

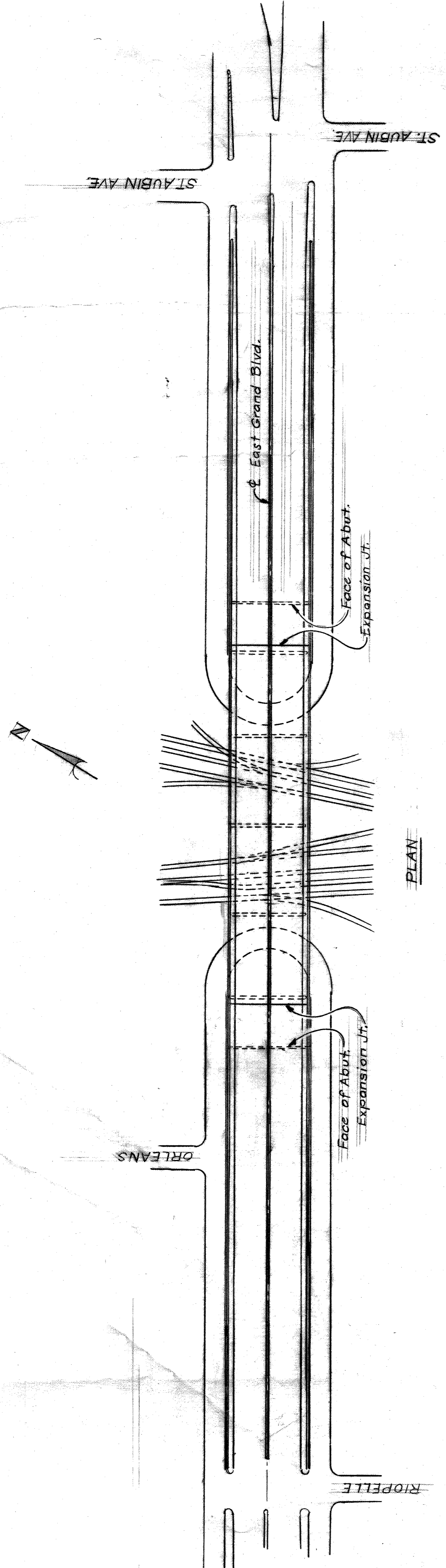
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DESIGNED BY: T. M.
 DRAWN BY: L. G.
 CHECKED BY: M. C.
 APPROVED: T. S. O'NEILL
 STRUCT. ENGR.
 HEAD, CIVIL ENGINEER
 CITY ENGINEER

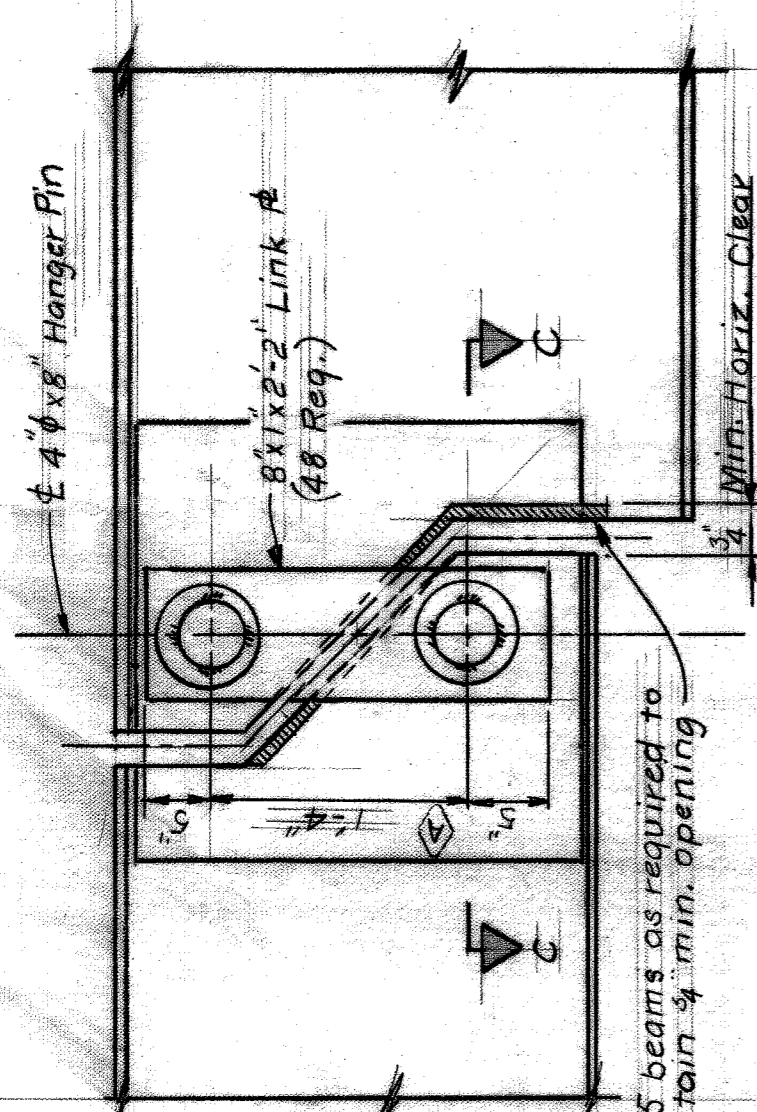
CITY OF DETROIT
 ENVIRONMENTAL PROTECTION AND MAINTENANCE DEPARTMENT
 CITY ENGINEERING DIVISION
 FOR DEPARTMENT OF PUBLIC WORKS

X087
 EAST GRAND BLVD. BRIDGE OVER G.T.W.R.R. REPLACEMENT OF EXPANS. JOINTS
 HANGER ASSEMBLIES, & ABUTMENT REPAIR
 PLAN

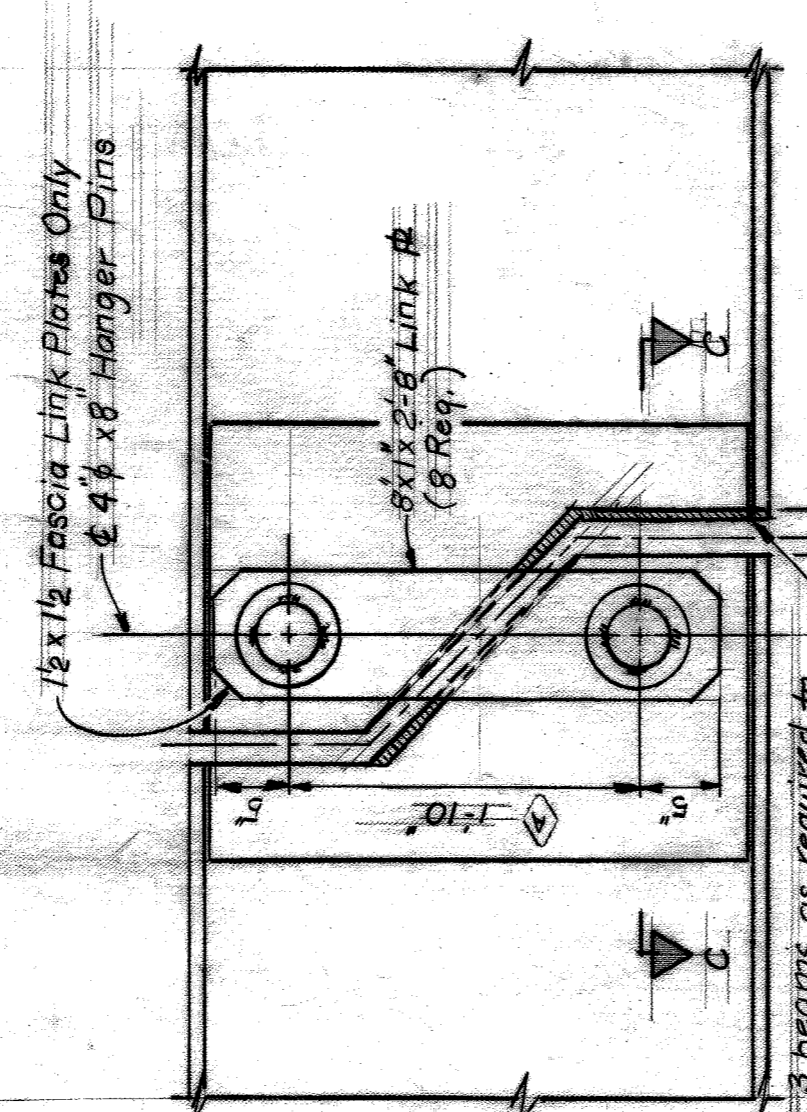
A.O. 80-22-08
 CONTRACT NO.
 DRAWING NO.
 SHEET / OF 4
 DATE 4-80



PLAN

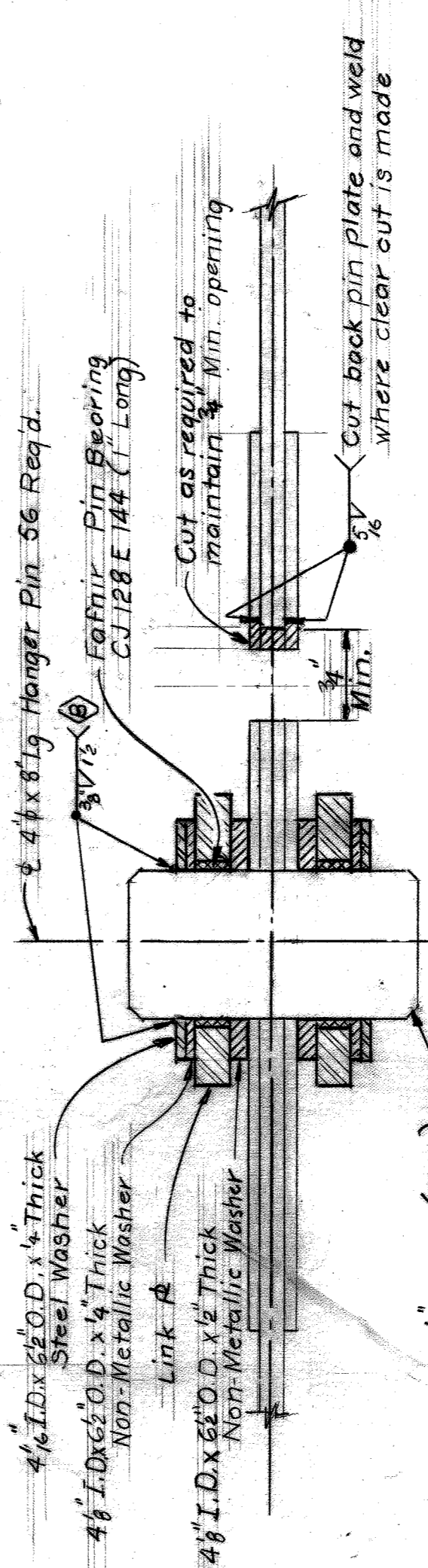


HANGER DETAILS - INTERIOR BEAMS



HANGER DETAIL - FASCIA BEAMS

Link plates to be fastened in pairs for remaining pin holes to tolerances. See pin bearing mtg. spec. for bearing installation. Attached pairs to be installed as a unit.



SECTION C-C

Note: Washers incidental to pins

Welding procedure to be approved by the engineer

NOTES

SCOPE OF OPERATIONS

- Traffic is to be detoured from the bridge while repair operations are in progress. Detour barricades and signing will be installed by city forces.
- The reinforced neoprene expansion joint in the concrete deck is to be completely replaced, as detailed, in both expansion joints and both sides of the bridge, including sidewalks.
- Spalling of abutment faces is to be repaired as detailed.
- All existing hanger pins and link plates are to be removed and replaced as detailed. Existing beams near joints are to be blast cleaned and painted.
- All work is to be done during July and August.

SPECIFICATIONS: M.D.C.T. 1979 Standard
 STRUCTURAL STEEL: ASTM A36; except hanger pins.
 REINF. STEEL: Grade 40
 DEMOLITION: Suspended span beams are to be shored up with adjustable shores and propped securely. Link plates and pins are to be removed without damage to existing beams. Existing holes in beam webs shall be reamed to a diameter of 4.03 ± .005 inches. A minimum clearance of 1/8 inch will be provided by cutting existing steel beams as detailed. 12 Pins are to be removed with 1/2 of one link plate intact for testing.
 PAINTING: Link plates and metallic washers will receive one prime coat and one top coat in the shop
 existing beams shall be blast-cleaned to a near-white finish and painted with one prime coat and one top coat. The portion painted will be 5FT long each side of pin.
 See special provision for cleaning and coating
 Color will be dark brown. A final "touch-up" coat will be provided after installation.
 CONCRETE PATCHING MIXTURE: Latex Modified Concrete Patching Mixture Type I-C. See Std. Spec.
 NON-METALLIC SPACER WASHER: See Supplemental Specifications
 HANGER PINS: Stainless steel A.I.S.I. type 304. Diameter of pin is to be 4.000 ± .003.
 PIN BUSHING INSTALLATION: The composite bearings will be epoxy-banded to the link plates. See mtg. recommendations for tolerances and bonding agent. Link plates must be fabricated in pairs and trial fit of link plates with hanger pins must be checked by the engineer before final installation.

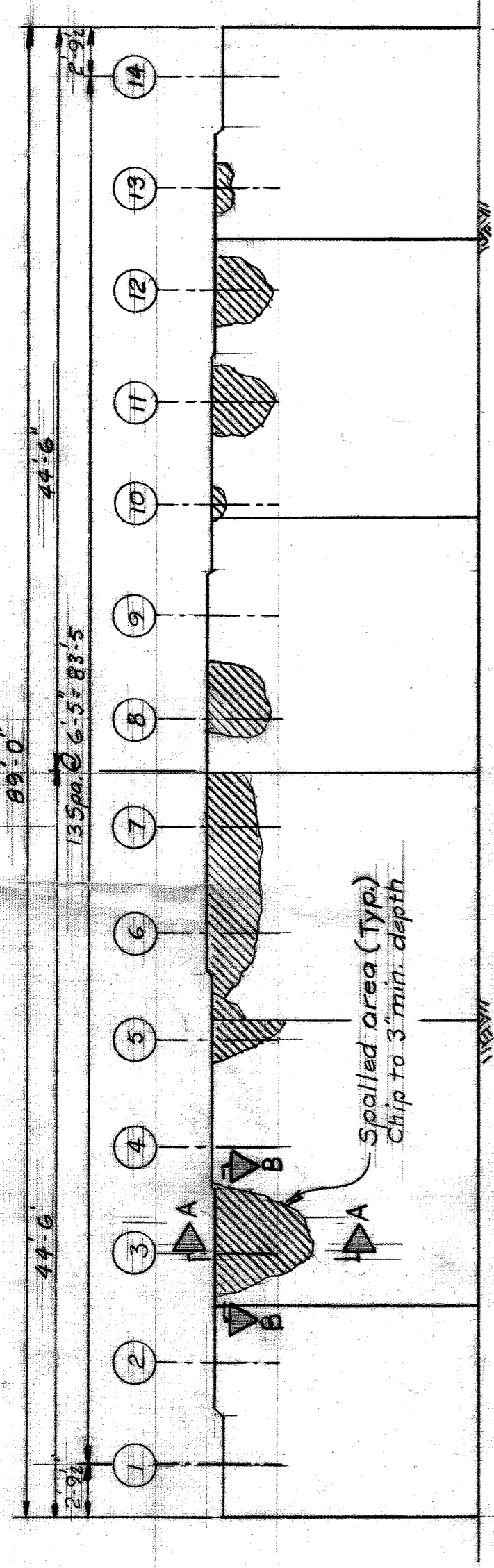
DESIGNED BY	T. M.
DRAWN BY	L. G.
CHECKED BY	M.S.
APPROVED:	T. E. M. STURM, ENGR.
	HEAD CIVIL ENGINEER
	CITY ENGINEER

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 CHECKED BY M.S.
 APPROVED: T. E. M. STURM, ENGR.
 HEAD CIVIL ENGINEER
 CITY ENGINEER

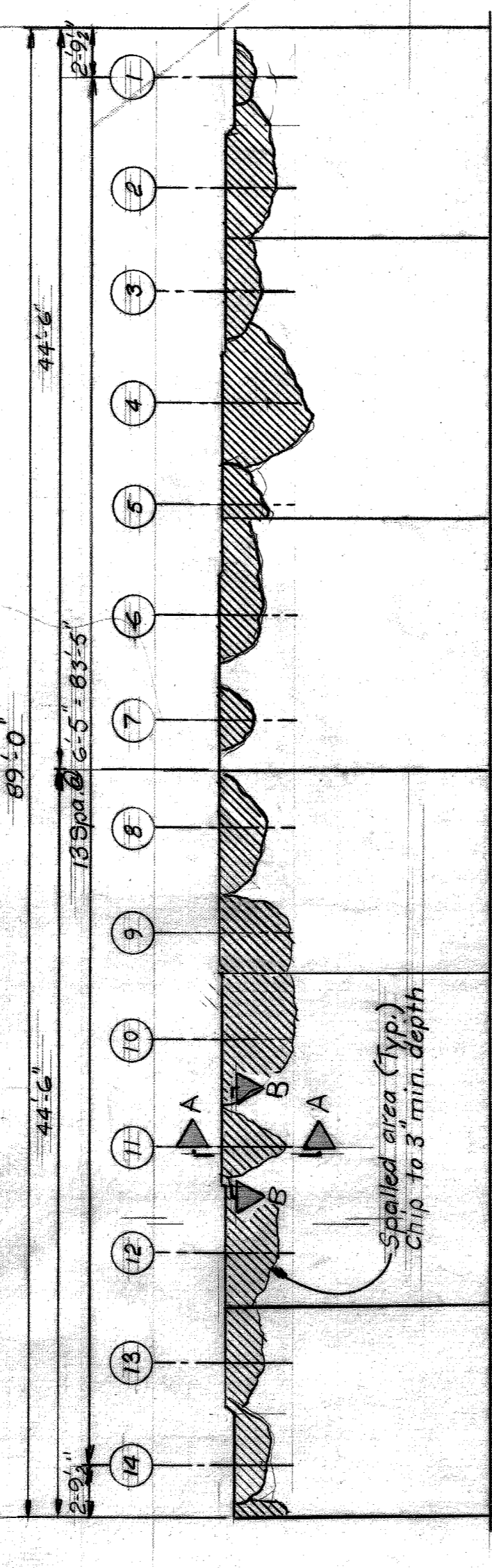
CITY OF DETROIT
 ENVIRONMENTAL PROTECTION AND MAINTENANCE DEPARTMENT
 CITY ENGINEERING DIVISION
 FOR DEPARTMENT OF PUBLIC WORKS

XO 87
 EAST GRAND BLVD. BRIDGE OVER G.T.W.R.R.
 REPLACEMENT OF EXPANS. JT. HANGER ASSEMBLIES & ABUTMENT REPAIR
 DETAILS

A.O. 80-22-08
 CONTRACT NO.
 DRAWING NO.
 SHEET 2 OF 4
 DATE 4-80

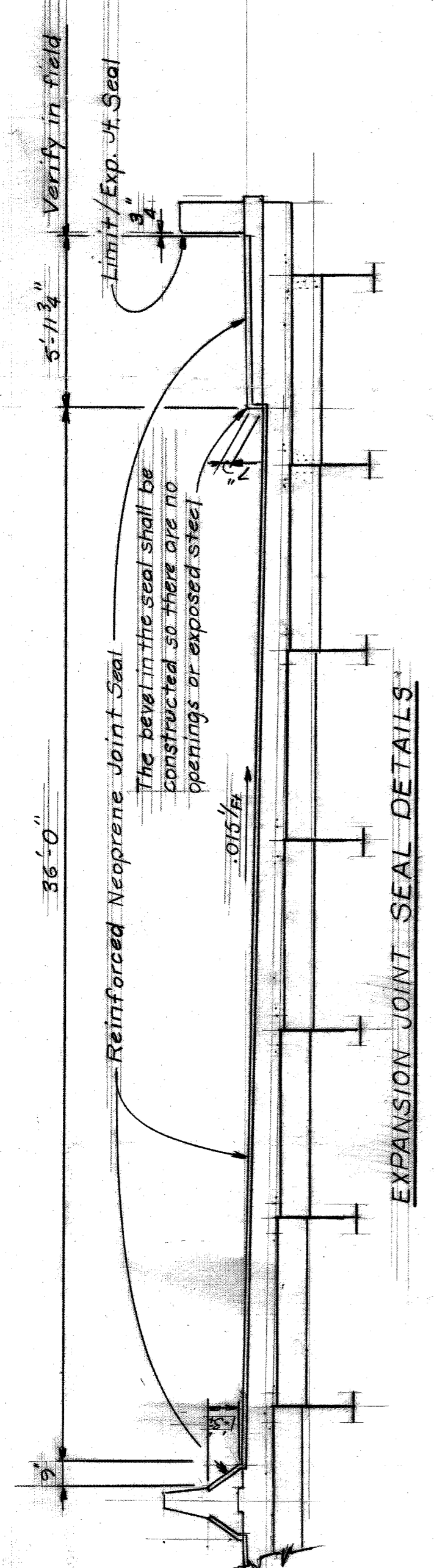


EAST ABUTMENT

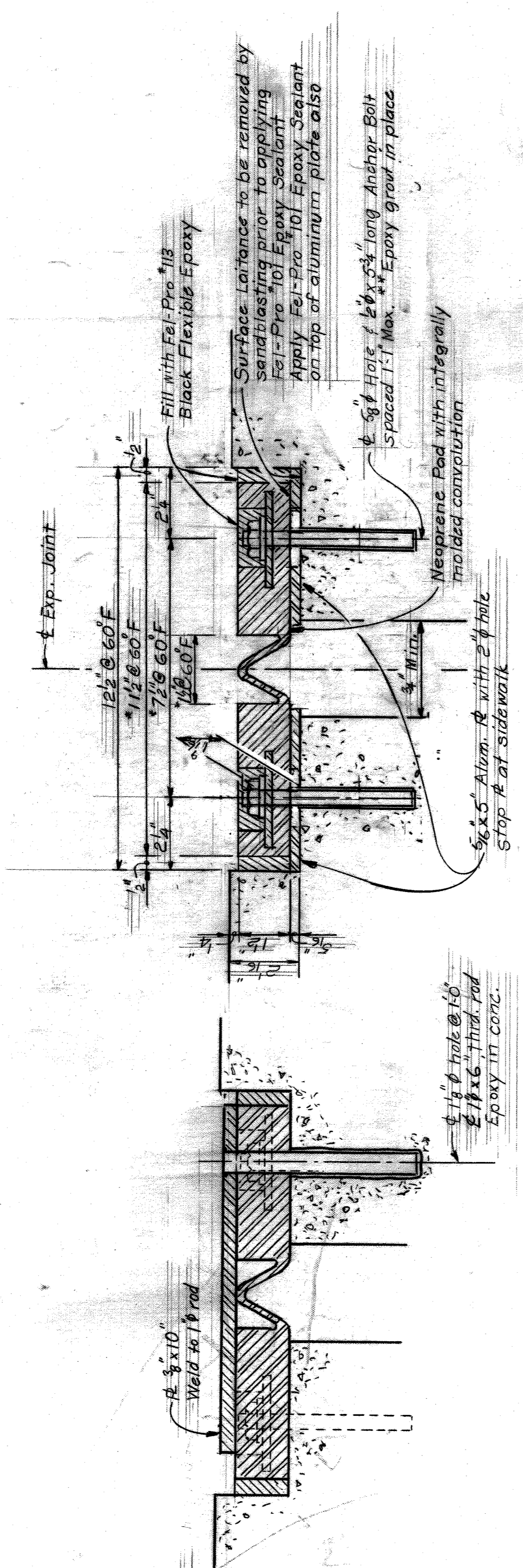


WEST ABUTMENT

ABUTMENT ELEVATIONS SHOWING SPALLED AREAS



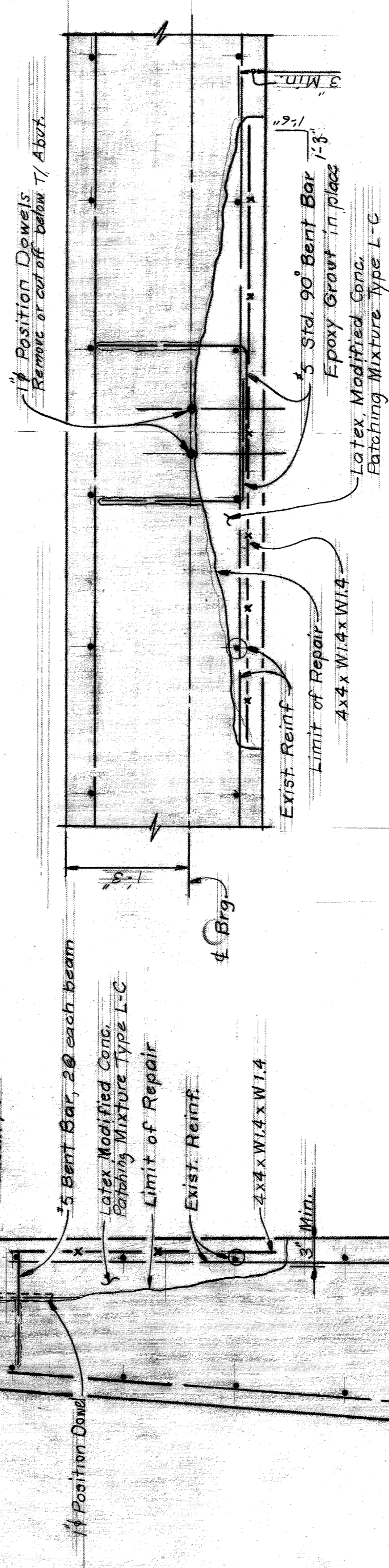
EXPANSION JOINT SEAL DETAILS



SECTION THROUGH SIDEWALK

SECTION THROUGH FEL-SPAN EXPANSION JOINT

NOTE:
 Expansion joint device is to be Fel-Span T30-1 1/2" as manufactured by Construction Products, Division of Fel-Pro Incorporated.
 * Adjust according to actual temperature
 ** Epoxy Grout as supplied by manufacturer or as in § 16.06 (b) M.D.O.T. std. spec.
 Cut existing anchor bolts and grind flush



SECTION B-B

CONCRETE PATCHING (Cu. Ft.)	
East Abutment	58.8
West Abutment	100.0

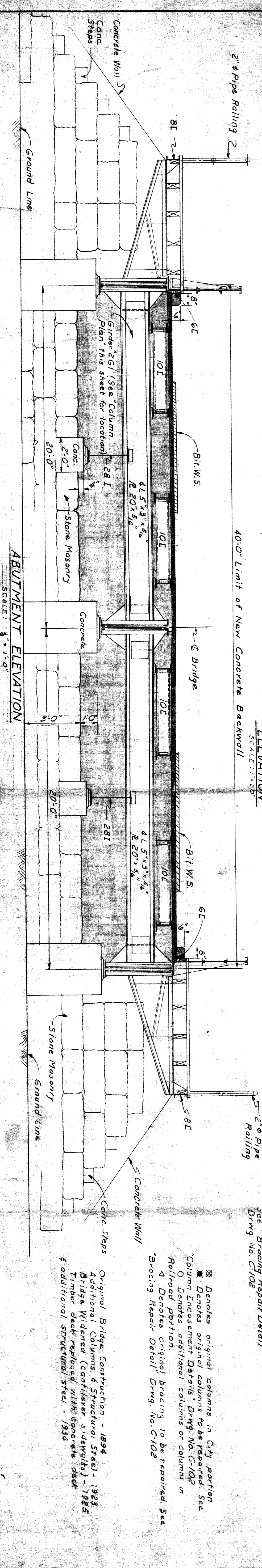
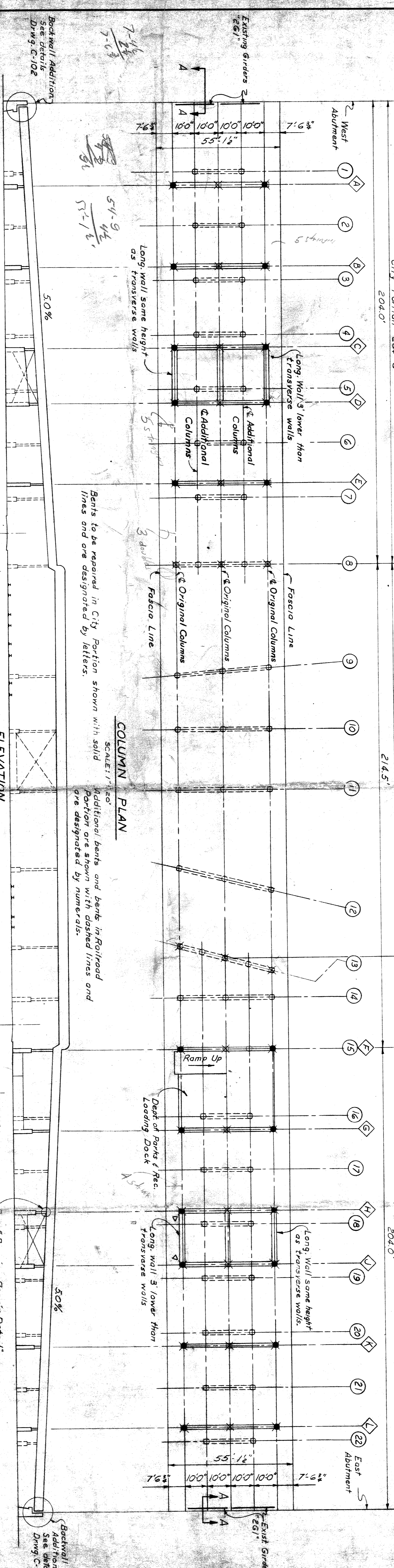
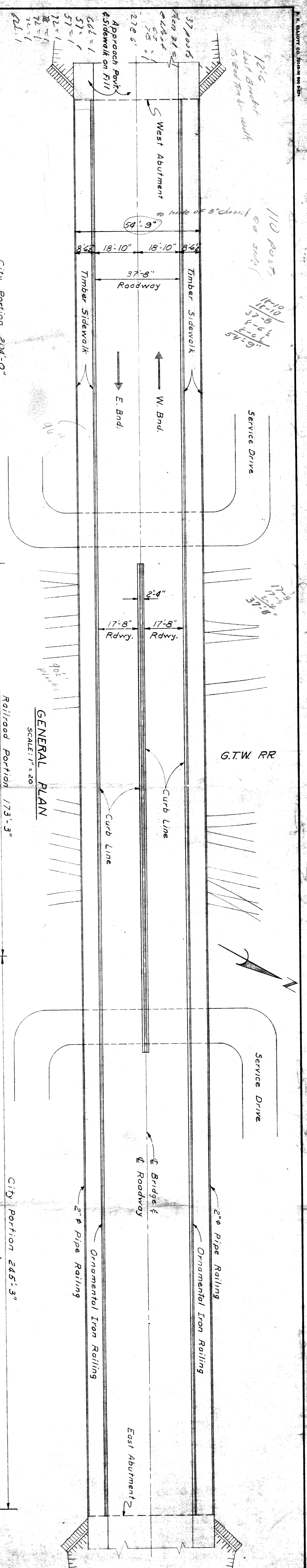
Notes:
 * 5" Bent bar and W.W.F. incidental to conc. patch

SECTION THROUGH ON-FLEX 40 EXPANSION JOINT (ALTERNATE)

Provide standard On-Flex cover plate at sidewalk

Notes:
 Complete working drawings of all details of fabrication of the expansion joint device shall be submitted for review in accordance with Standard Specification 1.05.02
 The contractor has the option of using Watson Bowman Inc. WABO ALU-STRIP TYPE II S-400 Expansion Device. The expansion device shall be installed in accordance with the manufacturer's recommendations.

SECTION A-A



CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 CITY ENGINEERS OFFICE
 BUREAU OF HIGHWAYS AND EXPRESSWAYS
BRIDGE MAINTENANCE

EAST GRAND BLVD. OVER GRAND TRUNK WESTERN RAILROAD
 (X087) West of St. Aubin St.

GENERAL PLAN

REVISIONS LOCATED BY COORDINATES ON SHEET

NO.	DESCRIPTION	DATE

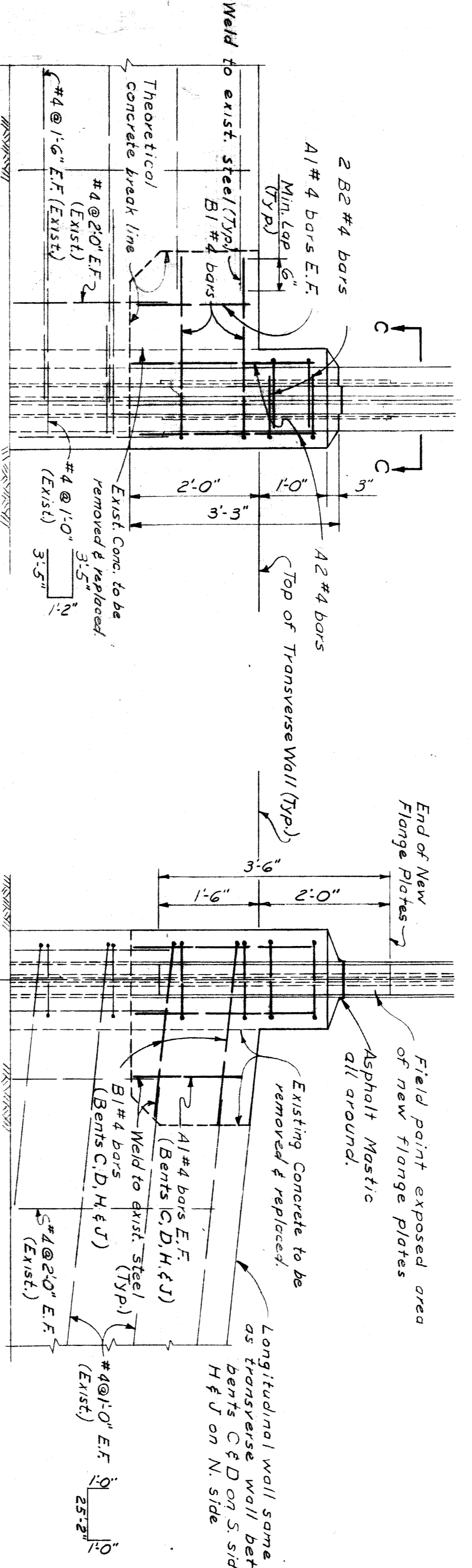
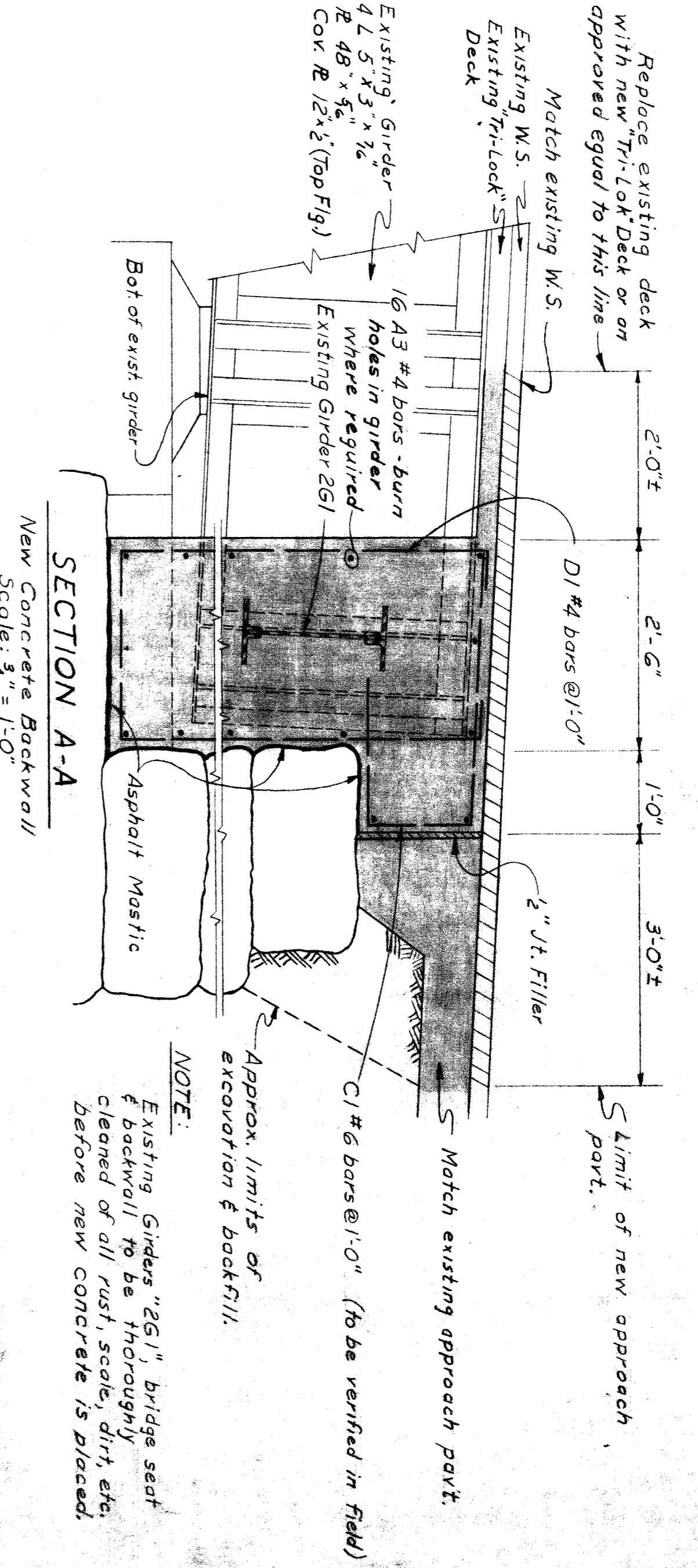
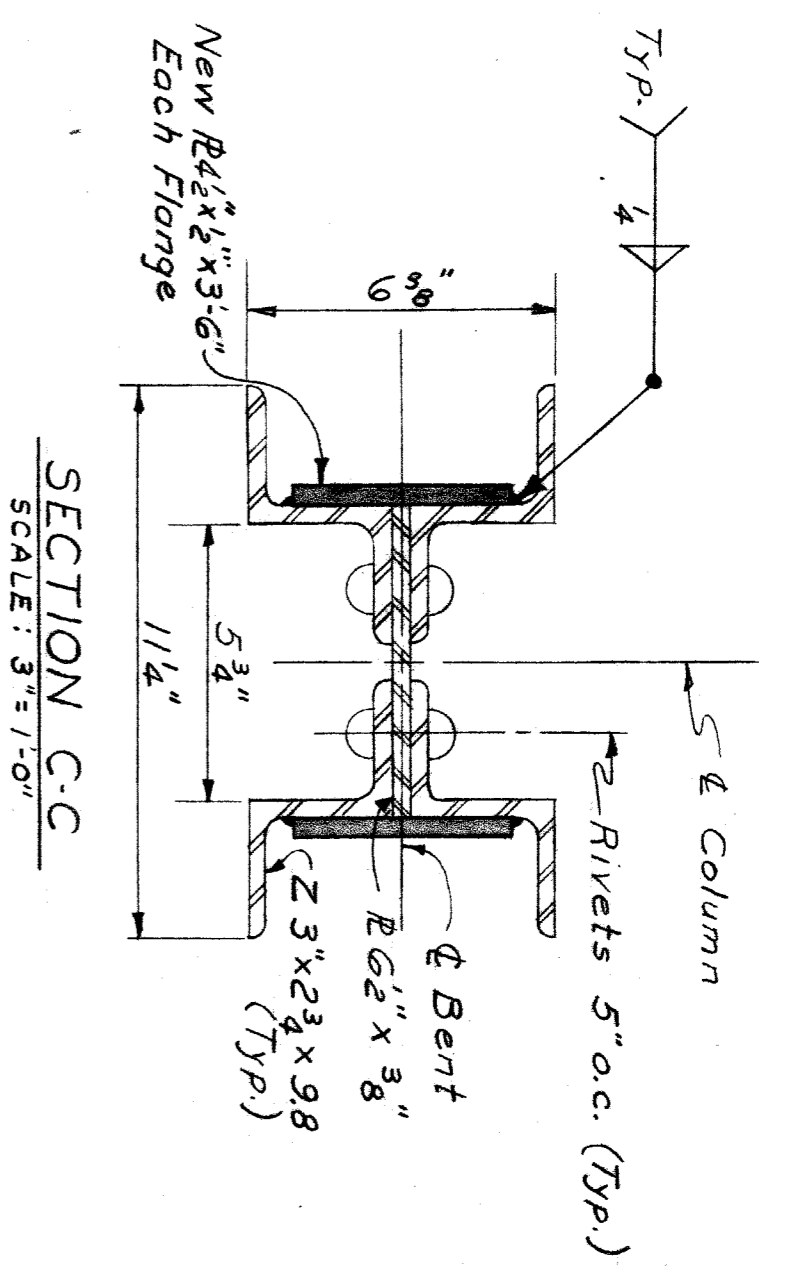
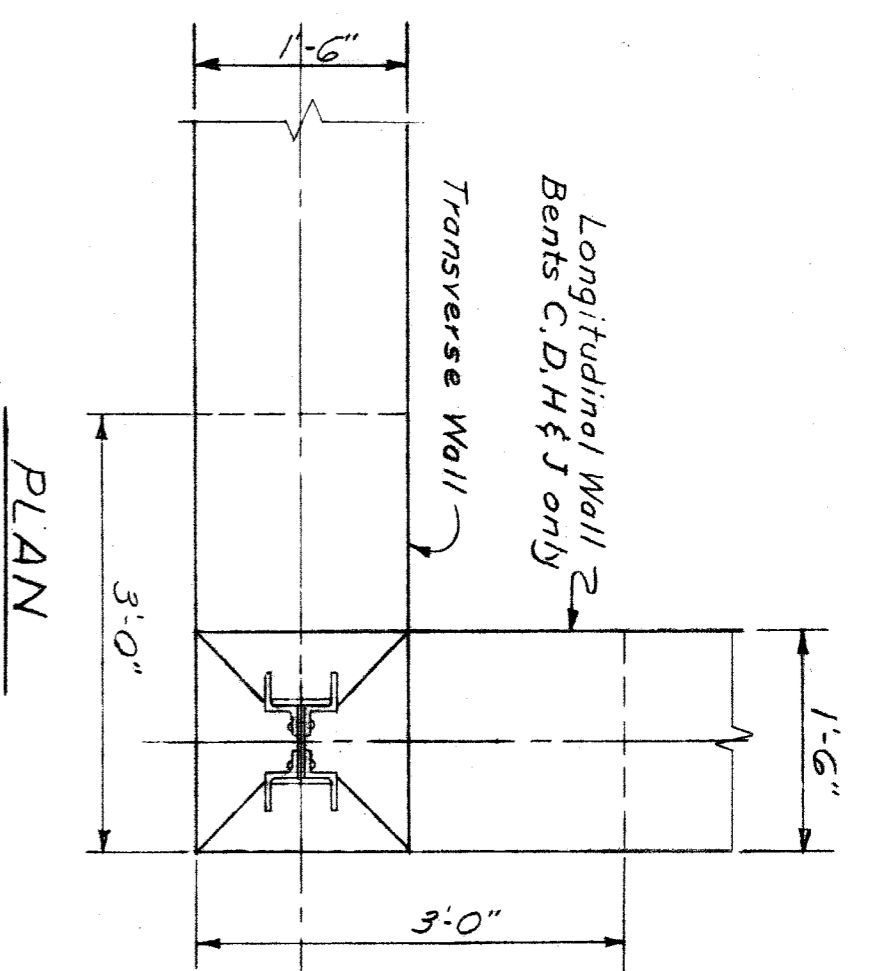
DESIGNED BY: R. F. Ricker
 DRAWN BY: N. M. L. Edin
 CHECKED BY: J. C. L. L. L.
 APPROVED: J. C. L. L. L.
 CITY ENGINEER

ORIGINAL BRIDGE CONSTRUCTION - 1894
 ADDITIONAL COLUMNS & STRUCTURAL STEEL - 1923
 BRIDGE WIDENED (CONFLUENT SIDEWALKS) - 1925
 TIMBER DECK REPLACED WITH CONCRETE DECK
 & ADDITIONAL STRUCTURAL STEEL - 1934

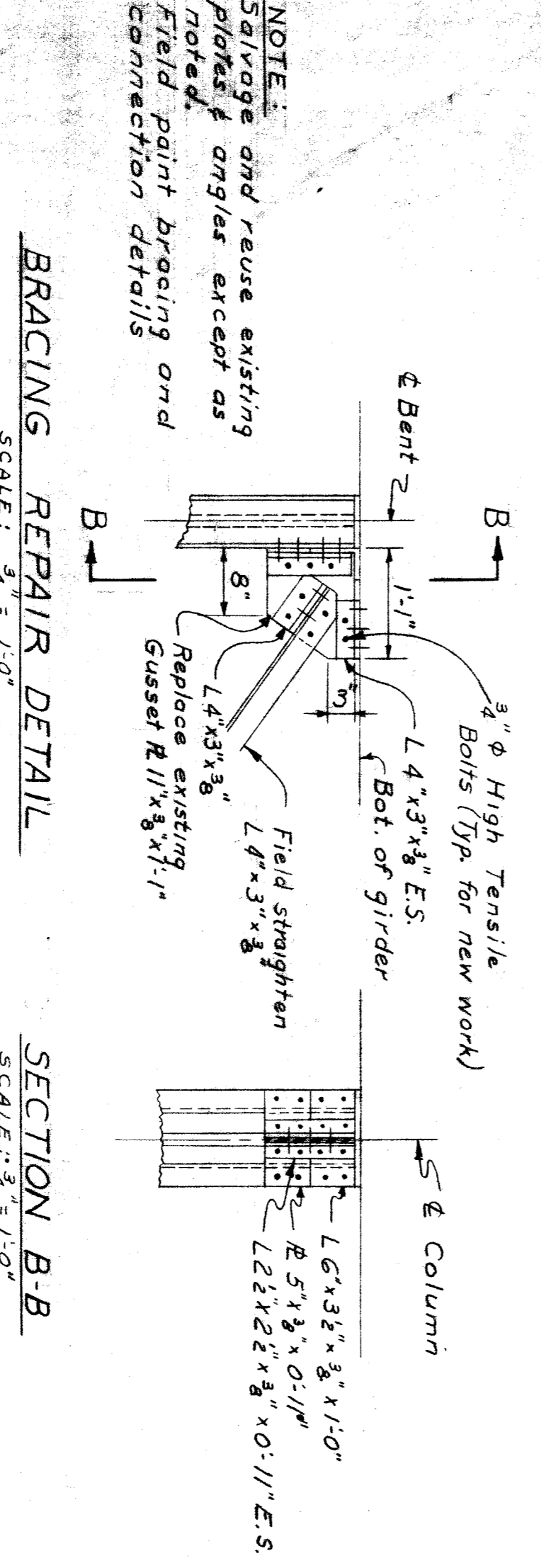
SCALE: 1" = 20'

SCALE: 1" = 20'

SCALE: 1" = 20'



COLUMN ENCASUREMENT DETAILS
 (Bents C, D, H, & J with longitudinal wall as shown)
 SCALE: 3/4" = 1'-0" unless noted



BRACING REPAIR DETAIL
 SCALE: 3/4" = 1'-0"

SECTION B-B
 SCALE: 3/4" = 1'-0"

NOTE:
 Concrete and miscellaneous quantities listed to the right are approximate and are for bidders' information and convenience only.

Bar Size	Dimensions	Length	No. Req'd	Weight	
A-1	#4 1'-8"	1'-8"	60	67	
A-2	#4 2'-9"	2'-9"	88	162	
A-3	#4 20'-6"	20'-6"	64	876	
B-1	#4 2'-9"	1'-1"	60	261	
B-2	#4 1'-0"	1'-1"	88	176	
C-1	#6 3'-0"	1'-3"	2'-0"	60	732
D-1	#4 4'-9"	2'-0"	0'-2"	12'-4"	659
Total				784	29376

LOCATION	AMOUNT
Bents	10 C.Y.D.
Backwalls	44
Deck & Approach Pavement	11
Total	65 C.Y.D.

ITEM	AMOUNT	UNIT
Steel Reinforcement	2937	Lb.
Struct. Steel Fab. & Erection	1300	Lb.
Bituminous Concrete W.S.	9	Ton
Fill Material	11	Cu.Yd.
Excavation	11	Cu.Yd.
Field Painting	120	Sq.Ft.
2" Joint Filler		L.S.
Concrete Removal	24	Cu.Yd.
Misc. Steel Removal	3000	Lb.

DESIGNED BY	APPROVED
DRAWN BY	
TRACED BY	
CHECKED BY	

CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 CITY ENGINEERS OFFICE
 BUREAU OF HIGHWAYS AND EXPRESSWAYS
BRIDGE MAINTENANCE

EAST GRAND BLVD. OVER GRAND TRUNK WESTERN RAILROAD
 (X087) West of St. Aubin St.
REPAIR DETAIL

SHEET 2 OF 2 SHEETS
CONTRACT PW 3962
DRWG No. C-102
DATE MARCH 1961