTED NORMAL TO BASE LINE.



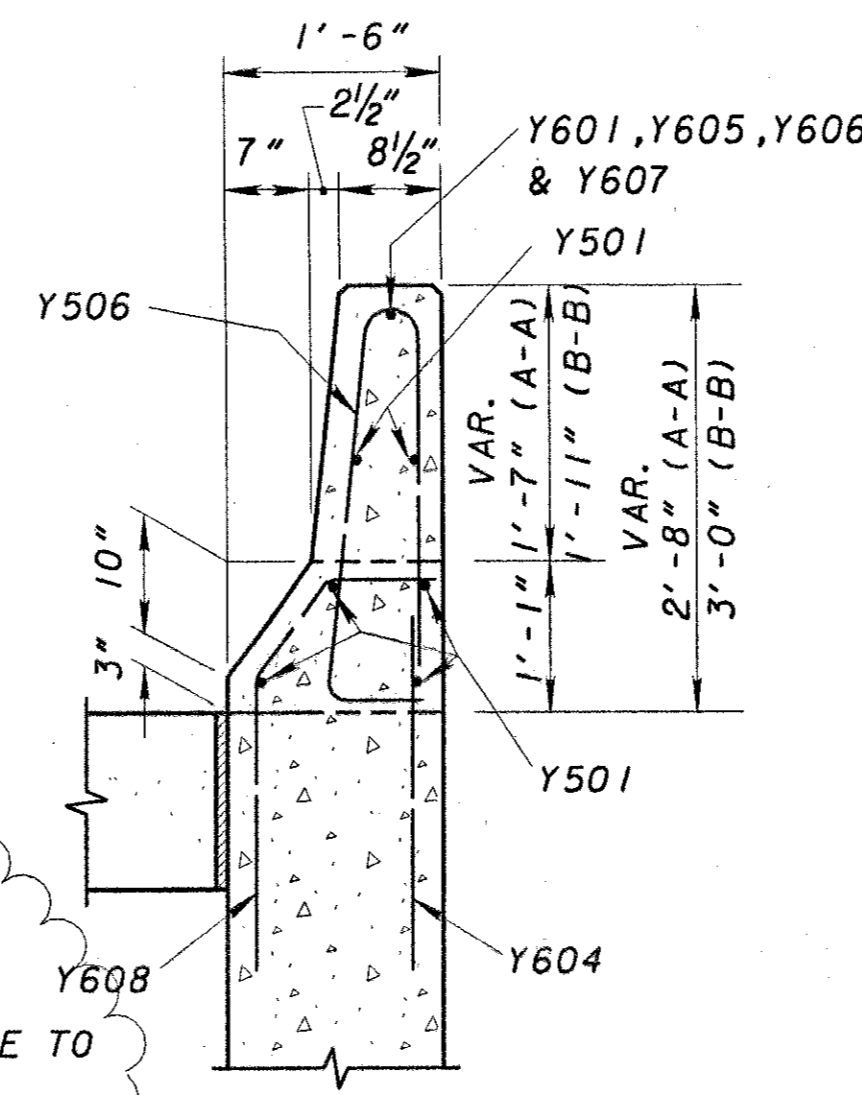
EXIST. TRANSVERSE SECTION



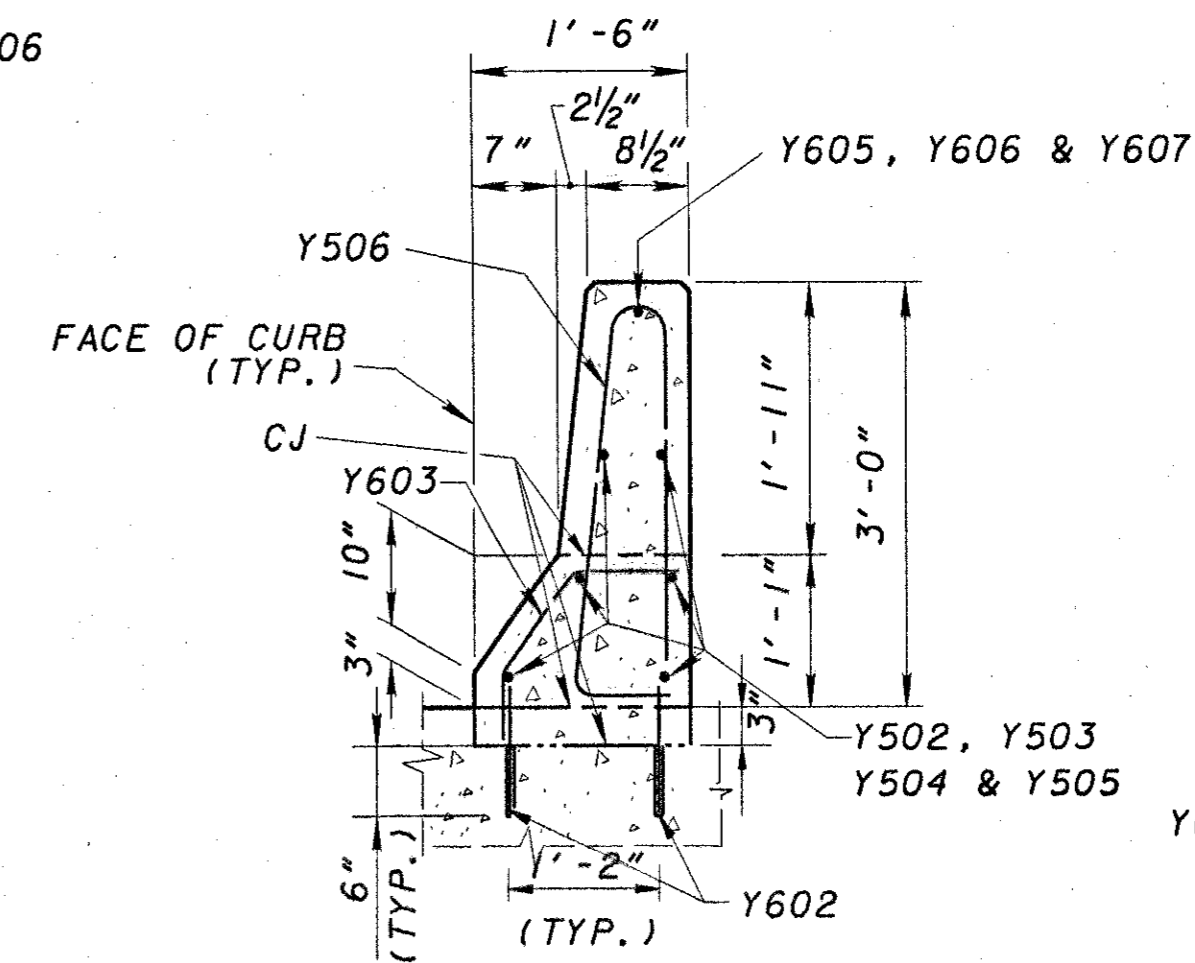
MODIFIED TRANSVERSE SECTION



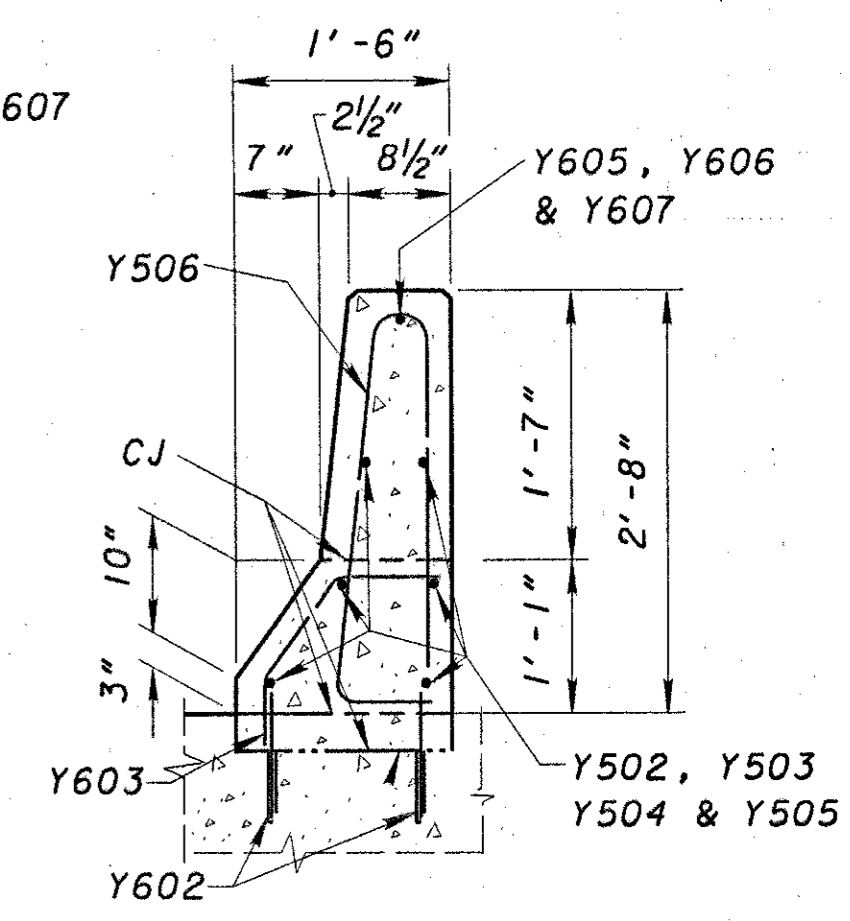
PLAN OF PARAPET TRANSITIONS



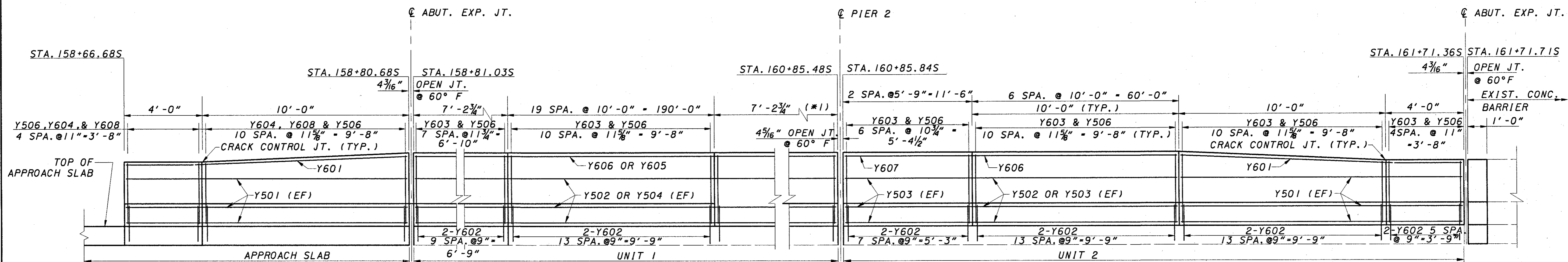
SECTION A-A & B-B



SECTION C-C & D-D



SECTION E-E



(\*1) - SEE EQUAL END SPAN FOR RESTEEL

BARRIER REINFORCING DETAIL

- NOTES:**
- FOR CRACK CONTROL JOINT DETAILS, SEE STD. DWG. BR-1.
  - LAP LENGTHS  
 #5 BAR-2'-9"  
 #6 BAR-3'-3"

DESIGN AGENCY  
**BARR ENGINEERING, INC.**  
 FIVE EAST LONG STREET, EIGHTH FLOOR  
 COLUMBUS, OH 43215  
 (614)-224-1941 FAX (614)-224-0907

DATE  
**7/2001**  
 REVIEWED  
 GEA  
 STRUCTURE FILE NUMBER  
**3106659**

DRAWN  
 HJM  
 REVISOR  
 KVB

DESIGNED  
 JEP  
 CHECKED  
 KVB

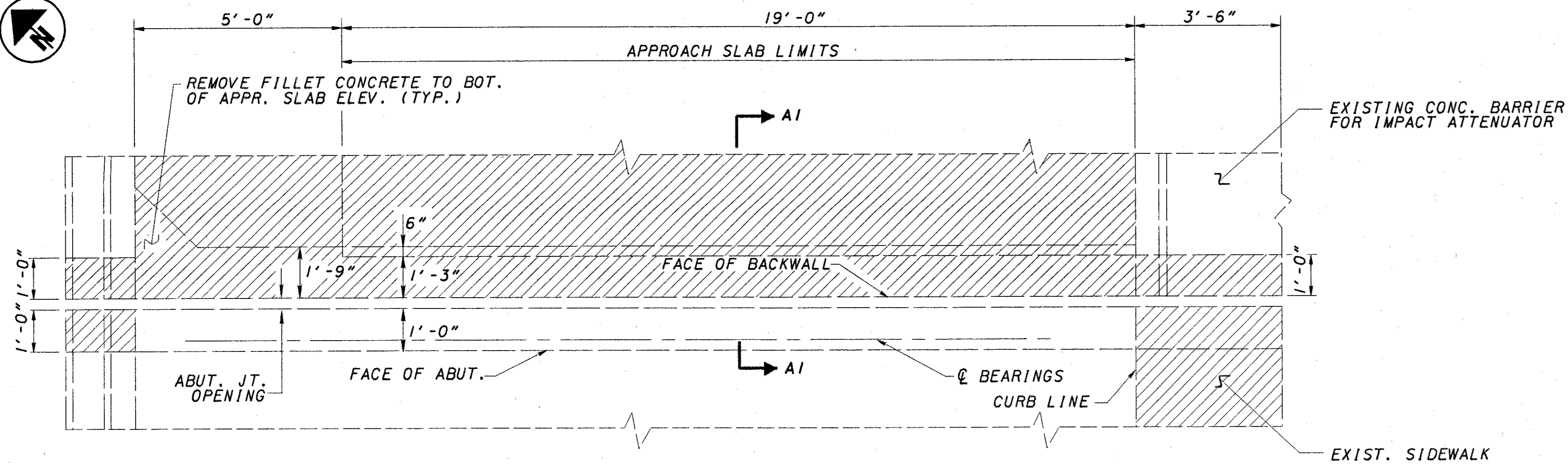
**SUPERSTRUCTURE**

RAMP GF (BRIDGE NO. HAM-71-0192 W)

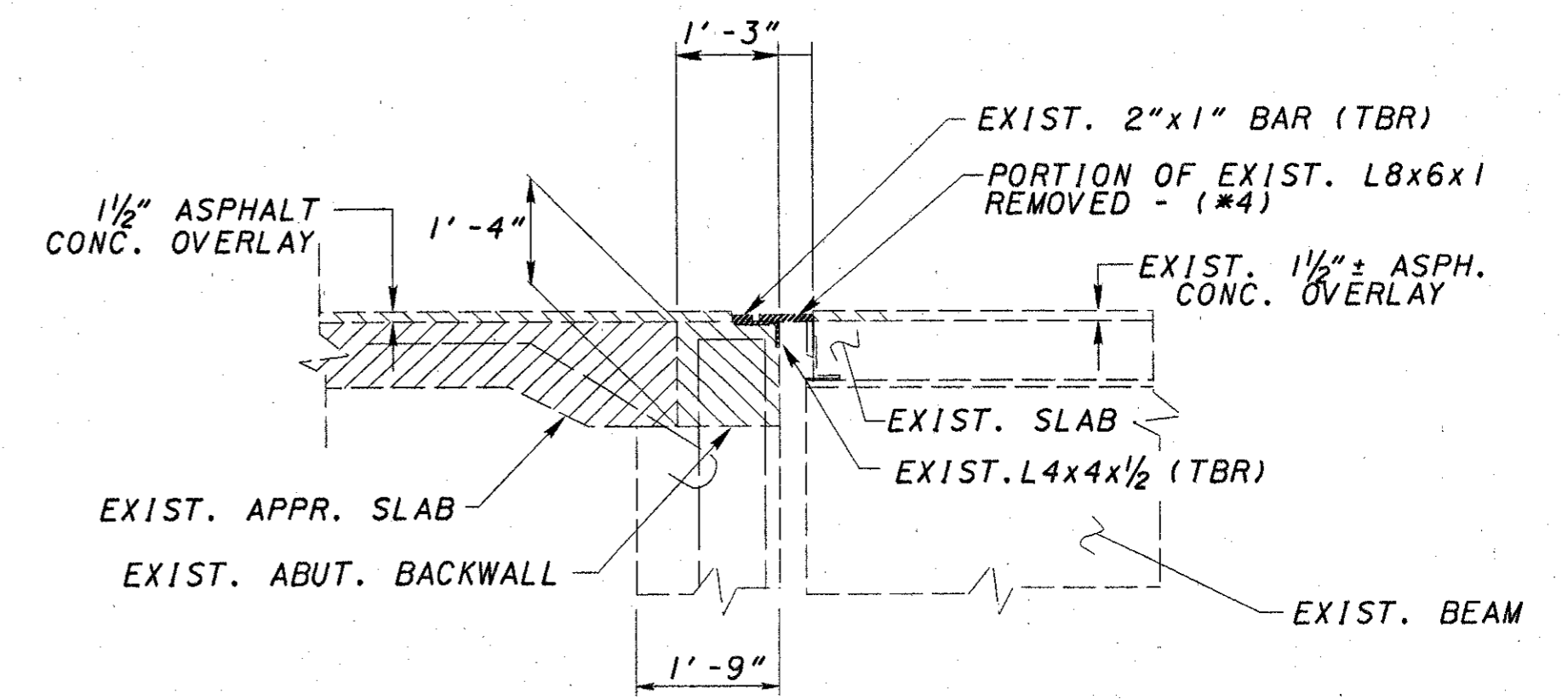
HAM-471-0.26

83/106

115  
 182

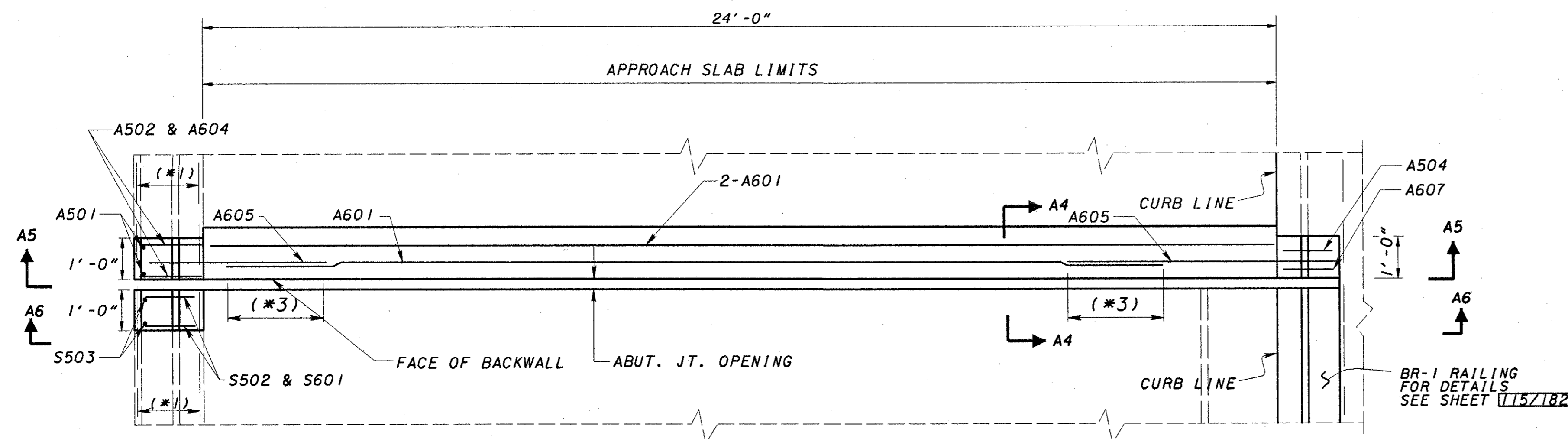


EXISTING ABUTMENT, DECK SLAB, PARAPET & APPROACH SLAB REMOVAL PLAN



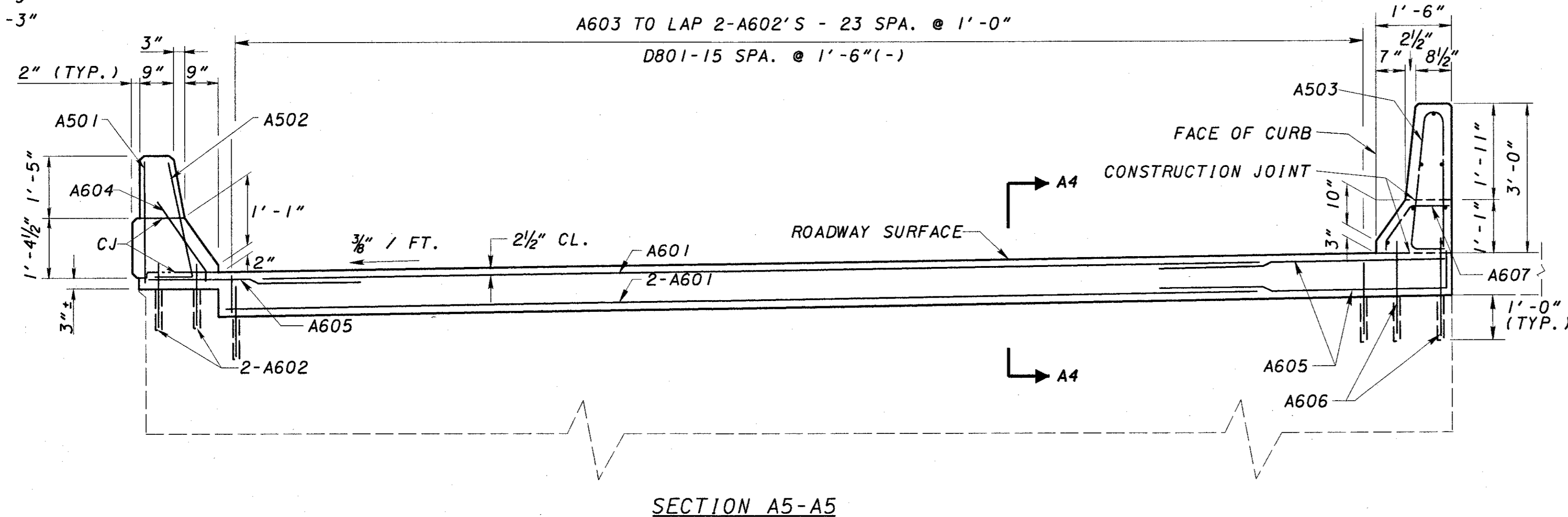
SECTION A1-A1

(\*4) REMOVE TOP PORTION OF ANGLE FLUSH WITH ORIGINAL CONCRETE DECK SLAB

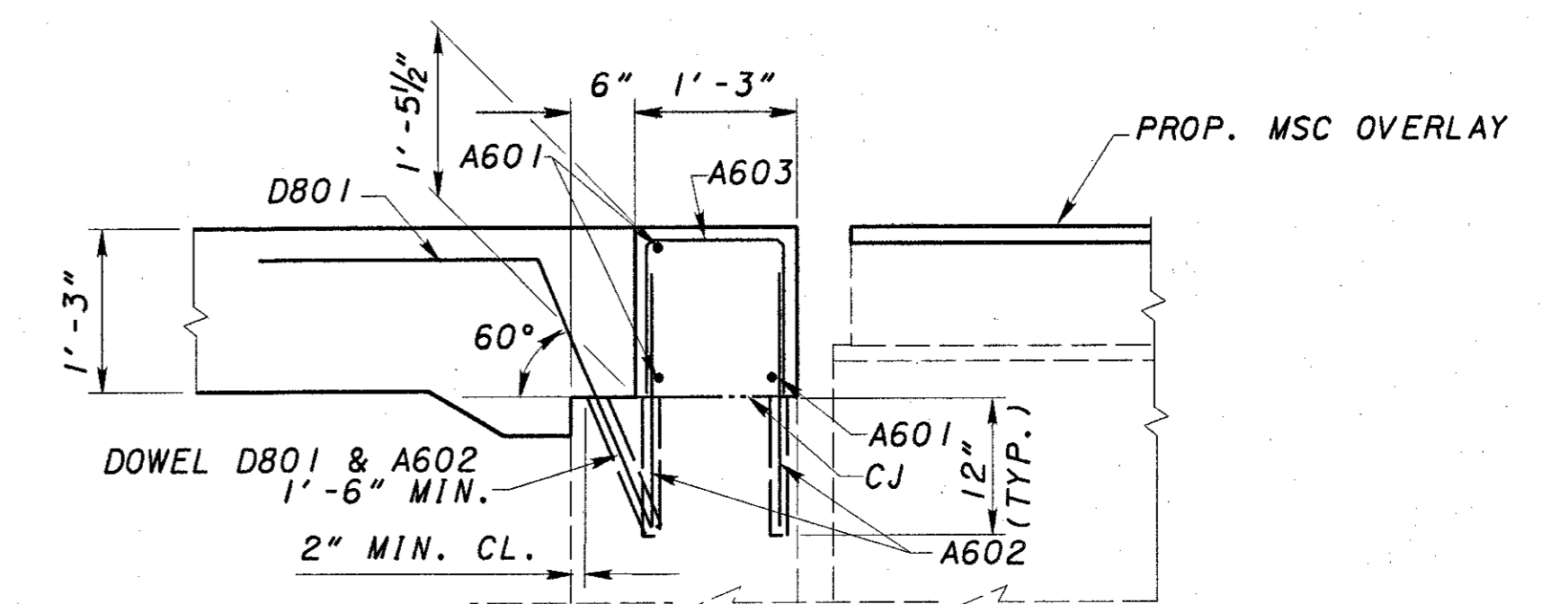


MODIFIED ABUTMENT, DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

- (\*1) EXIST. LONG. BARS TO REMAIN IN PARAPET
- (\*2) EXIST. DECK SLAB & PARAPET LONG. BARS PROTRUDE INTO NEW CONCRETE AREA
- (\*3) LAP LENGTHS
  - #5 BAR-2'-9"
  - #6 BAR-3'-3"



SECTION A5-A5



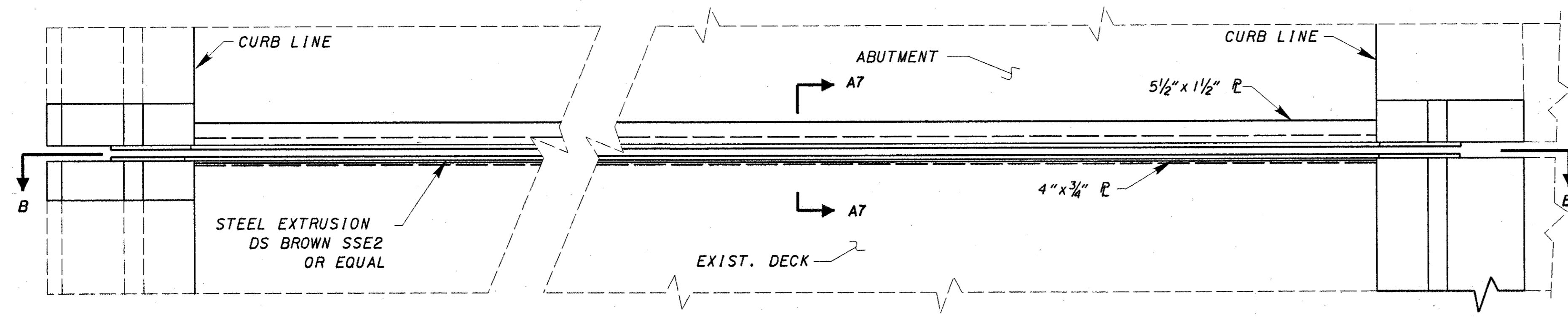
SECTION A4-A4

ALTERNATE TO BACKWALL CONSTRUCTION  
 PLANS SHOW THE PORTIONS OF BACKWALL REMOVAL BY SAWCUTTING AT APPROACH SLAB SEAL LEVEL (SECTION A1-A1) AND RECONSTRUCTING THE BACKWALL BY DOWELLING INTO THE REMAINING EXISTING BACKWALL AS PER THE DETAILS OF SECTION A4-A4. AS AN ALTERNATE TO DOWELLING IN NEW BARS, THE CONTRACTOR MAY CHOOSE TO PRESERVE THE EXIST. BARS (RUNNING THROUGH THE CONSTRUCTION JOINT) DURING THE REMOVAL OF THE BACKWALL CONCRETE. ANY BAR DAMAGED DURING THE CONCRETE REMOVAL SHALL BE REPLACED BY NEW BARS AS DETAILED IN SECTION A4-A4.

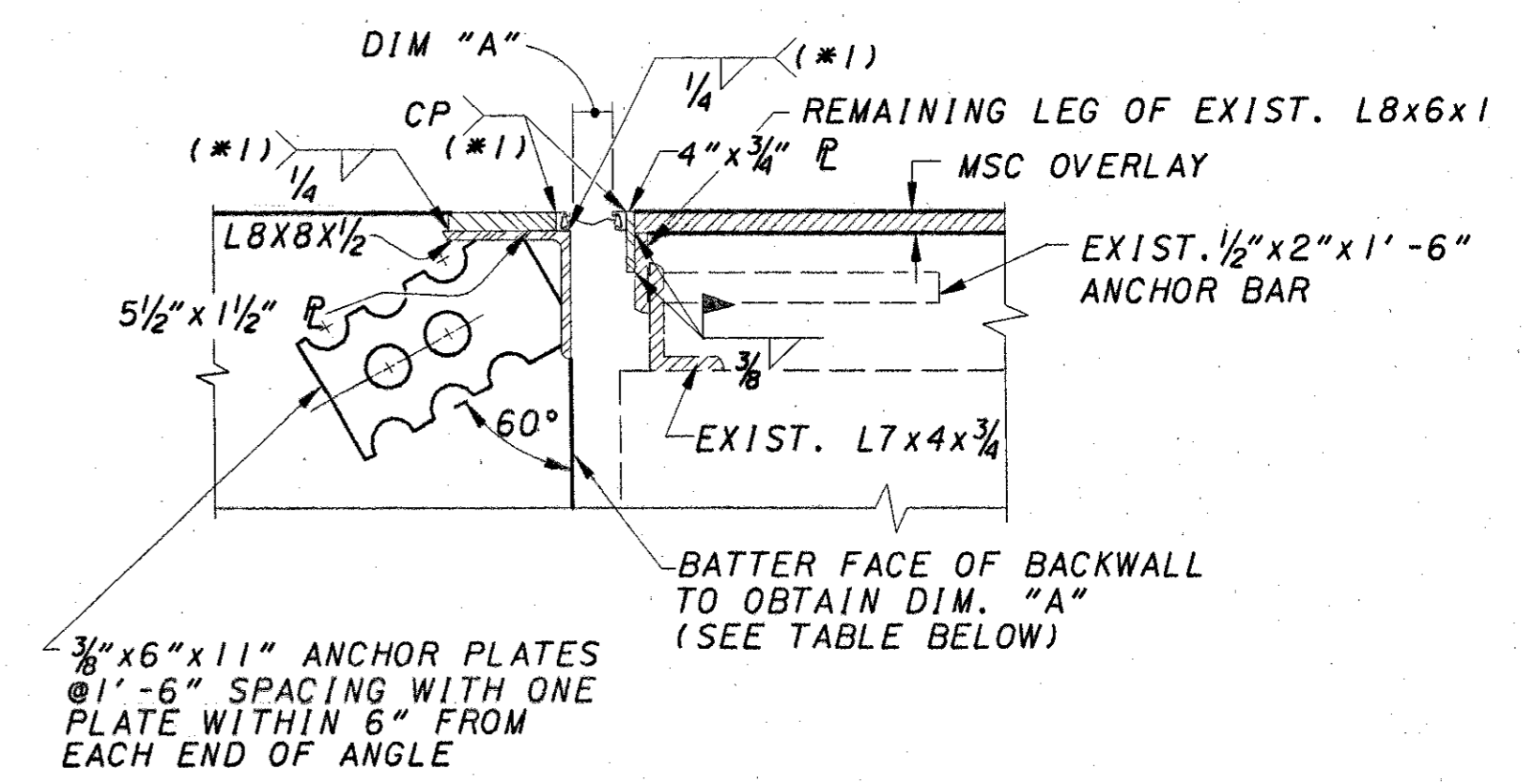
LEGEND

- CONCRETE REMOVAL

DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 PH: (614) 224-1941  
 DATE: 7/2001  
 REVIEWED: KVB  
 DRAWN: FIB  
 DESIGNED: JEP  
 CHECKED: ASB  
 STRUCTURE FILE NUMBER: 3106659  
 FORWARD ABUTMENT EXPANSION JOINT DETAILS  
 RAMP GF (BRIDGE NO. HAM-71-0192 W)  
 HAM 471-0.26  
 84/106  
 116/182

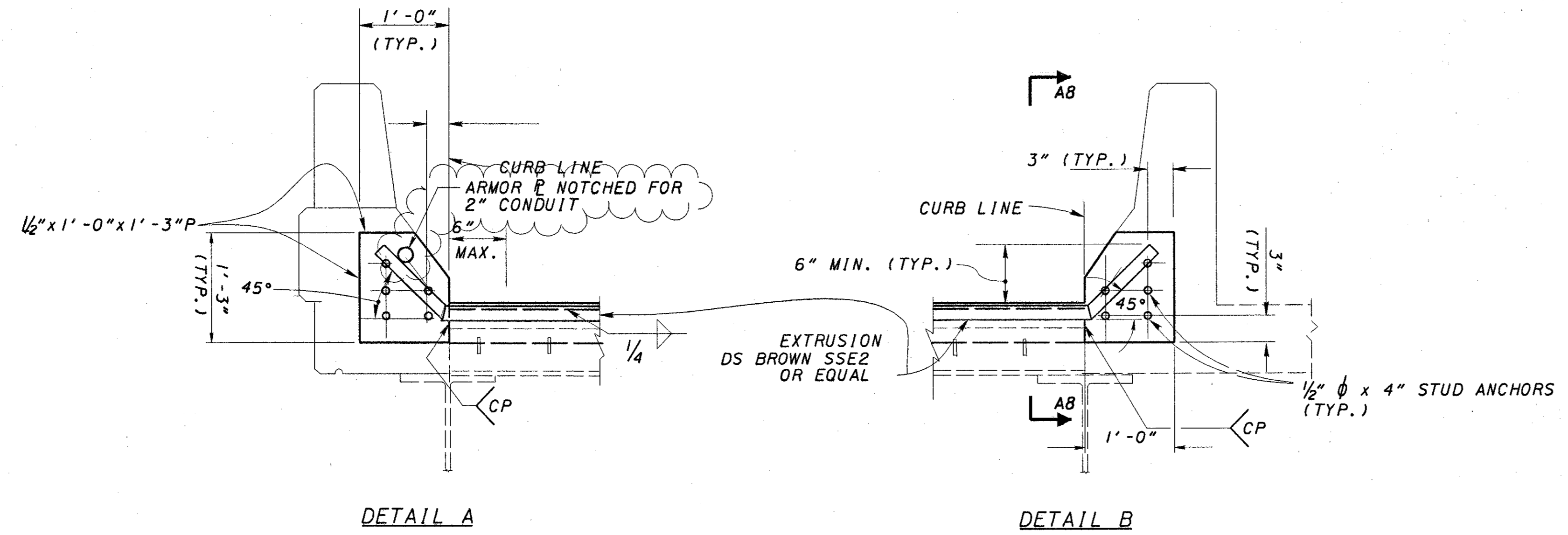


ABUTMENT EXPANSION JOINT



SECTION A7-A7

NOTE:  
 (\*1) - SHOP WELD AND PROVIDE 1/4" MIN. SETBACK DIMENSION FROM OUTSIDE EDGES OF L8x8x1/2



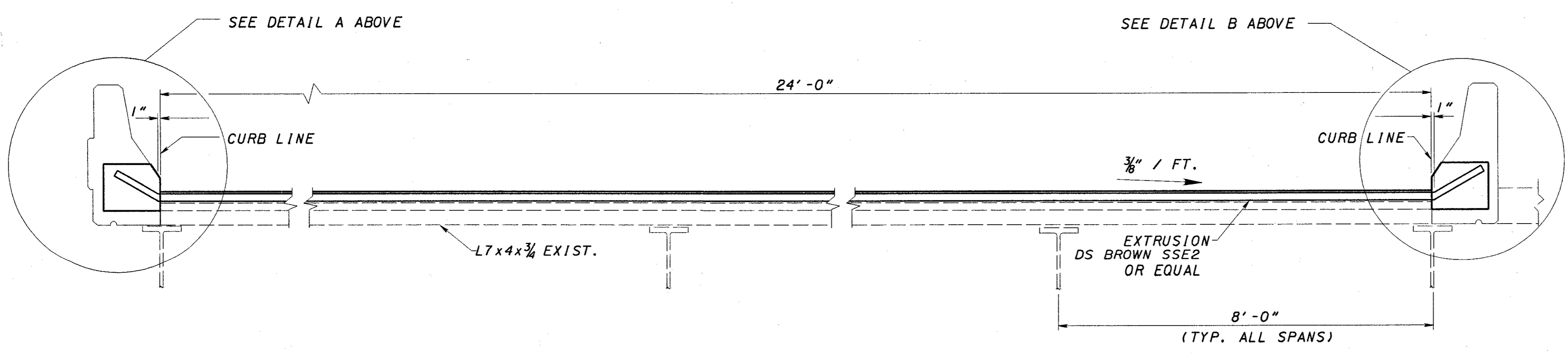
DETAIL A

DETAIL B

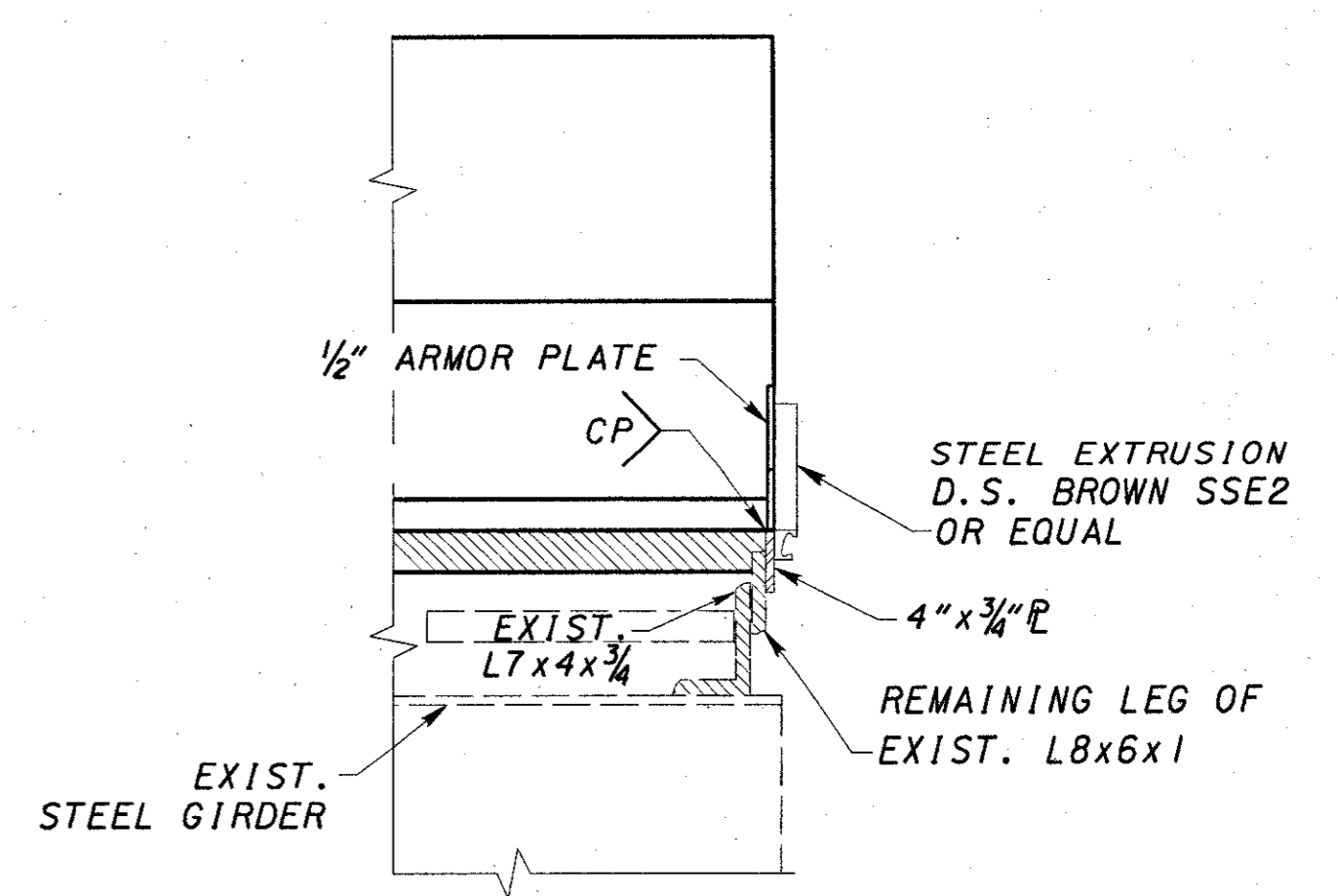
3" STRIP SEAL GLAND

TEMPERATURE (F)	DIMENSION "A"
30°	1 7/8"
40°	1 13/16"
50°	1 11/16"
60°	1 5/8"
70°	1 3/16"
80°	1 1/2"
90°	1 7/16"

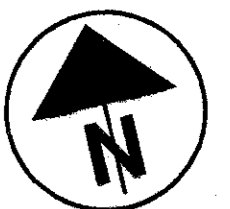
EXPANSION LENGTH = 84'-0" ±



SECTION B-B



SECTION A8-A8



DESIGN AGENCY  
 BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 PH: (614) 224-1941

DATE  
 7/2001  
 REVIEWED  
 GEA  
 STRUCTURE FILE NUMBER  
 3106659

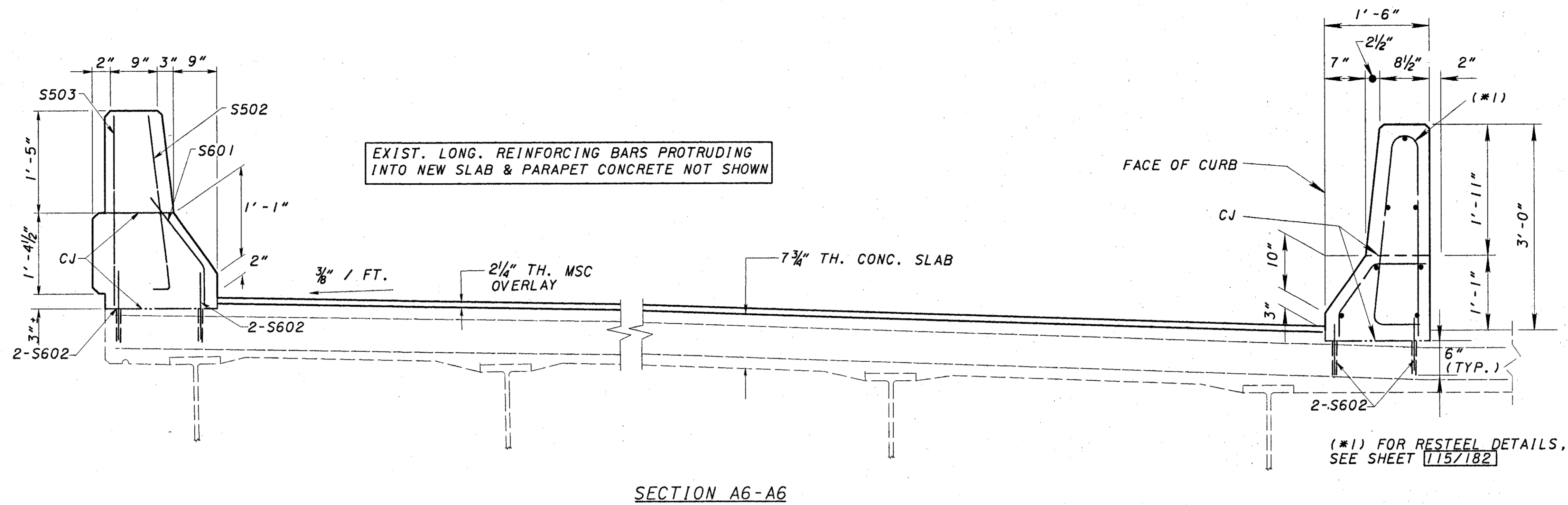
DRAWN  
 JEP  
 DESIGNED  
 JEP  
 CHECKED  
 ASB

FORWARD ABUTMENT EXPANSION JOINT DETAILS  
 RAMP GF (BRIDGE NO. HAM-71-0192 W)

HAM-471-0.26

85/106

117  
 182

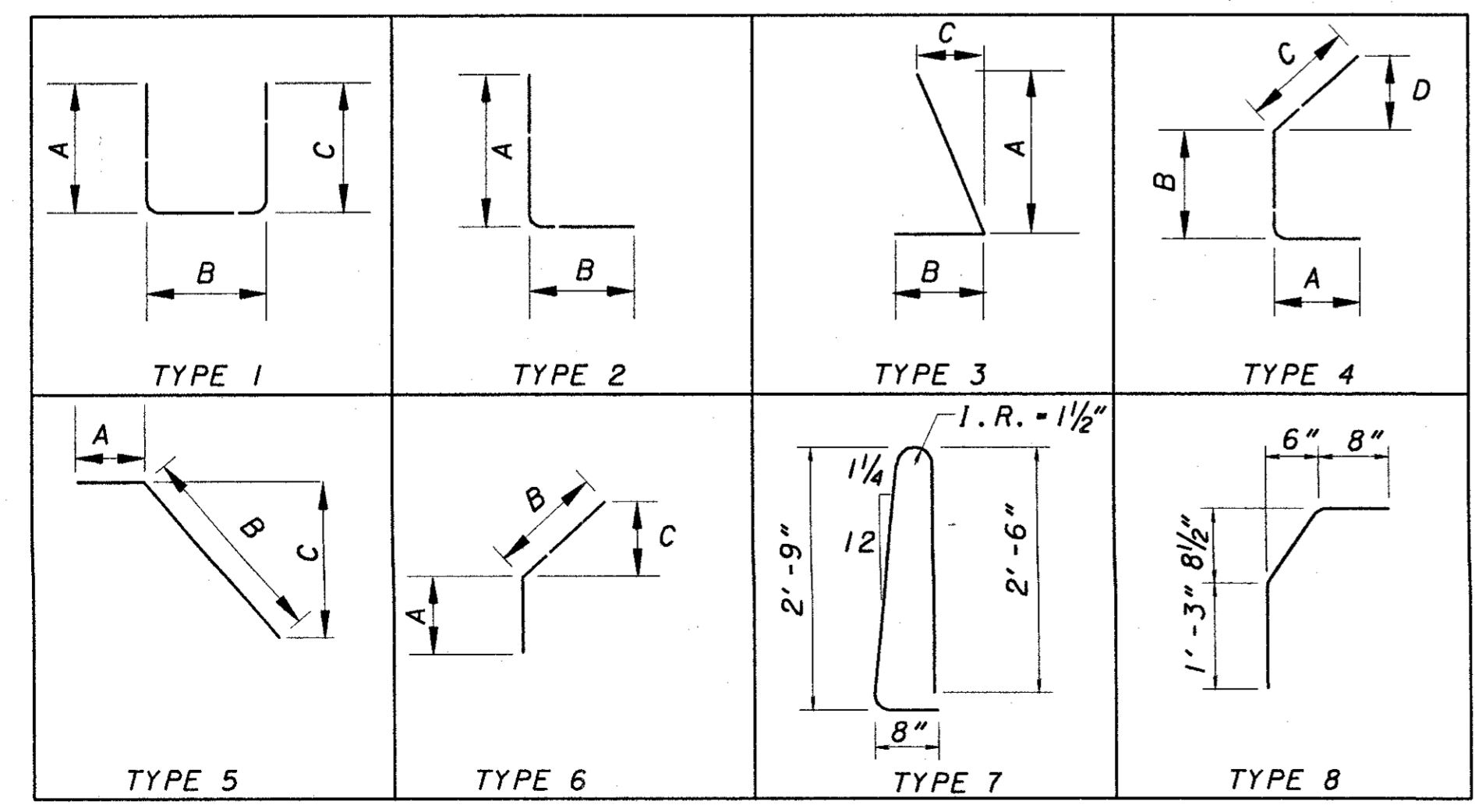


REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
<b>SUPERSTRUCTURE</b>									
S502	2	3'-2"		3	2'-6"	10"	2"		
S503	2	2'-6"		STR					
S601	2	3'-0"		6	4"	1'-6"	1'-2"		
S602	4	1'-6"		STR					

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
<b>ABUTMENT</b>									
A501	2	2'-10"		STR					
A502	2	3'-2"		3	2'-10"	10"	5"		
A503	2	6'-0"		7					
A601	3	23'-6"		STR					
A602	52	2'-0"		STR					
A603	24	3'-0"		1	1'-2"	11"	1'-2"		
A604	2	1'-10"		6	4"	1'-6"	1'-2"		
A605	3	5'-10"		STR					
A606	4	3'-0"		STR					
A607	2	2'-8"		8					
DB01	16	4'-3"		5	2'-0"	2'-3"	1'-11"		

BENDING DIAGRAMS



DESIGN AGENCY  
**BARR ENGINEERING**  
 Five East Long Street  
 Columbus, Ohio 43215  
 Ph: (614) 224-1941

DATE  
 7/2001

REVIEWED  
 GEA

DRAWN  
 JEP

DESIGNED  
 JEP

STRUCTURE FILE NUMBER  
 3106659

REVISION FILE NUMBER  
 3106659

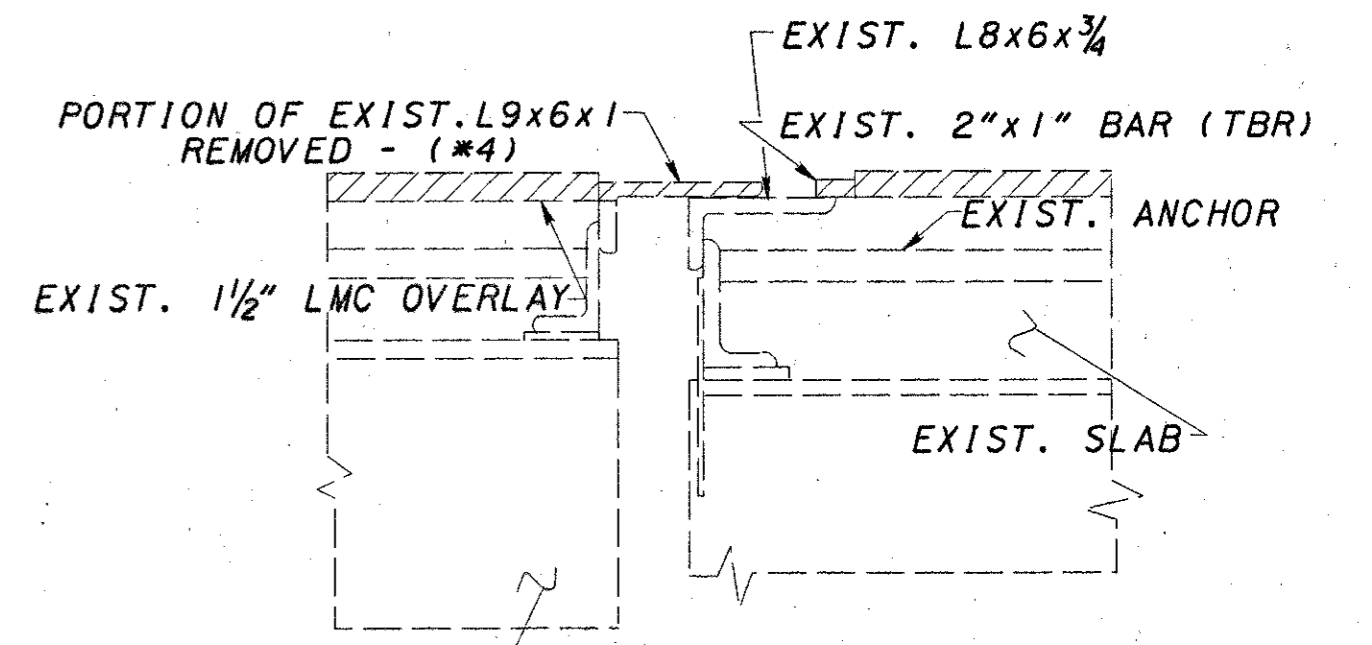
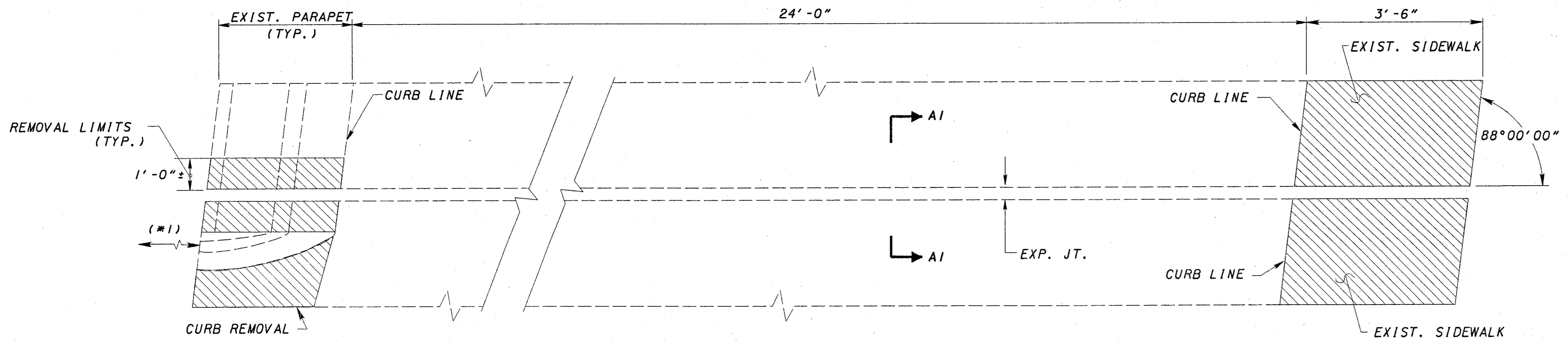
CHECKED  
 ASB

FORWARD ABUTMENT EXPANSION JOINT DETAILS  
 RAMP GF (BRIDGE NO. HAM-71-0192 W)

HAM-471-0.26

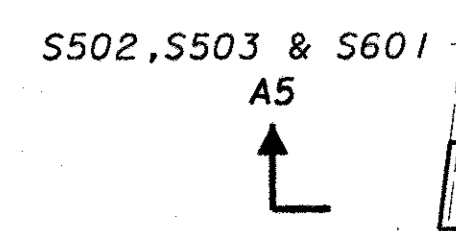
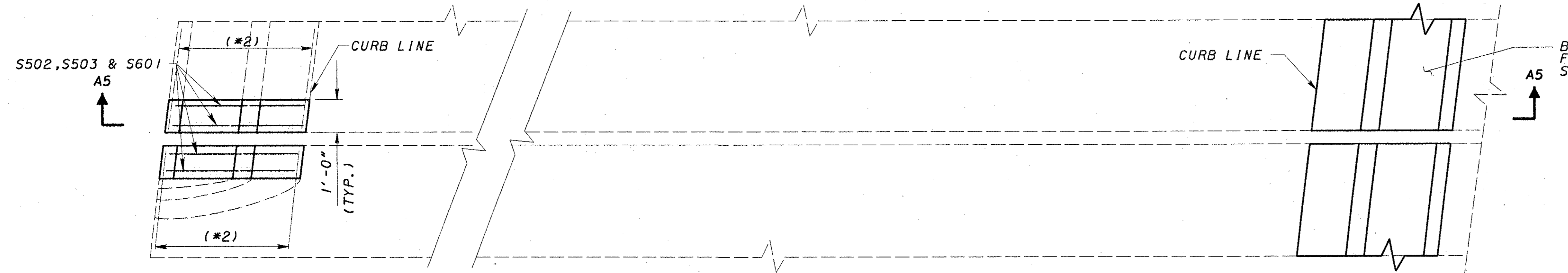
86/106

118  
 182

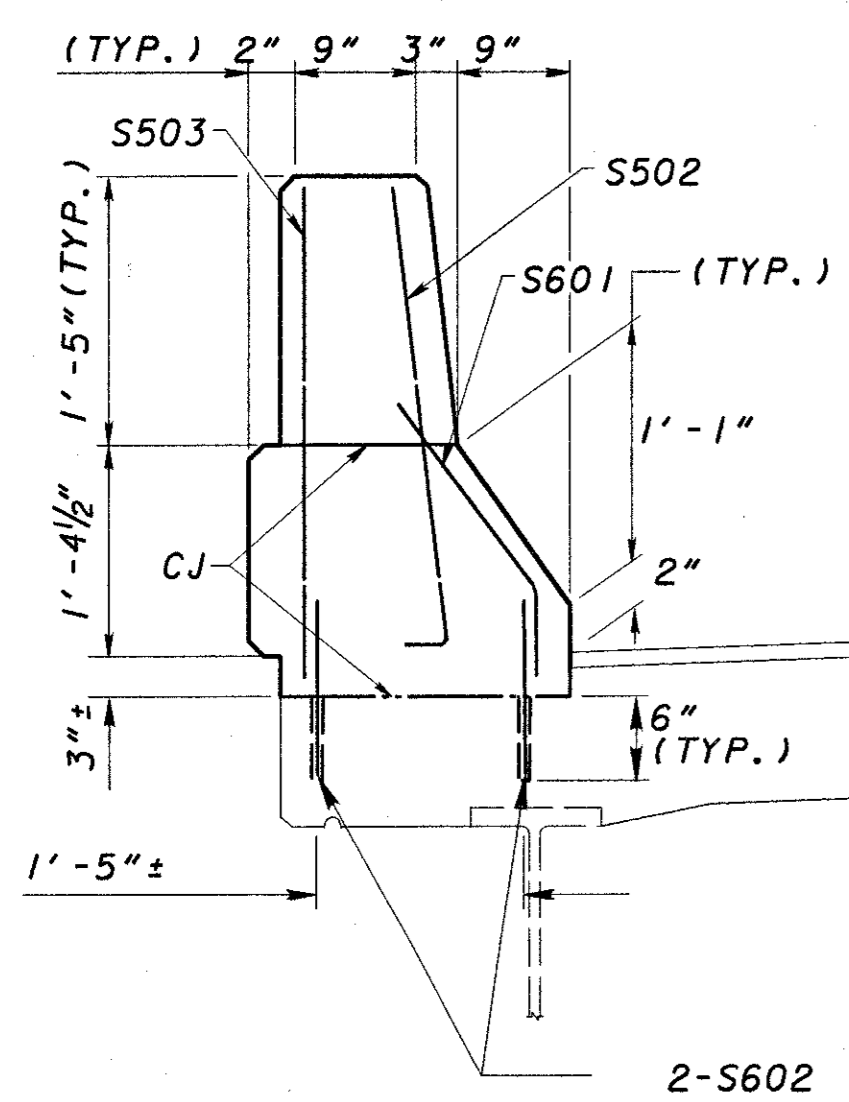


PRESERVE ALL LONG. REINFORCING BARS IN PARAPETS & DECK SLAB REMOVAL AREAS

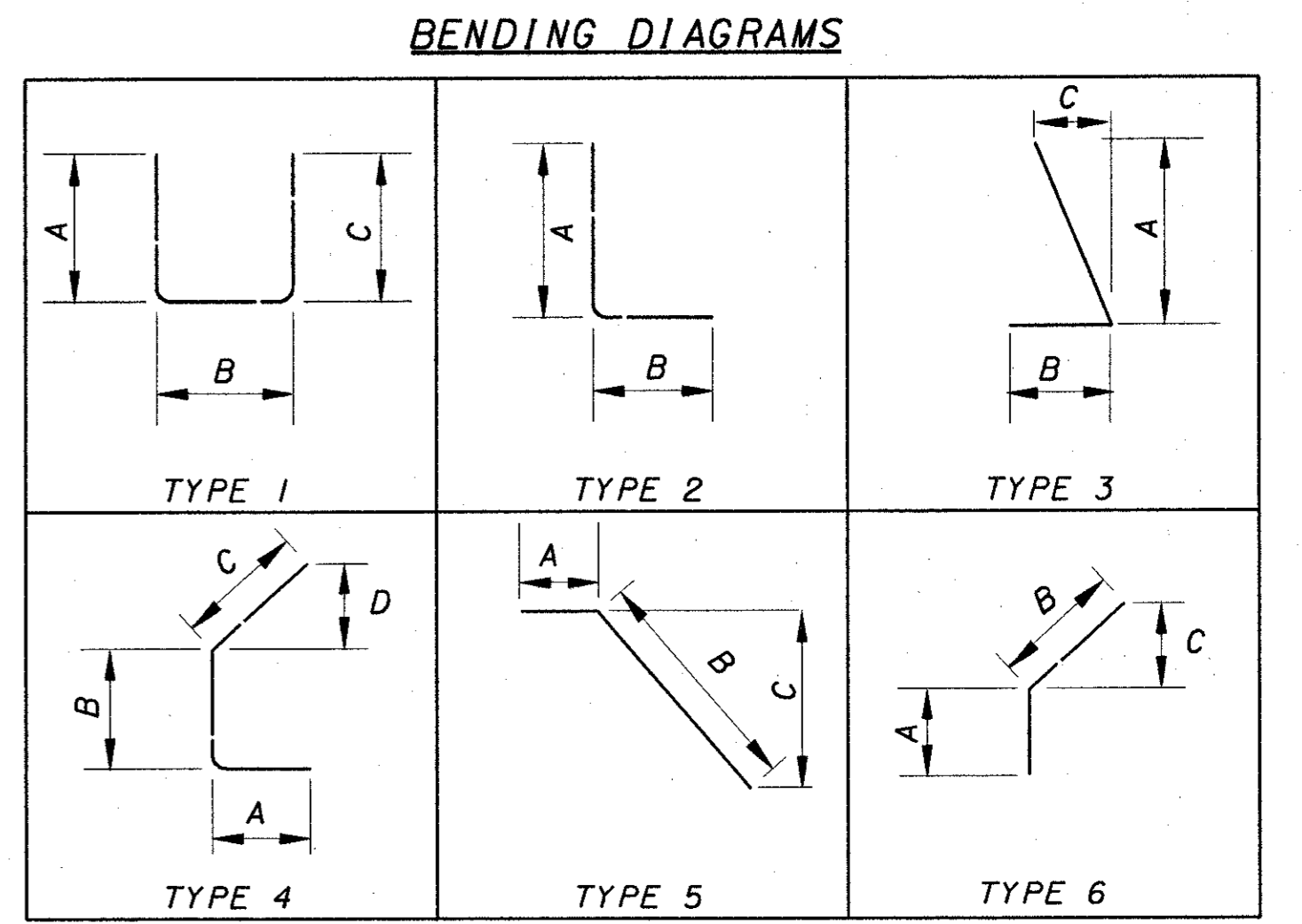
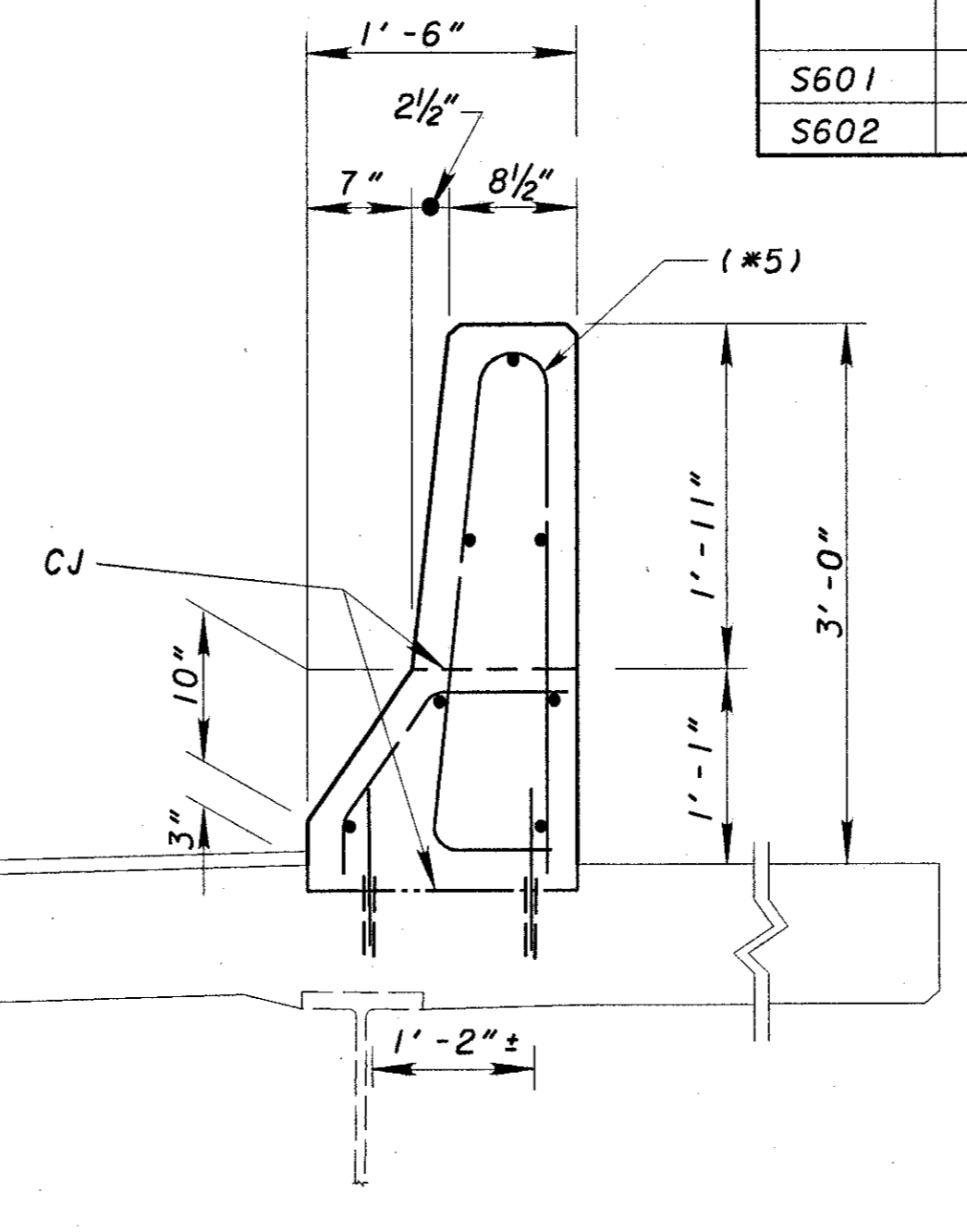
(\*1) HAM-71-0192 N BRIDGE



MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
S502	4	3'-2"		3	2'-6"	10"	2"		
S503	4	2'-6"		STR					
S601	4	1'-10"		6	4"	1'-6"	1'-2"		
S602	8	1'-6"		STR					

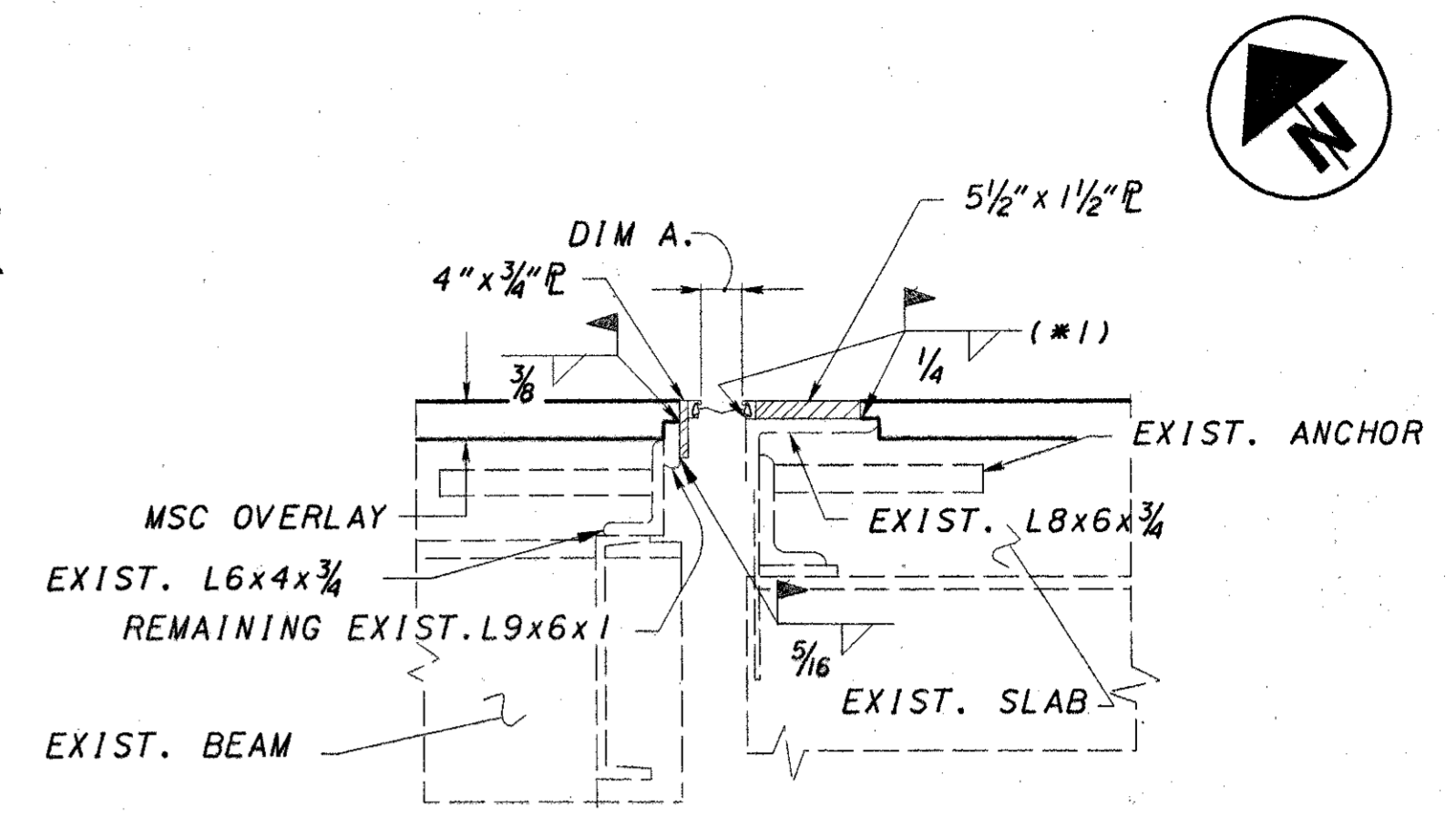
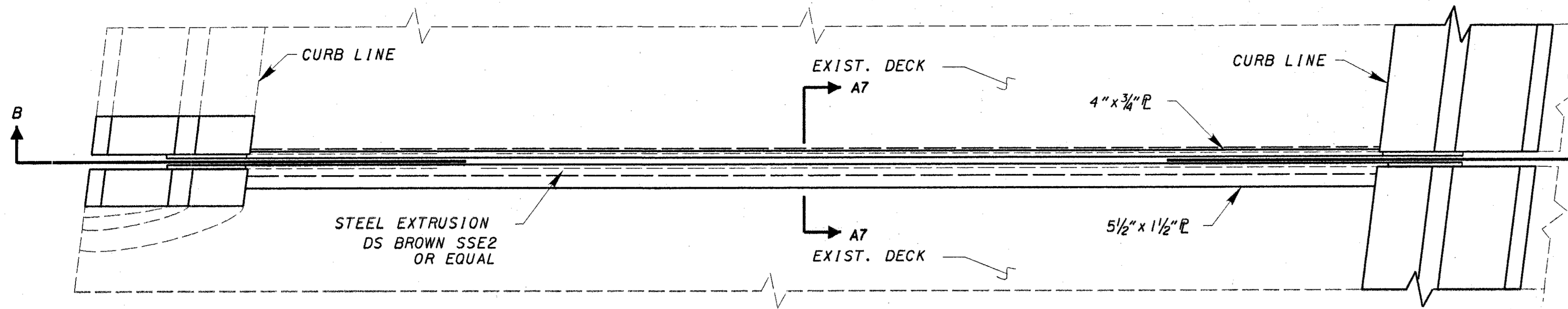


SECTION A5-A5



LEGEND

- CONCRETE REMOVAL

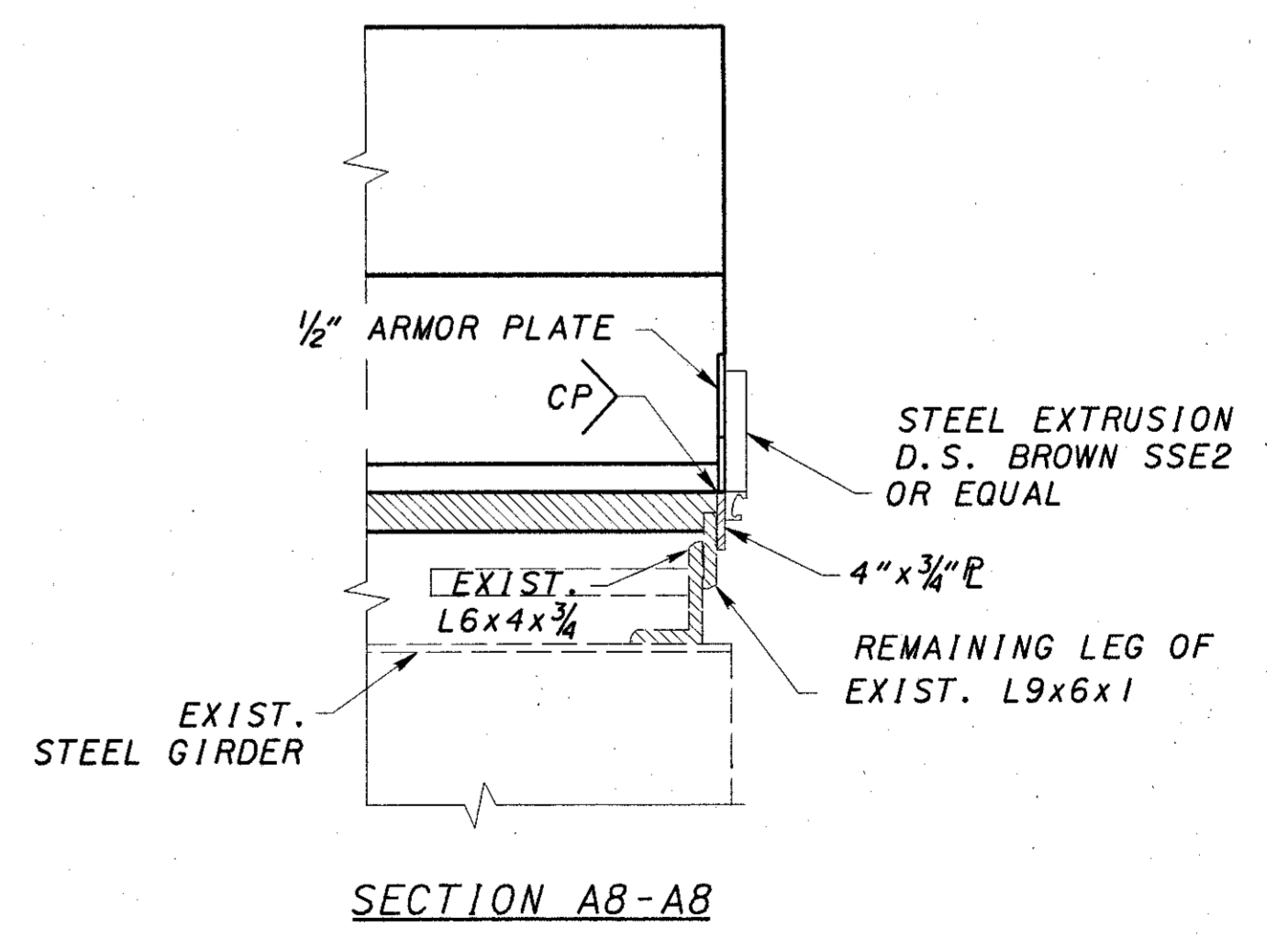
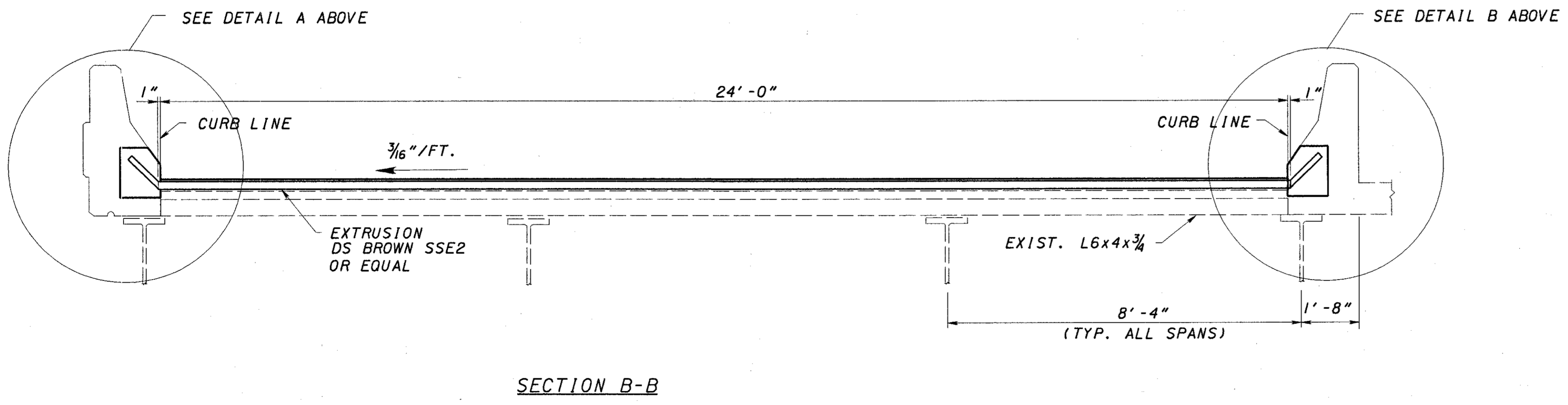
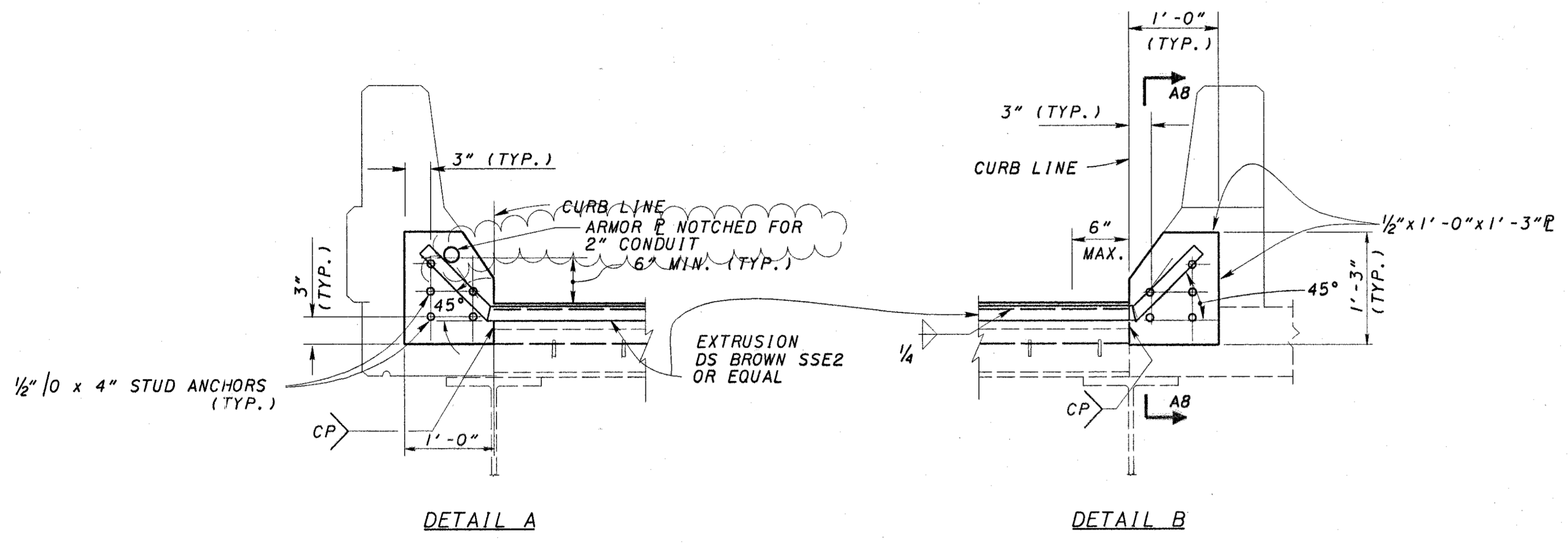


(\*1) - PROVIDE 1/4" MIN. SETBACK DIM. FROM OUTSIDE EDGES OF L8x6x3/4

3" STRIP SEAL GLAND

TEMPERATURE (F)	DIMENSION "A"
30°	1 7/8"
40°	1 13/16"
50°	1 11/16"
60°	1 5/8"
70°	1 1/2"
80°	1 7/16"
90°	1 3/16"

EXPANSION LENGTH = 119'-0" ±



DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 Ph: (614) 224-1941

DATE: 7/2001  
 REVIEWED: KVB  
 STRUCTURE FILE NUMBER: 3106659

DESIGNED: JEP  
 CHECKED: ASB

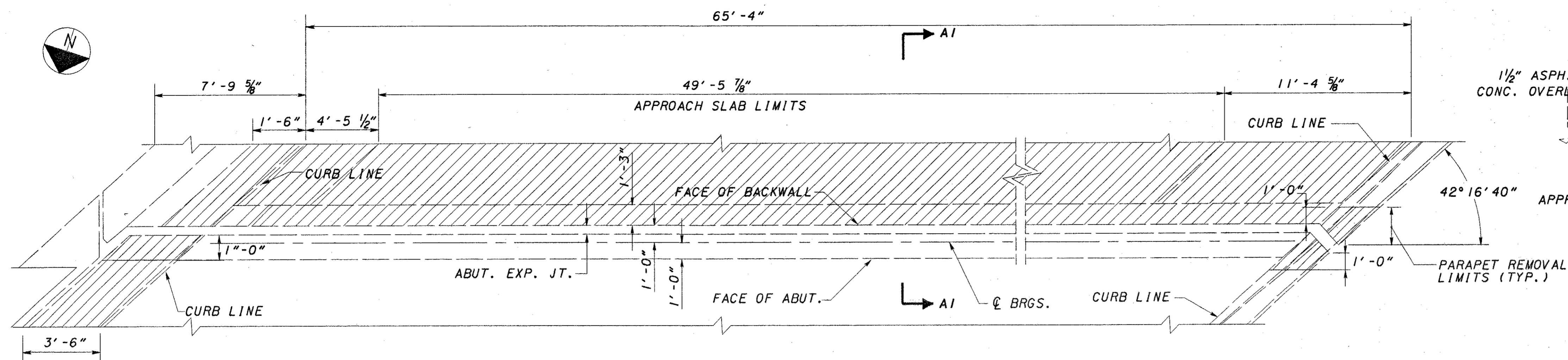
PIER 2 EXPANSION JOINT DETAILS  
 RAMP GF (BRIDGE NO. HAM-71-0192 W)

HAM-471-0.26

88/106

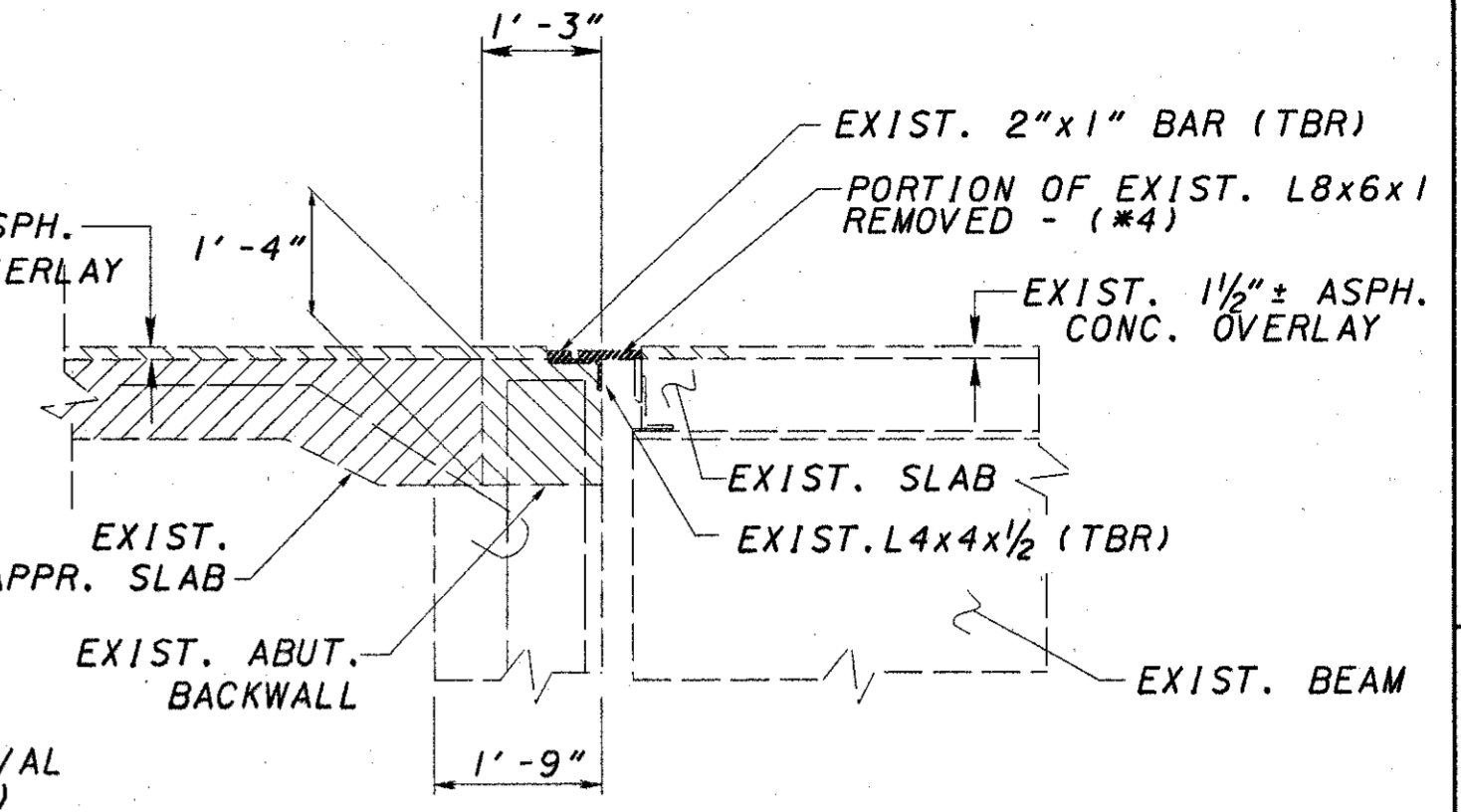
120  
182





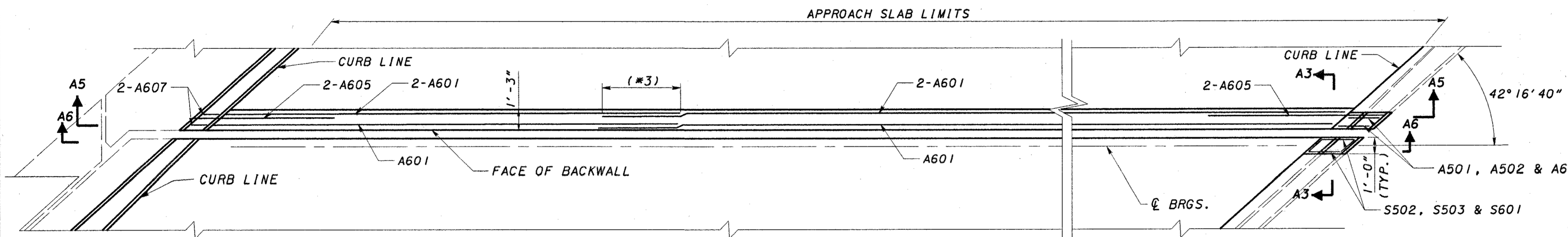
**EXISTING ABUTMENT, DECK SLAB, PARAPET & APPROACH SLAB REMOVAL PLAN**

PRESERVE ALL LONG. REINFORCING BARS IN PARAPETS & DECK SLAB



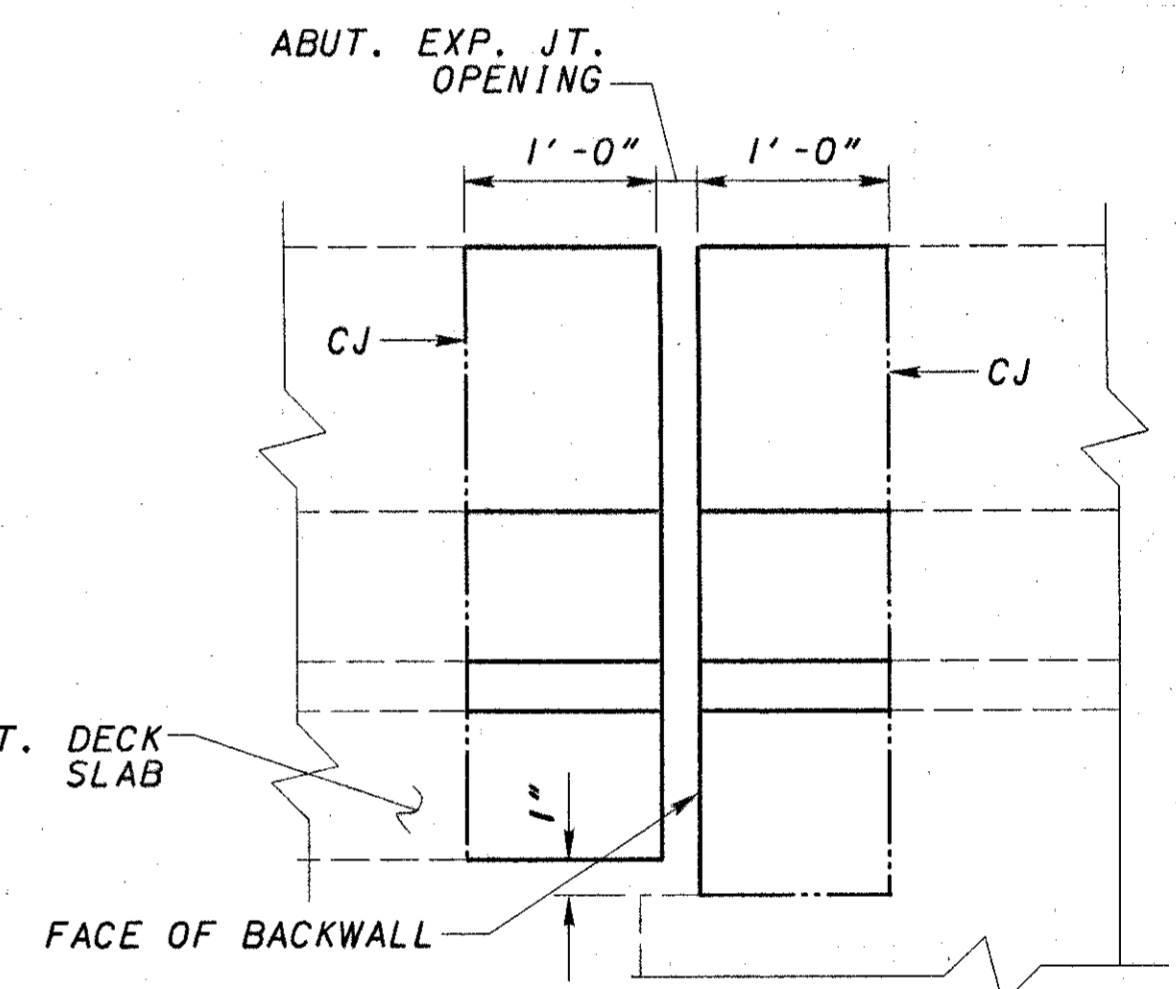
**SECTION A1-A1**

(\*4) REMOVE TOP PORTION OF ANGLE FLUSH W/ ORIG. CONC. DECK SLAB

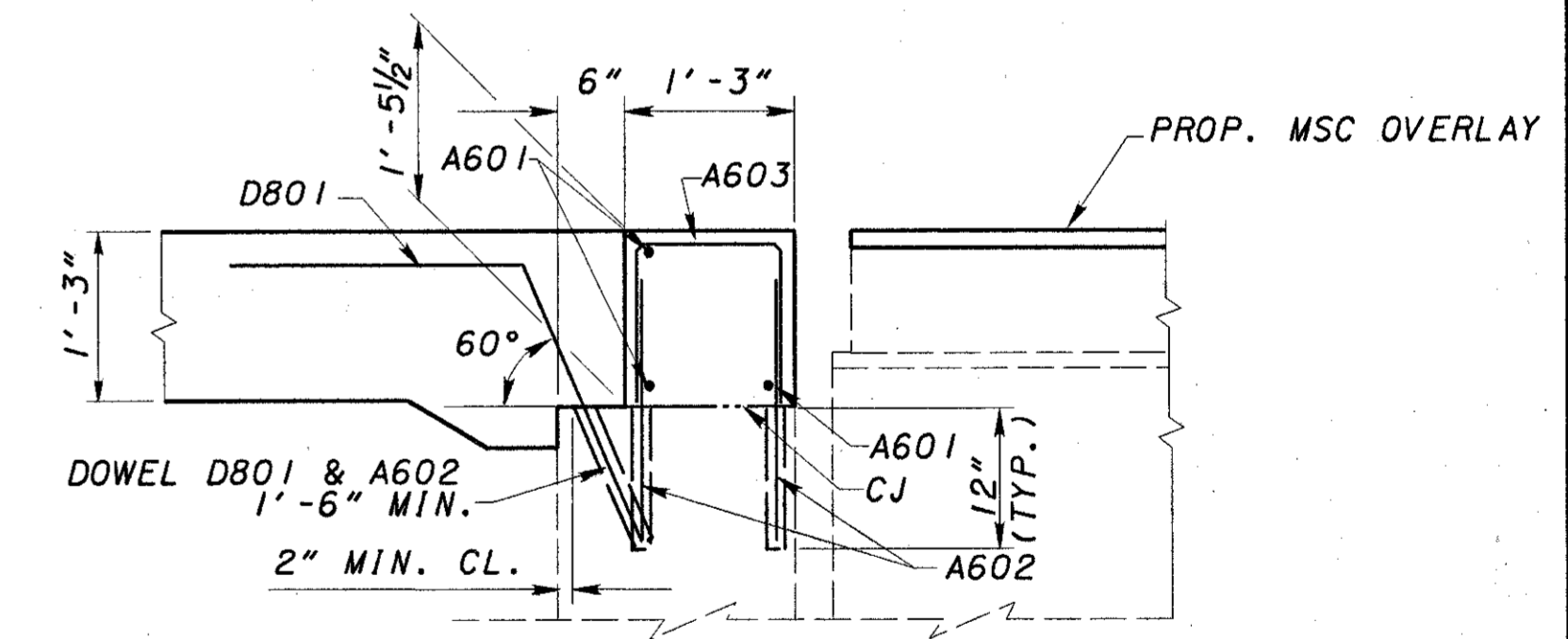


**MODIFIED ABUTMENT, DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION**

- (\*1) EXIST. LONG. BARS TO REMAIN IN PARAPET
- (\*2) EXIST. DECK SLAB & PARAPET LONG. BARS PROTRUDE INTO NEW CONCRETE AREA
- (\*3) LAP LENGTHS
  - #5 BAR=2'-9"
  - #6 BAR=3'-3"



**SECTION A3-A3**

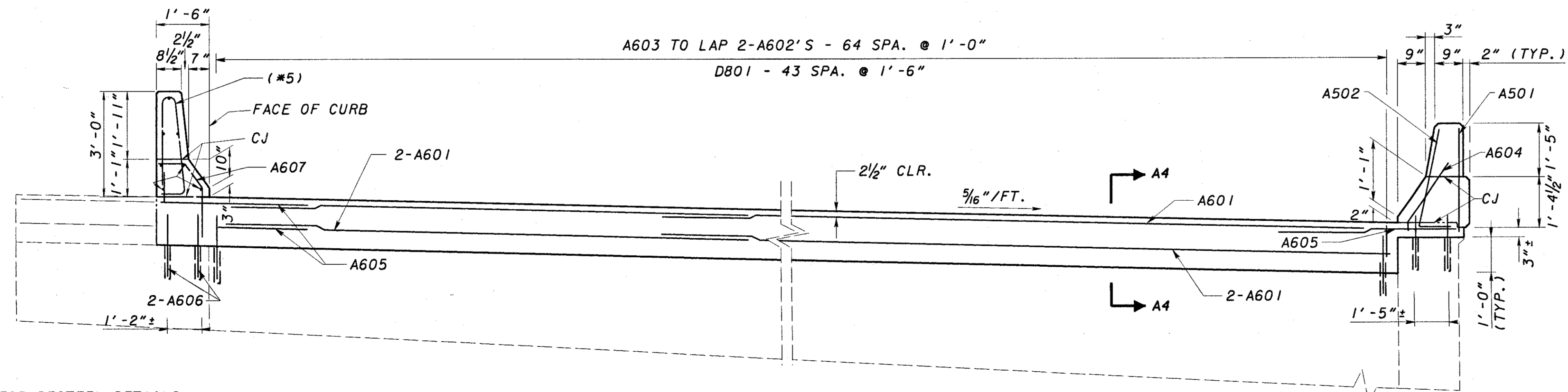


**SECTION A4-A4**

**ALTERNATE TO BACKWALL CONSTRUCTION**  
 PLANS SHOW THE PORTIONS OF BACKWALL REMOVAL BY SAWCUTTING AT APPROACH SLAB SEAL LEVEL (SECTION A1-A1) AND RECONSTRUCTING THE BACKWALL BY DOWELLING INTO THE REMAINING EXISTING BACKWALL AS PER THE DETAILS OF SECTION A4-A4. AS AN ALTERNATE TO DOWELLING IN NEW BARS, THE CONTRACTOR MAY CHOOSE TO PRESERVE THE EXIST. BARS (RUNNING THROUGH THE CONSTRUCTION JOINT) DURING THE REMOVAL OF THE BACKWALL CONCRETE. ANY BAR DAMAGED DURING THE CONCRETE REMOVAL SHALL BE REPLACED BY NEW BARS AS DETAILED IN SECTION A4-A4.

**LEGEND**

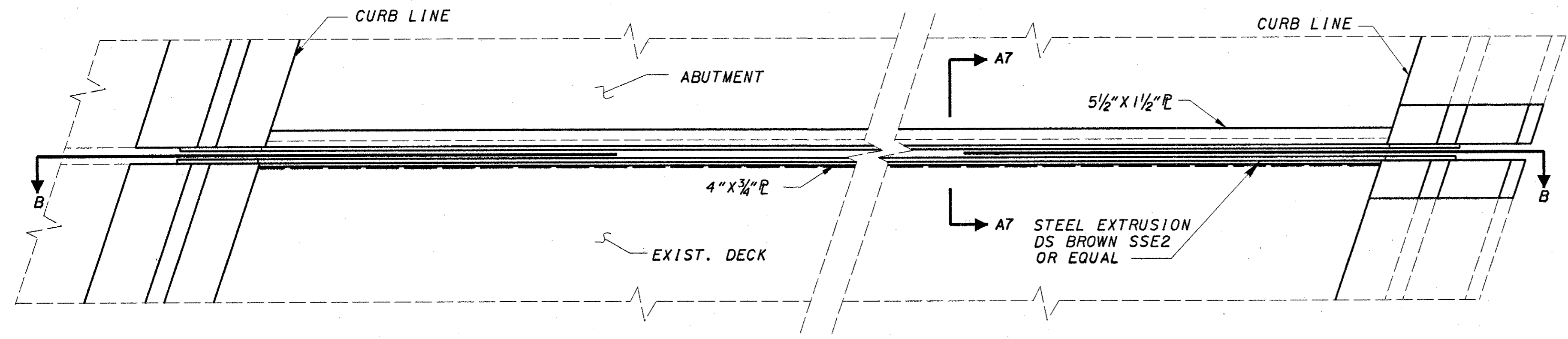
- CONCRETE REMOVAL



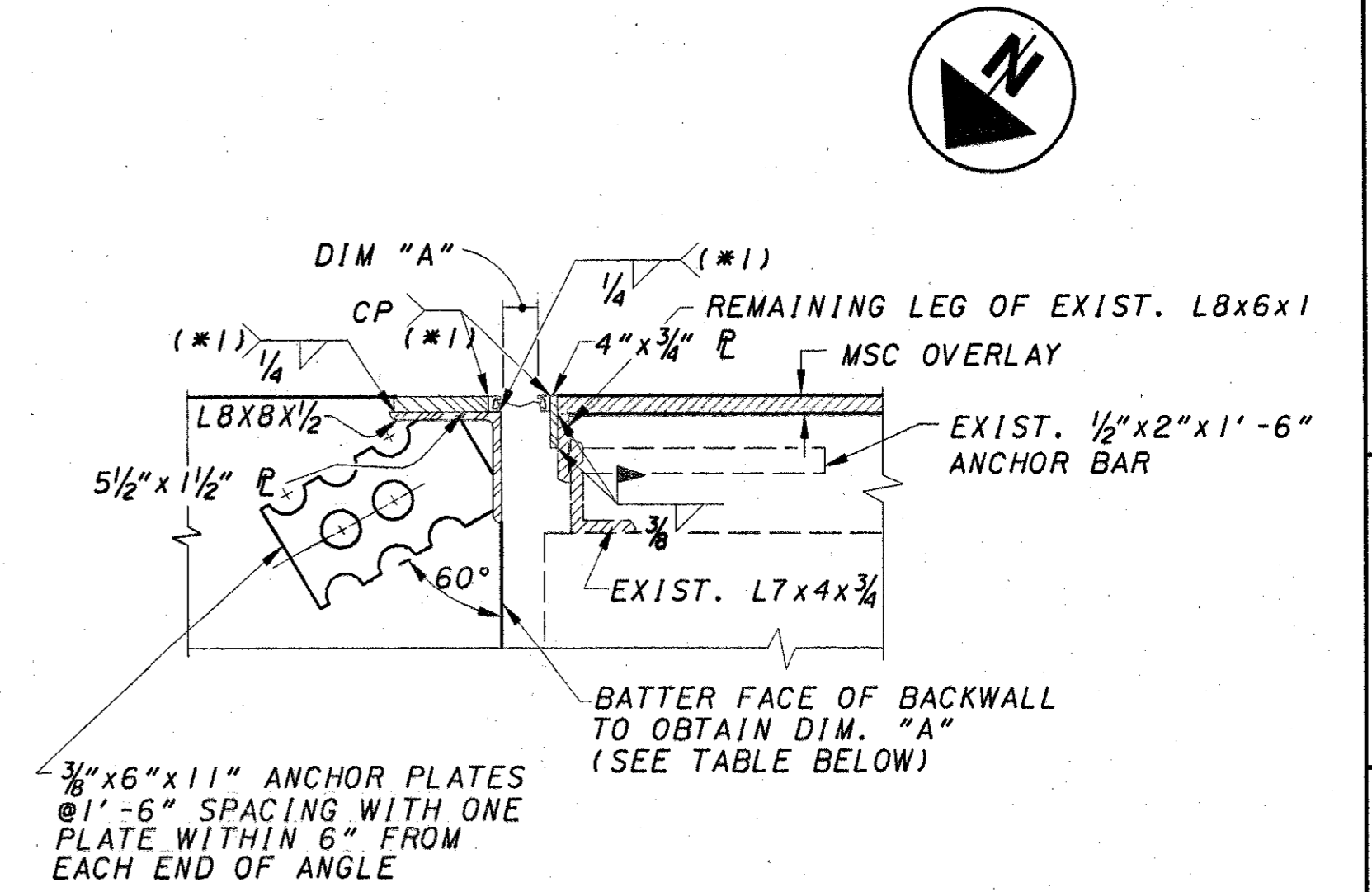
**SECTION A5-A5**

(\*5) FOR RESTEEL DETAILS SEE SHEET 115/182

DESIGN AGENCY BARR ENGINEERING Five East Long Street Columbus, Ohio 43215 Ph: (614) 224-1941	DATE 7/2001	REVIEWED KVB	DESIGNED JEP	CHECKED ASB	STRUCTURE FILE NO. 3106659
REAR ABUTMENT EXPANSION JOINT DETAILS RAMP GF (BRIDGE NO. HAM-71-0192 W)					
HAM-471-0.26					
89/106					
121 182					

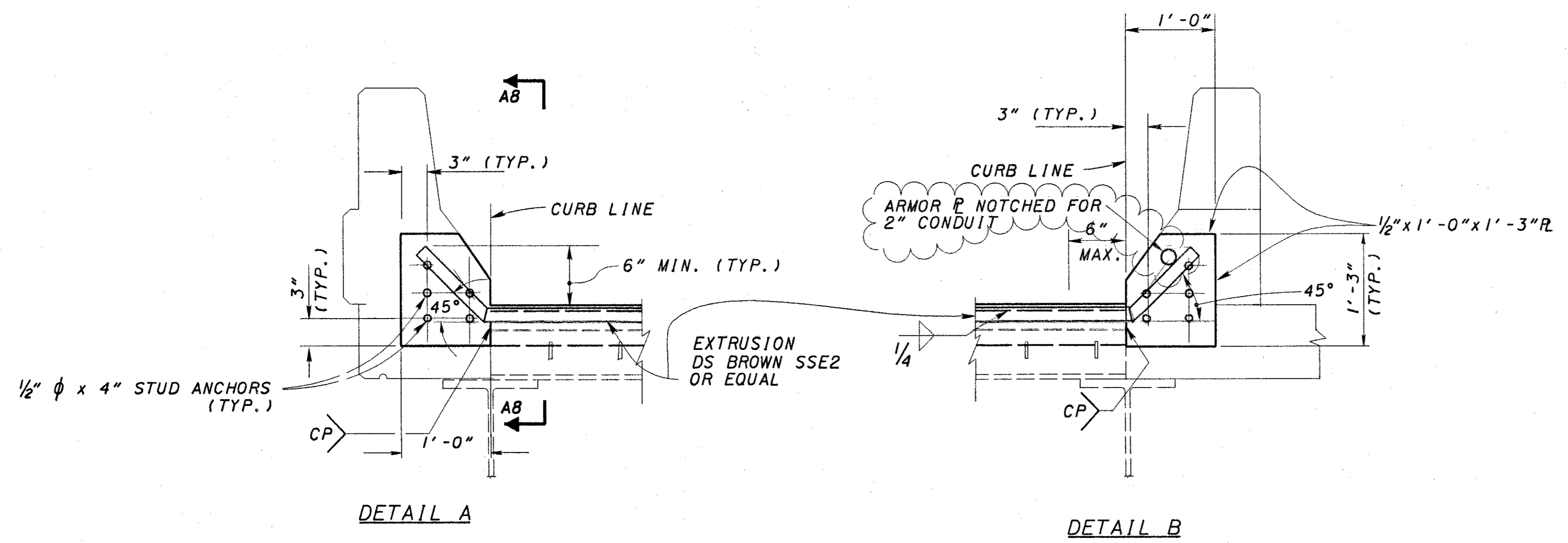


ABUTMENT EXPANSION JOINT



SECTION A7-A7

NOTE:  
 (\*1) - SHOP WELD AND PROVIDE 1/4" MIN. SETBACK DIMENSION FROM OUTSIDE EDGES OF L8x8x1/2



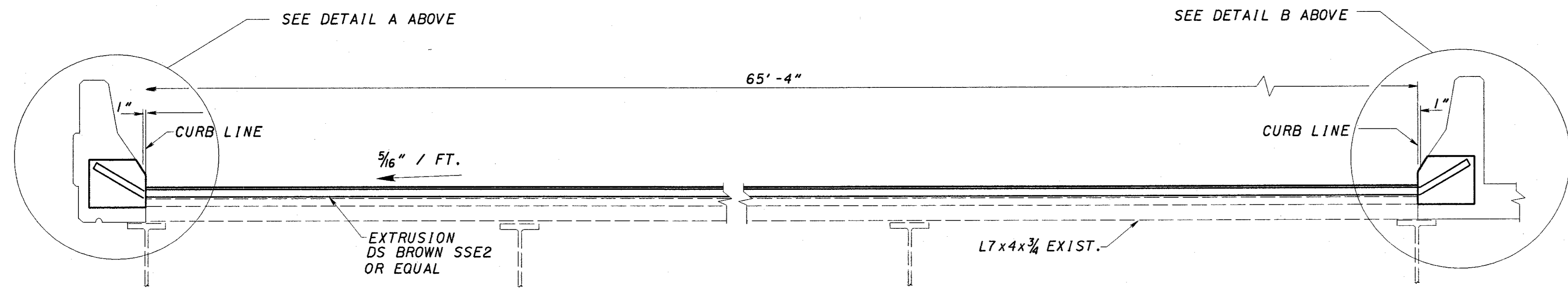
DETAIL A

DETAIL B

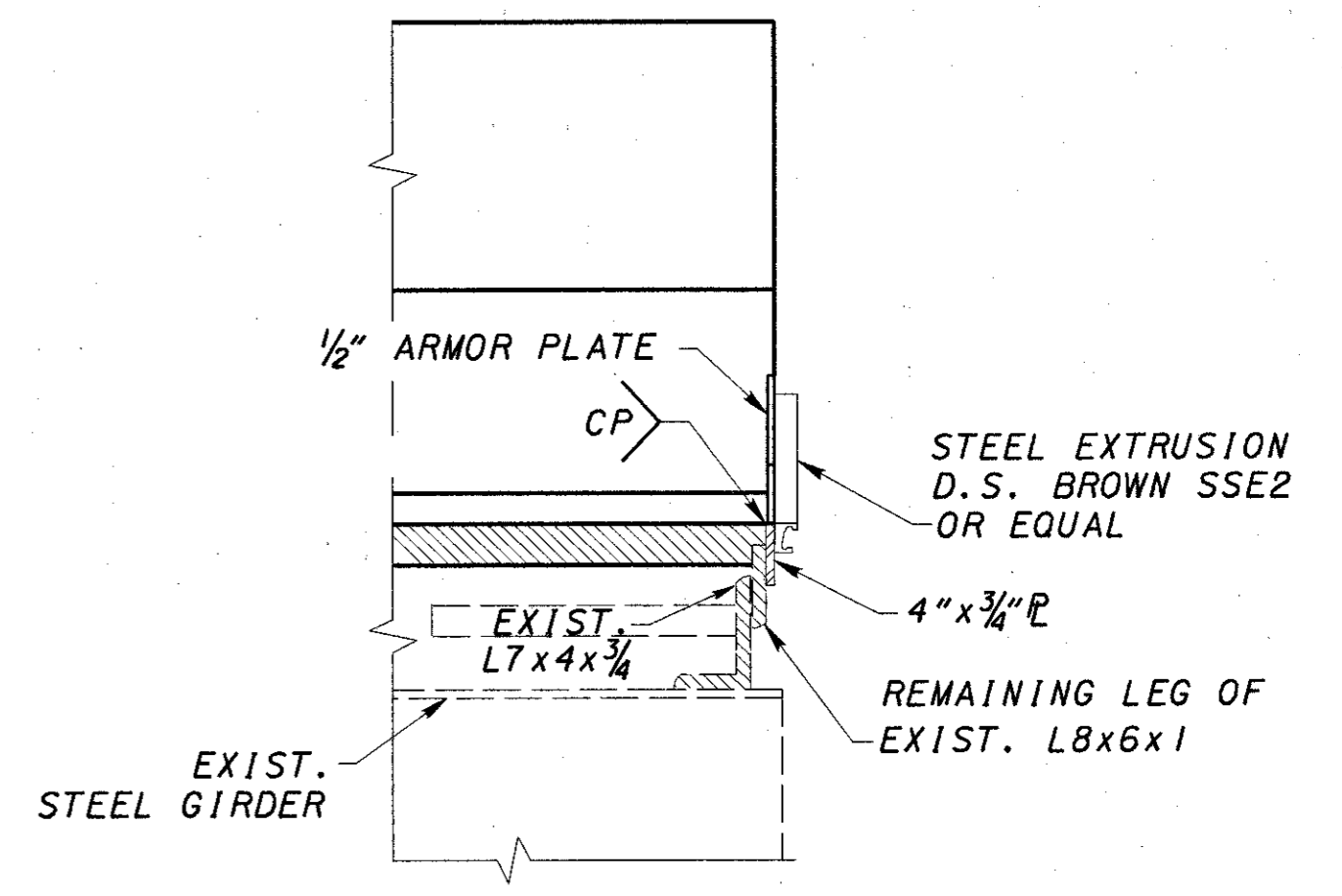
3" STRIP SEAL GLAND

TEMPERATURE (F)	DIMENSION "A"
30°	1 7/8"
40°	1 11/16"
50°	1 11/16"
60°	1 5/8"
70°	1 9/16"
80°	1 7/16"
90°	1 3/8"

EXPANSION LENGTH = 103'-0" ±

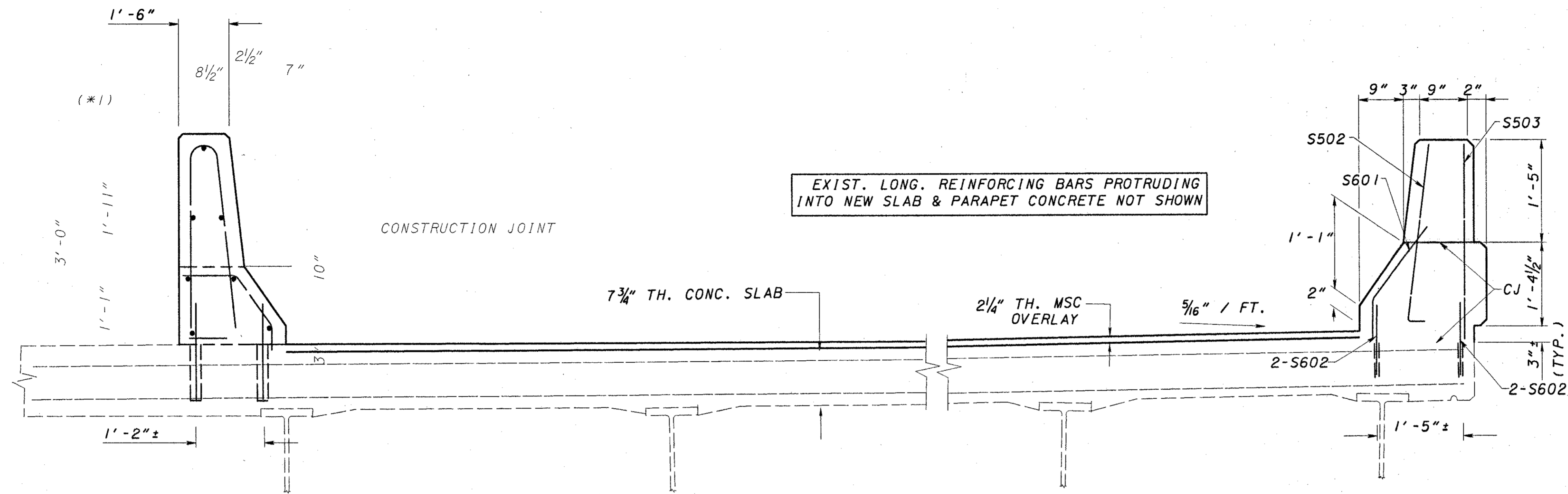


SECTION B-B



SECTION A8-A8

DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 PH: (614) 224-1941  
 DATE: 7/2001  
 REVIEWED: GEA  
 DRAWN: JEP  
 DESIGNED: JEP  
 CHECKED: ASB  
 STRUCTURE FILE NUMBER: 3106659  
 REAR ABUTMENT EXPANSION JOINT DETAILS  
 RAMP GF (BRIDGE NO. HAM-71-0192 W)  
 HAM-471-0.26  
 90/106  
 122  
 182



(\*1) FOR RESTEEL DETAILS, SEE SHEET 1157182

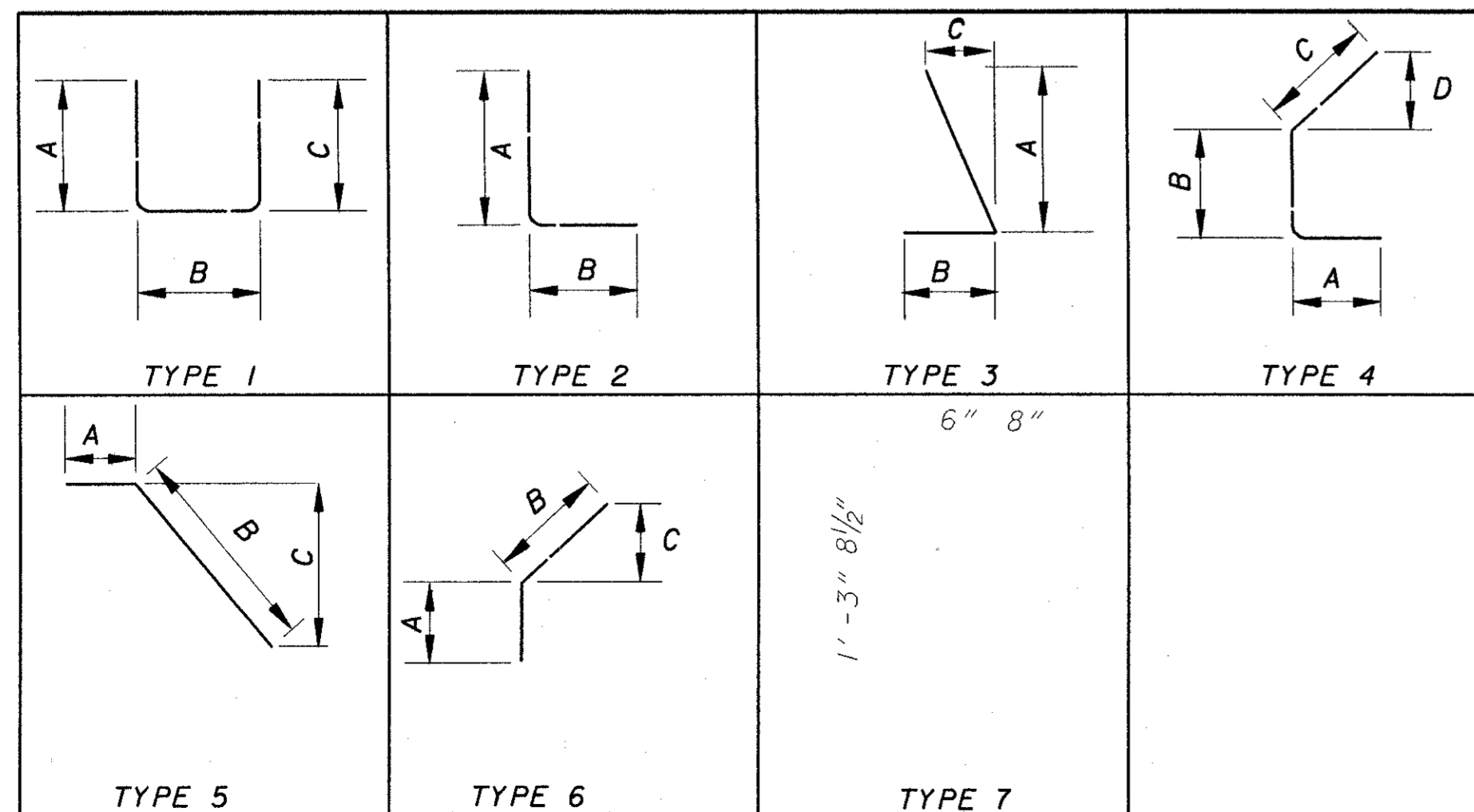
SECTION A6-A6

REINFORCING STEEL LIST

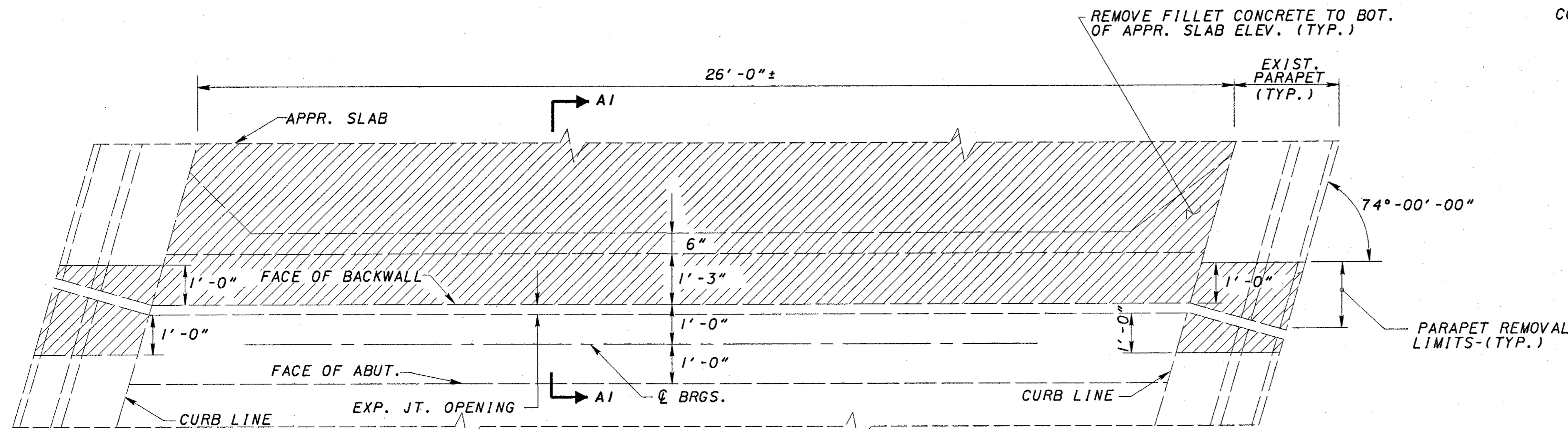
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
SUPERSTRUCTURE									
S502	2	3'-2"		3	2'-6"	10"	2"		
S503	2	2'-6"		STR					
S601	2	3'-0"		6	4"	1'-6"	1'-2"		
S602	4	1'-6"		STR					

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
ABUTMENT									
A501	2	2'-10"		STR					
A502	2	3'-2"		3	2'-10"	10"	5"		
A601	6	34'-5"		STR.					
A602	134	2'-0"		STR.					
A603	65	3'-0"		1	1'-2"	11"	1'-2"		
A604	2	1'-10"		6	4"	1'-6"	1'-2"		
A605	3	5'-10"		STR.					
A606	4	3'-0"		STR.					
A607	2	2'-8"		7					
D801	44	4'-3"		5	2'-0"	2'-3"	1'-11"		

BENDING DIAGRAMS

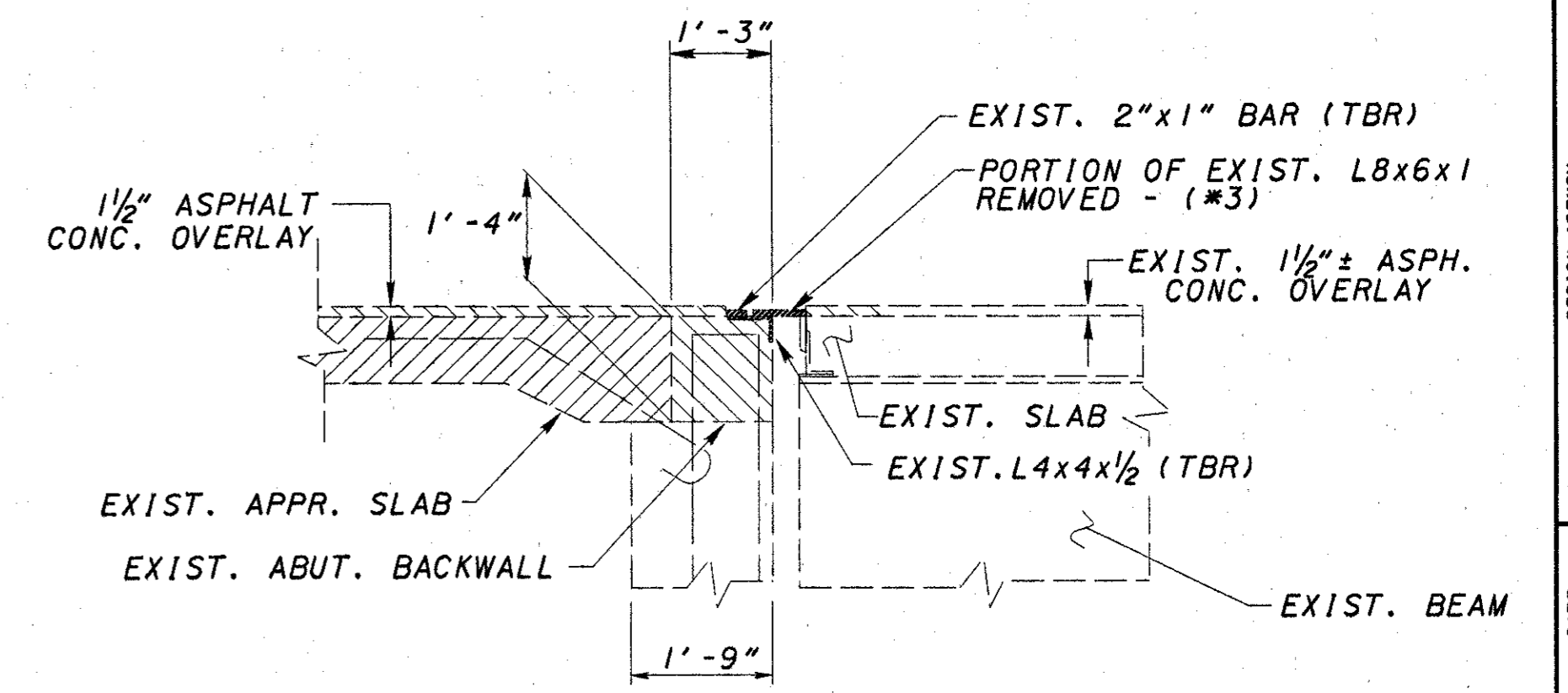


DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 PH: (614) 224-1941  
 DATE: 6/2001  
 REVIEWED: GEA  
 STRUCTURE FILE NUMBER: 3106659  
 DRAWN: JEP  
 CHECKED: ASB  
 REAR ABUTMENT EXPANSION JOINT DETAILS  
 RAMP GF (BRIDGE NO. HAM-71-0192 W)  
 HAM-471-0.26  
 9/1/06  
 123  
 182



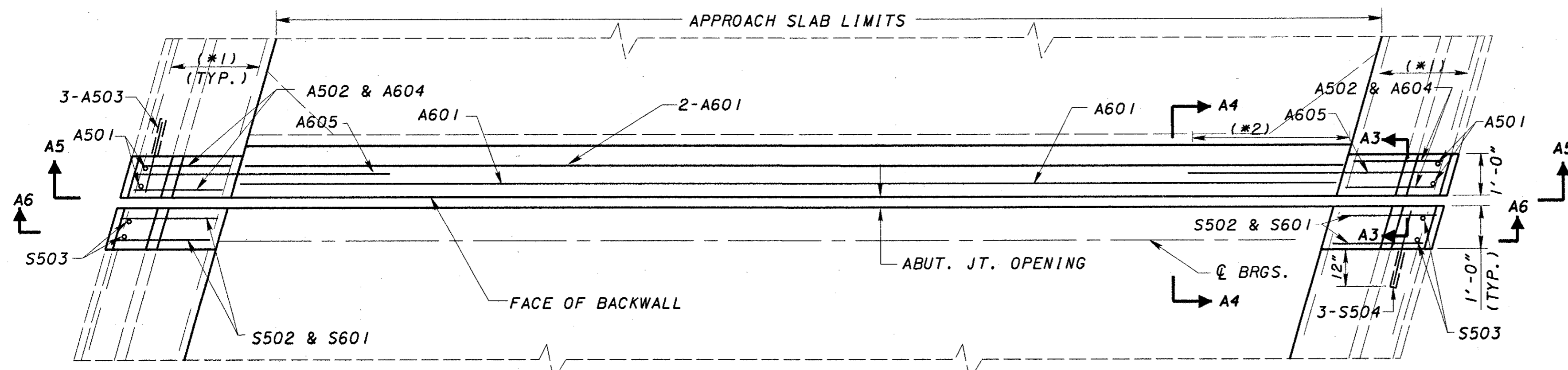
EXISTING ABUTMENT, DECK SLAB, PARAPET & APPROACH SLAB REMOVAL PLAN

PRESERVE ALL LONG. REINFORCING BARS IN PARAPETS & DECK SLAB



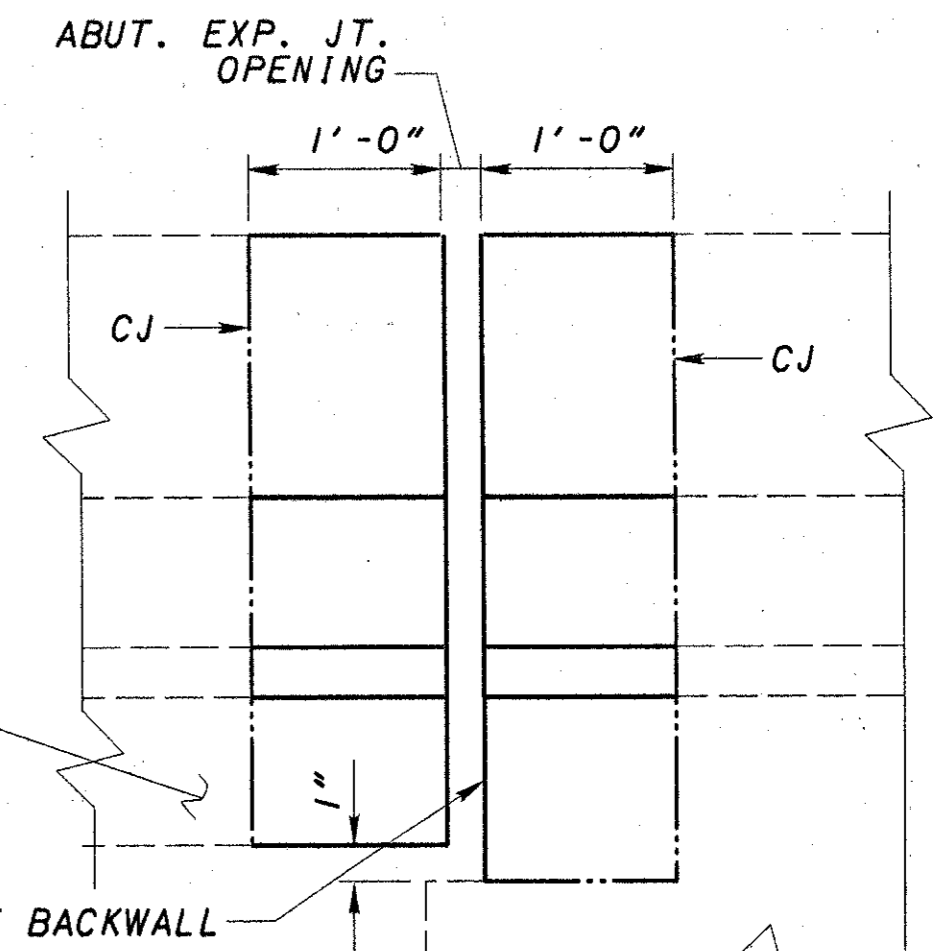
SECTION A1-A1

(\*3) REMOVE TOP PORTION OF ANGLE FLUSH WITH ORIGINAL CONCRETE DECK SLAB

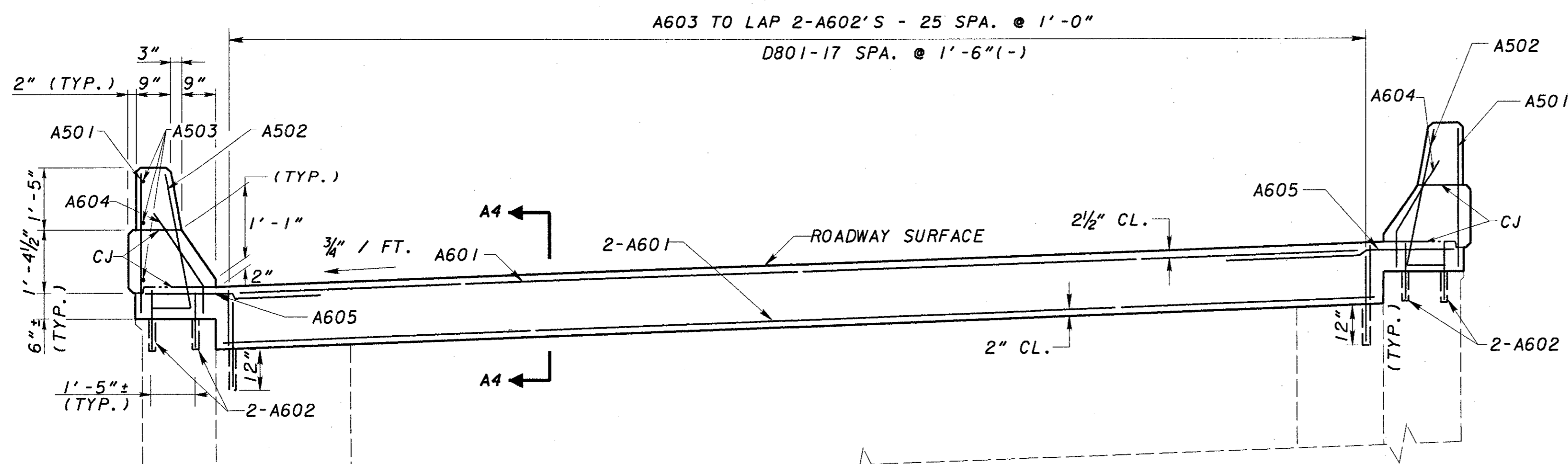


MODIFIED ABUTMENT, DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

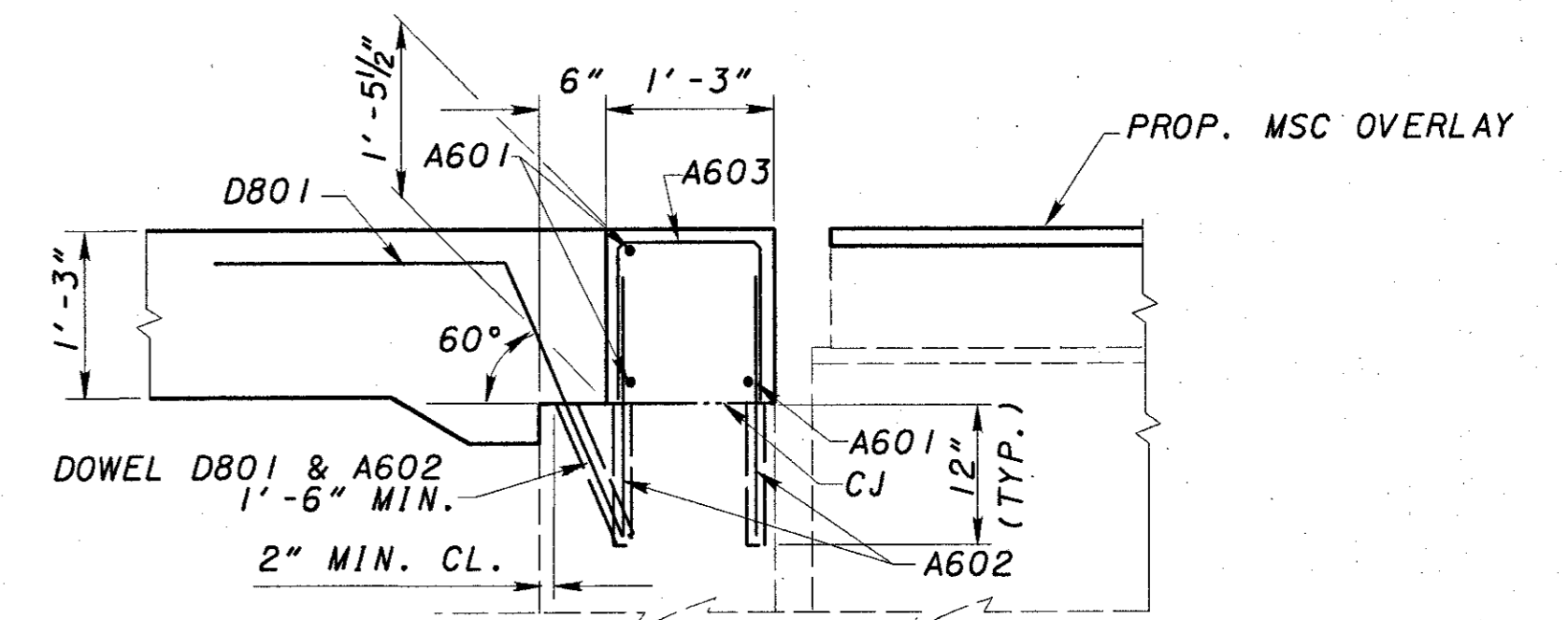
- (\*1) EXIST. LONG. BARS TO REMAIN IN PARAPET
- (\*2) LAP LENGTHS
  - #5 BAR-2'-9"
  - #6 BAR-3'-3"



SECTION A3-A3



SECTION A5-A5



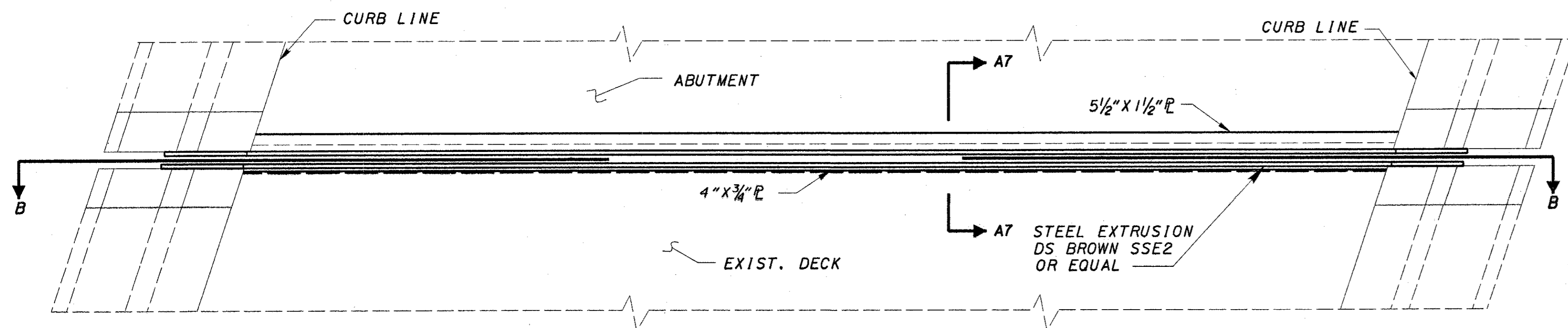
SECTION A4-A4

ALTERNATE TO BACKWALL CONSTRUCTION  
 PLANS SHOW THE PORTIONS OF BACKWALL REMOVAL BY SAWCUTTING AT APPROACH SLAB SEAL LEVEL (SECTION A1-A1) AND RECONSTRUCTING THE BACKWALL BY DOWELLING INTO THE REMAINING EXISTING BACKWALL AS PER THE DETAILS OF SECTION A4-A4. AS AN ALTERNATE TO DOWELLING IN NEW BARS, THE CONTRACTOR MAY CHOOSE TO PRESERVE THE EXIST. BARS (RUNNING THROUGH THE CONSTRUCTION JOINT) DURING THE REMOVAL OF THE BACKWALL CONCRETE. ANY BAR DAMAGED DURING THE CONCRETE REMOVAL SHALL BE REPLACED BY NEW BARS AS DETAILED IN SECTION A4-A4.

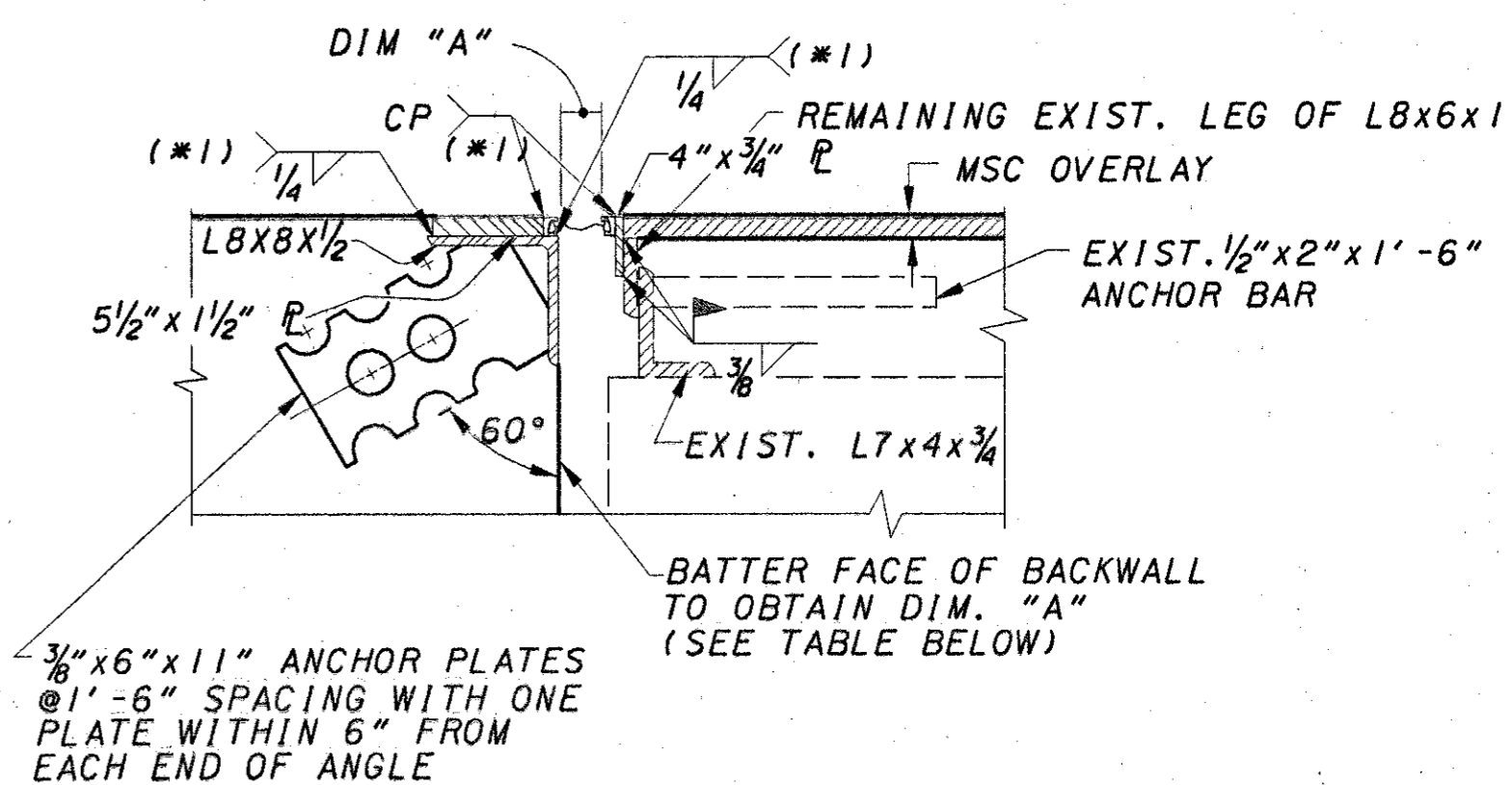
LEGEND

- CONCRETE REMOVAL

DESIGN AGENCY: BARR ENGINEERING, Five East Long Street, Columbus, Ohio 43215, Ph: (614) 224-1941  
 DATE: 7/2001  
 REVIEWED: KVB  
 DRAWN: JEP  
 CHECKED: ASB  
 STRUCTURE FILE NUMBER: 3100790  
 REAR ABUTMENT EXPANSION JOINT DETAILS  
 RAMP GF (BRIDGE NO. HAM-71-0192N)  
 HAM 471-0.26  
 92/106  
 124/182



ABUTMENT EXPANSION JOINT



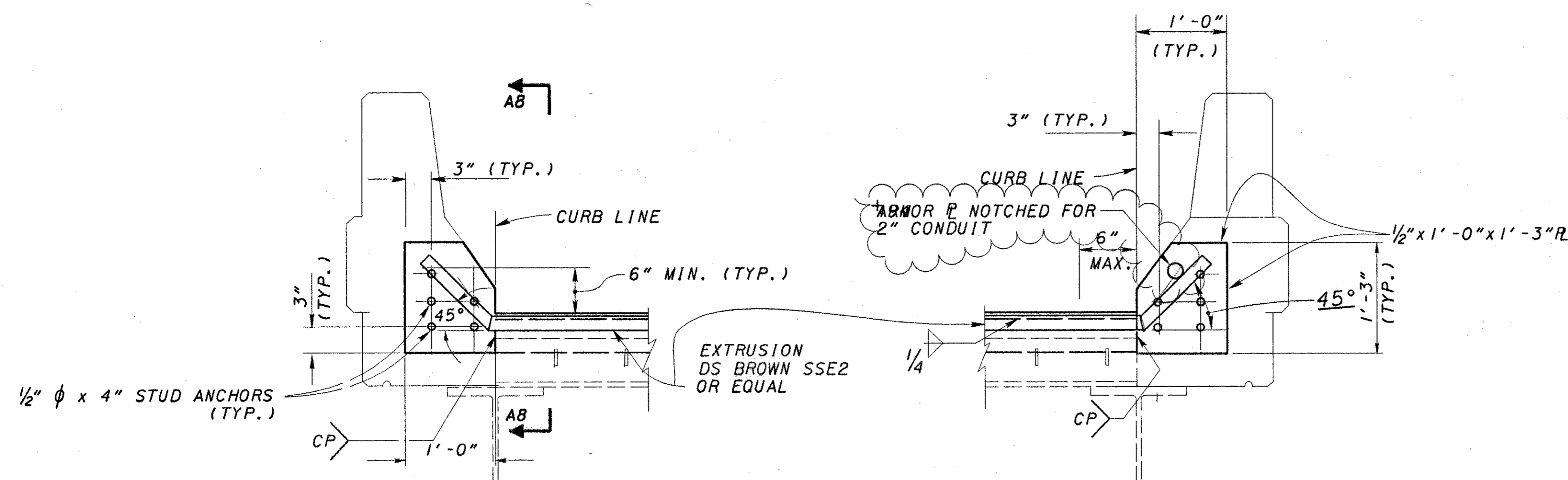
SECTION A7-A7

(\*1) - SHOP WELD AND PROVIDE 1/4" MIN. SETBACK DIMENSION FROM EDGE OF L8x8x 1/2.

4" STRIP SEAL GLAND

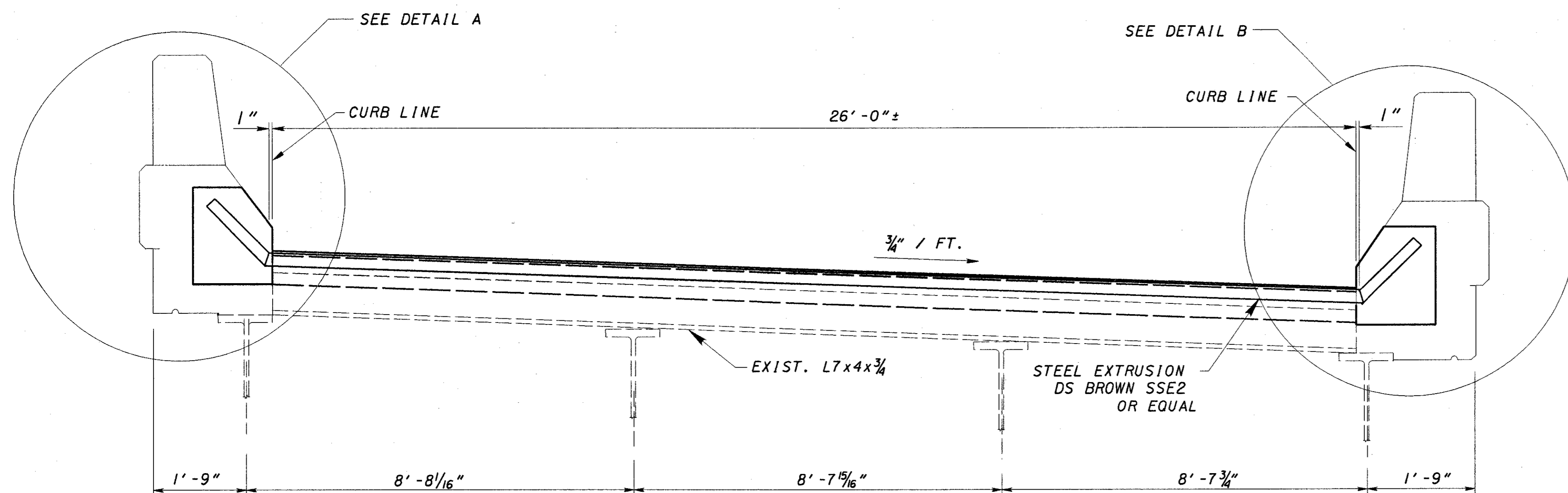
TEMPERATURE (F)	DIMENSION "A"
30°	2 1/2"
40°	2 3/8"
50°	2 1/4"
60°	2 1/16"
70°	1 3/4"
80°	1 1/2"
90°	1 3/16"

EXPANSION LENGTH = 271'-0"±

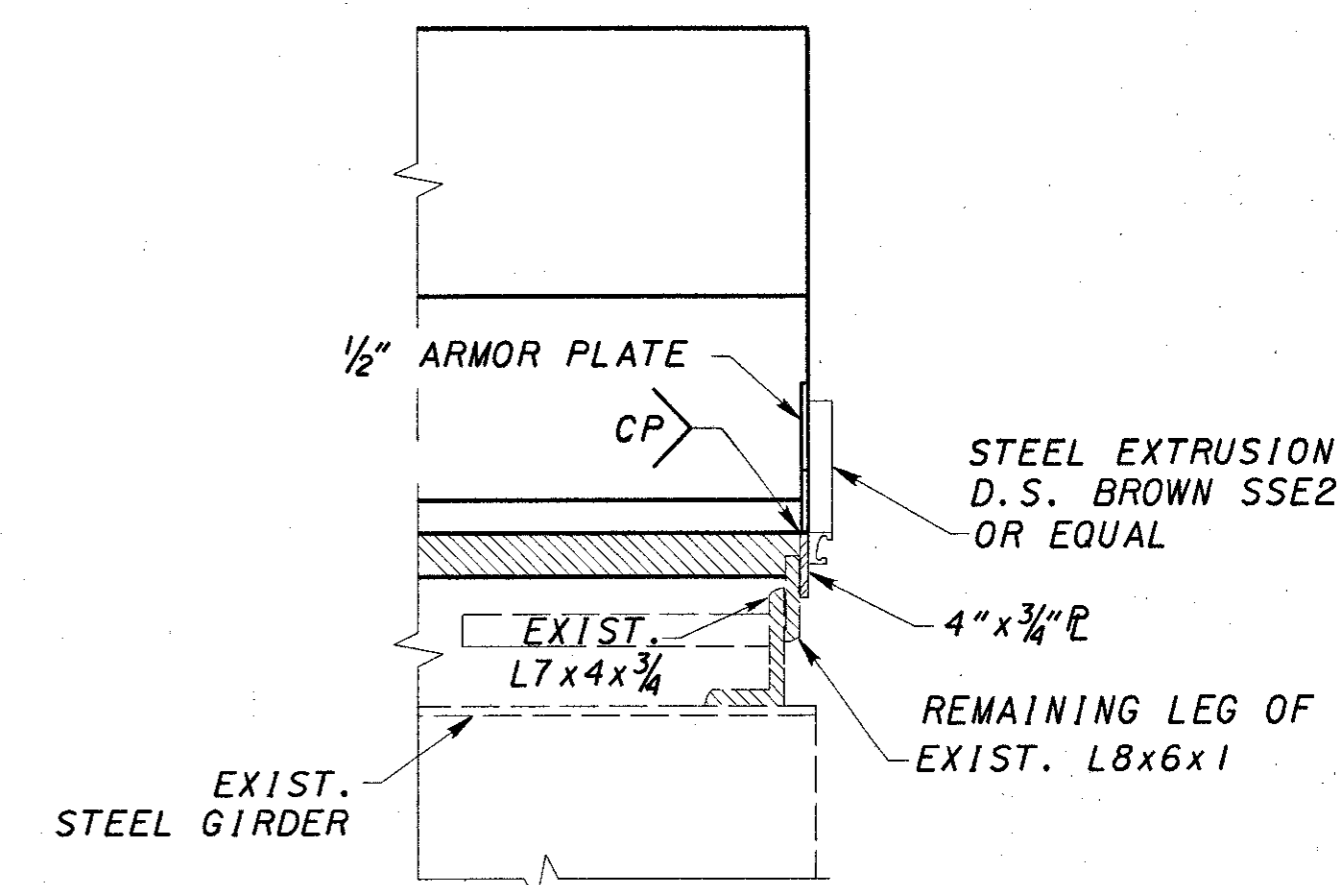


DETAIL A

DETAIL B



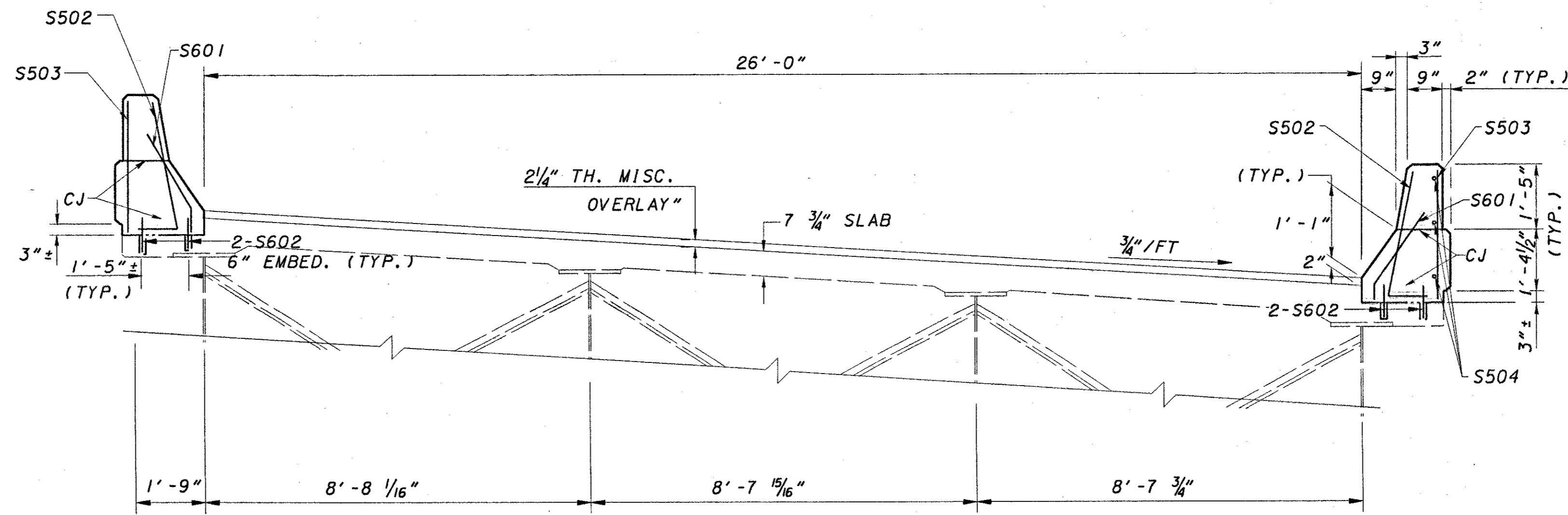
SECTION B-B



SECTION A8-A8

NOTES  
REFER TO STD. DWG. EXJ-4-87  
FOR DETAILS NOT SHOWN

DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 Ph: (614) 224-1941  
 DATE: 7/2001  
 REVIEWED: GEA  
 DRAWN: JEP  
 DESIGNED: JEP  
 CHECKED: ASB  
 STRUCTURE FILE NUMBER: 3100790  
 REAR ABUTMENT EXPANSION JOINT DETAILS  
 RAMP GF (BRIDGE NO. HAM-71-0192 N)  
 HAM 471-0.26  
 93/06  
 125  
 182



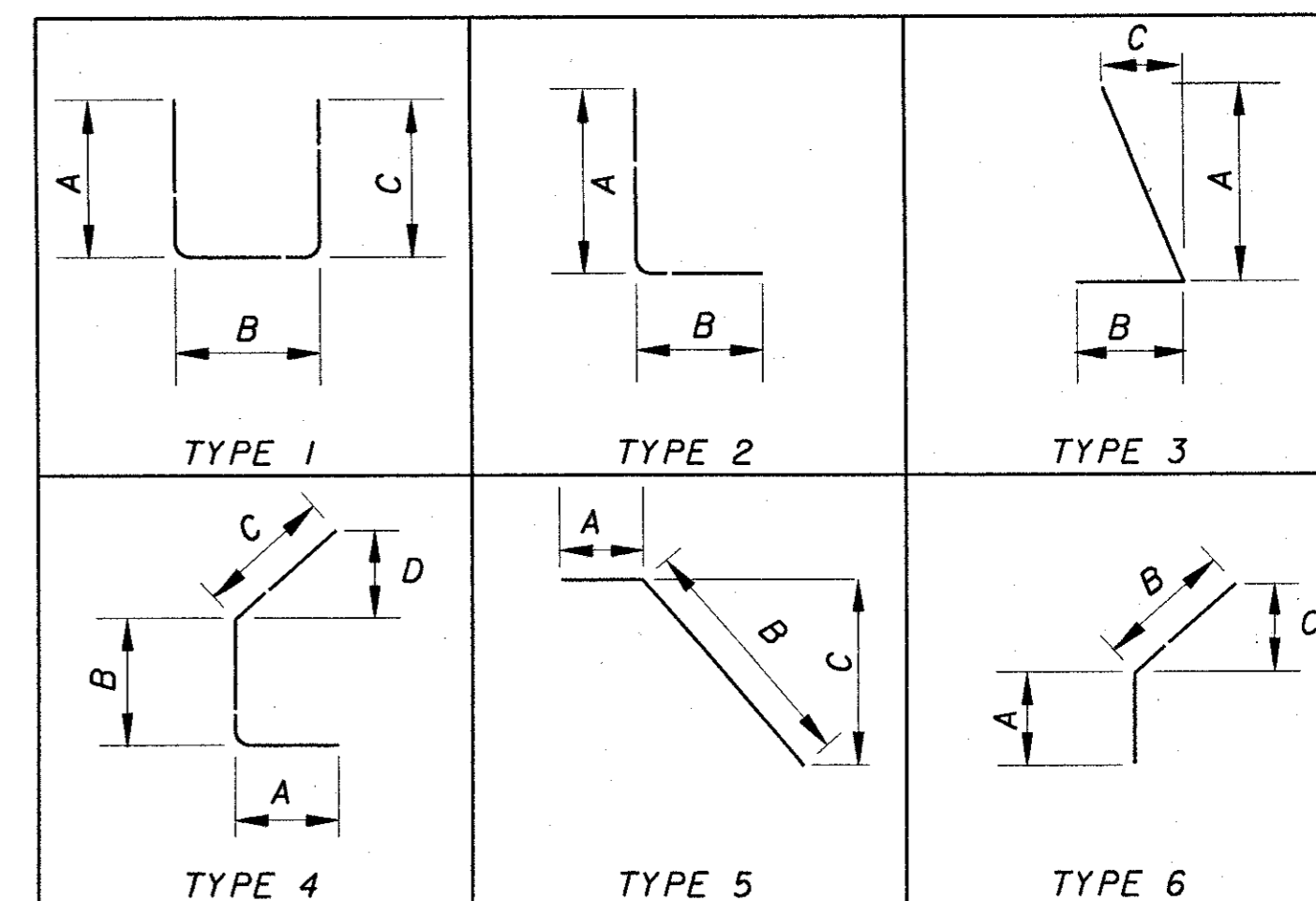
SECTION A6-A6

REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
ABUTMENT									
A501	4	2'-10"		STR					
A502	4	3'-2"		3	2'-10"	10"	5"		
A503	3	1'-10"		STR					
A601	3	25'-6"		STR					
A602	60	2'-0"		STR					
A603	26	3'-0"		1	1'-2"	11"	1'-2"		
A604	4	1'-10"		6	4"	1'-6"	1'-2"		
A605	2	5'-10"		STR					
D801	18	4'-3"		5	2'-0"	2'-3"	1'-11"		

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
SUPERSTRUCTURE									
S502	4	3'-2"		3	2'-6"	10"	2"		
S503	4	2'-6"		STR					
S504	3	1'-10"		STR					
S601	4	1'-10"		6	4"	1'-6"	1'-2"		
S602	8	1'-6"		STR					

BENDING DIAGRAMS



DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

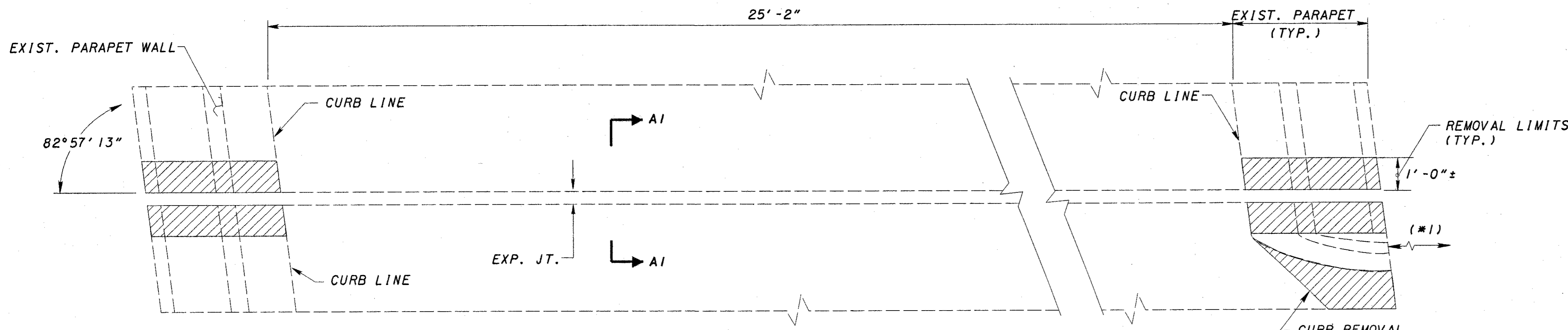
DATE 8/2001  
REVIEWED GEA  
DRAWN JEP  
DESIGNED JEP  
CHECKED ASB  
STRUCTURE FILE NUMBER 3100790

REAR ABUTMENT EXPANSION JOINT DETAILS  
RAMP GF (BRIDGE NO. HAM-71-0192 N)

HAM-471-0.26

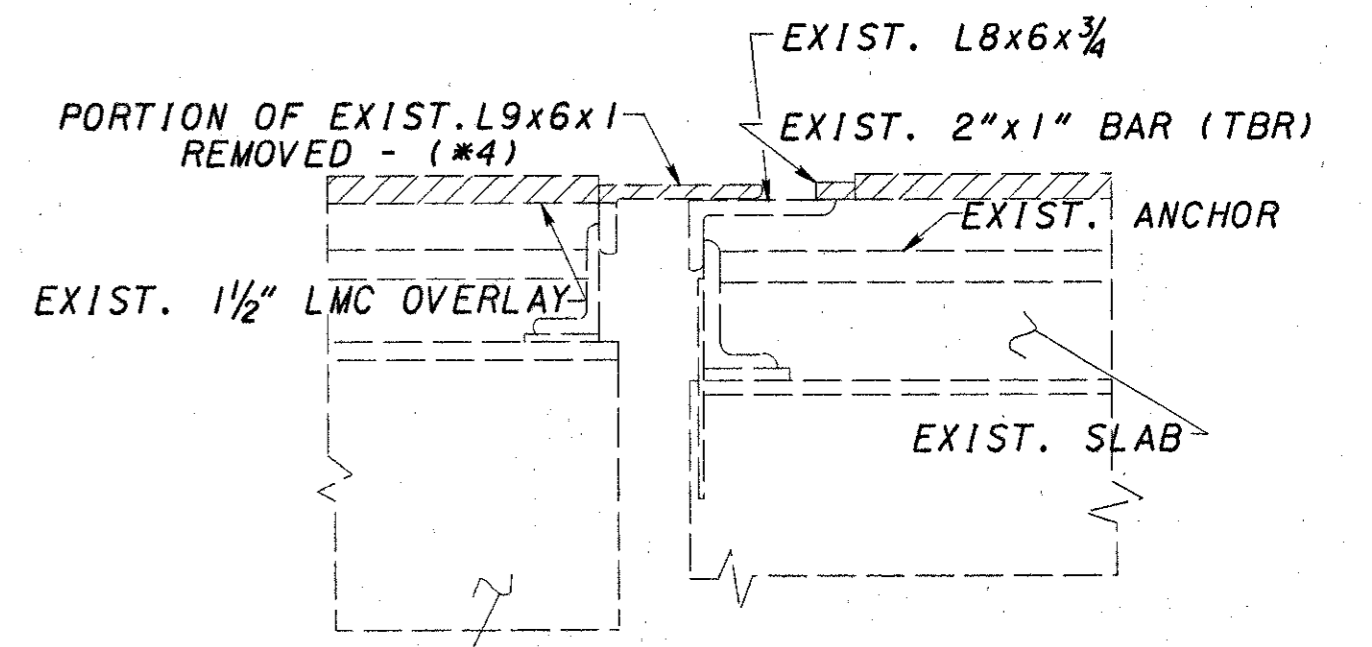
94/106

126  
182



PRESERVE ALL LONG. REINFORCING BARS IN PARAPETS & DECK SLAB REMOVAL AREAS

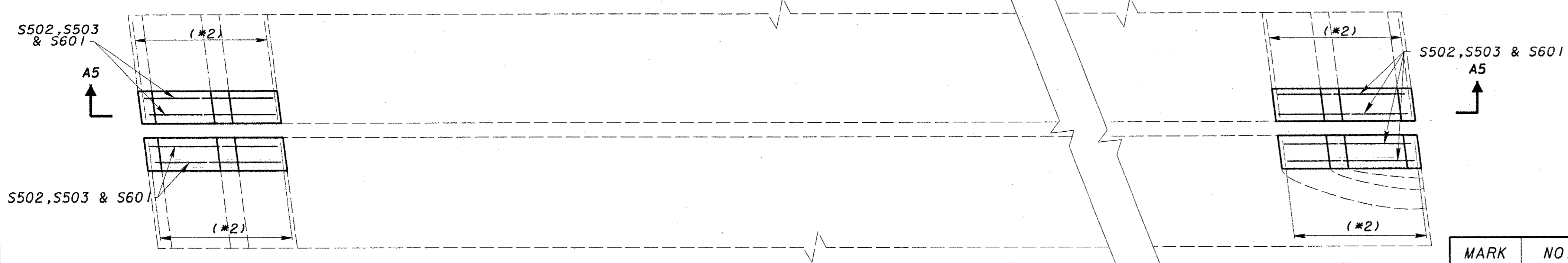
EXISTING DECK SLAB, PARAPET & MEDIAN REMOVAL PLAN



SECTION A1-A1

(\*4) - REMOVE TOP PORTION OF ANGLE FLUSH WITH ORIGINAL CONCRETE DECK SLAB

(\*1) HAM-71-0192 W BRIDGE

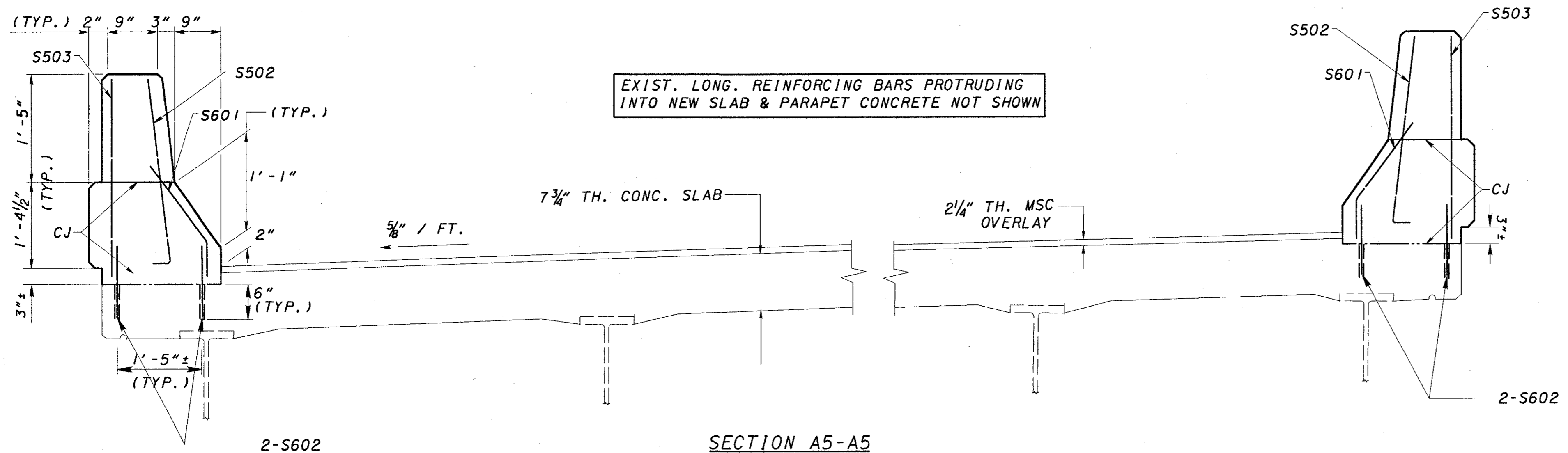


(\*2) EXIST. DECK SLAB & PARAPET LONG. BARS PROTRUDE INTO NEW CONCRETE AREA

(\*3) LAP LENGTHS #5 BAR=2'-9"

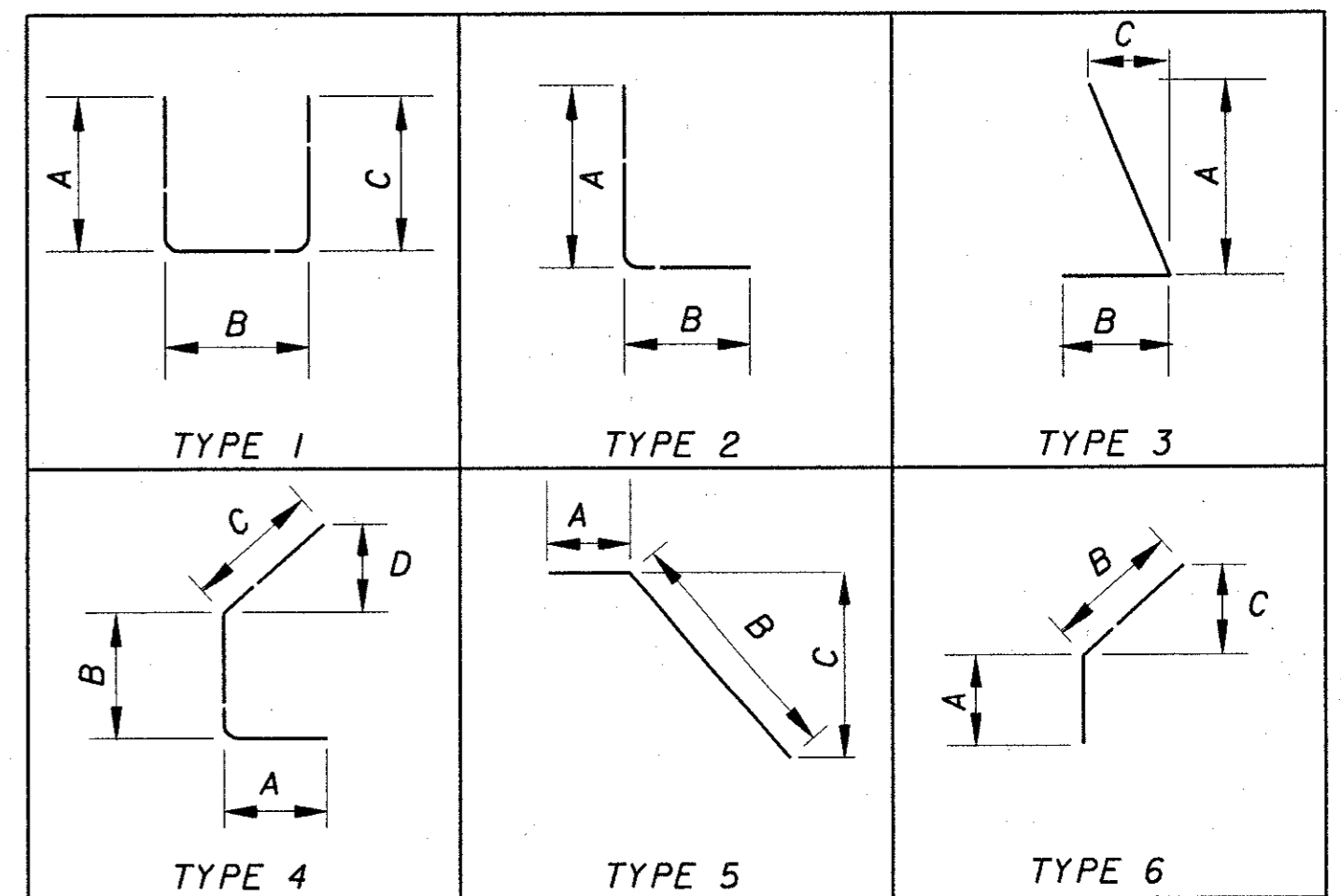
MODIFIED DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
S502	8	3'-2"		3	2'-6"	10"	2"		
S503	8	2'-6"		STR					
S601	8	1'-10"		6	4"	1'-6"	1'-2"		
S602	16	1'-6"		STR					



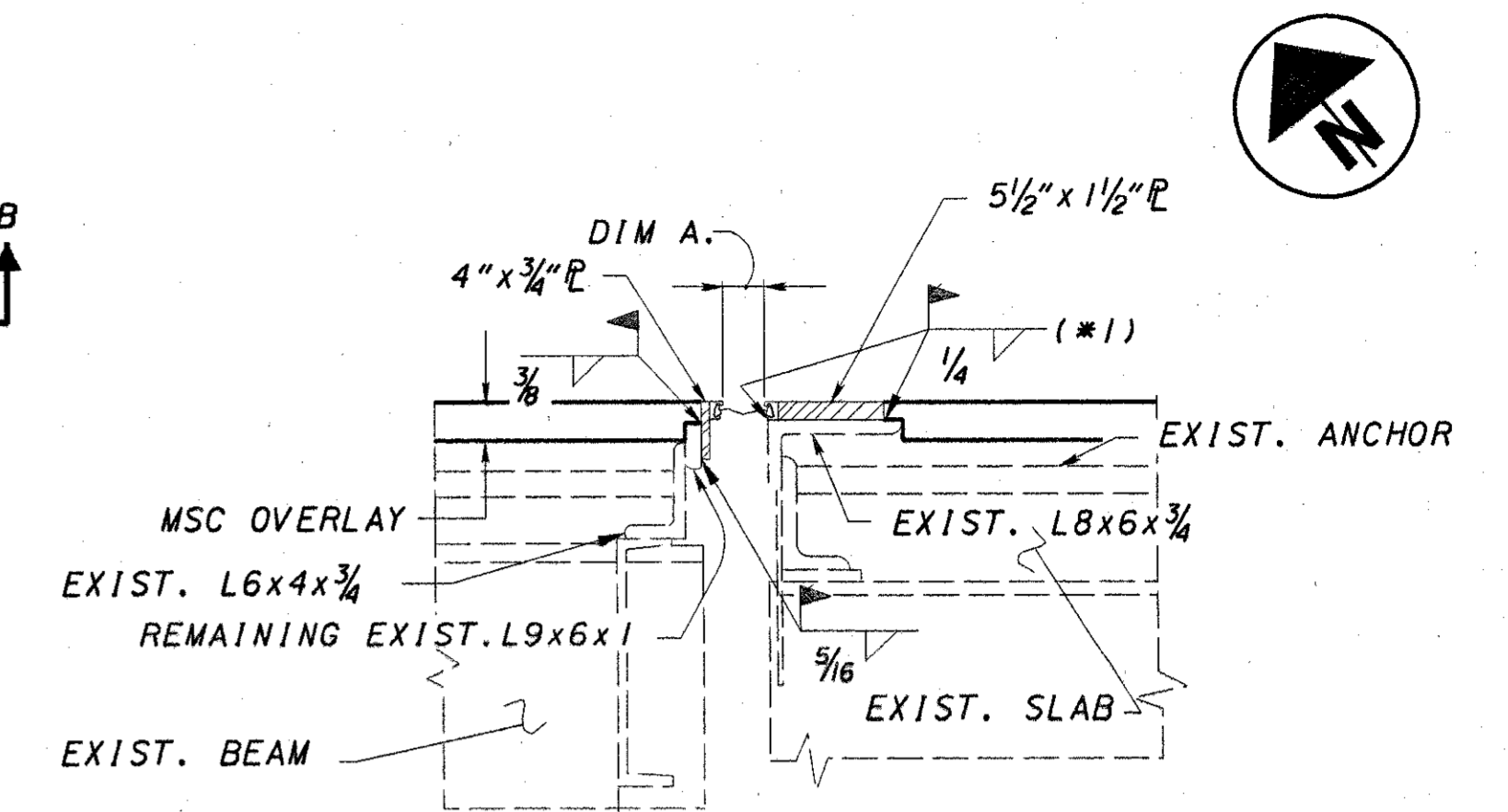
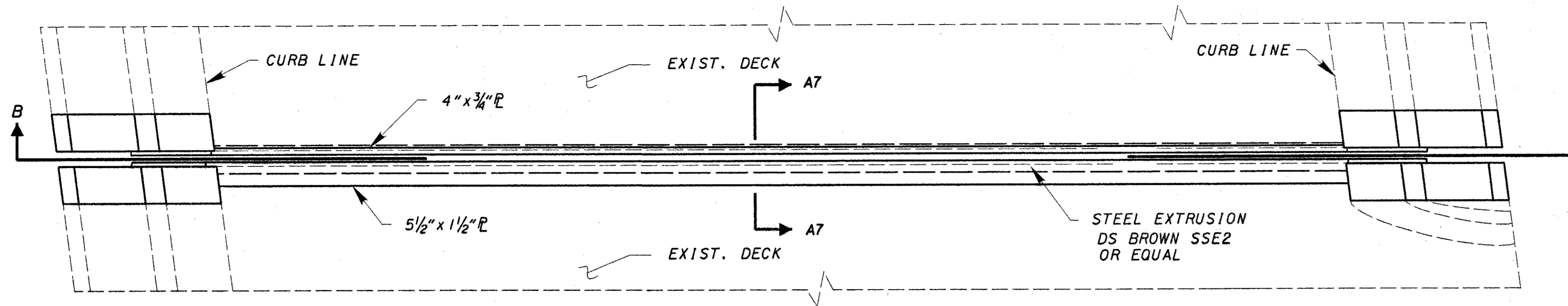
SECTION A5-A5

BENDING DIAGRAMS

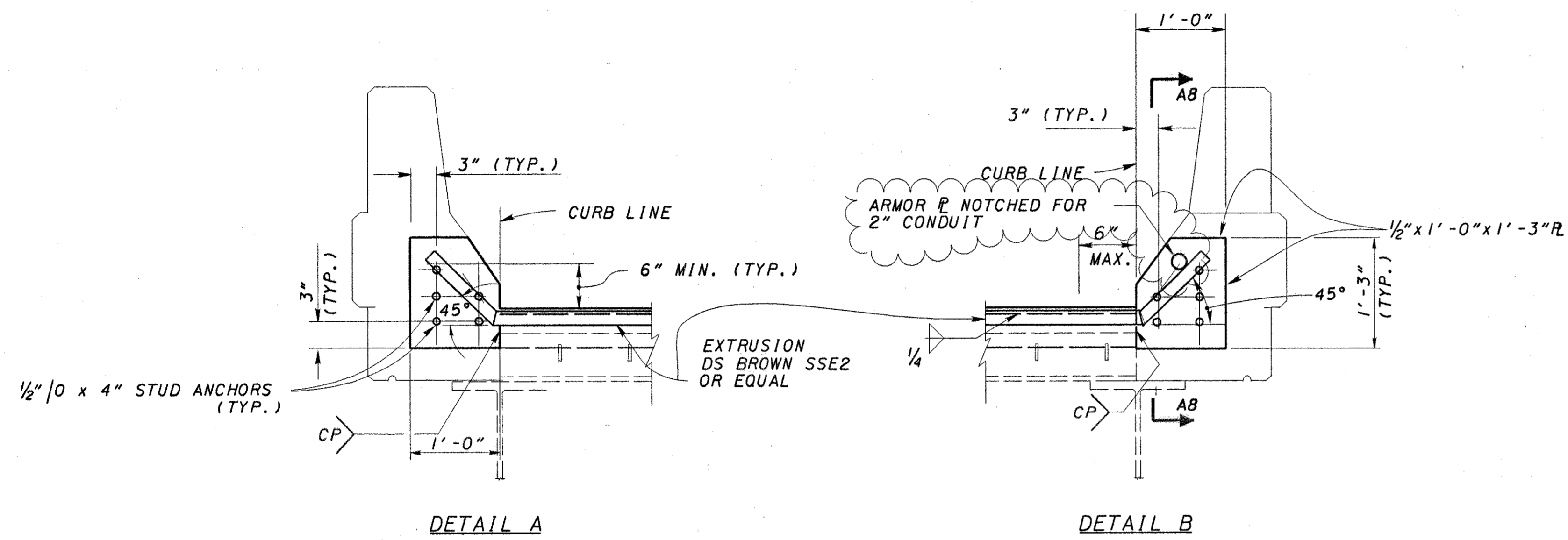


LEGEND

- CONCRETE REMOVAL



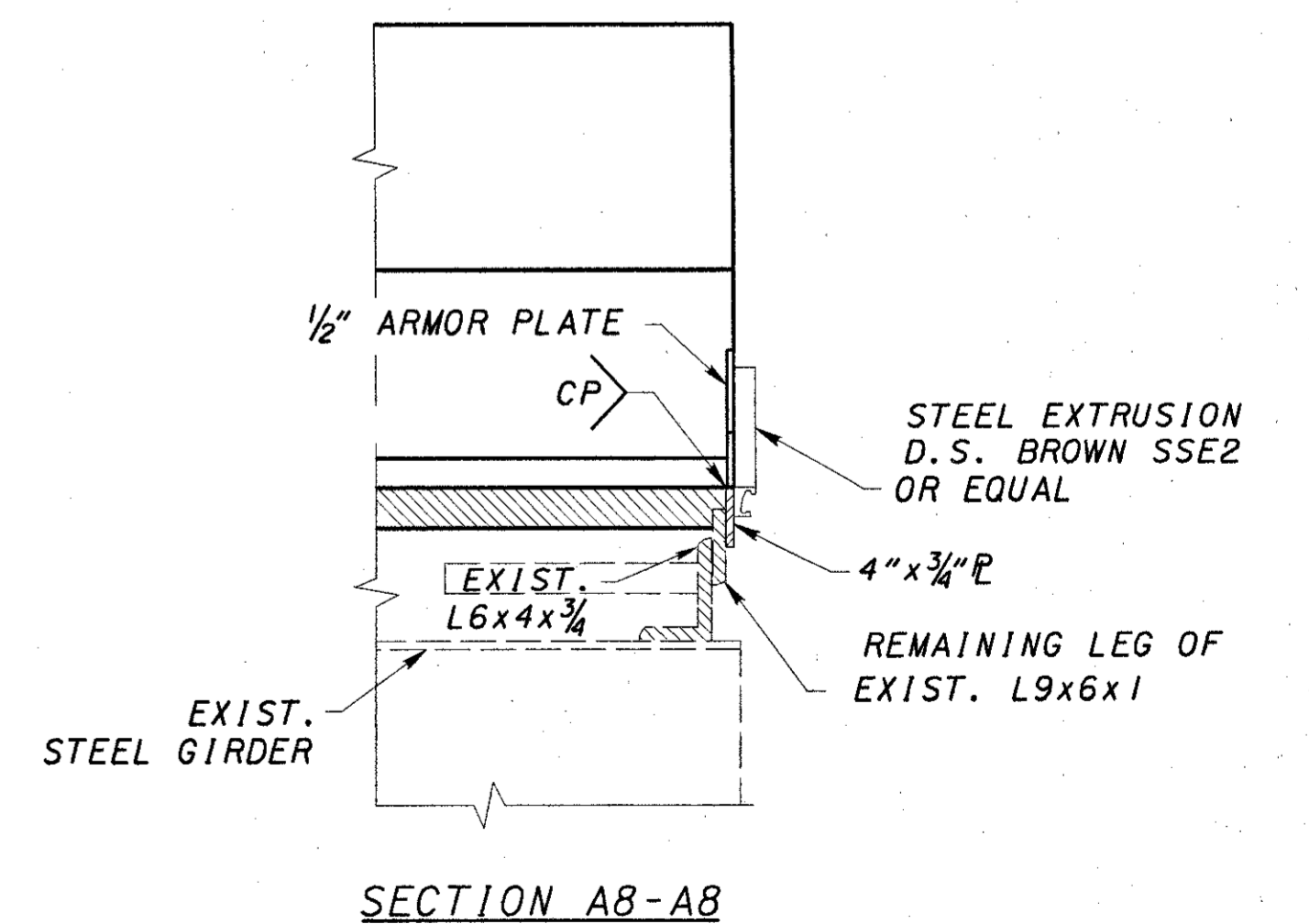
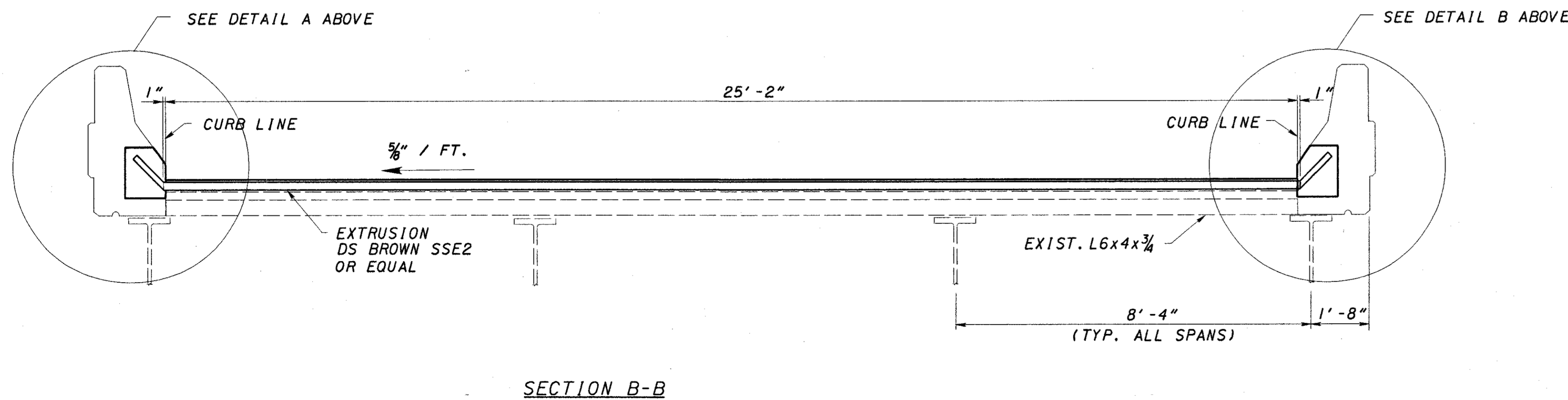
SECTION A7-A7  
 (\*1) - PROVIDE 1/4" MIN. SETBACK DIM. FROM OUTSIDE EDGES OF L8x6x3/4



5" STRIP SEAL GLAND

TEMPERATURE (F)	DIMENSION "A"
30°	3 3/16"
40°	2 7/8"
50°	2 5/8"
60°	2 5/16"
70°	2"
80°	1 3/4"
90°	1 1/16"

EXPANSION LENGTH = 378'-0" ±



DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 Ph: (614) 224-1941

DATE: 7/2001  
 REVIEWED: KVB  
 STRUCTURE FILE NUMBER: 3100790

DESIGNED: JEP  
 CHECKED: ASB

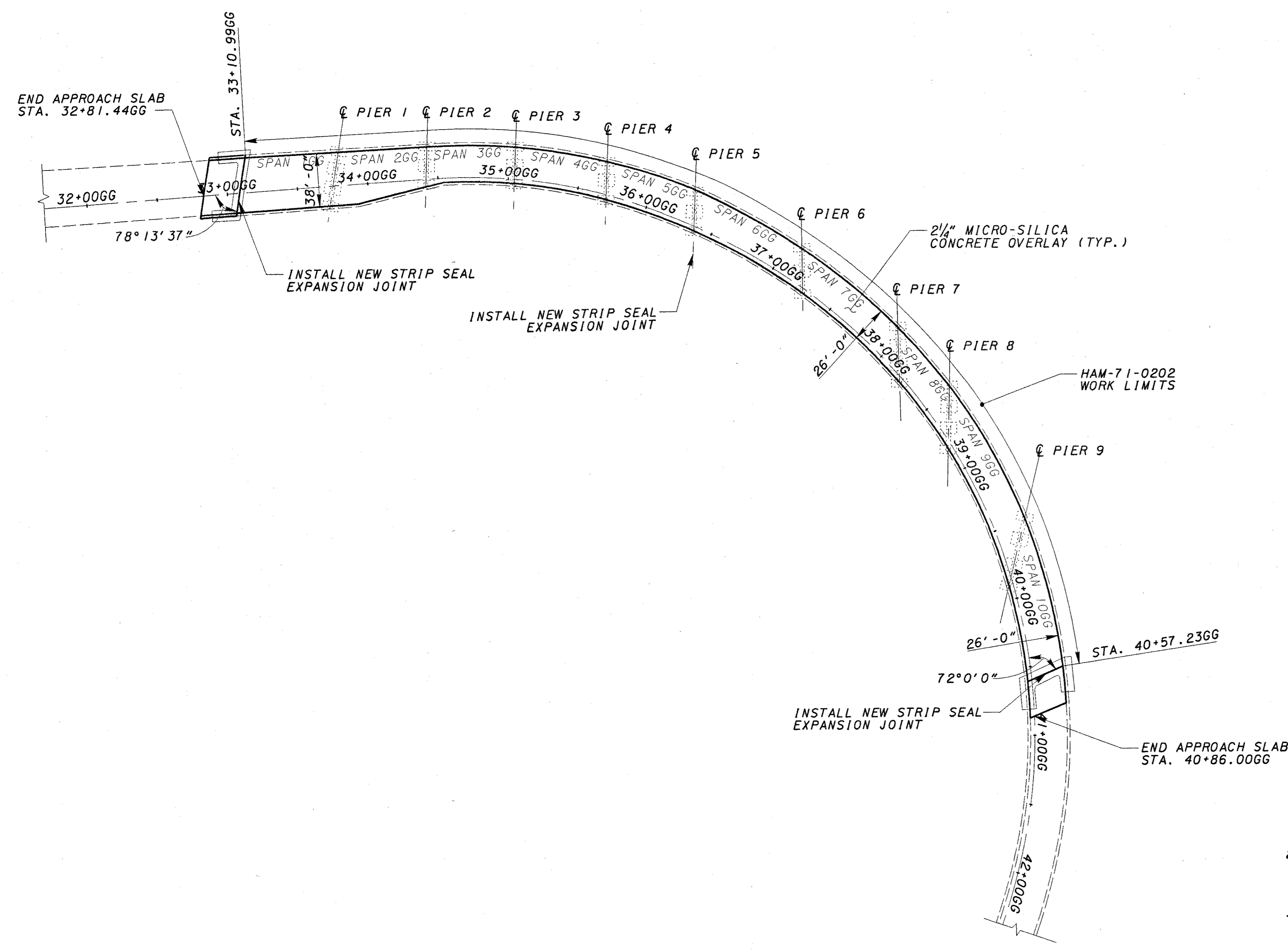
PIER 6 EXPANSION JOINT DETAILS  
 RAMP GF (BRIDGE NO. HAM-71-0192 N)

HAM-471-0.26

96/106

128  
182





**PROPOSED WORK: HAM-71-0202**

1. REMOVE EXISTING 1 1/2" ± ASPHALT CONCRETE OVERLAY AND 3/4" OF ORIGINAL DECK USING HYDRO DEMOLITION AND OVERLAY WITH 2 1/4" THICK MICRO-SILICA CONCRETE.
2. REMOVE AND REPLACE FULL WIDTH APPROACH SLABS AND INSTALL TYPE A PRESSURE RELIEF AT BOTH APPROACHES.
3. MODIFY DOWN SPOUTS, CLEAN AND UNCLOG SCUPPERS
4. PAINT STEEL USING OZEU SYSTEM.
5. SEAL CONCRETE SURFACES AS DESCRIBED IN THE GENERAL NOTES.
6. REMOVE AND RECONSTRUCT FORWARD AND REAR ABUTMENT BACKWALL DOWN TO APPROACH SLAB SEAT AND INSTALL NEW STRIP SEAL JOINT.
7. REPLACE EXPANSION JOINT WITH A NEW STRIP SEAL AT PIER 5.
8. REMOVE GRAFFITI FROM FORWARD ABUTMENT AND BACKWALL.
9. REPLACE WARNING CHEVRONS AND REFLECTORS MOUNTED ON THE BRIDGE RAILING WITH NEW SIGNS

(IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN THE SEQUENTIAL ORDER LISTED.)

**CURVE DATA**

PI STA.	40+40.5466
PC STA.	34+44.5366
PT STA.	42+28.3066
Δ	112° - 15' - 58"
D	14° - 19' - 26"
R	400.00'
L	783.77'
T	596.01'

**EXISTING STRUCTURE**

TYPE: CONTINUOUS STEEL CURVED PLATE GIRDERS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE  
 SPANS: VARIES, SEE TABLE FOR SPAN LENGTHS  
 ROADWAY: 26'-0" F/F CURBS (SPAN 4 THRU 10) VARIES, FOR SPANS 1, 2, AND 3  
 SKEW: VARIES, (SEE PLAN)  
 LIVE LOADING: HS 20-44 AND THE ALTERNATE MILITARY LOADING  
 SURFACE COURSE: 1 1/2" ASPHALT SURFACE COURSE  
 APPROACH SLABS: AS-1-67 (25'-0" LONG)  
 ALIGNMENT: VARIES, (SEE PLAN)  
 SUPERELEVATION: VARIES, (SEE PLAN)

TABLE OF SPAN LENGTHS

SPAN	LENGTH
1	66.52'
2	66.26'
3	62.84'
4	66.03'
5	66.03'
6	88.86'
7	93.55'
8	58.42'
9	107.23'
10	75.00'

**PROPOSED STRUCTURE**

SAME AS EXISTING EXCEPT AS FOLLOWS:  
 APPROACH SLABS: AS-1-81  
 WEARING SURFACE: 2 1/4" MICRO-SILICA CONCRETE

# STRUCTURE GENERAL NOTES

**PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:**

**DESCRIPTION:**

THIS WORK SHALL CONSIST OF THE REMOVAL OF PORTIONS OF CONCRETE DECKS INCLUDING L.M.C. OVERLAY, SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.) CARE SHALL BE TAKEN DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

**PROTECTION OF TRAFFIC**

DURING THE REMOVAL OF ANY PART OF THE EXISTING SUPERSTRUCTURE THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT VEHICULAR AND PEDESTRIAN TRAFFIC ADJACENT TO AND/OR UNDER THE STRUCTURE. THESE PROVISIONS MAY INCLUDE THE USE OF ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

**PROTECTION OF STEEL SUPPORT SYSTEMS**

BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

**REMOVAL METHODS**

CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS ABOVE STEEL MEMBERS, A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS MAY BE USED AT THE APPROVAL OF THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND TO PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

**EXTRANEQUS MEMBERS**

EXISTING EXTRANEQUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ECT.) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE TOP FLANGES SHALL BE REMOVED AND THE FLANGE SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

**CUT LINE CONSTRUCTION JOINT PREPARATION:**

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEAN OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT ALL PACK AND LOOSE RUST SHALL BE REMOVED. EXISTING CONCRETE SURFACES AGAINST WHICH NEW CONCRETE WILL BE PLACED SHALL BE WET, BUT WITHOUT FREE WATER, AT THE TIME OF CONCRETE PLACEMENT.

**EXISTING STRUCTURE VERIFICATION**

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.02/863.07.

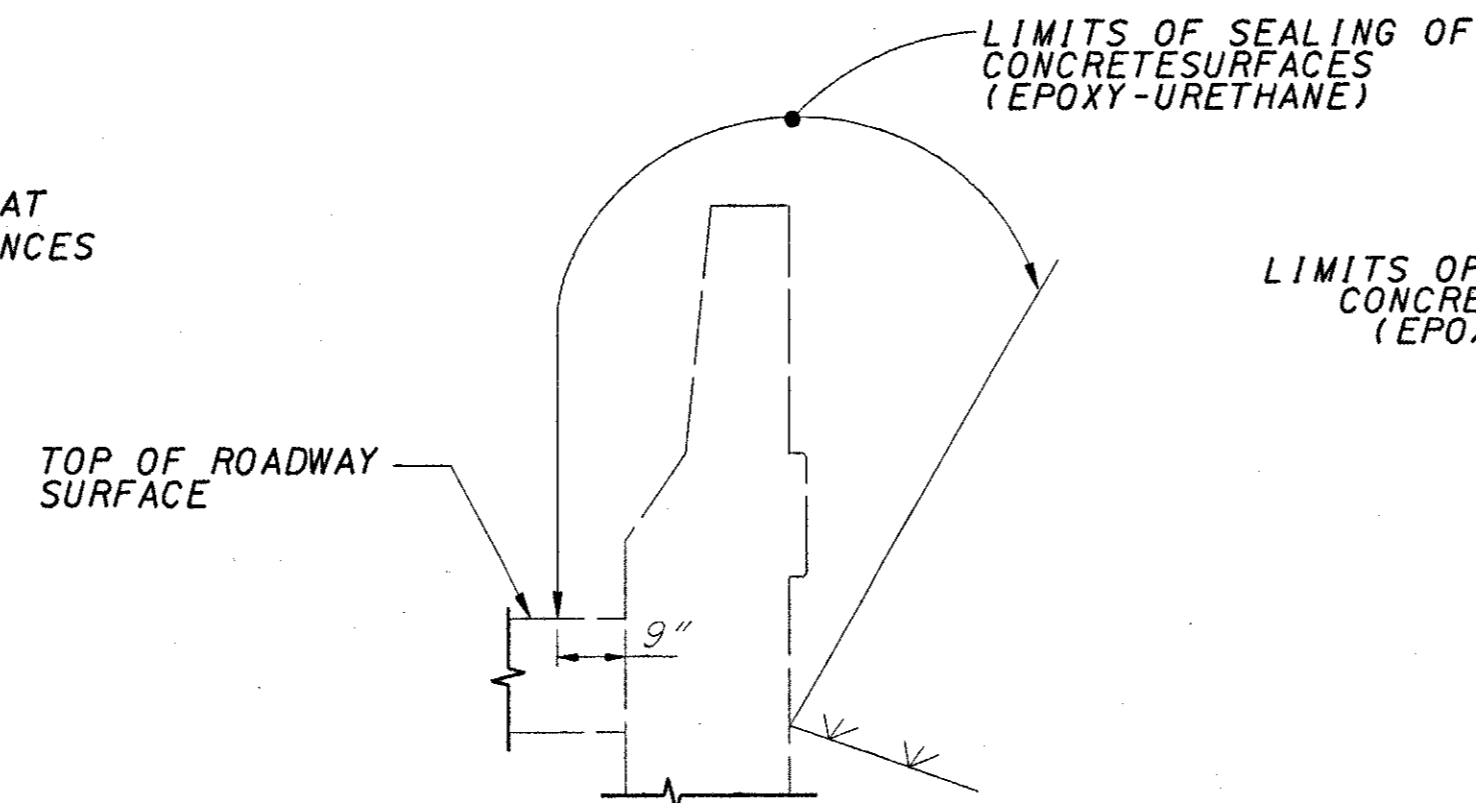
**BACKWALL CONCRETE**

IN ADDITION TO SS 842.08, BACKWALL ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.

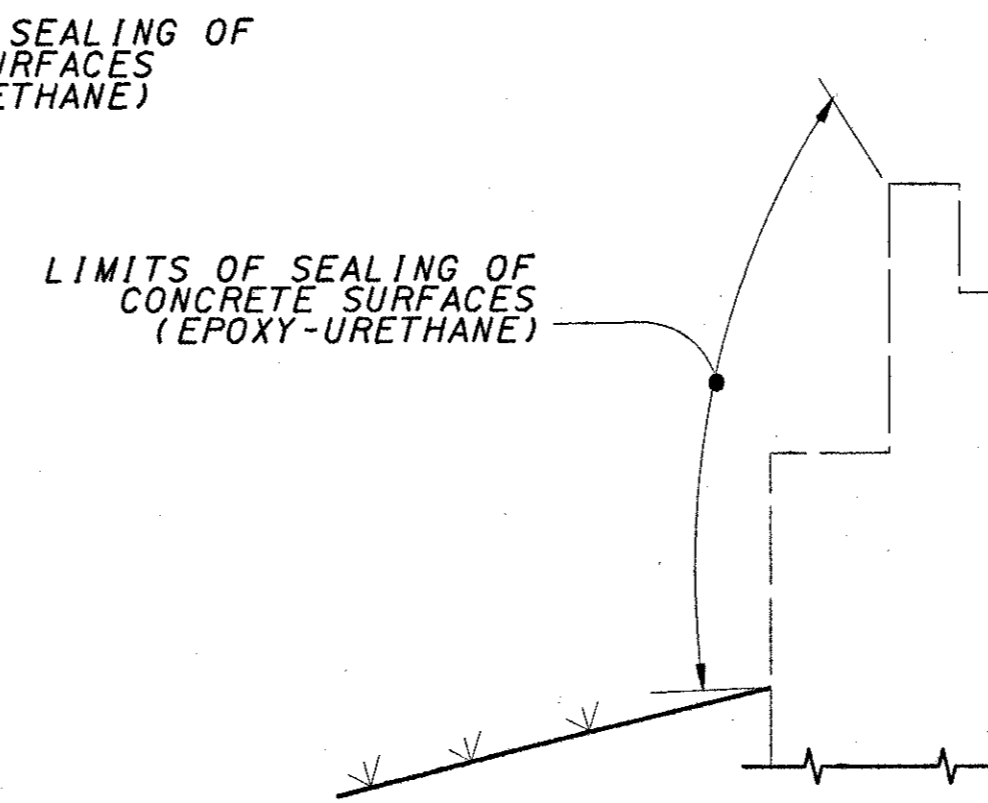
**SEALING OF CONCRETE SURFACES**

THE CONCRETE SURFACES SHOULD BE SEALED AS FOLLOWS:

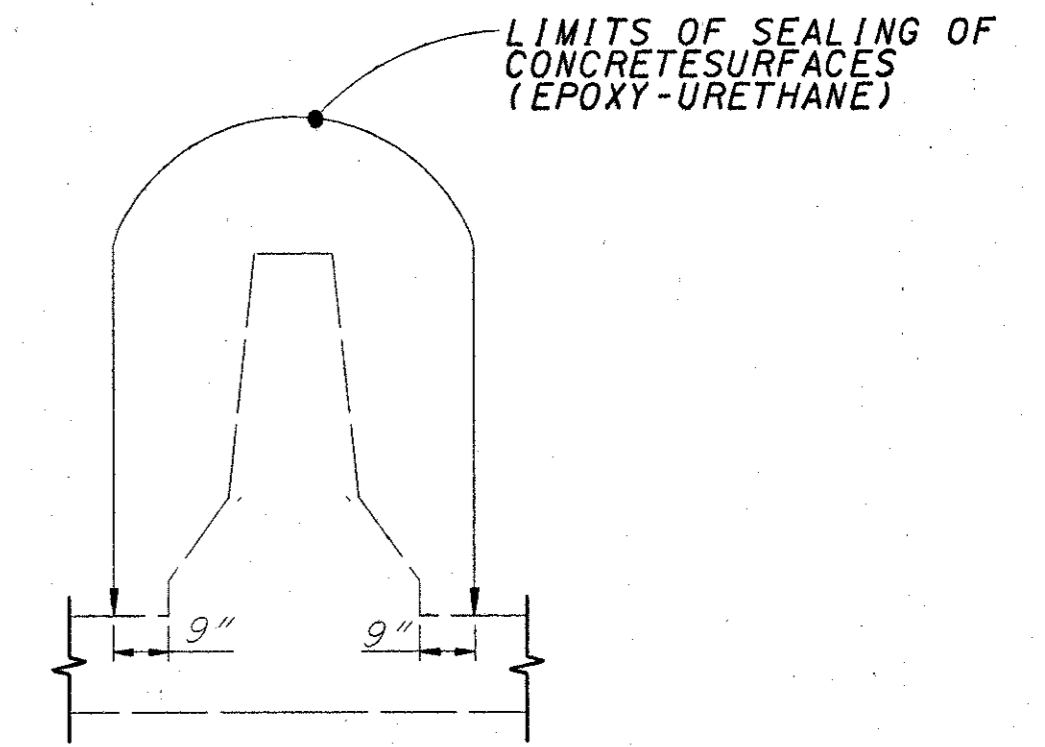
ABUTMENTS & WINGWALLS: ENTIRE LENGTH  
PIERS: ALL EXPOSED SURFACES EXCEPT THE TOP OF PIER CAP  
PARAPETS & MEDIAN BARRIERS: ENTIRE LENGTH OF THE BRIDGE



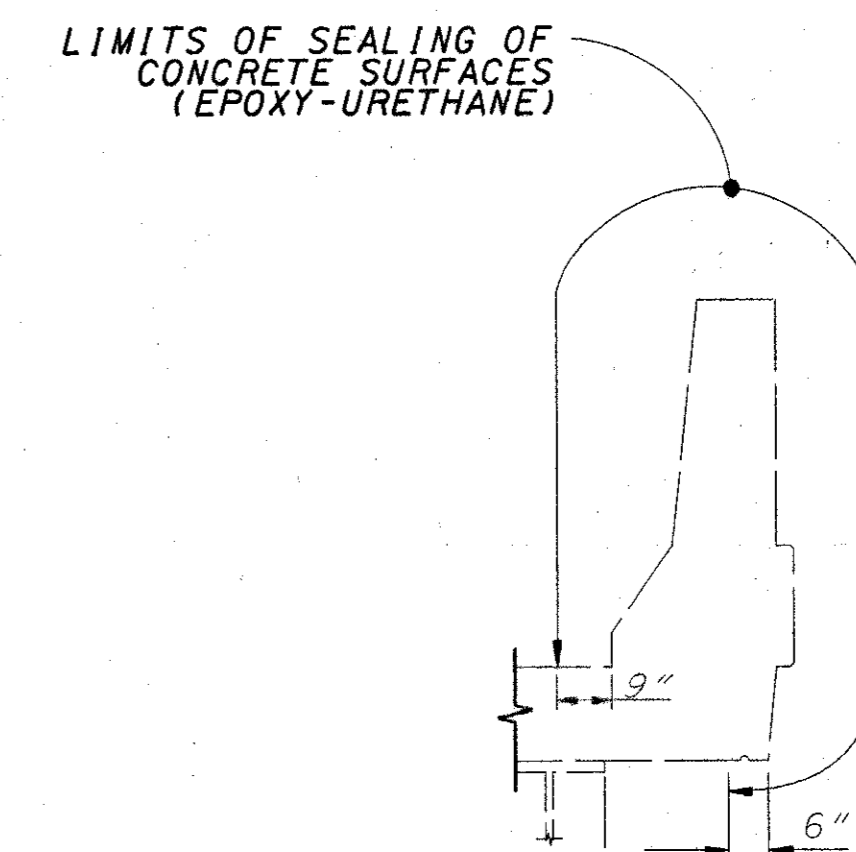
WINGWALL AND RETAINING WALL SECTION



ABUTMENT SECTION



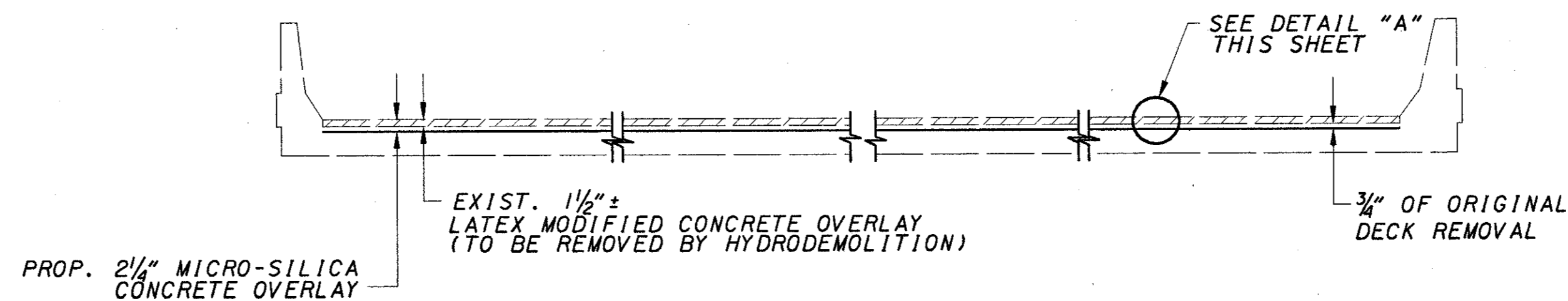
BARRIER SECTION



PARAPET SECTION

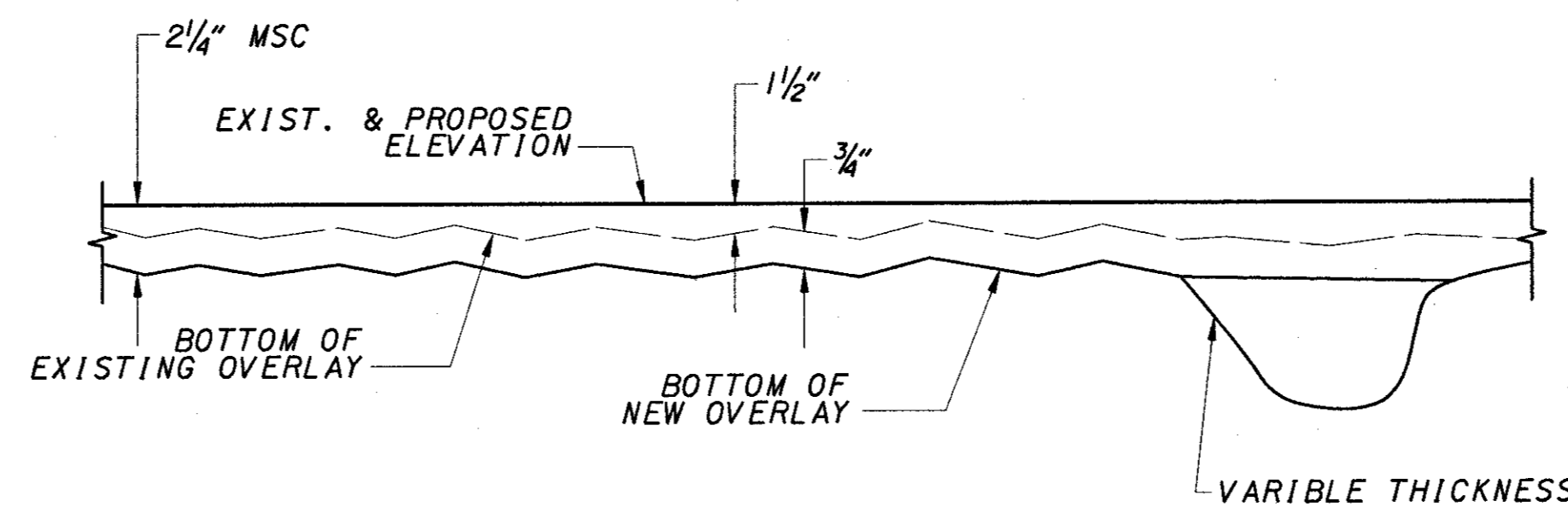
**MICRO-SILICA CONCRETE OVERLAY**

EXISTING DECKS WILL BE OVERLAYED AS PER THE DETAILS SHOWN BELOW AND IN ACCORDANCE WITH ITEM 848.



**EXISTING & MODIFIED TYPICAL SECTION**

(TYPICAL FOR BRIDGES WITHOUT MEDIAN BARRIER)

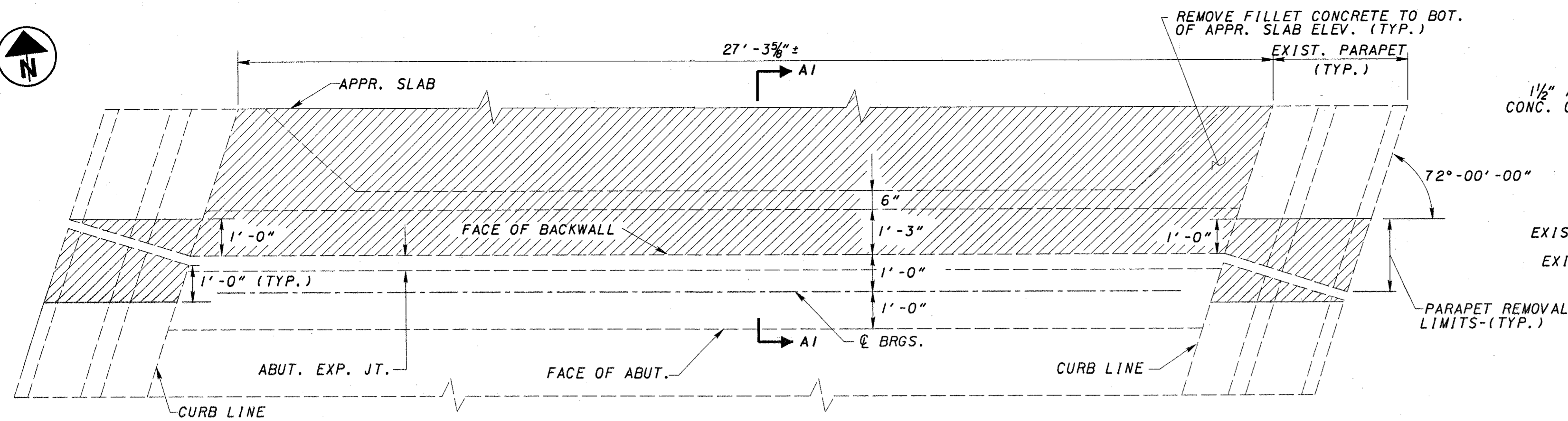


DETAIL A  
(TYPICAL FOR ALL BRIDGES)

**ABBREVIATIONS**

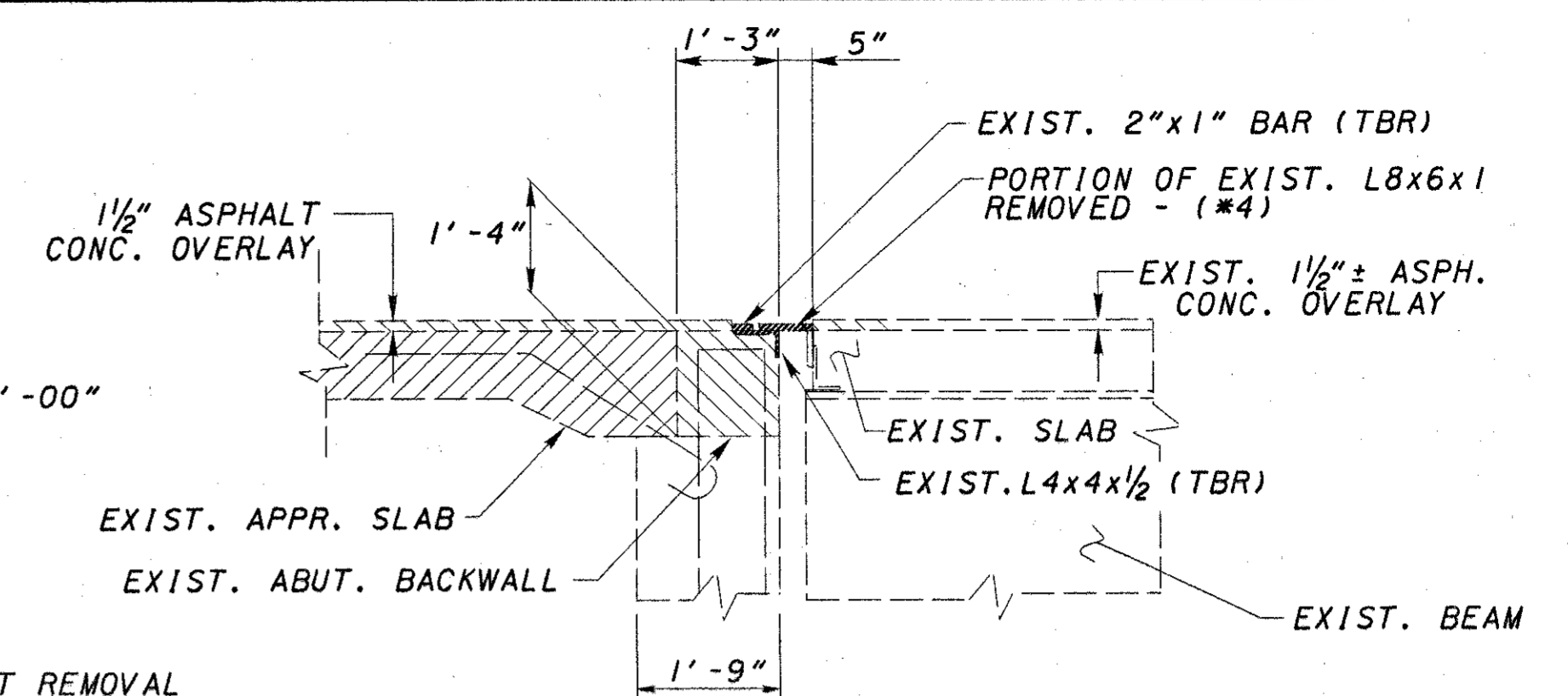
- |        |   |                       |      |   |               |
|--------|---|-----------------------|------|---|---------------|
| ABUT.  | - | ABUTMENT              | SPA. | - | SPACES        |
| APPR.  | - | APPROACH              | TBR. | - | TO BE REMOVED |
| BOT.   | - | BOTTOM                | TYP. | - | TYPICAL       |
| BRGS.  | - | BEARINGS              |      |   |               |
| CL.    | - | CLEAR                 |      |   |               |
| CJ.    | - | CONTROL JOINT         |      |   |               |
| DIM.   | - | DIMENSION             |      |   |               |
| ELEV.  | - | ELEVATION             |      |   |               |
| EXP.   | - | EXPANSION             |      |   |               |
| EXIST. | - | EXISTING              |      |   |               |
| LONG.  | - | LONGITUDINAL          |      |   |               |
| JT.    | - | JOINT                 |      |   |               |
| MSC    | - | MICRO SILICA CONCRETE |      |   |               |

DESIGN AGENCY: BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0901 FAX  
 DATE: 8/2001  
 REVIEWED: ASB  
 STRUCTURE FILE NUMBER: 3106683  
 DRAWN: FJB  
 CHECKED: JEP  
 DESIGNED: JS  
 STRUCTURE GENERAL NOTES  
 RAMP GG (HAM-71-0202)  
 HAM-471-0-26  
 98/106  
 130  
 182



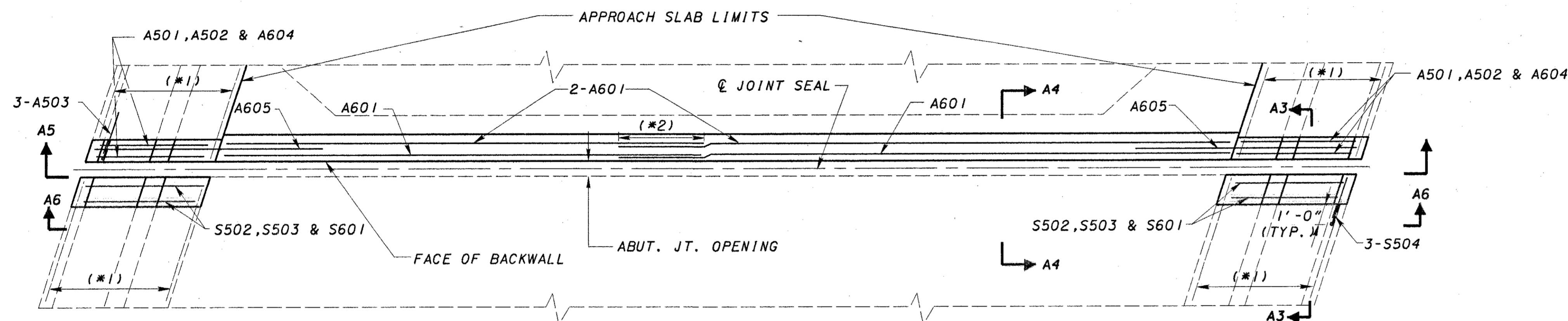
EXISTING ABUTMENT, DECK SLAB, PARAPET & APPROACH SLAB REMOVAL PLAN

PRESERVE ALL LONG. REINFORCING BARS IN PARAPETS & DECK SLAB



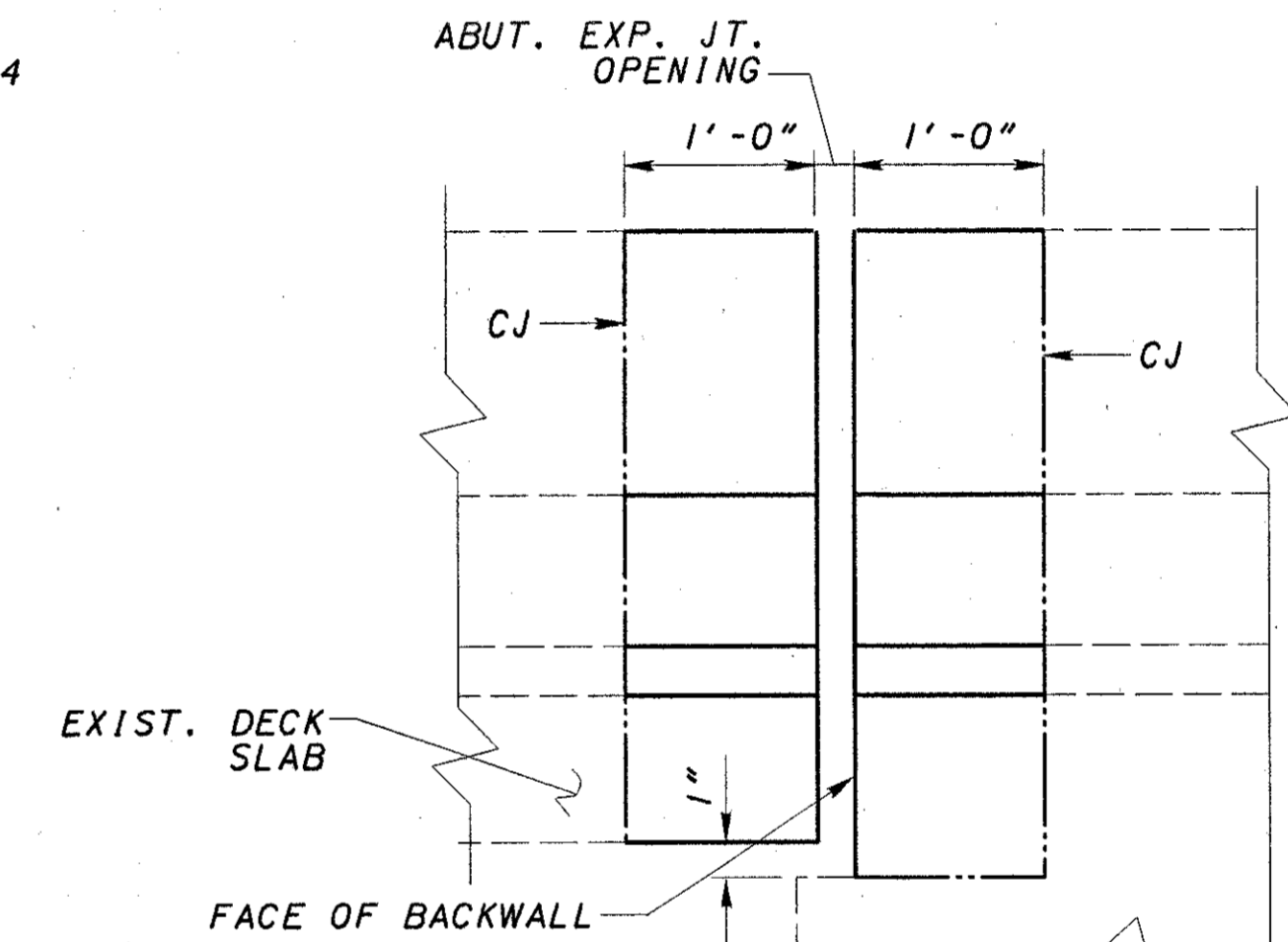
SECTION A1-A1

(\*4) REMOVE TOP PORTION OF ANGLE FLUSH WITH ORIGINAL CONCRETE DECK SLAB

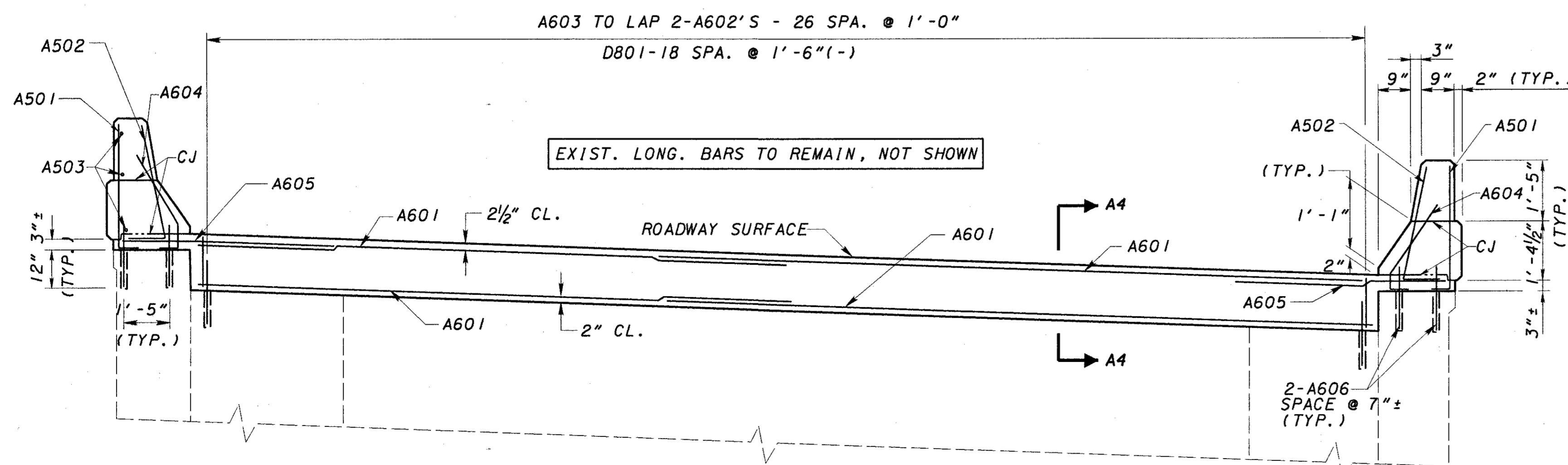


MODIFIED ABUTMENT, DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

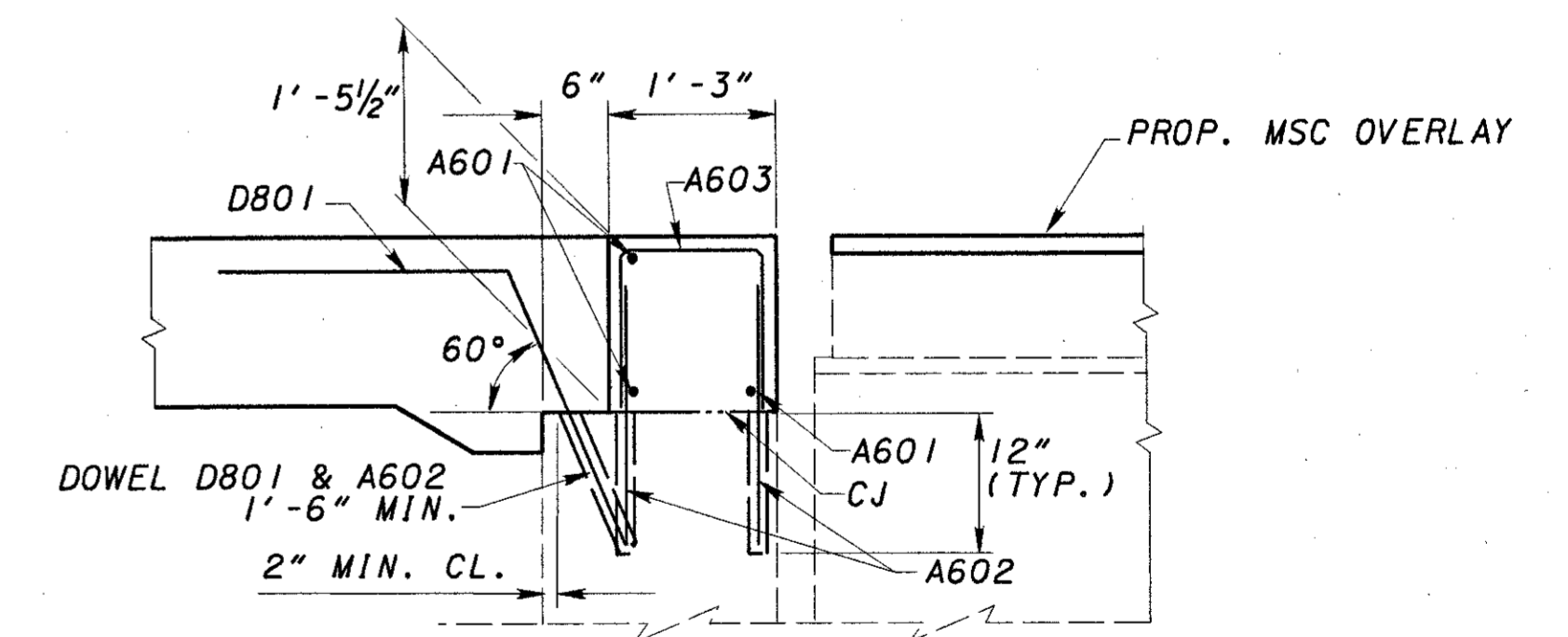
- (\*1) EXIST. LONG. BARS TO REMAIN IN PARAPET
- (\*2) LAP LENGTHS
- #5 BAR-2'-9"
- #6 BAR-3'-3"



SECTION A3-A3



SECTION A5-A5



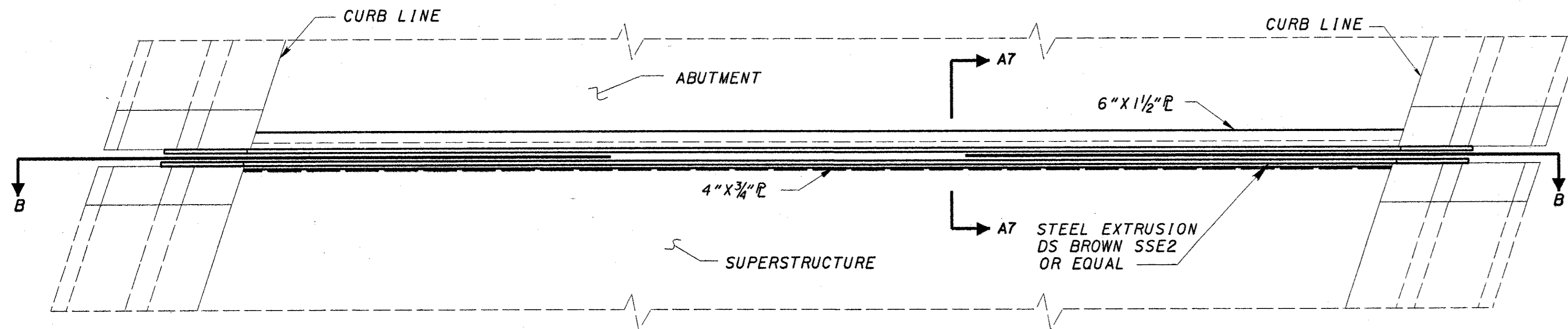
SECTION A4-A4

ALTERNATE TO BACKWALL CONSTRUCTION

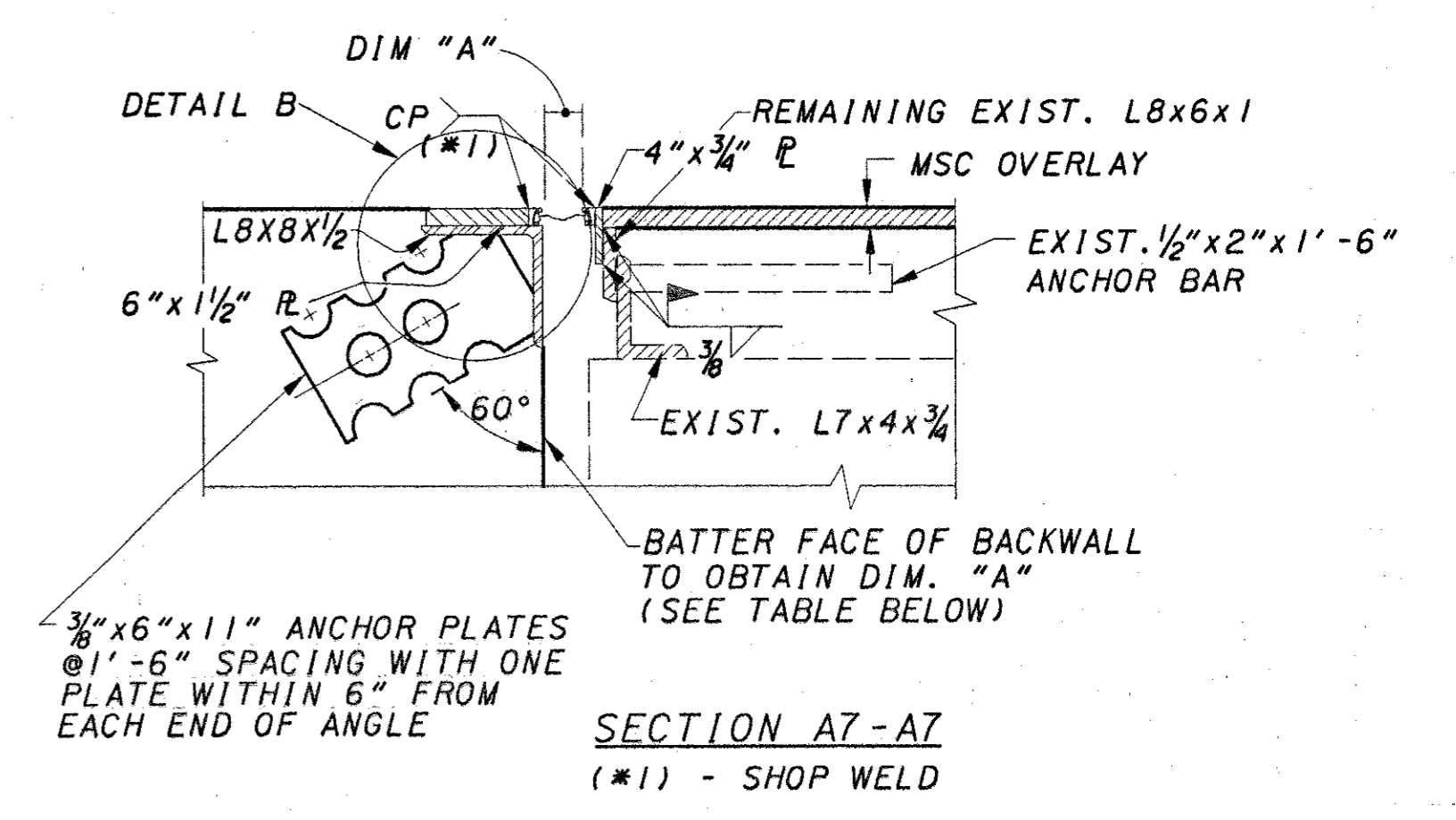
PLANS SHOW THE PORTIONS OF BACKWALL REMOVAL BY SAWCUTTING AT APPROACH SLAB SEAL LEVEL (SECTION A1-A1) AND RECONSTRUCTING THE BACKWALL BY DOWELLING INTO THE REMAINING EXISTING BACKWALL AS PER THE DETAILS OF SECTION A4-A4. AS AN ALTERNATE TO DOWELLING IN NEW BARS, THE CONTRACTOR MAY CHOOSE TO PRESERVE THE EXIST. BARS (RUNNING THROUGH THE CONSTRUCTION JOINT) DURING THE REMOVAL OF THE BACKWALL CONCRETE. ANY BAR DAMAGED DURING THE CONCRETE REMOVAL SHALL BE REPLACED BY NEW BARS AS DETAILED IN SECTION A4-A4.

LEGEND

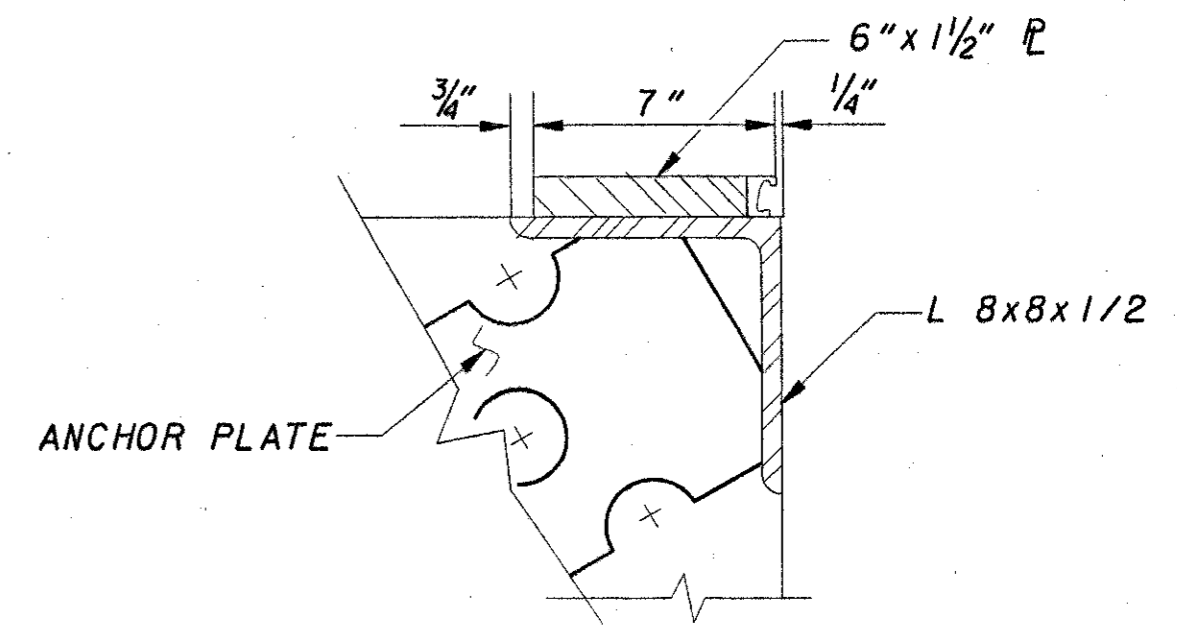
- CONCRETE REMOVAL



ABUTMENT EXPANSION JOINT



SECTION A7-A7  
(\*1) - SHOP WELD

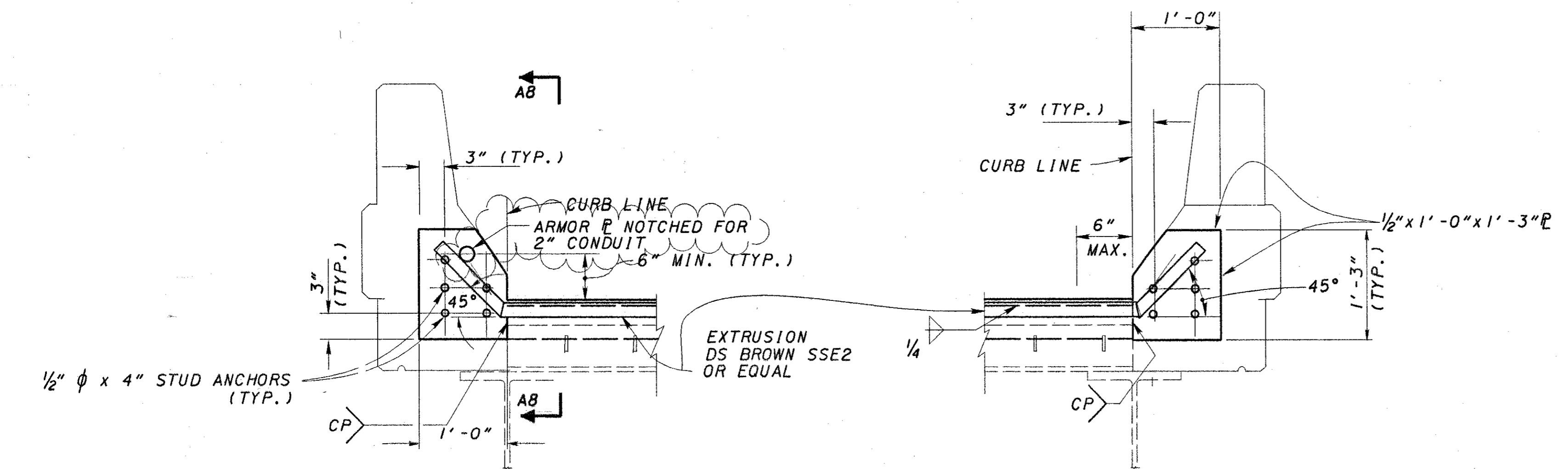


DETAIL B

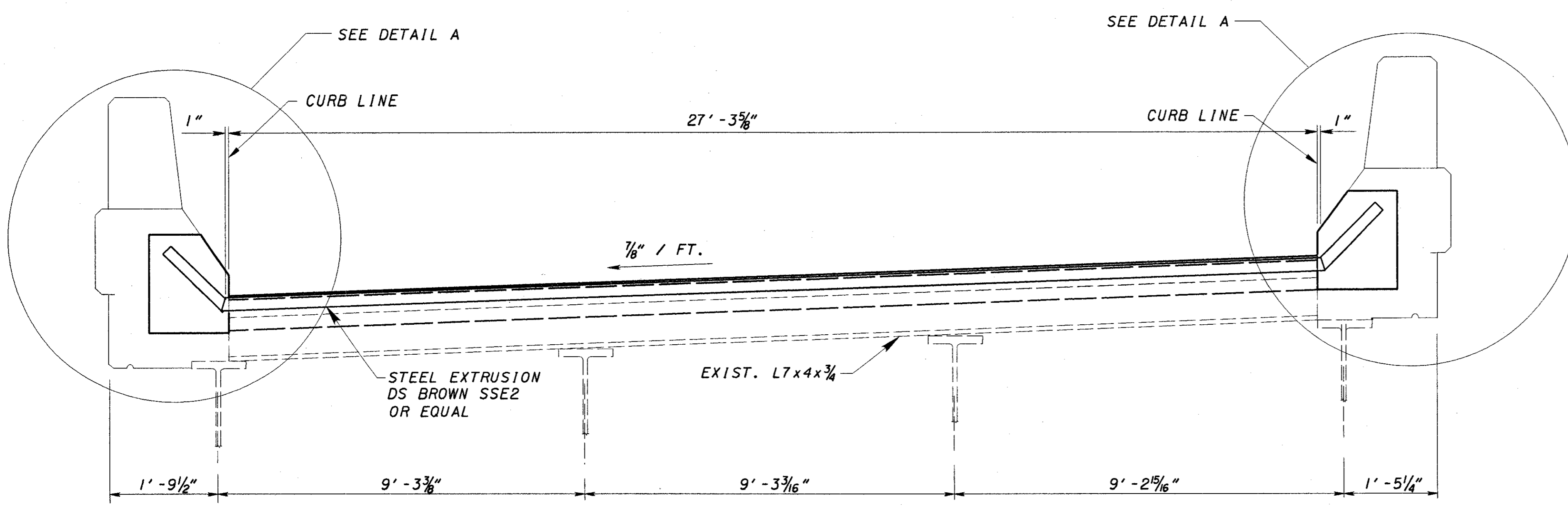
4" STRIP SEAL GLAND

TEMPERATURE (F)	DIMENSION "A"
30°	2 1/2"
40°	2 3/8"
50°	2 1/4"
60°	2 1/16"
70°	1 3/4"
80°	1 5/8"
90°	1 7/16"

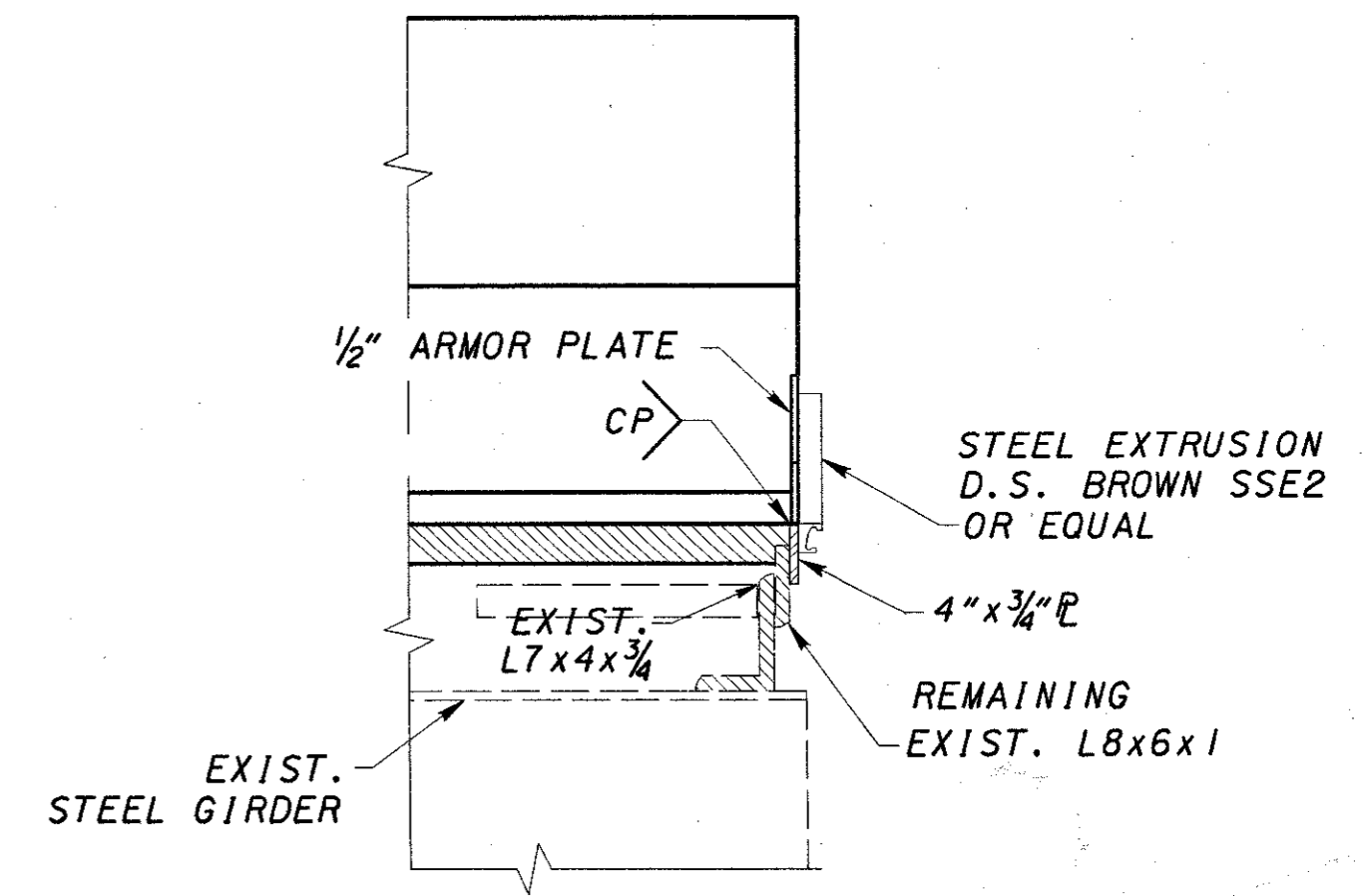
EXPANSION LENGTH - 241'-0" ±



DETAIL A



SECTION B-B

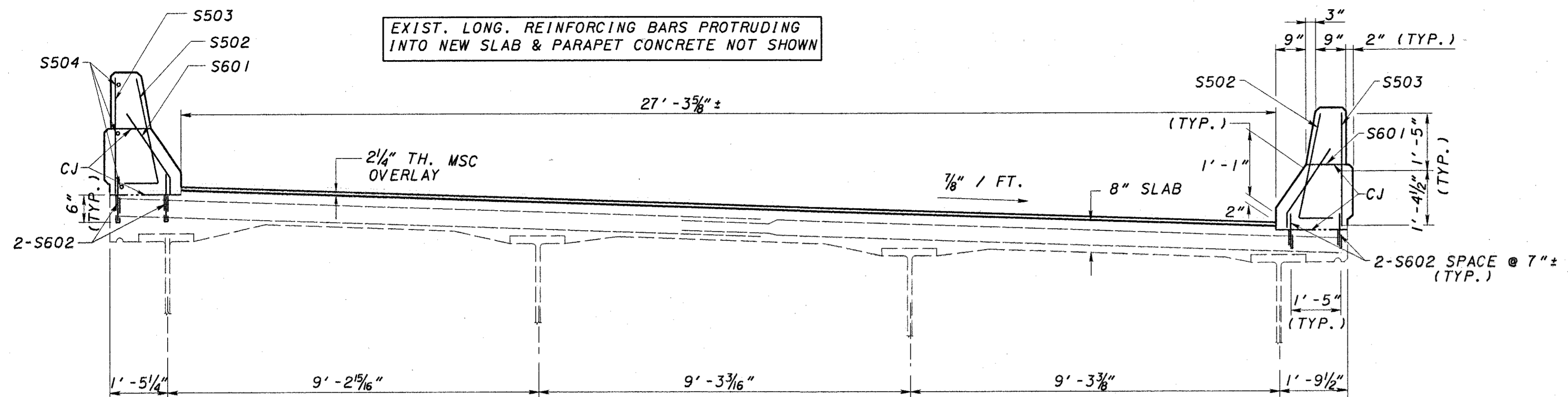


SECTION A8-A8

NOTES  
REFER TO STD. DWG. EXJ-4-87  
FOR DETAILS NOT SHOWN



DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 PH: (614) 224-1941  
 DATE: 8/2001  
 REVIEWED: GEA  
 DRAWN: JEP  
 DESIGNED: JEP  
 CHECKED: ASB  
 STRUCTURE FILE NUMBER: 3106683  
 FORWARD ABUTMENT EXPANSION JOINT DETAILS  
 RAMP GG (BRIDGE NO. HAM-71-0202)  
 HAM 471-0.26  
 100/106  
 132  
 182



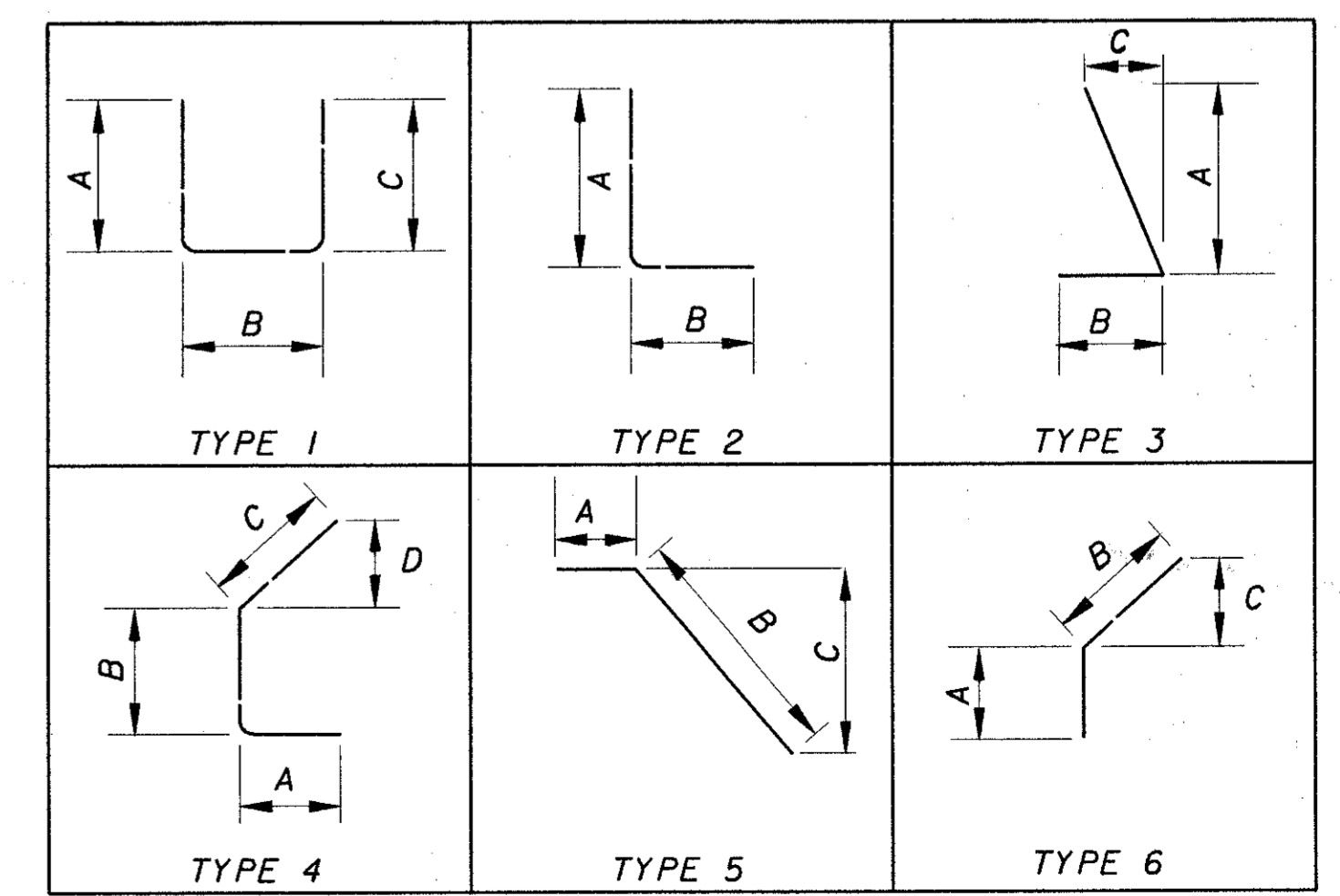
SECTION A6-A6

REINFORCING STEEL LIST

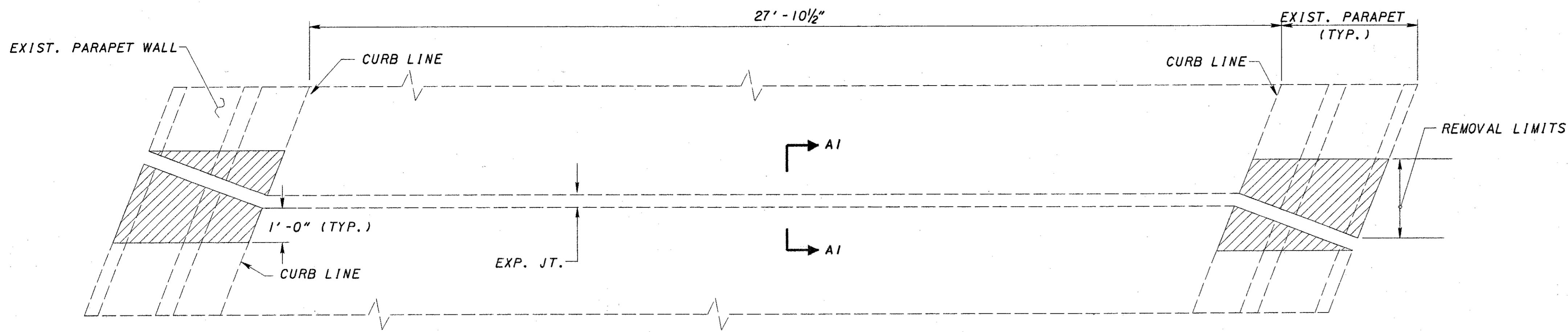
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
ABUTMENT									
A501	4	3'-6"		2	2'-10"	10"			
A502	4	3'-2"		3	2'-6"	10"	4"		
A503	3	1'-10"		STR					
A601	6	15'-8"		STR					
A602	58	2'-0"		STR					
A603	27	2'-10"		1	1'-2"	10"	1'-2"		
A604	4	3'-3"		4	1'-0"	6"	2'-0"	1'-7"	
A605	4	5'-10"		STR					
D801	19	3'-8"		5	1'-6"	2'-3"	1'-10"		

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
SUPERSTRUCTURE									
S502	4	3'-2"		3	2'-6"	10"	2"		
S503	4	2'-6"		STR					
S504	3	1'-10"		STR					
S601	4	3'-0"		6	4"	1'-6"	1'-2"		
S602	8	1'-6"		STR					

BENDING DIAGRAMS

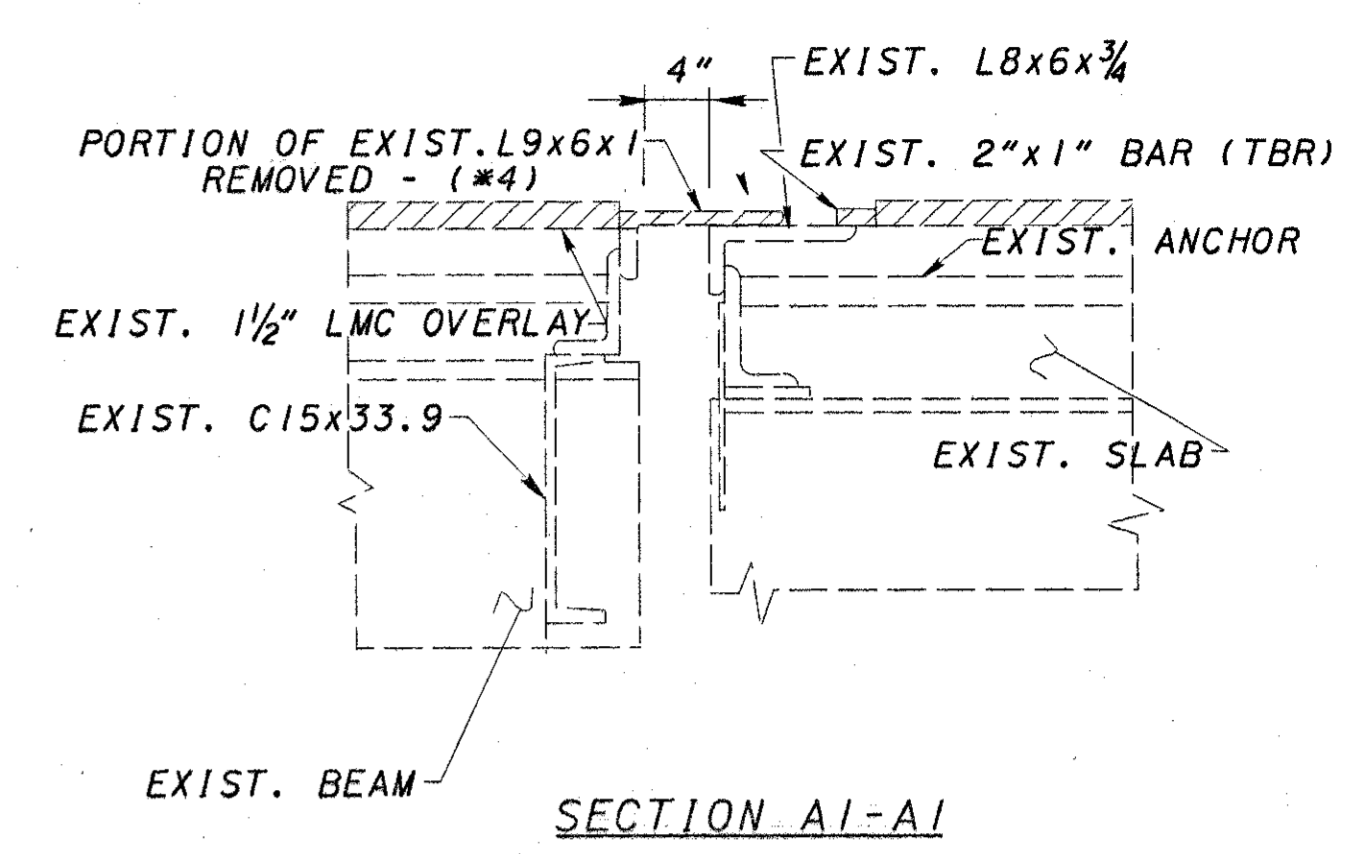


DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 Ph: (614) 224-1941  
 DATE: 8/2001  
 REVIEWED: GEA  
 STRUCTURE FILE NUMBER: 3106683  
 DRAWN: JEP  
 CHECKED: ASB  
 DESIGNED: JEP  
 FORWARD ABUTMENT EXPANSION JOINT DETAILS  
 RAMP 66 (BRIDGE NO. HAM-71-0202)  
 HAM-471-0.26  
 10/1/06  
 133/182

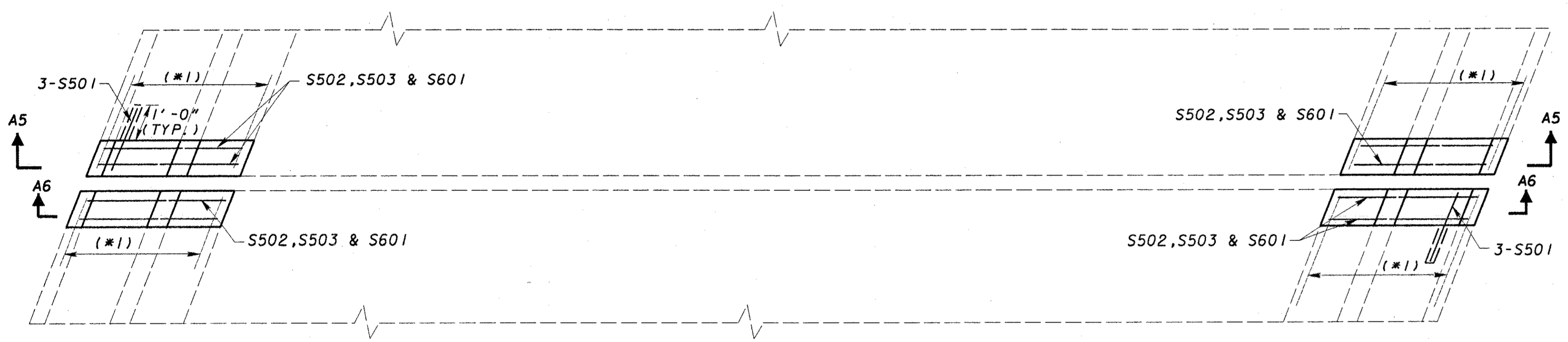


PRESERVE ALL LONG. REINFORCING BARS IN PARAPETS & DECK SLAB REMOVAL AREAS

EXISTING DECK SLAB, PARAPET & MEDIAN REMOVAL PLAN



SECTION A1-A1

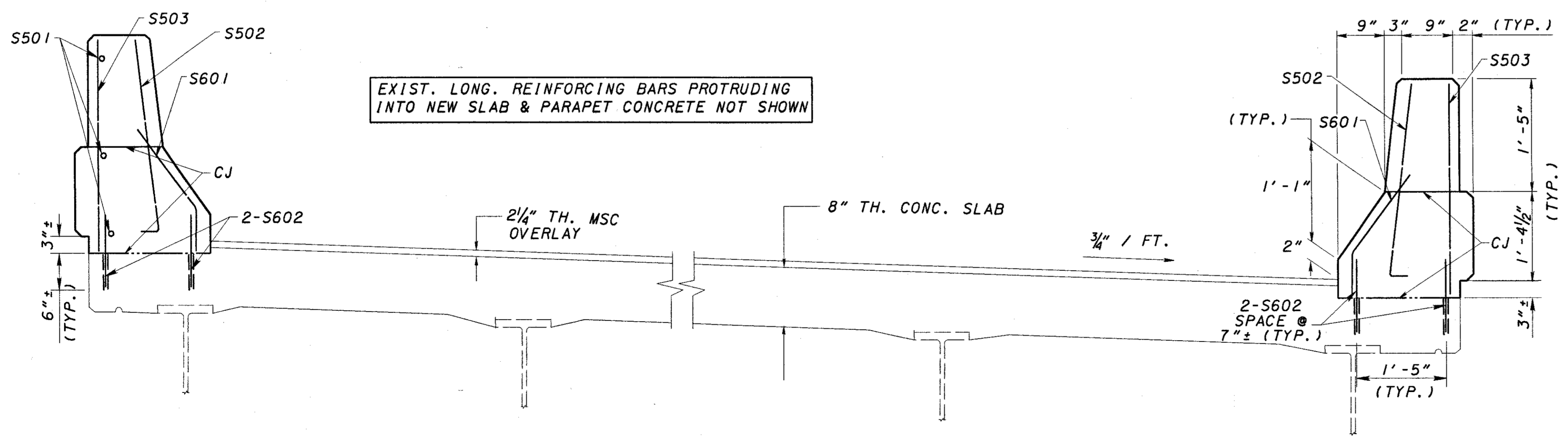


(\*1) EXIST. DECK SLAB & PARAPET LONG. BARS PROTRUDE INTO NEW CONCRETE AREA

MODIFIED DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

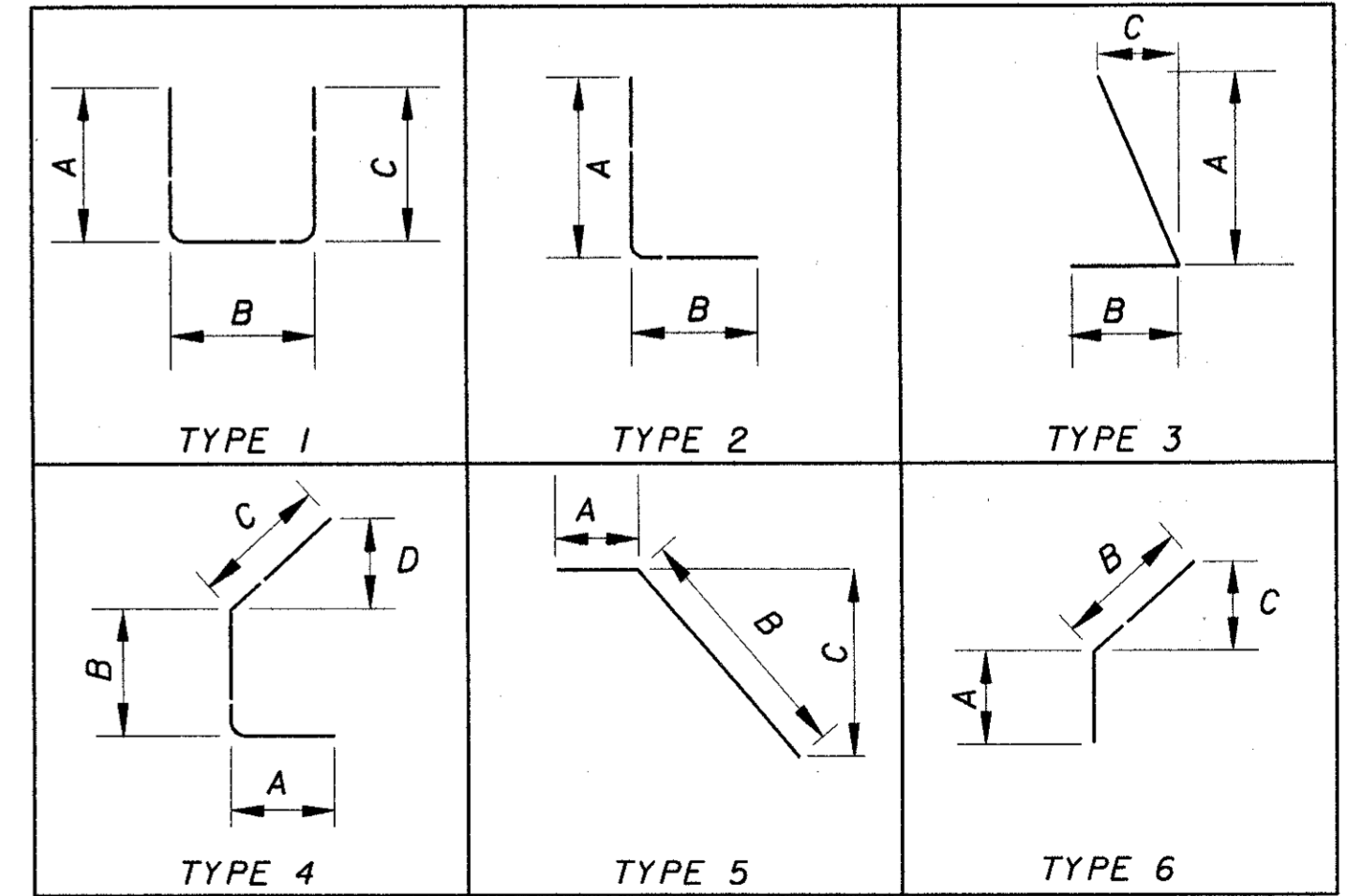
REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
SUPERSTRUCTURE									
S501	6	1'-10"		STR					
S502	8	3'-2"		3	2'-6"	10"	2"		
S503	8	2'-6"		STR					
S601	8	3'-0"		6	4"	1'-6"	1'-2"		
S602	16	1'-6"		STR					



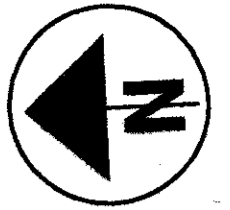
SECTION A5-A5

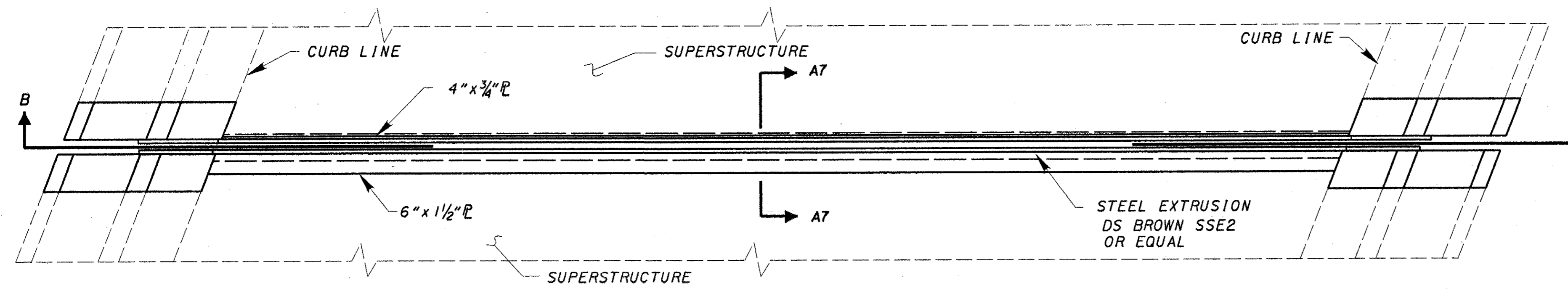
BENDING DIAGRAMS



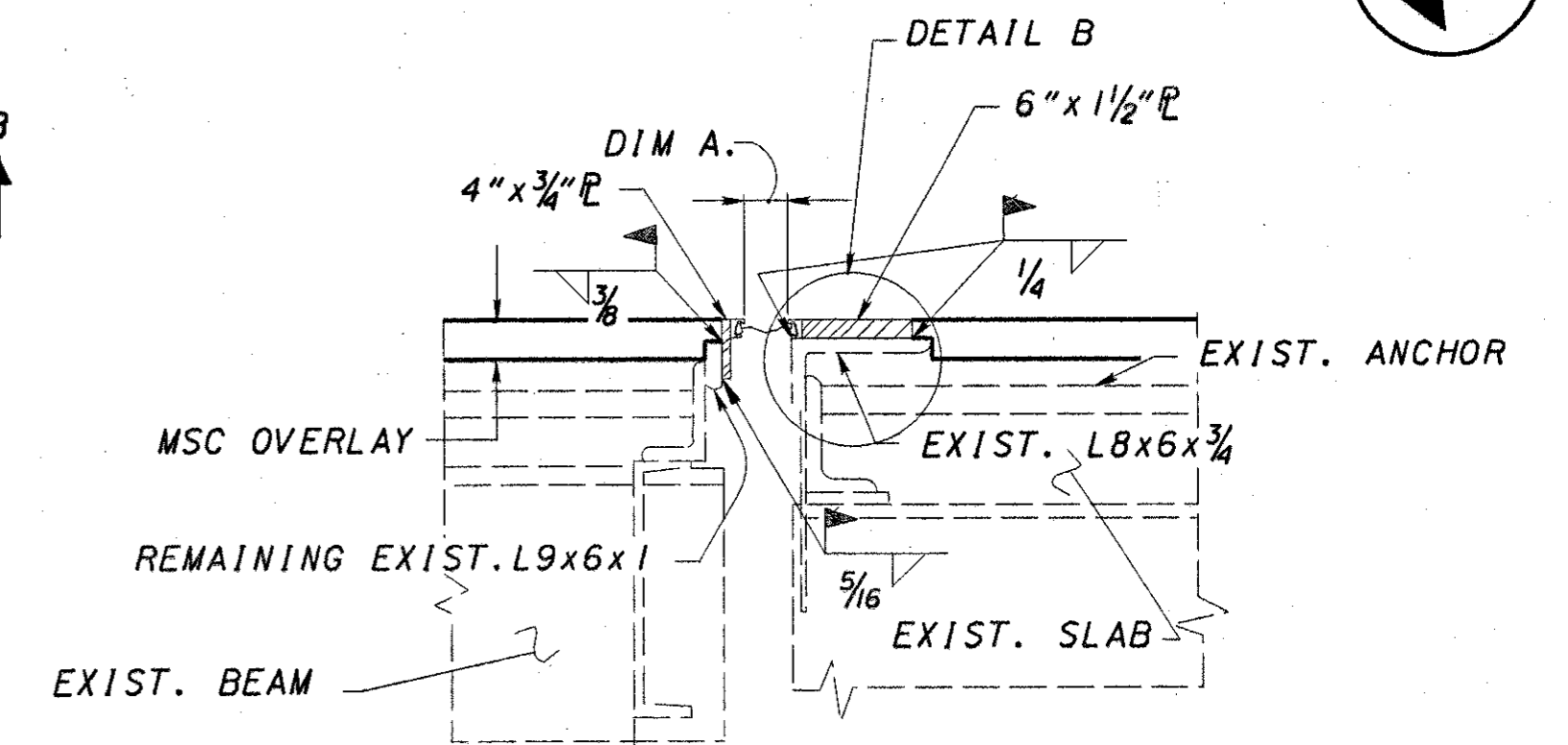
LEGEND

- REMOVAL LIMITS

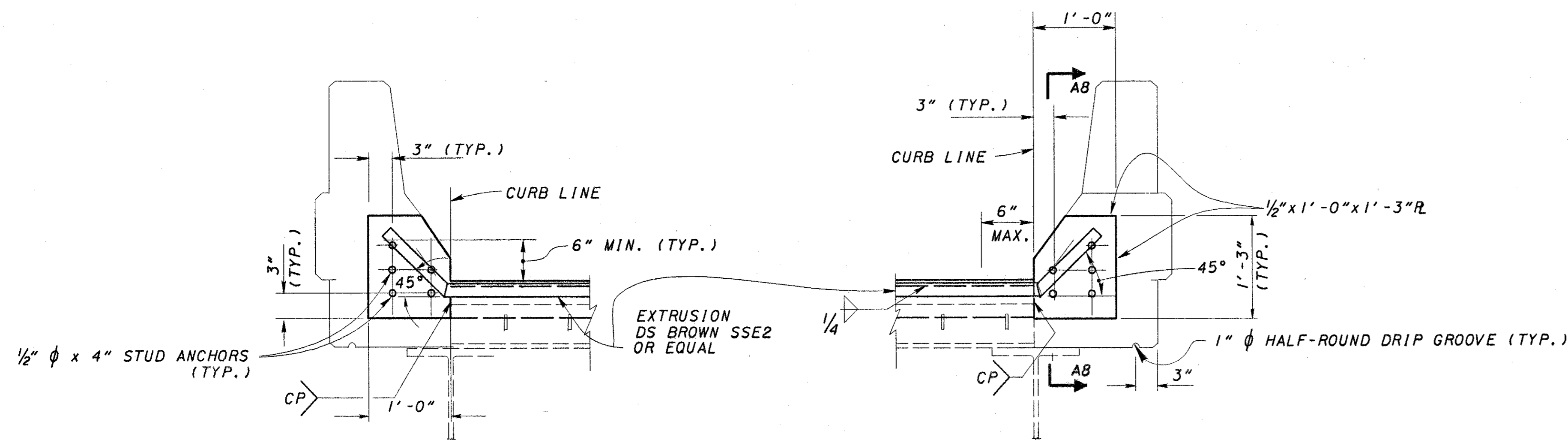




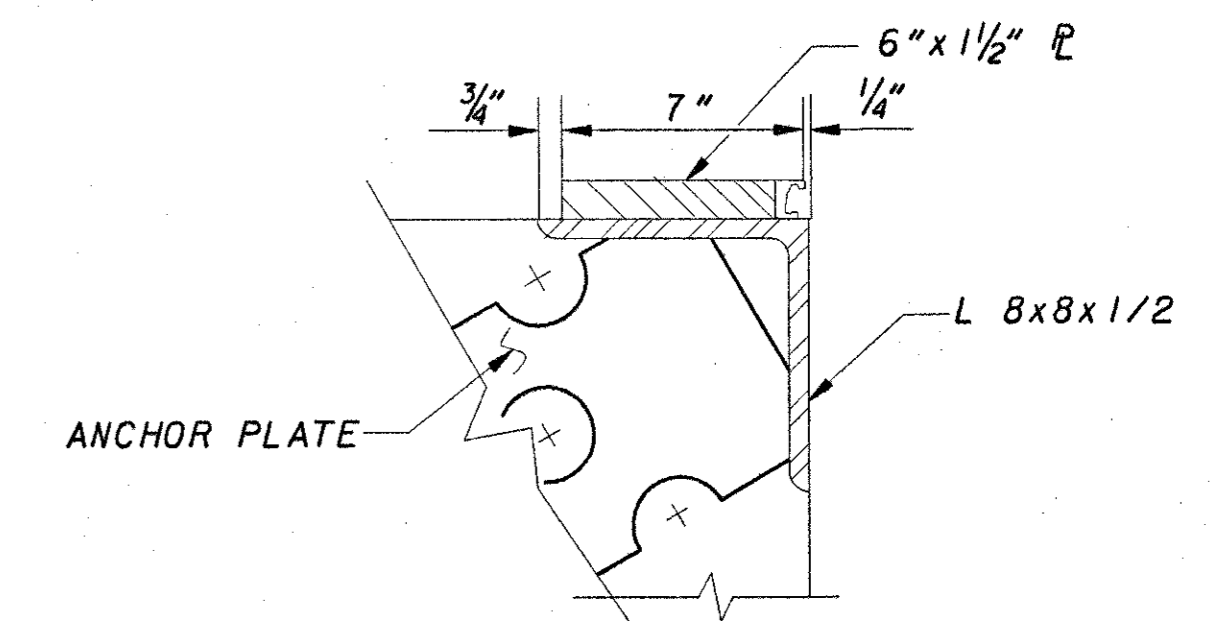
PIER 5 EXPANSION JOINT



SECTION A7-A7



DETAIL A

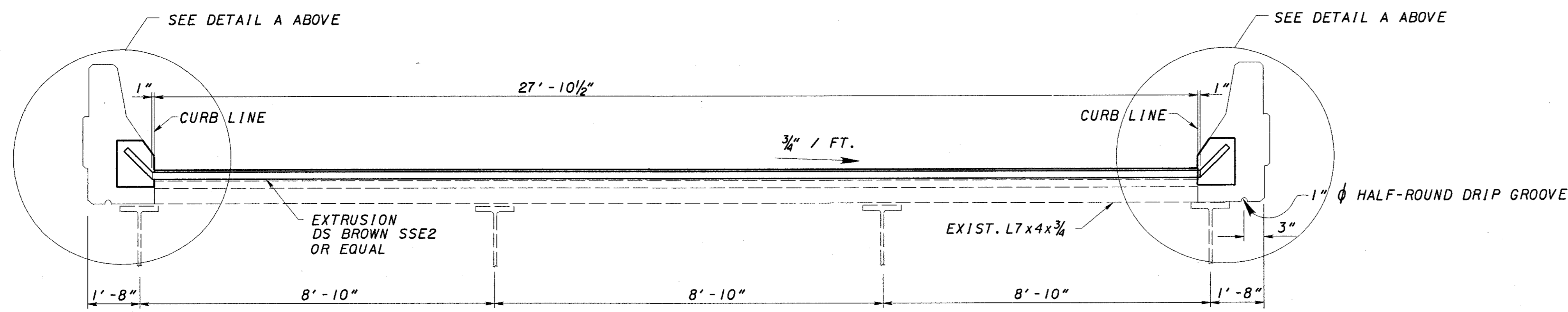


DETAIL B

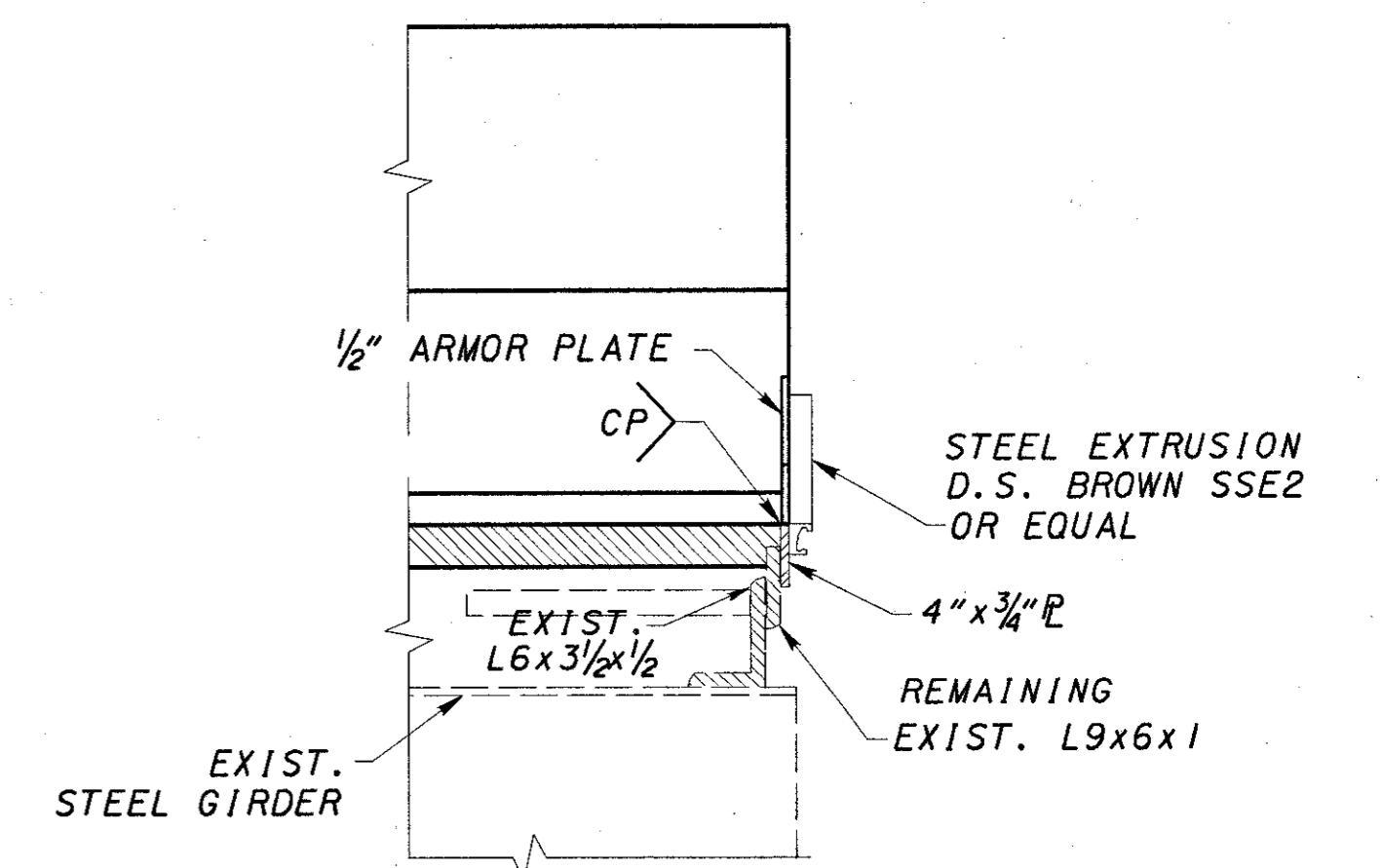
5" STRIP SEAL GLAND

TEMPERATURE (F)	DIMENSION "A"
30°	3 1/8"
40°	2 7/8"
50°	2 5/8"
60°	2 3/8"
70°	2 1/8"
80°	1 7/8"
90°	1 5/8"

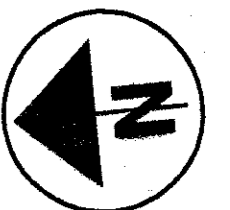
EXPANSION LENGTH = 314'-0" ±



SECTION B-B



SECTION A8-A8



DESIGN AGENCY  
BARR ENGINEERING  
Five East Long Street  
Columbus, Ohio 43215  
Ph: (614) 224-1941

DATE  
8/2001  
REVIEWED  
GEA  
STRUCTURE FILE NUMBER  
3106683

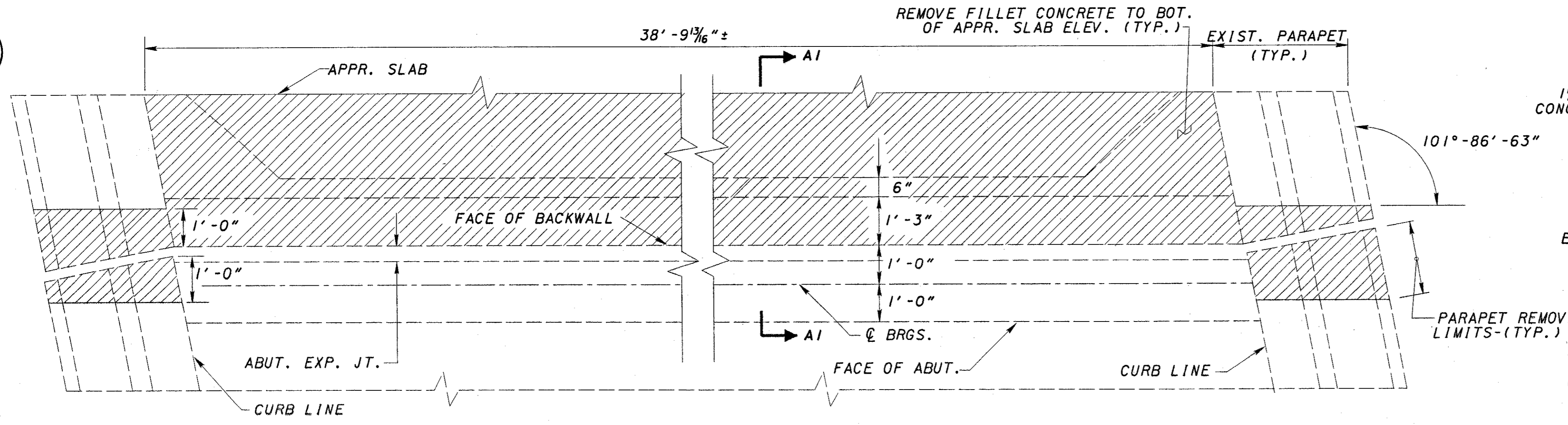
DESIGNED  
JEP  
CHECKED  
ASB

PIER 5 EXPANSION JOINT DETAILS  
RAMP 66 (BRIDGE NO. HAM-71-0202)

HAM-471-0.26

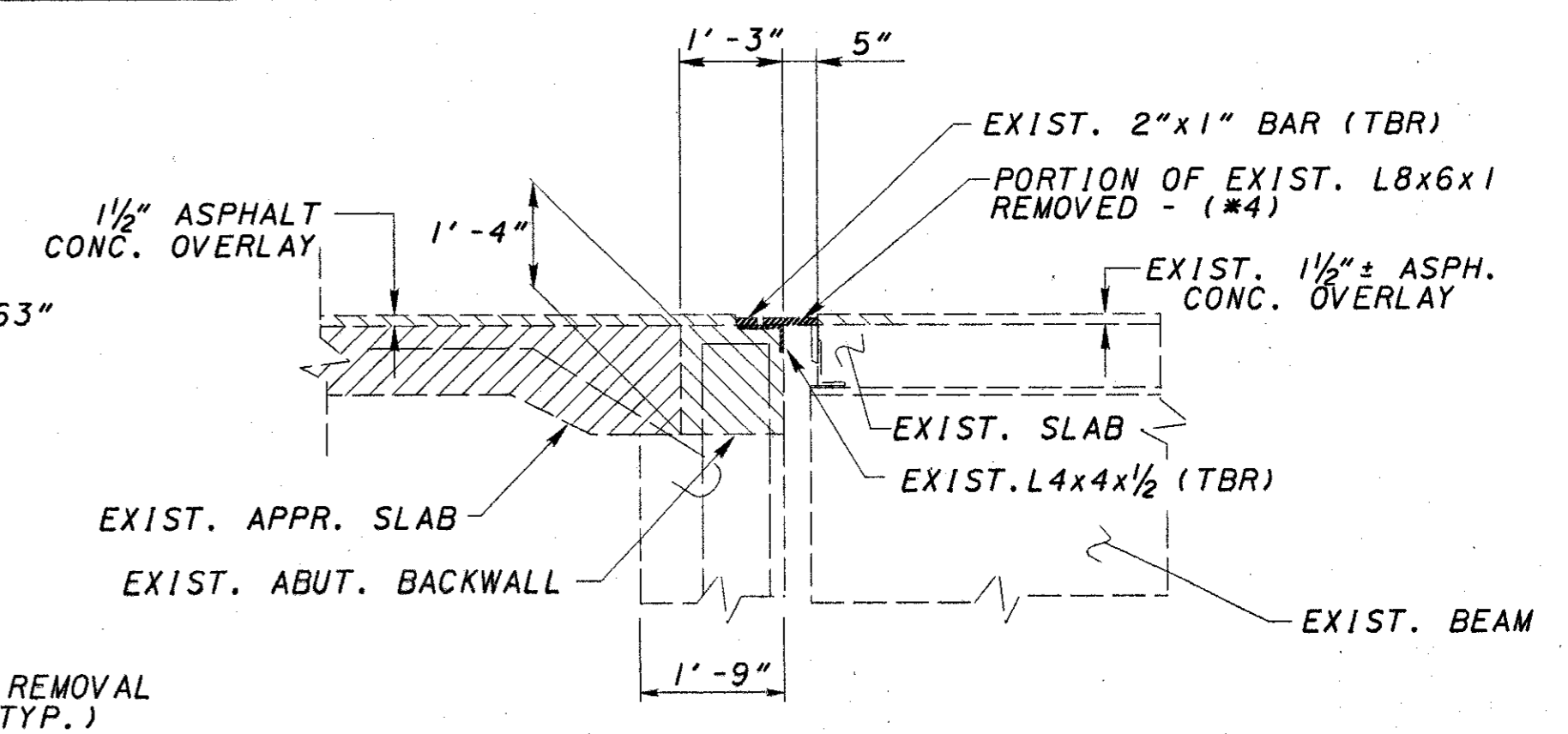
103/106

135  
182



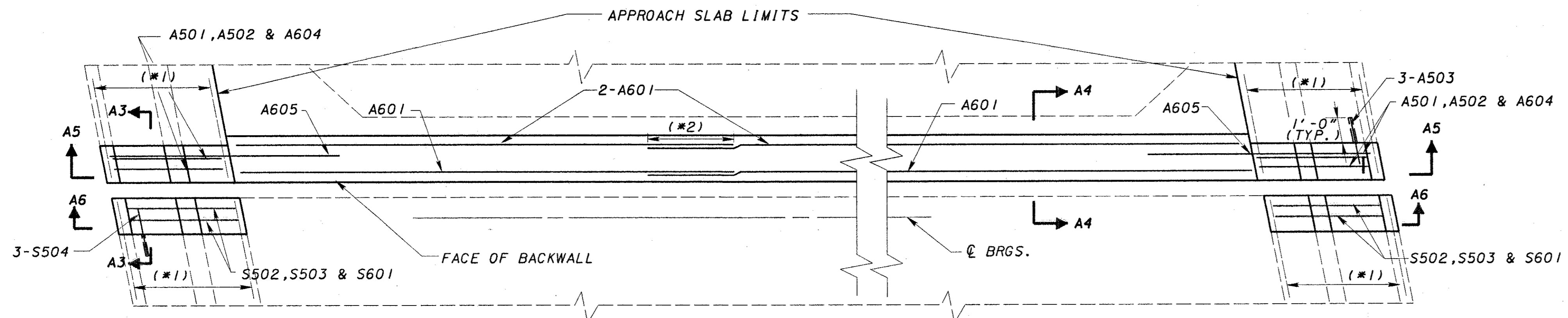
EXISTING ABUTMENT, DECK SLAB, PARAPET & APPROACH SLAB REMOVAL PLAN

PRESERVE ALL LONG. REINFORCING BARS IN PARAPETS & DECK SLAB



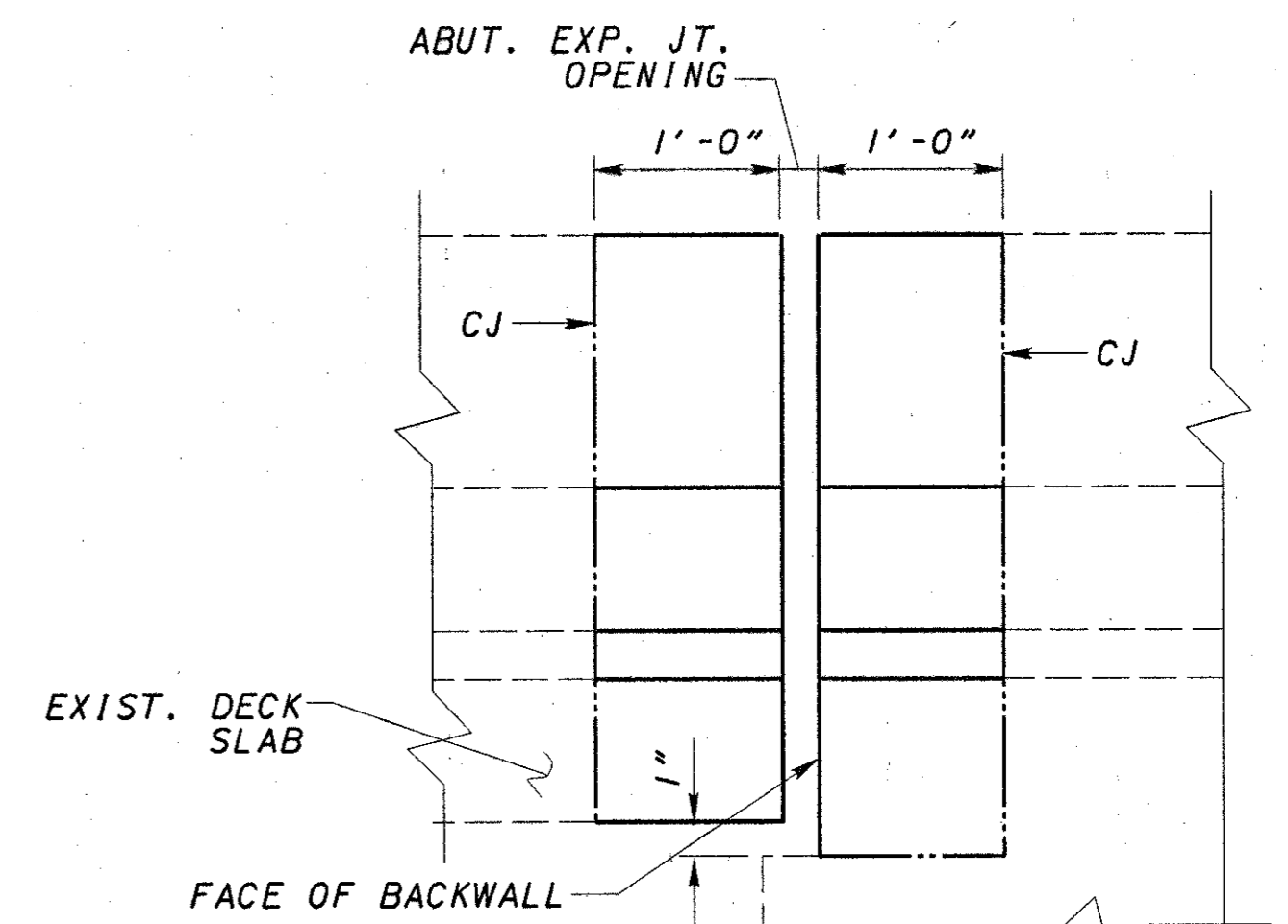
SECTION A1-A1

(\*4) REMOVE TOP PORTION OF ANGLE FLUSH WITH ORIGINAL CONCRETE DECK SLAB

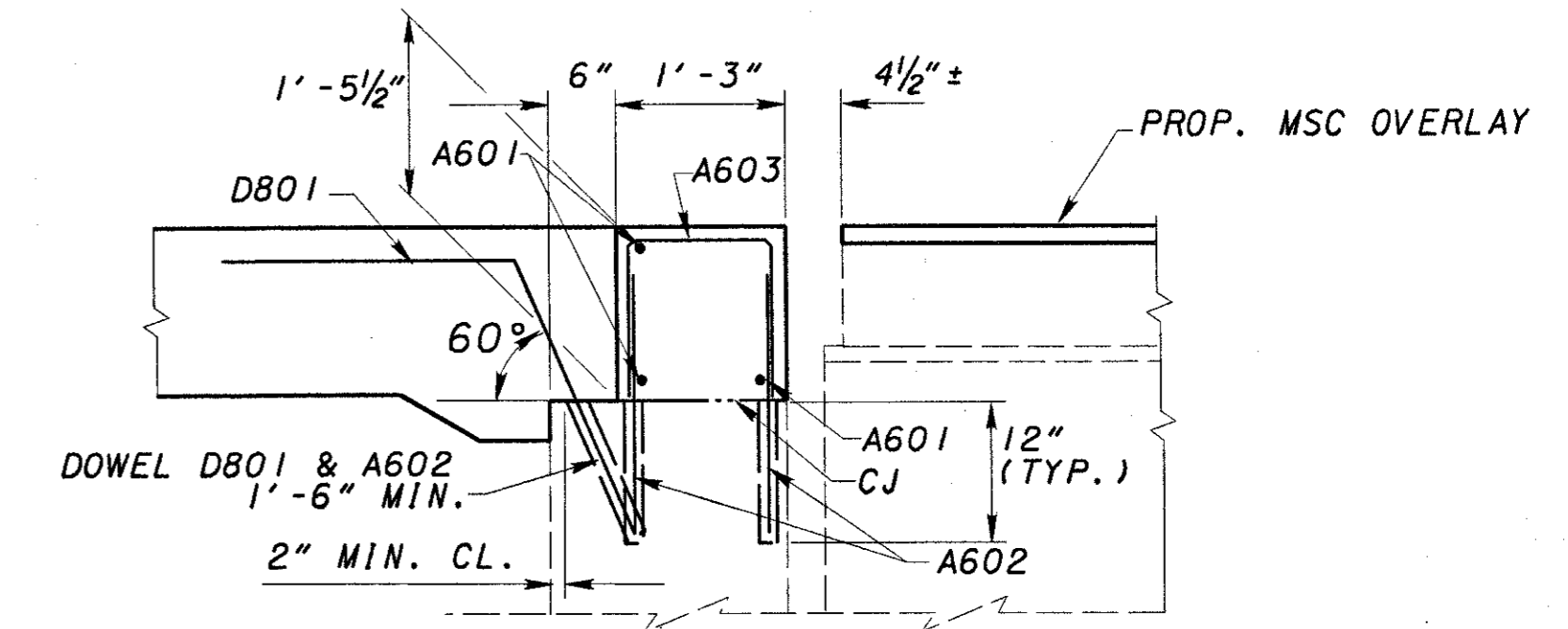


MODIFIED ABUTMENT, DECK SLAB & PARAPET PLAN FOR STRIP SEAL EXPANSION JOINT INSTALLATION

- (\*1) EXIST. LONG. BARS TO REMAIN IN PARAPET
- (\*2) LAP LENGTHS
  - #5 BAR-2'-9"
  - #6 BAR-3'-3"



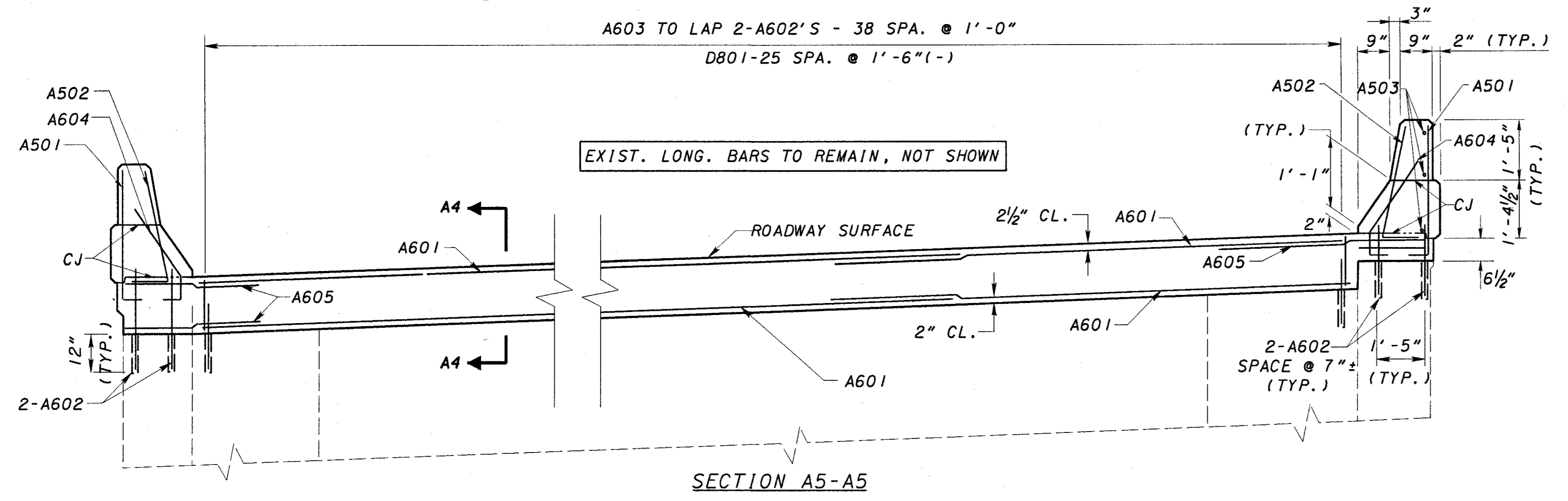
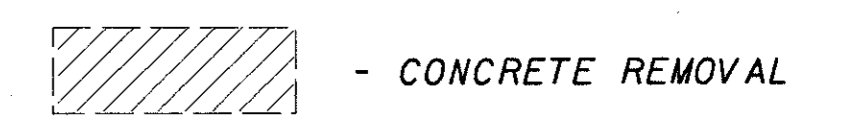
SECTION A3-A3



SECTION A4-A4

ALTERNATE TO BACKWALL CONSTRUCTION  
 PLANS SHOW THE PORTIONS OF BACKWALL REMOVAL BY SAWCUTTING AT APPROACH SLAB SEAL LEVEL (SECTION A1-A1) AND RECONSTRUCTING THE BACKWALL BY DOWELLING INTO THE REMAINING EXISTING BACKWALL AS PER THE DETAILS OF SECTION A4-A4. AS AN ALTERNATE TO DOWELLING IN NEW BARS, THE CONTRACTOR MAY CHOOSE TO PRESERVE THE EXIST. BARS (RUNNING THROUGH THE CONSTRUCTION JOINT) DURING THE REMOVAL OF THE BACKWALL CONCRETE. ANY BAR DAMAGED DURING THE CONCRETE REMOVAL SHALL BE REPLACED BY NEW BARS AS DETAILED IN SECTION A4-A4.

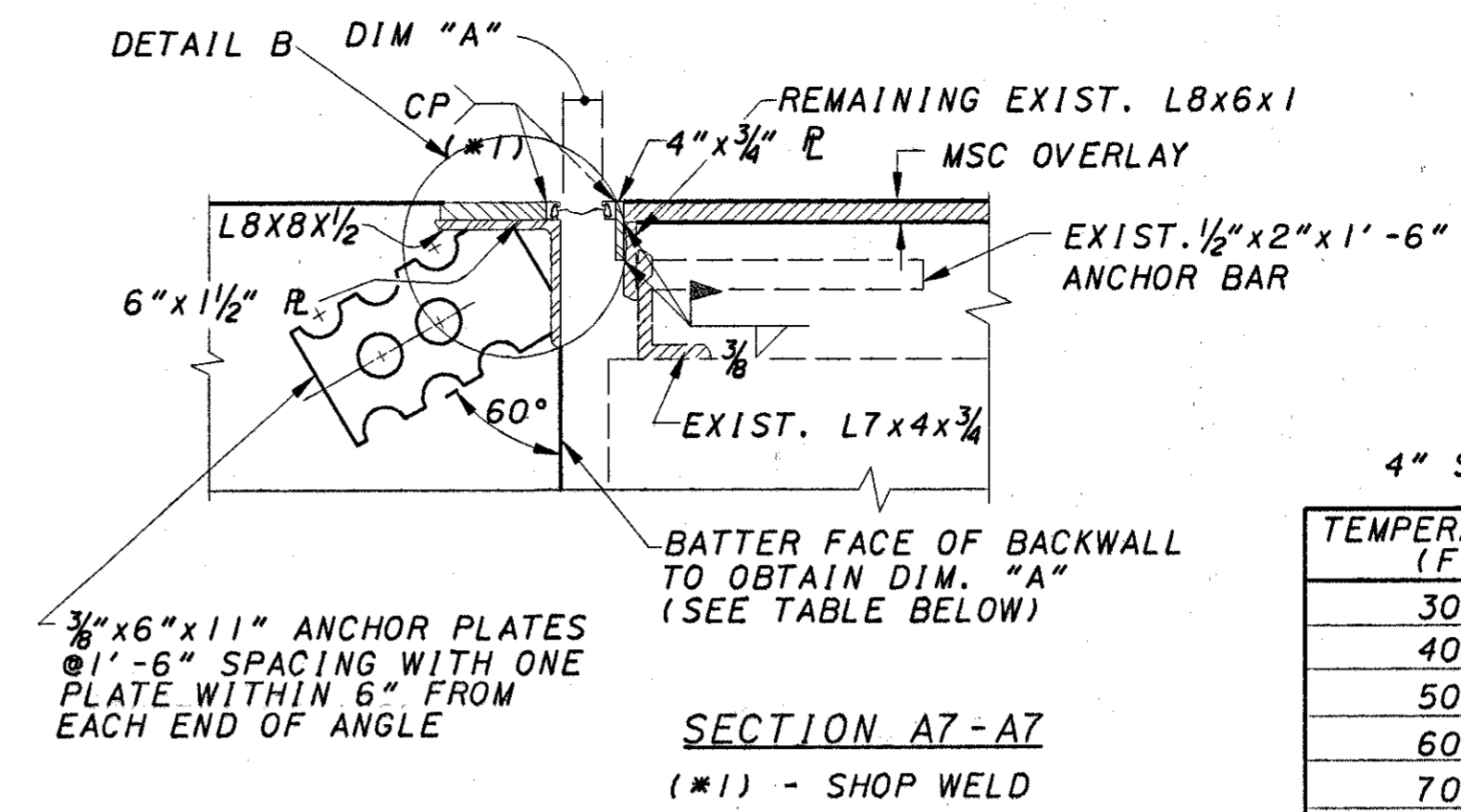
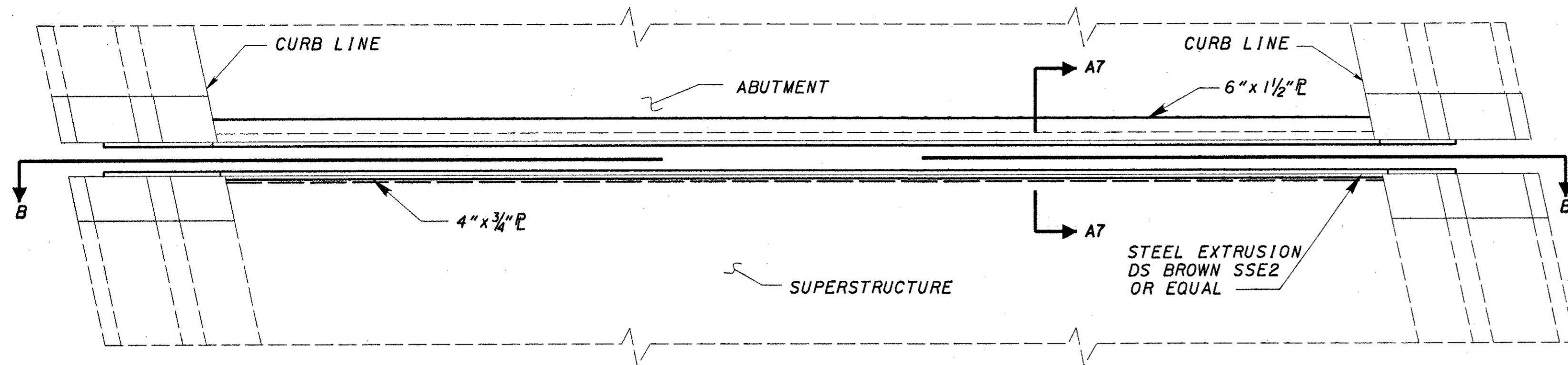
LEGEND



SECTION A5-A5

DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 PH: (614) 224-1941  
 DATE: 8/2001  
 REVIEWED: GEA  
 STRUCTURE FILE NUMBER: 3106683  
 DRAWN: JEP  
 REVISION: JEP  
 DESIGNED: JEP  
 CHECKED: ASB  
 REAR ABUTMENT EXPANSION JOINT DETAILS  
 RAMP GG (BRIDGE NO. HAM-71-0202)  
 HAM 471-0.26  
 104/106  
 136  
 182

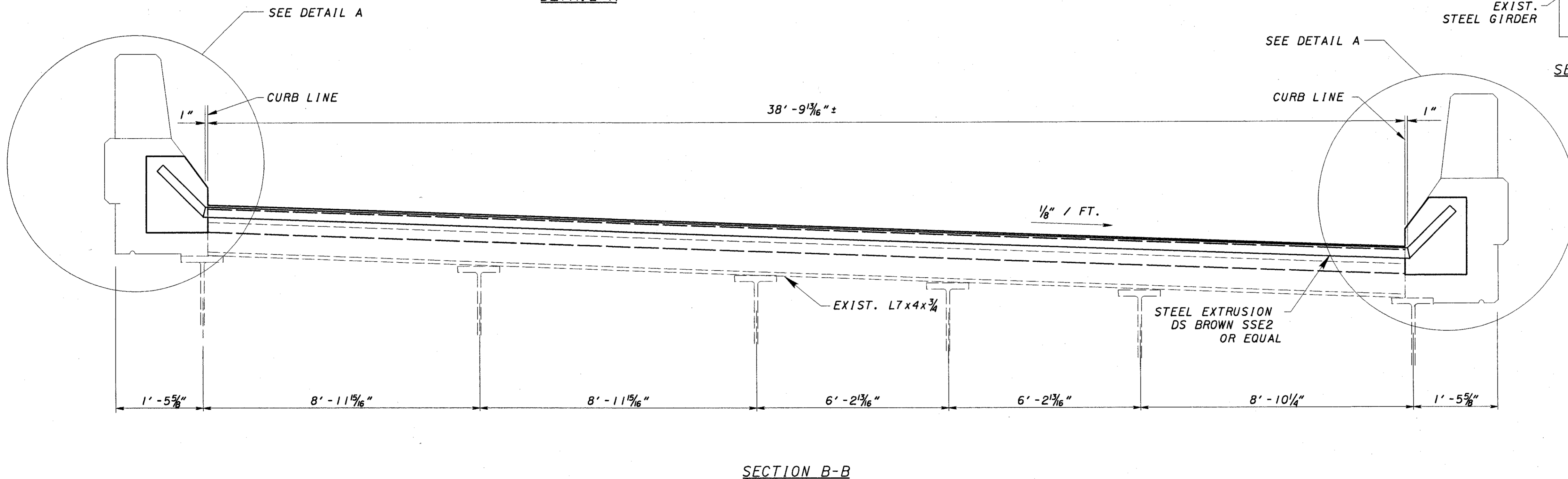
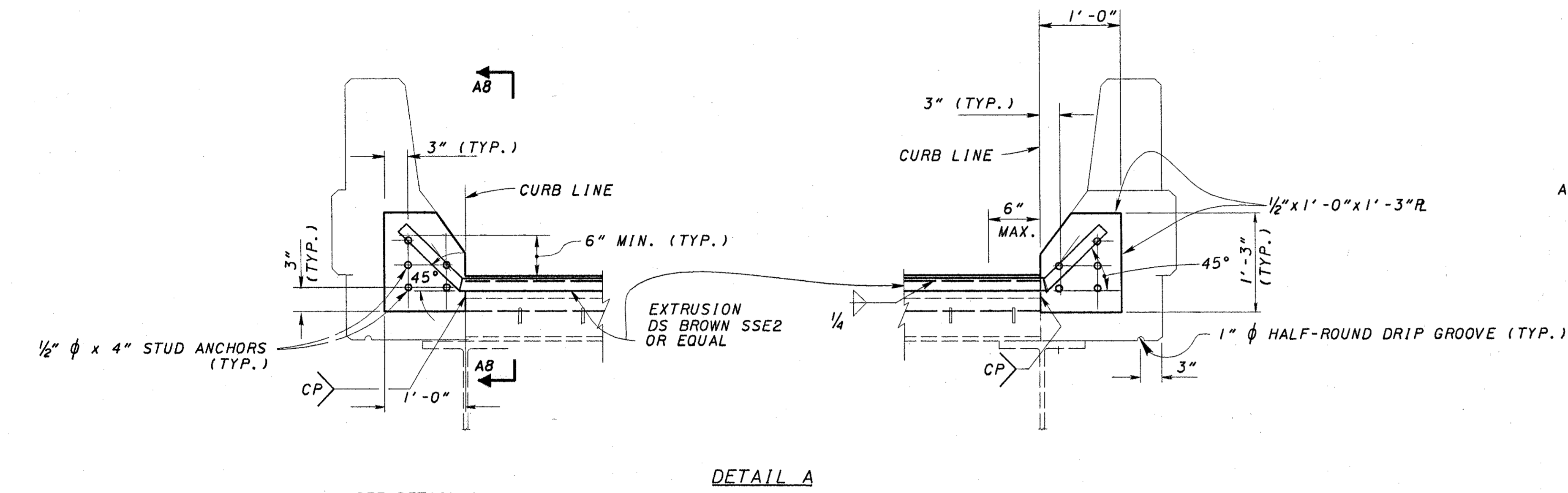
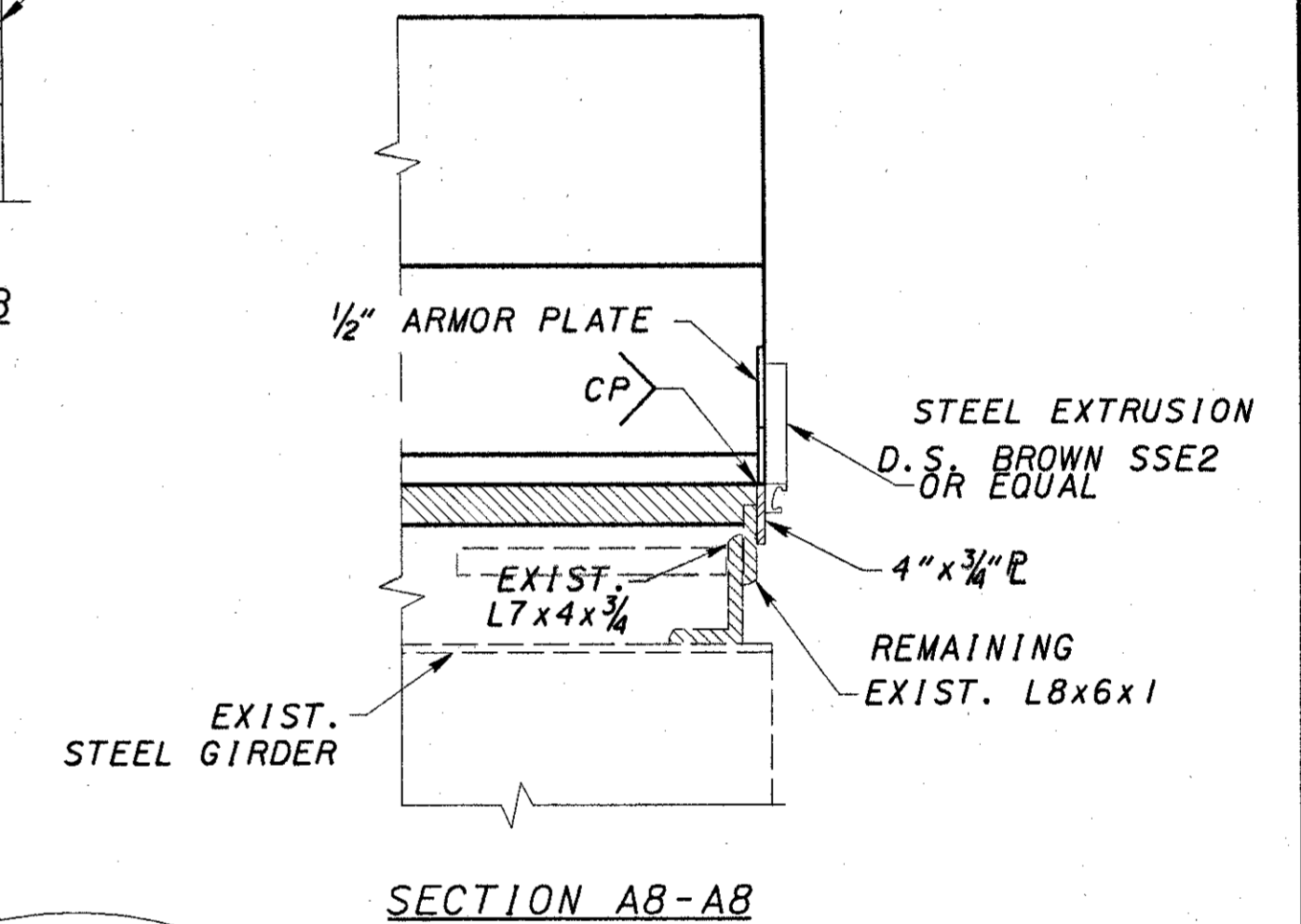
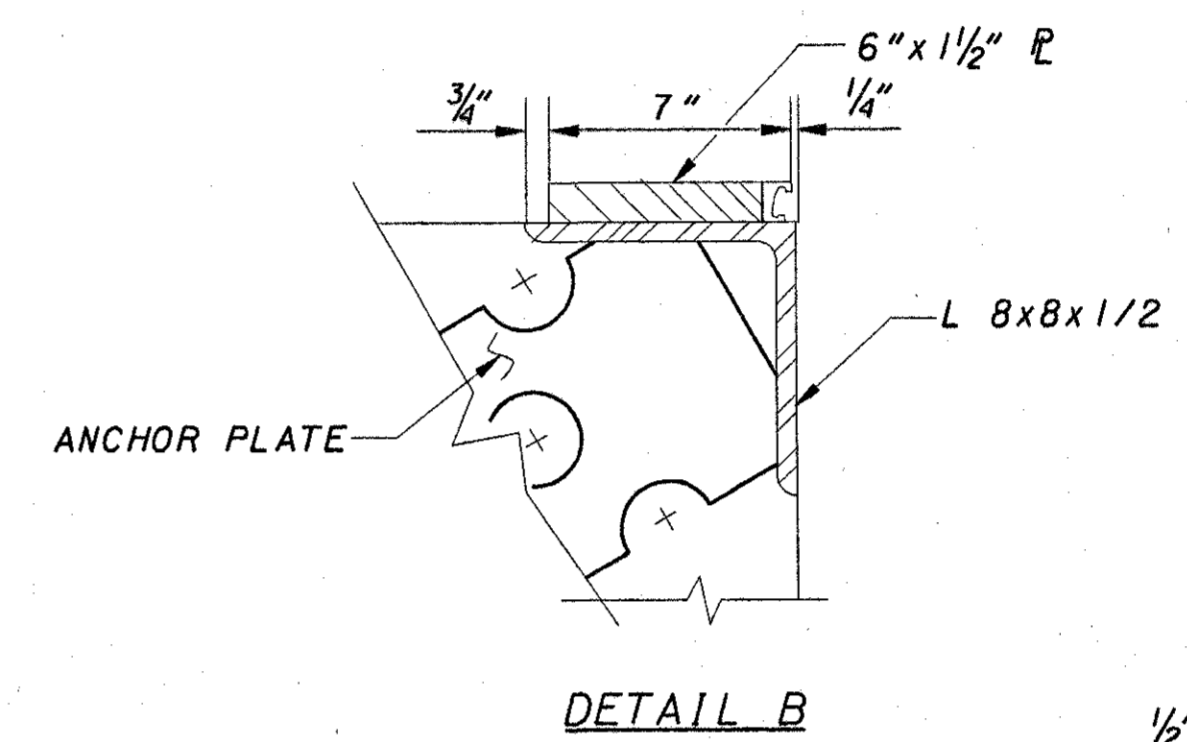




4" STRIP SEAL GLAND

TEMPERATURE (F)	DIMENSION "A"
30°	2 1/2"
40°	2 5/16"
50°	2 1/4"
60°	2 1/8"
70°	1 7/8"
80°	1 11/16"
90°	1 9/16"

EXPANSION LENGTH = 196'-0" ±



NOTES  
REFER TO STD. DWG. EXJ-4-87  
FOR DETAILS NOT SHOWN

DESIGN AGENCY: BARR ENGINEERING, Five East Long Street, Columbus, Ohio 43215, Ph: (614) 224-1941

DATE: 8/2001

REVIEWED: GEA

STRUCTURE FILE NUMBER: 3106683

DESIGNED: JEP

CHECKED: ASB

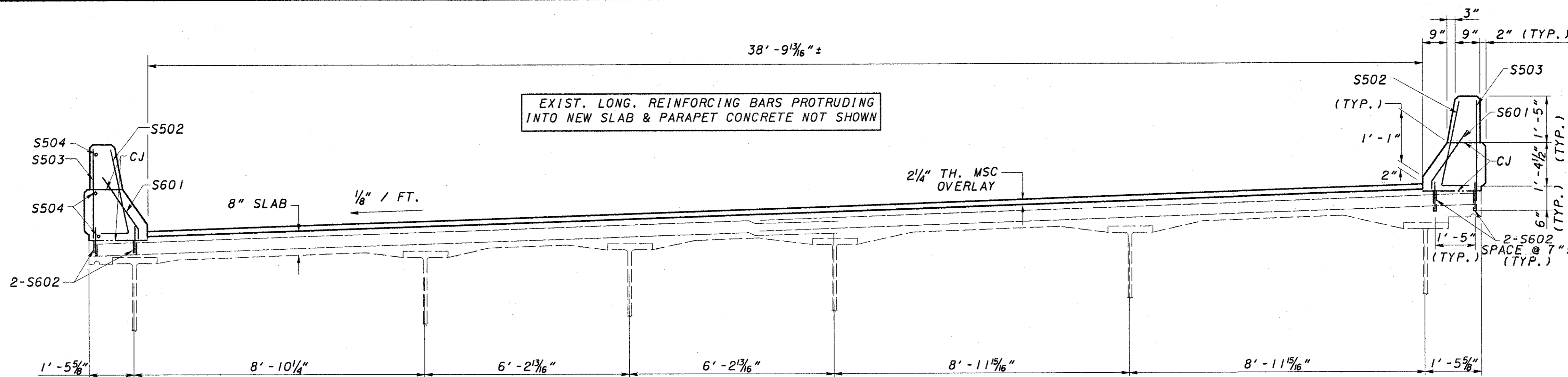
REAR ABUTMENT EXPANSION JOINT DETAILS

RAMP 66 (BRIDGE NO. HAM-71-0202)

HAM 471-0.26

105/106

137/182



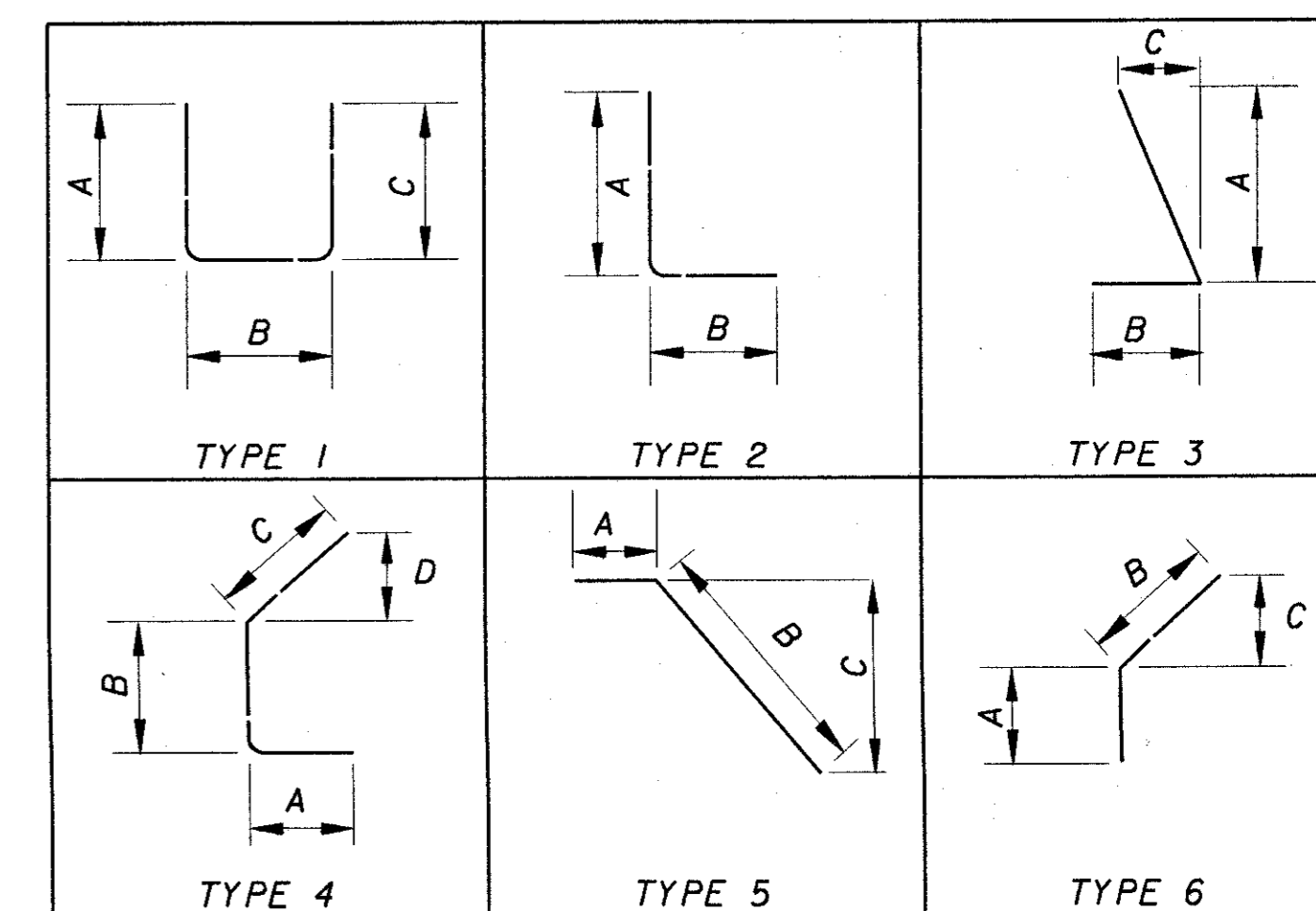
SECTION A6-A6

REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
ABUTMENT									
A501	4	3'-6"		2	2'-10"	10"			
A502	4	3'-2"		3	2'-6"	10"	4"		
A503	3	1'-10"		STR					
A601	6	20'-7"		STR					
A602	86	2'-0"		STR					
A603	39	2'-10"		1	1'-2"	10"	1'-2"		
A604	4	3'-3"		4	1'-0"	6"	2'-0"	1'-7"	
A605	4	5'-10"		STR					
D801	26	3'-8"		5	1'-6"	2'-3"	1'-10"		

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
SUPERSTRUCTURE									
S502	4	3'-2"		3	2'-6"	10"	2"		
S503	4	2'-6"		STR					
S504	3	1'-10"		STR					
S601	4	3'-0"		6	4"	1'-6"	1'-2"		
S602	8	1'-6"		STR					

BENDING DIAGRAMS



DESIGN AGENCY: BARR ENGINEERING  
 Five East Long Street  
 Columbus, Ohio 43215  
 Ph: (614) 224-1941  
 DATE: 8/2001  
 REVIEWED: GEA  
 STRUCTURE FILE NUMBER: 3106663  
 DRAWN: JEP  
 CHECKED: ASB  
 DESIGNED: JEP  
 REAR ABUTMENT EXPANSION JOINT DETAILS  
 RAMP 66 (BRIDGE NO. HAM-71-0202)  
 HAM-471-0.26  
 106/06  
 138  
 182