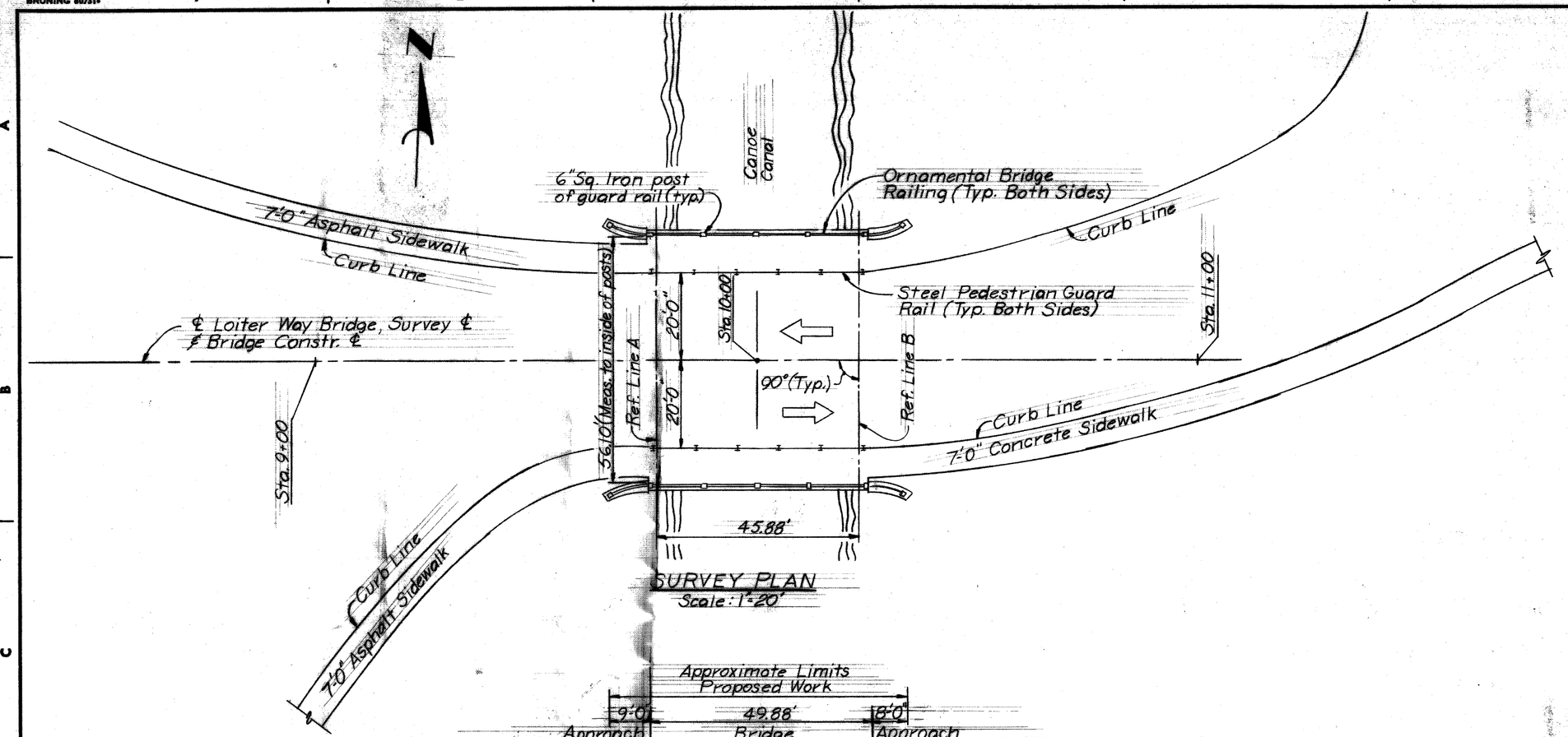
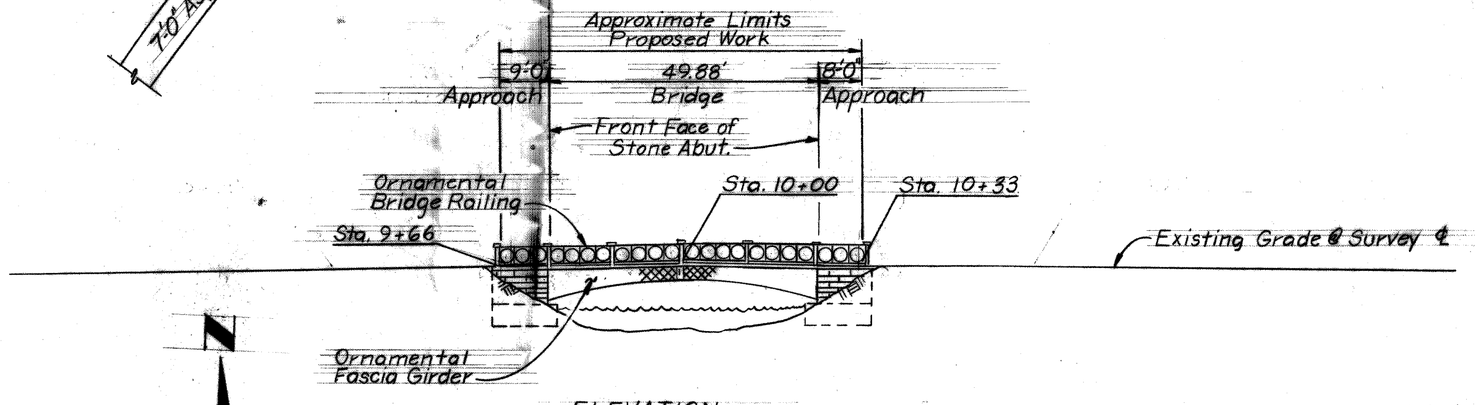
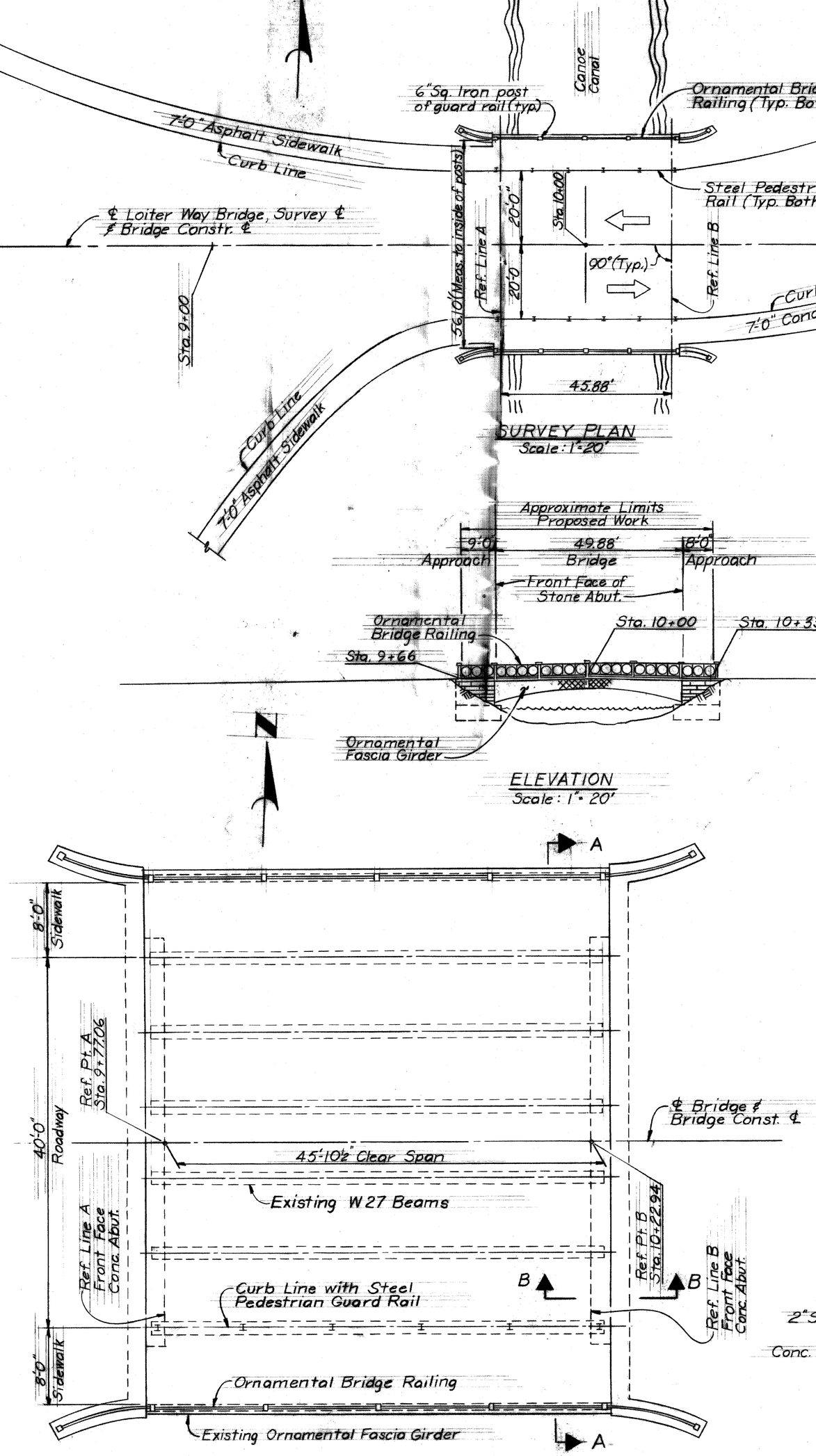


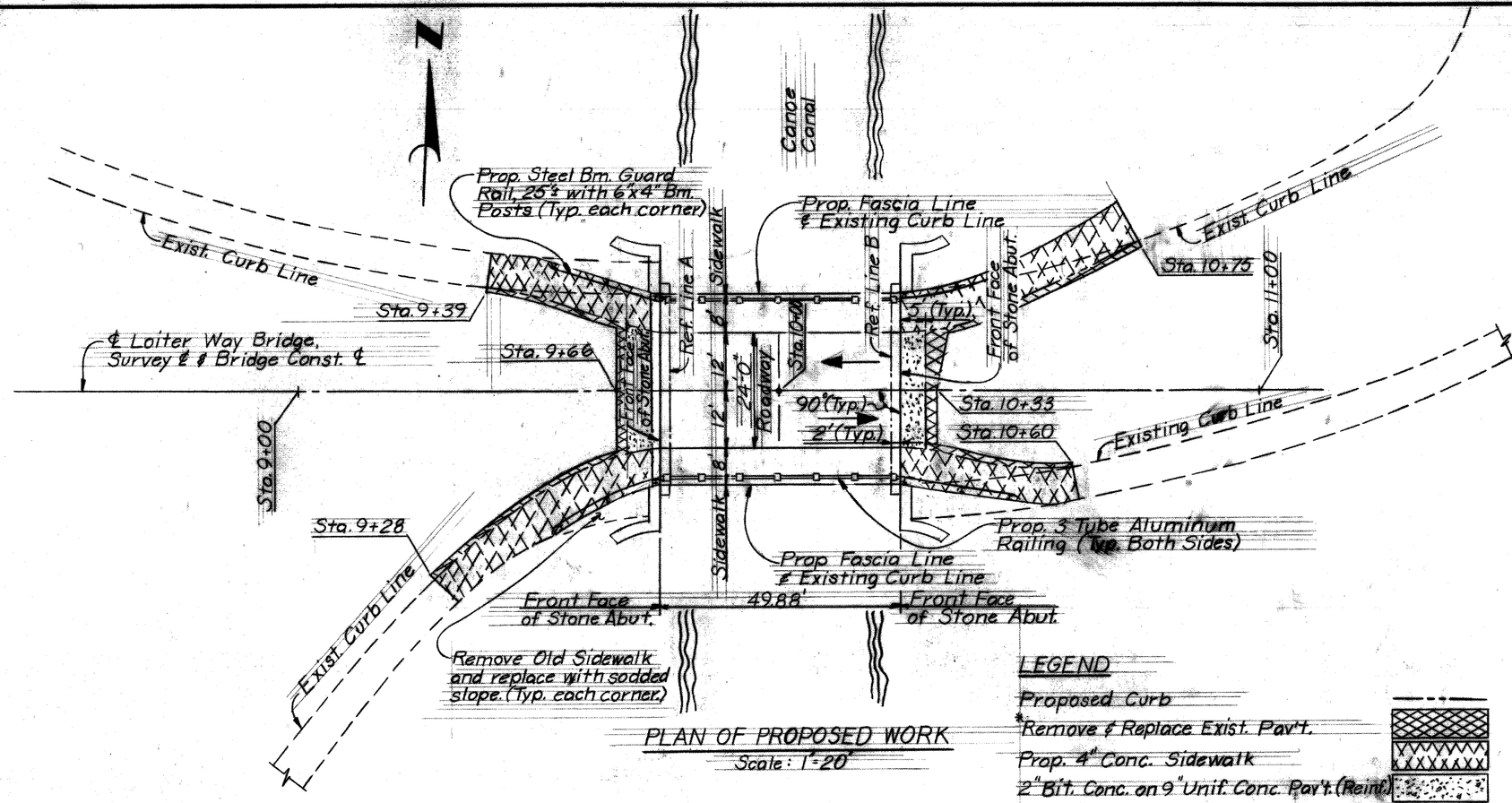
SURVEY PLAN
Scale: 1"=20'



ELEVATION
Scale: 1"=20'



GENERAL PLAN OF EXISTING STRUCTURE
Scale: ⅛"=1'-0"



PLAN OF PROPOSED WORK
Scale: 1"=20'

LEGEND

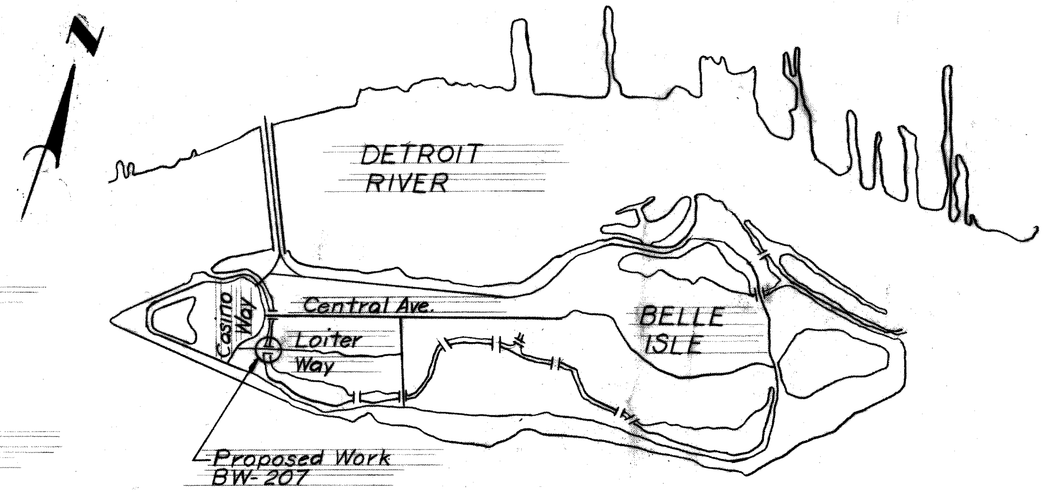
Proposed Curb

* Remove ∦ Replace Exist. Pav't.

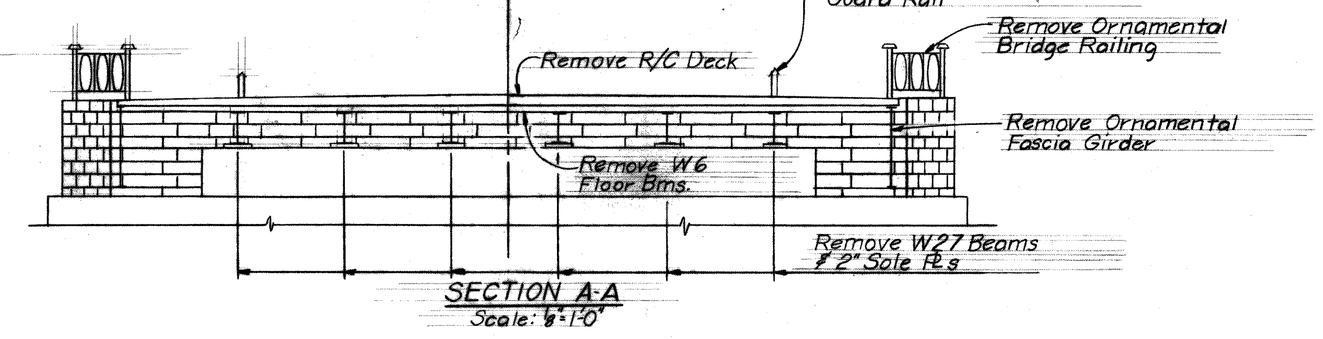
Prop. 4" Conc. Sidewalk

2" Bit. Conc. on 9" Unif. Conc. Pav't. (Reinf.)

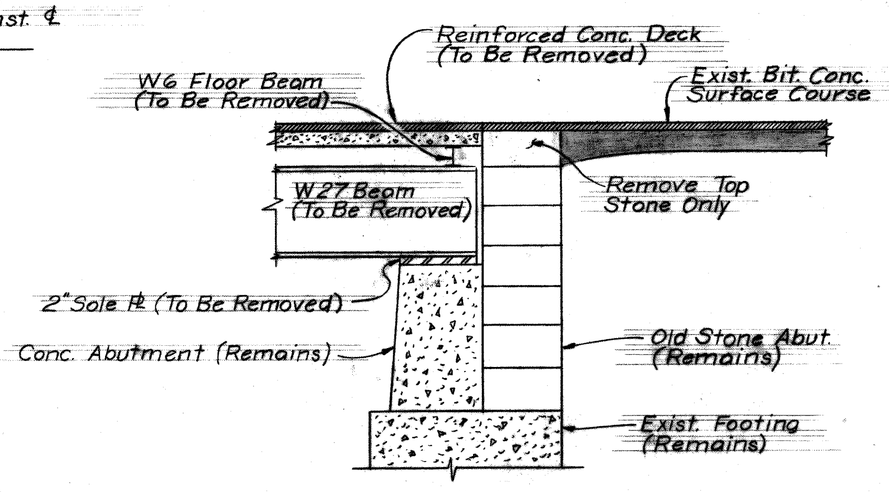
* Remove existing pavement ∦ replace with 2" Bit. conc. on 6" aggregate base course



LOCATION PLAN
No Scale



SECTION A-A
Scale: ⅛"=1'-0"



SECTION B-B
Scale: ⅛"=1'-0"

GENERAL NOTES:

When removing superstructure, as shown on the drawings, care shall be taken to protect the substructure from damage.

The design of the new superstructure is based on the M.D.S.H. Specifications for the Design of Highway Bridges, 1958 edition and current A.A.S.H.O. Standard Specifications for Highway Bridges H15-44 Loading.

Live load plus impact deflection = $\frac{1}{800}$ of span length.

For all paving related items, refer to the City of Detroit D.P.W. Standard Specifications for paving and related construction.

REVISIONS LOCATED BY COORDINATES ON SHEET						
COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE	

REFERENCE DRAWINGS

DESIGNED BY	R. Bunce
DRAWN BY	L.G.
TRACED BY	
CHECKED BY	

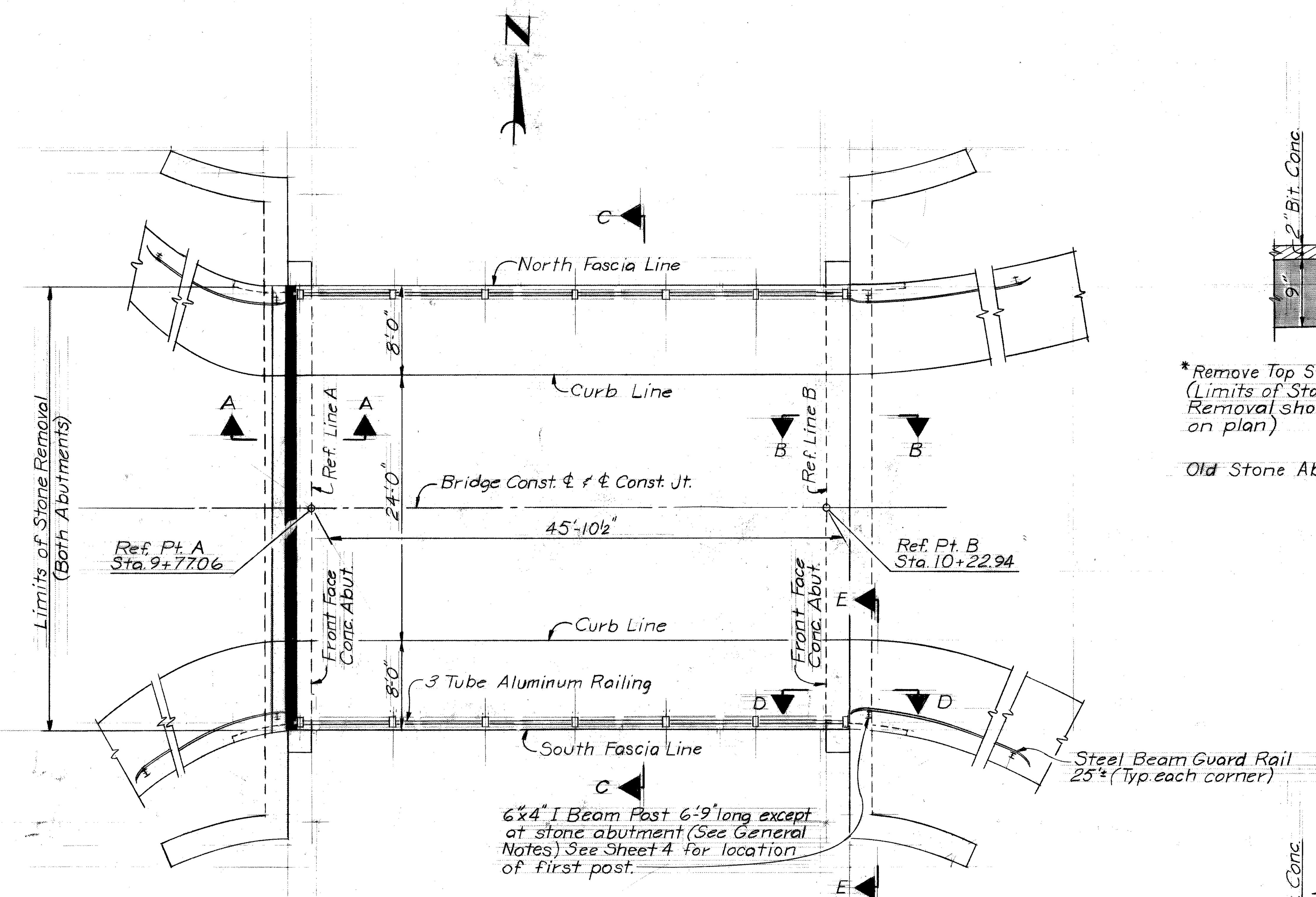
APPROVED:

CITY ENGINEER

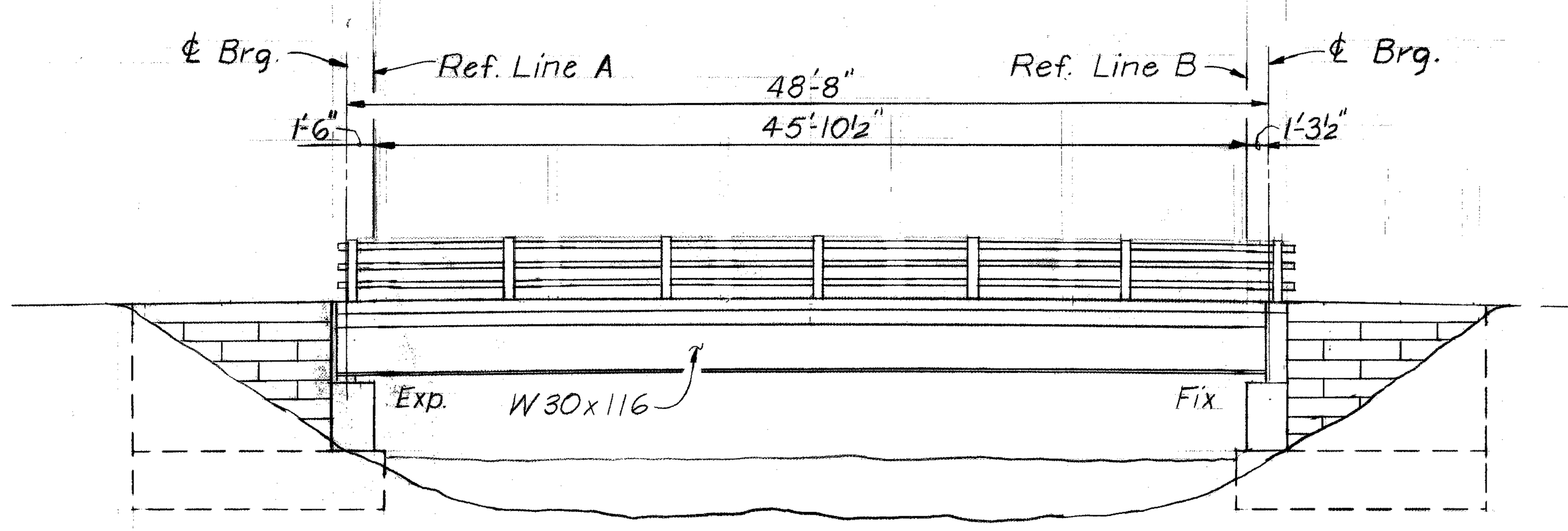
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
FOR
DEPARTMENT OF PUBLIC WORKS

BELLE ISLE BW 207 LOITER WAY
REPLACEMENT OF SUPERSTRUCTURE
GENERAL DRAWING

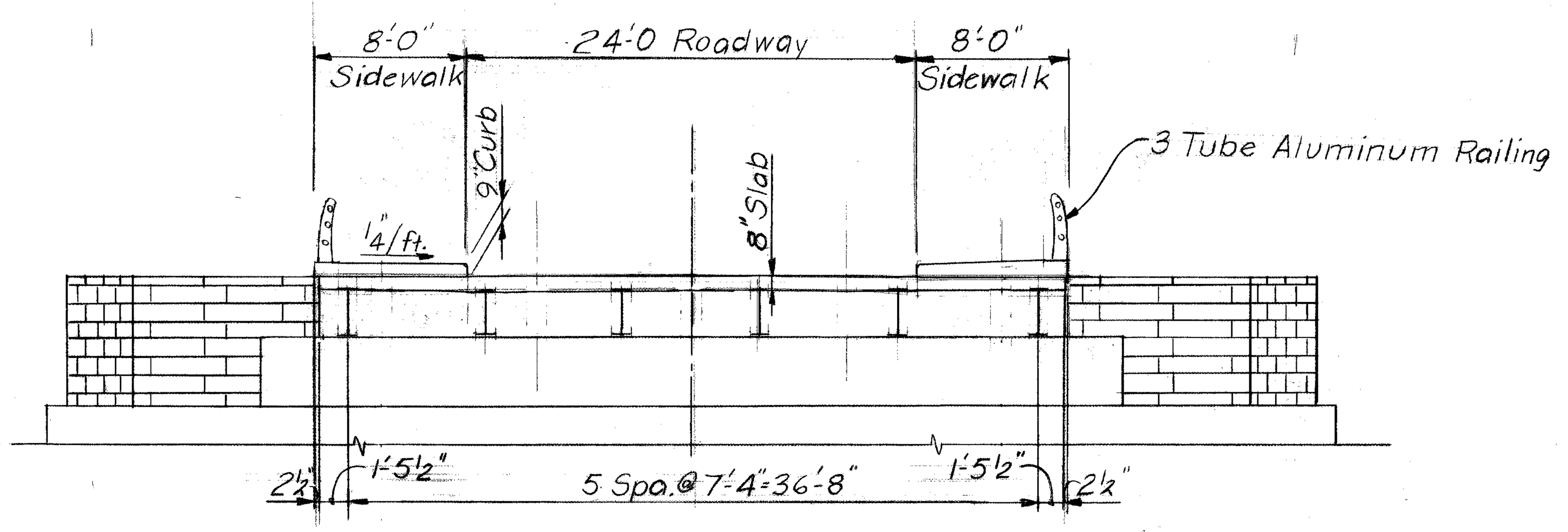
SHEET 1 OF 7 SHEETS
CONTRACT No.
DRWG No.
DATE



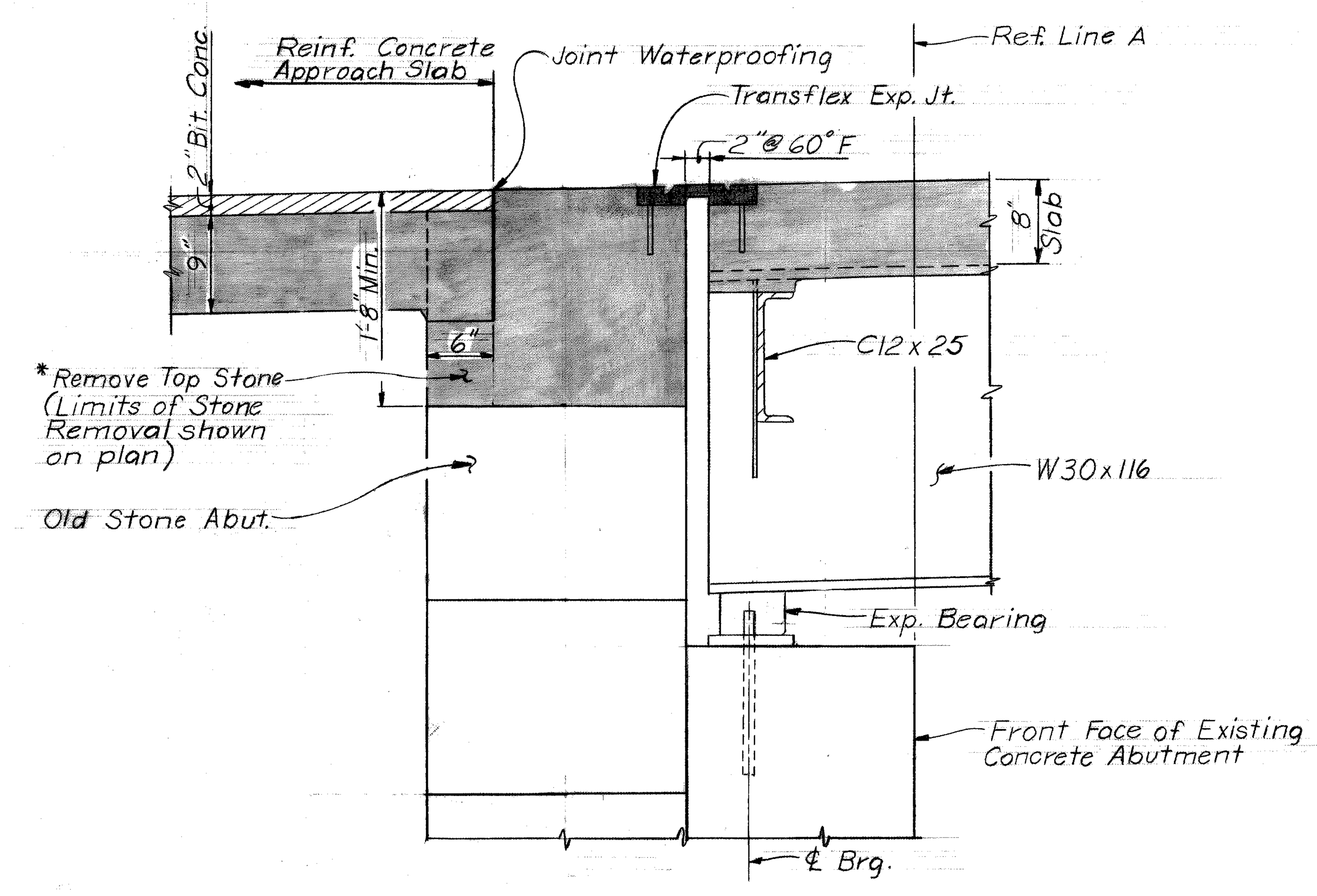
PLAN
Scale: 1/8"=1'-0"



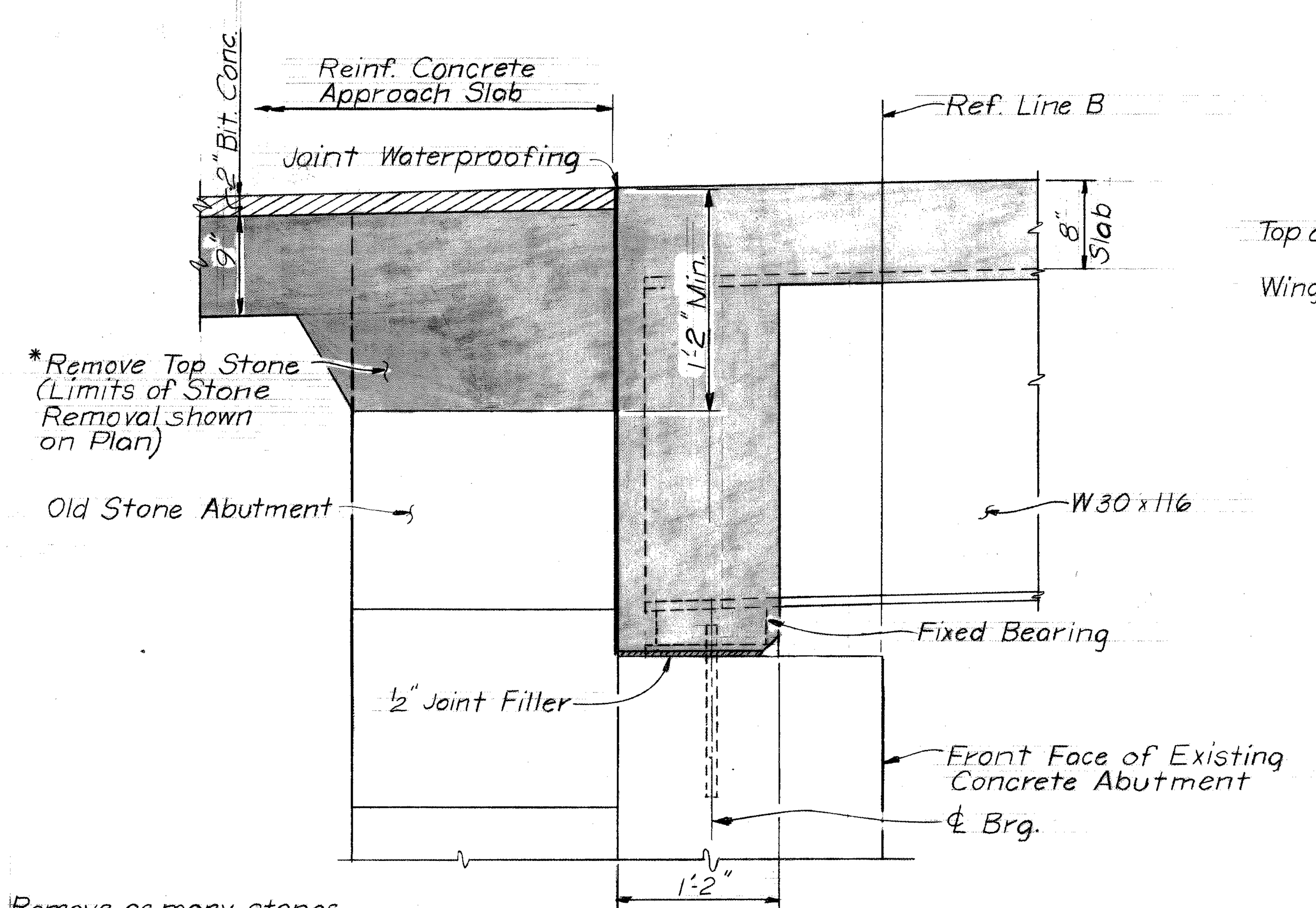
ELEVATION
Scale: 1/8"=1'-0"



SECTION C-C
Scale: 1/8"=1'-0"

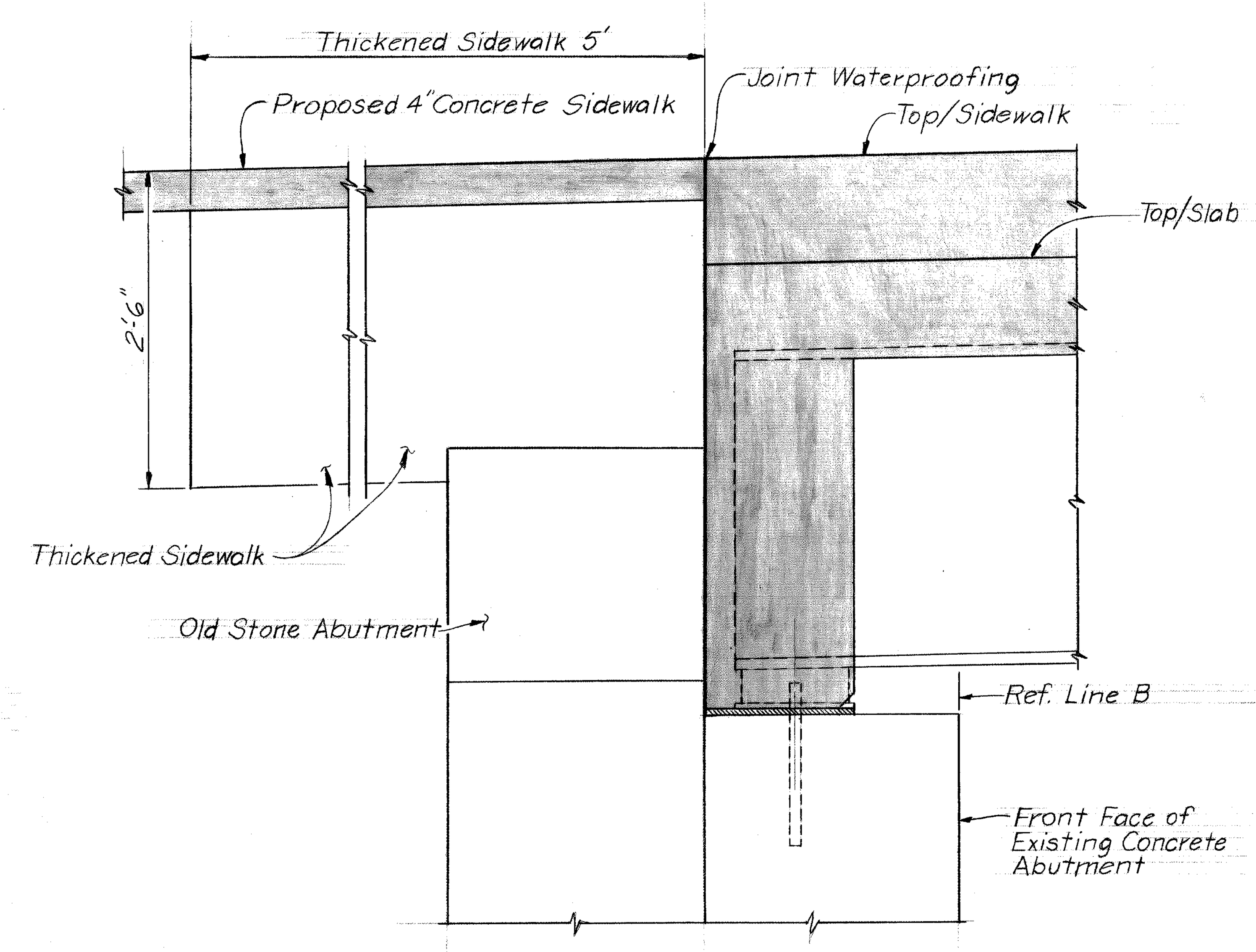


SECTION A-A
Scale: 1"=1'-0"

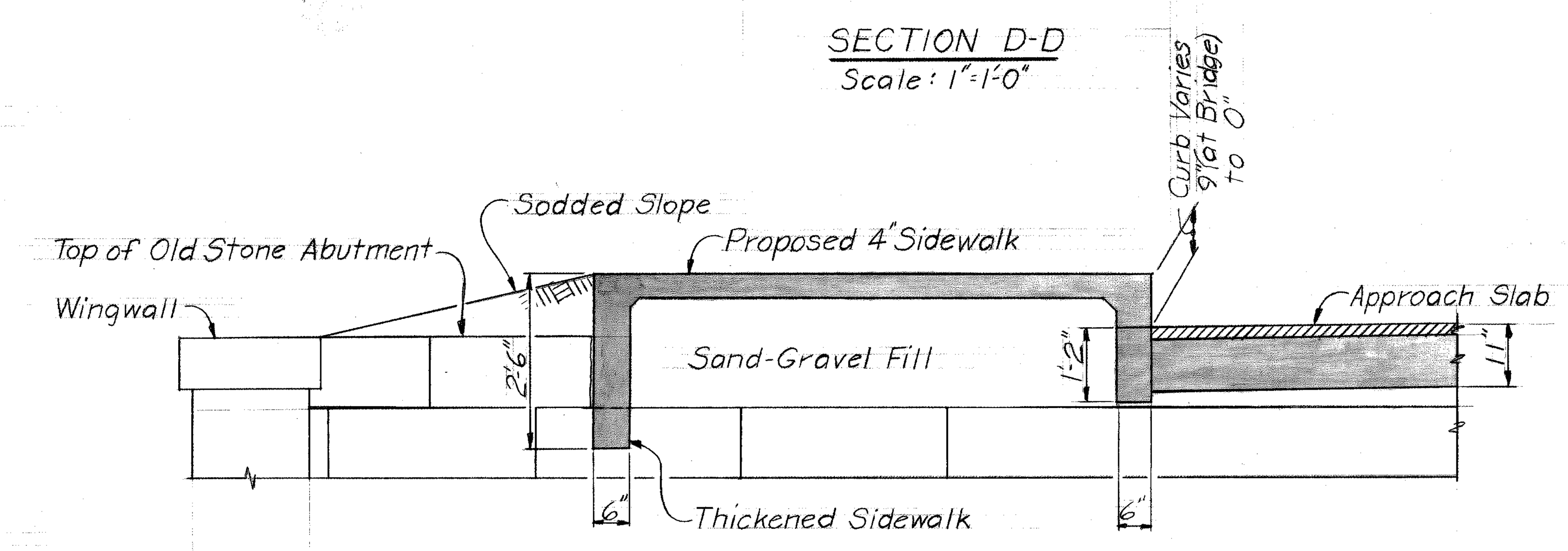


SECTION B-B
Scale: 1"=1'-0"

* Remove as many stones as necessary to ensure the minimum specified depth.



SECTION D-D
Scale: 1"=1'-0"



SECTION E-E

GENERAL NOTES:

The design of the new superstructure is based on the M.D.S.H. Specifications for the Design of Highway Bridges, 1958 edition and current A.A.S.H.O. Standard Specifications for Highway Bridges H15-44 Loading.

Live load plus impact deflection = 1/800 of span length.

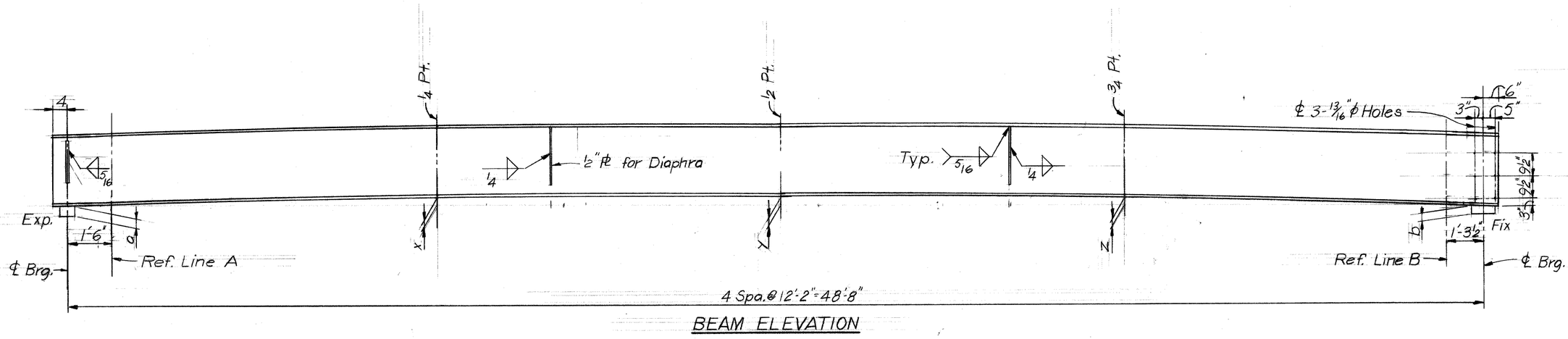
The Steel Beam Guard Rail Posts shall have a minimum embedment length of 4'-8"± cast in 1'-0" diameter of concrete. The posts lengths and embedment lengths at the stone abutments shall be adjusted accordingly.

COOR'D	DESCRIPTION / DR'N / CK'D / AP'VD / DATE
REVISIONS LOCATED BY COORDINATES ON SHEET	
REFERENCE DRAWINGS	
DESIGNED BY	R. Bunce
DRAWN BY	L.G.
TRACED BY	
CHECKED BY	
APPROVED:	CITY ENGINEER

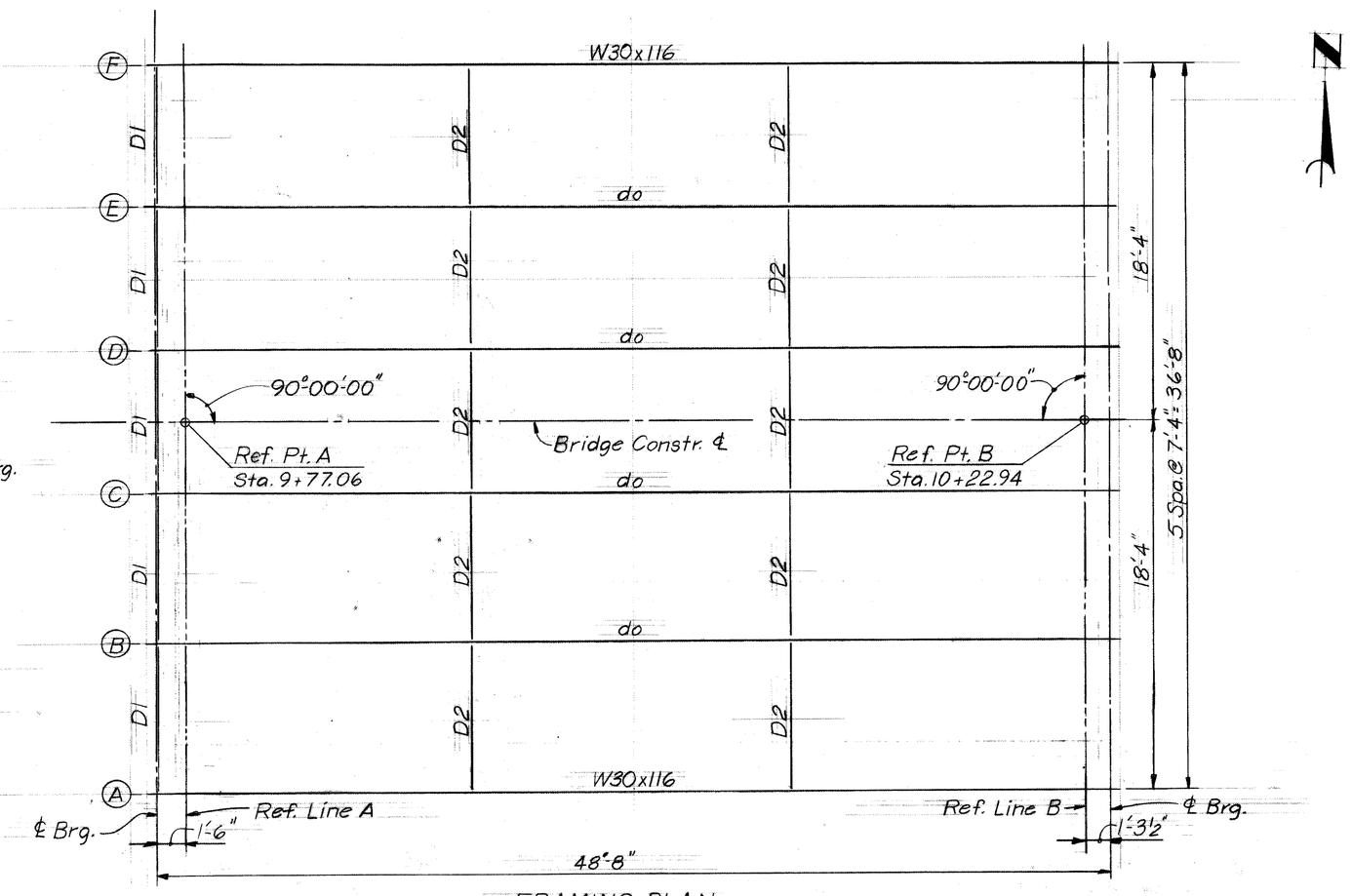
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
FOR
DEPARTMENT OF PUBLIC WORKS

BELLE ISLE BW207 LOITER WAY
REPLACEMENT OF SUPERSTRUCTURE
GENERAL PLAN OF STRUCTURE

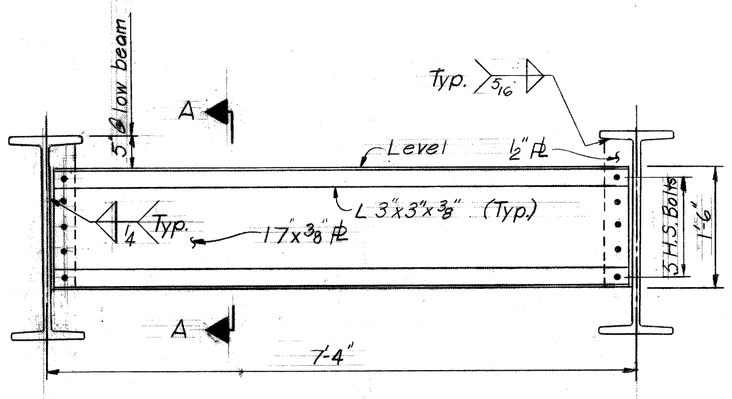
SHEET 2 OF 7 SHEETS
CONTRACT No.
DRWG No.
DATE



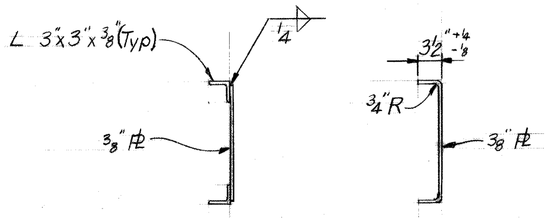
BEAM ELEVATION



FRAMING PLAN



D2

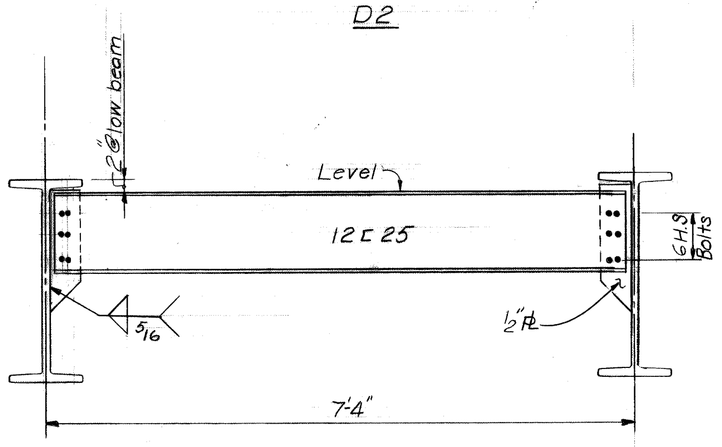


Note:
Either detail may be used

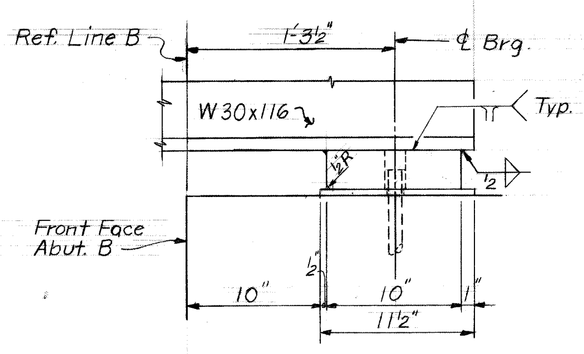
SECTION A-A

TOP OF STEEL ELEVATIONS			
Beam	℄ Brg. Abut A	½ Pt.	℄ Brg. Abut B
A	102.42	102.72	102.42
B	102.43	102.76	102.44
C	102.51	102.84	102.52
D	102.51	102.84	102.52
E	102.43	102.76	102.44
F	102.42	102.72	102.42

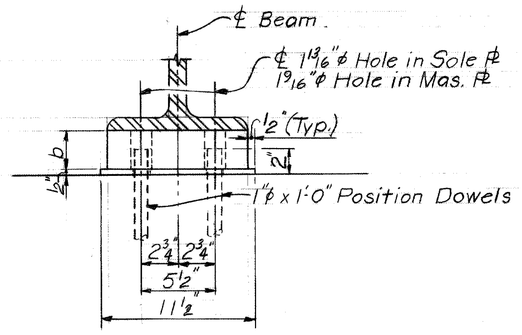
BEAM CAMBERS			
Bms. / Ord.	X	Y	Z
A & F	2¾"	3⅜"	2⅜"
B thru E	3"	4"	3"



D1



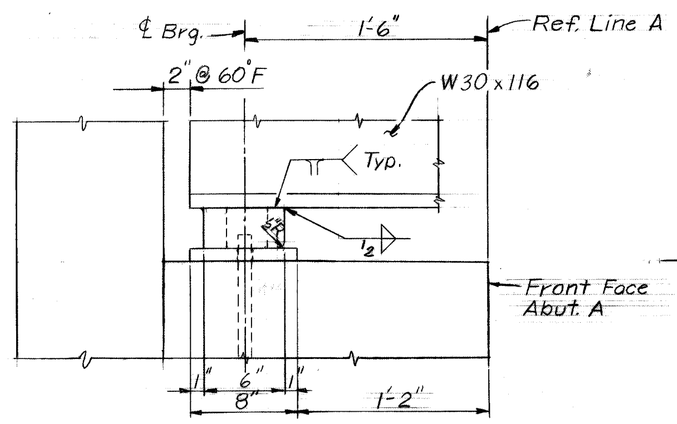
ELEVATION



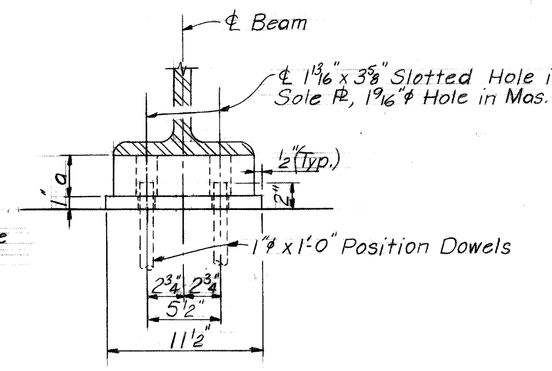
END VIEW

FIXED BEARING

SOLE ℓ THICKNESS TABLE						
Bm.	A	B	C	D	E	F
a	2⅜"	2⅝"	3⅝"	3⅝"	2⅝"	2⅜"
b	2'⅛"	3'⅛"	4'⅛"	4'⅛"	3'⅛"	2'⅛"



ELEVATION



END VIEW

EXPANSION BEARING

GENERAL NOTES:

Design: Michigan Department of State Highways Specifications for Design of Highway Bridges - 1958 edition and current AASHO Standard Specifications for Highway Bridges. (H15 Loading)

Fabrication: Michigan Department of State Highways Standard Specifications for Highway Construction - 1970 edition.

Shop connections shall be welded as shown on the plans.

Field connections shall be bolted with ⅞"ϕ high-strength bolts. The use of N-DRIV fastening system for high-strength bolts is permitted

The beams are to have a parabolic camber with ordinates as shown on the Beam Elevation. This camber is to be measured with the beam lying on its side. Allowable camber tolerance shall be ±¼" (at center). Heating is to be used, if necessary, to assure camber permanency within the above tolerance. The dead load deflection of the beams alone is ⅛" (at center).

Sole plates 3" or more in thickness may be built up by welding together plates not less than 1'2" in thickness. Edges must be beveled ¼" and welded with a continuous weld for the full perimeter. Welds shall be ground flush with faces of plates.

Position Dowels shall be galvanized in accordance with ASTM Designation A-153.

Structural Steel shall conform to ASTM A-588.

Structural steel shall not be painted. (Except as noted on plans)

Top of steel elevations are based on the condition that all structural steel has been erected, but no other loads applied. These elevations include allowances for deflections due to steel reinforcement, deck concrete, sidewalk and railing.

The existing concrete bridge seat shall be ground as necessary to provide even bearing for the beams.

The quantity Structural Steel includes:
Structural Steel Furnishing and Fabricating (A-588 Rolled) Lbs.
Structural Steel Erection (A-588 Rolled) Lbs.

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY	R. Bunce
DRAWN BY	L.G.
TRACED BY	
CHECKED BY	

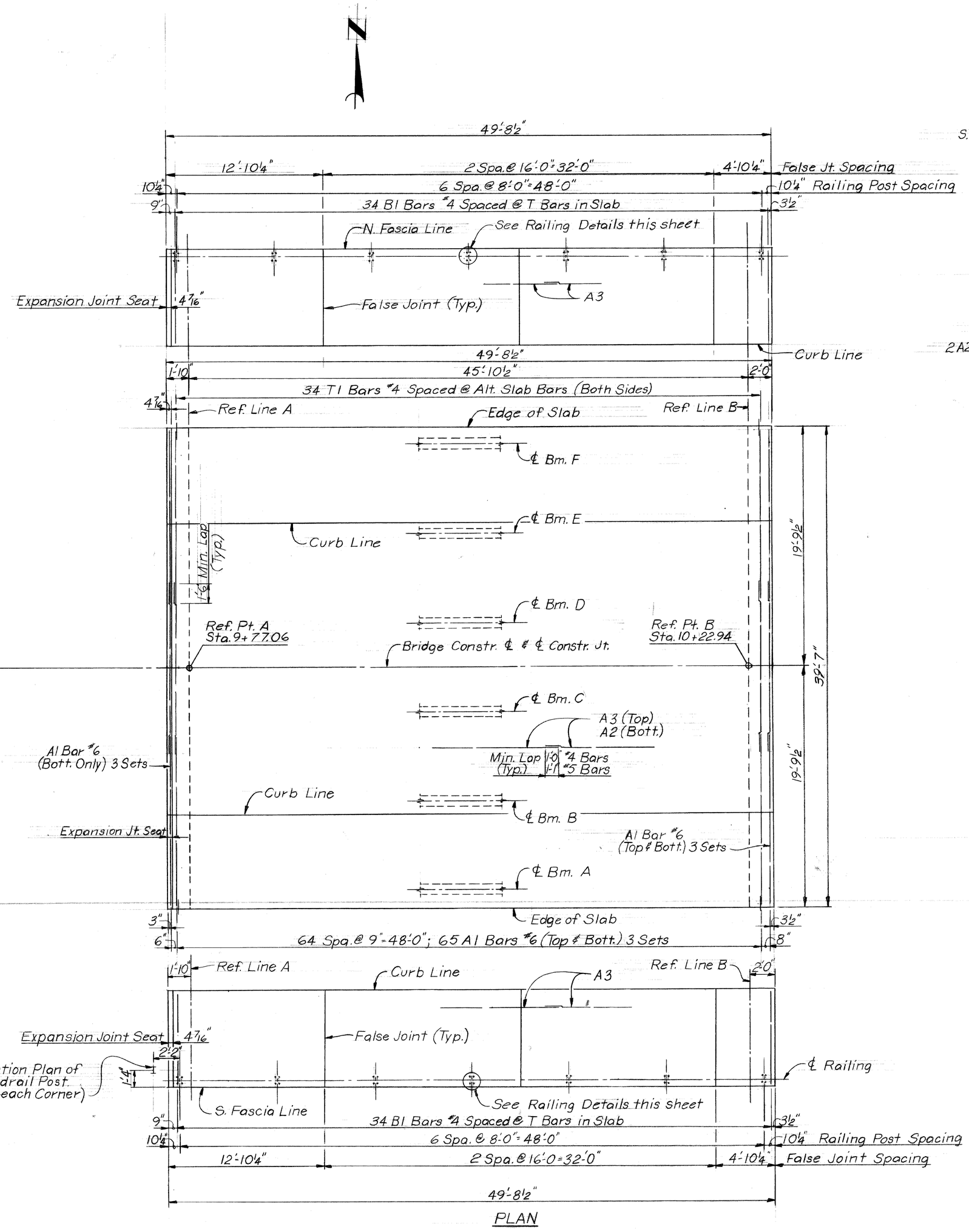
APPROVED:

CITY ENGINEER

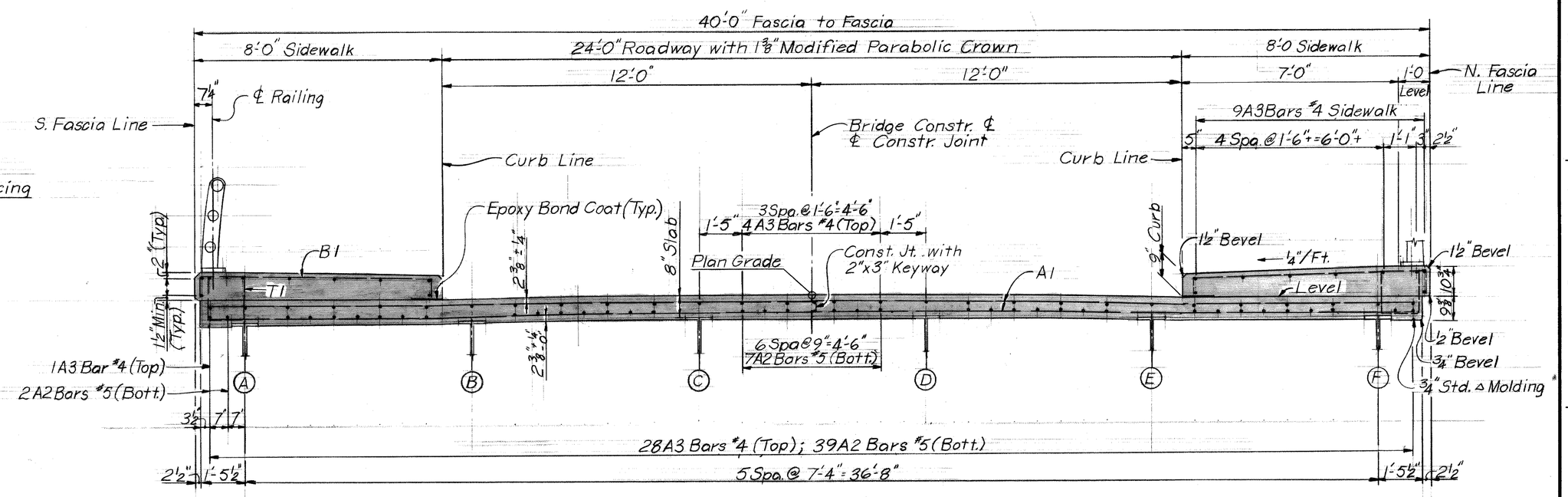
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
FOR
DEPARTMENT OF PUBLIC WORKS

BELLE ISLE BW207 LOITER WAY
REPLACEMENT OF SUPERSRUCTURE
STRUCTURAL STEEL DETAILS

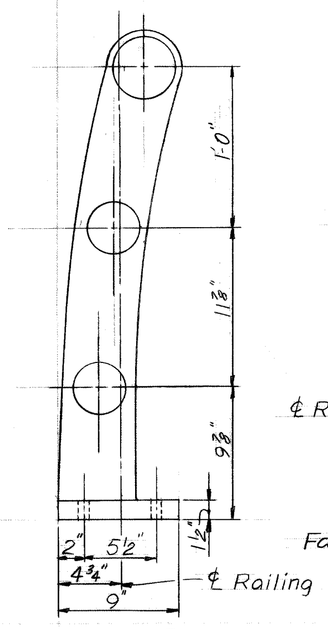
SHEET 3 OF 7 SHEETS
CONTRACT No.
DRWG No.
DATE



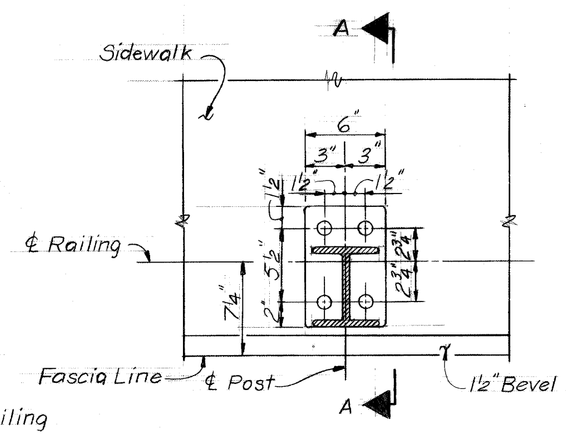
PLAN



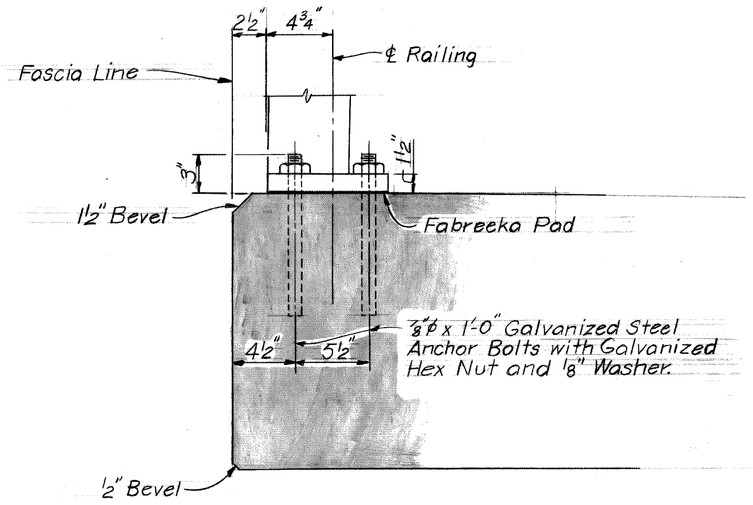
CROSS SECTION



ELEVATION



DETAIL A



SECTION A-A

GENERAL NOTES :

J.W.P. denotes Joint Waterproofing. B.S. denotes Both Sides.

Edge or groove denotes edging or grooving with an approved tool.

Sidewalk pours shall not be cast until slab concrete has attained at least 50% of its design strength as determined by Table 7.01-5 of the Michigan Department of State Highways Standard Specifications.

Protective Treatment for Bridge Decks is to be applied to all superstructure Concrete Surfaces between fascias.

The bridge deck at the sidewalks shall be coated with 1 foot of epoxy bonding agent. (Measured from curb line towards fascia)

Bridge Railing is to be aluminum-panel type - Alcoa 3001 or approved equal.

Reinforced Neoprene Expansion Joint shall be General Tire Transflex Expansion Joint Seal Model 200-A or approved equal.

Minimum Compressive strength of concrete at 28 days shall be 3000 p.s.i.

All reinforcing bars shall comply with the requirements of A.S.T.M. A615 Grade 40.

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY R. Bunce
DRAWN BY L.G.
TRACED BY
CHECKED BY

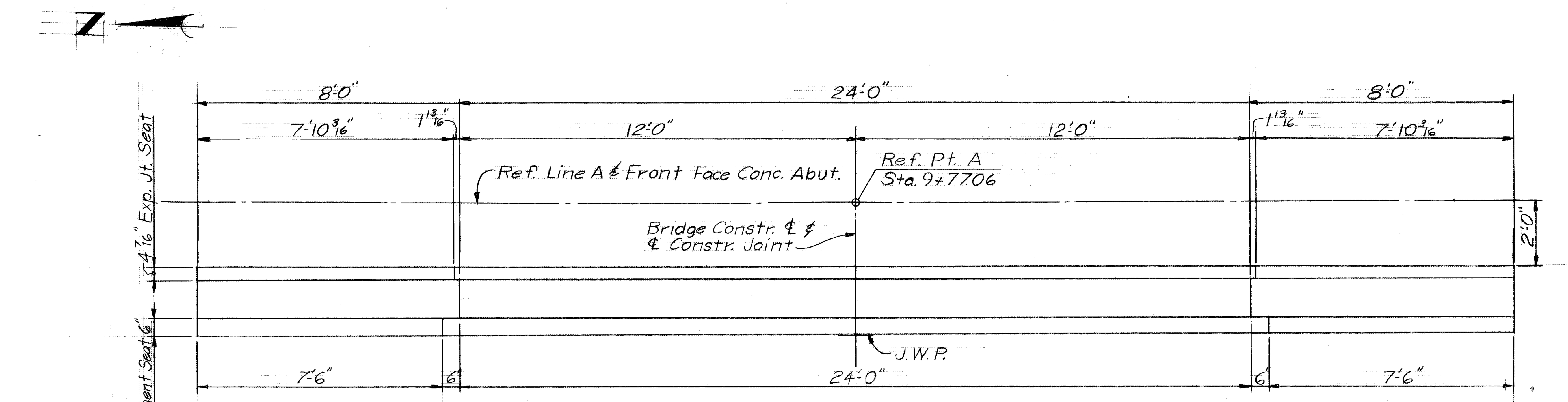
APPROVED:

CITY ENGINEER

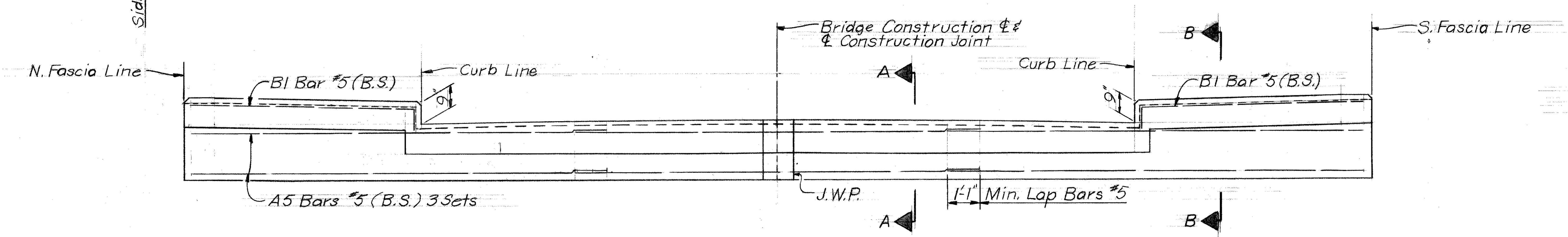
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
FOR
DEPARTMENT OF PUBLIC WORKS

BELLE ISLE BW207 LOITER WAY
REPLACEMENT OF SUPERSTRUCTURE
SUPERSTRUCTURE DETAILS

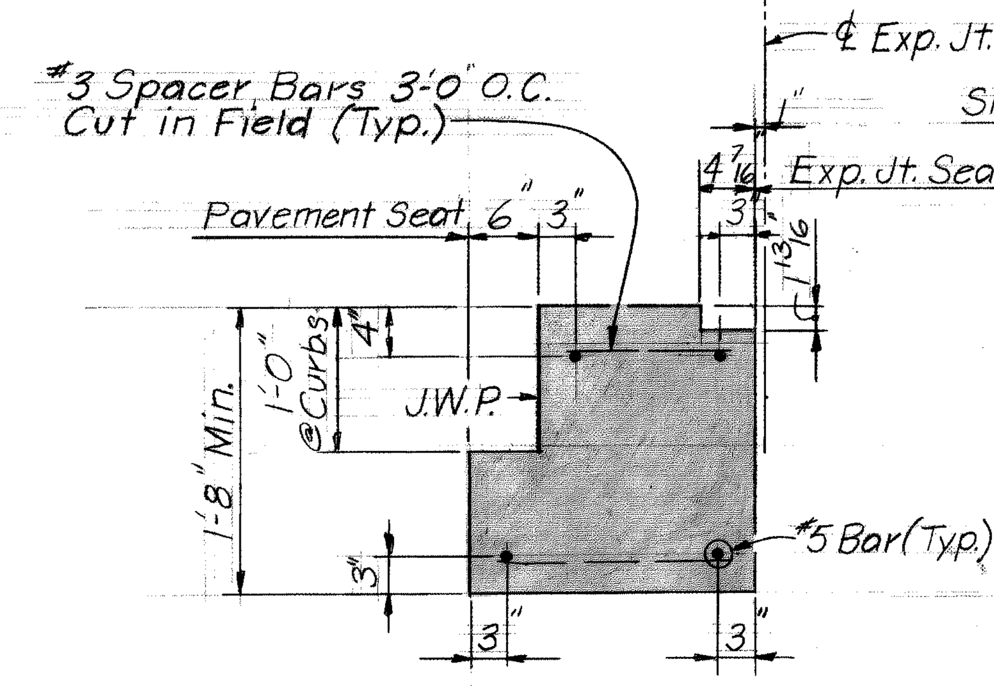
SHEET 4 OF 7 SHEETS
CONTRACT No.
DRWG No.
DATE



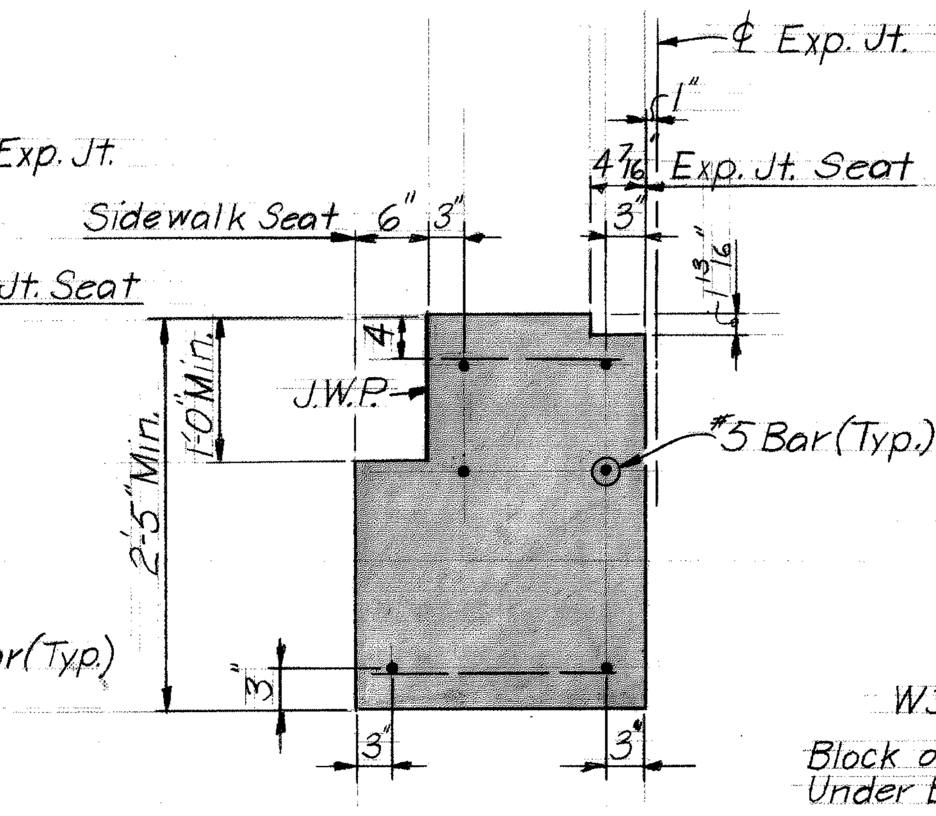
PLAN



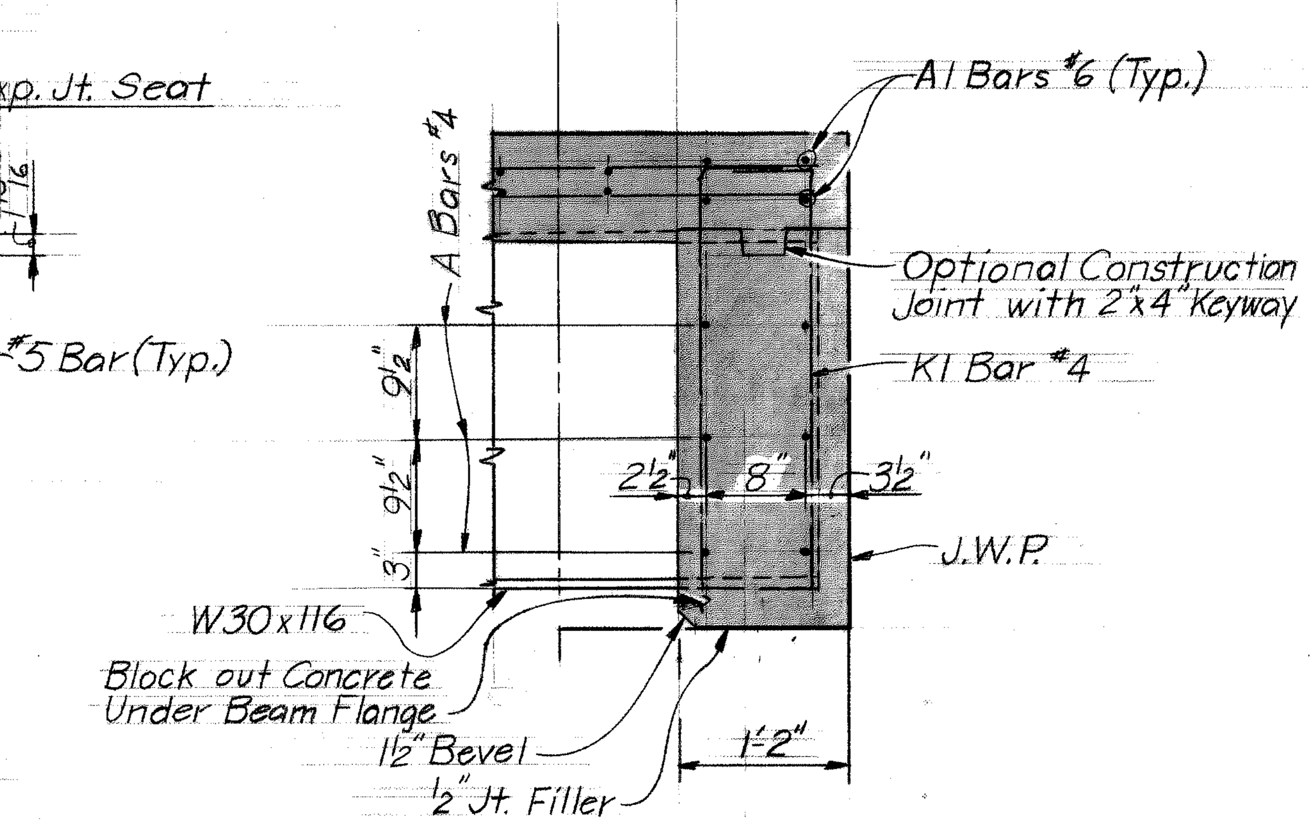
ELEVATION ABUTMENT A BACKWALL



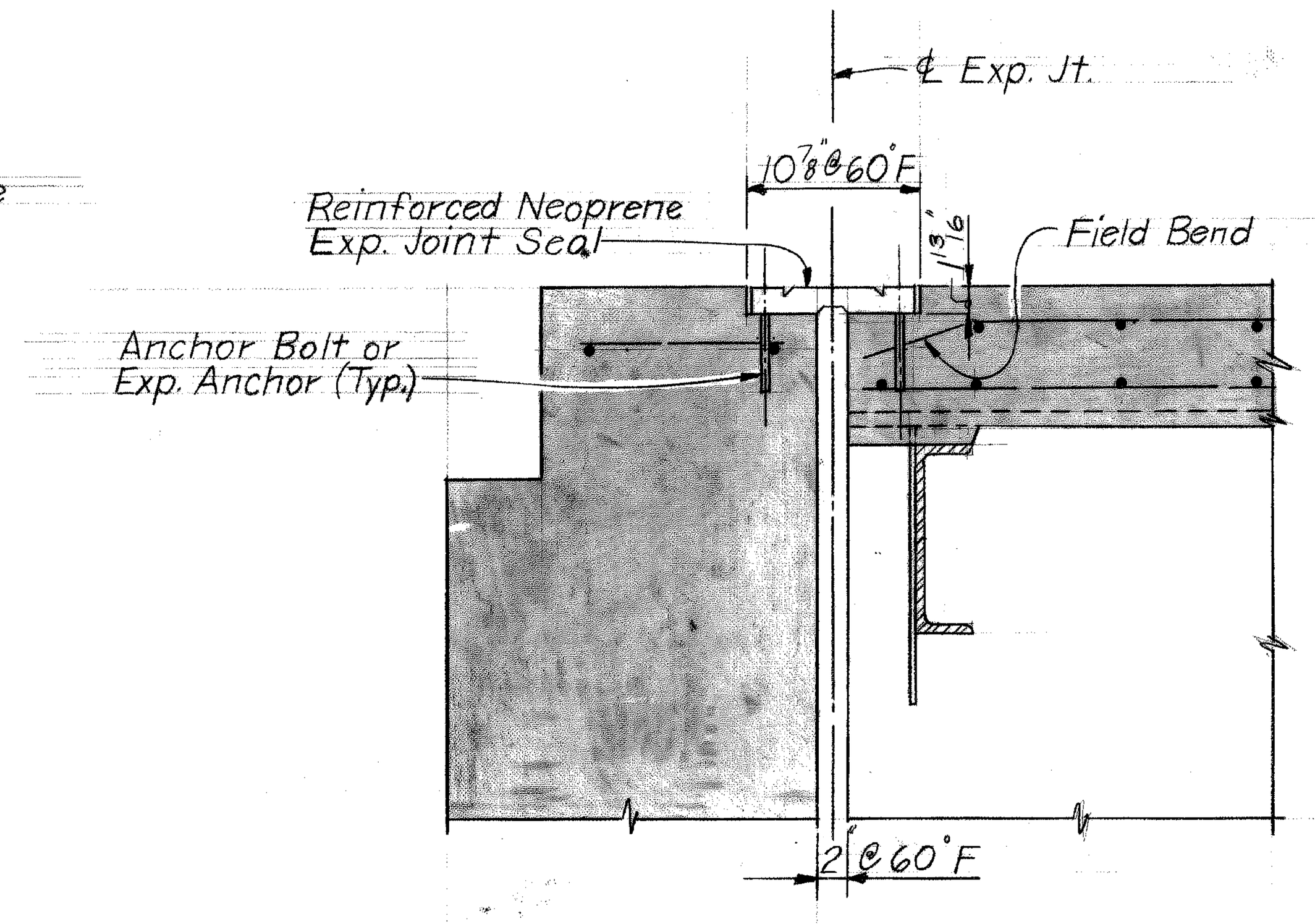
SECTION A-A



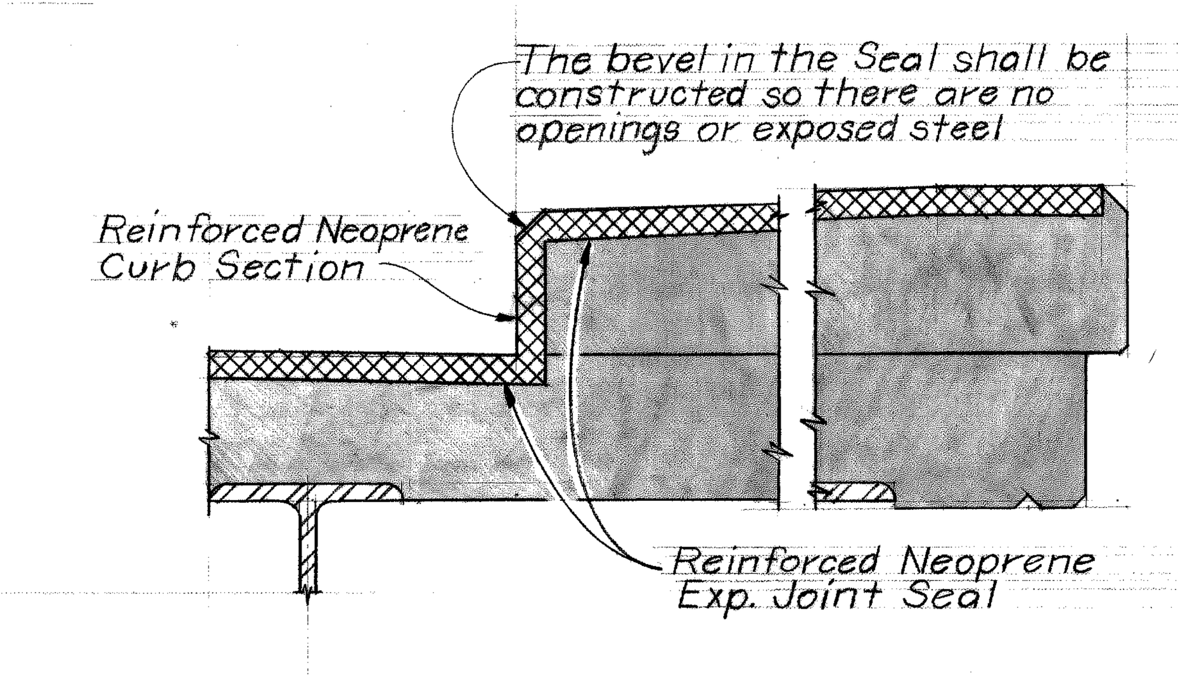
SECTION B-B



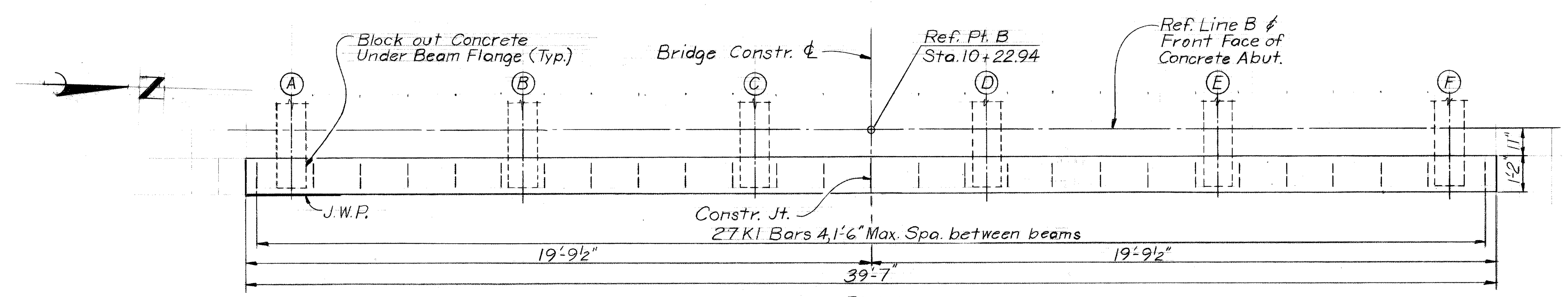
SECTION C-C



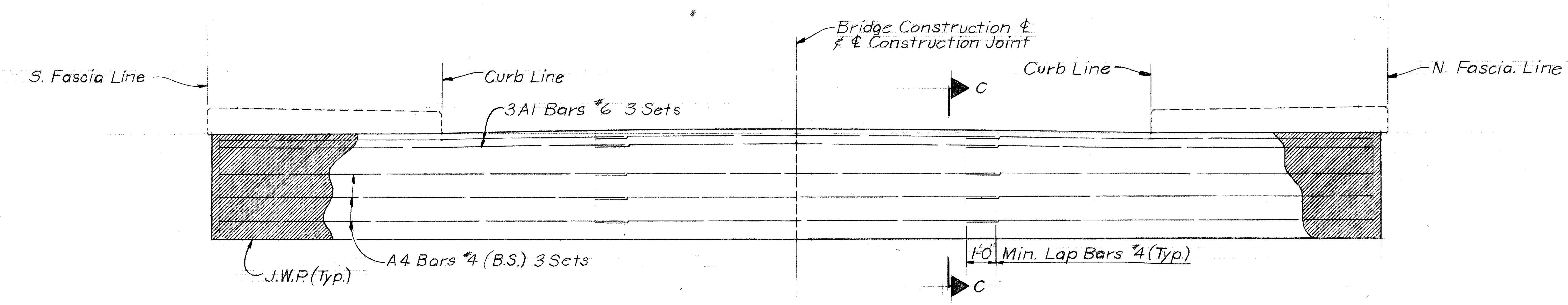
SECTION THRU REINFORCED NEOPRENE EXPANSION JOINT



SECTION AT CURB



PLAN

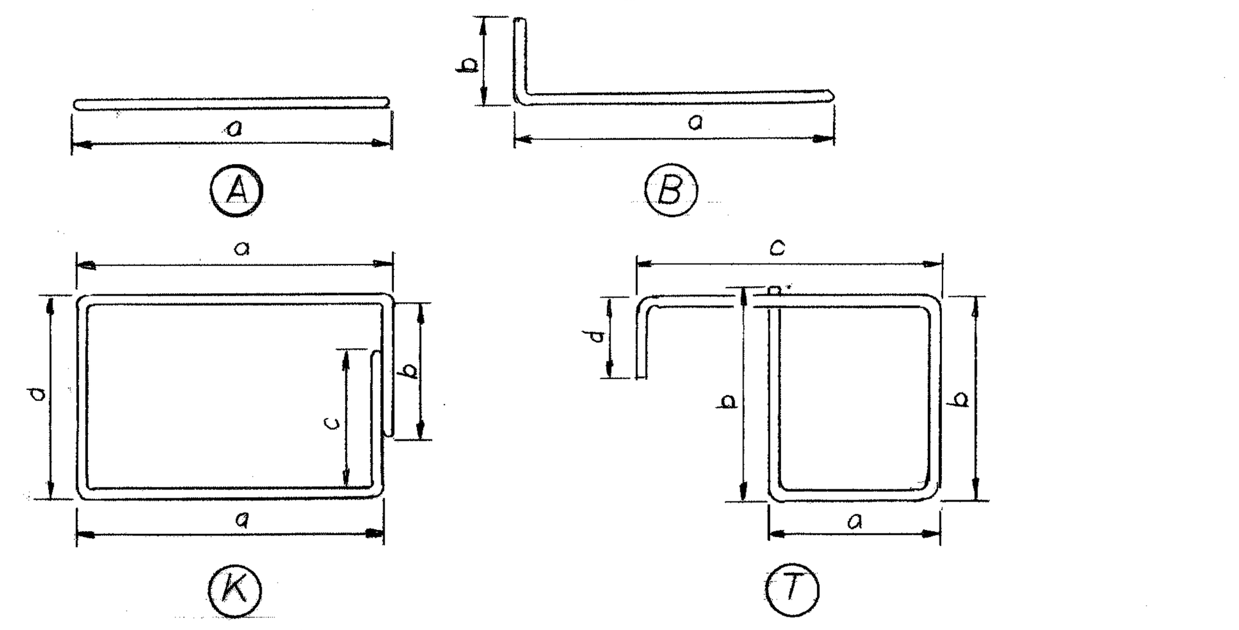


ELEVATION ABUTMENT B BACKWALL

BAR SCHEDULE

Bar	a	b	c	d	Size	Length	No. Req.d	Total WEIGHT
A1	14'-0"				#6	14'-0"	402	8453
A2	17'-3"				#5	17'-3"	117	2105
A3	17'-3"				#4	17'-3"	138	1590
A4	13'-9"				#4	13'-9"	18	165
A5	14'-0"				#5	14'-0"	12	175
B1	7'-3"	6 1/2"			#4	7'-9"	68	352
B2	7'-3"	6 1/2"			#5	7'-9"	4	32
K1	3'-0 1/2"	7 1/4"	7 1/4"	9 1/2"	#4	8'-0"	27	144
T1	1'-2 1/2"	1'-4 1/4"	1'-5 1/2"	8 1/2"	#4	5'-11"	68	269

BAR BENDING DIAGRAM



REVISIONS LOCATED BY COORDINATES ON SHEET		
COOR'D	DESCRIPTION	DR'N / CK'D / AP'VD / DATE

REFERENCE DRAWINGS	DESIGNED BY	R. Bunce
	DRAWN BY	L.G.
	TRACED BY	
	CHECKED BY	

APPROVED:

CITY ENGINEER

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
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BELLE ISLE BW207 LOITER WAY
REPLACEMENT OF SUPERSTRUCTURE
SUREPSTRUCTURE DETAILS

SHEET 5 OF 7 SHEETS
CONTRACT No.
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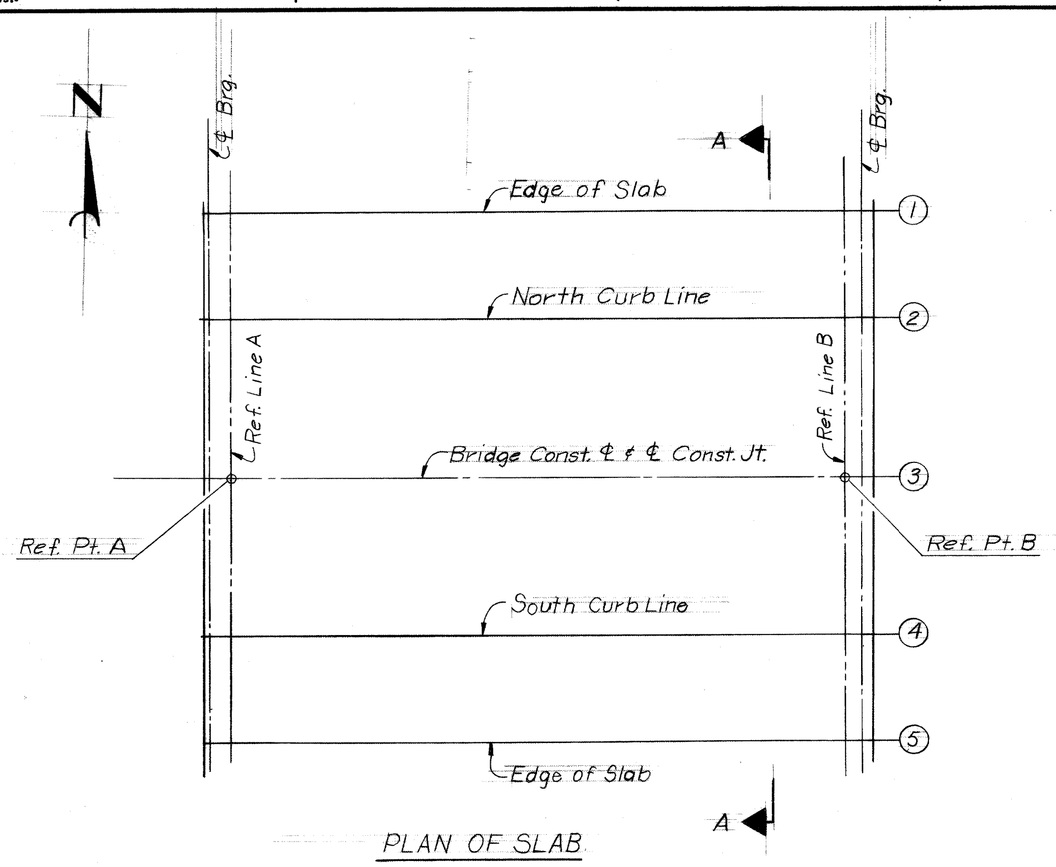
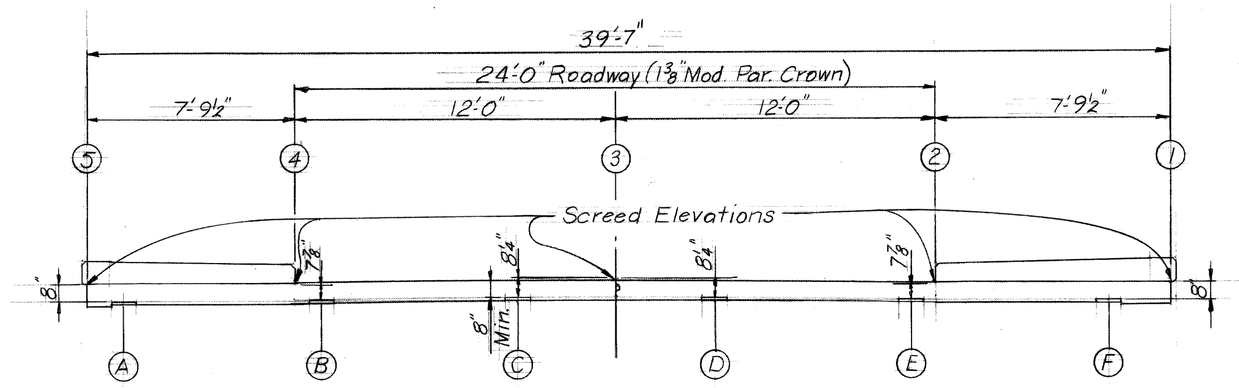
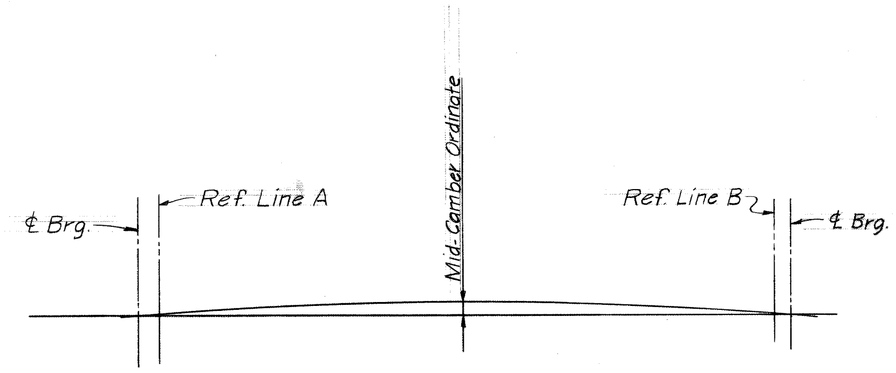


PLAN OF SLAB



SECTION A-A



CAMBER DIAGRAM

SCREED ELEVATIONS					
Location	℄ Brg. Abut. A	¼ Pt.	½ Pt.	¾ Pt.	℄ Brg. Abut. B
Line 1	103.09	103.30	103.38	103.30	103.09
Line 2	103.09	103.32	103.40	103.32	103.09
Line 3	103.20	103.44	103.52	103.44	103.21
Line 4	103.09	103.32	103.40	103.32	103.09
Line 5	103.09	103.30	103.38	103.30	103.09

MID-CAMBER ORDINATES (in inches)			
Beam / Case	I	II	III
A	3⅝"	3½"	3⅛"
B	3⅞"	3¾"	3⅜"
C	3⅞"	3¾"	3⅜"
D	3⅞"	3¾"	3⅜"
E	3⅞"	3¾"	3⅜"
F	3⅝"	3½"	3⅛"

GENERAL NOTES:

Transverse strike-off finishing machine is to be used in placing deck concrete.

Screed elevations are based on the condition that no slab concrete has been cast and that formwork and steel reinforcement are in place on structural steel.

After screeds are set, if a check indicates that less than the minimum slab thickness will be obtained, adjust the screeds and expansion joint accordingly.

Beam Mid-Camber Ordinates:

Case I - All Structural Steel erected with no other loads applied.

Case II - Forms and steel reinforcement in place on structural steel with no other loads applied.

Case III - Deck concrete in place on structural steel with forms removed and no other loads applied.

CODE'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY: R. Bunce
DRAWN BY: L.G.
TRACED BY:
CHECKED BY:

APPROVED:

CITY ENGINEER

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
FOR
DEPARTMENT OF PUBLIC WORKS

BELLE ISLE BW207 LOITER WAY
REPLACEMENT OF SUPERSTRUCTURE
SUPERSTRUCTURE DETAILS

SHEET 6 OF 7 SHEETS
CONTRACT No.
DRWG No.
DATE