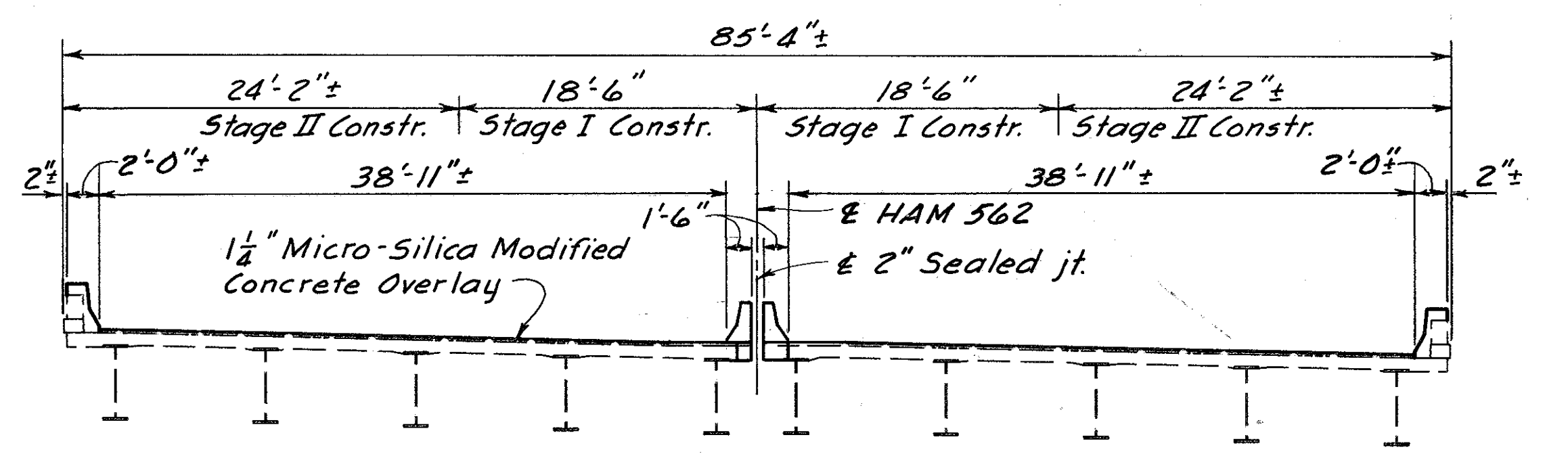


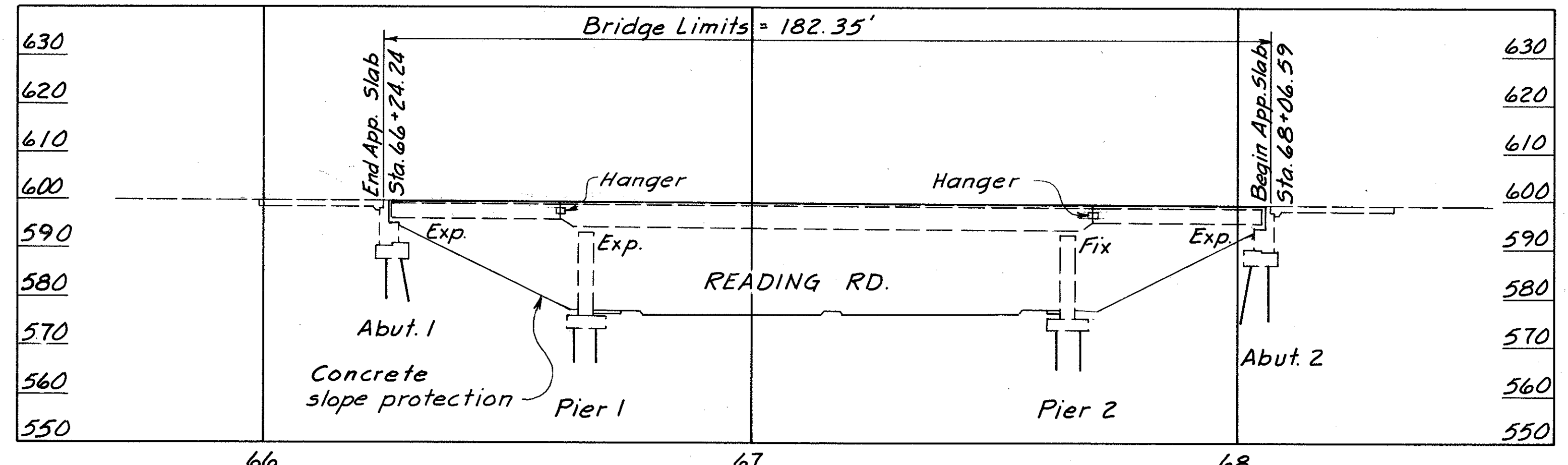
**PLAN**



**TRANSVERSE SECTION**  
(Looking east)

**EXISTING STRUCTURE**  
 TYPE: Simple span rolled steel beam and simple span welded plate girder with reinforced concrete deck and substructure  
 SPANS: 39'-3", 99'-2 5/8", 39'-3"  
 ROADWAY: 83'-0" face to face of parapets, includes 11'-0" raised median  
 LIVE LOADING: C.F. = 2000 (57)  
 SKEW: 14°24'56" L.F. to reference chord  
 DATE OF CONSTRUCTION: 19\_\_  
 STRUCTURE FILE NO.:

**PROPOSED STRUCTURE (REHABILITATION)**  
 PROPOSED WORK: Refurbish bearings, seal expansion joints, retrofit railings, apply overlay to deck, abandon drainage system and paint structural steel  
 SPANS: 39'-3", 99'-2 5/8", 39'-3"  
 ROADWAY: 2-38'-11" Roadways curb to curb with 3'-2" barrier median  
 LIVE LOADING: C.F. = 2000 (57)  
 SKEW: 14°24'56" L.F. to reference chord  
 WEARING SURFACE: 1 1/4" Micro-Silica modified concrete overlay  
 EXISTING APPROACH SLAB: 25'-0" long  
 ALIGNMENT: 300' Spiral to 4°00' curve right  
 SUPERELEVATION: Varies, 0.053/ft. max.



**ELEVATION**

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

**GENERAL PLAN AND ELEVATION**

**BRIDGE NO. HAM-562-0121  
OVER READING ROAD**

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MR5	ALT	~	VDG	CR5	7/93	

BASESHT 22 OCT 1991

**DESIGN REFERENCES**

REFERENCE shall be made to Standard Drawings:

EXJ-4-87 dated 1-5-89  
EXJ-2-81 revised 4-2-84

and to Supplemental Specifications:

852 dated 6-10-87  
952 dated 12-14-88

**DESIGN STRESSES**

Concrete Class S - compressive strength 4500 p.s.i.

Concrete Class C - compressive strength 4000 p.s.i.

Reinforcing Steel - ASTM A615, A616, A617  
(Epoxy coated) - Grade 60 minimum yield strength 60,000 p.s.i.

**SCOPE OF WORK**

1. Refurbish and reset abutment bearings
2. Seal expansion joints with strip seals at abutments
3. Seal intermediate deck expansion joints with compression seals
4. Lubricate pins in structural steel hangers
5. Abandon drainage system
6. Retrofit railings as indicated on plans
7. Apply overlay to deck, top of backwall and approach slab
8. Install compression seal between median barriers
9. Seal concrete surfaces
10. Paint structural steel, System OZEU

Work shall be executed in stages as indicated on plans.

**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/or 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.

Contract bid prices shall be based upon a recognition of the uncertainties described above and upon a prebid examination of the existing structure by the Contractor. However, all project work shall be based upon actual details and dimensions which have been verified by the Contractor in the field.

**REPLACEMENT OF EXISTING REINFORCEMENT STEEL:** Any existing reinforcing bars which are to be incorporated into the new work and which are made unusable by the Contractor's concrete removal operations shall be replaced with new steel at his cost. Any existing reinforcing bars deemed by the Engineer to be unusable because of corrosion shall be replaced with new steel. An allowance of 100 pounds is included in Item 509 for this purpose.

**PORTIONS OF STRUCTURES REMOVED**

Removal of portions of existing structure shall be performed in such a manner as to prevent debris from falling onto the roadway below. All debris shall be removed from the site and disposed of by the Contractor.

Concrete shall be removed only with pneumatic or hand tools that will give results satisfactory to the Engineer. Care shall be taken to avoid damaging the existing reinforcing steel which is to remain in place. The weight of the hammer shall not be more than 35 pounds for removal within 6 inches of portions to be preserved. Outside the 6-inch limit hammers not to exceed 85 pounds may be used with the approval of the Engineer. Any salvaged reinforcing steel which is made unusable by the Contractor's concrete removal operations shall be replaced with new doweled steel at his cost.

Removal of existing structure components shall be by means of equipment and procedures, approved by the Engineer, which are chosen and employed so as to prevent damage to the existing steel which is to remain.

**CUT LINE CONSTRUCTION JOINT PREPARATION:** Saw cut boundaries of proposed concrete removals 1" deep. Remove concrete to a rough surface. Where noted, protruding reinforcing steel shall be left in place. Install dowel bars as specified. Prior to concrete placement, abrasively clean joint surface and exposed reinforcement to remove loose and disintegrated concrete and loose rust. Then, the joint surface and exposed reinforcement shall be thoroughly cleaned of all dirt, dust, or other foreign material by the use of water, air under pressure, or other methods that produce satisfactory results. Concrete bonding surfaces shall be wet without free water as concrete is placed.

**PROTECTION OF TRAFFIC**

Prior to demolition of any portions of the existing superstructure, the Contractor shall submit his plans for the protection of traffic (vehicular and pedestrian) under the structure to the Director for approval. These plans shall include provisions for 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.

**PLANS FOR EXISTING BRIDGE**

Plans of the existing structure are available for reference at the ODOT District Eight office.

**MAINTENANCE OF TRAFFIC**

For sequence of construction on project and maintenance of traffic see roadway plans sheet <sup>1A</sup> 170

**REFURBISH BEARING DEVICE**

This Item shall include all work necessary to clean and paint abutment bearings. Included shall be:

1. Disassembly of the bearings.
2. Hand cleaning (grinding if required).
3. Abrasive blasting and painting as required by proposal note Field Painting of Existing Steel, System OZEU.
4. Replacement of any damaged sheet lead (711.19). Preformed bearing pads 1/8" thick, meeting the requirements of 711.21 may be substituted for the sheet lead.
5. Installation of any necessary 1/8" thick steel shims of the same size as the bearings to provide a snug fit.
6. Reassembly of the bearings.

At the option of the Contractor and at no additional cost to the State, new bearings of the same type as the existing may be installed in place of the refurbished bearings. All work shall be to the satisfaction of the Engineer. Payment for all the above described labor and materials will be made at the contract price bid for Item 516 - Refurbish bearing device.

**JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE**

The ends of the beams at each abutment shall be jacked and the beams supported so the bearing may be removed. The Contractor shall submit his jacking plan to the Director for approval prior to jacking.

**RESET BEARINGS**

Bearings at the abutments shall be reset to be vertical at 60° F. Masonry plates shall be adjusted to be centered under bearings.

**LUBRICATE PINS IN STRUCTURAL STEEL HANGERS**

Contractor to loosen nuts and apply grease to pin. Nuts shall be re-torqued to original condition. Add grease fittings as indicated in plans.

Payment to be included with Item 516 - Refurbish bearing device.

**ABANDON DRAINAGE SYSTEM**

Existing inlets shall be abandoned in place. Grating shall be removed and discarded. Downspouts shall be plugged and inlets filled with micro-silica modified concrete to the level of the existing deck. See plans for pipe removal details.

All labor, equipment, materials and incidentals necessary to complete this work to the satisfaction of the Engineer shall be included with Item 518, Structure drainage, misc.: Abandon and remove.

**MICRO-SILICA MODIFIED CONCRETE OVERLAY**

Longitudinal joints in the concrete overlay are permitted, but only to the extent necessary to accommodate the width of the finishing machine, to facilitate changes in the roadway crown, or to permit maintenance of vehicular traffic.

**PAINTING OF EXISTING STRUCTURAL STEEL**

All existing structural steel shall be cleaned and painted as required by the proposal note Field Painting of Existing Steel, System OZEU.

The surface area pay quantity is based on the surface area of the main members increased by 25 percent to account for the area of crossframes, bearings, and other structural steel incidentals to be cleaned and painted.

**SEALING OF CONCRETE SURFACES**

Reference shall be made to the proposal note for application and material specifications with the additional requirement that clear sealer shall be used. Sealer shall be applied to the following surfaces.

1. Abutment backwalls, beam seats, and the face of the breastwall to ground line shall be sealed with an epoxy sealer.
2. The piers shall be sealed with an epoxy sealer. The sealer shall be applied to the sides, bottom and ends of the cap and the total surface of the columns.
3. Superstructure and abutment wingwall parapets shall be sealed as shown on sheet <sup>4</sup> 12, <sup>6</sup> 12 and <sup>8</sup> 12 with an epoxy or non-epoxy sealer.

**MECHANICAL COUPLERS**

An approved type of mechanical coupler for reinforcing bars shall be provided. Installation of couplers shall conform with manufacturer's recommended procedures.

Couplers and dowel bars shall be epoxy coated. Coating for both couplers and bars shall conform to the same specification. Coatings which have been damaged or which otherwise do not meet specifications with respect to color, continuity and uniformity may be repaired as directed by the Engineer or they shall be replaced with material which meets the specifications.

Couplers and dowel bar extensions shall conform with Item 509 and be included in the bid price per pound for Item 509.

BALKE ENGINEERS  
1848 Summit Road  
Cincinnati, Ohio 45237


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**GENERAL NOTES**

BRIDGE NO. HAM-562-0121  
OVER READING ROAD

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	BRP	3/93	

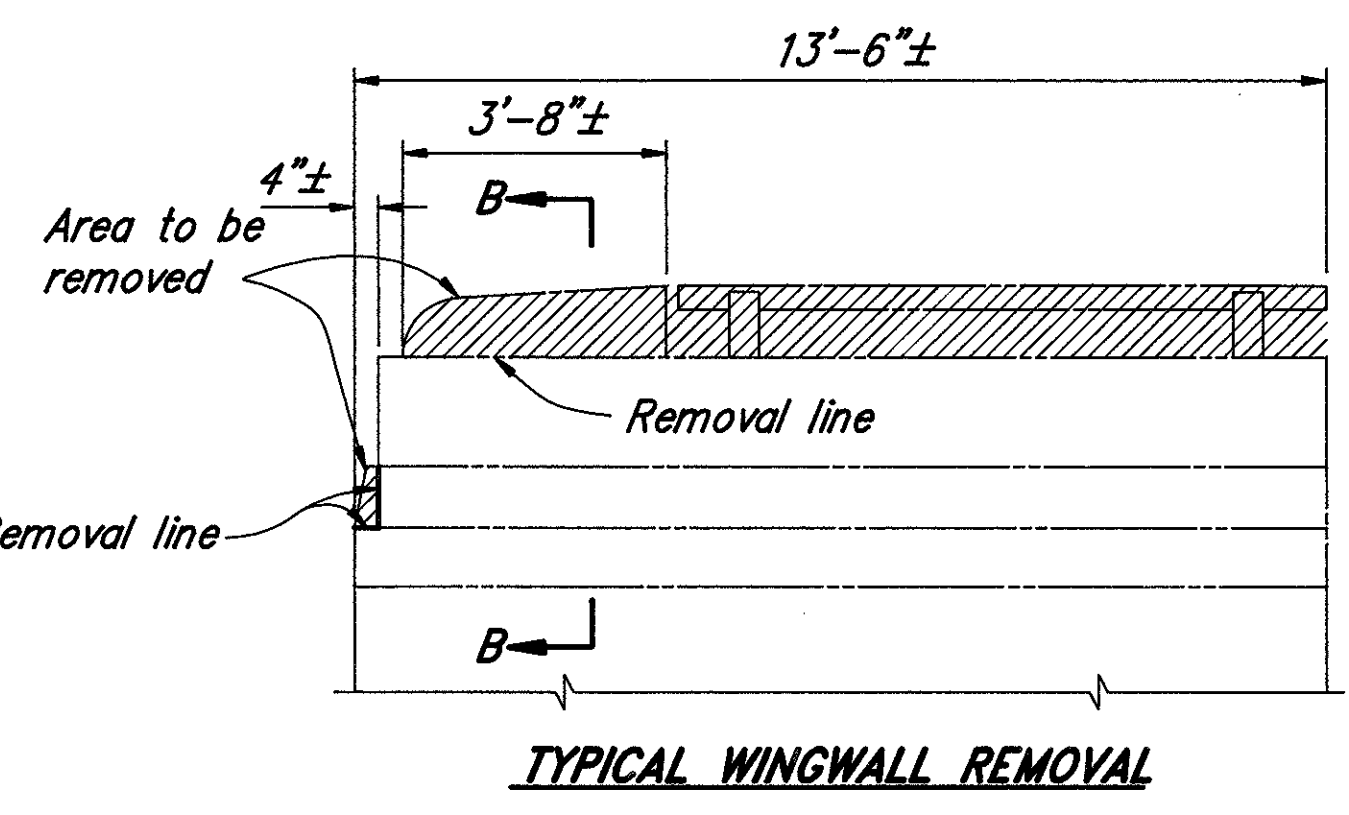
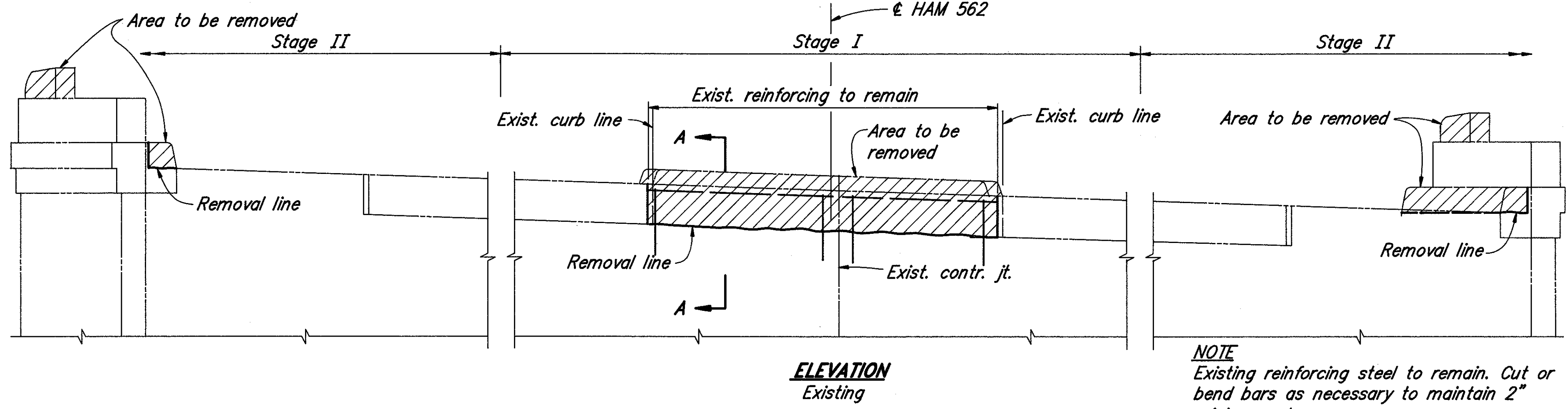
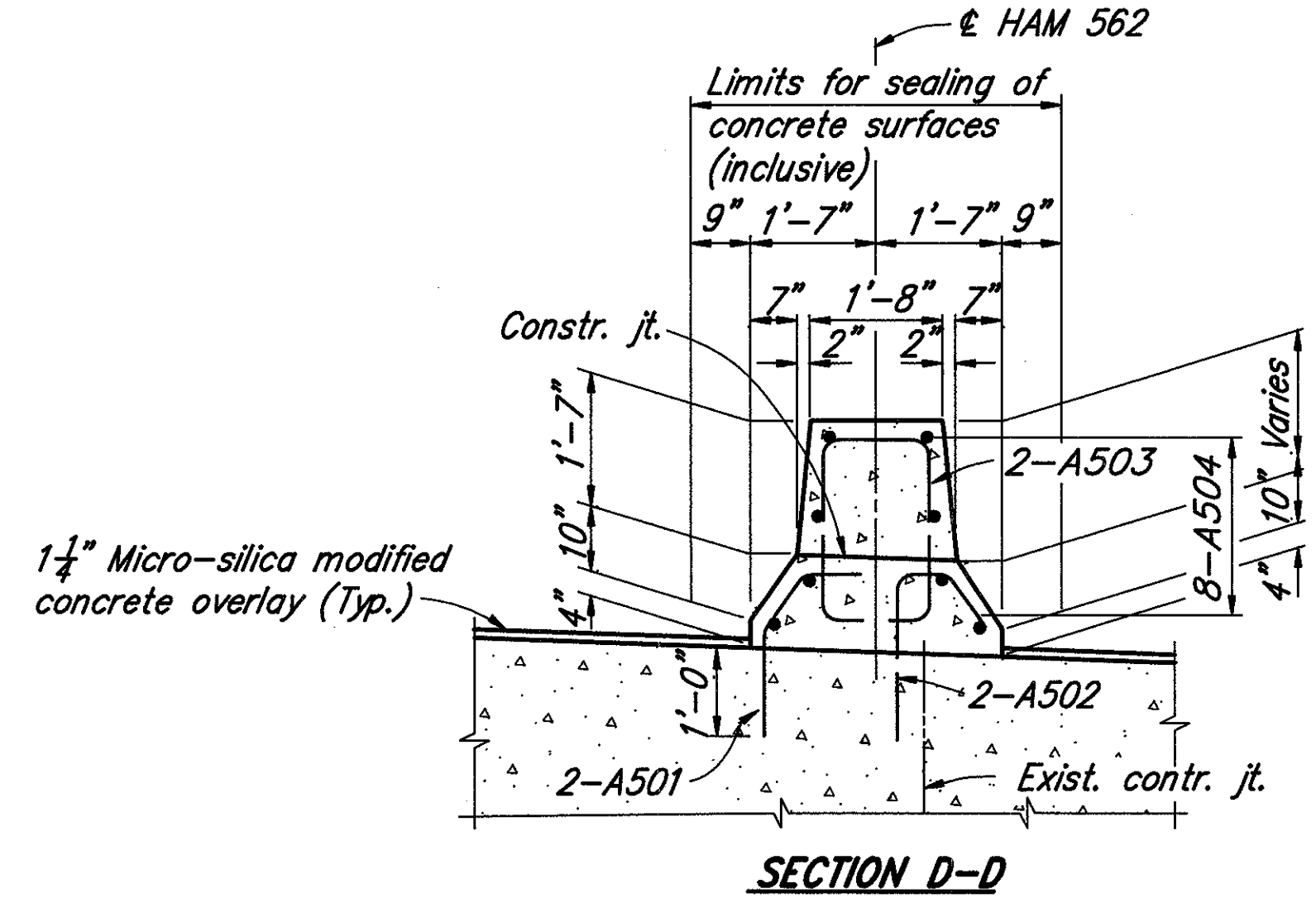
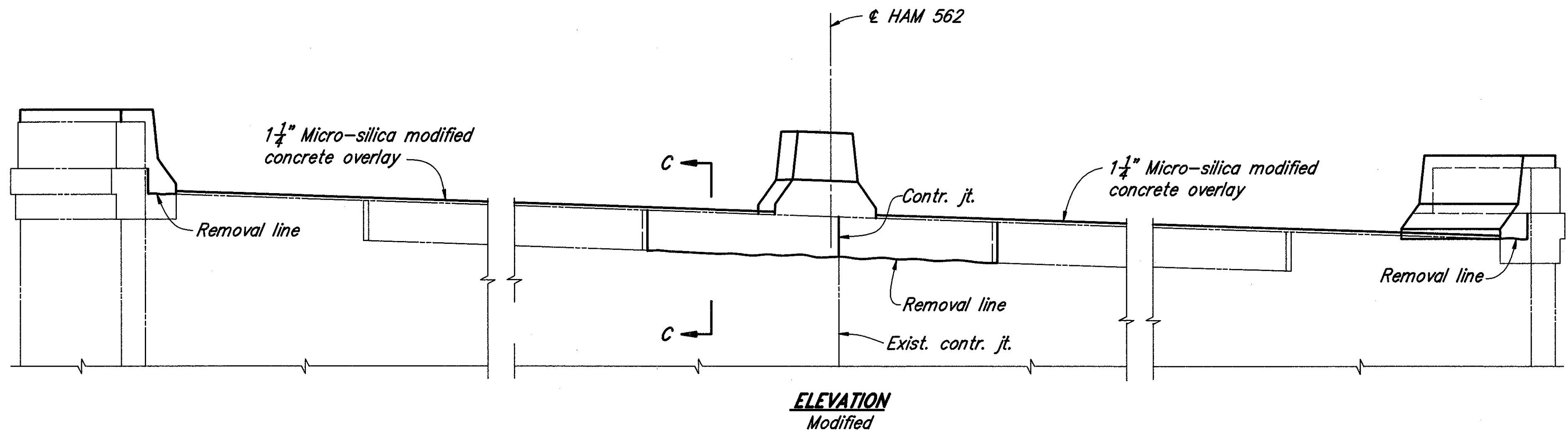
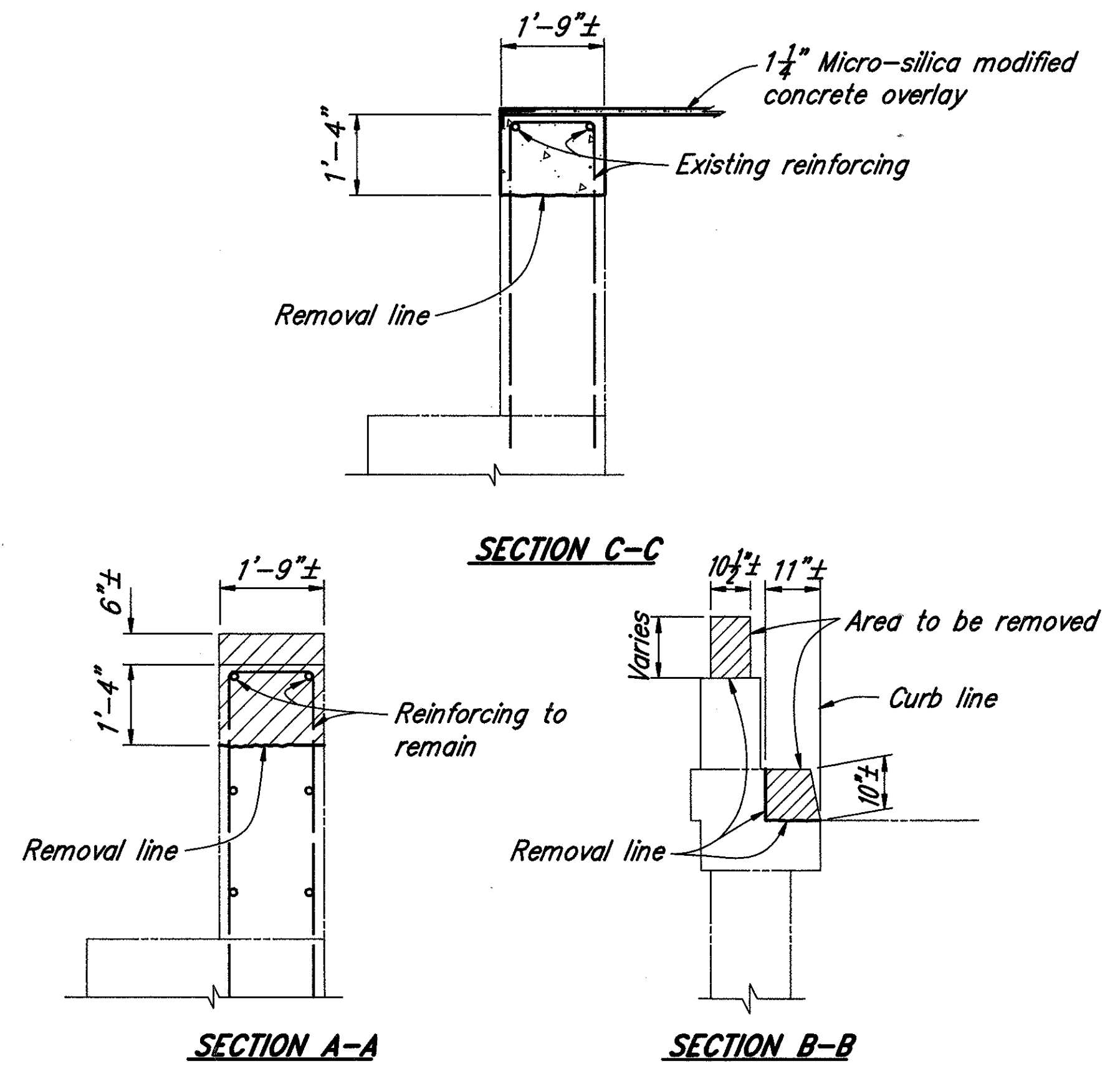
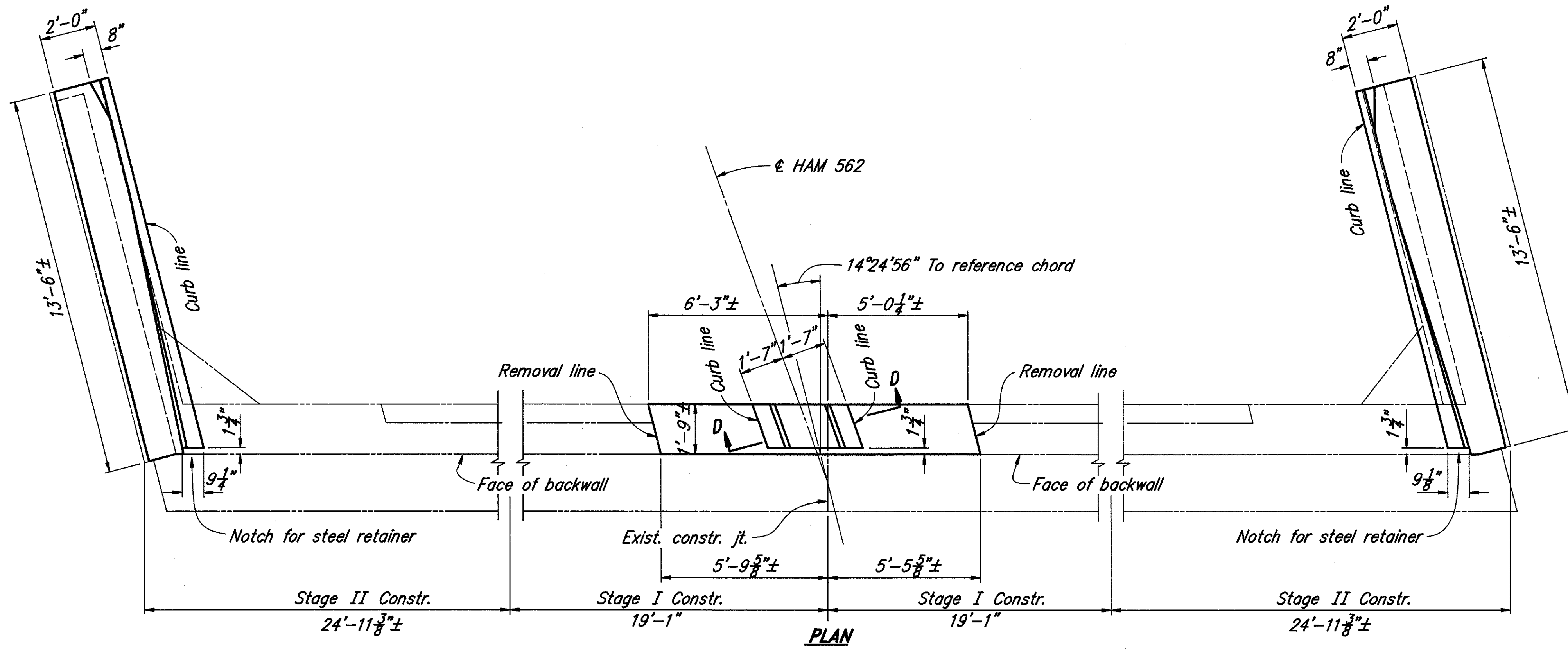
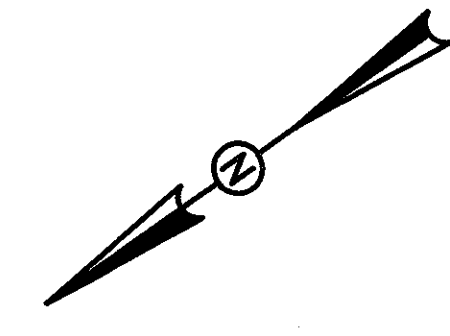
ESTIMATED QUANTITIES					Calculated by: MS Checked by: ALT			
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPERSTRUCTURE	GENERAL
202	11201 /	L.S.	Lump	Portions of structures removed, as per plan				L.S.
509	15800 /	15,397	Lb.	Epoxy coated reinforcing steel, grade 60	514		14,783	100
510	11100 /	703	Each	Dowel hole	80		623	
511	34400 /	62	Cu. yd.	Class S concrete, superstructure (repair or reconstruction)			62	
511	45700 /	3	Cu. yd.	Class C concrete, abutment (repair or reconstruction)	3			
Special	51267500 /	578	Sq. yd.	Sealing of concrete surfaces (see Proposal Note)	32		546	
Special	51267502 /	520	Sq. yd.	Sealing of concrete surfaces (epoxy) (see Proposal Note)	144	376		
Special	51400050 /	30,054	Sq. ft.	Surface preparation of existing steel, System OZEU (see Proposal Note)			30,054	
Special	51400056 /	30,054	Sq. ft.	Field painting of existing steel, prime coat, System OZEU (see Proposal Note)			30,054	
Special	51400060 /	30,054	Sq. ft.	Field painting of existing steel, intermediate coat, System OZEU (see Proposal Note)			30,054	
Special	51400066 /	30,054	Sq. ft.	Field painting of existing steel, finish coat, System OZEU (see Proposal Note)			30,054	
516	10900 /	340	Lin. ft.	Elastomeric compression seal			340	
516	11210 /	161	Lin. ft.	Structural expansion joint including elastomeric strip seal			161	
516	11800 /	161	Lin. ft.	Vertical extension of structural expansion joint			161	
516	45304 /	20	Each	Refurbish bearing device			20	
516	46700 /	20	Each	Reset bearing			20	
516	47000 /	L.S.	Lump	Jacking and temporary support of superstructure			L.S.	
517	76200 /	412	Lin. ft.	Railing faced			412	
518	63300 /	L.S.	Lump	Structure drainage, misc.: remove and abandon drainage system				L.S.
Special	51922000 /	1577	Sq. yd.	Micro-silica modified concrete overlay (1 1/4" thick) (see Proposal Note)			1577	
Special	51922100 /	14	Cu. yd.	Micro-silica modified concrete overlay (variable thickness) (see Proposal Note)			14	
Special	51922300 /	L.S.	Lump	Test slab (see Proposal Note)			L.S.	

 <b>BALKE ENGINEERS</b> 1848 Summit Road Cincinnati, Ohio 45237						3/12
<b>ESTIMATED QUANTITIES</b>  BRIDGE NO. HAM-562-0121 OVER READING ROAD						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDC	8/28/93	3/93	









NOTES  
For wingwall barrier details see sheet 6/12

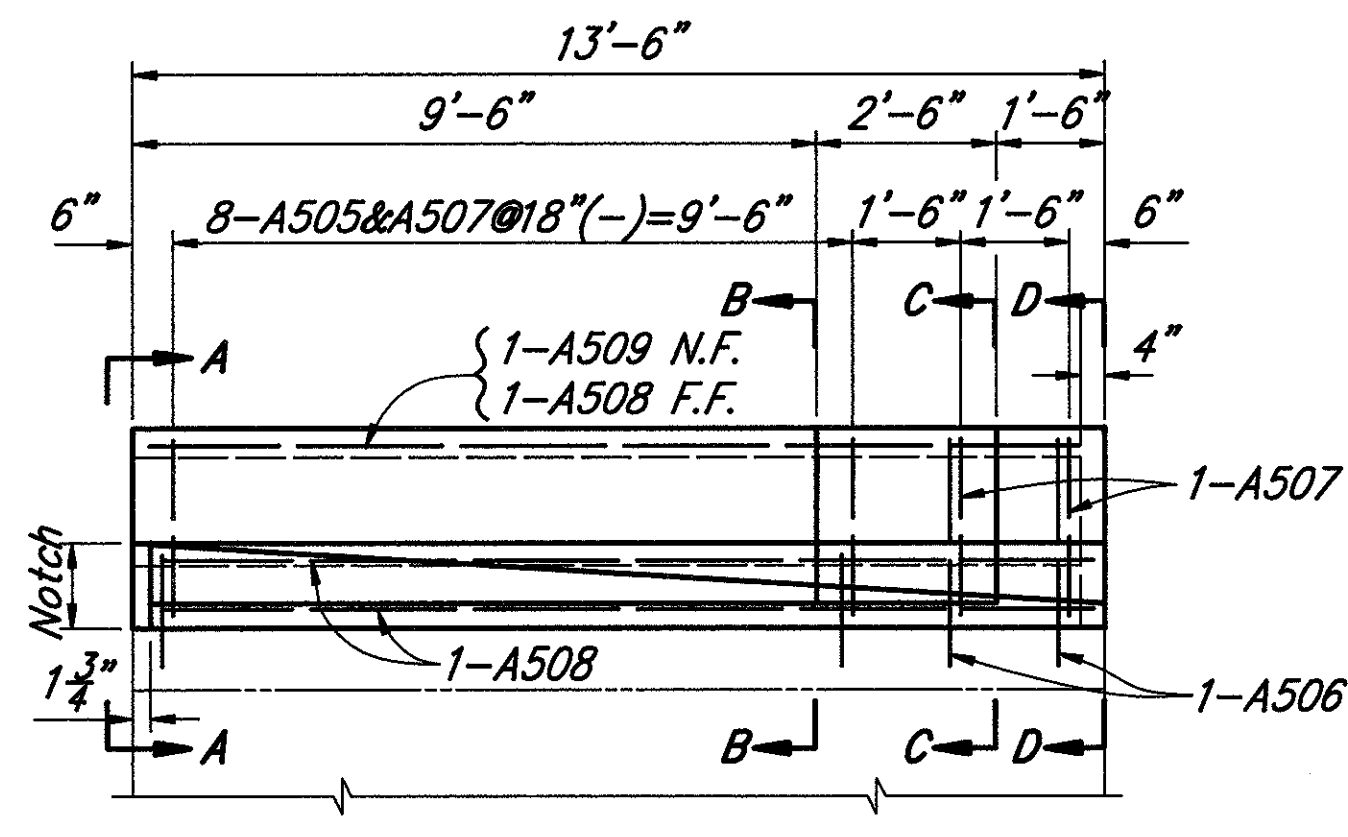
BALKE ENGINEERS  
1848 Summit Road  
Cincinnati, Ohio 45237

ABUTMENT NO. 2  
BRIDGE NO. HAM-562-0121  
OVER READING ROAD

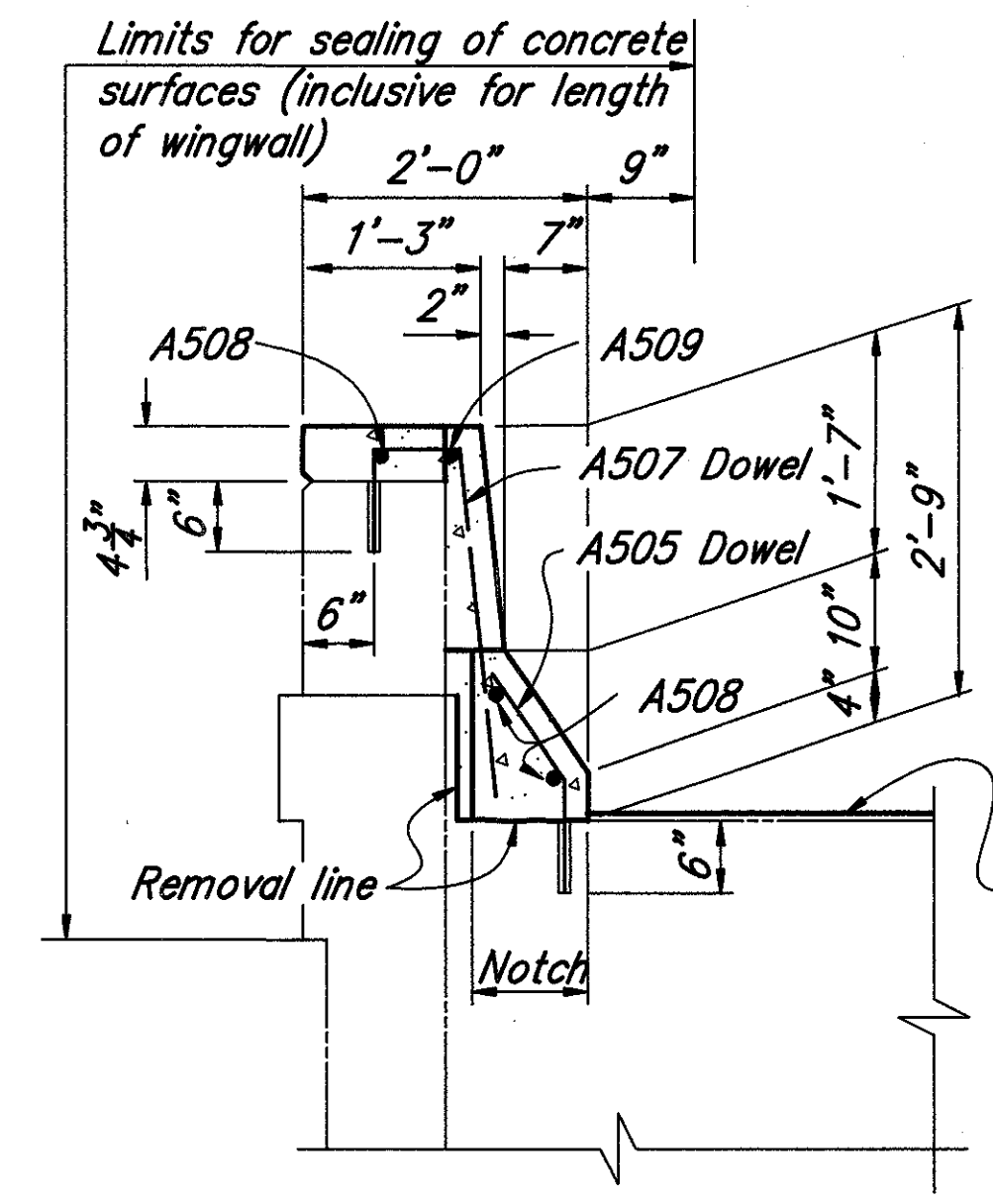
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	DWI	8/28/93	5/93	

NOTE  
Existing reinforcing steel to remain. Cut or bend bars as necessary to maintain 2" minimum clearance.

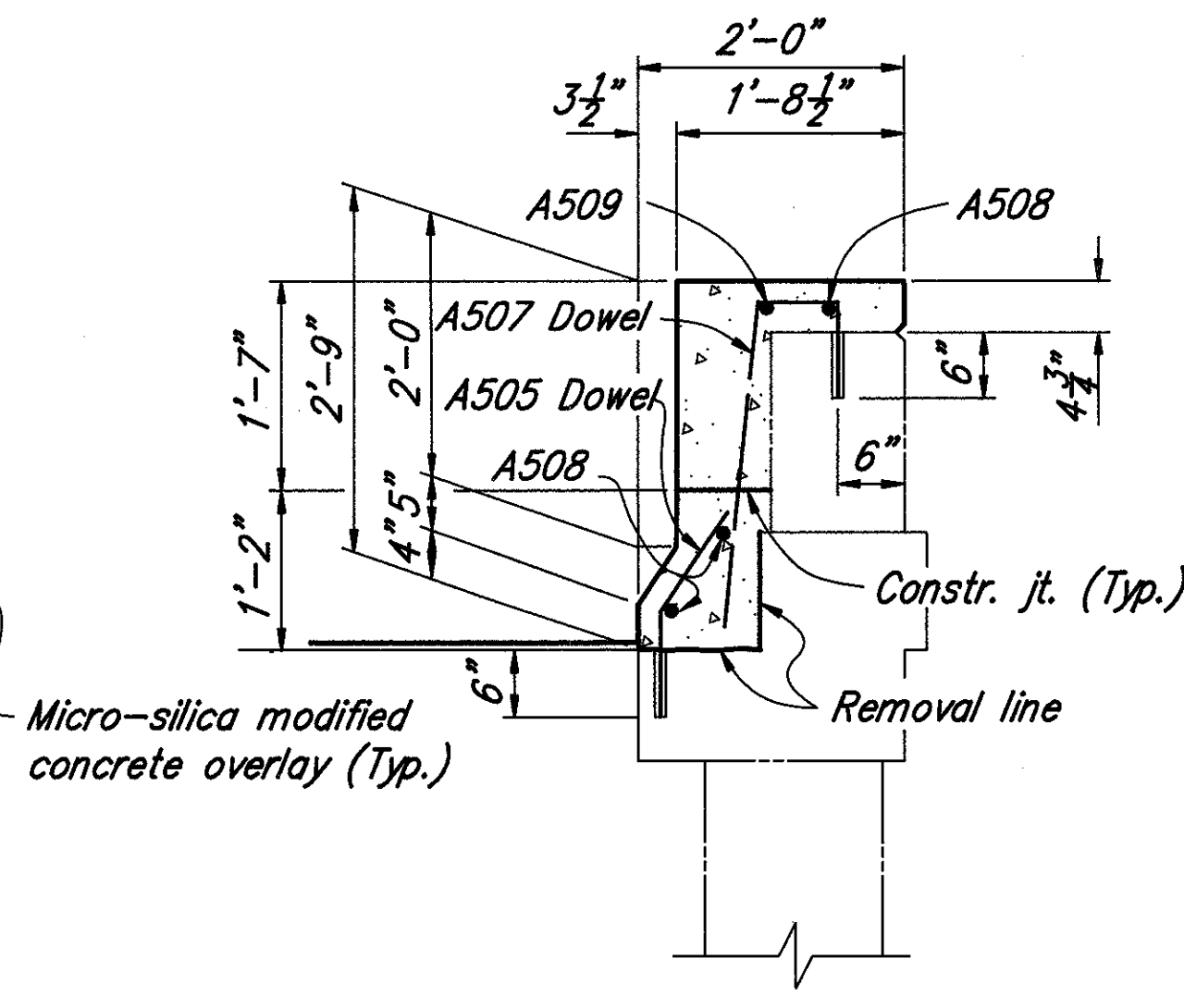
9044002 18 MAR 1993



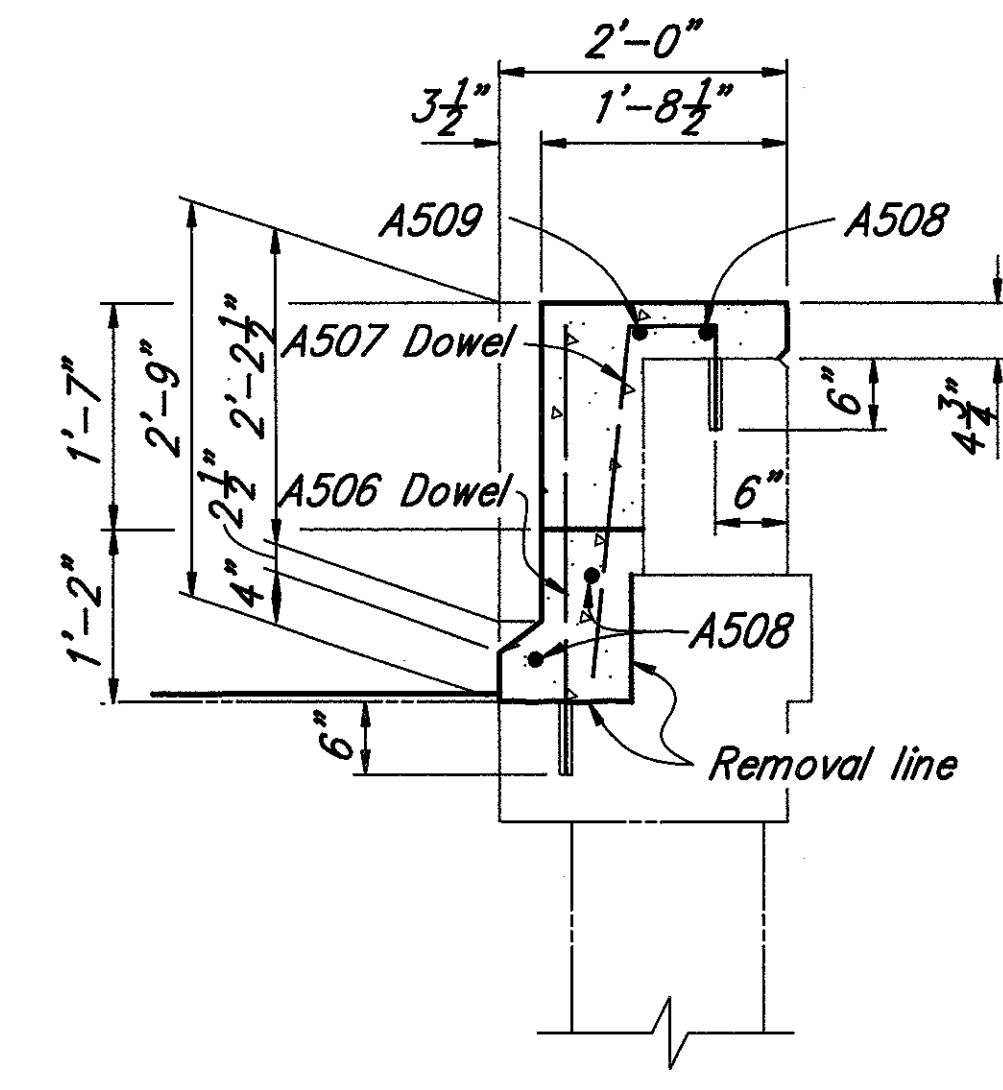
**WINGWALL BARRIER ELEVATION**  
Curb side elevation



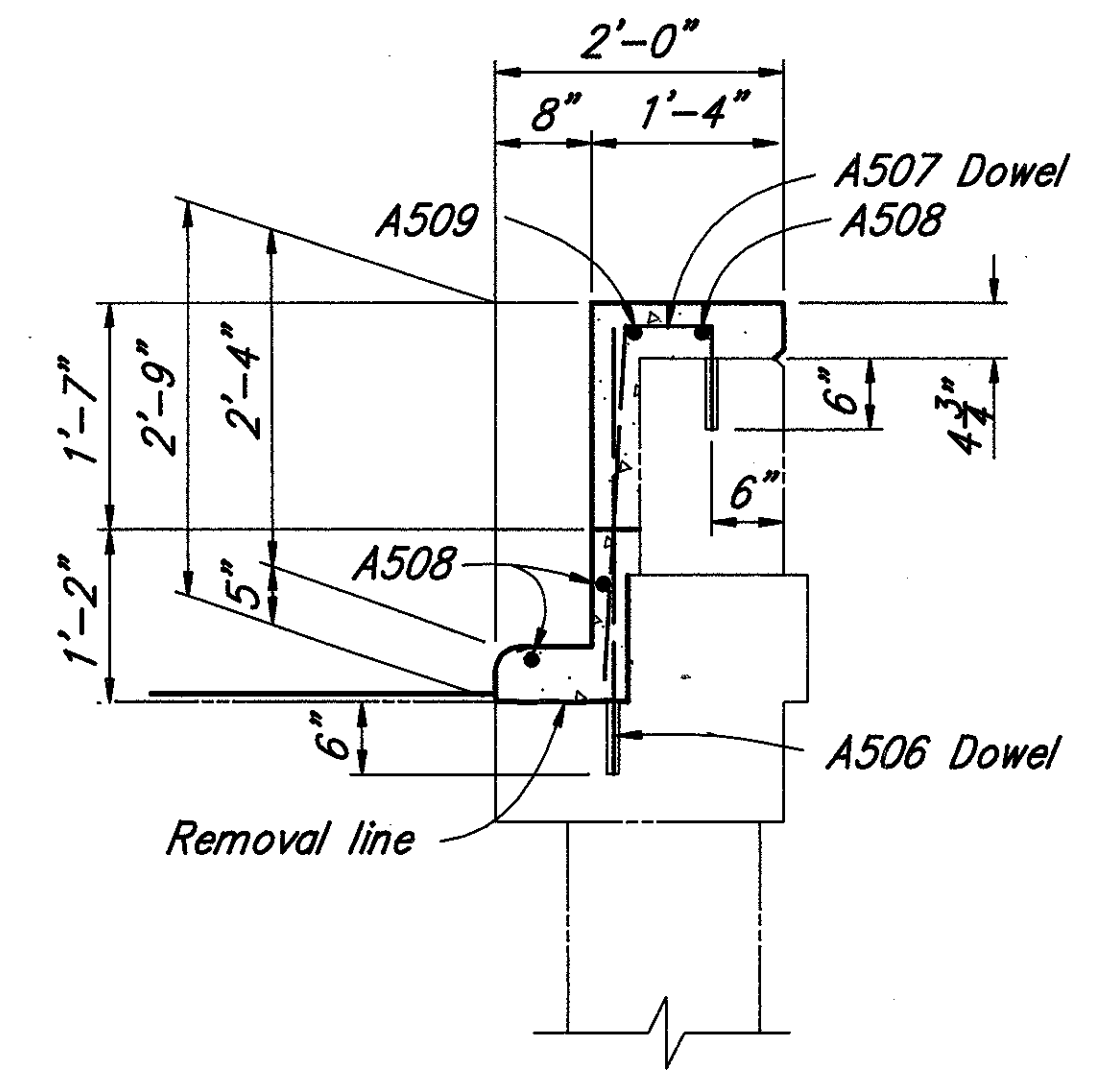
**SECTION A-A**



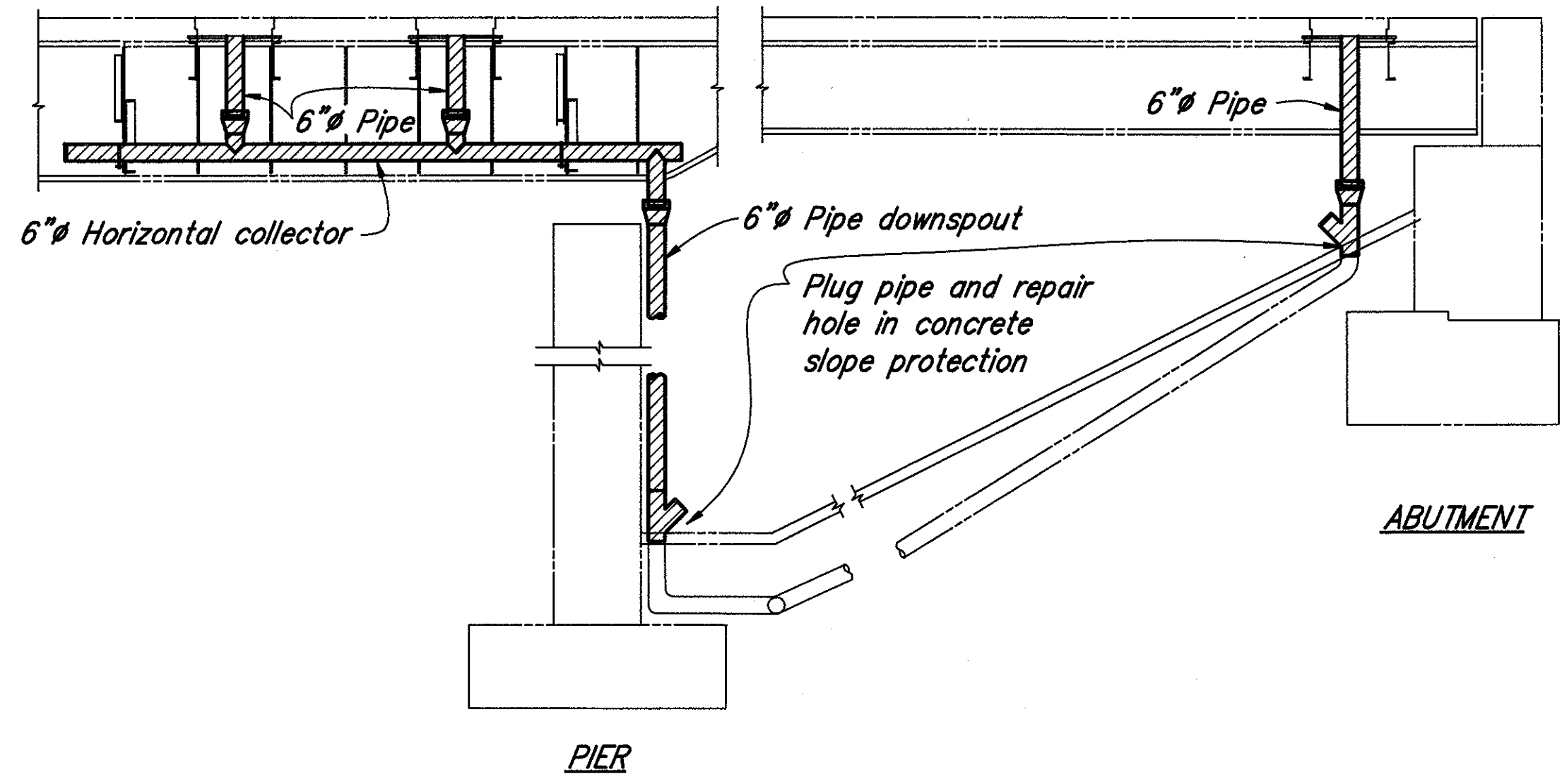
**SECTION B-B**



**SECTION C-C**



**SECTION D-D**

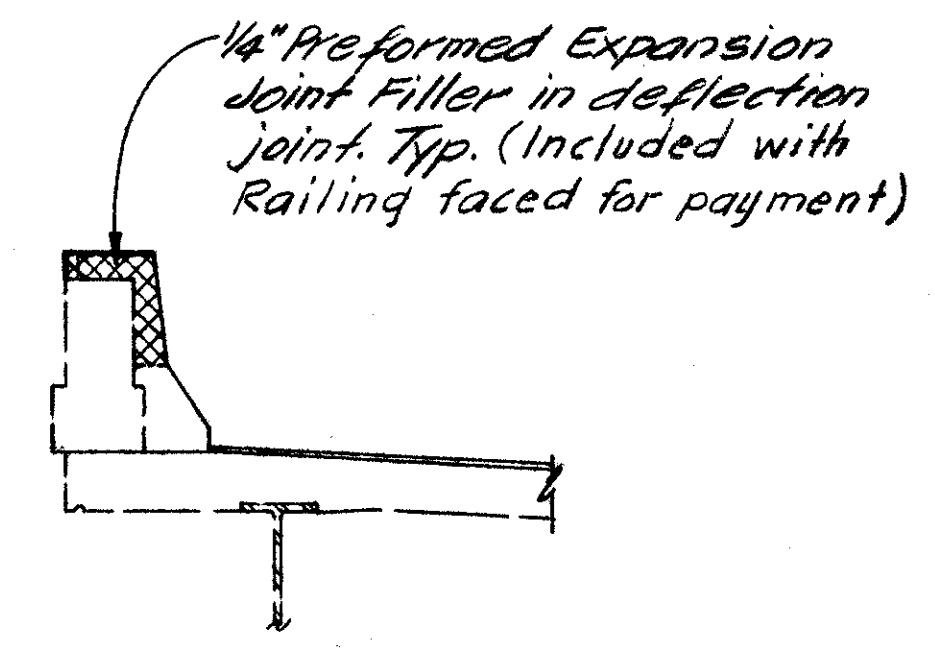
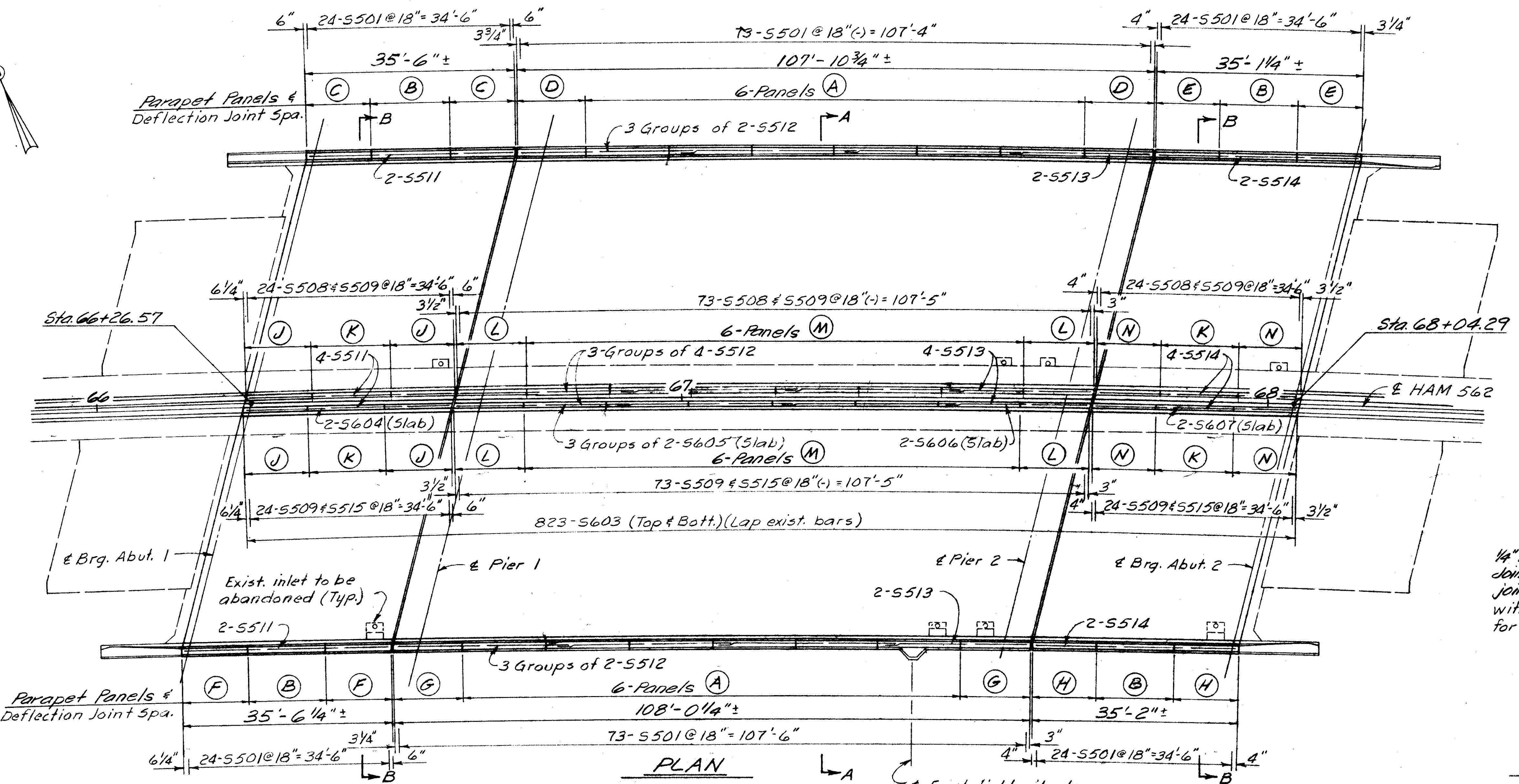
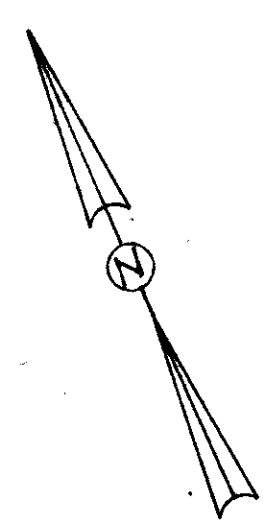


**REMOVAL OF DRAINAGE SYSTEM**  
Denotes 6" pipe to be removed  
(Pier 2 shown, Pier 1 similar)

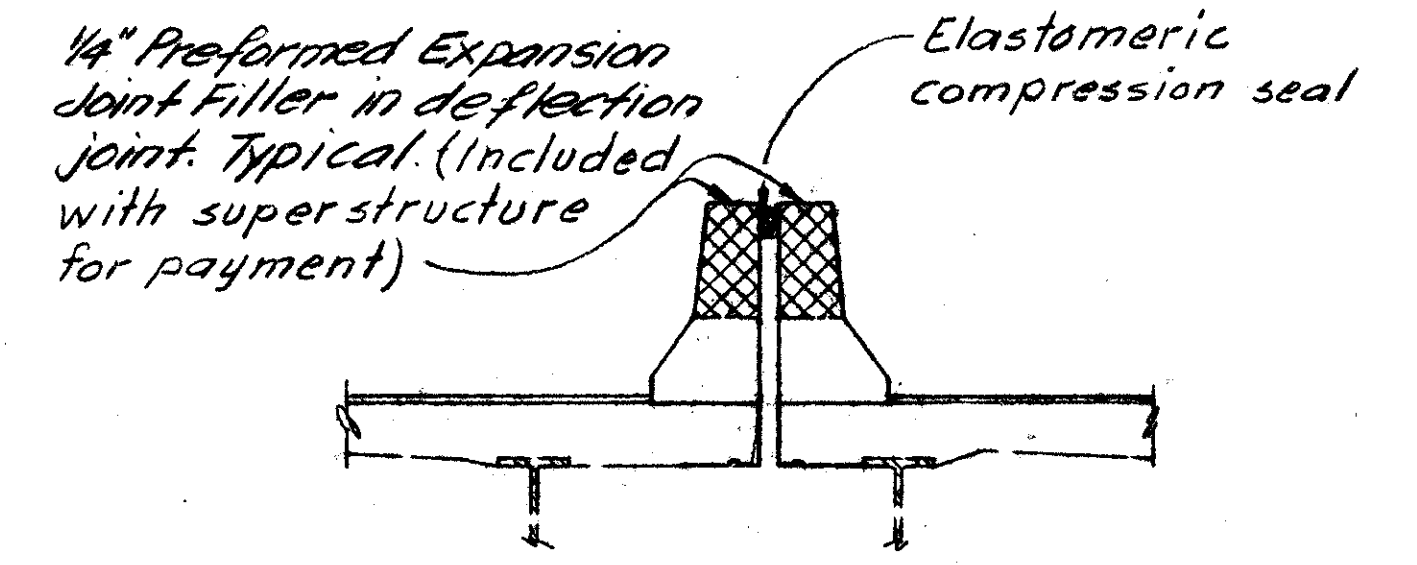
**NOTES**  
N.F. denotes near face  
F.F. denotes far face

<b>BALKE ENGINEERS</b> 1848 Summit Road Cincinnati, Ohio 45237							6/12
<b>ABUTMENT DETAILS</b> <b>REMOVAL OF DRAINAGE SYSTEM</b> BRIDGE NO. HAM-562-0121 OVER READING ROAD							
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
MRS	ALT	~	DW	8/28/93	3/93		

SCL4MDO3 26 FEB 1993



**DEFLECTION JOINT AT BARRIER**  
 Location of deflection joints to match existing joint locations

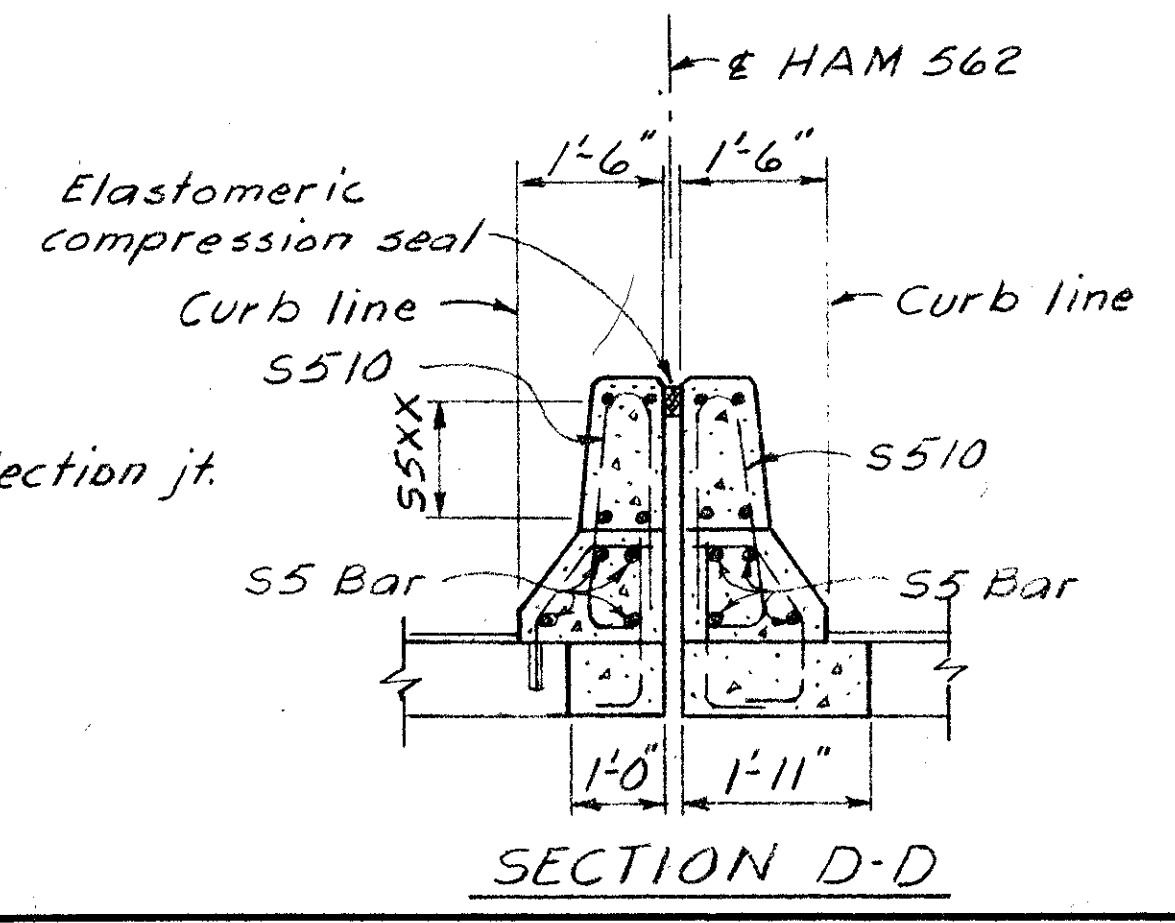
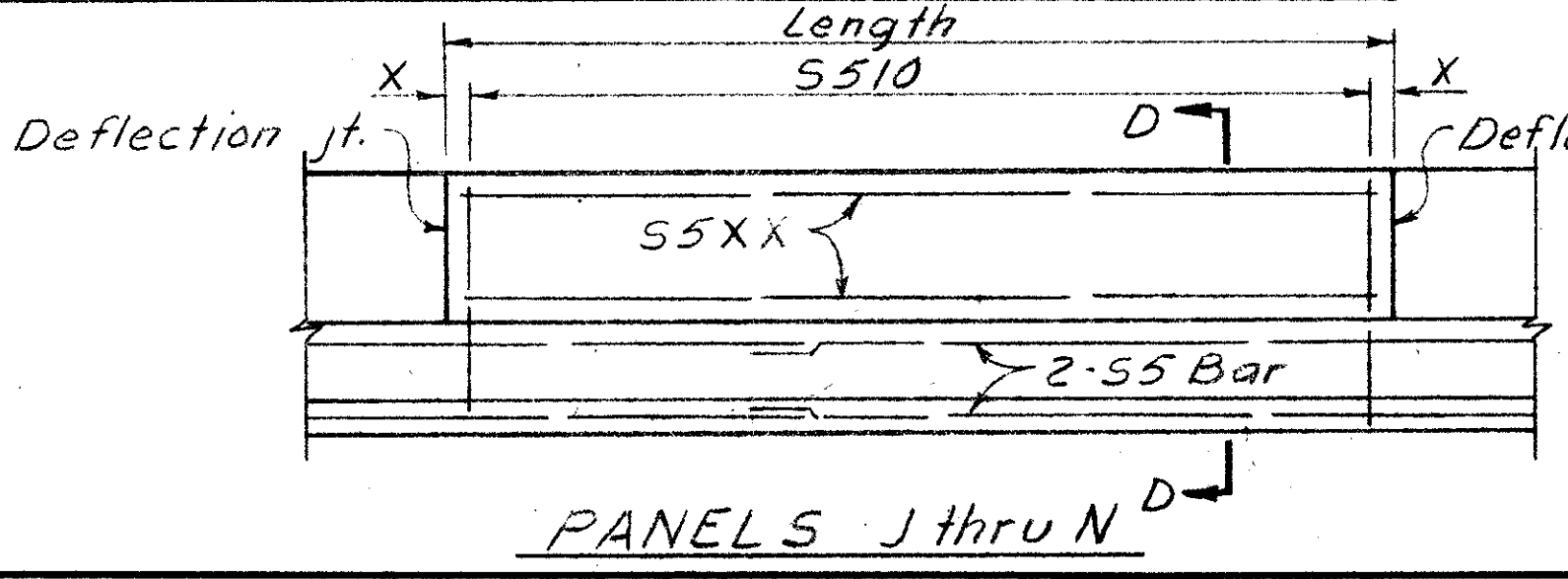
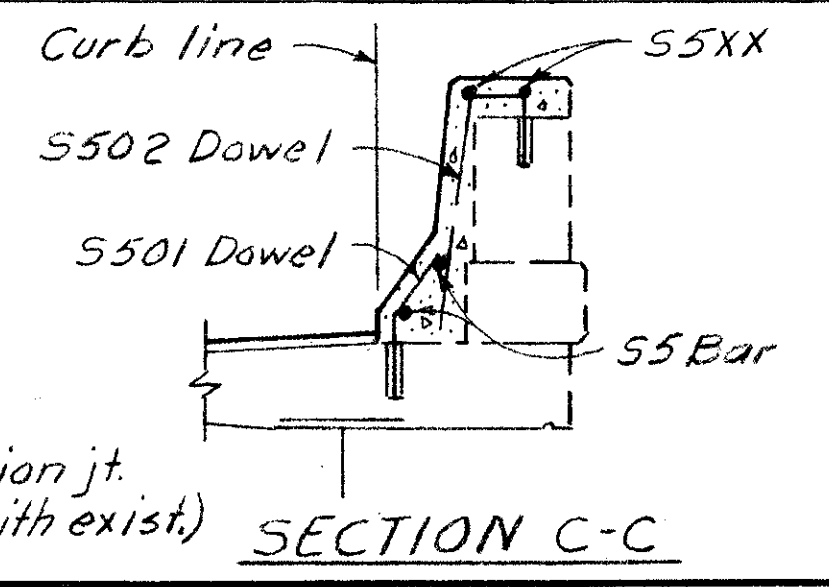
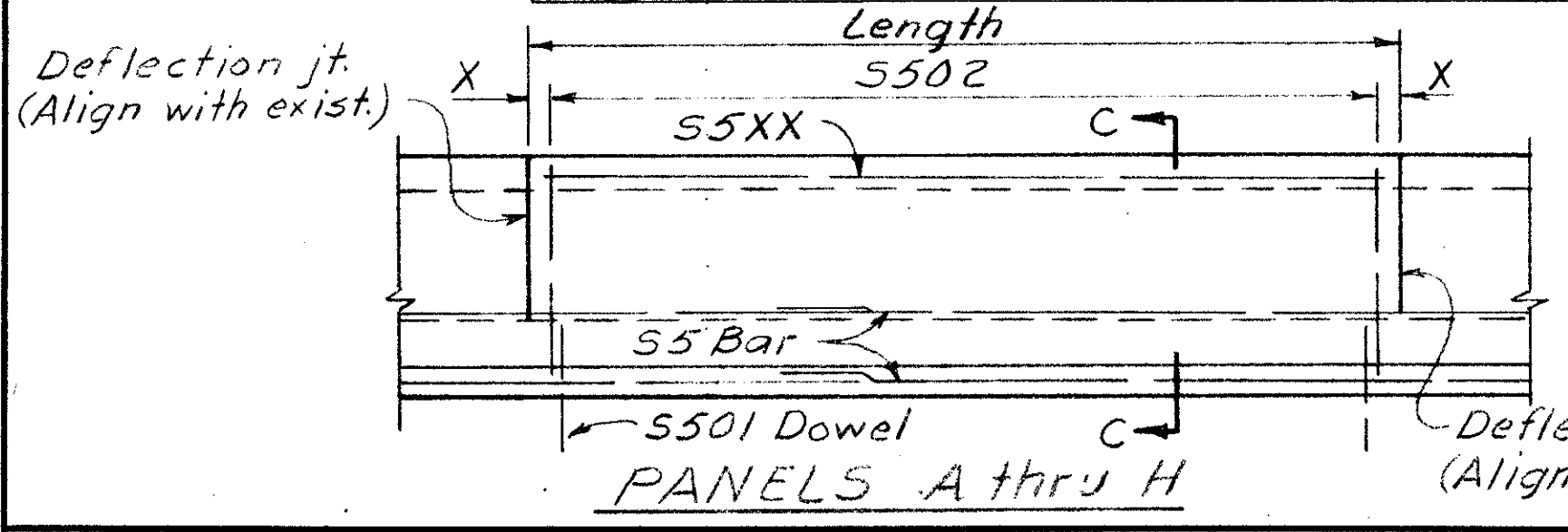


**DEFLECTION JOINT AT MEDIAN BARRIER**

PARAPET PANELS											
MARK	NO.	LENGTH	DIM. X	S5XX	NO. S502 BARS	MARK	NO.	LENGTH	DIM. X	S5XX	NO. S510 BARS
(A)	12	14'-1"	4"	2-S503	10	(J)	4	11'-1 1/2"	4"	4-S505	8
(B)	4	13'-3"	3"	2-S504	10	(K)	4	13'-3"	3"	4-S504	10
(C)	2	11'-1 1/2"	4"	2-S505	8	(L)	4	11'-9"	3"	4-S506	10
(D)	2	11'-8 3/8"	3"	2-S506	9	(M)	12	14'-1"	4"	4-S503	10
(E)	2	10'-11 1/8"	3"	2-S507	8	(N)	4	10'-11 1/4"	3"	4-S507	8
(F)	2	11'-1 3/8"	4"	2-S505	8						
(G)	2	11'-9 1/8"	3"	2-S506	9						
(H)	2	10'-11 1/2"	3"	2-S507	8						

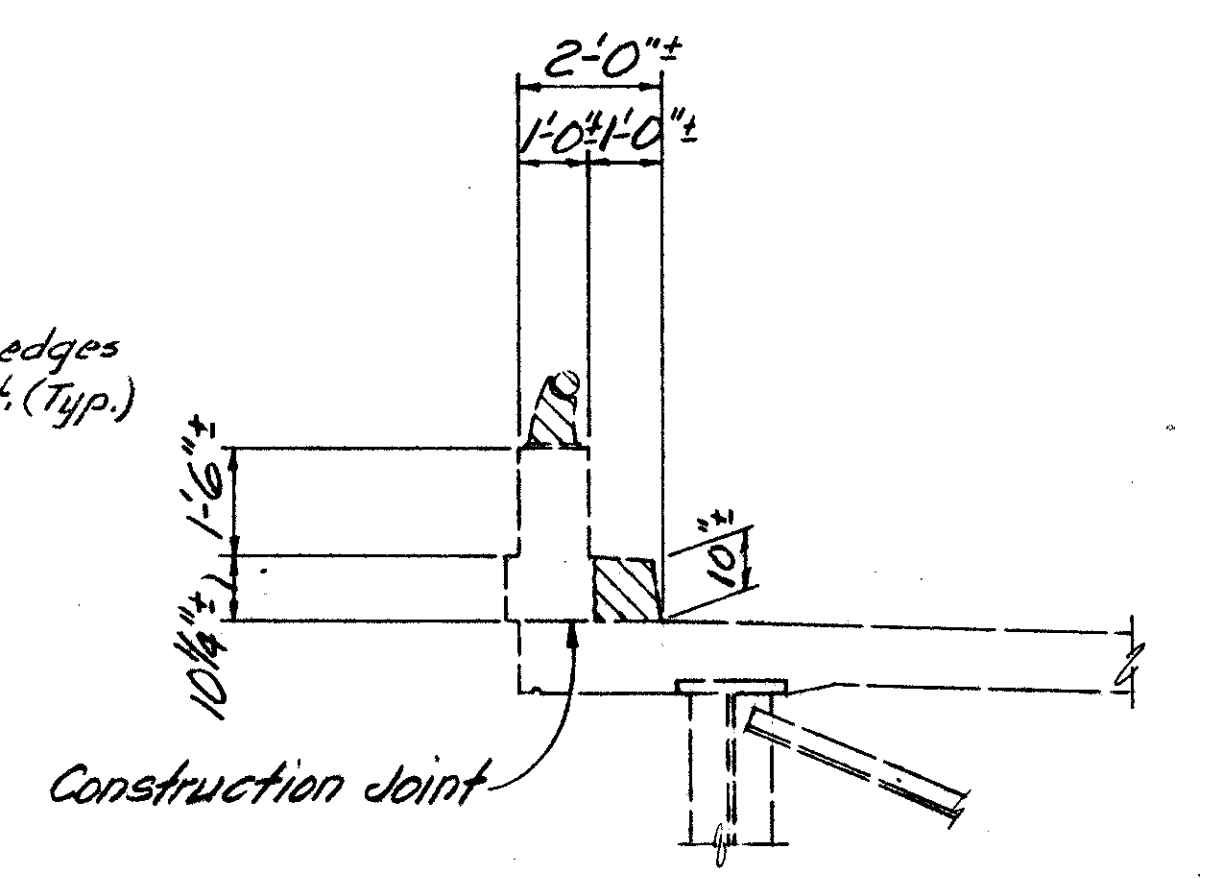
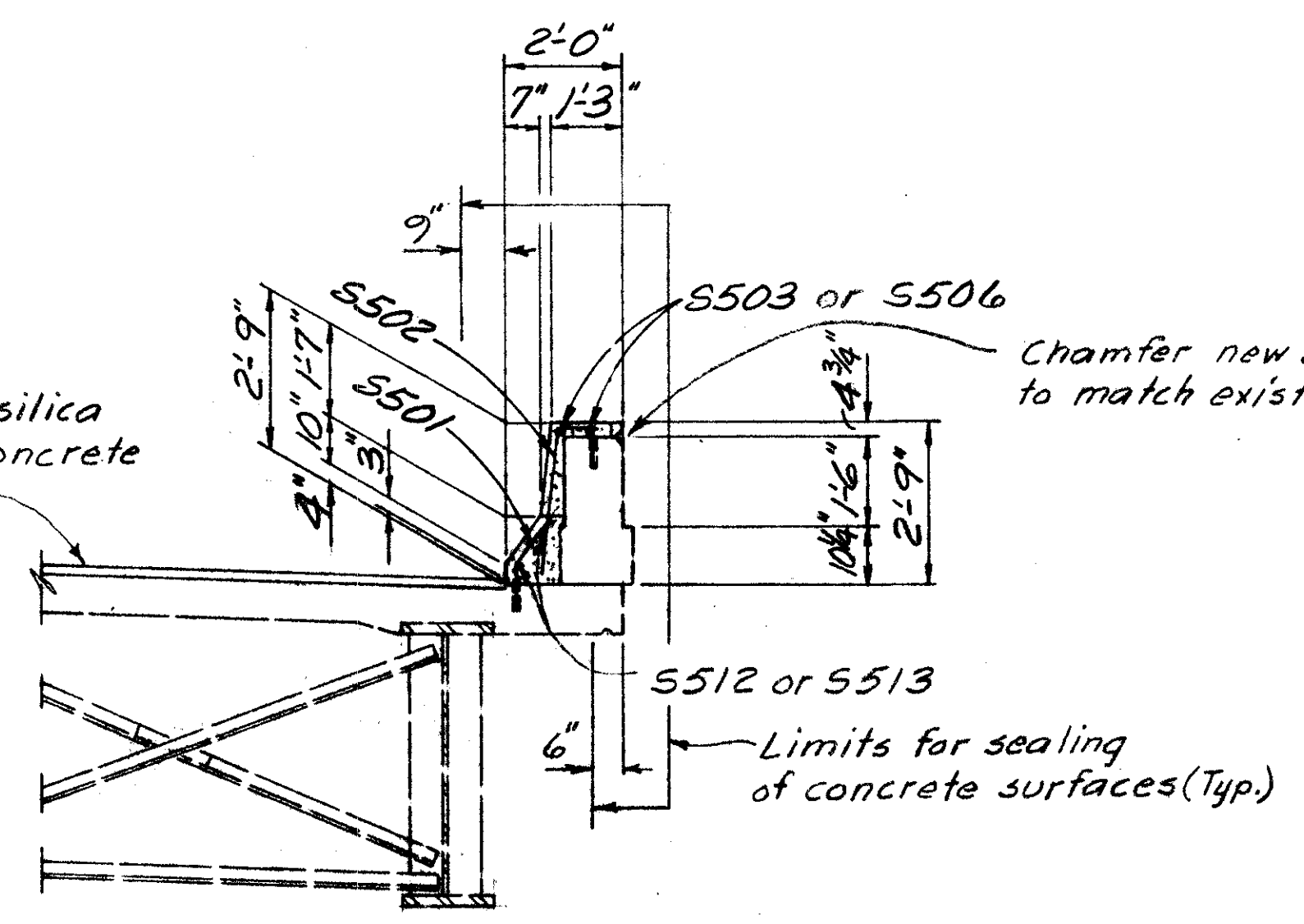
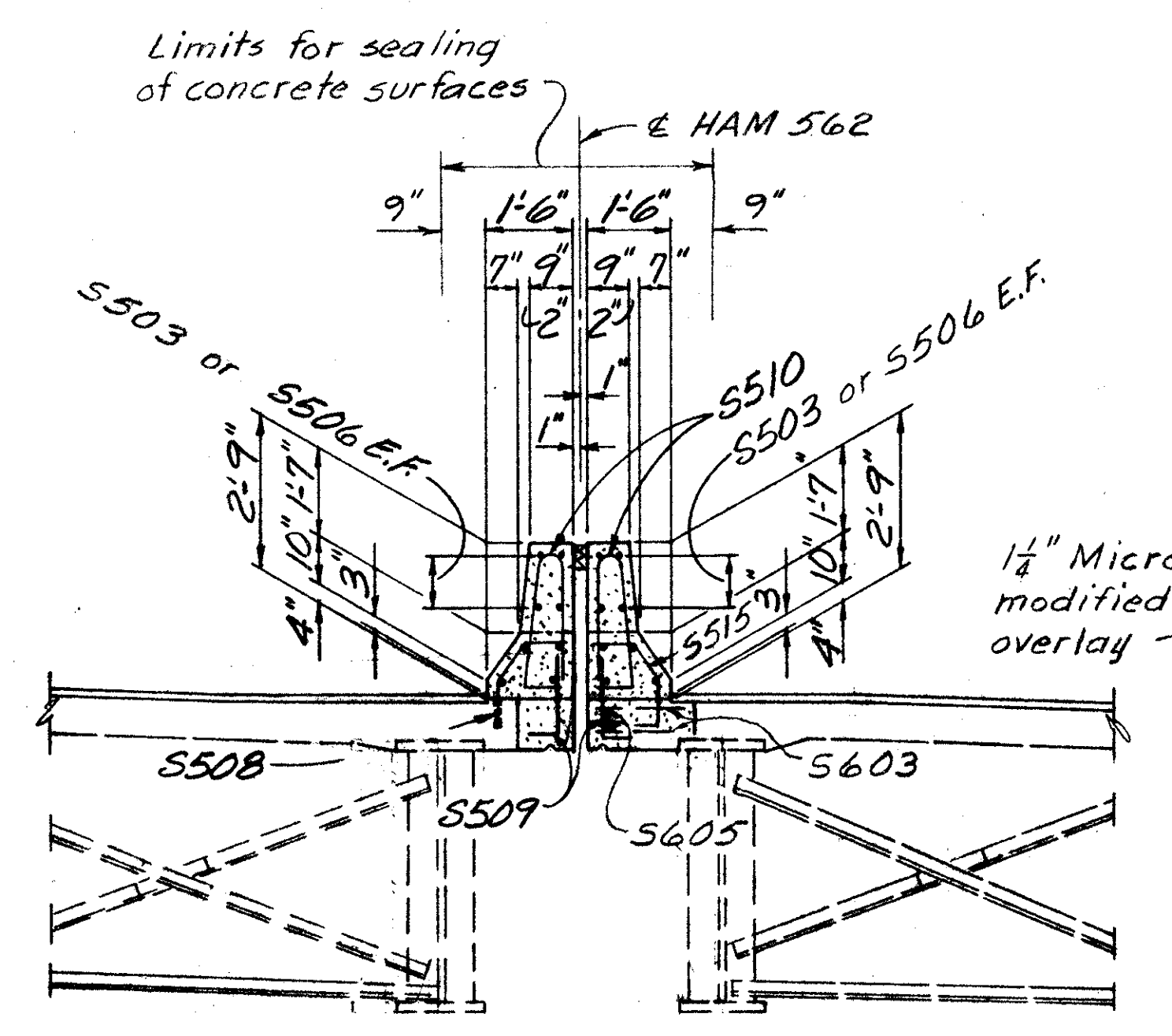
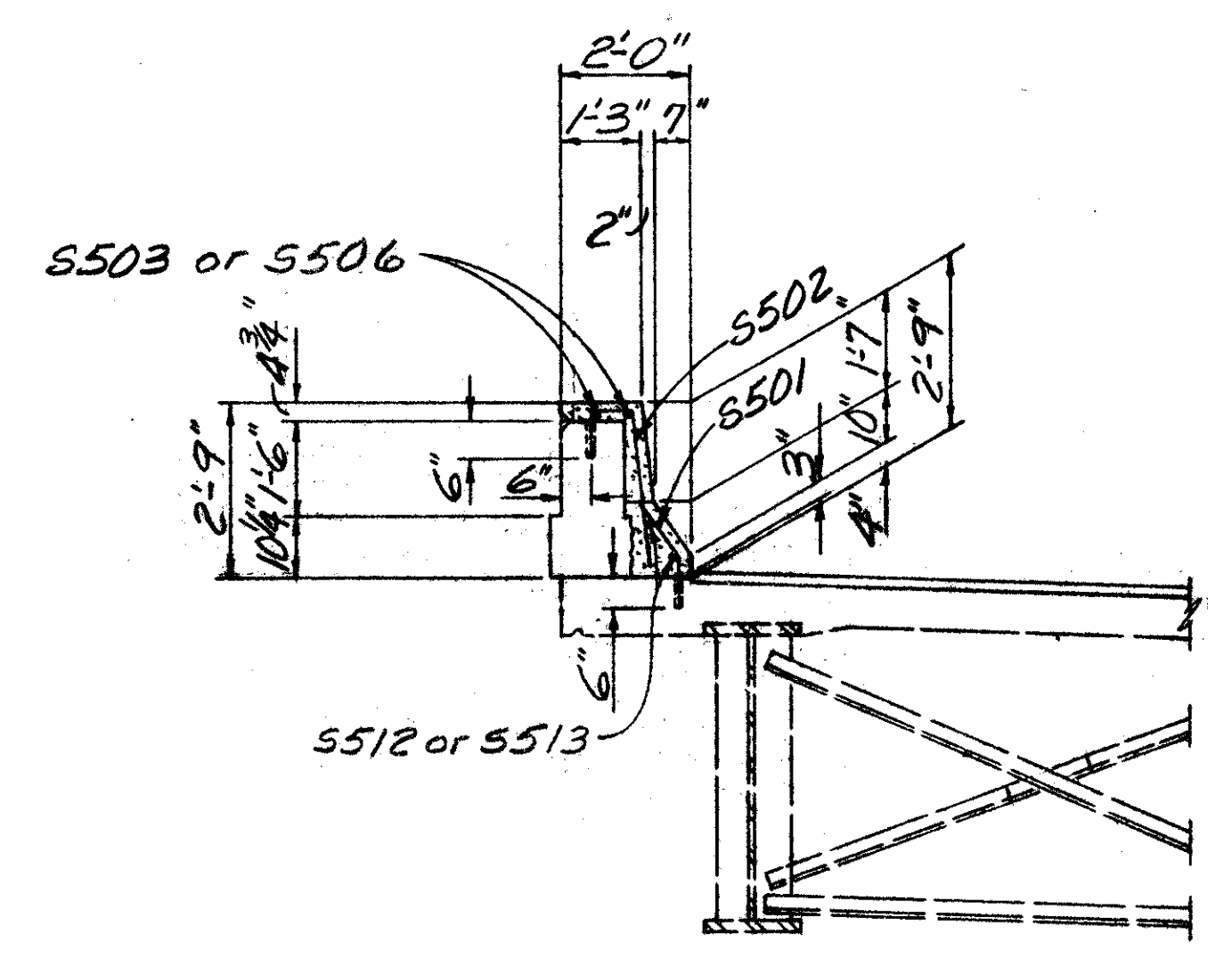
**NOTES**  
 Inlets shall be abandoned in place. Grating shall be removed and discarded. Down pipe in base of inlet shall be plugged and inlet filled with micro-silica modified concrete. Cost of concrete shall be included with Item Special, micro-silica modified concrete overlay (variable thickness)

For Sections A-A and B-B see sheet 8/12



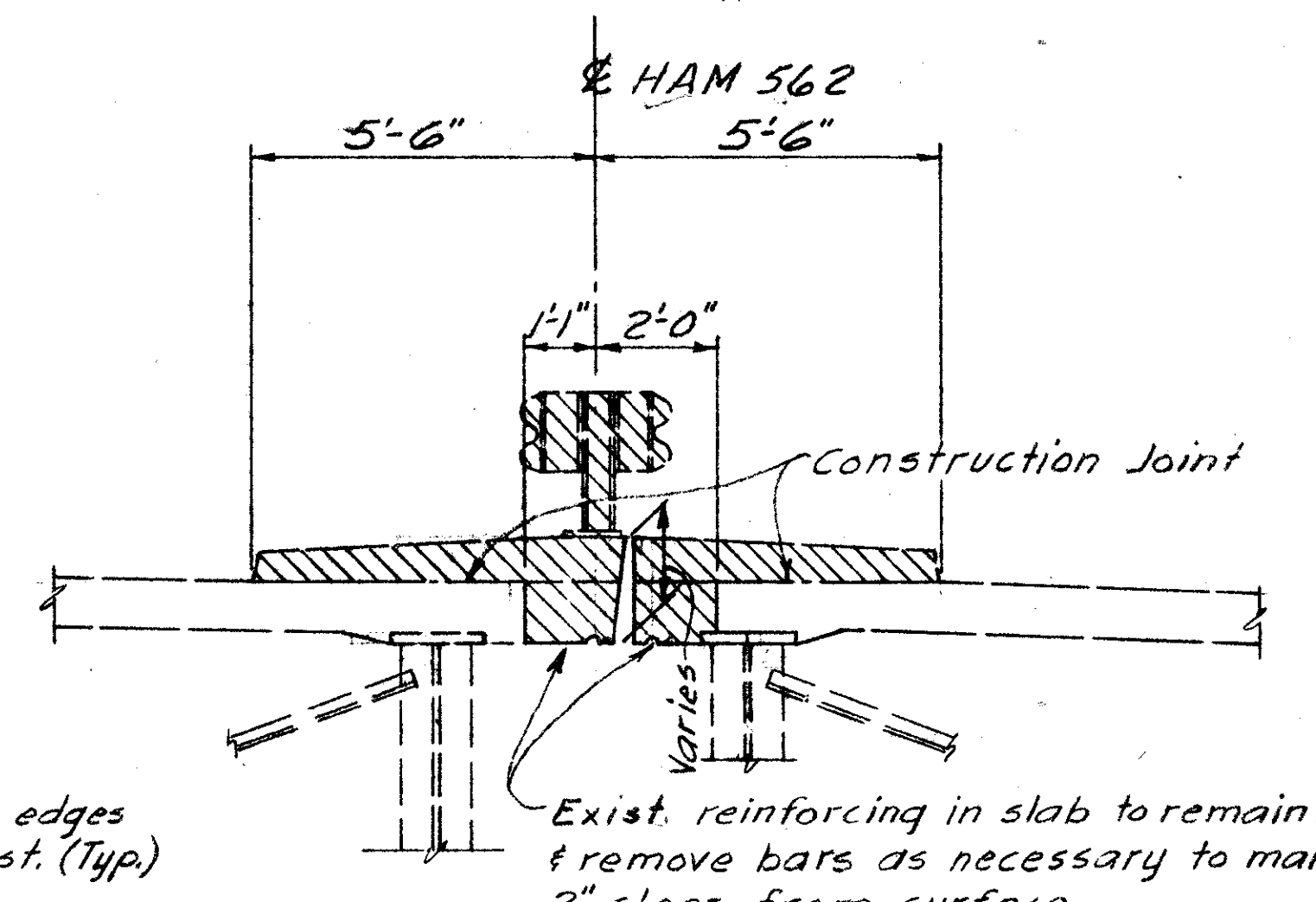
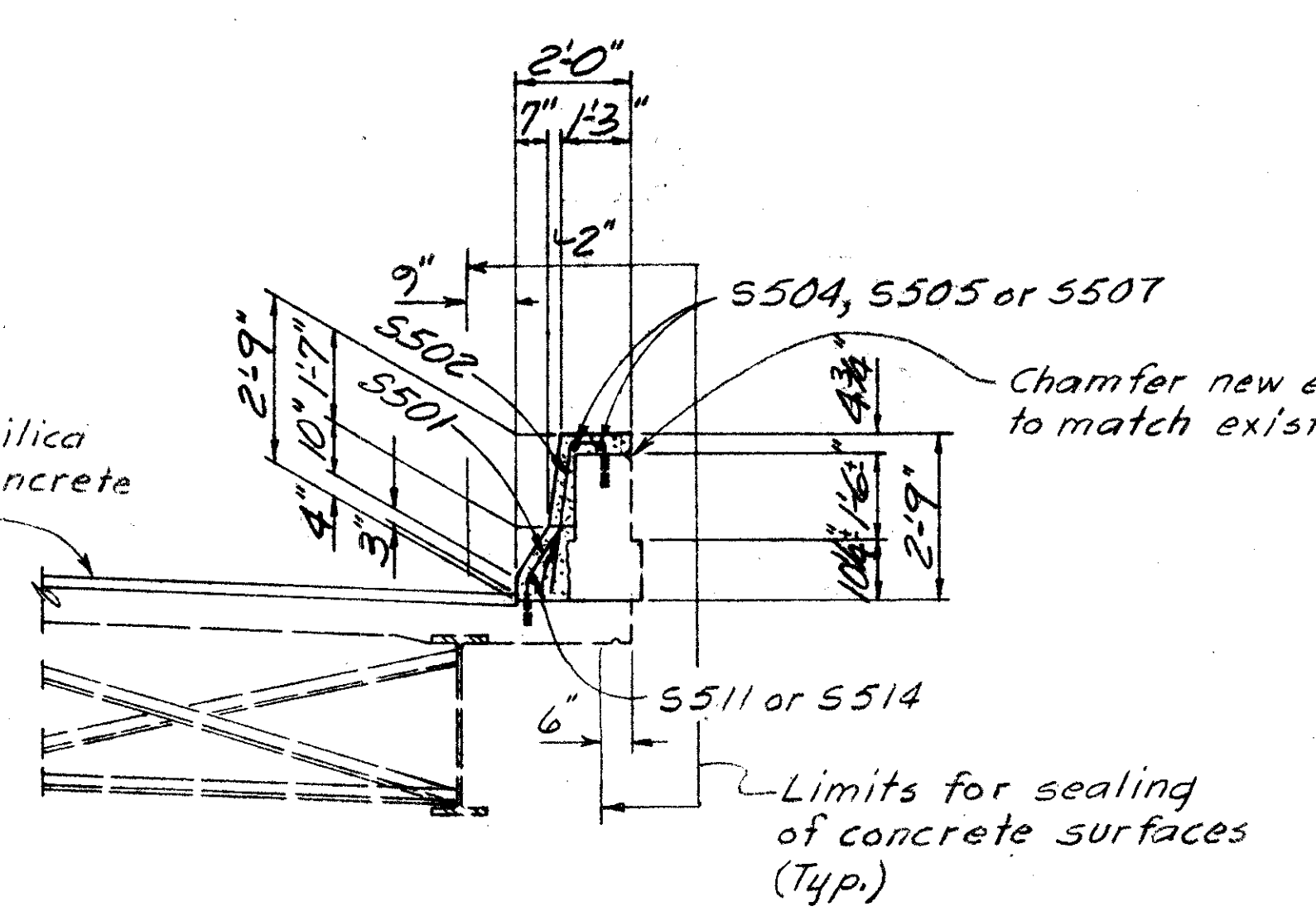
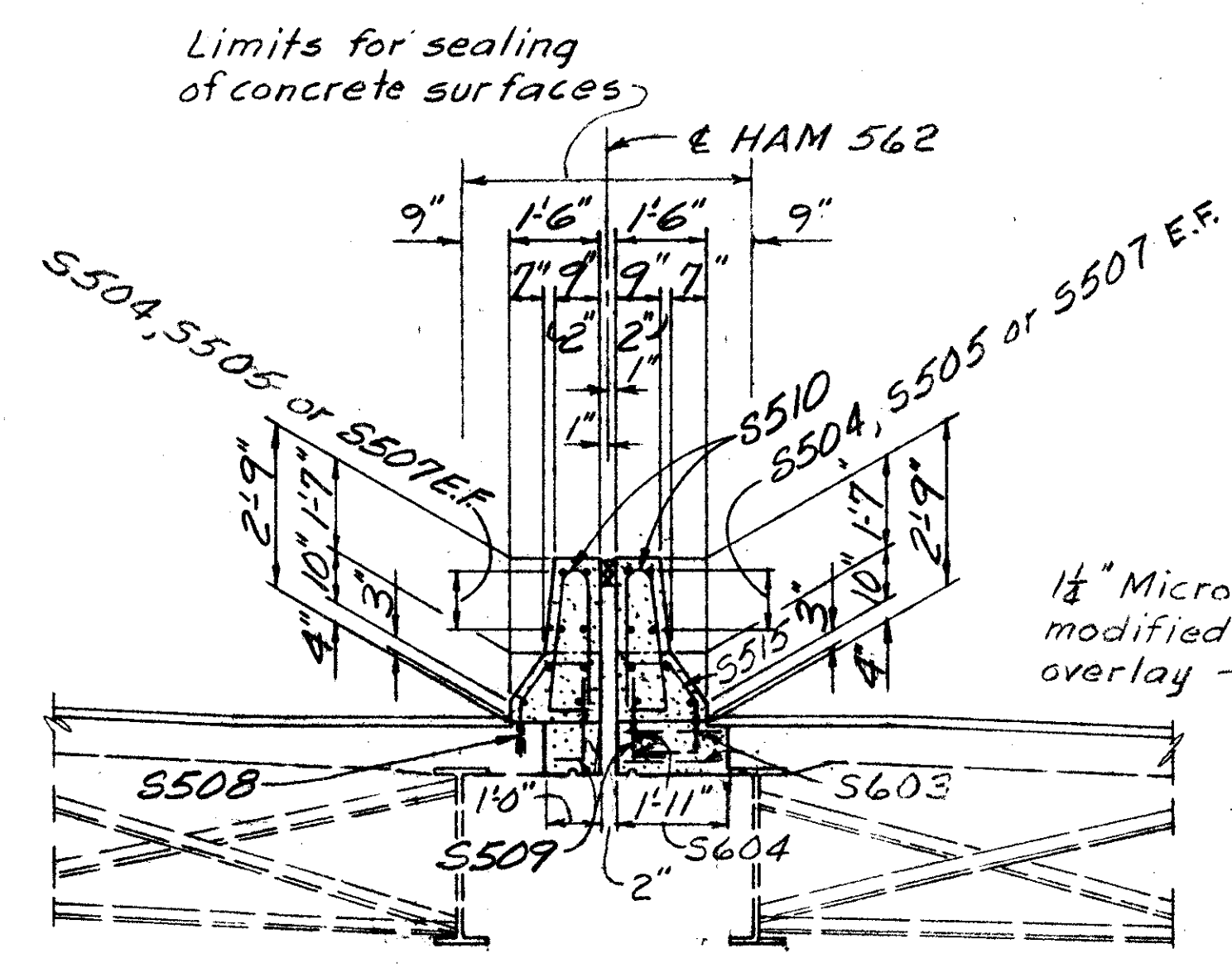
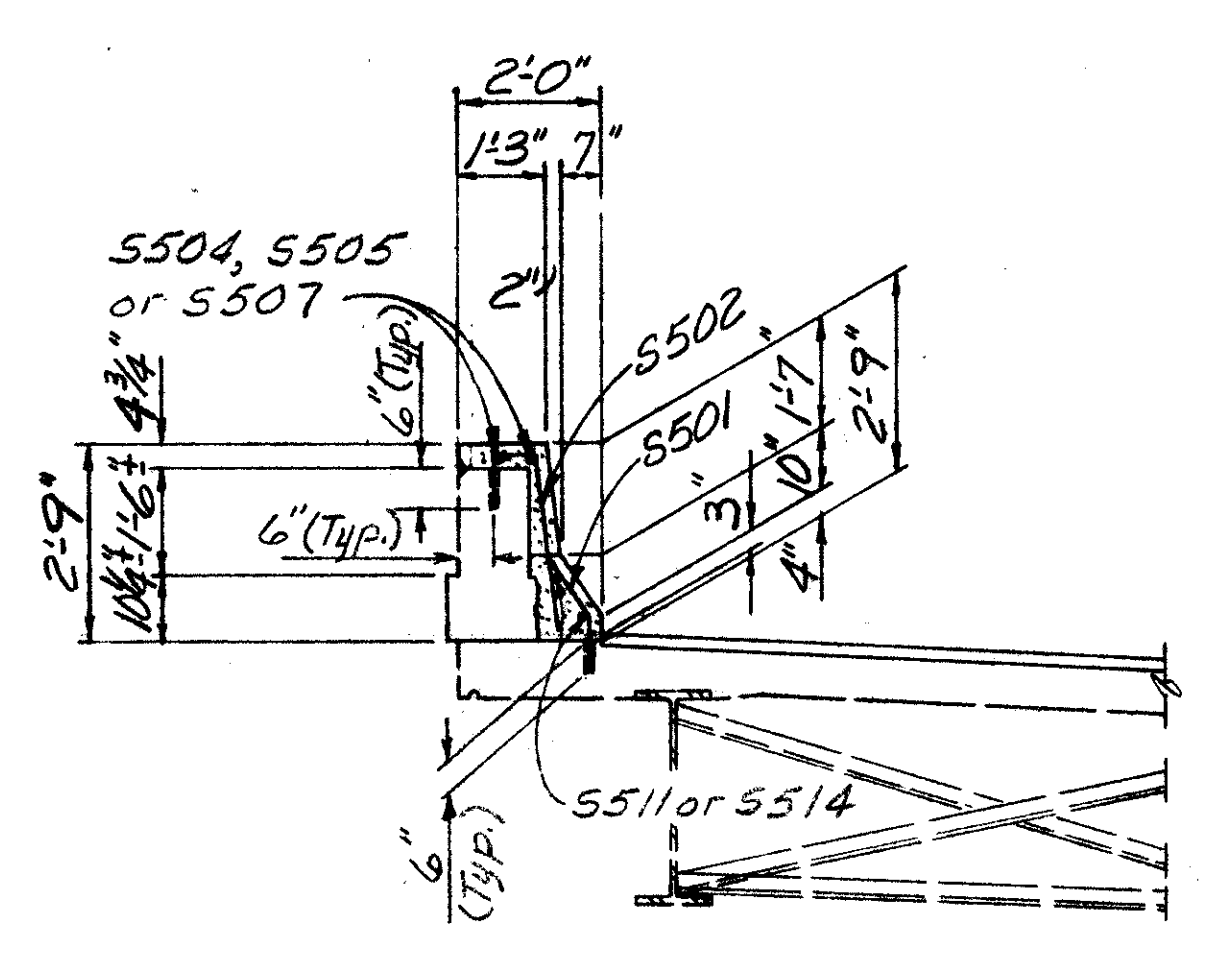
<b>BALKE ENGINEERS</b> 1848 SUMMIT RD. CINCINNATI, OHIO 45237					7/12
<b>SUPERSTRUCTURE</b>					
BRIDGE NO. HAM-562-0121 OVER READING ROAD					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
MRS	WJH	~	VDG	CRS 7/93	





**SECTION A-A**

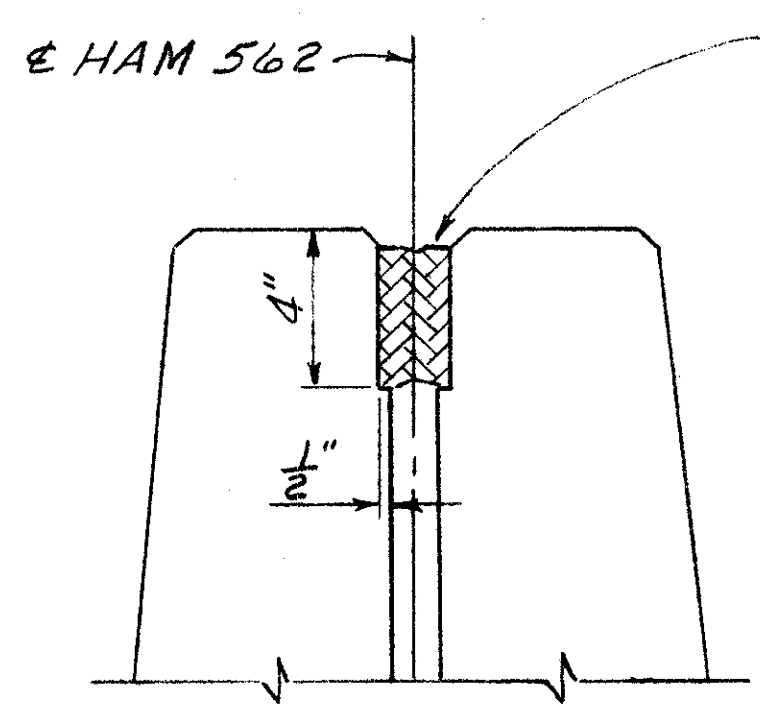
**SECTION THRU PARAPET (TYPICAL)**  
(Showing Removal)



**SECTION B-B**

**SECTION THRU MEDIAN**  
(Showing Removal)  
(Looking east)

Depotes portion of existing structure to be removed.

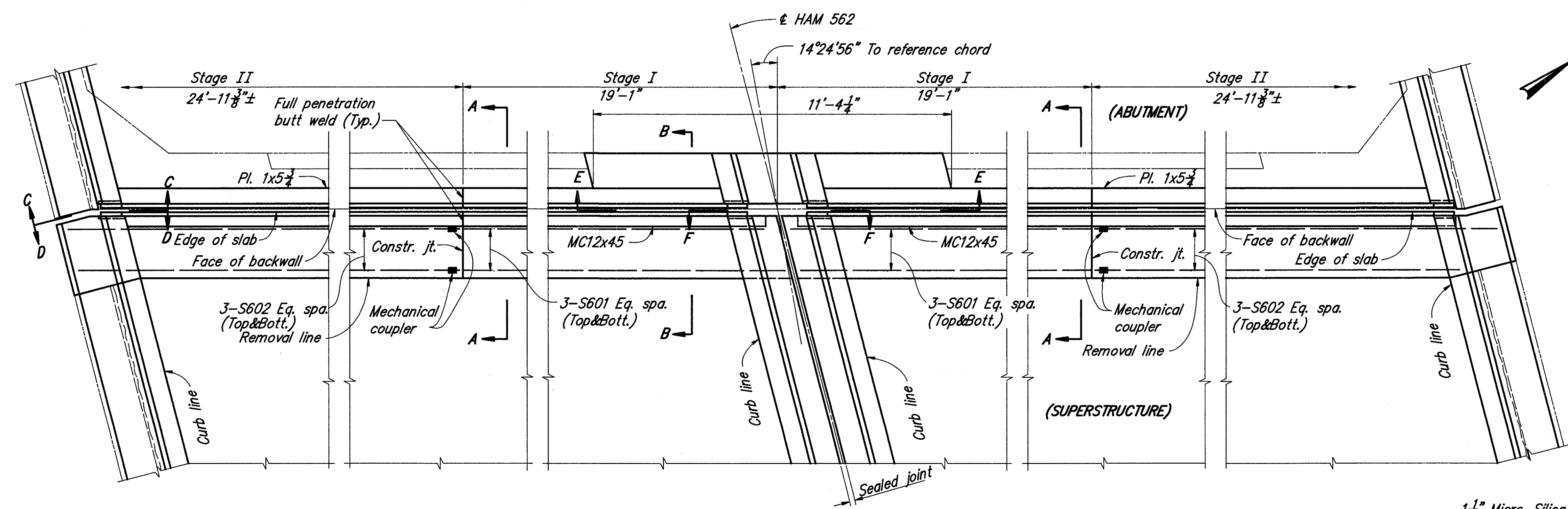
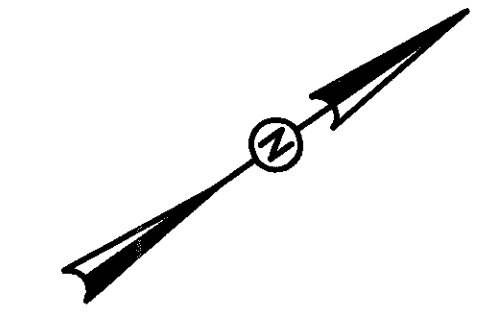


Compression seal full length of joint Wabo-Acme WE-400, D.S. Brown K-4000, or an approved equal.

Lubricant/adhesive shall be applied to concrete surfaces prior to installation of seal per manufacturer's recommendations. Seal shall be furnished in lengths as long as possible. Field splices shall be made per manufacturer's recommendations and shall be watertight.

**Notes**  
E.F. Denotes each face  
Elastomeric compression seal shall be installed prior to sealing adjacent concrete surfaces.

BALKE ENGINEERS 8/12 1848 SUMMIT RD. CINCINNATI, OHIO 45237				
<b>SUPERSTRUCTURE</b>				
BRIDGE NO. HAM-562-0121 OVER READING ROAD				
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE
MRS	WJH	~	VDG	CRS 3/93



**PLAN**  
Abutment 1 shown, Abutment 2 similar

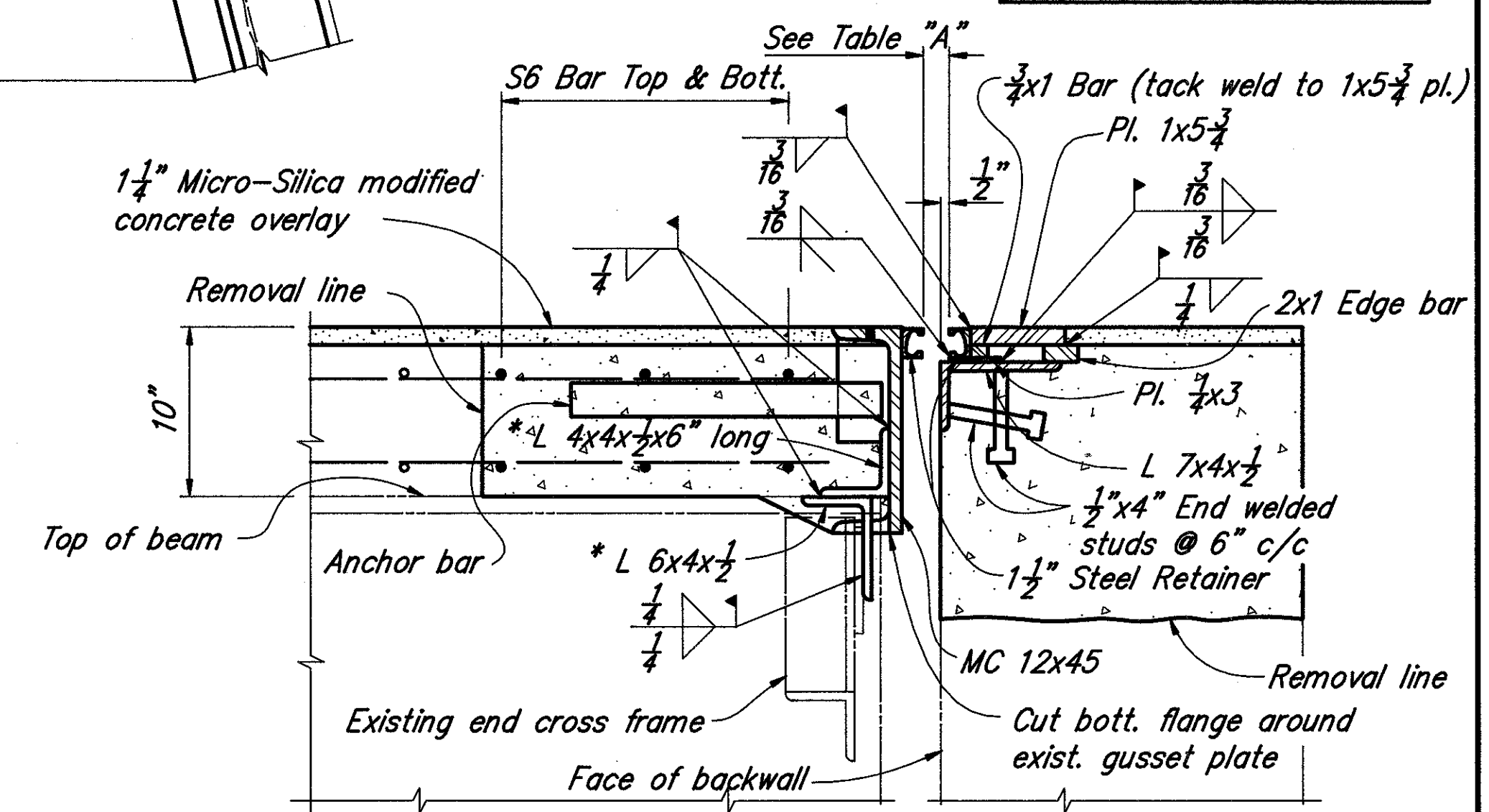
**STRIP SEAL GLAND TABLE**

SEAL MOVEMENT RATING	MANUFACTURER & DESIGNATION **		
	D.S. BROWN	STRUCTURAL ACCESSORIES	WATSON BOWMAN & ACME
3"	300A		SE-300

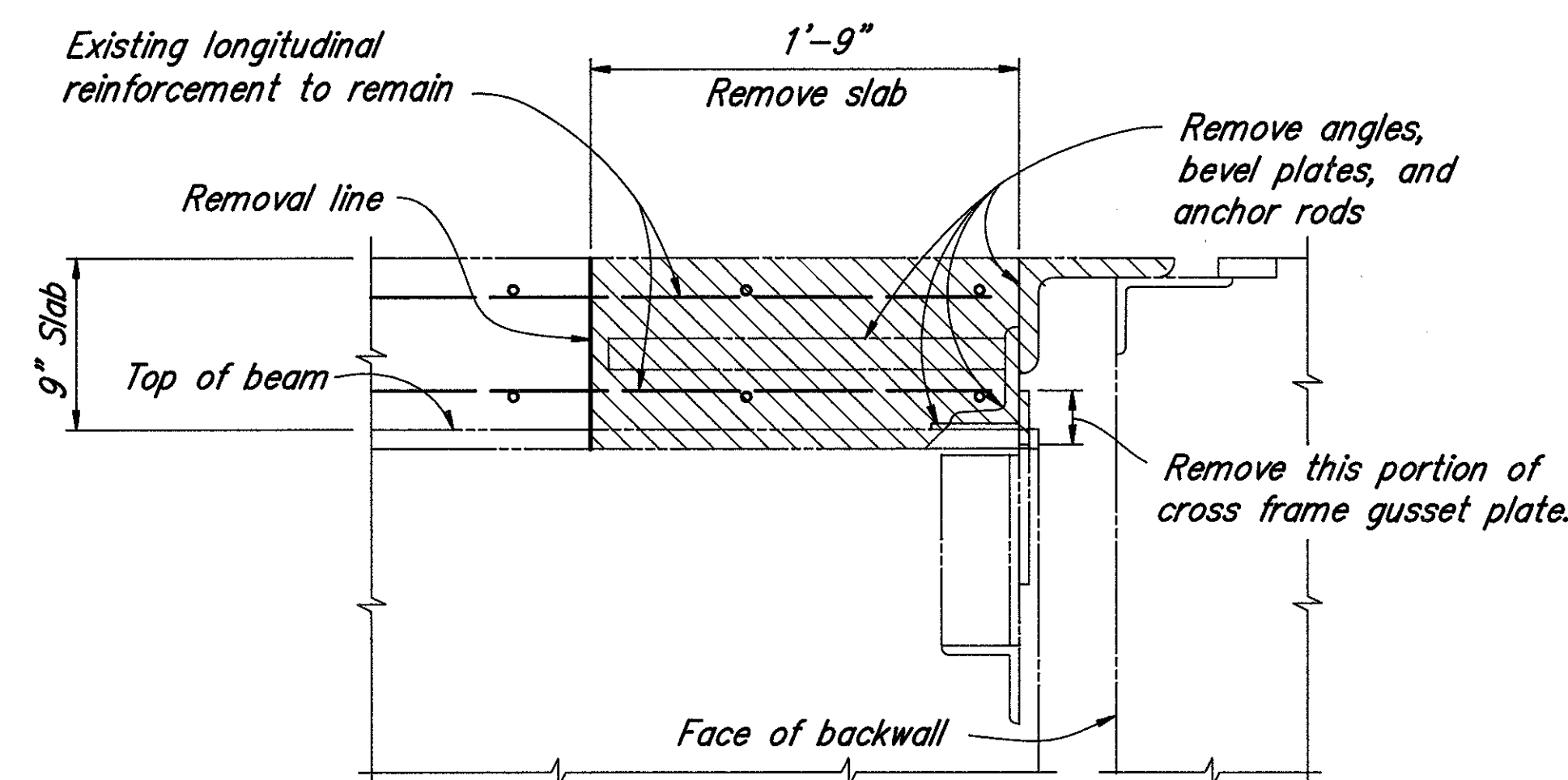
NOTE: Compression seal to be installed in one piece.  
\*\* or an approved alternate

**TABLE A**

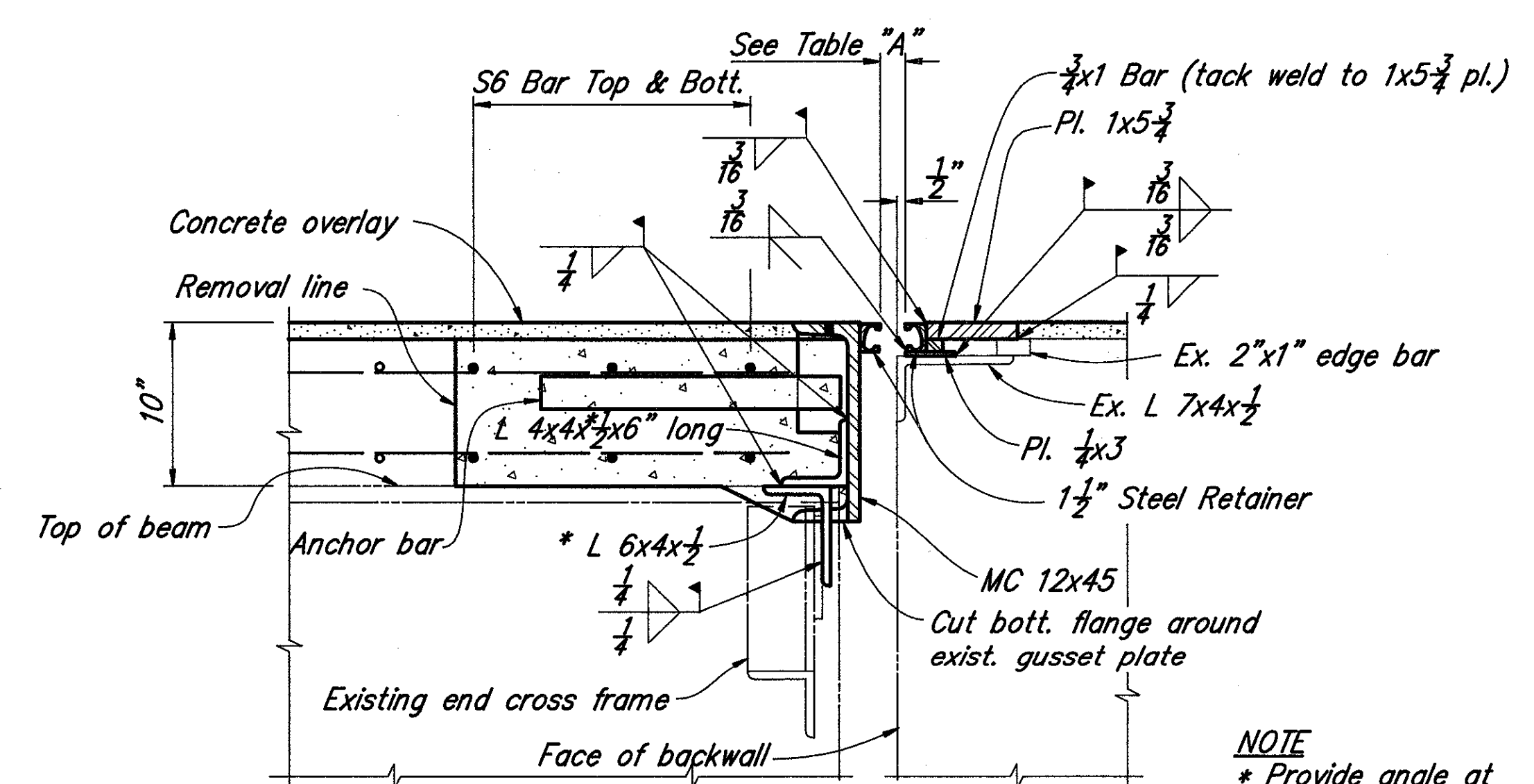
F <sup>o</sup>	Dimension A	
	Abutment 1	Abutment 2
90		1 5/8"
80		1 5/8"
70		1 11/16"
60	1 9/16"	1 11/16"
50	1 11/16"	1 3/4"
40	1 13/16"	1 3/4"
30	1 7/8"	1 13/16"



**SECTION B-B**  
For information not shown see Section X-X sheet 2 of 5 Standard Drawing EXJ-4-87

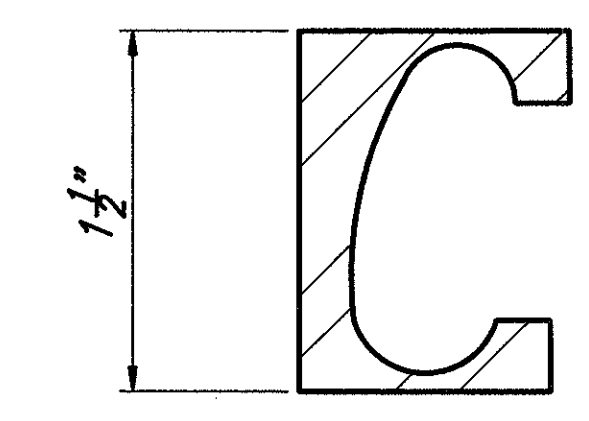


**SECTION A-A**  
Showing removal



**SECTION A-A**  
For information not shown see Section X-X sheet 2 of 5 Standard Drawing EXJ-4-87

NOTE  
\* Provide angle at each gusset plate.



**STEEL RETAINER**

NOTE  
For connection of MC12x45 to existing beams, see Detail A sh. 1 of 5, Standard Drawing EXJ-4-87

For Section C-C, D-D, E-E and F-F see sheet 10/12

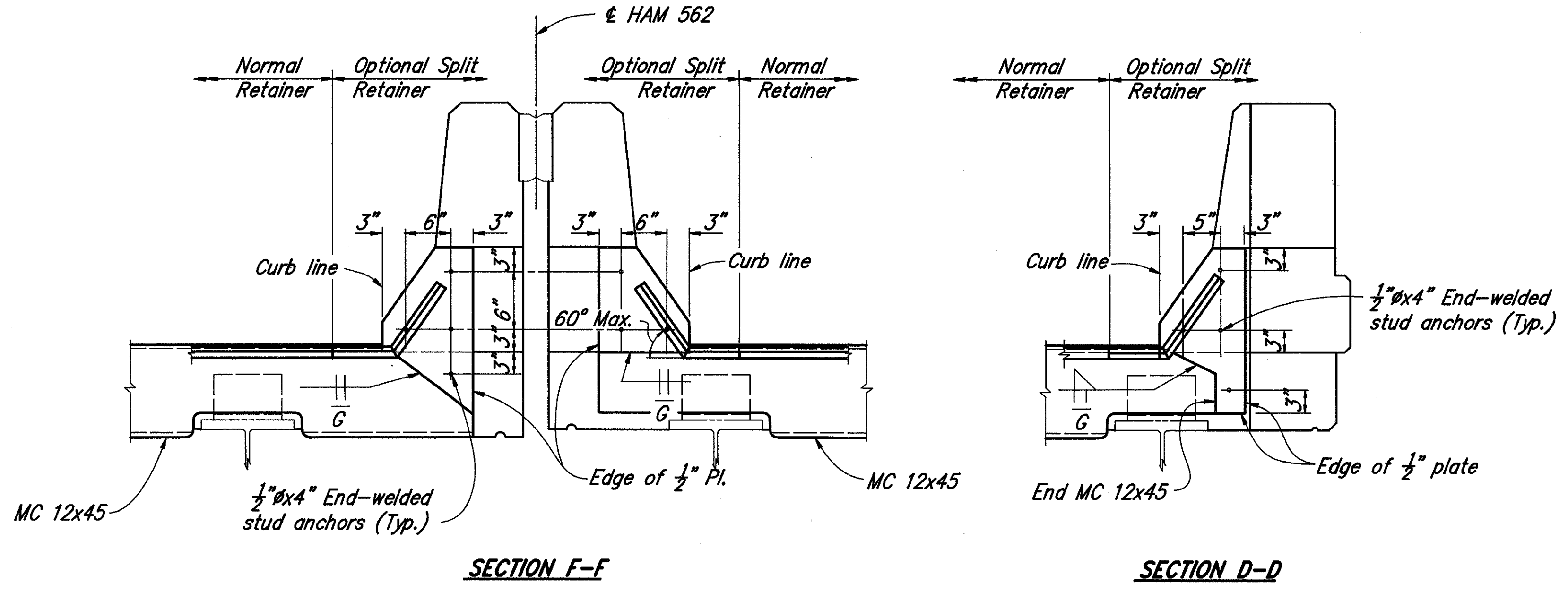
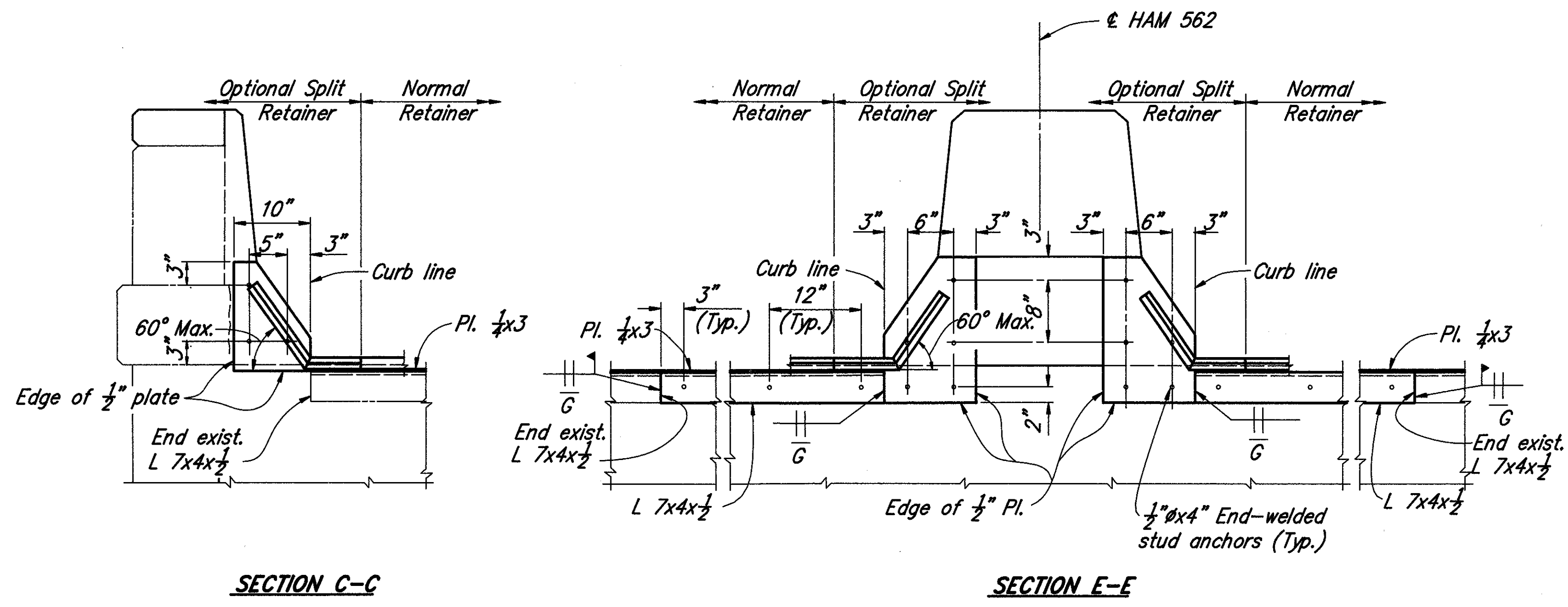
For additional details see Standard Drawing EXJ-4-87

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

9/12

**EXPANSION JOINT DETAILS AT ABUTMENTS**  
BRIDGE NO. HAM-562-0121  
OVER READING ROAD

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	DWI	8/28/89	3/93	

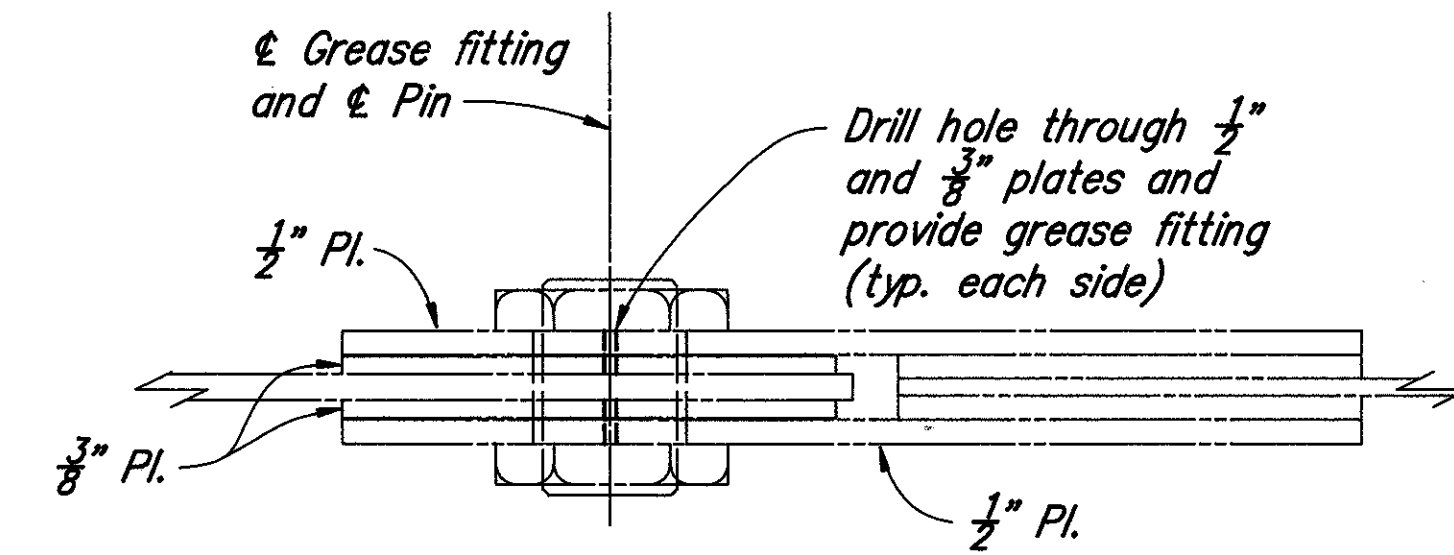
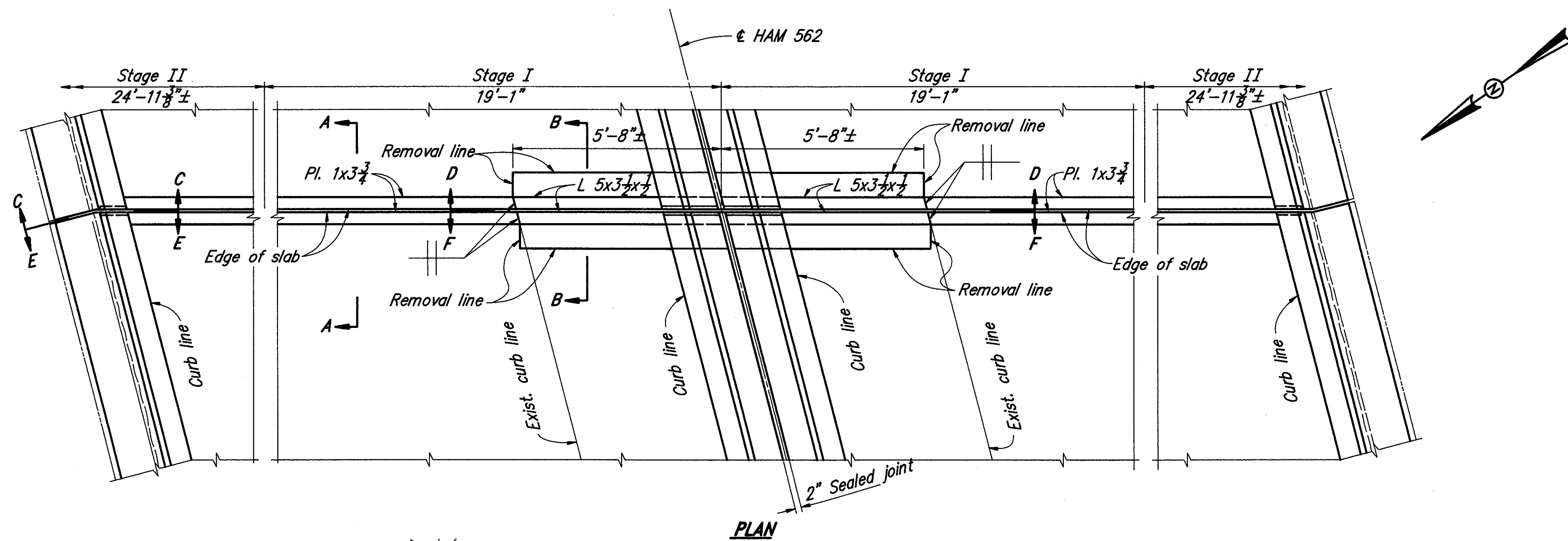


**NOTES**  
For location of Sections C-C, D-D, E-E and F-F see sheet 9/12  
For additional details, see Standard Drawing EXJ-4-87

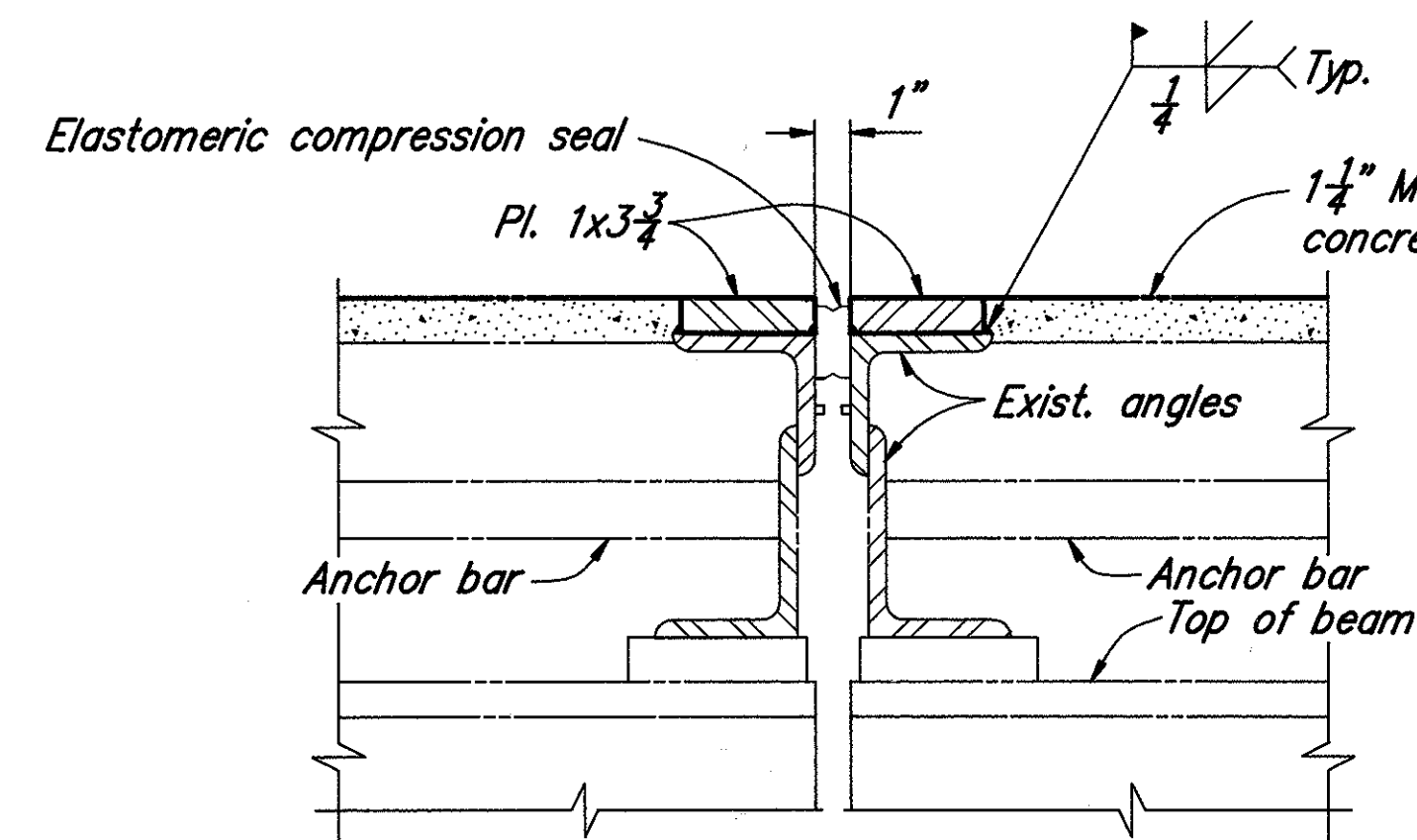
<b>BALKE ENGINEERS</b> 1848 Summit Road Cincinnati, Ohio 45237						10/12
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DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	DWI	BRP	3/93	

9014E-02 16 MAR 1993

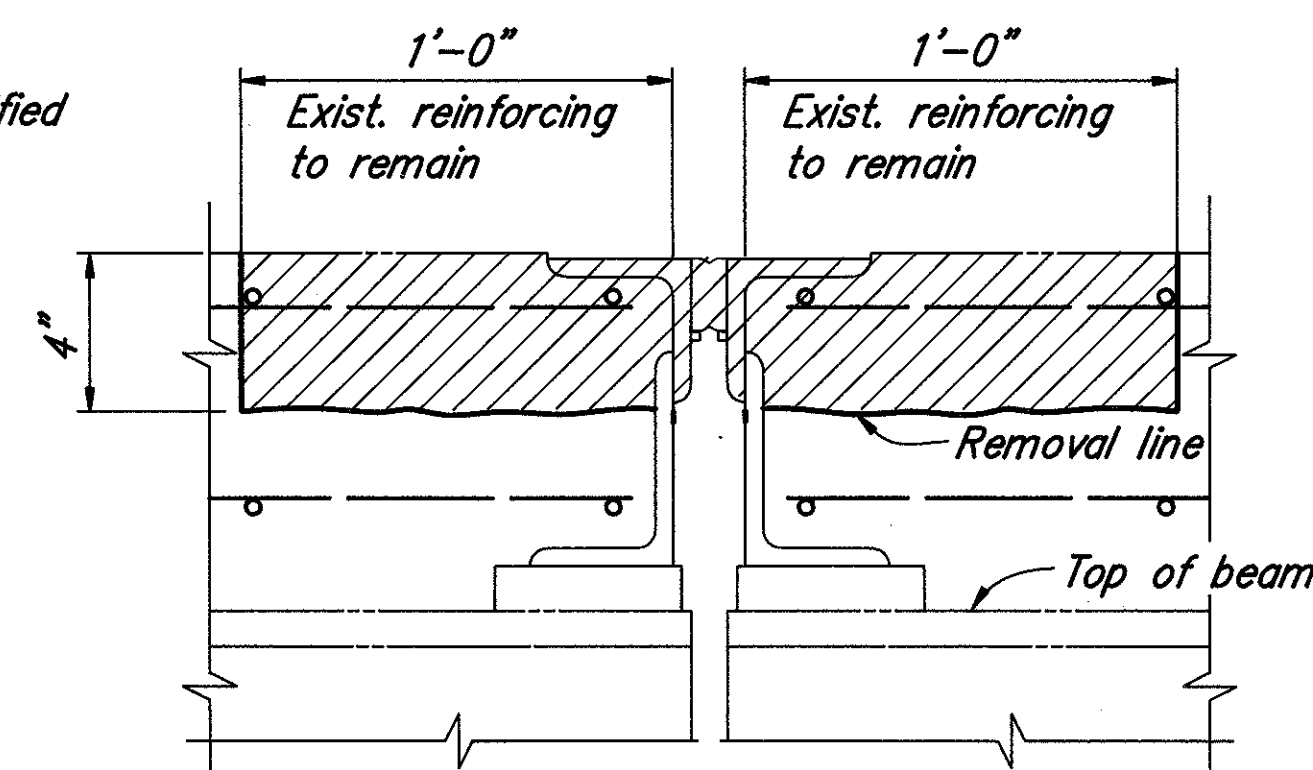




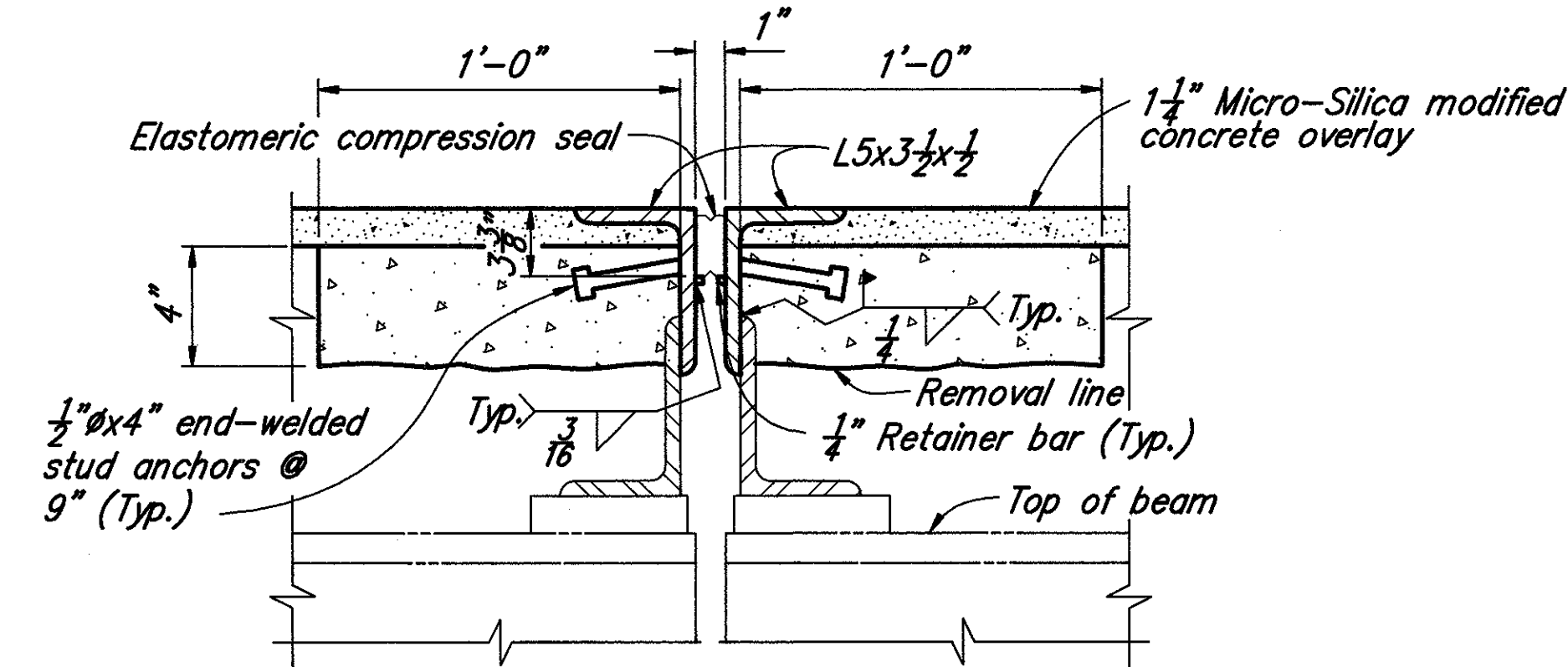
SECTION G-G



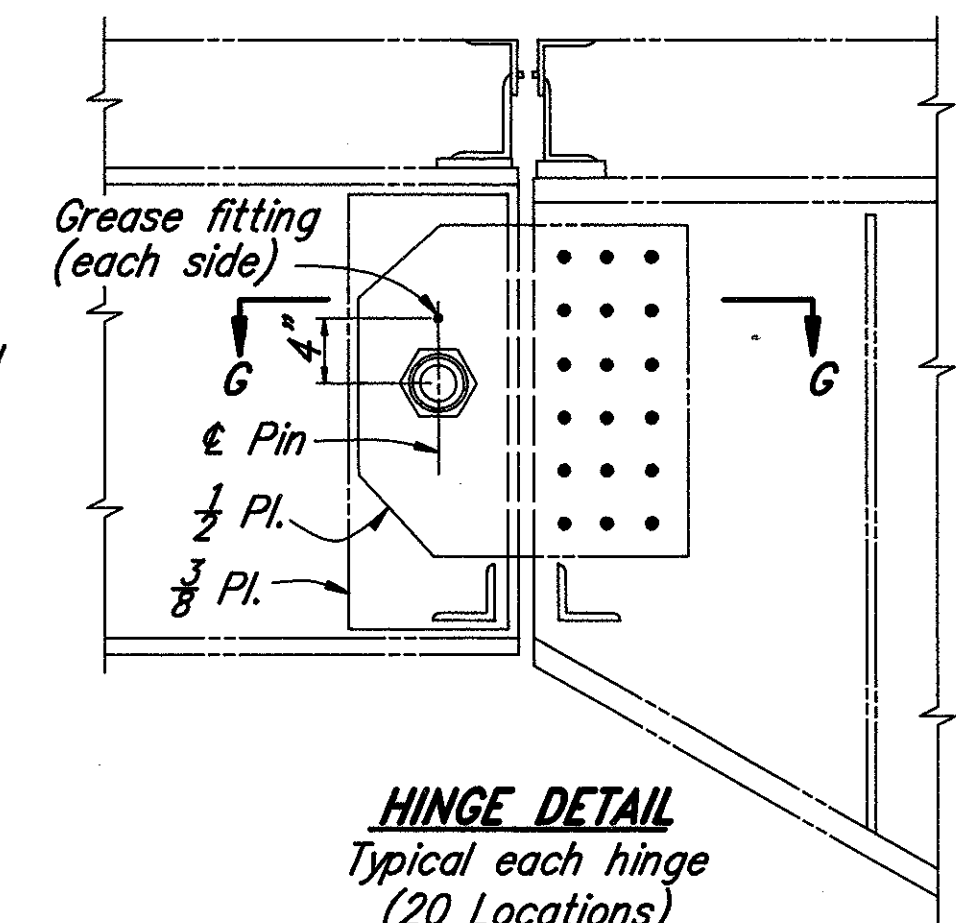
SECTION A-A



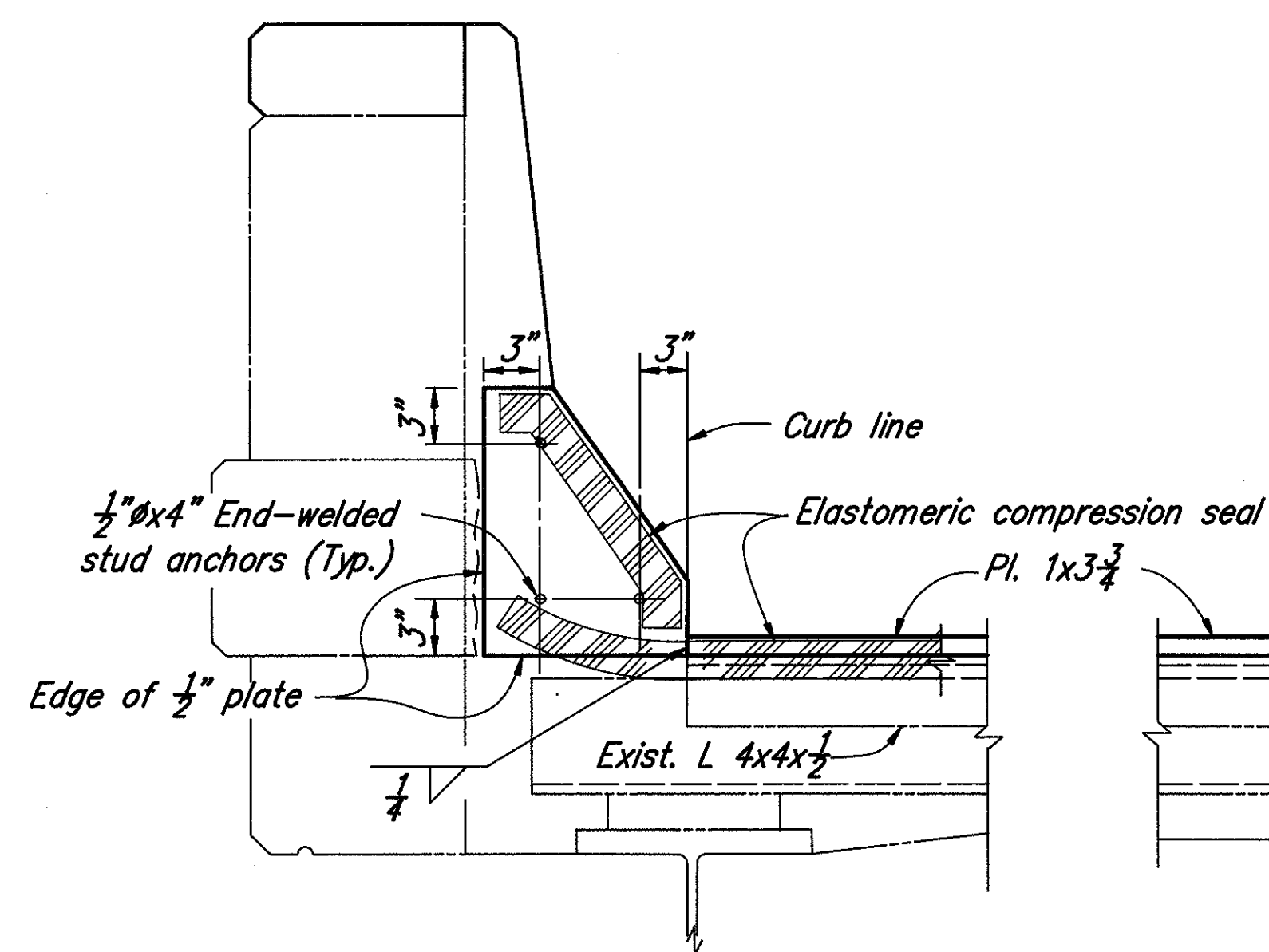
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Showing removal



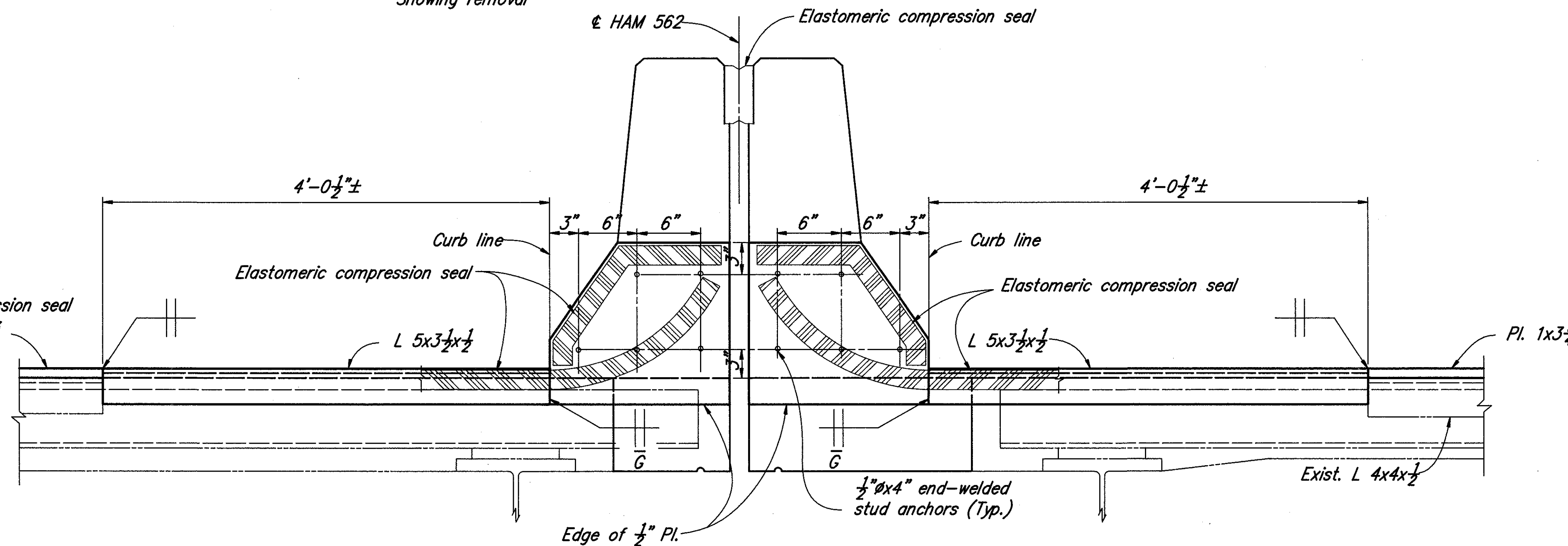
SECTION B-B



HINGE DETAIL  
Typical each hinge  
(20 Locations)



SECTION C-C  
Section E-E opposite hand



SECTION D-D  
Section F-F opposite hand

NOTES

Elastomeric compression seal shall be D.S. Brown CV-1625, Watson-Bowman WJ-175 or an approved equal.

Elastomeric compression seal to be installed in one piece.

For additional details see Standard Drawing EXJ-2-81.

Elastomeric compression seal and joint armor and studs included with Item 516 Vertical extension of structural expansion joint for payment.

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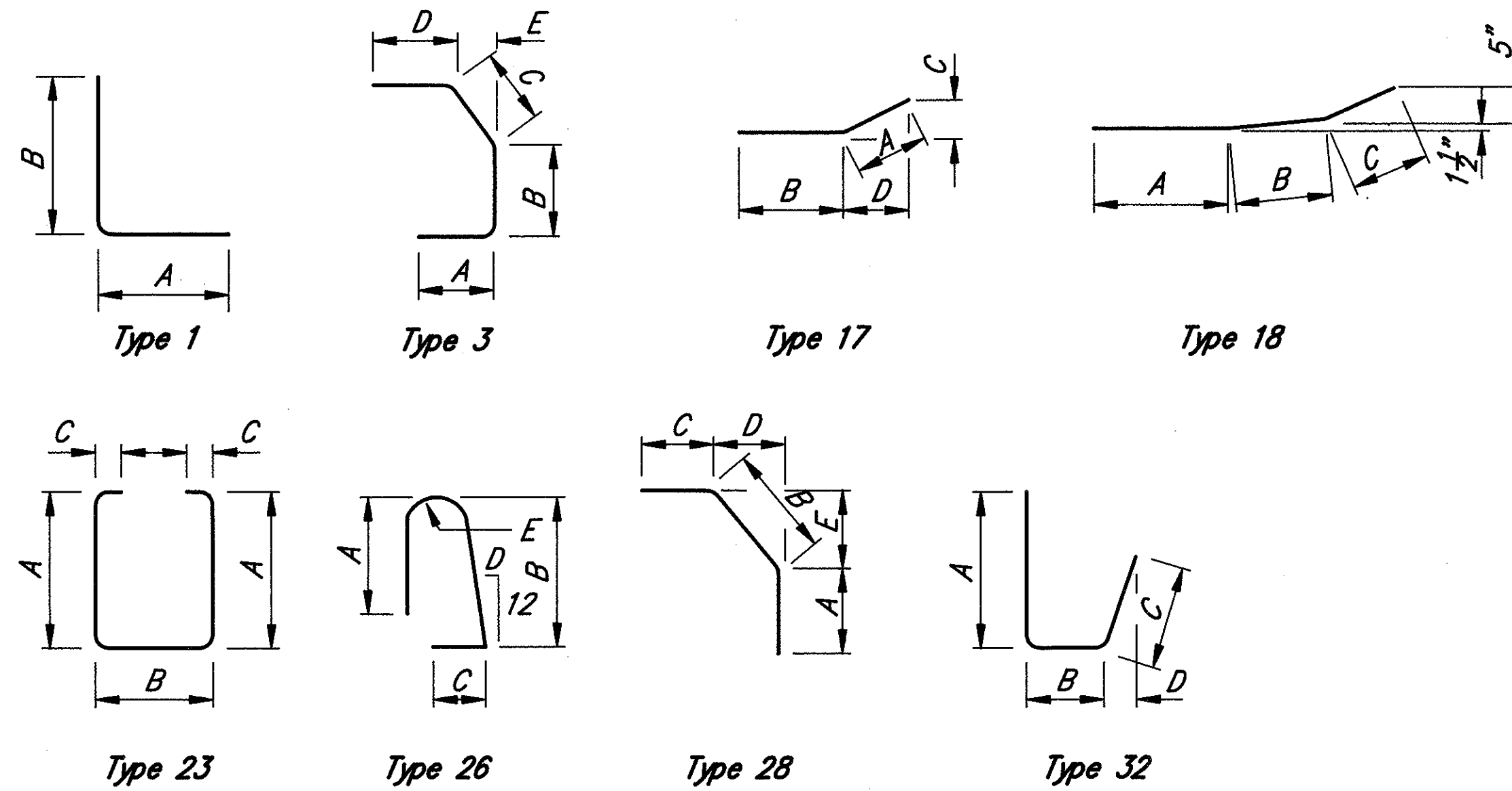
EXPANSION JOINT DETAILS  
AT HANGERS

BRIDGE NO. HAM-562-0121  
OVER READING ROAD

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	DWI	BRP	3/93	

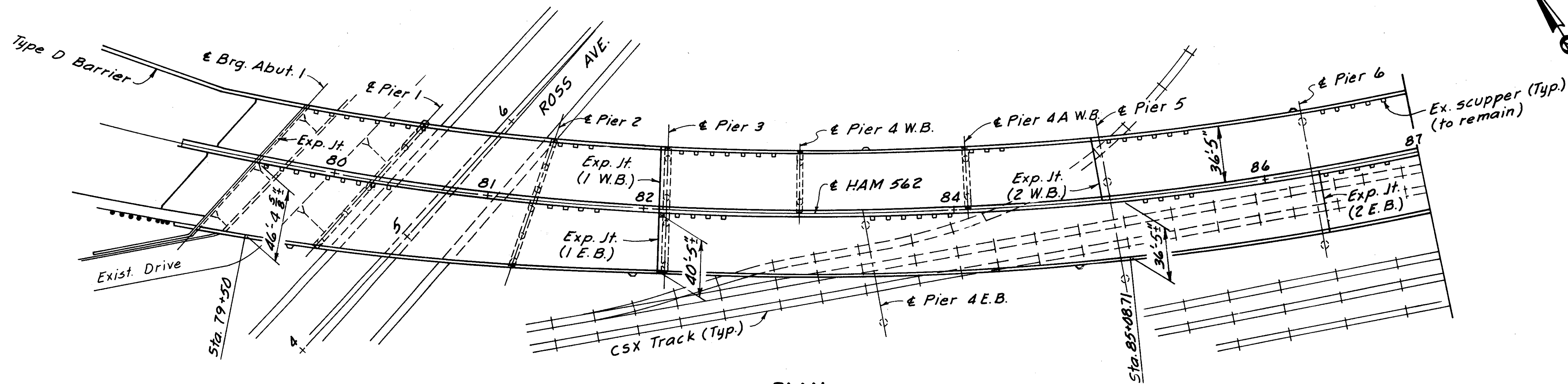
EPOXY COATED REINFORCING STEEL LIST									
MARK	TOTAL NO.	LENGTH	WEIGHT	TYPE	DIMENSIONS				
					A	B	C	D	E
ABUTMENTS									
A501	4	2'-5"	10	28	1'-1"	10 1/2"	8"	6"	8 1/2"
A502	4	3'-6"	15	32	2'-0"	9"	1'-0"	7"	
A503	4	6'-8"	28	23	2'-5"	1'-4"	6"		
A504	16	1'-2"	19	Str.					
A505	32	1'-8"	56	17	10 1/2"	9"	6"	8 1/2"	
A506	8	3'-1"	26	Str.					
A507	40	3'-5"	143	32	8"	7"	2'-5"	3"	
A508	12	12'-11"	162	Str.					
A509	4	13'-2"	55	18	9'-5"	2'-4"	1'-5"		
		Total	514						
SUPERSTRUCTURE									
S501	242	1'-8"	421	17	10 1/2"	9"	6"	8 1/2"	
S502	260	3'-8"	994	32	8"	7"	2'-5"	3"	
S503	72	13'-9"	1033	Str.					
S504	24	12'-11"	323	Str.					
S505	24	10'-9"	269	Str.					
S506	24	11'-4"	284	Str.					
S507	24	10'-7"	265	Str.					
S508	121	2'-5"	305	28	9"	10 1/2"	9"	6"	8 1/2"
S509	242	1'-11"	484	1	6"	1'-6"			
S510	264	5'-3"	1446	26	2'-2"	2'-5"	7 1/2"	1 1/4"	2"
S511	12	35'-2"	440	Str.					
S512	36	30'-0"	1126	Str.					
S513	12	23'-2"	290	Str.					
S514	12	34'-9"	435	Str.					
S515	121	3'-4"	421	3	1'-2"	9"	10 1/2"	9"	6"
S601	24	19'-5"	700	Str.					
S602	24	24'-2"	871	Str.					
S603	1646	1'-8"	4120	Str.					
S604	2	35'-2"	106	Str.					
S605	6	30'-0"	270	Str.					
S606	2	25'-5"	76	Str.					
S607	2	34'-9"	104	Str.					
		Total	14,783						

**BAR BENDING DIAGRAM**  
All dimensions are out to out of bars.

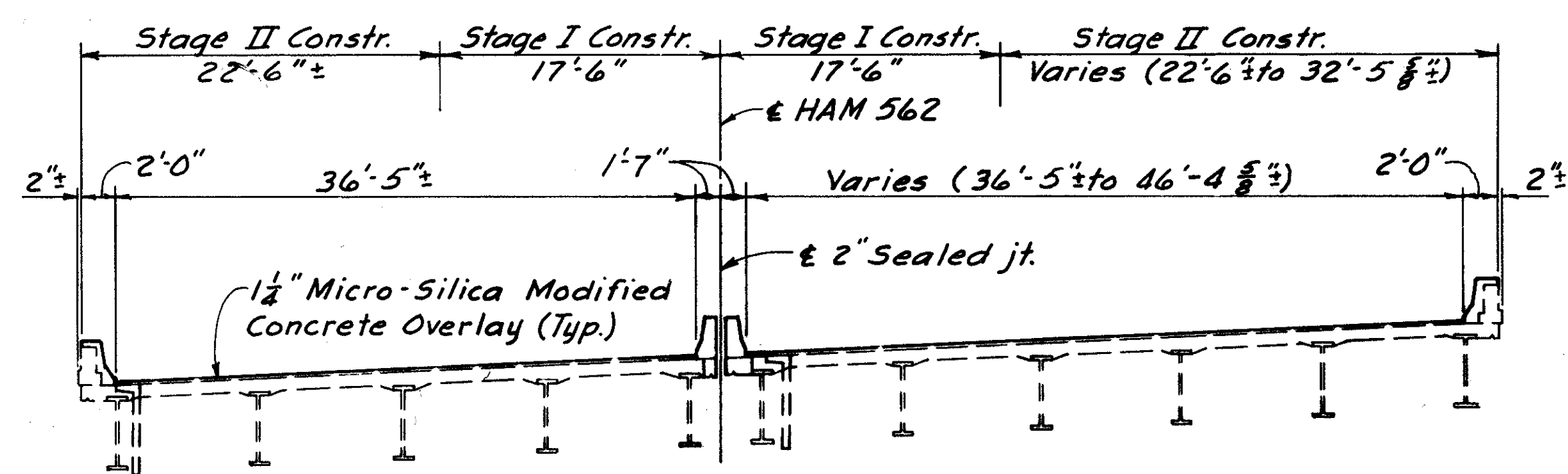


90148502 16 MAR 1993

<b>BALKE ENGINEERS</b> 1848 Summit Road Cincinnati, Ohio 45237						12/12
<b>EPOXY COATED REINFORCING STEEL LIST</b> BRIDGE NO. HAM-562-0121 OVER READING ROAD						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	DWI	ESB	3/93	



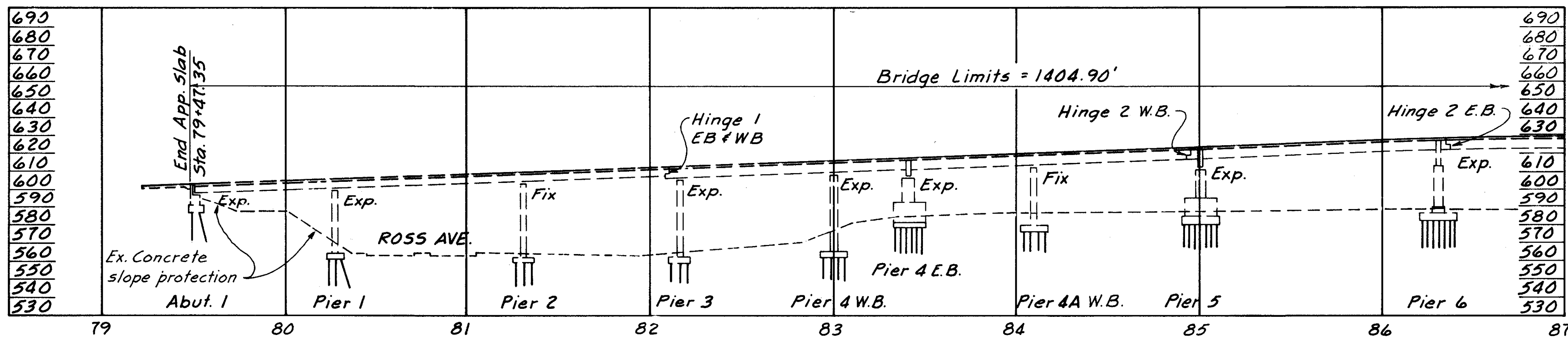
**PLAN**



**TRANSVERSE SECTION**  
Abutment 1 to Pier 9  
(Looking east)

**EXISTING STRUCTURE**  
 TYPE: Continuous plate girder and continuous rolled beams with reinforced concrete deck and reinforced concrete substructure  
 SPANS: Varies  
 ROADWAY: West bound 36'-0" and varies East bound Varies  
 LIVE LOADING: C.F. = 2000 (57)  
 SKEW: Varies  
 DATE OF CONSTRUCTION: 19\_\_\_\_  
 STRUCTURE FILE NO.: \_\_\_\_\_

**PROPOSED STRUCTURE (REHABILITATION)**  
 PROPOSED WORK: Refurbish bearings, seal expansion joints, refurbish drainage system, retrofit railings, apply overlay to deck and paint structural steel  
 SPANS: Varies  
 ROADWAY: West bound 36'-0" and varies East bound Varies  
 LIVE LOADING: C.F. = 2000 (57)  
 SKEW: Varies  
 WEARING SURFACE: 1 1/2" Micro-Silica modified concrete overlay  
 EXISTING APPROACH SLAB: 25'-0" long  
 ALIGNMENT: Curve and tangent  
 SUPERELEVATION: Varies



**ELEVATION**

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

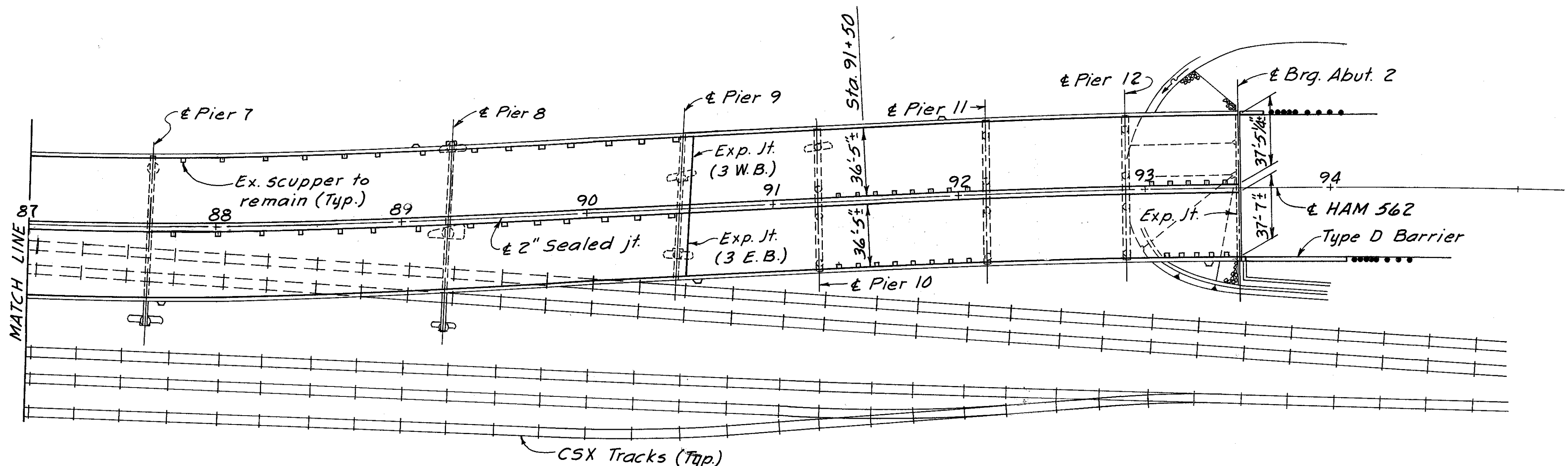
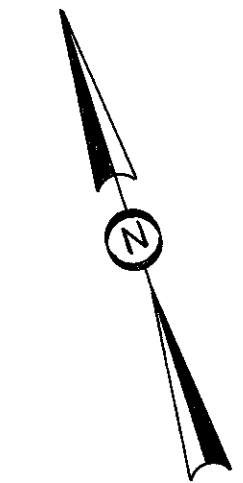
**GENERAL PLAN AND ELEVATION**

BRIDGE NO. HAM-562-0147  
OVER ROSS AVE. AND CSX R.R.

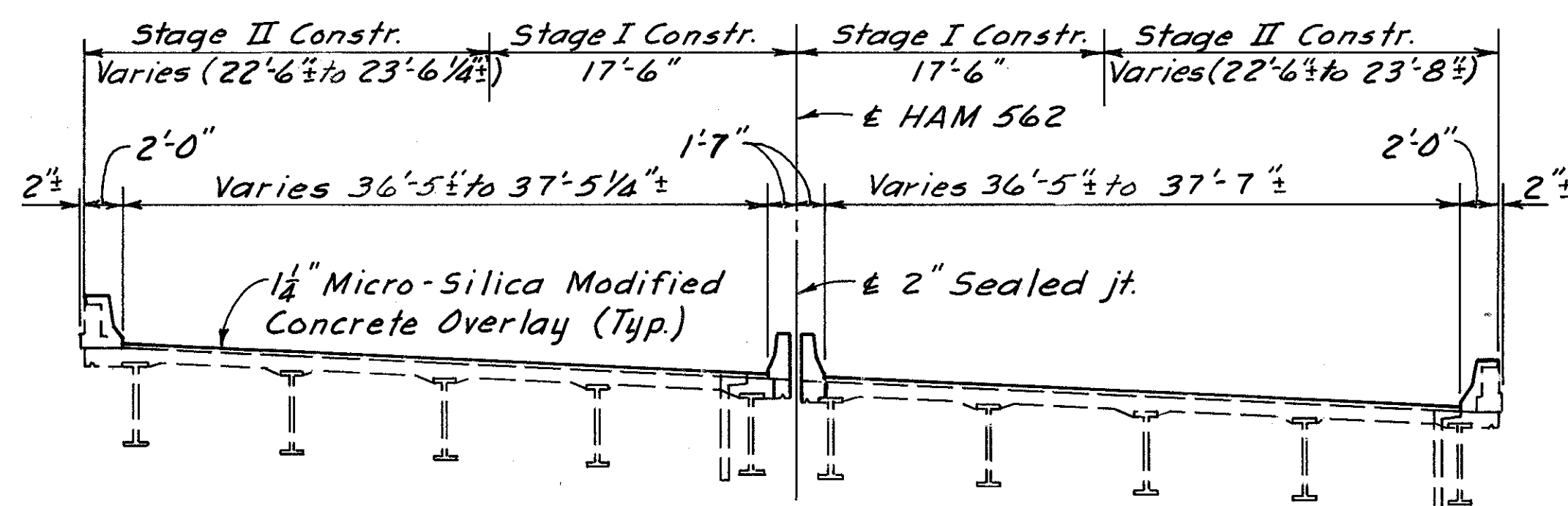
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MS	ALT	✓	VDG	CRS	3/93	

BASESHT 25 OCT 1993

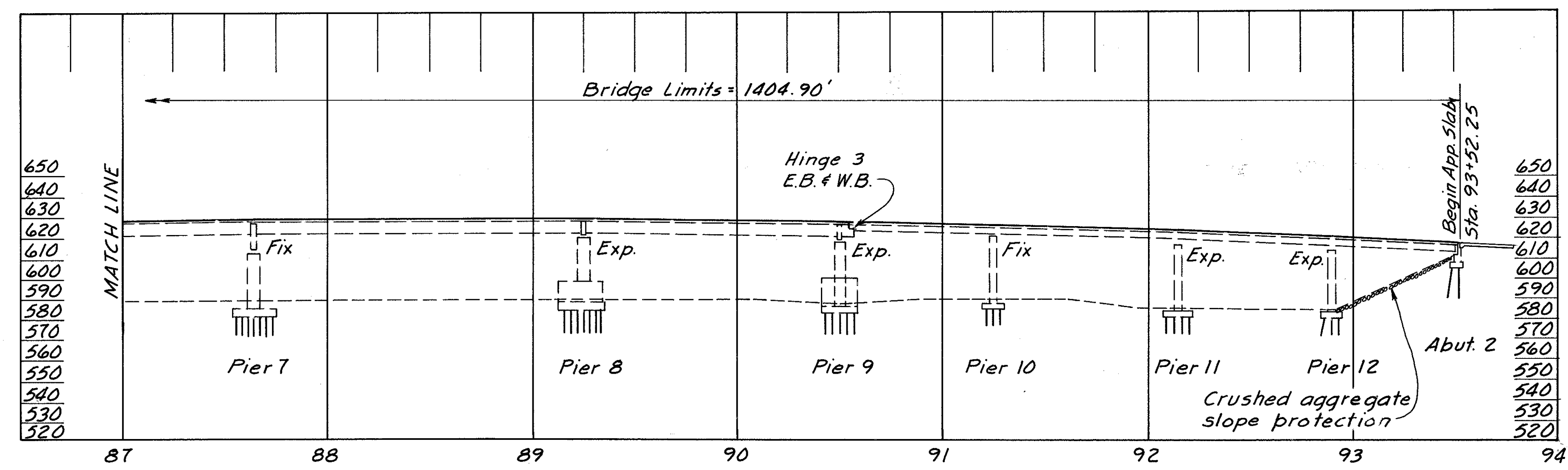




PLAN



TRANSVERSE SECTION  
Pier 9 to Abutment 2  
(Looking east)



ELEVATION

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

GENERAL PLAN AND ELEVATION

BRIDGE NO. HAM-562-0147  
OVER ROSS AVE. AND CSX R.R

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MS	ALT	~	VDG	CRS	7/93	

BASESHT 22 OCT 1991

**DESIGN REFERENCES**

REFERENCE shall be made to Standard Drawings:

EXJ-4-87 dated 1-5-89

and to Supplemental Specifications:

852 dated 6-10-87

952 dated 12-14-88

**DESIGN STRESSES**

Concrete Class S - compressive strength 4500 p.s.i.

Concrete Class C - compressive strength 4000 p.s.i.

Reinforcing Steel - ASTM A615, A616, A617  
- Grade 60 minimum yield strength 60,000 p.s.i.

**SCOPE OF WORK**

1. Refurbish and reset bearings at abutments and intermediate expansion joints
2. Replace end cross frames at intermediate expansion joints
3. Seal expansion joints with strip seals
4. Refurbish drainage system
5. Retrofit railings as indicated on plans
6. Apply overlay to deck, top of backwall and approach slab
7. Install compression seal between median barriers
8. Seal concrete surfaces
9. Paint structural steel, System OZEU or System IZEU

Work shall be executed in stages as indicated on plans.

**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/or 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.

Contract bid prices shall be based upon a recognition of the uncertainties described above and upon a prebid examination of the existing structure by the Contractor. However, all project work shall be based upon actual details and dimensions which have been verified by the Contractor in the field.

**REPLACEMENT OF EXISTING REINFORCEMENT STEEL:** Any existing reinforcing bars which are to be incorporated into the new work and which are made unusable by the Contractor's concrete removal operations shall be replaced with new steel at his cost. Any existing reinforcing bars deemed by the Engineer to be unusable because of corrosion shall be replaced with new steel. An allowance of 100 pounds is included in Item 509 for this purpose.

**PORTIONS OF STRUCTURES REMOVED**

Removal of portions of existing structure shall be performed in such a manner as to prevent debris from falling onto the roadway below. All debris shall be removed from the site and disposed of by the Contractor.

Concrete shall be removed only with pneumatic or hand tools that will give results satisfactory to the Engineer. Care shall be taken to avoid damaging the existing reinforcing steel which is to remain in place. The weight of the hammer shall not be more than 35 pounds for removal within 6 inches of portions to be preserved. Outside the 6-inch limit hammers not to exceed 85 pounds may be used with the approval of the Engineer. Any salvaged reinforcing steel which is made unusable by the Contractor's concrete removal operations shall be replaced with new doweled steel at his cost.

Removal of existing structure components shall be by means of equipment and procedures, approved by the Engineer, which are chosen and employed so as to prevent damage to the existing steel which is to remain.

**CUT LINE CONSTRUCTION JOINT PREPARATION:** Saw cut boundaries of proposed concrete removals 1" deep. Remove concrete to a rough surface. Where noted protruding reinforcing steel shall be left in place. Install dowel bars as specified. Prior to concrete placement, abrasively clean joint surface and exposed reinforcement to remove loose and disintegrated concrete and loose rust. Then, the joint surface and exposed reinforcement shall be thoroughly cleaned of all dirt, dust, or other foreign material by the use of water, air under pressure, or other methods that produce satisfactory results. Concrete bonding surfaces shall be wet without free water as concrete is placed.

**PROTECTION OF TRAFFIC**

Prior to demolition of any portions of the existing superstructure, the Contractor shall submit his plans for the protection of traffic (vehicular, pedestrian, or railroad) under the structure to the Director for approval. These plans shall include provisions for 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.

**PLANS FOR EXISTING BRIDGE**

Plans of the existing structure are available for reference at the ODOT District Eight office.

**MAINTENANCE OF TRAFFIC**

For sequence of construction on project and maintenance of traffic see roadway plans sheet <sup>1A</sup> 70

**REFURBISH BEARING DEVICE**

This Item shall include all work necessary to clean and paint bearings at abutments and hinges. Included shall be:

1. Disassembly of the bearings.
2. Hand cleaning (grinding if required).
3. Abrasive blasting and painting as required by proposal note Field Painting of Existing Steel, System OZEU.
4. Replacement of any damaged sheet lead (711.19). Preformed bearing pads 1/8" thick, meeting the requirements of 711.21 may be substituted for the sheet lead.
5. Installation of any necessary 1/8" thick steel shims of the same size as the bearings to provide a snug fit.
6. Reassembly of the bearings.

At the option of the Contractor and at no additional cost to the state, new bearings of the same type as the existing may be installed in place of the refurbished bearings. All work shall be to the satisfaction of the Engineer. Payment for all the above described labor and materials will be made at the contract price bid for Item 516 - Refurbish bearing device.

**JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE**

The ends of the beams at each location shall be jacked and the beams supported so the bearing may be removed. The Contractor shall submit his jacking plan to the Director for approval prior to jacking.

**RESET BEARINGS**

Bearings at the abutments and hinges shall be reset to be vertical at 60° F. Masonry plates shall be adjusted to be centered under bearings.

**REFURBISH DRAINAGE SYSTEM**

This item shall include the removal of horizontal collectors and downspouts as indicated in plans and cleaning and flushing out of all inlets and remaining downspouts. The downspouts shall be thoroughly cleaned so that water flows freely. All exposed pipes and supports shall be cleaned and painted as required by proposal note Field Painting of Existing Steel, System OZEU. Payment for all the above described labor and materials will be made at the contract price bid for Item 518 - Structural drainage, misc: refurbish drainage system.

**MICRO-SILICA MODIFIED CONCRETE OVERLAY**

Longitudinal joints in the concrete overlay are permitted, but only to the extent necessary to accommodate the width of the finishing machine, to facilitate changes in the roadway crown, or to permit maintenance of vehicular traffic.

**PAINTING OF EXISTING STRUCTURAL STEEL**

All existing structural steel shall be cleaned and painted as required by the proposal note Field Painting of Existing Steel, System OZEU.

The surface area pay quantity is based on the surface area of the main members increased by 25 percent to account for the area of crossframes, bearings, and other structural steel incidentals to be cleaned and painted.

**PAINTING NEW STEEL**

New end cross frames shall be painted per System IZEU. Payment shall be under Item Special, Painting of new steel, System IZEU.

**SEALING OF CONCRETE SURFACES**

Reference shall be made to the proposal note for application and material specifications. Sealer shall be applied to the following surfaces.

1. Abutment backwalls, beam seats, and the face of the breastwall to ground line shall be sealed with an epoxy sealer.
2. Superstructure and abutment wingwall parapets shall be sealed as shown on sheet 5/30 thru 7/30 and 21/30 with an epoxy or non-epoxy sealer.

**GENERAL NOTES**

BRIDGE NO. HAM-562-0147  
OVER ROSS AVENUE AND CSX R.R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	BRP	7/93	

ESTIMATED QUANTITIES

Calculated by: MRS  
Checked by: ALT

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	SUPERSTRUCTURE	GENERAL
202	11201	L.S.	Lump	Portions of structures removed, as per plan			L.S.
509	15800	84,850	Lb.	Epoxy coated reinforcing steel, grade 60	374	84,376	100
510	11100	4,712	Each	Dowel hole	45	4,667	
511	34400	481	Cu. yd.	Class S concrete, superstructure (repair or reconstruction)		481	
511	45700	3	Cu. yd.	Class C concrete, abutment (repair or reconstruction)	3		
Special	51267500	4,410	Sq. yd.	Sealing of concrete surfaces (see Proposal Note)	33	4,377	
Special	51267502	228	Sq. yd.	Sealing of concrete surfaces (epoxy) (see Proposal Note)	228		
513	15900	15,900	Lb.	Structural steel, replacement of deteriorated end cross frames		15,900	
513	16800	6	Each	structural steel, Misc. Repair of fractured critical Box girder pier cap		6	
Special	51400050	321,900	Sq. ft.	Surface preparation of existing steel, System OZEU (see Proposal Note)		321,900	
Special	51400056	321,900	Sq. ft.	Field painting of existing steel, prime coat, System OZEU (see Proposal Note)		321,900	
Special	51400060	321,900	Sq. ft.	Field painting of existing steel, intermediate coat, System OZEU (see Proposal Note)		321,900	
Special	51400066	321,900	Sq. ft.	Field painting of existing steel, finish coat, System OZEU (see Proposal Note)		321,900	
Special	51400610	15,900	Lb.	Painting of new steel, System IZEU (see Proposal Note)		15,900	
516	10900	1402	Lin. ft.	Elastomeric compression seal		1402	
516	11210	405	Lin. ft.	Structural expansion joint including elastomeric strip seal		405	
516	45304	52	Each	Refurbish bearing device		52	
516	46700	52	Each	Reset bearing		52	
516	47000	L.S.	Lump	Jacking and temporary support of superstructure		L.S.	
517	76200	2,838	Lin. ft.	Railing faced		2,838	
518	63300	L.S.	Lump	Structure drainage, misc.: refurbish drainage system		L.S.	
Special	51922000	11,670	Sq. yd.	Micro-silica modified concrete overlay (1 1/4" thick) (see Proposal Note)		11,670	
Special	51922100	242	Cu. yd.	Micro-silica modified concrete overlay (variable thickness) (see Proposal Note)		242	
Special	51922200	1	Cu. yd.	Full depth repair (micro-silica) (see Proposal Note)		1	
Special	51922300	L.S.	Lump	Test slab (see Proposal Note)		L.S.	
Special	53000400	151	Each	Structure, misc.: lateral bracing gusset plate retrofit upgrade (intermediate)		151	

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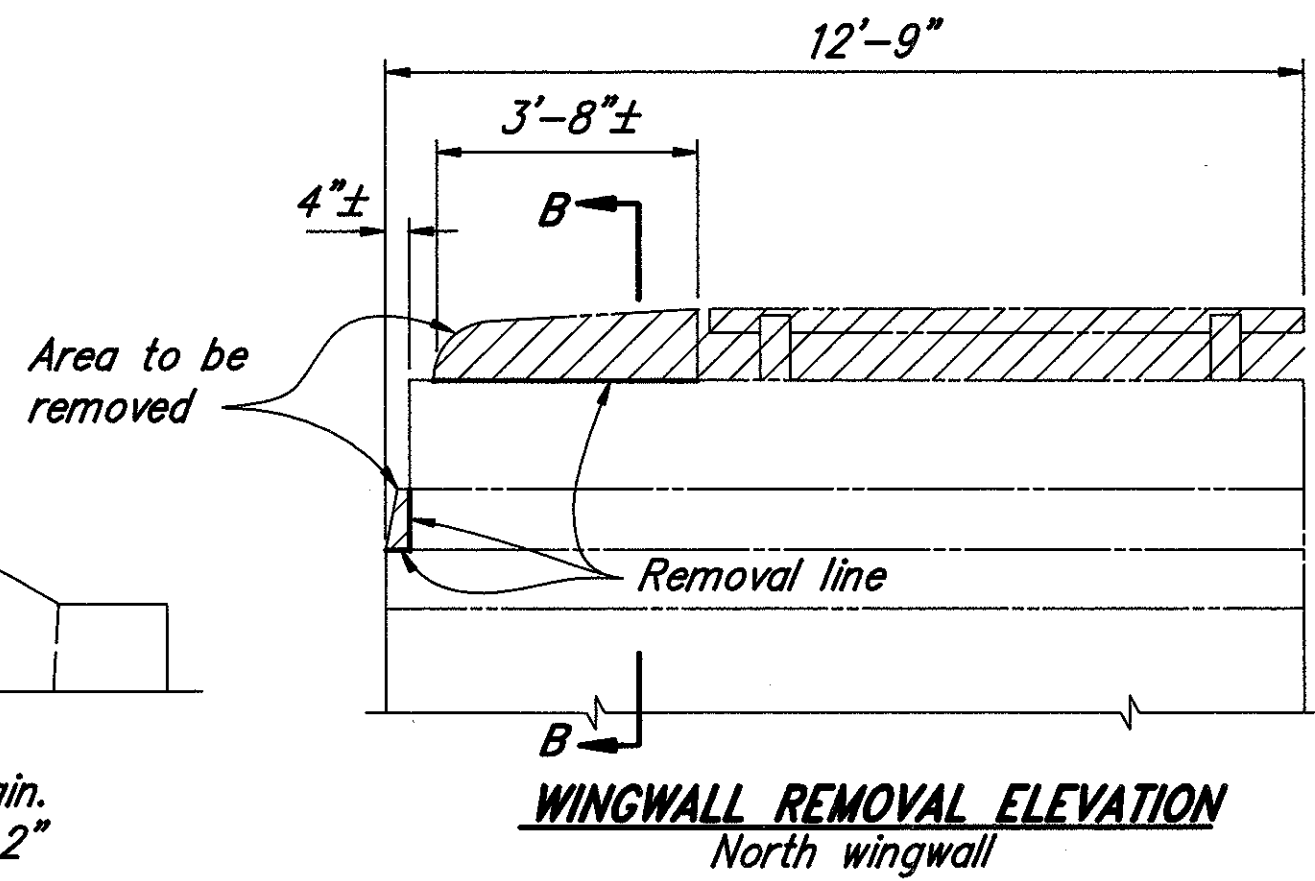
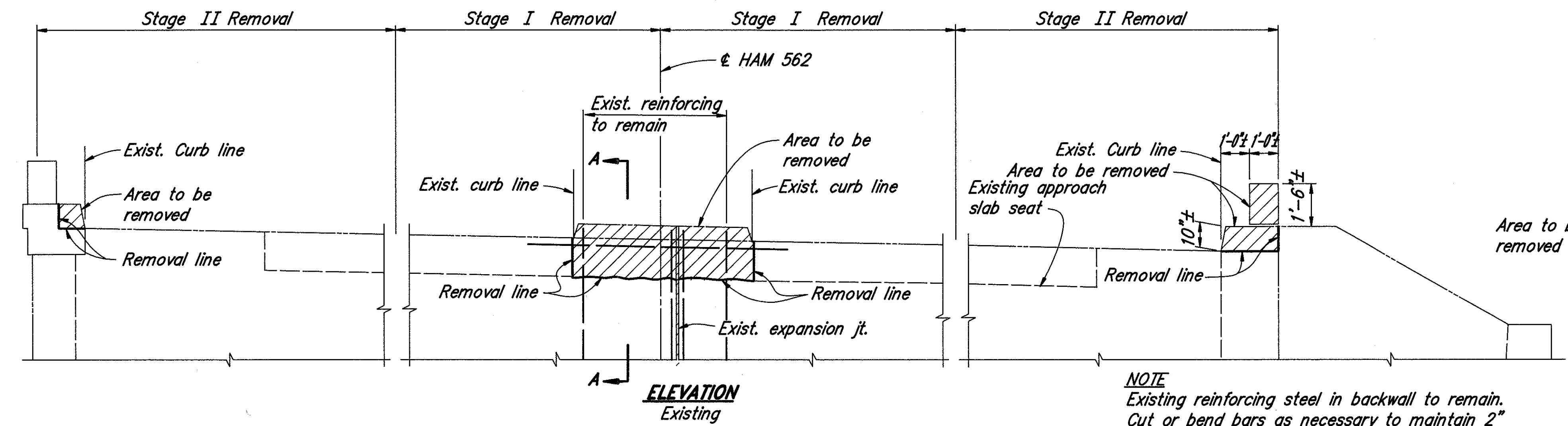
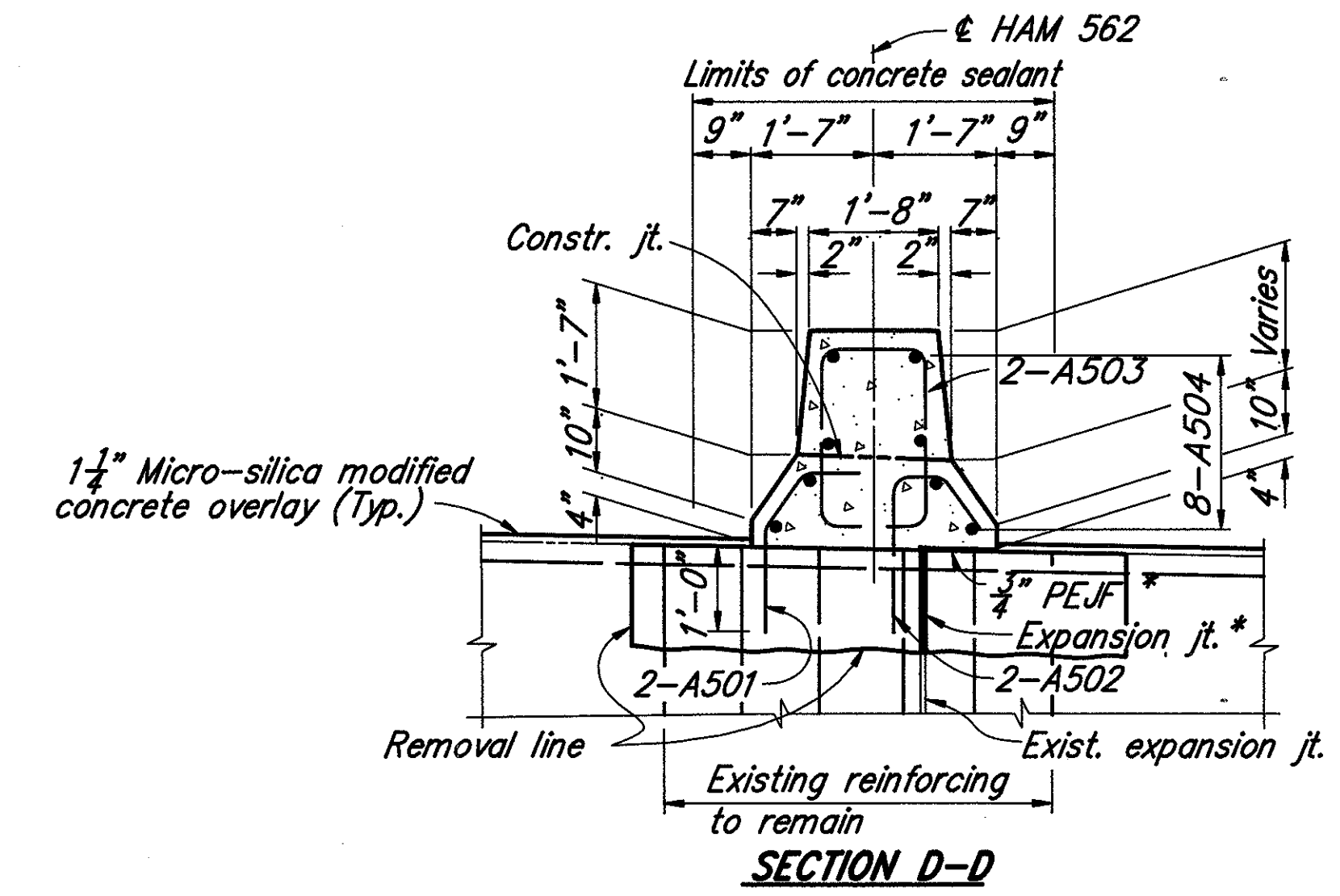
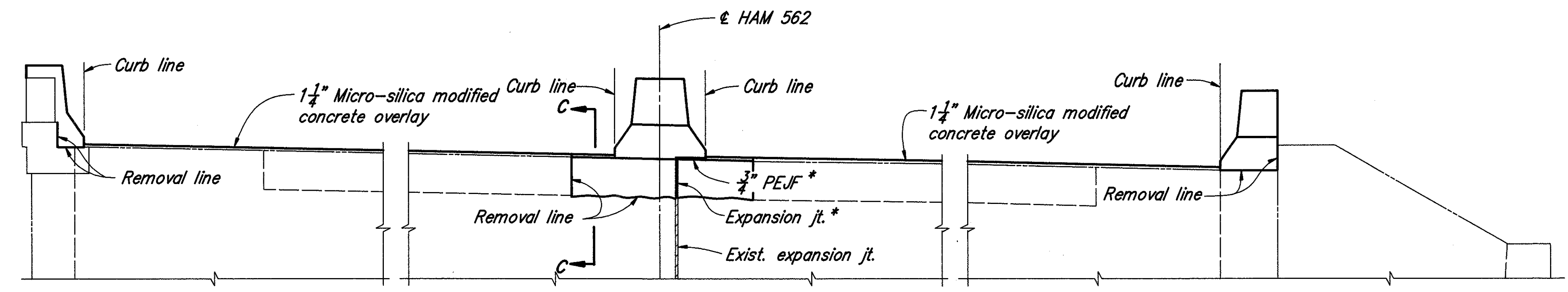
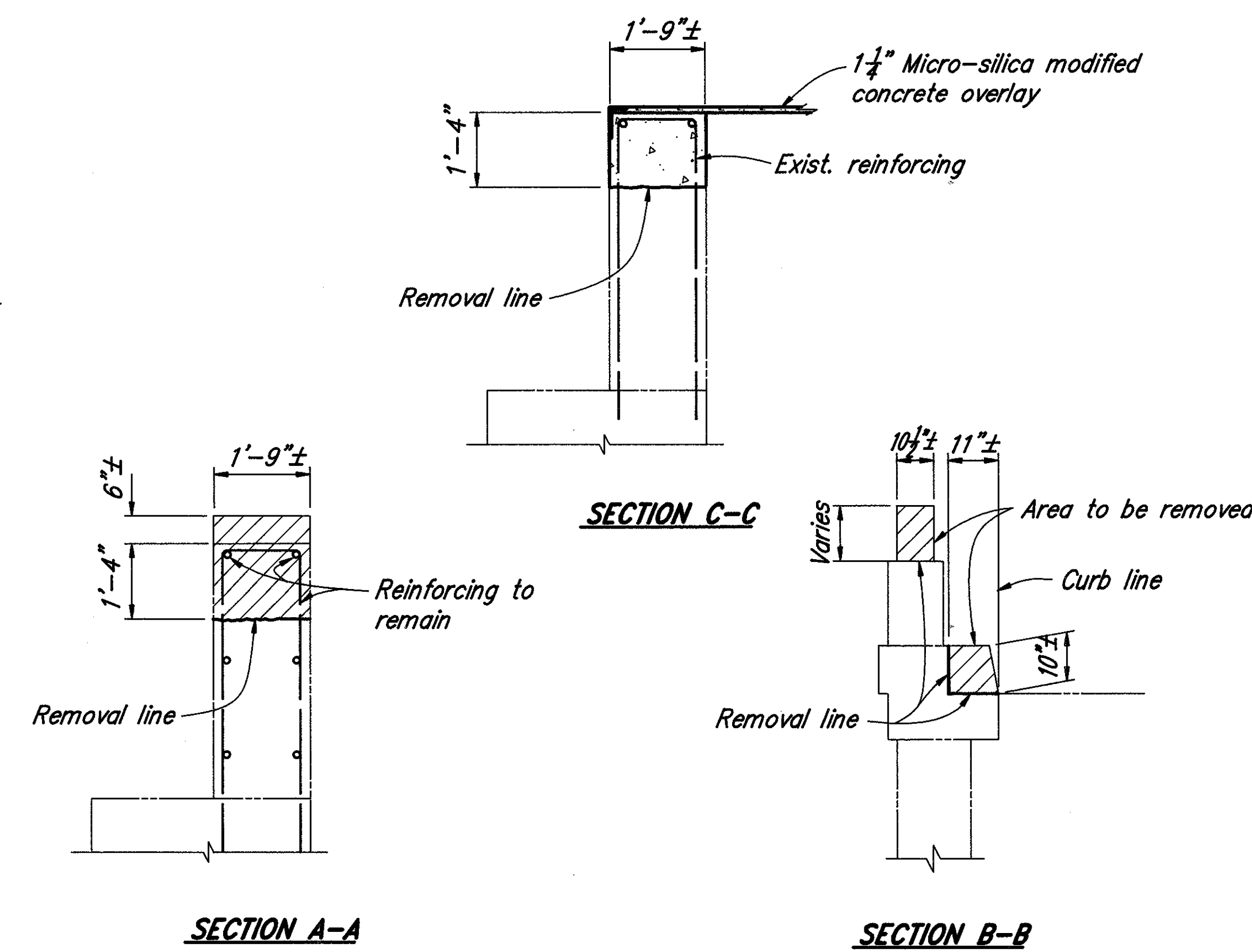
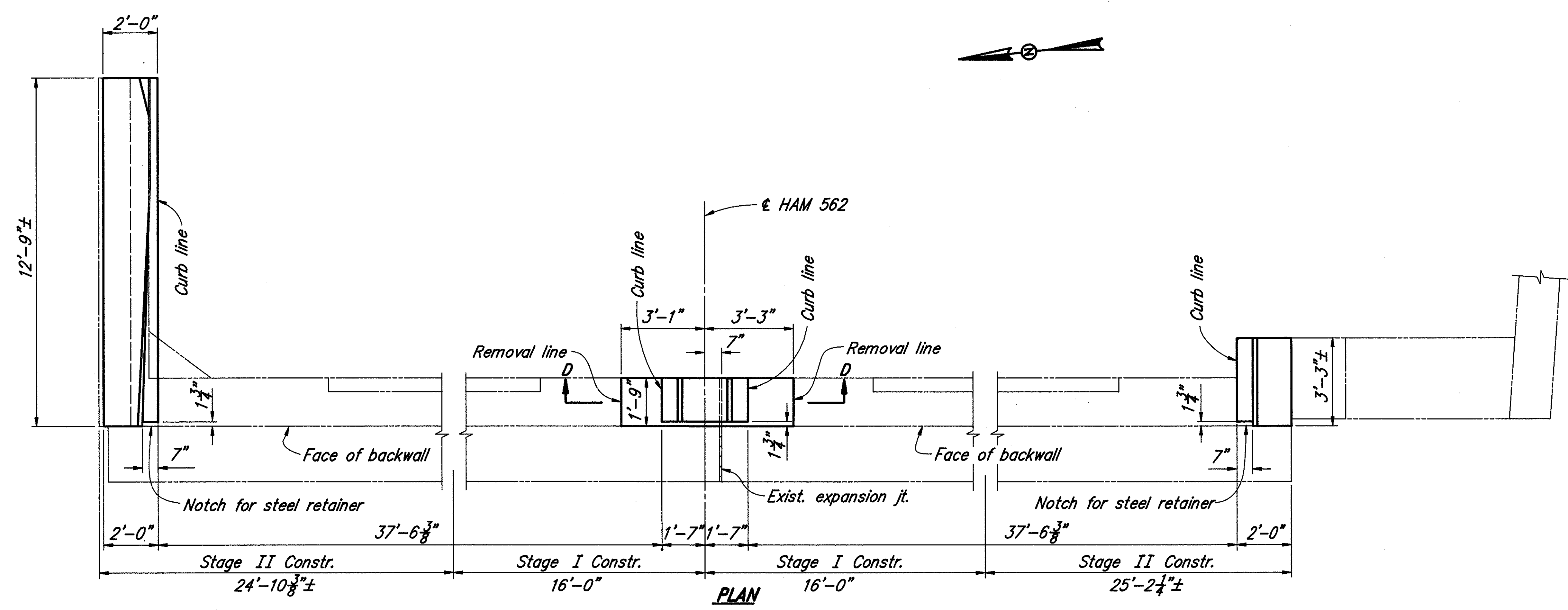
ESTIMATED QUANTITIES

BRIDGE NO. HAM-562-0147  
OVER ROSS AVENUE AND CSX R.R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	BRP		







**NOTES**  
For wingwall barrier details see sheet 7/30

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

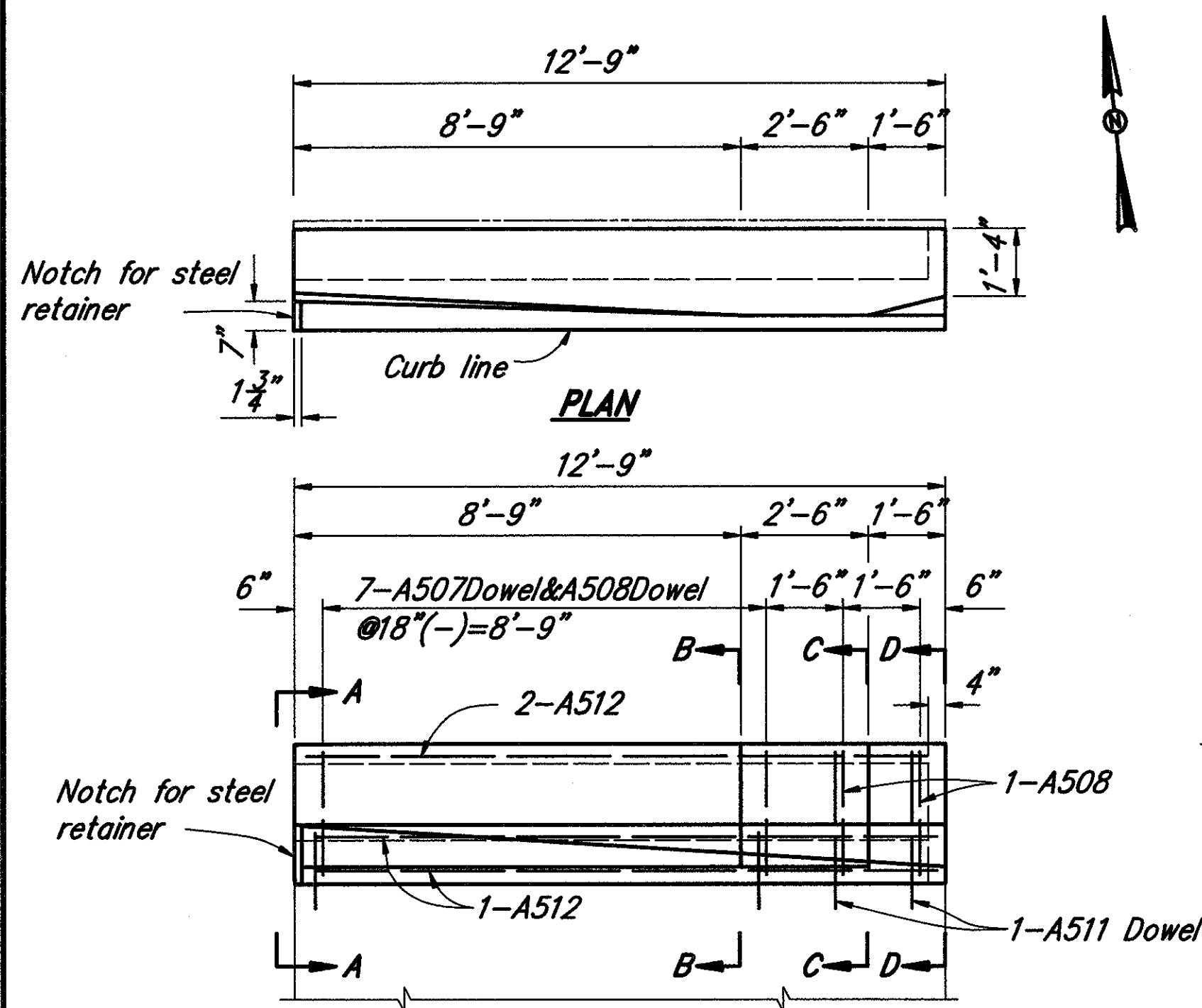
**ABUTMENT NO. 2**

BRIDGE NO. HAM-562-0147  
OVER ROSS AVENUE AND CSX R.R.

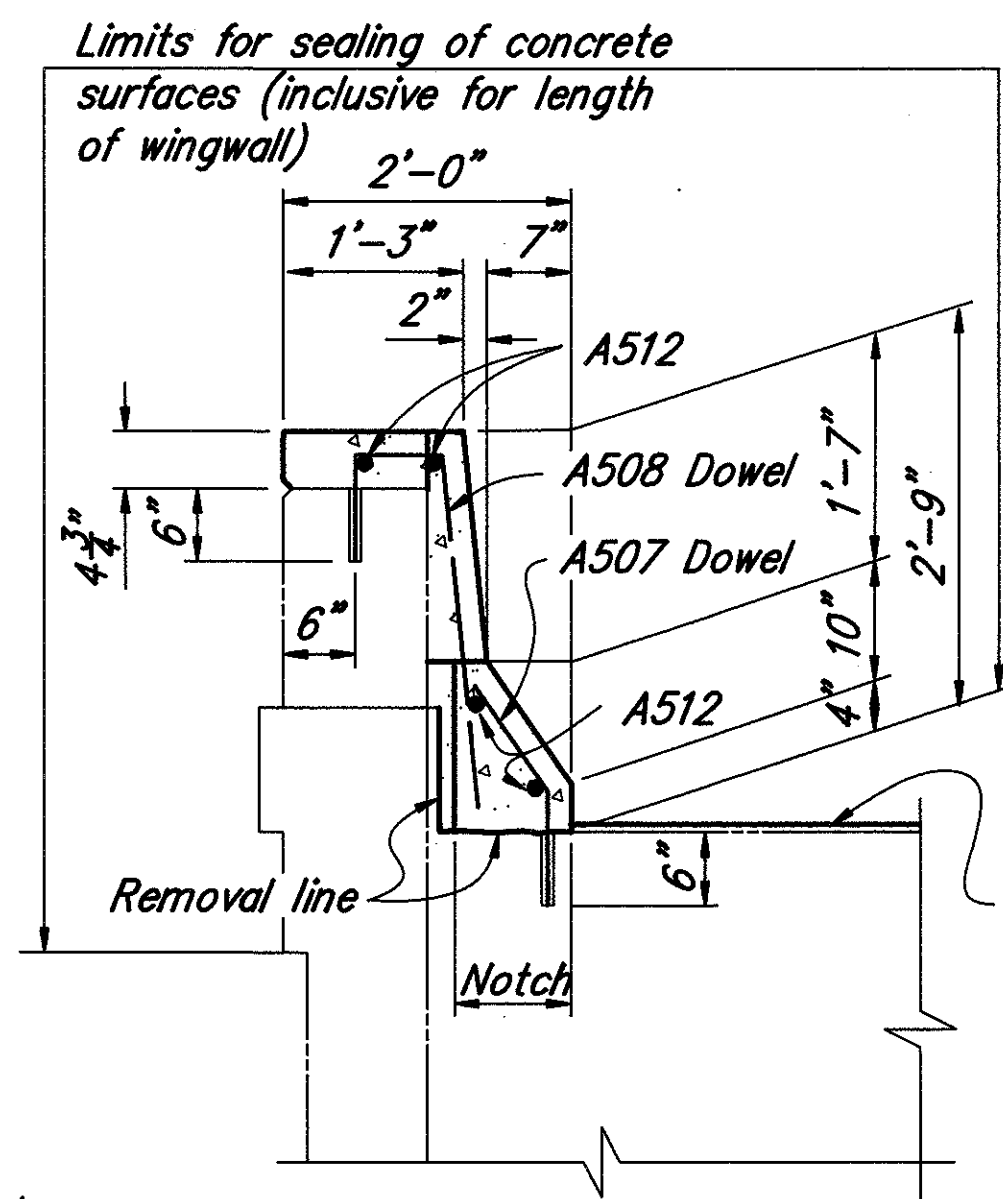
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	8/28/93	3/93	

S014ND05 17 MAR 1993

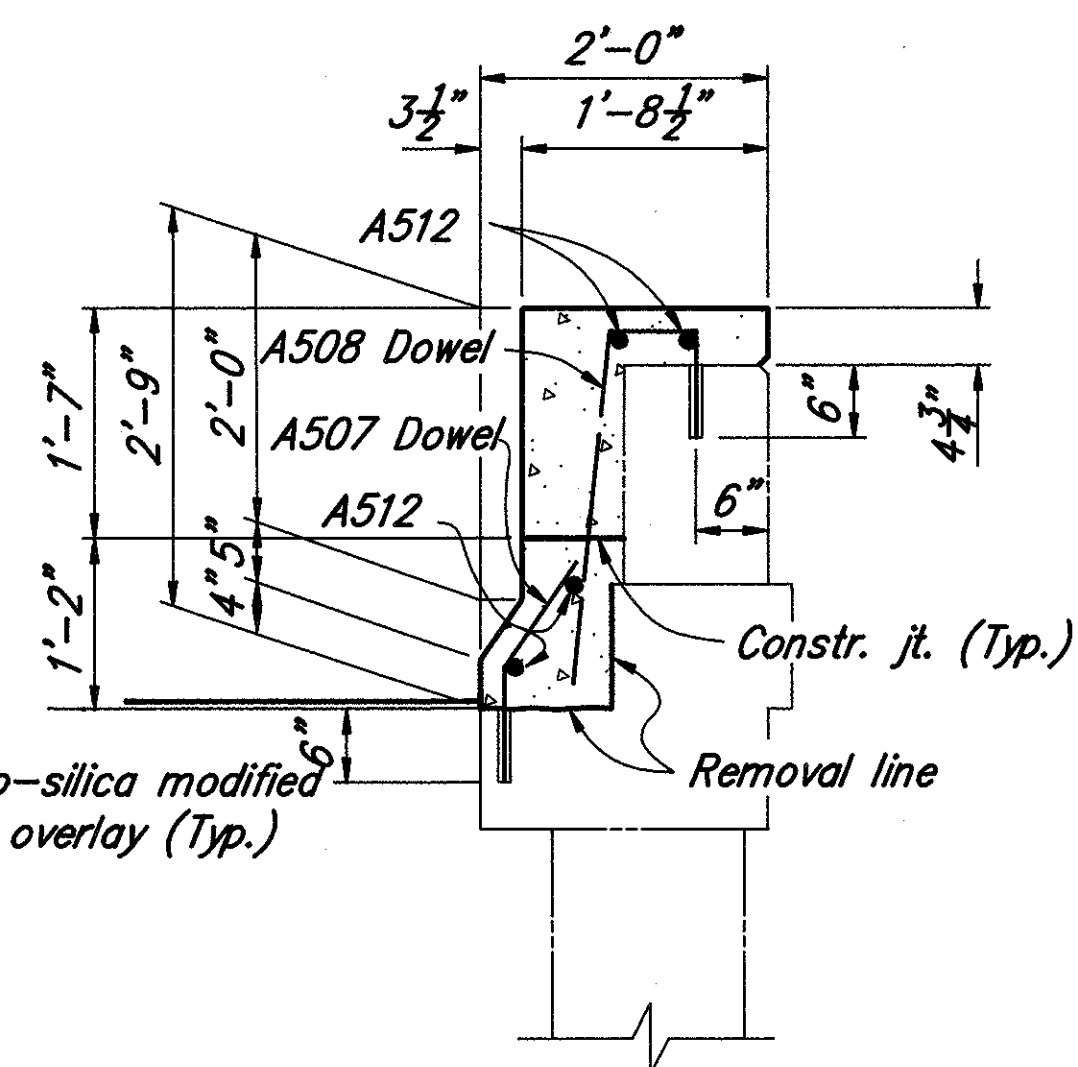
**NOTE**  
Existing reinforcing steel in backwall to remain. Cut or bend bars as necessary to maintain 2" minimum clearance.



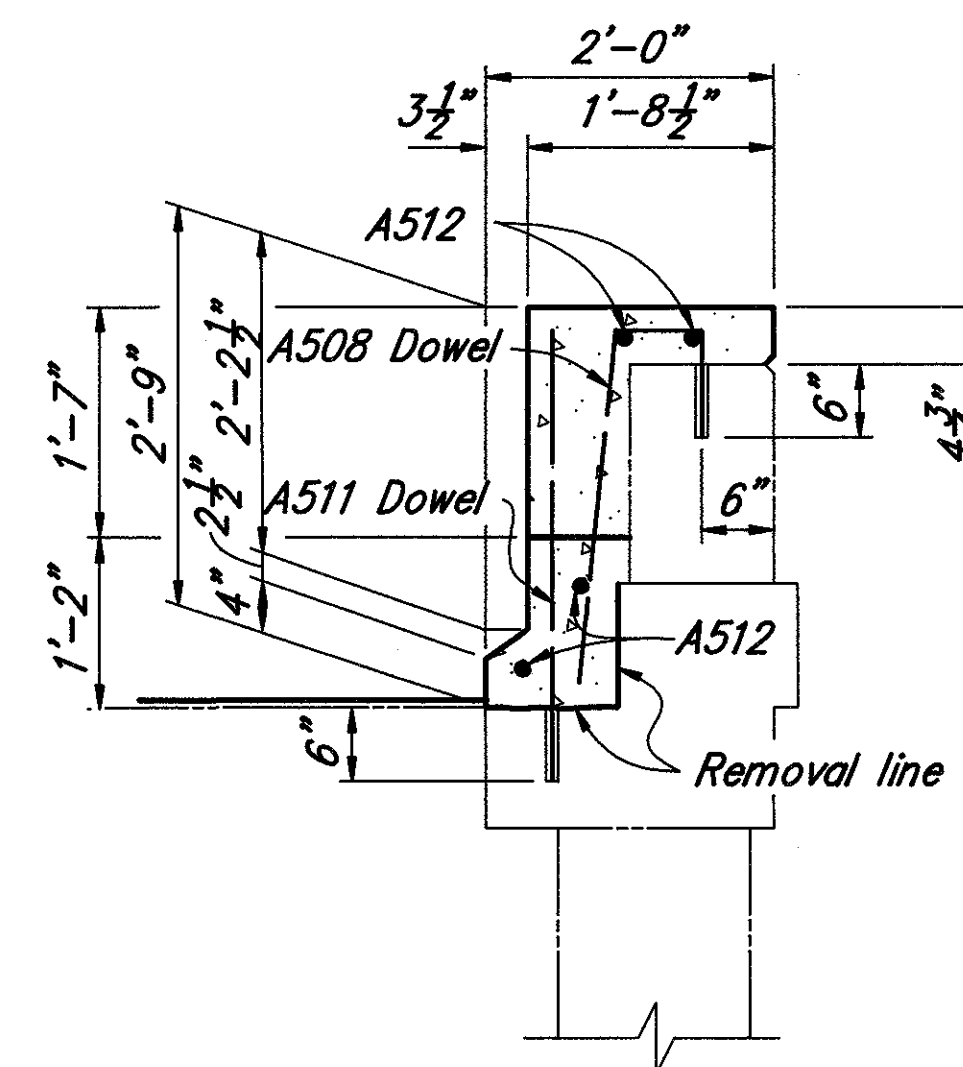
**NORTH WINGWALL ELEVATION - ABUTMENT NO. 2**  
Curb side elevation



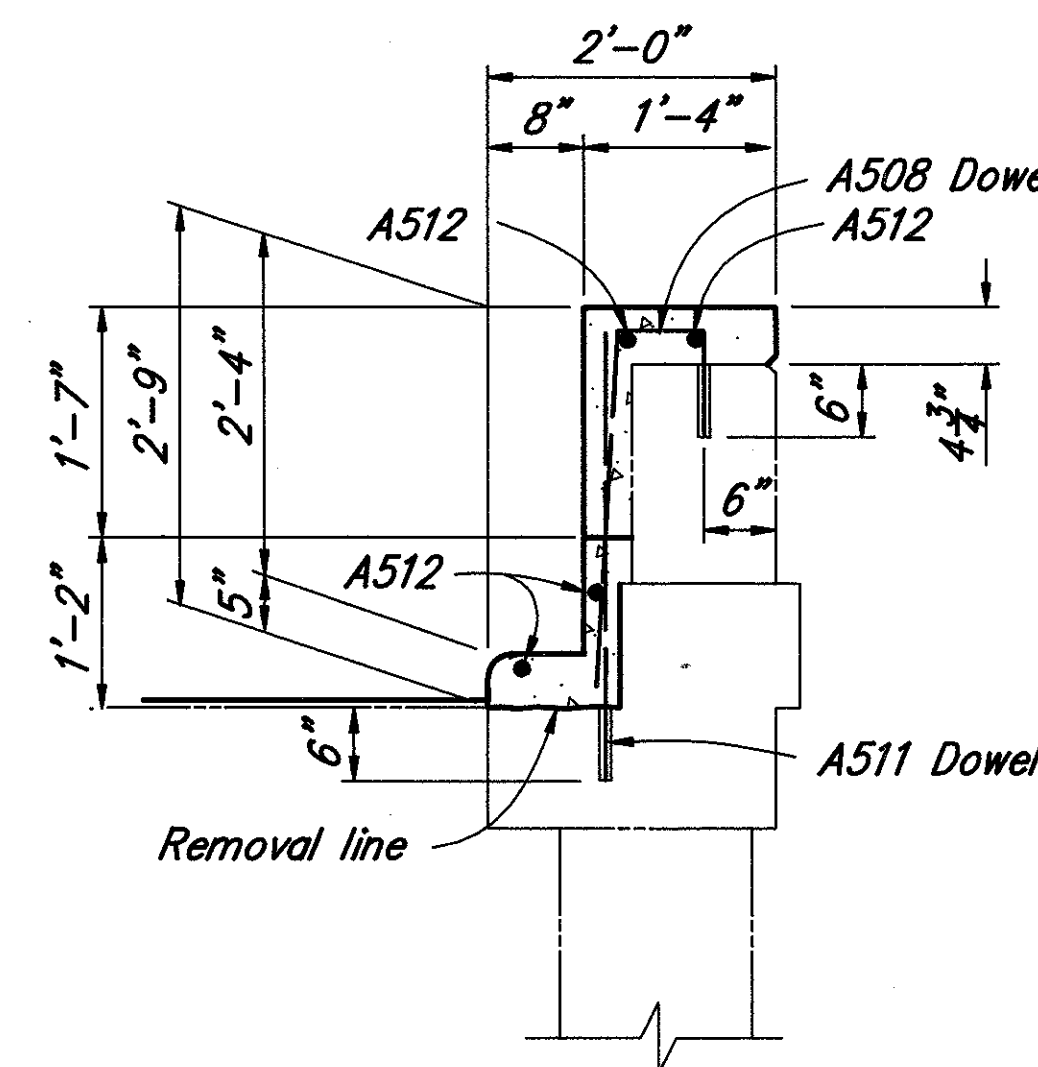
**SECTION A-A**



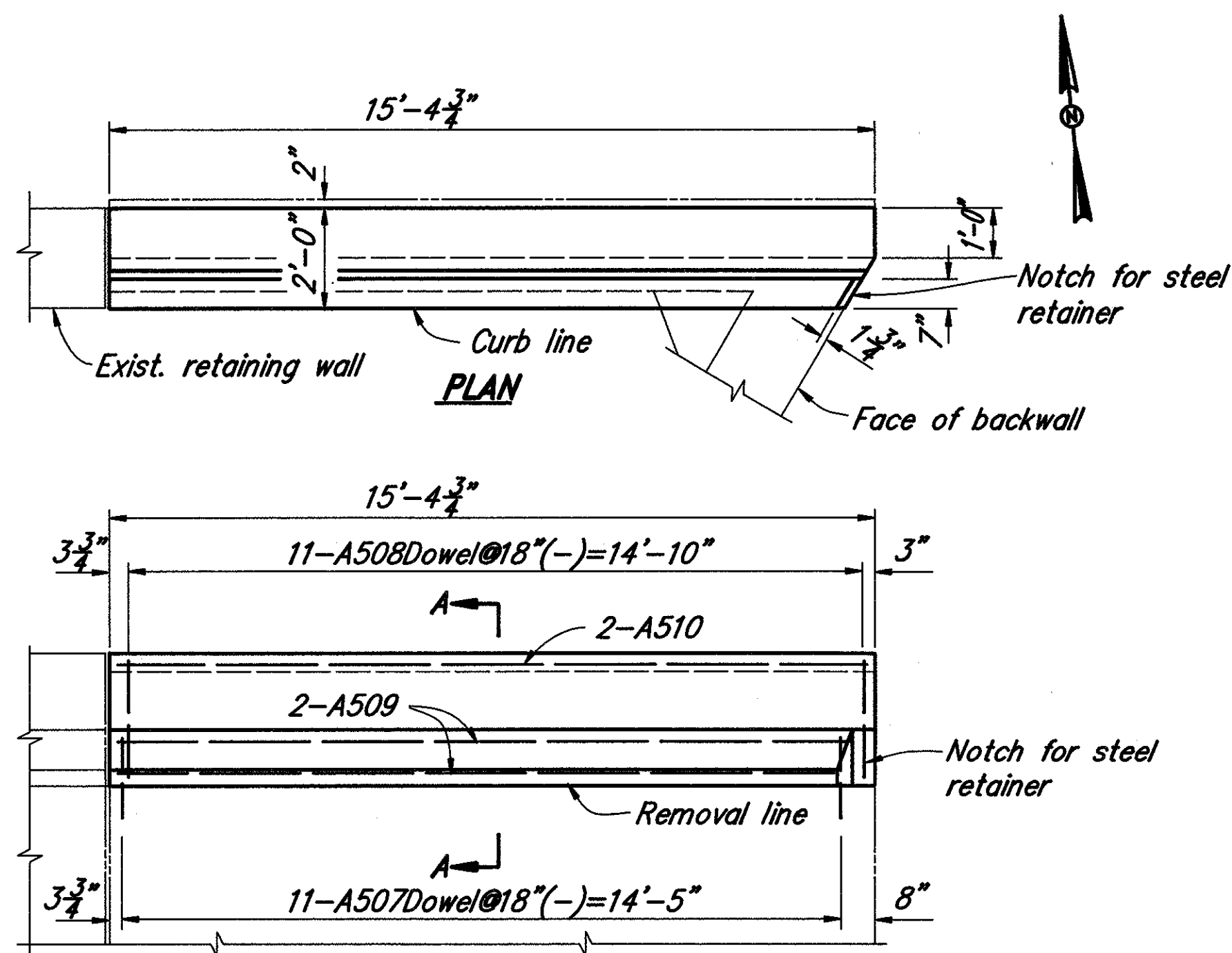
**SECTION B-B**



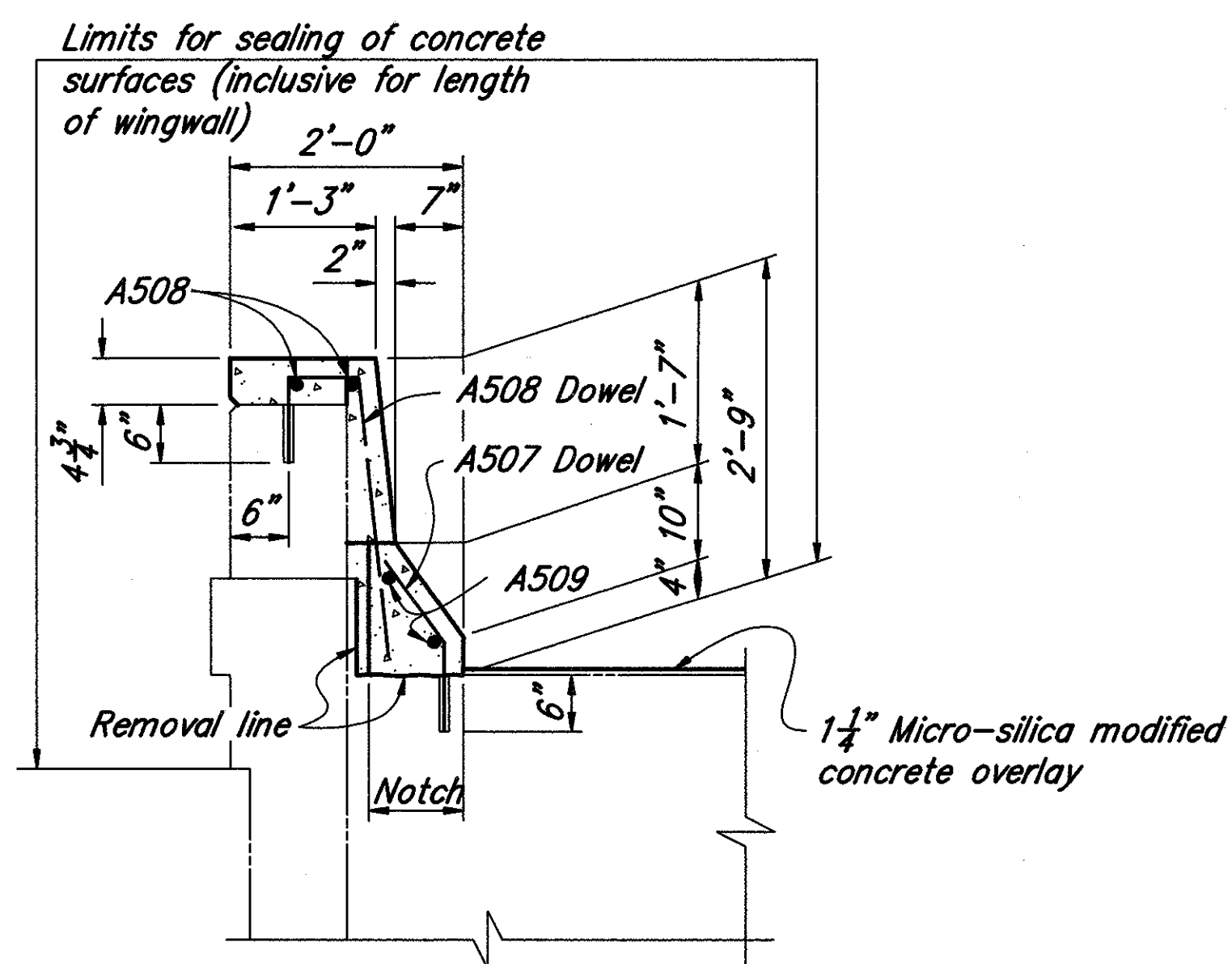
**SECTION C-C**



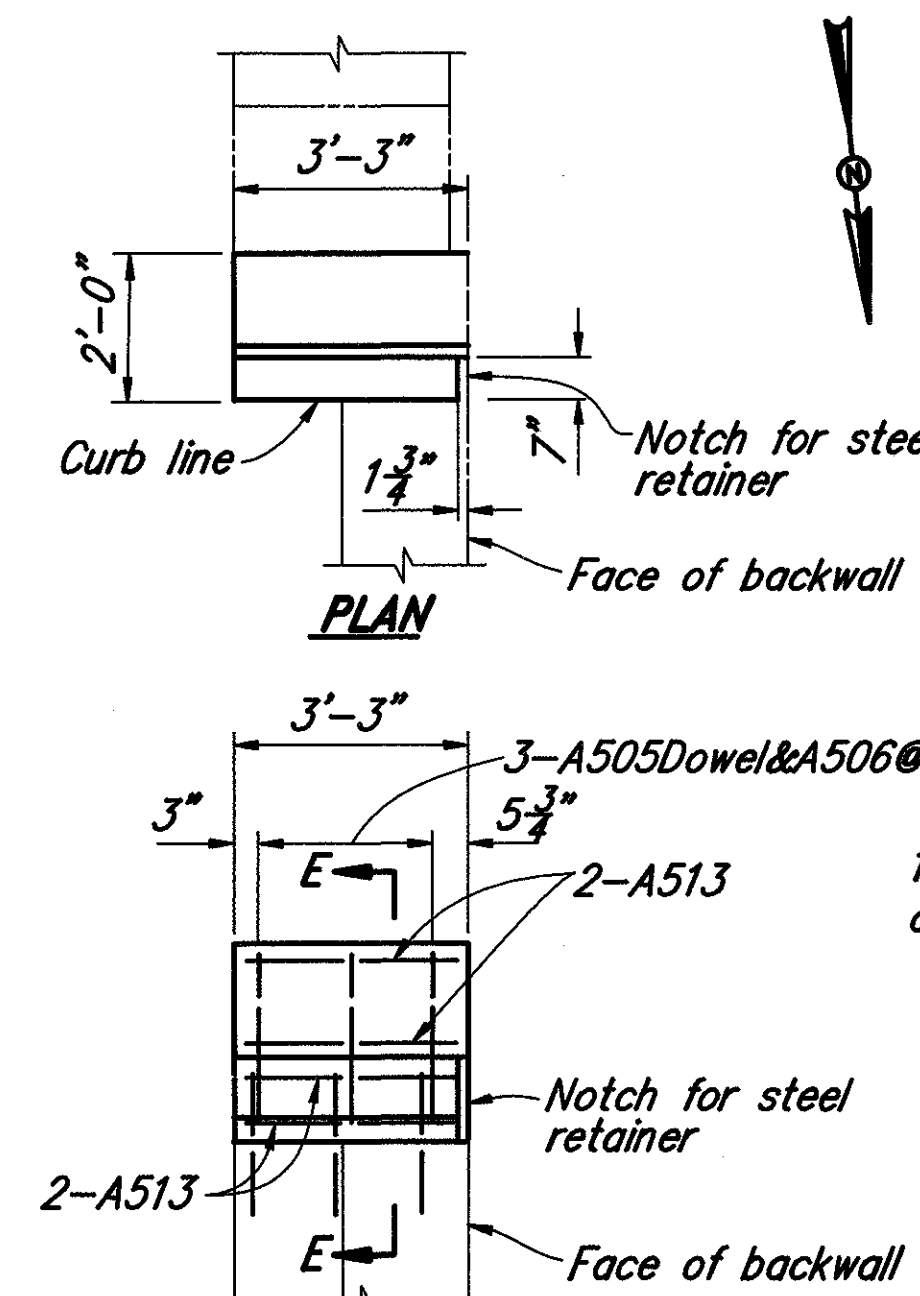
**SECTION D-D**



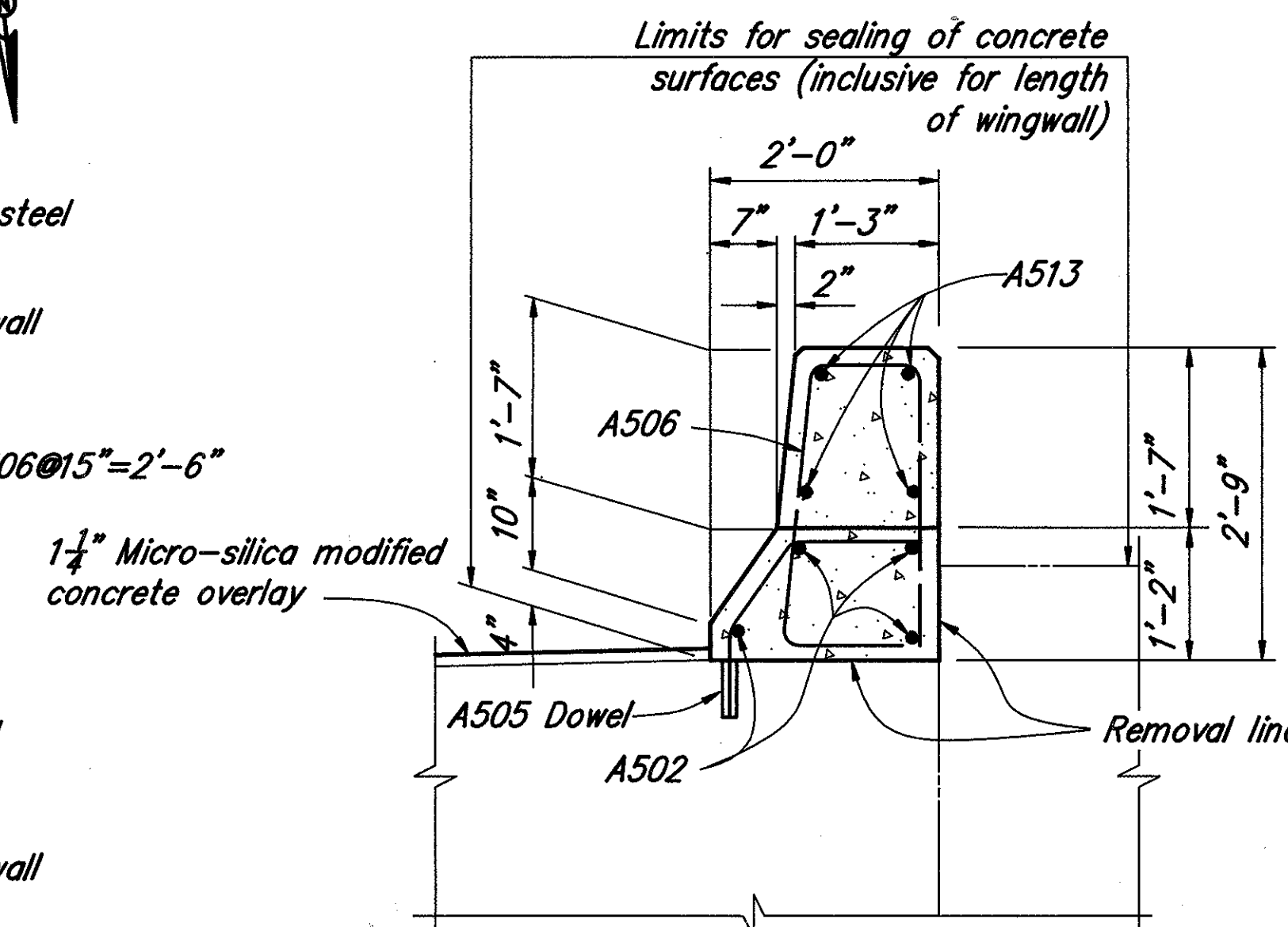
**WINGWALL ELEVATION - ABUTMENT NO. 1**  
Curb side elevation of north wingwall



**SECTION A-A**



**SOUTH WINGWALL ELEVATION  
ABUTMENT NO. 2**  
Curb side elevation



**SECTION E-E**

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

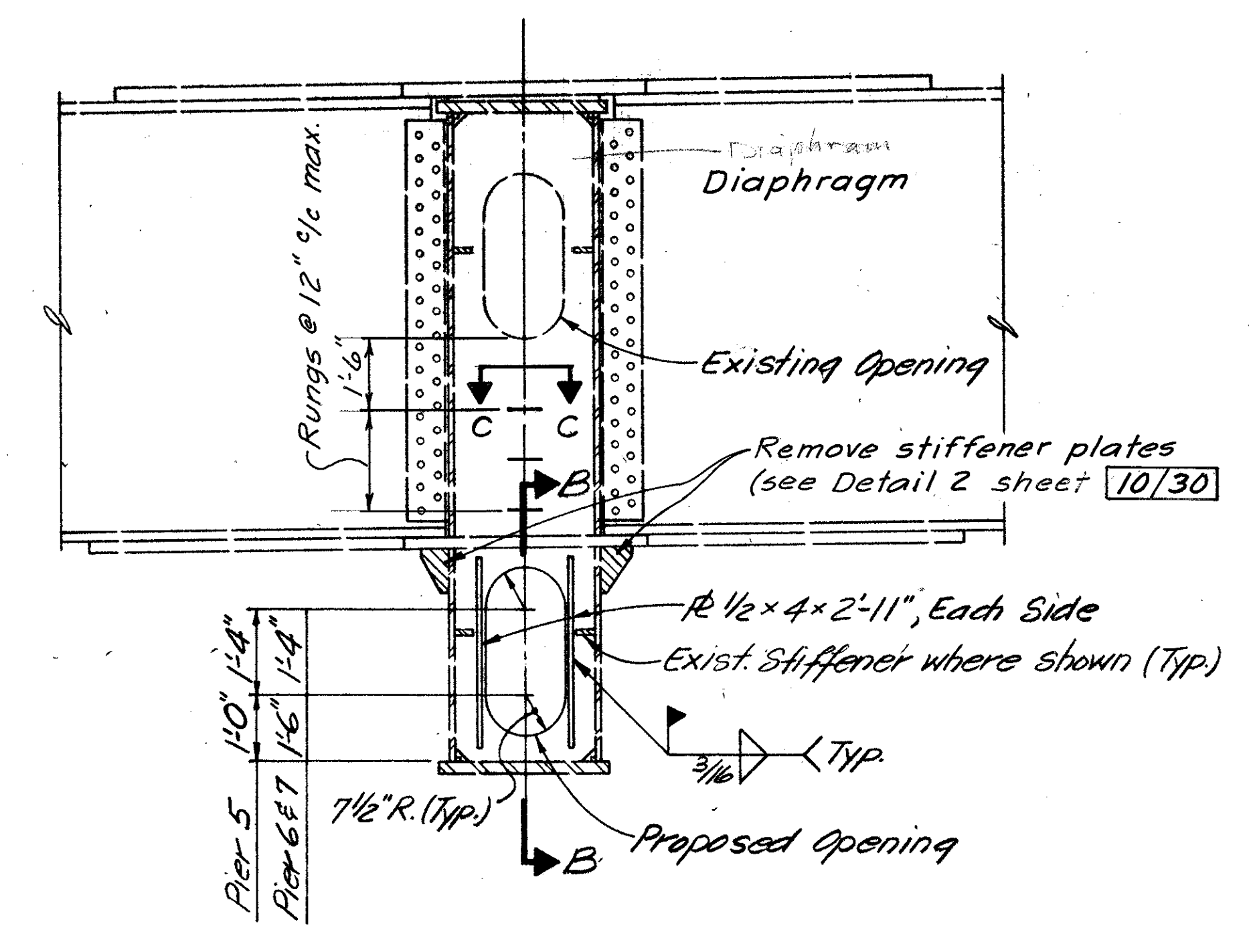
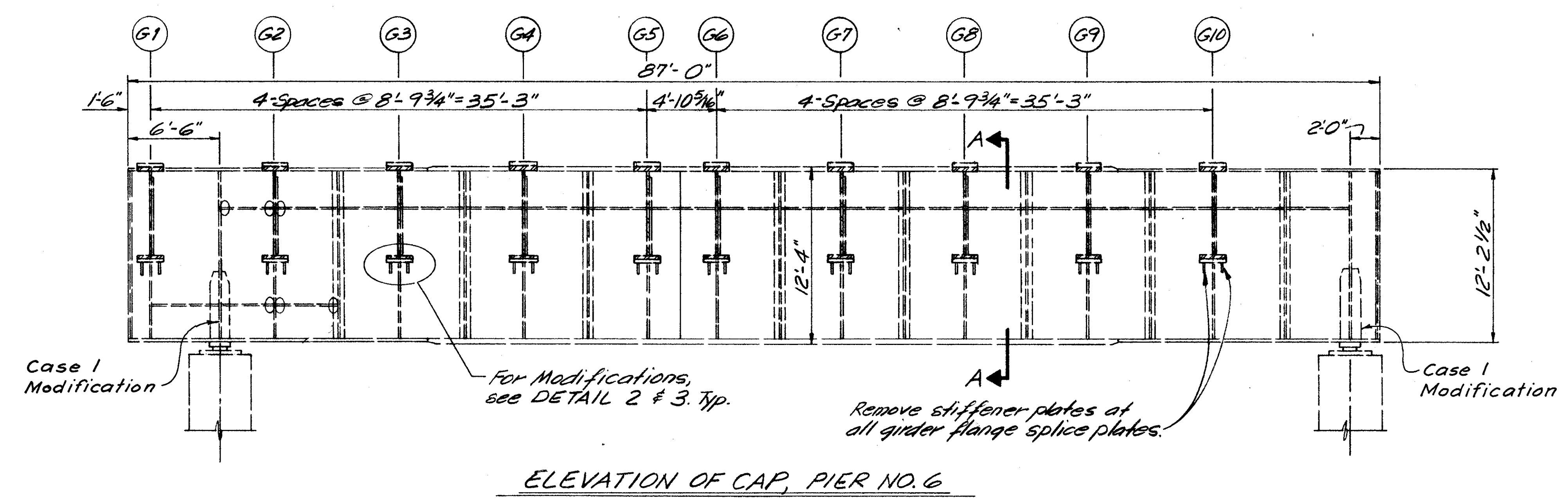
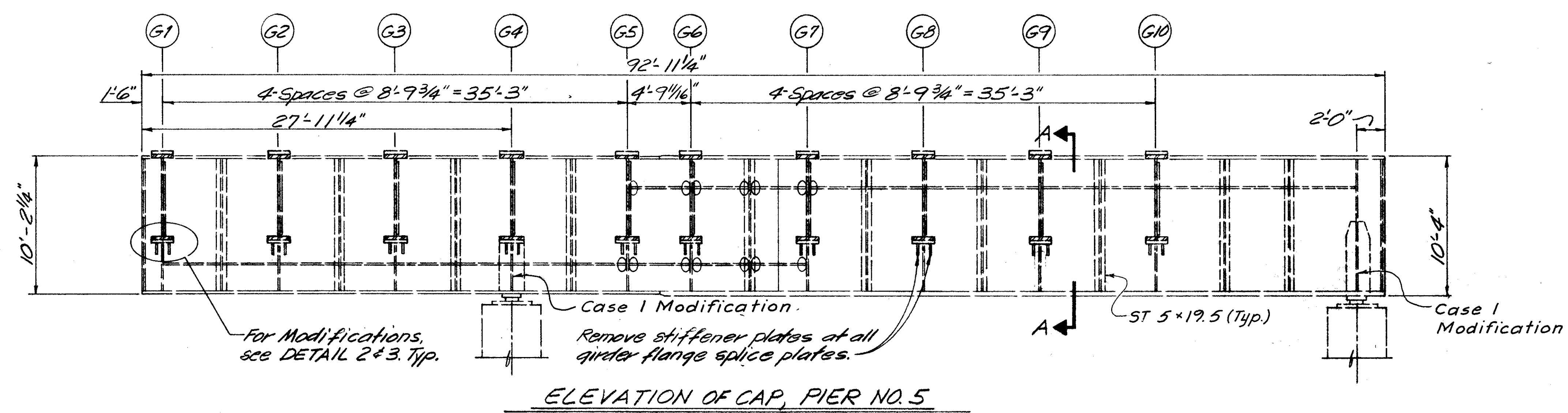
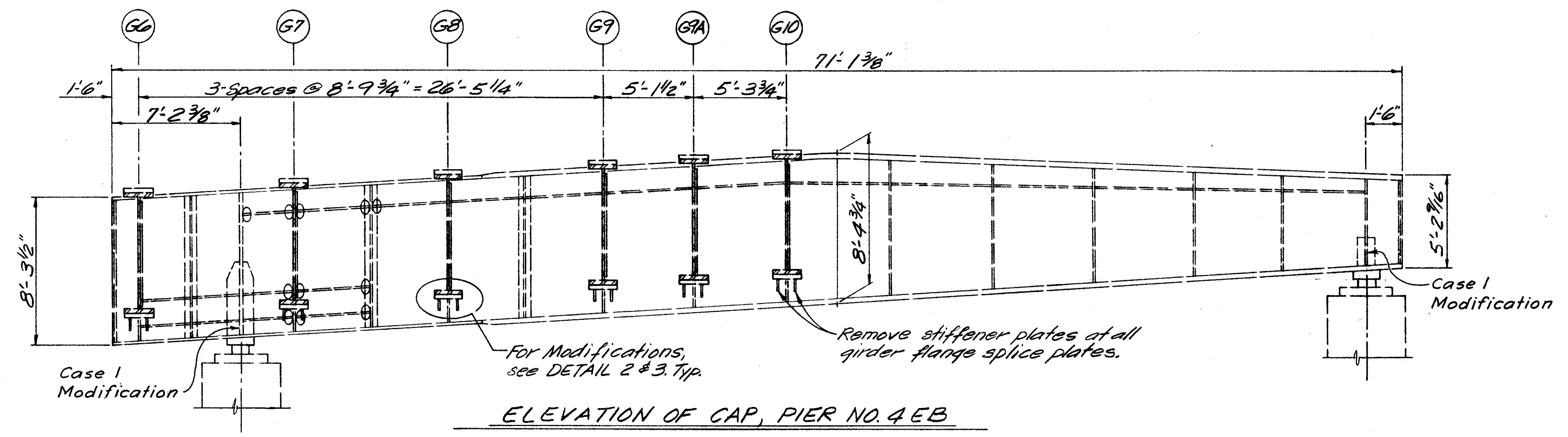
7/30

**ABUTMENT DETAILS**

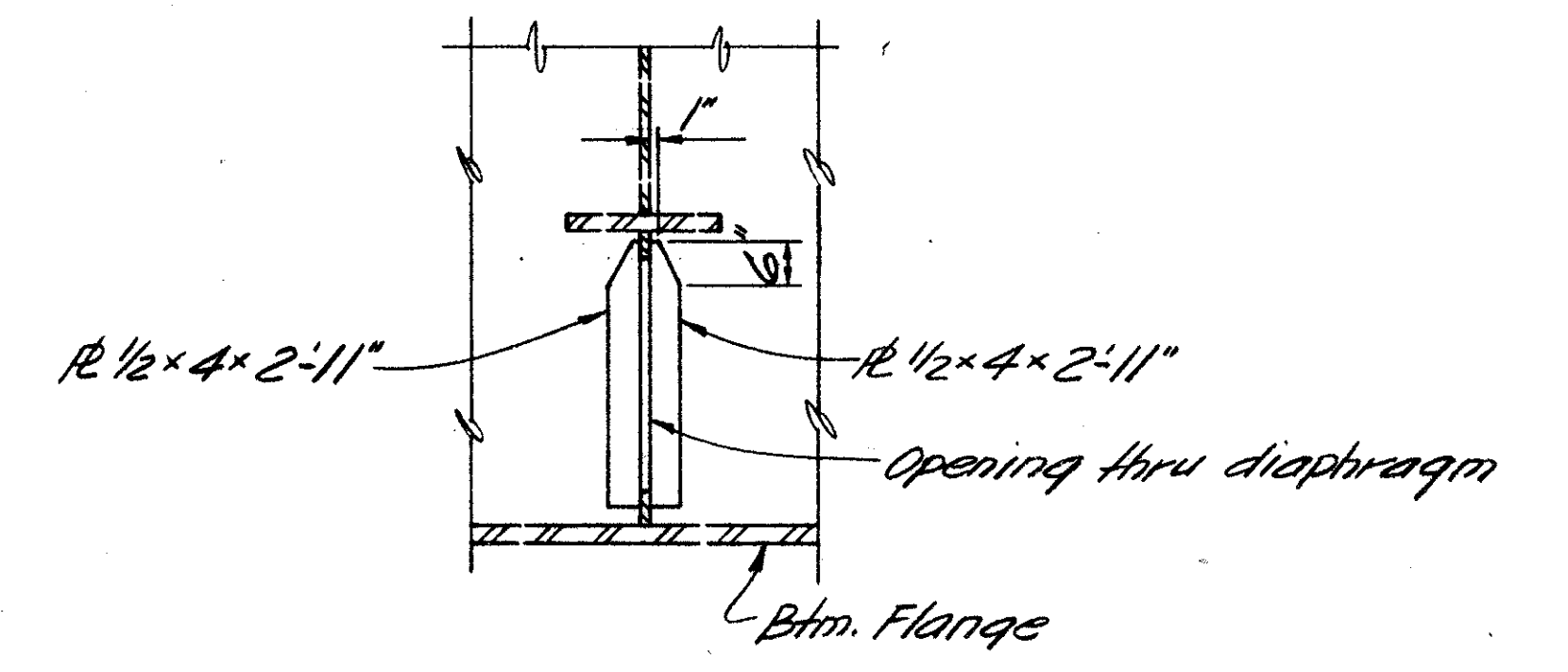
**BRIDGE NO. HAM-562-0147  
OVER ROSS AVENUE AND CSX R.R.**

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	BRP	3/93	





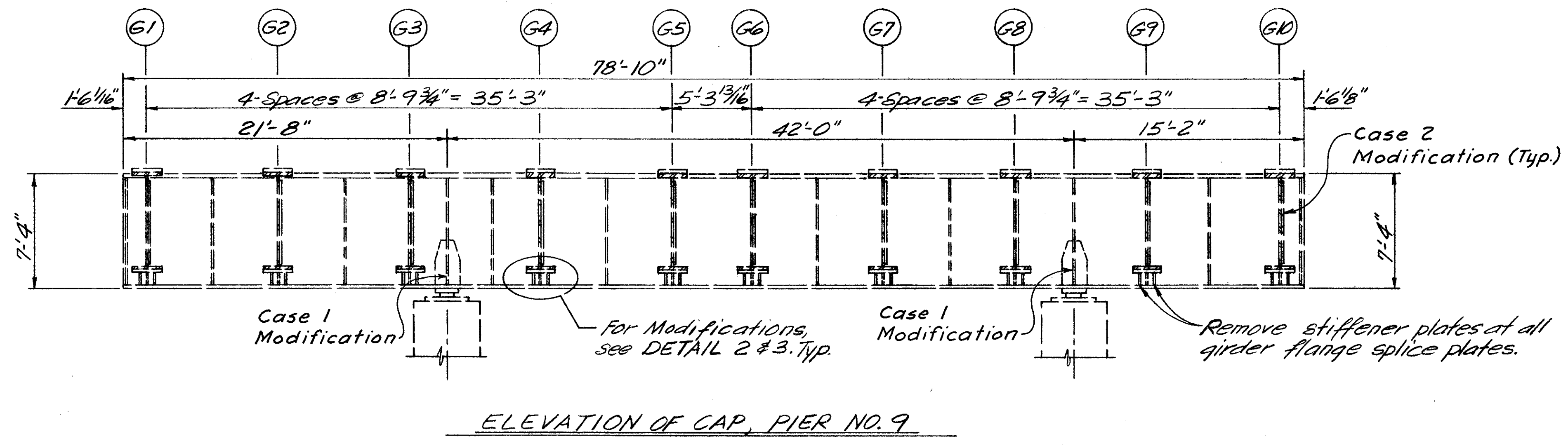
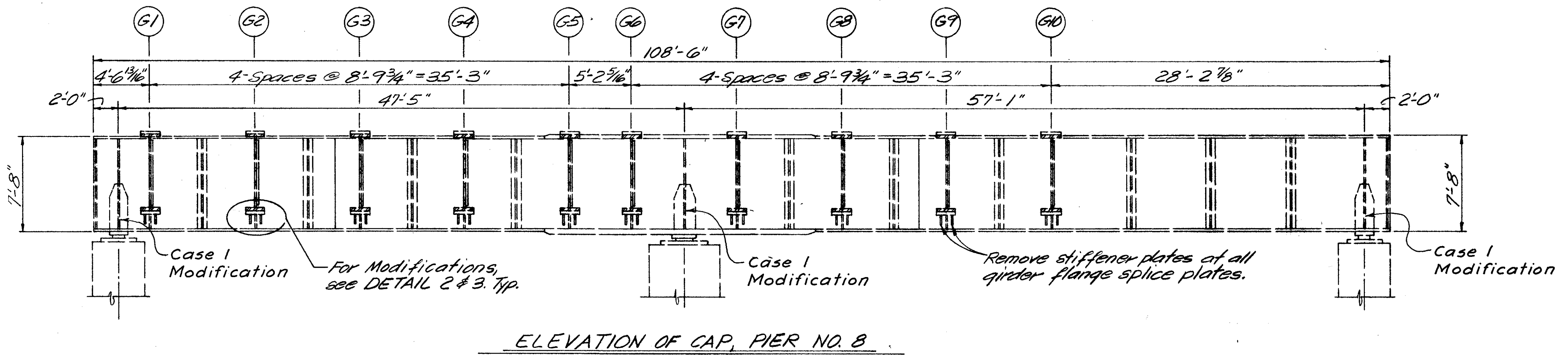
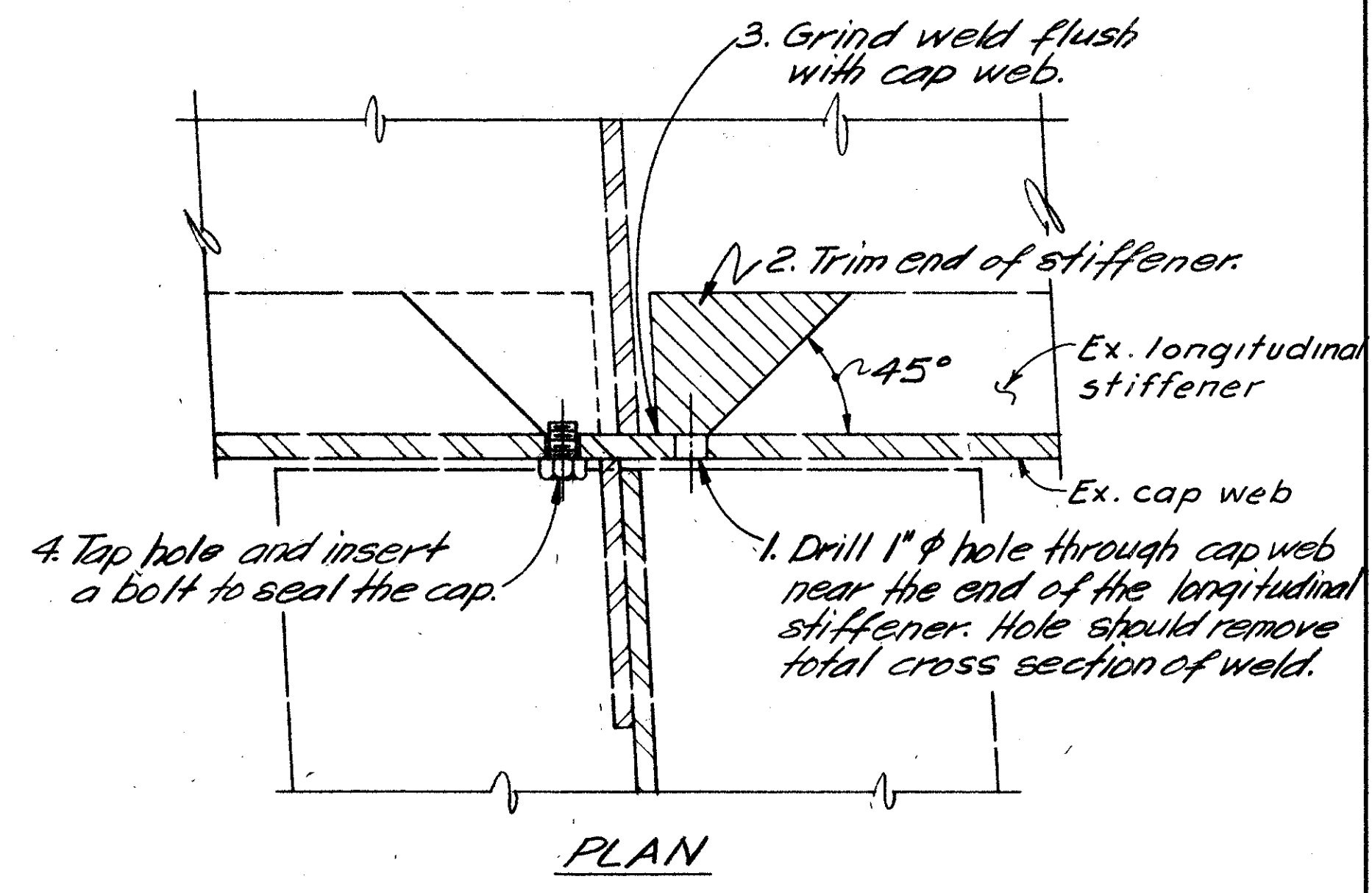
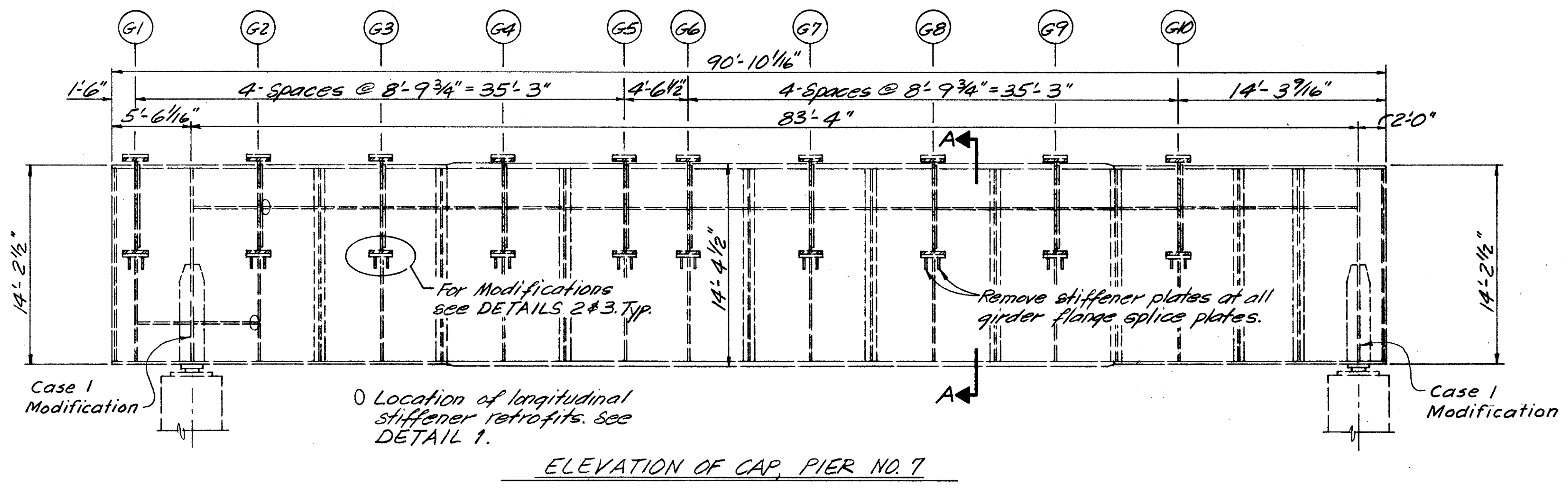
TYPICAL AS NOTED  
 Pier No. 5: G2, G3, G5 thru G10  
 Pier No. 6: G2 thru G10  
 Pier No. 7: G2 thru G10



TYPICAL

NOTES:  
 Unless noted otherwise, all diaphragm shall be modified per Case 2 detail as shown on sheet 10/30.  
 For Case 1 modification see sht. 10/30.  
 O denotes location of longitudinal stiffener retrofits. See DETAIL 1 on Sheet 9/30.  
 For DETAIL 2 & 3, see sht. 10/30.  
 For SECTION C-C see sht. 10/30.

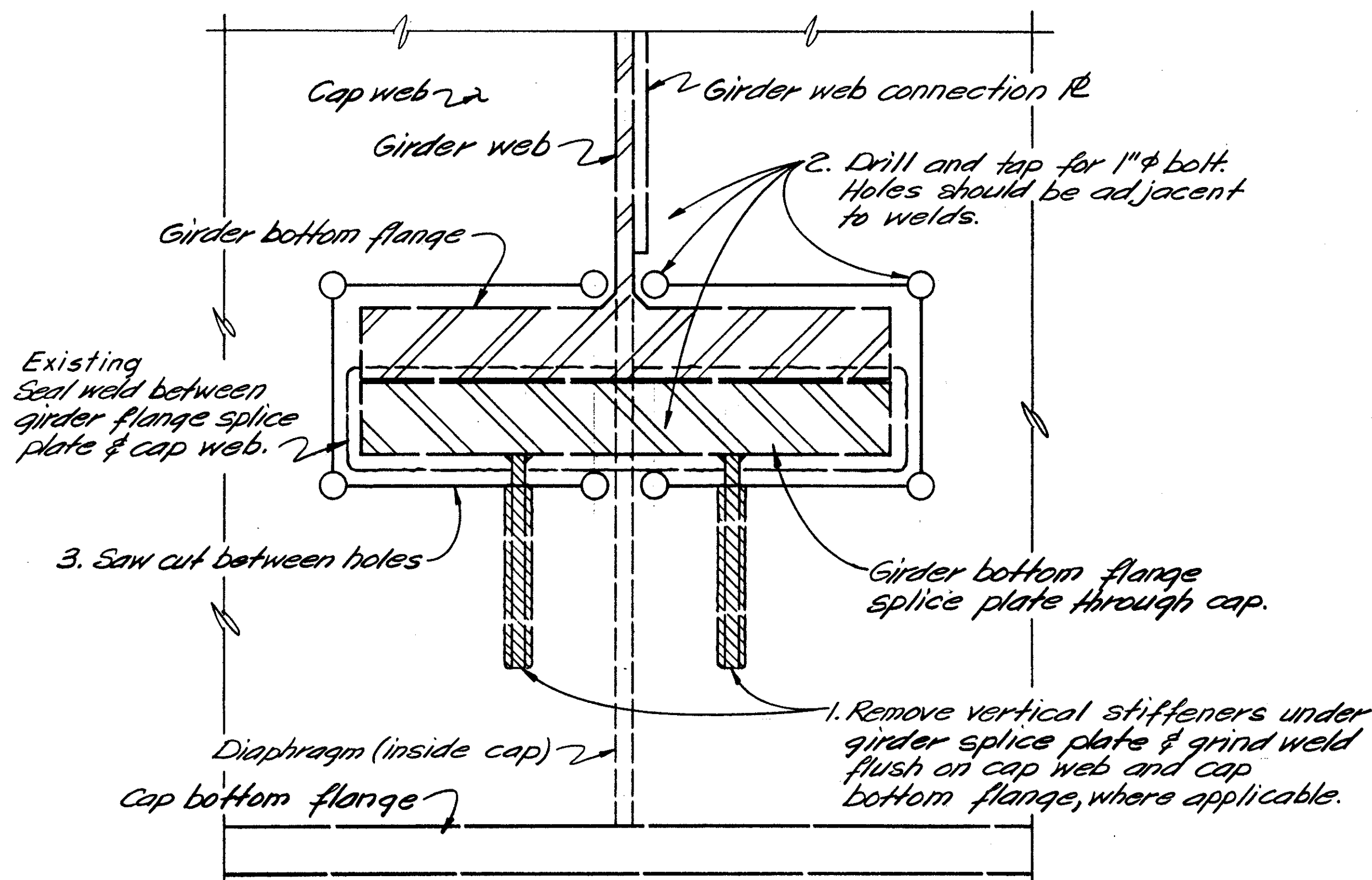
BALKE ENGINEERS 8/30 1848 SUMMIT RD. CINCINNATI, OHIO 45237					
PIER CAP DETAILS BRIDGE NO. HAM-562-0147 NORWOOD LATERAL OVER ROSS AVE. AND B. & O. R.R.					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
MRS	WJH	~	VDG	CRS 3/93	



NOTES  
 Unless noted otherwise, all diaphragms shall be modified per Case 2 detail as shown on sheet 10/30  
 For Case 1 modification see sheet 10/30  
 For SECTION A-A see sheet 8/30  
 For DETAIL 2 & 3 see sheet 10/30

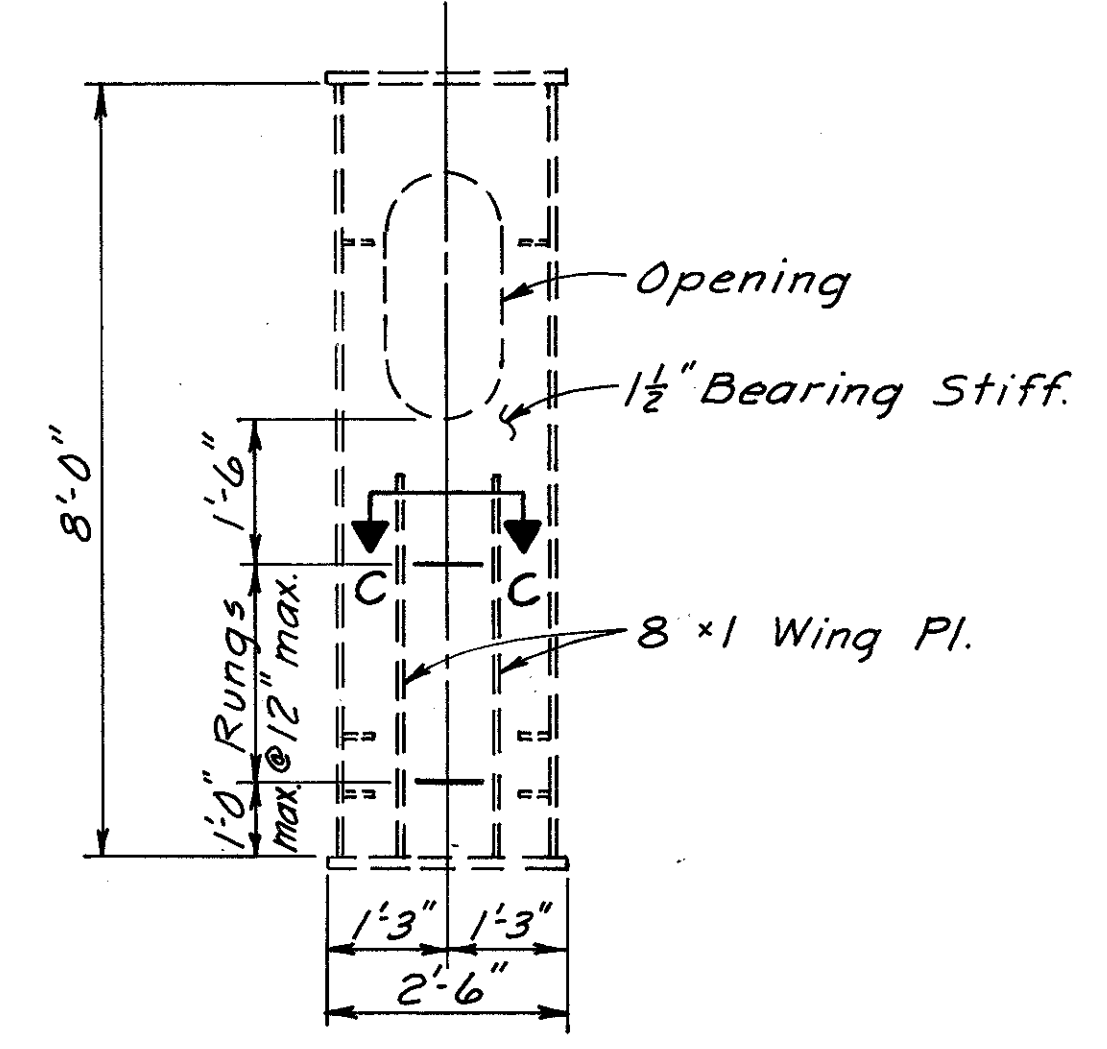
BALKE ENGINEERS 9/30					
1848 SUMMIT RD. CINCINNATI, OHIO 45237					
PIER CAP DETAILS BRIDGE NO. HAM-562-01A7 NORWOOD LATERAL OVER ROSS AVE. AND B.&O. R.R.					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
MRS	WJH	~	VDG	GRS 3/93	



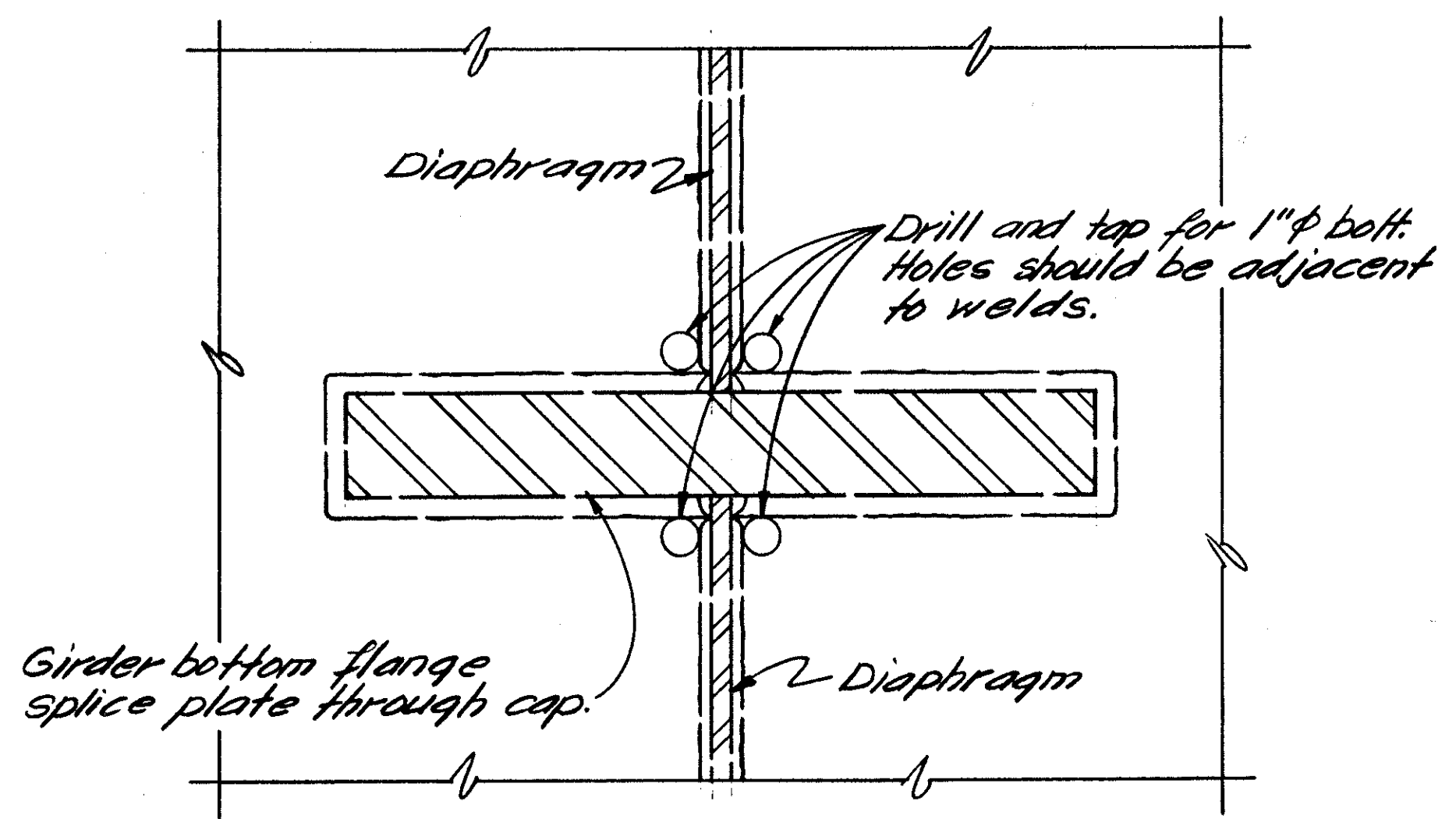


4. Place bolts in holes and caulk-in saw cut to seal the cap. Caulk shall be a two compound, 100% solids epoxy mastic. The material shall be Mark 2244 from Poly-Carb, Sikador Injection Gel from Sika Chemical Corp., A-788 Splash Zone Compound from Koppers Co., Inc., or approved equal.

- DETAIL 2**  
 TYPICAL AS NOTED
- Pier 4 E.B. : G8 thru G10
  - Pier 5 : G5 thru G10
  - Pier 6 : G3 thru G10
  - Pier 7 : G1 thru G3
  - Pier 8 : G1 thru G4, G8 thru G10
  - Pier 9 : G5 thru G7

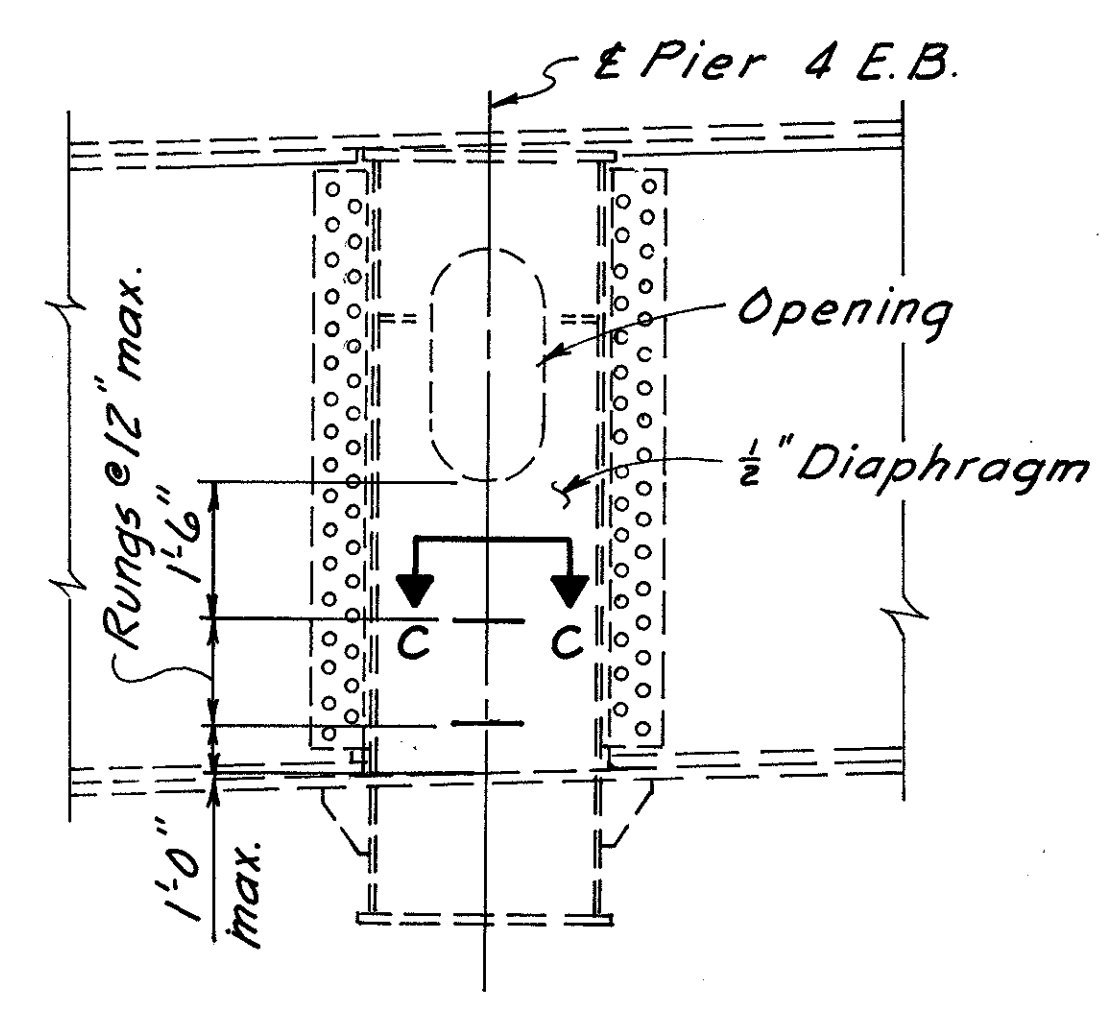


**CASE 1**  
 Stiffener Modification

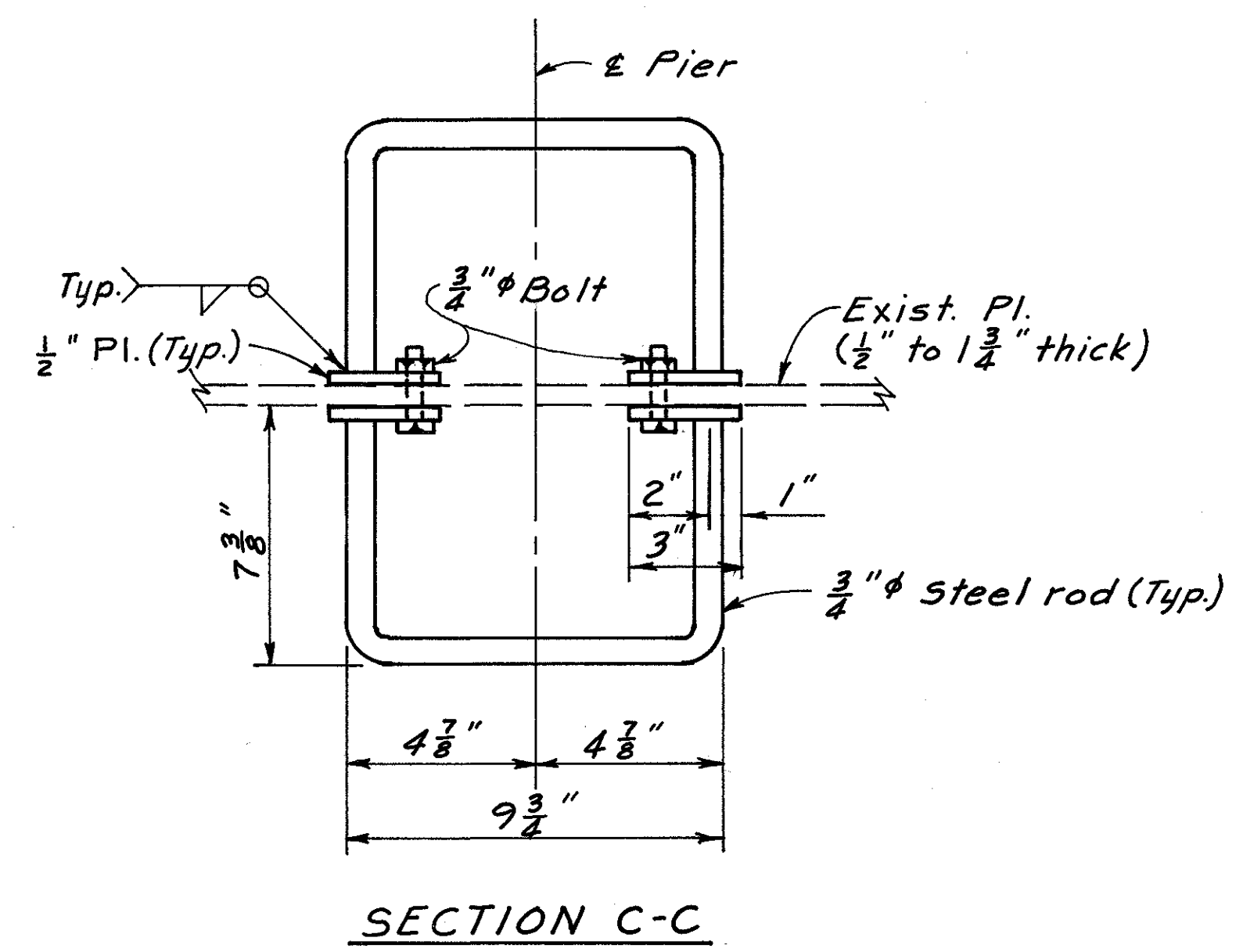


Note: View from inside cap.

- DETAIL 3**  
 TYPICAL AS NOTED
- Pier 4 E.B. : G6 & G7
  - Pier 5 : G1 thru G4
  - Pier 6 : G1 & G2
  - Pier 7 : G4 thru G10
  - Pier 8 : G5 thru G7
  - Pier 9 : G1 thru G4, G8 thru G10



**CASE 2**  
 Diaphragm Modification



**SECTION C-C**

**Notes**  
 In addition to the work detailed on the plans, sheets 8-10, the following work is required on the box girder pier caps at Piers No. 4 E.B., 5, 6, 7, 8, and 9.

Remove pigeon droppings, debris and corrosion from exterior of all pier caps. Remove concrete between girder bottom flanges and cap web plates on all pier caps.

Remove rags and debris from the inside of all pier caps.

On cap of Piers No. 4 E.B., 5, 6, 7, 8 clean corroded and burned areas inside cap. Paint cleaned areas with primer coat of paint and apply final coat of paint, silver or white, to entire inside of cap, per System EEU.

On cap of Pier No. 4 E.B. replace deteriorated seal at north access hatch with elastomeric gasket of 1/8" thick neoprene closed cell sponge. Apply neoprene caulking around access hatch cover. Caulking should be applied to bare steel.

The cap of Piers No. 4 E.B. and 8 is bearing on anchor rod at south bearing device. Remove portion of anchor rod on which cap is bearing.

Clean and paint all bearings per System OZEU.

All labor, material and equipment necessary to execute the above work shall be included for payment in the unit price bid for Item 513 Structural steel misc: Repair of fracture-critical box girder pier cap.

<b>BALKE ENGINEERS</b> 10/30 1848 SUMMIT RD. CINCINNATI, OHIO 45237					
<b>PIER CAP DETAILS</b> BRIDGE NO. HAM-562-0147 NORWOOD LATERAL OVER ROSS AVE. AND B.&O. R.R.					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
MRS	WJH	~	VDG	CRS 9/93	



**ITEM SPECIAL - STRUCTURE, MISC.: LATERAL BRACING GUSSET PLATE RETROFIT UPGRADE (INTERMEDIATE)**

THIS WORK SHALL CONSIST OF THE FOLLOWING SEQUENCE OF OPERATIONS PERFORMED ON ONE LATERAL BRACING GUSSET PLATE.

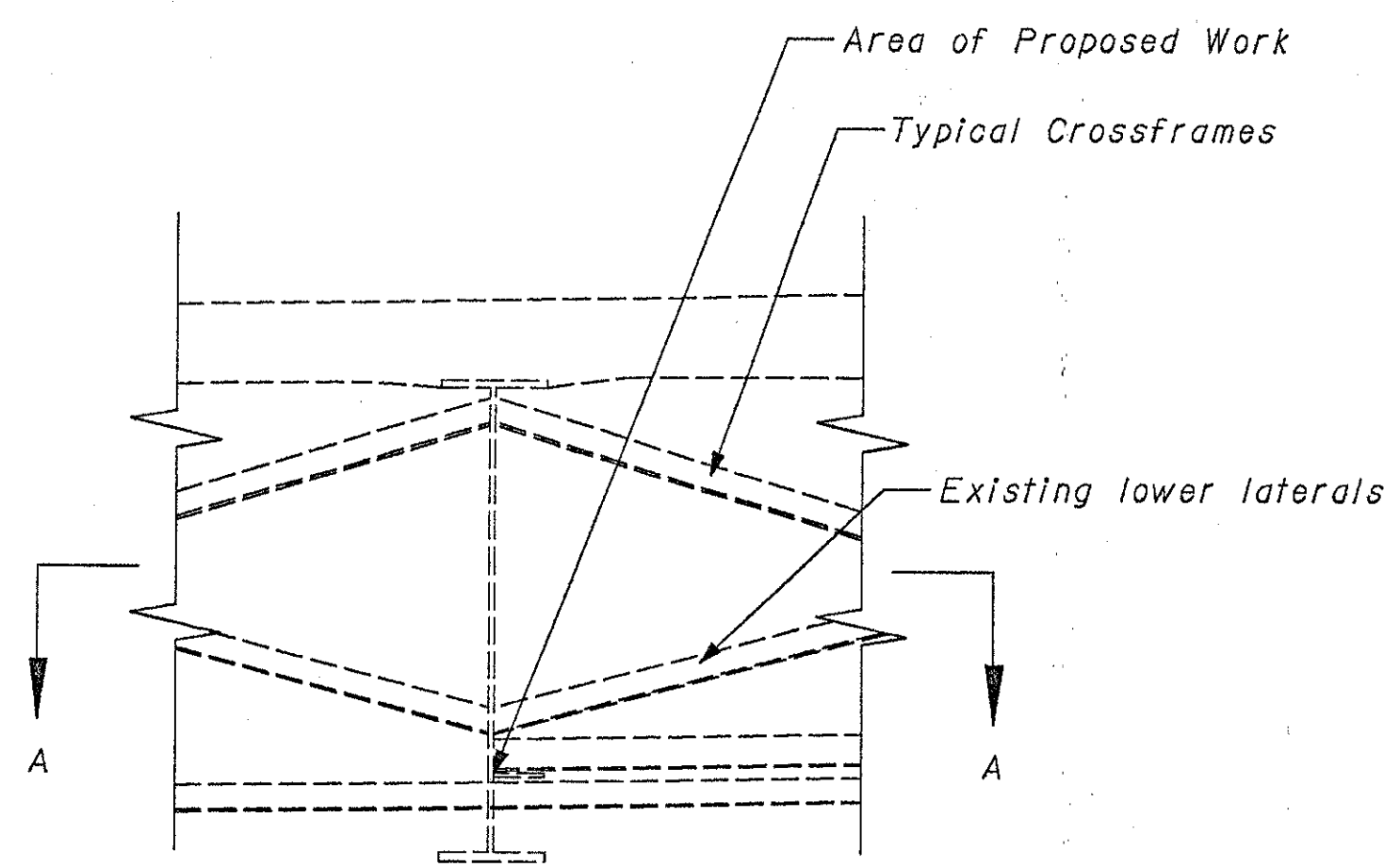
1. DRILL THE TWO 3-INCH OR SIX 2-INCH VERTICAL HOLES THROUGH THE GUSSET PLATE REMOVING THE GUSSET PLATE TO WEB AND GUSSET PLATE TO STIFFENER FILLET WELDS AT THE LOCATIONS WITHOUT GOUGING THE WEB OR STIFFENER. SEE RETROFIT DETAILS ON THIS SHEET. IF THE BOLTS ARE FOUND TO INTERFERE WITH THE RETROFIT THE BOLTS MAY BE REMOVED PRIOR TO DRILLING AND REPLACED AFTER THE RETROFIT IS PERFORMED.
2. DRILL THE TWO 3-INCH OR SIX 2-INCH VERTICAL HOLES THROUGH THE GUSSET PLATE REMOVING THE OUTSIDE CORNERS OF THE GUSSET PLATE WITHOUT GOUGING THE WEB.
3. ANY REMAINING FILLET WELDS AND GUSSET PLATE SHALL BE GROUND SO THAT THE RESULTING SURFACES OF THE WEB AND STIFFENER ARE SMOOTH. EXTREME CARE SHALL BE TAKEN TO INSURE THE FULL THICKNESS OF THE WEB IS MAINTAINED AND NO UNDERCUT, GOUGING OR OVERGRINDING OF WEB TAKES PLACE. IF THE HOLES OF STEP 1 AND STEP 2 DID NOT TOUCH THE FACE OF THE ADJACENT SURFACE, THE HOLE SHALL BE GROUND SO THAT A 1-INCH MINIMUM RADIUS RESULTS.

THE ACCEPTED NUMBER OF RETROFITS AS DESCRIBED HEREIN WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LOCATION, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, AND EQUIPMENT NECESSARY TO CLEAN, DRILL, CUT AND GRIND THE LATERAL BRACING GUSSET RETROFIT AREA. A SINGLE LOCATION IS CONSIDERED AS SHOWN IN DETAIL I OPTION A OR B. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID UNDER:

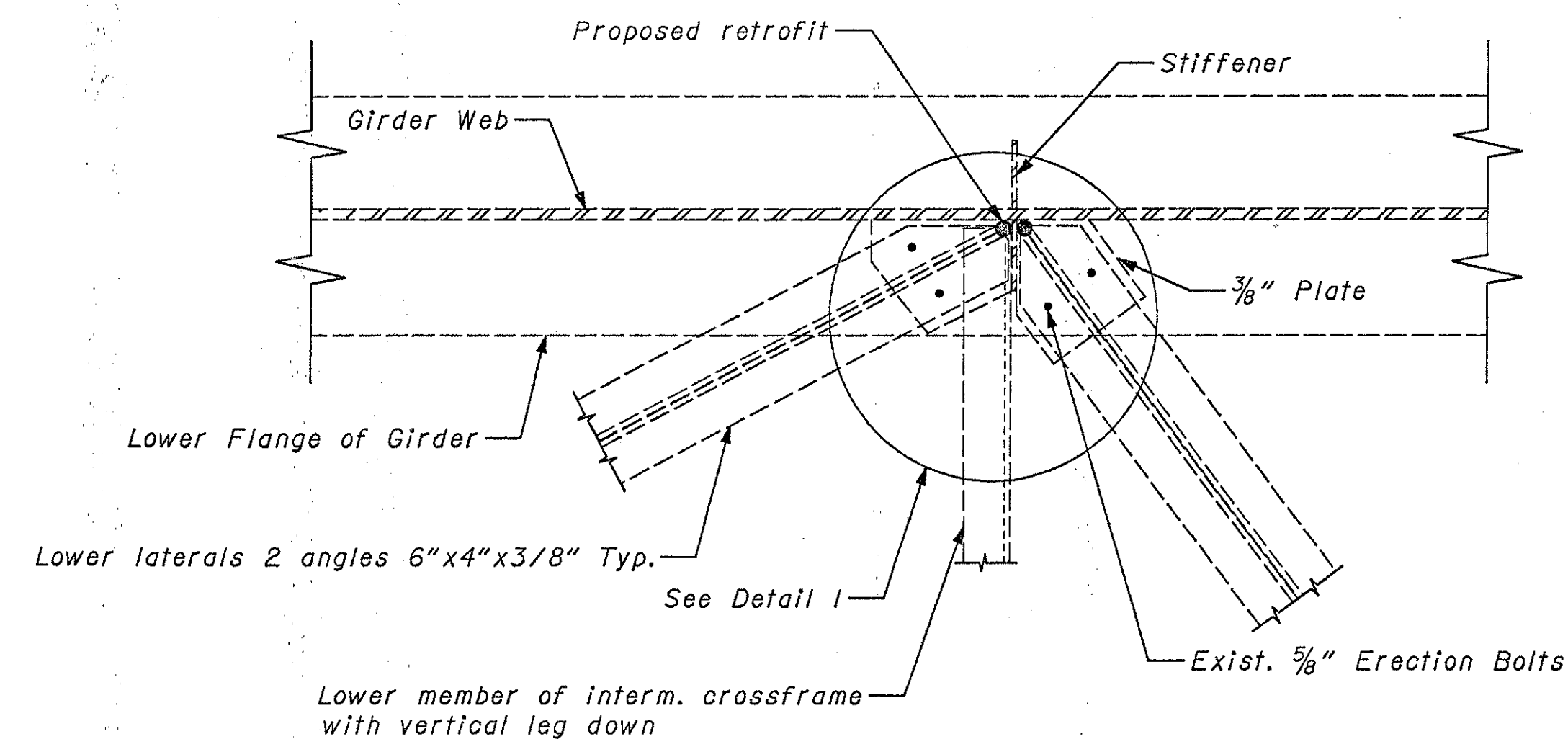
ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	STRUCTURE, MISC.: LATERAL BRACING GUSSET PLATE RETROFIT UPGRADE (INTERMEDIATE)

**CUTTING OF VERTICAL LEGS**

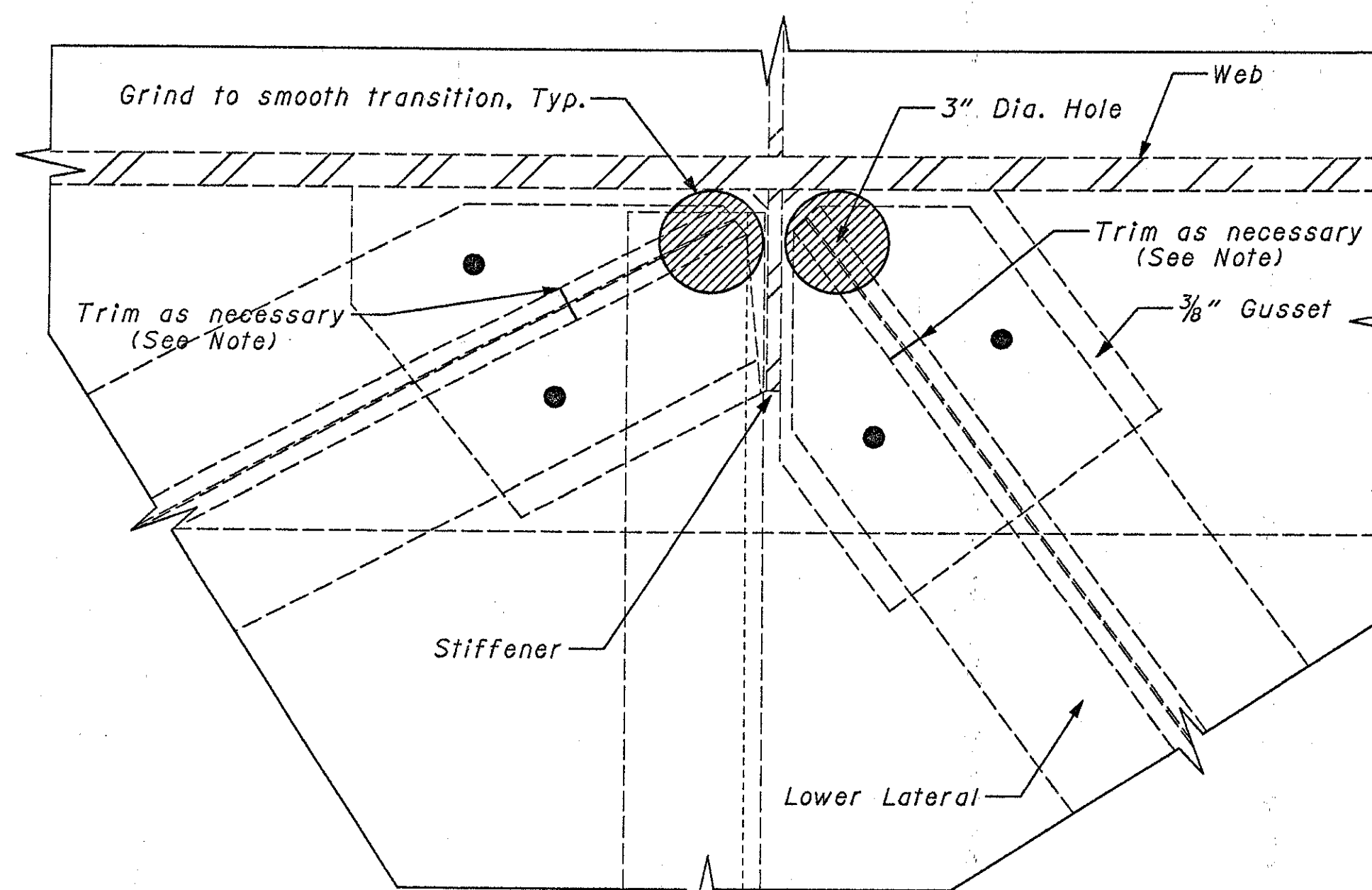
AT CERTAIN LOCATIONS THE LOWER LATERAL BRACING AND/OR THE HORIZONTAL MEMBER OF THE CROSSFRAME MAY HAVE A SECTION OF ITS VERTICAL LEG CUT IN ORDER TO DRILL THE HOLES AS DEEMED NECESSARY BY THE ENGINEER. IF SO THE CONTRACTOR MAY CUT THE MINIMAL AMOUNT OF THE VERTICAL LEG THAT THE ENGINEER DEEMS NECESSARY TO REMOVE. THE CONTRACTOR SHALL MAKE THE CUT LEAVING A SMOOTH ARC OR GRIND IT SMOOTH AFTER THE CUT. ANY DAMAGE DONE BY THE CONTRACTOR THRU NEGLIGENCE OR CARELESSNESS SHALL BE REPAIRED BY HIM AT NO ADDITIONAL COST TO THE STATE OF OHIO. THE ABOVE WORK SHALL BE INCLUDED IN ITEM SPECIAL STRUCTURE, MISC.: LATERAL BRACING GUSSET PLATE RETROFIT UPGRADE (INTERMEDIATE) FOR PAYMENT.



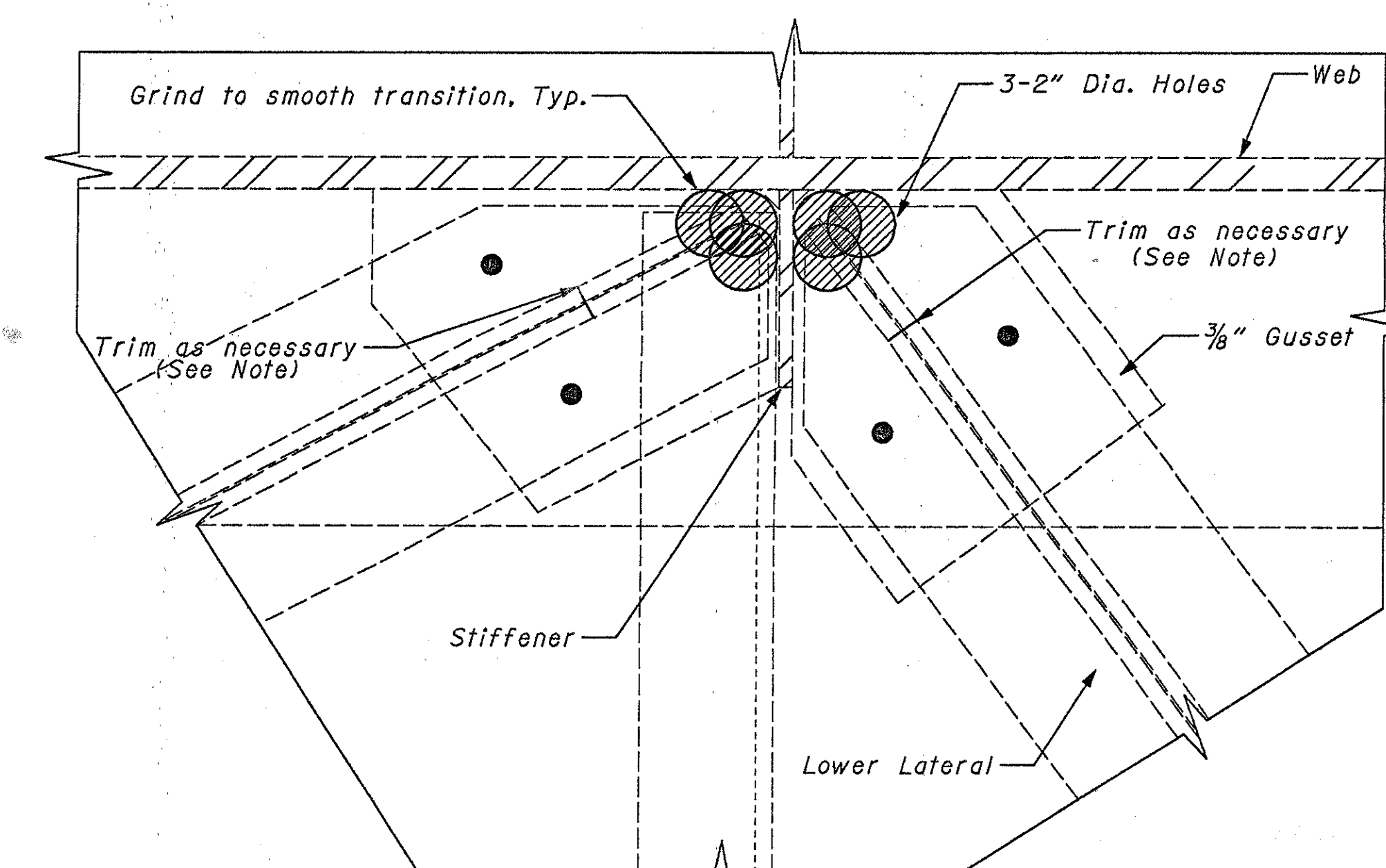
TYPICAL SECTION



SECTION A-A  
(EXISTING LOWER LATERAL CONNECTION DETAIL)



DETAIL I OPTION A



DETAIL I OPTION B

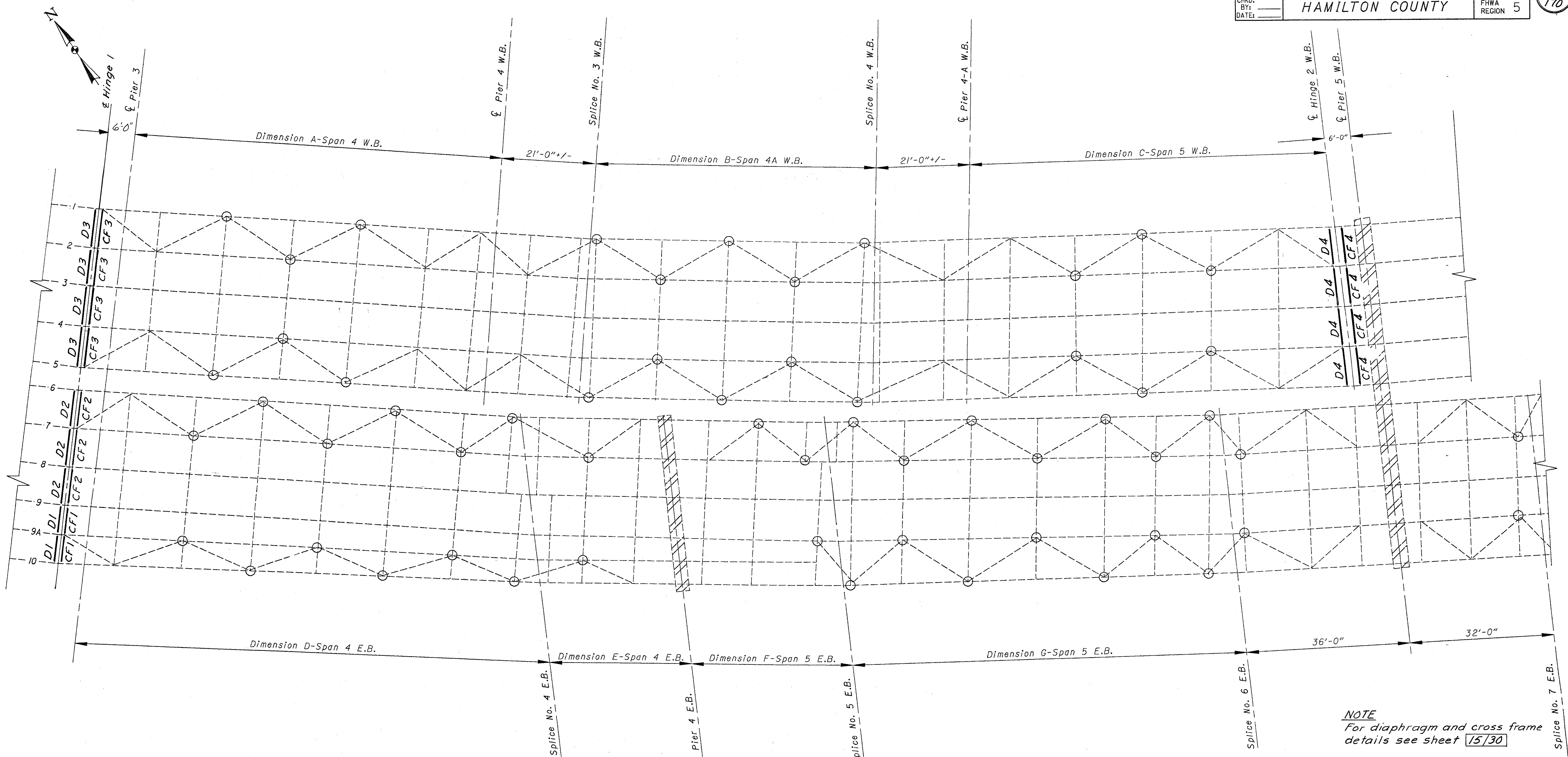
**SUB SUMMARY**

ITEM	ITEM EXTEN.	QTY	UNIT	DESCRIPTION
Special	53000400	151	Each	Structure, Misc.: Lateral Bracing Gusset Plate Retrofit Upgrade (Intermediate)

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DISTRICT 8 BRIDGE DEPARTMENT

RETROFIT DETAILS  
BRIDGE NO. HAM-562-0147  
over Ross Ave. and  
B&O R.R.

DESIGNED: SDC    DRAWN: SDC    REVIEWED: RLE    CHECKED: RLE    DATE: 3/19/93    REVISIONS: 11/30



**NOTE**  
For diaphragm and cross frame details see sheet 15/30

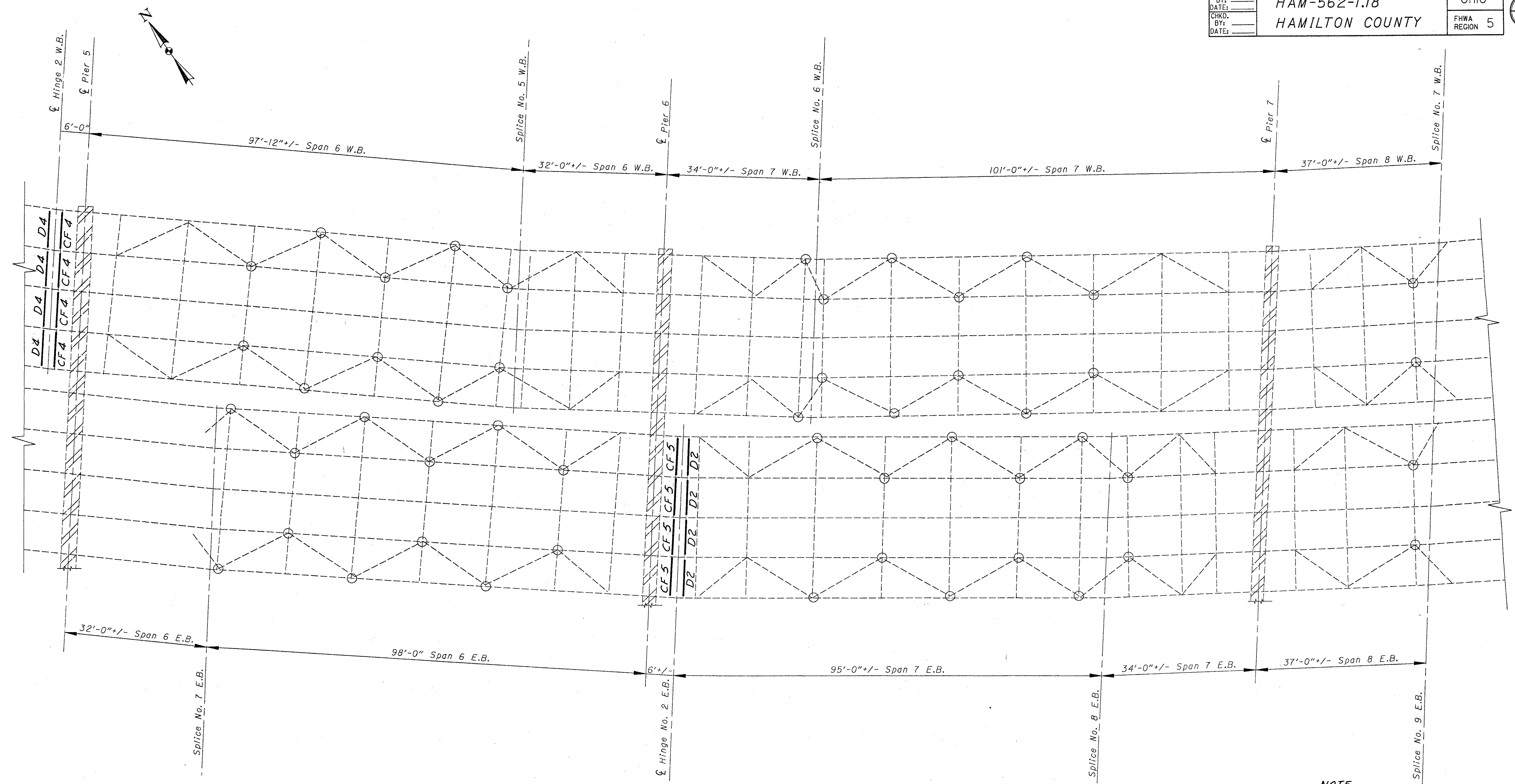
LOCATION	WESTBOUND LANES		
	A	B	C
Girder Line 1	83'-4" +/-	63'-1" +/-	81'-5" +/-
Girder Line 2	83'-9" +/-	64'-5" +/-	82'-6" +/-
Girder Line 3	84'-1" +/-	64'-11" +/-	83'-7" +/-
Girder Line 4	84'-6" +/-	65'-5" +/-	84'-8" +/-
Girder Line 5	84'-10" +/-	64'-11" +/-	85'-9" +/-

LOCATION	EASTBOUND LANES			
	D	E	F	G
Girder Line 6	93'-6" +/-	32'-0" +/-	36'-0" +/-	88'-0" +/-
Girder Line 7	95'-6" +/-	32'-0" +/-	36'-0" +/-	88'-0" +/-
Girder Line 8	97'-5" +/-	32'-0" +/-	36'-0" +/-	88'-0" +/-
Girder Line 9	99'-5" +/-	32'-0" +/-	36'-0" +/-	88'-0" +/-
Girder Line 10	100'-7" +/-	32'-0" +/-	28'-9" +/-	-
Girder Line 11	101'-10" +/-	32'-0" +/-	36'-0" +/-	87'-11" +/-

**LEGEND**  
○ Area of Lower Lateral Retrofit Locations  
See Details of Retrofits on Sheet 17/30

STATE OF OHIO						12/30
DEPARTMENT OF TRANSPORTATION						
DISTRICT 8 BRIDGE DEPARTMENT						
FRAMING PLAN UNIT 2						
BRIDGE NO. HAM-562-0147						
over Ross Ave. and						
B&O R.R.						
DESIGNED	DRAWN	REVIEWED	CHECKED	DATE	REVISIONS	
SDC	SDC	RLE	RLE	1/27/93		

25-JAN-1993  
 128-170



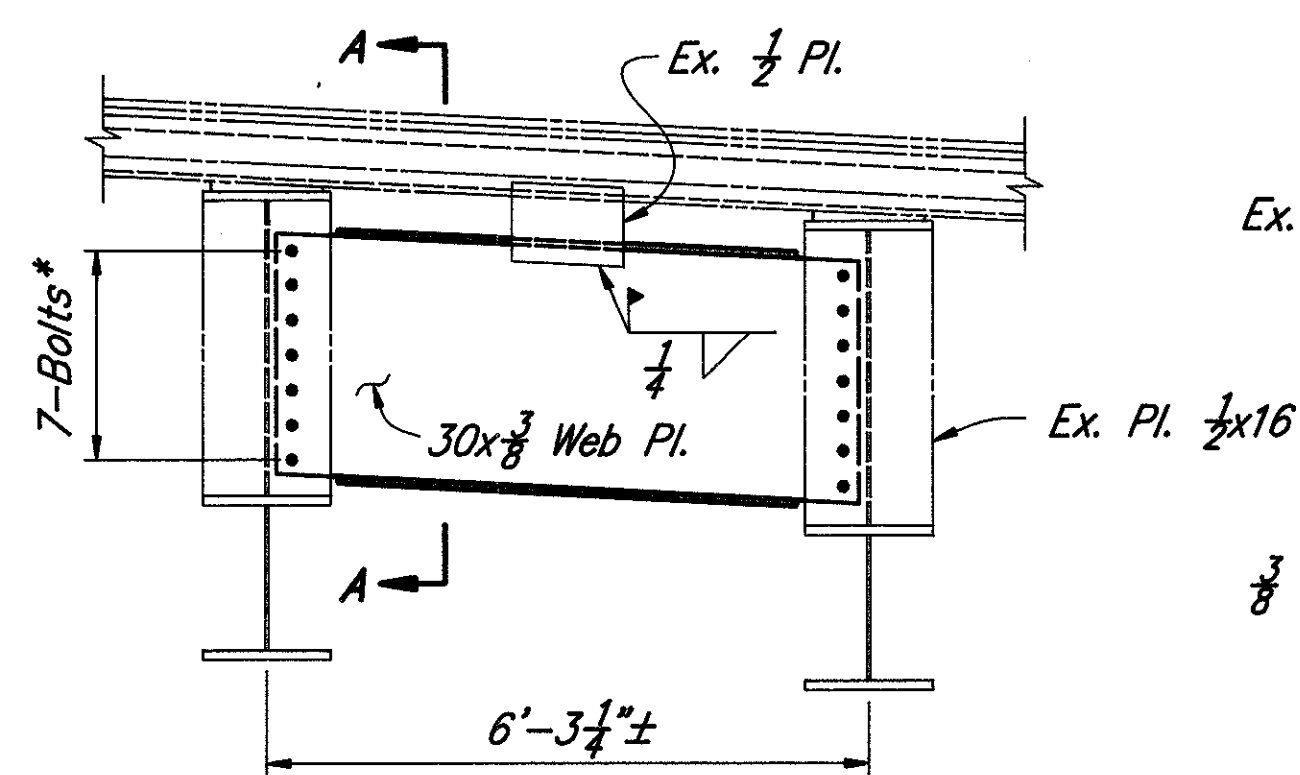
**NOTE**  
 For diaphragm and cross frame details see sheet 15/30

**LEGEND**  
 ○ Area of Lower Lateral Retrofit Locations  
 See Details of Retrofits on Sheet 11/30

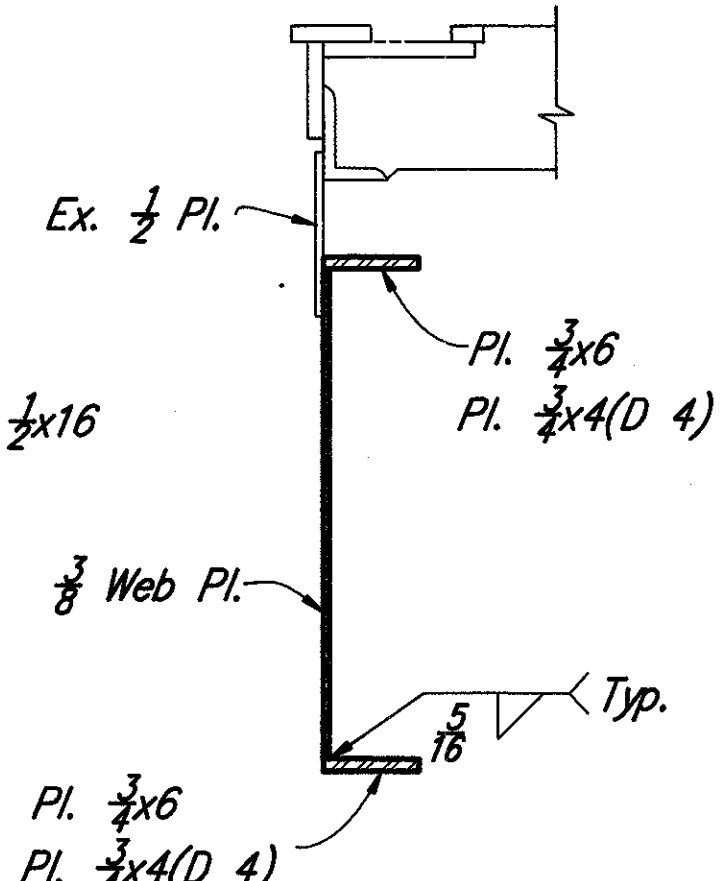
STATE OF OHIO		1/3/30	
DEPARTMENT OF TRANSPORTATION			
DISTRICT 8 BRIDGE DEPARTMENT			
FRAMING PLAN UNITS 2&3			
BRIDGE NO. HAM-562-0147			
over Ross Ave. and B&O R.R.			
DESIGNED	DRAWN	REVIEWED	CHECKED
SDC	SDC	RLE	RLE
			DATE
			1/27/93
			REVISIONS



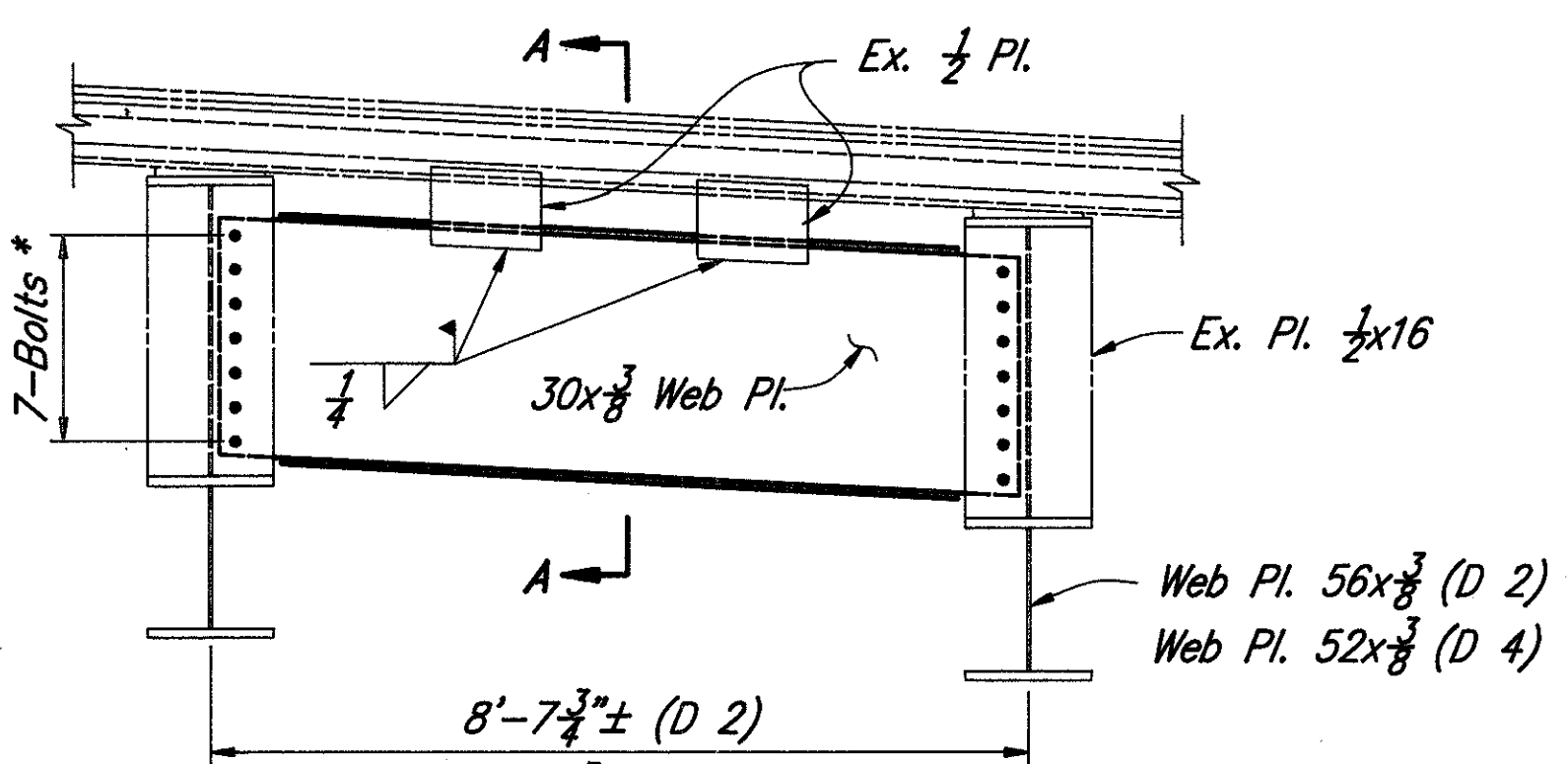




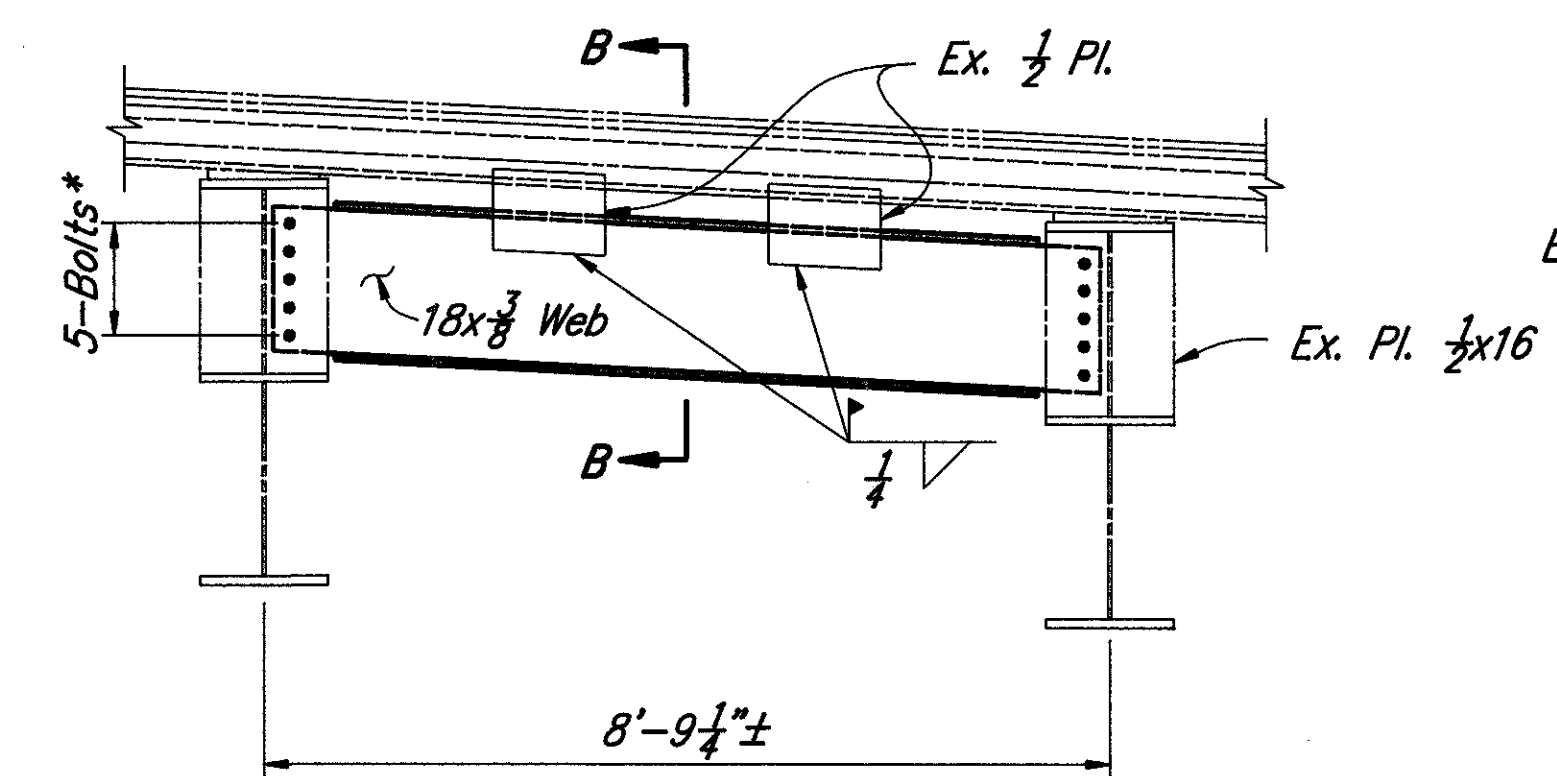
DIAPHRAGM D 1



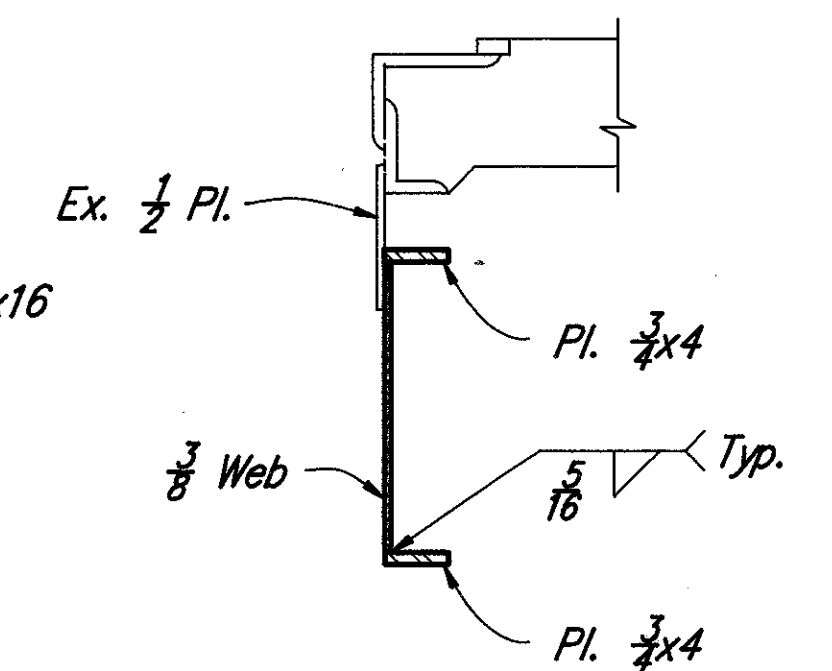
SECTION A-A



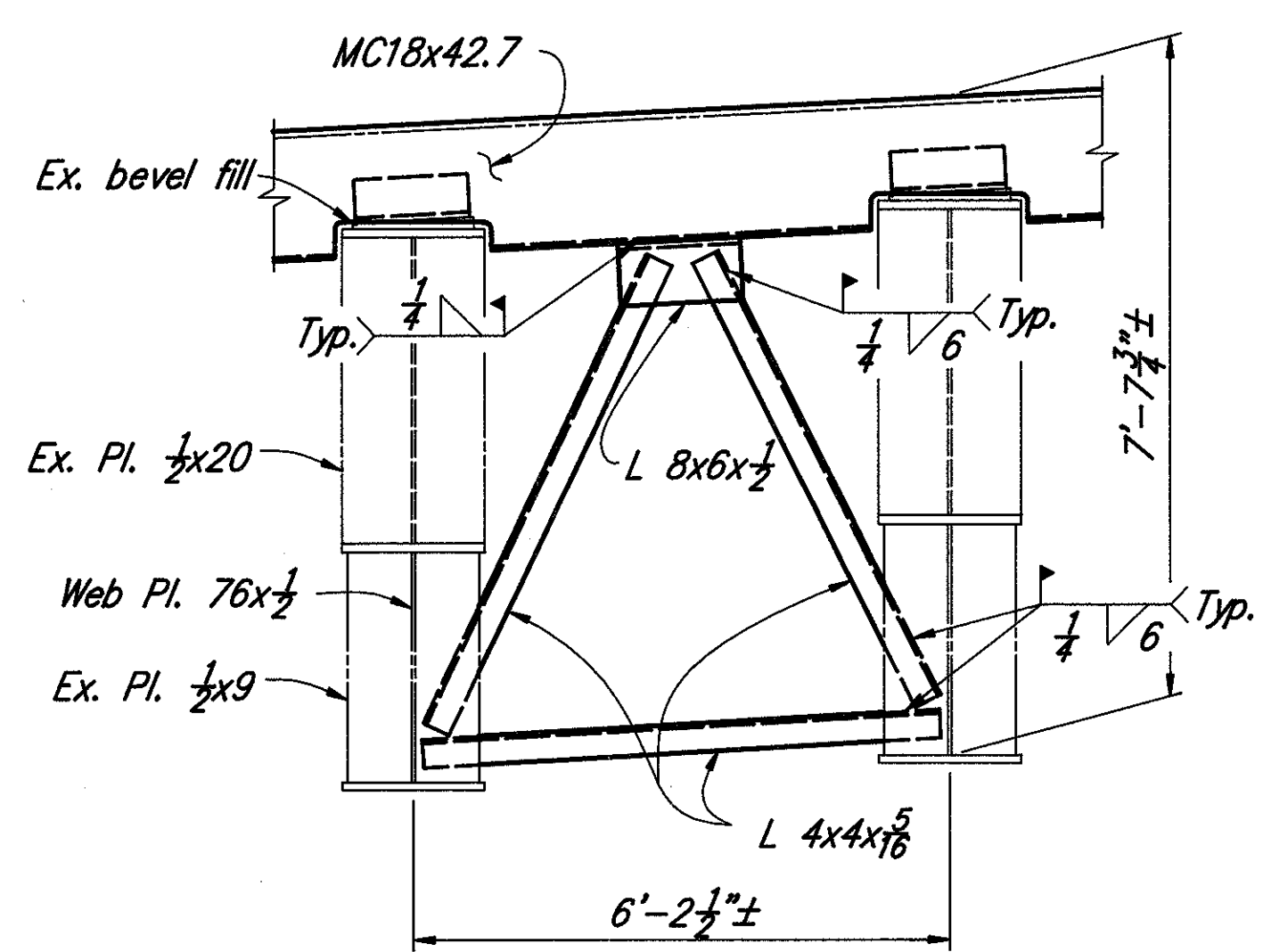
DIAPHRAGM D 2 & D 4



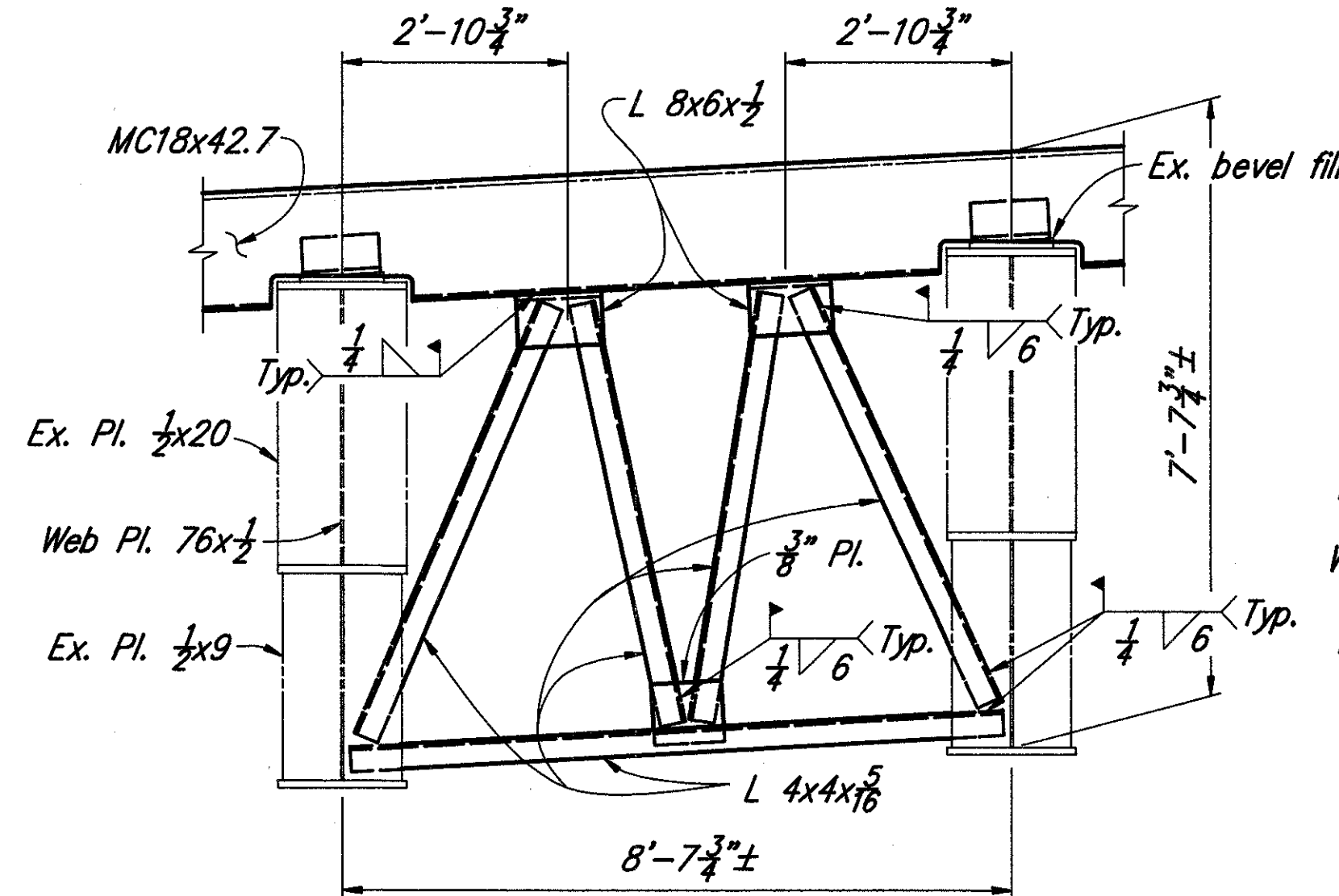
DIAPHRAGM D 3



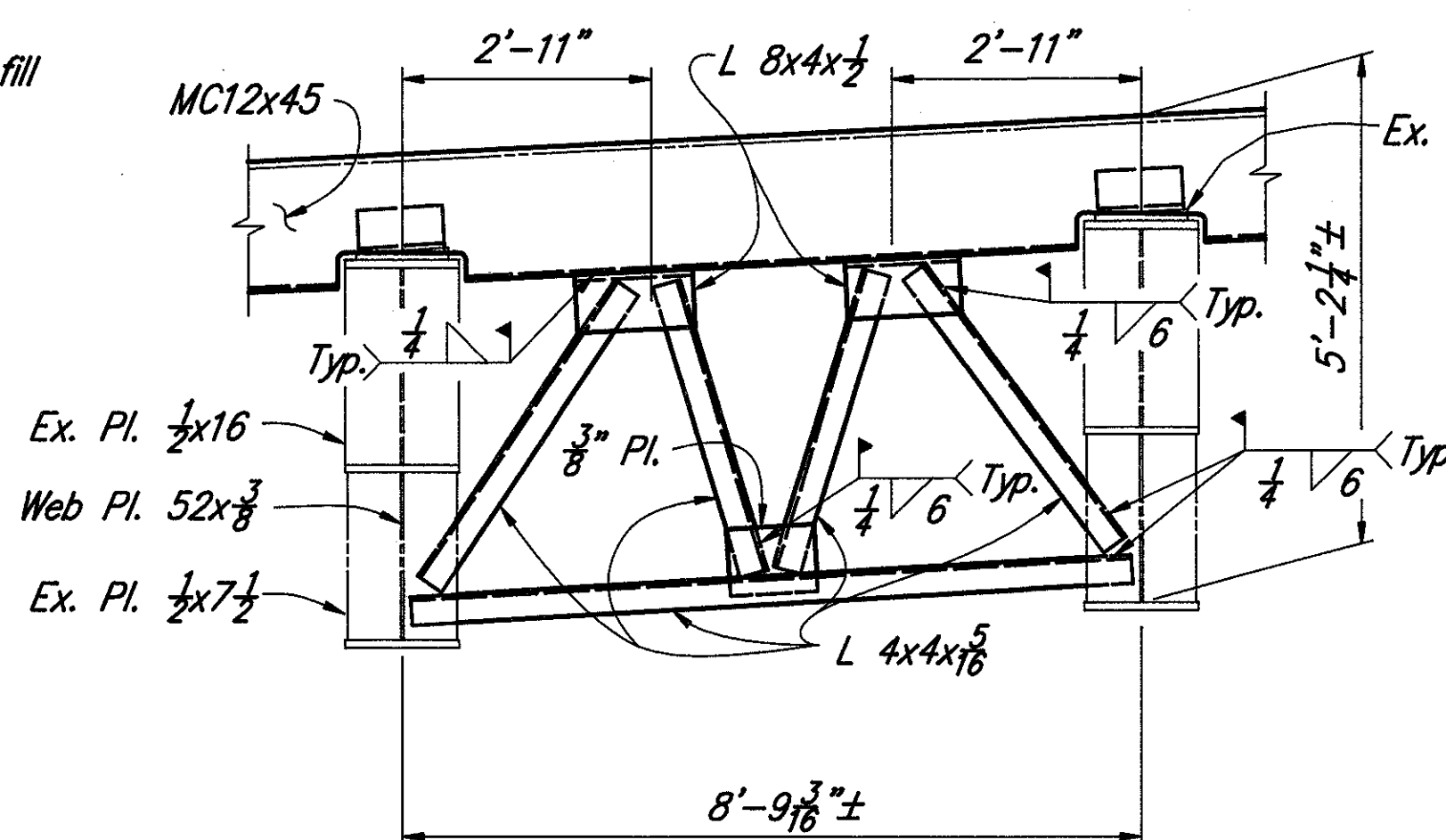
SECTION B-B



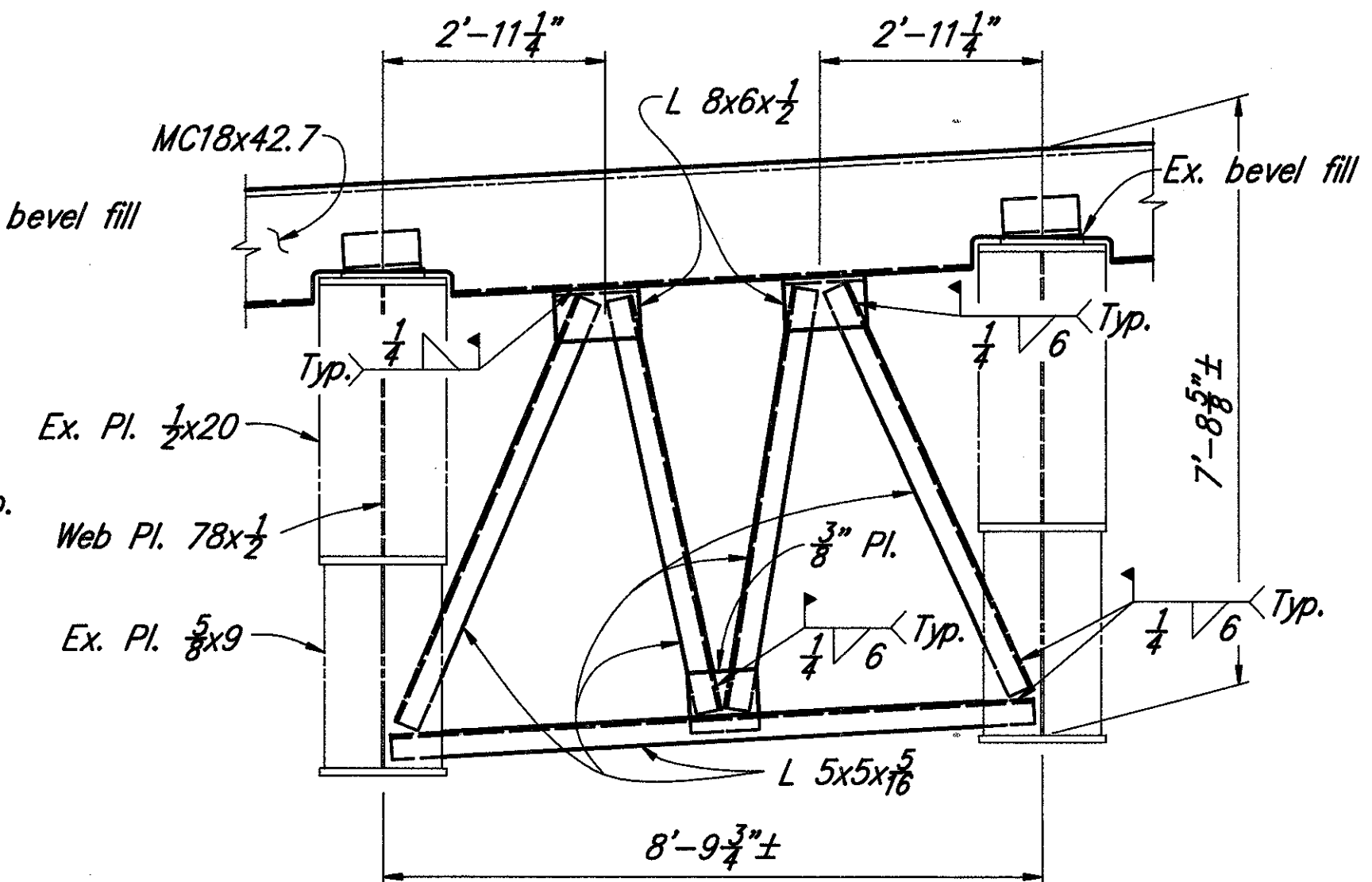
CROSS FRAME CF 1



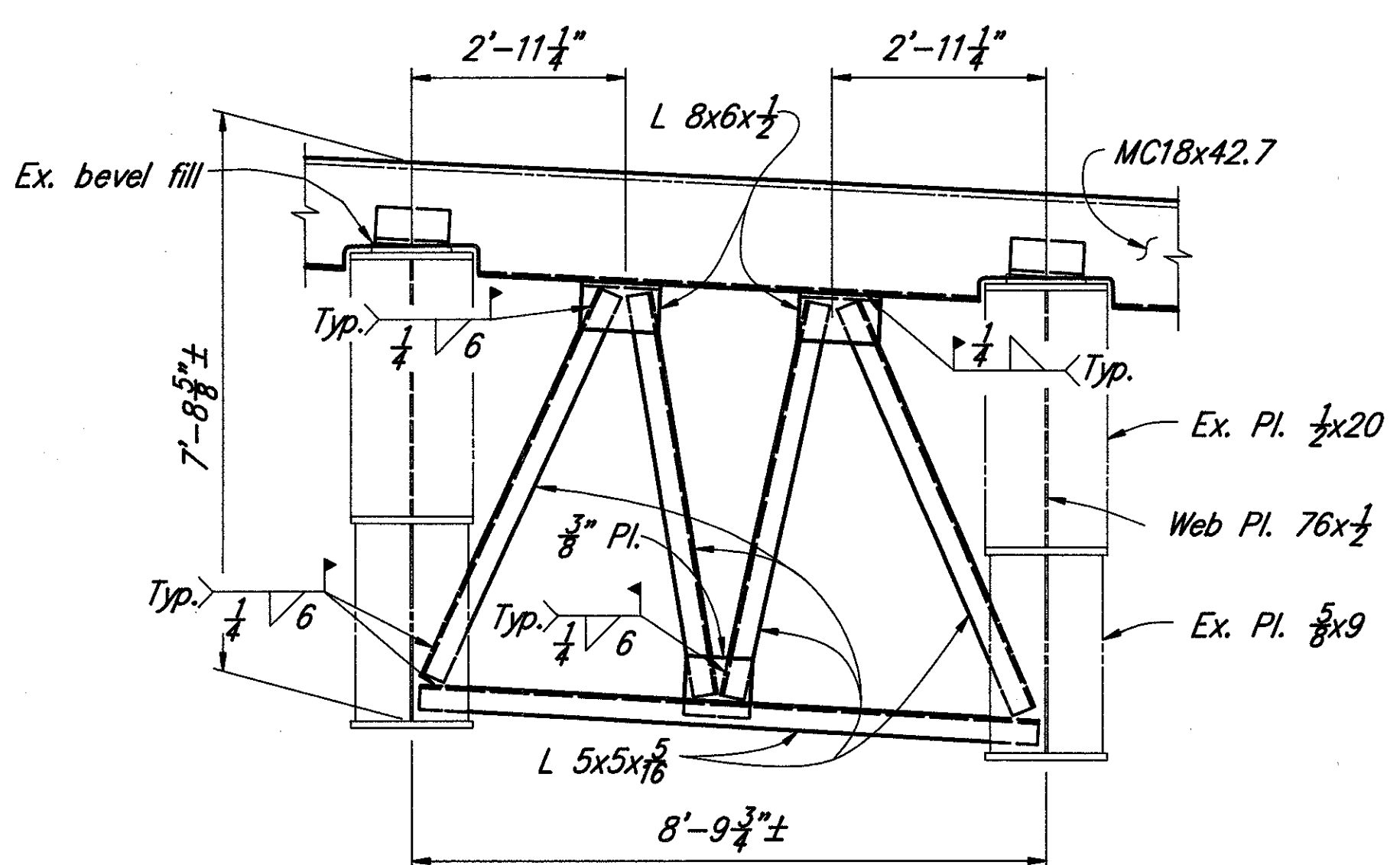
CROSS FRAME CF 2



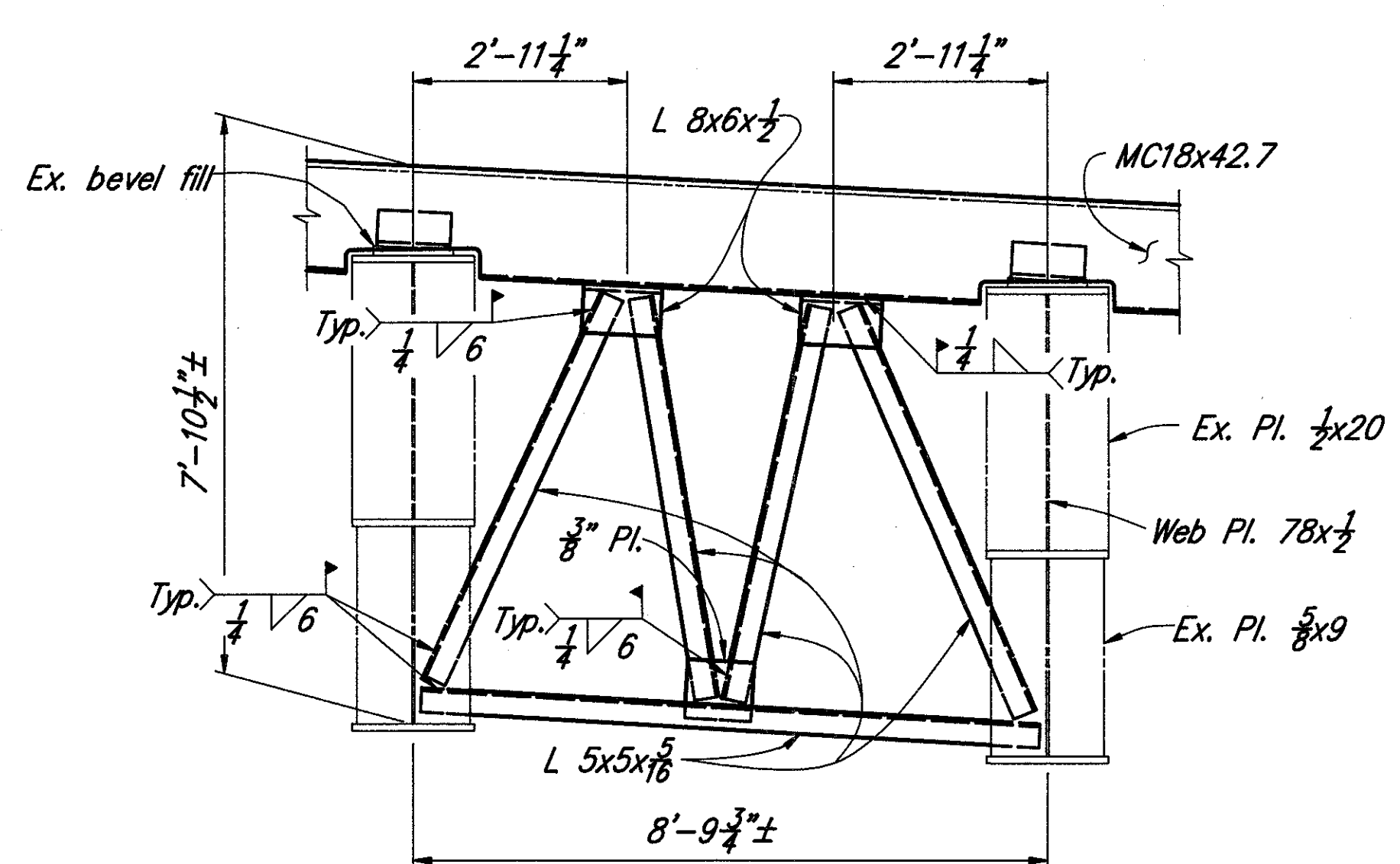
CROSS FRAME CF 3



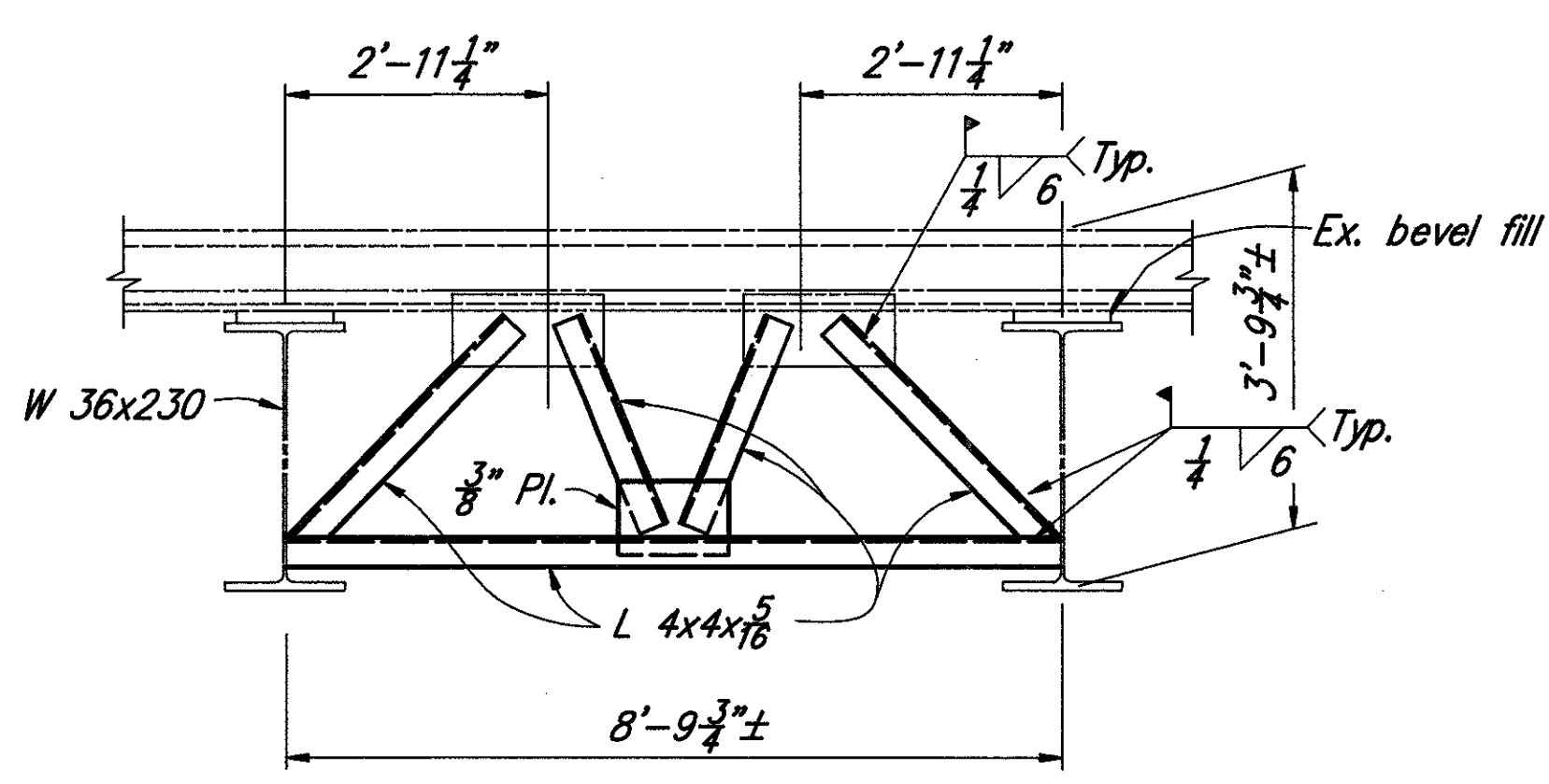
CROSS FRAME CF 4



CROSS FRAME CF 5



CROSS FRAME CF 6



CROSS FRAME CF 7

NOTES  
\* Bolt size, spacing and location to be determined by Contractor in field.  
For location of diaphragms and cross frames see sheets 12/30 thru 14/30  
All diaphragms and cross frames viewed from centerline of expansion joint.

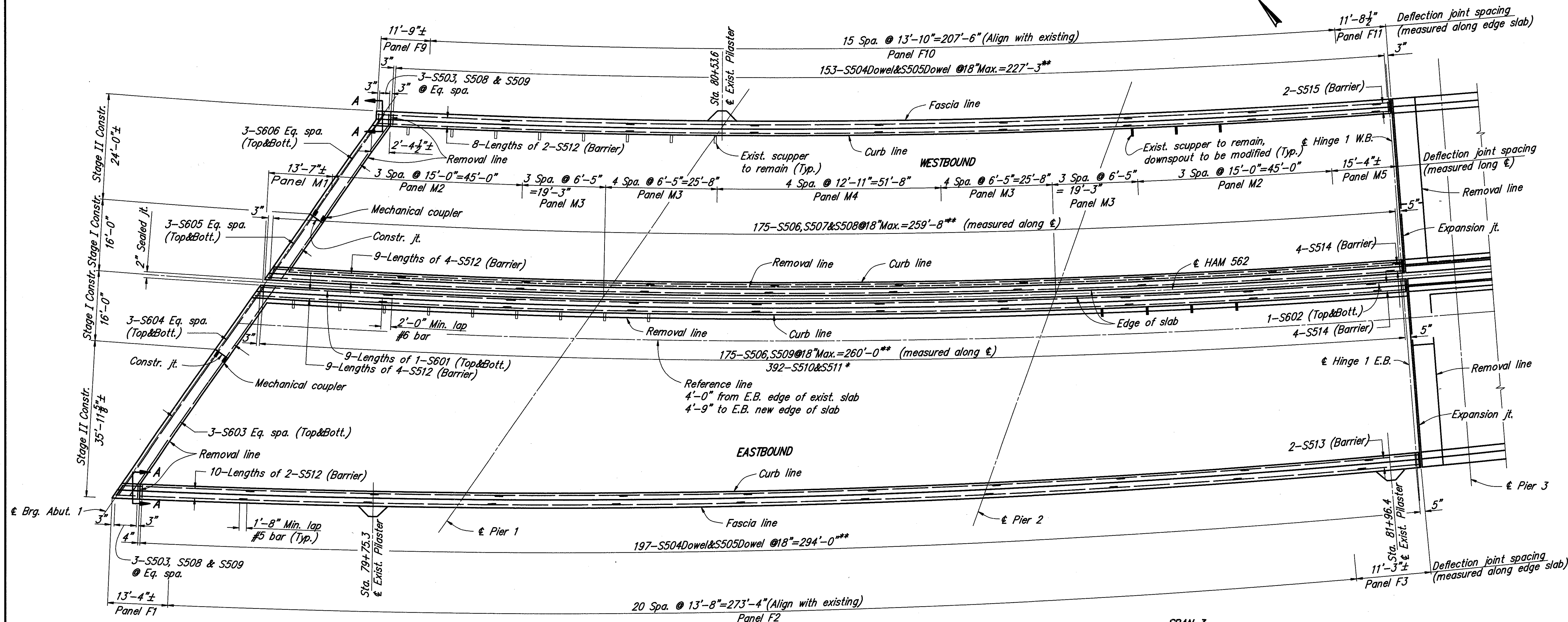
BALKE ENGINEERS  
1848 Summit Road  
Cincinnati, Ohio 45237

STRUCTURAL STEEL

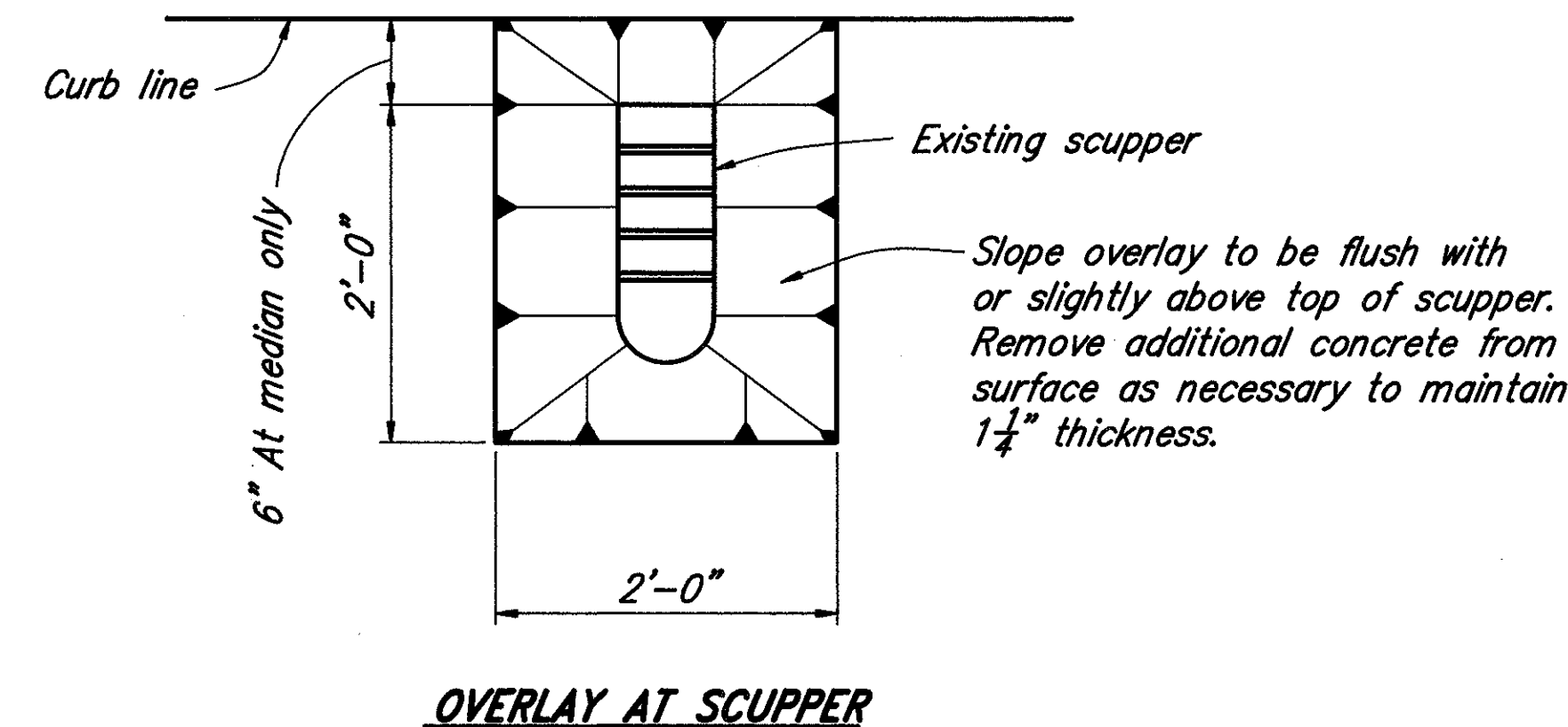
BRIDGE NO. HAM-562-0147  
OVER ROSS AVENUE AND CSX R.R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	8/28/88	7/93	

9014MD13 25 MAR 1993



**NOTE**  
\* Lap with existing transverse bars.  
\*\* S505 and S506 Bars to be adjusted to miss barrier deflection joint.



**NOTES**  
For Typical Section of slab see sheet 21/30  
For barrier panel details see sheet 22/30  
For expansion joint details see sheet 23/30 and 24/30  
For Section A-A see sheet 21/30  
For light pilaster details see sheet 22/30

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

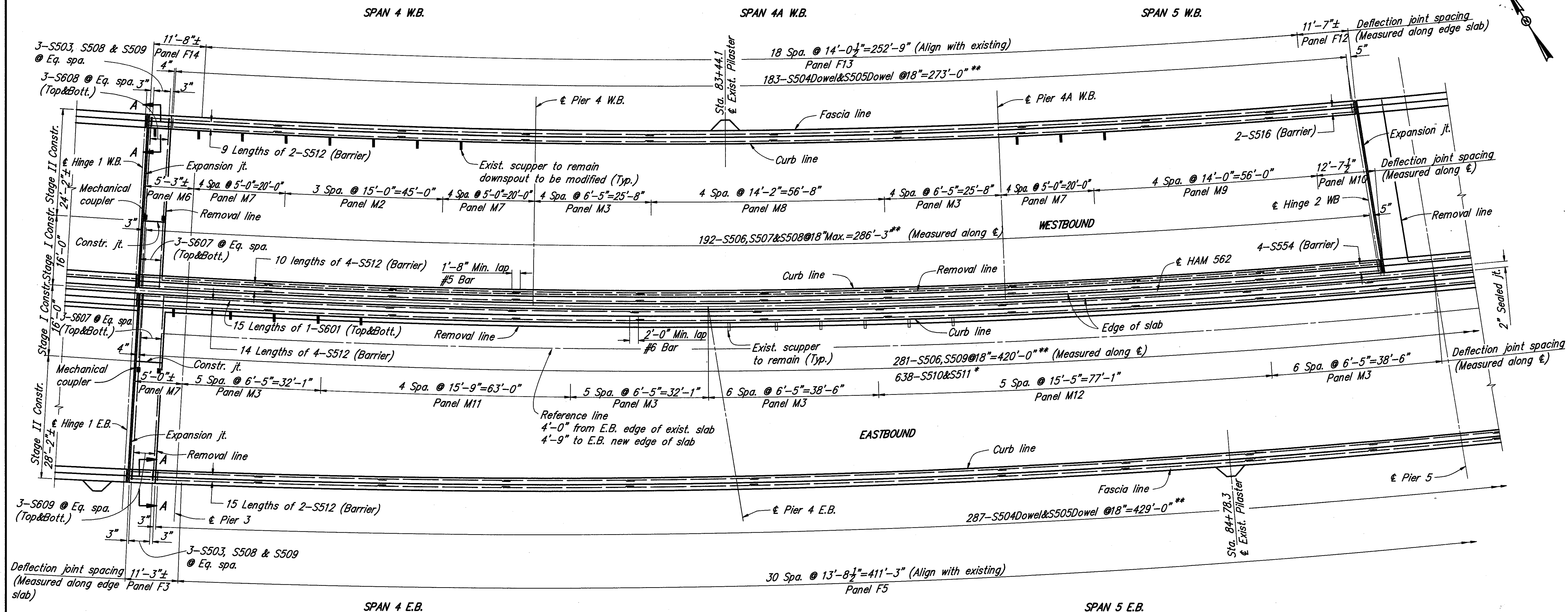
**SUPERSTRUCTURE DETAILS**

BRIDGE NO. HAM-562-0147  
OVER ROSS AVENUE AND CSX R.R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDC	8/88	7/93	

9044008 17 MAR 1993





**PLAN**

**NOTE**  
\* Lap with existing transverse bars.  
\*\* S505 and S506 Bars to be adjusted to miss barrier deflection joint.

**NOTES**  
For Typical Section of slab see sheet 21/30  
For barrier panel details see sheet 22/30  
For expansion joint details see sheet 24/30 and 25/30  
For overlay at scupper see sheet 16/30  
For Section A-A see sheet 21/30  
For light pilaster details see sheet 22/30

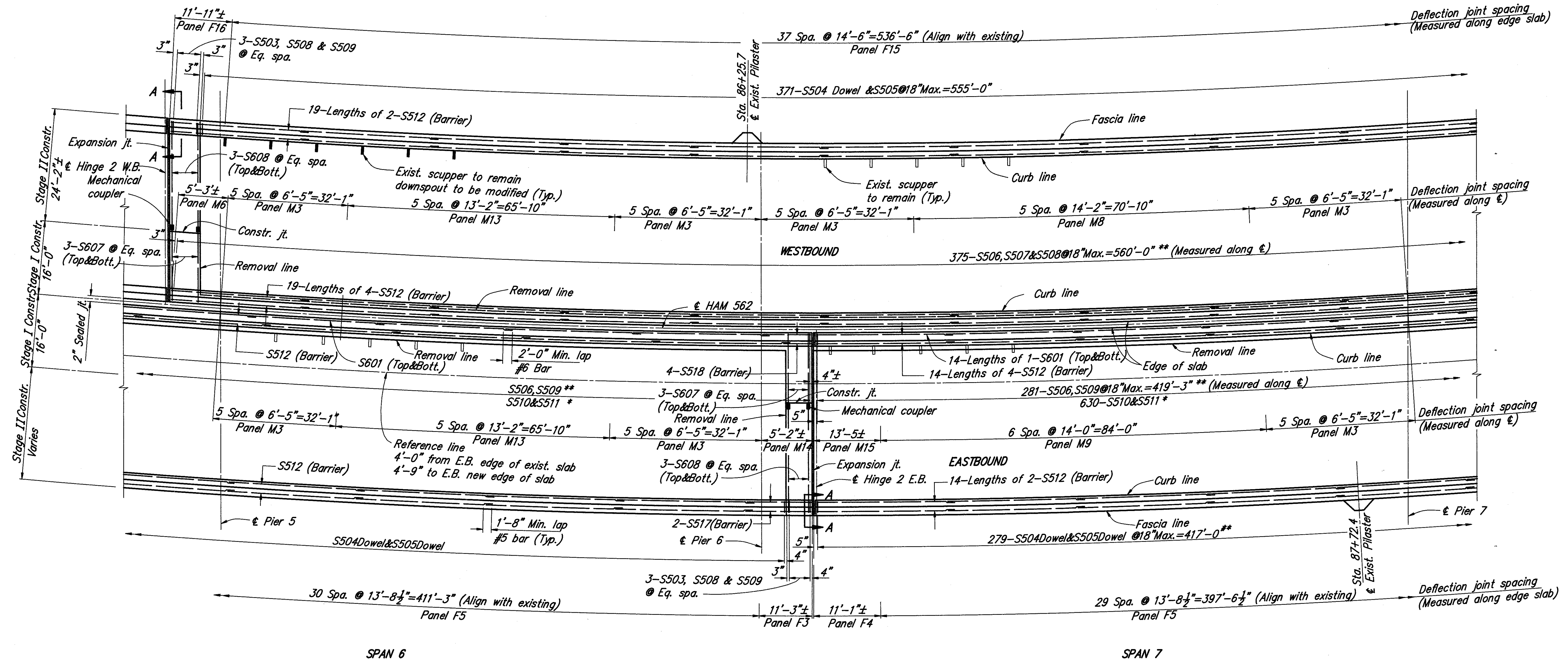
**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

**SUPERSTRUCTURE DETAILS**

BRIDGE NO. HAM-562-0147  
OVER ROSS AVENUE AND CSX R.R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	3/93	3/93	

8044ND08 17 MAR 1993



PLAN

**NOTE**  
 \* Lap with existing transverse bars.  
 \*\* S505 and S506 Bars to be adjusted to miss barrier deflection joint.

**NOTES**  
 For Typical Section of slab see sheet 21/30  
 For barrier panel details see sheet 22/30  
 For expansion joint details see sheet 25/30 and 26/30  
 For overlay at scupper see sheet 16/30  
 For Section A-A see sheet 21/30  
 For light pilaster detail see sheet 22/30

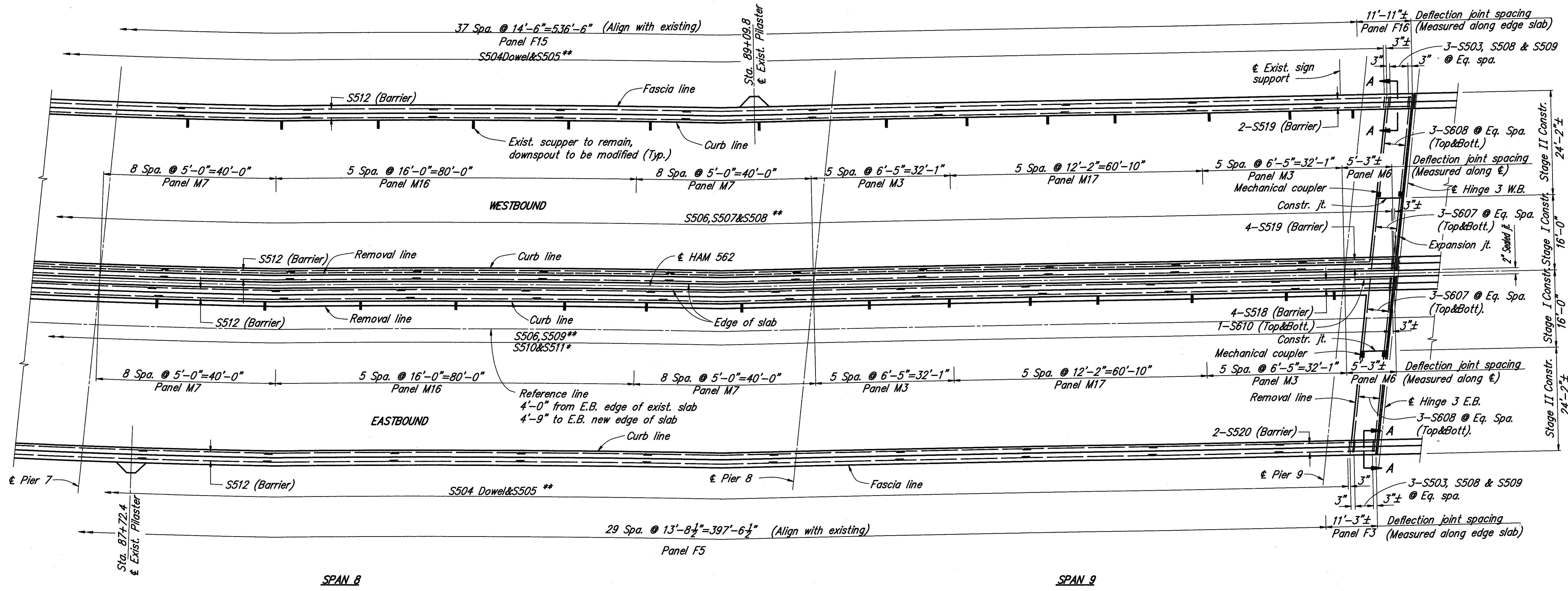
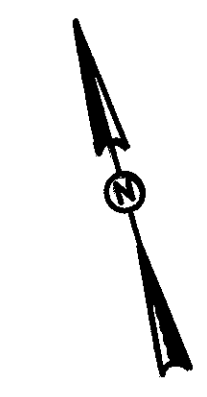
**BALKE ENGINEERS**  
 1848 Summit Road  
 Cincinnati, Ohio 45237

**SUPERSTRUCTURE DETAILS**

BRIDGE NO. HAM-562-0147  
 OVER ROSS AVENUE AND CSX R.R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	8/88	3/93	

8014MD10 17 MAR 1993



**PLAN**

**NOTE**  
 \* Lap with existing transverse bars.  
 \*\* S505 and S506 Bars to be adjusted to miss barrier deflection joint.

**NOTES**  
 For Typical Section of slab see sheet 21/30  
 For barrier panel details see sheet 22/30  
 For expansion joint details see sheet 25/30  
 For overlay at scupper see sheet 16/30  
 For Section A-A see sheet 21/30  
 For light pilaster detail see sheet 22/30

**BALKE ENGINEERS**  
 1848 Summit Road  
 Cincinnati, Ohio 45237

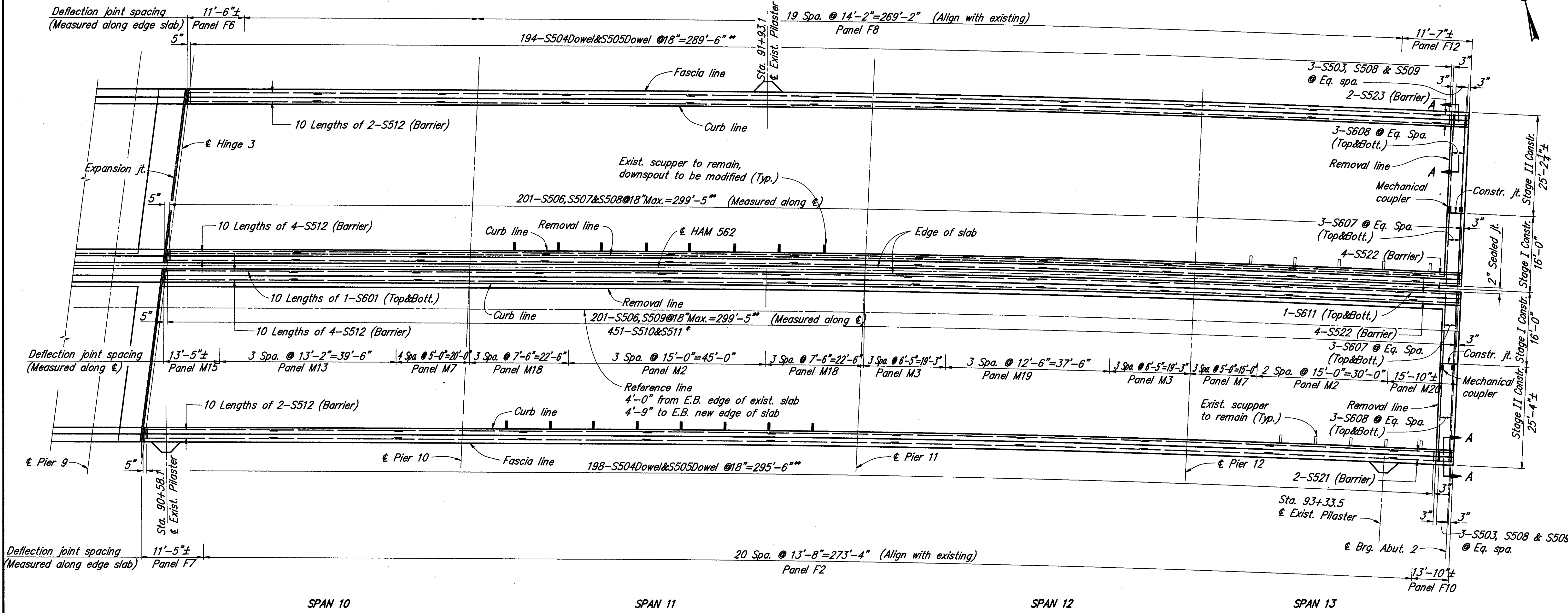
**SUPERSTRUCTURE DETAILS**

BRIDGE NO. HAM-562-0147  
 OVER ROSS AVENUE AND CSX R.R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	8/88	3/93	

S04LMD11 17 MAR 1993





**PLAN**

**NOTE**  
\* Lap with existing transverse bars.  
\*\* S505 and S506 Bars to be adjusted to miss barrier deflection joint.

**NOTES**  
For Typical Section of slab see sheet 21/30  
For barrier panel details see sheet 22/30  
For expansion joint details see sheet 27/30 and 28/30  
For overlay at scupper see sheet 16/30  
For Section A-A see sheet 21/30  
For light pilaster details see sheet 22/30

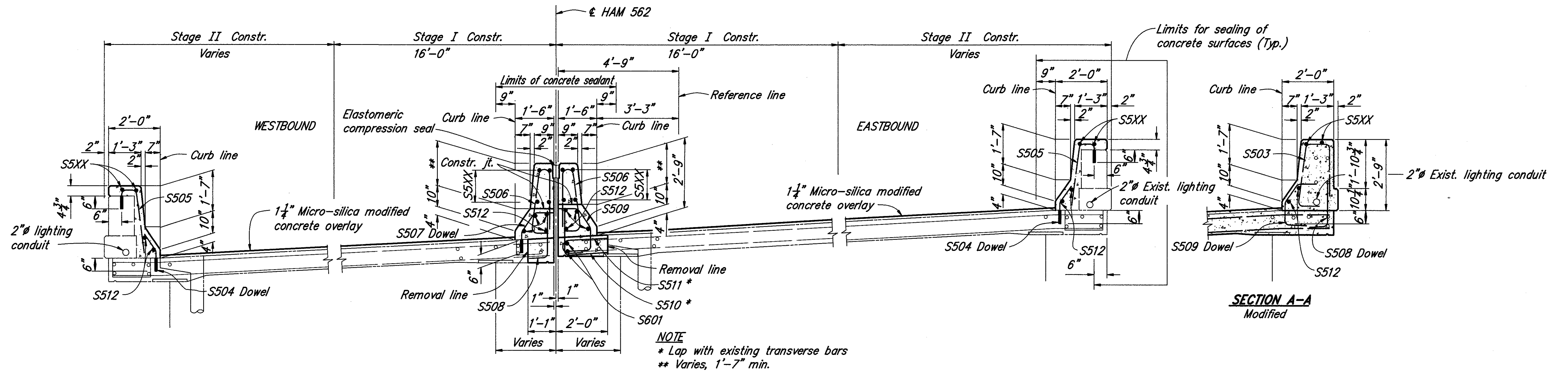
**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

**SUPERSTRUCTURE DETAILS**

BRIDGE NO. HAM-562-0147  
OVER ROSS AVENUE AND CSX R.R.

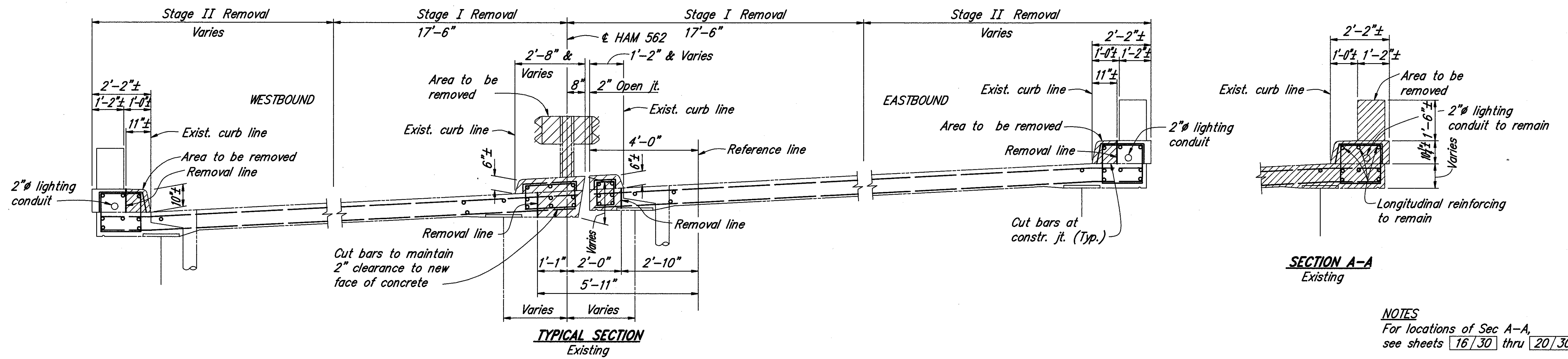
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDC	8/28/93	3/93	

S014MD12 18 MAR 1993



TYPICAL SECTION  
Modified

SECTION A-A  
Modified



TYPICAL SECTION  
Existing

SECTION A-A  
Existing

NOTES  
For locations of Sec A-A, see sheets 16/30 thru 20/30

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Cincinnati, Ohio 45237

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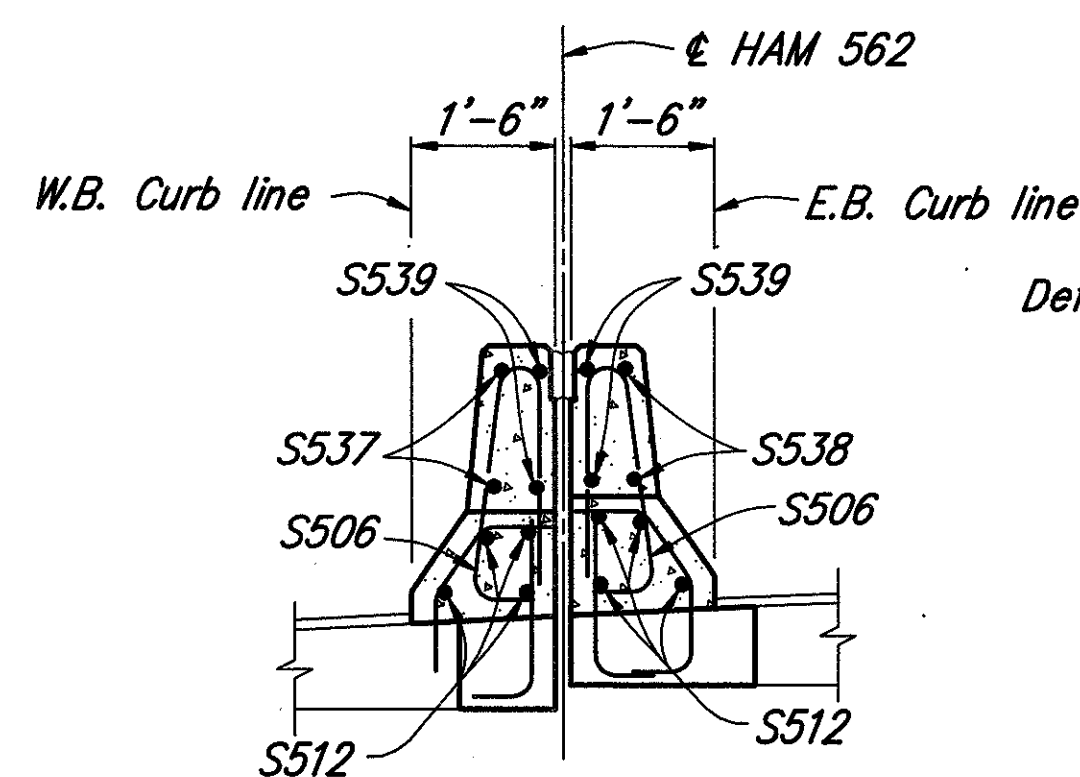
SUPERSTRUCTURE DETAILS

BRIDGE NO. HAM-562-0147  
OVER ROSS AVENUE AND CSX R.R.

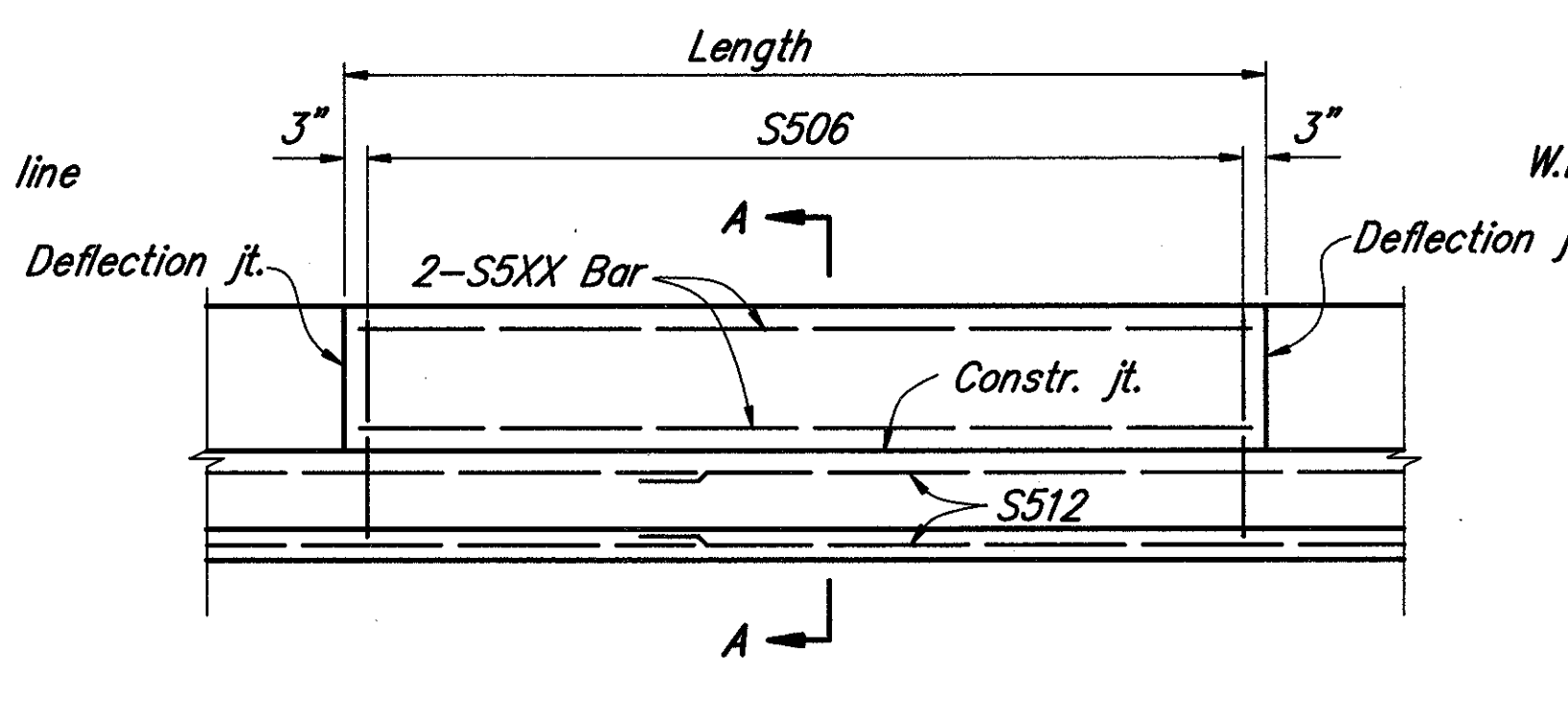
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	BAR	7/93	

5014ND07 18 MAR 1993

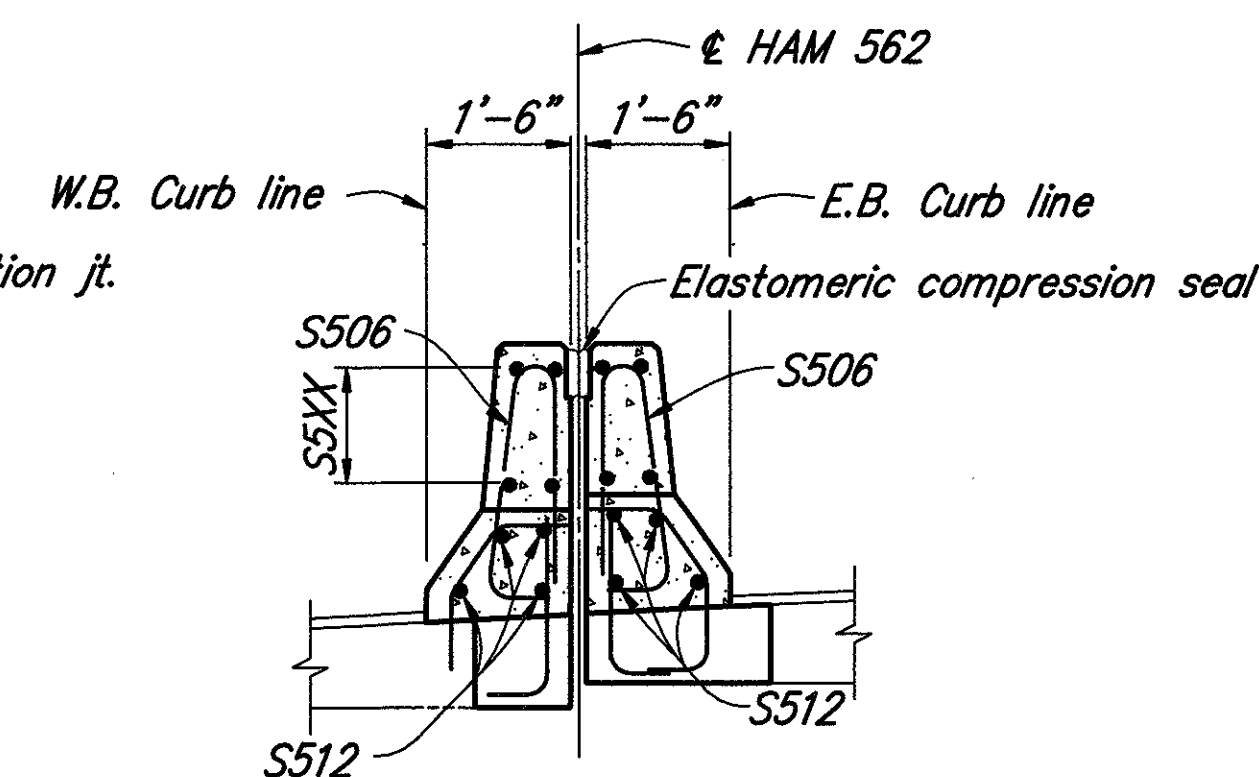
MEDIAN BARRIER PANEL TABLE			
Panel	Length	Number of Panels	S5XX
M1	13'-7"	2	See Section Panel M1
M2	15'-0"	25	S540
M3	6'-5"	125	S541
M4	12'-11"	8	S542
M5	15'-4"	2	S543
M6	5'-3"	4	S544
M7	5'-0"	59	S545
M8	14'-2"	9	S529
M9	14'-0"	10	S533
M10	12'-7 1/2"	1	S537
M11	15'-9"	4	S546
M12	15'-5"	5	S547
M13	13'-2"	16	S548
M14	5'-2"	1	S545
M15	13'-5"	3	S549
M16	16'-0"	10	S550
M17	12'-2"	10	S536
M18	7'-6"	12	S551
M19	12'-6"	6	S552
M20	15'-10"	2	S553



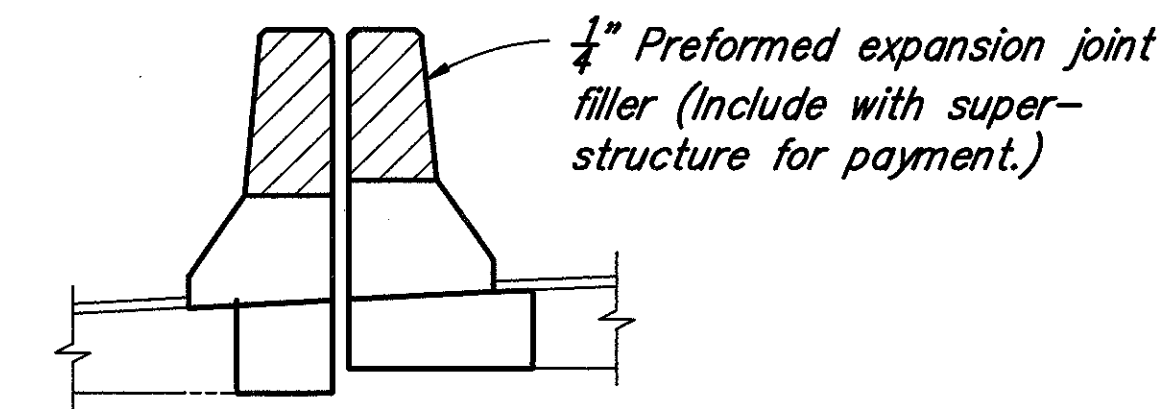
**SECTION PANEL M1**  
For dimensions see Typical Section



**MEDIAN BARRIER PANEL ELEVATION**  
See Median Barrier Panel Table

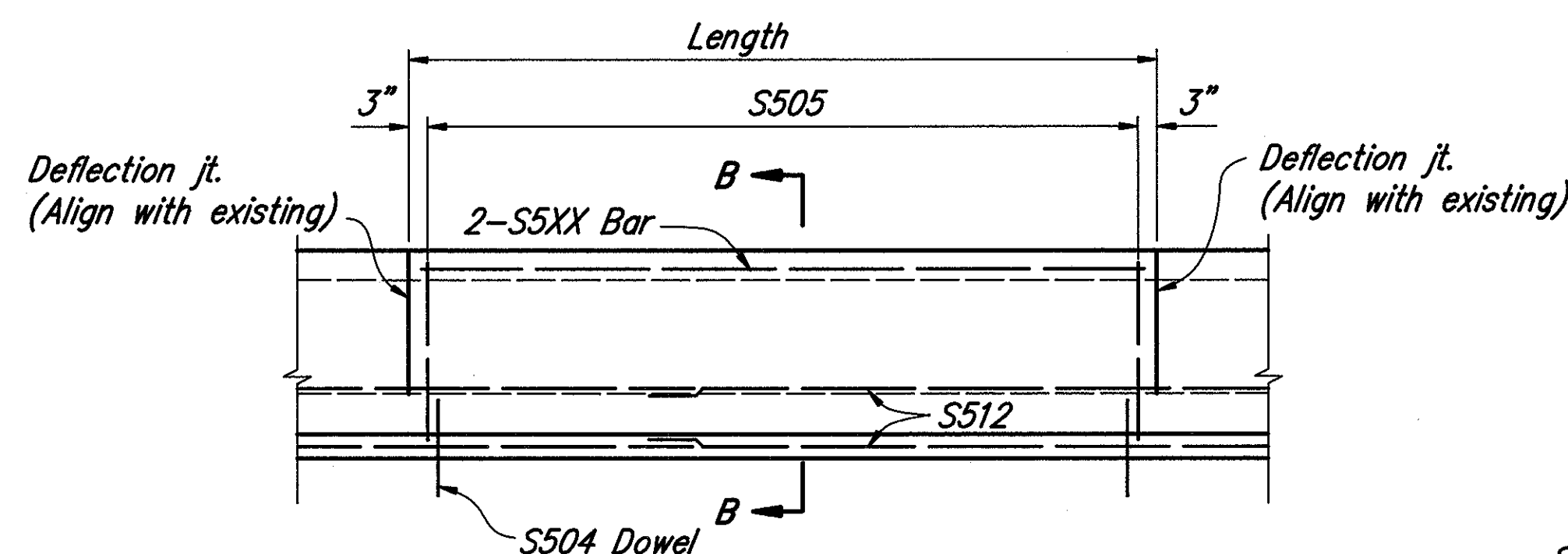


**SECTION A-A**  
For dimensions see Typical Section

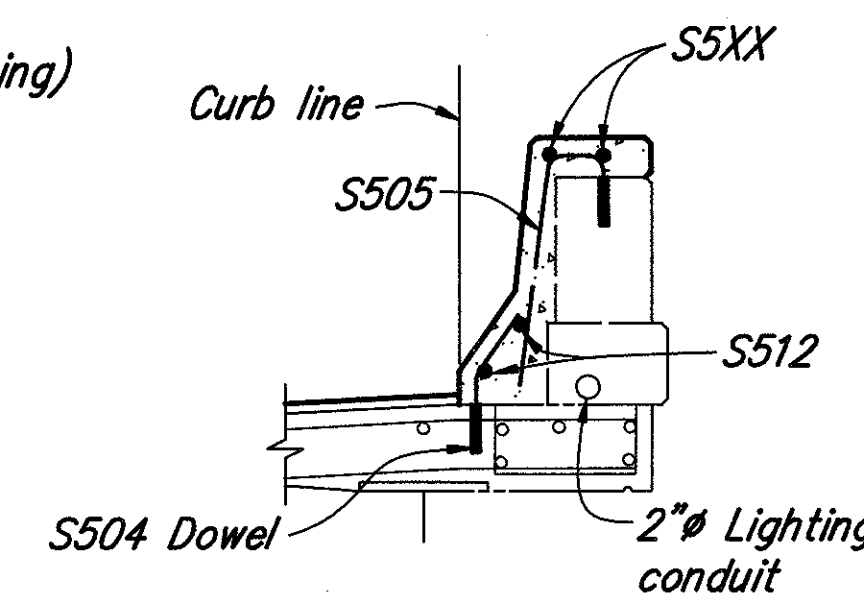


**SECTION A-A**  
Section thru deflection joint

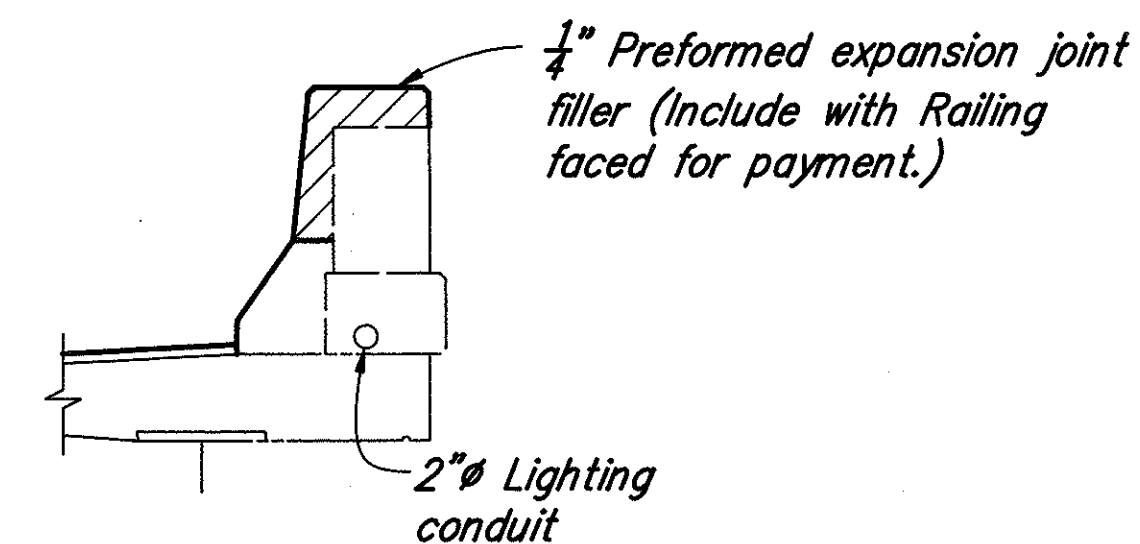
FASCIA BARRIER PANEL TABLE			
Panel	Length	Number of Panels	S5XX
F1	13'-4"	1	S524
F2	13'-8"	40	S525
F3	11'-3"	4	S526
F4	11'-1"	1	S527
F5	13'-8 1/2"	59	S525
F6	11'-6"	1	S528
F7	11'-5"	1	S528
F8	14'-2"	19	S529
F9	11'-9"	1	S530
F10	13'-10"	16	S531
F11	11'-8 1/2"	1	S530
F12	11'-7"	2	S532
F13	14'-0 1/2"	18	S533
F14	11'-8"	1	S534
F15	14'-6"	37	S535
F16	11'-11"	2	S530



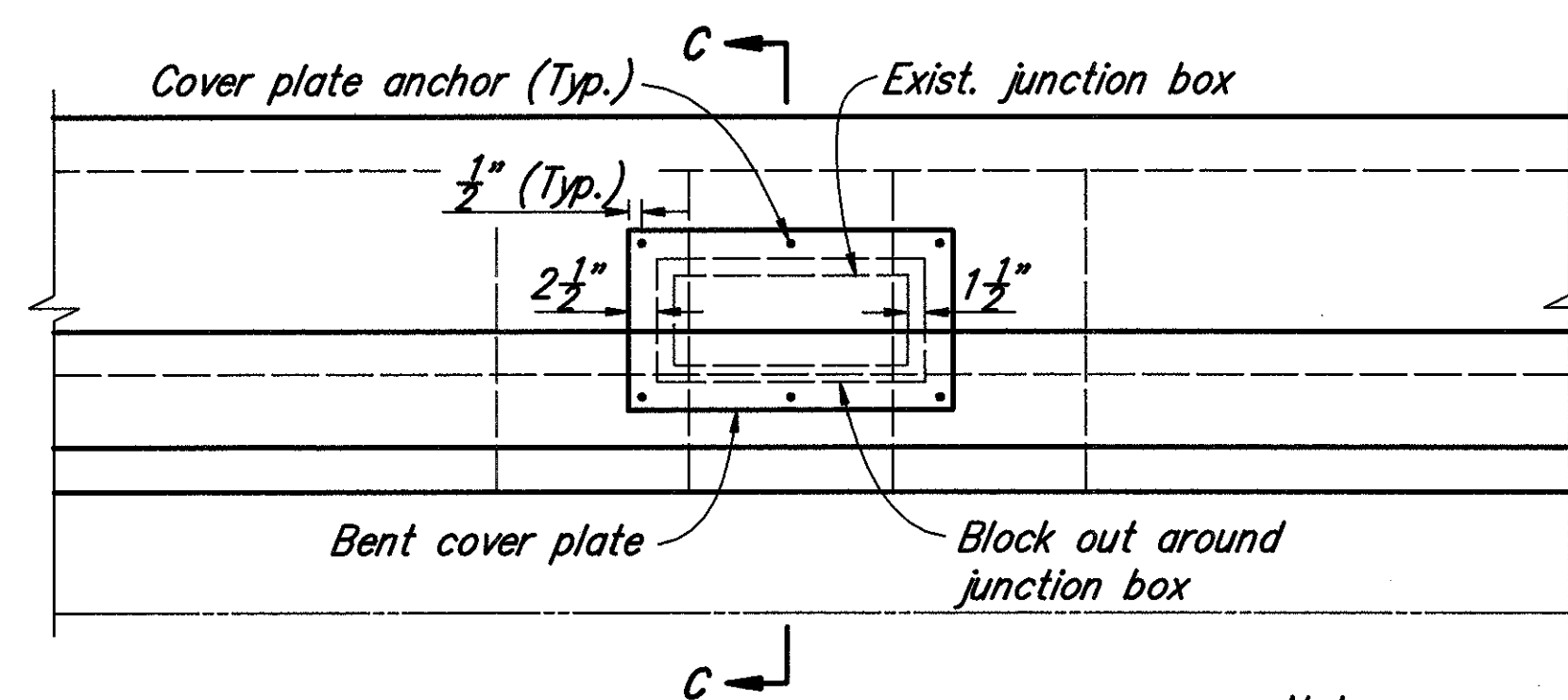
**FASCIA BARRIER PANEL ELEVATION**  
See Fascia Barrier Panel Table



**SECTION B-B**  
For dimensions see Typical Section

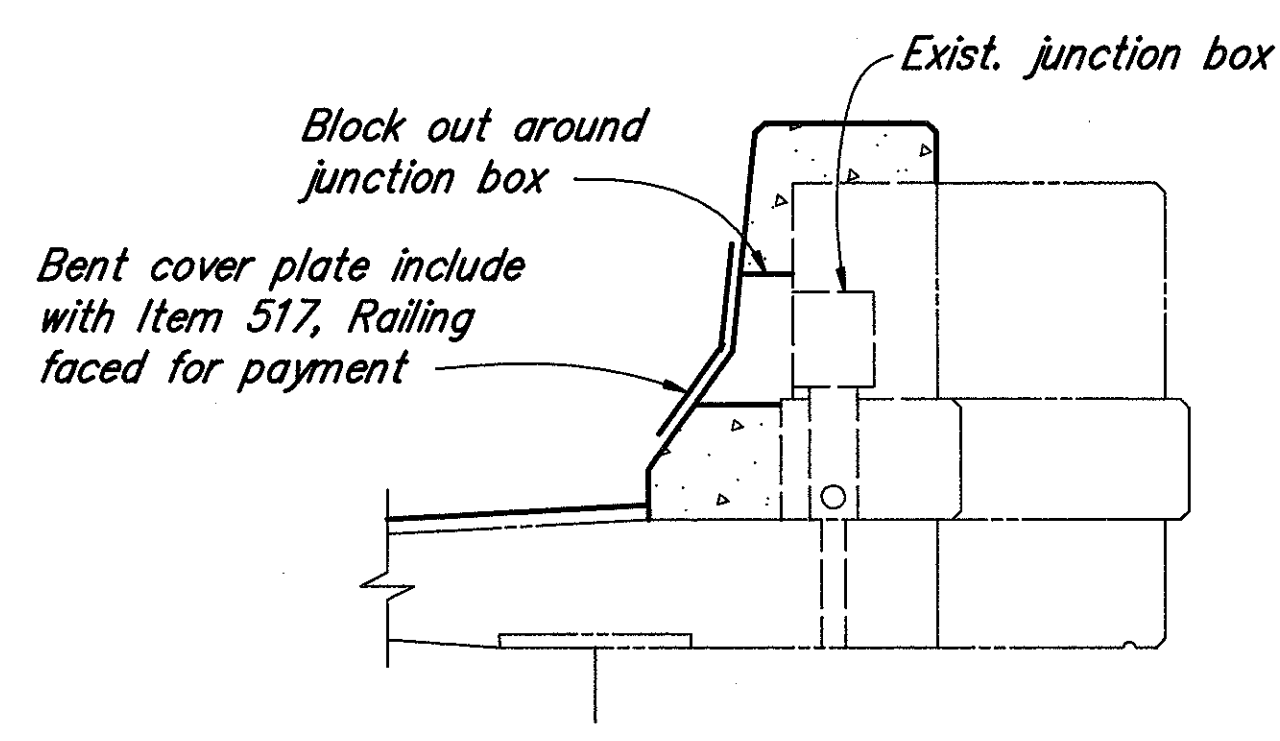


**SECTION B-B**  
Section thru deflection joint

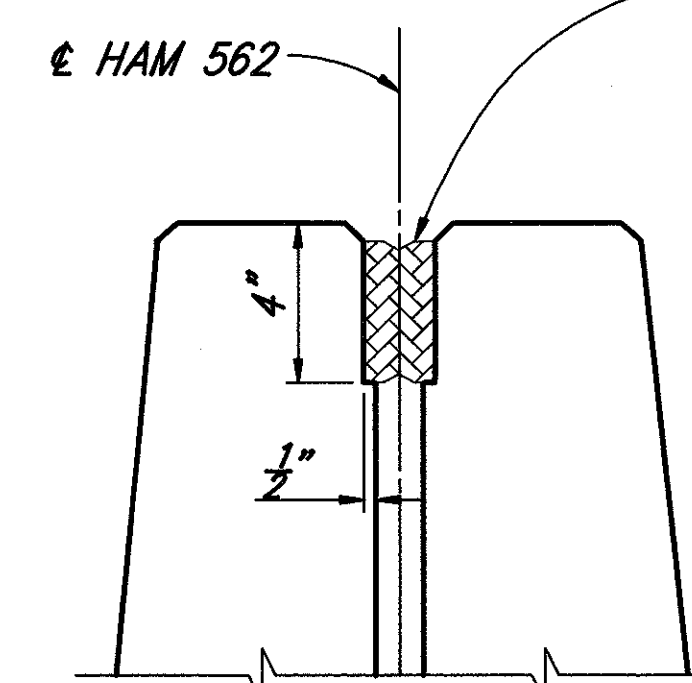


**LIGHT PILASTER DETAIL**

**Note**  
Adjust reinforcing as necessary to clear blockout.



**SECTION C-C**



**COMPRESSION SEAL AT MEDIAN BARRIER**

Compression seal full length of joint Wabo-Acme WE-400, D.S. Brown K-4000, or an approved equal.

Lubricant/adhesive shall be applied to concrete surfaces prior to installation of seal per manufacturer's recommendations. Seal shall be furnished in lengths as long as possible. Field splices shall be made per manufacturer's recommendations and shall be watertight.

**NOTE**  
Preformed expansion joint filler in the parapet deflection joints may be either 1/4" gray sponge rubber or 1/4" gray cellular polyvinyl chloride (PVC) sponge. Sponge rubber filler shall conform to AASHTO M-153, Type I. Density of PVC sponge shall not be less than 20 pcf.

Elastomeric compression seal shall be installed prior to sealing of adjacent concrete surfaces.

<b>BALKE ENGINEERS</b> 1848 Summit Road Cincinnati, Ohio 45237		22/30
<b>SUPERSTRUCTURE DETAILS</b>		
BRIDGE NO. HAM-562-0147 OVER ROSS AVENUE AND CSX R.R.		
DESIGNED	DRAWN	TRACED
MRS	ALT	~
CHECKED	REVIEWED	DATE
VDG	8/28/93	7/93
REVISED		



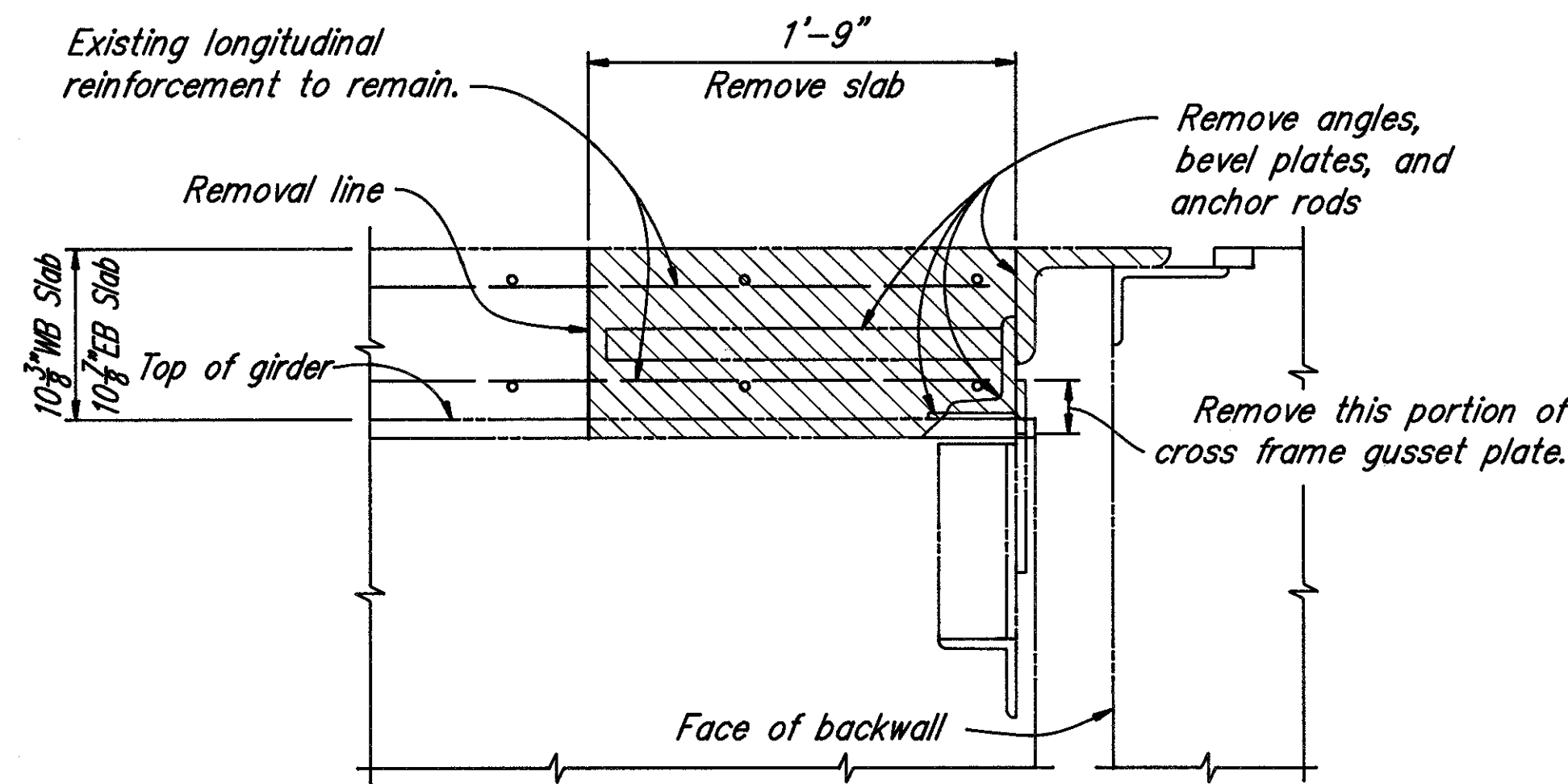
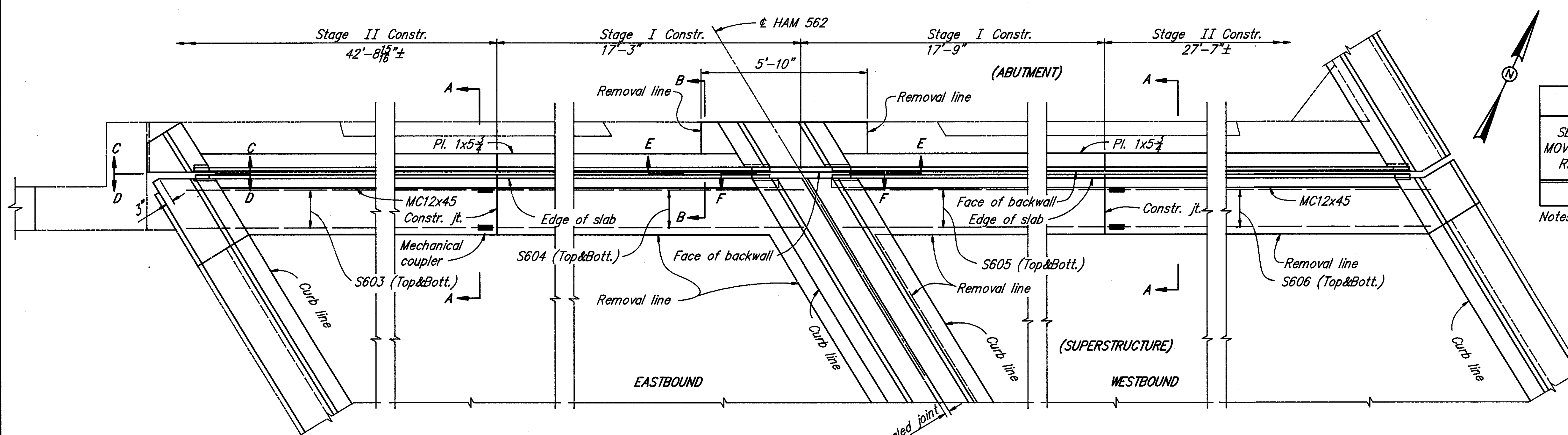
STRIP SEAL GLAND TABLE

SEAL MOVEMENT RATING	MANUFACTURER & DESIGNATION **		
	D.S. BROWN	STRUCTURAL ACCESSORIES	WATSON BOWMAN & ACME
3"	300A		SE-300

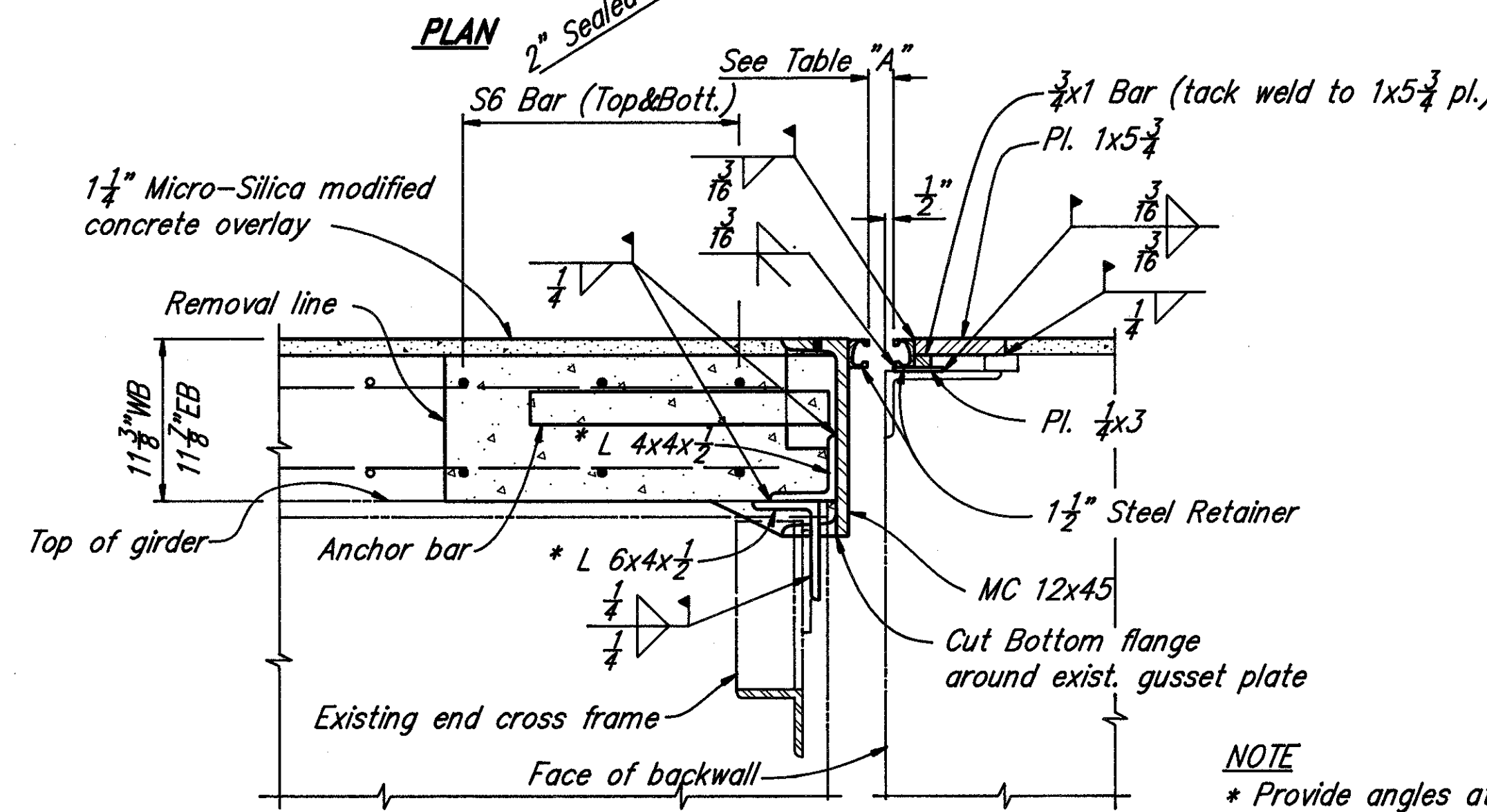
Notes: Compression seal to be installed in one piece \*\* or an approved alternate

TABLE A

F°	Dimension A	
	Eastbound	Westbound
90		
80		
70		
60	1 9/16"	1 9/16"
50	1 11/16"	1 11/16"
40	1 13/16"	1 13/16"
30	1 15/16"	1 15/16"

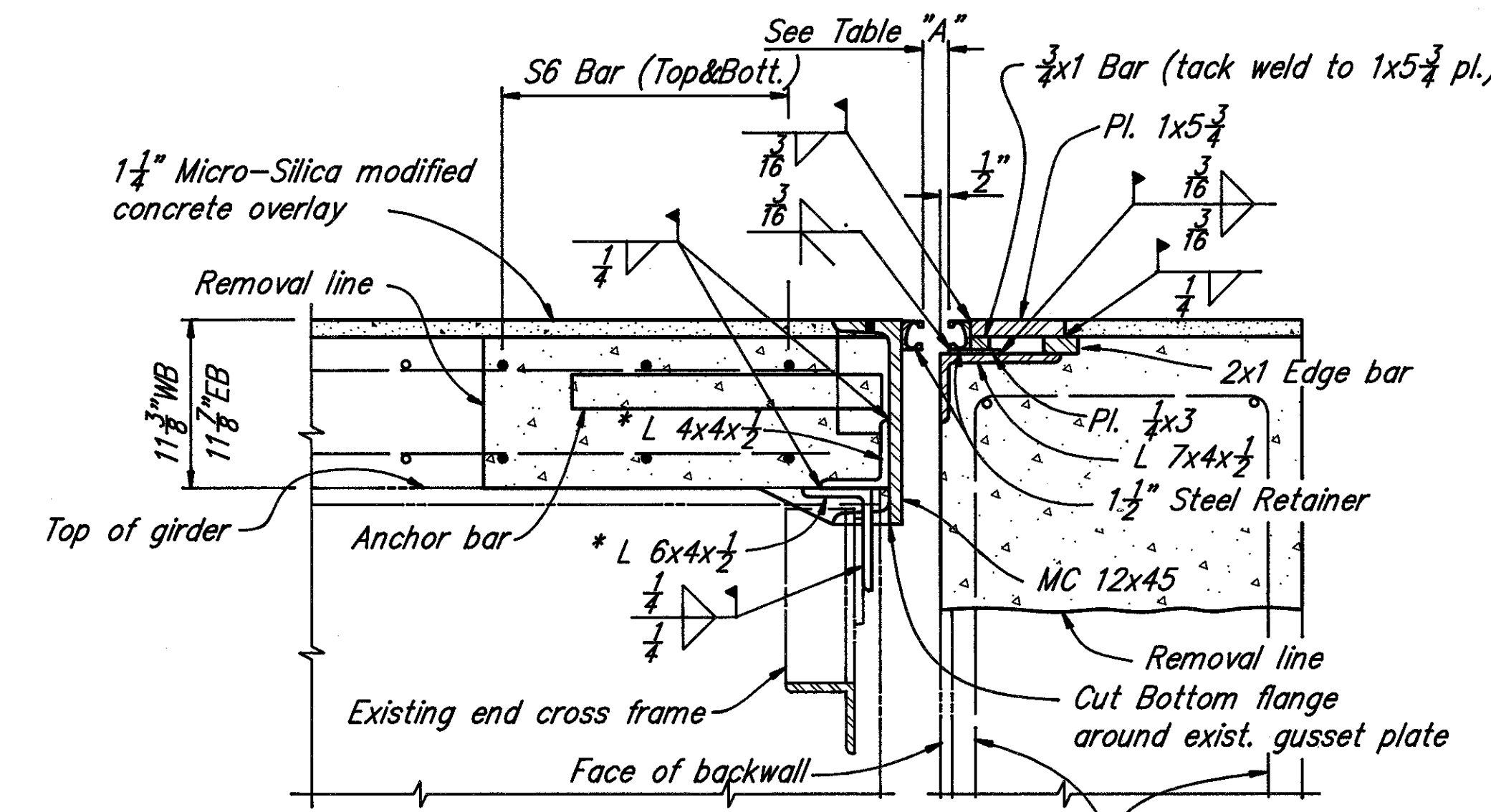


SECTION A-A  
Removal



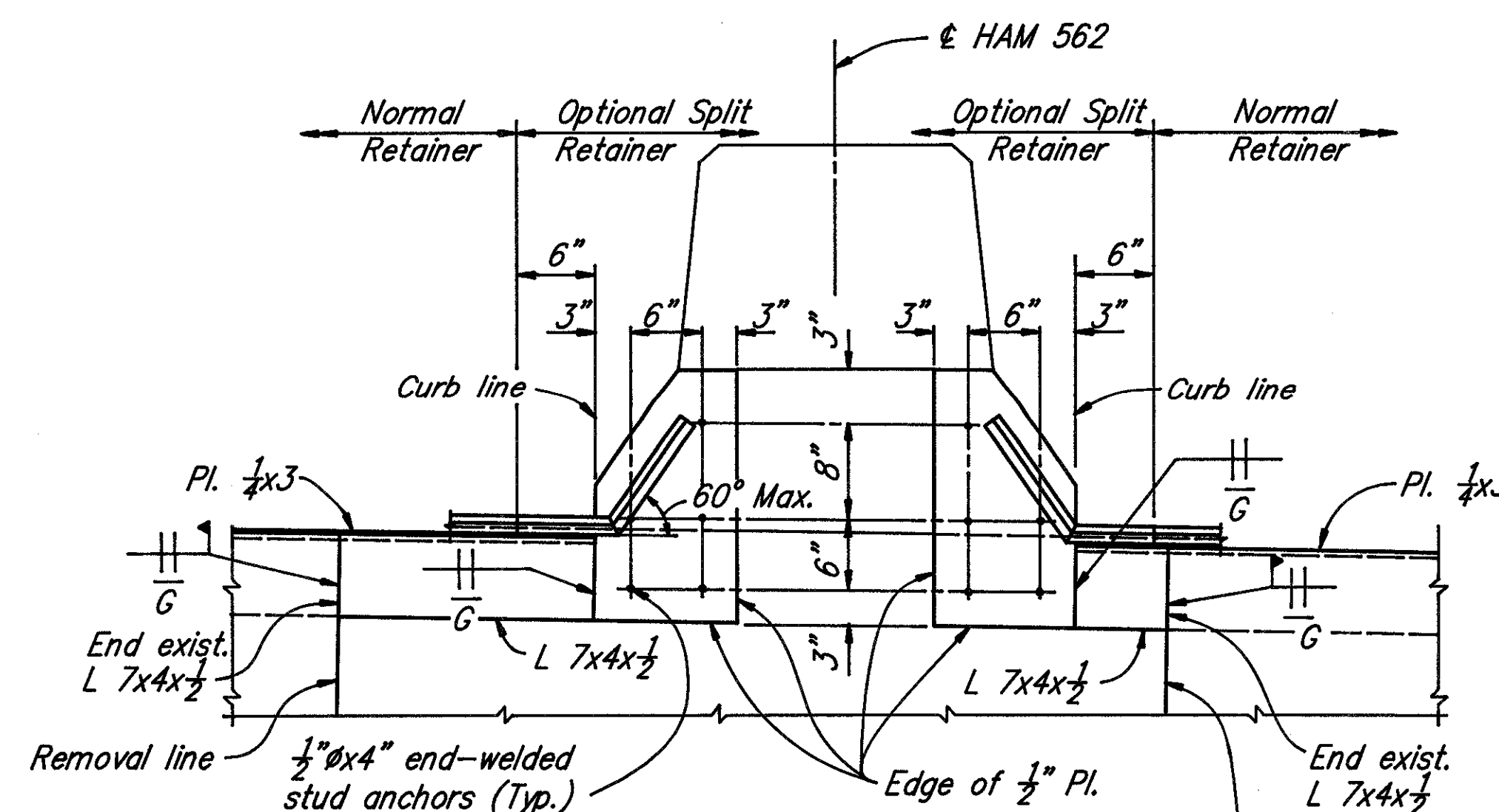
SECTION A-A

For information not shown see Section X-X sheet 2 of 5 Standard Drawing EXJ-4-87

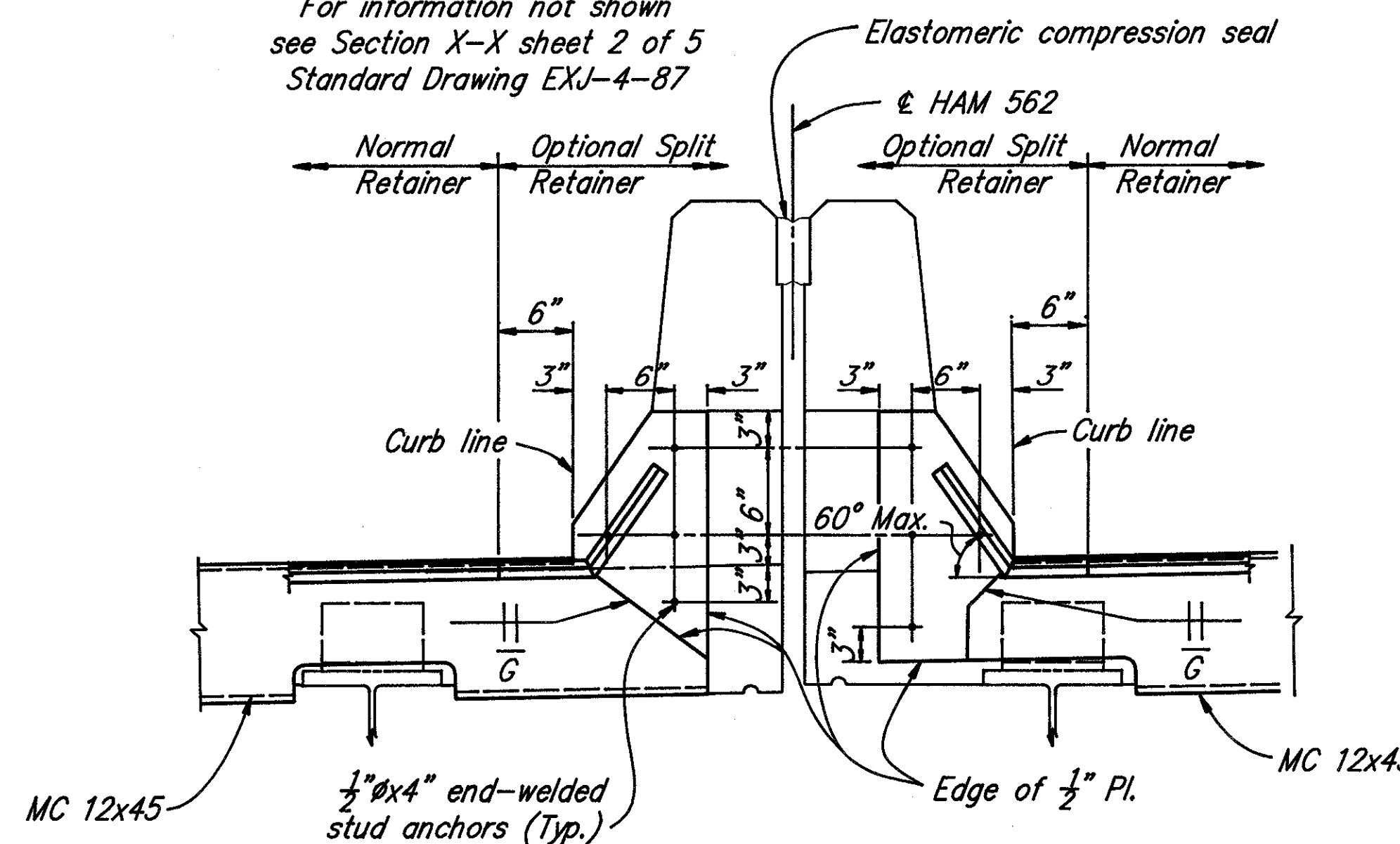


SECTION B-B

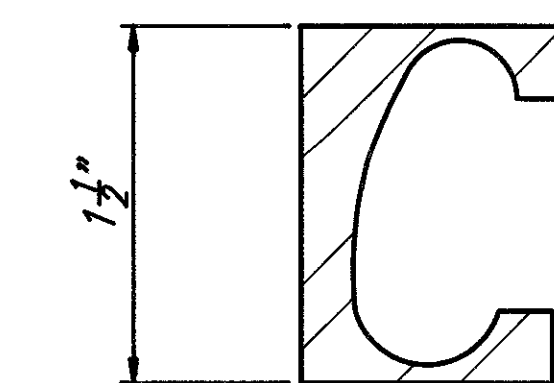
For information not shown see Section X-X sheet 2 of 5 Standard Drawing EXJ-4-87



SECTION E-E



SECTION F-F



STEEL RETAINER

NOTE  
For Section C-C and D-D see sheet 28/30

For additional details see Standard Drawing EXJ-4-87

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23/30

EXPANSION JOINT DETAILS  
AT ABUTMENT NO. 1

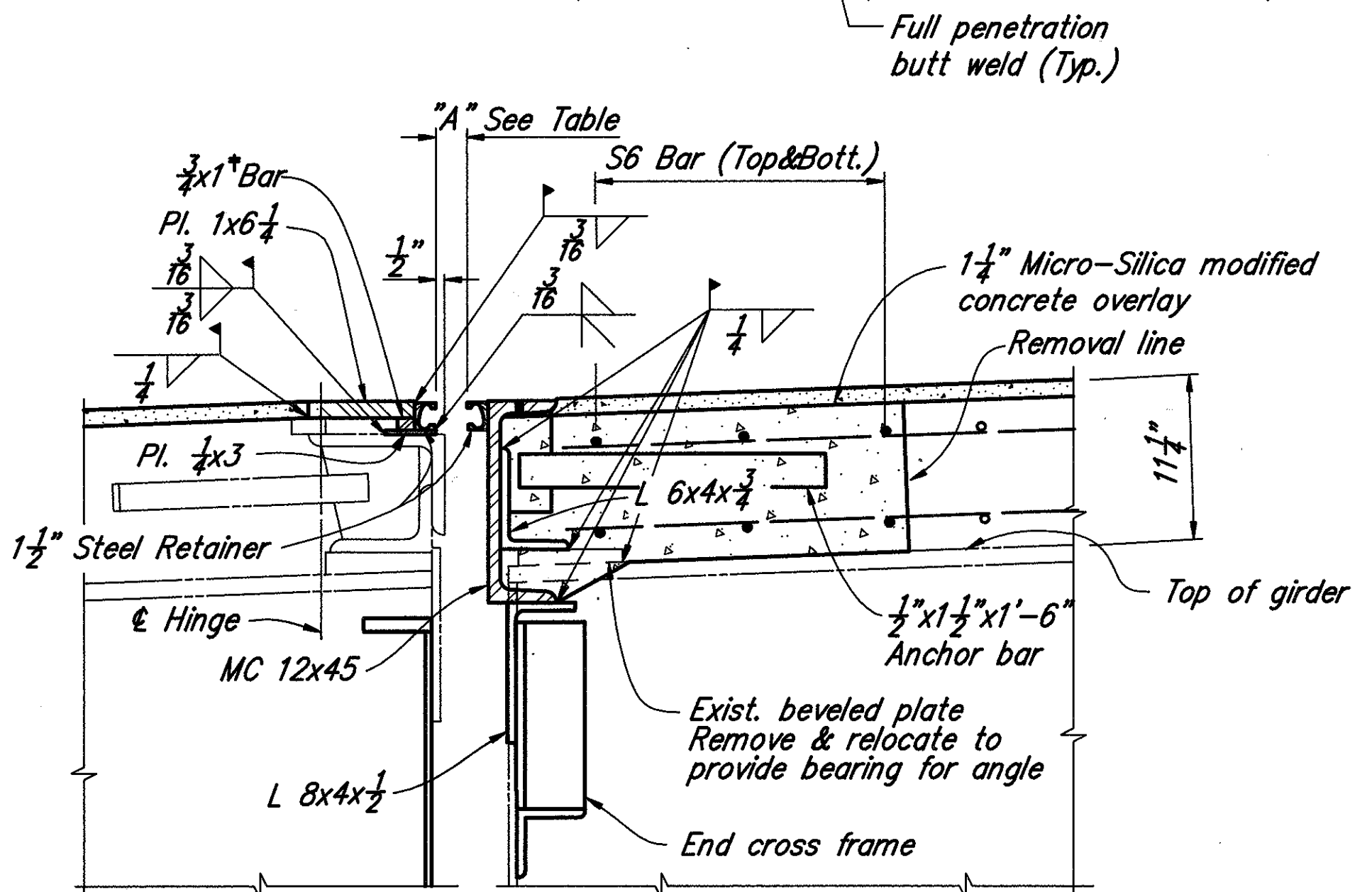
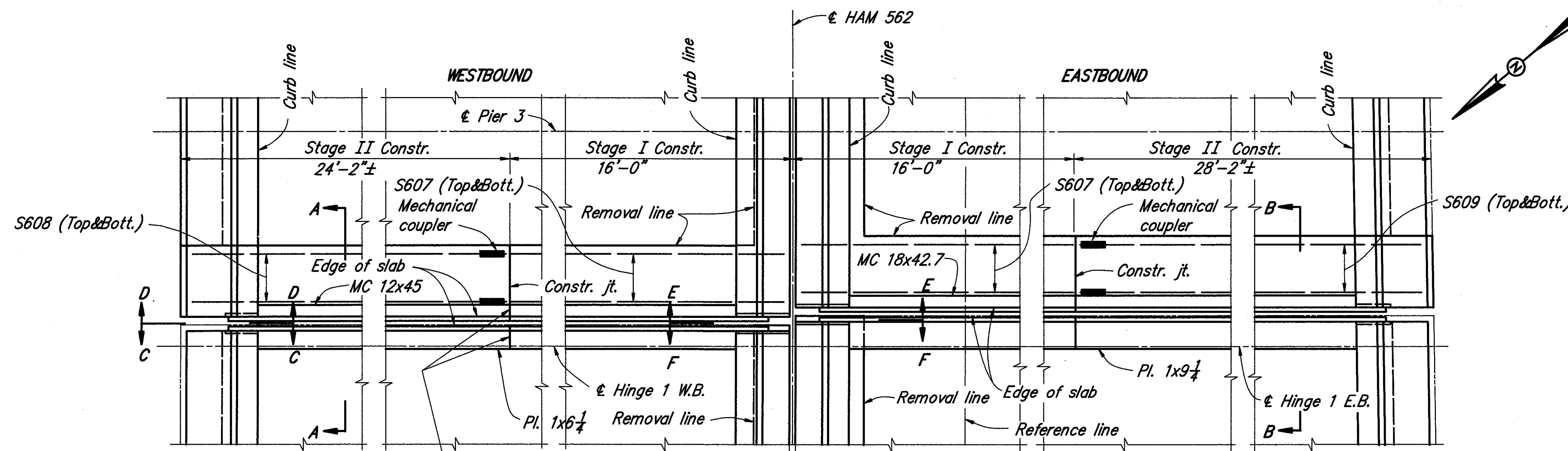
BRIDGE NO. HAM-562-0147  
OVER ROSS AVENUE AND CSX R.R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	8/28	7/93	

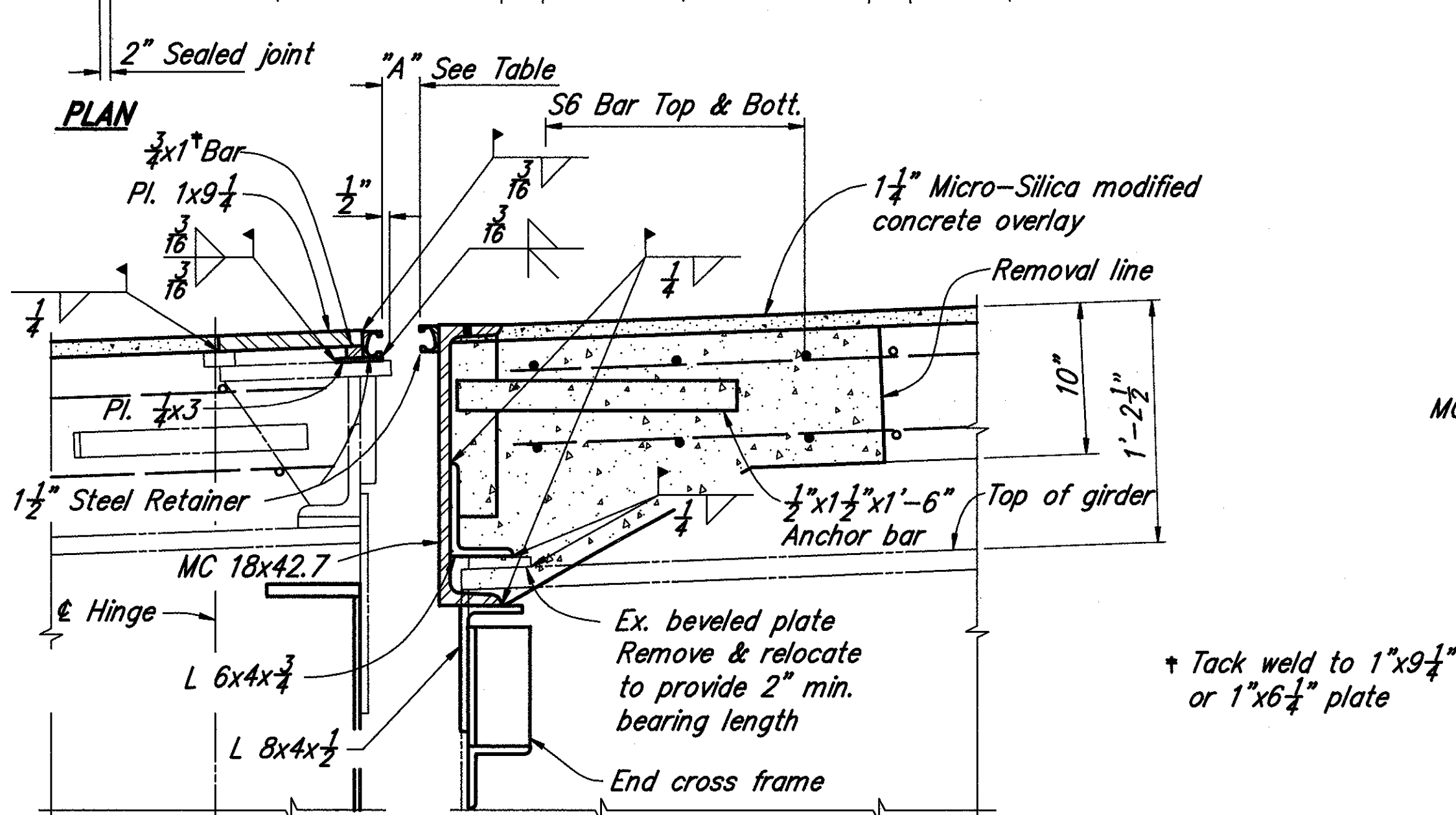
F°	Dimension A	
	Westbound	Eastbound
90		
80	1 1/2"	
70	1 11/16"	1 11/16"
60	1 13/16"	1 7/8"
50	2 1/8"	2 1/8"
40	2 3/8"	2 7/16"
30	2 9/16"	2 11/16"

SEAL MOVEMENT RATING	MANUFACTURER & DESIGNATION **		
	D.S. BROWN	STRUCTURAL ACCESSORIES	WATSON BOWMAN & ACME
4"	400A		SE-400

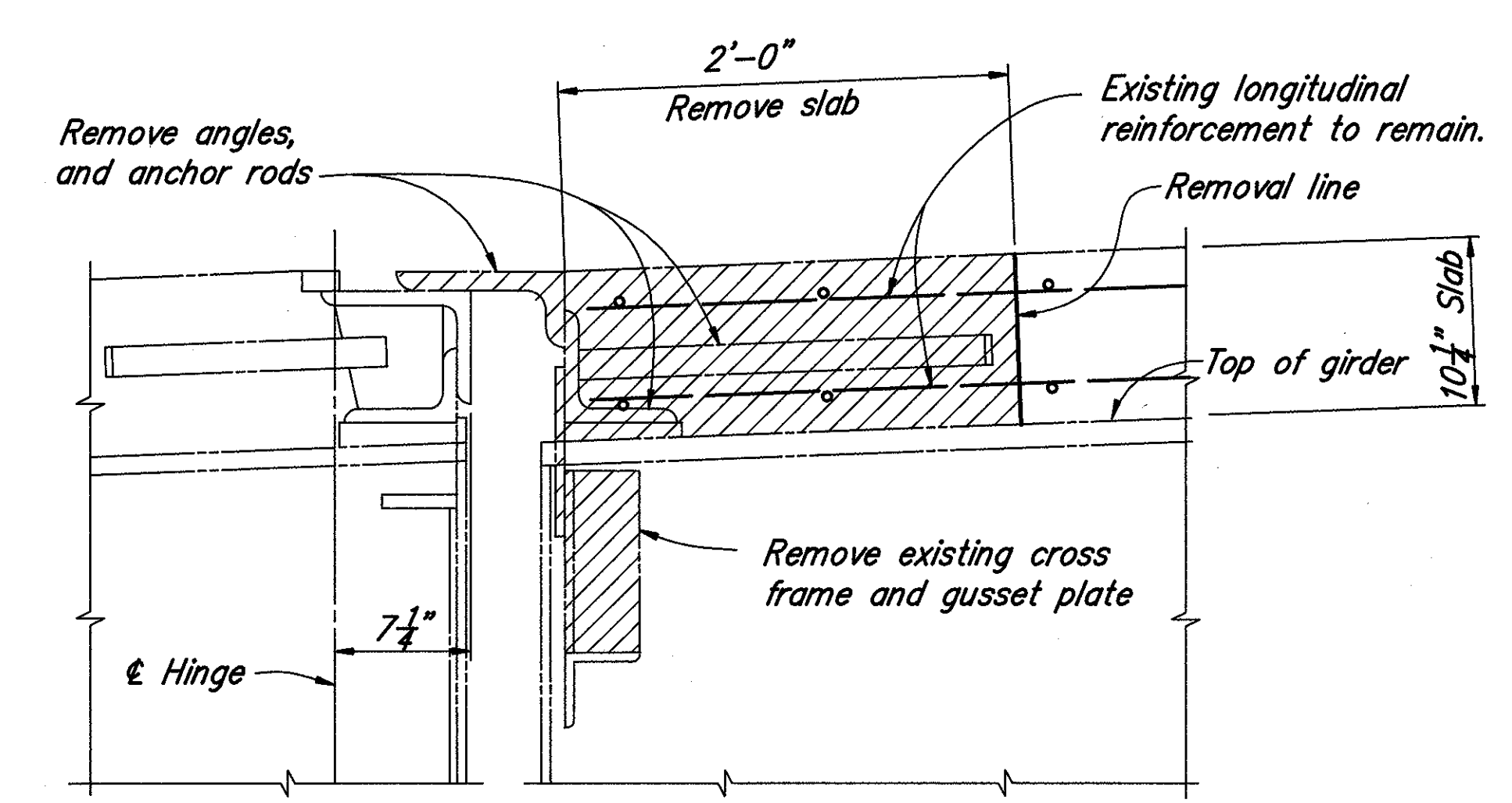
Notes: Compression seal to be installed in one piece \*\* or an approved alternate



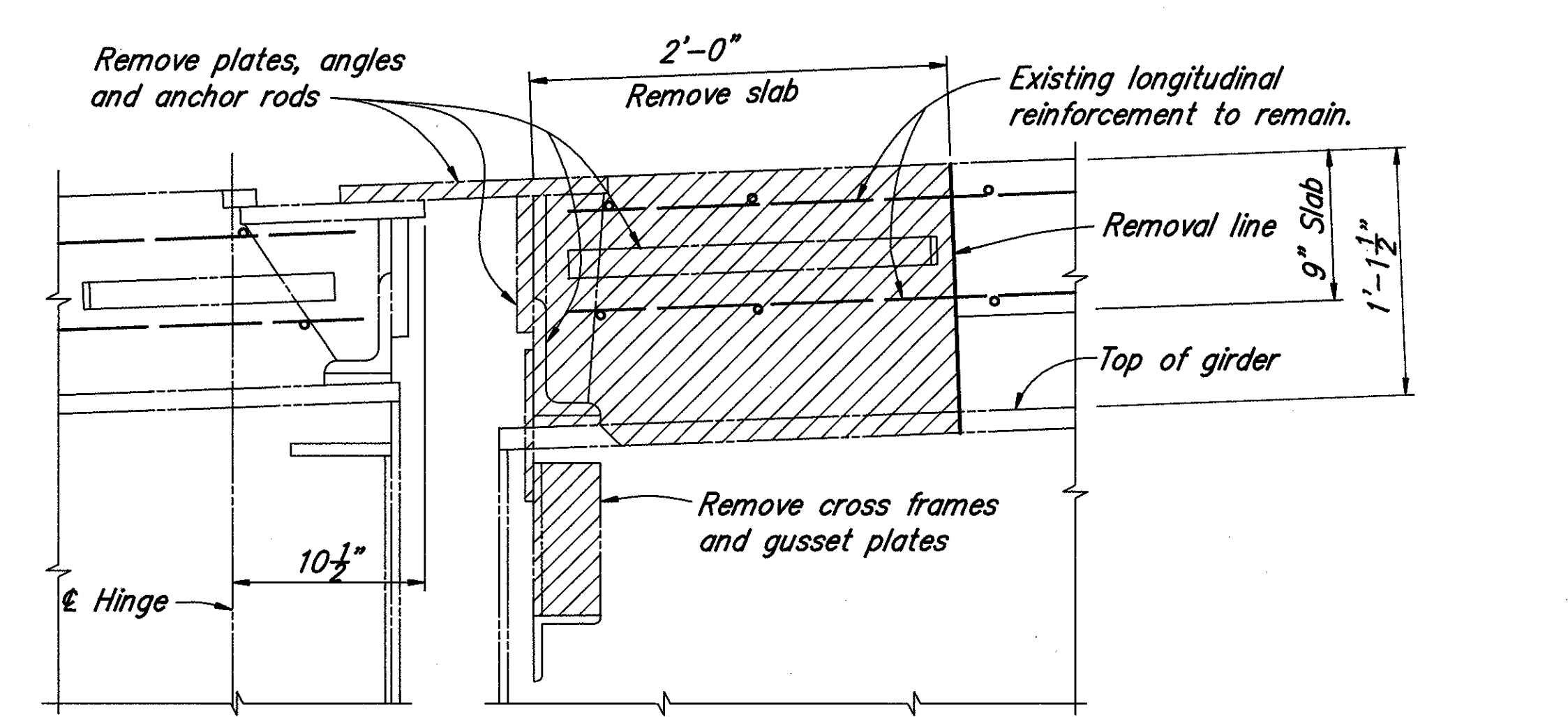
**SECTION A-A**  
For information not shown see Section X-X sheet 2 of 5 Standard Drawing EXJ-4-87



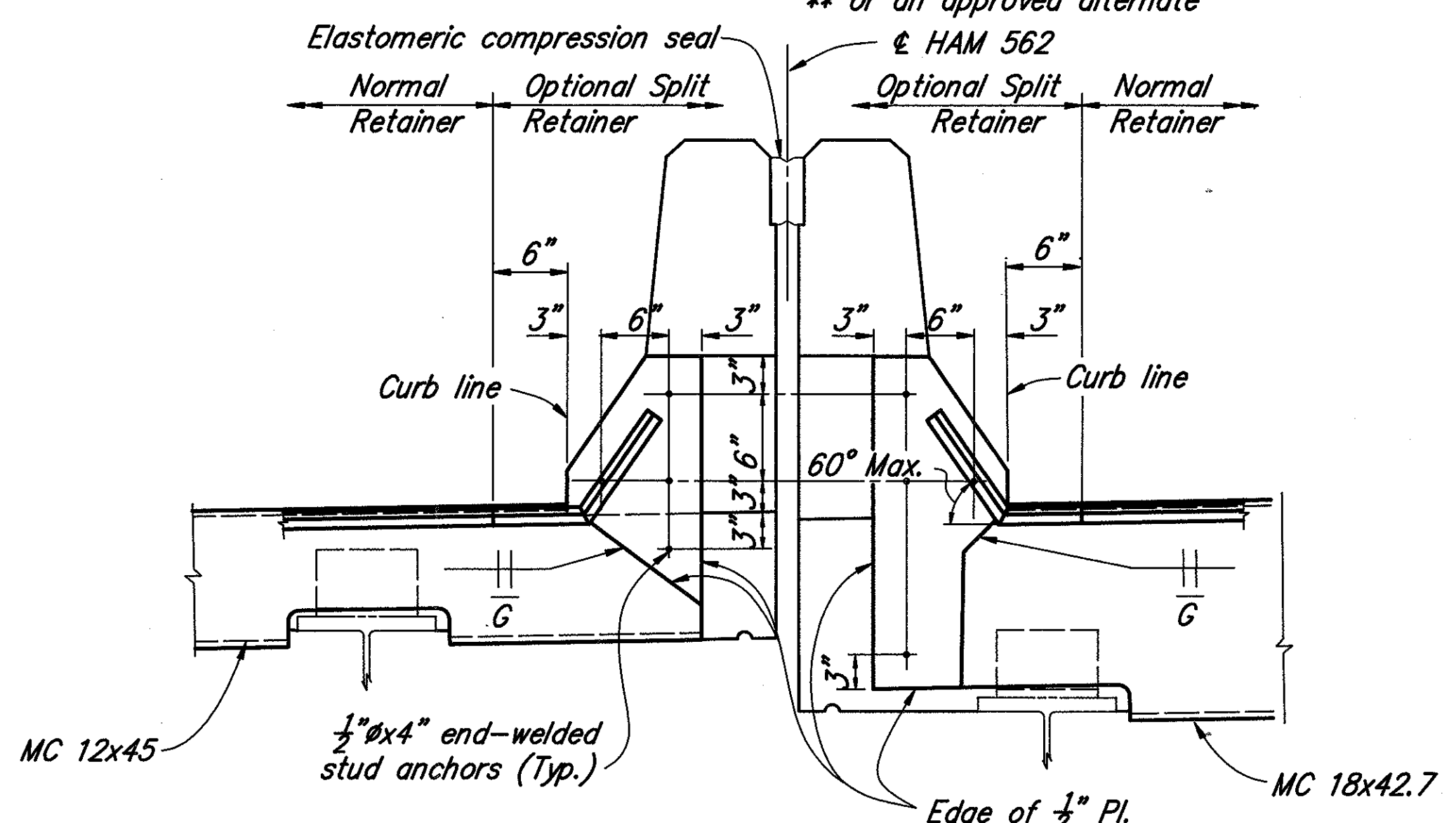
**SECTION B-B**  
For information not shown see Section X-X sheet 2 of 5 Standard Drawing EXJ-4-87



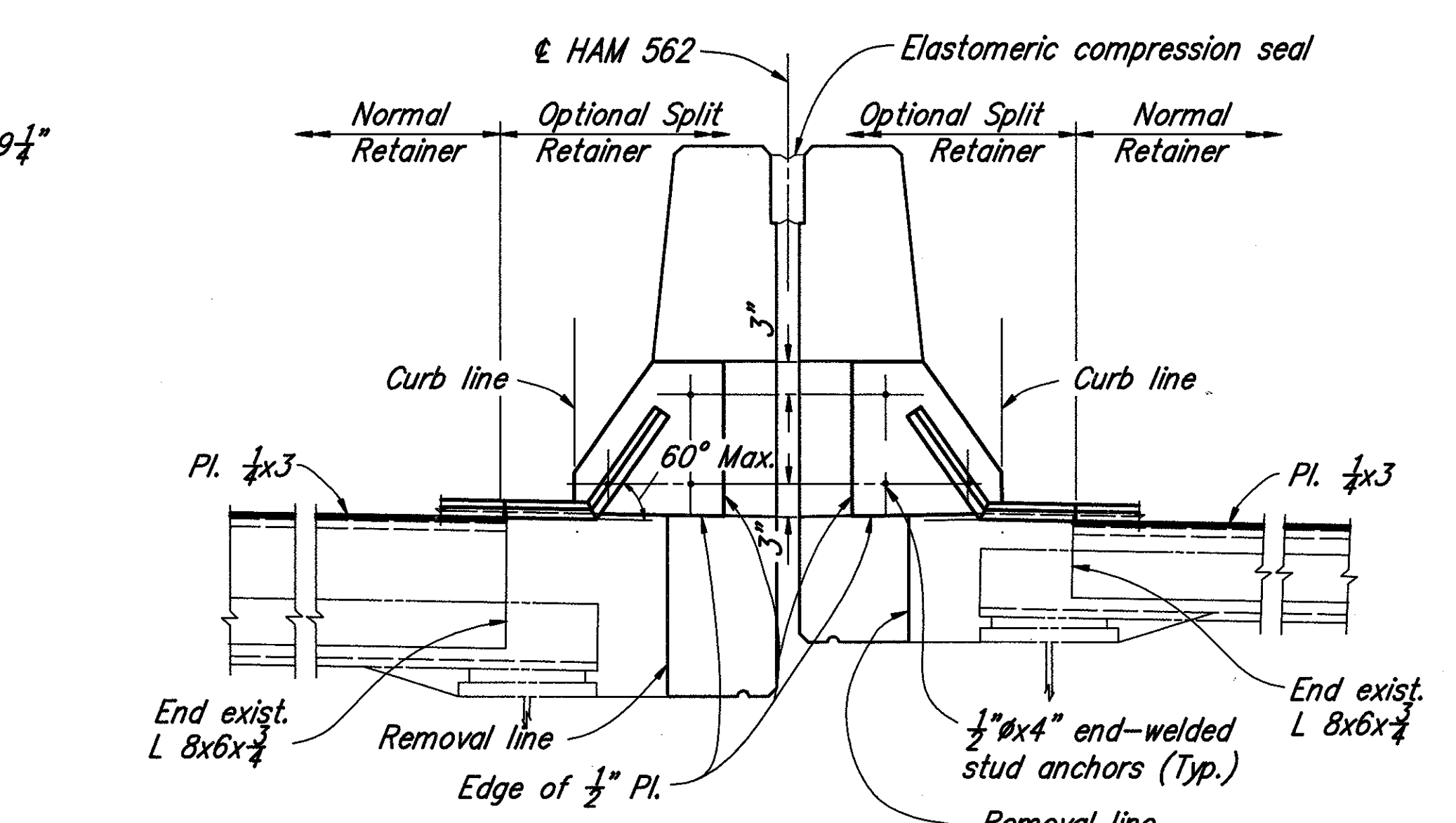
**SECTION A-A Removal**



**SECTION B-B Removal**



**SECTION E-E**



**SECTION F-F**

**NOTES**  
For Sections C-C and D-D see sheet 25/30  
For additional details see Standard Drawing EXJ-4-87.  
For steel retainer detail see sheet 23/30

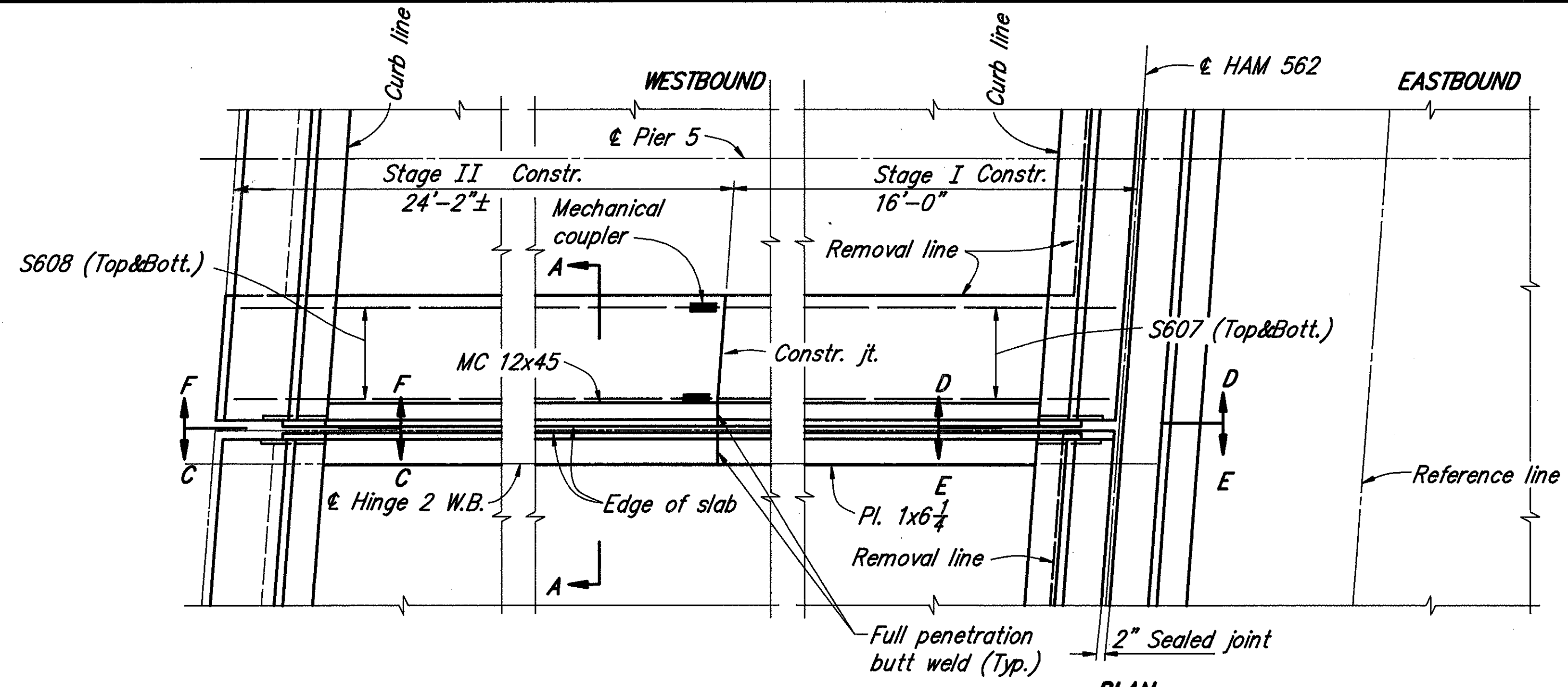
**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

**EXPANSION JOINT DETAILS AT HINGE 1-E.B. AND 1-W.B. BRIDGE NO. HAM-562-0147 OVER ROSS AVENUE AND CSX R.R.**

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	8/28/93	3/93	

9014EJ08 15 MAR 1993





PLAN

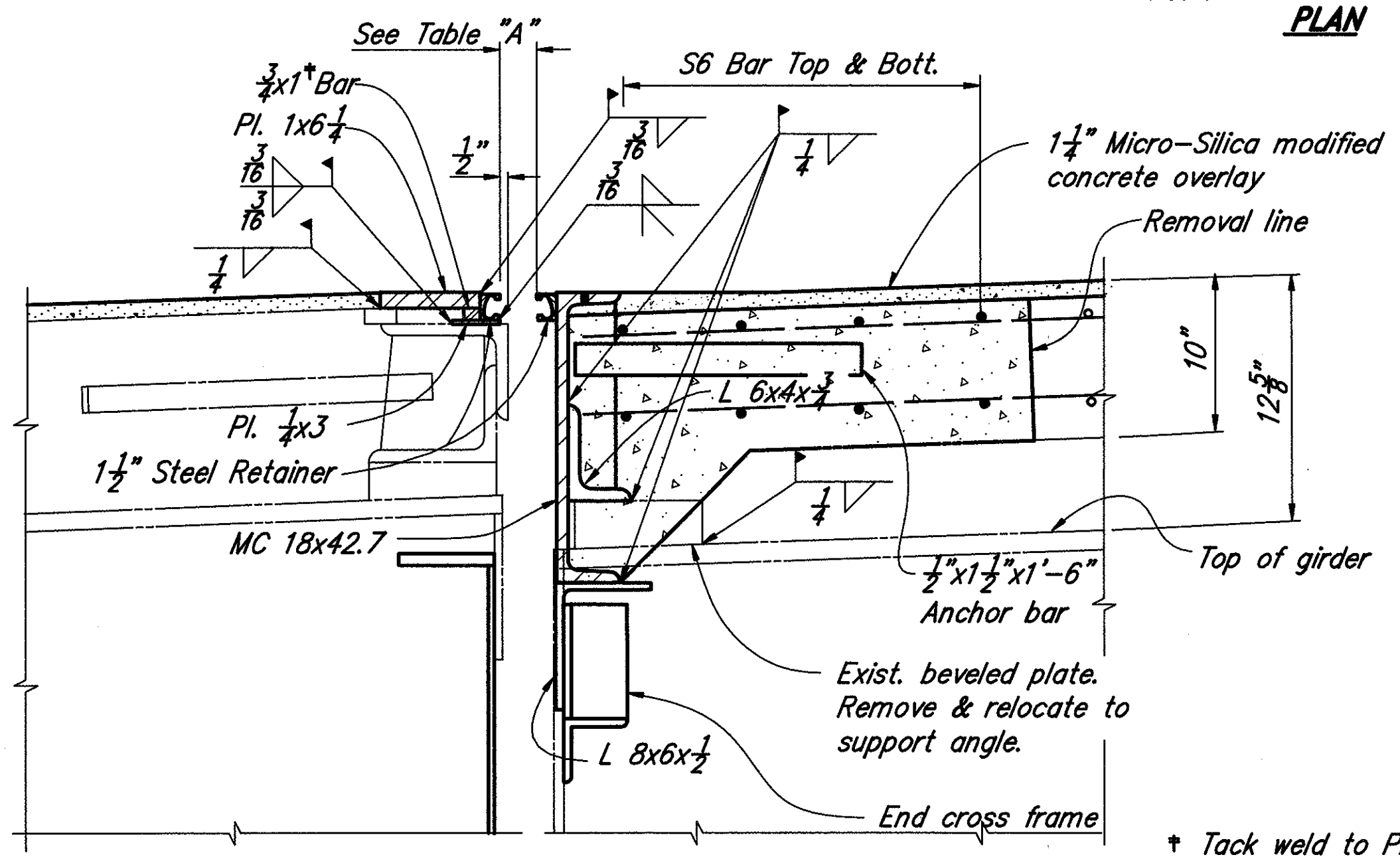
**STRIP SEAL GLAND TABLE**

SEAL MOVEMENT RATING	MANUFACTURER & DESIGNATION **		
	D.S. BROWN	STRUCTURAL ACCESSORIES	WATSON BOWMAN & ACME
5"	500A		SE-500

Notes: Compression seal to be installed in one piece  
\*\* or an approved alternate

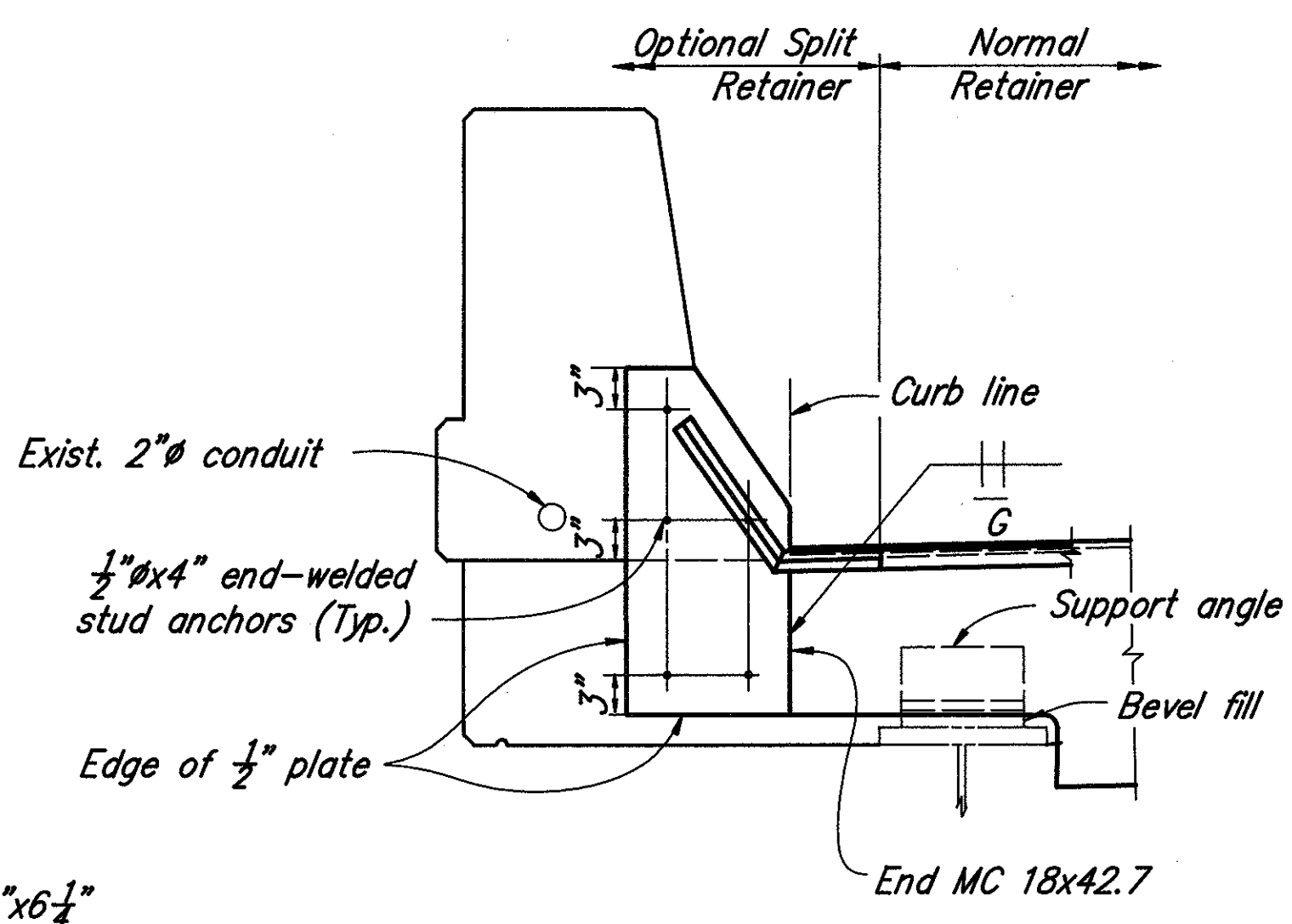
**TABLE A**

F <sup>o</sup>	Dimension A Westbound
90	1 9/16"
80	1 13/16"
70	2 1/16"
60	2 3/8"
50	2 5/8"
40	2 7/8"
30	3 1/8"

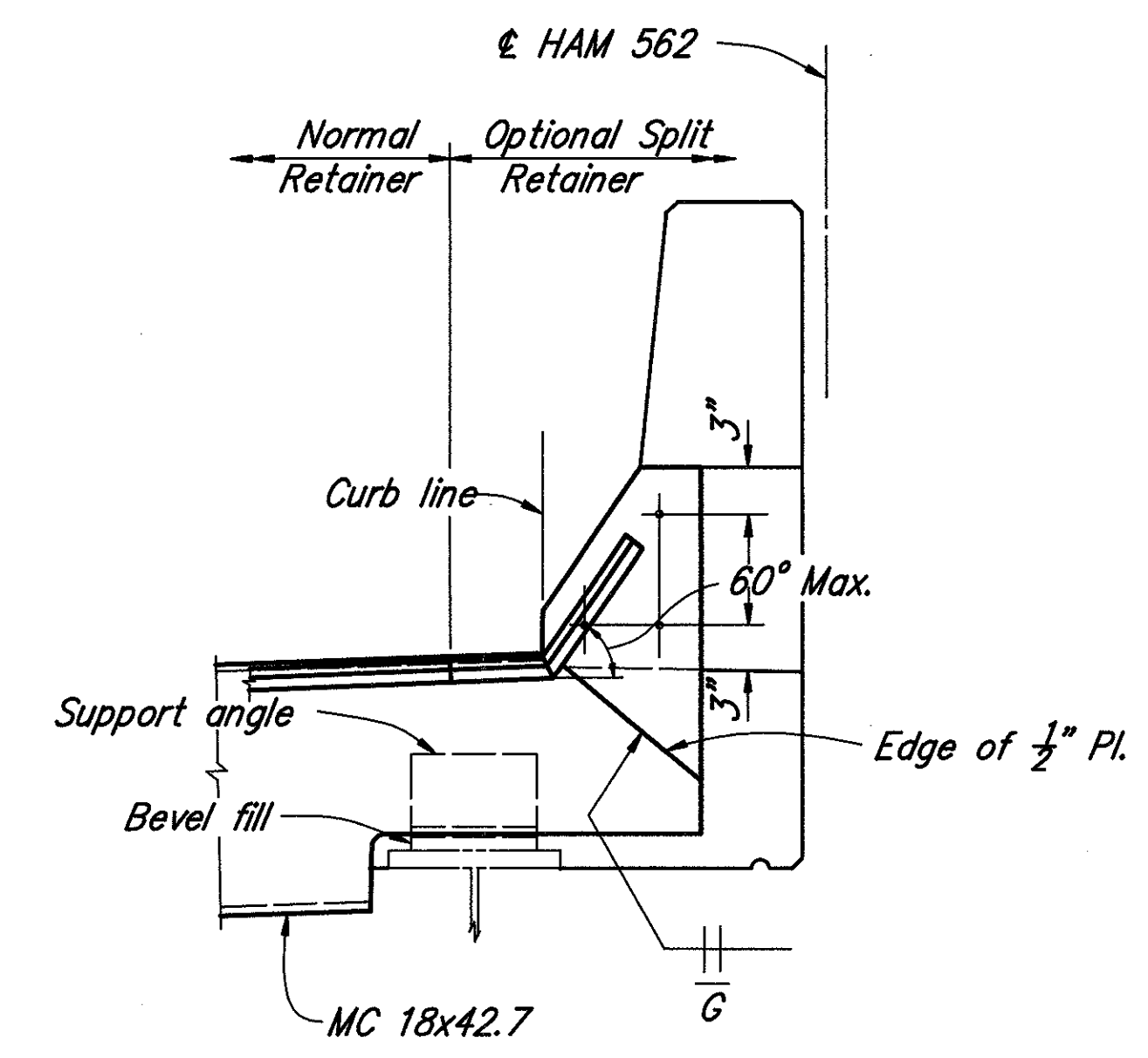


SECTION A-A

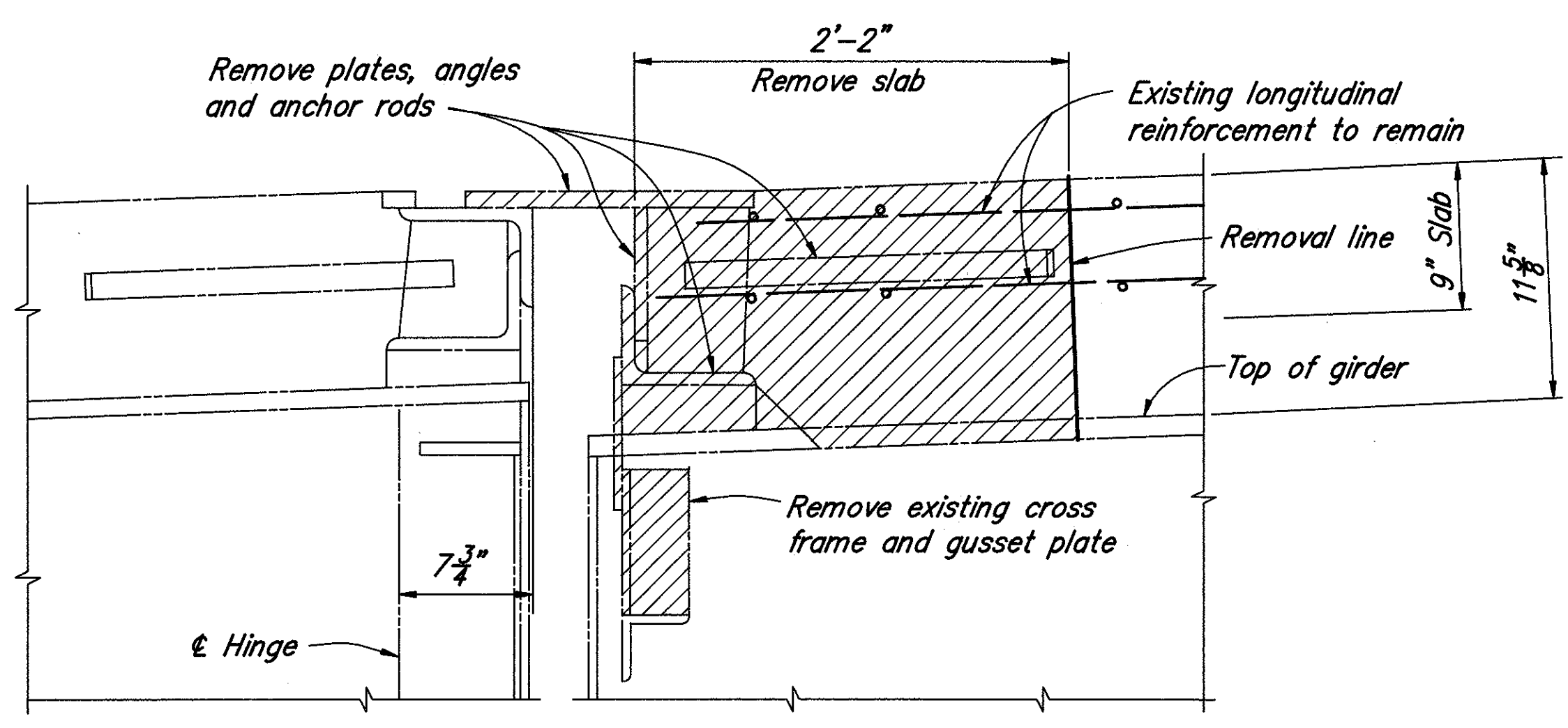
For information not shown see Section X-X sheet 2 of 5 Standard Drawing EXJ-4-87



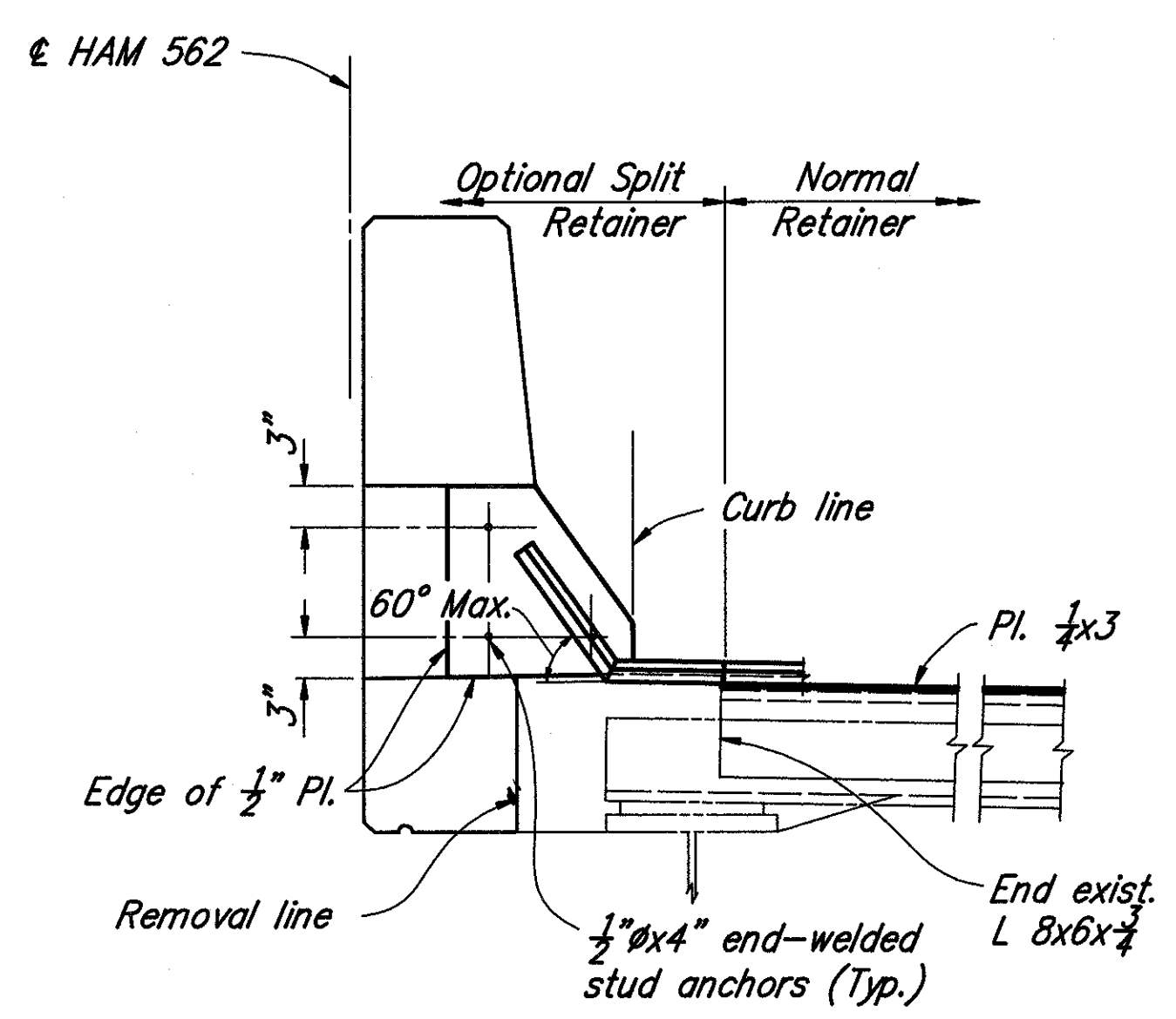
SECTION F-F



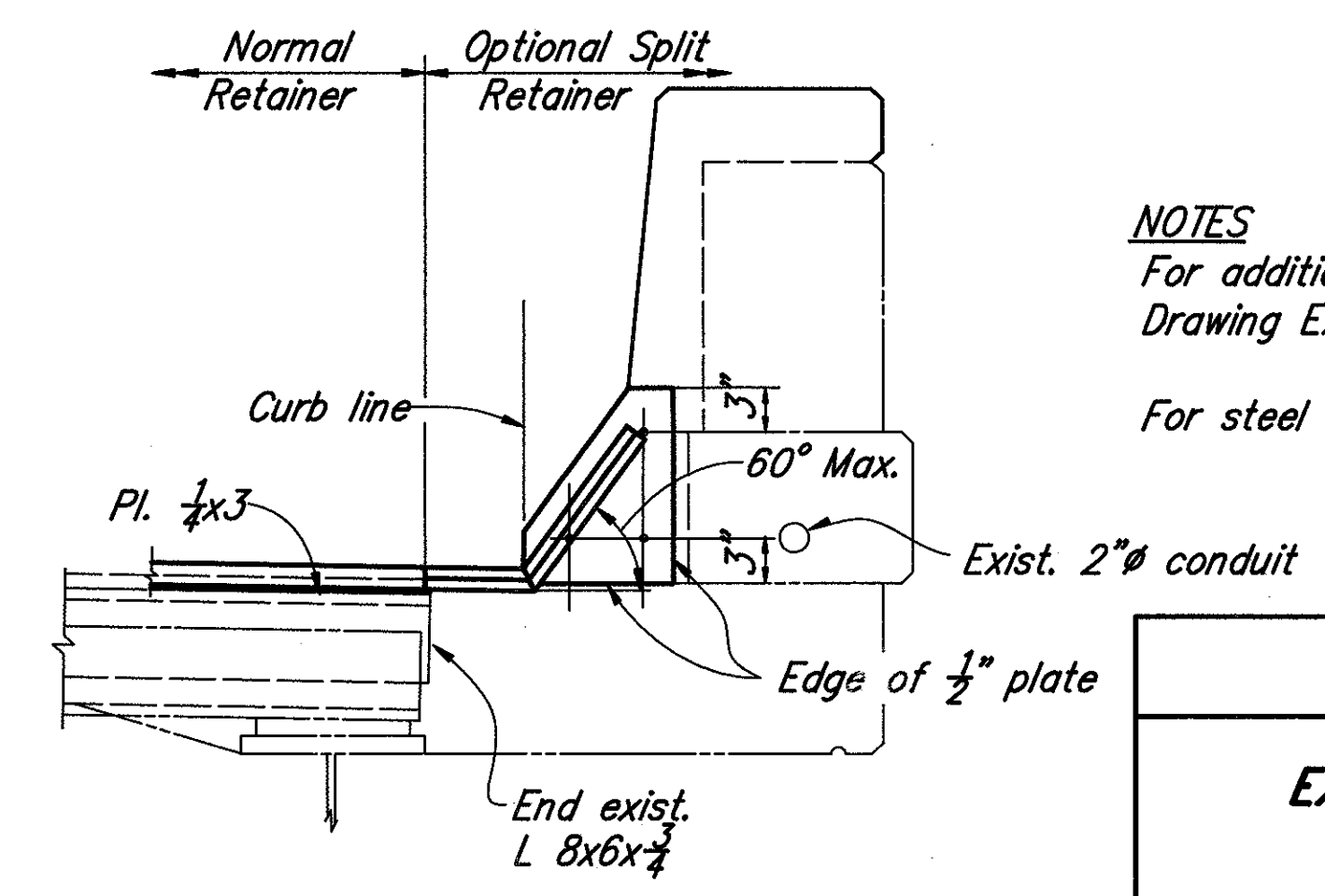
SECTION D-D



SECTION A-A Removal



SECTION E-E



SECTION C-C

NOTES  
For additional details see Standard Drawing EXJ-4-87.

For steel retainer detail see sheet 23/30

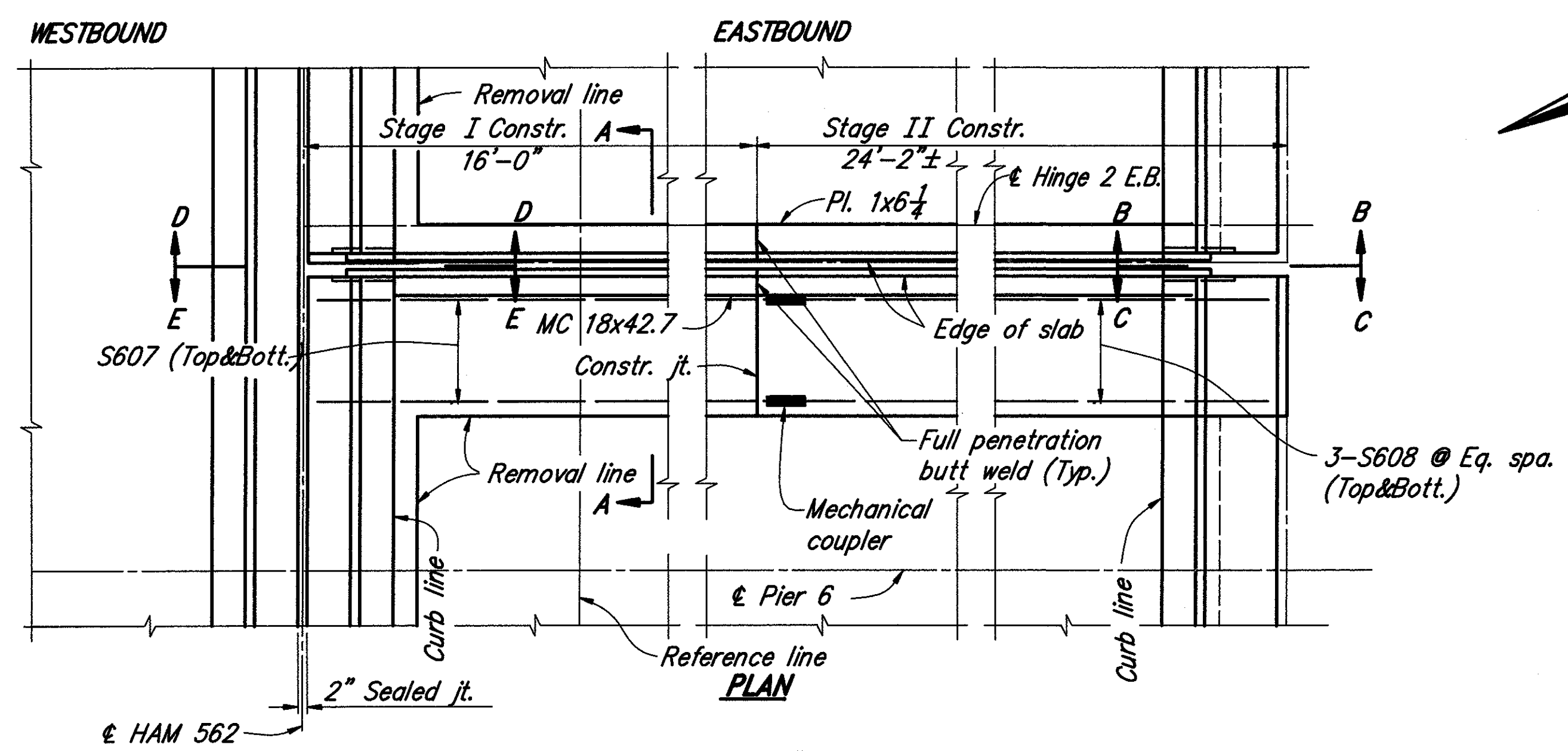
BALKE ENGINEERS  
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Cincinnati, Ohio 45237

**EXPANSION JOINT DETAILS AT HINGE 2-W.B.**  
BRIDGE NO. HAM-562-0147  
OVER ROSS AVENUE AND CSX R.R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDC	8/28/93	3/93	

9044E110 24 MAR 1993





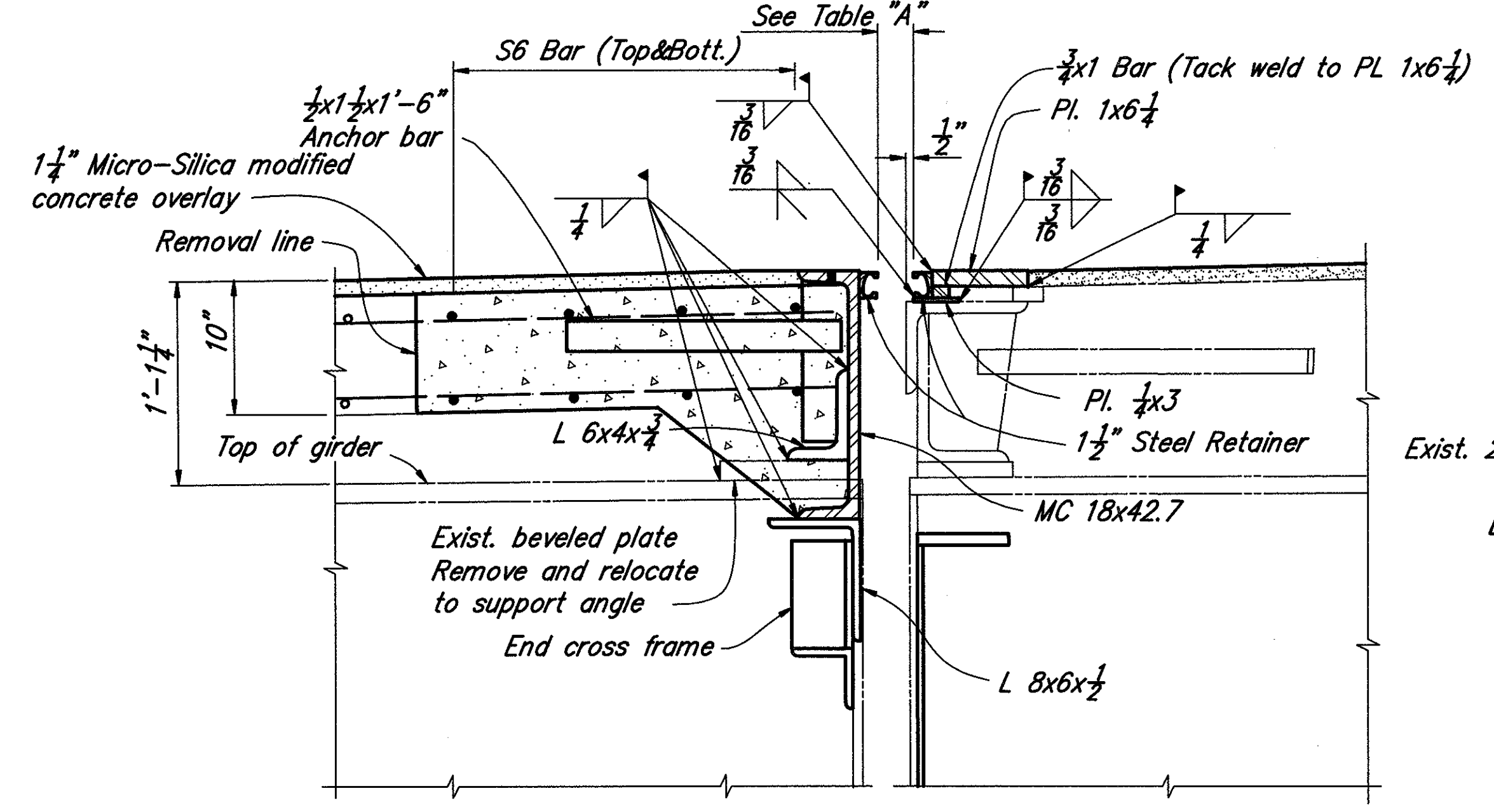
**STRIP SEAL GLAND TABLE**

SEAL MOVEMENT RATING	MANUFACTURER & DESIGNATION **		
	D.S. BROWN	STRUCTURAL ACCESSORIES	WATSON BOWMAN & ACME
5"	500A		SE-500

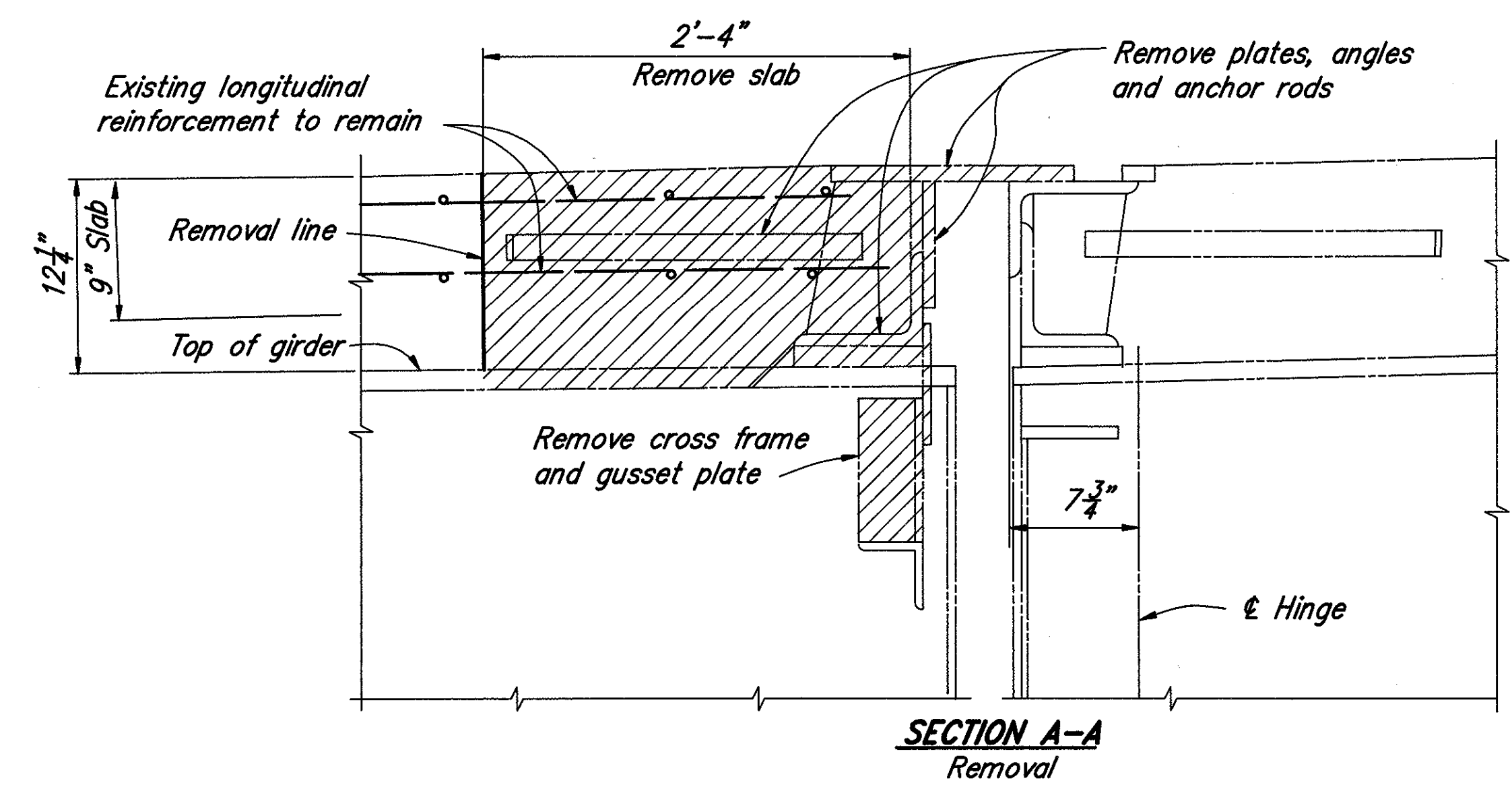
Notes: Compression seal to be installed in one piece \*\* or an approved alternate

**TABLE A**

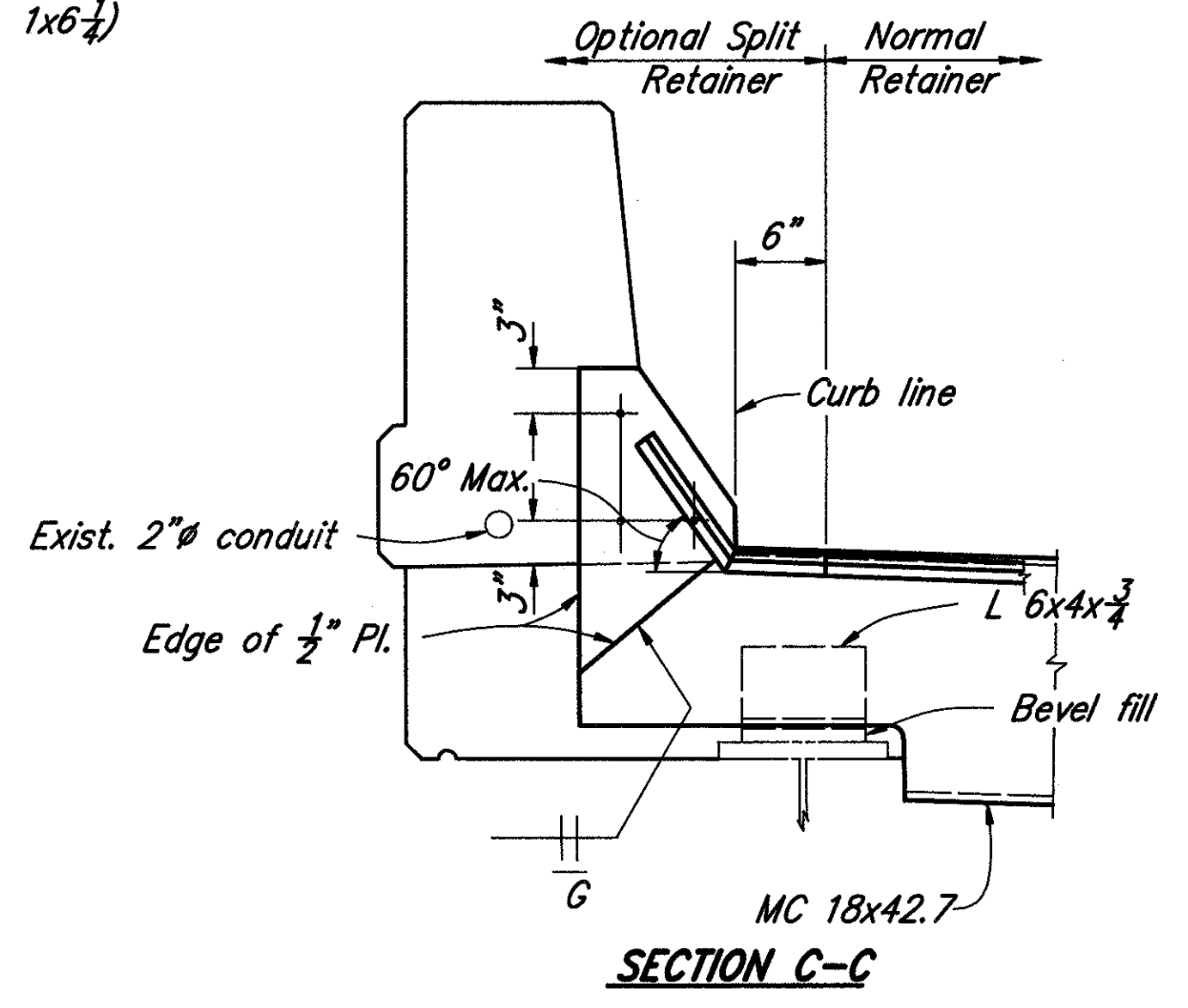
F°	Dimension A Eastbound
90	1 9/16"
80	1 13/16"
70	2 1/16"
60	2 3/8"
50	2 5/8"
40	2 7/8"
30	-3 3/16"



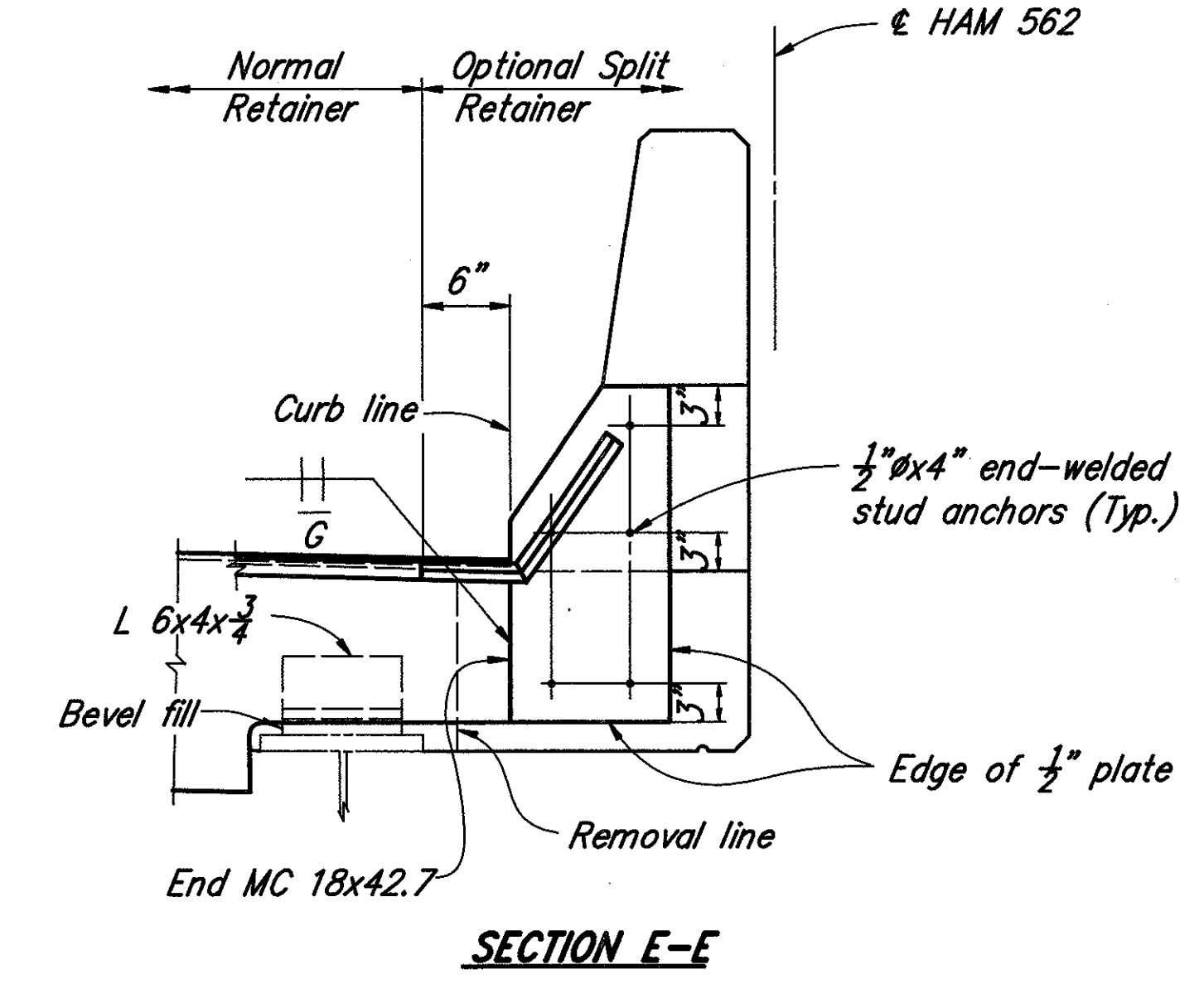
**SECTION A-A**  
For information not shown see Section X-X sheet 2 of 5 Standard Drawing EXJ-4-87



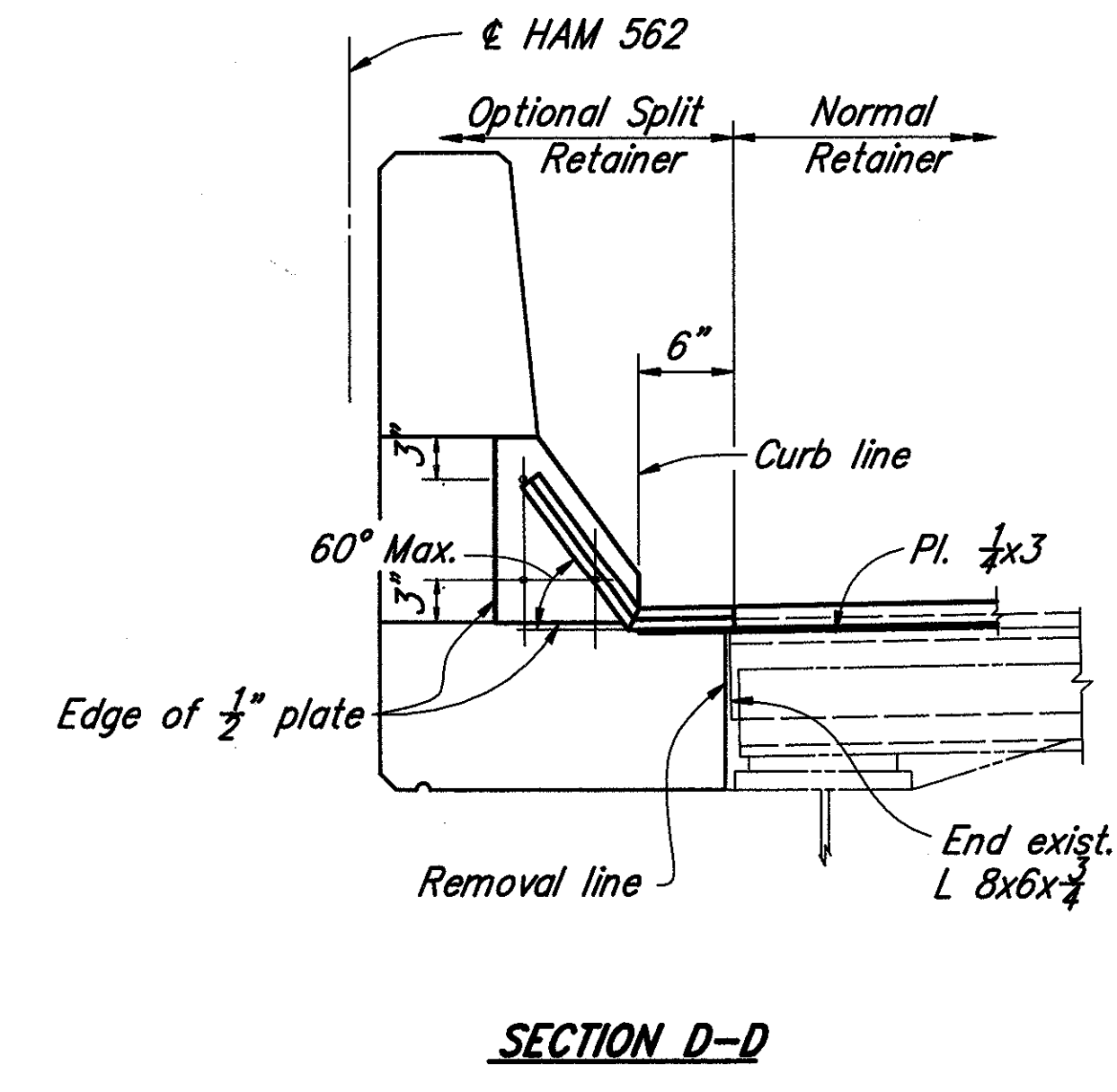
**SECTION A-A Removal**



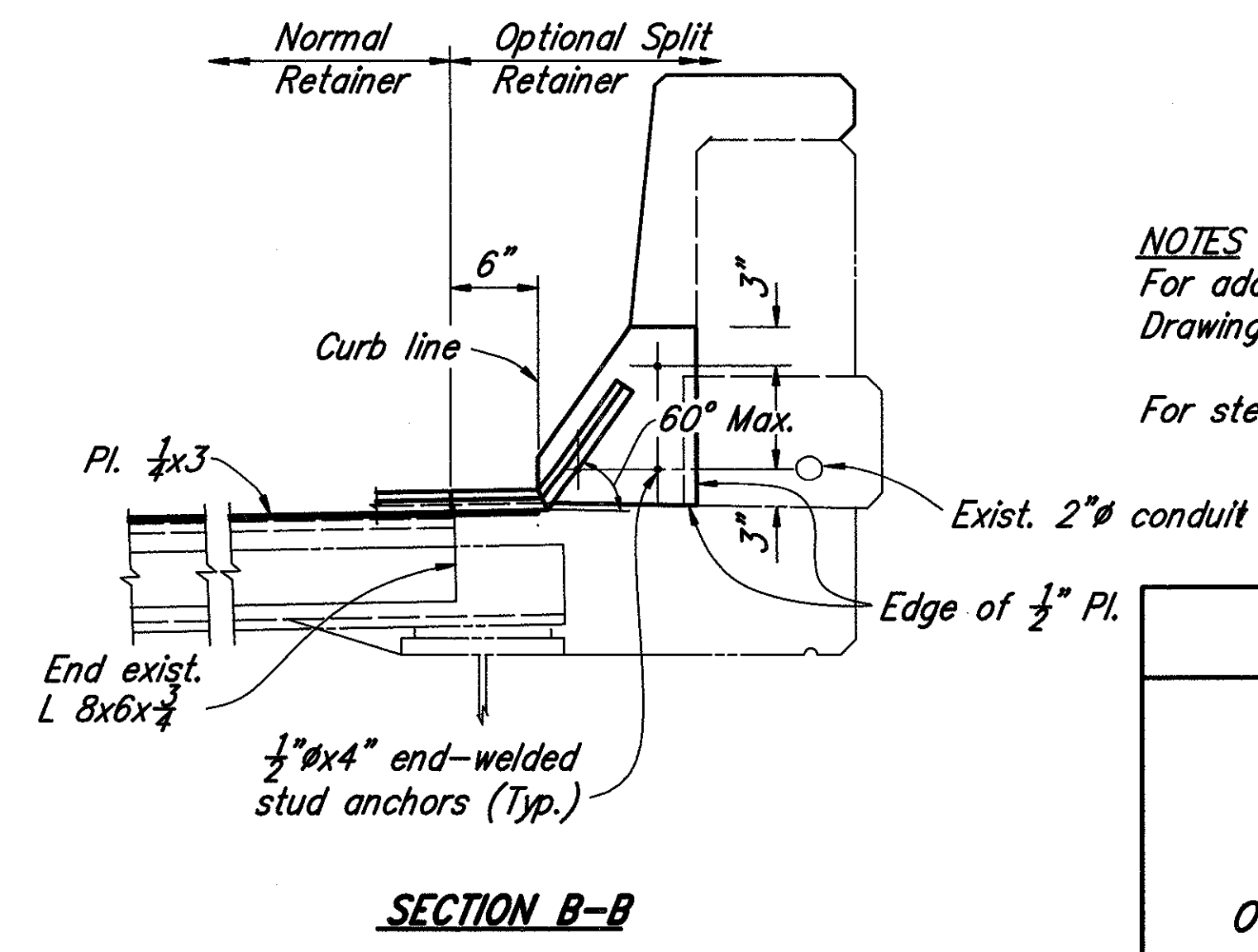
**SECTION C-C**



**SECTION E-E**



**SECTION D-D**



**SECTION B-B**

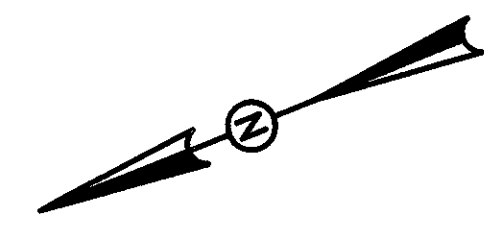
**NOTES**  
For additional details see Standard Drawing EXJ-4-87.  
For steel retainer detail see sheet 23/30

**BALKE ENGINEERS**  
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**EXPANSION JOINT DETAILS AT HINGE 2-E.B.**  
BRIDGE NO. HAM-562-0147  
OVER ROSS AVENUE AND CSX R.R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	BRP	3/93	

80145J1 18 MAR 1993



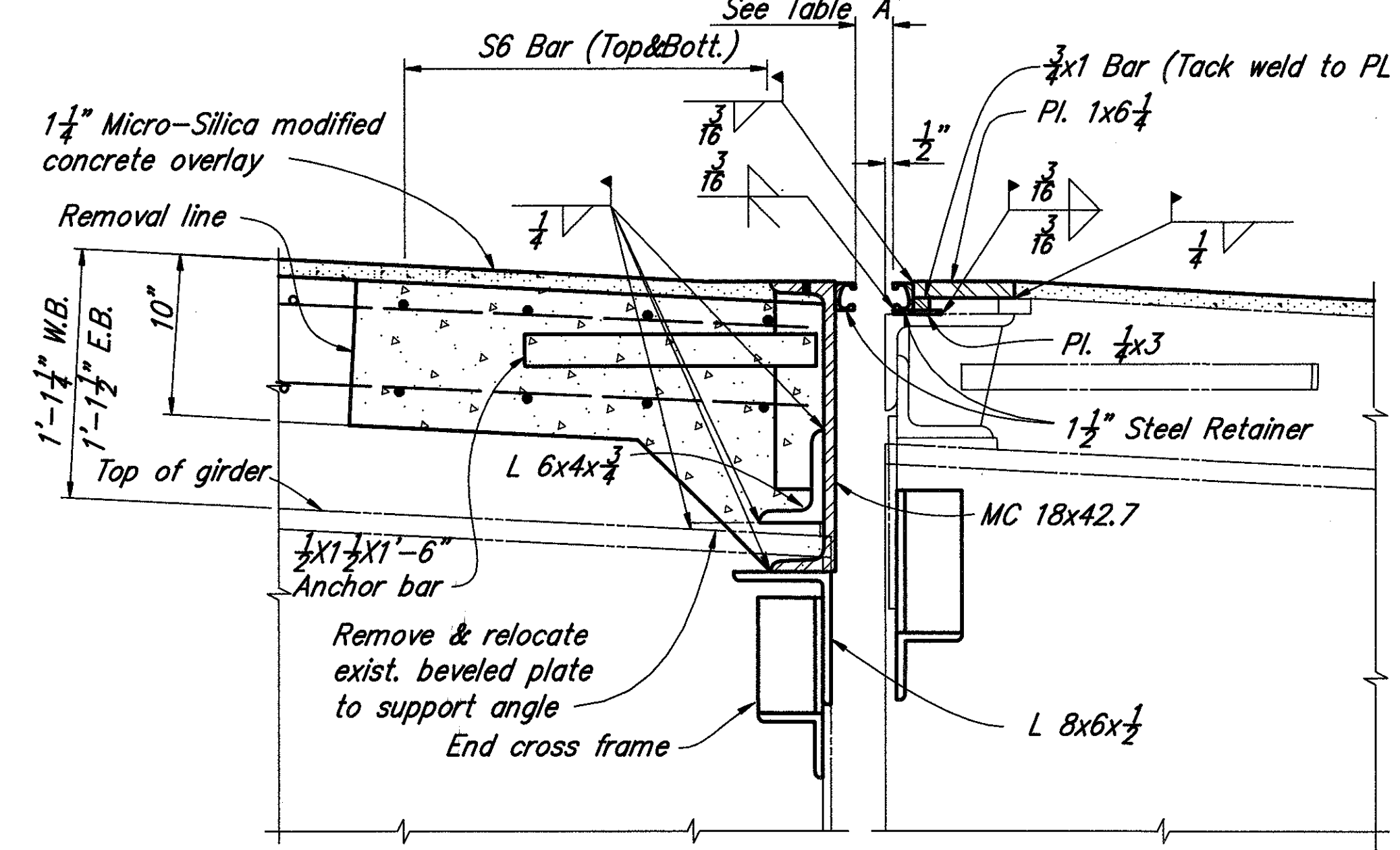
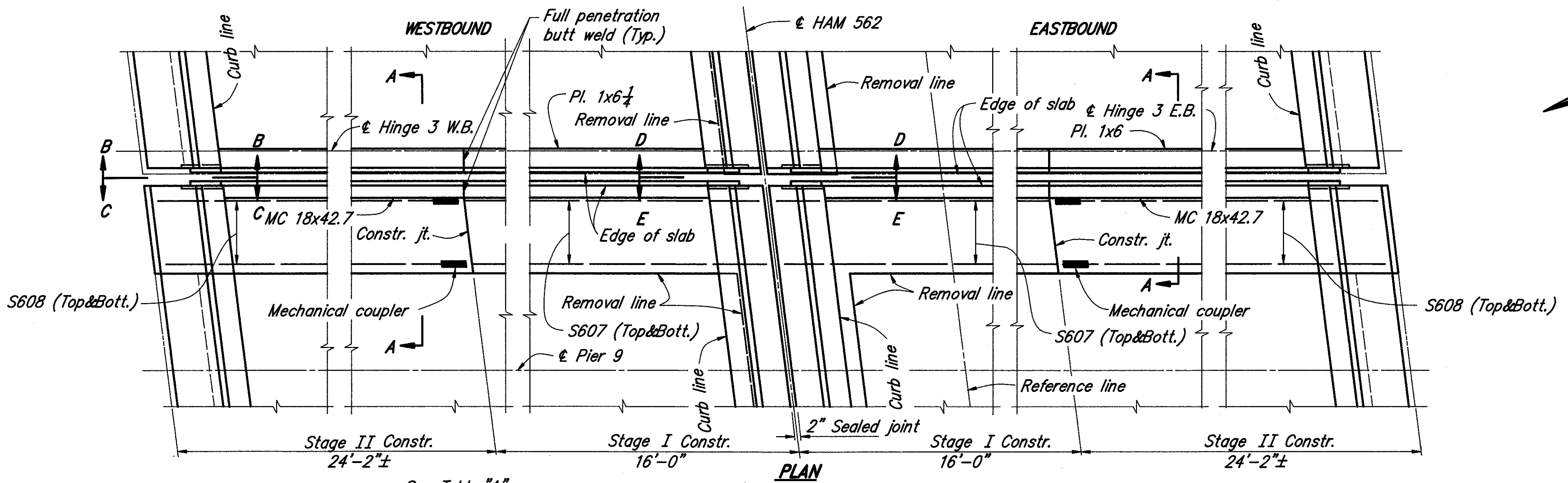
**TABLE A**

F <sup>o</sup>	Dimension A	
	Westbound	Eastbound
90	1 1/2"	1 1/2"
80	1 3/4"	1 3/4"
70	2 1/16"	2 1/16"
60	2 5/16"	2 5/16"
50	2 5/8"	2 5/8"
40	2 7/8"	2 7/8"
30	3 3/16"	3 3/16"

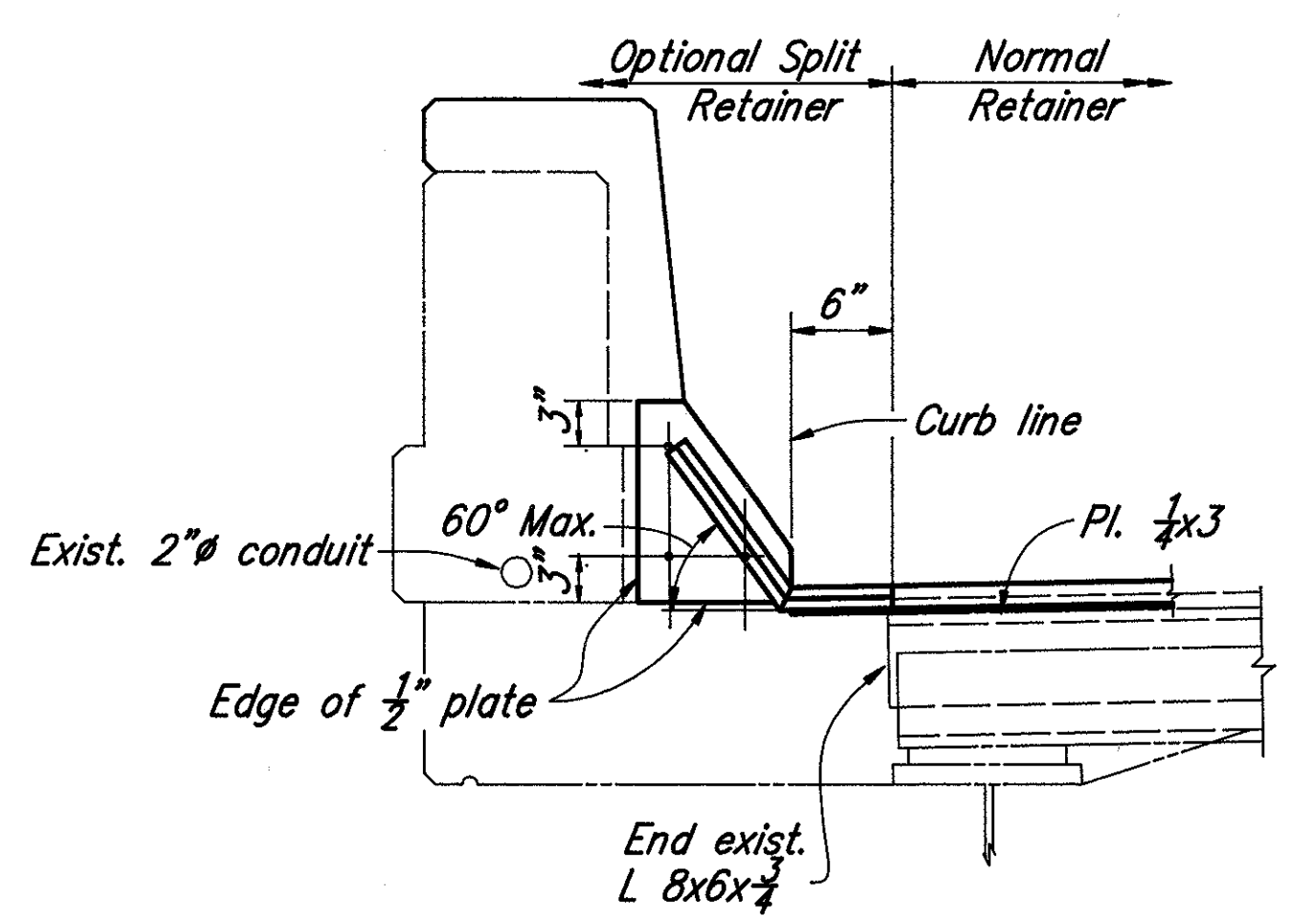
**STRIP SEAL GLAND TABLE**

SEAL MOVEMENT RATING	MANUFACTURER & DESIGNATION **		
	D.S. BROWN	STRUCTURAL ACCESSORIES	WATSON BOWMAN & ACME
5"	500A		SE-500

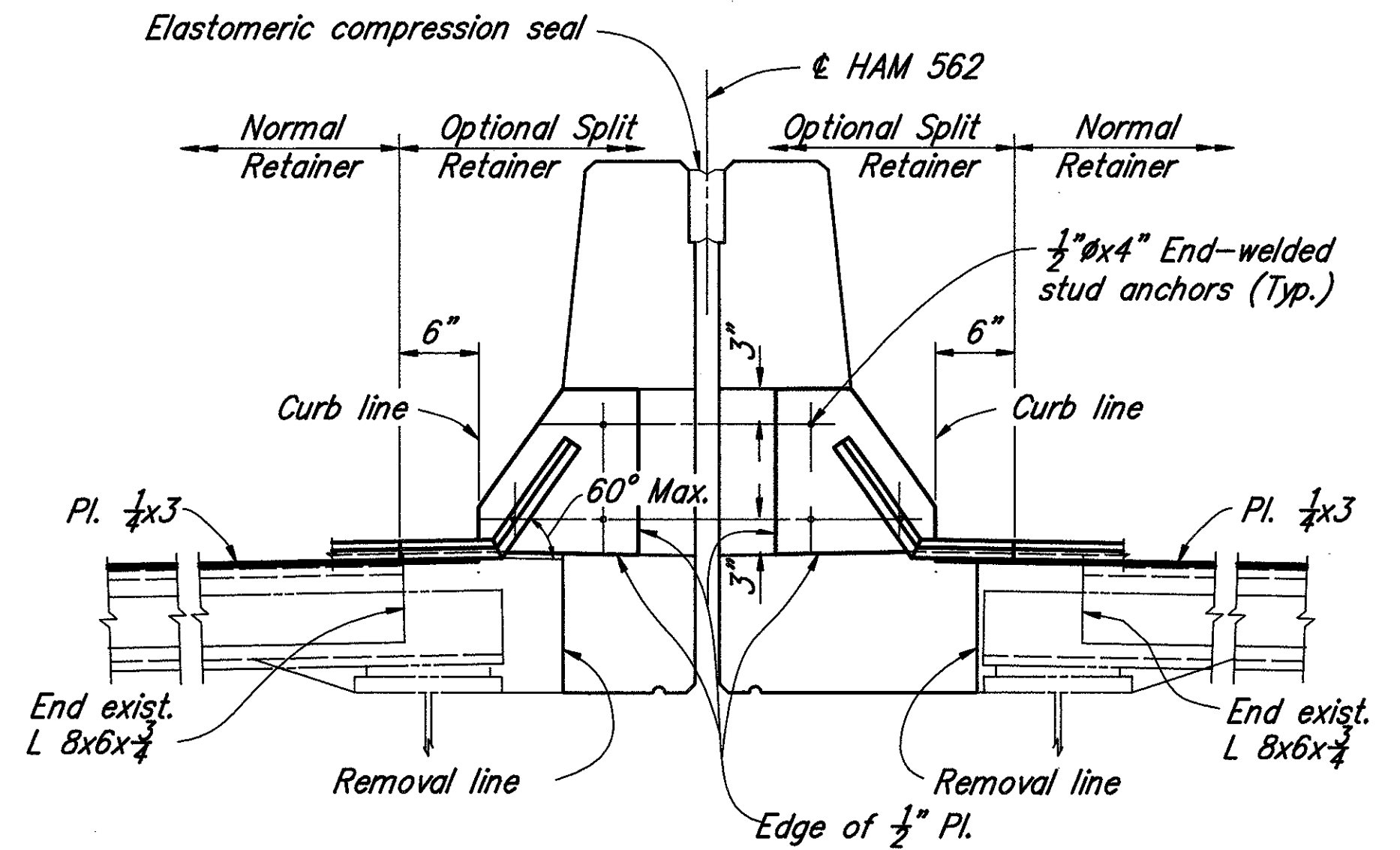
Notes: Compression seal to be installed in one piece  
\*\* or an approved alternate



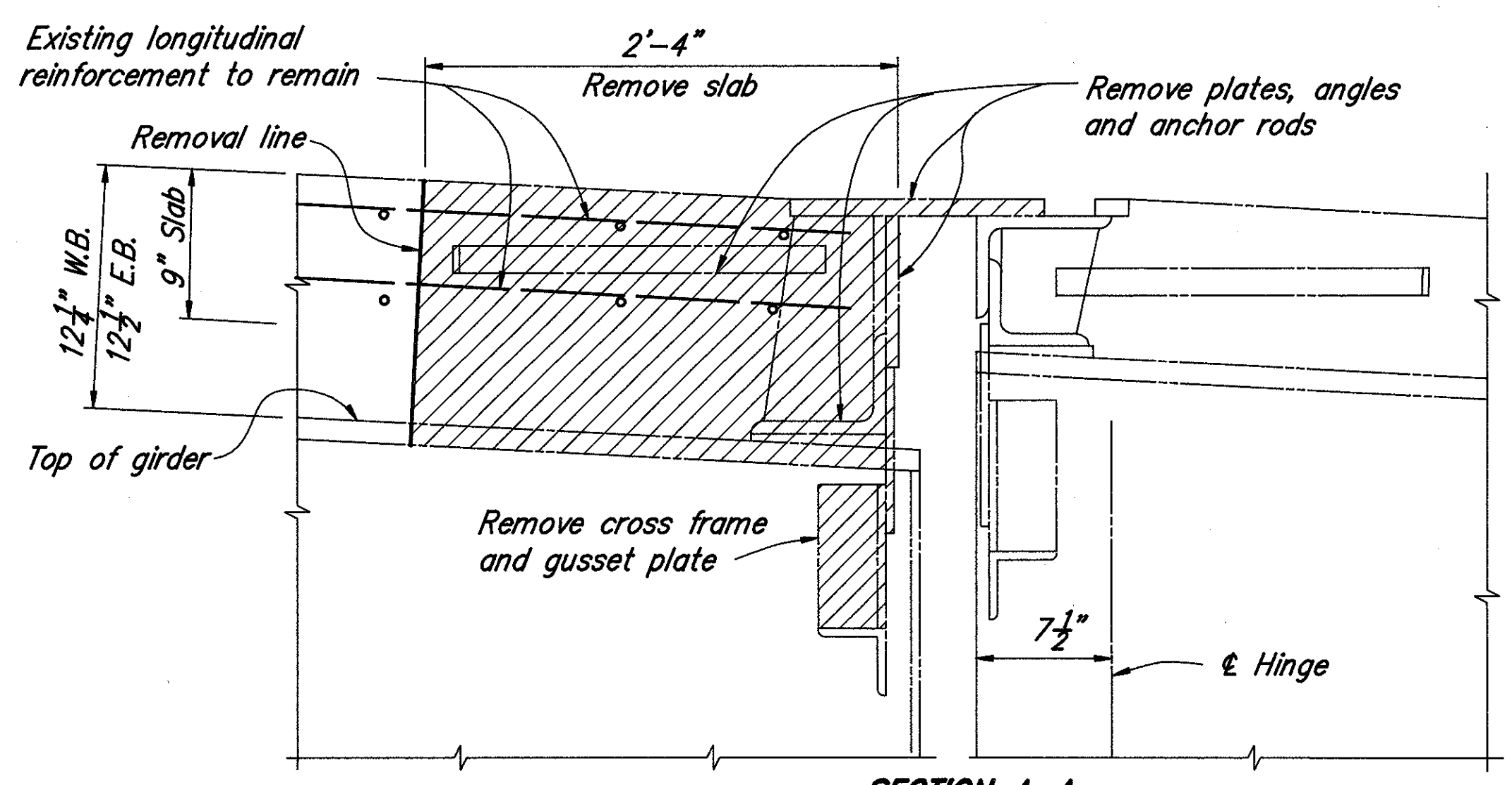
**SECTION A-A**  
For information not shown  
see Section X-X sheet 2 of 5  
Standard Drawing EXJ-4-87



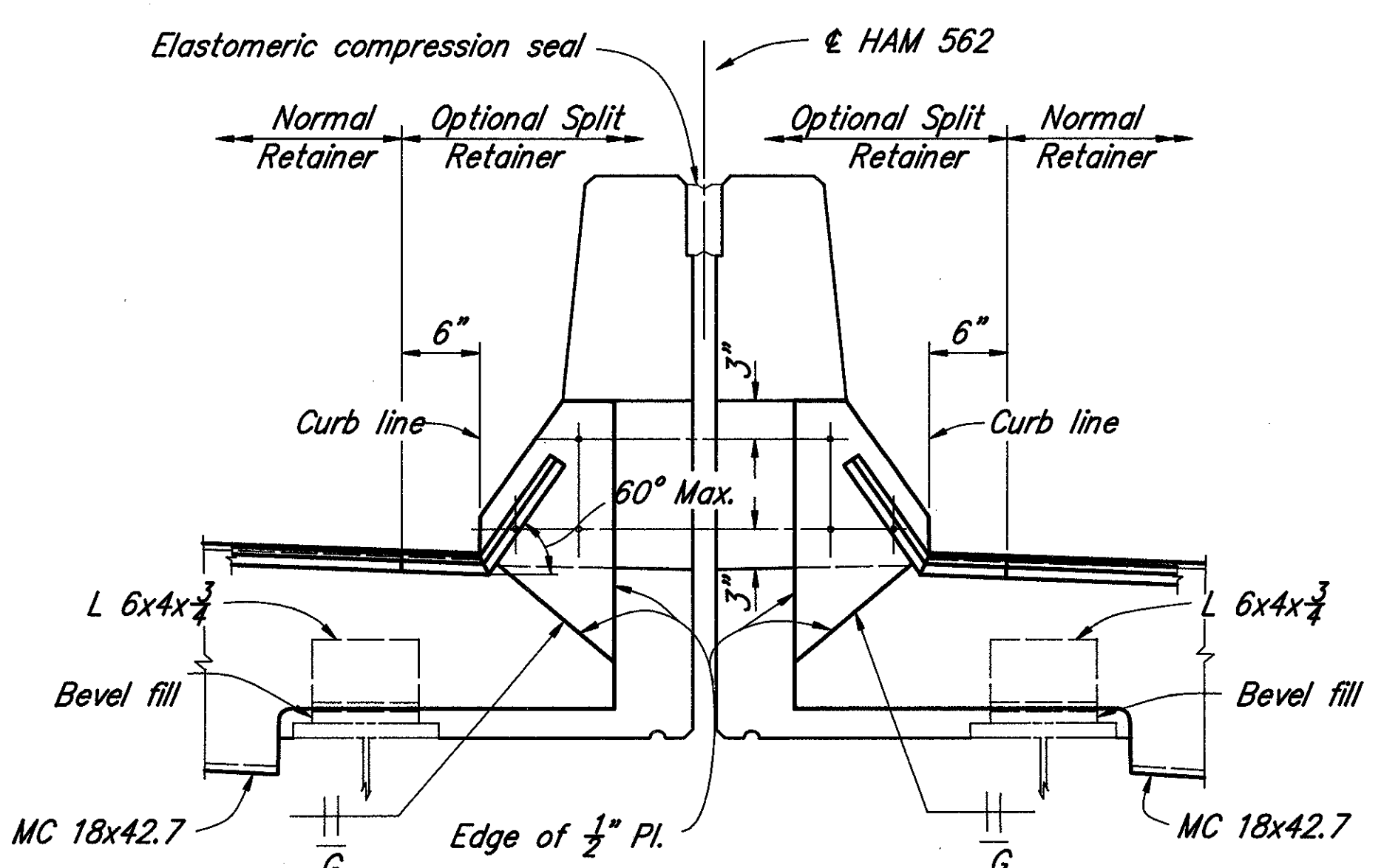
**SECTION B-B**



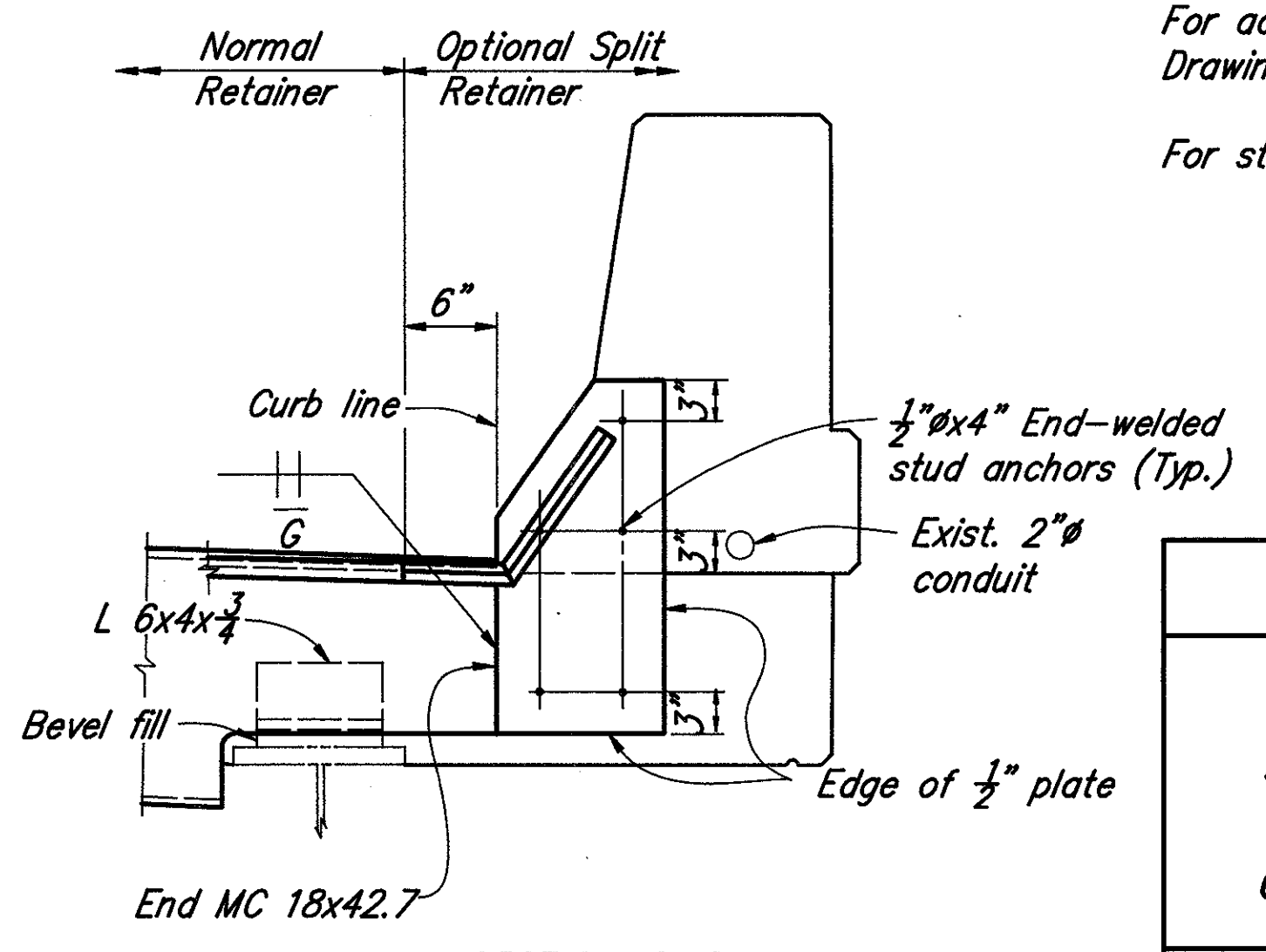
**SECTION D-D**



**SECTION A-A**  
Removal



**SECTION E-E**



**SECTION C-C**

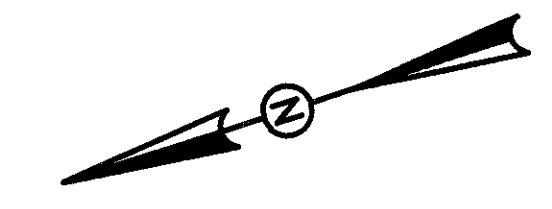
**NOTES**  
For additional details see Standard Drawing EXJ-4-87.  
For steel retainer detail see sheet 23/30

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

**EXPANSION JOINT DETAILS  
AT HINGE 3 E.B. AND 3 W.B.  
BRIDGE NO. HAM-562-0147  
OVER ROSS AVENUE AND CSX R.R.**

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	BRP	3/93	

904E-172 24 MAR 1993



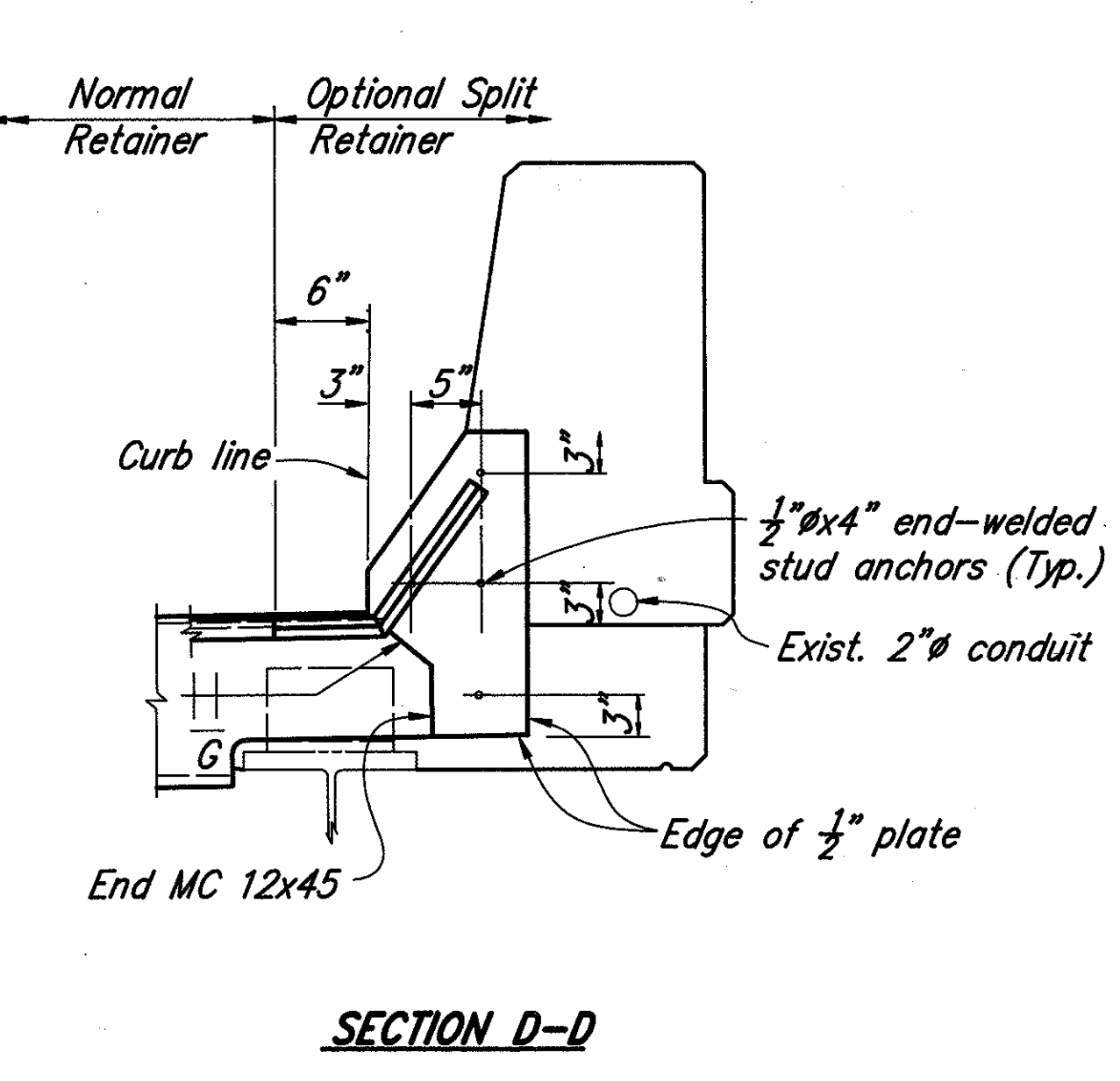
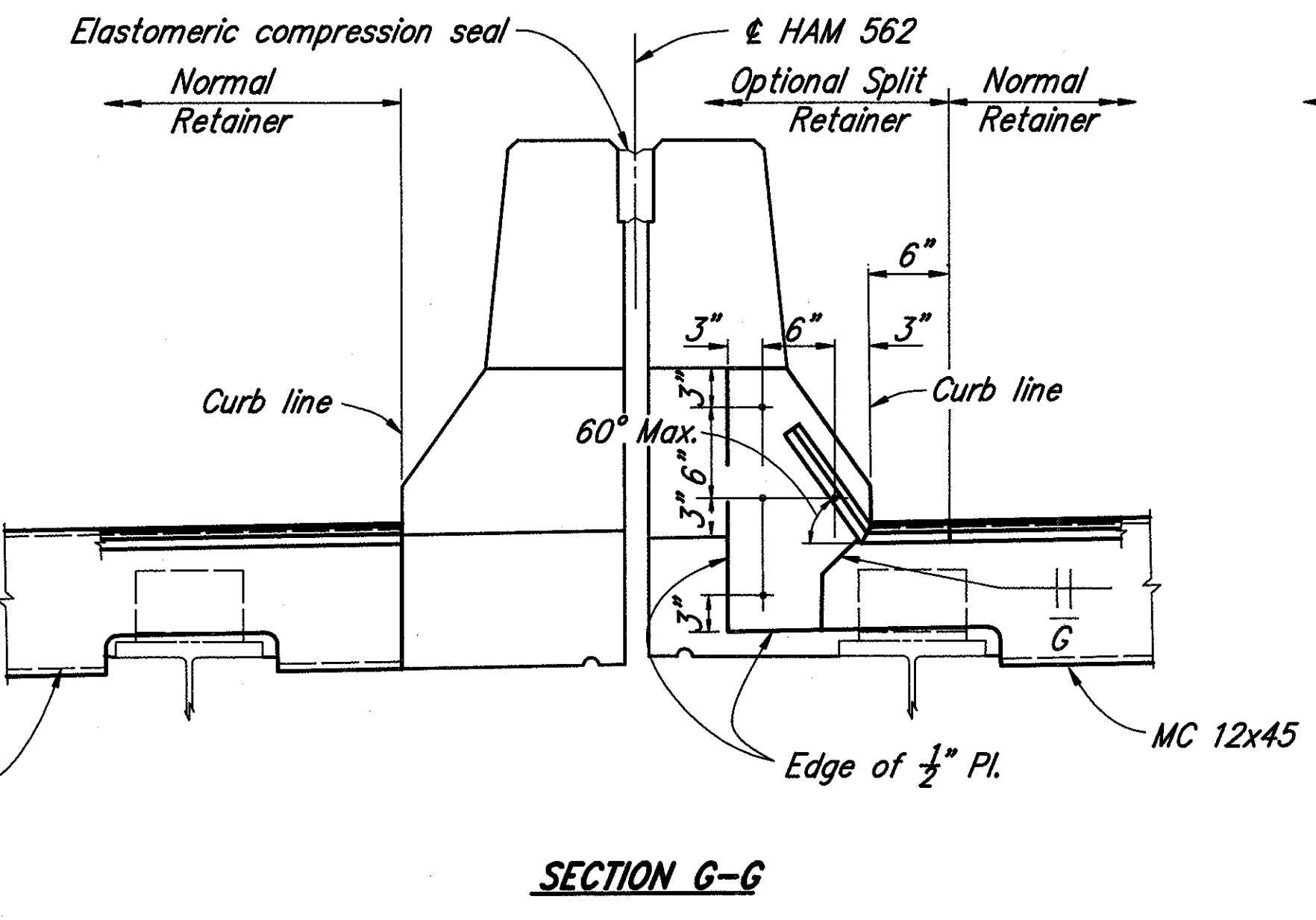
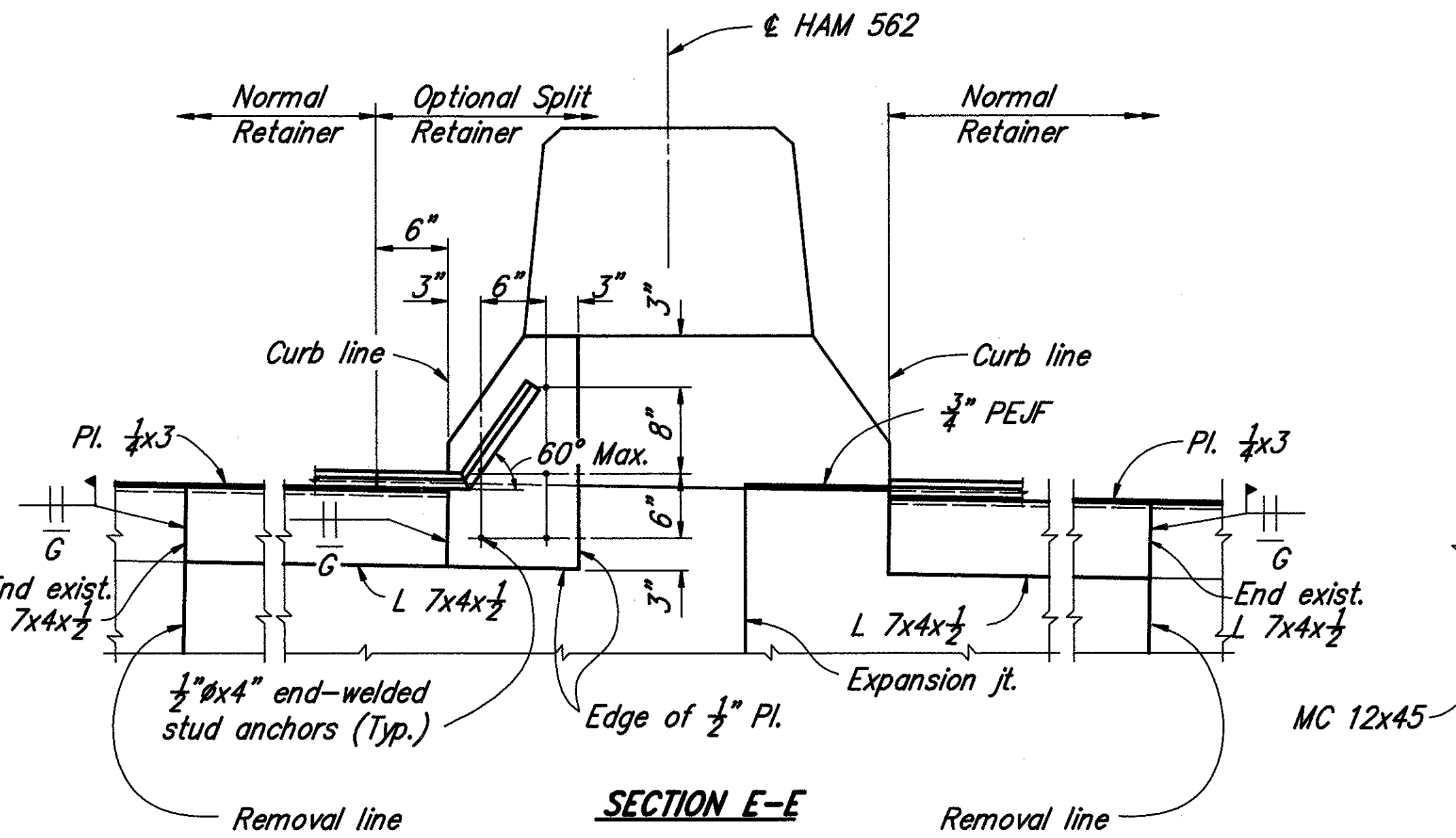
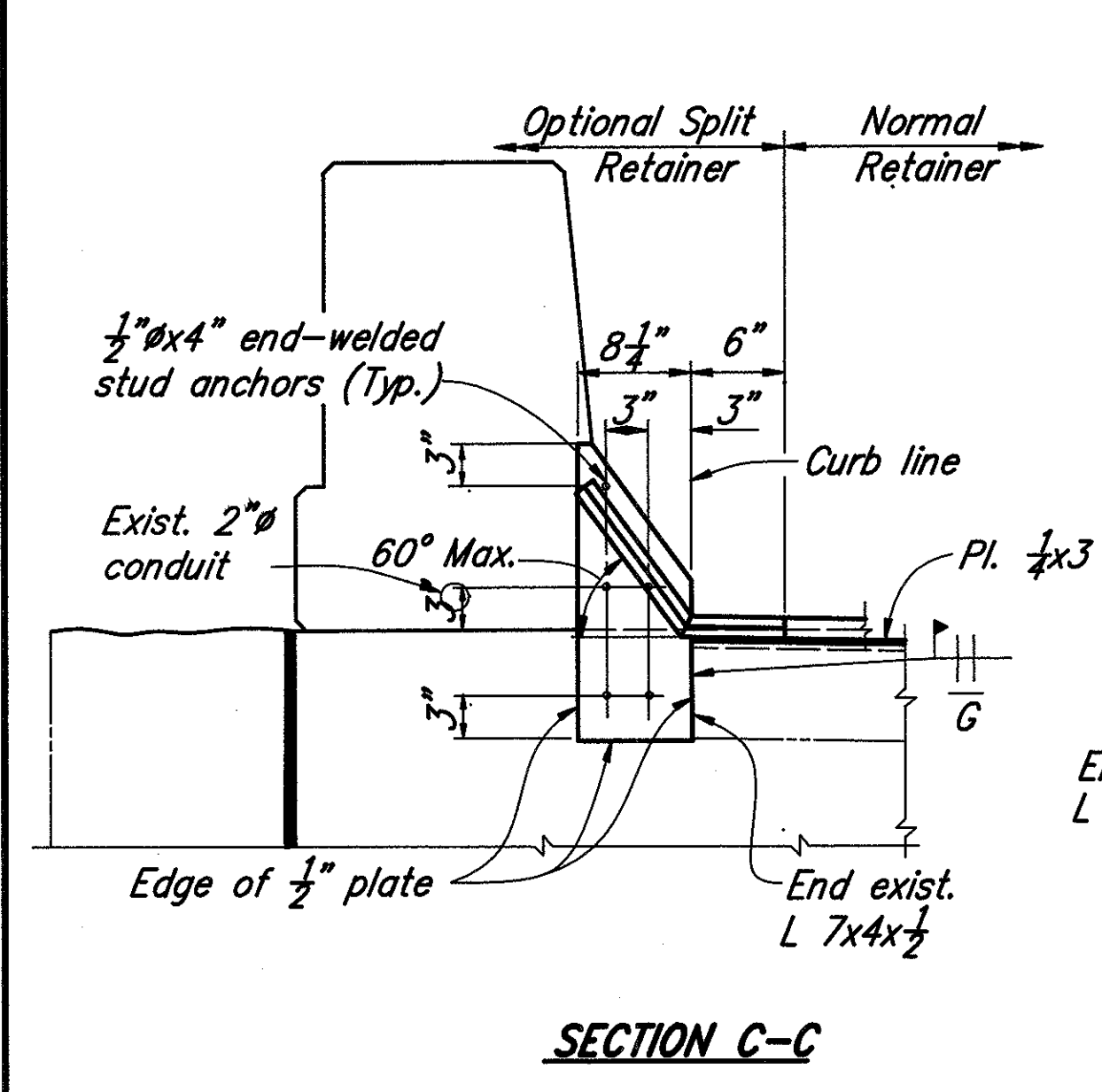
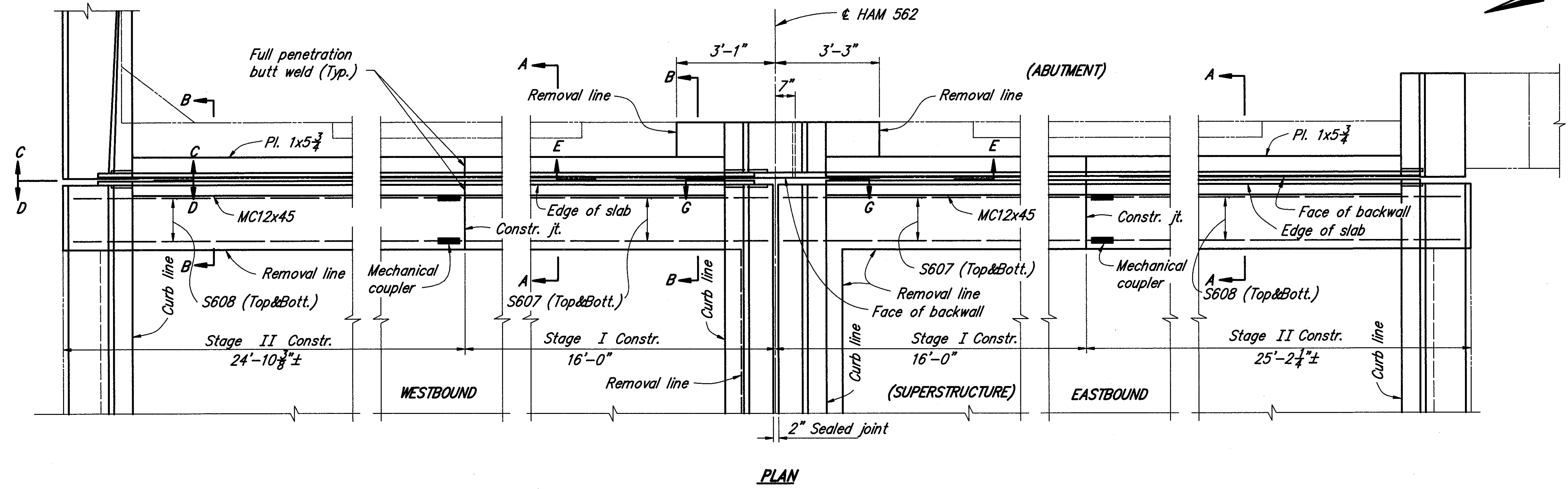
**STRIP SEAL GLAND TABLE**

SEAL MOVEMENT RATING	MANUFACTURER & DESIGNATION *		
	D.S. BROWN	STRUCTURAL ACCESSORIES	WATSON BOWMAN & ACME
3"	300A		SE-300

Notes: Compression seal to be installed in one piece  
\*\* or an approved alternate

**TABLE A**

F°	Dimension A	
	Westbound	Eastbound
90		
80		
70		
60	1 1/2"	1 1/2"
50	1 11/16"	1 11/16"
40	1 13/16"	1 13/16"
30	2"	2"



**NOTES**  
For Sections A-A and B-B see sheet 23/30  
For additional details see Standard Drawing EXJ-4-87  
For location of Sections C-C, D-D, and E-E see this sheet and sheet 23/30

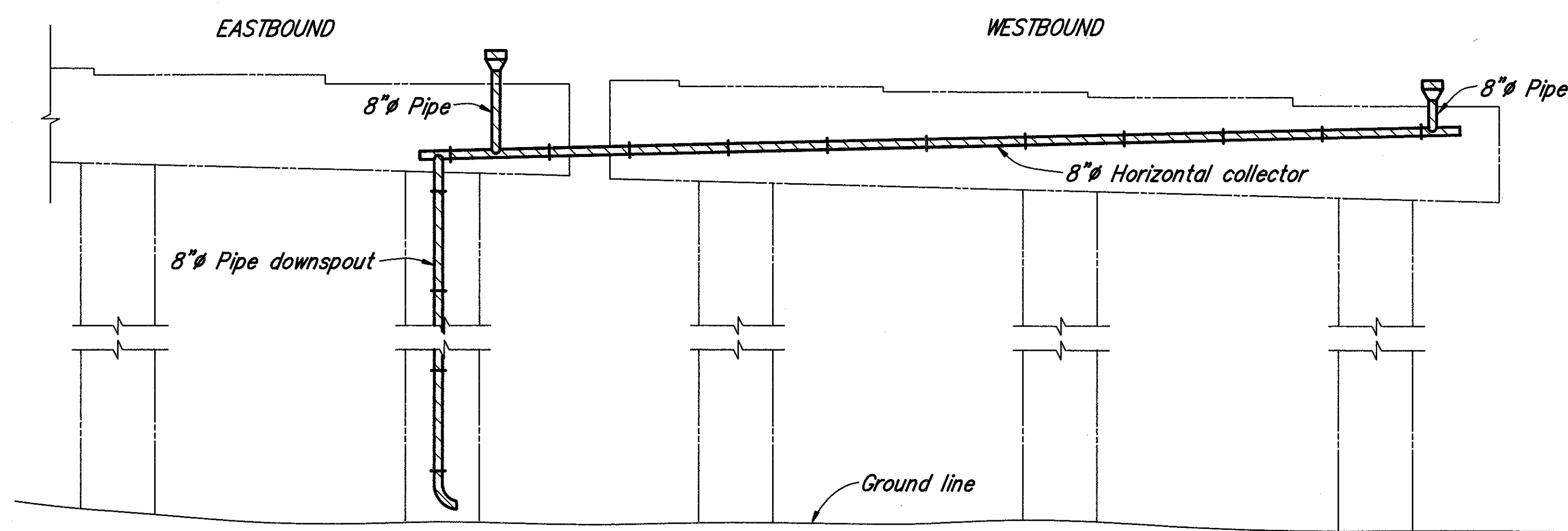
**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

**EXPANSION JOINT DETAILS AT ABUTMENT NO. 2**  
BRIDGE NO. HAM-562-0147  
OVER ROSS AVENUE AND CSX R.R.

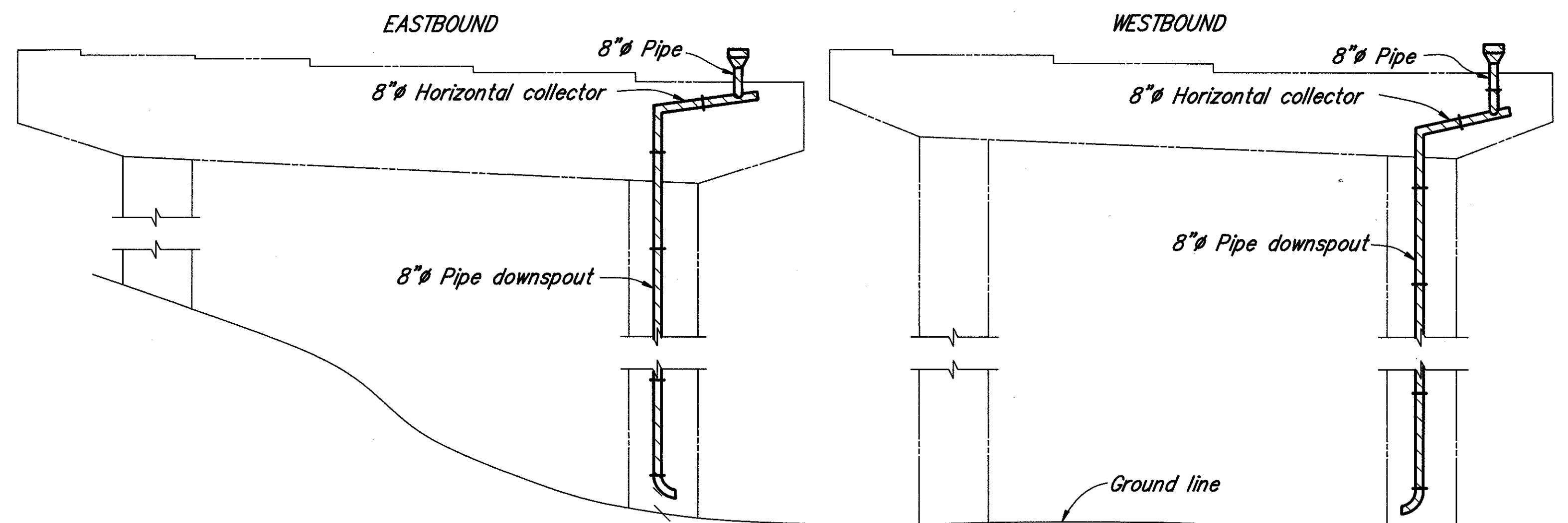
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MRS	ALT	~	VDG	8/93	3/93	

9014EJOB 18 MAR 1993

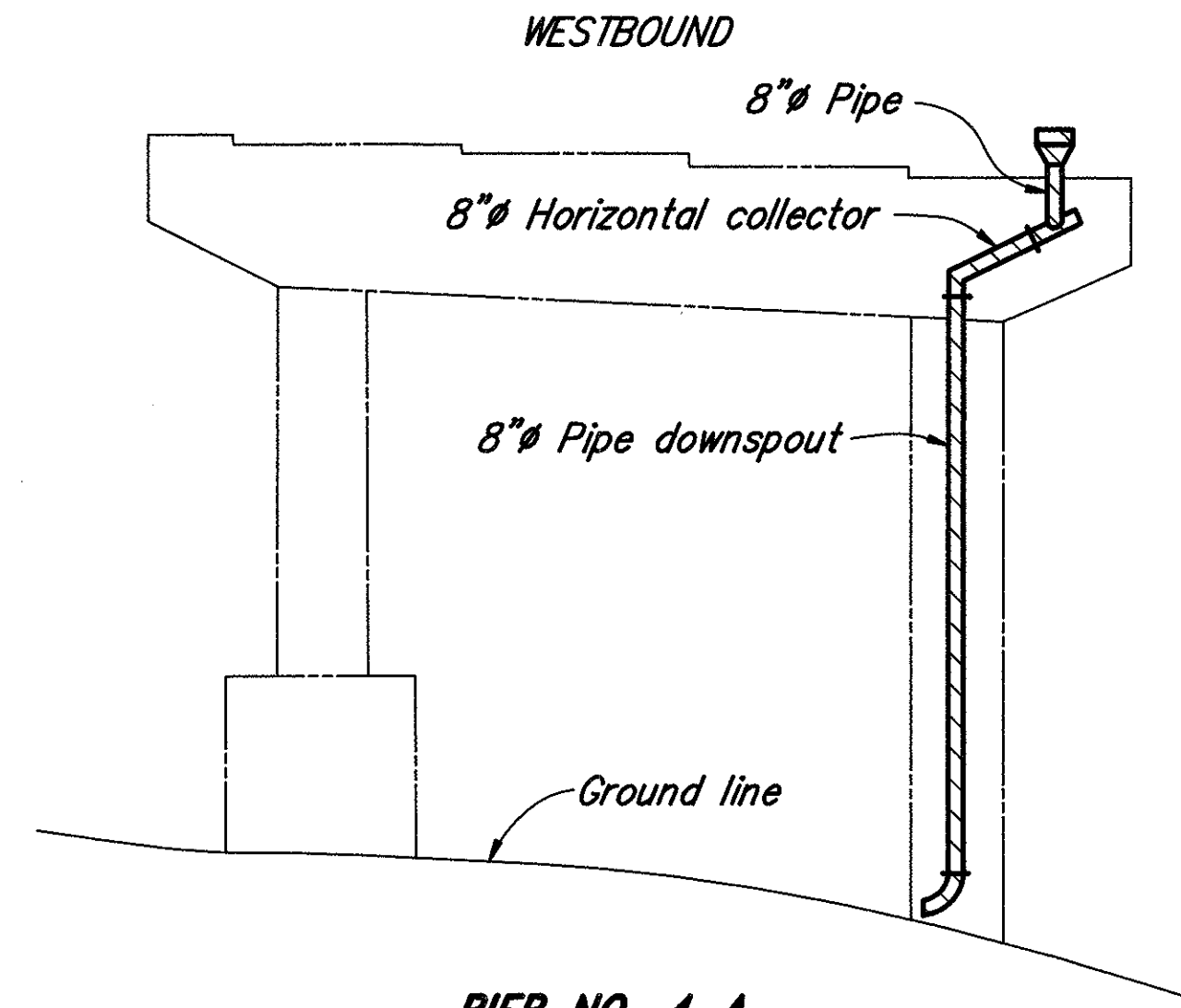




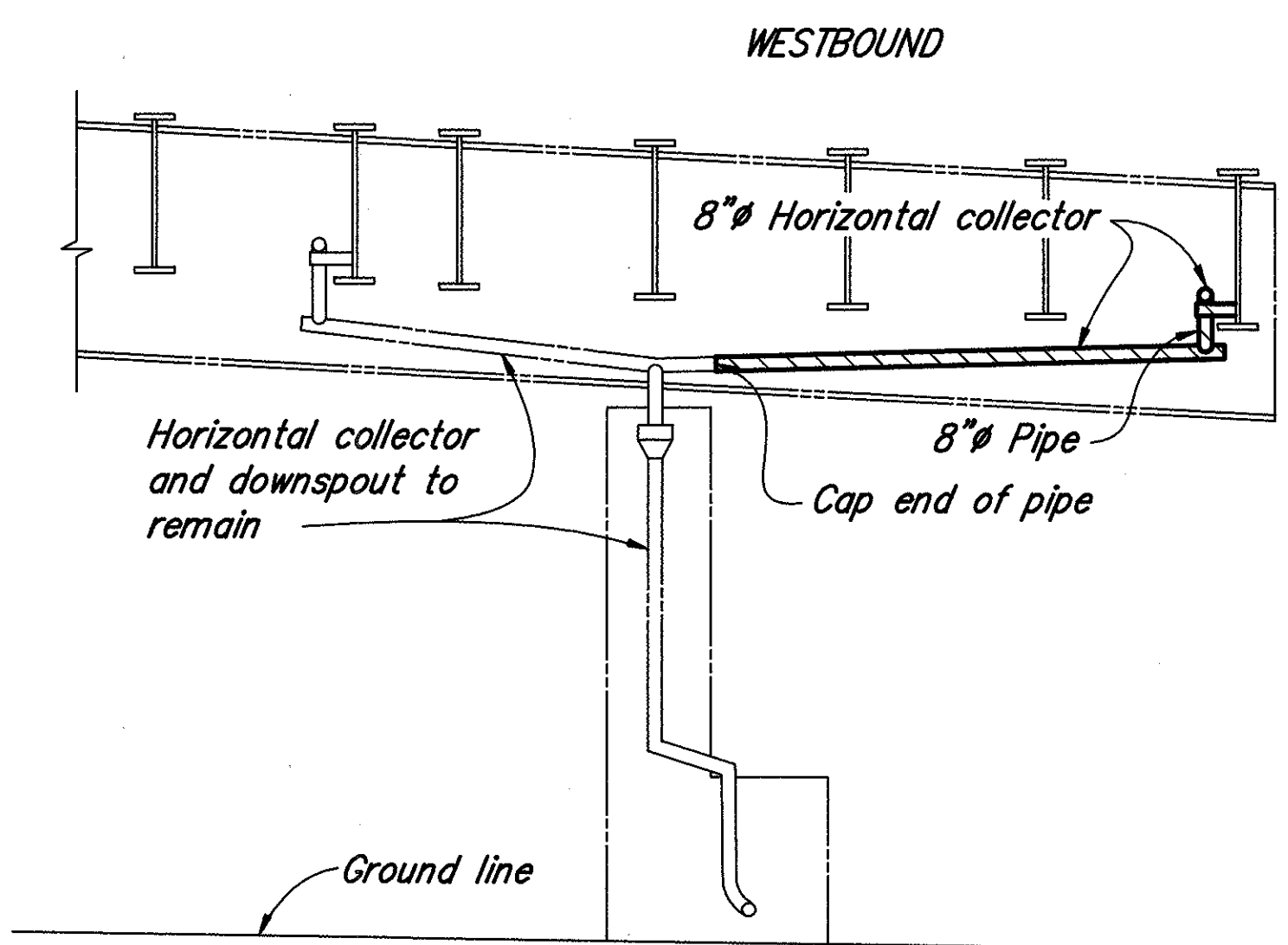
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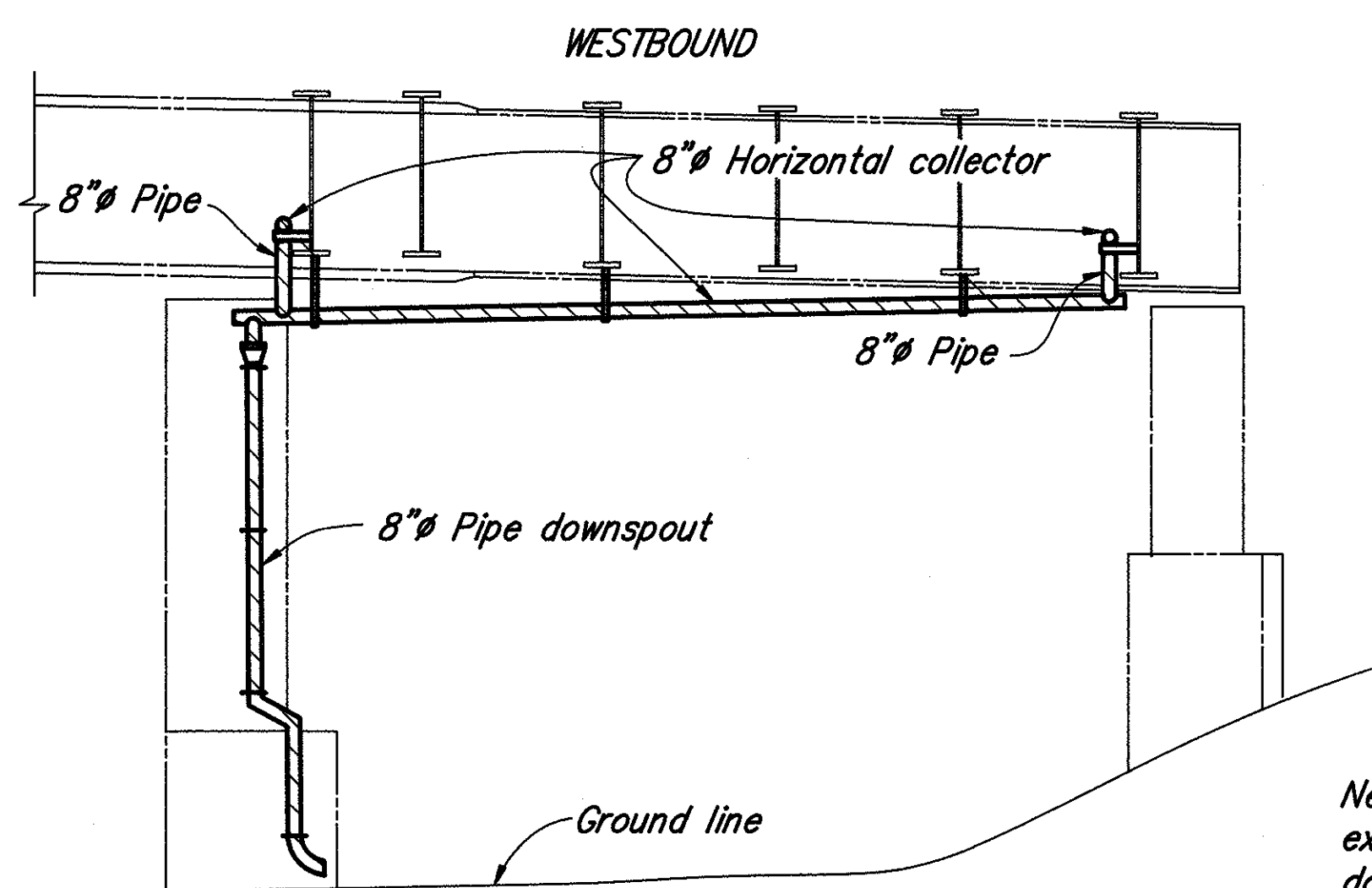
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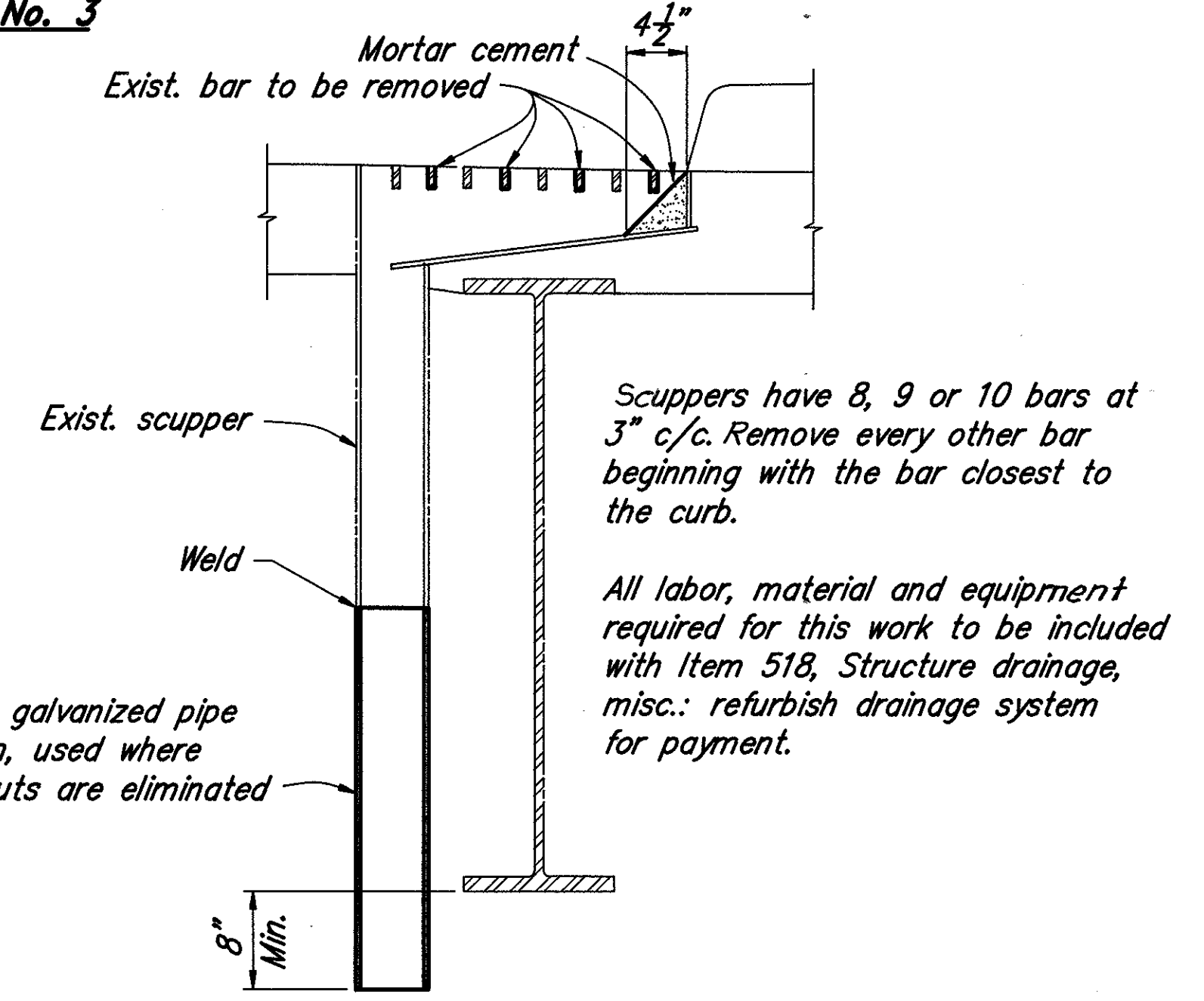
PIER NO. 4-A



PIER NO. 5



PIER NO. 8  
Collector and downspout on both sides of pier



Scuppers have 8, 9 or 10 bars at 3" c/c. Remove every other bar beginning with the bar closest to the curb.

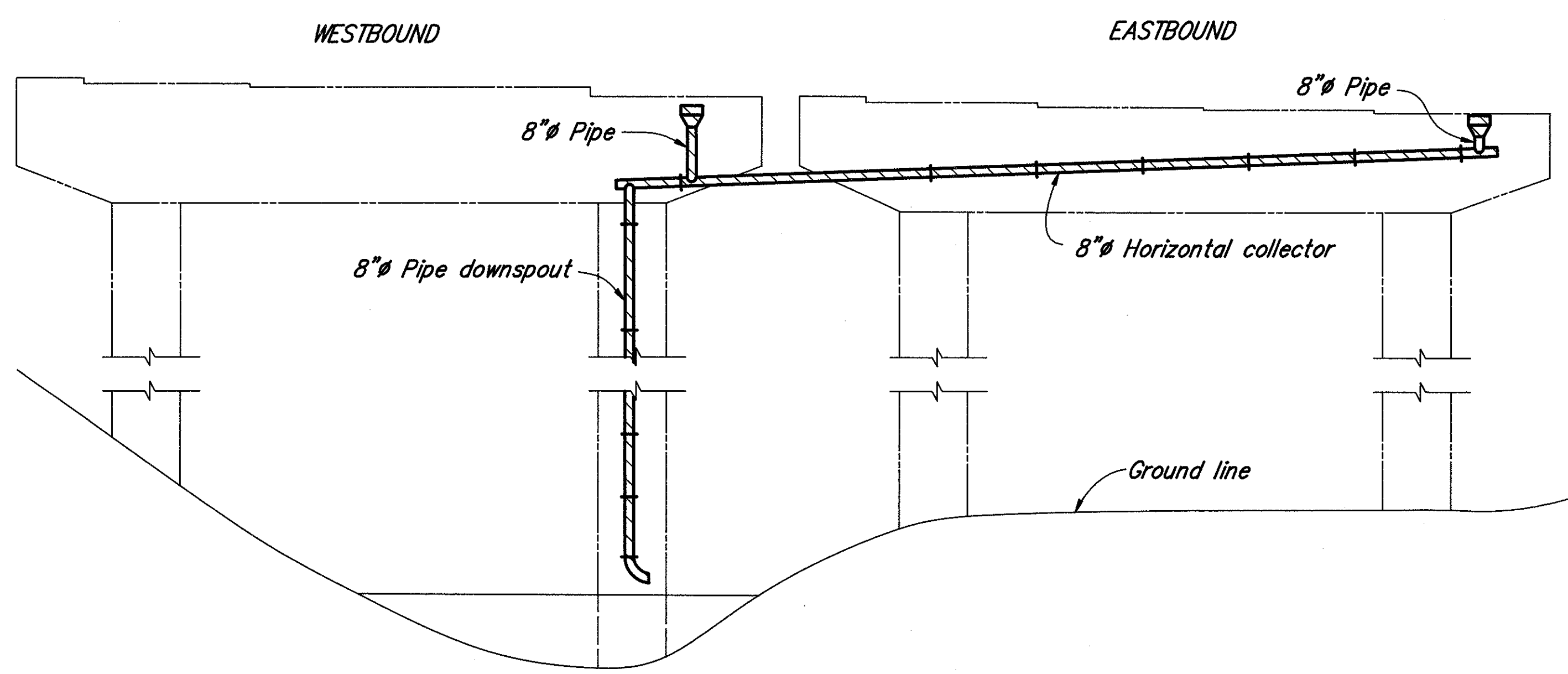
All labor, material and equipment required for this work to be included with Item 518, Structure drainage, misc.: refurbish drainage system for payment.

SCUPPER AND DOWNSPOUT MODIFICATION

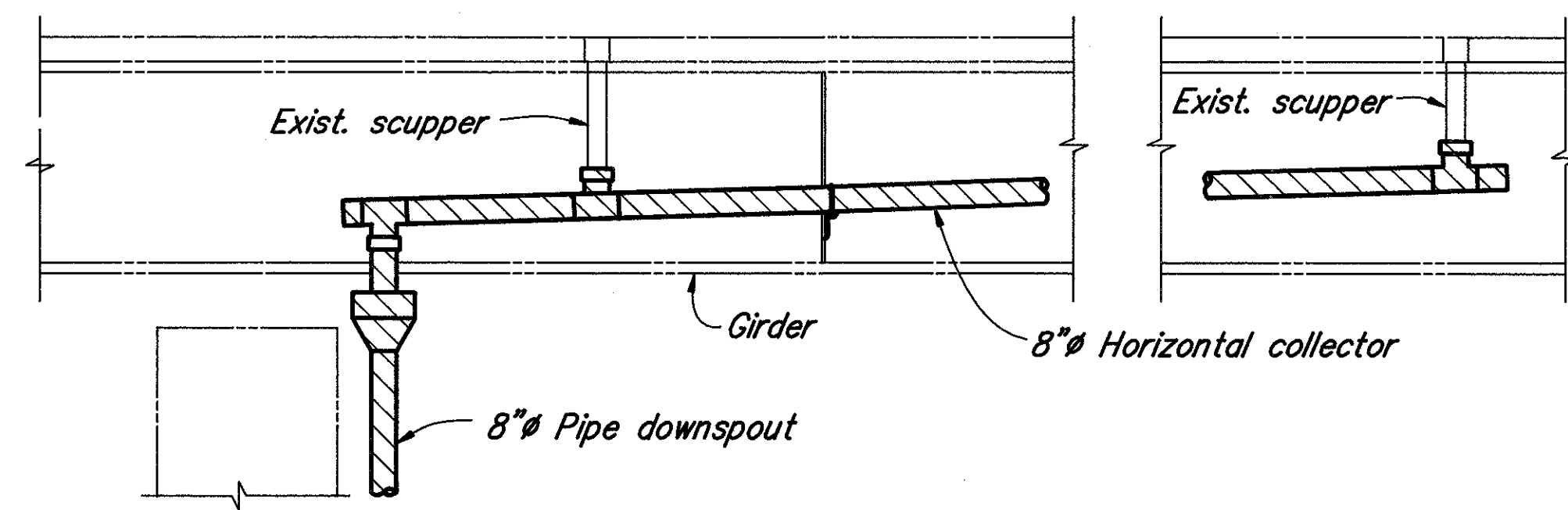
**NOTES**  
Remove concrete anchors flush with concrete surface.

Remove pipe supports from girders and steel pier caps. Grind remaining weld flush.

Denotes drain pipe to be removed



Pier No. 11



PARTIAL ELEVATION OF HORIZONTAL COLLECTOR

BALKE ENGINEERS  
1848 Summit Road  
Cincinnati, Ohio 45237

REMOVAL OF DRAINAGE SYSTEM

BRIDGE NO. HAM-562-0147  
OVER ROSS AVENUE AND CSX R.R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	AJT	~	VDC	ESB	3/93	

9014001 18 MAR 1993

EPOXY COATED REINFORCING STEEL LIST

MARK	TOTAL NO.	LENGTH	WEIGHT	TYPE	DIMENSIONS				
					A	B	C	D	E
SUPERSTRUCTURE									
S501		Not Used							
S502		Not Used							
S503	30	5'-11"	185	26	2'-2"	2'-5"	10"	1 1/4"	I.R.=5"
S504	1862	1'-8"	3237	17	10 1/2"	9"	6"	8 1/2"	
S505	1862	3'-5"	6635	32	8"	7"	2'-5"	3"	
S506	1881	5'-3"	10300	26	2'-2"	2'-5"	7 1/2"	1 1/4"	I.R.=2"
S507	943	2'-1"	2049	28	9"	10"	8"	6"	8 1/2"
S508	973	2'-5"	2453	1	10"	1'-8"			
S509	968	3'-3"	3281	3	10"	10"	10"	9"	6"
S510	2111	3'-3"	7156	1	1'-8"	1'-8"			
S511	2111	2'-4"	5137	12	1'-8"				
S512	570	30'-0"	17835	Str.					
S513	2	14'-9"	31	Str.					
S514	8	6'-0"	50	Str.					
S515	2	3'-10"	8	Str.					
S516	2	20'-6"	43	Str.					
S517	2	9'-1"	19	Str.					
S518	8	24'-9"	207	Str.					
S519	6	22'-0"	138	Str.					
S520	2	23'-0"	48	Str.					
S521	2	15'-1"	31	Str.					
S522	8	16'-3"	136	Str.					
S523	2	8'-5"	18	Str.					
S524	2	13'-0"	27	Str.					
S525	198	13'-4"	2754	Str.					
S526	8	10'-11"	91	Str.					
S527	2	10'-9"	22	Str.					
S528	4	11'-1"	46	Str.					
S529	74	13'-10"	1068	Str.					
S530	8	11'-5"	95	Str.					
S531	32	13'-6"	451	Str.					
S532	4	11'-3"	47	Str.					
S533	76	13'-8"	1083	Str.					
S534	2	11'-2"	23	Str.					
S535	74	14'-2"	1093	Str.					
S536	40	11'-10"	494	Str.					
S537	6	12'-3"	77	Str.					
S538	2	14'-3"	30	Str.					
S539	4	13'-5"	56	Str.					
S540	100	14'-8"	1530	Str.					
S541	500	6'-1"	3172	Str.					
S542	32	12'-7"	420	Str.					
S543	8	15'-0"	125	Str.					
S544	16	4'-11"	82	Str.					
S545	240	4'-8"	1168	Str.					
S546	16	15'-5"	257	Str.					
S547	20	15'-1"	315	Str.					
S548	64	12'-10"	857	Str.					
S549	12	13'-1"	164	Str.					
S550	40	15'-8"	654	Str.					
S551	48	7'-2"	359	Str.					
S552	24	12'-2"	305	Str.					
S553	8	15'-6"	129	Str.					
S554	4	3'-6"	15	Str.					
S601	96	30'-0"	4326	Str.					
S602	2	8'-5"	25	Str.					
S603	6	39'-0"	351	Str.					
S604	6	19'-6"	176	Str.					
S605	6	18'-7"	167	Str.					
S606	6	28'-0"	252	Str.					
S607	48	16'-6"	1190	Str.					
S608	42	23'-10"	1504	Str.					
S609	6	26'-3"	237	Str.					
S610	2	27'-9"	83	Str.					
S611	2	19'-9"	59	Str.					

Total Weight, Superstructure = 84,376 lbs

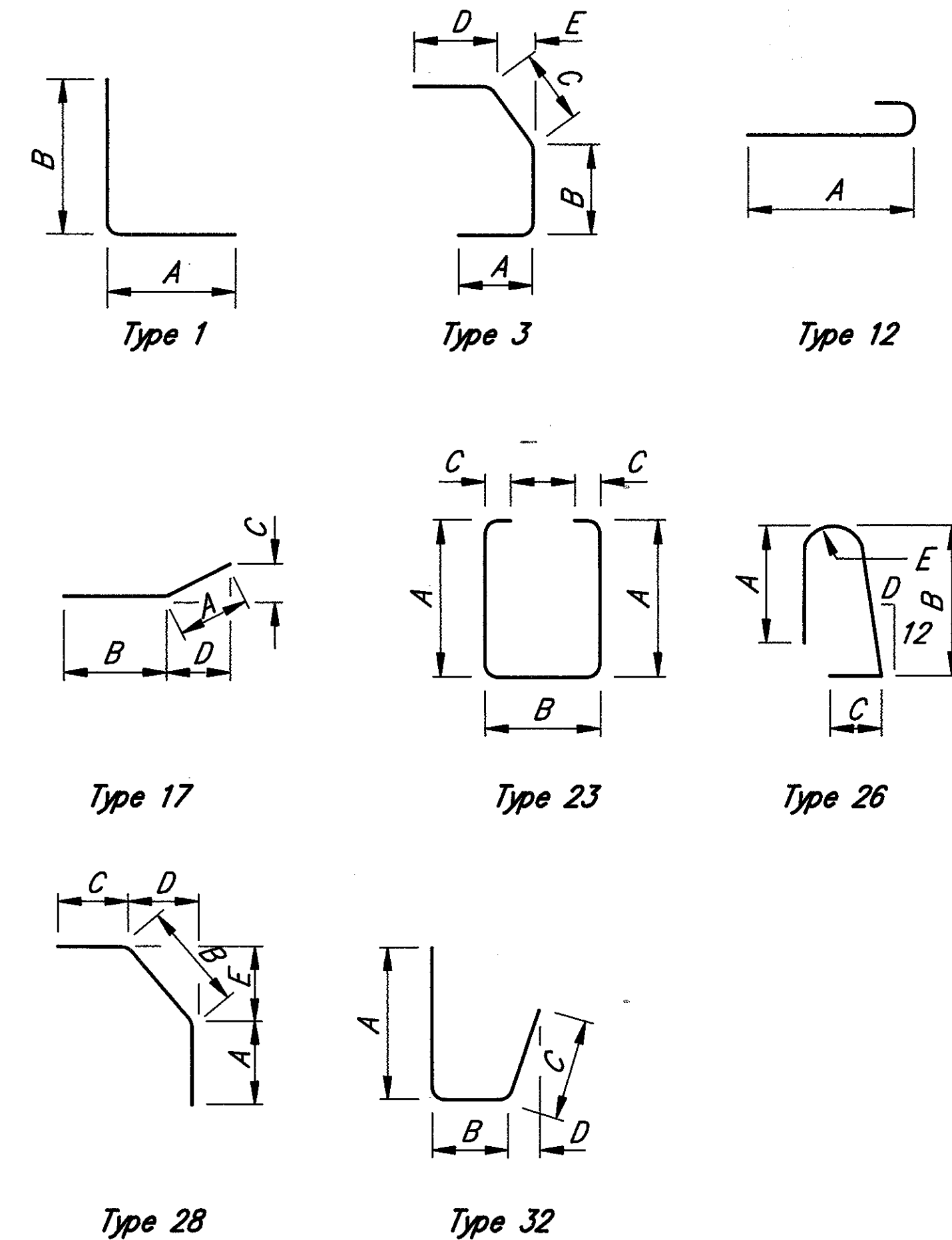
EPOXY COATED REINFORCING STEEL LIST

MARK	TOTAL NO.	LENGTH	WEIGHT	TYPE	DIMENSIONS				
					A	B	C	D	E
ABUTMENTS									
A501	4	2'-5"	10	28	1'-1"	10"	8"	6"	8 1/2"
A502	4	3'-6"	15	32	2'-0"	9"	1'-0"	7"	
A503	4	6'-8"	28	23	2'-5"	1'-4"	6"		
A504	24	1'-5"	35	Str.					
A505	3	2'-6"	8	28	9"	10"	1'-1"	6"	8 1/2"
A506	3	5'-9"	18	26	2'-2"	2'-5"	1'-1 1/2"	1 1/4"	I.R.=2"
A507	18	1'-8"	31	17	10 1/2"	9"	6"	8 1/2"	
A508	20	3'-5"	71	32	8"	7"	2'-5"	3"	
A509	2	14'-9"	31	Str.					
A510	2	15'-1"	31	Str.					
A511	2	3'-1"	6	Str.					
A512	4	12'-3"	51	Str.					
A513	8	2'-9"	23	Str.					
A514	2	2'-5"	5	28	9"	10 1/2"	9"	6"	8 1/2"
A515	2	5'-3"	11	26	2'-2"	2'-5"	7 1/2"	1 1/4"	2"

Total Weight, Abutments = 374 lbs

BAR BENDING DIAGRAM

All dimensions are out to out of bars.



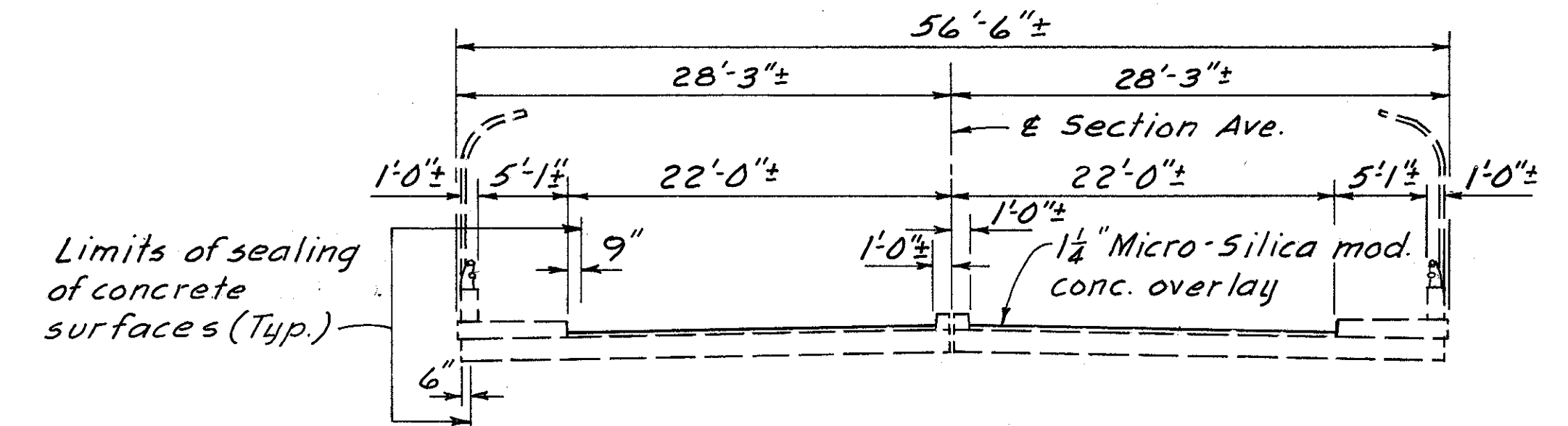
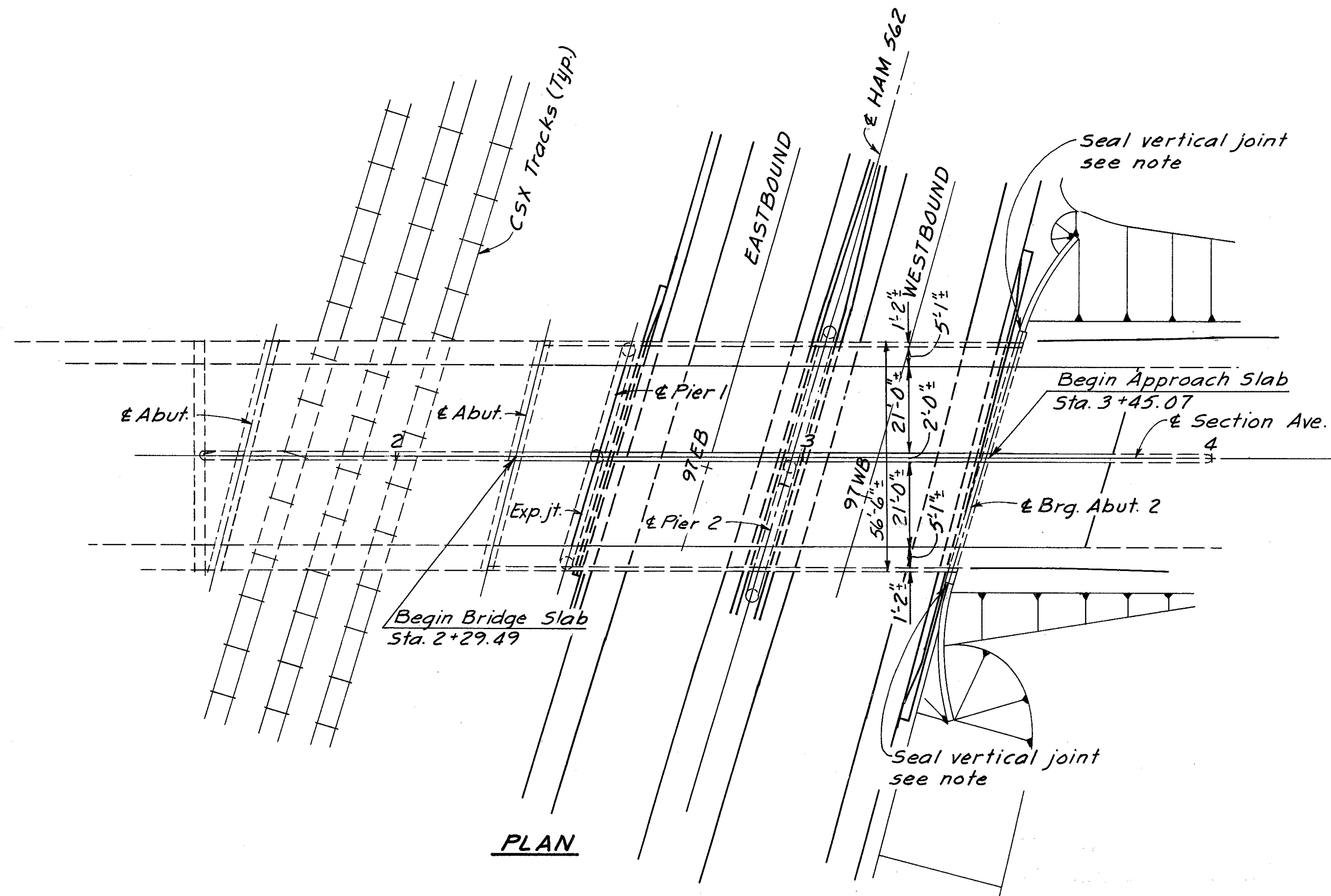
30 MAR 1993

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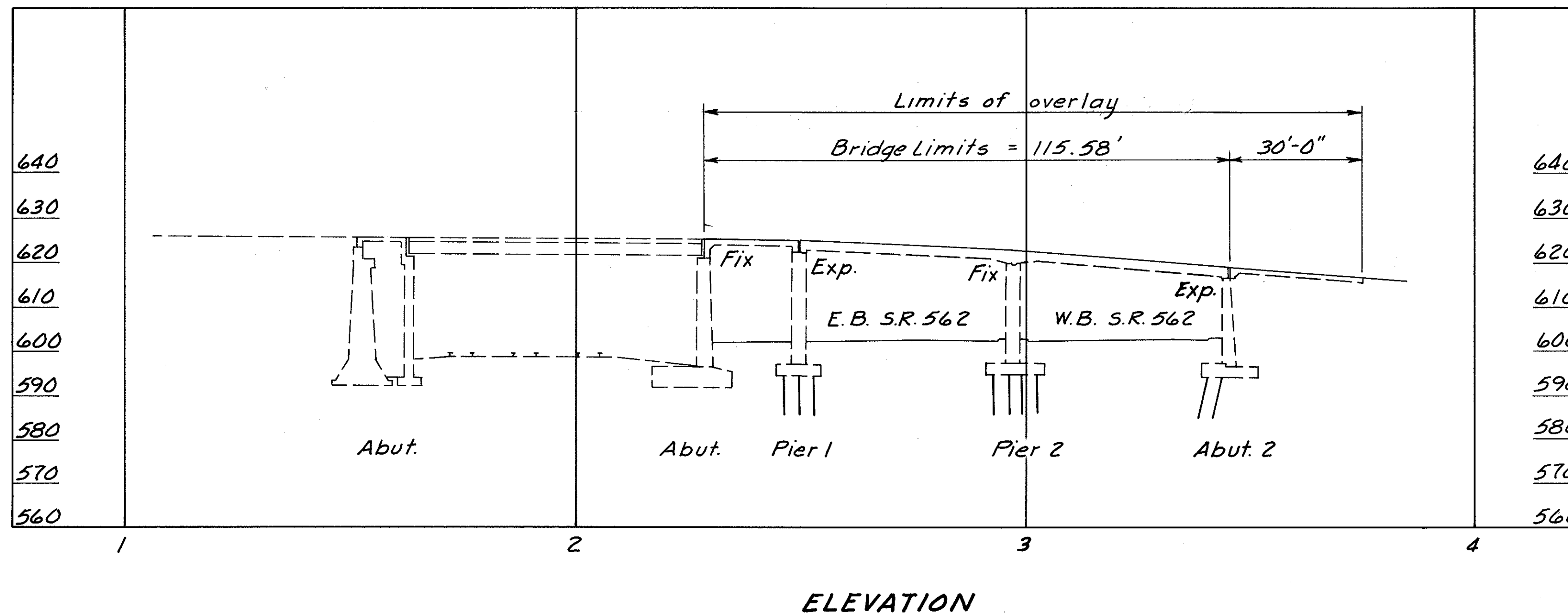
30/30

EPOXY COATED  
REINFORCING STEEL LIST  
BRIDGE NO. HAM-562-0147  
OVER ROSS AVENUE AND CSX R.R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	8/28/93	3/93	



**TRANSVERSE SECTION**



**ELEVATION**

EXISTING STRUCTURE	
TYPE: Simple span and two span continuous reinforced concrete slab with reinforced concrete substructure	
SPANS: 20'-0 1/4", 47'-9 1/4", 47'-9 1/4"	
ROADWAY: 44'-0" f/f curb with 5'-1" sidewalk includes 2'-0" median	
LIVE LOADING: C.F. = 2000 (57)	
SKEW: 16°7'05" L.F.	
DATE OF CONSTRUCTION: 19__	
STRUCTURE FILE NO.:	
PROPOSED STRUCTURE (REHABILITATION)	
PROPOSED WORK: Replace seals in expansion joints, patch pier, repair expansion joints in wingwalls and apply overlay to deck	
SPANS: 20'-0 1/4", 47'-9 1/4", 47'-9 1/4"	
ROADWAY: 44'-0" f/f curb with 5'-1" sidewalk includes 2'-0" median	
LIVE LOADING: C.F. = 2000 (57)	
SKEW: 16°7'05" L.F.	
WEARING SURFACE: 1 1/4" Micro-Silica modified concrete overlay	
EXISTING APPROACH SLAB: 30'-0" long	
ALIGNMENT: Tangent	
SUPERELEVATION: Normal crown	

**NOTE**  
Seal vertical joint with low-modulus, non-sag, polyurethane based elastomeric sealant. Prepare joint as recommended by manufacturer. Included for payment with Item 512, Waterproofing, misc.: sealing vertical joint.

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

1 / 3

**GENERAL PLAN AND ELEVATION**

BRIDGE NO. HAM-562-0179  
HAM 562 UNDER SECTION AVENUE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	CRS	3/13	

25 OCT 1991



**DESIGN REFERENCES**

REFERENCE shall be made to Supplemental Specifications:

849 dated 12-24-85

**SCOPE OF WORK**

1. Replace compression seals in expansion joints
2. Patch deteriorated concrete at pier
3. Repair vertical expansion joint at wingwalls
4. Apply overlay to deck, top of backwall and approach slab
5. Seal concrete surfaces

**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/or 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.

Contract bid prices shall be based upon a recognition of the uncertainties described above and upon a prebid examination of the existing structure by the Contractor. However, all project work shall be based upon actual details and dimensions which have been verified by the Contractor in the field.

**PLANS FOR EXISTING BRIDGE**

Plans of the existing structure are available for reference at the ODOT District Eight office.

**MAINTENANCE OF TRAFFIC**

Section Road shall be closed during construction.

For sequence of construction on project and maintenance of traffic see roadway plans sheet  $\frac{1A}{170}$

**ELASTOMERIC COMPRESSION SEAL**

This item shall consist of removing the old joint sealer at the abutments and pier. Replace with new elastomeric compression seal D. S. Brown CV-1625, Watson-Bowman WJ-162 or an approved equal.

Reference shall be made to Supplemental Specification 849 for installation procedures, material requirements and manufacturing control.

**MICRO-SILICA MODIFIED CONCRETE OVERLAY**

The overlay shall be applied, per the proposal note, face to face of curb to the limits indicated on sheet  $\frac{1}{3}$ . At the south end of the indicated limits, the existing concrete deck shall be planed down over a 10 ft. length so the overlay will meet flush with the existing surface. See Section B-B, sheet  $\frac{3}{3}$

Longitudinal joints in the concrete overlay are permitted, but only to the extent necessary to accommodate the width of the finishing machine or to facilitate changes in the roadway crown.

**SEALING OF CONCRETE SURFACES**

Reference shall be made to the proposal note for application and material specifications. Sealer shall be applied to the following surfaces.

1. Abutment 2, face of the breastwall from beam seat to ground line and total face of wingwalls shall be sealed with an epoxy sealer.
2. Piers 1 and 2 shall be sealed with an epoxy sealer. The sealer shall be applied to the sides, bottom and ends of the cap and the total surface of the columns.
3. Superstructure shall be sealed as shown on sheet  $\frac{1}{3}$  with an epoxy or non-epoxy sealer.

**ESTIMATED QUANTITIES**

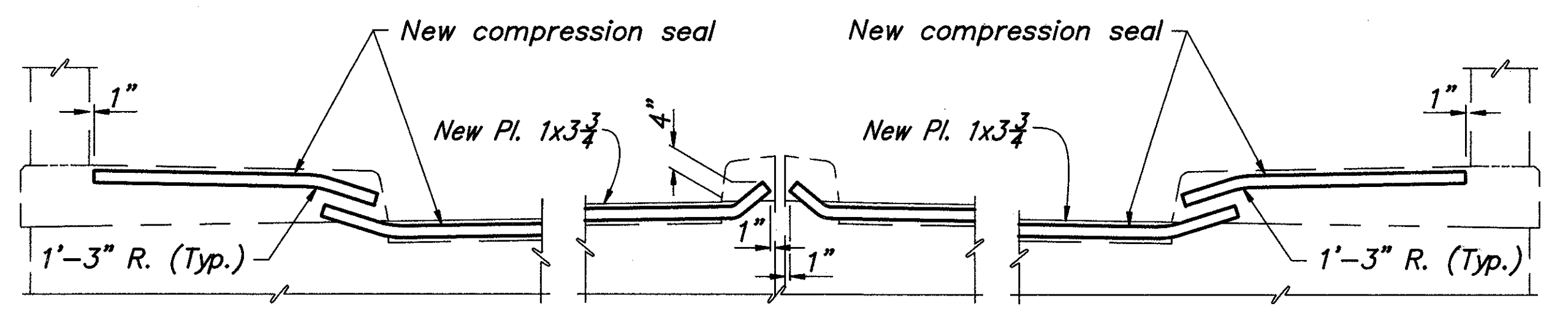
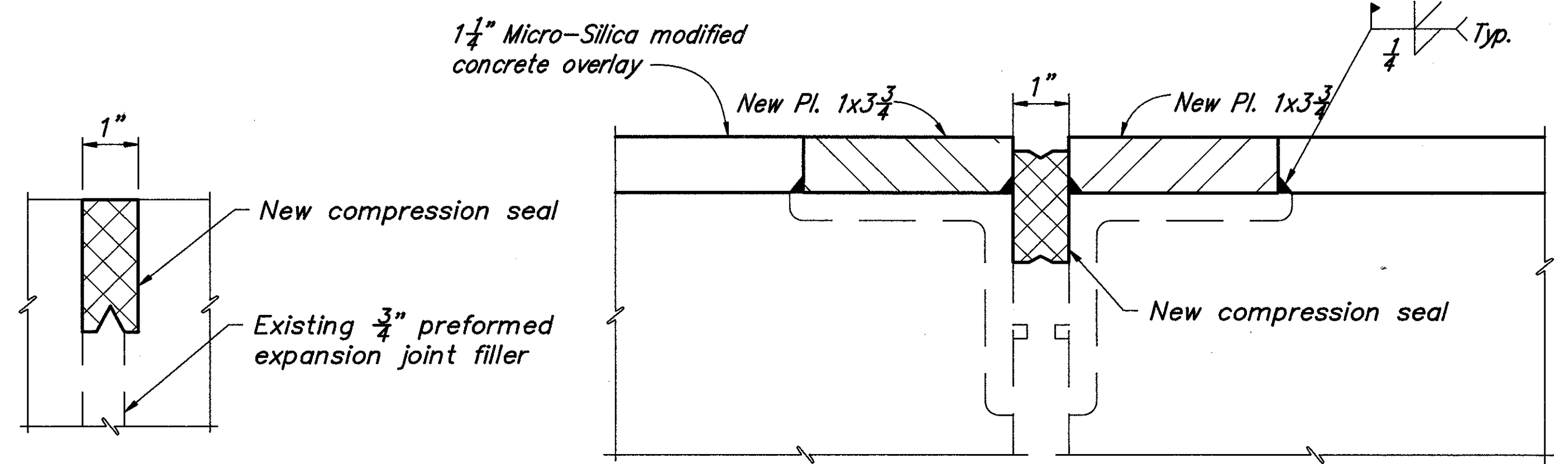
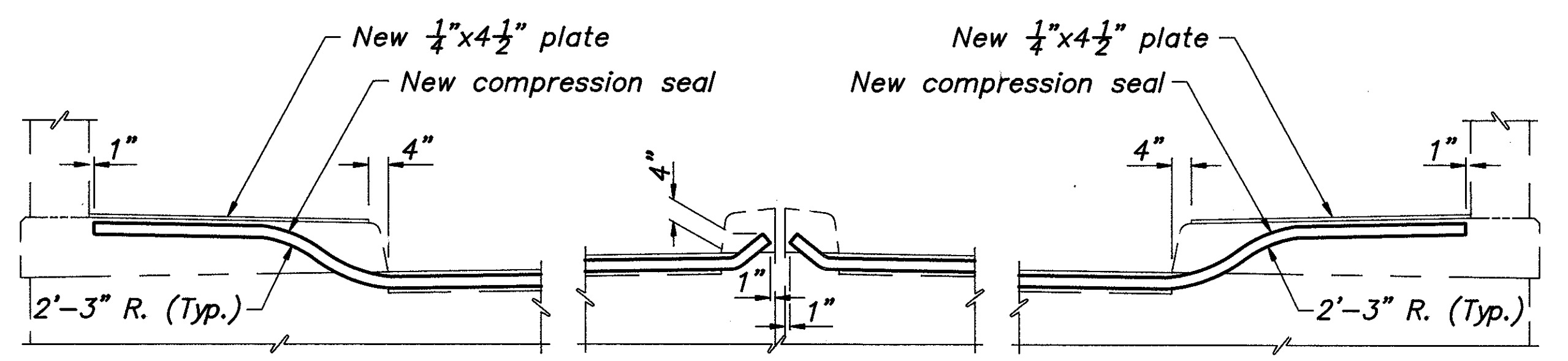
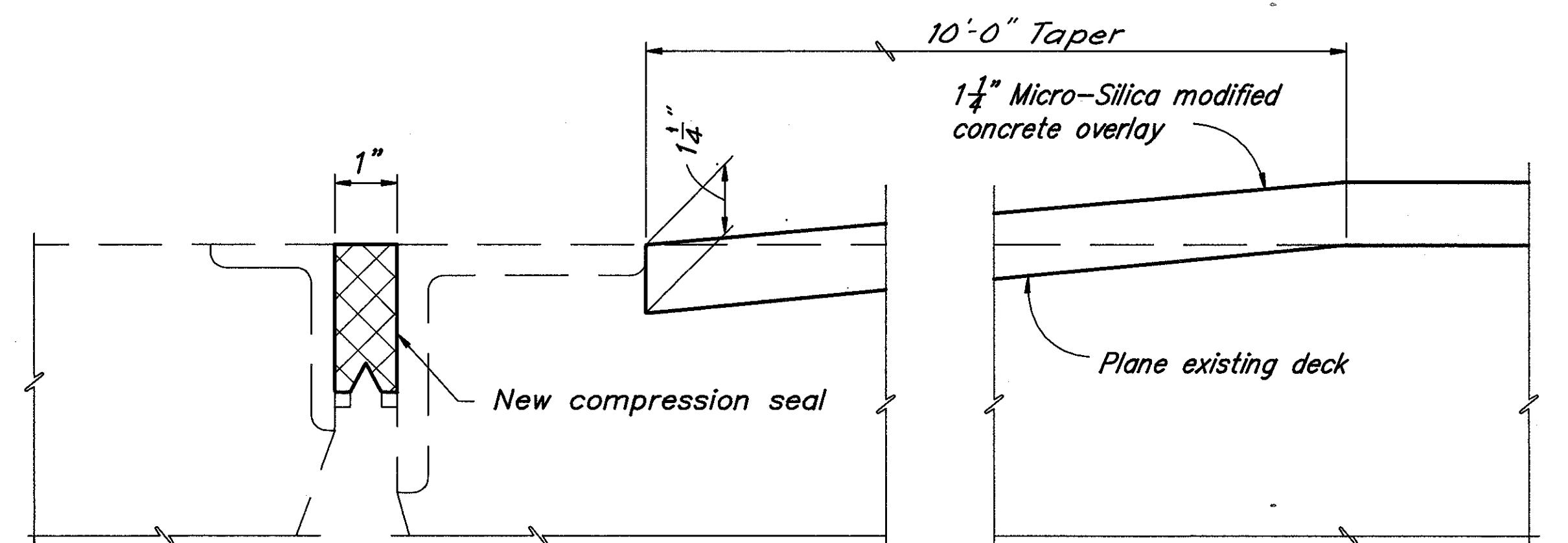
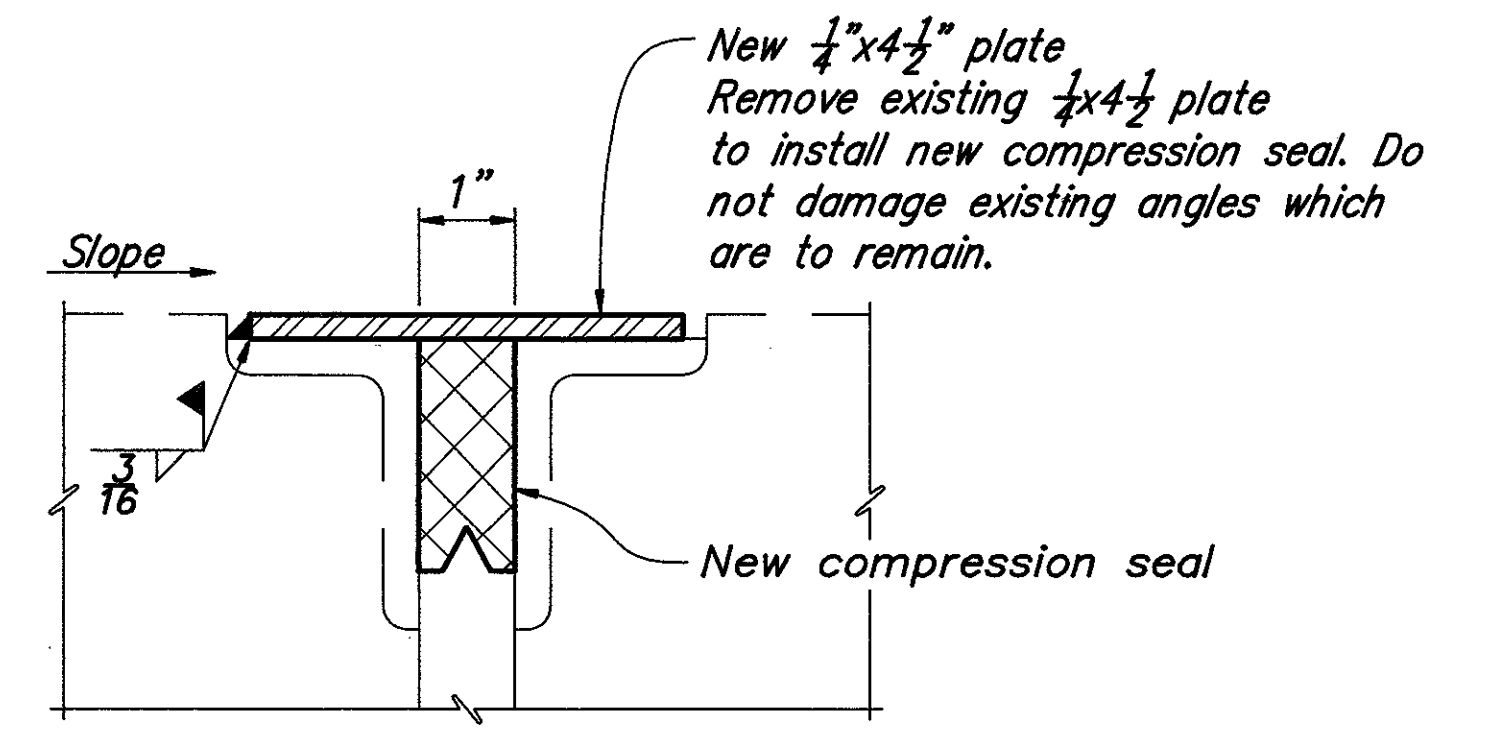
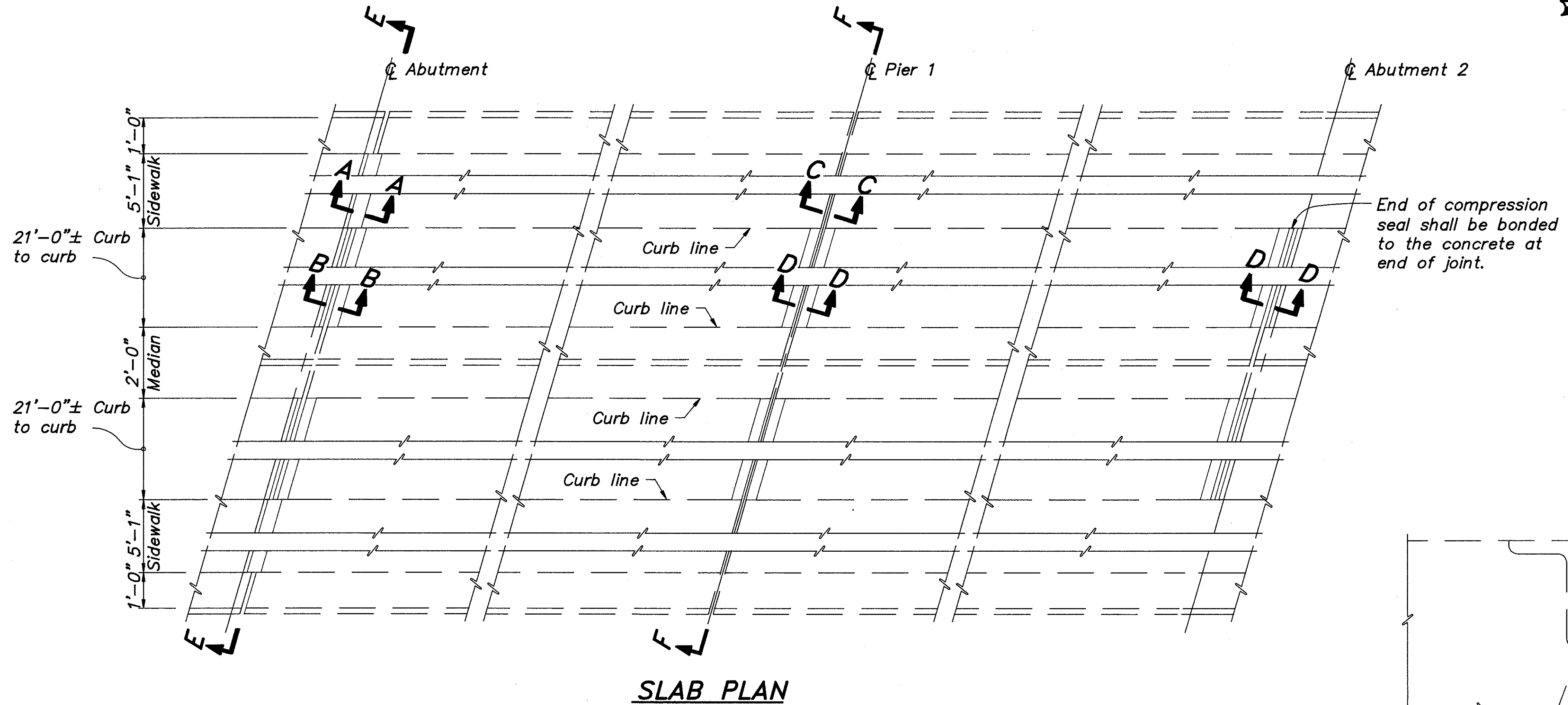
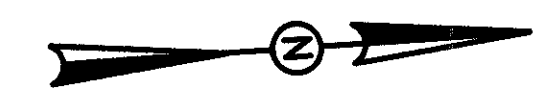
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Checked by: AT

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPERSTRUCTURE	GENERAL
254	01011	47	Sq. yd.	Pavement planing, portland cement concrete, as per plan			47	
Special	51267300	37	Lin. ft.	Waterproofing, misc.: seal vertical joint	37			
Special	51267500	389	Sq. yd.	Sealing of concrete surfaces (see Proposal Note)			389	
Special	51267502	492	Sq. yd.	Sealing of concrete surfaces (epoxy) (see Proposal Note)	218	274		
516	10901	152	Lin. ft.	Elastomeric compression seal, as per plan			152	
516	11800	88	Lin. ft.	Vertical extension of structural expansion joint			88	
Special	51922000	539	Sq. yd.	Micro-Silica modified concrete overlay (1 1/4" thick)(see Proposal Note)			539	
Special	51922100	5	Cu. yd.	Micro-Silica modified concrete overlay (variable thickness)(see Proposal Note)			5	
Special	51922300	L.S.	Lump	Test slab (see Proposal Note)				L.S.

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

**GENERAL NOTES**  
**ESTIMATED QUANTITIES**  
BRIDGE NO. HAM-562-0179  
HAM 562 UNDER SECTION ROAD

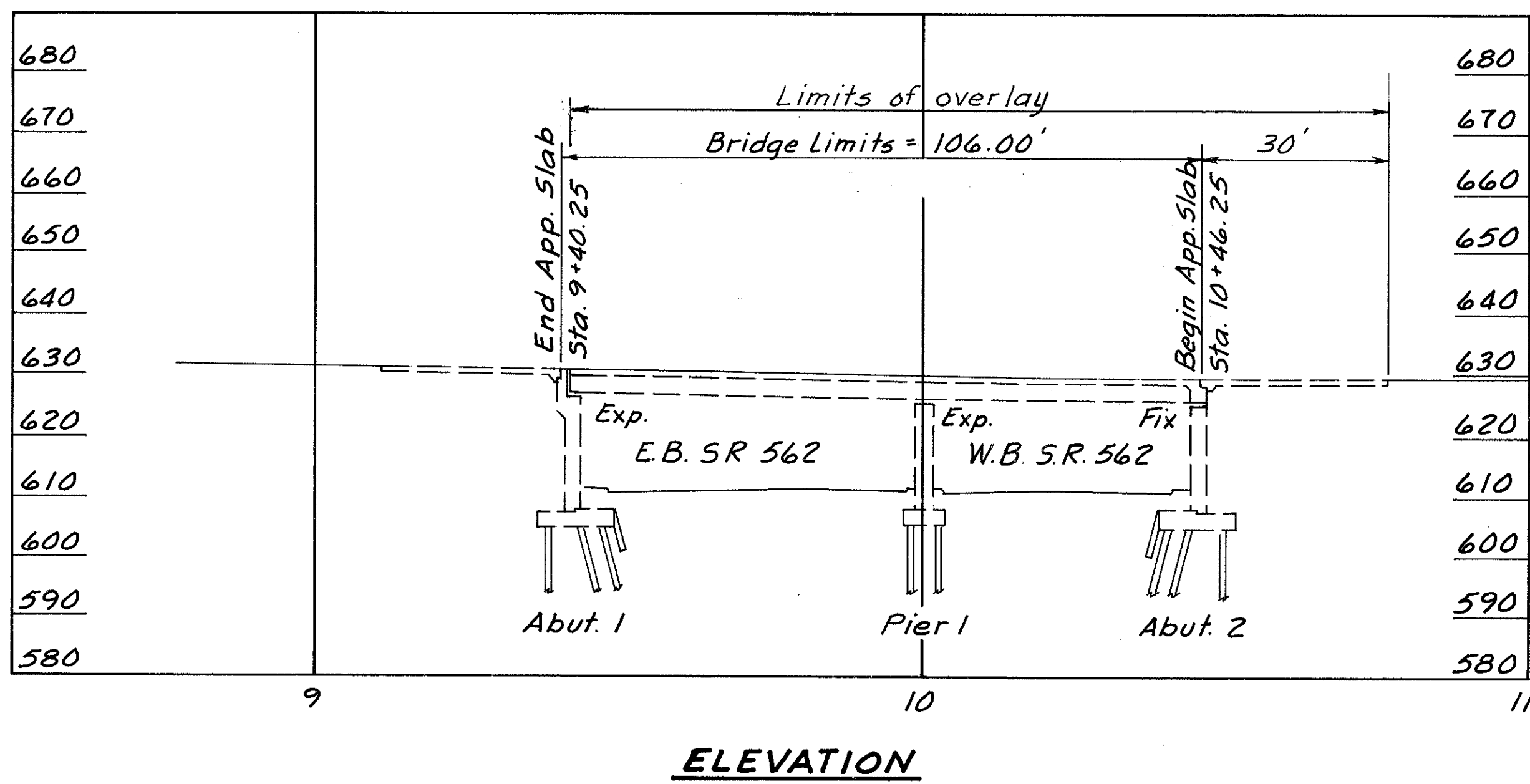
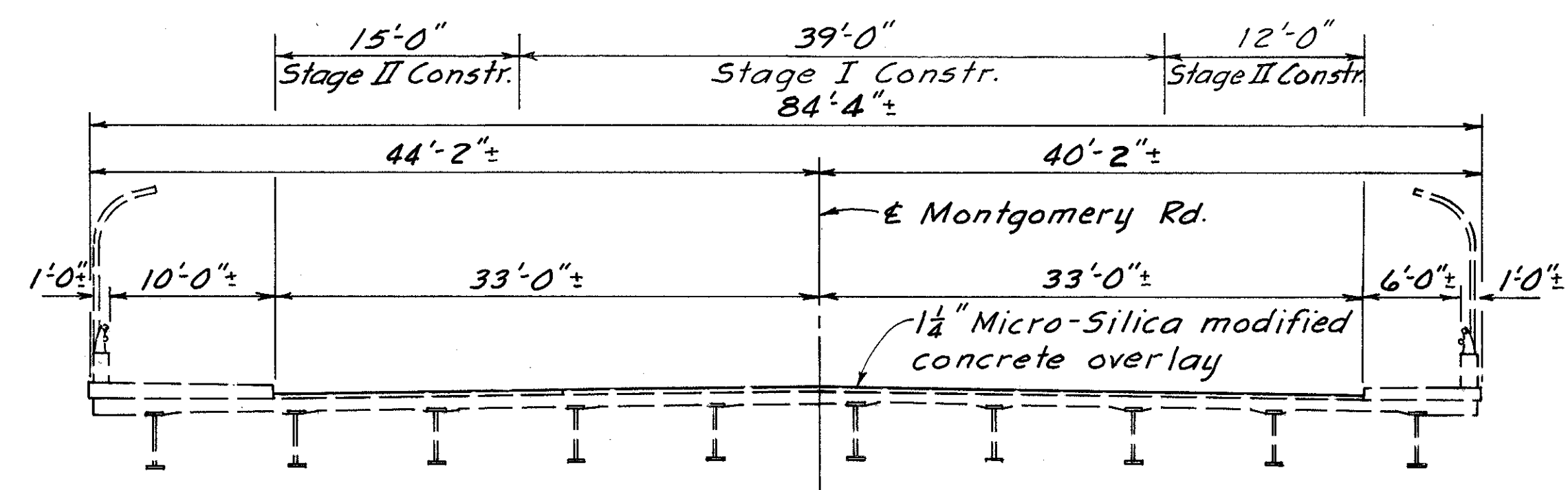
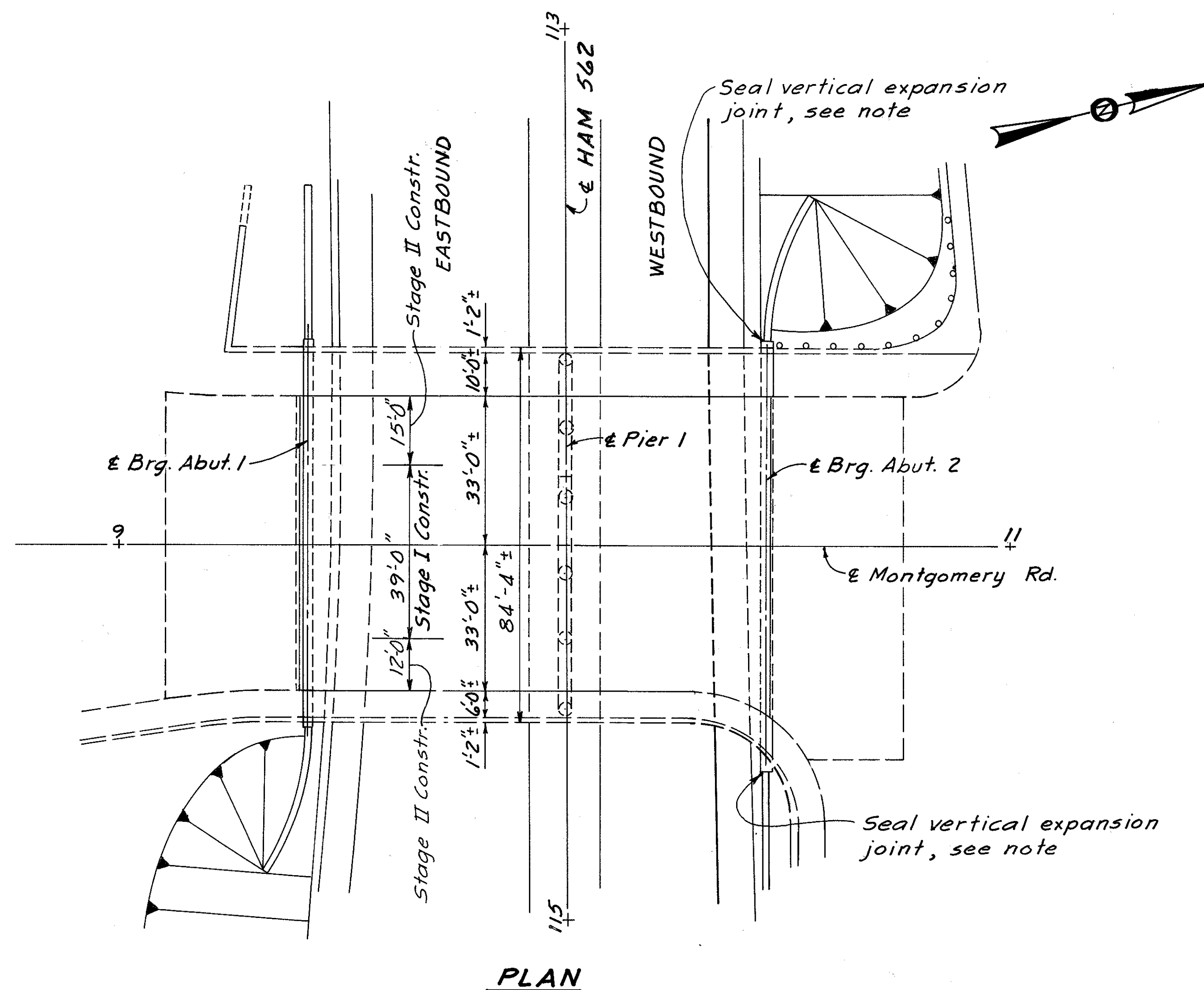
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	8/88	3/93	



**Notes:**  
 Compression seal shall be Watson Bowman WJ162, D.S. Brown CV1625, or approved equal.  
 Compression seal to be installed in one piece.  
 Removal of existing plate 1/4"x4 1/2" and installation of new plate are to be included with Item 516, Vertical extension of structural expansion joint for payment.

BALKE ENGINEERS 1848 Summit Road Cincinnati, Ohio 45237		3 / 3				
<b>EXPANSION JOINT DETAILS</b>						
BRIDGE NO. HAM-562-0179 HAM 562 UNDER SECTION ROAD						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	JDG		VDG	CRS	3/93	

9014E014 2 MAR 1993



EXISTING STRUCTURE	
TYPE: Continuous rolled steel beams with reinforced concrete deck and substructure	
SPANS: 57'-6", 45'-3"	
ROADWAY: 66'-0" f/f curb with 6'-0" sidewalk Right and 10'-0" sidewalk Left	
LIVE LOADING: C.F. = 2000 (57)	
SKEW: 0°11'31" R.F.	
DATE OF CONSTRUCTION: 19__	
STRUCTURE FILE NO.:	
PROPOSED STRUCTURE (REHABILITATION)	
PROPOSED WORK: Repair expansion joints in wingwalls, apply overlay to deck and paint structural steel	
SPANS: 57'-6", 45'-3"	
ROADWAY: 66'-0" f/f curb with 6'-0" sidewalk Right and 10'-0" sidewalk Left	
LIVE LOADING: C.F. = 2000 (57)	
SKEW: 0°11'31" R.F.	
WEARING SURFACE: 1 1/2" Micro-Silica modified concrete overlay	
EXISTING APPROACH SLAB: 30'-0" long	
ALIGNMENT: Tangent	
SUPERELEVATION: Normal crown	

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

1/2

**GENERAL PLAN AND ELEVATION**

BRIDGE NO. HAM-562-0211  
HAM 562 UNDER MONTGOMERY ROAD

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	CRS	3/93	

BASESHEET 25 OCT 1991



**DESIGN REFERENCES**

REFERENCE shall be made to Supplemental Specifications:

910 dated 5-20-91

**SCOPE OF WORK**

1. Apply overlay to deck and approach slab
2. Seal vertical expansion joints at Abutment 2
3. Paint structural steel, System OZEU

Work shall be executed in sequence as indicated on plans.

**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/or 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.

Contract bid prices shall be based upon a recognition of the uncertainties described above and upon a prebid examination of the existing structure by the Contractor. However, all project work shall be based upon actual details and dimensions which have been verified by the Contractor in the field.

**PLANS FOR EXISTING BRIDGE**

Plans of the existing structure are available for reference at the ODOT District Eight office.

**MAINTENANCE OF TRAFFIC**

For sequence of construction on project and maintenance of traffic see roadway plans sheet 1A/170

**MICRO-SILICA MODIFIED CONCRETE OVERLAY**

The overlay shall be applied, per the proposal note, face to face of curb to the limits indicated on sheet 1/2. At the south end of the indicated limits, the existing concrete deck shall be planed down over a 10 ft. length so the overlay will meet flush with the existing surface.

Longitudinal joints in the concrete overlay are permitted, but only to the extent necessary to accommodate the width of the finishing machine, to facilitate changes in the roadway crown, or to permit maintenance of vehicular traffic.

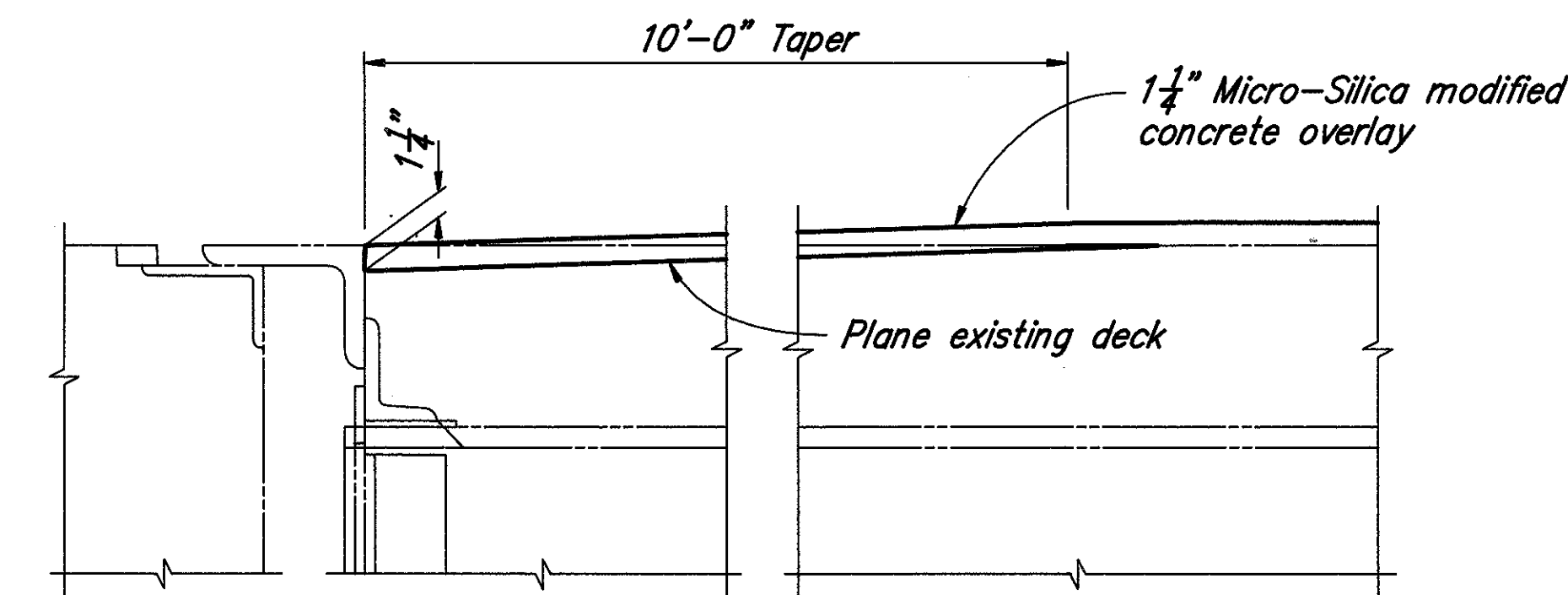
**PAINTING OF EXISTING STRUCTURAL STEEL**

All existing structural steel shall be cleaned and painted as required by the proposal note Field Painting of Existing Steel, System OZEU.

The surface area pay quantity is based on the surface area of the main members increased by 25 percent to account for the area of crossframes, bearings, and other structural steel incidentals to be cleaned and painted.

**SEALING VERTICAL JOINT**

Seal vertical 1" joint with low-modulus, non-sag, polyurethane based elastomeric sealant. Prepare joint as recommended by manufacturer. Included for payment with Item 512, Waterproofing, misc.: sealing vertical joint.



**DECK PLANING AT SOUTH ABUTMENT**

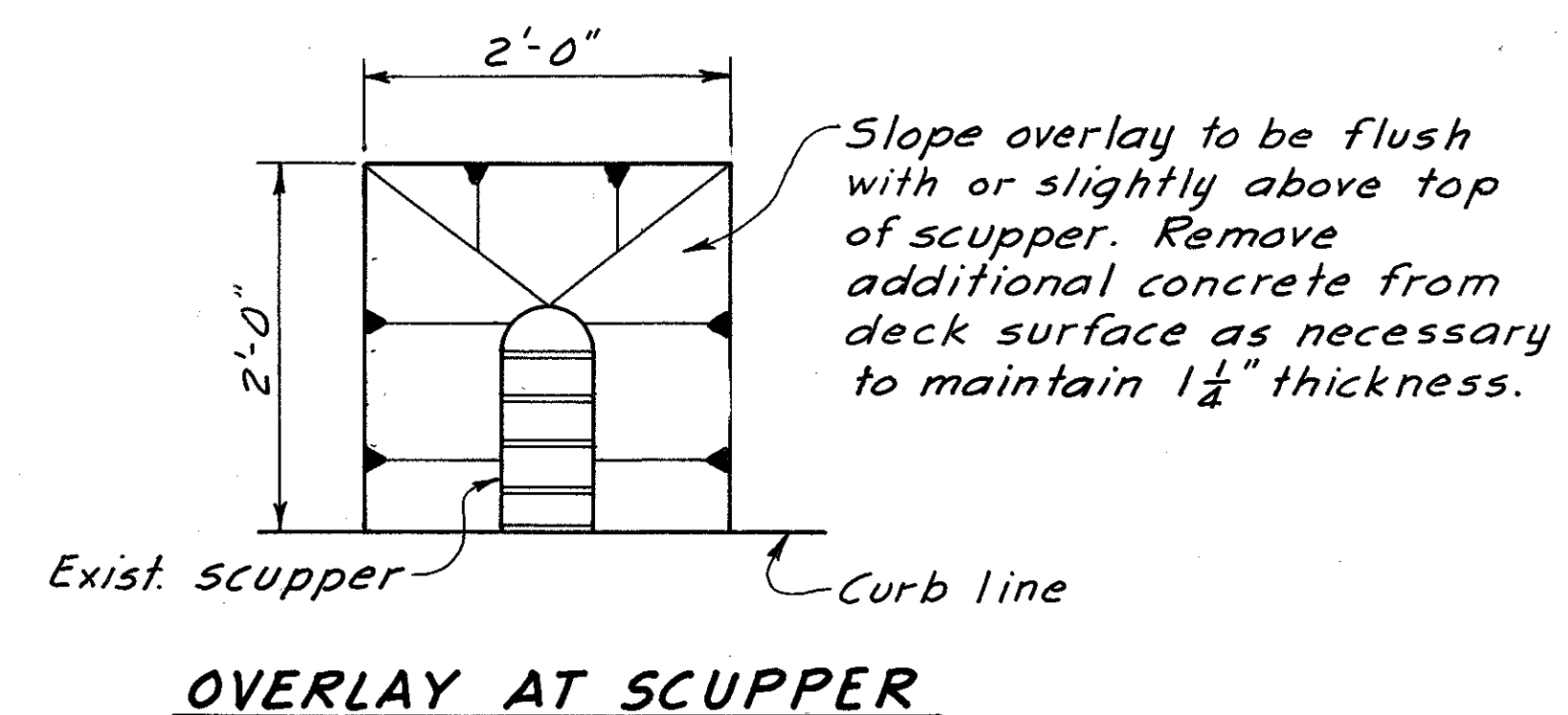
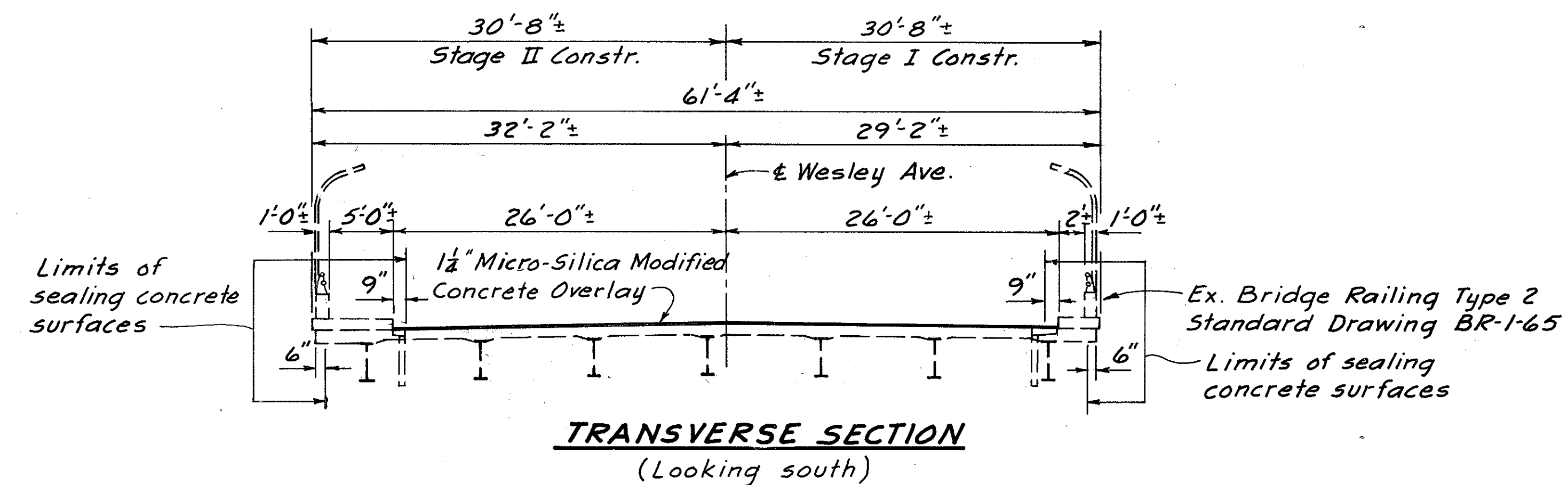
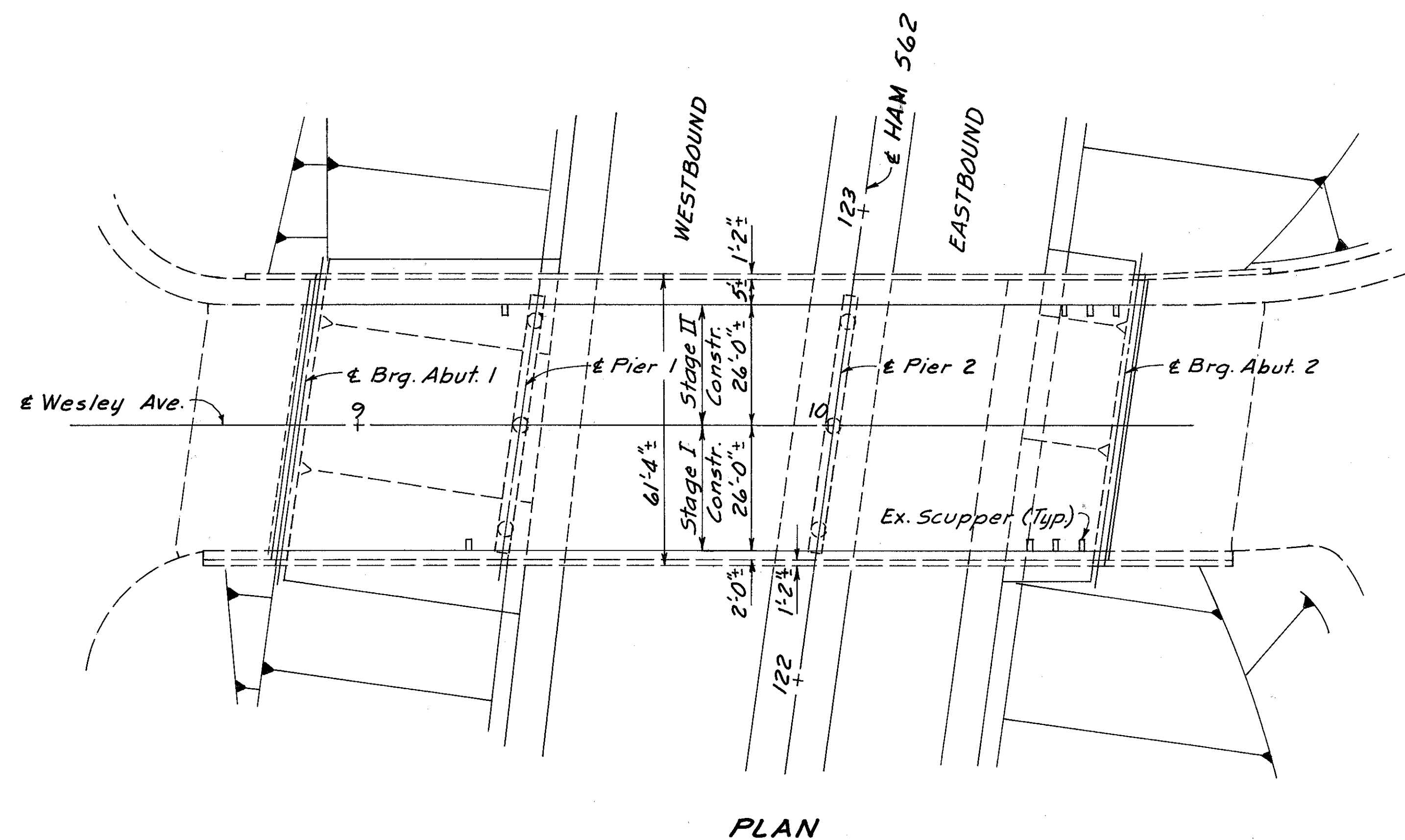
ESTIMATED QUANTITIES					Calculated by: MRS
					Checked by: AT
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	
254	01011	74	Sq. yd.	Pavement planing, portland cement concrete, as per plan	
Special	51267300	74	Lin ft.	Waterproofing, misc.: seal vertical joint	
Special	51400050	11348	Sq. ft.	Surface preparation of existing steel, System OZEU (see Proposal Note)	
Special	51400056	11348	Sq. ft.	Field painting of existing steel, prime coat, System OZEU (see Proposal Note)	
Special	51400060	11348	Sq. ft.	Field painting of existing steel, intermediate coat, System OZEU (see Proposal Note)	
Special	51400066	11348	Sq. ft.	Field painting of existing steel, finish coat, System OZEU (see Proposal Note)	
Special	51922000	778	Sq. yd.	Micro-Silica modified concrete overlay (1 1/4" thick) (see Proposal Note)	
Special	51922100	26	Cu. yd.	Micro-Silica modified concrete overlay (variable thickness) (see Proposal Note)	
Special	51922300	L.S.	Lump	Test slab (see Proposal Note)	

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

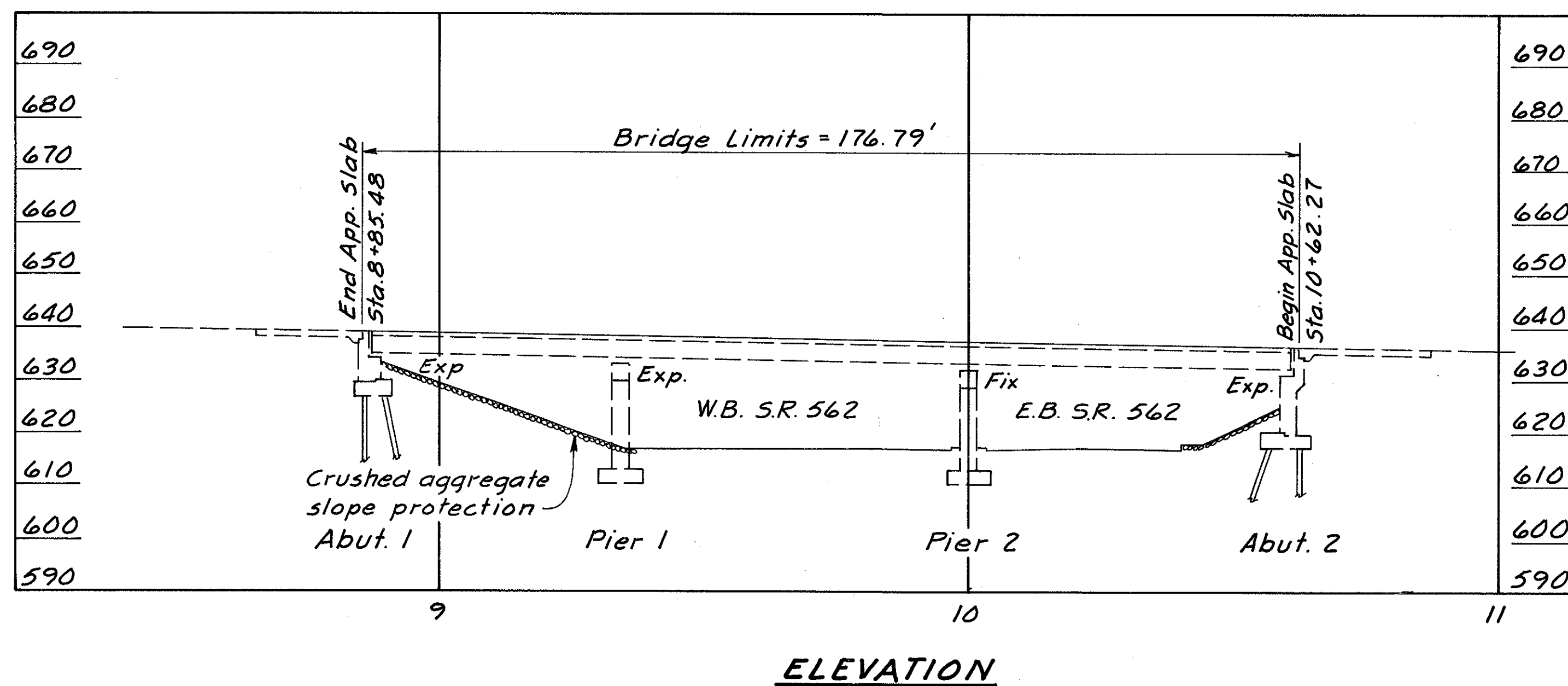
2 / 2

**GENERAL NOTES**  
**ESTIMATED QUANTITIES**  
BRIDGE NO. HAM-562-0211  
HAM 562 UNDER MONTGOMERY ROAD

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	828P	3/93	



EXISTING STRUCTURE	
TYPE: Continuous rolled steel beams with reinforced concrete deck and substructure	
SPANS: 46'-0", 66'-3", 60'-0"	
ROADWAY: 52'-0" f/f curb with 5'-0" sidewalk and 2'-0" safety curb	
LIVE LOADING: C.F.= 2000 (57)	
SKEW: 8° 05'50" L.F.	
DATE OF CONSTRUCTION: 19__	
STRUCTURE FILE NO.:	
PROPOSED STRUCTURE (REHABILITATION)	
PROPOSED WORK: Refurbish bearings, seal expansion joints, apply overlay to deck and paint structural steel	
SPANS: 46'-0", 66'-3", 60'-0"	
ROADWAY: 52'-0" f/f curb with 5'-0" sidewalk and 2'-0" safety curb	
LIVE LOADING: C.F.= 2000 (57)	
SKEW: 8° 05'50" L.F.	
WEARING SURFACE: 1 1/4" Micro-Silica modified concrete overlay	
EXISTING APPROACH SLAB: 20'-0" Abut. 1 25'-0" Abut. 2	
ALIGNMENT: Tangent	
SUPERELEVATION: Normal crown	



**DESIGN REFERENCES**

REFERENCE shall be made to Standard Drawings:

EXJ-4-87 dated 1-5-89

**DESIGN STRESSES**

Concrete Class S - compressive strength 4500 p.s.i.

Concrete Class C - compressive strength 4000 p.s.i.

Reinforcing Steel - ASTM A615, A616, A617  
(Epoxy coated) - Grade 60 minimum yield strength 60,000 p.s.i.

**SCOPE OF WORK**

1. Refurbish and reset abutment bearings
2. Seal expansion joints with strip seals
3. Apply overlay to deck, top of backwall and approach slab
4. Seal concrete surfaces
5. Paint structural steel, System OZEU

Work shall be executed in stages as indicated on plans.

**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/or 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.

Contract bid prices shall be based upon a recognition of the uncertainties described above and upon a prebid examination of the existing structure by the Contractor. However, all project work shall be based upon actual details and dimensions which have been verified by the Contractor in the field.

**PORTIONS OF STRUCTURES REMOVED**

Removal of portions of existing structure shall be performed in such a manner as to prevent debris from falling onto the roadway below. All debris shall be removed from the site and disposed of by the Contractor.

Concrete shall be removed only with pneumatic or hand tools that will give results satisfactory to the Engineer. Care shall be taken to avoid damaging the existing reinforcing steel which is to remain in place. The weight of the hammer shall not be more than 35 pounds for removal within 6 inches of portions to be preserved. Outside the 6-inch limit hammers not to exceed 85 pounds may be used with the approval of the Engineer. Any salvaged reinforcing steel which is made unusable by the Contractor's concrete removal operations shall be replaced with new dowelled steel at his cost.

Removal of existing structure components shall be by means of equipment and procedures, approved by the Engineer, which are chosen and employed so as to prevent damage to the existing steel which is to remain.

**CUT LINE CONSTRUCTION JOINT PREPARATION:** Saw cut boundaries of proposed concrete removals 1" deep. Remove concrete to a rough surface. Where noted protruding reinforcing steel shall be left in place. Install dowel bars as specified. Prior to concrete placement, abrasively clean joint surface and exposed reinforcement to remove loose and disintegrated concrete and loose rust. Then, the joint surface and exposed reinforcement shall be thoroughly cleaned of all dirt, dust, or other foreign material by the use of water, air under pressure, or other methods that produce satisfactory results. Concrete bonding surfaces shall be wet without free water as concrete is placed.

**REPLACEMENT OF EXISTING REINFORCEMENT STEEL:** Any existing reinforcing bars which are to be incorporated into the new work and which are made unusable by the Contractor's concrete removal operations shall be replaced with new steel at his cost. Any existing reinforcing bars deemed by the Engineer to be unusable because of corrosion shall be replaced with new steel. An allowance of 100 pounds is included in Item 509 for this purpose.

**MECHANICAL COUPLERS**

An approved type of mechanical coupler for reinforcing bars shall be provided. Installation of couplers shall conform with manufacturer's recommended procedures.

Couplers and dowel bars shall be epoxy coated. Coating for both couplers and bars shall conform to the same specification. Coatings which have been damaged or which otherwise do not meet specifications with respect to color, continuity and uniformity may be repaired as directed by the Engineer or they shall be replaced with material which meets the specifications.

Couplers and dowel bar extensions shall conform with Item 509 and be included in the bid price per pound for Item 509.

**PLANS FOR EXISTING BRIDGE**

Plans of the existing structure are available for reference at the ODOT District Eight office.

**MAINTENANCE OF TRAFFIC**

For sequence of construction on project and maintenance of traffic see roadway plans sheet  $\frac{1A}{170}$

**REFURBISH BEARING DEVICE**

This Item shall include all work necessary to clean and paint abutment bearings. Included shall be:

1. Disassembly of the bearings.
2. Hand cleaning (grinding if required).
3. Abrasive blasting and painting as required by proposal note Field Painting of Existing Steel, System OZEU.
4. Replacement of any damaged sheet lead (711.19). Preformed bearing pads 1/8" thick, meeting the requirements of 711.21 may be substituted for the sheet lead.
5. Installation of any necessary 1/8" thick steel shims of the same size as the bearings to provide a snug fit.
6. Reassembly of the rockers.

At the option of the Contractor and at no additional cost to the state, new bearings of the same type as the existing may be installed in place of the refurbished bearings. All work shall be to the satisfaction of the Engineer. Payment for all the above described labor and materials will be made at the contract price bid for Item 516 - Refurbish bearing device.

**JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE**

The ends of the beams at each abutment shall be jacked and the beams supported so the bearing may be removed. The Contractor shall submit his jacking plan to the Director for approval prior to jacking.

**RESET BEARINGS**

Bearings at the abutments shall be reset to be vertical at 60° F. Masonry plates shall be adjusted to be centered under bearings.

**PAINTING OF EXISTING STRUCTURAL STEEL**

All existing structural steel shall be cleaned and painted as required by the proposal note Field Painting of Existing Steel, System OZEU.

The surface area pay quantity is based on the surface area of the main members increased by 25 percent to account for the area of crossframes, bearings, and other structural steel incidentals to be cleaned and painted.

**MICRO-SILICA MODIFIED CONCRETE OVERLAY**

Longitudinal joints in the concrete overlay are permitted, but only to the extent necessary to accommodate the width of the finishing machine, to facilitate changes in the roadway crown, or to permit maintenance of vehicular traffic.

**SEALING OF CONCRETE SURFACES**

Reference shall be made to the proposal note for application and material specifications. Sealer shall be applied to the following surfaces.

1. Abutment backwalls, beam seats, and the face of the breastwall to ground line shall be sealed with an epoxy sealer.
2. The piers shall be sealed with an epoxy sealer. The sealer shall be applied to the sides, bottom and ends of the cap and the total surface of the columns.
3. Superstructure and abutment wingwall parapets shall be sealed as shown on sheets  $\frac{1}{5}$  and  $\frac{4}{5}$  with an epoxy or non-epoxy sealer.

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

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**GENERAL NOTES**

BRIDGE NO. HAM-562-0227  
HAM 562 UNDER WESLEY AVENUE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	BRP	3/93	



ESTIMATED QUANTITIES

Calculated by: MRS  
Checked by: AT

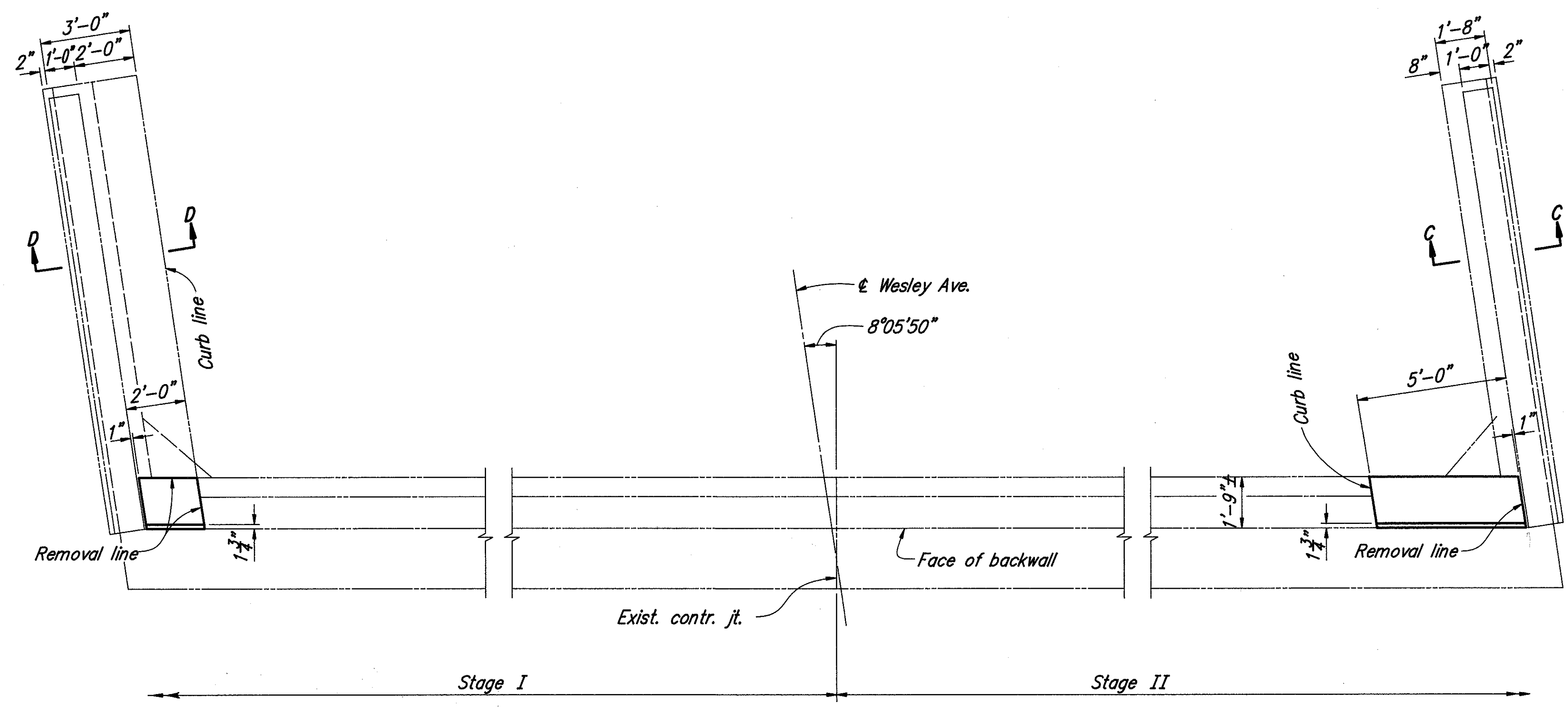
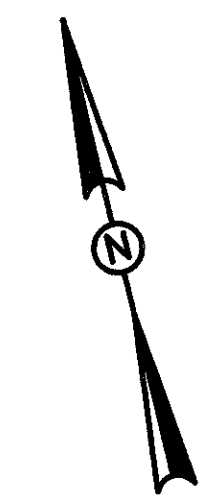
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPERSTRUCTURE	GENERAL
202	11201	L.S.	Lump	Portions of structures removed, as per plan				L.S.
509	15800	1388	Lb.	Epoxy coated reinforcing steel, grade 60			1288	100
511	34400	7	Cu. yd.	Class S concrete, superstructure (repair or reconstruction)			7	
511	45700	1	Cu. yd.	Class C concrete, abutment (repair or reconstruction)	1			
Special	51267500	525	Sq. yd.	Sealing of concrete surfaces (see Proposal Note)			525	
Special	51267502	372	Sq. yd.	Sealing of concrete surfaces (epoxy) (see Proposal Note)	146	226		
Special	51400050	13,235	Sq. ft.	Surface preparation of existing steel, system OZEU (see Proposal Note)			13,235	
Special	51400056	13,235	Sq. ft.	Field painting of existing steel, prime coat, system OZEU (see Proposal Note)			13,235	
Special	51400060	13,235	Sq. ft.	Field painting of existing steel, intermediate coat, system OZEU (see Proposal Note)			13,235	
Special	51400066	13,235	Sq. ft.	Field painting of existing steel, finish coat, system OZEU (see Proposal Note)			13,235	
516	11210	118	Lin. ft.	Structural expansion joint including elastomeric strip seal			118	
516	45304	14	Each	Refurbish bearing device			14	
516	46700	14	Each	Reset bearing			14	
516	47000	L.S.	Lump	Jacking and temporary support of superstructure			L.S.	
Special	51922000	1021	Sq. yd.	Micro-silica modified concrete overlay (1 1/4" thick) (see Proposal Note)			1021	
Special	51922100	46	Cu. yd.	Micro-silica modified concrete overlay (variable thickness) (see Proposal Note)			46	
Special	51922300	L.S.	Lump	Test slab (see Proposal Note)			L.S.	

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Cincinnati, Ohio 45237

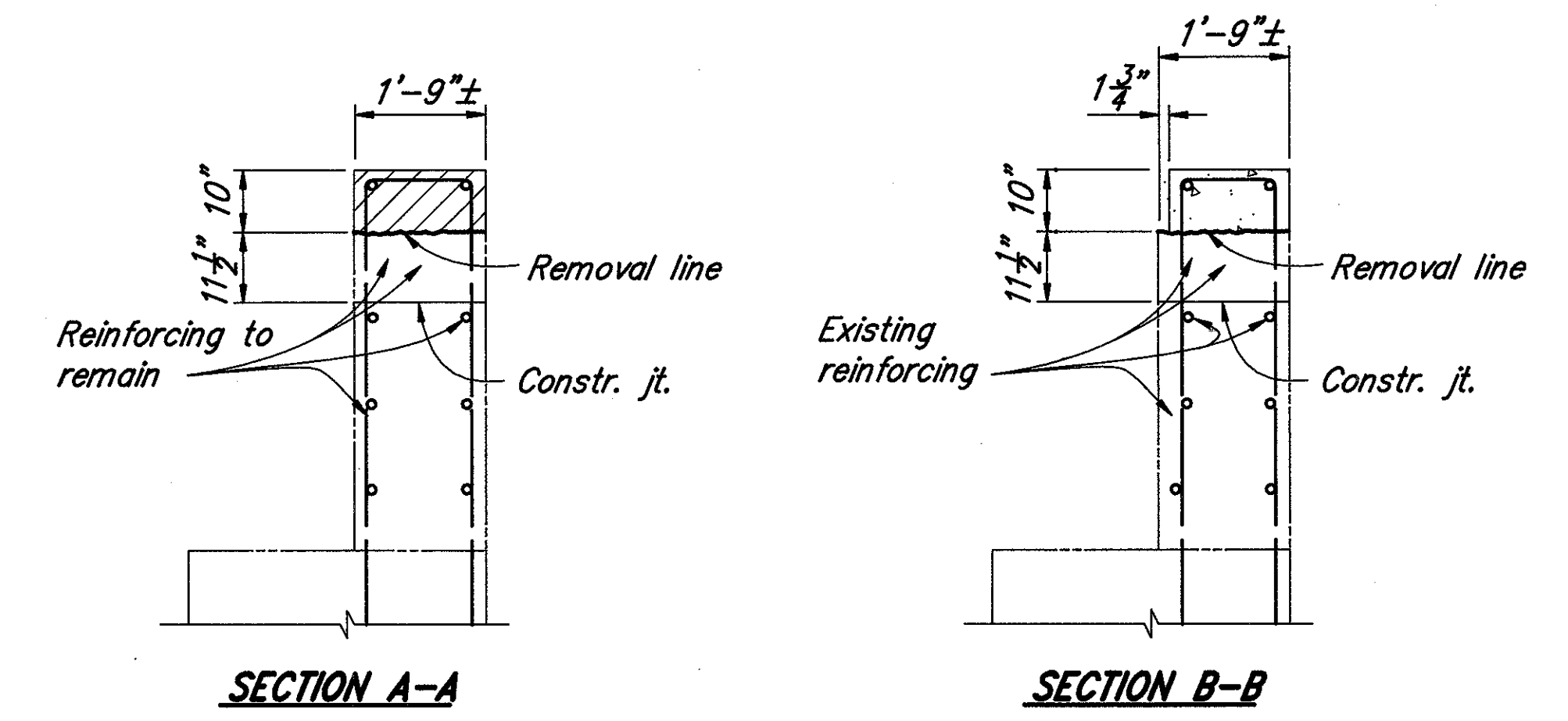
ESTIMATED QUANTITIES

BRIDGE NO. HAM-562-0227  
HAM 562 UNDER WESLEY AVENUE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	MBP	3/93	

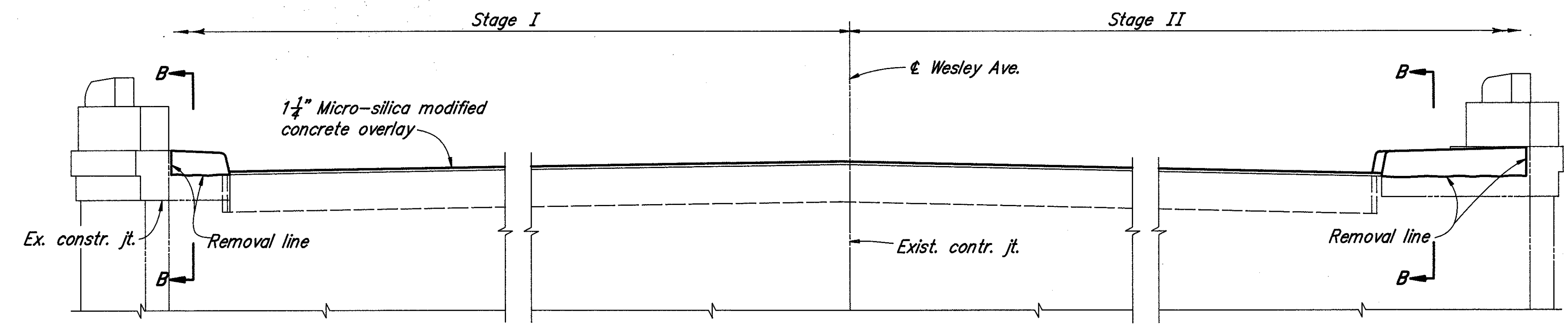


**PLAN**  
Abutment 1 shown  
Abutment 2 similar

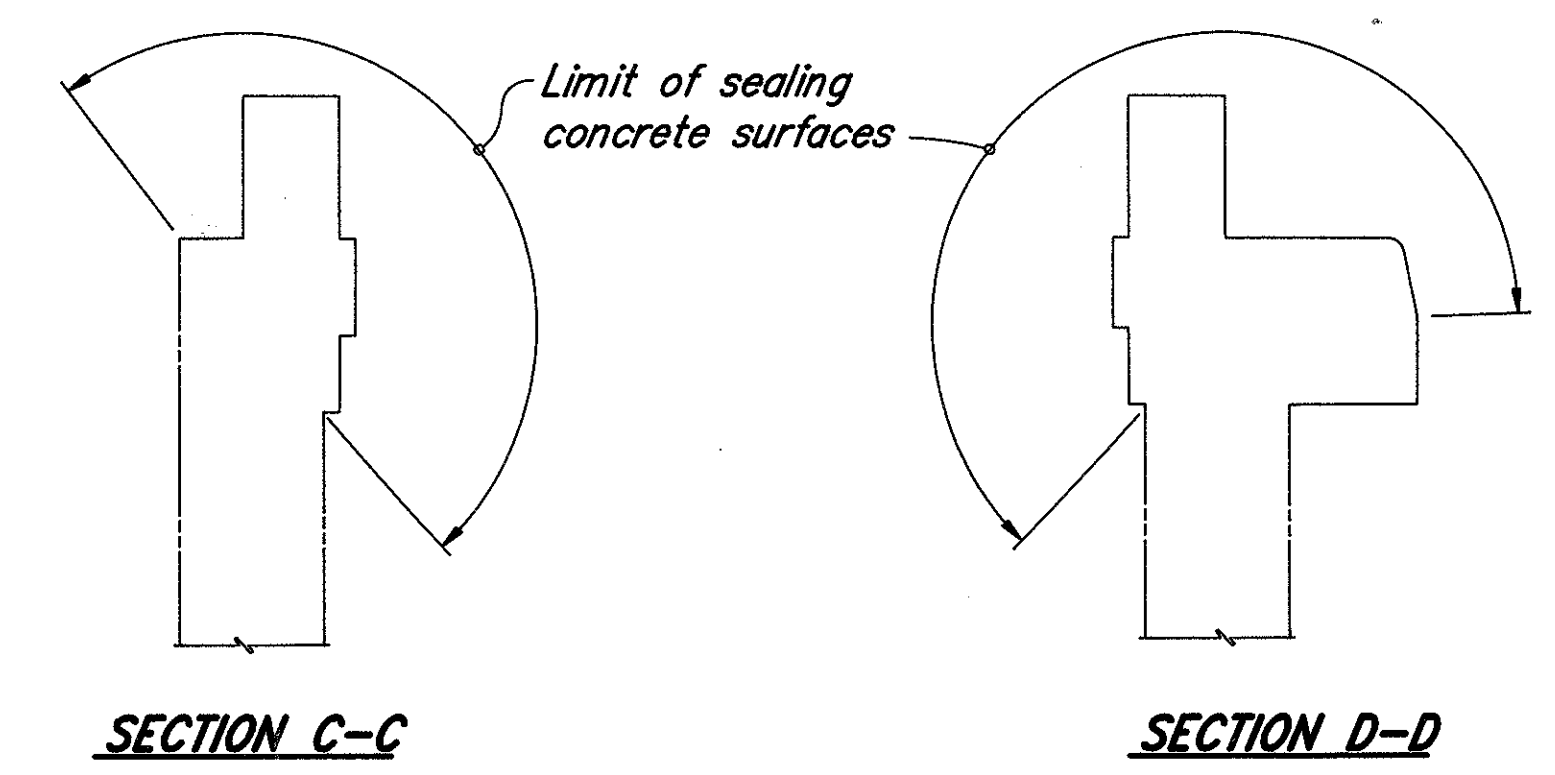


**SECTION A-A**

**SECTION B-B**

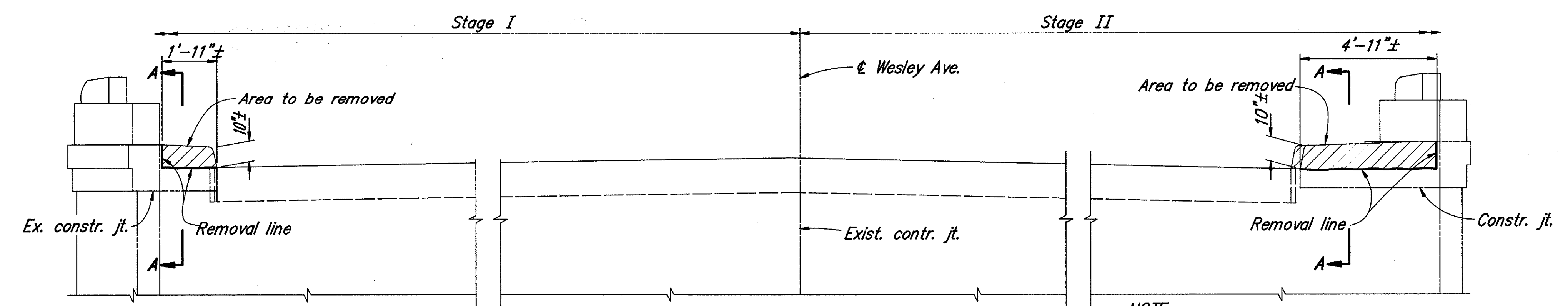


**ELEVATION**  
Modified



**SECTION C-C**

**SECTION D-D**

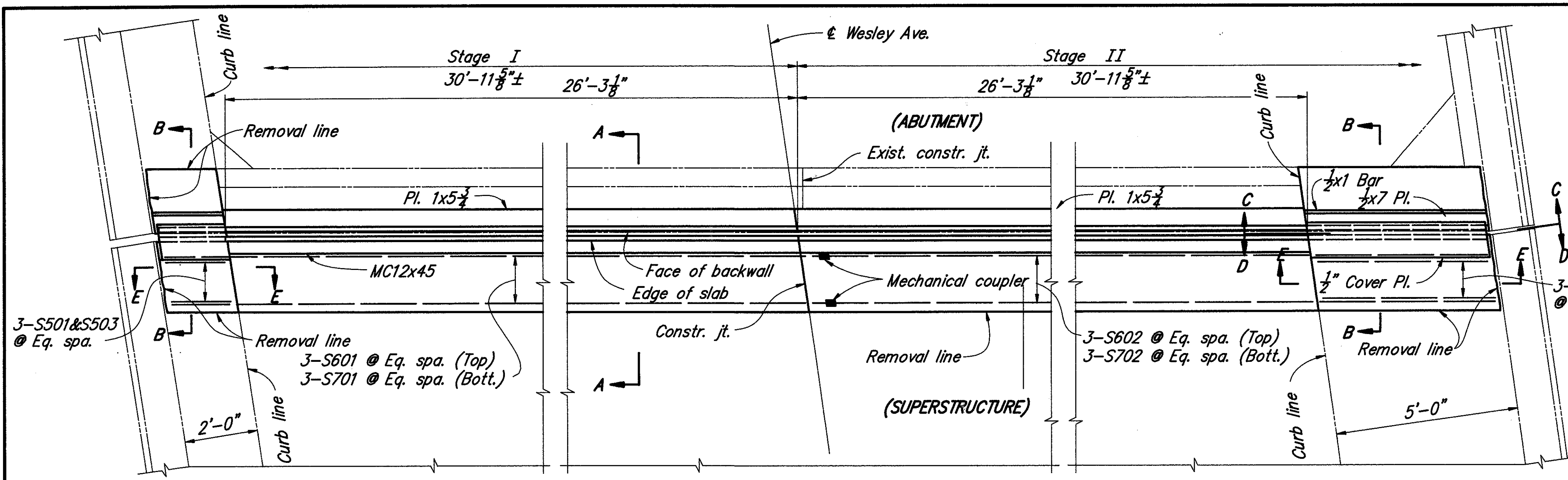


**ELEVATION**  
Existing

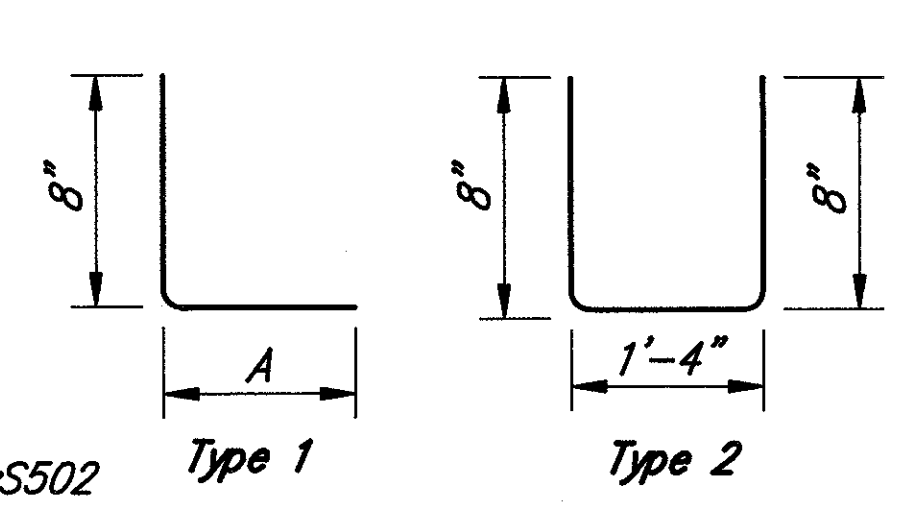
**NOTE**  
Existing reinforcing steel to remain. Cut or bend bars as necessary to maintain 2" minimum clearance.

S044015 25 MAR 1993

<p><b>BALKE ENGINEERS</b> 1848 Summit Road Cincinnati, Ohio 45237</p>						4 / 5
<p><b>ABUTMENTS NO. 1 AND 2</b></p>						
<p>BRIDGE NO. HAM-562-0227 HAM 562 UNDER WESLEY AVENUE</p>						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	BRP	3/93	



**BAR BENDING DIAGRAM**  
All dimensions are out to out of bars.



**TABLE A**

F°	Dimension A	
	Abutment 1	Abutment 2
90	1 9/16"	1 9/16"
80	1 9/16"	1 5/8"
70	1 9/16"	1 5/8"
60	1 5/8"	1 11/16"
50	1 11/16"	1 3/4"
40	1 13/16"	1 3/4"
30	1 7/8"	1 13/16"

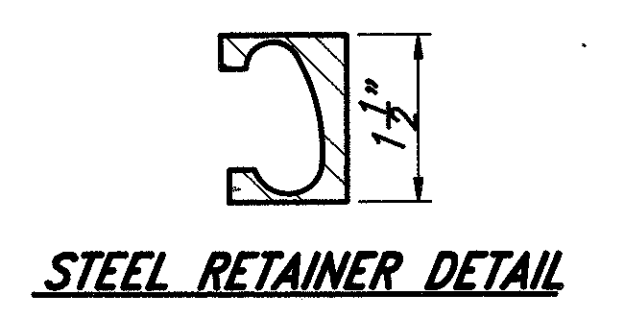
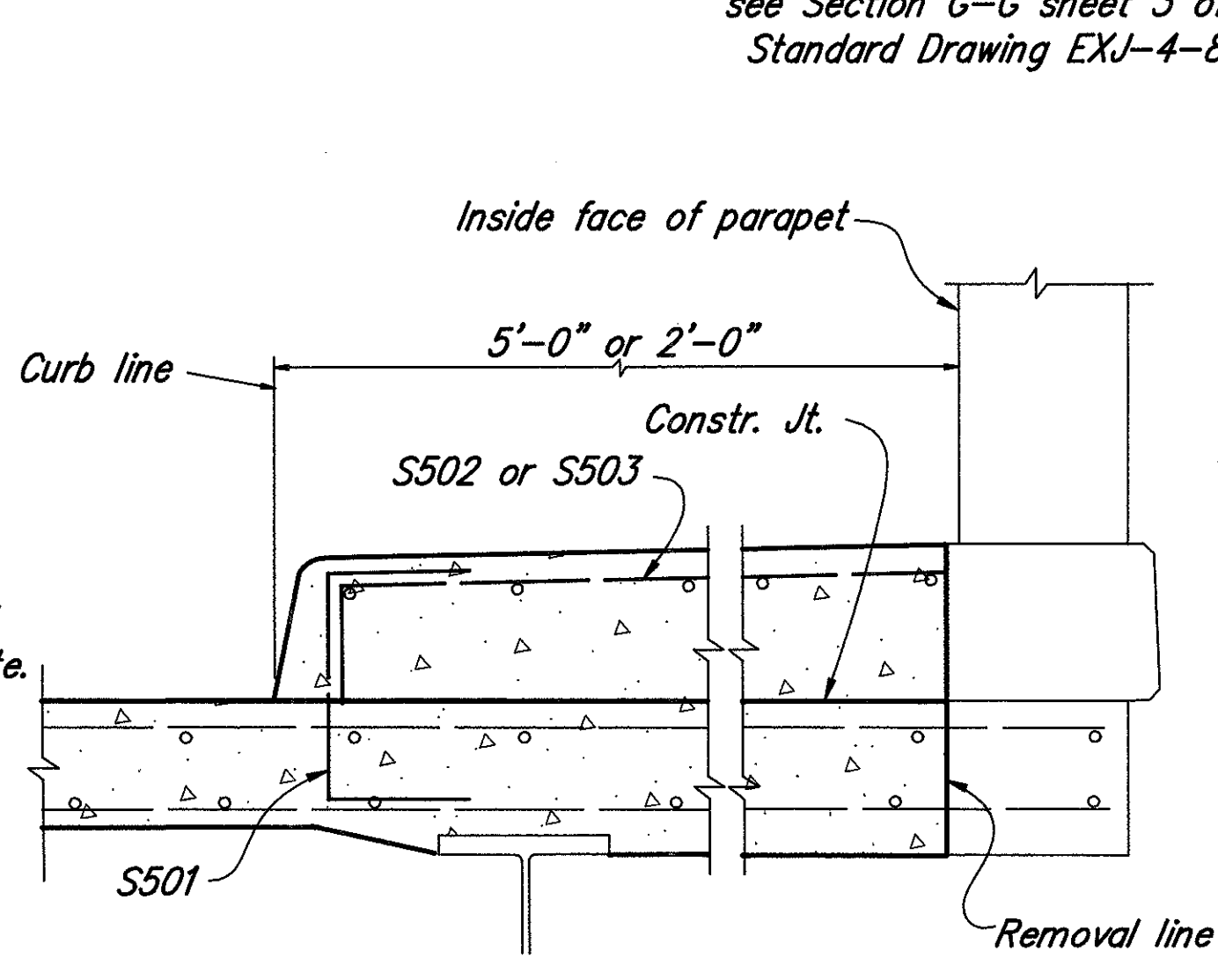
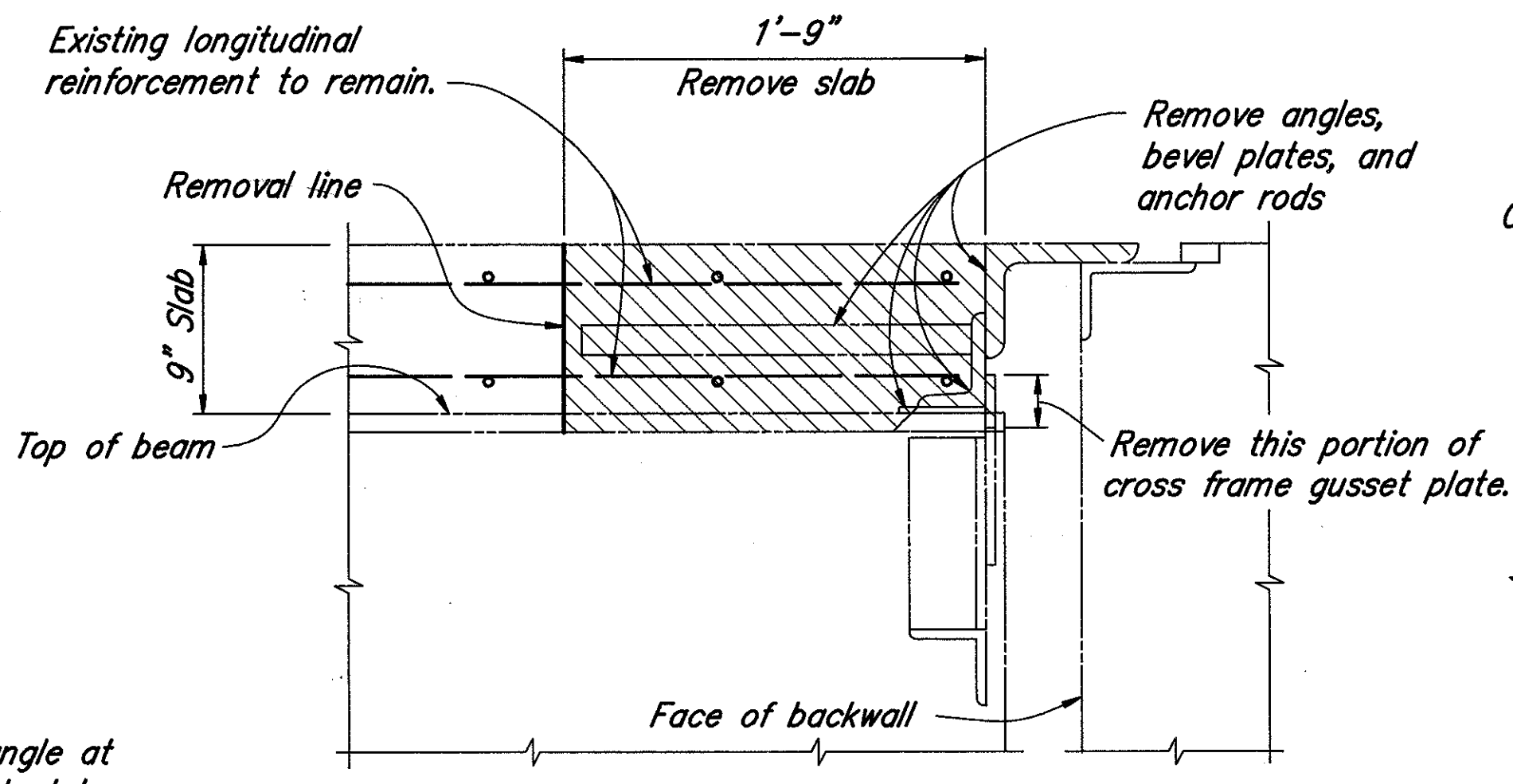
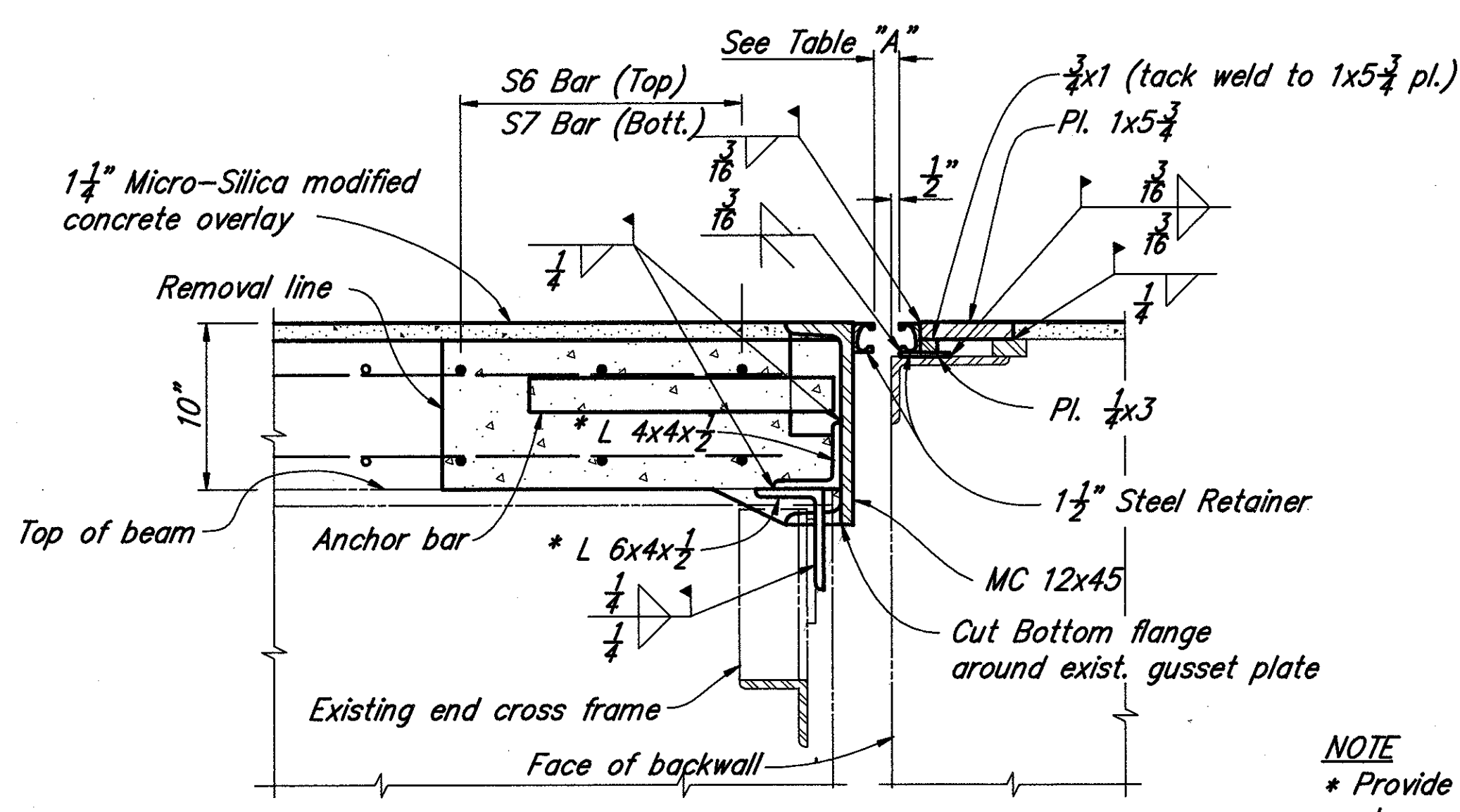
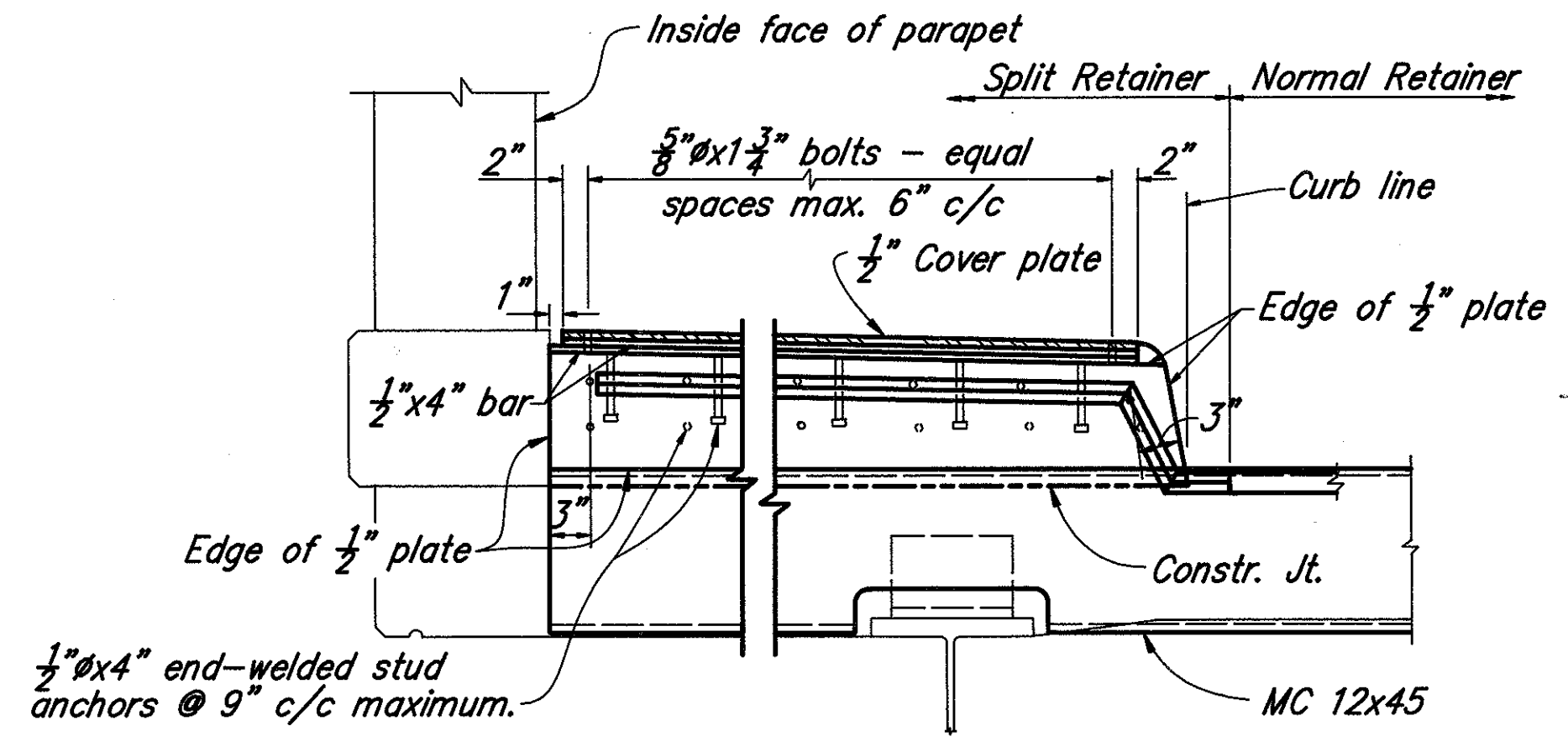
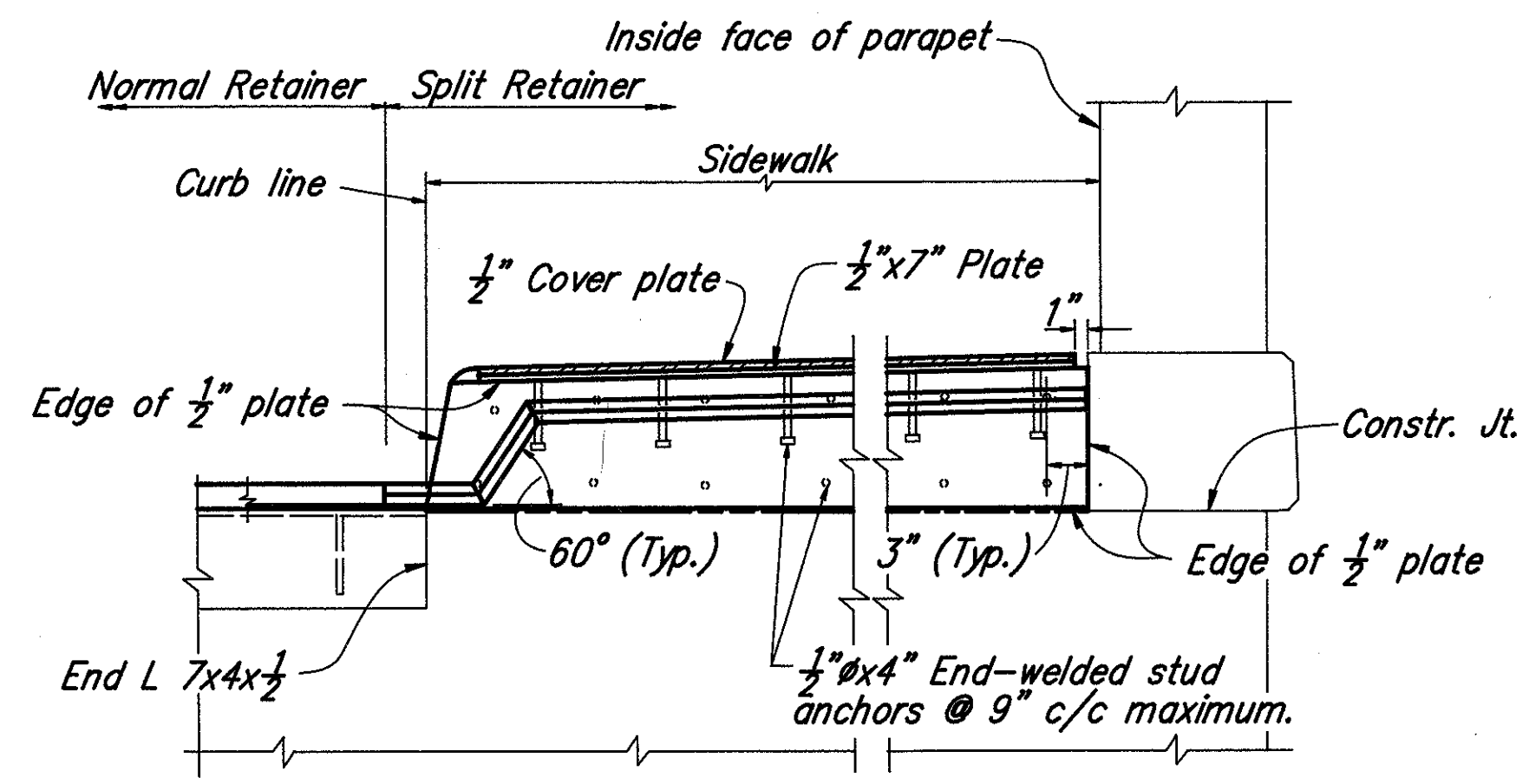
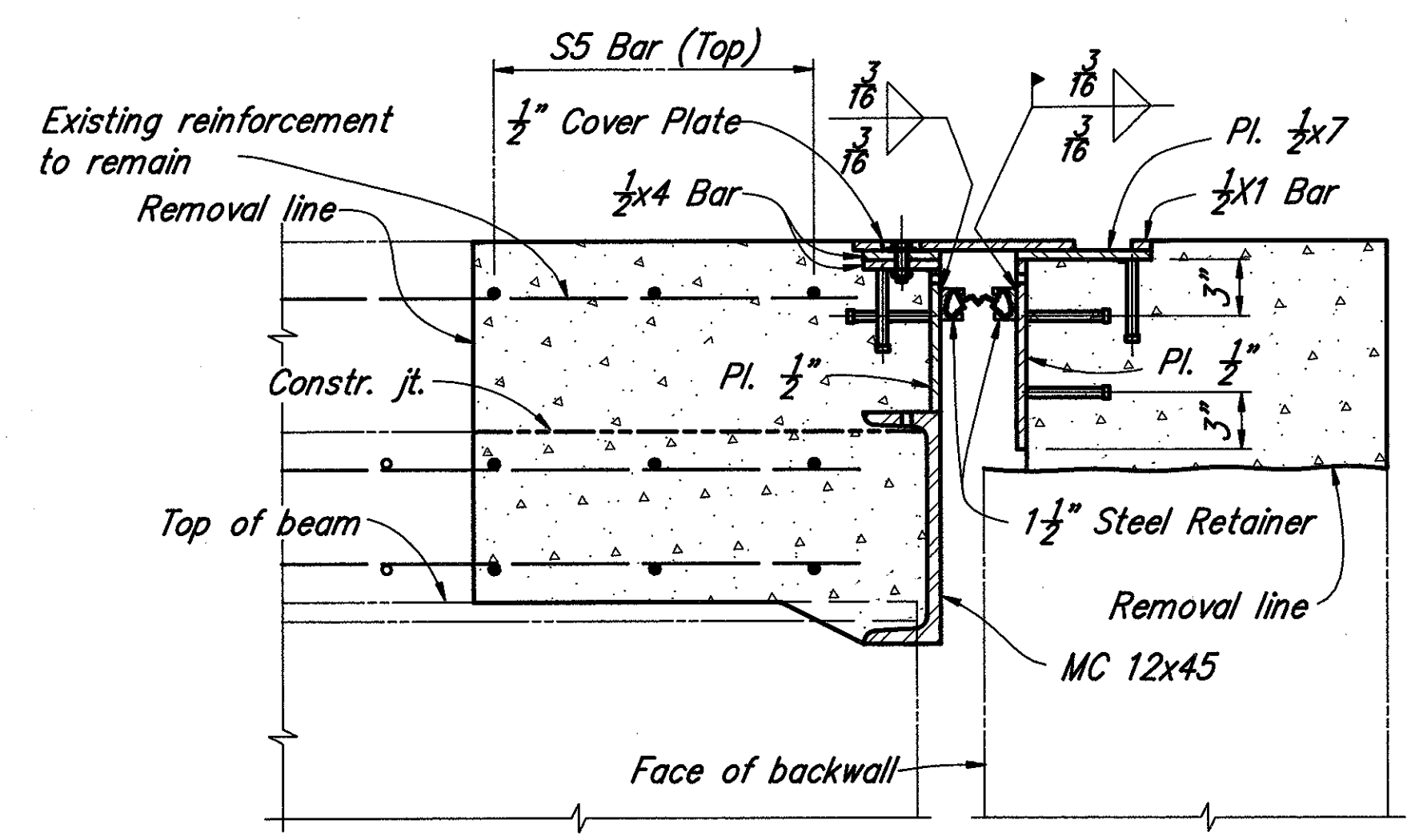
**EPOXY COATED REINFORCING STEEL LIST**

MARK	TOTAL NO.	LENGTH	WEIGHT	TYPE	DIMENSIONS A
SUPERSTRUCTURE					
S501	12	2'-5"	30	2	
S502	6	5'-1"	31	1	4'-6"
S503	6	2'-3"	14	1	1'-9"
S601	6	28'-0"	252	Str.	
S602	6	30'-0"	270	Str.	
S701	6	28'-0"	343	Str.	
S702	6	30'-0"	368	Str.	

**STRIP SEAL GLAND TABLE**

SEAL MOVEMENT RATING	MANUFACTURER & DESIGNATION **		
	D.S. BROWN	STRUCTURAL ACCESSORIES	WATSON BOWMAN & ACME
3"	300A		SE-300

Notes: Compression seal to be installed in one piece  
\*\* or an approved alternate



**NOTE**  
For connection of MC12x45 to existing beams, see detail A sheet 1 of 5, Standard Drawing EXJ-4-87  
For additional details see Standard Drawing EXJ-4-87

**NOTE**  
\* Provide angle at each gusset plate.

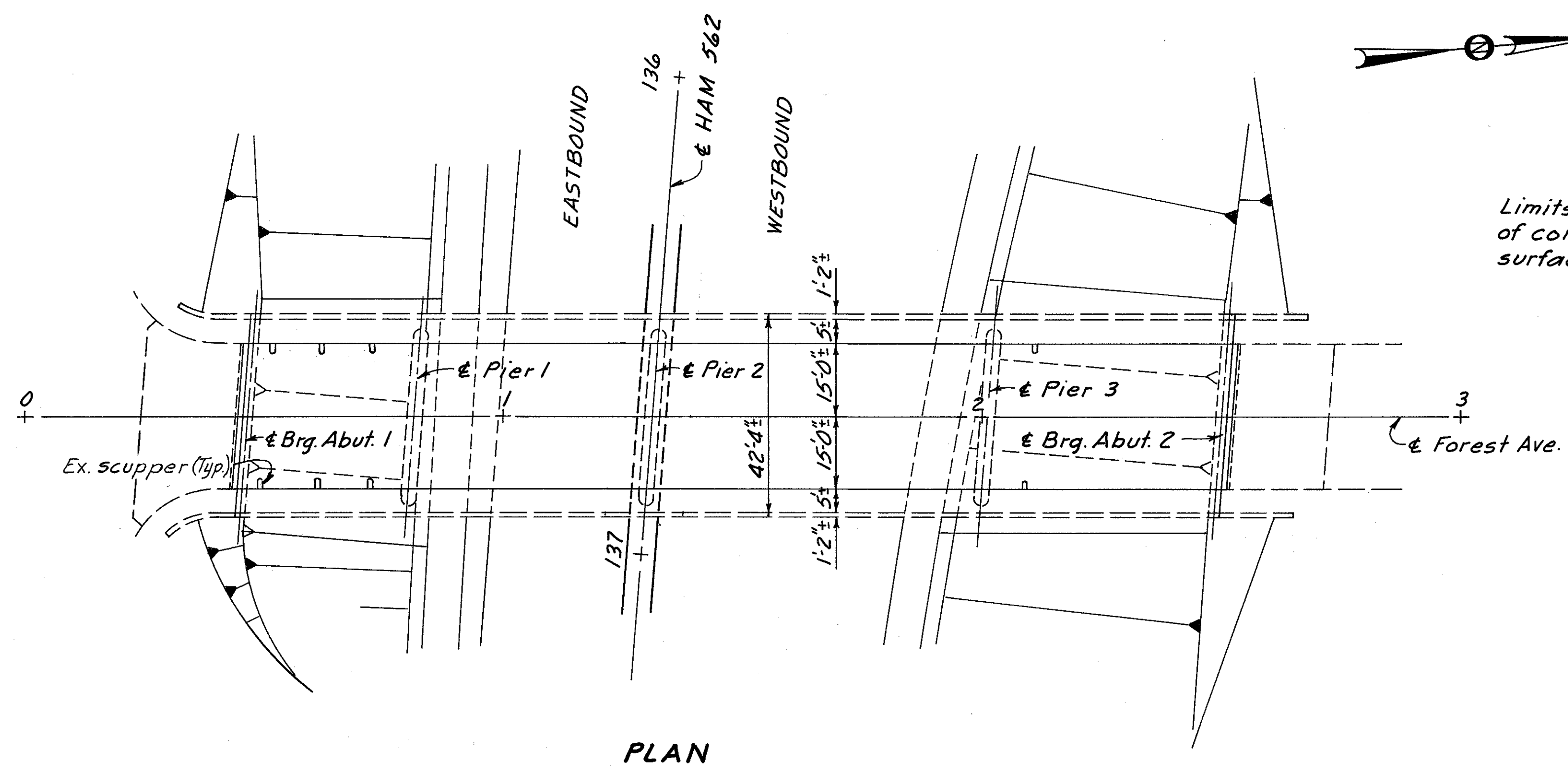
**BALKE ENGINEERS**  
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Cincinnati, Ohio 45237

**EXPANSION JOINT DETAILS AT ABUTMENT NO. 1 AND 2**  
BRIDGE NO. HAM-562-0227  
HAM 562 UNDER WESLEY AVENUE

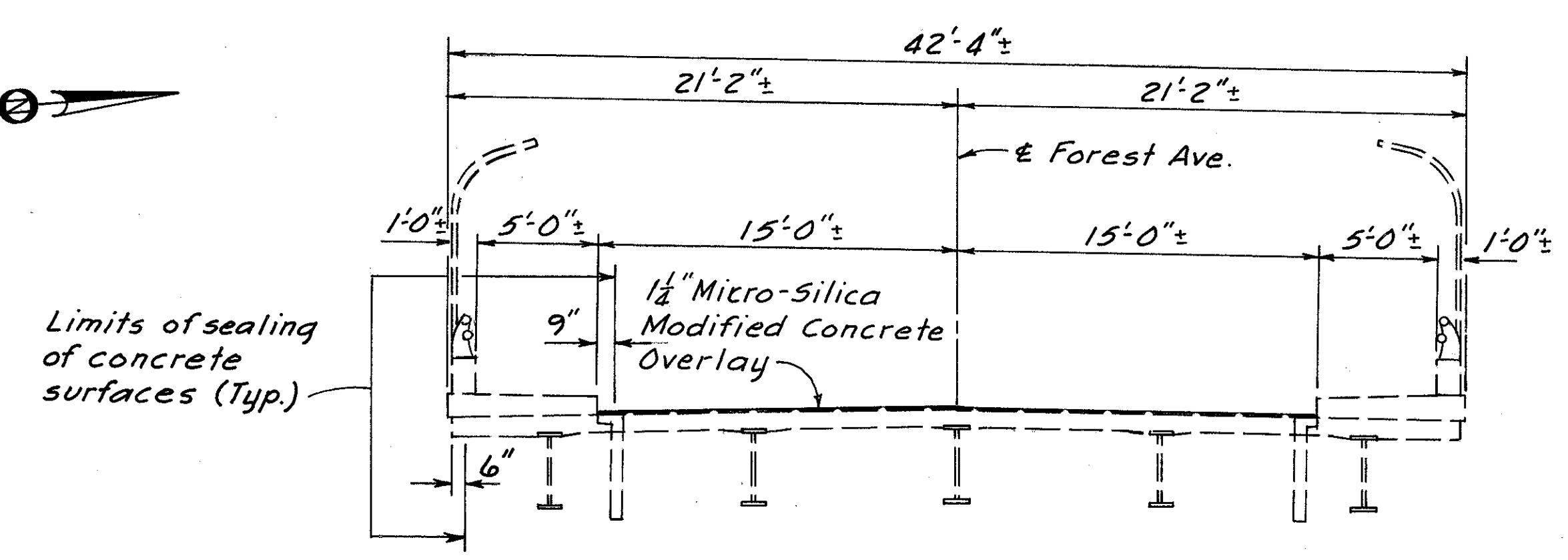
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	3/93		

3014EJ3 25 MAR 1993

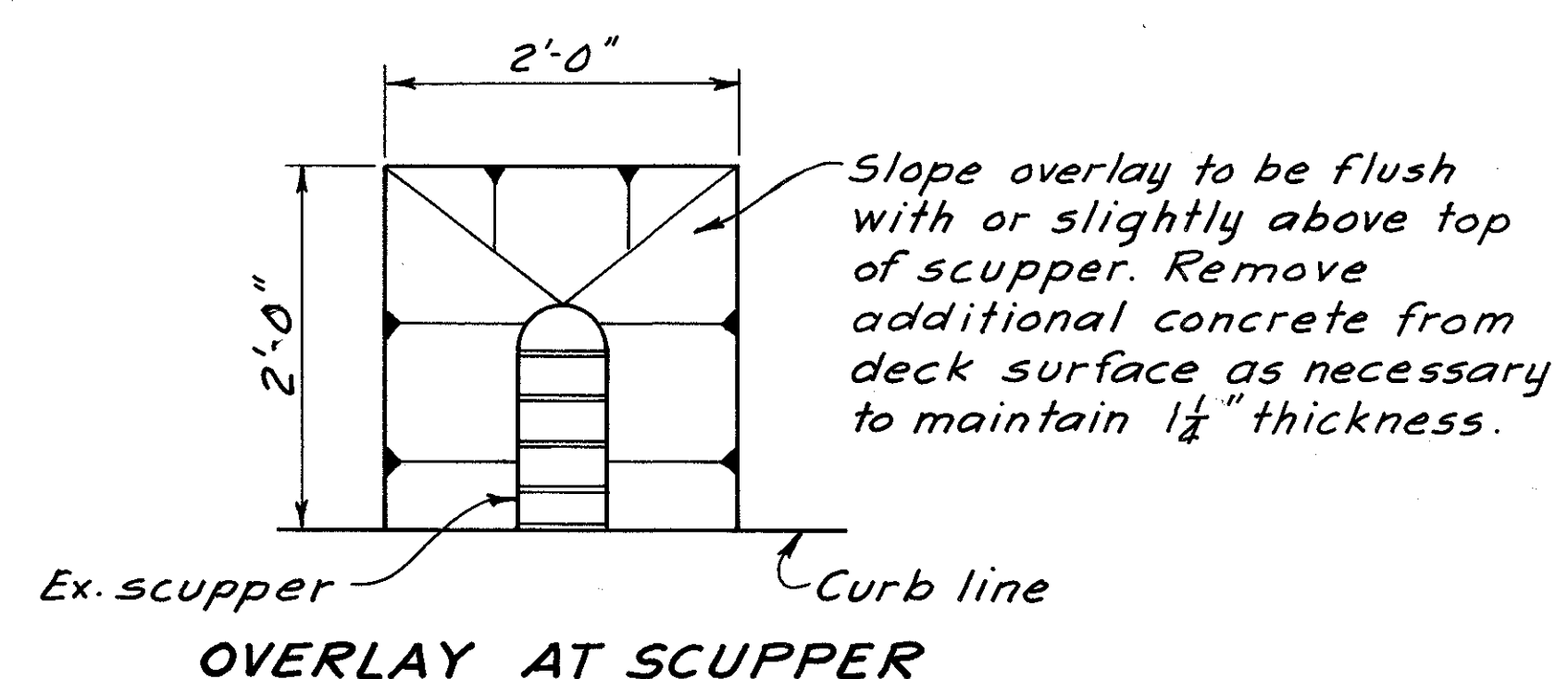




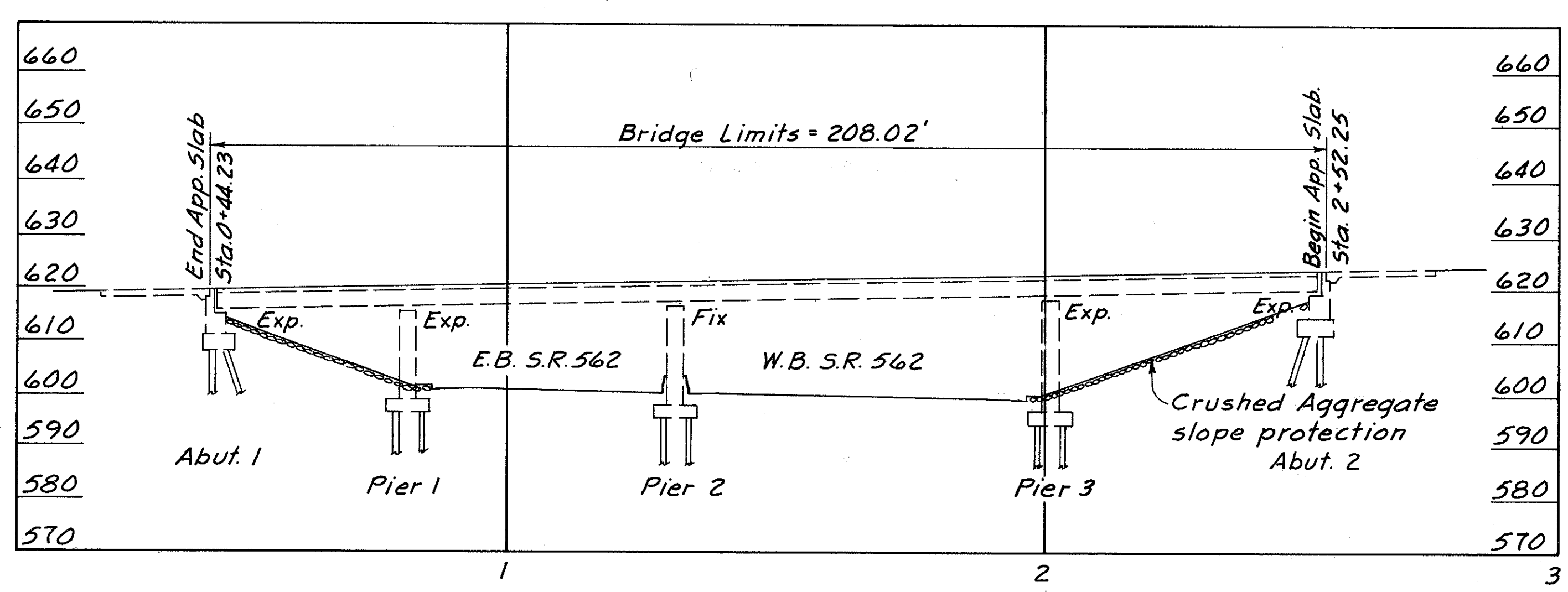
**PLAN**



**TRANSVERSE SECTION**



**OVERLAY AT SCUPPER**



**ELEVATION**

EXISTING STRUCTURE	
TYPE: Continuous rolled steel beams with reinforced concrete deck and substructure	
SPANS: 34'-9", 49'-9", 70'-0", 49'-0"	
ROADWAY: 30'-0" f/f curb with 5'-0" sidewalks	
LIVE LOADING: C.F. = 400 (57)	
SKEW: 4°41'10" L.F.	
DATE OF CONSTRUCTION: 19__	
STRUCTURE FILE NO.:	
PROPOSED STRUCTURE (REHABILITATION)	
PROPOSED WORK: Refurbish bearings, replace end cross frame, seal expansion joints, apply overlay to deck and paint structural steel	
SPANS: 34'-9", 49'-9", 70'-0", 49'-0"	
ROADWAY: 30'-0" f/f curb with 5'-0" sidewalks	
LIVE LOADING: C.F. = 400 (57)	
SKEW: 4°41'10" L.F.	
WEARING SURFACE: 1 1/2" Micro-Silica modified concrete overlay	
EXISTING APPROACH SLAB: 20'-0" long 20'-0" long	
ALIGNMENT: Tangent	
SUPERELEVATION: Normal crown	

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

**GENERAL PLAN AND ELEVATION**

BRIDGE NO. HAM-562-0253  
HAM 562 UNDER FOREST AVENUE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	CRS	3/93	

BASESHT 25 OCT 1991

**DESIGN REFERENCES**

REFERENCE shall be made to Standard Drawings:

EXJ-4-87 dated 1-5-89  
SD-1-69 dated 6-12-69

**DESIGN STRESSES**

Concrete Class S - compressive strength 4500 p.s.i.

Concrete Class C - compressive strength 4000 p.s.i.

Reinforcing Steel - ASTM A615, A616, A617  
- Grade 60 minimum yield strength 60,000 p.s.i.

**SCOPE OF WORK**

1. Refurbish and reset abutment bearings
2. Replace deteriorated end cross frame
3. Seal expansion joints with strip seals
4. Apply overlay to deck, top of backwall and approach slab
5. Seal concrete surfaces
6. Paint structural steel

**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/or 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.

Contract bid prices shall be based upon a recognition of the uncertainties described above and upon a prebid examination of the existing structure by the Contractor. However, all project work shall be based upon actual details and dimensions which have been verified by the Contractor in the field.

**PORTIONS OF STRUCTURES REMOVED**

Removal of portions of existing structure shall be performed in such a manner as to prevent debris from falling onto the roadway below. All debris shall be removed from the site and disposed of by the Contractor.

Concrete shall be removed only with pneumatic or hand tools that will give results satisfactory to the Engineer. Care shall be taken to avoid damaging the existing reinforcing steel which is to remain in place. The weight of the hammer shall not be more than 35 pounds for removal within 6 inches of portions to be preserved. Outside the 6-inch limit hammers not to exceed 85 pounds may be used with the approval of the Engineer. Any salvaged reinforcing steel which is made unusable by the Contractor's concrete removal operations shall be replaced with new dowelled steel at his cost.

Removal of existing structure components shall be by means of equipment and procedures, approved by the Engineer, which are chosen and employed so as to prevent damage to the existing steel which is to remain.

**CUT LINE CONSTRUCTION JOINT PREPARATION:** Saw cut boundaries of proposed concrete removals 1" deep. Remove concrete to a rough surface. Where noted protruding reinforcing steel shall be left in place. Install dowel bars as specified. Prior to concrete placement, abrasively clean joint surface and exposed reinforcement to remove loose and disintegrated concrete and loose rust. Then, the joint surface and exposed reinforcement shall be thoroughly cleaned of all dirt, dust, or other foreign material by the use of water, air under pressure, or other methods that produce satisfactory results. Concrete bonding surfaces shall be wet without free water as concrete is placed.

**REPLACEMENT OF EXISTING REINFORCEMENT STEEL:** Any existing reinforcing bars which are to be incorporated into the new work and which are made unusable by the Contractor's concrete removal operations shall be replaced with new steel at his cost. Any existing reinforcing bars deemed by the Engineer to be unusable because of corrosion shall be replaced with new steel. An allowance of 100 pounds is included in Item 509 for this purpose.

**STRUCTURAL STEEL, REPLACEMENT OF DETERIORATED END CROSS FRAMES**

This item shall include the following:

1. Removal of the existing end cross frames as shown.
2. Cleaning the areas of the existing beams where the new members will be attached.
3. Fabrication and erection of the new cross frames.
4. Painting of the new cross frames according to System IZEU proposal note.

The bid price for this item shall include all material, labor, and equipment necessary to complete this item of work.

**PLANS FOR EXISTING BRIDGE**

Plans of the existing structure are available for reference at the ODOT District Eight office.

**MAINTENANCE OF TRAFFIC**

Forest Avenue shall be closed to traffic during construction.

For sequence of construction on project and maintenance of traffic see roadway plans sheet  $\frac{14}{170}$

**REFURBISH BEARING DEVICE**

This Item shall include all work necessary to clean and paint abutment bearings. Included shall be:

1. Disassembly of the bearings.
2. Hand cleaning (grinding if required).
3. Abrasive blasting and painting as required by proposal note Field Painting of Existing Steel, System OZEU.
4. Replacement of any damaged sheet lead (711.19). Preformed bearing pads 1/8" thick, meeting the requirements of 711.21 may be substituted for the sheet lead.
5. Installation of any necessary 1/8" thick steel shims of the same size as the bearings to provide a snug fit.
6. Reassembly of the bearings.

At the option of the Contractor and at no additional cost to the state, new bearings of the same type as the existing may be installed in place of the refurbished bearings. All work shall be to the satisfaction of the Engineer. Payment for all the above described labor and materials will be made at the contract price bid for Item 516 - Refurbish bearing device.

**JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE**

The ends of the beams at each abutment shall be jacked and the beams supported so the bearing may be removed. The Contractor shall submit his jacking plan to the Director for approval prior to jacking.

**RESET BEARINGS**

Bearings at the abutments shall be reset to be vertical at 60° F. Masonry plates shall be adjusted to be centered under bearings.

**MICRO-SILICA MODIFIED CONCRETE OVERLAY**

Longitudinal joints in the concrete overlay are permitted, but only to the extent necessary to accommodate the width of the finishing machine or to facilitate changes in the roadway crown.

**PAINTING OF EXISTING STRUCTURAL STEEL**

All existing structural steel shall be cleaned and painted as required by the proposal note Field Painting of Existing Steel, System OZEU.

The surface area pay quantity is based on the surface area of the main members increased by 25 percent to account for the area of crossframes, bearings, and other structural steel incidentals to be cleaned and painted.

**SEALING OF CONCRETE SURFACES**

Reference shall be made to the proposal note for application and material specifications. Sealer shall be applied to the following surfaces.

1. Abutment backwalls, beam seats, and the face of the breastwall to ground line shall be sealed with an epoxy sealer.
2. The piers shall be sealed with an epoxy sealer. The sealer shall be applied to the sides, bottom and ends of the cap and the total surface of the columns.
3. Superstructure and abutment wingwall parapets shall be sealed as shown on sheet  $\frac{1}{5}$  and  $\frac{4}{5}$  with an epoxy or non-epoxy sealer.

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

2 / 5

**GENERAL NOTES**

BRIDGE NO. HAM-562-0253  
HAM 562 UNDER FOREST AVENUE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	BRP	3/93	

ESTIMATED QUANTITIES

Calculated by: MRS  
Checked by: AT

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPERSTRUCTURE	GENERAL
202	11201 /	L.S.	Lump	Portions of structures removed, as per plan				L.S.
509	15800 /	1343	Lb.	Epoxy coated reinforcing steel, grade 60			1243	100
511	34401 /	3	Cu. yd.	Class S concrete, superstructure (repair or reconstruction), as per plan			3	
511	45700 /	2	Cu. yd.	Class C concrete, abutment (repair or reconstruction)	2			
Special	51267500 /	646	Sq. yd.	Sealing of concrete surfaces (see Proposal Note)			646	
Special	51267502 /	309	Sq. yd.	Sealing of concrete surfaces (epoxy) (see Proposal Note)	73	236		
513	15901 /	500	Lbs.	Structural steel, replacement of deteriorated end cross frames, as per plan			500	
Special	51400050 /	11,124	Sq. ft.	Surface preparation of existing steel, System OZEU (see Proposal Note)			11,124	
Special	51400056 /	11,124	Sq. ft.	Field painting of existing steel, prime coat, System OZEU (see Proposal Note)			11,124	
Special	51400060 /	11,124	Sq. ft.	Field painting of existing steel, intermediate coat, System OZEU (see Proposal Note)			11,124	
Special	51400066 /	11,124	Sq. ft.	Field painting of existing steel, finish coat, System OZEU (see Proposal Note)			11,124	
516	11210 /	80	Lin. ft.	Structural expansion joint including elastomeric strip seal			80	
516	45304 /	10	Each	Refurbish bearing device			10	
516	46700 /	10	Each	Reset bearing			10	
516	47000 /	L.S.	Lump	Jacking and temporary support of superstructure			L.S.	
Special	51922000 /	693	Sq. yd.	Micro-silica modified concrete overlay (1 1/4" thick) (see Proposal Note)			693	
Special	51922100 /	16	Cu. yd.	Micro-silica modified concrete overlay (variable thickness)			16	
Special	51922300 /	L.S.	Lump	Test slab (see Proposal Note)			L.S.	

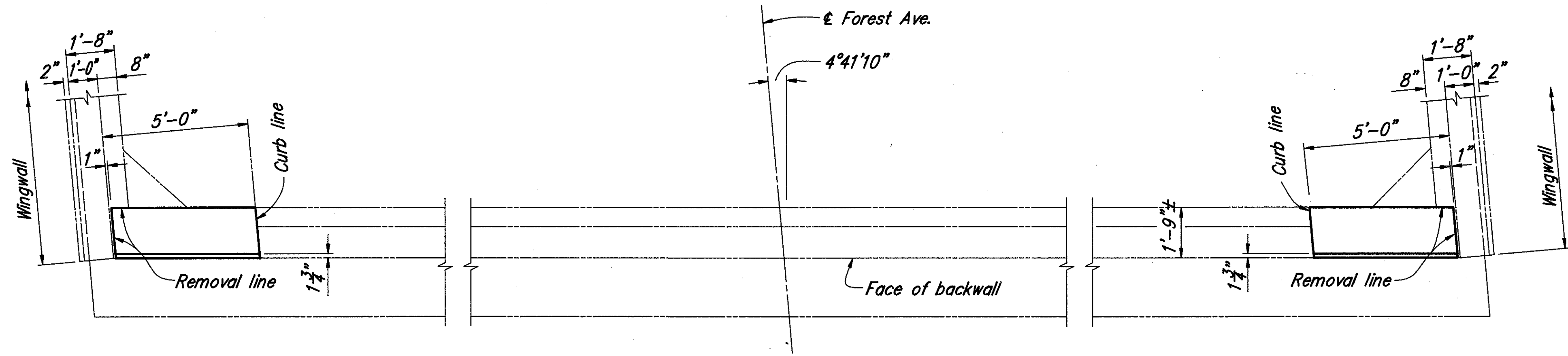
**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

ESTIMATED QUANTITIES

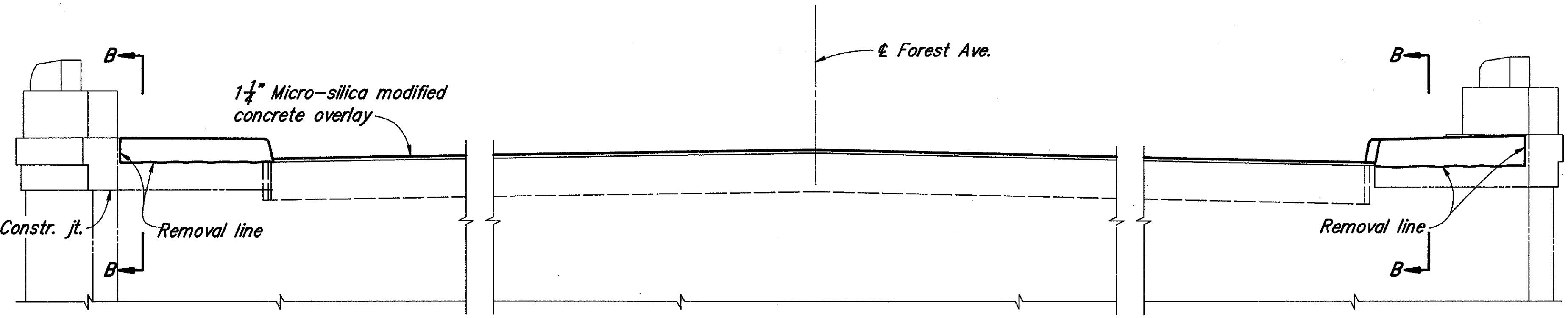
BRIDGE NO. HAM-562-0253  
HAM 562 UNDER FOREST AVENUE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	RRP	3/93	

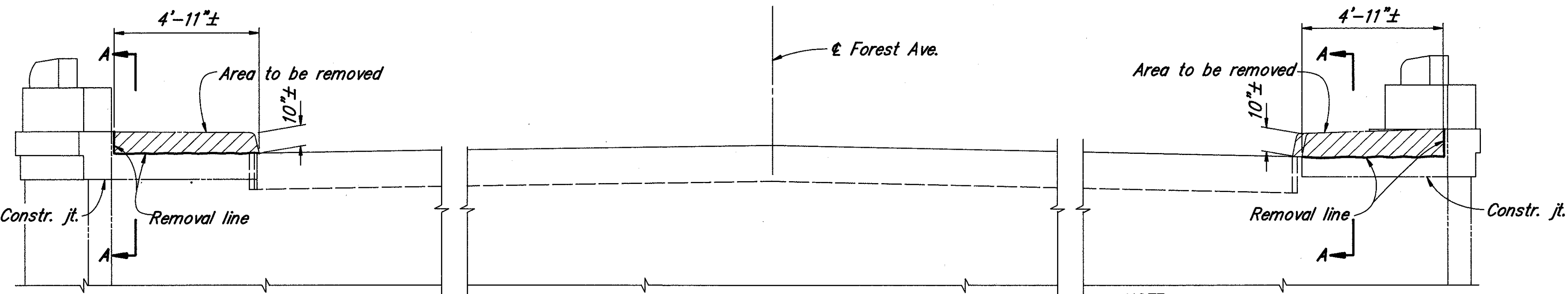




**PLAN**  
Abutment 1 shown  
Abutment 2 similar

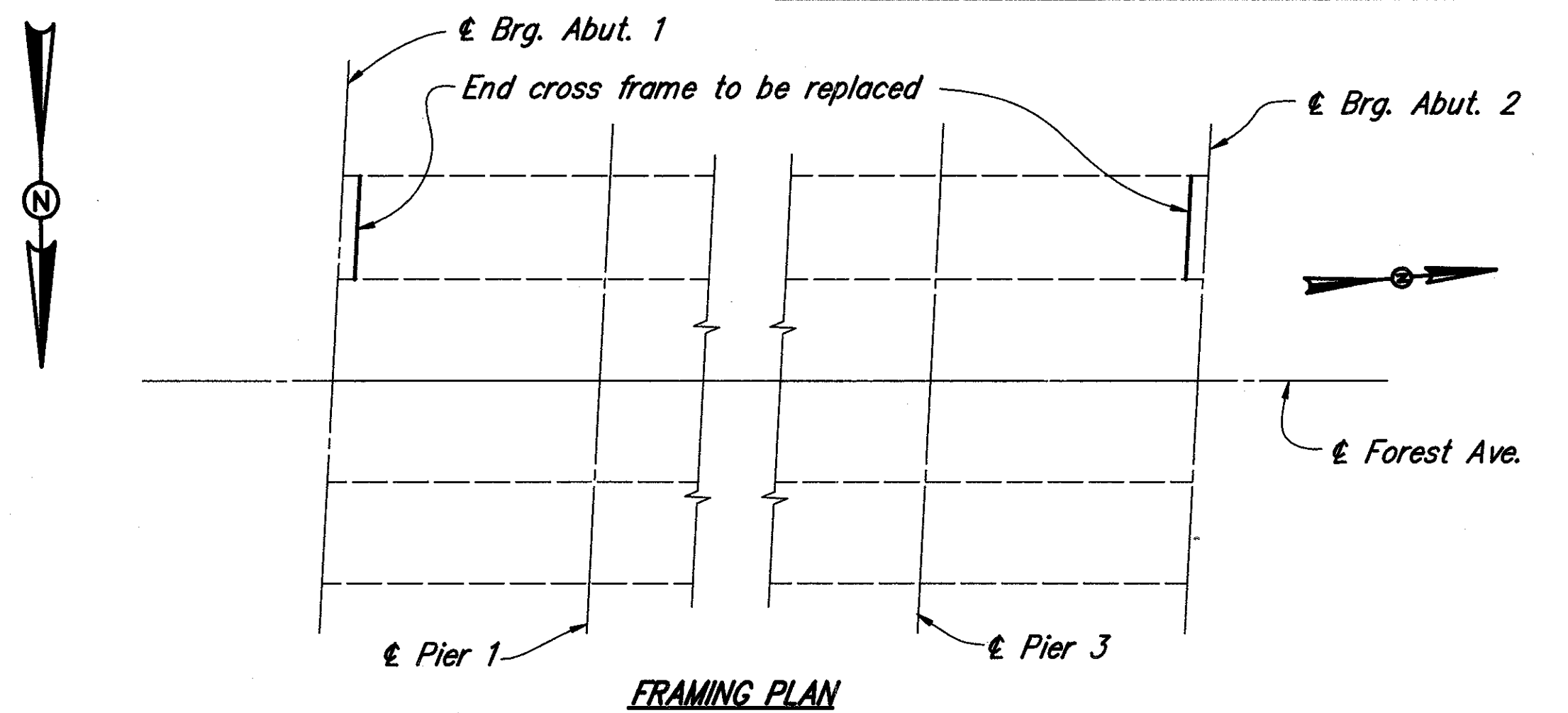


**ELEVATION**  
Modified

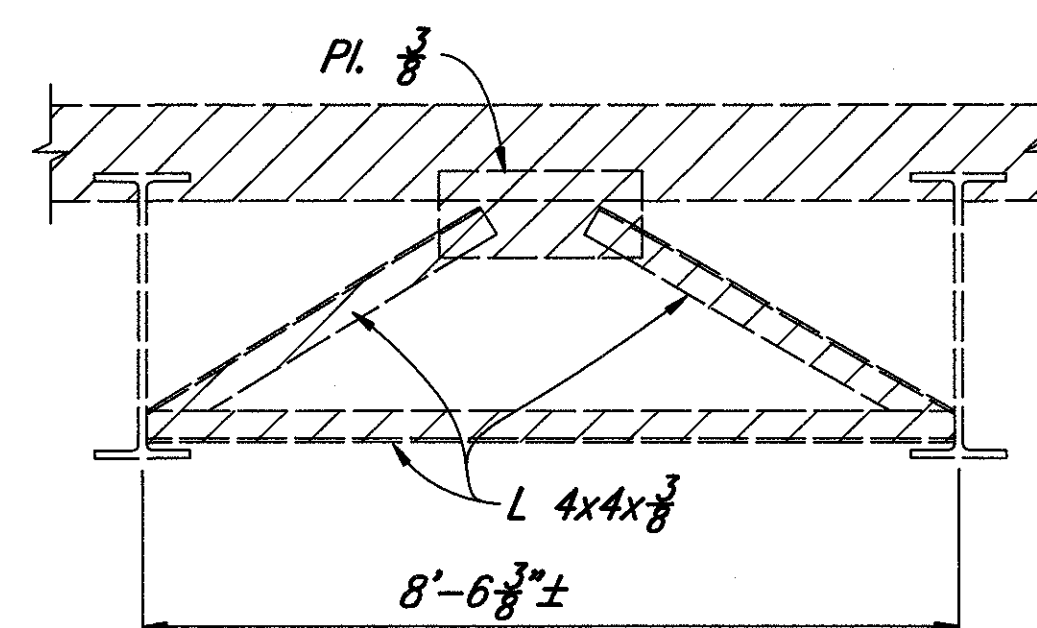


**ELEVATION**  
Existing

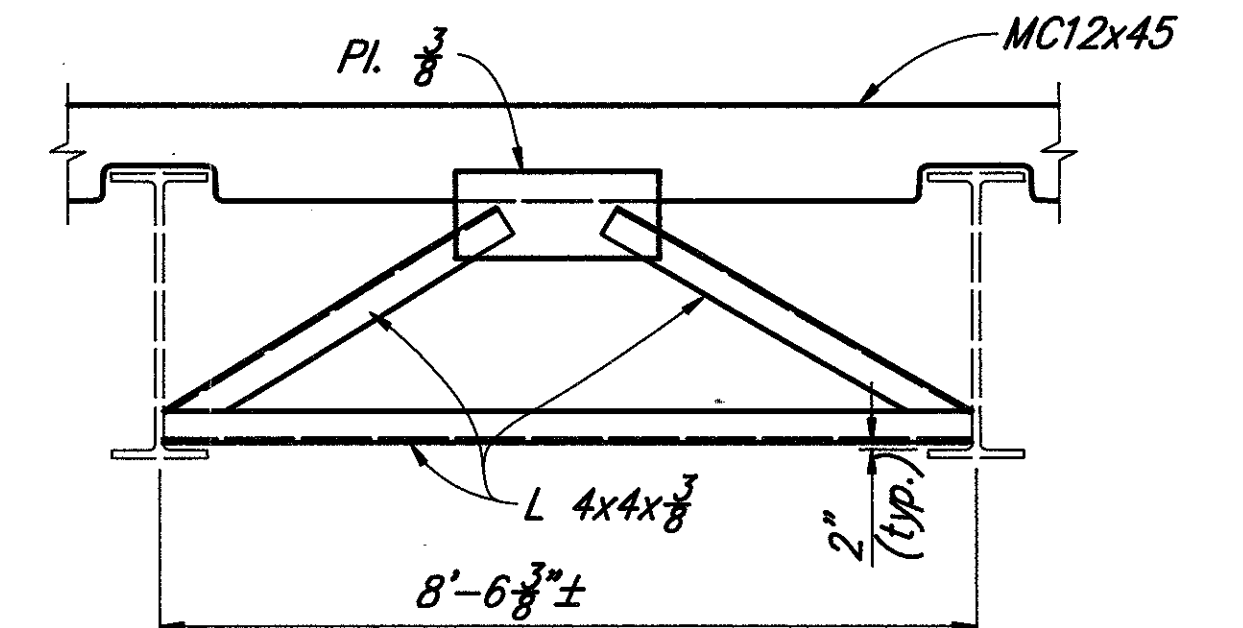
**NOTE**  
Existing reinforcing steel to remain. Cut or bend bars as necessary to maintain 2" minimum clearance.



**FRAMING PLAN**

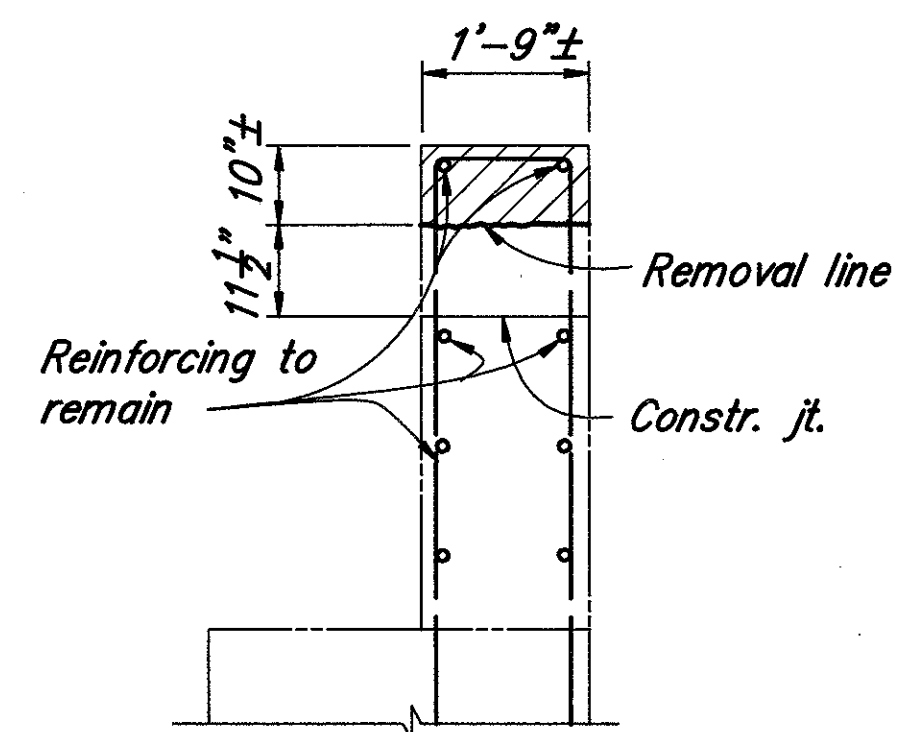


**EXISTING END CROSS FRAME DETAIL**

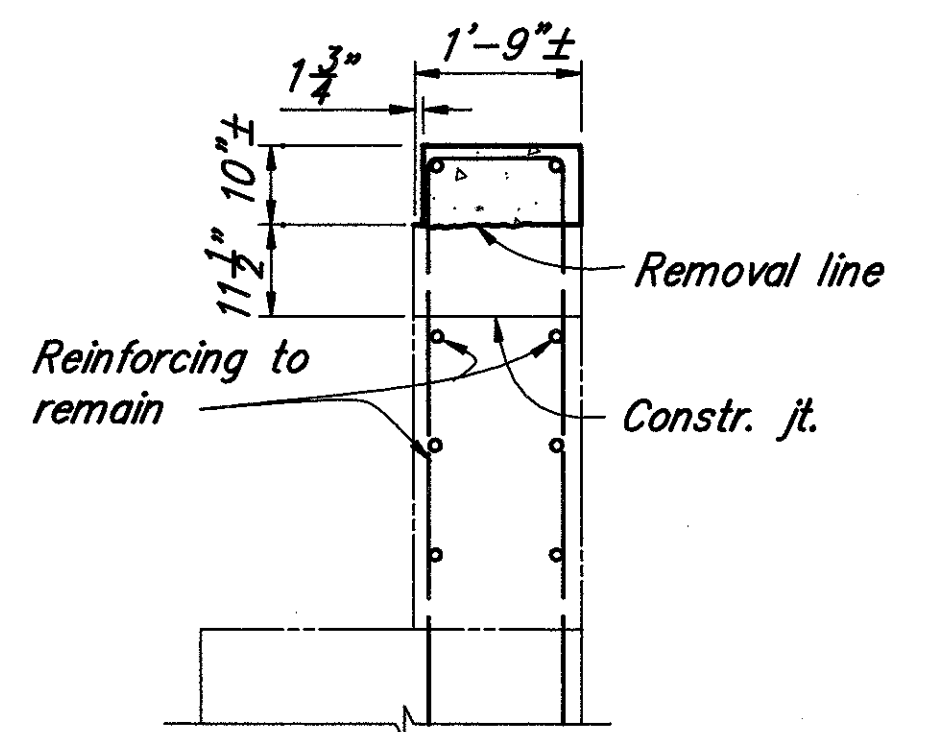


**NEW END CROSS FRAME DETAIL**

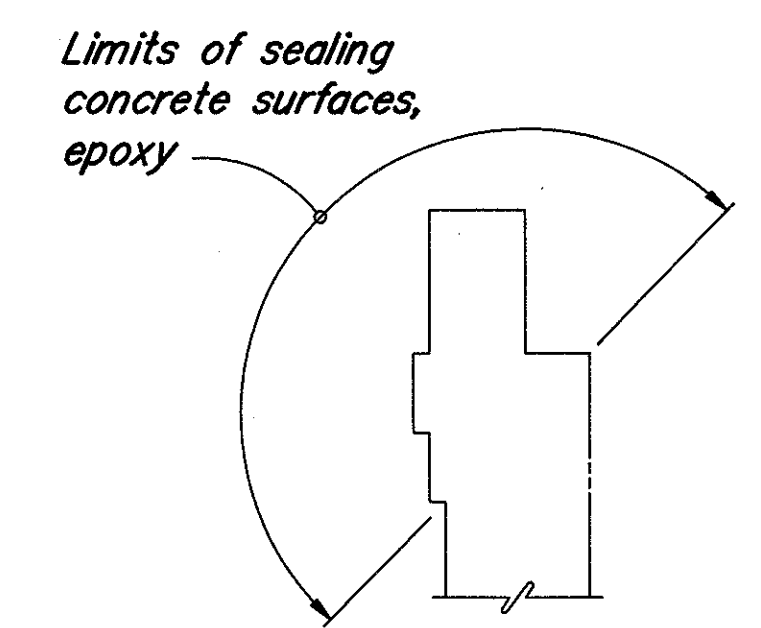
For additional details, see Std. Dwg. SD-1-69.  
See General Notes



**SECTION A-A**



**SECTION B-B**



**SEALING CONCRETE SURFACES**  
WINGWALL RAILING

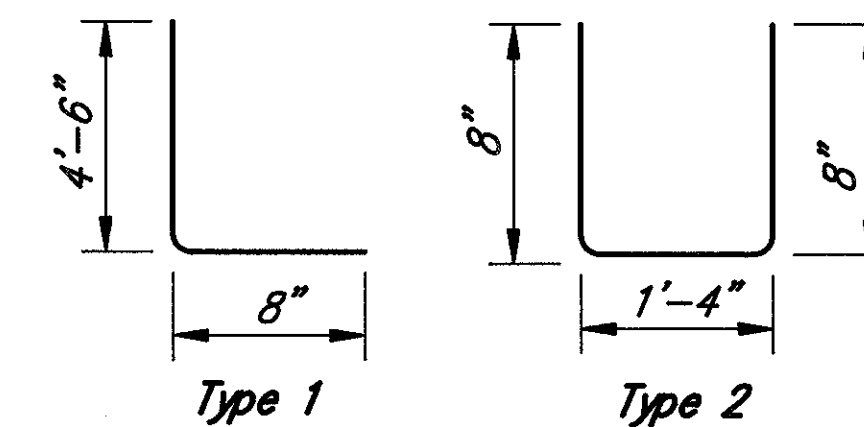
**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

**ABUTMENTS NO. 1 AND 2**  
**END CROSS FRAME REPLACEMENT**  
BRIDGE NO. HAM-562-0253  
HAM 562 UNDER FOREST AVENUE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	BRP	3/93	

SOLAND14 2 MAR 1993

**BAR BENDING DIAGRAM**  
All dimensions are out to out of bars.



**TABLE A**

F°	Dimension A	
	Abutment 1	Abutment 2
90		
80	1 1/2"	
70	1 5/8"	1 1/2"
60	1 5/8"	1 5/8"
50	1 11/16"	1 11/16"
40	1 3/4"	1 13/16"
30	1 7/8"	1 7/8"

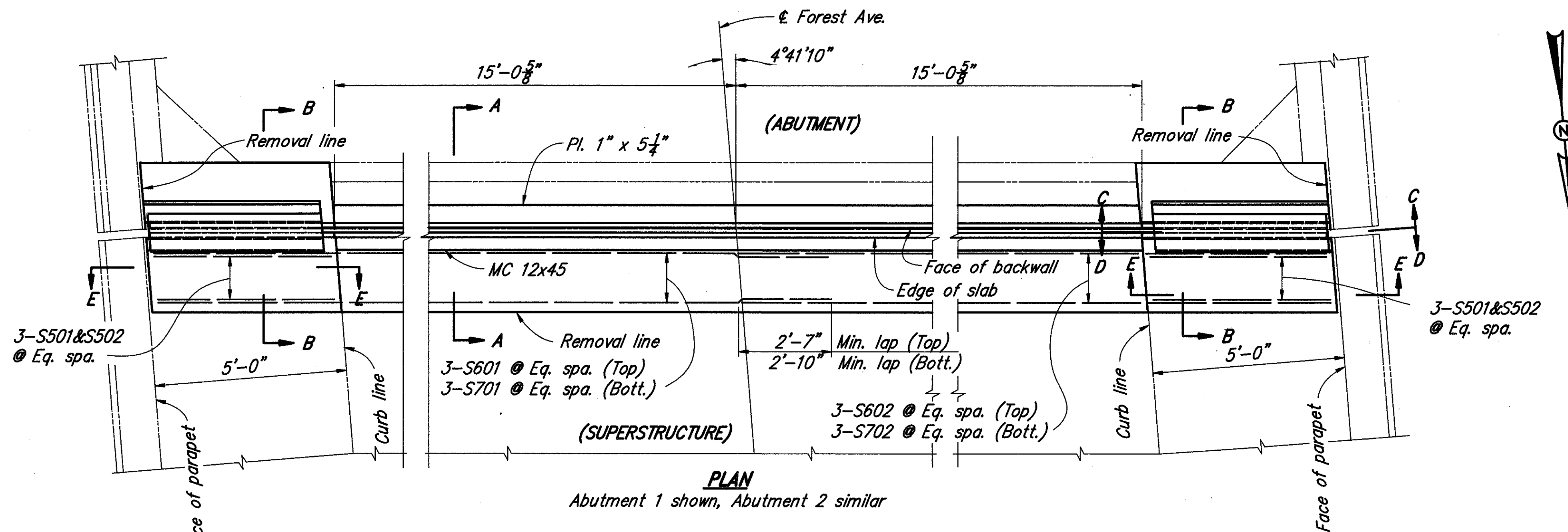
**EPOXY COATED REINFORCING STEEL LIST**

MARK	TOTAL NO.	LENGTH	WEIGHT	TYPE
<b>SUPERSTRUCTURE</b>				
S501	12	2'-5"	30	2
S502	12	5'-1"	31	1
S601	6	23'-2"	252	Str.
S602	6	20'-10"	270	Str.
S701	6	23'-10"	292	Str.
S702	6	20'-10"	368	Str.
Total 1243				

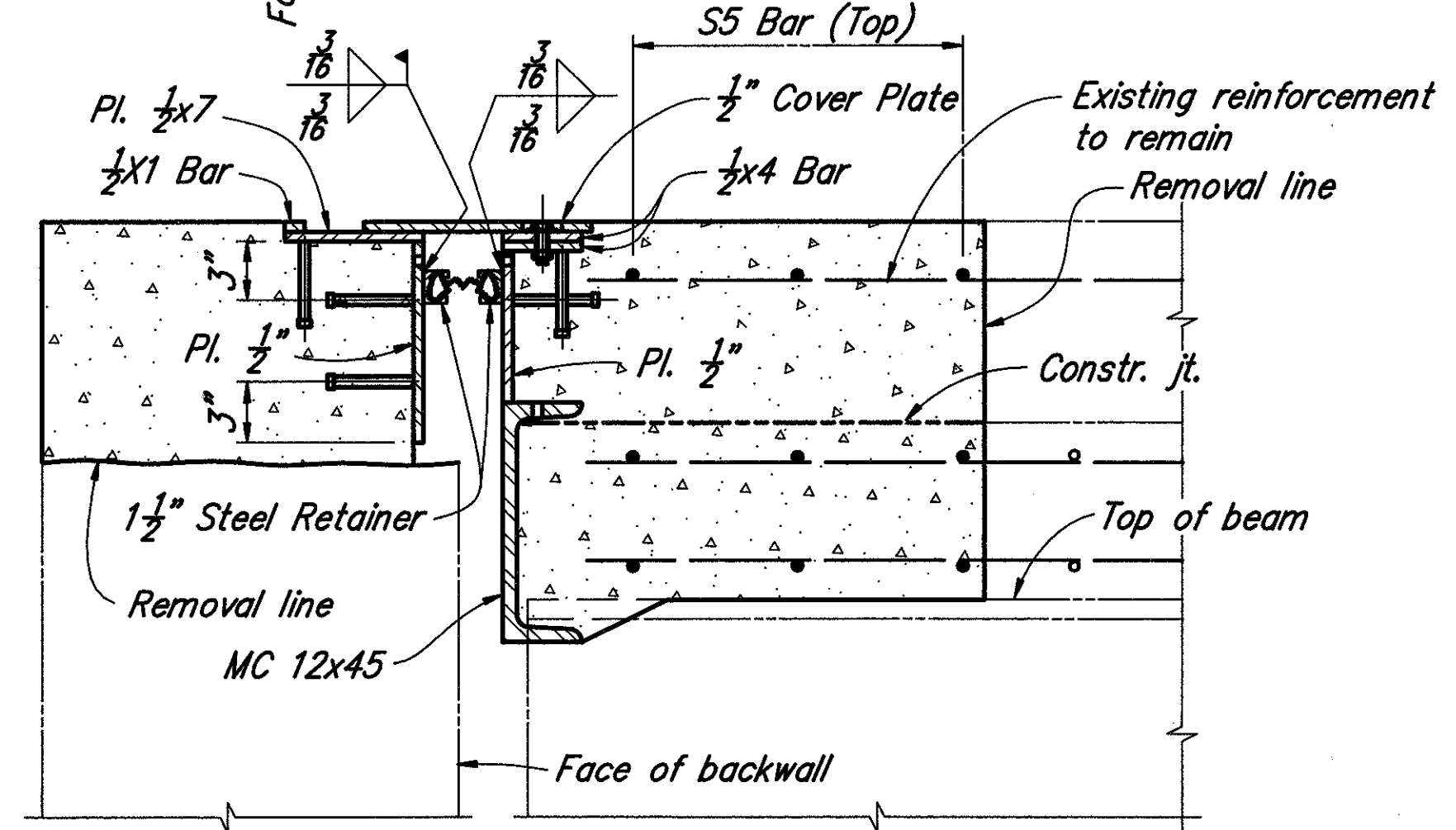
**STRIP SEAL GLAND TABLE**

SEAL MOVEMENT RATING	MANUFACTURER & DESIGNATION **		
	D.S. BROWN	STRUCTURAL ACCESSORIES	WATSON BOWMAN & ACME
3"	300A		SE-300

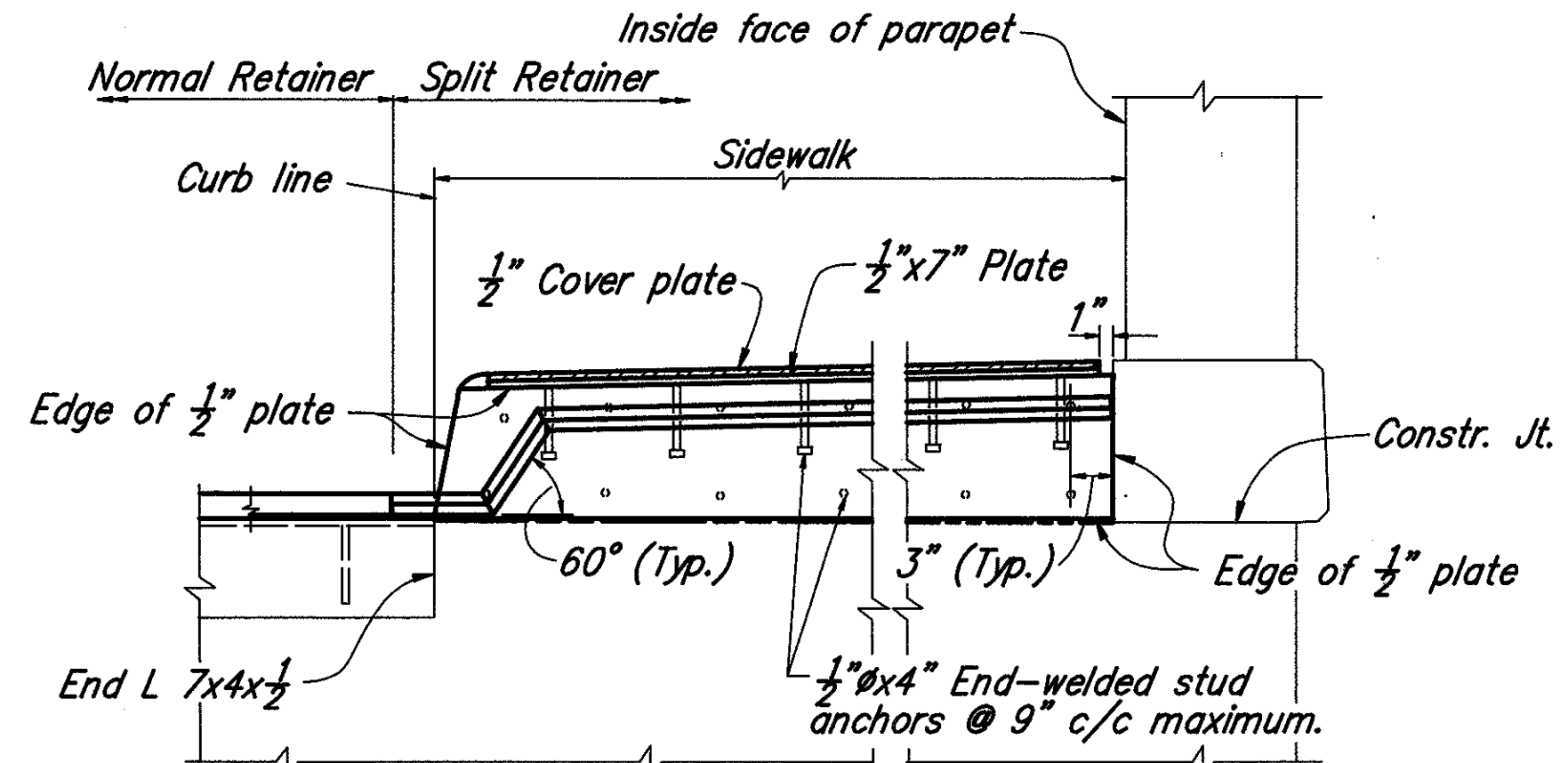
Notes: Compression seal to be installed in one piece \*\* or an approved alternate



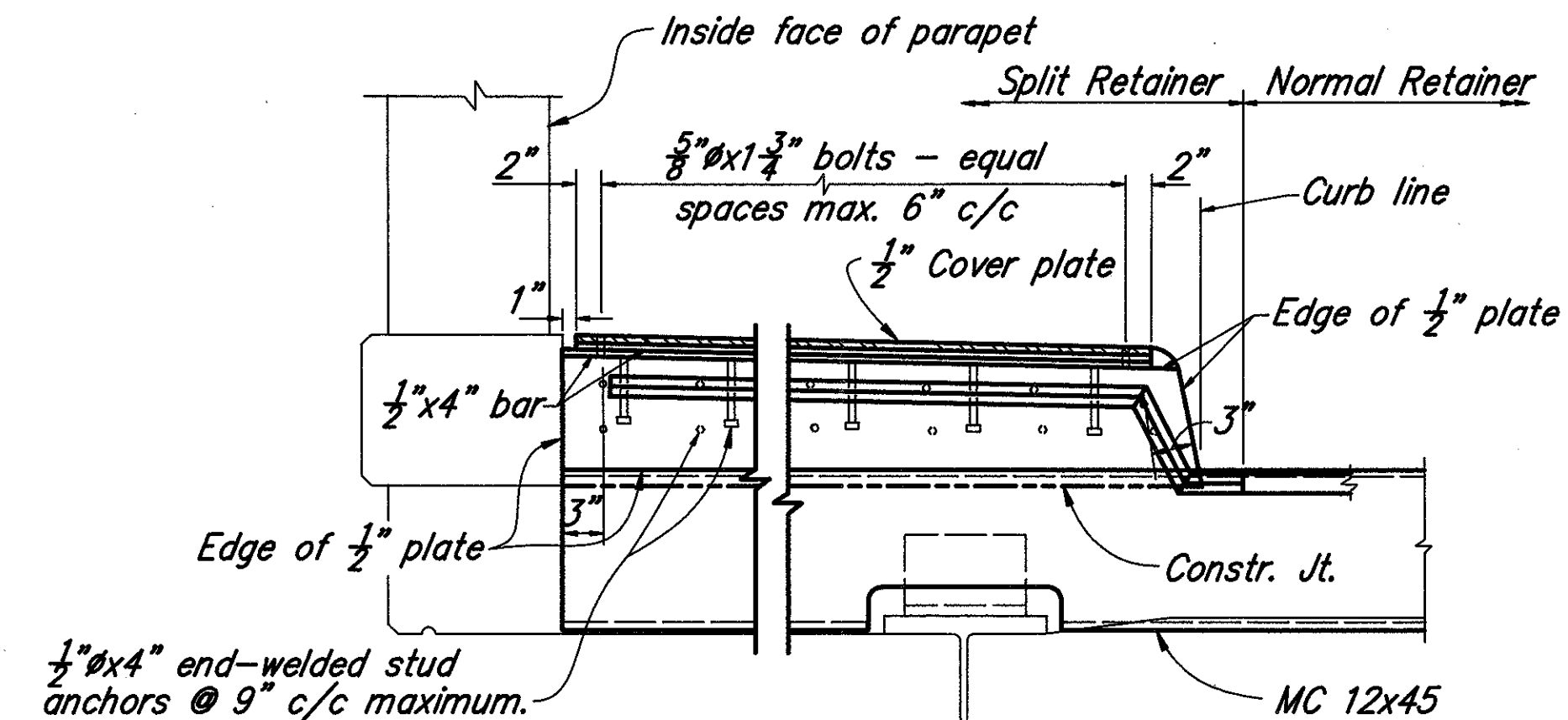
**PLAN**  
Abutment 1 shown, Abutment 2 similar



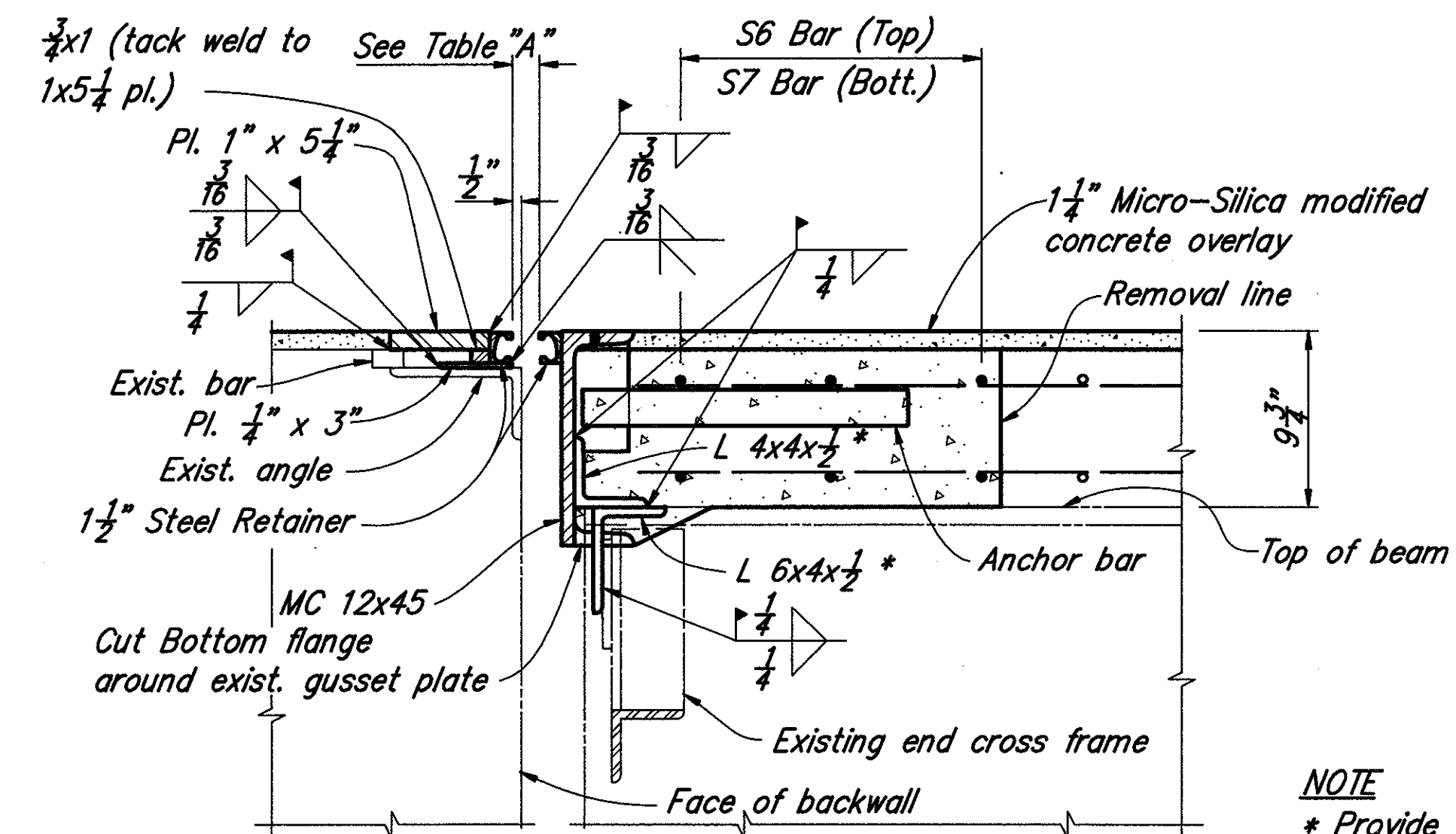
**SECTION B-B**  
For information not shown see Section Y-Y sheet 4 of 5 Standard Drawing EXJ-4-87



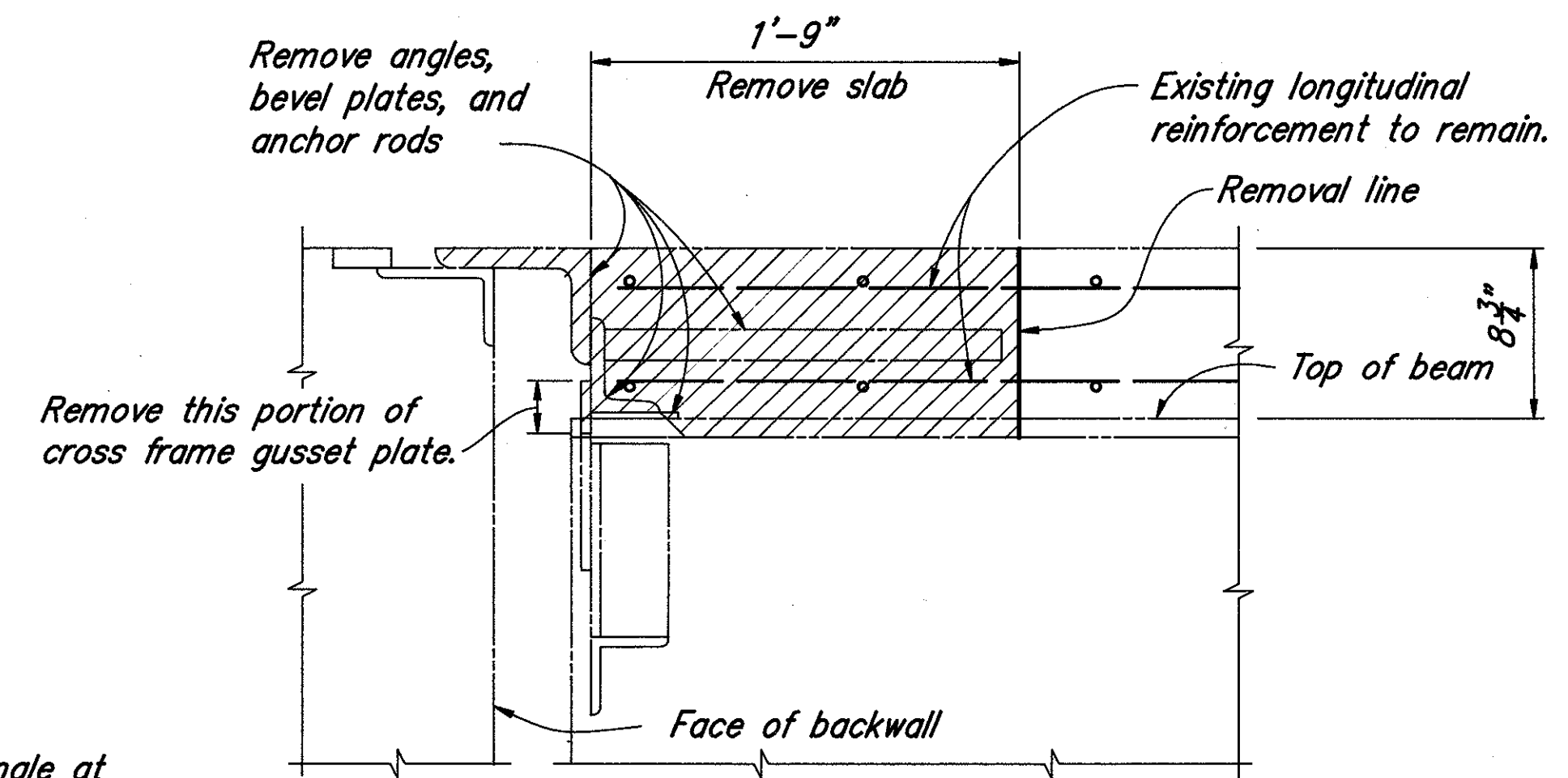
**SECTION C-C**  
For information not shown see Section F-F sheet 3 of 5 Standard Drawing EXJ-4-87



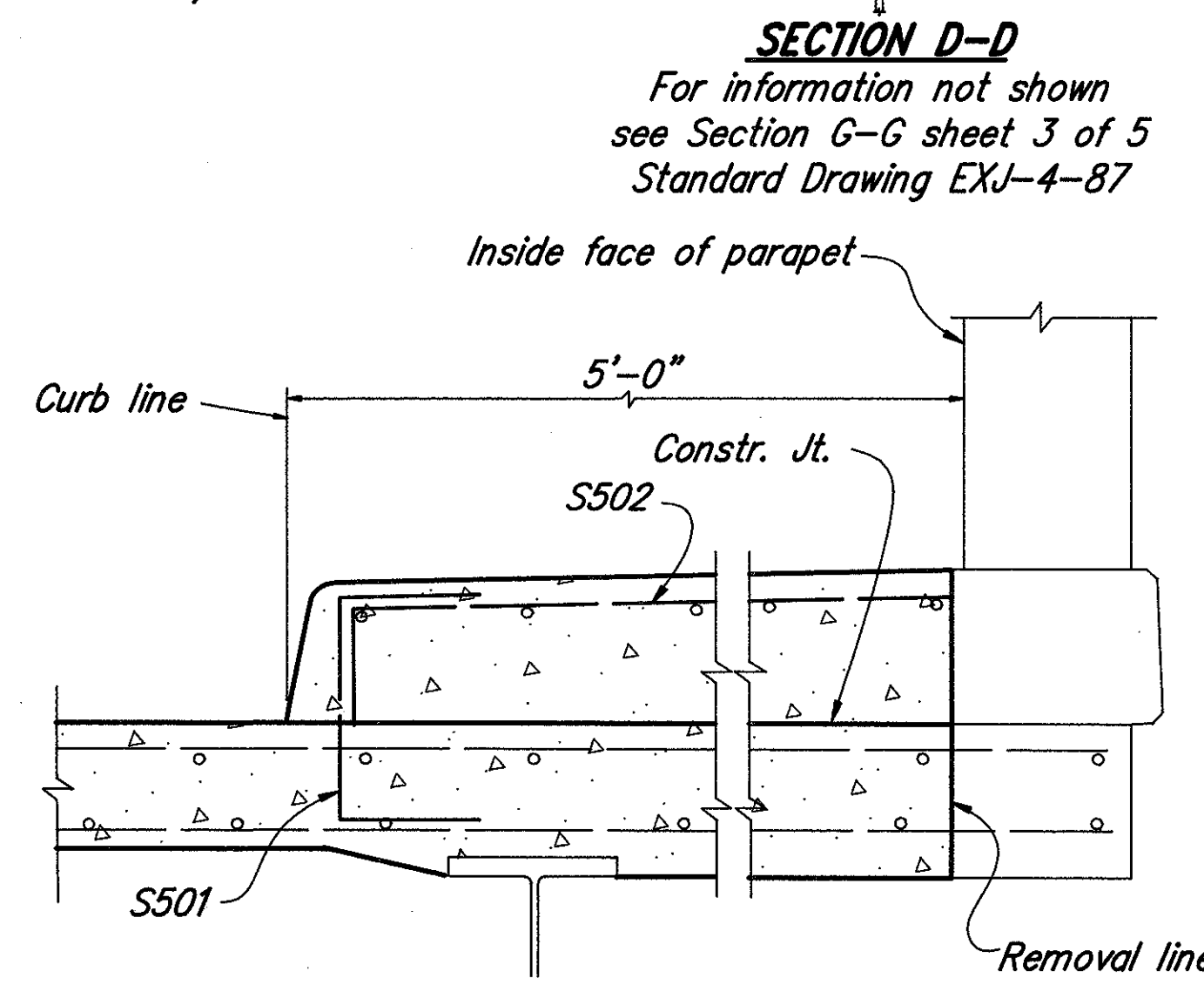
**SECTION D-D**  
For information not shown see Section G-G sheet 3 of 5 Standard Drawing EXJ-4-87



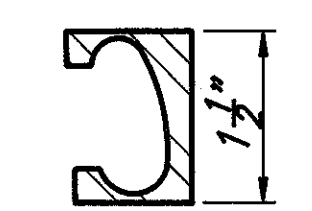
**SECTION A-A**  
For information not shown see Section X-X sheet 2 of 5 Standard Drawing EXJ-4-87



**SECTION A-A**  
Showing removal



**SECTION E-E**  
Existing reinforcing to remain



**STEEL RETAINER DETAIL**

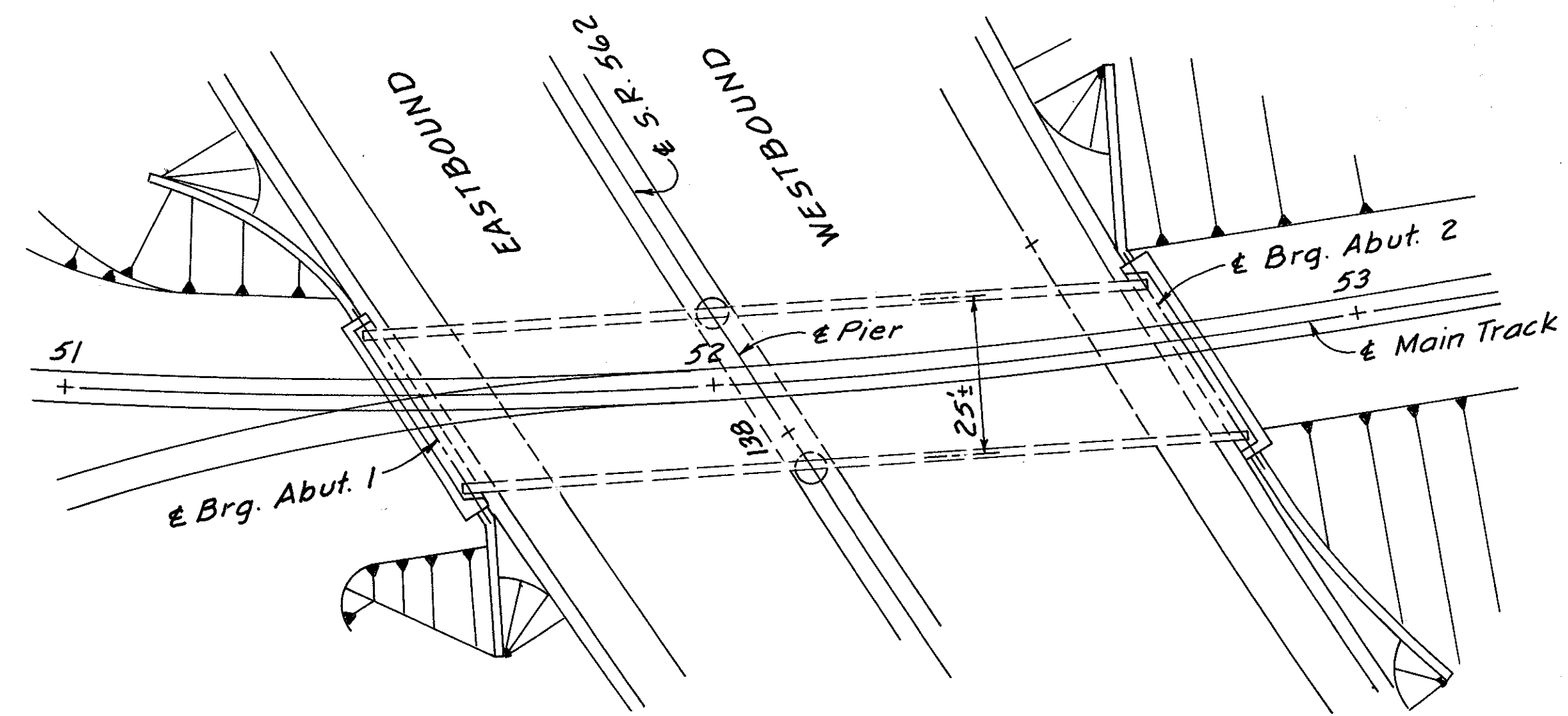
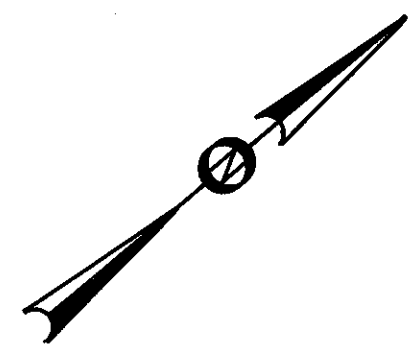
**NOTE**  
For connection of MC12x45 to existing beams, see detail A sheet 1 of 5, Standard Drawing EXJ-4-87  
For additional details see Standard Drawing EXJ-4-87

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

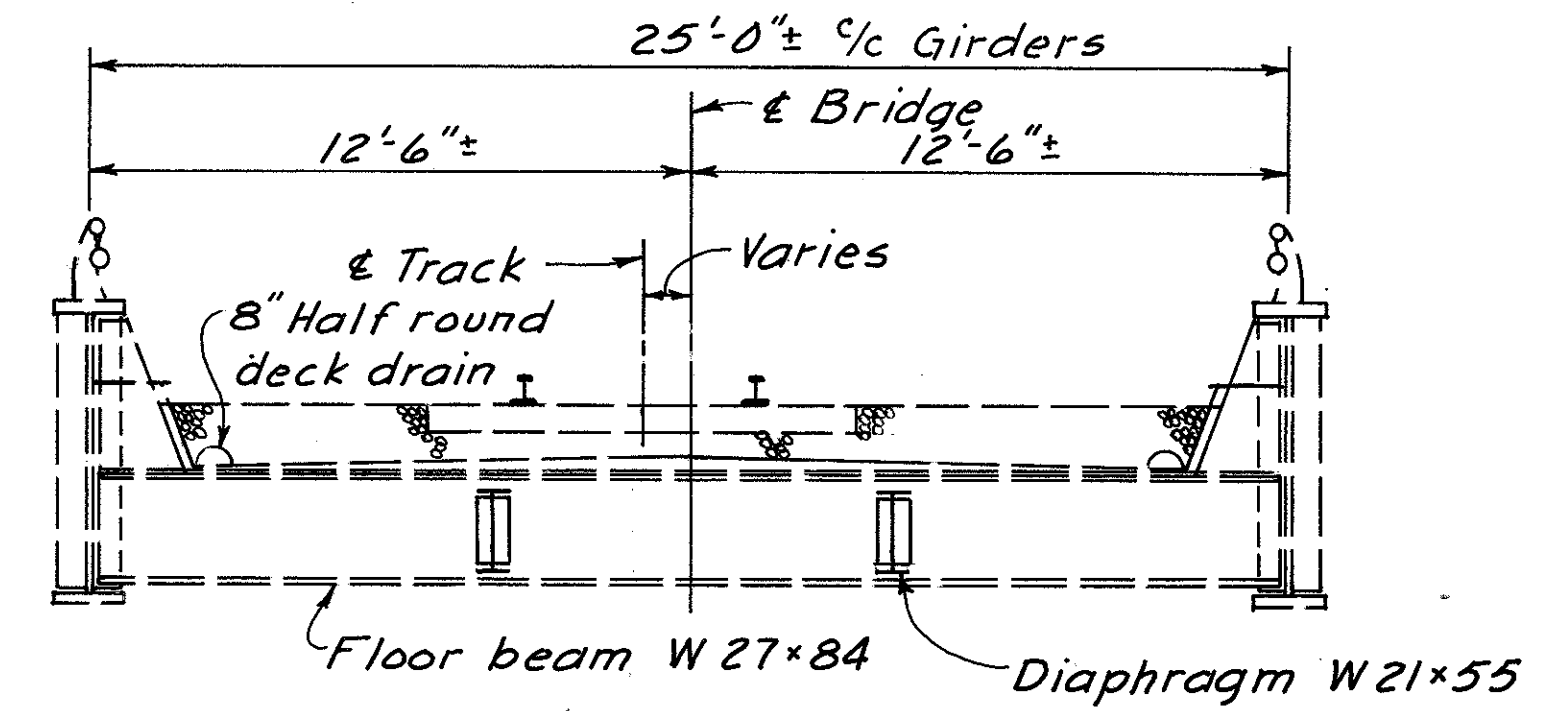
**EXPANSION JOINT DETAILS AT ABUTMENTS**  
BRIDGE NO. HAM-562-0253  
HAM 562 UNDER FOREST AVENUE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	BAR	3/93	

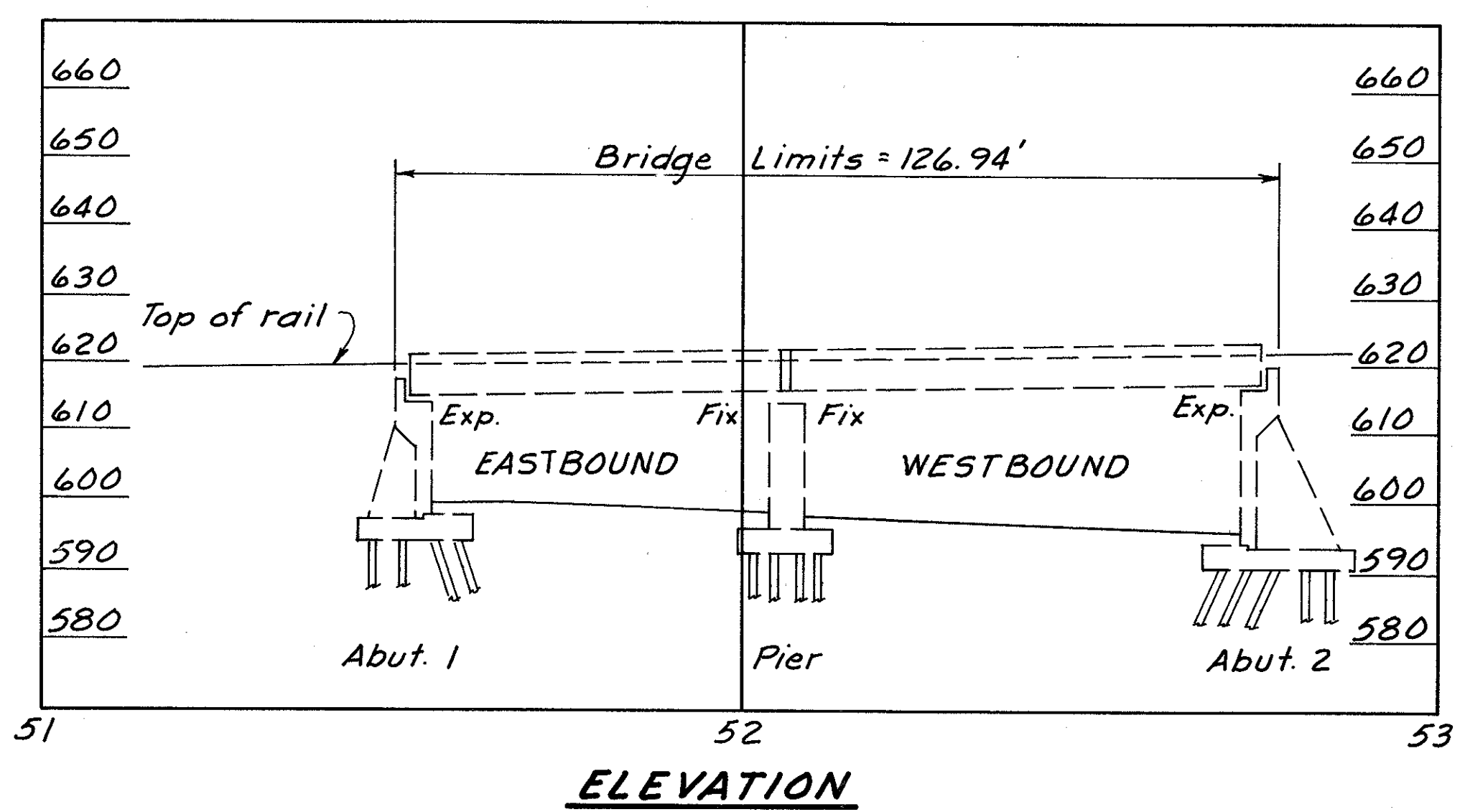
25 MAR 1993



PLAN



TRANSVERSE SECTION  
(Looking north)



ELEVATION

**EXISTING STRUCTURE**

TYPE: Simple span welded steel through plate girder, field bolted connections, ballasted deck and reinforced concrete substructure  
 SPANS: 53'-6", 66'-7 1/8"  
 LIVE LOADING: Railroad Cooper's E-72 with diesel impact  
 SKEW: 28°43'11" R.F. (to reference tangent)  
 DATE OF CONSTRUCTION: 19\_\_  
 STRUCTURE FILE NO.:

**PROPOSED STRUCTURE (REHABILITATION)**

PROPOSED WORK: Reseal deck joint and paint structural steel  
 SPANS: 53'-6", 66'-7 1/8"  
 LIVE LOADING: Railroad Cooper's E-72 with diesel impact  
 SKEW: 28°43'11" R.F. (to reference tangent)  
 ALIGNMENT: Tangent  
 SUPERELEVATION: None

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

**GENERAL PLAN AND ELEVATION**

BRIDGE NO. HAM-562-0255  
HAM 562 UNDER CONRAIL R.R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	✓	VDG	CRS	3/93	

BASE SHEET 25 OCT 1991



**DESIGN REFERENCES**

REFERENCE shall be made to Supplemental Specifications:

910 dated 5-20-91

**SCOPE OF WORK**

1. Reseal intermediate deck joint over pier
2. Paint structural steel, System OZEU

Work shall be executed in stage I construction.

**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/or 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.

Contract bid prices shall be based upon a recognition of the uncertainties described above and upon a prebid examination of the existing structure by the Contractor. However, all project work shall be based upon actual details and dimensions which have been verified by the Contractor in the field.

**PLANS FOR EXISTING BRIDGE**

Plans of the existing structure are available for reference at the ODOT District Eight office.

**MAINTENANCE OF TRAFFIC**

For sequence of construction on project and maintenance of traffic on HAM 562, see roadway plans sheet  $\frac{12}{170}$

**PAINTING OF EXISTING STRUCTURAL STEEL**

All existing structural steel shall be cleaned and painted as required by the proposal note Field Painting of Existing Steel, System OZEU.

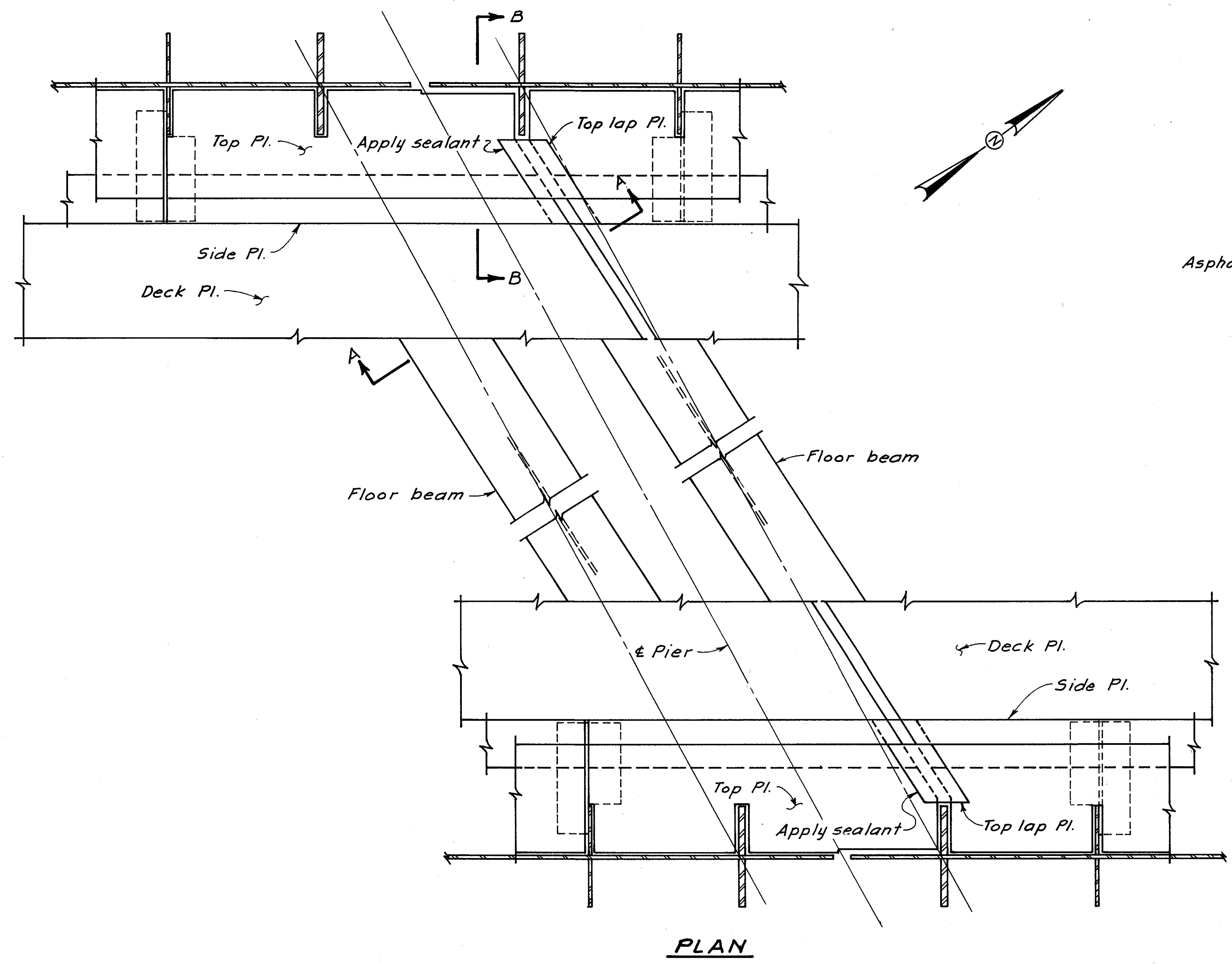
The surface area pay quantity is based on the surface area of the main members increased by 25 percent to account for the area of crossframes, bearings, and other structural steel incidentals to be cleaned and painted.

<b>ESTIMATED QUANTITIES</b>				
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
Special	51267300	29	Lin ft.	Waterproofing, misc.: seal intermediate joint
Special	51400050	19694	Sq. ft.	Surface preparation of existing steel, System OZEU (see Proposal Note)
Special	51400056	19694	Sq. ft.	Field painting of existing steel, prime coat, System OZEU (see Proposal Note)
Special	51400060	19694	Sq. ft.	Field painting of existing steel, intermediate coat, System OZEU (see Proposal Note)
Special	51400066	19694	Sq. ft.	Field painting of existing steel, finish coat, System OZEU (see Proposal Note)

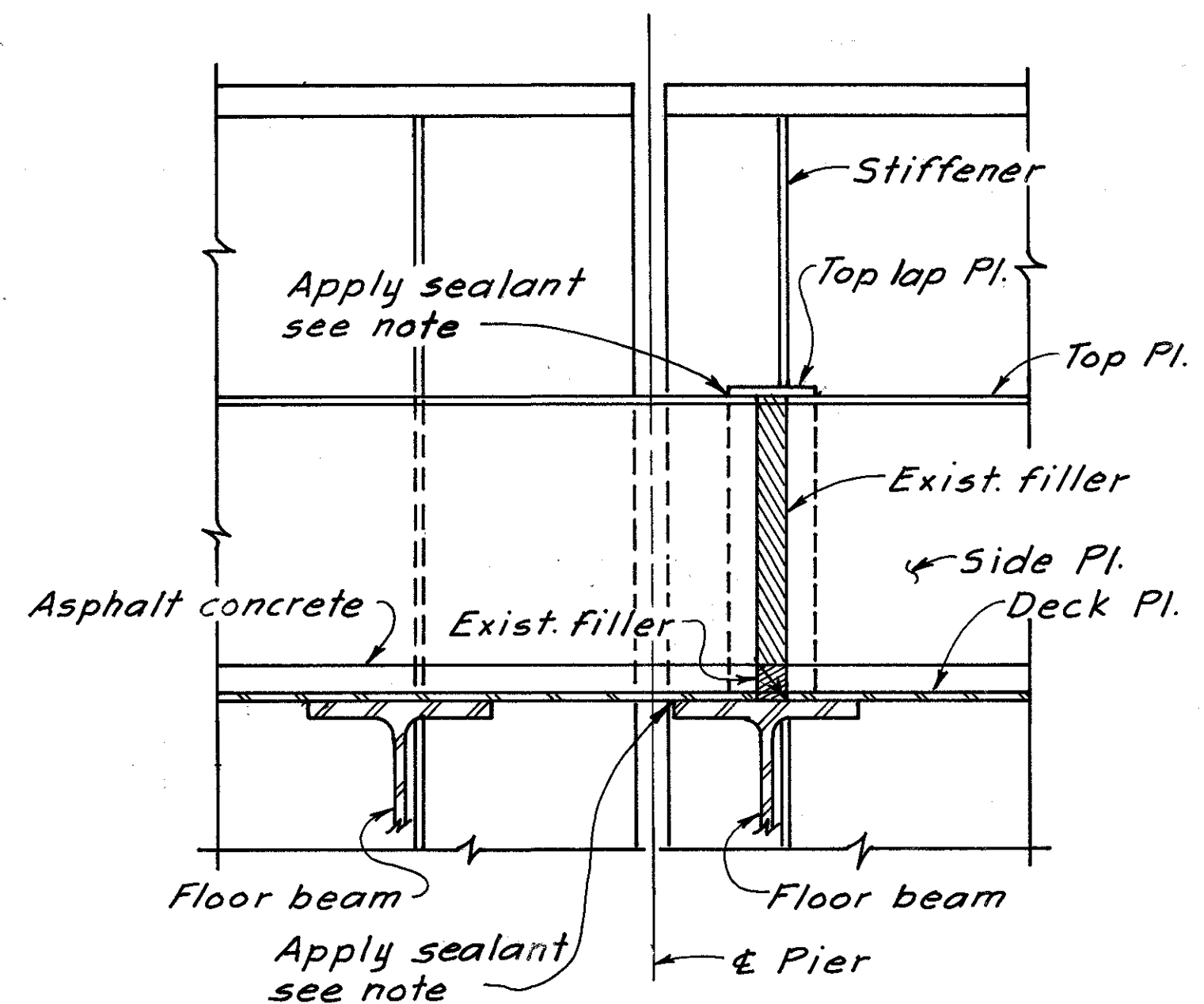
Calculated by: MRS  
Checked by: AT

**GENERAL NOTES**  
**ESTIMATED QUANTITIES**  
BRIDGE NO. HAM-562-0255  
HAM 562 UNDER CONRAIL R.R.

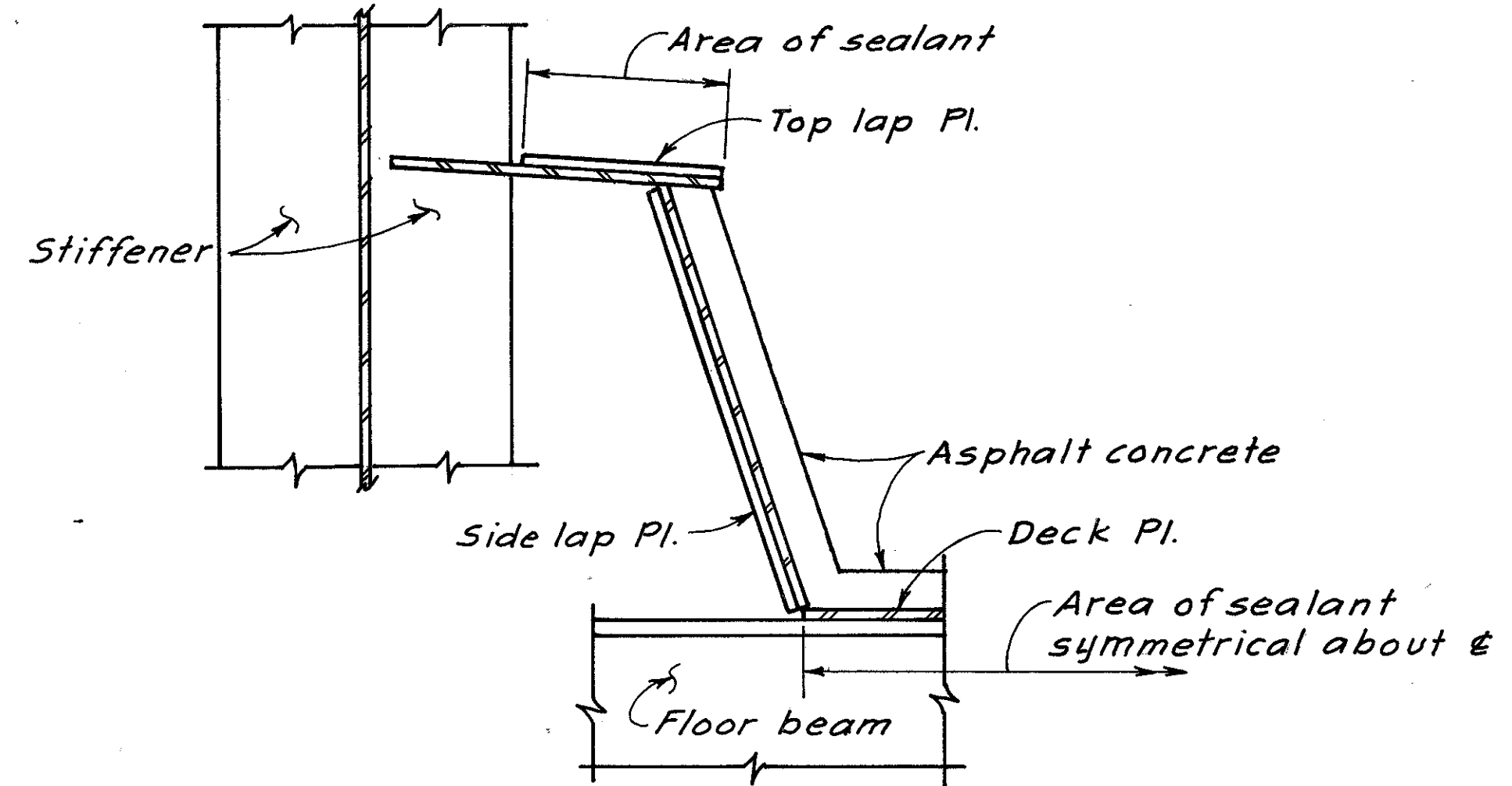
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	BRP	3/93	



**PLAN**



**SECTION A-A**

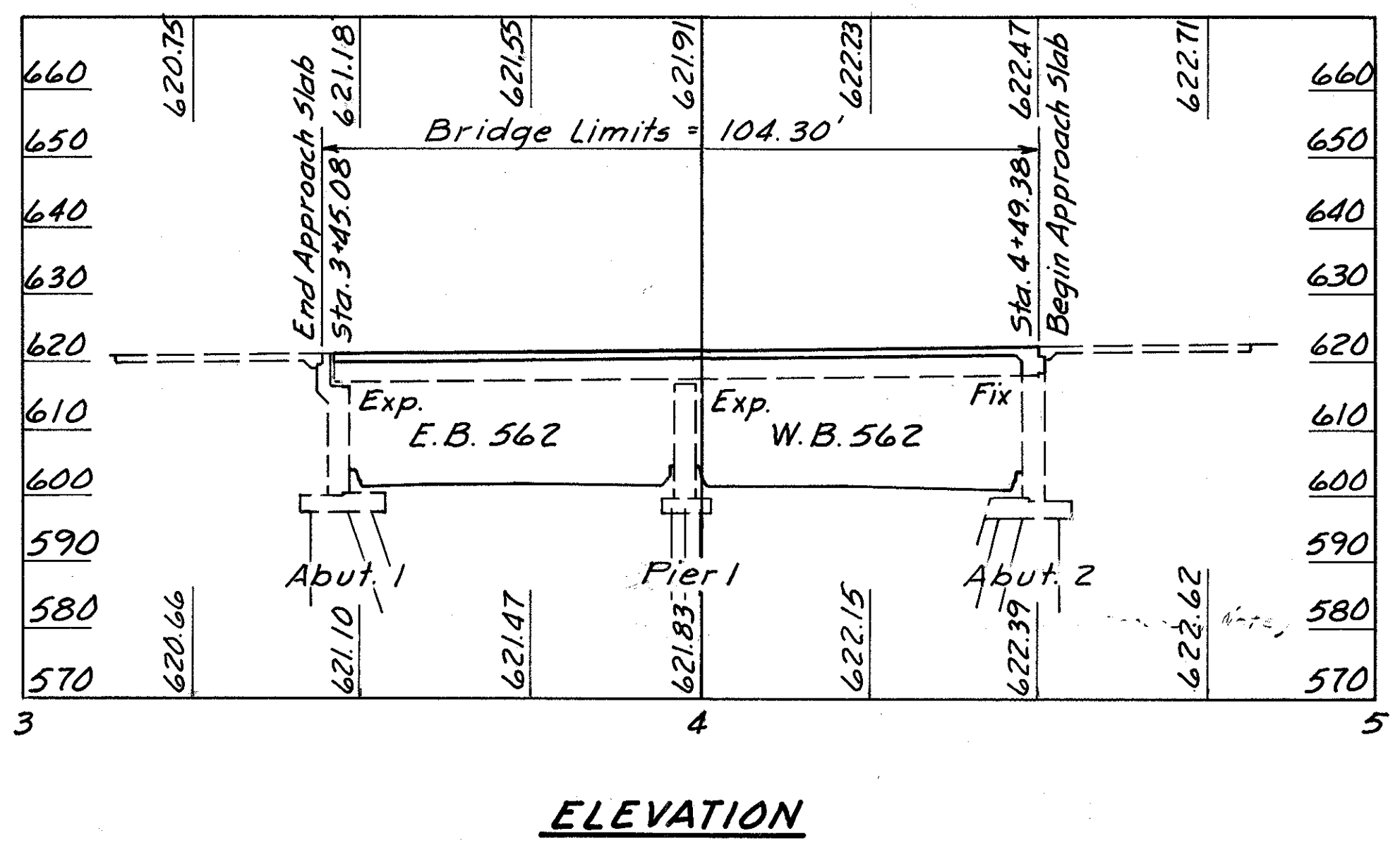
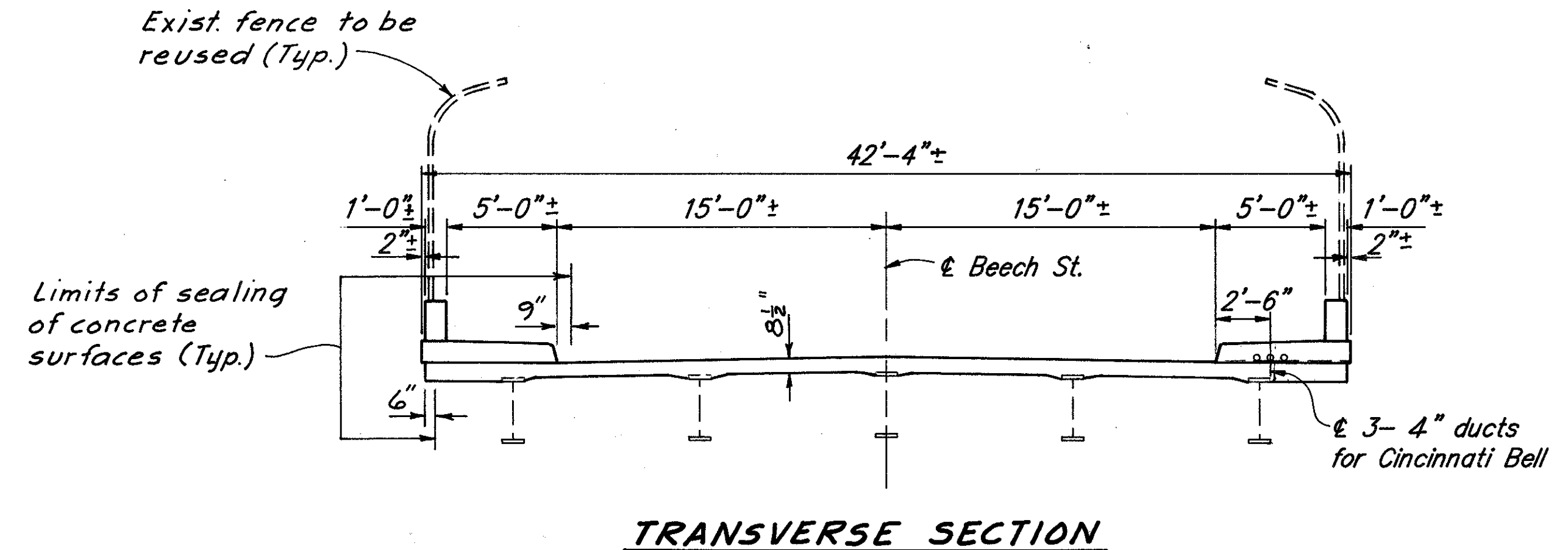
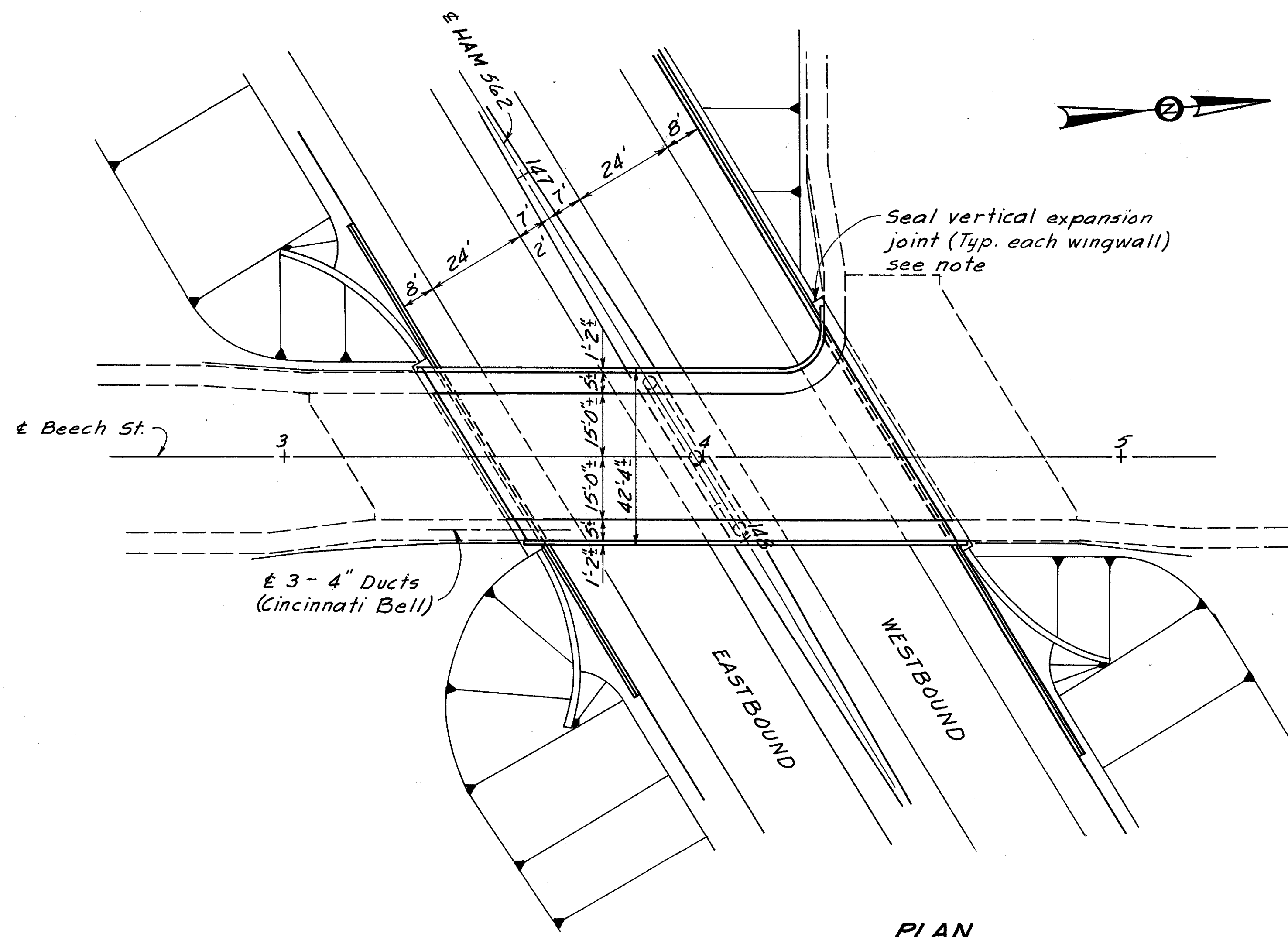


**SECTION B-B**

**NOTE**  
Seal with low-modulus, non-sag, polyurethane based elastomeric sealant. Apply per manufacturer's recommendations. Include for payment with Item 512, Waterproofing, misc.: sealing intermediate joint.

BASESHT 25 OCT 1991

<b>BALKE ENGINEERS</b> 1848 Summit Road Cincinnati, Ohio 45237							3/3
<b>JOINT SEALING DETAILS</b>							
BRIDGE NO. HAM-562-0255 HAM 562 UNDER CONRAIL R.R.							
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
MRS	ALT	~	VDG	CRS	3/93		



EXISTING STRUCTURE
TYPE: Continuous rolled steel beams with reinforced concrete deck and substructure
SPANS: 50'-3", 50'-3"
ROADWAY: 30'-0" f/f curb with 5'-0" sidewalks
LIVE LOADING: C.F. = 400 (57)
SKEW: 31°08'36" R.F.
DATE OF CONSTRUCTION: 19__
STRUCTURE FILE NO.:
PROPOSED STRUCTURE (REHABILITATION)
PROPOSED WORK: New reinforced concrete deck on existing rolled beams and existing substructure
SPANS: 50'-3", 50'-3"
ROADWAY: 30'-0" f/f curb with 5'-0" sidewalks
LIVE LOADING: C.F. = 400 (57)
SKEW: 31°08'36" R.F.
WEARING SURFACE: 1½" Micro-Silica modified concrete overlay
EXISTING APPROACH SLAB: 20'-0" long
ALIGNMENT: Tangent
SUPERELEVATION: Normal crown

**NOTE**  
Seal with low-modulus, non-sag, polyurethane based elastomeric sealant. Prepare joint per manufacturer's recommendations. Include for payment with Item 512, Waterproofing, misc.: sealing vertical joint.

**BALKE ENGINEERS**  
1848 Summit Road  
Cincinnati, Ohio 45237

1 / 7

**GENERAL PLAN AND ELEVATION**

BRIDGE NO. HAM-562-0275  
S.R. 562 UNDER BEECH STREET

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DW	ALT	~	MRS	BBP	3/93	



**DESIGN REFERENCES**

REFERENCE shall be made to Standard Drawings:

EXP-4-87 dated 1-5-89

**SCOPE OF WORK**

1. Refurbish and reset south abutment bearings
2. Remove existing deck and replace with new concrete deck
3. Install expansion joint at south abutment with strip seal
4. Heat straighten steel beam, Span 1
5. Abandon drainage system
6. Repair vertical expansion joints at wingwalls
7. Paint structural steel, System OZEU
8. Seal concrete surfaces

**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/or 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.

Contract bid prices shall be based upon a recognition of the uncertainties described above and upon a prebid examination of the existing structure by the Contractor. However, all project work shall be based upon actual details and dimensions which have been verified by the Contractor in the field.

**REPLACEMENT OF EXISTING REINFORCEMENT STEEL:** Any existing reinforcing bars which are to be incorporated into the new work and which are made unusable by the Contractor's concrete removal operations shall be replaced with new steel at his cost. Any existing reinforcing bars deemed by the Engineer to be unusable because of corrosion shall be replaced with new steel. An allowance of 50 pounds is included in Item 509 for this purpose.

**PLANS FOR EXISTING BRIDGE**

Plans of the existing structure are available for reference at the ODOT District Eight office.

**MAINTENANCE OF TRAFFIC**

Beech Avenue shall be closed for construction.

For sequence of construction on project and maintenance of traffic see roadway plans sheet 165/170

**PORTIONS OF STRUCTURES REMOVED, AS PER PLAN**

Removal of portions of existing structure shall be performed in such a manner as to prevent debris from falling onto the roadway below. All debris shall be removed from the site and disposed of by the Contractor.

**DESCRIPTION:** This work shall consist of the removal of the concrete deck, including walk, safety curb, railing, and deck joint. Care shall be taken during deck removals to protect steel beams which 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 STEEL SUPPORT SYSTEM:** Before any sawing of the deck is permitted, the outlines of the top flanges of all stringers are to be drawn on the bridge deck and small diameter pilot holes drilled 2" outside these lines to confirm the flange locations. 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. Deck cuts over or within 2 inches of the flange edges shall not extend below the bottom layer of deck slab reinforcing steel. Cuts made outside the limits defined may extend through the full depth of the slab. The Engineer has the right to terminate sawing over the flanges any time he feels flange damage may occur. For removals above steel members, light hammers approved by the Engineer shall be used to ensure adequate depth control and to prevent nicking or gouging primary steel members.

**DECK REMOVALS:** Due to the possible presence of welded attachments to existing structural steel (finishing machine, scupper and form supports, etc.), care shall be taken during deck removal to avoid damaging stringers which are to remain. Stringers damaged by the Contractor's removal operations shall, at no cost to the project, be replaced or repaired. Proposed repairs, developed by a registered engineer, shall be submitted in writing for review and approval by the Director.

**EXTRANEOUS MEMBERS:** Existing extraneous members (i.e., finishing machine and form supports, supports for scuppers, etc.) attached by welded connections to portions of the top flanges designated "tension" shall be removed and the flange surfaces ground smooth. Grinding shall be carefully done and be parallel to the flanges.

**LOADING LIMITATIONS:** No part of the structure shall be subjected to unit stresses that exceed by more than one-third the allowable unit stresses given in the AASHTO Standard Specifications for Highway Bridges due either to demolition, erection or construction methods, or to the use or movement of demolition or erection equipment on or across the structure. Structural analysis computations, by an engineer registered by the State of Ohio, showing the allowable stresses and the maximum stresses produced by the Contractor's methods or equipment shall be submitted to the Director for review and approval at least two weeks prior to the start of the work.

**PAYMENT:** All labor, equipment, materials and incidentals necessary to complete the above described work to the satisfaction of the Engineer shall be included in the lump sum bid for Item 202, Portions of structures removed, as per plan.

**INSPECTION OF STRUCTURAL STEEL**

The Engineer shall be given the opportunity to visually inspect all existing butt-welded top flange splices and/or top flange cover plate fillet welds to ensure that they are free of defects. The deck slab haunch forms immediately adjacent to such welds shall not be erected until after the Engineer has completed this inspection. This inspection shall not take place until after the top flanges are cleaned as specified in 511.08, but it shall be done before the deck slab reinforcement is installed. The cost associated with this inspection shall be included with Item 511, Class S Concrete, Superstructure for payment.

**REFURBISH BEARING DEVICE**

This Item shall include all work necessary to clean and paint south abutment bearings. Included shall be:

1. Disassembly of the bearings.
2. Hand cleaning (grinding if required).
3. Abrasive blasting and painting as required by proposal note Field Painting of Existing Steel, System OZEU.
4. Replacement of any damaged sheet lead (711.19). Preformed bearing pads 1/8" thick, meeting the requirements of 711.21 may be substituted for the sheet lead.
5. Installation of any necessary 1/8" thick steel shims of the same size as the bearings to provide a snug fit.
6. Reassembly of the bearings.

At the option of the Contractor and at no additional cost to the state, new bearings of the same type as the existing may be installed in place of the refurbished bearings. All work shall be to the satisfaction of the Engineer. Payment for all the above described labor and materials will be made at the contract price bid for Item 516 - Refurbish bearing device.

**JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE**

The ends of the beams at the south abutment shall be jacked and the beams supported so the bearings may be removed. The Contractor shall submit his jacking plan to the Director for approval prior to jacking.

**RESET BEARINGS**

Bearings at the south abutment shall be reset to be vertical at 60' F. Masonry plates shall be adjusted to be centered under bearings.

**HEAT STRAIGHTENING OF DAMAGED STRUCTURAL STEEL**

The west fascia beam above the eastbound lane of HAM 562 shall be straightened per the proposal note heat straightening of damaged structural steel.

**ITEM 517 - RAILING, CONCRETE PARAPET WITH CHAIN LINK FENCE, AS PER PLAN**

This item shall include the cost of removing and salvaging the existing chain link fence, including fabric, posts, base plates, and all fence accessories. Fence shall be installed on the new concrete parapet using new expansion anchors of the same type as those removed. Any fence accessories or materials made unusable by the Contractor during his removal operations shall be replaced by him at no additional cost to the State.

**ABANDON DRAINAGE SYSTEM**

This item shall include the removal of the scuppers and downspout. Payment for all the above described labor and materials will be made at the contract price bid for Item 518 - Structural drainage, misc: abandon drainage system.

**PAINTING OF EXISTING STRUCTURAL STEEL**

All existing structural steel shall be cleaned and painted as required by the proposal note Field Painting of Existing Steel, System OZEU.

The surface area pay quantity is based on the surface area of the main members increased by 25 percent to account for the area of crossframes, bearings, and other structural steel incidentals to be cleaned and painted.

**SEALING OF CONCRETE SURFACES**

Reference shall be made to the proposal note for application and material specifications. Sealer shall be applied to the following surfaces.

1. Abutment backwalls and beam seats at the south abutment, and the face of the breastwall and wingwalls to ground line at both abutments shall be sealed with an epoxy sealer.
2. The piers shall be sealed with an epoxy sealer. The sealer shall be applied to the sides, bottom and ends of the cap and the total surface of the columns.
3. Superstructure parapets shall be sealed as shown on sheet 5/7 with an epoxy or non-epoxy sealer.

**ESTIMATED QUANTITIES**

Calculated by: MRS  
Checked by: AT

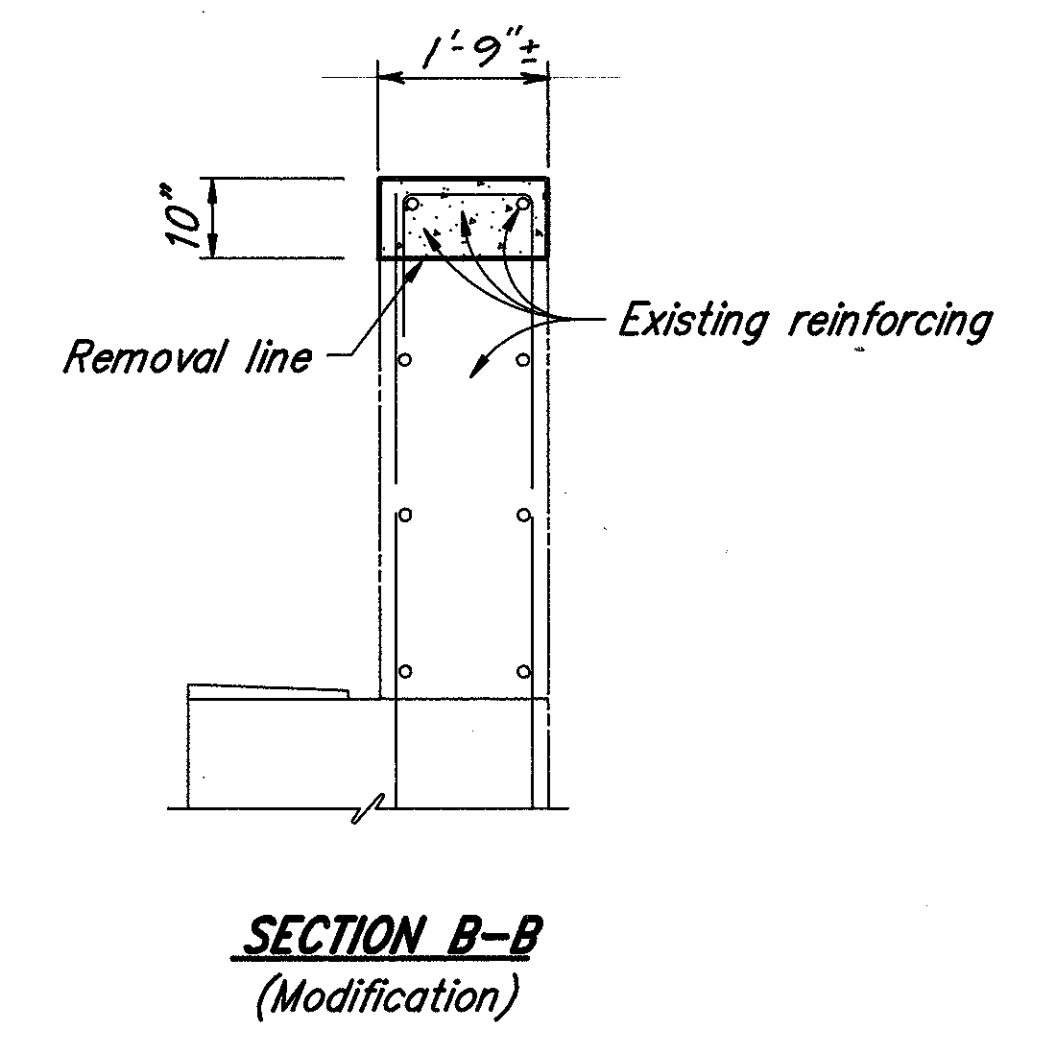
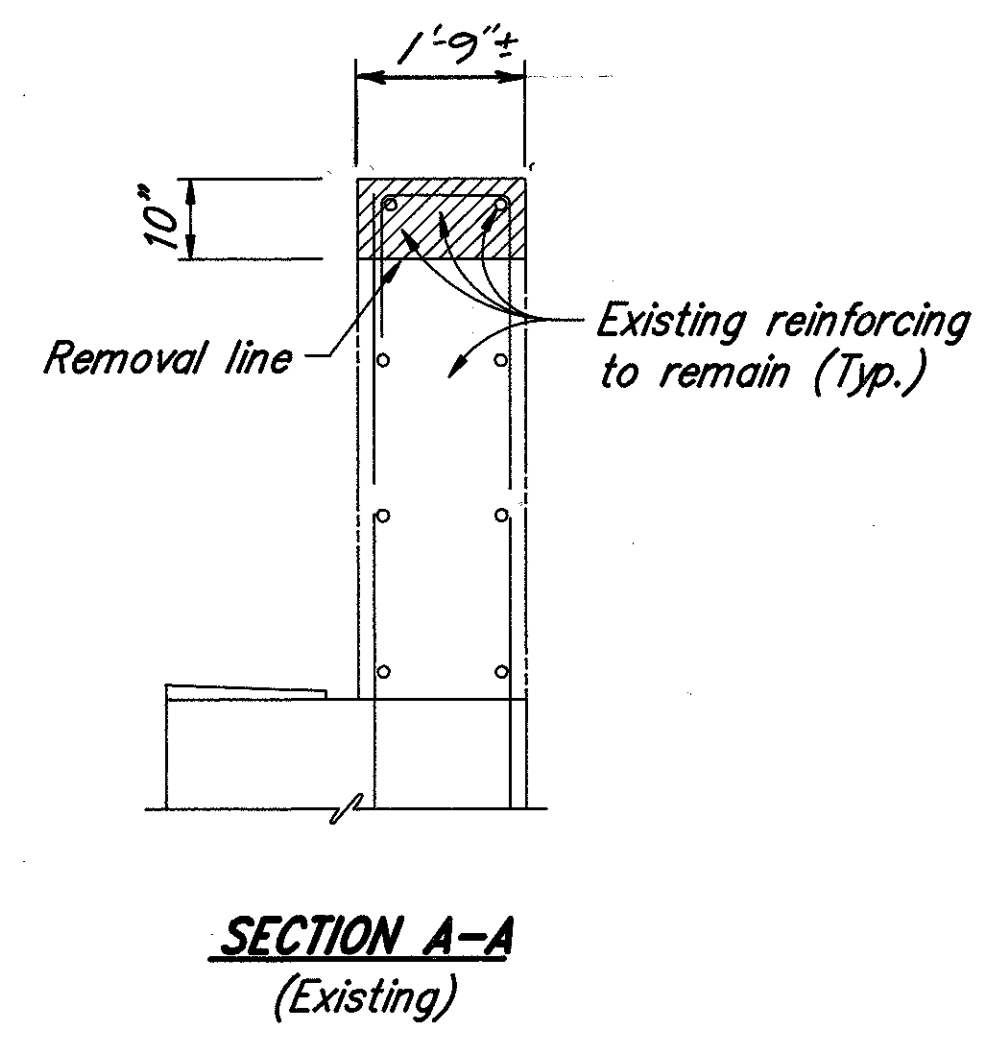
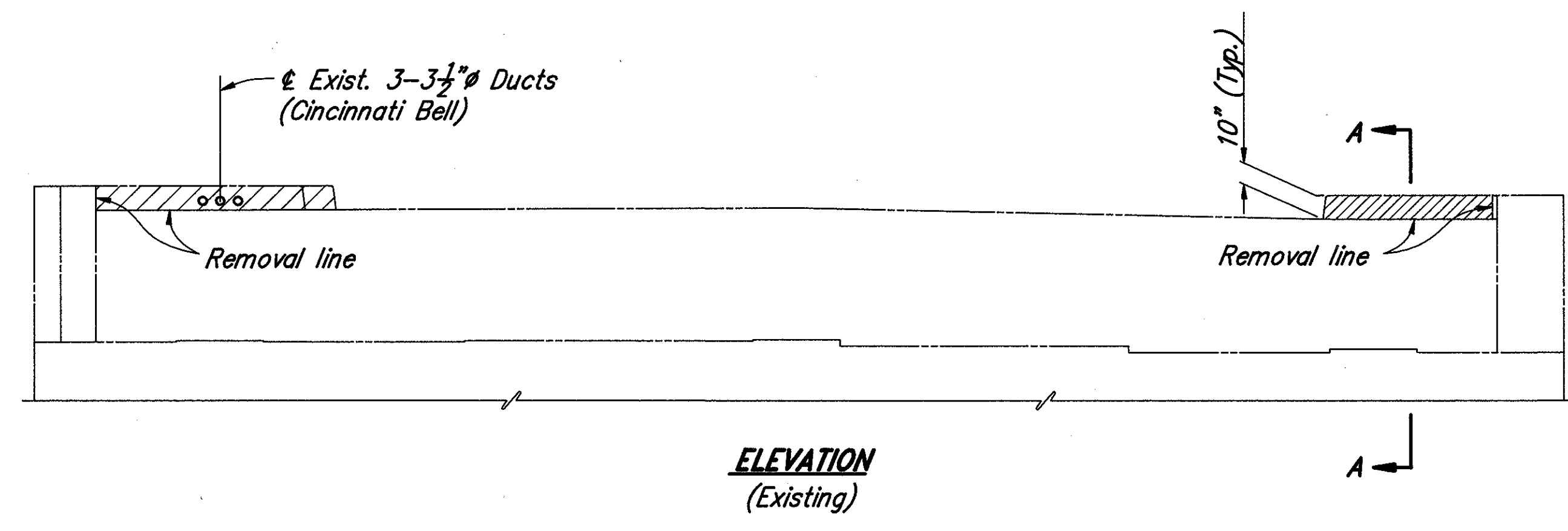
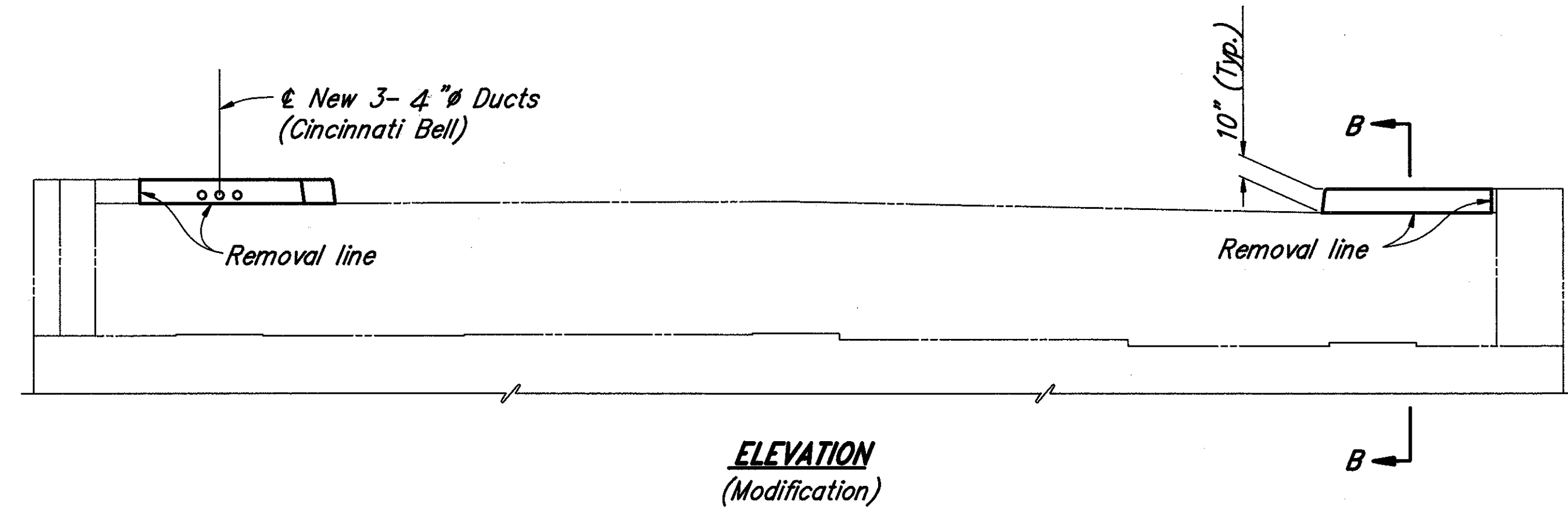
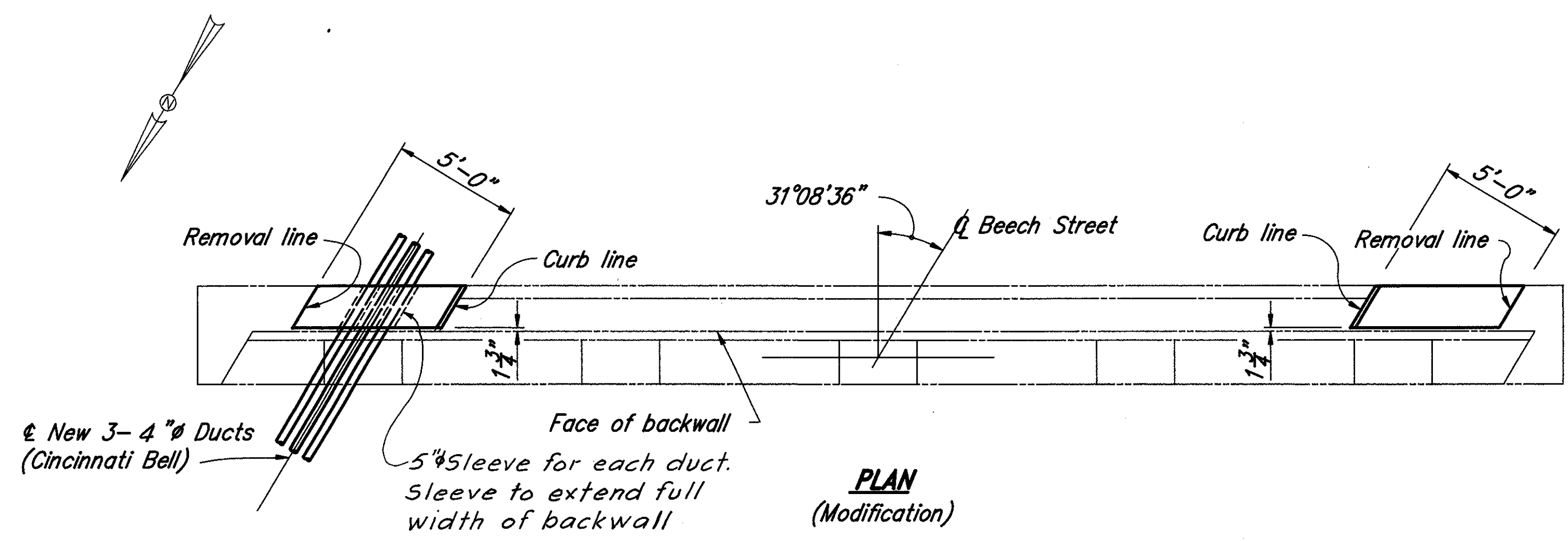
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPERSTRUCTURE	GENERAL
202	11201	L.S.	Lump sum	Portions of structures removed, as per plan				Lump sum
509	15800	29,796	Lb.	Epoxy coated reinforcing steel, grade 60			29,746	50
511	34400	172	Cu. yd.	Class S concrete, superstructure (repair or reconstruction)			172	
511	45700	1	Cu. yd.	Class C concrete, abutment (repair or reconstruction)	1			
Special	51267300	81	Lin. ft.	Waterproofing, misc.: sealing vertical joint	81			
Special	51267500	354	Sq. yd.	Sealing of concrete surfaces (see Proposal Note)			354	
Special	51267502	617	Sq. yd.	Sealing of concrete surfaces (epoxy) (see Proposal Note)	530	87		
513	19000	L.S.	Lump sum	Heat Straightening of damaged structural steel (see Proposal Note)				Lump sum
Special	51400050	5552	Sq. ft.	Surface preparation of existing steel, system OZEU			5552	
Special	51400056	5552	Sq. ft.	Field painting of existing steel, prime coat, system OZEU			5552	
Special	51400060	5552	Sq. ft.	Field painting of existing steel, intermediate coat, system OZEU			5552	
Special	51400066	5552	Sq. ft.	Field painting of existing steel, finish coat, system OZEU			5552	
516	11210	47	Lin. ft.	Structural expansion joint including elastomeric strip seal				47
516	45304	5	Each	Refurbish bearing device				5
516	46700	5	Each	Reset bearing				5
516	47000	L.S.	Lump sum	Jacking and temporary support of superstructure				Lump sum
517	75301	208	Lin. ft.	Railing, concrete parapet with chain link fence, as per plan				208
518	63300	L.S.	Lump sum	Structure drainage, misc.: abandon drainage system				Lump sum

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Cincinnati, Ohio 45237

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**GENERAL NOTES  
ESTIMATED QUANTITIES  
BRIDGE NO. HAM-562-0275  
HAM 562 UNDER BEECH STREET**

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	8/93	3/93	



**NOTES**

UTILITY LINES: All expense involved in relocating (installing) the affected utility lines shall be borne by the Owner. The Contractor and Owner are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

 Denotes portions of structure to be removed.

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Cincinnati, Ohio 45237

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**ABUTMENT 1**

BRIDGE NO. HAM-562-0275  
HAM 562 UNDER BEECH STREET

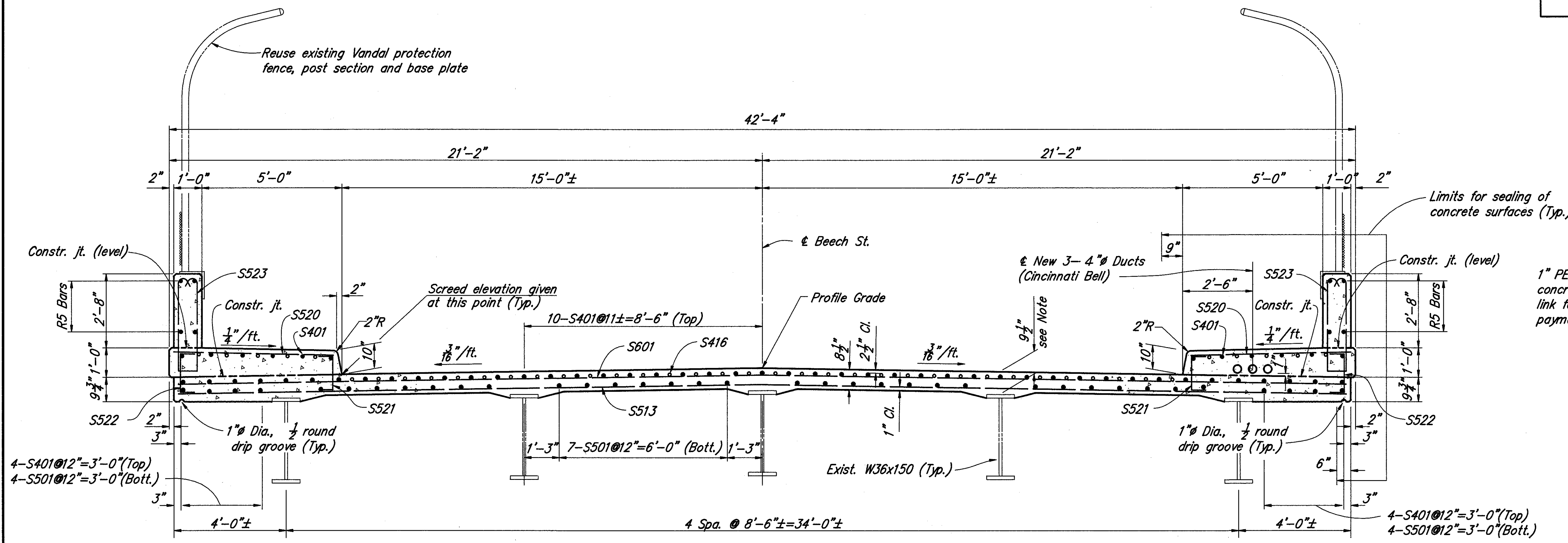
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	JDG	~	VDG	CRS	3/93	

0275ABUT 25 MAR 1993



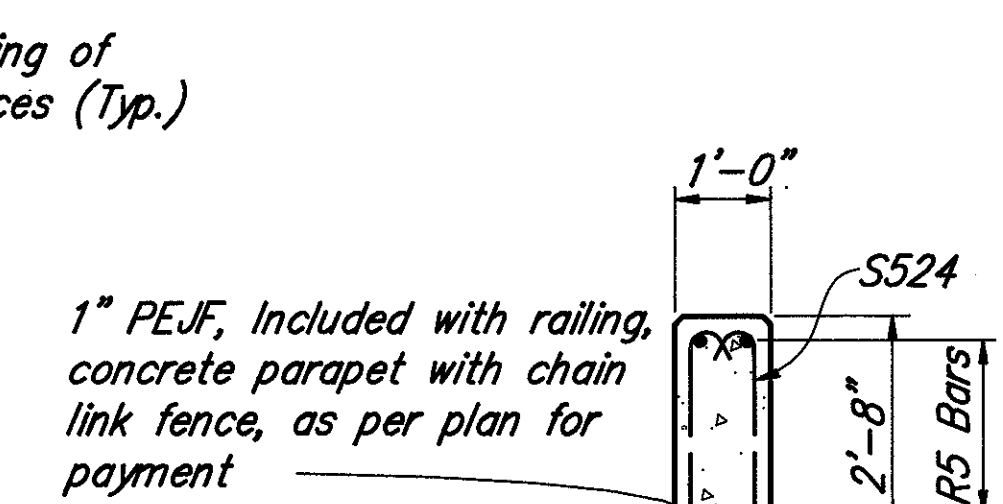




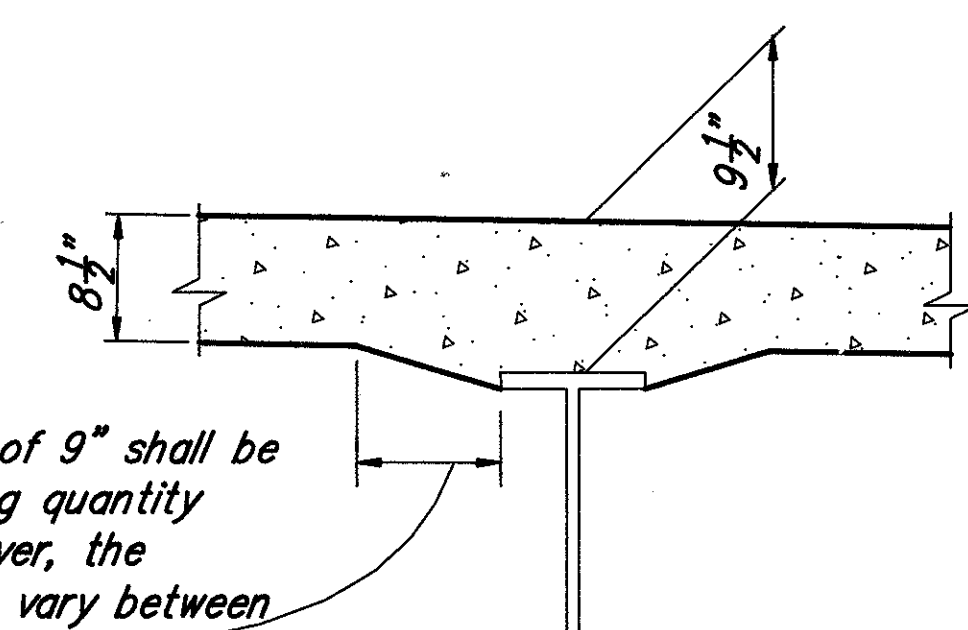


SECTION C-C

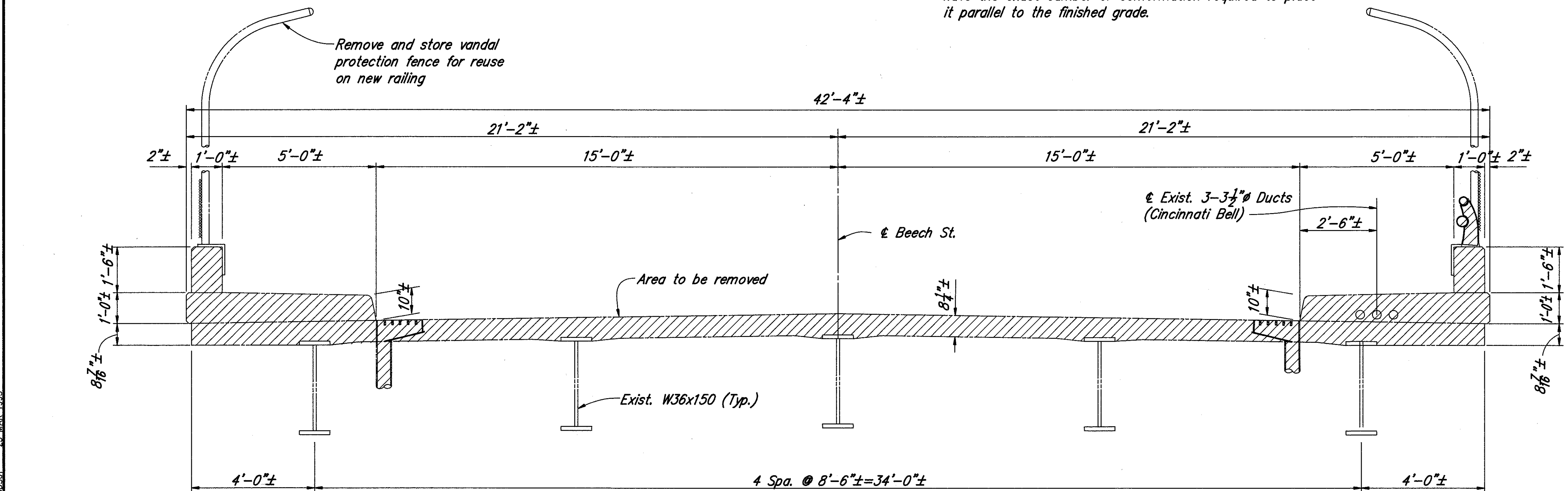
**NOTE**  
DECK SLAB DEPTH: The distance shown from top of deck slab to top of steel beam is the design dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.



SECTION D-D



HAUNCH DETAIL



SECTION C-C  
Removal

**NOTE**  
For location of Sections C-C and D-D see sheet 4/7

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Cincinnati, Ohio 45237

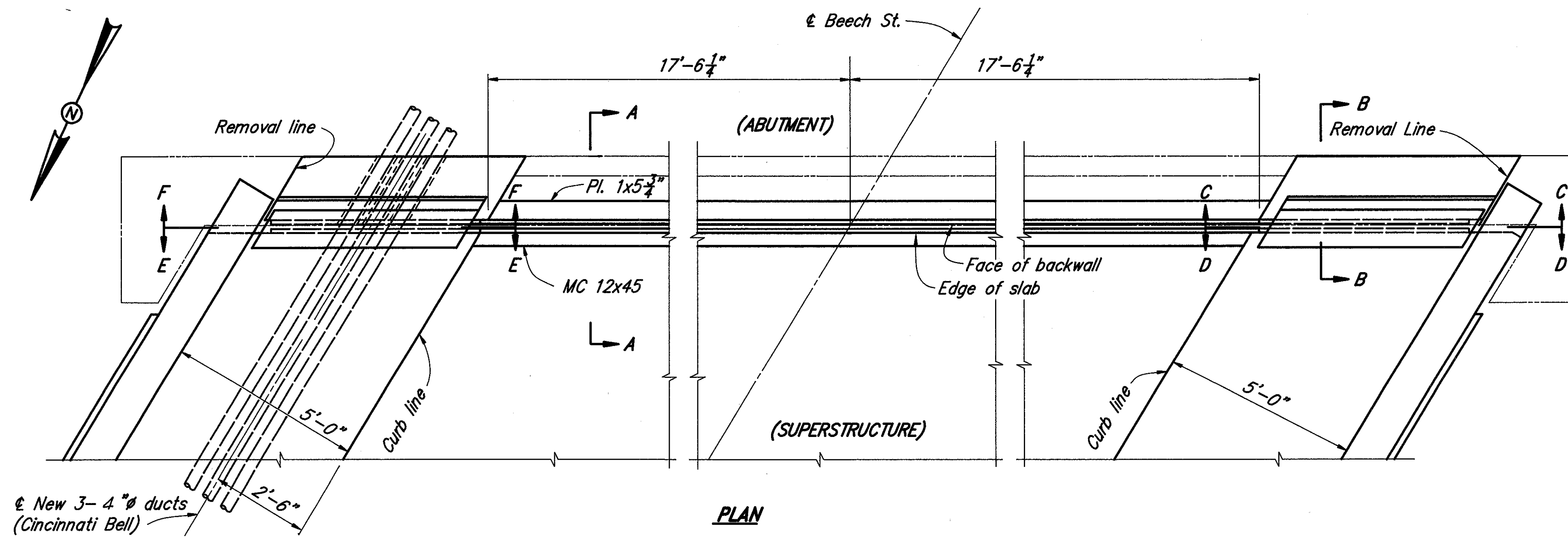
5/7

**SUPERSTRUCTURE**

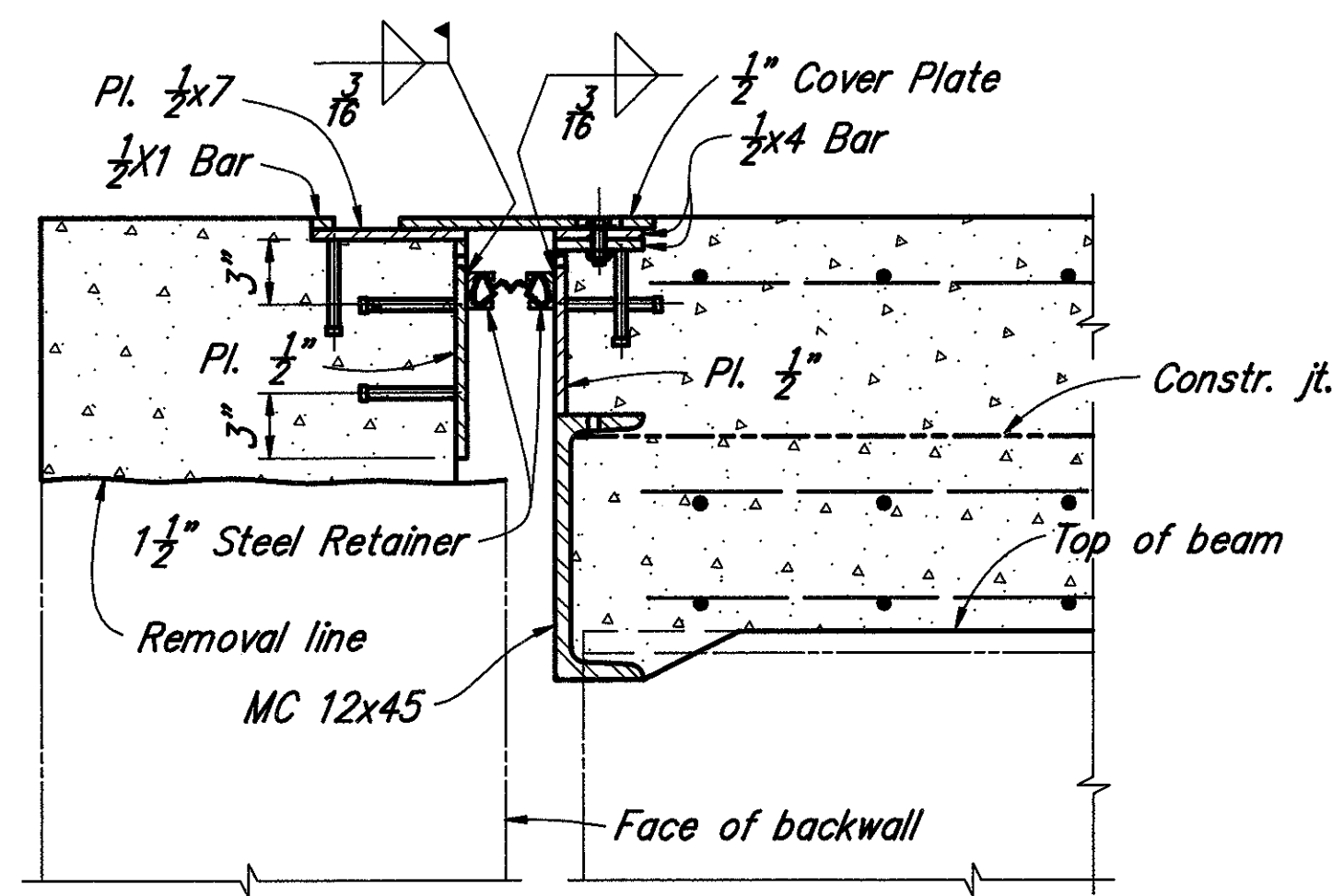
BRIDGE NO. HAM-562-0275  
HAM 562 UNDER BEECH STREET

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDC	3/93	3/93	

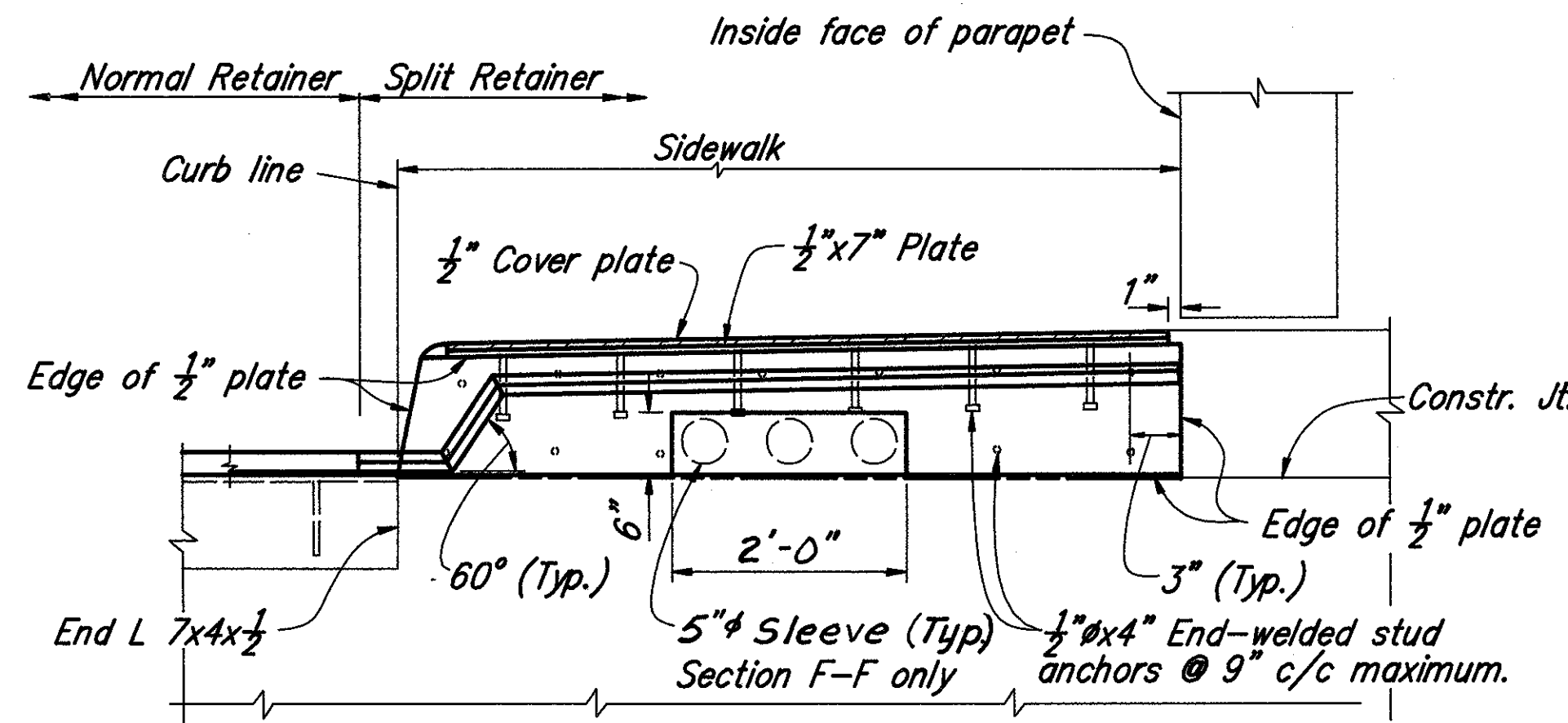
02750501 25 MAR 1993



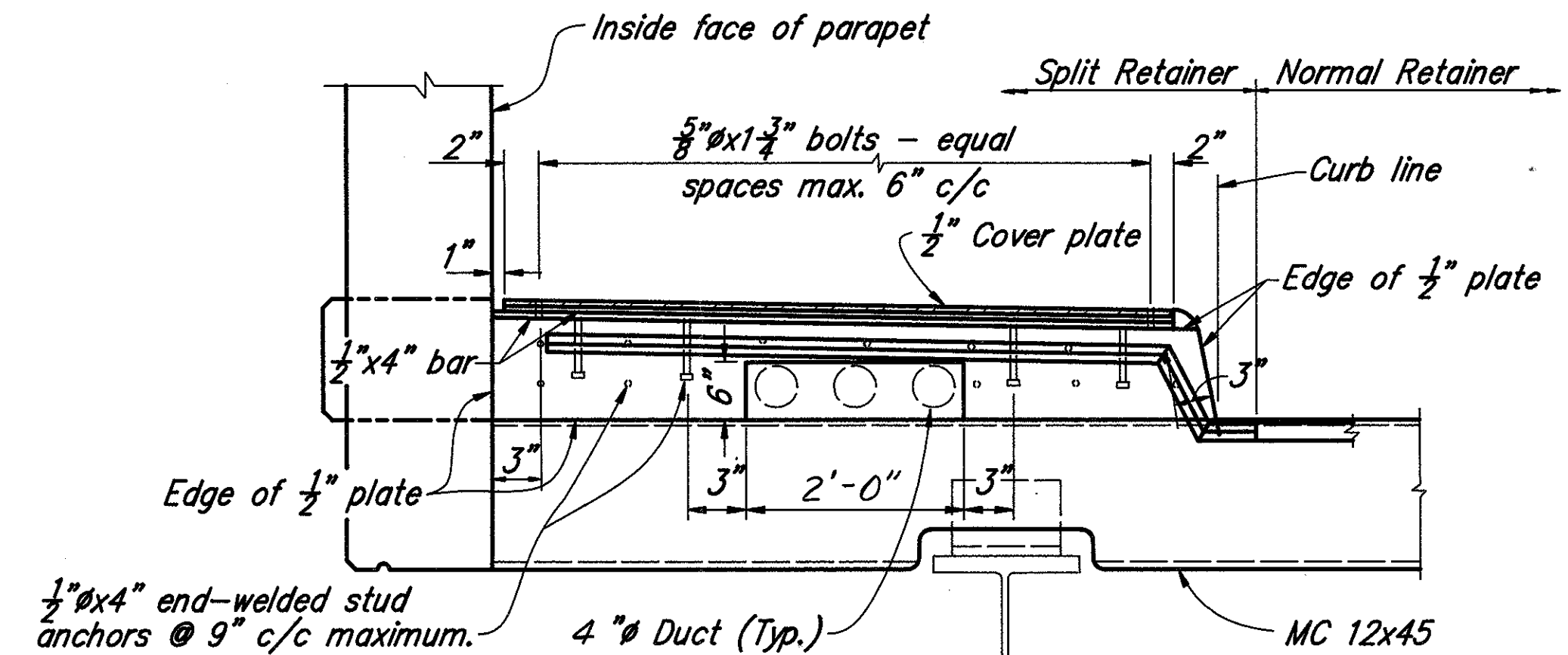
PLAN



SECTION B-B  
For information not shown  
see Standard Drawing EXJ-2-87

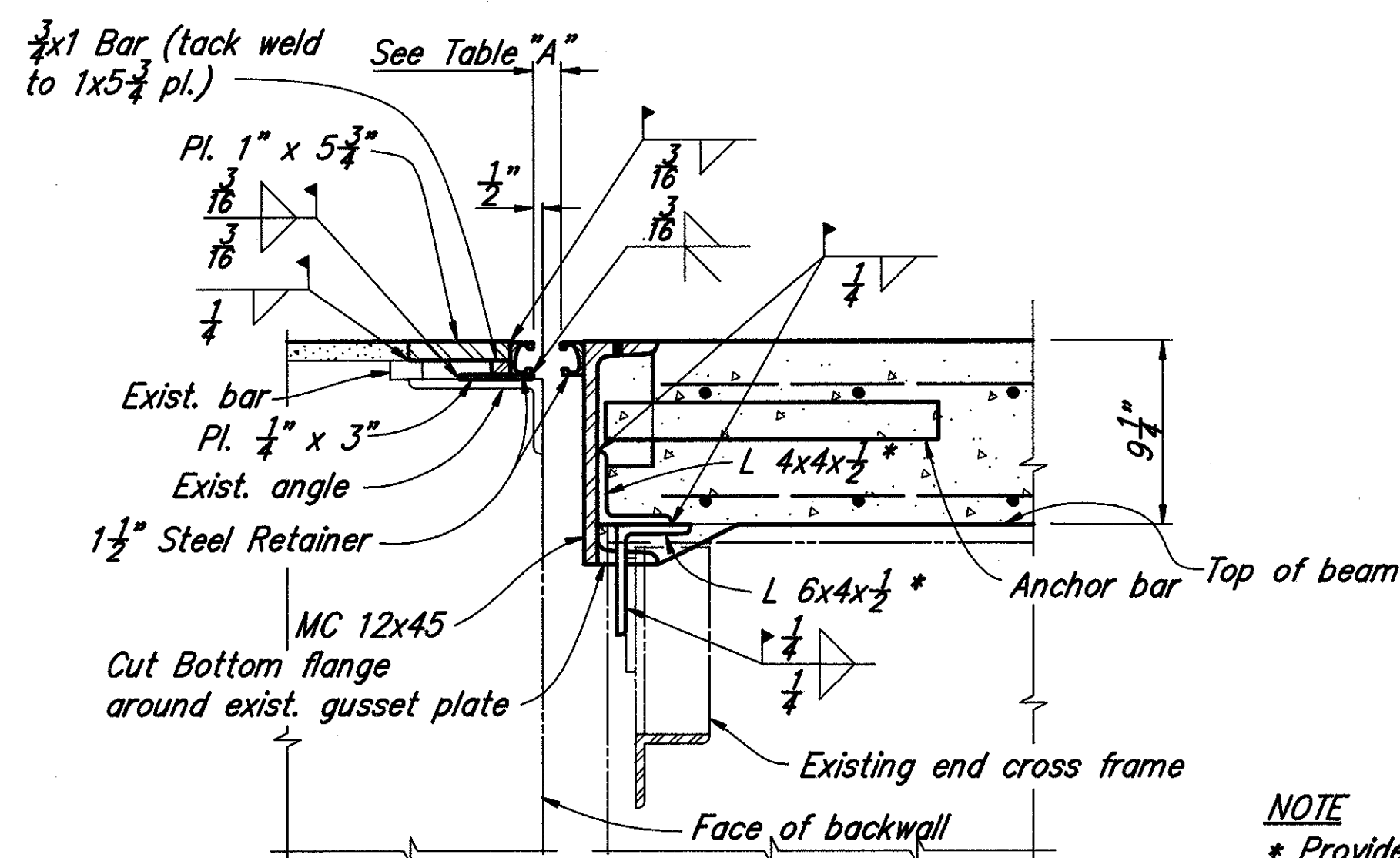


SECTION C-C  
Section F-F opposite hand  
For information not shown  
see Standard Drawing EXJ-4-87



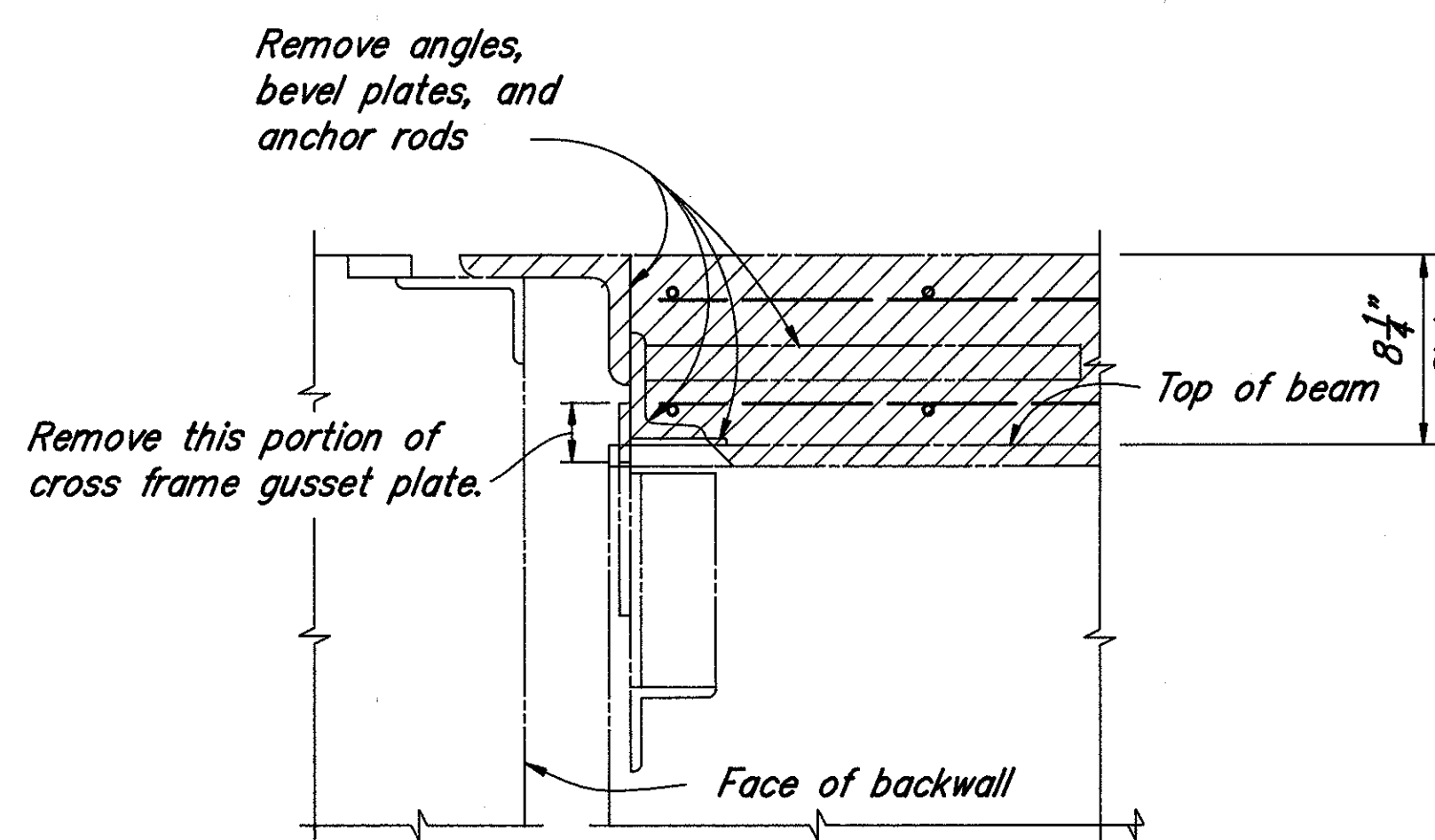
SECTION D-D  
Section E-E opposite hand  
For information not shown  
see Standard Drawing EXJ-4-87

NOTE  
End plates in east sidewalk shall  
be modified for Cincinnati Bell ducts.

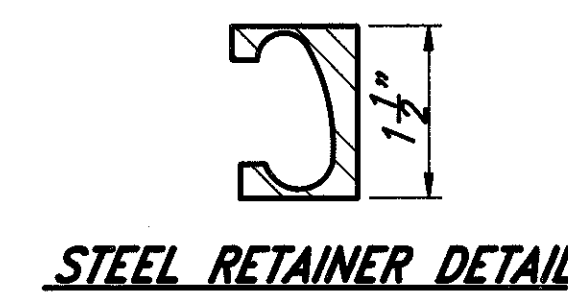


SECTION A-A  
For information not shown  
see Standard Drawing EXJ-2-87

NOTE  
\* Provide angle at  
each gusset plate.



SECTION A-A  
Showing removal



STRIP SEAL GLAND TABLE			
SEAL MOVEMENT RATING	MANUFACTURER & DESIGNATION **		
	D.S. BROWN	STRUCTURAL ACCESSORIES	WATSON BOWMAN & ACME
3"	300		SE-300

\*\* or an approved alternate

TABLE A	
F <sup>o</sup>	Dimension A Abutment 1
90	
80	
70	1 9/16"
60	1 5/8"
50	1 11/16"
40	1 3/4"
30	1 7/8"

NOTE  
For additional details see  
Std. Drawing EXJ-4-87.

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EXPANSION JOINT DETAILS  
AT ABUTMENT NO. 1  
BRIDGE NO. HAM-562-0275  
HAM 562 UNDER BEECH STREET

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	8/28/87	7/93	

5014E.006 25 MAR 1993

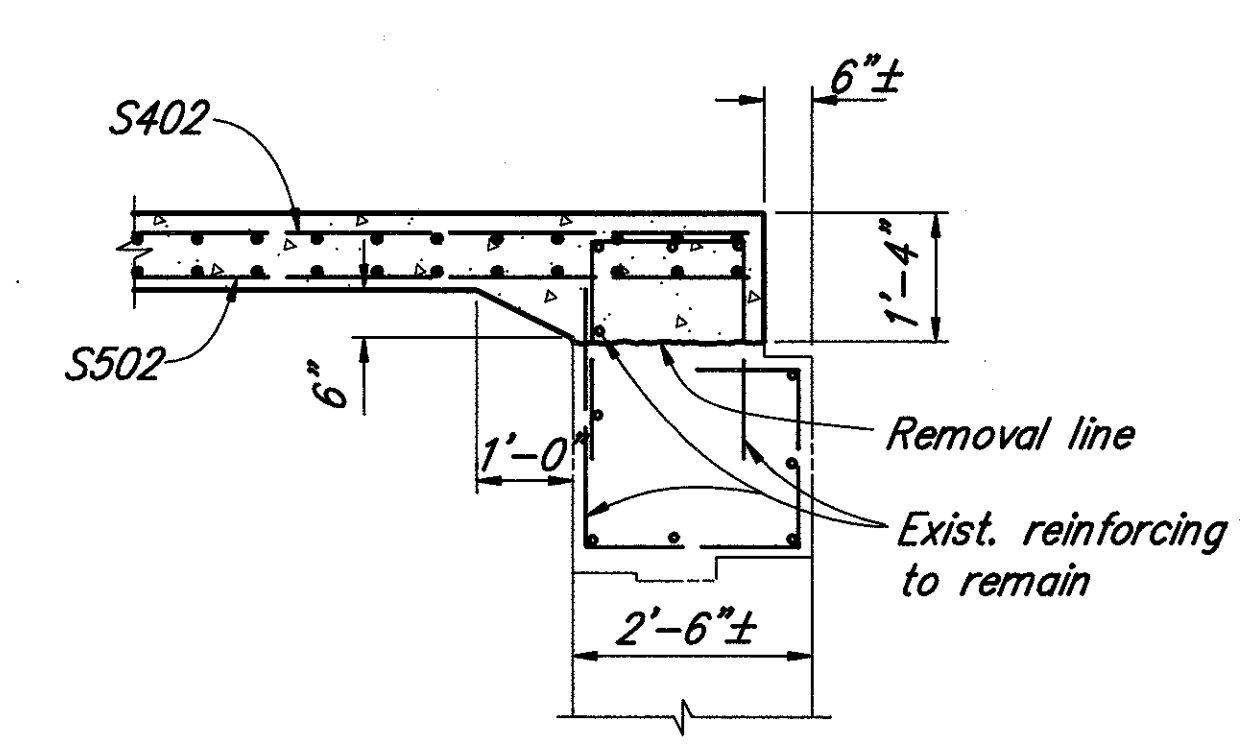
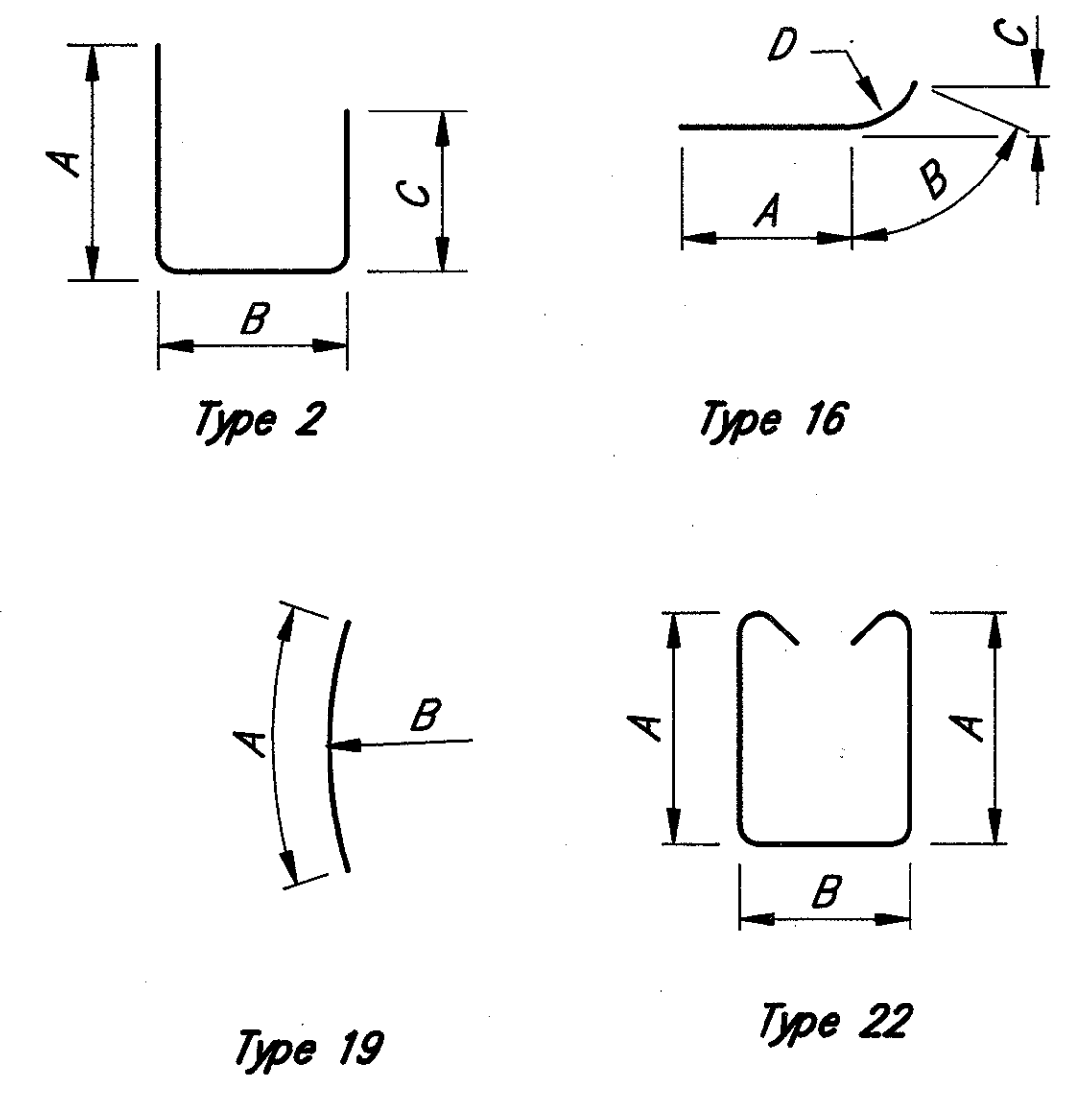
**EPOXY COATED REINFORCING STEEL LIST**

Mark	Total No.	Length	Weight	Type	Dimensions			
					A	B	C	D
<b>SUPERSTRUCTURE</b>								
S401	165	30'-0"	3307	Str.				
S402	51	17'-6"	596	Str.				
S403	1	14'-0"	9	Str.				
S404	1	11'-6"	8	Str.				
S405	1	9'-10"	7	Str.				
S406	1	8'-8"	6	Str.				
S407	1	7'-5"	5	Str.				
S408	1	6'-5"	4	Str.				
S409	1	6'-1"	4	Str.				
S410	1	5'-3"	4	Str.				
S411	1	4'-7"	3	Str.				
S412	1	4'-0"	3	Str.				
S413	6	27'-1"	109	Str.				
S414	1-Ser. of 6	17'-5" to 23'-8"	82	19	17'-5" to 23'-8"	9'-3" to 14'-9"		
S415	1-Ser. of 5	3'-11" to 8'-11"	21	Str.				
S416	42	23'-0"	645	Str.				
S501	108	30'-0"	3379	Str.				
S502	36	17'-9"	666	Str.				
S503	1	14'-0"	15	Str.				
S504	1	11'-6"	12	Str.				
S505	1	9'-10"	10	Str.				
S506	1	8'-8"	9	Str.				
S507	1	7'-5"	8	Str.				
S508	1	6'-5"	7	Str.				
S509	1	6'-1"	6	Str.				
S510	1	5'-3"	5	Str.				
S511	1	4'-7"	5	Str.				
S512	1	4'-0"	4	Str.				
S513	124	41'-6"	5367	Str.				
S514	1 Ser. of 36	4'-8" to 40'-11"	856	Str.				
S515	1 Ser. of 36	4'-5" to 40'-8"	846	Str.				
S516	3	4'-1"	13	Str.				
S517	1 Ser. of 11	2'-3" to 9'-6"	67	Str.				
S518	1 Ser. of 9	9'-3" to 17'-6"	126	Str.				
S519	1 Ser. of 5	3'-1" to 7'-3"	27	Str.				
S520	146	5'-8"	863	Str.				
S521	138	2'-8"	384	2	10"	1'-2 1/2"	10"	
S522	144	2'-10"	426	2	10"	1'-4 1/2"	10"	
S523	141	8'-0"	1177	22	3'-4"	8"	3'-4"	
S524	2	5'-10"	12	22	2'-3"	8"	2'-3"	
S525	2	48'-6"	101	Str.				
S601	124	41'-6"	7729	Str.				
S602	1 Ser. of 36	4'-8" to 40'-11"	1232	Str.				
S603	1 Ser. of 36	4'-5" to 40'-8"	1219	Str.				
S604	3	4'-1"	18	Str.				
S605	1 Ser. of 11	3'-0" to 10'-3"	109	Str.				
S606	1 Ser. of 9	10'-0" to 18'-3"	191	Str.				
S607	1 Ser. of 5	3'-10" to 8'-0"	44	Str.				
R501	12	15'-6"	*	Str.				
R502	36	14'-0"	*	Str.				
R503	4	11'-6"	*	Str.				
R504	4	20'-4"	*	16	6'-0"	14'-4"	9'-6"	9'-6"
<b>Total</b>			<b>29746</b>					

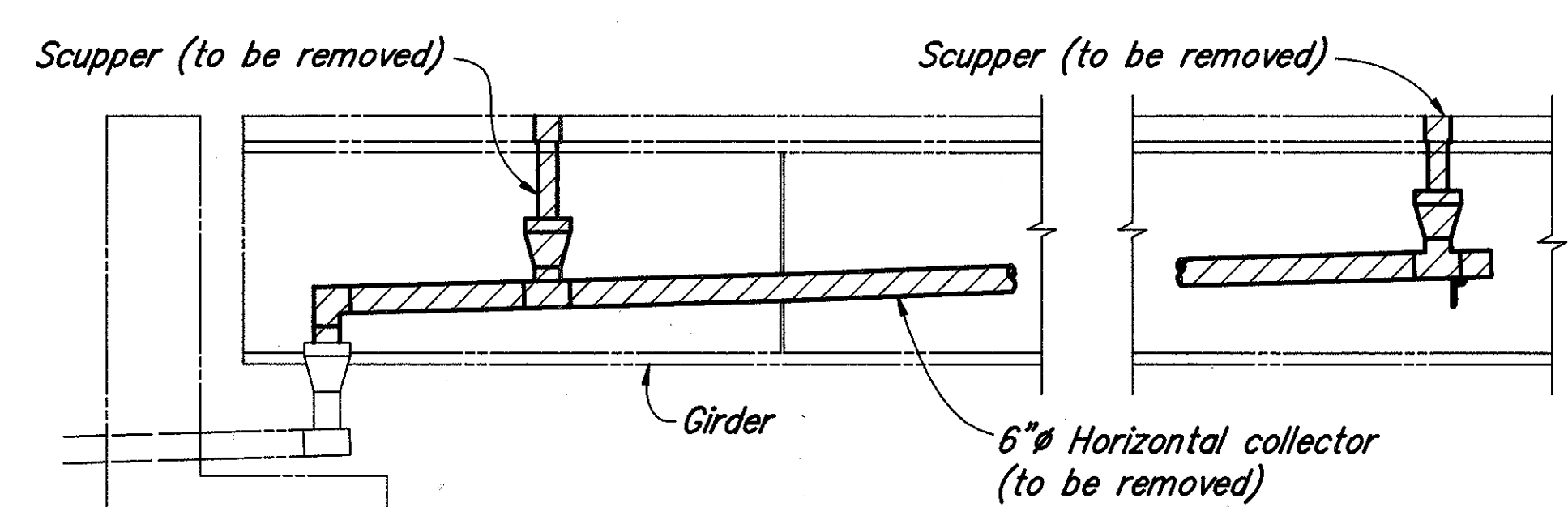
\* Included with railing for payment.

**BAR BENDING DIAGRAM**

All dimensions are out to out of bars.



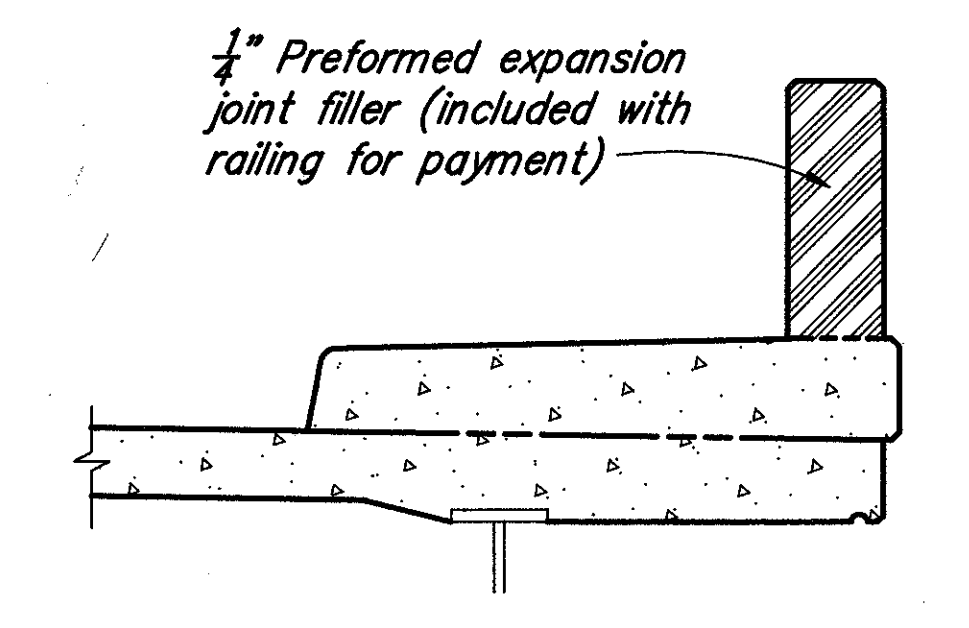
**SECTION B-B**



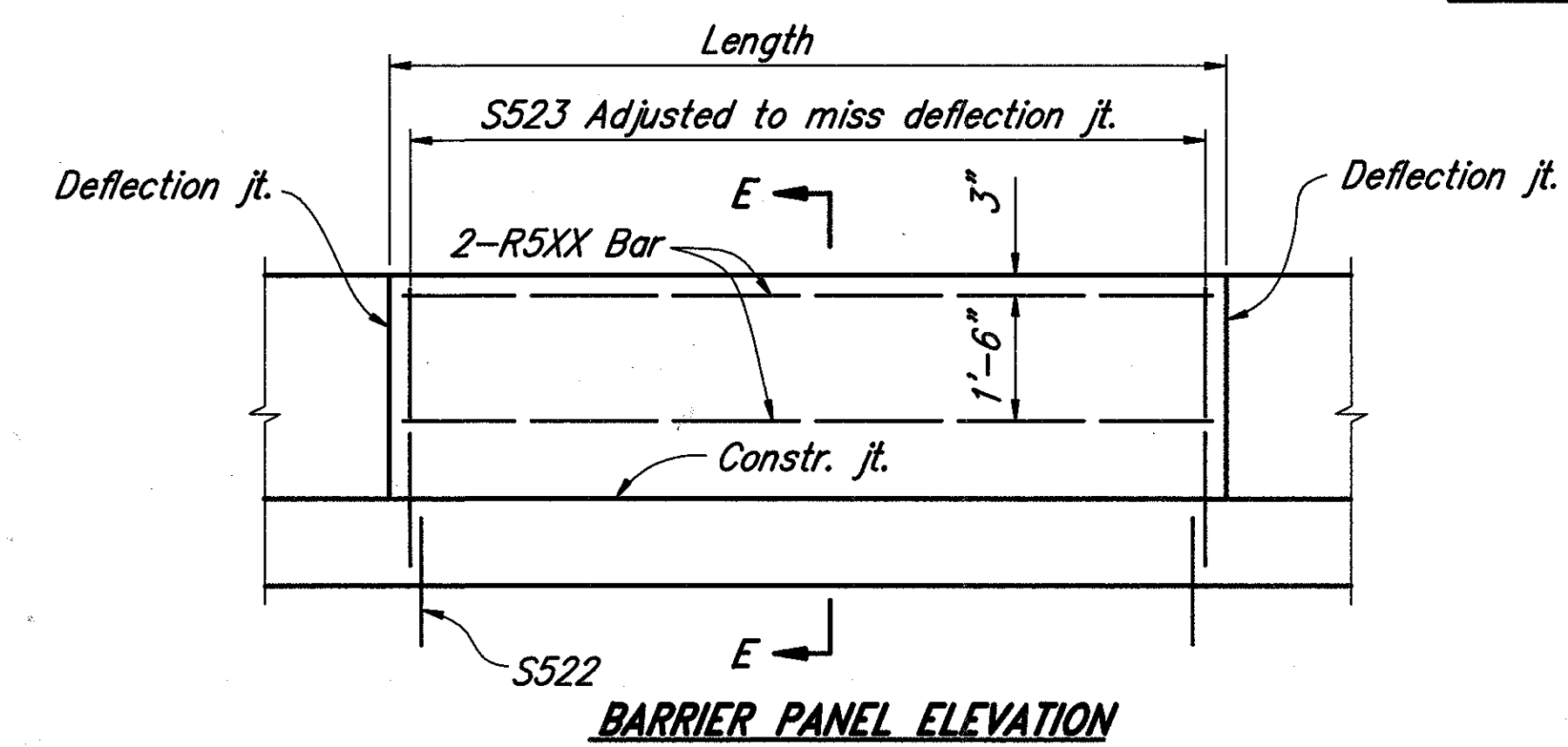
**DECK DRAINAGE**

**BARRIER PANEL TABLE**

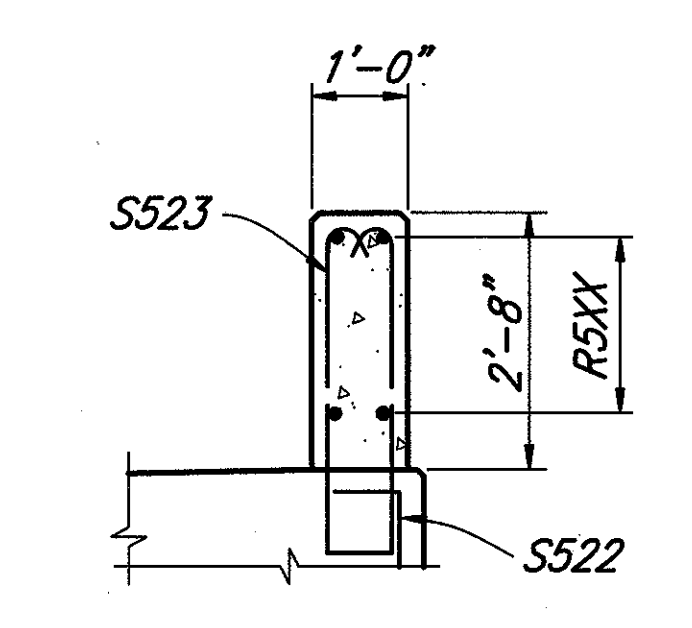
Panel	Length	Number of Panels	R5XX
P-1	15'-9 7/8"	1	R501
P-2	14'-4"	4	R502
P-3	11'-10"	1	R503
P-4	21'-11 3/4"	1	R504
P-5	15'-10 3/8"	2	R501
P-6	14'-6"	5	R502



**SECTION THROUGH DEFLECTION JOINT**

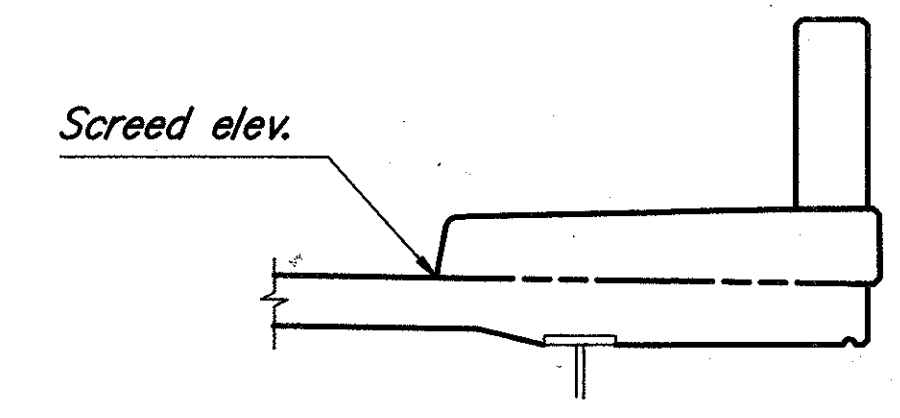


**BARRIER PANEL ELEVATION**



**SECTION E-E**

**NOTE**  
For location of Section B-B see sheet 4 / 7



**SCREED ELEVATION LOCATION**

**SCREED ELEVATION TABLE**

Location	Left Screed	Right Screed
Abut. 1	620.76	621.05
1/2 Span Pier	621.17	621.43
1/2 Span	621.52	621.77
Abut. 2	621.89	622.10
	622.14	622.30

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**BALKE ENGINEERS**  
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**SUPERSTRUCTURE  
EPOXY COATED REINFORCING STEEL LIST**

**BRIDGE NO. HAM-562-0275  
HAM 562 UNDER BEECH STREET**

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MRS	ALT	~	VDG	BRP	7/3	

SOL 45033 25 MAR 1993

HAM-562-1.18  
170  
170  
D-8