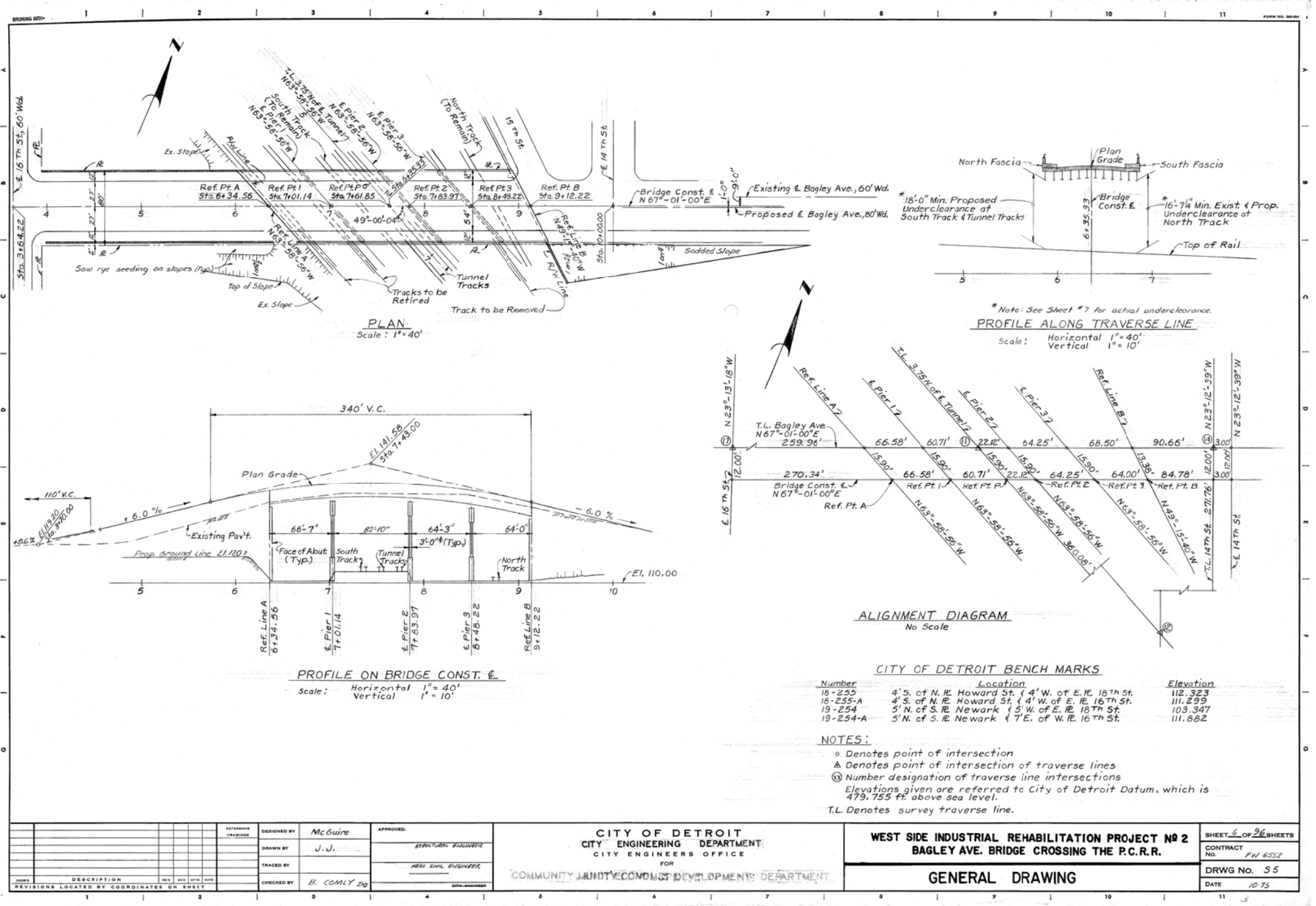
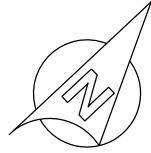


SCALE	HORIZONTAL VERTICAL	BOOK NO.	PG.	LEVEL DATE	BEFORE STARTING CONSTRUCTION BEST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.
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BENCH MARKS ELEV

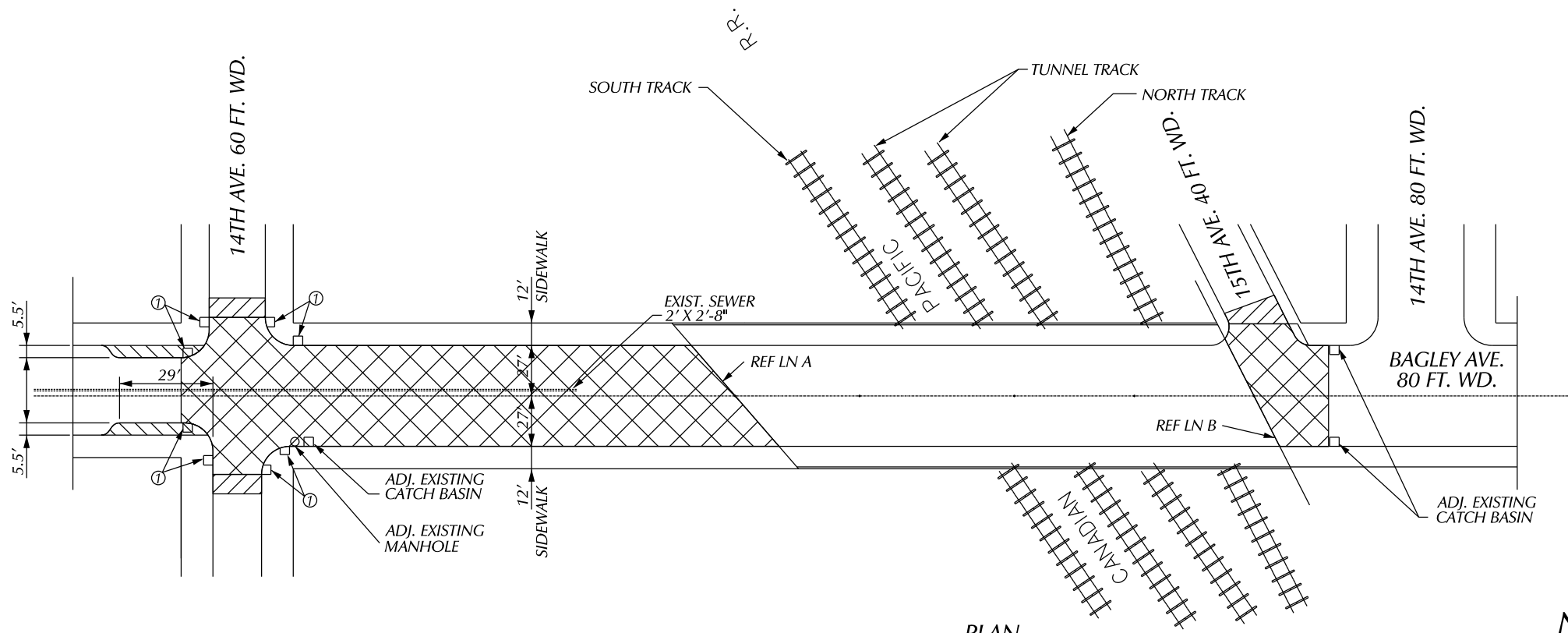


DESCRIPTION	DR	CK	DATE	BY	CHECKED BY	APPROVED:	CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR	BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.	SHEET 2 OF 65 SHEETS CONTRACT NO. PW-6985 ASSIGNMENT NO.
REVISIONS								EXISTING GENERAL PLAN OF SITE	DATE 03/23/2018



LEGEND:

- SIDEWALK - 6" REMOVAL
- STRIP & ADJUST ASPHALT SURFACE
- ① SIDEWALK RAMP, TYPE ① TO BE REPLACED
- COLD MILLING EXISTING PAVEMENT



PLAN

NOTE:

1. CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT THIS OPERATION IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRED RELOCATION WILL BE NOT DISTURBED.

REMOVAL QUANTITIES

7,000 SYD	COLD MILLING CONC. PAVEMENT
* 400 SYD	HMA PATCH REM
100 FT	INTEGRAL CURB & SIDEWALK
	2 FEET, REM, MODIFIED
100 FT	CURB, REM
** 75 SYD	SIDEWALK, REM
*** 0.5 Acre	CLEARING

- * THIS QUANTITIES FOR HMA PATCH REMOVAL ON APPROACHES. EXACT LOCATION SHALL BE DETERMINE IN THE FIELD.
- ** THIS QUANTITIES FOR SIDEWALK PATCH REMOVAL ON APPROACHES. EXACT LOCATION SHALL BE DETERMINE IN THE FIELD.
- *** THIS QUANTITIES FOR CLEANING BRUSHES AND OTHER VEGETATION ON BRIDGE SIDEWALKS, APPROACHES AND OTHER AREAS AS DIRECTED BY THE ENGINEER

CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR		BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R. REMOVAL PLAN		SHEET 9 OF 65 SHEETS CONTRACT NO. PW-6985 ASSIGNMENT NO. DATE 03/23/2018
PLAN GRADE ESTIMATE FINAL	BY CHECKED BY APPROVED	ENGINEER OF STREETS	REVISIONS	DESCRIPTION DR CK DATE

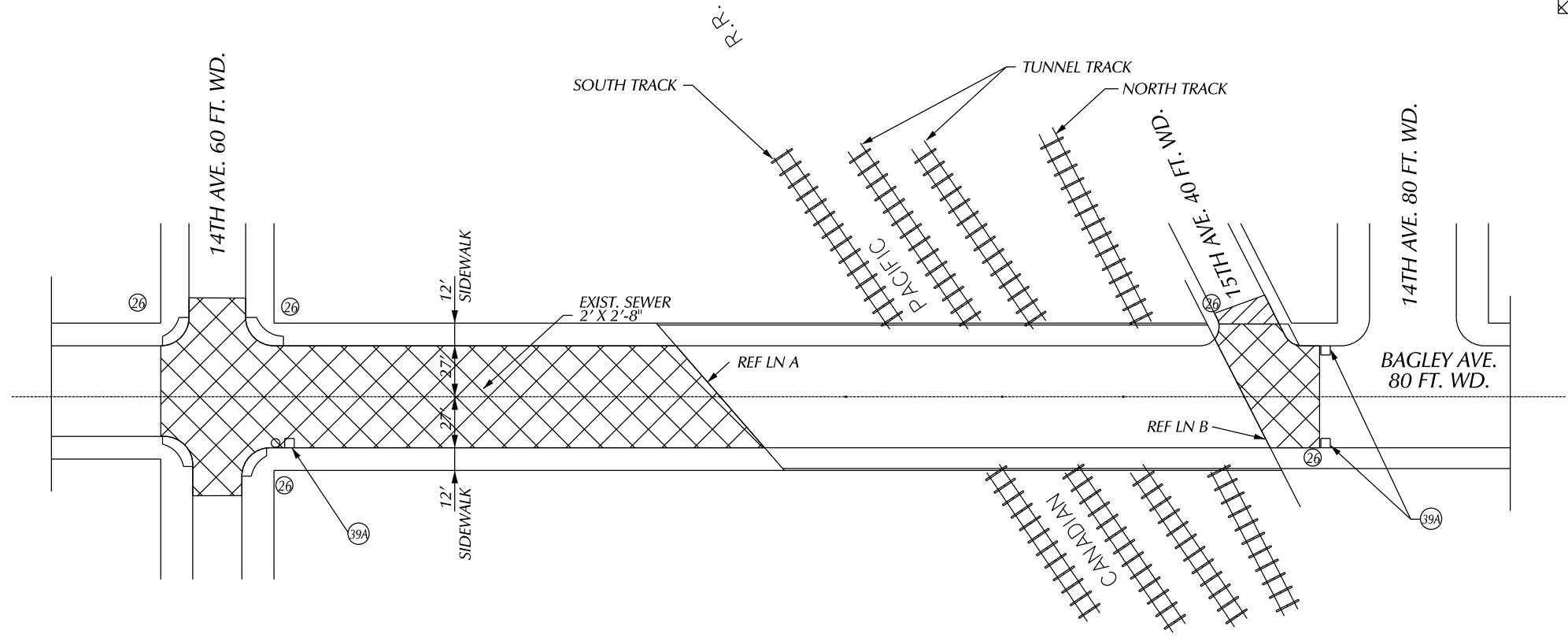
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	VERTICAL		PAGES COMPLETED		

BENCH MARKS ELEV



LEGEND:

LIMITS OF ROADWAY CONC. OVERLAY



PLAN

CONSTRUCTION QUANTITIES

860 SFT	SIDEWALK RAMP ADA, 6 INCH, MODIFIED
30 FT	CURB, CONC., DET E2
50 SYD	CONC PAVEMENT WITH INTEGRAL CURB, REINF. 9 INCH, MODIFIED
7,200 SYD	CONC PAVEMENT OVLV FINISHING AND CUPING
500 CYD	CONC PAVEMENT OVLV FURNISHING AND PLACING
3 EA	DR. STRUCTURE, CLEANING, MODIFIED
210 LB	DR. STRUCTURE, COVER, MODIFIED
3	DR. STRUCTURE, COVER, ADJ., CASE 1, MODIFIED
100 FT	DETECTABLE WARNING SURFACE
1 LS	PAV'T CLEANING

EROSION AND SEDIMENTATION CONTROL

KEY	QUANTITY	PAY ITEM
	3,000 FT	EROSION CONTROL, SILT FENCE
	3 EA	EROSION CONTROL, INLET PROTECTION, FABRIC DROP

			BY	CHECKED BY	APPROVED
		PLAN			
		GRADE			ENGINEER OF STREETS
		ESTIMATE			
DESCRIPTION	DR	CHK	DATE	FINAL	*****
REVISIONS					

CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAUS OF STREETS AND HIGHWAYS
FOR

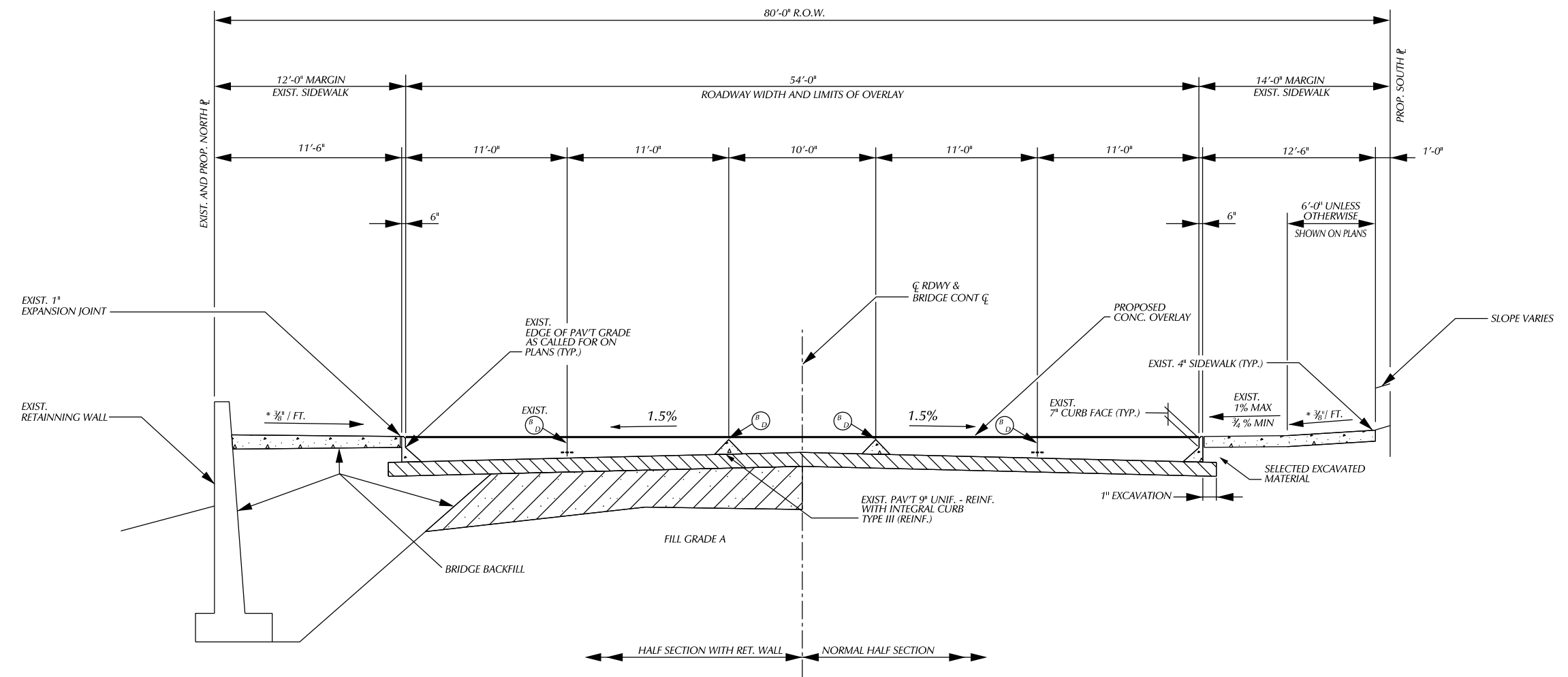
BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

ROAD CONSTRUCTION

SHEET 10 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE 03/23/2018

SCALE	HORIZONTAL	BOOK NO.	PG.	LEVEL DATE	CONTRACTOR
	VERTICAL	PAVING COMPLETED			BEFORE STARTING CONSTRUCTION MUST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.

BENCH MARKS ELEV



TYPICAL CROSS SECTION OF BAGLEY AVE.

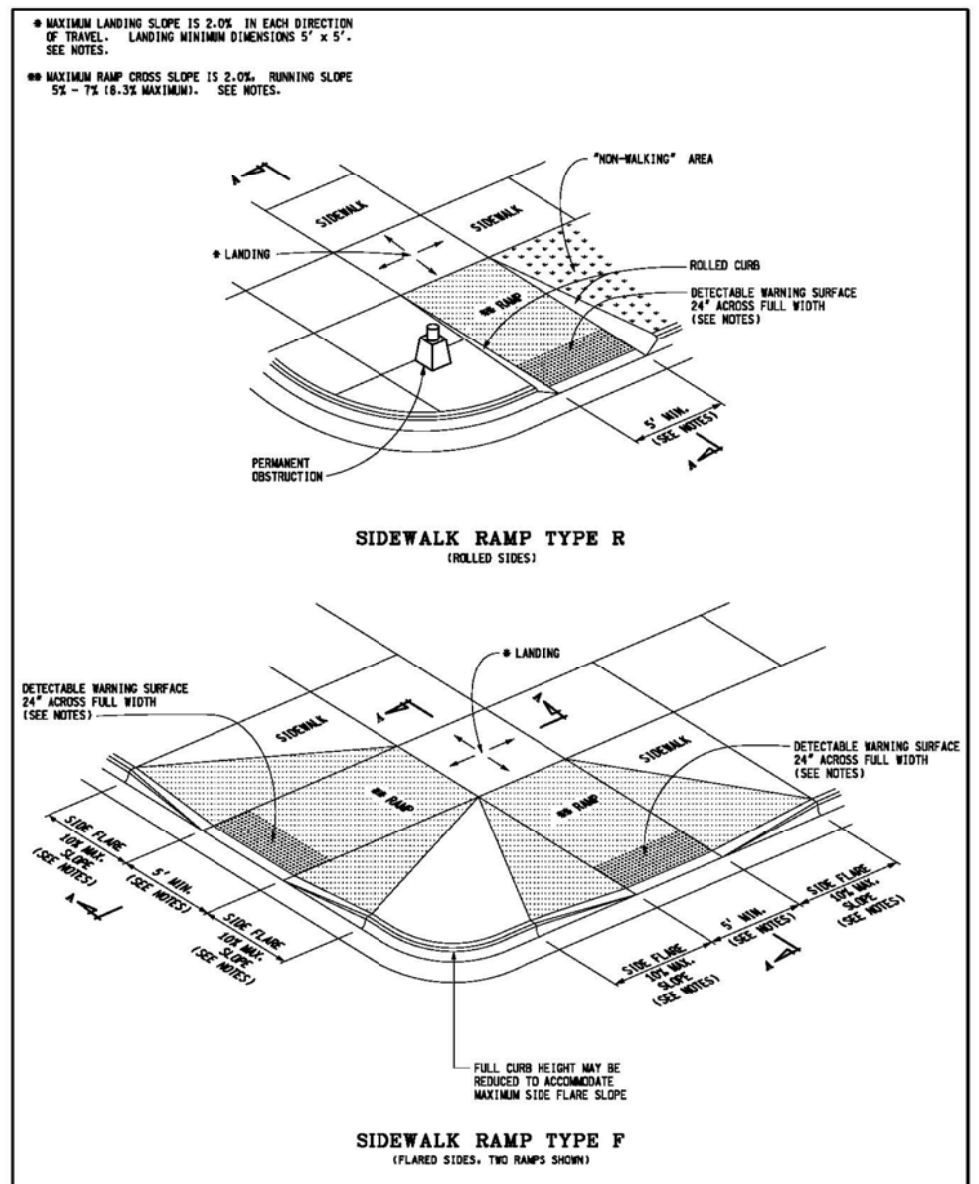
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GRADE			ENGINEER BY STREET
ESTIMATE			
FINAL	****	****	

CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAUS OF STREETS AND HIGHWAYS
FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

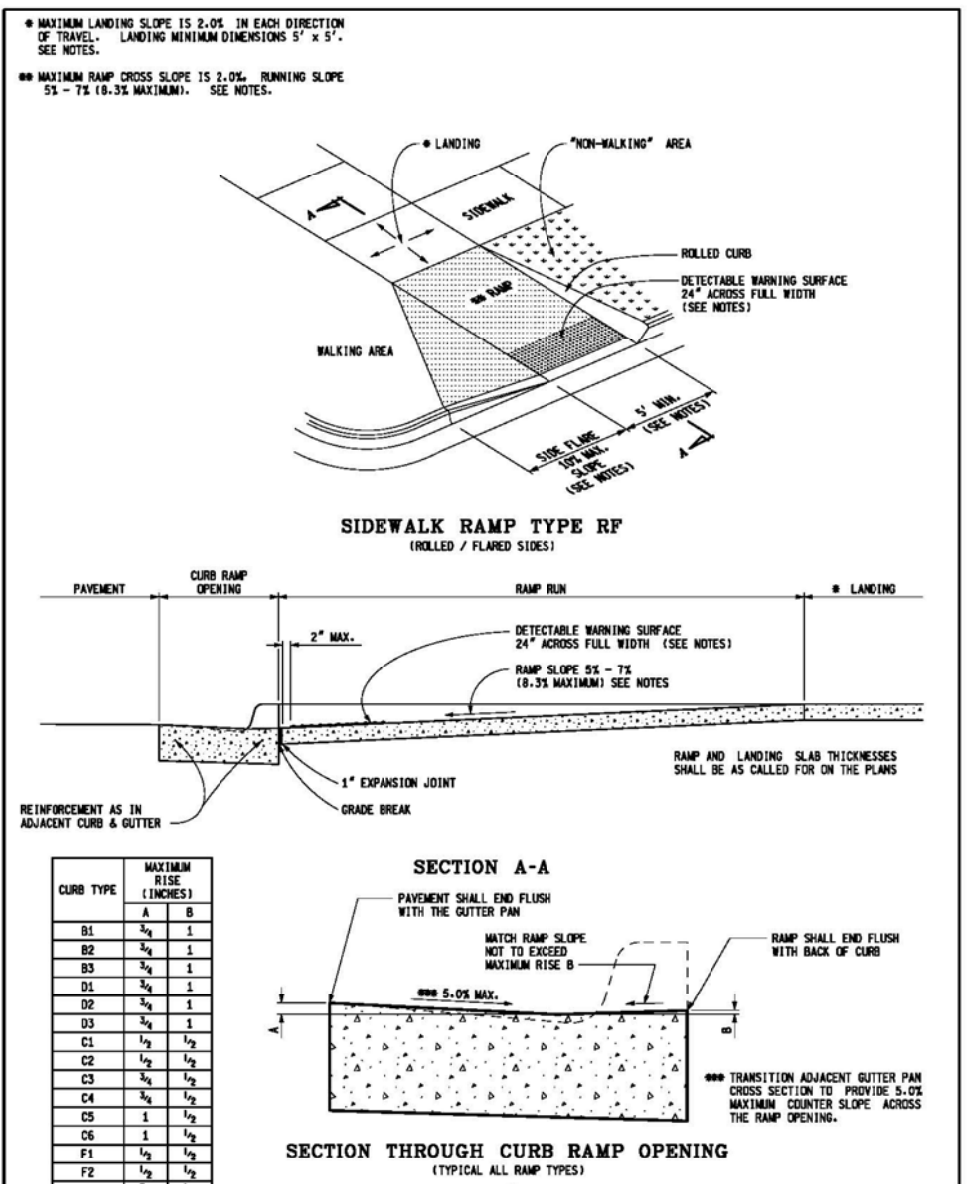
TYPICAL CROSS - SECTION

SHEET 11 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE 03/23/2018



	DEPARTMENT DIRECTOR Kirk T. Stouffe	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR
	APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES	SIDEWALK RAMP AND DETECTABLE WARNING DETAILS
	APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT	F.H.W.A. APPROVAL
		12-11-2017 PLAN DATE

R-28-J SHEET 1 OF 7



	DEPARTMENT DIRECTOR Kirk T. Stouffe	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR
	APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES	SIDEWALK RAMP AND DETECTABLE WARNING DETAILS
	APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT	F.H.W.A. APPROVAL
		12-11-2017 PLAN DATE

R-28-J SHEET 2 OF 7

CURB TYPE	MAXIMUM RISE (INCHES)	
	A	B
B1	3/4	1
B2	3/4	1
B3	3/4	1
D1	3/4	1
D2	3/4	1
D3	3/4	1
C1	1/2	1/2
C2	1/2	1/2
C3	3/4	1/2
C4	3/4	1/2
C5	1	1/2
C6	1	1/2
F1	1/2	1/2
F2	1/2	1/2
F3	3/4	1/2
F4	3/4	1/2
F5	1	1/2
F6	1	1/2

FOR CURB TYPES SEE STANDARD PLAN R-30-SERIES

AS-LET PLAN REVISIONS					
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE

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 HORZ. (FT) 0 1 2

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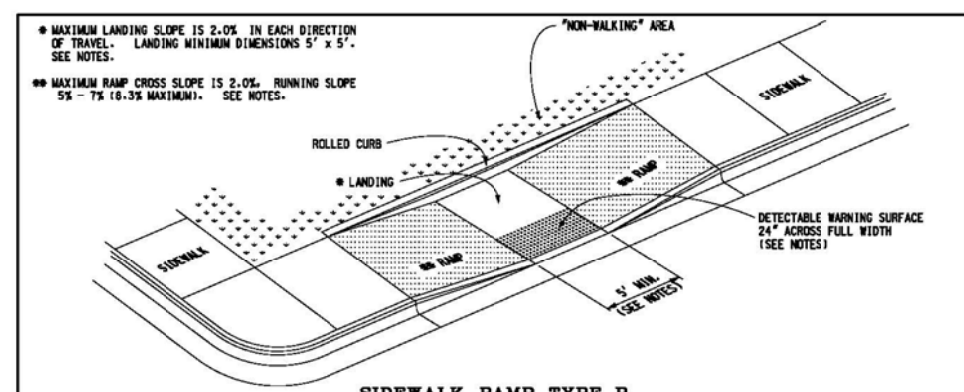
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GRADE							
ESTIMATE							
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CITY OF DETROIT
 CITY ENGINEERING DIVISION - D.P.W.
 BUREAUS OF STREETS AND HIGHWAYS
 FOR

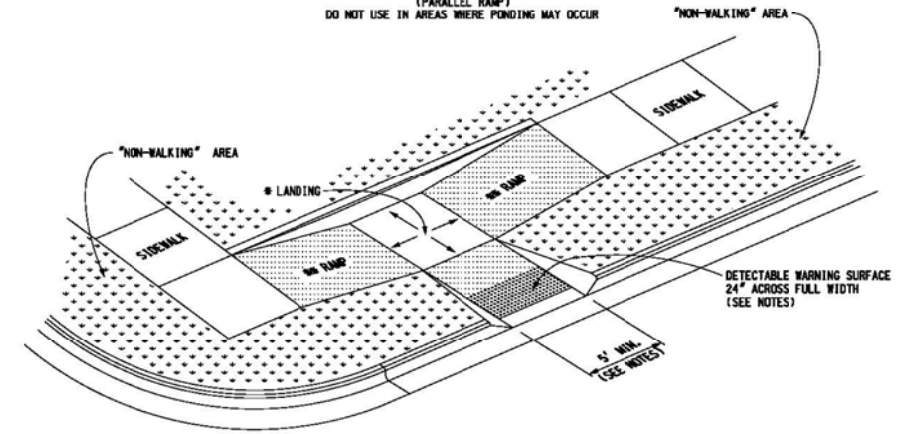
BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

ROAD - DETAILS

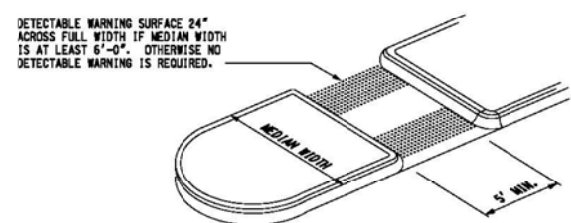
SHEET 12 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE 03/23/2018



SIDEWALK RAMP TYPE P
(PARALLEL RAMP)
DO NOT USE IN AREAS WHERE PONDING MAY OCCUR

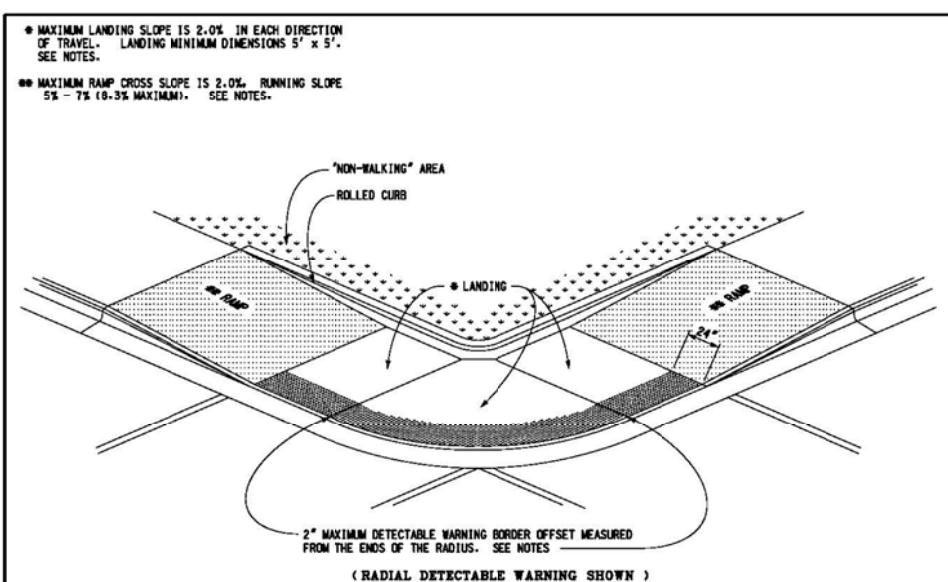


SIDEWALK RAMP TYPE C
(COMBINATION RAMP)

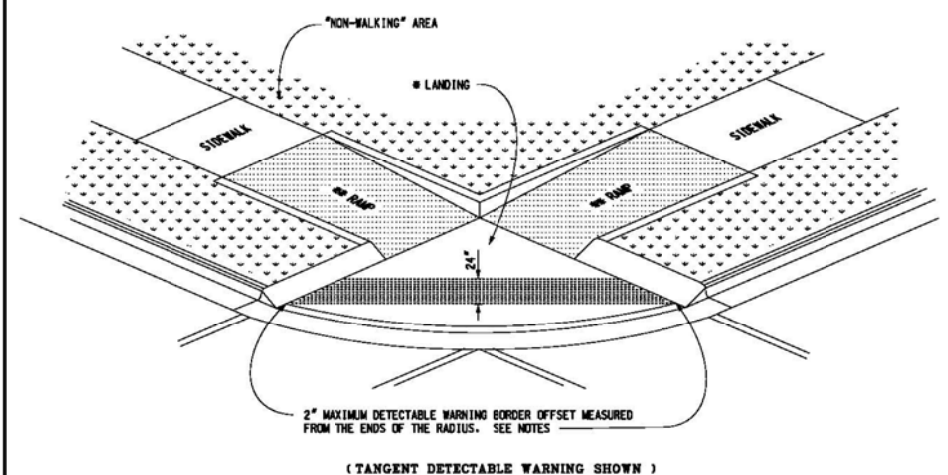


SIDEWALK RAMP TYPE M
(MEDIAN ISLAND)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
**SIDEWALK RAMP AND
DETECTABLE WARNING DETAILS**
12-11-2017
R-28-J SHEET 3 OF 7



(RADIAL DETECTABLE WARNING SHOWN)



(TANGENT DETECTABLE WARNING SHOWN)

SIDEWALK RAMP TYPE D
(DEPRESSED CORNER)

USE ONLY WHEN INDEPENDENT DIRECTIONAL RAMPS CAN NOT BE CONSTRUCTED FOR EACH CROSSING DIRECTION

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
**SIDEWALK RAMP AND
DETECTABLE WARNING DETAILS**
12-11-2017
R-28-J SHEET 4 OF 7

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



DATE: _____ CS: _____
DESIGN UNIT: _____ JN: _____
TSC: _____

FILE: _____

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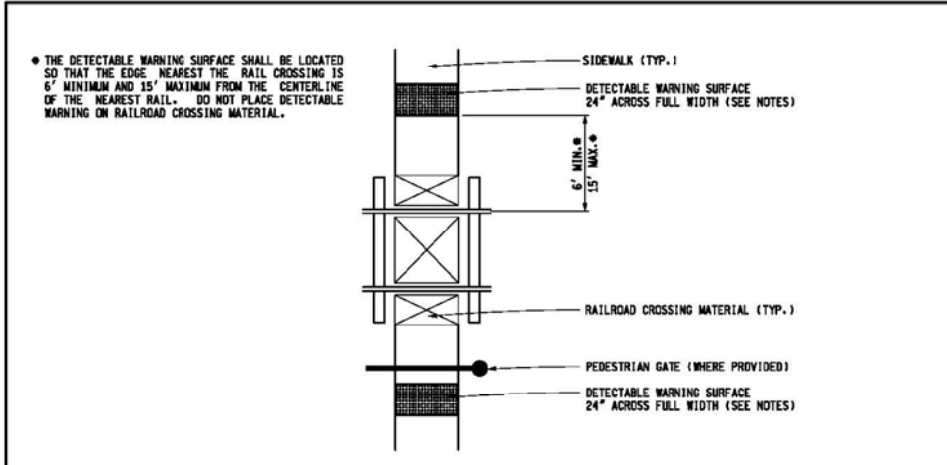
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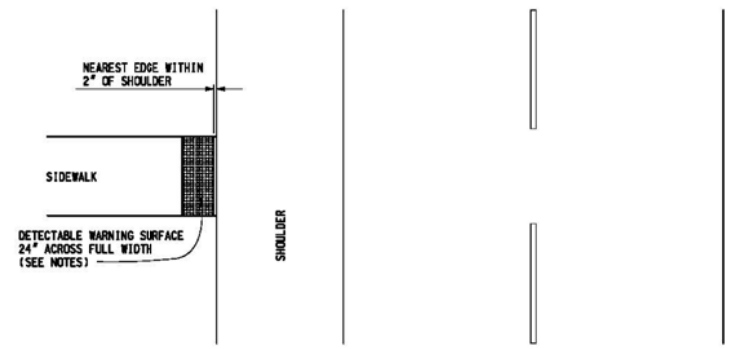
CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAUS OF STREETS AND HIGHWAYS
FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.
ROAD - DETAILS

SHEET 13 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE 03/23/2018



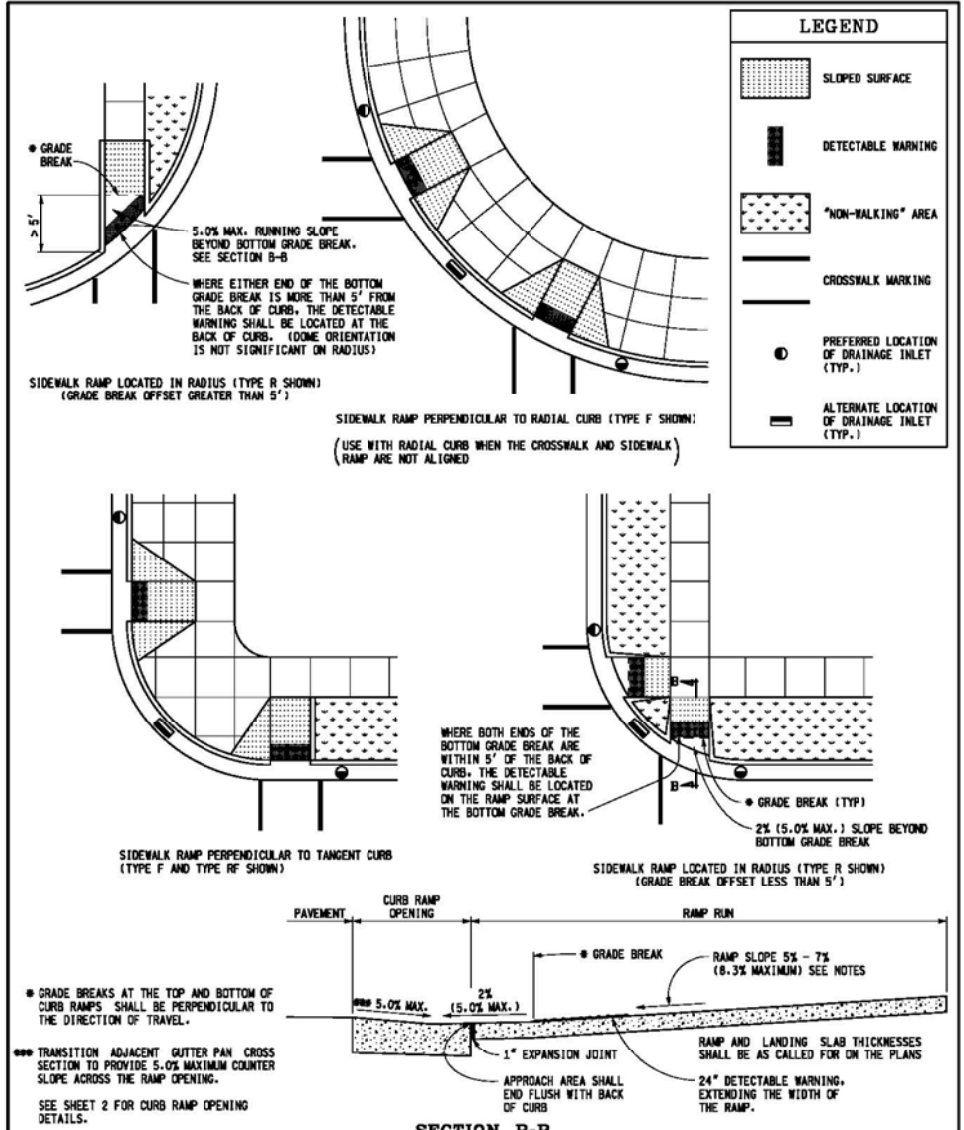
DETECTABLE WARNING AT RAILROAD CROSSING



DETECTABLE WARNING AT FLUSH SHOULDER OR ROADWAY

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
**SIDEWALK RAMP AND
DETECTABLE WARNING DETAILS**

F.R.H.A. APPROVAL	12-11-2017 PLAN DATE	R-28-J	SHEET 5 OF 7
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SECTION B-B
SIDEWALK RAMP ORIENTATION

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
**SIDEWALK RAMP AND
DETECTABLE WARNING DETAILS**

F.R.H.A. APPROVAL	12-11-2017 PLAN DATE	R-28-J	SHEET 6 OF 7
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AS-LET PLAN REVISIONS			
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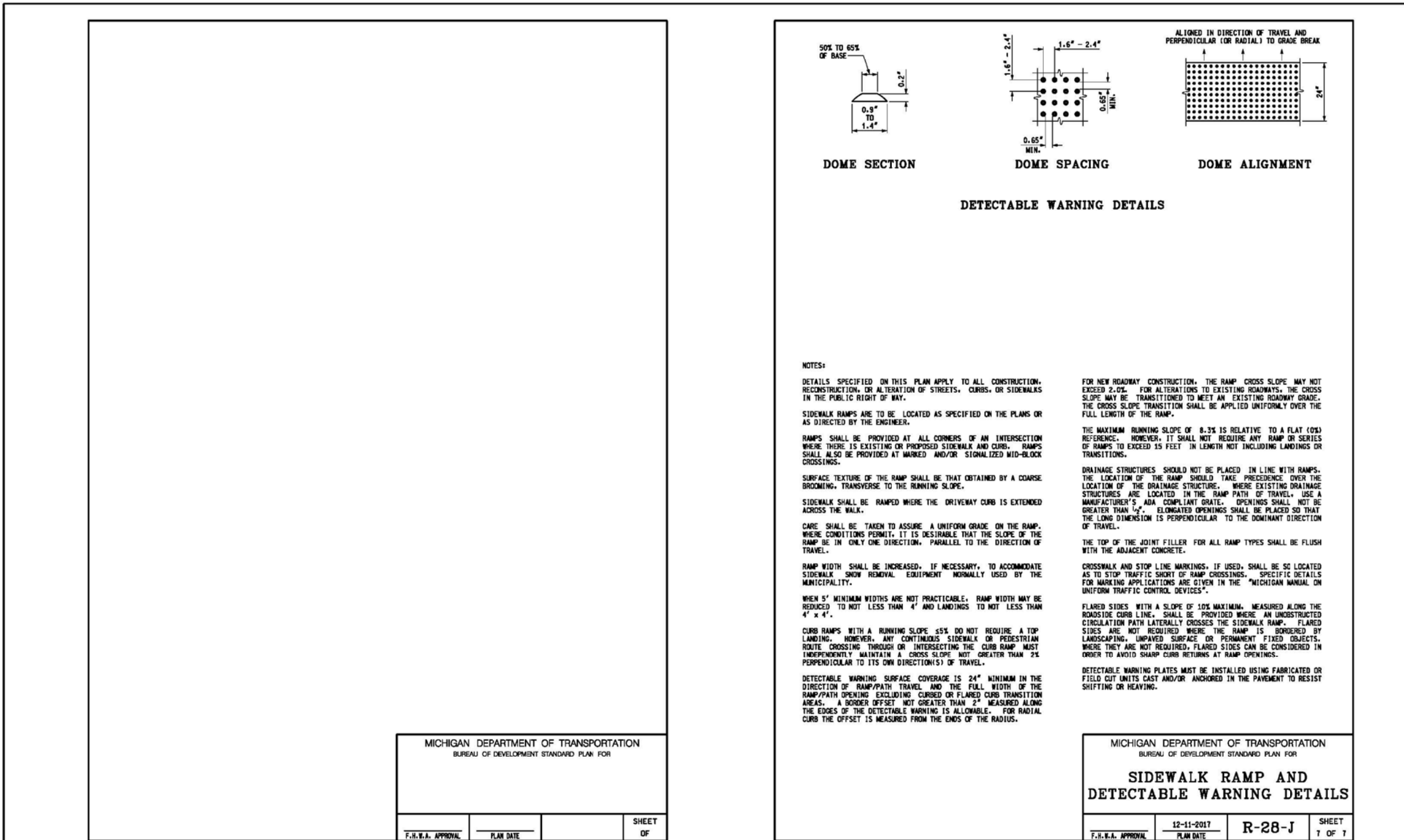
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PLAN							
GRADE							
ESTIMATE							
FINAL							

CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAUS OF STREETS AND HIGHWAYS
FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.
ROAD - DETAILS

SHEET 14 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE 03/23/2018



NOTES:

DETAILS SPECIFIED ON THIS PLAN APPLY TO ALL CONSTRUCTION, RECONSTRUCTION, OR ALTERATION OF STREETS, CURBS, OR SIDEWALKS IN THE PUBLIC RIGHT OF WAY.

SIDEWALK RAMP ARE TO BE LOCATED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

RAMP SHALL BE PROVIDED AT ALL CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB. RAMP SHALL ALSO BE PROVIDED AT MARKED AND/OR SIGNALIZED MID-BLOCK CROSSINGS.

SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING, TRANSVERSE TO THE RUNNING SLOPE.

SIDEWALK SHALL BE RAMPED WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.

CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP. WHERE CONDITIONS PERMIT, IT IS DESIRABLE THAT THE SLOPE OF THE RAMP BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.

RAMP WIDTH SHALL BE INCREASED, IF NECESSARY, TO ACCOMMODATE SIDEWALK SNOW REMOVAL EQUIPMENT NORMALLY USED BY THE MUNICIPALITY.

WHEN 5' MINIMUM WIDTHS ARE NOT PRACTICABLE, RAMP WIDTH MAY BE REDUCED TO NOT LESS THAN 4' AND LANDINGS TO NOT LESS THAN 4' x 4'.

CURB RAMP WITH A RUNNING SLOPE ≤5% DO NOT REQUIRE A TOP LANDING. HOWEVER, ANY CONTINUOUS SIDEWALK OR PEDESTRIAN ROUTE CROSSING THROUGH OR INTERSECTING THE CURB RAMP MUST INDEPENDENTLY MAINTAIN A CROSS SLOPE NOT GREATER THAN 2% PERPENDICULAR TO ITS OWN DIRECTION(S) OF TRAVEL.

DETECTABLE WARNING SURFACE COVERAGE IS 24" MINIMUM IN THE DIRECTION OF RAMP/PATH TRAVEL AND THE FULL WIDTH OF THE RAMP/PATH OPENING EXCLUDING CURBED OR FLARED CURB TRANSITION AREAS. A BORDER OFFSET NOT GREATER THAN 2" MEASURED ALONG THE EDGES OF THE DETECTABLE WARNING IS ALLOWABLE. FOR RADIAL CURB THE OFFSET IS MEASURED FROM THE ENDS OF THE RADIUS.

FOR NEW ROADWAY CONSTRUCTION, THE RAMP CROSS SLOPE MAY NOT EXCEED 2.0%. FOR ALTERATIONS TO EXISTING ROADWAYS, THE CROSS SLOPE MAY BE TRANSITIONED TO MEET AN EXISTING ROADWAY GRADE. THE CROSS SLOPE TRANSITION SHALL BE APPLIED UNIFORMLY OVER THE FULL LENGTH OF THE RAMP.

THE MAXIMUM RUNNING SLOPE OF 8.5% IS RELATIVE TO A FLAT (0%) REFERENCE. HOWEVER, IT SHALL NOT REQUIRE ANY RAMP OR SERIES OF RAMP TO EXCEED 15 FEET IN LENGTH NOT INCLUDING LANDINGS OR TRANSITIONS.

DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN LINE WITH RAMP. THE LOCATION OF THE RAMP SHOULD TAKE PRECEDENCE OVER THE LOCATION OF THE DRAINAGE STRUCTURE. WHERE EXISTING DRAINAGE STRUCTURES ARE LOCATED IN THE RAMP PATH OF TRAVEL, USE A MANUFACTURER'S ADA COMPLIANT GRATE. OPENINGS SHALL NOT BE GREATER THAN 1/2". ELONGATED OPENINGS SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL.

THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.

CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE SO LOCATED AS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

FLARED SIDES WITH A SLOPE OF 10% MAXIMUM, MEASURED ALONG THE ROADSIDE CURB LINE, SHALL BE PROVIDED WHERE AN UNOBSTRUCTED CIRCULATION PATH LATERALLY CROSSES THE SIDEWALK RAMP. FLARED SIDES ARE NOT REQUIRED WHERE THE RAMP IS BORDERED BY LANDSCAPING, UNPAVED SURFACE OR PERMANENT FIXED OBJECTS, WHERE THEY ARE NOT REQUIRED, FLARED SIDES CAN BE CONSIDERED IN ORDER TO AVOID SHARP CURB RETURNS AT RAMP OPENINGS.

DETECTABLE WARNING PLATES MUST BE INSTALLED USING FABRICATED OR FIELD CUT UNITS CAST AND/OR ANCHORED IN THE PAVEMENT TO RESIST SHIFTING OR HEAVING.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

F.H.V.A. APPROVAL _____ PLAN DATE _____ SHEET OF _____

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

**SIDEWALK RAMP AND
DETECTABLE WARNING DETAILS**

F.H.V.A. APPROVAL _____ 12-11-2017 PLAN DATE R-28-J SHEET 7 OF 7

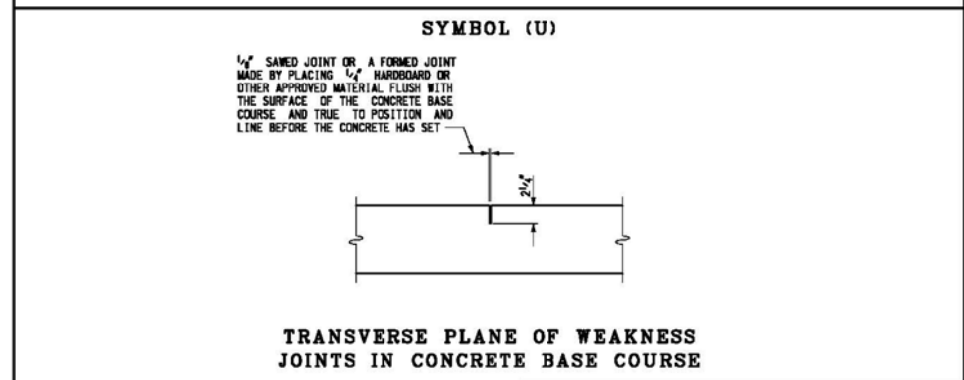
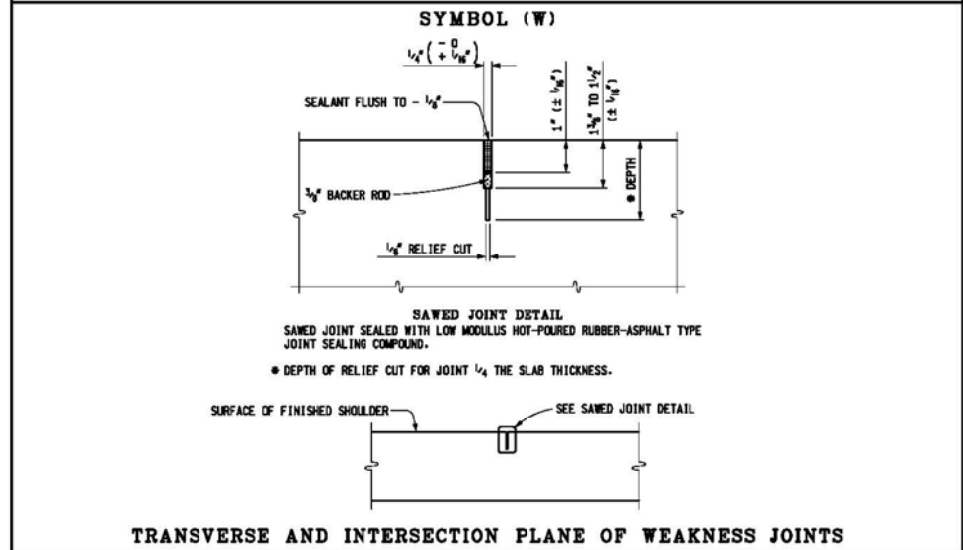
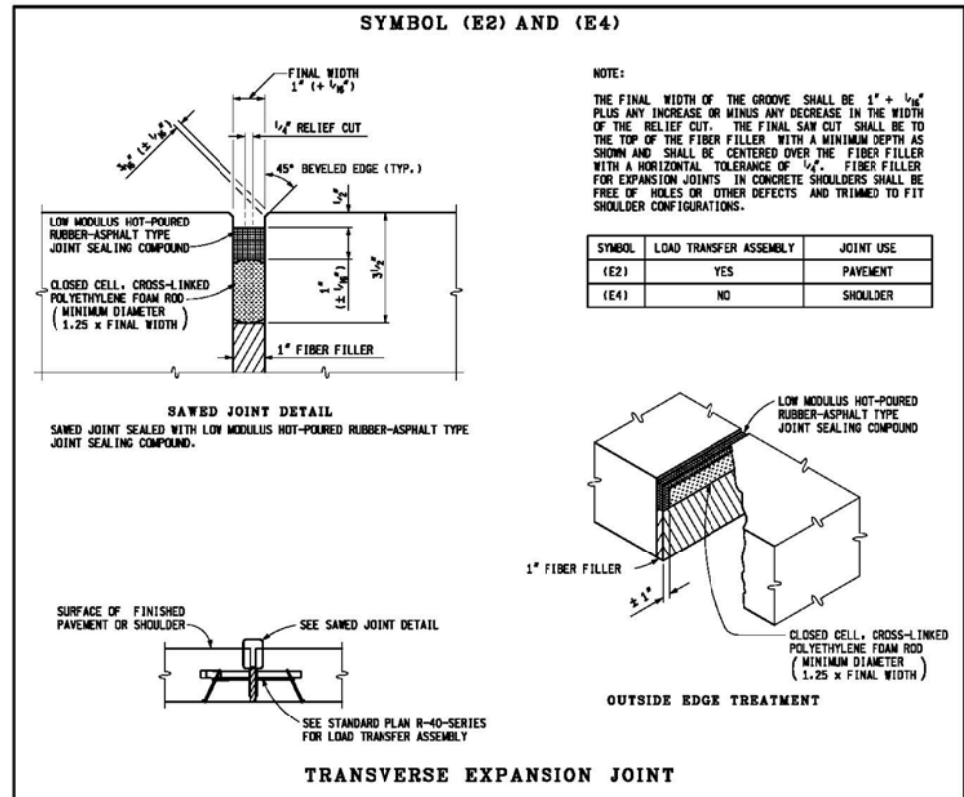
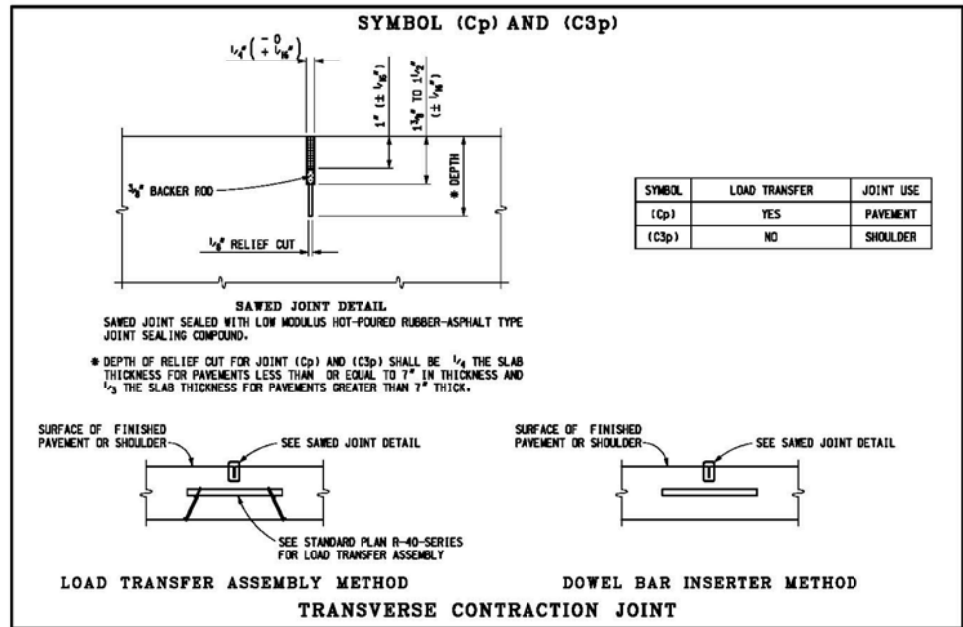
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GRADE							CONTRACT NO. PW-6985
ESTIMATE							ASSIGNMENT NO. _____
DESCRIPTION OR CHECK DATE							DATE 03/23/2018
REVISIONS							



<p>PREPARED BY DESIGN DIVISION</p> <p>DRAWN BY: B.L.L.</p> <p>CHECKED BY: V.K.P.</p>	<p>DEPARTMENT DIRECTOR Kirk T. Steudle</p> <p>APPROVED BY: _____ ENGINEER OF DELIVERY</p>	<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR</p> <p>TRANSVERSE PAVEMENT JOINTS (PLAIN CONCRETE PAVEMENT)</p>
	<p>APPROVED BY: _____ ENGINEER OF DEVELOPMENT</p>	<p>F.I.E.A. APPROVAL</p> <p>9-25-2017 PLAN DATE</p> <p>R-39-K</p> <p>SHEET 1 OF 5</p>

<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR</p> <p>TRANSVERSE PAVEMENT JOINTS (PLAIN CONCRETE PAVEMENT)</p>	
<p>F.I.E.A. APPROVAL</p> <p>9-25-2017 PLAN DATE</p> <p>R-39-K</p> <p>SHEET 2 OF 5</p>	

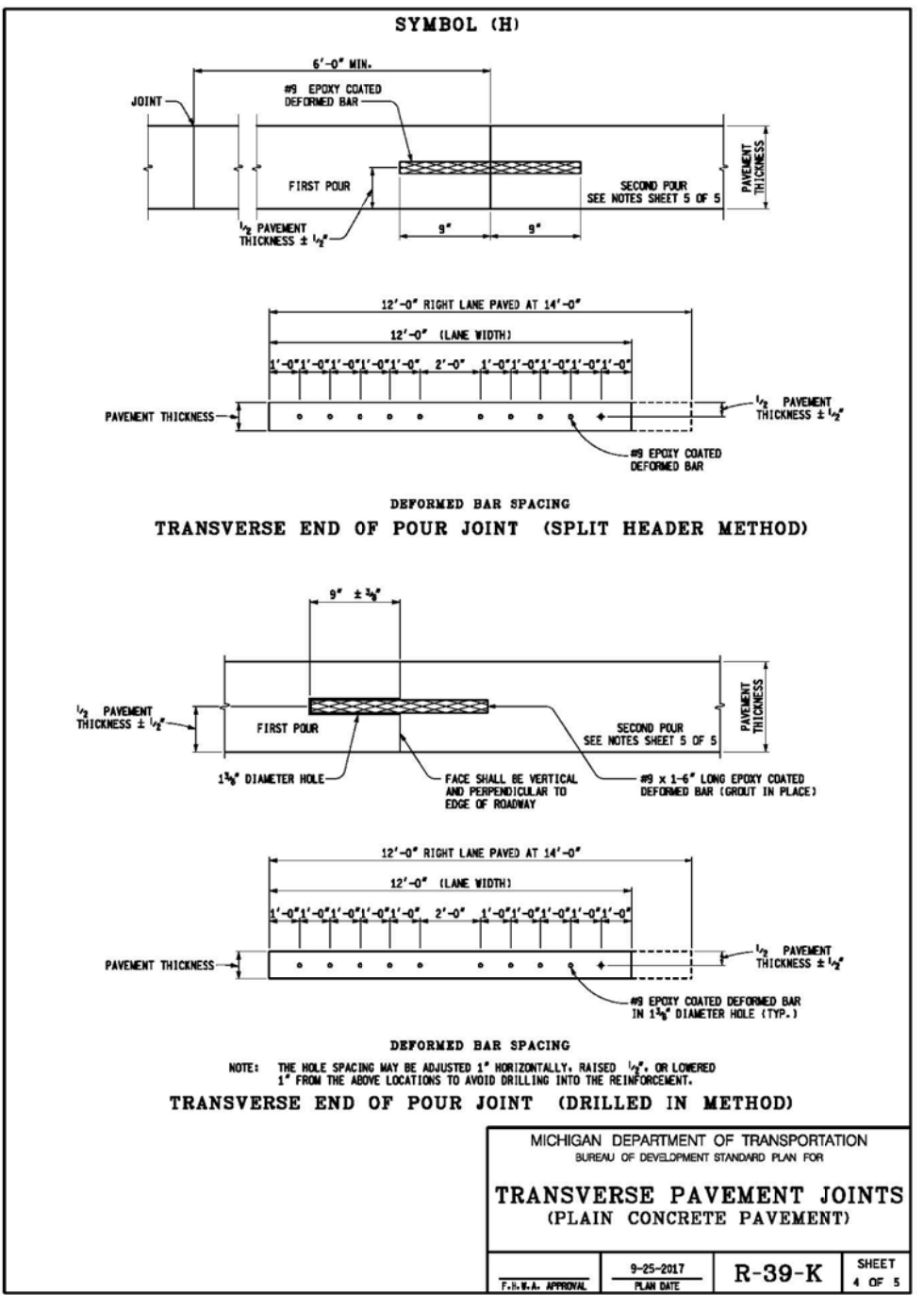
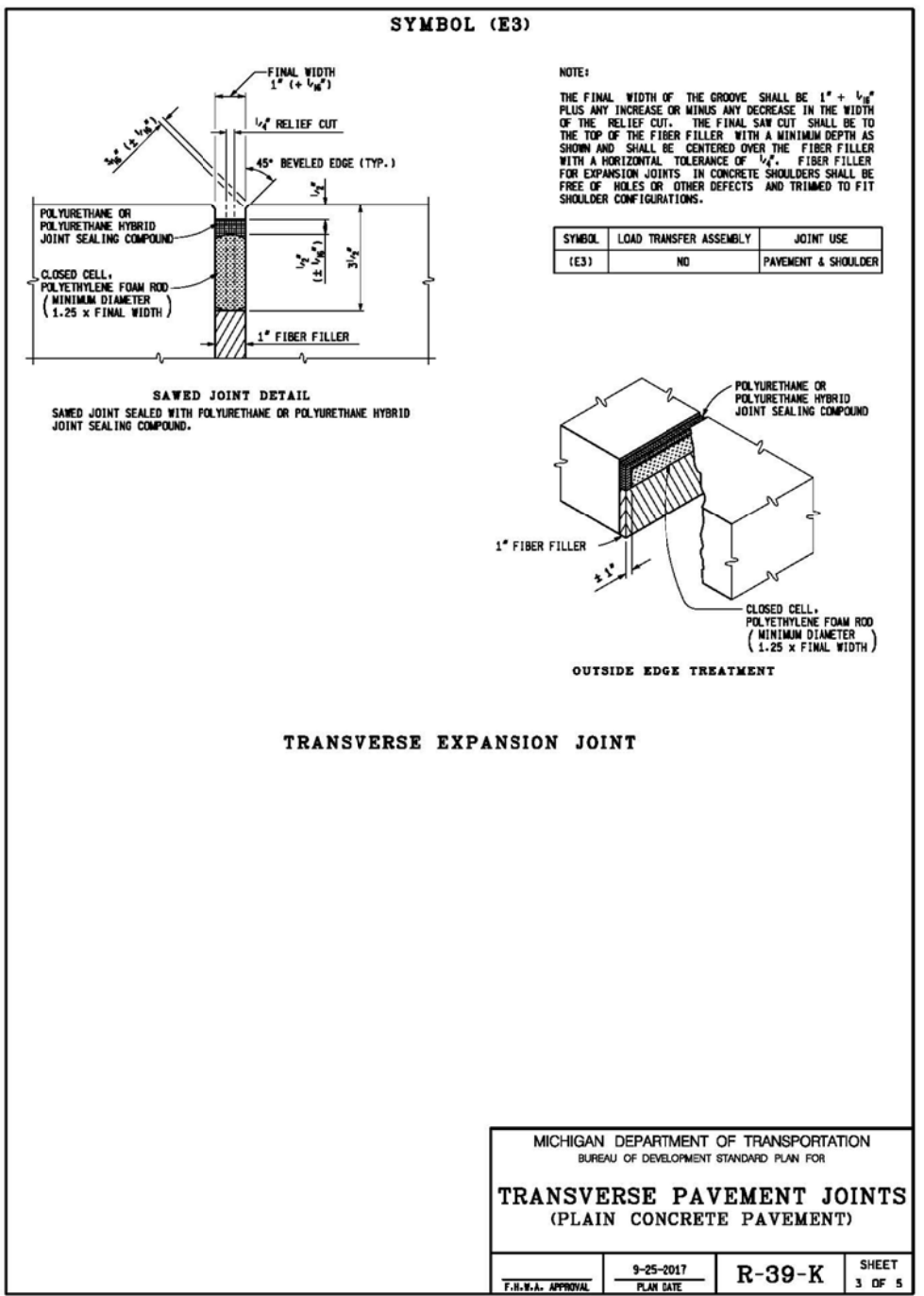
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NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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Michigan Department of Transportation

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DATE: CS:
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GRADE							
ESTIMATE							
FINAL							

CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAUS OF STREETS AND HIGHWAYS
FOR

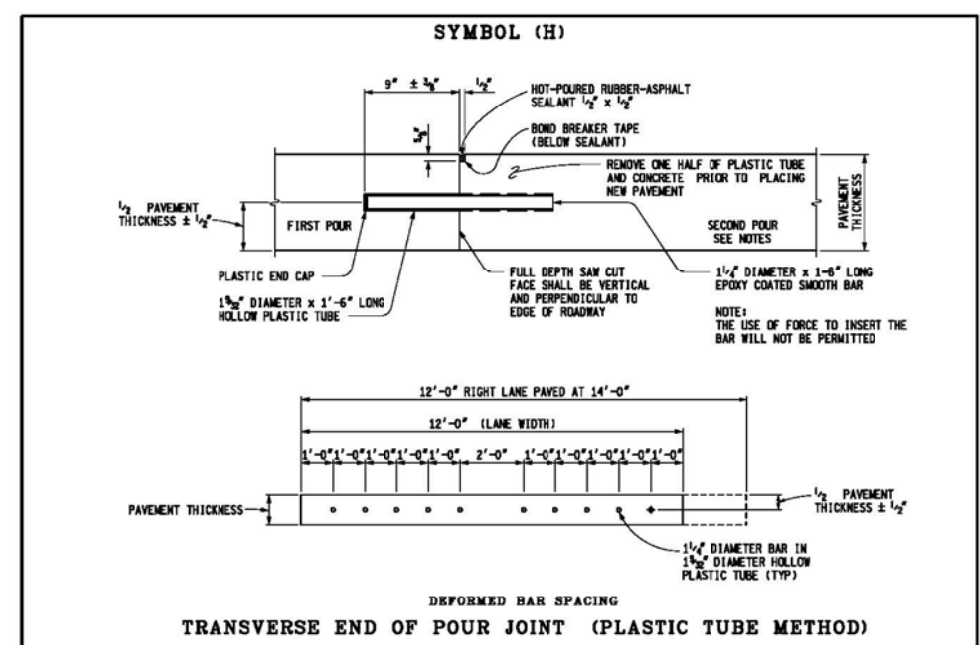
BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

ROAD - DETAILS

SHEET 17 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE 03/23/2018

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

F.H.R.A. APPROVAL	PLAN DATE	SHEET OF
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NOTES:

LOAD TRANSFER ASSEMBLIES ARE DETAILED ON THE CURRENT STANDARD PLAN R-40-SERIES.

TRANSVERSE JOINTS SHALL BE SPACED ACCORDING TO THE CURRENT STANDARD PLAN R-43-SERIES.

A TRANSVERSE END OF POUR JOINT (DRILLED IN METHOD) SYMBOL (H), SHALL BE CONSTRUCTED WHEN IT IS ANTICIPATED THAT THE SECOND POUR WILL BE DELAYED 7 DAYS OR LONGER.

A TRANSVERSE END OF POUR JOINT (SPLIT HEADER METHOD) OR (PLASTIC TUBE METHOD) SHALL BE USED AT THE END OF THE DAY'S POUR OR WHEN THERE IS AN UNAVOIDABLE INTERRUPTION OF THE WORK FOR MORE THAN ONE-HALF HOUR AND LESS THAN 7 DAYS. THE JOINT SHALL BE CONSTRUCTED ACCORDING TO TRANSVERSE END OF POUR JOINT (SPLIT HEADER METHOD) OR (PLASTIC TUBE METHOD), SYMBOL (H).

THE EXPANSION JOINT MATERIAL IN THE SHOULDERS SHALL BE SUPPORTED BY ONE OF THE FOLLOWING METHODS:

1. A CONTINUOUS SUPPORT WIRE, AS SPECIFIED FOR EXPANSION LOAD TRANSFERS ASSEMBLIES, AS DETAILED ON STANDARD PLAN R-40-SERIES, SHALL BE USED ON EACH SIDE OF EXPANSION MATERIAL. THIS WIRE SHALL BE EQUIPPED WITH STAKES AND STAKE POCKETS TO RIGIDLY HOLD THE EXPANSION MATERIAL IN PLACE DURING CONCRETE PLACEMENT. STAKES SHALL BE AS SPECIFIED ON STANDARD PLAN R-40-SERIES, SPACED NOT MORE THAN 2'-0" APART.
2. "U" OR "J" SHAPE STAPLES OF W8 WIRE (0.319" NOMINAL DIAMETER) SHALL BE SPACED ON 2'-0" CENTERS EACH SIDE OF THE EXPANSION MATERIAL. EACH VERTICAL LEG OF THE STAPLE SHALL BE AT LEAST 1'-3" LONG.
3. OTHER EQUIVALENT METHODS MAY BE USED WHEN APPROVED BY THE ENGINEER.

JOINTS SHALL NOT BE SEALED IN CONCRETE BASE COURSE.

WHEN CONCRETE SHOULDERS ARE CAST SEPARATELY FROM MAINLINE CONCRETE PAVEMENT, A KEYWAY MAY BE USED TO FACILITATE THE PLACING OF LANE TIES. WHEN A KEYWAY GROOVE IS USED, IT SHALL BE CONTINUOUS AND UNIFORM.

THE LOCATION OF TRANSVERSE JOINTS IN CONCRETE SHOULDERS SHALL MATCH THE LOCATION OF ADJACENT TRANSVERSE PAVEMENT JOINTS. CORRESPONDING TRANSVERSE CONCRETE SHOULDER AND PAVEMENT JOINTS SHALL BE (C3D) SHOULDER WITH (Cp) PAVEMENT, (E4) SHOULDER WITH (E2) PAVEMENT, AND (E3) BEING THE SAME IN BOTH SHOULDER AND PAVEMENT.

DEFORMED BARS FOR TRANSVERSE END OF POUR JOINTS (DRILLED IN METHOD) SHALL BE GROUTED INTO EXISTING PAVEMENT WITH A GROUT SELECTED FROM THE PREQUALIFIED MATERIALS LISTED IN THE DEPARTMENT'S "MATERIALS SOURCE GUIDE" UNDER ADHESIVE SYSTEMS FOR GROUTING DWEL BARS AND TIE BARS FOR FULL-DEPTH PAVEMENT REPAIRS.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

**TRANSVERSE PAVEMENT JOINTS
(PLAIN CONCRETE PAVEMENT)**

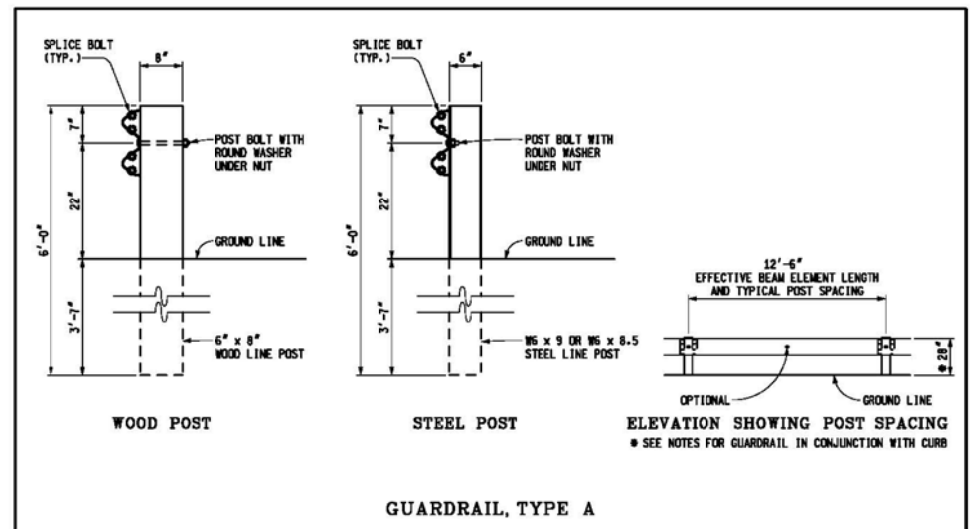
F.H.R.A. APPROVAL	9-25-2017 PLAN DATE	R-39-K SHEET 5 OF 5
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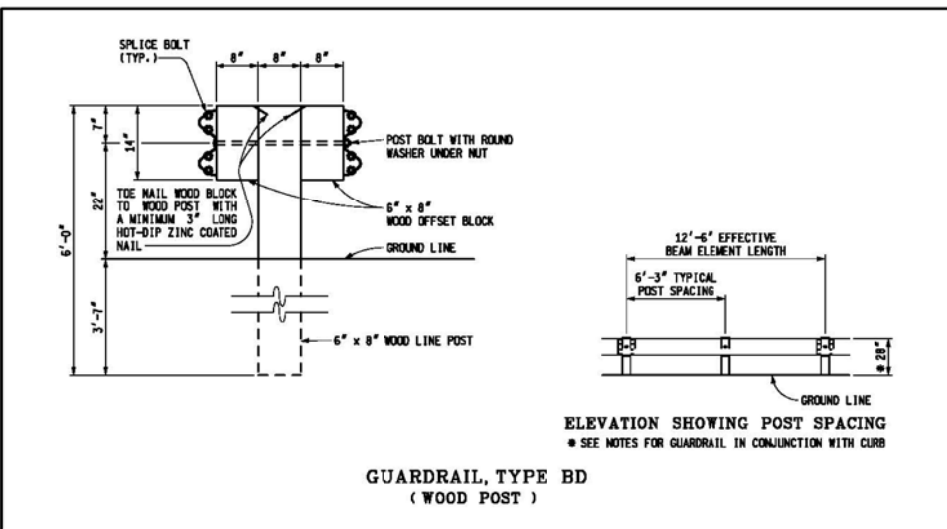
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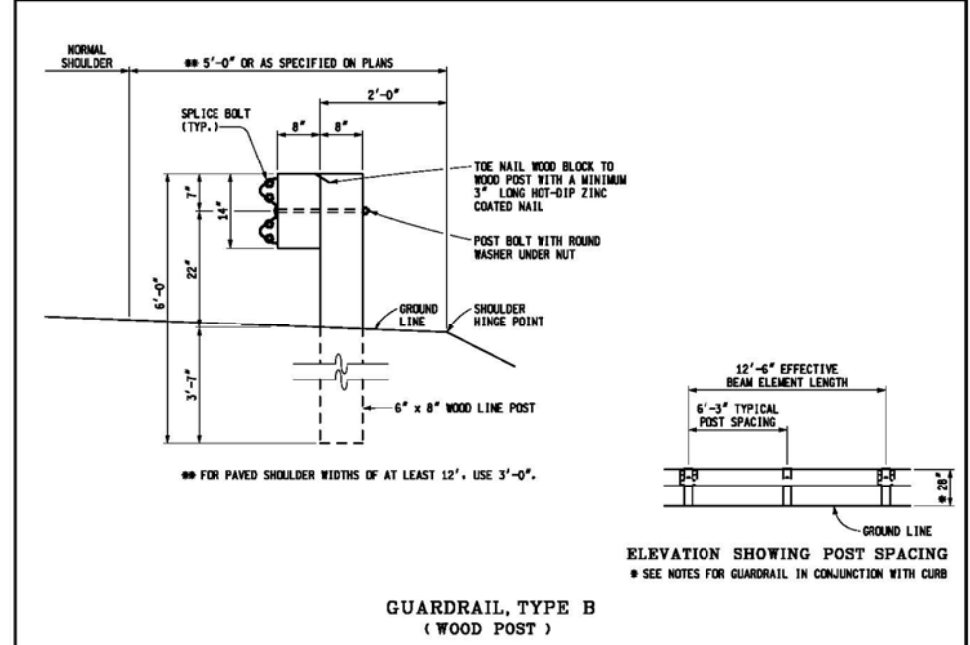
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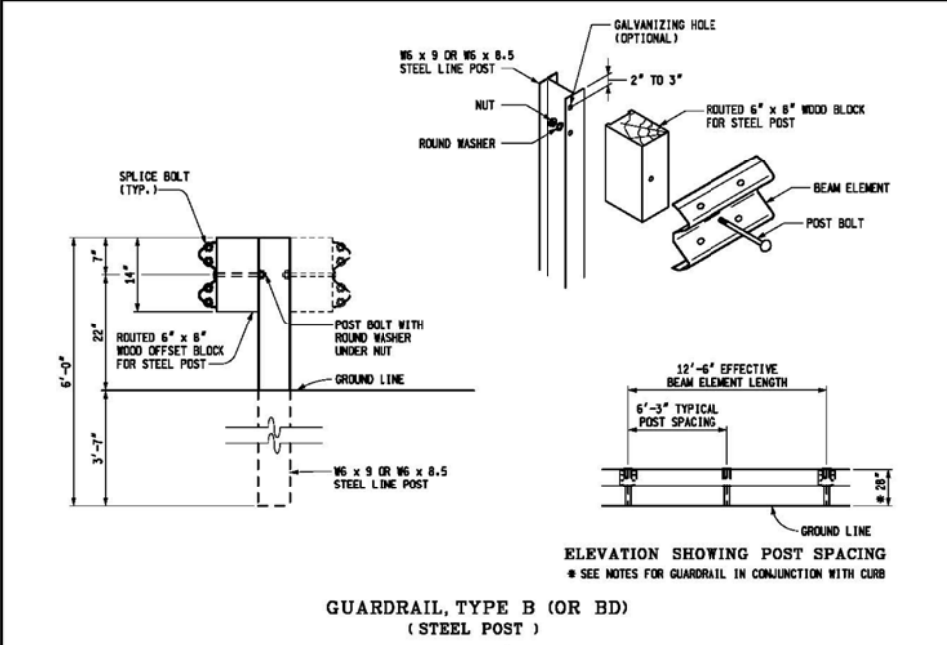
GUARDRAIL, TYPE A



GUARDRAIL, TYPE BD (WOOD POST)



GUARDRAIL, TYPE B (WOOD POST)



GUARDRAIL, TYPE B (OR BD) (STEEL POST)

<p>PREPARED BY DESIGN DIVISION</p> <p>DRAWN BY: <u>B.L.L.</u></p> <p>CHECKED BY: <u>W.K.P.</u></p>	<p>DEPARTMENT DIRECTOR Kirk T. Staudie</p> <p>APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES</p>	<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR</p> <p>GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D</p>	<p>F.H.W.A. APPROVAL</p> <p>7-26-2017 PLAN DATE</p> <p>R-60-J</p> <p>SHEET 1 OF 17</p>
	<p>APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT</p>		

<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR</p> <p>GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D</p>	<p>F.H.W.A. APPROVAL</p> <p>7-26-2017 PLAN DATE</p> <p>R-60-J</p> <p>SHEET 2 OF 17</p>

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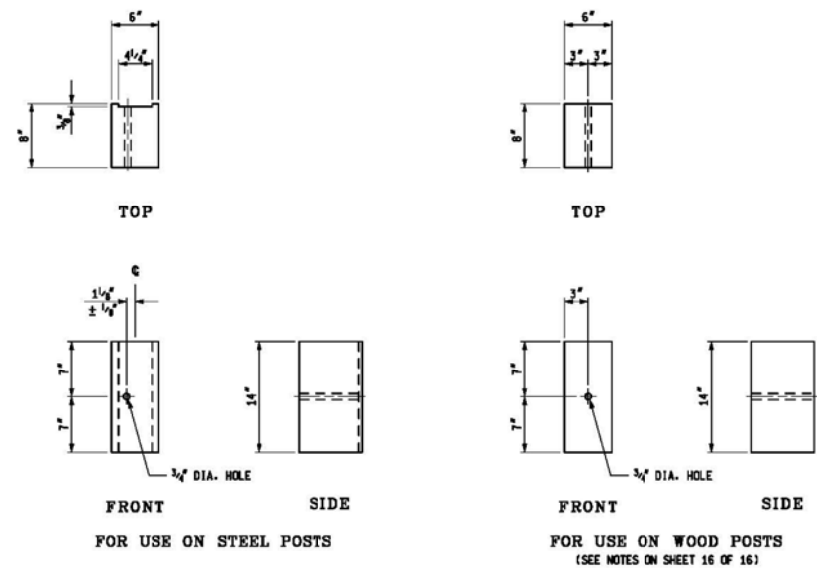
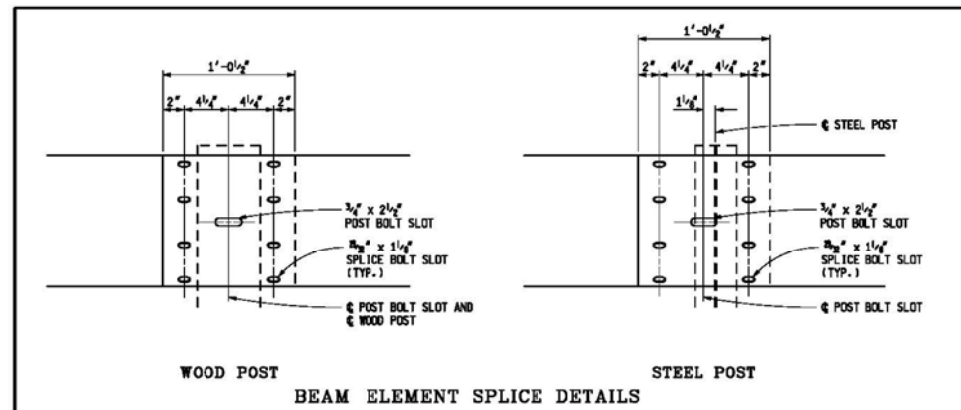
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GRADE								
ESTIMATE								
REVISIONS								

CITY OF DETROIT
 CITY ENGINEERING DIVISION - D.P.W.
 BUREAUS OF STREETS AND HIGHWAYS
 FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

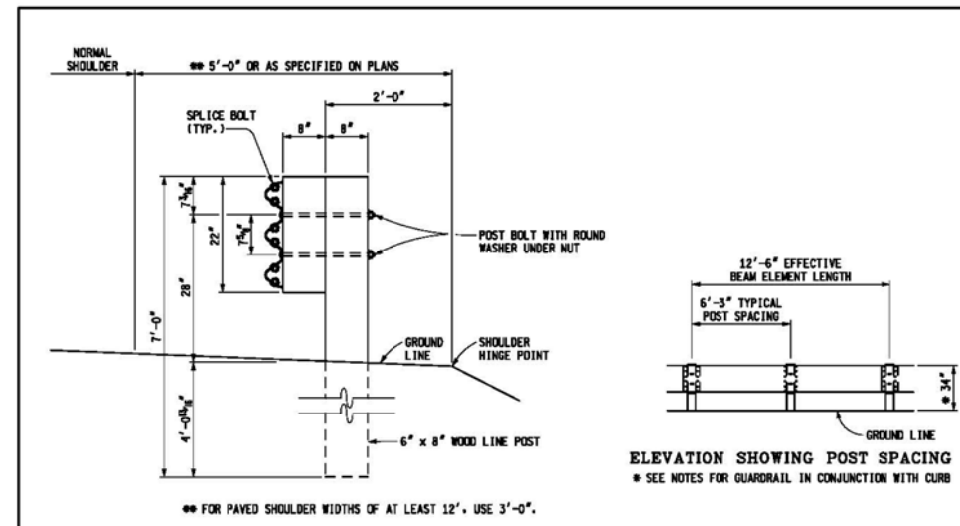
ROAD - DETAILS

SHEET 19 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE 03/23/2018

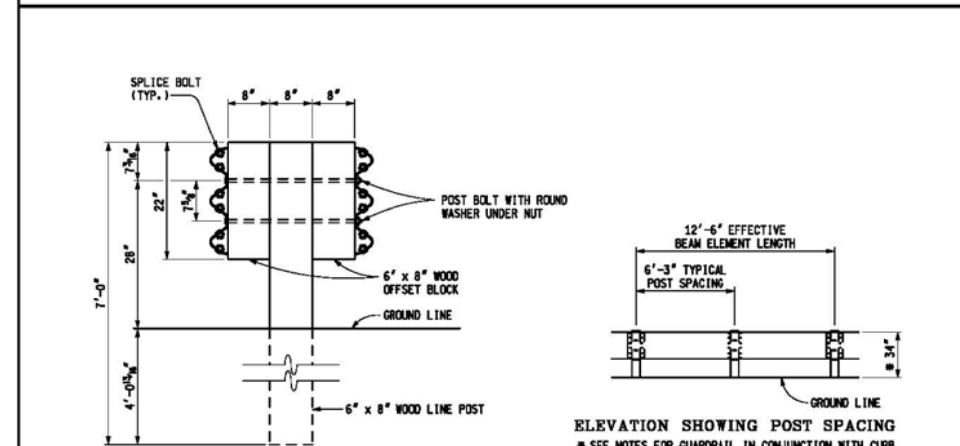


WOOD OFFSET BLOCKS FOR GUARDRAIL, TYPE B AND TYPE BD

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
**GUARDRAIL,
TYPES A, B, BD, T, TD,
MGS-8, & MGS-8D**
F.H.V.A. APPROVAL: _____ 7-26-2017 PLAN DATE: _____ R-60-J SHEET 3 OF 17



GUARDRAIL, TYPE T
(WOOD POST)



GUARDRAIL, TYPE TD
(WOOD POST)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
**GUARDRAIL,
TYPES A, B, BD, T, TD,
MGS-8, & MGS-8D**
F.H.V.A. APPROVAL: _____ 7-26-2017 PLAN DATE: _____ R-60-J SHEET 4 OF 17

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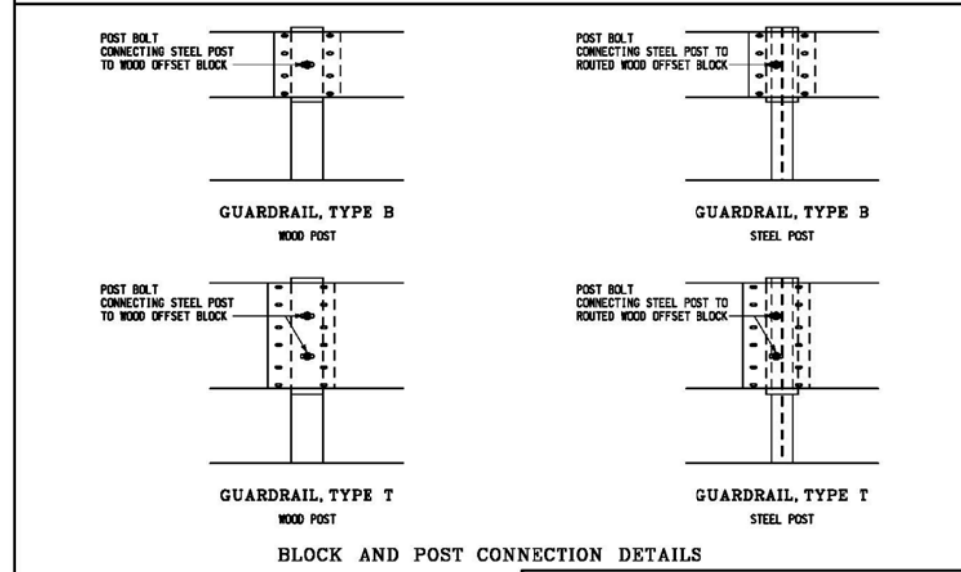
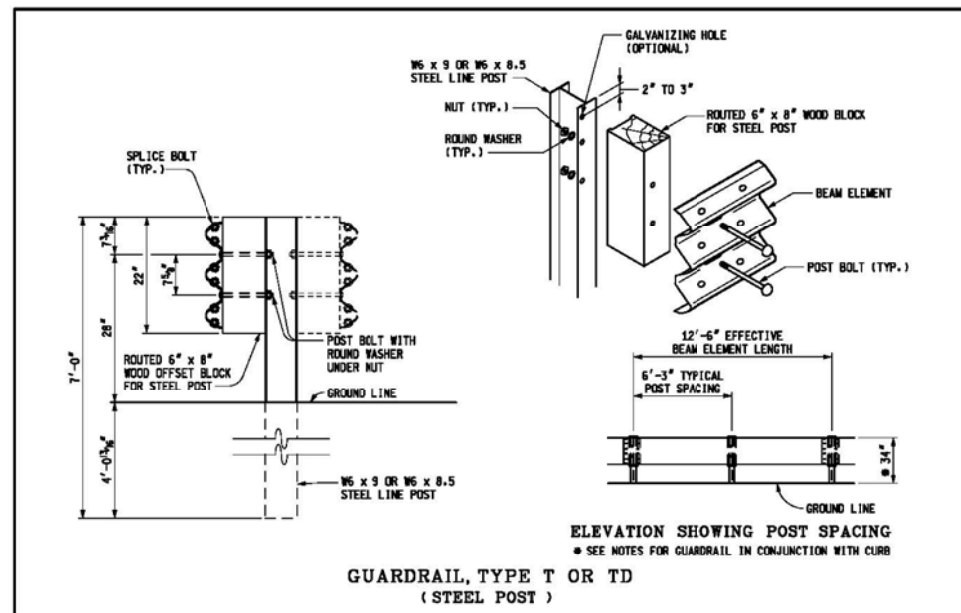
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FOR

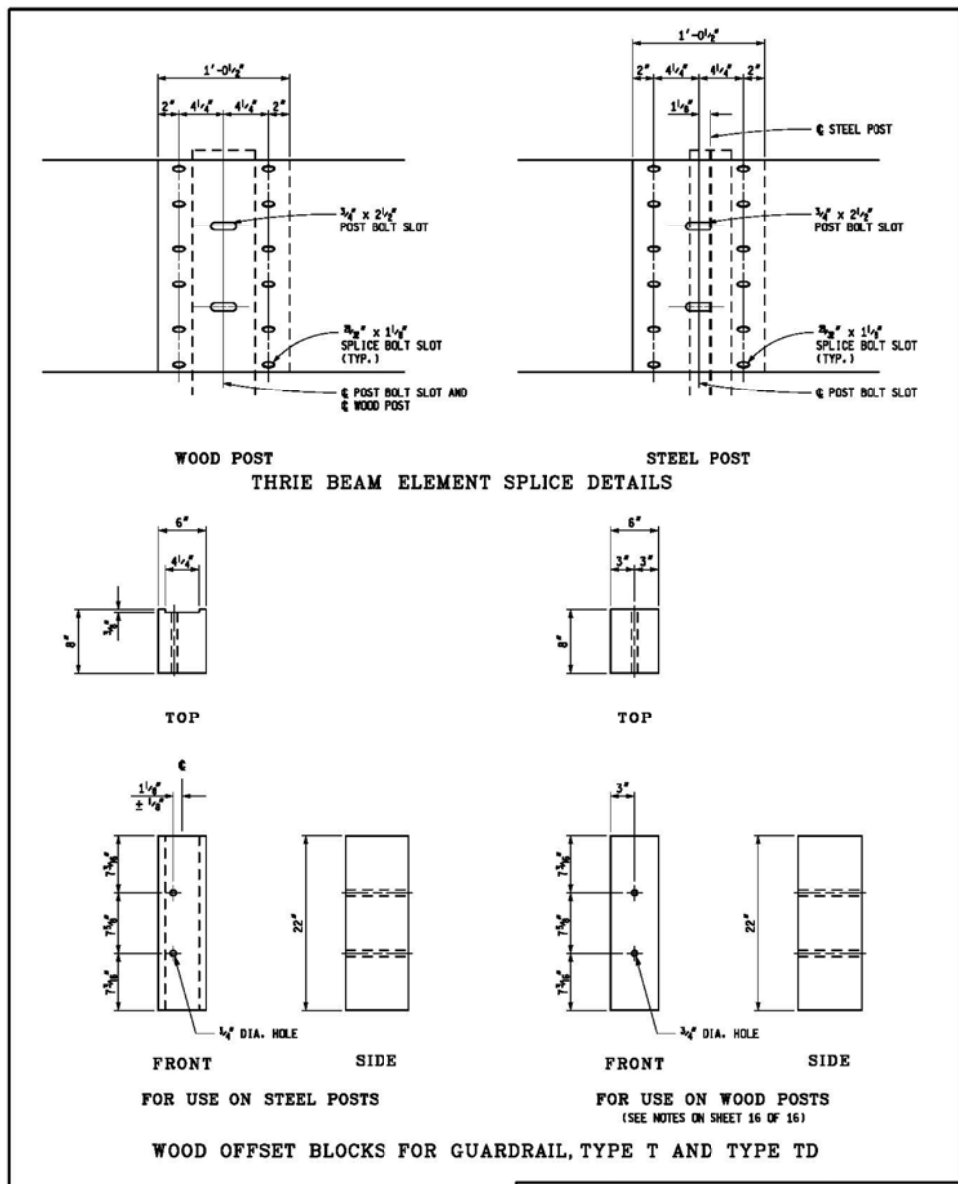
BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.
ROAD - DETAILS

SHEET 20 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE 03/23/2018



MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
GUARDRAIL,
TYPES A, B, BD, T, TD,
MGS-8, & MGS-8D

F.H.V.E. APPROVAL 7-26-2017 PLAN DATE R-60-J SHEET 5 OF 17



MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
GUARDRAIL,
TYPES A, B, BD, T, TD,
MGS-8, & MGS-8D

F.H.V.E. APPROVAL 7-26-2017 PLAN DATE R-60-J SHEET 6 OF 17

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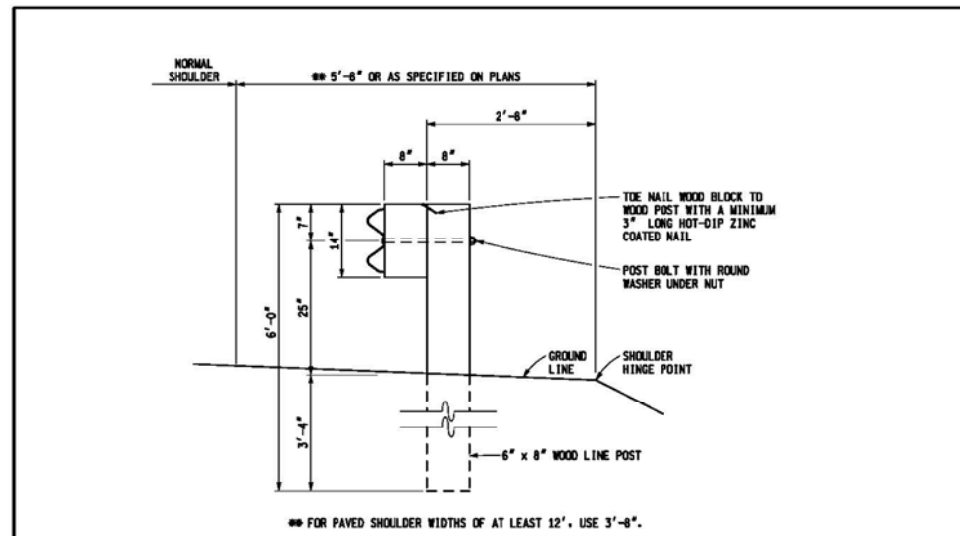
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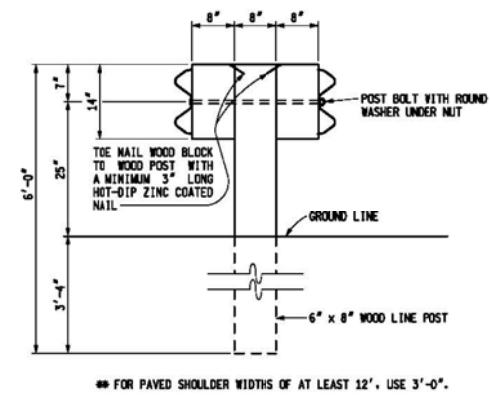
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ROAD - DETAILS

SHEET 21 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE 03/23/2018



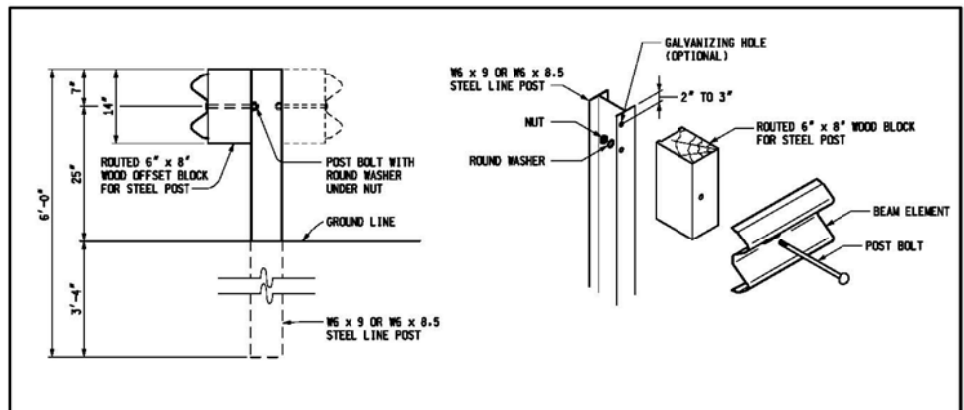
GUARDRAIL, TYPE MGS-8 (WOOD POST)



GUARDRAIL, TYPE MGS-8D (WOOD POST)

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF DEVELOPMENT STANDARD PLAN FOR
GUARDRAIL,
TYPES A, B, BD, T, TD,
MGS-8, & MGS-8D

F.H.V.A. APPROVAL	7-26-2017 PLAN DATE	R-60-J	SHEET 7 OF 17
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GUARDRAIL, TYPE MGS-8 (OR MGS-8D) (STEEL POST)

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF DEVELOPMENT STANDARD PLAN FOR
GUARDRAIL,
TYPES A, B, BD, T, TD,
MGS-8, & MGS-8D

F.H.V.A. APPROVAL	7-26-2017 PLAN DATE	R-60-J	SHEET 8 OF 17
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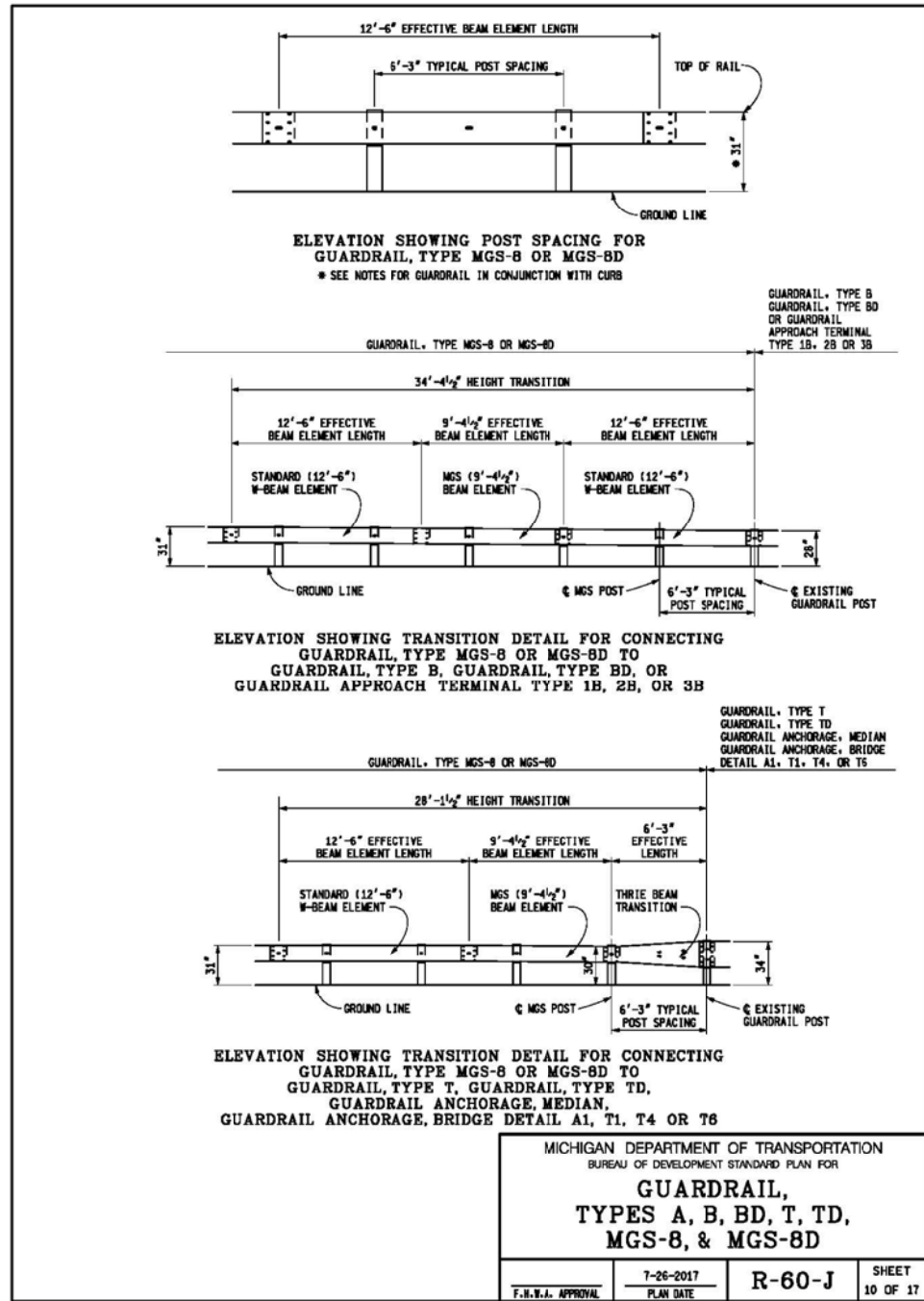
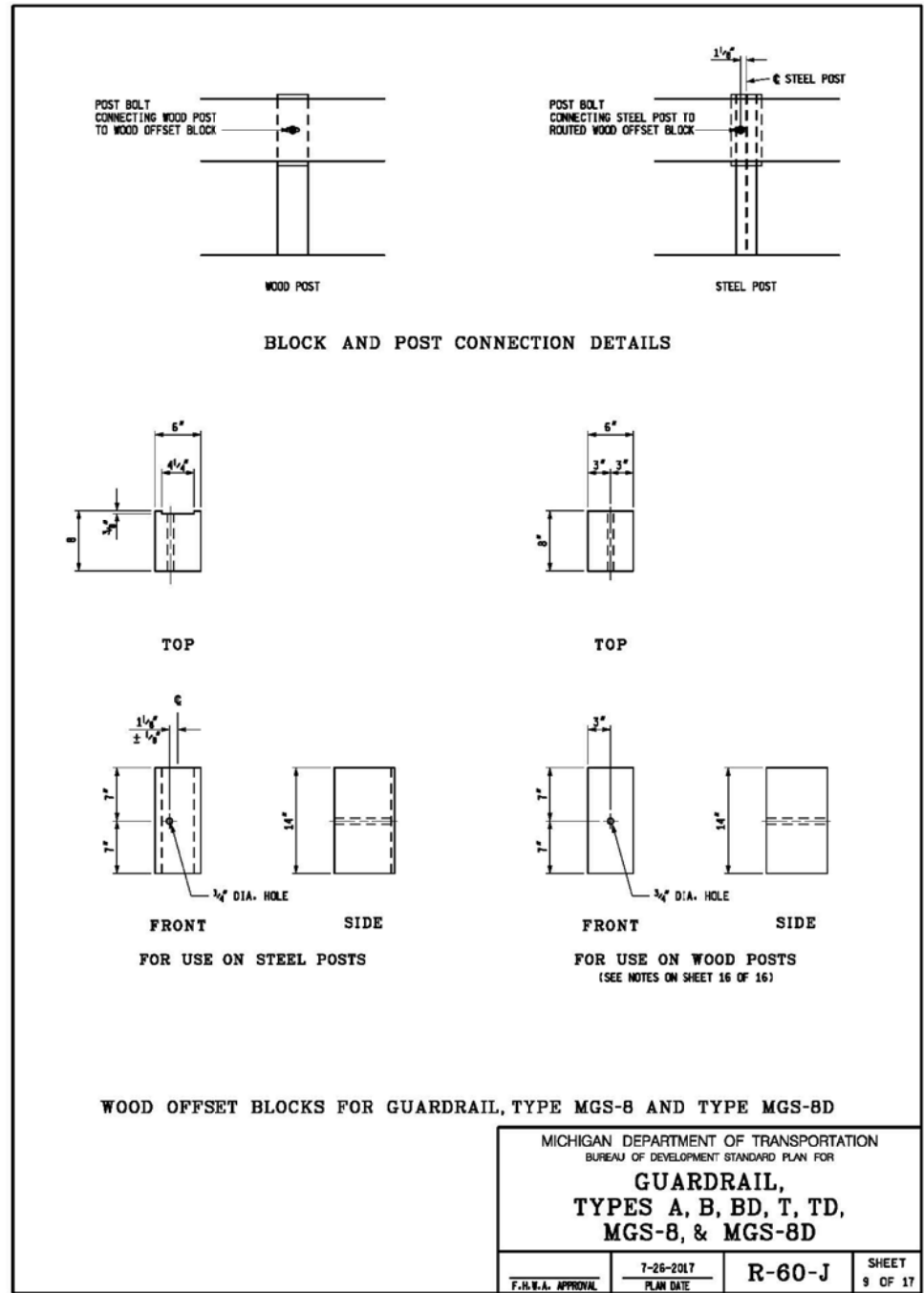
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 BUREAUS OF STREETS AND HIGHWAYS
 FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

ROAD - DETAILS

SHEET 22 OF 65 SHEETS
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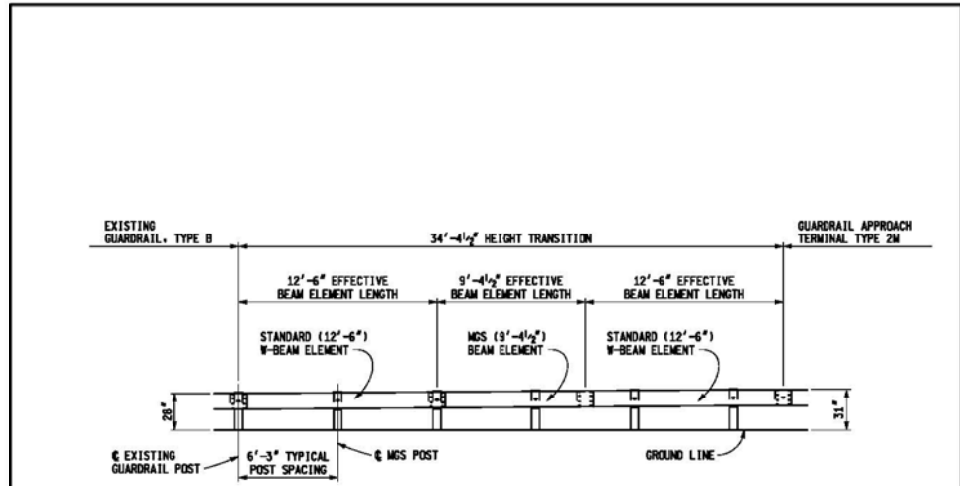
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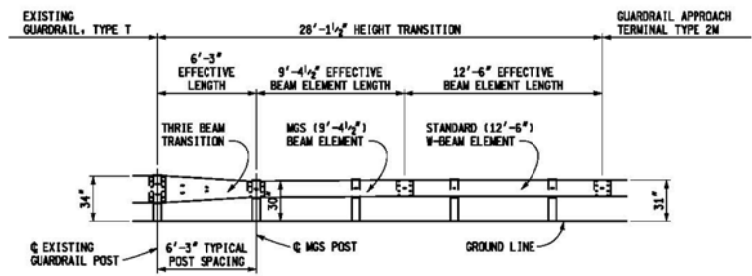
BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

ROAD - DETAILS

SHEET 23 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO. _____
DATE 03/23/2018



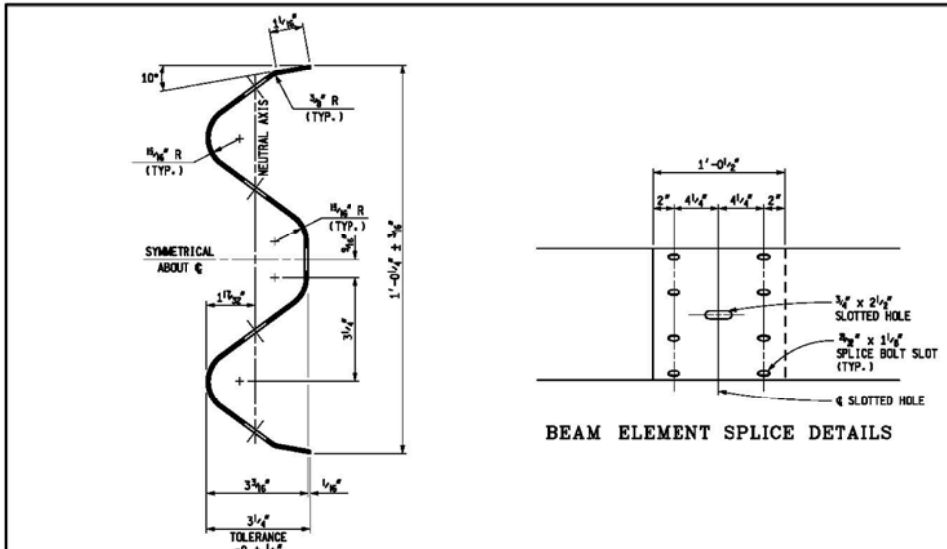
ELEVATION SHOWING TRANSITION DETAIL FOR CONNECTING GUARDRAIL, TYPE B TO GUARDRAIL APPROACH TERMINAL TYPE 2M



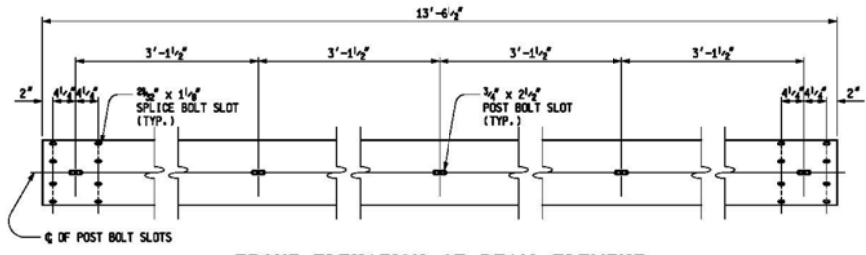
ELEVATION SHOWING TRANSITION DETAIL FOR CONNECTING GUARDRAIL, TYPE T TO GUARDRAIL APPROACH TERMINAL TYPE 2M

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
**GUARDRAIL,
TYPES A, B, BD, T, TD,
MGS-8, & MGS-8D**

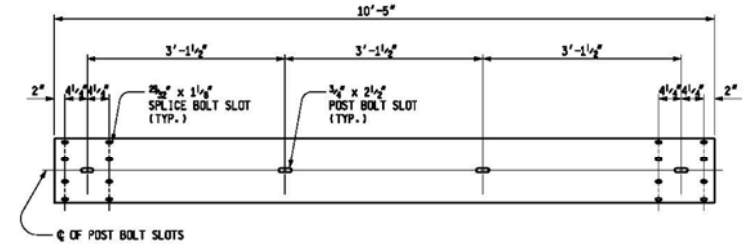
F.H.S.L. APPROVAL	7-26-2017 PLAN DATE	R-60-J	SHEET 11 OF 17
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SECTION THROUGH BEAM ELEMENT



FRONT ELEVATION OF BEAM ELEMENT



FRONT ELEVATION OF MGS (9'-4 1/2") BEAM ELEMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
**GUARDRAIL,
TYPES A, B, BD, T, TD,
MGS-8, & MGS-8D**

F.H.S.L. APPROVAL	7-26-2017 PLAN DATE	R-60-J	SHEET 12 OF 17
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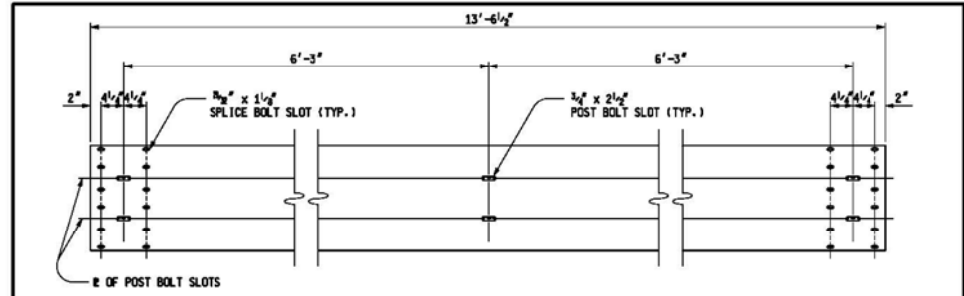
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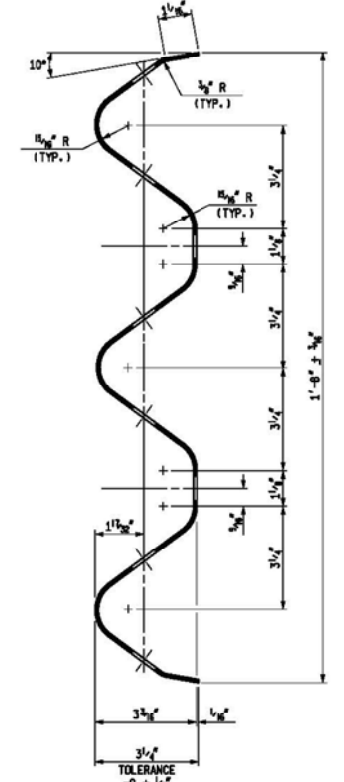
BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

ROAD - DETAILS

SHEET 24 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
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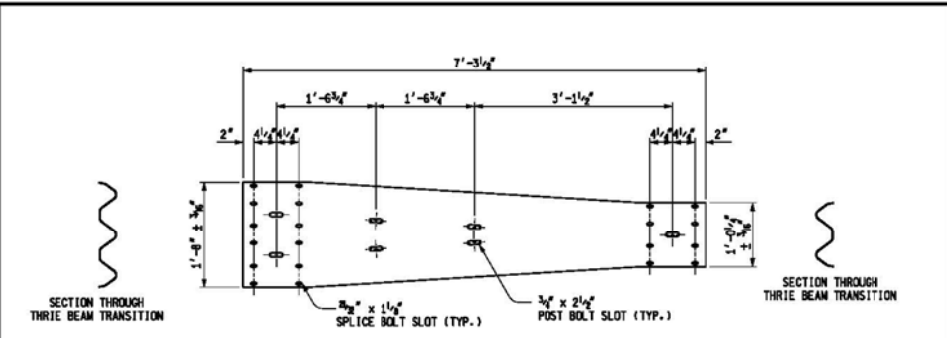
FRONT ELEVATION OF THRIE BEAM ELEMENT



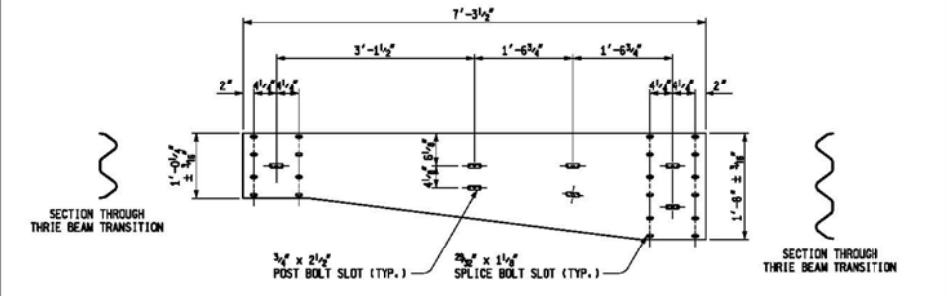
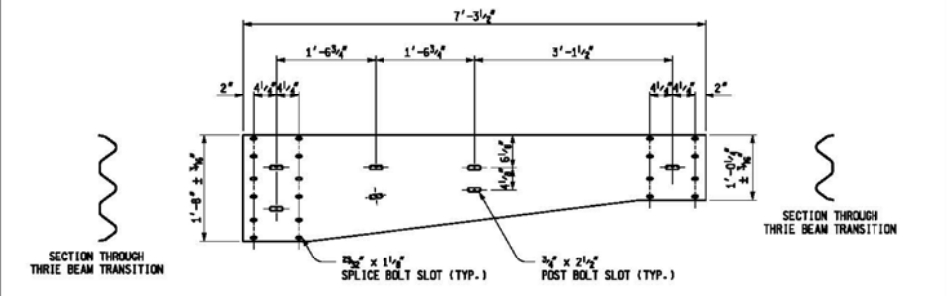
SECTION THROUGH THRIE BEAM ELEMENT
(FOR GUARDRAIL, TYPE T AND TD)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
GUARDRAIL,
TYPES A, B, BD, T, TD,
MGS-8, & MGS-8D

F.H.W.A. APPROVAL 7-26-2017 PLAN DATE R-60-J SHEET 13 OF 17



THRIE BEAM TRANSITION



AS YMMETRICAL THRIE BEAM TRANSITIONS
NOTE: AS YMMETRICAL TRANSITION TYPE WILL VARY BY LOCATION DEPENDING ON GUARDRAIL LAYOUT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
GUARDRAIL,
TYPES A, B, BD, T, TD,
MGS-8, & MGS-8D

F.H.W.A. APPROVAL 7-26-2017 PLAN DATE R-60-J SHEET 14 OF 17

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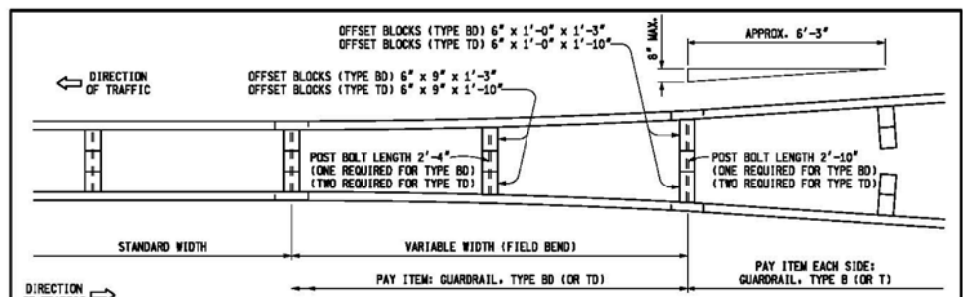
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CITY ENGINEERING DIVISION - D.P.W.
BUREAUS OF STREETS AND HIGHWAYS
FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

ROAD - DETAILS

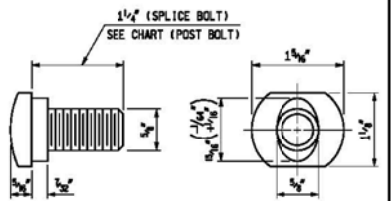
SHEET 25 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
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DETAIL SHOWING TRANSITION FROM GUARDRAIL, TYPE B (OR TYPE T) TO GUARDRAIL, TYPE BD (OR TYPE TD)

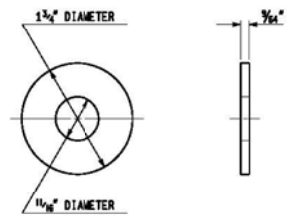
GUARDRAIL TYPE	POST	OFFSET BLOCK	POST BOLTS		SPLICE BOLTS (1/4" LONG) (NO. REQ'D)	WASHERS (ROUND) (NO. REQ'D)
			NO. REQ'D	LENGTH		
A	WOOD	N/A	1	9 1/2"	8	1
	STEEL	N/A	1	2"		
B	WOOD	WOOD	1	18"	8	1
	STEEL	WOOD	1	9 1/2"		
BD	WOOD	WOOD	1	26 1/2"	16	2
	STEEL	WOOD	2	9 1/2"		
T	WOOD	WOOD	2	18"	12	2
	STEEL	WOOD	2	9 1/2"		
TD	WOOD	WOOD	2	26 1/2"	24	4
	STEEL	WOOD	4	9 1/2"		

BOLT LENGTH	MINIMUM THREAD LENGTH
9 1/2"	1 1/4"
18"	2 1/2"
26 1/2"	3"

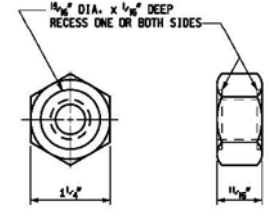


SPLICE BOLT AND POST BOLT

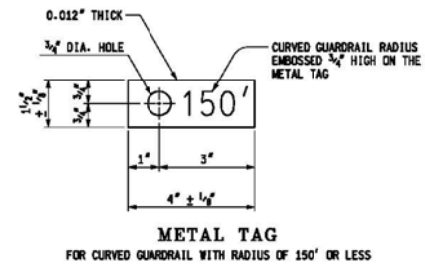
THREE BEAM TRANSITIONS REQUIRE 20 SPLICE BOLTS EACH (12 ON TYPE T END AND 8 ON TYPE B END).
 * EXCEPT AS SPECIFIED ON DETAIL SHOWING TRANSITION FROM GUARDRAIL, TYPE B (OR TYPE T) TO GUARDRAIL, TYPE BD (OR TYPE TD), POST BOLTS SHALL NOT EXTEND MORE THAN 1/2" BEYOND NUT.



ROUND WASHER



NUT

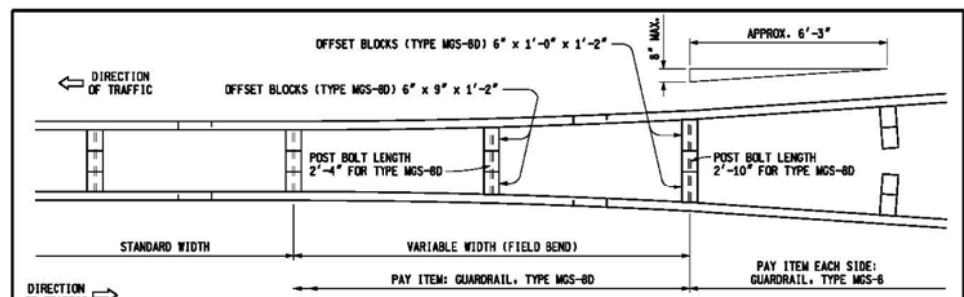


METAL TAG

FOR CURVED GUARDRAIL WITH RADIUS OF 150' OR LESS

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF DEVELOPMENT STANDARD PLAN FOR
GUARDRAIL,
 TYPES A, B, BD, T, TD,
 MGS-8, & MGS-8D

F.I.E.L. APPROVAL 7-26-2017 PLAN DATE R-60-J SHEET 15 OF 17



DETAIL SHOWING TRANSITION FROM GUARDRAIL, TYPE MGS-B TO GUARDRAIL, TYPE MGS-8D

GUARDRAIL TYPE	POST	OFFSET BLOCK	POST BOLTS		SPLICE BOLTS (1/4" LONG) (NO. REQ'D)	WASHERS (ROUND) (NO. REQ'D)
			NO. REQ'D	LENGTH		
MGS-B	WOOD	WOOD	1	18"	8	1
	STEEL	WOOD	1	9 1/2"		
MGS-8D	WOOD	WOOD	1	26 1/2"	16	2
	STEEL	WOOD	2	9 1/2"		

BOLT LENGTH	MINIMUM THREAD LENGTH
9 1/2"	1 1/4"
18"	2 1/2"
26 1/2"	3"

THREE BEAM TRANSITIONS REQUIRE 20 SPLICE BOLTS EACH (12 ON TYPE T END AND 8 ON TYPE MGS END).

* EXCEPT AS SPECIFIED ON DETAIL SHOWING TRANSITION FROM GUARDRAIL, TYPE MGS-B TO GUARDRAIL, TYPE MGS-8D POST BOLTS SHALL NOT EXTEND MORE THAN 1/2" BEYOND NUT.

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF DEVELOPMENT STANDARD PLAN FOR
GUARDRAIL,
 TYPES A, B, BD, T, TD,
 MGS-8, & MGS-8D

F.I.E.L. APPROVAL 7-26-2017 PLAN DATE R-60-J SHEET 16 OF 17

NO.	DATE	AUTH.	DESCRIPTION



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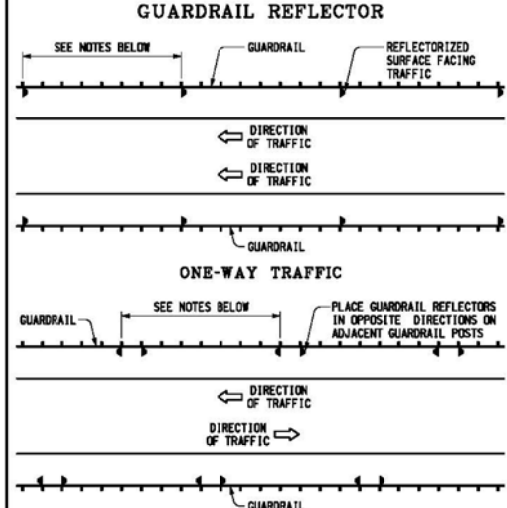
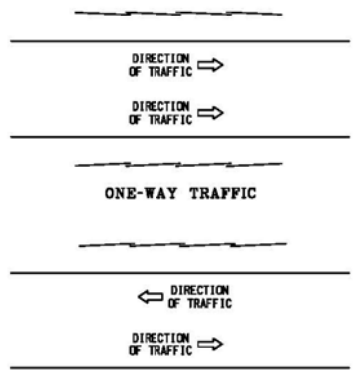
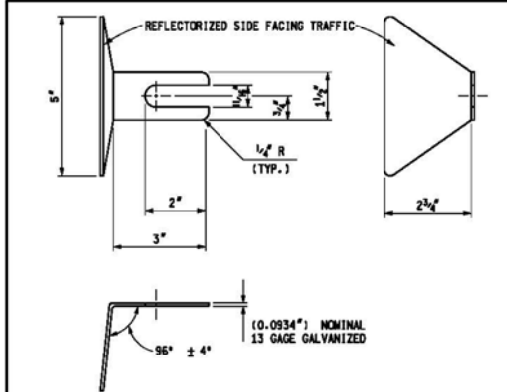
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CITY OF DETROIT
 CITY ENGINEERING DIVISION - D.P.W.
 BUREAUS OF STREETS AND HIGHWAYS
 FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.
 ROAD - DETAILS
 SHEET 26 OF 65 SHEETS
 CONTRACT NO. PW-6985
 ASSIGNMENT NO. _____
 DATE 03/23/2018

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

F.H.V.A. APPROVAL	PLAN DATE	SHEET OF
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NOTES:
DETAILS SPECIFIED ON THIS STANDARD ARE ACCORDING TO THE AASHTO-ACRTPA JOINT COMMITTEE, TASK FORCE 13 PUBLICATION TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE."

BEAM ELEMENTS SHALL BE SHOP BENT TO PLAN RADIUS FOR CURVE RADI 1150' OR LESS. A TAG IDENTIFYING THE CURVATURE OF THE SHOP BENT SECTION WILL BE REQUIRED FOR EACH CURVED ELEMENT.

SEE STANDARD PLAN R-61-SERIES, R-62-SERIES OR R-63-SERIES FOR GUARDRAIL APPROACH TERMINALS, STANDARD PLAN R-66-SERIES FOR GUARDRAIL DEPARTING TERMINALS AND STANDARD PLAN R-67-SERIES FOR GUARDRAIL ANCHORAGE, BRIDGE.

WHEN THE PLANS SPECIFY GUARDRAIL (TYPE B OR T) TO BE PLACED ON THE SHOULDER HINGE POINT, RATHER THAN AS SPECIFIED ON THIS PLAN, 8'-0" POSTS SHALL BE PROVIDED, WITH THE ADDITIONAL LENGTH EMBEDDED FOR ADDED STABILITY. (NOT NECESSARY WHEN THE SLOPE IS REASONABLY LEVEL BEYOND THE SHOULDER HINGE POINT, AS DETERMINED BY THE ENGINEER.)

WHEN THE PLANS SPECIFY GUARDRAIL TYPE MGS-8 TO BE PLACED ON THE SHOULDER HINGE POINT, RATHER THAN AS SPECIFIED ON THIS PLAN, 9'-0" POSTS SHALL BE PROVIDED, WITH THE ADDITIONAL LENGTH EMBEDDED FOR ADDED STABILITY. (NOT NECESSARY WHEN THE SLOPE IS REASONABLY LEVEL BEYOND THE SHOULDER HINGE POINT, AS DETERMINED BY THE ENGINEER.)

WOOD POSTS WITH 1/4" BEVELS AT THE TOP MAY BE USED IN LIEU OF WOOD POSTS WITHOUT BEVELS SPECIFIED. THE LENGTH, WIDTH AND DEPTH OF THE POST SHALL BE AS SPECIFIED ON THIS STANDARD AND THE POST BOLT HOLES SHALL BE LOCATED TO ENSURE PROPER RAIL HEIGHT.

WOOD OFFSET BLOCKS WITH 1/4" BEVELS AT THE TOP AND BOTTOM OR A 1" BEVELLED TOP MAY BE USED IN LIEU OF WOOD BLOCKS WITHOUT BEVELS SPECIFIED. THE LENGTH (FRONT AND BACK FACE), WIDTH AND DEPTH OF THE BLOCK SHALL BE AS SPECIFIED ON THIS STANDARD AND THE POST BOLT HOLES SHALL BE LOCATED TO ENSURE PROPER RAIL HEIGHT AND COMPATIBILITY WITH POST HOLES.

WHEN THE FACE OF GUARDRAIL IS PLACED FLUSH WITH FACE OF CURB, THE RAIL HEIGHT SHOULD BE MEASURED FROM THE FRONT EDGE OF THE GUTTER PAN, WHICH IS THE POINT ON THE GUTTER PAN THAT IS CLOSEST TO THE EDGE OF THE TRAVELED LANE. WHEN THE FACE OF THE GUARDRAIL PANEL IS LOCATED BEHIND THE CURB THE RAIL HEIGHT SHOULD BE MEASURED FROM THE GROUND JUST IN FRONT OF THE GUARDRAIL.

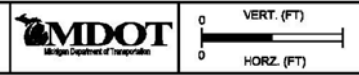
- NOTES GOVERNING THE USE OF GUARDRAIL REFLECTORS**
- GUARDRAIL REFLECTORS SHALL BE USED ON ALL STANDARD GUARDRAIL RUNS, REGARDLESS OF ROADWAY LIGHTING.
 - GUARDRAIL REFLECTORS ARE TO BE SPACED AT THE FOLLOWING INTERVALS:
 - a) 50'-0" ON TANGENT SECTIONS AND CURVES WITH A RADIUS OF 1150' OR MORE.
 - b) 25'-0" ON CURVES WITH A RADIUS LESS THAN 1150'.
 - FOR GUARDRAIL REFLECTOR PLACEMENT ON APPROACH TERMINALS, SEE THE APPROPRIATE GUARDRAIL APPROACH TERMINAL STANDARD PLAN.
 - A GUARDRAIL REFLECTOR IS TO BE PLACED ON THE SECOND POST FROM THE GUARDRAIL DEPARTING TERMINAL.
 - ON GUARDRAIL, TYPE T AND TYPE TD GUARDRAIL REFLECTORS ARE TO BE PLACED ON THE UPPER POST BOLT.
 - GUARDRAIL REFLECTORS SHALL MATCH COLOR OF EDGE LINE.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

**GUARDRAIL,
TYPES A, B, BD, T, TD,
MGS-8, & MGS-8D**

F.H.V.A. APPROVAL	7-26-2017 PLAN DATE	R-60-J SHEET 17 OF 17
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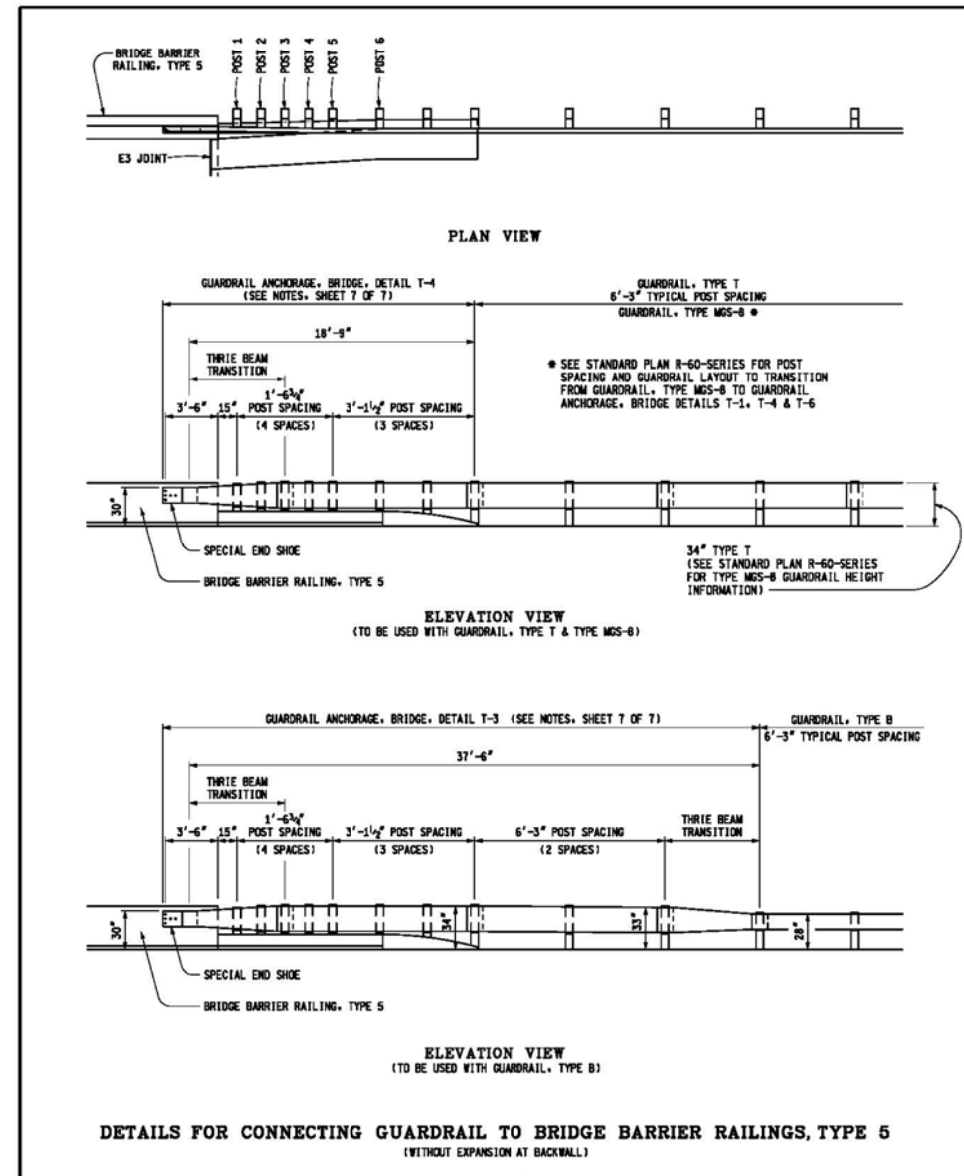
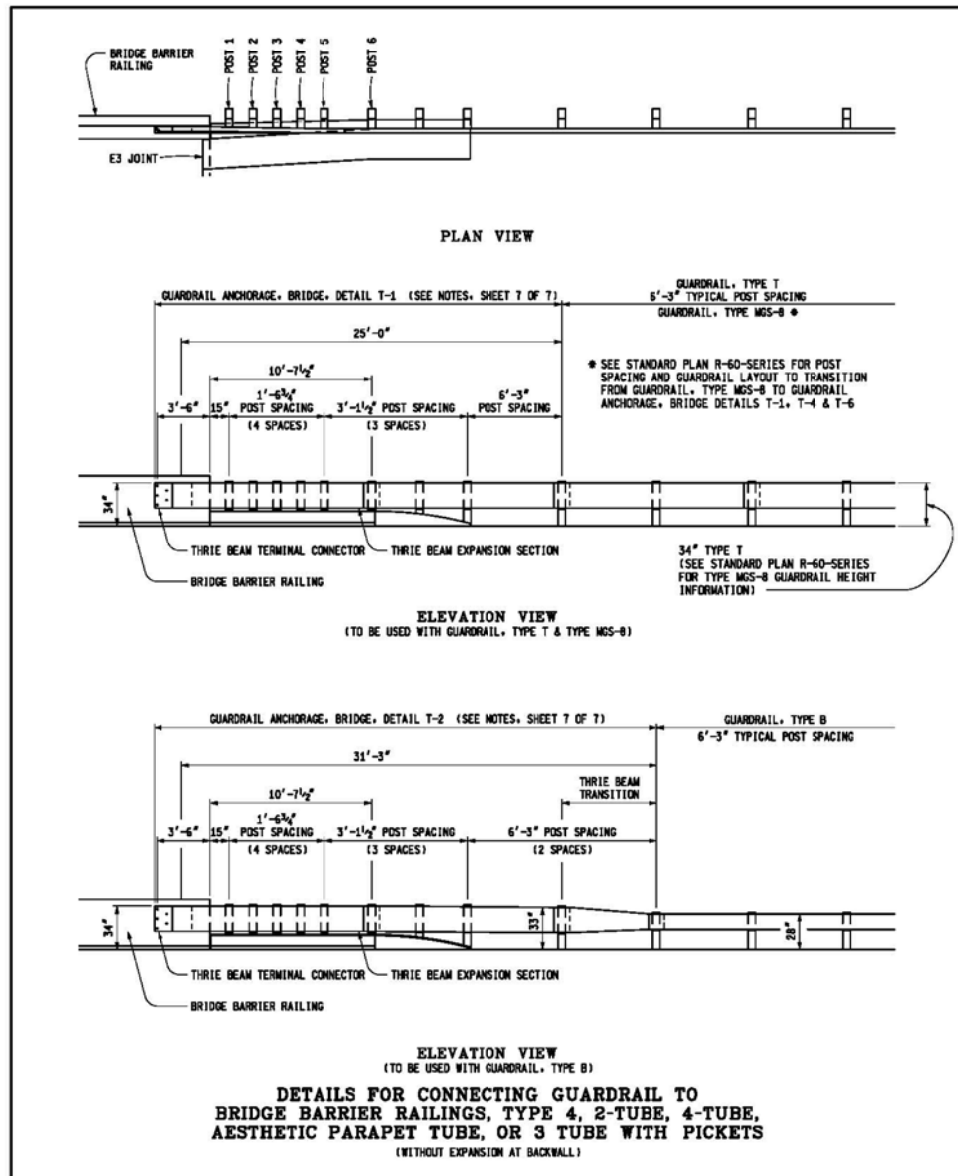
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BUREAUS OF STREETS AND HIGHWAYS
FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

ROAD - DETAILS

SHEET 27 OF 65 SHEETS	CONTRACT NO. PW-6985
ASSIGNMENT NO.	DATE 03/23/2018



MDOT Michigan Department of Transportation	DEPARTMENT DIRECTOR Kirk T. Steudle	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR
	APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES	GUARDRAIL ANCHORAGE, BRIDGE, DETAILS
PREPARED BY DESIGN DIVISION	APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT	F.I.R.E.A. APPROVAL
DRAWN BY: _____	8-9-2017 PLAN DATE	R-67-G
CHECKED BY: _____		SHEET 1 OF 7

MDOT Michigan Department of Transportation	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR
	GUARDRAIL ANCHORAGE, BRIDGE, DETAILS
APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT	F.I.R.E.A. APPROVAL
8-9-2017 PLAN DATE	R-67-G
	SHEET 2 OF 7

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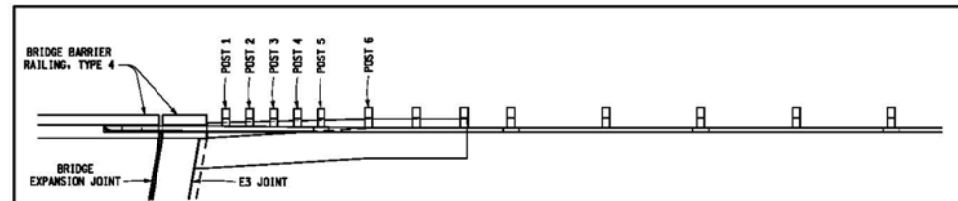
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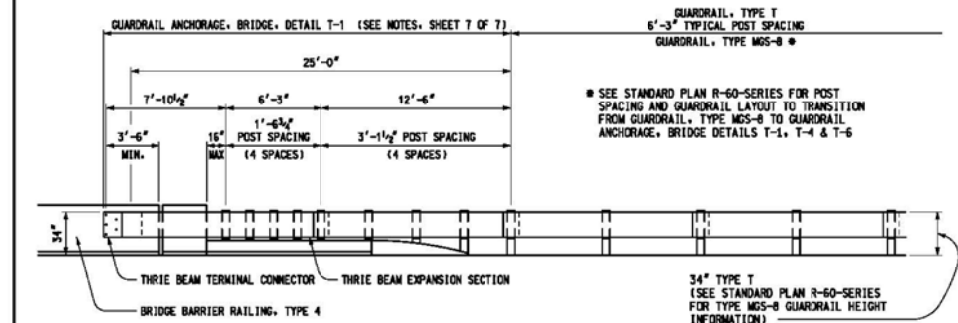
BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

ROAD - DETAILS

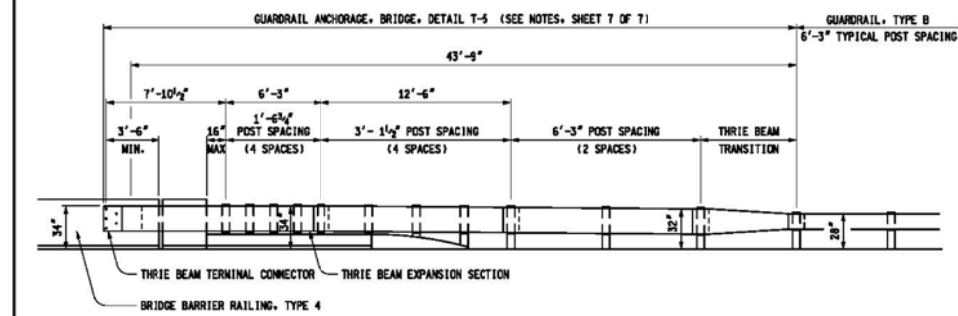
SHEET 28 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE 03/23/2018



PLAN VIEW



ELEVATION VIEW
(TO BE USED WITH GUARDRAIL, TYPE T & TYPE MGS-8)

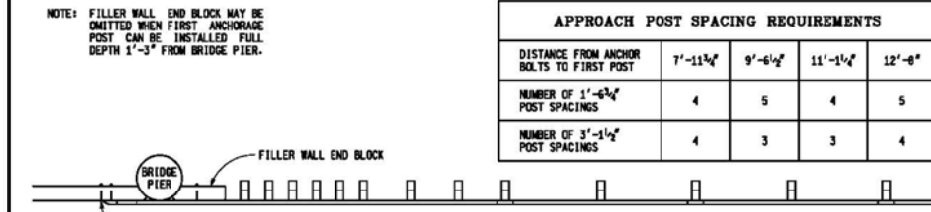


ELEVATION VIEW
(TO BE USED WITH GUARDRAIL, TYPE B)

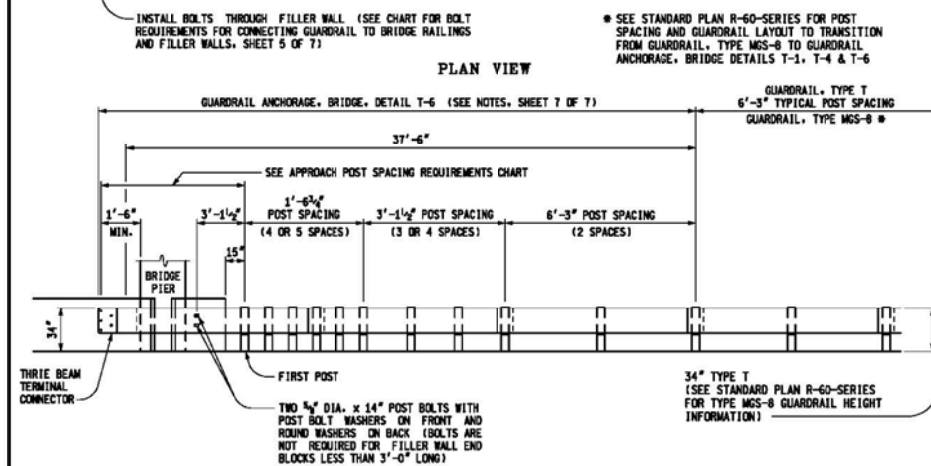
DETAILS FOR CONNECTING GUARDRAIL TO BRIDGE BARRIER RAILINGS, TYPE 4, 2-TUBE, 4-TUBE, AESTHETIC PARAPET TUBE, OR 3 TUBE WITH PICKETS (WITH EXPANSION AT BACKWALL)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

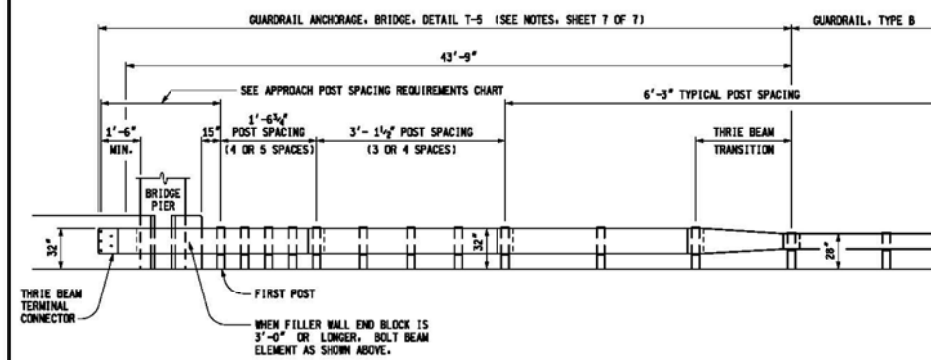
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APPROACH POST SPACING REQUIREMENTS				
DISTANCE FROM ANCHOR BOLTS TO FIRST POST	7'-11 1/2"	9'-6 1/2"	11'-1 1/2"	12'-8"
NUMBER OF 1'-6 3/4" POST SPACINGS	4	5	4	5
NUMBER OF 3'-1 1/2" POST SPACINGS	4	3	3	4



ELEVATION VIEW
(TO BE USED WITH GUARDRAIL, TYPE T & TYPE MGS-8)



ELEVATION VIEW
(TO BE USED WITH GUARDRAIL, TYPE B)

DETAILS FOR CONNECTING GUARDRAIL TO FILLER WALLS

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

F.I.E.A. APPROVAL: _____ PLAN DATE: 8-9-2017 R-67-G SHEET 4 OF 7

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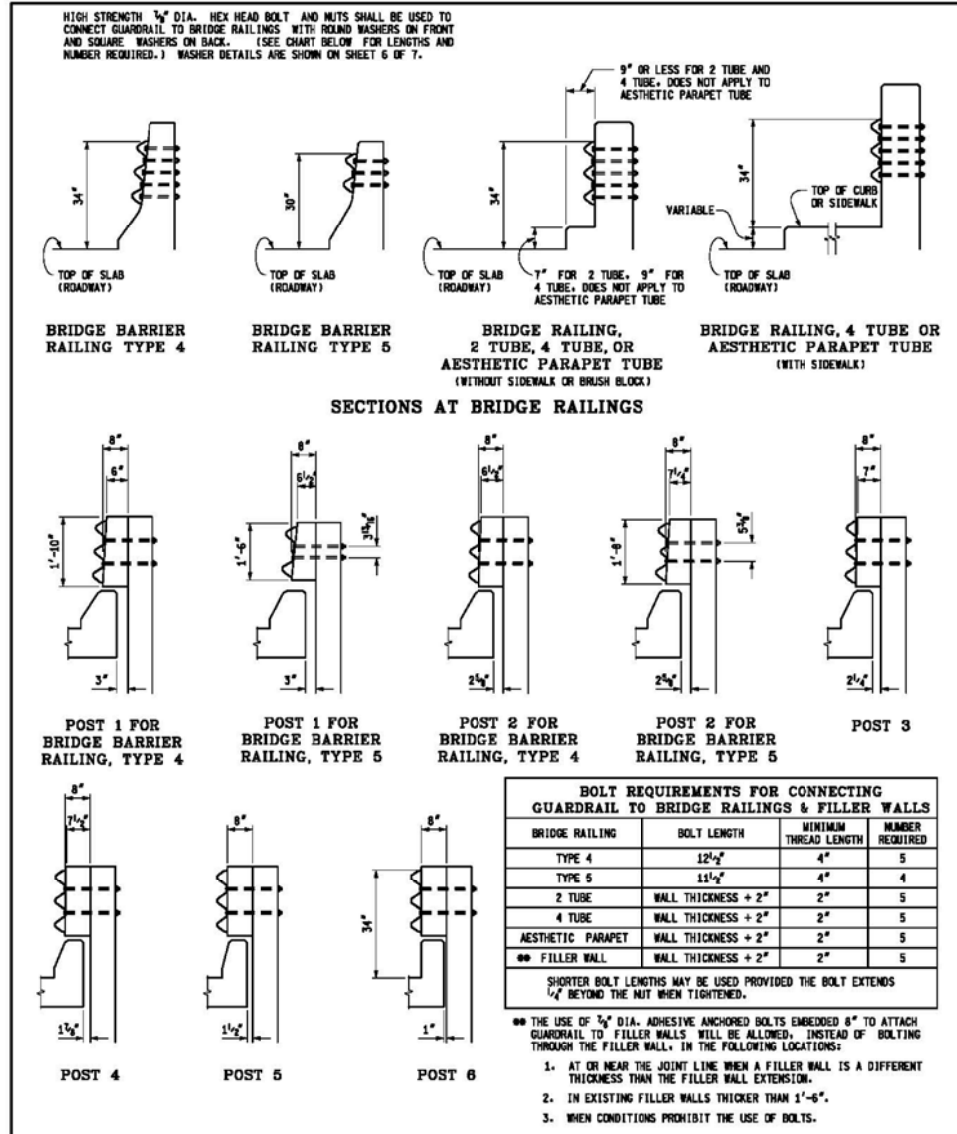
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CITY OF DETROIT
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BUREAUS OF STREETS AND HIGHWAYS
FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.
ROAD - DETAILS

SHEET 29 OF 65 SHEETS
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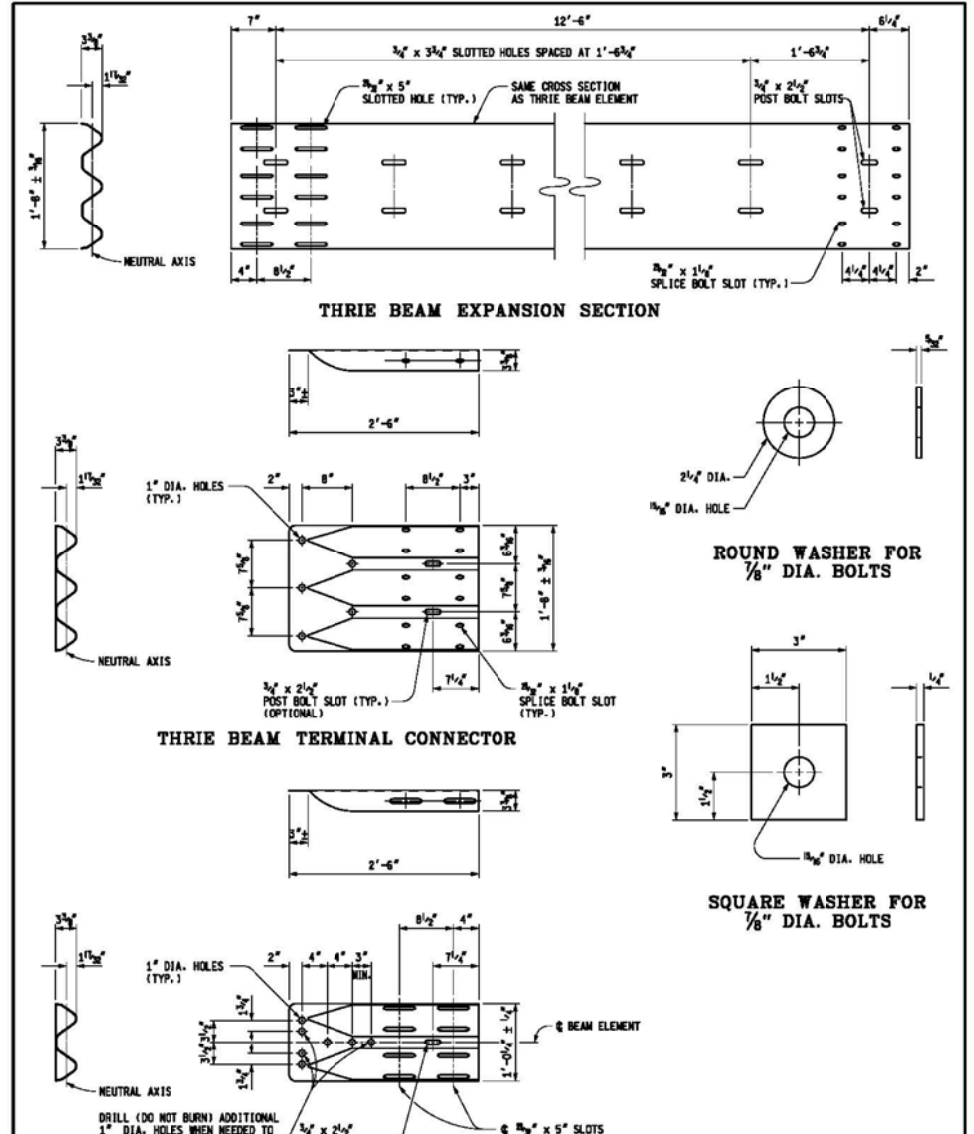


GUARDRAIL POST SECTIONS FOR GUARDRAIL ANCHORAGE, BRIDGE

NOTE: ADHESIVE ANCHORS SHALL BE SELECTED FROM THE QUALIFIED PRODUCTS LIST OF THE MATERIALS SAMPLING GUIDE.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

8-9-2017 PLAN DATE R-67-G SHEET 5 OF 7



MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

8-9-2017 PLAN DATE R-67-G SHEET 6 OF 7

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CITY OF DETROIT
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BUREAUS OF STREETS AND HIGHWAYS
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BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

ROAD - DETAILS

SHEET 30 OF 65 SHEETS
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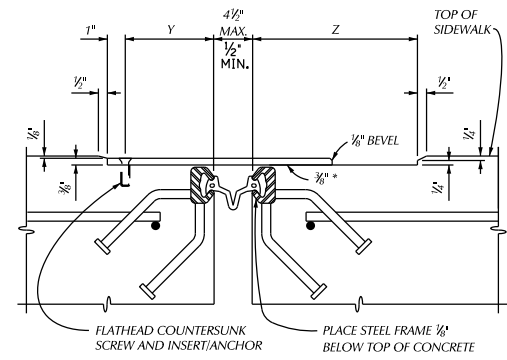
<p style="text-align: center;">MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">F.H.S.A. APPROVAL</td> <td style="width: 30%;">PLAN DATE</td> <td style="width: 20%;">SHEET OF</td> </tr> </table>	F.H.S.A. APPROVAL	PLAN DATE	SHEET OF	<p>NOTES:</p> <p>ALL POSTS, OFFSET BLOCKS, BEAM ELEMENTS, REFLECTORS, AND HARDWARE, (INCLUDING BOLTS, NUTS, AND WASHERS) SHALL CONFORM TO THE CURRENT STANDARD SPECIFICATIONS AND TO THE CURRENT STANDARD PLAN R-60-SERIES, WHERE APPLICABLE, EXCEPT AS SPECIFIED ON THIS STANDARD.</p> <p>ALL POSTS USED TO CONSTRUCT GUARDRAIL ANCHORAGE, BRIDGE SHALL BE 7'-0" LONG.</p> <p>THE THRIE BEAM TERMINAL CONNECTOR AND SPECIAL END SHOE SHALL BE THE SAME MATERIAL AS ADJACENT RUN OF GUARDRAIL, EXCEPT THAT THEY SHALL NOT BE LIGHTER THAN 10 GAGE (0.138").</p> <p>SECTIONS OF THE THRIE BEAM ELEMENT REQUIRED TO BE TWISTED FOR USE IN ANCHORAGE SHALL BE FIELD BENT.</p> <p>GUARDRAIL BEAM ELEMENTS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC, EXCEPT FOR THE THRIE BEAM TERMINAL CONNECTOR WHICH MAY BE LAPPED IN EITHER DIRECTION.</p> <p>STANDARD SPLICE BOLTS SHALL BE USED WHEN SPLICING THE THRIE BEAM TERMINAL CONNECTOR TO THE THRIE BEAM EXPANSION SECTION AND WHEN SPLICING THE SPECIAL END SHOE TO THE TRANSITION SECTION. THE SPLICE BOLT NUT SHALL BE INSTALLED FINGER-TIGHT AND SHALL FULLY ENGAGE THE SPLICE BOLT WITH A MINIMUM OF ONE THREAD EXTENDING BEYOND THE NUT. THIS SHALL BE FOLLOWED UP BY UPSETTING THE FIRST THREAD ON THE OUTSIDE OF THE NUT WITH A CENTER PUNCH OR COLD CHISEL, SO THAT IT WILL NOT LOOSEN.</p> <p>SEE THE CURRENT STANDARD PLAN R-32-SERIES FOR APPROACH CURB AND GUTTER AND DOWNSPOUT HEADS.</p> <p>GUARDRAIL ANCHORAGE, BRIDGE, DETAILS T-1, T-2, T-5, AND T-6 REQUIRE THAT THE THRIE BEAM TERMINAL CONNECTOR BE ATTACHED TO THE 3/4" x 5" LONG SLOTTED HOLES IN THE THRIE BEAM EXPANSION SECTION.</p> <p>SEE APPROPRIATE PLANS TO DETERMINE WHETHER GUARDRAIL ANCHORAGE, BRIDGE SPANS A BRIDGE EXPANSION JOINT.</p> <p>SEE THE CURRENT STANDARD PLAN R-55-SERIES FOR FILLER WALLS AND FILLER WALL END BLOCK.</p> <p style="text-align: center;">MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR</p> <p style="text-align: center;">GUARDRAIL ANCHORAGE, BRIDGE, DETAILS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">F.H.S.A. APPROVAL</td> <td style="width: 30%;">8-9-2017 PLAN DATE</td> <td style="width: 20%;">R-67-G</td> <td style="width: 20%;">SHEET 7 OF 7</td> </tr> </table>	F.H.S.A. APPROVAL	8-9-2017 PLAN DATE	R-67-G	SHEET 7 OF 7
F.H.S.A. APPROVAL	PLAN DATE	SHEET OF						
F.H.S.A. APPROVAL	8-9-2017 PLAN DATE	R-67-G	SHEET 7 OF 7					

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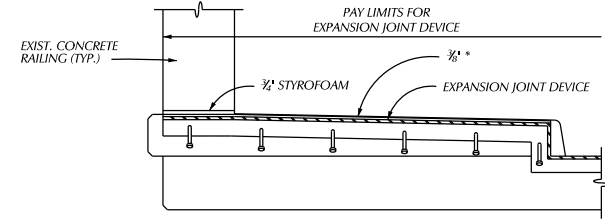
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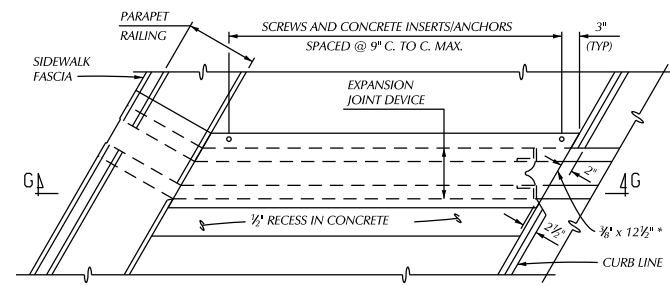
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SECTION THROUGH EXPANSION JOINT AND COVER PLATE



SECTION G - G



PLAN AT PARAPET RAILING WITH SIDEWALK

WABO STRIP SEAL TYPE M			
TOTAL TRAVEL *	PLATE WIDTH	Y	Z
2' - 3'	12"	3 1/2"	7 1/2"

ALL OTHER DEVICES			
TOTAL TRAVEL *	PLATE WIDTH	Y	Z
1 1/2' - 3 1/2'	10"	2 1/2"	7"

* SEE TABLE FOR MINIMUM TOTAL TRAVEL ALONG CENTERLINE OF BRIDGE

STRUCTURE NUMBER	ANGLE OF CROSSING TO NEAREST 10'	LOCATION OF JOINT	MIN. TOT. TRAVEL ALONG CENTERLINE OF BRIDGE	REQUIRED LENGTH OF EXPANSION JOINT DEVICE
R01	49°	PIER 1		103'-5"
R01	49°	PIER 3		103'-5"

QUANTITY		
ITEM	UNIT	AMOUNT
EXPANSION JOINT DEVICE	FT	207'-0"
EXPANSION JOINT		
DEVICE COVER PLATE		
	FT	86'-0"

SIDEWALK SECTIONS

ALL STEEL FOR COVER PLATE SHALL BE AASHTO M270, GRADE 36, MEET THE REQUIREMENTS OF ASTM A786 AND GALVANIZED (ASTM A123).

USE ASTM F 593 (TYPE 304) STAINLESS STEEL 1/4" OR 1/2" DIAMETER FLATHEAD COUNTERSUNK SCREWS WITH 3/8" OR 1/2" DIAMETER INSERTS OR FLUSH TYPE EXPANSION ANCHORS WITH A MINIMUM ALLOWABLE OR SAFE WORKING TENSION LOAD CAPACITY OF 1200 POUNDS.

CAST CURBS AND SIDEWALKS WITH 3/8" SLIDING PLATES IN PLACE TO INSURE THAT INSERTS AND SCREWS ARE ALIGNED PROPERLY. APPLY BOND BREAKER TO SLIDING PLATES PRIOR TO INSTALLATION.

FORM CONCRETE RECESS AREA IN SIDEWALK AND GRIND TO PROVIDE SMOOTH SURFACE. TOOL OR GRIND CONCRETE EDGES TO 1/4" RADIUS. APPLY ONE COAT OF EPOXY RESIN ADHESIVE TO ALLOW BENT SLIDING PLATE TO MOVE FREELY WITHOUT FRICTION. CARE SHALL BE TAKEN SO THAT NO ADHESIVE COMES IN CONTACT WITH ANY PART OF THE EXPANSION JOINT DEVICE OR GLAND. REMOVE ANY FOREIGN PARTICLES FROM THE SURFACE PRIOR TO INSTALLING PLATES.

INSTALL PLATES SO THAT THE SCREWS AND INSERTS ARE SET ON THE HIGH SIDE OF LONGITUDINAL SIDEWALK GRADE.

THE COST OF ALL MATERIALS AND LABOR REQUIRED FOR PROPER INSTALLATION OF THE COVER PLATE IS INCLUDED IN THE PAYMENT FOR THE EXPANSION JOINT DEVICE COVER PLATE.

NOTES:

JOINT TYPES

THE EXPANSION JOINT DEVICE SHALL BE OF A TYPE THAT INCLUDES A CONTINUOUS NEOPRENE (OR EQUIVALENT) SEAL ACROSS THE DECK. UNLESS OTHERWISE NOTED ON THE PLANS, THE CONTRACTOR HAS THE OPTION OF USING ANY OF THE DEVICES LISTED BELOW:

DEVICE	MANUFACTURER
WABO STRIP SEAL - TYPE M	WATSON-BOWMAN & ACME, INC.
WABO STRIP SEAL - TYPE A	WATSON-BOWMAN & ACME, INC.
STEEFLEX-SSA2	D.S. BROWN
STEEFLEX-SSCM	D.S. BROWN
ONFLEX-40 SS	STRUCTURAL RUBBER PRODUCTS CO.
ONFLEX-40 SSA	STRUCTURAL RUBBER PRODUCTS CO.

THE MODEL OF THE JOINT TYPE SELECTED SHALL BE SUITABLE TO ACCOMMODATE THE TOTAL MOVEMENT NOTED ON THE PLANS.

COMPLETE WORKING DRAWINGS OF ALL DETAILS OF FABRICATION OF THE EXPANSION JOINT DEVICE SHALL BE SUBMITTED FOR REVIEW IN ACCORDANCE WITH STANDARD SPECIFICATION 104.02. THIS REQUIREMENT IS WAIVED FOR EXPANSION JOINT DEVICES FOR WHICH A SET OF STANDARD INSTALLATION DETAILS HAS BEEN APPROVED. STANDARD INSTALLATION DETAILS CAN BE OBTAINED FROM THE DESIGN DIVISION.

FABRICATION AND INSTALLATION

REMOVE SHIPPING BOLTS PRIOR TO PLACEMENT OF CONCRETE.

THE EXPANSION JOINT SHALL BE SHOP FABRICATED TO CONFORM TO THE CONTOUR OF THE BRIDGE DECK, BARRIERS, ETC. IT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS SUBJECT TO NOTES HEREIN AND THE APPROVAL OF THE ENGINEER.

THE DECK REINFORCING STEEL TO STEEL FRAME ANCHORS TO MAXIMUM EXTENT PRACTICABLE WITHOUT DAMAGING GALVANIZED OR EPOXY COATINGS.

THE TOP OF THE EXPANSION JOINT DEVICE SHALL BE SET 1/2" - 3/8" BELOW THE CONCRETE SLAB (PAVEMENT).

THE STEEL ANCHORAGE FOR STRIP SEAL GLANDS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SUBSECTION 707.03C.17 OF THE STANDARD SPECIFICATIONS.

THE AREA OF THE STEEL ANCHORAGE AND SEALING GLAND WHICH WILL BE IN CONTACT WITH A SEALANT, OR LUBRICANT-ADHESIVE SHALL BE CLEANED WITH TOLUENE OR OTHER APPROVED SOLVENT.

IN THE EVENT THAT SPlicing IS REQUIRED OF THE SEALING GLAND, IT SHALL BE SPliced BY AN APPROVED METHOD (SUCH AS COLD VULCANIZATION) BY A TRAINED REPRESENTATIVE OF THE MANUFACTURER.

DETAILS AT CURBS OR BARRIERS

THE DETAILS ON THIS SHEET SHOW AN APPROVED MEANS OF TERMINATING THE EXPANSION JOINT DEVICE AT CURBS OR BARRIERS. VARIATIONS OR ALTERNATIVE SCHEMES WILL BE CONSIDERED AND MAY BE USED IF APPROVED BY THE ENGINEER.

MATERIALS

THE COST OF ALL MATERIALS AND LABOR REQUIRED FOR PROPER INSTALLATION OF THE EXPANSION JOINT AND THE TERMINAL ASSEMBLIES AT THE CURBS, SIDEWALKS, OR BARRIERS IS INCLUDED IN THE PAYMENT FOR THE EXPANSION JOINT DEVICE.

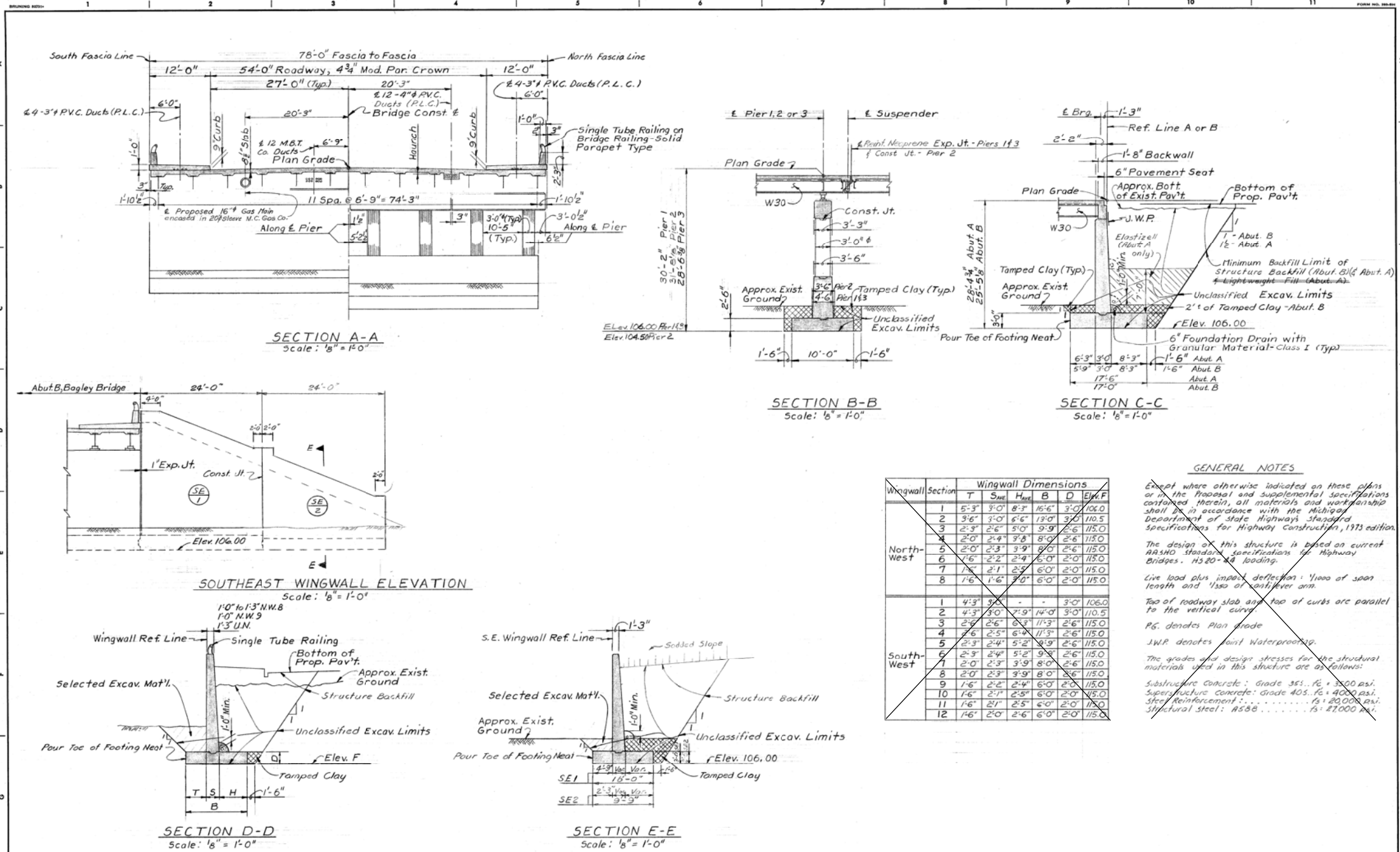
DESCRIPTION	DATE	BY	CHECKED BY	APPROVED
PLAN				
GRADE				
ESTIMATE				
FINAL	****	****		

CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAUS OF STREETS AND HIGHWAYS
FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

EXPANSION JOINT DETAILS

SHEET 32 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE 03/23/2018



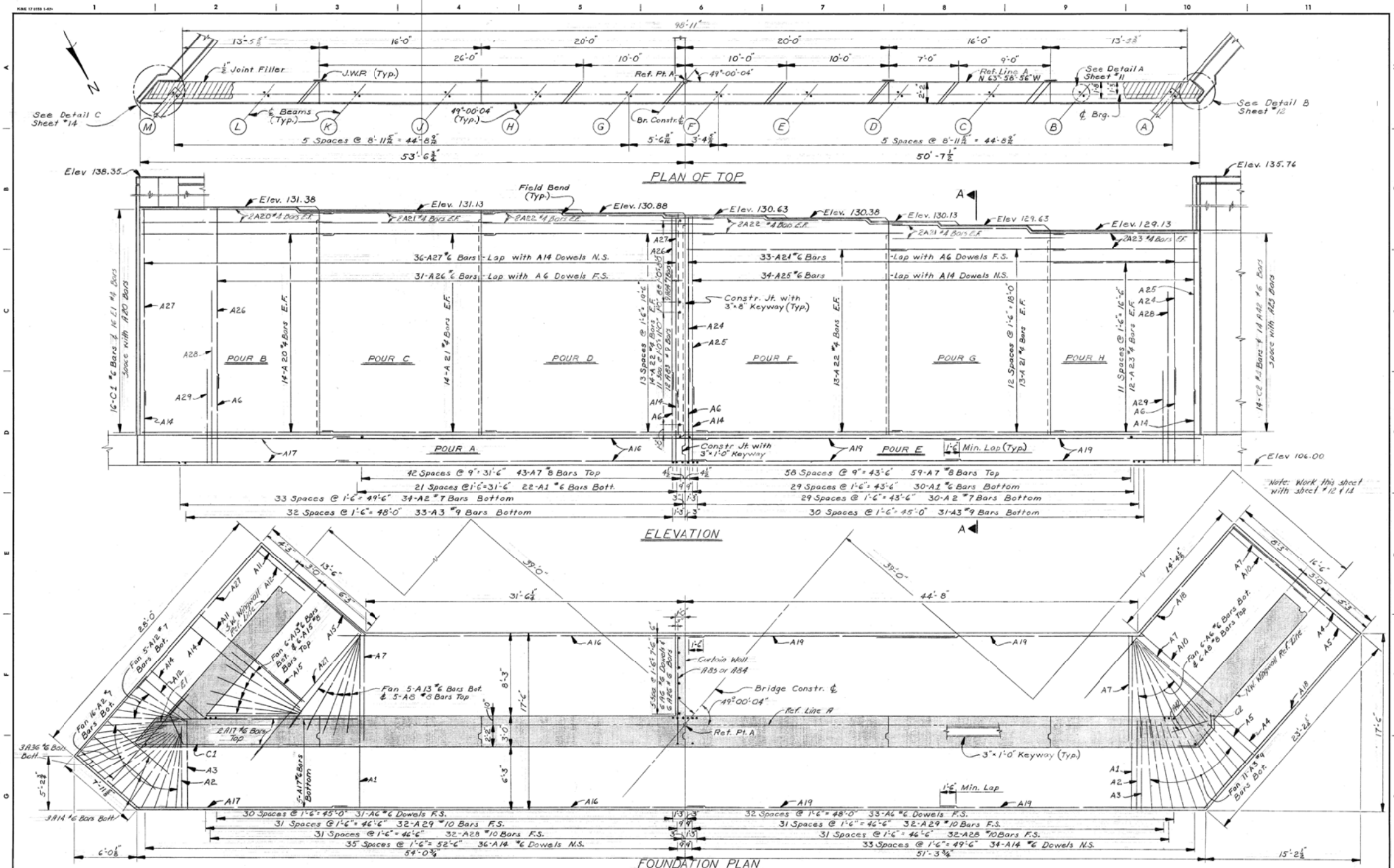
DESIGNED BY	Mc Guire	APPROVED		CITY OF DETROIT CITY ENGINEERING DEPARTMENT CITY ENGINEERS OFFICE FOR COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT	WEST SIDE INDUSTRIAL REHABILITATION PROJECT NO 2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.	SHEET 8 OF 26 SHEETS
DRAWN BY	J. J.	STRUCTURAL ENGINEER				CONTRACT NO. PW 6552
TRACED BY		HEAD CIVIL ENGINEER		GENERAL PLAN OF STRUCTURE	DRWG No. 57	DATE 10-73
CHECKED BY	B. COMLY JWS					

EXISTING

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DESCRIPTION	DATE	BY	CHECKED BY	APPROVED	CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR	BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.	SHEET 33 OF 65 SHEETS CONTRACT NO. PW-6985
REVISIONS	DATE	BY	CHECKED BY	APPROVED			
PLAN							ASSIGNMENT NO.
GRADE							DATE
ESTIMATE							
FINAL							



DESIGNED BY <i>M. J. [Signature]</i>	APPROVED STRUCTURAL ENGINEER	<p align="center">CITY OF DETROIT CITY ENGINEERING DEPARTMENT CITY ENGINEERS OFFICE FOR COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT</p>	WEST SIDE INDUSTRIAL REHABILITATION PROJECT No.2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.	SHEET 59 OF 65 SHEETS
DRAWN BY R. Rosik	ASST. CIVIL ENGINEER		ABUTMENT A DETAILS	CONTRACT No. PW-6985
TRACED BY	CITY ENGINEER			DRWG No. 59
CHECKED BY M.C.				DATE 10-73

EXISTING

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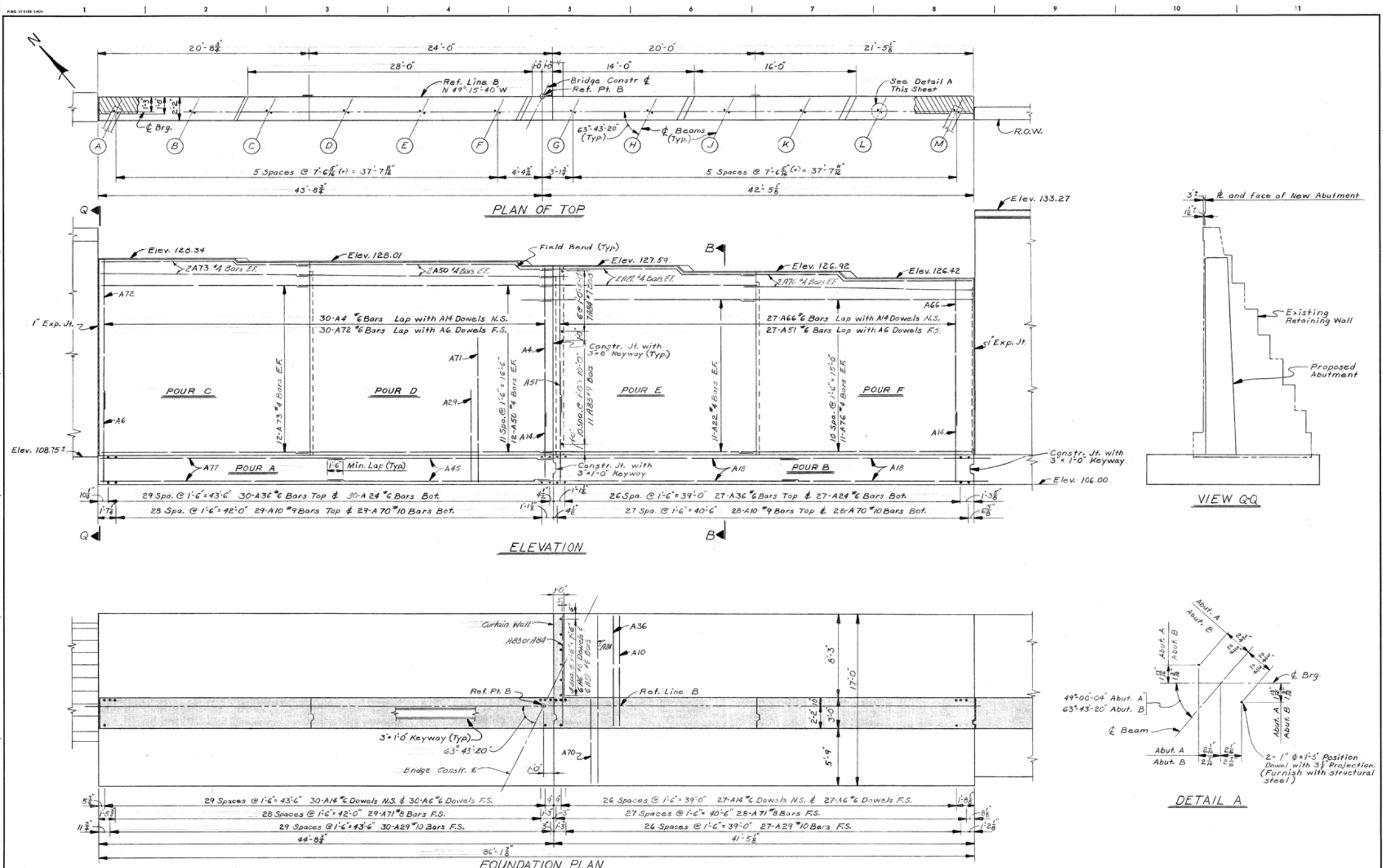
NO.	DESCRIPTION	DATE	BY	CHECKED BY	APPROVED

CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAUS OF STREETS AND HIGHWAYS
FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

EXISTING ABUTMENT A DETAILS

SHEET 34 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE



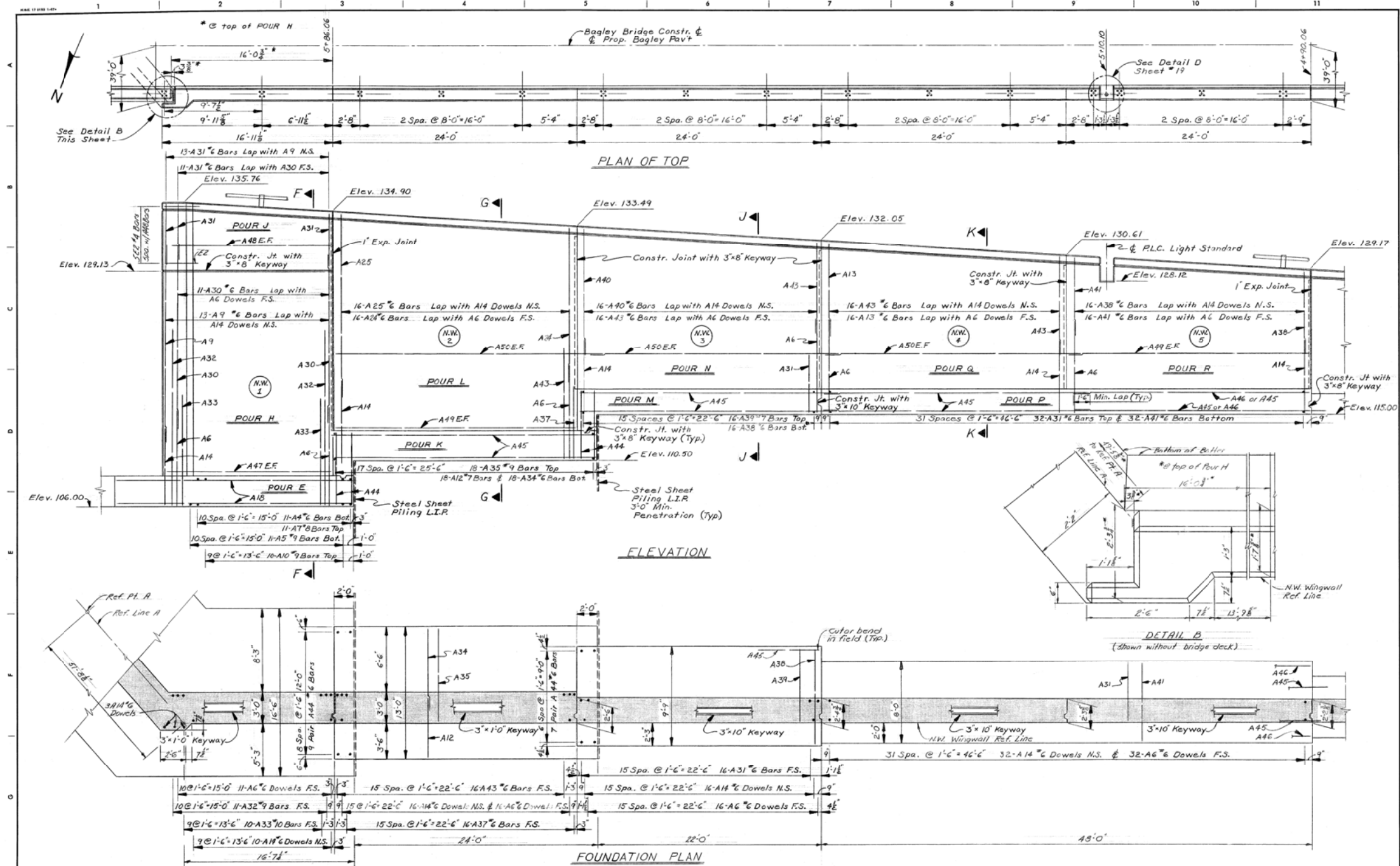
DESIGNED BY <i>M. C.</i>	APPROVED STRUCTURAL ENGINEER	CITY OF DETROIT CITY ENGINEERING DEPARTMENT CITY ENGINEERS OFFICE FOR COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT	WEST SIDE INDUSTRIAL REHABILITATION PROJECT No.2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.	SHEET 11 OF 26 SHEETS
DRAWN BY R. Rosik	HEAD CIVIL ENGINEER			CONTRACT NO. PW6552
CHECKED BY M.C.	CITY ENGINEER		ABUTMENT B DETAILS	DATE 10/73

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DESCRIPTION	DR	CHK	APP	DATE	BY	CHECKED BY	APPROVED	CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR	BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.	EXISTING ABUTMENT B DETAILS	SHEET 35 OF 65 SHEETS CONTRACT NO. PW-6985 ASSIGNMENT NO. DATE
REVISIONS											



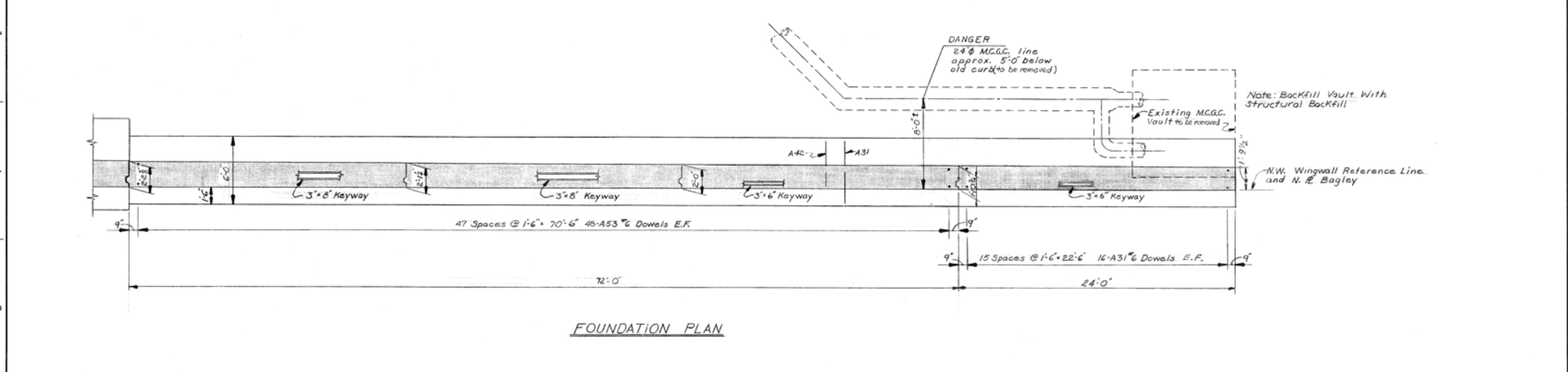
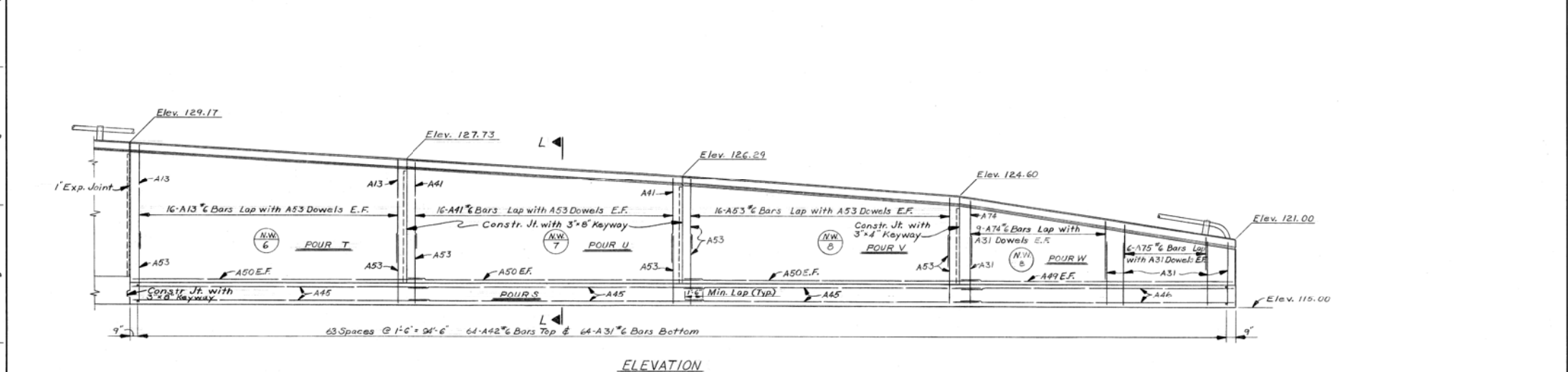
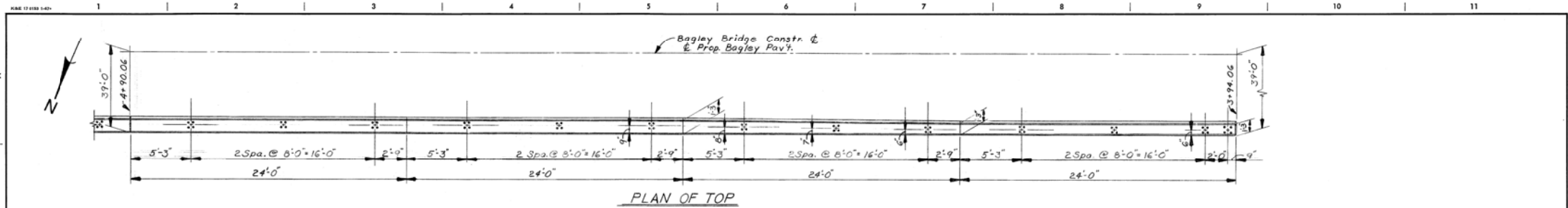
DESIGNED BY <i>M. Jure</i>	APPROVED STRUCTURAL ENGINEER	CITY OF DETROIT CITY ENGINEERING DEPARTMENT CITY ENGINEERS OFFICE FOR COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT	WEST SIDE INDUSTRIAL REHABILITATION PROJECT No.2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.	SHEET 12 OF 26 SHEETS
DRAWN BY R. Rosik	HEAD CIVIL ENGINEER			CONTRACT No. PW 6552
CHECKED BY M.C.			N.W. WINGWALL DETAILS	DRWG No. 5 11
				DATE 7/10/73

EXISTING

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DESCRIPTION	DR	CHK	DATE	BY	CHECKED BY	APPROVED	CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR	BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.	EXISTING N.W. WINGWALL DETAILS	SHEET 36 OF 65 SHEETS CONTRACT NO. PW-6985 ASSIGNMENT NO. DATE
REVISIONS	OR	CHK	DATE	FINAL	****	****				



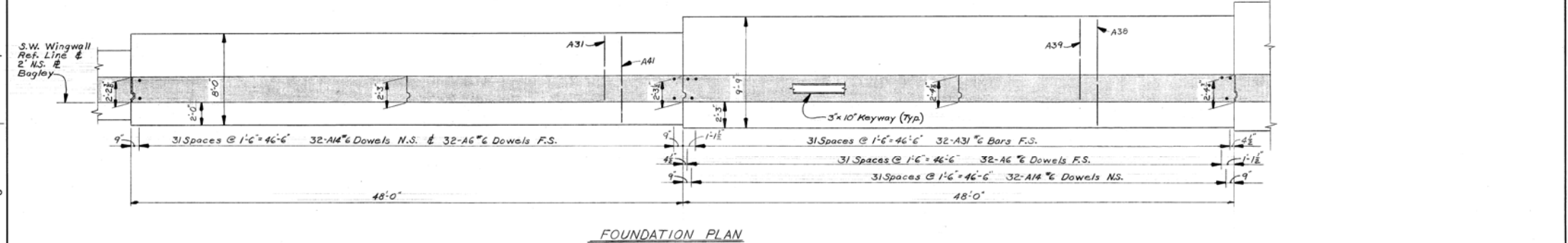
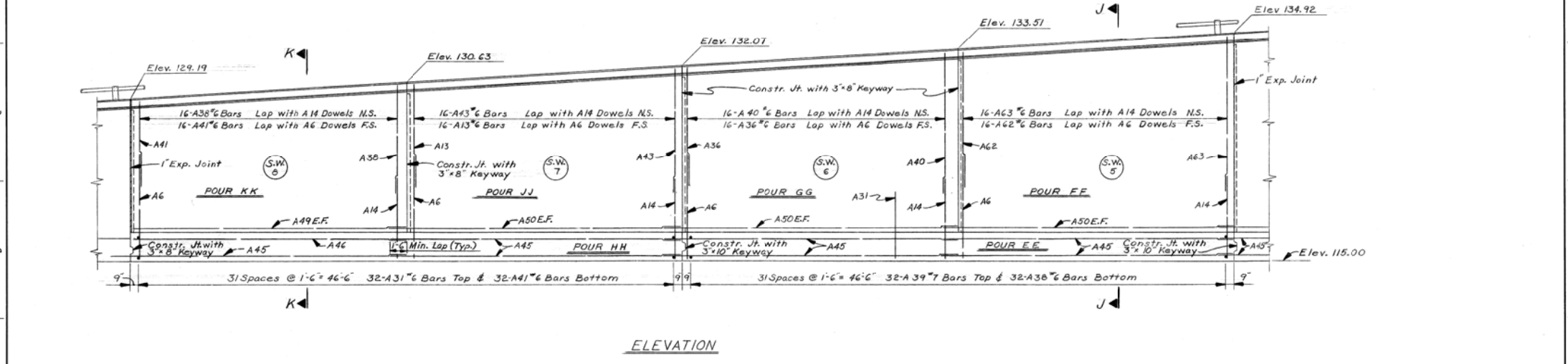
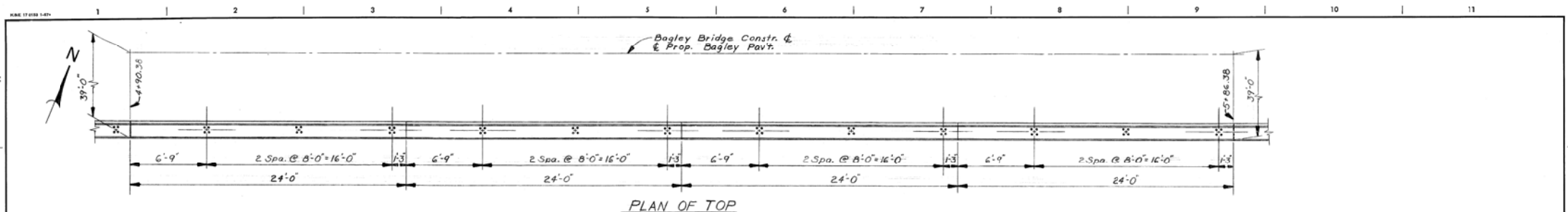
DESIGNED BY: <i>M. J. J...</i> DRAWN BY: R. Rosik CHECKED BY: M. G.		APPROVED: _____ STRUCTURAL ENGINEER HEAD CIVIL ENGINEER		CITY OF DETROIT CITY ENGINEERING DEPARTMENT CITY ENGINEERS OFFICE FOR COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT		WEST SIDE INDUSTRIAL REHABILITATION PROJECT No.2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R. N.W. WINGWALL DETAILS		SHEET 37 OF 65 SHEETS CONTRACT NO. PW-6985 DRWG No. 512 DATE 10-73	
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CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR		BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R. EXISTING N.W. WINGWALL DETAILS		SHEET 37 OF 65 SHEETS CONTRACT NO. PW-6985 ASSIGNMENT NO. DATE	
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DESIGNED BY <i>M. J. J.</i>	APPROVED STRUCTURAL ENGINEER	CITY OF DETROIT CITY ENGINEERING DEPARTMENT CITY ENGINEERS OFFICE FOR COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT	WEST SIDE INDUSTRIAL REHABILITATION PROJECT No. 2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.	SHEET 39 OF 65 SHEETS
DRAWN BY R. Rosik	HEAD CIVIL ENGINEER			CONTRACT No. PW 6552
CHECKED BY M.C.	DATE ENGINEER	S.W. WINGWALL DETAILS	DRWG No. 514	DATE 10-73

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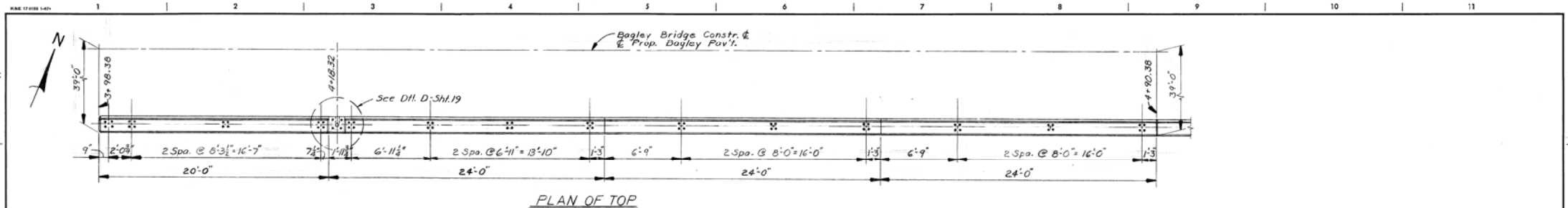
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PLAN				
GRADE				
ESTIMATE				
FINAL				

CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAUS OF STREETS AND HIGHWAYS
FOR

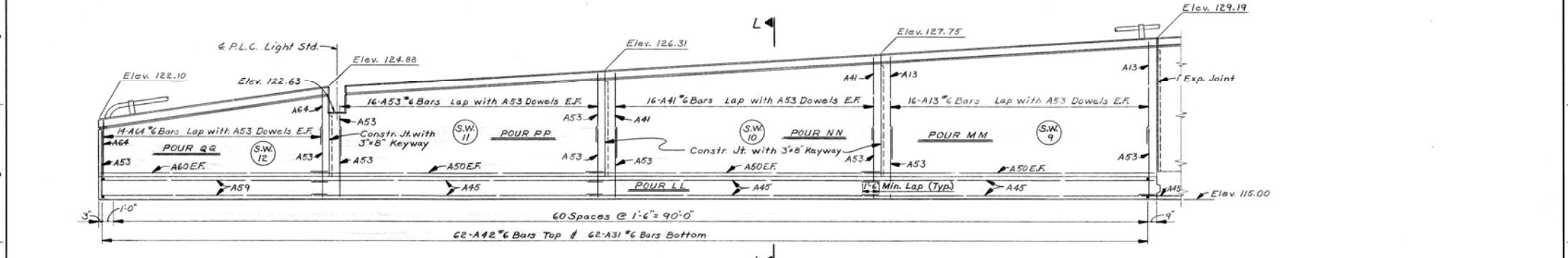
BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

EXISTING S.W. WINGWALL DETAILS

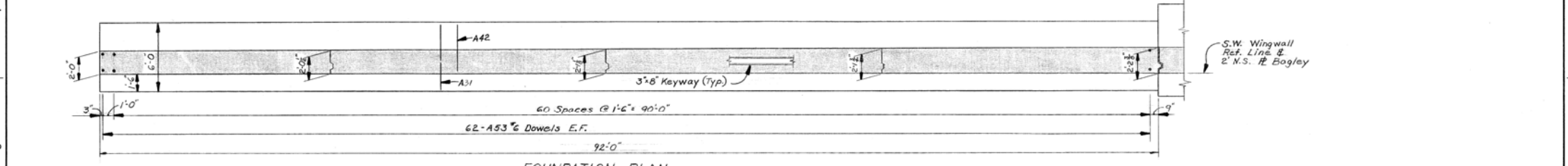
SHEET 39 OF 65 SHEETS
CONTRACT No. PW-6985
ASSIGNMENT No.
DATE



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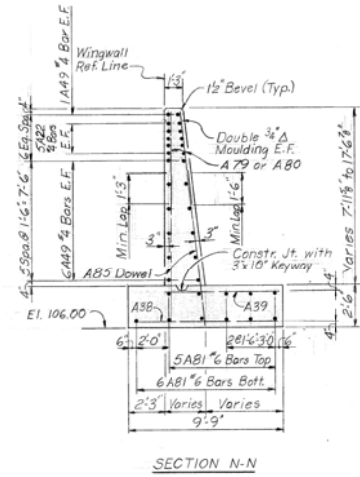
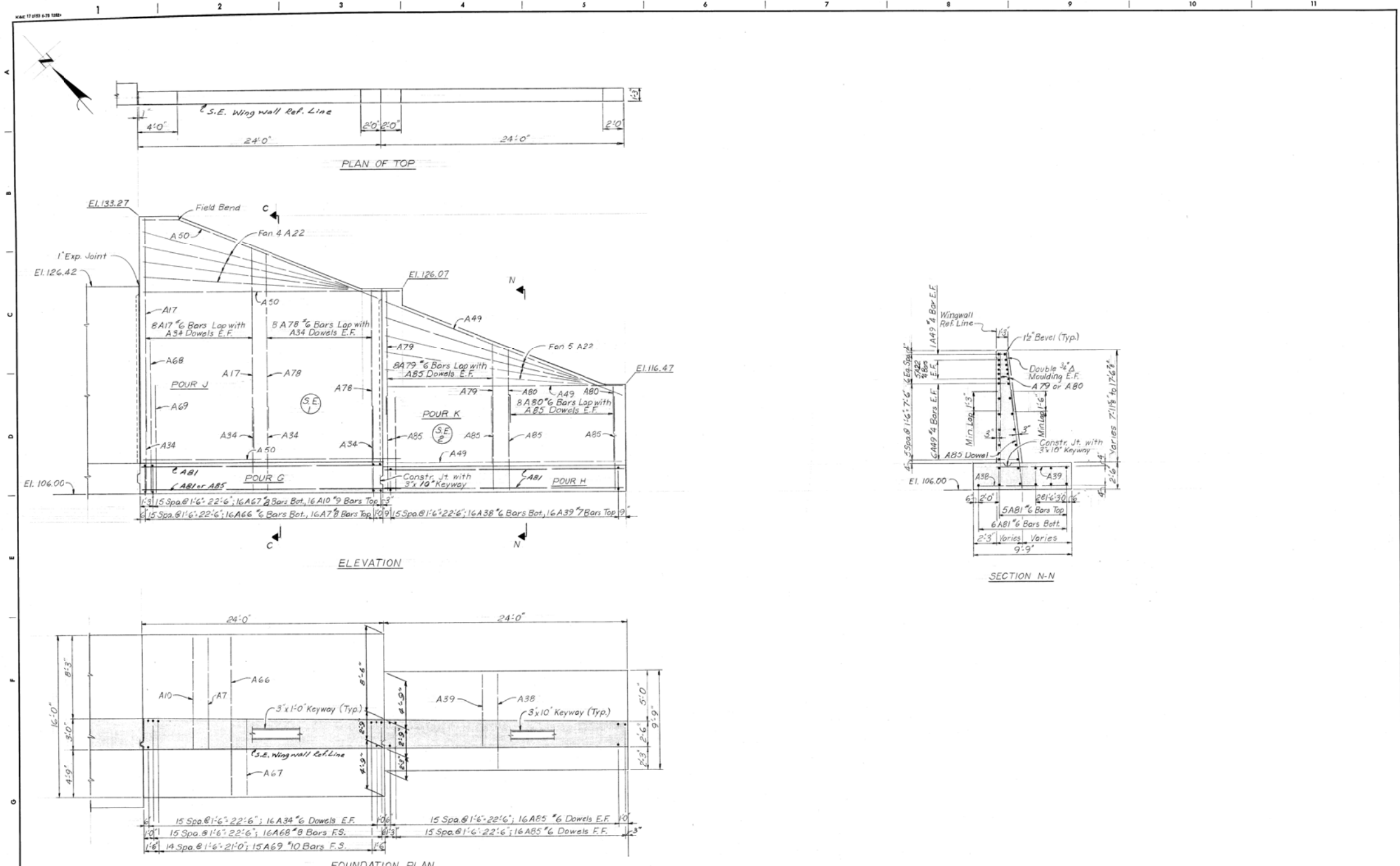
DESIGNED BY <i>M. Jure</i>	APPROVED STRUCTURAL ENGINEER	CITY OF DETROIT CITY ENGINEERING DEPARTMENT CITY ENGINEERS OFFICE FOR COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT	WEST SIDE INDUSTRIAL REHABILITATION PROJECT No.2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.	SHEET 40 OF 65 SHEETS
DRAWN BY R. Rosik	HEAD CIVIL ENGINEER			CONTRACT No. PW-6985
CHECKED BY M.C.			S.W. WINGWALL DETAILS	DATE 10-73

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DESCRIPTION	BY	CHECKED BY	APPROVED	CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR	BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.	EXISTING S.W. WINGWALL DETAILS	SHEET 40 OF 65 SHEETS
REVISIONS	PLAN						CONTRACT No. PW-6985
	GRADE						ASSIGNMENT No.
	ESTIMATE						DATE
	FINAL						



DESIGNED BY	M. J. J.	APPROVED	
DRAWN BY	L.G.	STRUCTURAL ENGINEER	
TRACED BY		HEAD CIVIL ENGINEER	
CHECKED BY	M.C.		

CITY OF DETROIT
 CITY ENGINEERING DEPARTMENT
 CITY ENGINEERS OFFICE
 FOR
 COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT

WEST SIDE INDUSTRIAL REHABILITATION PROJECT No. 2
 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.
 FOR
 S.E. WINGWALL DETAILS

SHEET	11	OF	26	SHEETS
CONTRACT NO.	PW 6552			
DRWG No.	S 16			
DATE	10-73			

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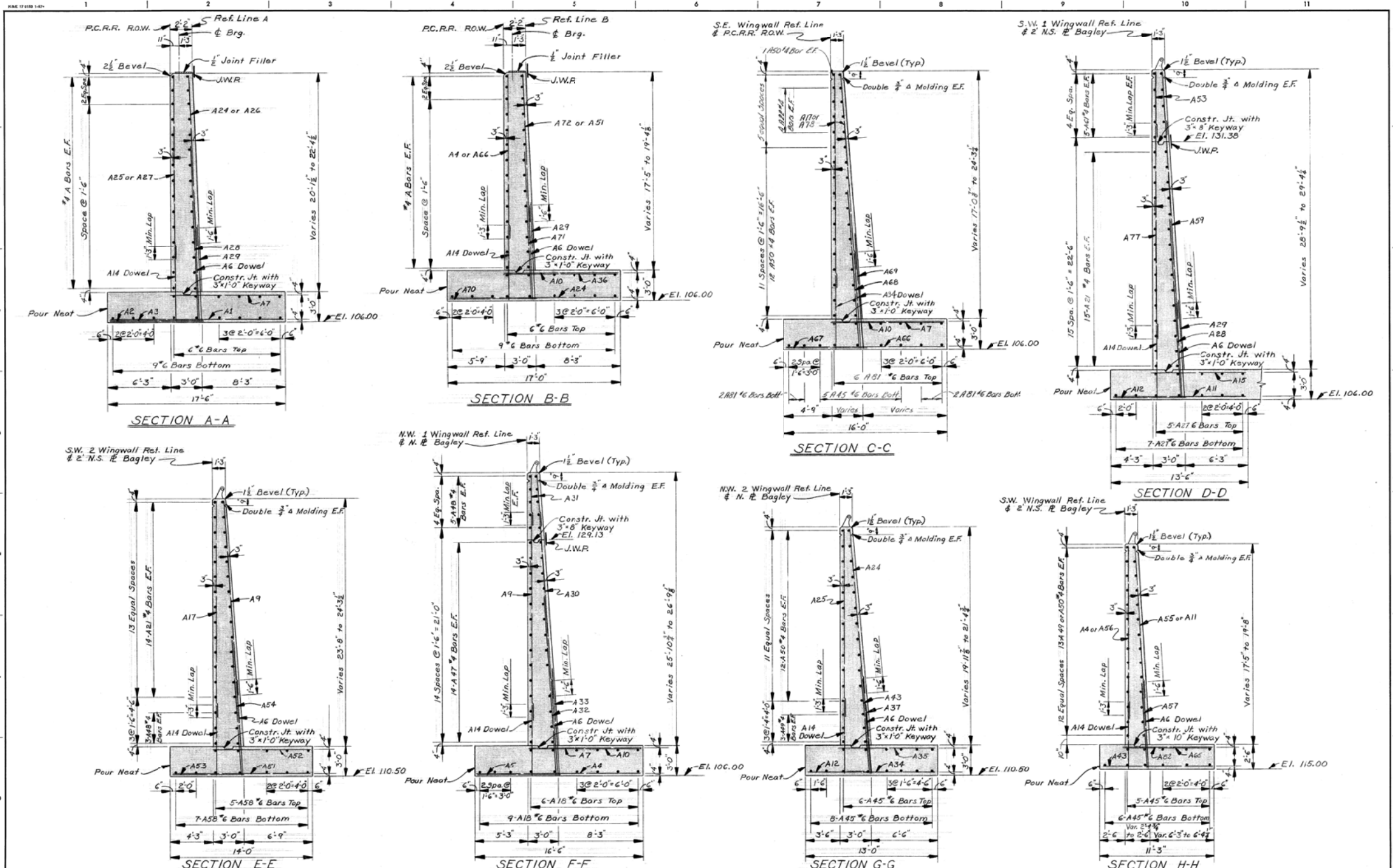
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PLAN						
GRADE						
ESTIMATE						
REVISIONS						

CITY OF DETROIT
 CITY ENGINEERING DIVISION - D.P.W.
 BUREAUS OF STREETS AND HIGHWAYS
 FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

EXISTING S.E. WINGWALL DETAILS

SHEET	41	OF	65	SHEETS
CONTRACT NO.	PW-6985			
ASSIGNMENT NO.				
DATE				



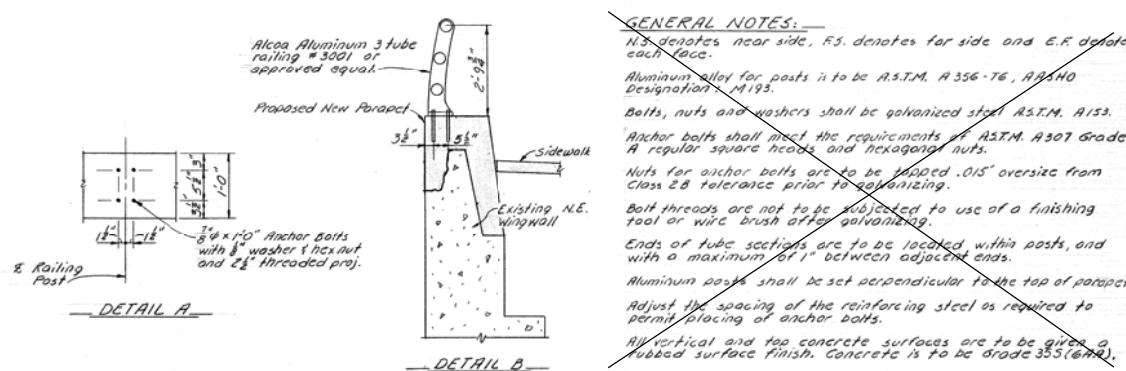
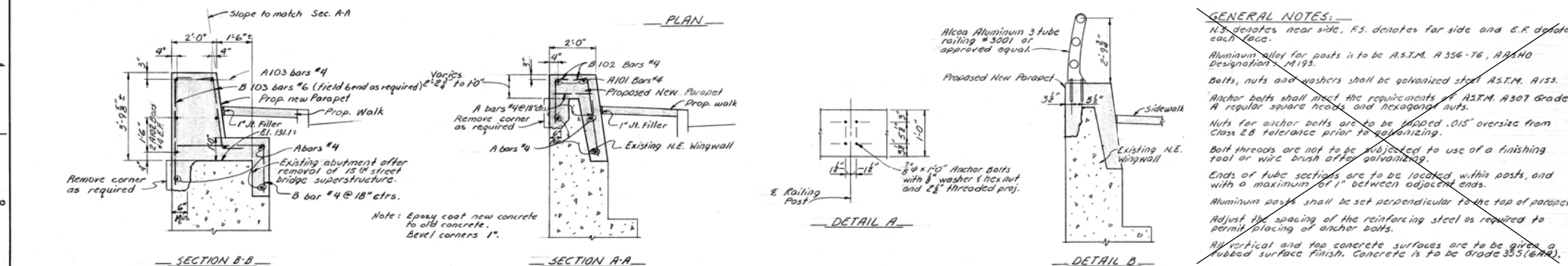
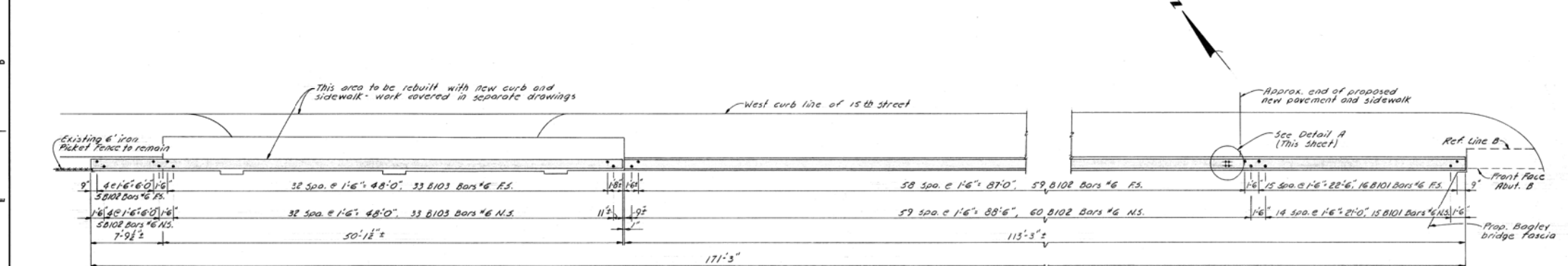
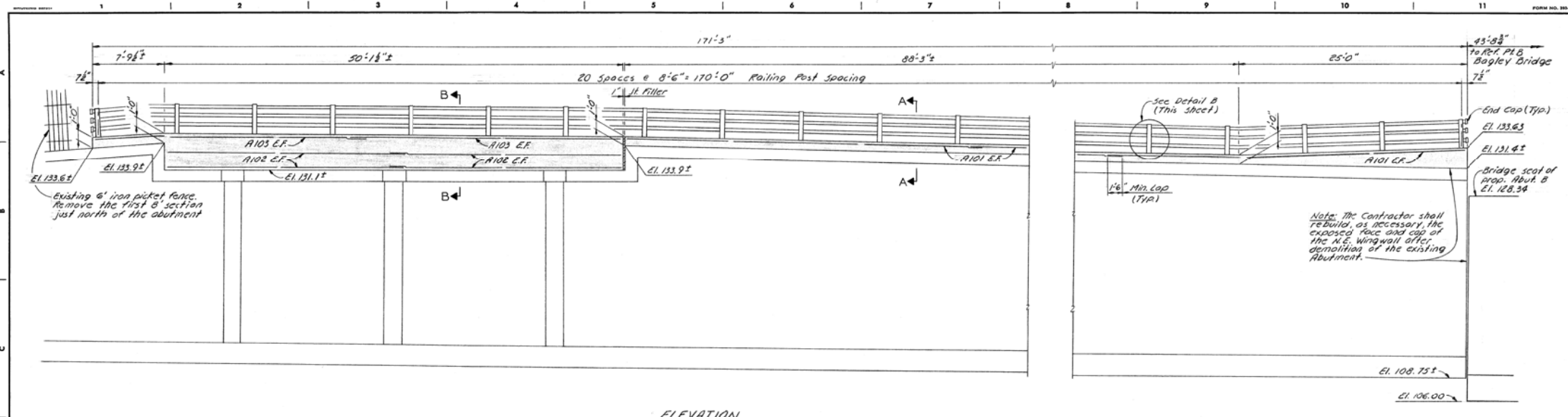
DESIGNED BY <i>M. Jurek</i>	APPROVED STRUCTURAL ENGINEER	<p align="center">CITY OF DETROIT CITY ENGINEERING DEPARTMENT CITY ENGINEERS OFFICE FOR COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT</p>	<p align="center">WEST SIDE INDUSTRIAL REHABILITATION PROJECT No.2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.</p>	SHEET 10 OF 26 SHEETS
DRAWN BY R. Rosik	HEAD CIV. ENGINEER			CONTRACT NO. PW 6552
CHECKED BY M.C.				DRWG No. 517
REVISIONS LOCATED BY COORDINATES ON SHEET				DATE 10-73

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BY	CHECKED BY	APPROVED	<p align="center">CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR</p>	<p align="center">BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.</p>	SHEET 42 OF 65 SHEETS
PLAN		ENGINEER BY STREET			CONTRACT NO. PW-6985
GRADE					ASSIGNMENT NO.
ESTIMATE					DATE



GENERAL NOTES:
 N.S. denotes near side, F.S. denotes far side and E.F. denotes each face.
 Aluminum relief for posts is to be A.S.T.M. A 356-T6, A 3610 Designation M193.
 Bolts, nuts and washers shall be galvanized steel A.S.T.M. A153.
 Anchor bolts shall meet the requirements of A.S.T.M. A307 Grade A regular square heads and hexagonal nuts.
 Nuts for anchor bolts are to be tapered .015" oversize from Class 2B tolerance prior to galvanizing.
 Bolt threads are not to be subjected to use of a finishing tool or wire brush after galvanizing.
 Ends of tube sections are to be located within posts, and with a maximum of 1" between adjacent ends.
 Aluminum posts shall be set perpendicular to the top of parapet.
 Adjust the spacing of the reinforcing steel as required to permit placing of anchor bolts.
 All vertical and top concrete surfaces are to be given a rubbed surface finish. Concrete is to be grade 355 (6000).

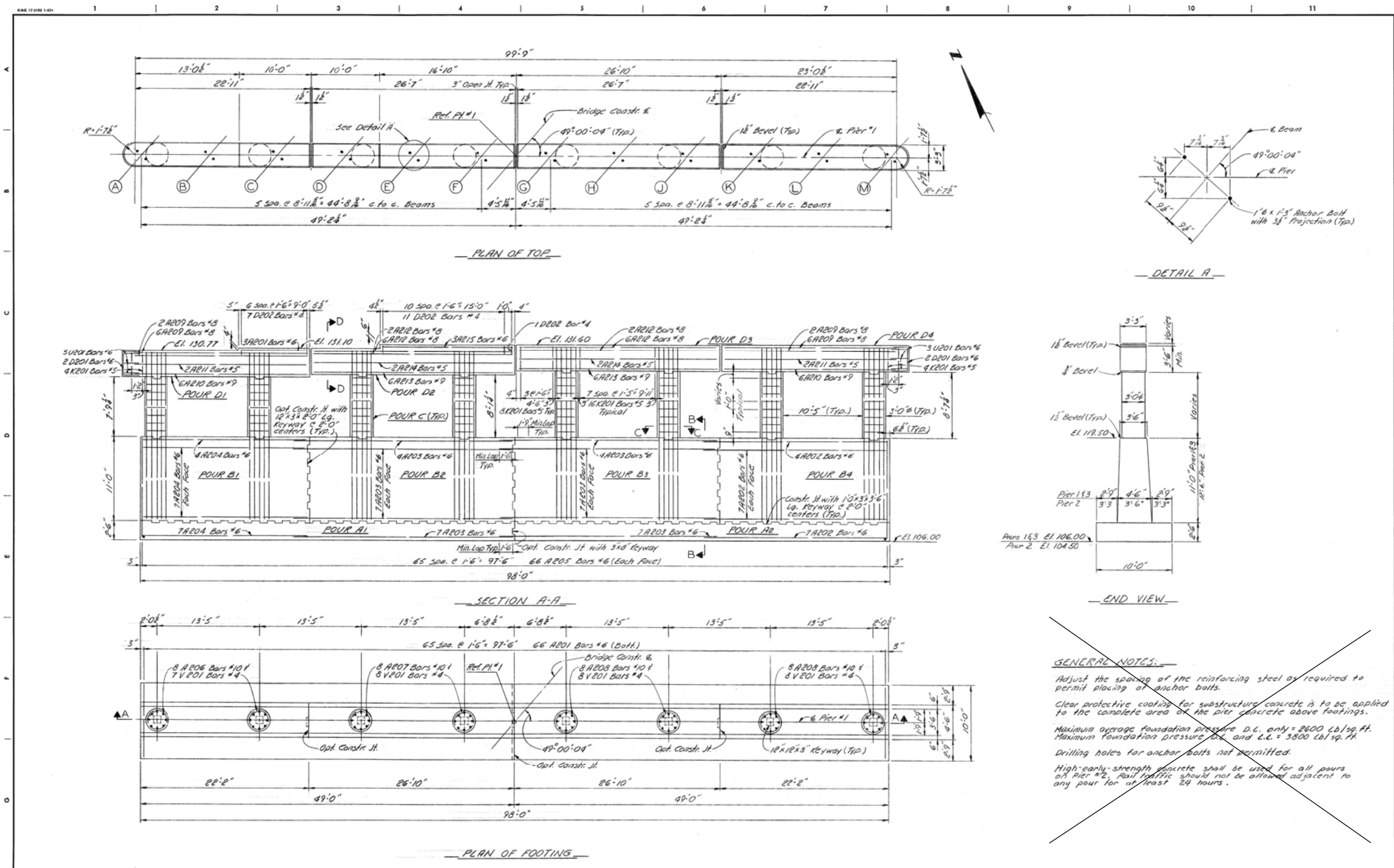
A. Grand Sec. A.S. & O.L. & A. met. field conditions at ex. walls.		DESIGNED BY: <i>[Signature]</i> DRAWN BY: <i>[Signature]</i> CHECKED BY: J.M. Guire	APPROVED: <i>[Signature]</i> STRUCTURAL ENGINEER HEAD CIVIL ENGINEER	CITY OF DETROIT CITY ENGINEERING DEPARTMENT CITY ENGINEERS OFFICE FOR COMMUNITY PLANNING & ECONOMIC DEVELOPMENT DEPARTMENT	WEST SIDE INDUSTRIAL REHABILITATION PROJECT NO. 2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R. N.E. WINGWALL PARAPET DETAILS	SHEET 20 OF 26 SHEETS CONTRACT No. PW-6552 DRWG No. 519 DATE 10-73
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CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR	BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R. EXISTING N.E. WINGWALL PARAPET DETAILS	SHEET 44 OF 65 SHEETS CONTRACT No. PW-6985 ASSIGNMENT No. DATE
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GENERAL NOTES:

- Adjust the spacing of the reinforcing steel as required to permit placing of anchor bolts.
- Clear protective coating for substructure concrete is to be applied to the complete area of the pier concrete above footings.
- Maximum average foundation pressure D.C. only = 2600 lb./sq. ft. Maximum foundation pressure C.C. and C.L. = 3800 lb./sq. ft.
- Drilling holes for anchor bolts not permitted.
- High-early-strength concrete shall be used for all pours on Pier #2. Rail traffic should not be allowed adjacent to any pour for at least 24 hours.

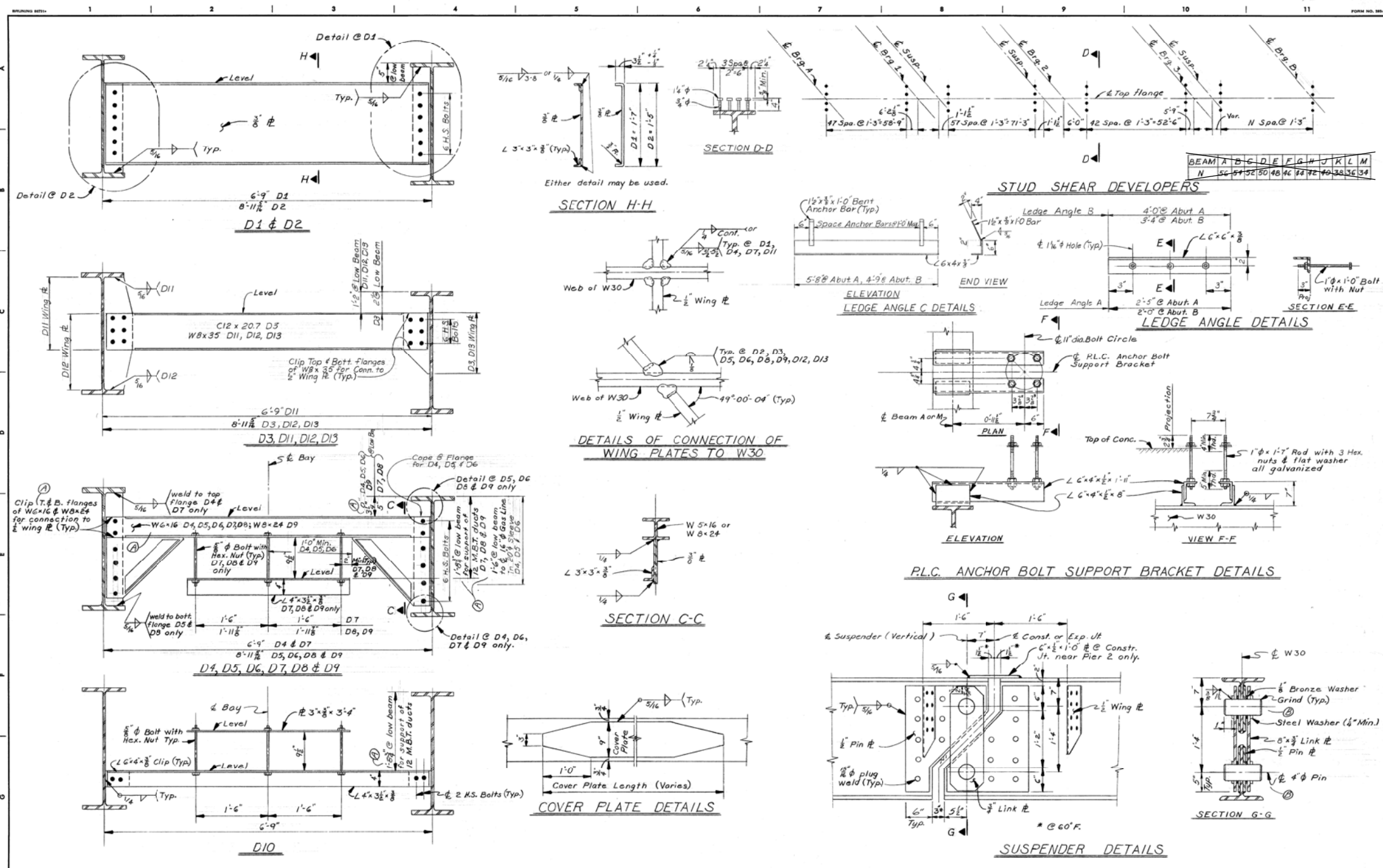
DESIGNED BY M.C.	APPROVED STRUCTURAL ENGINEER	CITY OF DETROIT CITY ENGINEERING DEPARTMENT CITY ENGINEERS OFFICE FOR COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT	WEST SIDE INDUSTRIAL REHABILITATION PROJECT NO. 2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.	SHEET 21 OF 26 SHEETS
DRAWN BY A.G.	APPROVED HEAD CIVIL ENGINEER			CONTRACT NO. PW 6552
CHECKED BY J.M.			PIER DETAILS	DRWG NO. 520
				DATE 10-73

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DESCRIPTION	DATE	BY	CHECKED BY	APPROVED	CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR	BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.	SHEET 45 OF 65 SHEETS CONTRACT NO. PW-6985
REVISIONS							
PLAN							ASSIGNMENT NO.
GRADE							DATE
ESTIMATE							
FINAL							



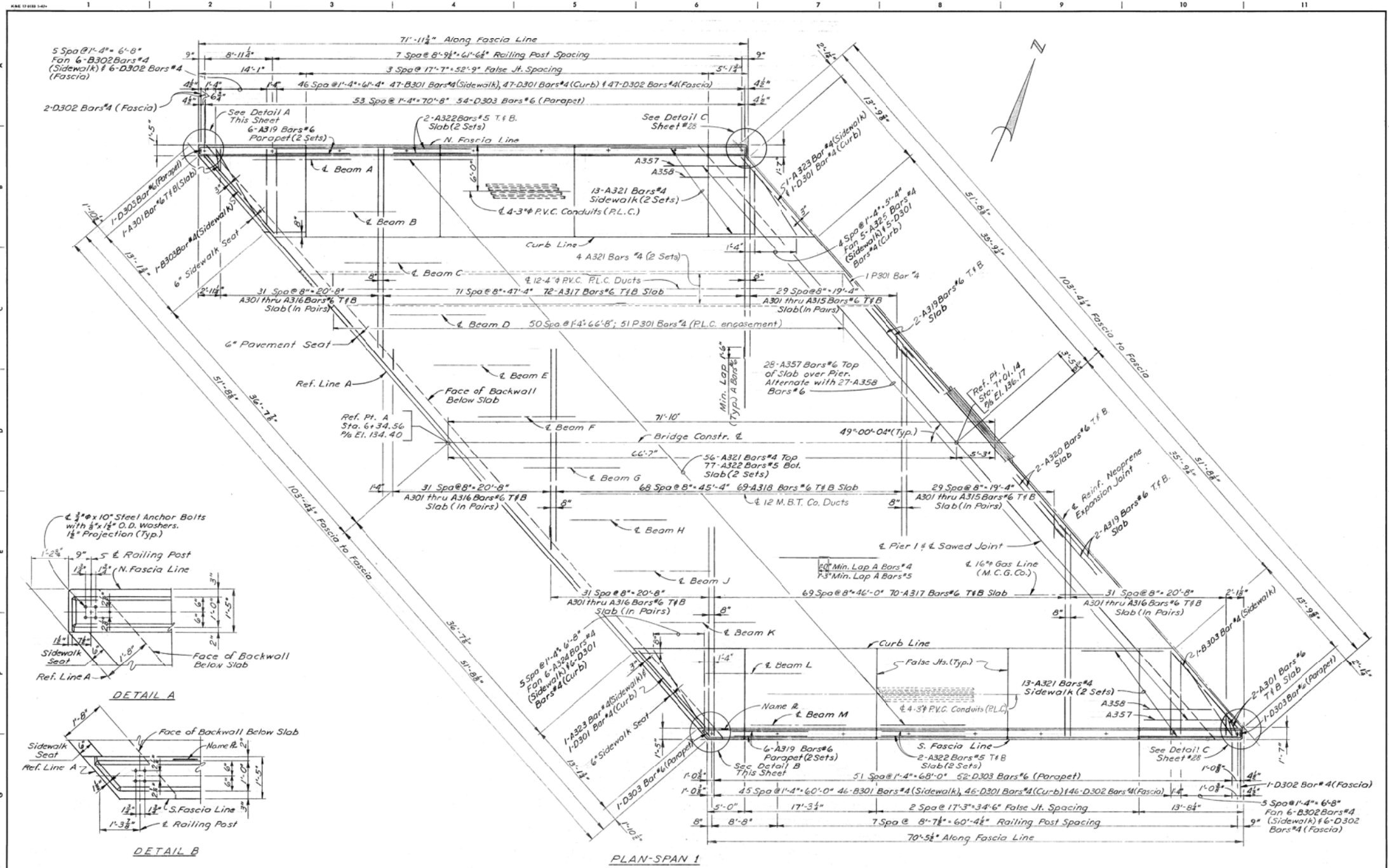
<p>A D1-D9 Check W.S. & H.P. & W.C. & L.L. Collected Dim. per detacher report via approved 3/4" washers @ temp pins instead of corner pins</p>		<p>DESIGNED BY</p>	<p>APPROVED</p>	<p>CITY OF DETROIT CITY ENGINEERING DEPARTMENT CITY ENGINEERS OFFICE FOR COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT</p>	<p>WEST SIDE INDUSTRIAL REHABILITATION PROJECT No.2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.</p>	<p>SHEET 26 OF 26 SHEETS CONTRACT No. PW 6552 DRWG No. 525 DATE 10 73</p>
<p>DESCRIPTION</p>	<p>DATE</p>	<p>DESIGNED BY</p>	<p>APPROVED</p>	<p>DESIGNED BY</p>	<p>WEST SIDE INDUSTRIAL REHABILITATION PROJECT No.2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.</p>	<p>SHEET 26 OF 26 SHEETS CONTRACT No. PW 6552 DRWG No. 525 DATE 10 73</p>
<p>REVISIONS LOCATED BY COORDINATES ON SHEET</p>	<p>DATE</p>	<p>DESIGNED BY</p>	<p>APPROVED</p>	<p>DESIGNED BY</p>	<p>WEST SIDE INDUSTRIAL REHABILITATION PROJECT No.2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.</p>	<p>SHEET 26 OF 26 SHEETS CONTRACT No. PW 6552 DRWG No. 525 DATE 10 73</p>

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<p>DESCRIPTION</p>	<p>DATE</p>	<p>DESIGNED BY</p>	<p>APPROVED</p>	<p>CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR</p>	<p>BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.</p>	<p>SHEET 50 OF 65 SHEETS CONTRACT No. PW-6985 ASSIGNMENT No. DATE</p>
<p>REVISIONS</p>	<p>DATE</p>	<p>DESIGNED BY</p>	<p>APPROVED</p>	<p>CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR</p>	<p>BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.</p>	<p>SHEET 50 OF 65 SHEETS CONTRACT No. PW-6985 ASSIGNMENT No. DATE</p>
<p>REVISIONS</p>	<p>DATE</p>	<p>DESIGNED BY</p>	<p>APPROVED</p>	<p>CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR</p>	<p>BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.</p>	<p>SHEET 50 OF 65 SHEETS CONTRACT No. PW-6985 ASSIGNMENT No. DATE</p>



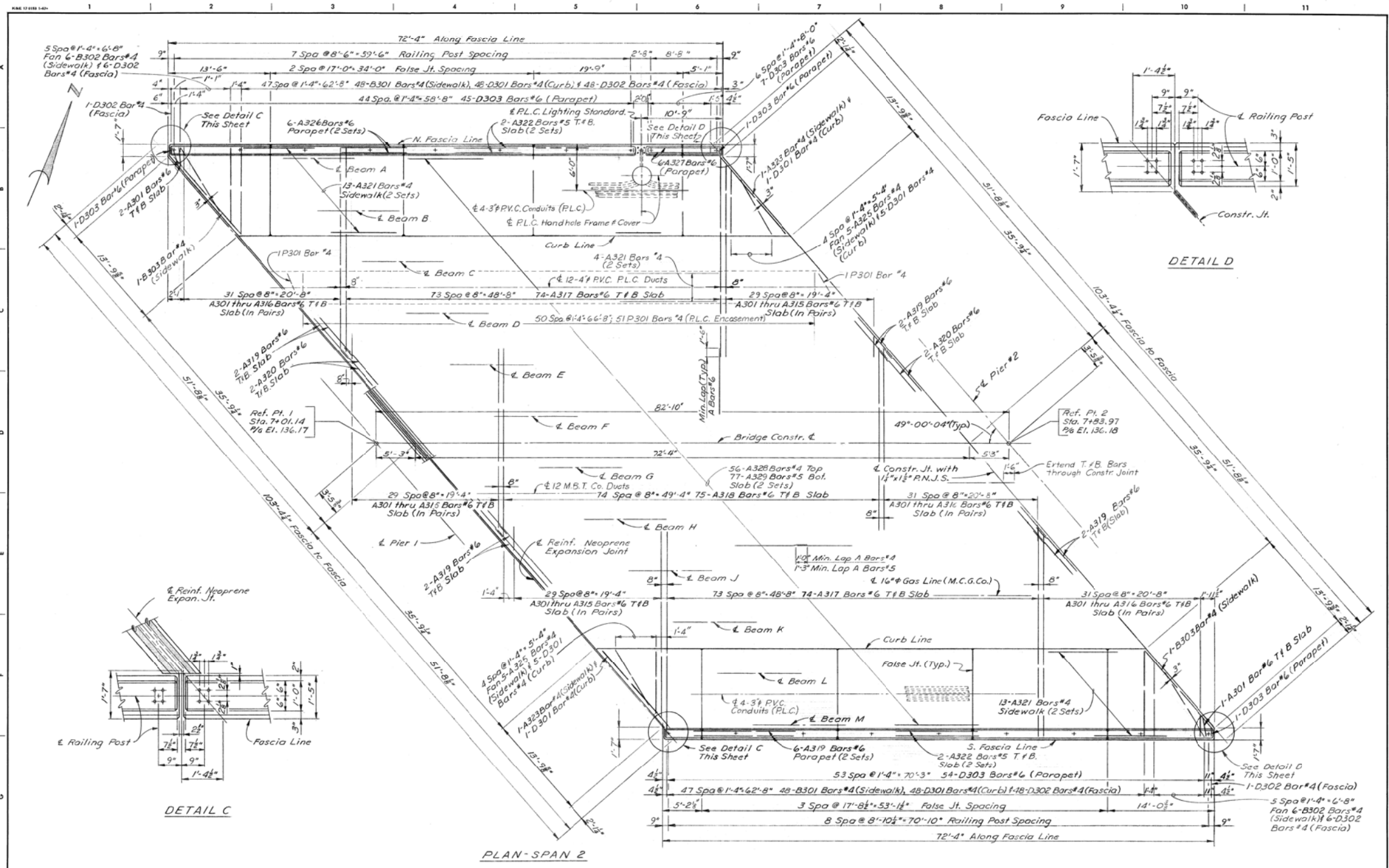
DESIGNED BY <i>M. J. ...</i>	APPROVED STRUCTURAL ENGINEER	CITY OF DETROIT CITY ENGINEERING DEPARTMENT CITY ENGINEERS OFFICE FOR COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT	WEST SIDE INDUSTRIAL REHABILITATION PROJECT No.2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.	SHEET 27 OF 26 SHEETS
DRAWN BY <i>R. Harris</i>	HEAD CIVIL ENGINEER			CONTRACT No. PW 6852
CHECKED BY <i>J. M.</i>			SUPERSTRUCTURE DETAILS	DRWG No. 526
				DATE 10-73

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PLAN	BY	CHECKED BY	APPROVED	CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR	BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.	EXISTING SUPERSTRUCTURE DETAILS	SHEET 51 OF 65 SHEETS
GRADE							CONTRACT No. PW-6985
ESTIMATE							ASSIGNMENT NO.
DESCRIPTION	OR	NO	DATE				DATE
REVISIONS							



DESIGNED BY	M. J. Jurek	APPROVED	
DRAWN BY	R. Harris	STRUCTURAL ENGINEER	
CHECKED BY	J. M.	HEAD CIVIL ENGINEER	

CITY OF DETROIT
CITY ENGINEERING DEPARTMENT
CITY ENGINEERS OFFICE
FOR
COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT

WEST SIDE INDUSTRIAL REHABILITATION PROJECT NO. 2
BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.
SUPERSTRUCTURE DETAILS

SHEET 22 OF 26 SHEETS
CONTRACT NO. PW6552
DRWG No. 5 27
DATE 10-78

EXISTING

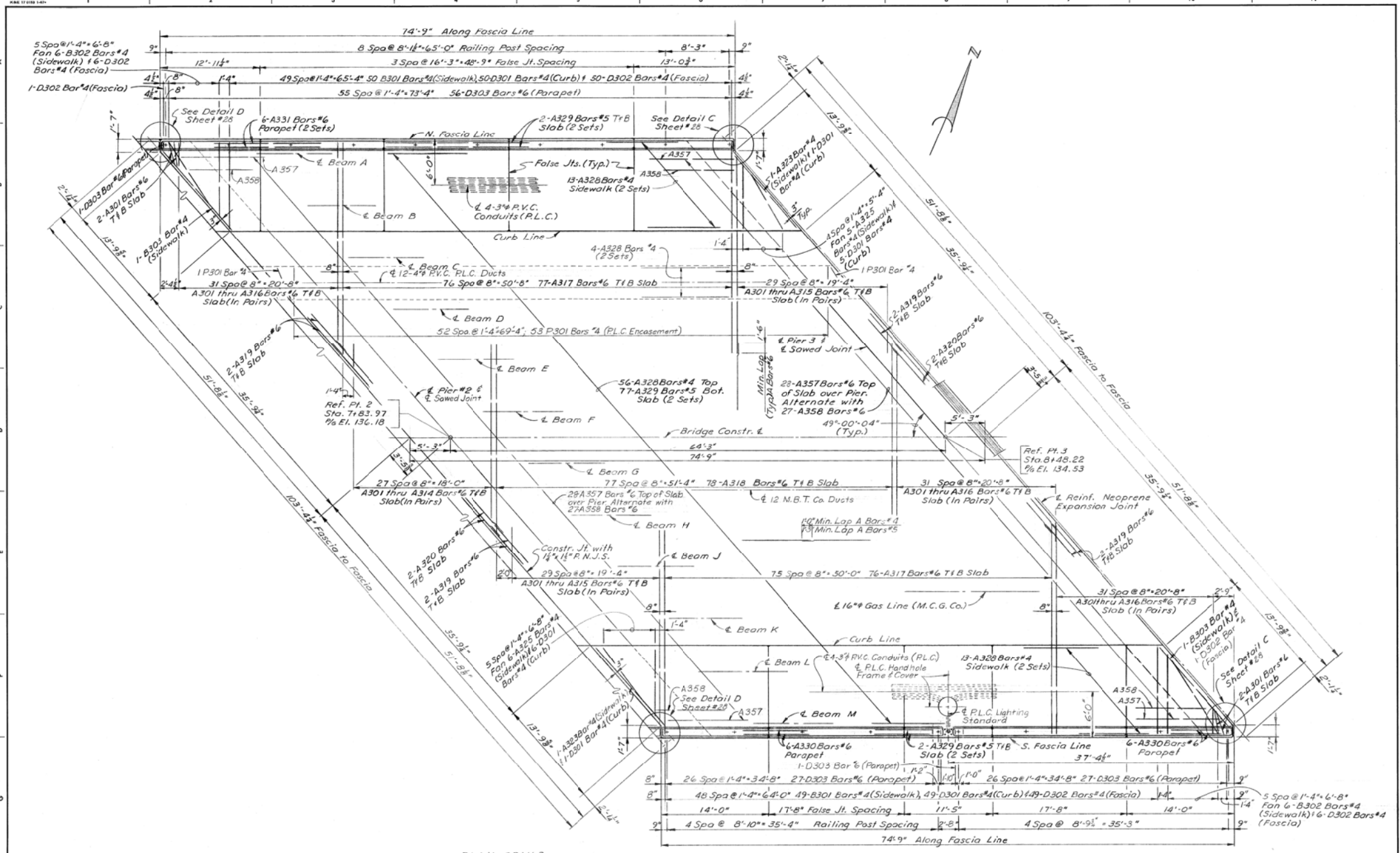
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NO.	DESCRIPTION	DR	CHK	DATE	BY	CHECKED BY	APPROVED
	PLAN						
	GRADE						
	ESTIMATE						
	REVISIONS						

CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAUS OF STREETS AND HIGHWAYS
FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.
EXISTING SUPERSTRUCTURE DETAILS

SHEET 52 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE



PLAN - SPAN 3

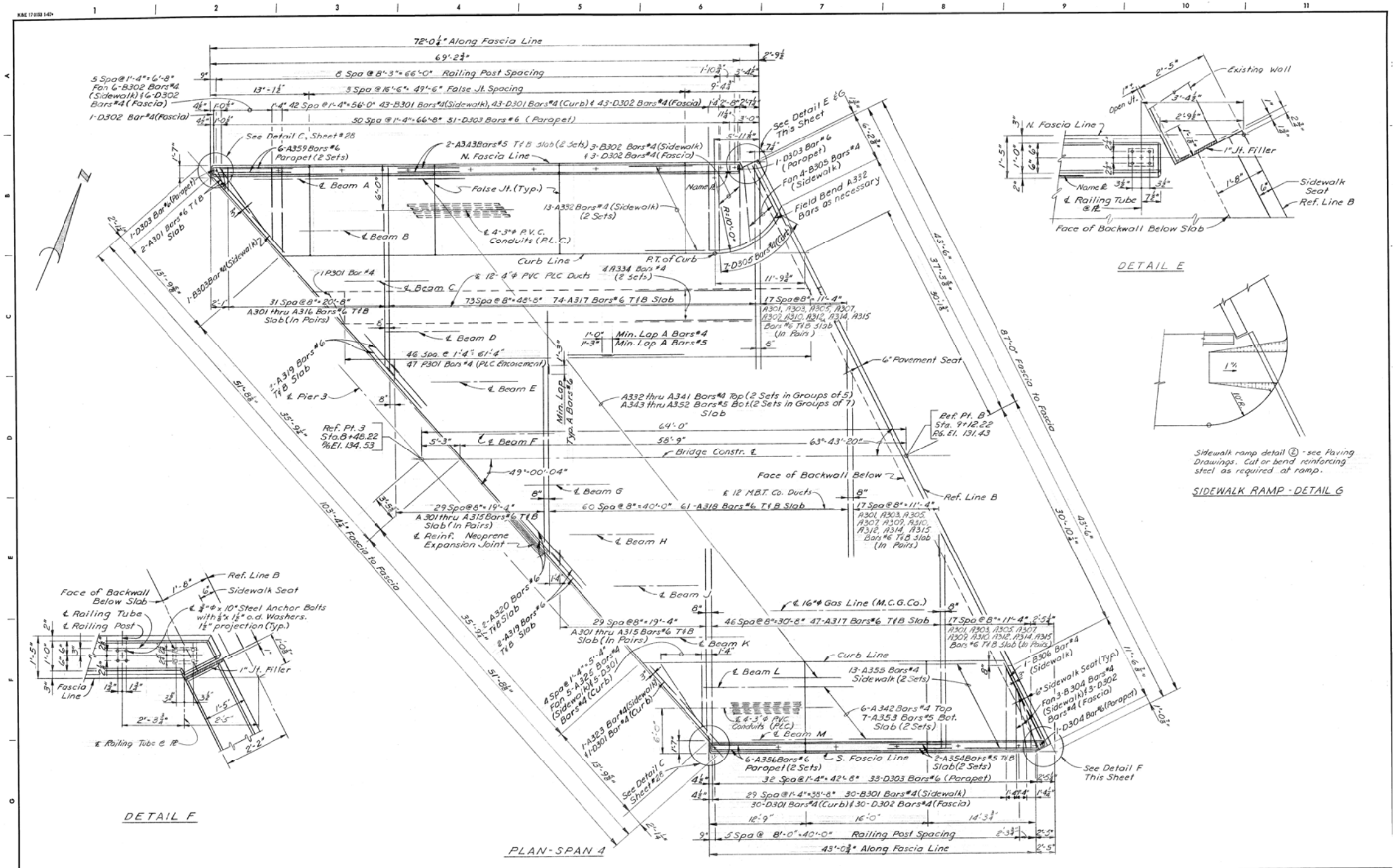
DESIGNED BY <i>M. J. J.</i>	APPROVED: STRUCTURAL ENGINEER	<p>CITY OF DETROIT CITY ENGINEERING DEPARTMENT CITY ENGINEERS OFFICE FOR COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT</p> <p>WEST SIDE INDUSTRIAL REHABILITATION PROJECT No.2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.</p> <p>SUPERSTRUCTURE DETAILS</p>	SHEET 53 OF 65 SHEETS
DRAWN BY <i>R. Harris</i>	HEAD CIVIL ENGINEER		CONTRACT NO. PW-6985
CHECKED BY <i>J.M.</i>	DATE 10-73		DRWG No. 528
REVISIONS LOCATED BY COORDINATOR ON SHEET			

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DESCRIPTION	DR	CHK	APP	DATE	BY	CHECKED BY	APPROVED:	<p>CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR</p> <p>BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.</p> <p>EXISTING SUPERSTRUCTURE DETAILS</p>	<p>SHEET 53 OF 65 SHEETS CONTRACT NO. PW-6985 ASSIGNMENT NO. DATE</p>
PLAN							ENGINEER BY STREET		
GRADE									
ESTIMATE									
REVISIONS	DR	CHK	APP	DATE	FINAL	****	****		



DESIGNED BY	<i>M. Spivey</i>
DRAWN BY	<i>R. Harris</i>
TRACED BY	
CHECKED BY	<i>J.M.</i>
APPROVED	

CITY OF DETROIT
 CITY ENGINEERING DEPARTMENT
 CITY ENGINEERS OFFICE
 FOR
 COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT

WEST SIDE INDUSTRIAL REHABILITATION PROJECT No.2
 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.
 SUPERSTRUCTURE DETAILS

SHEET 30 OF 26 SHEETS
CONTRACT NO. PW 6352
DRWG No. 529
DATE 10-73

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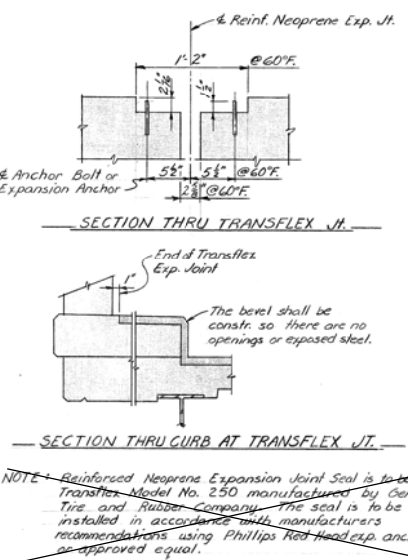
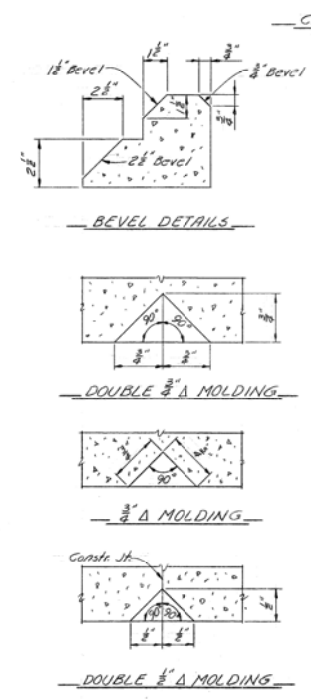
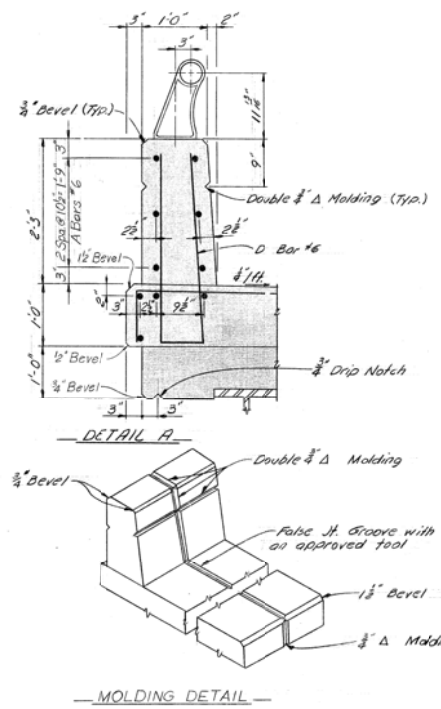
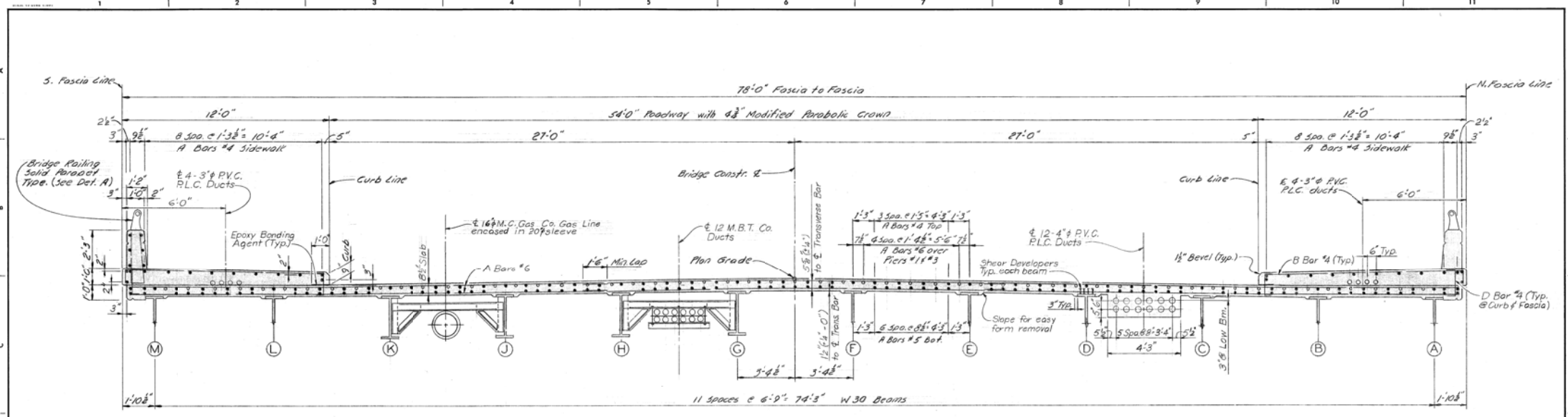
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DESCRIPTION	DR	CHK	DATE	BY	CHECKED BY	APPROVED
PLAN						
GRADE						
ESTIMATE						
REVISIONS						

CITY OF DETROIT
 CITY ENGINEERING DIVISION - D.P.W.
 BUREAUS OF STREETS AND HIGHWAYS
 FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.
 EXISTING SUPERSTRUCTURE DETAILS

SHEET 54 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE



GENERAL NOTES:
 P.L.C. denotes Public Lighting Commission. P.V.C. denotes Polyvinyl Chloride.
 J.W.P. denotes Joint Waterproofing. N.F. denotes near face. F.F. denotes far face.
 E.F. denotes each face. T denotes Top & B denotes Bottom. H.P.R.A.T.F. denotes Hot-Poured Rubber Asphalt Type Filler. P.M.S. denotes Performed Neoprene Joint Seal.
 Edge or groove denote 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 Section 7.01-4 of the standard specifications.
 The contractor is to provide a sawed joint 1/4" deep by 1/8" wide (min.) in top of slab over and parallel to the centerline of beams #11#3. The joint is to be sawed before casting of sidewalks and is to be filled with Hot-Poured Rubber Asphalt Type Filler. The Sawing and Hot-Poured Rubber Asphalt Type Filler are incidental to superstructure concrete.
 Protective Treatment for Bridge Decks is to be applied to all superstructure concrete surfaces between inside faces of parapets.
 Structural Concrete shall be Air-entrained, Grade 40S with Grade 6AA aggregate. Materials and workmanship shall be in accordance with Mich. Dept. of State Highway Standard Specifications for Highway Construction-1973 Edition.

NOTE: Reinforced Neoprene Expansion Joint Seal is to be Transflex Model No. 250 manufactured by General Tire and Rubber Company. The seal is to be installed in accordance with manufacturers recommendations using Phillips Red-Head exp. anchors or approved equal.

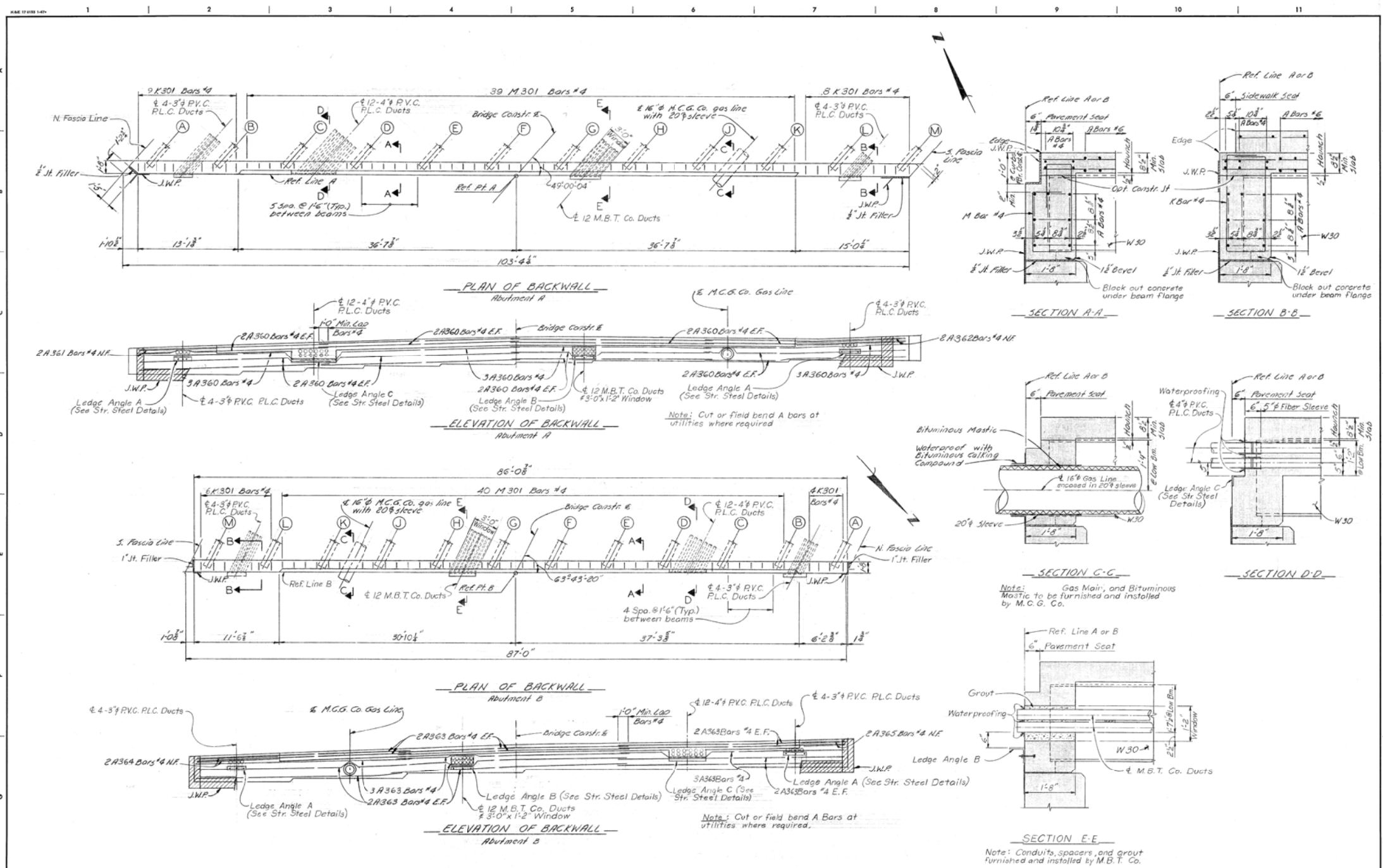
DESIGNED BY <i>M. Shire</i>	APPROVED: _____ STRUCTURAL ENGINEER	CITY OF DETROIT CITY ENGINEERING DEPARTMENT CITY ENGINEERS OFFICE FOR COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT	WEST SIDE INDUSTRIAL REHABILITATION PROJECT NO.2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R. SUPERSTRUCTURE DETAILS	SHEET 31 OF 96 SHEETS
DRAWN BY <i>A.G.</i>	_____ HEAD CIVIL ENGINEER			CONTRACT NO. <i>PW 6552</i>
CHECKED BY <i>J.M.</i>	_____ DATE			DRWG No. 530

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DESCRIPTION	DATE	BY	CHECKED BY	APPROVED:	CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR	BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R. EXISTING SUPERSTRUCTURE DETAILS	SHEET 55 OF 65 SHEETS
REVISIONS	FINAL						CONTRACT NO. <i>PW-6985</i>
							ASSIGNMENT NO.
							DATE



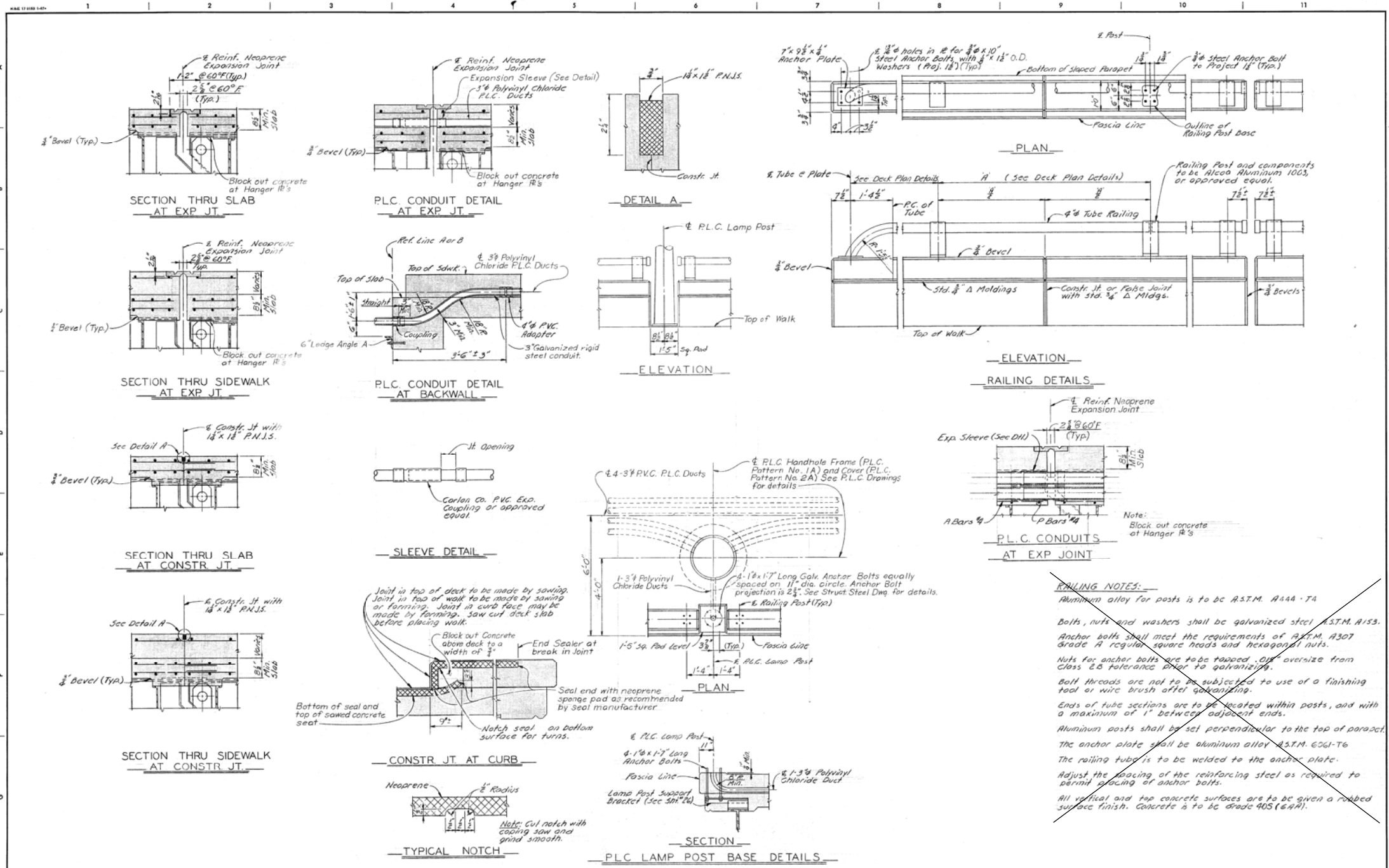
DESIGNED BY <i>M. J. J.</i>	APPROVED STRUCTURAL ENGINEER	CITY OF DETROIT CITY ENGINEERING DEPARTMENT CITY ENGINEERS OFFICE FOR COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT	WEST SIDE INDUSTRIAL REHABILITATION PROJECT NO. 2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.	SHEET 32 OF 26 SHEETS
DRAWN BY A.G.	HEAD CIVIL ENGINEER			CONTRACT NO. PW 6552
CHECKED BY <i>A.P.</i>		COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT	SUPERSTRUCTURE DETAILS	DRWG No. 531
DATE				DATE 10-73

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DESCRIPTION	BY	CHECKED BY	APPROVED	CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR	BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.	EXISTING SUPERSTRUCTURE DETAILS	SHEET 56 OF 65 SHEETS
REVISIONS	PLAN	GRADE	ESTIMATE				CONTRACT NO. PW-6985
	FINAL						ASSIGNMENT NO.
							DATE



DESIGNED BY <i>M. Sime</i>	APPROVED STRUCTURAL ENGINEER	CITY OF DETROIT CITY ENGINEERING DEPARTMENT CITY ENGINEERS OFFICE FOR COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT	WEST SIDE INDUSTRIAL REHABILITATION PROJECT NO. 2 BAGLEY AVE. BRIDGE CROSSING THE P.C.R.R.	SHEET 33 OF 26 SHEETS
DRAWN BY A. G.	MFG. CIV. ENGINEER		SUPERSTRUCTURE DETAILS	CONTRACT NO. PW 6552
CHECKED BY J. M.				DRWG No. 532
				DATE 10-73

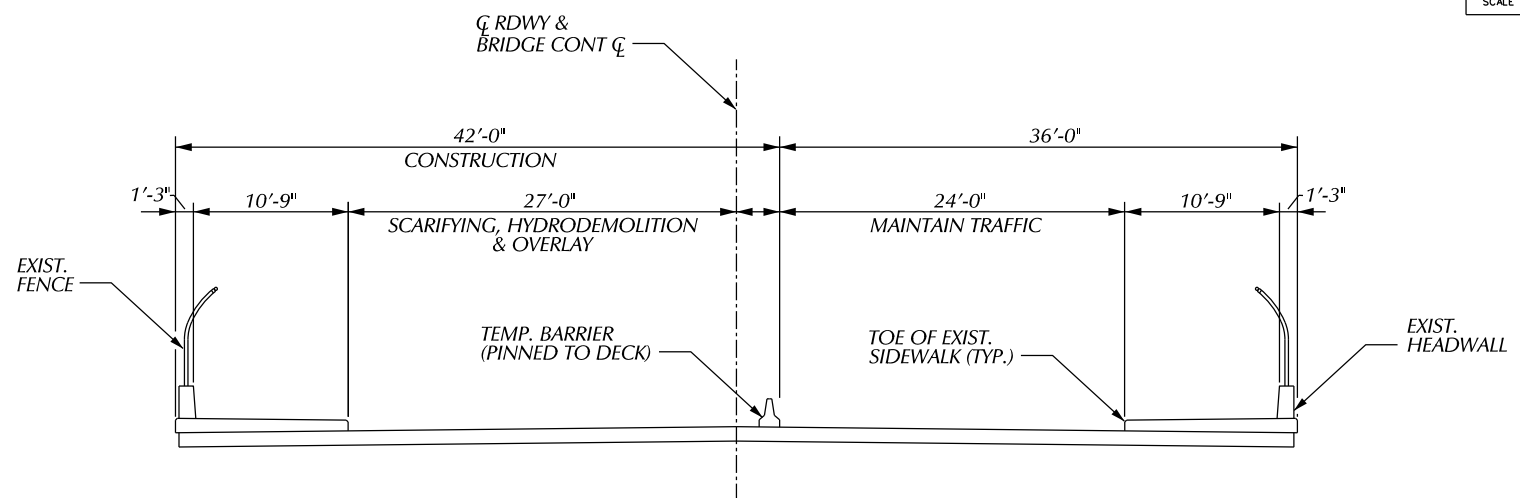
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FOR INFORMATION ONLY

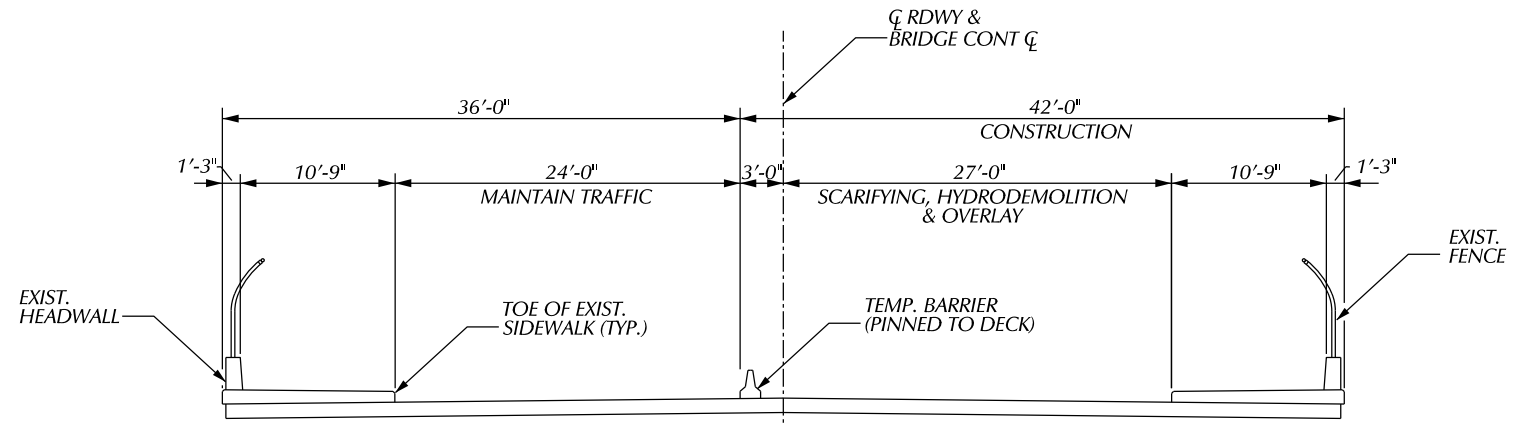
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DESCRIPTION	BY	CHECKED BY	APPROVED	CITY OF DETROIT CITY ENGINEERING DIVISION - D.P.W. BUREAUS OF STREETS AND HIGHWAYS FOR	BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R. EXISTING SUPERSTRUCTURE DETAILS	SHEET 57 OF 65 SHEETS CONTRACT NO. PW-6985 ASSIGNMENT NO. DATE
REVISIONS						

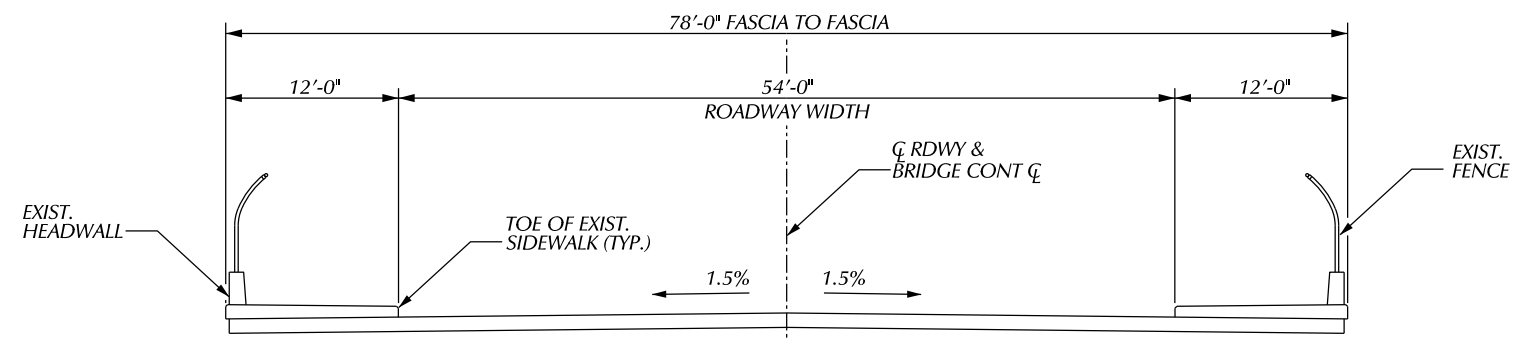
BENCH MARKS ELEV



STAGE I
(Part - Width)



STAGE II
(Part - Width)



STAGE III
(Open to Traffic)

NOTES:

1. TRAFFIC IS TO BE MAINTAINED OVER THE BRIDGE BY PART-WIDTH CONSTRUCTION.
2. PLACEMENT OF TEMPORARY BARRIER SHALL BE ACCORDING TO STANDARD PLAN R-126-SERIES OR AS APPROVED BY ENGINEER (INCLUDED IN PAY ITEM "CONC BARRIER, TEMP, FURN").

MISCELLANEOUS QUANTITIES

1,500 FT	CONCRETE BARRIER TEMP, FURN
1,500 FT	CONCRETE BARRIER TEMP, OPER

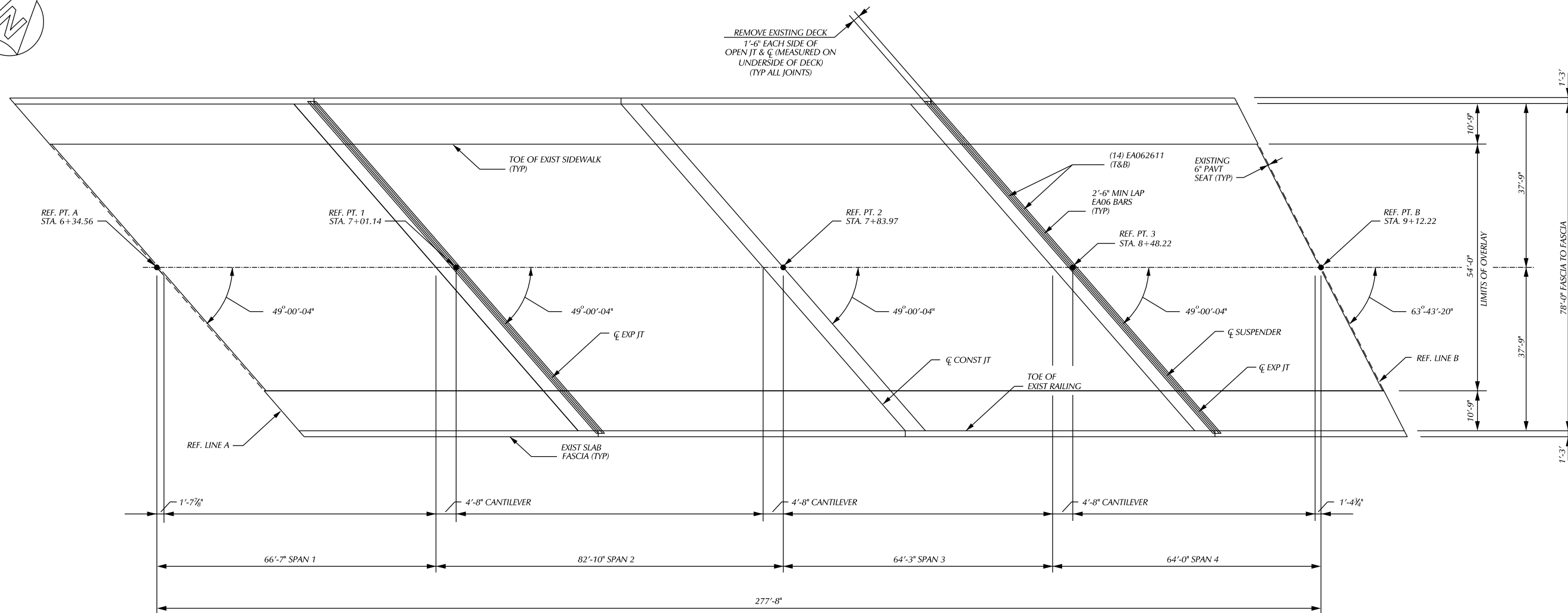
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GRADE			
ESTIMATE			
DESCRIPTION	DR	CHK	DATE
REVISIONS	FINAL	****	****

CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAU OF STREETS AND HIGHWAYS
FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

STAGING PLAN

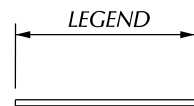
SHEET 59 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE 03/23/2018



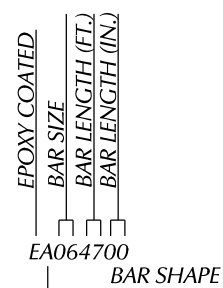
PLAN OF DECK
(R.R. TRACKS NOT SHOWN)

**EPOXY COATED
STEEL
REINFORCEMENT**

BAR	NO. REQ'D	TOTAL WT
EA065204	28	2,201
OVERRUN		109
TOTAL		2,310



EA BAR



BAR LEGEND

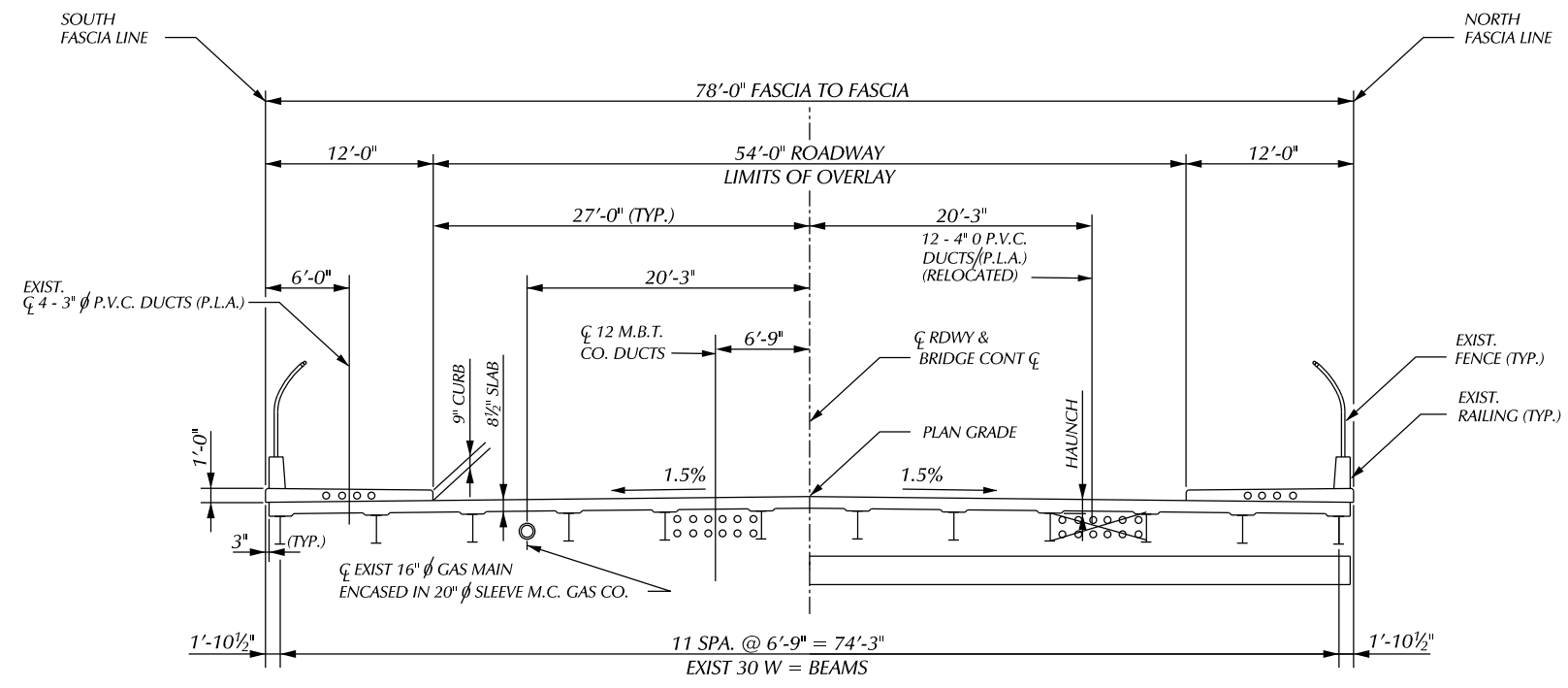
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						ENGINEER BY STREET
DESCRIPTION	DR	CHK	APP	DATE		
REVISIONS						

CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAUS OF STREETS AND HIGHWAYS
FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

DECK RESURFACING DETAILS

SHEET 60 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE 03/23/2018



SECTION A-A
(LOOKING DOWNSTATION)

PLAN	BY	CHECKED BY	APPROVED:
GRADE			ENGINEER OF STREETS
ESTIMATE			
REVISIONS	DESCRIPTION	DATE	BY

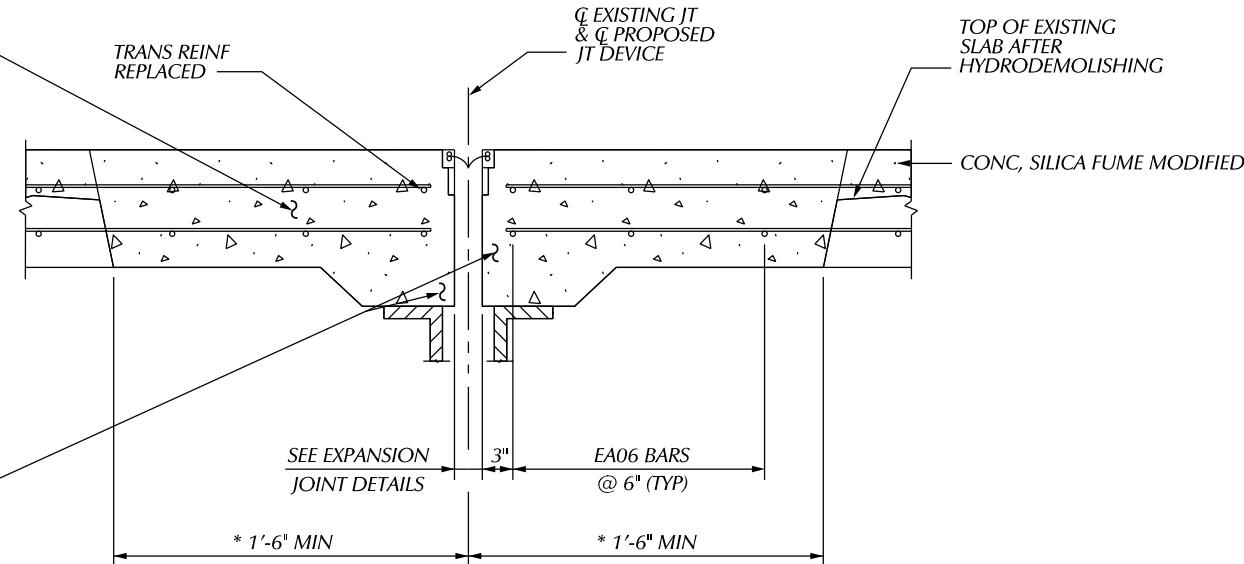
CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAUS OF STREETS AND HIGHWAYS
FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

DECK CROSS - SECTION

SHEET 61 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE 03/23/2018

REMOVE EXISTING EXPANSION JOINT. CONCRETE REMOVAL IS INCLUDED IN THE BID ITEM "DECK JOINT, REM". EXISTING LONGITUDINAL REINFORCEMENT SHALL BE LEFT INTACT AND BLAST CLEANED, TRANSVERSE REINFORCEMENT SHALL BE REPLACED AS SHOWN, AND PAID FOR AS "REINFORCEMENT, STEEL, EXPOXY COATED".

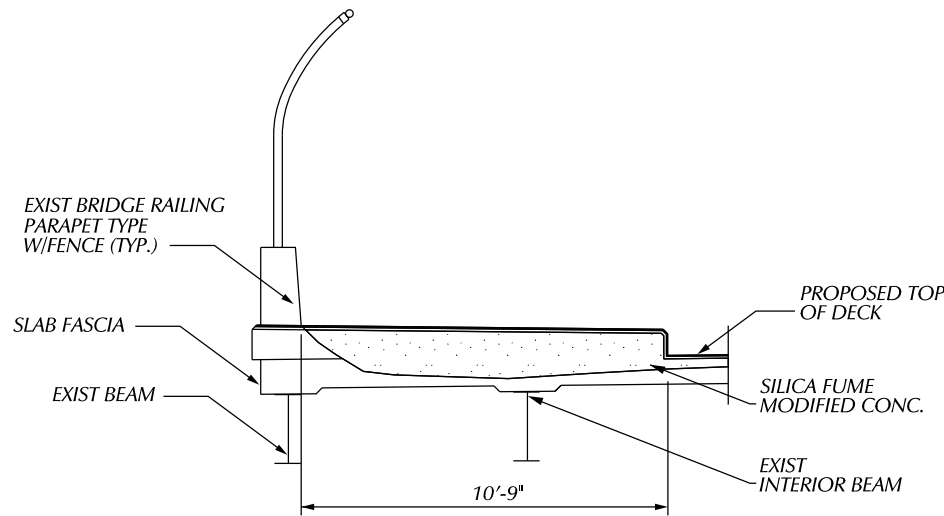


CONC. GRADE D, (CONC. SILICA FUME MODIFIED, MAY BE SUBSTITUTED BUT WILL BE PAID FOR AS "CONC. GRADE D") COST OF FORMING IS INCLUDED IN BID ITEM "CONC. GRADE D". IF CONC. SILICA FUME MODIFIED IS USED, THE EXPANSION JOINT REPLACEMENT AREA SHALL BE CAST AS AN INTERGAL PART OF THE OVERLAY.

SECTION AT PROPOSED TRANSVERSE JOINT
 * BEFORE FORMING, SOUND CONCRETE TO SEE IF ADDITIONAL REMOVAL WILL BE REQUIRED.

NOTES:

- THE WORK COVERED BY THESE PLANS INCLUDES RESURFACING THE EXISTING BRIDGE DECK WITH A DEEP OVERLAY, DECK JOINT REPLACEMENT, COATING OF STRUCTURAL STEEL, P&H REPLACEMENT, BEAM END REPAIR, SUBSTRUCTURE REPAIR AND MAINTAINING TRAFFIC.
- THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
- BAGLEY AVE. TRAFFIC IS TO BE MAINTAINED OVER THE BRIDGE BY PART-WIDTH CONSTRUCTION.
- THE VOLUME OF SILICA FUME MODIFIED CONC. IS BASED ON THE OVERLAY AND AN ESTIMATE QUANTITY TO REPLACE UNSOUND CONCRETE AND TO MAKE GRADE ADJUSTMENTS AS DETERMINED BY THE ENGINEER.
- THE CONTRACTOR SHALL REMOVE AND REPLACE ONLY THAT PORTION OF THE BRUSH BLOCK THAT IS NECESSARY FOR INSTALLATION OF THE DECK JOINT.
- THE ITEM "DECK JOINT, REM" INCLUDES HAND CHIPPING WITHIN LIMITS REQUIRED FOR REMOVAL.
- BEFORE OVERLAYING, SOUND CONCRETE TO DETERMINE WHETHER 1'-6" REMOVAL AT EACH SIDE OF TRANSVERSE JOINTS WILL BE ADEQUATE. INCREASE THE REMOVAL LIMITS IF NECESSARY.
- WHERE STRUCTURAL STEEL IS EXPOSED DURING THE REMOVAL OF UNSOUND DECK CONCRETE, IT SHALL BE CLEANED AND COATED. CLEANING SHALL BE BY BLASTING OR POWER TOOLS. THE PROTECTION OF WORK AND ENVIRONMENT DURING CLEANING WILL BE PAID FOR AS EXTRA WORK.



SECTION THRU BARRIER AT PROP EXPANSION JOINT DEVICE

MISCELLANEOUS QUANTITIES

2,310 LB	REINFORCEMENT, STEEL, EXPOXY COATED
1,200 SFT	* PATCH, FORMING
30 CYD	* PATCHING CONC. C-L
160 CYD	CONC. SILICA FUME MODIFIED
21,660 SFT	FALSE DECKING
600 CFT	* HAND CHIPPING, OTHER THAN DECK
1,666 SYD	HYDRODEMOLITION, FIRST PASS
67 SYD	HYDRODEMOLITION, SECOND PASS
209 FT	DECK JOINT, REM
1,666 SYD	BRIDGE DECK SURFACE CONSTRUCTION
1,666 SYD	SCRAFFING
8,000 DLR	RAILROAD INSPECTION AND FLAGGING
112 SYD	HAND CHIPPING, SHALLOW

THE ACTUAL QUANTITY OF SILICA FUME MODIFIED CONCRETE PLACED ON THE DECK WAS _____ CUBIC YARDS. (THIS INFORMATION IS TO BE FILLED IN BY THE ENGINEER WHEN SUBMITTING AS CONSTRUCTED PLANS.)

* TO BE USED FOR SUBSTRUCTURE REPAIR AS DIRECTED BY THE ENGINEER.

FALSE DECKING SHALL INCLUDE THE AREA BOUND BY REFERENCE LINES A & B AND OUTSIDE FLANGE FASCIAS BEAMS OF A & M.

BRIDGE OVERLAY CROSS SLOPE SHALL BE 1.5%.

MEASURES SHALL BE TAKING TO PREVENT DEBRIS FROM FALLING FROM THE STRUCTURE.

ALL STEEL FOR EXPANSION JOINT SHALL BE AASHTO M270, GRADE 36.

THE CONTRACTOR WILL BE FURNISHED WITH PLANS OF THE EXISTING STRUCTURE IF REQUESTED.

WORK FOR REMOVAL AND REINSTALLATION OF PORTIONS OF THE EXISTING THREE BEAM GUARDRAIL REQUIRED FOR ACCESS TO SCREED THE DECK SHALL BE INCLUDED IN THE BID ITEM, "BRIDGE DECK SURFACE CONSTRUCTION".

WORK FOR REMOVAL AND REINSTALLATION OF PORTIONS OF THE EXISTING THREE BEAM GUARDRAIL REQUIRED FOR ACCESS TO SCREED THE DECK SHALL BE INCLUDED IN THE BID ITEM, "DECK JOINT, REM".

NO PORTION OF THE DECK WORK SHALL ENCRDACH ON THE EXISTING UNDERCLEARANCE.

FIELD BEND STEEL REINFORCEMENT IF NECESSARY TO CLEAR OBSTRUCTIONS AND BEND BACK INTO PLACE FOR EMBEDMENT INTO PROPOSED CONCRETE. INCLUDED IN THE BID ITEM "REINFORCEMENT, STEEL, EXPOXY COATED".

THE CONTRACTOR SHALL NOTIFY EACH UTILITY COMPANY 48 HOURS IN ADVANCE OF PERFORMING WORK ON THAT COMPANY'S CONDUITS OR FACILITIES.

FORMS FOR LARGE PATCHES SHALL BE INSTALLED IN 2'-0" TO 4'-0" HIGH SECTIONS WITH THE TOP OF FORM NO MORE THAN 4'-0" ABOVE THE LEVEL OF CONCRETE AS THE POUR PROGRESSES.

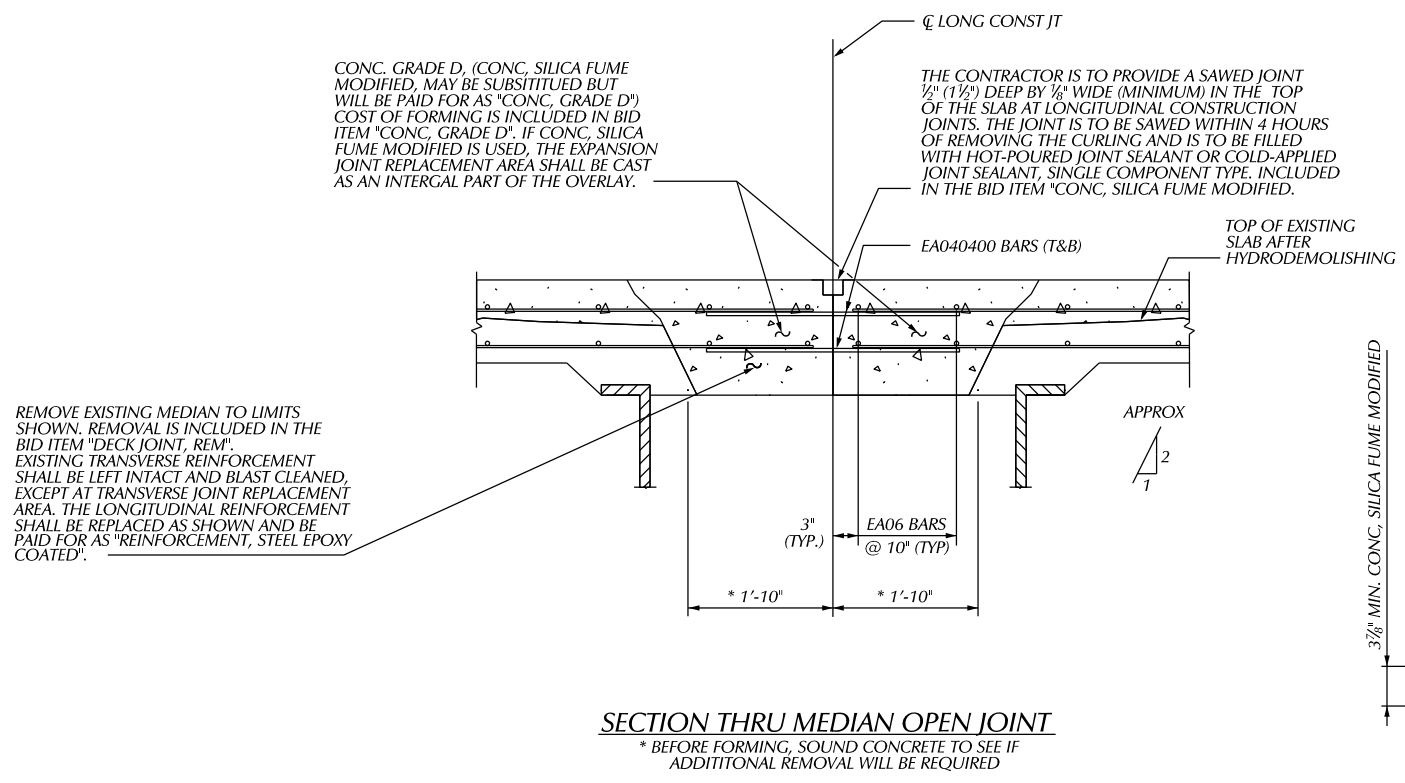
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REVISIONS	APPROVATE	
FINAL	*****	*****

CITY OF DETROIT
 CITY ENGINEERING DIVISION - D.P.W.
 BUREAUS OF STREETS AND HIGHWAYS
 FOR

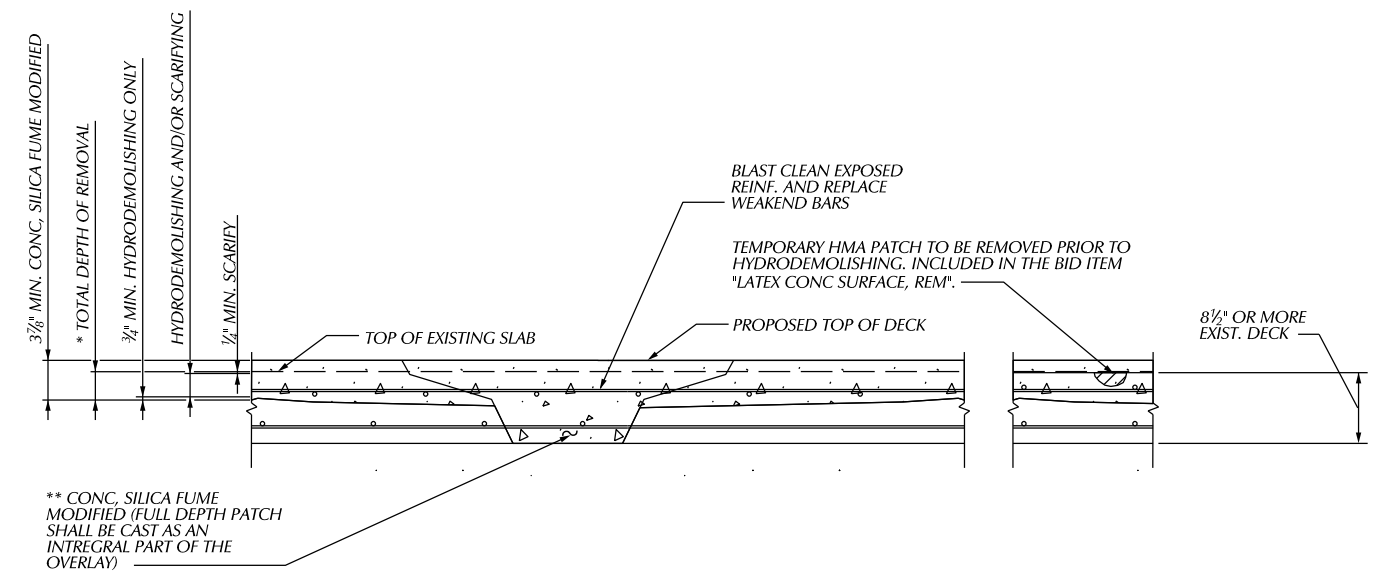
BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

DECK RESURFACING DETAILS

SHEET 62 OF 65 SHEETS
 CONTRACT NO. PW-6985
 ASSIGNMENT NO.
 DATE 03/23/2018



REMOVE EXISTING MEDIAN TO LIMITS SHOWN. REMOVAL IS INCLUDED IN THE BID ITEM "DECK JOINT, REM". EXISTING TRANSVERSE REINFORCEMENT SHALL BE LEFT INTACT AND BLAST CLEANED, EXCEPT AT TRANSVERSE JOINT REPLACEMENT AREA. THE LONGITUDINAL REINFORCEMENT SHALL BE REPLACED AS SHOWN AND BE PAID FOR AS "REINFORCEMENT, STEEL EPOXY COATED".



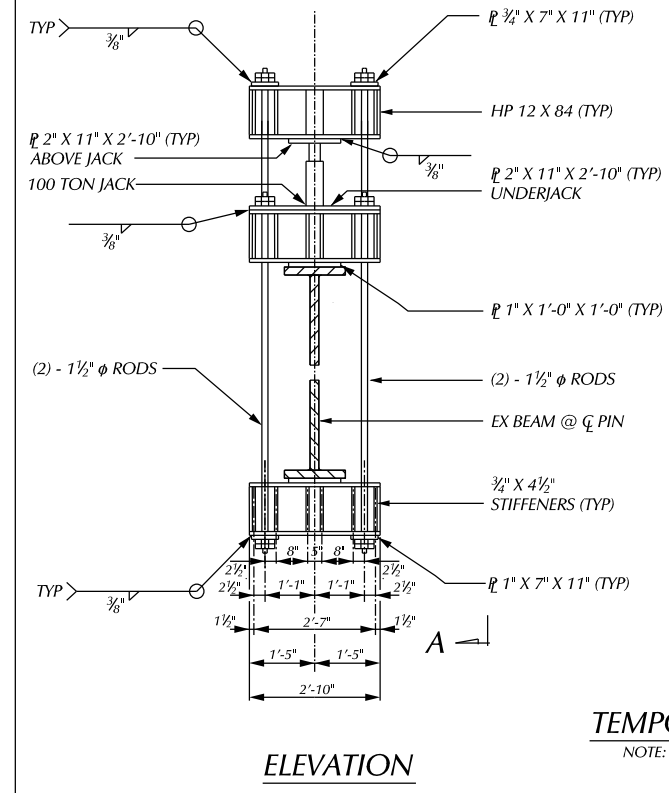
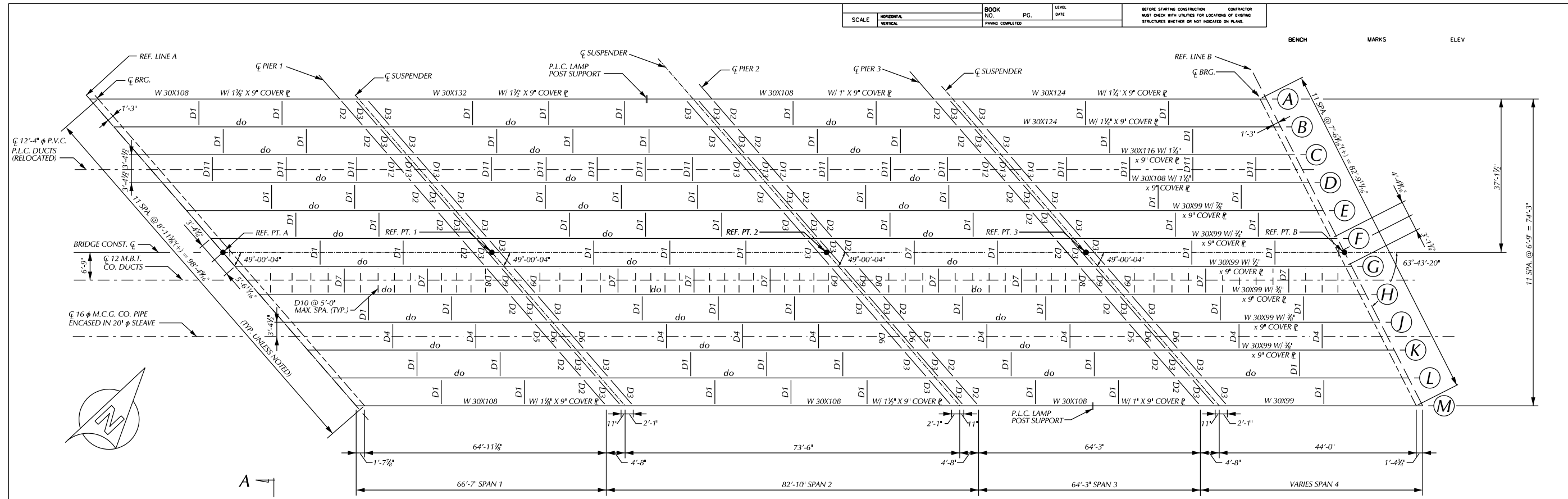
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				GRADE			DESIGNED BY STREET
				ESTIMATE			
				FINAL	DATE	DATE	
REVISIONS							

CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAU OF STREETS AND HIGHWAYS
FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.
DECK RESURFACING DETAILS

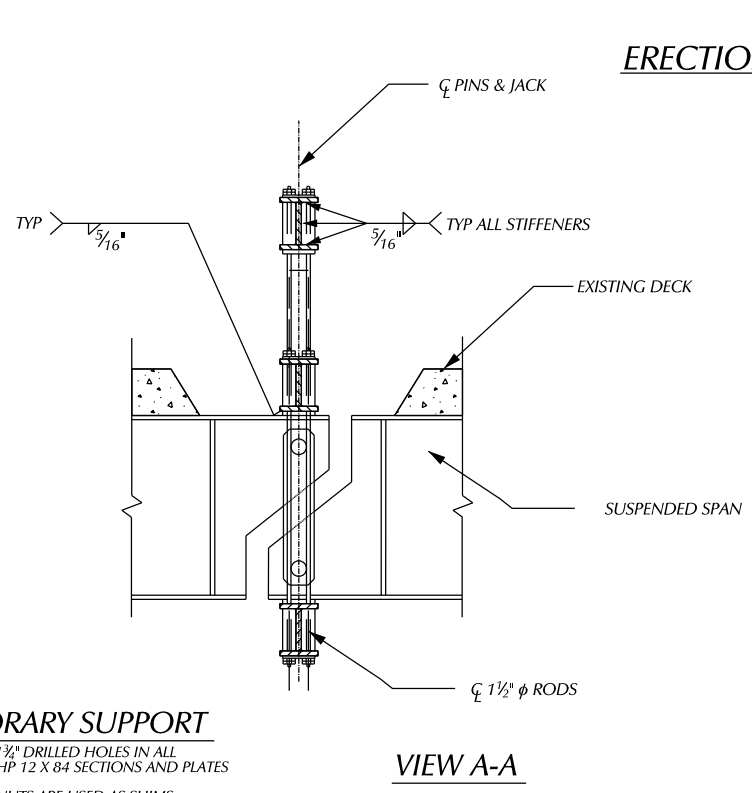
SHEET 63 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE 03/23/2018

SCALE	HORIZONTAL	BOOK NO.	PG.	LEVEL	DATE	BEFORE STARTING CONSTRUCTION CONTRACTOR MUST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.
	VERTICAL					

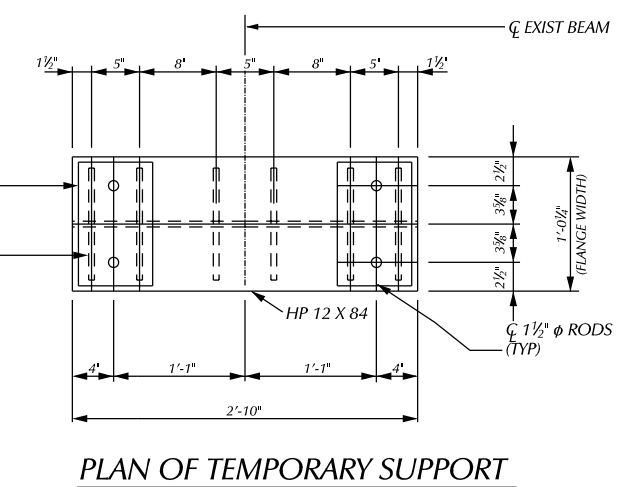
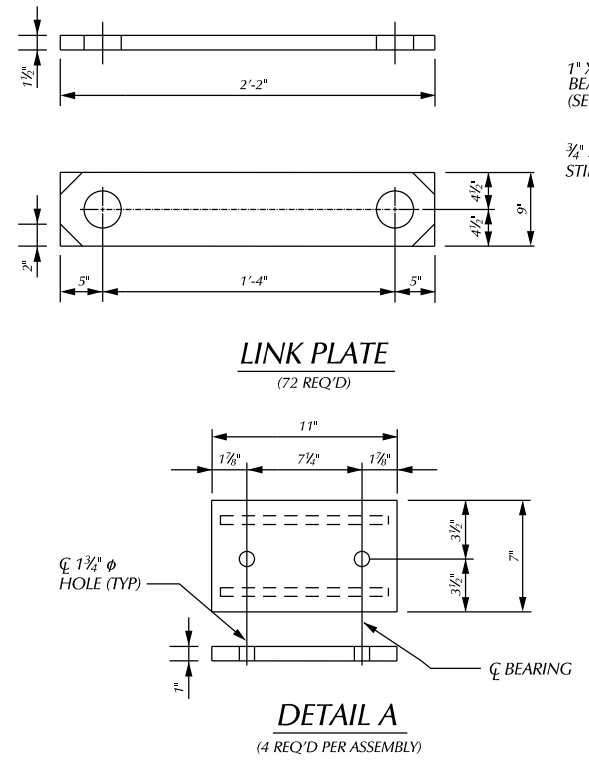


TEMPORARY SUPPORT

NOTE: 1/8" DRILLED HOLES IN ALL HP 12 X 84 SECTIONS AND PLATES
NUTS ARE USED AS SHIMS
STOP WELD 1/2" SHORT OF CORNER CLIPS, WRAP WELD AROUND OUTSIDE EDGE AT STIFFENERS



ERECTION DIAGRAM



SUSPENDER ROD DETAIL

* CONTRACTOR SHALL DETERMINE ROD AND THREAD LENGTH TO FIT SITUATION
4 REQUIRED PER ASSEMBLY W/7 HEAVY HEX NUTS & 4 HARDENED WASHERS PER ROD

DESCRIPTION	DR	CHK	APPV	DATE
REVISIONS				
PLAN				
GRADE				
ESTIMATE				
FINAL				

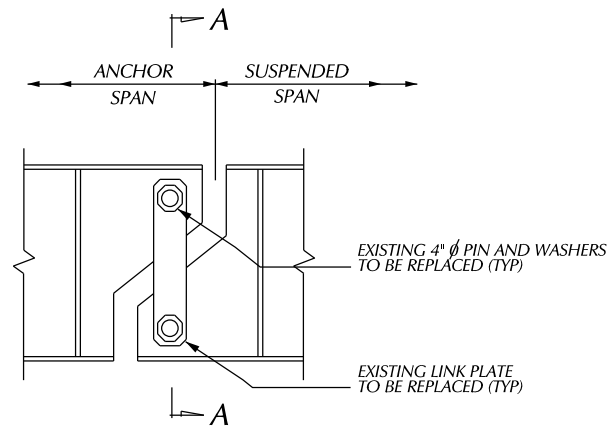
CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAU OF STREETS AND HIGHWAYS
FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.
PIN & HANGER REPLACEMENT DETAILS

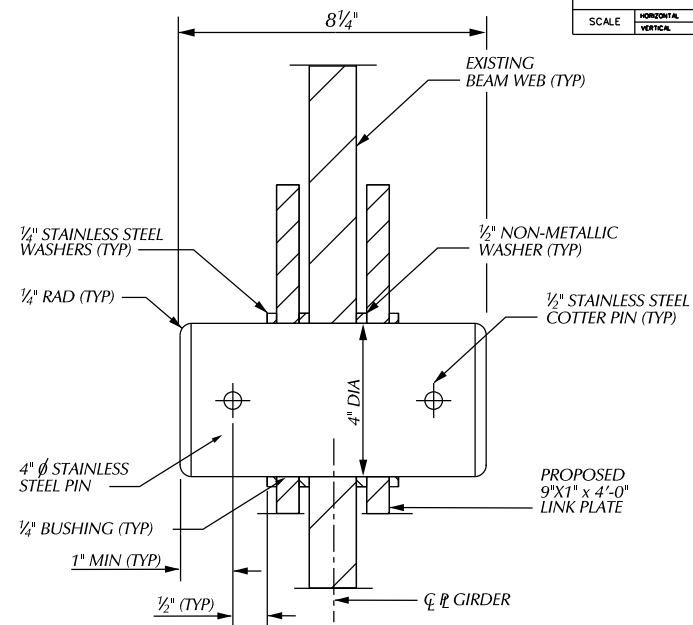
SHEET 64 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE 03/23/2018

SCALE	HORIZONTAL	BOOK NO.	PC.	LEVEL	DATE	BEFORE STARTING CONSTRUCTION MUST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.
	VERTICAL	NO. PAINTING COMPLETED				

BENCH MARKS ELEV

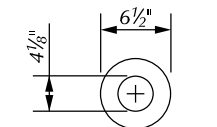
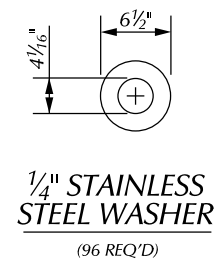


ELEVATION AT PIN



PROPOSED PIN DETAIL

(72 REQ'D)



INCLUDED IN THE BID ITEM "STRUCTURAL STEEL, FURN AND FAB, PIN HANGER" (144 REQ'D)

MISCELLANEOUS QUANTITIES

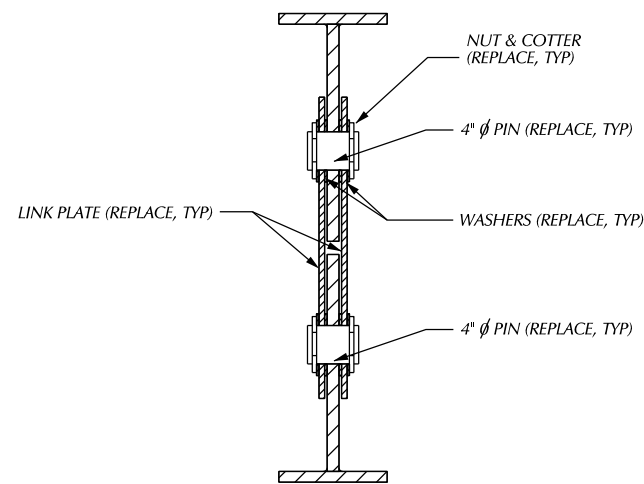
1,555 FT	BEAM PLATE, SEAL PERIMETER
** 1 LS	CONC SURFACE COATING (R01 OF 82418)
112 SYD	SUBSTRUCTURE HORIZONTAL SURFACE SEALER
834 FT	PROTECTIVE SHIELD, UTILITY PIPE
36 EA	SUPPORT, SUSPENSION, TEMP
36 EA	HANGER ASSEMBLY, FIELD MEASUREMENT
36 EA	HANGER ASSEMBLY, REM AND ERECT
7,730 LBS	STRUCTURAL STEEL, FURN AND FAB, PIN AND HANGER
144 EA	BUSHING
1 LS	STEEL STRUCTURE, CLEANING, TYPE 4 (R01 OF 82418)
1 LS	STEEL STRUCTURE, COATING, TYPE 4 (R01 OF 82418)
1 LS	FIELD REPR OF DAMAGE COATING (R01 OF 82418)

* THE ESTIMATE AREA OF STRUCTURAL STEEL TO BE PAINTED IS 84,300 SQUARE FEET.

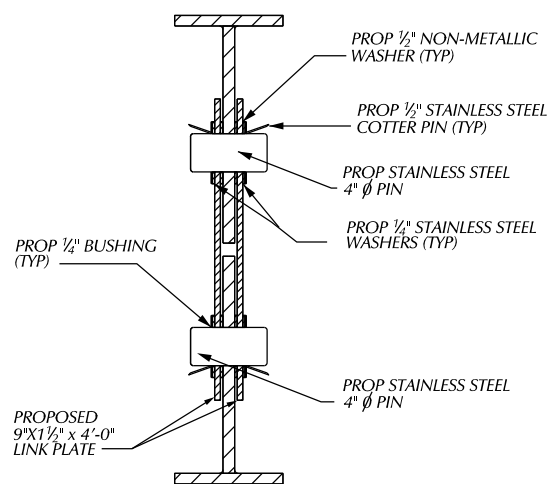
** THE ESTIMATE AREA OF CONC. SURFACE COATING IS 1,510 SYD.

NOTES:

- THIS BRIDGE IS COATED WITH LEAD BASED PAINT.
- SEE SUBSECTION 715 OF THE STANDARD SPECIFICATIONS FOR PROTECTION OF WORK AND ENVIRONMENT DURING THE BLAST CLEANING OF STRUCTURES.
- CONDUITS SHALL NOT BE CLEANED AND COATED. (SEE SUBSECTION 715 OF THE STANDARD SPECIFICATIONS).
- SUBSTRUCTURE HORIZONTAL SURFACE COATING SHALL BE APPLIED TO THE TOP OF ALL PIERS.
- CONCRETE SURFACE COATING SHALL BE APPLIED TO THE ENTIRE EXPOSED SURFACES OF ALL PIERS EXCEPT TOP, CRASHWALL, CONCRETE RAILING AND SLAB FASCIA.
- THE AREA BEHIND AND AROUND THE HANGER ASSEMBLY SHALL BE COATED PRIOR TO INSTALLING THE NEW LINK PLATES AND PINS. PROPOSAL LINK PLATES SHALL BE SHOP COATED.
- THE PROTECTION OF THE WORK AND ENVIRONMENT DURING BLAST CLEANING OF WEBS BEHIND AND AROUND HANGER ASSEMBLIES SHALL BE ACCORDING TO SUBSECTION 715 OF THE STANDARD SPECIFICATIONS. (INCLUDED IN THE BID ITEM "HANGER ASSEMBLY, REMOVE AND ERECT").
- WELDING ON EXISTING GIRDERS WILL NOT BE PERMITTED.
- THE PERMISSIBLE HYDRAULIC JACK CAPACITY SHALL BE LIMITED TO 100 TON.
- ALTERNATE DESIGNS OF THE TEMPORARY SUPPORT SHALL BE BASED ON LOADS AS FOLLOWS:
200 KIPS VERTICAL GIRDER LOAD.
- THE ENGINEER SHALL INSPECT THE STRUCTURAL STEEL PARTS THAT HAVE BEEN BLAST CLEANED FOR EVIDENCE OF CRACKS OR LOSS OF SECTION DUE TO CORROSION OF MORE THAN 25 PERCENT. SUCH DETERIORATION SHALL BE REPORTED IN WRITING TO THE REGION BRIDGE ENGINEER.
- THE SIGNS OVER CANADIAN PACIFIC R.R. SHALL BE REMOVED FOR CLEANING AND COATING OF THE FASCIA BEAMS. SIGNS SHALL BE REINSTALLED USING NEW CONNECTION HARDWARE ACCORDING TO SUBSECTION 919.02 OF THE STANDARD SPECIFICATIONS (INCLUDING IN THE BID ITEMS FOR CLEANING AND COATING EXISTING STEEL STRUCTURES).
- SEALANT SHALL BE APPLIED AROUND THE PERIMETER OF THE BEARING PLATES TO CONCRETE CONTACT SURFACES AFTER CUTTING AWAY ANY PROTRUDING PORTION OF LEAD PLATE.
- SEALANT SHALL BE APPLIED AROUND THE PERIMETER OF THE BOLTED END DIAPHRAGM CONNECTION PLATES AND ANGLES.
- SEALANT SHALL BE APPLIED AROUND THE PERIMETER OF ALL BEAM ENDS WHERE ENCASED IN THE BACKWALLS.
- ALL STRUCTURAL STEEL SHALL BE COATED ACCORDING TO SUBSECTION 716 OF THE STANDARD SPECIFICATIONS. THE COLOR OF THE URETHANE PROTECTIVE COAT SHALL BE LIGHT GREY. FEDERAL STANDARD 595B COLOR NUMBER 16440.
- THE CONTRACTOR SHALL TAKE NECESSARY MEASURES TO AVOID OVERSPRAY ON ADJACENT SUBSTRUCTURE AND SUPERSTRUCTURE CONCRETE SURFACES AND ON SIGNS ATTACHED TO THE STRUCTURE. (INCLUDING IN THE BID ITEM "STEEL STRUCTURE, COATING, TYPE 4").
- IF END DIAPHRAGMS INTERFERE WITH THE PLACEMENT OF THE TEMPORARY SUPPORT, THEY SHALL BE REMOVED AND RE-INSTALLED WITH NEW HARDWARE. INCLUDED IN THE BID ITEM "SUPPORT, SUSPENSION, TEMP".



SECTION A-A (EXISTING)



SECTION A-A (PROPOSED)

PROPOSED CROSS SLOPE
(LOOKING UPSTATION)

PLAN	BY	CHECKED BY	APPROVED
GRADE			
ESTIMATE			
REVISIONS	DR	CHK	APPV DATE
	FINAL	****	****

CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAUS OF STREETS AND HIGHWAYS
FOR

BAGLEY AVE. BRIDGE OVER CANADIAN PACIFIC R.R.

PIN & HANGER REPLACEMENT DETAILS

SHEET 65 OF 65 SHEETS
CONTRACT NO. PW-6985
ASSIGNMENT NO.
DATE 03/23/2018