Reinforce according to Section A-A

New Expansion Joint

A B C D E F

Sta 18+40.94

8'-2 27/32"

3'-0"

54'-8"

Reinforce according to Section G-G

8'-1"

BL-1

4'-0"

3'-0"

2'-0"

3'-0"

3'-0" 3'-0"

3'-0"

6'-0"

℄ Bridge

℄ Pier D 7

Sta 18+61.06

33'-9"

15'-0"

Expansion joints spaced every 100 feet

18" 18" 18" 18"

3'-0" 3'-0"

Reinforcing for this counterfort is similar to that shown in Sect. C-C except that bars BM-2 are omitted.

E1. 98.64

BM-1

BV-1 12" Ctrs

E1. 93.14

BM-2

2½" ℄ Anchor Rod

2'-3"

SECTION C-C

Reinforcement similar to Section D-D except additional bars as shown.

℄ Anchor Rod

℄ Mooring Post 7

61'-0"

12" 5'-0" 12" 5'-0" 12" 8'-0" 12" 8'-0" 12" 8'-0" 12" 8'-0" 12"

15" 15" 15" 15"

¾" Bolt O.G. Washers both Ends

2 - 12"×12" Walers, 16'-0", 13'-0", & 10'-0" staggered on piles. All Splices must come on piles

D

E1. 21.5

Harbor Line 7

6"

3'-7"

0'-10"

3'-7"

20"

4'-7"

4'-2"

9'-6"

8'-0"

9'-6"

8'-6"

9'-6"

80° 15' 30"

℄ Pier C 7

℄ Bridge 7

19'-1 13/16"

Symmetrical about ℄ of fender

14'-0"

1'-6" 3'-3" 3'-3" 3'-3" 3'-3"

1¼" Drift Bolts

American Chain Co. Proof Coil Chain around Chocks at Top & inside waters. Use 1¾" Eye Bolts on ends of Chain

PLAN OF FENDER FOR PIER C

6'-0"

6"

6"

11½"

5½"

2'-0"

1¼" Eye bolt

2 — 1¼" Chains at ℄ each Pier Sta ahead

Additional Reinforcement same as Section C-C

E1. 93.14

1½" Ms for Caper to weld bend 7 around length of rivets on Sta ahead

15"

45°

4 Sheet Piling 8×12'-2"

SECTION E-E

E1. 70.00

E1. 98.64

BV-1 walers

BL-1

BV-1 12"Ctrs

BV2-12"ctrs

BL-2

BV-3 12"ctrs

To be placed when base of Pier is poured

1" Anchor Bolt 10'-2" Walers

Sheet Piling 8×12'-2.0"

SECTION A-A

E1. 98.64

Reinforcement Similar to Section A-A

SECTION B-B

23'-0"

4'-0" 3'-0" 3'-0" 13'-0" 5'-3"

R=3'-6"

E1. 98.64

Replace Fill

Fender Timbers

BV-1 12"ctrs

BV1-12"ctrs

BL-1 12"ctrs

BT-4 12"ctrs

BT-4 2

E1. 93.14

Bottom of Web Pier D E1. 93.32

5"

BL-1 12"ctrs

BT-4 12"ctrs

BT-9

BP-1

BT-8 2

BT-3

Low Water

Datum Elev.

1-80# Rail Continuous

3'-5"

3'-3"

5'-3"

6'-9"

7'-3"

2'-0"

¾" ϕ bolt 2 O.G. Washers

Round Piling 3'-0" Ctrs

Sheet Piling 8×12'-2.0"

Sheet Piling 8×12'-1.28"

5'-6"

4'-6"

4'-0"

Omit this Water where water is deep

Round Piling 3'-6" Ctrs

10×12 Waler

This Pile to be battered as much as possible without interfering with Sheet Piling

2½ϕ Anchor Rod with 2½"×18" Turnbuckle

Round Piling

12

10

¾" ϕ Bolt O.G Washer both Ends

12"[@ 30" 26' Long

10×10×¾" washer

8×8×⅝" washer

3.6" Nut

1⅛" U bolt with Saddle & bearing Pls

SECTION D-D

Typical Section showing piles & reinforcement.

BT-4 12" ctrs

BL-1

BV-1 12" ctrs

BT-5 12" ctrs

BT-6 12" ctrs

1-80# Rail Continuous

SECTION G-G

6 turns of 1" Galv. Cable

Stat 12" Treated Timber Waler

E1. 98.64

Low Water

9'-6"

9'-6"

9'-6"

12'-3"

ELEVATION

Scale ⅜" 1'-0"

NOTE:
All hardware galvanized

Space between bulkhead and pier shaft to be filled with railroad cinders or other fine material that will act as a cushion.

E1. 93.14

BT-6-24" Ctrs

(10'-0" Long)

3'-6"

12"

18"

45°

SECTION F-F

REINFORCEMENT SCHEDULE

Bars

Mark	Size	Length	Bending	Location
BT-5	¾ ϕ	as reqd		Transverse-Top
BV-3	¾ ϕ	as reqd	2'-0" 3'-0" 2'-0"	Bottom of Bulkhead
BV2	¾ ϕ	14'-7"	5'-6" variable 2'-0"	Rear Bulkhead
BT4	¾ ϕ	8'-0"	2'-0" 6'-0"	Top of Bulkhead
BT6	¾ ϕ	as reqd	1'-6" 1'-6"	Transverse-Bottom
BT10	¾ ϕ	as reqd	R=3'-6"	Around piling head
BT11	¾ ϕ	12'-0"	6'-0" 3'-0"	Slab-Longitudinal

REINFORCEMENT BAR SCHEDULE

Straight Bars

Mark	Size	Length	Bending	Location
BA1	¾ ϕ	4'-0"	4'-0"	Through pile head bend up after placing
BL-1	¾ ϕ	as reqd		Longitudinal
BT-4	¾" ϕ	22'-0"	22'-0"	Transverse

Bent Bars

Mark	Size	Length	Bending	Location
BV-1	¾ ϕ	9'-0"	8'-3"	Front & Rear of bulkhead
BT-8	¾ ϕ	31'-0"	1'-8" R 14'-2"	Around piling head Rear
BT-9	¾ ϕ	19'-0"	1'-8" R 9'-2"	" " " Front
BT-3	¾ ϕ	1'-5"	3'-6" 8'-6" 11'-6"	Over rear piling heads. Trans.
Additional bars at Mooring Posts.				Mooring Posts at 50'-0" Ctrs
BM-1	¾ ϕ	14'-0"	3'-9" 6'-6" R=3"	Rear of bulkhead
BM-2	1" ϕ	11'-0"		Inside of Mooring Posts.

CITY OF TOLEDO, OHIO

BRIDGE over MAUMEE RIVER

CONCRETE BULKHEAD AT PIER "D" AND FENDER AT PIER "C"

Scale ½" and ⅜" 1'-0"

WADDELL AND HARDESTY, CONSULTING ENGINEERS
NEW YORK CITY.

JULY 20 1929

Revised January 25, 1930
April 5, 1930.

SHEET 10

NOTE:— For detail of sidewalk brackets and of their connection to truss see sheet-43

Tension Pls 1 Pl 8½×½ (Carbon) 1 Pl 8½×7/16

Tension Pls 1 Pl 8½×½ (Carbon) 1 Pl 8½×7/16

Splice Material: 1 Pl 21×1/16 (top) 2 Pls 26×5/16 1 Pl 21×3/8 (bottom)

Tension Pls. 1 Pl 8½×½ (Carbon) 1 Pl 8½×7/16

Splice Material: 1 Pl 21×½ (top) 2 Pls 26×⅜ 2 Pls 14×⅜ 1 Pl 21×⅜ (bottom)

9" 20" intermediate gusset

Pl (Carbon) Fill

½ Fill L 3½×3½×⅜ Carbon ⅜ Pl. Carbon TLI

Note an erection diagram must indicate that this lateral plate is on top of U.5 leg of angle

U0-U1 (Carbon) 1 Cov Pl 22×½ 4 Le 3½×3½×½ 2 Pls 26×⅜ D.L. 2½×⅝ Tie Pls-16×⅝

Diaphragm 4 Le 4×3½×⅜ 2 Le 4×4×⅜ (top) 1 Pl ½ Carbon

U0 U1 U2 U3 U5

Diaphragm same as at U1

2 Fills ½ 2 Fills 1/16

Diaphragm same as U-1 2 Fills 1/16

U1-U3 Cov Pl 22×½ 2 L 4×4×½ 2 Le 8×6×⅝ 2 Pls 26×⅝ SL 5×7/16 (2 Rw) Tie Pls 21×⅝

U3-U5 1 Cov Pl 21×½ 2 L 6×4×11/16 2 L 8×6×11/16 2 Pls 26×⅝ 2 Pls 26×½ S.L. 6×½ & R.W. Tie Pls. 21×⅝

Diaphragm 4 Le 7.36×½ 1 Pl ½ Carbon

2 Fills ⅜

1'-2½" 10'-3"

½ Gusset Pls Carbon For detail of F.S. Gusset Pl see detail for Sidewalk Bracket connection on sheet 43

⅜ Fill

¾ Gusset Pls.

½ Gusset Pls. Carbon For detail of F.S. Gusset Pl see detail of Sidewalk Bracket connection Sheet-43

2 Gus Pls ½"s

Diaphragm same as at U1

Diaphragm same as at U1 For detail of Sidewalk Bracket connection on F.S. Gusset Pl see Sheet 43

2 Gus Pls ½"s

L0-U0 4 Le 7.36×½ Carbon D.L 2½×⅝ Tie Pls 21×⅝

SL-5×7/16 (2 Rw) Tie Pls 21×⅝

Diaphragm 4 Le 4×3½×⅜ 1 Pl ½ Carbon

For detail of Sidewalk Bracket connection on F.S. Gusset Pl. see sheet 43

L-G-4×⅜

L0-U1 4 Le 6×4×⅝ 2 Pls 24×⅜

L1-U2 4 Le 6×4×⅝ 2 Pls 22×⅜ D.L 2½×⅝ Tie Pls 18×⅝

L2-U2 Same as L0-U0

L2-U3 4 Le 4×4×⅝ 2 Pls 20×⅝ D.L 2½×⅝ Tie Pls 21×⅝

L4-U4 Same as L0-U0

For detail of Sidewalk Bracket connection on F.S. Gusset Pl. see sheet 43

Symmetrical about ℄ except as shown on L0 and U5 and except for Sidewalk Bracket connections at U2 and U10

Fill 15⅝" Mill Gusset Pls and Diaphragm Mill Diaphragm 4 Le 7.36×½ 1 Pl ½ Carbon

25'-0" W.I. to W.I. chords

Mill Post L0-U0

Mill Gusset Pls Carbon

10⅝" 2'-0½" to b.b.l.s

L0 L0-L2 4 Le 6×4×7/16 2 Pls-24×⅝ D.L-2½×⅝" Tie Pls-10×⅝"

L2 Diaphragm 4 Le 4×4×⅜ 1 Pl ⅜ Carbon

L2-L4 4 Le 6×4×⅝ 2 Pls 24×½ 2 Pls 24×⅜

D.L. 2½×⅝ Tie Pls. 18×⅝"

Cut 16×⅜ Pl. Cut 24×½ Pl. Cut 24×½ Pl. 16×⅜ Sp. Pl. inside Cut 24×½ Pl. & 6×4×⅜ L's Cut 24×½ Pl. & 6×4×⅜ L's

L4 Diaphragm 4 Le 4×4×⅜ 1 Pl ⅜ Carbon

L4-L6 2 Pls-16×⅜ 4 Le 6×4×½ 2 Pls Bal 24×½ 2 Pls-22×½

D.L 2½×⅝ Tie Pls-18×⅝"

Splice

10 Panels @ 19'-2½" = 192'-1"

192'-1" c to c end pins

Sp. Pl. 22×½

Sp. Pls 6×⅜

Sp. Pl. 6×⅜

⅜ Holes for ¼" Bolts

at L10 4½" at L0 5½"

5½" 9" 5'-3½"

15 G 16×¾

2'-0" in to gussets

⅜ Pl. Carbon BL 1 BL 2

Bottom lateral plate must provide bearing for both gusset pls.

BL 1 BL 2 BL 3 ⅜ Pl. Carbon

Section showing Bottom Lateral Intersection and BL 3 Top View Simpler

BL 1 BL 2

⅜ Pl.

BL 1 BL 2

⅜ Pl. Carbon

BL 1 BL 2

⅜ Pl. Carbon

BL 1 BL 2

⅜ Pl. Carbon

℄ Bott Chord

10⅝" 9"

L 3½×3½×⅜ Carbon ⅜ Pl. Carbon BL 1 BL 2

Top View Bottom Lateral Connection at L0

Lateral Bracing

BL 1: 4 Le 4×3×⅜, SL 2½×⅜, Tie Pls 12×⅜ do. do. do.

BL 2: do. do. do.

BL 3: 2 Le 5×3×⅜, do. do.

TLI: 2 Le 6×4×⅜

Draw in Laterals — 6" in 57'-0"

see note concerning fillers of tie plates

℄ Bott. Chord

9" 10⅝" at L2 10⅜" at L4

L 3½×3½×⅜ Carbon ⅜ Pl. Carbon BL 1 BL 2

Typical Top View Bottom Lateral Connection (at L2, L4, L6, L8)

⅜ Pl. Carbon

TLI TLI TLI TLI

℄ Floor beam L 3½×3½×⅜ Carbon

⅜ Pl Carbon

L 3½×3½×⅜ Carbon

Fill to be provided on floor beam under angles. These fills must be developed to provide bearing area for the field rivets connecting L6 to F.B.m.

Connection of Top Laterals to Floor beam ℄ Bridge (Panels 1, 3, 5, 7 & 9)

½ TLI

Stringer-21" CB 60#

2 L 5½ G 4×⅜ Carbon

℄ Bridge 7

5'-11½" 16'-1½" at Str #3 at Str #1

Connection of Top Laterals to Stringers #1 and #3

½ edge on Pl

Ship Diaphragm bolted in place

SECTION A-A

NOTES

All material Silicon Steel except as noted and except lacing, tie pls. and fillers which are Carbon Steel.

In Bott. Laterals and Vert. Posts where thickness of tie plates is less than twice the thickness of lacing bars, loose fillers shall be provided so that the distance b. to b. of angles shall be uniform for the entire length of member.

Rivet spacing to be scaled from details shown.

For additional deck truss span details not shown on this sheet see sheet 43

For stresses, general notes, etc. see sheet 13

CITY OF TOLEDO OHIO

BRIDGE OVER MAUMEE RIVER

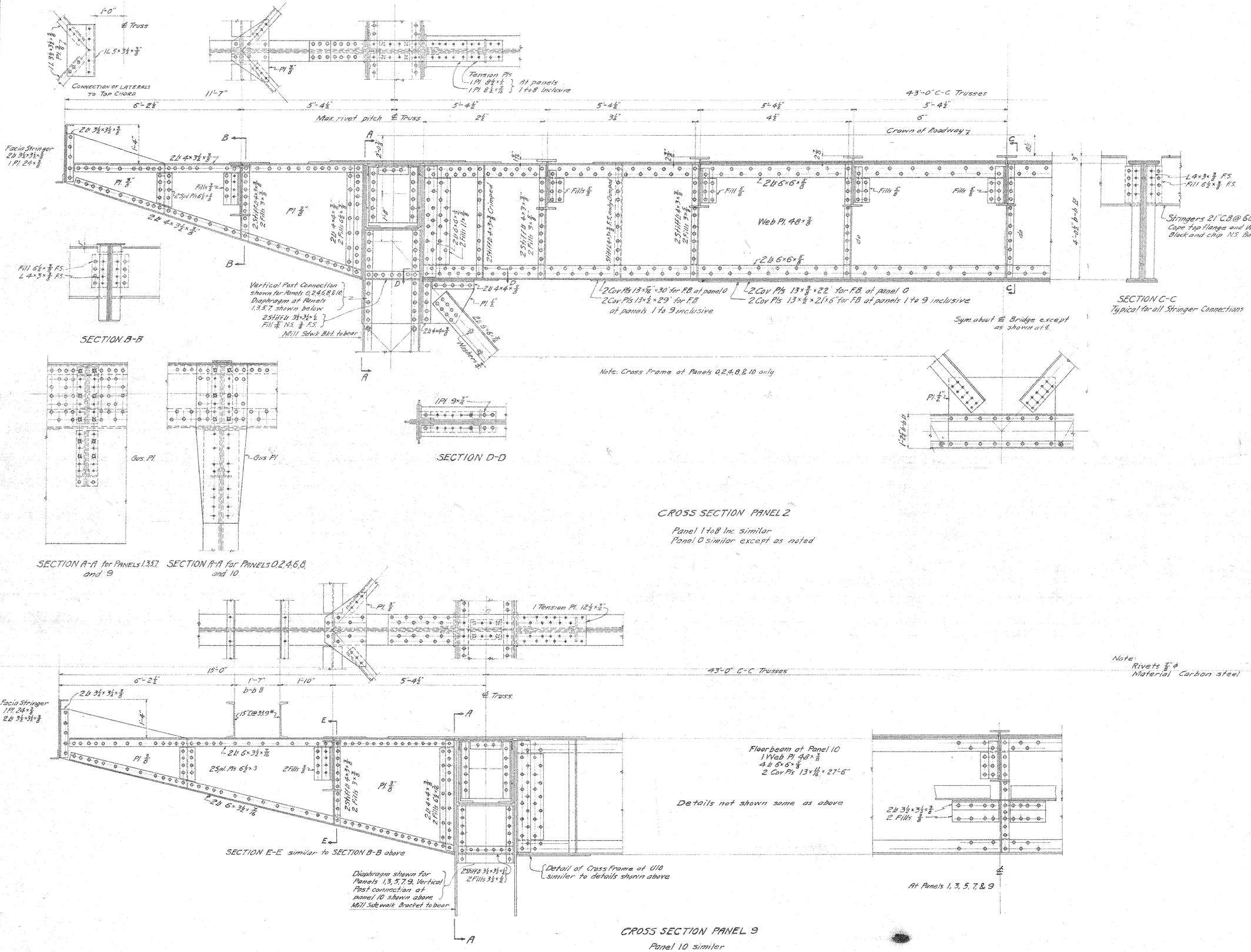
DECK TRUSS SPAN

Scale ¾" = 1'-0"

WADDELL AND HARDESTY CONSULTING ENGINEERS

NEW YORK JULY 1930

SHEET 42



CITY OF TOLEDO, OHIO.

BRIDGE OVER MAUMEE RIVER

CROSS SECTION DECK SPAN

Scale ⅜"=1'-0"

WADDELL AND HARDESTY CONSULTING ENGINEERS
NEW YORK CITY JULY 1930

SHEET 43

50 Lac. bars - 2½ × ⅜ × 1-7½ c to c - K - Carbon

Carbon
1 Wash 24" × ⅜" thk

1 Spl PL 6" × ½" × 3-11¾" L - Silicon

Note to Shop:

25 Spaces @ 1-11¾ = 28-7¾
30-3¾

HOLES SHOWN THUS ⊕ TO BE SUBPUNCHED IN ALL MATERIAL FOR BOTH SIDES OF MEMBER AND ARE TO BE USED FOR BOLTING REAMING TEMPLET FOR DRILLING. HOLES SHOWN THUS ⊙ ARE DRILLED FROM THE SOLID THROUGH REAMING TEMPLET. HOLES SHOWN THUS • ARE THEN REAMED TO SIZE. NOTE (3)

MAIN MATERIAL
4 L 6" × 4" × ⅞" × 35-7½"
2 UM WEB PLS 24" × ⅜" × 35-7½" } Silicon

NOTE! RIVET LG-L8R TO L8-L10R; LG-L8L TO L8-L10L IN SHOP

MARK NEAR SIDE OF NEAR WEB "INSIDE"

Panel H

21 Panels @ H = 24-0¾
38-5" - h = 38-4¾
27 Spaces @ 1-11¾ = 30-11¼

54 Lacing bars 2½ × ⅜ × 1-7½ c to c K Carbon

Carbon
1 Wash 24" × ⅜" thk

LO-L12

Note to Shop:
Assemble this end
1-11⅜ B to B of L2

VIEW-AA

Carbon
1-L 6 × 3½ × ⅜ × 2-11½ - F5 - L0-L2
2-L 4 × 3½ × ⅜ × 1-10 - F5 - L8-L10

Carbon
1-L 6 × 3½ × ⅜ × 2-11½ - F5 - L0-L2
2-L 4 × 3½ × ⅜ × 1-10 - F5 - L8-L10

1-PL 14 × ⅝ × 2-1½ - ya
Silicon

1-PL - ya

1 Wash 24" × ⅜" thk - Carbon

2½" HOLE

PART DETAIL FOR L8-L10
BALANCE NOT SHOWN SAME AS L0-L12

2 BOTTOM CHORDS - L0-L12R AS SHOWN
2 do do - L0-L12L OPP HAND
2 do do - L8-L10R AS SHOWN
2 do do - L8-L10L OPP HAND

L6 L6-L8L L8 L8-L10L L10
INSIDE
SPLICE
2 COMPLETE BOTTOM CHORDS - L6-L10L

SHOP ASSEMBLING DIAGRAM FOR BOTTOM CHORDS

L6 INSIDE L8 L10
L6-L8R L8-L10R
SPLICE
2 COMPLETE BOTTOM CHORDS - L6-L10R

Note:-
Rivets ⅞" ⌀ Open holes 1⅛" ⌀ Unless noted
Holes punched ⅝" ⌀ reamed to size after assembling except holes for bracing, lacing bars & tie plates may be punched full size
Carbon steel more than ⅜" thick must be drilled from the solid.
Holes marked ⊕ punched ⅝" ⌀ reamed to size; or drilled from the solid, to a metal templet.

Burrs to be removed from all holes.
Paint: One coat of Sherwin Williams Kromic Structural Steel Primer #63
Washers as noted.

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVE

DECK TRUSS SPANS

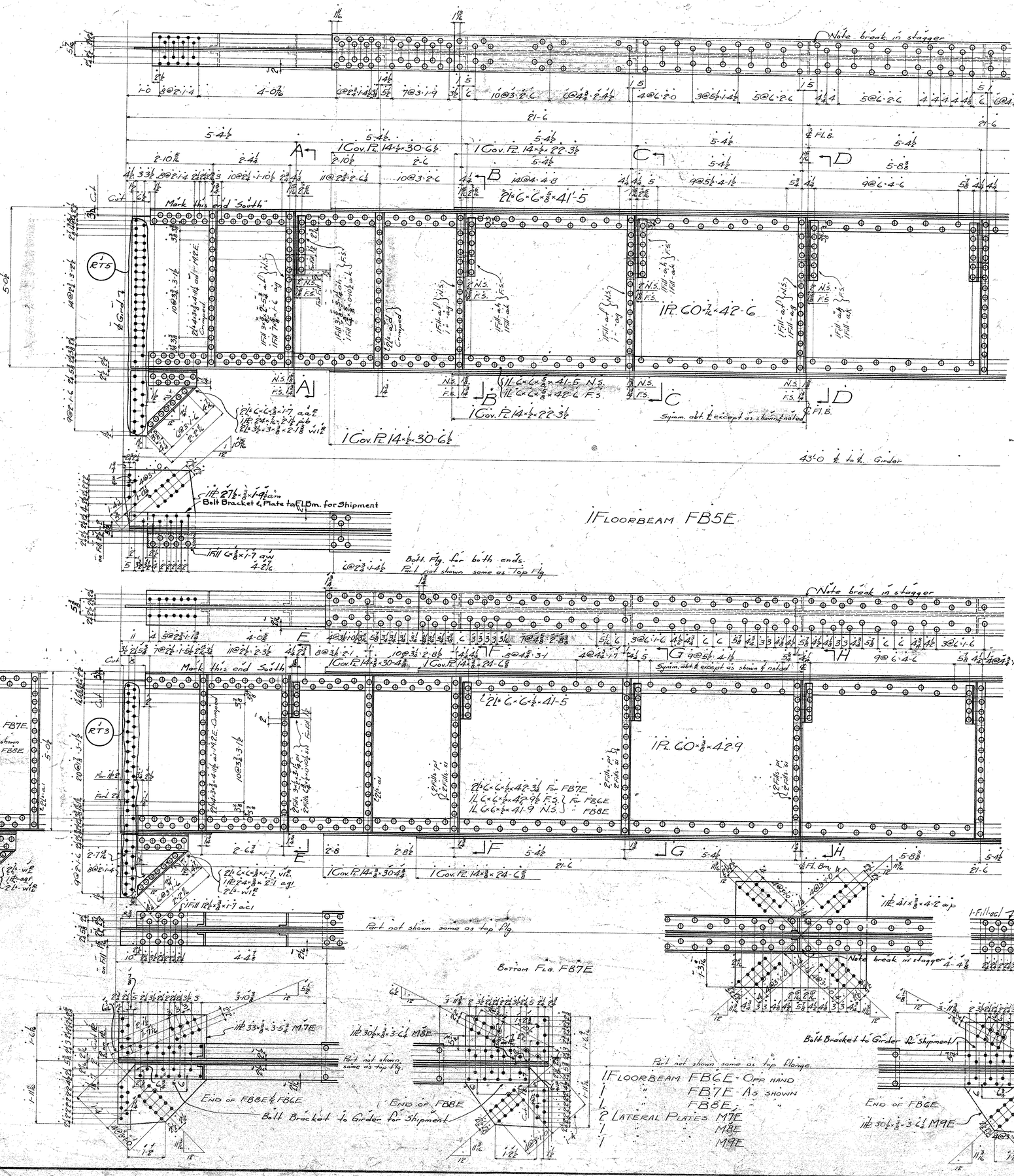
BOTTOM CHORD SECTIONS
L0-L12 & L8-L10

APPROVED Waddell & Hardesty
1-21-30

McCLINTIC-MARSHALL CONST.
PITTSBURGH, PA.

IN CHARGE G.F. Steigner			
MADE BY JAF	DATE	CHECKED BY GFS	DATE
TRACED BY LMc	DATE	REVISED	DATE
SCALE: INCH = 1 FOOT		LAST ASSEMBLING MARK	

CONT. NO. 5014 SHEET NO. 7



CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVE

EAST APPROACH
FLOORBEAMS - SPAN # 1

McCLINTIC-MARSHALL CONST. C
PITTSBURGH, PA.
IN CHARGE Wm son
MADE BY C.W.K. DATE CHECKED BY F.B.A DATE 4/
TRACED BY DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK

CONT. NO. 5015B SHEET NO. 2

APPROVED 12-7-29
Waddell & Hardesty

A-7-375

20-Top Laterals-LT1R-as shown
20- " " -LT1L- opp.hand } Carbon Steel

4-Bottom Laterals-BL1 (Carbon Steel)
4-Bottom Laterals-BL12 (Carbon Steel)

2-Bottom Laterals-BL2 (Carbon Steel)

16-Bottom Laterals-BL3 (Carbon Steel)
4-Bottom Laterals-BL13 (Carbon Steel)

12-Struts-BL8 Carbon-Steel

8-Struts-BL9 Carbon Steel

2-Struts-BL10 Carbon Steel

2-Struts-BL11 Carbon Steel

8-Bottom Lateral Pls.BL5 Carbon Steel.

8-Bottom Lateral Pls.BL6 Carbon Steel.

8-Bottom Lateral Pls.BL7 Carbon Steel

24-Expansion Gratings-M2 (Carbon Steel)

24-Expansion Gratings-M4 (Carbon Steel).

2-Side Walk Expansion Plates-M5 as shown
2-Side Walk Expansion Plates-M5 opp.Hand. } Carbon Steel

28-Bolts-x11 (no paint)
2-Bolts-x12 (no paint)

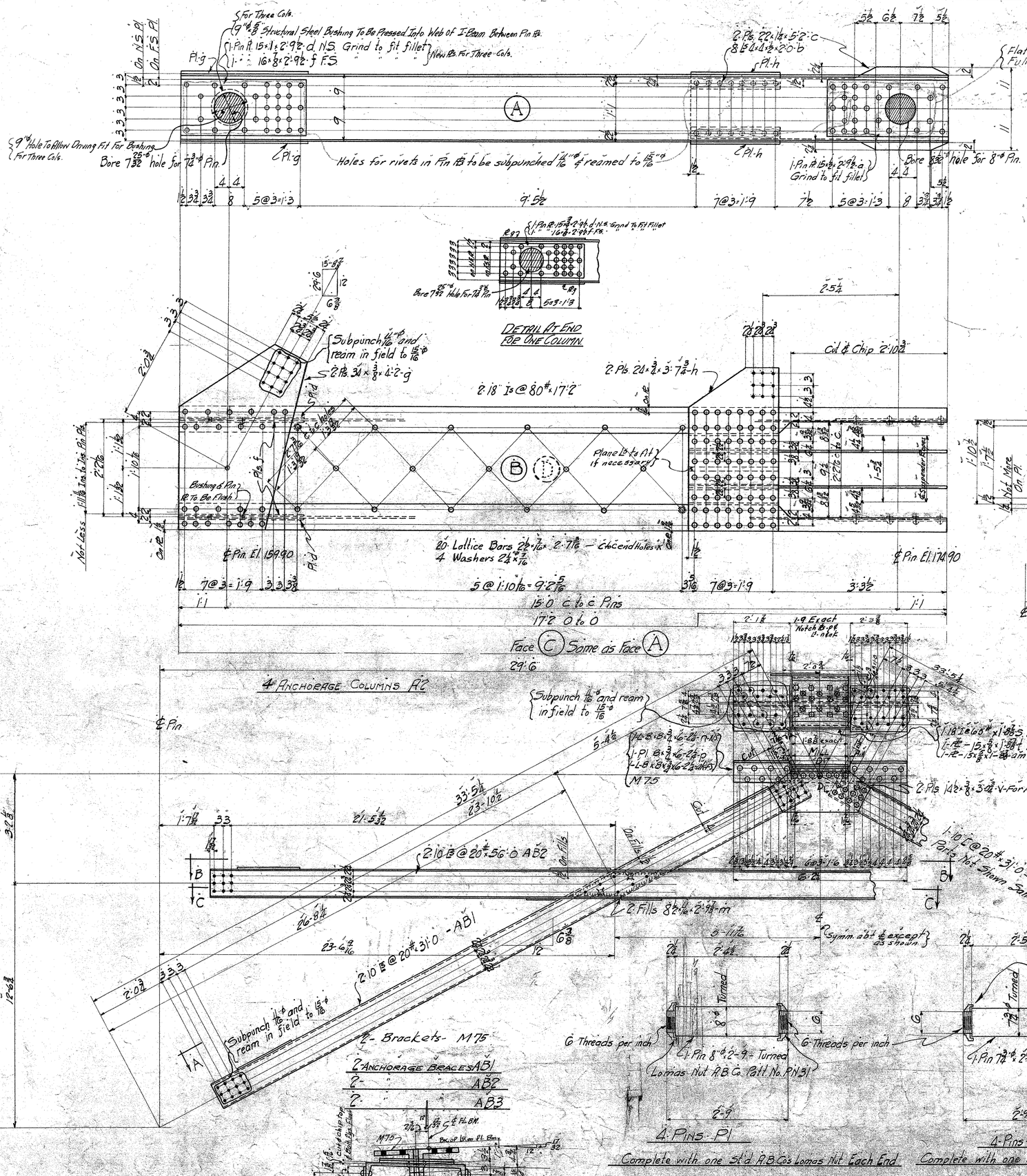
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
LATERALS & EXP. GRATINGS.
DECK TRUSS SPANS

Note: Rivets-⅞" ϕ
Holes-⅞" ϕ unless noted
Holes punched ⅛" ϕ and reamed to size
Material more than ⅞" thick must be drilled from the solid.
Holes for Bracing, Lacing Bars and Tie Plates may be punched full size.
Burrs to be removed from all holes

APPROVED Waddell & Hardesty
2-7-30

Washers-as noted
Paint: One Coat of Sherwin Williams Iron-ox Structural Steel Primer #43

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE G.F. STELZNER
MADE BY H.S. DATE CHECKED BY DATE
TRACED BY H.E.J. DATE REVISED DATE
SCALE-1" INCH 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5013 D SHEET NO. 4


For Three Cols.
9⅛" ø Structural Steel Bushing To Be Pressed Into Web of I-Beam Between Pin Pls.
1-Pin Pl. 15×1½×2'-9½ d N.S. Grind to fit fillet
1-" " 16×⅞×2'-9½ f F.S.
New Pls For Three Cols.
Pl·g
On N.S.
On F.S.
9⅛" Hole To Allow Driving Fit For Bushing For Three Cols.
Bore 7 25/32" hole for 7⅛" ø Pin.
Holes for rivets in Pin Pls to be subpunched 1 1/16" ø & reamed to 1 5/16"
2 Pls 22×1¼×5'-2 c
8 Ls 4×4×½×2'-0 b
Pl·h
Flatten F.S. Head to ⅛" High
Full head N.S.
1-Pin Pl 15×⅞×2'-9½ a
Grind to fit fillet
Bore 8⅜" hole for 8" ø Pin.
A
9'-5½
7@3=1'-9
7½
5@3=1'-3
DETAIL AT END FOR ONE COLUMN
Subpunch 1 1/16" ø and ream in field to 1 5/16" ø
2 Pls 30×⅜×1'-2'-g
2 Pls 24×⅜×3'-7¾-h
2-18" Is @ 80#=17'-2
Cut & Chip 2'-10⅔
Bushing & Pin Pl To Be Flush
B
Plane ⊥ to At if necessary
Not Less
E Pin El. 159.90
E Pin El. 174.90
20-Lattice Bars 2½×⅞×2'-7⅛ c to c End Holes-K
4 Washers 2¼×⅞
5@1'-10 15/16=9'-2 5/16
15'-0 c to c Pins
17'-2 0 to 0
Face (C) Same as Face (A)
29'-6
4 ANCHORAGE COLUMNS A2
Subpunch 1 1/16" ø and ream in field to 1 5/16" ø
2-Brackets-M75
2 ANCHORAGE BRACES AB1
" " AB2
" " AB3
Enlarged Section D-D
2-10" I @ 20#×56'-0 AB2
2-10" I @ 20#×31'-0 - AB1
2-10" I @ 20#×31'-0 - AB3
Rads Not Shown Same as AB1
2 Fills 8½×⅜×2'-9½-m
2 Pls 14½×⅜×3'-0½-v For AB3
1-16" I @ 65# ×1'-8½ S M2E
1-F-15½×⅜×1'-5½ t M2E
1-F-15½×⅜×1'-8½ u M2E
1-Pl 8½×¾×6'-2½-p
4-L 8×8×¾×6'-2½ (Welded)
M75
4-Pins-P1
Complete with one Std A.B.Co's Lomas Nut Each End
4-Pins-P2
Complete with one Std A.B.Co's Lomas Nut each end
6 Threads per inch
1-Pin 8" ø 2'-9" Turned
Lomas Nut A.B.Co. Patt. No. P1N31
1-Pin 7¾" ø 2'-9½ Turned
Symm. abt ℄ except as shown
Lomas Nut A.B.Co's Patt. # P1N31
For Bolt Flge.
36 Sps. @ 8 1/16" = 26'-0 3/4"
72 Lattice Bars 2½×⅜×1'-5 15/16" c to c-ab
2 Washers 2¼×⅞
2 Pls 15×⅜×1'-5½ w
2 Pls. W
For Top Flge
36 Sps. @ 8 1/16" = 26'-0 3/4"
91'-0
VIEW A-A
Rivets
Cut & Chip
Washer this half only
Washer other half only
18 Lattice Bars 2½×⅜×2'-7⅜ c to c end holes-aa
2 Washers 2¼×⅞
1-Pl y
1-L 2½×2½×⅜×2'-1-y
Washer 2¼×⅞
Symmetrical except as Shown
28'-0
56'-0
VIEW B-B
For AB3
1-L 8×8×¾×2'-1-ac
1-Pl 27×⅜×2'-1-ad
4-Latt Bars 2½×⅜×2'-6 c to c
1-Washer 2¼×⅞
16 Lattice Bars 2½×⅜×2'-8 c to c end Holes-ah
2 Washers 2¼×⅞
8@1'-11=15'-4
8@3=2'-0
2@1'-8½=3'-5
SECTION C-C
℄ Cable
℄ Pier B"
℄ Pier E
1252'-0
Notes:
Holes 15/16" ø Unless Noted.
Rivets ¾" ø Unless Noted
Holes Punched Full Size Unless Noted
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIV
ANCHORAGE BRACING
PIER B & E"
L. O. 2
Fit. 2
Mach. 1
PWD 1
S.S.C. 1
D.I. 1
Paint: One coat of Detroit Graphite Co's #501
Paint Pin Hole - One coat of white lead & tallow applied hot.
APPROVED 7-7-30
Waddell & Hardesty
M·CLINTIC-MARSHALL CONST
PITTSBURGH, PA.
IN CHARGE W.D. DATE
MADE BY C.H. DATE CHECKED BY F.C.H. DA
TRACED BY C.E.P. DATE 3/30 REVISED DA
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5001 B SHEET NO.
A-2-270

WEST APPROACH

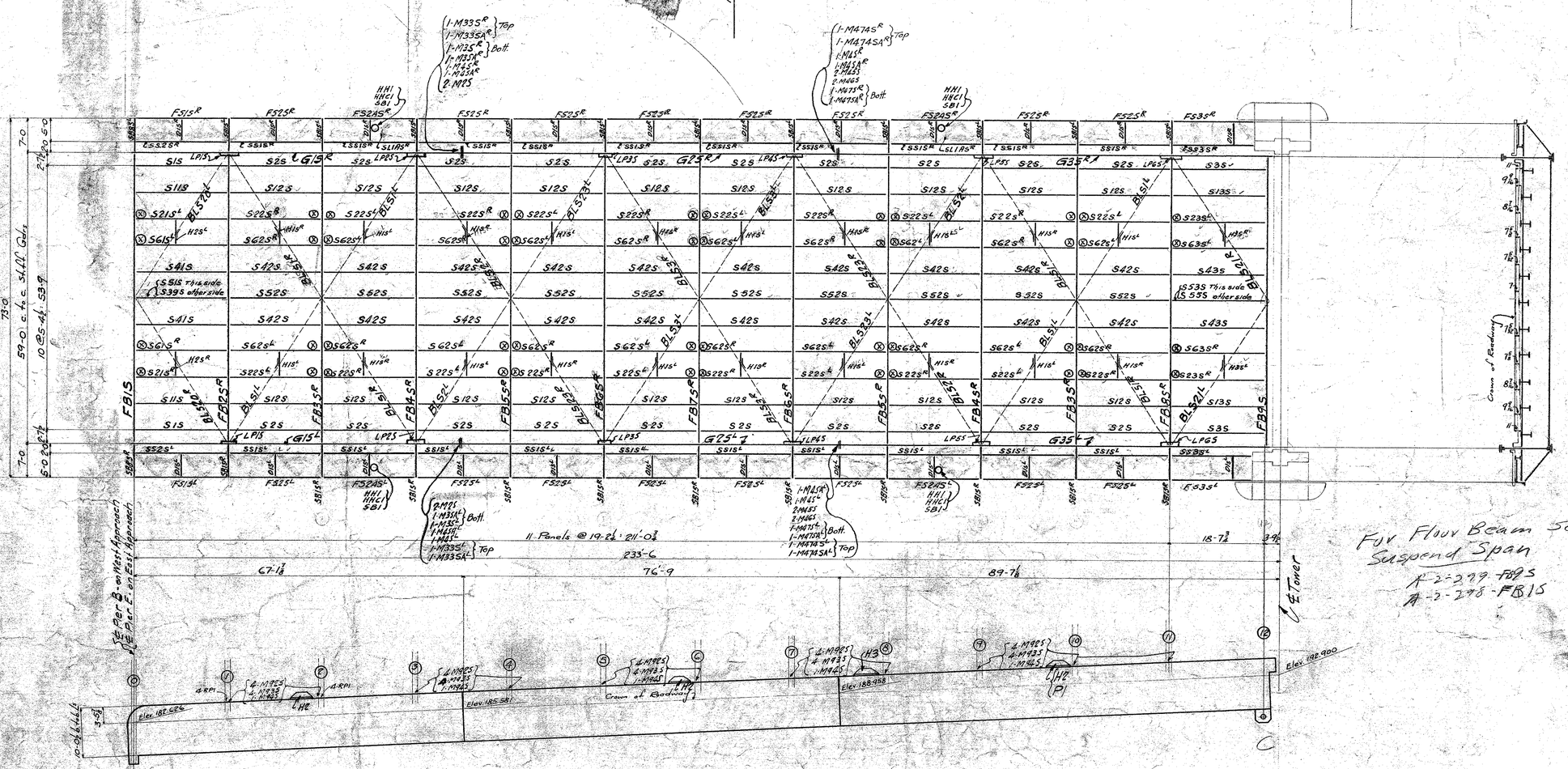
EAST APPROACH

SHIPMENT #4

SHIPMENT #2

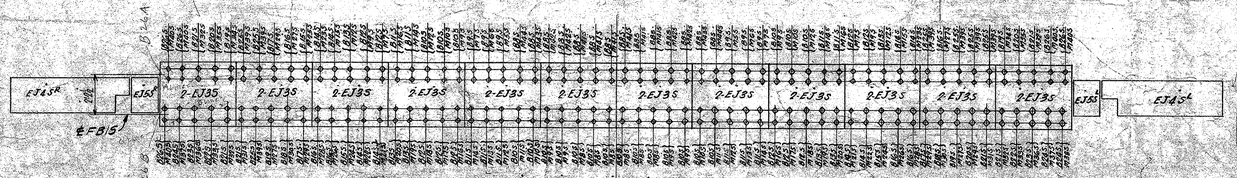
SHIPMENT #3

NORTH



PLAN OF ANCHORAGE BRACING

TRUSS SPAN



SUSP SPAN ℄ BRIDGE

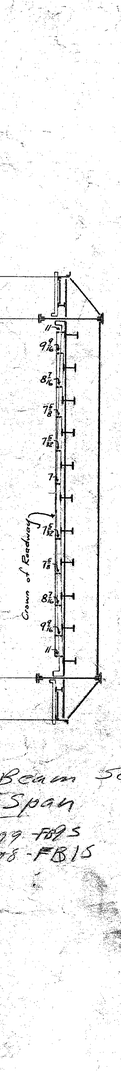
EXPANSION JOINTS AT TRUSS SPAN & SUSPENDED SPAN

WEST APPROACH - AS SHOWN - PIER B to ℄ TOWER
EAST APPROACH - OPP HAND - PIER E to ℄ TOWER

General Notes:

1- All field connections riveted except EJ3S to Tower
2- Shipments noted on E1 and E2 C-5001-5002 are for structural portion only. See E1 C-5018A; E101 C-5018B and E1 C-5018C for Handrailing shipments.
3- U-Bolts for attaching conduits to sidewalk, bracing and diaphragms; by others.
4- Washers on bolts for transformer in fascia stringers by others.
5- Hand Ropes furnished complete with sockets and pins.
6- For Handrailing diagram See sheet E1, C-5018A
7- Pieces marked thus: ⊗ to be erected with mark on member corresponding to mark on plan.

NOTE TO ERECTOR:-
Retainer Castings detailed on St. Sheet #M1 Cont. 5002A
4 Req'd on each Girder at each suspender connection.
After suspenders are in place, the opening between the rope and retainer to be filled with sheet lead, hammered in to form a plug that cannot work out, to prevent chafing of the rope.



For Floor Beam See Suspend Span
A-2-27S - FB1S
A-2-27S - FB7S

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVE

SIDE SUSPENDED SPANS
ERECTION DIAGRAM

APPROVED

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE			
MADE BY A.T.	DATE	CHECKED BY	DATE
TRACED BY J.M.	DATE	REVISED	DATE
SCALE:	INCH = 1 FOOT	LAST ASSEMBLING MARK	

CONT. NO. 5001
CONT. NO. 5002 SHEET NO. E

A-2-27S

SHIPMENT #1 (BETWEEN TOWERS)

NORTH

Note to Erector:
Erect guard L M77s before erecting Ladder.

West Half
L25
M77S
M78S
M76S
2-M68S

East Half
L25
M77S
M78S
M76S
2-M68S

HHI HHCI SBI

7'-0
73'-0 c.t.c. Shaft Gds.
59'-0 c.t.c. Shaft Gds.
7'-0
5'-0
10 Gds. @ 5'-9

E Tower
FB10S
FB11S
FB12S
FB13S
FB14S
FB8S
FB9S
FB7S
FB6S
FB5S
FB4S
FB3S
FB2S
FB1S

G45R
G55L
G55R
G65R
G75R
G85R
G95R
G105R
G115R
G125R
G135R
G145R
G155R
G165R
G175R
G165L

G45L
G55R
G65L
G75L
G85L
G95L
G105L
G115L
G125L
G135L
G145L
G155L
G165L
G175L
G165R

LP7S
LP8S
LP10S
LP11S
LP12S
LP13S
LP14S
LP15S
LP16S
LP17S

19'-5½

19'-11½

9'-11¾ 9'-11¾

392'-0 c. to c. Towers from E Tower

785'-0 c. to c. Towers

93'-1½ 79'-10 79'-10 39'-11 39'-11 39'-11 39'-11 19'-11½ 19'-11½

Splice Mat'l
Top: M68SR M93SR
Bott: M50S M51S M52S M53S M94SR M95SR M83SR M93SR

Far Truss as shown
Near Truss opp hand

Splice Mat'l
Top: M56SR M55SR M54SR M53SR M52SR M51SR M50SR M49SR
Bott: M57S M58S M59S M60S M61S M62S M63S M64S

Far Truss as shown
Near Truss opp hand

12.0¢
7.6¢
27.0¢

Light & ladder West half of North & South Spans
" & " East half of South Span
" & " East half of North Span

4-M49S 4-M33S 1-M46S

Crown of Roadway

Elev. 196.948
Elev. 200.188
Elev. 202.408
Elev. 203.149
Elev. 203.842
Elev. 203.482
Elev. 203.948
Elev. 196.900

G45R G55R G65R-G65AS-G65BS G75R G85R G95R G105 & G105A

Splice Mat'l
Top: M83SR M83SAR M66SR M66SAR M67SR M67SAR M68S M69S M70S M71S
Bott: M84S M85S

Far Truss as shown
Near Truss opp hand

Splice Mat'l
Top: M83SR M83SAR M66SR M66SAR M67SR M67SAR M68S M69S M70S M71S
Bott: M84S M85S

Far Truss as shown
Near Truss opp hand

Splice Mat'l
Top: M83SR M83SAR M66SR M66SAR M67SR M67SAR M68S M69S M70S M71S
Bott: M84S M85S

Far Truss as shown
Near Truss opp hand

Splice Mat'l
Top: M83SR M83SAR M66SR M66SAR M67SR M67SAR M68S M69S M70S M71S
Bott: M84S M85S

Far Truss as shown
Near Truss opp hand

For Typical Cross Section see Sheet E1

For General Notes see Sheet E1

Apply a thick coat of red lead paste before bolting hood in place. Red lead paste furnished by others

Edges of saddle cast for welding

WP2

4" fillet weld in field continuous

Cable

WP3

Assembly Sketch

Angle dependent on position of cable. Therefore weld hood to plate in field

WEST HALF - AS SHOWN
EAST HALF - OPP HAND

Cable Hood & Walk
1-WA1R
1-WA1L
1-WW1
1-WP1
1-WP2
1-WP3
1-CH1
18-CS1
2-CS2

2-CRSG
CBGA
CBGB

Cable Hood & Walk
1-WA1R
1-WA1L
1-WW1
2-WP1
1-WP2
1-WP3
1-CH1
18-CS1
2-CS2

Cable Hood & Walk
2-P1R
2-EB1
1-CB0
8-HH1
2-EB1

WEST

EAST

2-EB1
8-HH1
2-EB1
2-P1R
1-CB0

CCI
2-CRSG
CBG

Cable Hood & Frame
1-CS1
1-MI
1-AIR
1-AIL
2-A2

SHIMS
CRS1 To Be Used at Points 7 to 11 incl.
CRS2 " " " " 2 to 6 incl. & 14 to 16 incl.
CRS3 " " " " 1 & 17 to 22 incl.
CRS4 " " " " 23 to 32 incl.
CRS5 " " " " 0

Clip L² - CA1-2 } TO BE USED TO CONNECT CONDUIT
Fills - CAF1-2 } TO SIDEWALK BKTS. AND
U-Bolts - UB1-23 } DIAPHRAGMS R TO TOWER COLS.
16 - Covers CI - FURNISHED FOR MAIN SPAN
8 " CI " " APPROACH "
16 - Castings HCI " " MAIN "
8 " HC2 " " APPROACH "
8 - Cover Plates CP1 - Furnished For Towers
12 " " CP2 " "
Hook Bolts - HB1-2 - Furnished for CP1-2
Clips - CA1-2

NOTE TO ERECTOR:-
Retainer Castings detailed on St. Sheet M. Cont. 5002A
4 Req'd on each Girder at each Suspender Connection

Note:-
22½ Conduit tobe used for Approaches
2½ " " " " Tower Cols.
1½ " " " " Across Towers.

Supports For Hand Rods

1⅝ c.t.c.
5½ Rest
1" Hand Rope
⅞" Bolts Hex. Hvy Hd. Nut
Weld Plate 6"x6"
5/8
3/4 Rod
Pipe to be Galvanized
Pipe to be Painted
E of Cable
3½ Rod
4'-0" Side Span
3'-7" Side Span
3'-3⅜" Main Span
1'-4 Saddle Angles
1'-4 Shoulder Bolt
1⅜
1'-10

Plan of Cable Collar Anchor Bolts at Anchorage 'A' & 'F'

22°30'
Main Cable
8 Equal Spaces
E.C.
W.P.
3.82
59'-0 c.t.c. of CA1-2

Section AA

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIV
MAIN SUSPENDED SPAN
ERECTION DIAGRAM

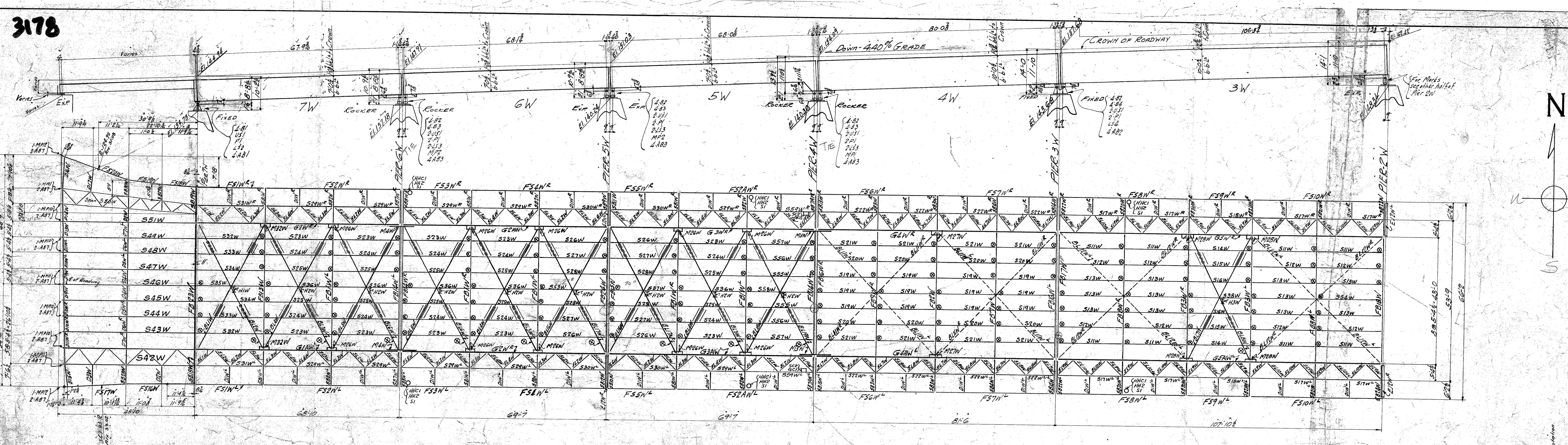
M.CLINTIC-MARSHALL CONST
PITTSBURGH, PA.
IN CHARGE
MADE BY AS DATE CHECKED BY
TRACED BY DATE REVISED
SCALE: INCH = FOOT LAST ASSEMBLING MARK

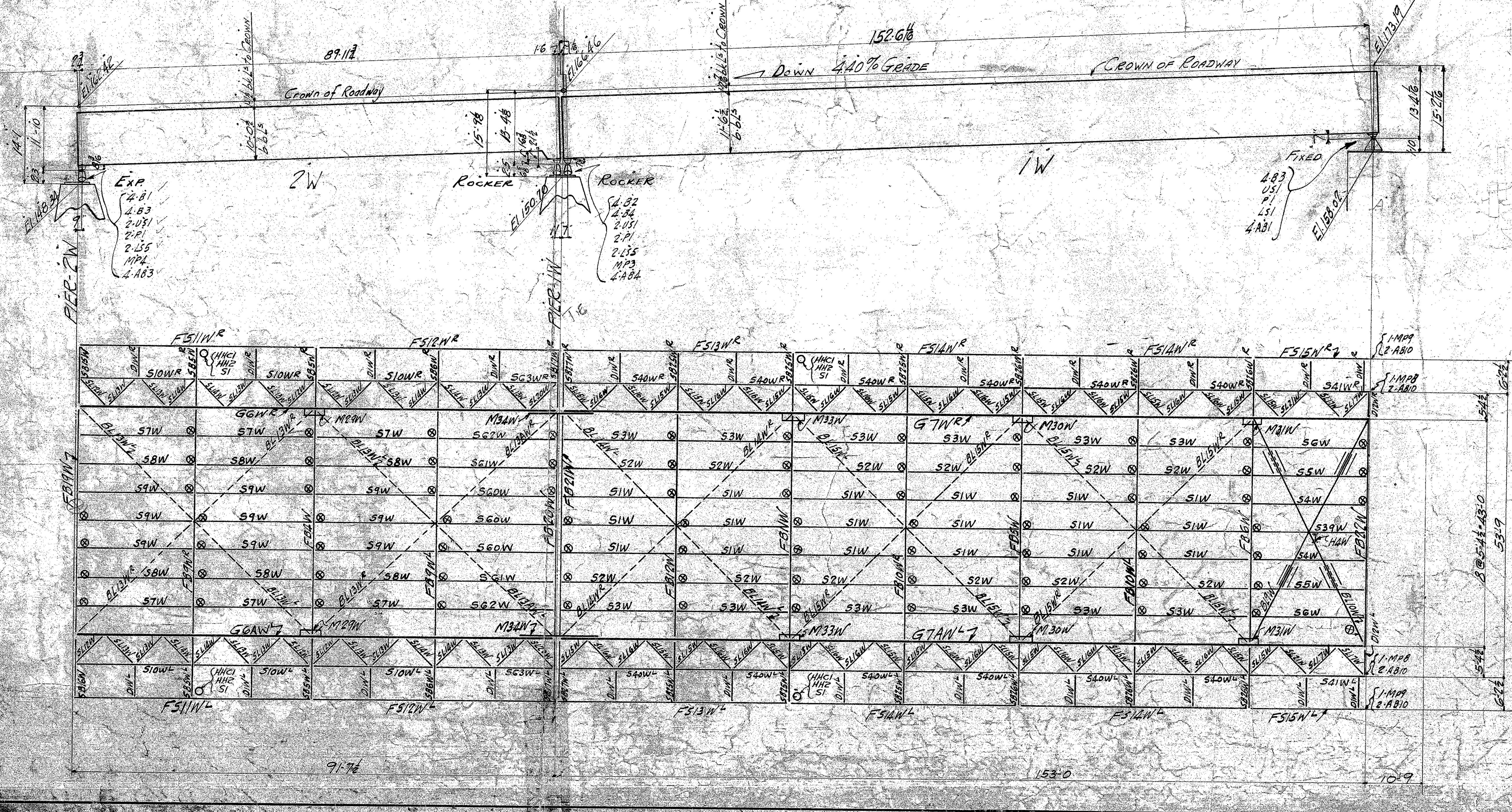
APPROVED

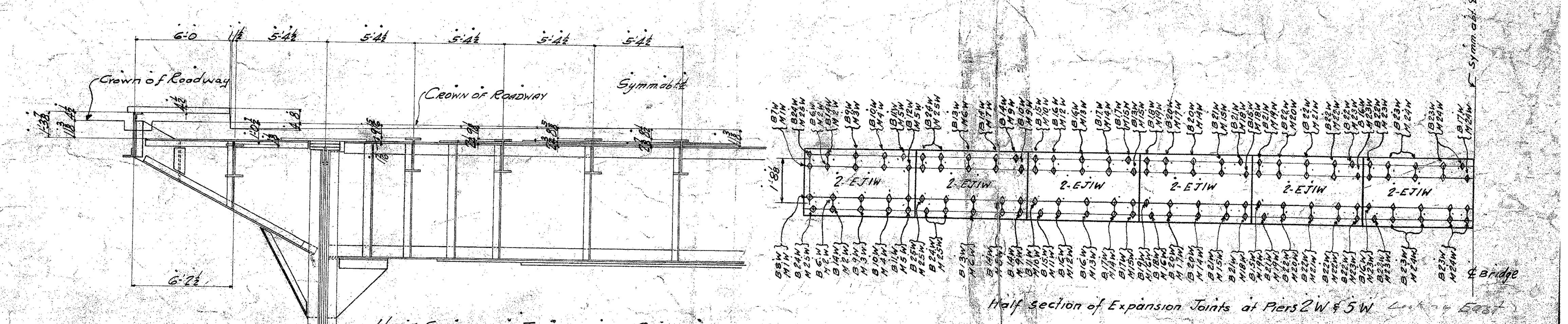
CONT. NO. 5001 5002-25 SHEET NO. E

A-2-265

3178

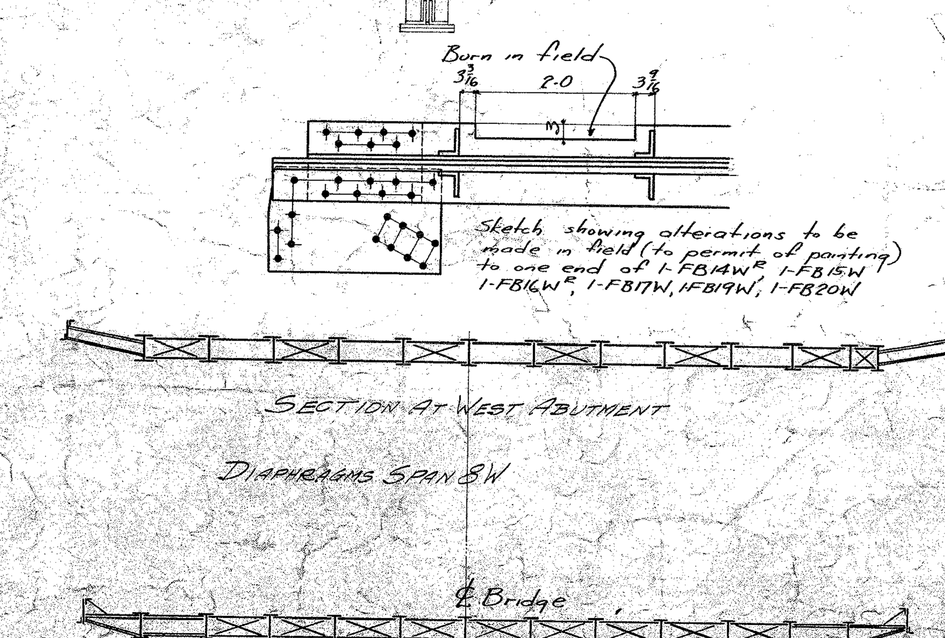






Half Section at Intermediate Panel Points of Girder Spans

Half section of Expansion Joints at Piers 2W & 5W Looking East



Sketch showing alterations to be made in field (to permit of painting) to one end of 1-FB14W^R, 1-FB15W, 1-FB16W^R, 1-FB17W, 1-FB19W, 1-FB20W

Section at West Abutment

Diaphragms Span 8W

Section at Midspan

Diaphragms Span 8W

List of Contracts				Dwg. No. Series West Appr.	Dwg. No. Series East Appr.
5015-A	Plate Girder Spans	Girders	Carbon Steel	101 to 106	1 to 4
5015-B	" " "	Floorbeams	"	101 to 104	1 to 3
5015-C	" " "	Beams	" "	101 to 103	1 & 2
5015-D	" " "	Slabs, Pins, Brkts, Laterals, Exp. Jnts, etc.	" "	101 to 108	1 to 7
5015-E	" " "	Cast Steel	" "	1	
5016	" " "	Girders	Silicon Steel	1 to 4	
5017-A	Stringer Spans	Beams		101 to 103	1 to 4
5017-B	" "	Exp. Jnts & Misc.		101 & 102	1 to 3
5017-C	" "	Bearings		1	

For Marking Index see Sheet K1 - Cont. 5015-5017

Note:- For Elevations, Top of Steel and other figures not given for Span 8W see Work Sheet WS2.

For Railing Diagram see Sheet #E101 - Cont. 5018B

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

WEST APPROACH

ERECTION DIAGRAM

APPROVED

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Wilson
MADE BY J.C.H. DATE — CHECKED BY — DATE
TRACED BY F.M. DATE — REVISED — DATE
SCALE: INCH = 1 FOOT — LAST ASSEMBLING MARK
CONT. NO. 5015-17 SHEET NO. E101

Crown of Roadway

GRADE 4.7% DOWN →

Burn in Field

Sketch showing alterations to be made in field (to permit of painting) to one end of 1-F8IE, 4-F8JE, 1-F8IE

Main Bridge Tangent

℄ East Approach

℄ Shoreline

℄ Dock Fixes Bearing

℄ Girder Bearings

℄ Girder Bearings

℄ Girder Bearings

℄ Bridge

Symm. about ℄

Note:- All Elevations given at ℄ of Bridge.

Note To Erector

Place Expansion Joints E.I.C. of Piers 8E-12E-11E & 12E-13E as soon as clear Railing Posts.

For Railing Diagram See Sheet E1 - Cont. 5018C

PLAN OF SPAN-7E
(All dimensions are horizontal)

List of Contracts				Dwg. No. Series East Approach	West Approach
5015-A	Plate Girder Spans	Girders	Carbon Steel	1 to 4	101 to 106
5015-B	" "	Floorbeams	" "	1 to 3	101 to 104
5015-C	" "	Beams	" "	1 & 2	101 to 103
5015-D	" "	Expansion Rockers, Shoes, Pedestals, Fixed Parts, etc.	" "	1 to 7	101 to 108
5015-E	" "	Cast Steel	" "		
5016		Girders	Silicon Steel		1 to 4
5017-A	Stringer Spans	Beams		1 to 4	101 to 103
5017-B	" "	Expansion Joints & Misc.		1 to 2	101 to 102
5017-C	" "	Bearings			

For Marking Index see Sheet K1 - Cont. 5015-5017

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

ERECTION DIAGRAM

EAST APPROACH

Approved

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
In Charge W.F.S.
Made by A.E.S. Date Checked by Date
Traced by Date Revised By
Scale Inch = 1 Foot Dwg. Assembling No.
Cont. No. 5015-5017 Sheet No. 2

1 FLOORBEAM - FB9E

1 FLOORBEAM FB10E

Rivets: $\frac{7}{8}$" ϕ
Holes: $\frac{11}{16}$" ϕ

Holes punched $\frac{5}{16}$" ϕ reamed to $\frac{11}{16}$" ϕ after assembly, except lateral plates which may be punched full size

Holes marked (RT) are subpunched $\frac{5}{16}$" ϕ reamed to $\frac{11}{16}$" ϕ thru a metal template

Burrs are to be removed from all holes

Paint: One coat of Industrial Paint Co's. Brown Nocoro

APPROVED 12-7-29

Waddell & Hardesty

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIV

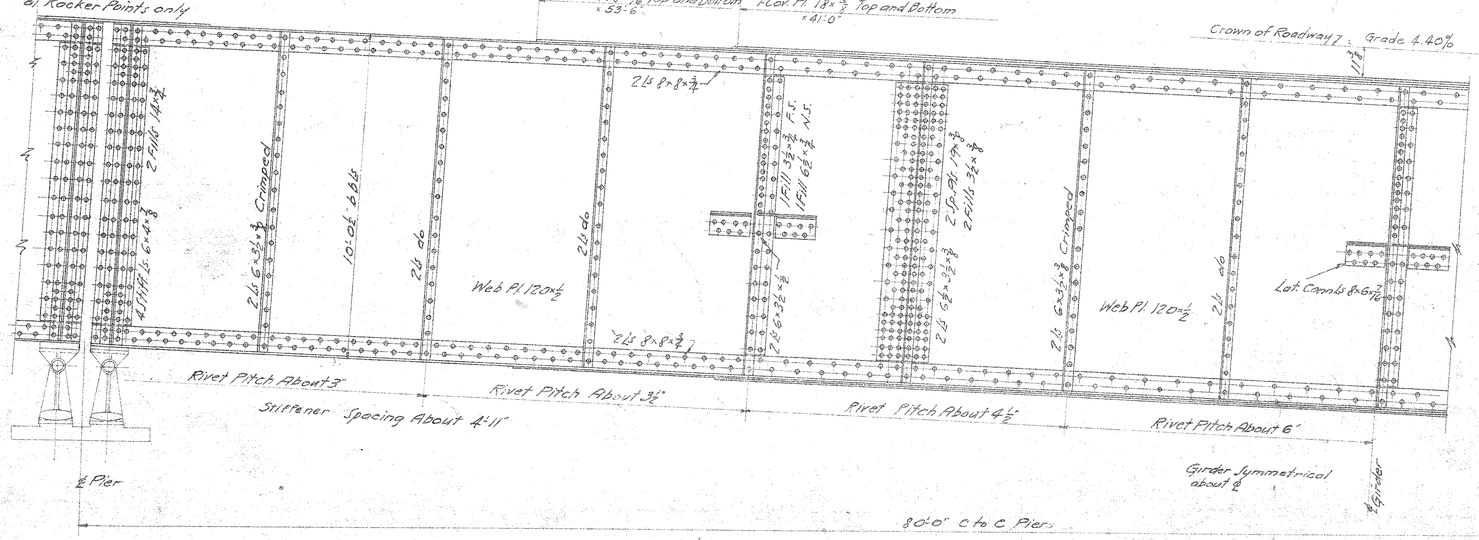
EAST APPROACH
FLOORBEAMS - SPAN #1

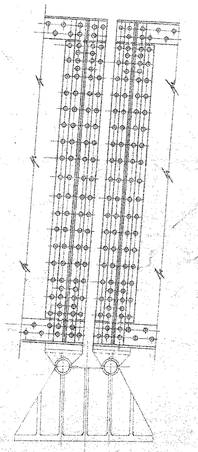
McCLINTIC-MARSHALL CONST
PITTSBURGH, PA.

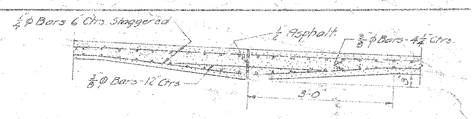
IN CHARGE W.P. Storr
MADE BY C.W.K. DATE CHECKED BY F.B.A. DA
TRACED BY J.M. DATE REVISED DA
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK

CONT. NO. 5015B SHEET NO.

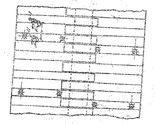
A-2-376

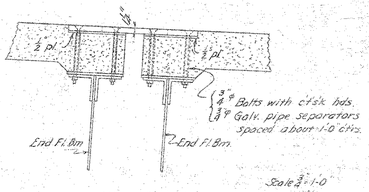




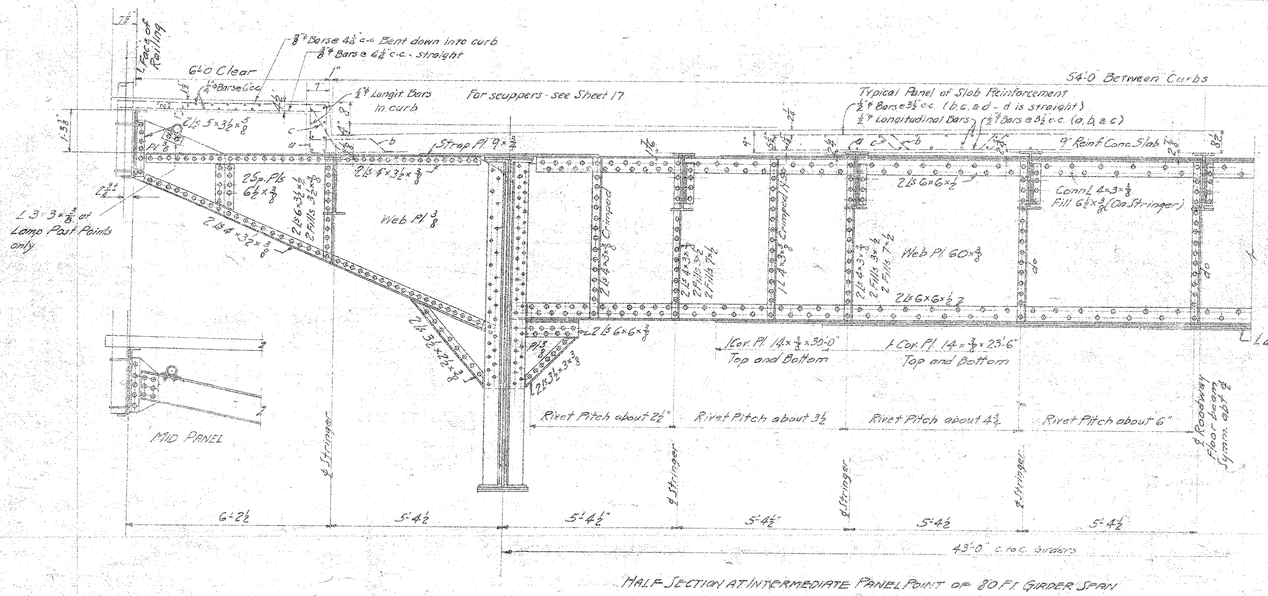


CONSTRUCTION JOINT IN SIDEWALK SLAB

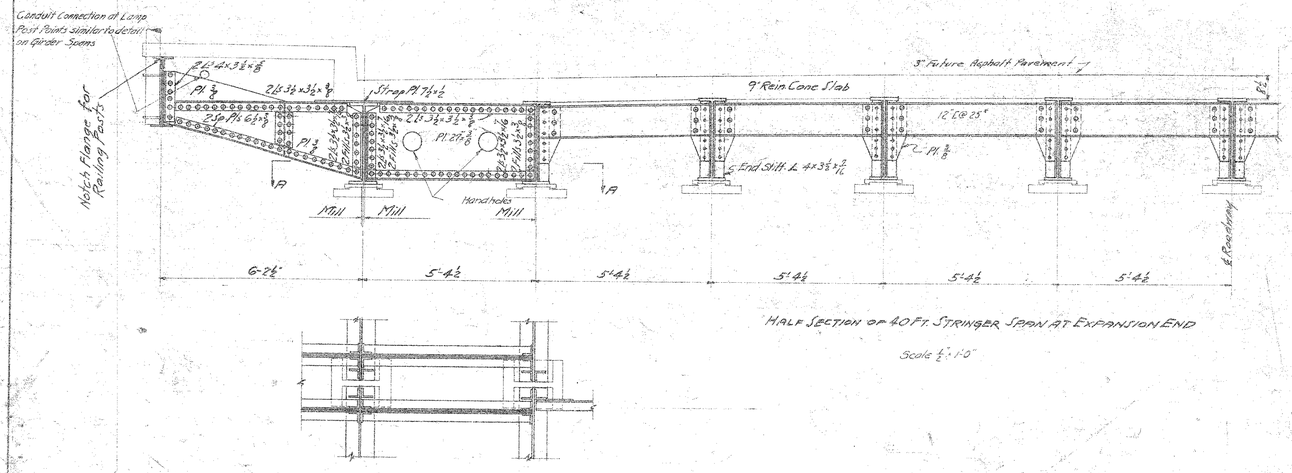




TYPICAL EXPANSION JOINT ON APPROACHES.
Note: Curb and sidewalk joint covered by plain ½" plate

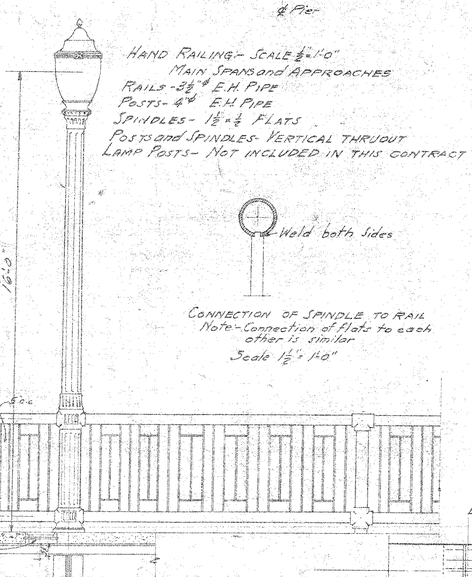


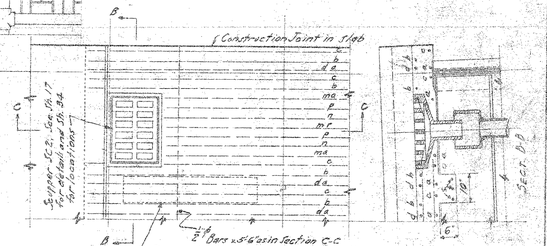
HALF SECTION AT INTERMEDIATE PANEL POINT OF 80 Ft. GIRDER SPAN
Scale ½"=1'-0"

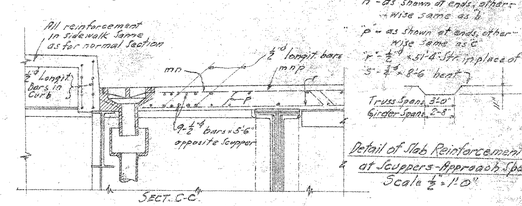


HALF SECTION OF 40 Ft. STRINGER SPAN AT EXPANSION END
Scale ½"=1'-0"

SECTION A-A



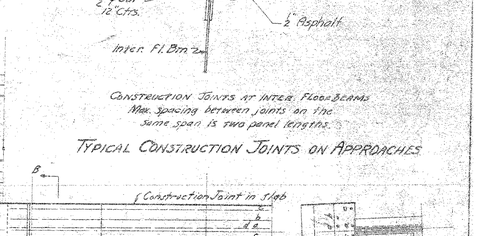




Bar m - ¾" ⌀ x 21'-4" str. in place of n
" n - as shown at ends, otherwise same as p
" p - as shown at ends, otherwise same as n
" r - ¾" ⌀ x 21'-8" str. in place of s
" s - ¾" ⌀ 8-6 bent

Detail of Slab Reinforcement at Scuppers - Approach Span
Scale ½"=1'-0"

TYPICAL CONSTRUCTION JOINTS ON APPROACHES



CONSTRUCTION JOINTS BETWEEN SPANS
Required at all rocker and fixed points.
Scale ¾"=1'-0"

CONSTRUCTION JOINTS AT INTER. FLOOR BEAMS
Max. spacing between joints on the same span is two panel lengths.

Scale:- ½"=1'-0 Except as noted
Material:- Carbon Steel
Rivets - ⅞" ⌀

Revised
Nov. 8, 1929
Nov. 25, 1929
Feb. 17, 1930
April 3, 1930
May 16, 1930
June 4, 1930
Sept. 11, 1930

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

80 FOOT GIRDER SPAN
40 FOOT STRINGER SPAN

WADDELL AND HARDESTY - CONSULTING ENGINEERS
NEW YORK CITY.
JULY 20, 1929

SHEET 16

For FBIE & FBIE — Top Flg. for both ends of FBIE & FBIE - Part not shown same as bott. Flg. for FBIE

" FB3E " " Top Flg. for both ends of FB3E - Part not shown same as bott. Flg. for FB3E

Holes for Expansion Joint Bolts — Note break in stagger — Holes for expansion

1 Cov. Pl. 14 × ½ × 26 - 5¾ — Top Flg. for FB4E & FB11E — 21-6

42'-5 ℄ to ℄ End Holes

1 Cov. Pl. 14 × ⅜ × 24'-6⅞ For FBIE & FBIE — 1 Cov. Pl. 14 × ⅜ × 30 - 4½ For FBIE & FBIE — 1 Cov. Pl. 14 × ½ × 26 - 6⅞ For FB3E

Mark this end "North" For FBIE — Mark this end "South" " FB1-E-3½-4E

2 PL. C. C. C. ½ × 41'-5 For FBIE & FBIE

RT3 — RT1 — RT1

I 60 × ⅜ × 42'-9

Sym. abt ℄ except as shown or noted

43'-0 ℄ to ℄ Girder

1 Cov. Pl. 14 × ⅜ × 30 - 4½ For FBIE & FBIE — 1 Cov. Pl. 14 × ⅜ × 24'-6⅞ For FBIE & FBIE — 1 Cov. Pl. 14 × ½ × 26 - 8⅝ FB3E & FB4E & FBIE

I 25¼ × ⅜ × 3'-9 - MGE

Bolt Bracket to Girder for Shipment

Bottom Flg. for FBIE

Note break in stagger

I 41 × ⅜ × 4'-2 ab

Fill 12 × ⅜ × 1'-7 a c l

Bottom Flg. for FB2E

Bolt Bracket & Plate to Flr. Bm. for Shipment

Fill 6 × ⅜ × 1'-7 a d l

I 25¼ × ⅜ × 1'-9⅜ a l

Bottom Flg. For Both Ends of FB3E & FB4E FB11E

Mark this end North for FB11E — Mark this end South " " FB3E & FB4E

2 PL. C. C. C. ½ × 41-5

This View for both Ends of FB3E & FB4E FB11E

Part not shown same as FBIE

I 60 × ⅜ × 42'-7¼ (N.S.)

I 60 × ⅜ × 41'-9 (F.S.)

I 24 × ⅜ × 2'-0⅝ bl

2 L. 6 × 6 × ½ × 1'-7 v l

2 L. 3½ × 3½ × ½ × 2'-1½ v l

Sec. D-D, E-E, F-F, H-H — For FBIE & FB2E

Sec. D-D, E-E, F-F, H-H — For FB3E, FB4E, FB11E

4 Floor Beams - FBIE R As shown

2 " " FBIE L Opp. hand

6 " " FB2E R As shown

6 " " FB2E L Opp. hand

4 " " FB3E R As shown

3 " " FB3E L Opp. hand

2 " " FB4E As shown } Alike except for direction

2 " " FB11E " " }

12 Lateral Plates MGE

Rivets: ⅞ ϕ

Holes: 15/16 ϕ

Holes punched ½ ϕ & reamed to 15/16 ϕ after assembly, except lateral plates which may be punched full size.

Holes marked (RT) are subpunched ½ ϕ & reamed to 15/16 ϕ thru a metal template.

Burrs are to be removed from all holes

Paint One coat of Industreial Paint Co's Brown Nocaro

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIV

EAST APPROACH

FLOORBEAMS - SPANS 2 TO 7

2E96E

McCLINTIC-MARSHALL CONS

PITTSBURGH, PA.

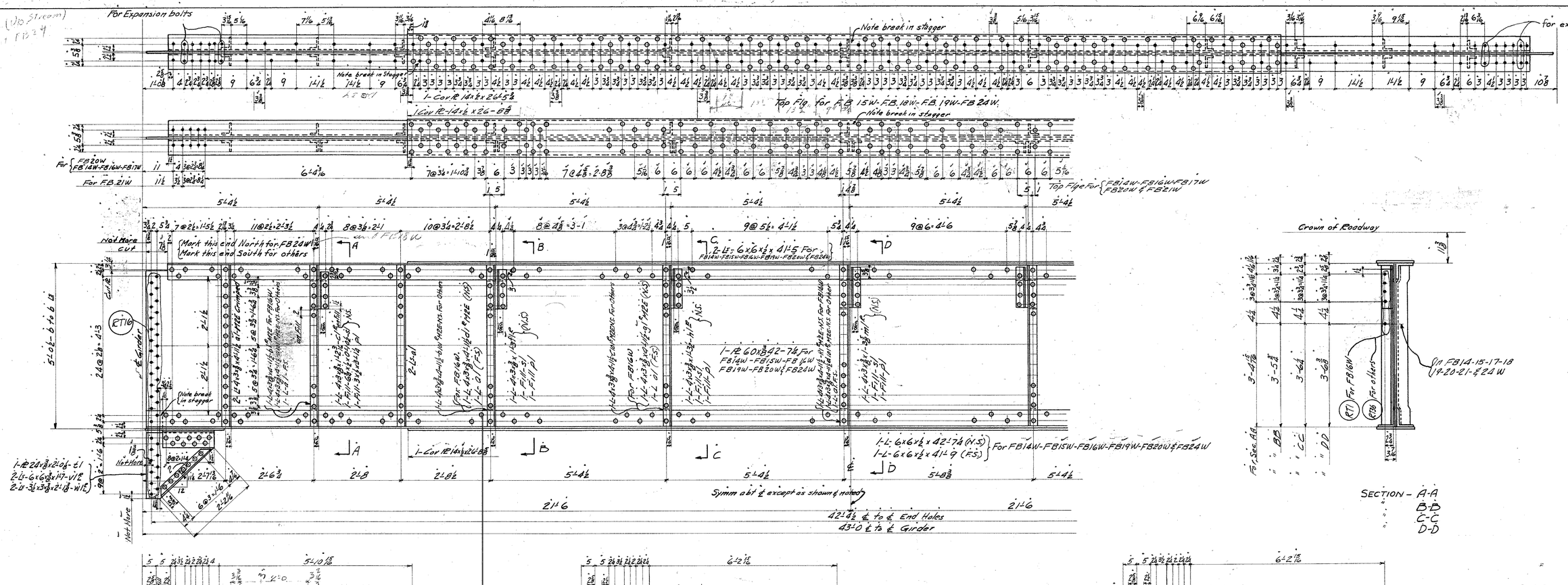
IN CHARGE W.M. SON — MADE BY C.W.K. DATE — CHECKED BY J.A. — TRACED BY J.M. DATE — REVISED — SCALE: INCH = 1 FOOT — LAST ASSEMBLING MAR

CONT. NO. 5015B SHEET NO.

APPROVED 12-7-29

Waddell & Hardesty

A-2-374


For Expansion bolts
Note break in stagger
for expansion bolts
Top Flg. for F.B 15W-F.B.16W-F.B.19W-F.B 24W.
Top Flge for {FB14W-FB15W-FB17W FB20W & FB21W
For {FB20W FB14W-FB15W-FB17W
For FB.21W
Not More cut
{Mark this end North for FB24W
Mark this end South for others
Crown of Roadway
For FB16W
For others
SECTION - A-A
B-B
C-C
D-D
Symm abt ℄ except as shown & noted
42'-8½ ℄ to ℄ End Holes
43'-0 ℄ to ℄ Girder
21'-6
Bolt Bracket & Plate to Fl.Bm. for Shipment
Bott flg for both ends of FB14W-FB15W & FB24W
Bott flg for both ends of FB16W
Bott flg for both ends of FB19W & FB20W
Bott flg for both ends of FB17W, FB18W
Bott flg for both ends of FB21W
Mark this end North for FB16W
Mark this end South for FB17W
Mark This end South.
View for both ends of F.B.17W & FB18W
View for both ends of F.B. 21W
Part not shown same as F.B. 14W except as noted
Part not shown same as Top flg F.B. 14W
Part not shown same as Top flg FB14W
Rivets ⅞"ϕ
Holes 15/16"ϕ
Holes punched 1⅛"ϕ reamed to 15/16"ϕ after assembly, except lateral plates which may be punched full size.
Holes marked (RT) are subpunched 1⅛"ϕ & reamed to 15/16"ϕ thru a metal template.
Burrs are to be removed from all holes.
Paint:- One coat of Industrial Paint Co's Brown No coro
2 - FLOORBEAMS - FB14W℄ opp hand.
1 do FB14W℄ as shown
1 do FB15W as shown
1 do FB24W as shown
1 do FB16W℄ as shown
1 do FB16W℄ opp hand
1 do FB17W as shown
1 do FB18W as shown
1 do FB19W as shown
1 do FB20W opp hand
1 do FB21W as shown
Alike except for direction
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RI
WEST-APPROACH
FLOORBEAMS SPAN #1W to 7
2W & 5W
McCLINTIC-MARSHALL CONS
PITTSBURGH, PA.
APPROVED 1-20-30.
Waddell & Hardesty.
CONT. NO. 5015B SHEET NO.
A-2-379

Note break in stagger

Mark this end "South"

Cut

Fill

Cov. PL 14"×7/16"×29'-4 1/2"

2 L's 6"×6"×1/2"×41'-4

PL 60"×7/8"×42'-5 7/8"

PL 6"×6"×1/2"×42'-5 7/8" F.S.

PL 6"×6"×1/2"×41'-2 7/8" N.S.

Symm. abt. ℄ except as shown & noted

42'-2 7/8" ℄ to ℄ End Holes

43'-0 ℄ to ℄ Girder

21'-6

Crown of Roadway

Sec. A-A
Sec. B-B
Sec. C-C
Sec. D-D

Bolt Bracket & Plate to Fl. Bm. for Shipment

Part not shown; same as top Flg.

Bolt. Flg. for both ends

FLOORBEAM-FB22W—for SPAN 1W

Note break in stagger

Mark this end "South"

Cov. PL 14"×1/2"×30'-6 1/2"

Cov. PL 14"×1/2"×22'-3 1/2"

2 L's 6"×6"×5/8"×41'-5

PL 60"×7/16"×44'-6

43'-0 ℄ to ℄ Girder

44'-2 ℄ to ℄ Holes

Part not shown; same as Top Flg.

Bolt. Flg. for both ends

FLOORBEAM FB23W— for SPAN 7W

Crown of Roadway

Sec. E-E
Sec. F-F
Sec. G-G
Sec. H-H

Rivets: 7/8" ϕ

Holes: 15/16" ϕ

Holes punched 13/16" ϕ & reamed to 15/16" ϕ after assembly, except lateral p/s. which may be punched full size. Holes marked (RT) are subpunched 13/16" ϕ & reamed to 15/16" ϕ thru a metal template. Burrs are to be removed from all holes.

Paint: One coat of Industrial Paint Co.'s Brown Nocoro

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER

WEST APPROACH
FLOORBEAMS - SPANS #1 AND #7

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE W. M. SON
MADE BY C.W.K. DATE CHECKED BY F.B.A. DATE 8-3-30
TRACED BY J.M. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK am

APPROVED 8-4-30

Waddell & Hardesty

CONT. NO. 5015-B

Note break in stagger

For FB7W-8W-9W
For FB10W-12W

Mark this end "South"

Cut

Note break in stagger

Fill - pl

For FB7W

For Others

Symm. abt. ℄ except as shown & noted

42-5 ℄ to ℄ End Holes
43-0 ℄ to ℄ Girder

Bolt. Flg. for FB7W

43-0 ℄ to ℄ Girder
42-4½ ℄ to ℄ End Holes

Bolt. Flg. for FB8W

Part not shown same as FB7W

For both ends of FB8W

42-2⅞ ℄ to ℄ End Holes

Part not shown same as FB7W-Except as shown & noted

For both ends of FB10W & 12W

Bolt. Flg. for FB10W

Part not shown same as Bolt. Flg. FB7W

Bolt. Flg. for FB9W

Part not shown same as Bolt. Fl. FB10W

Bolt. Flg. for FB12W

Crown of Roadway

For FB7W

For others

In FB8-10-12 only

Sec. A-A
Sec. B-B
Sec. C-C
Sec. D-D

Floor Beam		
FB7W	R	As shown
FB7W	L	Opp. hand
FB8W	R	As shown
FB8W	L	Opp. hand
FB9W	R	As shown
FB9W	L	Opp. hand
FB10W	R	As shown
FB10W	L	Opp. hand
FB12W		As shown

Rivets: ⅞" ϕ
Holes: 15/16" ϕ

Holes punched 11/16" ϕ reamed to 15/16" ϕ after assembly except Lateral Hls. which may be punched full size.
Holes marked (F.T.) are subpunched 11/16" ϕ & reamed to 15/16" ϕ thru a metal template
Burrs are to be removed from all holes

Paint: One coat of Industrial Paint Co's. Brown Nocoro

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVI

WEST APPROACH
FLOORBEAMS - SPANS #1 TO #4

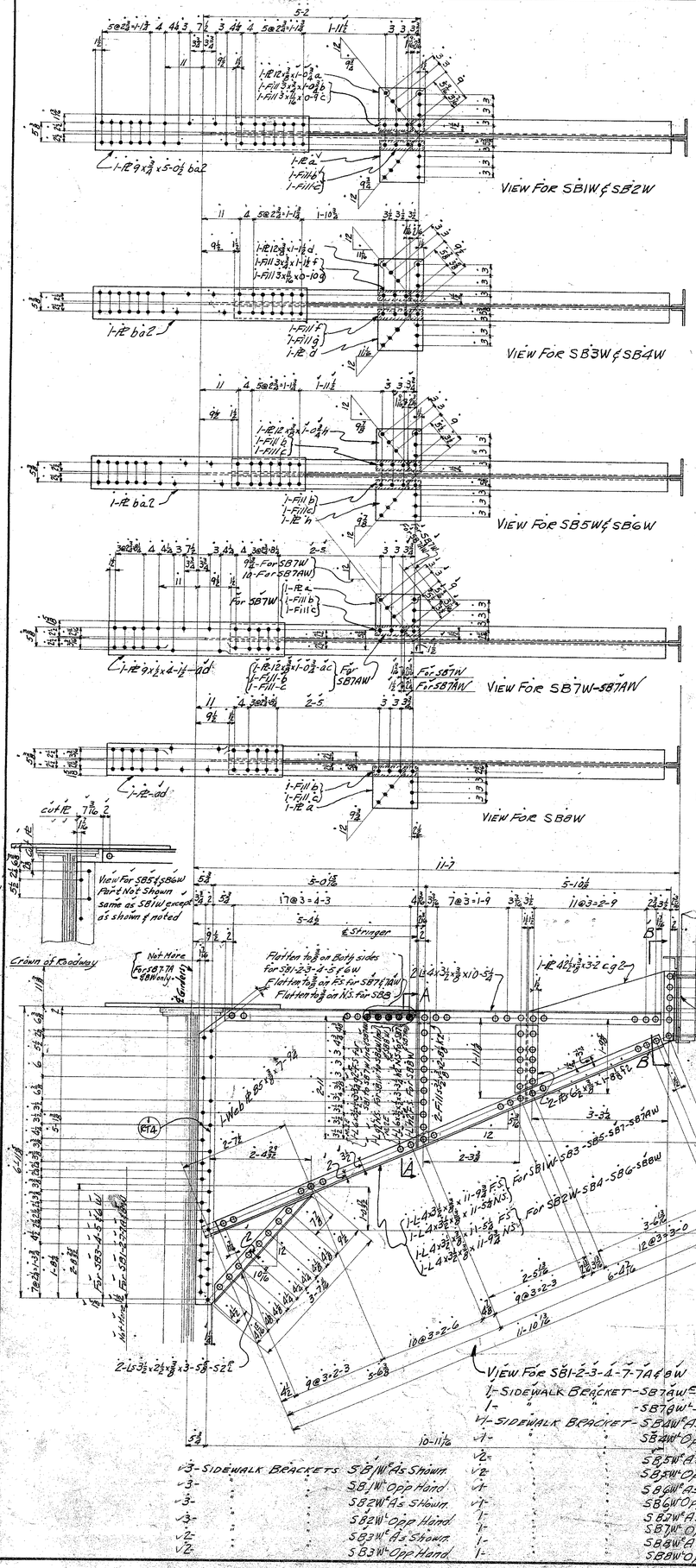
McCLINTIC-MARSHALL CONST.
PITTSBURGH, PA.

IN CHARGE Wilson
MADE BY C.W.K. DATE
TRACED BY J.M. DATE
CHECKED BY F.H.A. DATE
REVISED DATE
SCALE: INCH = 1 FOOT
LAST ASSEMBLING MARK

CONT. NO. 5015B SHEET NO. 10

APPROVED 1-20-30.
Waddell & Hardesty.

A-2-378



Rivets 7/8"ø
Holes 15/16"ø Unless Noted
Holes punched 1/4" small & reamed to size after assembly in s
except lateral plates which may be punched full size.
Holes marked (E) are subpunched 1/16" & reamed
size thru a metal template
Burrs to be removed from all open holes.

Paint - One coat of Industrial Paint Co's. Brown

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVE

WEST APPROACH

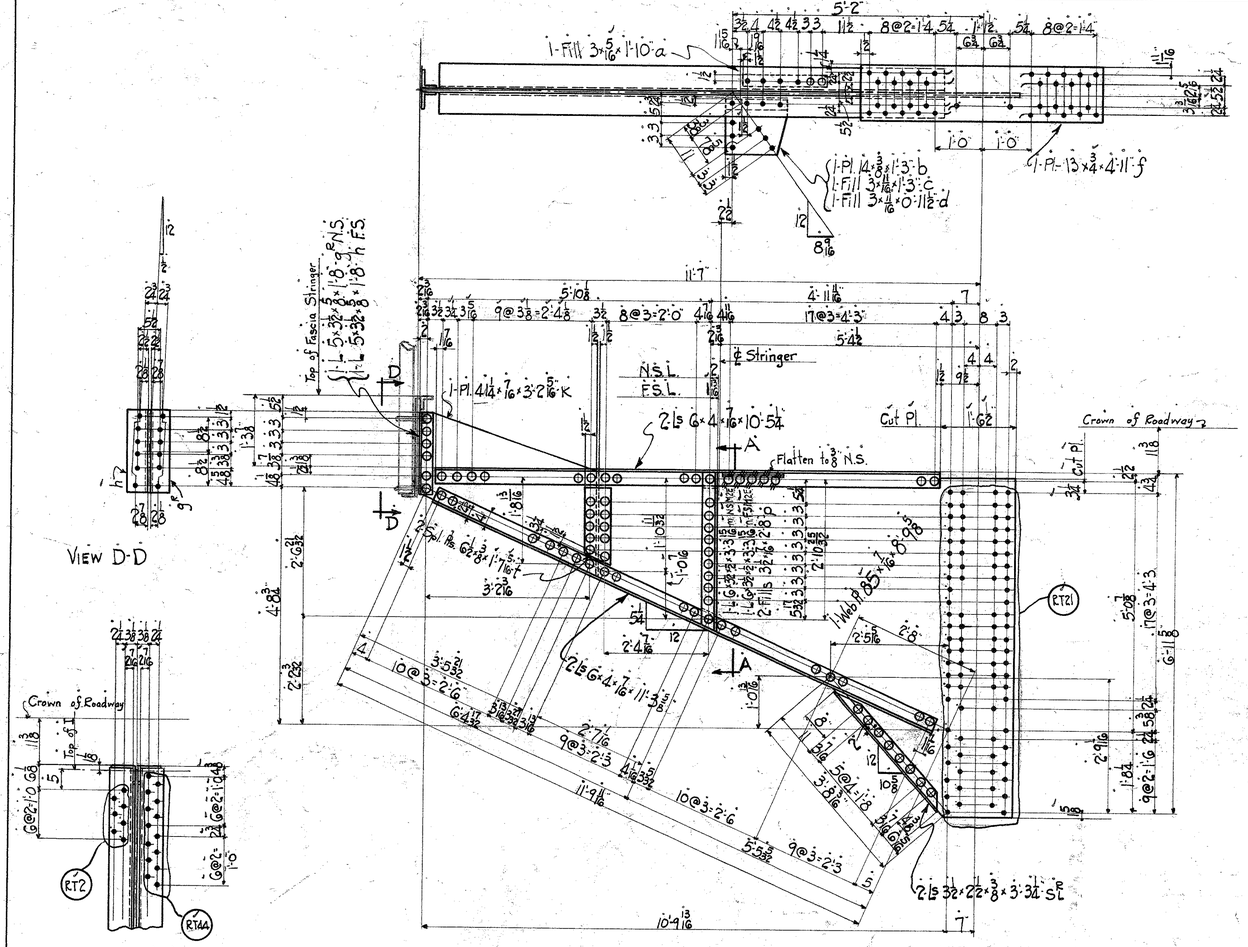
SIDEWALK BRACKETS - SPANS 2-4-5-6 & 7

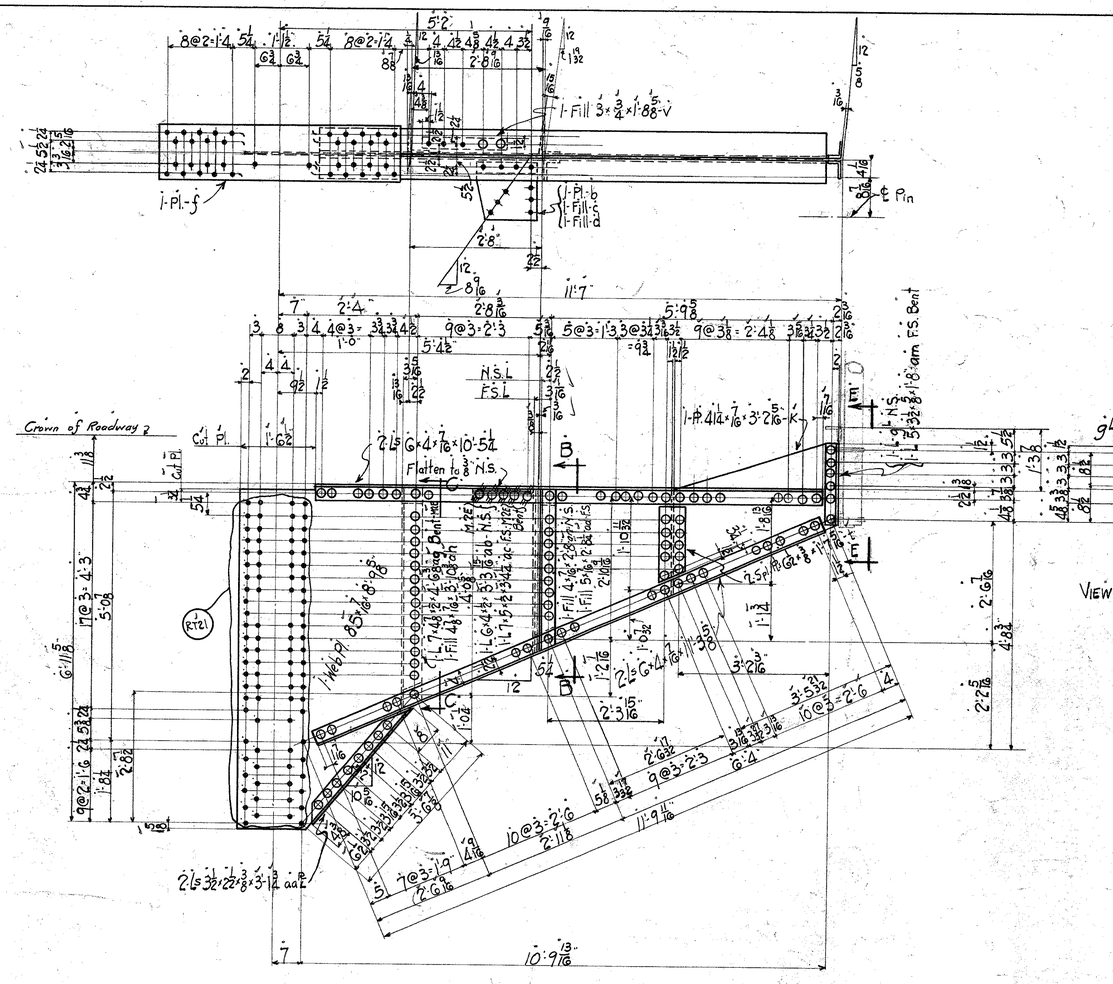
GW52W

APPROVED 2-17-30

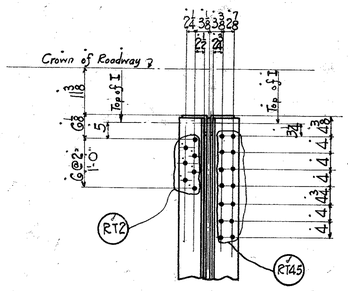
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. C
PITTSBURGH, PA.
IN CHARGE W.M.S. DATE
MADE BY H.F.M. DATE 11-29-29 CHECKED BY F.B.A. DATE 1/
TRACED BY E.Z. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK G2
CONT. NO. 5015D SHEET NO. 101

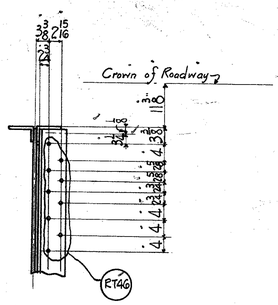




1-Sidewalk Bracket SB19W



Section B-B



Section C-C

Notes:-
Rivets 1" ℄
Holes 15/16" ℄
Holes punched & small & reamed to size after assembly in shop except lateral plates which may be punched full size.
Holes marked (RT) are subpunched 11/16" ℄ and reamed to size thru a metal template.
Burrs are to be removed from all holes.

Paint:- One coat of Industrial Paint Co's Brown Nocoro

APPROVED 3-5-30
Waddell & Hardesty

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVE

WEST APPROACH
SIDEWALK BRACKETS SPAN 7W

McCLINTIC-MARSHALL CONST.
PITTSBURGH, PA.
IN CHARGE Wm Son
MADE BY H.F.M. DATE CHECKED BY F.B.A. DATE
TRACED BY C.E.P. DATE 2/7/30 REVISED DATE
SCALE 1" INCH = 1 FOOT LAST ASSEMBLING MARK G
CONT. NO. 5015-D SHEET NO. 10

1Fill 9×$\frac{3}{8}$×1-6 av } For SB20-21
1Fill 9×$\frac{7}{16}$×1-6 aw } only

1Plt 9×$\frac{3}{8}$×5-0½ ba

1Plt-a
1Fill-b
1Fill-c

VIEW FOR SB20W & SB21W - SB20AW & SB21AW

1Plt 10×½×4-1½ d

VIEW FOR SB22W

End of Exp. Joints

1Plt 10½×$\frac{3}{8}$×1-4⅜ f
1Fill 3×$\frac{3}{8}$×1-4⅜ g
1Fill 3×$\frac{7}{16}$×1-1 h

Holes for Bolts for Expansion

1Plt 10×½×5-0½ k

VIEW FOR SB23W

1Plt 10½×$\frac{3}{8}$×1-2 m
1Fill 3×$\frac{3}{8}$×1-2 n
1Fill 3×$\frac{7}{16}$×0-10¾ p

Nail Mark

Holes for Bolts for Expansion

1Plt 10×½×5-6 s

VIEW FOR SB24W

11-7

5-0⅞ 5-10⅛ 10@3'-2'-0

Crown of Roadway

Fr SB22-23 24"wide Not More

½ Stringer SB20-21 20A50A

Flatten 1½ bolt sides - N.S. - SB22
F.S. - SB23 & 24
F.S. - SB23

1½Plt 42×$\frac{3}{8}$×3'-2 c

2Pl 4×3½×$\frac{3}{8}$ - 10-5½

Web PL 85×$\frac{3}{8}$×7-9

2-4⅞ 2-7½ 2-3⅜ 3-3½ 5½ 12

1Fill 3½×$\frac{3}{8}$×1'-8½ v

SB20-SB23 SB24W & SB20AW
SB21- SB22W & SB21AW

11-9½ F.S. 11-5 N.S.
11-5 F.S. 11-9½ N.S.

3-6½ 12@3'-3-0 2-5⅝ 9@3'-2'-3 6-4½

2Pl 3½×2½×$\frac{3}{8}$×3-5½ a b

10@3'-2'-6 11-10½ 10-10⅛

SECTION B-B

Holes in SB20-21-23-24 as PTW 20A50A

Top of Fascia

Crown of Roadway

SECTION A-A

	SIDEWALK BRACKETS	
1		SB20W^{R} As shown
1		SB20W^{L} Opp. hand
1		SB21W^{R} As shown
1		SB21W^{L} Opp. hand
1		SB22W^{R} As shown
1		SB22W^{L} Opp. hand
1		SB23W As shown F&R-105
1		SB24W Opp. hand F&R-105
1		SB20AW^{R} As shown
1		SB20AW^{L} Opp. hand
1		SB21AW^{R} As shown
1		SB21AW^{L} Opp. hand

1Plt 9×$\frac{3}{4}$×5-0½ a g

Holes

1Plt 12×$\frac{3}{8}$×1-1 a c
1Fill 3×$\frac{3}{8}$×1-1 a d
1Fill 3×$\frac{7}{16}$×0-9½ a f

1Plt a c
1Fill a d
1Fill a f

VIEW FOR SB25W & SB26W

1Plt 10½×½×4-1½ a h

VIEW FOR SB27W

11-7

6⅞ 5-11⅞ 1@3-4-3 8@3'-2'-0 10@3½=2-8½ 5-10⅛

5-4½

Cut Plt

Flatten 1½ bolt sides - SB25W & SB26W
Flatten 1½ N.S. - SB27W

1½Plt 42×$\frac{3}{8}$×3'-2½ a k

2Pl 4×3½×$\frac{3}{8}$×10-4½

Top of Fascia

Web PL 85×$\frac{3}{8}$×7-9

2-7½ 2-4⅞ 2-3⅜ 3-3½ 12

1Fill 3½×$\frac{3}{8}$×1'-8½ a l

11-4⅜ N.S. } For SB25W
11-8⅜ F.S. }
11-8⅜ N.S. } For SB26W & SB27W
11-4⅜ F.S. }

1Plt 4×3½×$\frac{3}{8}$ - 11-4⅜ N.S.
1Plt 4×3½×$\frac{3}{8}$ - 11-8⅜ F.S.

3-6⅝ 12@3'-3-0 2-11⅛ 9@3'-2'-3 6-4½

2Pl 3½×2½×$\frac{3}{8}$×3-5½ a m

10@3'-2'-6 11-9⅞ 10-10⅛

	SIDEWALK BRACKETS	
3		SB25W^{R} As shown
3		SB25W^{L} Opp. hand
3		SB26W^{R} As shown
3		SB26W^{L} Opp. hand
1		SB27W^{R} As shown
1		SB27W^{L} Opp. hand

Rivets - ⅞"ϕ
Holes - ⅞"ϕ Unless noted
Holes punched ¼" small & reamed to size after assembly in shop except lateral plates which may be punched full size.
Holes marked (RT) are subpunched ⅜"ϕ & reamed to size thru a metal template
Burrs are to be removed from all holes

Paint: One coat of Industrial Paint Co.'s. Brown No. 1070

APPROVED 2-17-30
Waddell & Hardesty

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVE

WEST APPROACH
SIDEWALK BRACKETS - SPANS #1 & #3

2W

McCLINTIC-MARSHALL CONST. C
PITTSBURGH, PA.

IN CHARGE W.M. Scott DATE
MADE BY H.F.M. DATE CHECKED BY F.B.A DATE
TRACED BY J.M. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK

CONT. NO. 5015D SHEET NO. 10

Note break in stagger

For FB1W-FB2W-FB3W-FB4W-FB1W
" FB5W-FB6W-FB11W

Cov. PL 14 × 3/8 × 24-6 5/8

Cov. PL 14 × 3/8 × 30-4 3/4

2L 6 × 6 × 1/2 × 41-5 For FB1W-2W-3W-4W & 13W

Mark this end "South"

Cut

RT3 For Girder

Cov. PL 14 × 3/8 × 30-4 3/4

Cov. PL 14 × 3/8 × 24-6 5/8

1 PL CO × 3/8 × 42-9 For FB1W-FB2W FB4W-FB13W

Note break in stagger

8-2 1/4 holes

2-6 1/2

2-8

2-8 1/2

5-4 1/2

5-8 3/8

21-6

Sym. abt. ℄ except as shown & noted

42-5 ℄ to ℄ End Holes
43'-0 ℄ to ℄ Girder

1L 6 × 6 × 1/2 × 42-9 1/2 F.S.
1L 6 × 6 × 1/2 × 41-9 N.S.
} For FB1W-FB2W FB4W-FB13W

Sec A-A
" B-B
" C-C
" D-D

1 PL FB1-3-4 5/8-11 1/4 thk

For Sec A-A
B-B
C-C
D-D

RT1 For FB2W
RT36 For others
Crown of Roadway

Part not shown same as Top Flg.

1 PL 24 × 3/8 × 3-1 1/8 - M26W

Bolt Bracket to Girder for Shipment

Bott. Flg. for both ends of FB1W

1 PL 24 × 3/8 × 3-1 1/8 M32W

Bott. Flg. for both ends of FB13W

1 PL 25 1/4 × 3/8 × 3-9 3/8 M27W

Bottom Flg. for both ends of FB2W

1 PL 25 1/4 × 3/8 × 3-10 1/4 M29W

Bott. Flg. for both ends of FB4W

Mark this end "South"

For both ends of FB3W

Part not shown same as FB1W

1 PL 60 × 3/8 × 42-8 1/4

Note break in stagger

1L 6 × 6 × 1/2 × 42-9 1/2 (F.S.)
1L 6 × 6 × 1/2 × 41-8 1/4 (N.S.)

2-7 1/16

1 PL adj
2 PLS - W1E
2 PLS - W2E

42-4 1/2 ℄ to ℄ End Holes
43'-0 ℄ to ℄ Girder

1 PL 29 1/2 × 3/8 × 3-4 3/4 M28W

Bott. Flg. for both ends of FB3W

Mark this end "South"

2L 6 × 6 × 1/2 × 41-4

For both ends of FB5W-FB6W & FB11W

Part not shown same as FB1W except as shown & noted

1 PL 60 × 3/8 × 42-6 3/8

1L 6 × 6 × 1/2 × 42-9 1/8 F.S.
1L 6 × 6 × 1/2 × 41-6 3/8 N.S.

2-6 3/4

1 PL adj
2 PLS - W1E
2 PLS - W2E

42-2 3/8 ℄ to ℄ End Holes
43'-0 ℄ to ℄ Girder

1 PL 32 1/2 × 3/8 × 3-6 M31W

Part not shown same as Top Flg.

Bolt Bracket to Girder for Shipment

Bott. Flg. for both ends of FB6W

1 PL 29 1/2 × 3/8 × 3-10 1/4 M30W

Bolt Bracket to Girder for Shipment

Part not shown same as Top Flg.

Bott. Flg. for both ends of FB5W

1 PL 21 1/4 × 3/8 × 3-11 3/8 M33W

Bolt Bracket to Girder for Shipment

Part not shown same as Top Flg.

Bott. Flg. for both ends of FB11W

2	Floorbeams	FB1W ℄ As shown
3	"	FB1W' Opp. hand
1	"	FB2W As shown
1	"	FB3W ℄ " "
1	"	FB3W' Opp. hand
1	"	FB4W As shown
1	"	FB5W Opp. hand
1	"	FB6W " "
1	"	FB11W As shown
1	"	FB13W " "

10	Lateral Plates	M26W
2	"	M27W
4	"	M28W
2	"	M29W
2	"	M30W
2	"	M31W
2	"	M32W
2	"	M33W

Rivets: 7/8" ℄
Holes: 15/16" ℄

Holes punched 15/16" ℄ reamed to 15/16" ℄ after assembly except Lateral fits. which may be punched full size.
Holes marked (RT) are subpunched 1 1/16" ℄ reamed to 15/16" ℄ thru a metal template.
Burrs are to be removed from all holes.

Paint: One coat of Industrial Paint Co's. Brown Nocora

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

WEST APPROACH
FLOORBEAMS - SPANS *1 TO *7 INC.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE	WM SON		
MADE BY	C.W.K.	DATE	
CHECKED BY	F.C.H.	DATE	
TRACED BY		DATE	
REVISED		DATE	
SCALE	INCH = 1 FOOT	LAST ASSEMBLING MARK	

CONT. NO. 5015B SHEET NO. 10

APPROVED 1-20-30
Waddell & Hardesty

A-2-377

1 Girder GIW^R As shown

1 " GIAW^L Opp. hand & as noted.

Notes:-
Rivets 7/8" ø
Holes 15/16" ø Unless noted
Holes punched 13/16" ø & reamed 15/16" ø after assembly in shop except lateral plates which may be punched full size & material over 3/4" thick which is to be drilled from the solid.
Holes marked (M) to be sub-punched 13/16" ø & reamed to 15/16" ø thru a iron template.
Burrs are to be removed from all open holes.

Web PL must be sheared so as to get joint between the plates not in excess of 1/8" otherwise they will have to be planed.

Paint - One coat of Industrial Paint Co's. Brown Nocoro.

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVE

WEST APPROACH

GIRDERS - SPAN 7W

Approved 1-13-30.

Waddell & Hardesty.

McCLINTIC-MARSHALL CONST. C

PITTSBURGH, PA.

IN CHARGE W.M. JOHN

MADE BY A.E.S. DATE 3/29 CHECKED BY K.D.A. DATE

TRACED BY E.S.P. DATE REVISED DATE

SCALE: 1 INCH = 1 FOOT LAST ASSEMBLING MARK

CONT. NO. 5015A SHEET NO. 10

Crown of Roadway

Rivets for GGW^L Open Holes for GGAW^L

Mark this end West

Symm about ℄ between lines XX except as shown & noted

Rivets in bottom flange

For other half

For this half

For top flange

For top flange in top flange

Notch

Notch

Top Flg Camber for Bolt Pkg For camber on Webs

20-5 15/16 ctec Floor beams

20-5 15/16 ctec Floor beams

20-5 15/16 ctec Floor beams

Rivets for GGW^R Open Holes for GGAW^L

Rivets for GGW^R Open Holes for GGAW^L

1 Web Pl 120 × 1/2 × 238-4 3/4

1 Web Plate 120 × 1/2 × 33-7 1/2

Cut & chip flush

Cut & chip flush

Crown of Roadway

Back of Floor beam ℄s & Top of Sidewalk Brackets ℄

Crown of Roadway

Back of Floor beam ℄s & top of sidewalk brackets ℄

224 3/8 ℄ to ℄ Floor Beams

Rivets for GGW^R Open Holes for GGAW^L

Note break in stagger

Note break in stagger

Note break in stagger

1 Web Pl 120 × 1/2 × 238-4 3/4

Cut not chipped rivets

Holes for 1" ϕ bolts

1 Side plate 14 × 2 3/4 × 1-6 bb

1 Side plate 14 × 2 3/4 × 1-6 bb Erect as shown for this half only

Holes for 1" ϕ bolts

1 Side plate 14 × 2 3/4 × 1-4 6 aa

1 Side plate 14 × 2 3/4 × 1-4 6 ac Erect as shown for this half only

℄ Floor beam

℄ Floor beam

Cut & chip flush

Holes for 1" ϕ bolts

1 - GIRDER - GGW^R AS SHOWN

1 - GIRDER - GGAW^L - OPP HAND (AND AS NOTED)

Camber

SECTION - AA

SECTION - BB

SECTION - CC

SECTION - DD

SECTION - EE

SECTION FF

CAMBER DIAGRAM.

DETAIL OF RIGHT HAND END

Notes

Rivets 7/8"ϕ

Holes 15/16"ϕ unless noted

Holes punched 1 1/16"ϕ & reamed 15/16"ϕ after assembly in shop except lateral plates which may be punched full size of material over 3/8" thick which is to be drilled from the solid

Holes marked (ET) to be subpunched 1" & reamed 15/16" thru an iron template

Burrs are to be removed from all open holes.

Web Pls must be sheared so as to get joint between the plates not in excess of 1/8" otherwise they will have to be planed

Paint One coat of Industrial Paint Co's. Brown No. 2010

APPROVED 1-13-30

Waddell & Hardesty

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVE

WEST APPROACH

GIRDERS - SPAN - 12W

McCLINTIC-MARSHALL CONST. CO.

PITTSBURGH, PA.

IN CHARGE Wm Sun. DATE 4/15/30 CHECKED BY F.B.A. DATE

MADE BY A.E.J. DATE REVISED DATE

TRACED BY Mac. DATE REVISED DATE

SCALE: 1 INCH = 1 FOOT LAST ASSEMBLING MARK

CONT. NO. 5015A SHEET NO. 10

A-2-373

1 Cov. Pl. 19"×⅞"×18'-5⅞" Silicon

1 Cov. Pl. 19"×¾"×94'-0¾" Silicon

1 Cov. Pl. 19"×¾"×90'-1⅞" Silicon

2 Fills 10½"×11"×1'-6" cc. Carbon Bolt to Girders.

1 Fill 18"×⅞"×3'-5¼" a.g. Carbon

2 Fills 9"×⅞"×1'-6" cp. Carbon

1 Tie Plate 18"×¾"×6'-2½" Carbon - M34W

¾" ø Holes

1 Stiff. 11"×⅜"×1'-10½" a.h. Carbon

1 Stiff. a.h.

2 Fills 14"×⅜"×0'-11½" bh Carbon

1 Stiff. 14"×⅜"×1'-10½" ak. Carbon

Crown of Roadway

Grind Fillers d¼" cd to fit Fillet of 8"×8"×1⅛" L

A

B

1 Side Pl. 12"×⅝"×42'-3⅞" N.S. Silicon

1 Side Pl. 12"×⅝"×33'-7⅛" F.S. Silicon

1 L 8"×8"×1⅛"×98'-8⅛" N.S. - Silicon

1 L 8"×8"×1⅛"×55'-3" F.S. - Silicon

33'-6 15/16" + ¼" Camber = 33'-7⅛"

42'-3⅞" + ¼" Camber = 42'-3⅞"

77'-11⅞" + 1" Camber = 78'-0⅞"

4+¼ Camber = 4¼ on Web Pls.

Note break in staggers

RT 1A

RT 4

RT 3A

Note break in stagger

Clek. not shipped N.S.

Flatten 4⅛" bolt sides

2 Pls. c.j. 15"×⅜"×1'-4½" m. Carbon - Crimped M.E.

2 Fills 15"×⅜"×0'-9½" o. Carbon

Mark this end West

1 Web Plate 138"×⅝"×26'-11⅛" Silicon

Rivets in G7W^R Open Holes in G7AW^L

2 Pls. c.j.

2 Fills

2 Pls. c.j. m.

2 Fills n.

1 L 6"×4"×½" n.s. Carbon

1 L 6"×4"×½" s.s. F.S. Carbon

1 Fill 7½"×⅜"×9'-5½" t. N.S. Carbon

2 Fills 7½"×½"×10'-2" v. N.S. Carbon

1 Fill 4"×⅜"×9'-5½" w. F.S. Carbon

2 Fills 4"×½"×10'-2" y. F.S. Carbon

2 Pls. c.j. m.

2 Fills n.

2 Splice Pls. 22"×⅝"×9'-2½" a.s. Silicon

2 Fills 35"×½"×9'-5½" ak. - Carbon

2 L 6"×4"×½"×11'-4½" ac. - Carbon - Crimped M.E.

2 Fills 4"×½"×10'-2" a.s. Silicon

4 Fillers 3½"×¾"×4'-0½" a.f. Silicon

2 Pls. 10"×⅜"×4'-0½" a.f. Silicon

2 Fills 4"×½"×10'-2" a.s.

4 Fills a.f.

2 Pls. a.s.

4 Fills a.f.

Note break in stagger

℄ of Splice

2'-1⅛

2'-2⅜

Grind Fillers d¼" cd to fit Fillet of 8"×8"×1⅛" L

Grind ⅛" Flat on 4 L's

Silicon - M.E.

Silicon

Grind ⅛" Flat on 8"×8"×1⅛" L

Silicon Grind ⅛" Flat on Fill

of 8"×8"×1⅛" L

Drilled Holes

1 Sole Pl. 14"×1⅝"×1'-5¾" t. Carbon

Must be straight & true

Section A-A

Section B-B

Section C-C

1 Girder G7W^R As shown

1 " G7AW^L Opp Hand & as noted

2 Tie Plates M34W

Camber Diagram

2C'-3 | 22'-10¼ | 27'-2¼ | 27'-1 | 22'-10¼ | 2C'-4

152'-6¼

Note: Work this sheet in conjunction with Sheets #2-3 & 4

For Splice Diagram see Sheet #4

Rivets: 1" ø Unless noted

Holes: 1⅛" ø " "

Material over ⅞" thick is to be drilled from the solid.

Other material punched ¼" small & reamed to size after assembly in shop except lateral plates which may be punched full size.

Holes marked (RT) to be subpunched ¾" & reamed to 1⅛" thru an iron template.

Burrs to be removed from all holes.

Web plates must be sheared so as to get joint between the plates not in excess of ⅛" otherwise they will have to be planed.

Paint One coat of Industrial Paint Co's Brown Nodoro

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

WEST APPROACH

GIRDERS - SPAN #1

APPROVED 3-3-30

Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.

PITTSBURGH, PA.

IN CHARGE W.C. MADE BY A.E.S. DATE CHECKED BY F.B.A. DATE

TRACED BY J.M. DATE REVISED DATE

SCALE- INCH = 1 FOOT LAST ASSEMBLING MARK

CONT. NO. 5016 SHEET NO. 1

A-2-403

Notch

This View for Other End

In Top Flange only

1-Cov.PL 18-¾ × 56-3⅜

1-Cov.PL 18-⅛ × 42-5¼

Rivets in Bott. Flg.

for Top Flg. Only

Rivets for G1W^R
Open Holes for G1W^L

Rivets for G4W^R
Open Holes for G4AW^L

Mark This End WEST

Cut no edge N5

Sym. abt. ℄ except as shown & noted

19-11⅛ c. to c. Floor beams

℄ Floorbeam

SECTION AA

SECTION BB

SECTION CC

SECTION DD

Part not shown
Same as Top Flange except as noted

Sole Pls must be Straight & True

Crown of Roadway

Back of Bs on Fl. Bm.

Top of cov. pls & back of Sidewalk bracket Fs

Note Break in Stiffener

1-GIRDER - G4W^R As shown
1- " - G4AW^L Opp. Hand and as noted

2 Tie Plates - M5W

Notes:-
Rivets ⅞"ø
Holes 15/16" Unless noted
Holes punched 1/16" ø & reamed to 15/16" ø after assembly in shop except lateral plates which may be punched full size & material over ⅜" thick which is to be drilled from the solid
Holes marked (D) to be sub-punched 1/16" ø & reamed to 15/16" ø thru an iron template
Burrs are to be removed from all open holes.

Web Pls must be sheared so as to get joint between the plates not in excess of ⅛" otherwise they will have to be planed.

Paint:- One coat of Industrial Paint Co's Brown Nocoro

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIV
WEST APPROACH
GIRDERS SPAN 4 W

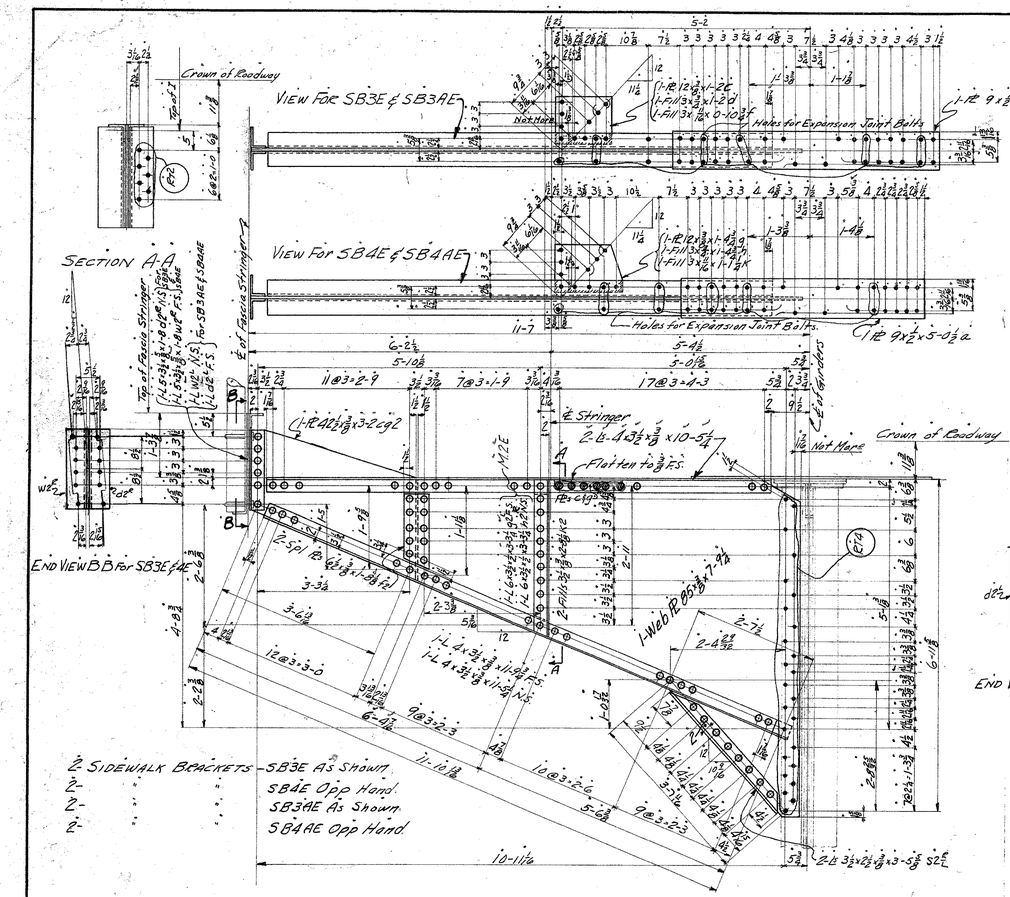
McCLINTIC-MARSHALL CONST
PITTSBURGH, PA.
IN CHARGE W.E.L. Jan
MADE BY A.T. DATE
CHECKED BY F.B.A
TRACED BY F.M. DATE
REVISED
SCALE: INCH = 1 FOOT
LAST ASSEMBLING MARK
CONT. NO. 5015A SHEET NO.

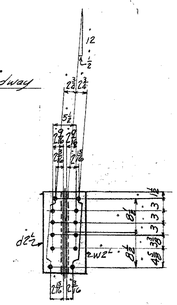
APPROVED 1-6-30
Waddell & Hardesty

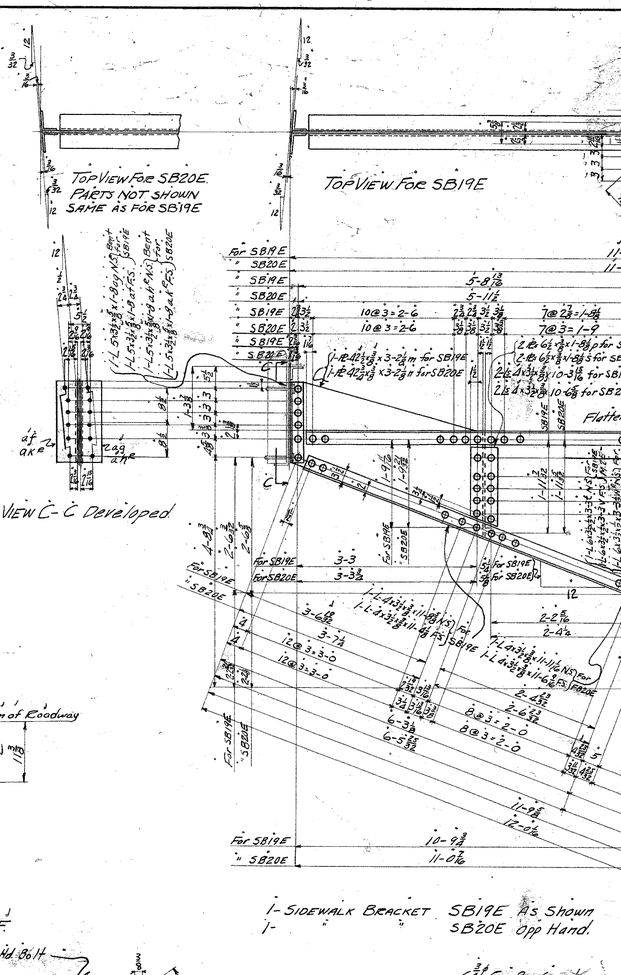
A-2-369

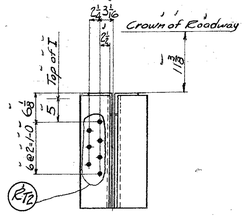
1-Filler 18×¾×0-9·b
1-Filler 18×¾×0-9·c
1-Cover Pl. 18×¾×52-7
1-Pl.-ah101 for top flange
1 Cover Pl. 18×¾·40-2¼
1-Pl. 13½×⅜×1-9½-af101 For top flange
1-Pl. 13½×⅜×1-11¼-ag101 For top flange
1-Pl.-ag101 for top flange
1-Pl. 13½×⅜×1-9½-W For Top Flange of G3W^R & G3AW^L
1-Pl. 13½×⅜×1-9½-ah101 For top flange of G2W^R & G2AW^L
In Top Flg. only
in top flange
Rivets in bott. flange
Spacing not shown same as on sheet #101
22-8⅛ c. to c. Floorbeams
22-7⅞ c. to c. Floorbeams
22-7⅞ c. to c. Floorbeams For G2W^R G2AW^L
22-6¼ c. to c. Floor beams For G3W^R G3AW^L
Crown of Roadway
Mark this end "East" for G2W
Mark this end "West" for G3W
2-Ls 8×8×¾×69-3¾
Symm. abt this line between Lines XX except as shown
1-Web Pl. 84×7/16×34-8 5/16
1-Web Pl. 84×7/16×34-7 5/16
Rivets for G2AW^L & G3W^R
Open Holes for G2W^R & G3AW^L
Remainder of spacing same as sheet #101
Spacing same as on sheet #101
68-1¾ c. to c. Bearings For G2AW^L G2W^R
68-0⅛ ℄ to ℄ Bearings For G3W^R & G3AW^L
69-3¾ O. to O. For G2W^R & G2AW^L
69-2⅛ O. to O. For G3W^R & G3AW^L
Web View For G2W^R & G2AW^L
Section-DD
Section CC
℄ Floorbeam
Details not shown same as for top flange sheet #101 except as noted.
1-Pl. 14×⅝×1-4½ af1 {G2W^R G2AW^L}
1-Pl. 14×1⅜×1-4½ bbl {G3W^R G3AW^L}
Pls. must be straight & true.
1-Cover Plate 18×¾×52-7
1-Cover Plate 18×¾×40-2¼
1-Pl. 14×1⅜×1-4½-bbl
Pl. must be straight & true
View For {G2W^R G2AW^L}
15/16 Holes for 1¼" Bolts
1-Plate 18×¾×7-7⅞-M4W
1-Filler 18×¾×0-9-t
1-Filler-t
Section-BB
Back of Floorbeam Ls & top of Sidewalk Br-k't Ls
Note break in stagger
Material & details not shown for G3W^R & G3AW^L same as for G2W^R except as noted
End For {G3W^R G3AW^L}
1-Web Pl. 84×7/16×34-5¼
Section-EE
Section-FF
Section G-G
Material and details not shown same as G2W except as noted
Section-AA
1- Girder-G2W^R As shown
1- " -G3W^R " "
1- " G2AW^L Opp hand & as noted
1- " G3AW^L " & "
2 Tie Plates-M4W
For Notes See Sheet #101
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIV
WEST APPROACH
GIRDERS SPANS 5 & 6 W
APPROVED 1-13-30.
Waddell & Hardesty
McCLINTIC-MARSHALL CONST.
PITTSBURGH, PA.
CONT. NO. 5015A SHEET NO.

A-2-370

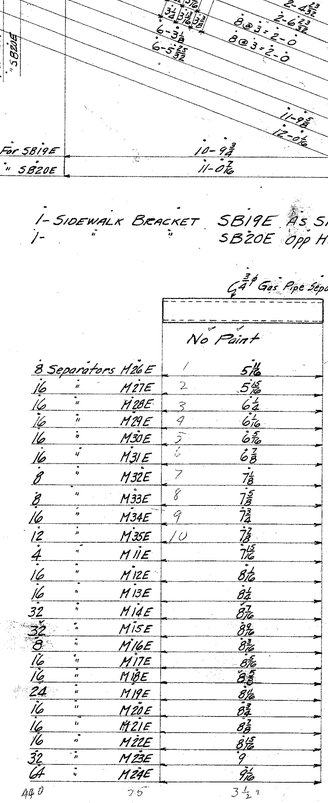




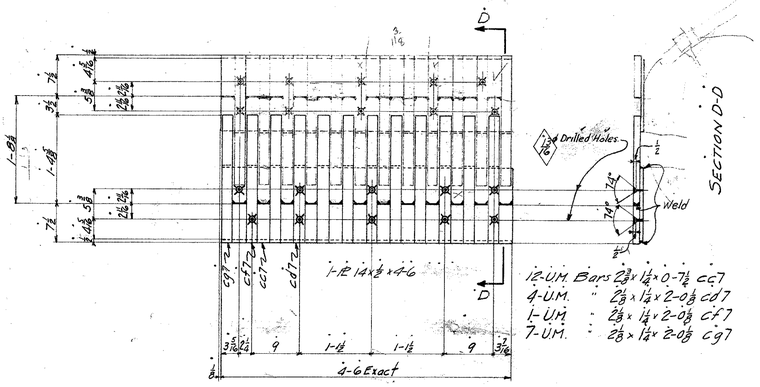


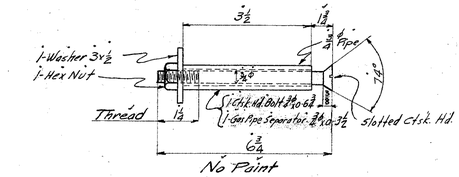


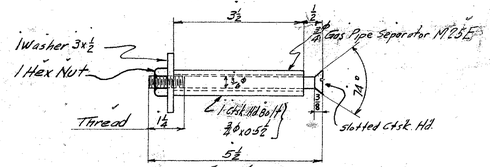
8	Bolts B6E	9¼
4	" B7E	9
4	" B8E	7⅞
16	" B9E	9½
20	" B10E	9⅞
16	" B11E	10
4	" B12E	8¾
20	" B13E	10½
36	" B14E	11
20	" B15E	11¼
40	" B16E	11½
32	" B17E	11⅞
12	" B18E	1-0
4	" B19E	10⅞
32	" B20E	1-0¼
40	" B21E	1-0½
72	" B22E	1-0¾
60	" B23E	1-1

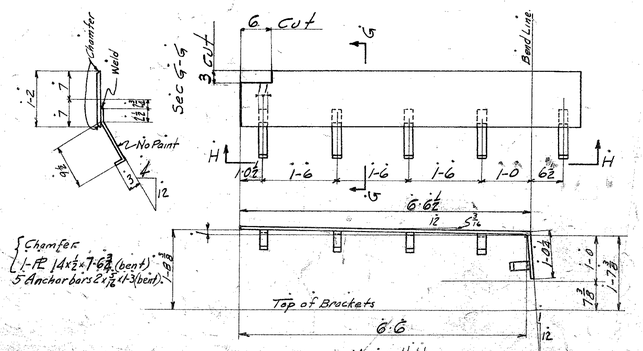


8	Separators M26E	1	5¹⁵⁄₁₆
16	" M27E	2	5¹⁵⁄₁₆
16	" M28E	3	6¼
16	" M29E	4	6⅛
16	" M30E	5	6⅜
16	" M31E	6	6⅞
8	" M32E	7	7⅛
8	" M33E	8	7⅜
16	" M34E	9	7⅞
12	" M35E	10	7⅞
4	" M11E		7¹⁵⁄₁₆
16	" M12E		8⅛
16	" M13E		8¼
32	" M14E		8⅜
32	" M15E		8⅝
8	" M16E		8¾
16	" M17E		8⅞
16	" M18E		8⅞
24	" M19E		8¹⁵⁄₁₆
16	" M20E		9⅛
16	" M21E		9⅜
16	" M22E		9⅝
32	" M23E		9
64	" M24E		9⅛









2 - Sidewalk Expansion Joints - E J3E" As shown
2 " " - E J3E" Opp Hand.

Rivets ⅞"ϕ
Holes 15/16" unless noted
Holes in Brackets punched ¼" small & reamed to size after assembly in shop except lateral Rs which may be punched full size.
Holes marked (RT) are subpunched 11/16" & reamed to size thru a metal template.
Burrs to be removed from all open holes.

Paint - One Coat of Industrial Paint except as noted
Co's Brown No. 6070

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVE

EAST APPROACH

Brackets for Spans 2-3-6 & 7E

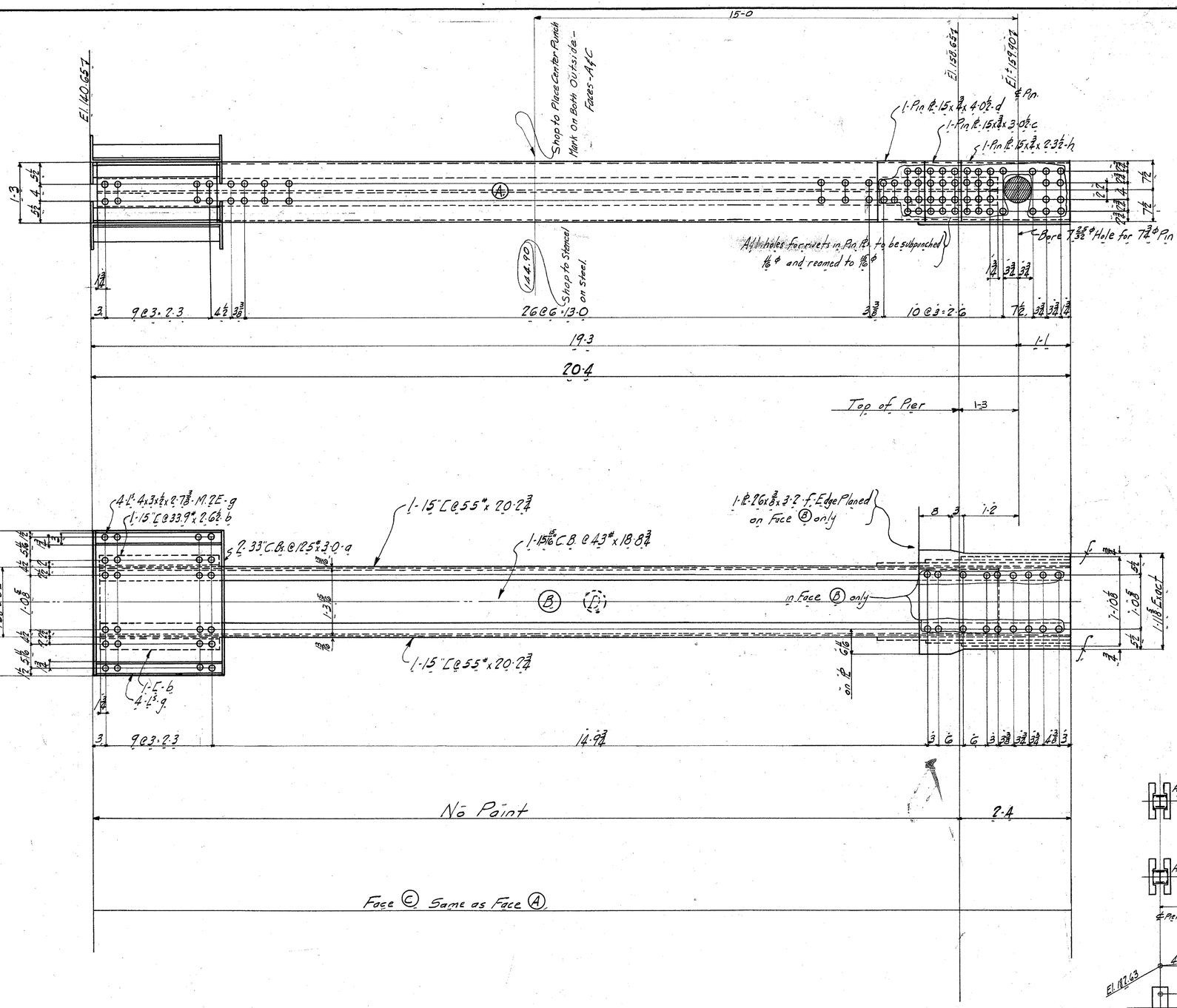
Expansion Joints for Spans 2-3-6

McCLINTIC-MARSHALL CONST.			
PITTSBURGH, PA.			
IN CHARGE W.M. Scott			
MADE BY H.F.M.	DATE	CHECKED BY F.B.A.	DATE
TRACED BY E.Z.	DATE	REVISED	DATE
SCALE:	INCH = 1 FOOT	LAST ASSEMBLING MARK	
CONT. NO. 5015-D		SHEET NO.	

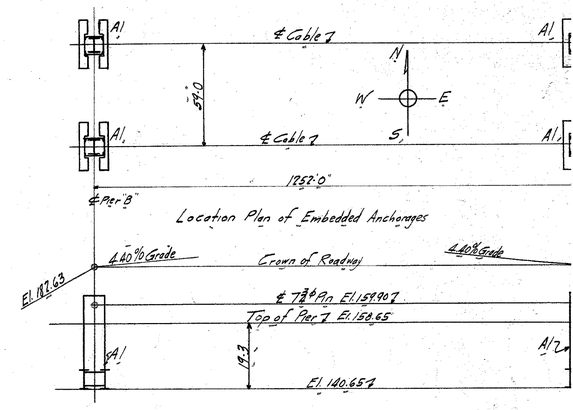
APPROVED 1-14-30
12-30-29

Waddell & Hardesty

A-2-392



4 - Anchorages - A1



Rivets - 7/8 ϕ
Holes - 15/16 ϕ unless noted
Holes Punched full size unless noted

Paint:- One Coat of Detroit Graphite Co's #501 only for Portion above top of Pier
Pin Hole to Have one Coat of White Lead & Tallow applied Hot.

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIV

PIER "B" & PIER "E"

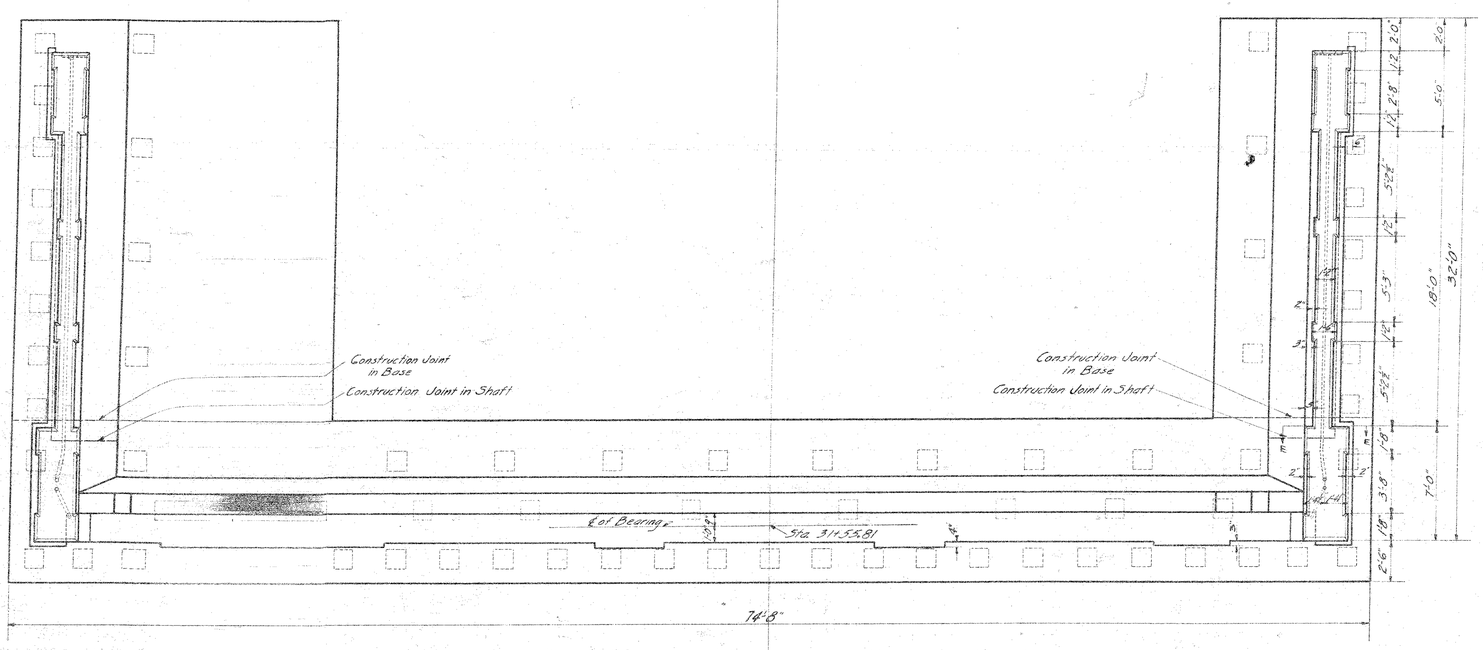
EMBEDDED ANCHORAGES

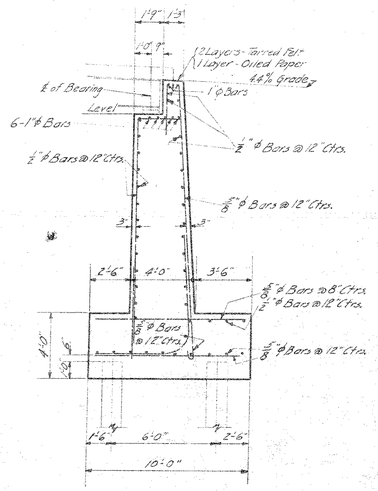
McCLINTIC-MARSHALL CONST
PITTSBURGH, PA.
IN CHARGE Wm Son
MADE BY F.B.A DATE 11/1929 CHECKED BY Pier
TRACED BY F.B.A DATE REVISED
SCALE:- INCH equ. 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 3005 SHEET NO.

APPROVED 11-21-29

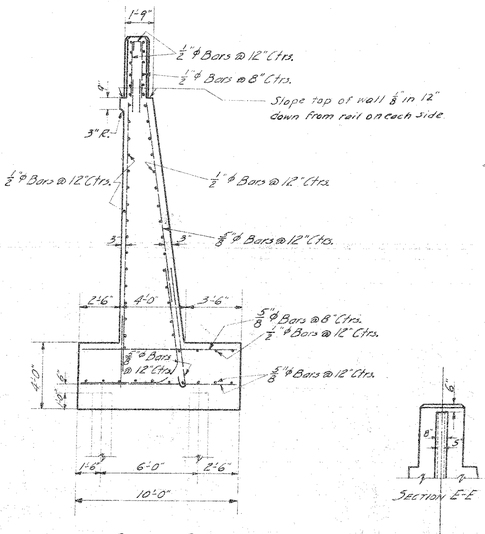
WADDELL & HARDESTY.

A-2-3

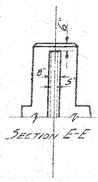


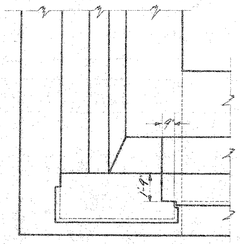


SECTION A-A

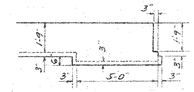


SECTION B-B

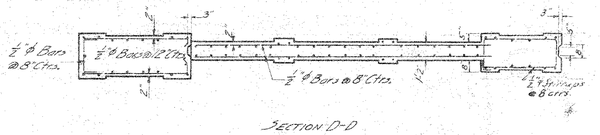




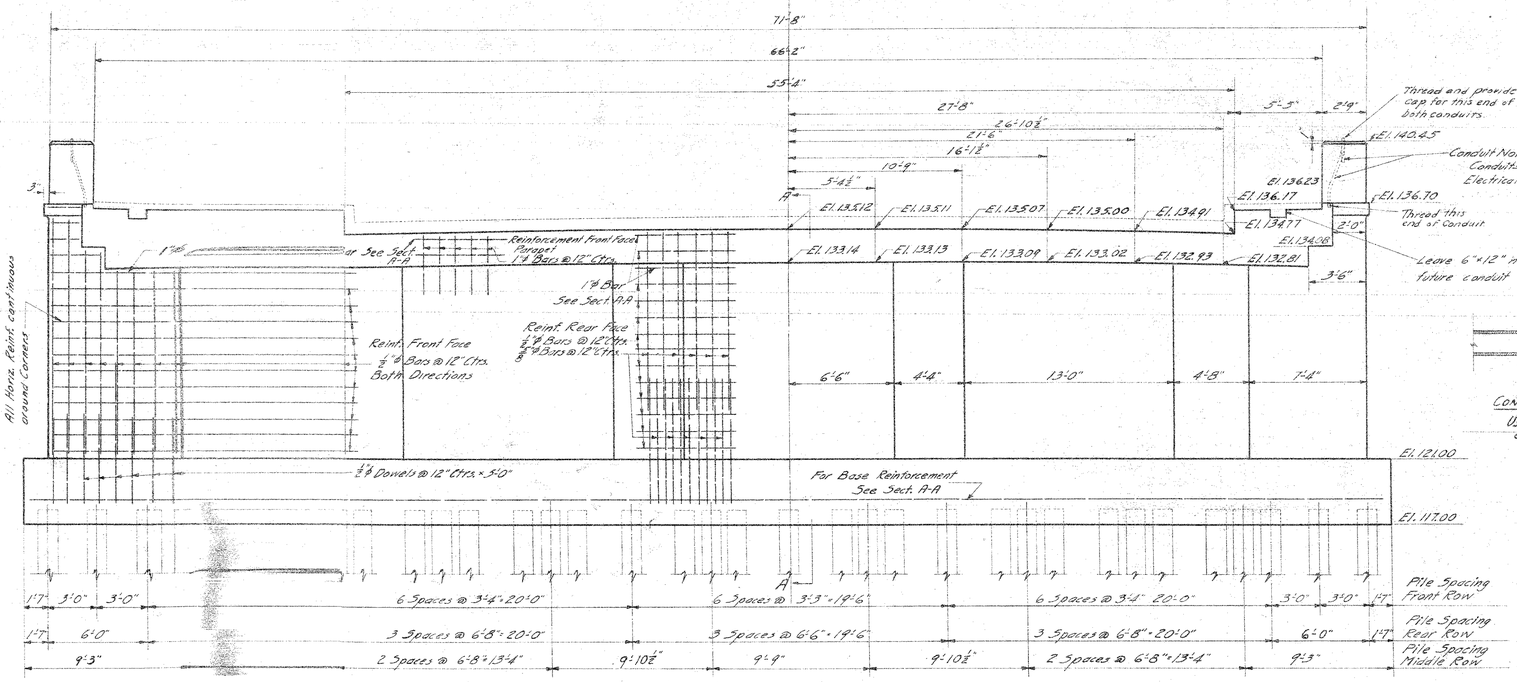
SECTION C-C
Detail of Construction Joint in Shaft or Side Wall



SECTION F-F

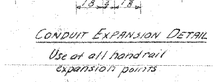


SECTION D-D

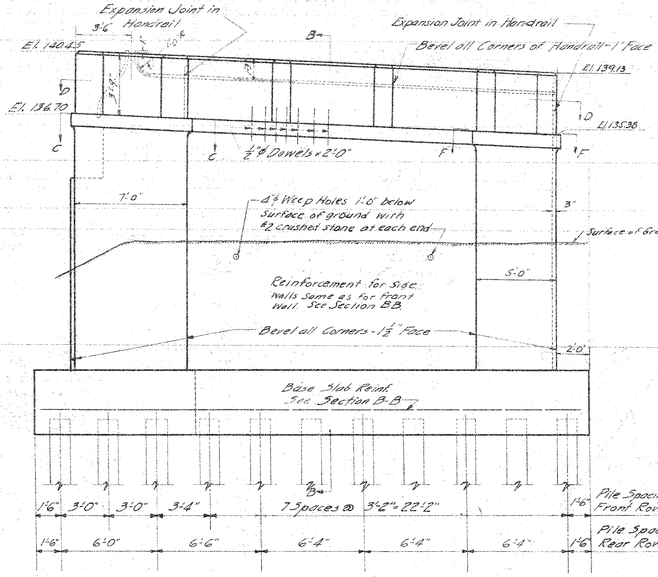


ELEVATION

Average Length of Piles = 39.8 Ft.



CONDUIT EXPANSION DETAIL
Use at all handrail expansion points



END VIEW

Note:
For Details of Reinf. Conc. Piles see Sheet 7
Bearing for stringer masonry plates to be finished level and true

Revised: May 3, 1930.
June 4, 1930.
Dec. 1, 1931

CITY OF TOLEDO, OHIO

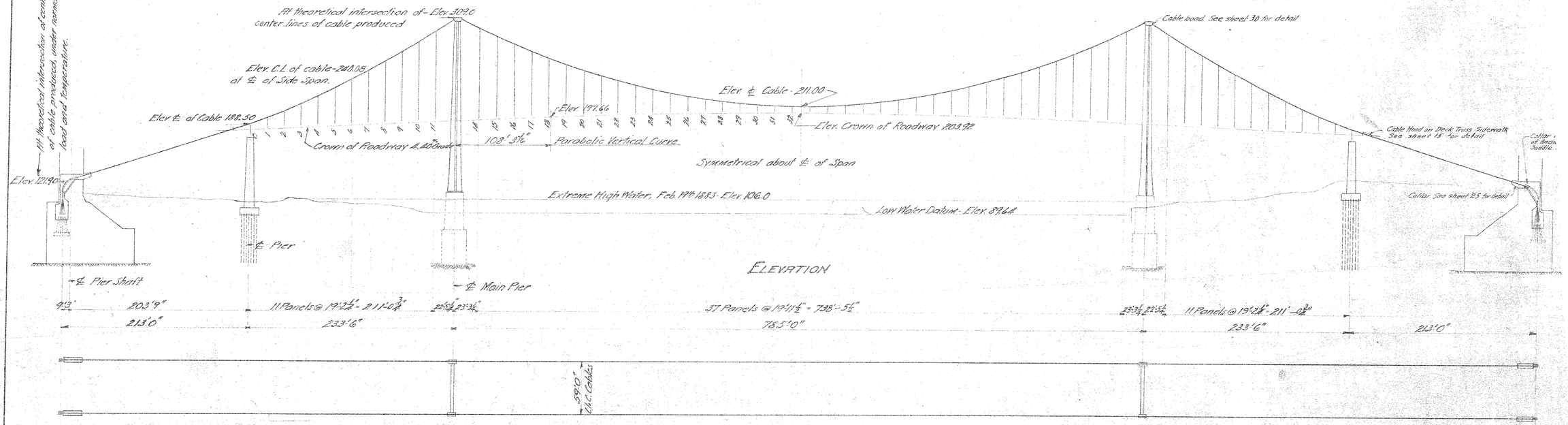
BRIDGE over MAUMEE RIVER

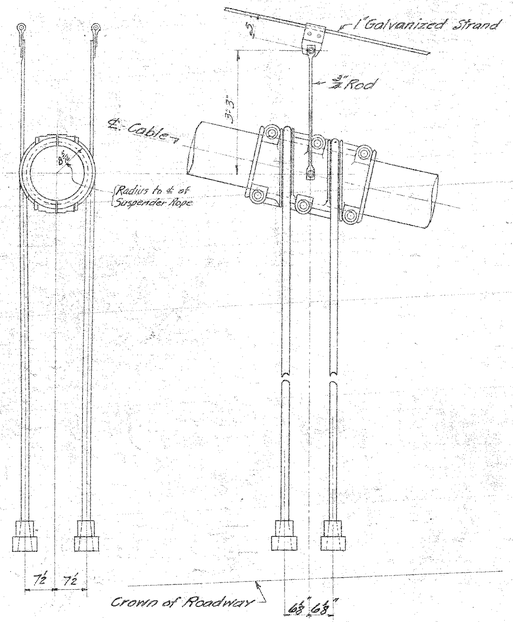
EAST ABUTMENT

Scale ½" = 1'-0"

WADDELL AND HARDESTY CONSULTING ENGINEERS
NEW YORK CITY APRIL 14, 1930

SHEET 9





Transverse Longitudinal

LOCATION OF SUSPENDER ROPES, SOCKETS, CLAMPS AND HAND ROPES.

Ft all points except panel point "0".
For details of panel point "0" See Sheet 15

CABLES

Two cables, each consisting of 19 Strands of 186 wires or a total of 3534 wires per cable.
Wire to be 11°6 galvanized, 0.192 inches in diameter before galvanizing.
Area of cable = 166.6 sq. inches, including galvanizing.
Diameter = 13⅜ inches ±.
Maximum stress, D+L+T = 8.000.000 lbs one cable.

SUSPENDER ROPES

Two ropes looped over main cable at each panel point.
Ft panel points 0, 16 ropes not looped over main cable, 2¼" nominal diameter, 6 strands of 19 wires each, around an independent wire rope centre.
Ft intermediate panel points, 240 ropes required, each rope 1⅞ inches nominal diameter, 6 Strands of 37 wires each, around an independent wire rope centre.

1⅞" ϕ	2¼" ϕ
Main Strands	Main Strands
6 Strands - 37 wires each	6 Strands - 19 wires each
1 ctr. wire 0.113" Galv.	1 ctr. wire 0.172" Galv.
9 inside, first layer 0.056 "	6 inside wires 0.165" "
9 " , second " 0.101" "	6 outside small 0.122" "
9 large outside wires 0.088" "	6 " large 0.165" "
9 small inside wires 0.065" "	Strand Lay 9½" - Rope Lay 21"
Strand lay 5⅝" - Rope Lay 14"	
Independent Wire Rope Center	Independent Wire Rope Center
7 Strands - 7 wires each	7 Strands - 7 wires each
Center Strand	All Strands
1 Ctr. wire 0.083" Galv.	1 Ctr. wire 0.102" Galv.
6 outside wires 0.075" "	6 outer wires 0.090" "
Strand Lay 1⅝"	Strand Lay 2¼" - Rope Lay 6"
Outside Strands	
1 Ctr. wire 0.070" Galv.	
6 outside wires 0.061" "	
Strand Lay 1⅛" - Rope Lay 3¾"	

Ultimate Strength: 1⅞" rope = 235,000 Lbs., 2¼" rope = 402,800 Lbs.
Theoretical Area: " = 1.294 Sq. in., " = 2.424 Sq. in.
Modulus: " = 17,900,000 , " = 19,600,000

NOTES

Positions of cables and suspenders given are for full dead load and normal temperature. Suspenders to be vertical under these conditions.
Full dead load in main span of completed structure, including cables and suspenders = 13000 lbs. per lineal foot of span.
Full dead load in side span of completed structure, including cables and suspenders = 13000 lbs. per lineal foot of span.
Normal temperature = +50° Fahrenheit.
Live Loading and Impact = 4000 lbs. per lineal foot of Span.
Tops of columns to lean 3" forward under full dead load

HAND ROPES

Two ropes per main cable, each rope a one inch strand of 37 wires.

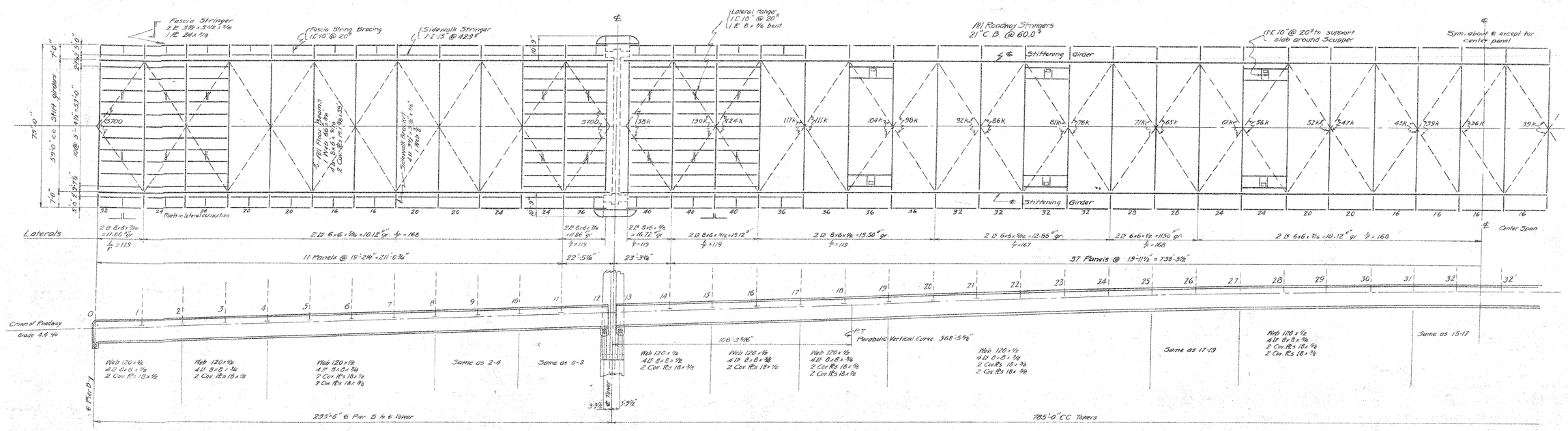
REVISED
Nov. 20, 1929.
May 6, 1930
June 19, 1931
Nov. 27, 1931

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

CABLES

WADDELL AND HARDESTY-CONSULTING ENGINEERS



FLOOR SYSTEM

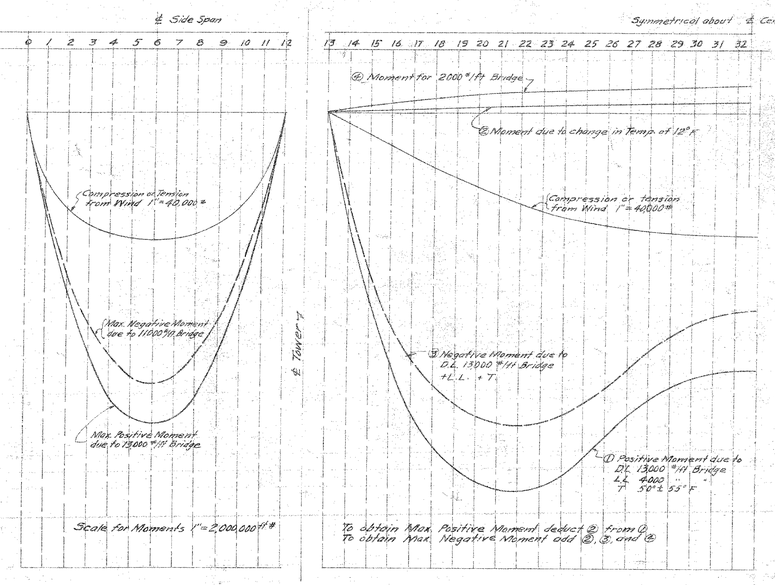
		Moment	Shear
Intermediate Stringer	D L	40,000 ft#	8,000
	L L	96,000	20,600
	I L 30%	29,000	6,200
		165,000	34,800
	S.M. Req'd @ 16000 = 1240		Conn Rivets Req'd. 6 F 55
	Use 21" CB @ 60# = 1241		Use 8 F 55
Curb Stringer	D L	33,000	7,800
	L L	63,000	14,000
	I L 30%	20,000	4,200
		124,600	26,000
	Use Same as for Intermediate Stringer		
Inner Sidewalk Stringer	D L	14,000	280
	L L	20,000	390
	I L 30%	6,000	120
		40,000	790
	S.M. Req'd @ 16000 = 30		
	Use 15" I @ 42.9# = 58.9		
Fascia Stringer	D L	13,000	250
	L L	10,000	210
	I L 30%	3,000	60
		26,000	520
	S.M. Req'd. @ 16000 = 19.5		
	Use 1 Web 24 x 3/8 Area = 9.00 "/gr		7.50 "/ net
	2 Pl 31/2 x 3/4 = 4.36		3.46
	S.M. = 67 net	13.36 "/gr	10.96 "/net
Sidewalk Bracket	D L	4,000	1,600
	L L	6,000	2,000
	I L 30%	1,400	360
		10,700	3,960
	d = 4.9 S = 2,200 f_s = 16000		Web Area Req'd 272
	Flange Area = 1.37 " net Req'd		Use 3/8 Web
	Use 2 Pl 3 1/2 x 13/16 = 4.96 "/gr 3.96 " net		Area at inter.
	Area Strap Pl. Req'd = 1.59 " net		Stringer = 5.1 x 3/8 = 1.91 "
	Use Strap Pl. 7 x 5/8 = 4.38 "/gr 3.13 " net		
Floor Beams	D L	136,000	97,000
	L L	124,000	78,000
	I L 30%	37,000	23,000
		297,000	198,000
	d = 5.44 S = 665,000 f_s = 24,000		Web Area Req'd.
	Flange Area Req'd = 22.9 " net		@ 14000 = 14.1 "
	Use 3/8 Web = 3.09 "/gr 3.04 " net		Use 66 x 3/8 = 24.75 "
	2 Pl 8 x 1 1/16 = 15.12 12.88		Rivet pitch = 2 1/2 "
	1 Cov Pl 14 x 3/8 = 8.75 7.30		Conn Req'd. 33 F 55
	Total Area = 26.96 "/gr 23.47 " net		Use 42 I
	Cov. Pl. length = 33'-0" both flanges		

STIFFENING GIRDER CENTER SPAN

Panel point		13	15	17	19	21	23	25	27	29	31	33
Make up of Sections		Web 120 x 5/8	Web 120 x 1/2	Web 120 x 1/2	Web 120 x 5/8			Web 120 x 3/8	Web 120 x 1/2		Web 120 x 1/2	
		4 L 8 x 8 x 1	4 L 8 x 8 x 1	4 L 8 x 8 x 1	4 L 8 x 8 x 1			4 L 8 x 8 x 3/4	4 L 8 x 8 x 3/4		4 L 8 x 8 x 3/4	
		2 Cov Pls 18 x 5/8	2 Cov Pls 18 x 5/8	2 Cov Pls 18 x 5/8	2 Cov Pls 18 x 1/2	2 Cov Pls 18 x 5/8		2 Cov Pls 18 x 5/8	2 Cov Pls 18 x 5/8		2 Cov Pls 18 x 5/8	
					2 Cov Pls 18 x 1/2	2 Cov Pls 18 x 3/4		2 Cov Pls 18 x 1/2				
Area of Section	Gross	104.50	123.28	146.26	155.26	155.26	155.26	146.26	141.76	141.76	128.26	
	Net for D+L+T	97.50	119.76	136.76	145.26	145.26	145.26	136.76	132.51	132.51	119.76	
	Net for Wind	90.50	111.26	127.26	135.26	135.26	135.26	127.26	123.26	123.26	111.26	
Moment of Inertia In.^{2}-Ft.^{2} net		1449	1988	2432	2656	2656	2656	2432	2319	2319	1988	
y_t Tension in ft.		5.36	5.37	5.40	5.41	5.41	5.41	5.40	5.40	5.40	5.37	
y_c Compression in ft.		4.72	4.73	4.78	4.79	4.79	4.79	4.78	4.78	4.78	4.73	
Max. positive Moment in K-ft.		5660	9000	10663	11325	11400	11250	10310	8995	8206	7695	
Unit Stress in #/in.^{2} for D+L+T+W	T. Bot. Flange	20500	20400	23800	23200	23400	23000	22800	21000	19100	20700	
	C. Top Flange	18000	21400	21000	20400	20500	20200	20200	18600	16900	18300	
Wind Load in lbs. per Girder		140,000	268000	396000	506000	555000	600000	665000	714,000	760000	755000	
Wind Stress in #/in.^{2}	T. Bot. Flange	1550	2400	3100	3750	4100	4500	5200	5800	6000	6800	
	C. Top Flange	1350	2100	2700	3250	3600	4100	4600	5100	5300	5900	
Unit Stress in #/in.^{2} for D+L+T+W	T. Bot. Flange	22050	26800	26900	26950	27500	27500	28000	26600	25100	27300	
	C. Top Flange	19350	23300	23700	23750	24,100	24300	24800	23700	22200	24200	
Max. Negative Moment in K-ft.		4880	7942	9505	10225	10365	10340	9825	8815	7835	7235	
Unit Stress in #/in.^{2}	C. Bot. Flange	15900	18900	18800	18600	18700	18700	18400	18200	16300	17000	
	T. Top Flange	18000	21000	21300	21000	21100	21100	21800	20600	18400	19300	
Wind Load in lbs per Girder		153000	286000	396000	485000	525000	562000	630000	687000	729000	760000	
Wind Stress in #/in.^{2}	C. Bot. Flange	1450	2250	2700	3100	3600	3600	4100	4900	5200	5900	
	T. Top Flange	1700	2600	3100	3600	3900	4800	4700	5600	5900	6800	
Unit Stress in #/in.^{2} for D+L+T+W	C. Bot. Flange	17350	21150	21500	21700	22100	22300	22500	23100	21500	22900	
	T. Top Flange	19700	24000	24400	24600	25000	25300	26500	26200	24900	26150	
Moment at P.P. for D+L+T+W		15	17	19	21	23	23	25	27	29	31	

STIFFENING GIRDER SIDE SPAN

Panel point		0	2	4	6	8	10	12
Make up of Sections		Web 120 x 5/8	Web 120 x 1/2	Web 120 x 1/2		Web 120 x 5/8	Web 120 x 1/2	
		4 L 8 x 8 x 1	4 L 8 x 8 x 1	4 L 8 x 8 x 1		4 L 8 x 8 x 3/4	4 L 8 x 8 x 3/4	
		2 Cov Pls 18 x 1/2	2 Cov Pls 18 x 1/2	2 Cov Pls 18 x 5/8		2 Cov Pls 18 x 1/2	2 Cov Pls 18 x 1/2	
				2 Cov Pls 18 x 5/8				
Area of Section	Gross	109.00	123.76	137.26	137.26	123.76	109.00	
	Net for D+L+T	101.75	111.51	128.26	128.26	111.51	101.75	
	Net for Wind	94.50	107.26	119.26	119.26	107.26	94.50	
Moment of Inertia In.^{2}-Ft.^{2} net		1552	1908	2208	2208	1908	1552	
y_t for Tension in ft.		5.36	5.36	5.39	5.39	5.36	5.36	
y_c for Compression in ft.		4.72	4.72	4.77	4.77	4.72	4.72	
Max. Positive Moment K-ft. due to D+L+T		5472	8540	9351	9551	8617	5635	
Unit Stress in #/in.^{2} for D+L+T	T. Bot. Flange	18500	24000	23300	23300	24100	19500	
	C. Top Flange	16600	21200	20600	20600	21300	17100	
Max. Negative Moment in K-ft. due to D+L+T		4910	7426	8322	8322	7446	4930	
Unit Stress in #/in.^{2} for D+L+T+W	C. Bot. Flange	14900	18400	18000	18000	18500	15000	
	T. Top Flange	16900	20800	20300	20300	20900	17000	
Wind Load in lbs per Girder		43000	69000	77000	77000	69000	43000	
Wind Stress in #/in.^{2}	T. Bot. Flange	450	650	650	650	650	450	
	C. Top Flange	400	560	560	560	560	400	
Unit Stress in #/in.^{2} for	T. Bot. Flange	18950	24650	23950	23950	24750	19950	
	C. Top Flange	17000	21760	21160	21160	21860	17500	



Note:

Loads D.L for Stiffening Girders 11,000 #/ft. Bridge without asphalt
D.L for Stiffening Girders 13000 #/ft Bridge with asphalt
L+I for Stiffening Girders 4000 #/ft Bridge
L+I for Floor system H20 A.R.E.A. Spec. 1927
Wind Load A.R.E.A. Spec. 1927

Unit Stresses:-
Carbon Steel A.R.E.A. Spec. 1927.
Silicon Steel Floorbeams

	Tension	Shear
	24,000 #/in²	14,000 #/in²
Stiffening Girders	Tension	Compression
D+L+T	25000 #/in²	19,000 #/in²
D+L+T+W	30,000 #/in²	25,000 #/in²

Rivets 7/8" ℄ except field Splices of Stiffening Girders where 1" ℄ rivets are used.
Material: Main sections of Stiffening Girders, Floorbeams, and Laterals are Silicon Steel. Details are Silicon Steel unless otherwise noted. Floor Stringers, Diaphragms and Sidewalk Brackets are Carbon Steel.

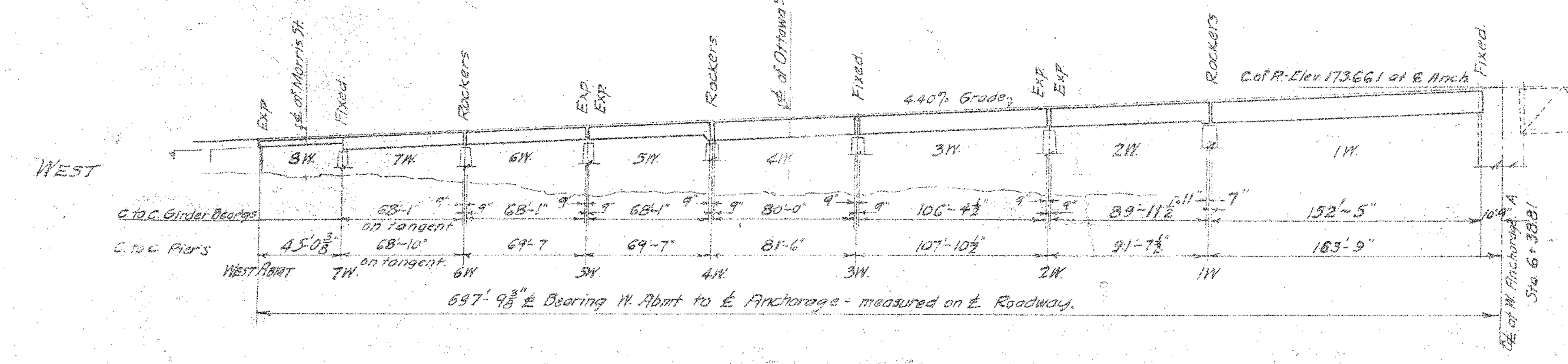
CITY OF TOLEDO OHIO

BRIDGE OVER MAUMEE RIVER

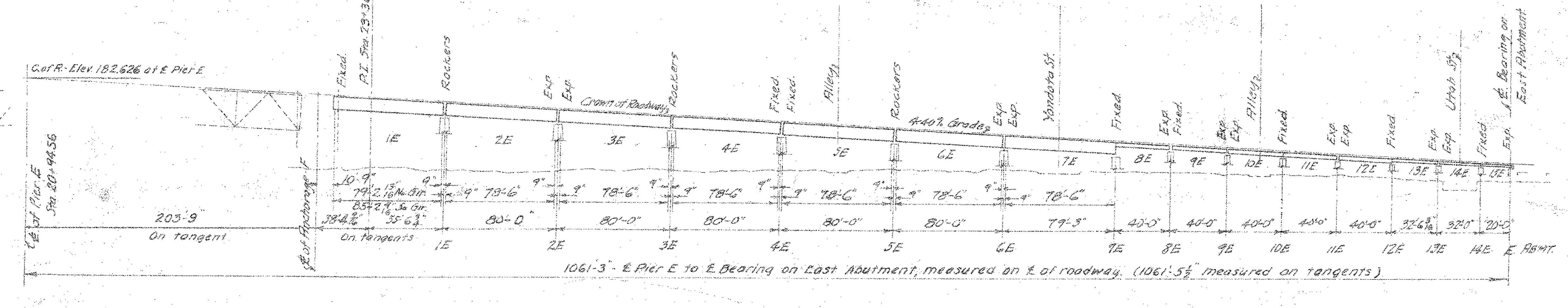
STRESS SHEET STIFFENING GIRDER

WADDELL AND HARDESTY CONSULTING ENGINEERS
NEW YORK CITY JULY 1930

SHEET 12A

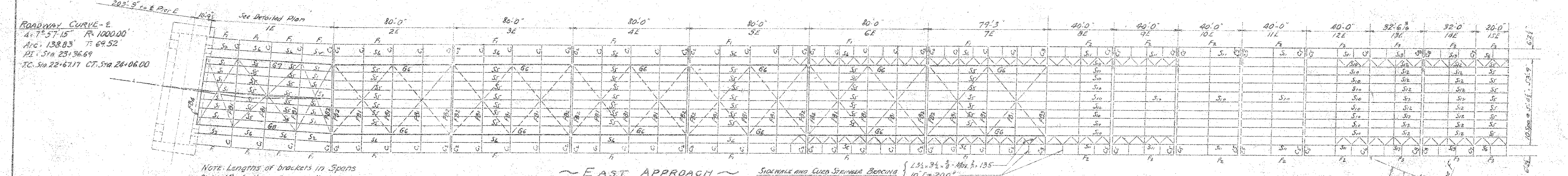


~ WEST APPROACH ~



~ EAST APPROACH ~

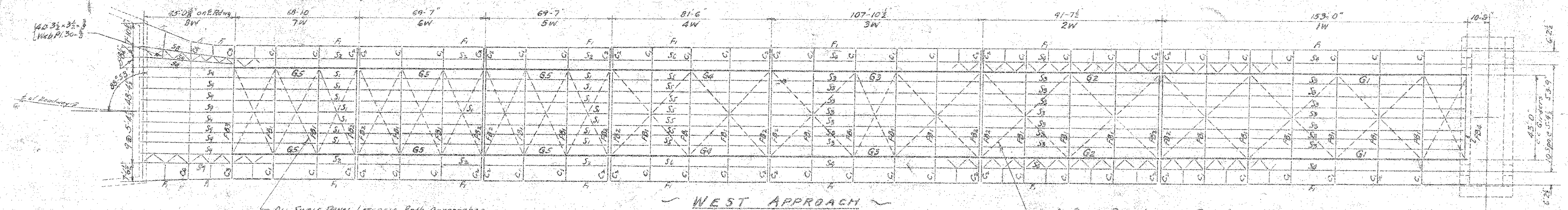
Roadway Curve - ¢
Δ = 7°-57'-15" R = 1000.00'
Arc = 138.83' T = 69.52'
P.I. = Sta. 23+36.69
T.C. Sta. 22+67.17 C.T. Sta. 24+06.00



Note: Lengths of brackets in Spans 8W & 1E shall conform to the curvature of the roadway.

~ EAST APPROACH ~

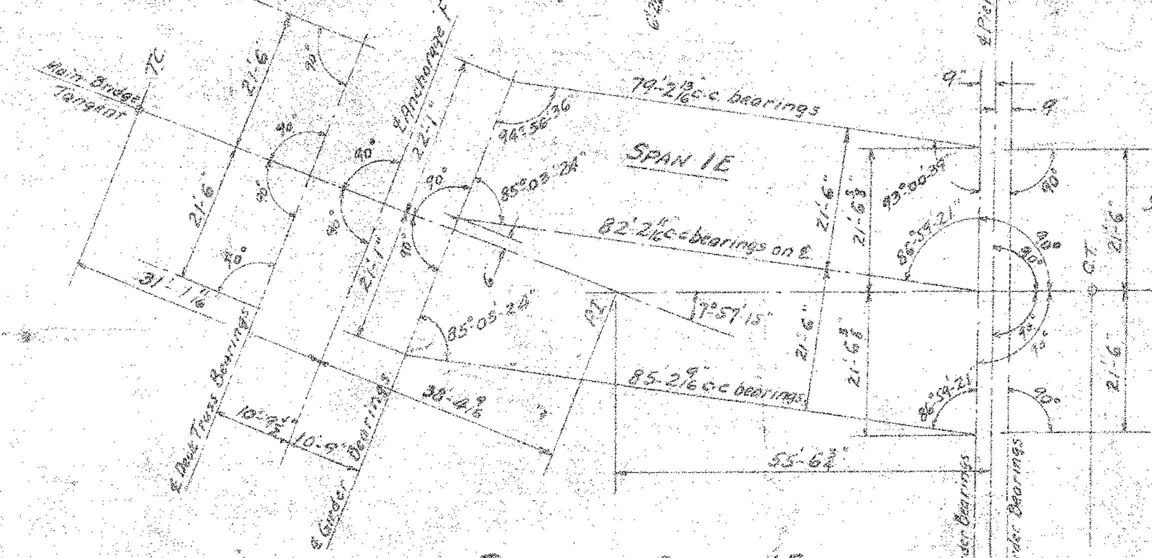
Sidewalk and Curb Stringer Bracing in all spans of both approaches { ∠3½×3½×⅜ - Max. l/r = 135; 10" [@ 20.0#



~ WEST APPROACH ~

All Single Panel Laterals - Both Approaches
2∠s 4×3½×⅜ - 5.34" gr. 3.67" Eff. Net Area
Max. l/r = 234. Use 4 Rivets in each ∠ at all end panels except 5 in Span 1W.
Use 3 rivets in each ∠ for all center panels.
Support laterals from web of middle stringer at mid-panel.

All Double Panel Laterals - Both Approaches
2∠s 5×4×⅜ 6.46" gr. 4.56 Eff. Net Area
Max. l/r = 236. Use 5 Rivet in each ∠ at all end panels, except 6 in Span 1W. Use 4 Rivets in all center panels except 5 in Span 1W.



PLAN OF SPAN 1E
All dimensions are horizontal

GIRDERS

Mark and Dist. c-c Bearings		G1 - 152'-5"	G2 - 89'-11½"	G3 - 106'-4½"	G4 - 80'-0"	G5 - 68'-1"	G6 - 78'-6"	G7 - 79'-2 13/16"	G8 - 85'-2 9/16"
Flange Section		2∠s 8×8×1⅛ (S)	2∠s 8×8×¾	2∠s 8×8×1⅛	2∠s 8×8×¾	2∠s 8×8×¾	2∠s 8×8×¾	2∠s 8×8×¾	2∠s 8×8×¾
		2 Flg. Pls. 12×⅝ (S)	1 Cov. Pl. 18×⅝	3 Cov. Pls. 18×¾	1 Cov. Pl. 18×⅝	2 Cov. Pls. 18×⅝	1 Cov. Pl. 18×11/16	2 Cov. Pls. 18×11/16	2 Cov. Pls. 18×⅝
		1 Cov. Pl. 19×13/16 (S)	2 Cov. Pls. 18×11/16	1 Cov. Pl. 18×11/16	1 Cov. Pl. 18×11/16		1 Cov. Pl. 18×⅝		1 Cov. Pl. 18×9/16
		3 Cov. Pls. 19×¾ (S)							
Web Plate		138×9/16 (S)	120×½	120×½	120×½	84×7/16	120×½	120×½	120×½
Net Area of Flange	Angles	* 40.59"	19.88"	28.96"	19.88"	19.88"	19.88"	19.88	19.88"
	Cov. Pls.	51.30	34.00	47.00	23.00	24.00	21.00	22.00	29.00
	⅛ Web	9.70	7.50	7.50	7.50	4.59	7.50	7.50	7.50
	Total	101.59"	61.38"	83.46"	50.38"	48.47"	48.38"	49.38"	56.38"
Maximum Web Shear	DL	456 000#	222 000#	284 000#	197 000#	151 000#	194 000#	197 000#	210 000#
	LL	196 000	131 000	149 000	124 000	109 000	122 000	124 000	127 000
	I	35 000	30 000	32 000	30 000	28 000	30 000	30 000	30 000
	Total	687 000#	383 000#	465 000#	351 000#	288 000#	346 000#	351 000#	368 000#
Maximum Moment	DL	19 100 000'#	6 090 000'#	8 610 000'#	4 860 000'#	3 155 000'#	4 686 000'#	4 820 000'#	5 570 000'#
	LL	7 410 000	2 930 000	3 870 000	2 436 000	1 770 000	2 362 000	2 420 000	2 720 000
	I	1 330 000	680 000	830 000	589 000	455 000	577 000	590 000	650 000
	Total	27 840 000'#	9 700 000'#	13 310 000'#	7 885 000'#	5 380 000'#	7 625 000'#	7 830 000'#	8 940 000'#
Effective Depth		11.41'	10.01'	10.03'	9.92'	6.93'	9.91'	9.91'	9.97'
Net Area of Flange Req'd @ 16000#/"		① 101.6"	60.6"	82.9"	49.7"	48.4"	48.1"	49.3"	56.0"
Length of Cover Plates		13/16"- 115'-0"	¾"- 67'-6"	¾"- 85'-0; 75'-0; 61'-0	¾"- 55'-6"	⅝"- 52'-0; 40'-0	11/16"- 53'-6"	11/16"- 50'-6; 42'-0"	⅝"- 61'-6; 51'-0 ⊕
		¾"- 109'-0; 89'-0; 66'-6 ⊕	11/16"- 55'-0; 37'-6	11/16"- 42'-0	11/16"- 41'-6"		⅝"- 41'-0"		9/16"- 40'-9" ⊕
Stiffeners	Intermediate	At Floor beam connections - 2∠s 6×3½×½ with fills. Other int. stiffs 2∠s 6×3½×⅜ - Crimped except at web splices							
	Each End	4∠s 6×4×1", 2 Pls. 6×⅝ (S)	4∠s 6×4×11/16	4∠s 6×4×13/16, 2 Pls. 6×9/16	4∠s 6×4×⅞	4∠s 6×4×¾	4∠s 6×4×⅞	4∠s 6×4×⅞	4∠s 6×4×11/16
	End Piers 7W, 7E					4∠s 8×6×15/16	4∠s 8×6×1"		
Rivet Pitch at Ends		3"	3"	2½"	3"	2½"	3"	3"	3"

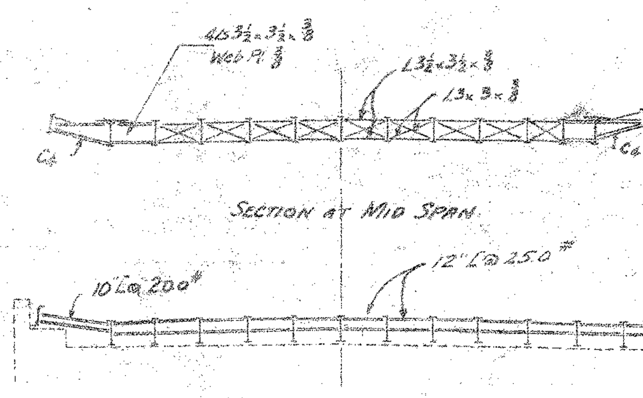
* Net area of flange pls. added to net area of angles.
① Net flange area req'd @ f_t = 24000#/" for silicon steel.
⊕ Some of the cover plates on G1 are unsymmetrical about ¢ of girder because of splices; on G8, because of unequal panels.

FLOOR BEAMS

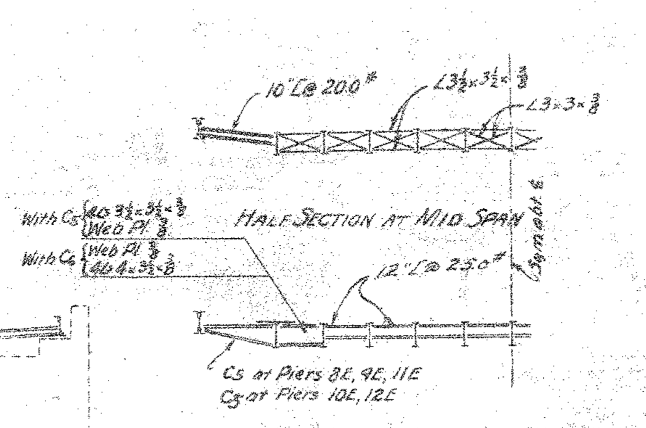
Mark		FB1	FB2	FB3	FB4
Flange Section		2∠s 6×6×½	2∠s 6×6×½	2∠s 6×6×⅝	2∠s 6×6×½
		2 Cov. Pls. 14×⅜	1 Cov. Pl. 14×½	2 Cov. Pls. 14×½	1 Cov. Pl. 14×9/16
Web Plate		60×⅜	60×⅜	60×7/16	60×⅜
Net Area of Flange	Angles	9.50"	9.50"	11.72"	9.50"
	Cov. Pls.	9.00	6.00	12.00	6.75
	⅛ Web	2.81	2.81	3.28	2.81
	Total	21.31"	18.31"	27.00"	19.06"
Max. Web Shear	DL	75000#	42200#	117000#	41200#
	LL	73600	74400	81300	74100
	I	21600	25100	25000	25000
	Total	170200#	141700#	218300#	140300#
Max. Moment	DL	761000'#	425000'#	1140000'#	495000'#
	LL	720000	740000	786000	738000
	I	211000	250000	204000	249000
	Total	1692000'#	1415000'#	2130000'#	1482000'#
Effective Depth		4.92'	4.88'	4.94'	4.89'
Net Area of Flg Req'd @ 16000#/"		21.5"	18.1"	27.0"	18.9"
Length of Cov. Pls.		⅜"- 30'-0; 23'-6"	½"- 26'-0"	½"- 30'-0; 22'-0"	9/16"- 28'-6"
Intermediate Stiffeners		∠s 4×3×⅜ Crimped, except at Stringer Connections.			
Rivet Pitch		FB1, FB2, FB4 - 2½" at ends, 3½", 4¾", 6" at ctr. FB3 - 2¼", 3", 4½", 6" at ctr.			

BRACKETS

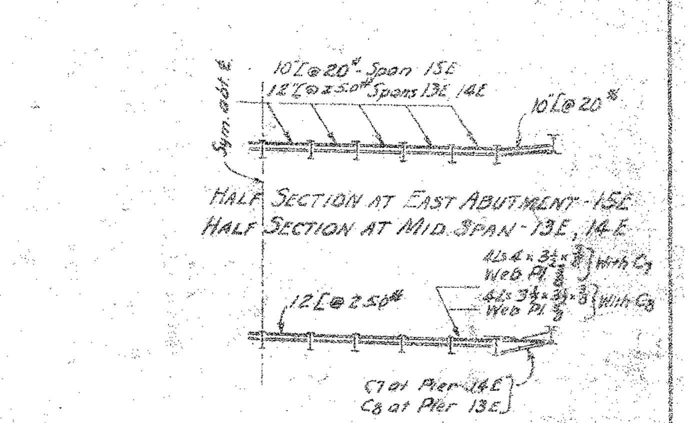
Mark		C1	C2	C3	C4	C5	C6	C7	C8
Top and Bott. Flange Angles		2∠s 4×3½×⅜	2∠s 4×3½×⅜	2∠s 6×4×⅜	2∠s 3½×3½×⅜	2∠s 3½×3½×⅜	2∠s 4×3½×⅜	2∠s 4×3½×⅜	2∠s 3½×3½×⅜
		5.34" gr. 3.84" n.	5.34" gr. 3.84" n.	7.22" gr. 5.72" n.	4.96" gr. 3.46" n.	4.96" gr. 3.46" n.	5.34" gr. 3.84" n.	5.34" gr. 3.84" n.	4.96" gr. 3.46" n.
Web Plate		85×⅜	85×⅜	85×7/16	30×⅜	27×⅜	27×½	21×½	21×⅜
Strap Plate	Size	9×¾	9×½	2 Pls. 9×⅝	7½×½	7½×½	9×¾	9×⅝	7½×½
	Net Area	5.25"	3.50"	8.75"	3.09"	2.75"	5.25"	4.38"	2.75"
Shear	DL	27160#	15070#	61200#	8340#	7800#	15100#	9900#	6200#
	LL	26680	20640	41900	6310	6200	12400	8100	4960
	I	7860	6990	10800	1970	1900	3000	2300	1580
	Total	61700#	42700#	113900#	16620#	15900#	30500#	20300#	12740#
Moment (at ¢ Girder or Curb Stringer)	DL	190800'#	104300'#	373000'#	64000'#	46200'#	91200'#	58500'#	36300'#
	LL	187100	134000	271000	51100	38500	77000	50200	30800
	I	55100	45200	70000	15900	11700	18800	14200	9800
	Total	433000'#	283500'#	720000'#	131000'#	96400'#	187000'#	122900'#	76900'#
Effective Depth at ¢ Gir. or Str.		5.25'	5.25'	5.25'	2.58'	2.25'	2.25'	1.79'	1.79'
Flange Stress	Top	82500#	54000#	137000#	49000#	42700#	83000#	68600#	42900#
	Bottom	90000#	58900#	150000#	51000#	44000#	85500#	70000#	44000#
Area Required	Gr. Bott. Flg.	6.1"	4.0"	10.1"	3.4"	2.9"	5.6"	4.6"	3.0"
	Nt. Strap Pl.	5.15"	3.37"	8.6"	3.1"	2.7"	5.2"	4.3"	2.7"



DIAPHRAGMS - SPAN 8W



DIAPHRAGMS - SPANS 8E-12E INCL.



DIAPHRAGMS - SPANS 13E, 14E, 15E

STRINGERS

Mark		S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
Max. Panel		22.7'	22.7'	22.3'	22.3'	20.0'	20.0'	44.2'	46.0'	45.3'	40.0'	40.0'	32.2'	32.2'
C.B. Section		24" CB @ 70.0#	Use	24" CB @ 70.0#	Use	21" CB @ 64.0#	Use	33" C.B. @ 220#	33" C.B. @ 240#	33" C.B. @ 198#	30" CB @ 126#	Use	24" CB @ 100#	Use
Nt. S.M.		162.8	Same	162.8	Same	132.9	Same	728	800	423	353.7	Same	250.7	Same
Beth. Section		24" B.I. @ 70.0#	as	22" B.I. @ 67.5#	as	22" B.I. @ 62.5#	as	33" B.G. @ 230#	33" B.G. @ 230#	33" B.I. @ 193#	30" B.I. @ 121#	as	24" B.I. @ 104.5#	as
Nt. S.M.		163.7	S5	148.7	S5	135.9	S5	762	762	410.5	341.7	S10	247.6	S12
Shear	DL	9960#	9140#	9800#	9000#	8720#	8000#	36000#	41400#	21900#	18940#	17500#	14900#	13700#
	LL	21000	16400	20900	16200	20550	15700	33600	39100	22800	22200	19700	21800	18300
	I	7100	5540	7100	5500	7070	5400	9900	11500	6700	6720	6000	6900	5800
	Σ	38060#	31080#	37800#	30700#	36340#	29100#	79500#	* 92000#	51400#	47860#	43200#	43600#	37800#
Moment	DL	56500'#	51900'#	54500'#	50000'#	43600'#	40000'#	470000'#	483000'#	241000'#	189400'#	175000'#	120000'#	110600'#
	LL	108400	86400	106500	84500	95600	74100	400000	406000	238000	206700	187000	160000	137600
	I	36600	29200	36200	28800	33000	25600	118000	119000	70000	62600	57000	51000	43800
	Σ	201500'#	167500'#	197200'#	163300'#	172200'#	139700'#	988000'#	1008000'#	549000'#	458700'#	419000'#	331000'#	292000'#
S.M. Req'd @ 16000#/"		151	126	148	123	129	105	740	756	411	344	314	248	219

* Max. at W. Abmt; 64.2# total at 7W.

FASCIA STRINGERS

Mark		F1	F2	F3
Max. Panel Length		22.7'	40.0'	32.2'
Section	Angles	2∠s 3½×3½×⅜	4∠s 4×3½×7/16	4∠s 3½×3½×⅜
	Plate	24×⅜	24×⅜	24×⅜
Net Section Mod.	Compr.	82	127	108
	Tension	72	128	113
Shear	DL	3740#	7200#	5640#
	LL	3520	6200	4990
	I	1190	1900	1590
	Total	8450#	15300#	12220#
Moment	DL	21200'#	72000'#	45400'#
	LL	20000	62000	40200
	I	6800	19000	12800
	Total	48000'#	153000'#	98400'#
S.M. Req'd @ 16000#/"		⊖ 36	115	74

⊖ In addition to the Vert. bending, there is an extreme fiber stress of about 4000#/" due to bending about the vertical axis of this unsym. section.

SPECIFICATIONS FOR DESIGN - AREA-AASHO "Specifications for Steel Highway Bridges (1927)", with H-20 Live Load

MATERIAL:
G1 - Silicon Steel thruout, except Carbon steel for intermediate stiffeners and their fills.
ALL OTHER MEMBERS - Structural Carbon Steel

RIVETS:
G1 - 1" Carbon Rivet Steel - (Girders only)
ALL OTHER MEMBERS - ⅞" Carbon Rivet Steel.

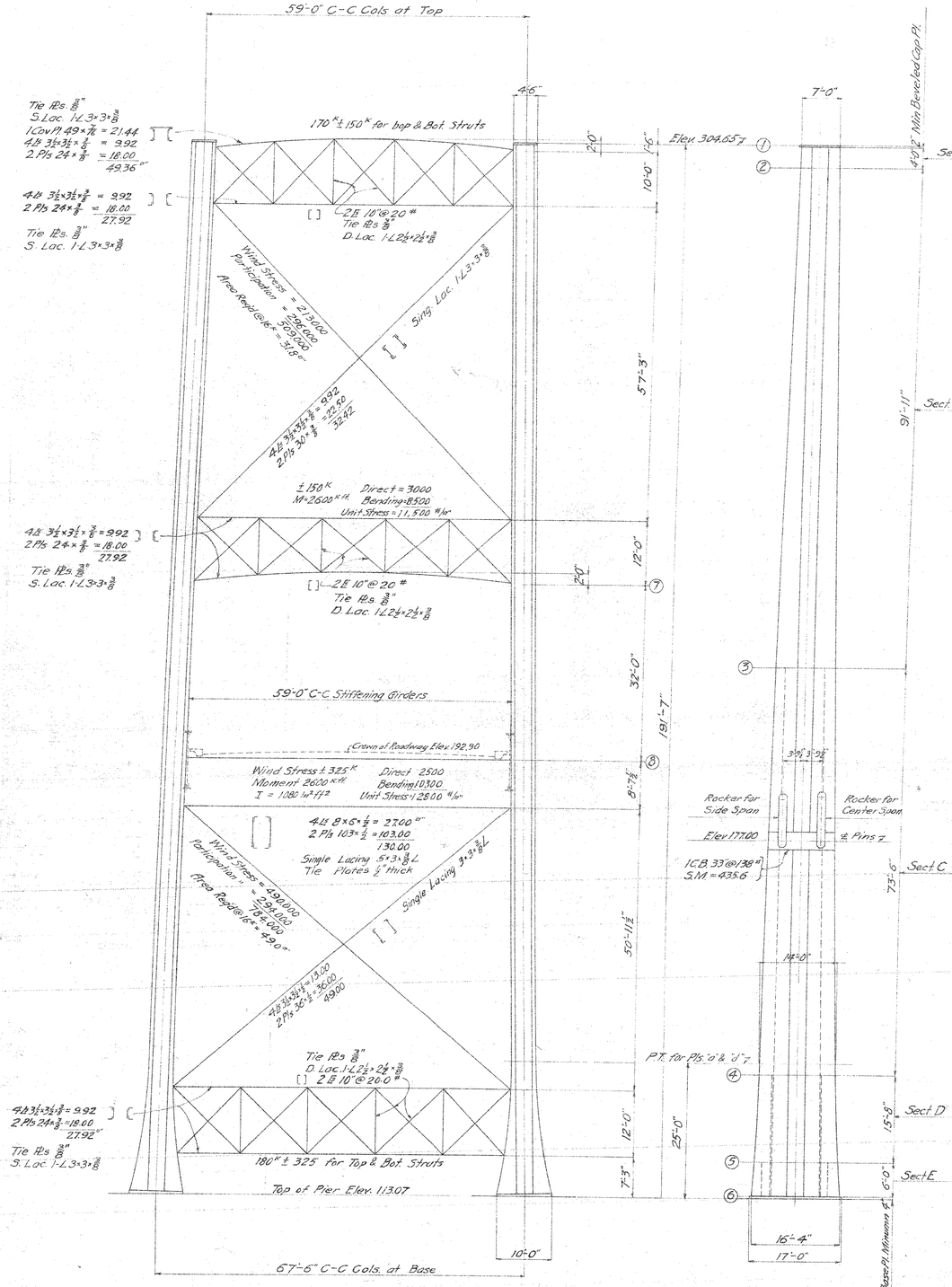
DEAD LOAD: Rail, Concrete Deck (including 3" of future pavement), Lighting Conduits - 9350#/lin.ft. of bridge.

Revised - Sept. 16, 1929
Sept. 23, 1929
Oct. 28, 1929

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
STRESS SHEET - GIRDER SPANS

WADDELL AND HARDESTY CONSULTING ENGINEERS
NEW YORK CITY JULY 20, 1929

SHEET 14



y

x

SECTION A

Main Material

a	2 Pls 54×⅞	=	94.50
b	2 Pls 36×⅜	=	54.00
c	2 Pls 38×⅜	=	66.50
d	4 Pls 2½×2½×⅜ at ①		
	2⅜×⅜ at ②	=	67.50
	12 Lb 6×6×⅜	=	101.28
	Total Main Material at ②		383.78"
m	4 Pls 24×⅜	=	72.00
n	2 Pls 27×⅜	=	40.50
o	2 Pls 16½×⅜	=	24.37
p	8 Pls 10⅜×⅜	=	63.00
	8 Lb 6×6×⅜	=	55.52
	4 Lb 6×6×⅜	=	39.76
	Total Reinforcement at ②		289.15"
	Total		672.93"

SECTION B

Main Material

a	2 Pls 54×⅞	=	94.50
b	2 Pls 36×⅜	=	54.00
c	2 Pls 38×⅜	=	66.50
d	4 Pls 4½×2×⅜ at ⑤	=	137.25
	12 Lb 6×6×⅜	=	101.28
	Total Main Material at ⑤		453.53"
e	4 Pls 6×⅜×6'-1½	=	18.00
f	2 Pls 24×⅜×9'-4½	=	36.00
f	2 Pls 36×⅜×25'-6⅜	=	54.00
	Total Reinforcement at ⑤		108.00"
	Total		561.53"

SECTION C

Main Material

a	2 Pls 54×⅞	=	94.50
b	2 Pls 36×⅜	=	54.00
c	2 Pls 38×⅜	=	66.50
d	4 Pls 6½×¾ at P.T.	=	190.50
g	2 Pls 24×½	=	24.00
	8 Lb 6×6×½	=	46.00
	8 Lb 6×6×⅝	=	56.88
	Total Main Material at P.T.		532.38"
e	4 Pls 7½×⅝×19'-5⅜	=	18.75
f	2 Pls 24×⅜×13'-0½	=	36.00
f	2 Pls 36×½×36'-0"	=	36.00
	Total Reinforcement at ⑥		90.75"
	Total		623.13

SECTION D same as SECTION C except for increase in width of Pls 'a' & 'd' and addition of 4 Lb 6×6×½ = 23.00

SECTION D

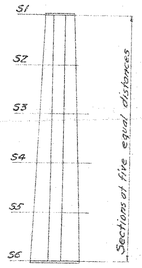
Main Material

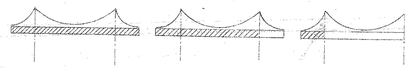
a	2 Pls 120×⅝	=	210.00
b	2 Pls 36×⅜	=	54.00
c	2 Pls 38×⅜	=	66.50
d	4 Pls 77×½	=	231.00
g	2 Pls 24×½	=	24.00
	8 Lb 6×6×⅝	=	56.88
	8 Lb 6×6×½	=	46.00
	Total Main Material at Base		688.38"
g	2 Pls 24×½	=	24.00
h	3 Pls 36×½	=	54.00
j	4 Pls 13×½	=	26.00
k	4 Pls 29×½	=	58.00
l	4 Pls 10×½	=	20.00
q	4 Pls 9⅜×½	=	19.50
m	4 Pls 7½×½	=	15.00
n	4 Pls 14½×½	=	29.00
	24 Lb 6×6×½	=	138.00
	Total Reinforcement at Base		383.50"
	Total		1071.88

Case A: Center and Side Spans loaded at Lowest Temp.

Sect	Area	Vertical load	Unit Stress
S1	381"	7,140 K	20,200 #/in²
S2	407	7,800	19,100
S3	438	7,890	18,100
S4	498	7,980	16,000
S5	521	8,060	15,500
S6	689	8,220	11,900
S6*	1072	8,220	7,630

* Total area including reinforcements & Diaphs.





Loading Case A: V = 7,695; H = 6,636; S = 1.6" Riverward

Loading Case B: V = 7,513; H = 6,481; S = 80" Riverward

Loading Case C: V = 6,045; H = 5,201; S = 38" Shoreward

Note:
V = Vertical Tower Reaction per Cable in kips
H = Horizontal cable pull per Cable in kips.
S = Deflection of Top of Tower.
Top of Tower to be bent Shoreward 4" for dead load position at normal temperature.

Case B1 Center & one Side Span loaded at highest temperature with Longitudinal Wind @ 500 #/ft² Bridge

Sect	Area in²	Direct Stress: Vertical Load Kips	Direct Stress: Stress in #/in²	Stress due to Deflection of Tower: Moment due to V	Moment due to H	Total Moment	Iy in² ft²	S.M. in² ft	Bending Stress #/in²	Stress due to Wind: M. due to wind on Center & Side Span	M. due to wind on Tower	Total M. f.l.k	Total wind stress #/in²	Total Unit Stress #/in²
S1	381	7,350	19800	0	0	0	2023	580	0	0	0	0	0	19800
S2	407	7,620	18700	1130 K ft	692 K ft	1822 K ft	3000	700	2600	690 K ft	630 K ft	1320	1890	23280
S3*	541	7,700	14200	2000	1376	3376	4500	900	3760	1370	800	2170	2410	20370
S4*	574	7,790	13500	2621	2076	4696	6480	1085	4320	2070	1000	3070	2840	20650
S5	521	8,030	15400	3000	2768	5768	8600	1260	4680	2500	1250	3700	2960	23050
S6	689	8,040	11700	3120	3460	6580	13400	1640	4000	2300	1350	3600	2240	17940
S6*	1072	8,040	7500	3120	3460	6580	20800	2550	2580	2300	1350	3600	1640	11520

Case B2 Same as B1 with Wind at right angle to ± Bridge

Sect	Area in²	Direct Stress Same as B1	Stress due to Deflection	Direct Wind load	Direct Wind stress	Moment due to Wind	Bending Stress	Total Wind Stress	Total Unit Stress #/in²
S1	381	19800 #/in²	0	400 K	1050 #/in²			1050 #/in²	20850
S2	407	18700	2600 #/in²	400	980			980	22280
S3*	541	14200	3760	600	1110	2600 K ft	5300 #/in²	6410	24560
S4*	574	13500	4320	600	1050	2600	5700	6750	24570
S5	521	15400	4680	1250	2400			2400	22480
S6	689	11700	4000	1250	1290			1790	17490
S6*	1072	7500	2580	1250	1160			1160	11240

Loads
D.L. 13000 #/ft of Bridge
L+I 4000 " " "
Wind A.R.E.A. 1927

Unit Stresses allowable.
Carbon steel A.R.E.A. Spec. 192
Silicon steel
D+L 19,000 #/in²
D+L+T+W 25,000 "

Case C1 One Side Span loaded at lowest Temp with Longitudinal Wind

Sect	Direct Stress: Area in²	Vertical load	Unit Stress	Stress due to Deflection of Tower: Moment due to V	Moment due to H	Total Moment	S.M. in² ft	Bending Stress #/in²	Wind Stress: Same as in Case B1	Total Unit Stress #/in²
S1	381	6090 K	16000 #/in²	0	0	0	580	0	0	16000
S2	407	6150	15100	1600 K ft	1300 K ft	3100 K ft	700	4430	1890 #/in²	21420
S3*	541	6240	11500	2800	3000	5800	900	6440	2410	20350
S4*	574	6330	11000	3700	4500	8200	1084	7560	2840	21400
S5	521	6400	12300	4300	6000	10300	1260	8200	2940	23440
S6	689	6560	9500	4400	7700	11900	1640	7300	2240	18940
S6*	1072	6560	6100	4400	7500	11900	2550	4700	1440	12240

Case C2 Same as C1 with Wind of right angles to ±, Bridge

Sect	Direct stress Same as C1	Bending stress due to Deflection Same as C1	Wind stress Same as in B2	Total Unit Stress #/in²
S1	16,000 #/in²	0	1050 #/in²	17050
S2	15,100	4430 #/in²	980	20510
S3*	11,500	6440	6600	24540
S4*	11,000	7560	6750	25310
S5	12,300	8200	2400	22900
S6	9,600	7300	1790	18690
S6*	6,100	4700	1160	11960

* Sections include all reinforcement Pls

Max. Stress of Rocker at ends of Center Span
Comp = 50,000 #
Tens = 30,000
Use 2 Pls 20×½ = 20" gr. 18" nt. 12" at pin hole
2 Pin Pls 20×½ = 20 16 12
40" 32" 24"
Diaph 1 Pl 10×7/16 = 4.38
4 Lb 3½×3½×7/16 = 17.36
Section of Rocker = 41.74
Excluding Pin Pls

ℓ = 96 ℓ/r = 16
Ix = 585 ℓ/r = 20
Iy = 4.8

Max. Stress of Rocker at end of Side Spans
Comp = 180,000 #
Tens = 130,000
Use 2 Pls 20×⅞ = 30" gr. 24" nt. 18" at pin hole
2 Pin Pls 20×⅞ = 30 24 18
60" 48" 36"
Diaph 1 Pl 10×½ = 5
4 Lb 6×3½×½ = 22
Section of Rocker = 57.0 " gr.
Excluding Pin Pls

ℓ = 72.5
rx = 6 ℓ/r = 15+
ry = 4.85 ℓ/ry = 19.2

Note:
Rivets 7/8"ø
Material: Main section of Tower Column Silicon Steel. Tower Bracings Carbon Steel. Splices, Gus. Pls, and other details are Silicon Steel unless otherwise noted by the Engineer.

CITY OF TOLEDO OHIO

BRIDGE OVER MAUMEE RIVER

STRESS SHEET TOWER

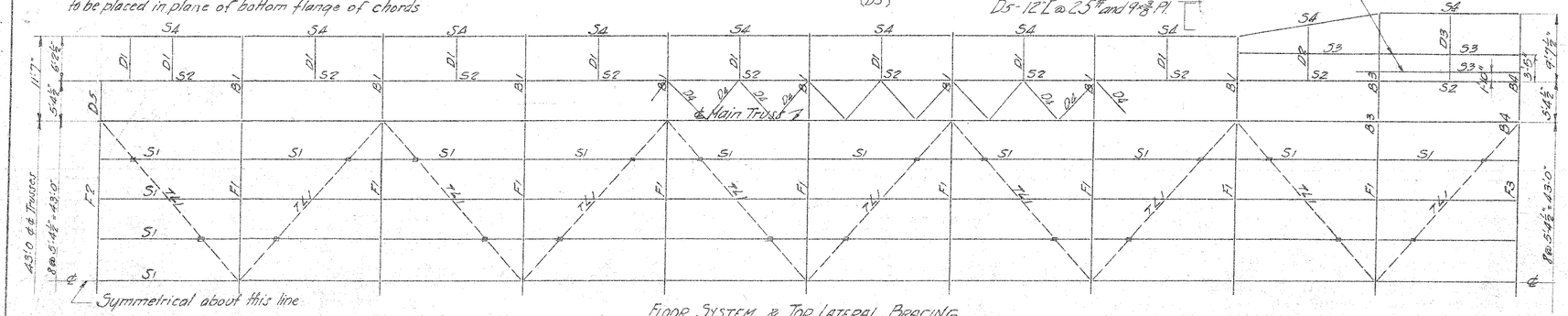
WADDELL AND HARDESTY CONSULTING ENGINEERS
NEW YORK CITY JULY 1930

All Top laterals TL1 ⌊ 2 L's 6 x 4 x 3/8 = 7.22# /yr, l/r = 115, 422# /mt. to be placed in plane of bottom flange of chords

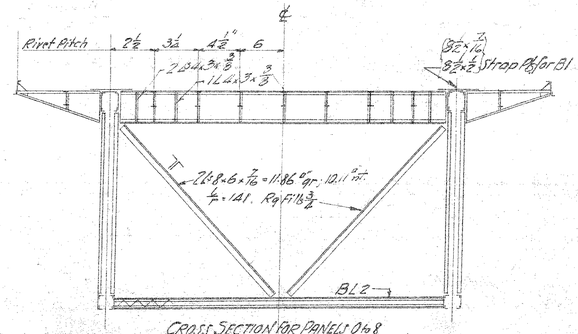
Draw 1/8" in 5'

Fascia Stringer Bracing { D1 / D2 / D3 } 10'C@20#; D2: 1 L 3½ x 3½ x 3/8 - in all panels; f = 126
D3: 12 I @ 25# and 9 @ 31.5#

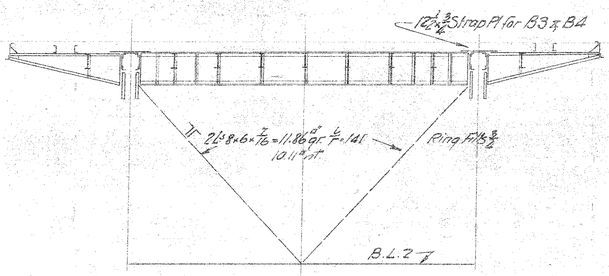
15" B @ 33.9# to support edge of sidewalk slab at hole for suspension span cable



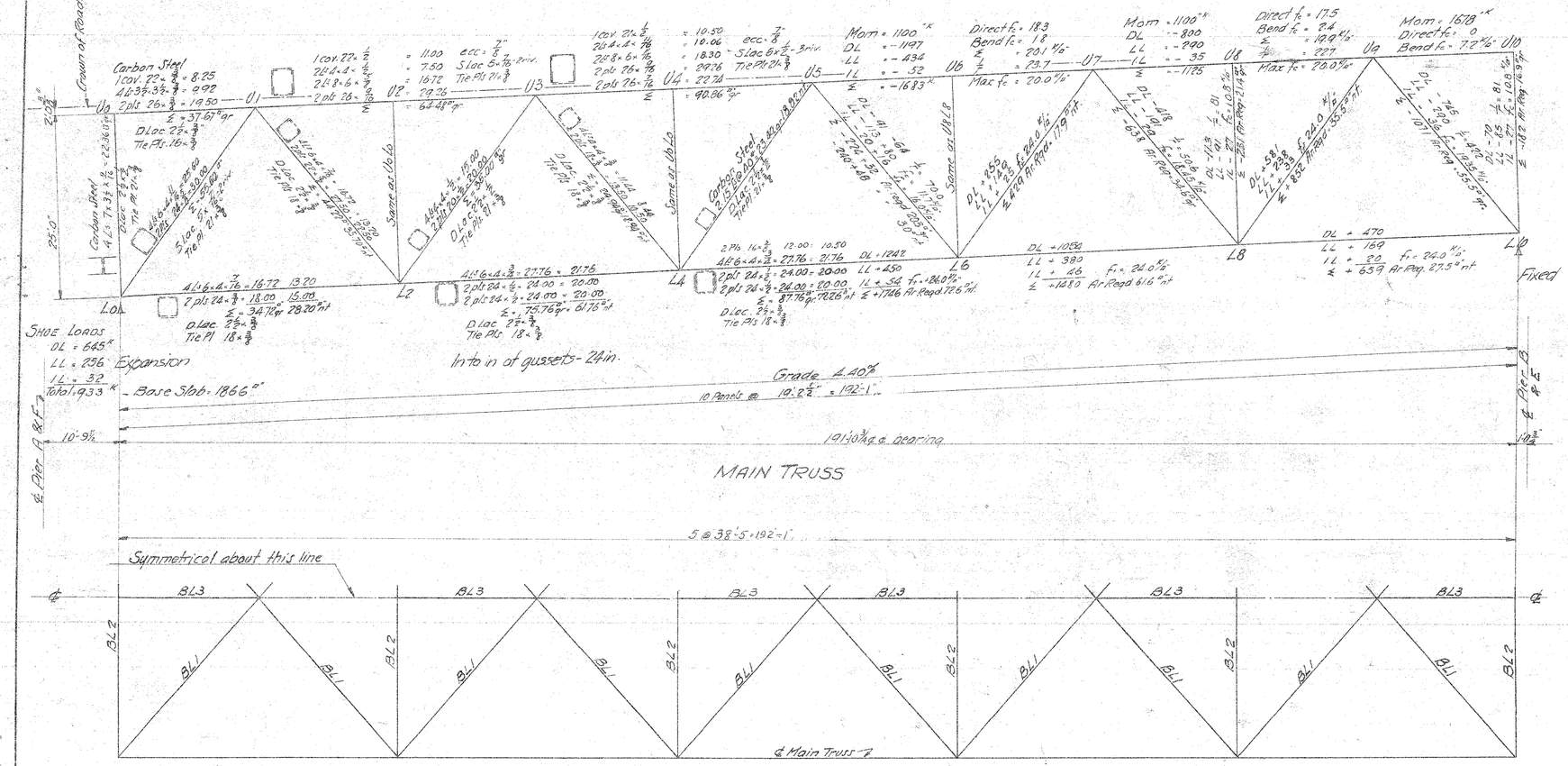
FLOOR SYSTEM & TOP LATERAL BRACING.



CROSS SECTION FOR PANELS 0 & 8
Sway Frames at Panel Points
0-2-4-6 & 8



CROSS SECTION FOR PANELS 9 & 10
Sway Frame at Panel Point 10



BOTTOM LATERAL BRACING

BL1 ⌊ 1 L 4 x 3 x 3/8 = 9.98# /yr; l/r = 108; l/r = 167; S. Lac 2½ x 3/8, Tie Pls 12 x 3/8 = 6.98" mt.

BL2 " " " l/r = 81; l/r = 125 " "

BL3 ⌊ 2 L's 5 x 3½ x 3/8 = 5.12# /yr; l/r = 144; S. Lac 2½ x 3/8, Tie Pls 12 x 3/8

		STRINGERS					FLOOR BEAMS			BRACKETS			
		S1	S2	S3	S4	S5	F1	F2	F3	B1	B2	B3	B4
Span Length		19'-7½"	19'-2½"	19'-2½"	19'-2½"	19'-2½"	43'-0"	43'-0"	43'-0"	11'-7"	11'-7"	15'-0"	15'-0"
Web					24 x 3/8		48"-3/8"	48"-3/8"	48"-3/8"	48"-3/8"	24"-3/8"	48"-3/8"	48"-3/8"
Section	Flange ⌊'s	21" C B@60#		15" I @ 42.9#	1 L 3½ x 3½ x 3/8		2 L's 6 x 6 x 5/8	2 L's 6 x 6 x 5/8	2 L's 6 x 6 x 5/8	2 L's 8 x 6 x 3/8	2 L's 3½ x 3½ x 3/8	2 L's 6 x 6 x 7/8	2 L's 6 x 6 x 7/8
	Cov. Pl's	Sect Mod = 124.1		33.9#			1 pl 13 x 3/8	1 pl 13 x 3/8	1 pl 13 x 5/16				
		or 22" Beth. I @ 58#		5 Nat. Cl. I			1 pl 13 x 3/4	1 pl 13 x 3/4					
Flange Area Net		Sect Mod = 124.1				Sect Mod = 70	22.72	20.66	19.28	3.84	3.26	6.19	6.19
½ Web							2.25	2.25	2.25	2.25	2.25	2.25	2.25
Total	in²						24.97	22.91	21.53	6.09	5.51	8.44	8.44
Shear Kips	Dead Ld	8.3	7.6	3.1	3.0	4.0	62.5	36.6	36.6	22.5	11.6	25.4	14.9
	Live Ld	20.2	15.7	4.6	2.9	2.9	71.3	74.3	74.3	28.1	23.3	28.7	28.1
	Impact	7.0	5.4	.2	1.0	.6	24.0	25.2	25.8	8.3	6.9	8.8	8.4
	Total K	35.5	28.7	7.9	6.9	6.9	157.8	136.1	136.1	60.0	40.9	62.9	57.4
Mom. Ft Kips	Dead Ld	40.4	37.1	14.3	14.4	19.0	650	444	345	161	78	213	126
	Live Ld	91.6	71.0	22.0	14.0	14.0	700	730	720	166	132	207	147
	Impact	31.8	24.6	7.6	4.9	4	214	252	262	51	42	63	51
	Total Ft K	163.8	132.7	44.2	33.3	33.0	1564	1826	1325	378	228	483	324
Effective Depth							3.91	3.90	3.88	3.88	3.88	3.92	3.92
Flange Area Req'd							24.80 in²	22.93 in²	21.38 in²	6.05 in²	3.70 in²	7.71 in²	5.75 in²
Sect Mod. Req'd		123.0	99.6	33.3	25.0	25.0							
End Connection		4 Rivs. F.D.S. with PL 6½ x 3/8					14 Rivs. Sh. D.S.; 34 F.S.S.			8 Rivs. Sh. B.; 16 F.S.S			
Intermediate Stiffs							2 L's 4 x 3 x 3/8						

Revised Sept 14, 1927, " 24, 1928, Nov 7, 1929, Feb 11, 1930

NOTES

LIVE LOADING: H20 Specifications for Steel Highway Bridges 1927 American Railway Engineering Association

LATERAL FORCES IMPACT: In accordance with Specifications noted above

MATERIAL: Carbon Steel throughout except for Silicon Steel truss members.
- Silicon Steel in main truss members, except all verticals, diagonals L4 U5 and U5 L6, and end top chord members U6 U7 and U9 U10.
- Details connecting carbon steel members of Lateral system to silicon steel members of Main Trusses shall be made of silicon steel when required by the Engineer

RIVETS: Carbon Steel 7/8 ϕ.

UNIT STRESSES: Carbon Steel - In accordance with Specifications noted above
Silicon Steel f tension = 24000 #/□"
f comp = 24000 - 110 l/r but not to exceed 20000 #/□"

CITY OF TOLEDO, OHIO

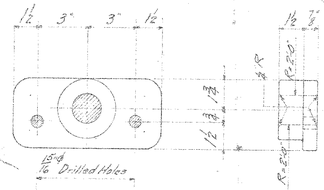
BRIDGE OVER MAUMEE RIVER

STRESS SHEET ~ DECK TRUSS SPAN

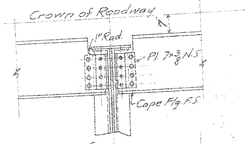
SCALE: 1/8" = 1'-0"

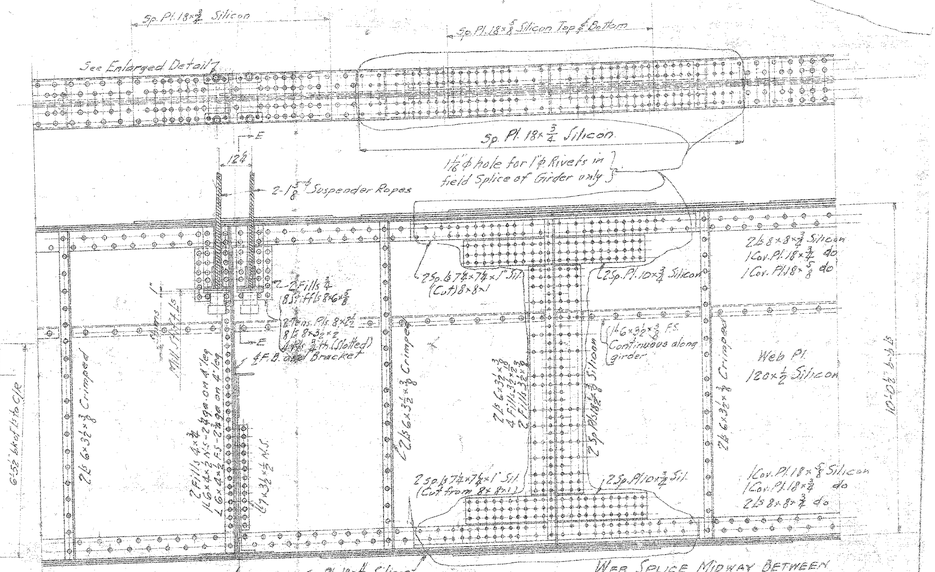
WADDELL AND HARDESTY ~ CONSULTING ENGINEERS
NEW YORK CITY JULY 20, 1929.

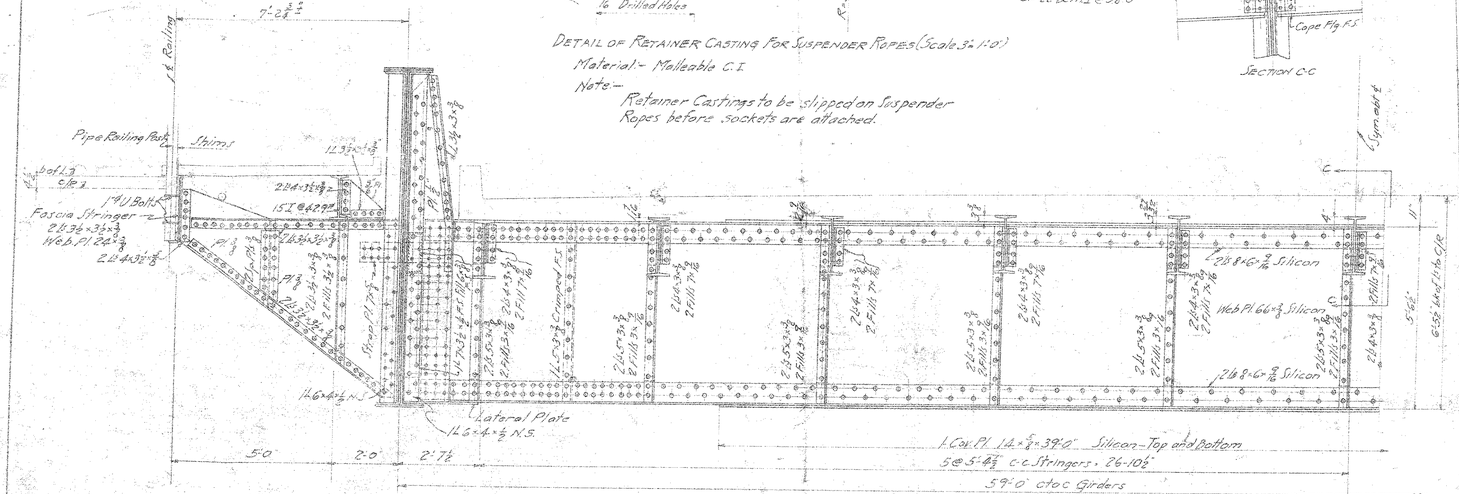
SHEET 13



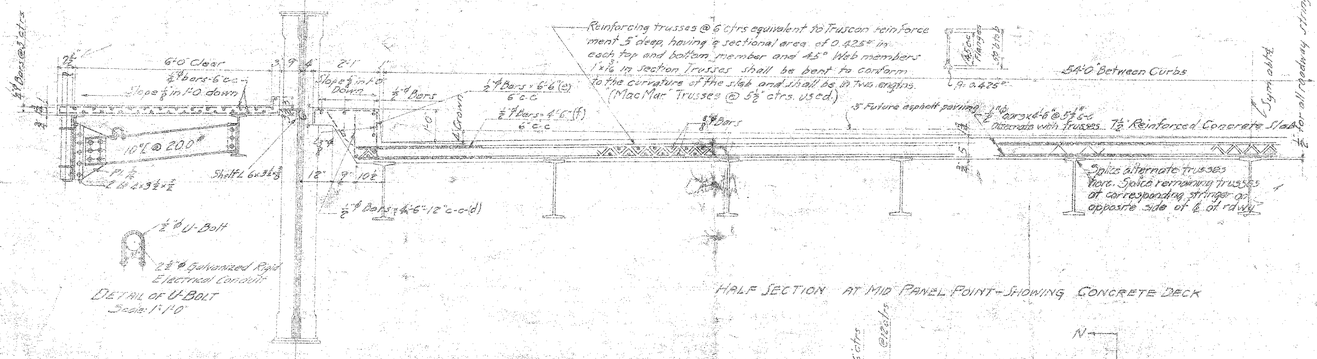
DETAIL OF RETAINER CASTING FOR SUSPENDER ROPES (Scale 3"=1'-0")
Material:- Malleable C.I
Note— Retainer Castings to be slipped on Suspender Ropes before sockets are attached.



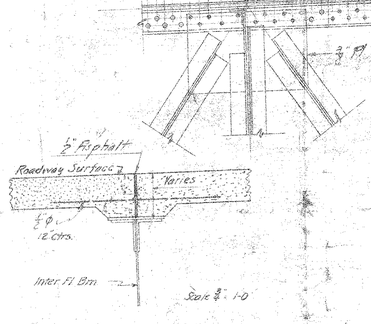




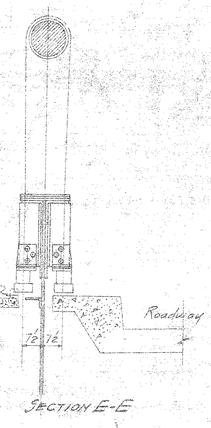
HALF SECTION AT INTERMEDIATE FLOORBEAM

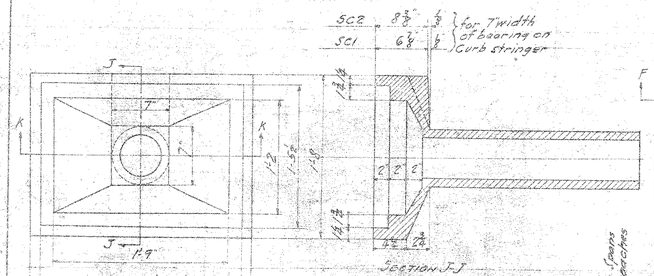


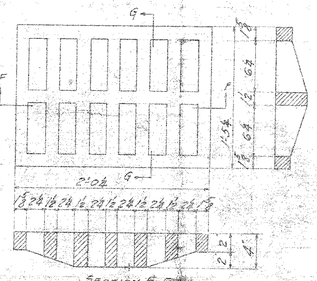
HALF SECTION AT MID PANEL POINT - SHOWING CONCRETE DECK



STIFFENING GIRDER



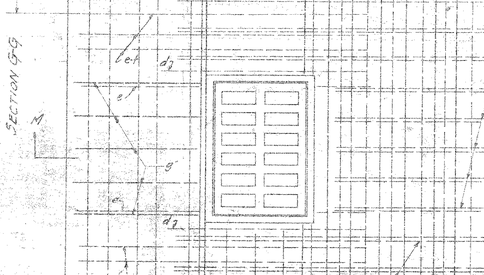


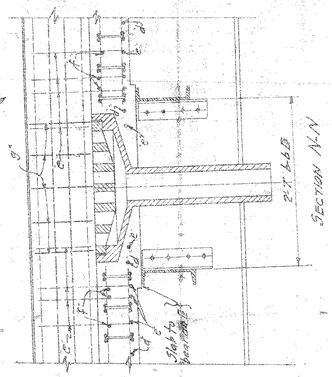


DETAIL OF SCUPPERS

CAST IRON
12 Required - SC1 - Main Spans
12 Req'd SC2 - Approaches
Scuppers SC1 - located at ¢ of panels L18-19, L22-23 and L27-28, Sym. abt ¢ of Span, one each side of roadway.
For location of SC2 see Sh. 34.

Detail of Hand Hole Openings in Sidewalks
Cast Iron Scale 1½"=1'-0"
38 Req'd - HC1 - Main Spans
76 Req'd - HC2 - Approaches
Note - The 4 castings to be placed over transverse boxes 10"x 10" located near each end of each sidewalk slab at L4 as L12-13, L16-17 & L32-33. Bottom surface of sidewalk slab to be sloped to drain on diaphragm at these points. For location of HC2 see Sh. 34





NOTES.
Joints in sidewalk slab come opposite joints in roadway slab. Detail is similar to that shown on Sheet 16 for the approach.

SCALE - ½"=1'-0" except as noted.
MATERIAL - Main section of stiffening girder and of floor beams to be of Silicon steel. Details to be of Silicon steel when required by the Engineer.
All material not otherwise noted, to be carbon steel.
RIVETS - ¾" Carbon rivet steel except as noted.

REVISED- Nov 8, 1929.
MAR 12, 1930.
APR. 2, 1930
May 13, 1930
JUNE 4, 1930
JUNE 22, 1931

CITY OF TOLEDO, OHIO

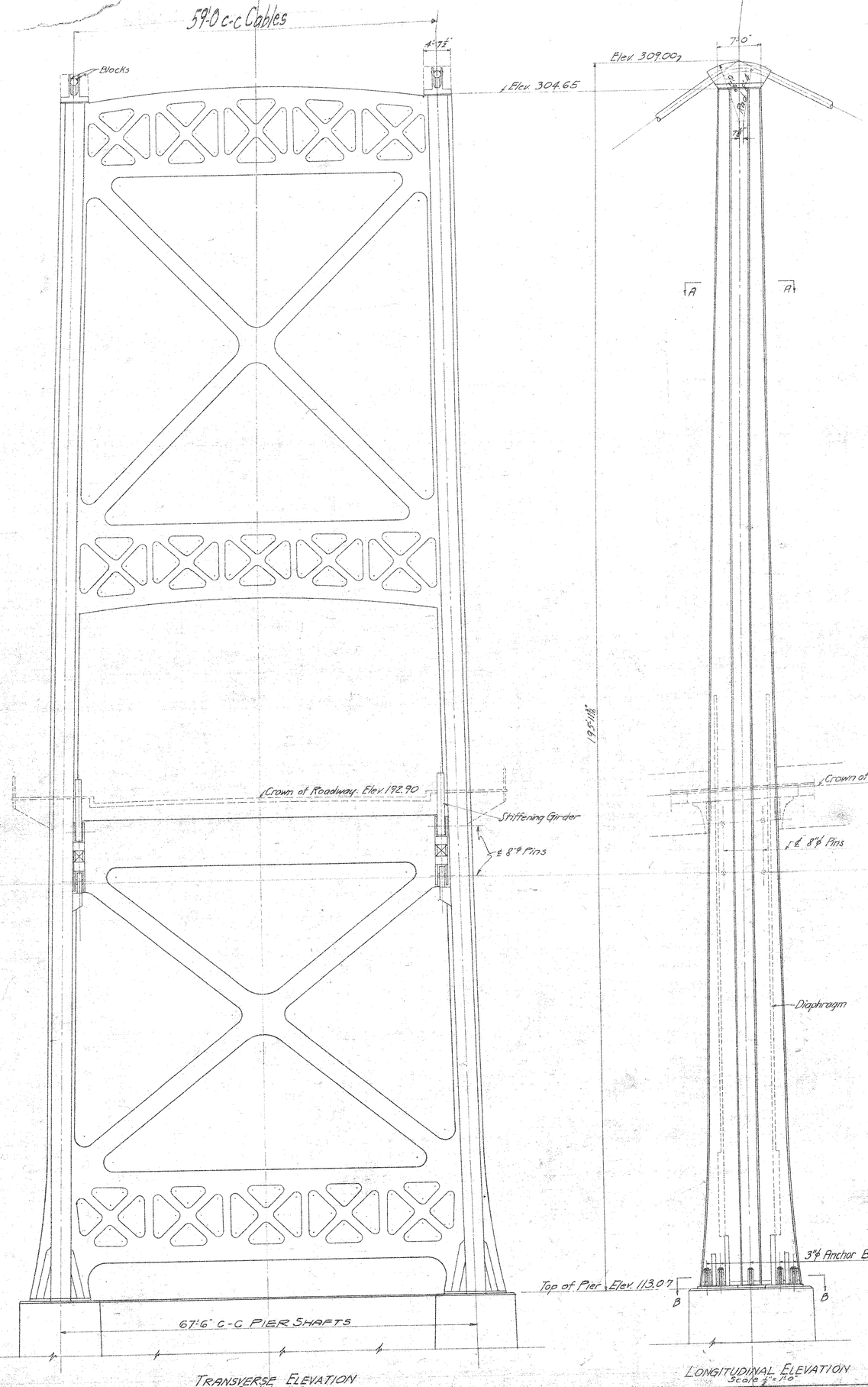
BRIDGE OVER MAUMEE RIVER

CROSS SECTION-MAIN SPAN

WADDELL AND HARDESTY, CONSULTING ENGINEERS
NEW YORK CITY. JULY 20 1929

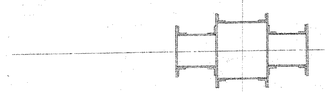
SHEET 17

Details of Slab Reinforcement at Scuppers - Main Spans
Scale 1"=1'-0"

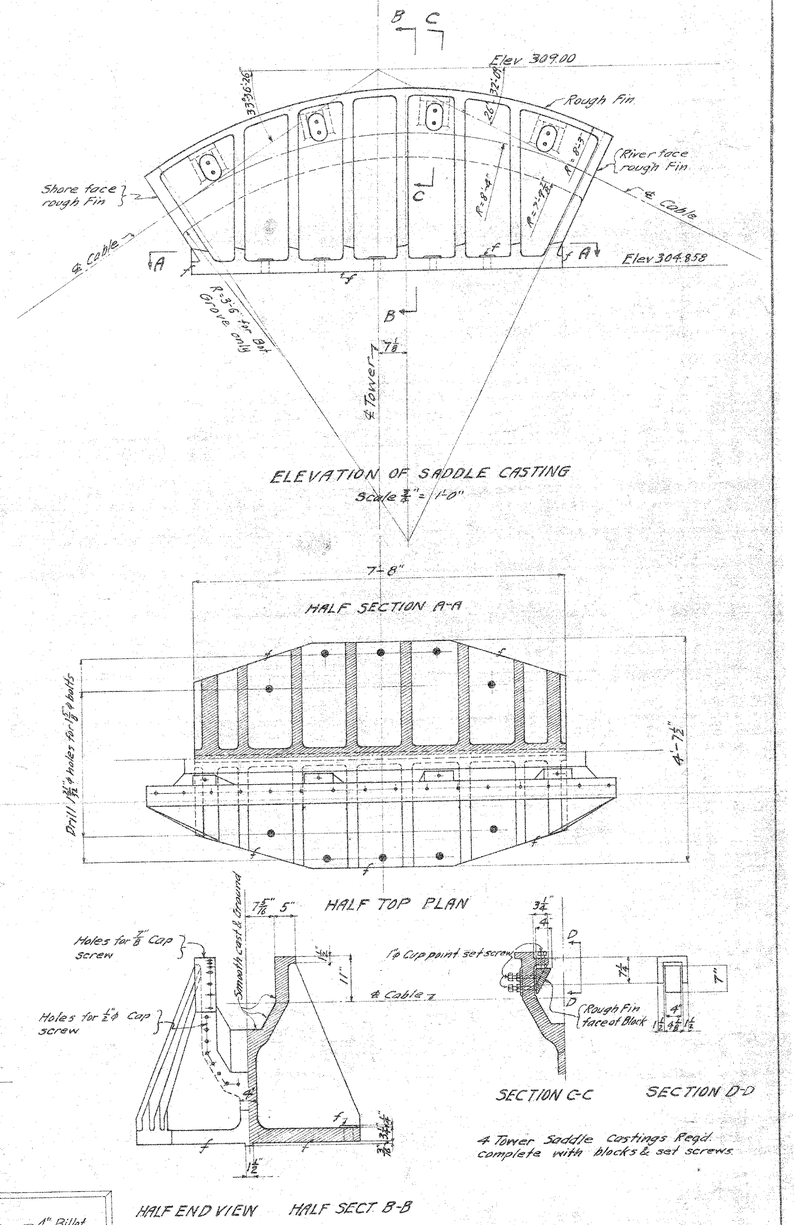


TRANSVERSE ELEVATION
Scale 1/8"=1'-0"

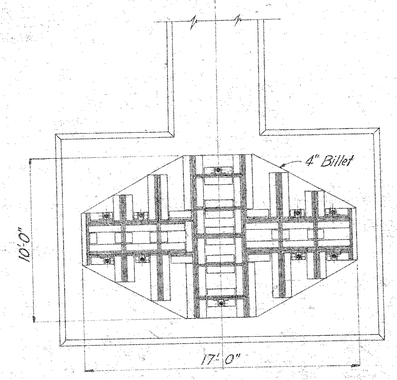
LONGITUDINAL ELEVATION
Scale 1/16"=1'-0"



SECTION A-A
Scale ½"=1'-0"



4 Tower Saddle Castings Reqd. complete with blocks & set screws.



SECTION B-B
Scale ½"=1'-0"

CITY OF TOLEDO, OHIO

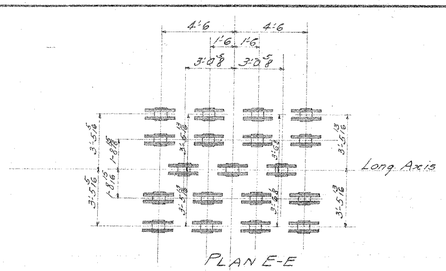
BRIDGE OVER MAUMEE RIVER

TOWER

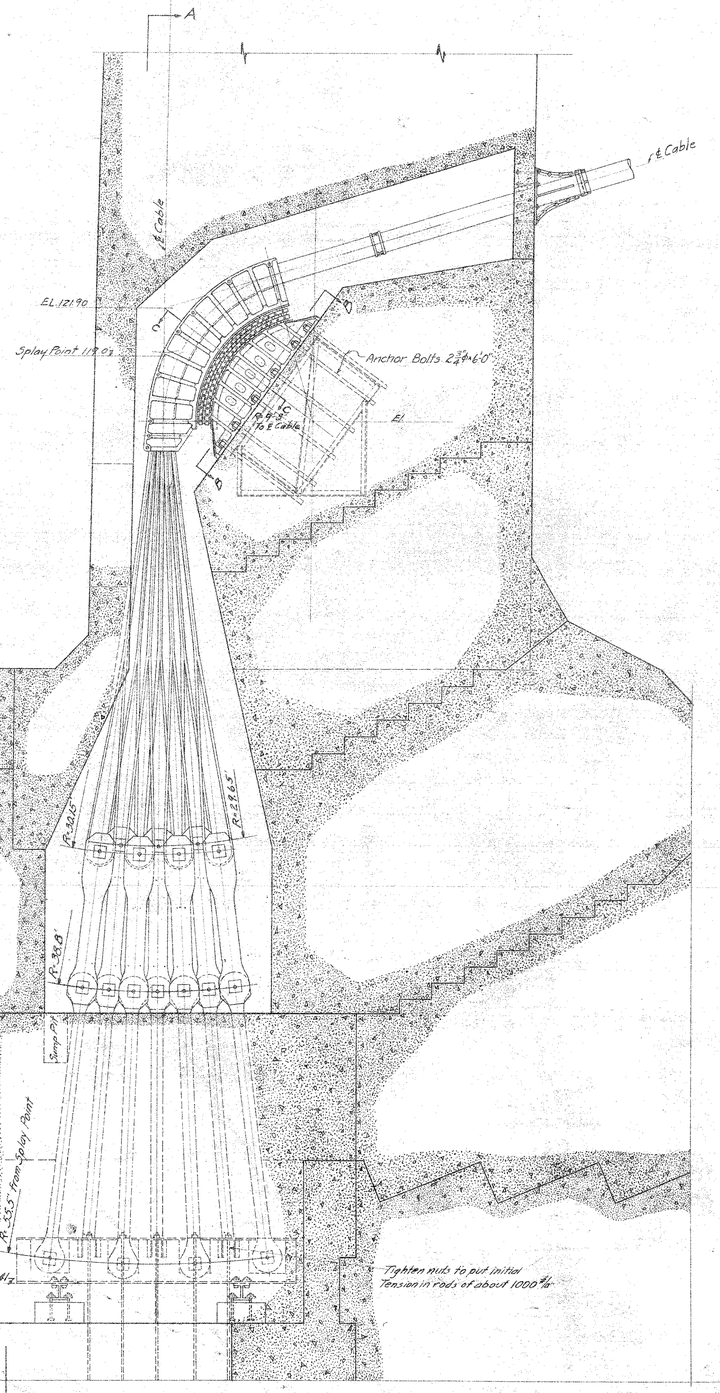
Revised
Nov. 7, 1929.
May 13, 1930

WADDELL AND HARDESTY, CONSULTING ENGINEERS
NEW YORK CITY. JULY 20, 1929.

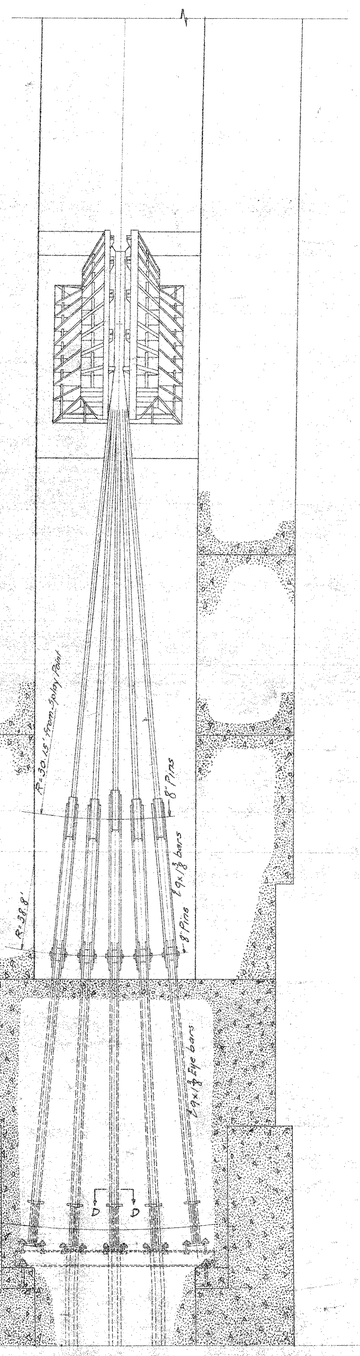
SHEET 18



PLAN E-E

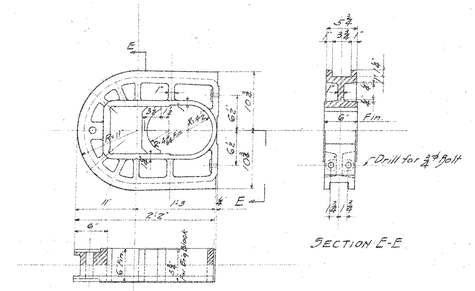


SECTION THRU ANCHORAGE WELL



SECTION A-A

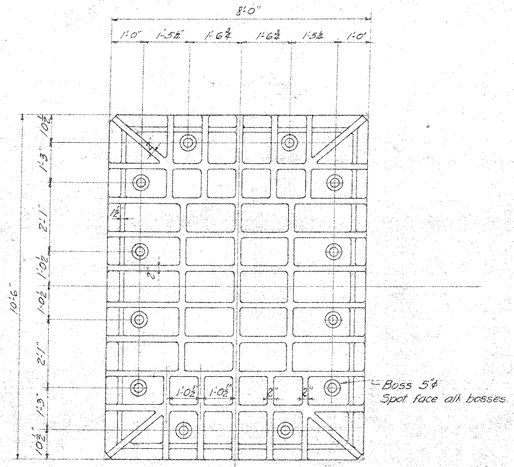
Scale ¼"=1'0"



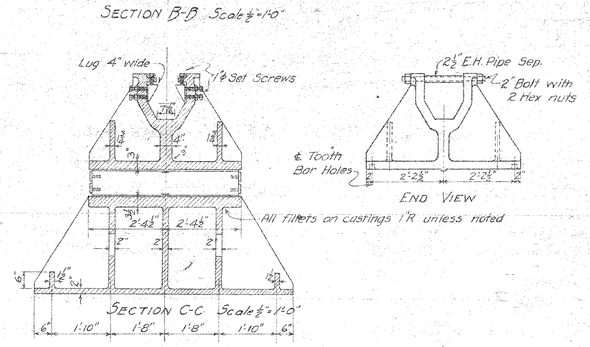
SECTION E-E

HALF PLAN AND SECTION

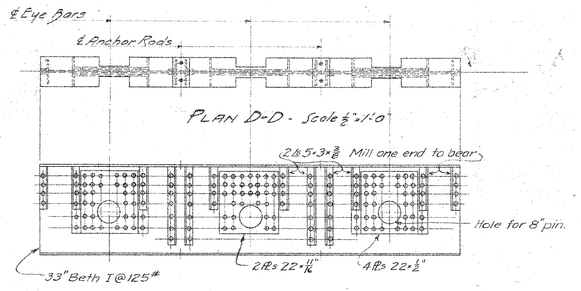
CAST STEEL STRAND SHOES Scale 1"=1'0"



SECTION B-B Scale ½"=1'0"



SECTION C-C Scale ½"=1'0"



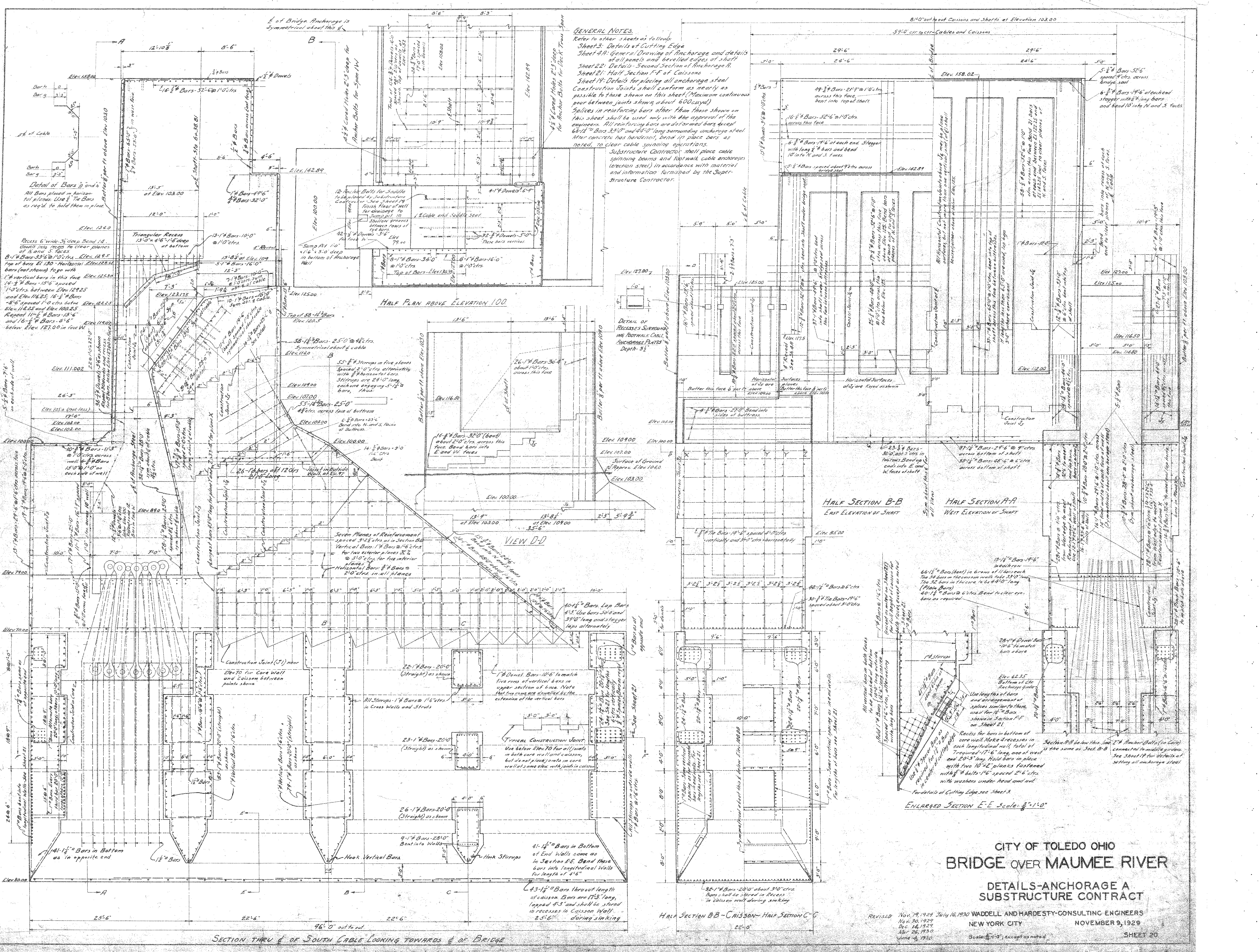
PLAN D-D - Scale ½"=1'0"

CITY OF TOLEDO, OHIO

BRIDGE over MAUMEE RIVER

ANCHORAGE STEEL

WADDELL AND HARDESTY, CONSULTING ENGINEERS
NEW YORK CITY MAY 10, 1930
Scale - As Noted. SHEET 19



CITY OF TOLEDO OHIO

BRIDGE OVER MAUMEE RIVER

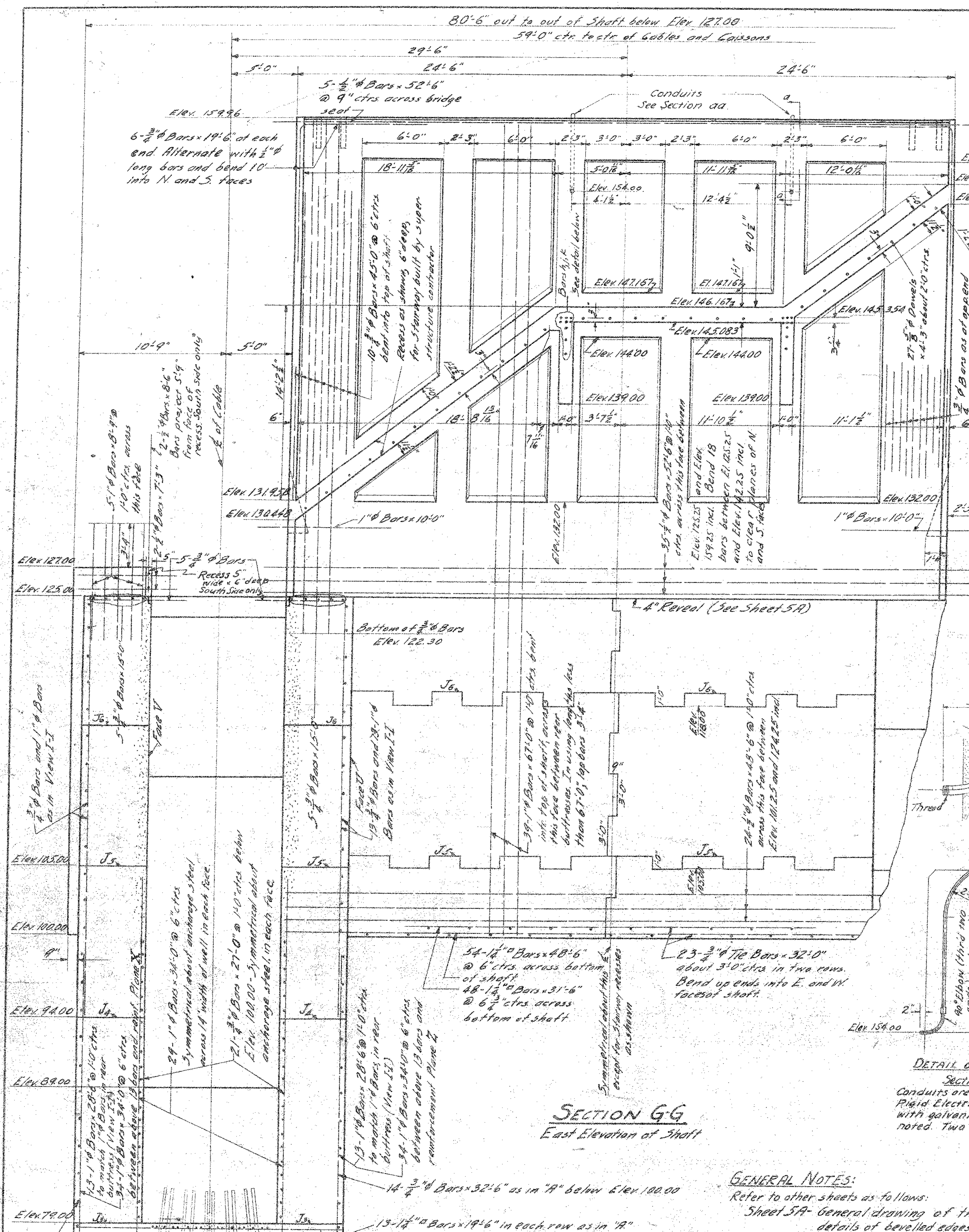
DETAILS-ANCHORAGE A SUBSTRUCTURE CONTRACT

REVISED Nov. 19, 1929 July 16, 1930 Nov. 30, 1929 Dec. 14, 1929 Mar. 26, 1930 June 4, 1930

WADDELL AND HARDESTY-CONSULTING ENGINEERS
NEW YORK CITY
NOVEMBER 9, 1929

Scale: $\frac{1}{16}$" = 1'-0", except as noted

SHEET 20



SECTION G-G
East Elevation of Shaft

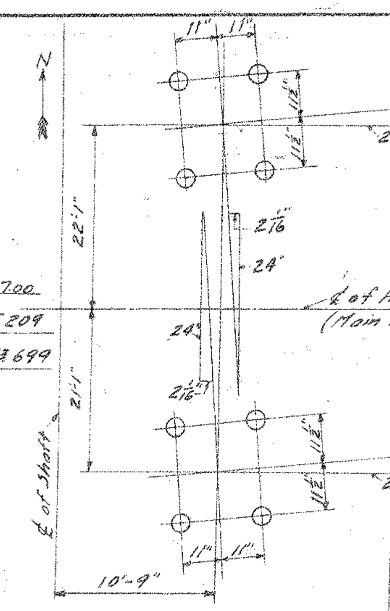
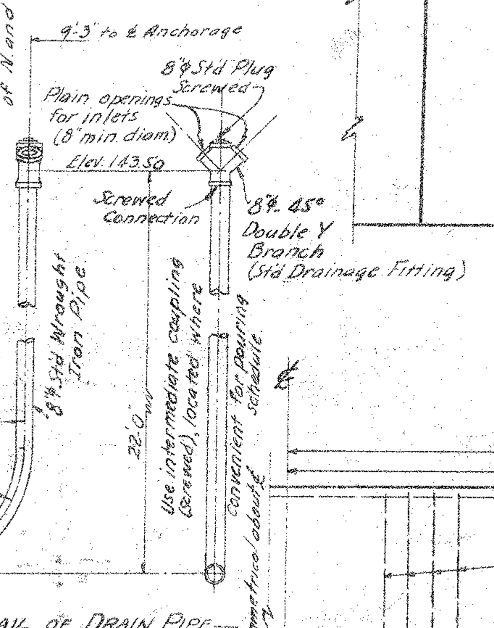
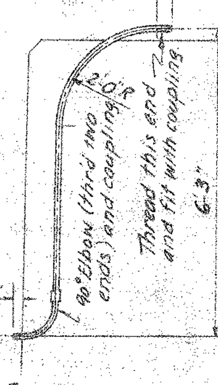


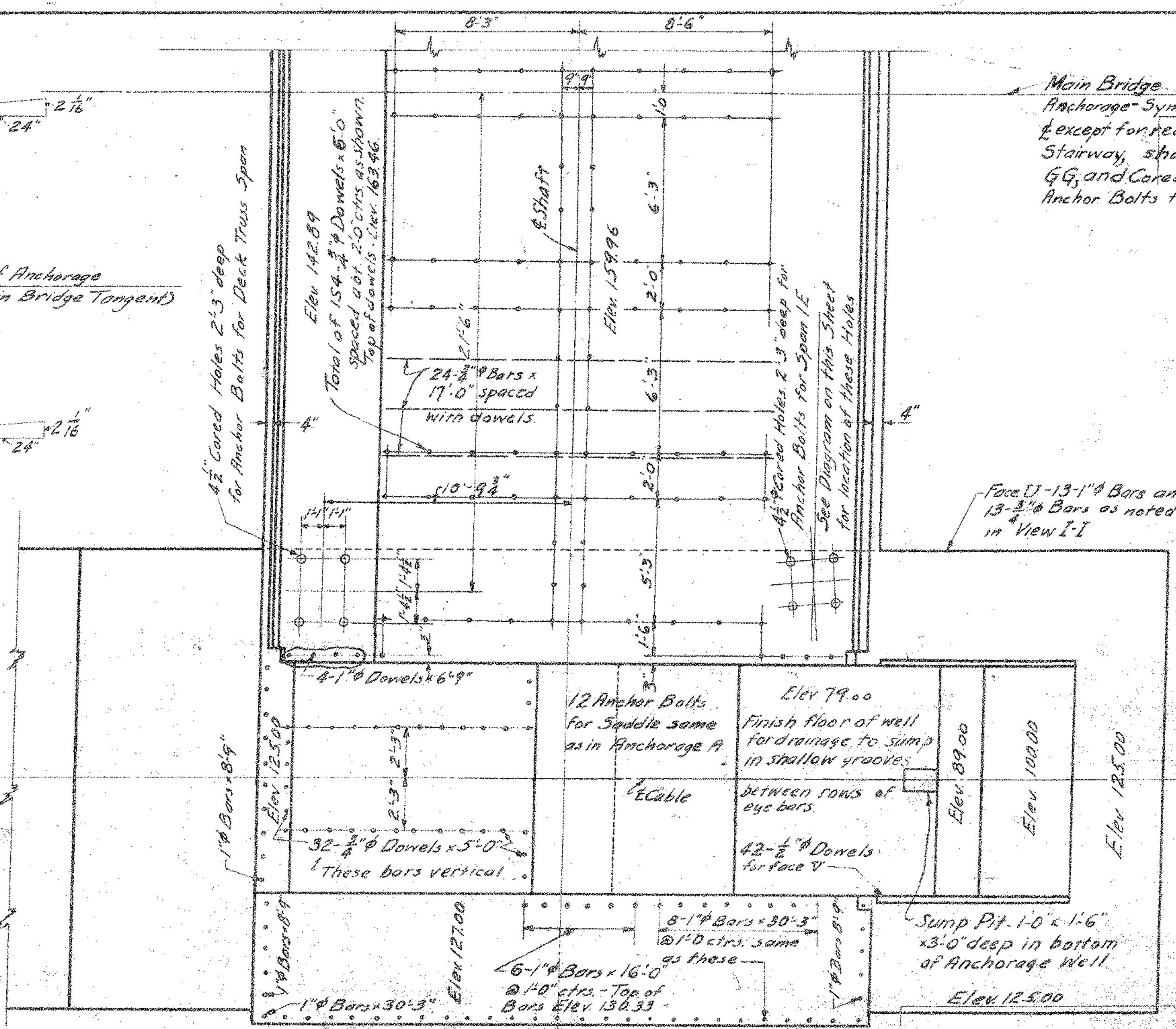
DIAGRAM SHOWING LOCATION OF CORED HOLES FOR ANCHOR BOLTS FOR SPAN 1E
Not to Scale



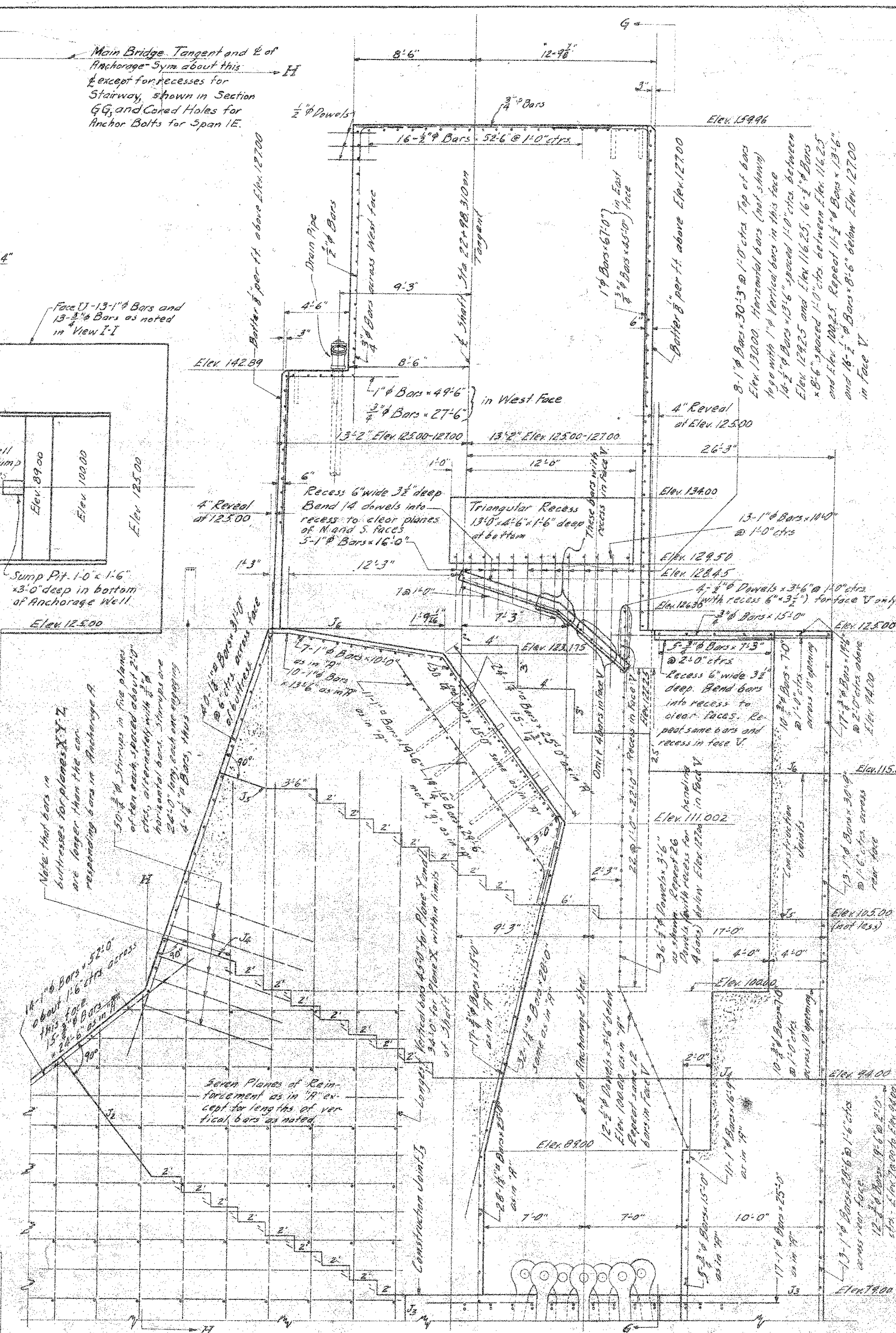
DETAIL OF DRAIN PIPE



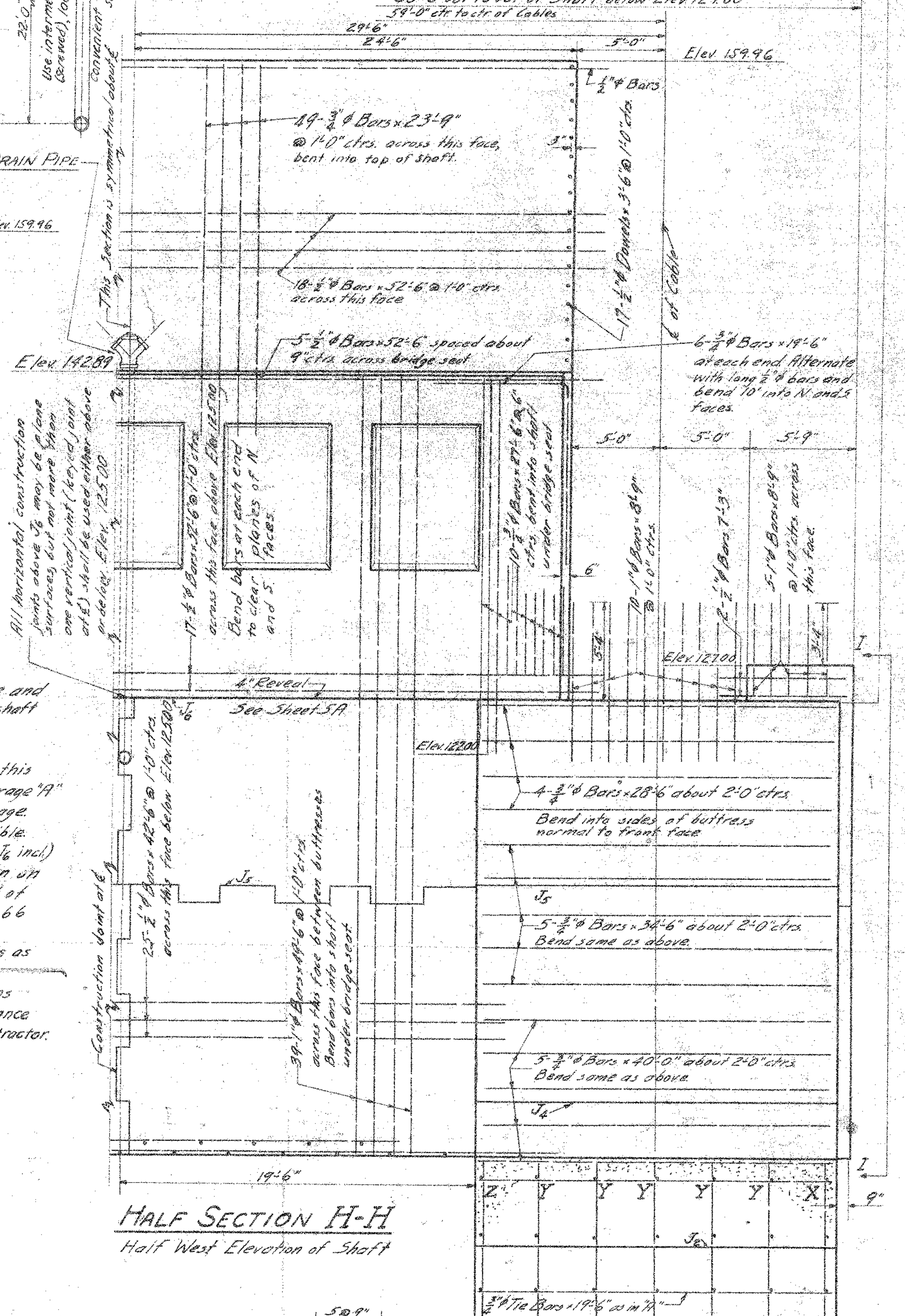
DETAIL OF CONDUITS
Section aa
Conduits are 1¼"ϕ Galvanized Rigid Electrical Conduits with galvanized fittings as noted. Two required.



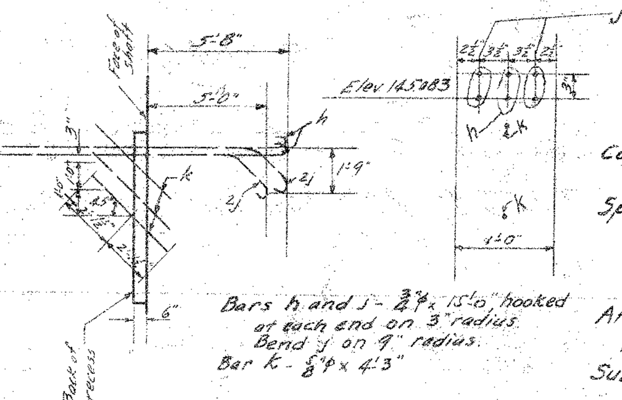
HALF-PLAN ABOVE ELEVATION 100



SECTION THRU ℄ OF SOUTH CABLE LOOKING TOWARDS ℄ OF BRIDGE
Details of Anchorage F below Elevation 100 including construction joints and reinforcement are identical with those for Anchorage "A" (Sheet 20) except as noted above and in Sections GG, HH, & II.



HALF SECTION H-H
Half West Elevation of Shaft



DETAIL OF BARS h, j, k, for STAIRWAY BRACKETS

GENERAL NOTES:

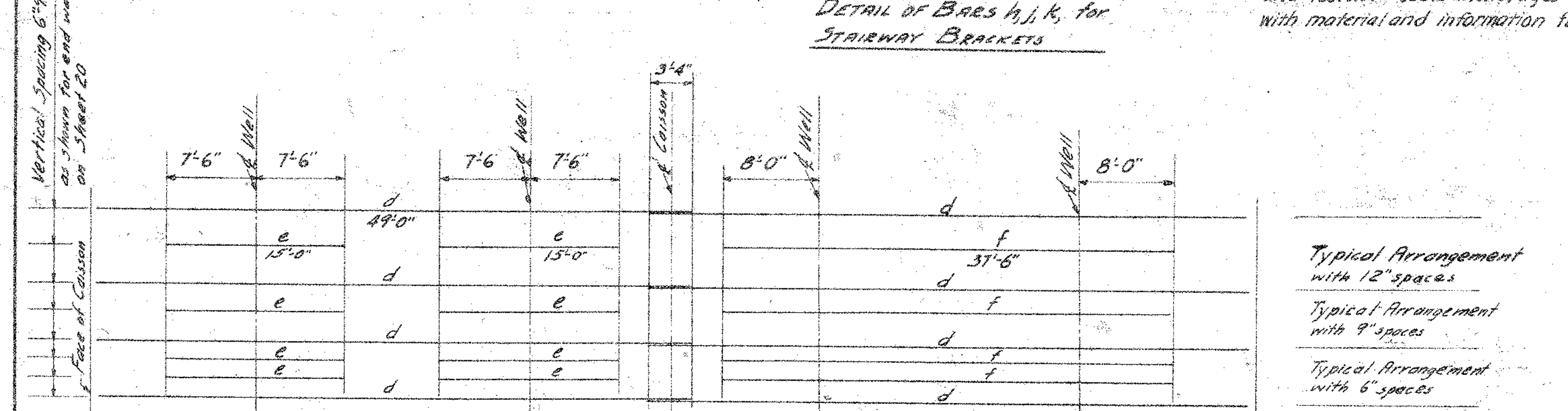
Refer to other sheets as follows:
- Sheet 5A - General drawing of this Anchorage and details of bevelled edges and panels in shaft except outline of panels in East Face.
- Sheet 19 - Details for placing all anchorage steel.
- Sheet 20 - Parts of this Anchorage not shown on this sheet which are identical with Anchorage "A".
- Sheet 23 - Details - Second Section of this Anchorage.

Construction Joints shall conform as nearly as possible to those shown on this sheet and on Sheet 20 (J_1-J_6 incl.)

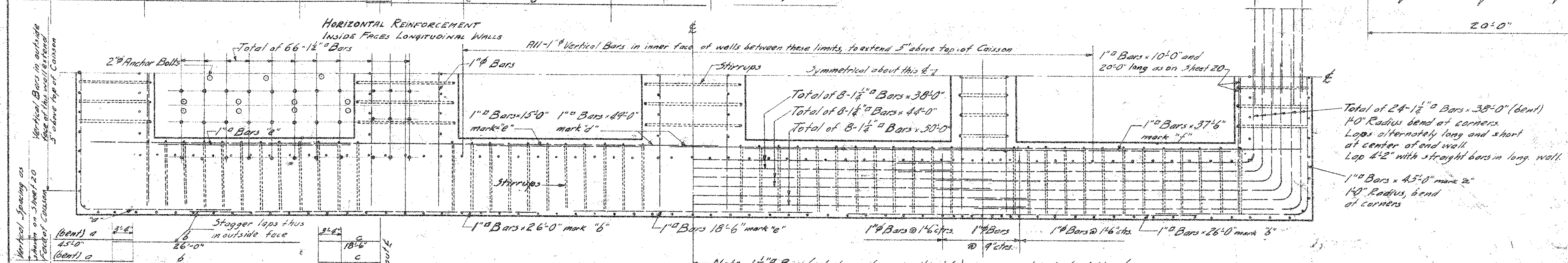
Splices in reinforcing bars other than those shown on this sheet shall be used only with the approval of the engineers. All bars are deformed bars, except 66 1½"□ Bars called for on Sheet 20.

After concrete has hardened, bend in place bars as noted, to clear ~~cable spinning operations~~

Substructure Contractor shall place cable spinning beams and footwalk cable anchorages (erection steel) in accordance with material and information furnished by Superstr. Contractor.

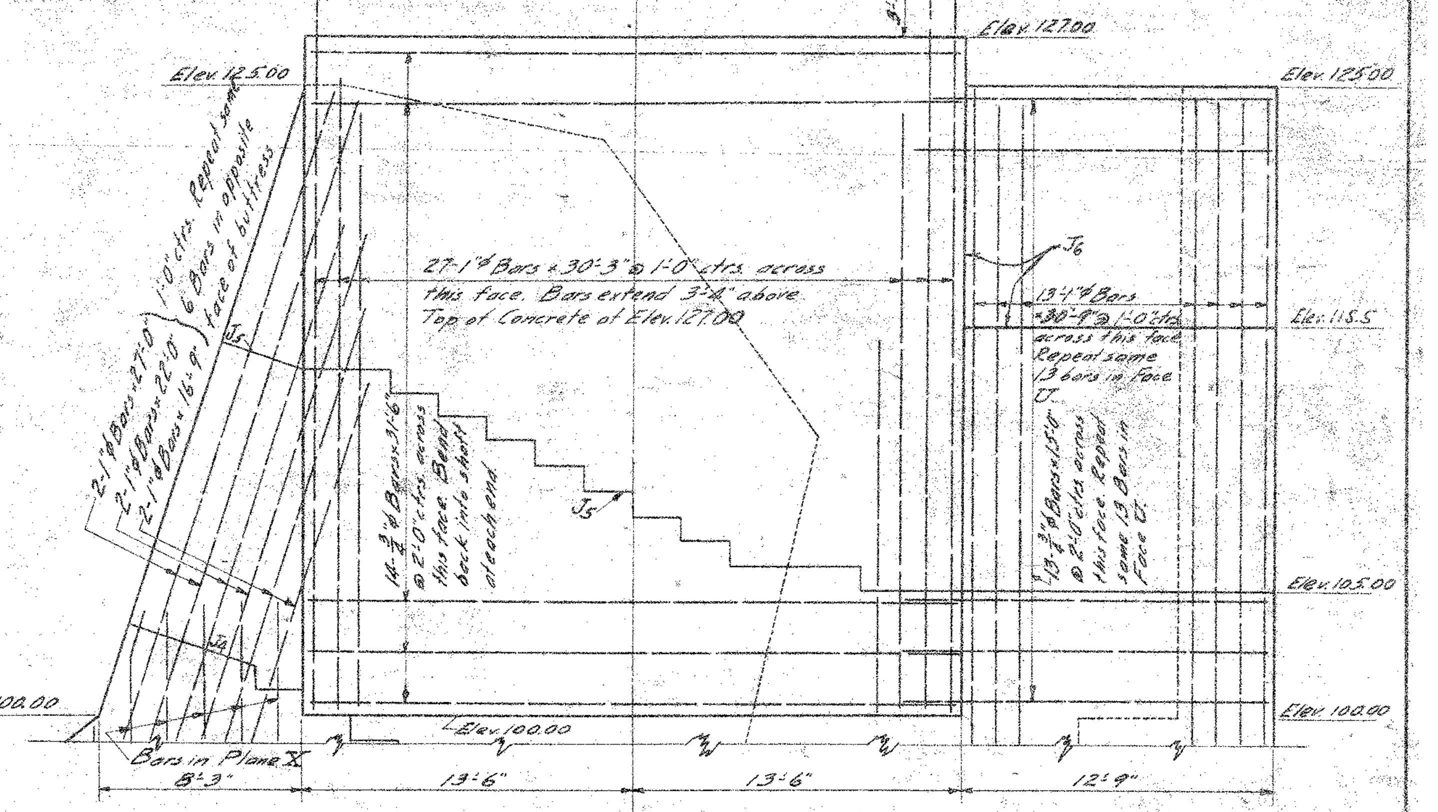


HORIZONTAL REINFORCEMENT
INSIDE FACES LONGITUDINAL WALLS



HORIZONTAL REINFORCEMENT
OUTSIDE FACES OF LONGITUDINAL WALLS

HALF SECTION OF CAISSON AT ELEVATION 53 (SECTION F-F SHEET 20)



VIEW I-I

CITY OF TOLEDO OHIO
BRIDGE OVER MAUMEE RIVER
DETAILS-ANCHORAGE F
SUBSTRUCTURE CONTRACT

WADDELL AND HARDESTY-CONSULTING ENGINEERS
NEW YORK CITY — NOVEMBER 26, 1929

REVISED Nov. 30, 1929.
Dec. 14, 1929.
Mar. 26, 1930.
June 4, 1930.
July 16, 1930.

Scale: $\frac{3}{16}$" = 1'-0"

SHEET 21

A-2-21

ENLARGED SECTION L-L SHOWING POSITION OF TRUSSES AND GIRDERS

Scale $\frac{3}{8}$" = 1'0"

SECTION R-R

SECTION V-V

SECTION W-W

HALF PLAN

HALF SECTION Q-Q

SECTION U-U

SECTION P-P

SECTION O-O

SECTION N-N

SECTION M-M

SOUTH ELEVATION

Note: North Elevation is similar

HALF EAST ELEVATION

HALF WEST ELEVATION

SECTION JJ - AT ℄ OF SOUTH CABLE LOOKING TOWARD ℄ OF BRIDGE

ENLARGED SECTION K-K

Scale $\frac{3}{8}$" = 1'0" (Elev. 102.5)

ENLARGED SECTION S-S

Scale $\frac{3}{8}$" = 1'0" (Elev. 106.00)

ENLARGED SECTION T-T

Scale $\frac{3}{8}$" = 1'0"

GENERAL NOTES:

Refer to other Sheets as follows:
Sheet 4A: General Drawing of this anchorage, details of panels and beveled edges, details of parapet rail.
Sheet 20: Details-First Section of this anchorage.
Sheet 25: Miscellaneous Details of work to be done by superstructure contractor, not included on this sheet.
Sheet 31: Roadway Expansion Details.

All reinforcing bars are deformed bars. Splices in reinforcing bars other than those shown on this sheet shall be used only with the approval of the Engineers.
Dowels bent by Substructure Contractor to clear Cable Spinning Operations (See Sheet 20), shall be straightened by the Superstructure Contractor.
Concrete between Elev. 121.90 and not less than Elev. 138.00 shall be placed in one continuous pour for each (N. and S.) side.

Revised - April 12, 1930
June 4, 1930.

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

DETAILS - ANCHORAGE - A

SUPERSTRUCTURE CONTRACT

WADDELL AND HARDESTY - CONSULTING ENGINEERS
NEW YORK CITY
FEBRUARY 26, 1930

Scale $\frac{3}{16}$" = 1'0", unless noted.

SHEET 22

HALF SECTION QQ

HALF WEST ELEVATION

SECTION V-V

SECTION U-U

SECTION W-W

PLAN

WEST FACE.

EAST FACE.

SECTION X-Y

SECTION Z-Z

REINFORCEMENT FOR CURB AROUND STAIRWELL

SECTION K-K

SECTION J-J THRU ℄ OF 100TH CABLE LOOKING NORTH.

Note: Sections J-J, K-K, Q-Q, S-S, T-T & X-X are drawn for the south half of the anchorage. Similar views of the north half are identical except for steps near El 128. in place of recess B.

SOUTH ELEVATION

NOTE - NORTH ELEVATION IS SIMILAR

SECTION R-R

SECTION S-S

SECTION T-T

SECTION N-N

SECTION M-M

SECTION X-X

EAST ELEVATION

Note - Below this elevation the reinforcement for the North side, including the Anchorage Walls shown in sections J-J, K-K, R-R, S-S, T-T & X-X, is identical with that for the south side except for the omission of Stairway steel in Recess A and addition of 4 #13, 28 #14, & 12 #15 as shown below in section M-M.

PLAN OF ENTRANCE NORTH ANCHORAGE WELL

Note: Entrance to South Anchorage Well is similar, except that steps are omitted. See Sh. 25 for details of Ladders and Platforms.

RECESS B

RECESS A

DETAIL OF BARS h, J & K FOR STAIRWAY BRACKETS

GENERAL NOTES

Refer to other sheets as follows:
- Sheet 5A - General Drawing of this Anchorage, details of panels and beveled edges, details of parapet rail.
- Sheet 21 - Details - first section of this anchorage.
- Sheet 22 - Details of Anchorage A which are identical with those of this Anchorage.
- Sheet 24 - Stairway for this Anchorage.
- Sheet 25 - Miscellaneous details of work to be done by Superstructure Contractor not included on this sheet.
- Sheet 31 - Roadway Expansion Details.

All reinforcing bars are deformed bars. Splices in reinforcing bars other than those shown on this sheet shall be used only with the approval of the Engineers. Bars marked with letter a-as ad-refer to identical bars used for Anchorage A (see Sh. 22.) Dowels bent by Substructure Contractor to clear cable spinning operations (see Sh 21) shall be straightened by the Superstructure Contractor. Concrete between El 121.90 and not less than El 134.00 shall be placed in one continuous pour for each (No. S) side.

Revised June 4, 1930.

CITY OF TOLEDO, OHIO

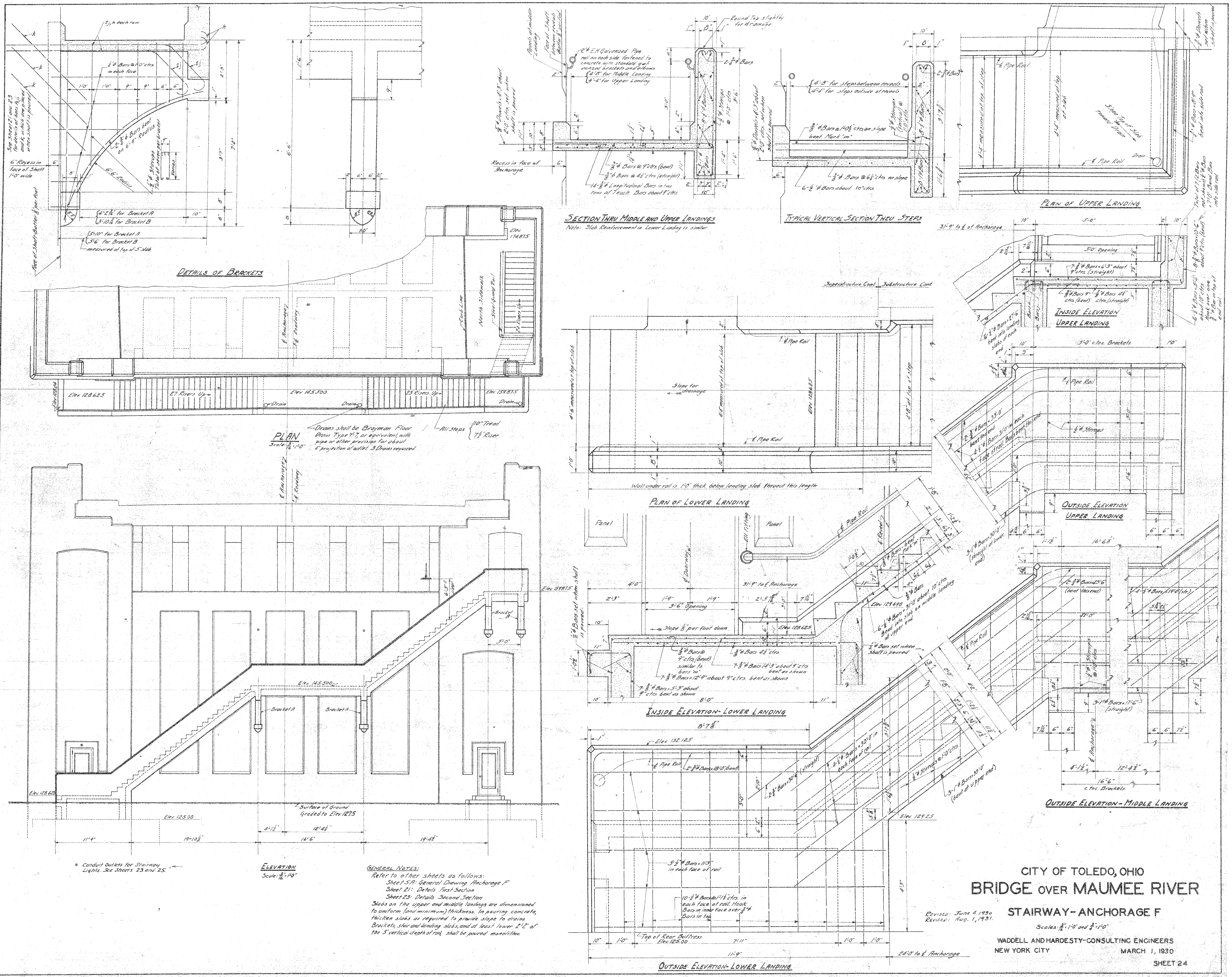
BRIDGE OVER MAUMEE RIVER

DETAILS - ANCHORAGE F

SUPERSTRUCTURE CONTRACT

WADDELL AND HARDESTY CONSULTING ENGINEERS
NEW YORK CITY
APRIL 10, 1930
Scale: 1/8" = 1'-0"

SHEET 23



General Notes:

Refer to other sheets as follows:

- Sheet 5A: General Drawing Anchorage F
- Sheet 21: Details First Section
- Sheet 23: Details Second Section

Slabs on the upper and middle landings are dimensioned to uniform (and minimum) thickness. In pouring concrete, thicken slabs as required to provide slope to drains. Brackets, stair and landing slabs, and at least lower 2'-2" of the 5" vertical depth of rail, shall be poured monolithic.

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

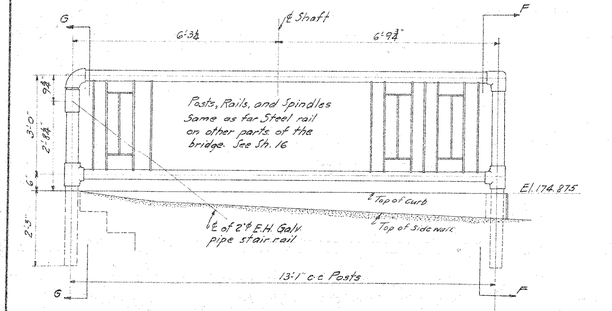
STAIRWAY - ANCHORAGE F

Revised: June 4, 1930
Revised: Aug. 1, 1931.

Scales: 3/16" = 1'-0" and ¾" = 1'-0"

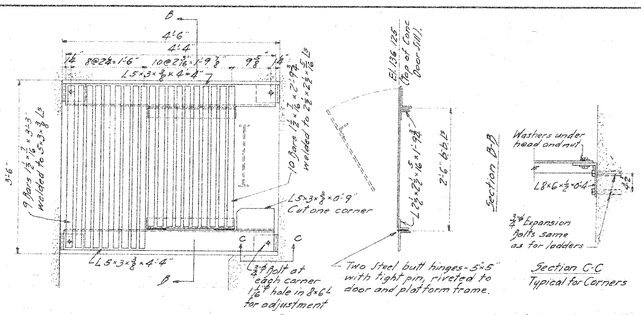
WADDELL AND HARDESTY - CONSULTING ENGINEERS
NEW YORK CITY — MARCH 1, 1930

SHEET 24

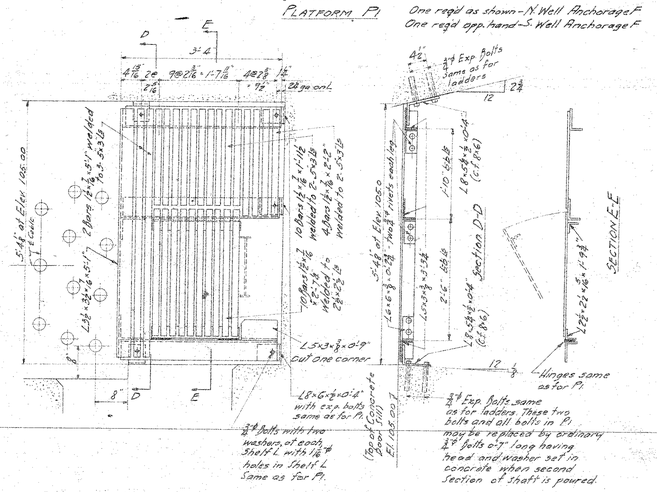


Note: Contractor may set sleeves for two posts (use) 4½" Standard pipe reamed to 4⅝ ins. diam.) and set rail after anchorage is completed, or set the assembled rail before pouring concrete. If used, sleeves and posts shall be welded at top of sleeve before grouting inside of post.

GUARD RAIL FOR STAIRWELL - ANCHORAGE F Scale ¾"=1'-0"

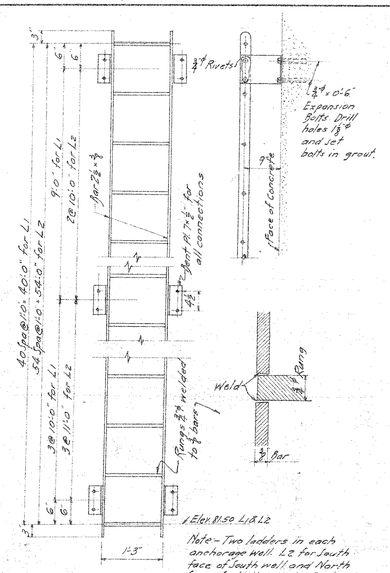


PLATFORM P1 One regd as shown - N. Wall Anchorage F
One regd opp. hand - S. Wall Anchorage F

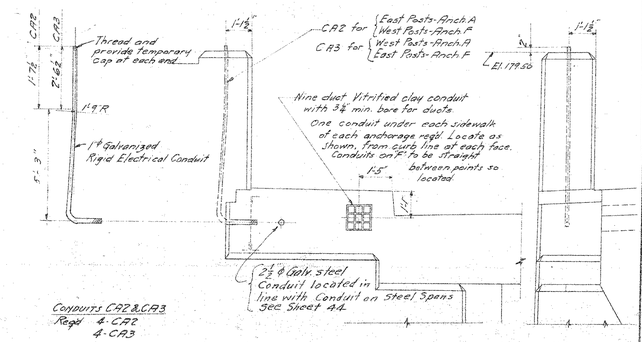


PLATFORM P2 - One regd as shown - S. Wall Anchorage F
One regd opp. hand - N. Wall Anchorage A

PLATFORMS P1 & P2 Scale ¾"=1'-0"

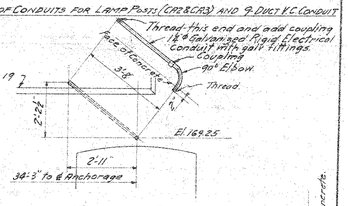


LADDERS L1 & L2 Scale ¾"=1'-0"
Required 6 L1
2 L2

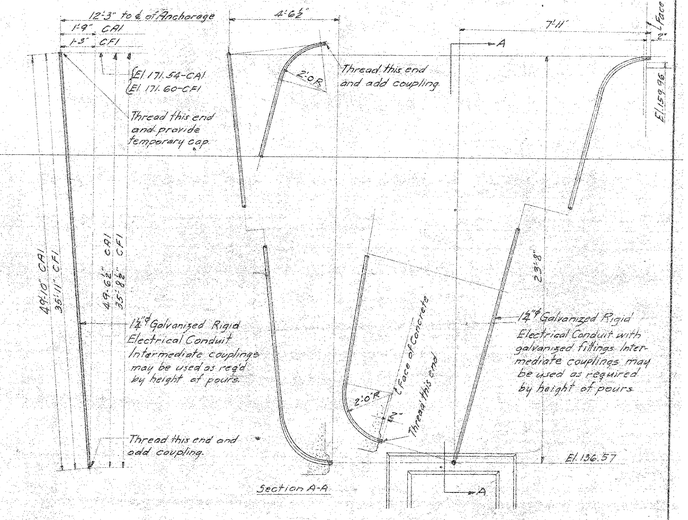


Conduits CA2 & CA3
Regd 4-CA2
4-CA3

LOCATION OF CONDUITS FOR LAMP POSTS (CA2 & CA3) AND 9-DUCT V.C. CONDUIT



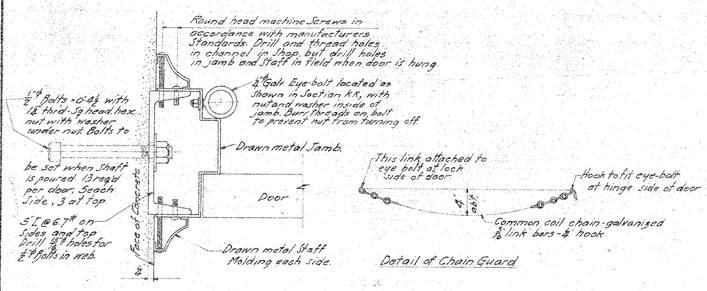
CONDUIT CF2
One Regd.



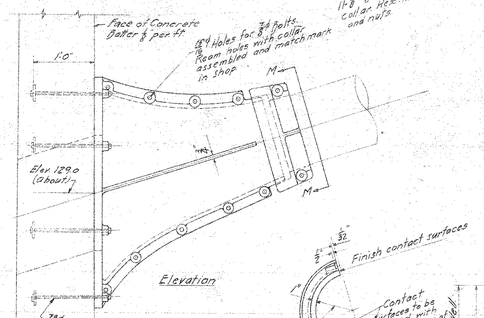
CONDUITS CA1 & CF1
2 Regd CA1 - in planes 29'-6" from longit. ℄ of Anchorage A
2 Regd CF1 - in planes 30'-3" from longit. ℄ of Anchorage F

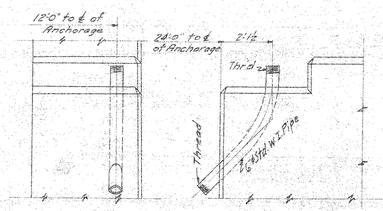
CONDUIT CF3
One Regd

CONDUITS Scale ¾"=1'-0"

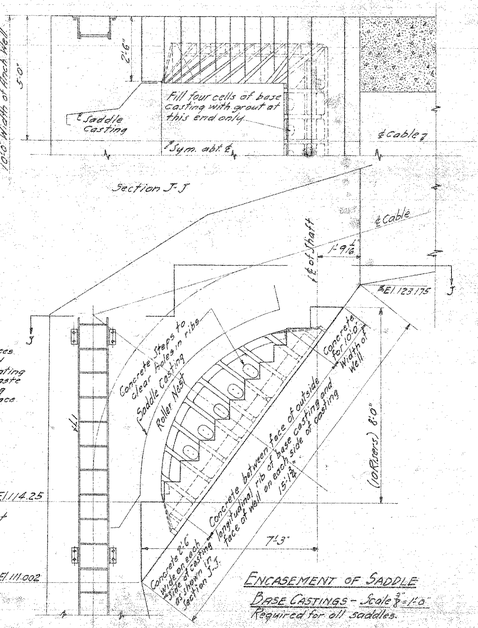


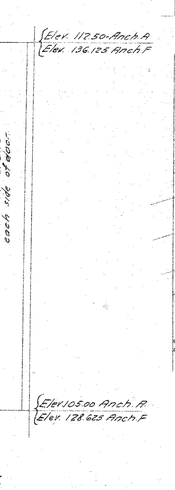
Section L-L Scale ¾"=1'
Typical Detail of Frame at top and sides





DRAIN PIPE Scale ¾"=1'-0"
Two Regd - West face of Anchorage F
Note: - See DR2 - Sheet 34 for details of drain at Anchorage F. At least the parts shown above must be in place before this part of the Anchorage Shaft is poured.





DOORS - Scale ¾"=1'-0"
Required, Two Right-Swing Doors for (North Well - Anchorage A (as shown) South " " F
Two Left Swing Doors for (South Well - Anchorage A (opp. hand) North " " F

CABLE COLLARS - Scale 1"=1'-0"
Required - Four complete collars. Cast iron.

ENCASEMENT OF SADDLE BASE CASTINGS - Scale ¾"=1'-0"
Required for all saddles.

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

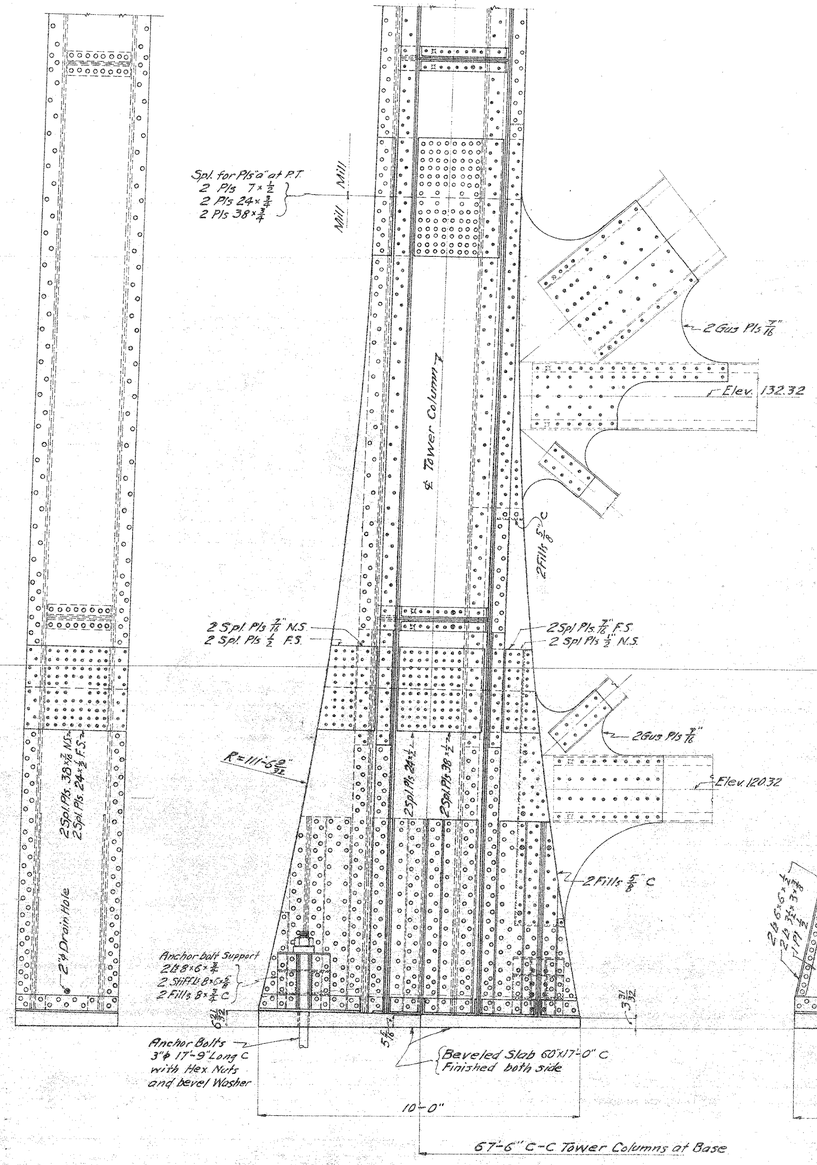
MISCELLANEOUS DETAILS - ANCHORAGES A & F

SUPERSTRUCTURE CONTRACT

WADDELL AND HARDESTY, CONSULTING ENGINEERS.
NEW YORK CITY. APRIL 25, 1930.

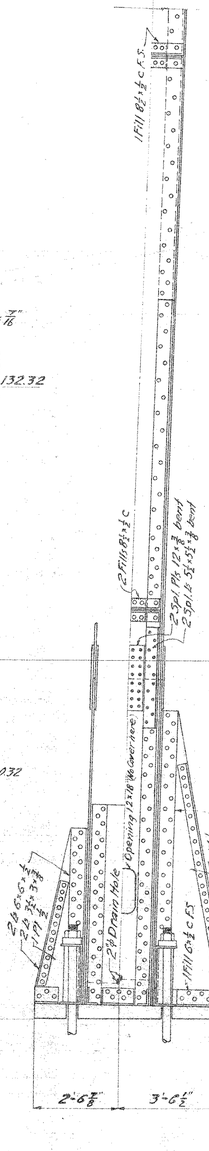
Revised Sept. 23 1930

SCALES - AS NOTED. SHEET 25

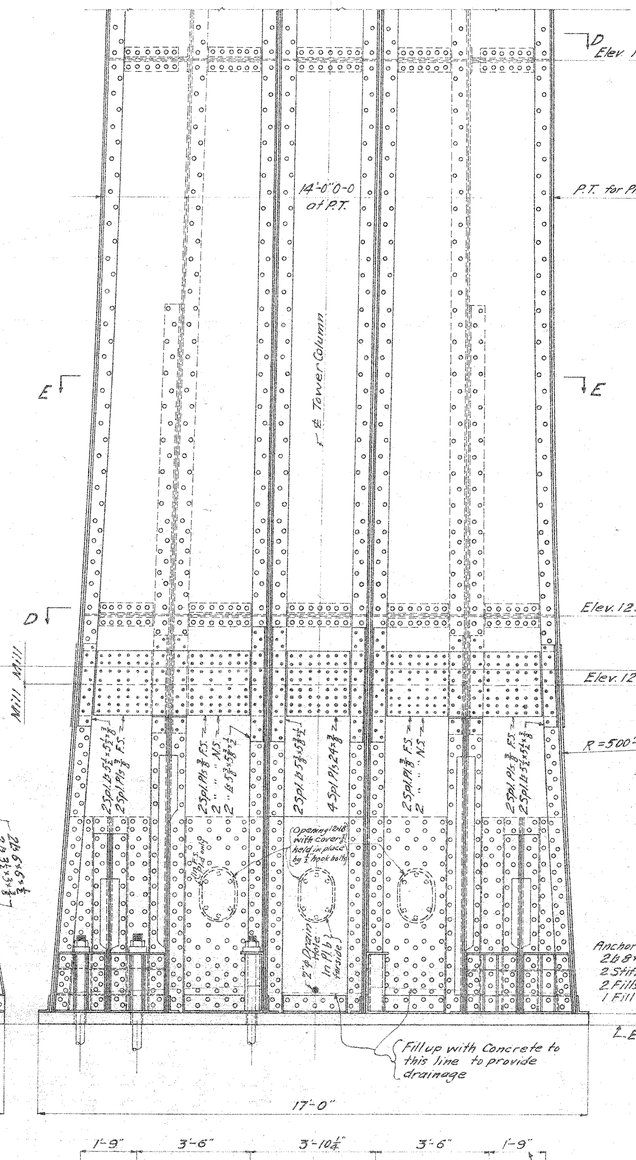


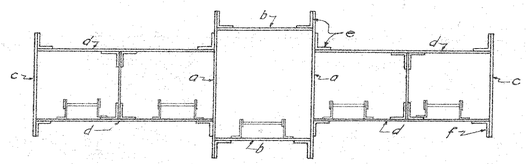
SECTION C-C

SECTION A-A



SECTION B-B

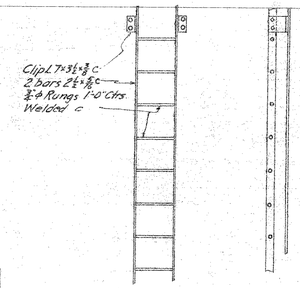




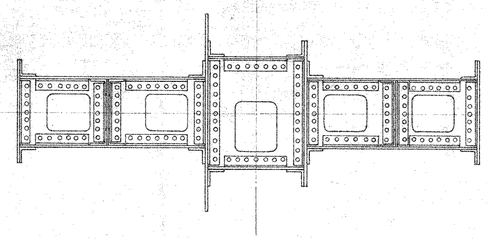
SECTION E-E

Main Material of Tower Column

a 2 Pls 7/8" 120" at base, 54" at P.T. and from P.T. to Top
b 2 Pls 36 × 3/4
c 2 Pls 38 × 7/8
d 4 Pls 3/4" 77" at base, 63 1/2 at P.T. Tapperd to 21 1/2 at Top
e 8 ∠s 6 × 6 × 5/8
f 4 ∠s 6 × 6 × 1/2

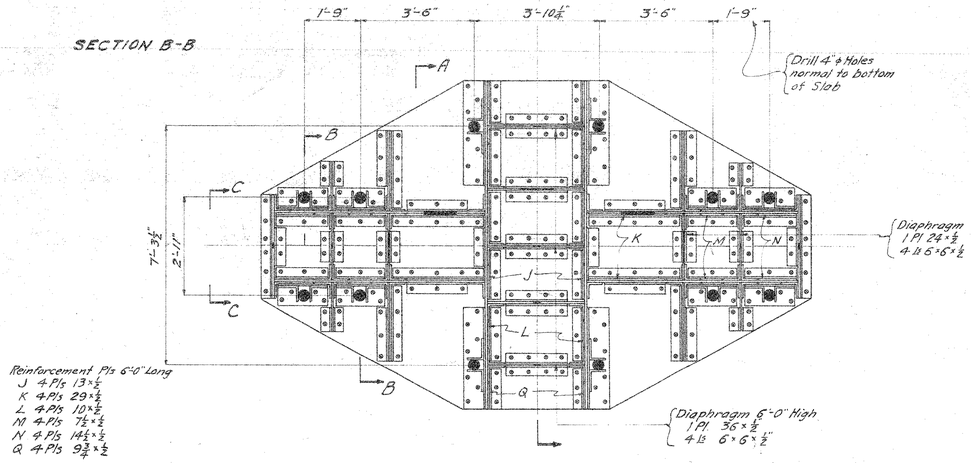


TYPICAL DETAIL OF LADDER



SECTION D-D

Material in all Horizontal Diaphragms
∠s 4 × 4 × 1/2 C
Pls 1/2



Reinforcement Pls 6'-0" Long
J 4 Pls 13 × 1/2
K 4 Pls 29 × 1/2
L 4 Pls 10 × 1/2
M 4 Pls 7 1/2 × 1/2
N 4 Pls 14 1/2 × 1/2
Q 4 Pls 9 3/4 × 1/2

BOTTOM PLAN

All bottom ∠s 6 × 4 × 7/16
except Anchor bolt Support

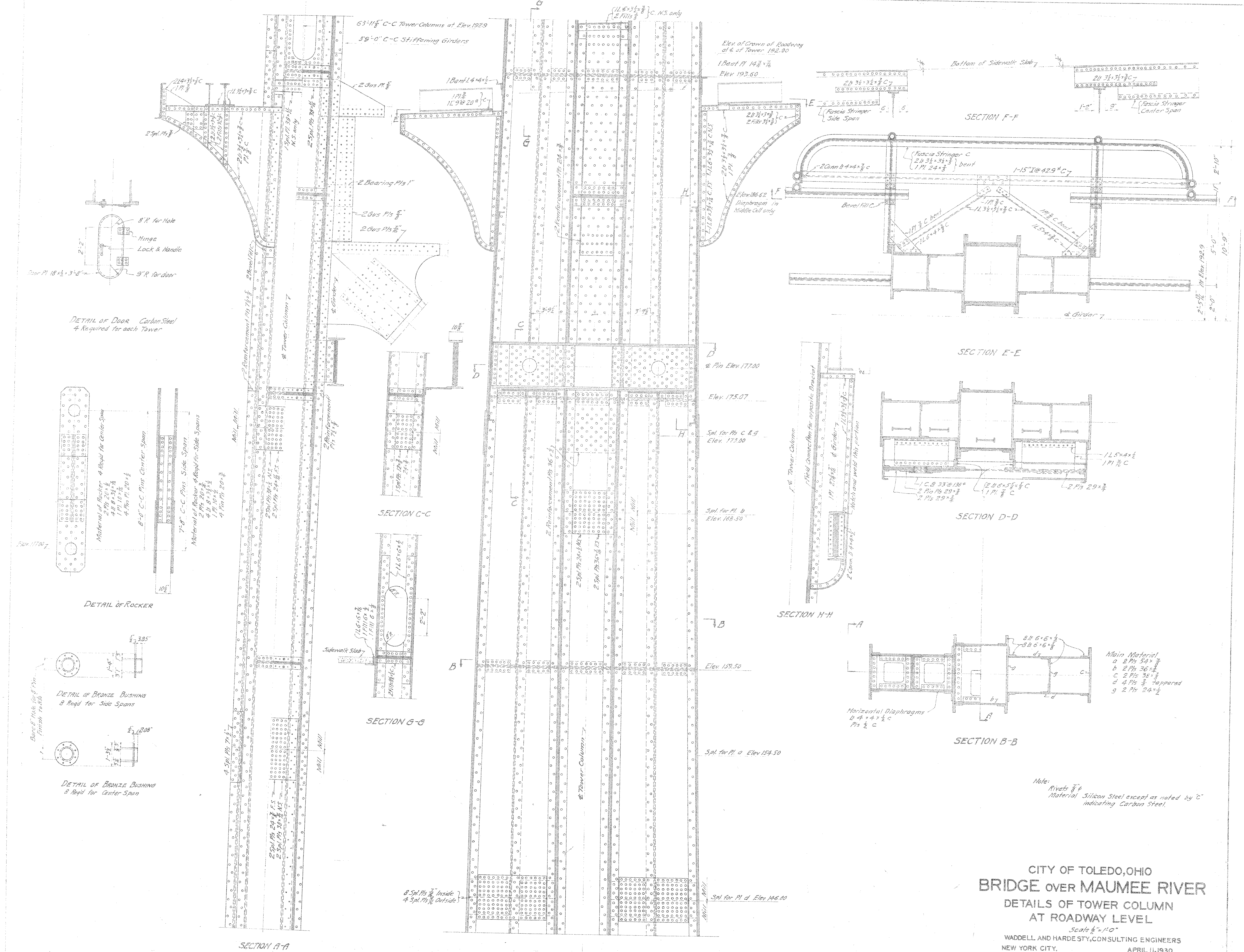
Note:
Rivets 7/8" ϕ
Material Silicon Steel except as noted by "C"
indicating Carbon Steel

CITY OF TOLEDO. OHIO.

BRIDGE over MAUMEE RIVER

DETAILS OF TOWER COLUMN BASE

WADDELL AND HARDESTY, CONSULTING ENGINEERS
NEW YORK CITY MARCH 27, 1930.
SCALE 1/2" = 1'-0" SHEET 26



CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

DETAILS OF TOWER COLUMN AT ROADWAY LEVEL

Scale 1/2" = 1'-0"

WADDELL AND HARDESTY, CONSULTING ENGINEERS

NEW YORK CITY. APRIL 11, 1930

SHEET 27

Beveled Cap Pl. Min. Thickness 2" Carbon Finish Top and Bottom

Elev. 304.65

E

1 Fill 26⅜ × ⅜ to be planed in field

Elev. 303.15

2 Gus. Pls. 7/16

Mill

E

Elev. 300.42

2 Fills 6 × ⅜

1 Fill 3 × ⅜ N.S. only

Manhole and Jack

16'-3⅛" × 5'-0"

Elev. 293.15

F

Elev. 292.78

F

External Reinforcement (Pls. beyond end of Cyl. Pls.

2 Fills 6 × ⅜ Carbon

Elev. 235.90

2 Gus. Pls. 7/16

⅜ Reinforcement Pl.

Elev. 223.90

2 Gus. Pls. 7/16

Longitudinal

Splice for Pl. "C" Elev. 244.48

Elev. 241.48

Splice for Pl. "B" Elev. 238.49

2 Spl. Pls. 24 × ⅜

2 Spl. Pls. 36 × 7/16

2 Stiffeners 4 × 4 × ⅜

Elev. 226.89

2 Reinforcement Pls. 24 × ⅜

2 Reinforcement Pls. 36 × ⅜

2 Stiffeners 4 × 4 × ⅜

Elev. 211.58

A

4 Splice Pls. ⅜

4 Splice Pls. ⅜

Elev. 208.58

Mill

Mill

2 Splice Pls. 5½ × ⅝

2 Splice Pls. 5½ × ⅝

2 Fills 5 × ⅝

2 Fills 5 × ⅝

A

Elev. 205.58

4 Fills 5½ Carbon

4 Splice Pls. 5½ × ⅝

4 Fills 5½ Carbon

4 Splice Pls. 5½ × ⅝

2 Fills 36 × ⅜

Splice for Pl. "C" (2 Spl. Pls. 24 × ⅜ (Inside) 2 Spl. Pls. 38 × 7/16 (Outside)

Splice Pl. for Pl. "D" (2 Splice Pls. 24 × ⅜ 2 Splice Pls. 38 × 7/16 4 Splice Pls. 6 × 7/16

Splice Material for Pl. "C" (2 Splice Pls. 24 × ⅜ (Inside) 2 Splice Pls. 38 × 7/16 (Outside)

Splice Material for Pl. "D"

2 Splice Pls. 24 × ⅜

2 Splice Pls. 38 × 7/16

4 Splice Pls. 6 × 7/16

12 Splice Pls. ⅜

12 ⊔ 5½ × 5½ × ½

Mill

Mill

C

C

Elev. 262.68

Elev. 259.48

Elev. 256.48

Elev. 218.18

Section B-B

Section D-D

Section E-E

Drill Holes for 1⅛ ϕ Bolt

3'-10"

1'-1⅛"

1'-1⅛"

1'-5"

3'-2"

2'-10½"

4'-6"

2 6 × 4½ bent

2 8 × 6 × ⅜

Reinforcement Material of Top Section	
m, 4 Pls.	24 × ⅜
n, 2 Pls.	27 × ⅜
o, 2 Pls.	16½ × ⅜
p, 8 Pls.	10½ × ⅜
4 ∠s	6 × 6 × ⅜
8 ∠s	6 × 4 × ⅜

Diaphragm in Side Cell
4 ∠s 8 × 7⅞ × ⅞ C.f. 8 × 8 × ⅞
2 Pls. 27½ × 1/16 Tapered

Diaphragm in Middle Cell
4 ∠s 8 × 7½ × ⅞
2 Pls. 34½ × ⅞

D

D

Section C-C

Main Material	
12 ∠s	6 × 6 × ⅝
a, 2 Pls.	36 × ⅜
b, 2 Pls.	36 × ⅜
c, 2 Pls.	38 × ⅜
d, 4 Pls.	⅜ Tapered

B

Reinforcement Pl. ½

Reinforcement Pl. ⅜

B 6 × 6 × ⅝

D 6 × 6 × ½

B

b 6 × 6 × ¾

Section A-A

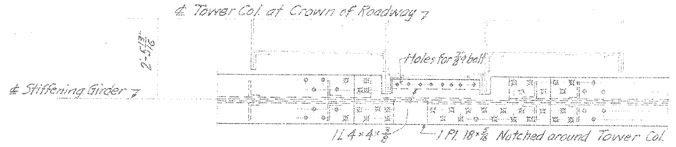
Section F-F

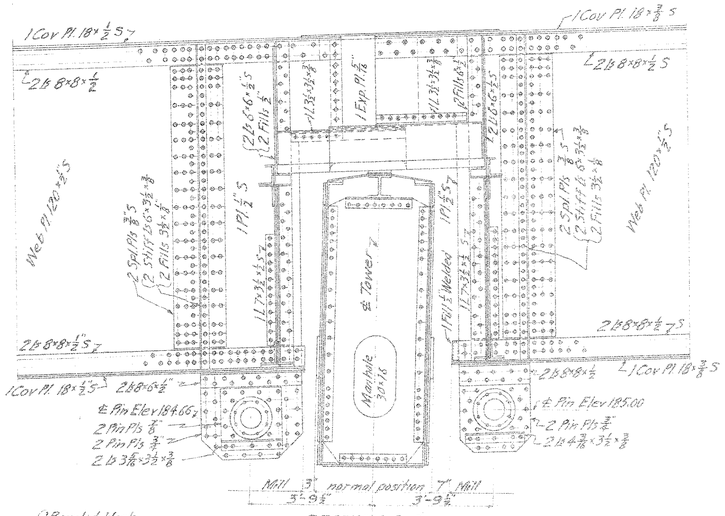
Notes:
Rivets: ⅞" ϕ
Material: Silicon steel, except as noted

CITY OF TOLEDO, OHIO
BRIDGE over MAUMEE RIVER
DETAILS OF TOWER COLUMN TOP

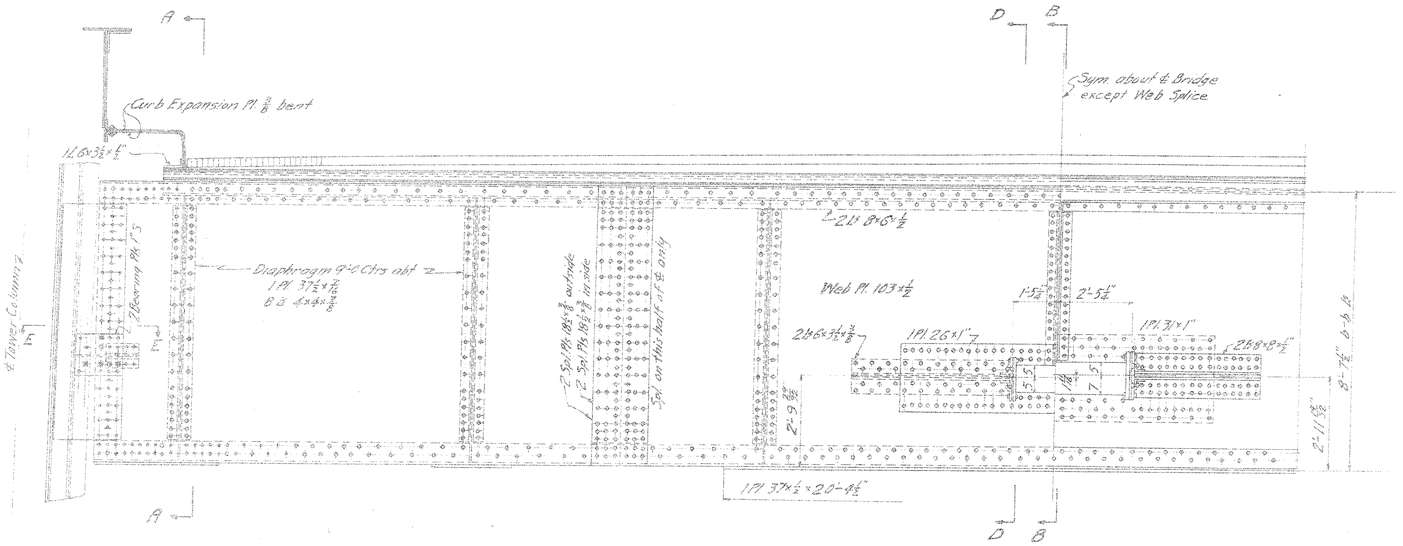
WADDELL AND HARDESTY CONSULTING ENGINEERS
NEW YORK CITY — MAY 12, 1930

SHEET 28

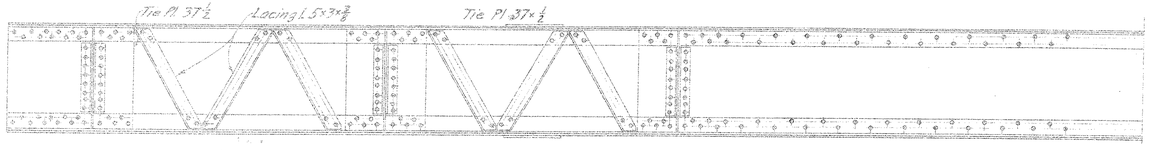




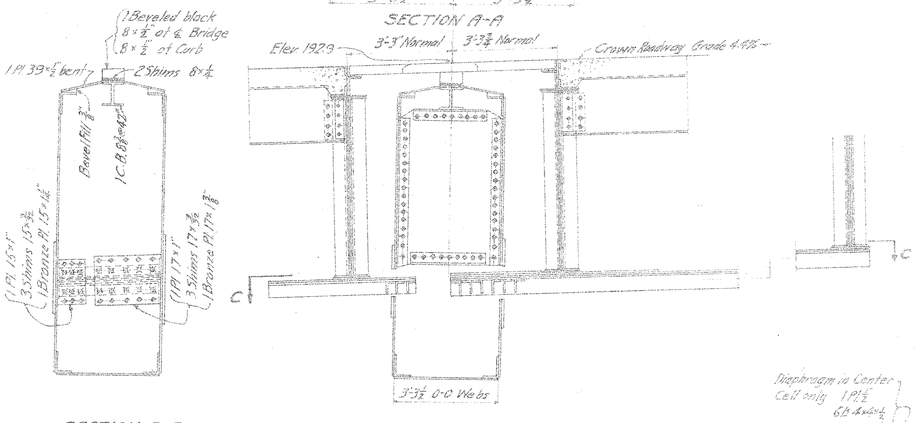
SECTION A-A



TRANSVERSE STRUT

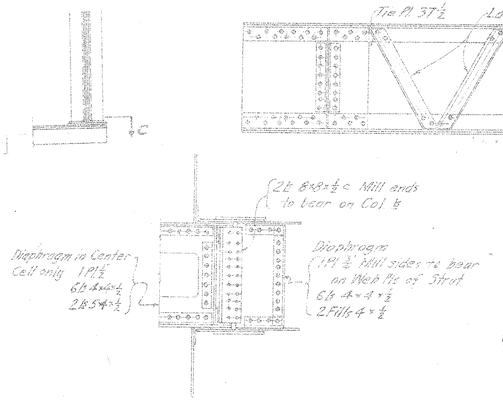


BOTTOM PLAN

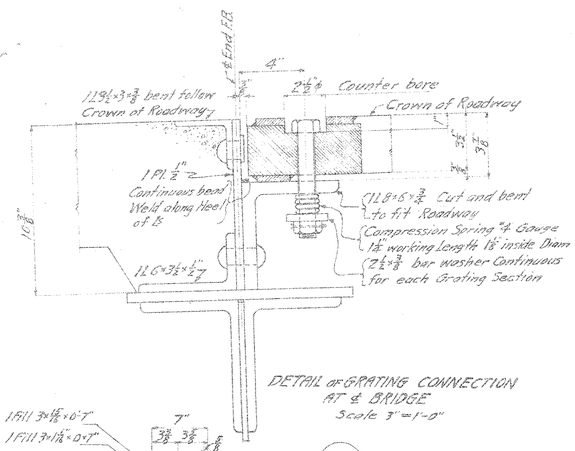


SECTION D-D

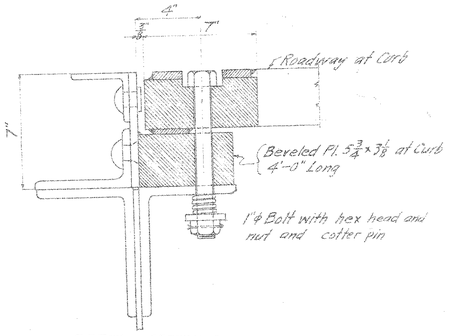
SECTION B-B



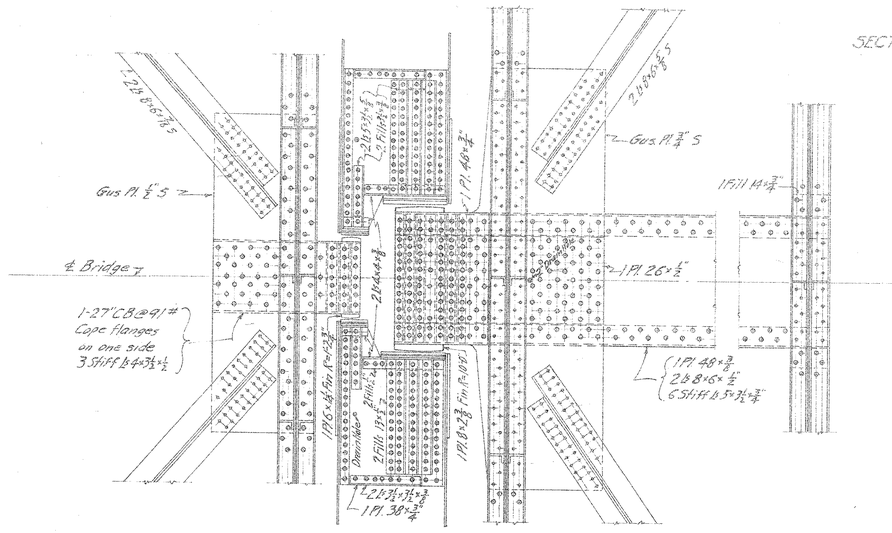
SECTION E-E



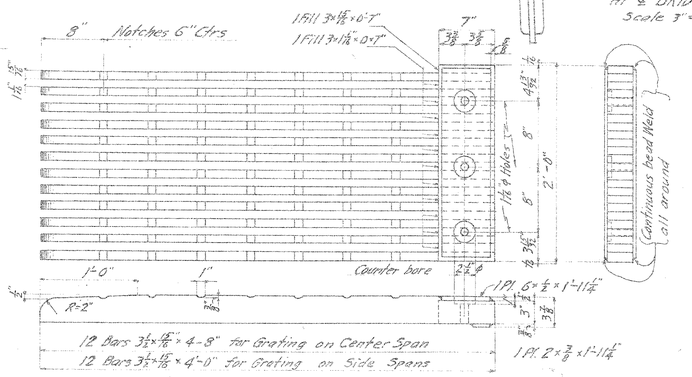
DETAIL of GRATING CONNECTION AT ℄ BRIDGE
Scale 3" = 1'-0"



DETAIL of GRATING CONNECTION AT CURB



SECTION C-C



DETAILS of GRATING SECTIONS
Scale 1 1/2" = 1'-0"

Note:
Rivets 7/8" ϕ
Material carbon steel except where marked by S indicating silicon steel

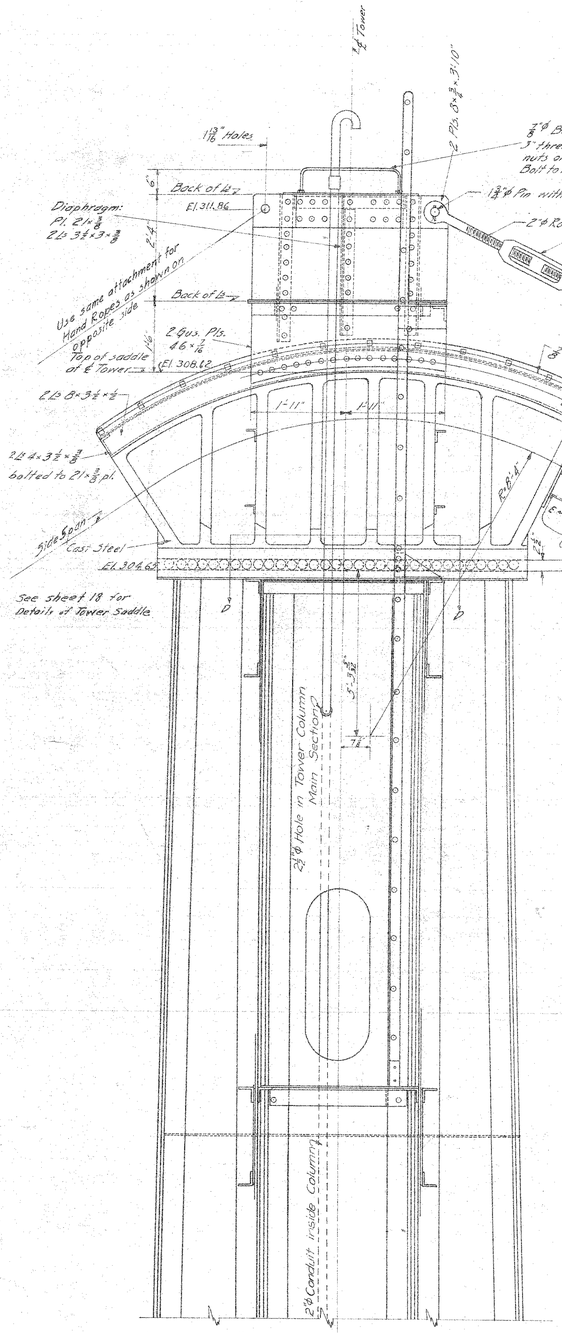
CITY OF TOLEDO OHIO

BRIDGE OVER MAUMEE RIVER

EXPANSION DETAILS AT TOWER

Scale 1" = 1'-0"

WADDELL AND HARDESTY CONSULTING ENGINEERS
NEW YORK CITY JUNE 17 1930



All material called for on this sheet is carbon steel, except hand rope connection as noted
Rivets and Bolts: ⅞" ϕ except as noted

CITY OF TOLEDO OHIO

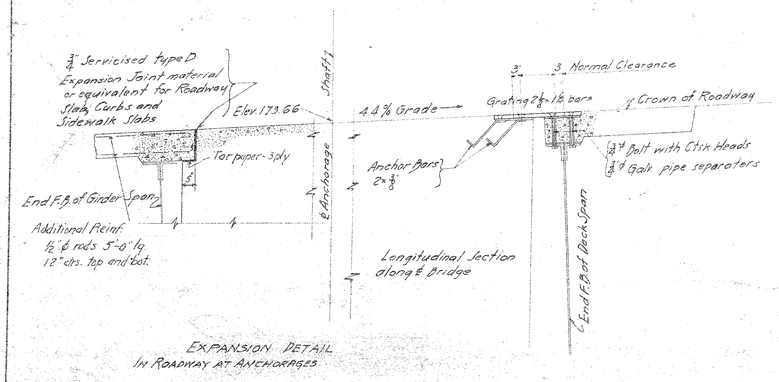
BRIDGE OVER MAUMEE RIVER

HANDRAILING AND AIRPLANE LIGHTS AT TOP OF MAIN TOWER

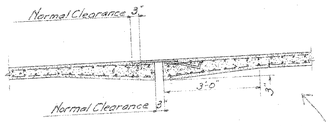
WADDELL AND HARDESTY CONSULTING ENGINEERS

NEW YORK CITY — APRIL 26 1930

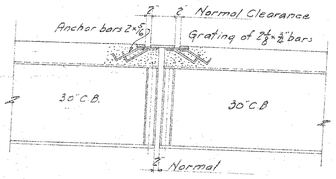
Scale: ½"=1'-0" — SHEET 30



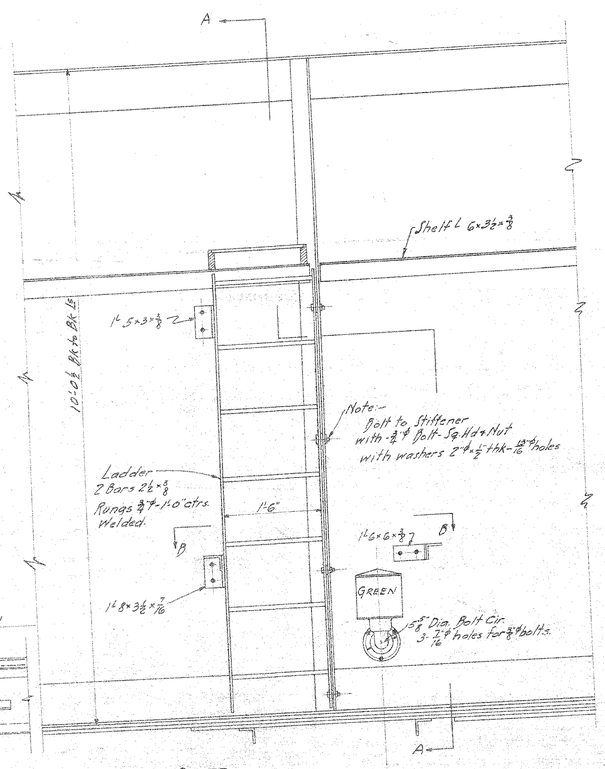
EXPANSION DETAIL IN ROADWAY AT ANCHORAGES



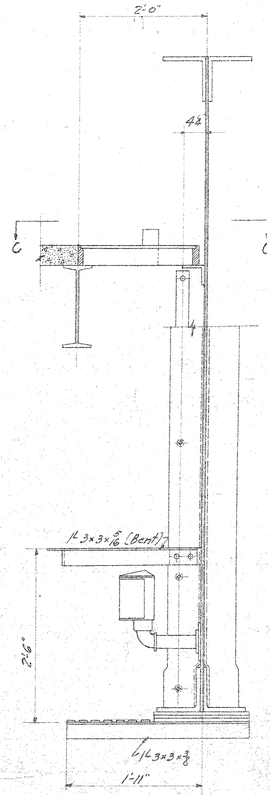
LONGITUDINAL SECTION - TYPICAL SIDEWALK EXPANSION JOINT ON APPROACH



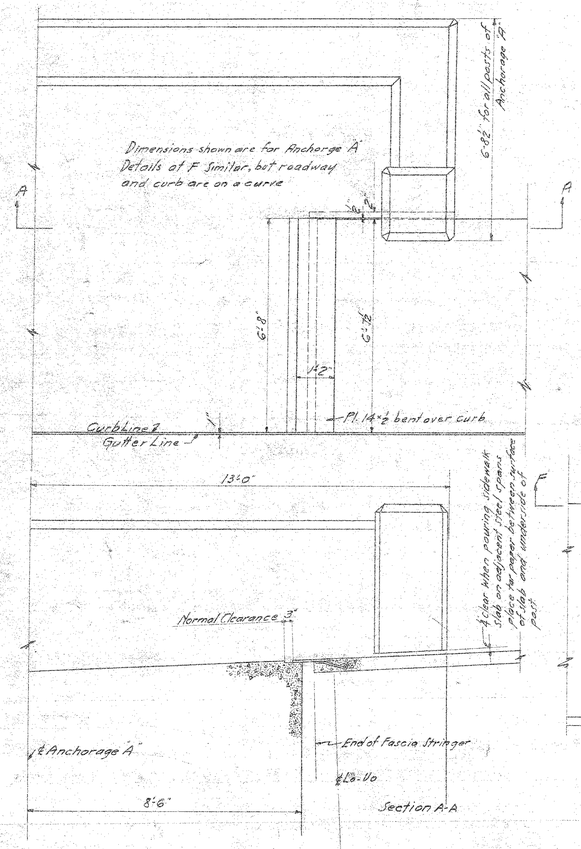
LONGITUDINAL SECTION thru ℄ 40' Stringer Span.



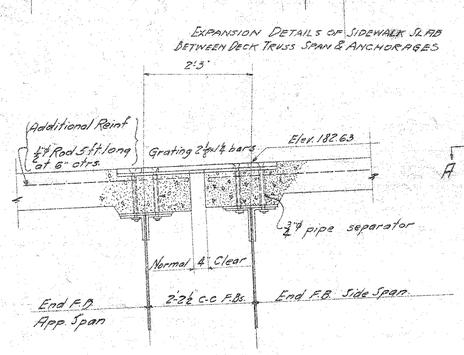
STIFFENING GIRDER



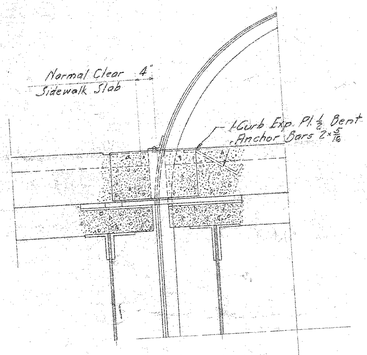
SECTION A-A



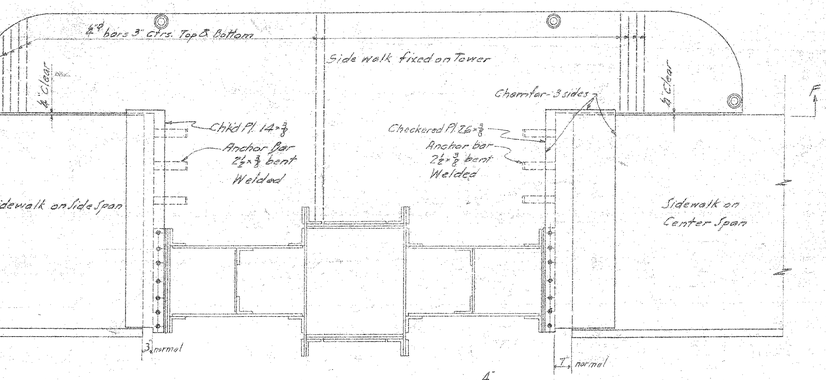
EXPANSION DETAILS OF SIDEWALK SLAB BETWEEN DECK TRUSS SPAN & ANCHORAGES



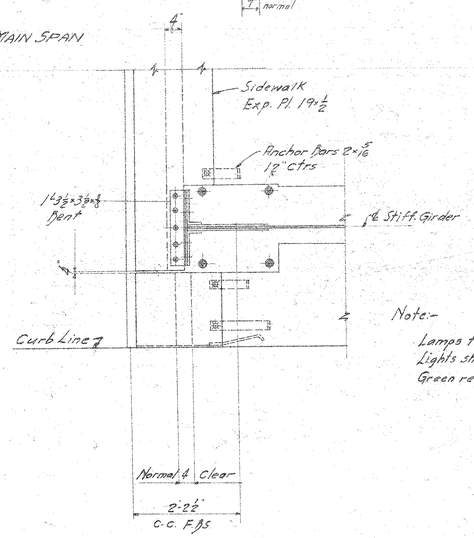
EXPANSION DETAIL AT ℄ ROADWAY



EXPANSION DETAIL AT CURB

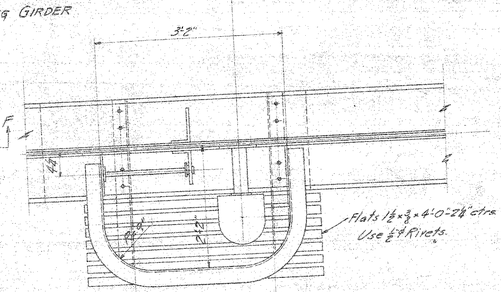


DETAIL OF SIDEWALK SLAB AROUND TOWER - MAIN SPAN

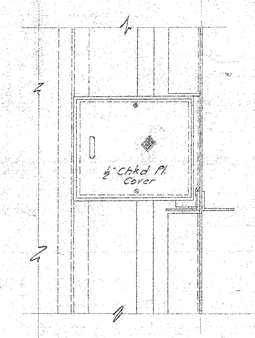


SECTION A-A

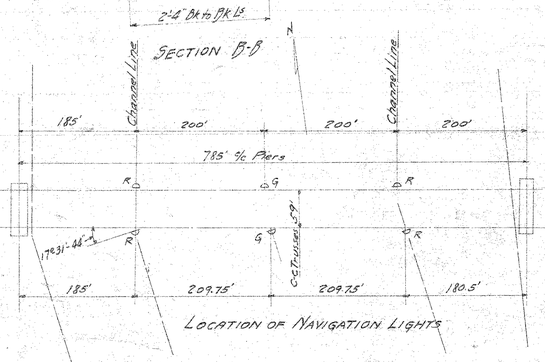
EXPANSION DETAIL BETWEEN DECK TRUSS SPAN & SIDE SPAN



SECTION B-B



SECTION C-C



LOCATION OF NAVIGATION LIGHTS

NAVIGATION LIGHTS

SCALE 1" = 1'-0"

Note:-
Lamps to be furnished by electrical contractor.
Lights shown are Norwood-Noonan Fig. 1A Bridge Lamps.
Green required at center and red at channel lines. Total = 6

Revised June 4, 1930
July 21, 1931.

CITY OF TOLEDO OHIO

BRIDGE over MAUMEE RIVER

NAVIGATION LIGHTS

EXPANSION JOINTS IN CONCRETE DECK

Scale ¼" = 1'-0 UNLESS NOTED

WADDELL AND HARDESTY CONSULTING ENGINEERS

NEW YORK CITY APRIL 16, 1930

SHEET 31

℄ CROWN OF ROADWAY GRADE 4.40%

℄ Pier 1W

152'-6 3/4" c-c Bearings

152-6 3/4" c-c Bearings

Top Flange Splice Points

Cover Plate Splice Points (Top & Bott. Flgs.)

Web Splice Points

SPLICE DIAGRAM

CITY OF TOLEDO, OHIO

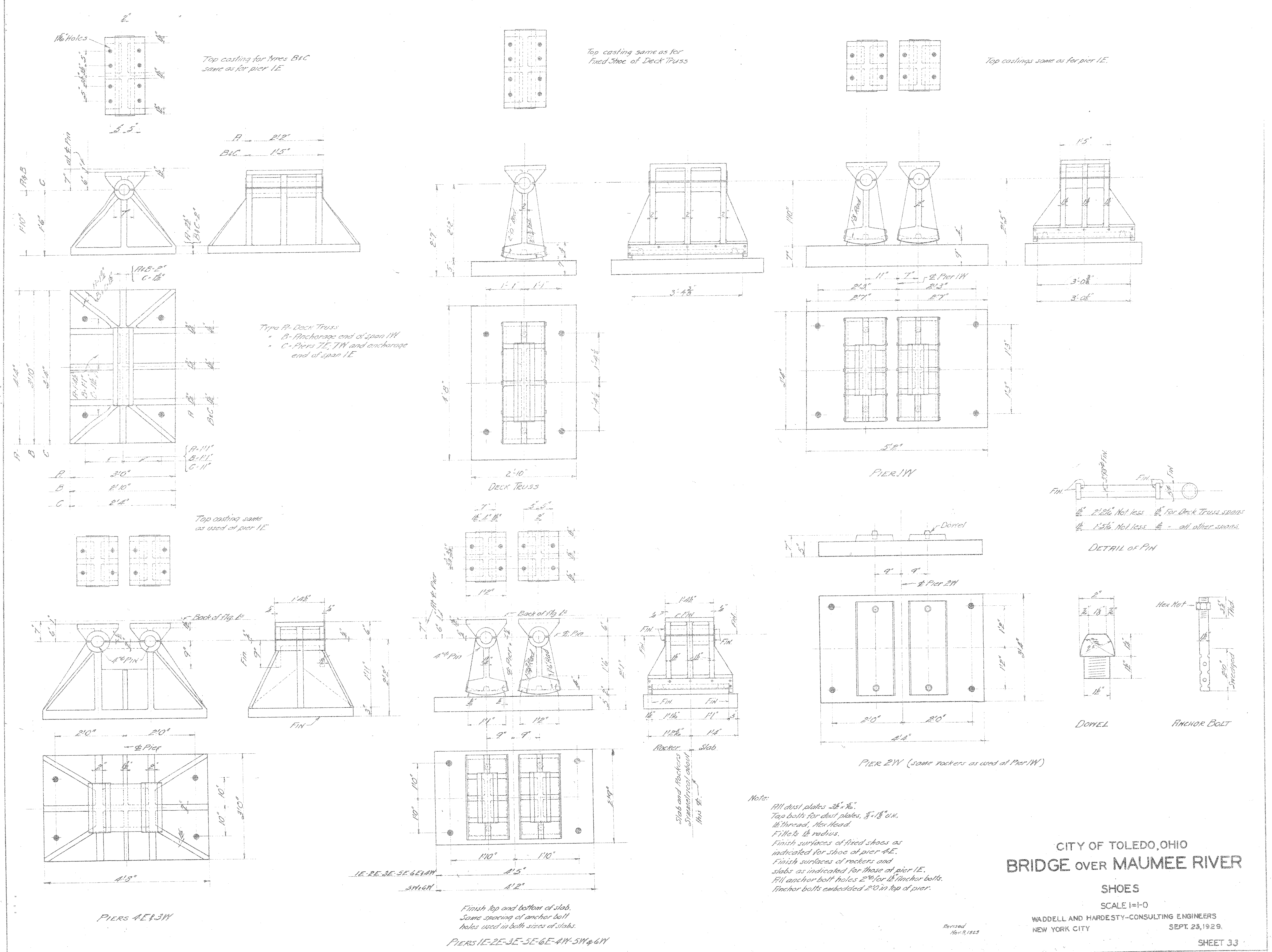
BRIDGE OVER MAUMEE RIVER

153 FOOT GIRDER SPAN

Scale 1/2" = 1'-0"

WADDELL AND HARDESTY, CONSULTING ENGINEERS
NEW YORK CITY. APRIL 11, 1930

SHEET 32



CITY OF TOLEDO, OHIO

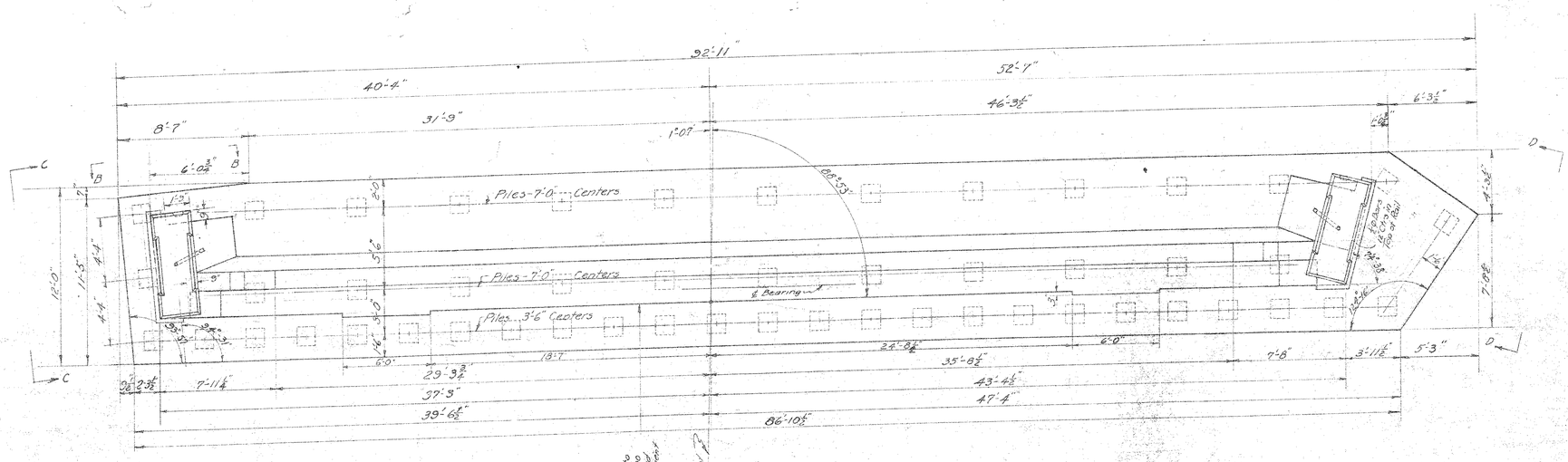
BRIDGE OVER MAUMEE RIVER

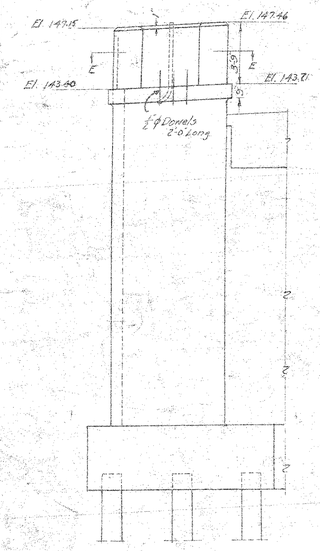
SHOES

SCALE 1=1-0

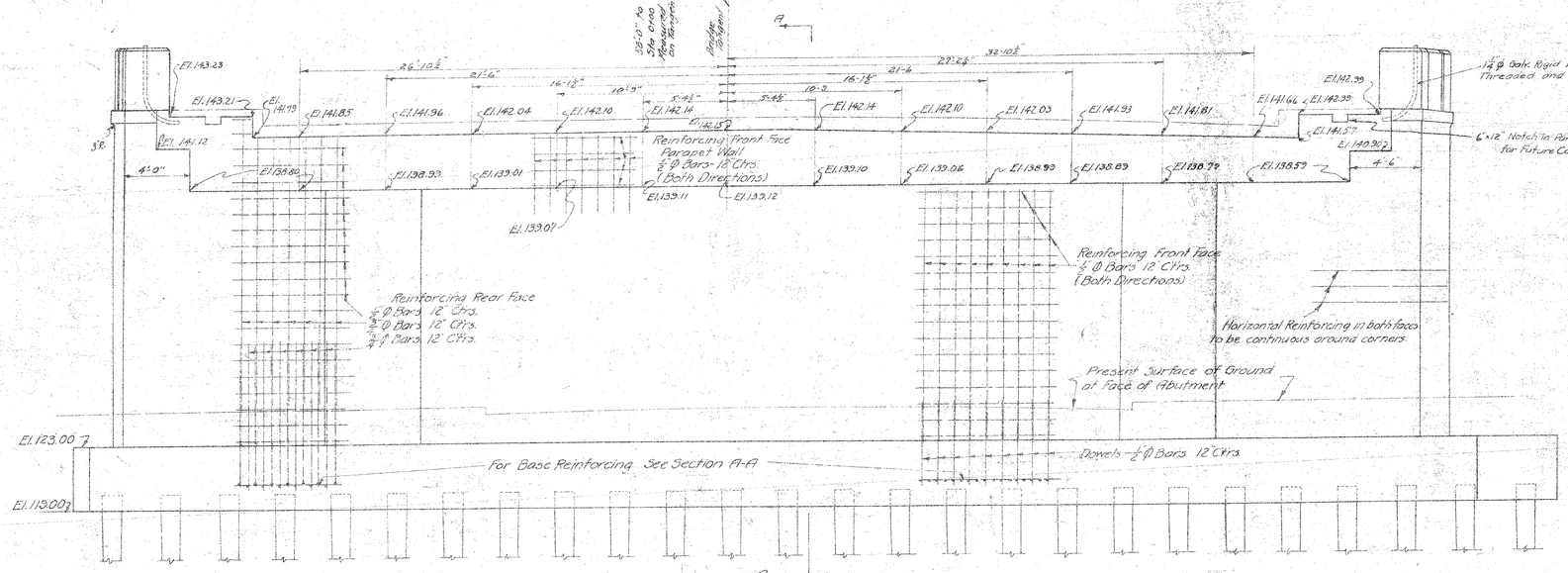
WADDELL AND HARDESTY - CONSULTING ENGINEERS
NEW YORK CITY — SEPT. 25, 1929.

SHEET 33



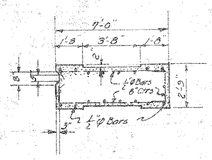


End View C-C

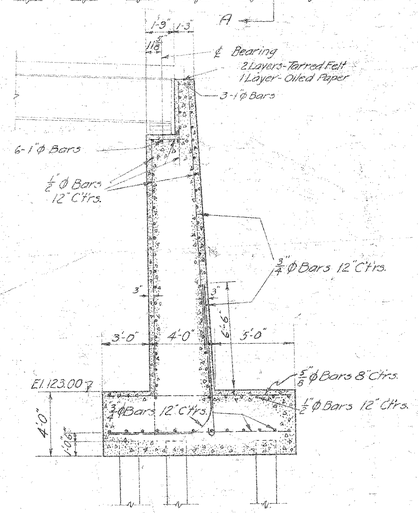


End View D-D

Average Length of Piles = 34.1 Ft.



Section E-E



Section A-A

B-B

Note:-
For Details of Rein. Conc. Piles See Sheet 7
Finish Bevel on all Edges of Abut. Wall - 1½ Face
Bearing for Stringer Masonry Plates to be finished Level and True
Elevs. of Top of Parapet Wall are for its ℄

Revised
Sept. 16, 1929.
Nov. 8, 1929.
Nov. 21, 1929.
Dec. 5, 1929.
Feb. 3, 1930.
Feb. 17, 1930.
March 21, 1930
Dec. 1, 1931

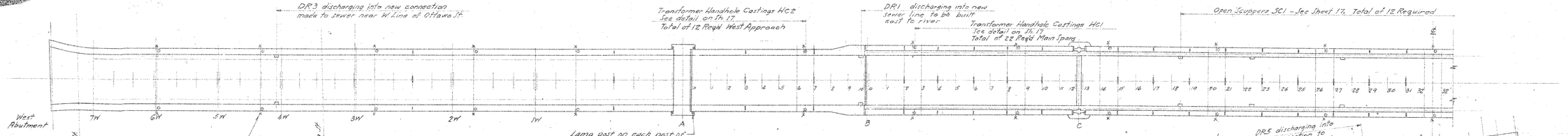
CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

WEST ABUTMENT

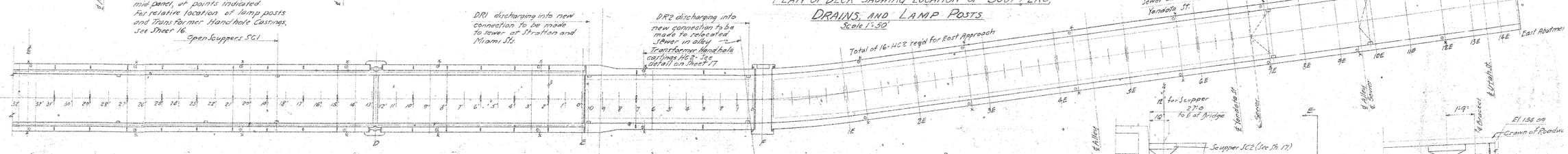
SCALE ¼"-1'

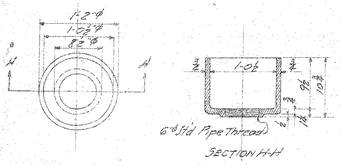
WADDELL AND HARDESTY CONSULTING ENGINEERS
NEW YORK CITY JULY 20, 1929.



PLAN OF DECK - SHOWING LOCATION OF SCUPPERS, DRAINS, AND LAMP POSTS

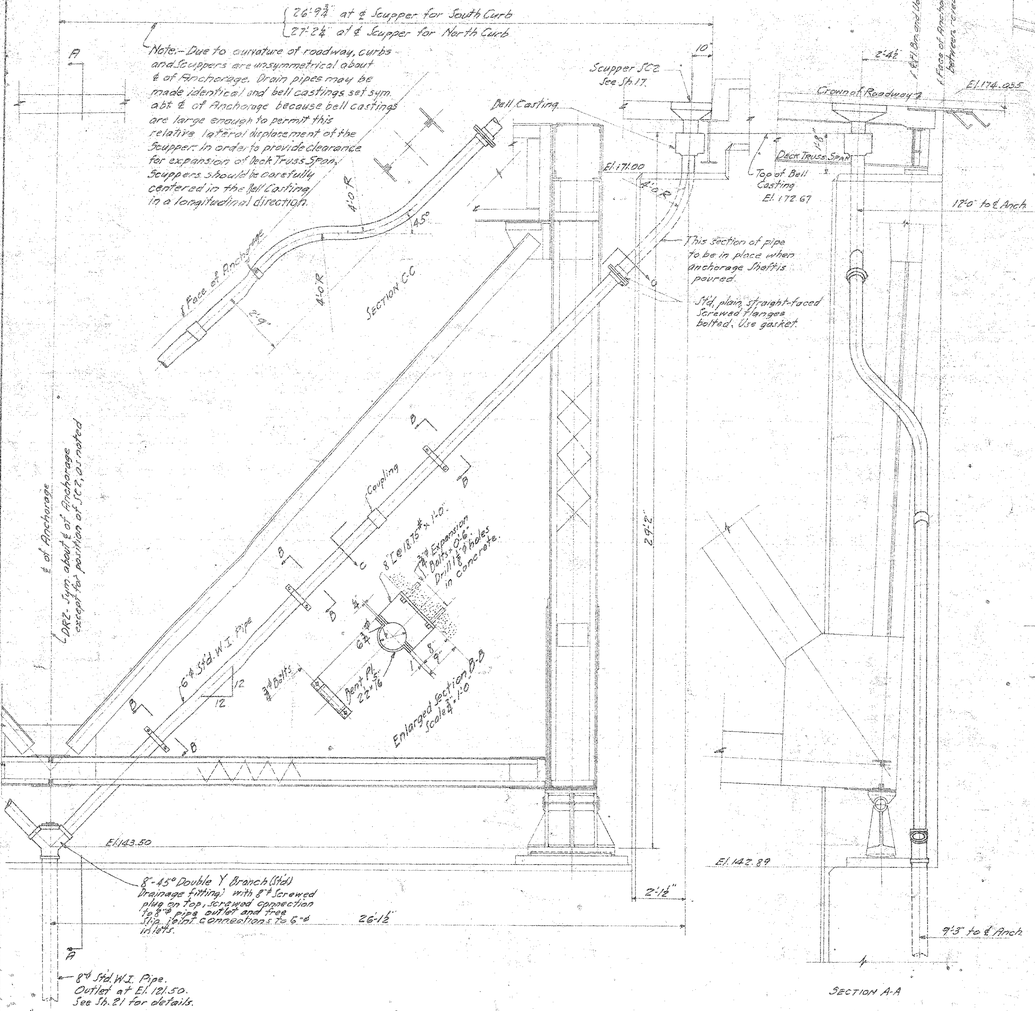
Scale 1:50





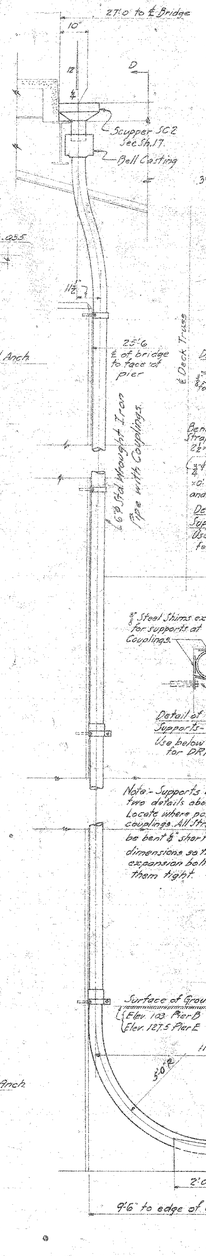
DETAIL OF BELL CASTING

Scale 1"=1'-0" 12 Required



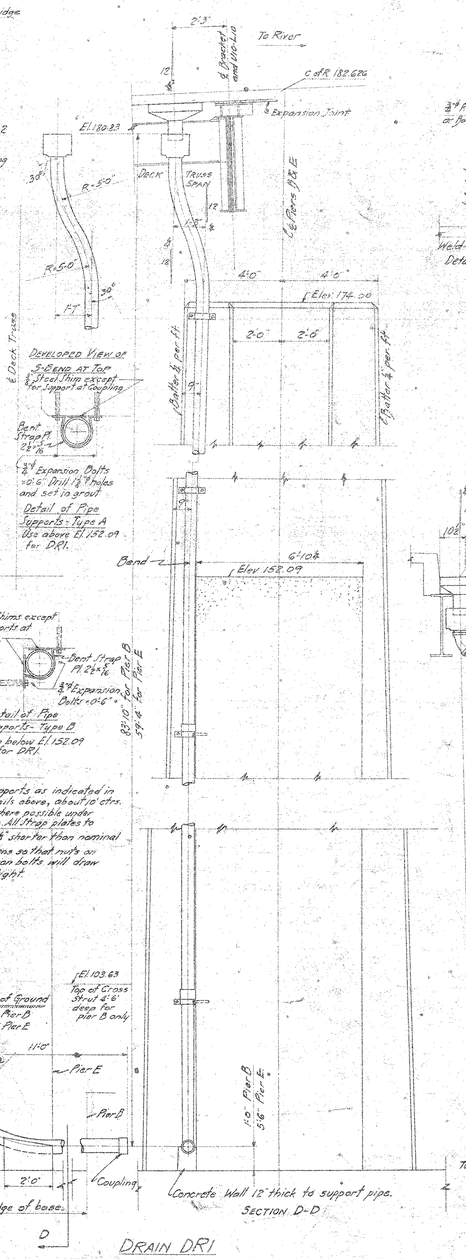
DRAIN DR2

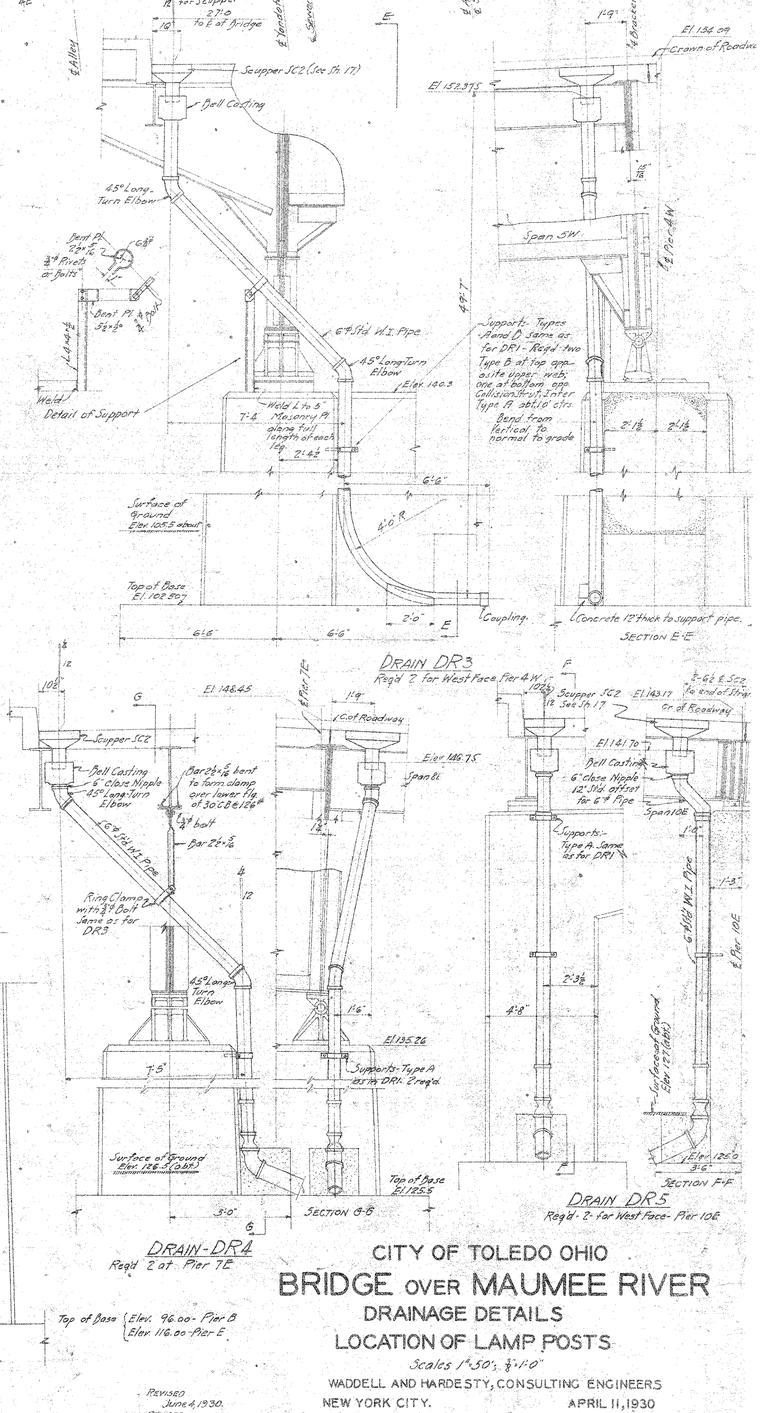
West Face of Anchorage F



DRAIN DR1

Reqd 2 for West face Pier B } Alike except
2 " East " E } as noted





DRAIN-DR4

Reqd 2 at Pier 7E

DRAIN DR3

Reqd 2 for West Face Pier 4W

DRAIN DR5

Reqd - 2 - for West Face - Pier 10E

CITY OF TOLEDO OHIO

BRIDGE OVER MAUMEE RIVER

DRAINAGE DETAILS

LOCATION OF LAMP POSTS

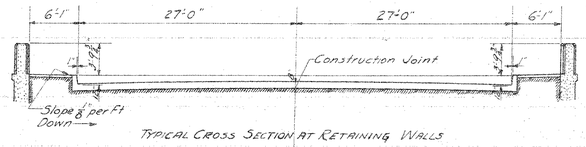
Scales 1"=50', ⅜"=1'-0"

WADDELL AND HARDESTY, CONSULTING ENGINEERS

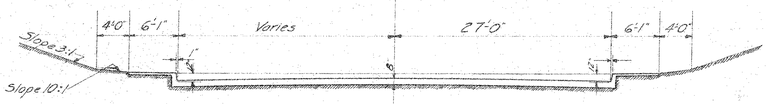
NEW YORK CITY. APRIL 11, 1930

SHEET 34

REVISED June 4, 1930.
REVISED June 19, 1931



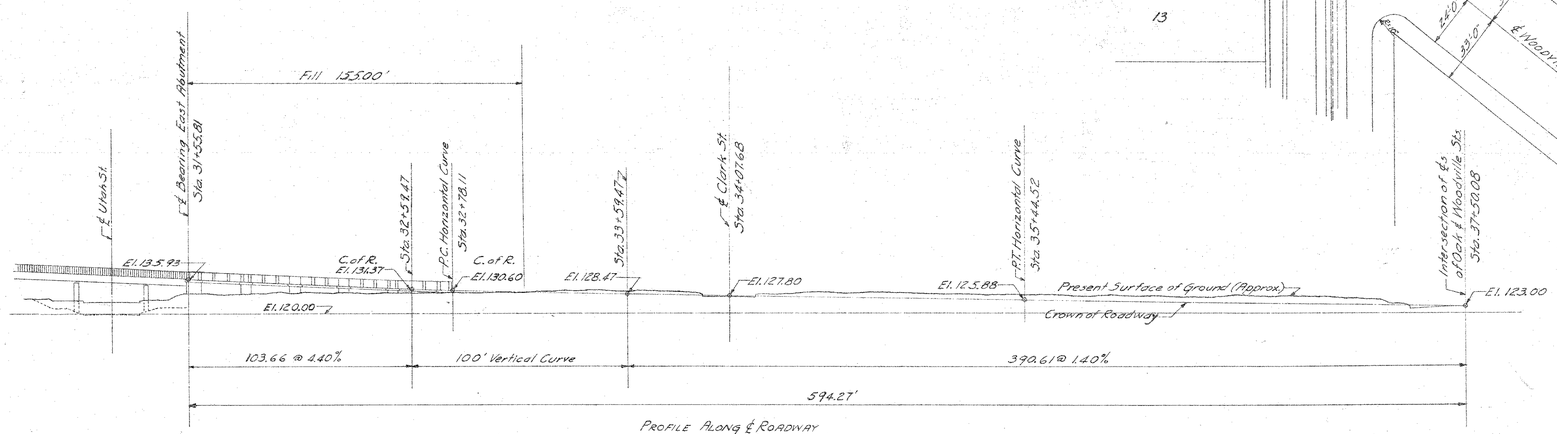
TYPICAL CROSS SECTION AT RETAINING WALLS



TYPICAL CROSS SECTION STA. 32+78.11 TO CLARK ST.

PLAN
Scale: 1"=30'

Note:
Drainage East of Clark Street not shown on this sheet



PROFILE ALONG ℄ ROADWAY
FROM ℄ BEARING OF EAST ABUTMENT TO INTERSECTION OF ℄s OF OAK AND WOODVILLE STREETS
Scales: Vertical & Horizontal: 1"=30'

NOTES:
For Typical Details of Roadway, Sidewalk Slabs, and Catch Basins see Sheet 36.

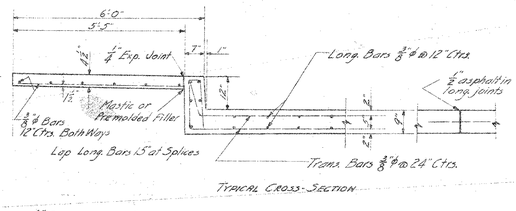
CITY OF TOLEDO, OHIO

BRIDGE over MAUMEE RIVER

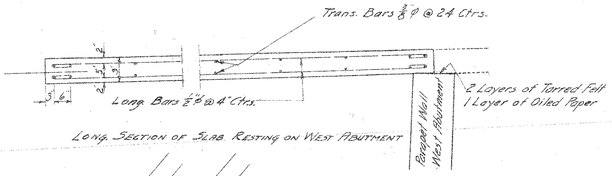
EAST APPROACH PLAZA

WADDELL AND HARDESTY CONSULTING ENGINEERS
NEW YORK CITY AUGUST 14, 1930

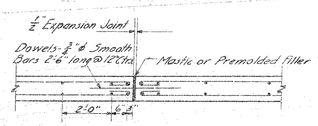
SHEET 35



TYPICAL CROSS-SECTION

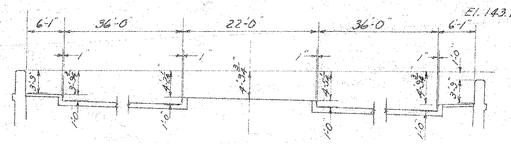


LONG. SECTION OF SLAB RESTING ON WEST ABUTMENT

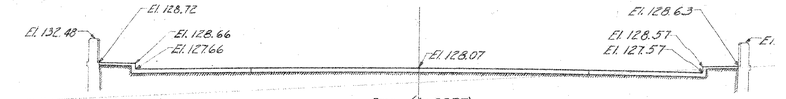


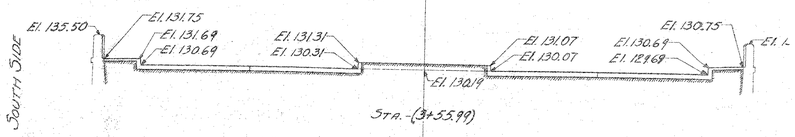
LONG. SECTION AT EXPANSION JOINT
Expansion Joints to be located at intervals of approximately 60'

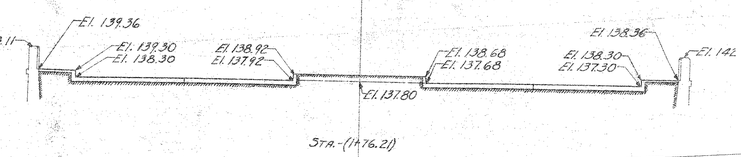
PAVING DETAILS
Scale: 1/2" = 1'-0"



CROSS SECTION STA.-(0+76.21) TO -(3+55.99)

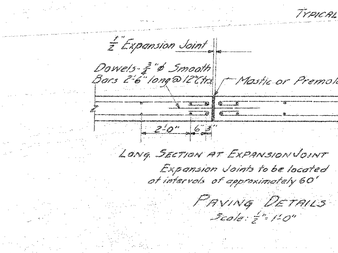






AT ℄ OF PARAPET WALL OF WEST ABUTMENT

CROSS-SECTIONS OF ROADWAY SLAB
Scale: 3/32" = 1'-0"

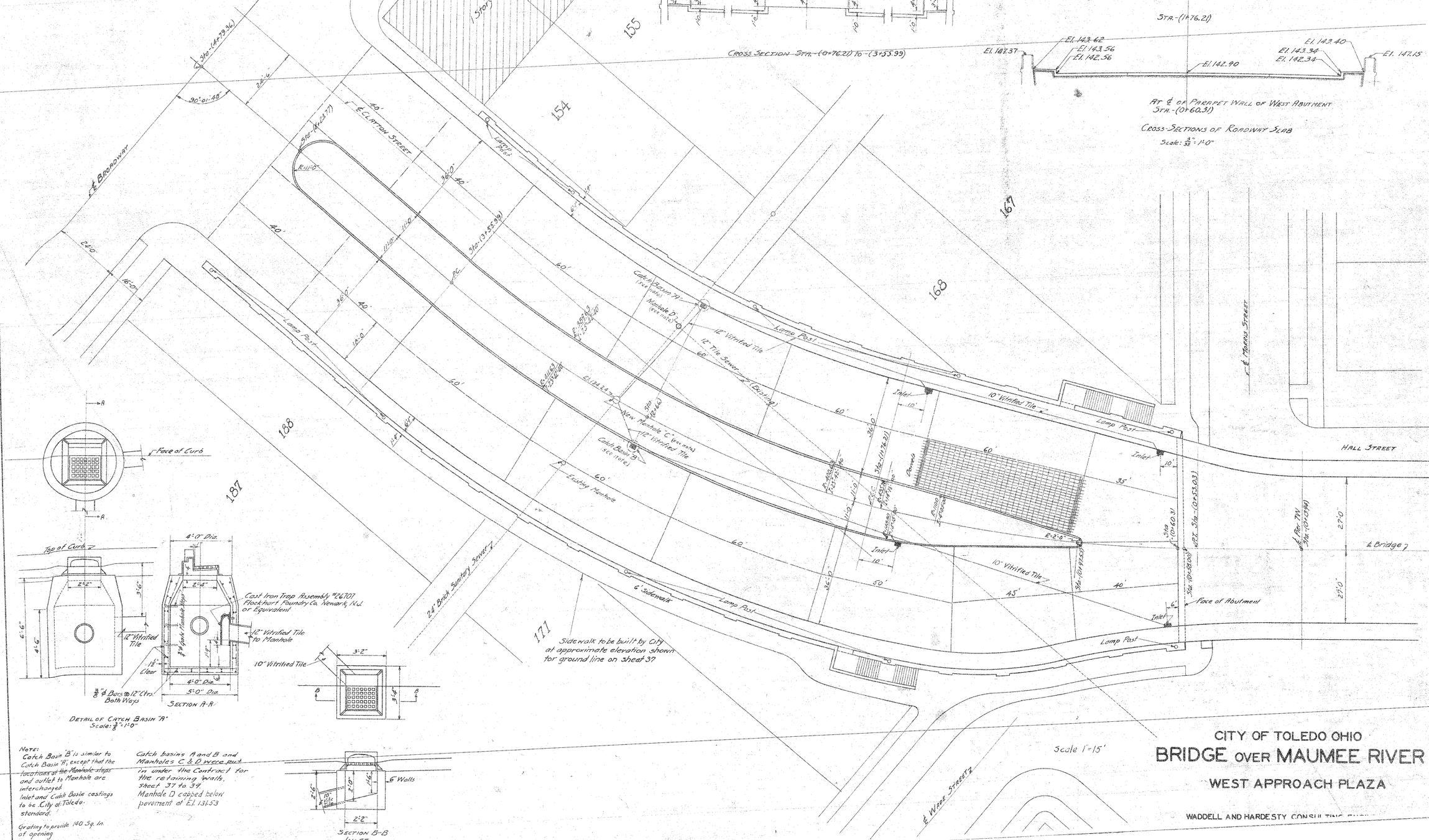


DETAIL OF CATCH BASIN "A"
Scale: 3/8" = 1'-0"

NOTE:
Catch Basin "B" is similar to Catch Basin "A", except that the Manhole steps locations at the Manhole are and outlet to Manhole are interchanged.
Inlet and Catch Basin castings to be City of Toledo standard.

Grating to provide 140 Sq. In. of opening

Catch basins A and B and Manholes C & D were put in under the Contract for the retaining walls, Sheet 37 to 39.
Manhole D capped below pavement of El. 131.53



CITY OF TOLEDO OHIO

BRIDGE OVER MAUMEE RIVER

WEST APPROACH PLAZA

WADDELL AND HARDESTY CONSULTING ENGINEERS

ELEVATION OF NORTH WALL (DEVELOPED)
Scale: 1" = 15'

328-5 3/8"

Vertical Curve 111.76

170.30' Grade 3.097%

Vertical Curve 64.90'

On Outside Face of Retaining Wall

Notch footing as required to clear Lot No. 154

Notch in Base of North Wall
Scale: 3/8" = 1'-0"

Lot No. 154

Toe of Wall

Manhole, City of Toledo Standard, connecting to existing 24" Brick Sewer

Provide connections for 12" Tile Pipe

Notch Footing as required to clear Lot No. 161

West Abutment (Completed)

PLAN OF WALLS AT ELEVATION OF UNDERSIDE OF COPING
Scale 1"=15'

Working Point to Location of Walls

ELEVATION OF SOUTH WALL (DEVELOPED)
Scale: 1"=15'

261.10' Grade 3.870%

36.46 Vert. Curve

40.12' Vertical Curve

47.83' @ 2.80% Grade

37.83' Vertical Curve

Ground Line

On Outside Face of Retaining Wall

CITY OF TOLEDO, OHIO
BRIDGE over MAUMEE RIVER
RETAINING WALLS
WEST APPROACH PLAZA

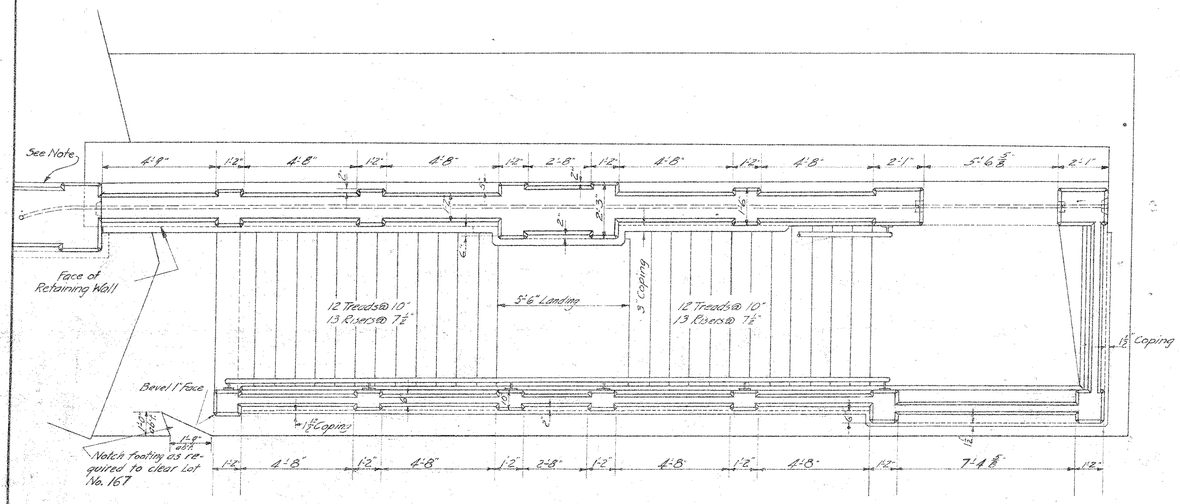
WADDELL AND HARDESTY CONSULTING ENGINEERS
NEW YORK CITY

MAY 6, 1930

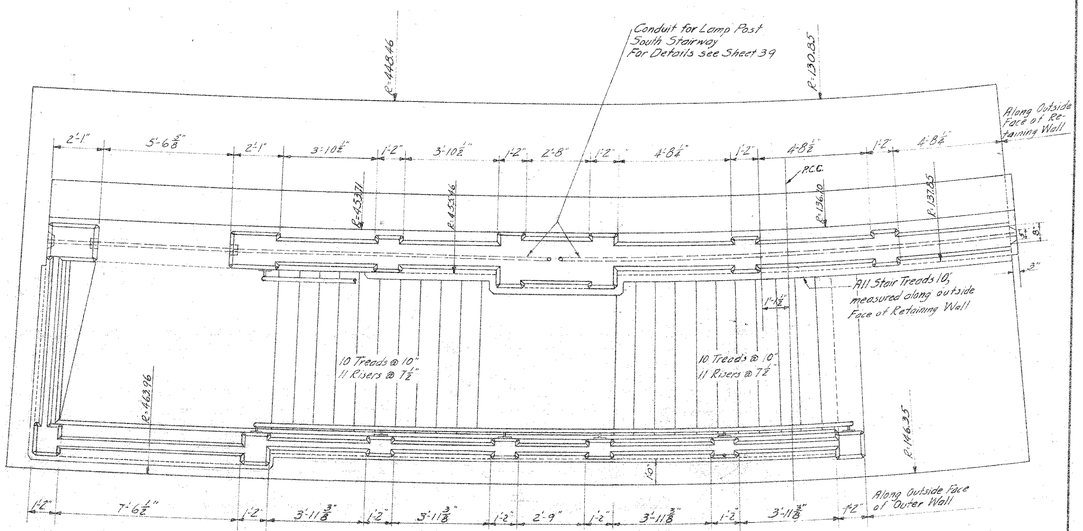
SHEET 37

NOTE:
For Details of Handrail, Expansion Joints and Retaining Wall Sections 14-F Inclusive see Sheet 38
For Details of Stairways see Sheets 38 and 39
At Points marked L.P. provide outlet for conduit as detailed on on Sheet 39.

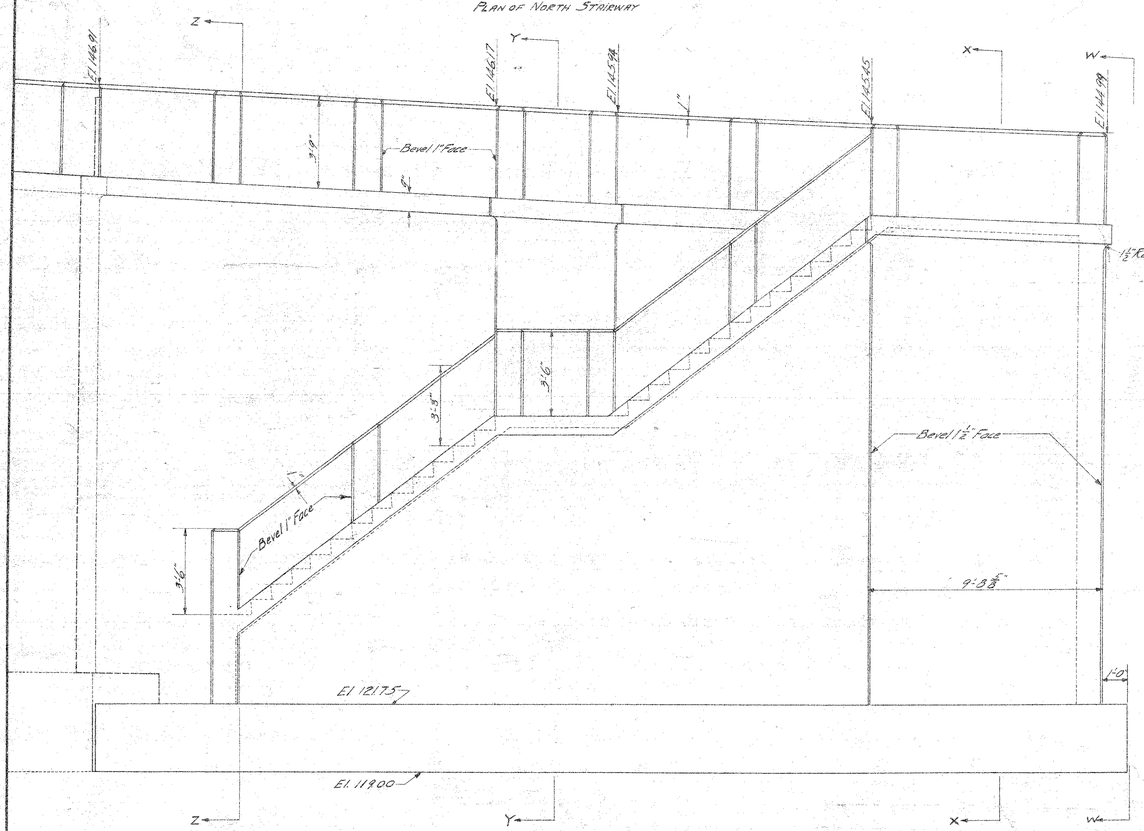
Revised: May 23, 1930
June 22, 1931



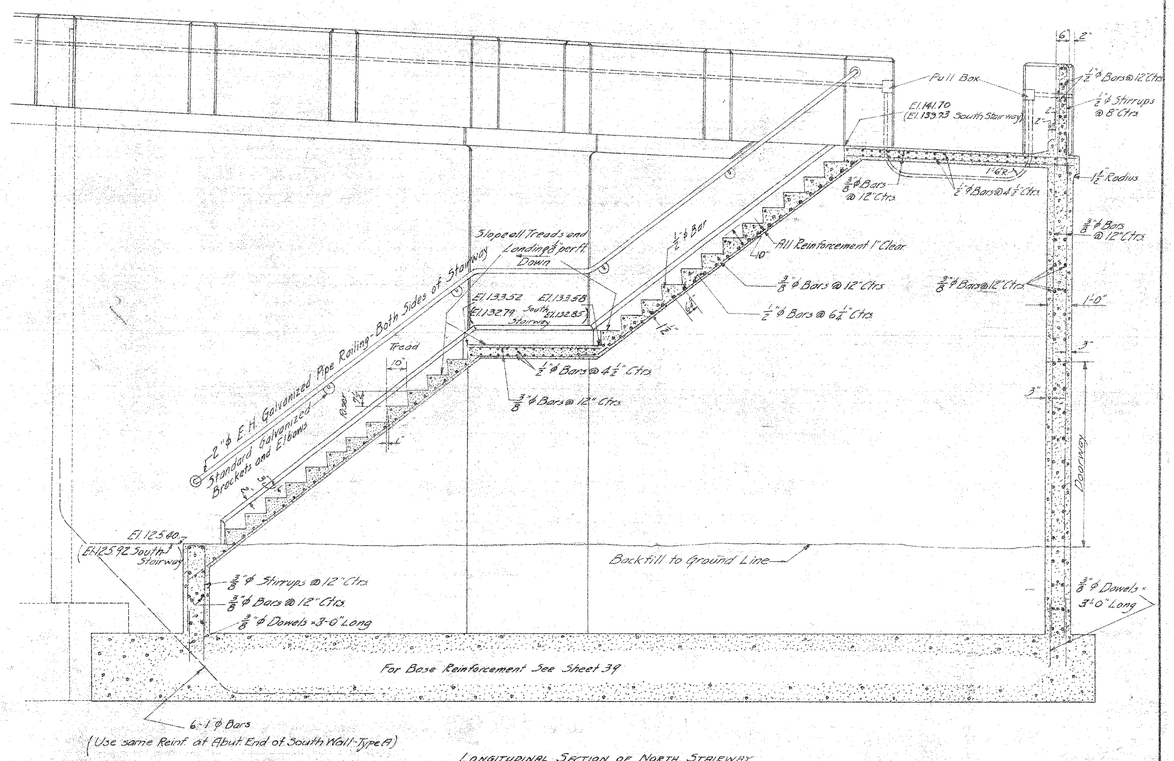
PLAN OF NORTH STAIRWAY



PLAN OF SOUTH STAIRWAY
(For Elevations of Handrail see Sheet 37
Other Details similar to those of North Stairway)

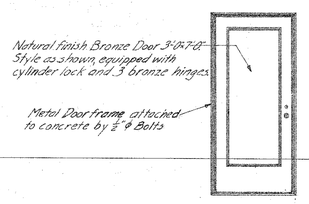


ELEVATION OF NORTH STAIRWAY
(Elevation of South Stairway is Similar)



LONGITUDINAL SECTION OF NORTH STAIRWAY
(Details for South Stairway are Similar)

Note:
Walkway slabs and stair treads to have aluminum oxide crystals (3 pounds per Sq. Yd. of surface) troweled into the surface.



DETAIL OF DOOR

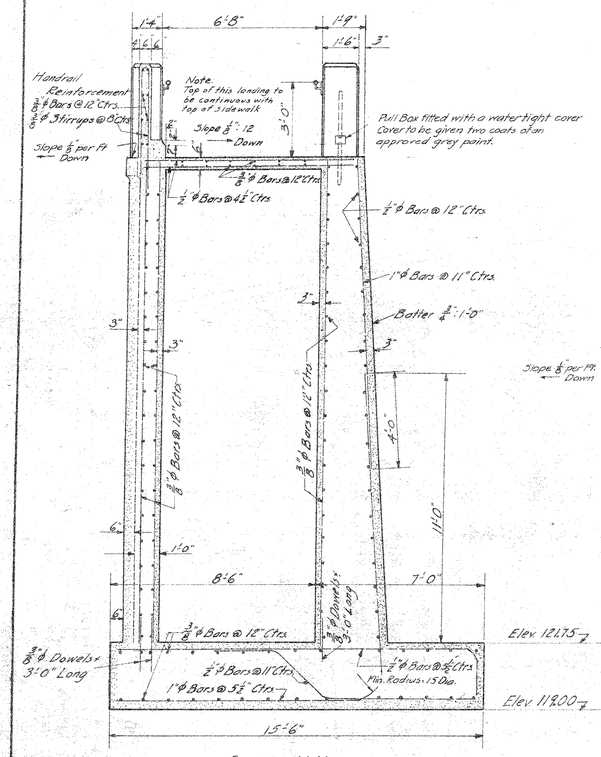
Revised: May 26, 1930

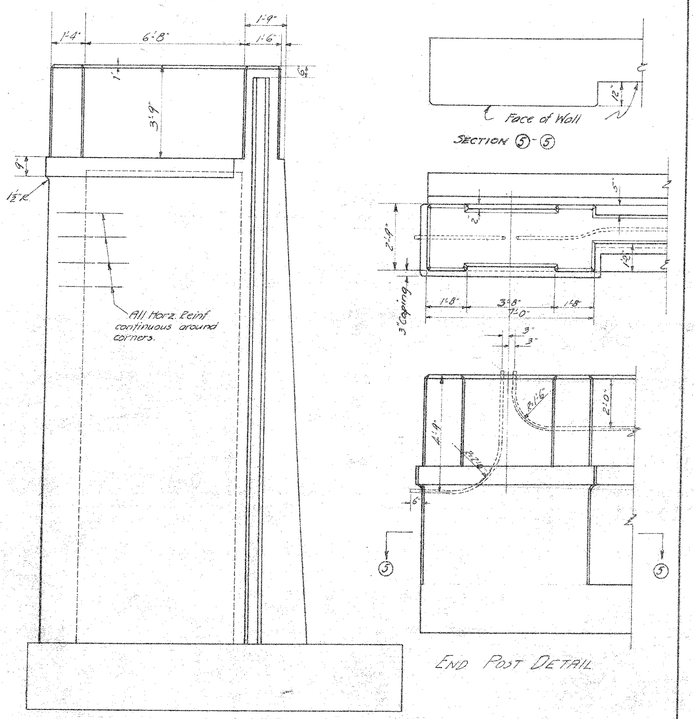
CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

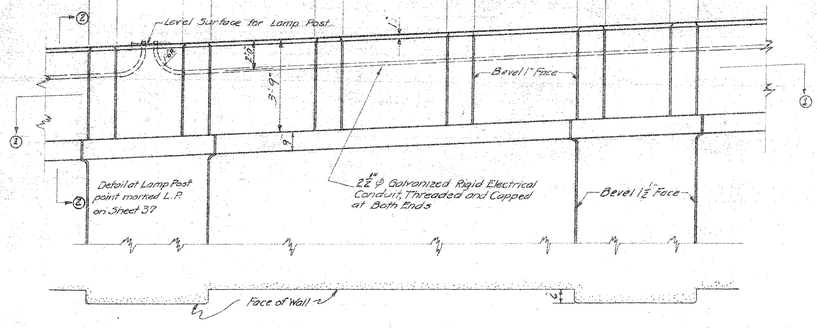
DETAILS OF STAIRWAYS
WEST APPROACH PLAZA

WADDELL AND HARDESTY CONSULTING ENGINEERS
NEW YORK CITY. MAY 6, 1930
Scale: ⅜" = 1'-0" SHEET 38

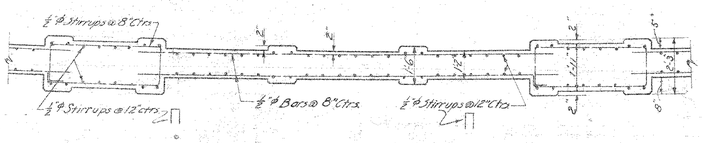


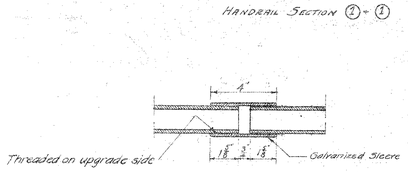


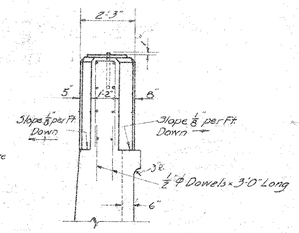
Scale 3/8" : 1'-0"



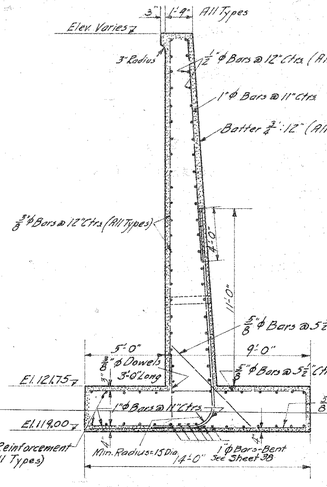
ELEVATION OF HANDRAIL (Developed)
Scale 3/8" = 1'-0"



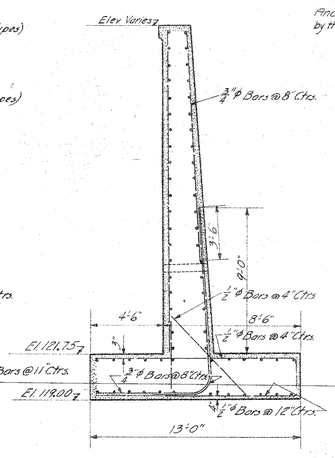




NOTE:
Back Face of all Walls to be treated with 2 Coats of an approved Waterproofing Asphalt
Anchor Bolts for Lamp Posts to be furnished by the Lamp Post Manufacturer and set by Contractor.



TYPE A



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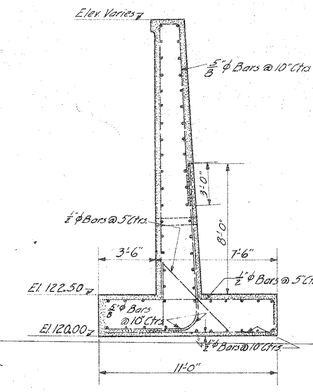
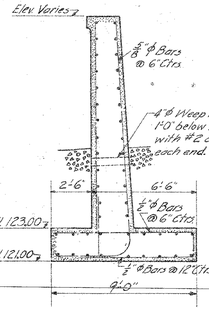
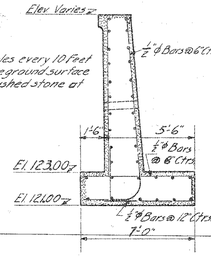


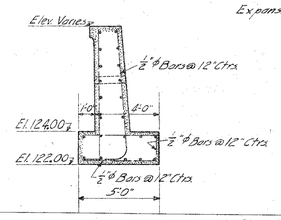
TYPE C



TYPE D

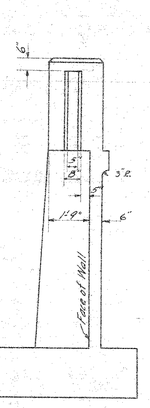


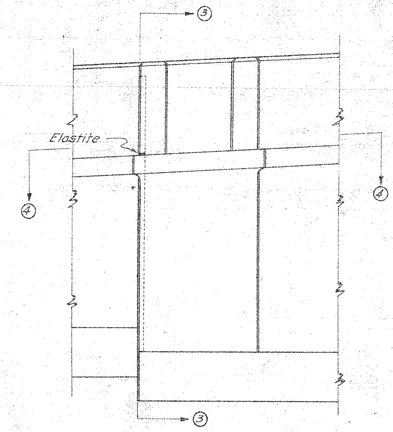
TYPE E

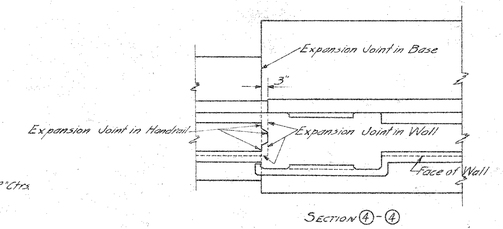


TYPE F

TYPICAL CROSS SECTION - BELOW TOP OF COPING
Scale 1/4" = 1'





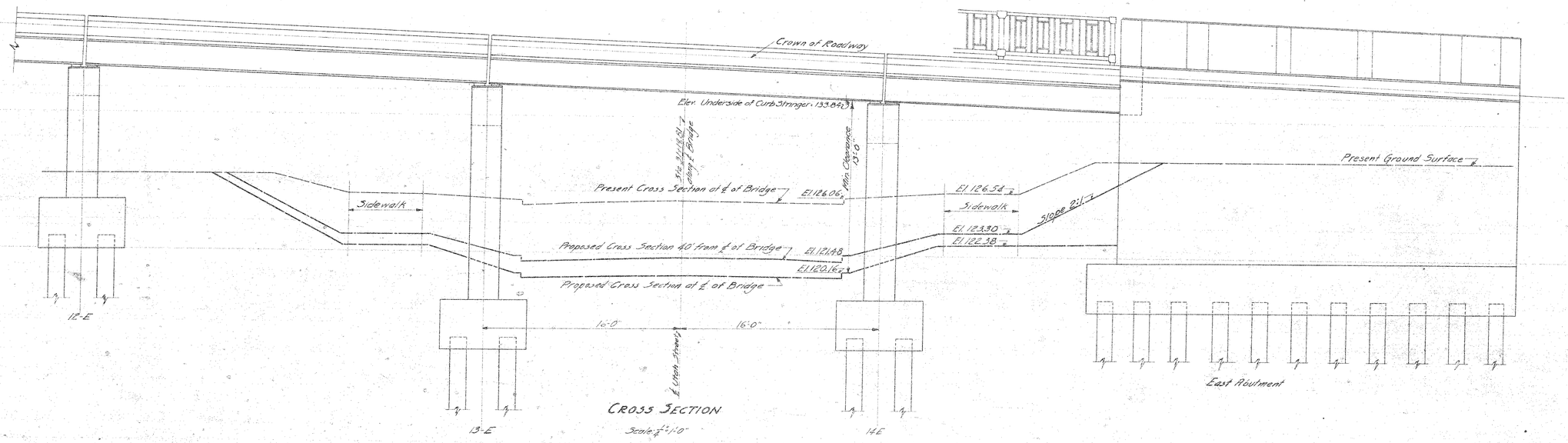


CITY OF TOLEDO, OHIO

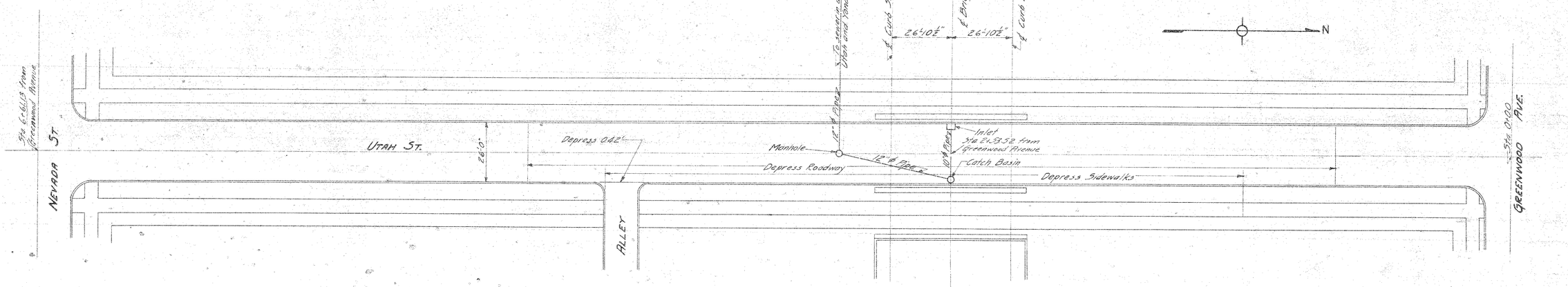
BRIDGE OVER MAUMEE RIVER

DETAILS OF RETAINING WALLS WEST APPROACH PLAZA

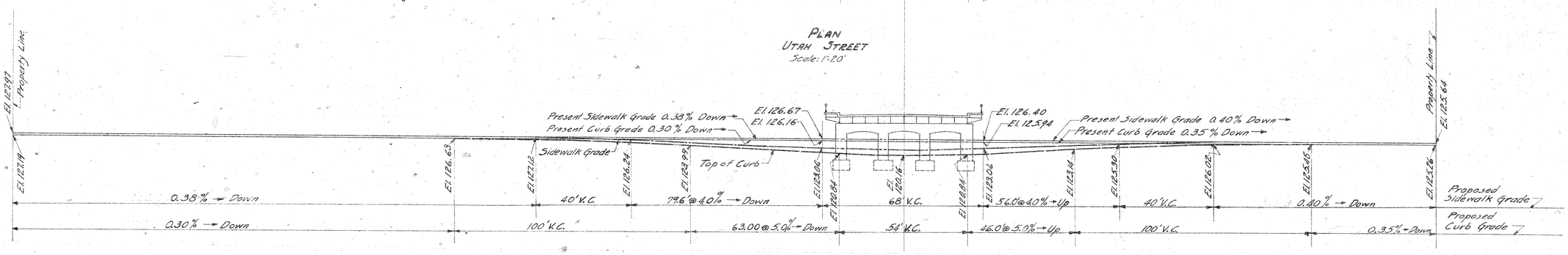
WADDELL AND HARDESTY CONSULTING ENGINEERS
NEW YORK CITY
MAY 6, 1930
Scales as Noted
SHEET 39



CROSS SECTION
Scale: 1/4"=1'-0"



PLAN
UTAH STREET
Scale: 1"=20'



PROFILE
EAST CURB AND SIDEWALK LINES
OF
UTAH STREET
Scales: Vert. & Horiz.: 1"=20'

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

UTAH STREET DEPRESSION

Rev. May 19, 1930.

WADDELL AND HARDESTY CONSULTING ENGINEERS
NEW YORK CITY APRIL 11, 1930

SHEET 40

℄ of Bridge. Retaining Walls and Abutment are Sym. abt. this ℄

N

P.C. of Vertical Curves Sta. 321+59.47 Elev. C of R. 131.37

P.C. of Horizontal Curves Sta. 324+78.16

East Abutment See Sheet 9

Exp. Joint

Exp. Joint

Exp. Joint

PLAN VIEW AT TOP OF WALL

Exp. Joint

1/2" ϕ Stirrups @ 8" ctrs.

Exp. Joint

℄ Inside edge of top of wall

℄ Outside edge of coping

Exp. Joint

1/2" ϕ Bars 19'0" @ 8" ctrs.

1/2" ϕ Bars - See Section C-C

(2) 1/2" ϕ Stirrups @ 8" ctrs.

1/2" ϕ Bar - 3'7"

3" 5'2" 1'2" 5'2" 1'2" 5'2" 1'2" 2'0" 1'2" 5'2" 1'2" 5'2" 1'2" 2'0" 1'2" 5'2" 1'2" 5'2" 1'2" 5'2" 1'2" 2'0" 1'2" 5'2" 1'2" 5'2" 1'2" 5'2" 1'8" 3'8" 1'8"

SECTION A-A

1" Bevel for all horizontal edges of handrail

3'6"

SECTION B-B

Elev. 139.13

Conduit to fit expansion detail provided in rail on East Abutment

Elev. 135.39

℄

4.40% Grade

2 1/2" ϕ Galvanized Rigid Electrical Conduits. Provide expansion detail shown for East Abutment on Sheet 9 at all handrail expansion points

Bevel all vertical edges of handrail - 1" face

Thread and provide caps for both Conduits

El. 135.02

B

A El. 181.27

Thread this end of Conduit

Approx. Surface of Ground

℄ El. 129

Bevel all edges of pilasters - 1" face

(Two 4" ϕ Weep Holes per panel, set 1'0" below ground surface with #2 cut-shed stone at each end see detail shown in Type H, below

℄ Alley

Wall to bear on base of East Abutment

5-1" ϕ Bars x 12'0" bent as shown

Elev. 123.

Elev. 122.

Elev. 121.

Elev. 120.

Bottom of base of East Abutment El. 117.7

18'1" 5'0" 17'10" 5'0" 22'10" Type H 5'0" 22'10" Type J 5'0" 17'10" 7'0" 24'10" Type K

93'7"

ELEVATION

Note - South Wall is shown. Details of the north wall are the same as those shown for the South Wall.

Slope top of Wall 1/8" in 12" down from rail on each side

1/2" ϕ Bars abt. 12" ctrs.

1/2" ϕ Dowels x 3'0" @ 12" ctrs

(Note: Use 1/2" ϕ Bars bent thus for all vertical reinforcement shown in rail in section A-A except two bars as noted

SECTION C-C

Elev. varies

Batter 2 3/4" per ft.

Longitudinal Bars in Type G

5 5/8" ϕ Bars x 14'3"

3 3/4" ϕ Bars x 14'3"

5-1" ϕ Bars as shown ℄ in South Elevation

2 3/4" ϕ Bars x 5'6"

Elev. 121.

SECTION D-D

3'1" for all Types

Elev. varies

3" Bevel all Types

Batter 3/4" per ft. for all Types

3/4" ϕ Bars @ 12" ctrs for all types

3/4" ϕ Bars @ 12" ctrs for all types

3/4" ϕ Bars @ 6" ctrs bent into base

3/4" ϕ Dowels x 2'6" for all types

Longitudinal Bars 3/4" ϕ for all types

2'6"

6'6"

1 1/2" ϕ Bars x 9'9" (bent) @ 6" ctrs.

El. 120.

1/2" ϕ Bars x 7'0" @ 12" ctrs.

9'0"

TYPE G

Elev. varies

5/8" ϕ Bars @ 8" ctrs bent into base

#2 Crushed Stone on each side

4" ϕ Weep Hole

2'0"

6'0"

1 1/2" ϕ Bars x 8'9" (bent) @ 8" ctrs

El. 121.

8'0"

1/2" ϕ Bars x 6'6" @ 12" ctrs.

TYPE H

Elev. varies

1/2" ϕ Bars @ 6" ctrs. bent into base

1'6"

5'0"

1 1/2" ϕ Bars x 7'3" (bent) @ 9" ctrs.

2'0"

El. 122.

6'6"

1/2" ϕ Bars x 5'6" @ 12" ctrs.

TYPE J

Elev. varies

1/2" ϕ Bars @ 12" ctrs. bent into base

1'0"

4'0"

1/2" ϕ Bars x 5'9" @ 12" ctrs.

2'0"

El. 123.

5'0"

1/2" ϕ Bars, 4'6" @ 12" ctrs.

TYPE K

CITY OF TOLEDO OHIO

BRIDGE OVER MAUMEE RIVER

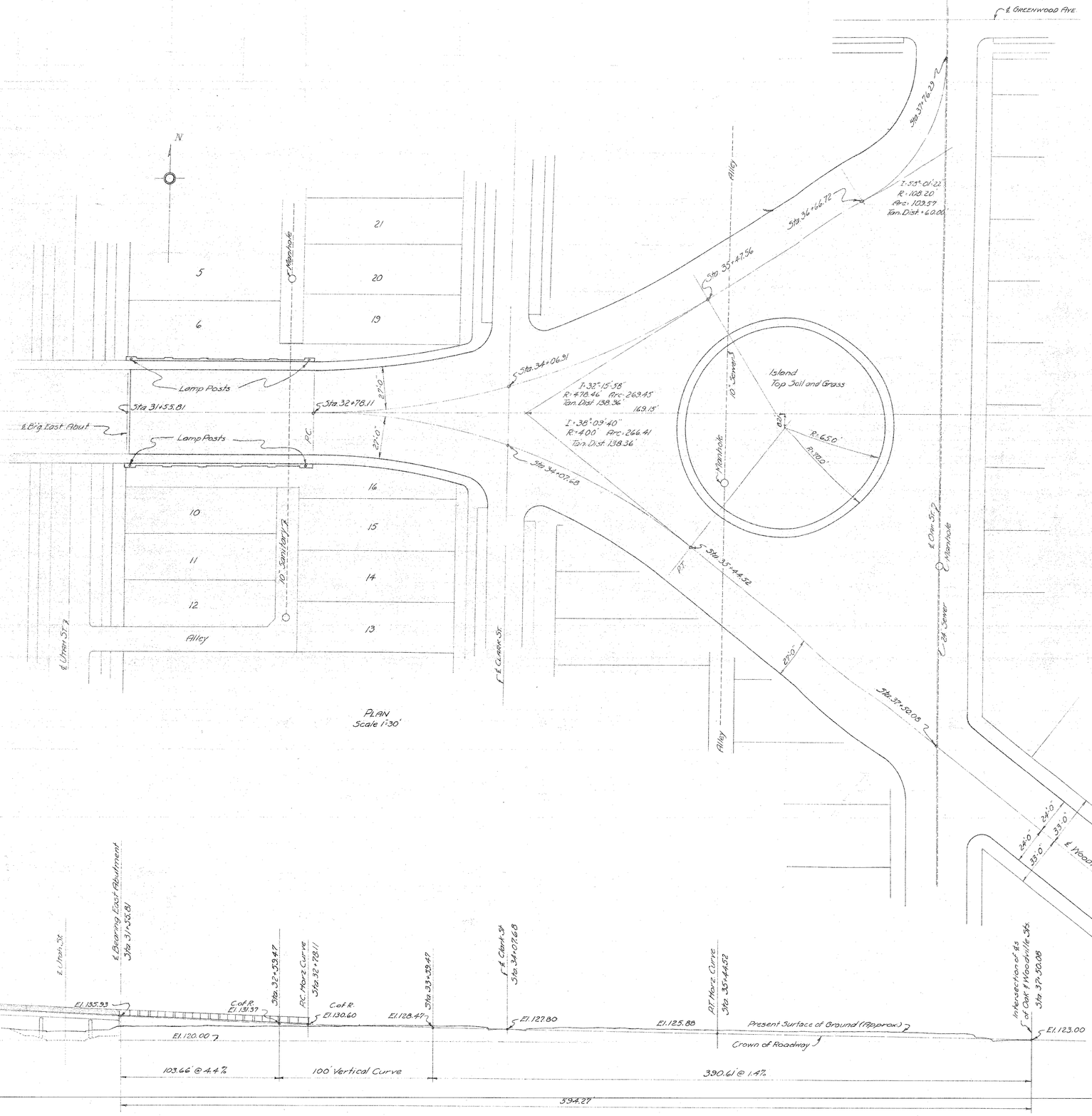
DETAIL OF RETAINING WALLS EAST APPROACH FILL

Scale 1/4" = 1'-0"

WADDELL AND HARDESTY CONSULTING ENGINEERS

NEW YORK CITY JULY 1930

SHEET 41



PLAN
Scale 1"=30'

PROFILE ALONG ℄ ROADWAY
FROM ℄ BEARING OF EAST ABUTMENT TO INTERSECTION OF ℄S OF OAK AND WOODVILLE STS.
Scales: Vert & Horz. 1"=30'

NOTES
For Typical Details of Roadway and Sidewalk Slabs, Inlets, and Catch Basins see Sheet 36.

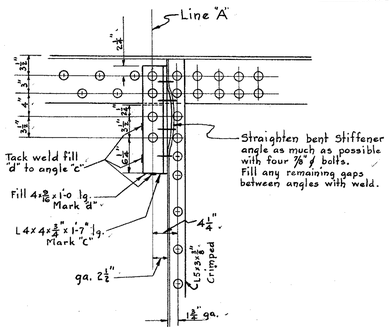
CITY OF TOLEDO OHIO

BRIDGE over MAUMEE RIVER

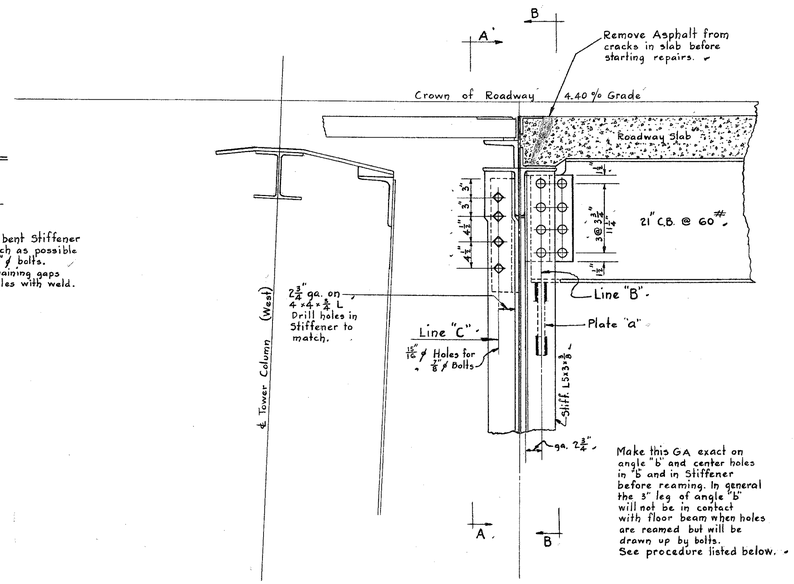
EAST APPROACH PLAZA
ALTERNATE PLAN

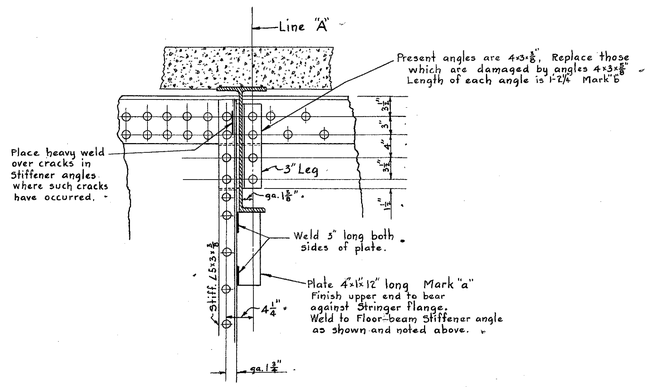
WADDELL AND HARDESTY CONSULTING ENGINEERS
NEW YORK CITY OCT. 1930

SHEET 45

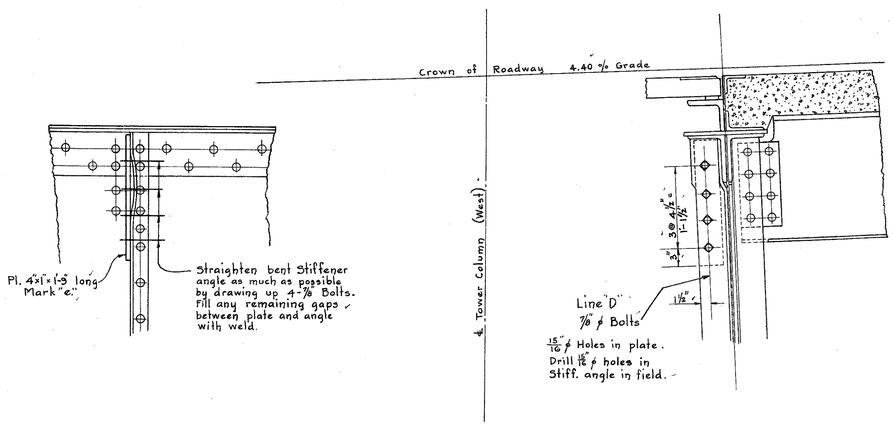


Section AA.





Section BB.



Method of Straightening and Strengthening Bent Stiffener Angles at Points Where Stringer Connections Do Not Need To Be Repaired.

-Procedure-

1. Material required for each Stiffener
   Mark "e" 1 Plate 4"x1'x1'-5" long with four 15/16" ϕ holes.
2. Clamp plate "e" to Stiffener in position shown and drill four 13/16" ϕ holes in O.S. leg of Stiffener angle.
3. Bolt plate "e" to Stiffener with four 7/8" ϕ ordinary bolts. Tighten nuts - Straighteing bent Stiffener leg as much as possible - and when tight, tack weld nuts to prevent them from turning off.

Repairs to Stringer Connections.

-Procedure-

1. New Material Required
   For each Stringer Connection to be repaired.
   - Mark a - 1 Plate 4"x1'-1-0 long - Finish one end to bear.
   - Mark b - 1 Angle 4"x3"x5/16" - 1'-2 1/4" long - Holes punched 13/16" ϕ in both legs.
   - Mark c - 1 Angle 4"x4"x1/4" - 1'-7" long - Holes line "A" punched 13/16" ϕ and holes line "C" punched 15/16" ϕ
   - Mark d - 1 Plate 4"x 5/16" - 1'-0 long - Two holes line "A" punched 13/16" ϕ. Tack weld to angle "C".
2. Remove Asphalt from cracks in slab.
3. Weld plate "a" to O.S. leg of floor-beam Stiffener angle with milled end of plate bearing against stringer flange (Wedge from below for tight Contact) Use welds 3" long both sides of plate top and bottom as shown, this plate will support Stringer temporarily during subsequent operations. Keep live load off the damaged Stringer connections until repairs are completed.
4. Remove 8 rivets in lines "A" and "B"; also damaged connecting angle. If Stringer shows any tendency to move side-wise, block it to adjacent Stringer.
5. Bolt angle "b" to Stringer web with line "B" holes centered. Ream line "B" holes to 15/16" ϕ. Since the Stiffener angle at each Stringer is slightly bent, the 3" leg of angle "b" will not be in contact with the floor-beam flange. After reaming holes in line "B" drive four 7/8" ϕ rivets through these holes.
6. Clamp angle "c" to Stiffener on opposite side of floor-beam and ream holes in line "A" in both angles "b" and "c" to light driving fit for 15/16" ϕ Turned bolts. Drill four 13/16" ϕ bolts through O.S. leg of Stiffener angle to match holes in line "C" in angle "c". Place 13/16" turned bolts in holes in line "A" and 7/8" ϕ ordinary bolts in holes in line "C".
7. Start tightening all bolts. Both lines will tend to straighten floor-beam flange and bent Stiffeners and bring 3" leg of angle "b" into tight contact with floor-beam.
8. When bolts are tight replace turned bolts in line "A" with 7/8" ϕ rivets if the 3" leg of angle "b" does not spring away from the floor-beam when bolts are released; otherwise leave turned bolts in place and tack weld nuts to prevent them from turning off.
9. Bolts in line "C" are to remain in place permanently. Tack weld nuts when tight to prevent them from turning off.
10. Place heavy weld over cracks in 3" legs of floor-beam Stiffeners on East Side. (see Section BB.)

-Important-

Floor-beam flanges and web plate are Silicon Steel. Do not weld anything to Silicon Steel parts, and do not do any flame cutting close enough to Silicon Steel to heat it sufficiently to cause permanent injury.

Anthony Wayne High Level Bridge
Over Maumee River
Toledo-Ohio.

Repairs to Stringer Connections and Floor-beam Stiffener at West Tower

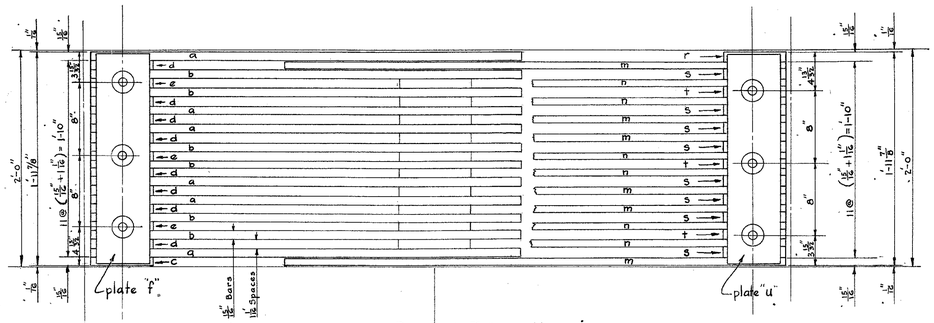
Scale 1"=1'-0"

Waddell & Hardesty, Cons. Engrs. New York, N.Y.

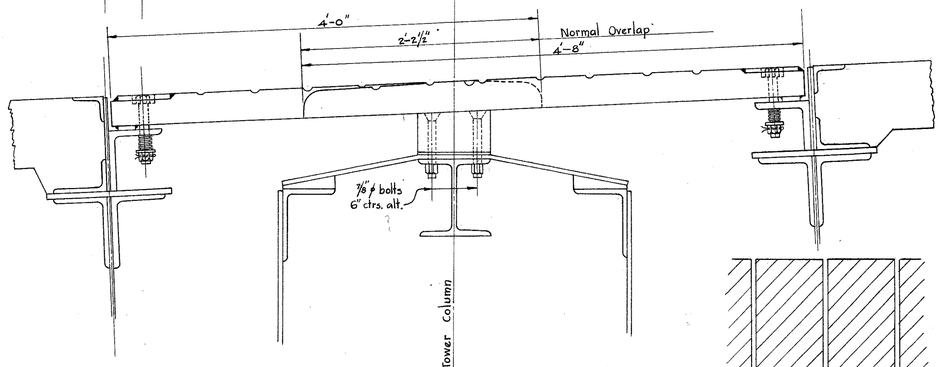
Jan. 24, 1936. Sketch "A"

Traced by F. Leighton 3-6-36.

A-7-126

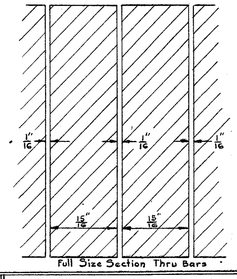


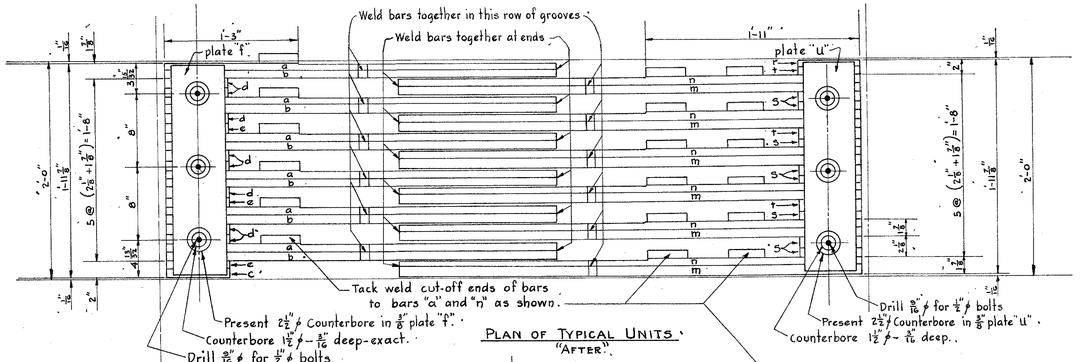
PLAN OF TYPICAL UNITS
"BEFORE"



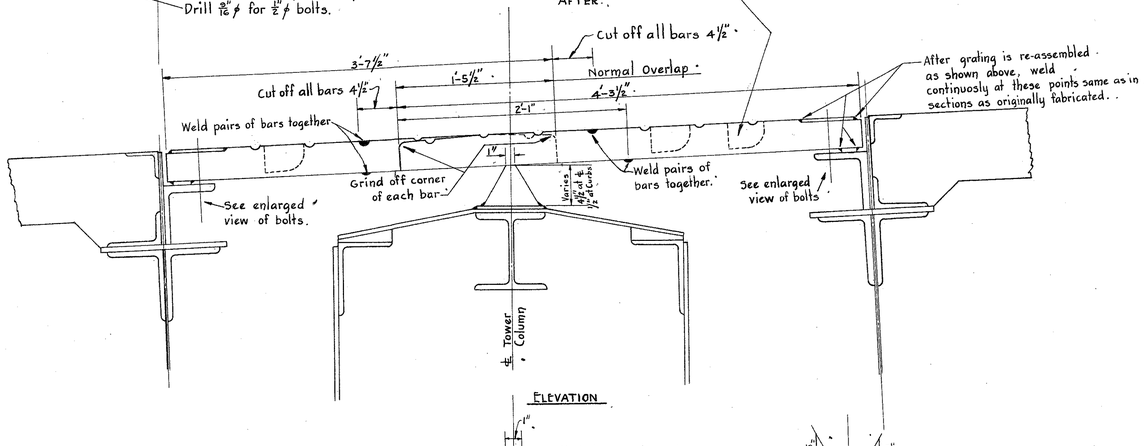
ELEVATION

EXISTING ROADWAY EXPANSION JOINT

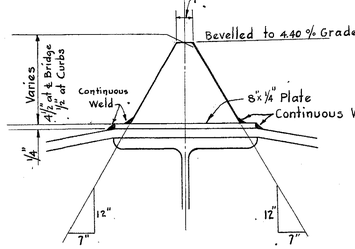


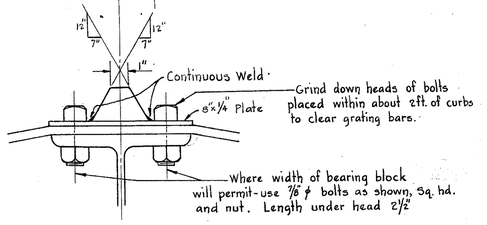


PLAN OF TYPICAL UNITS
"AFTER"

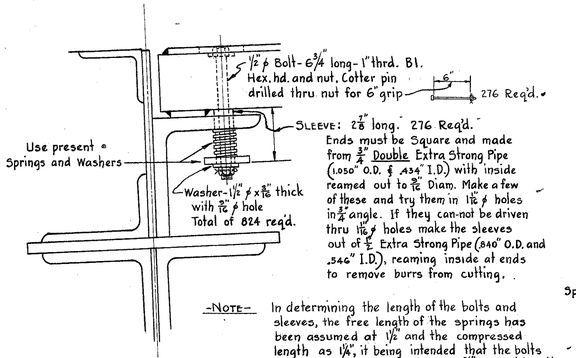


ELEVATION



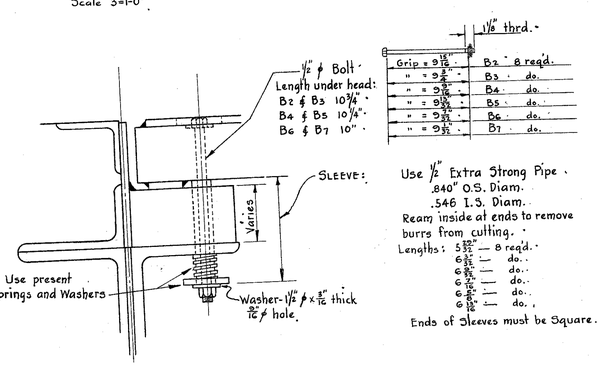


SECTIONS THRU CENTER BEARING FOR BARS
Scale 3"=1'-0"



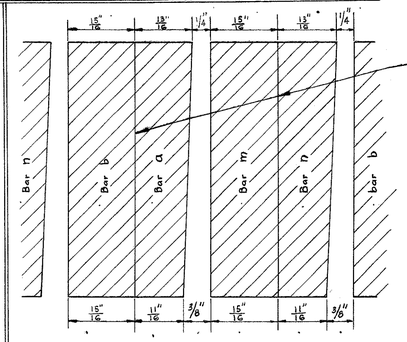
-NOTE- In determining the length of the bolts and sleeves, the free length of the springs has been assumed at 1½" and the compressed length as 1¼", it being intended that the bolts shall compress the springs to 1⅛" actual length when in place. If springs vary in length, make proper corrections.

SECTION NEAR ℄ BRIDGE.



SECTION NEAR CURB

ENLARGED DETAILS OF BOLTS Scale 3"=1'-0"



Full Size Section Thru Bars

-NOTES-

The joints are to be reconstructed as follows:

1. Reduce the amount of overlap 9" by cutting off 4½" from the present length of all bars.

2. Reduce the width of the center bearing seat from 8" to 1".

3. Break apart each section of grating and reassemble the individual parts with bars in pairs as shown. This will reduce the number of overlapped surfaces to one-half of the original number. Before assembling the grating, one-half of the bars (which are now 15/16" wide) shall be ground or rough cut in a milling machine to a top width of 13/16" and a bottom width of 11/16" for the lengths indicated in the plan view, thus increasing the clear space between bars. Bars "a" & "n" are to be so planed or ground.

New Material Required
- 44-⅞" ϕ Bolts - 2½" long.
- 324-½ ϕ Bolts - length as shown.
- 324-Sleeves " " "
- 324-Washers.

The center bearing seat is to be cut to a width of 1" at top, the sides having a constant slope. This can be done by flame cutting. If possible, it should be done in a shop equipped with mechanical guides for holding flame in line. If it must be cut by hand, increase top width to 1¼". Smooth off any roughness in top and bottom surfaces. Before removing any sections of this bearing, mark proper directions for re-assembling. The top surface is milled to the grade of the roadway, and must not be reversed in position.

On account of the drilling and counter-boring for the original bolts, the grating must be assembled in accordance with the piece marks given on the "before" and "after" plan views shown at the top of this drawing. In assembling and welding the grating, care must be taken to insure that the bottom surfaces of all bars are flush for uniform bearing. Pairs of bars shall be welded together as shown in plan view. Before breaking the grating apart, place assembly mark on each piece (a, b, ... s, t, u, etc.).

Notes cont.

The work on these expansion joints can be carried out without interruption to traffic by starting at either curb, taking up 7 complete sections at a time and completing all work before proceeding with the next 7 sections. Note that the repairs to the Stringer connections at the West Tower must be completed in advance of or simultaneous with the repairs to the 14ft. widths of the West expansion joint which are adjacent to the curbs, since traffic cannot use these lanes until the Stringer connections are repaired in accordance with Sketch "A".

ROADWAY EXPANSION JOINT AS IT IS TO BE RECONSTRUCTED

RECONSTRUCTED 1944 } INK
SEE SH. NO A-2-999

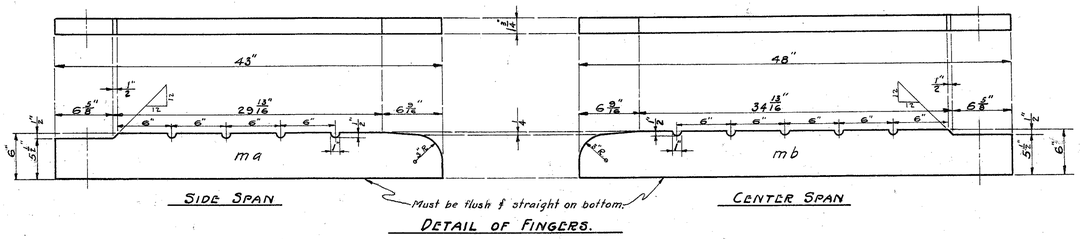
ANTHONY WAYNE BRIDGE.
TOLEDO-OHIO.

RECONSTRUCTION OF ROADWAY EXPANSION JOINTS AT TOWER COLUMNS.
Scale 1½" = 1'-0" unless noted.

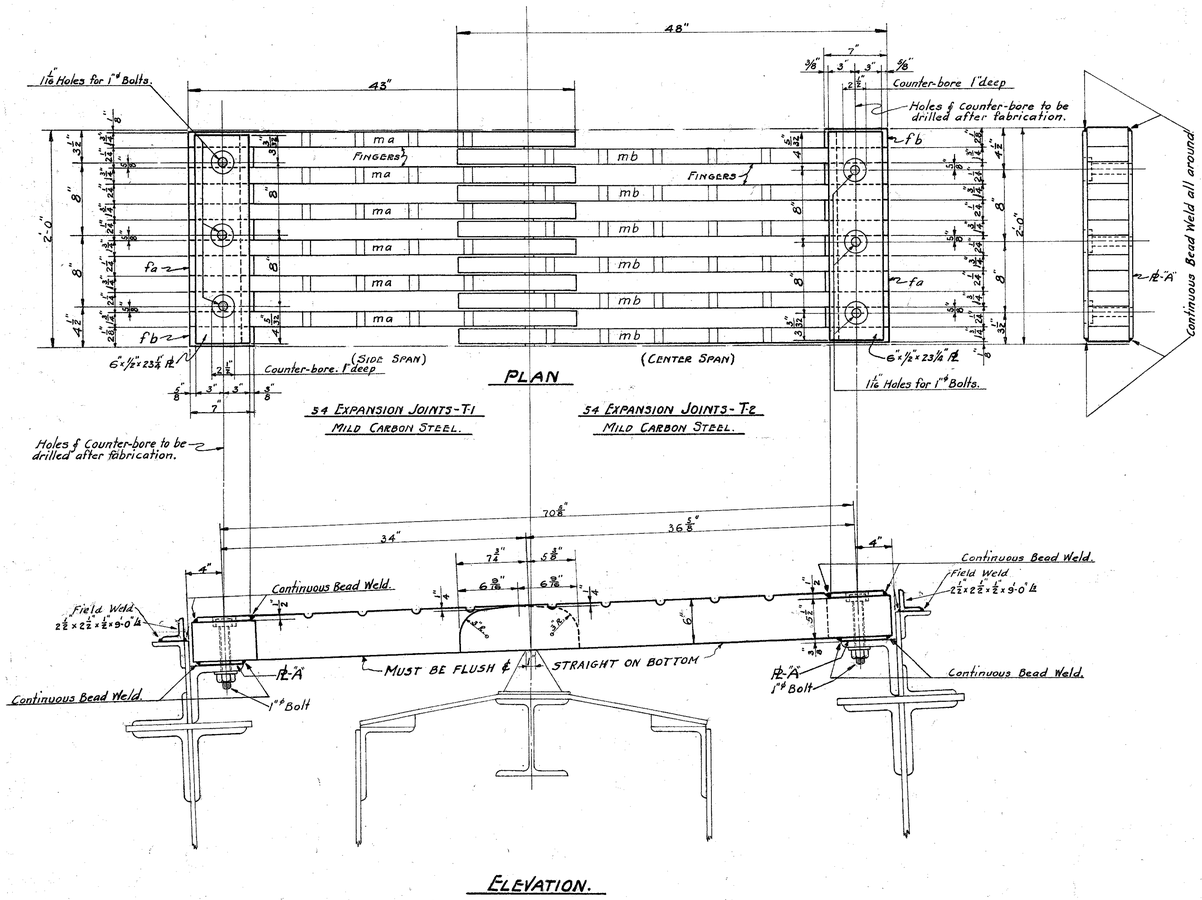
Ink → Copy of Drwg by WADDELL & HARDESTY, CONS. ENGRS. NEW YORK, N.Y.

JAN. 29, 1936.
Sketch B.

A-2-437

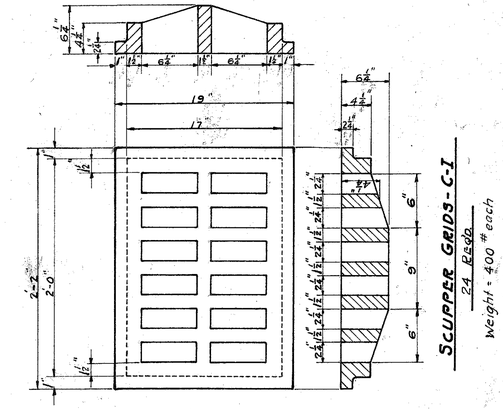


DETAIL OF FINGERS.

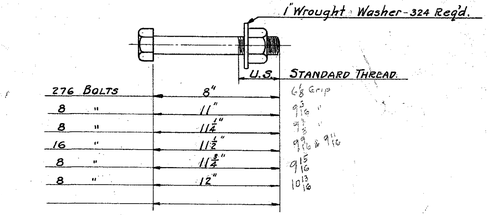


PLAN

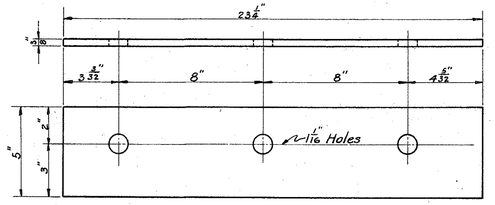
ELEVATION.



SCUPPER GRIDS - C-I
24 Req'd.
Weight = 400 # each



1" ϕ BOLTS WITH HEX. HEAD & NUT.



DETAIL OF ℄-A.
108 Req'd.
Scale 3"-1'-0"

MATERIAL

324	6"x⅜"x48" mb = 1296'	48270 #
324	6"x⅜"x45" ma = 1161'	41450 #
540	5/16"x2¼"x0-7" fa = 315'	13255 #
108	5/16"x2⅛"x0-7" fb = 63'	2505 #
108	5"x⅜"x23⅛" ℄A = 209-3"	1,334 #
108	6"x½"x23¼" = 209-3"	2,134 #
24	2½"x2½"x⅝" ℓ 9-0 Each-216-0"	1664 #
276	1" ϕ Bolts & 8" Hex. Head & Nut	730 #
8	1" " " 11" " " "	27 #
8	1" " " 11½" " " "	27 #
16	1" " " 11½" " " "	58 #
8	1" " " 11½" " " "	28 #
8	1" " " 12" " " "	28 #
	1" Wrought Washers	65 #
24	SCUPPER GRIDS - CAST IRON	9600 #

ANTHONY WAYNE BRIDGE

OVER MAUMEE RIVER

EXPANSION JOINTS C&D

CITY OF TOLEDO

DEPARTMENT OF PUBLIC SERVICE.

DIVISION OF ENGR. & CONST. - HARBOR & BRIDGES.

FIELD BK.___ PG.___ DRAWN BY F.L.

SCALE 1½"-1'-0" CHECKED BY R.R.C.

DATE 5-11-48. REVISED 5-31-44.

1/2

A-2-449

Crown of Roadway

Exact

SEE NOTE ② SHEET 2

MILL

Exact

SEE NOTE ① SHEET #1

MILL

Exact

20-Spaces @ 9⅞ = 16'-5½

20-Spaces @ 9⅞ = 16'-5½

20-Lac-Pls. w5

20-Lac-Pls. w5

50'-7¼ Exact Milled Length

38'-5 + ¼ = 38'-5¼

MAIN-MATERIAL

2-Ls 4×4×⅞×50'-7¼-M2E
2-Ls 8×6×⅞×50'-7¼-M2E
1-U.M.Cov.Pl.21×½×50'-7¼-M2E
2-U.M.WEB Pls.26×⅝×50'-7¼-M2E
2-U.M.WEB Pls.26×⅝×50'-7¼-M2E

} Silicon

2-TOP CHORDS-U3-U5R AS SHOWN
2- " -U3-U5L OPP HAND

SECTION-AA

SECTION-BB

Note:—
Rivets ⅞" ϕ Open holes 15/16" ϕ
Holes punched 1/16" and reamed to size after assembling except holes for lacing bars & tie plates which may be punched full size
Holes marked ⊙ to be punched 5/16" ϕ and reamed to size, or drilled from the solid, to a metal templet

Burrs to be removed from all holes
Paint One coat of Sherwin Williams Kromik Structural Steel Primer #63

APPROVED Waddell & Hardesty
1-21-30

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVE
TOP-CHORD SECTIONS
U3 - U5
Deck Truss Spans

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Steiner
MADE BY J.A.F. DATE CHECKED BY D.A.C. DATE
TRACED BY J.R. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5014 SHEET NO.

A-2-360

1-U.M.#P. 21×½×3'-7-46 Silicon

2-Le-4×4×⅞×1'-1'-0b5 Carbon

1-L5

Exact

5@3'-1'-3 6½

6@3'-1'-6 4 4 4 4½

9@6'-4'-6

8'-10 5/32"

4'-9 23/32"

4'-9 23/32"

15@6'-7-6

9'-7 5/16"

39-6a Milled Length Exact

45'-0 3/4"

32'-10 3/4"

19'-2½+⅝-19'-2⅞

19'-2½+⅝-19'-2⅞

14@6'-7-0

4'-9 23/32"

1'-9 27/32"

6'-7½

1-U.M.#P. 21×⅞×3'-7-46

Exact

5@3'-1'-3 6½ 4@3'-1'-0¾

5'-6½

Crown of Roadway

℄ of U5

2-Le-4×4×⅞×1'-1'-0b5 Carbon

1-Web PL b5 Carbon

2-Fills b5 Carbon

Shop rivets in F.S.

Chisk & Chip N.S. Far N.S. PL.

Chisk & Chip F.S. Far F.S. PL.

1-L.5×3½×⅝×2'-0-h5 Carbon

1-L-h5

4-Le-4×3½×½×1'-11½ b5L Carbon

1-Web PL 19⅜×1'-11½ b5 Carbon

2-Fills 8⅜×½×1'-2 b5 Carbon

¼ Not More

Exact

1-Fill-5×½×0'-11½"-d1"-Carbon

1-L.5×3½×⅝×2'-0¼-c5L Carbon

SEE NOTE ② SHEET

SEE NOTE ② SHEET 2

Mark Near Side of Near Web "Inside"

1-L-4×3½×⅝×1'-3½-f4E Carbon)

1-Fill-4×½×1'-0-g4-Carbon)

1-L-f4L

1-Fill-g4

In N.S. PL only

SEE NOTE ③ SH. #1

(1-PL.25×½×5-6a3-d4-N.S. Carbon

1-PL.25×½×5-6a3-d4-F.S. Carbon

RT2 N.S.

RT2M F.S.

MILL

13'-8⅞"

℄ of U6

MAIN MATERIAL

2-Le-4×4×½×39'-6a-M2E

2-Le-8×6×½×39'-6a-M2E

1-UM Gov PL 21×⅞×39'-6a-M2E

2-UM WEB PLs 26×½×39'-6a M2E

2-UM WEB PLs 26×½×39'-6a M2E

} SILICON

RT6

RT5

(1-PL.65×½×6'-11-a5L N.S.

1-PL.65×½×6'-11-b5L F.S.

} SILICON

In N.S. PL only

RT2M N.S.

RT2M F.S.

SEE NOTE ③ SH. #1

MILL

Not more

℄ of U7

7@3'-1'-9

12 Spaces @9⅞=9'-10½

38'-5+½=38'-5½

20 Spa. @9⅞=16'-5½

6@3'-1'-3

Exact

1-Fill-5×½×0'-6¾"-a5 Carbon

12-Lac. PLs 6×½×2-1"-w5-Carbon

1-PL.21×⅜×1'-8-v5-Carbon

20 Lac. PLs w5

1-Fill-a5 5

1-PL.21×⅜×1'-8-f5 Carbon

3-Lac. PLs w5

1'-10 6/16" Chord L

1'-8⅜

on PL

2'-0½

1'-9½

2'-0

SECTION AA

1'-10

1'-8⅜

SECTION BB

2- TOP CHORDS U5-U7R AS SHOWN

2- TOP CHORDS U5-U7L OPP HAND

Note:-
Rivets ¾" ϕ Open holes 15/16" ϕ
Holes punched 1/16" ϕ reamed to size after assembling except holes for bracing, lacing bars & tie plates may be punched full size.
Holes marked (R) to be punched 1/16" and reamed to size, or drilled from the solid, to a metal templet.

Burrs to be removed from all holes
Paint- One coat of Sherwin Williams Kromik Structural Steel Primer #63.

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIV

TOP CHORD SECTIONS
U5-U7
DECK TRUSS SPANS

APPROVED Waddell & Hardesty
1-21-30

McCLINTIC-MARSHALL CONST
PITTSBURGH, PA.
IN CHARGE GF Stelzner
MADE BY JAF DATE CHECKED BY DA
TRACED BY JAF DATE REVISED DA
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK

CONT. NO. 5014 SHEET NO.

1-Fill G-⅜×1'-1¼-b Carbon
1-L-a^L
1-Fill-b
1-UM.PL 21×⅜×1'-8¾-c-Carbon
22 Lac.Pls-p-Carbon
1-UM.PL 21×⅜×1'-8¾-d-Carbon
1-Fill-f
1-L-a^R
28 on Fill
Note:- Mark this Flange "Top"
1-Fill-e-Carbon
1-L-a^L
1-L-a^R
4 L 6×4×⅜×2'-4½ a^R Silicon
Note:- Mark this end "Lower End"
Cut PL
2 L 6×4×½×26'-10
2 L 6×4×½×26'-7
2-UM.Web Pls 24×⅜×26'-10
Silicon
1-Fill G-⅜×1'-10¼-f-Carbon
22 Spaces @ 10⅜ = 18'-6¼
26'-10
SEE NOTE ③ SHEET #1
RT6
RT13
13@3 = 3'-3
3⅜
44 Spaces @ 5 11/16 = 18'-6¼
26'-6 9/16
31'-6⅝ W.P. to W.P.
22 Spaces @ 10⅜ = 18'-6¼
15@3 = 3'-9
4⅞
2'-7
U1 U9 L2 L8
1-Fill-g
1-L-a^L
1-Fill 3×7/16×0'-6⅜-e-Carbon
1-Fill-k
1-L-a^L
22 Lac. Pls 5×7/16×2'-10⅜ p-Carbon
on Fill
1-L-a^R
1-UM.PL 21×⅜×1'-8¾-h-Carbon
1-UM.PL 21×⅜×1'-8¾-m-Carbon
1-Fill G-⅜×1'-5¼-g-Carbon
1-Fill G-⅜×1'-7¼-k-Carbon
4-DIAGONALS-L0-U1 } Alike
4- " -U9-L10 }

1-L-L^L
1-UM.PL 18×⅜×1'-8¾-w-Carbon
1-Washer 2¼"ϕ×⅜th-Carbon
Note:- MARK THIS FLANGE "Top"
1-PL-w-Carbon
1-L-L^R
40-Lac.Bars-aa-Carbon
1-Washer 2¼"ϕ×⅜th-Carbon
1-L-G-4-⅜×1'-4½-f^S Silicon
20 Spaces @ 11¾ = 19'-7
26'-11¼
2 L 6×4×½×26'-11¼
2 L 6×4×½×26'-8¼
2-U.M. Web Pls 27×⅜×26'-11¼
Silicon
Note:- Mark this end "Lower End"
Cut PL
SEE NOTE ③ SHEET #1
RT14
RT7
9@3-2'-3
Panel 'A'
16 Panels A = 15'-8
26'-7 13/16
31'-6⅝ W.P. to W.P.
20 @ 11¾ = 19'-7
11@3-2'-9
U1 U9 L2 L8
2'-6½
2'-4
2'-3 5/16
2'-0⅜
1-Wash. 2¼"ϕ×⅜th Carbon
40-Lac. bars 2½×⅜×1'-5⅝"-c to c.-aa-Carbon
1-UM.PL 18×⅜×1'-8¾-w Carbon
1-Wash. 2¼"ϕ×⅜th Carbon
1-PL-w-Carbon
4-DIAGONALS-U1-L2 } Alike
4-DIAGONALS-L8-U9 }

1-UM.PL 21×⅜×1'-9"-ab-Carbon
1-Wash 2¼"ϕ×⅜th-Carbon
26 Lac.Bars 2½×½×2'-1⅜-c.to c.-ac-Carbon
1-PL-ab
Note:- Mark this Flange "Top"
Note:- Punching & Material in top & Bottom Flange Alike
1-Wash 2¼"ϕ×⅜th-Carbon
2'-0⅜
13 Spaces @ 1'-6 = 19'-6
27'-1
4 L 6×4×½×27'-1
2-UM.Web Pls 20×½×27'-1
Silicon
Note:- Mark this end "Lower End"
SEE NOTE ③ SHEET #1
RT9
RT15
Panel 'B'
10@3-2'-6
9-Panels B = 13'-6
26'-9 9/16
31'-6⅝ W.P. to W.P.
2'-4½
2'-4
U1 U9 L2 L8
4-DIAGONALS-L2-U3 } Alike
4- " -U7-L8 }

1-UM.PL 18×⅜×1'-9¼-ad-Carbon
Note:- MARK THIS FLANGE "Top"
Carbon
1-Wash 2¼"ϕ×⅜th
1-PL-ad
1-Wash. 2¼"ϕ×⅜th Carbon
28 Lac.Bars 2½×⅜×2'-1⅜ c.to c.-af-Carbon
Note:- Punching & Material in top & bottom Flanges Alike
14 Spaces @ 1'-6" = 21'-0
27'-2¾
4 L 4×4×⅜×27'-2¾
2 UM.Web Pls 18×⅜×27'-2¾
Silicon
Note:- MARK THIS END "LOWER END"
SEE NOTE ③ SHEET #1
RT16
RT10
Panel 'C'
7@3-1'-9
10-Panels C = 15'-0
26'-11⅝
31'-6⅝ W.P. to W.P.
2'-3½
U3 U7 L4 L6
4-DIAGONALS-U3-L4 } Alike
4- " -L6-U7 }

Note:-
Rivets ⅞ϕ Open holes 15/16ϕ
Holes punched 13/16"ϕ & reamed to size after assembling except holes for lacing bars & tie plates may be punched full size.
Holes marked (RT) to be punched 13/16"ϕ & reamed to size, or drilled from the solid, to a metal templet.

Burrs to be removed from all holes.
Paint One coat of Sherwin Williams Kromik Structural Steel Primer #63
Washers as noted.

APPROVED 1-21-30
Waddell & Hardesty

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIV
DIAGONALS
L0-U1 & U4-L10 & U1-L2 & L8-U9 & L2-U3 & U5-L4 &
DECK TRUSS SPANS

McCLINTIC-MARSHALL CONST.
PITTSBURGH, PA.
IN CHARGE G.F. Steigner.
MADE BY JAF DATE CHECKED BY DATE
TRACED BY F.M. DATE REVISED DATE
SCALE- INCH PER FOOT LAST ASSEMBLING MARK
CONT. NO. 5014 SHEET NO. 7

A-2-361

3 Girders G1E^R As shown
2 " G2E^R " "
1 " G3E^R " "
3 " G1AE^L Opp. hand & as noted
2 " G2AE^L " " & "
1 " G3AE^L " " & "
4 Tie Plates - M1E

Rivets: 7/8" ϕ
Holes: 15/16" ϕ Unless noted
Holes punched 11/16" ϕ & reamed to 15/16" ϕ after assembly in shop except lateral plates which may be punched full size & material over 7/8" thick which is to be drilled from the solid.
Holes marked (RT) to be subpunched 11/16" ϕ & reamed to 15/16" ϕ thru a metal template
Burrs are to be removed from all open holes
Web pls. must be sheared so as to get joint between the plates not in excess of 1/8" otherwise they will have to be planed
Paint: One coat of Industrial Paint Co's Brown Nocoro

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVE[R]

EAST APPROACH
GIRDERS SPANS #2 TO #7 INC.

APPROVED 11-11-29 / 10-22-29
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. C[O.]
PITTSBURGH, PA.
IN CHARGE Wm son
MADE BY A.E.S. DATE
CHECKED BY F.B.A. DATE
TRACED BY J.M. DATE
REVISED DATE
SCALE: INCH = 1 FOOT
LAST ASSEMBLING MARK

Notes:—

Rivets 7/8"φ

Holes 15/16"φ Unless noted.

Holes punched 11/16"φ & reamed to 15/16"φ after assembly in shop except lateral plates which may be punched full size & material over 7/8 thick which is to be drilled from the solid.

Holes marked (RT) to be sub-punched 11/16"φ & reamed to 15/16"φ thru a metal template

Burrs are to be removed from all open holes.

Web Pls must be sheared so as to get joint between the plates not in excess of 1/8" otherwise they will have to be planed.

Paint- One coat of Industrial Paint Co's. Brown Nocoro

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

EAST APPROACH
GIRDER- SPAN #1

APPROVED 11-11-29 12-5-29.
Waddell & Hardesty.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Wm Sort
MADE BY A.E.S. DATE — CHECKED BY F.G.A. DATE 10-9-29
TRACED BY F.M. DATE — REVISED — DATE
SCALE- INCH = 1 FOOT — LAST ASSEMBLING MARK G4
CONT. NO. 5015A SHEET NO. 2

1 Cov. Pl. 18-⅝"×61'-9⅞"

1 Cov. Pl. 18-⅝"×51'-7⅞"

1 Cov. Pl. 18-½"×41'-7"

Notch

Crown of Roadway

Top of Floor beam

Note break in stagger

Cut not chipped to N.S.

2 Pls 8"×8"×¾"×86'-5⅞"

1 Web Pl. 120"×½"×27'-6⅜"

1 Web Pl. 120"×½"×29'-11⅛"

Rivets in bott. flg

20'-0 c. to c. Floor beams

21'-9⅞" c. to c. Floor beams

Section A-A

Section C-C

Section D-D

Section B-B

Details not shown same as for top flange except as noted

⅞" ϕ Rivets

℄ Pier

Holes for 1¼ϕ Bolts

1 L 8"×4"×½"×1'-4½" a.k. It must be straight & true.

Crown of Roadway

℄ Floor beam

Work this sheet in conjunction with Sheet #4

1 Girder G5

1 Tie Plate-M3E

Rivets: ⅞" ϕ Unless noted

Holes: 15/16" ϕ Unless noted

Holes punched ¾" ϕ & reamed to 15/16" ϕ after assembly in shop except lateral plates which may be punched full size & material over ⅞" thick which is to be drilled from the solid

Holes marked (RT) in material ¾" thick or less to be subpunched ¾" ϕ & reamed to 15/16" ϕ thru a metal template. Holes marked (RT) in material over ⅞" thick to be drilled from the solid thru a metal template.

Burrs to be removed from all holes

Web plates must be sheared so as to get joint between the plates not in excess of ⅛ otherwise they will have to be planed.

Paint — One coat of Industrial Paint Co's Brown Nacoro

Approved 11-11-29

Waddell & Hardesty.

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

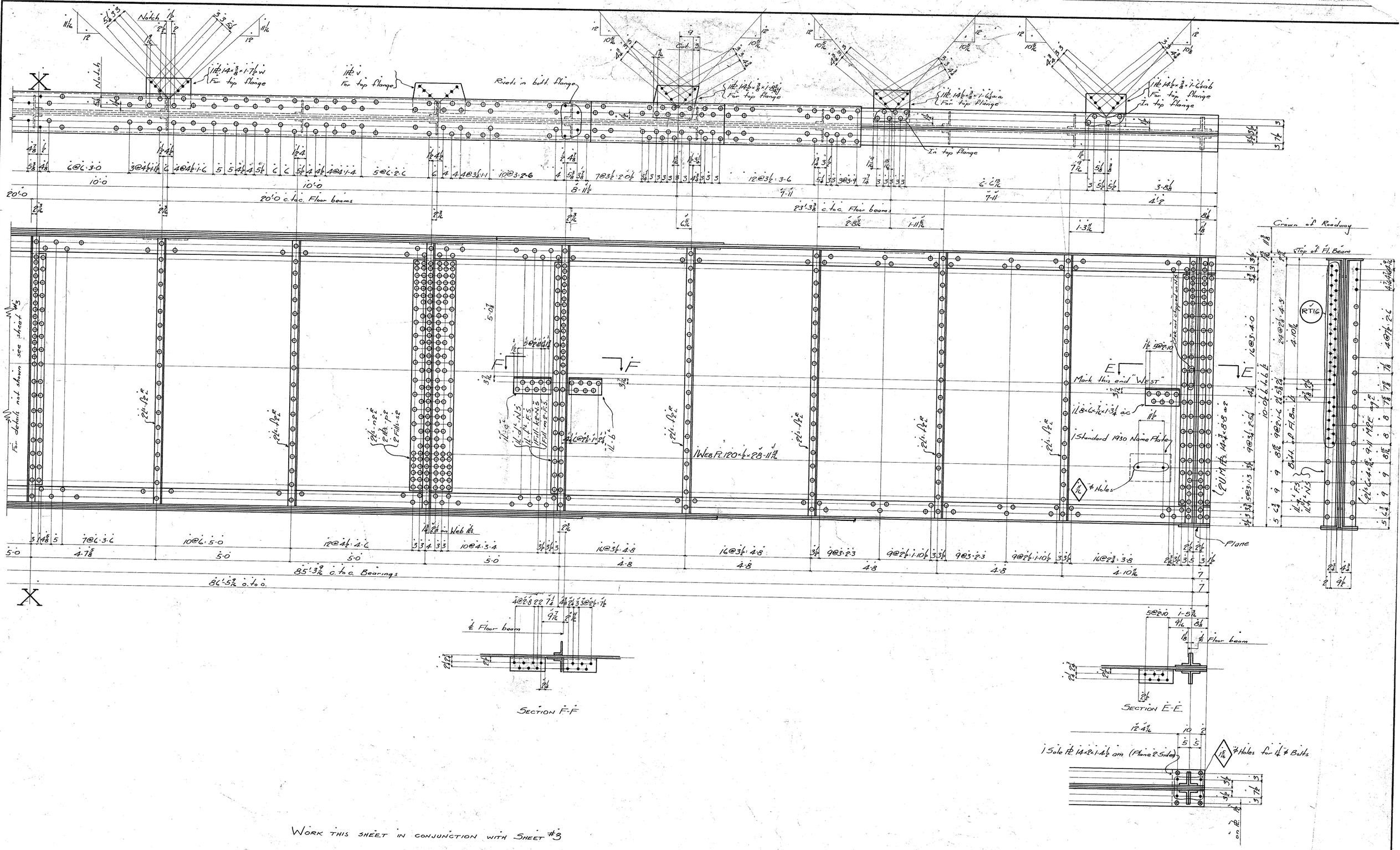
EAST APPROACH
GIRDER - SPAN #1

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE Wd Sont
MADE BY A.E.S. DATE CHECKED BY F.B.A. DATE 10-11-29
TRACED BY J.M. DATE REVISED DATE
SCALE- INCH = 1 FOOT LAST ASSEMBLING MARK

CONT. NO. 5015A SHEET NO. 3

For remainder of details see Sheet #4



Work this sheet in conjunction with Sheet #3

Notes:
See Sheet #3

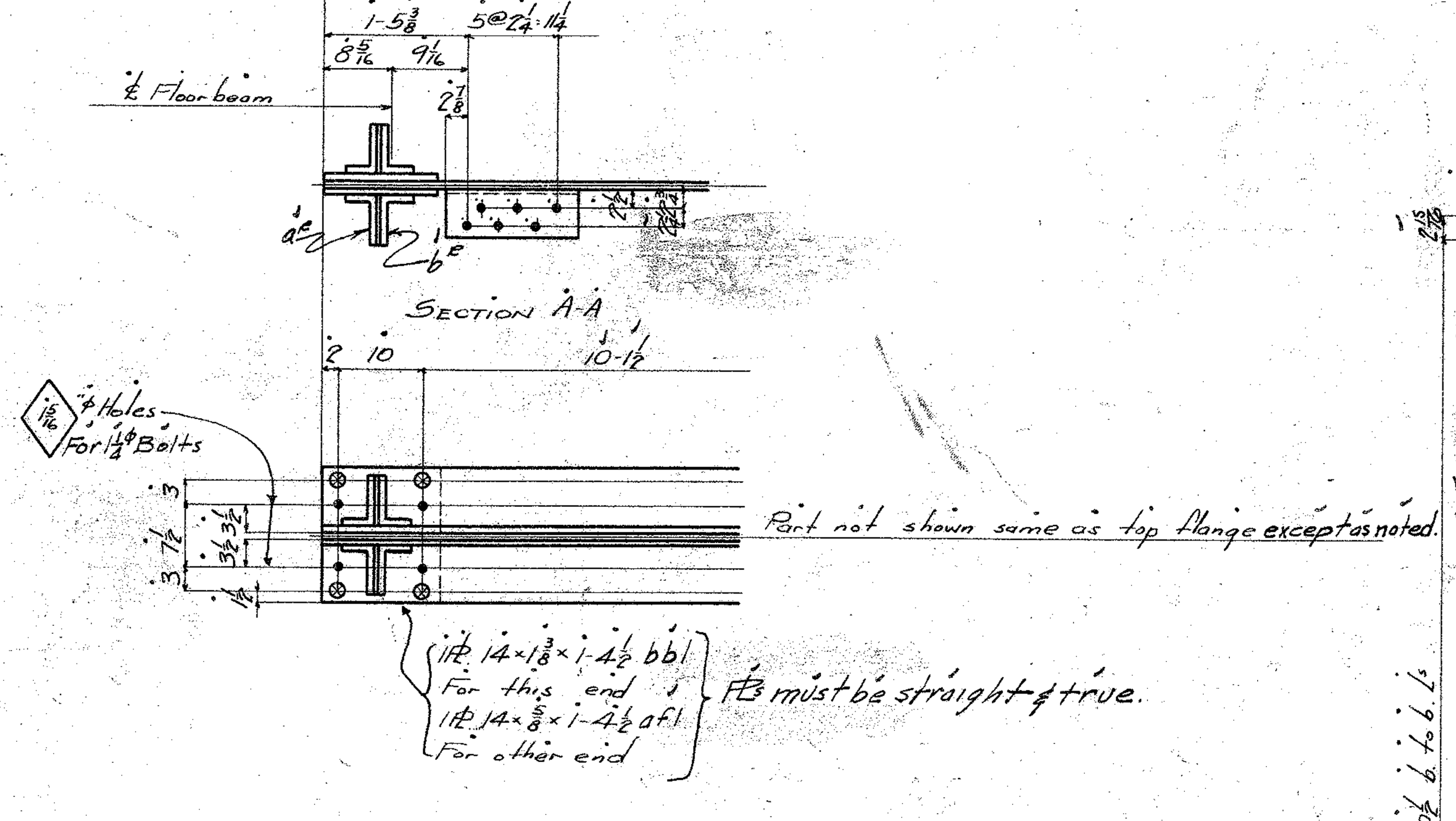
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
EAST APPROACH
GIRDER-SPAN #1

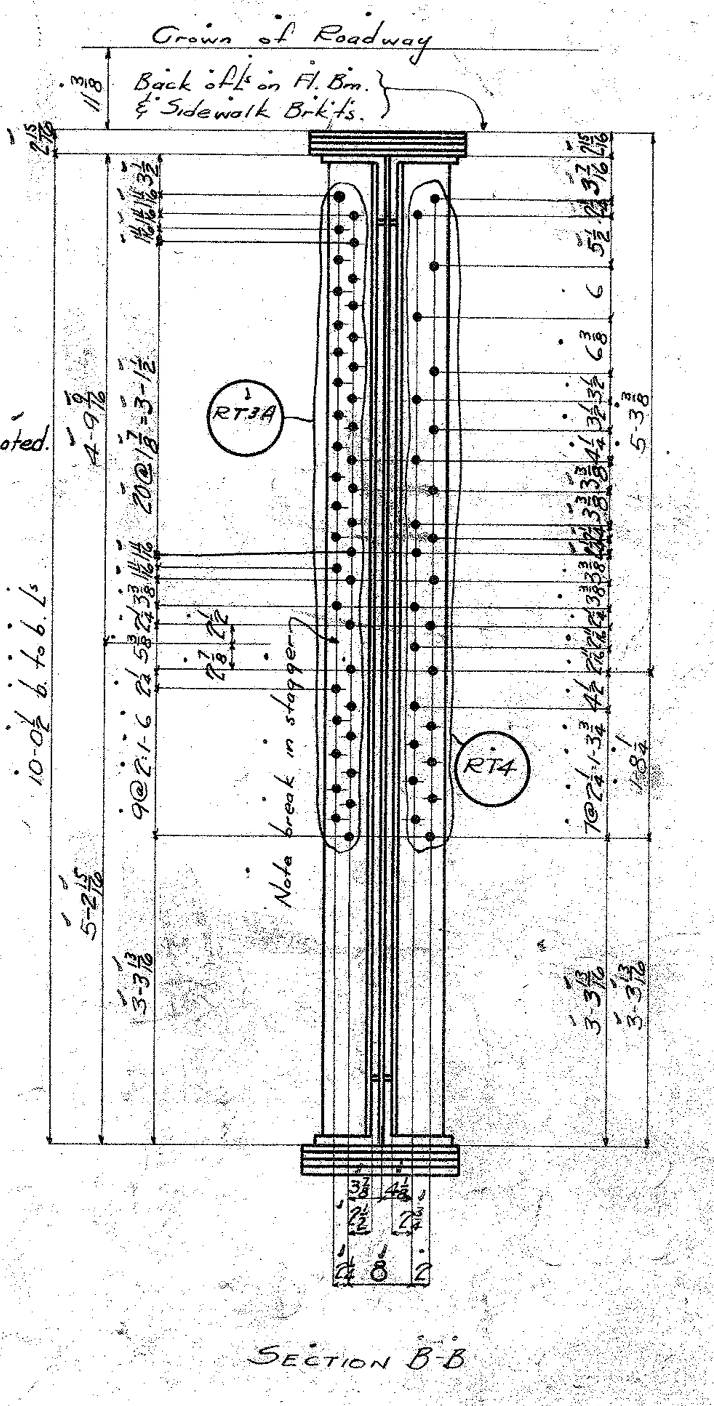
12-5-29
APPROVED 11-11-29
Waddell & Hardesty.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE	W.M. Son				
MADE BY	A.E.S.	DATE	CHECKED BY	F.B.A.	DATE 10-11-29
TRACED BY	J.M.	DATE	REVISED		DATE
SCALE—	INCH = 1 FOOT		LAST ASSEMBLING MARK		

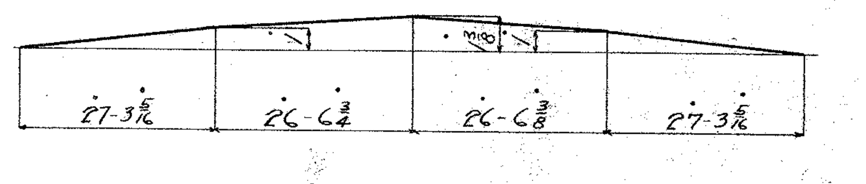
CONT. NO. 5015A SHEET NO. 4





Section B-B

1 Girder G5W^R As shown
1 " G5AW^L Opp. hand and as noted



Camber Diagram

Work this sheet in conjunction with sheet #105.

Rivets: 7/8"φ
Holes: 15/16"φ unless noted
Holes punched 13/16 & reamed to 15/16 after assembly in shop except lateral plates which may be punched full size & material over 7/8" thick which is to be drilled from the solid.
Holes marked (RT) to be subpunched 11/16"φ & reamed to 15/16"φ thru a metal template
Burrs are to be removed from all open holes

Web pls. must be sheared so as to get joint between the plates not in excess of 1/8" otherwise they will have to be planed.

Paint: One coat of Industrial Paint Co's Brown Nocoro

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVE

WEST APPROACH
GIRDERS-SPAN # 3W

APPROVED 1-13-30
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. C
PITTSBURGH, PA.
IN CHARGE W^m son
MADE BY A.T. DATE CHECKED BY F.D.A. DATE
TRACED BY J.M. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5015A SHEET NO. 10

A-2-371

Notch 2 ℄

1 ℄ bf

Top Flg. only

Rivets in Batt. Flge

Top Flg Cambered

Bott. Flg.

21'-3 c. to c. Fl. Bm.

21'-3⅜ c. to c. Fl. Bm.

(21'-3¾ Cambered Length Top Flg.)

Rivets for G5W²
Open Hole for G5AW¹

1 Web Pl. 120 × ½ × 26'-6½

2 Fills. v

Sym. abt. ℄ except as shown & noted

106'-5¾ c. to c. Bearings

107'-7⅞ o. to o.

SECTION C-C

Balance of Girder to Left of Line X-X shown on Sheet #104

Work this sheet in conjunction with sheet #104.

For Notes see Sheet #104

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

WEST APPROACH
GIRDERS SPAN 3W

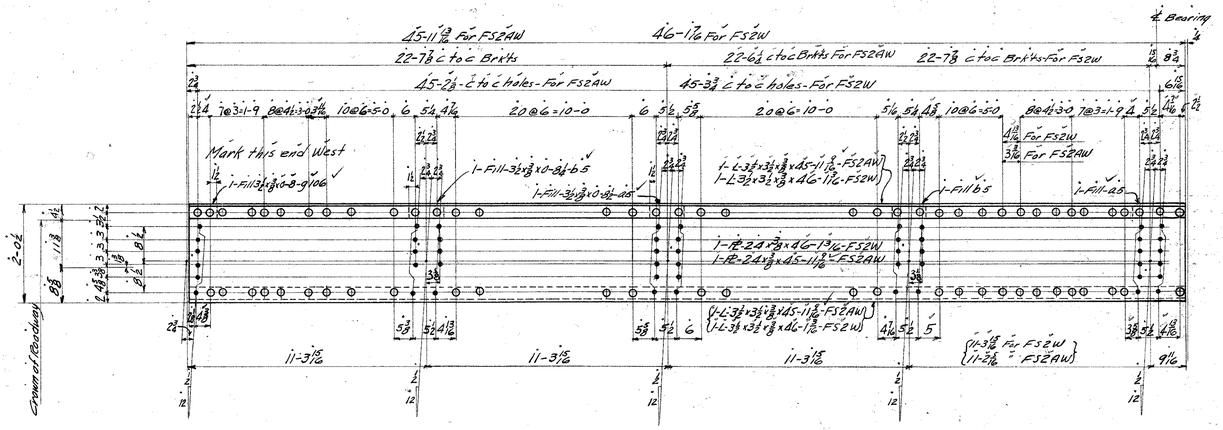
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE Wm Sow
MADE BY A.T. DATE
CHECKED BY F.B.A. DATE 1/20/30
TRACED BY J.M. DATE
REVISED DATE
SCALE- INCH = 1 FOOT
LAST ASSEMBLING MARK L6

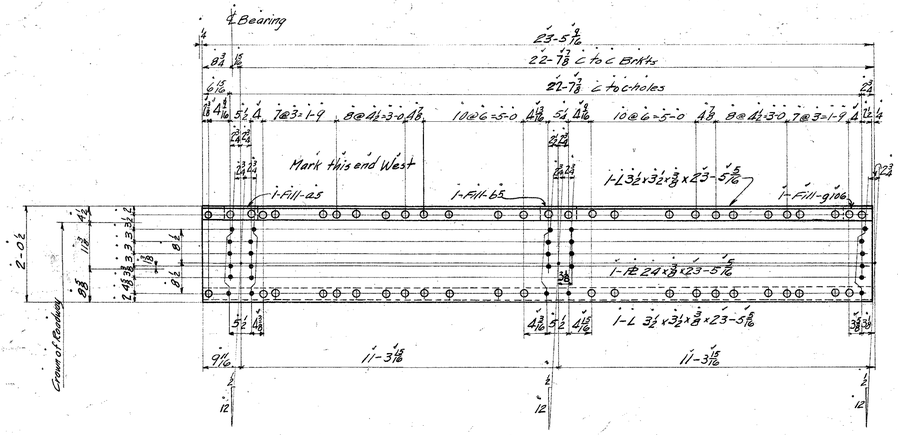
CONT. NO. 5015A SHEET NO. 105

APPROVED 1-6-30
Waddell & Hardesty

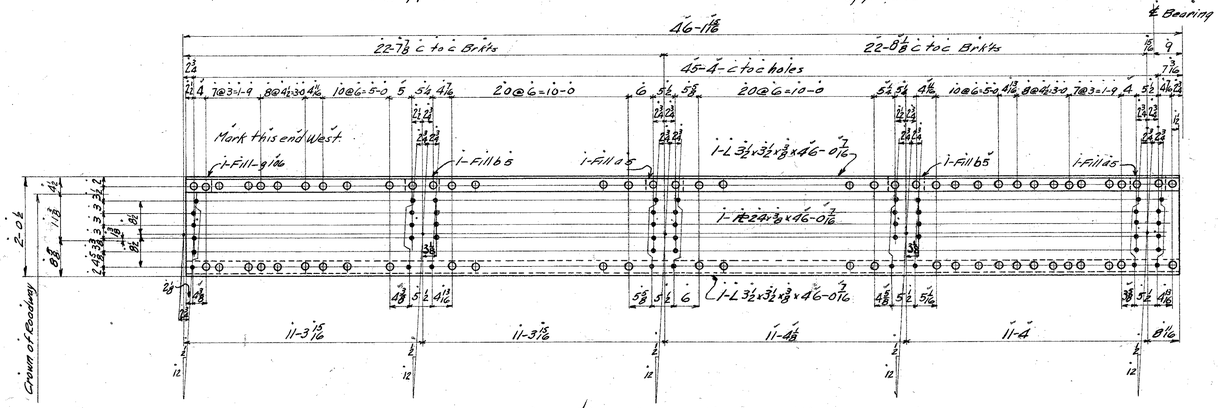
A-2-372



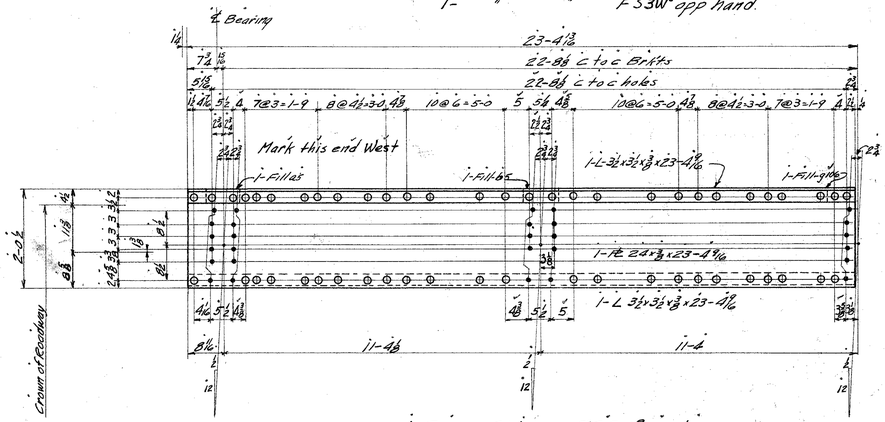
1-Fascia Stringer-FS2AW^R as shown ✓ 1-Fascia Stringer FS2W^R as shown
1- " " FS2AW^L opp hand ✓ 1- " " FS2W^L opp hand



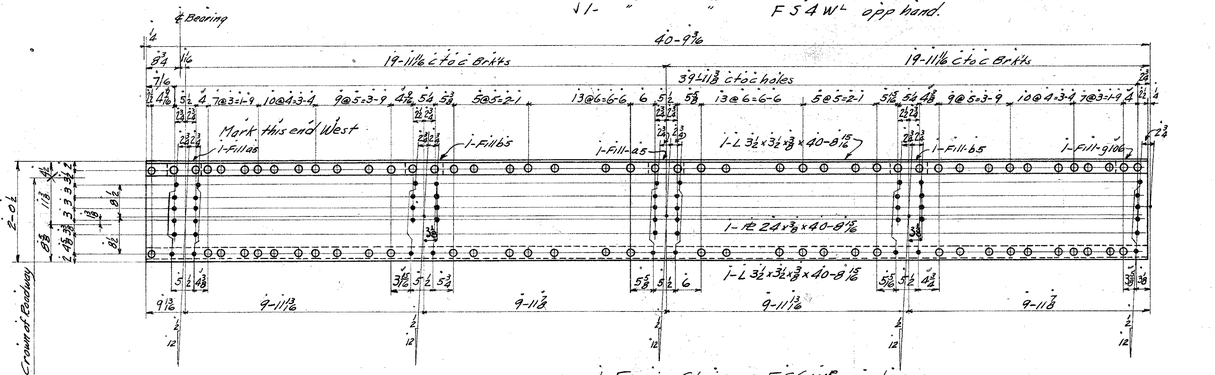
1-Fascia Stringer FS3W^R as shown.
1- " " FS3W^L opp hand.



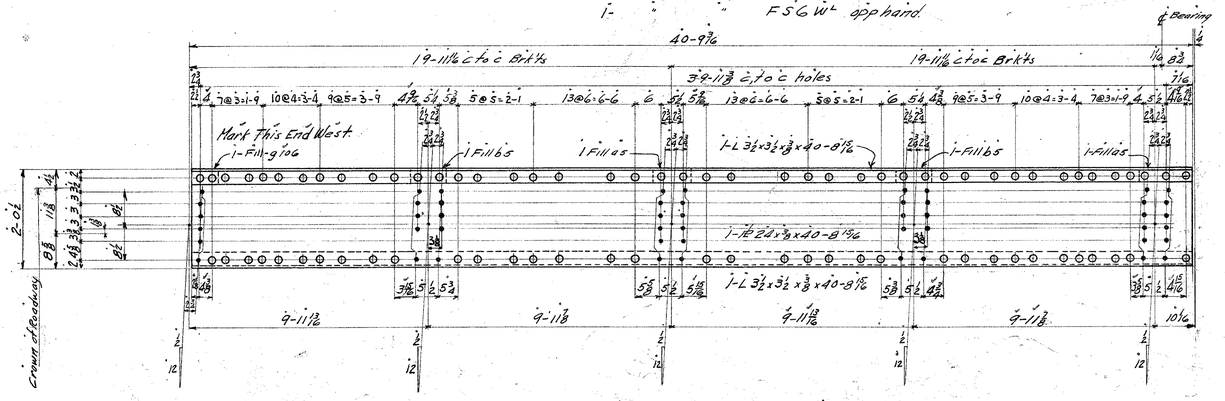
1-Fascia Stringer-FS4W^R as shown.
1- " " FS4W^L opp hand.



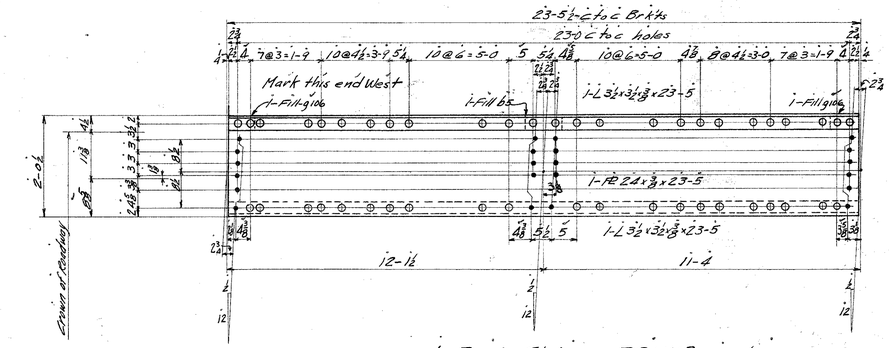
1-Fascia Stringer FS5W^R as shown.
1- " " FS5W^L opp hand.



1-Fascia Stringer FS6W^R as shown
1- " " FS6W^L opp hand.



1-Fascia Stringer FS7W^R as shown.
1- " " FS7W^L opp hand.



1-Fascia Stringer FS1W^R as shown.
1- " " FS1W^L opp hand.

Rivets 7/8" ϕ
Holes 1 1/2" ϕ
Holes punched 1 1/16" ϕ and reamed to 1 5/16" ϕ after assembling
Burrs are to be removed from all open holes.

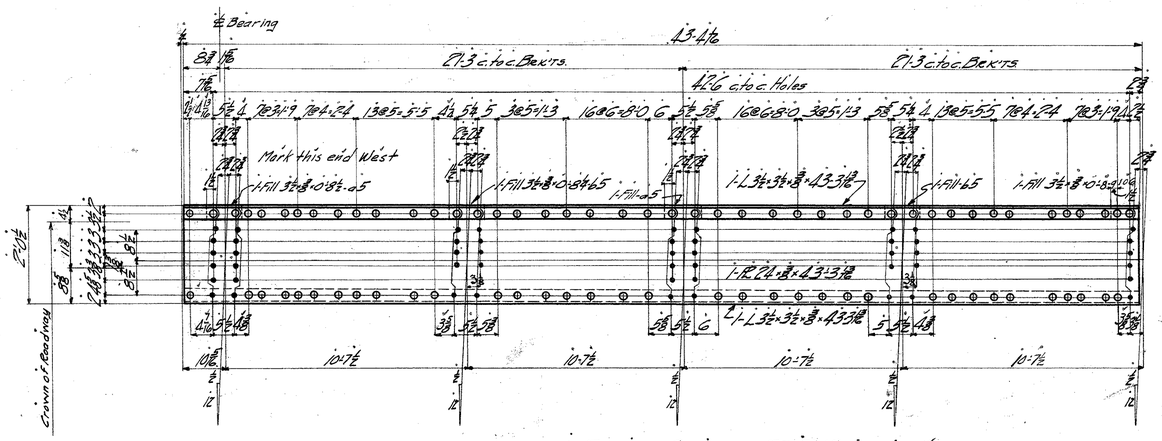
Paint:- One coat of Industrial Paint Co's. Brown Nocoro

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVE
WEST APPROACH
FASCIA STRINGERS SPANS #4 TO #7 Incl.

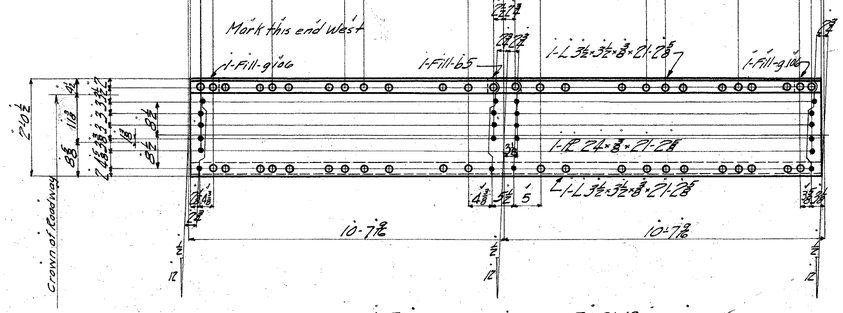
APPROVED 2-17-30
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO
PITTSBURGH, PA.
IN CHARGE WILSON
MADE BY C.W.K. DATE CHECKED BY F.B.A. DATE 1/16
TRACED BY E.L.Z. DATE REVISED DATE
SCALE= INCH = 1 FOOT LAST ASSEMBLING MARK 9
CONT. NO. 5015D SHEET NO. 106

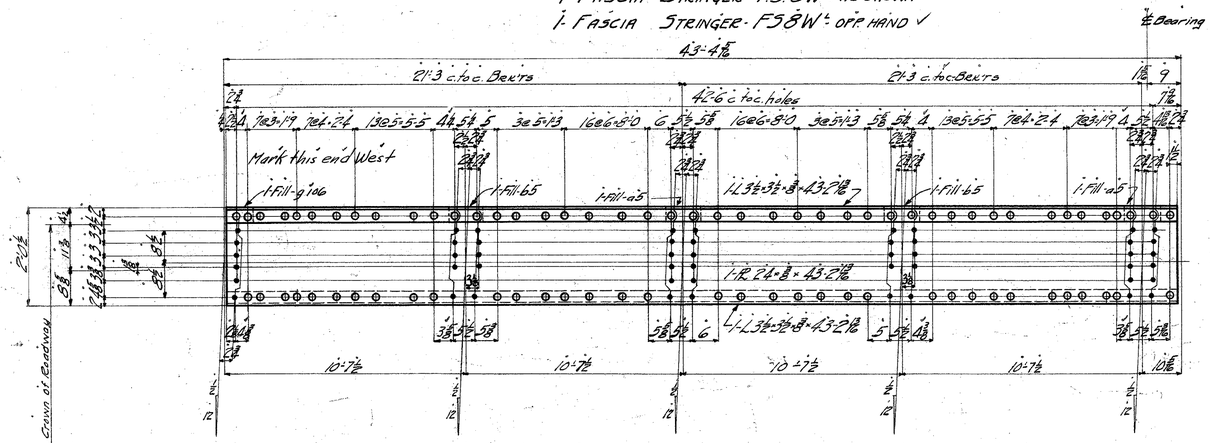
A-2-399



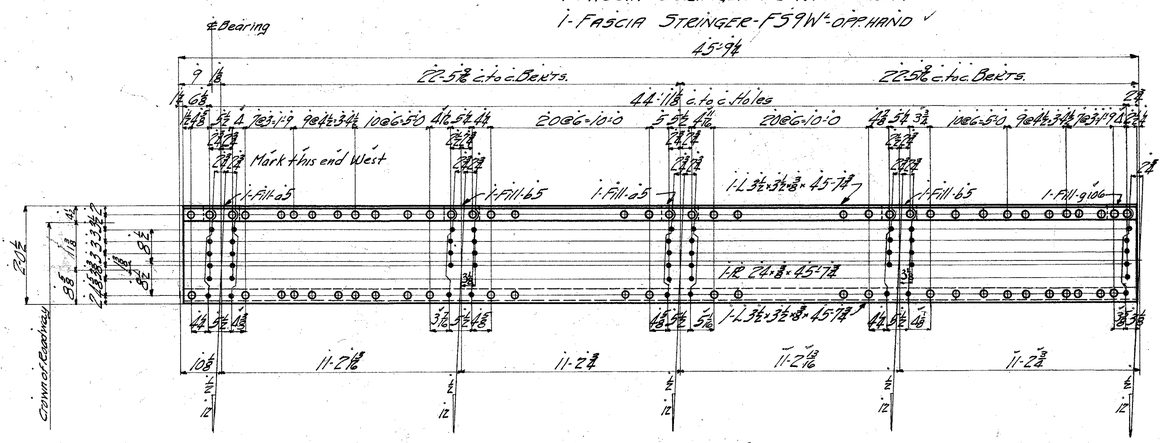
1-Fascia Stringer-FS8W^R as shown ✓
1-Fascia Stringer-FS8W^L- opp hand ✓



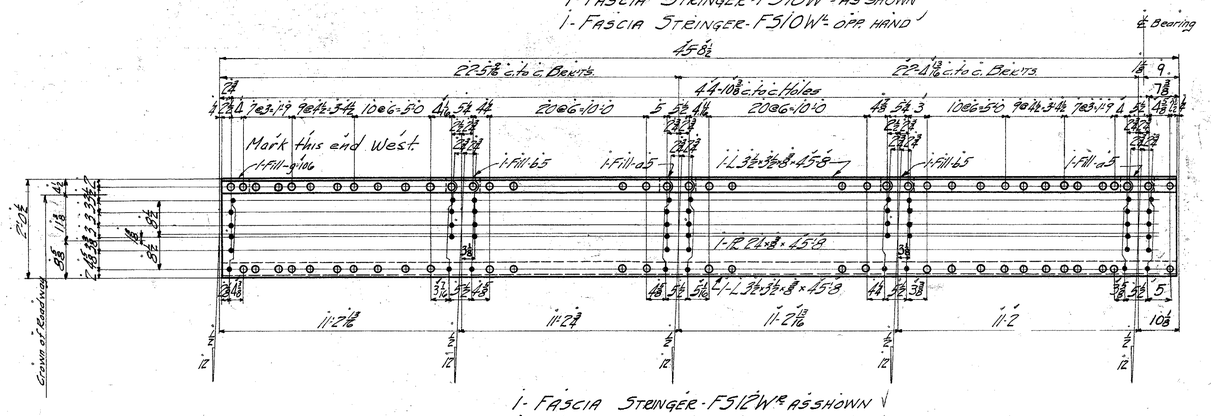
1-Fascia Stringer-FS9W^R as shown ✓
1-Fascia Stringer-FS9W^L-opp hand ✓



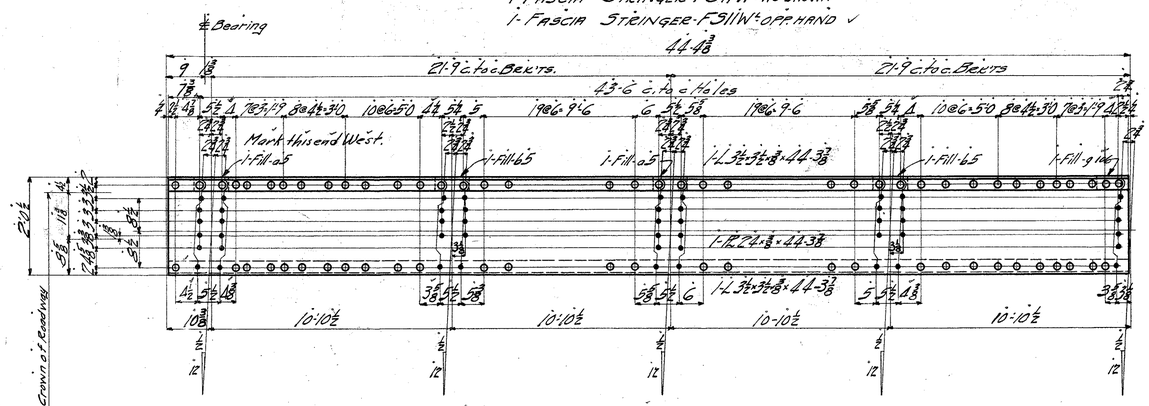
1-Fascia Stringer-FS10W^R as shown ✓
1-Fascia Stringer-FS10W^L- opp hand ✓



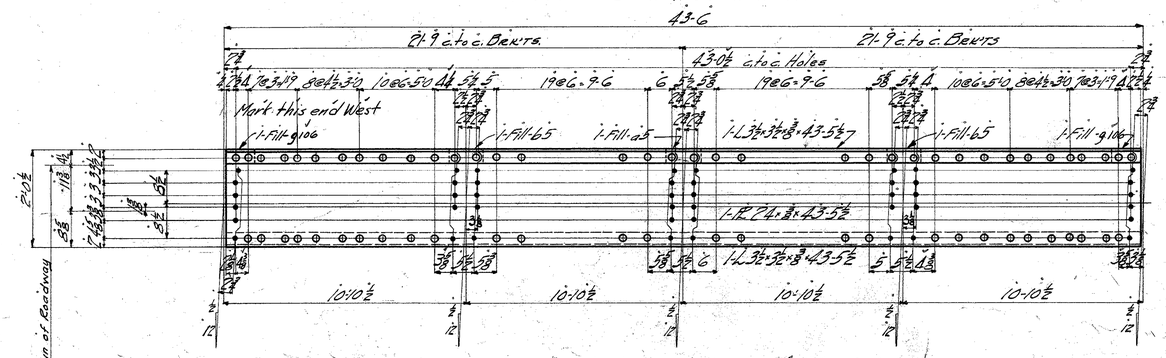
1-Fascia Stringer-FS11W^R as shown ✓
1-Fascia Stringer-FS11W^L-opp hand ✓



1-Fascia Steinger-FS12W^R as shown ✓
1-Fascia Stringer-FS12W^L-opp hand ✓



1-Fascia Steinger-FS13W^R as shown
1-Fascia Steinger-FS13W^L-opp hand



2-Fascia Stringers-FS14W^R as shown ✓
2-Fascia Stringers-FS14W^L-opp hand ✓

Notes:—
Rivets 7/8" ϕ
Holes 15/16" ϕ
Holes punched 1 1/16" and reamed to 15/16"
after assembling
Burrs to be removed from all open holes.

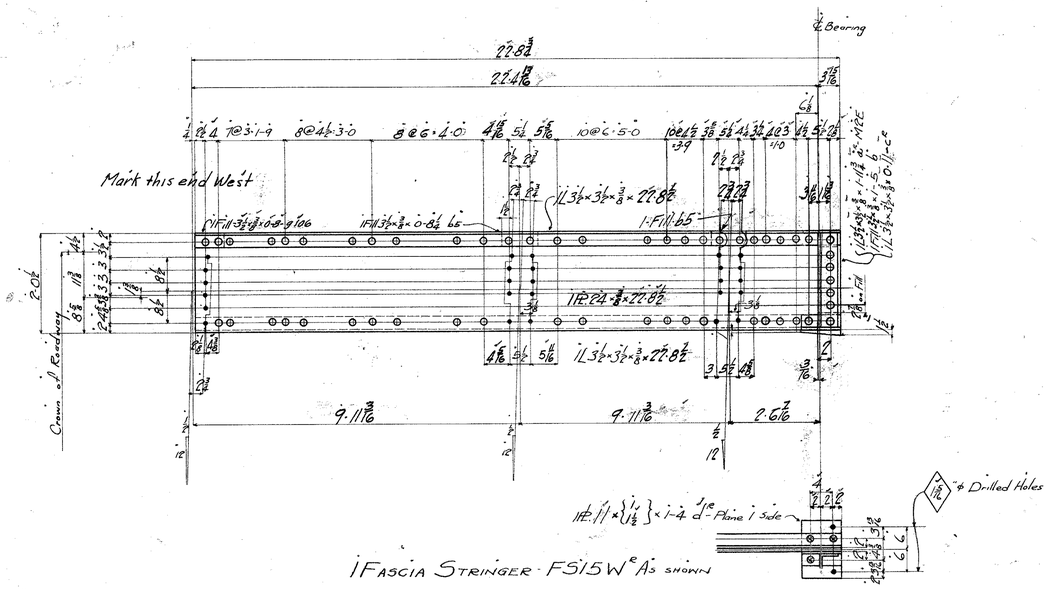
Paint:- One coat of Industrial Paint Co's. Brown Nocoro

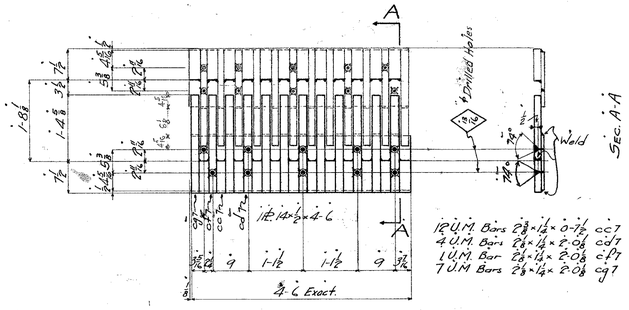
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVE
WEST APPROACH
FASCIA STRINGERS - SPANS 1 TO 3 in

Approved 2-17-30
Waddell & Hardesty

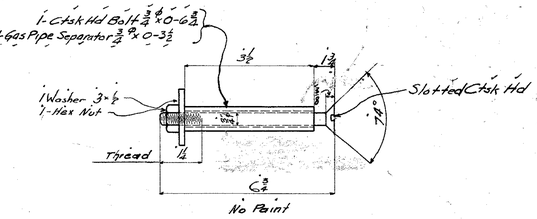
McCLINTIC-MARSHALL CONST. C
PITTSBURGH, PA.
IN CHARGE W.B.D.
MADE BY C.W.E. DATE 11/29 CHECKED BY F.B.A DATE
TRACED BY F.M. DATE REVISED DATE
SCALE- INCH = 1 FOOT LAST ASSEMBLING MARK —
CONT. NO. 5015D SHEET NO. 107

A-2-400

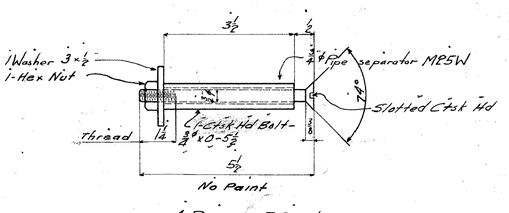




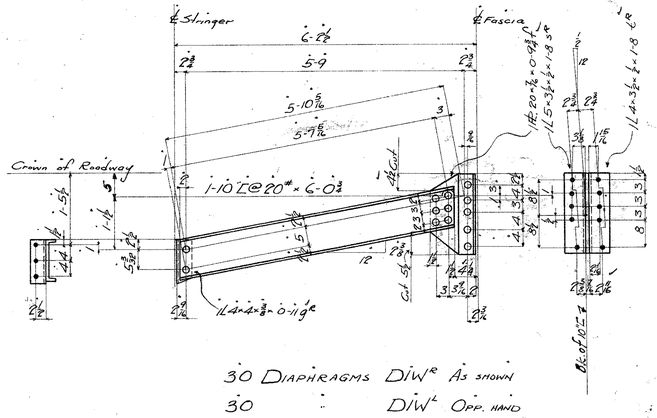
48 Expansion Joints-EJ1W



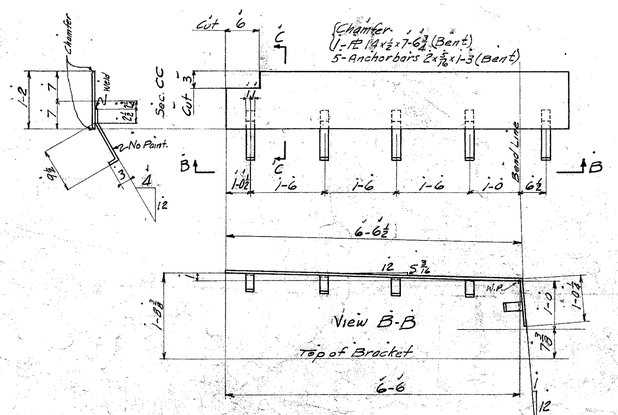
36 Bolts B24W
40 Separators M25W



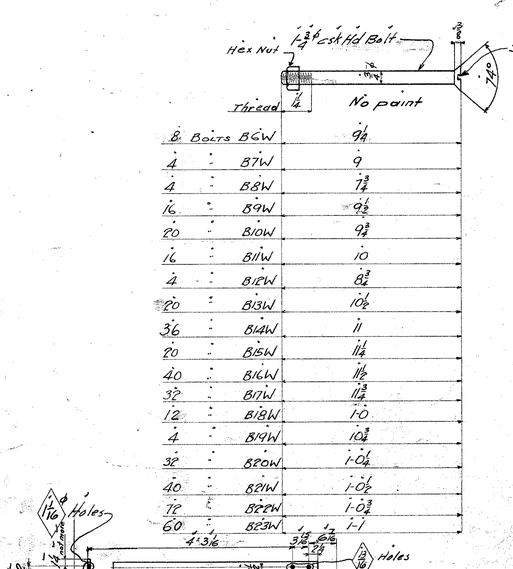
4 Bolts B25W



30 Diaphragms D1W^E As shown
30 " D1W^L Opp. Hand



2 - Sidewalk Expansion Joints EJ2W^E as shown.
2 - " " " EJ2W^L opp Hand.



8	Bolts B6W	9¼
4	" B7W	9
4	" B8W	7⅞
16	" B9W	6½
20	" B10W	9⅜
16	" B11W	10
4	" B12W	8⅜
20	" B13W	10½
36	" B14W	11
20	" B15W	11¼
40	" B16W	11½
32	" B17W	11⅜
12	" B18W	1'-0
4	" B19W	10⅜
32	" B20W	1'-0¼
40	" B21W	1'-0½
12	" B22W	1'-0⅜
60	" B23W	1'-1

¾ ℄ Gas Pipe Separators

		No Paint
8	Sep. M1W	5¼
16	" M2W	5⅛
16	" M3W	6¼
16	" M4W	6¼
16	" M5W	6⅞
16	" M6W	6⅞
8	" M7W	7⅛
8	" M8W	7⅝
16	" M9W	7⅜
12	" M10W	7⅞
4	" M11W	7⅞
16	" M12W	8¼
16	" M13W	8¼
32	" M14W	8¼
32	" M15W	8⅜
8	" M16W	8⅜
16	" M17W	8⅝
16	" M18W	8⅝
24	" M19W	8¼
16	" M20W	8⅜
16	" M21W	8⅜
16	" M22W	8⅜
32	" M23W	9
64	" M24W	9¼

M25 3½"

1-Diaphragm D12W^E As Shown
1- " D12W^L Opp Hand

ADDED

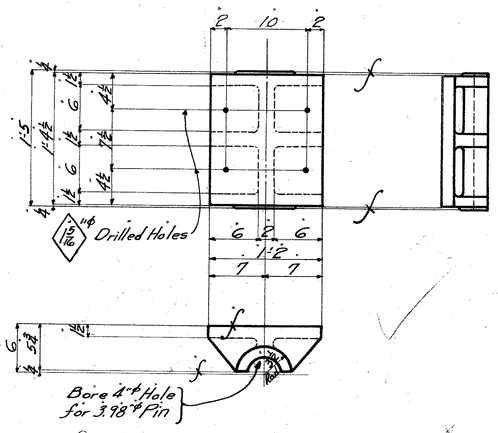
Rivets: ⅞"℄
Holes: 15/16" ℄ Unless noted
Holes punched 11/16" ℄ reamed to 15/16" ℄ after assembling in shop
Paint. One coat of Industrial Paint except as noted.
Col's. Brown No. 6070

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVE
WEST APPROACH
FASCIA STRINGERS-DIAPHRAGMS
& EXPANSION JOINTS

McCLINTIC-MARSHALL CONST. CO
PITTSBURGH, PA.
IN CHARGE Wm Sam
MADE BY CWK DATE CHECKED BY F.B.A DATE 1/1
TRACED BY TM DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5015D SHEET NO. 108

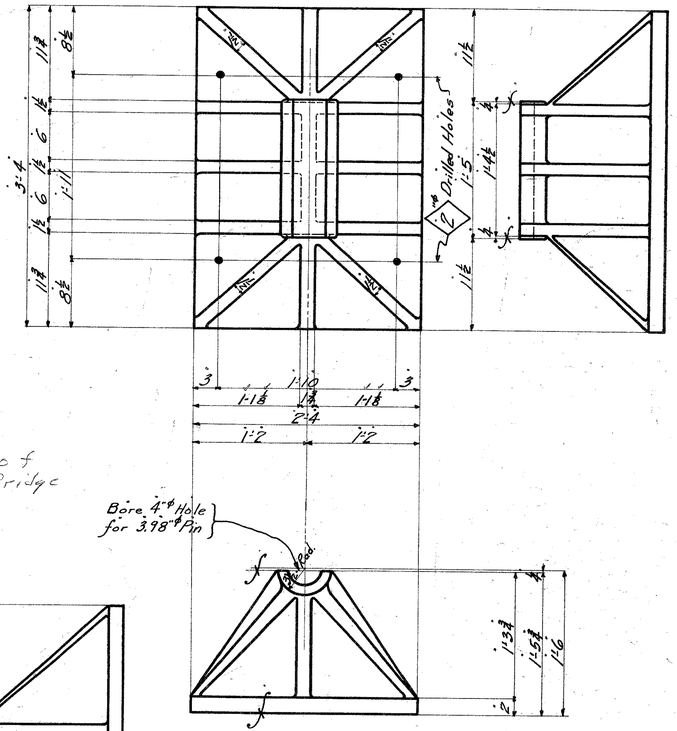
APPROVED 2-17-30
Waddell & Hardesty

A-2-401

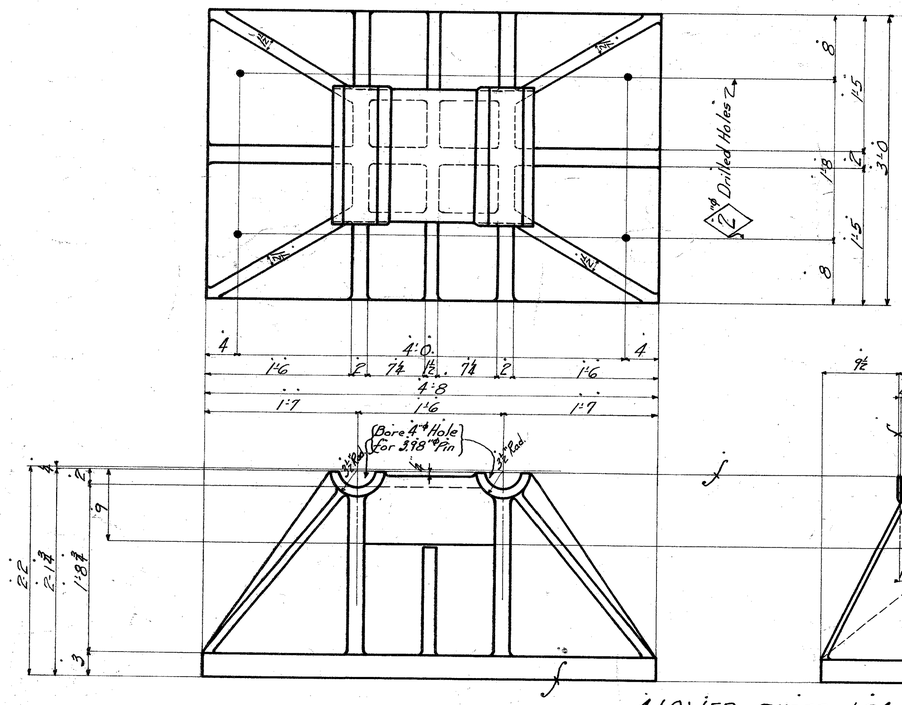


2 ~~56~~ - UPPER SHOES - U51
Annealed Steel Casting
Used at ~~Anchorage End of Spans 1W & 1E~~ & Piers ~~1E to 7E (inc.) & 1W to 7W (inc.)~~

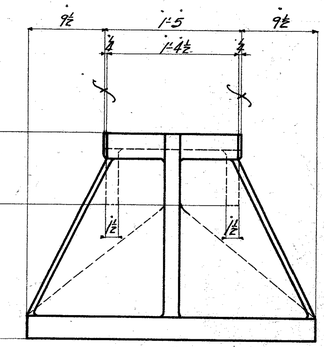
S. Abutment of Sumner St. Bridge

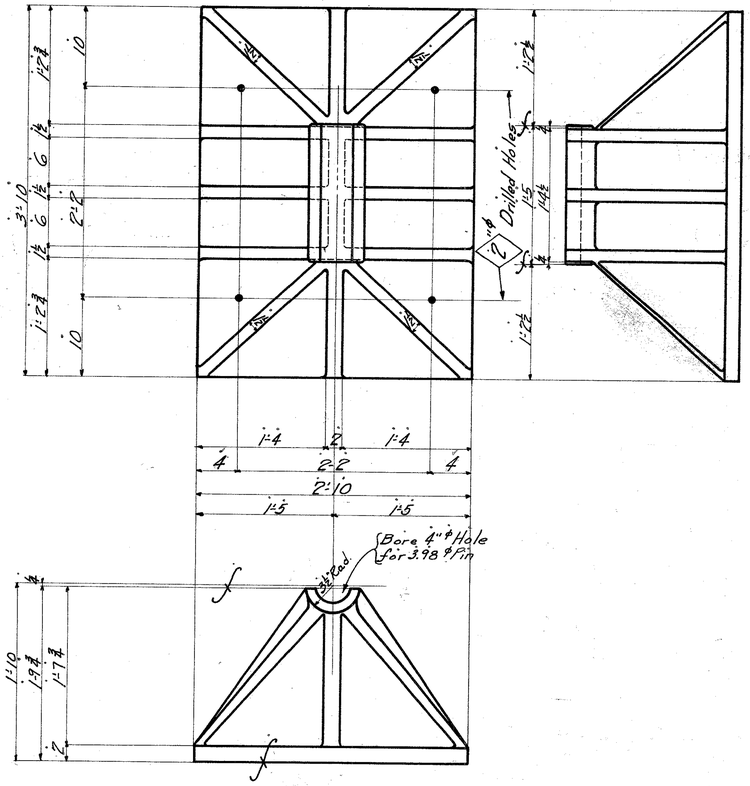


6 LOWER SHOES - L52
Annealed Steel Casting
Used at Piers 7E, 7W & Anchorage End of Span 1E

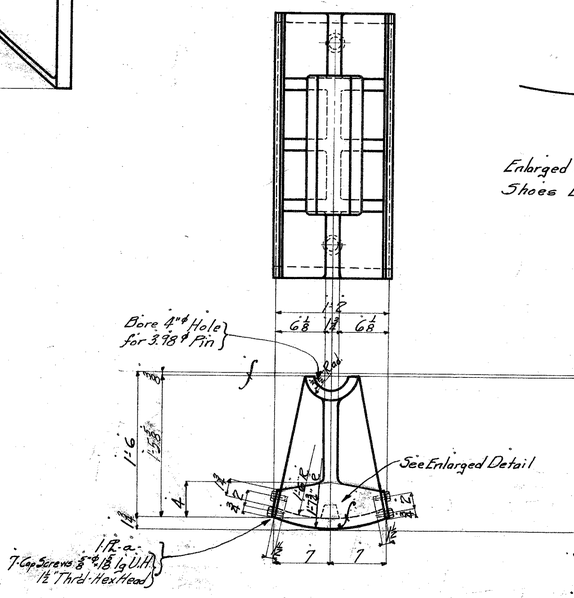


4 LOWER SHOES - L54
Annealed Steel Casting.
Used at Piers 4E & 3W

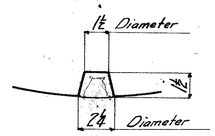




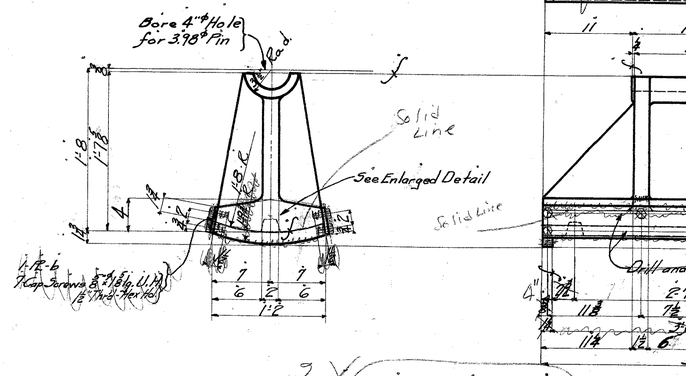
2 - LOWER SHOES - L51
Annealed Steel Casting.
Used at Anchorage End of Span 1W



32 - LOWER SHOES - L53
Annealed Steel Casting
Used at 1E, 2E, 3E, 5E, 6E, 4W, 5W & 6W



Enlarged Detail of Hole in Shoes ~~L53 &~~ L55



2 ~~8~~ LOWER SHOES - L55
OK
Annealed Steel Casting
Used at Pier 1W & 2W

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
EAST & WEST APPROACH
FIXED & EXPANSION SHOES

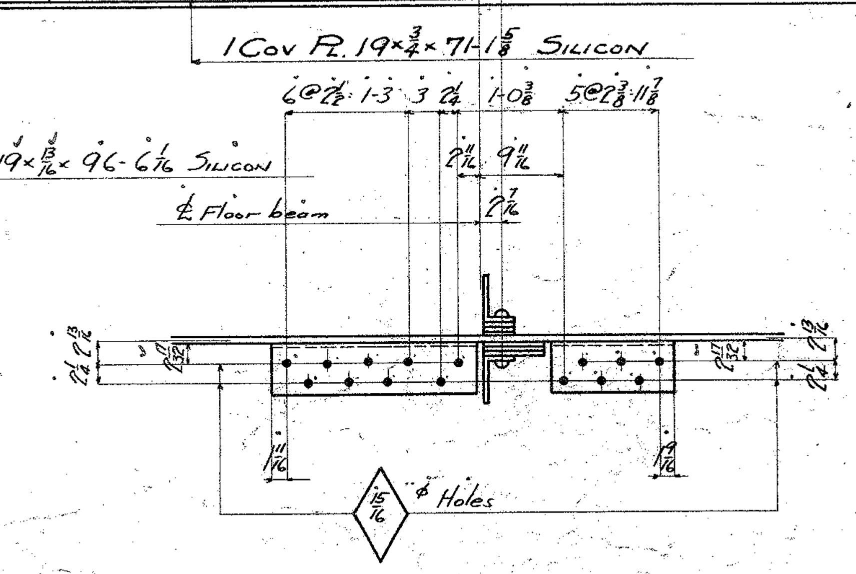
Note:-
Machined surfaces to receive one coat of White Lead & Tallow applied hot.
Balance one coat of Industrial Paint Co's Brown Nacoro
All fillets to be made to 1½" rad.
Care must be taken to locate holes for dowels in rockers accurately.

APPROVED 10-14-29
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W. Sun
MADE BY AT DATE CHECKED BY F.B.A. DATE 10-29
TRACED BY EM DATE REVISED DATE
SCALE- INCH = 1 FOOT LAST ASSEMBLING MARK 2
CONT. NO. 5015E SHEET NO. 1

870 #

A-2-402



Section D-D

NOTE: WORK THIS SHEET IN CONJUNCTION WITH SHEET #1-3&4
FOR SPLICE DIAGRAM SEE SHEET #4
FOR CAMBER DIAGRAM SEE SHEET #1

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIV

WEST APPROACH
GIRDERS - SPAN #1

APPROVED 3-3-30

Waddell & Hardesty

McCLINTIC-MARSHALL CONST
PITTSBURGH, PA.
IN CHARGE Wm son
MADE BY A.E.S. DATE CHECKED BY F.B.A. DA
TRACED BY J.M. DATE REVISED DA
SCALE:- INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5016 SHEET NO. 2

A-2-404

1 Cov Pl. 19-$\frac{3}{4}$ × 16-0$\frac{15}{16}$ Silicon

1 Cov Pl. 19-$\frac{3}{4}$ × 16-0$\frac{1}{16}$ Silicon

Crown of Roadway

Note: Work this sheet in conjunction with Sheets #1-2-4
For Splice Diagram see Sheet #4
For Camber Diagram see Sheet #1

Section E-E

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

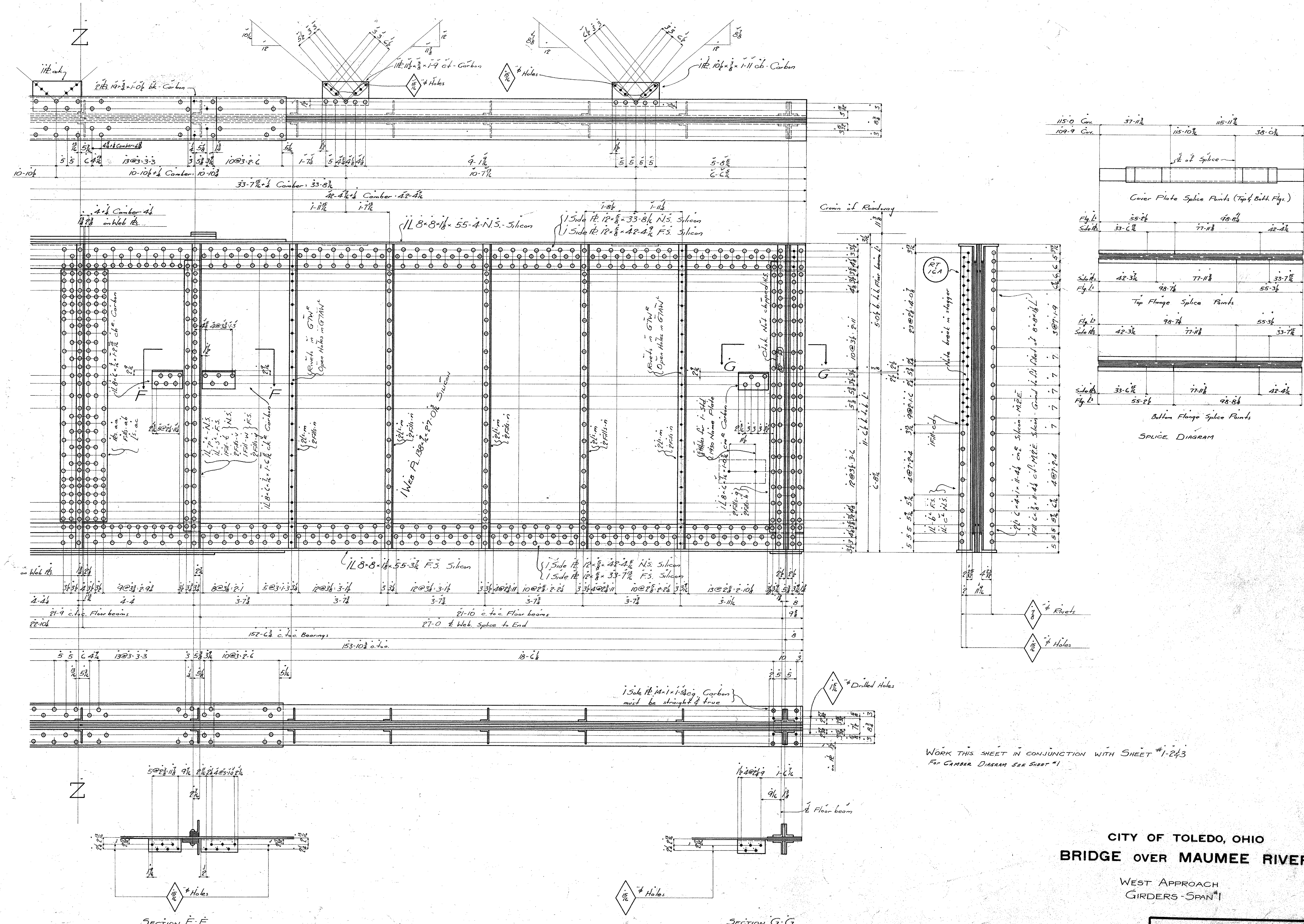
West Approach
Girders - Span #1

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE W.M. Scott
MADE BY A.E.S. DATE
CHECKED BY F.B.A. DATE 2-5-30
TRACED BY J.M. DATE
REVISED DATE
SCALE: INCH = 1 FOOT
LAST ASSEMBLING MARK
CONT. NO. 5016 SHEET NO. 3

APPROVED 3-3-30
Waddell & Hardesty

A-2-405



Work this sheet in conjunction with Sheet #1-2&3
For Camber Diagram see Sheet #1

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER

West Approach
Girders - Span #1

Approved 3-3-30
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
In charge Wmson
Made by A.E.S. Date
Checked by F.C.A Date 5-5-30
Traced by J.M. Date
Revised Date
Scale: Inch = 1 Foot
Last assembling mark C4
Cont. No. 5016 Sheet No. 4

A-2-406

7- STRINGERS - S1E - SPAN 9E
7- " - S7E - " 11E

7- STRINGERS - S2E - SPAN 10E

1 STRINGER S3E
1 " S4E^R As shown
1 " S4E^L Opp. hand

1 STRINGER S5E^R As shown
1 " S5E^L Opp. hand
1 " S6E^R As shown

1 STRINGER - S6E^L Opp. hand

All for Span 8E

7 STRINGERS S11E - SPAN 15E

1 STRINGER S8E^R As shown
S8E^L Opp. hand
} SPAN 9E

7- STRINGERS - S9E - SPAN 13E

SECTION A-A

SECTION C-C

VIEW E-E

SECTION H-H

NOTES:-
Holes ⅞" ø unless noted
⅞" ø Holes punched ¾" and reamed to ⅞" ø for assembly except diaphragms, laterals and lateral plates which may be punched full size and material over ⅝" thick which is to be drilled from the solid.
Holes marked (M) are subpunched ¾" and reamed to ⅞" through a metal template.
Burrs are to be removed from all open holes.

Paint:- One Coat of Industrial Paint.

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
EAST APPROACH
STRINGER SPANS 8-9-10-11-13-15E

APPROVED 12-14-29
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.G. MADE BY C.E. DATE CHECKED BY C.E.S. DATE 10/23
TRACED BY J.M. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK

CONT. NO. 5017A SHEET NO. 1

A-2-407

1-STRINGER SIZE R AS SHOWN
1- " SIZE L OPP HAND } SPAN 13E

1-STRINGER SIZE R AS SHOWN
1- " SIZE L OPP HAND } SPAN 14E

1-STRINGER SIZE R AS SHOWN
1- " SIZE L OPP HAND } SPAN 10E

SECTION B-B AS SHOWN
" E-E OPP HAND

SECTION F-F AS SHOWN
" A-A OPP HAND

SECTION C-C

SECTION D-D

NOTES:-
Rivets 7/8" ø
Holes 15/16" Unless noted.
15/16" Holes punched 1 1/16" and reamed to 15/16" after assembly except diaphragms laterals and lateral plates which may be punched full size and material over 3/4" Thick which is to be drilled from the solid.
Holes marked (R) are subpunched 1 1/16" and reamed to 15/16" through a metal template.
Burrs are to be removed from all open holes.

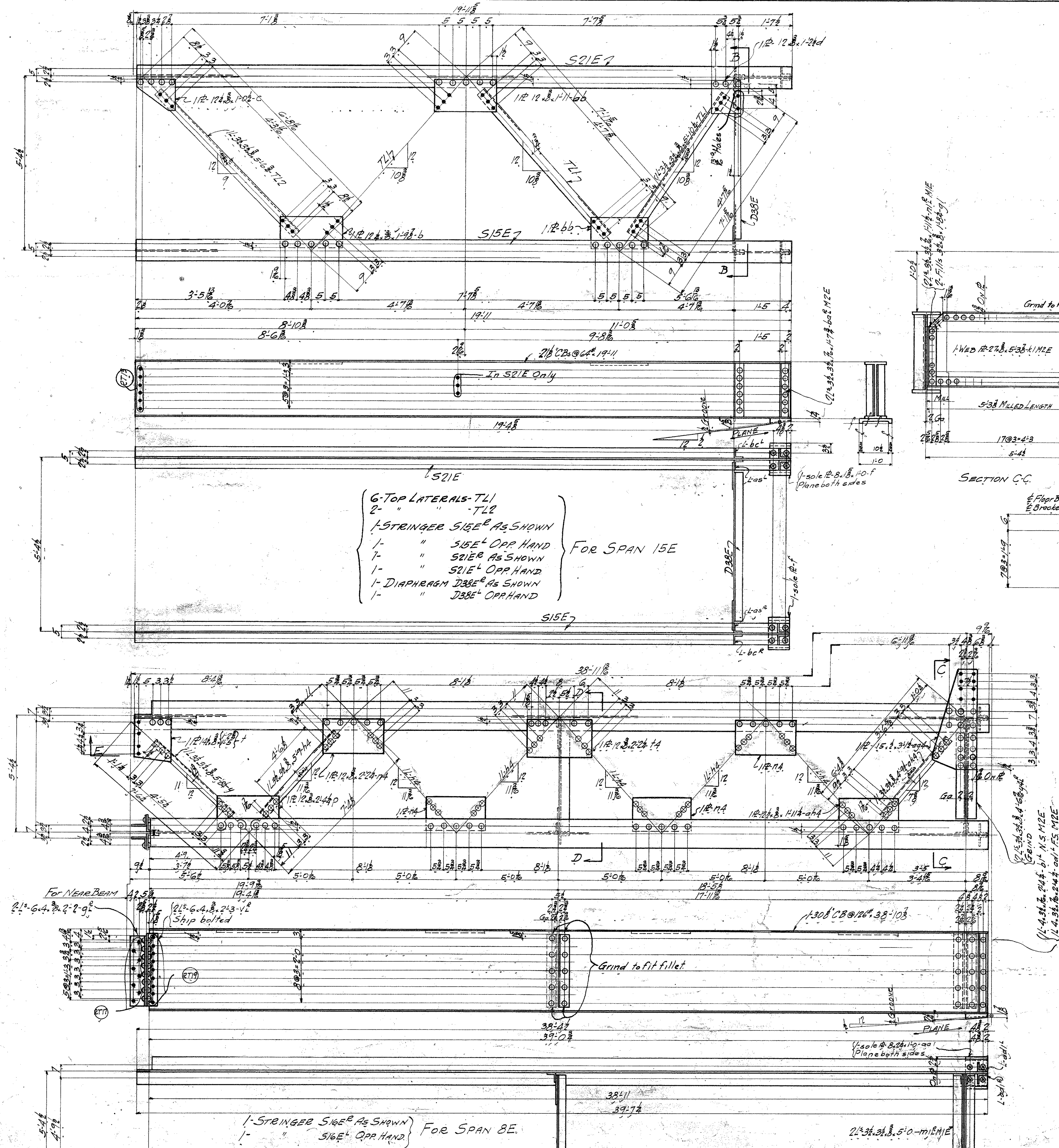
Paint- One coat of Industrial Paint.

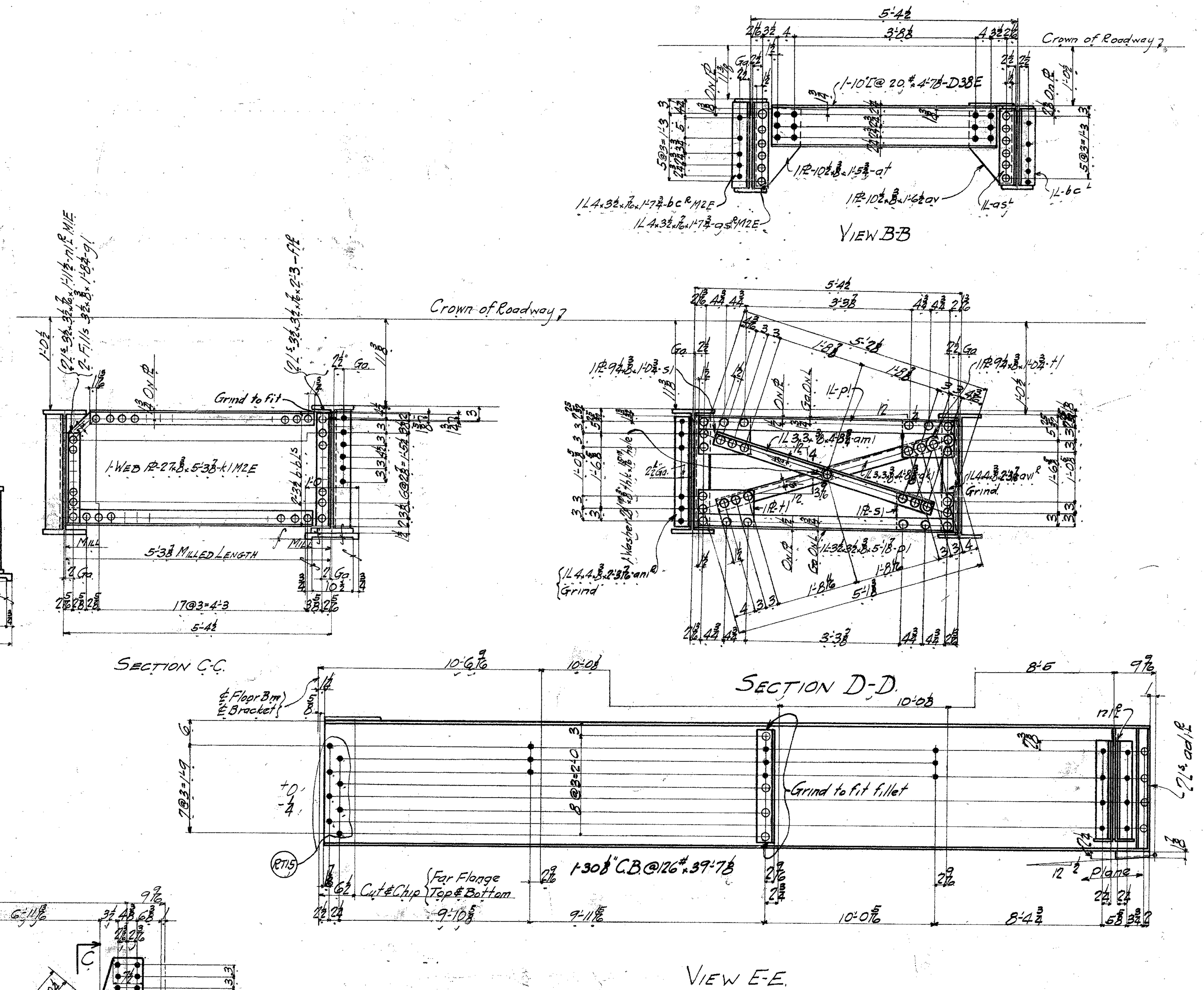
APPROVED 12-14-29
Waddell & Hardesty

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
EAST APPROACH
STRINGER SPANS #10-13&14E

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Wilson
MADE BY [illegible] DATE CHECKED BY WES DATE 11-2
TRACED BY CJO DATE REVISED DATE
SCALE- INCH = 1 FOOT LAST ASSEMBLING MARK BC
CONT. NO. 5017A SHEET NO. 7

A-3-108





Notes:-
Rivets 7/8"φ
Holes 15/16"φ Unless noted.
15/16"φ Holes punched 11/16"φ and reamed to 15/16"φ after assembly except diaphragms laterals and lateral plates which may be punched full size and material over 7/8" thick which is to be drilled from the solid.
Holes marked (RT) are subpunched 11/16"φ and reamed to 15/16"φ through a metal template
Burrs are to be removed from all open holes.

Paint:- One Coat of Industrial Paint.

Approved 12-14-29
Waddell & Hardesty.

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
East Approach
Stringer Spans-8E & 15E

McCLINTIC-MARSHALL CONST. CO. PITTSBURGH, PA.	
In Charge Wmson	
Made by	Checked by
Traced by do	Revised
Scale:- Inch = 1 Foot	Last Assembling Mark bb
Cont. No. 5017A	Sheet No. 3

A-2-409

40'-5

1 PL 17 x 3/4 x 3'-1 1/2 - P4

1 PL 17 x 3/4 x 4'-7 1/2 - S

1 PL 12 3/8 x 2'-2 1/2 - f4

1 PL 12 3/8 x 2'-2 1/2 - n4

1 PL 12 3/8 x 2'-0 3/8 - m

2-30 3/8" CB @ 126.4# x 40'-4 M1E

2-30 3/8" CB @ 126.4# x 39'-10 3/8

1-STRINGER S1GER AS SHOWN } SPAN 12E
1- " S1GEL OPP HAND }

40'-0 1/2 c. to c. Piers

1-STRINGER S2GER AS SHOWN } SPAN 11E
1- " S2GEL OPP HAND }

N.S.
F.S.

Holes in far beam
Hole in far beam
Rivet in near beam
In far beam
In near beam
Grind
For near beam only
For N.S. Beam
F.S.
Ga. F.S.
Ga. N.S.
Ship bolted
Plane both sides
Groove
Milled Length

1-sole PL-W1
1-sole PL-C
1-sole PL-C1
1-sole PL-B1 1/8 x 1'-6 - V1
1-sole PL-B1 2/8 x 1'-10 - a1
1-sole PL-B1 3/32 x 1'-1 1/2 - b2

1-30 B "CB @ 126.4# x 40'-4 M1E

1-24" CB @ 100.4# x 32'-3 3/8 - M1E

7-STRINGERS - S1TE - SPAN 12E

7-STRINGERS - S2DE - SPAN 11E

SECTION A-A

SECTION D-D

SECTION B-B AS SHOWN
" E-E OPP HAND

SECTION C-C

NOTES:—
Rivets 7/8"ø
Holes 15/16"ø Unless noted
Holes punched 13/16" and reamed to 15/16" after assembly, except diaphragms, laterals and lateral plates which may be punched full size and material over 3/4" thick which is to be drilled from the solid.
Holes marked (er) are subpunched 1/4" and reamed to 15/16"ø through a metal template.
Burrs are to be removed from all holes.

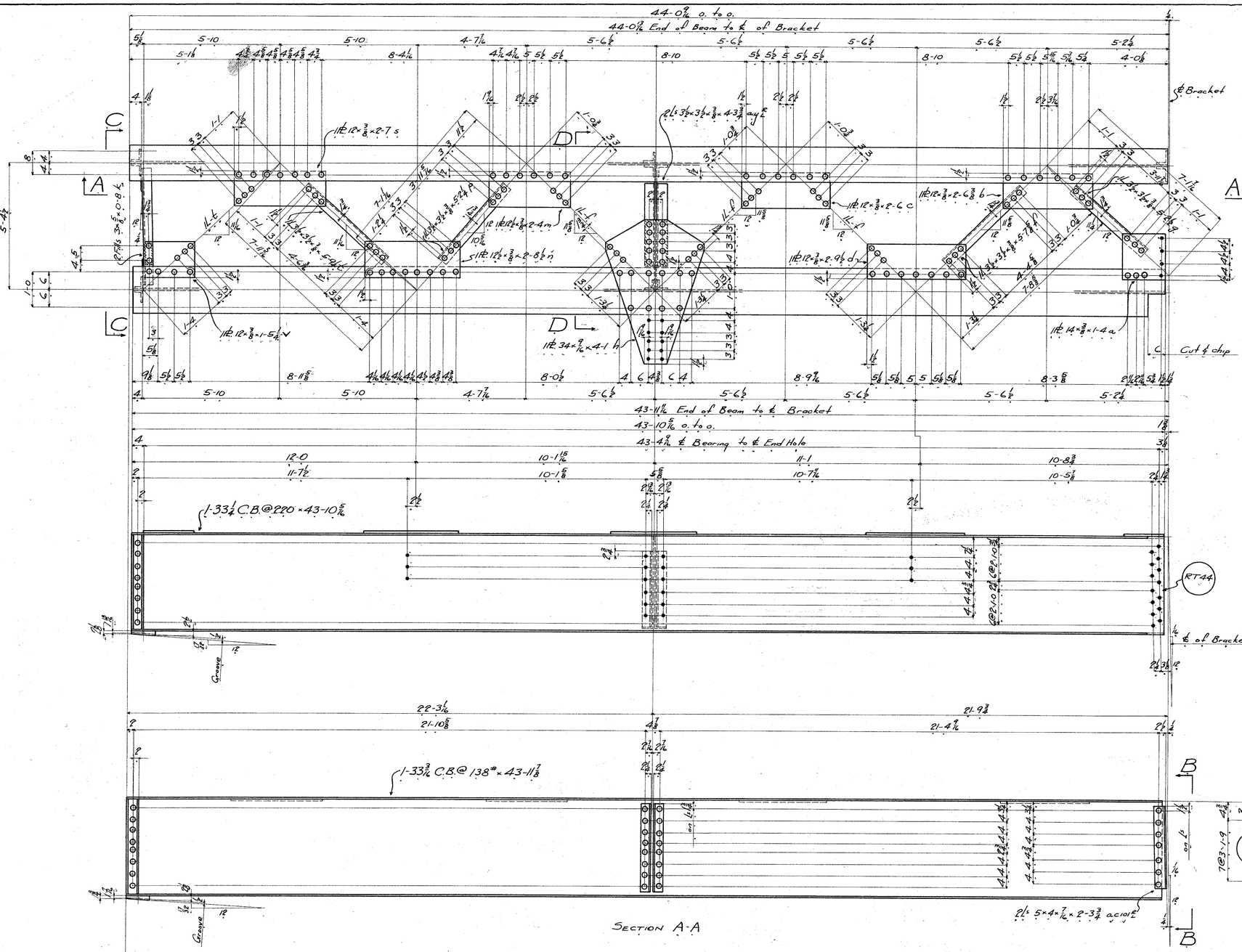
Paint One coat of Industrial Paint Co's Brown Nocoro

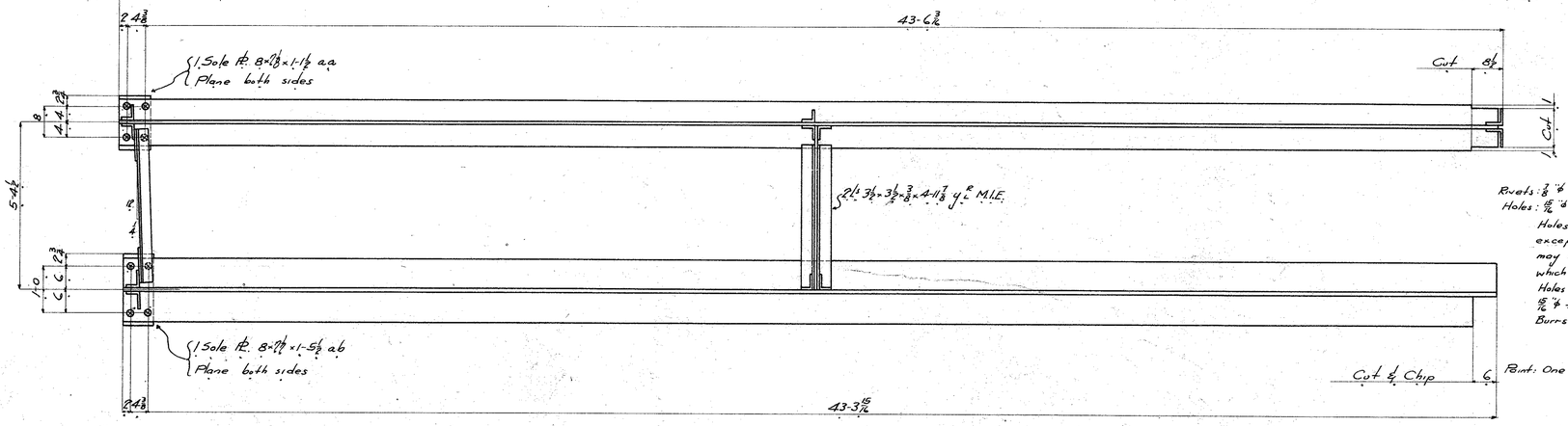
APPROVED 12-14-29
Waddell & Hardesty

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVE
EAST APPROACH
STRINGER SPANS-11-12 & 14E

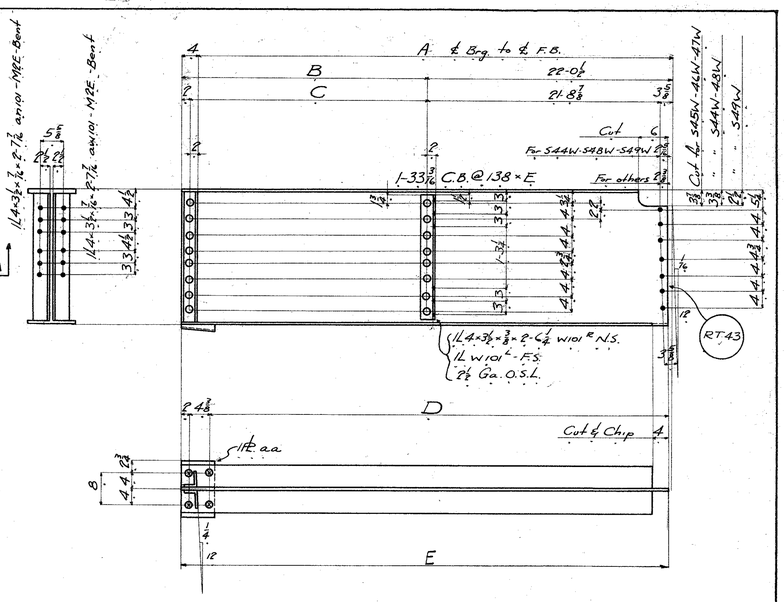
McCLINTIC-MARSHALL CONST. CO
PITTSBURGH, PA.
IN CHARGE Wilson
MADE BY [illegible] DATE CHECKED BY OES DATE 11-7
TRACED BY do DATE REVISED DATE
SCALE" INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5017A SHEET NO. 4

A-2-11



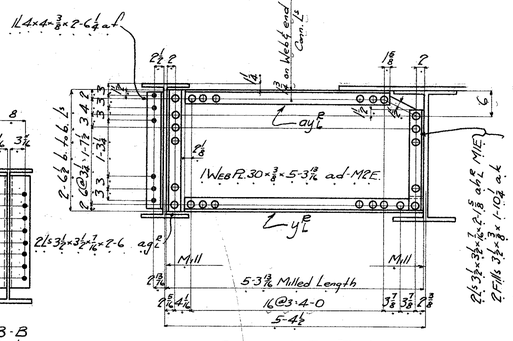


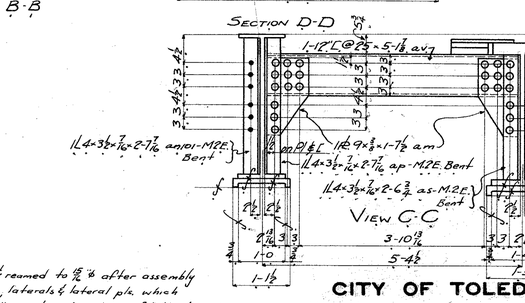
1 STRINGER 542W



Mark	A	B	C	D	E
544W	43-11 3/16	22-3 1/16	22-1 1/16	43-8 5/8	44-2 1/2
545W	44-1	22-4 1/2	22-2 1/2	43-9 3/8	44-3 3/4
546W	44-2 1/4	22-5 3/4	22-3 3/4	43-10 5/8	44-5
547W	44-3 1/2	22-7	22-5	43-11 7/8	44-6 1/4
548W	44-4 3/16	22-8 1/16	22-6 1/16	44-1 1/8	44-7 1/2
549W	44-6 1/16	22-9 1/16	22-7 1/16	44-2 3/8	44-8 3/4

1. STRINGER 544W
1. " 545W
1. " 546W
1. " 547W
1. " 548W
1. " 549W





Rivets: 7/8"ϕ
Holes: 13/16"ϕ Unless noted
Holes punched 11/16"ϕ & reamed to 13/16"ϕ after assembly except diaphragms, laterals & lateral pls. which may be punched full size of material over 3/4" thick which is to be drilled from the solid.
Holes marked (RT) are subpunched 11/16"ϕ & reamed to 13/16"ϕ thru a metal template.
Burrs are to be removed from all holes

Paint: One coat of Industrial Paint Co's Brown Nocoro

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

WEST APPROACH
STRINGERS - SPAN #8

APPROVED 3-17-30
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE	Wm. Son		
MADE BY	C.J.H.	DATE	
CHECKED BY	WEB	DATE	3-3-30
TRACED BY	J.M.	DATE	
REVISED		DATE	
SCALE	INCH = 1 FOOT	LAST ASSEMBLING MARK	2-4

CONT. NO. 5017A SHEET NO. 101

A-2-411

Rivets 7/8"φ
Holes 15/16"φ
Holes punched 11/16"φ & reamed to 15/16"φ after assembly except diaphragms, laterals & lateral plates which may be punched full size & material over 3/4" thick which is to be drilled from the solid.
Holes marked (RT) are subpunched 11/16"φ & reamed to 15/16"φ thru a metal Templet.
Burrs are to be removed from all holes

Paint - One coat of Industrial Paint Co's Brown Nocoro

Approved 3-24-30

Waddell & Hardesty.

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER

WEST APPROACH
STRINGER SPAN 8W

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Wm Son
MADE BY AT DATE CHECKED BY AES DATE 3-15
TRACED BY E.Z. DATE REVISED DATE
SCALE:- INCH = 1 FOOT LAST ASSEMBLING MARK CS
CONT. NO. 5017A SHEET NO. 102

A-2-412

3178

INDEX FOR TOWERS & SUSPENDED SPAN

Side Span E1 - Main Span E2 - Cont. 5001 to 5002 — Suspended Span

Piece No.	5001A Roadway Stringers S	5001A Sidewalk Stringers SS	Fascia Stringers FS	Sidewalk Brackets SB	5001B Hangers H	Pins P	Diaphragms D	Sidewalk Expansion Joints EJ	Bolts B	Separators etc. M	Washers W	Anchorage Cols. A	Anchorage Braces AB	Scupper Castings SC	Grid Castings GC	Hand Hole Cstgs. HH	Hand Hole Cover Castings HHC	Screws SB	Navigation Lt. Platforms	Ladders L	5002A Girders G	Lateral Plates LP	Splice Pls., Angles Stiffening Angles M	5002B Longitudinal Struts LS	Floor beams FB	5002C Bottom Laterals BLS
1	1	2	3	3	5	2	5	1	1		1		2	5	5	5	5	5	7	7	1&2	1		6	3	1
2	1	2	3	3	5	2	5	1	1			2	2						7	7	3&4	2	2		1	1
3	1	2	3	3	5		5	1	1				2								5-6-7	3	2		2	1
4&4A	1	2	3	3	5		5	1	1												8-9-10	4	2		1	1
5&5A		2	4	3	5		5	1	1	1											11&12	5			2	1
6, 6A&6B	1	2	4	3	5		5	4	1	1											13-14-20	6			1	1
7&7A	1	2	4	3	5		5	4	1	1											15	8			2	2
8	1	2	4	3	5		5	4	1	1											16	9			1	2
9&9A	1	2	4					4	1	1											17	11			4	2
10&10A	1	2	4						1	1											18-19	12			5	2
11	1	2	4						1	1												13			1	2
12	1		4						1	1												14			2	2
13	1		4						1	1												15			1	3
14	1		4						1	1												16			2	3
15			4						1	1												17			1	3
16	1		4						1	1												18			2	3
17&17A	1		4						1	1												18			2	3
18	1								1	1															1	3
19	1								1	1															2	4
20	1								1	1															2	4
21	1								1	1															2	4
22	1								1	1															2	4
23	1								1	1															1	1
24	1								1	1																4
25									1	1																
26	1								1	1																
27	1									1																
28	1									1																
29	1									1																
30&30A	1									1																
31	1									1																
32										1																
33										1													2			
34										1																
35	1									1																
36										1											BB1, BB2 } Sheet M1					
37	1									1																
38										1			M474-Draw. #4													
39	1									1																
40										1																
41	1									1																
42	1									1																
43	1									1																
44	1									1																
45	1																						4			
46	1																						4			
47&47A	1																						4			
48	1																						10			
49	1																						10			
50	1																						10			
51	1																						10			
52	1																						10			
53	1																						10			
54	1																						14			
55	1																						14			
56	1																						14			
57&57A	1																						14			
58	1																						14/20			
59	1																						14			
60	1																									
61	1																						15			
62	1																						15			
63	1																						15			
64	1																						15			
65	1																									
66	1																						16			
67	1																						16			
68	1																						16			
69	1																						16			
70&70A	1																						16			
71	1																						16			
72																										
73	1																									
74																										
75	1									2																
76	1									7																
77	1									7																
78	1									7																
79	1									7																
80	1																									
81																							18			
82																							18			
83																							10			
84										7																
85																										
86																										
87																										
88										7																
89										7																
90																							15			
91																							15			
92																										
93																										
94																										
95																										

Towers E1 - Cont. 5003B to 5004 — Towers

Piece No.	5003A	5003B Fascia Stringers TFS	Verticals, Diagonals, Top & Bott. Chords TB	Ladders L	Sidewalk Stringers TSS	Fascia Stringers TFS	Struts TB	Expansion Plates TEP	Handrope Supports HRT	Handrails HR	Platforms M	Panels PR	5004 Tower Bases TB	Tower Slabs, Tower Sections TS	Tower Brackets TK	Gusset Plates GP	Rocker Links TRL	Expansion Beams TEB	Pins TP	Doors TD
1		12		9	12	12		12	13	13	13	13	1	2&3	3	8	9	9	9	10
2			1	9				12		13		13		2&3	9	8	9		9	
3			1	9								13		2-3-4	9	8				
4&4A			1	9								13		5&6	9	8				
5&5A			1	9								13		5&6	9	8				
6, 6A&6B			1	9										7		8				
7&7A			1	9										7		8				
8				9										7		8				
9&9A			1	11										7		8				
10&10A			1	9												8				
11			2	9																
12			2	9																
13			2	9																
14			2	9																
15			2	10																
16			2	10																
17&17A			2	10																
18			2	10																
19			2	10																
20			2	10																
21			2	10																
22			2	10																
23			3	10																
24	TAB1, W1, BV1 } Sheet M1		4	11																
25			4	11																
26			6	11																
27			7	11																
28			7	11																
29			8																	
30&30A			8	9																
31			8	11																
32			8	10																
33			8	10																
34			8																	
35			8																	
36			8																	
37			8																	
38			8																	
39			8																	
40			8																	
41			8	14							14									
42			5	14							14									
43				14			12													
44				14			12													
45				14																

Anchorage E1 - Cont. 5005 to 5006 — Anchorage; Saddle E1 - Cont. 5007A — Saddle Top of Tower

Piece No.	5005 Anchor Girders AG	Anchor Rods AR	Anchor Washers AW	Anchorage Cols. A	5006A Keeper Plates KP	Pins P	Rings R	Eye Bars E	Bolts B	5006B Keeper Plates KP	Pins P	Rings R	Eye Bars E	Bolts B	5007A Saddle Castings SC	Cap Screws CB	Rollers TSR	Bars TSB	Bolts SB	5007C Spacer Bars S	Rockers R	Shouldered Bolts P	Anchor Bolts AB
1	1	1	1	2	1	1	1	1	1	1	1	1			1	1	1	1	1				1
2	1	1	1			1	1		1					1			1	1	1				
3	1						1										1		1				
4&4A							1						1				1		1		1	1	
5&5A													1						1		1	1	
6, 6A&6B																			1				
8																				1			
9&9A																				1			

Misc.

Piece No.	5008C Supports for Hand Ropes-Suspender Blocks M	5010C Shims M	5011C Bolts B	Erection Brackets BK	Footwalk Supports at Temporary Bent E	5011D Brackets, Beams, Washers BK	Bolts B	Eye Bolts T	Cap Screws P	Washers, Channels & Pls. S	SB	D
1			1		110 D56	1	D13	D10		D13	D12	D12
2			1		111 D56	1	2				D12	D12
3			1		112 D56	1	2	D10			D12	D13
4&4A			1		113 D56	1		D10			D12	
5&5A			1		114 D56	1		D10				D13
6, 6A&6B			1		115 D56	1		D10	2		D13	
7&7A			1		116 D56	1		D10				D12
8				1	117 D56			D10				D12
9&9A				1	118 D56			D10				
10&10A				1	122 D56							
11				1	123 D56							
12				1	124 D56							
18										2		
19										2		
21	M36E, M36W, M87S } Sheet M1-M2	M92S, M93S, M94S } Sheet M1								2		
23										2		
26							1					
27							1					
28							1					
29							1	2				

Truss Span E1 & E2 - Cont. 5013 to 5014 — Deck Truss Spans

Piece No.	5013A Top Chords U	Posts L-U	Diagonals L-U	5013B Floorbeams FB	5013C Stringers S	Masonry Pls. M	5013D Masonry Pls. MP	Pins P	Anchor Bolts AB	Bolts B	Sidewalk Brackets K	Fascia Girders FG	Diagonals D	Struts S	Top Laterals LT	Bott. Laterals BL	Bolts X	Expansion Pls. M	Pipe Z	5013E Upper Shoes US	Lower Shoes LS	5014 Bott. Chords L	Top Chords U	Diagonals L-U
1	U0-U1 1	L0-U0 1	L4-U5 1	1	1	1					2	3	3		4	4	4		4			L0-L2 1	U1-U3 4	U1-L2 7
2	U9-U10 1	L2-U2 1	L6-U5 1	1	1			1			2	3	3			4	4	4	4	1		L2-L4 2	U3-U5 5	L2-U3 7
3		L4-U4 1		1	1						2	3	3			4	4		4			L4-L6 3	U5-U7 6	U3-L4 7
4&4A		L6-U6 1		1	1						2	3	3				4	4	4			L6-L8 2	U7-U9 4	L6-U7 7
5&5A		L8-U8 1		1	1		1		1	1	2		3			4	4	4	4			L8-U0 1	L0-U1 7	U7-L8 7
6, 6A&6B				2	1				1		2		3			4	4		4		1		U9-L10 7	L8-U9 7
7&7A					1								3			4	4		4		1			
8					1								3			4	4		4					
9&9A					1											4	4		4					
10&10A					1											4	4		4					
11														3		4	4		4					
12														3		4	4		4					
13														3		4	4		4					
14														4			4		4					
15														4			4		4					
16																	4		4					
17&17A																	4		4					
18																			4					
19																			4					
20																			4					
21																			4					
22																		3	4					

INDEX FOR RAILING

Railing E1-5018A, E101-5018B, E1-5018C — Railing

Piece No.	5018A Railing R	Posts RP	U Bolts UB	5018B Railing R	Posts RP	U Bolts UB	5018C Railing R	Posts RP	Sleeves S	U Bolts UB
1-1A	1	2	5	101		5	105	2	105	5
2-2A	1	3	5	101			105	105		5
3	1			101			1			
4	1			104			1			
5	1			104			104			
6	1			104			105			
7	1			101			105			
8				101			1			
9	2			101			105			
10	2			101			1			
11	3			101			1			
12	2			101			1			
13	3			101			1			
14	3			102			1			
15				104			2			
16	4			104			2			
17	3			101			2			
18				102			2			
19	2			102			2			
20	3			102			2			
21	3			102			2			
22	3			102			2			
23				102						
24				102						
25	3			102			104			
26				102						
27	3			105			104			
28				101						
29				101						
30	3			103						
31	3			103						
32	3			101						
33				103						
34	3			103						
35	2			103						
36	3			104						
37	3			104						
38	2			104						
39	4			104						
40	3			104						

Fills A.B.C.D.F&G Sheet #5 Cont. 5018A.B.C

Temp.	BRIDGE OVER MAUMEE RIVER
Supt.	TOWERS, SUSPENDED SPAN & RAILING
Shops	INDEX OF MARKS
Insp.	McClintic-Marshall Construction Co.
Pc. Wk.	RANKIN Works Pittsburgh, Pa.
B. Smith	In Charge Eicher
Mch.	Made by J.M. Date — Checked by M.H. Date 8-8-30
Erect.	Traced by E.Z. Date — Revised — Date
O. Insp.	Scale:- Inch=1 Foot — Last Assembling Mark
Shop No.	Cont. No. 5001-5025 — Sheet K1

Form R-360

INDEX FOR EAST APPROACH

All marks followed by Suffix "E"

ERECTION DIAGRAM - SHEET E1 - CONT. 5015 - 5017

Piece No.	5015A Girders G	5015A Tie Plates M	5015B Floorbeams FB	5015B Lateral Plates M	5015C Stringers S	5015D Bottom Laterals BL	5015D Fascia Stringers FS	5015D Sidewalk Brackets SB	5015D Sidewalk Laterals SL	5015D Lateral Hangers H	5015D Masonry Plates MP	5015D Pins P	5015D Anchor Bolts AB	5015D Diaphragms D	5015D Expansion Joints EJ	5015D Bolts B	5015D Separators M	5015E Upper Shoes US	5015E Lower Shoes LS	5017A Stringers S	5017A Diaphragms D	5017A Top Laterals TL	5017B Fascia Stringers FS	5017B Diaphragms D	5017B Sidewalk Brackets SB	5017B Expansion Joints EJ	5017C Masonry Plates MP	5017C Anchor Bolts AB
1&1A	1	1	1			4	5	2	4	4	1	1	1		7	1		1		1		3		1				
2&2A	1	2	1			4	5	2	4	4			1			1		1	1	1		3		1	1	1		
3&3A	1	3	1			4	5	2	4				1		7	1		1		1				1					
4&4A	2		1			4	5	2	4									1		1				3		1		
5&5A	3&4		2			4	5	2	4											1				3				
6			2	1		4		2	4							7				1			2	3			1	
7			2	2		4		2	4							7				1			2	3			1	1
8			2	2				2	4							7				1			2	3			1	1
9			3	2				2	4							7				1			2	3			1	1
10			3					3	4							7							2	3				1
11&11A			1					3	4							7	7			1			2	3				
12								3	4							7	7			2			2	3				
13							5	3	4							7	7			2				3				
14							5	3	4							7	7			2				3				
15							6									7	7			3				3	1		1	
16							6									7	7			3				3	1		1	
17							6									7	7			4				3	1		1	
18																7	7			4			2	3	1		1	
19							5	7								7	7			4				3			1	
20								7								7	7			4				3			1	
21																7	7			3				3			1	
22																7	7							3			1	
23																7	7							3			1	
24																7	7										1	
25&25A					1									C		7	7										1	
26					1									C			7										1	
27					1									C			7										1	
28					1									C			7											
29					1									C			7											
30					1									C			7											
31					1									C			7											
32					1									C			7											
33					1									C			7											
34					1									C			7											
35					1									C			7											
36					1									C														
37					1									C														
38					1																3							
39					?									?														
40					?									?														
41					?																							
42					?																							
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51					?																							
52					?																							
53					?																							
54					?																							
55					?																							

INDEX FOR WEST APPROACH

All marks followed by Suffix "W"

ERECTION DIAGRAM - SHEET E101 CONT 5015 - 5017

Piece No.	5015A Girders G	5015A Tie Plates M	5015B Floorbeams FB	5015B Lateral Plates M	5015C Stringers S	5015D Bottom Laterals BL	5015D Fascia Stringers FS	5015D Sidewalk Brackets SB	5015D Sidewalk Laterals SL	5015D Lateral Hangers H	5015D Masonry Plates MP	5015D Pins P	5015D Anchor Bolts AB	5015D Diaphragms D	5015D Expansion Joints EJ	5015D Bolts B	5015D Separators M	5015E Upper Shoes US	5015E Lower Shoes LS	5016 Girders G	5016 Tie Plates M	5017A Stringers S	5017B Fascia Stringers FS	5017B Diaphragms D	5017B Sidewalk Brackets SB	5017C Masonry Plates MP	5017C Anchor Bolts AB
1&1A	101		101		101	104	106	101	105	105	1	1	1	108	108	1	108	1	1									
2&2A	103		101		101	104	106	101	105	105	1		1		108	1	108		1					101				
3&3A	103		101		101	104	106	101	105	105	1		1			1	108		1					101				
4&4A	102	103	101		101	104	106	101	105	105	1		1			1	108		1					101				
5&5A	104 & 105	102	101		101	104	106	101	105								108		1					101				
6&6A	106		101		101	104	106	101	105							108	108							102				
7&7A			102		101	104	106	101	105							108	108		1 to 4					102				1
8			102		101	104	107	101	105							108	108							102			1	
9			102		101	104	107	101	105							108	108							102			1	
10			102		101	104	107	101	105							108	108							102			1	1
11			101		101	104	107	101	105							108	108							102			1	
12			102		101	104	107	101	105					108		108	108										1	
13&13A			101		101	105	107	101	105							108	108							102				
14			103		101	105	107	101	105							108	108							102				
15			103		101	105	108	101	105							108	108							102				
16			103		101	104		101	105							108	108						101	102				
17			103		101	104		101	105							108	108						101	102				
18			103		101	104		102								108	108						101					
19			103		101	104		102	105							108	108						101					
20&20A			103		101			103	105							108	108						101					
21&21A			103		101			103	105							108	108											
22			104		101			103								108	108											
23			104		101			103								108	108											
24			103		101			103								108	108											
25					101			103								108	108											
26				101	101			103																				
27				101	101			103																				
28				101	101																							
29				101	102																							
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32				101	102																							
33				101	102																							
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58					103																							
59					103																							
60					103																							
61					103																							
62					103																							
63					103																							

NOTE:-
FOR SCUPPERS-GRIDS- HAND HOLE CASTINGS & HAND HOLE COVERS SEE DRWG #8 CONTRACT 5015 D

Rivets
Open Holes
Ream
Milling
Paint

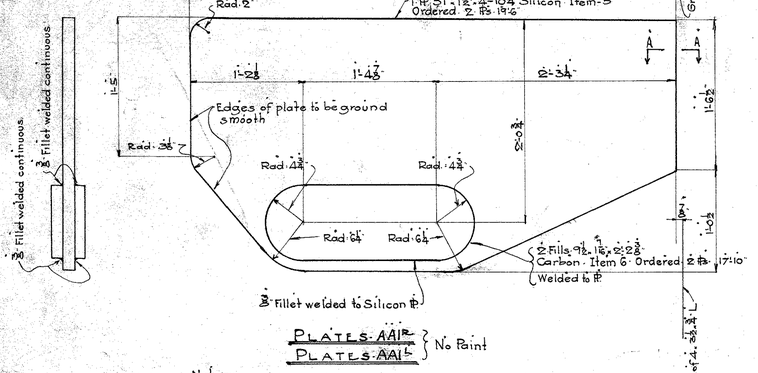
Temp.	
Supt.	
Shops	
Insp.	
Pc. Wk.	
B. Smith	
Mch.	
Erect.	
O. Insp.	

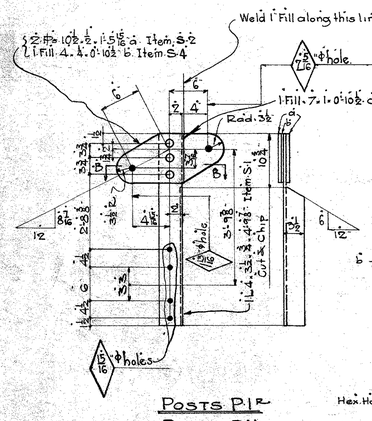
BRIDGE OVER MAUMEE RIVER
EAST & WEST APPROACHES
INDEX OF MARKS

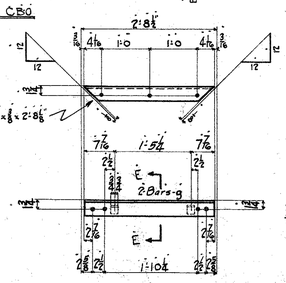
McClintic-Marshall Construction Co.
RANKIN Works Pittsburgh, Pa.

In Charge W^m SON
Made by J.M. Date
Traced by Date
Scale:- Inch=1 Foot
Checked by B.W. Date 3/31/30.
Revised Date
Last Assembling Mark
Shop No.
Cont. No. 5001-5025
Sheet (K2)

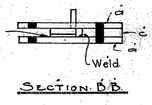
Form R-350 A-2-261







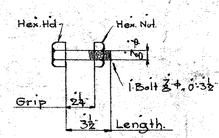
ANGLES - A2



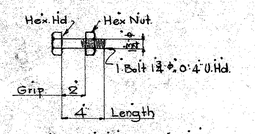
SECTION - DD

SECTION - EE

POSTS P1R
POSTS P1L



BOLTS H H B1
FOR H.R. SUPPORT TO CB6



BOLTS E B P1 Item S5
FOR EYE BAR TO H.R. SUPPORT

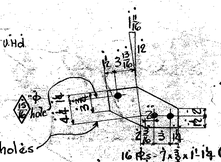
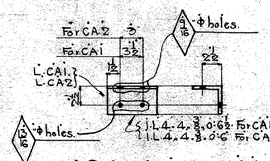
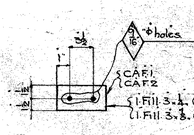


PLATE - WP1

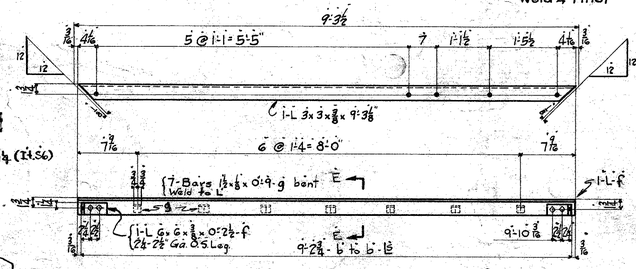


CLIP ANGLE CA1
Use on sidewalk Brackets.
CLIP ANGLE CA2
Use on Towers.

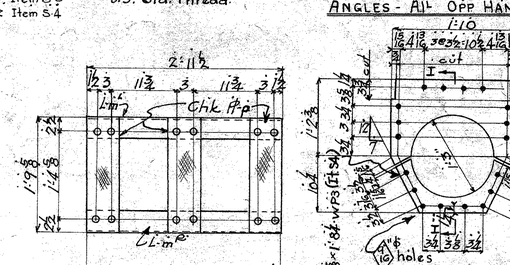


FILL CA F1
FILL CA F2
Use on sidewalk Diaphragms.

CAP SCREW CSS1
CSS2
Cap Screw ½ - 4 x ½ U.H. CSS1
Cap screw ¾ - 4 x ½ U.H. CSS2
U.S. Std. Thread.



ANGLES - A1R As Shown
ANGLES - A1L Opp Hand



WALK - WW1

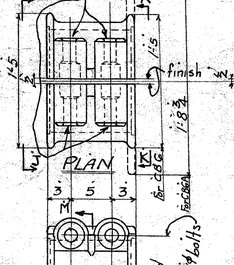
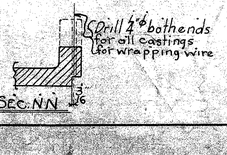
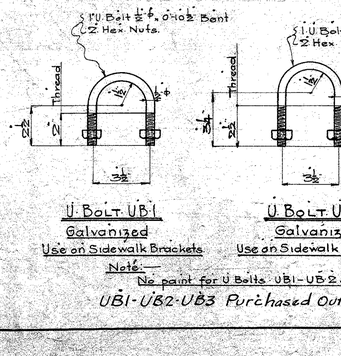
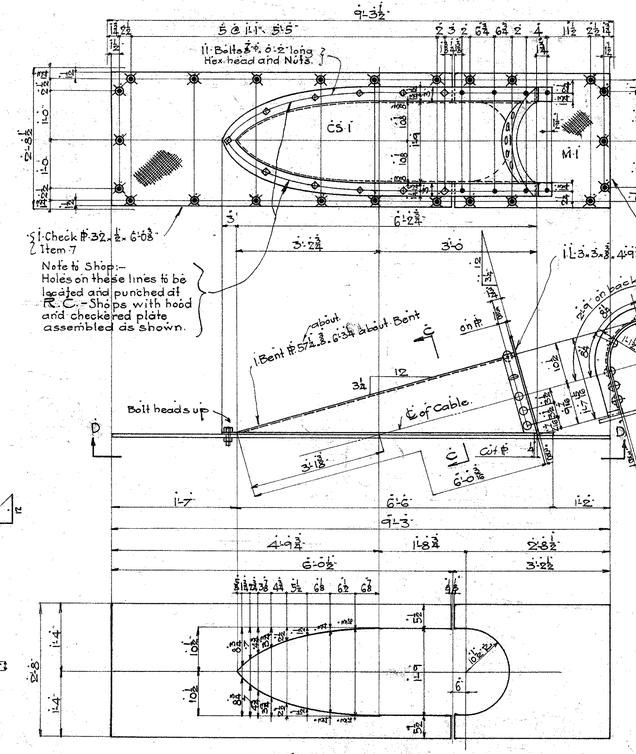


PLATE - WP2
PLATE - WP3



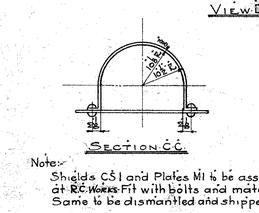


U BOLT UB1
Galvanized
Use on Sidewalk Brackets.
U BOLT UB2
Galvanized
Use on Sidewalk Diaphragms.
U BOLT UB3
Galvanized
Use on Towers.
Note:-
No paint for U Bolts UB1 - UB2 and UB3.
UB1 - UB2 - UB3 Purchased Outside

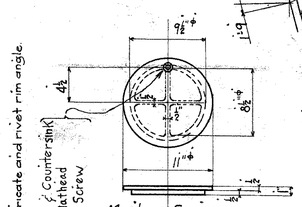


VIEW D-D Showing Cuts for Plates

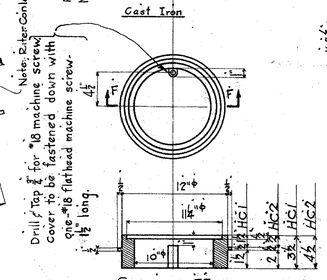
CABLE SHIELDS CS1
PLATES M1



Note:-
Shields CS1 and Plates M1 to be assembled at R.C. Works Fit with bolts and match mark. Same to be dismantled and shipped.

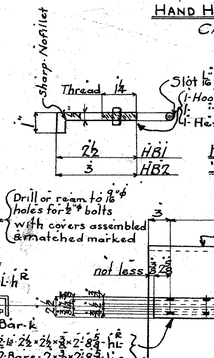


COVER - C1

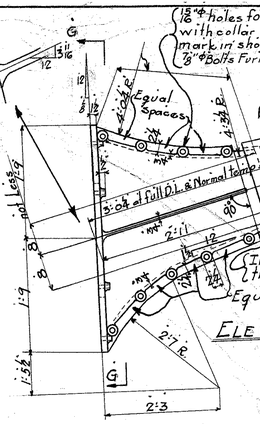


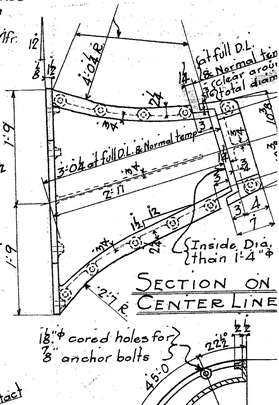
SECTION - FF

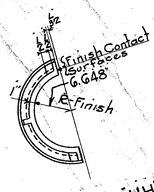
HAND HOLE CASTING - HC1
HAND HOLE CASTING - HC2
CAST IRON



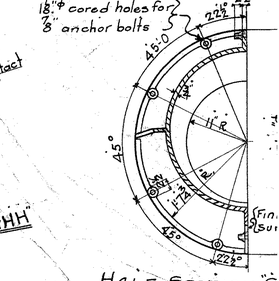
HOOK BOLT HB1
" " HB2

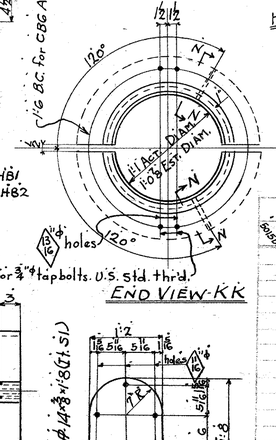




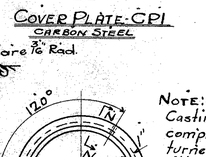


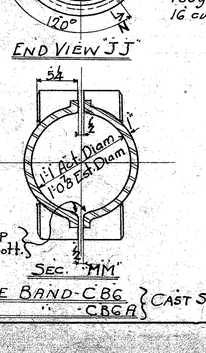
HALF END VIEW HH



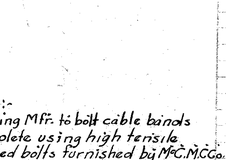


ANGLE - WA1

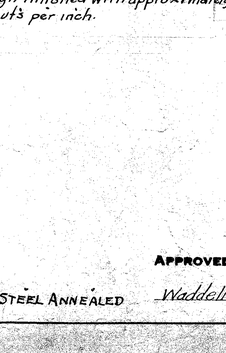




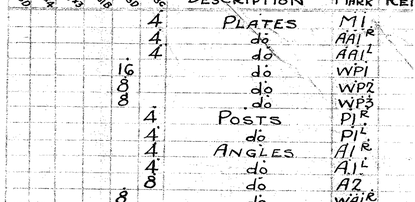
COMPLETE CABLE BAND - CB6
" " - CB6A
CAST STEEL ANNEALED



COVER PLATE - CP1
CARBON STEEL



Note:-
Casting Mfr. to bolt cable bands complete using high tensile turned bolts furnished by Mfr. McCo.
All corners of casting where not noted to be filleted or rounded to ⅜ radius.
Internal surface of bands to be rough finished with approximately 16 cut's per inch.



COVER PLATE - CP2
CARBON STEEL

REQUIRED LIST

Solid	Scale	Built	Scale	Scale	Description	Mark	Remarks
				4	PLATES	M1	
				4	do	AA1R	
				4	do	AA1L	
			16		do	WP1	
			8		do	WP2	
			8		do	WP3	
				4	POSTS	P1R	
				4	do	P1L	
				4	ANGLES	A1R	
				4	do	A1L	
				8	do	A2	
			8		do	WA1R	
			8		do	WA1L	
			30		CLIP ANGLES	CA1	
			20		do	CA2	
			350		FILLS	CAF1	
			700		do	CAF2	
8			16		COVERS	C1	
8			16		HAND HOLE CASTINGS	HC1	
8					do	HC2	
				4	COMPLETE CABLE COLLARS	CC1	
			8		" " HOODS	CH1	
				4	" " BANDS	CB6	
				8	" "	CB6A	
			8		WALKS	WW1	
8					COVER PLATES	CP1	Cast Steel Annealed
12					do	CP2	
				4	CABLE SHIELDS	CS1	
			150		CAP SCREWS	CSS1	
			70		do	CSS2	
56					HOOK BOLTS	HB1	
48					do	HB2	
			30		U BOLTS	UB1	Galv.
			350		do	UB2	
			20		do	UB3	
				10	BOLTS	EBB1	
				33	do	HHB1	

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE R

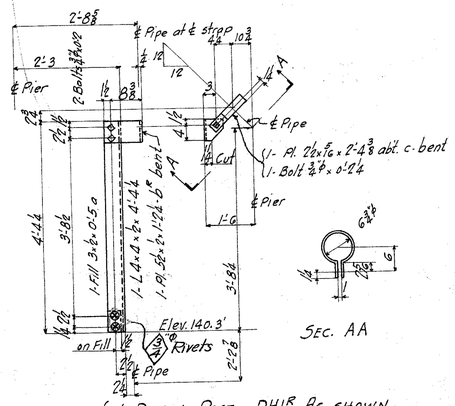
MISCELLANEOUS DETAI

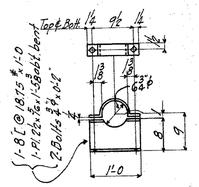
McCLINTIC-MARSHALL CON
PITTSBURGH, PA.
IN CHARGE F.R.F
MADE BY J.P.R. DATE
CHECKED BY TBC
TRACED BY DATE
REVISED
SCALE- FULL SIZE 1 FOOT CAST ASSEMBLING

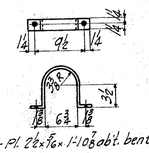
APPROVED 11-12-30
Waddell & Hardesty

CONT. NO. 5001-25 SHEET NO

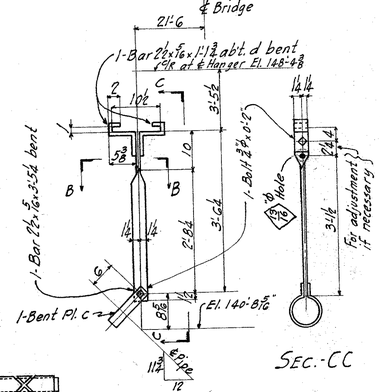
A-2-26

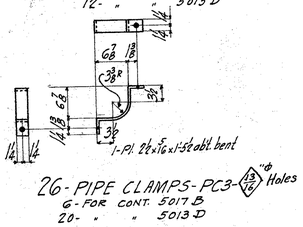


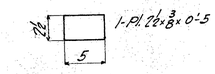


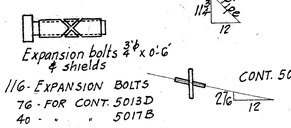


Cont. 5017B { 1- DRAIN POST DH1R AS SHOWN
1- " " DH1L OPP. HAND

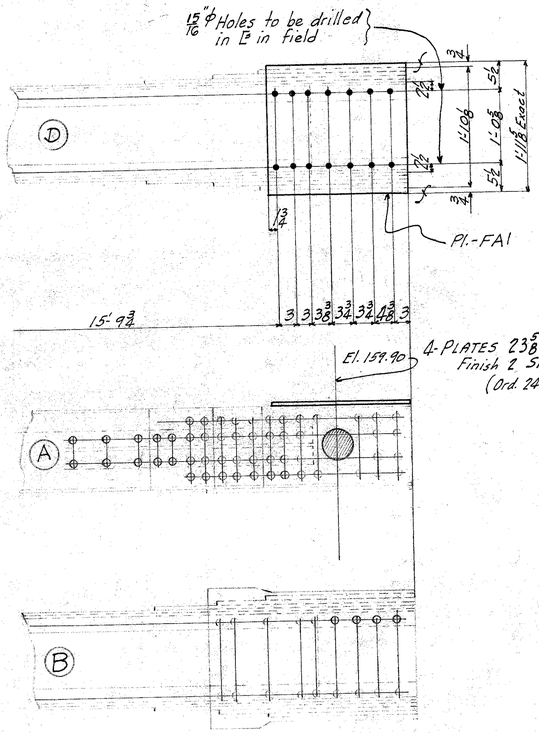




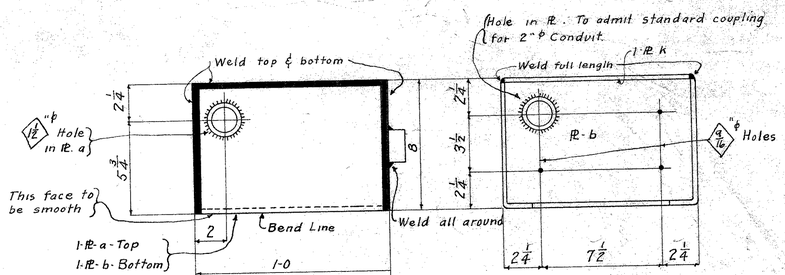




Cont. 5017B { 1- DRAIN HANGER- DH2R AS SHOWN
1- " " -DH2L OPP. HAND



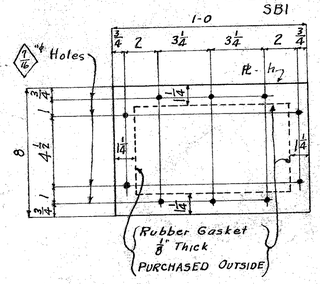
SKETCH SHOWING ALTERATIONS TO BE MADE IN FIELD TO 4 ANCHORAGES-A1- Detailed on sheet #2 Cont. 5005



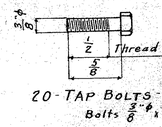
2- SPLICE BOXES SB1

2 ℞s.	9 x ¼ x 11½ - a - Bent	56
2 ℞s.	9 x ¼ x 11½ - b - do	56
2 ℞s.	11½ x ⅜ x 7½ - k	55
2 ℞s.	9 x ½ x 7½ - c - Bent	57
2 ℞s.	9 x ½ x 7½ - d - do	57
2- Standard Couplings for 2"ϕ Conduit			Galvanized Threaded inside U.S. Std. Thd.
4	do	do	do 1½"ϕ do.

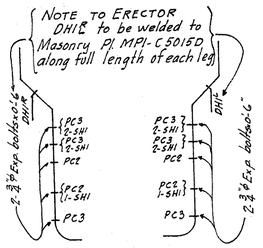
NOTE: COUPLINGS PURCHASED OUTSIDE.



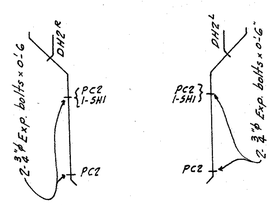
2- SPLICE BOX COVERS- SBC1
2-℞s 8 x ¼ x 1-0 h SB



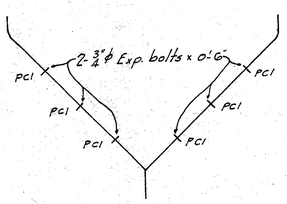
20- TAP BOLTS- TB1 } PURCHASED OUTSIDE.
Bolts ¾"ϕ x ⅝" lg



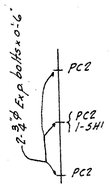
1- Drain DR3 { Pier 4W West Approach West Face
Cont. 5017B



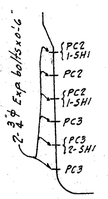
1- Drain DR4 { Pier 7E East Approach East Face
Cont. 5017B



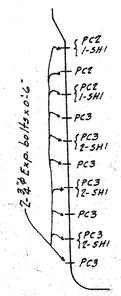
Drain DR2 { West Face of Anchorage "F"
Cont. 5013D



2- Drains DR5 { Pier 10E East Approach West Face
Cont. 5017B



2- Drains DR1 { Pier E East Face
Cont. 5013D



2- Drains DR1 { Pier B West Face
Cont. 5013D

REQUIRED LIST						
C5005	C5001X3	C5017B	C5013D	MARK	DESCRIPTION	REMA
		2		DH1L R	Drain Post	
		2		DH2L R	Drain Hanger	
		40	76		Expansion Bolts	
		14	24	SH1	Shims	
			6	PC1	Pipe Clamps	
		14	12	PC2	do	
		6	20	PC3	do	
4				FA1	Plates	
	2			SB1	Splice Boxes	
	2			SBC1	Splice Box Covers	
	20			TB1	Tap Bolts	

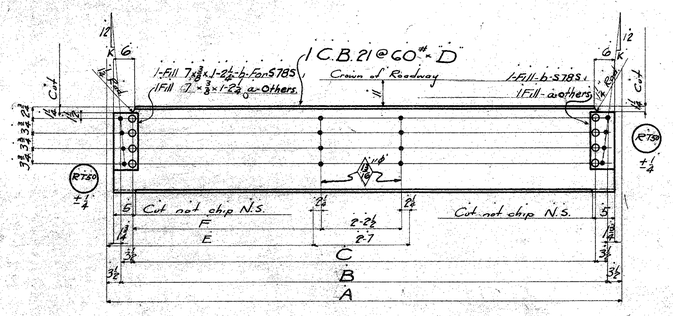
Rivets - As Noted
Holes - As Noted
Paint - Drain Hangars & Clamps- 1 Coat of Industrial Paint Co's Brown Nocoro
Drains - None.
Conduit Splice Boxes- 1 Coat Detroit Graphite #501
APPROVED Dec. 22, 1990
Waddell & Hardesty

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIV

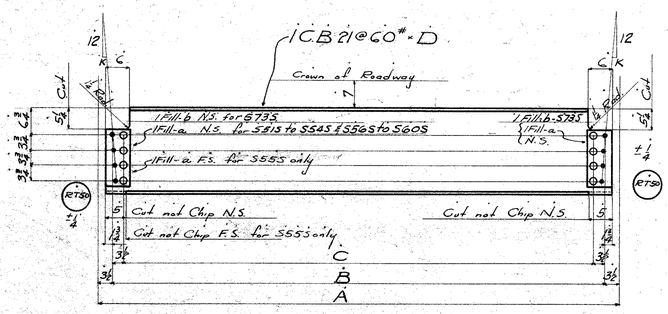
MISCELLANEOUS DETAILS

McCLINTIC-MARSHALL CONST
PITTSBURGH, PA.
IN CHARGE Fekete DATE 12-90 CHECKED BY KHC DATE 12/90
MADE BY GMK DATE 12-90 REVISED DAT
TRACED BY B.O.B. DATE REVISED DAT
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. C5001-25 SHEET NO. X

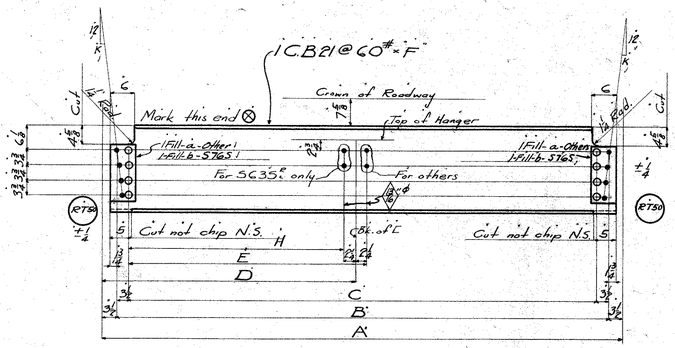
A-2-263



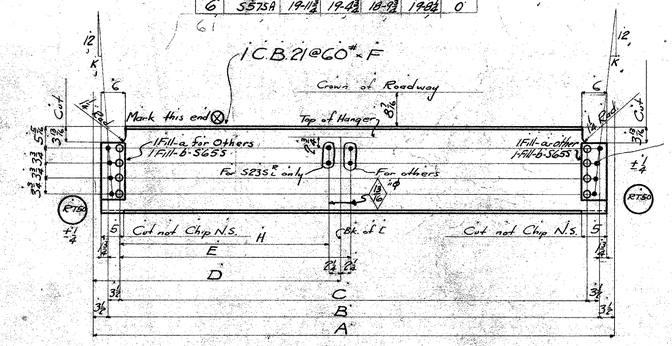
No.	Mark	A	B	C	D	E	F	K
4	S1S	19-5	18-10	18-3	19-1 1/2			0
40	S2S	19-2 1/2	18-7 1/2	18-0 1/2	18-10 5/16			0
4	S3S	19-1	18-6	17-11	18-9 1/2			0
4	S4S	20-1 5/16	19-6 5/8	18-11 5/8	19-9 3/8			0
12	S175A	19-11 3/8	19-4 3/8	18-9 3/8	19-8 1/2			0
16	S6S	19-11 1/16	19-4 1/16	18-9 1/16	19-8 1/16			0
8	S7S	19-11 1/16	19-4 1/16	18-9 1/16	19-8 1/16			0
12	S8S	19-11 1/16	19-4 1/16	18-9 1/16	19-7 15/16			0
8	S9S	19-11 1/16	19-4 1/16	18-9 1/16	19-8			0
2	S10S	19-10 5/8	19-3 1/8	18-8 1/8	19-6 5/8			0
4	S175S	19-11 3/8	19-4 3/8	18-9 3/8	19-7 3/8			10
Alike 4	S27S	19-11 3/8	19-4 3/8	18-9 3/8	19-8 3/16	8-8 3/8	8-3 5/8	0
4	S28S	19-11 3/8	19-4 3/8	18-9 3/8	19-8 1/16	8-8 3/8	8-3 5/8	0
4	S29S	19-11 3/8	19-4 3/8	18-9 3/8	19-7 15/16	8-8 3/8	8-3 5/8	0



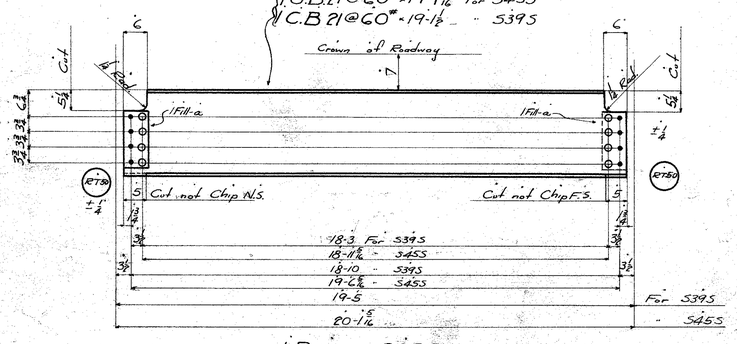
No.	Mark	A	B	C	D	K
1	S51S	19-5	18-10	18-3	19-1 1/2	0
20	S52S	19-2 1/2	18-7 1/2	18-0 1/2	18-10 5/16	0
1	S53S	19-1	18-6	17-11	18-9 1/2	0
1	S54S	20-1 5/16	19-6 5/8	18-11 5/8	19-9 3/8	0
1	S55S	19-1	18-6	17-11	18-9 1/2	0
8	S56S	19-11 3/8	19-4 3/8	18-9 3/8	19-8 1/16	0
8	S57S	19-11 3/8	19-4 3/8	18-9 3/8	19-8 1/16	0
8	S58S	19-11 3/8	19-4 3/8	18-9 3/8	19-7 15/16	0
4	S59S	19-11	19-4	18-8 7/8	19-8	0
1	S60S	19-10 5/8	19-3 1/8	18-8 1/8	19-6 5/8	0
2	S73S	19-11 3/8	19-4 3/8	18-9 3/8	19-7 3/8	10
6	S75SA	19-11 3/8	19-4 3/8	18-9 3/8	19-8 1/2	0



No.	Mark	A	B	C	D	E	F	H	K
2	S615E	19-5	18-10	18-3	9-8 1/2	9-3 3/8	19-1 1/2		0
2	S615L								
20	S625E	19-2 1/2	18-7 1/16	18-0 1/16	9-7 7/16	9-2 5/16	18-10 5/16		0
20	S625L								
2	S635E	19-1	18-6	17-11	10-6 5/8		18-9 1/2	9-9 1/2	0
2	S635L								
2	S645E	20-1 5/16	19-6 5/8	18-11 5/8	9-10	8-7 1/2	19-9 1/2		0
2	S645L								
6	S705AE	19-11 3/8	19-4 3/8	18-9 3/8	9-11 3/8	9-7 1/8	19-8 1/2		0
6	S705AL								
8	S665E	19-11 3/8	19-4 3/8	18-9 3/8	9-11 5/8	9-7 5/8	19-8 1/16		0
8	S665L								
8	S705E	19-11 3/8	19-4 3/8	18-9 3/8	9-11 5/8	9-7 1/8	19-8 1/16		0
8	S705L								
8	S715E	19-11 3/8	19-4 3/8	18-9 3/8	9-11 5/8	9-6 7/8	19-7 3/4		0
8	S715L								
4	S755E	19-11 1/2	19-4 1/2	18-9 1/2	9-11 1/2	9-7	19-8		0
4	S755L								
1	S715E	19-10 5/8	19-3 1/8	18-8 1/8	9-11 1/16	9-6 1/8	19-6 5/8		0
1	S775L								
2	S765E	19-11 3/8	19-4 3/8	18-9 3/8	9-11 5/8	9-6 7/8	19-7 3/4		10
2	S765L								

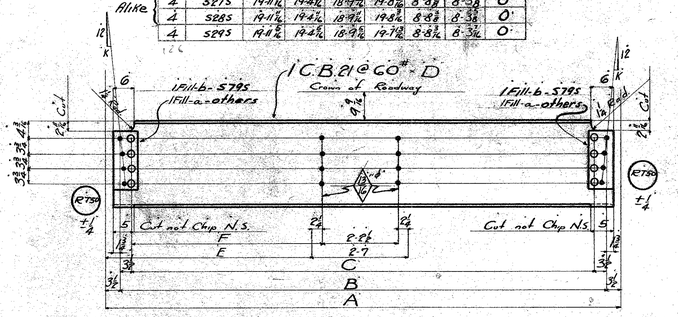


No.	Mark	A	B	C	D	E	F	H	K
2	S215E	19-5	18-10	18-3	9-8 1/2	9-3 3/8	19-1 1/2		0
2	S215L								
20	S225E	19-2 1/2	18-7 1/2	18-0 1/2	9-7 7/16	9-2 5/16	18-10 5/16		0
20	S225L								
2	S235E	19-1	18-6	17-11	10-6 5/8		18-9 1/2	9-9 1/2	0
2	S235L								
2	S245E	20-1 5/16	19-6 5/8	18-11 5/8	9-10	8-7 1/2	19-9 1/2		0
2	S245L								
6	S305AE	19-11 3/8	19-4 3/8	18-9 3/8	9-11 3/8	9-7 1/8	19-8 1/2		0
6	S305AL								
8	S265E	19-11 3/8	19-4 3/8	18-9 3/8	9-11 5/8	9-7 5/8	19-8 1/16		0
8	S265L								
8	S305E	19-11 3/8	19-4 3/8	18-9 3/8	9-11 5/8	9-7 1/8	19-8 1/16		0
8	S305L								
8	S315E	19-11 3/8	19-4 3/8	18-9 3/8	9-11 5/8	9-6 7/8	19-7 3/4		0
8	S315L								
4	S355E	19-11 1/2	19-4 1/2	18-9 1/2	9-11 1/2	9-7	19-8		0
4	S355L								
1	S315E	19-10 5/8	19-3 1/8	18-8 1/8	9-11 1/16	9-6 1/8	19-6 5/8		0
1	S375L								
2	S265E	19-11 3/8	19-4 3/8	18-9 3/8	9-11 5/8	9-6 7/8	19-7 3/4		10
2	S265L								

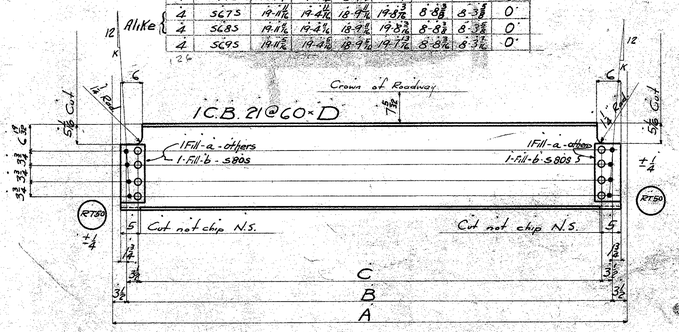


1 BEAM - S395
1 - S455

L.O. 2
F.H. 2
PWD 1
S.L. 1
O.I. 1
7



No.	Mark	A	B	C	D	E	F	K
4	S1S	19-5	18-10	18-3	19-1 1/2			0
40	S2S	19-2 1/2	18-7 1/2	18-0 1/2	18-10 5/16			0
4	S3S	19-1	18-6	17-11	18-9 1/2			0
4	S4S	20-1 5/16	19-6 5/8	18-11 5/8	19-9 3/8			0
12	S175A	19-11 3/8	19-4 3/8	18-9 3/8	19-8 1/2			0
16	S6S	19-11 1/16	19-4 1/16	18-9 1/16	19-8 1/16			0
8	S7S	19-11 1/16	19-4 1/16	18-9 1/16	19-8 1/16			0
18	S8S	19-11 3/8	19-4 3/8	18-9 3/8	19-7 15/16			0
8	S9S	19-11 1/16	19-4 1/16	18-9 1/16	19-8			0
2	S10S	19-10 5/8	19-3 1/8	18-8 1/8	19-6 5/8			0
4	S79S	19-11 3/8	19-4 3/8	18-9 3/8	19-7 3/8			10
Alike 4	S67S	19-11 3/8	19-4 3/8	18-9 3/8	19-8 1/2	8-8 3/8	8-3 5/8	0
4	S68S	19-11 3/8	19-4 3/8	18-9 3/8	19-8 1/16	8-8 3/8	8-3 5/8	0
4	S69S	19-11 3/8	19-4 3/8	18-9 3/8	19-7 15/16	8-8 3/8	8-3 5/8	0



No.	Mark	A	B	C	D	K
4	S41S	19-5	18-10	18-3	19-1 1/2	0
40	S42S	19-2 1/2	18-7 1/2	18-0 1/2	18-11	0
4	S43S	19-1	18-6	17-11	18-9 1/2	0
4	S44S	20-1 5/16	19-6 5/8	18-11 5/8	19-9 3/8	0
12	S475A	19-11 3/8	19-4 3/8	18-9 3/8	19-8 1/2	0
16	S46S	19-11 1/16	19-4 1/16	18-9 1/16	19-8 1/16	0
16	S47S	19-11 1/16	19-4 1/16	18-9 1/16	19-8 1/16	0
16	S48S	19-11 3/8	19-4 3/8	18-9 3/8	19-7 15/16	0
8	S49S	19-11 1/2	19-4 1/2	18-9 1/2	19-8	0
2	S60S	19-10 5/8	19-3 1/8	18-8 1/8	19-6 5/8	0
4	S80S	19-11 3/8	19-4 3/8	18-9 3/8	19-7 3/8	10

Rivets : 7/8"ϕ
Holes : 15/16"ϕ Unless Noted
Holes punched 13/16"ϕ reamed to 15/16"ϕ after assembling
Holes marked (RT) to be subpunched 13/16"ϕ reamed to 15/16"ϕ thru an iron template.
Burrs are to be removed from all holes

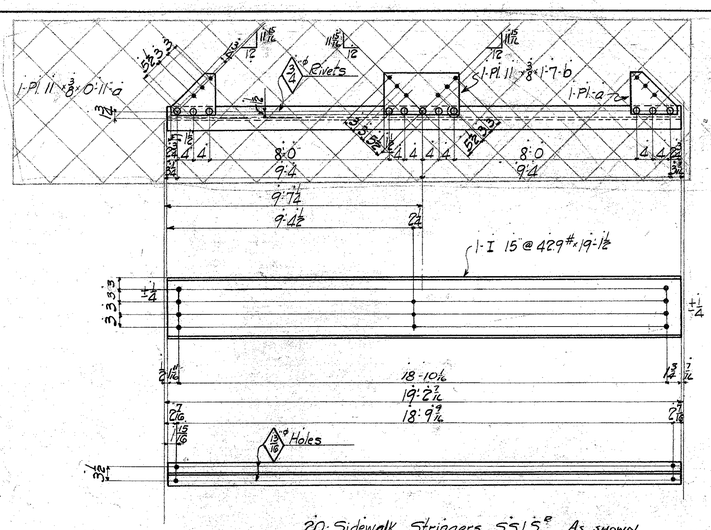
Paint : One coat of Detroit Graphite Co's #501

APPROVED 5-15-30
Waddell & Hardesty

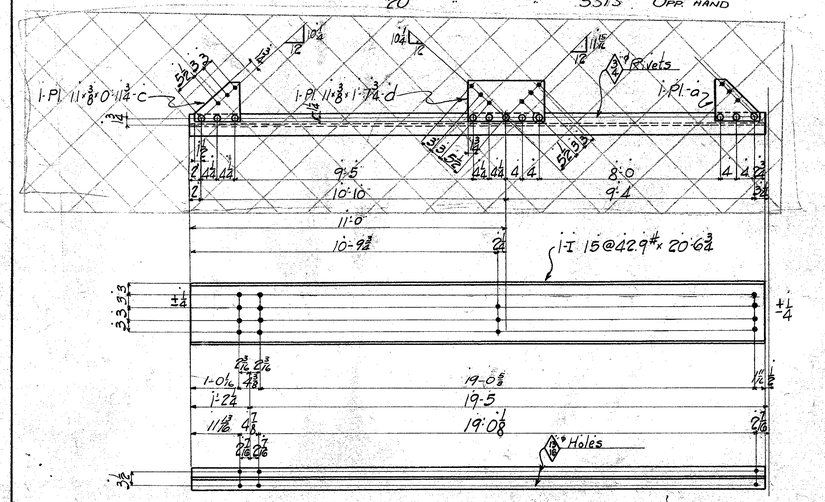
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
SUSPENDED SPAN
ROADWAY STRINGERS - PANELS 1 TO 32 INC.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.M. ASM.
MADE BY A.T. DATE CHECKED BY E.W.K. DATED 1930
TRACED BY J.M. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK G.
CONT. NO. 5001A SHEET NO. 1

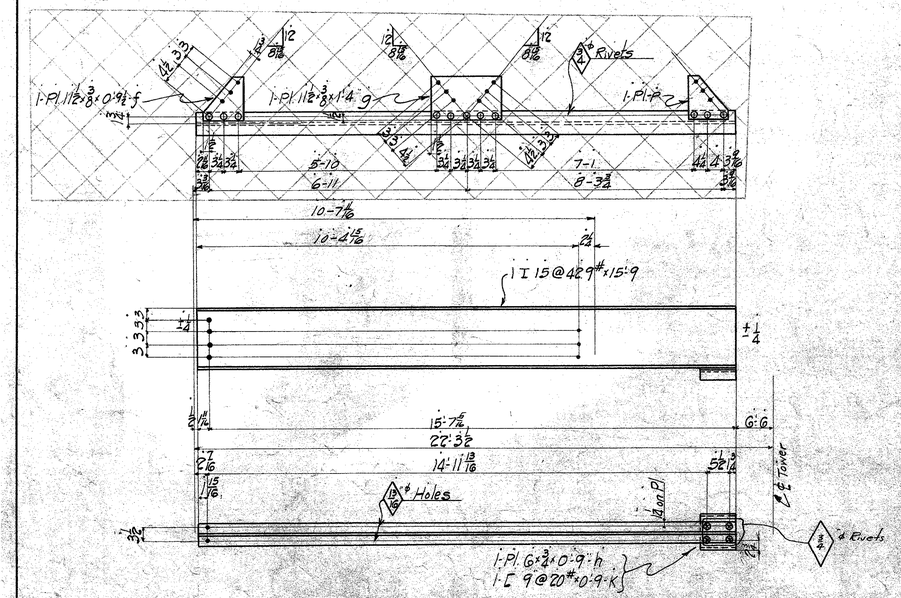
A-2-267



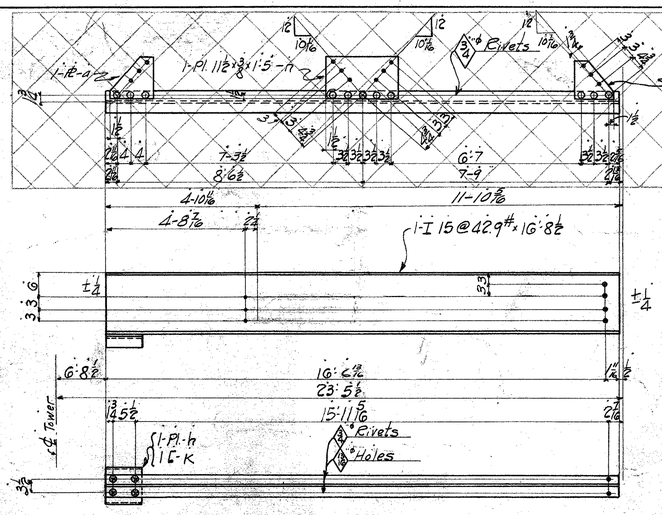
20 Sidewalk Stringers 5515^R As shown
20 " " 5515^L Opp. Hand



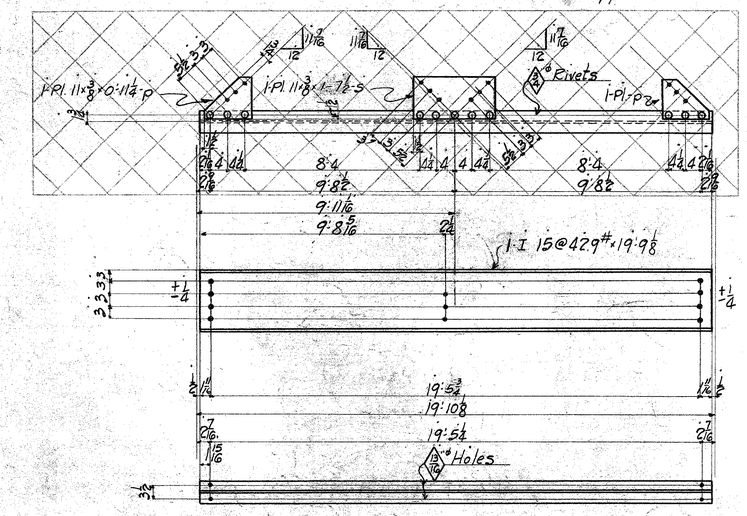
2 Sidewalk Stringers 5525^R As Shown
2 " " 5525^L Opp Hand



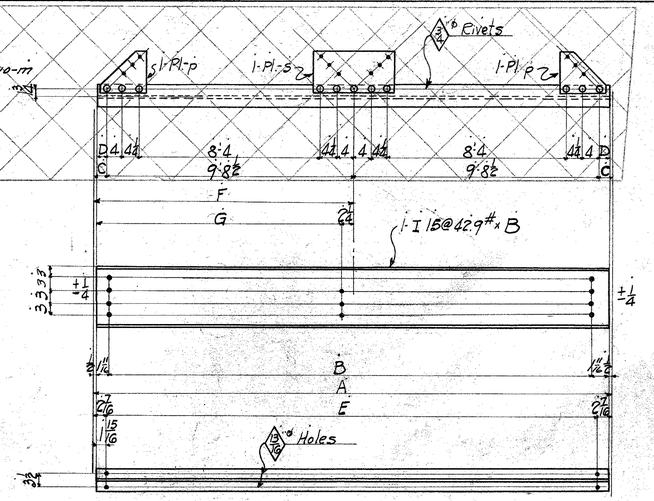
2 Sidewalk Stringers 5535^R As Shown
2 " " 5535^L Opp Hand



2 Sidewalk Stringers 5545^R As Shown.
2 " " 5545^L Opp Hand



1 Sidewalk Stringer 5555^R As shown
1 " " 5553^L Opp hand



No.	Mark	A	B	C	D	E	F	G	
8	5565^L	19'-11⅞"	19'-7⅞"	3⅝"	2⅝"	19'-6⅞"	9'-11⅝"	9'-9⅝"	As shown
8	5575^L	19'-11⅞"	19'-7⅞"	3⅝"	2⅝"	19'-6⅞"	9'-11⅝"	9'-9⅝"	As shown
6	5585^L	19'-11⅞"	19'-7⅞"	3⅝"	2⅝"	19'-6⅞"	9'-11⅝"	9'-9⅝"	As shown
4	5595^L	19'-11⅞"	19'-7⅞"	3⅝"	2⅝"	19'-6⅞"	9'-11⅝"	9'-9"	As shown
8	55105^L	19'-11⅞"	19'-6⅞"	3⅝"	2⅝"	19'-6⅞"	9'-11⅝"	9'-9⅝"	As shown
2	5515^L	19'-11⅞"	19'-6⅞"	3⅝"	2⅝"	19'-6⅞"	9'-11⅝"	9'-9⅝"	As shown
8	5565^L	19'-11⅞"	19'-7⅞"	3⅝"	2⅝"	19'-6⅞"	9'-11⅝"	9'-9⅝"	Opp. hand
8	5575^L	19'-11⅞"	19'-7⅞"	3⅝"	2⅝"	19'-6⅞"	9'-11⅝"	9'-9⅝"	Opp. hand
4	5595^L	19'-11⅞"	19'-7⅞"	3⅝"	2⅝"	19'-6⅞"	9'-11⅝"	9'-9"	Opp. hand
8	55105^L	19'-11⅞"	19'-6⅞"	3⅝"	2⅝"	19'-6⅞"	9'-11⅝"	9'-9⅝"	Opp. hand
2	5515^L	19'-11⅞"	19'-6⅞"	3⅝"	2⅝"	19'-6⅞"	9'-11⅝"	9'-9⅝"	Opp. hand
6	5585^L	19'-11⅞"	19'-7⅞"	3⅝"	2⅝"	19'-6⅞"	9'-11⅝"	9'-9⅝"	Opp hand

L.O. 2
F.H. 2
P.W.D. 1
S.I. 1
O.I. 1
7

Rivets ¾"ϕ
Holes ⅞"ϕ Unless Noted
All holes punched full size

Burrs are to be removed from all open holes.
Paint: One coat of Detroit Graphite Co's # 501

APPROVED 5/15-30
Waddell & Hardesty

CITY OF TOLEDO, OHIO

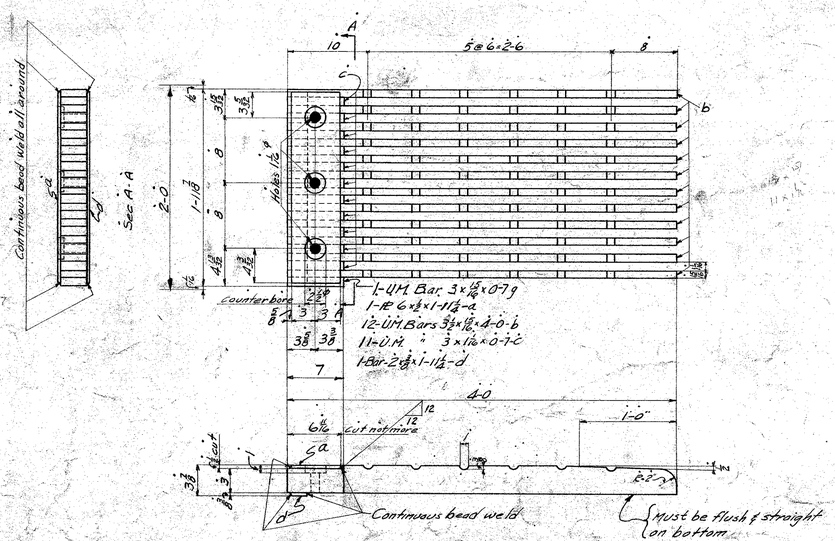
BRIDGE OVER MAUMEE RIVER

SUSPENDED SPAN

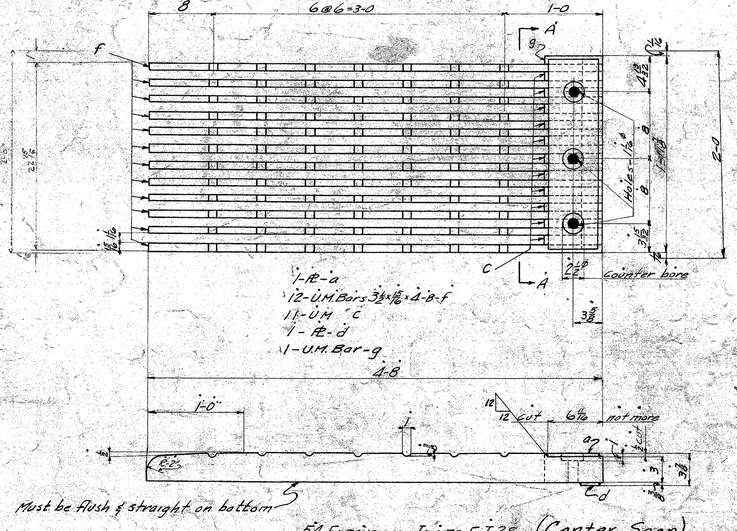
SIDEWALK STRINGERS PANELS #1 & 32 Inc.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.M. Son
MADE BY A.T. DATE 3-17-30 CHECKED BY C.W.K. DATE 4-18-30
TRACED BY C.E.P. DATE 3-19-30 REVISED DATE
SCALE— INCH = 1 FOOT LAST ASSEMBLING MARK S
CONT. NO. 5001A SHEET NO. 2

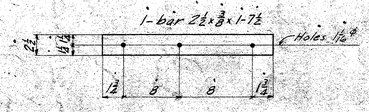
A-2-268



54 Expansion Joints EJ1S (Side Span)



54 Expansion Joints EJ2S (Center Span)



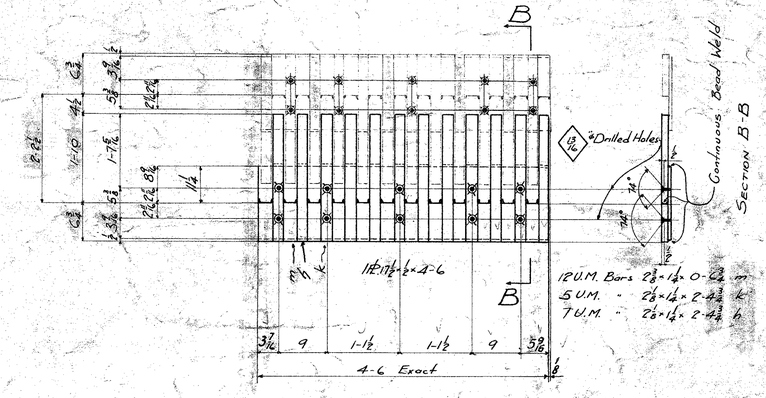
108 Washers-W1S

for B1S	5 1/2
B2S	8 1/16
B3S	8 1/2
B4S	8 15/16
B5S	9 3/8
B6S	9 13/16
B7S	10 1/4

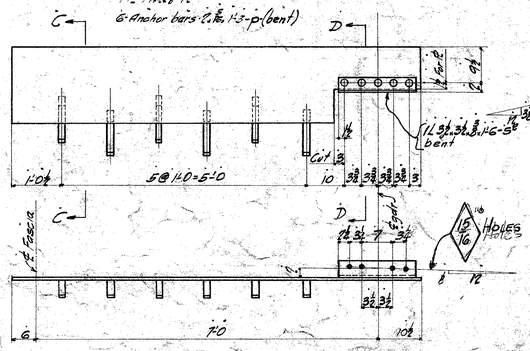
Drill 1/2 ø hole for cotter pin
1-Compression Spring "d" gauge 1/2 working length 1 1/4 inside Diam
1-Bolt with hex. nut & head
1-Cotter Pin 3/32 x 2 1/2

276 Bolts- B1S	6 1/2
8 " B2S	9 1/16
8 " B3S	9 1/2
8 " B4S	10
8 " B5S	10
8 " B6S	10 1/2
8 " B7S	10 1/2

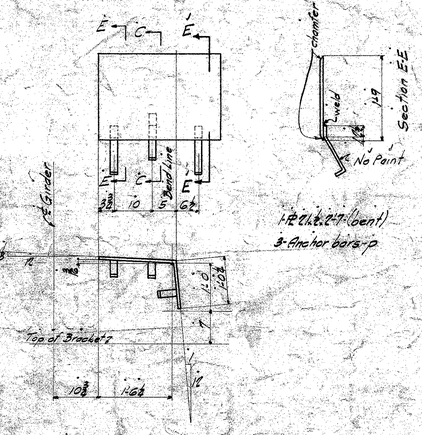
McClintic-Marshall Drwgs
1 S003 B sh 5, Struts at Tower Cols
S001B sh 425 Floor Beams



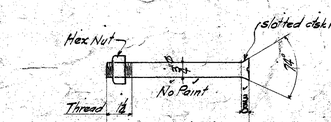
48 Expansion Joints - EJ3S



2-Sidewalk Expansion Joints EJ4S^R As Shown
2- " " " EJ4S^L Opp Hand



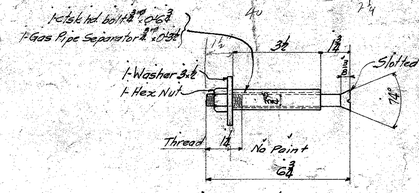
2-Sidewalk Expansion Joints EJ5S^R As Shown
2- " " " EJ5S^L Opp Hand



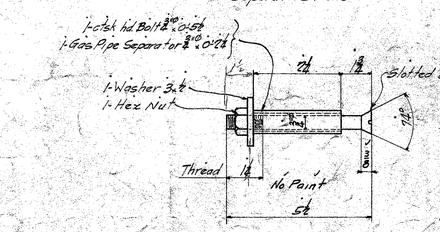
56-Bolts	B8S	1-1
24 "	B9S	1-0 3/8
80 "	B10S	1-0 1/4
40 "	B11S	1-0 1/4
40 "	B12S	1-0
24 "	B13S	11 3/4
32 "	B14S	11 1/2
16 "	B15S	11 1/4
24 "	B16S	11
12 "	B17S	10 3/4
8 "	B18S	10 1/2
16 "	B19S	10 1/4
16 "	B20S	10
24 "	B21S	9 3/4
8 "	B22S	9 1/2
8 "	B23S	9 1/4
16 "	B24S	9

3/4" Gas Pipe Separators

24-Separators	M1S	9 1/16
16 "	M2S	9
8 "	M3S	8 15/16
8 "	M4S	8 7/8
8 "	M5S	8 13/16
8 "	M6S	8 3/4
16 "	M7S	8 11/16
24 "	M8S	8 5/8
32 "	M9S	8 1/2
16 "	M10S	8 7/16
8 "	M11S	8 3/8
24 "	M12S	8 5/16
8 "	M13S	8 1/4
16 "	M14S	8 3/16
8 "	M15S	8 1/8
16 "	M16S	8 1/16
8 "	M17S	8
8 "	M18S	7 15/16
8 "	M19S	7 7/8
8 "	M20S	7 13/16
8 "	M21S	7 3/4
8 "	M22S	7 11/16
8 "	M23S	7 5/8
8 "	M24S	7 9/16
4 "	M25S	7 1/2
8 "	M26S	7 7/16
16 "	M27S	7
8 "	M28S	6 15/16
16 "	M29S	6 7/8
8 "	M30S	6 13/16
8 "	M31S	6 3/4
16 "	M32S	6 11/16
8 "	M33S	6 5/8
8 "	M34S	6 9/16
8 "	M35S	6 1/2
8 "	M36S	5 15/16
8 "	M37S	5 7/8
4 "	M38S	5 3/4



28-Bolts B2S5
28-Separators M9S



20-Bolts- B2G5
20 Separators M4S

Holes as noted

Paint - One coat of Detroit Graphite Co's 501

APPROVED 3-29-30
2-18-30
Waddell & Hardesty

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

SUSPENDED SPANS
EXPANSION JOINTS
B2E

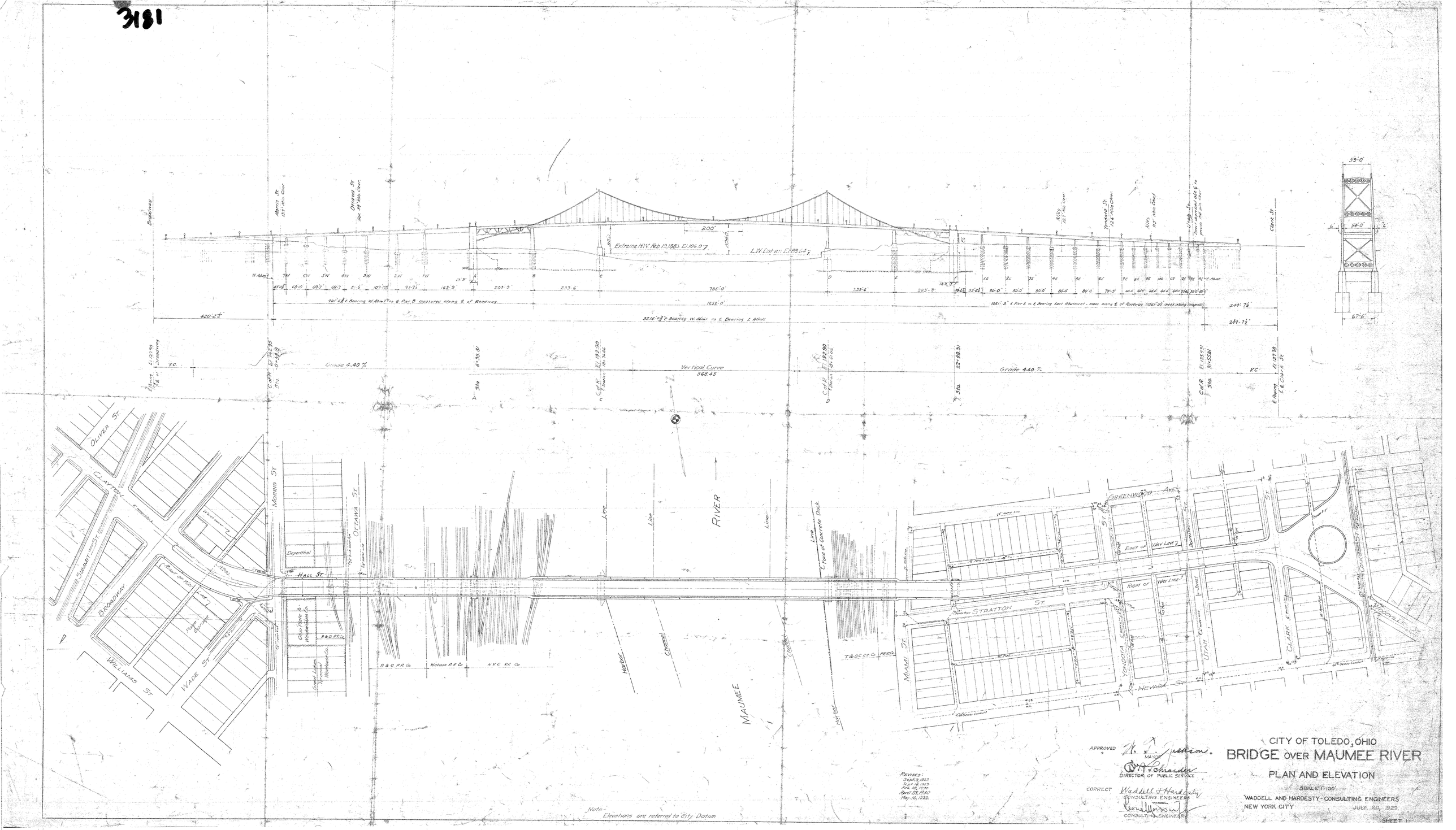
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE W.T.S. | MADE BY C.W.A. DATE | CHECKED BY H.W.C. F.E.H. DATE 1/14 | TRACED BY E.Z. DATE | REVISED DATE | SCALE: INCH = 1 FOOT | LAST ASSEMBLING MARK

CONT. NO. 5001B SHEET NO. 1

A-2-269

3181



Revised:
Sept. 5, 1929
Sept. 18, 1929
Feb. 18, 1930
April 28, 1930
May 10, 1930.

APPROVED
Mayor
Director of Public Service

CORRECT
Waddell & Hardesty
Consulting Engineers
Consulting Engineer

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
PLAN AND ELEVATION

SCALE 1" = 100'

WADDELL AND HARDESTY - CONSULTING ENGINEERS
NEW YORK CITY — JULY 20, 1929.

SHEET 1

L.W. El 89.64

Low Water El 89.64

—BORINGS—
Vertical Scale 1"=50'

N

RIVER

OLIVER ST

CLAY ST

SUMMIT ST

BROADWAY

WILLIAMS ST

WADE ST

MORRIS ST

OTTAWA ST

HALL ST

Depenthal

Base Line 1

Base Line 2

Line

Line

Line

Line

Line

Top of Concrete Dock

B&O RR Co

B&O RR Co

Ohio Plate & Window Glass Co

Great Lakes Terminal Warehouse Co

B&O R.R. Co.

WABASH R.R.

N.Y.C.R.R. Co.

Harbor

Channel

Channel

MAUMEE

T&OCRR Co PRR Co

Harbor

GREENWOOD AVE

5TH ST

STRATTON ST

MIAMI ST

YONDOTA

NEVADA ST.

UTAH

CLARK

OAK ST

WOODVILLE ST

Note- Elevations are referred to City Datum.

CITY OF TOLEDO, OHIO

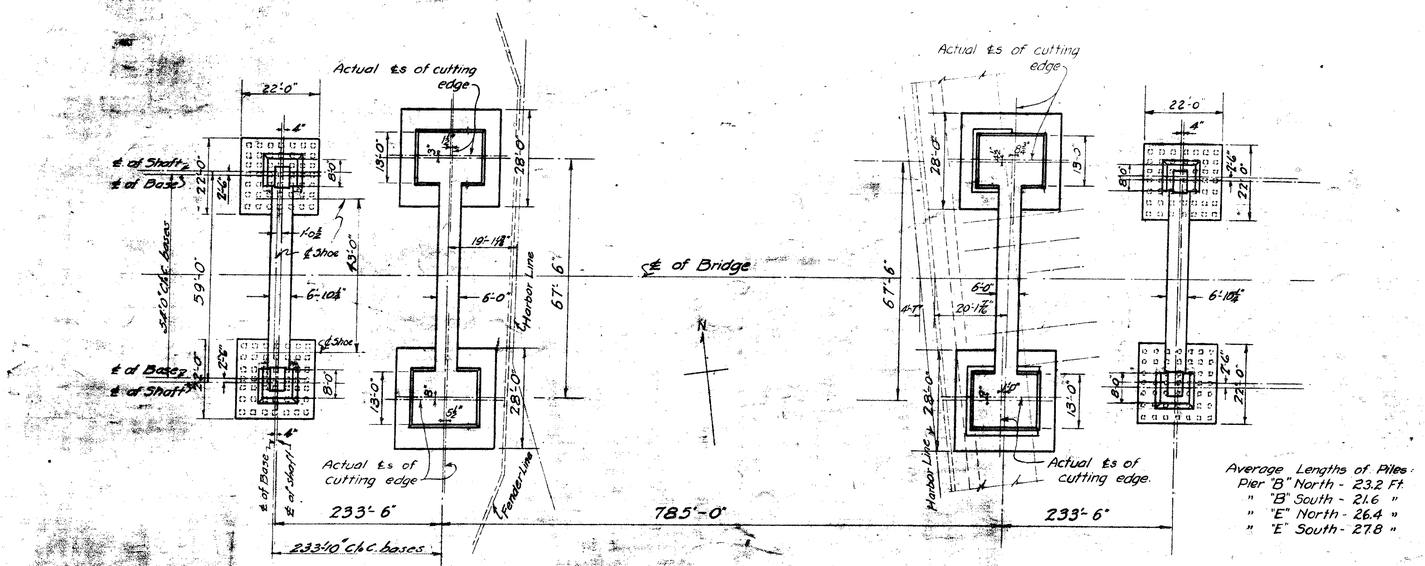
BRIDGE OVER MAUMEE RIVER

BORINGS

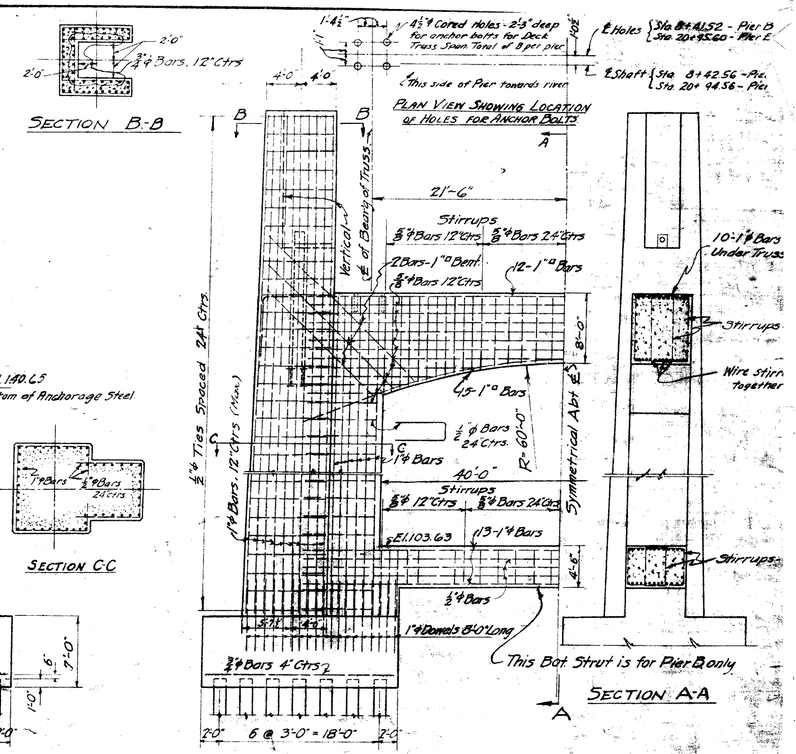
SCALE 1"=100'

WADDELL AND HARDESTY-CONSULTING ENGINEERS
NEW YORK CITY JULY 20, 1928.

SHEET 2



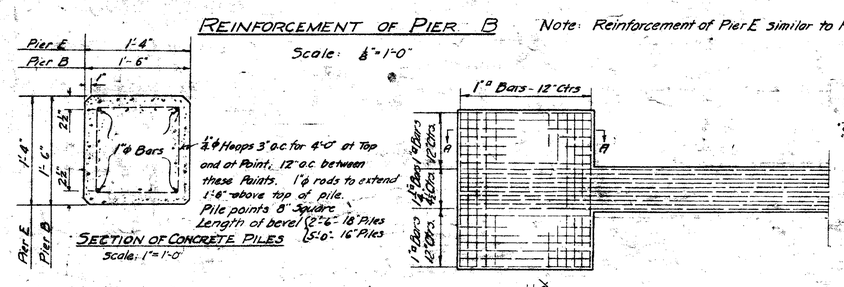
Average Lengths of Piles:
Pier 'B' North - 23.2 Ft.
" 'B' South - 21.6 "
" 'E' North - 26.4 "
" 'E' South - 27.8 "

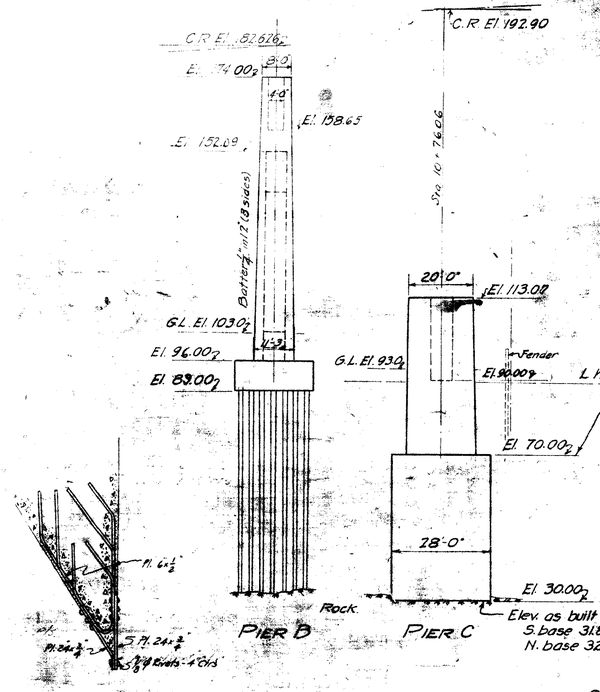


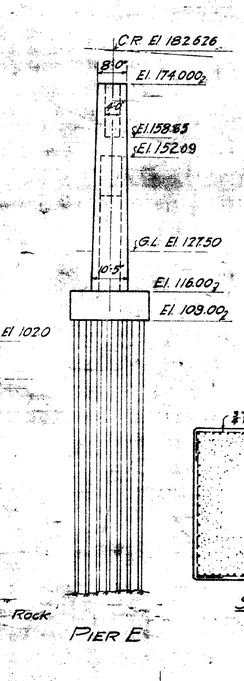
REINFORCEMENT OF PIER B

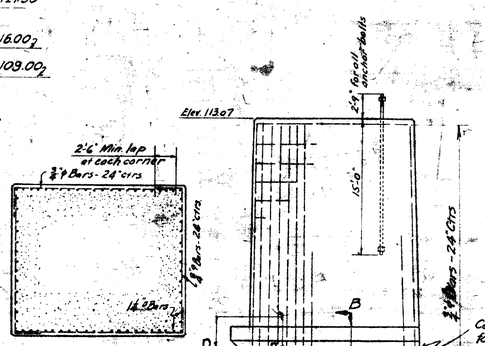
Note: Reinforcement of Pier E similar to Pier B.

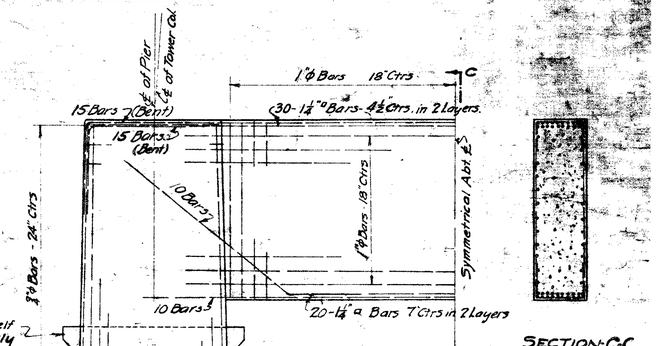
Scale: ⅜"=1'-0"





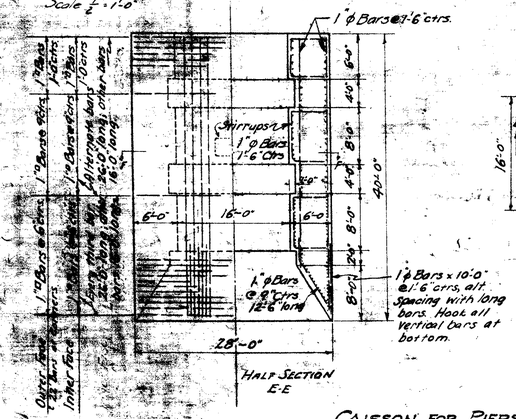






DETAIL OF CUTTING EDGE FOR CAISSON

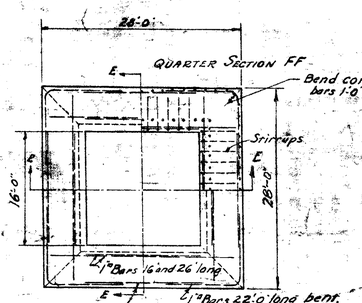
Scale ½"=1'-0"

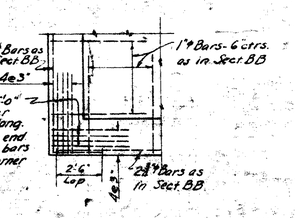


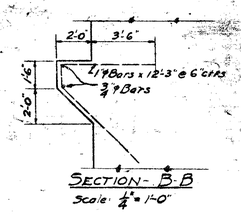
CAISSON FOR PIERS C & D

Scale: 1"=10'-0"

Scales: 1"=20'-0 FOR PIERS; 1"=100' FOR HORIZONTAL DISTANCE.







NOTE:
Finish Bevels on Pier Shafts
Horz Edges 4" Face
Vert Edges ¢ℓ Face

REINFORCEMENT OF PIERS C & D

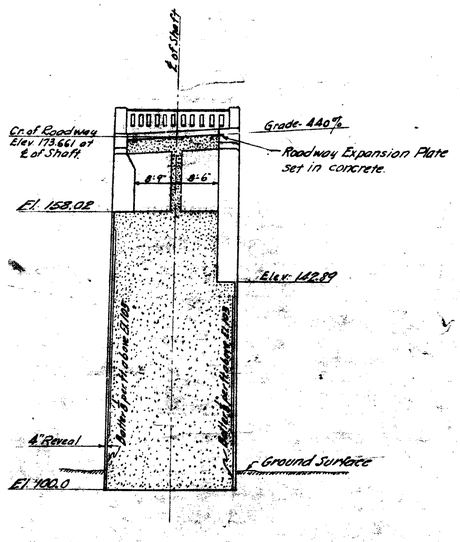
Scale: ⅜"=1'-0"

REVISED
Sept. 16, 1929
Sept. 30, 1929
Nov. 7, 1929
Mar. 8, 1930
Nov. 30, 1931

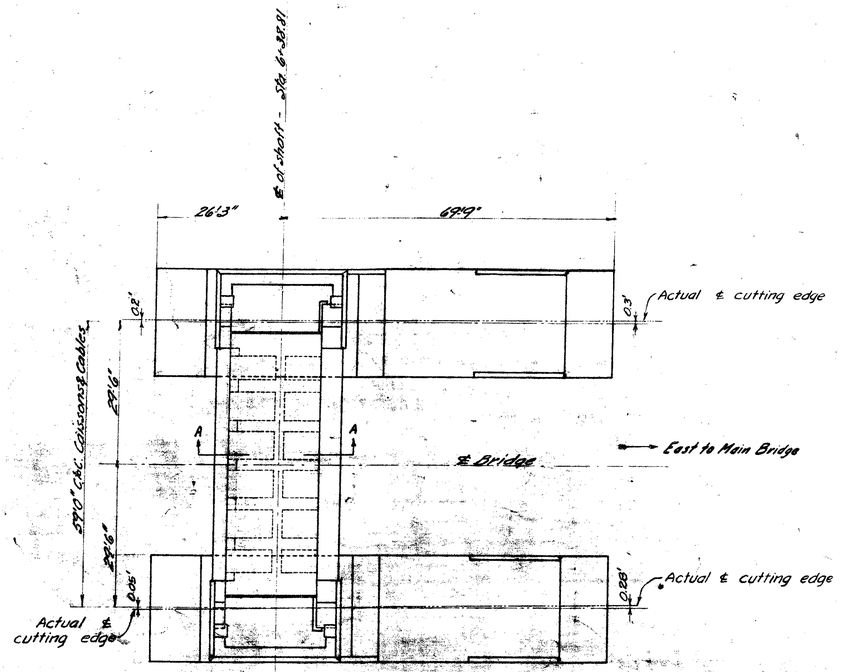
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
MAIN PIERS - B, C, D, E

SCALES AS NOTED

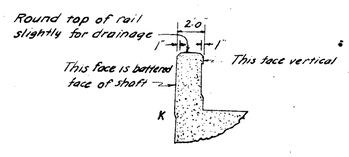
WADDELL AND HARRESTY - CONSULTING ENGINEERS
NEW YORK CITY — JULY, 1929



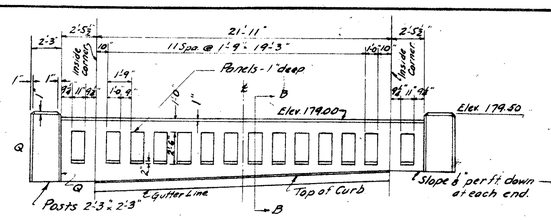
SECTION AA.



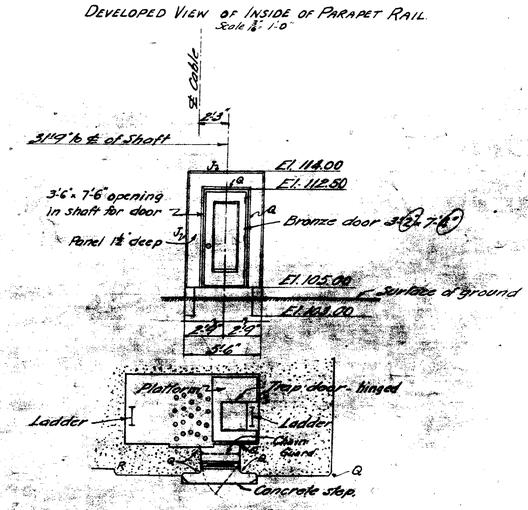
PLAN



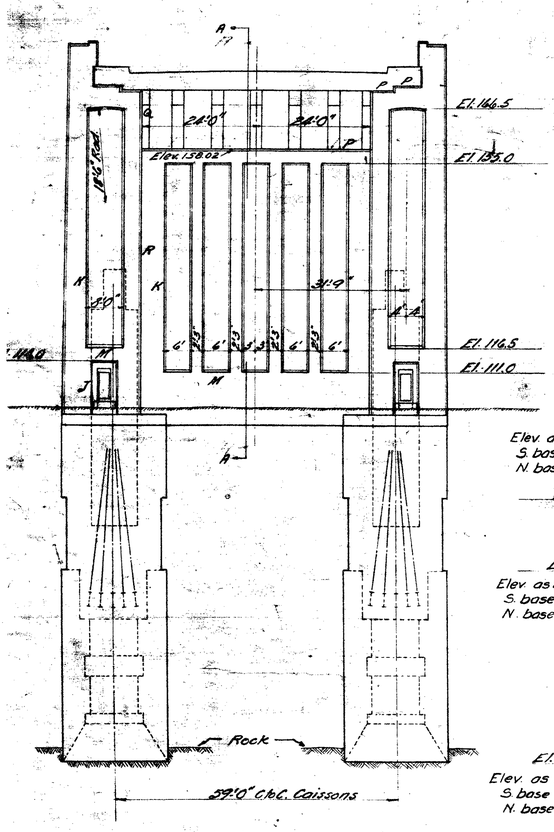
SECTION B-B



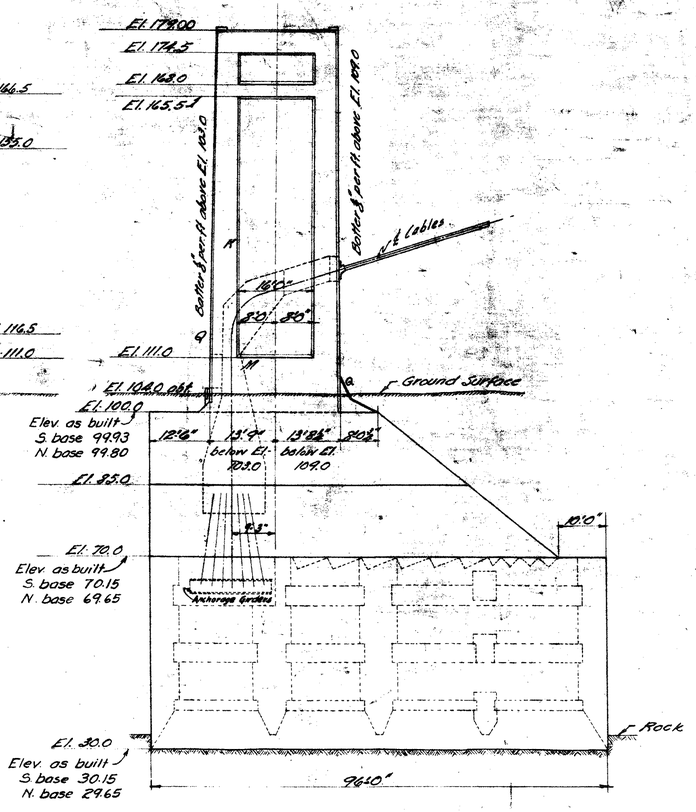
DEVELOPED VIEW OF INSIDE OF PARAPET RAIL.
Scale ½" = 1'-0"



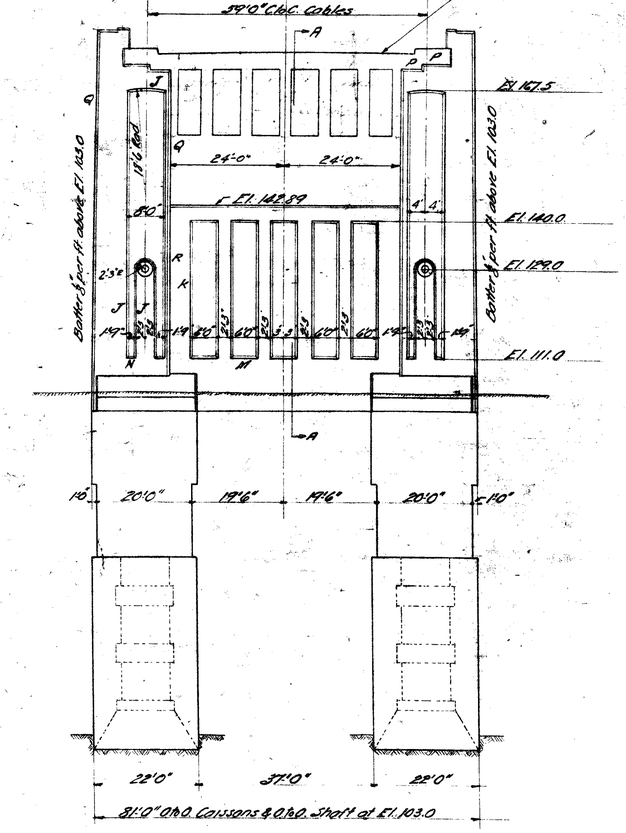
DETAIL OF ENTRANCE TO WELLS
Scale ½"=1'0"



WEST ELEVATION



SOUTH ELEVATION

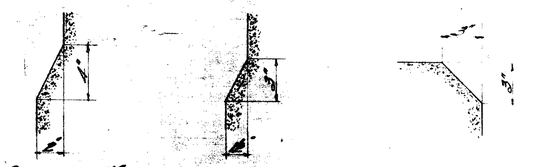


EAST ELEVATION

DETAILS of PANELS AND BEVELED EDGES on SHAFT
Scale ½"=1'

SECTION AT K
Typical of sides and tops of all panels except long panels in East face.

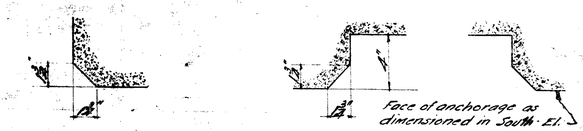
SECTION AT J
For tops and sides of long panels in East face and panels for doors in West face.



SECTION AT M
Typical of bottoms of all panels except long panels in East face.

SECTION AT N
For bottoms of long panels in East face.

SECTION AT P
For edges of bearing seats for trusses, girders and stringers.



SECTION AT Q
For all vertical edges

SECTION AT R
For 4" reveal in faces of Shaft for width of 48".

Face of anchorage as dimensioned in South Elevation

Note: For details of this anchorage, See Sheets 19-20-22-25

Note: This sheet supersedes and replaces Sheet 4.
Revised: February 14, 1930
June 4, 1930.
November 30, 1931

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

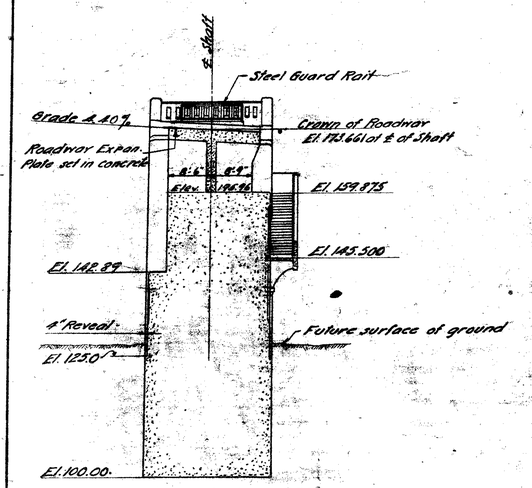
ANCHORAGE-A

SCALE: 1"=15' EXCEPT AS NOTED

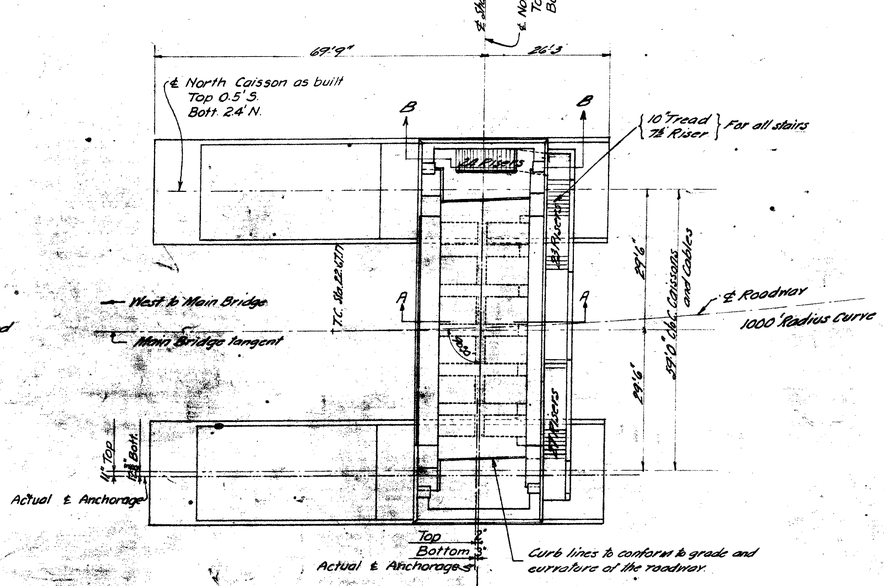
WADDELL AND HARDESTY, CONSULTING ENGINEERS
NEW YORK CITY

NOV. 7, 1929

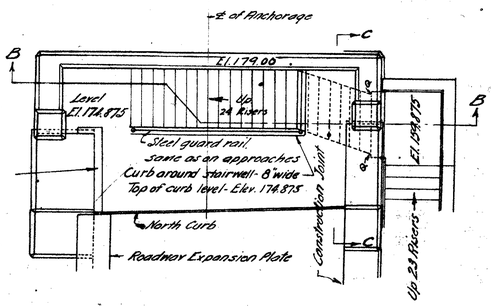
SHEET 4A



SECTION AA

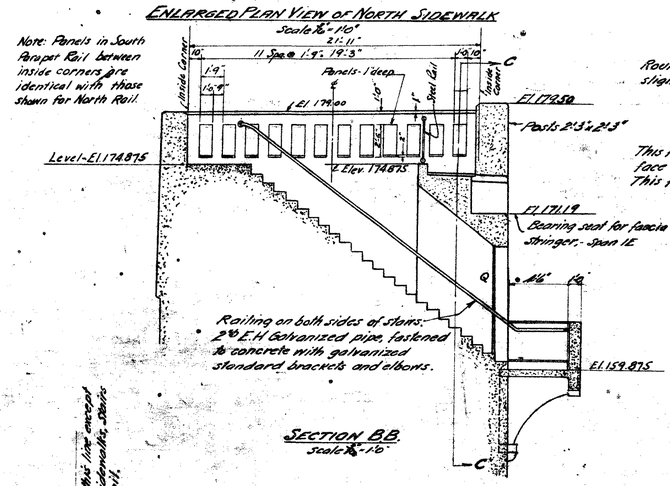


PLAN

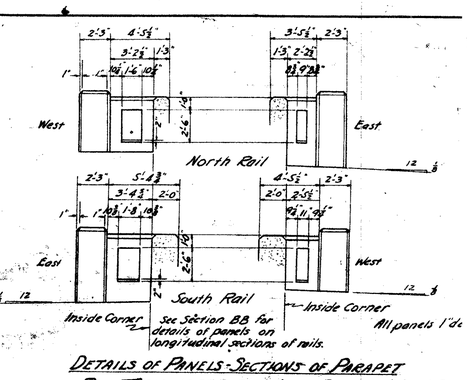


ENLARGED PLAN VIEW OF NORTH SIDEWALK
Scale ⅜"=1'0"

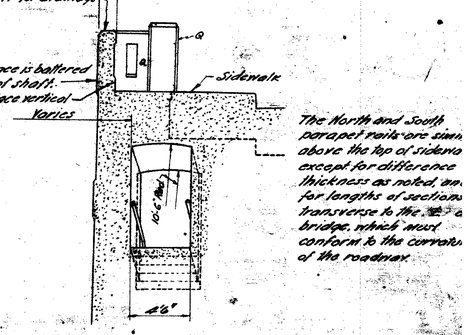
Note: Panels in South Parapet Rail between inside corners are identical with those shown for North Rail.



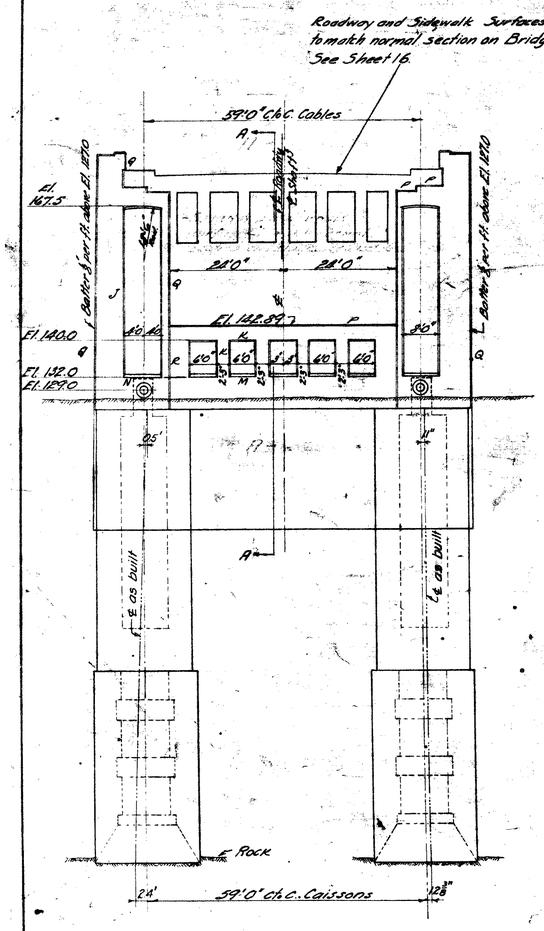
SECTION BB
Scale ⅜"=1'0"



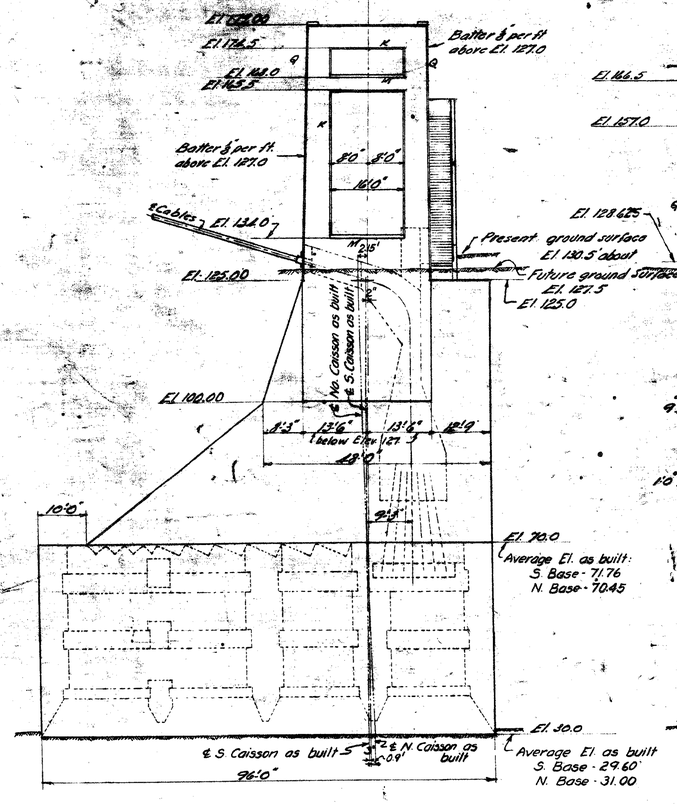
DETAILS OF PANELS - SECTIONS OF PARAPET RAIL TRANSVERSE TO ℄ OF BRIDGE
Scale 3"=1'-



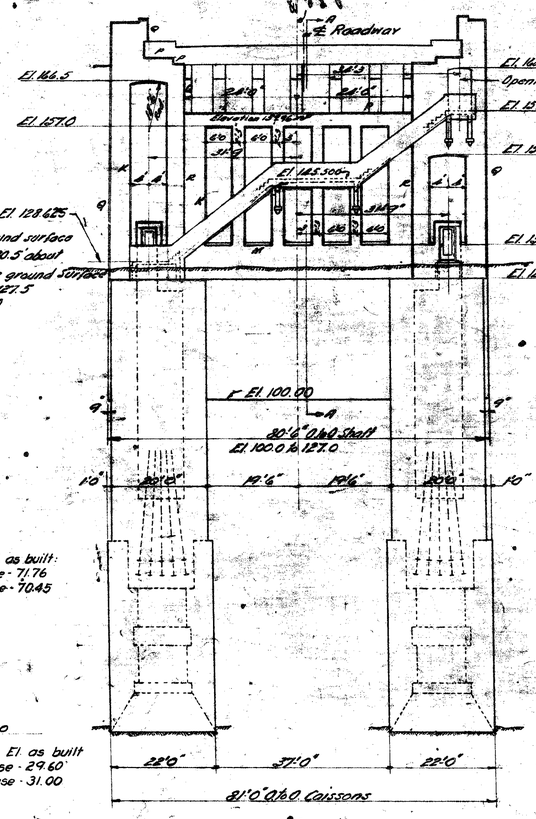
SECTION CC
scale ½"=1'0"



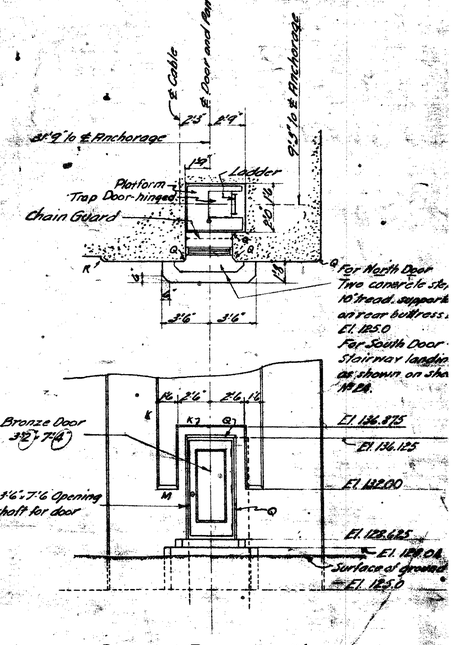
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



DETAIL OF ENTRANCE TO WELLS
Scale ½"=1'0"

Notes:
This sheet supersedes and replaces Sheet 19-5.
For details of panels and beveled edges of shaft above El. 125.0 see sheet 4A Sections J.K.M.N.Q.R

For details of this Anchorage, See Sheets 19-21-23-24-25

Revised February 17, 1930.
April 12, 1930.
June 4, 1930.
Dec. 1, 1931

CITY OF TOLEDO, OHIO

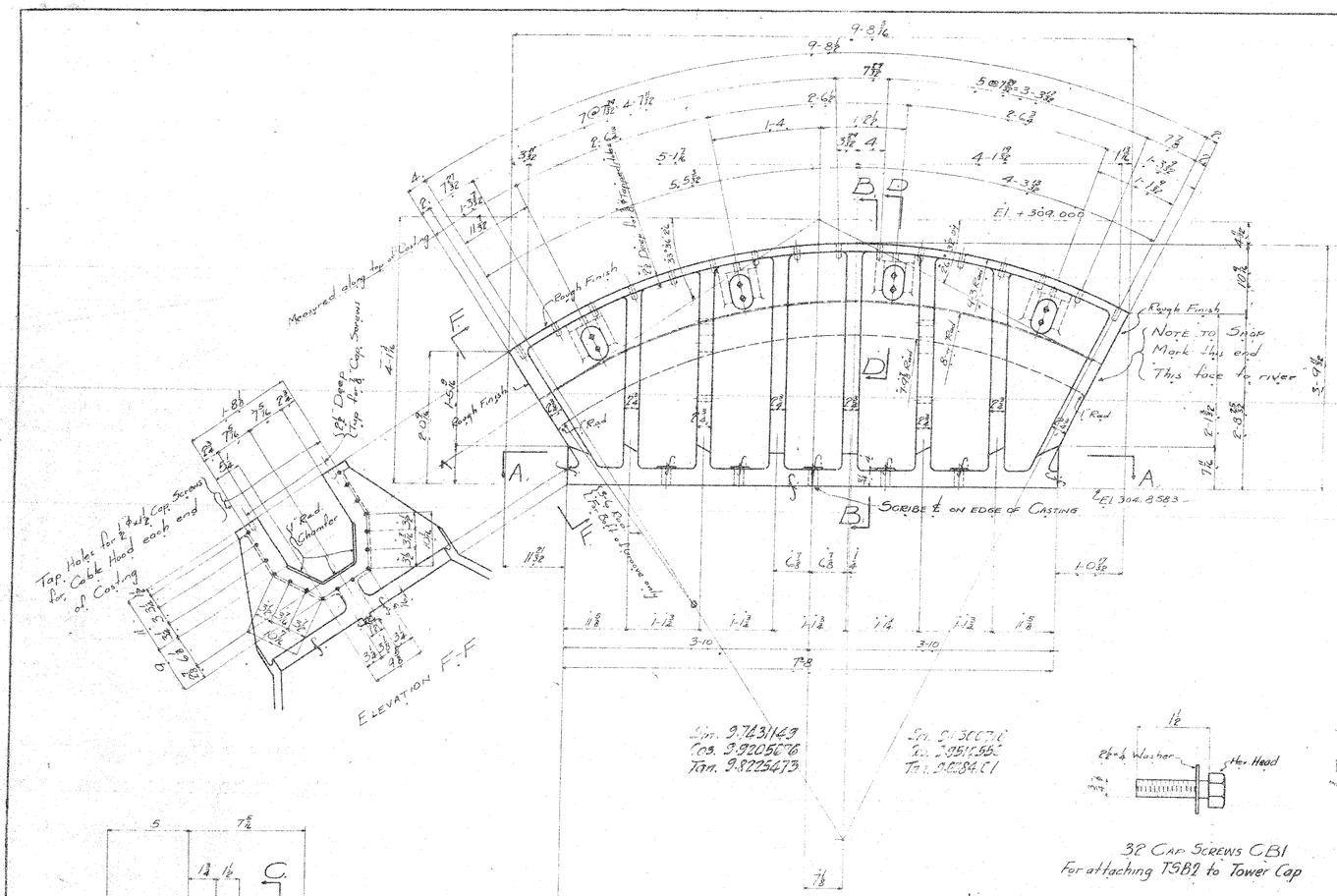
BRIDGE OVER MAUMEE RIVER

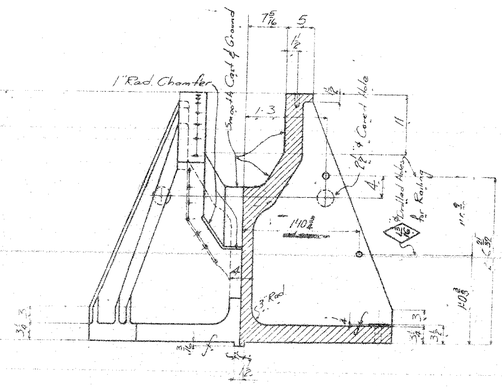
ANCHORAGE-F

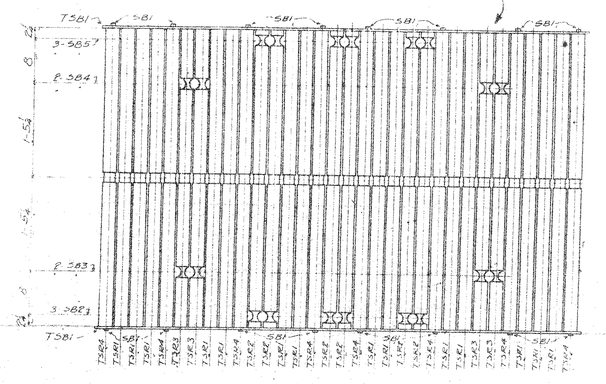
Scale: 1"=15'-0"; except as noted

WADDELL AND HARDESTY-CONSULTING ENGINEERS
NEW YORK CITY — NOVEMBER 27, 1929

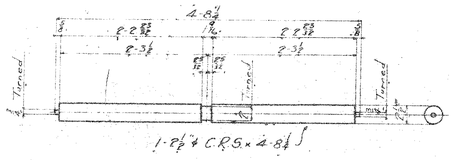
SHEET 5A.



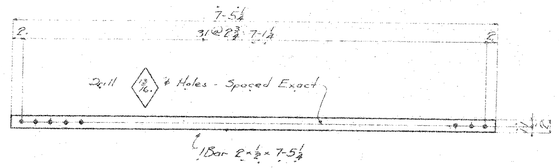




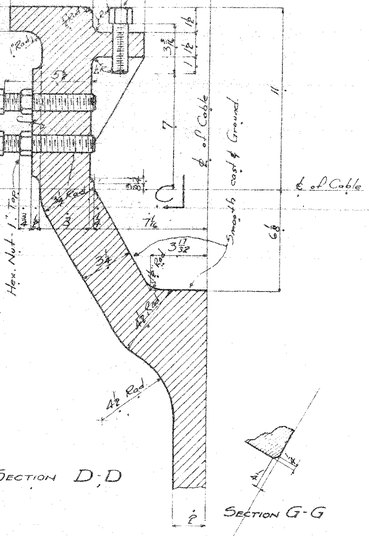
32 Cap Screws CB1
For attaching TSB2 to Tower Cap

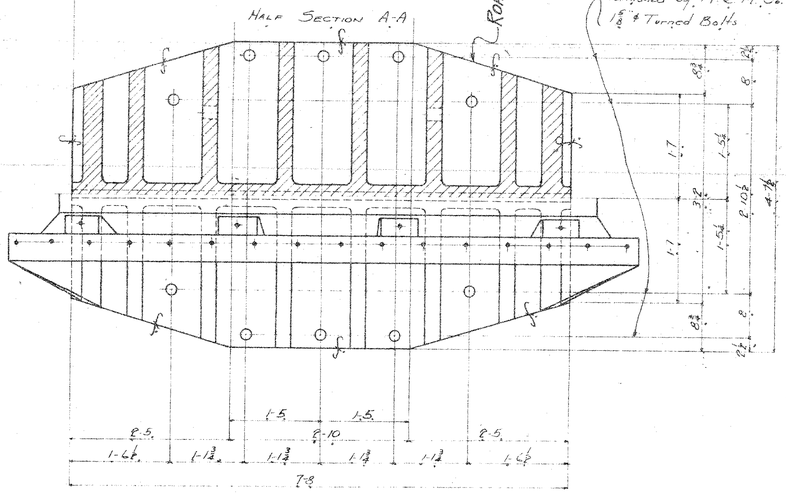


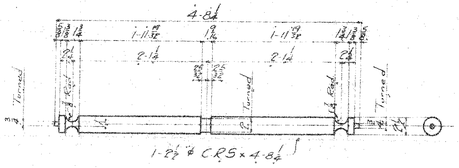
56 Rollers TSR1



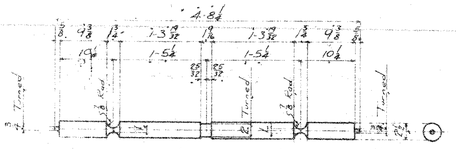
8 Bars - TSB1



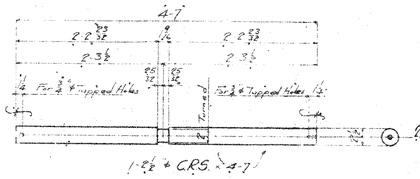




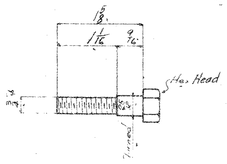
24 Rollers TSR2



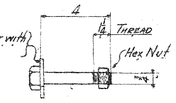
16 Rollers TSR3



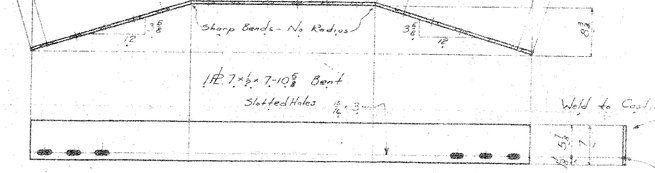
38 Rollers TSR4

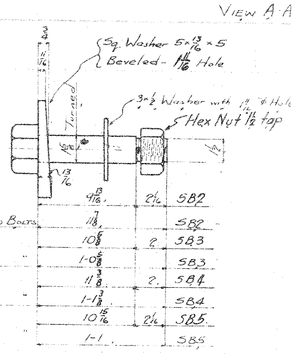


64 Shouldered Bolts SB1
For Roller Nest

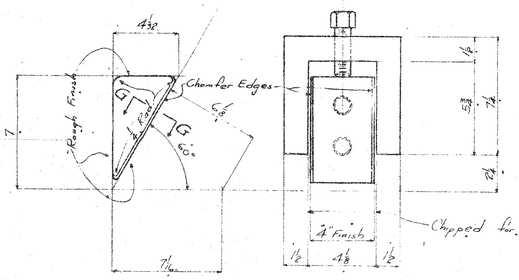


16 - Bolts - SB6
Railing to Saddle





4	1⅛	2½	SB2
12	1⅛		SB2
	10⅝	2	SB3
8	1-0⅝		SB3
	11⅝	2	SB4
8	1-1⅛		SB4
	10¹⁵/₁₆	2½	SB5
12	1-1		SB5



2 Saddle Castings SC1e As shown
2 " " SC1 Opp. Hand
Alike except holes for Railing
Complete with Blocks & Setscrews

Note 1 for Saddle Castings

A.S.T.M. Specifications A27-24 Class B Medium, modified as follows only: Sulphur not over 0.05%; Tens. str. not less than 65000; Yield Pt. not less than 35000; each casting to have attached at least 2 coupons 12" long & 2" sq., which shall not be detached until after annealing nor before proper identification by the inspector.

Rollers: To be Cold Rolled Shafting A.S.T.M. A108-27 Grade C.H. Carbon .15-.25

Paint: One coat - all Detroit Graphite Co's #66; Except machined surfaces & rollers which receive one coat of white lead & tallow applied h...

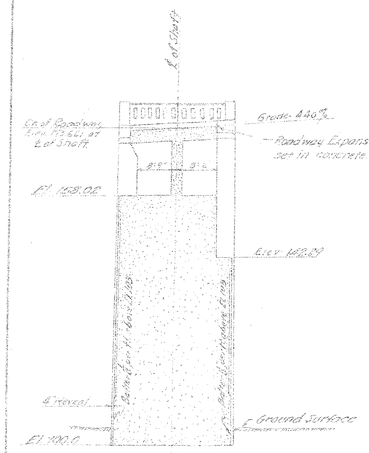
APPROVED 3-1-3
Waddell & Hardesty

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIV

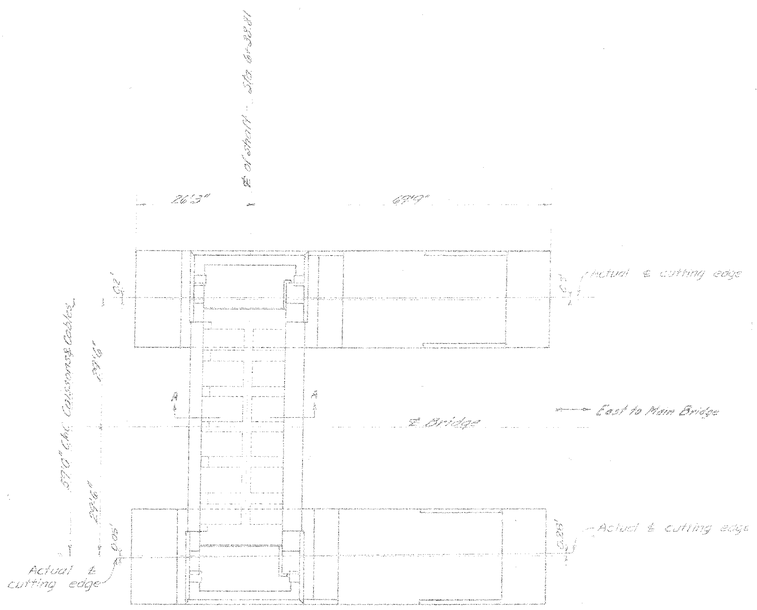
TOWERS
SADDLE CSTG, ROLLER NEST, ETC

McCLINTIC-MARSHALL CONST
PITTSBURGH, PA.
IN CHARGE WDS
MADE BY HFM DATE CHECKED BY (JL)
TRACED BY JM DATE REVISED
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK

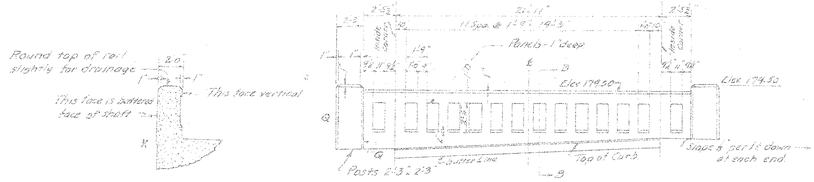
CONT. NO. 5007A SHEET NO.



SECTION ON ℄

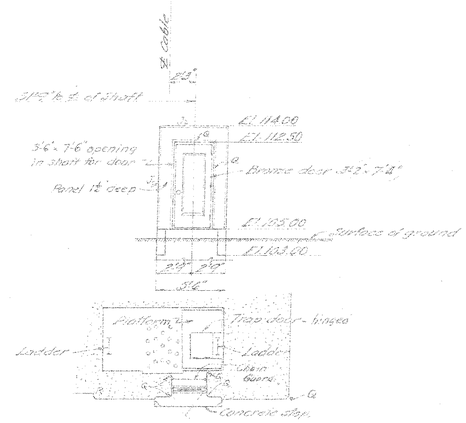


PLAN

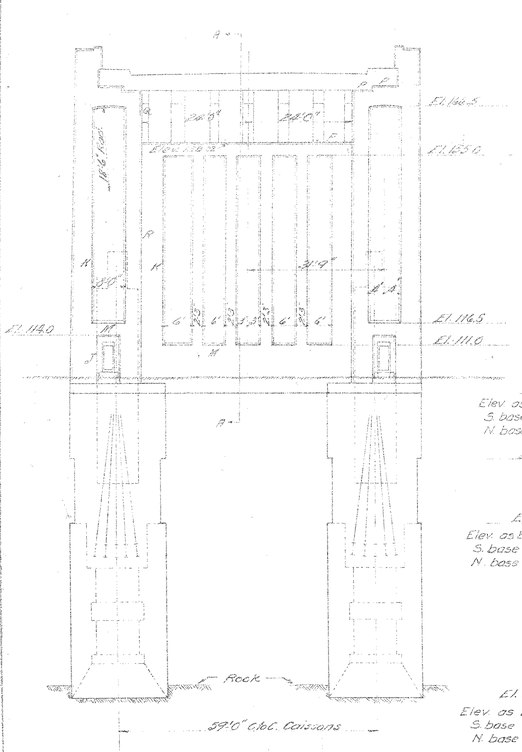


SECTION B-B

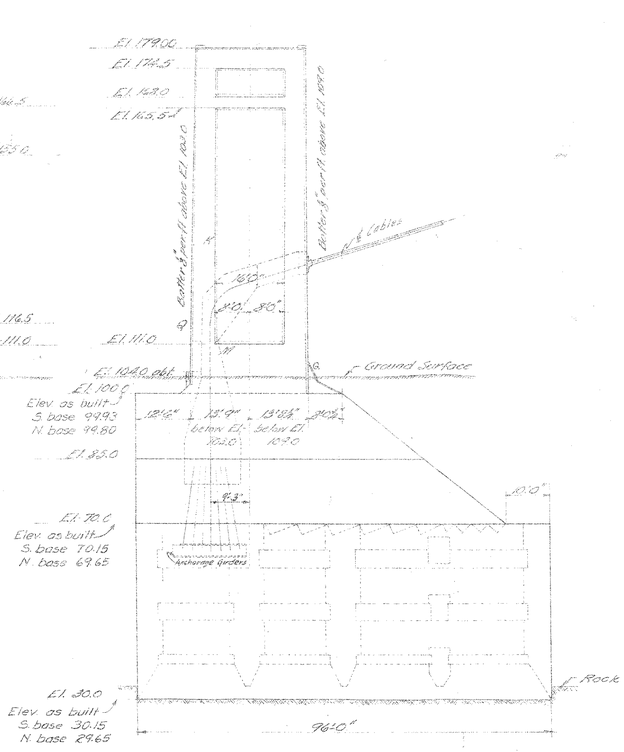
DEVELOPED VIEW OF INSIDE OF PARAPET RAIL.
Scale ½" = 1'0



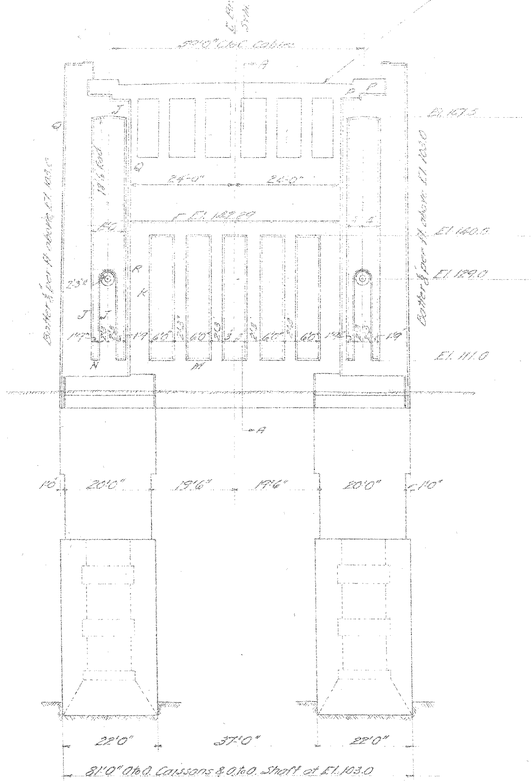
DETAIL OF ENTRANCE TO WELLS
Scale ½" = 1'0"



WEST ELEVATION



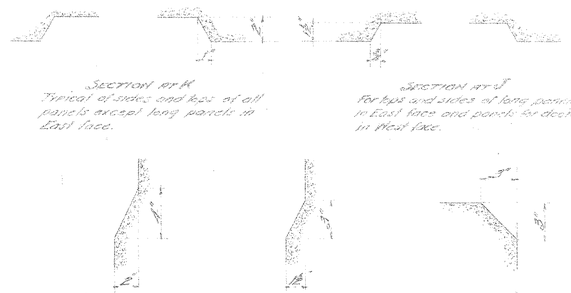
SOUTH ELEVATION



EAST ELEVATION

Roadway and Sidewalk surfaces to match normal section on bridge. See Sheet 16

DETAILS OF PANELS AND BEVELED EDGES ON SHAFT
Scale 3/8" = 1'



Note: For details of this anchorage, See Sheets 19-20 - 22-25

Note: This sheet supersedes and replaces Sheet 4.
Revised: February 14, 1930
June 6, 1930.
November 30, 1931

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

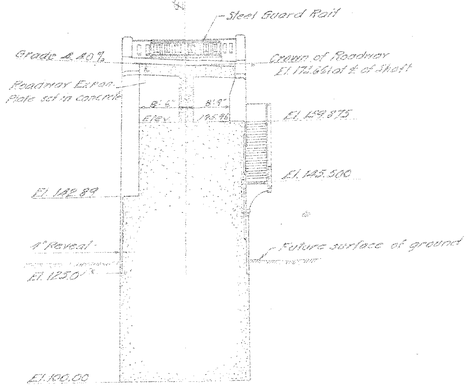
ANCHORAGE-A

SCALE: 1" = 15' EXCEPT AS NOTED

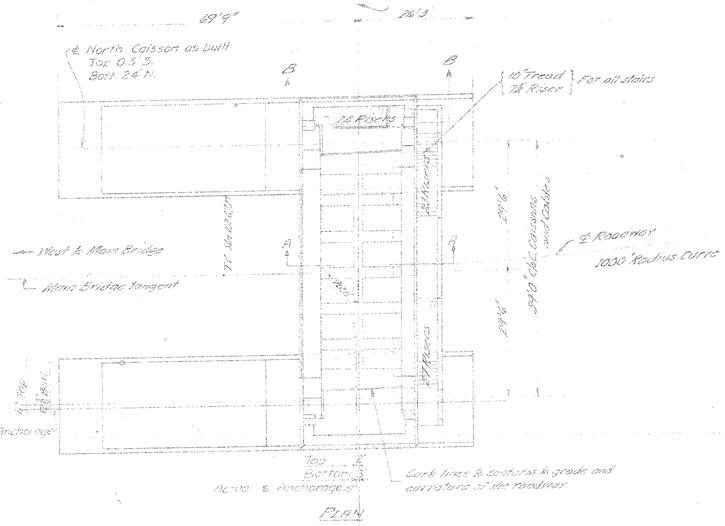
WADDELL AND HARDESTY CONSULTING ENGINEERS
NEW YORK CITY

NOV. 7, 1929

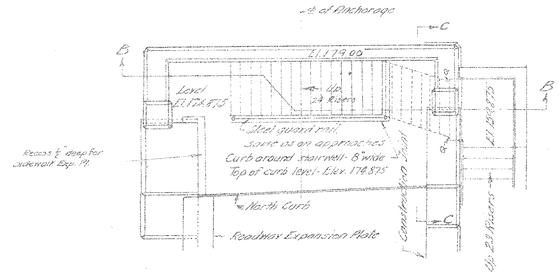
SHEET 4A

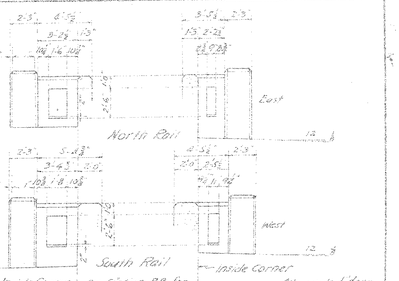


SECTION H-H



PLAN

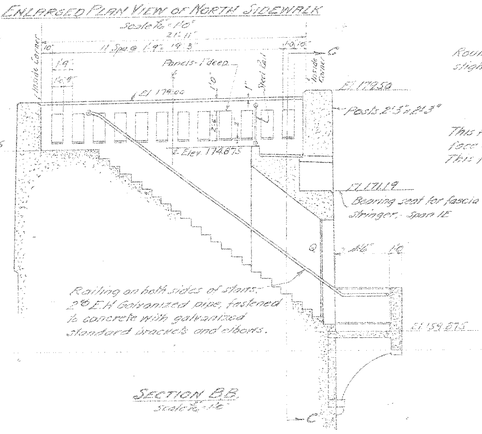




ENLARGED PLAN VIEW OF NORTH SIDEWALK

Scale ¾"=1'0"

Note: Panels in South Parapet Rail between inside corners are identical with those shown for North Rail



SECTION B-B

Scale ¾"=1'0"

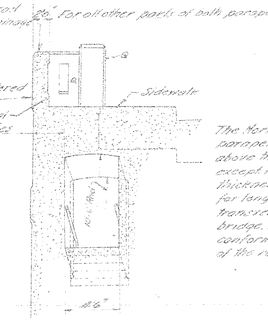
DETAILS OF PANELS - SECTIONS OF PARAPET RAIL TRANSVERSE TO ℄ OF BRIDGE Scale ¾"=1'0"

12" for North Parapet Rail between inside corners.

8½" for all other parts of both parapet rails.

Round top of rail slightly for drainage

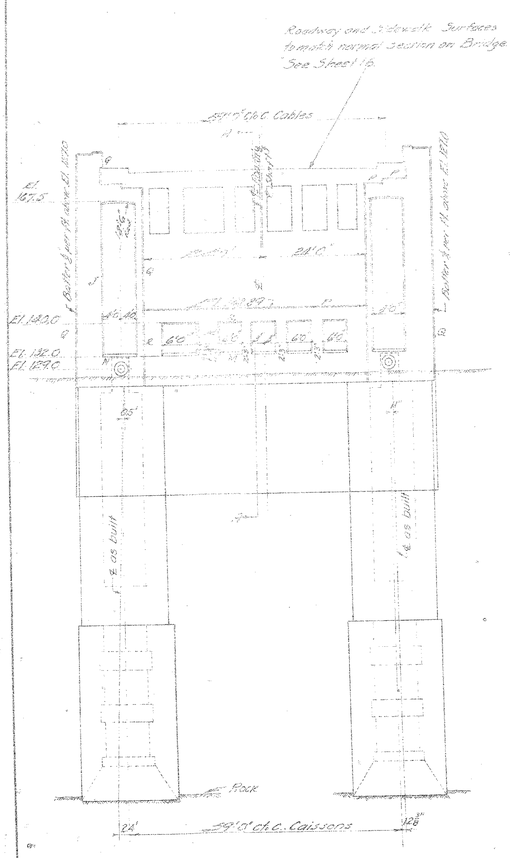
This face is battered
Face of shaft
This face vertical
Vertical



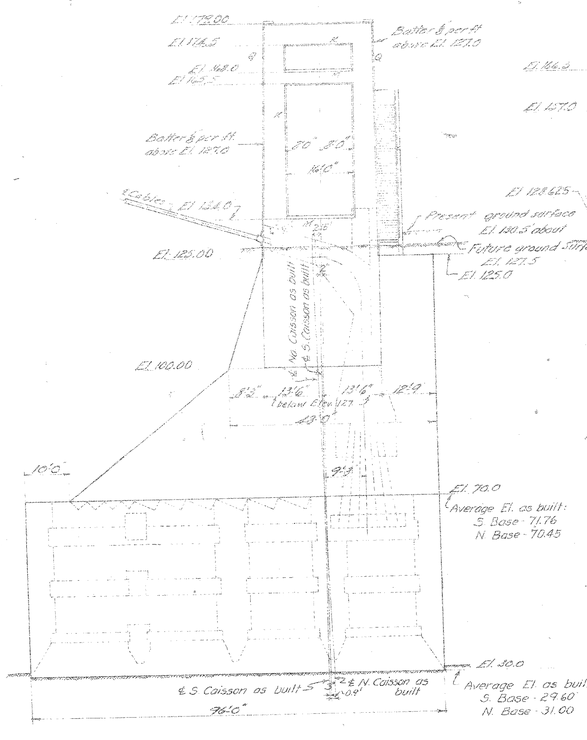
SECTION C-C

Scale ¾"=1'0"

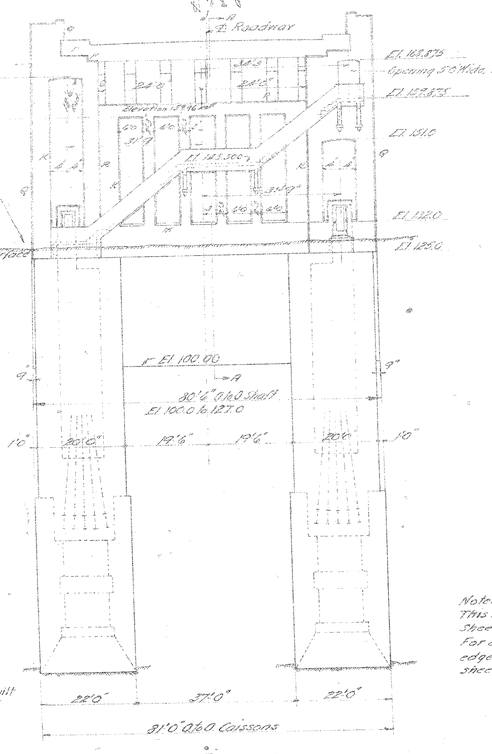
Roadway and Sidewalk Surfaces to match normal Section on Bridge. See Sheet 1A



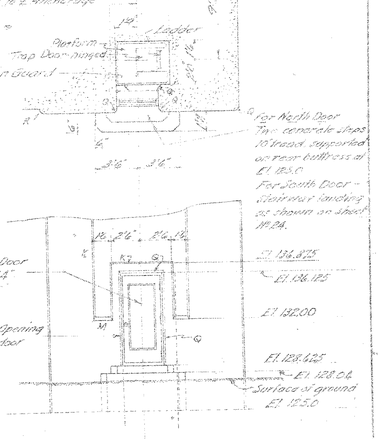
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



DETAIL OF ENTRANCE TO WELL

Scale ¾"=1'0"

Notes:
This sheet supersedes and replaces Sheet No. 5.
For details of panels and beveled edges of shaft above El. 125.0 see sheet 6A Sections J, K, M, N, Q, R

For details of this Anchorage, See Sheets 19, 21, 23, 24, 25

Revised February 17, 1930.
April 12, 1930.
June 4, 1930.
Dec. 1, 1931

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

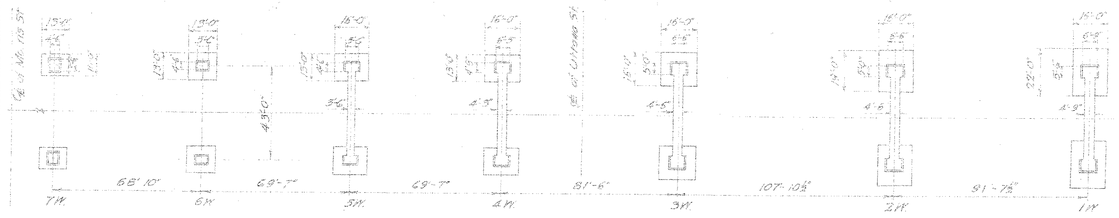
ANCHORAGE-F

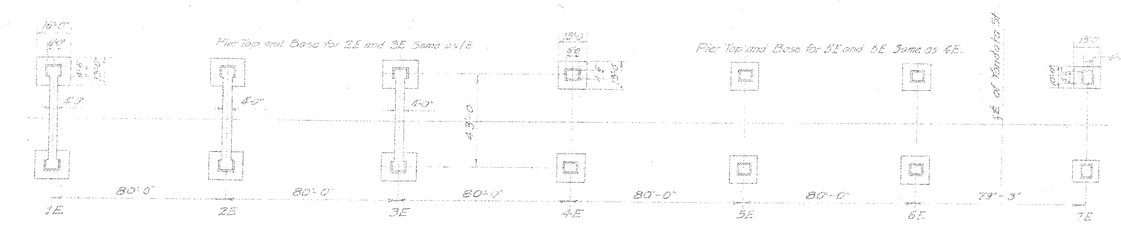
Scale: 1"=15'-0" except as noted

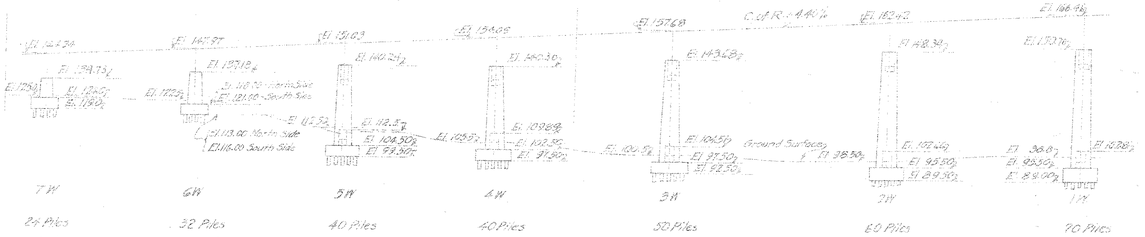
WADDELL AND HARDESTY-CONSULTING ENGINEERS

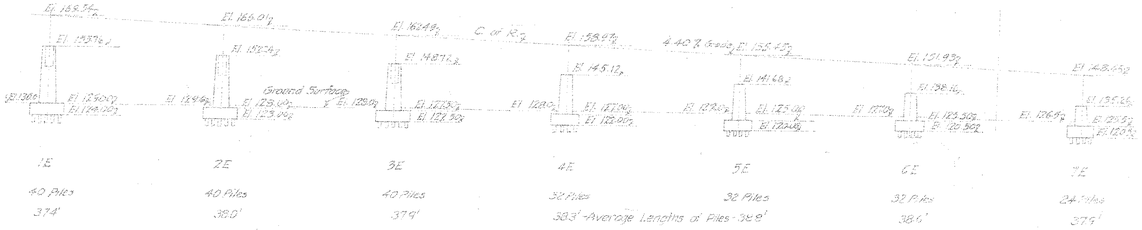
NEW YORK CITY — NOVEMBER 27, 1929

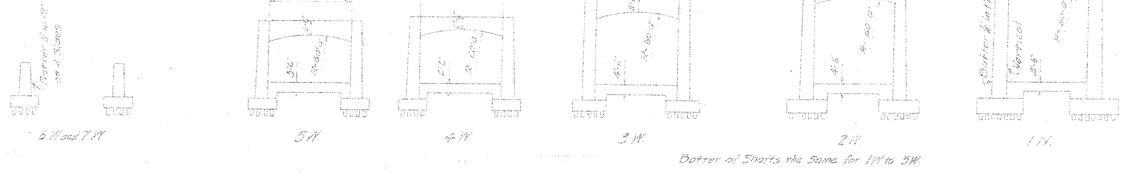
SHEET 5A



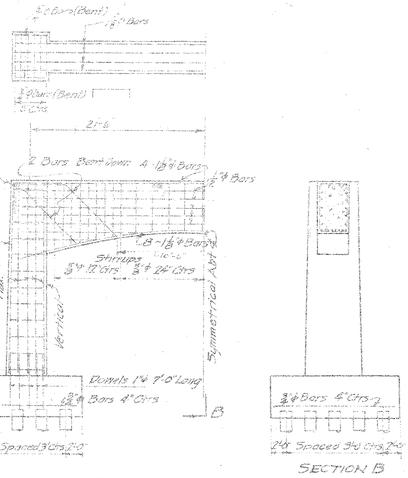


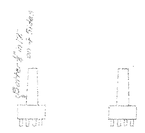




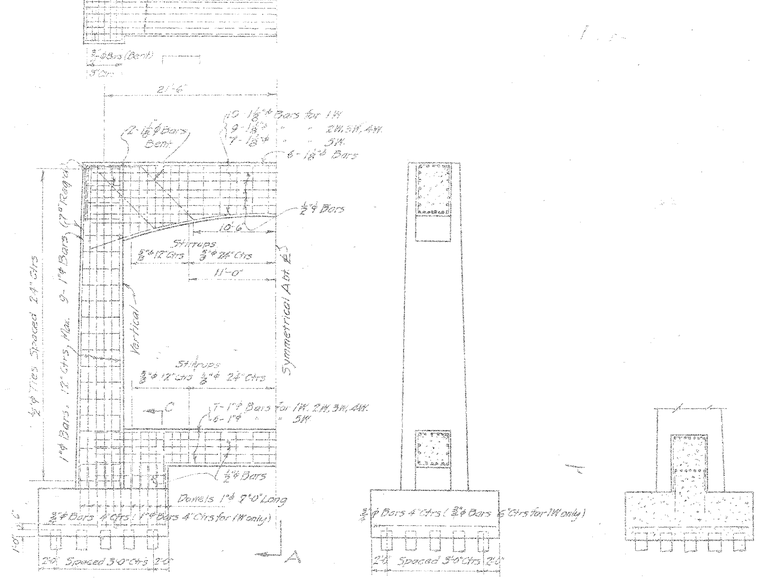


WEST APPROACH PIERS Scale: 1"=30'-0"





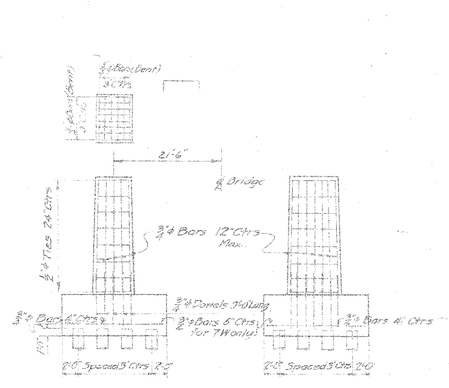
EAST APPROACH PIERS Scale: 1"=30'-0"



TYPICAL REINFORCEMENT
FOR PIERS 1W, 2W, 3W, 4W, & 5W.
Scale ⅛"=1'-0"

Note
Finish Bevels on Pier Shafts
Horz Edges 4" face
Vert Edges 2½" face
Piles are of Reinforced Concrete
See Detail on Sheet 7
Bearing seats for Superstructure
are to be finished level and true
to Elevations given for Top of Piers

TYPICAL REINFORCEMENT
FOR PIERS 1E, 2E, & 3E
Scale ⅛"=1'-0"



TYPICAL REINFORCEMENT
FOR PIERS 7W, 6W, 4E, 5E, 6E & 7E.
Scale ⅛"=1'-0"

Revised
Sept 16, 1929.
Sept 30 1929.
Nov 7 1929.
Feb 19 1930.
Dec 1, 1931

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

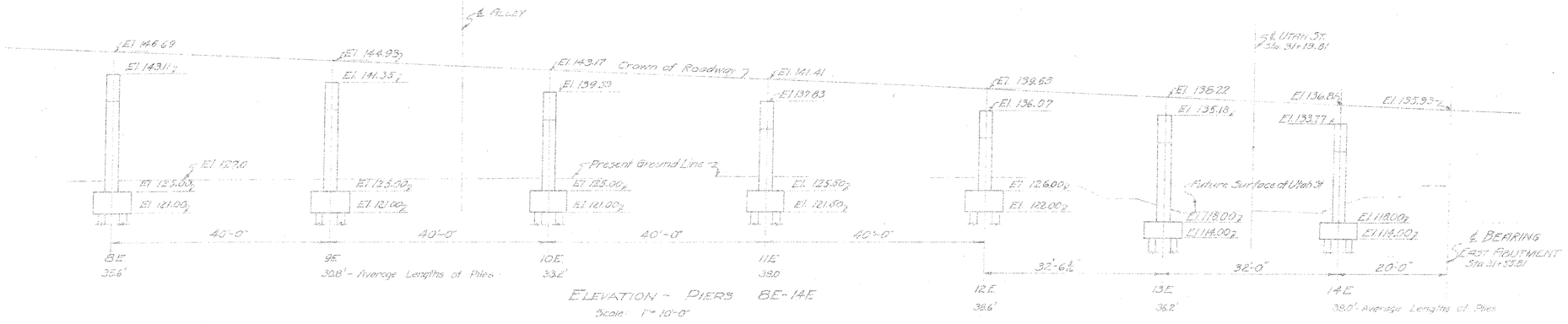
APPROACH PIERS

1W TO 7W. & 1E TO 7E

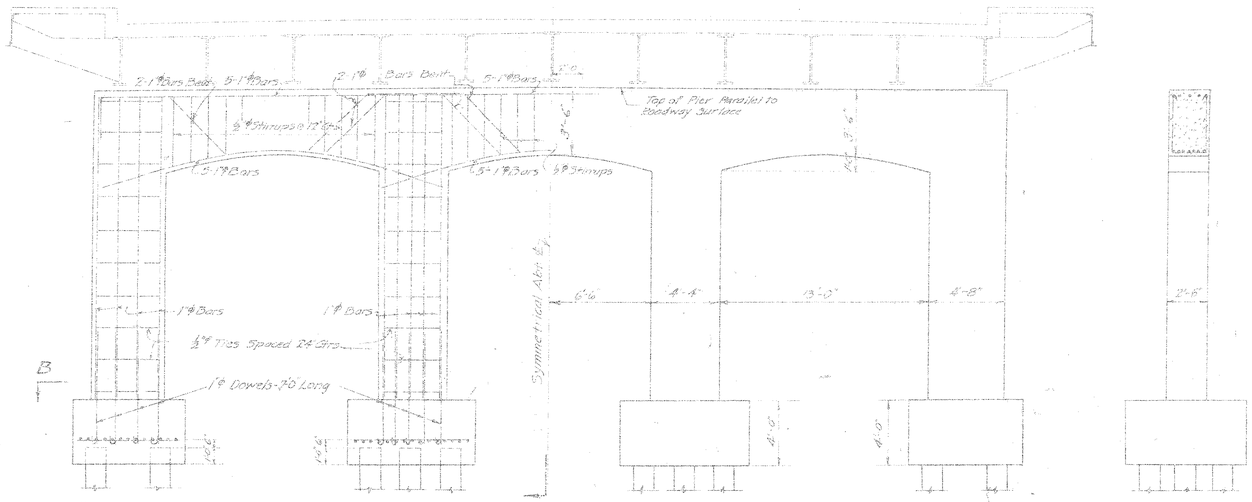
SCALES 1"=30'-0", ⅛"=1'-0"

WADDELL AND HARDESTY CONSULTING ENGINEERS

NEW YORK CITY JULY 20, 1929.

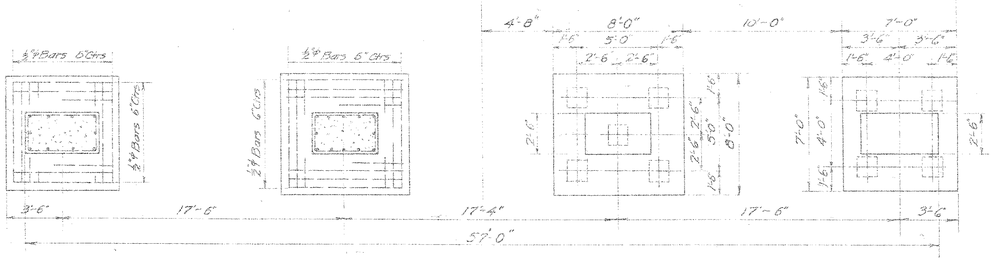


ELEVATION - PIERS 8E-14E
Scale: 1" = 10'-0"

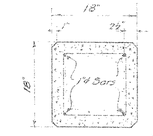


DETAIL OF CONCRETE PIERS - E 8, 9, 10, 11, 12, 13, & 14.
Scale ⅛" = 1'-0"

SECTION A



SECTION - B



Piles 50 feet long and over are 18" Square.

½" ℄ Hoops 3" ctrs. for 4'-0" at Top and at Point; and 12" ctrs between these points. 1¼ Vertical Bars extend 1'-6" above Top of Pile. Pile points 8" square. Length of bevel 2'-6"

Piles less than 50 feet long are 16" Square.

SECTION OF CONCRETE PILES
Scale: 1" = 1'-0"

NOTE:
Finish Bevels on Pier Shafts and Abutment Walls
All Edges 2½" Face

Note: Standard Raymond Concrete Piles were substituted for the square piles shown.
Standard is steel shell 8"℄ at point and 20"℄ at 30' from point.
Piles under piers 1W, 2W, and 3W were reinforced with 4 ⅞"℄ bars with ¼" hoops @ 15" ctrs.
Remainder of piles not reinforced.

REVISED
Sept 16, 1929.
Sept 30, 1929.
Nov. 21, 1929
Dec. 1, 1931

CITY OF TOLEDO, OHIO

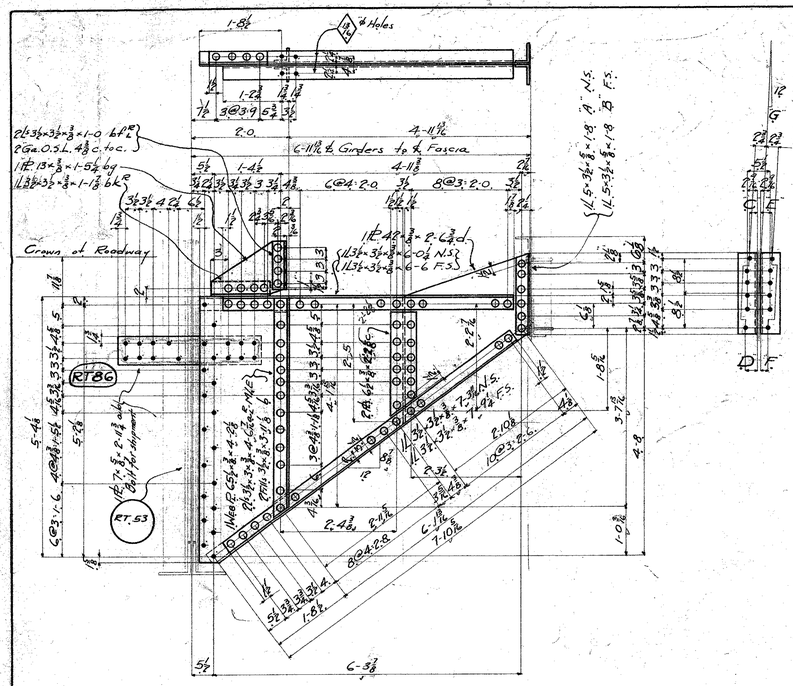
BRIDGE OVER MAUMEE RIVER

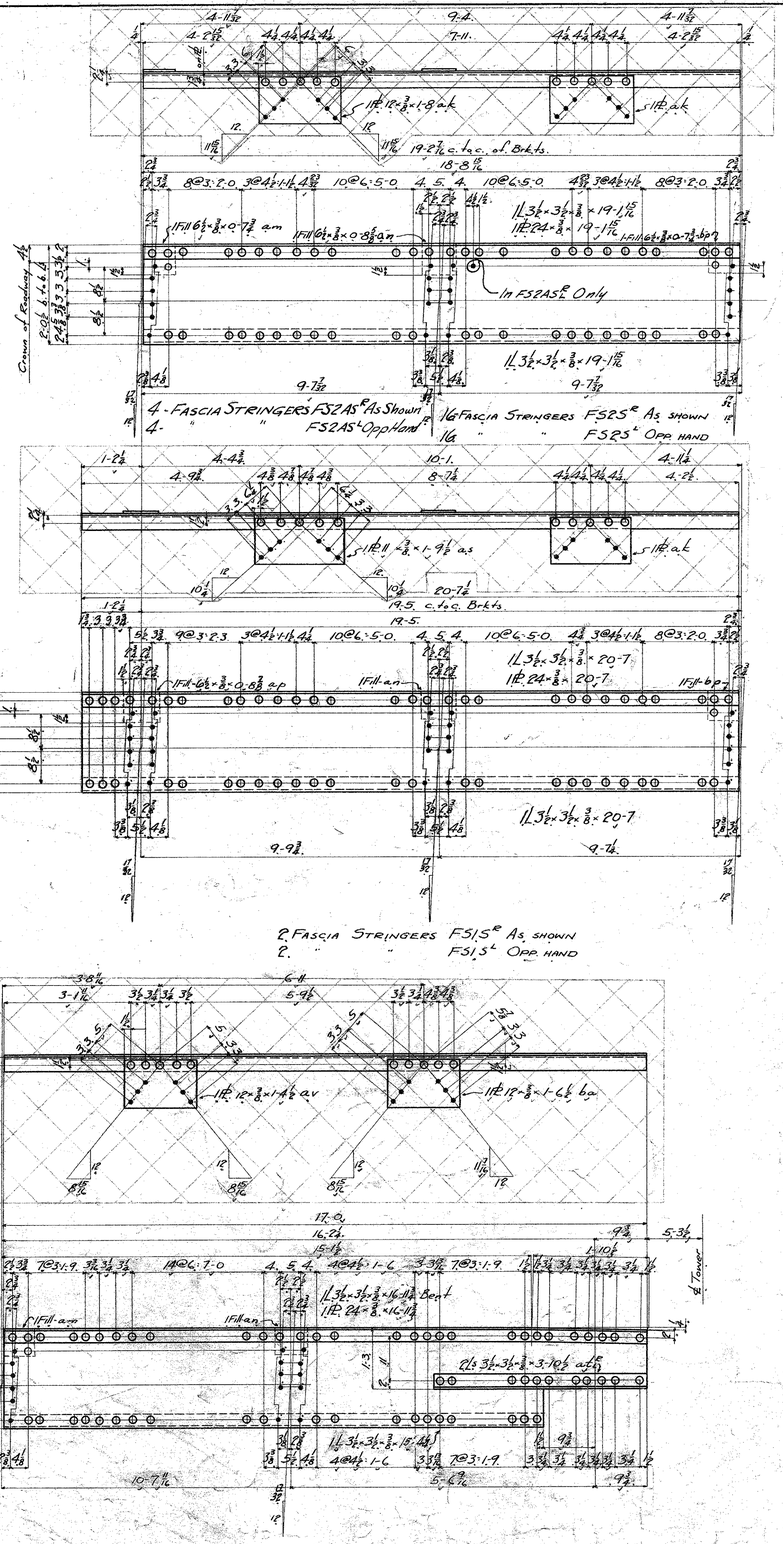
APPROACH PIERS

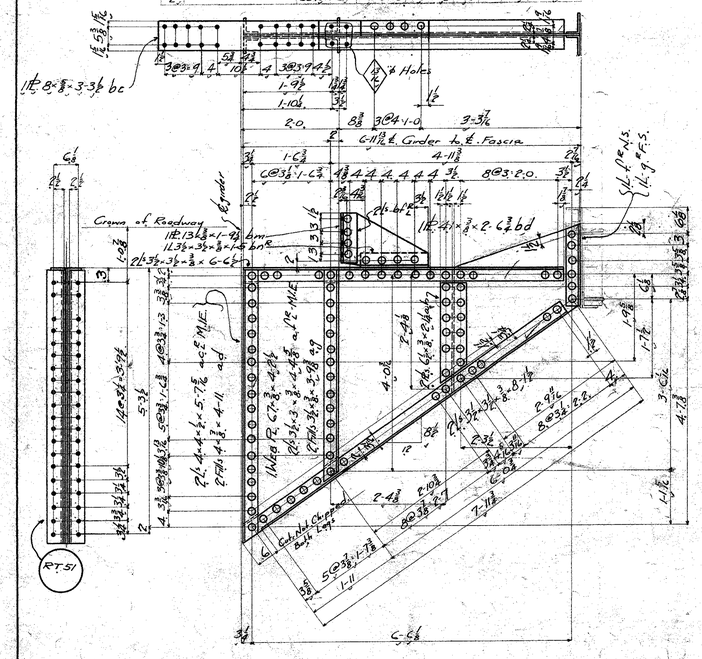
8E-14E

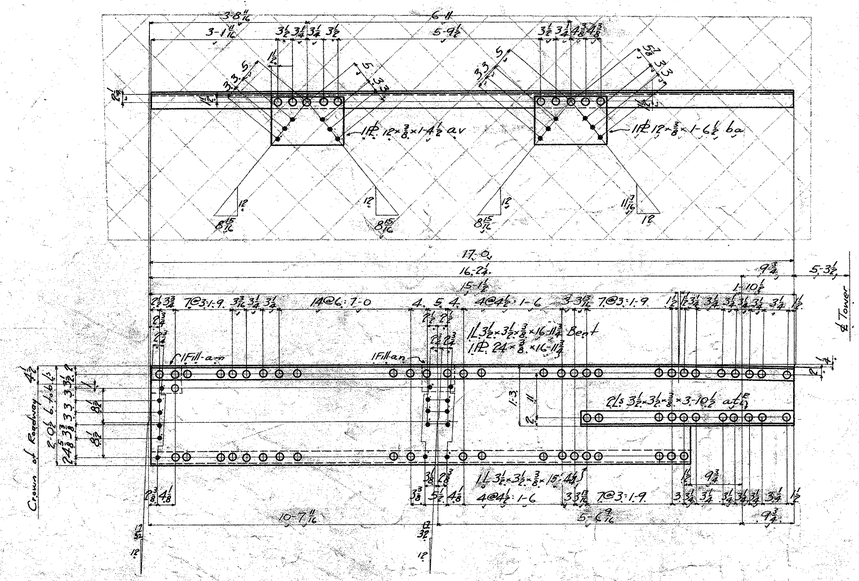
SCALES: 1" = 10'-0" ½" = 1'-0"

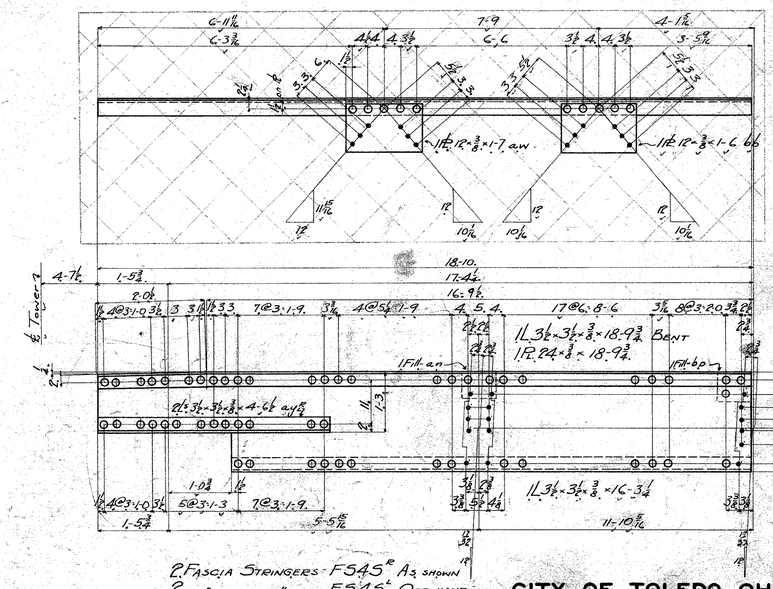
WADDELL AND HARDESTY CONSULTING ENGINEERS
NEW YORK CITY. JULY 20, 1928.











No.	Sidewalk Brackets		Mark	A.	B.	C.	D.	E.	F.	G.	Remarks
30	-	-	SB1S℄	f℄	g℄	2⅛	2⅛	2⅛	2⅛	5/32	As shown
30	-	-	SB1S'	f'	g'	2⅛	2⅛	2⅛	2⅛	5/32	Opp. Hand
8.	-	-	SB2S℄	h℄	k℄	2⅛	2⅛	2⅛	2⅛	5/32	As shown
8.	-	-	SB2S'	h'	k'	2⅛	2⅛	2⅛	2⅛	5/32	Opp. Hand
8.	-	-	SB3S℄	m℄	n℄	2⅛	2⅛	2⅛	2⅛	5/32	As shown
8.	-	-	SB3S'	m'	n'	2⅛	2⅛	2⅛	2⅛	5/32	Opp. Hand
4.	-	-	SB4S℄	p℄	s℄	2⅛	2⅛	2⅛	2⅛	5/32	As shown
4.	-	-	SB4S'	p'	s'	2⅛	2⅛	2⅛	2⅛	5/32	Opp. Hand
4.	-	-	SB5S℄	t℄	v℄	2⅛	2⅛	2⅛	2⅛	5/32	As shown
4.	-	-	SB5S'	t'	v'	2⅛	2⅛	2⅛	2⅛	5/32	Opp. Hand
4.	-	-	SB6S℄	w℄	y℄	2⅛	2⅛	2⅛	2⅛	⅛	As shown
4.	-	-	SB6S'	w'	y'	2⅛	2⅛	2⅛	2⅛	⅛	Opp. Hand
2.	-	-	SB7S℄	aa℄	aa℄	2⅛	2⅛	2⅛	2⅛	0	As shown
2.	-	-	SB7S'	aa'	aa'	2⅛	2⅛	2⅛	2⅛	0	Opp. Hand

? Sidewalk Brackets SB8S℄ As shown
? " " SB8S' Opp Hand

? Fascia Stringers FS3S℄ As shown
? " " FS3S' Opp Hand

? Fascia Stringers FS5S℄ As shown
? " " FS5S' Opp Hand

Rivets ⅞"ϕ
Holes 1⅛"ϕ unless noted
All holes punched full size except those marked RT
Holes marked RT are subpunched 1⅜"ϕ & reamed to 1⅛"ϕ
thru a metal template
Burrs are to be removed from all holes

Paint:- One coat of Detroit Graphite Co's. #501

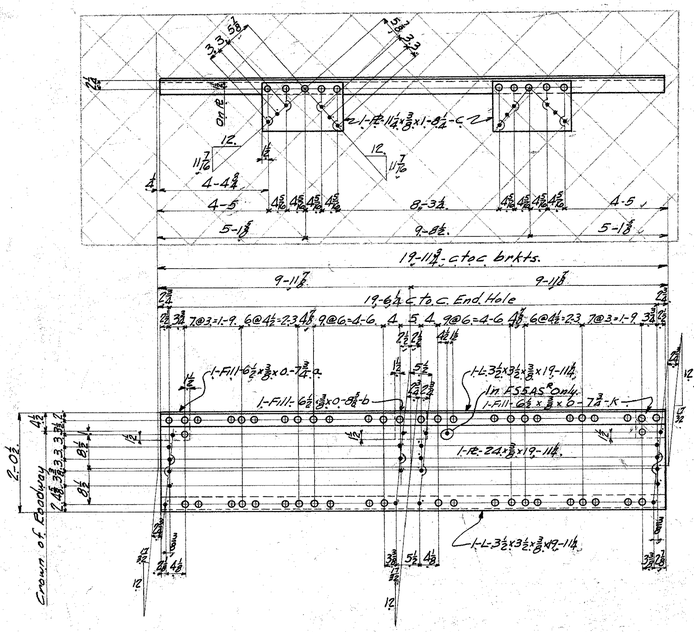
L.O. 2
F.H. 2
PIN. 1
S.I. 1
O.I. 1
7

APPROVED 5/23-30
Waddell & Hardesty

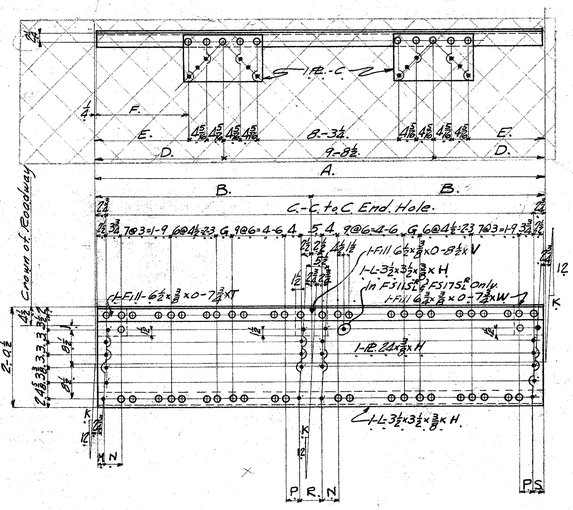
CITY OF TOLEDO, OHIO
BRIDGE over MAUMEE RIVE
SUSPENDED SPAN
SIDEWALK BRACKETS & FASCIA STRINGE

McCLINTIC-MARSHALL CONST.
PITTSBURGH, PA.
IN CHARGE W.S.M. DATE
MADE BY A.H.M. DATE CHECKED BY A.E.J. DATE
TRACED BY T.M. DATE REVISED DATE
SCALE: INCH 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5001 B SHEET NO. 3

A-7-771

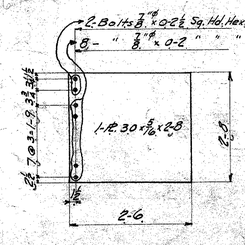


4-FASCIA STRINGERS FS5S^{R} As Shown.
4- " " -FS5S^{L} Opp Hand.
2- " " -FS5AS^{R} As Shown
2- " " -FS5AS^{L} Opp Hand

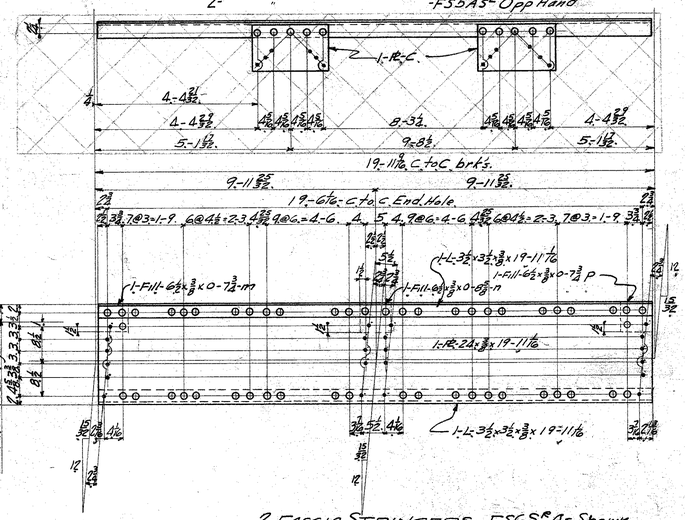


Mark	A.	B.	C.	D.	E.	F.	G.	H.	K.	M.	N.	P.	R.	S.	T.	V.	W.
FS8S^{R}	19-11½	9-11⅜	19-5⅞	5-1⅜	4-4¾	4-4½	4⅝	19-10⅜	⅝	2¼	4	3½	5½	2⅞	s	t	v
FS9S^{R}	19-11⅞	9-11⅝	19-6⅛	5-1½	4-4⅝	4-4⅝	4⅝	19-11⅛	⅝	2¼	4	3½	5½	2⅞	s	t	v
FS10S^{R}	19-11⅞	9-11⅝	19-5⅛	5-1⅜	4-4⅝	4-4½	4⅝	19-10⅜	⅝	2⅝	3⅝	3⅞	5½	2⅞	y	aa	ab
FS11S^{R}	19-11⅞	9-11⅝	19-6⅛	5-1½	4-4⅝	4-4⅝	4⅝	19-11⅛	⅝	2⅝	3⅝	3⅞	5½	2⅞	y	aa	ab
FS12S^{R}	19-11⅞	9-11⅝	19-5⅛	5-1½	4-4⅝	4-4½	4⅝	19-10⅜	⅝	2⅝	3½	3⅝	5½	2⅞	ac	ad	af
FS13S^{R}	19-11½	9-11⅜	19-6	5-1⅛	4-4⅞	4-4⅝	4⅝	19-11	⅝	2⅝	3½	3⅝	5½	2⅞	ac	ad	af
FS14S^{R}	19-11⅞	9-11⅝	19-5⅛	5-1⅜	4-4⅝	4-4⅝	4⅝	19-10⅛	⅝	2⅝	3⅝	3⅝	5½	2⅞	ag	ah	ak
FS15S^{R}	19-11⅞	9-11⅜	19-6	5-1⅛	4-4⅞	4-4⅝	4⅝	19-11	⅝	2⅝	3⅝	3⅝	5½	2⅞	ag	ah	ak
FS16S^{R}	19-11⅞	9-11⅝	19-5⅛	5-1⅜	4-4⅝	4-4⅝	4⅝	19-10⅛	⅝	2½	3⅝	3⅝	5½	2½	am	an	ap
FS17S^{R}	19-10⅞	9-11⅛	19-4⅞	5-0⅜	4-4⅛	4-3⅞	4⅛	19-9⅞	⅝	2½	3⅝	3⅝	5½	2½	am	an	ap
FS9AS^{L}	19-11⅞	9-11⅝	19-6⅛	5-1⅜	4-4⅝	4-4⅝	4⅝	19-11⅛	⅝	2¼	4	3½	5½	2⅞	S	t	V

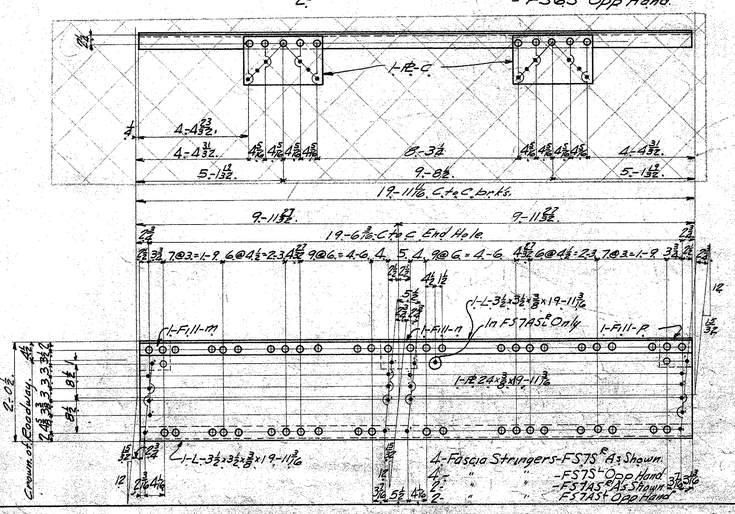
2-FASCIA STRINGERS FS8S^{R} As Shown
2- " " FS8S^{L} Opp Hand
4- " " FS9S^{R} As Shown
4- " " FS9S^{L} Opp Hand
2- " " FS10S^{R} As Shown
2- " " FS10S^{L} Opp Hand
2- " " FS11S^{R} As Shown
2- " " FS11S^{L} Opp Hand
2- " " FS12S^{R} As Shown
2- " " FS12S^{L} Opp Hand
2- " " FS13S^{R} As Shown
2- " " FS13S^{L} Opp Hand
2- " " FS14S^{R} As Shown
2- " " FS14S^{L} Opp Hand
2- " " FS15S^{R} As Shown
2- " " FS15S^{L} Opp Hand
2- " " FS16S^{R} As Shown
2- " " FS16S^{L} Opp Hand
1- " " FS17S^{R} As Shown
1- " " FS17S^{L} Opp Hand
2- " " FS9AS^{R} As Shown
2- " " FS9AS^{L} Opp Hand



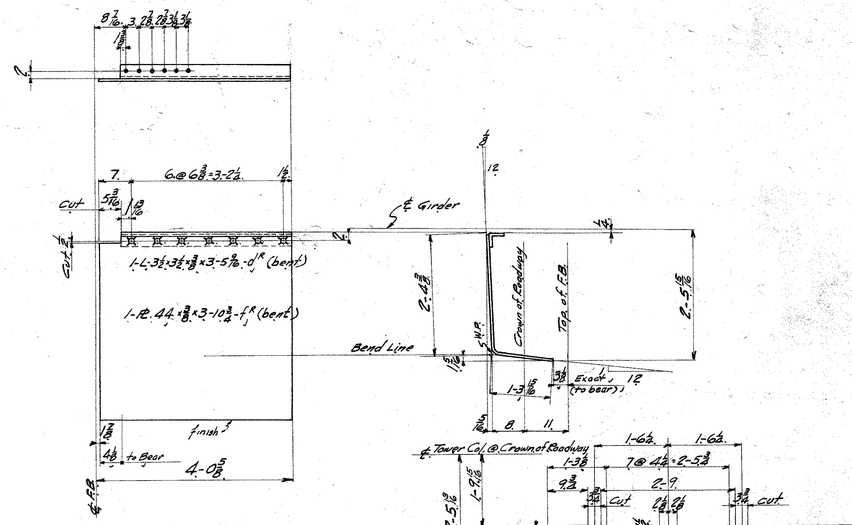
4-Expansion Joints EJ.9S



2-FASCIA STEINGERS -FS6S^{R} As Shown
2- " " -FS6S^{L} Opp Hand.



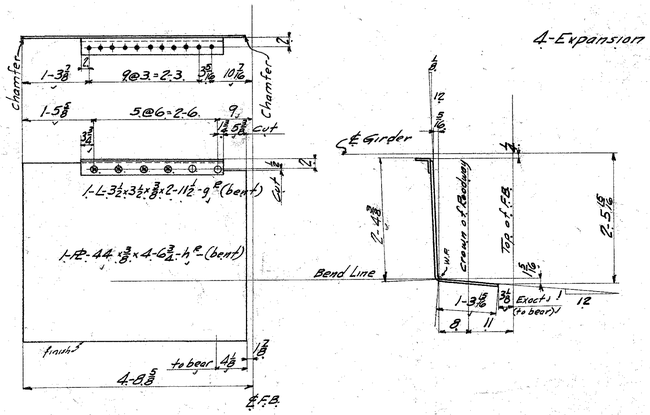
4-Fascia Stringers-FS7S^{R} As Shown.
4- " " -FS7S^{L} Opp Hand
4- " " -FS7AS^{R} As Shown
2- " " FS7AS^{L} Opp Hand



Developed View

2-Expansion Joints EJ6S^{R} As Shown
2- " " EJ6S^{L} Opp Hand

4-Expansion Joints EJ.8S



Developed View

2-Expansion Joints EJ.7S^{R} As Shown
2- " " EJ.7S^{L} Opp Hand

Rivets ⅞"ø
Holes 1⅛"d
All holes to be punched full size.
Burrs to be removed from all open holes

Paint:- One coat of Detroit Graphite Co's #501

L.O. 2
F.H. 2
Blk. 1
PWD 1
S.I. 1
O.I. 1
8

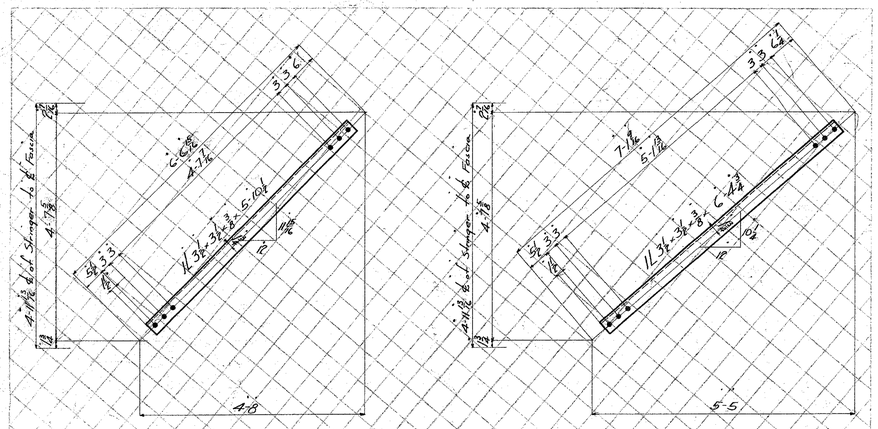
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVI
FASCIA STRINGERS
SUSPENDED SPANS 14 TO 32 IN
EXPANSION PLATES.

McCLINTIC-MARSHALL CONST.
PITTSBURGH, PA.
IN CHARGE W.M.S. DATE
MADE BY C.J.H. DATE CHECKED BY A.H. DATE
TRACED BY E.Z. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK

APPROVED 6/2-30
Waddell & Hardesty

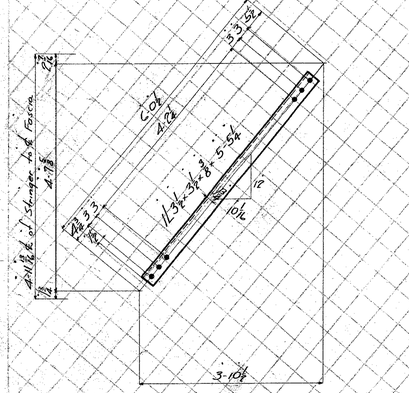
CONT. NO. 50018 SHEET NO. 4

A-2-272

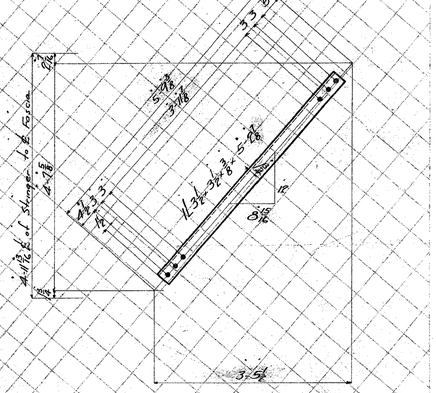


164-Sidewalk Laterals SL1S

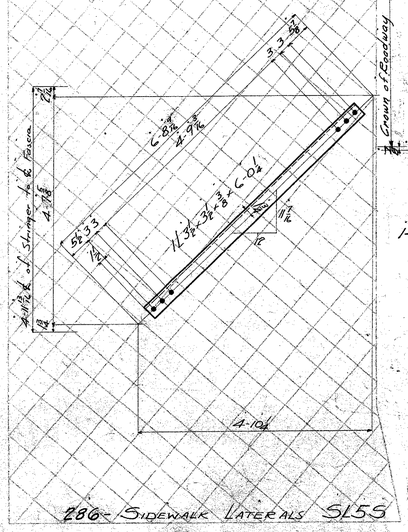
8 Sidewalk Laterals SL2S



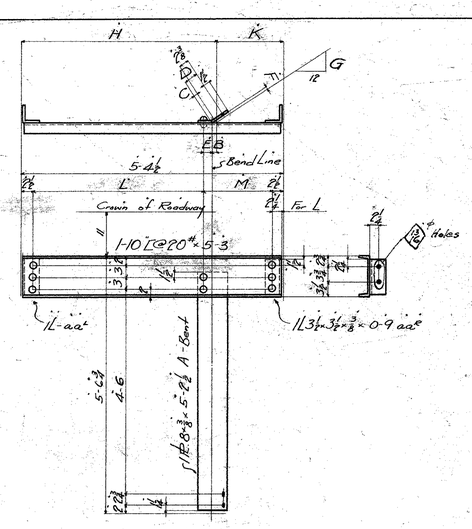
12 Sidewalk Laterals SL3S



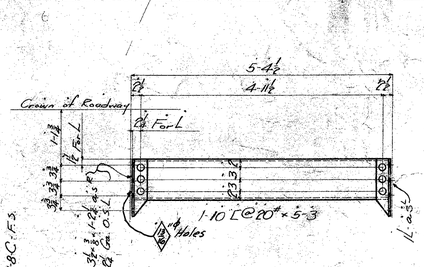
12 Sidewalk Laterals SL4S



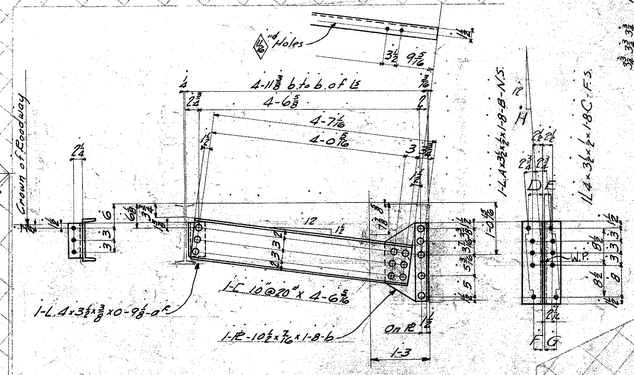
286-Sidewalk Laterals SL5S



No.		Marks	A	B	C	D	E	F	G	H	K	L	M	Remarks
20	Hangers	H1S^R	ad	2	1	3	2	1	7	4-0	1-4	3-6	1-4	As shown
20	"	H1S^L	-	-	-	-	-	-	-	-	-	-	-	Opp. hand
2	-	H2S^R	ai	-	-	-	-	-	7	4-8	1-2	3-8	1-3	As shown
2	-	H2S^L	-	-	-	-	-	-	-	-	-	-	-	Opp. hand
2	-	H3S^R	ag	3	5	3	2	-	8	3-6	1-10	3-0	1-10	As shown
2	-	H3S^L	-	-	-	-	-	-	-	-	-	-	-	Opp. hand
2	-	H4S^R	ah	1	1	1	1	8	8	3-4	1-11	3-11	1-11	As shown
2	-	H4S^L	-	-	-	-	-	-	-	-	-	-	-	Opp. hand
12	-	H5S^R	ak	3	1	3	1	9	8	4-0	1-4	3-6	1-4	As shown
12	-	H5S^L	-	-	-	-	-	-	-	-	-	-	-	Opp. hand
12	-	H6S^R	am	2	3	3	1	2	-	-	-	-	-	As shown
12	-	H6S^L	-	-	-	-	-	-	-	-	-	-	-	Opp. hand
12	-	H7S^R	an	3	5	3	2	1	-	-	-	-	-	As shown
12	-	H7S^L	-	-	-	-	-	-	-	-	-	-	-	Opp. hand
1	-	H8S^R	ap	-	-	-	-	-	8	-	-	-	-	As shown
1	-	H8S^L	-	-	-	-	-	-	-	-	-	-	-	Opp. hand

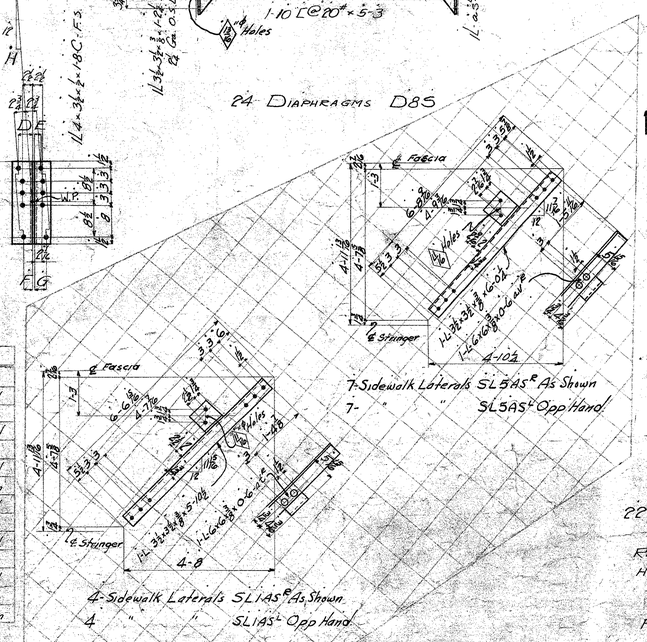


24 Diaphragms D8S



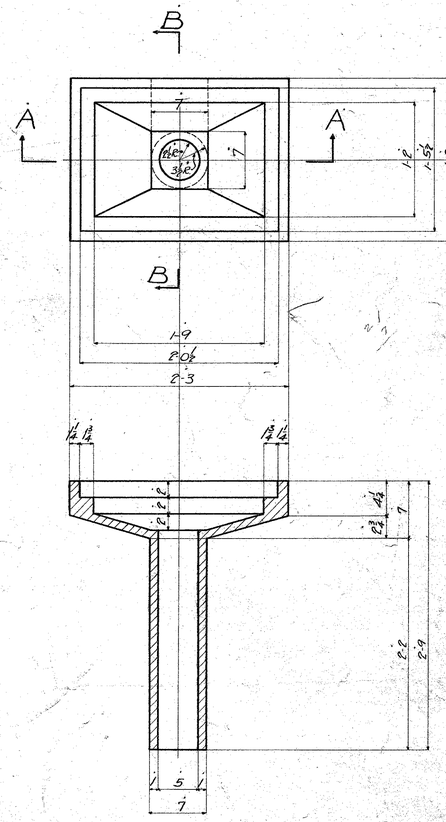
No		Mark	A	B	C	D	E	F	G	H	Remarks
32	Diaphragms	D1S^R	5	C^R	J^R	3 1/2	1 11/16	2 1/8	2 1/4	3/32	As shown
32	-	D1S^L	5	C^L	J^L	-	-	-	-	3/32	Opp. hand
8	-	D2S^R	5	I^R	g^R	-	-	-	-	3/32	As shown
8	-	D2S^L	5	I^R	g^L	-	-	-	-	3/32	Opp. hand
8	-	D3S^R	5	h^R	L^R	3	2 1/4	2 1/2	2 1/4	3/32	As shown
8	-	D3S^L	5	h^L	L^L	-	-	-	-	3/32	Opp. hand
4	-	D4S^R	5	m^R	n^R	2 1/4	1 1/8	2 1/2	2 1/4	3/32	As shown
4	-	D4S^L	5	m^L	n^L	-	-	-	-	3/32	Opp. hand
4	-	D5S^R	5	p^R	s^R	2 1/8	2 1/8	2 1/8	2 1/4	3/32	As shown
4	-	D5S^L	5	p^L	s^L	-	-	-	-	3/32	Opp. hand
4	-	D6S^R	5	t^R	v^R	2 1/8	2 1/4	2 1/4	2 1/8	1/4	As shown
4	-	D6S^L	5	t^L	v^L	-	-	-	-	1/4	Opp. hand
3	-	D7S^R	4	w^R	y^R	2 1/8	2 1/4	2 1/4	2 1/2	0	As shown
3	-	D7S^L	4	w^L	y^L	-	-	-	-	0	As shown

24 Diaphragms D8S

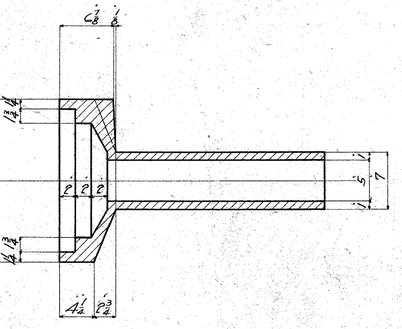


7-Sidewalk Laterals SL8AS^R As Shown
7- " " SL8AS^L Opp Hand

4-Sidewalk Laterals SL1AS^R As Shown
4 " " " SL1AS^L Opp Hand

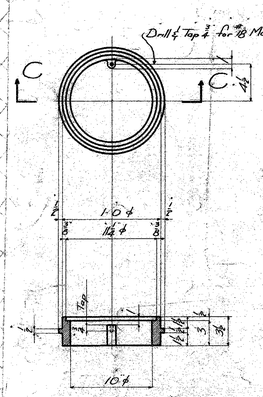


Section A-A

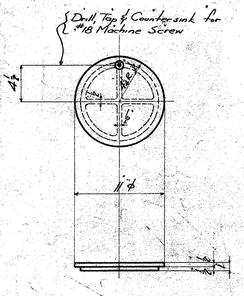


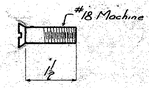
12 Grid Castings - GC1 (Cast Iron)
Same as GC1 Dwg. & Contract 5015-D

12 Scupper Castings SC1 (Cast Iron)



Section C-C





24 Screws SBI (2 Extra

24 Hand Hole Cover Castings - HHC1 (Cast Iron) (2 Extra)
Same as HHC1 Dwg. & Contract 5015-D

22 Hand Hole Castings HH1 (Cast Iron)

Rivets: 3/8"ϕ
Holes: 15/16"ϕ As noted
All holes punched full size

Paint: One coat of Detroit Graphite Co's #501

CITY OF TOLEDO, OHIO

BRIDGE over MAUMEE RIV

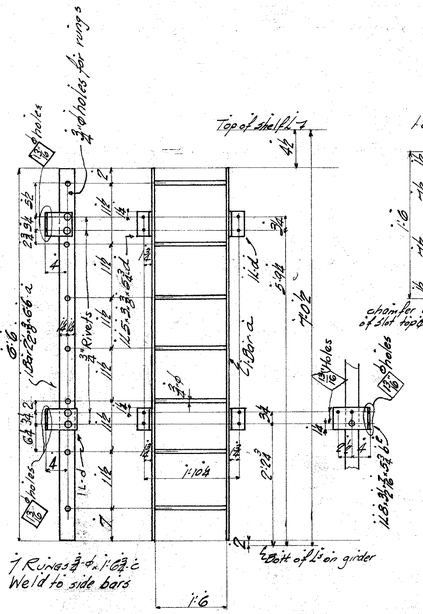
Suspended Span

Sidewalk Laterals - Diaphragms - Scuppers - Grids
Hand Hole & Hand Hole Cover Castings

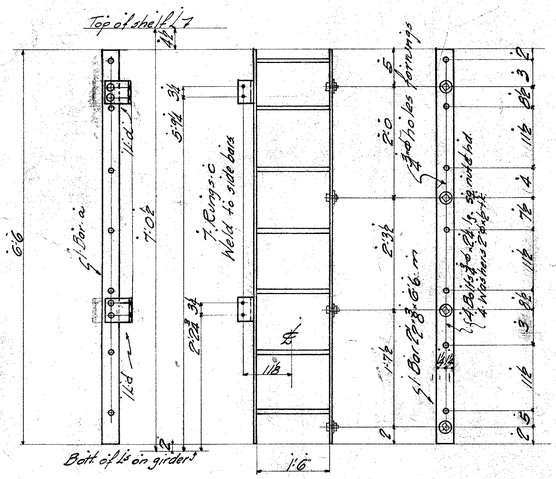
McCLINTIC-MARSHALL CONST	
PITTSBURGH, PA.	
IN CHARGE W^m Son	
MADE BY H.F.M. DATE	CHECKED BY C.W.K. DA
TRACED BY J.M. DATE	REVISED DA
SCALE:- INCH = 1 FOOT	LAST ASSEMBLING MARK
CONT. NO. 5001B	SHEET NO. 5

APPROVED 5/23-1930
Waddell & Hardesty

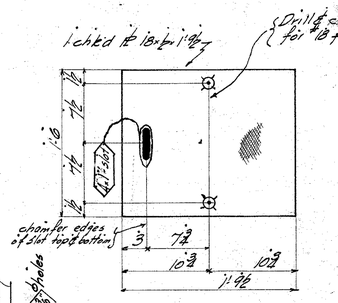
Tem.
L.O.
Fift.
Blk
PWD
S.I.
O.I.



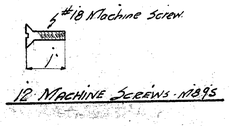
3 LADDERS L 13' 8" (AS SHOWN)



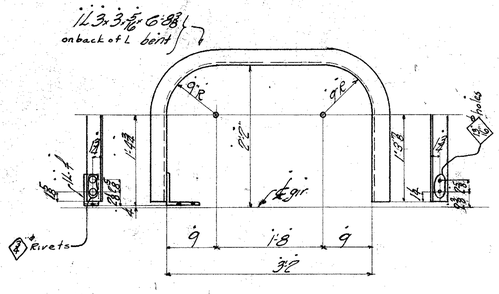
2 LADDERS L 25



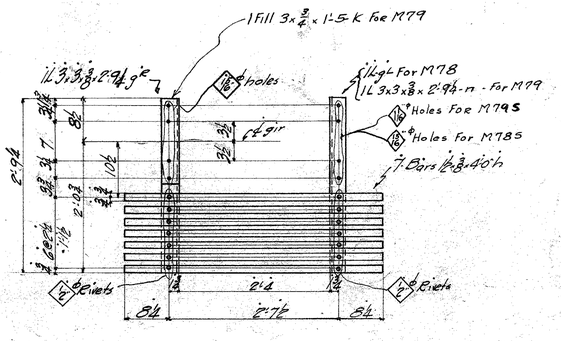
6 TRENCH COVERS M765



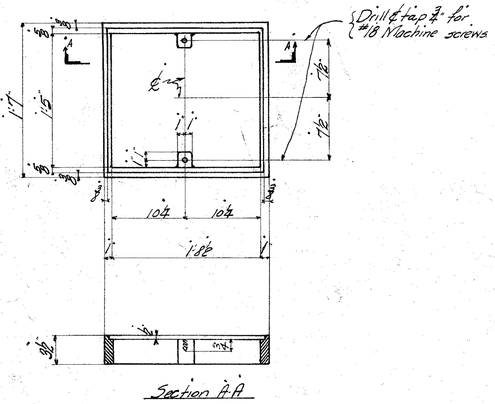
12 MACHINE SCREWS M995



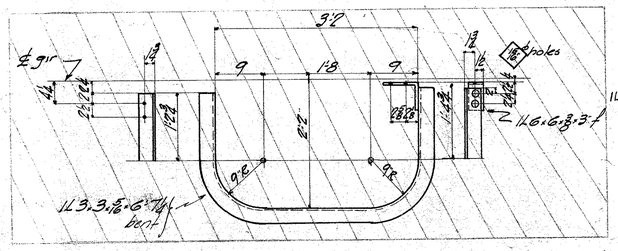
2 GUARD ANGLES M775



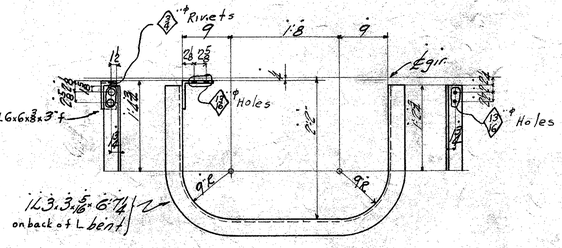
5 PLATFORMS M785
1 - Do - M795



6 FRAMES M885 (Cast Iron)



1 GUARD ANGLE M805 (AS SHOWN)
1 GUARD ANGLE M805 (OPP HAND)



3 GUARD ANGLES M815 (AS SHOWN)
1 GUARD ANGLE M815 (OPP HAND)

Temp 1-Revised
L.O. 2
F.H. 2
B.H. 1
P.W.D 1
S.I. 1
O.I. 1
9

RIVETS: As noted
HOLES: As noted
BURRS TO BE REMOVED FROM ALL HOLES
PAINT: ONE COAT OF DETROIT GRAPHITE CO. #501

APPROVED 6-3-1930
Waddell & Hardesty

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIV
LADDERS & PLATFORMS for NAVIGATION LIGHTS

McCLINTIC-MARSHALL CONS
PITTSBURGH, PA.
IN CHARGE Eichel
MADE BY F.J.W. DATE 4/4 CHECKED BY N.W.C.
TRACED BY DATE REVISED
SCALE: INCH = 1 FOOT LAST ASSEMBLING MAR
CONT. NO. 5001B SHEET NO.

A-2-275

Work this sheet in conjunction with Sheet #2

Notes.

Suspender Connection Pockets to have field paint applied in shop
First Coat Detroit #55. Second Coat Detroit #736.

Enlarged detail of Rets-bkt

Rivets $\frac{7}{8}$"ø Unless noted
Holes $\frac{13}{16}$"ø Holes subpunched $\frac{1}{4}$" and reamed to size unless noted
Holes in material over $\frac{3}{4}$" thick subpunched $\frac{1}{4}$" and reamed to size except Laterals which may be drilled from the solid
Holes marked (RR) are to be subpunched $\frac{1}{4}$" & reamed to size thru a metal template
Burrs are to be removed from all holes
Bolts are to be placed with head toward top of Girder
Paint: One coat of Detroit Graphite Co's #301
Holes shown Thus ⊕ at field Splices are to be subpunched in all thickness of metal and used for bolting members together while assembling and then reamed out to size while Girders are assembled.
Holes shown Thus ⊕ are to be subpunched in material that will be outermost after Girder has been assembled and drilled thru other material. Such areas as have been thus subpunched in material only

APPROVED 5-16-30
Waddell & Hardesty

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIV

SIDE SUSPENDED SPAN
STIFFENING GIRDERS PANELS 0 T

McCLINTIC-MARSHALL CONST
PITTSBURGH, PA.

IN CHARGE	J.V.S.N.		
MADE BY	A.E.S.	DATE	CHECKED BY
TRACED BY	J.M.	DATE	REVISED
SCALE:	INCH = 1 FOOT	LAST ASSEMBLING MARK	

CONT. NO. 5002A SHEET NO. 1

4-2-30

1 Reinforcing Pl 18×3/8×6'-2 1/2" dcE Silicon

Holes for erection hitch

Note break in stagger

1 Reinforcing Pl 18×3/8×6'-8 1/2" dcE Silicon

Note break in stagger

Note break in stagger

Csk in Main Material only

1/16 Holes

Note Break in Stagger

1 Spl L-7 1/2×7 1/2×1×8'-11 3/8" - M335A^E Silicon

Grind to f.t. fillet of 8×8×3/4 L

Hitch.

for enlarged detail of slots see Sheet #1

for enlarged detail of slots see sheet #1

1 Fill 18×3/8×4'-2 1/2"-dg - Carbon

1 Spl L-7 1/2×7 1/2×1×8'-11 3/8" - M335^E Silicon

Grind to f.t. fillet of 8×8×3/4 L

1 Spl Pl 18×1/2×5'-0 1/2" - M25 - Silicon

E 1 1/8" Suspender & Slot

E 1 1/8" Suspender & Slot

2 Pl 8×4 1/2×5/8×1'-10 1/2" clE2E M2E Carbon

2 Pl 8×5 1/2×5/8×1'-9 1/2" cgE2E M2E Carbon

2 Fills 20 1/4×3/4×2'-5 chE2 Carbon

2 Pl 8×5×5/8×1'-10 1/2" ckE2E M2E Carbon

2 Pl 8×4 1/2×5/8×1'-10 3/8" cmE2E M2E Carbon

Note break in stagger

2 Pl 8×8×3/4×38'-4 1/2 Silicon

2 Pl 8×8×3/4×38'-4 1/2 Silicon

2 Pl s-clE2E

2 Pl s-cgE2E

2 Fills-chE2

2 Pl s-ckE2E

2 Pl s-cmE2E

Note break in stagger

Csk in Main Material only

Note break in stagger

1/16 Holes

M25

N

K

H

G

F

M

M1

2 1/8"×8" Slots in web & Fills

2 1/8"×8" Slots in web & Fills

Crown of Roadway

Working Point for Panel 11

℄ Floor beam

7@C.3-6

5@C.2-6

1 IL C-3 1/2×3/8×4'-7 15/16-cmE Carbon

1 IL C-3 1/2×3/8×4'-7 15/16-cmE Carbon

1 IL-cdE

1 IL-cdE

1 IL C-3 1/2×3/8×4'-4 1/2-cdgE Carbon

1 IL C-3 1/2×3/8×4'-5 7/16-cE Carbon

1 IL C-3 1/2×3/8×4'-5 7/16-cE Carbon

2 IL-cvE

2 IL-cvE

1 IL-bhE-N.S.

1 IL-bkE-F.S.

1 Fill-caE-N.S.

1 Fill-cbE-F.S.

1 IL C-4 1/2×3/8×6'-11 3/8" cdE Carbon

1 IL C-4 1/2×3/8×6'-11 3/8" M2E Silicon

1 IL C-4 1/2×3/8×6'-11 3/8" M2E Carbon

1 IL C-3 1/2×3/8×4'-4 1/2 cdgE Carbon

1 IL C-3 1/2×3/8×4'-5 7/16-cE Carbon

1 IL C-3 1/2×3/8×4'-5 7/16-cE Carbon

1 IL-cvE

1 IL-cvE

1 IL-bhE-N.S.

1 IL-bkE-F.S.

1 Fill-caE-N.S.

1 Fill-cbE-F.S.

1 Fill 4×3/4×6'-11 3/8" caE Carbon-N.S.

1 Fill 4×3/4×6'-11 3/8" cbE Carbon-F.S.

1 IL-sE-N.S.

1 IL-sE-N.S.

1×1 7/8 Slot in web

1×1 7/8 Slot in web

A-3.58

A-3.58

Note break in stagger

Note break in stagger

2 Pl 8×8×3/4×38'-4 1/2 Silicon

2 Pl 8×8×3/4×38'-4 1/2 Silicon

1 IL-sE-N.S.

1 IL-sE-N.S.

1 7/8 Slot in web

1 7/8 Slot in web

A-3.58

A-3.58

1 IL C-3 1/2×3/8×4'-7 15/16-cE Carbon

1 IL C-3 1/2×3/8×4'-7 15/16-cE Carbon

1 IL-cdE

1 IL-cdE

1 IL C-3 1/2×3/8×4'-4 1/2 cdgE Carbon

1 IL C-3 1/2×3/8×4'-5 7/16-cE Carbon

1 IL C-3 1/2×3/8×4'-5 7/16-cE Carbon

2 IL-cvE

2 IL-cvE

1 IL-bhE-N.S.

1 IL-bkE-F.S.

1 Fill-caE-N.S.

1 Fill-cbE-F.S.

1 IL C-4 1/2×3/8×6'-11 3/8" cdE Carbon

1 IL C-4 1/2×3/8×6'-11 3/8" M2E Silicon

1 IL C-4 1/2×3/8×6'-11 3/8" M2E Carbon

1 IL C-3 1/2×3/8×4'-4 1/2 cdgE Carbon

1 IL C-3 1/2×3/8×4'-5 7/16-cE Carbon

1 IL C-3 1/2×3/8×4'-5 7/16-cE Carbon

2 IL-cvE

2 IL-cvE

1 IL-bhE-N.S.

1 IL-bkE-F.S.

1 Fill-caE-N.S.

1 Fill-cbE-F.S.

1 IL-sE-N.S.

1 IL-sE-N.S.

1 7/8 Slot in web

1 7/8 Slot in web

A-3.58

A-3.58

2 IL W8 Q 120×1/2×38'-4 1/2 Silicon

2 IL W8 Q 120×1/2×38'-4 1/2 Silicon

Csk in Main Material only

Note break in stagger

Note break in stagger

Csk in Main Material only

Note break in stagger

2 Fills-3/4×6'-11 3/8" M2E Carbon

2 Fills-3/4×6'-11 3/8" M2E Carbon

2 Pl 8×3/4×6'-11 3/8" M2E Carbon

2 Fills 20 1/4×3/4×2'-5 fnE2

4 Fills 3 1/2×3/4×8'-7 1/2 fnE2

(2) Spl Pls 10×3/4×6'-0 1/2 E2 - Silicon - F.S.

(2) Spl Pls 10×3/4×6'-0 1/2 E2 - Silicon - N.S.

Note: Splice Pls cgE2E to be shifted along web & bolted (with long bolts if necessary to clear stiff. L) for shipment as that ends will not project beyond edge of Web 12"

2 Pl 8×3/4×6'-11 3/8" M2E Carbon

2 Fills-3/4×6'-11 3/8" M2E Carbon

2 Pl 8×3/4×6'-9 1/2" cgE2E M2E Carbon

2 Fills-3/4×6'-9 1/2" M2E Carbon

2 Pl 8×3/4×6'-11 3/8" M2E Carbon

2 Fills 20 1/4×3/4×2'-5 fnE2

4 Fills 3 1/2×3/4×8'-7 1/2 fnE2

(2) Spl Pls 10×3/4×6'-0 1/2 E2 - Silicon - F.S.

(2) Spl Pls 10×3/4×6'-0 1/2 E2 - Silicon - N.S.

Note: Splice Pls cgE2E to be shifted along web & bolted (with long bolts if necessary to clear stiff. L) for shipment as that ends will not project beyond edge of Web 12"

Tack weld for shipment

Tack weld for shipment

1 Fill 4×3/4×6'-11 3/8" caE Carbon-N.S.

1 Fill 4×3/4×6'-11 3/8" cbE Carbon-F.S.

Note break in stagger

Note break in stagger

Csk in Main Material only

Note break in stagger

F

F

N

on Web & Flange Pls

10@3-2-6

14@3-3-6

4@3 1/2-2-4

8@3-2-0

8@3 1/2-2-2

12@3 1/2-3-3

14@3-3-6

9@3 1/2-2-6

5@3 1/2-1-4 1/2

10@3 1/2-2-8 1/2

4-9 1/2

4-9 1/2

4-11 1/2

4-9 1/8

4-9 1/2

4-9 1/2

4-10 15/16

19-2 1/2 c. to c. Floor beams

19-2 1/2 c. to c. Floor beams

19-2 1/2 c. to c. Floor beams

67-6 7/8 ℄ Pin to Gage of end ℄ Stiffener Pls

5@C.2-6

4@C.3-0

6@C.3-0

7@3 1/2-2-0 1/2

3 1/2-4@3-10

7@3 1/2-1-10 3/8

4 1/2

4@C.2-0

6@C.3-1

7@3 1/2-1-10 3/8

3 1/2-4@3-10

7@3 1/2-2-0 1/2

3 1/2-5@3-1-3

4 1/2-5 1/2

15@3 1/2-4-0 3/4

8@3 1/2-2-2

3

6@3 1/2-1-7 1/2

L2

L3

Note break in stagger

Note break in stagger

Spl Pl M25

Csk in Main Matl only

Note break in stagger

1 Spl L-7 1/2×7 1/2×1×8-11 3/8 M335^E Silicon

Grind to fit fillet of 8×8×3/4 L

1-Fill-18×3/8×4'-2 1/2"-dg-Carbon

1/16 Holes

After Suspender Bars are Riveted-Ends to be Neatly welded

Crown of Roadway

5 Cut

Section F-F

Section N-N

Section G-G

Section H-H

Section K-K

Enlarged Section M-M

1 IL 39 3/4×3/8×5'-0 3/4 Silicon LPIS

1 IL-bkE 6 Bolts-gE 2 Shims-bvE

1 IL-bkE 6 Bolts-gE 2 Shims-bvE

1 IL-bkE 6 Bolts-gE 2 Shims-bvE

1 IL-bkE 6 Bolts-gE 2 Shims-bvE

1-Cut

Rad

Rad

Working line

Working line

Mill & chamfer 1 disE

Mill & chamfer 1 disE

Mill

Mill

1-4 1/2

1-11

1-11

2 IL-dgE

2 IL-dsE

2 IL-dsE

2 IL-dgE

2 IL-dgE

2 IL-dsE

2 IL-dsE

2 IL-dgE

Scrap-E.N.S.

Cbe-E.F.S.

Cge-E.N.S.

Cbe-E.F.S.

4 1/2 F 3 3/8 3 1/2 4 1/2

10 10

4 1/2 F 3 3/8 3 1/2 4 1/2

10 10

4 1/2 F 3 3/8 3 1/2 4 1/2

10 10

2 Pl 8×3/4×6'-0 1/2 dgE2E Carbon

Grind to fit fillet of 8×8×3/4 L

2 Pl 8×3/4×6'-0 1/2 dsE2E Carbon

Grind to fit fillet of 8×8×3/4 L

1 IL-2 3/8×3/8×6'-0 1/2 dgE2E Carbon

Grind to fit fillet of 8×8×3/4 L

Work this sheet in conjunction with Sheet #1

2-Girders G15^E As shown

2 " G15' Opp hand

4-Lateral Plates LP15

4 " LP25

8-Splice Plates M25

2-Splice Angles M35^E As shown

2 " M35' Opp hand

2 " M335^E - As Shown

2 " M335' - Opp hand

4 Stiffener Angles M45^E As shown

4 " M45' Opp hand

4 " M45A^E As shown

4 " M45A' Opp hand

For notes see Sheet #1

2-Splice Angles M35A^E As shown

2 " M35A Opp hand

2 " M335A^E As shown

2 " M335A' Opp hand

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIV

SIDE SUSPENDED SPAN

STIFFENING GIRDERS - FRAMED O

McCLINTIC-MARSHALL CONST

PITTSBURGH, PA.

IN CHARGE

MADE BY

TRACED

CHECKED

DATE

APPROVED

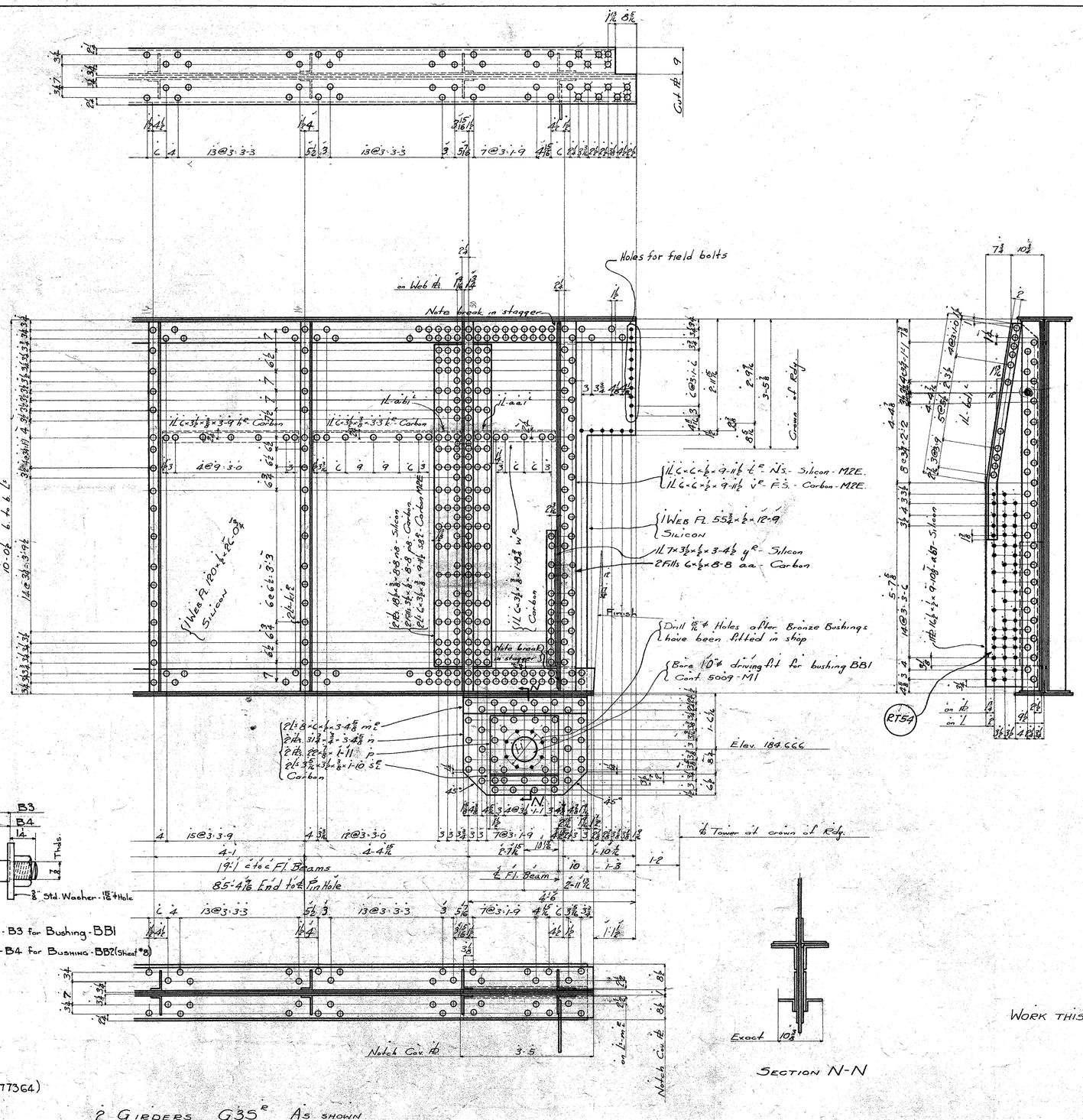
JOB NO.

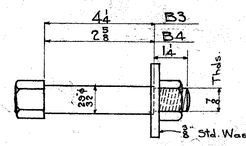
SHEET NO.

A-2-277

1 Cov. Pl. 18-½ × 88-4⅜ Silicon
1 Cov. Pl. 18-⅜ × 15-0 Silicon
1 Reinforcing ℔ 18-¾ × C-2⅜ d.e. Silicon
1 Reinforcing ℔ 18-¾ × 6-4½ c. Silicon
See enlarged detail of slots
Csk. in Main Mat'l only
Note break in stagger
For Hitch
℄ Hitch
℄ 18# Suspenders @ ℄ slot
2 L 8-8-¾ × 57-C 11/16 Silicon
2 L 8 - 4½ - ⅝ × 1-10½ c.t.e.z. M.P.E. Carbon
2 L 8 × 5½ - ⅝ × 1-9¹⁵/₁₆ c.g.e.z. M.P.E. Carbon
2 L 8 × 4½ - ⅝ × 1-10½ c.m.e.z. - M.P.E. Carbon
2 Fills 20½ × ¾ × 2-5 c.h.e. - Carbon
2 L c.t.e.z.
2 L c.g.e.z.
2 Fills c.h.e.
15-8 Top of Hitch
½ Holes
Crown of Roadway
Working point for panel
℄ Floor beam
℄ slot
Fill 4-¾ × 6-11/16 ca.e. Carbon - N.S.
Fill 4-¾ × 6-11/16 c.h.e. Carbon - F.S.
Web Pl. 120-½ × 38-4⅞ Silicon
19-2½ c. to c. Floor beams
85-4⅞ End to ℄ of Pin Hole
℄ F. Beam
L8
L9
1 Cov. Pl. 18-½ × 87-2⅞ Silicon
1 Cov. Pl. 18-⅜ × 15-0 Silicon
1 ℔ 40 × ⅜ × 5-2½ LP5S Silicon
RT 58M
Work this sheet in conjunction with Sheets #64 #7
Girder G3
Rivets: ⅞ ℄
Holes: 13/16 ℄ Unless noted
Holes subpunched 13/16 ℄ reamed to size unless noted
Holes in material over ½ thick to be subdrilled 13/16 ℄ reamed to size except 1½ Tension flts. which may be drilled from the solid
Holes marked (#7) to be subpunched 13/16 ℄ reamed to size thru a metal Template
Burrs to be removed from all holes
Paint: One coat of DeTrex Graphite Co's #501
Enlarged detail of Shims - bvl
Enlarged detail of slots
Chamfer edges of slots
Sides of slots must be parallel to suspender stiffeners & must be accurately finished to dimensions shown
Section A-A
Section B-B
Section C-C
Section D-D
Section E-E
Enlarged detail of ℔s. bk1
RT 53
RT 54
CITY OF TOLEDO, OHIO
BRIDGE over MAUMEE RIVER
SIDE SUSPENDED SPAN
STIFFENING GIRDERS
PANELS #8 to TOWER
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.H.Sou.
MADE BY A.E.S. DATE CHECKED BY F.C.H. DATE
TRACED BY J.M. DATE REVISED DATE
SCALE= INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5002A SHEET NO. 5
APPROVED 6-2-30
Waddell & Hardesty
A-2-280

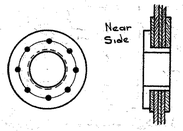
1 Reinforcing pl. 18×¾×5-11½ d. Silicon
See enlarged detail of slot
1 Fill 7×¼×24⅜ fgj - Carbon
11 ℄-dc2
See enlarged detail of slot
Holes for hitch
Note break in stagger
1 Fill fgi
Suspenders ¼ slot
15-8 to L9
Hitch
Note break in stagger
Fills - che
Fills - aki
Fills 20½×½×2'-5 awi - Carbon
2 Fills G4½×4×2'-2⅜ gdi - carbon
Slot in web & Fills
Crown of Roadway
Working point for panel ℄
℄ Floorbeam
℄ Slot
Fill - cae - N.S.
Fill - cbe - F.S.
Note break in stagger
Web Pl. 180×½×19'-2 Silicon
Fill 16½×½×2'-10⅝ fi - Carbon
Tack weld to G3S for Shipment
PL 47⅞×⅞×4'-2¾ LPC5 - Silicon
Fill 6½×½×3'-3½ gj - Carbon
Tack weld to G3S1 for Shipment
Fill 4×½×6-11⅜ fci - Carbon - N.S.
Fill 4×½×6-11⅜ bai - Carbon - F.S.
Note break in stagger
Fill - fgi
Fill 7×¼×2'-4⅜ fgi - Carbon
Work this sheet in conjunction with Sheets #5 & 7
For Notes see Sheet #5
Girder G3
Section F-F
Section G-G
Section H-H
Section K-K
Enlarged Section M-M
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RI
Side Suspended Span
Stiffening Girders
Panels #8 to Tower
McCLINTIC-MARSHALL CONS
PITTSBURGH, PA.
IN CHARGE W. [illegible]
MADE BY A.E.S. DATE
CHECKED BY F.R.A.
TRACED BY J.M. DATE
REVISED
SCALE: INCH = 1' FOOT
LAST ASSEMBLING
CONT. NO. 5002A SHEET NO.
APPROVED 6-2-30
Waddell & Hardesty
A-2-281





8 - Turned Bolts - 29/32" × 5 1/2" - B3 for Bushing - BB1

8 - Turned Bolts - 29/32" × 3 7/8" - B4 for Bushing - BB2 (Sheet #8)



1 - Bronze Bushing - BB1 (P.O. order No. 77364) - To Be Shop Bolted to G35E

1 - Bronze Bushing - BB2 To Be Shop Bolted To G45E (Sheet #8)

2 Girders G35E As shown

2 " G35L Opp. hand

4 Lateral Plates LP55

4 " " LP65

Work this sheet in conjunction with Sheets #5 & #6

For Notes See Sheet #5

L.O. 2
F.H. 2
Mach. 1
PWD 1
S.L. 1
O.I. 1
8

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVE

SIDE SUSPENDED SPAN

STIFFENING GIRDERS - PANELS 8 TO TOW

McCLINTIC-MARSHALL CONST.
PITTSBURGH, PA.
IN CHARGE W.M. Sons
MADE BY A.T. DATE CHECKED BY F.B.A. DATE
TRACED BY J.M. DATE REVISED DATE
SCALE - INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5002A SHEET NO. 7

APPROVED 6-2-30

Waddell & Hardesty

A-2-282

Enlarged Detail of Slots

Work This Sheet in Conjunction with Sheet #9 & 10 Girder G4

SECTION AA
SECTION PP
SECTION B-B
SECTION C-C
SECTION D-D
SECTION E-E
SECTION S-S

Enlarged Detail of Shims bvl

Enlarged Detail of Pls bkl

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVE

MAIN SUSPENDED SPAN
STIFFENING GIRDERS
PANELS #13 to #17

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE W.C. Son.
MADE BY AT DATE CHECKED BY AES DATE
TRACED BY DATE REVISED DATE
SCALE: INCH = 1 FOOT. LAST ASSEMBLING MARK

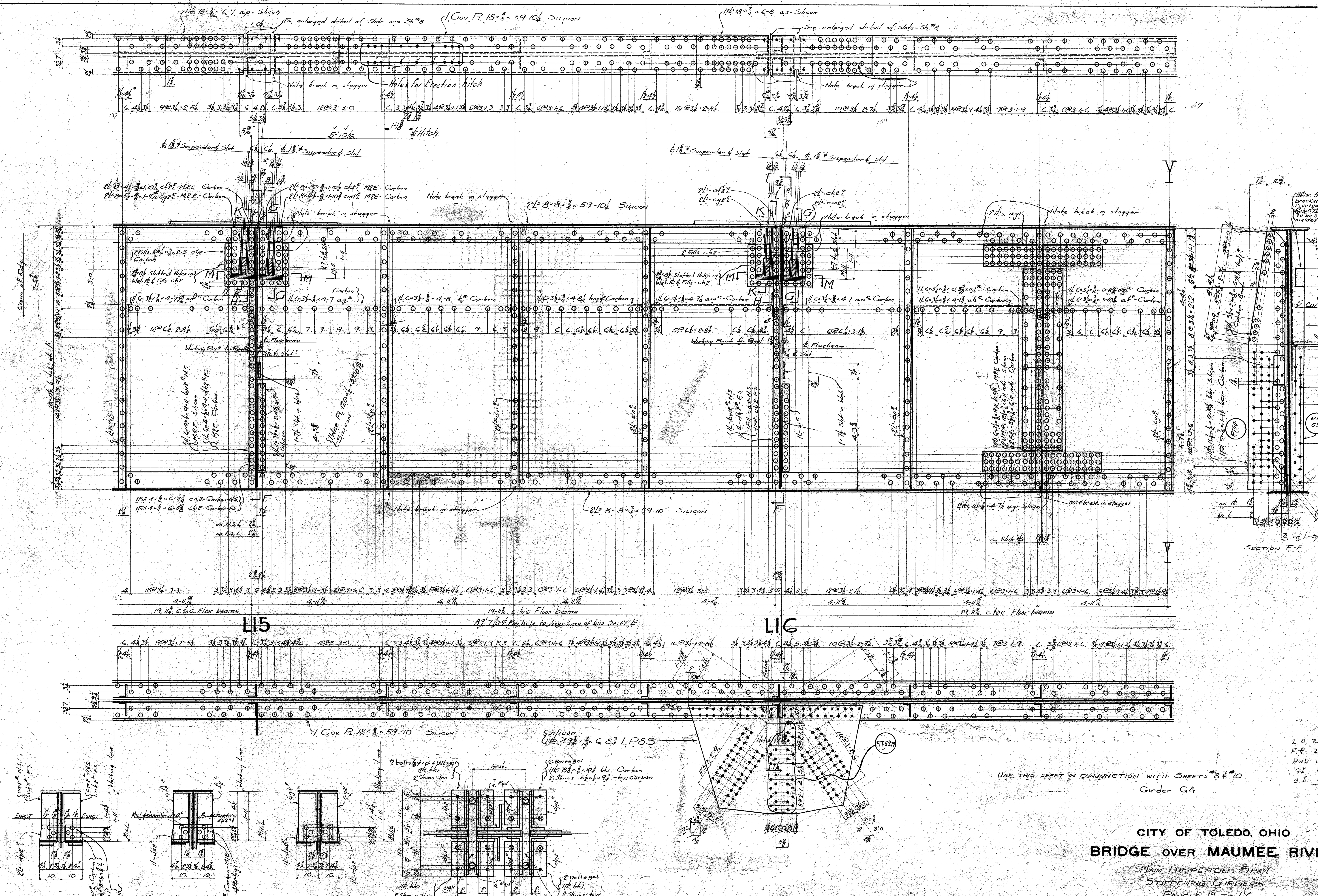
CONT. NO. 5002 A SHEET NO. 8

APPROVED 6-2-30
Waddell & Hardesty

Rivets: ⅞" ϕ
Holes: 15/16" ϕ Unless noted
Holes punched 7/8" ϕ reamed to 15/16" ϕ after assembly in shop except material over ½" thick which is to be drilled from the solid.
Holes marked ⊗ are to be subpunched ⅞" ϕ reamed to 15/16" ϕ thru a metal template.
Burrs are to be removed from all holes.

Paint: One coat of Detroit Graphite Co's #501

A-2-283



USE THIS SHEET IN CONJUNCTION WITH SHEETS #8 & #10

Girder G4

For Notes see sheet #8

CITY OF TOLEDO, OHIO

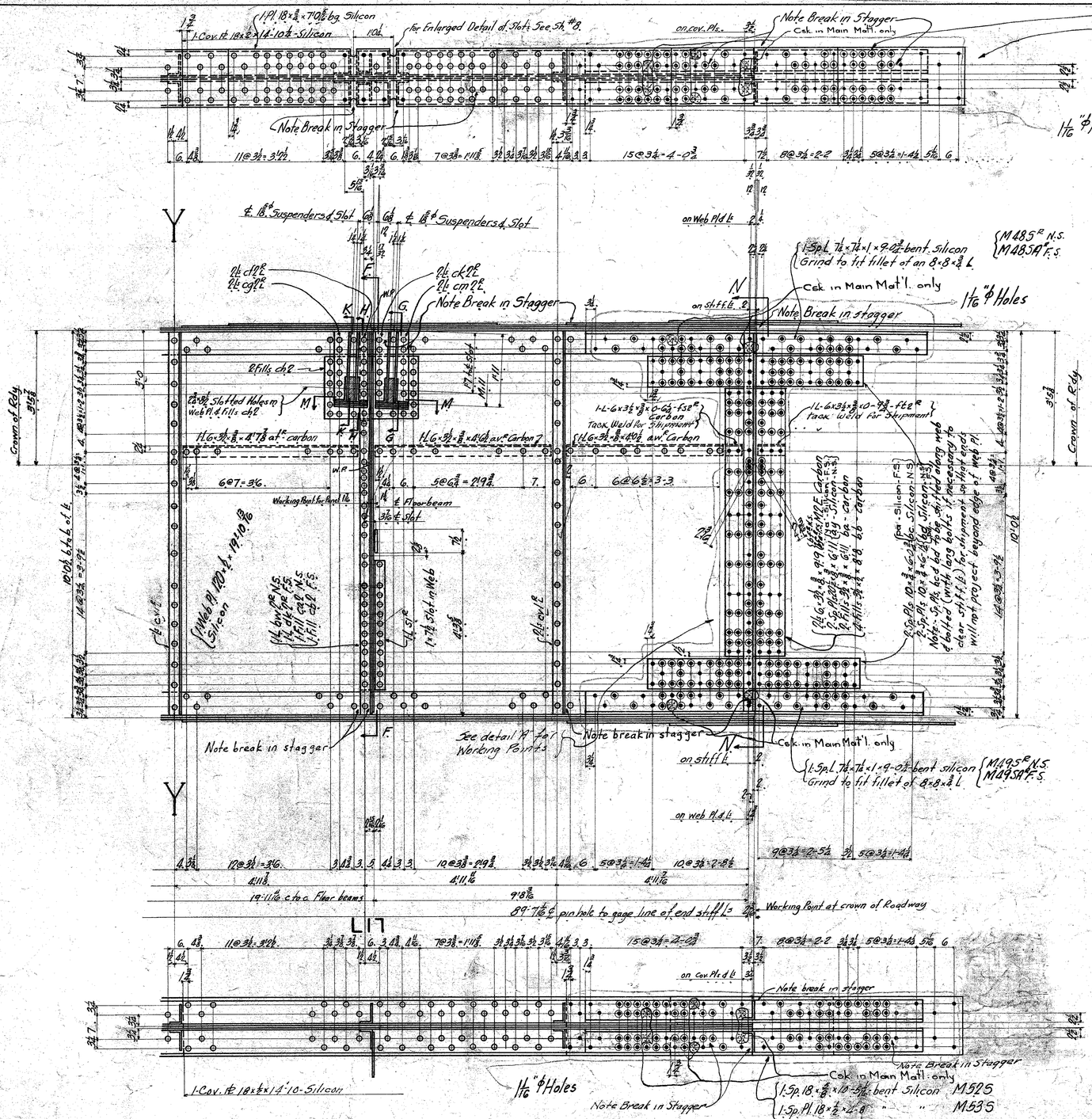
BRIDGE OVER MAUMEE RIVE[R]

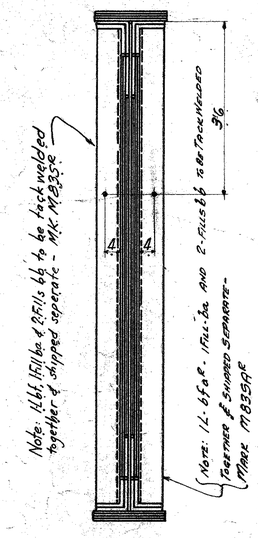
MAIN SUSPENDED SPAN
STIFFENING GIRDERS
PANELS 13 TO 17

APPROVED 6-2-30
Waddell & Hardesty

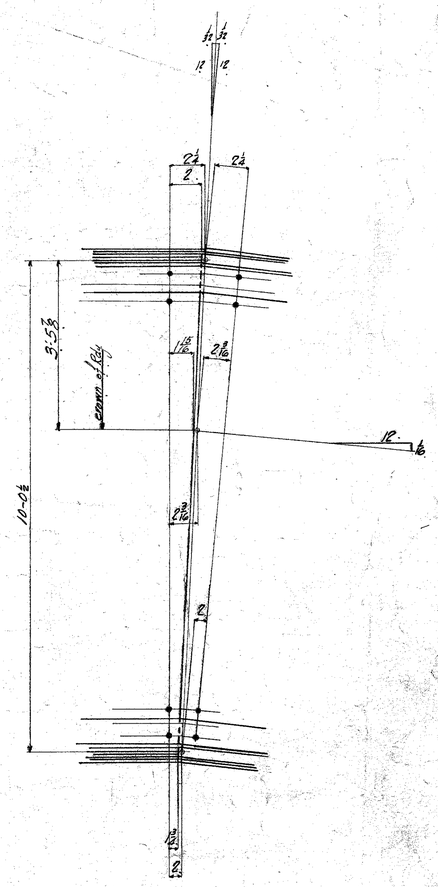
McCLINTIC-MARSHALL CONST.
PITTSBURGH, PA.
IN CHARGE Wmson
MADE BY A.T. DATE CHECKED BY
TRACED BY J.M. DATE REVISED
SCALE:- INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5002A SHEET NO. 9

A-2-284





SECTION N-N



Exaggerated detail 'A' showing Working Points

Work This Sheet in Conjunction with Sheets #8 & 9

2 - GIRDERS	G4.5R As Shown				
2 - "	G4.5L Opp Hand				
4 - LATERAL PLATES	LP7S				
4 - " "	LP8S				
4 - SPLICE PLATES	M505				
4 - " "	M515				
4 - " "	M525				
4 - " "	M535				
2 - " ANGLES	M485R As Shown	2 - SPLICE ANGLES	- M48SAR - As Shown		
2 - " "	M485L Opp Hand	2 - " "	- M48SAL - Opp Hand		
12 - STIFFENER "	M835R As Shown	12 - STIFFENER "	- M835AR As Shown		
12 - " "	M835L Opp Hand	12 - " "	- M835AL Opp Hand		
2 SPLICE ANGLES	M495R As Shown	2 - SPLICE "	- M495AR As Shown		
2 - " "	M495L Opp Hand	2 - " "	- M495AL - Opp Hand		

L.O. 2
Fl. 2
Blk. 1
PWD 1
S.I. 1
O.L. 1
8

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVI

MAIN SUSPENDED SPAN

STIFFENING GIRDERS PANELS 13 to 17

APPROVED 6-2-30

Waddell & Hardesty

McCLINTIC-MARSHALL CONST.
PITTSBURGH, PA.
IN CHARGE Wilson
MADE BY A.F. DATE 5/13 CHECKED BY WD DATE
TRACED BY H.M. DATE REVISED DATE
SCALE: INCH = FOOT LAST ASSEMBLING MARK
CONT. NO. 5002A SHEET NO. 10

A-2-285

Note break in stagger

Cak. in Main Mall only

Note Break in Staggers

1-Pl. 18×3/4×6'-4 3/8" -M- Silicon

Carbon 1-Fill 18 1/4×2-4 3/8" -P-

1-Sp.Pl. 18 3/8×5'-5"-S- Silicon

Note break in stagger

1-Pl. 18×3/4×6'-6" -L Silicon

Note Break in stagger

Holes for erection Hitch

See enlarged detail of Slots

Note break in stagger

1 1/16" ϕ Holes

8@3 1/2=2'-2"

5@3 1/2=1'-4 1/2"

6@3 1/2=1'-6"

5@3 1/2=1'-3"

6@3 1/2=1'-6"

7@3 1/2=1'-10 1/2"

6@3=1'-6"

5@3=1'-6"

4@3 1/2=1'-0"

6@3=1'-6"

5@3 1/2=1'-3"

6@3 1/2=1'-6"

11@3 1/2=2'-10 3/8"

7@3 1/2=1'-10 1/2"

5@3=1'-3"

6@3=1'-6"

8@3=2'-0"

1-Cov Pl. 18×9/16×79-10 9/16 Silicon

1-Cov Pl. 18×9/16×19-9 7/16 Silicon

℄ 18" Suspender ℄ Slot

1-Cov Pl. 18×3/4×60-3 5/8" - Silicon

℄ 18" Suspenders ℄ Slot

℄ 18" Suspender ℄ Slot

Sides of Slots must be parallel to suspender stiffeners & must be accurately finished to dimensions shown.

℄ Hitch 9'-10 to L 20

Enlarged Detail of Slot

2-L 8×4 3/4×5/8×1'-10 3/16" V.E. M2E Carbon

2-L 8×5×5/8×1'-10 W.E.-M2E- Carbon

Cak. in Main Main Mall only

Note Break in Stagger

2-L 8×4 3/4×5/8×1'-10 7/8" -aa.E. M2E Carbon

2-L 8×8×3/4×79-10 7/16" - Silicon

Note Break in Stagger

Note Break in Stagger

2-L 8×4"×7/16 V.E.

2-L 5" W.E.

2-L 4" L.L. aa.E.

Note Break in stagger

2-Pl. ag1

Note Break in Stagger

2-Fills 20 1/4×3/8×2'-5" -bd Carbon

2-Fills bd

1-L 6×3 1/2×3/8×3'-10 3/4"-a.E. Carbon

1-L 6×3 1/2×3/8×4-7 7/8" -E Carbon

2-Ø 7/8" Slotted Holes in Web Pl & Fills bd

1-L 6×3 1/2×3/8×4-7 7/8" -bm E Carbon

2-Ø 7/8" Slotted Holes in web Pl & Fills bd

1-L 6×3 1/2×3/8×4-7 7/8" -gl E Carbon

1-L 6×3 1/2×3/8×4 6 1/2" -cl E Carbon

1-L 6×3 1/2×3/8×4-7 7/8" -k E Carbon

Carbon 1-L 6×3 1/2×3/8×8 3/8" -ab1 E Carbon

Carbon 1-L 6×3 1/2×3/8×4 6 1/2" -cl E Carbon

Carbon 1-L 6×3 1/2×3/8×4-6 1/2" -d E

1-L 6×3 1/2×3/8×3'-10 3/4" -a E Carbon

Crown of Rdy.

3-5% extend of Grade

W.P.

Working Point for Panel

℄ of Floor Beam

3/16 ℄ of Slot

1×7 1/8 Slot in Web

1-Web Pl 120 ℄×3/8"-11 3/8" Silicon

Comp M2E Carbon

2-L 6×4×3/8×9'-11" -GV1 E

2-L 6×4×3/8×9'-11" -L1 E M2E Carbon

2-L 6×4×3/8×9'-11" -bg E F.S.

2-L 6×4×3/8×9'-11" -bg E N.S.

2-L 6×4×3/8×9'-11" -L1 E M2E Silicon

2-L 7 3/8×3/8×3'-3" -aa E Silicon

4-dg

2-L 8 GV1 E

2-L 8 GV1 E

2-L 8 GV1 E

1×7 1/8 Slot in Web

4-dg

1-L 6×4×3/8×9'-11" -bg E F.S.

1-L 6×4×3/8×9'-11" -bg E N.S.

1-L 6×4×3/8×9'-11" -L1 E M2E Carbon

1-L 6×4×3/8×9'-11" -L1 E M2E Silicon

1-L 7 3/8×3/8×3'-3" -aa E Silicon

1-Fill Carbon

1-Fill-bd

1-Fill-cd E F.S.

1-Fill-cd E N.S.

Ring holes

10-Ø 1 1/16" ϕ holes at 6" ctrs

Ø 1 1/16" ϕ holes at 6" ctrs

Working Point at Crown of Rdy.

1-Fill-4-3/8×6-11/8 ca2-Carbon N.S.

1-Fill-4-3/8×6-11/8 cb2-Carbon F.S.

On N.S.L.

On F.S.L.

12@3 1/2=3'-1 1/2"

8@3 1/2=2'-2"

6@3=1'-6"

6@3=1'-6"

5@3 1/2=1'-4 1/2"

9@3 1/2=2'-4 1/2"

12@3 1/2=3'-1 1/2"

8@3 1/2=2'-2"

6@3=1'-6"

6@3=1'-6"

5@3 1/2=1'-4 1/2"

4-11 5/16"

4-11 5/16"

4-11 5/16"

4-11 5/16"

4-11 5/16"

4-11 5/16"

9-11 1/2"

19-11 5/16" C. to C. Floorbeams

79-6" C. to C. End Holes

19-11 5/16" C. to C. Floorbeams

1-Cov Pl. 18×3/4×60-2 5/8" Silicon

L 18

L 19

1-Cov Pl. 18×9/16×19-6 13/16" - Silicon

1-Cov Pl. 18×9/16×79-9 7/16" Silicon

Cak. in Main Mall only

Note break in stagger

1 1/16" ϕ Holes

1-Fill-6-3/4×3/8×6'-0" -ap- Carbon Tack Welded to Gdr.

1-Pl. 47 1/2×7/16×6-6 1/2" -LP9S- Silicon

Notch

1-Fill-6-3/4×3/8×2'-11 5/8" -as- Carbon Tack Welded to Gdr.

1-Fill-p

1-Pl.-s

Note Break in Stagger

Note Break in Stagger

Section	A	B	C	D	E	F	G	H	Mark	K
A-A	4-4 3/8	5-0 3/8	5 3/8	6 1/2	4-3 7/16	3 3/8	4-5 1/4	9 9/16	ah	5-10
F-F	4-3 3/8	5-0 3/8	5 7/8	6 1/2	4-3 7/16	3.	4-4 1/2	9 3/8	ag	5-10
G-G	4-4 1/2	5-0 3/4	5 1/4	6 1/2	4-3 7/16	3 3/8	4-5 3/8	9 7/16	ah	5-10

Section B-B

Section G-G

Section D-D

Section E-E

1-Pl. bk1

2-Shims-bv1

2-Bolts 8" to gusset gc1

1-Pl. bk1

2-Shims bv1

2-Bolts. gc1

1-Pl. bk1

2-Shims-bv1

2-Bolts gc1

1-Pl. bk1

2-Shims bv1

2-Bolts gc1

Enlarged detail of Plate bk1

Enlarged Detail of Shims bv1

Pl 8 3/8×3/4×10 3/8 bk1 - Carbon

Pl 5 1/2×1/2×0-10 3/4 - bv1 - carbon

Work This Sheet In Conjunction With Sheet #12.

Girder G5

Rivets: 7/8" ϕ

Holes: 13/16" ϕ unless noted

Holes subpunched 13/16" ϕ and reamed to size unless noted

Holes in material over 3/4" thick to be subdrilled 13/16" ϕ and reamed to size except 1 1/4" tension plates which may be drilled from the solid

Holes marked (RT) are to be subpunched 13/16" ϕ and reamed to size thru a metal template

Burrs are to be removed from all holes

Paint: One coat of Detroit Graphite Co's. #501

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIV

MAIN SUSPENDED SPAN

STIFFENING GIRDERS-PANE

APPROVED 6-5-30

Waddell & Hardesty

McCLINTIC-MARSHALL CONS

PITTSBURGH, PA.

IN CHARGE Wm Sorn

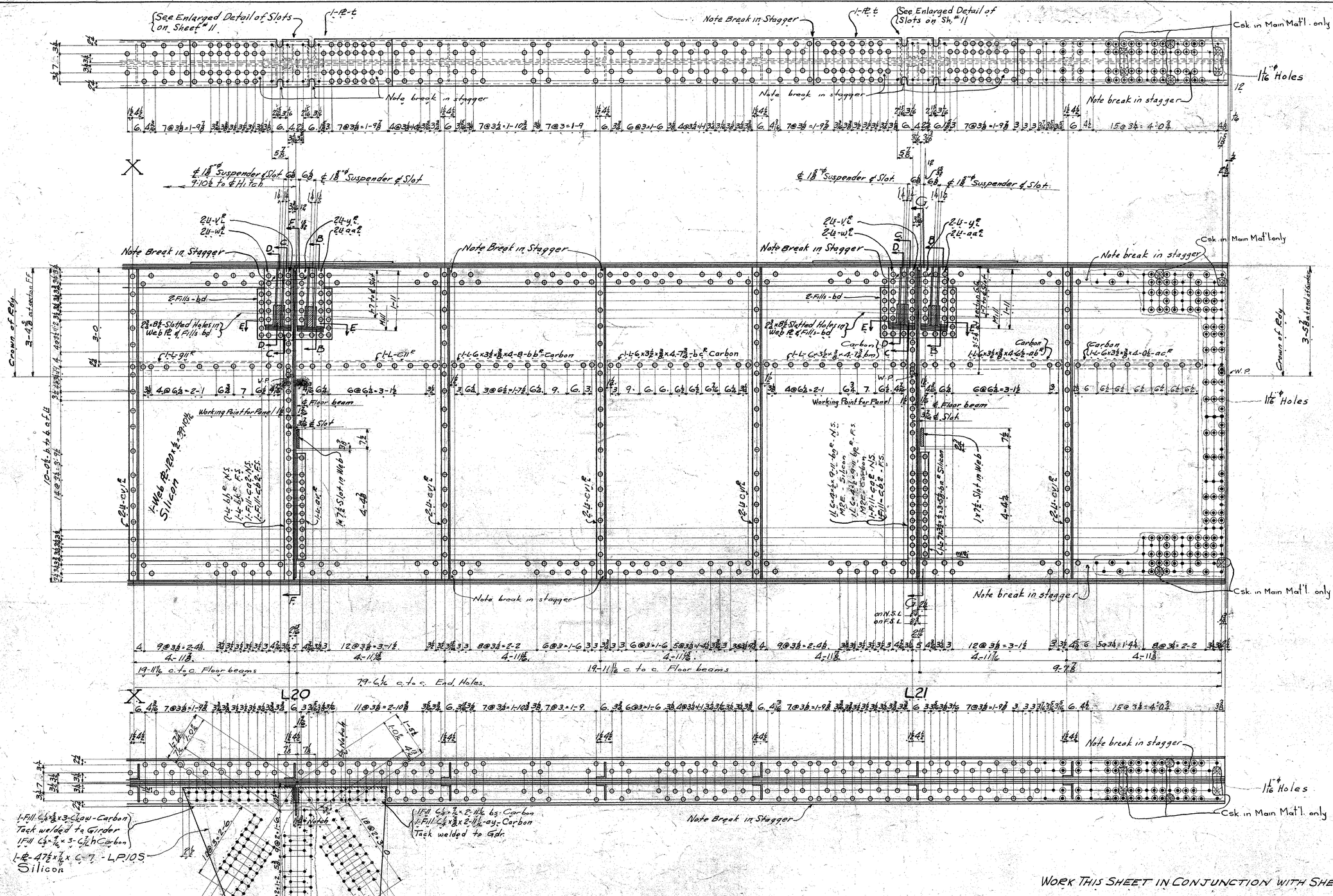
MADE BY AT DATE CHECKED BY WES

TRACED BY EZ. DATE REVISED

SCALE: INCH = 1 FOOT LAST ASSEMBLING MA

CONT. NO. 5002A SHEET NO.

A-2-286



WORK THIS SHEET IN CONJUNCTION WITH SHEET #11

2- GIRDERS G5S^R - As Shown.
2- " G5S^L Opp Hand.
4- LATERAL PLATES - LP9S.
4- " " LP10S.

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RI

MAIN SUSPENDED SPAN

STIFFENING GIRDERS - PANELS-18

APPROVED 6-5-30

Waddell & Hardesty

McCLINTIC-MARSHALL CONS
PITTSBURGH, PA.
IN CHARGE WMcL
MADE BY AT DATE CHECKED BY WEH
TRACED BY E.Z. DATE REVISED
SCALE: INCH = 1 FOOT LAST ASSEMBLING MAR
CONT. NO. 5002 A SHEET NO.

A-2-287

Holes.

1 Cov Pl 18×5/8×79-10 7/16 Silicon

1 Cov Pl 18×3/4×79-10 7/16 Silicon

Note Break in Stagger

Note Break in Stagger

cskin Main Matl only

1 Sp Lt 18-3/8×11-11 3/8 bent Silicon - M56S

1 Sp Lt 18-5/8×5-10 3/8 bent - Silicon - M57S

Note: Lts M56S & M57S to be tack welded together along edges

1 Sp L 7 1/2 - 7 1/2 × 1 - 9-2 bent - Silicon {M54S^R N.S. / M54SA^R F.S.}

Grind to fit fillet of 8-8-3/4 L

{1" Rivets / 1 1/16" Holes.}

cskin Main Matl only

Note break in stagger

Note Break in Stagger

1 Cut Web Lt & Li & Cov Pls

℄ 18 3/4 Suspender ℄ Slot

2 Pl 8-4 3/8 × 5/8 × 1-10 7/16 ac13^R - M2E - Carbon

2 Pl 8-4 5/8 × 5/8 × 1-10 7/16 ab13^R - M2E - Carbon

2 Pl 8-4 5/8 × 5/8 × 1-10 7/16 ac13^R - M2E - Carbon

2 Pl 8-4 5/8 × 5/8 × 1-10 7/16 ad13^R - M2E - Carbon

2 Pl 8×8×3/4 - 79-10 7/16 Silicon

Note break in stagger

Note Break in Stagger

Note break in stagger

Note Break in Stagger

Note break in stagger

2 Pl aa13^R

2 Pl a 6 13^R

2 Pl ac13^R

2 Pl ad13^R

℄ 18 7/8 Suspender ℄ Slot

9-4 3/8 to ℄ Hitch

Sides of slots must be parallel to suspender st. Pieners & must be accurately finished to dimensions shown

Chamfer Edge to prevent cutting Suspender

Enlarged Detail of

Rivets 7/8" Holes 15/16" Unless Noted

Holes Subpunched 1/8" & reamed to size unless noted. Holes in material over 3/4 thick to be subdrilled 1/8" and reamed to size except 7/8" tension Rt which may be drilled from the solid. Holes marked Ⓔ are to be subpunched 13/16" & reamed to size thru a metal template. Burrs are to be removed from all holes.

Paint: One coat of Detroit Graphite Co 501.

APPROVED 7/3-30

Waddell & Hardesty

Section AA & FF

Sect	A	B	C	D	E	F	G	H	Mark	K
A-A	4 4½	5 0½	5½	C 8	4-3½	3 5/8	4-5 6	9-9½	ah	5 0½
F-F	4-3½	5-9	C	C	4-3½	7 8	4-4 8½	9-8½	ak	5-9½

Work this sheet in conjunction with Sheet #14820

Girder G6

L.O.
F.H.
PWD
Blk
S.L.
O.L.

Section G-G

Section B-B

Section C-C

Section D-D

Section E-E

Enlarged Detail of Shims - bv1

Enlarged Detail of ℄ bk1

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RI

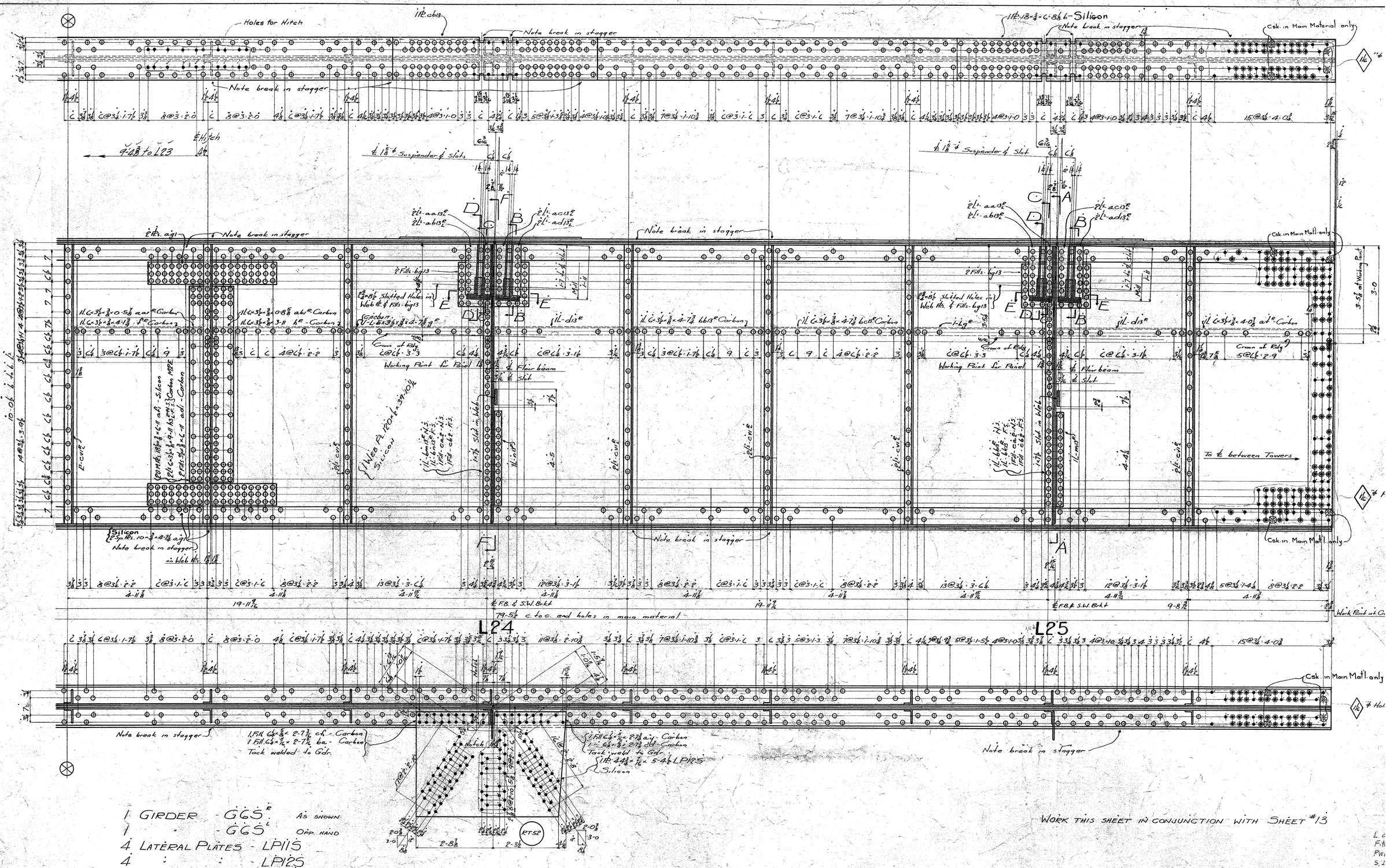
MAIN SUSPENDED SPAN
STIFFENING GIRDERS
PANELS 22-25

McCLINTIC-MARSHALL CONS
PITTSBURGH, PA.

IN CHARGE W.M. SAW
MADE BY A.T. DATE CHECKED BY H.W.C.
TRACED BY J.M. DATE REVISED
SCALE: INCH = 1 FOOT LAST ASSEMBLING MA

CONT. NO. 5002A SHEET NO.

A-2-288



1	GIRDER	- GGS^{R}	As shown
1	"	- GGS^{L}	Opp. hand
4	LATERAL PLATES	- LPIIS	
4	" "	- LPI2S	
2	SPLICE ANGLES	- M54S^{R}	As shown
2	" "	- M54S^{L}	Opp. hand
2	" "	- M55S^{R}	As shown
2	" "	- M55S^{L}	Opp. hand
4	" PLATES	- M56S	
4	" "	- M57S	
4	" "	- M58S	
4	" "	- M59S	
2	" ANGLES	- M54SA^{R}	As shown
2	" "	- M54SA^{L}	Opp. hand
2	" "	- M55SA^{R}	As shown
2	" "	- M55SA^{L}	Opp. hand

WORK THIS SHEET IN CONJUNCTION WITH SHEET #13

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIV

MAIN SUSPENDED SPAN
STIFFENING GIRDERS
PANELS #22 TO #25

APPROVED 7/3-30
Waddell & Hardesty

For notes see sheet #13

McCLINTIC-MARSHALL CONST
PITTSBURGH, PA.
IN CHARGE W.M.SON
MADE BY A.T. DATE CHECKED BY H.M.C.
TRACED BY J.M. DATE REVISED
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5002A SHEET NO.

A-2-289

Holes

Csk. in Main Mat'l. only

Note Break in stagger

1-Fill 18×½ A 441 - carbon tack welded to G75 for shipment

1-Pl. 18×⅜×6-4⅝-y-Silicon

1-½

1-Cov. Pl. 18×⅜×39-10⅞ Silicon

1-Cov. Pl. 18×⅜×39-10⅞ Silicon

Holes For Hitch

1-Pl-y

1-0½

See Enlarged Detail of Slots

℄ Hitch.

15@3½ = 4-0½

1-Sp. Pl. 18×⅝×9-1½-bent-Silicon-M905

1-Sp. Pl. 18×⅝×4-2⅜-bent-Silicon-M915

Note: Pls M905 & M915 to be tack welded together along edges

1-Sp. L 7½×7½×1×9-1½-bent Silicon {M615R NS / M615R FS}

Grind to fit fillet of an 8×8×½ L

℄ 18" Suspenders & Slots

4 on Web Pl ℄

2-L 8×8×½×39-10⅜-Silicon

2-L 6×3½×⅜×1-10⅜-a℄-M2℄-Carbon

2-L 6×3½×⅜×1-10½-b℄-M2℄-Carbon

2-L 8×4½×⅝×1-10⅜-c℄-M2℄-Carbon

2-L 8×4½×⅝×1-10½-d℄-M2℄-Carbon

2-L a

2-L b

2-L c

2-L d

2 Fills-20½×2½×5-af Carbon

2½×6½ Slotted Holes in Web Pl & Fills-af

1-L-L 6×3½×⅜×4-8-m^R Carbon

1-L-L 6×3½×⅜×4-7-ad Carbon

1-L-L 6×3½×⅜×4-7½-ak^R Carbon

1-L-L 6×3½×⅜×4-7½-am^R Carbon

1-L-L 6×3½×⅜×4-7½-an^R Carbon

1-L-L 6×3½×⅜×4-7-ap^R Carbon

1-L-L 6×3½×⅜×4-0½-aq^R Carbon

1L 6×3½×⅜×0-6½ Fct^R Carbon Trim weld for shipment

1L 6×3½×⅜×3-9½ Fct^R Carbon

Crown of Roadway

6@6½=3-3

Working Point for Panel

℄ Floorbeam

3½ ℄ Slot

Note: Splice to be shifted along web & bolted with long bolts if necessary to clear stiff'g's for shipment as Holes will not project beyond edge of web Pl

2-L 8×8×½×39-10⅜

1-Web Pl 120×½×39-10⅜ Silicon

2-L c

2-L d

1-Fill 4½×6-1⅜ c℄2-Carbon NS

1-Fill 4×6-1⅜ d℄2-Carbon FS

Crimp M2℄-Carbon

1-Fill 6½×½×9-11-c℄1-NS

1-Fill 6½×½×9-11-d℄1-FS

1-Fill 6½×½×13-4½-a℄2-NS

1-Fill 6½×½×13-4½-b℄2-FS

1-Fill 6½×½×13-4½-a℄2-NS

1-Fill 6½×½×13-4½-b℄2-FS

1-7½ Slot in web

4-3½

2-L c

2-L d

1-Fill 6½×½×9-11-a℄1-NS

1-Fill 6½×½×9-11-b℄1-FS

1-Fill 6½×½×9-11-a℄1-NS

1-Fill 6½×½×9-11-b℄1-FS

1-7½ Slot in web

1-Fill 6½×½×13-4½-a℄2-NS

1-Fill 6½×½×13-4½-b℄2-FS

1-Fill 6½×½×13-4½-a℄2-NS

1-Fill 6½×½×13-4½-b℄2-FS

1-L-a

1-L-b

1-L-c

1-L-d

1-L-Sk

Rivets

Holes

M625^R NS / M625^R FS

{M625^L NS / M625^L FS} Grind to fit fillet of an 8×8×½ L

Working Point at Crown of Rdy

L26 ℄ Fl. Beam

L27 ℄ Fl. Beam

19-11⅞

39-6⅞ c to c End Holes

9-10⅞

5-0

4-11⅞

9-8⅞

15@3½ = 4-0½

Note Break in Stagger

1-Fill 18×½ A 441 - av - Carbon Tack Weld to G75 for shipment

Csk. in Main Mat'l. only

1-Sp. Pl. 18×⅞×9-0⅞ bent Silicon M635

1-Sp. Pl. 18×⅞×4-1⅜ bent Silicon M645

Note - Pls M635 & M645 to be tack welded together along edges

INTER SUSPENDER BRACKETS ARE RIVETED, AS ℄ 18" Fl. TO BE NEARLY NORMAL IN PLACE

1-Fill 6½×½×2-4⅞-ab-Carbon Tack Weld to G75 for Shipment

1-Pl-41½×⅜×4-9⅜-Silicon-L P135

1-Cov. Pl. 18×⅜×39-9½ Silicon

1-Cov. Pl. 18×½×39-9½ Silicon

2 GIRDERS G75^R As Shown.
2 do G75^L Opp Hand.
4 LATERAL PLATES - LP135 As Shown
2 SPLICE ANGLES - M615^R As Shown
2 do do - M615^L Opp Hand.
2 do do M625^R As Shown
2 do do M625^L Opp Hand
4 SPLICE PLATES M635 As Shown
4 do do M645
4 do do M905
4 do do M915
2 SPLICE ANGLES M615AR AS SHOWN
2 " " M615AL OPP HAND
2 " " M625AR AS SHOWN
2 " " M625AL OPP HAND

Rivets 1" Unless noted
Holes: 15/16" Unless noted
Holes subpunched 13/16" & reamed to size unless noted
Holes in material over ⅜" thick to be subdrilled 11/16 and reamed to size except 1" tension ℄ which may be drilled from the solid
Holes marked Ⓐ are to be subpunched 13/16" & reamed to size thru' a metal template
Burrs are to be removed from all holes

Paint One Coat of Detroit Graphite Co's #501

APPROVED 7-3-30

Waddell & Hardesty

SECTION A-A

SECTION B-B

SECTION C-C

SECTION D-D

ENLARGED SECTION E-E

Enlarged Detail of Pl B-bk1

Enlarged Detail of Shims-bv1

Chamfer edges of Slots

Sides of slots must be parallel to suspender. Stiffeners must be accurately finished to dimensions shown

Enlarged Detail of Slots

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE R

MAIN SUSPENDED SPAN

STIFFENER GIRDERS

PANELS 26 & 27

McCLINTIC-MARSHALL CO.

PITTSBURGH, PA.

IN CHARGE R.M.S.

MADE BY AT DATE CHECKED BY FBA

TRACED BY EZ DATE REVISED

SCALE: INCH = 1 FOOT LAST ASSEMBLING

CONT. NO. 5002A SHEET NO.

A-2-290

Csk. in Main Mat'l. only
Note break in stagger
1 Fill 18"×⅝"×4'-6⅝" adj. Carbon
1 Pl. 18"×¾"× 6'-3" adj. Carbon
See enlarged detail of Slots
1 Cov. Pl. 18"×⅝"× 39'-10⅛" - Silicon
Holes for Hitch
℄ Hitch
Csk. in Main Mat'l. only
Note break in stagger
15@3¼"=4'-0¾"
1 Sp. Pl. 18"×⅝"= 9'-1½" Bent - Silicon - MG8S
1 Sp. Pl. 18"×⅜"= 4'-2½" Bent - Silicon - MG9S
Note: Pls. MG8S & MG9S & Fill adj. to be tack welded together along edges.
1 Sp. L. 7½"×7½"×1"×9'-1½" Bent - Silicon } MG7S^R N.S.
Grind to Pl. fillet of 8"×8"×¾" L. } MG7SAR F.S.
℄ 1⅞" Suspenders & Slots
Csk. in Main Mat'l. only
Pls. 8"×4½"×⅝"×1'-10⅝" k^E MPE. Carbon
Pls. 8"×4½"×⅝"×1'-10⅝" m^E MPE. Carbon
Note break in stagger
Pls. 8"×4½"×⅝"×1'-10⅝" n^E MPE. Carbon
Pls. 8"×4½"×⅝"×1'-10⅝" p^E MPE. Carbon
Pls. 8"×8"×¾"×39'-10⅞" Silicon
Note break in stagger
Csk. in Main Mat'l. only
2 Fills-h
8¾"×8½" Slotted Holes in Web Pl. & Fills-h
Crown of Roadway
Working Point for Panel
Floorbeam
Slat
Note Break in Stagger
Csk. in Main Mat'l. only
Note: Splice plates thus shaded to be shifted clear of rivets if necessary to use ⅞" ℄ bolts; if necessary to clear rivets (R) the shortened ends will not project beyond edge of web Pl.
See detail "A" for Working Points
Csk. in Main Mat'l. only
Note break in stagger
1 Fill 4'-3"×⅜"×9'-11" adj^E N.S. Carbon
1 Fill 4'-3"×⅜"×9'-11" adj^E F.S. Carbon
Pls. 8"×4½"×⅝"×9'-11" adj^E Silicon
MPE. Carbon
Comp. MPE. Carbon
1 Pl. 8"×8"×¾"×39'-10⅛" Silicon
Web Pl. 120"×⅝"×39'-10⅛" Silicon
Csk. in Main Mat'l. only
Note break in stagger
15@3¼"=4'-0¾"
1 Sp. L. 7½"×7½"×1"×9'-0½" Bent - Silicon
Grind to Pl. fillet of 8"×8"×¾" L.
MG7SAR F.S.
MG7S^R N.S.
Note Break in Stagger
Csk. in Main Mat'l. only
Working point at Crown of Rdy.
L28
L29
Csk. in Main Mat'l. only
Note break in stagger
1 Fill 18"×⅝"×4'-6⅝" adj. Carbon
1 Sp. Pl. 18"×⅝"×9'-0½" Bent - Silicon - M71S
1 Sp. Pl. 18"×⅜"×4'-1½" Bent - Silicon - M70S
Note: Pls. M71S & M70S & Fill adj. to be tack welded together along edges
1 Fill 6"×½"×2'-1⅞" adj. Carbon
Tack welded to Gdr.
1 Pl. 40"×⅜"×4'-3⅜" - LP145
Silicon
RT 52M
1 Cov. Pl. 18"×⅝"×39'-10⅛" - SILICON
1 Cov. Pl. 18"×⅜"×39'-10⅛" - SILICON
Note break in stagger
After Subfender Brackets 1 Fill 6"×½"×2'-1⅛" adj. Carbon are Riveted, Angles & Web Pl. Tack weld to Gdr. is to be Neatly Welded in Place
5' cut
Crown of Rdy.
4'-4½"
RT 54
RT 53
Detail "A" showing Working Points
Sect. A-A
Sect. B-B
Sect. C-C
Sect. D-D
Enlarged Sect. E-E
Enlarged detail of Slots
Enlarged detail of Shims-bvl
Sides of slots parallel to sus. stiffeners & accurately fin. dimensions sh.

2 Girders - G8S^E As shown
2 " - G8S^L Opp. Hand
4 Lateral Plates - LP145
6 Splice Angles - MG6S^R As shown
6 " - MG6S^L Opp. Hand
6 " - MG7S^R As shown
6 " - MG7S^L Opp. Hand
8 Splice Plates - MG8S
8 " - MG9S
8 " - M70S
8 " - M71S
6 Splice Angles - MG6SA^R As shown
6 " " - MG6SA^L Opp. Hand
6 " " - MG7SA^R As shown
6 " " - MG7SA^L Opp. Hand

Rivets: ⅞" ℄
Holes: 15/16" ℄ Unless noted
Holes subpunched 13/16" ℄ reamed to size unless noted.
Holes in material over ½" thick to be subdrilled 13/16" ℄ reamed to size except 1¼ tension pls. which may be drilled from the solid.
Holes marked (RT) are to be subpunched ⅞" ℄ reamed to size thru a metal template.
Burrs are to be removed from all holes.

Paint. One coat of Detroit Graphite Co's # 501

L.D.2
F.R. 2
Blk. 1
Pwd. 1
S.L. 1
O.I. 1/8

APPROVED 6-5-30
Waddell & Hardesty

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RI
MAIN SUSPENDED SPAN
STIFFENING GIRDERS
PANELS 28 & 29

McCLINTIC-MARSHALL CONS
PITTSBURGH, PA.
IN CHARGE Eicher
MADE BY A.T. DATE CHECKED BY
TRACED BY J.M. DATE REVISED
SCALE: INCH = 1 FOOT LAST ASSEMBLING
CONT. NO. 5002A SHEET NO.

A-2-291

Holes For Hitch

Note break in stagger

csk in Main Mat'l only

Working Point at Crown of Rdy.

L30

L31

Sect. A-A

Sect. B-B

Sect. C-C

Sect. D-D

Enlarged Sect. E-E

Enlarged detail of slots

Enlarged detail of Shims-bw

2 Girders G95E As shown
2 " G95F Opp. Hand
4 Lateral Plates LP155

Rivets 7/8" ϕ Unless Noted.
Holes 1" ϕ Unless noted
Holes Subpunched 1/4" and reamed to size Unless Noted
Holes in material over 5/8" thick to be subdrilled 1/4" and reamed to size except 1 3/4" tension ϕs which may be drilled from the solid
Holes marked (F) are to be subpunched 1/4" and reamed to size thru a metal Template
Burrs are to be removed from all holes
Paint: One coat of Detroit Graphite Co's #501

CITY OF TOLEDO, OHIO

BRIDGE over MAUMEE R

MAIN SUSPENDED SPAN
STIFFENING GIRDERS
PANELS 30 & 31

L.O. 2
Fill. 2
PWD 1
S.L. 1
O.L. 1
7

APPROVED 7/3-30
Waddell & Hardesty

McCLINTIC-MARSHALL CON
PITTSBURGH, PA.
IN CHARGE E.C.her
MADE BY A.T. DATE CHECKED BY HWC
TRACED BY J.M. DATE REVISED
SCALE: INCH = 1 FOOT. LAST ASSEMBLING
CONT. NO. 3002A SHEET NO

A-2-292

1 Girder G105
2 Lateral Plates LP16S
2 " " LP17S
4 Splice Plates M81S
4 " " M82S

Work in Conjunction with SH #19

Rivets: 7/8 ϕ
Holes: 15/16" ϕ Unless noted
Holes subpunched 13/16"ϕ & reamed to size unless noted.
Holes in material over 7/8" thick to be subdrilled 13/16 and reamed to size except 1 3/4 tension Pls. which may be drilled from the solid.
Holes marked (RT) are to be subpunched 13/16" and reamed to size thru a metal template.
Burrs are to be removed from all holes.

Paint: One coat of Detroit Graphite Co's #501

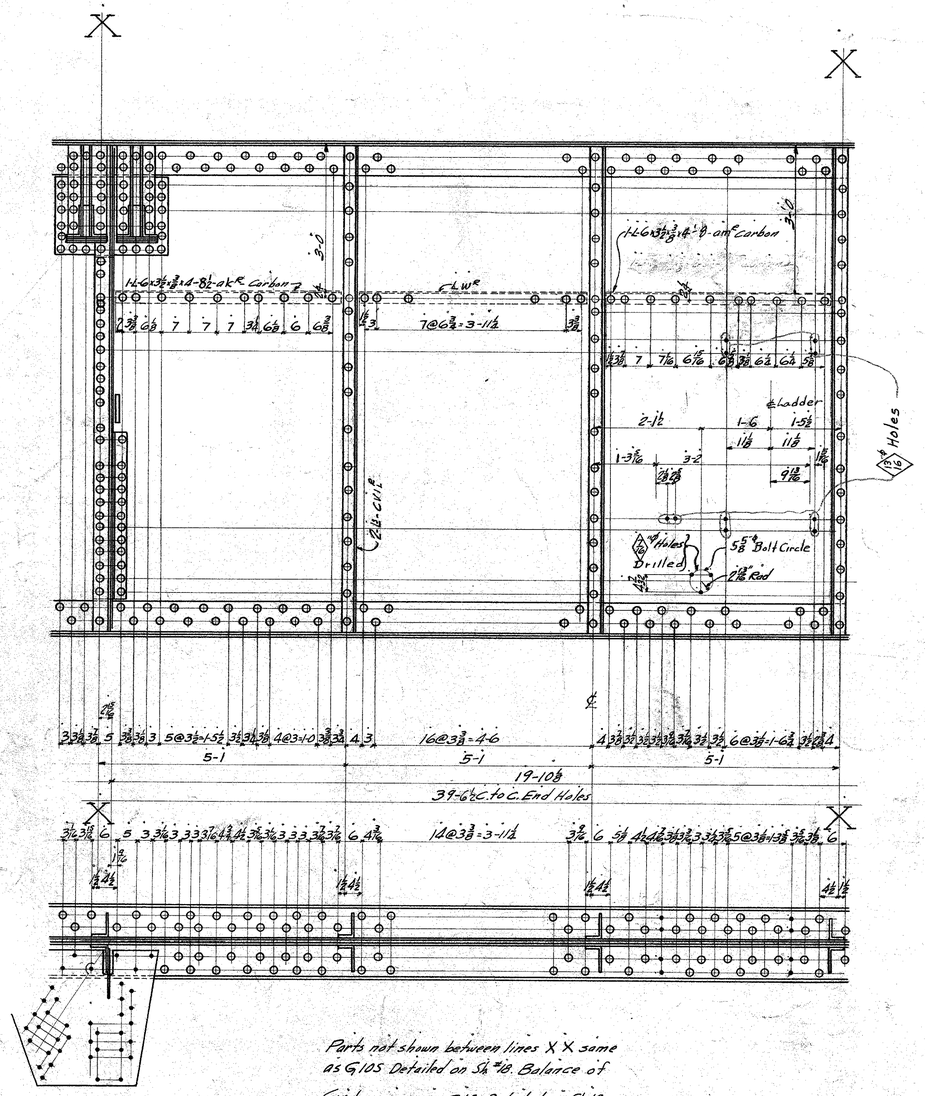
L.O. 2
F.H. 2
P.W.D. 1
S.I. 1
O.E. 1
7

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIV[ER]

Main Suspended Span
Stiffening Girder
Panels #32 to #32'

APPROVED 7/3-30
Waddell & Hardesty

McCLINTIC-MARSHALL CONST[RUCTION CO.]
PITTSBURGH, PA.
In charge Eicher
Made by A.T. Date — Checked by F.B.A.
Traced by J.M. Date — Revised
Scale: 1 inch = 1 foot — Last assembling mark
CONT. NO. 5002A SHEET NO. 1



Parts not shown between lines X X same as G10S Detailed on Sh. #18. Balance of Girder same as G10 Detailed on Sh. 18

1-GIRDER G10AS OPP HAND

L.O. 2
F.H. 2
PWD 1
S.I. 1
O.I. 1
7

FOR NOTES SEE SHEET #18

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

MAIN SUSPENDED SPAN
STIFFENING GIRDER
PANELS #32 TO #32'

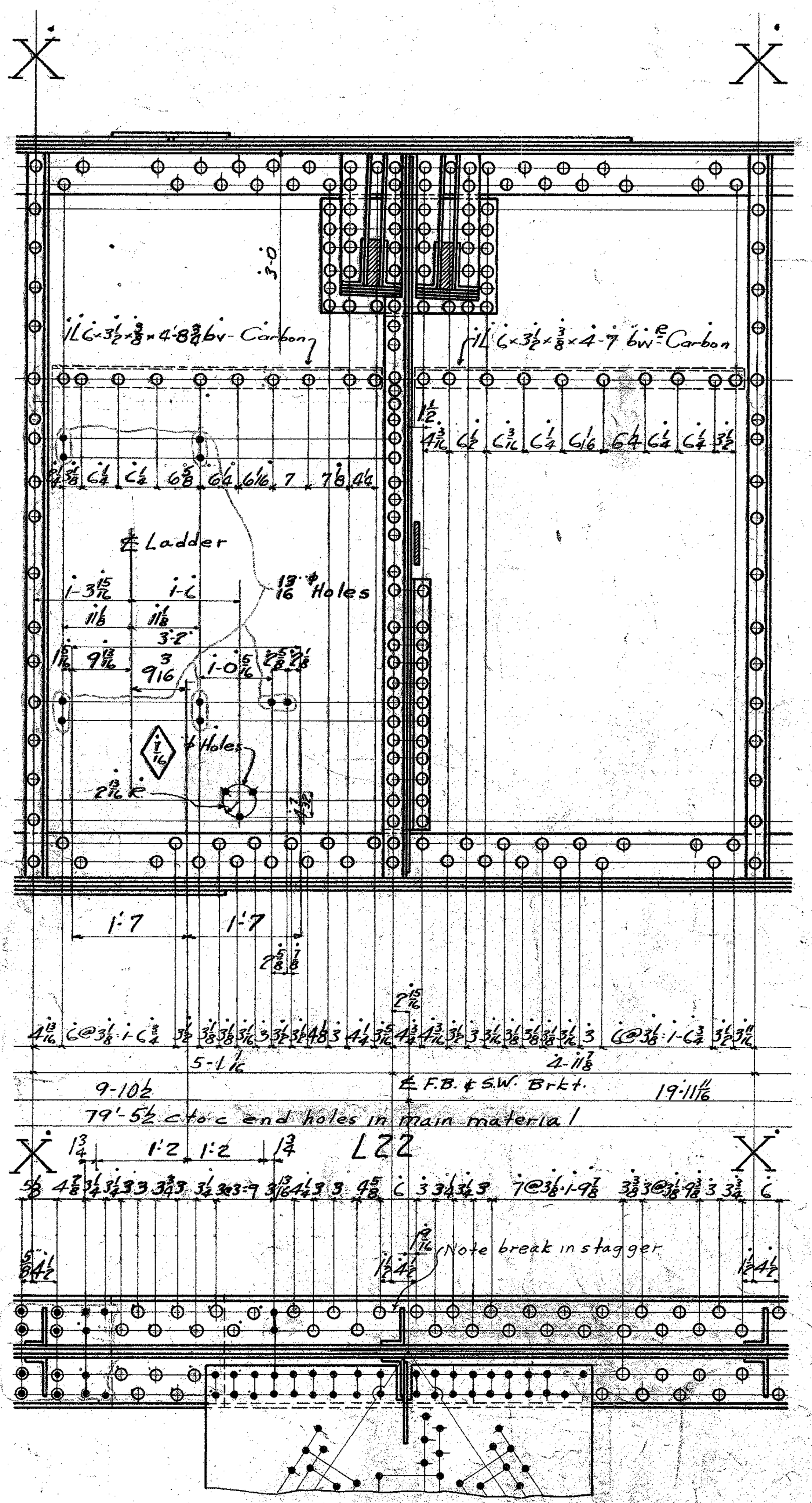
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE EICHER
MADE BY A.T. DATE CHECKED BY F.B.A. DATE 5 TO 30
TRACED BY E.Z. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK

CONT. NO. 5002A SHEET NO. 19

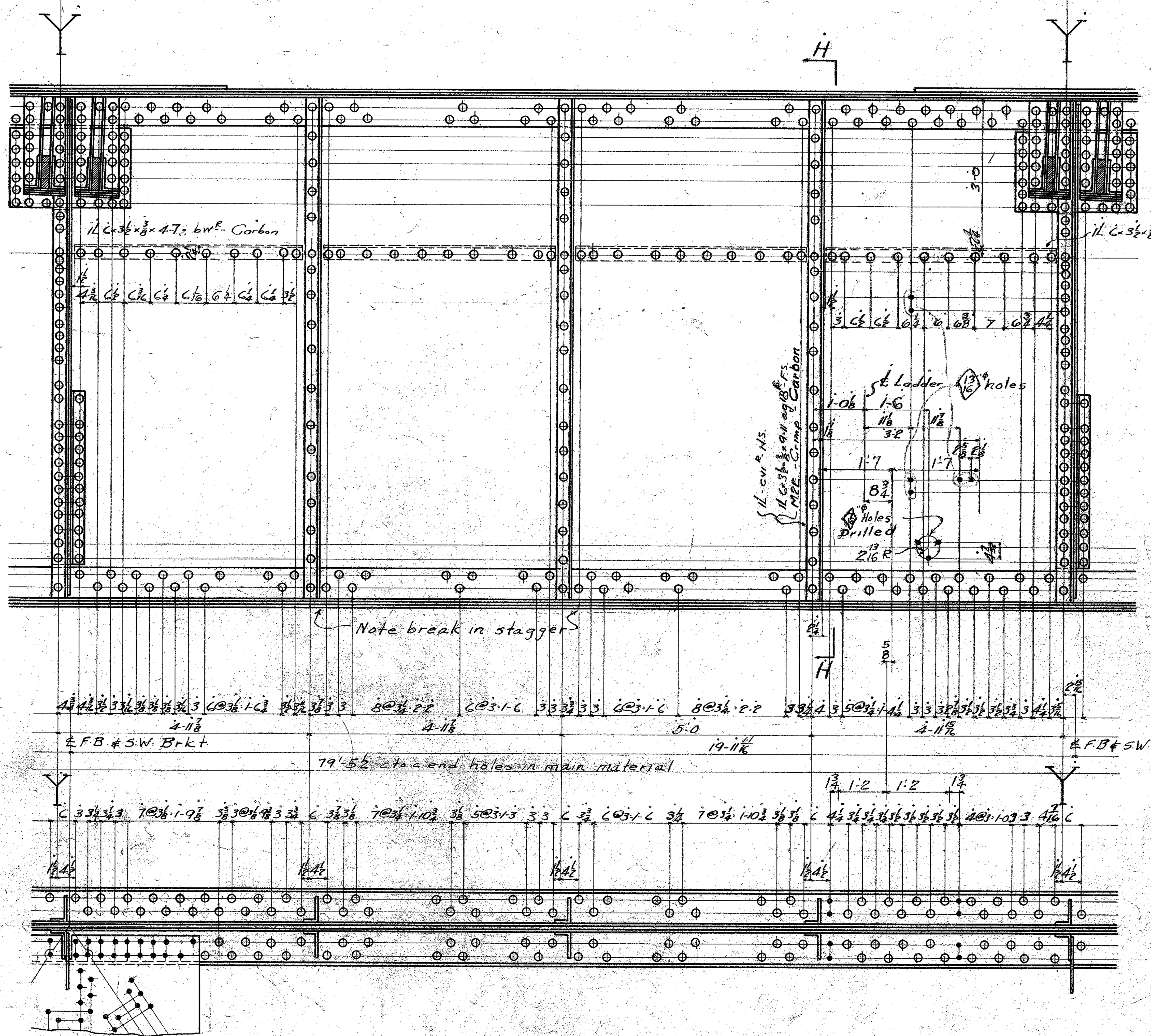
APPROVED 7/3 - 30
Waddell & Hardesty

A-2-294



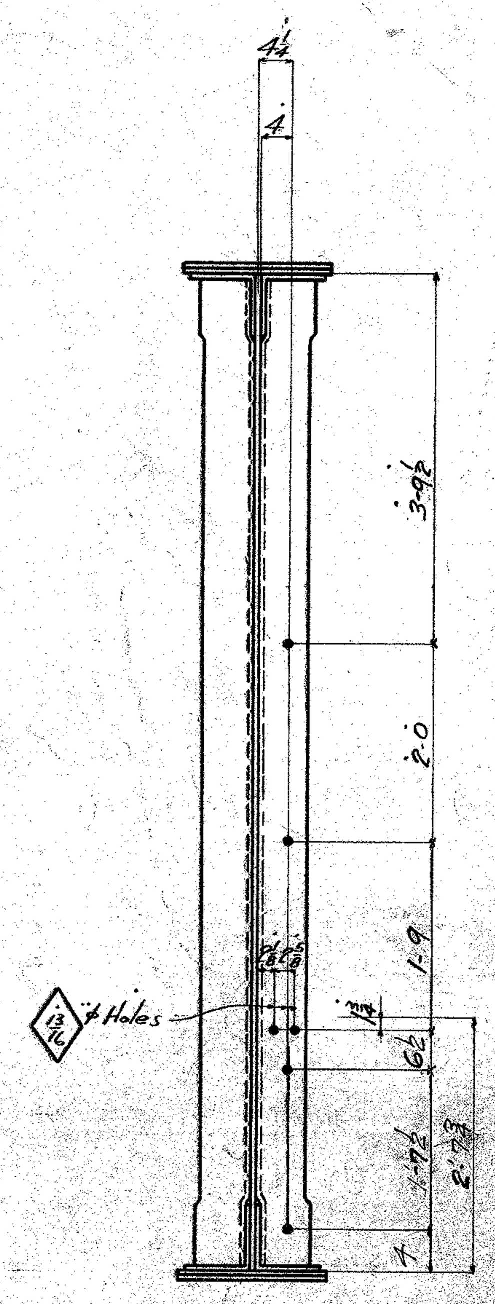
Parts not shown between lines X-X
same as G6S detailed on Sheets #13 & #14
Balance of Girder same as G6S
detailed on Sheets #13 & #14

1 GIRDER G6AS AS SHOWN



Parts not shown between lines Y-Y
same as G6S detailed on Sheets #13 & #14
Balance of Girder same as G6S
detailed on Sheets #13 & #14

1 GIRDER G6BS OPP. HAND



SECTION H-H

L.G. 2
F.H. 2
PWD 1
S.I. 1
O.I. 1
7

Rivets: ⅞" ϕ Unless noted
Holes: 15/16" ϕ Unless noted
Holes subpunched 13/16" ϕ & reamed to size unless noted
Holes in material over ⅞ thick to be subdrilled 13/16" ϕ and reamed to size
except 1⅛ tension pls which may be drilled from the solid.
Holes marked (R) are to be subpunched 13/16" ϕ & reamed to size
thru a metal template
Burrs are to be removed from all holes
Paint: One coat of Detroit Graphite Co's #501

USE THIS SHEET IN CONJUNCTION WITH SHEETS #13 & #14

CITY OF TOLEDO, OHIO

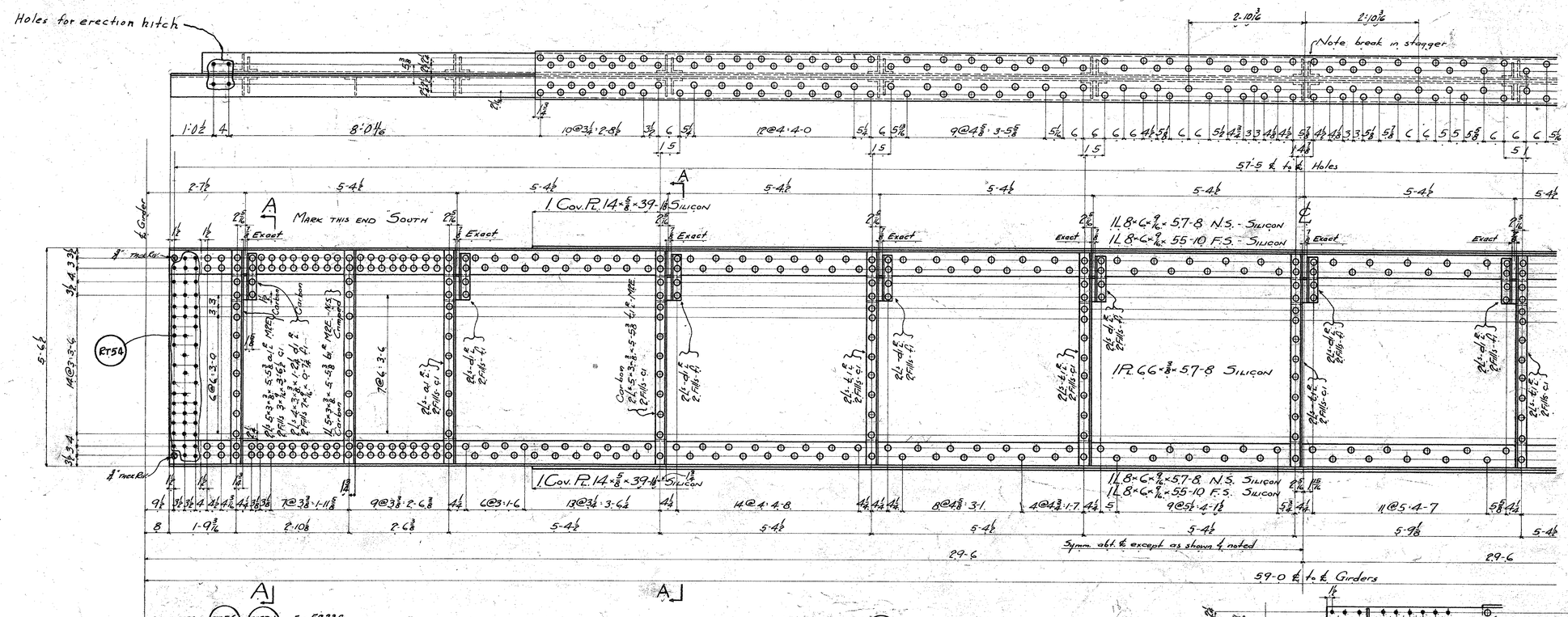
BRIDGE OVER MAUMEE RIVER

MAIN SUSPENDED SPAN
STIFFENING GIRDERS
PANELS 22-25

APPROVED 7/3-30
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Eicher
MADE BY A.T. DATE — CHECKED BY H.W.C. DATE 5/15/30
TRACED BY J.M. DATE — REVISED — DATE
SCALE: — INCH = 1 FOOT — LAST ASSEMBLING MARK C4
CONT. NO. 5002A — SHEET NO. 20

A-2-295



3	Floor beams	FB25 E	As shown
3	"	FB25 L	Opp. hand
3	"	FB45 E	As shown
3	"	FB45 L	Opp. hand
3	"	FB65 E	As shown
3	"	FB65 L	Opp. hand
3	"	FB85 E	As shown
3	"	FB85 L	Opp. hand
1	"	FB115 E	As shown
1	"	FB115 L	Opp. hand
1	"	FB135 E	As shown
1	"	FB135 L	Opp. hand
1	"	FB185 E	As shown
1	"	FB185 L	Opp. hand
1	"	FB155	As shown
1	"	FB235	Opp. hand

Rivets: ⅞" ϕ
Holes: 15/16" ϕ
Holes punched 13/16" ϕ reamed to ⅞" ϕ after assembly.
Holes marked (RT) are subpunched 13/16" ϕ reamed to 15/16" ϕ thru a metal template.
Burrs are to be removed from all holes.
Paint: One coat of Detroit Graphite Co's #501

Approved 5-7-30
Waddell & Hardesty

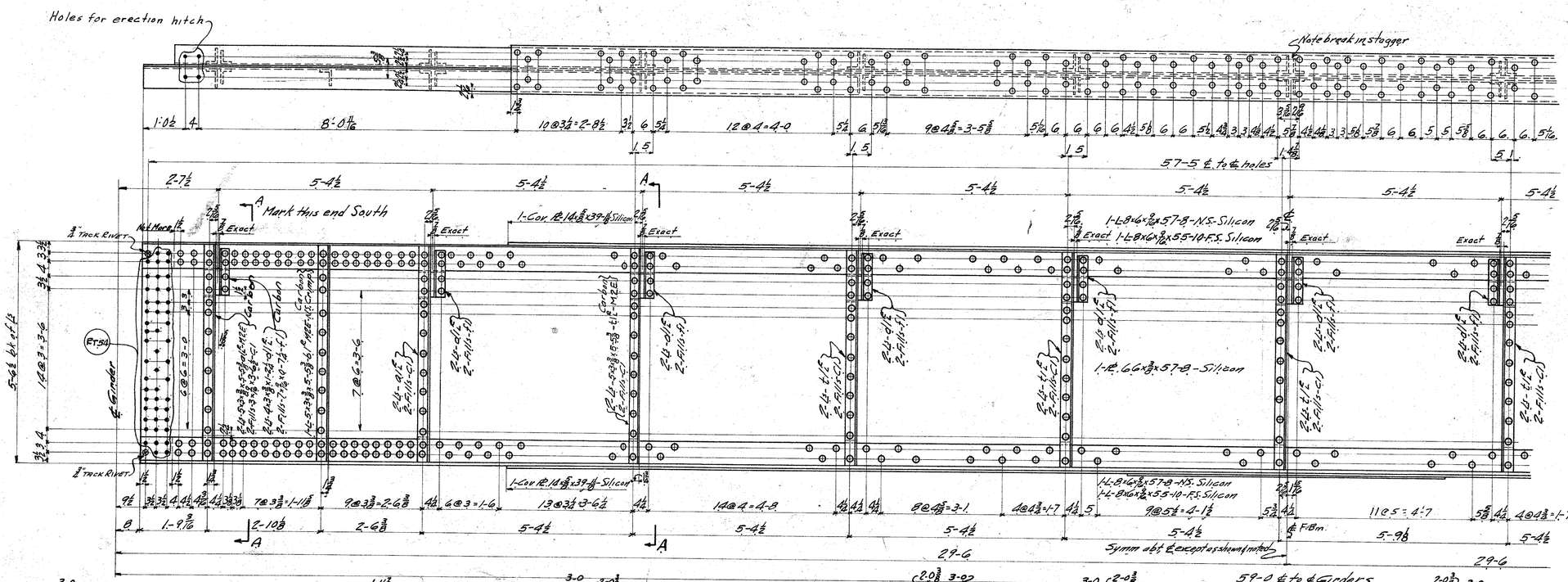
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
Suspended Span
Floorbeams
Panels 1-3-5-7-9-11-14-16-18-20-22-24-26-28-30-32-32'

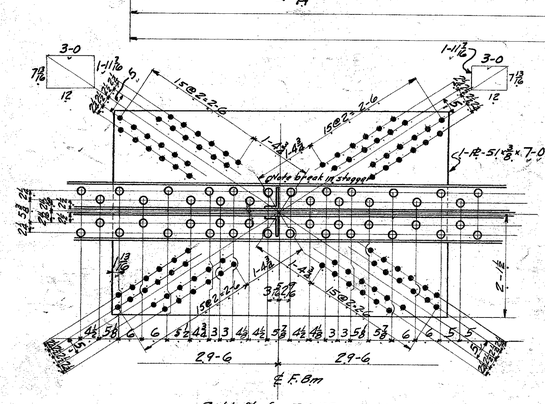
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

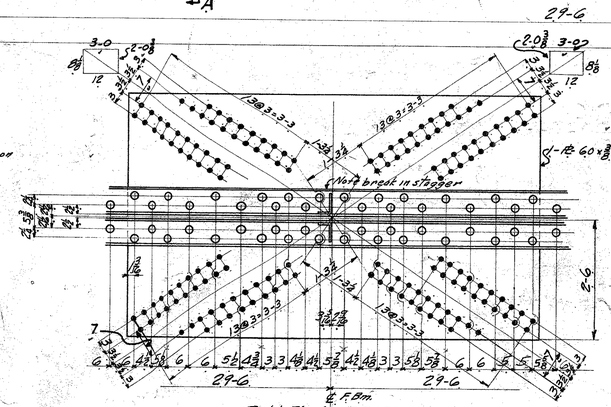
In charge W.C.S.W.			
Made by C.W.K.	Date	Checked by A.C.L.	Date 4/4/30
Traced by J.M.	Date	Revised	Date
Scale:	Inch = 1 foot	Last assembling mark	I

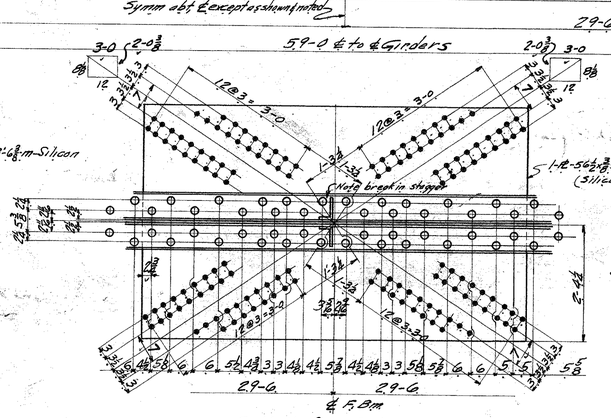
Cont. No. 5002B Sheet No. 1

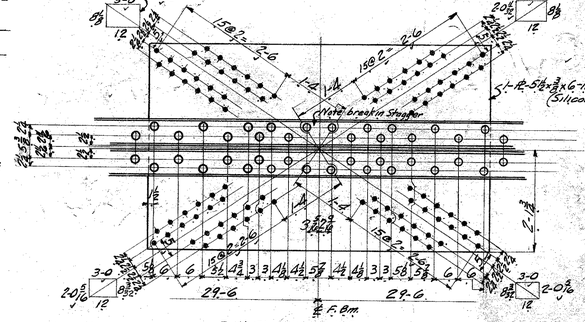
A-2-296

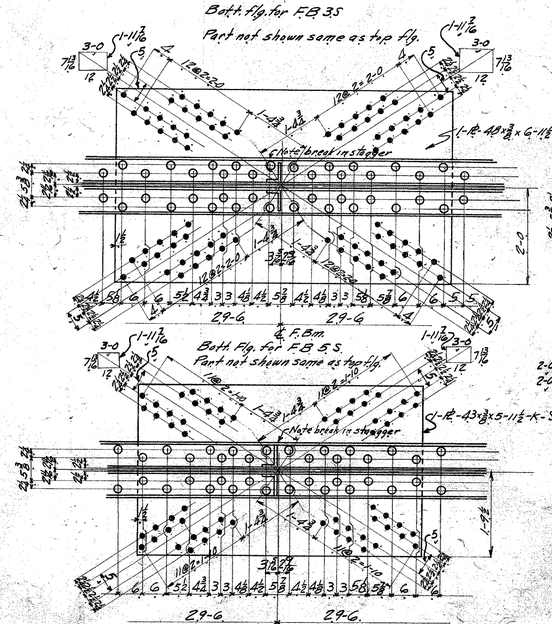


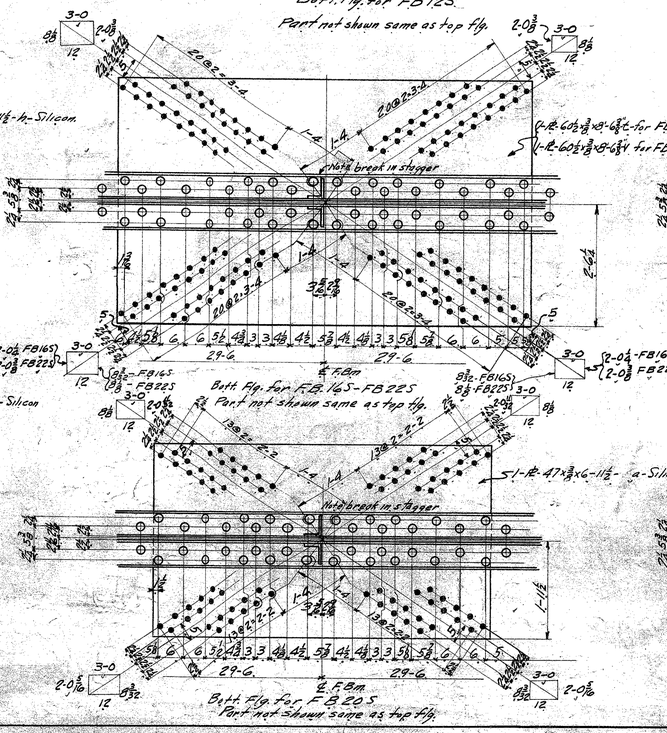


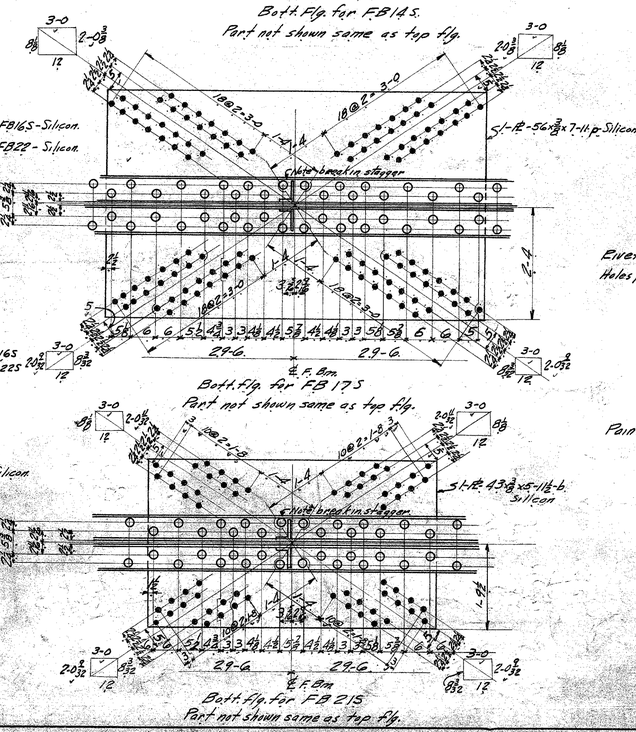












2.	Floorbeams	FB 3S R as shown	1.	Floorbeam	FB 16S R as shown
2.	"	FB 3S L opp hand	1.	"	FB 16S L opp hand
2.	"	FB 5S R as shown	1.	"	FB 17S R as shown
2.	"	FB 5S L opp hand	1.	"	FB 17S L opp hand
1.	"	FB 7S R as shown	1.	"	FB 19S R as shown
1.	"	FB 7S L opp hand	1.	"	FB 19S L opp hand
1.	"	FB 12S R as shown	1.	"	FB 20S R as shown
1.	"	FB 12S L opp hand	1.	"	FB 20S L opp hand
2.	"	FB 14S R as shown	1.	"	FB 21S R as shown
2.	"	FB 14S L opp hand	1.	"	FB 21S L opp hand
			1.	"	FB 22S R as shown
			1.	"	FB 22S L opp hand

Rivet 7/8" ϕ
Holes 15/16" ϕ

Holes punched 13/16" ϕ reamed to 15/16" ϕ after assembly.

Holes marked (ET) are sub punched 13/16" ϕ reamed to 15/16" ϕ thru a metal templet. Burrs are to be removed from all holes.

Paint One coat of Detroit Graphite Co's. #501

Jan 1 Rec.
Sept 4
Rec'd 1
Ret'd 1
Ret'd 1
8

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

SUSPENDED SPAN.
FLOORBEAMS.

PANELS-2-4-6-8-10-15-17-19-21-23-25-27-29-31

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE W.M.S. DATE
MADE BY C.W.K. DATE
TRACED BY E.C. DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK

CHECKED BY A.E.S. DATE 4/1/30
REVISED DATE

CONT. NO. 5002B SHEET NO. 2

APPROVED 4/30/1930
Waddell & Hardesty

A-2-297

Note break in stagger.

Chamfer Cut Edges Throughout

2-Fills-8×3/16×1'-10½"-g Carbon

℄ Stringer.

℄ Gdr. Z

2 Fills-g

58-10½" Lk. of Ls

Mill

Mark F.S. of Web "Down Grade"

1-Cov Pl. 14×⅝×39'-6½" (Silicon)

2-Ls-8×6×7/16×58'-10½"-M2E. (Silicon)

1-Pl.-66"×⅜×58'-10½"-M2E.-(Silicon)

Crown of Roadway

Section AA

Symm. about ℄ except as shown & noted

59'-0" E. to E. Girder

Spacing same as top fly.

Note break in stagger.

Subpunch 13/16" and ream in Field to 15/16"

1-Pl.-37"×3/8"×8'-3½"-p (Silicon)

Chamfer Cut Edges Throughout

Cut

2 FLOORBEAMS FB1S
AT PANEL Lo

Rivets: 7/8"ø
Holes: 15/16"ø
Holes punched 13/16"ø & reamed to 15/16" after assembly.
Holes marked (PT) are subpunched 13/16"ø & reamed to 15/16"ø thru a metal templet.
Burrs are to be removed from all holes.

Paint One coat of Detroit Graphite Co's #501

Top 1 Prime
Chg 4
Fwb 1
Lo 1
Bot 1

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

SUSPENDED SPAN B&C
FLOORBEAM FB1S
PANEL Lo

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE W.M.S. DATE
MADE BY C.W.K. DATE CHECKED BY A.B.J. DATE 4/10/30
TRACED BY E.T.L. DATE REVISED DATE
SCALE INCH = 1 FOOT LAST ASSEMBLING MARK S

CONT. NO. 5002B SHEET NO. 3

APPROVED 4-30-30
Waddell & Hardesty

A-2-298

View B-B

Section A-A

Section C-C

Section D-D

Section E-E As Shown
Section F-F Opp Hand

2- FLOOR BEAMS FB95

Beveled Bar $5\frac{3}{4}\times\{\frac{3}{8}\ \frac{7}{16}\ \frac{15}{32}\}\times 4'\text{-}0\frac{3}{8}$-d {Plane 2 sides / 1 edge} Carbon
Detail Bar-d

Beveled Bar $5\frac{3}{4}\times\{\frac{3}{8}\ \frac{7}{16}\ \frac{15}{32}\}\times 4'\text{-}0\frac{3}{8}$-f {Plane 2 sides / 1 edge} Carbon
Detail of Bar-f

Rivets $\frac{7}{8}\phi$
Holes $\frac{15}{16}$ E. ϕ Unless noted.
Holes punched $\frac{13}{16}\phi$ reamed to $\frac{15}{16}\phi$ after assembly
Holes marked RT are subpunched $\frac{13}{16}$" and reamed to $\frac{15}{16}\phi$ thru a metal templet
Burrs are to be removed from all holes

Paint One coat of Detroit Graphite Co's #501

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

FLOOR BEAMS PANEL #12

SIDE SUSPENDED SPAN

Waddell & Hardesty

APPROVED 4/30-1930

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Wm Sm
MADE BY CWK DATE DECHECKED BY AKS DATE 4/4/30
TRACED BY CEP DATE 3/31 REVISED DATE
SCALE: INCH = 1 FOOT 30 LAST ASSEMBLING MARK M
CONT. NO. 5002-B SHEET NO. 4

A-2-299

1-Bar-C- For detail see below

34@8·22·8.

1-Bar-d For detail see below

VIEW B-B

1-L 7"x6"x21/32"x4'-5 3/8" Carbon Bent

1 1/16" ϕ Holes

1 Fill 7/8"x 5/8"-3-4 3/8" bd Carbon

Note break in stagger

1 Fill-64

1-L-a'

SECTION A-A

57-5 ℄ to ℄ Holes

1 Cov. PL 14"x 5/8"-39-1/8 Silicon

Symm. abt. ℄ except as shown ℄ noted

Mark Far Side of Web "DOWN GRADE"

1 PL 10"x 1/2"x 54-0

1 L 3 1/2"x 3 1/2"x 5/16"x 54-3 abt-Bent

1 L 6"x 3 1/2"x 7/16"x 45'-11

Carbon

1 L 8"x 6"x 7/16"x 46'-2 abt-Bent (Cut ℄ Chip) Carbon

1 PL 66"x 3/8"x 57'-8 Silicon

1 L 8"x 6"x 7/16"x 57'-8 N.S.

Silicon Exact

1 L 8"x 6"x 7/16"x 55'-10 F.S.

1 L 8"x 6"x 7/16"x 57'-8 N.S.

1 L 8"x 6"x 7/16"x 55'-10 F.S.

Silicon

Crown of Roadway

℄ Girder

℄ Bearing

Continuous bead weld

3 1/2"x3"x5/16" ∠

3 1/2"x3"x3/8" ∠

SEC. C-C

SEC. D-D

1 Cov. PL 14"x 5/8"x 39-1/8 Silicon

Note break in stagger

BEVELED BAR 5/8"x{3 1/2" / 4 1/2"}x 4'-0 {Plane 2 sides / ℄ 1 edge} Carbon

Detail of Bar-C

BEVELED BAR 5/8"x{3 1/2" / 4 1/2"}x 4'-0 {Plane 2 sides / ℄ 1 edge} Carbon

Detail of Bar-d

2 FLOOR BEAMS-FB105

Rivets: 7/8" ϕ

Holes: 15/16" ϕ Unless noted

Holes punched 13/16" ϕ reamed to 15/16" after assembly

Holes marked (RT) are subpunched 13/16" ϕ reamed to 15/16" thru a metal templet

Burrs are to be removed from all holes

Paint:- One coat of Detroit Graphite Co's #501

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

SUSPENDED SPAN

FLOORBEAMS - PANEL #13

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE W.H.Sou

MADE BY Chk. DATE CHECKED BY EEJ DATE 4/30

TRACED BY J.M. DATE REVISED DATE

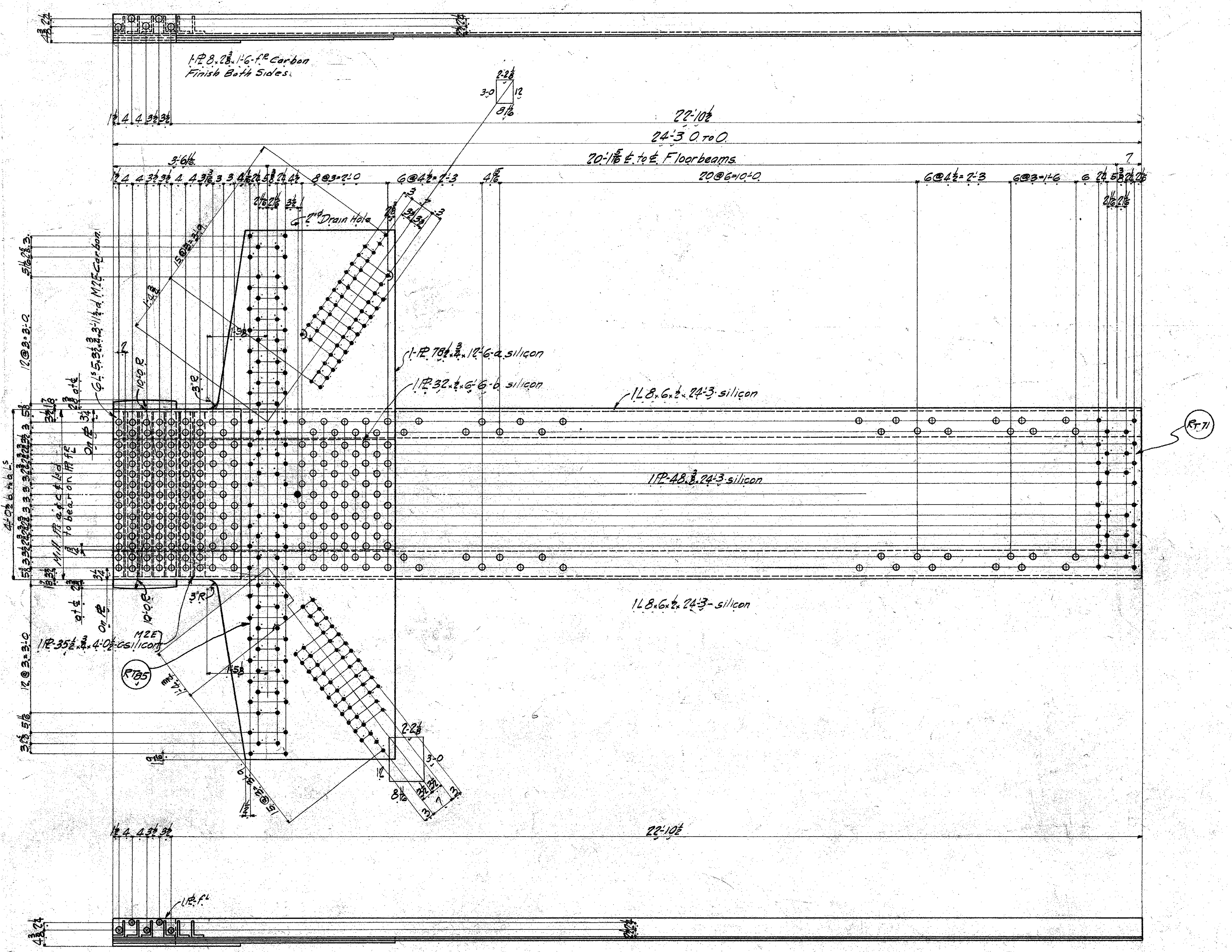
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK 9

CONT. NO. 5002B SHEET NO. 5

APPROVED 4/30 1930

Waddell & Hardesty

A-2-300



2-Longitudinal Struts LS15.

Rivets 7/8"φ
Holes 15/16"φ Unless Noted
Holes punched 13/16"φ and reamed to 15/16"φ after assembling
Holes marked (RT) are subpunched 13/16"φ & reamed to 15/16"φ thru a metal templet.
Burrs are to be removed from all open holes.

Paint:- One coat of Detroit Graphite Co's #501.

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

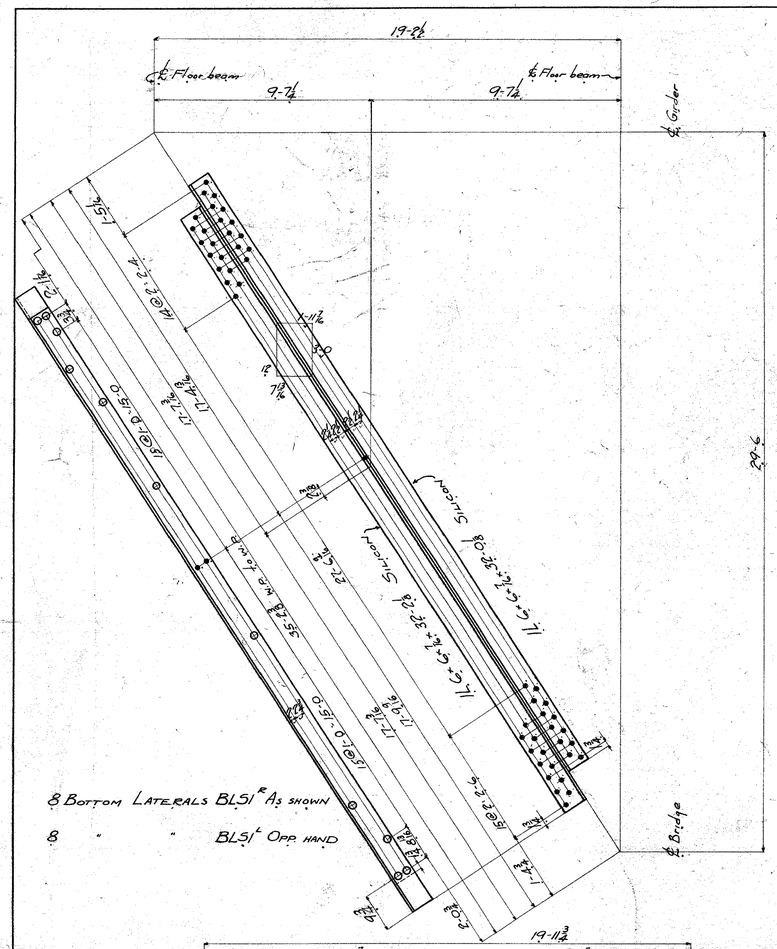
Longitudinal Strut

Suspended Span - Panel 13

Approved 4/30-1930
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
In charge Wilson
Made by E Date Checked by AES Date 4/16/30
Traced by do Date Revised Date
Scale: Inch = 1 Foot Last Assembling Mark f
CONT. NO. 5002B SHEET NO. 6

A-2-301

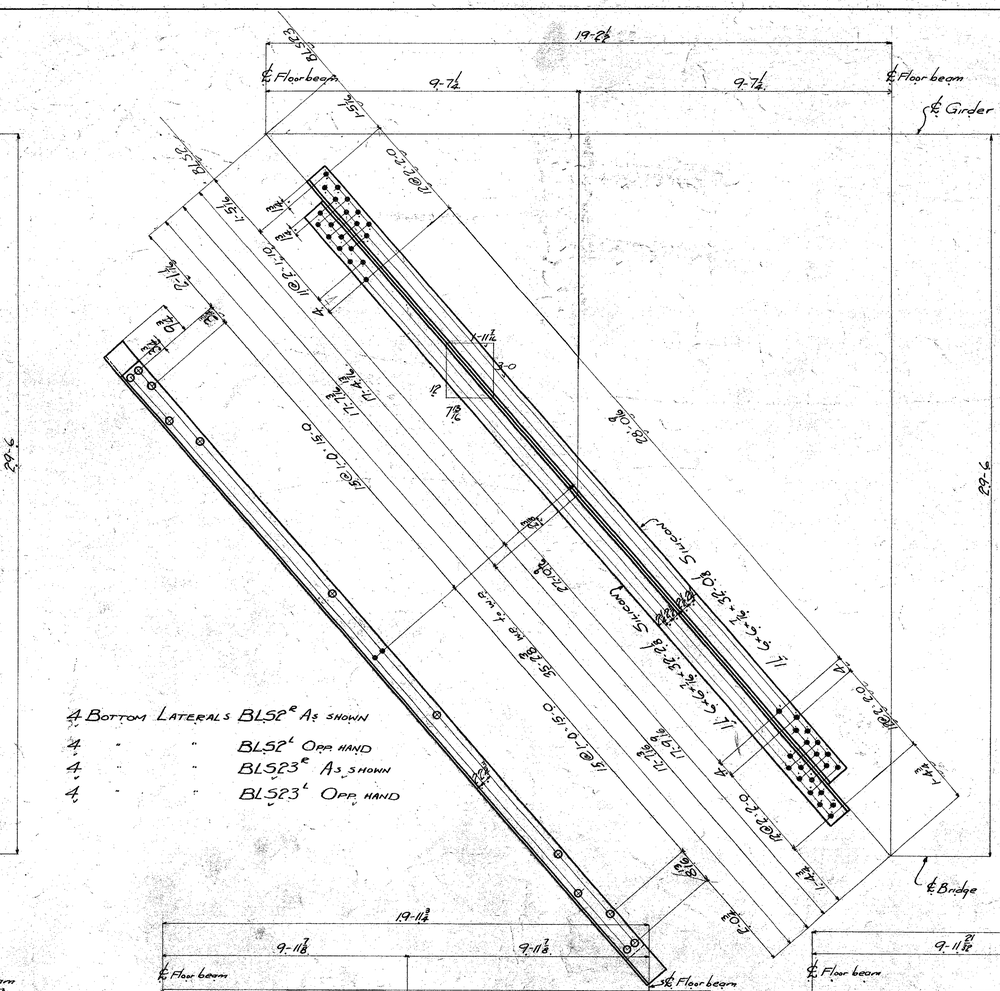


8 Bottom Laterals BL51R As shown

8 " " BL51L Opp. hand

4 Bottom Laterals - BL54R As shown

4 " " BL54L Opp. hand



4 Bottom Laterals BL52R As shown

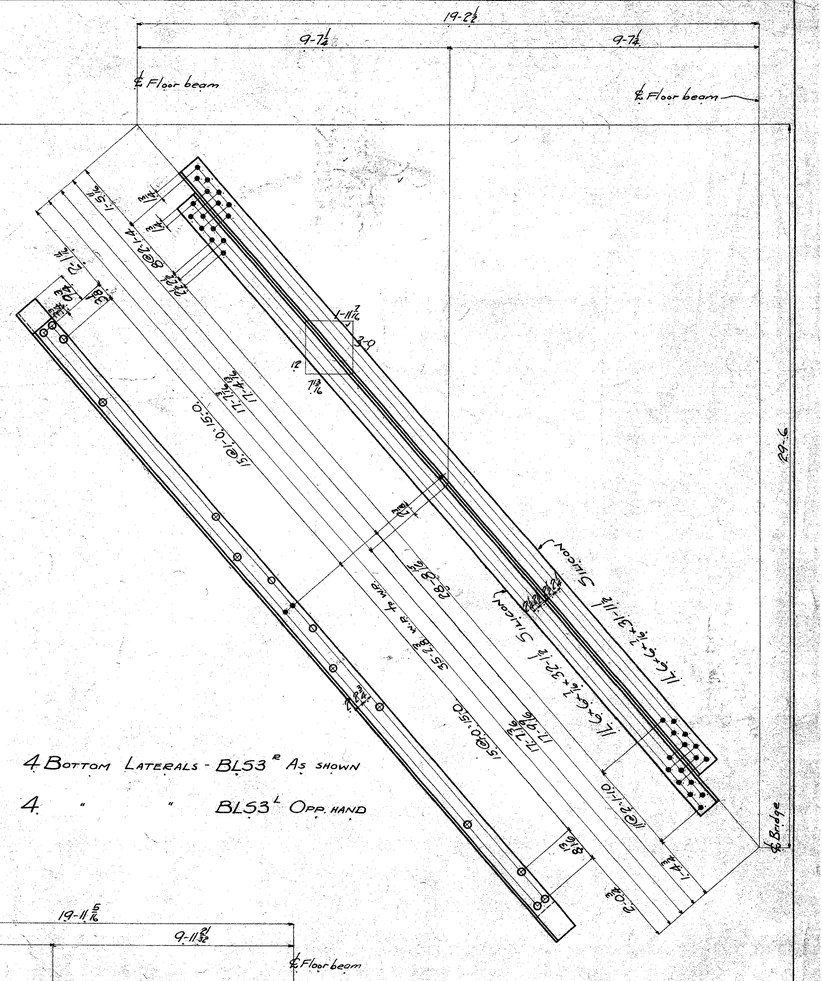
4 " " BL52L Opp. hand

4 " " BL523R As shown

4 " " BL523L Opp. hand

4 Bottom Laterals BL55R As shown

4 " " BL55L Opp. hand



4 Bottom Laterals - BL53R As shown

4 " " BL53L Opp. hand

? Bottom Laterals BL56R As shown

? " " BL56L Opp. hand

Rivets: ⅞"ϕ

Holes: 15/16"ϕ

Holes punched 13/16"ϕ reamed to 15/16"ϕ after assembly.

Burrs are to be removed from all holes.

Paint: One coat of Detroit Graphite Co's #501

Shop 4
Fwd 1
Erd 1
Paint 1
7

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

Bottom Laterals Suspended Span

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

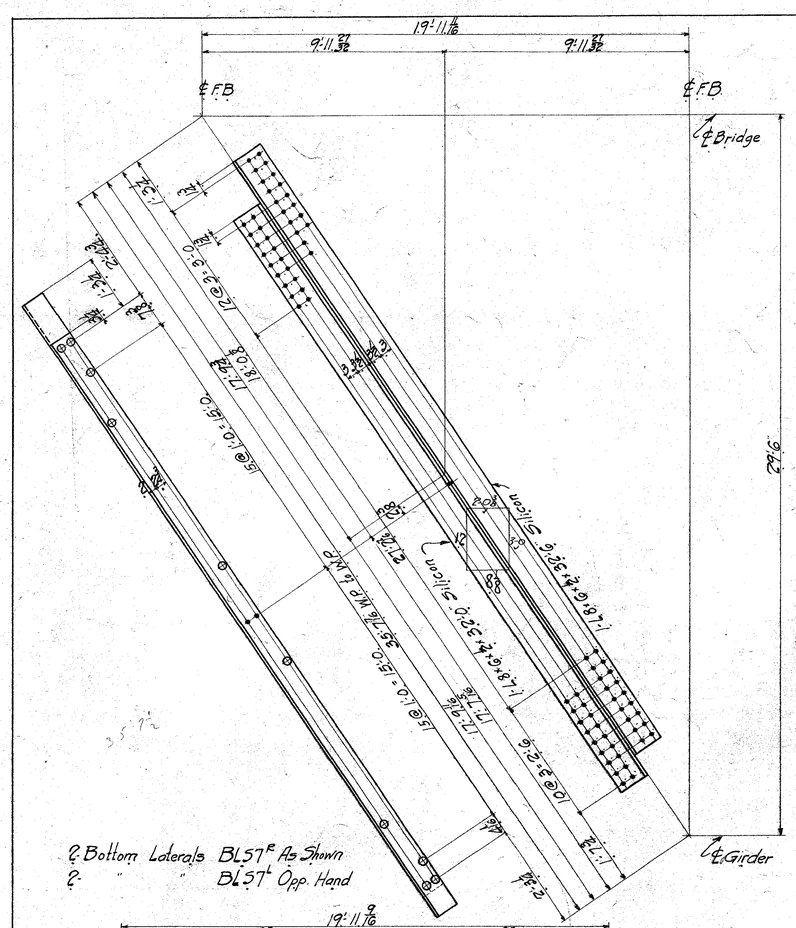
IN CHARGE W.M. Wilson
MADE BY J.C.H. DATE CHECKED BY A.L.J. DATE 4/15/30
TRACED BY J.M. DATE REVISED DATE
SCALE: 1 INCH = 1 FOOT LAST ASSEMBLING MARK

CONT. NO. 5002C SHEET NO. 1

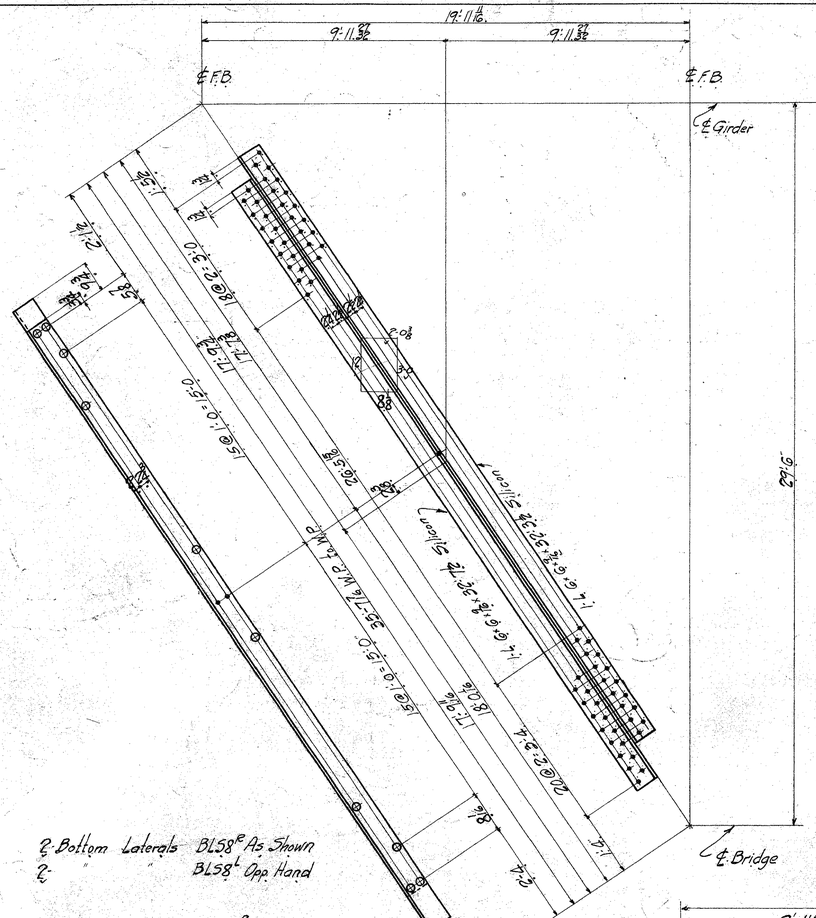
APPROVED 5-15-30

Waddell & Hardesty

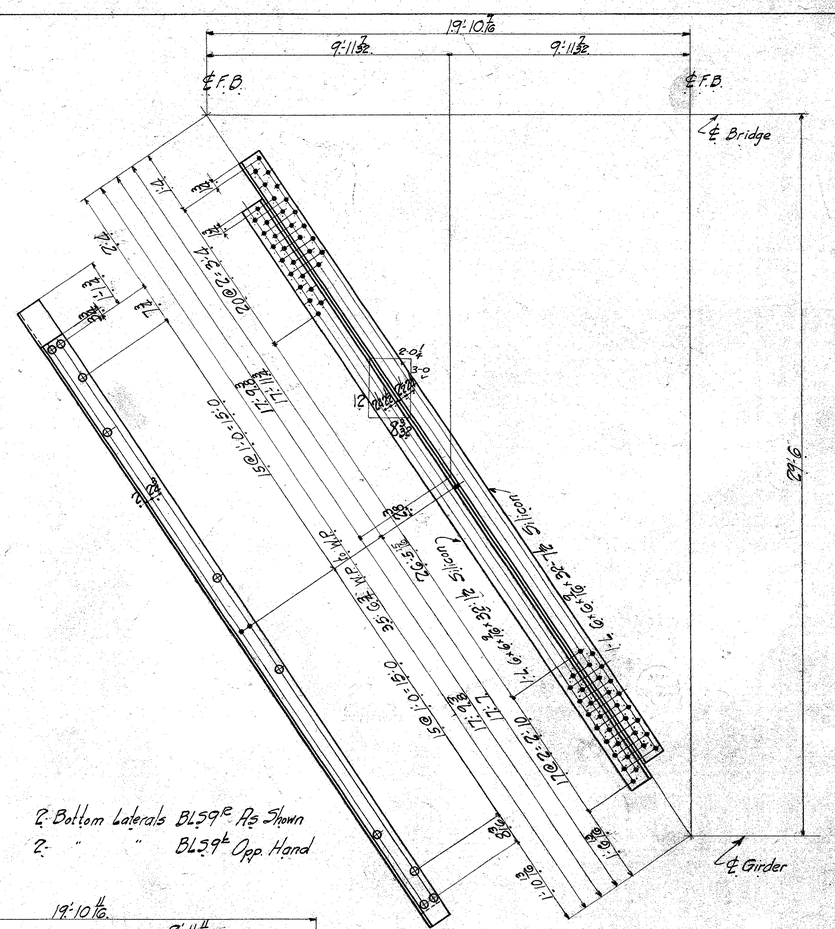
A-2-302



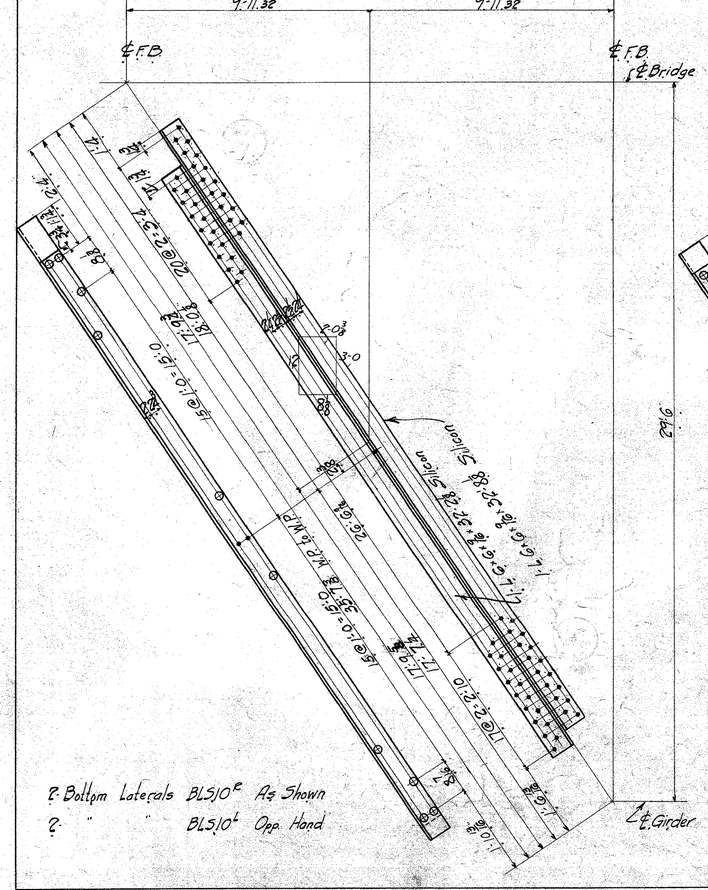
2 Bottom Laterals BL57R As Shown
2 " " BL57L Opp. Hand



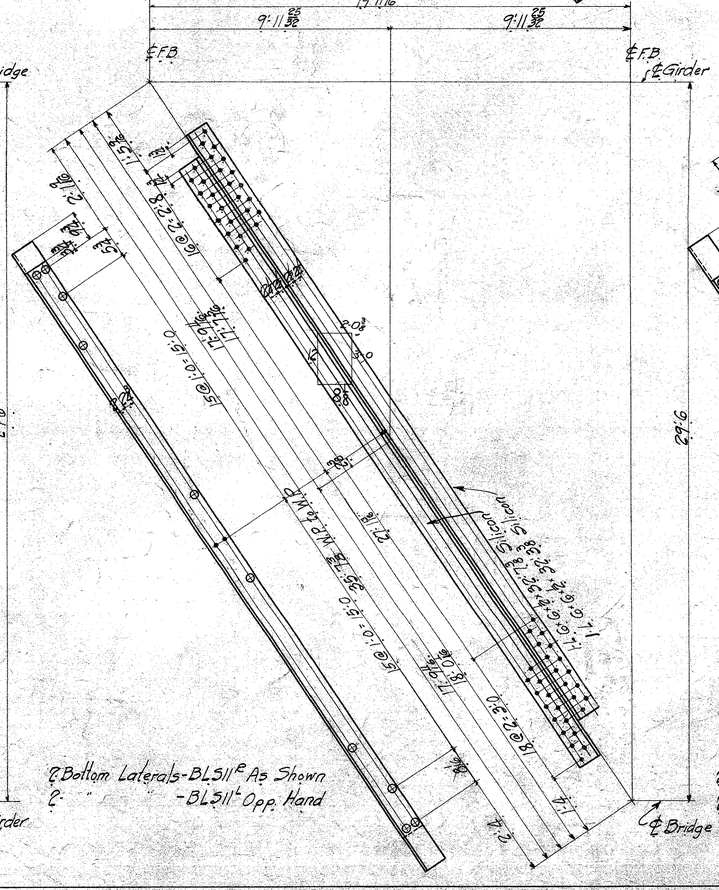
2 Bottom Laterals BL58R As Shown
2 " " BL58L Opp. Hand



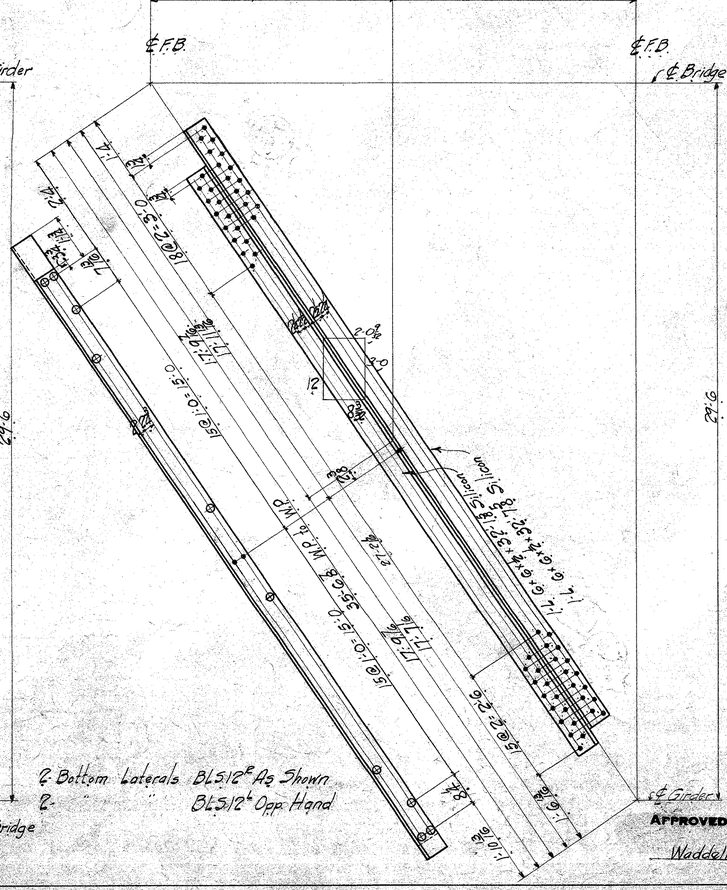
2 Bottom Laterals BL59R As Shown
2 " " BL59L Opp. Hand



2 Bottom Laterals BL510R As Shown
2 " " BL510L Opp. Hand



2 Bottom Laterals-BL511R As Shown
2 " " -BL511L Opp. Hand



2 Bottom Laterals BL512R As Shown
2 " " BL512L Opp. Hand

Rivets 7/8" ø
Holes 15/16" ø

Holes punched 13/16" ø & reamed to 15/16" ø after assembly

Burrs are to be removed from all holes.

Paint: One coat of Detroit Graphite Co's #501

Shop 4
PW 7 1
S 0 1
B 0 1
7

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER

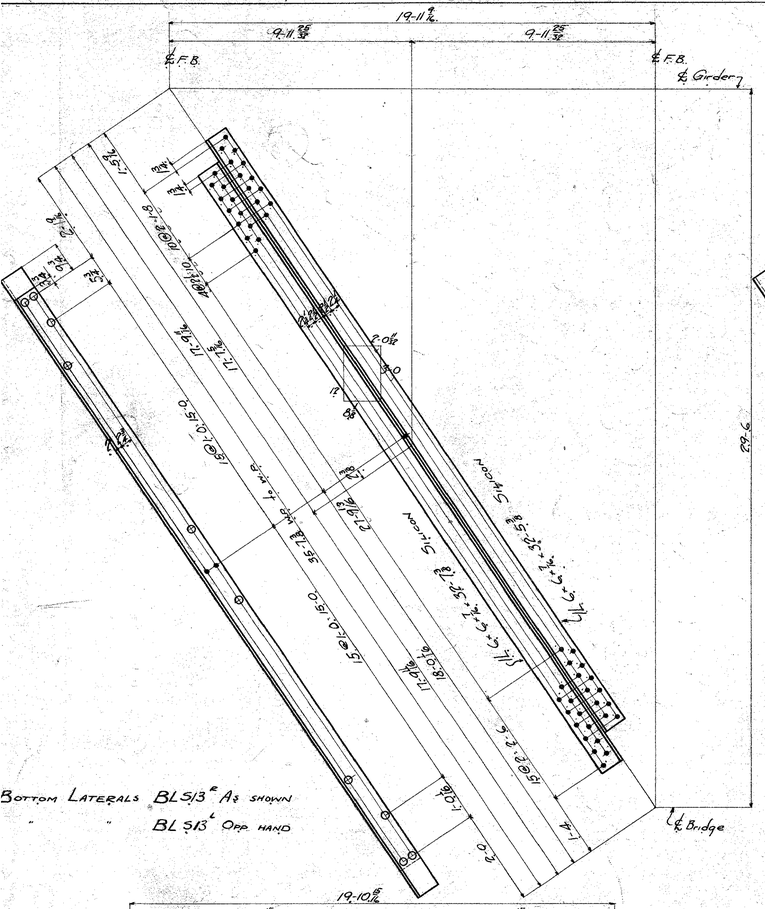
BOTTOM LATERALS
SUSPENDED SPAN

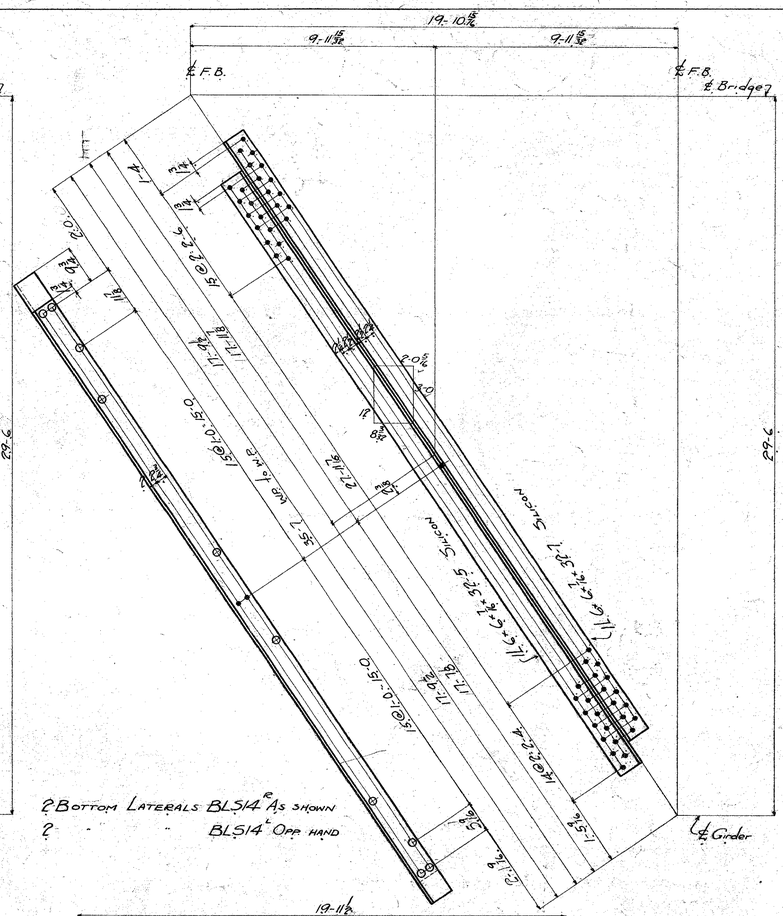
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

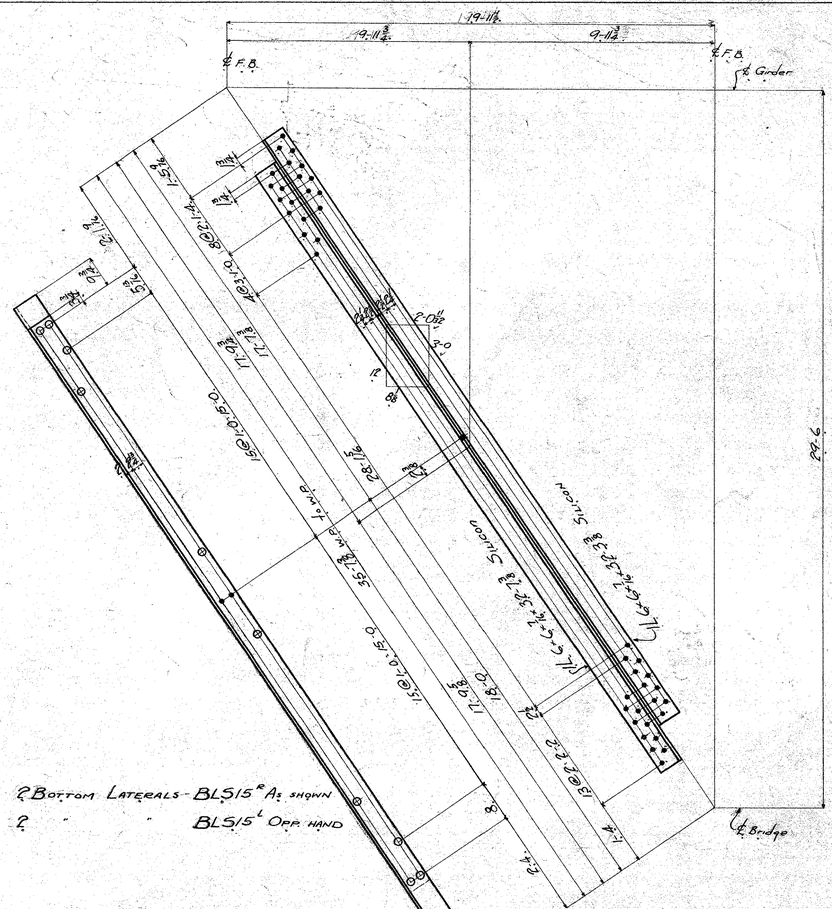
IN CHARGE Wm Sen
MADE BY C.H. DATE CHECKED BY ARd DATE 4/11/30
TRACED BY C.E.P. DATE 3/30 REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5002-C SHEET NO. 2

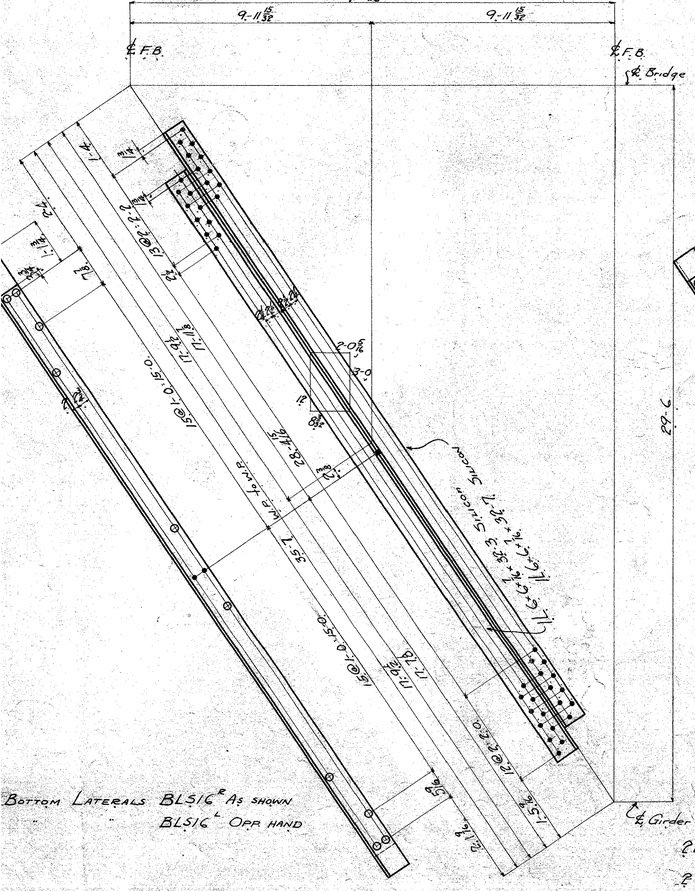
APPROVED 5/15-30
Waddell & Hardesty

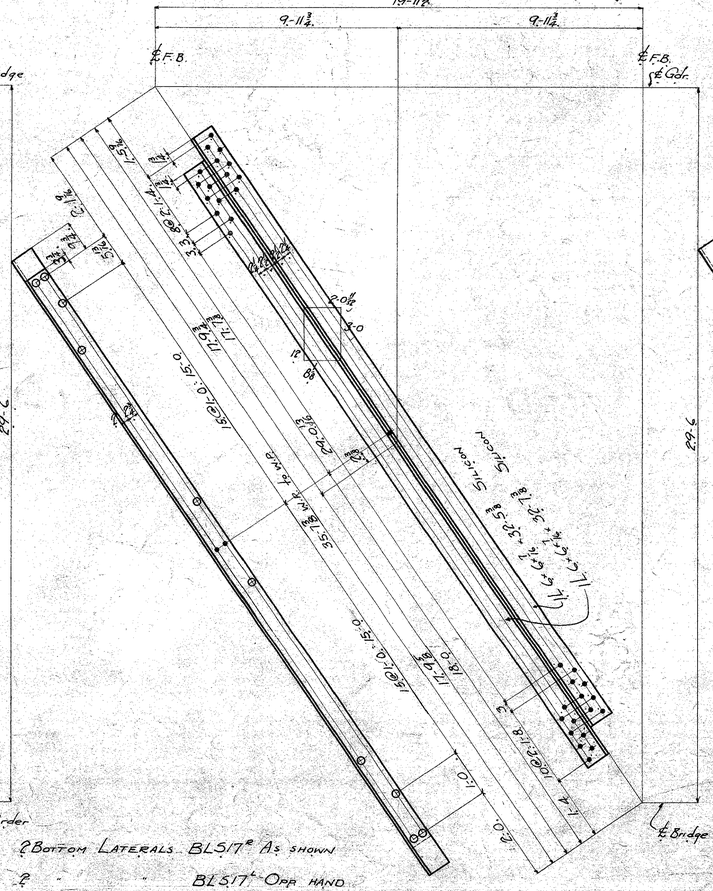
A-2-303

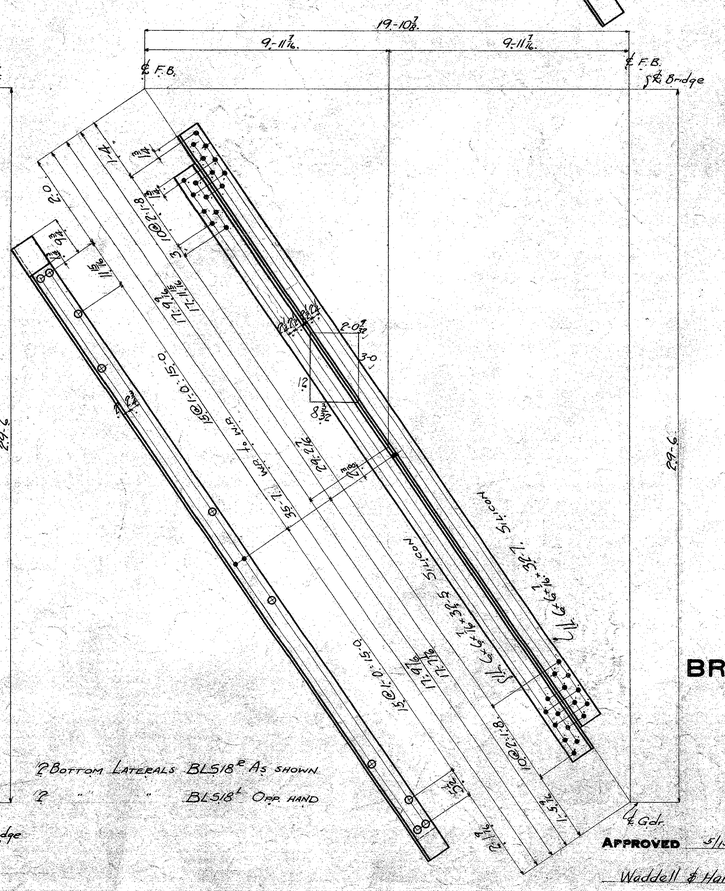












Rivets: 7/8" ϕ
Holes: 9/16" ϕ
Holes punched 13/16" ϕ reamed to 5/8" ϕ after assembly.

Burrs are to be removed from all holes
Paint. One coat of Detroit Graphite Co's. #501

Shts 4
PW & 1
A.S. 1
O. & 1/7

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER

Bottom Laterals
Suspended Span

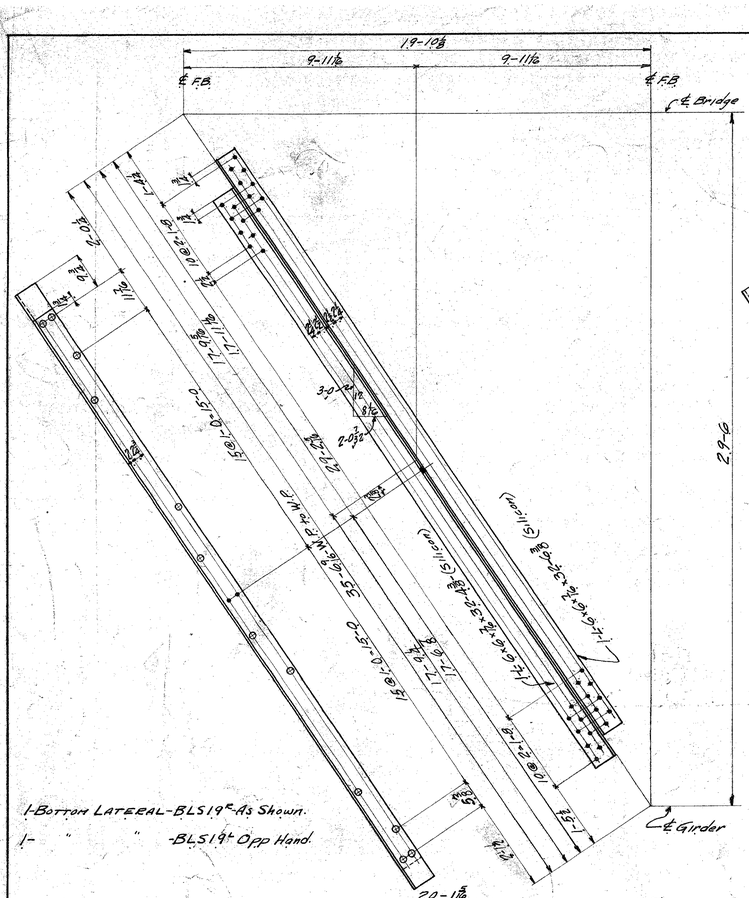
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE	W. Stein				
MADE BY	J.C.H.	DATE	CHECKED BY	A.E.D.	DATE 4/16/30
TRACED BY	J.M.	DATE	REVISED		DATE
SCALE=	INCH = 1 FOOT		LAST ASSEMBLING MARK		

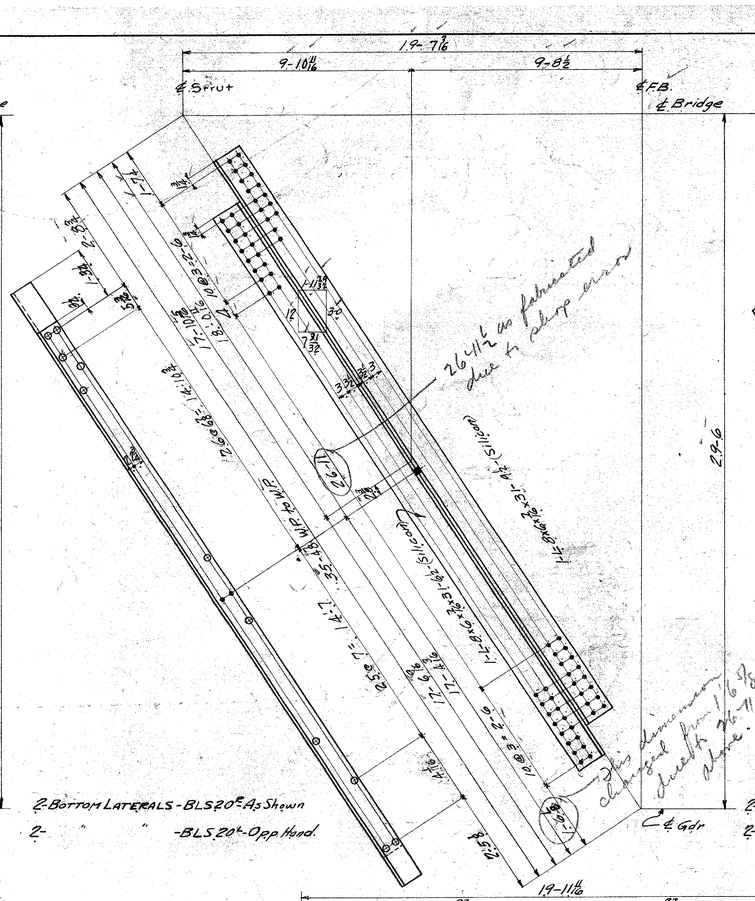
CONT. NO. 5002C SHEET NO. 3

APPROVED 5/15-30
Waddell & Hardesty

A-2-304



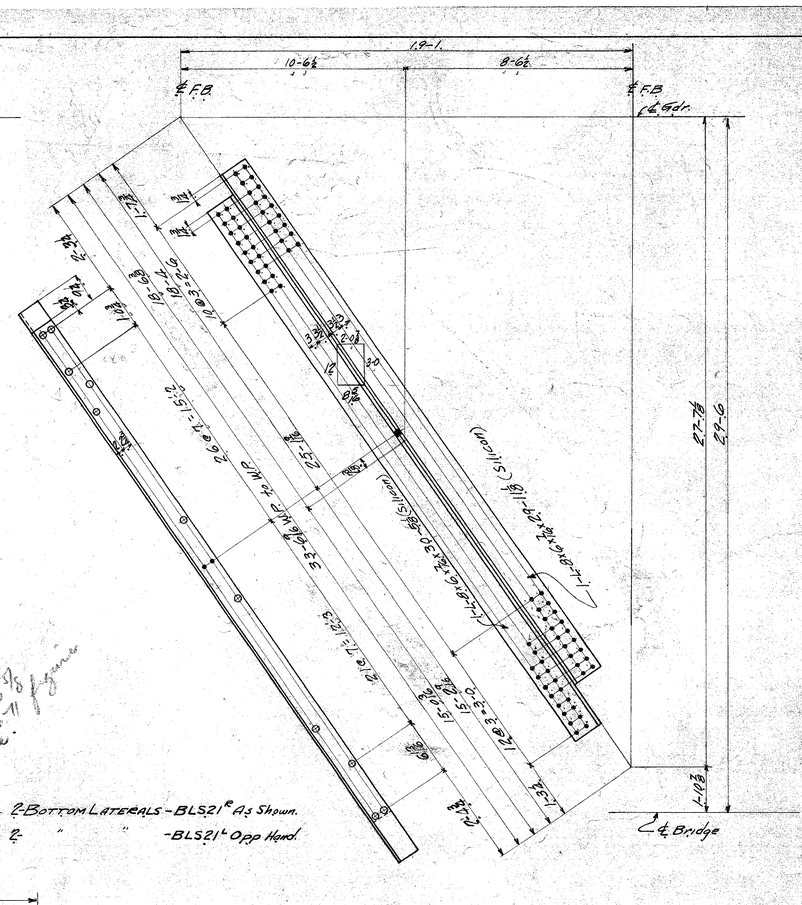
1-Bottom Lateral-BLS19ᴿ As Shown.
1- " " -BLS19ᴸ Opp Hand.



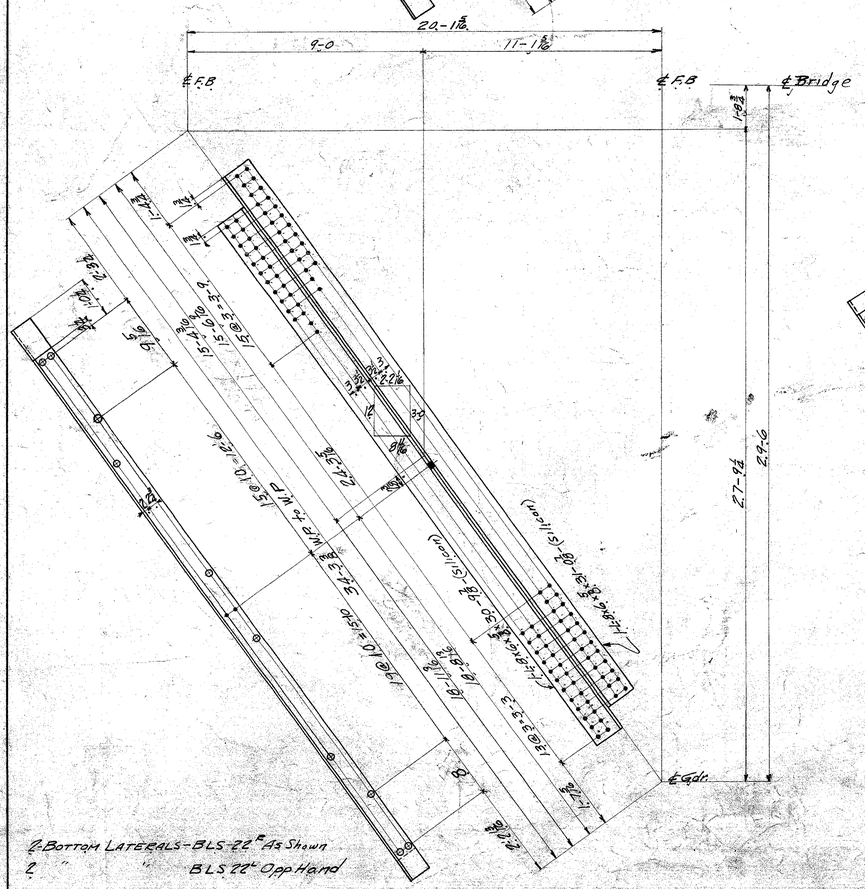
2-Bottom Laterals-BLS20ᴿ As Shown
2- " " -BLS20ᴸ Opp Hand.

26-1½ as fabricated due to slope error

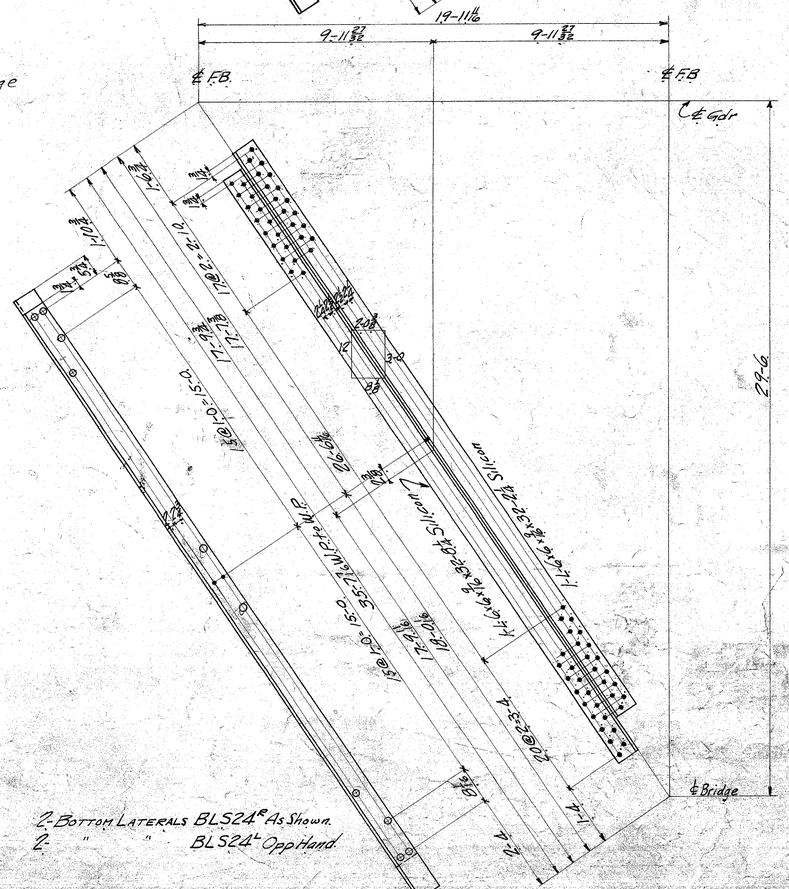
This dimension changed from 1'6⅜ to 1'6⅞ per Change Sheet 26-1 issued.



2-Bottom Laterals-BLS21ᴿ As Shown.
2- " " -BLS21ᴸ Opp Hand.



2-Bottom Laterals-BLS22ᴿ As Shown
2- " " BLS22ᴸ Opp Hand



2-Bottom Laterals BLS24ᴿ As Shown.
2- " " BLS24ᴸ Opp Hand.

Rivets ⅞" ø
Holes 15/16" ø
Holes punched 13/16" ø reamed to 15/16" ø after assembly

Burrs are to be removed from all holes

Paint: One coat of Detroit Graphite Co's 301

Jay 1 Round
Jay 4
P.W.D 1
S.S. 1
O.I. 1
8

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

Bottom Laterals Suspended Span

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE			
MADE BY CE	DATE	CHECKED BY ALS	DATE 4/6/0
TRACED BY EZ	DATE	REVISED	DATE
SCALE= INCH = 1 FOOT		LAST ASSEMBLING MARK	

CONT. NO. 5002C SHEET NO. 4

APPROVED 5/15-30
Waddell & Hardesty

A-2-305

TB10

TB2

TB3 TB4 TB5 TB6 TB7 TB9

2 TOP CHORDS - TB10
2 BOTTOM CHORDS TB2
4 DIAGONALS - TB3
6 Do - TB4
4 Do - TB5
10 Do - TB6
4 Do - TB7
8 VERTICALS - TB9

VIEW G-G 4 3/4" RIVETS

VIEW B-B 4 3/4" RIVETS

VIEW C-C 4 3/4" RIVETS

VIEW D-D E-E 4 3/4" RIVETS

VIEW A-A

Assemble this end to 3 3/4 b.to b. of L's

CITY OF TOLEDO, OHIO

BRIDGE over MAUMEE RIV

TOWER BRACING
STRUT BELOW ROADWAY

Rivets - 3/4" unless noted
Holes 13/16"
Holes for shop rivets to be punched full size
All field holes to be subpunched 1/8" and reamed to 3/4" after assembling in shop
All joints to be accurately matchmarked with sections assembled in shop
Burrs to be removed from all holes
Paint One coat of Detroit Graphite Co. #501

APPROVED 2-3-30
Waddell & Hardesty

McCLINTIC-MARSHALL CONSTR
PITTSBURGH, PA.

IN CHARGE W. SON
MADE BY C. DATE CHECKED BY NWC. DAT
TRACED BY S.T. DATE REVISED DAT
SCALE 1 INCH = 1 FOOT LAST ASSEMBLING MARK

CONT. NO. 5003B SHEET NO.

A-2-22

Date	DESCRIPTION
7/10/30	NOTE RE-LINKS AT Roadway

Note:- Red lead paste to be applied between HRT 1c and saddle castings

59'-0 c to c Tower Cols.

Note:- Red lead paste to be applied between HRT 1c & saddle castings

Handrope Attachment

For Jacking Device Arrangement see Sheet E1 - Cont. 5007A

Slab { TS9R - Near Shaft / TS9L - Far Shaft

Elev. 304.65+1/16

TB34 to be left out until foot walk saddles are removed. Burn this plate in field See detail on sheet 8 - Cont. 5003B

TB30

TB29

TB34 to be left out until foot walk saddles are removed. Burn this plate in field See detail on sheet 8 - Cont. 5003B

Drill 4" tap in field for connection of walk over hood

Elev. 293.15+1/16

GP8

GP8

TB28 Near Side

TB26

TB27

Near Side TB26 - TB27 - TB28 with this symbol ⊗ corresponding to symbol ⊗ on member

Splice Elev. 259.48+1

TS8L Near Shaft / TS8R Far Shaft } Wing

TS6L - Near Shaft / TS6R - Far Shaft } Main

TS7R - Near Shaft / TS7L - Far Shaft } Wing

Near Side ⊗

Note: To be erected before Pt. GP7

GP7

GP7

TB11

TB12

GP6

GP6

Elev. 223.90+1/2

TS5L - Near Shaft / TS5R - Far Shaft } Wing

TS4 Main

TS5R - Near Shaft / TS5L - Far Shaft } Wing

Splice Elev. 208.57+1/8

Center of Gravity

59'-0 c to c Gdrs.

Note: Must be erected Sideways

Elev. 192.90+1/16 Crown of Roadway

B

B

GP5

GP5

Elev. 191.90+1/16

GP4L - Near Side GP4R - Far Side

GP4R - Near Side GP4L - Far Side

TB42

Near Side GP4L Far Side GP4R

TK2R - FS / TK3L - NS

TK2L - FS / TK3R - NS

GP3

GP3

Elev. Pin Holes 177.00+1/16

Note: This beam TEB1L to be erected before TB42 and TB23 or TB25

Near Side ⊗ Each TB23 - TB24 - TB25 with this symbol ⊗ corresponding to symbol ⊗ on member

TB25 Near Side

TEB1R

TH1L Far Wing

TH1R Far Wing

TB23

TB24 Near Side

GP2

GP2

Note: To be erected before Pt. GP2

TB10

TB2

Elev. 120.36

GP1

GP1

Elev. 113.01

TB1

TB1

67'-6 c to c Tower Cols.

TK4L - Near shaft / TK4R - Far shaft

TK5R - Near shaft / TK5L - Far shaft

Riv. in Bott. of Link TLR1-2 omitted in Shop to permit Erection. Set Link with Holes toward ℄ Roadway for Driving

TS1R - Near Shaft / TS1L - Far Shaft } Wing

TS2L - Far Shaft / TS2R - Near Shaft } Main

TS3R - Near Shaft / TS3L - Far Shaft } Wing

View A-A

Longitudinal Section Through Center Cells

Transverse Section Through Center Cells

Section Through Base Showing Drainage

Concrete 1, 2, 4 Mix, set by McC. M. Co. & billed customer at cost for material & labor

Shore Side

TB42

River Side

Section B-B

Burn Corner Before Erecting

Enlarged Detail at A

NOTE TO ERECTOR:- Burn Ladder Connection Angle as Indicated to Clear Main Tower Shaft. Two of these Ladders have been Shipped M'30. The Remaining 2 will be fixed in shop.

2-LADDERS-L28

Ship wings with -38" Cover Pt. - Down.

Ship main sections with North or South faces - Down.

Assemble doors to cols. for shft. ladders

Bolt in place for shipment.

Match Mark this Shaft (A)

Match Mark this Shaft (B)

Match Mark this Shaft (C)

185'-0 c to c Towers

Plan of Towers

Match mark Shafts on West Side (A) & (A)

" " on East Side (C) & (B)

" Bracing on West Side (A)

" " on East Side (C)

Last Match-mark (C) (B) (A)

5003A - Slabs & Anchors

5003B - Bracing

5004 - Tower Shafts

APPROVED

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

TOWER ERECTION DIAGRAM

McCLINTIC-MARSHALL CONST. CO. PITTSBURGH, PA.

IN CHARGE Wilson

MADE BY A.T. DATE CHECKED BY DATE

TRACED BY T.M. DATE REVISED DATE

SCALE- INCH = 1 FOOT LAST ASSEMBLING MARK

CONT. NO. 5003 5004 SHEET NO. E1

A-2-306

VIEW C-C - $\frac{3}{4}\phi$ Rivets

VIEW D-D

$\frac{3}{4}\phi$ Rivets.

View E-E
" F-F
$\frac{3}{4}\phi$ Rivets.

VIEW A-A

VIEW G-G - $\frac{3}{4}\phi$ Rivets.

VIEW B-B DEVELOPED

4	Diagonals	TB13	View H-H		
4	"	TB14	View J-J		$\frac{3}{4}\phi$ Rivets
2	"	TB15	View K-K		
4	"	TB16			
4	"	TB17			
4	"	TB18			
4	"	TB19			
4	"	TB20			
4	Verticals	TB21			
4	"	TB22			
2	Top Chords	TB11			
2	Bottom Chords	TB12			

Rivets - $\frac{3}{4}\phi$ Unless Noted
Holes - $\frac{13}{16}\phi$
Holes for shop rivets to be punched full size.
All field holes to be subpunched $\frac{1}{4}$" and reamed to $\frac{13}{16}\phi$ after assembling in shop.
All joints to be reamed and match marked with sections assembled in shop.
Burrs to be removed from all holes.

Paint: One Coat of Detroit Graphite Co's #501

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER

TOWER BRACING.
STRUT ABOVE ROADWAY.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE Wm Sten
MADE BY C.W.K. DATE
CHECKED BY H.W.C DATE 4/15/30
TRACED BY E.Z. DATE
REVISED DATE
SCALE: INCH = 1 FOOT
LAST ASSEMBLING MARK bh

CONT. NO. 5003B SHEET NO. 2

APPROVED 2-14-30
Waddell & Hardesty

A-2-308

2 Sidewalk Brackets TK2R As shown
2 " " TK2L Opp hand
2 " " TK3L "
2 " " TK3R As shown

2 Tower Brackets TK4R As shown
2 " " TK4L Opp hand

2 Tower Brackets TK5R As shown
2 " " TK5L Opp hand

4 Rocker Links TRL1 Center Span

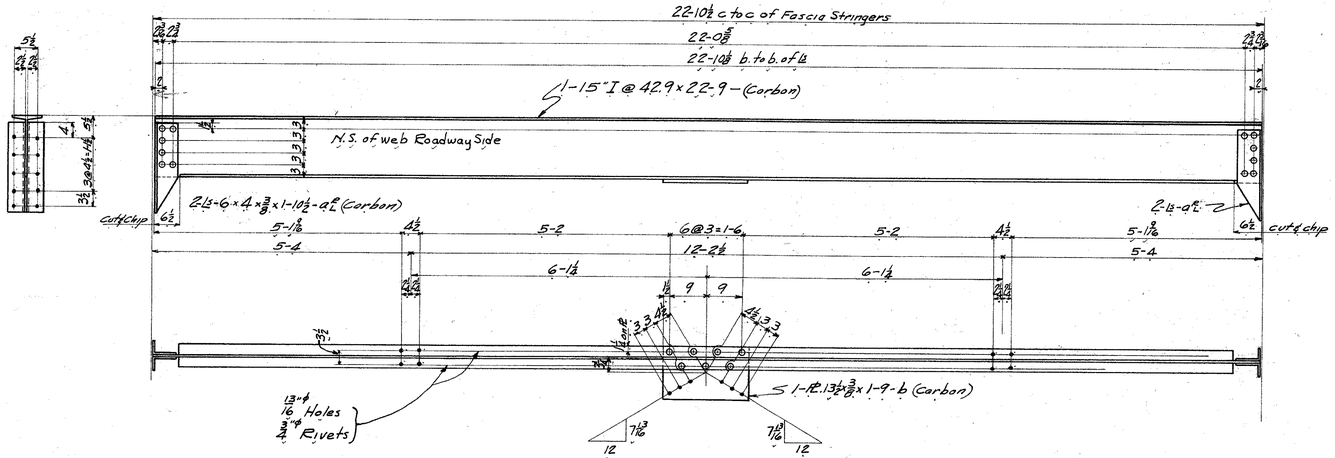
4 Rocker Links TRL2 Side Span

2 Expansion Bearings TEB1R As shown
2 " " TEB1L Opp hand

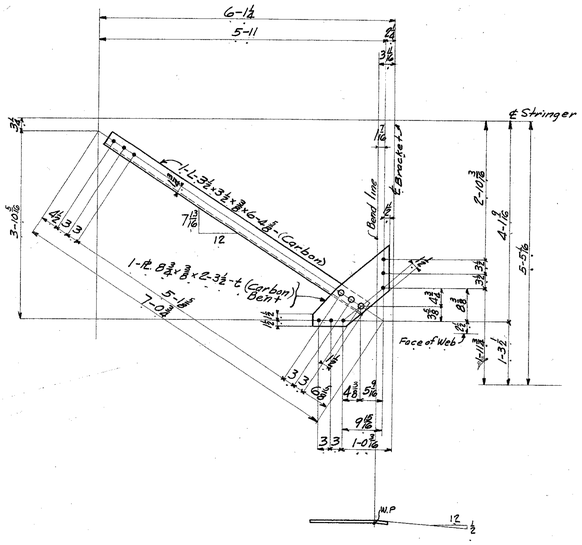
Approved 3-24-30
Waddell & Hardesty

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
Towers, Brackets, Rocker Links & Expansion Bearings

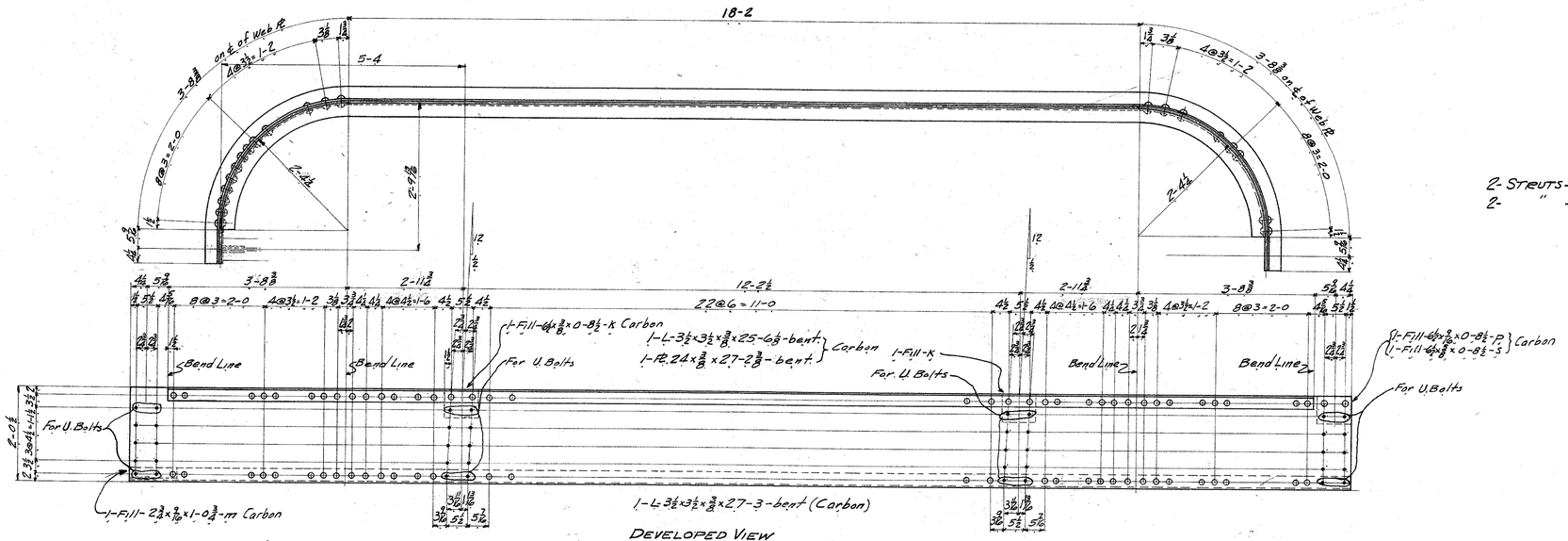
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE ... DATE ... CHECKED BY ... DATE ...
TRACED BY ... DATE ... APPROVED BY ... DATE ...
BOARD NO. ... STOCK ... PAT. ASSEMBLING BOARD NO. ...
CONT. NO. 3611 SHEET NO. 52



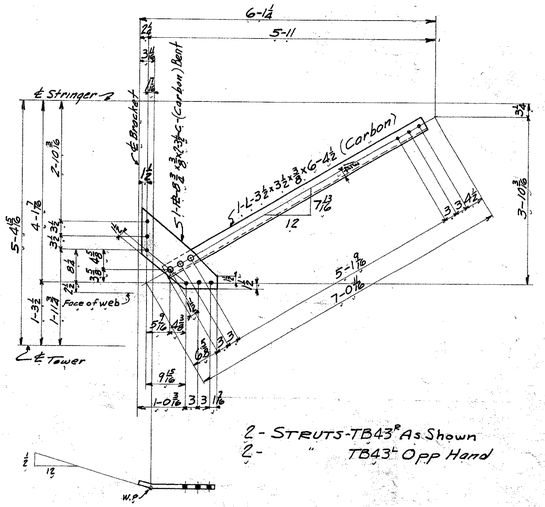
4- SIDEWALK STRINGERS-TSS1



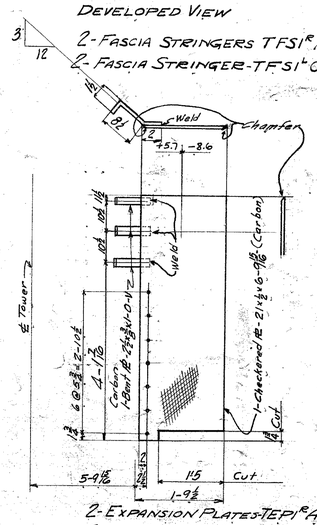
2- STRUTS-TB44R AS SHOWN.
2- " -TB44L OPP HAND.



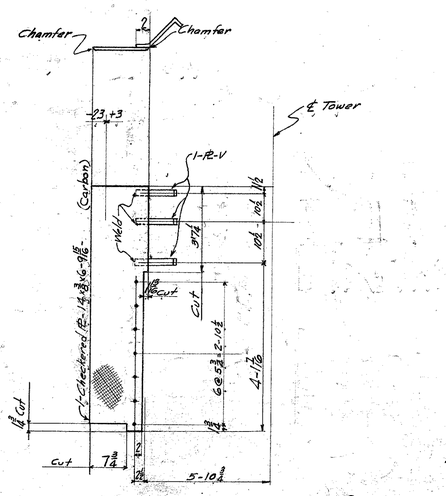
DEVELOPED VIEW



2- STRUTS-TB43R AS SHOWN
2- " TB43L OPP HAND



2- EXPANSION PLATES-TEP1R AS SHOWN.
2- " " -TEP1L OPP HAND.



2- EXPANSION PLATES-TEP2R AS SHOWN.
2- " " -TEP2L OPP HAND.

Rivets ¾-⌀ Unless Noted
Holes ⅞-⌀ Unless Noted
Holes punched full size.

Burrs are to be removed from all open holes

Paint: One coat of Detroit Graphite Co's #501

APPROVED 4-30-1930

Waddell & Hardesty

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

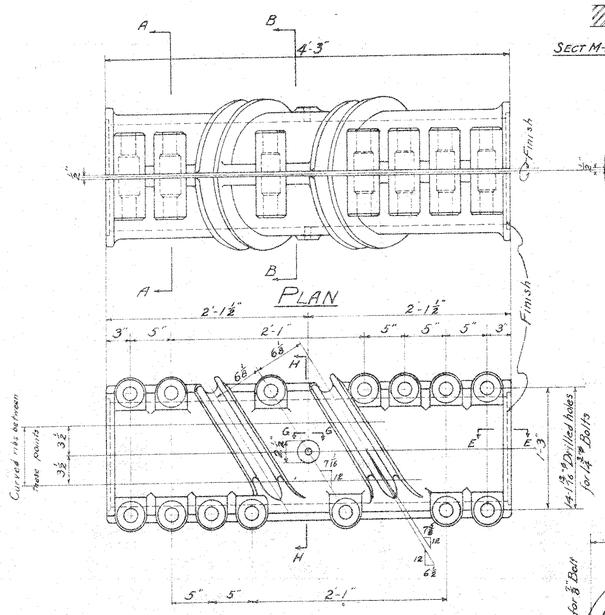
SIDEWALK FRAMING AT TOWERS

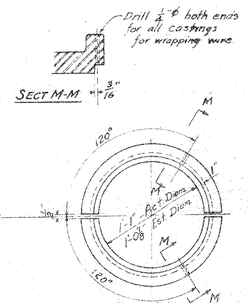
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

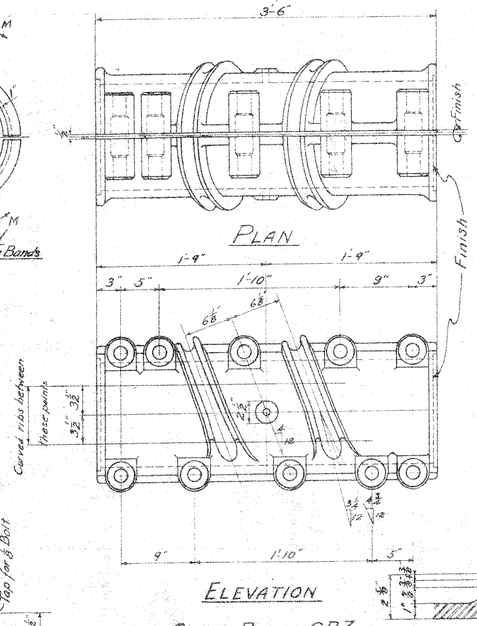
IN CHARGE W. Son.			
MADE BY H.F.M.	DATE	CHECKED BY W.E.S.	DATE 4/1/30
TRACED BY E.Z.	DATE	REVISED	DATE
SCALE- INCH = 1 FOOT		LAST ASSEMBLING MARK	

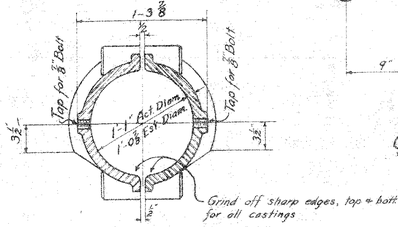
CONT. NO. 5003-B SHEET NO. 12

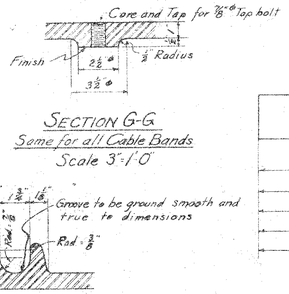
A-2-318

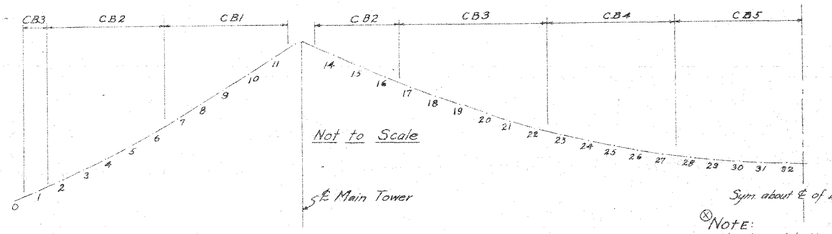








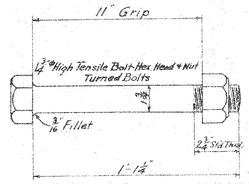


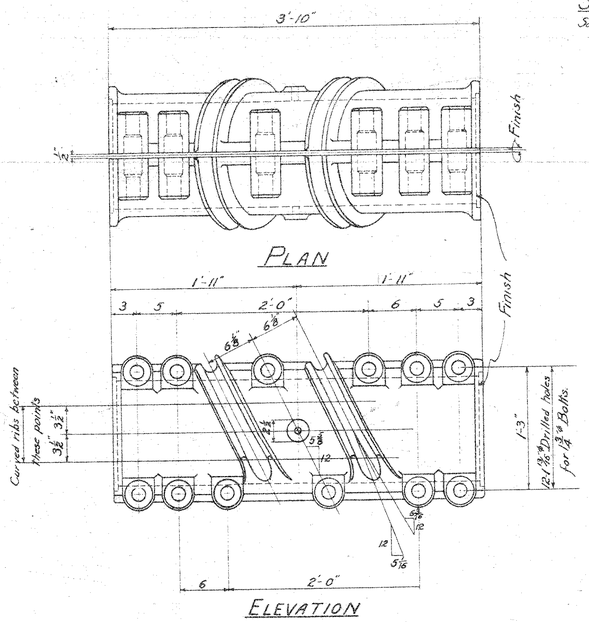


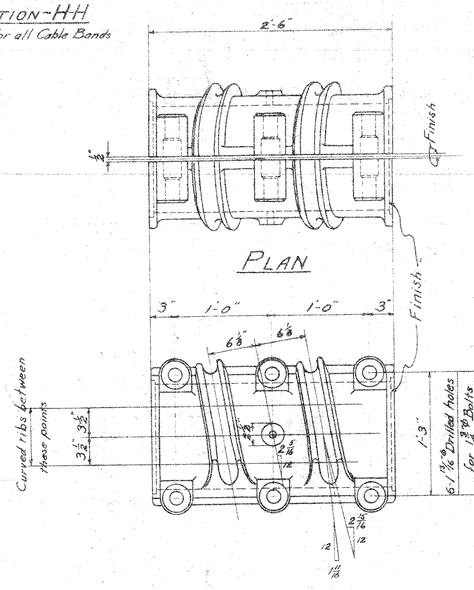
REQUIRED LIST FOR CABLE BANDS				DESIGN OF BOLTS	
Mark	No Reqd	Location	No H.T. Bolts	Max. Angle	No. Bolts per Band
CB1	20	Panel Points 7 to 11 incl.	280	32°37'	14
CB2	32	Panel Points 2 to 6 incl. + 14 to 16 incl.	384	27°12'	12
CB3	28	Panel Points 1 and 17 to 22 incl.	280	21°28'	10
CB4	20	Panel Points 23 to 27 incl.	120	13°33'	6
CB5	20	Panel Points 28 to 32 incl.	120	6°30'	6
		Total	1184		

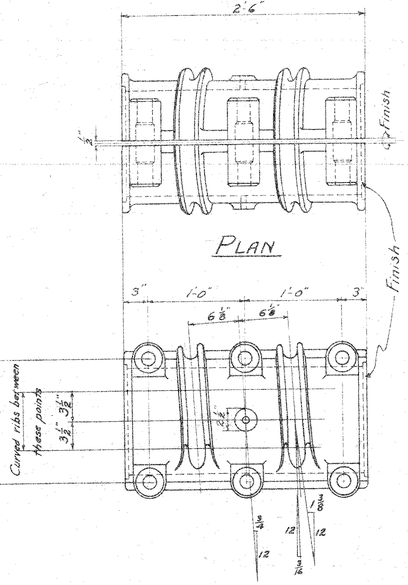
⊗NOTE:
Number of bolts per band required based on developing 17.5% of the component of stress acting parallel to cable. This represents a factor of safety of 4.
Stress per bolt = 54,000 lbs. or 31,000 lbs. per square inch at root of thread.

Galvanized #16 Gage Cold Rolled Steel	6" 6½" Rad.
4'-2" (40 Pieces for CB1)	
3'-9" (64 Pieces for CB2)	
3'-5" (36 Pieces for CB3)	
2'-5" (40 Pieces for CB4)	
2'-5" (40 Pieces for CB5)	









NOTES:
All corners of castings where not noted, to be filleted or rounded to ⅜" radius.
Internal surface of bands to be rough finished with approximately 16 cuts per inch.
For additional notes & sections not shown on this drawing see Sheet No. D15
Sections A-A, B-B and E-E same for all cable bands.
Shop Paint - 1 Coat Detroit Graphite #501. inside and outside; after inspection.

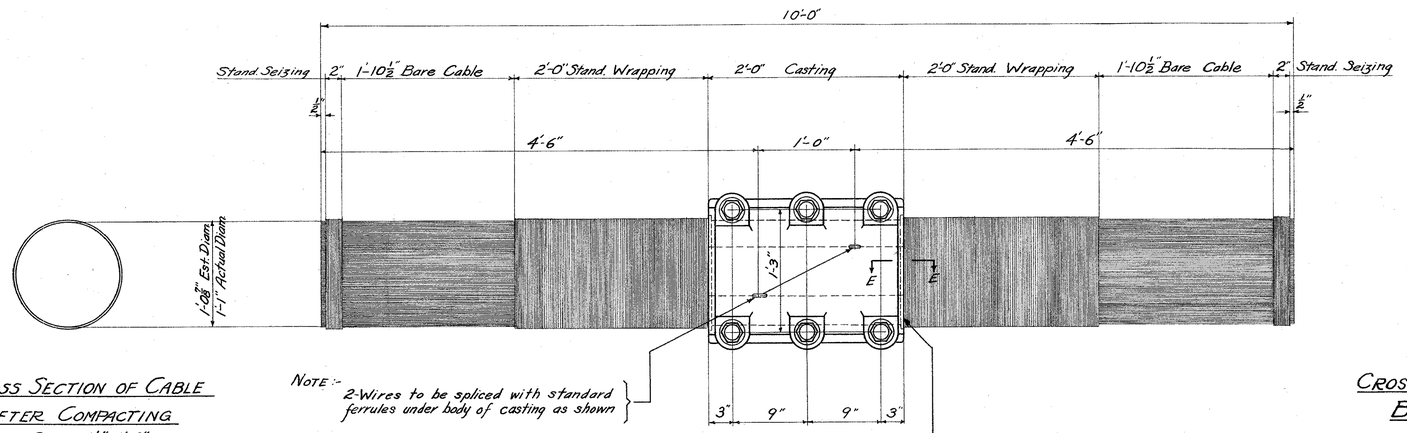
Revised: Feb. 20, 1930
" June 11, 1930
" Aug. 4, 1930
" " 13, 1930
" " 20, 1930
" Sept. 25, 1930 added "Turned Bolts".

WADDELL & HARDESTY, Cons. Eng., New York, N.Y.
Approved: 8-8-1930, by letter.

Submitted by:-
McCLINTIC-MARSHALL CO.
Pittsburgh, Pa.

CITY OF TOLEDO, OHIO.
MAUMEE RIVER BRIDGE
CABLE BANDS

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
In Charge
Made By W.B.L. Date 7/30/30 Checked By Date
Traced By R.E.H. Date Revised Date
Scale 1½ inch = 1 foot Unless noted Last Assembling Mark
CONT NO. 5008C-D SHEET No. D16

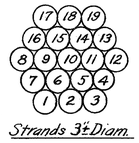


CROSS SECTION OF CABLE
AFTER COMPACTING
Scale 1½"=1'-0"

NOTE:- 2-Wires to be spliced with standard ferrules under body of casting as shown

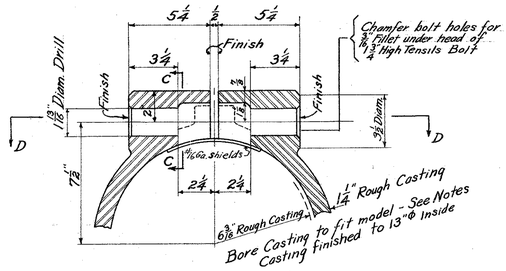
ELEVATION
Scale 1½"=1'-0"

NOTE:- Tightly Caulk with oakum saturated with red lead and then cover with a layer of lead wool throughly "driven home."

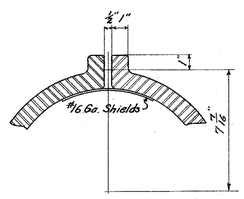


Strands 3½ Diam.

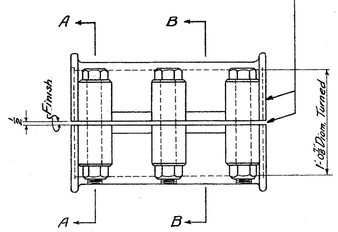
CROSS SECTION OF CABLE
BEFORE COMPACTING
Scale 1½"=1'-0"



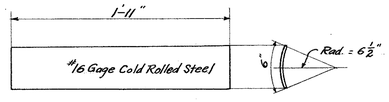
SECTION A-A
THRU BOLT



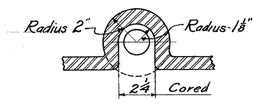
SECTION B-B



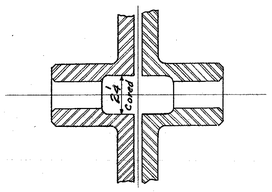
PLAN
Scale 1½"=1'-0"



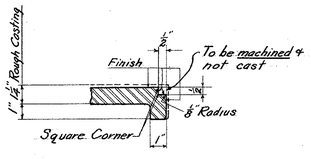
2-BENT SHEETS REQ'D.
Scale 1½"=1'-0"



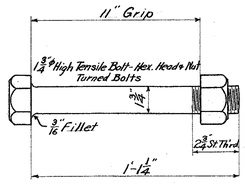
SECTION C-C



SECTION D-D



SECTION E-E



6-BOLTS REQ'D.

CONSTRUCTION OF MODEL

Model Cable to Consist of 19 Strands of 186 wires each, equal to a total of 3534 wires

After strands have been formed they are to be seized with standard seising bands and compacted with hydraulic squeezer until the minimum practicable diameter has been reached. This diameter is assumed to be 12⅞" based on 18.9% voids.

Casting is not to be bored, however, until after the diameter of the model has been checked. Model measured 13" & casting bored 13"

Casting Bolts are to be drawn up with a tension of approximately - 34,000 pounds per bolt, or 31,000 pounds per square inch at root of thread.

Specimen is then to be wrapped and caulked as shown.

After specimen has served it's purpose as a check on the diameter it is to become the property of the City of Toledo, Ohio.

MATERIAL FOR MODEL

All material used in model to conform to the specifications for Maumee River Bridge

Cable wire to be #6 galvanized bridge wire (see clause #65 specs.)

Casting to be cast steel annealed (see A.S.T.M. Specs. A27-24)

Bolts to be high tensile steel (See clause 24)

Wrapping Wire to be soft annealed double galvanized steel wire .148 inches in diameter before galvanizing. (See Specs. clause 66)

Paint:- One coat consisting of 25 pounds of red lead to the gallon of oil (See Clause 77)

Paint cable band and bolts only

Lacquer cut ends of galvanized wires.

Galvanized surfaces to remain unpainted

NOTES:-

All corners of castings, where not noted, to be filleted or rounded to ⅜" radius.

Internal surface of bands to be finished with approx. 16 cuts per inch.

WADDELL & HARDESTY, CONS. ENG.
New York, N.Y.
Approved:- 1/20/30

Revised: Jan. 27, 1930 - 1⅜"Φ Bolts Changed to 1¾"Φ Bolts
Revised: Feb. 20, 1930 - Unit Stress on H.T. Bolts
" June 10, 1930 - Added ins. diam. of cable band.
" Aug 20, 1930 - Shields
" Aug 25, 1930 - Paint
" Sept. 25, 1930 - "Turned Bolts" added

CITY OF TOLEDO, OHIO
MAUMEE RIVER BRIDGE

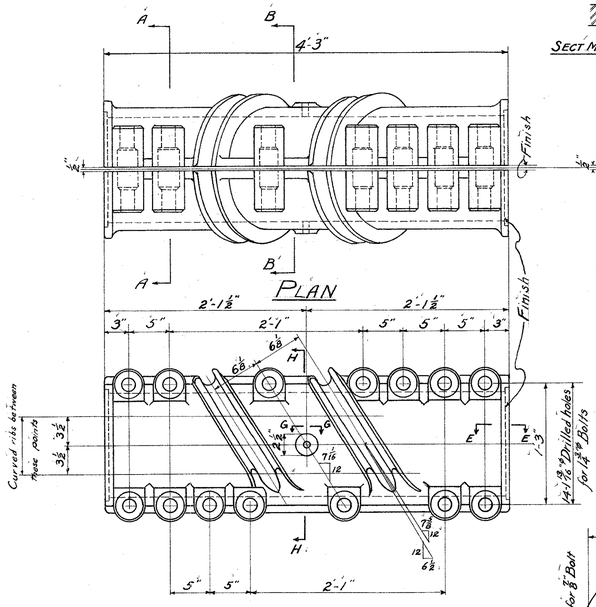
MODEL CABLE

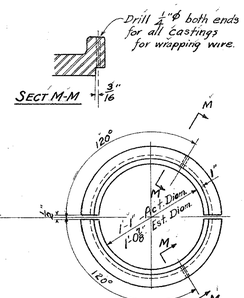
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

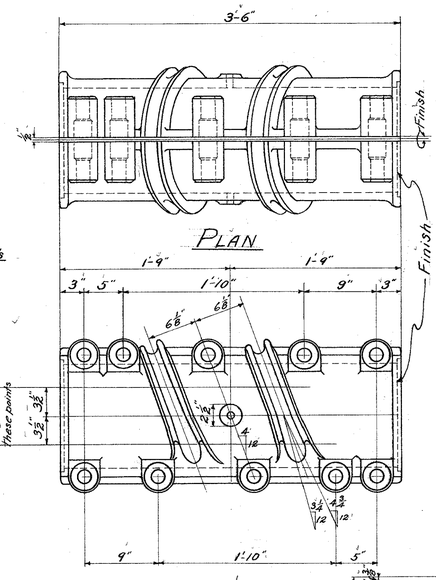
In Charge
Made by W.B.L. Date 9/26/30 Checked by Date
Traced by Date Revised Date
Scale {3 Inch = 1 Foot / Unless Noted} Last Assembling Mark
Cont No. 5008-C Sheet No. D15

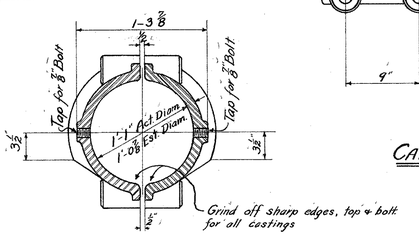
A-2-342

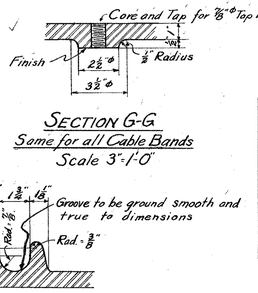
Copy Ckd M.L.S. 3-13-'31

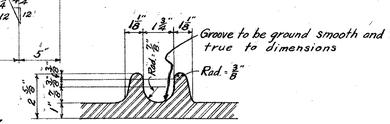


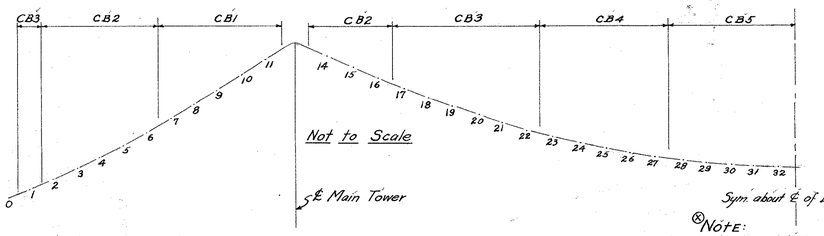








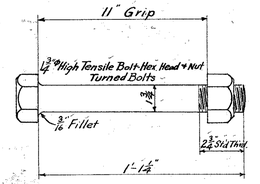


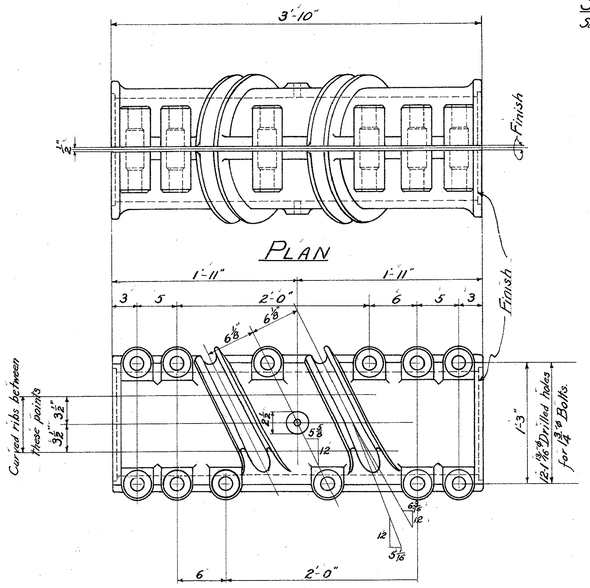


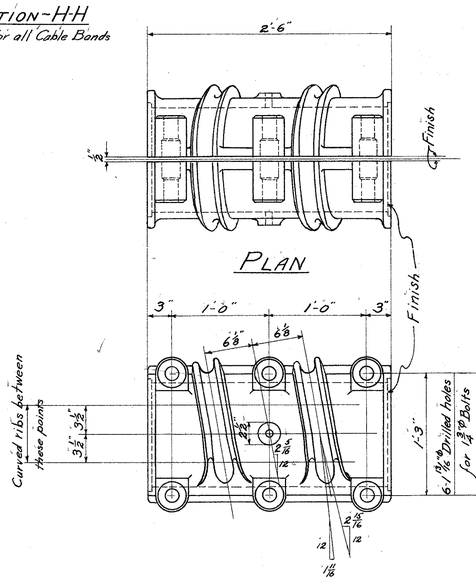
REQUIRED LIST FOR CABLE BANDS				DESIGN OF BOLTS	
Mark	No. Reqd	Location	No. H.T. Bolts	Max. Angle	No. Bolts per Band
CB1	20	Panel Points 1 to 11 incl.	280	32°37'	14
CB2	32	Panel Points 2 to 6 incl. + 14 to 16 incl.	384	27°12'	12
CB3	28	Panel Points 1 and 17 to 22 incl.	280	21°28'	10
CB4	20	Panel Points 23 to 27 incl.	120	13°33'	6
CB5	20	Panel Points 28 to 32 incl.	120	6°30'	6
		Total	1184		

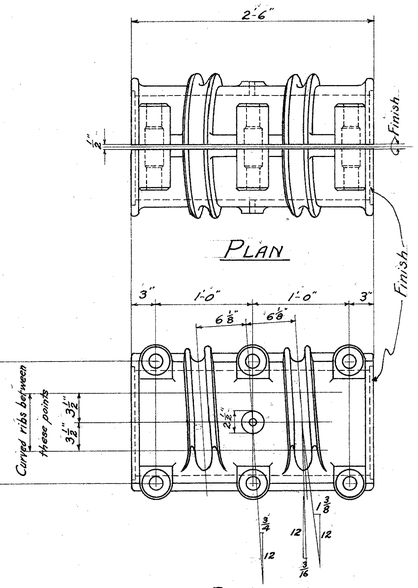
Ⓚ NOTE:
Number of bolts per band required based on developing 17.5% of the component of stress acting parallel to cable. This represents a factor of safety of 4.
Stress per bolt = 54,000 lbs. or 31,000 lbs. per square inch at root of thread

Galvanized #16 Gage Cold Rolled Steel	6"	6½ Rad.
4'-2" (40 Pieces for CB1)		
3'-9" (64 Pieces for CB2)		
3'-5" (56 Pieces for CB3)		
2'-5" (40 Pieces for CB4)		
2'-5" (40 Pieces for CB5)		









NOTES:
- All corners of castings where not noted, to be filleted or rounded to ⅜" radius.
- Internal surface of bands to be rough finished with approximately 16 cuts per inch.
- For additional notes & sections not shown on this drawing see Sheet No. D15
- Sections A-A, B-B and E-E same for all cable bands.
- Shop Paint - 1 Coat Detroit Graphite #501. inside and outside; after inspection.

Revised: Feb. 20, 1930
" : June 11, 1930
" Aug. 4, 1930
" " 13, 1930
" " 20, 1930
" Sept. 25, 1930 added "Turned Bolts"

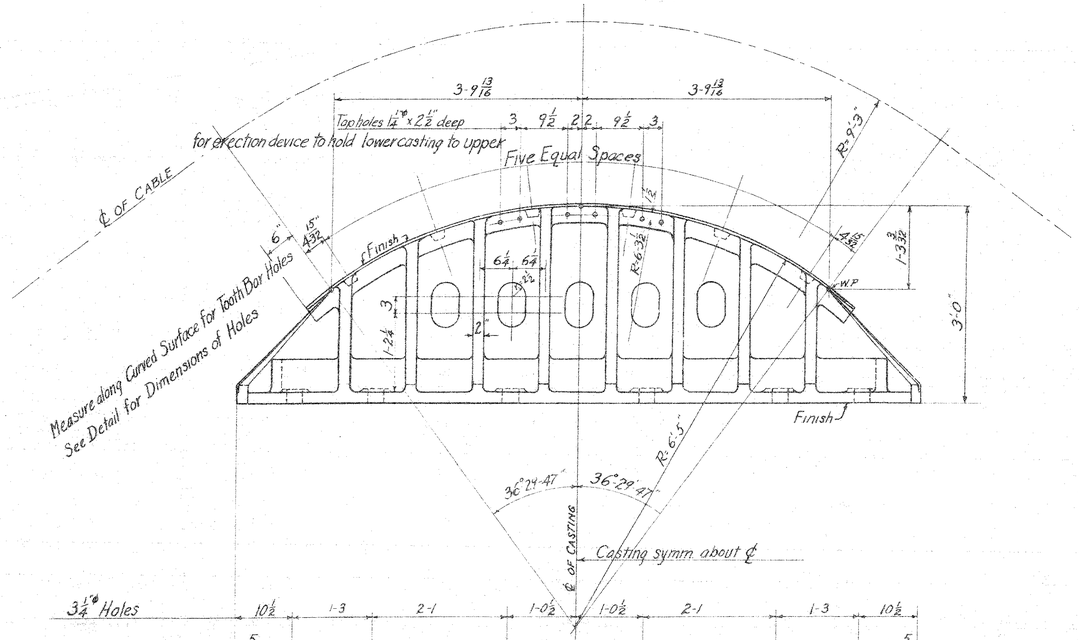
WADDELL & HARDESTY, Cons. Eng., New York, N.Y.
Approved:- 8-8-1930, by letter.

Submitted by:-
Mc CLINTIC-MARSHALL CO.
Pittsburgh, Pa.

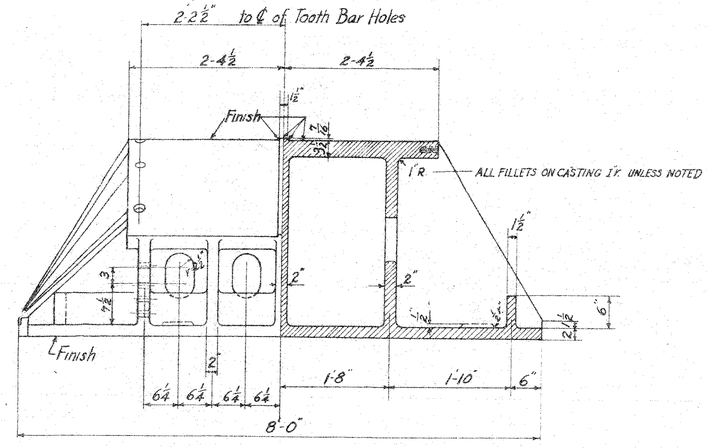
CITY OF TOLEDO, OHIO.
MAUMEE RIVER BRIDGE
CABLE BANDS

Mc CLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE
MADE BY W.B.L. DATE CHECKED BY DATE
TRACED BY R.E.H. DATE REVISED DATE
SCALE ½ INCH = 1 FOOT Unless noted Last Assembling Mark
CONT NO. 5008C-D SHEET No. D16

A-2-344 Copy Chk. - J.M.L. 7/11/31

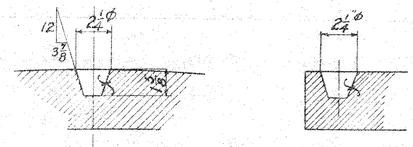


PLAN



HALF END VIEW

HALF SECTION ON CENTER LINE



SECTIONS THRU TOOTH BAR HOLE

NOTES:-

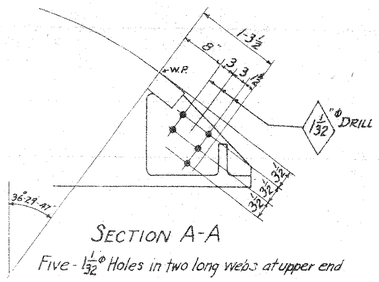
REQUIRED - Four Castings

MATERIAL:- A.S.T.M. Specifications A27-24 Class B Medium modified. See Specifications, "Steel Castings"

Drill and ream tooth holes

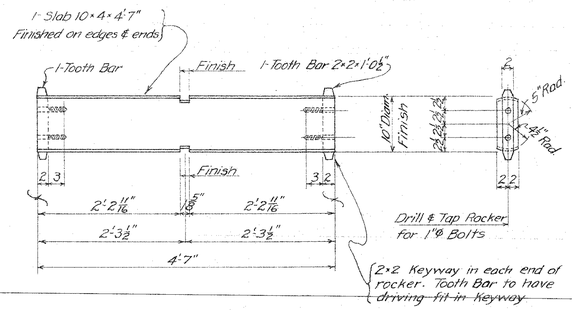
Drill Anchor Bolt Holes from solid to a templet furnished by McClintic-Marshall Co

Care must be taken to locate holes for tooth bars accurately.



SECTION A-A

Five - 1 1/32"ø Holes in two long webs at upper end of casting for holding and adjusting rocker nest during erection.



24 ROCKERS AS SHOWN
68 ROCKERS WITHOUT TOOTH BARS

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

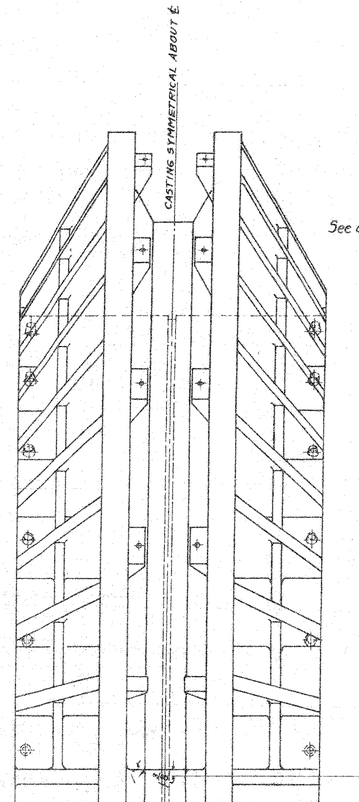
ANCHORAGE SADDLE BASE CASTING

WADDELL AND HARDESTY, Consulting Engineers,
NEW YORK CITY
APPROVED:- Feb 25, 1930

McCLINTIC-MARSHALL CONST CO.
PITTSBURGH, PA

In Charge:
Made By — Date 2/24/30 — Checked By — Date
Traced By R.E.H. Date 2/26/30 — Revised — Date 3/25/30
Scale 1 inch = 1 foot — Last Assembling Made

Cont No 5007-B Sheet No D21



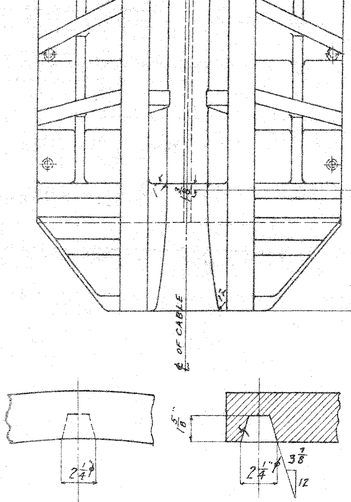
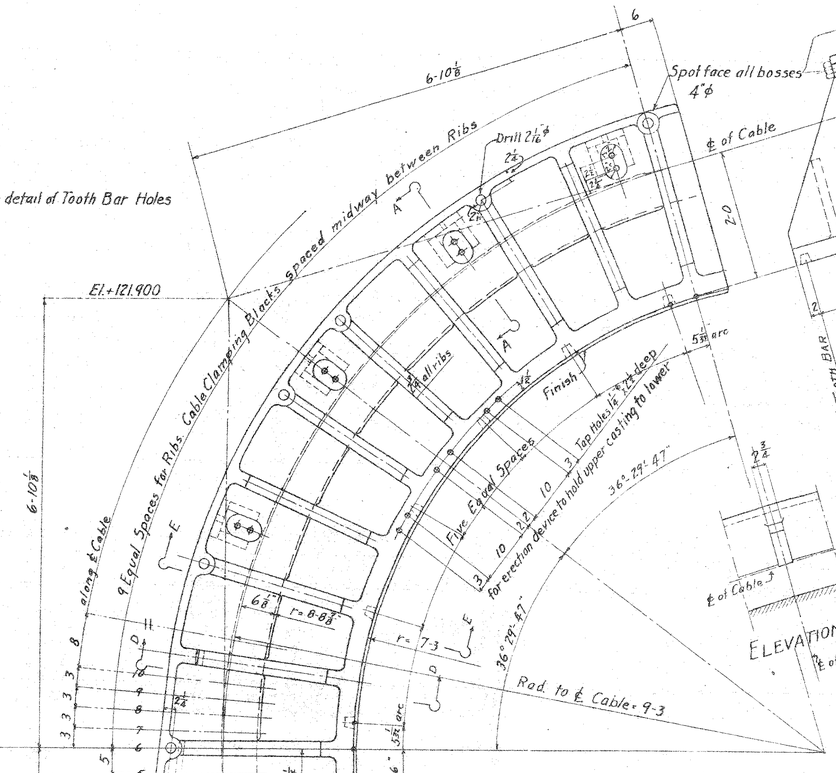
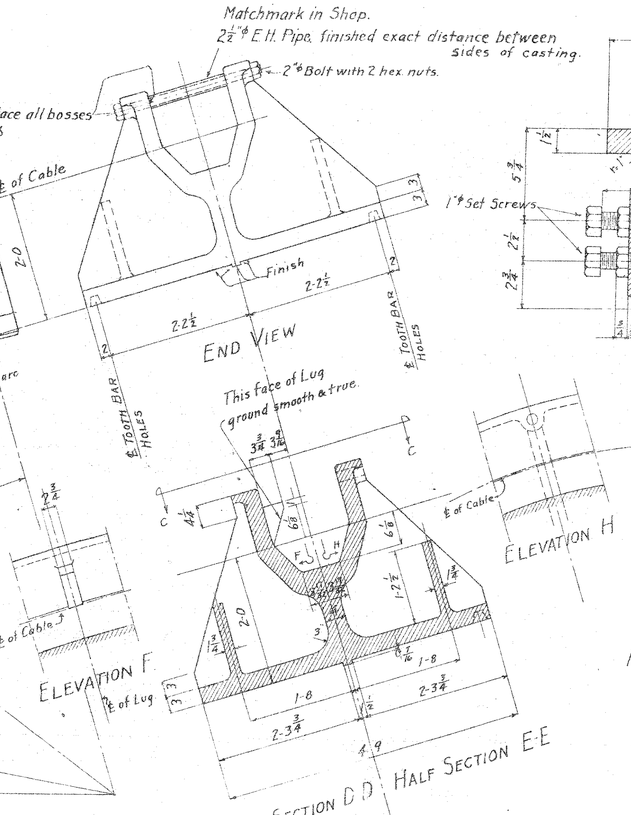
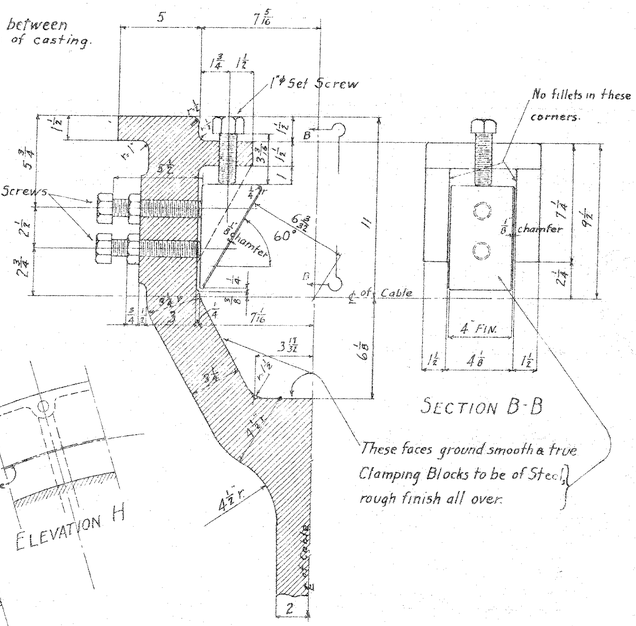


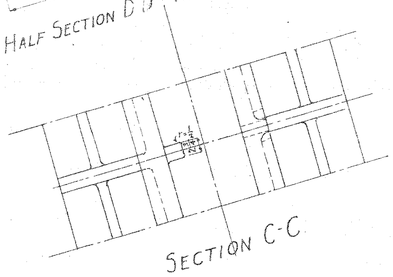
TABLE OF VARIABLE DIMENSIONS
FOR SECTIONS 1 TO 10 INCLUSIVE
Dimensions not given for these Sections to be same as in Section AA.

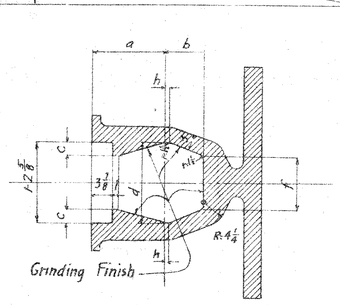
SECTION	a	b	c	d	f	h
1	1-2 3/8	8 1/4	1 1/2	1-6 15/16	11 3/8	13/16
2	1-1 5/8	7 1/2	2 3/8	1-5 7/16	9 3/8	5/8
3	1-1 5/8	6 15/16	3	1-3 3/4	8 3/8	7/16
4	1-0 5/8	6 1/2	3 3/8	1-2 7/8	7 1/2	1/4
5	1-0 5/8	6 1/2	3 3/8	1-2 7/8	7 3/16	1/8
6	11 1/2	6 3/8	3 3/8	1-2 7/8	7 1/16	0
7	11 1/2	—	—	—	7 1/16	—
8	11 3/16	—	—	—	7 1/16	—
9	11 1/16	—	—	—	7 1/16	—
10	11	—	—	—	7 1/16	—
11	11	—	—	—	7 1/16	—

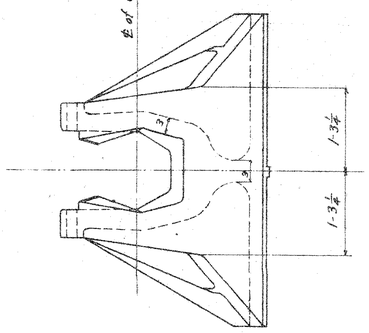


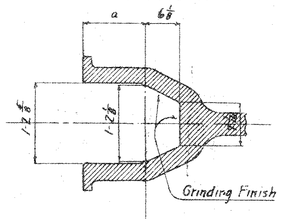












NOTES.

REQUIRED:- Four Castings

MATERIAL:- A.S.T.M. Specifications A27-24 Class B" Medium, modified. See Specifications "Steel Castings."

Each Casting to be furnished with a full set of set screws, clamping blocks, 2" Tie Bolts and Pipe Washers.

Drill and ream tooth holes

Care must be taken to locate holes for tooth bars accurately.

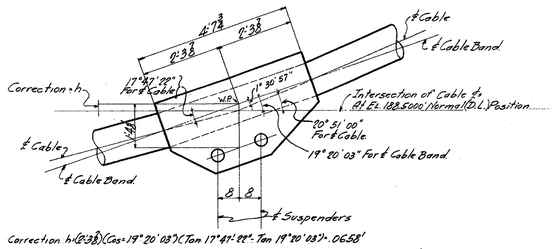
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER

ANCHORAGE SADDLE CASTING

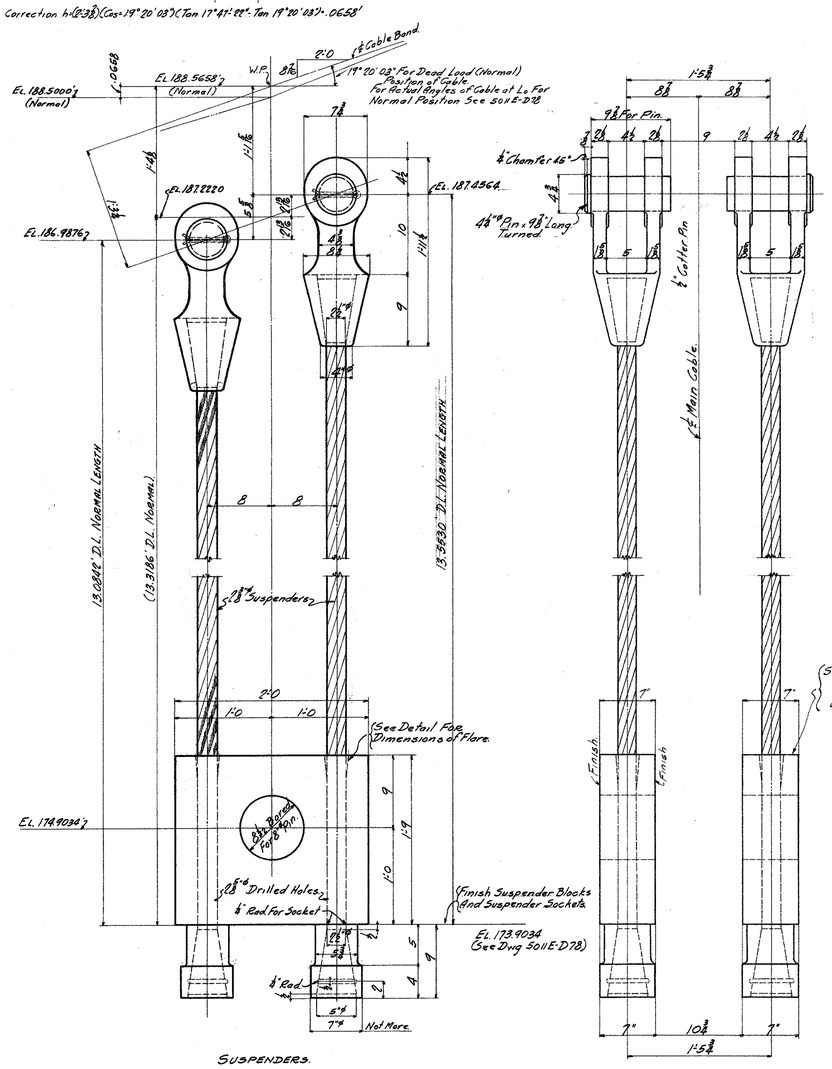
WADDELL AND HARDESTY, CONSULTING ENGINEERS.
NEW YORK CITY.
APPROVED: Feb. 25, 1930
SUBMITTED BY:-
McCLINTIC-MARSHALL CO.
PITTSBURGH, PA.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH PA.
In Charge
Made By Date 1-9-30 Checked By Date
Traced By G.O.B. Date 3-7-30 Revised By Date
Scale 1-Inch. 1 Foot Last Assembling Mark
CONT No C5007 B SHEET No D22

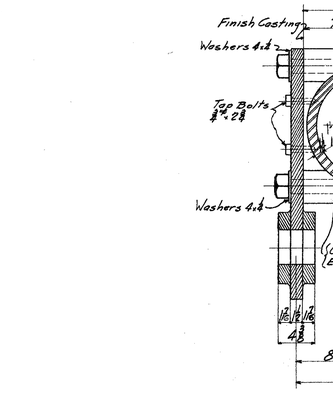
NOTES:-
Suspender Ropes: 2⅞" 6x19 (I.W.C)
Area = 2.814"²
E = 18866000
Lengths of Suspenders as Shown on Sketch are For 60° F at a tension of (303410+14) = 15852# On One Rope (See Dwg. 5011E-D78) For a Normal (D.L) Condition



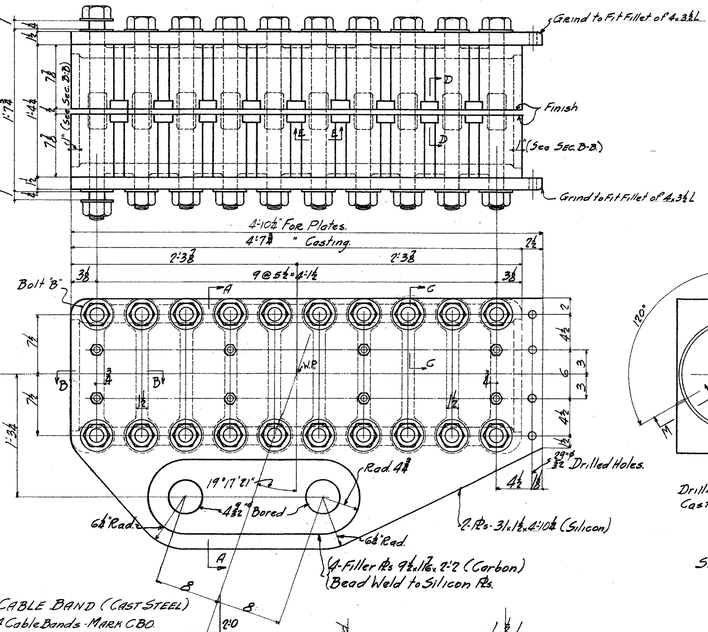
Correction h = (8-2⅜) (Cos 19°20'03") (Tan 17°41'22" - Tan 19°20'03") = .0658'



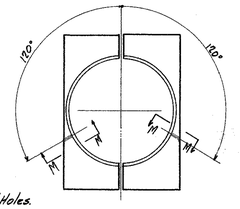
SUSPENDERS.
Required - 8 Suspender Sets Assembled As Shown.
Consisting of
1. OPEN SOCKETS FORGED STEEL (.25-.30 CARBON) WITH PINS.
2. 2⅞" Suspender Ropes (6x19-I.W.R.C.)
2. Forged Steel Sockets
One Suspender Block (3 lab)

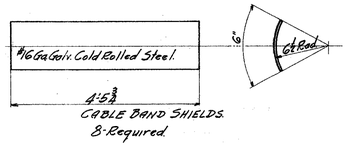


SECTION A-A

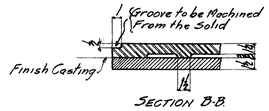


CABLE BAND (CAST STEEL)
Required - 4 Cable Bands - MARK CBO.
For High Tensile Bolts See Sketch and Req'd List Below

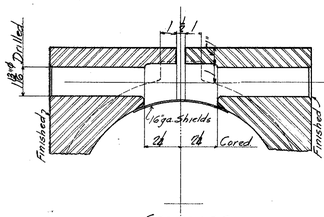




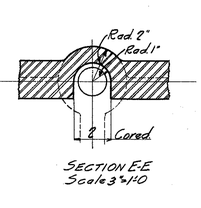
CABLE BAND SHIELDS.
8 Required



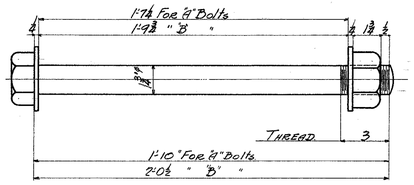
SECTION B-B.



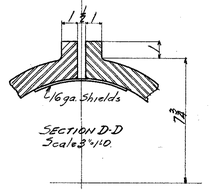
SECTION C-C
Scale 3"=1'-0



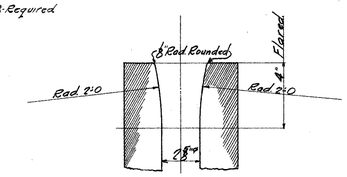
SECTION E-E
Scale 3"=1'-0



HIGH TENSILE BOLTS.
Required (4-1⅜"-6 Turned x 2'-0⅛ Long Hex Hd & Nut
(16-1⅜" " x 1'-10" " " "4".



SECTION D-D
Scale 3"=1'-0



Detail of Flared Hole For Suspender Blocks. Scale 3"=1'-0

NOTES:- All Corners of Castings Where Not Noted, to be Filleted Or Rounded to ⅜" Rad.
Internal Surface of Cable Band to be Rough Finished With Aprox. 16 Cuts per Inch.

CITY OF TOLEDO OHIO
BRIDGE over MAUMEE RIVER

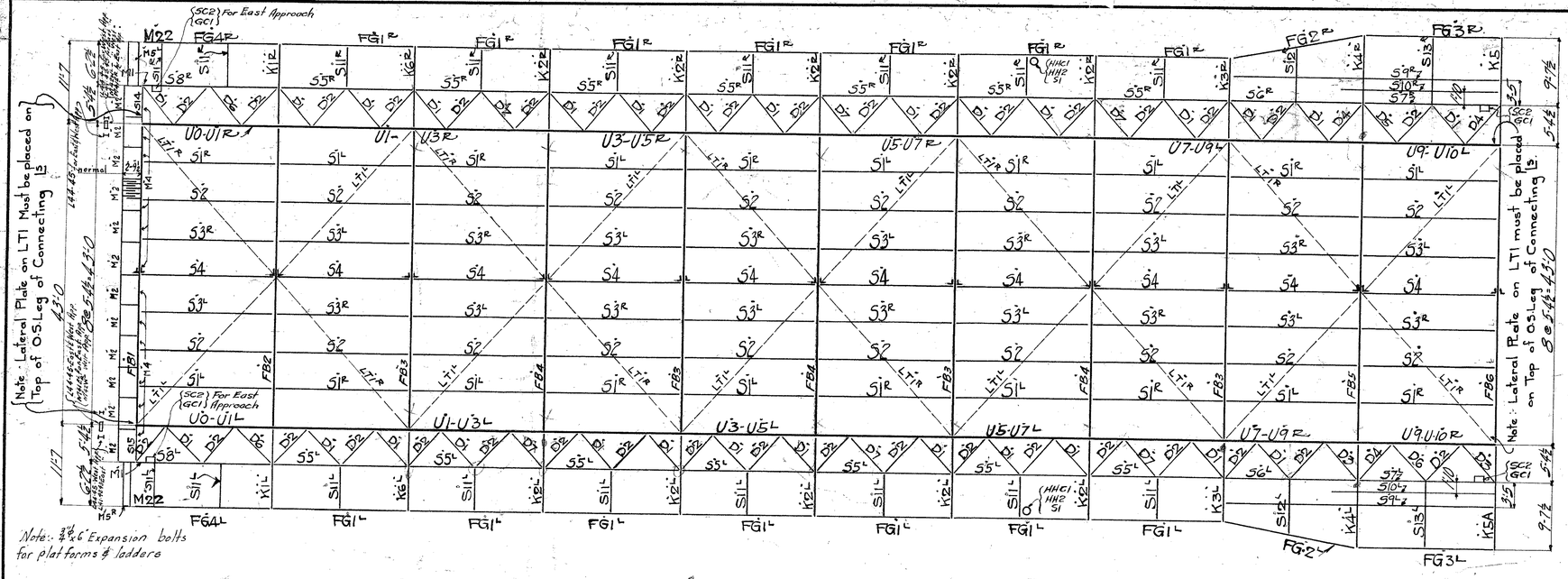
CABLE BANDS & SUSPENDERS AT PANEL Lo.

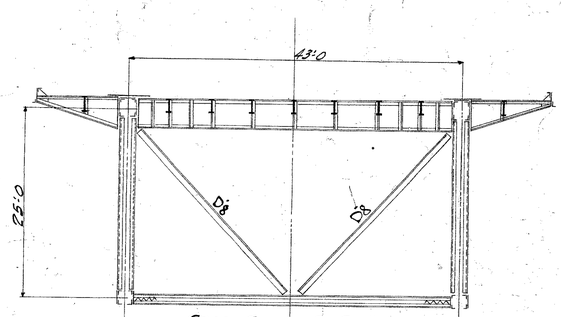
Date 5-27-30
Revised 6-17-30
" 8-4-30
" 8-20-30
" 9-2-30 - 2¼ to 2⅞ suspenders
" 11-22-30
" 12-4-30 - increased cable holes
" 1-29-31

APPROVED. 8-8-30
Waddell & Hardesty.

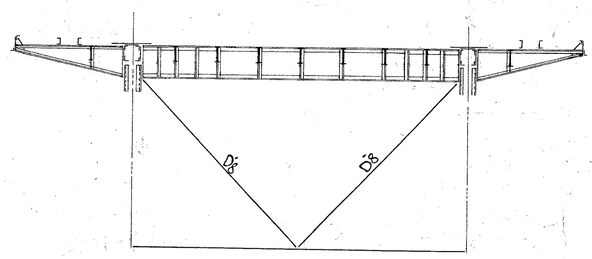
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE. FEKETE
MADE BY J.I.C. DATE CHECKED BY DATE
TRACED BY G DATE REVISED DATE
SCALE- INCH = 1 FOOT LAST ASSEMBLING MARK
CONT NO. 5008C. SHEET NO. D72

A-2-343
Copy Checked R.M.B.

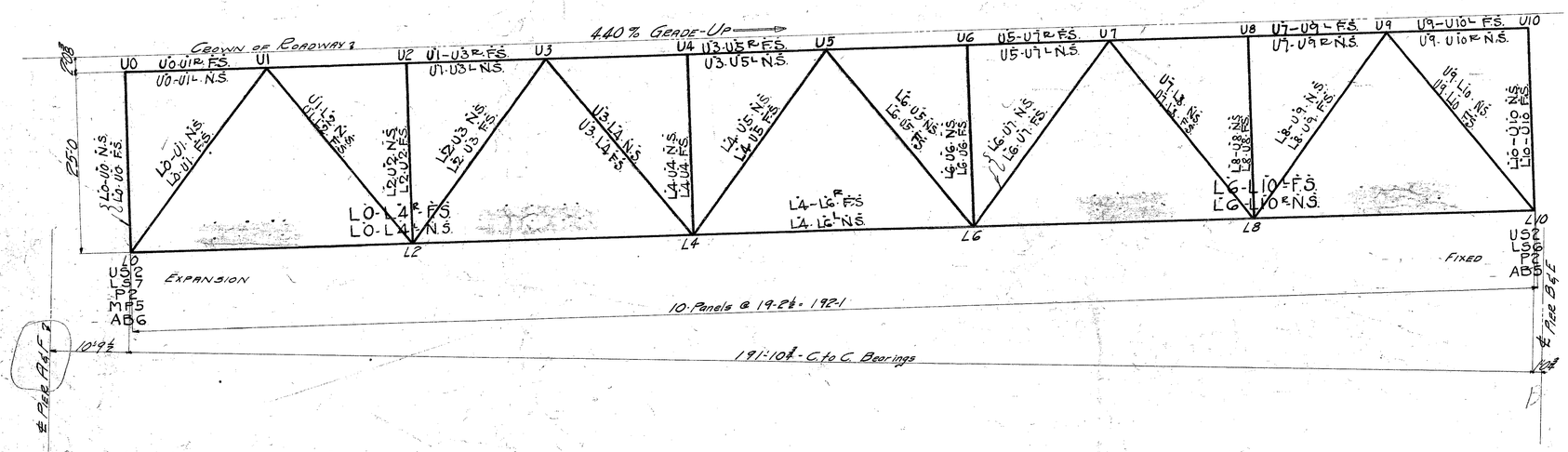


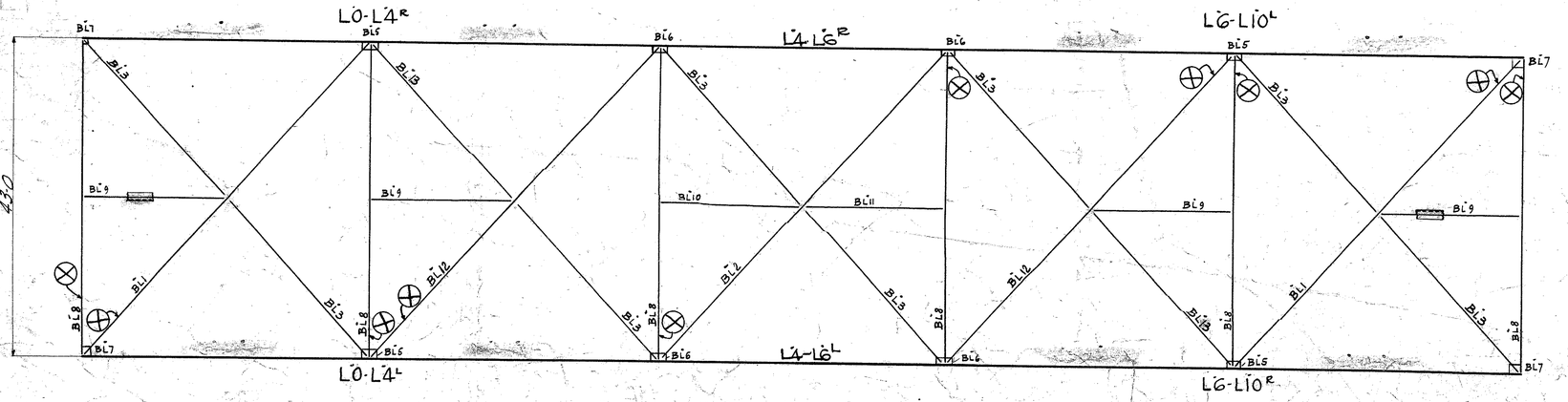


CROSS SECTION FOR PANELS 0 to 8
SWAY FRAMES AT PANEL POINTS
0-2-4-6 & 8



CROSS SECTIONS FOR PANELS 9 & 10
SWAY FRAME AT PANEL POINT 10





Note Erector :- ⊗ End of BL12 / BL8 / BL1 to correspond to ⊗ End on plan

CAMBER FOR BOTTOM CHORD

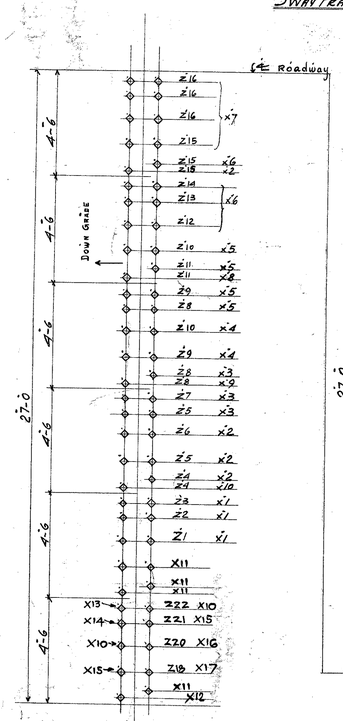


DIAGRAM FOR BOLTS & PIPES FOR EXPANSION GRATING

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

DECK TRUSS SPANS

ERECTION DIAGRAM

APPROVED Waddell & Hardesty

8-7-30

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE G.F. Stelzner
MADE BY DATE CHECKED BY DATE
TRACED BY DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK

CONT. NO. 5013-14 SHEET NO. E4

Shop rivets in U0-U1

Fillhead Shop rivets in U0-U1

In U9-U10 only

Shop rivets in U0-U1

Carbon
SHOP RIVETS CTSK. & CHIP F.S. U9-U10.
SHOP RIVETS CTSK. & CHIP N.S.

Crown or Roadway

Shop rivets in F.S. For U0-U1 only

Fill Head Shop rivets F.S. For U0-U1 only

Ctsk. & Chip F.S. For U9-U10 only

Ctsk. & Chip N.S.

MAIN MATERIAL — SHOP RIVETS BOTH SIDES U0-U1

Carbon

MARK NEAR SIDE OF NEAR WEB "INSIDE"
WORK LINE
IN BOTH SIDES U9-U10 ONLY

Shop rivets N.S.

SEE NOTE (3)

Note to Shop— Assemble this end to L 11/8 B to B of B

SEE NOTE (3)

SEE NOTE (3)

Shop rivets N.S.

SEE NOTE (3)

B/14 F.B

SEE NOTE (3)

Note to Shop— Assemble this end to L 11/8 B to B of B

12 Spaces @ 6'-6"

Carbon

Carbon

12 Lac bars 2½ × ⅜ × 2'-3" - c. to c. a - Carbon

2 TOP CHORDS U0-U1 R - AS SHOWN
2 " " - U0-U1 L - OPP HAND
2 " " - U9-U10 R - AS SHOWN
2 " " - U9-U10 L - OPP HAND

U9-U10 only

SECTION A-A

NOTE (3)
HOLES SHOWN THUS * TO BE SUB-PUNCHED IN ALL MATERIAL FOR BOTH FACES OF MEMBER AND ARE TO BE USED FOR BOLTING REAMING TEMPLET FOR DRILLING. HOLES SHOWN THUS ⊗ ARE DRILLED FROM THE SOLID THROUGH REAMING TEMPLET HOLES MARKED THUS * ARE THEN REAMED TO SIZE.

Bolt for Shipment

Mill

8 Spaces @ 1'-7⅞" = 13'-2½"

25'-0 W. Line to W. Line of Trusses

Work Line Upper Chord

SEE NOTE (3)

4 - POSTS - L0-U0 } Alike
4 " " - L10-U10 }

Note:— Mark this Flange "Inside"

VIEW BB - For L4-U4 & L6-U6

16'-11¼

SEE NOTE (3)

Note:— Mark this Flange "Inside"

VIEW BB - For L2-U2 & L8-U8

16'-5¾

SECTION CC - For L4-U4 & L6-U6

16'-5¾

SECTION CC - For L2-U2 & L8-U8

4 - POSTS - L4-U4 } Alike
4 " " - L6-U6 }

4 - POSTS - L2-U2 } Alike
4 " " - L8-U8 }

Note:- Punching & Material in top & Bottom Flanges Alike

13 Spaces @ 1'-7⅞ = 21'-0⅜

21'-6

MARK THIS END "LOWER END"

MARK "TOP"

4 - DIAGONALS - L4-U5 } Alike
4 " " - L6-U5 }

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

DECK TRUSS SPANS

TOP CHORD SECTIONS - POSTS & DIAGONALS

Note:—
Rivets ⅞" ϕ Open holes 1⅛" ϕ
Holes punched 1/16" & reamed to size after assembling except holes for bracing, lacing bars & tie plates may be punched full size.
Holes marked ⊠ punched & reamed to size, or drilled from the solid, to a metal templet.

Burrs to be removed from all holes.
Paint: One coat of Sherwin Williams Kromik Structural Steel Primer #63
Washers as noted.

APPROVED 1-21-30
Waddell & Hardesty

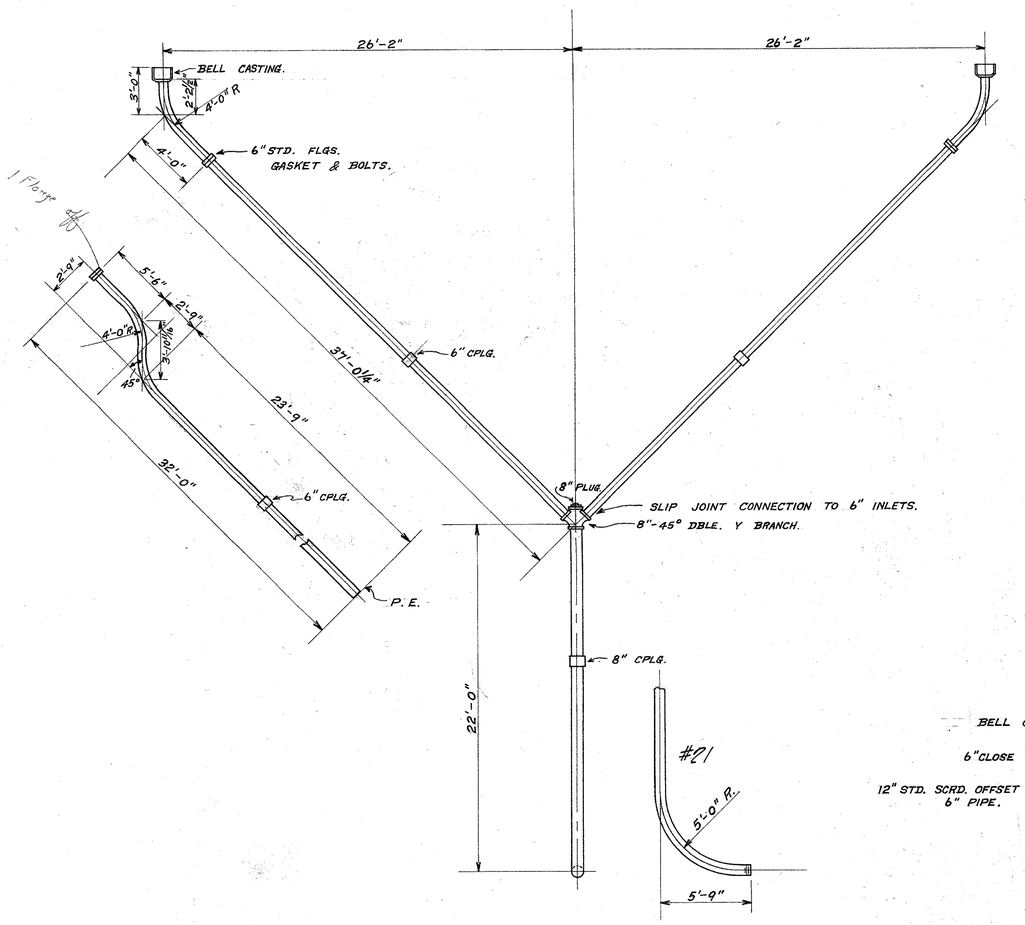
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE	G.F. Stelzner				
MADE BY	JAF	DATE	CHECKED BY	DATE	1/4/30
TRACED BY		DATE	REVISED	DATE	
SCALE:	INCH = 1 FOOT		LAST ASSEMBLING MARK		

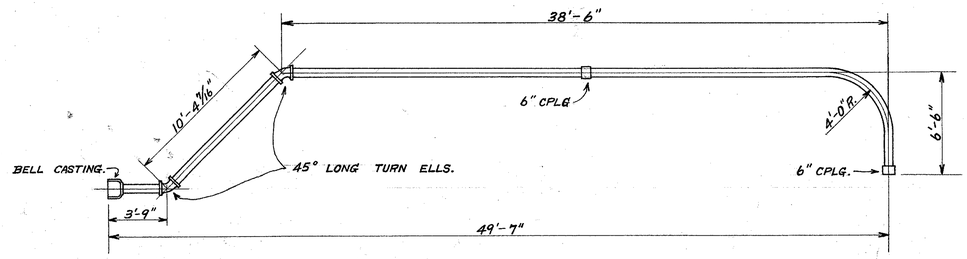
CONT. NO. 5013A SHEET NO. 1

A-2-347

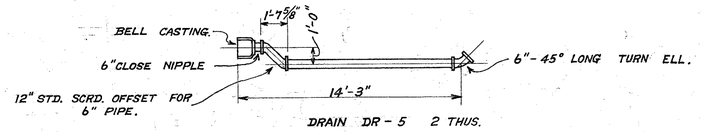
3178A



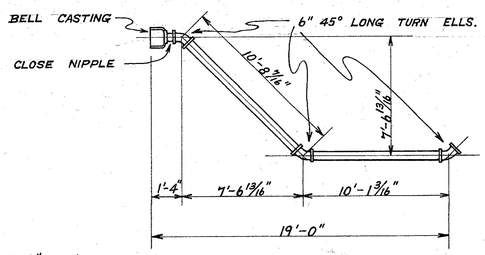
DRAIN DR 2 1 THUS
WROUGHT IRON PIPE



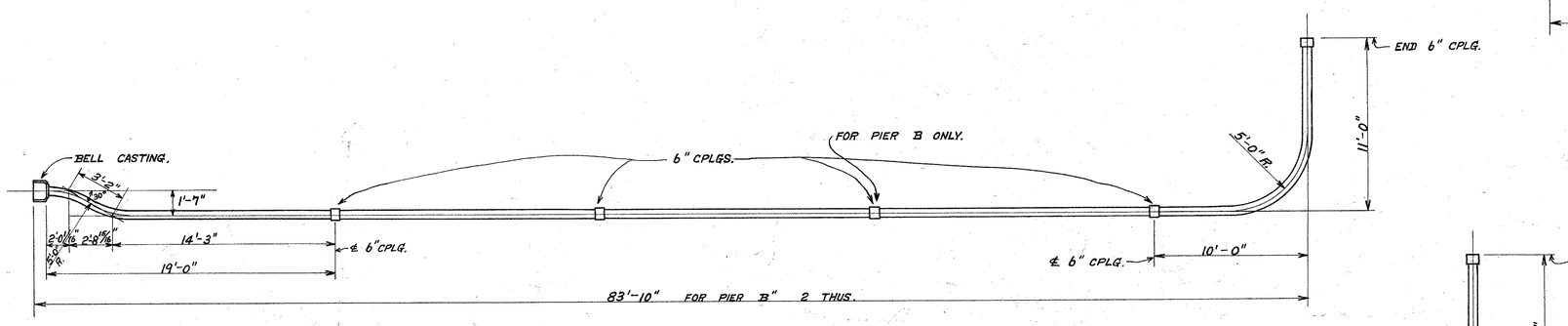
DRAIN DR 3. 2 THUS.
WROUGHT IRON PIPE.



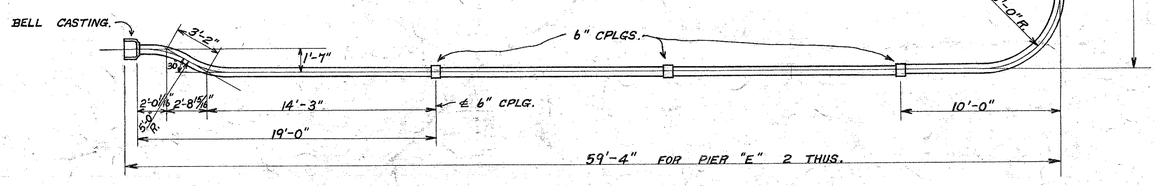
DRAIN DR - 5 2 THUS.
WROUGHT IRON PIPE



DRAIN DR 4 2 THUS
WROUGHT IRON PIPE



DRAIN DR 1
WROUGHT IRON PIPE



CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

DRAIN PIPES

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE EICHER
MADE BY DATE CHECKED BY DATE
TRACED BY DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5001X2 SHEET NO. 1

APPROVED Sept 3, 1930
Waddell & Hardesty

A-2-266

PART NOT SHOWN OPPOSITE HAND TO HR1 for HR2

SECTION H-H

SECTION G-G

SECTION B-B

SECTION A-A

SECTION E-E

SECTION C-C

SECTION F-F As Shown
SECTION K-K Opp Hand

SECTION D-D

DETAIL OF RODS aa

NOTE:- NUTS TO BE SECURELY WELDED TO BOTTOM OF PLATES, SO THAT BOLTS CAN BE REMOVED & REPLACED AFTER COVERS ARE ONCE IN PLACE. USE SQ. NUTS & HEX HDS.

NOTE: HOLES FOR LAMP TO BE DRILLED IN FIELD

RIVETS $\frac{7}{8}\phi$
HOLES $\frac{13}{16}\phi$ UNLESS NOTED

2	HANDRAILS	$HR1^R$ AS SHOWN
2	do	$HR1^L$ OPP HAND
2	do	$HR2^R$ AS SHOWN & NOTED
2	do	$HR2^L$ OPP HAND & NOTED
4	PANELS	$P1^R$ AS SHOWN
4	do	$P1^L$ OPP HAND
4	do	$RP1^R$ AS SHOWN
4	do	$RP1^L$ OPP HAND
4	do	$RP2^R$ AS SHOWN
4	do	$RP2^L$ OPP HAND
4	do	$RP3^R$ AS SHOWN
4	do	$RP3^L$ OPP HAND
2	do	$RP4^R$ AS SHOWN
2	do	$RP5^R$ AS SHOWN
2	do	$RP4^L$ OPP HAND
2	do	$RP5^L$ OPP HAND

2 HANDROPE SUPPORTS $HRT1^R$ AS SHOWN
2 do do $HRT1^L$ OPP HAND

128 CAP SCREWS HRT1 to SC1

Red lead paste to be applied to make watertight

Notes:

$\frac{7}{8}\phi$ Rivets - Unless noted
$\frac{13}{16}\phi$ Holes - Unless noted
All holes punched full size
Burrs are to be removed from all open holes
Paint:- One coat of Detroit Graphite Co's 501

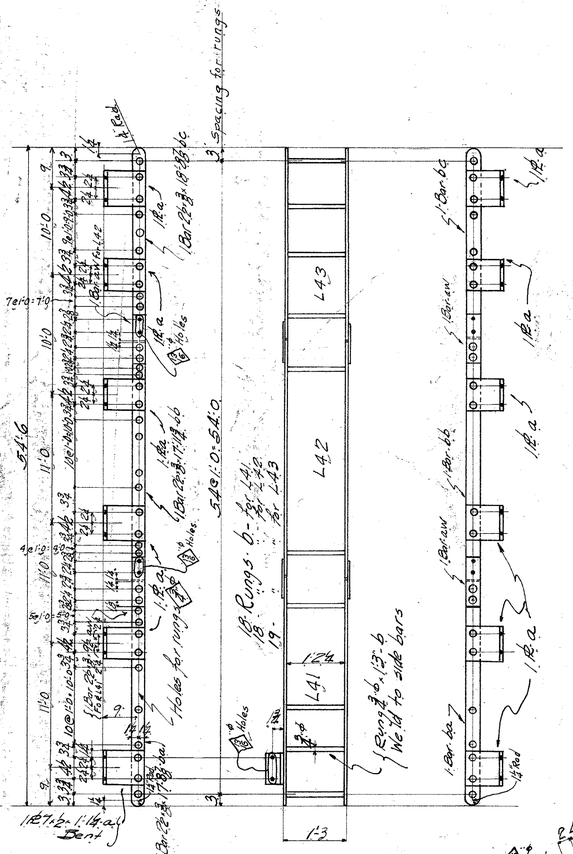
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER

TOWER
FOOTWALK ON SADDLE & HANDRAILING

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.M. Scott
MADE BY H.A.S. DATE
CHECKED BY A.E.S. DATE 4-10-30
TRACED BY J.M. DATE
REVISED DATE
SCALE:- INCH = 1 FOOT
LAST ASSEMBLING MARK
CONT. NO. 5003B SHEET NO. 13

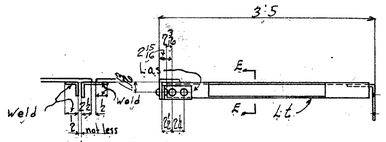
APPROVED 4-10-30
Waddell & Hardesty

A-2-319

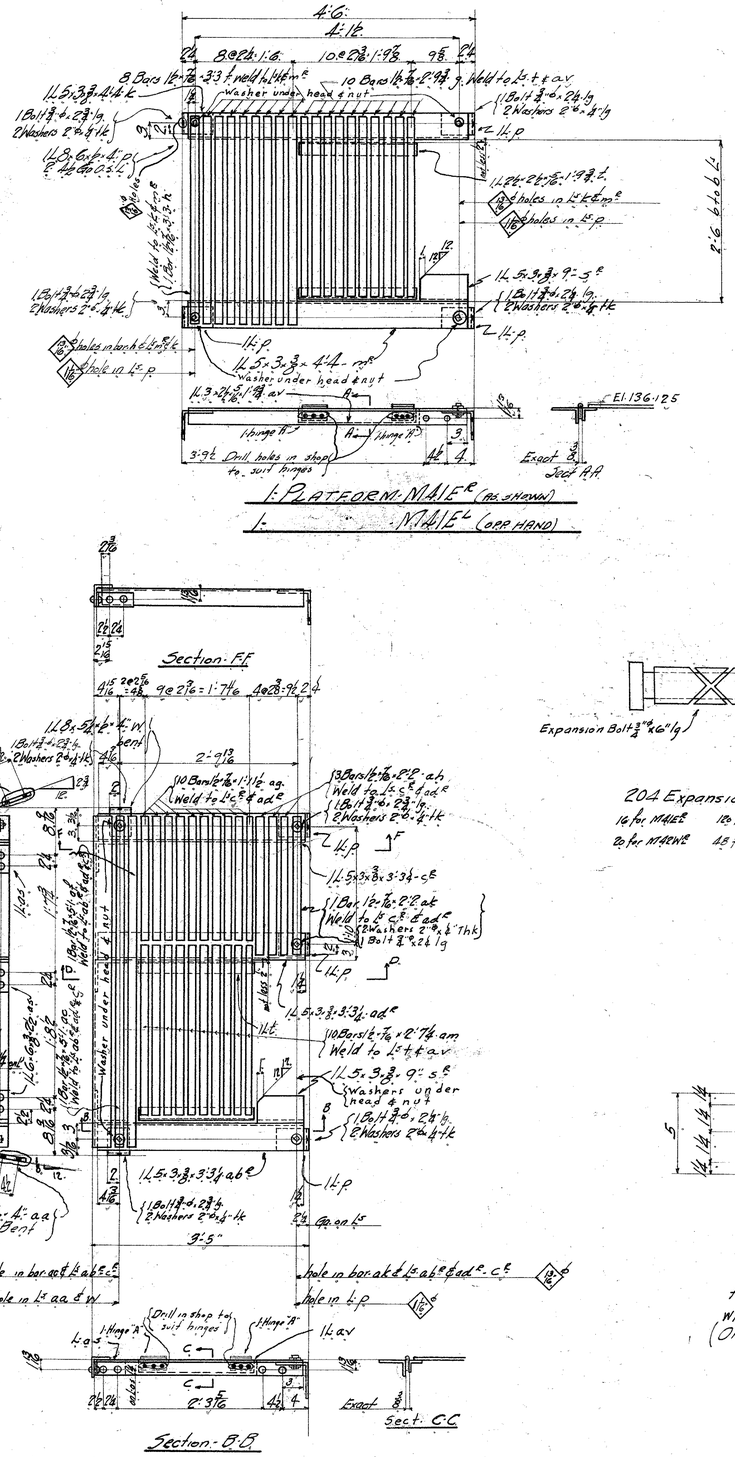


2-LADDERS-L41
2- Do -L42
2- Do -L43

Enlarged View Showing Rung

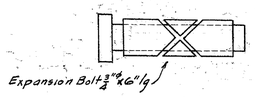


Section-DD

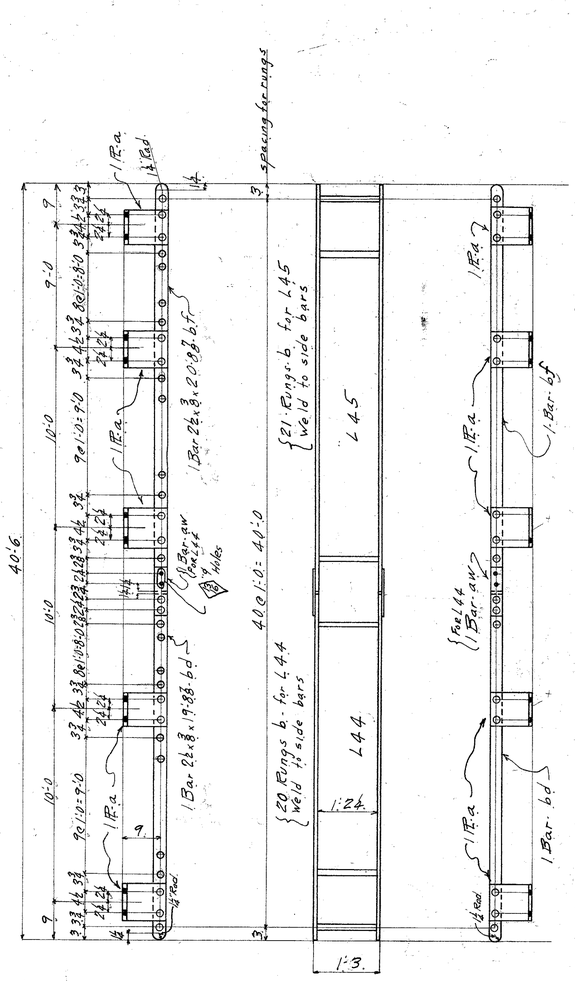


1-PLATFORM-MAIE^R (AS SHOWN)
1- " -MAIE^L (OPP. HAND)

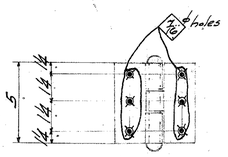
1-PLATFORM-MA2W^R (AS SHOWN)
1- DO -MA2W^L (OPP. HAND)



204 Expansion Bolts
16 for MAIE^R 16 for L44-L45
20 for MA2W^R 48 for L41-L42-L43



6-LADDERS-L44
6-LADDERS-L45



8-HINGES-"A"
to be assembled in shop with MAIE^R & MA2W^R
(Ordered on Bill Page AR-C50038)

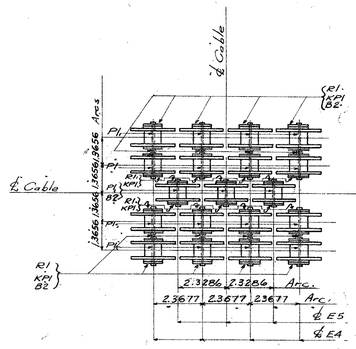
Holes as noted
Rivets - ¾" ø
Paint One coat of Detroit Graphite Co's #501

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
PLATFORMS & LADDERS
ANCHORAGES "A" & "F"

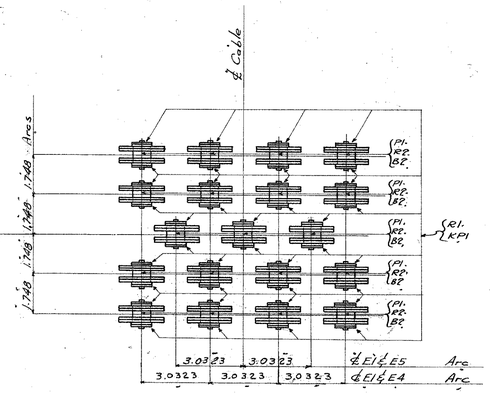
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Eichar
MADE BY F.T.N. DATE 5-30 CHECKED BY A.L.S. DATE 7/30/30
TRACED BY F.T.W. DATE 7-30 REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 50038 SHEET NO. 14

APPROVED 6/12-1930
Waddell & Hardesty

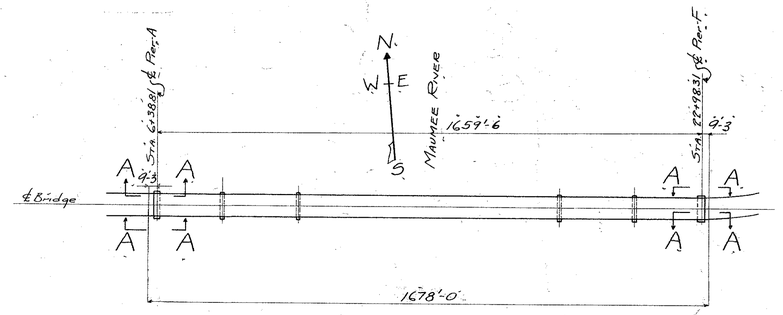
A-2-320



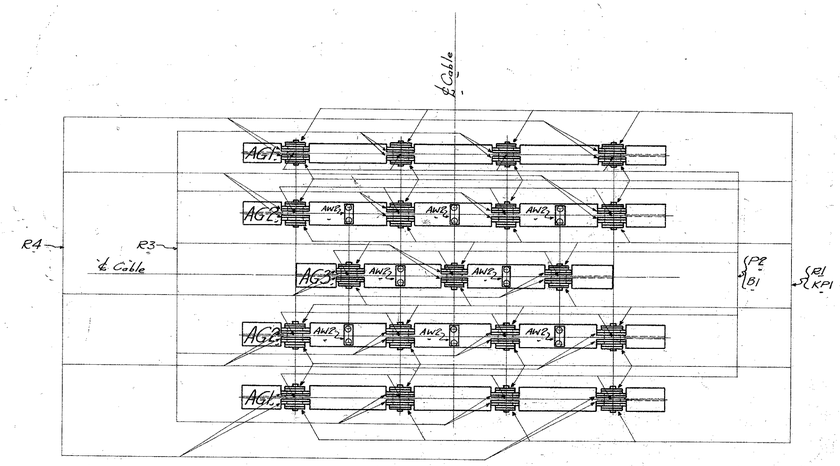
SECTION C-C



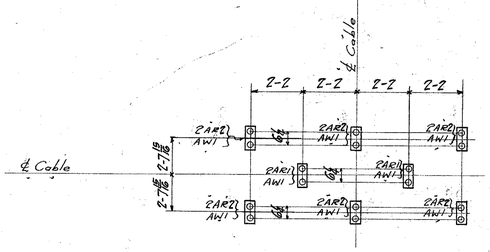
SECTION D-D



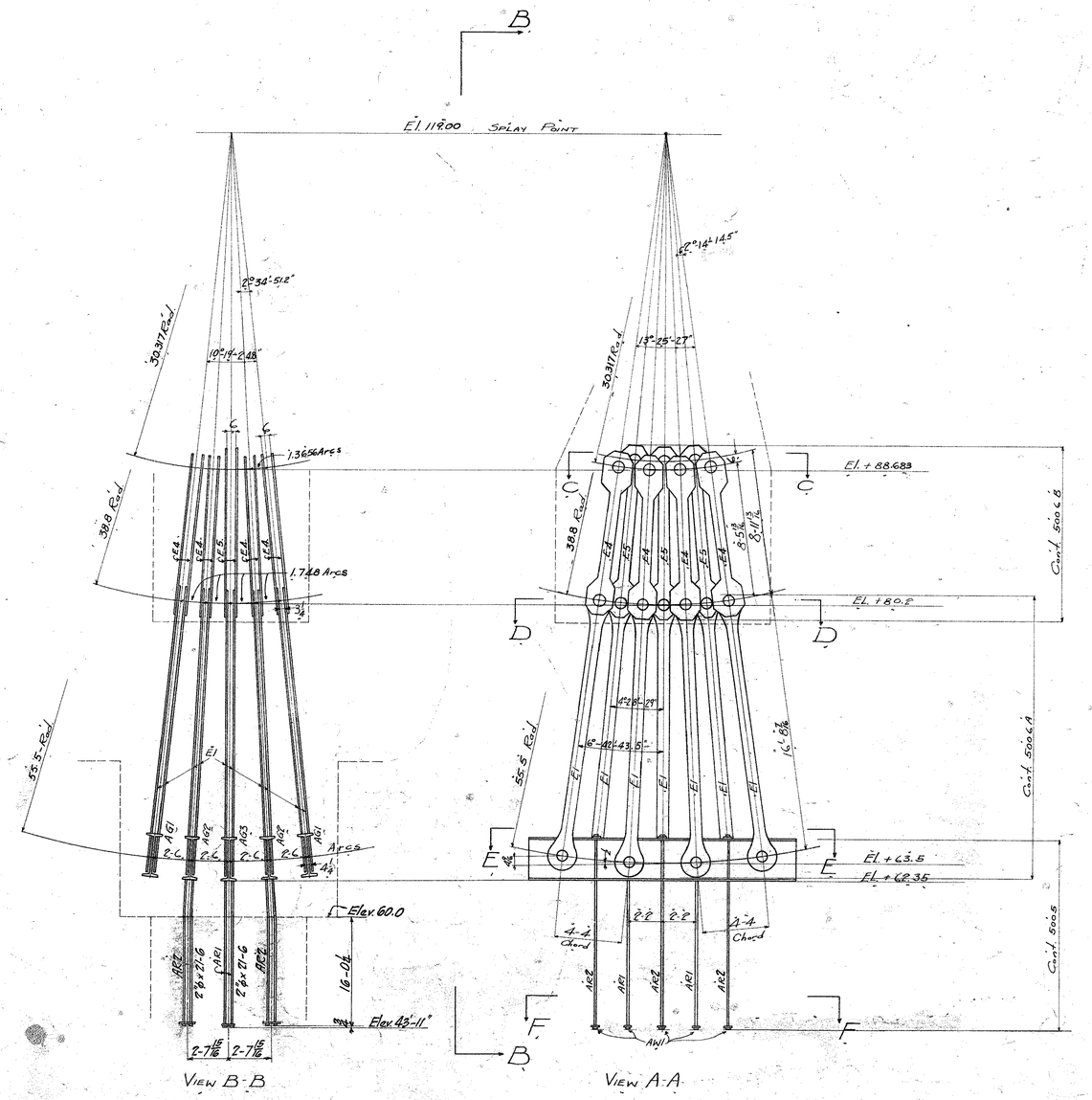
PLAN
ANCHORAGE LOCATIONS



SECTION E-E



SECTION F-F



VIEW B-B

VIEW A-A

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

ANCHORAGE ERECTION DIAGRAM

APPROVED 11-13-29

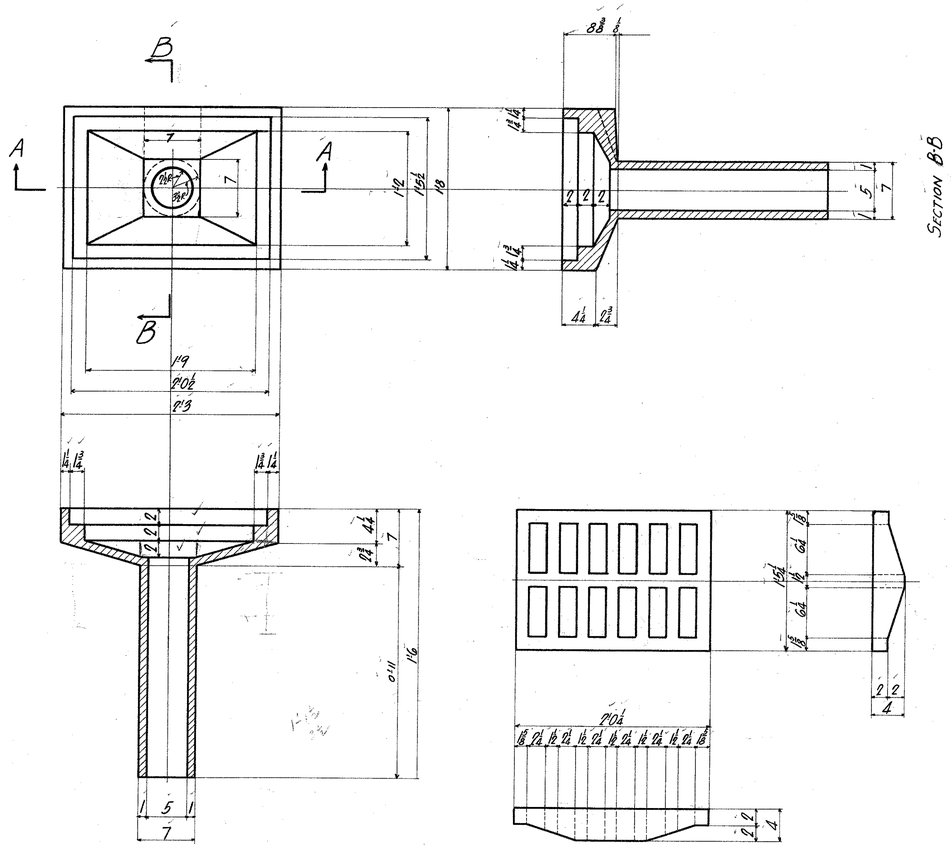
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE W.J.G. DATE | CHECKED BY Buck DATE 11/8/29
MADE BY H.C.M.C. DATE | REVISED DATE
TRACED BY DATE | LAST ASSEMBLING MARK
SCALE: INCH = 1 FOOT

CONT. NO. 5006 5006A 5006B SHEET NO. E1

A-2-331

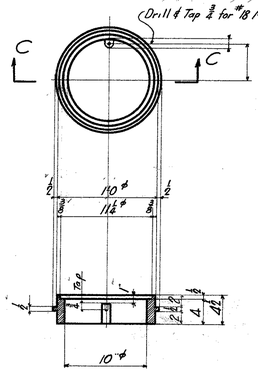


SECTION A-A

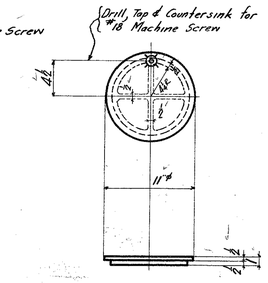
SECTION B-B

12 SCUPPER CASTINGS SC2 (CAST IRON)

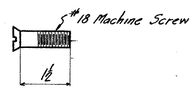
13-GRID CASTINGS GC1 (CAST IRON)
SAME AS GC1 DRWG. 5 CONTRACT 5001-B



SECTION C-C



30- HAND HOLE COVER CASTINGS - HHC1 (CAST IRON) (2 EXTRA)
SAME AS HHC1 DRWG 5 CONTRACT 5001-B



30-SCREWS-S1 (2 Extra)

28- HAND HOLE CASTINGS HH2 (CAST IRON)

Paint: One coat of Detroit Graphite Co's. #501

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

EAST & WEST APPROACH

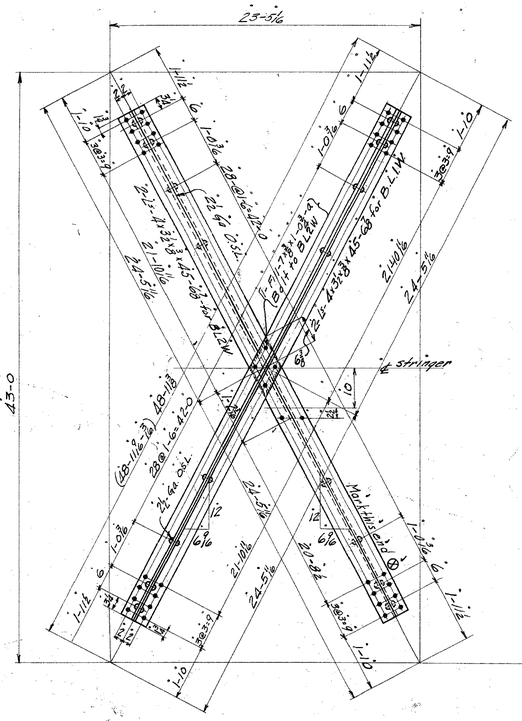
SCUPPERS - GRIDS - HAND HOLE & HAND HOLE COVER CASTINGS.

APPROVED 5/7/30

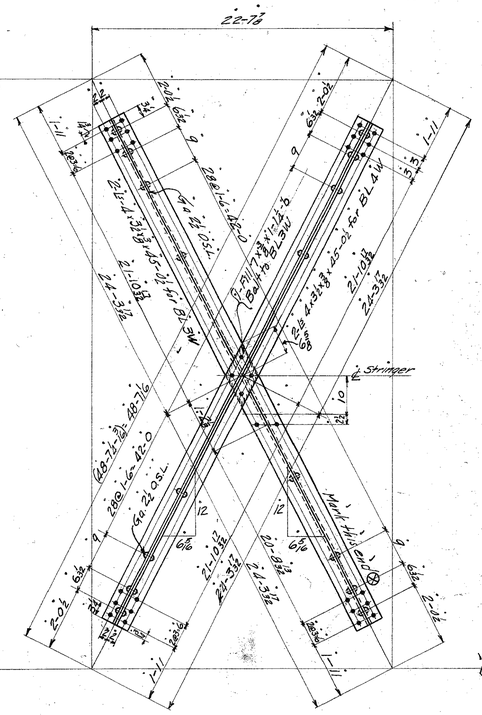
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.M. Sam
MADE BY H.F.M. DATE 4/11/30 CHECKED BY DATE
TRACED BY DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5015-D SHEET NO. 8

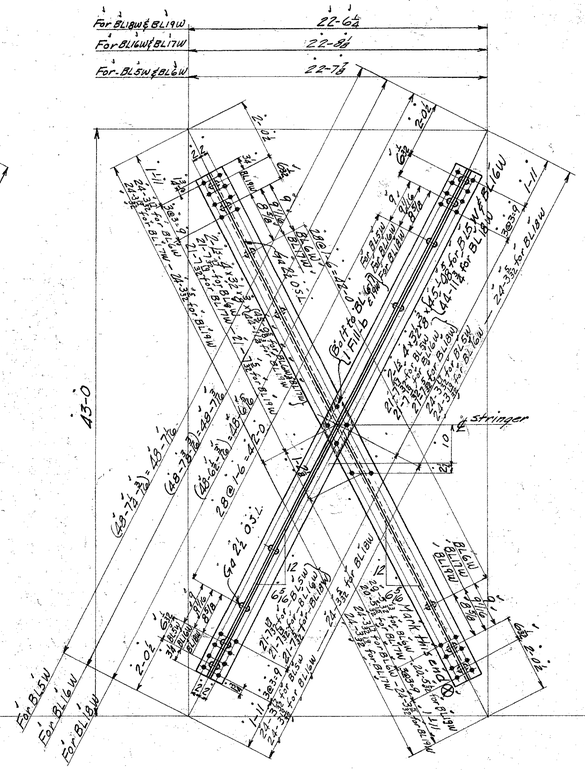
A-2-393



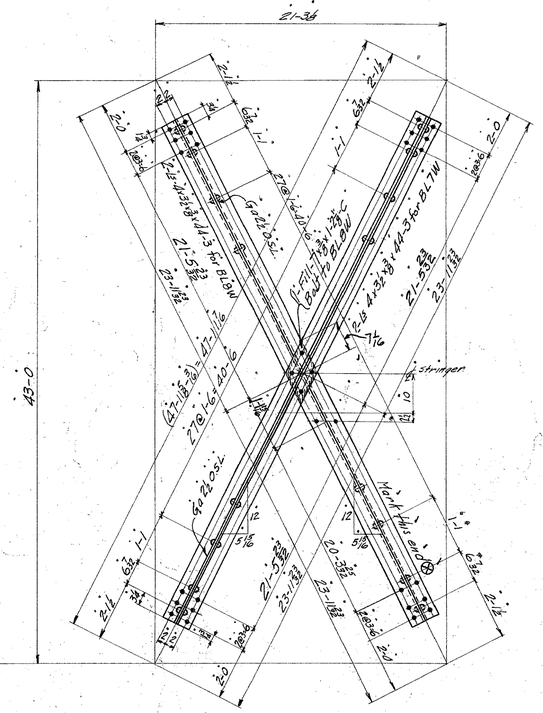
1- Bottom Lateral BL1W
1- " " BL2W



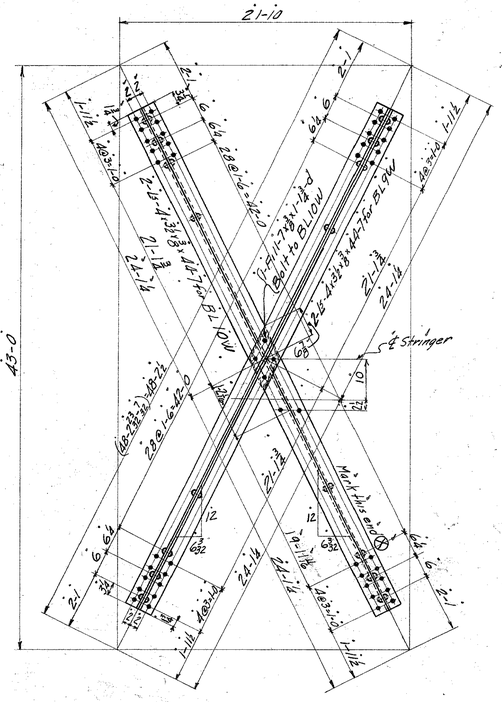
3- Bottom Laterals BL3W
3- " " BL4W



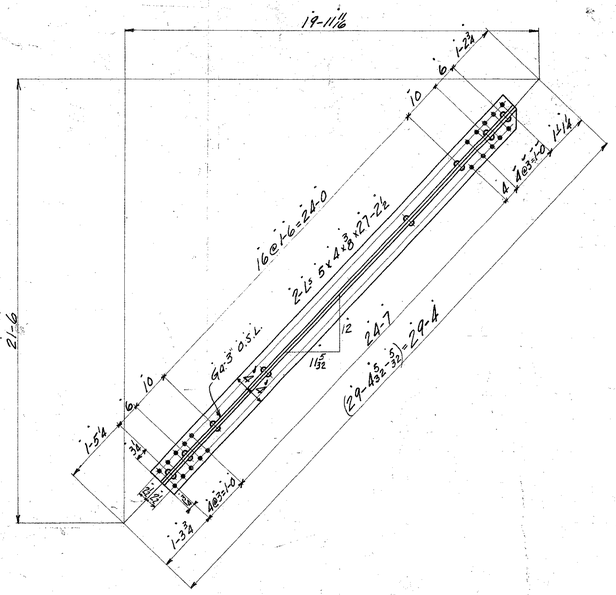
2 Bottom Laterals BL5W
2 " " BL6W
2 " " BL16W
2 " " BL17W
1 " Lateral BL18W
1 " " BL19W



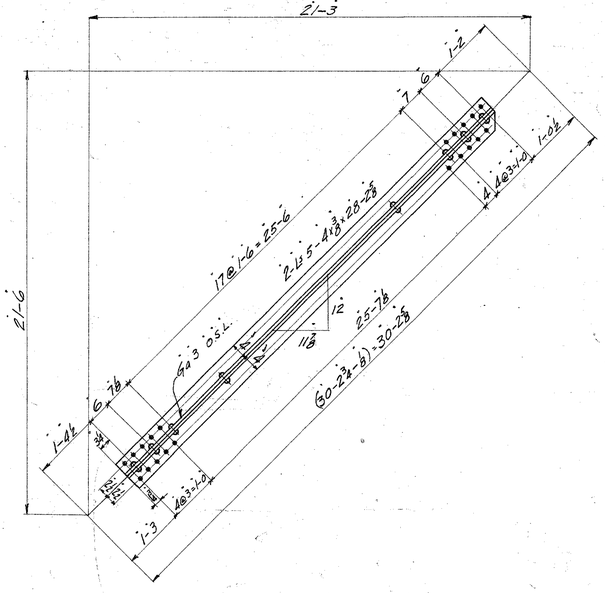
1- Bottom Lateral BL7W
1- " " BL8W



1- Bottom Lateral BL9W
1- " " BL10W



4- Bottom Laterals BL11W^R as shown
4- " " BL11W^L opp hand



4- Bottom Laterals BL12W^R as shown
4- " " BL12W^L opp hand

Rivets:- 7/8" ϕ
Holes 15/16" ϕ

All holes punched full size
Burrs to be removed from all open holes

Paint:- One coat of Industrial Paint Co. Brown Nacoro

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

WEST APPROACH

LATERALS - SPAN #1 & 3 to 7 INC.

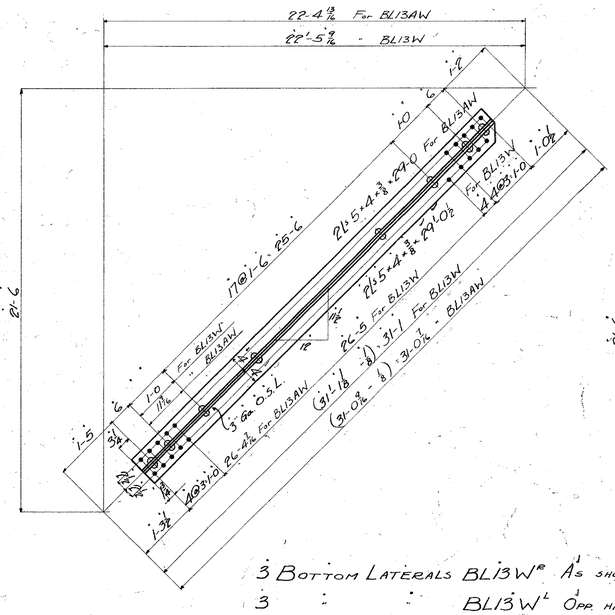
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE W^m SON
MADE BY C.W.K. DATE CHECKED BY F.B.A. DATE 1/30
TRACED BY E.L.Z. DATE REVISED DATE
SCALE: 1 INCH = 1 FOOT LAST ASSEMBLING MARK 8

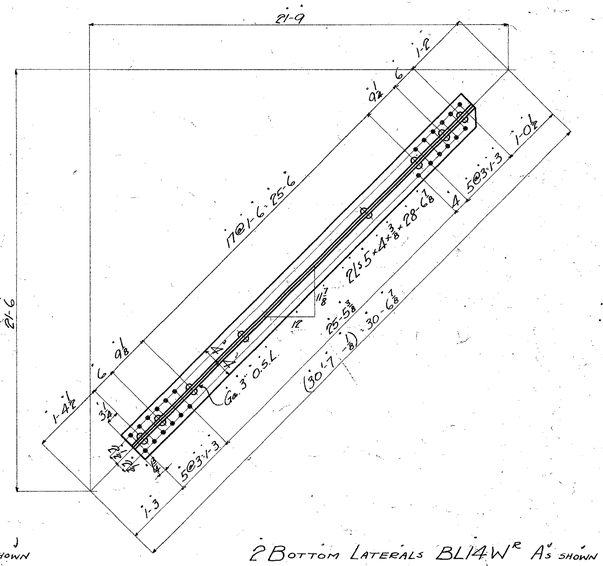
CONT. NO. 5015D SHEET NO. 104

APPROVED 1-24-30
Waddell & Hardesty

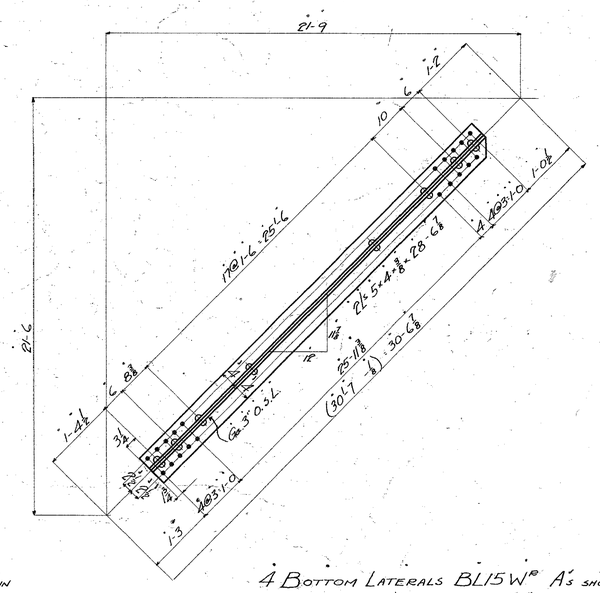
A-2-397



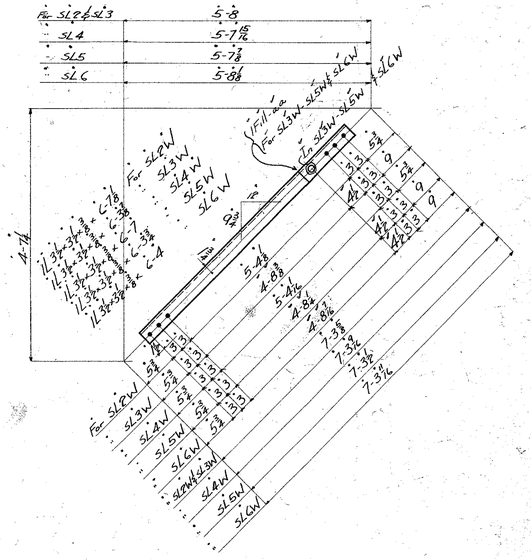
3 Bottom Laterals BL13W^{R} As shown
3 " " BL13W^{L} Opp. hand
1 " " BL13AW^{R} As shown
1 " " BL13AW^{L} Opp. hand



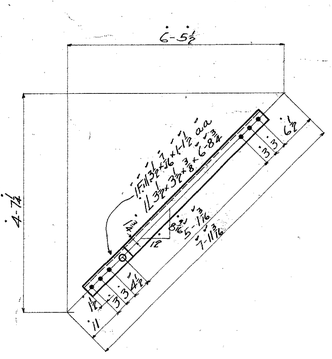
2 Bottom Laterals BL14W^{R} As shown
2 " " BL14W^{L} Opp. hand



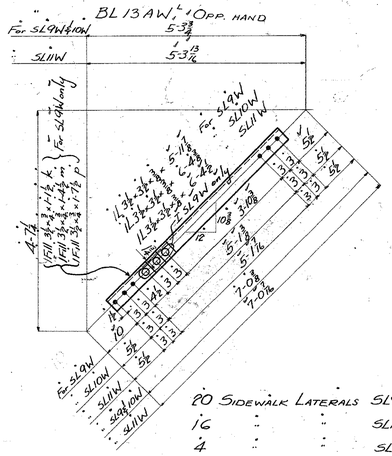
4 Bottom Laterals BL15W^{R} As shown
4 " " BL15W^{L} Opp. hand



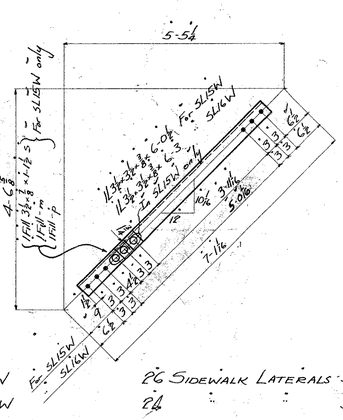
24 Sidewalk Laterals SL2W
24 " " SL3W
12 " " SL4W
4 " " SL5W
4 " " SL6W



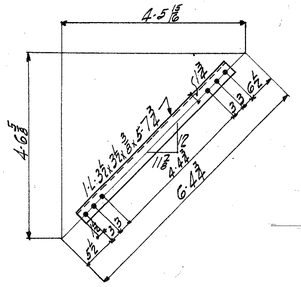
2 Sidewalk Laterals SL1W



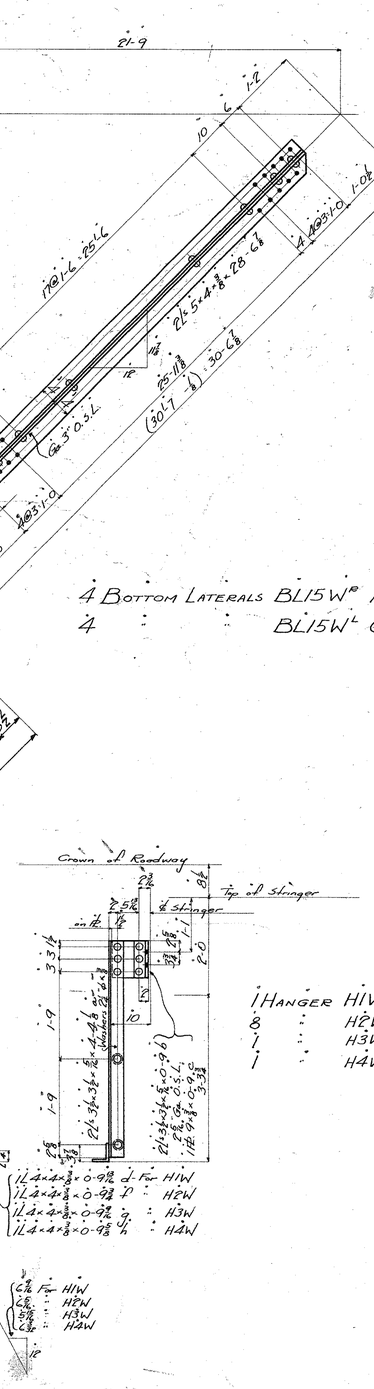
20 Sidewalk Laterals SL9W
16 " " SL10W
4 " " SL11W



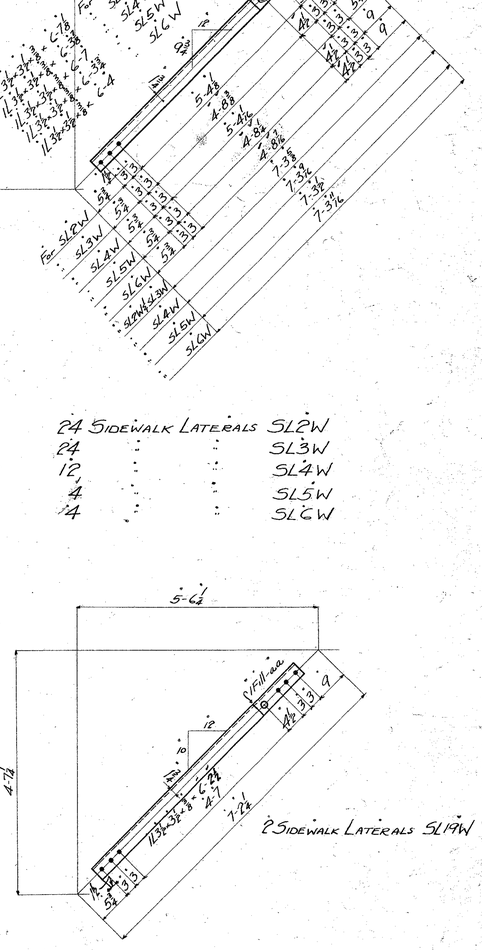
26 Sidewalk Laterals SL15W
24 " " SL16W



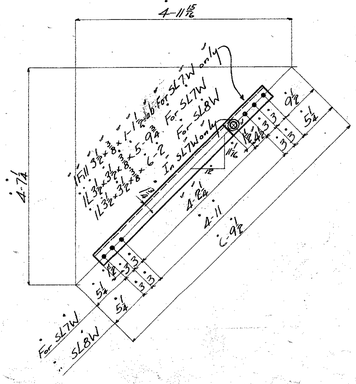
2 Sidewalk Laterals SL21W



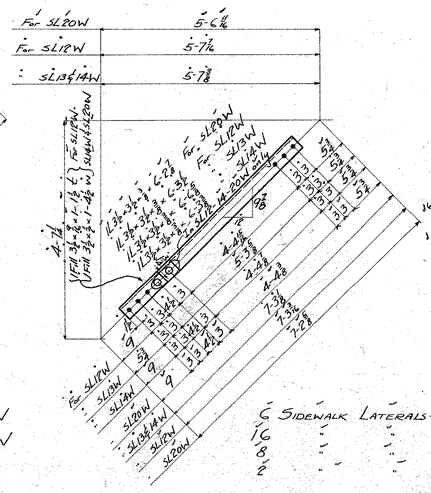
1 Hanger H1W
8 " H2W
1 " H3W
1 " H4W



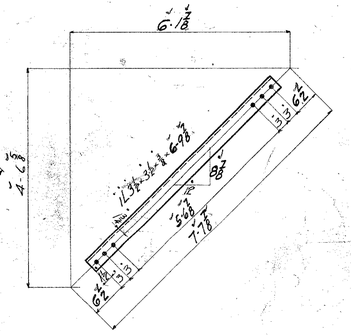
2 Sidewalk Laterals SL19W



16 Sidewalk Laterals SL7W
16 " " SL8W



6 Sidewalk Laterals SL12W
16 " " SL13W
8 " " SL14W
6 " " SL20W



4 Sidewalk Laterals SL17W

Rivets : 7/8" ϕ
Holes : 15/16" ϕ
All holes punched full size.
Burrs to be removed from all open holes.

Paint: One coat of Industrial Paint Co's Brown Nacoro

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
WEST APPROACH
LATERALS & HANGERS - SPANS 1 TO 7

Approved 2-10-30
1-14-30
Waddell & Hardesty.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Wm Son
MADE BY C.W.K. DATE CHECKED BY F.E.A. DATE 1-30
TRACED BY J.M. DATE REVISED DATE
SCALE- INCH = 1 FOOT LAST ASSEMBLING MARK 24
CONT. NO. 5015 D SHEET NO. 105

A-2-398

Total
41-Rs-9⅞"x⅞"x0'-11"-b3
42-Ls 3.3"x3"x⅝"x2'-9½"-a3

Total
41-Rs-b3
42-Ls-a3

2-DIAGONALS-TB23

Ctsk. Near Side
Flatten to ⅜" High F.S.
2-Fills-30½"x½"x4'-1"-h3

Ctsk N.S.
Flatten to ⅜" high F.S.

Mark this end near side thus "⊗"

4 Ls 3½"x3½"x½"x7'-8"
2-Rs 36"x½"x7'-8"

2-Rs-11⅞"x⅞"x11'-1½"-f.
2-Fills-30½"x½"x12'-3½"-g.

Flatten to ⅜" F.S.

Flatten to ⅜" F.S.

Symm. abt. ℄ except as shown and noted.

Rivets:- ⅞"ø
Holes 15/16"ø
Holes for shop rivets to be punched full size.
All field holes to be subpunched 1/16" and reamed to 15/16" thru an iron templet.
Burrs to be removed from all holes.
Paint:- One Coat of Detroit Graphite Co.'s #501.

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

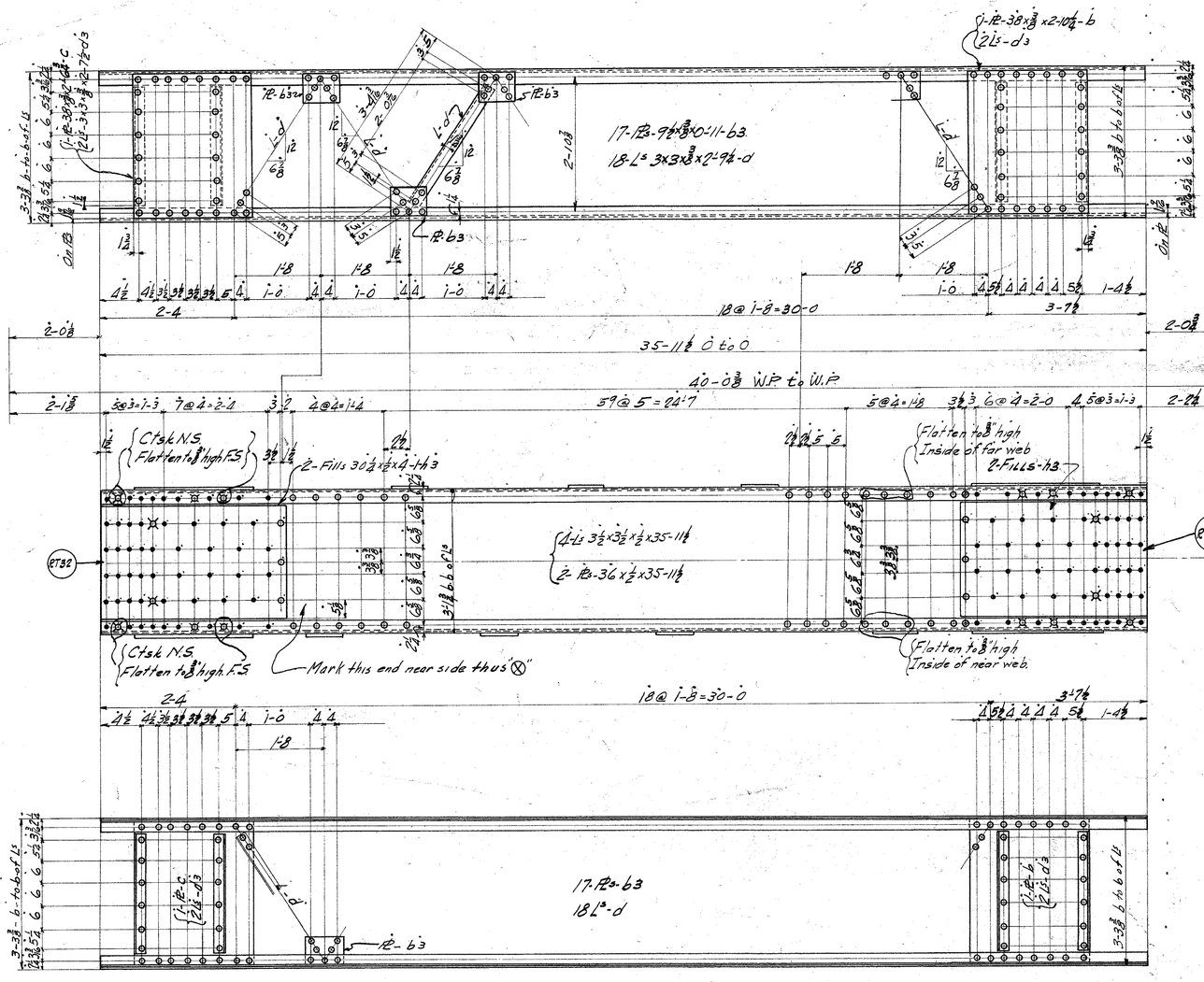
TOWER BRACING

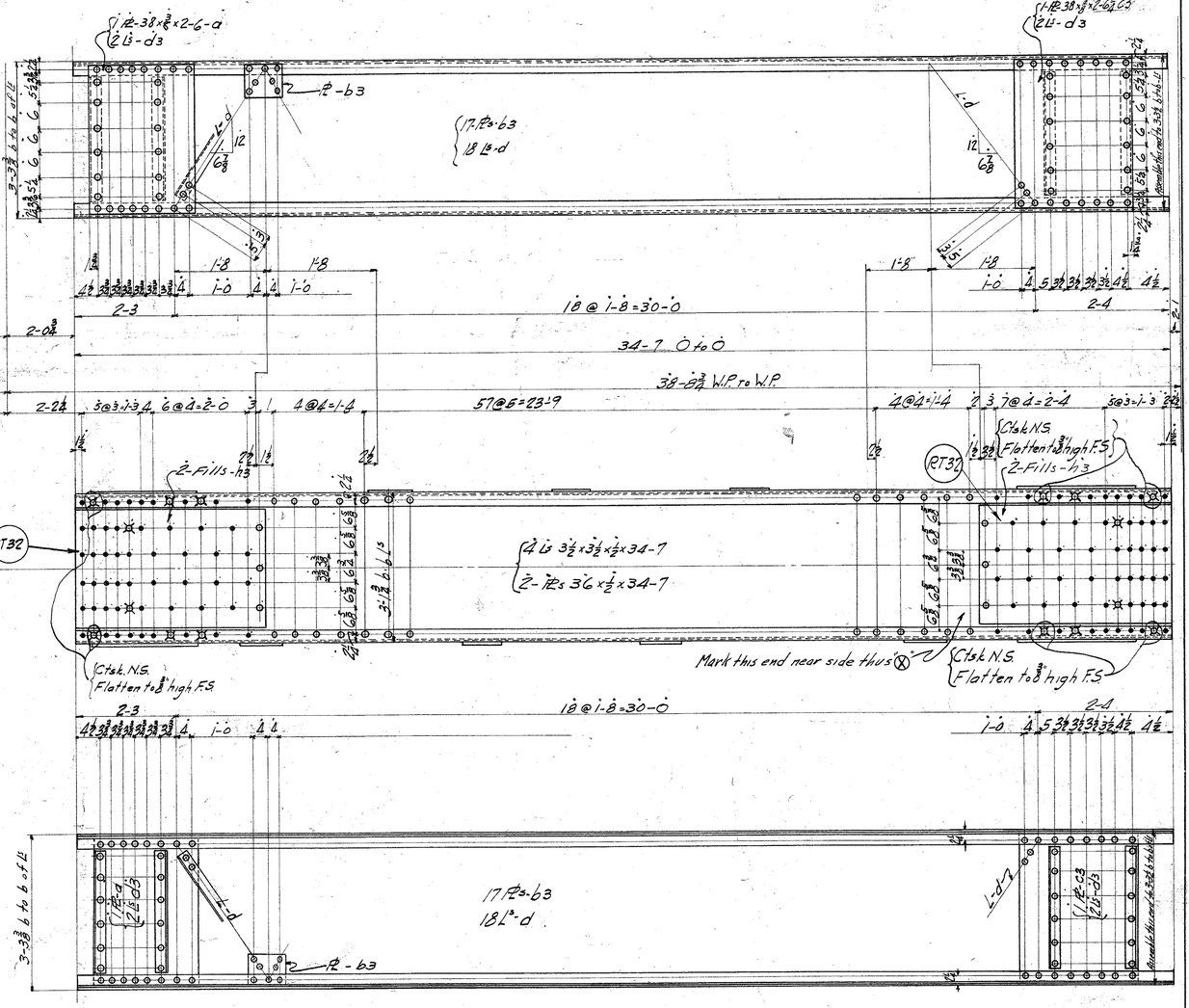
DIAGONALS BELOW ROADWAY.

APPROVED 2-1-30
Waddell & Hardesty.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Wilson
MADE BY H DATE CHECKED BY H.W.C. DATE 1/2/30
TRACED BY EZ DATE 1/30/30 REVISED DATE
SCALE:- INCH = 1 FOOT LAST ASSEMBLING MARK 11
CONT. NO. 5003B SHEET NO. 3

A-2-309





Rivets-⅞"ϕ
Holes 1⅛"ϕ
Holes For Shop Rivets To Be Punched Full Size.
All Field Holes to be Subpunched 1⅛" and
Reamed to 1⅛" thru an Iron Templet.
Burrs To Be Removed From All Holes.

PAINT:- One Coat of Detroit Graphite Co's #501

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

TOWER BRACING

DIAGONALS BELOW ROADWAY

APPROVED 2-1-30

Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE Wilson			
MADE BY EB	DATE	CHECKED BY H.W.C.	DATE 1/31/30
TRACED BY EZ	DATE	REVISED	DATE
SCALE:- INCH = 1 FOOT		LAST ASSEMBLING MARK	0

CONT. NO. 5003B SHEET NO. 4

A-2-310

Mark Far Side "Shore Face"

Slot Near Web

Holes for erection purposes to be plugged with rivets in field

Holes for erection purposes to be plugged with rivets in field.

In this half Only

In this half only

This half only

Symmetrical About ℄ Except As Noted

Note Break in Stagger

Note break in stagger

Detailed Normal with one Shim

Section A-A

Section B-B

Section C-C

Section D-D
Developed

Section G-G

2- Transverse Struts-TB42

Details For This Web Not Shown To Be Same As For Web

Rivets ⅞" ϕ Holes 1⅛" ϕ Unless noted.
Holes For shop rivets to be punched full size
Holes for connection to tower gussets to be subpunched 1 1/16" and reamed to 1 5/16" after assembling in Shop
Holes marked (T) to be subpunched 1⅛" and reamed to 1 5/16" to an iron templet
All other field holes to be punched full size.
Burrs to be removed from all holes.
Plane top of 8" Slabs to straight line between ordinates given for parabolic curve
Paint: One coat of Detroit Graphite Co's #501

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

Tower Bracing
Strut at Roadway

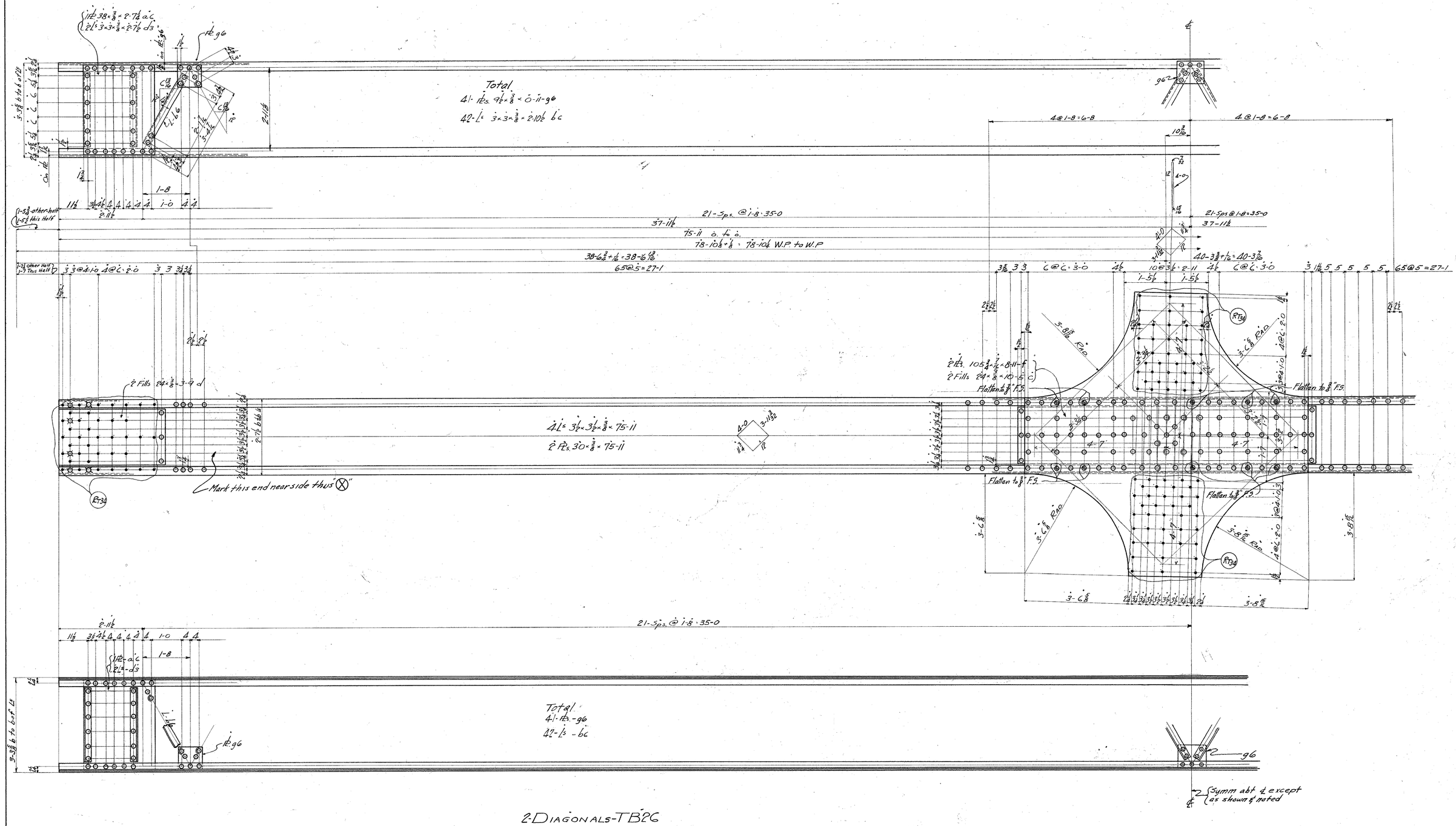
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE Wm Corr DATE
MADE BY W.F.H. CHECKED BY H.W.C. DATE 7/21/30
TRACED BY C.E.P. DATE 2/1/30 REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK CM

CONT. NO. 5003B SHEET NO. 5

APPROVED 3-17-30
Waddell & Hardesty

A-2-311



CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

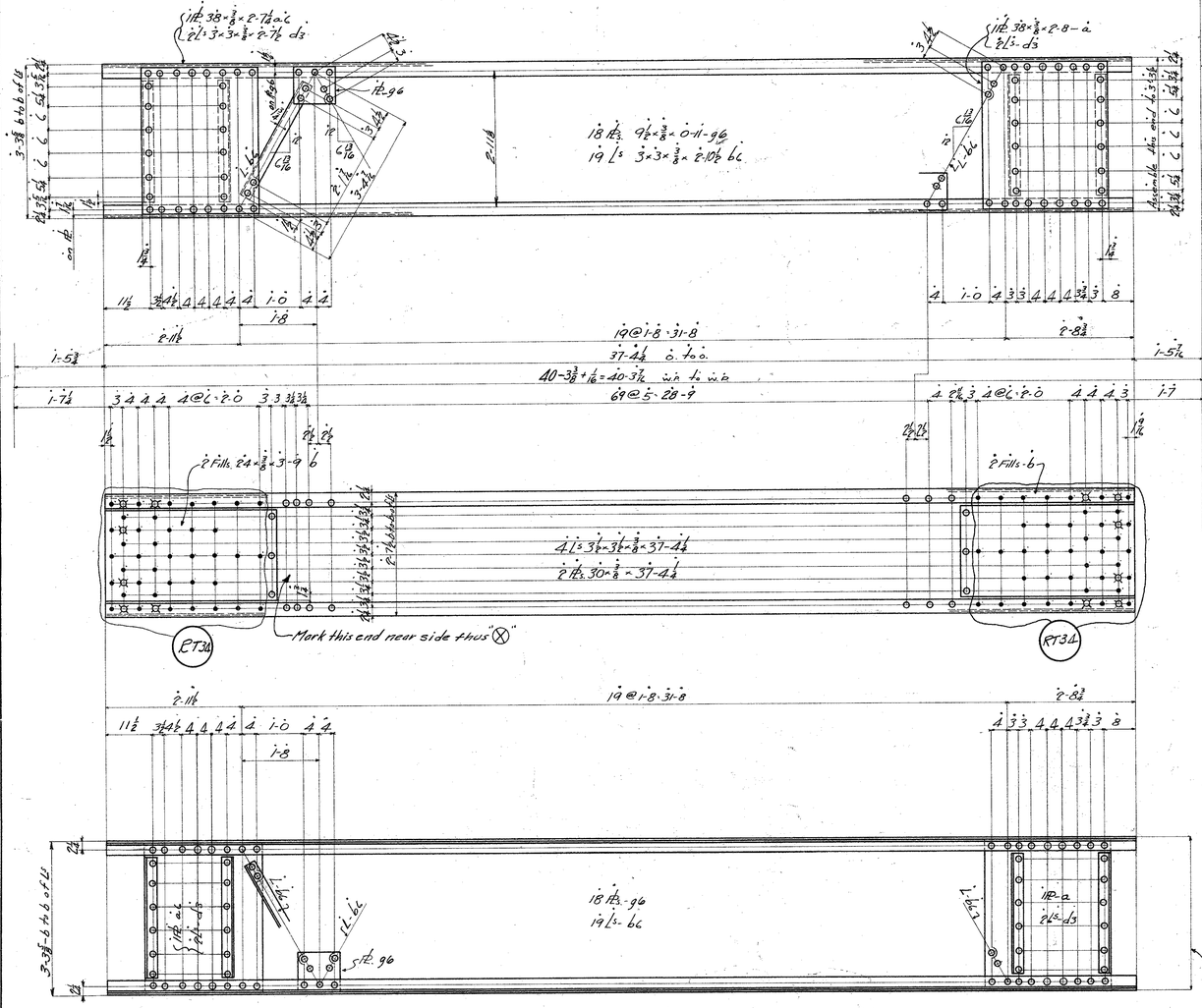
TOWER BRACING
DIAGONALS ABOVE ROADWAY

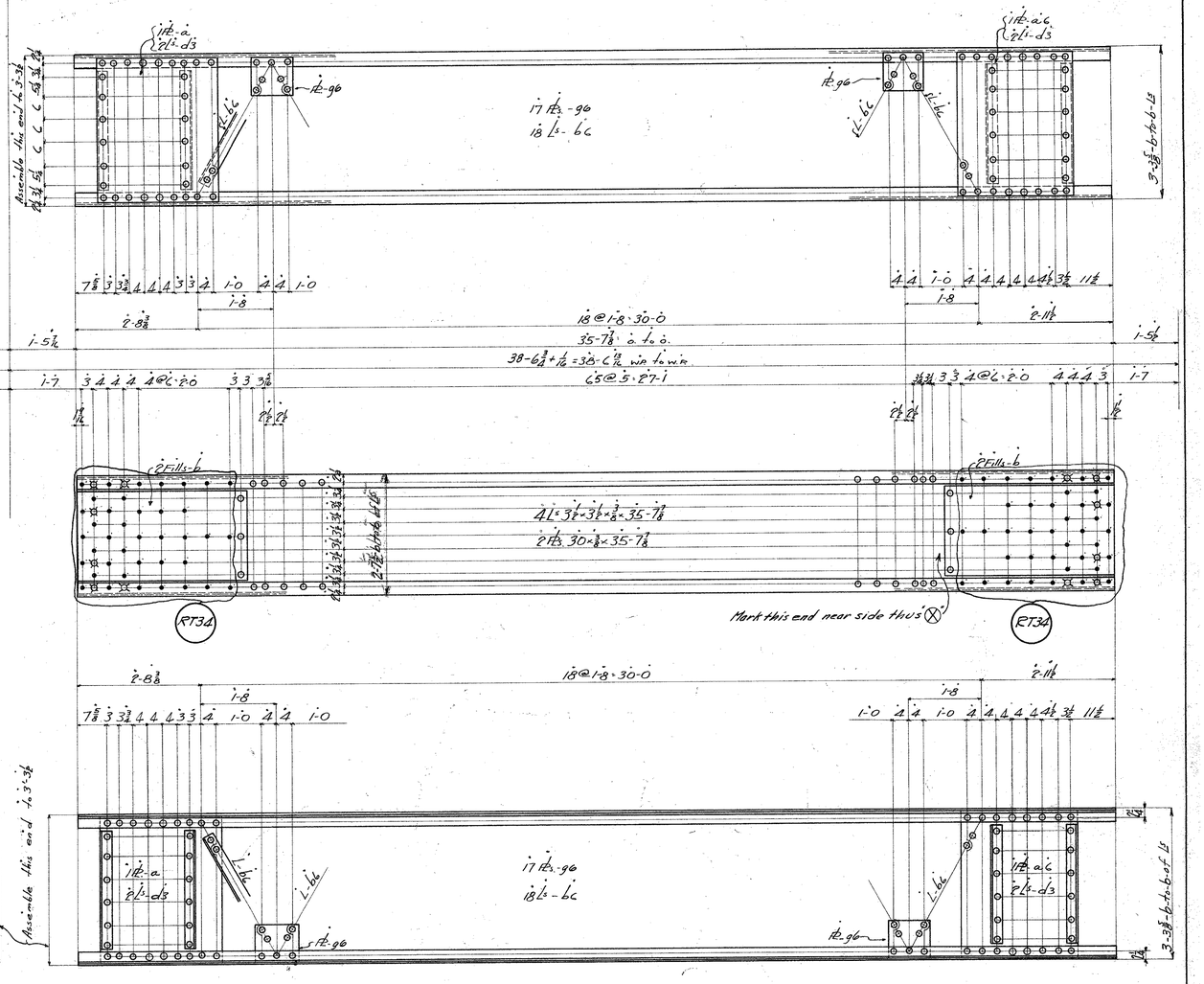
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE W.M. SON
MADE BY RH DATE
CHECKED BY H.W.C. DATE 1/24/30
TRACED BY J.M. DATE
REVISED DATE
SCALE: INCH = 1 FOOT
LAST ASSEMBLING MARK 9
CONT. NO. 5003B SHEET NO. 6

APPROVED 2-10-30
Waddell & Hardesty

A-2-312





Rivets: ⅞" ϕ
Holes: 15/16" ϕ
Holes for shop rivets to be punched full size.
All field holes to be subpunched 1 1/16" ϕ & reamed to 15/16" ϕ thru an iron templat
Burrs to be removed from all holes.

Paint: One coat of Detroit Graphite Co's #501

CITY OF TOLEDO, OHIO

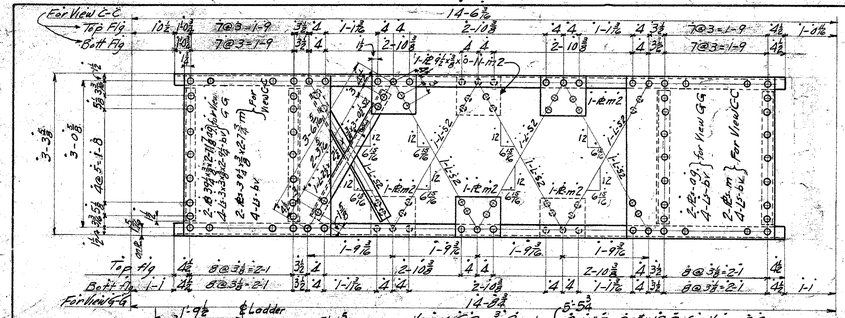
BRIDGE OVER MAUMEE RIVER

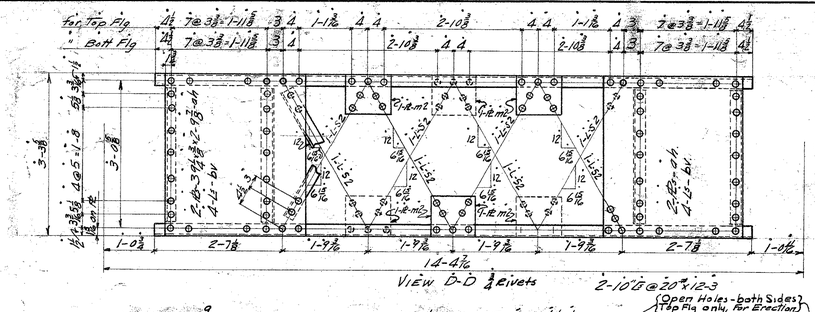
TOWER BRACING
DIAGONALS ABOVE ROADWAY

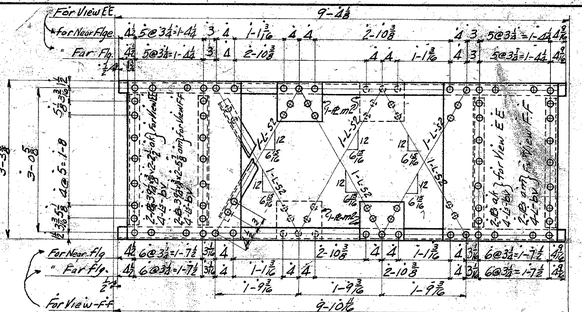
APPROVED 2-10-30
Waddell & Hardesty

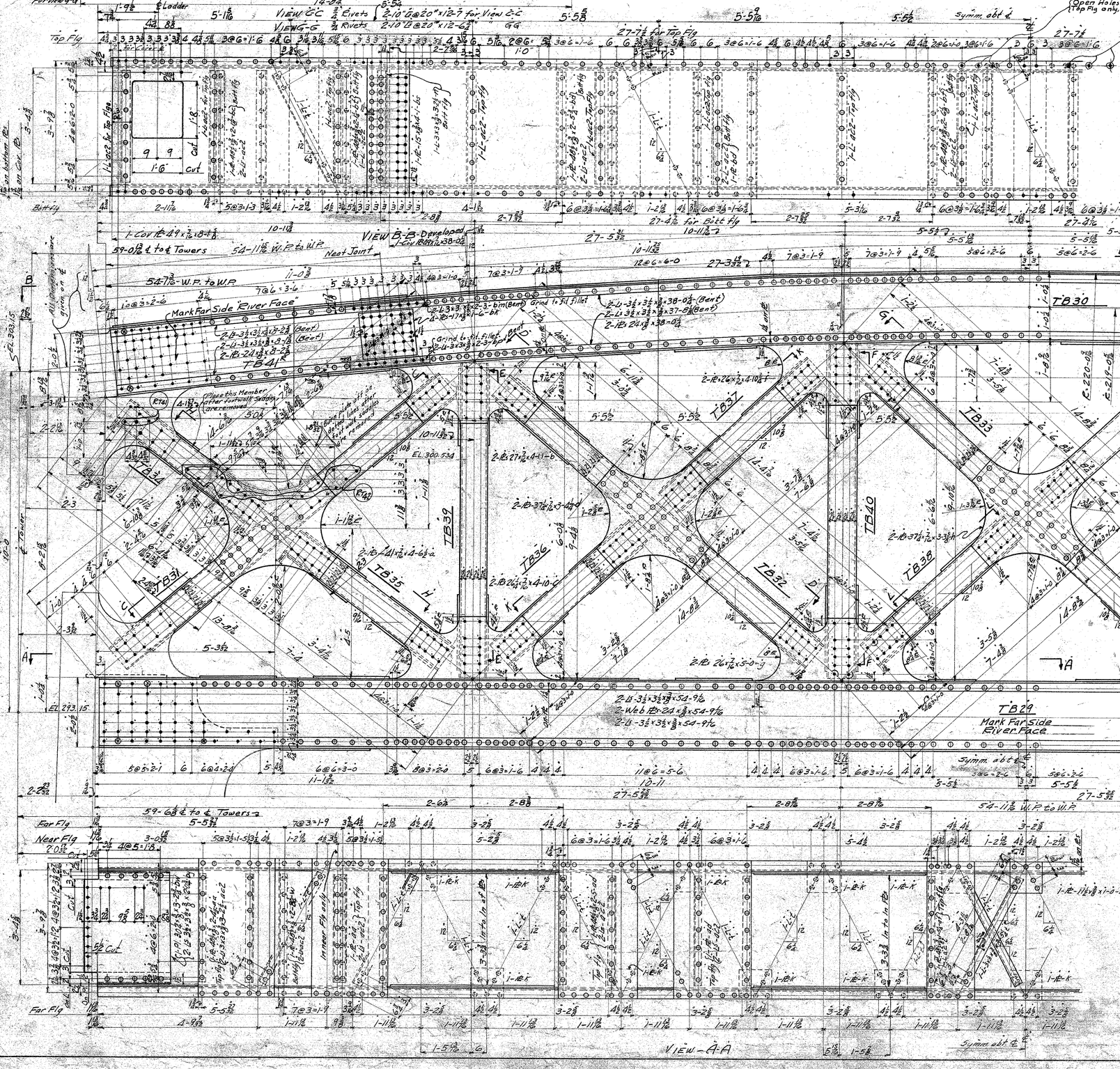
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.C. Son
MADE BY CH DATE
CHECKED BY H.W.C. DATE 1/21/30
TRACED BY DATE
REVISED DATE
SCALE- INCH = 1 FOOT
LAST ASSEMBLING MARK 6
CONT. NO. 5003B SHEET NO. 7

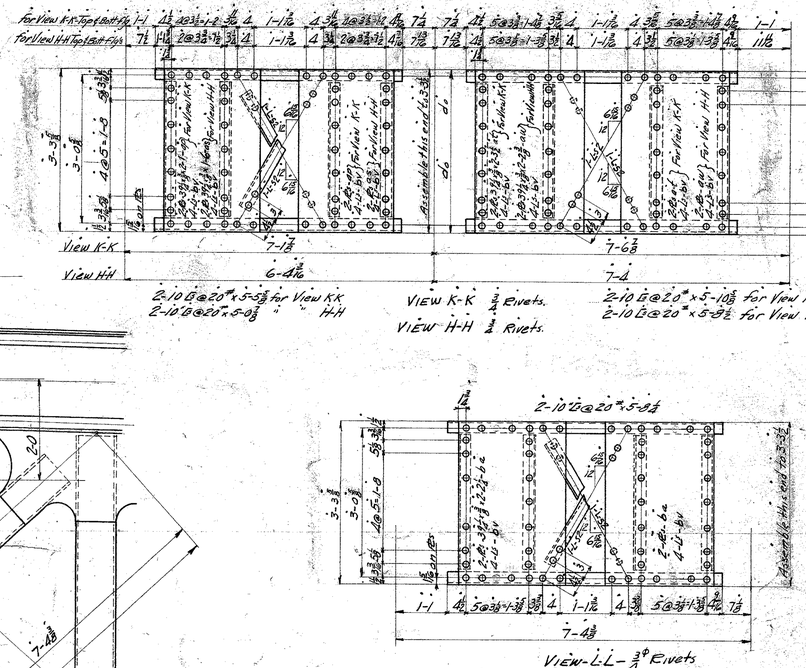
A-2-313











2-Bottom Chords TB29
2-Top " TB30
4-Diagonals TB31
4 do TB32
2 do TB33
4 do TB34
4 do TB35
4 do TB36
4 do TB37
4 do TB38
4 Verticals TB39
4 do TB40
2- Top Chords TB41R As Shown
2- do TB41L-Opp Hand.

Rivets 7/8" Unless Noted.
Holes 13/16"ø
Holes for shop rivets to be punched full size.
All field holes to be subpunched 1/4" & reamed to 13/16" after assembling in shop.
All joints to be reamed & match-marked with sections assembled in shop.
Burrs to be removed from all holes.

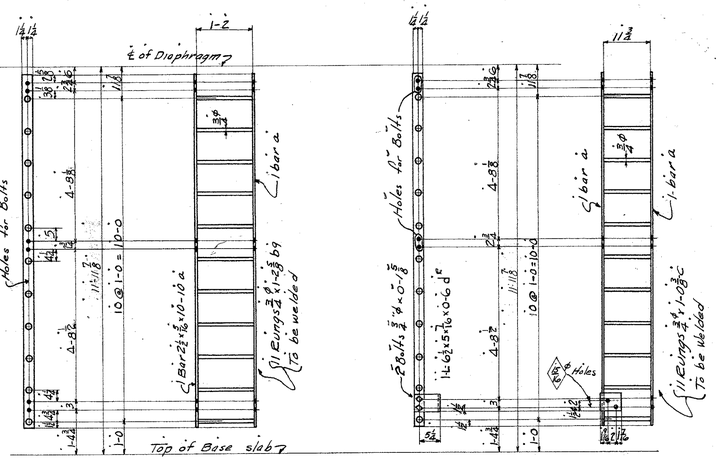
Paint- One coat of Detroit Graphite Co's #501.

APPROVED 3-29-30
Waddell & Hardesty

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
TOWER BRACING
STRUT AT TOP OF TOWER.

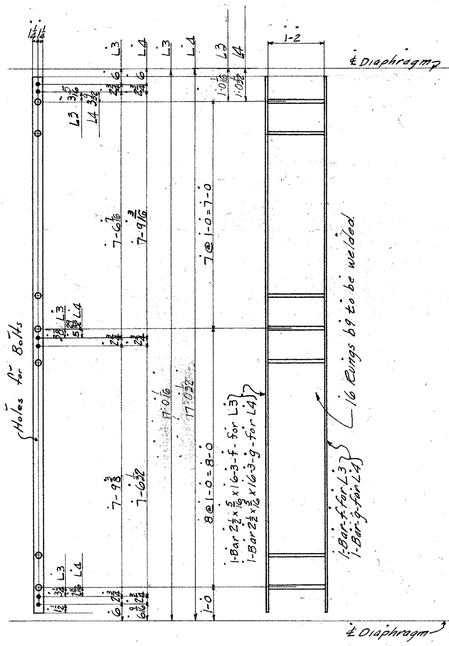
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Wm Son.
MADE BY C.W.K. DATE CHECKED BY H.W.C. DATE 1/29/30
TRACED BY E.Z. DATE REVISED DATE
SCALE: 1 INCH = 1 FOOT LAST ASSEMBLING MARK 69
CONT. NO. 5003B SHEET NO. 8

A-2-314

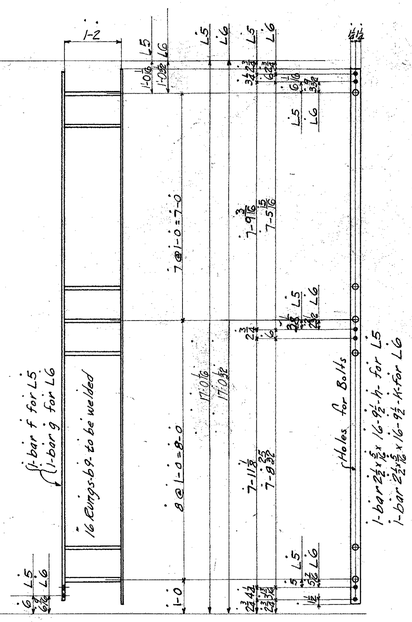


12 Ladders-L1

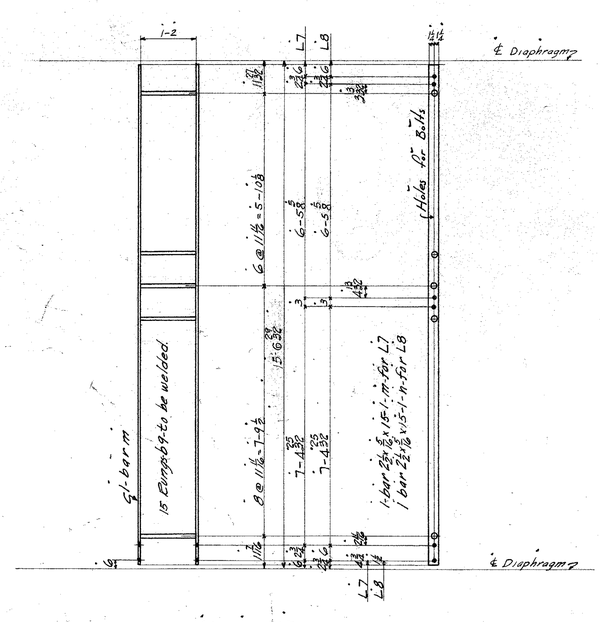
4 Ladders L2 as shown.
4 " L2 opp hand



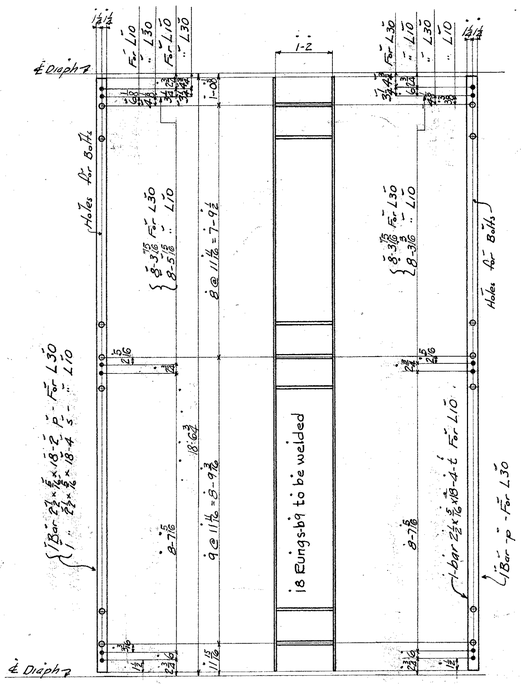
4 Ladders L3
4 " L4



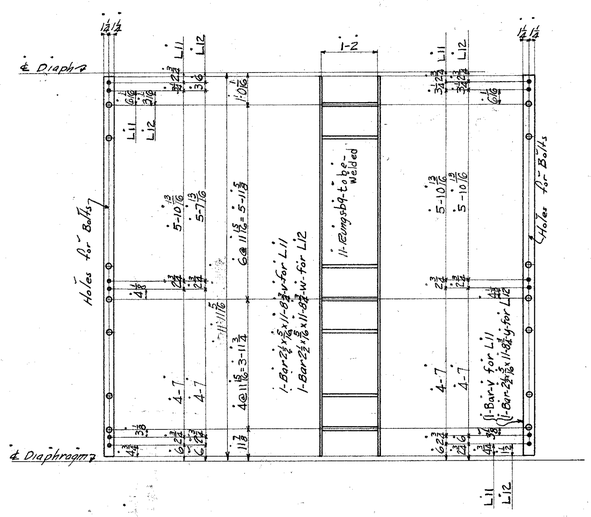
8 Ladders-L5
8 " L6



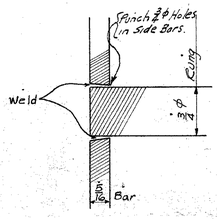
4 Ladders-L7
8 " L8



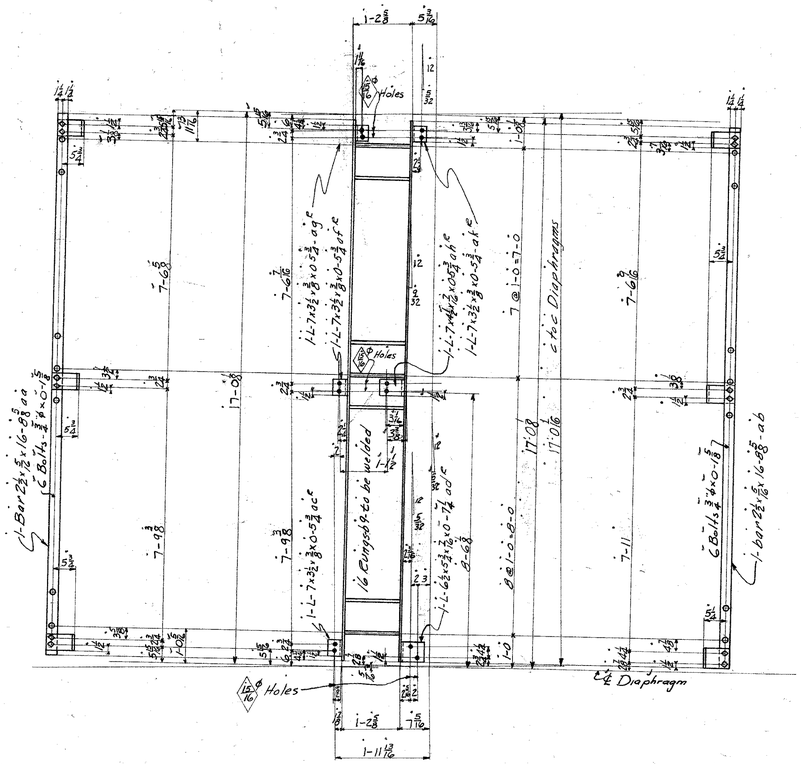
4-Ladders-L10
4 " L30



4 Ladders L11
8 " L12



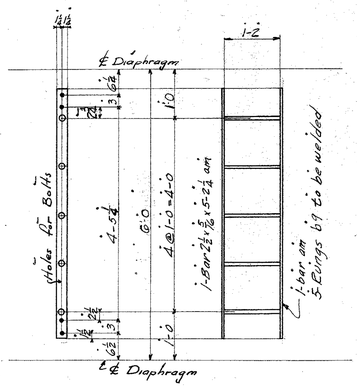
Detail Showing Welding of Ladder Rungs



4 Ladders - L13 As shown.
4 " -L13 opp hand.

Holes 13/16ø Unless Noted
Punch ¾ø Holes for Ladder Rungs
Paint: One coat of Detroit Graphite Co's #501

Note to Shop:
Ladders to be bolted to Tower Sections in shop
For Location Plan see Sheet E1- Cont. 5003 & 5004



12 Ladders-L14

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
LADDERS
For Tower Sections #1 & #2

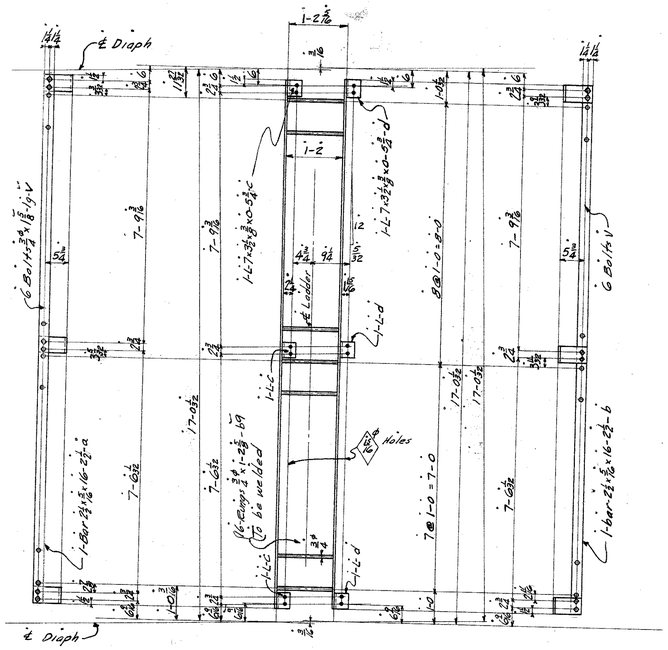
Approved 3-13-30
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

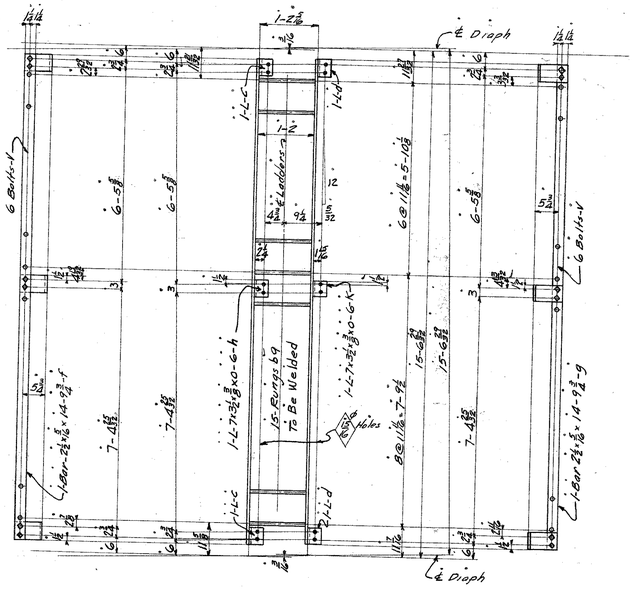
In charge WMcC			
Made by AT	Date	Checked by FBA	Date 2-18-30
Traced by E.Z.	Date	Revised	Date
Scale: Inch = 1 Foot		Last assembling mark	a.m.

Cont. No. 5003B Sheet No. 9

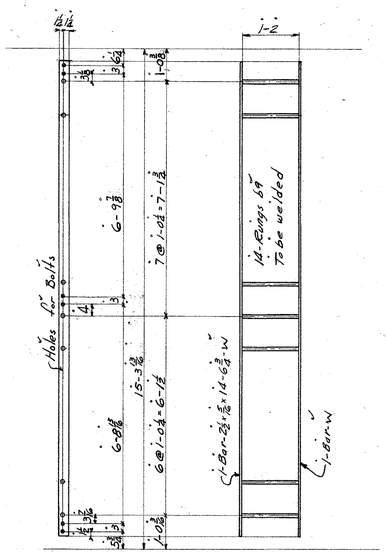
A-2-315



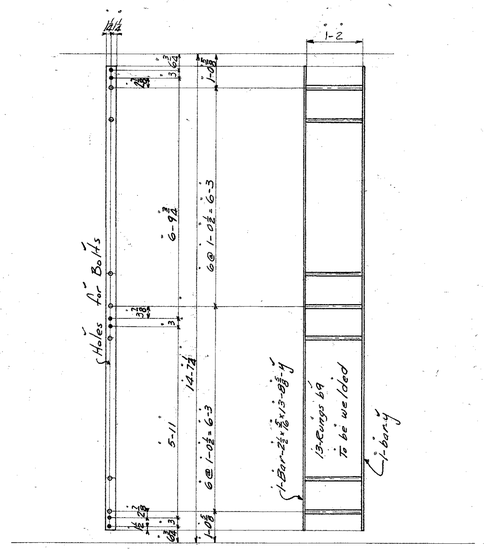
4- LADDERS L15R as shown
4- do L15L opp hand



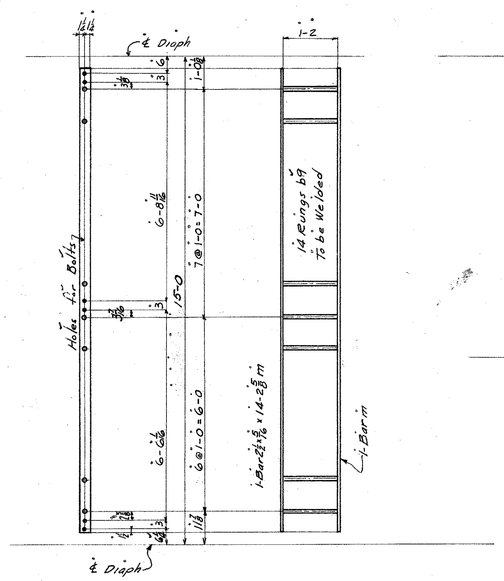
4-LADDERS L16R As shown
4- do L16L opp hand



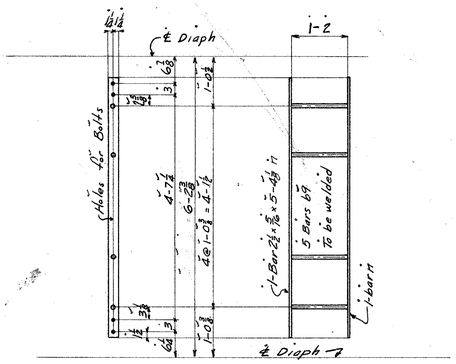
12- LADDERS-L17



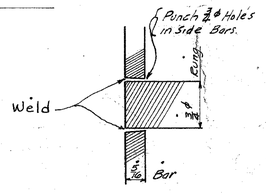
12- LADDERS L18



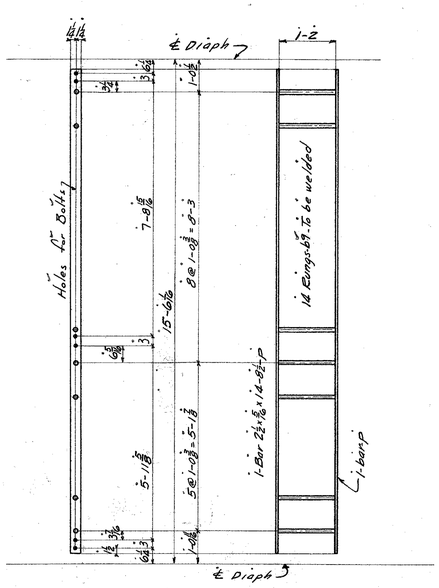
12- LADDERS L19



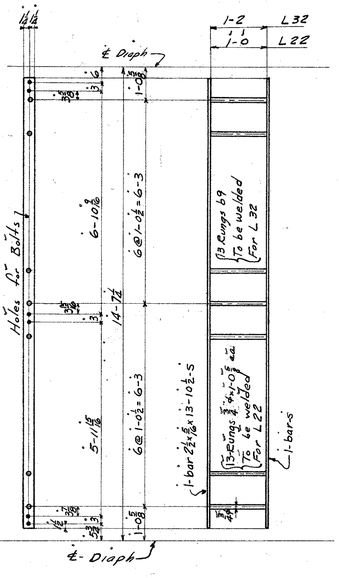
12- LADDERS L20



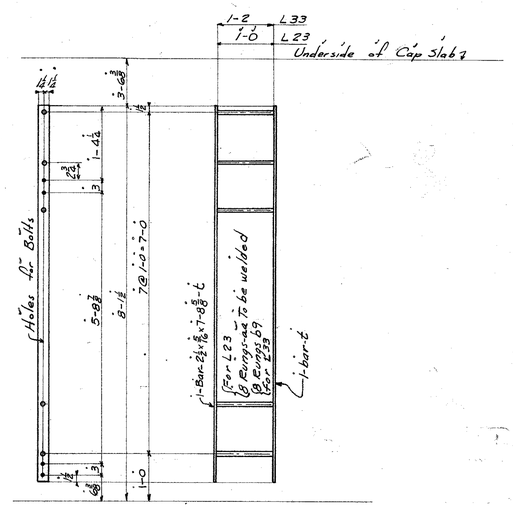
Detail Showing Welding of Ladder Rungs



12- LADDERS L21



8-LADDERS-L22
4- " -L32



8-LADDERS-L23
4- " -L33

Holes- 13/16ø Unless Noted
Punch ¾ø Holes for Ladder Rungs.

Paint-One coat of Detroit Graphite Co's #501

NOTE TO SHOP:
LADDERS TO BE BOLTED TO TOWER SECTIONS IN SHOP
FOR LOCATION PLAN SEE SHEET E1- CONT. 5003 & 5004

APPROVED 3-13-30
Waddell & Hardesty.

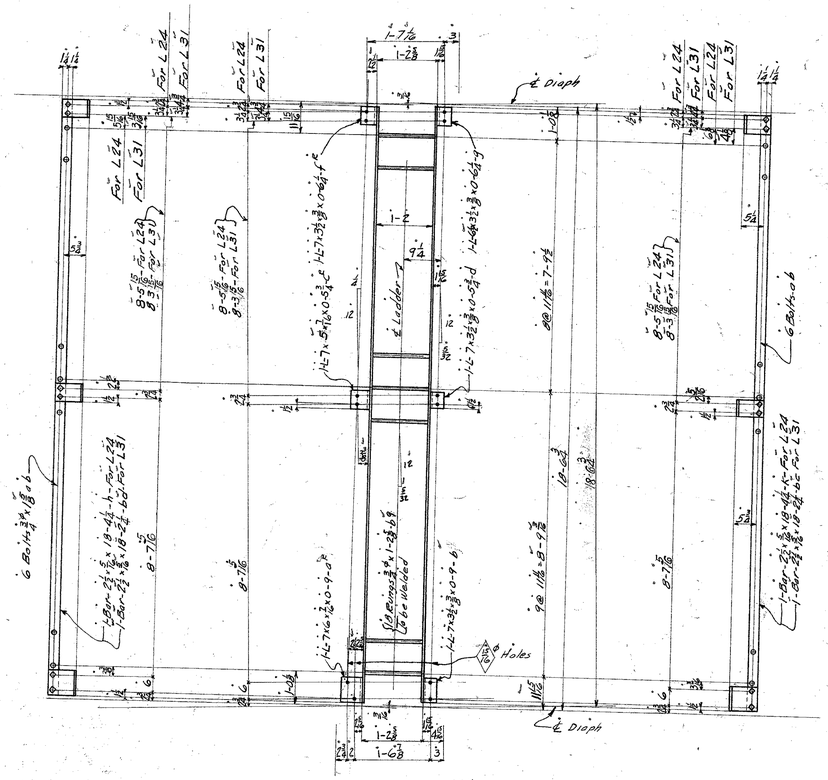
CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

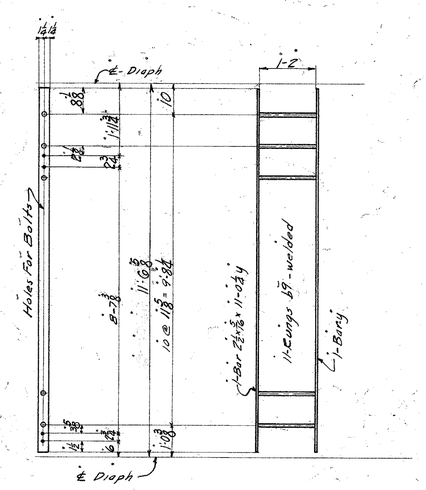
LADDERS
FOR TOWER SECTIONS #2-#3-#4

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.H.S. MADE BY A.T. DATE 1-6-30 CHECKED BY F.B.A DATE 2-18-30
TRACED BY E.Z. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK 22
CONT. NO. 5003B SHEET NO. 10

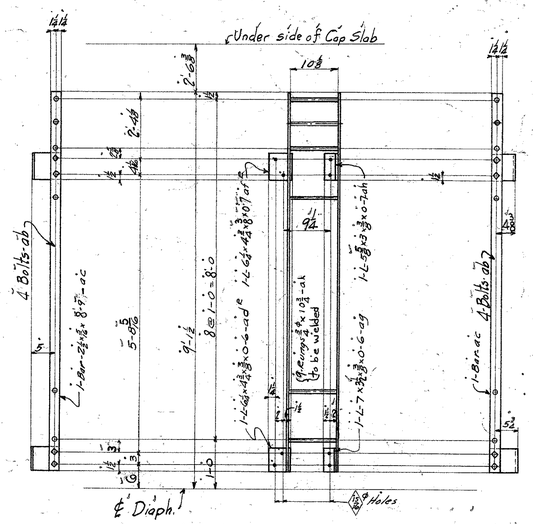
A-2-316



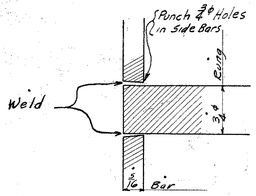
2-LADDERS L24R As Shown
2- " L24L Opp Hand
2- " L31R As Shown
2- " L31L Opp Hand



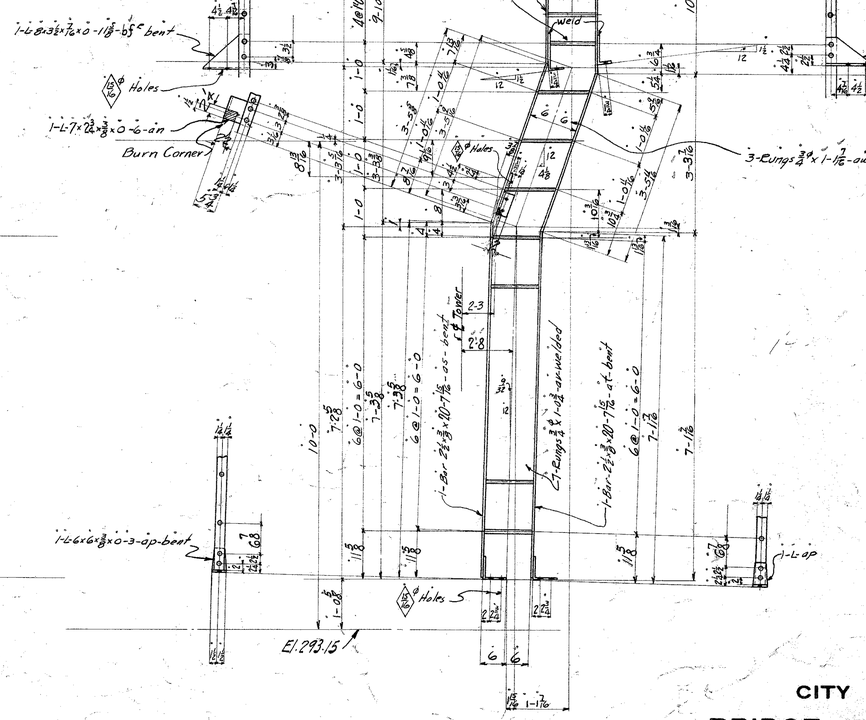
4-LADDERS L9



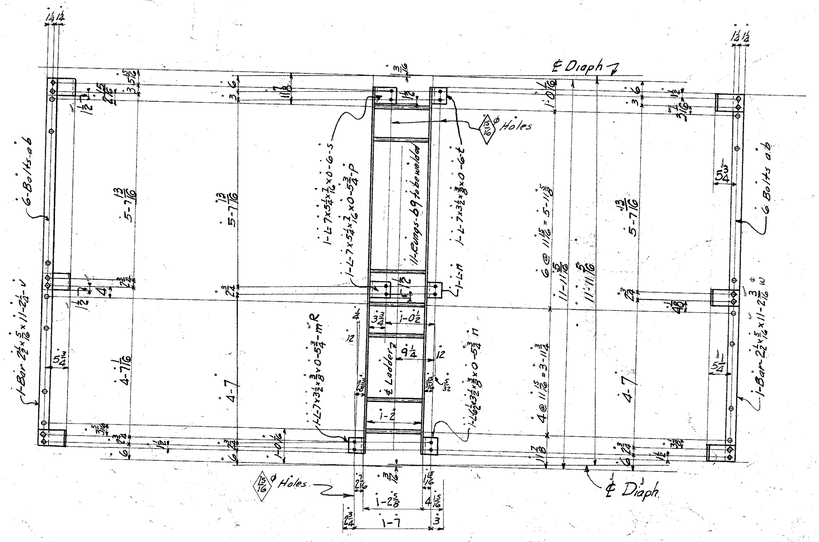
2-LADDERS-L27R As Shown
2- " -L27L Opp Hand



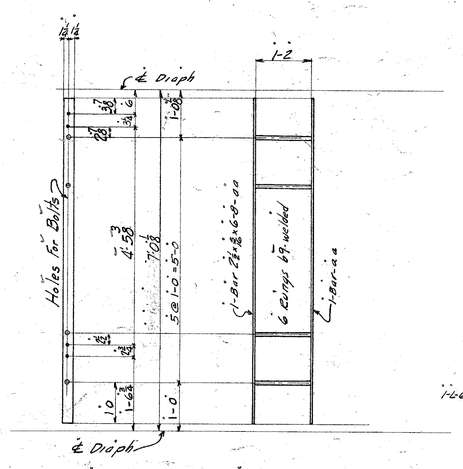
Detail Showing Welding of Ladder Rungs



2-LADDERS-L28R As Shown
2- " L28L Opp Hand



4-LADDERS L25R As Shown
4- " L25L Opp Hand



4-LADDERS-L26

Note to Shop:-
Ladders L9-24-25-26-27 & 31 to be bolted to Tower Sections in shop.
For Location Plan see sheet #E1 Contract 5003 & 5004

Rivets ⅞ø
Holes 15/16ø Unless Noted
Punch ¾ø Holes for Ladder Rungs

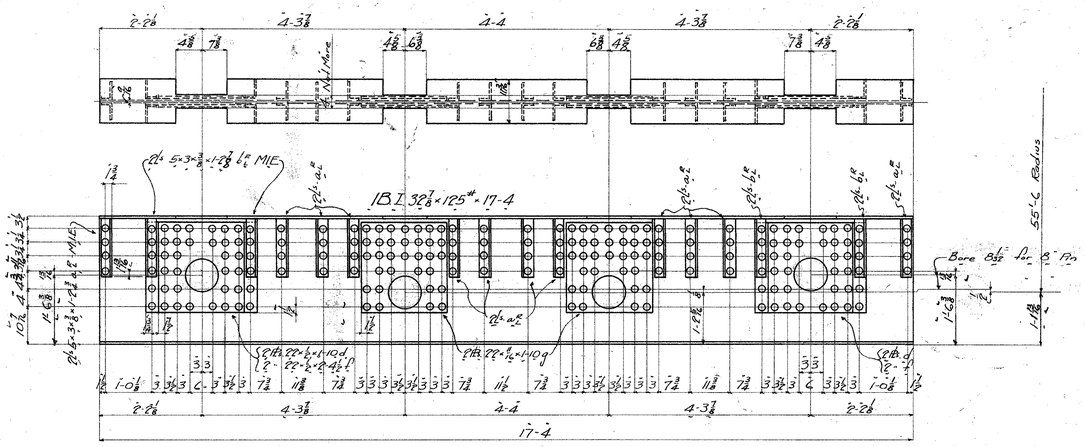
Paint - One coat of Detroit Graphite Co's #501

APPROVED 3-29-30
Waddell & Hardesty

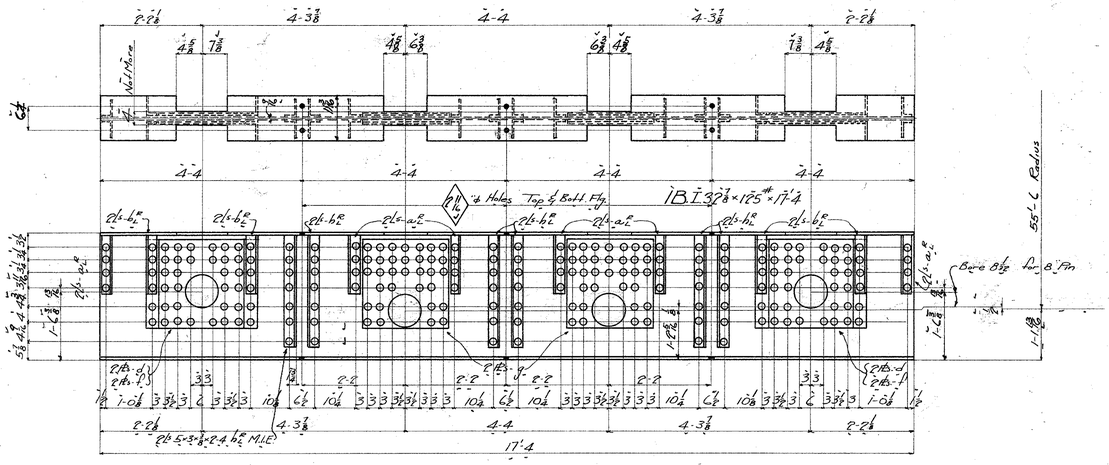
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
TOWERS
LADDERS

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.M.Smith
MADE BY A.T. DATE CHECKED BY F.B.A. DATE 7-14-30
TRACED BY E.Z. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK L9
CONT. NO. 5003B SHEET NO. 11

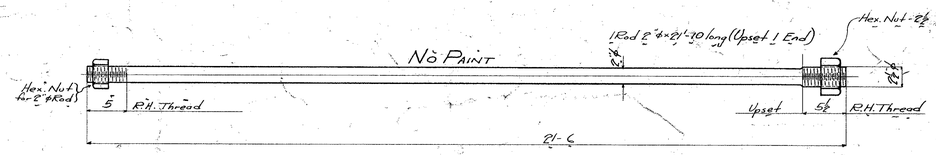
A-2-317



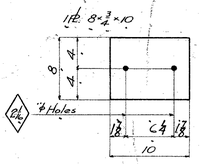
8 Anchor Girders AG1



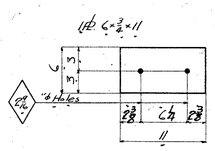
8 Anchor Girders AG2



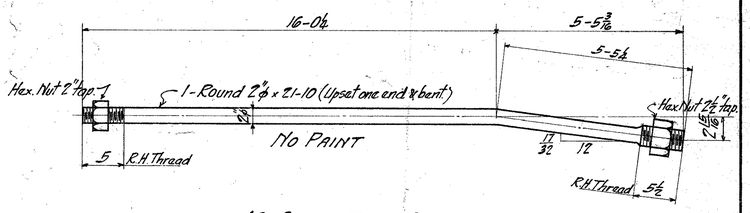
16-Anchor Rods - AR1



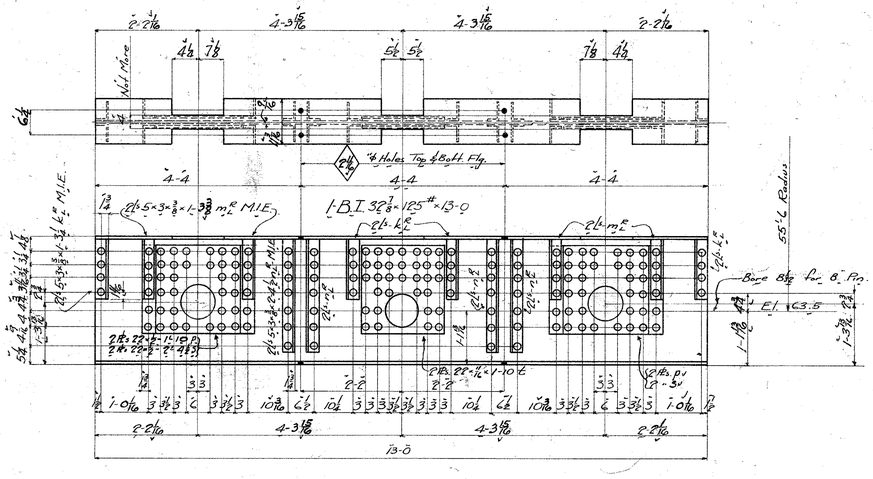
32 Anchor Washers - AW1



32 Anchor Washers - AW2



48-Anchor Rods - AR2



4 Anchor Girders AG3

Rivets: ⅞"ϕ
Holes: As noted

Paint: For Girders only, 3 coats of Detroit Graphite Co's #501
No Paint on Anchor Rods & Washers

CITY OF TOLEDO, OHIO

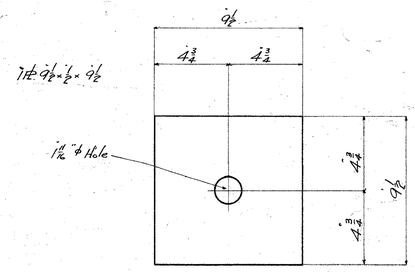
BRIDGE OVER MAUMEE RIVER

ANCHORAGE
GIRDERS & ANCHORS

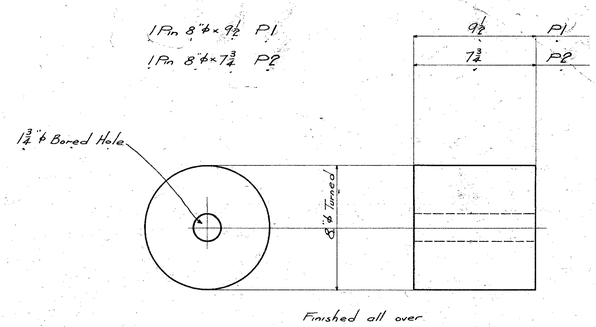
APPROVED 11-29-29
11-13-29
Waddell & Hardesty.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.C. Sons
MADE BY H.C.M.P.C. DATE 11/6 CHECKED BY P.W. DATE 11/7/29
TRACED BY DATE REVISED 11/20/29 DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK G
CONT. NO. 5005 SHEET NO. 1

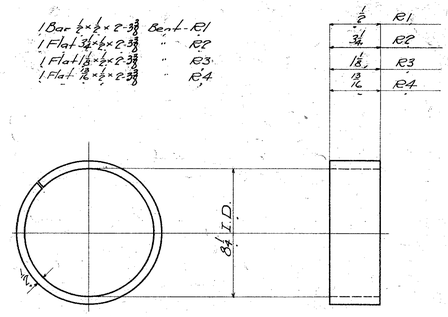
A-2-332



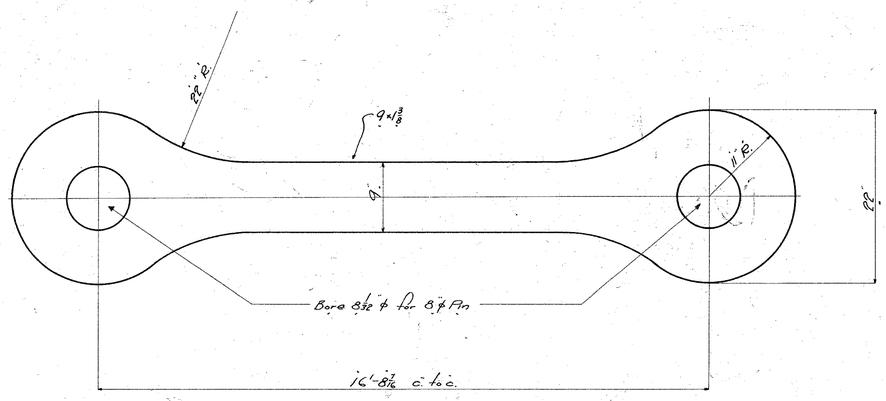
304 KEEPER PLATES-KP1



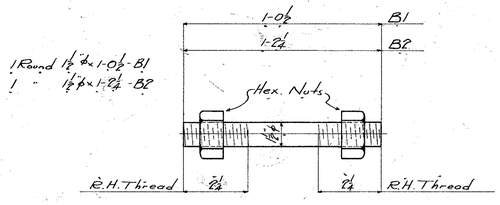
76 PINS-P1 STEEL FORGINGS
76 " P2 " "



304 RINGS R1
76 " R2
72 " R3
80 " R4



154 EYE BARS-E1
2 EXTRA FOR TEST BARS INCLUDED.



76 BOLTS B1
76 " B2

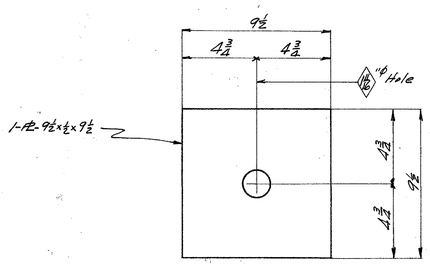
Paint: 3 coats of Detroit Graphite Co's #501
Machined surfaces to receive one coat
of White Lead & Tallow applied hot.

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
ANCHORAGE
EYE BARS-PINS ETC.

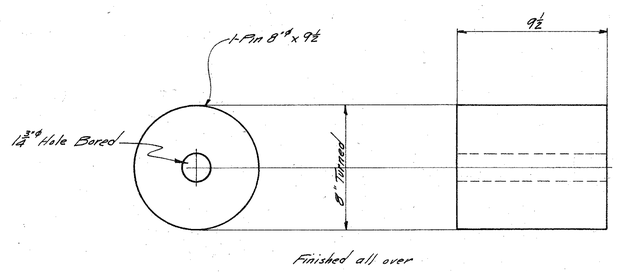
APPROVED 11-13-29
Waddell & Hardesty.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE J.S.M. SON
MADE BY H.C.M.P.C. DATE 10/22 CHECKED BY B.H.D. DATE 11/6/29
TRACED BY DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5006A SHEET NO. 1

A-2-334

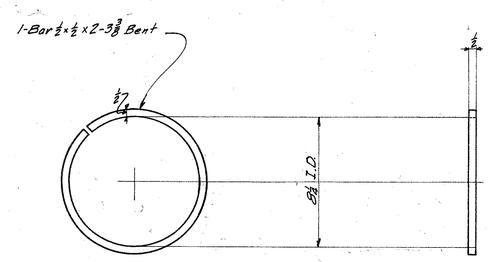


152 KEEPER PLATES KP1

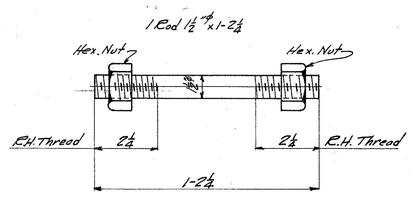


Finished all over

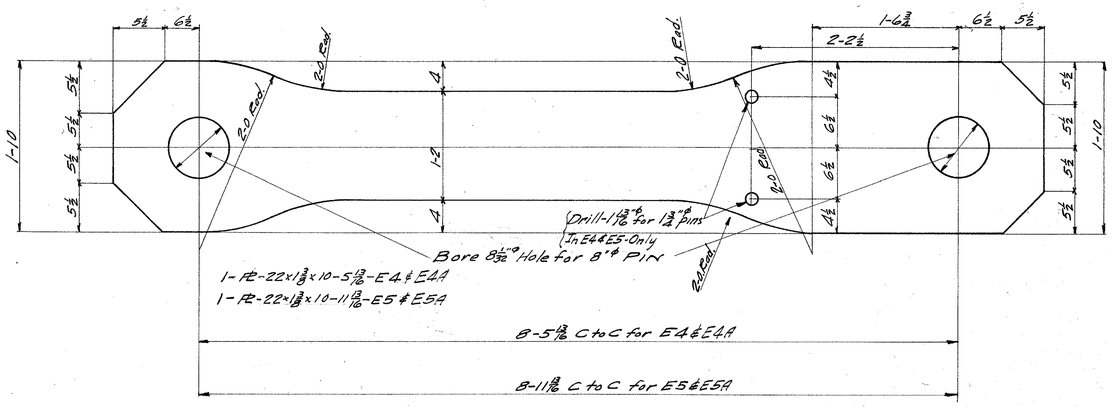
76 PINS P1 (STEEL FORGINGS)



152 RINGS R1



76 BOLTS B2



64 EYE BARS E4
65 " " E4A
12-EYE BARS-E5
13-EYE BARS-E5A

1-Bar E4A & 1-E5A for test bors.

Paint:- 3 coats of Detroit Graphite Co's #501
Machined surfaces to receive one coat
of white lead & tallow applied hot.

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

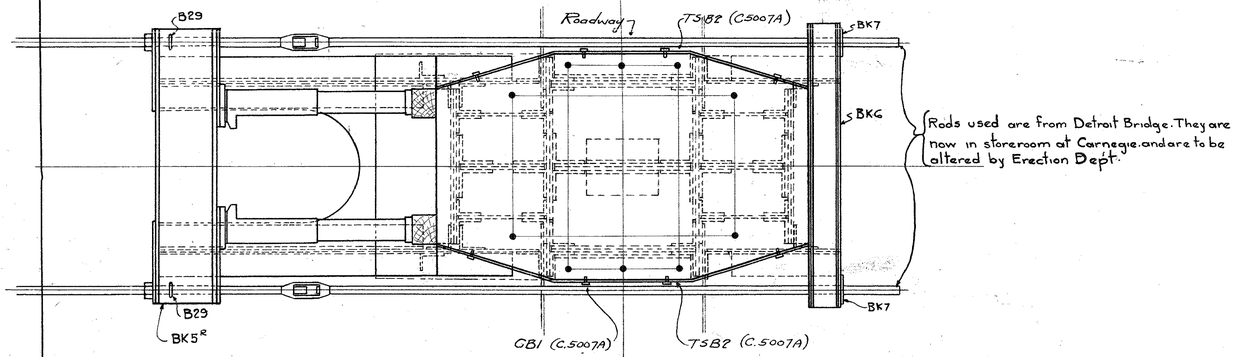
ANCHORAGE
EYE BARS-PINS-ETC.

11-29-29
APPROVED 11-13-29
Waddell & Hardesty

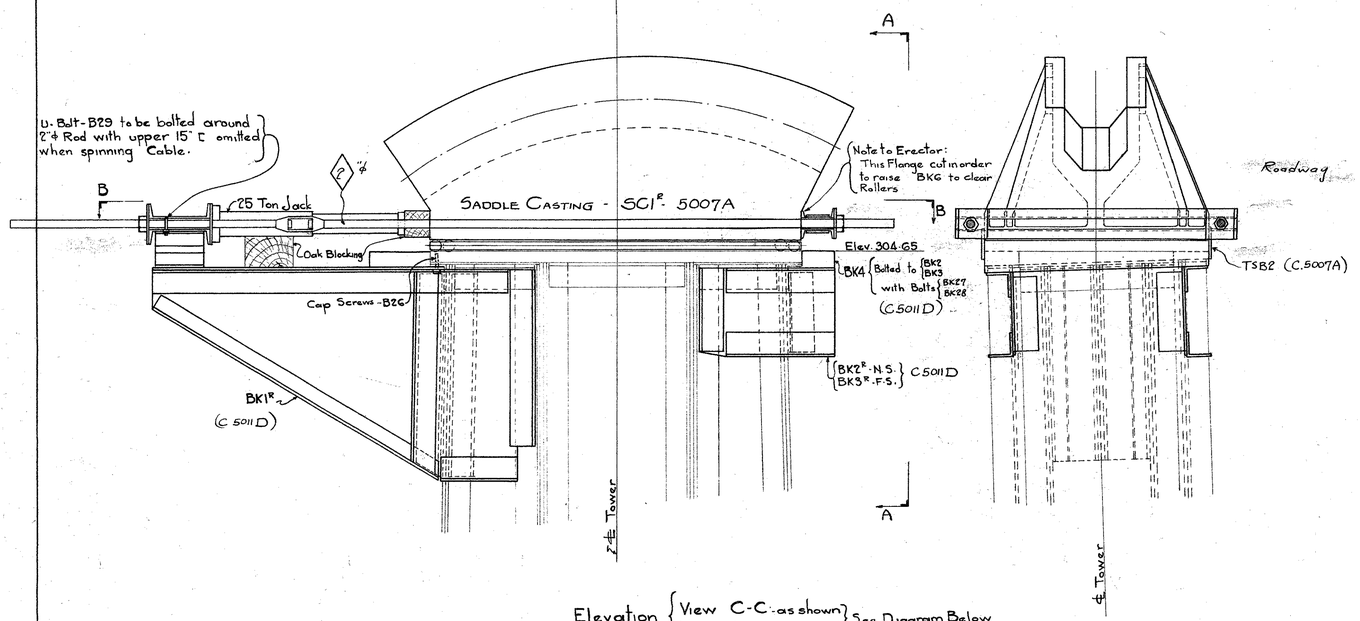
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE WMcC DATE
MADE BY HCMc DATE CHECKED BY BAH DATE 11/4/29
TRACED BY EZ DATE REVISED DATE
SCALE:- INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5006B SHEET NO. 1

COPY CHECKED BY- S.L.B. 3/11/30 -FROM OLD TRACING OF SAME NUMBER WHICH WAS TORN.

A-2-335

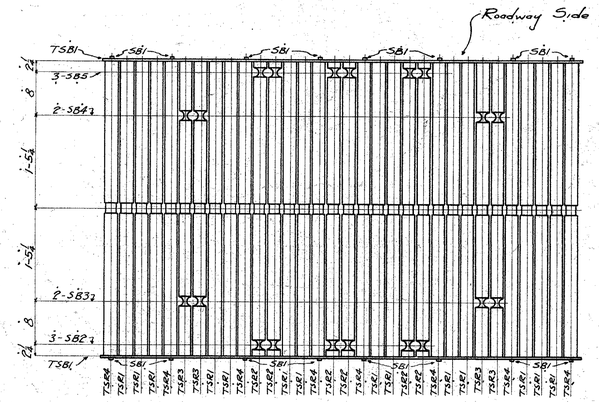


Plan View B-B

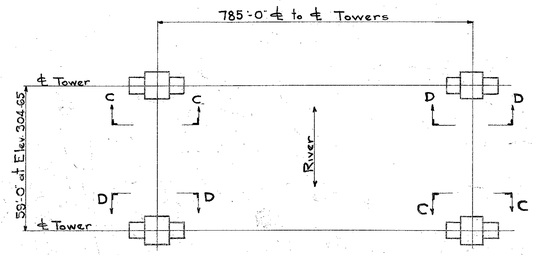


Elevation { View C-C - as shown / View D-D - opp. hand } See Diagram Below

View A-A



Plan of Roller Nest



Plan of Towers

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

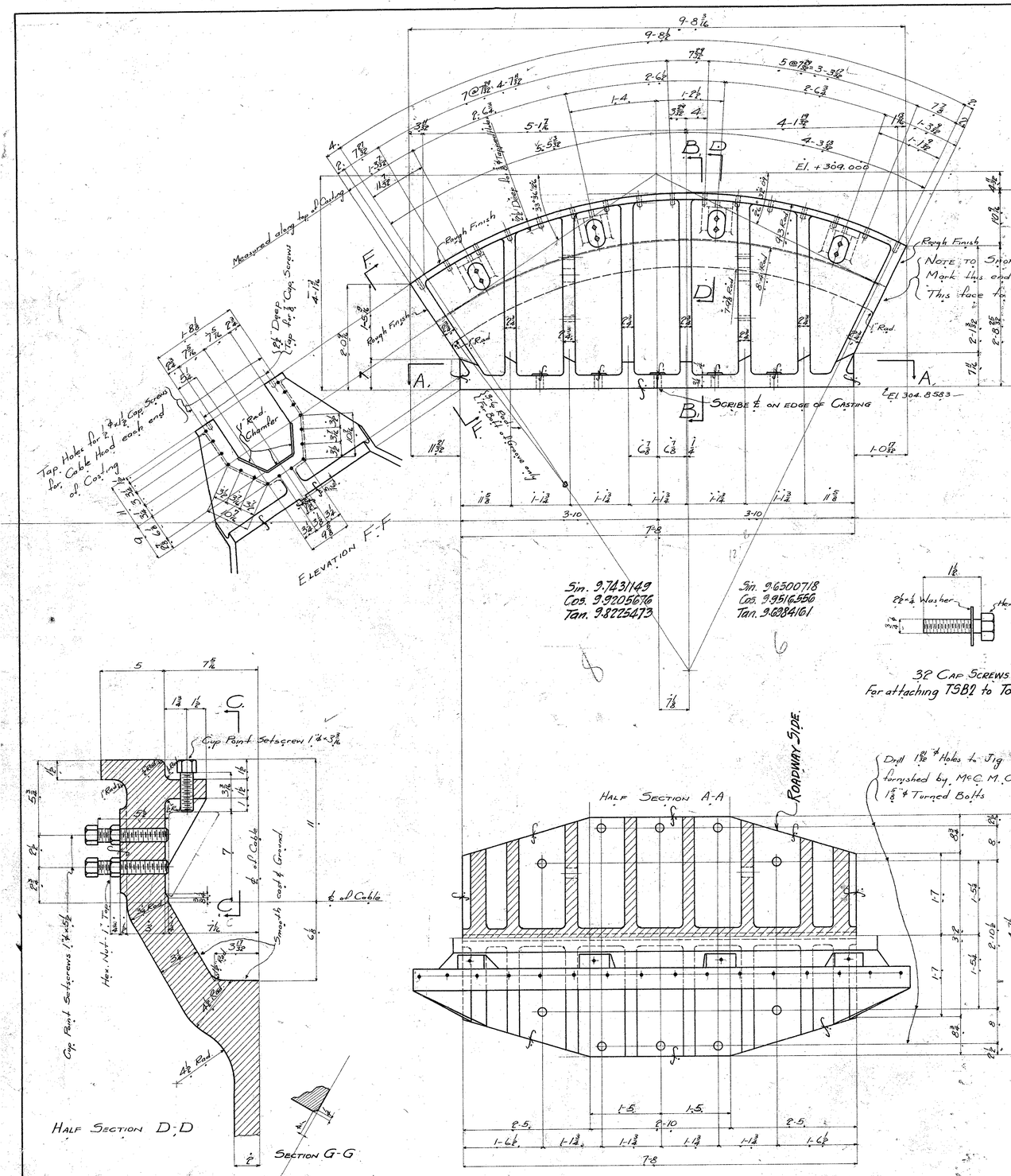
Towers

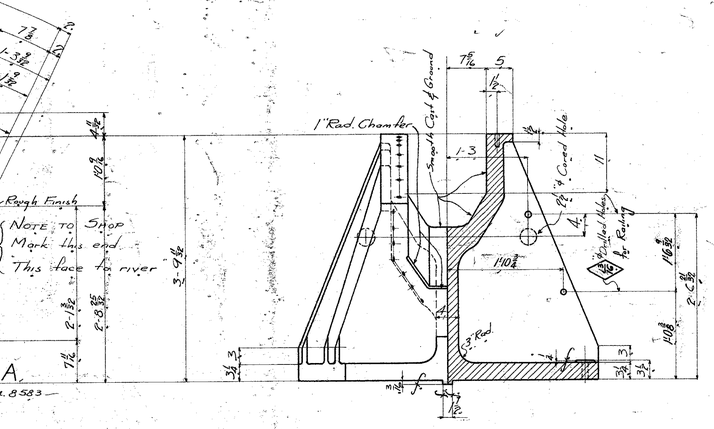
Jacking arrangement for Saddle

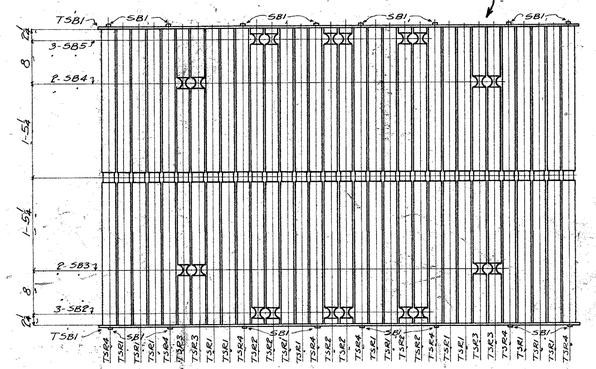
APPROVED _____

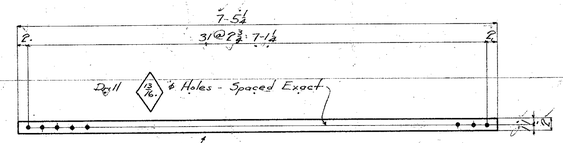
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Wm Reid
MADE BY H.W.C. DATE CHECKED BY DATE 6/18/30
TRACED BY H.E.J. DATE 2-14-30 REVISED DATE
SCALE- INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5007A SHEET NO. E1

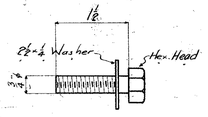
A-2-336

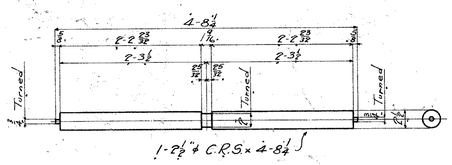


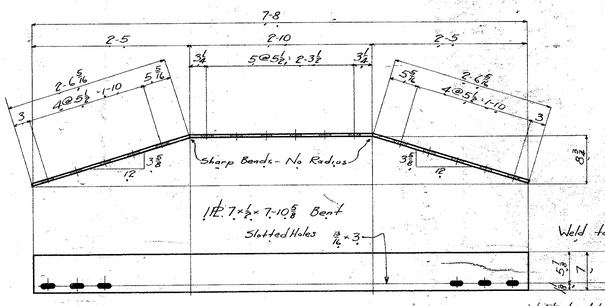


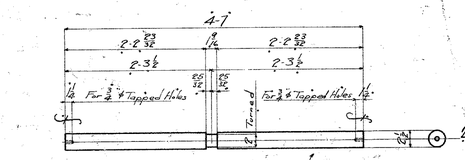


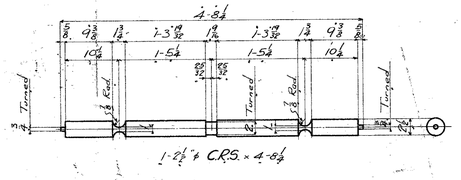


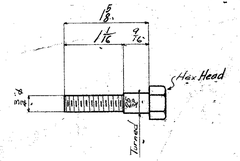


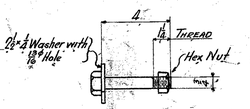












	9⅝	2½	SB2
12 SHOULDERED BOLTS	11⅞		SB2
	10⅜	2	SB3
8 " "	1-0⅝		SB3
	11⅜	2	SB4
8 " "	1-1⅜		SB4
	10 15/16	2½	SB5
12 " "	1-1		SB5

2 SADDLE CASTINGS SC1R As shown
2 " " SC1L Opp. HAND
} Alike except holes for Railing
Complete with Blocks & Setscrews

Material for Saddle Cstg: A.S.T.M. Specifications A27-24 Class B Medium, modified as follows only: Sulphur not over 0.05%; Tens. str. not less than 65000; Yield Pt. not less than 35000; each casting to have attached at least 2 coupons 12" long & 2 sq., which shall not be detached until after annealing nor before proper identification by the inspector.

Rollers: To be Cold Rolled Shafting A.S.T.M. A108-27 Grade O.H. Carbon .15-.25

Paint: One coat of Detroit Graphite Co's #501 Except machined surfaces & rollers which receive one coat of white lead & tallow applied hot.

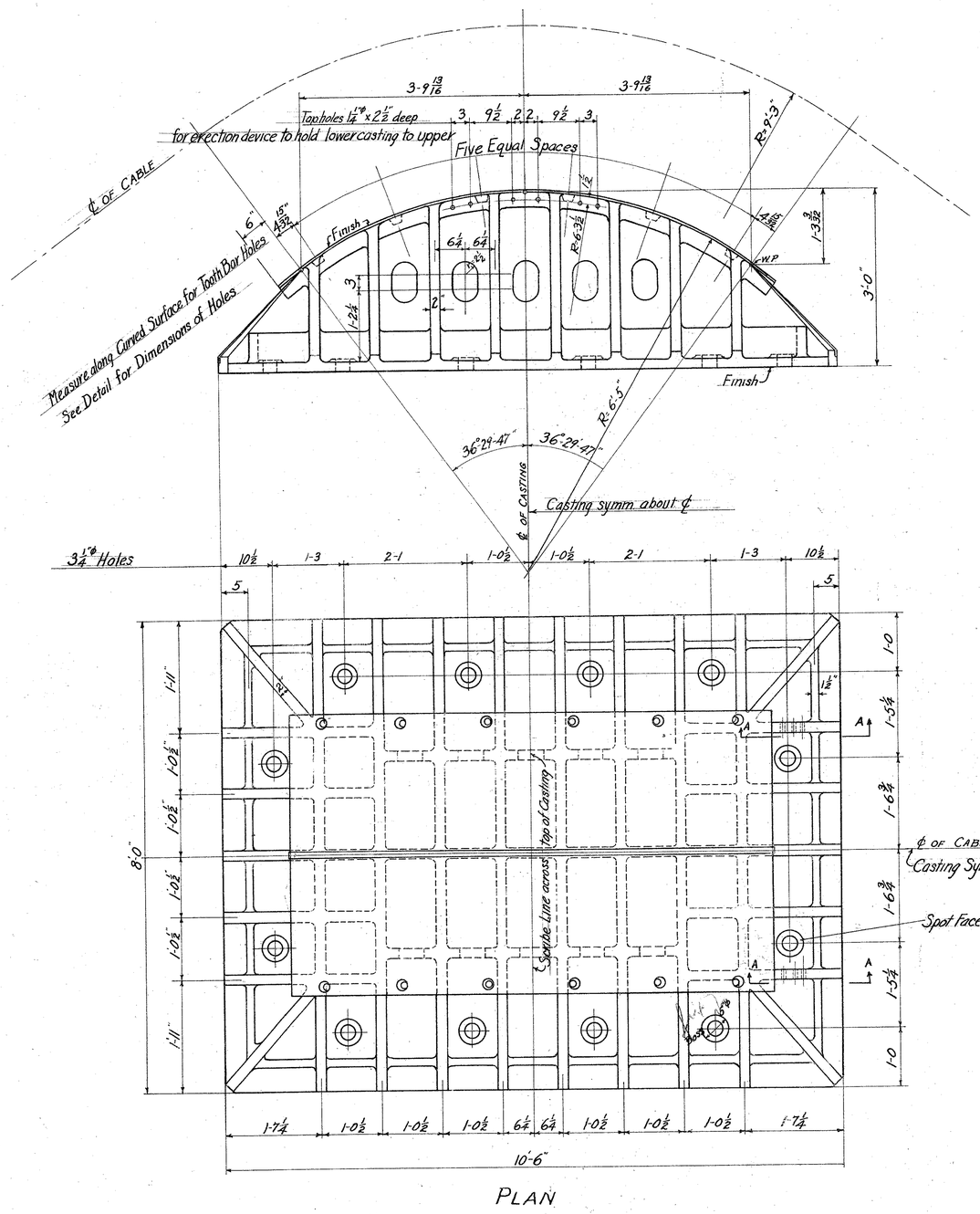
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
TOWERS
SADDLE CSTG, ROLLER NEST, ETC.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Wm Son
MADE BY H.M. DATE
CHECKED BY W.W. DATE 2/13/30
TRACED BY J.M. DATE
REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK

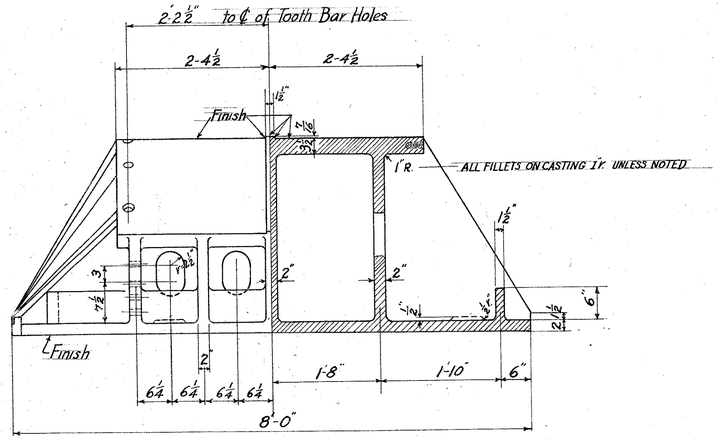
CONT. NO. 5007A SHEET NO. 1

APPROVED 3-1-30
Waddell & Hardesty

A-2-337

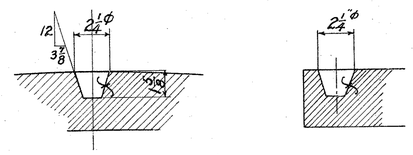


PLAN

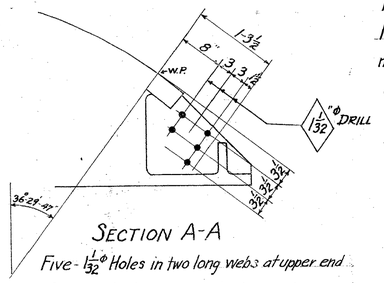


HALF END VIEW

HALF SECTION ON CENTER LINE



SECTIONS THRU TOOTH BAR HOLE



SECTION A-A

Five - $1\frac{1}{32}$" ϕ Holes in two long webs at upper end of casting for holding and adjusting rocker nest during erection.

NOTES:-

REQUIRED - Four Castings

MATERIAL:- A.S.T.M. Specifications A27-24 Class B Medium modified. See Specifications, "Steel Castings"

Drill and ream tooth holes.

Drill Anchor Bolt Holes from solid to a templet furnished by McClintic-Marshall Co.

Care must be taken to locate holes for tooth bars accurately.

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

ANCHORAGE SADDLE BASE CASTING

WADDELL AND HARDESTY, Consulting Engineers,
NEW YORK CITY
APPROVED:- Feb 25, 1930

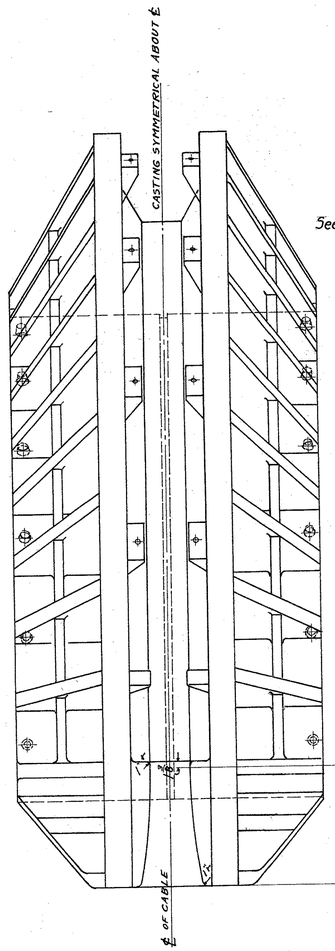
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA

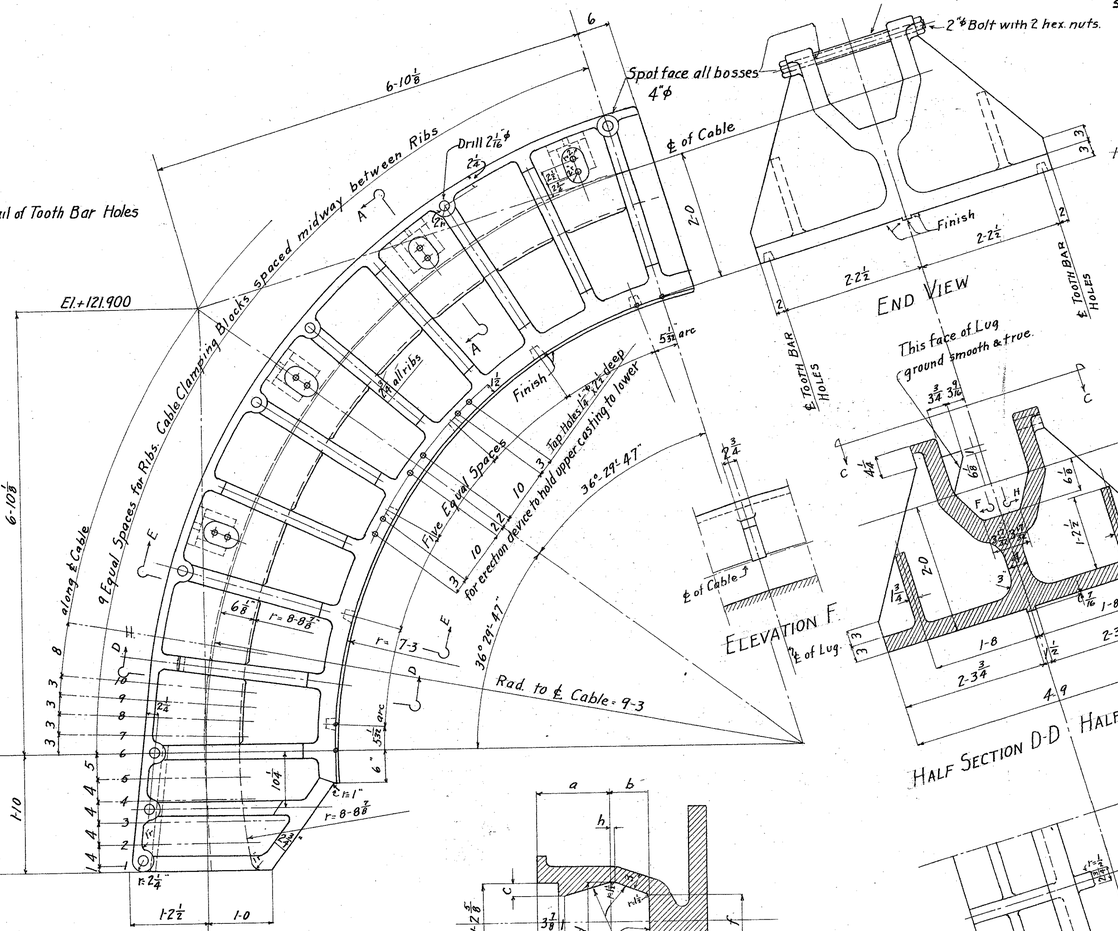
IN CHARGE			
MADE BY	DATE 12/12/29	CHECKED BY	DATE
TRACED BY R.E.H.	DATE 2/6/31	REVISED	DATE 3/25/30
SCALE: 1 INCH = 1 FOOT		LAST ASSEMBLING MARK	

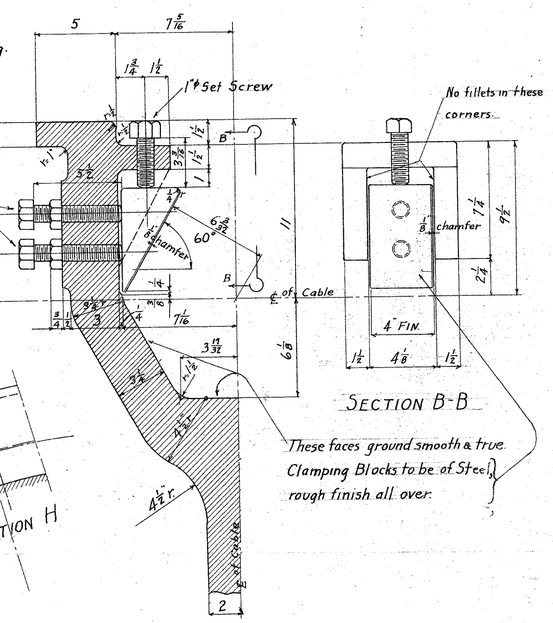
CONT No. 5007-B SHEET No. D21

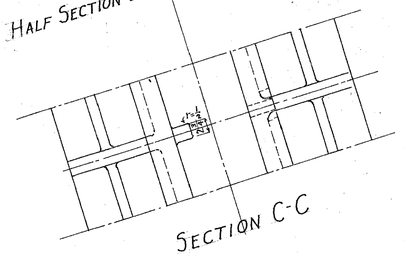
A-2-338

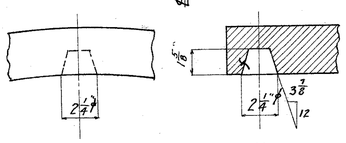
Copy Checked F.M.S.

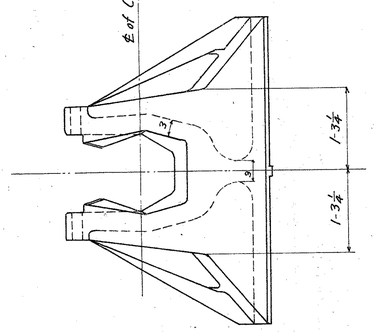


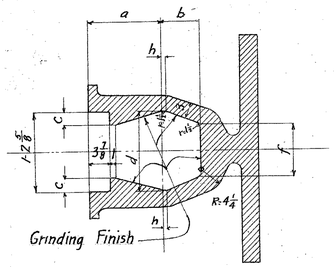












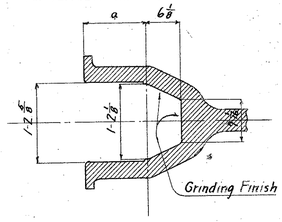


TABLE OF VARIABLE DIMENSIONS
FOR SECTIONS 1 to 10 INCLUSIVE
Dimensions not given for these Sections to be same as in Section AA.

SECTION	a	b	c	d	f	h
1	1-2⅜	8¼	1½	1-6 15/16	11⅜	1⅛
2	1-1⅞	7½	2⅜	1-5 15/16	9⅛	⅝
3	1-1⅜	6 15/16	3	1-3¾	8⅝	7/16
4	1-0⅞	6½	3⅜	1-2⅞	7 13/16	¼
5	1-0⅜	6¼	3⅝	1-2⅜	7⅜	⅛
6	11½	6⅛	3¾	1-2⅛	7/16	0
7	11½	—	—	—	7/16	—
8	11 15/16	—	—	—	7/16	—
9	11 15/16	—	—	—	7/16	—
10	11	—	—	—	7/16	—
11	11	—	—	—	7/16	—

NOTES.

REQUIRED:- Four Castings.

MATERIAL:- A.S.T.M. Specifications A27-24 Class B" Medium, modified. See Specifications Steel Castings.

Each Casting to be furnished with a full set of set screws, clamping blocks, 2" Tie Bolts and Pipe Washers.

Drill and ream tooth holes

Care must be taken to locate holes for tooth bars accurately.

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER

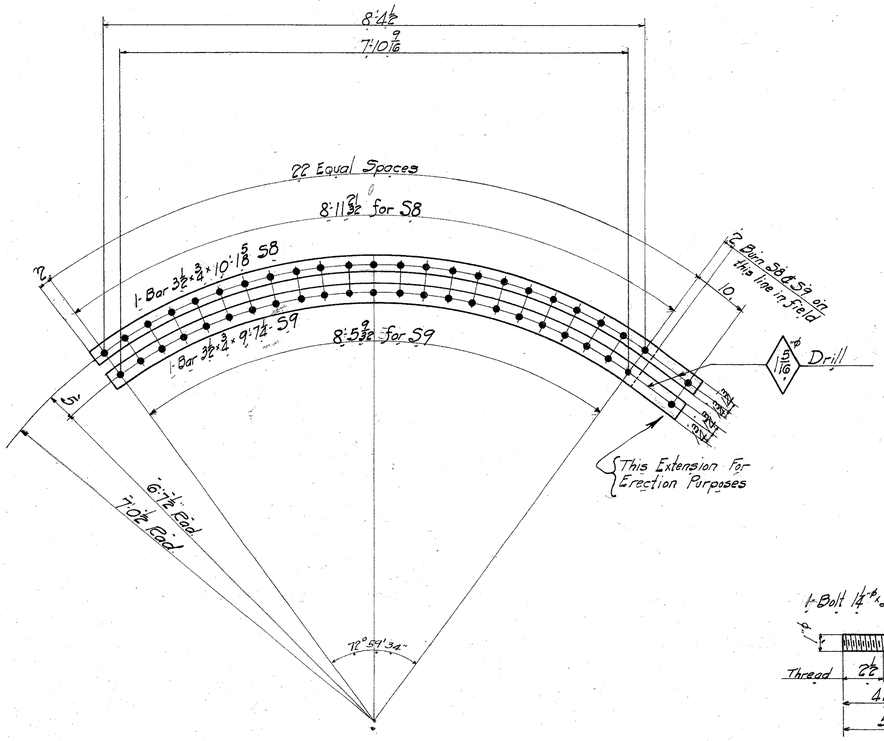
ANCHORAGE SADDLE CASTING

WADDELL AND HARDESTY, CONSULTING ENGINEERS.
NEW YORK CITY.
APPROVED - Feb. 25, 1930
SUBMITTED BY:-
McCLINTIC-MARSHALL CO.
PITTSBURGH, PA.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH PA.
In Charge
Made By Date 11-28 Checked By Date
Traced By G.O.B Date 3-13 Revised By Date
Scale 1-Inch. 1 Foot Last Assembling Mark
CONT. NO. C5007.B. SHEET NO. D22

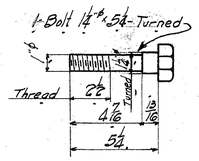
Cody. Ckd M.J.S. 3-9-31 A-2-339

9.864323 × Dia = Arc.

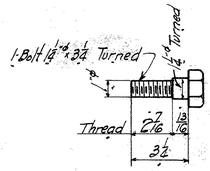


8-SPACER BARS-S8

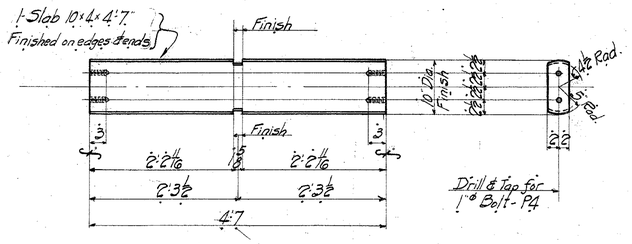
8 " " -S9



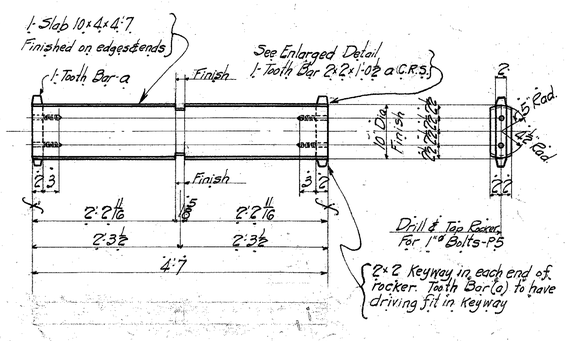
96-SHOULDER BOLTS-P5



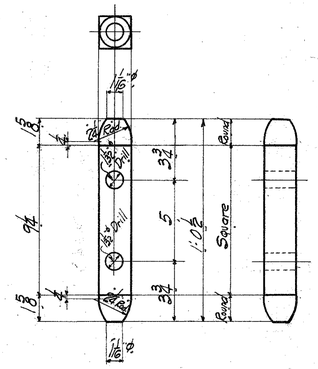
272-SHOULDER BOLTS-P4



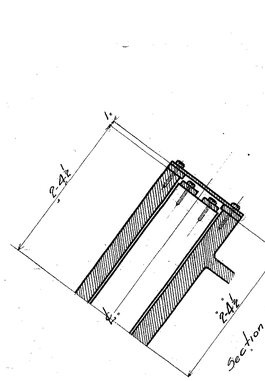
68-ROCKERS-R4

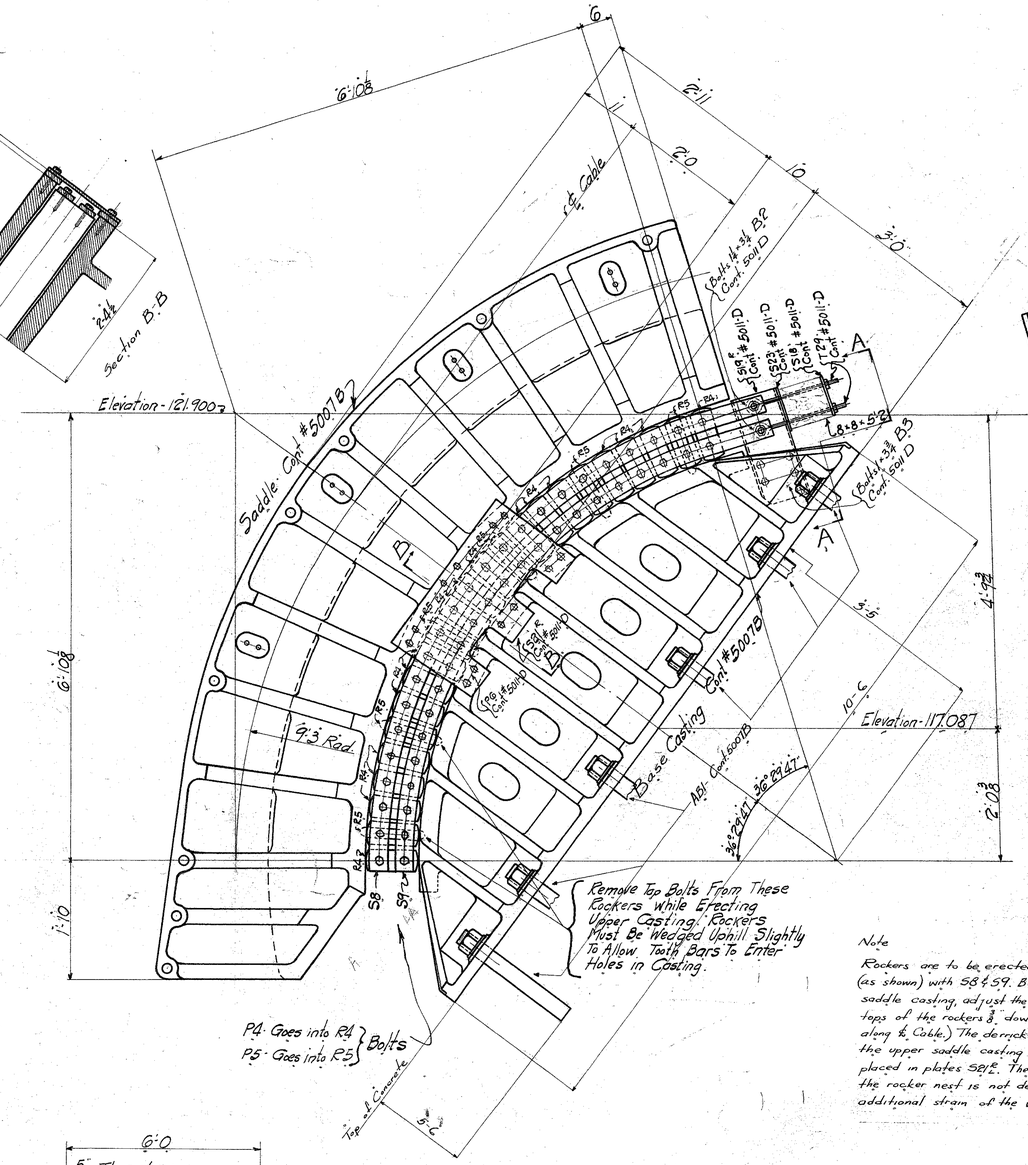


24-ROCKERS-R5

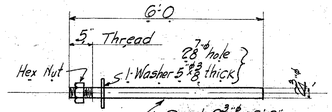


Enlarged Detail of Tooth Bar a





P4-Goes into R4 } Bolts
P5-Goes into R5 }



48 ANCHOR BOLTS AB1

NO PAINT

Note

Rockers are to be erected in neutral position (as shown) with S8 & S9. Before placing the upper saddle casting, adjust the rocker nest moving the tops of the rockers ⅜" downhill (corresponding to ½" along ℄ Cable.) The derrick is not to cut loose from the upper saddle casting until all bolts have been placed in plates S8 & S12. The adjustment device for the rocker nest is not designed to take the additional strain of the weight of the casting.

Paint: One coat of white lead & tallow applied hot except as noted.

APPROVED 4-3-30

Waddell & Hardesty

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

ANCHORAGE

ROCKER NEST

McCLINTIC-MARSHALL CONST. CO. PITTSBURGH, PA.

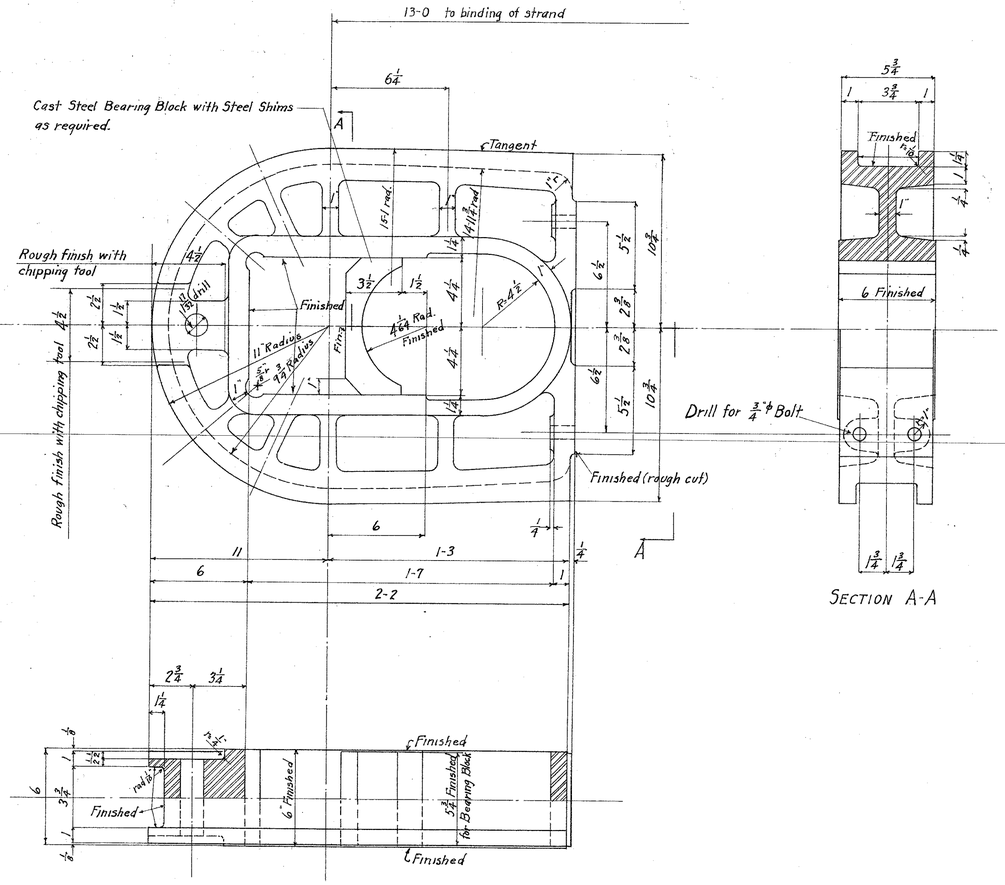
IN CHARGE Wm Son MADE BY SLB DATE 3-26 CHECKED BY BW DATE 3/28/30

TRACED BY CEP DATE 3/31/30 REVISED DATE

SCALE- 1½" = 1 FOOT LAST ASSEMBLING MARK a

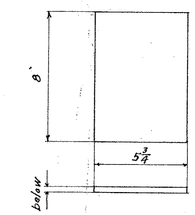
CONT. NO. 5007-C SHEET NO. 1

A-2-340



HALF PLAN AND SECTION

SECTION A-A



MILD STEEL SHIMS

76 each - 1" 1/16, 1" 1/4, 3" 1/8, 11" 1/16 } = 3 1/2" per shoe
152 - 3/4" thick
76 - 1/2" thick (extra)

Surfaces to be smooth and parallel

CAST STEEL STRAND SHOES

76 REQUIRED

NOTES:-

Strand Shoes and Bearing Blocks to be cast steel annealed (A.S.T.M. Spec. A27-24).

All corners of castings to be filleted or rounded to 3/8" radius unless shown or noted otherwise.

Paint: One coat of Detroit Graphite Co's # 501.

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

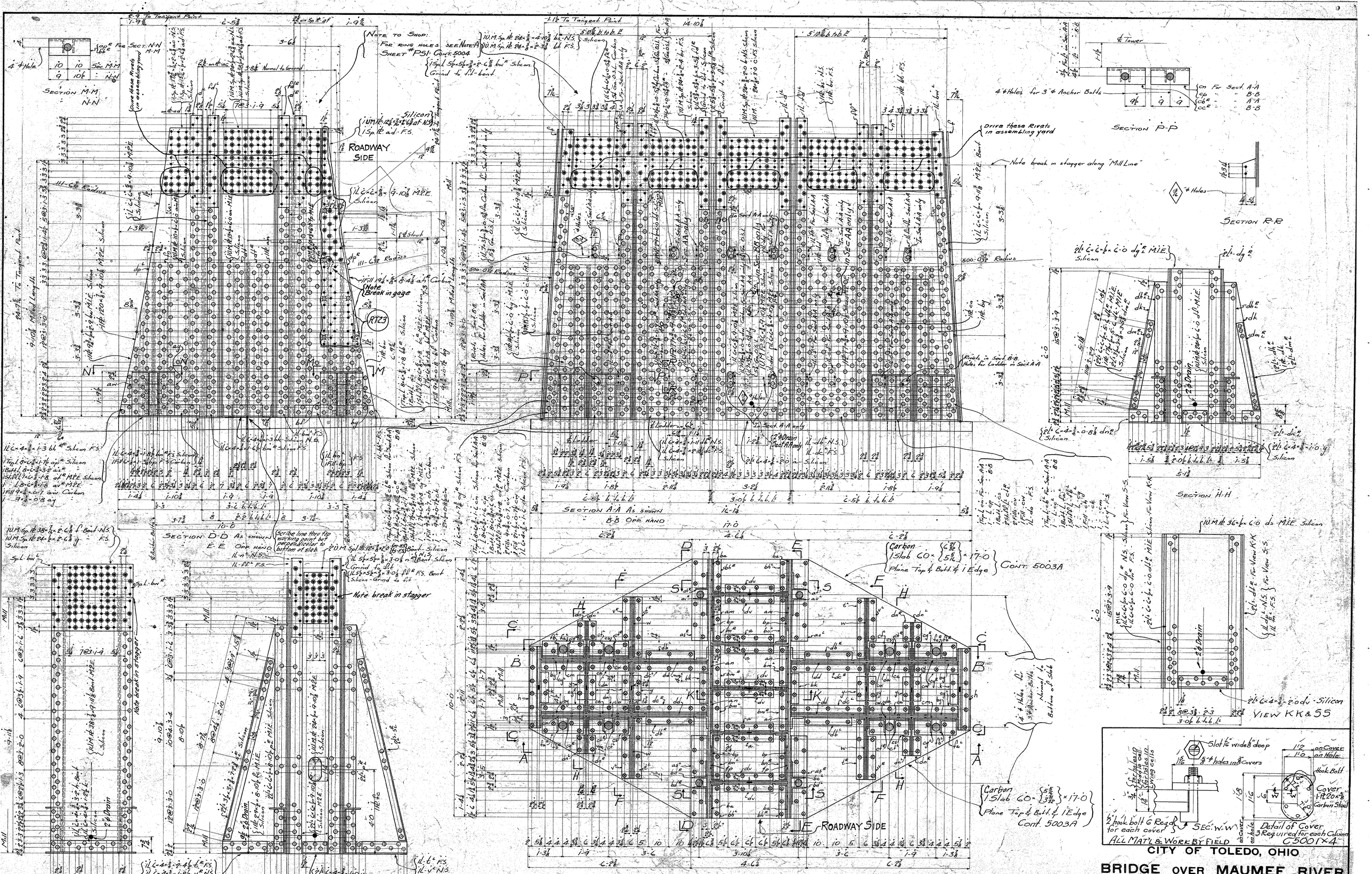
STRAND SHOES AND SHIMS

WADDELL & HARDESTY, CONSULTING ENGINEERS
NEW YORK CITY.
APPROVED: Nov. 13, 1929.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH PA.
In Charge
Made By Date 11/14/29 Checked By Date
Traced By G.O.B Date 3-9-31 Revised Paint Date 8-12-30
Scale 3 Inch = 1 Foot Last assembling Mark
CONT. No. C5008A-B SHEET No. D5

A-2-341

Copy Ckd M.F.S. - 3-11-'31



CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

TOWER BASE (1st Section)

Rivets 7/8"ϕ
Holes 15/16"ϕ Unless noted
Holes in material over 3/4" thick to be drilled
Holes marked (PRT) are to be subpunched 1/2"ϕ & reamed to size to an iron template
All other holes are to be subpunched 1/2"ϕ & reamed to size after assembling
Holes for splices & for connecting wings to main tower are to be reamed & match-marked with sections assembled in the shop
Burrs to be removed from all holes
Paint: One coat of Detroit Graphite Co's #501

Note: 10'-10" Manholes covered under C-5001×4

NOTE TO SHOP:
Distances marked c-to-c of Lt should be exact.
Scribe and center punch mark center line on exposed portion of top surface and edge of base slabs in both directions

APPROVED 12-16-29
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE J.H. SON			
MADE BY A.T.	DATE	CHECKED BY H.W.C.	DATE 4/25/29
TRACED BY J.M.	DATE	REVISED	DATE
SCALE: INCH = 1 FOOT		LAST ASSEMBLING MARK	

CONT. NO. 5004 SHEET NO.

A-2-321

VIEW A-A - DEVELOPED

SECTION B-B

SECTION C-C - As shown
{For this side of ℄ of Tower
SECTION M-M - Opp. Hand.
For other side of ℄ of Tower

SECTION D-D

SECTION E-E

SECTION F-F

TS1

TS2

Note to Shop:
For rmg holes on this end of TS1-TS2-TS3 see Note B on Sheet PSI-Cont. 5004

Note - Work this sheet in conjunction with Sheet #3 & #4

Rivets - 7/8" ϕ
Holes - 15/16" ϕ unless noted
Holes in material over 3/4" thick to be drilled.
Holes marked (PT) are to be sub-punched 1/2" ϕ and reamed to 15/16" ϕ to an iron templet.
All other holes are to be sub-punched 1/2" ϕ and reamed to 15/16" ϕ after assembling except holes in web of horizontal diaphragms which may be punched full size.
Holes for all splices, for connecting wings to main tower and for connecting bracket TK1 to wing are to be reamed and matched-marked with sections assembled in the shop.
Burrs to be removed from all holes.
Paint: One coat of Detroit Graphite Co's #501

APPROVED 1-20-30
Waddell & Hardesty

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
TOWER
SECTION #2

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.C. Soni
MADE BY A.E.S. DATE CHECKED BY M.M.C. DATE
TRACED BY J.M. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK Sym. T1-T2
CONT. NO. 5004 SHEET NO. 2

A-2-322

VIEW A-A

SECTION B-B

SECTION C-C-As shown
SECTION M-M-Opp. hand
for other side of ℄ of Tower

SECTION G-G

SECTION K-K

SECTION N-N

TSI

TS2

TKI

Note to Shop:
For ring holes on this end of TSI-TS2 see "Note A" on Sheet PSI-Cont. 5004

Work this sheet in conjunction with Sheet #2 & 4

? Tower Sections TSI℄ As shown
? " " TS2℄ " "
? " " TSI℄ Opp Hand
? " " TS2℄ " "
? Brackets TKI℄ As shown
? " " TKI℄ Opp Hand

For Notes see Sheet #2

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

Towers
Section #2

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Watson
MADE BY A.E.S. DATE CHECKED BY H.W.O. DATE 1/1929
TRACED BY J.M. DATE REVISED DATE
SCALE 1" = 1 FOOT LAST ASSEMBLING DATE
CONT. NO. 5004 SHEET NO. 3

APPROVED 2-1-30
Waddell & Hardesty

A-2-323

TS1

TS2

TS3

℄ Tower

℄ Ladders

℄ Ladder

℄ Brackets

Balance of TS3 not shown opposite hand to part of TS1 detailed on sheet 2-Cont. 5004

Tangent Point

Part Section H-H

Part of Bottom Lateral

View A-A

Section B-B same as section B-B on sheet #3

Section M-M opposite hand to section C-C on sheet #3

Note to Shop:
For ring holes on this end of TS3 see "Note A" on Sheet PS1-Cont. 5004

Part of View A-A not shown same as View A-A as shown #2

For sections - G-G & K-K see Sheet #3

2 Tower Sections - TS3 R As shown
2 " " TS3 L Opp. Hand

For notes see Sheet #2

Work this sheet in conjunction with Sheets #2 & #3

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

Towers
Section #2

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE	W.M. JAN		
MADE BY	A.E.S.	DATE	CHECKED BY H.W.C. DATE 12/17/29
TRACED BY	J.M.	DATE	REVISED DATE
SCALE:	1INCH = 1 FOOT		LAST ASSEMBLING MARK No.

CONT. NO. 5004 SHEET NO. 4

APPROVED 1-20-30.
Waddell & Hardesty.

A-2-324

Mill

IUMPF 38×⅞×35-11⅞ M2E. Silicon

IUMPF 38×⅞×15-0¼ M2E.- Silicon

IUMPF 38×⅞×2'-6" Silicon
IUMPF 24×11/16×2'-6" "

View B.B.

IUMPF 6×¾×2'-6"×⅝ am-Carbon

IUMPF 6×¾×7'-9⅜ ak-Silicon

IUMPF 6×¾×10'-10½ am-Carbon

IUMPF 54×⅞×50-11⅞ M2E. Silicon

Elev. 223.9 + .0667 Camber

Elev. 223.9 + .0667 Camber

Section A-A

Section C-C

Section D-D

Section E-E

Note to Shop
For ring holes in this end of TS4-TS5 see "Note B" on Sheet PS1 - Cont. 5004

4 Tower Sections TS4
4 " " TS5R As shown
4 " " TS5L Opp. hand

Use this sheet in conjunction with Sheet #6

Rivets ⅞"ϕ
Holes 15/16"ϕ unless noted

For Notes See Sheet #2

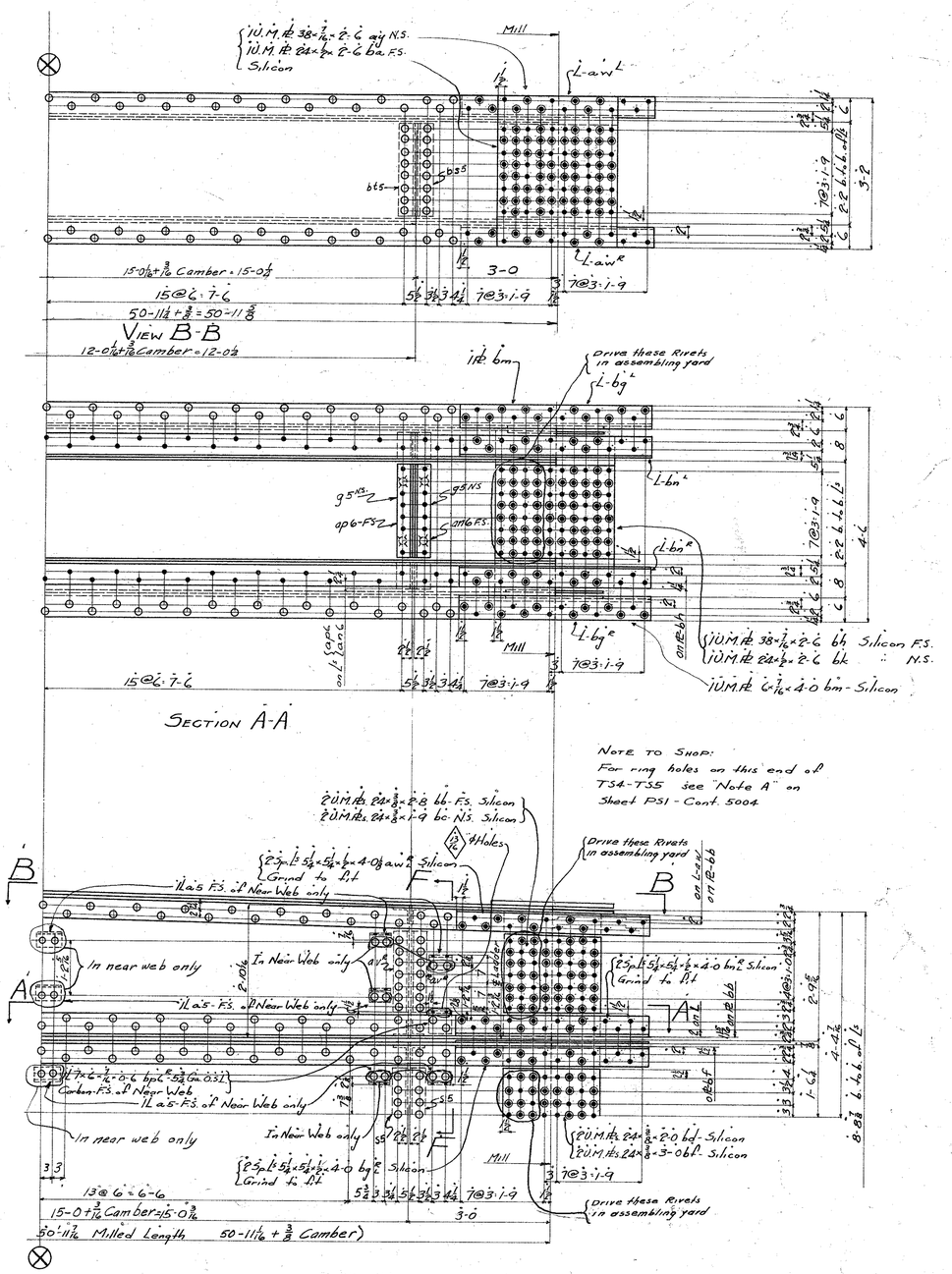
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
Tower Section #3

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Wm Son
MADE BY A.T. DATE CHECKED BY H.W.C. DATE 12/6/30
TRACED BY J.M. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK See Sh. 6

CONT. NO. 5004 SHEET NO. 5

APPROVED July 11, 1930
Waddell & Hawkesty

A-2-325



USE THIS SHEET IN CONJUNCTION WITH SHEET #5

FOR NOTES SEE SHEET #2

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

TOWER SECTION #3

APPROVED 1-16-30

Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE W.M. SON
MADE BY A.T. DATE CHECKED BY H.W.C. DATE 12/21/29
TRACED BY J.M. DATE REVISED DATE
SCALE: 1 INCH = 1 FOOT LAST ASSEMBLING MARK B6

CONT. NO. 5004 SHEET NO. 6

A-7-326

VIEW B-B

SECTION A-A

SECTION H-H

SECTION C-C
D-D

SECTION E-E

SECTION F-F

VIEW G-G

Note to Shop:
For ring holes on this end of TS6-T&8 see "Note B" on Sheet PS1 - Cont. 5004

Scribe ℄ on top & edges of Cap Slab in both directions.

2 Tower Sections	TS6e As shown
2 "	TS6' Opp. hand
2 "	TS7e As shown
2 "	TS7' Opp. hand
2 "	TS8e As shown
2 "	TS8' Opp. hand
2 Slabs	TS9e As shown
2 "	TS9' Opp. hand

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

TOWERS

SECTION #4

Rivets 7/8"ø
Holes 15/16"ø unless noted
For notes see sheet #2

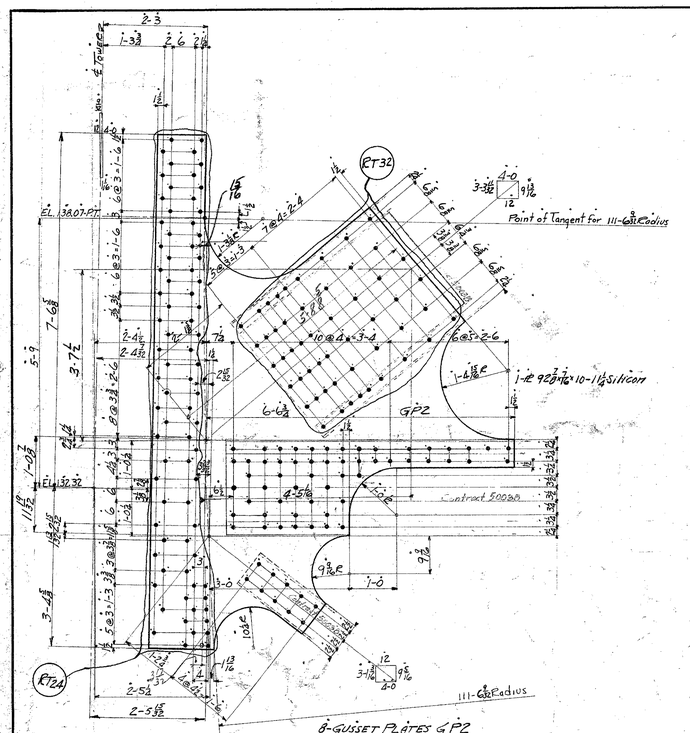
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

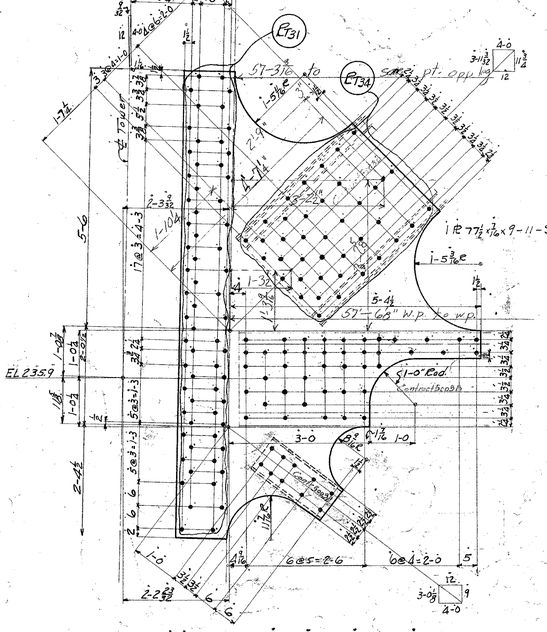
IN CHARGE [illegible] DATE CHECKED BY H.W.C.
MADE BY A.T.M. DATE REVISED
TRACED BY T.M. DATE LAST ASSEMBLING MARK
SCALE: 1 INCH = 1 FOOT

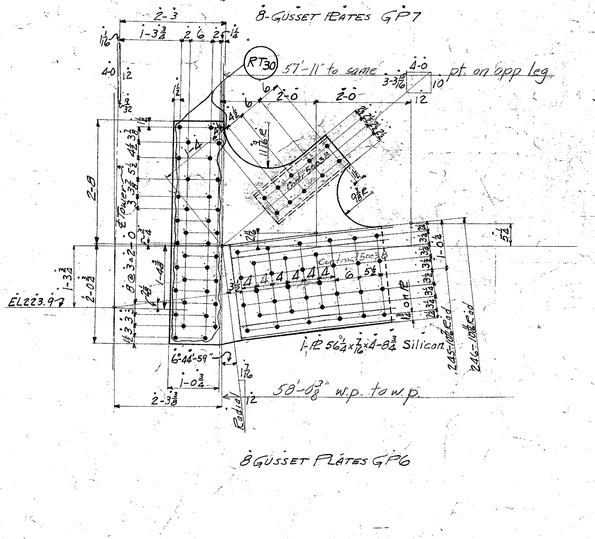
CONT. NO. 5004 SHEET NO.

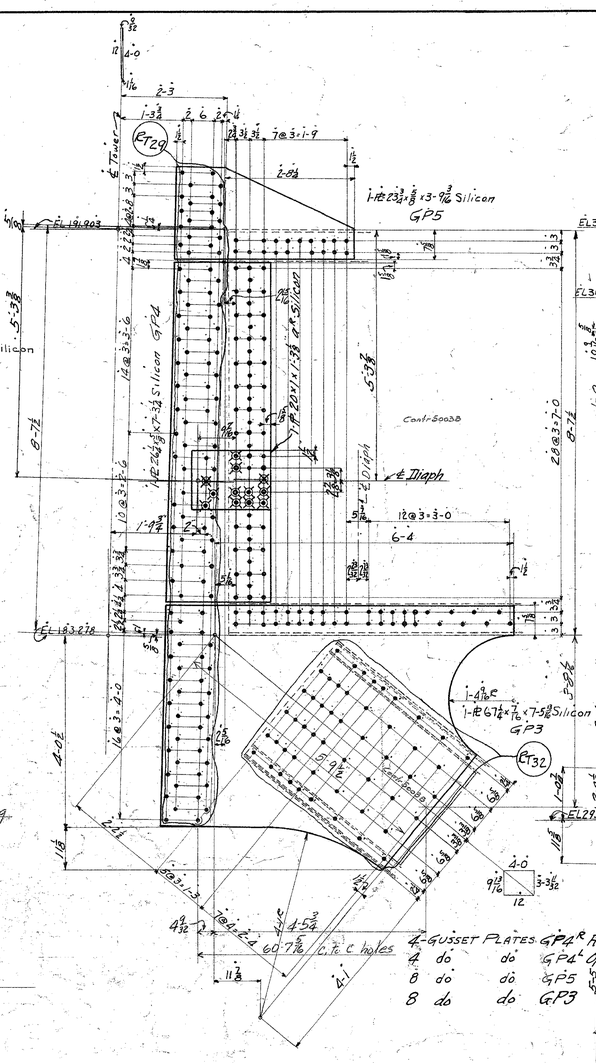
APPROVED 2-14-30
Waddell & Hardesty

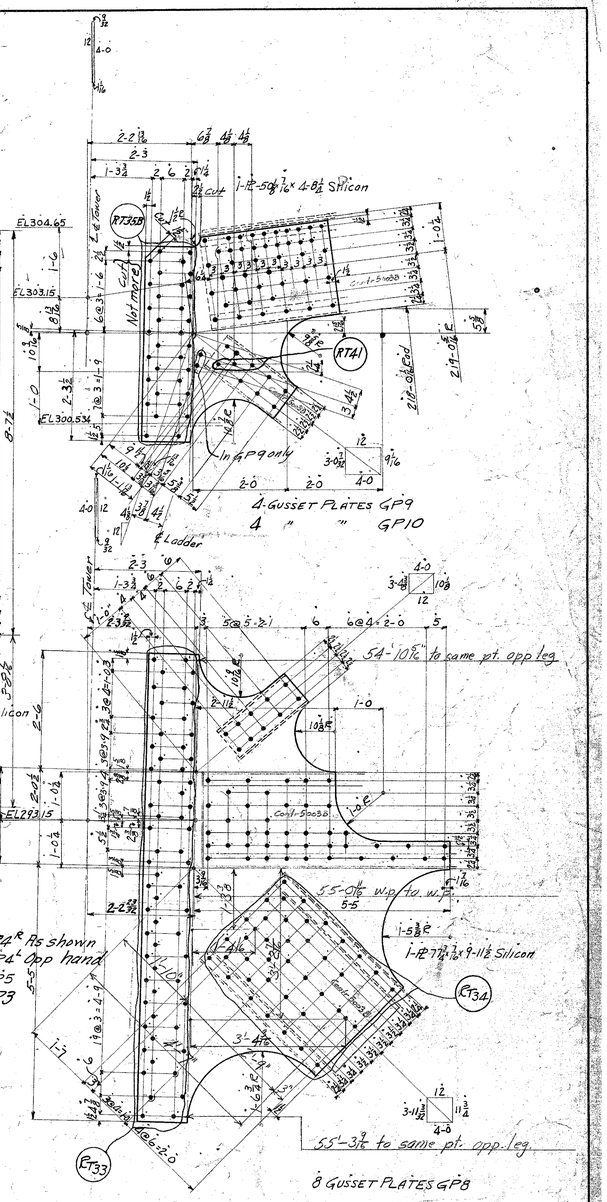
A-2-327

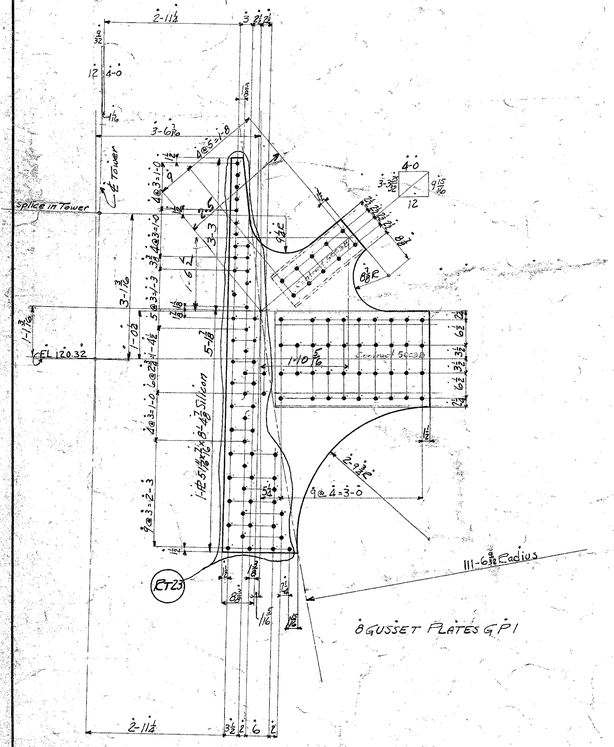












Rivets 7/8
Holes 15/16

Holes marked RT to be sub-punched 1/16" ø and reamed to 15/16" ø to an iron templet. All other holes to be sub-punched 11/16" ø reamed to 15/16" with plates assembled and match marked in the shop. Burrs to be removed from all holes.

Paint— One coat of Detroit Graphite Co's #501.

APPROVED 2-1-30

Waddell & Hardesty

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

TOWER

BRACING PLATES.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE W.M.S.2nd
MADE BY H.C.W.C. DATE 12/6/29 CHECKED BY H.W.C. DATE 1/8/30
TRACED BY E.Z. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK A

CONT. NO. 5004 SHEET NO. 8

A-2-328

2 Sidewalk Brackets TK2R As shown
2 " " TK2L Opp Hand
2 " " TK3R "
2 " " TK3L As shown

2 Tower Brackets TK4R As shown
2 " " TK4L Opp Hand

2 Tower Brackets TK5R As shown
2 " " TK5L Opp Hand

4 Rocker Links TRL1 Center Span

4 Rocker Links TRL2 Side Span

8 Pins TP1 Center Span } Steel Forging
8 " TP2 Side Span }

2 Expansion Beams TEB1R As shown
2 " TEB1L Opp Hand

Rivets: 7/8" ⌀
Holes: 15/16" ⌀ unless noted
Holes in material over 3/4" thick to be drilled
Holes marked (M) are to be subpunched 3/4" ⌀ & reamed to 13/16" ⌀ to on iron templet.
All other holes are to be subpunched 13/16" ⌀ reamed to 15/16" ⌀ after assembling except holes in web at horizontal diaphragms which may be punched full size.
Holes for all splices for connecting wings to main tower & for connecting brackets to wing are to be reamed & match-marked with sections assembled in shop.
Burrs are to be removed from all holes.

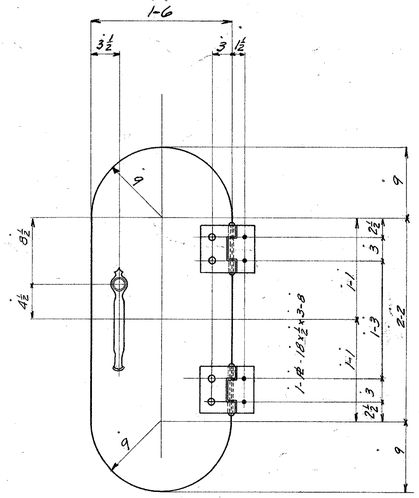
Paint: One coat of Detroit Graphite Co's #501

APPROVED 3-24-30
Waddell & Hardesty

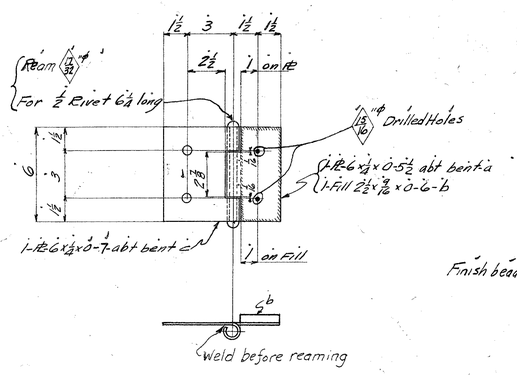
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
TOWERS
BRACKETS - ROCKER LINKS
& EXPANSION BEAMS

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.H. 3-20-30
MADE BY J.B.H. DATE CHECKED BY H.W.C. DATE 3/25/30
TRACED BY J.M. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK SQ.
CONT. NO. 5004 SHEET NO. 9

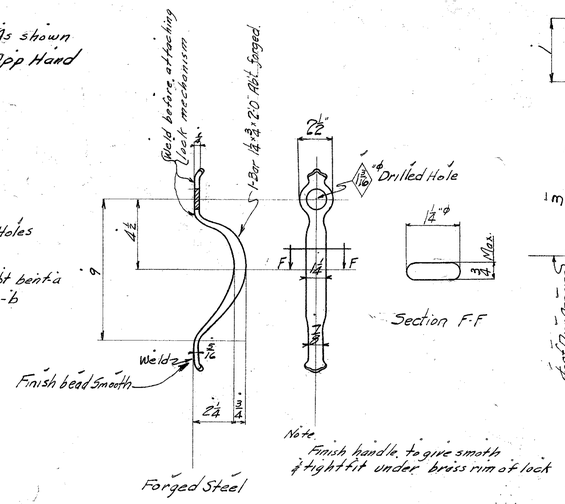
A-2-329



4 Doors TD1R As shown
4 do TD1L Opp Hand

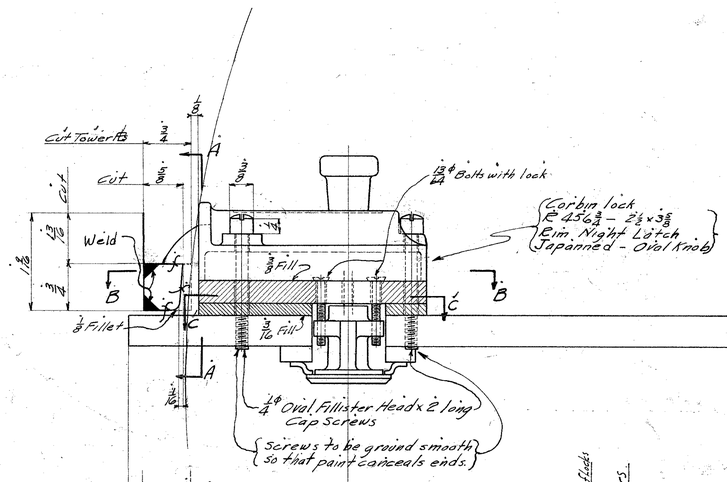


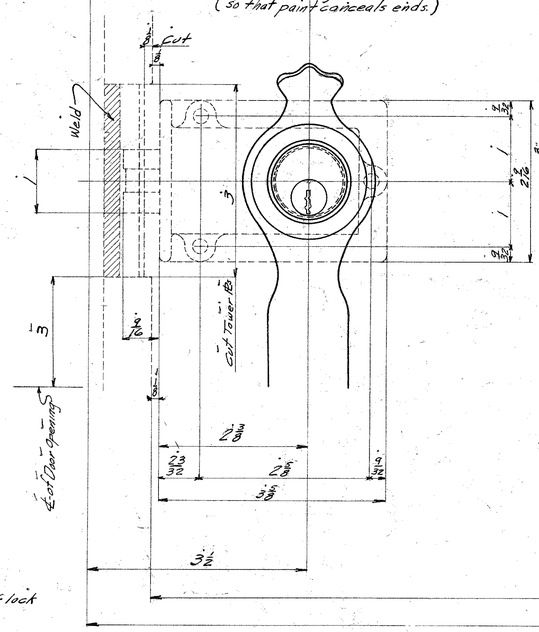
Enlarged Detail of Hinge
16-Reqd.

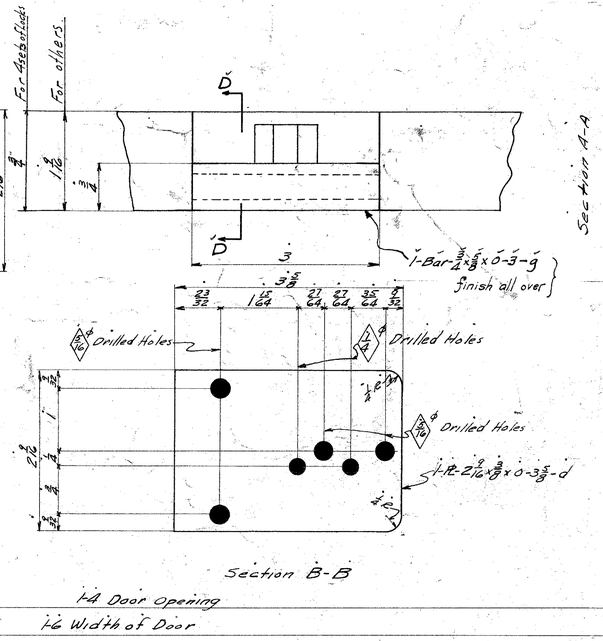


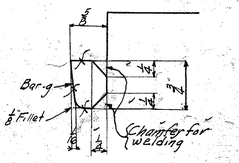
Enlarged Detail of Handle
8-Reqd.

Note
Finish handle to give smooth fit tight fit under brass rim of lock









SECTION D-D

Section A-A

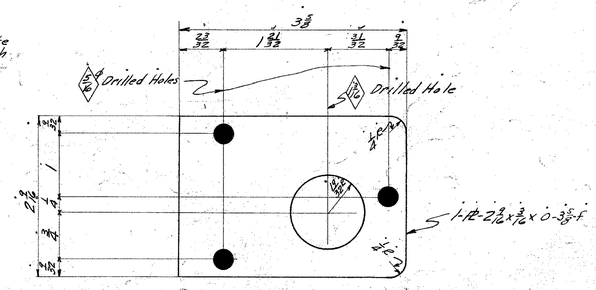
1-4 Door opening
1-6 Width of Door

8 Locks –

Locks all to be exactly alike or if not to be supplied with 4 master keys

Lock to be used as a templet if desired

Locks & Doors to be assembled with Tower in shop.



Section C-C

Notes

Rivets 7/8 ϕ – Unless Noted
Holes 13/16 ϕ Unless Noted

Paint: One coat of Detroit Graphite Co's. #501.
Locks not to be painted.

CITY OF TOLEDO, OHIO

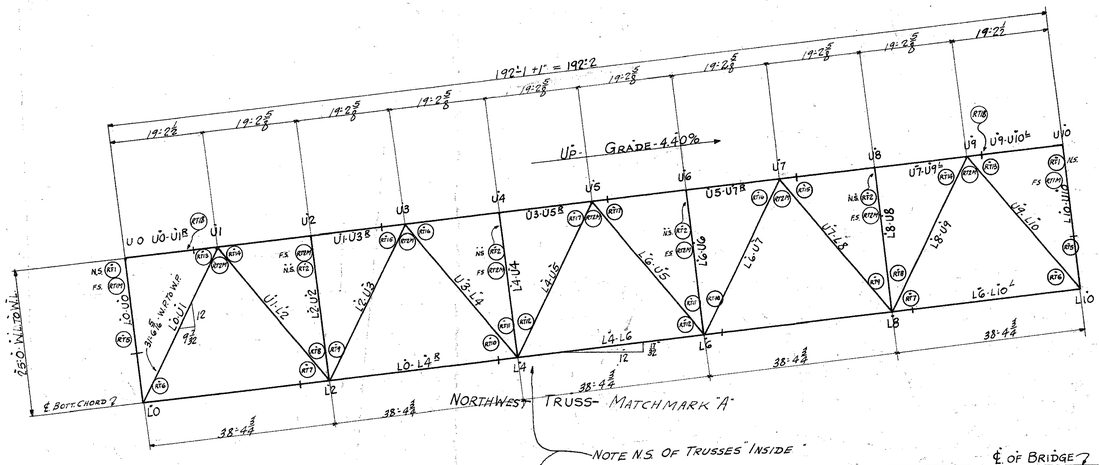
BRIDGE OVER MAUMEE RIVER

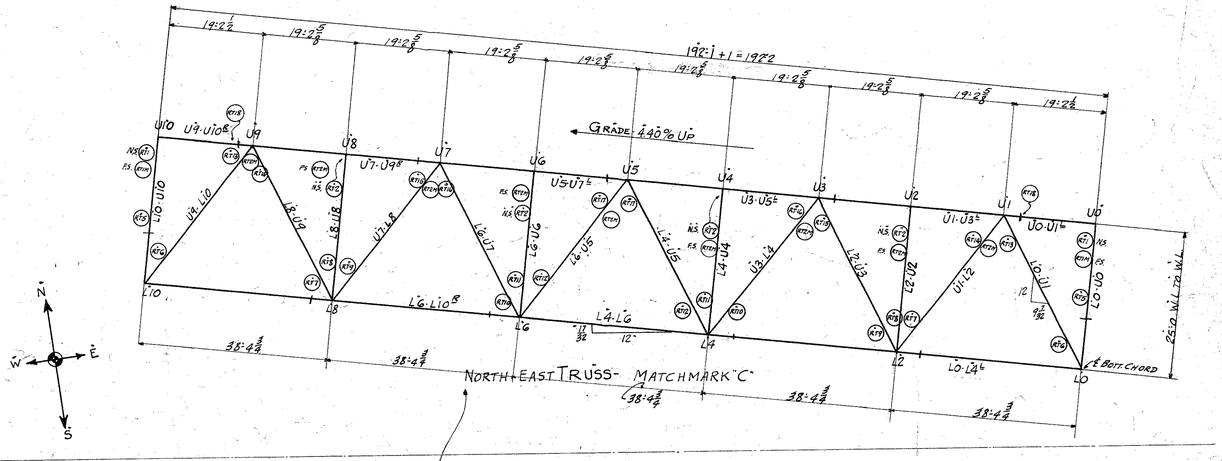
TOWERS
DOORS & LOCKS

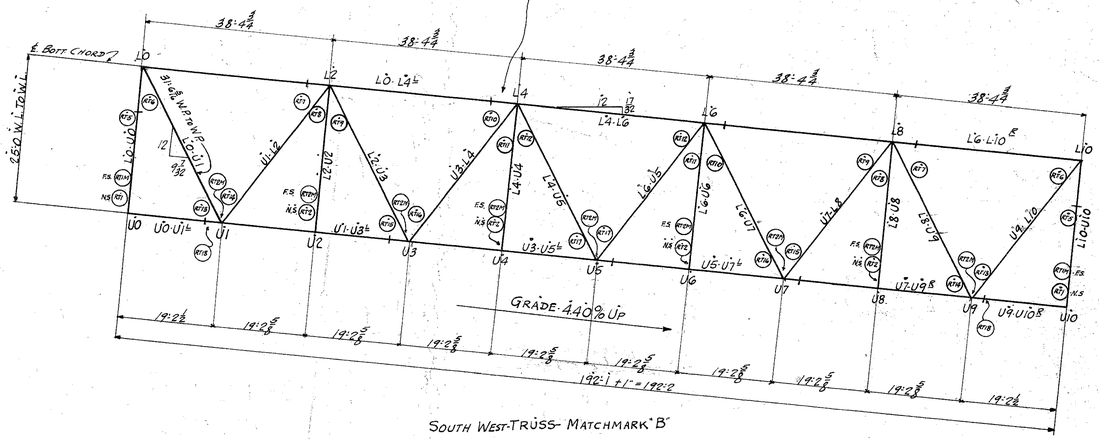
APPROVED 3-18-30
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Wm Smith
MADE BY HFM DATE CHECKED BY F.B.A DATE 3-430
TRACED BY E.Z. DATE 2-43 REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK g
CONT. NO. 5004 SHEET NO. 10

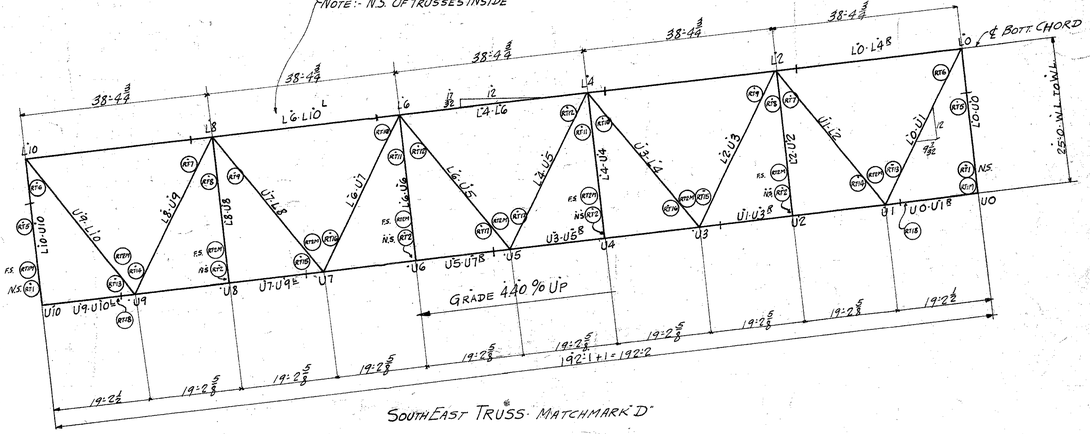
A-2-330



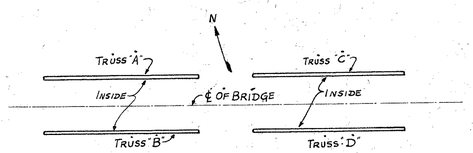




SOUTH WEST-TRUSS- MATCHMARK "B"



SOUTH EAST TRUSS- MATCHMARK "D"



PLAN OF TRUSSES FOR MATCHMARKING

NOTE:-
TOP & BOTTOM CHORDS ARE TO BE ASSEMBLED, REAMED, & MATCHMARKED IN THE REAMING YARD. CONNECTIONS FOR WEB MEMBERS IN TOP & BOTTOM CHORDS ARE TO BE REAMED TO JIGS IN THE REAMING YARD. WEB MEMBERS ARE TO BE REAMED TO JIGS IN THE SHOP

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

DECK TRUSS SPANS.

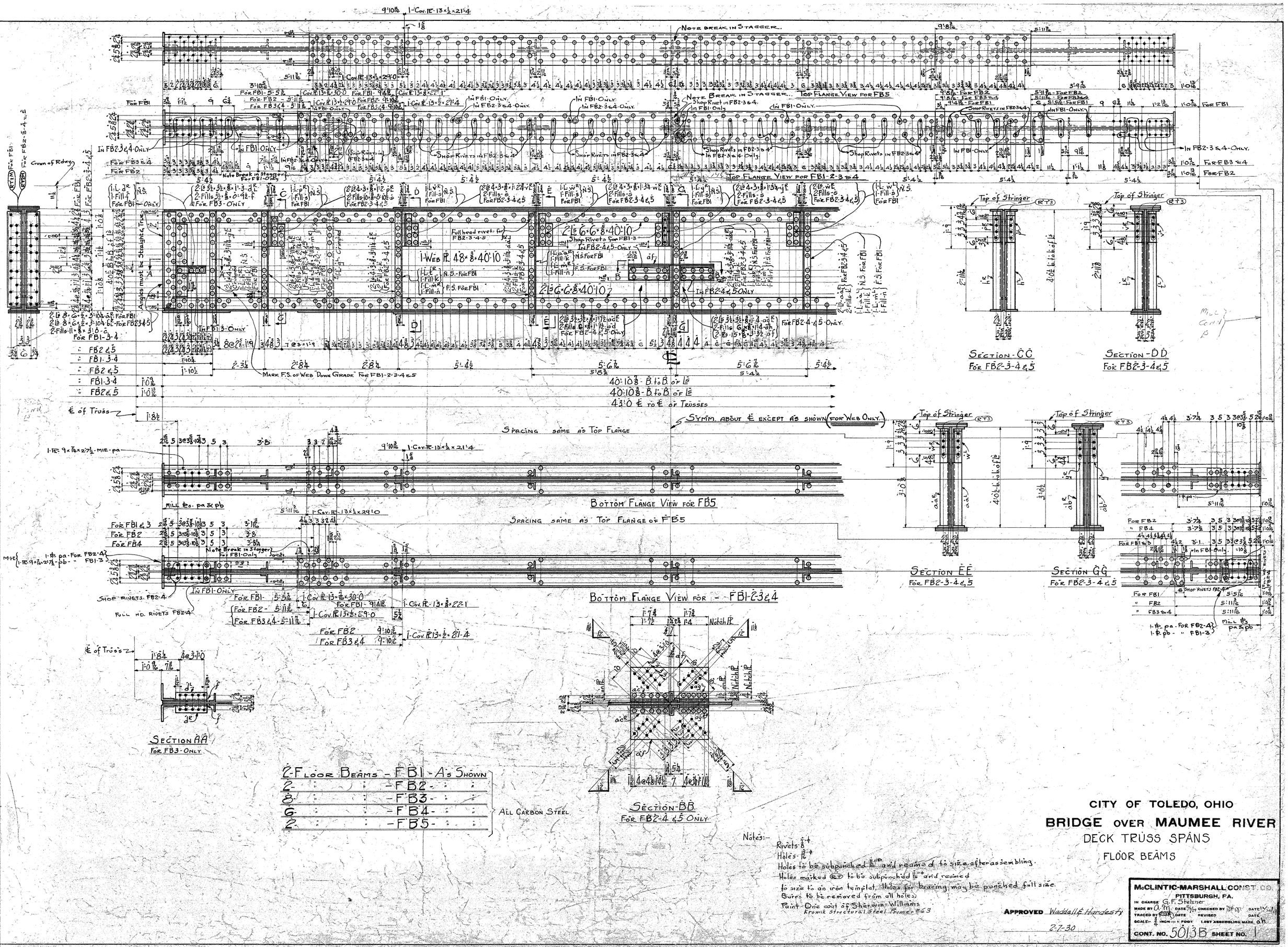
MATCHMARKING & JIG REAMING DIAGRAM

APPROVED Waddell & Hardesty

3-7-30

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE G.F. STELZNER
MADE BY J.A.F. DATE CHECKED BY J.R.C. DATE 3/6
TRACED BY E.H.G. DATE 2-20-30 REVISED DATE
SCALE:- INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5014 SHEET NO. E2

A-2-346



2	Floor Beams - FB1 - As Shown
8	" " - FB2 - " "
8	" " - FB3 - " "
6	" " - FB4 - " "
2	" " - FB5 - " "

All Carbon Steel

Notes:-
Rivets ⅞"ϕ
Holes 15/16"ϕ
Holes to be subpunched ¼" and reamed to size after assembling.
Holes marked ℄ to be subpunched ¼" and reamed to size to an iron templet. Holes for bracing may be punched full size.
Burrs to be removed from all holes.
Paint - One coat of Sherwin-Williams Kromik Structural Steel Primer #63

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

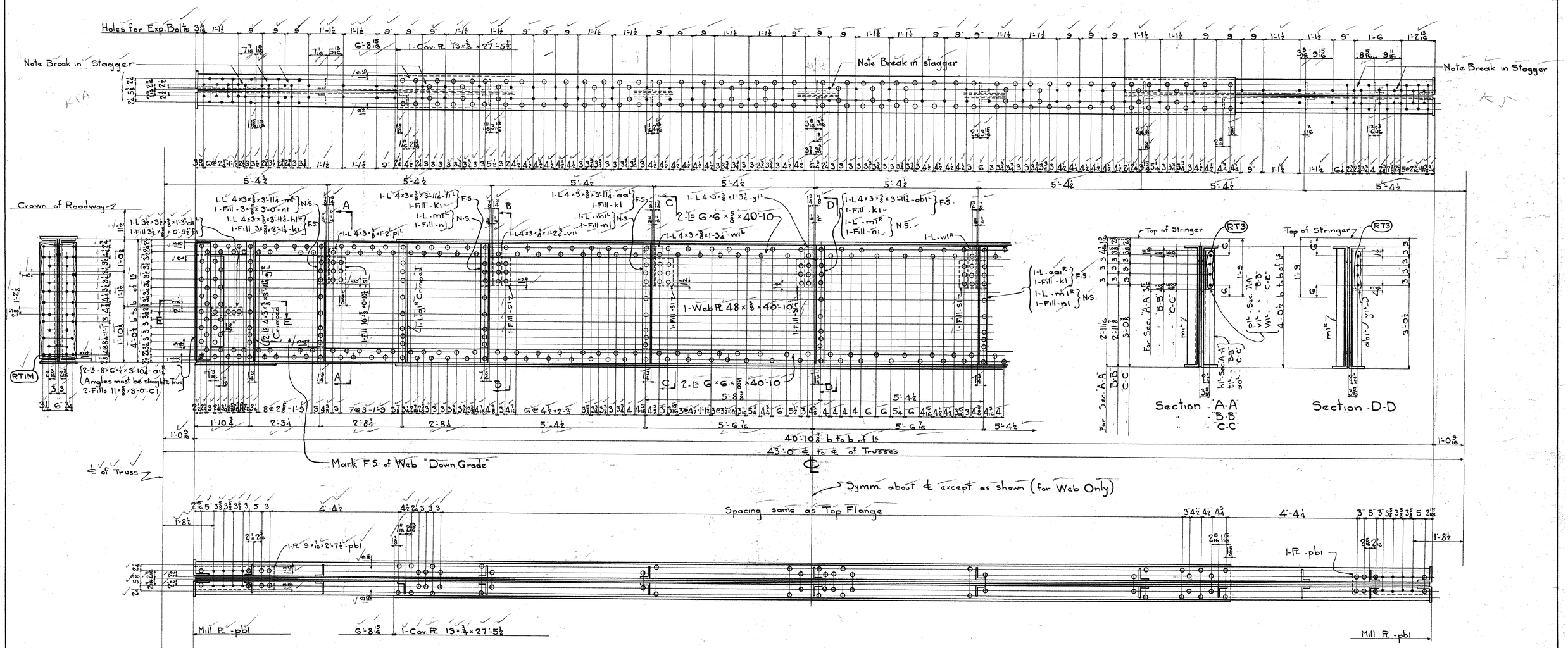
DECK TRUSS SPANS

FLOOR BEAMS

Approved Waddell & Hardesty
2-7-30

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
In charge G.F. Stelzner
Made by A.M. Date 2/19 Checked by [illegible] Date 2/21/30
Traced by [illegible] Date Revised Date
Scale - ½ inch = 1 foot Last assembling mark GH
Cont. No. 5013B Sheet No. 1

A-2-34B



2 - Floor Beams - FB6 (All Carbon Steel)

Notes

Rivets ⅞ ϕ
Holes - 15/16" ϕ
Holes to be subpunched 1" ϕ and reamed to size after assembling
Holes marked (RT) to be subpunched 1" ϕ and reamed to size to an iron templet. Holes for bracing may be punched full size.
Burrs to be removed from all holes
Paint: One coat of Sherwin-Williams Kromik Structural Steel Primer #63

APPROVED Waddell & Hardesty
3-24-80

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

Deck Truss Spans

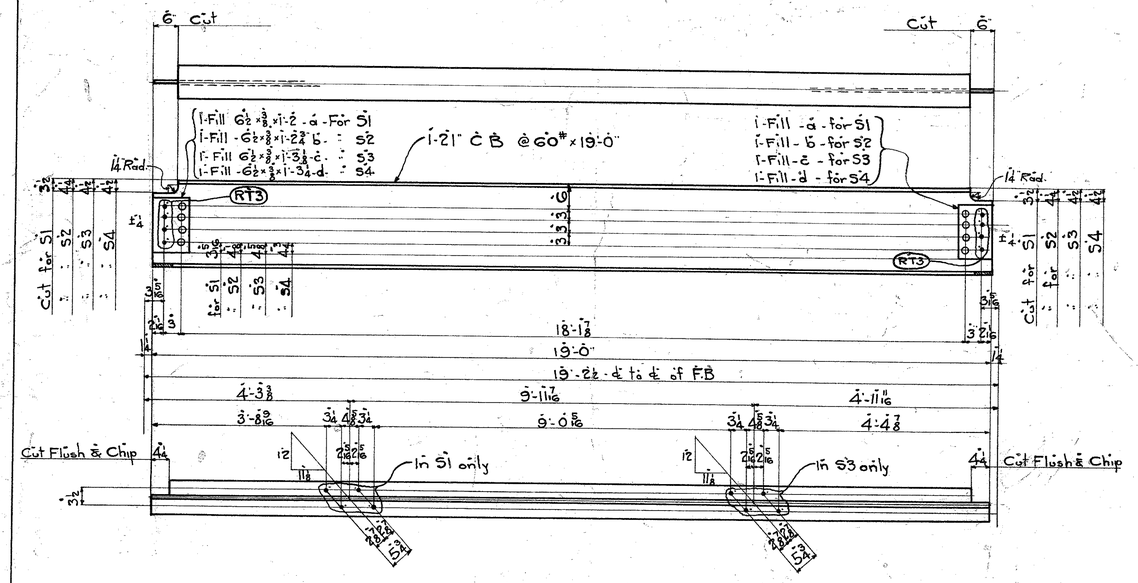
Floor Beams FB6

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

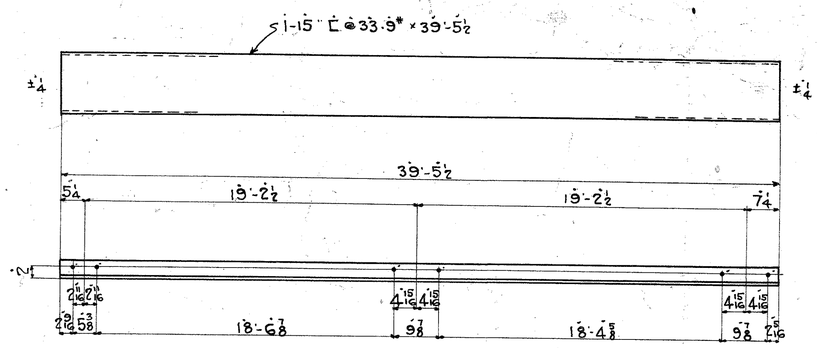
IN CHARGE G.F. Stelsner
MADE BY A.M. DATE 3-24-80 CHECKED BY DATE
TRACED BY DATE REVISED DATE
SCALE: ½ INCH = 1 FOOT LAST ASSEMBLING MARK

CONT. NO. 5013-B SHEET NO. 2

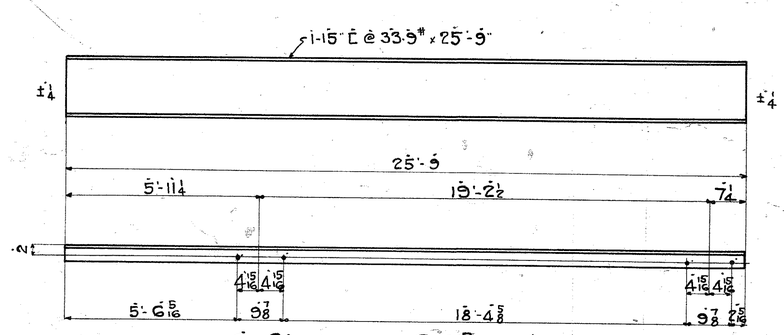
A-2-349



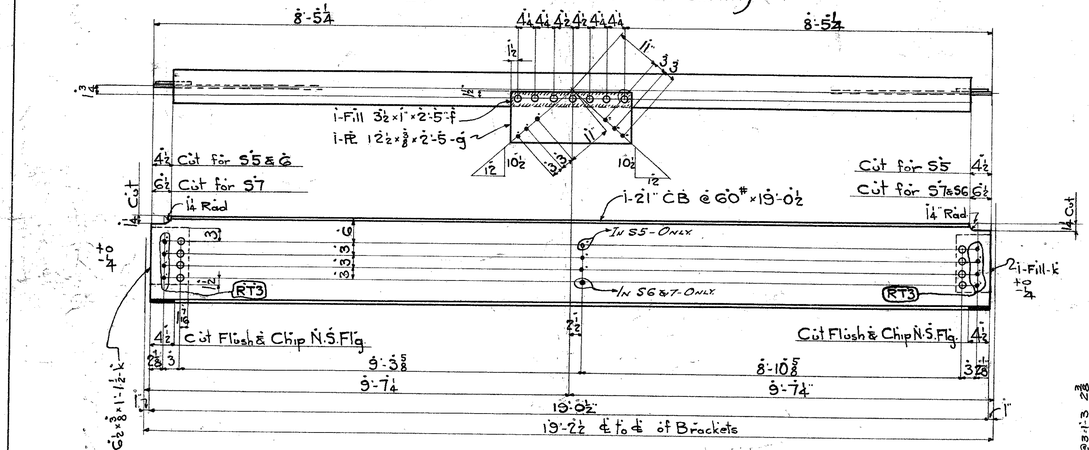
20 - Stringers - S1R - as shown
20 - : - S1L - opp. hand
40 - : - S2 - as shown
20 - : - S3R - as shown
20 - : - S3L - opp. hand
20 - : - S4 - as shown
} All Carbon Steel



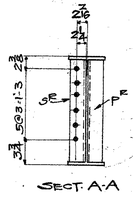
2 - Stringers - S9R - As shown
2 - : - S9L Opp. Hand
} Carbon Steel

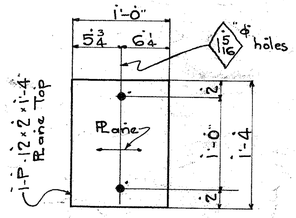


2 - Stringers - S10R - as shown
2 - : - S10L - opp. hand
} Carbon Steel

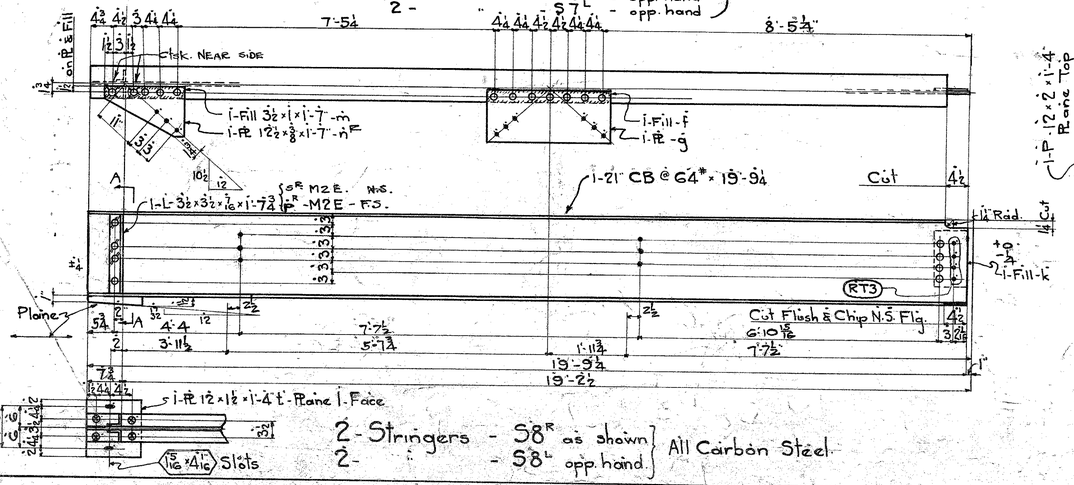


14 - Stringers - S5R - as shown
2 - : - S6R - as shown
2 - : - S6L - opp. hand
2 - : - S7R - as shown
14 - : - S5L - opp. hand
2 - : - S7L - opp. hand
} All Carbon Steel





4 - Masonry Plates - M1 - Carbon Steel.



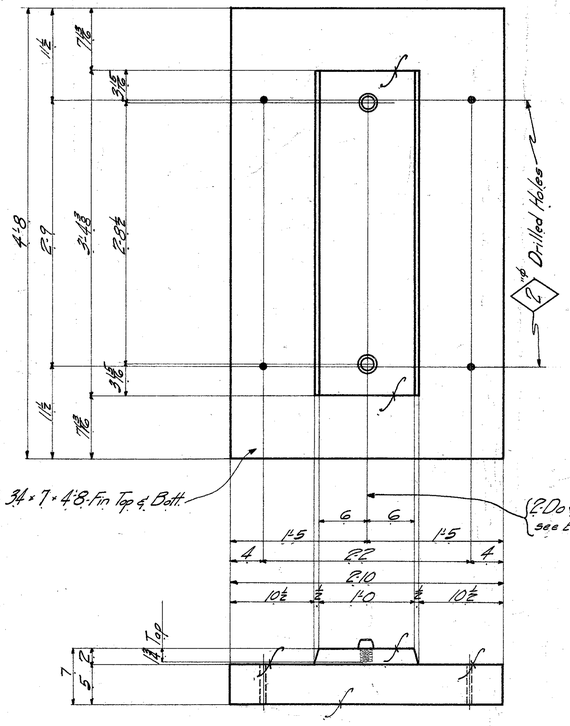
2 - Stringers - S8R as shown
2 - : - S8L opp. hand
} All Carbon Steel.

Notes:
Rivets ⅞" ϕ
Holes 15/16" ϕ Unless noted.
Material more than ⅞" thick must be drilled from the solid.
Holes to be subpunched 1" and reamed to size.
Holes marked (RT) to be subpunched 11/16" and reamed to size to an iron templet. Holes for bracing may be punched full size.
Burrs to be removed from all holes.
Paint - One coat of Sherwin Williams Kromik Structural Steel Primer #63

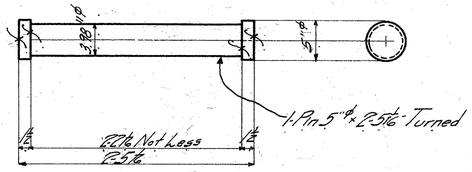
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVE
Deck Truss Spans
Stringers

APPROVED Waddell & Hardesty
1-27-30

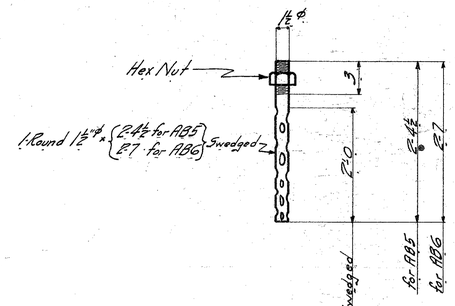
McCLINTIC-MARSHALL CONST. C
PITTSBURGH, PA.
IN CHARGE Stelzner
MADE BY A. M. DATE 11/26 CHECKED BY DATE
TRACED BY H.E.J. DATE REVISED DATE
SCALE- 3/4 INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5013C SHEET NO.



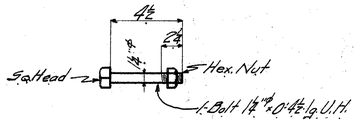
4-Masonry Plates-MP5
Note-ABG



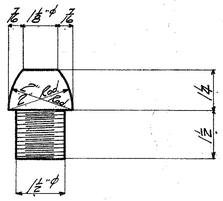
8-Pins-P2



16-Anchor Bolts-ABS
16- " " -ABG



64-Bolts-B5
(Upper Shoes-U52 to Deck Trusses)



Finish all over

Enlarged detail of Dowels

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVE

EAST & WEST DECK TRUSSES

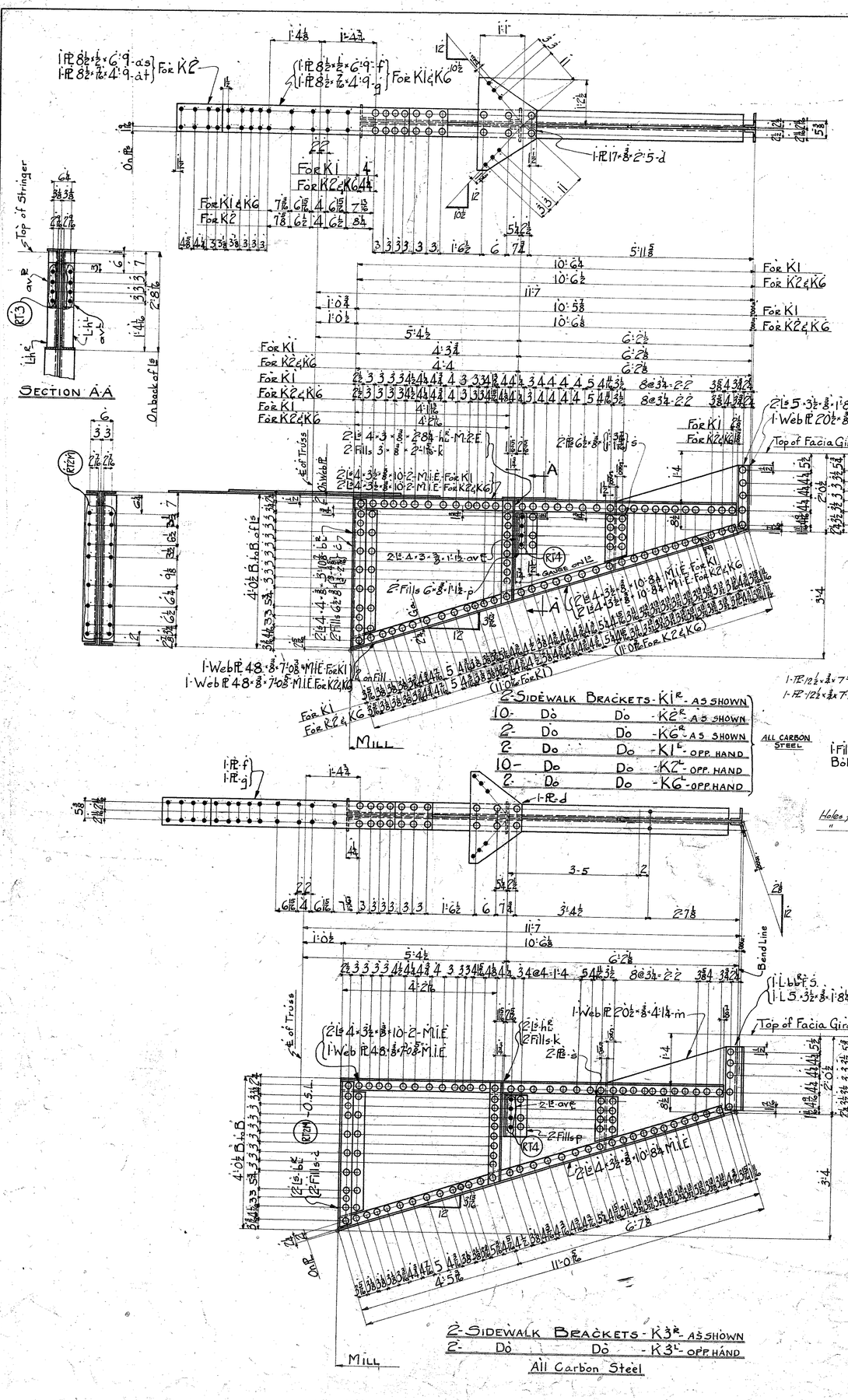
MASONRY PLATES PINS & BOLTS

Holes:- As Noted.
Paint:- Machined surfaces to receive one coat of White Lead & Tallow applied hot.
Balance one coat of Detroit Graphite Co's #501

APPROVED Oct 31-1929
Waddell & Hardesty

McCLINTIC-MARSHALL CONST.
PITTSBURGH, PA.
IN CHARGE G.H. Stelzner
MADE BY A.T. DATE CHECKED BY A.E.S. DATE
TRACED BY E.M. DATE REVISED DATE
SCALE:- INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5013D SHEET NO.

A-2-351


SECTION A-A
SECTION B-B
2-SIDEWALK BRACKETS-K1R-AS SHOWN
10- Do Do -K2R-AS SHOWN
2- Do Do -K6R-AS SHOWN
2- Do Do -K1L-OPP. HAND
10- Do Do -K2L-OPP. HAND
2- Do Do -K6L-OPP. HAND
ALL CARBON STEEL
2-SIDEWALK BRACKETS-K4R-AS SHOWN
2- Do Do -K4L-OPP. HAND
ALL CARBON STEEL
2-SIDEWALK BRACKETS-K3R-AS SHOWN
2- Do Do -K3L-OPP. HAND
All Carbon Steel
2-SIDEWALK BRACKETS-K5-AS SHOWN
2- Do Do -K5A-OPP. HAND
All Carbon Steel
Top of Stringer
Top of Facia Girder
Bend Line
Mill
On Fill
On Back of Is
On Web PL
E. of Truss
Gauge Line
Note:-
Rivets 8/8" ϕ Open holes 15/16" ϕ
Holes to be sub-punched 13/16" ϕ & reamed to size.
Holes marked (RT) to be sub-punched 13/16" ϕ and reamed to size to an iron templet.
Holes in Bracing Plates may be punched full size.
Burrs to be removed from all holes.
Paint: One coat of Sherwin Williams Kromik Structural Steel Primer #63
APPROVED Waddell & Hardesty
1-2930
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVE
SIDEWALK BRACKETS
DECK TRUSS SPAN
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE G.F. Stelzner
MADE BY JAF DATE CHECKED BY
TRACED BY FM DATE REVISED DATE
SCALE- INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5013D SHEET NO. 2

1-Bar 3½"x⅜"x1'-0"-yb
1-UM-WEB PL 24"x⅜"x19'-2"
MARK TOP
1-L 3½"x3½"x⅜"x19'-2"
1-Fill 3½"x⅜"x0'-8½"-ya
8@3'-2"0 | 4 4 4 | 11@6"-5"-6 | 9'-7¼
19'-2½"
14-FASCIA GIRDERS - FG1R AS SHOWN
14-FASCIA GIRDERS - FG1L OPP HAND
CARBON STEEL
VIEW CC
Bend Line N.S.
1-Bar-3½"x⅜"x1'-0"-yc-Bent
1-UM-WEB PL 24"x⅜"x19'-5½"
MARK TOP
1-L 3½"x3½"x⅜"x19'-5½" CUT HOT CHIP O.S.L.
1-Fill-ya
CUT HOT CHIP O.S.L.
8@3'-2"0 | 4 4 4 5/8 | 11@6"-5"6 | 9'-9⅞
19'-5⅝"
2-FASCIA GIRDERS - FG2R AS SHOWN
2-FASCIA GIRDERS - FG2L OPP HAND
CARBON STEEL
VIEW DD
Bend Line F.S.
1-Bar-yd-Bent
1-UM-WEB PL 24"x⅜"x19'-10"
1-L 3½"x3½"x⅜"x19'-10"
1-Fill-yc
MARK TOP
8@3'-2"0 | 4 4 4 | 11@6"-5"6 | 9'-7¼
19'-2½"
19'-10¼"
2-FASCIA GIRDERS - FG3R AS SHOWN
2- Do Do - FG3L OPP. HAND
CARBON STEEL
1-L 5 3½"x3½"x⅜"x1'-1¼"-a-M22
1-Fill 5"x⅜"x1'-5"-b
1-UM-WEB PL 24"x⅜"x19'-10"
1-L 3½"x3½"x⅜"x19'-10"
1-Fill-ya
1-L 3½"x3½"x⅜"x1'-4"-c
1-Fill-ya
8@3'-2"0 | 4 4 4 | 12@6"-6"0 | 3½ | 7@6'-3"-6" | 8@3'-2"0
3-11½
7'-7½"
19'-10¼"
Slab
Plane top of Station
1-PL 16"x½"x1'-5"-d
1-PL 16"x½"x1'-5"-e
2-FASCIA GIRDERS - FG4R AS SHOWN
2- Do Do - FG4L OPP. HAND
CARBON STEEL
℄ of Bearing
1-PL 16"x½"x1'-5"-Plane Top
Plane in this direction
4 Holes
4-MASONRY PLATES-M22
CARBON STEEL
1-L 3½"x3½"x⅜"x5'-1¼"-D1
1-PL 12"x⅜"x2'0"-f FOR D1
℄ of Truss
56-DIAGONALS-D1
74- Do -D2
CARBON STEEL

1-L 3½"x3½"x⅜"x5'0"-D3
1-PL ⅜"x12"x2'0"-f FOR D3
4-DIAGONALS - D3
6- Do -D4
CARBON STEEL
1-L 3½"x3½"x⅜"x5'0"-D5
1-L 3½"x3½"x⅜"x5'-1¼"-FOR D6
1-PL 12"x⅜"x2'0"-g
2-DIAGONALS - D5
6- Do -D6
CARBON STEEL
1-L 3½"x3½"x⅜"x5'-1¼"-D2
1-PL 12"x⅜"x2'0"-h
12-DIAGONALS-D7-CARBON STEEL
1-L 4x4x⅜"x9'-4"-g
1-L 4x4x⅜"x1'-2½" cop N.S.
1-L 5x3½"x⅜"x1'-2½" cob F.S.
Top of Fascia Girder
Top of Stringer
1-10"-E 20"# 5'-8½"
on ℄
1-PL 11½"x⅜"x1'-7½" c.c.
18-STRUTS-S11R AS SHOWN
18-STRUTS-S11L OPP HAND
CARBON STEEL

Working Line Top Chord
℄ of Truss
℄ of Bottom Chord
2-L 4x4x⅜"x16'-6"-kR
1-PL 18½"x½"-n
Washers 2¼"d x ⅜"th.
SECTION AA
Bottom of Floor Beam
2-L 4x4x⅜"x15½"-pR
32'-0¼" = 32'-0"
15 Spaces @ 1'-6" = 22'-6
2-L 6x6x⅝"x28'-2¾"
24 DIAGONALS-D8 - CARBON STEEL

1-L 5x3½"x½"x1'-7⅛"cg R FS Bent
1-PL 11"x⅜"x1'-7½"-cd
Top of Fascia Girder
Top of Stringer
VIEW EE-DEVELOPED
1-L 4x3½"x½"x1'-7½"cf R Bent N.S.
Bend Line
1-L 6x4x⅜"x0'-9½"-vR
SECTION BB
2-STRUTS-S12R AS SHOWN
2-STRUTS-S12L OPP HAND
CARBON STEEL
1-L Ca R N.S.
1-L Cb R F.S.
1-L 4x4x⅜"x9'-4"-ab R
1-PL 11"x⅜"x1'-7½"ch.
2-STRUTS-S13R AS SHOWN
2-STRUTS-S13L OPP HAND
CARBON STEEL

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVE
FASCIA GIRDERS - STRUTS & DIAGONALS
DECK TRUSS SPANS

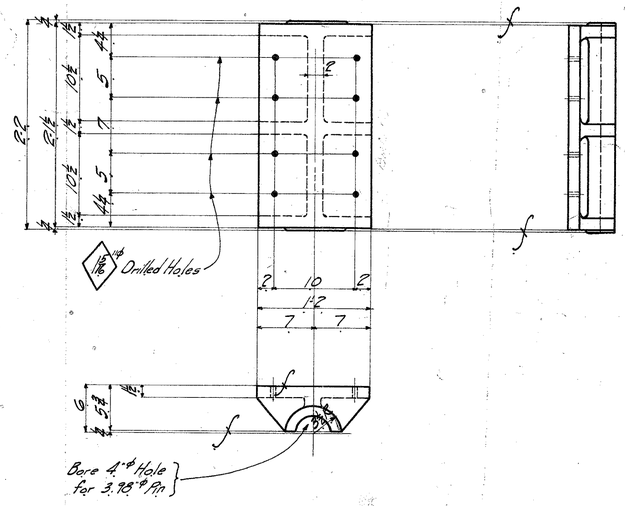
Note:-
Rivets ⅞" ϕ Open Holes 15/16" unless noted
Holes punched 1/16" d reamed to size, except holes for bracing & lateral plates may be punched full size.
Burre to be removed from all holes.

Paint- One coat of Sherwin Williams Kromik Structural Steel Primer #63
Washers - as noted.

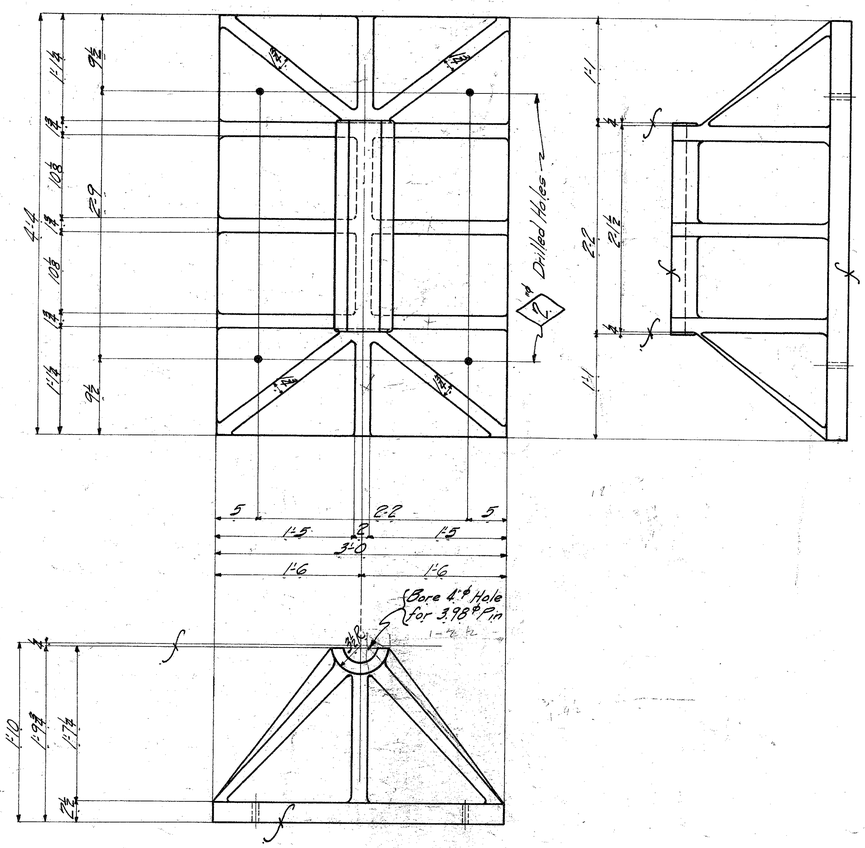
APPROVED Waddell & Hardesty
8-7-80

McCLINTIC-MARSHALL CONST. C
PITTSBURGH, PA.
IN CHARGE G.F. STELZNER
MADE BY JAF DATE CHECKED BY DATE
TRACED BY FM DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5013-D SHEET NO. 3

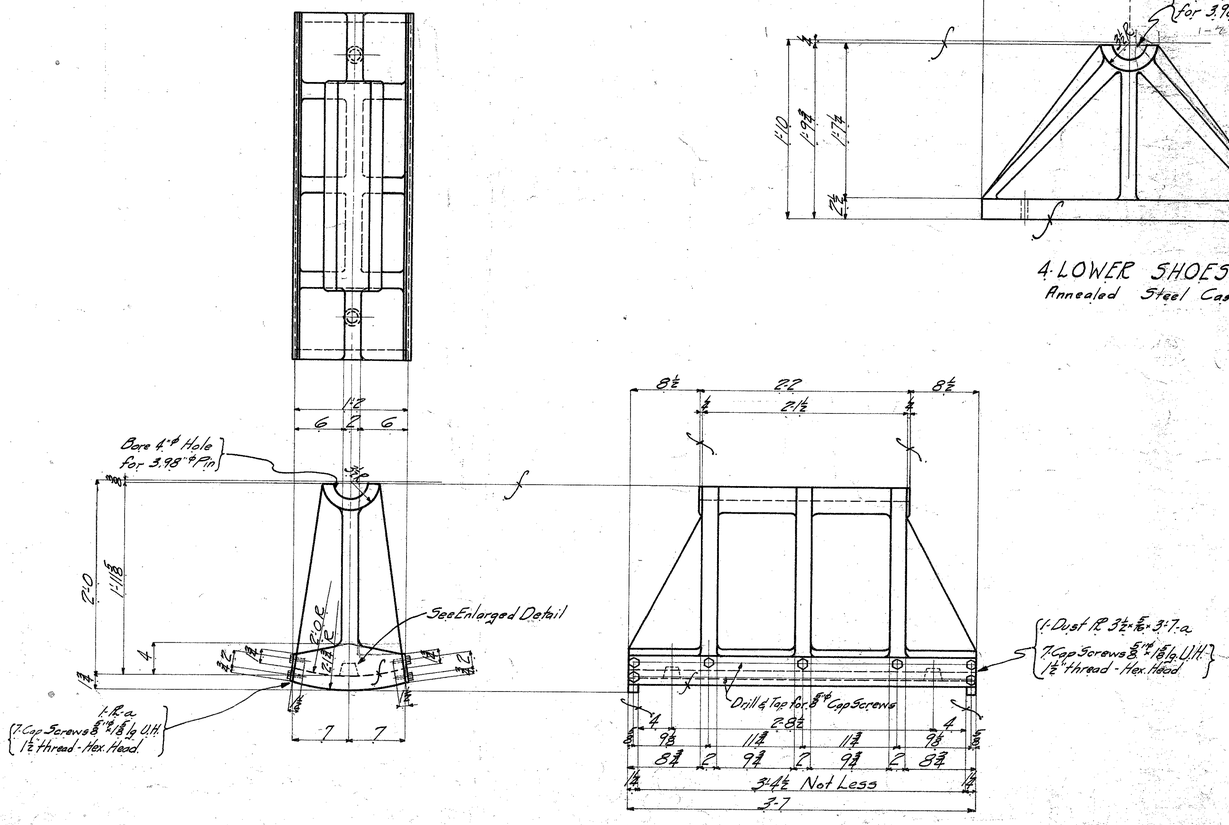
A-7-353



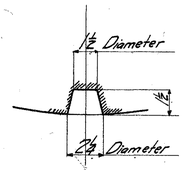
8 UPPER SHOES - U5E
Annealed Steel Casting



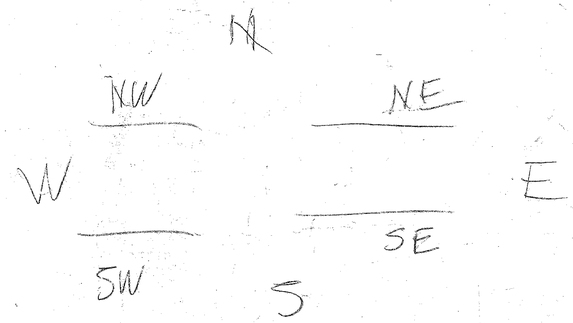
4 LOWER SHOES - L56
Annealed Steel Casting



4 LOWER SHOES - L57
Annealed Steel Casting



Enlarged Detail of Holes in Shoes L57



Note:-
Machined surfaces to receive one coat of White Lead & Tallow applied hot. Balance one coat of Detroit Graphite Co's #501

All fillets to be made to 1½" Radius Care must be taken to locate holes for dowels in rockers accurately

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIV
EAST & WEST DECK TRUSSES
FIXED & EXPANSION SHOES

McCLINTIC-MARSHALL CONST.
PITTSBURGH, PA.
IN CHARGE G.F.S. MADE BY A.J. DATE CHECKED BY A.E.S. DATE
TRACED BY A.M. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5013E SHEET NO. 1

APPROVED Oct. 31-1929
Waddell & Hardesty

A-2-256

1-U.M. Web ℄ 18-⅜×1'-8" ℄ Carbon

60-Lac. bars-g

{Carbon 1-Wash 24"×⅜" thk ℄ ℄

1-Wash 24"×⅜" thk-Carbon

30 Spaces @ 11 13/16 = 29'-6⅜"
37'-11½"

Note to Shop
Assemble this end
to 1'-7⅜" Brs. of 13

SEE NOTE ③ SHEET #1

RT7 RT8 RT9

Main Material
4 L³ 6"×4"×⅜" - 40'-0" - Silicon
2 U.M. Web ℄s 24"×½" - 40'-0" - Silicon
2 U.M. Web ℄s 24"×½" - 37'-8" - Silicon

2 ℄s 63-⅜"×⅞" ℄ Silicon

MARK NEAR SIDE OF NEAR WEB "INSIDE"

1 Web 18"×1'-6" Carbon
2 Flls 8"×¼" L.H. Cl. Carbon

Panel A

25 Panels A - 24'-7 5/16"
40'-0"
(38'-5-¼") - 38'-4⅜"
40'-6⅝"
33 Spa. @ 11 13/16 = 32'-5 13/16"

Not More

NOTE ②

Holes thus • are subpunched in all material and used for bolting chords together. Holes thus ⊙ are drilled from solid through from splice material when assembled and match marked in reaming yard. Holes • are then reamed to size.

6'-0" Ctrs

6'6 Lac. bars ⅝"×⅜"×1'-3¼" c to c. g. Carbon

{Carbon 1-Wash 24"×⅜" thk

SHOP RIVETS FOR L2-L4 ONLY

1 13/16" Holes

1 ℄ 39-⅜"×⅜"×5'-5½" ℄ Silicon

{1-Wash 24"×⅜" thk. CARBON

{1-Pl. 38-⅜"×7'-5"×⅜" Silicon FOR L2-L4 ONLY

℄ of L2-L8

℄ Truss

SECTION AA

SECTION BB

2 BOTTOM CHORDS - L2-L4R AS SHOWN
2 do do - L2-L4L OPP HAND
2 do do - L6-L8R AS SHOWN
2 do do - L6-L8L OPP HAND

FOR SHOP ASSEMBLING DIAGRAM - SEE SHEET #1

Note:-
Rivets ⅞" Open holes 1⅛" - Unless noted
Holes punched 1" & reamed to size after assembling except holes for bracing, lacing bars & tie plates may be punched full size
Holes marked ⊙ punched 1" & reamed to size, or drilled from the solid, to a metal templet.

Burrs to be removed from all holes.
Paint - One coat of Sherwin Williams Kromik Structural Steel Primer #63
Washers as noted.

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVE

BOTTOM CHORD SECTIONS
L2-L4 & L6-L8
DECK TRUSS SPANS

APPROVED 1-21-30
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE G. Steiner			
MADE BY J.A.F.	DATE	CHECKED BY [illegible]	DATE
TRACED BY Mac.	DATE	REVISED	DATE
SCALE:	INCH = 1 FOOT	LAST ASSEMBLING MARK	K

CONT. NO. 5014 SHEET NO. 2

A-2-357

1-U.M. Spl. 6x3/4x1'-5"-K. Silicon
1-U.M. Pl. 18 3/8x1'-8"-h2 Carbon
1-Wash. 24"Øx3/8 th-Carbon
56-Lac. bars-m
1-Wash. 24"Øx3/8 th-Carbon
1-Pl. h2
1-Spl. Pl. K
1-Spl. Pl. K
28 Spcs. @ 11 3/4" = 27'-5"
2'-0" O to O
1'-10 3/16" B to B
1-Spl. Pl. 24 3/8x1'-5 1/4 f. f. Silicon N.S.
1-Spl. Pl. 24 3/8x1'-5 1/4 f. f. Silicon
SEE NOTE ③ SHEET #1
2-Pls. 5/16x1'-3 1/2 a. Silicon
R110
R111
R112
MAIN MATERIAL
4-L's 6x4x3/4x39'-2 1/2
2-U.M. Web Pls. 24x1/2x39'-2 1/2
2-U.M. Web Pls. 24x1/2x43'-10 1/2
2-U.M. Side Pls. 16x3/8x46'-2 1/2
Silicon
MARK NEAR SIDE OF NEAR WEB INSIDE
4-L's 4x4x3/8 lbs. Carbon
1-Pl. 18 1/2x3/8x1'-10"-c Carbon
Panel A
2-Spl. Pls. 16x3/8x3'-5"-d Silicon
1-L 3 1/2x3 1/2x3/8x3'-5"-gR Carbon
28 Panels @ 4" = 27'-5"
38'-5" - 4" = 38'-4 3/4"
39'-2 1/4"
32 Spcs. @ 11 3/4" = 31'-4"
64-Lac. Bars 2 1/2x3/8x1'-5 1/8 c to c-m-Carbon
1-Wash. 24"Øx3/8 thk-Carbon
SEE NOTE ⑤ SHEET #1
NOTE BREAK IN STAGGER
2-Pls. a
1-Spl. Pl.
SEE NOTE ①
Panel A
2-Pls. d
Carbon
1-Wash. 24"Øx3/8 thk
1-Pl. 38x3/8x7'-5"-h3 Silicon
℄ L6
2-BOTTOM CHORDS L4-L6R AS SHOWN
2- " " -L4-L6L OPP. HAND.
℄ L4
℄ of Chord
1-gR
SECTION B-B
SECTION A-A

NOTE ⑦ Subpunch all holes thus ⑦ in outer material for both sides. Holes thus • are subpunched in all material and used for bolting. Chords together. After chords are bolted together holes thus ⑦ are drilled full size using as provided in outer mat'l to guide drill. Holes reamed to size.

Note:
Rivets: 7/8" Ø
Holes: 15/16" Ø Unless Noted
Holes punched 1/16" Ø reamed to size except holes for Lacing bars, Tie plates & Bracing may be punched full size.
Holes marked ⑦ punched 1/16" Ø reamed to size, or drilled from the solid to a metal templet.
Burrs to be removed from all holes.
Paint-One coat of Sherwin Williams Kromik Structural Steel Primer #63
Washers as noted.

APPROVED 1-21-30
Waddell & Hardesty

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIV
BOTTOM CHORD SECTIONS L4-L6
DECK TRUSS SPANS

McCLINTIC-MARSHALL CONST
PITTSBURGH, PA.
IN CHARGE G.F.Stelzner
MADE BY J.A.F. DATE CHECKED BY DATE
TRACED BY RD DATE 12/4 REVISED DAT
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5014 SHEET NO. 3

A-2-358

Full head rivets in U1-U3

2-L5 4×4×⅜×1'-2"-aa.Carbon

Crown of Roadway

Work Line

Shop rivets in F.S.Web

Mark Near Side of Near Web "INSIDE"

See Note ① Sheet 3.

See Note ③ Sheet #1

Main Material
2-L5 4×4×½×34'-11¼-M1E.
2-L5 8×6×⅝×34'-11¼-M1E.
1-U.M.Cov.Pl. 22×½×34'-11¼-M1E
2-U.M.Web Pls. 2G×⅜×34'-11¼-M1E
} Silicon

1-Pl. 74×⅜×7'-10⅜-aR-N.S.-Silicon
1-Pl. 74×⅜×7'-10⅜-bR-F.S.-Silicon

4-L5 4×3½×½×2'-0"-aa4L-Carbon
1-Web Pl. 23×½×2'-0"-ag4-Carbon
2-L5 3½×3½×½×1'-11"-ah4M2E-Carbon
2-Fills 3½×½×1'-4½-ak4 Carbon

Carbon { 1-L 4×3½×⅜×1'-34'-f4L
1-Fill 4×½×1'-0"-g4 }

1-L-f4L
1-Fill-g4

In N.S.Pl. only

B/4 F.B.Z
1-Pl. 25×½×5'-6¾-c4-N.S.
1-Pl. 25×½×5'-6¾-a4-F.S.
} Carbon

Mill

Assemble this end to

Assemble This End to

5 2-U.M.Pls. 2G×½×3'-4"-k-Silicon

34'-11¼ Milled Length

41'-6¾

38'-5+¼ = 38'-5¼

19'-2½+⅜ = 19'-2⅝

19'-2½+⅜ = 19'-2⅝

15@6"=7'-6"

14@6"=7'-0"

8@6"=4'-0"

7@6"=3'-6"

3¼" Exact

3¼ 3¼ Exact

4-L5 4×3½×½×1'-11½-ab.Carbon
1-Web Pl. 20½×½×1'-11½-ac.Carbon

2-Fills 3×⅜×0'-8½-ad-Carbon
Ctsk & Chip N.S. of N.S.Pl.
Ctsk & Chip F.S. of F.S.Pl.

1-L 5×3½×⅜×2'-0"-h-Carbon

4-L5 4×3½×½×1'-11½-aa
1-Web Pl. 20½×½×1'-11½-ac

2-Fills-ad

Ctsk & chip N.S. of N.S.Pl.
Ctsk & chip F.S. of F.S.Pl.

1-L-h

2-Fills-am

1-L-k

1-L-f4L
1-Fill-g4

See Note ③ Sh. #1

12'-7⅛

3'-1½

19'-2⅝

3'-1½

3'-0¼

16 Spaces @ 10⅜ = 13'-10"

10 Spaces @ 10⅜ = 8'-7½

16 Lac.Pls. 5×7/16×2'-1¼-v-Carbon

10-Lac.Pl.-v-carbon

1-U.M.Pl. 24×⅜×1'-9-aa-Carbon

1-U.M.Pl. 21×⅜×1'-9"-s-Carbon

1-Fill-3×7/16×0'-6¾-w-Carbon

1-Fill-w-Carbon

1-U.M.Pl. 21×⅜×4'-2-p-Silicon

Assemble This End to

1'-11⅛ c to c

2'-0 c to c

Section A-A

Section B-B

2 - Top Chords - U1-U3R - as shown
2 - " " - U1-U3L - opp hand
2 - " " - U7-U9R - as shown
2 - " " - U7-U9L - opp hand

Note:-
Rivets ⅞" ϕ Open Holes 15/16" ϕ
Holes punched 1/16" and reamed to size except holes for bracing, lacing bars & tie plates may be punched full size.
Holes marked Ⓓ to be punched 1/16" & reamed to size, or drilled from the solid, to a metal templet.

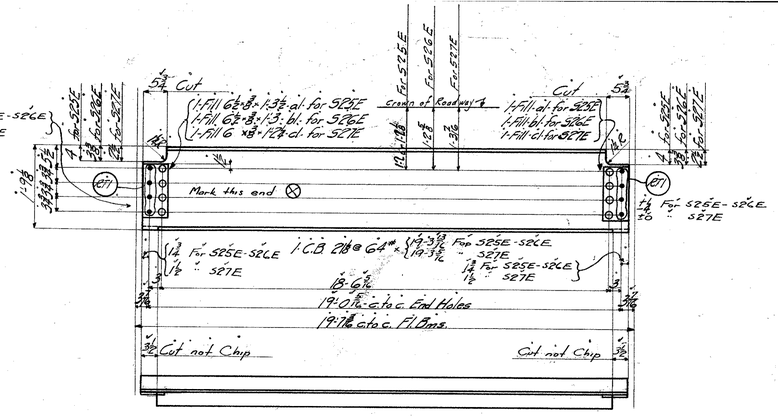
Burrs to be removed from all holes.
Paint - One coat of Sherwin Williams Kromik Structural Steel Primer #63

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
Top Chord Sections U1-U3 & U7-U9
DECK TRUSS SPANS

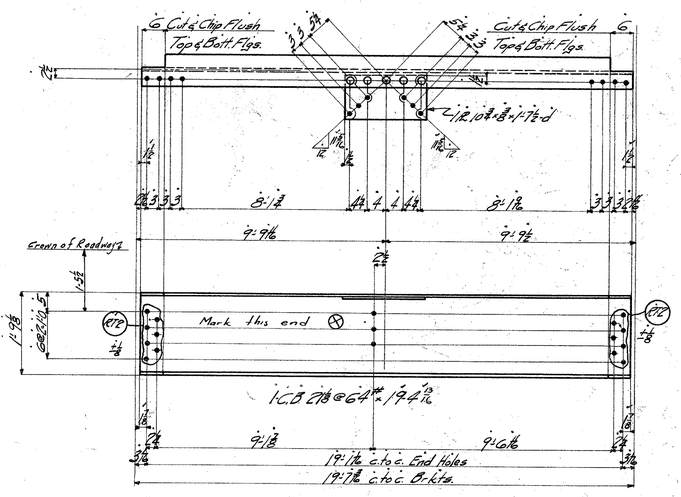
APPROVED 1-21-30
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE G.F.Stelzner
MADE BY J.A.F. DATE CHECKED BY DATE 12/10/29
TRACED BY H.E.J. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5014 SHEET NO. 4

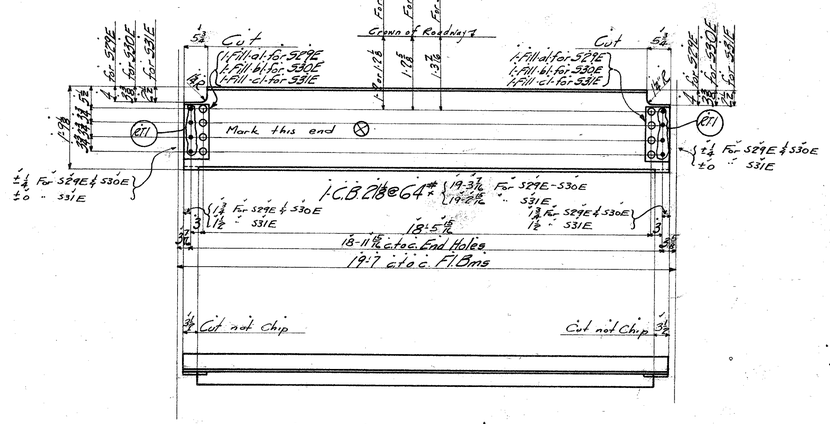
4-2-359



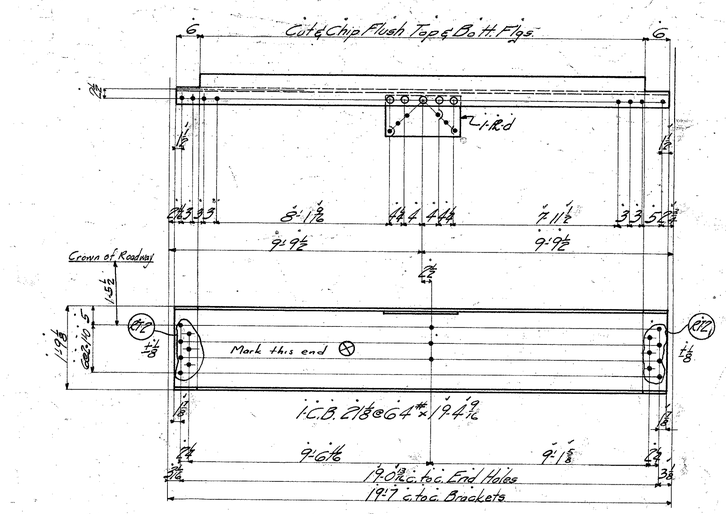
67 - STRINGERS - 525E
46 " -526E
46 " -527E



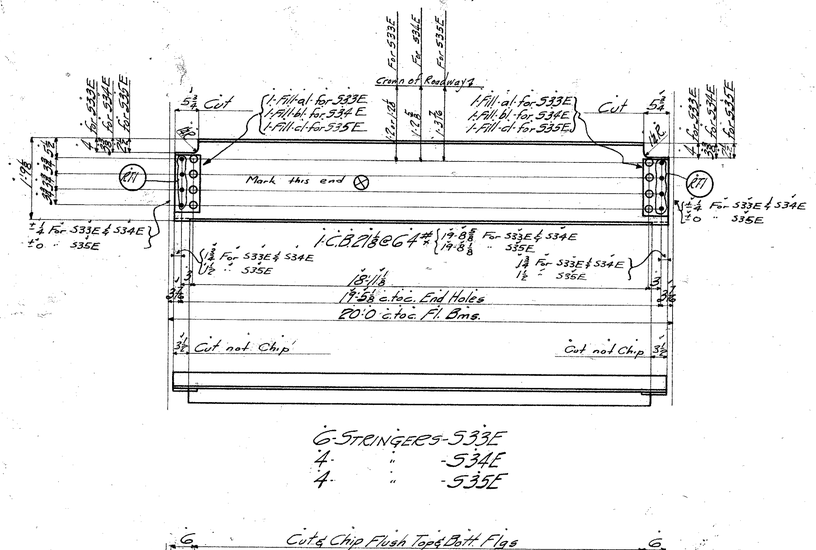
23 - STRINGERS - 528E Rt As Shown
23 " -528E Lt Opp Hand



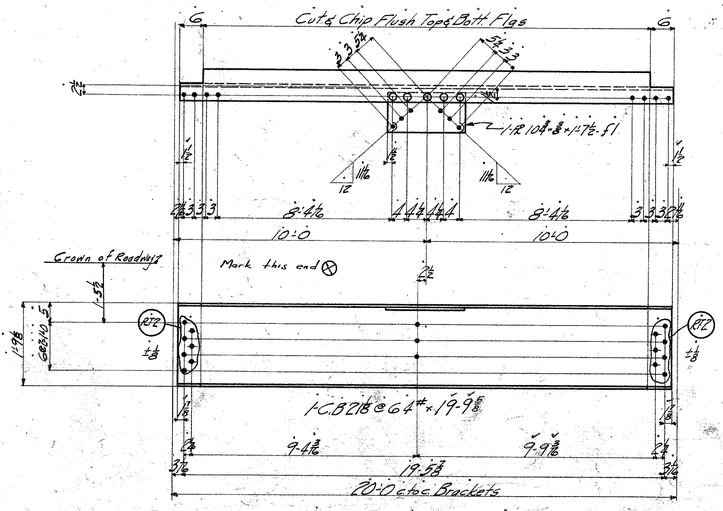
3 - STRINGERS - 529E
2 " -530E
2 " -531E



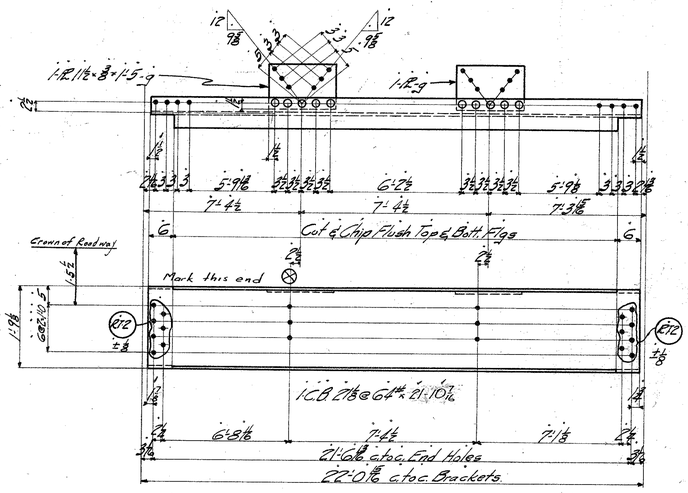
1 STRINGER 532E Rt As Shown
1 " -532E Lt Opp Hand



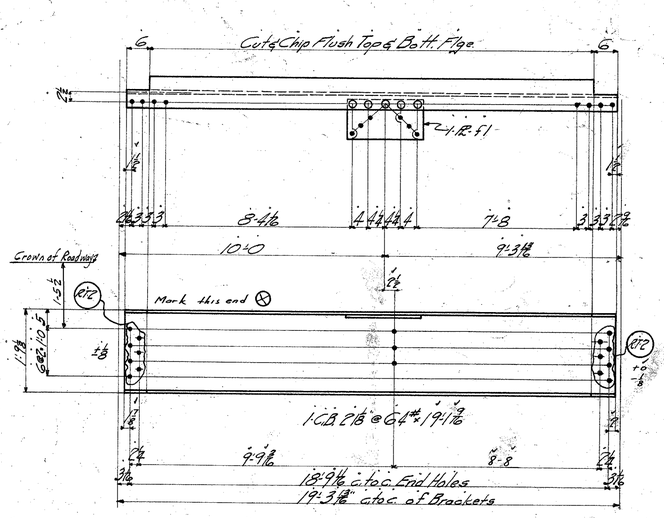
6 STRINGERS - 533E
4 " -534E
4 " -535E



2 STRINGERS - 536E Rt As Shown
2 " -536E Lt Opp Hand



1 STRINGER - 538E



1 STRINGER - 537E

Rivets - ⅞"ϕ
Holes - 15/16"ϕ
Holes punched 1¼" and reamed to 15/16" after assembling in shop except lateral plates which may be punched full size

Holes marked (F7) are to be subpunched 1⅛" and reamed to 15/16" thru a metal template
Burrs are to be removed from all open holes.

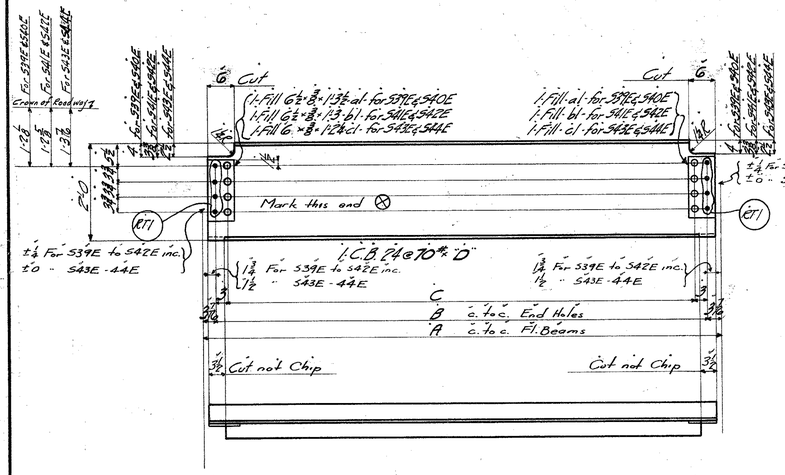
Paint - One coat of Industrial Paint Co's Brown Nocoro

APPROVED 11-25-29
Waddell & Hardesty

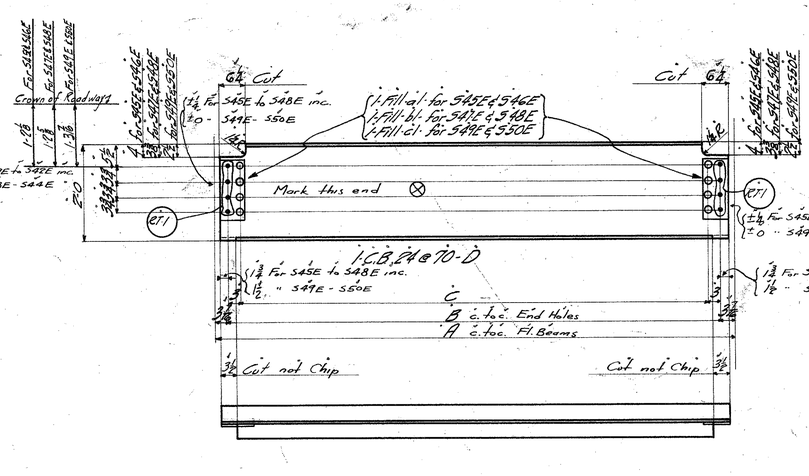
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
EAST APPROACH
STRINGERS - SPANS #1 TO #7 INC.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.E. Linn
MADE BY A.T. DATE 6-4-29 CHECKED BY F.B.A. DATE 6-6-29
TRACED BY F.M. DATE REVISED DATE
SCALE 1" INCH = 1 FOOT LAST ASSEMBLING MARK 3
CONT. NO. 5015C SHEET NO. 1

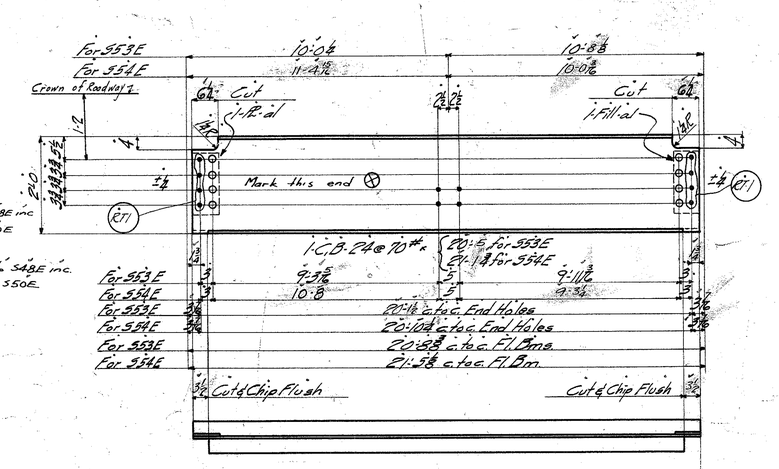
A-2-381



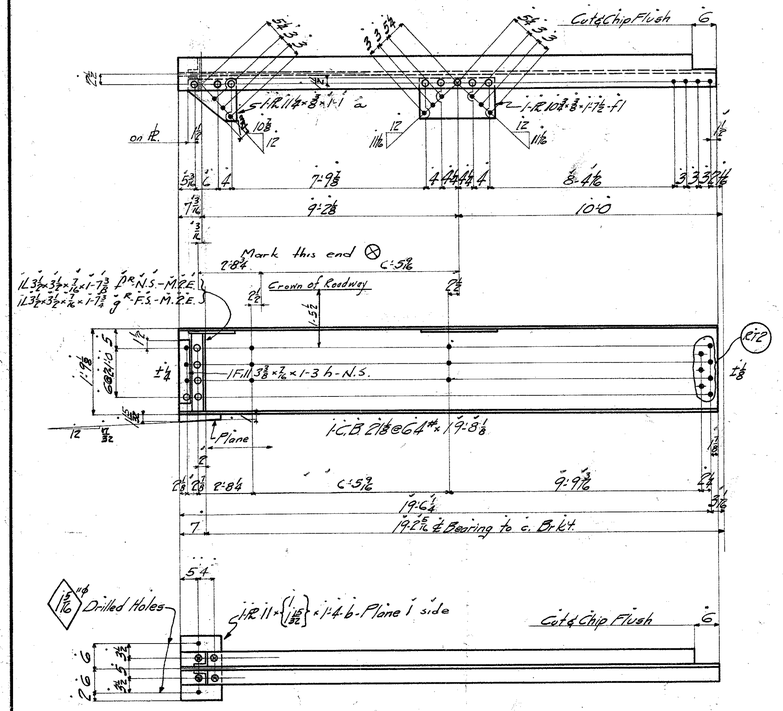
No	Mark	A	B	C	D
1	539E	20-4⅜	19-10	19-6	20-1½
1	540E	20-1⅜	20-5	19-11	20-8½
1	541E	20-1⅜	19-6	19-0⅜	19-10
1	542E	21-3⅜	20-9⅜	20-2½	21-0
1	543E	19-9⅜	19-3	18-9	19-6
1	544E	21-6⅜	21-0	20-6	21-3



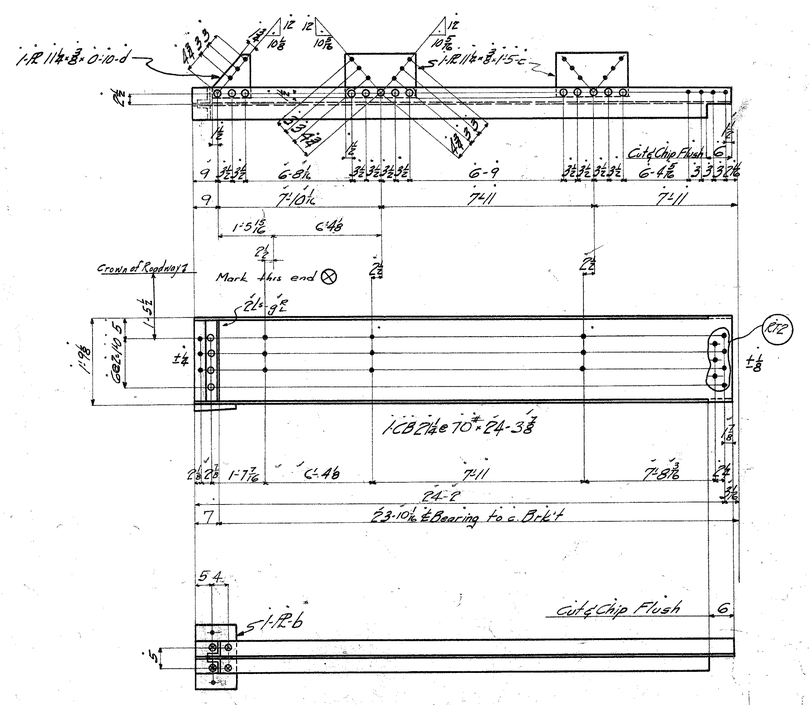
No	Mark	A	B	C	D
1	545E	20-1⅜	20-4½	19-10½	20-8
1	546E	21-1⅜	21-3½	20-9⅜	21-7½
1	547E	20-5⅜	19-10½	19-4⅜	20-2
1	548E	22-1⅜	21-4½	21-3½	22-1½
1	549E	19-1⅜	18-8½	18-1¼	18-8
1	550E	22-1⅜	22-3½	21-9½	22-6½



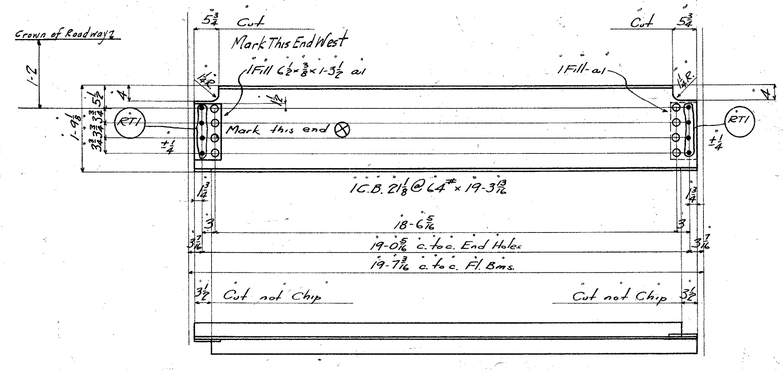
1-STRINGER-553E
1- " -554E



1-STRINGER-551E



1-STRINGER-552E



2 STRINGERS 555E

Rivets ⅞"ϕ
Holes 15/16"ϕ
Holes punched 11/16"ϕ reamed to 15/16"ϕ after assembling in shop except lateral plates which may be punched full size of material over ⅜" thick which is to be drilled from the solid.
Holes marked (E.T.) are to be sub-punched 11/16" reamed to 15/16"ϕ thru an iron template
Burrs are to be removed from all open holes.

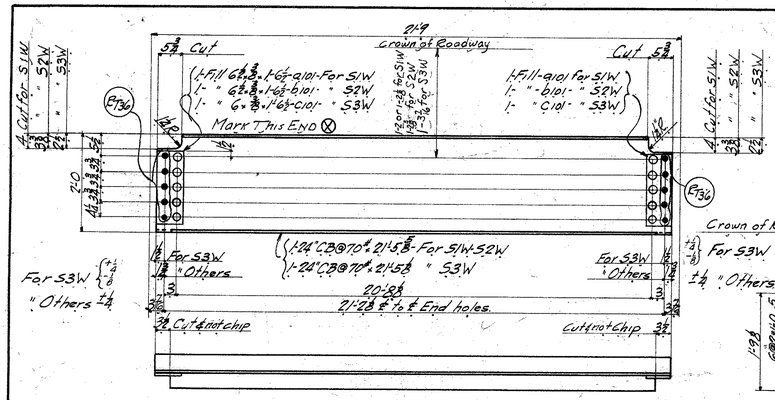
Paint- One coat of Industrial Paint Co's. Brown Nocoro

3-5-30
APPROVED 12-5-29
Waddell & Hardesty

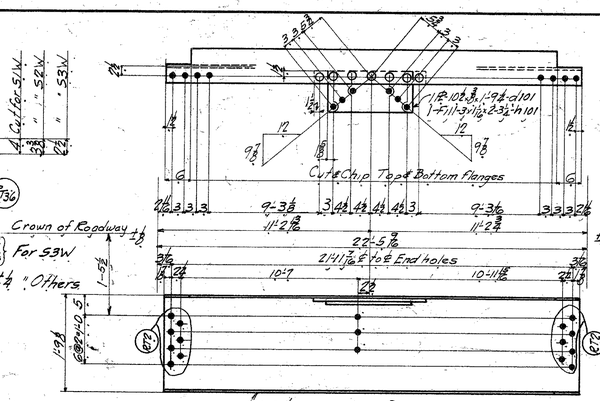
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIV
EAST APPROACH
STRINGERS - SPAN # 1-2-6

McCLINTIC-MARSHALL CONS
PITTSBURGH, PA.
IN CHARGE W.F.C.
MADE BY A.T. DATE 6-7-29 CHECKED BY F.B.A.
TRACED BY F.M. DATE REVISED
SCALE:- INCH = 1 FOOT LAST ASSEMBLING MAR
CONT. NO. 5015C SHEET NO.

A-2-382

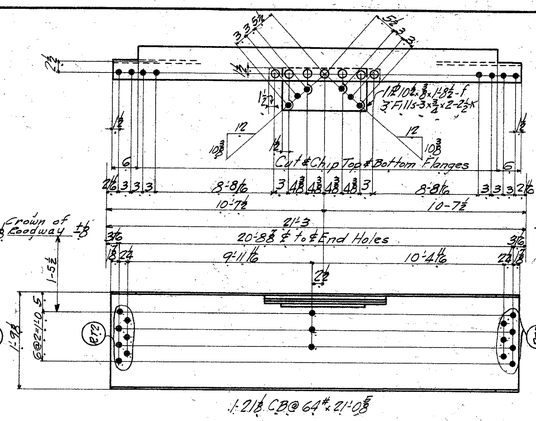


18-STRINGERS-S1W
12- " -S2W
12- " -S3W



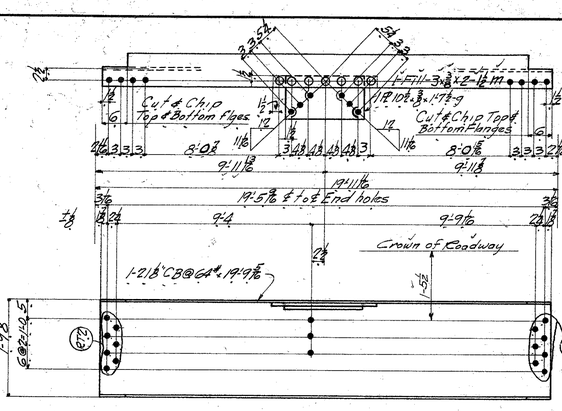
1-21⅛" CB@64" @ 22-3 3/16"

3-STRINGERS S1OW^R AS SHOWN
3- " S1OW^L OPP HAND.

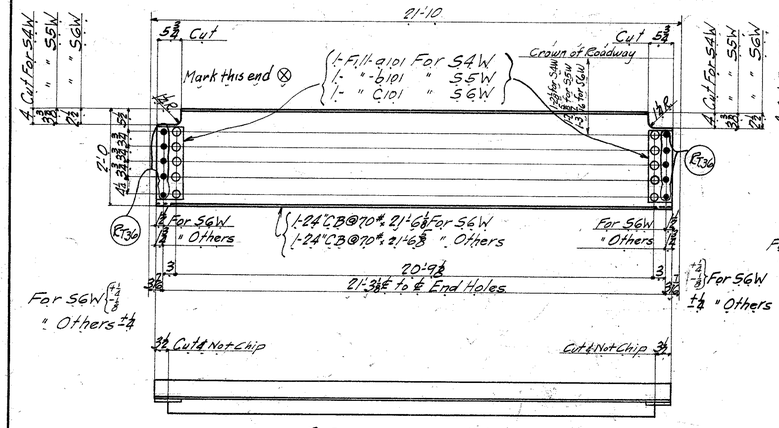


1-21⅛" CB@64" @ 21-0⅝"

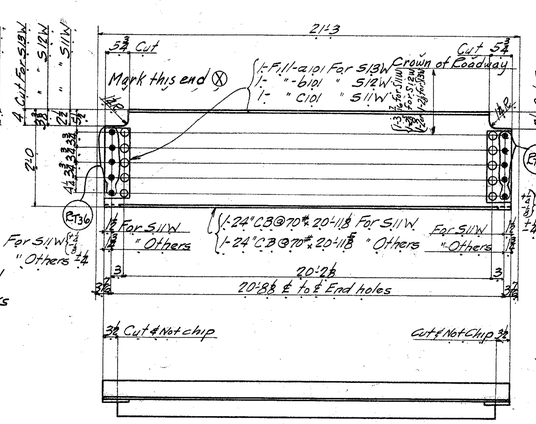
4-STRINGERS-S17W^R AS SHOWN
4- " -S17W^L OPP HAND.



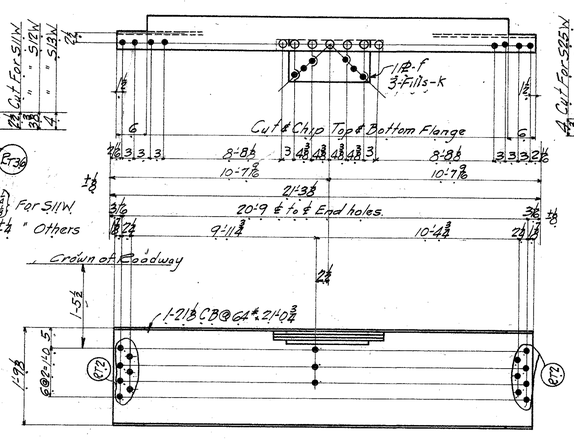
4-STRINGERS-S22W^R AS SHOWN
4- " -S22W^L OPP HAND



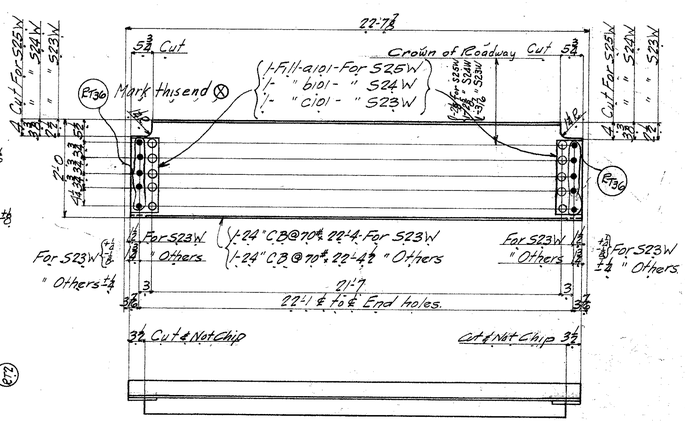
2-STRINGERS S4W
2- " S5W
2- " S6W



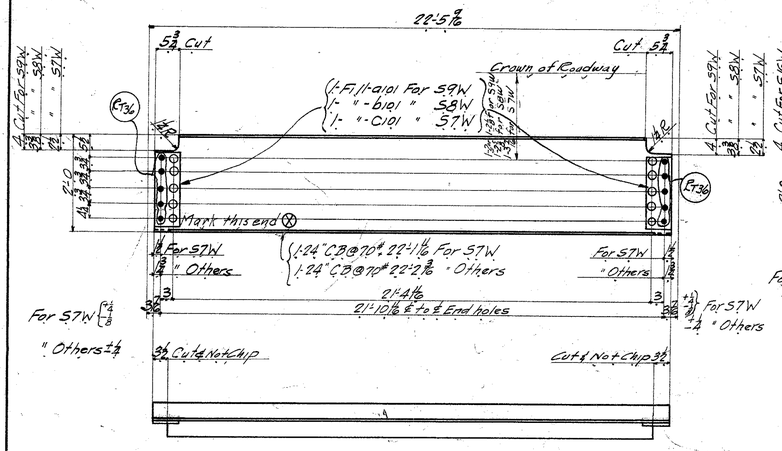
8-STRINGERS-S11W
8- " -S12W
11- " -S13W



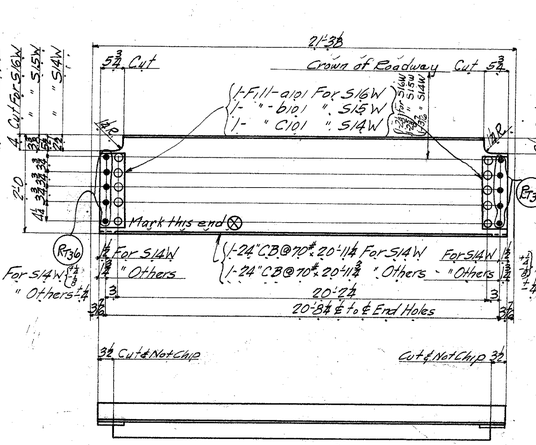
1-STRINGER S18W^R AS SHOWN
1- " S18W^L OPP HAND.



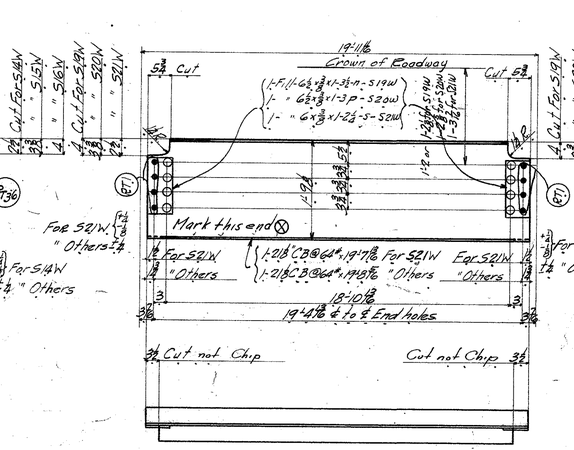
10-STRINGERS-S23W
10- " -S24W
10- " -S25W



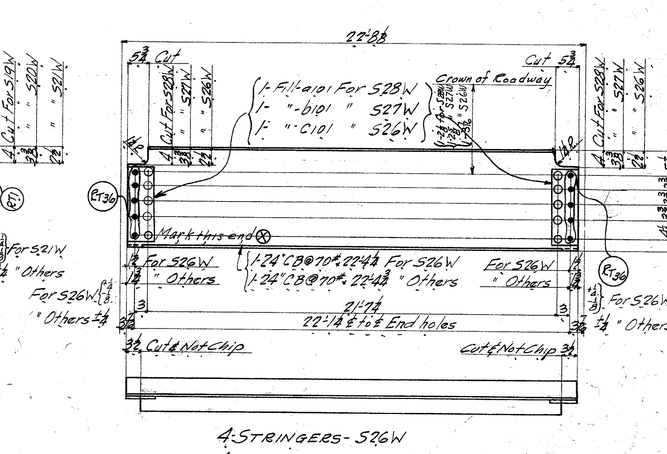
6-STRINGERS-S7W
6- " -S8W
9- " -S9W



2-STRINGERS-S14W
2- " -S15W
2- " -S16W



12-STRINGERS S19W
8- " S20W
8- " S21W



4-STRINGERS-S26W
4- " -S27W
4- " -S28W

Notes:
Rivets ⅞" ø
Holes 15/16" ø
Holes punched 1 1/16" ø and reamed to 15/16" ø after assembling, except lateral plates which may be punched full size.

Holes marked (27) to be subpunched 1 1/16" ø and reamed to size through a metal template
Burrs are to be removed from all open holes.

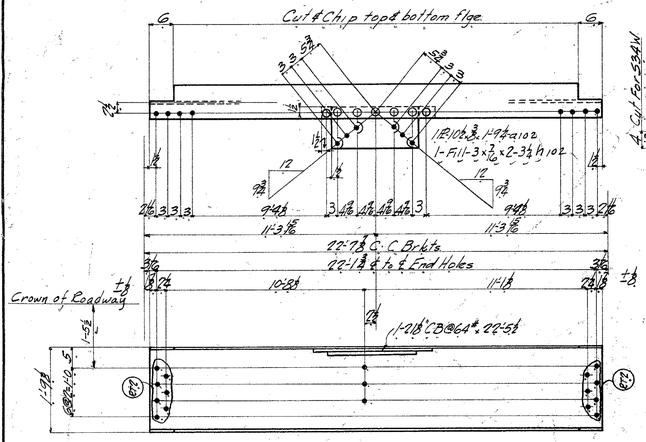
Paint:- One coat of Industrial Paint Co's. Brown Nacoro

APPROVED 2-10-30
Waddell & Hardesty

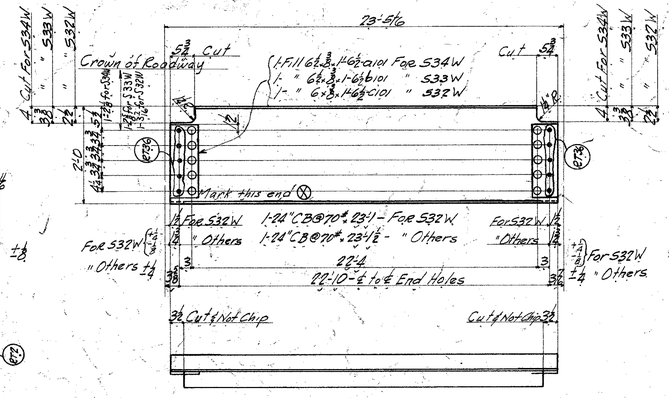
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
WEST APPROACH
STRINGERS

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Watson
MADE BY C DATE 1-17 CHECKED BY DES DATE 1-22
TRACED BY do. DATE 1-17 REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK S-1
CONT. NO. 5015-C SHEET NO. 101

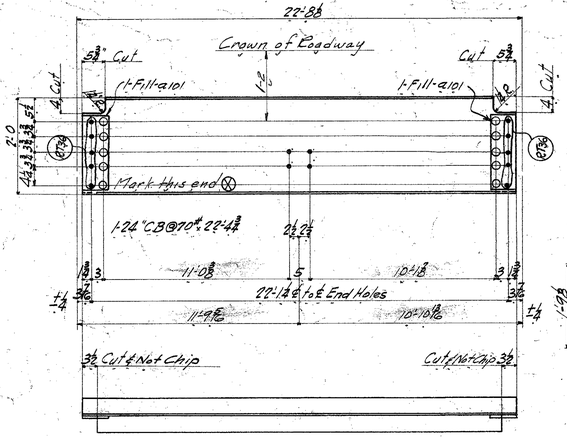
A-7-282



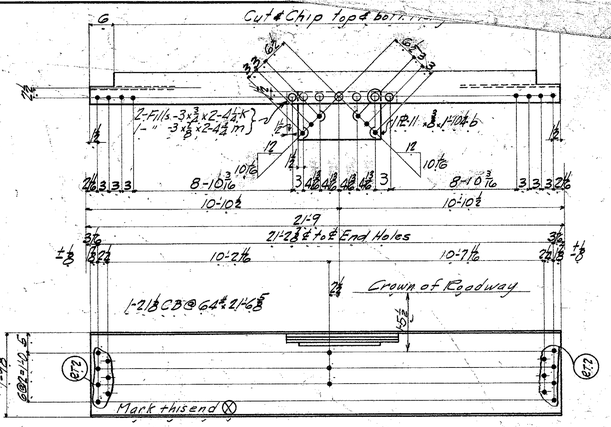
5-STRINGERS S29W^R As Shown
5- " S29W^L Opp Hand



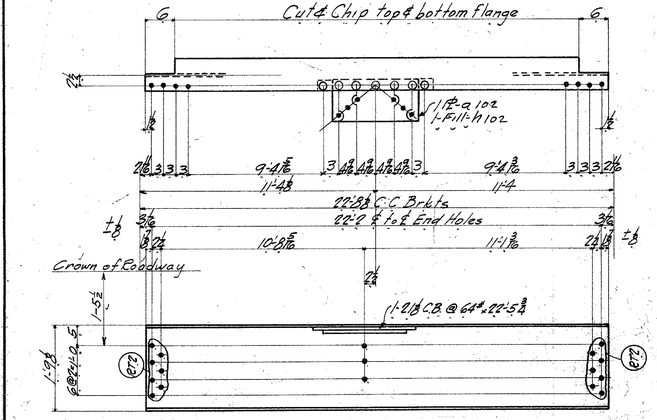
2-STRINGERS-S32W
2- " -S33W
2- " -S34W



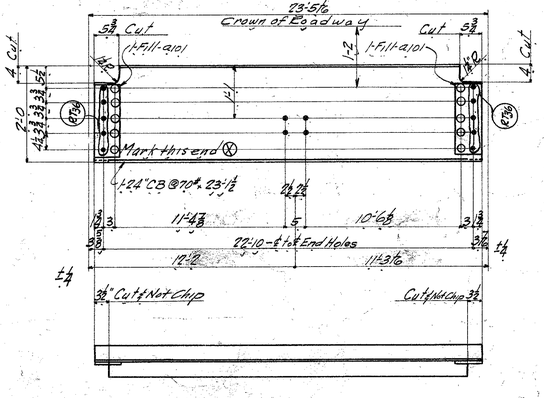
1-STRINGER - S37W



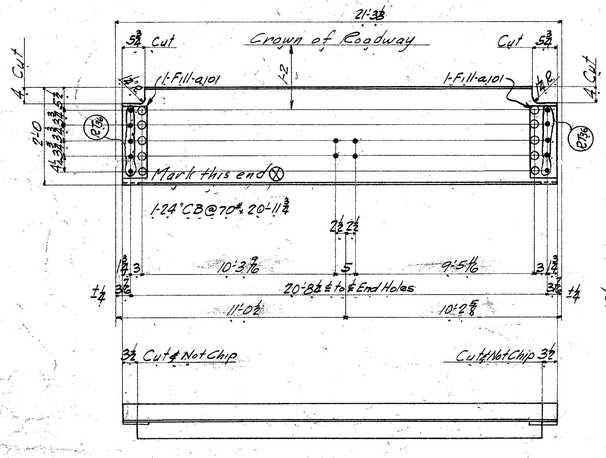
6-STRINGERS S40W^R As Shown
6- " S40W^L Opp Hand



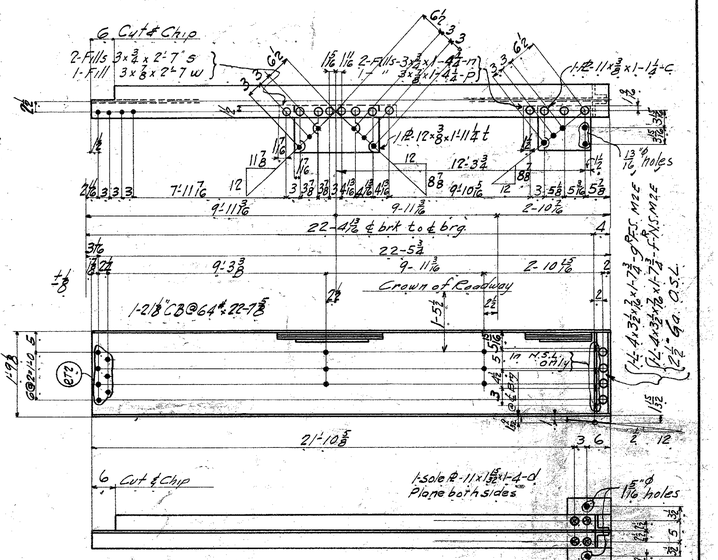
2-STRINGERS-S30W^R As Shown
2- " -S30W^L Opp Hand



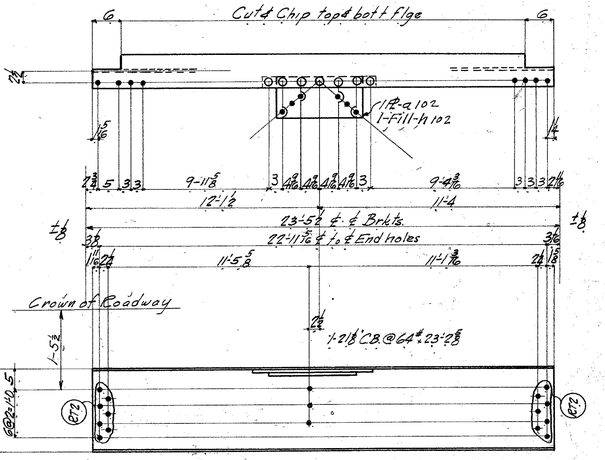
1-STRINGER S35W



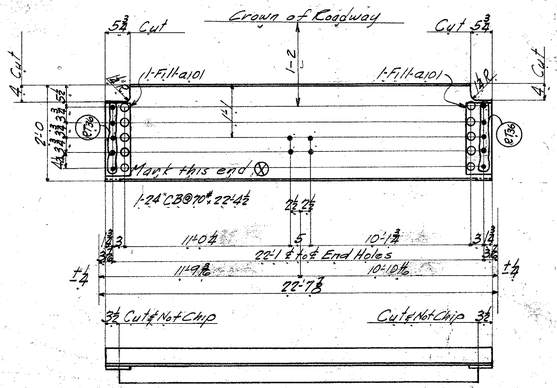
1-STRINGER S38W



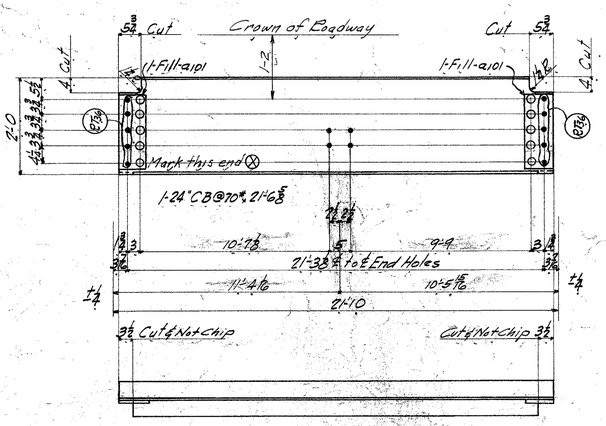
1-STRINGER S41W^R As Shown
1- " S41W^L Opp Hand



1-STRINGER S31W^R As Shown
1- " S31W^L Opp Hand



5-STRINGERS-S36W



1-STRINGER S39W

Notes—
Rivets ⅞" ø
Holes 15/16" ø Unless Noted
Holes punched 13/16" and reamed to 15/16" after assembling except lateral plates which may be punched full size.

Holes marked (21) to be subpunched 11/16" and reamed to size through a metal template
Burrs are to be removed from all open holes

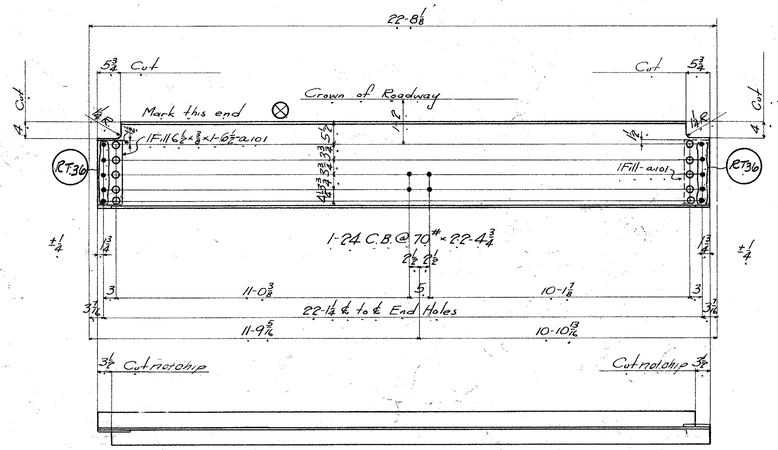
Paint:- One coat of Industrial Paint Co's Brown No coro

APPROVED March 5, 1930
Waddell & Hardesty

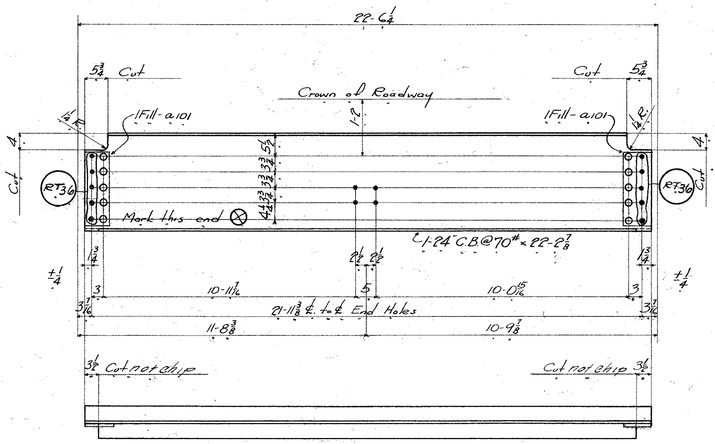
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
WEST APPROACH
STRINGERS

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W. M. SON
MADE BY G DATE 1-4 CHECKED BY ACS DATE 1-30
TRACED BY GO DATE 1-4 REVISED DATE
SCALE- INCH = 1 FOOT LAST ASSEMBLING MARK W
CONT. NO. 5015-C SHEET NO. 102

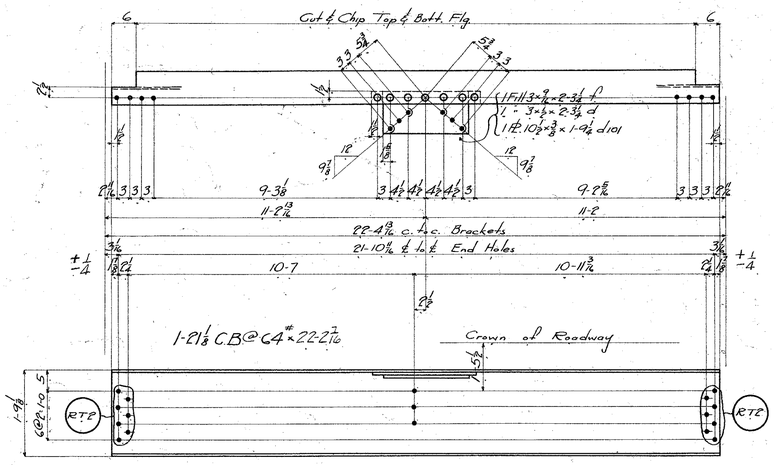
A-2-384



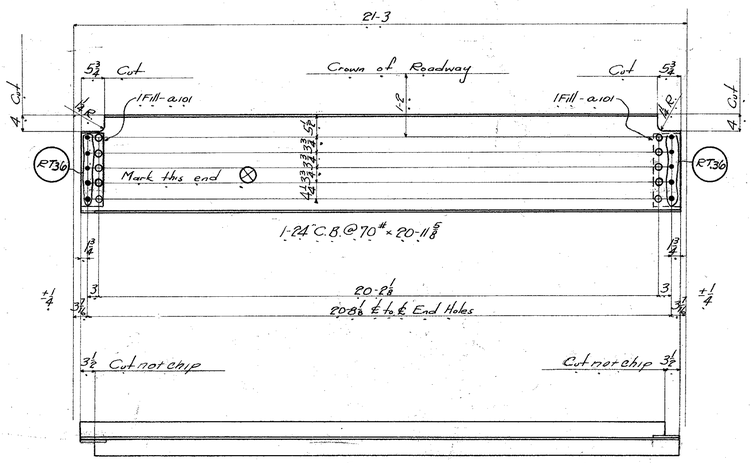
1 STRINGER 553W



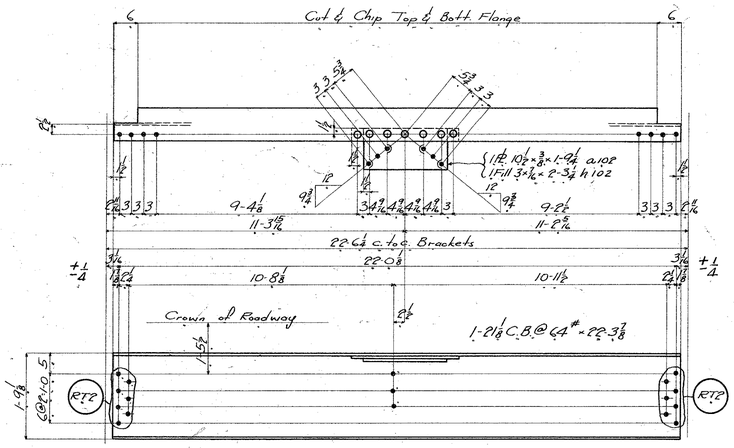
1 STRINGER - 558W



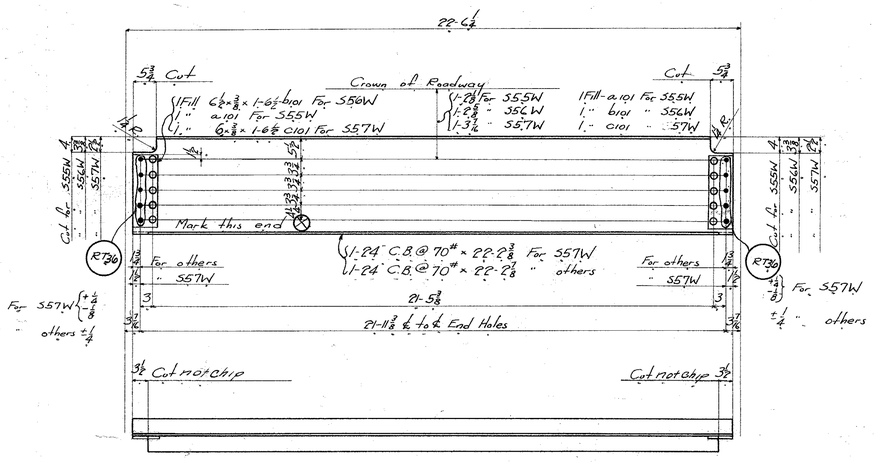
1 STRINGER 563W^R AS SHOWN
1 " 563W^L OPP. HAND



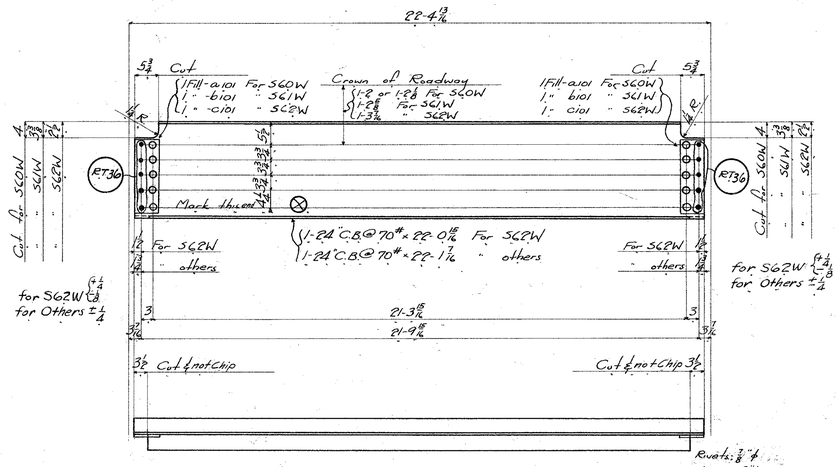
1 STRINGER 554W



1 STRINGER 559W^R AS SHOWN
1 " 559W^L OPP. HAND



? STRINGERS 555W
? " 556W
? " 557W



3 STRINGERS 560W
? " 561W
? " 562W

Rivets: ⅞" ϕ
Holes: ¹⁵⁄₁₆" ϕ
Holes punched ¹³⁄₁₆" ϕ & reamed to ¹⁵⁄₁₆" ϕ after assembling except lateral plates which may be punched full size.
Holes marked (RT) to be subpunched ¹³⁄₁₆" ϕ reamed to size thru a metal template.
Burrs are to be removed from all open holes.

Paint: One coat of Industrial Paint Co's. Brown Nocoro

APPROVED 2-10-30
Waddell & Hardesty

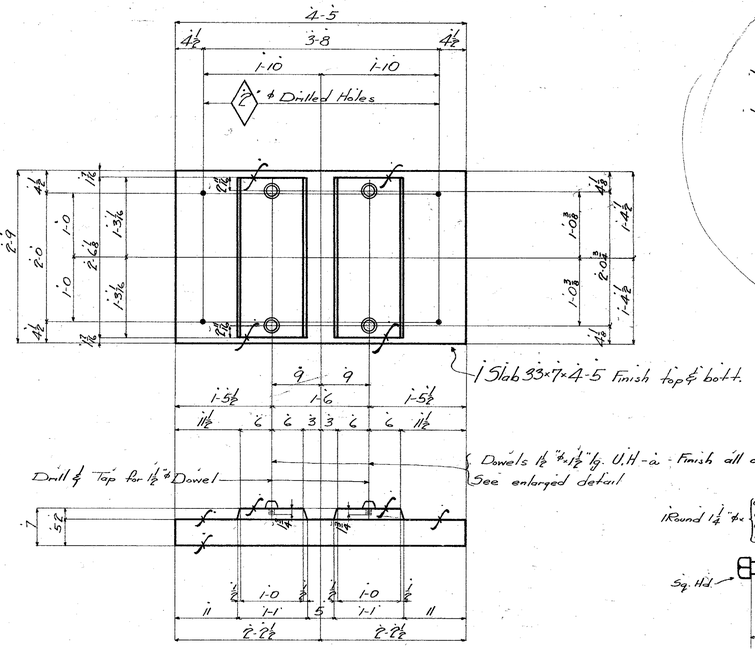
CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

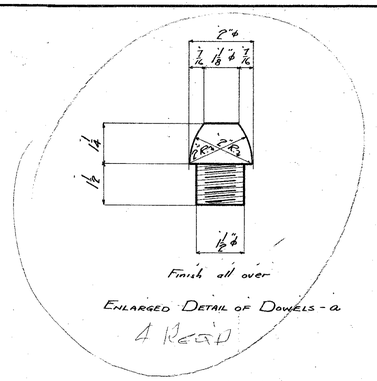
WEST APPROACH
STRINGERS

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Wilson
MADE BY (R) DATE CHECKED BY AEB DATE 1-3-30
TRACED BY J.M. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5015C SHEET NO. 103

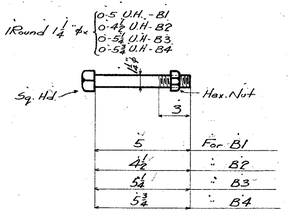
A-2-385



12 Masonry Plates - MP1
Used at Piers 1E, 2E, 3E, 5E, CE & 4W

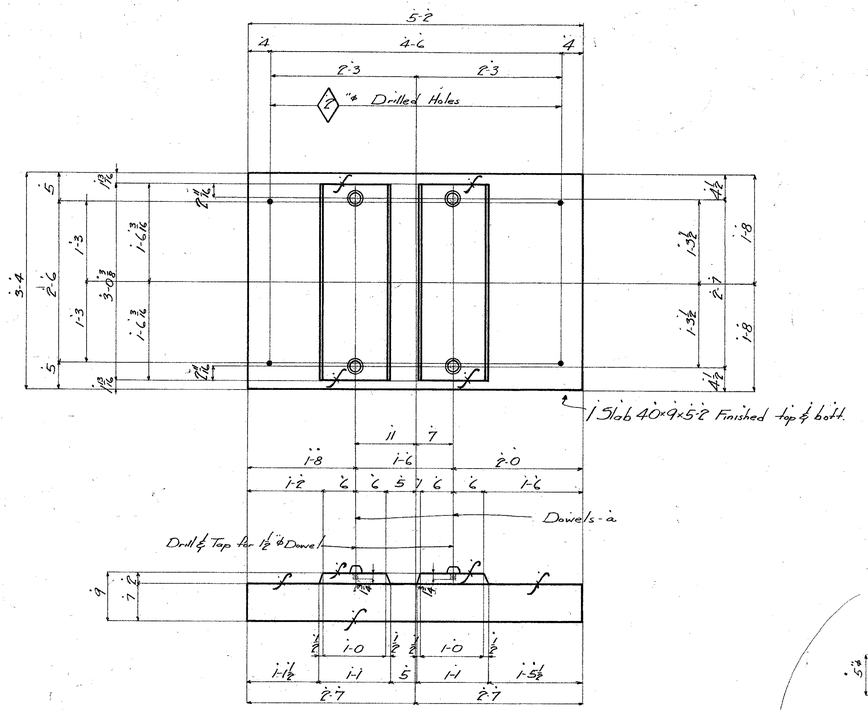


Enlarged Detail of Dowels - a
4 Req'd

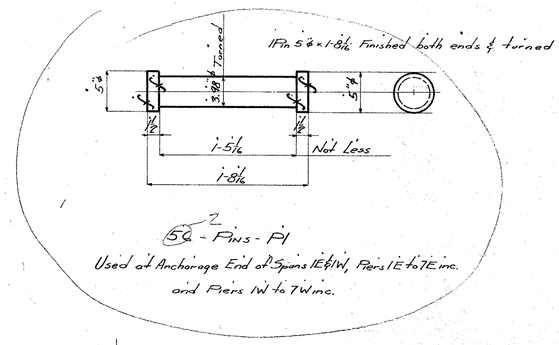


32 Bolts B1 - Piers 1E, 2W, 1W & Anchorage end of 1E
88 " B2 - " 1E to CE inc., 1W, 3W to CW inc.
88 " B3 - " 1E to CE inc., 2W, 4W, 5W, CW & Anchorage end of 1W
16 " B4 - " 1W & 3W
8 " RB " 2W
To replace 8 bolts B3 4/27-30

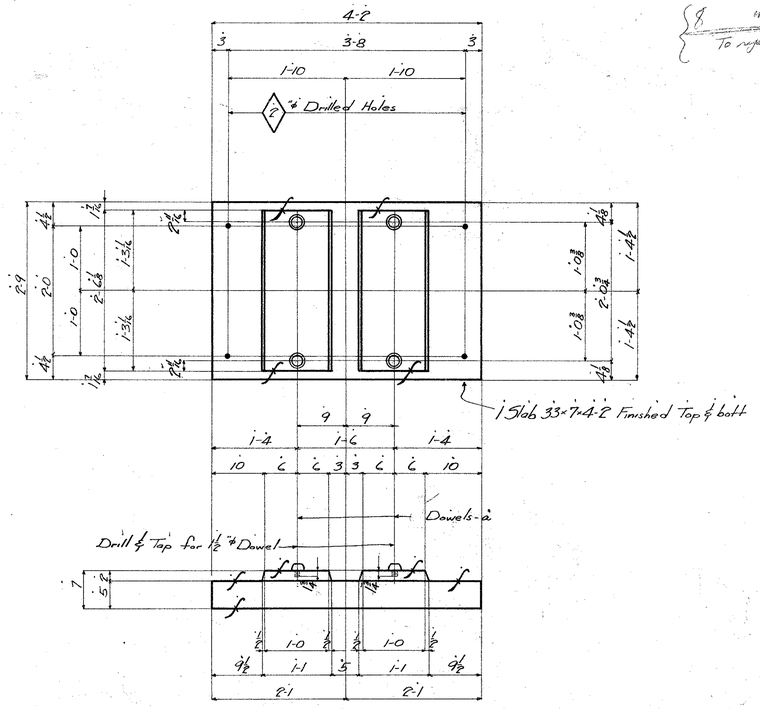
For Girders to Upper Shoes U51



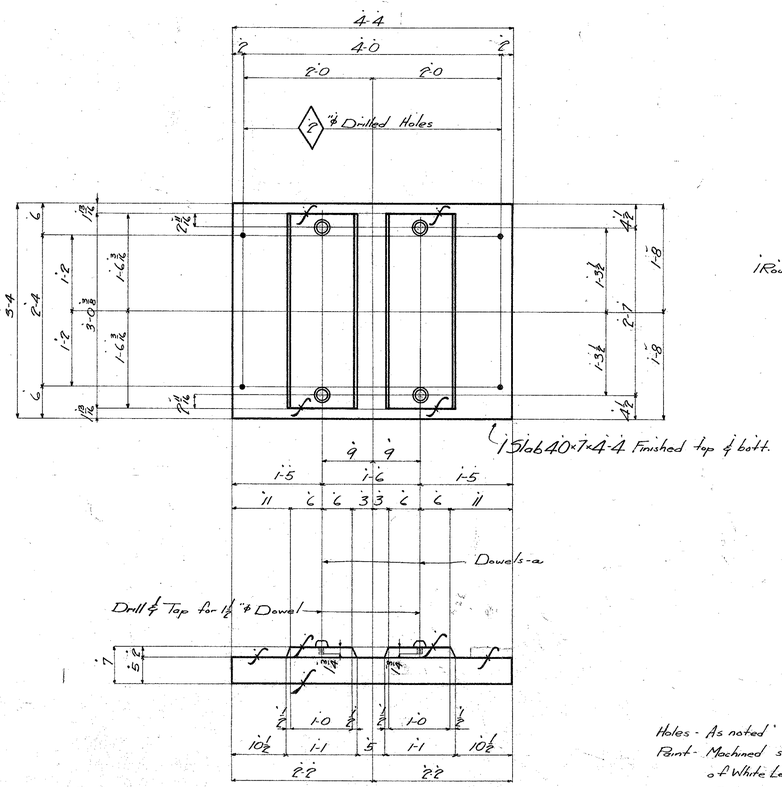
2 Masonry Plates - MP3
Used at Pier - 1W



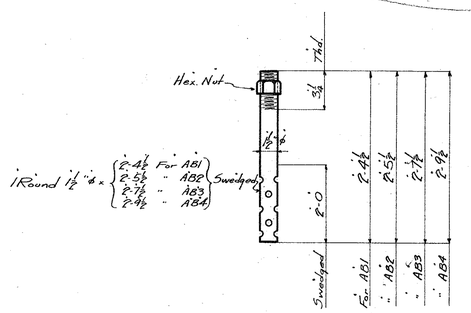
56 - Pins - P1
Used at Anchorage End of Spans 1E & 1W, Piers 1E to 7E inc. and Piers 1W to 7W inc.



4 Masonry Plates - MP2
Used at Piers 5W & 6W



2 Masonry Plates MP4
Used at Pier - 2W



32 Anchor Bolts - AB1 Used at anchorage End of Spans 1E & 1W, Piers 7E & 7W
16 " " AB2 Used at Piers 4E & 3W
72 " " AB3 Used at Piers 1E, 2E, 3E, 5E, CE, 2W, 4W, 5W & CW
8 " " AB4 Used at Pier 1W

Holes - As noted.
Paint - Machined surfaces to receive one coat of White Lead & tallow applied hot.
Balance one coat of Industrial Paint. Co's. Brown Nocoro
Care must be taken to locate dowels accurately.

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
EAST & WEST APPROACHES
MASONRY PLATES - PINS & ANCHOR BOLTS

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE W^m Son			
MADE BY F.B.A	DATE	CHECKED BY [illegible]	DATE 10/8/29
TRACED BY J.M.	DATE	REVISED	DATE
SCALE=	INCH = 1 FOOT	LAST ASSEMBLING MARK a	

CONT. NO. 5015 D SHEET NO. 1

APPROVED 10-15-29.
Waddell & Hardesty.

A-2-386

SECTION A-A

END VIEW C-C
For SB1E-1AE-2E & SB2E-SB1AE & SB6E-SB5AE

4 SIDEWALK BRACKETS SB1AE* As shown
4 " " SB1AE* Opp hand
6 " " SB1E* As shown
6 " " SB1E* Opp hand
3 " " SB2E* As shown
3 " " SB2E* Opp hand
6 " " SB5E* As shown
3 " " SB5E* Opp hand
3 " " SB2AE* As shown
2 " " SB2AE* Opp hand
2 " " SB5AE* As shown
2 " " SB5AE* Opp hand

VIEW F-F for SB2E-SB2AE

VIEW F-F for SB1E-1AE-5E & 5AE

SECTION B-B

1 SIDEWALK BRACKET SB7E* As shown
1 " " SB7E* Opp hand

VIEW D-D

END VIEW C-C FOR SB2AE

TOP VIEW FOR SB9E For SB8E
PARTS NOT SHOWN
SAME AS FOR SB8E

TOP VIEW FOR SB8E

1 SIDEWALK BRACKET SB8E
1 " " SB9E

1 SIDEWALK BRACKET SB6E

Developed View F-F

1 DIAPHRAGM-D39E

Developed View G-G

1 DIAPHRAGM-D40E

Rivets-⅞"ø
Holes 1⅛"ø

Holes punched ¼" small & reamed to size after assembly in shop except lateral plates which may be punched full size.
Holes in Diaphragms may be punched full size

Holes marked ar are subpunched 1⅛"ø and reamed to size thru a metal template.
Burrs to be removed from all open holes.

Paint- One Coat of Industrial Paint Co's. Brown Nacoro

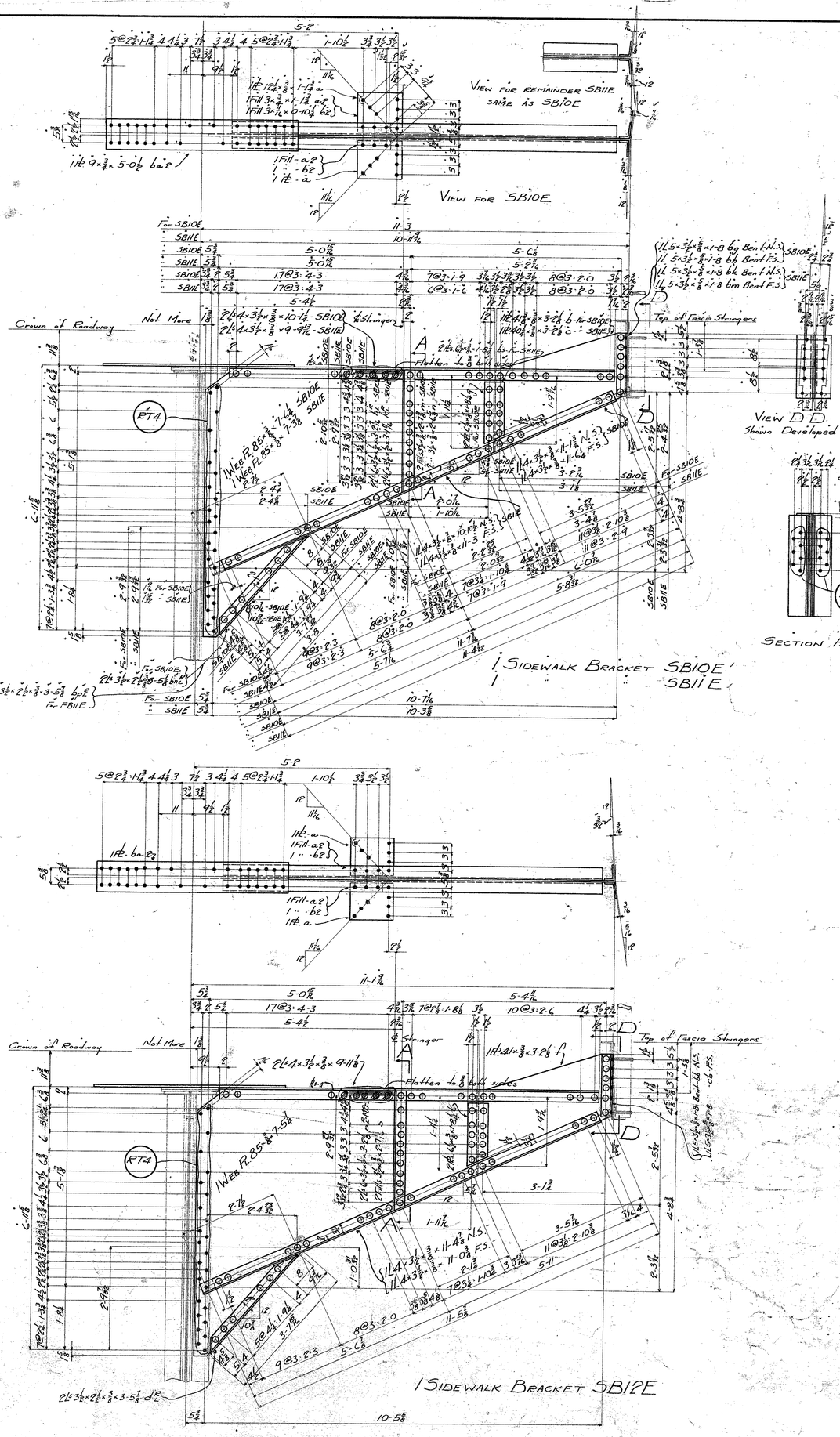
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER

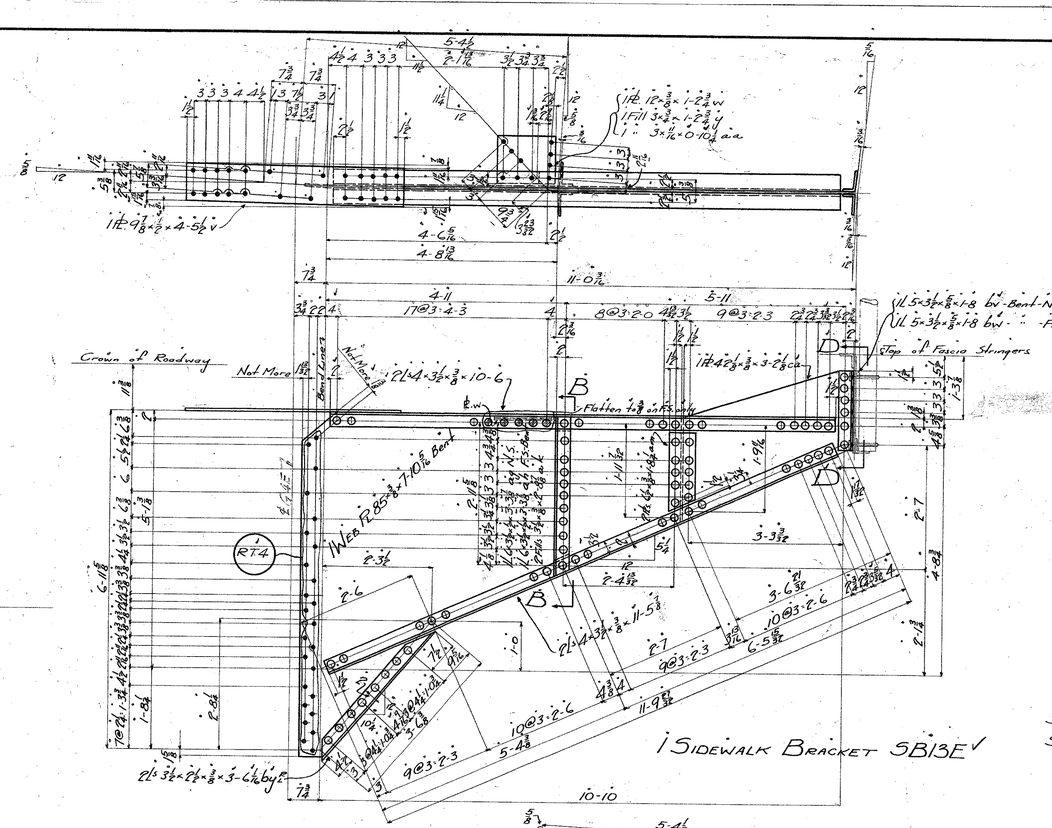
EAST APPROACH
SIDEWALK BRACKETS-SPANS 1 TO 7 INC.

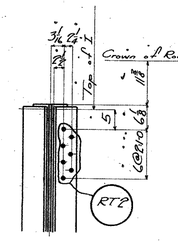
APPROVED 3-12-30 12-26-29
Waddell & Hardesty

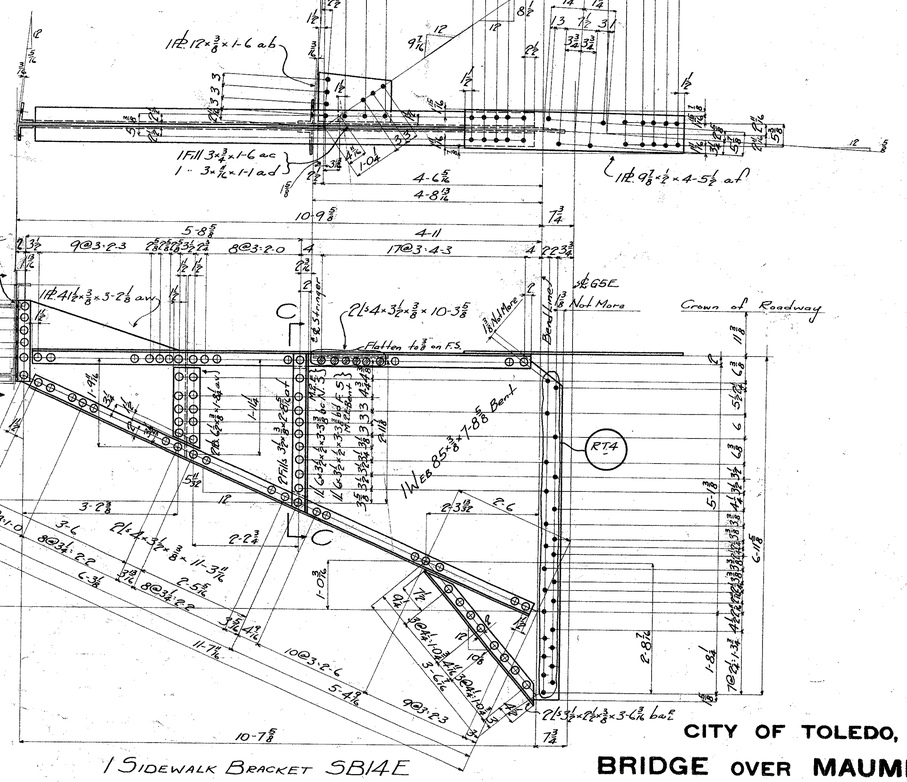
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Wilson
MADE BY H.F.M. DATE CHECKED BY F.B.A. DATE 11-13-29
TRACED BY J.M. DATE REVISED DATE
SCALE- INCH = 1 FOOT LAST ASSEMBLING MARK F-M
CONT. NO. 5015D SHEET NO. 2

A-2-387









Rivets - $\frac{7}{8}\phi$
Holes - $\frac{15}{16}\phi$
Holes punched $\frac{1}{4}$" small & reamed to size after assembly in shop

Holes marked (RT) to be subpunched $\frac{13}{16}$" & reamed to $\frac{15}{16}\phi$ thru a metal template
Burrs to be removed from all open holes

Paint:- One Coat of Industrial Paint Co's. Brown Nacoro

APPROVED 12-26-29

Waddell & Hardesty.

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER

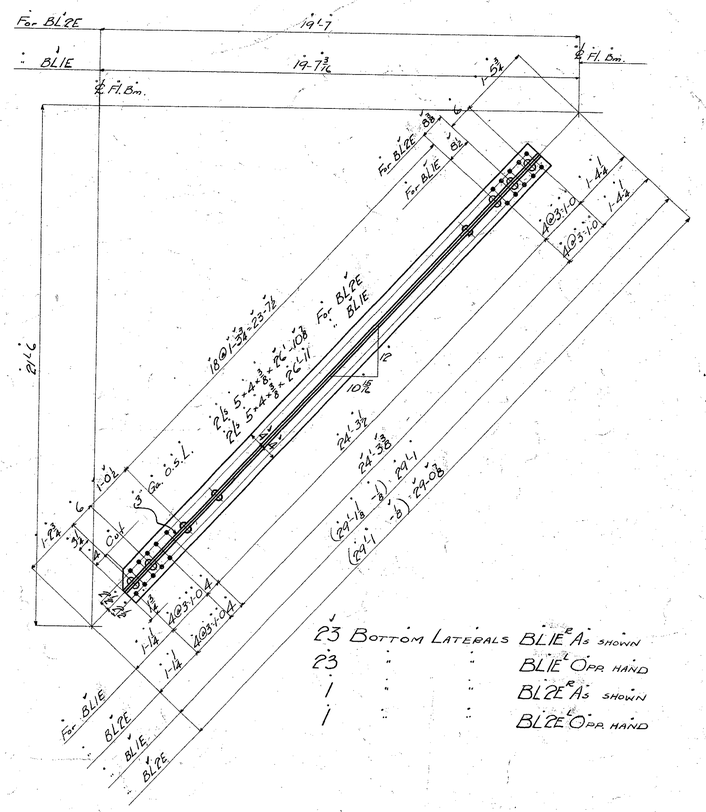
EAST APPROACH
SIDEWALK BRACKETS - SPAN #1

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

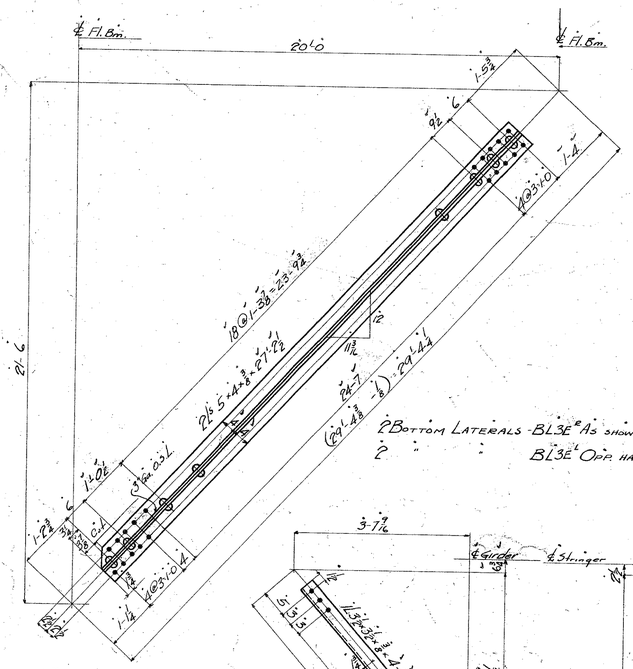
IN CHARGE Wilson
MADE BY H.F.M. DATE
CHECKED BY F.B.A. DATE 11-1929
TRACED BY J.M. DATE
REVISED DATE
SCALE: INCH = 1 FOOT
LAST ASSEMBLING MARK cg

CONT. NO. 5015D SHEET NO. 3

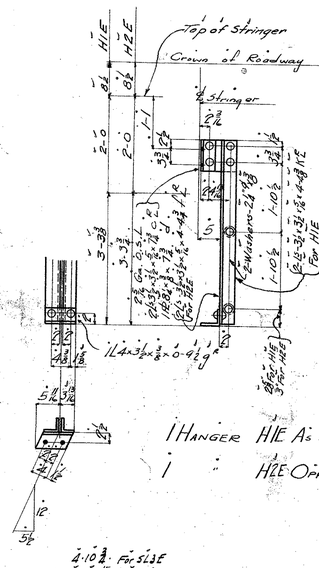
A-2-388



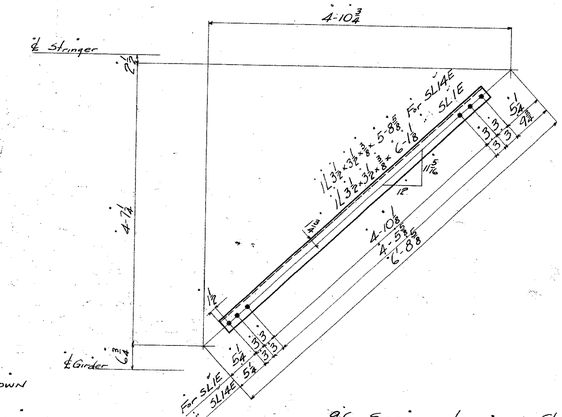
23 Bottom Laterals BL1E^R As shown
23 " " BL1E^L Opp hand
1 " " BL2E^R As shown
1 " " BL2E^L Opp hand



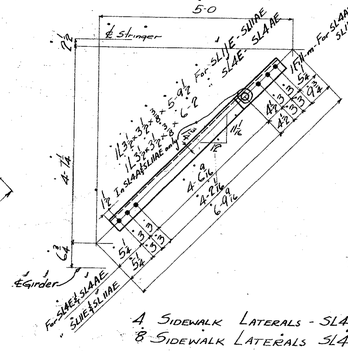
2 Bottom Laterals BL3E^R As shown
2 " " BL3E^L Opp hand



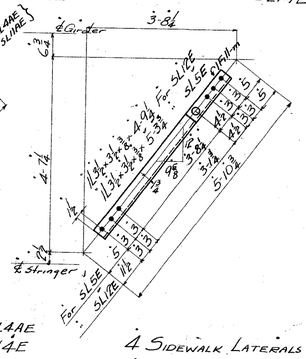
1 Hanger H1E As shown
1 " H2E Opp. hand



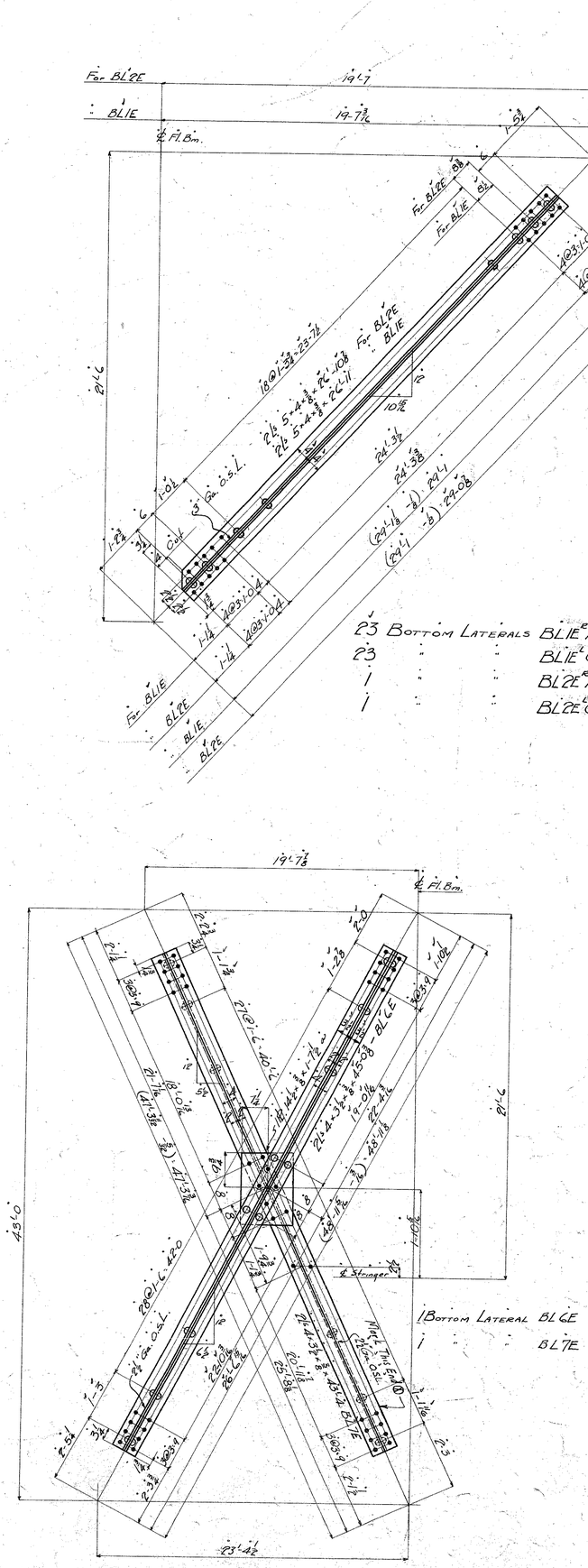
9 Sidewalk Laterals SL1E
48 " " SL14E



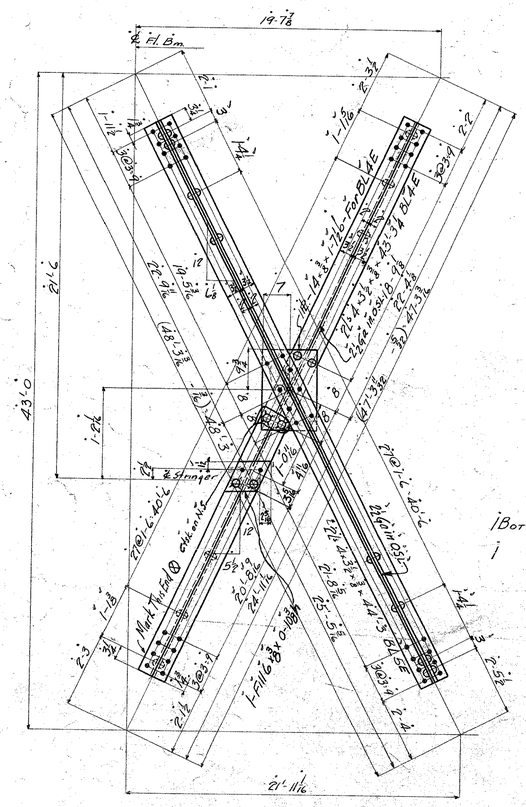
4 Sidewalk Laterals - SL4AE
8 Sidewalk Laterals SL4E
6 " " SL1IE
4 " " SL1IAE



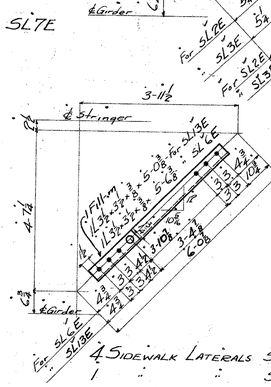
4 Sidewalk Laterals SL5E
1 " " SL12E



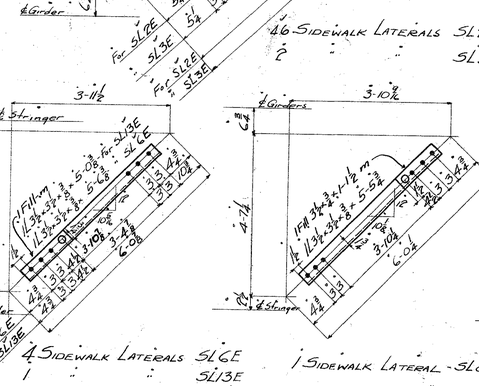
1 Bottom Lateral BL4E
1 " " BL1E



1 Bottom Lateral BL4E
1 " " BL5E



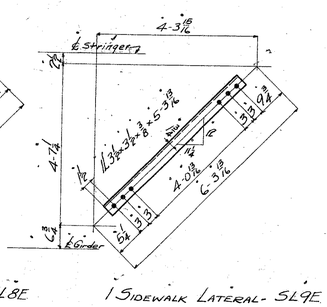
1 Sidewalk Lateral SL7E



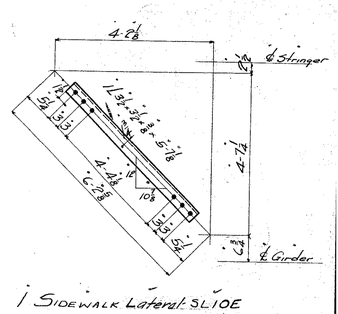
46 Sidewalk Laterals SL2E
2 " " SL3E

4 Sidewalk Laterals SL6E
1 " " SL13E

1 Sidewalk Lateral - SL8E



1 Sidewalk Lateral - SL9E



1 Sidewalk Lateral SL10E

Rivets: 7/8" ℄
Holes: 15/16" ℄
All holes punched full size
Burrs to be removed from all open holes

Paint: One coat of Industrial Paint Co's. Brown Nocoro

APPROVED 12-26-29
12-18-29

Waddell & Hardesty

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

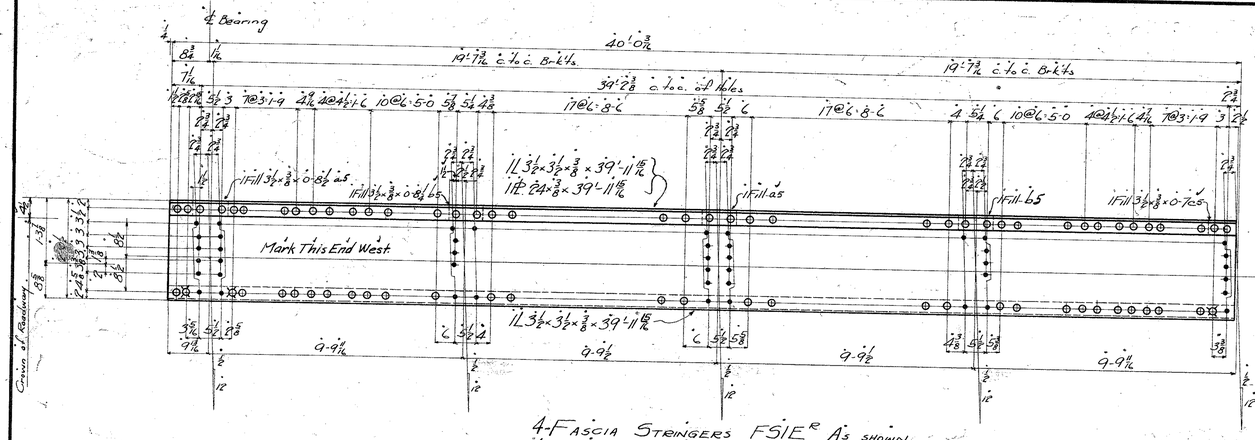
EAST APPROACH
LATERALS - SPANS #1 TO 7 INC.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

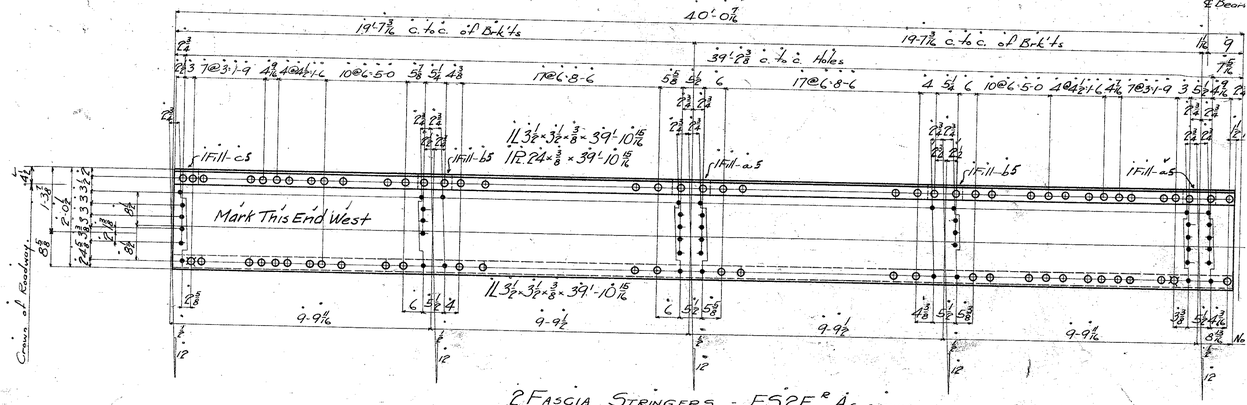
IN CHARGE W.S.S.W.			
MADE BY C.W.K.	DATE	CHECKED BY F.B.A.	DATE 11-5-29
TRACED BY J.M.	DATE	REVISED	DATE
SCALE=	INCH = 1 FOOT	LAST ASSEMBLING MARK	

CONT. NO. 5015D SHEET NO. 4

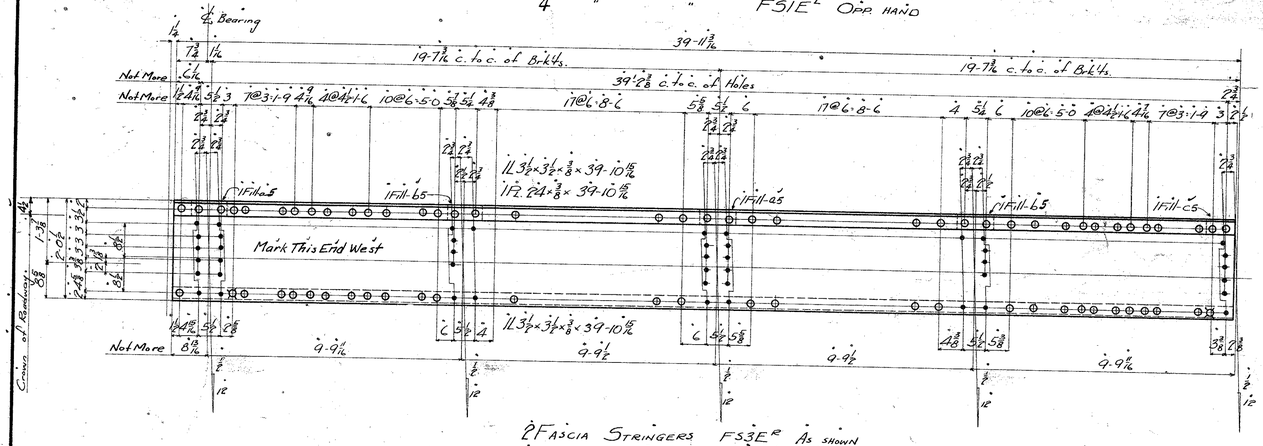
A-2-380



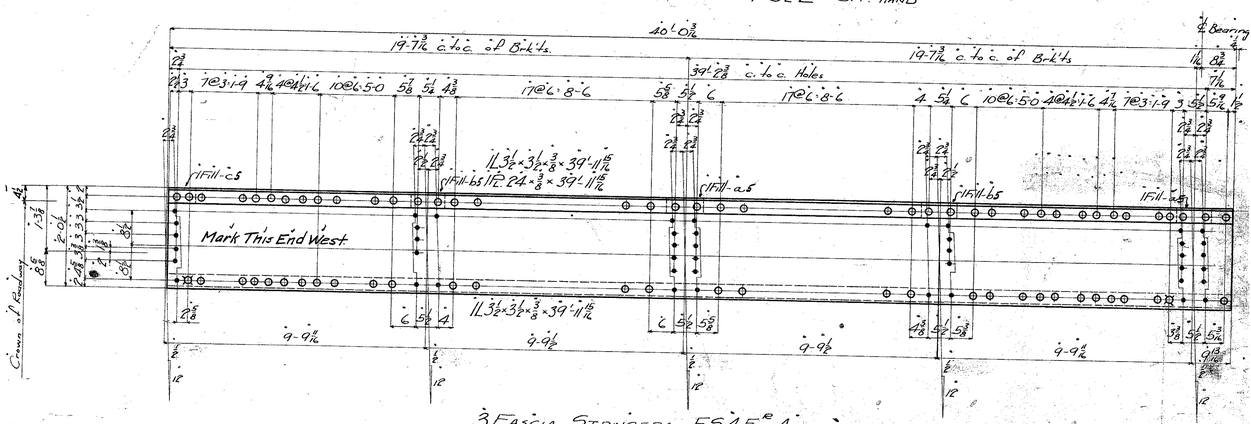
4-FASCIA STRINGERS FS1E^R AS SHOWN
4 " " FS1E^L OPP. HAND



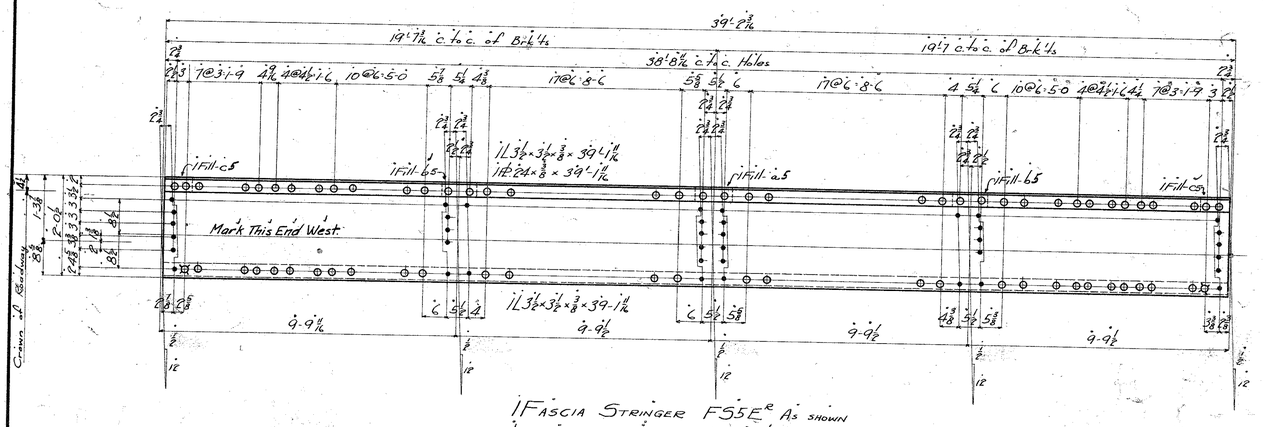
2 FASCIA STRINGERS - FS2E^R AS SHOWN
2 " " FS2E^L OPP. HAND



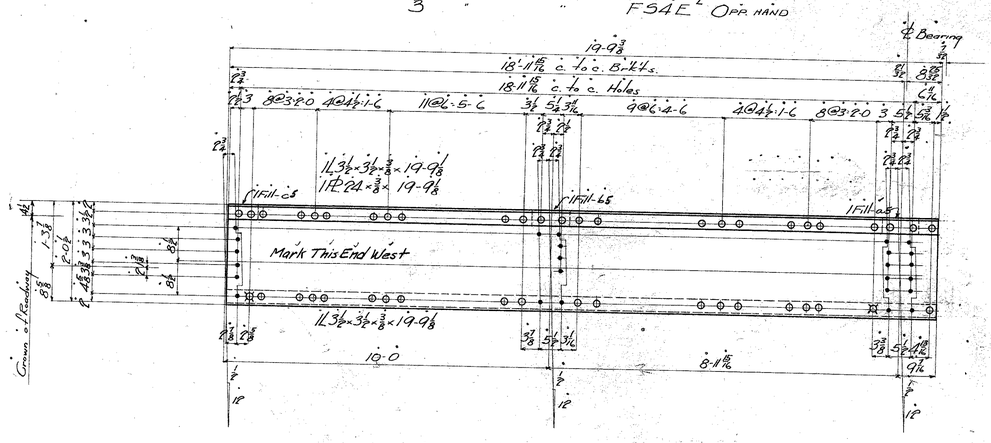
2 FASCIA STRINGERS FS3E^R AS SHOWN
2 " " FS3E^L OPP. HAND



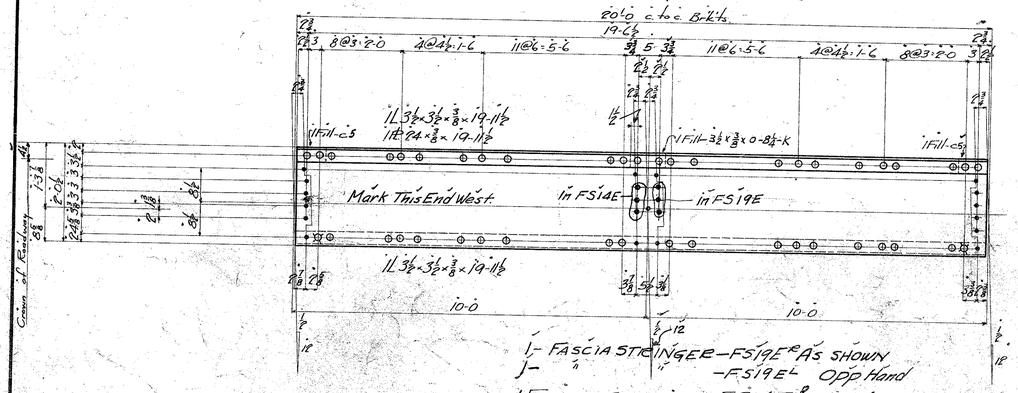
3 FASCIA STRINGERS FS4E^R AS SHOWN
3 " " FS4E^L OPP. HAND



1 FASCIA STRINGER FS5E^R AS SHOWN
1 " " FS5E^L OPP. HAND



1 FASCIA STRINGER FS13E



1- FASCIA STRINGER - FS19E^R AS SHOWN
1- " " - FS19E^L OPP Hand
1 FASCIA STRINGERS FS14E^R AS SHOWN
1 " " FS14E^L OPP HAND

Rivets 7/8"ϕ
Holes - 15/16"ϕ

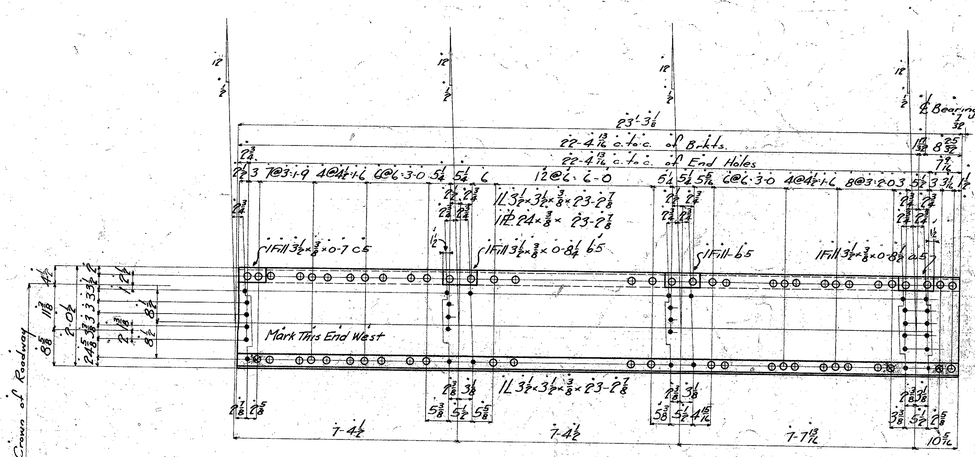
Holes punched 1 1/16" ϕ reamed to 15/16" ϕ after assembly, in shop.
Burrs are to be removed from all open holes.

Paint:- One coat of Industrial Paint Co's. Brown No. 6076

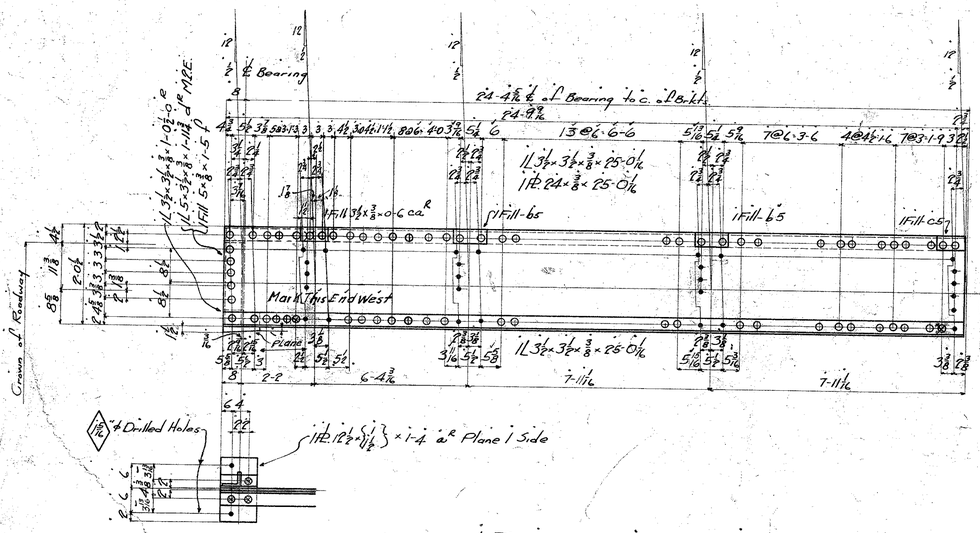
APPROVED 12-31-29
Waddell & Hardesty

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
EAST APPROACH
FASCIA STRINGERS-SPANS #1 TO #7

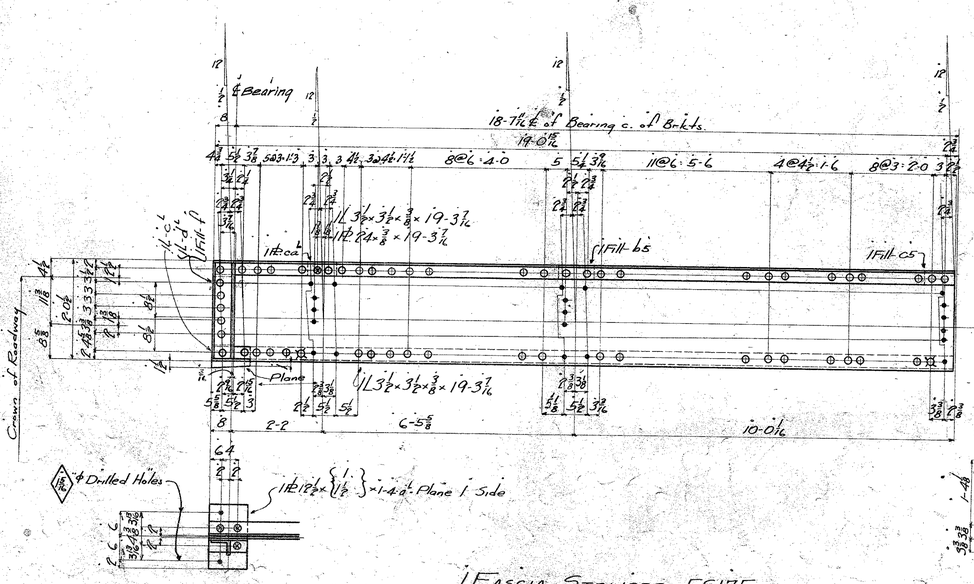
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W. M. SON
MADE BY H.F.M. DATE CHECKED BY F.B.A. DATE 11-12-29
TRACED BY J.M. DATE REVISED DATE
SCALE 1" = INCH = 1 FOOT LAST ASSEMBLING MARK K
CONT. NO. 5015 D SHEET NO. 5



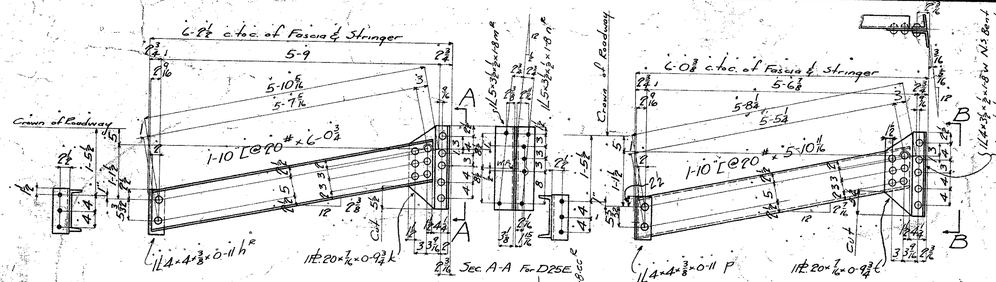
1 FASCIA STRINGER FS15E



1 FASCIA STRINGER FS16E



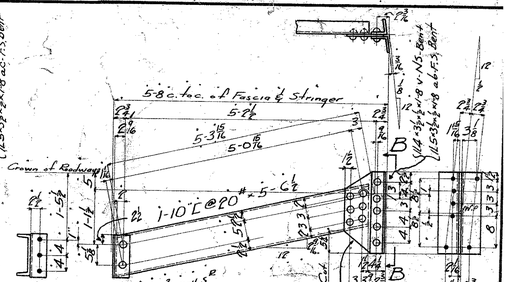
1 FASCIA STRINGER FS17E



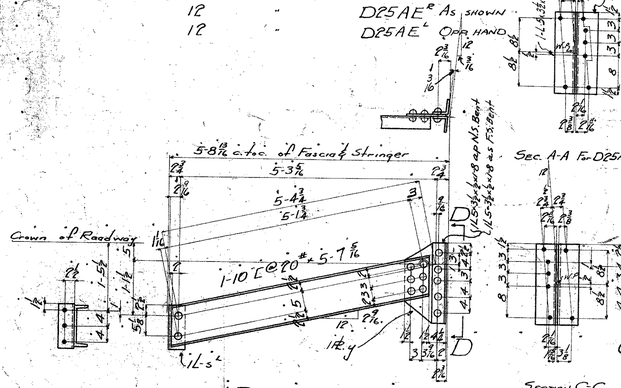
12 DIAPHRAGMS D25E As shown
12 " D25E' Opp Hand
12 " D25AE As shown
12 " D25AE' Opp Hand

1 DIAPHRAGM D25E

1 DIAPHRAGM - D26E



1 DIAPHRAGM - D27E



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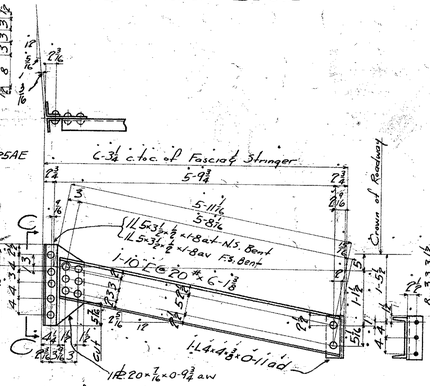

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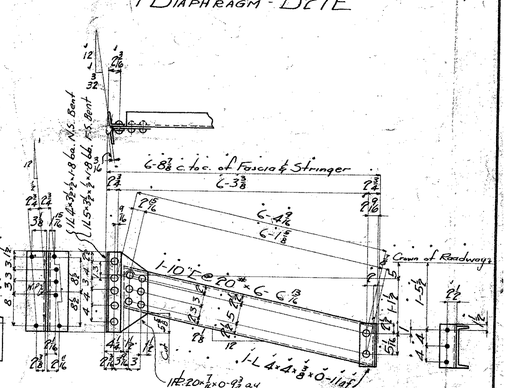

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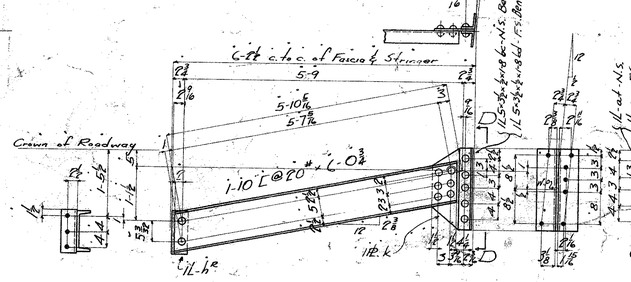
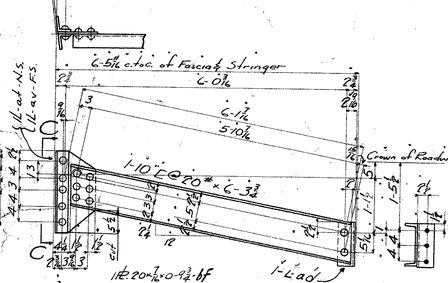


1 DIAPHRAGM D29E



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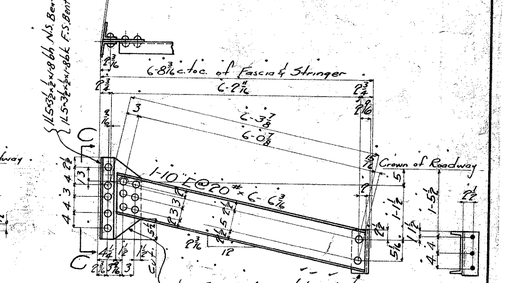
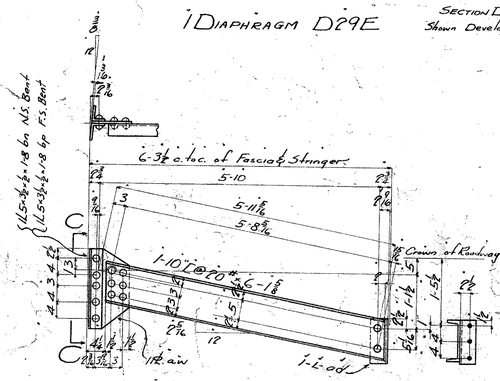
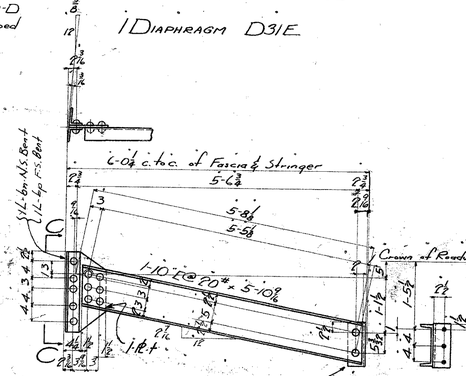


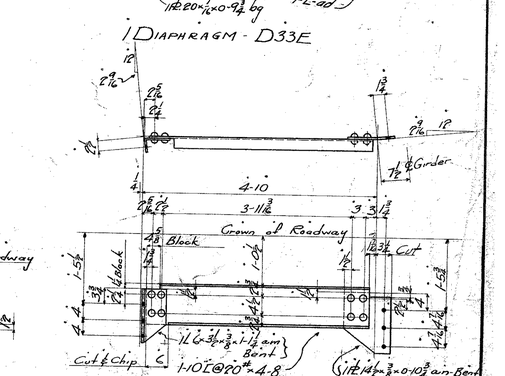
1 DIAPHRAGM - D33E



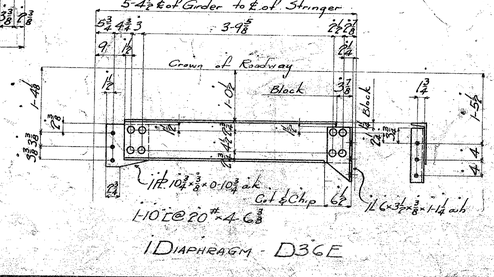
1 DIAPHRAGM D34E



1 DIAPHRAGM D35E



1 DIAPHRAGM D37E



1 DIAPHRAGM - D36E

Note:-
Rivets ⅞ ϕ
Holes 1⅛ ϕ
Holes in Diaphragms to be punched full size.
Holes in Fascia Stringers to be punched 1/16" and reamed to 1⅛" ϕ after assembling in shop.
Burrs to be removed from all open holes.

Paint one coat of Industrial Paint Co's. Brown Nacoro

APPROVED 3-5-30
Waddell & Hardesty

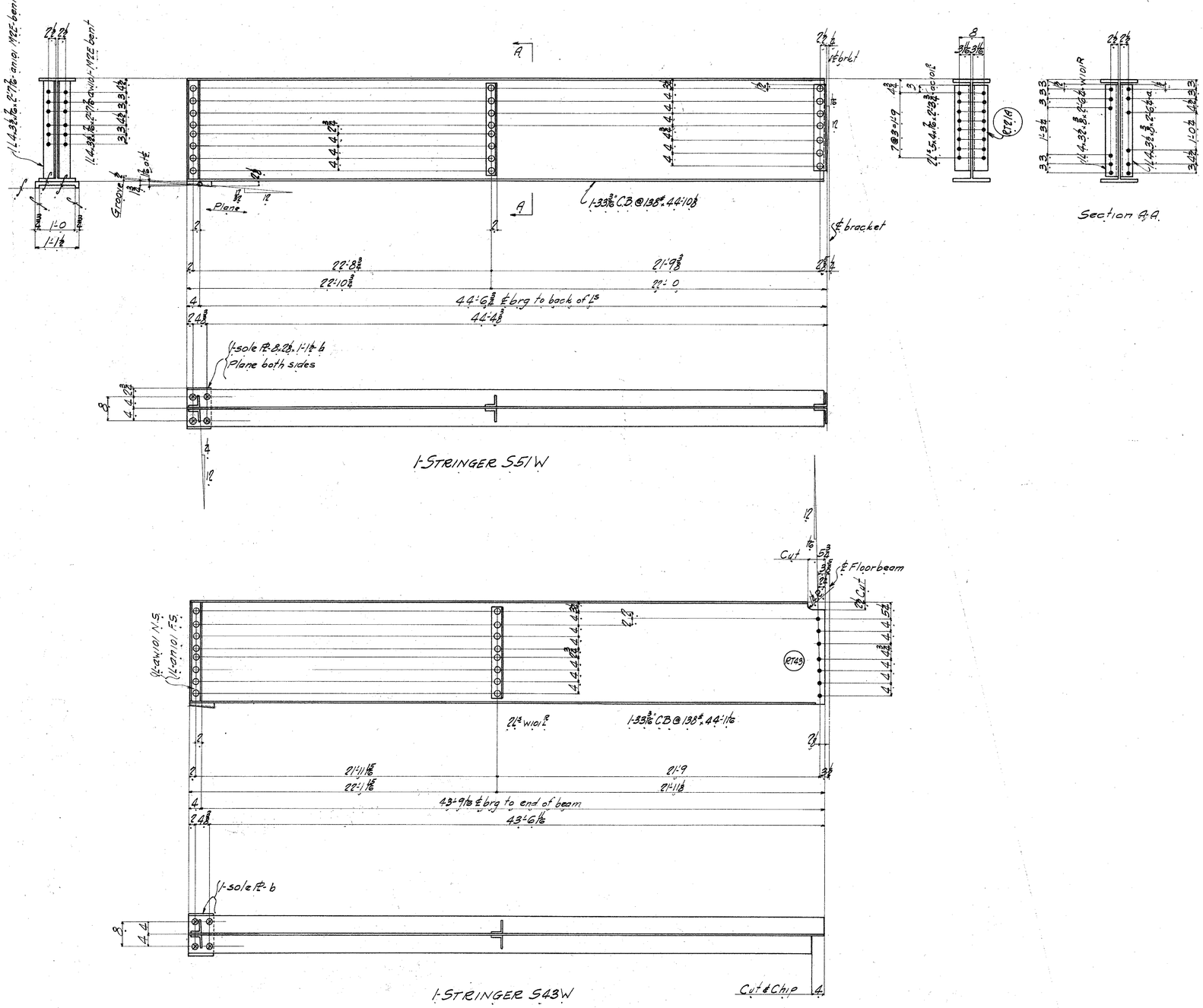
CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

EAST APPROACH
FASCIA STRINGERS & DIAPHRAGMS-SPANS 1 TO 7

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.M. SON
MADE BY H.F.M. DATE CHECKED BY F&A DATE 11-25-29
TRACED BY J.M. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING-MAR. CC
CONT. NO. 5015D SHEET NO. 6

3178A



Rivets $\frac{7}{8}\phi$
Holes $\frac{15}{16}\phi$
Holes punched $1\frac{1}{16}$" and reamed to $1\frac{15}{16}$" after assembly except in material over 3" thick which is to be drilled from the solid.

Burrs are to be removed from all holes.
Holes marked (GT) are to be subpunched $1\frac{1}{16}$" and reamed to $1\frac{15}{16}$" thru an iron template.
Paint:- One coat of Industrial Paint Co's Brown Necoro

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

WEST APPROACH

STRINGERS. SPAN 8W

APPROVED 3-17-30

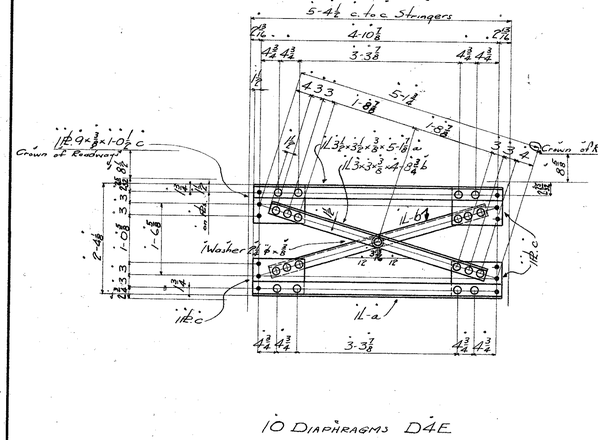
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

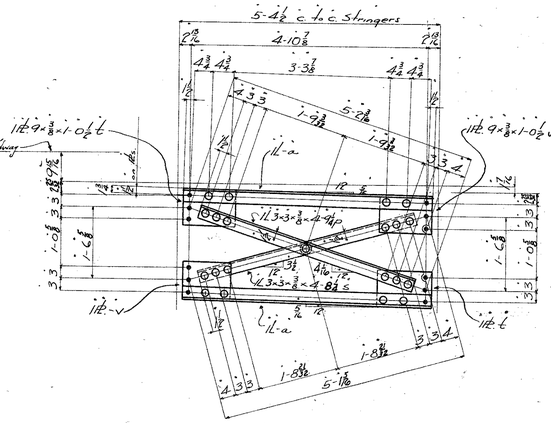
IN CHARGE	Wilson				
MADE BY	G	DATE 2-20	CHECKED BY	ahl	DATE 2-28-30
TRACED BY	JO	DATE 2-21	REVISED		DATE
SCALE:-	INCH = 1 FOOT		LAST ASSEMBLING MARK		b

CONT. NO. 5017A SHEET NO. 103

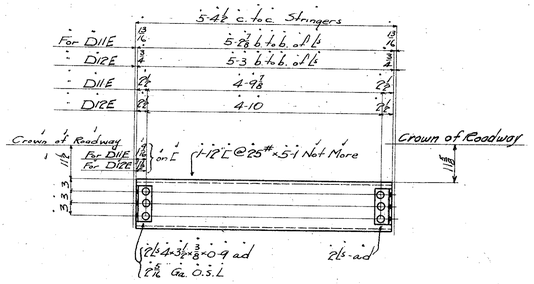
A-2-413



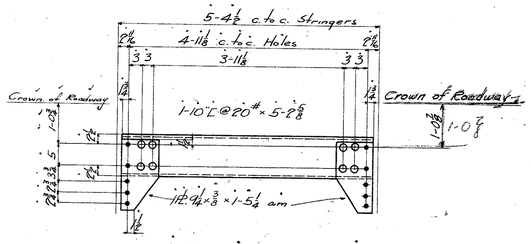
10 Diaphragms D4E



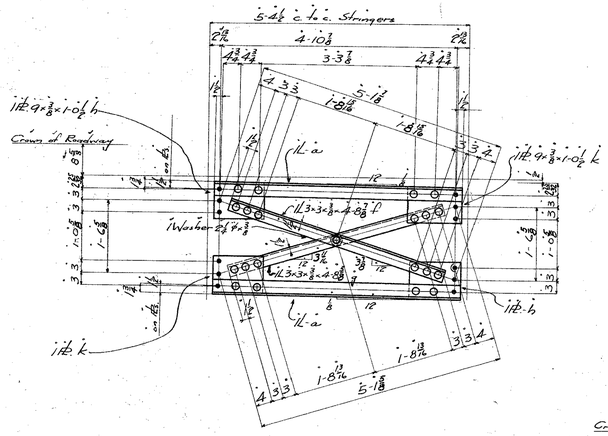
5 Diaphragms - D7E^R As shown
5 " D7E^L Opp. hand



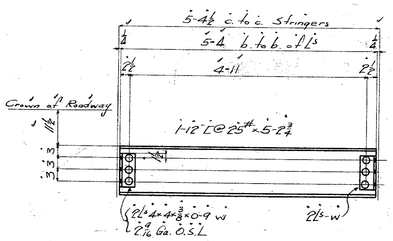
2 Diaphragms - D11E
2 " D12E



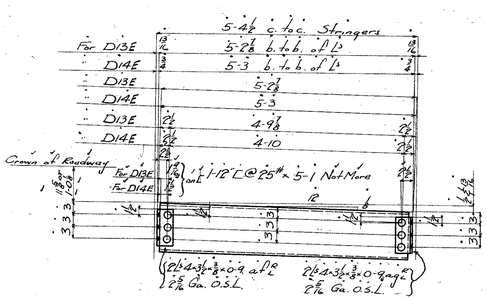
2 Diaphragms - D17E



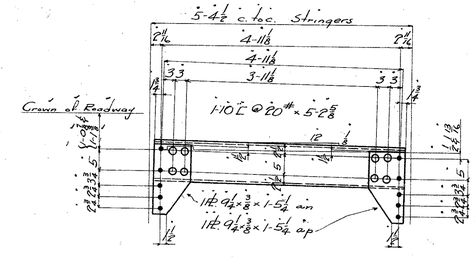
5 Diaphragms D5E^R As shown
5 " D5E^L Opp. hand



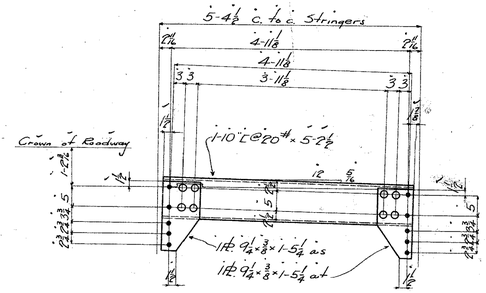
4 Diaphragms - D8E



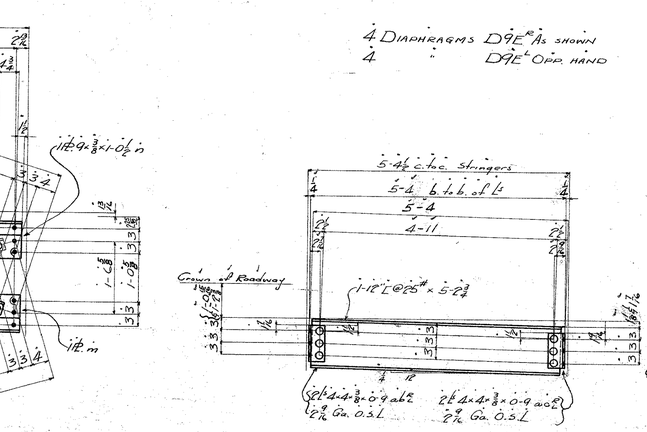
2 Diaphragms D13E^R As shown
2 " D13E^L Opp. hand
2 " D14E^R As shown
2 " D14E^L Opp. hand



2 Diaphragms D18E^R As shown
2 " D18E^L Opp. hand



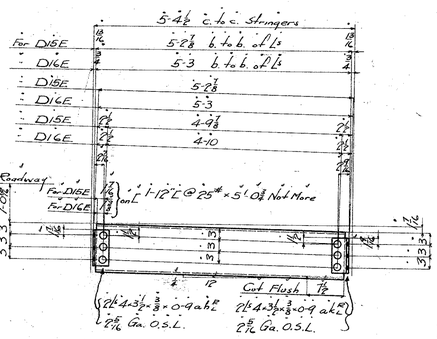
1 Diaphragm D19E^R As shown
1 " D19E^L Opp. hand



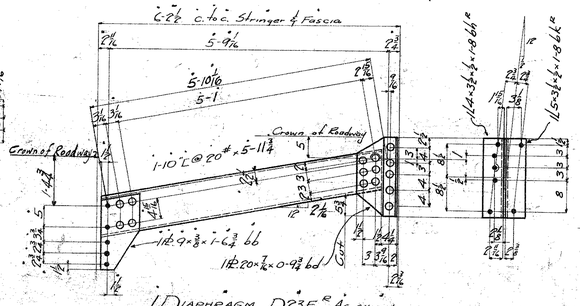
5 Diaphragms D6E^R As shown
5 " D6E^L Opp. hand

4 Diaphragms D9E^R As shown
4 " D9E^L Opp. hand

4 Diaphragms D10E^R As shown
4 " D10E^L Opp. hand



1 Diaphragm D15E^R As shown
1 " D15E^L Opp. hand
1 " D16E^R As shown
1 " D16E^L Opp. hand



10 Diaphragms D20E^R As shown
10 " D20E^L Opp. hand
5 " D21E^R As shown
5 " D21E^L Opp. hand
5 " D22E^R As shown
5 " D22E^L Opp. hand

1 Diaphragm D23E^R As shown
1 " D23E^L Opp. hand

Notes:-
Rivets ⅞ ϕ
Holes: 15/16 ϕ
All holes punched full size
Burrs to be removed from all holes.

Paint: One Coat of Industrial Paint Co's Brown Nacoro

3-6-30

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

EAST APPROACH
DIAPHRAGMS - SPANS 8 TO 15 INC.

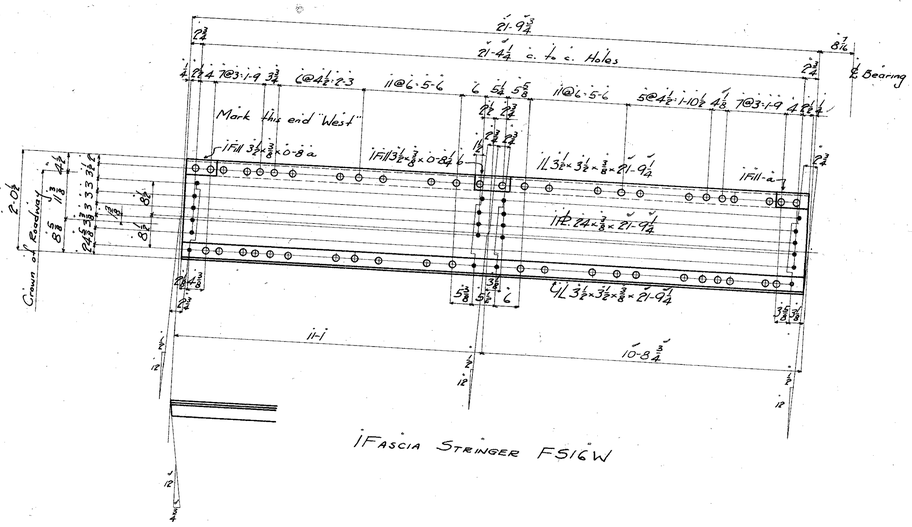
APPROVED 12-26-29
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

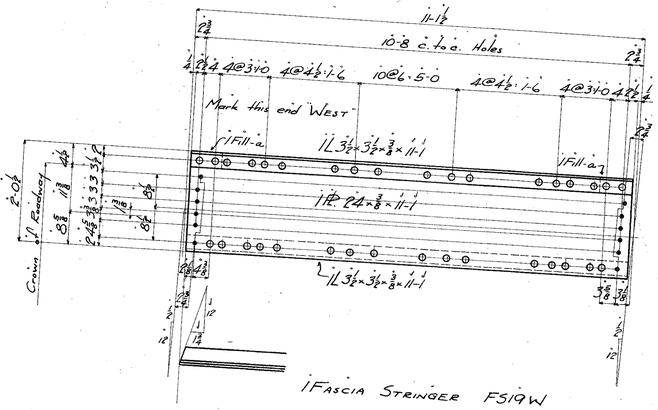
IN CHARGE W.M. SON					
MADE BY A.T.	DATE	CHECKED BY E.B.A.	DATE 11-21-29
TRACED BY J.M.	DATE	REVISED	DATE
SCALE: INCH = 1 FOOT		LAST ASSEMBLING MARK	DR

CONT. NO. 5017B SHEET NO. 3

A-2-416



1 FASCIA STRINGER FS16W



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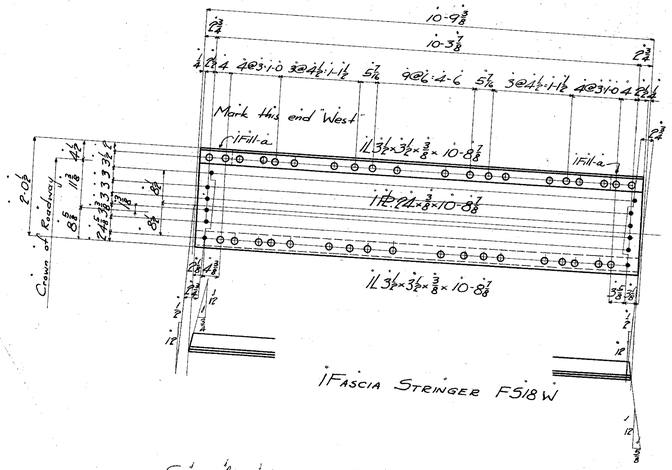

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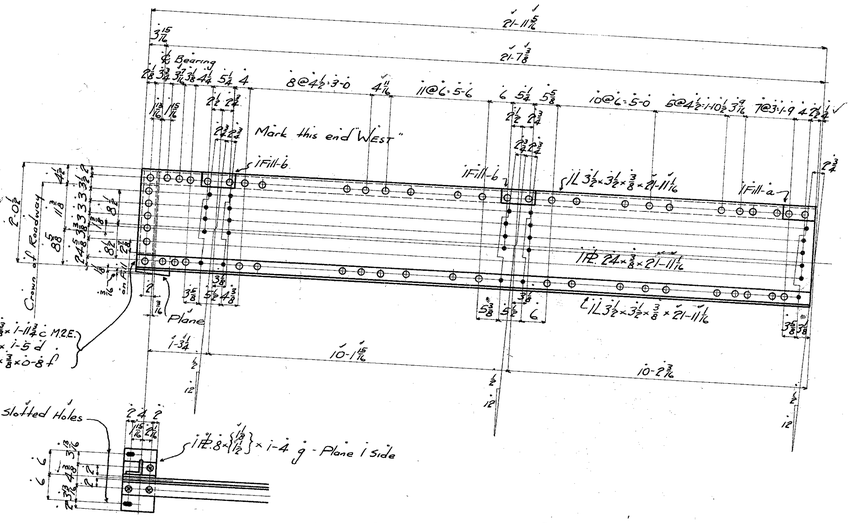
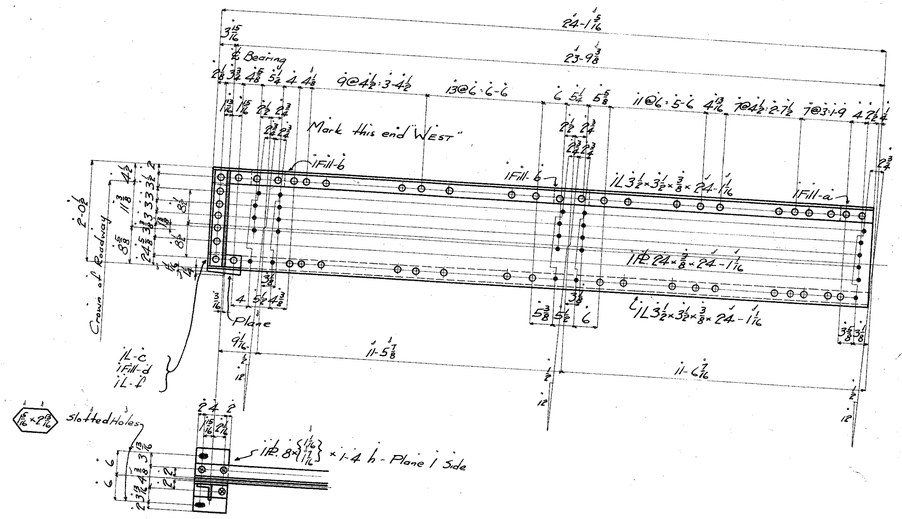


1 FASCIA STRINGER FS17W



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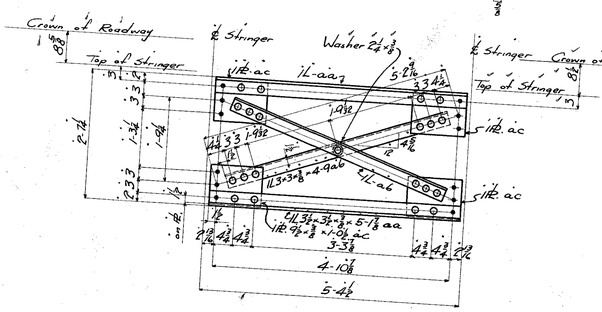
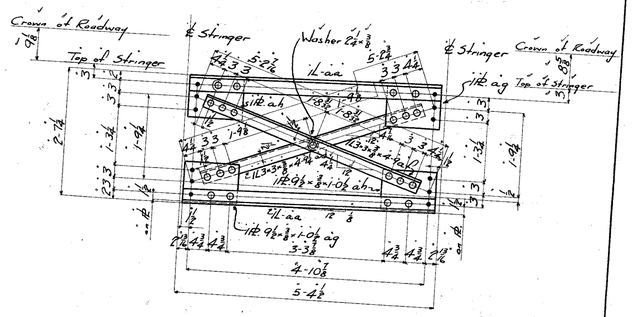
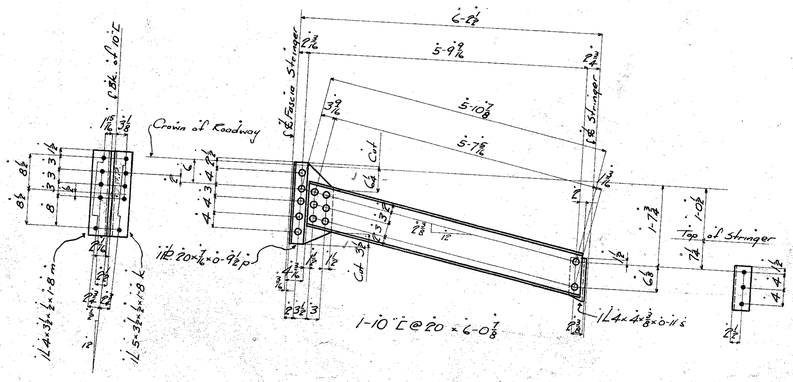


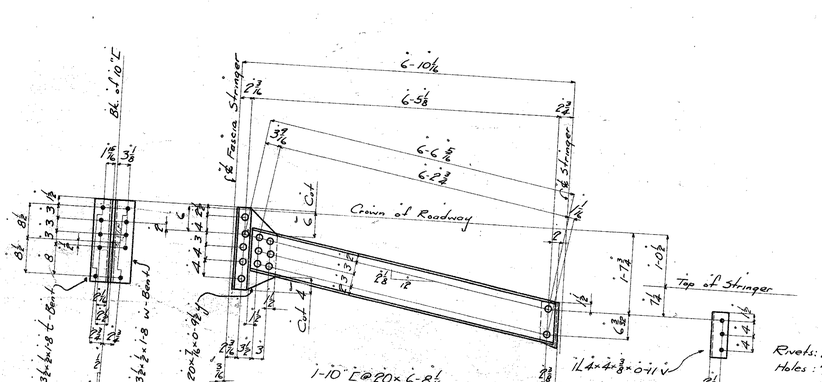
2 DIAPHRAGMS D4W



1 DIAPHRAGM D5W^R As shown
1 " D5W^L Opp. hand



1 DIAPHRAGM D2W



DEVELOPED VIEW

1 DIAPHRAGM D3W

Rivets: 7/8" ϕ
Holes: 15/16" ϕ Unless noted
Holes in diaphragms to be punched full size.
Holes in fascia stringers to be punched 11/16" ϕ reamed to 15/16" after assembling in shop
Burrs to be removed from all open holes.

Paint: One coat of Industrial Paint Co's Brown Nocoro

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
WEST APPROACH
FASCIA GIRDERS & DIAPHRAGMS - SPAN #8

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

2 Diaphragms D9W

1 Sidewalk Bracket SB8W

Developed View

1 Diaphragm D14W

1 Sidewalk Bracket SB9W

1 Diaphragm D11W^R As shown
1 " D11W^L Opp. hand

Developed View

1 Diaphragm D17W

1 Diaphragm D6W^R As shown
1 " D6W^L Opp. hand

2 Diaphragms D10W^R As shown
1 " D10W^L Opp. hand

1 Sidewalk Bracket SB3OW

Developed View

1 Diaphragm D13W

Developed View

1 Diaphragm D8W

1 Diaphragm D1CW

Developed View

1 Diaphragm D15W

1 Diaphragm D7W^R As shown
1 " D7W^L Opp. hand

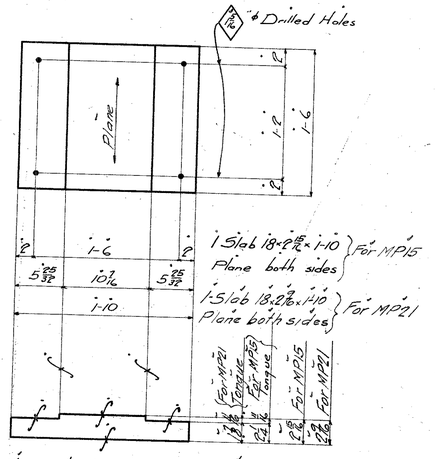
Rivets-7/8" ϕ
Holes-13/16" ϕ unless noted
Holes in diaphragms to be punched full size
Holes in brackets to be punched 7/8" ϕ and reamed to 13/16" ϕ after assembling in shop
Burrs to be removed from all holes

Paint:- One coat of Industrial Paint Co's Brown, Nocoro

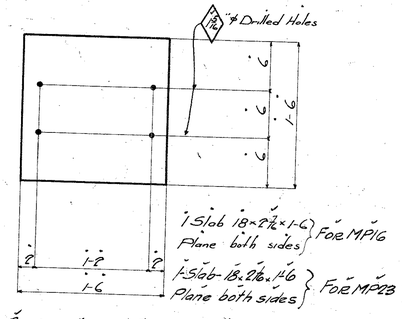
APPROVED 3-17-30
Waddell & Hardesty.

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
WEST APPROACH
SIDEWALK BRACKETS & DIAPHRAGMS-SPAN #8

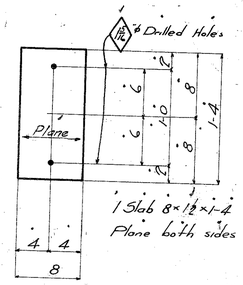
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Wm Son
MADE BY C.W.K. DATE
CHECKED BY F.B.A DATE 2-28-30
TRACED BY J.M. DATE
REVISED DATE
SCALE 1" = 1 FOOT
LAST ASSEMBLING MARK db
CONT. NO. 5017B SHEET NO. 102



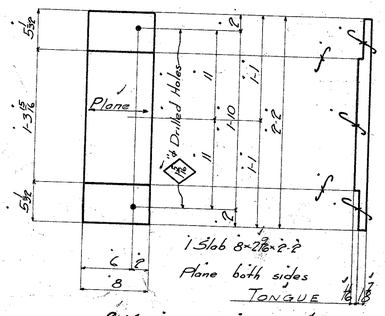
4 Masonry Plates MP21
18 Masonry Plates MP15
On Piers 9E & 11E



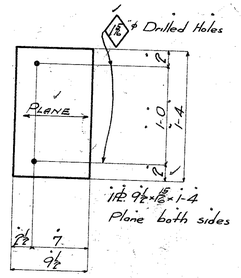
2 Masonry Plates MP23
9 Masonry Plates MP16
On Pier 10E



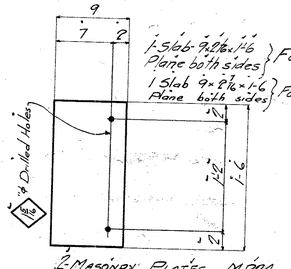
2 Masonry Plates MP7
For Fascia Stringers on East Abutment



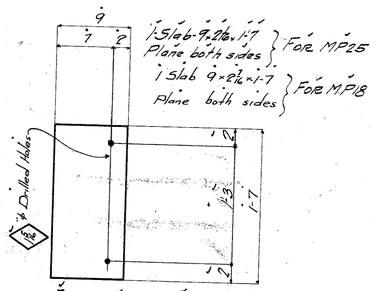
2 Masonry Plate MP11
For Stringers on West Abutment



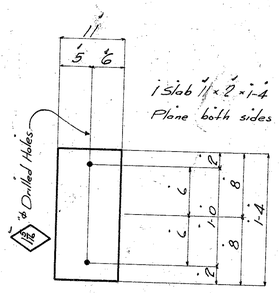
2 Masonry Plates MP12
For Fascia Stringers on West Abutment



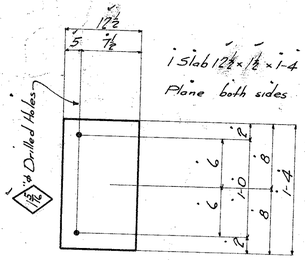
2 Masonry Plates MP24
9 Masonry Plates MP17
On Pier 12E



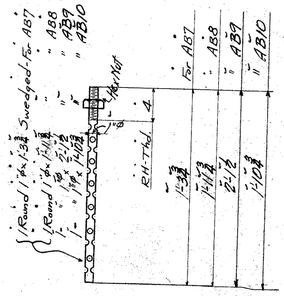
2 Masonry Plates MP25
9 Masonry Plates MP18
On Pier 14E



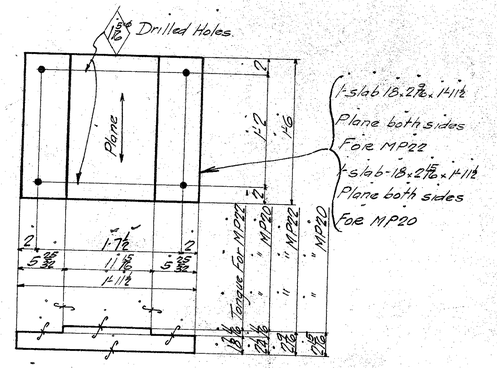
4 Masonry Plates - MP8
For Stringers on Pier F & A



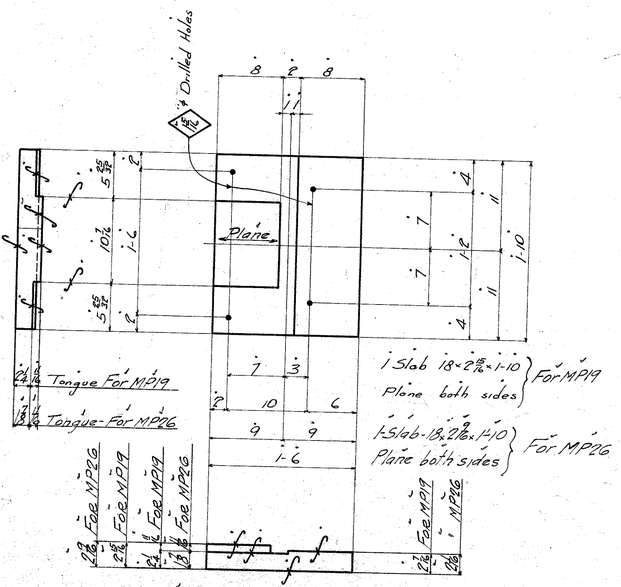
4 Masonry Plates MP9
For Fascia Stringers on Pier F & Pier A



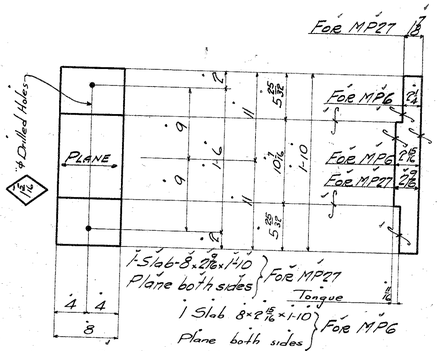
210 Anchor Bolts AB7 - On Piers 8E-9E-11E-13E - East & West Abutments
16 " " AB8 - " " 8E-10E-12E-14E
8 " " AB9 " " 12E & 14E
16 " " AB10 " Anchorage Piers - A & F



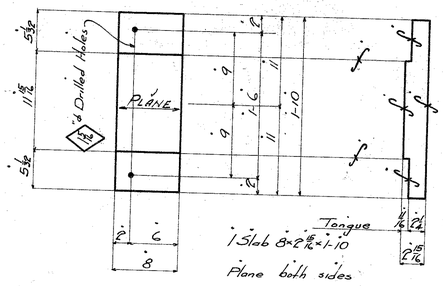
9 Masonry Plates - MP20
2 " " - MP22
On Pier 13E



2 Masonry Plates MP26
9 Masonry Plates MP19
On Pier 8E



2 Masonry Plates - MP27
9 Masonry Plates MP6
For Stringers on East Abutment



10 Masonry Plates MP10
For Stringers on West Abutment

Holes: As noted
Paint: Finished surfaces to receive one coat of white lead & tallow applied hot.
Other surfaces to receive one coat of Industrial Paint Co's Brown Nocoro

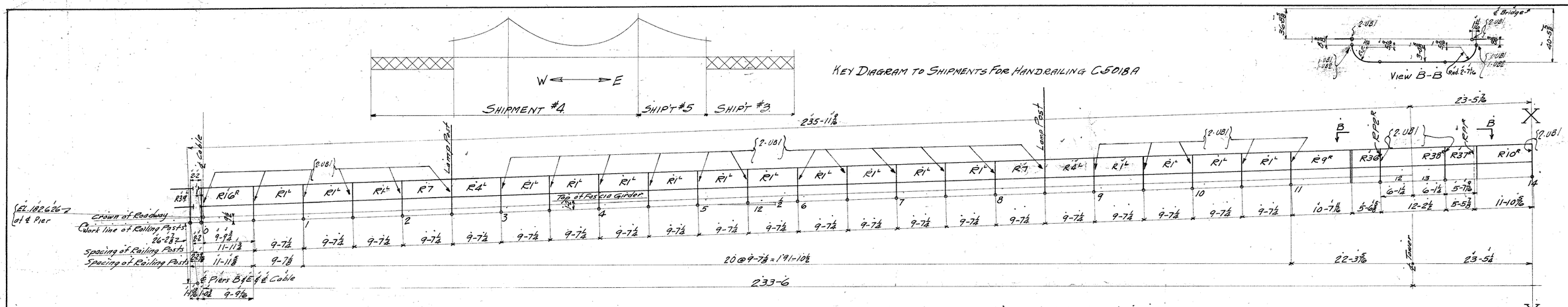
CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

EAST & WEST APPROACH
STRINGER SPANS
MASONRY PLATES & ANCHOR BOLTS

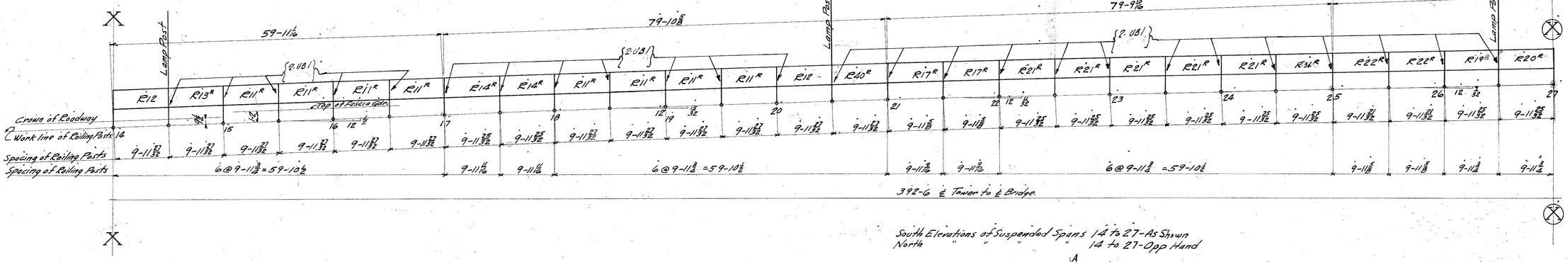
Approved 12-26-29.
Waddell & Hardesty.

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE WM SON
MADE BY [illegible] DATE
CHECKED BY F.C.A. DATE 12-29
TRACED BY J.M. DATE
REVISED DATE
SCALE- INCH = 1 FOOT
LAST ASSEMBLING MARK
CONT. NO. 5017C SHEET NO. 1

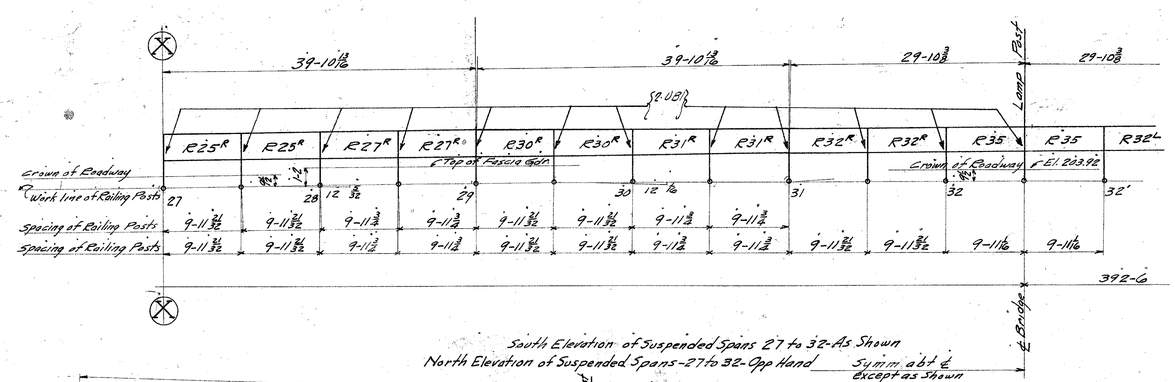


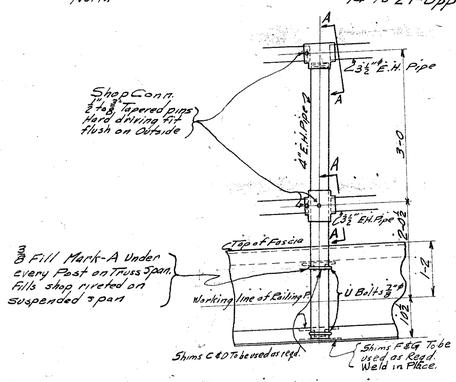
KEY DIAGRAM TO SHIPMENTS FOR HANDRAILING C5018A

South Elevation of Suspended Spans 0 to 14 - As Shown
North " " " " 0 to 14 - Opp Hand

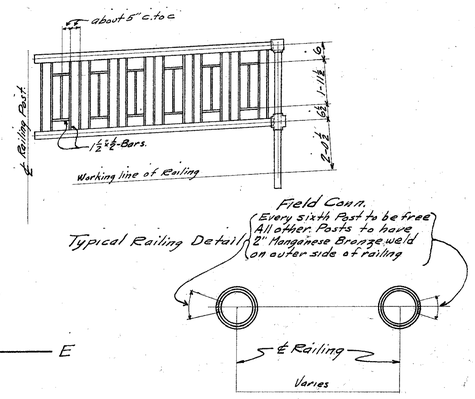


South Elevations of Suspended Spans 14 to 27 - As Shown
North " " " " 14 to 27 - Opp Hand

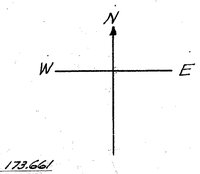


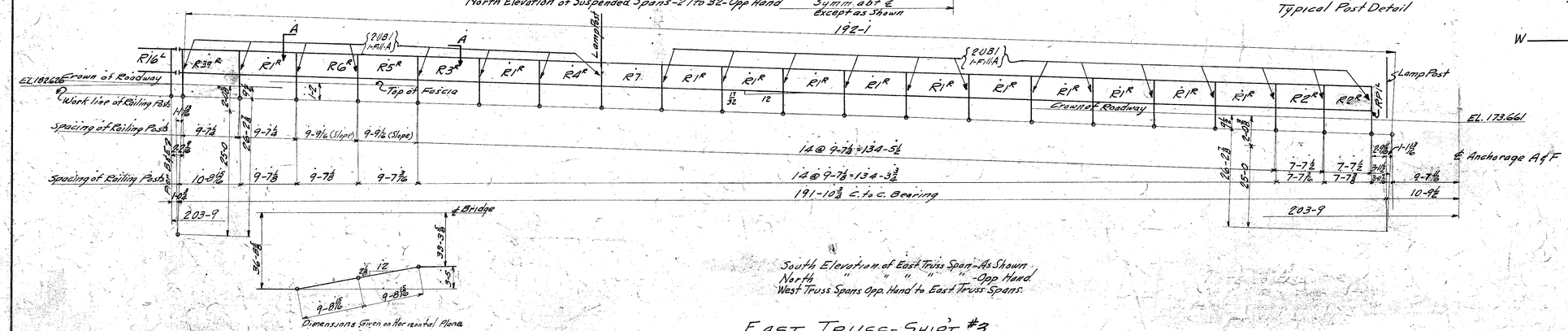


Typical Post Detail



Typical Railing Detail





South Elevation of East Truss Span - As Shown
North " " " " - Opp Hand
West Truss Spans Opp. Hand to East Truss Spans.

EAST TRUSS - SHIPT #3

WEST TRUSS - SHIPT #4

TYPICAL SECTION - A-A

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER

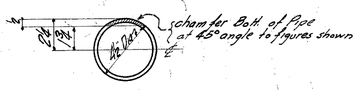
TRUSS & SUSPENDED SPANS.

ERECTION DIAGRAM OF RAILING.

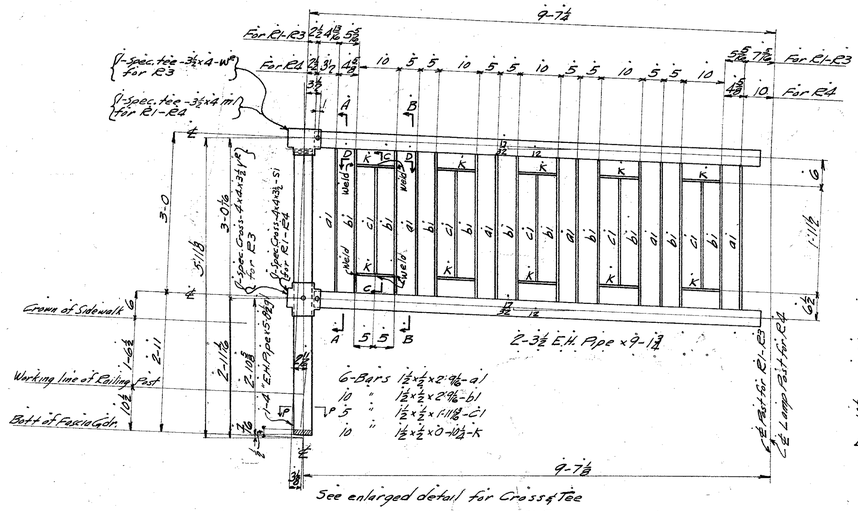
APPROVED 5-15-30
Waddell & Hardesty

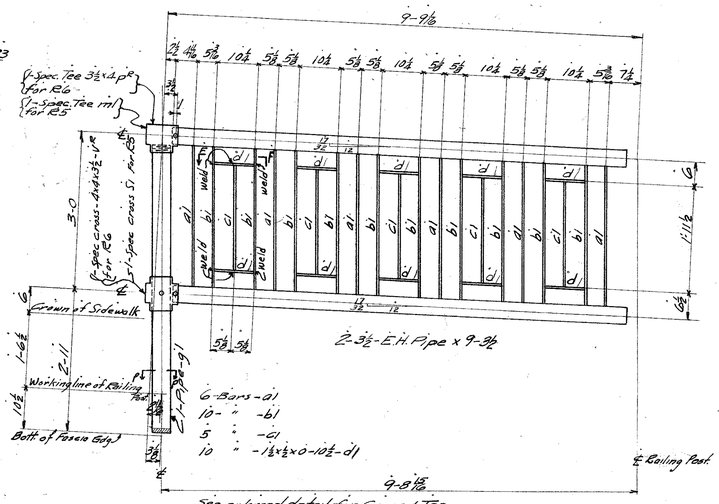
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.P.S.
MADE BY C.W.K. DATE CHECKED BY F.B.A DATE 4-15-30
TRACED BY E.Z. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5018A SHEET NO. E1

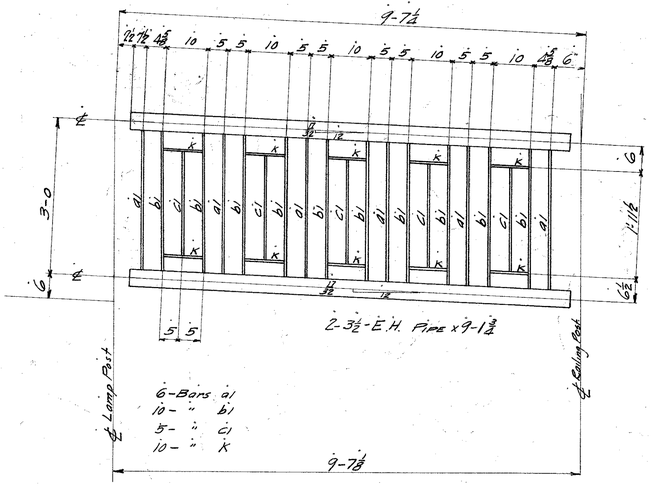
A-2-420



Enlarged View P.P.



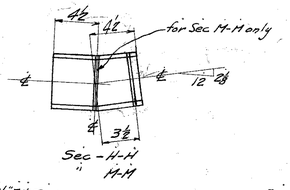


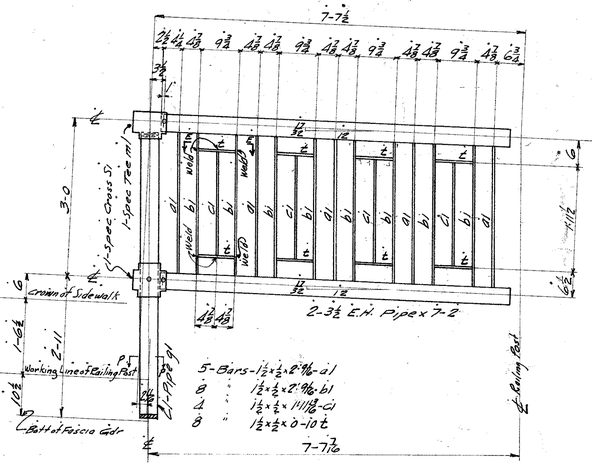


5B-Railings R1^R - as shown (24^R & 24^L - For Truss Span
5B " R1^L - opp hand (34^R & 34^L - For Suspended Span.
6 " R2^R - as shown (6^R & 6^L - For Truss span
6 " R4^L - opp hand (4^R & 4^L - for Suspended span
2 " R3^R - as shown } For Truss span.
2 " R3^L - opp hand }

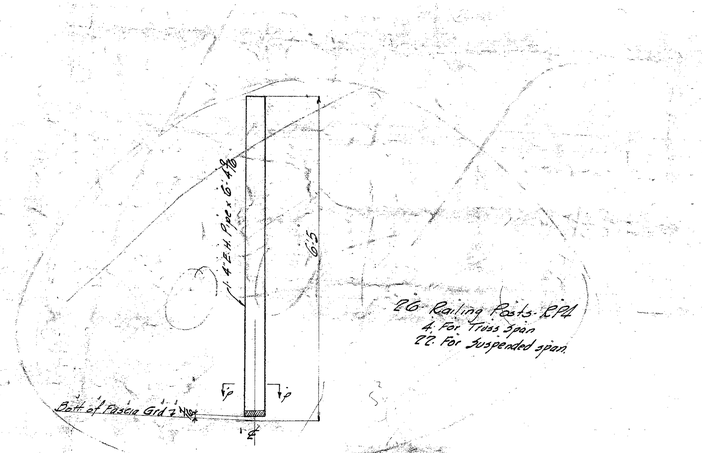
2-Railings R5^R - as shown
2-Railings R5^L - opp hand } For Truss Span.
2- " R6^R as shown.
2 " R6^L opp hand.

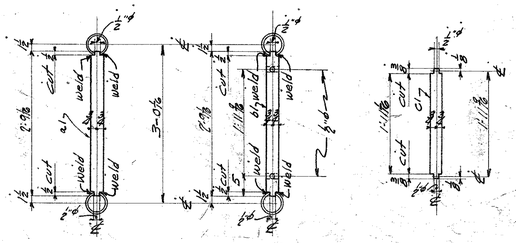
12-Railings R7 { 4. For Truss Span. 8. For Suspended Span.

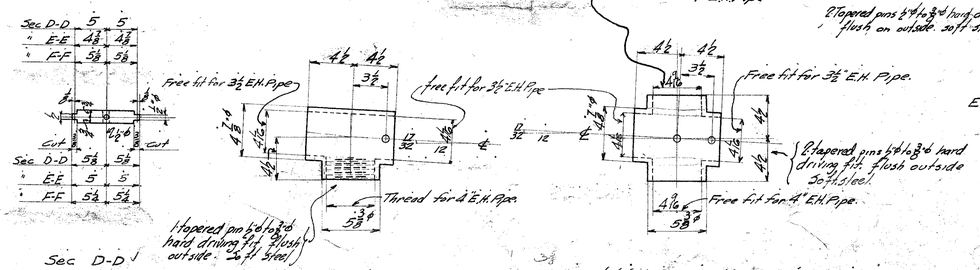




4-Railings R2^R - As shown
4 " R2^L - Opp. hand } For Truss Span.

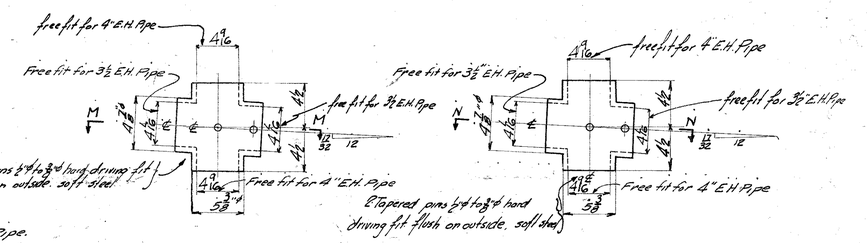






Enlarged detail for malleable iron spec. Tee rml

Enlarged detail for malleable iron special cross 51



Enlarged detail for malleable iron special tee p^e

Enlarged Detail for malleable iron special tee W^e

Enlarged detail for malleable iron special cross v^e

Enlarged detail for malleable iron special cross y^e

Shop Notes
Holes as noted
Paint: One Coat Mountain Varnish & Color Works Chrome Base Primer #500

APPROVED 5-15-30
Waddell & Hardesty

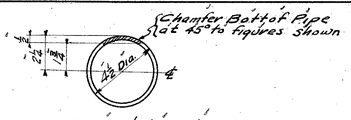
CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

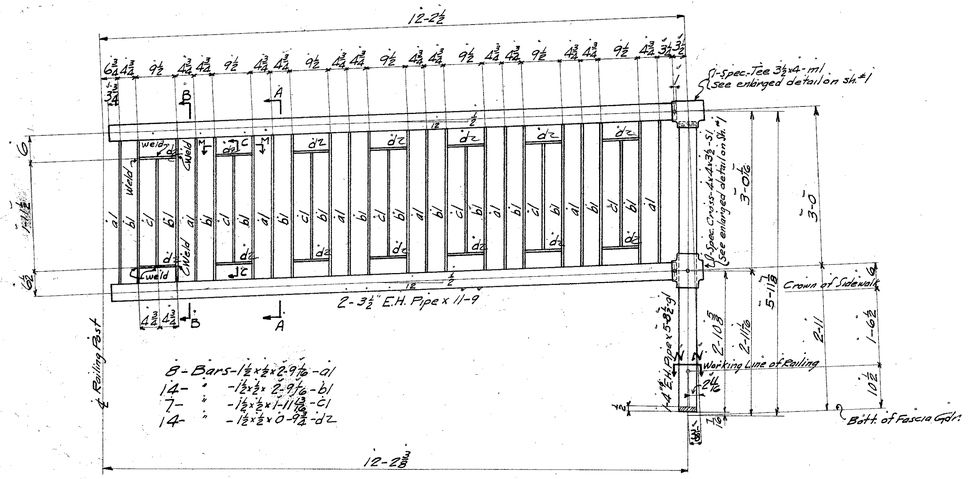
TRUSS SPAN & SUSPENDED SPAN
RAILING

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.M.Shaw
MADE BY C.W.K. DATE CHECKED BY F.B.A. DATE 4-1-30
TRACED BY E.Z. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK Y
CONT. NO. 5018A SHEET NO. 1

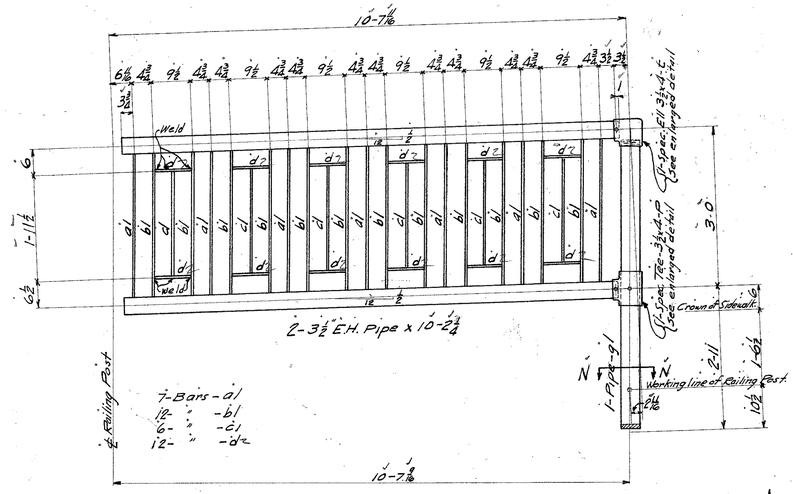
A-2-421



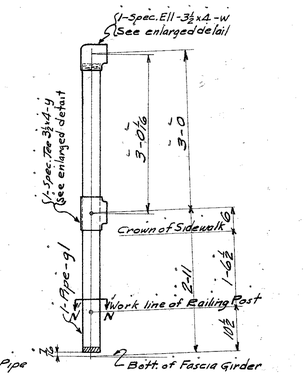
Enlarged View N N



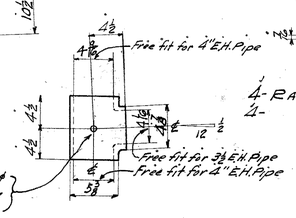
2 - RAILINGS - R38R - As Shown
2 - " - R38L - Opp Hand



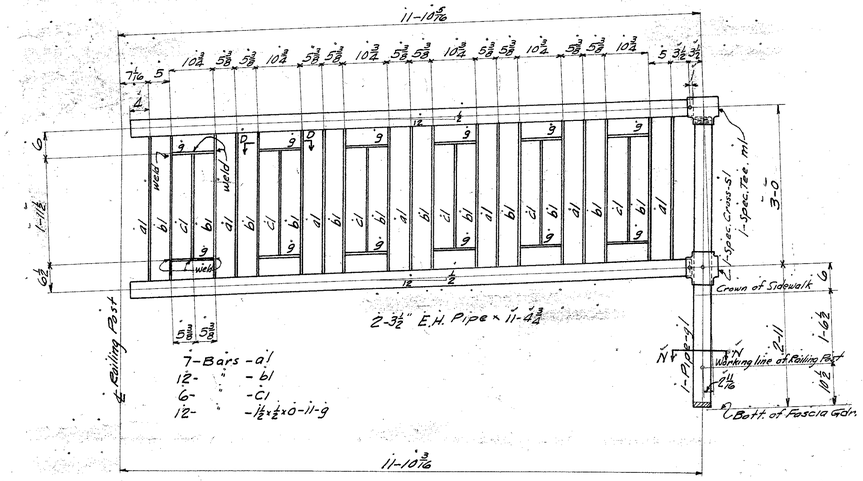
2 - RAILINGS - R9R - As Shown
2 " - R9L - Opp Hand



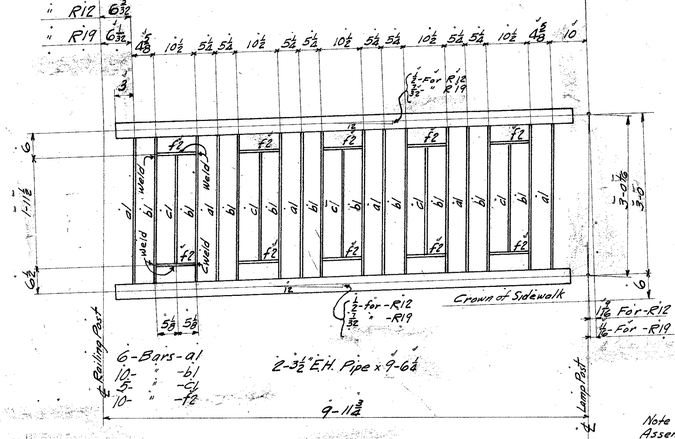
4 - RAILING POSTS RP1R As Shown
4 - " " RP1L Opp Hand



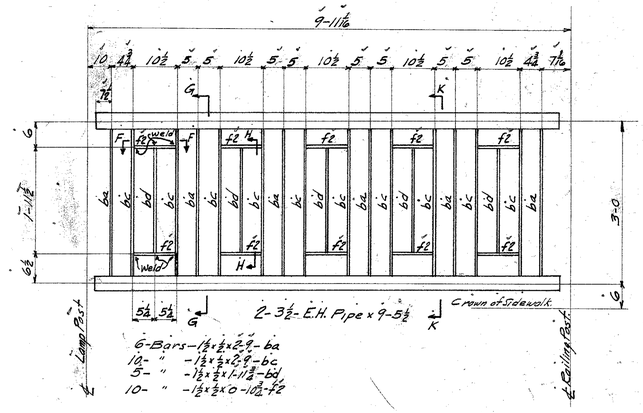
Enlarged Detail for Malleable Iron Spec. Tee-y



2 - RAILINGS R10R As Shown.
2 " R10L Opp Hand

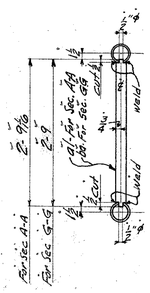


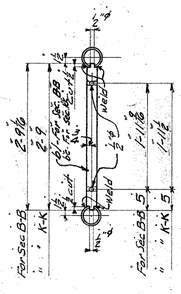
8 - RAILINGS - R12
4 - " - R19

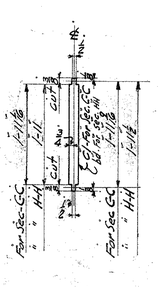


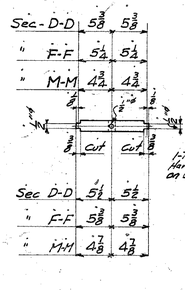
4 - RAILINGS - R35

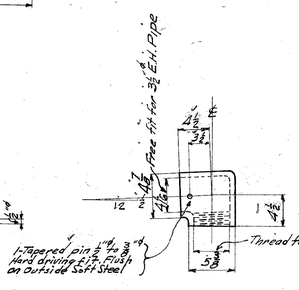
Note to Shop: For Railing R12-R19
Assembly marks of bars will be same
for all bevels.
Variation to be taken care of in Shop.



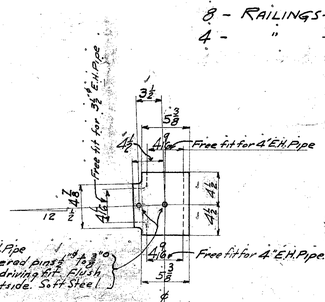




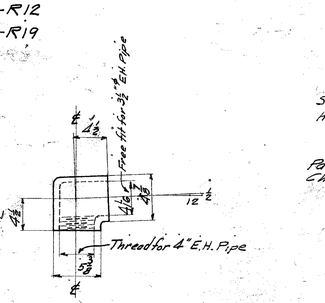




Enlarged Detail for Malleable Iron Spec. Ell-t



Enlarged Detail for Malleable Iron Spec. Tee-P



Enlarged Detail for Malleable Iron Spec. Ell-W

Shop Notes:-
Holes as noted

Paint:- One coat - Mountain Varnish & Color Works.
Chrome Base Primer #500

CITY OF TOLEDO, OHIO

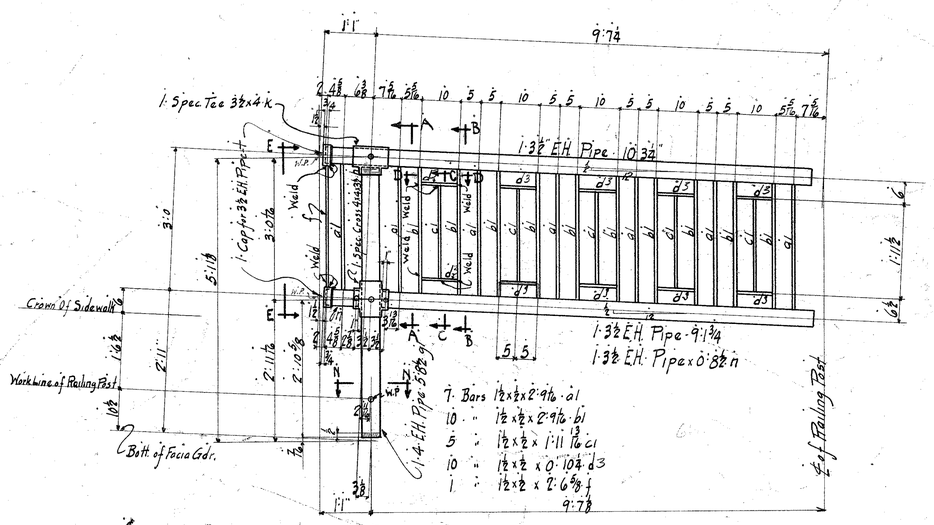
BRIDGE OVER MAUMEE RIVER

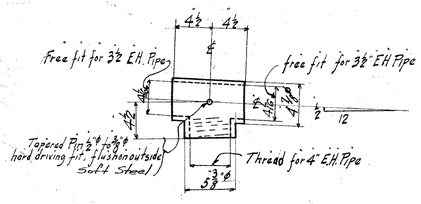
SUSPENDED SPAN
RAILING

APPROVED 5-15-30
Waddell & Hardesty

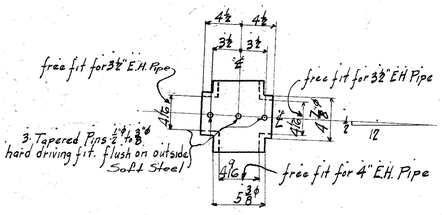
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.M.Sipp
MADE BY C.W.K. DATE CHECKED BY F.B.A. DATE 4/8/30
TRACED BY E.Z. DATE REVISED DATE
SCALE: INCH ON 1 FOOT LAST ASSEMBLING MARK Ed
CONT. NO. 5018A SHEET NO. 2

A-2-422

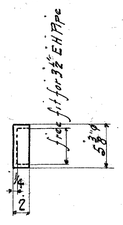




Enlarged Detail for Malleable Iron Spec. Tee-K



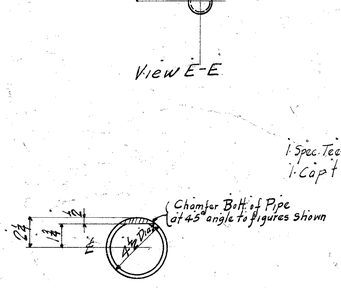
Enlarged Detail for Malleable Iron Spec. Cross-h



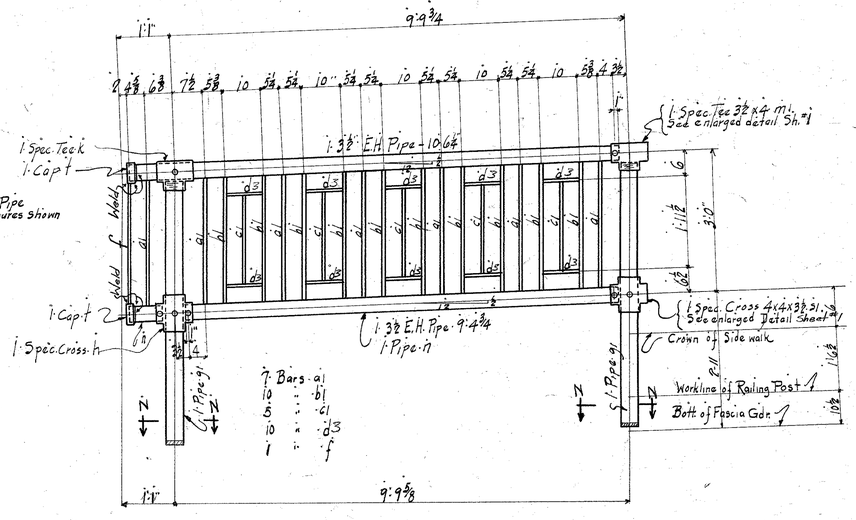
Enlarged Detail for Malleable Iron Spec. Cap-t.

View E-E

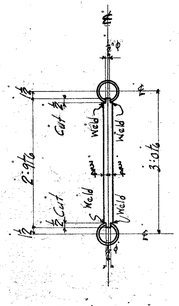
2 Railings - R39L As Shown
2 Railings - R39R - Opp Hand
} For Truss Span



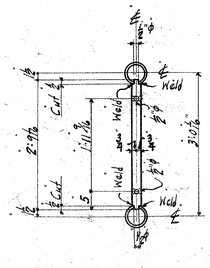
Enlarged View - N-N



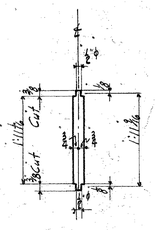
2 Railings - R16R As Shown
2 " - R16L Opp. Hand
} For Suspended Span



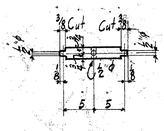
Section A-A



Section B-B



Section C-C



Section D-D

SHOP NOTES:
HOLES: AS NOTED

PAINT: ONE COAT MOUNTAIN VARNISH & COLOR
WORKS: CHROME BASE PRIMER #500

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

TRUSS SPAN AND SUSPENDED SPAN
RAILING

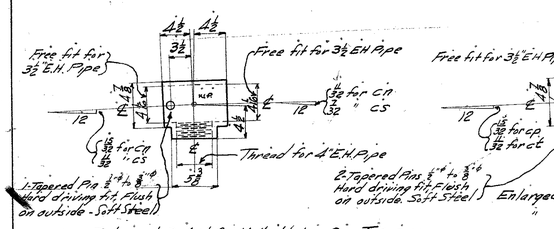
APPROVED 5-15-30
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

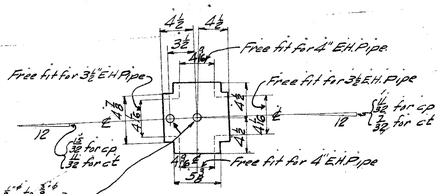
IN CHARGE	Eicher				
MADE BY	CWK	DATE	CHECKED BY	F.O.A	DATE 5-2-30
TRACED BY	RR	DATE	REVISED		DATE
SCALE:	INCH = 1 FOOT		LAST ASSEMBLING MARK		t

CONT. NO. 5018A SHEET NO. 4

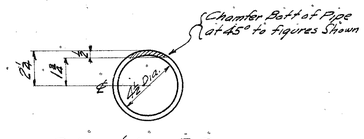
A-2-424



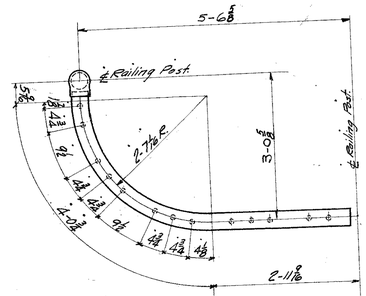
Enlarged Detail for Malleable Iron Spec Tee c-n
" " " " " " " " cs



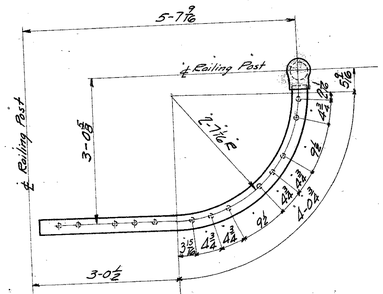
Enlarged Detail for Malleable Iron Spec. Cross-cp
" " " " " " " " " " cc



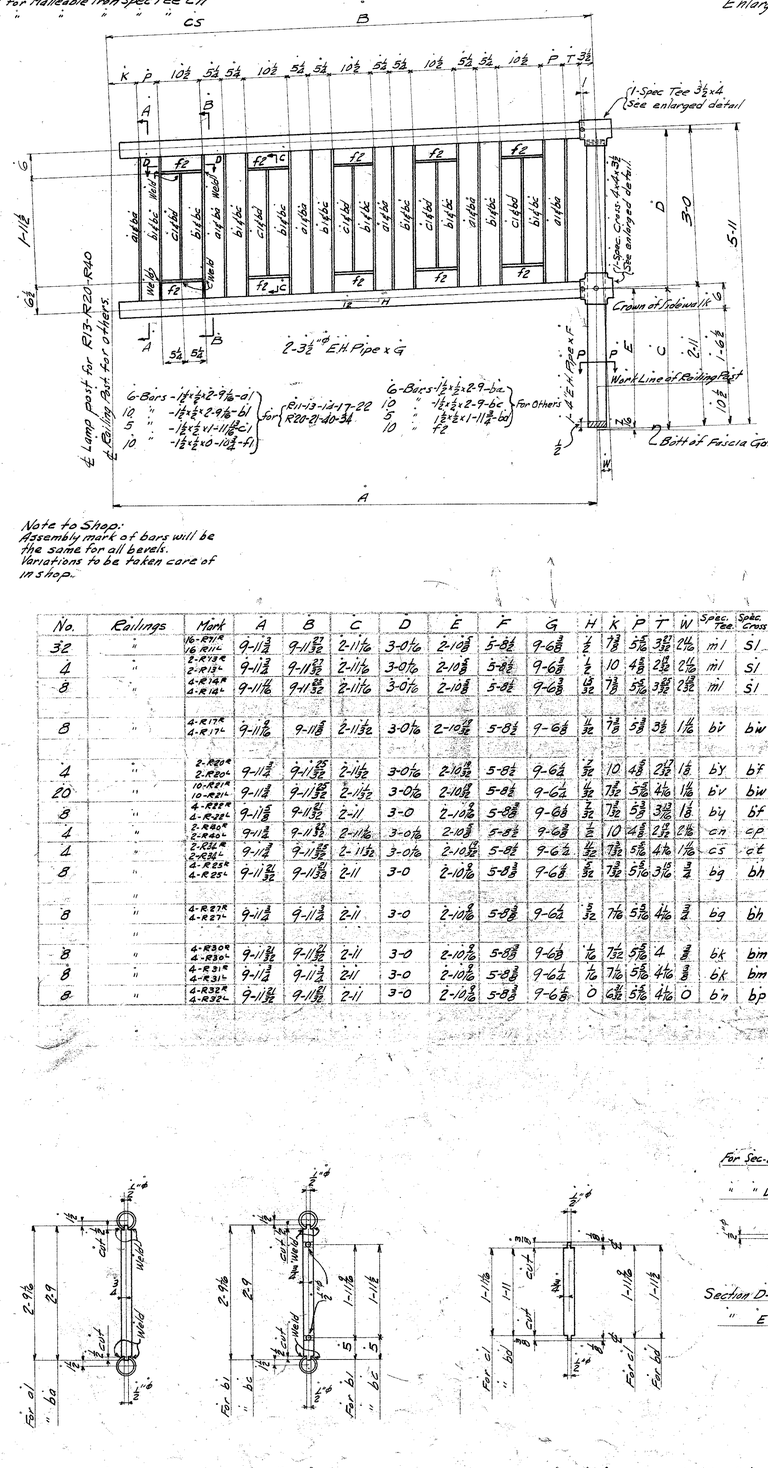
Enlarged View P.P



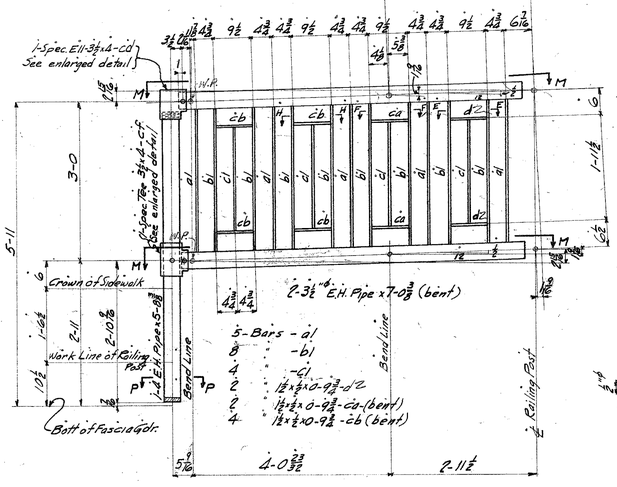
View M-M

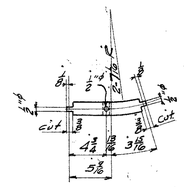


View N-N

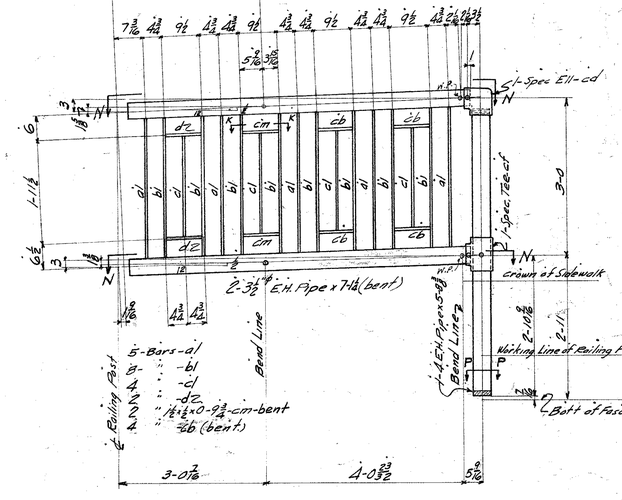


Note to Shop:
Assembly mark of bars will be the same for all bevels.
Variations to be taken care of in shop.

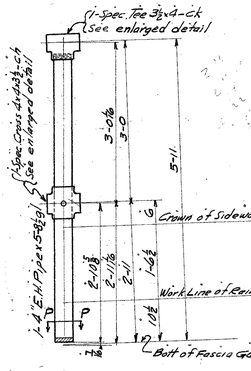




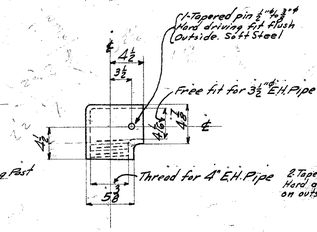
Sec K-K



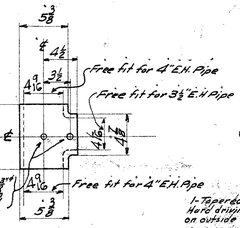
No.	Railings	Mark	A	B	C	D	E	F	G	H	K	P	T	W	Spec. Tee	Spec. Cross
32	"	16-R17R 16-R17L	9-11 3/8	9-11 23/32	2-11 7/16	3-0 7/16	2-10 3/8	5-8 1/2	9-6 3/8	1/2	7 3/8	5 5/8	3 25/32	2 1/16	m/	s/
4	"	2-R13R 2-R13L	9-11 3/8	9-11 23/32	2-11 7/16	3-0 7/16	2-10 3/8	5-8 1/2	9-6 3/8	1/2	10	4 3/8	2 25/32	2 1/16	m/	s/
8	"	4-R14R 4-R14L	9-11 7/16	9-11 23/32	2-11 7/16	3-0 7/16	2-10 3/8	5-8 1/2	9-6 3/8	19/32	7 3/8	5 5/8	3 25/32	2 5/32	m/	s/
8	"	4-R17R 4-R17L	9-11 7/16	9-11 3/8	2-11 5/32	3-0 7/16	2-10 5/32	5-8 1/2	9-6 3/8	11/32	7 3/8	5 3/8	3 1/2	1 13/16	bv	bw
4	"	2-R20R 2-R20L	9-11 3/8	9-11 5/32	2-11 5/32	3-0 7/16	2-10 3/8	5-8 1/2	9-6 1/2	11/32	10	4 3/8	2 5/32	1 5/8	bY	bF
20	"	10-R21R 10-R21L	9-11 3/8	9-11 5/32	2-11 5/32	3-0 7/16	2-10 1/8	5-8 1/2	9-6 1/2	11/32	7 1/2	5 5/8	4 1/16	1 1/16	bv	bw
8	"	4-R22R 4-R22L	9-11 3/8	9-11 3/32	2-11	3-0	2-10 3/8	5-8 3/8	9-6 3/8	3/32	7 1/2	5 3/8	3 3/32	1 5/8	bY	bF
4	"	2-R24R 2-R24L	9-11 3/8	9-11 3/32	2-11 1/16	3-0 7/16	2-10 3/8	5-8 1/2	9-6 3/8	1/32	10	4 3/8	2 1/32	2 1/16	cn	cp
4	"	2-R25R 2-R25L	9-11 3/8	9-11 3/32	2-11 5/32	3-0 7/16	2-10 3/32	5-8 1/2	9-6 1/2	11/32	7 1/2	5 5/8	4 1/16	1 1/16	cs	ct
8	"	4-R25R 4-R25L	9-11 21/32	9-11 3/32	2-11	3-0	2-10 3/8	5-8 3/8	9-6 1/8	5/32	7 1/2	5 5/8	3 1/16	3/4	bg	bh
8	"	4-R27R 4-R27L	9-11 3/8	9-11 3/8	2-11	3-0	2-10 3/8	5-8 3/8	9-6 1/2	5/32	7 1/8	5 5/16	4 1/16	3/4	bg	bh
8	"	4-R30R 4-R30L	9-11 21/32	9-11 3/32	2-11	3-0	2-10 3/8	5-8 3/8	9-6 3/8	1/16	7 1/2	5 5/8	4	3/4	bK	bm
8	"	4-R31R 4-R31L	9-11 3/8	9-11 3/8	2-11	3-0	2-10 1/8	5-8 3/8	9-6 1/2	1/16	7 1/8	5 5/8	4 1/16	3/4	bK	bm
8	"	4-R32R 4-R32L	9-11 21/32	9-11 3/32	2-11	3-0	2-10 3/8	5-8 3/8	9-6 5/8	0	6 7/8	5 5/8	4 1/16	0	bn	bp



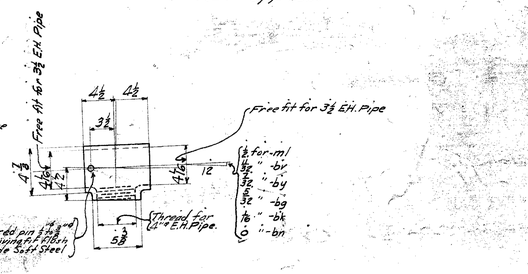
Developed View
2-Railings R36R As Shown
2- " R36L Opp Hand



Enlarged Detail for Malleable Iron Spec Ell-cd

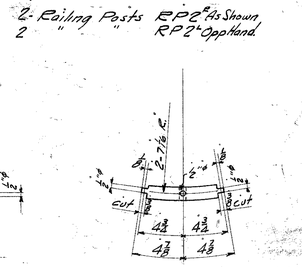


Enlarged Detail for Malleable Iron Spec Tee-cf

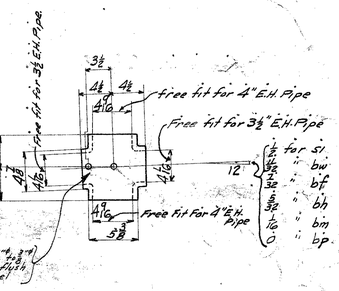


Enlarged Detail for Malleable Iron Spec. Tee-ml-bi-by-bg-bK&bn

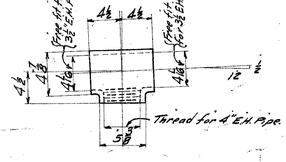
Developed View
2-Railings R37R As Shown.
2- " R37L Opp Hand.



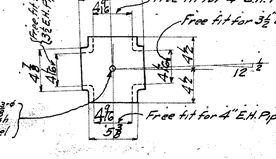
2-Railing Posts RP2R As Shown
2 " " RP2L Opp Hand



Enlarged Detail for Malleable Iron Spec Cross-ci-bw-bm-bp-bf-bh



Enlarged Detail for Malleable Iron Spec. Tee-ck



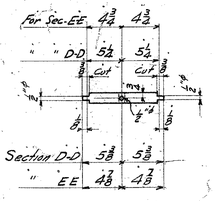
Enlarged Detail for Malleable Iron Spec. Cross-ch

Sec A-A

Sec B-B

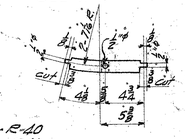
Sec. C-C

Detail Special Tee CN & Special Cross CP - For R-40
" " " C'S " " " CT - For R41



Sec. D-D
Sec. E-E

Sec H-H



Sec F-F

Shop Notes

Holes - as noted

Paint One coat of Mountain Varnish & Color Works Chrome Base Primer #500

APPROVED 5-15-30
Waddell & Hardesty

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER

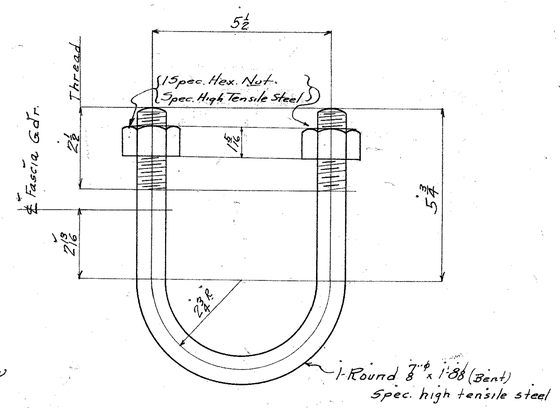
SUSPENDED SPAN
RAILING

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH PA.

IN CHARGE Wm Senn
MADE BY C.W.K. DATE
CHECKED BY F.B.A. DATE 4-23-30
TRACED BY E.Z. DATE
REVISED DATE
SCALE 1" INCH = 1 FOOT LAST ASSEMBLING MARK CP

CONT. NO. 5018A SHEET NO. 3

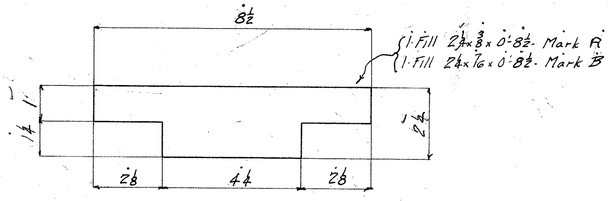
A-2-423



Bought Outside

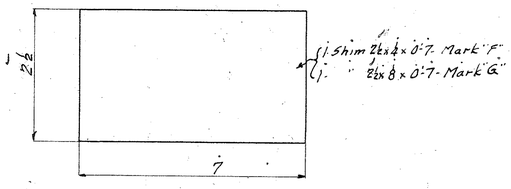
170 U Bolts - UB1 for Truss Span (2 extra) } Cont. N° 5018A
532 " " - UB1 " Suspended Span (8 extra) }
276 " " - UB1W " West Approach (4 extra) Cont. N° 5018B
260 " " - UB1E " East Approach (4 extra) Cont. N° 5018C

All U Bolts alike



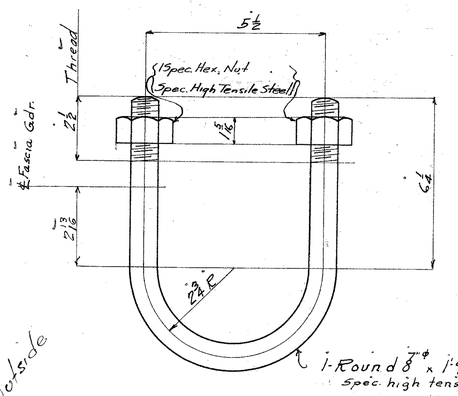
370 - Fills Mark A
42 " Mark B

84 Fills Mark A " Truss Span } Cont. N° 5018A
136 " " A " West Approach Cont. N° 5018B
150 " " A " East Approach } Cont. N° 5018C
42 " " B " East Approach }



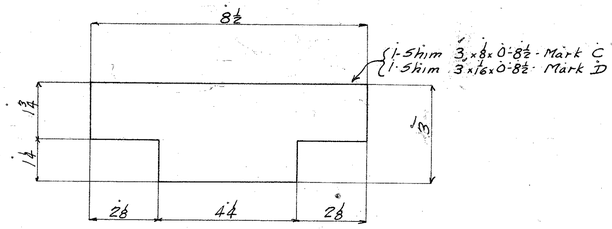
223 - Shims Mark "F"
223 - Shims Mark "G"

89 Shims Mark "F" for Suspended Span }
89 " Mark G " " " " } Cont. N° 5018A
28 " Mark F " Truss-Span }
28 " Mark G " " " "
46 " Mark "F" West Approach } Cont. N° 5018B
46 " Mark G " " "
60 " Mark "F" East Approach } Cont. N° 5018C
60 " Mark G " " "



Bought Outside

8 U Bolts - UB2 for Suspended Span Cont. N° 5018R
114 " " - UB2E " East Approach (2 extra) Cont. N° 5018C
All U Bolts alike



670 - Shims Mark C
670 - Shims Mark D

266 Shims Mark C for Suspended Span }
266 " Mark D " " " " } Cont. N° 5018R
84 " Mark C " Truss Span }
84 " Mark D " " "
136 " Mark C " West Approach } Cont. N° 5018B
136 " Mark D " " "
184 " Mark C " East Approach } Cont. N° 5018C
184 " Mark D " " "

Shop Note:
Paint One Coat of Mountain Varnish & Color Works Chrome Base Primer #500

Alt. 6 on BJP

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

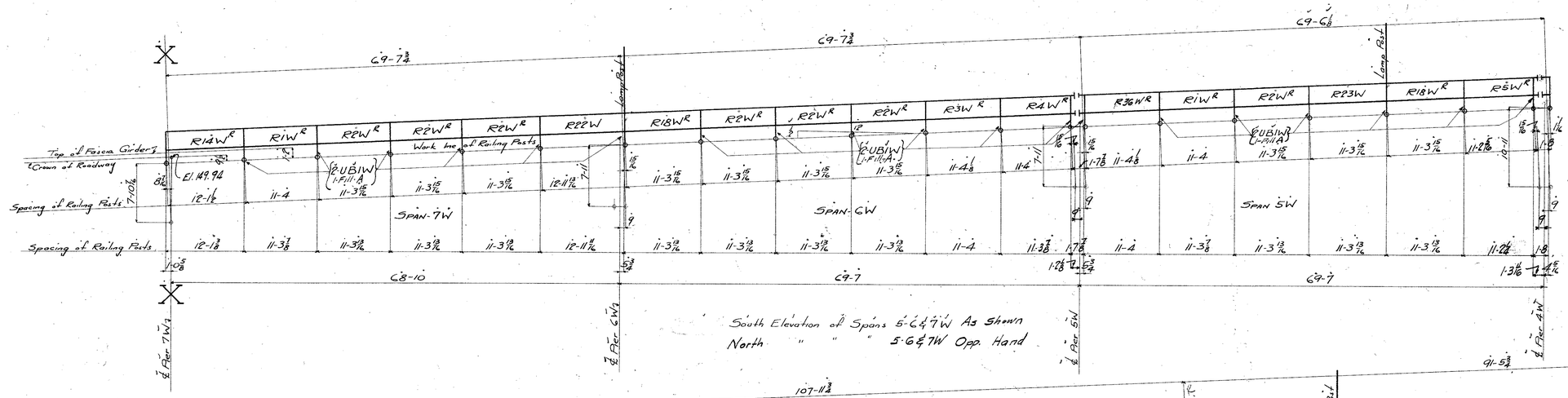
U Bolts - Shims & Fills for Railing
Suspended Span - Truss Span - West Approach
East Approach

APPROVED 5-15-30
Waddell & Hardesty

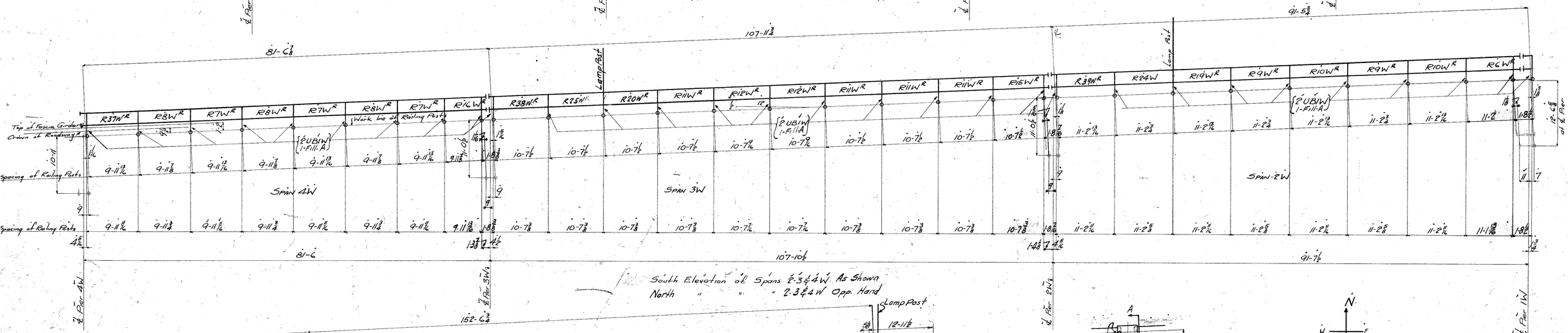
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE Eicher					
MADE BY C.W.K.	DATE		CHECKED BY F.A.	DATE 5-9-30	
TRACED BY J.T.	DATE		REVISED	DATE	
SCALE:	INCH = 1 FOOT		LAST ASSEMBLING MARK		
CONT. NO.	5018A 5018B 5018C	SHEET NO. 5			

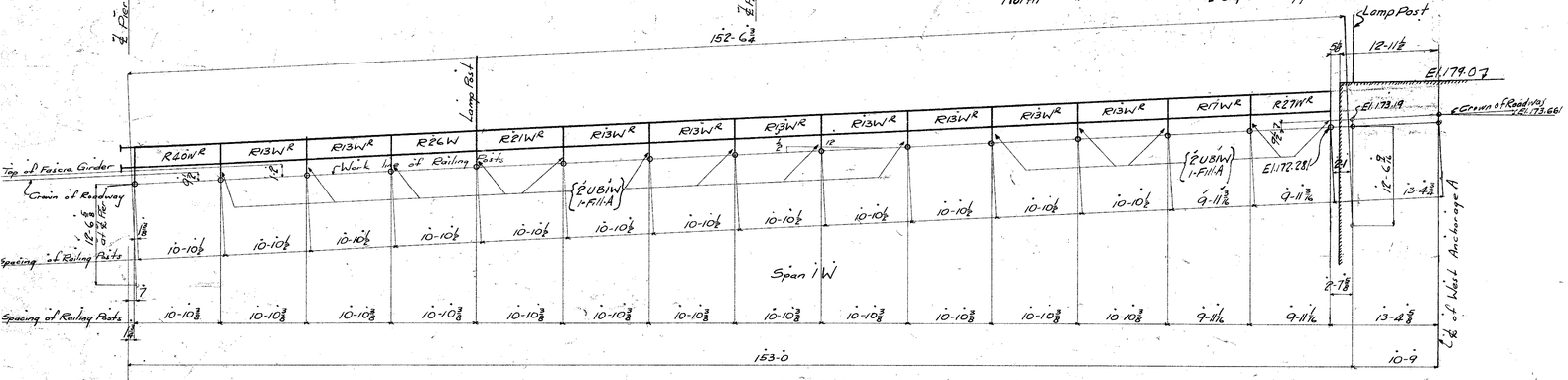
A-2-425



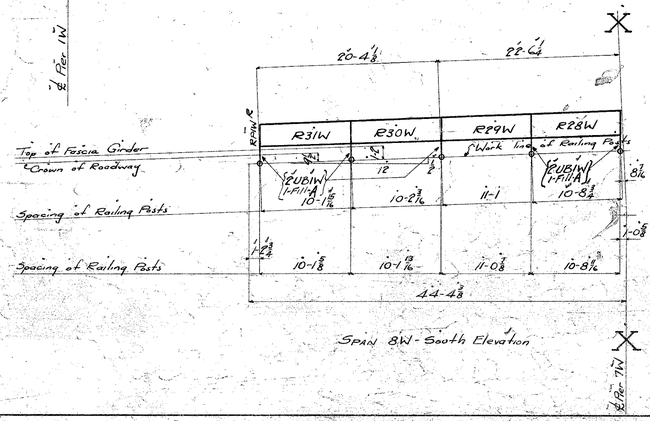
South Elevation of Spans 5-6 & 7W As Shown
North " " " 5-6 & 7W Opp. Hand



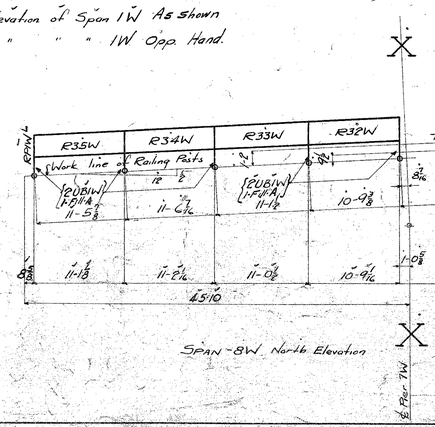
South Elevation of Spans 2-3 & 4W As Shown
North " " " 2-3 & 4W Opp. Hand



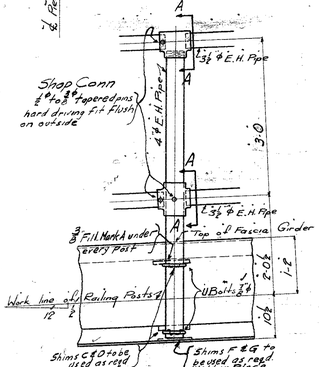
South Elevation of Span 1W As Shown
North " " " 1W Opp. Hand



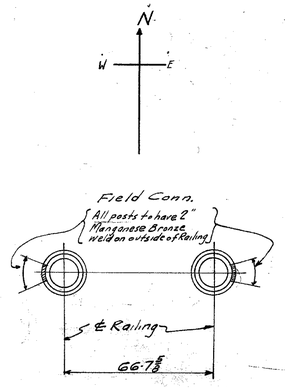
Span 8W - South Elevation



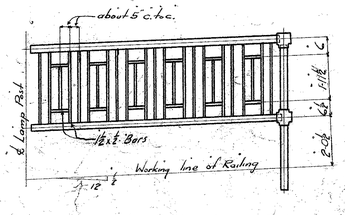
Span 8W - North Elevation



Typical Post Detail



Typical Section "AA"



Typical Railing Detail

ALL SHIPT #1

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER

WEST APPROACH
ERECTION DIAGRAM OF RAILING

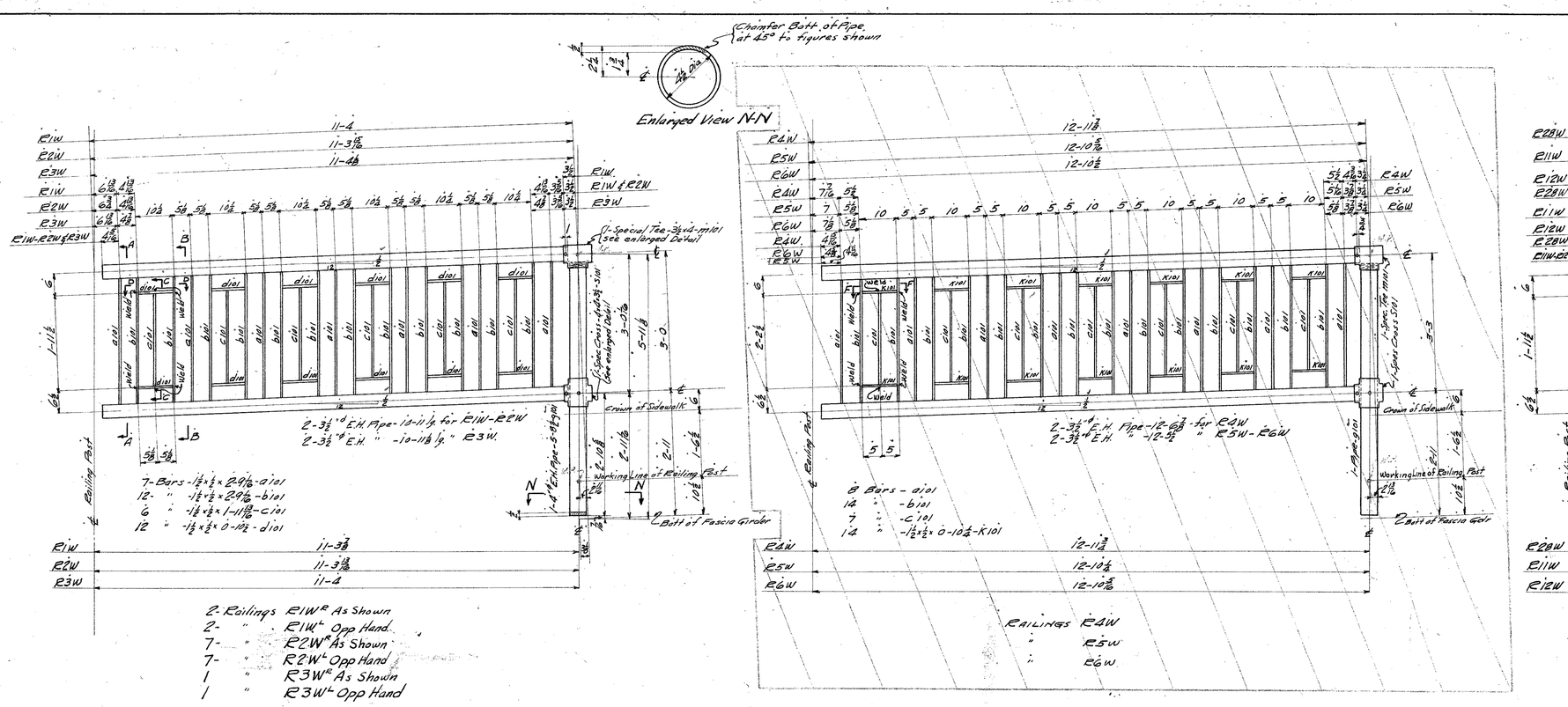
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

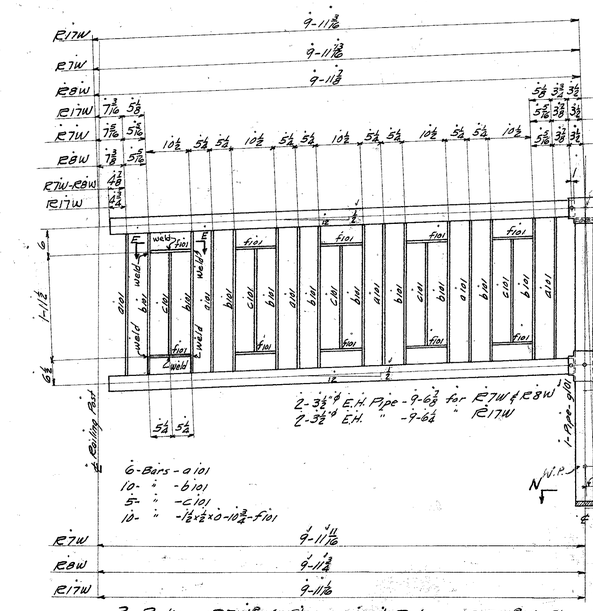
IN CHARGE W^m Sohn
MADE BY C.W.K. DATE
CHECKED BY F.E.A. DATE 2-20-30
TRACED BY J.M. DATE
REVISED DATE
SCALE: INCH = 1 FOOT
LAST ASSEMBLING MARK

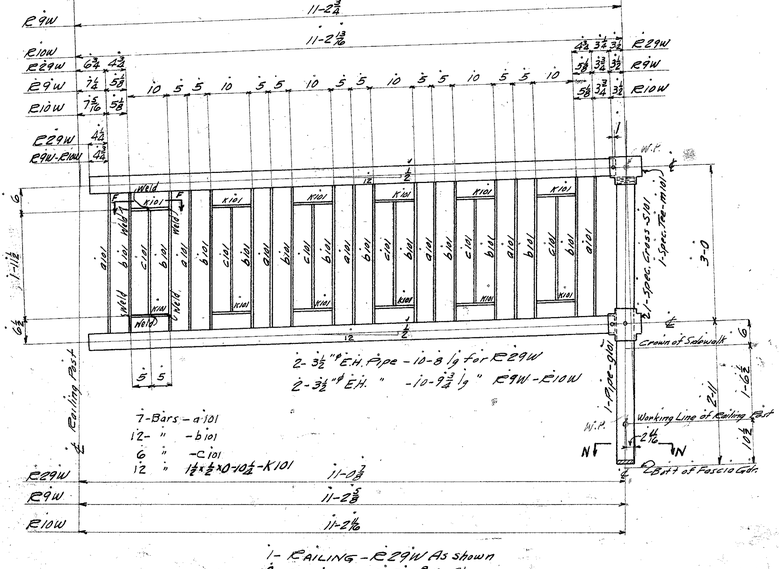
CONT. NO. 5018B SHEET NO. E101

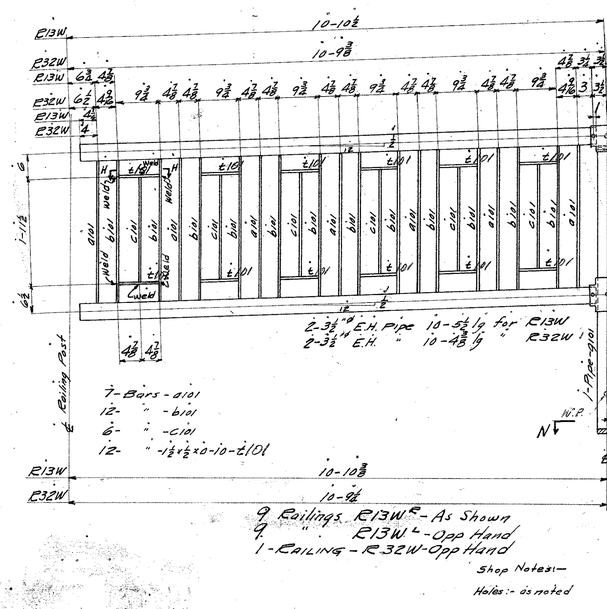
APPROVED 5-15-30
Waddell & Hardesty

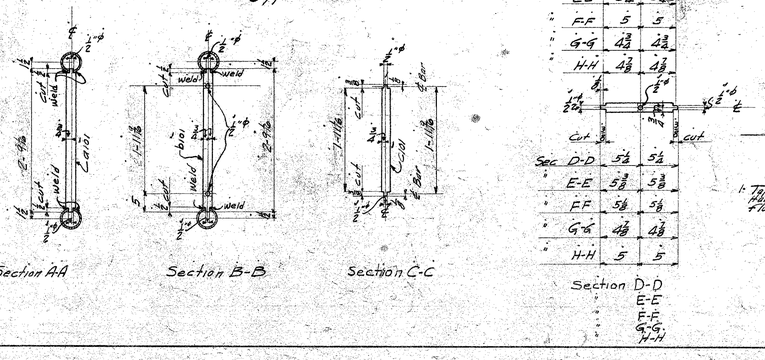
A-2-426

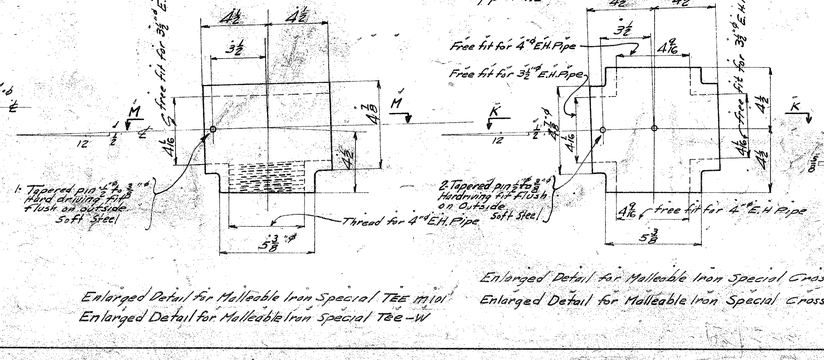


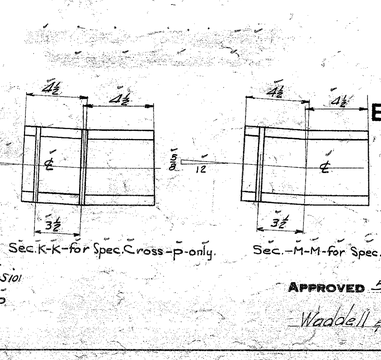












CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

WEST APPROACH

RAILING

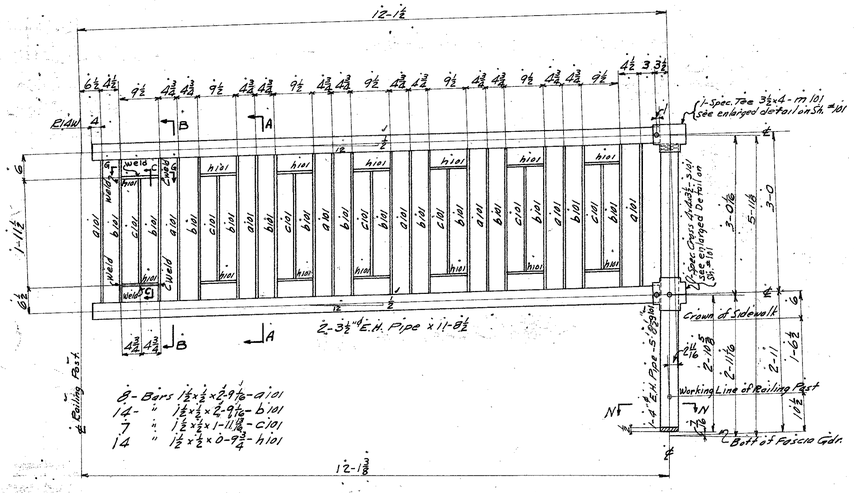
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE W.M.Sen
MADE BY C.W.K. DATE CHECKED BY F.E.H. DATE 3-20-30
TRACED BY E.Z. DATE REVISED DATE
SCALE- INCH = 1 FOOT LAST ASSEMBLING MARK W.

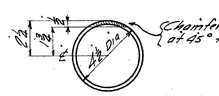
CONT. NO. 50183 SHEET NO. 101

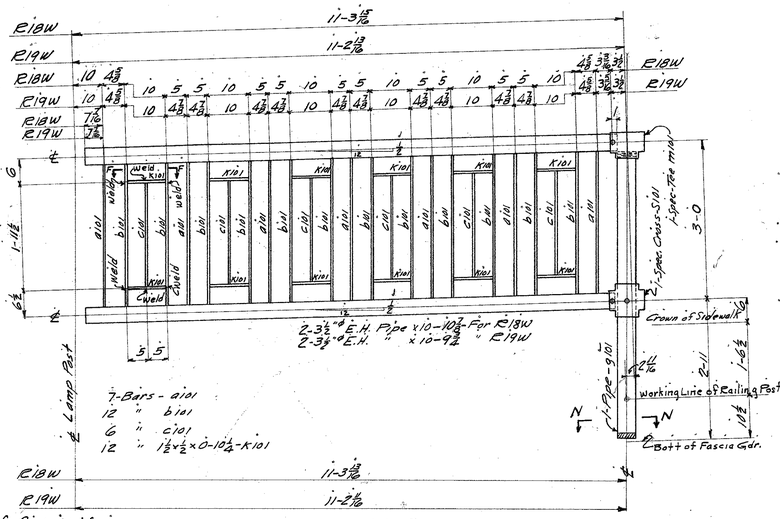
APPROVED 5-15-30
Waddell & Hardesty.

A-2-427

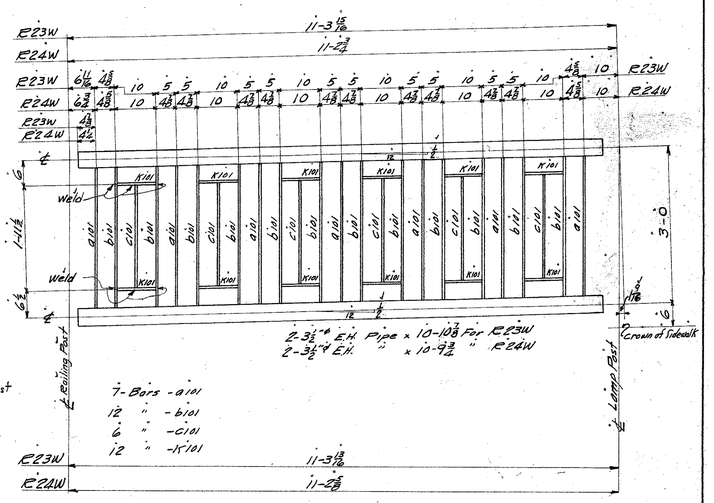


1-Railing R14W^R As Shown
1- " R14W^L Opp Hand

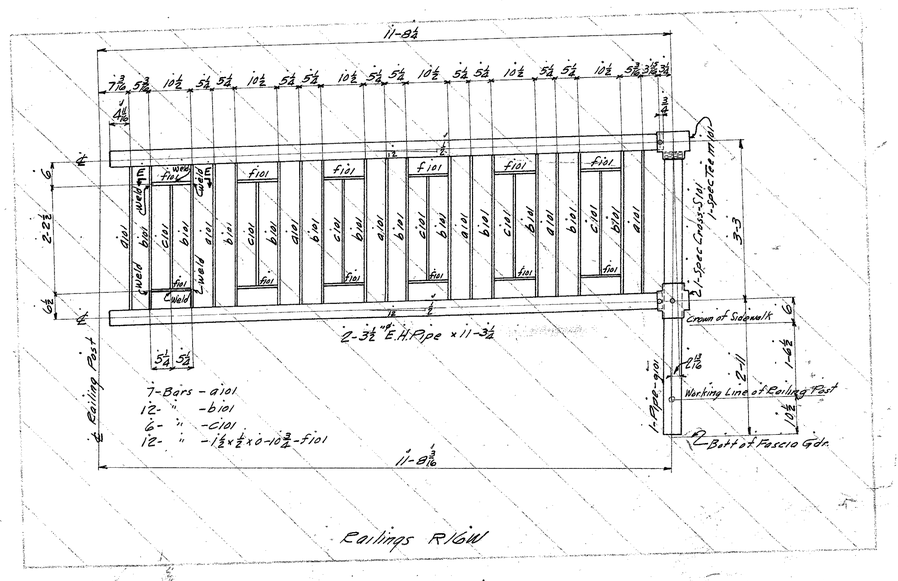




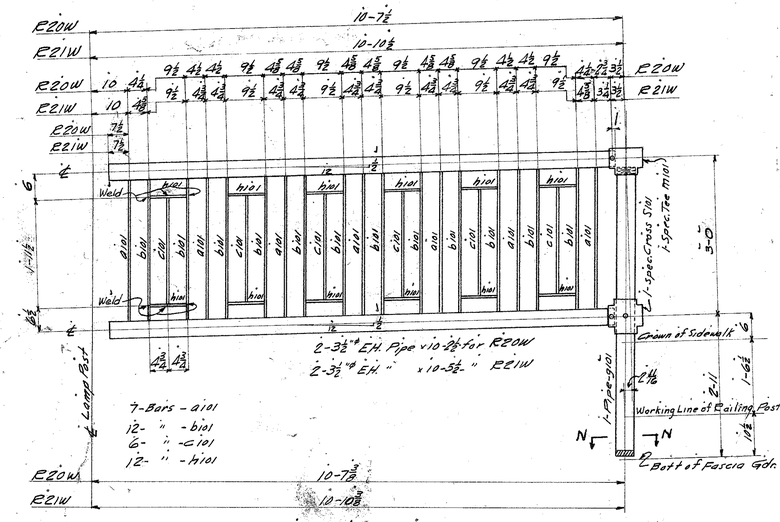
2-Railings R18W^R As Shown.
2- " R18W^L Opp Hand.
1- " R19W^R As Shown.
1- " R19W^L Opp Hand.



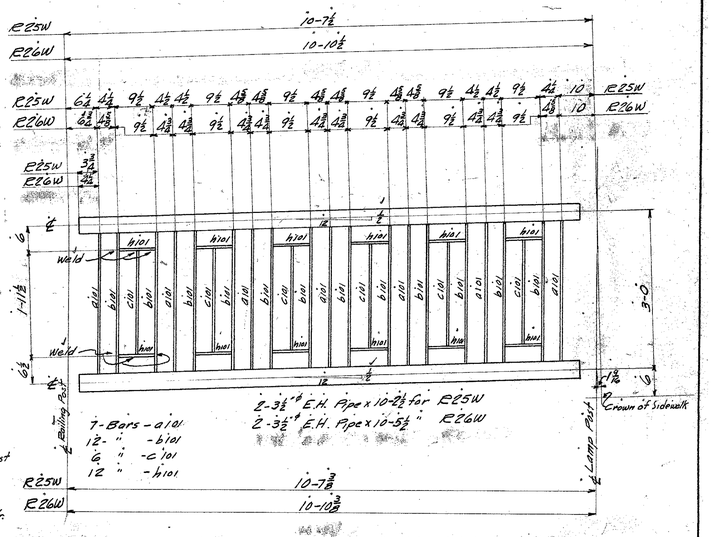
2-Railings R23W
2- " R24W



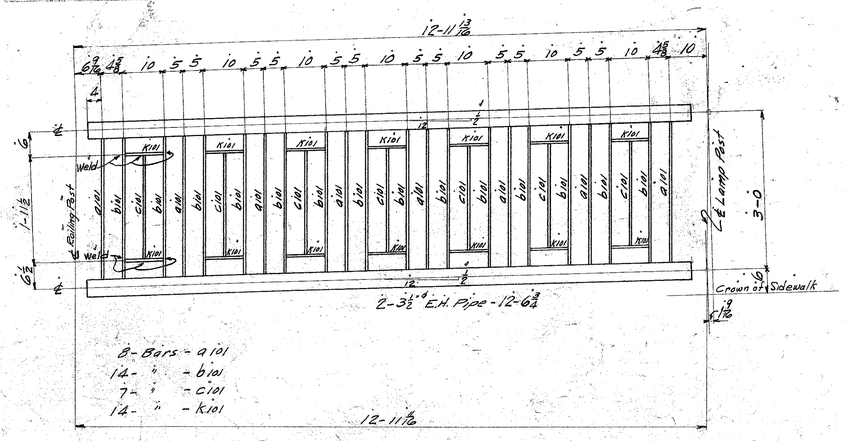
Railings R16W



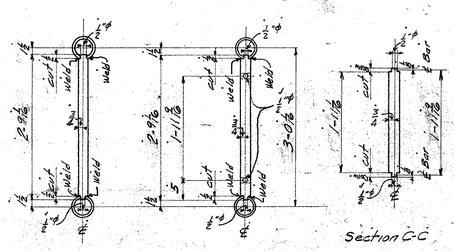
1-Railing R20W^R As Shown
1 " R20W^L Opp Hand
1 " R21W^R As Shown
1 " R21W^L Opp Hand

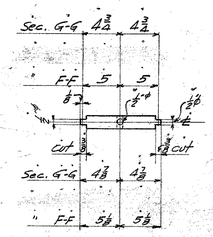


2-Railings R25W
2- " R26W



2-Railings - R22W





Shop Notes:—
Holes as noted

Paint:- One Coat Mountain Varnish & Color Works - Chrome Base Primer #500

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
WEST APPROACH
RAILING

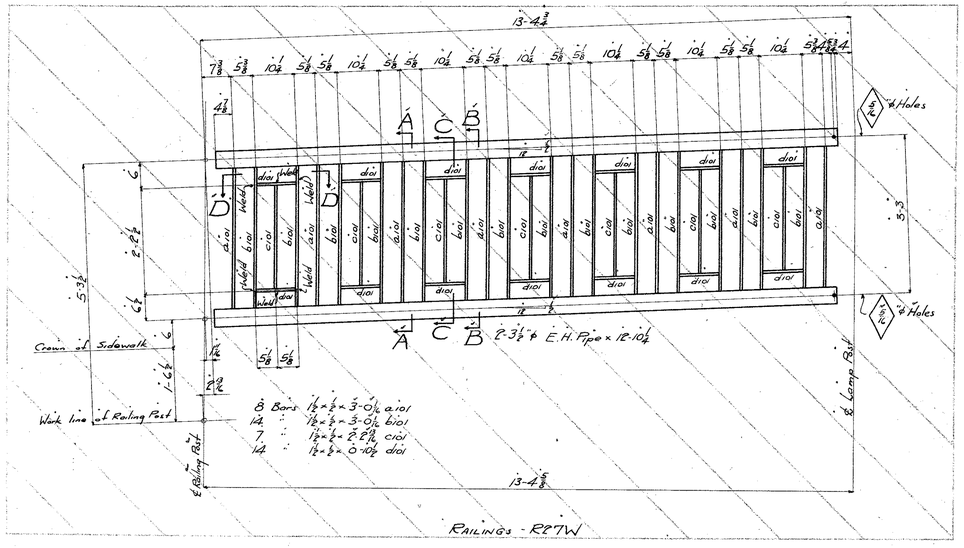
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

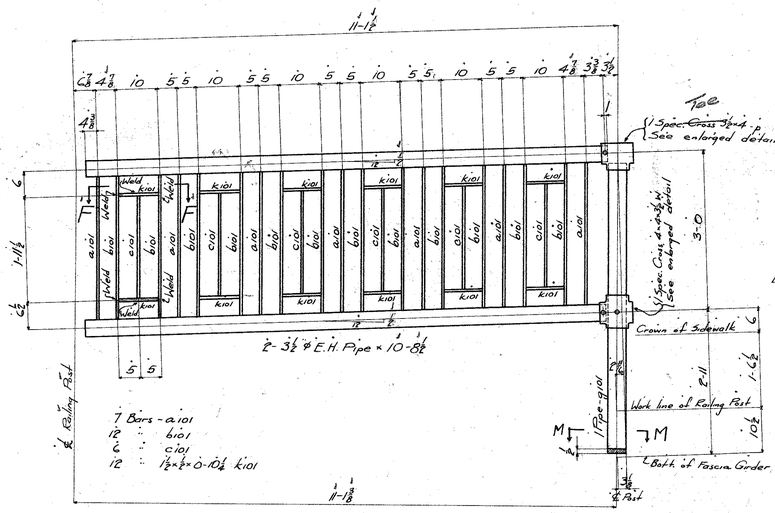
IN CHARGE Wm. Smith
MADE BY C.W.K. DATE
TRACED BY E.Z. DATE
SCALE: INCH = 1 FOOT
CHECKED BY F.B.A. DATE 12/30
REVISED DATE
LAST ASSEMBLING MARK K

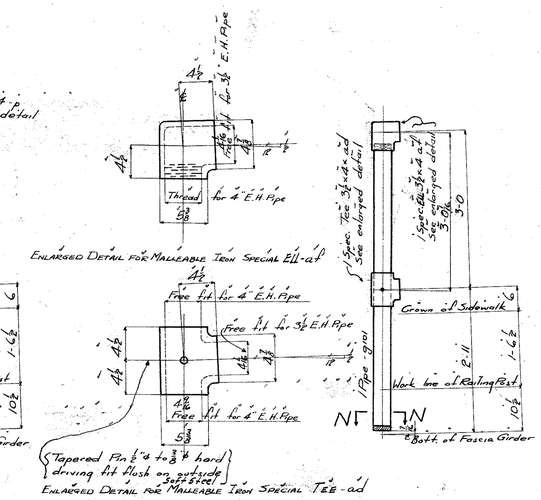
CONT. NO. 5018B SHEET NO. 102

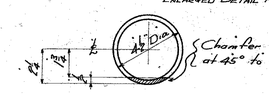
APPROVED 5-15-30
Waddell & Hardesty

A-7-42B

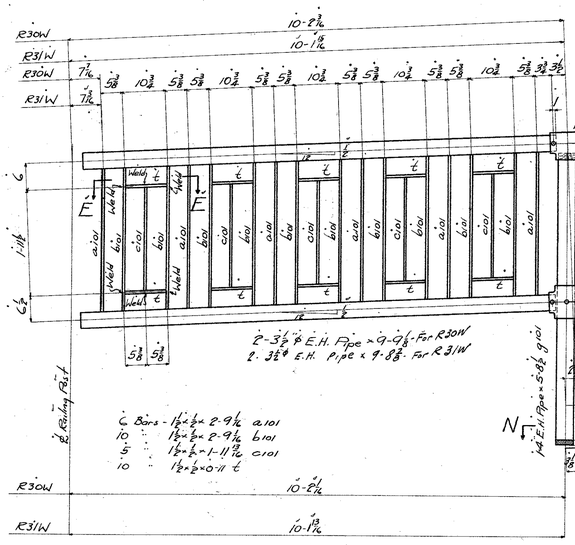


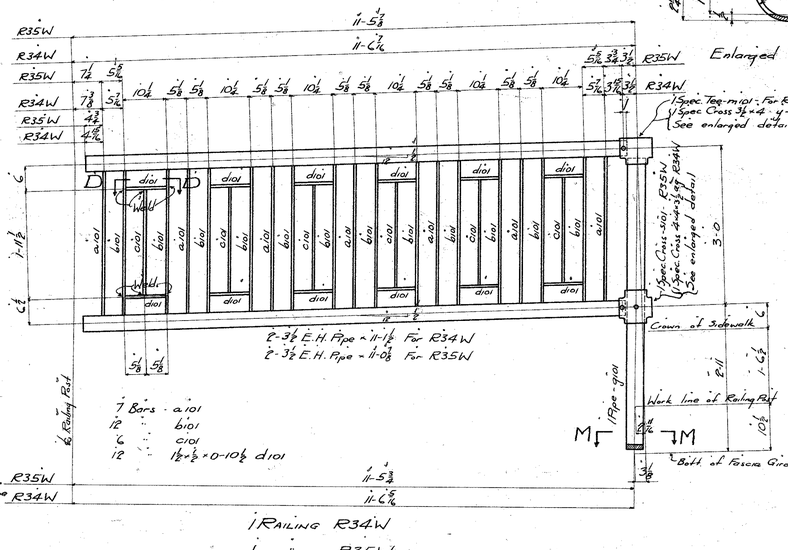


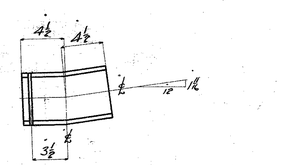


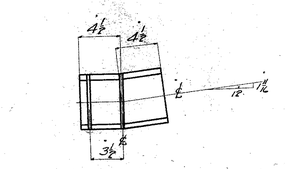


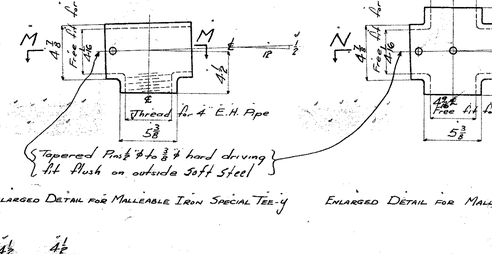
1 RAILING POST RP1W^{R} - AS SHOWN
1 " " RP1W^{L} - OPP. HAND

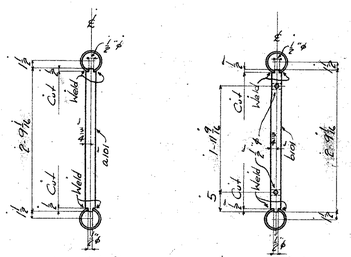


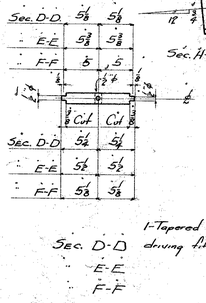


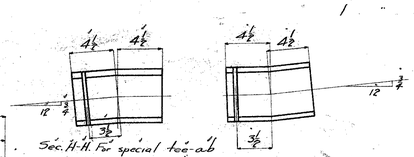


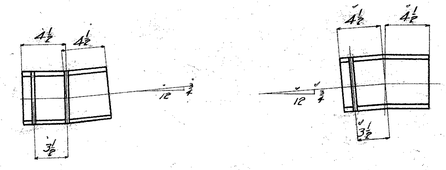


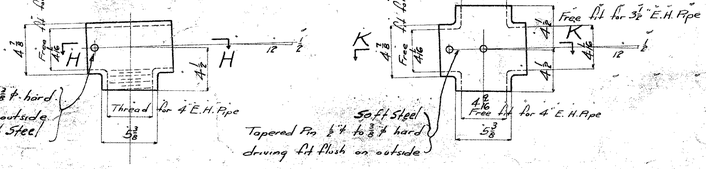












ENLARGED DETAIL FOR MALLEABLE IRON SPECIAL TEE-p
ENLARGED DETAIL FOR MALLEABLE IRON SPECIAL TEE-ab
ENLARGED DETAIL FOR MALLEABLE IRON SPECIAL CROSS-W
ENLARGED DETAIL FOR MALLEABLE IRON SPECIAL CROSS-ag

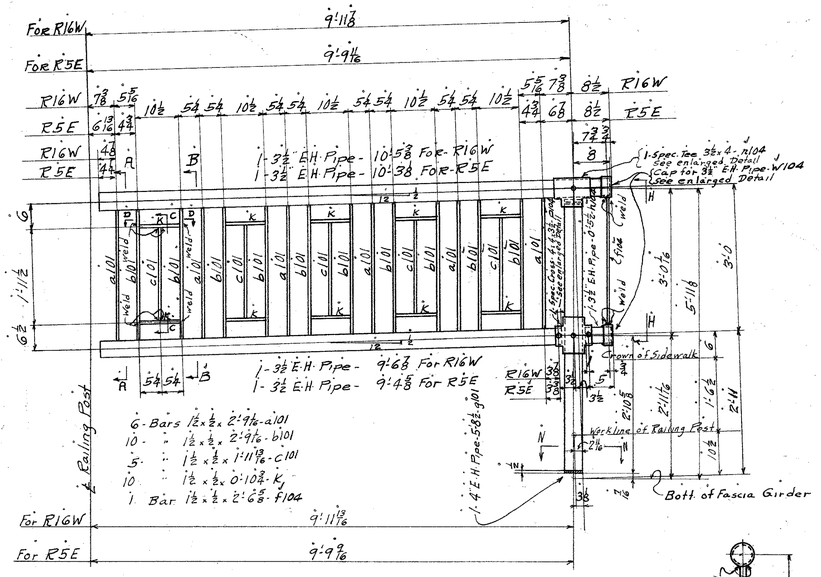
Shop Notes:—
Holes: As noted
Paint: One Coat Mountain Varnish & Color
Works: Chrome Base Primer #500

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
WEST APPROACH RAILING

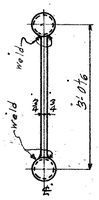
APPROVED 5-15-30
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Watson
MADE BY C.W.K. DATE CHECKED BY F.C.A. DATE 7-7-30
TRACED BY J.M. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK G-7
CONT. NO. 5018B SHEET NO. 103

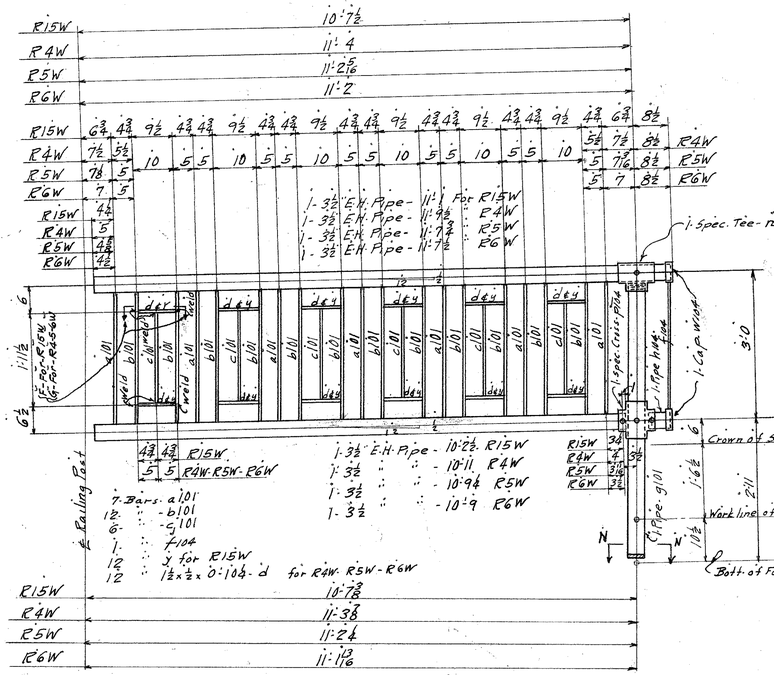
A-2-429



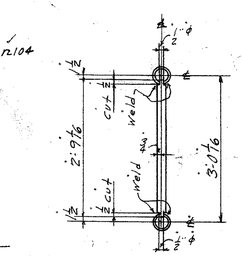
1-Railing R16W^R as shown } Cont. N° 5018B
1- " R16W^L opp hand }
6- Railings R5E^R as shown } Cont. N° 5018C
6- " R5E^L opp hand }



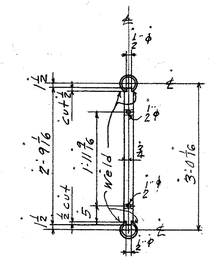
View H-H



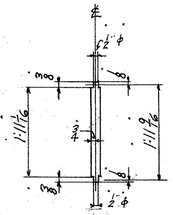
1-Railing R15W^R as shown
1- " R15W^L opp hand
1- " R4W^R as shown
1- " R4W^L opp hand
1- " R5W^R as shown
1- " R5W^L opp hand
1- " R6W^R as shown
1- " R6W^L opp hand
} Cont N° 5018B



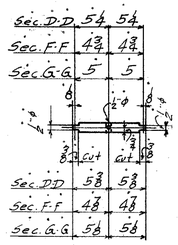
Sec. A-A



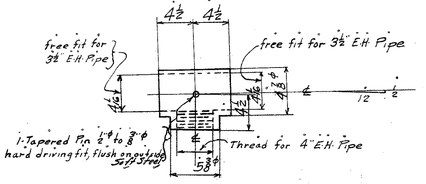
Sec. B-B



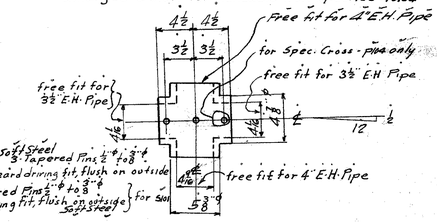
Sec. C-C



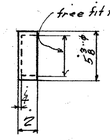
Sec. D-D
F-F
G-G



Enlarged Detail for Malleable Iron Spec. Tee - n104

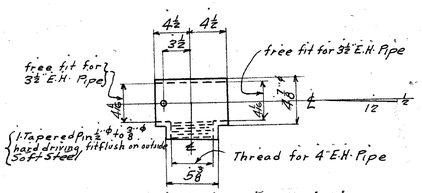


Enlarged Detail for Malleable Iron Spec. Cross - P104

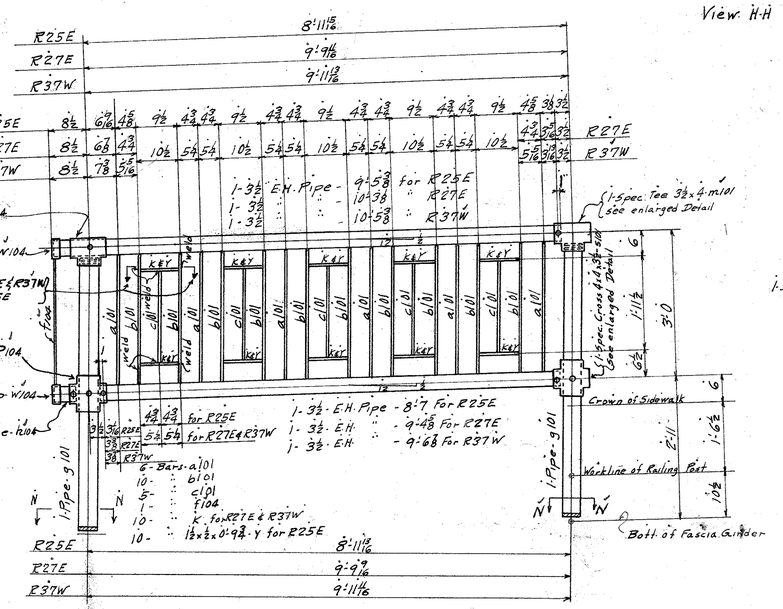


Enlarged Detail for Malleable Iron Spec. Cap - W104

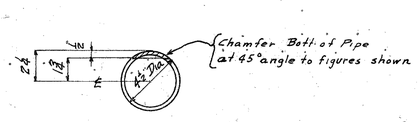
Enlarged Detail for Malleable Iron Spec. Cross - S101



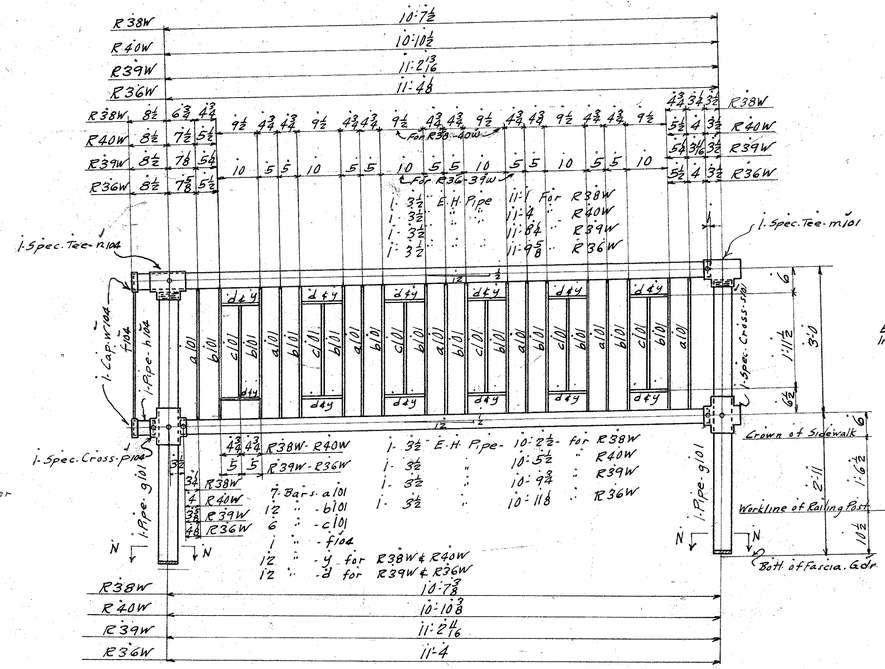
Enlarged Detail for Malleable Iron Spec. Tee - m101



1-Railing R25E as shown
5-Railings R27E^R " "
5-Railings R27E^L opp hand
} Cont. N° 5018C
1-Railing R37W^R as shown
1-Railing R37W^L opp hand
} Cont. N° 5018B



Enlarged View N-N



1-Railing R38W^R as shown
1- " R38W^L opp hand
1- " R40W^R as shown
1- " R40W^L opp hand
1- " R39W^R as shown
1- " R39W^L opp hand
1- " R36W^R as shown
1- " R36W^L opp hand
} Cont. N° 5018B

Shop Notes
Holes - as noted

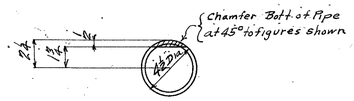
Paint - One coat Mountain Varnish & Color Works
Chrome Base Primer # 500

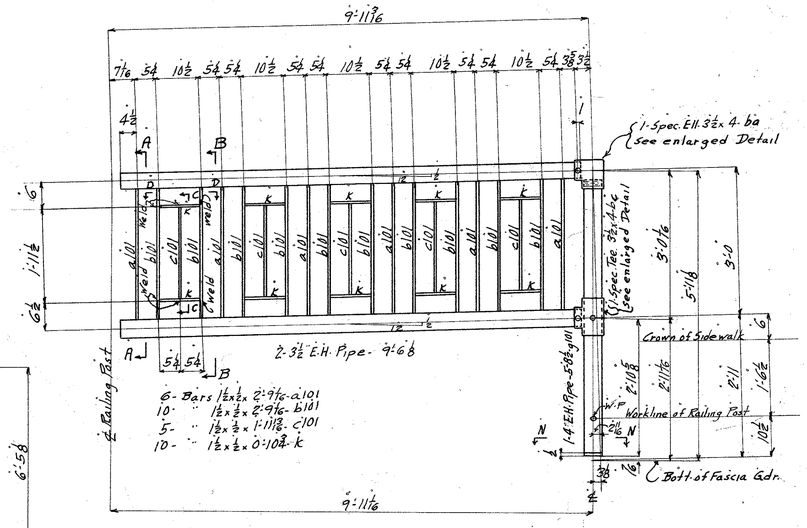
CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
WEST & EAST APPROACH
RAILING

APPROVED 5-15-30
Waddell & Hardesty

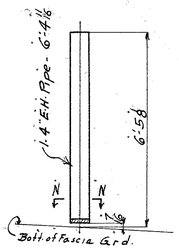
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE Eicher
MADE BY C.W.K. DATE CHECKED BY F.B.A. DATE 5-63
TRACED BY K.J.L. DATE REVISED DATE
SCALE: INCH = 1 FOOT LAST ASSEMBLING MARK Y
CONT. NO. 5018B 5018C SHEET NO. 104

A-2-430

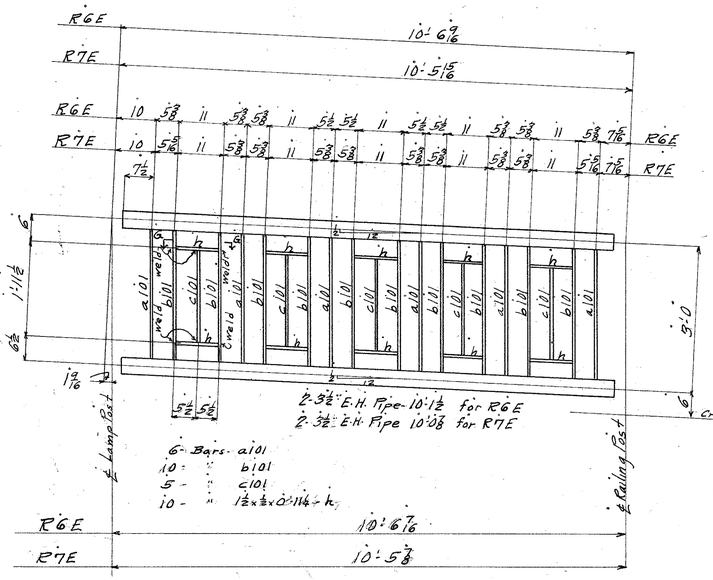




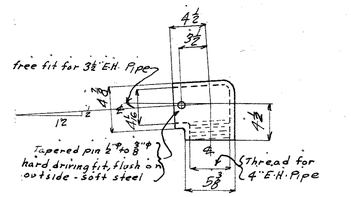
1-Railing R27W^E as shown
1- " R27W^L opp. hand
} Cont. N° 5018B



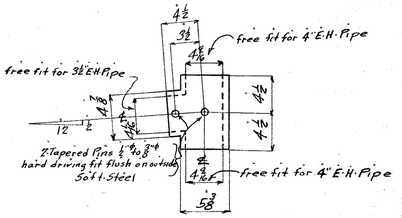
10 Posts. R P2W - Cont. N° 5018B
14 " R P2E - Cont. N° 5018C



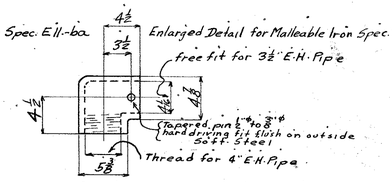
2-Railings - R6E
2- " - R7E
} Cont. N° 5018C



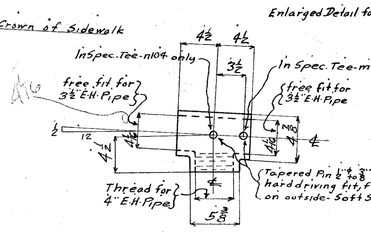
Enlarged Detail for Malleable Iron Spec. E11.-ba.



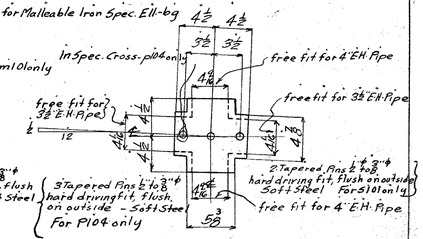
Enlarged Detail for Malleable Iron Spec. Tee - bc



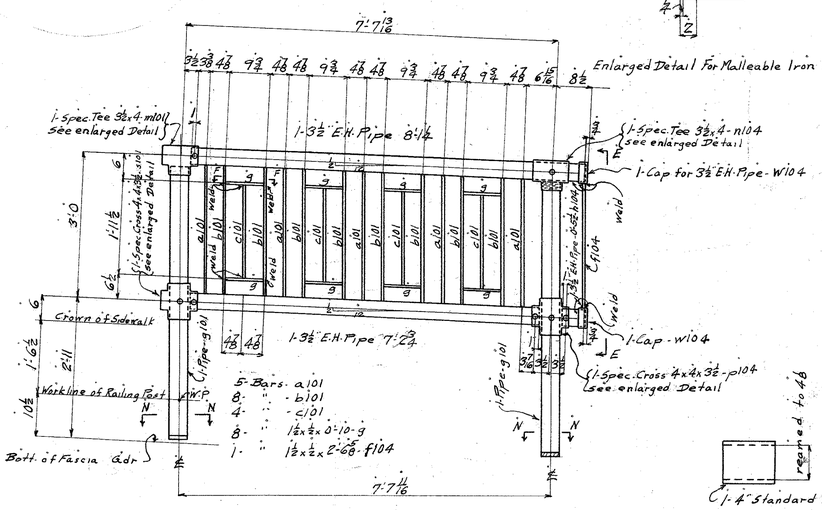
Enlarged Detail for Malleable Iron Spec. E11-bg



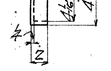
Enlarged Detail for Malleable Iron Spec. Tee - m101
Enlarged Detail for Malleable Iron Spec. Tee - n104



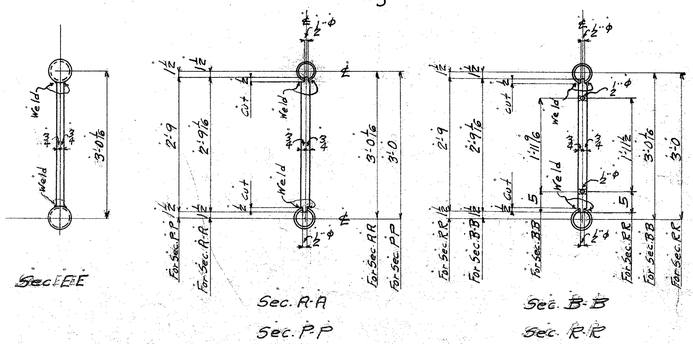
Enlarged Detail for Malleable Iron Spec. Cross - p104
Enlarged Detail for Malleable Iron Spec. Cross - s101

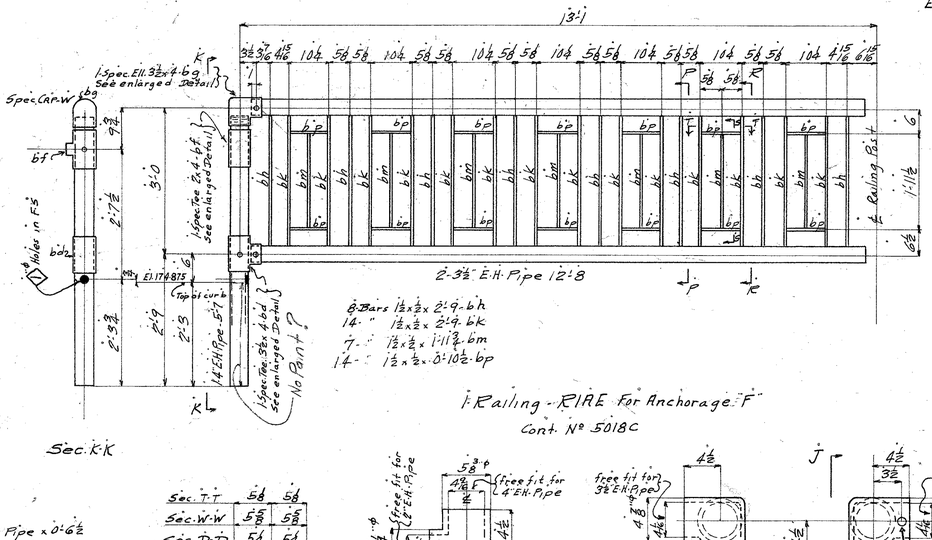


Enlarged Detail for Malleable Iron Spec. Cap. W



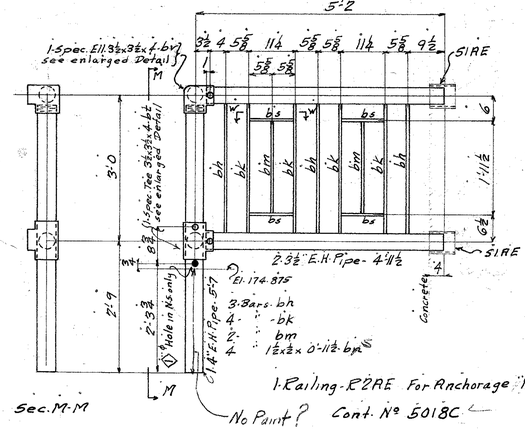
1-Railing R9E - Cont. N° 5018C





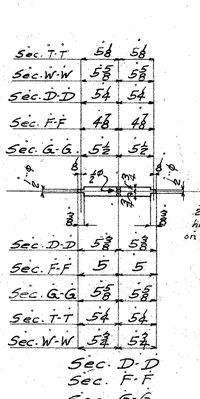
1-Railing - R1RE For Anchorage "F"
Cont. N° 5018C

Sec. K-K

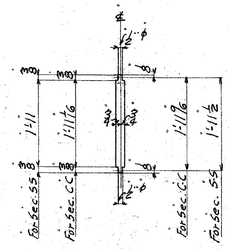


1-Railing - R2RE For Anchorage "F"
Cont. N° 5018C

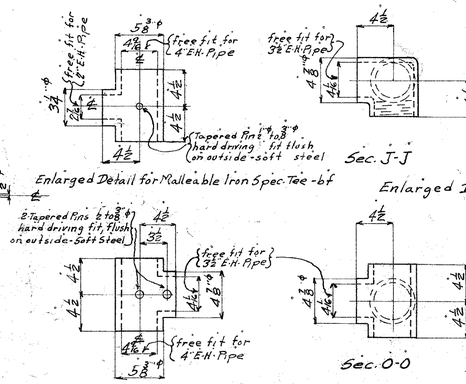
Sec. M-M



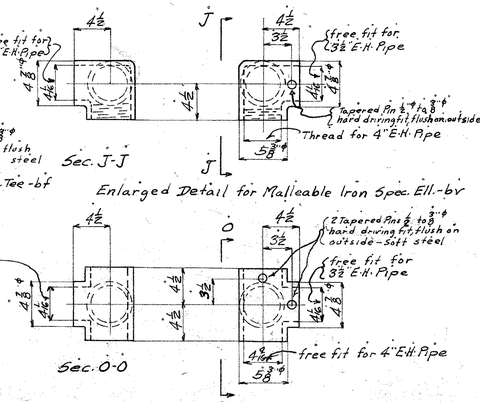
2-Sleeves - SIRE
Cont. 5018C



Sec. C-C
Sec. S-S



Enlarged Detail for Malleable Iron Spec. Tee - bf
Enlarged Detail for Malleable Iron Spec. Tee - bd



Enlarged Detail for Malleable Iron Spec. E11.-bv
Enlarged Detail for Malleable Iron Spec. Tee - bt

Shop Notes
Holes - as noted

Paint: One coat Mountain Varnish &
Color Works - Chrome Base Primer #500

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER
WEST-EAST APPROACH & ANCHORAGE "F"
Railing

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

IN CHARGE Eicher			
MADE BY C.W.K	DATE	CHECKED BY F.E.A.	DATE 5-7-30
TRACED BY S.T.	DATE 8/21/1930		DATE
SCALE-	INCH = 1 FOOT	LAST ASSEMBLING MARK bv	

CONT. NO. 5018B 5018C SHEET NO. 105

APPROVED 5-15-30
Waddell & Hardesty

A-2-431

SOUTH ELEVATION OF SPANS 2-3E & 4E-As Shown
NORTH " " " " 2-3E & 4E-Opp Hand

SOUTH ELEVATION OF SPANS-5-6E & 7E-As Shown
NORTH " " " -5-6E & 7E-Opp Hand

SOUTH ELEVATION OF SPANS-8 to 13E INC. As Shown
NORTH " " " -8 to 13E INC. Opp Hand

SOUTH ELEVATION OF SPANS 12E & 13E As Shown
NORTH " " " " 12E & 13E Opp Hand

Section BB

NORTH ELEVATION OF SPAN 1E

SOUTH ELEVATION OF SPAN 1E

Typical Section AA

TYPICAL POST DETAIL

ALL SHIPT #2

CITY OF TOLEDO, OHIO

BRIDGE OVER MAUMEE RIVER

EAST APPROACH
ERECTION DIAGRAM OF RAILING

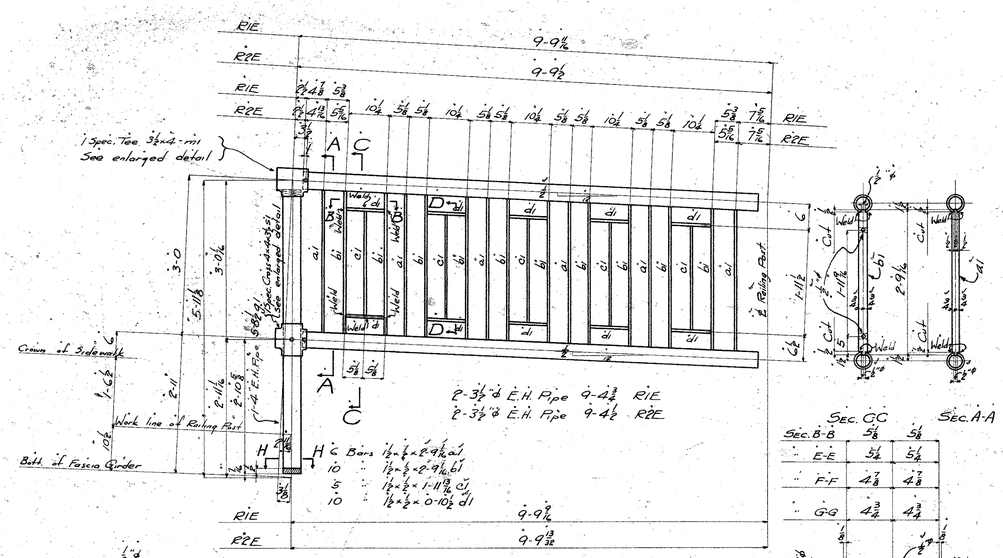
McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

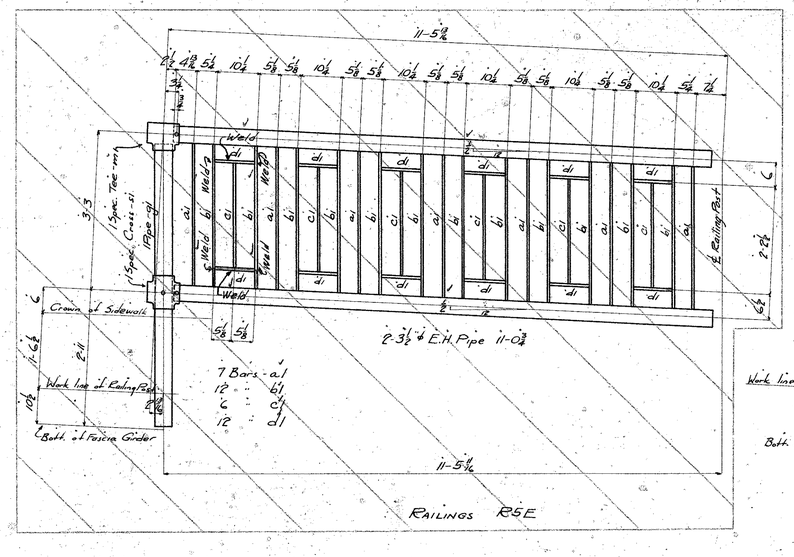
IN CHARGE Wilson
MADE BY C.K. DATE CHECKED BY F.B.A. DATE 7-30
TRACED BY J.M. DATE REVISED DATE
SCALE- INCH = 1 FOOT LAST ASSEMBLING MARK

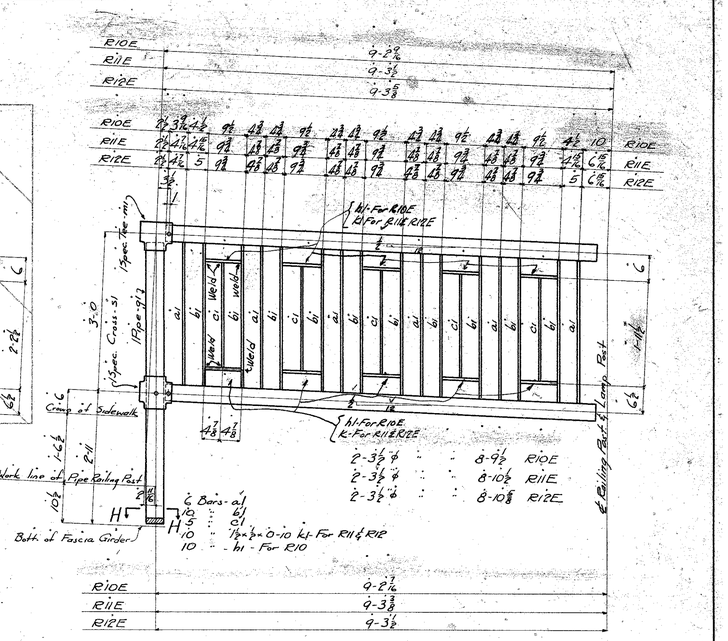
CONT. NO. 5018C SHEET NO. E1

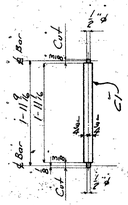
APPROVED 5-15-30
Waddell & Hardesty

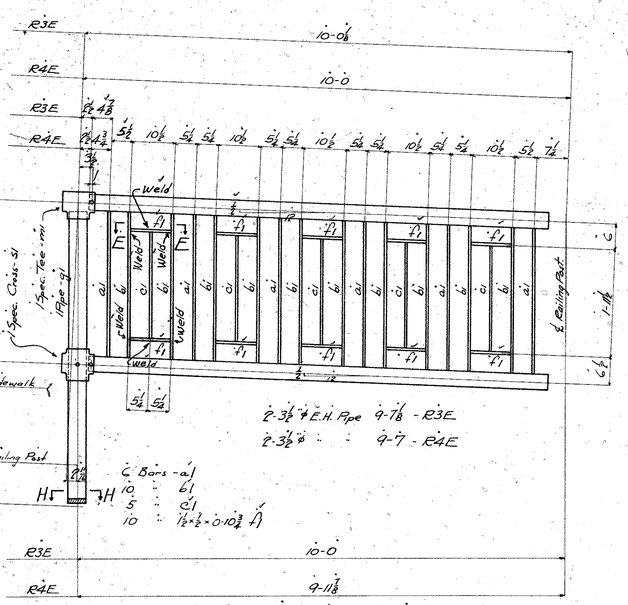
A-2-432

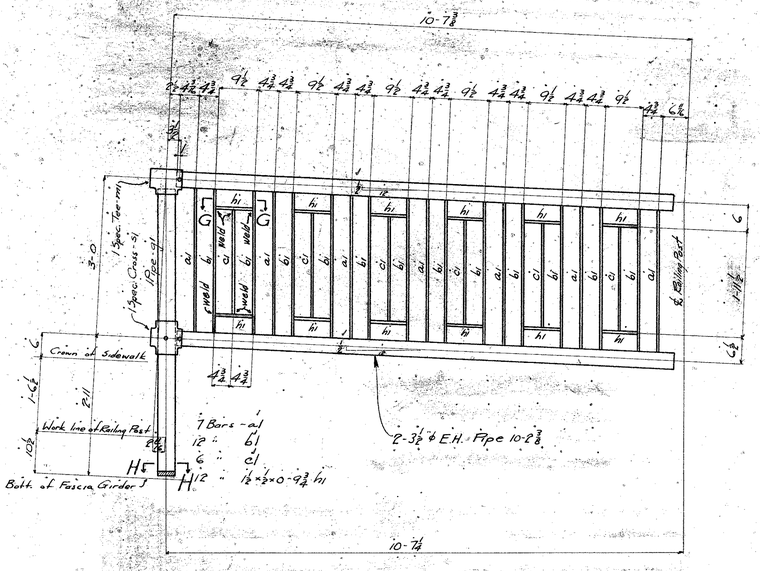


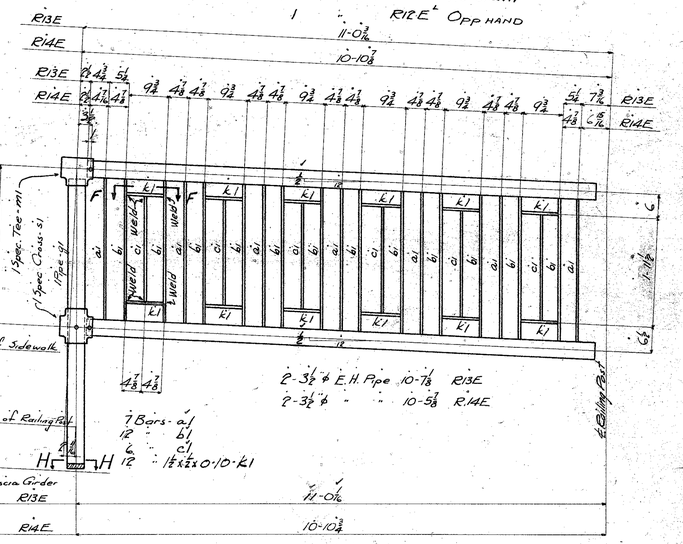


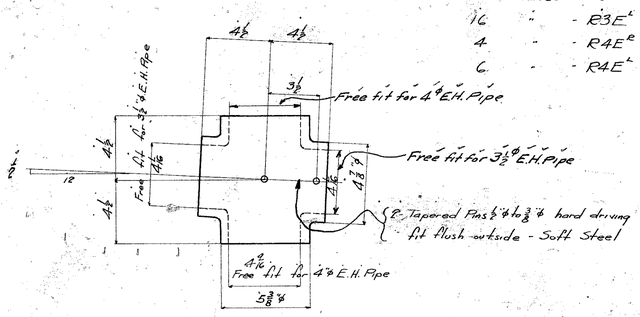


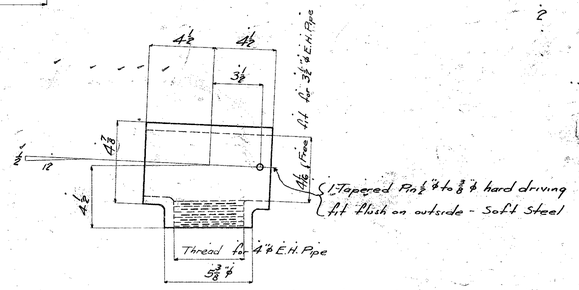












CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER

EAST APPROACH RAILING

Shop Notes.
Holes-as noted

Paint: One coat Mountain Varnish & color Works-Chrome Base Primer #500

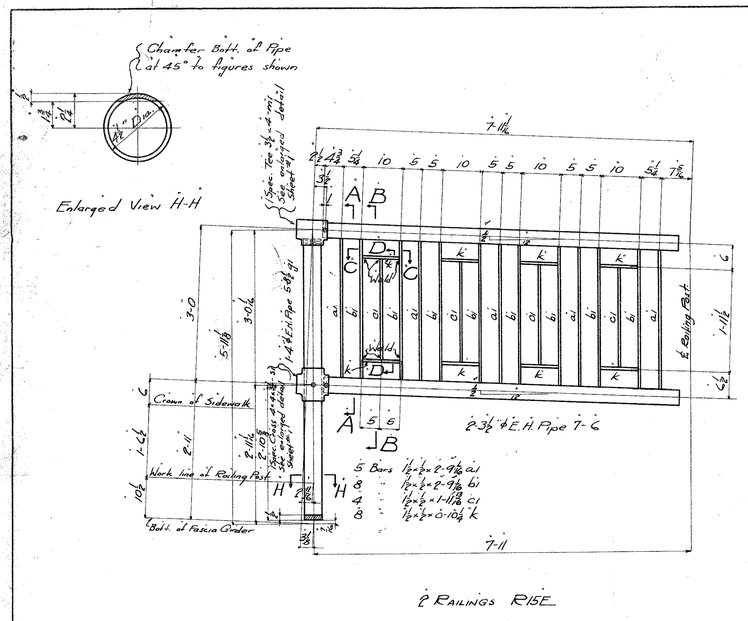
APPROVED 5-15-30
Waddell & Hardesty

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.

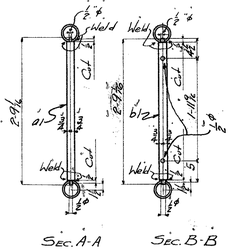
IN CHARGE W.M. Son			
MADE BY C.W.K.	DATE	CHECKED BY F.B.A.	DATE 4-23-30
TRACED BY J.M.	DATE	REVISED	DATE
SCALE:	INCH = 1 FOOT	LAST ASSEMBLING MARK M1	

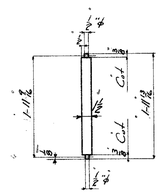
CONT. NO. 5018C SHEET NO. 1

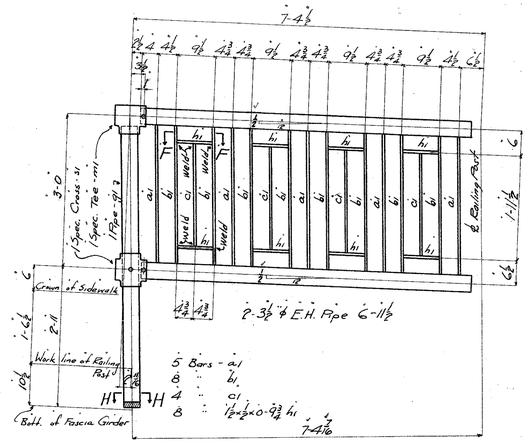
A-2-433



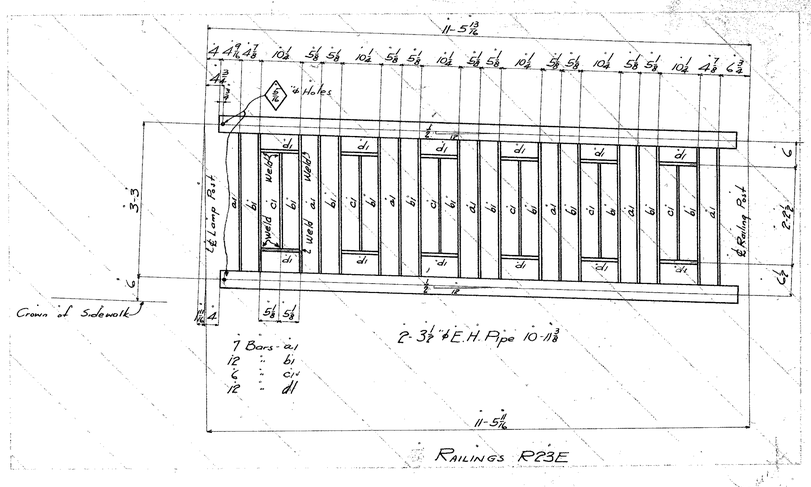
2 RAILINGS R15E



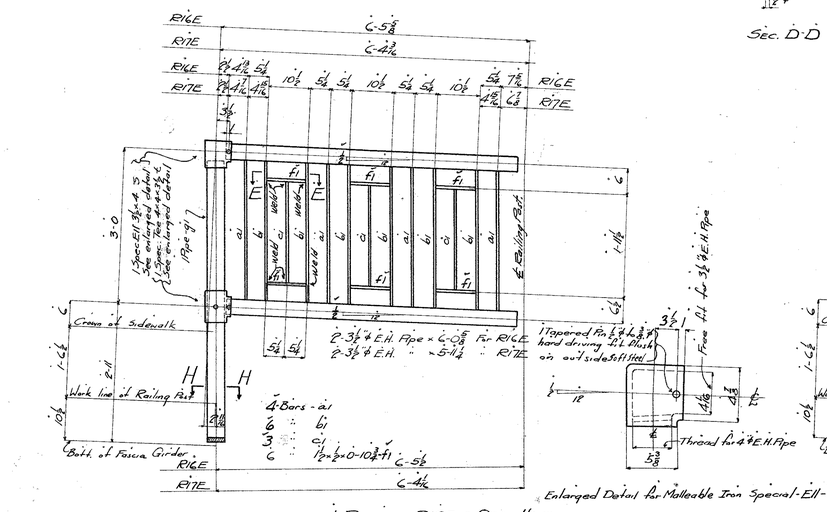




2 RAILINGS R18E

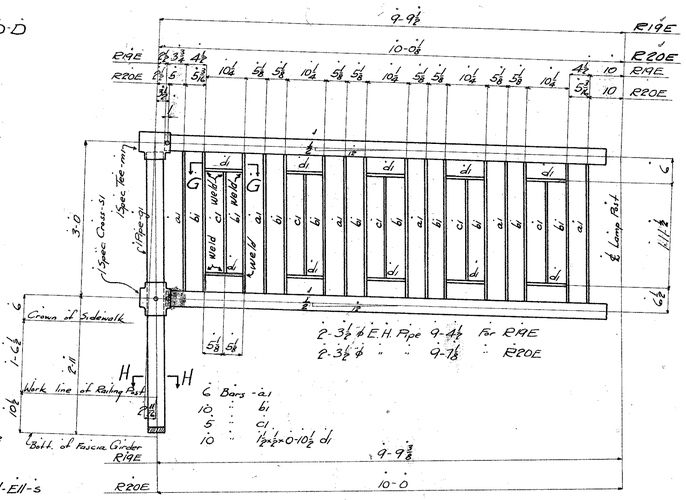


RAILINGS R23E

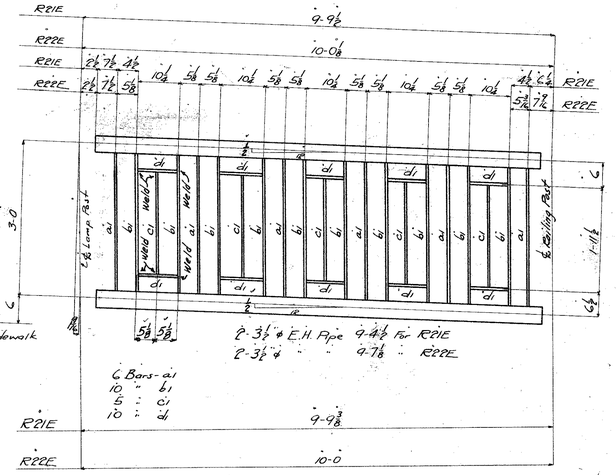


Enlarged Detail for Malleable Iron Special Ell-s

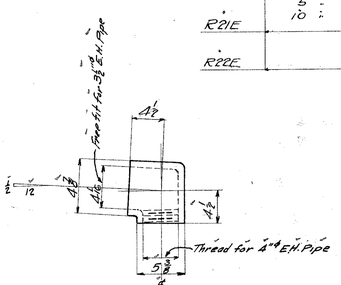
1 RAILING R16E - OPP. HAND
1 " R17E - AS SHOWN



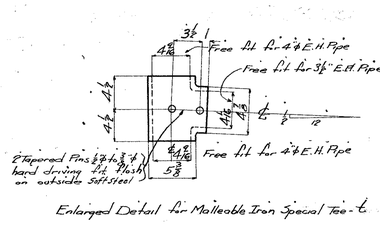
5 RAILINGS R19E^R AS SHOWN
5 " R19E^L OPP. HAND
1 " R20E^R AS SHOWN
1 " R20E^L OPP. HAND



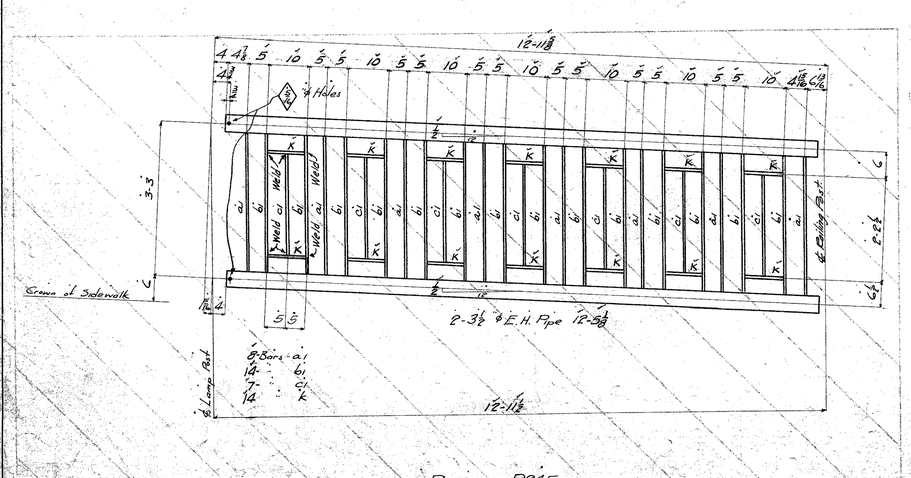
3 RAILINGS R21E
2 " R22E



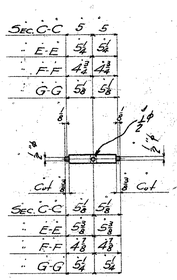
Enlarged Detail for Malleable Iron Special Ell-p



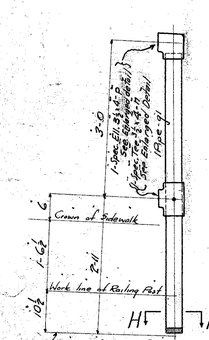
Enlarged Detail for Malleable Iron Special Tee-t



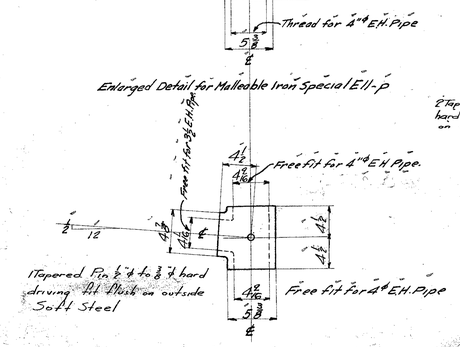
RAILINGS R24E



Sec. C-C
E-E
F-F
G-G



1 RAILING POST R21E^R AS SHOWN
1 " " R21E^L OPP. HAND



Enlarged Detail for Malleable Iron Special Tee-n

Shop Notes.
Holes as noted

Paint: One coat of Mountain Varnish Color Works-Chrome Base Primer #500

APPROVED 5-15-30
Woodell & Hardesty

CITY OF TOLEDO, OHIO
BRIDGE OVER MAUMEE RIVER

EAST APPROACH
RAILING

McCLINTIC-MARSHALL CONST. CO.
PITTSBURGH, PA.
IN CHARGE W.L.Olson DATE
MADE BY CWK DATE CHECKED BY F.B.H. DATE 6-1930
TRACED BY JM DATE REVISED DATE
SCALE: HIGH - 1 FOOT LAST ASSEMBLING MARK
CONT. NO. 5018C SHEET NO. 2

A-2-434