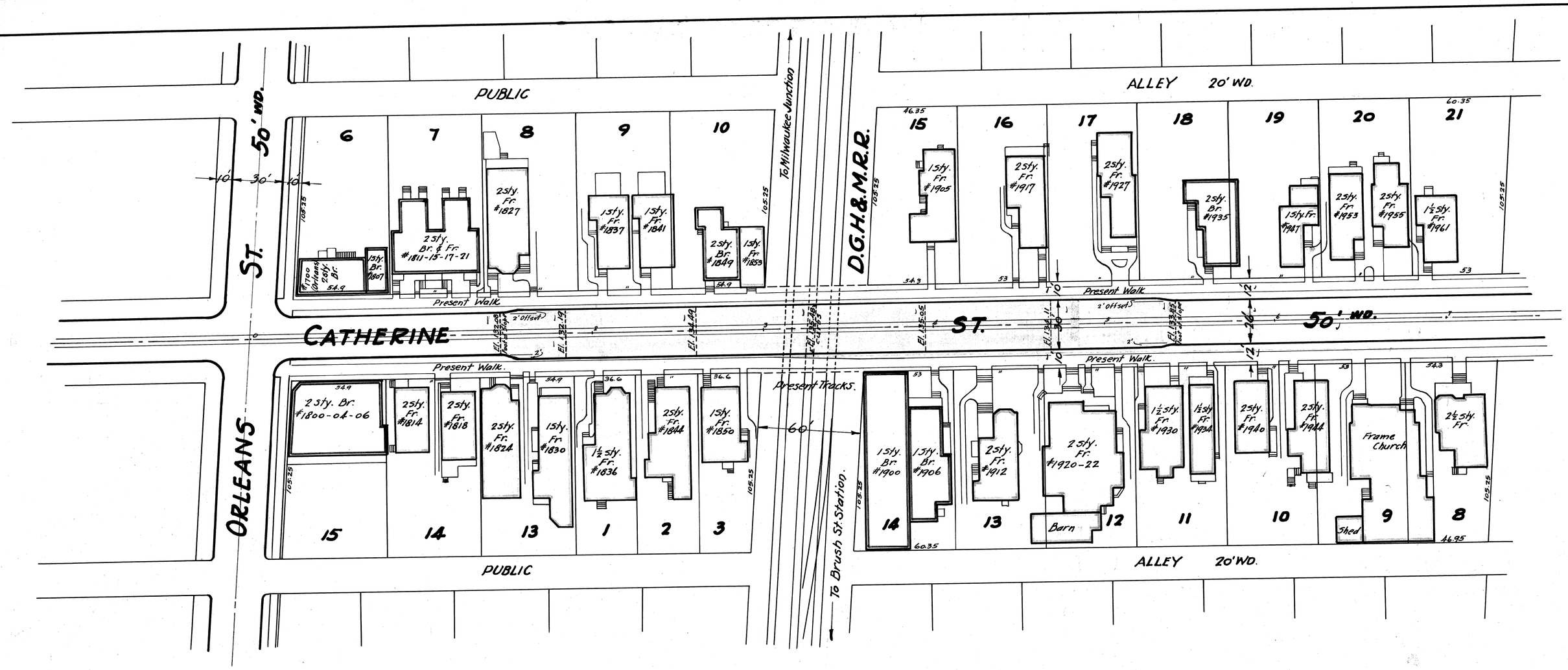
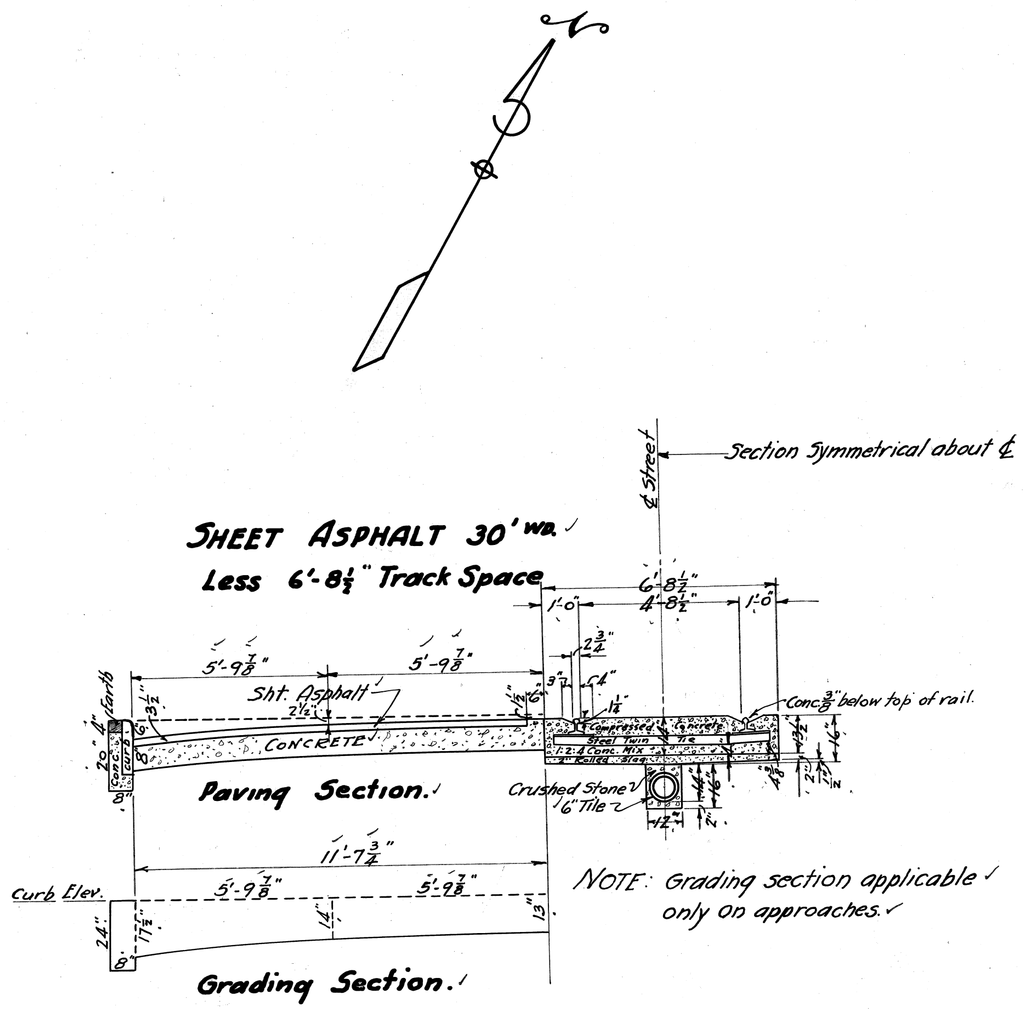
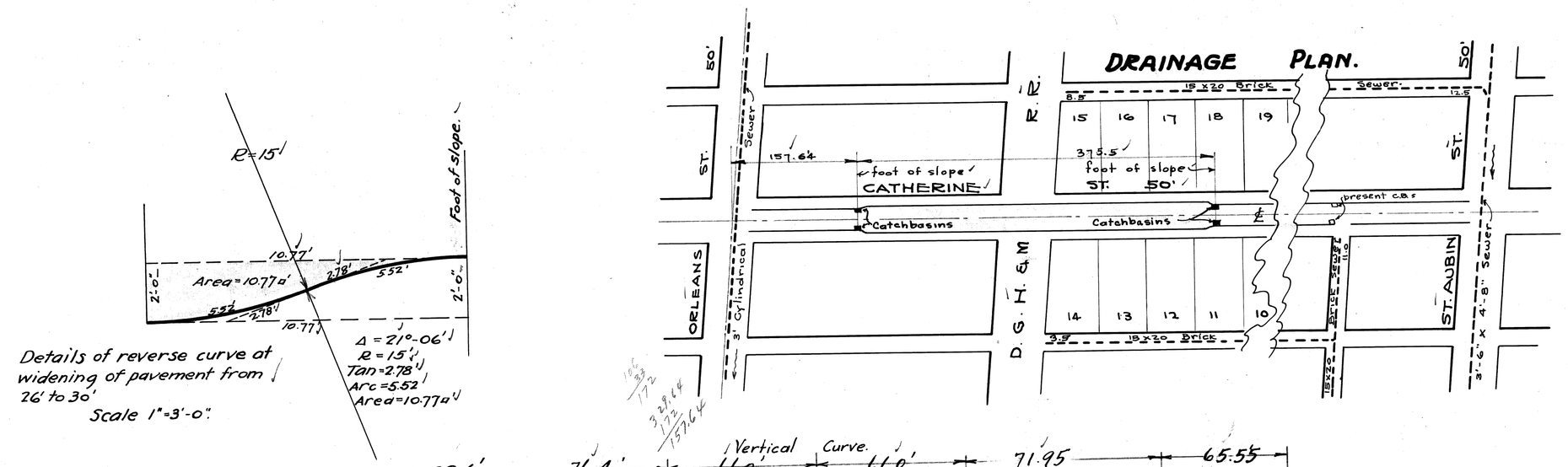
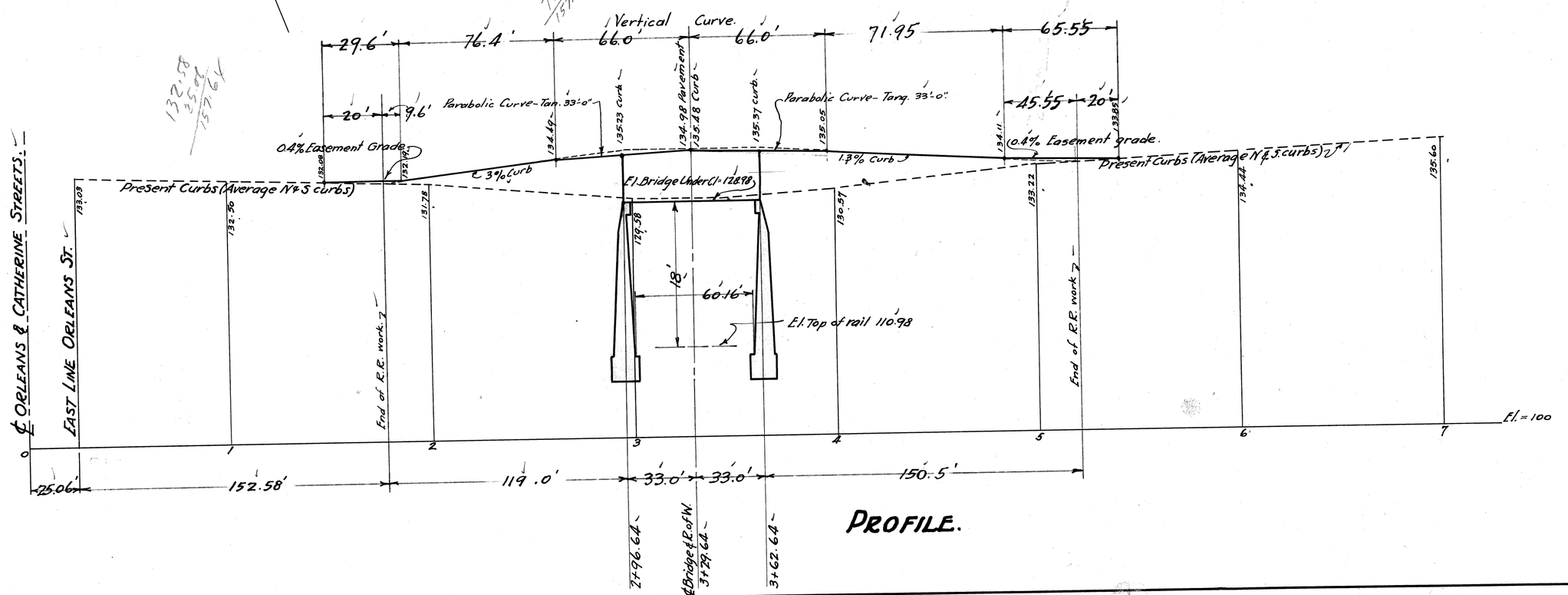








APPROVED Aug 23 1927 1926
Perry A. Fellows
CITY ENGINEER
J. A. Heaman
CHIEF ENGINEER G.T.RY. SYSTEM WESTERN LINES.

CITY OF DETROIT

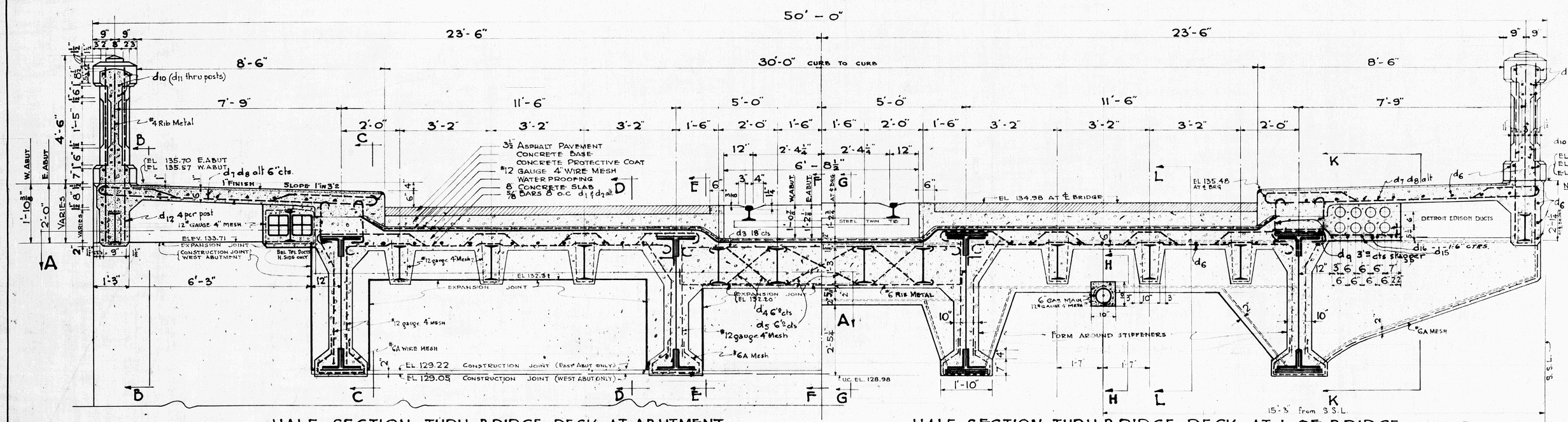
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE.
DEPARTMENT OF GRADE SEPARATION & BRIDGES
DEQUINDRE ST. GRADE SEPARATION

MADISON ~~CATHERINE~~ ST.

Made by AW-H.T.J Scales 1926.
Checked by R.J. 5/5/26. Plan 1"=40'
Vertical 1"=10'

REVISED JULY 1926.

File XO 77-1



HALF SECTION THRU BRIDGE DECK AT ABUTMENT

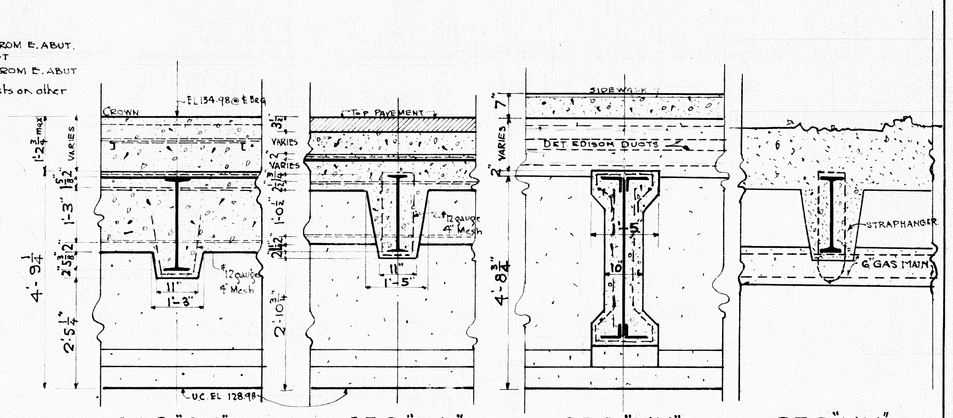
NOTE - EXPANSION JOINTS IN EAST ABUT ONLY
- USE TWO PLY TAR FELT BETWEEN ALL SLIDING SURFACES

SECTIONS AT RT. ∠ TO STREET

HALF SECTION THRU BRIDGE DECK AT ℄ OF BRIDGE

NOTE - SECTIONS AT OTHER FLOOR BEAMS SAME AS ABOVE EXCEPT FOR THICKNESS OF CONCRETE BASE AND ELEVATIONS OF PAVEMENT AND SIDEWALK.

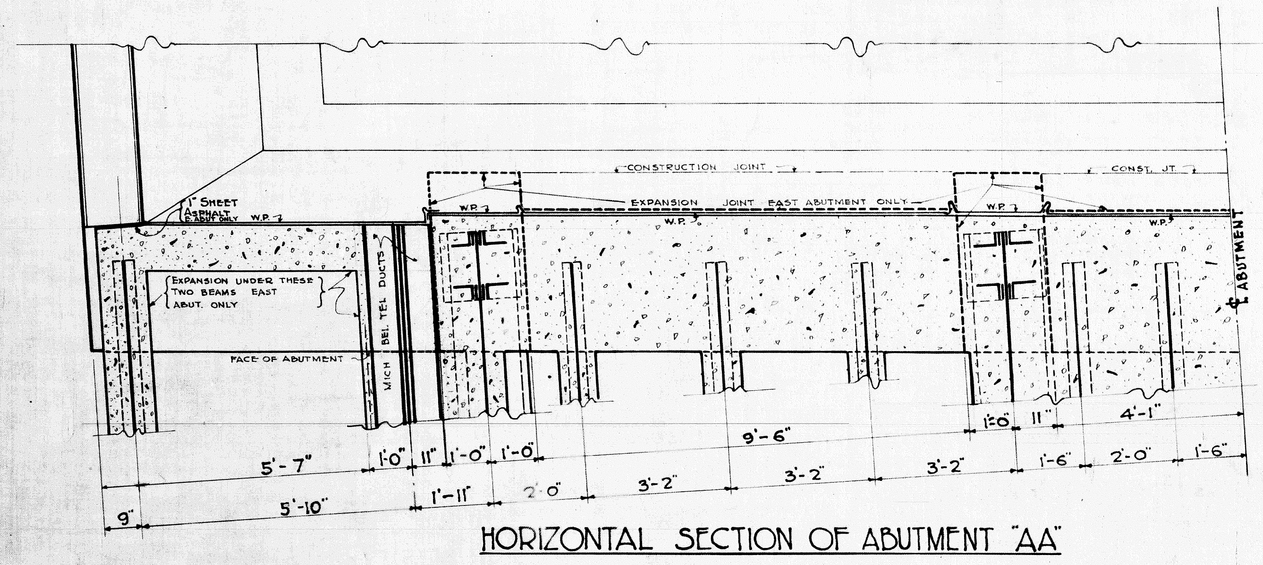
Note PLC ducts not shown to be arranged for in field



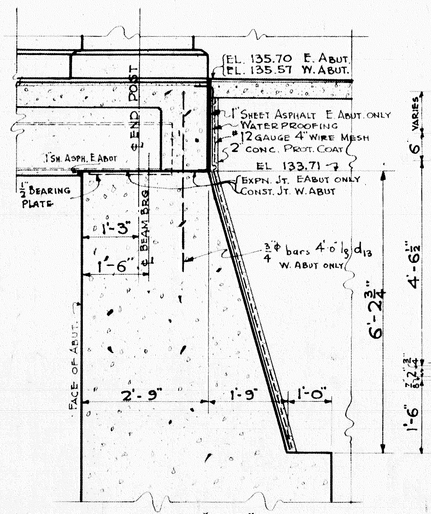
SEC "GG" SEC "LL" SEC "KK" SEC "HH"

TYP. SECS. AT INT. PANEL POINTS

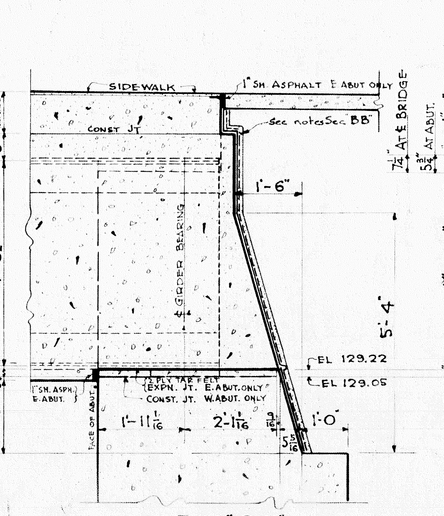
REINFORCING BARS NOT SHOWN



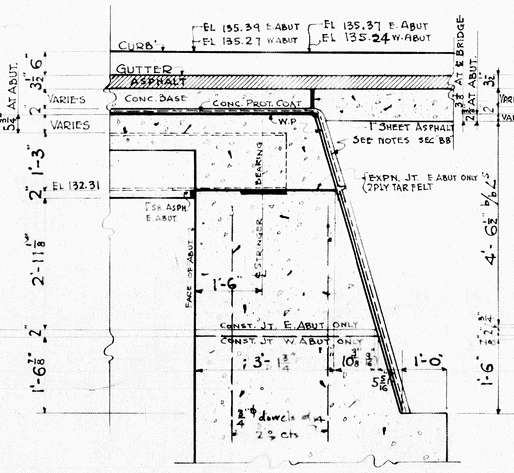
HORIZONTAL SECTION OF ABUTMENT "AA"



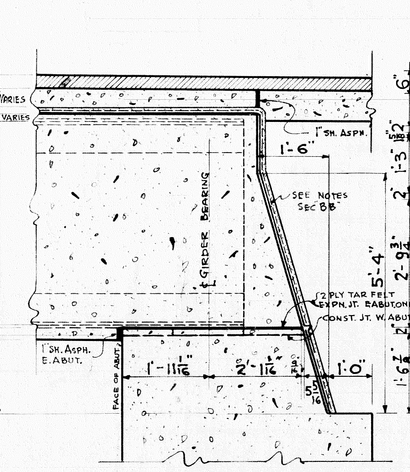
SEC "BB"



SEC "CC"



SEC "DD"

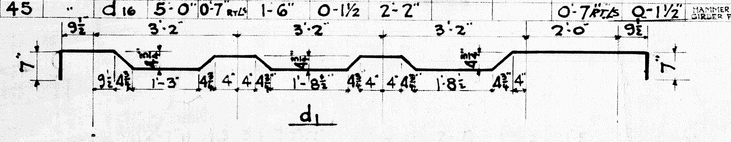


SEC "EE" SEC "FF"

TYPICAL SECTIONS AT ABUTMENTS

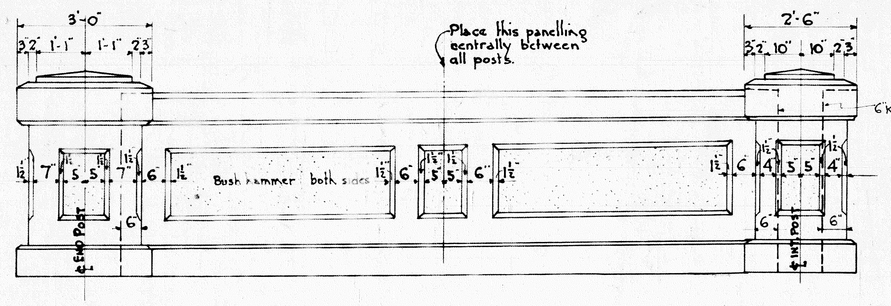
REINFORCING BARS

LOCATION	Nº	SIZE	MARK	LENGTH	HOOK	A	B	C	H	D	E	HOOK	H	REMARKS
DECK SLAB - UNDER SIDE PAVMENT	100	⅝ ϕ	d_1	15'-3"										SEE SKETCH BELOW
" " " " "	100	-	d_2	12'-0"	0'-8" 2R			10'-8"				0'-8" 2R		
" " " ST. CAR "	40	¾ ϕ	d_3	10'-9"	0'-9" 5R			9'-3"				0'-9" 5R		
" " " " "	48	-	d_4	4'-0"	0'-6" RED	0'-6"	1'-6"	0'-6"				0'-6" RED	1'-3"	2 Hooks to be hammered around I.B. flanges after placing
" " " " "	24	-	d_5	5'-0"	0'-6" RED	0'-6"	2'-6"	0'-6"				0'-6" RED	1'-3"	do
" " To SIDEWALK	46	¾ ϕ	d_9	2'-6"	0'-5" R			1'-3"				0'-6" RED		dowels
" " SIDEWALK & RAIL	200	⅜ ϕ	d_6	15'-0"				STRAIGHT						temperature bars
S.W. "	132	½ ϕ	d_7	10'-3"	0'-6" 2R	2'-6"	0'-3"	4'-0"	0'-3"	2'-0"		0'-6" 2R	0'-3"	
" "	132	½ ϕ	d_8	10'-0"	0'-6" 2R			9'-0"				0'-6" 2R		
RAILING Top & Btm Rails	80	½ □	d_{10}	12'-0"				STRAIGHT						
" Posts to Rails	100	½ □	d_{11}	7'-0"				"						dowels
" Posts to Beam	40	¾ ϕ	d_{12}	6'-0"				"						"
Abut. to S.W. End Beam	8	¾ ϕ	d_{13}	4'-0"				"						"
" Const. joint.	68	¾ ϕ	d_{14}	6'-0"				"						"
DETROIT EDISON DUCTS	24	½ ϕ	d_{15}	20'-0"										
" " "	45	-	d_{16}	5'-0"	0'-7" RED	1'-6"	0'-1½"	2'-2"		3'-2"		0'-7" RED	0'-1½"	INSIDE HOOK BROKEN OFF AFTER PLACING

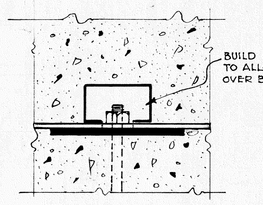


BILL OF WIRE MESH

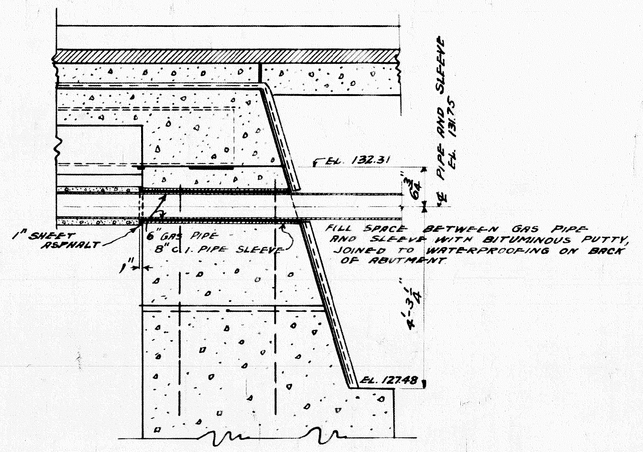
LOCATION	Nº SHEETS	SIZE	DESCRIPTION
RAILING	4	32" × 13'-6"	TRUSCON RIB METAL #4 OR EQUIVALENT
"	2	32" × 13'-0"	" " " " " "
"	2	32" × 14'-0"	" " " " " "
BTM FLANGES OF GIRDERS	260 lin. ft	56" WIDE	A.S. & W. Co #6A " "
" " CANTILEVERS	65 "	44" "	" " " "
SIDES OF GIRDERS	680 "	48" "	#12 GAUGE 4" WIRE MESH
UNDER STREET CAR STRINGERS	16 sheets	48" × 11'-0"	TRUSCON RIB METAL #6 " "
AROUND STRINGERS	500 lin. ft	42" WIDE	#12 GAUGE 4" WIRE MESH
DECK PROTECTIVE COAT	560 "	48" "	" " " " "
AROUND CENTRE FL. BEAMS	45 "	42" "	" " " " "
" OUTSIDE "	70 "	60" "	" " " " "
SIDES OF CANTILEVERS	120 "	48" "	" " " " "
TOP FL "	60 "	48" "	" " " " "
AROUND BELL TEL. DUCTS	65 "	60" "	" " " " "
" GAS MAIN	65 "	24" "	" " " " "



DETAIL OF RAILING AND POSTS



SEC AT ANCHOR BOLTS
EXPANSION END



DETAIL OF SLEEVE FOR GAS PIPE
EXPANSION END ONLY

Approved _____ CHIEF ENGINEER D.G.H.&M.Ry.

Approved Perry A Green CITY ENGINEER

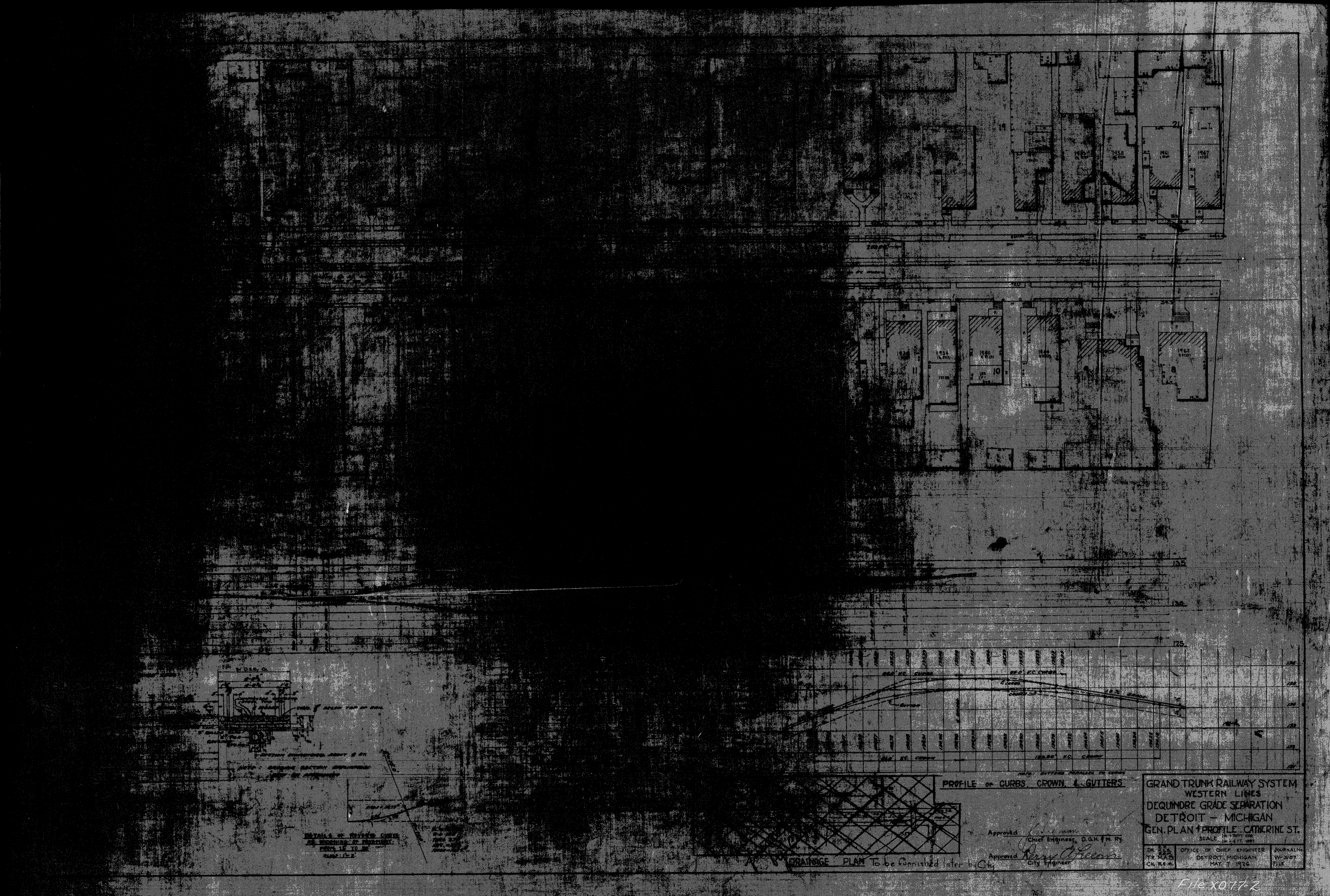
GRAND TRUNK RAILWAY SYSTEM
WESTERN LINES
DEQUINDRE GRADE SEPARATION
MASONRY DETAILS - CATHERINE ST.
DETROIT MICHIGAN
SCALE ½" = 1 FT.

DR. E.J.W.	OFFICE OF CHIEF ENGINEER	JNL Nº
TR. E.J.W.	DETROIT, MICHIGAN.	W. 3111
CH. R.E.M.	MAY 18 1926	FILE

SHEET ② OF ②

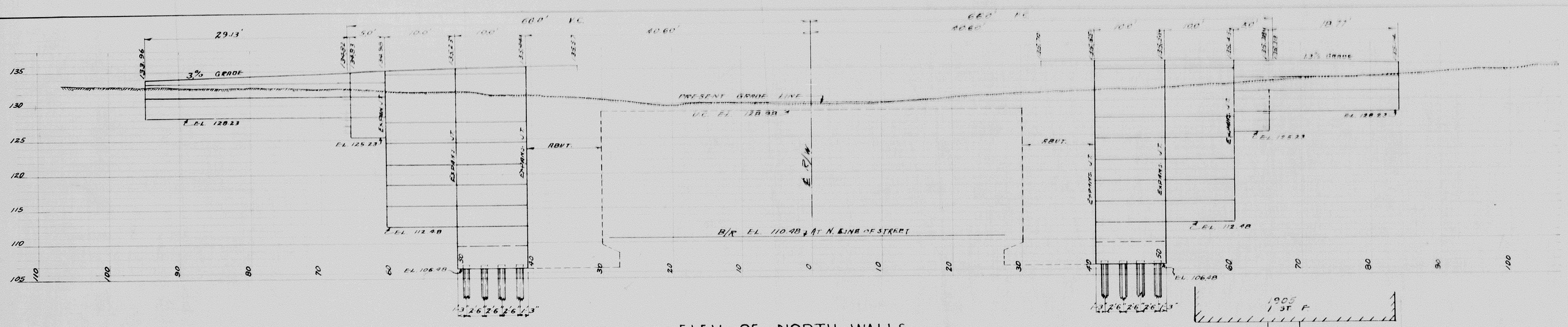
PROPERTY OF

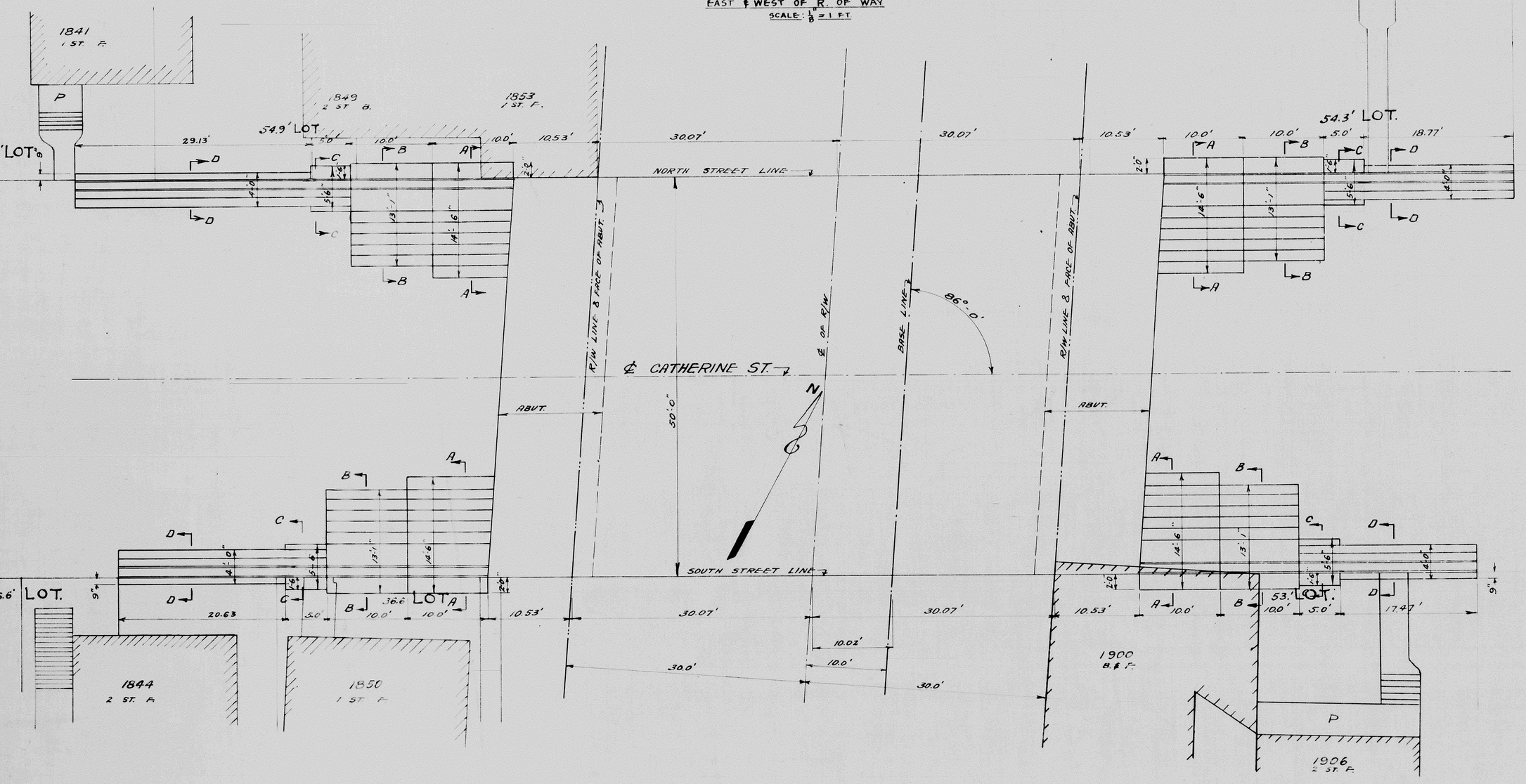
23.A



PROFILE OF CURBS, CROWN, & GUTTERS
GRAND TRUNK RAILWAY SYSTEM
WESTERN LINES
DEQUINDRE GRADE SEPARATION
DETROIT – MICHIGAN
GEN. PLAN & PROFILE CATHERINE ST.
SCALE 1in. = 20 FT. HOR. 1in. = 4 FT. VERT.
DR. R.E.S.
TR. M.A.D.
CH. R.E.M.
OFFICE OF CHIEF ENGINEER
DETROIT, MICHIGAN
MAY 7 1926
JOURNAL No. W-3107
FILE
Approved
Chief Engineer, D.G.H. & M. Ry.
Approved
City Engineer
DRAINAGE PLAN To be furnished later by City

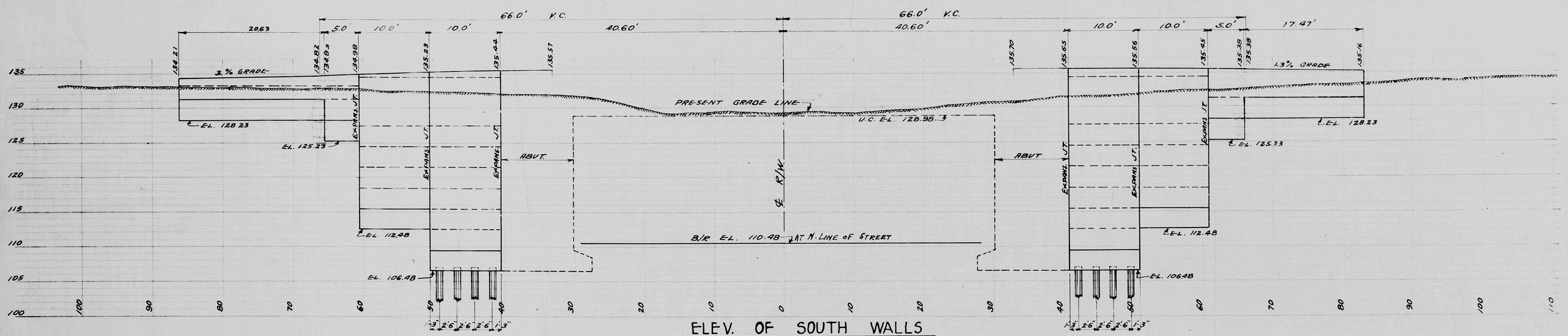
File X077-2





PLAN OF STREET WALLS

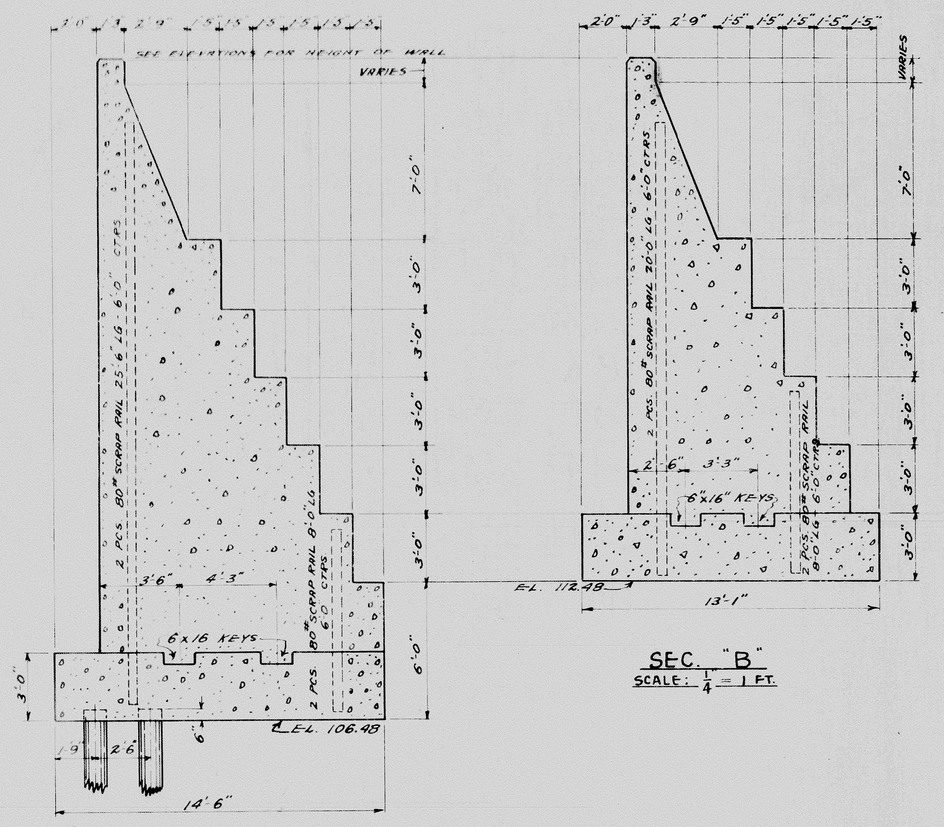
SCALE: $\frac{1}{8}$" = 1 FT.



ELEV. OF SOUTH WALLS

EAST & WEST OF RIGHT OF WAY

SCALE: $\frac{1}{8}$" = 1 FT.

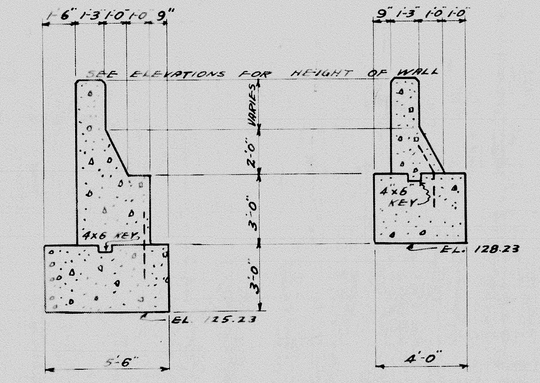


SEC. "A"

SCALE: $\frac{1}{4}$" = 1 FT.

SEC. "B"

SCALE: $\frac{1}{4}$" = 1 FT.



SEC. "C"

SCALE: $\frac{1}{4}$" = 1 FT

SEC. "D"

SCALE: $\frac{1}{4}$" = 1 FT.

ALL DOWELS $\frac{3}{4}$" @ 3'-0" - 2'-0" CTRS.

Approved _____
Chief Engineer D.G.H. & M. Ry.

Approved _____
City Engineer

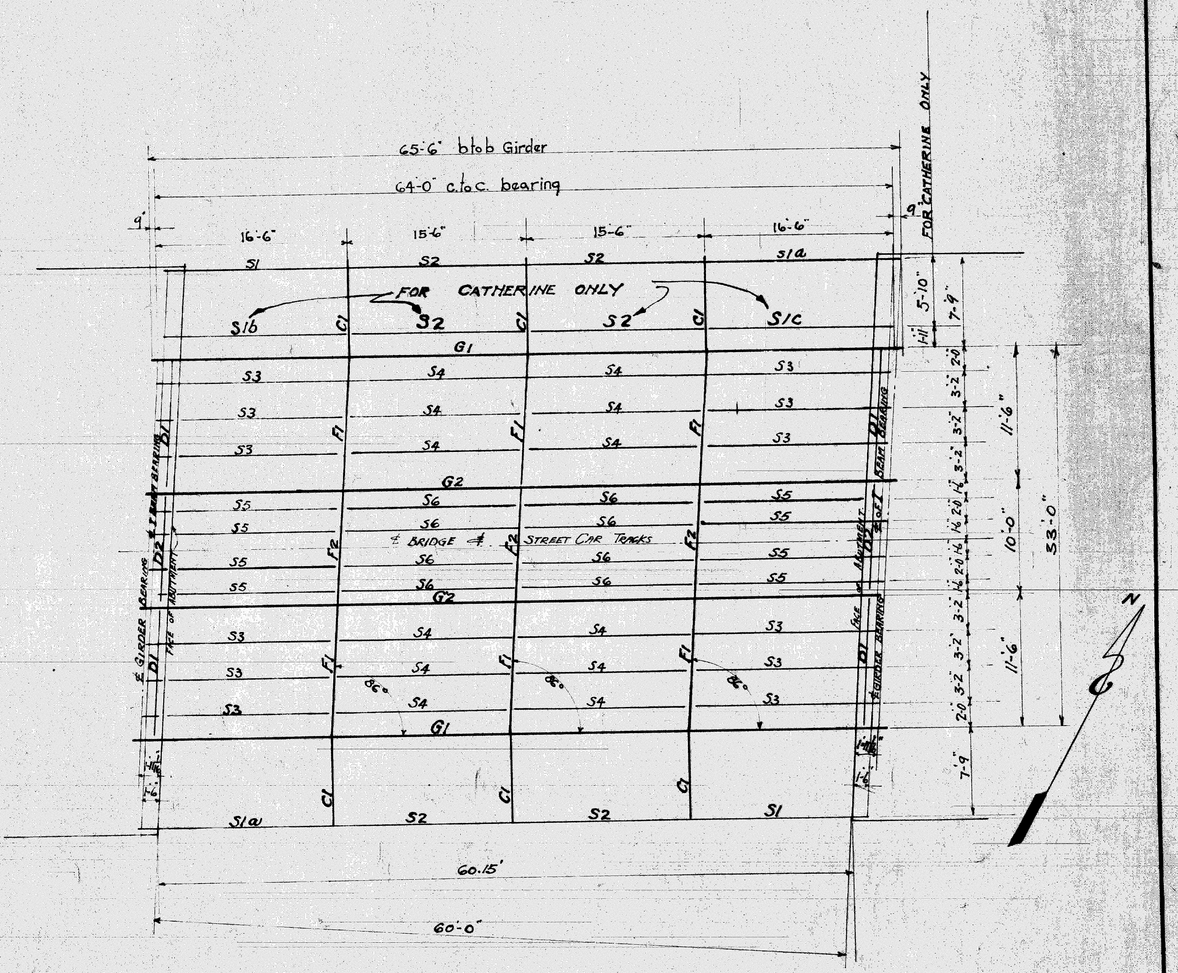
GRAND TRUNK RAILWAY SYSTEM
WESTERN LINES
DEQUINDRE GRADE SEPARATION
DETROIT MICHIGAN
CATHERINE ST. RETAINING WALLS

SCALE AS SHOWN

DR. R.E.M.	OFFICE OF CHIEF ENGINEER	JOURNAL NO.
TR. R.E.M.	DETROIT MICHIGAN	W-3113
CH. R.A.W.	MAY 8, 1926	FILE

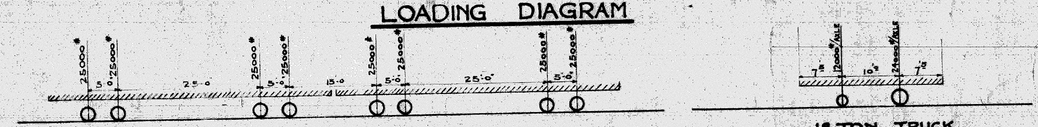
File X077-5

MEMBER	MAXIMUM SHEAR DL. LBS	LL. LBS	I. LBS	TOTAL LBS	WEB SECT REQD AT 10000# PER SQ.IN.	WEB SECT USED	END STIFFENERS	MAXIMUM MOMENT D.L. IN-LBS	L.L. IN-LBS	I. IN-LBS	TOTAL IN-LBS	COMPRESSION FLANGE SECT. REQD AT 14000# PER SQ. IN.	SECTION USED	LENGTH OF COVER PLATES	TENSION FLANGE SECT. REQD AT 16000# PER SQ. IN.	SECTION USED	LENGTH OF COVER PLATES
G1	152,927	43,520	10,880	207,327	20.73#	54×7/16 23.65#		34,886,724	10,118,400	2,529,600	47,534,724	64.33#	1/8 WEB 2.95 2 ∠s 8×8×1 30.00 1 C.P. 18×3/4 13.50 2 C.P. 18×1/2 18.00 64.45	1-FULL LENGTH 1-35'-4" LONG 1-23'-7" LONG	56.28#	1/8 WEB 2.95 2 ∠s 8×8×1 26.00 1 C.P. 18×3/4 12.00 2 C.P. 18×1/2 16.00 56.95	1-FULL LENGTH 1-35'-4" LONG 1-23'-7" LONG
G2	153,912	48,000	18,000	219,912	22.00#	54×7/16 23.65#		36,045,864	11,950,560	4,550,640	52,547,064	70.39#	1/8 WEB 2.95 2 ∠s 8×8×1 30.00 2 C.P.s 18×3/4 27.00 1 C.P. 18×5/8 11.25 71.20	1-FULL LENGTH 1-39'-0" LONG 1-25'-0" LONG	61.59#	1/8 WEB 2.95 2 ∠s 8×8×1 26.00 2 C.P.s 18×3/4 24.00 1 C.P.s 18×5/8 10.00 62.95	1-FULL LENGTH 1-39'-0" LONG 1-25'-0" LONG
C1	25,600	6,400	1,600	33,600	3.36#			2,019,475	595,200	148,800	2,763,475	4.6#	2 ∠s 6×4×3/8 7.22 7.22		3.6#	2 ∠s 6×4×3/8 5.72 5.72	
F1	28,565	17,650	4,410	50,625				1,109,175	612,900	153,225	1,875,300		SEC. MOD. REQD 114# USE 20 I.s @ 65.4 = 1169#				
F2	39,950	21,100	10,550	71,600				1,198,500	633,000	316,500	2,148,000		SEC. MOD. REQD 134.2# USE 24 I.s @ 79.9 = 173.1#				
S1	8,000	3,200	800	12,000				384,000	153,600	38,400	576,000		SEC. MOD. REQD 36# USE 12 I.s @ 31.8 = 36#				
S2	8,000	3,200	800	12,000				384,000	153,600	38,400	576,000		SEC. MOD. REQD 36# USE 12 I.s @ 31.8 = 36#				
S3	8,140	14,250	3,560	25,950				391,000	369,000	92,250	852,250		SEC. MOD. REQD 53.2# USE 15 I.s @ 42.9 = 58.9				
S4	8,140	14,250	3,560	25,950				391,000	369,000	92,250	852,250		SEC. MOD. REQD 53.2# USE 15 I.s @ 42.9 = 58.9				
S5	9,800	10,750	5,125	25,675				470,500	427,500	213,750	1,111,750		SEC. MOD. REQD 69.5# USE 15 I.s @ 55 = 68.1				
S6	9,800	10,750	5,125	25,675				470,500	427,500	213,750	1,111,750		SEC. MOD. REQD 69.5# USE 15 I.s @ 55 = 68.1				



ERECTION PLAN of STEEL
SCALE 0 - 1-0

LOADING DIAGRAM



SERIES OF 50 TON STREET CARS
50% IMPACT
LOADING FOR ONE TRACK

18 TON TRUCK
25% IMPACT

LIVE LOAD OVER REMAINING PORTION OF BRIDGE 100#/□
25% IMPACT

Approved _____
Chief Engineer D.G.H.& M. Ry.

Approved _____
City Engineer

* NOTE:- A.R.E.A. Specifications 1920 for Reamed Work
All steel to be given one shop coat of red lead and linseed oil.
Assemble all field connections in shop.
Complete tracings of all steelwork to be furnished R.R.Co's.
Open holes 15/16" for 7/8" rivets, except as noted.
Bridge to be erected by General Contractor.
All rivets 7/8" except as noted
Steelwork plans to be approved by Chief Engineer of Ry. Co. before work is started.

GRAND TRUNK RAILWAY SYSTEM
WESTERN LINES
DEQUINDRE GRADE SEPARATION
STRESS SHEET CATHERINE & SHERMAN
DETROIT —— MICHIGAN
Scales as Shown

DR. R.P. TR. M.A.B. CH. R.A.W.	OFFICE OF CHIEF ENGINEER DETROIT, MICH. MAY 17, 1926.	JOURNAL No. W-3108 FILE

File X077-6