C-20 1B 14

W. LINE

E. LINE

N

SIDE TRACK

MAIN TRACK

℄ BRIDGE

1"ø BARS @ 5 CTS.

1"ø BARS

ELEVATION OF RAILING

EARTH FILL

1"ø BARS @ 7½ CTS.

1"ø BARS @ 5 CTS.

SYMMETRICAL ABT.

SECTION III-III.

W.L. SLOPE

E. WING WALL

W WING WALL

℄ SLOPE

1"ø BARS SPACED AS SHOWN IN SEC. III-III. ALTERNATE BARS BENT AS SHOWN

¾"ø BARS SPACED AS SHOWN

E.L. SLOPE

W. WING WALL

SECTION I-I

12-1"ø BARS

SECTION OF COL.

SECTION IV-IV.

12-1"ø BARS - 6 BARS BENT AS SHOWN

SECTION II-II.

GROUND LINE

S. ABUTMENT (DEVELOPMENT)

N. ABUTMENT (DEVELOPMENT)

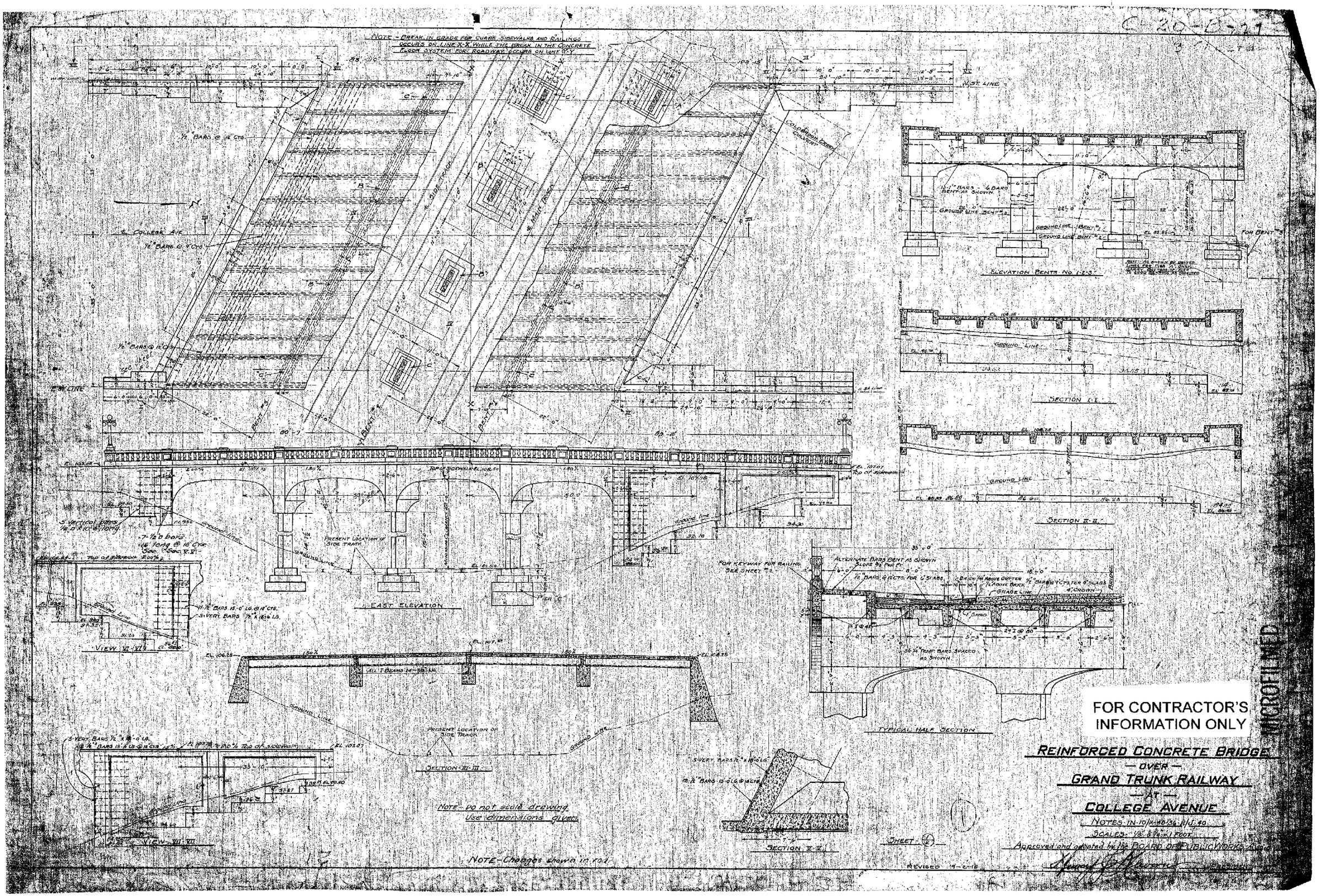
BENT "A"

BENT "B"

FOR CONTRACTOR'S INFORMATION ONLY

PROPOSED BRIDGE
AT COLLEGE AVENUE
OVER GRAND TRUNK RY.
DESIGN A-1 REINFORCED CONCRETE
OFFICE OF CITY ENGINEER
APRIL 6, 1915. GRAND RAPIDS MICH.
SCALE ⅛" AND ¼"=1'-0"

MICROFILMED


NOTE - BREAK IN GRADE FOR CURBS, SIDEWALKS AND RAILINGS OCCURS ON LINE X-X WHILE THE BREAK IN THE CONCRETE FLOOR SYSTEM FOR ROADWAY OCCURS ON LINE Y-Y
EAST ELEVATION
VIEW VI-VI
SECTION III-III
VIEW VII-VII
SECTION V-V
TYPICAL HALF SECTION
ELEVATION BENTS NO 1-2-3
SECTION I-I
SECTION II-II
NOTE - Do not scale drawing. Use dimensions given.
NOTE - Changes shown in red.
FOR CONTRACTOR'S INFORMATION ONLY
REINFORCED CONCRETE BRIDGE
— OVER —
GRAND TRUNK RAILWAY
— AT —
COLLEGE AVENUE
NOTES IN 10/X-40-36-11/J-40
SCALES 1/8" & 1/4" = 1 FOOT
Approved and adopted by the BOARD OF PUBLIC WORKS
MICROFILMED

C-20-B-41

B. Sheet 1

Build new sidewalks as directed.

100'

Build new sidewalks as directed

G.R. basins

33" Storm

Relay cobble as directed
Screened gravel as directed

Clean and fill.

Clean and fill

G.R. basins

Relay cobble as directed

Screened gravel as directed

IMPROVEMENT PLAN
SCALE: 1" = 20'

Grade balance of street as directed to meet original grade at Station 18.

Grade balance of street as directed to meet original grade at 32+25.

2.00%

104.41

106.28 107.25 150'/o 108.00 107.20 150'/o 106.53 107.25

103.09

33" Storm
12" Sanitary
7.00%

36" abutment of

℄ of bridge

N abutment of

HOR SCALE: 1" = 20'
VER SCALE: 1" = 10'

CENTER PROFILE
BASE 40

21 22 23 24 25 26 27 28 29 30

TYPICAL HALF SECTION 36' BITUMINOUS GRAVEL ROADWAY

15' 15'

6' Slope ⅜ per foot

Brick ½ above gutter
⅛" ½ above brick
Grade line

4" Crown

℄ of Road

Furnish soil as directed

6" Sand

CARRY BASE OF WALL TO GOOD BEARING AS DIRECTED

SECTION A-A

EL. 107.42
EL. 106.55

WIDTH = ¾ H

NOTE: THIS CHANGE ADOPTED BY THE BOARD OF PUBLIC WORKS, OCT 19, 1915

SECTIONAL PLAN AT S.E. CORNER OF BRIDGE
SCALE ¼" = 1'-0"

4-⅞" BARS - 2'-3" LG.
1-¼" BARS - 18' LG.

TAR PAPER JOINT

FOUNDATION BOLTS FOR LIGHT POST

12'-5"

2/3 8 EQUAL SPACES @ 13.3 = 8'-10.4" 2/3

2-⅞" BARS - 10'-6" LG.

PLACE 3" GAS PIPE AS DIRECTED

2-⅞" BARS 10'-6" LONG

DETAIL OF RAILING
SCALE 1" = 1'-0"

13-1" bars

12-⅞" bars 28'-0" Lg.

20-¾" bars @ 12" Ctrs

Maximum Clearance 22'-0"

18-½" hor. bars Spaced 2'-3"

Elev. 82.50'

Pier B.

SECTION OF COLUMN

SECTION IV-IV.

FOR 15" I
FOR 12" I

EXPANDED METAL 27 GAUGE ½" WIDE

FOR 24" I
FOR 15" I

FOR 24" I
FOR 15" I

DETAIL FOR CONCRETE AROUND I BEAMS
SCALE 1½" = 1'-0"

TOP OF SIDEWALK
EL. 106.28

SECTION OF ABUTMENT AT SIDEWALK

TOP OF SIDEWALK
EL. 106.28

SECTION OF TOP OF WING WALLS

(IV)

SHEET 2/4

REVISED 10-20-15
7-2-15

FOR CONTRACTOR'S INFORMATION ONLY

MICROFILMED

REINFORCED CONCRETE BRIDGE
— OVER —
GRAND TRUNK RAILWAY
— AT —
COLLEGE AVENUE

NOTES - IN: 10/X-40-34-11/J-40

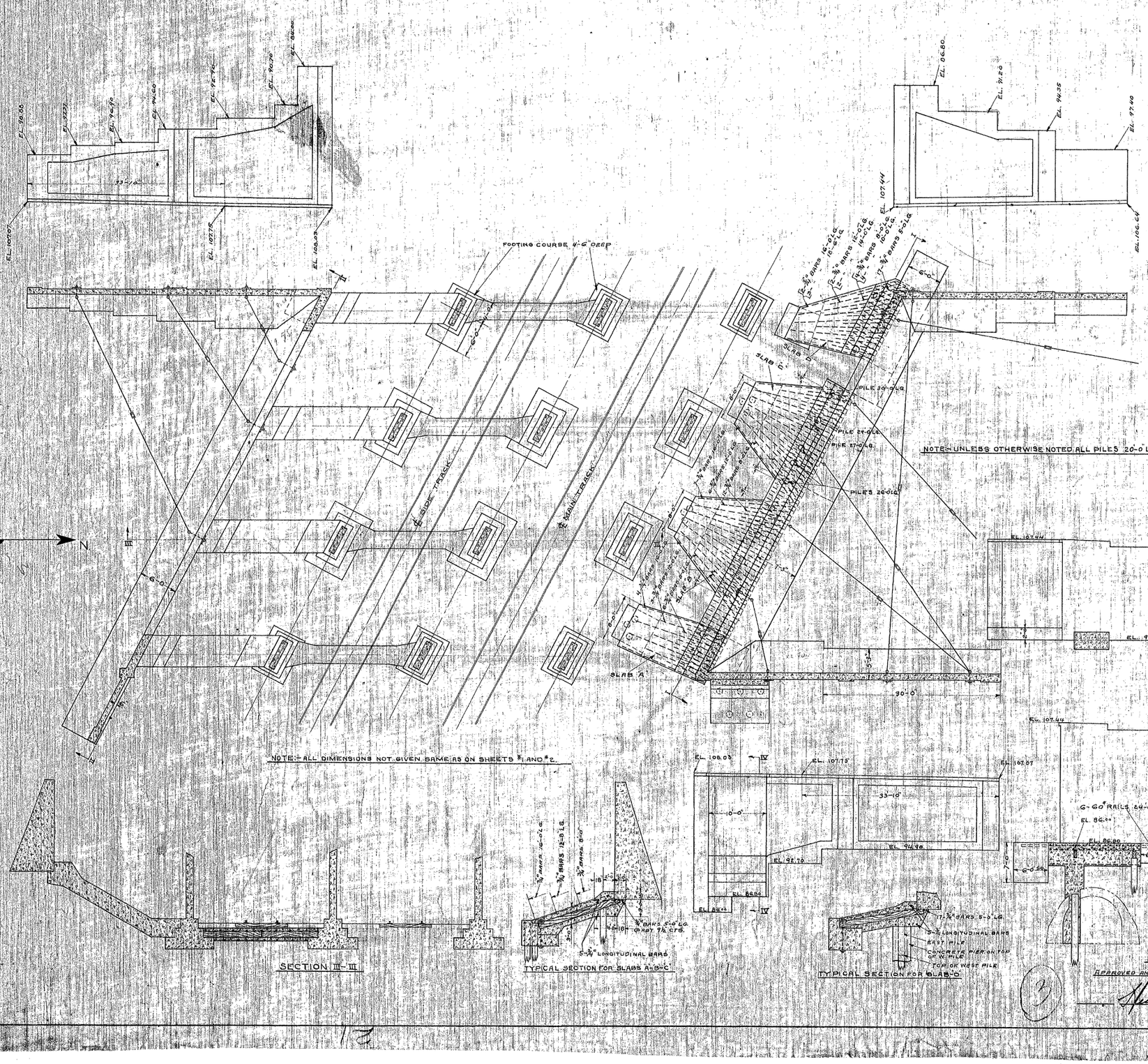
SCALES: 8 & 1½" = 1'-0" AND AS SHOWN

Approved and adopted by the BOARD OF PUBLIC WORKS Aug 5 1915

[signature] Secretary [signature] President

C-20 B-17

3 Sheet



FOR CONTRACTOR'S INFORMATION ONLY

REINFORCED CONCRETE BRIDGE OVER GRAND TRUNK RAILWAY AT COLLEGE AVENUE

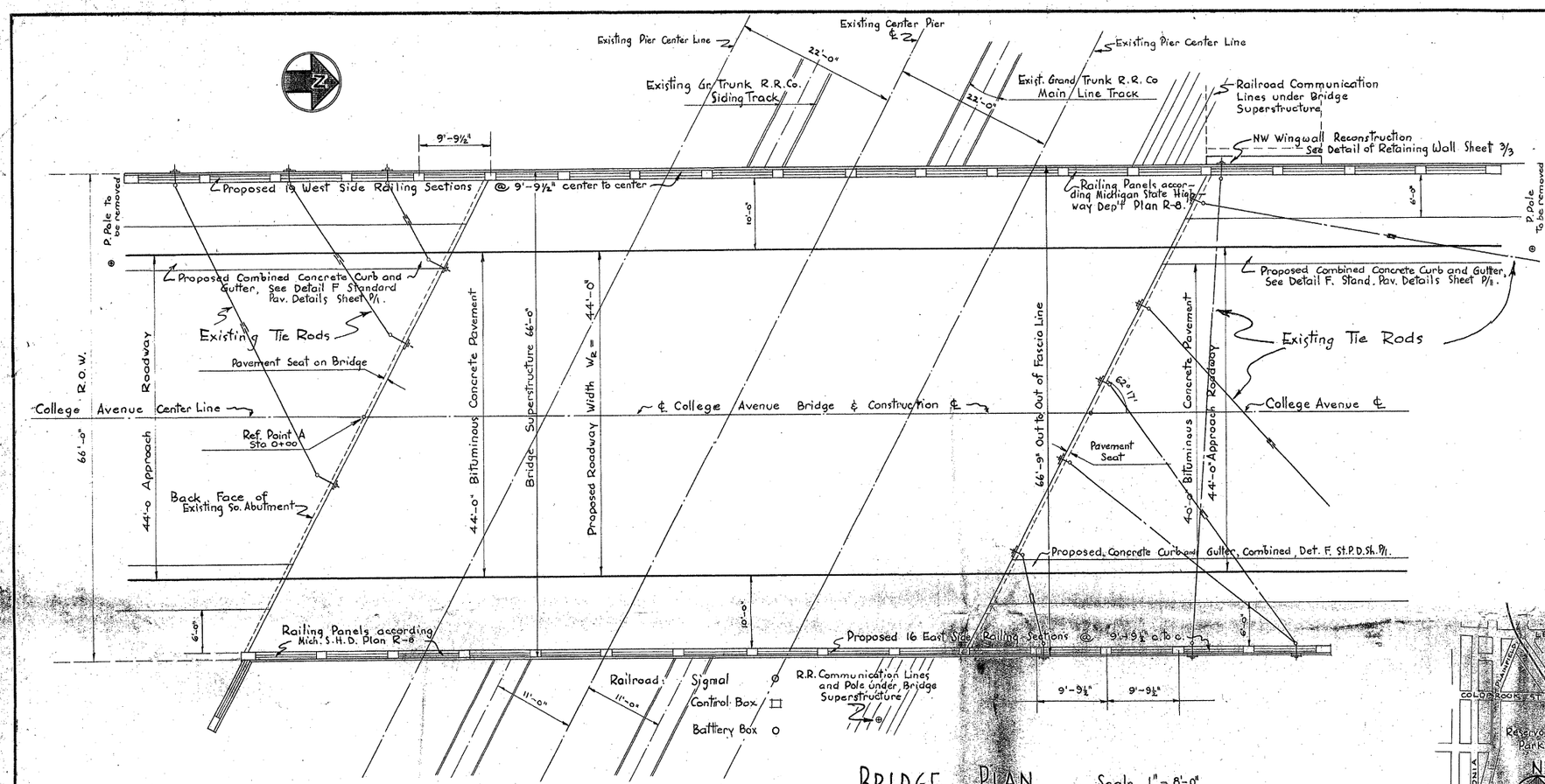
REVISED PLAN SHOWING UNDERPINNING. SCALE ⅜" = 1'-0"

APPROVED AND ADOPTED BY THE BOARD OF PUBLIC WORKS, NOV. 11, 1915.

Henry P. Browne PRESIDENT

MICROFILMED

13

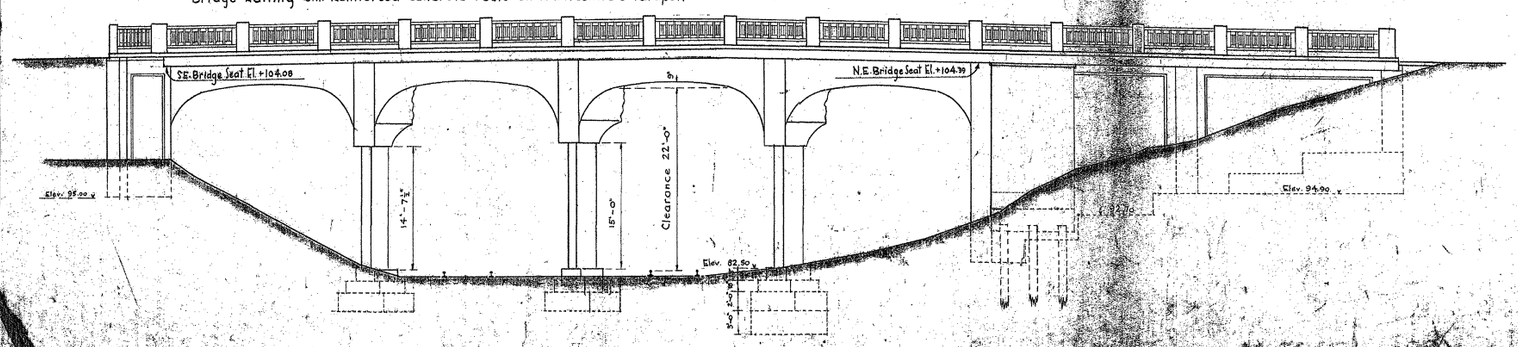


BRIDGE PLAN

Scale 1" = 8'-0"

(See Profile Sheet 3/3.)

Mich. S. H. D. Standard Aluminum
Bridge Railing with Reinforced Concrete Posts on Reinf. Concrete Parapet.



EAST ELEVATION

@ 90° to center line of College Avenue.

Scale 1" = 8'-0"

Revised Febr. 22, 1961 Sheet 2/3
Revised July 29, 1960 Sh. 2/3

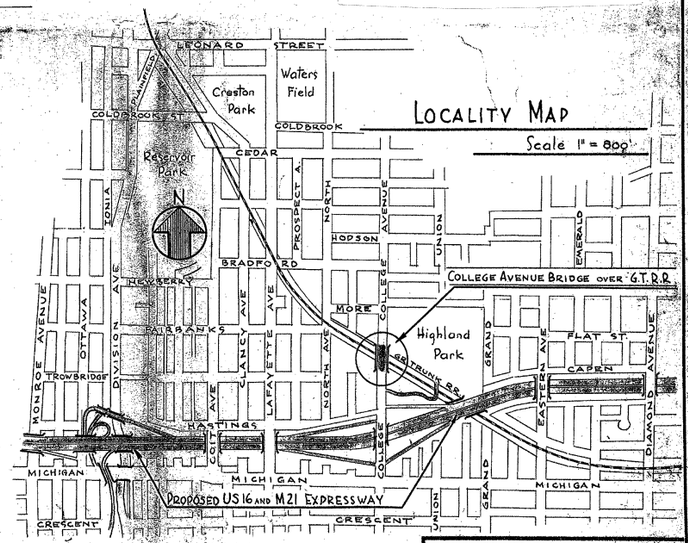
LEGEND

- Existing Sanitary or Combined Sewer
- Proposed Sanitary or Combined Sewer
- Existing Storm Sewer
- Proposed Storm Sewer
- Existing Sidewalk
- Proposed Sidewalk
- Existing G.R. Basin
- Proposed Standard G.R. Basin
- Existing Curb & Gutter
- Proposed Curb & Gutter
- Existing Flat Grate
- Proposed Flat Grate
- Existing Watermain
- Proposed Watermain
- Existing Watermain Valve
- Proposed Watermain Valve
- Existing Watermain Valve in Chamber
- Proposed Watermain Valve in Chamber
- Existing Watermain Valve with Proposed Chamber
- Existing Fire Hydrant
- Proposed Fire Hydrant
- (7) See Note Number 7
- Utility Conduit-Ownership as Indicated
- Existing Gas Main
- Existing Fence
- Railroad
- Utility Poles
- Trees
- Direction of Drainage

FOR CONTRACTOR'S INFORMATION ONLY

LOCALITY MAP

Scale 1" = 800'



APPROVED July 12, 1960.

Prepared by: City Engineer

Submitted by: Director of Public Service

Approved by: City Manager

City of Grand Rapids, Michigan
Department of Public Service
Division of Engineering

RECONSTRUCTION OF COLLEGE AVENUE BRIDGE OVER GRAND TRUNK R.R. CROSSING

Project No. 60-1016	Code No. 118930 Act. 175 (1960)	1/3	Drawn by L.K.R.K. Traced by L.K.R.K. Checked by R.A.M. Unaccounted for	Field Checked R.A.M. L.K.R. Notes in 22 K pp. TC-20 K

6 P. GPC - 6666

FOR CONTRACTOR'S INFORMATION ONLY

Note: For Demolition Limits see PROFILE – Sheet No 3/3

Existing S.W. Wingwall

Existing Footing Outline

Existing South Abutment

Proposed Pavement Seat

Ref. Point A Sta 0+00

College Avenue ℄ Center Line

65'-0"

64'± – Limits of existing superstructure to be removed

Existing Footing Outline

Existing End Beam

Prop. Expansion Joints

Longitudinal Construction Joints

2 in. ϕ Holes for Transverse Tie Rods at Typical all beams. See Detail "A" for Transverse tie rods at appr. half points.

2" Dowel Holes cast in Beam

Face of N. Abutment

Exist. North Abutment

Back of N. Abutment

℄ of 12" C.I. Sleeve for Future Gas Main.

Existing Reinf. Conc. Girder

2" Dowel Holes cast in Beam

Nich. B.T. Co. Duct Lines

Existing End Beam Fascia Line

24.70' 24.80' 24.80' 24.70' 99.00'

Note: Exact Span Length for Beam construction shall be determined in the site by Beam Manufacturer as directed by City Engineer.

100 feet ± – Limits of existing superstructure to be removed

PRECAST PRESTRESSED CONCRETE DECK PLAN Scale 1"=8'-0"

16'-0"

See Details of Retaining Wall Sheet 3/3

Face of Existing NW Wingwall

Existing Footing Outline

Construction ℄ and ℄ of Bridge

21 Beams @ 3'-0"+1¼"-up ¼"x20'=63'-5"

62°17'

Ref. Point B Sta 99+88

Expansion Joints in Reinf. Concrete Sidewalk to be placed over Expans. Joints 10'-0" Beam Joints

1'-4"

Michigan Bell Telephone Co. Ducts – 3½" cement asbestos pipe

1" Bevel

#5 Bars spaced 8" c.to c.

Sidewalk Slope ¼" per foot

#5 Bars 12" c/c

#5 Bars 12" c/c

#5 Bars 12" c/c

24 #4 Top and Bottom Bars spaced appr. 15 inches c. to c.

1½" Drain Tile Keyway

See Detail "A" for filling Longit. Joints

#5 Bars 12" c/c

1" ϕ Transverse Tie Rods See Det. "A" Sheet 3/3

½" Joint Fill 7.16.03

¾" Drip Bead

15 I 40

CURB, SIDEWALK SLAB AND RAILING POST DETAILS Scale 1"=1'-0"

Existing End Beam

Intermediate Post Scale 1"=1'

¾" Bevel

¾" Recess

7⅞"

2'-3½"

3'-4"

5⅞"

6" Reinforced Concrete Parapet

Reinforced Concrete Railing Posts according M.S.H.D. Plan R.8.

#3 Horiz. Bars

4 #6 Bars 4'-8" long

Railing Clip 1'-11"x1¾"x¾" (RC13)

6" Parapet cast in place

#5 Bars

#6 Bars

#3 Bars Spacing of #3 Bars

End Post Scale 1"=1'

Railing Clip 1'-3"x1¾"x¾" (RC 11)

6 #6 Bars 4'-8" long

#3 Horizontal Bars spaced 1'-3" c. to c. as shown on Intermediate Post Detail

Joint Sealer. Hot-poured rubberized asphalt type compound to be used, or equal.

2½" Bitum. Concrete Topping for Pav't

2 inches Sleeve cast in Beam

¾" Premolded Joint Filler 7.16.03

1"ϕ x 18" Position Dowels

1'-2" Bearing

¾" Bevel

Place 6 #7 Horizontal Bars. Only one reinforcement layer – 4 #7 Bars where Top 6 inches

#4 Stirrups 12" c.to c.

1 inch round Anchor Bars 16" long spaced 14" center to center

Existing reinforced concrete girder 2'-6" x 4'-6"

½" Joint Filler Bearing Pad 7.16.03

Varies from 6"to 1'-6"

2'-6"

Note: After placing 1 inch positan dowels fill holes of fixed ends – with cement grout at expansion ends – with rubberized asphalt type compound

Note: Drill Holes into cap after tightening transverse tie bars.

Proposed reinforced concrete cap poured in place. Grade A concrete to be used.

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

Bridge symetrical about this center line

℄ Center Line

33'-0"

22'-0"

10'-6¾"

4'-6¼"

Roadway Center Line and Bridge Construction ℄ Center Line

Existing Concrete Masonry Railing to be removed

10'-0"

6'-0"

4'-0"

Exist. sidewalk 6" reinforced conc. slab to be removed

For proposed slab construction see Detail on this Sheet

Curb and Gutter to be removed

Top of end beam To be removed

Proposed Precast Prestressed Concrete 17"x36" Beams designed for H 20 – S16-44 loading as specified by MSHD Design Specif. for Highway Bridges 1958.

Proposed 2½" min. bituminous conc. pav't

Proposed 4" crown

Bridge Seat Elev. Y

Reinf. Concrete Cap appr. 1'-0" See Det.

12" C.I. Sleeve for Future Gas Main

Composite Beams to be removed

Reinf. Concrete Cap's approx. See Detail

Appr. 2" of top of girder to be removed

15 I 40

24 I 80

Existing End Beam

Cap Appr.

8'-0" 8'-0"

6'-0" 4'-3" 4'-3" 5'-3" 5'-3" 5'-0" 2'-6" 2'-6" 5'-0" 5'-3" 5'-3" 4'-3" 4'-3"

All existing intermediate and end concrete diaphragms between roadway and sidewalk composite beams to be removed

Dirt

6" Slab

Width of the bridge deck (W_d = 64 ft.) in dotted lines and shaded, to be removed

½ W_d = 32 feet

½ W_d = 32 feet

HALF SECTION THROUGH BRIDGE DECK A–A Scale 1"=2'-0"

Revised Feb. 22, 1967
Revised July 29, 1966

City of Grand Rapids, Michigan
Department of Public Service
Division of Engineering

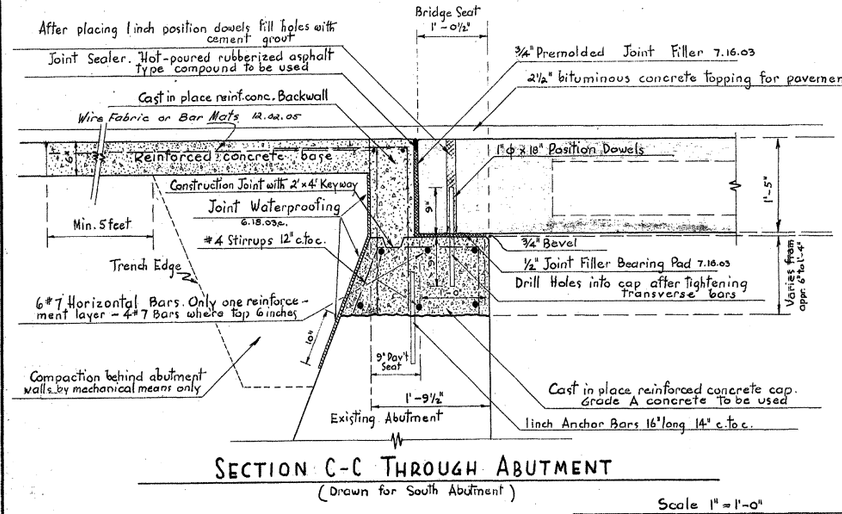
RECONSTRUCTION OF COLLEGE AVENUE BRIDGE OVER GRAND TRUNK R.R. CROSSING

2/3

Drawn by L.K.K.
Traced by L.K.K.
Checked by R.A.M.
Underground Cab. L.K.K.

Field Checked R.A.M. L.K.K.
Notes by R.A.M. L.K.K.

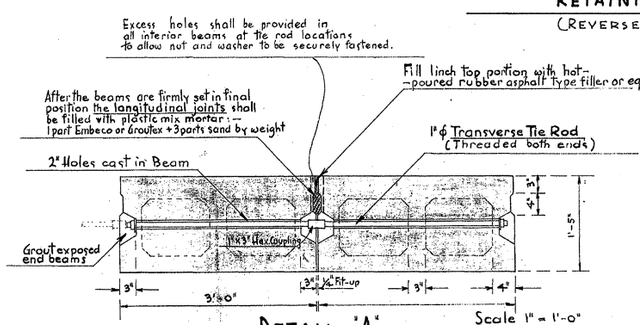
CITY-66 LMP



SECTION C-C THROUGH ABUTMENT

(Drawn for South Abutment)

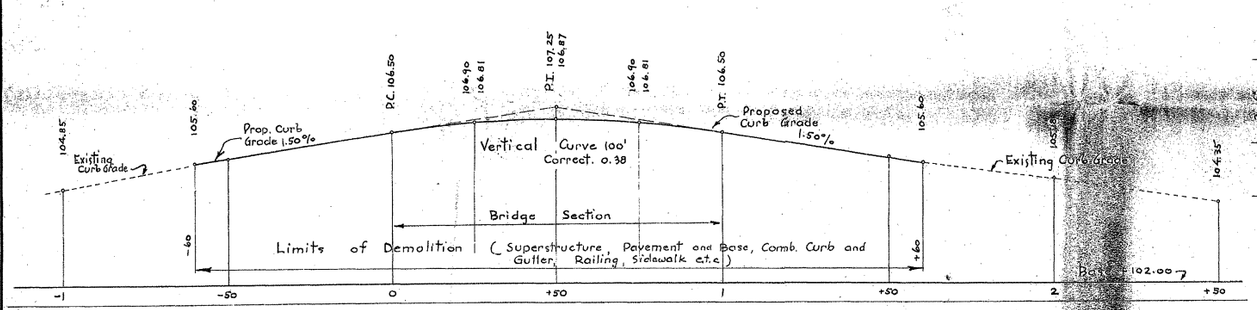
Scale 1" = 1'-0"



DETAIL "A"

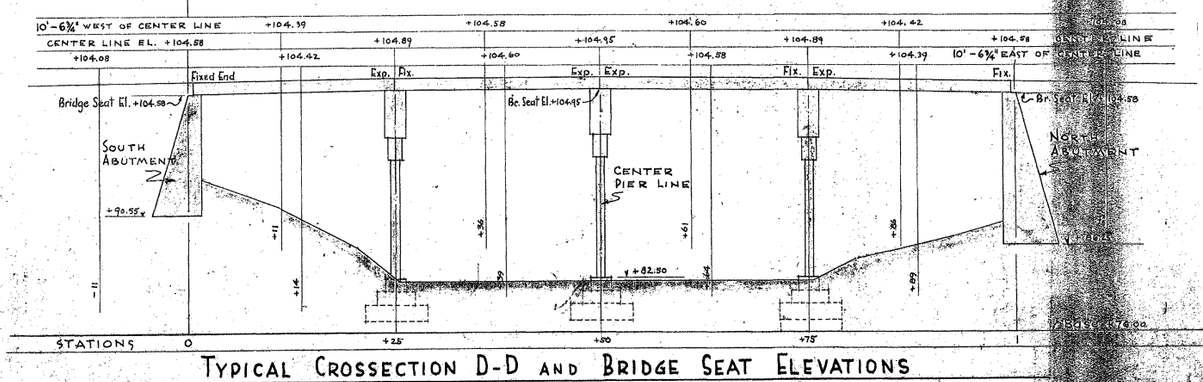
(Longitudinal Construction Joint and Transverse Tie Rod)

Scale 1" = 1'-0"



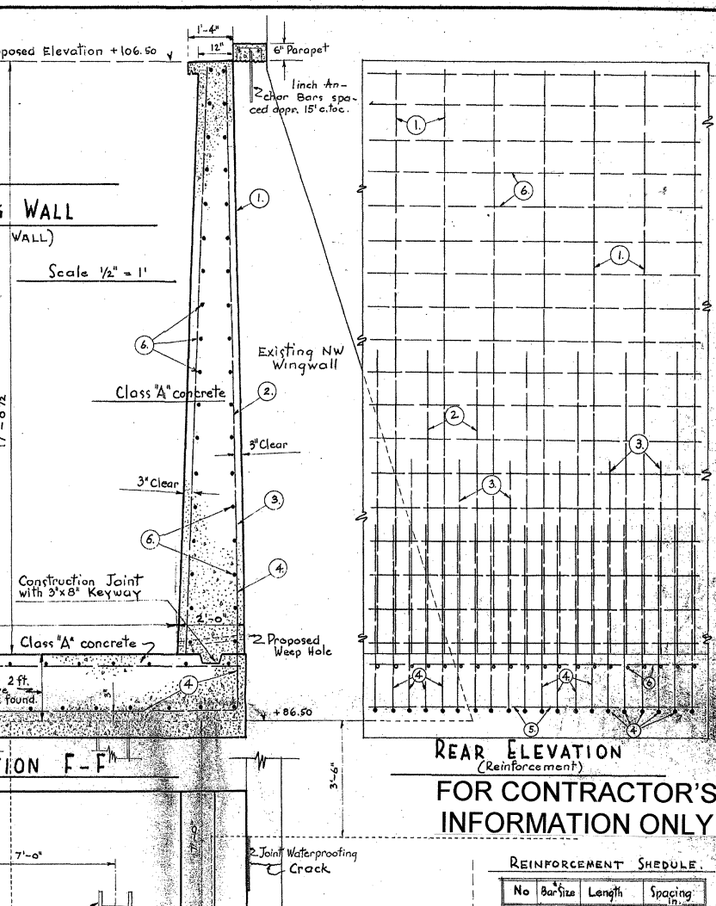
PROFILE

Scales: Horizontal 1" = 20'
Vertical 1" = 2'



TYPICAL CROSSECTION D-D AND BRIDGE SEAT ELEVATIONS

Scale 1" = 8'-0"

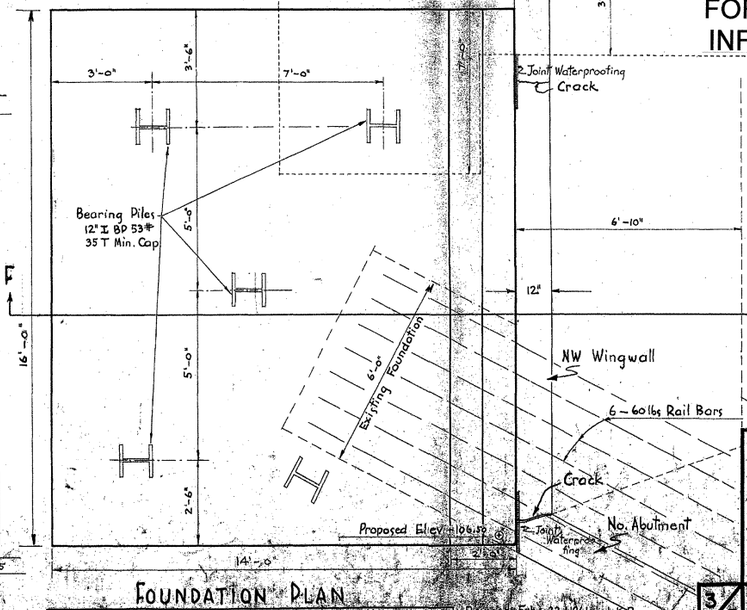


DETAILS OF RETAINING WALL

(REVERSE L WALL)

Scale ½" = 1'

FOR CONTRACTOR'S INFORMATION ONLY

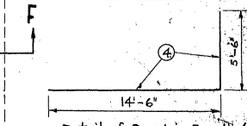


FOUNDATION PLAN

Revised Feb. 22 1961 L.K.R.
Revised July 28 1960

REINFORCEMENT SHEDULE

No	Bar Size	Length	Spacing in.
1	#8	17'-6"	18
2	#8	9'-0"	18
3	#8	5'-9"	18
4	#10	20'-0"	6
5	#5	—	12
6	#4	—	12



Detail of Bend in Bar No 4

City of Grand Rapids, Michigan
Department of Public Service
Division of Engineering

RECONSTRUCTION OF COLLEGE AVENUE BRIDGE

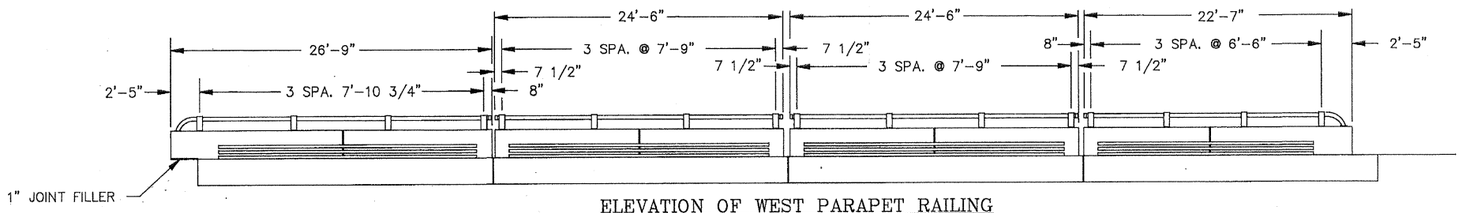
OVER GRAND TRUNK R.R. CROSSING

Drawn by L.K.R.
Traced by L.K.R.
Checked by R.A.M.
Underground Det. L.K.R.

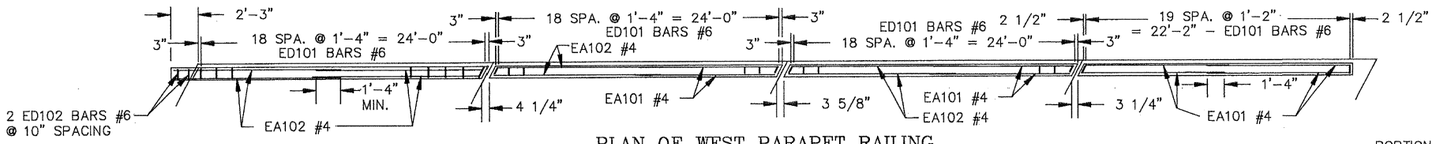
Field Checked R.A.M. L.K.R.
Notes: In 1"=20' 2'-3"
Out 2'-0"

3 1/3

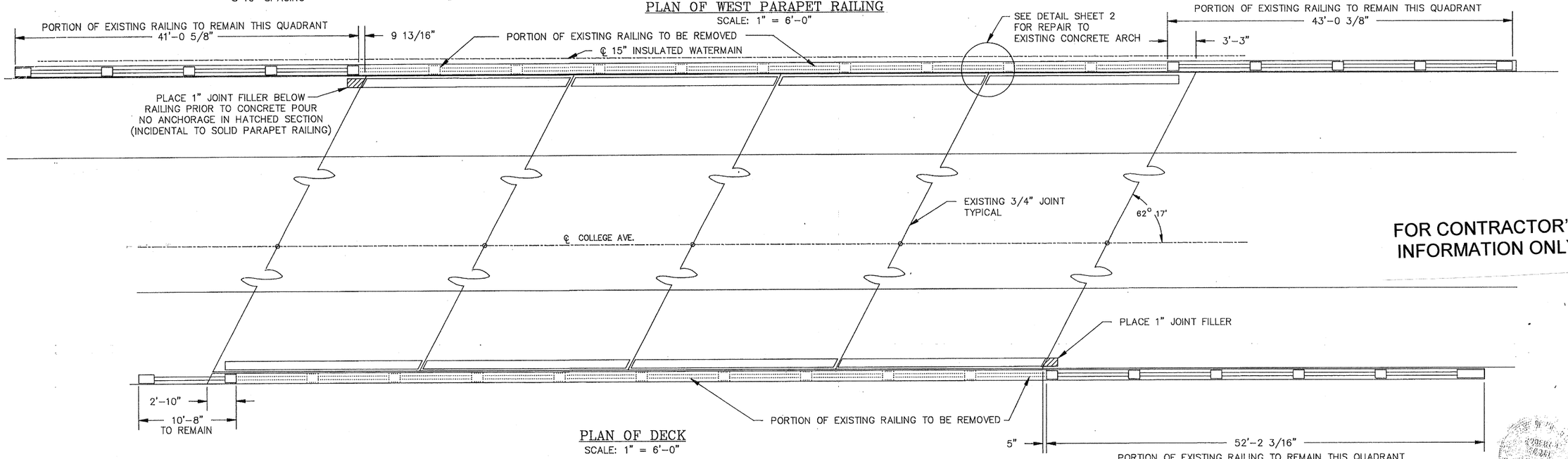
GPF GREGG (MICH.)



ELEVATION OF WEST PARAPET RAILING
SCALE: 1" = 6'-0"

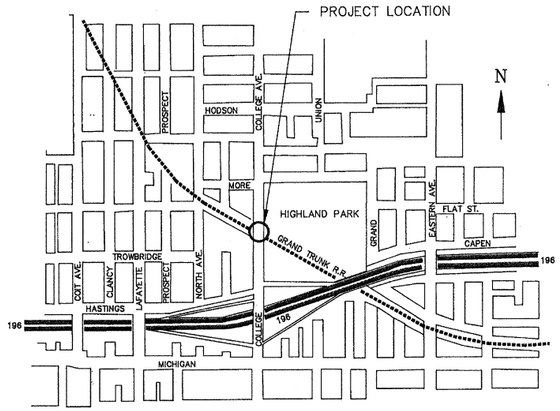


PLAN OF WEST PARAPET RAILING
SCALE: 1" = 6'-0"

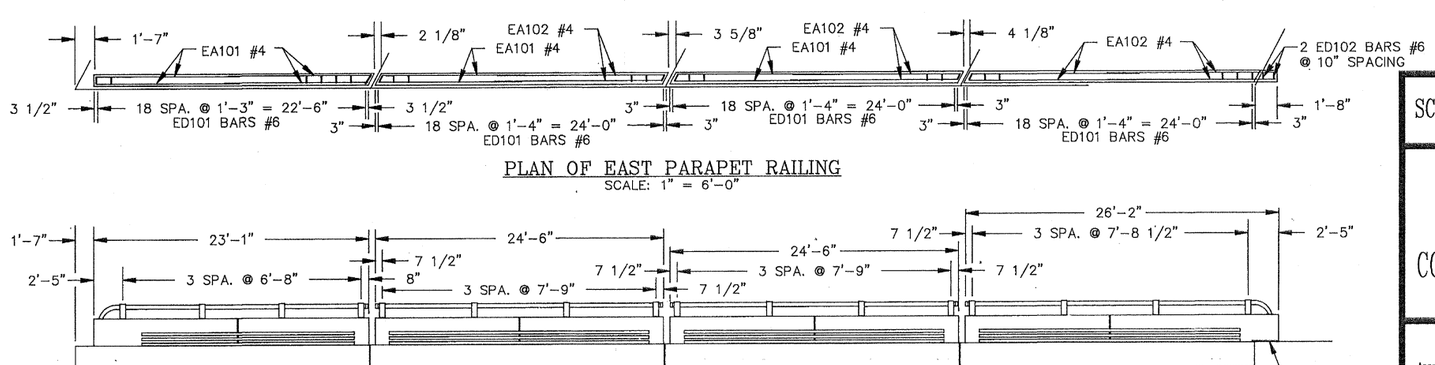


PLAN OF DECK
SCALE: 1" = 6'-0"

FOR CONTRACTOR'S INFORMATION ONLY



VICINITY MAP
1" = 800' APPROXIMATELY



ELEVATION OF EAST PARAPET RAILING
SCALE: 1" = 6'-0"

CITY OF GRAND RAPIDS
41-14-007919
Flats & Vandenbrink Engineering 11.01.2002

SCOTT CIVIL ENGINEERING CO.
GRAND RAPIDS, MICHIGAN

City of Grand Rapids, Michigan
Department of Public Services
Division of Engineering

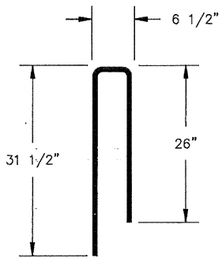
PARAPET RECONSTRUCTION
OF
COLLEGE AVENUE BRIDGE
OVER
GRAND TRUNK RAILROAD

Approved [signature] 7/1/87
City Engineer Date

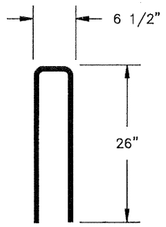
Drawn by J. Vos
Check: Field RJS
Check: Office RDV

Sheet No. 1 of 3

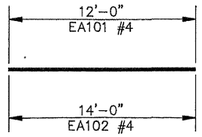
GPF 2996 IMP.



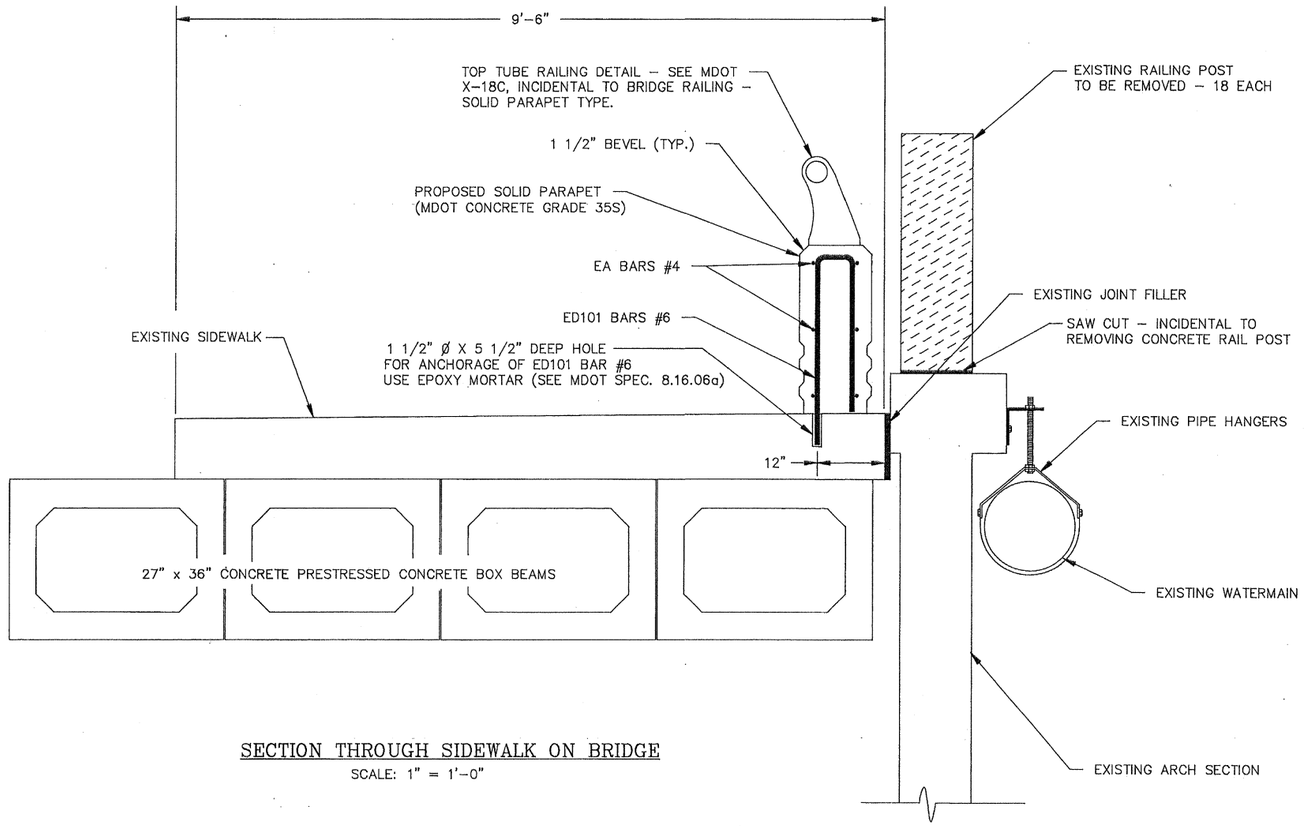
ED101 BAR #6
153 REQUIRED



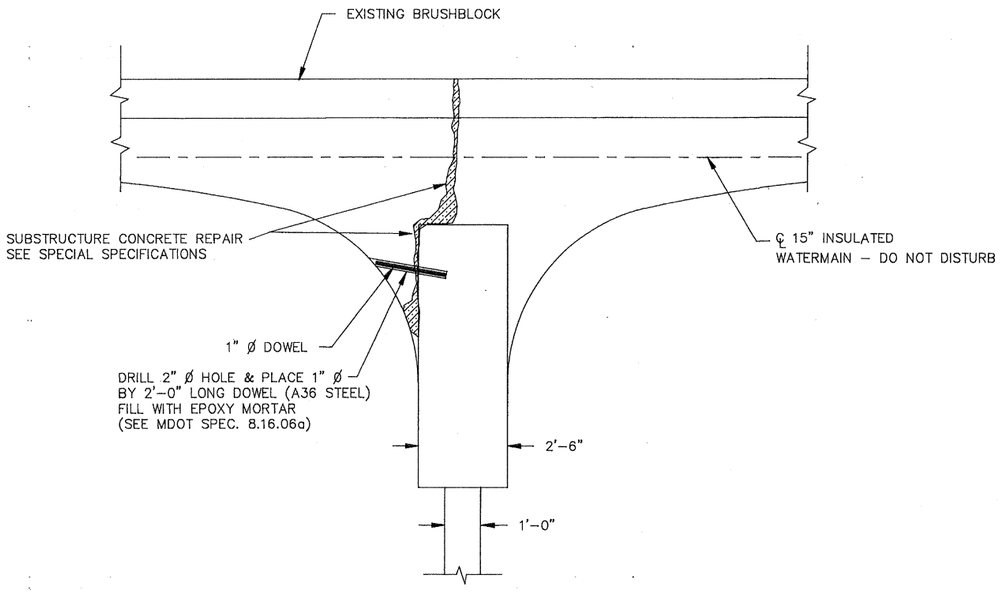
ED102 BAR #6
4 REQUIRED



EA101 & EA102 BARS #4
EA101 – 48 REQUIRED
EA102 – 48 REQUIRED



SECTION THROUGH SIDEWALK ON BRIDGE
SCALE: 1" = 1'-0"



ELEVATION AT EXISTING N.W. CONCRETE ARCH
SCALE: 1" = 2'-0"

PAY ITEM	UNIT	QUANTITY
REMOVING CONCRETE RAIL POSTS	EACH	18
REMOVING STEEL RAIL	LUMP SUM	1.0
SUBSTRUCTURE CONCRETE REPAIR	LUMP SUM	1.0
DRILLING & SETTING ANCHORS	EACH	153
STEEL REINFORCEMENT – EPOXY	POUNDS	2089
SOLID PARAPET RAILING (35S)	LIN. FT.	197.0

FOR CONTRACTOR'S INFORMATION ONLY

CITY OF GRAND RAPIDS
41-14-007920
Fleis & VandenBrink Engineering 11.01.2002

SCOTT CIVIL ENGINEERING CO.
GRAND RAPIDS, MICHIGAN

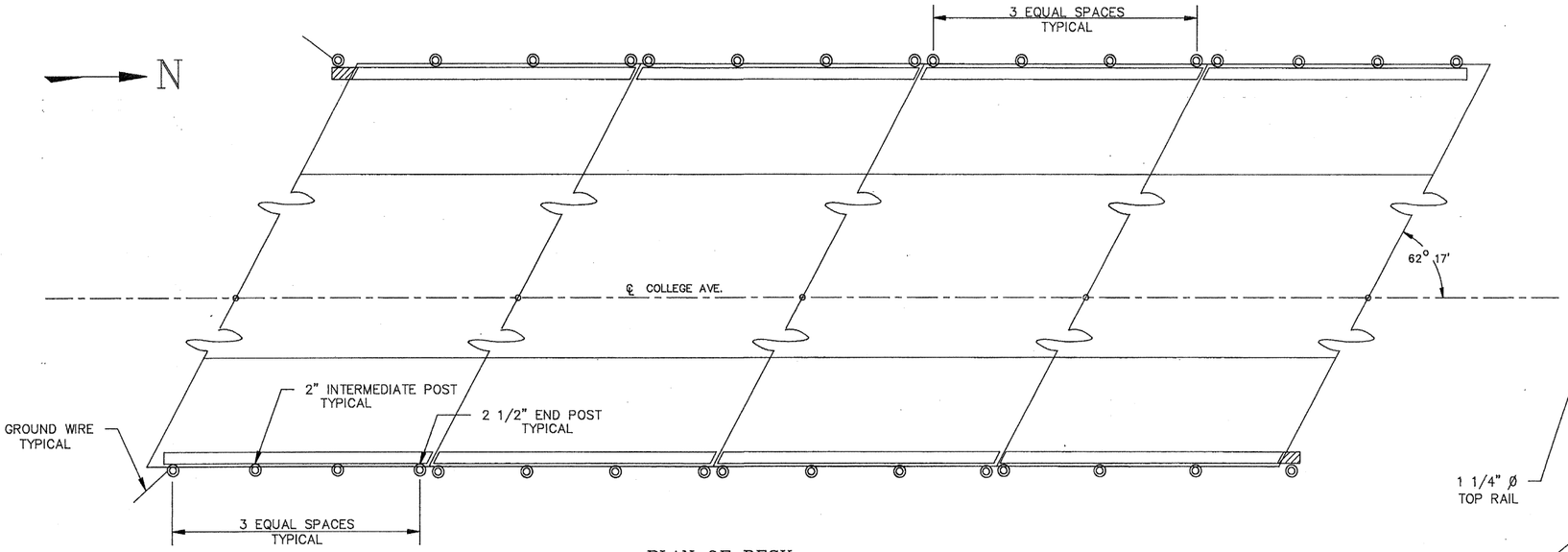
City of Grand Rapids, Michigan
Department of Public Services
Division of Engineering

PARAPET RECONSTRUCTION
OF
COLLEGE AVENUE BRIDGE
OVER
GRAND TRUNK RAILROAD

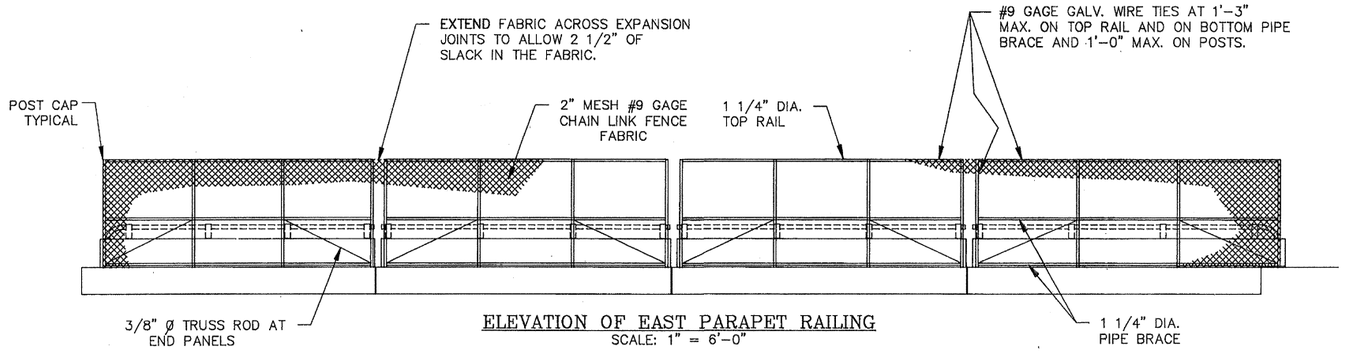
Drawn by J. Vos
Check: Field RJS
Check: Office RDV

Sheet No. 2 of 3

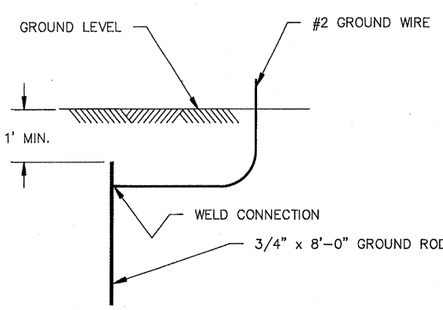
GPF 2996 IMP.



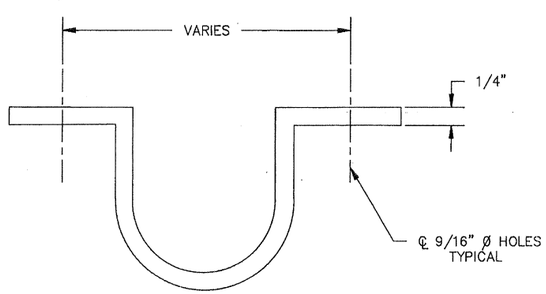
PLAN OF DECK
SCALE: 1" = 6'-0"



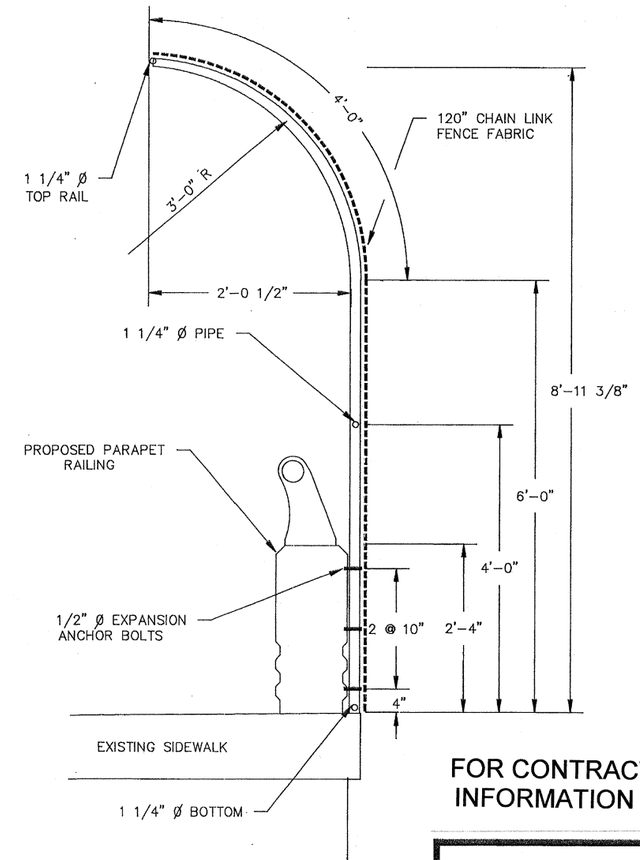
ELEVATION OF EAST PARAPET RAILING
SCALE: 1" = 6'-0"



GROUND DETAIL



BRACKET FOR POSTS



TYPICAL POST DETAIL
SCALE: 1" = 1'-0"

FOR CONTRACTOR'S INFORMATION ONLY

CITY OF GRAND RAPIDS
41-14-007921
Fleis & VandenBrink Engineering 11.01.2002

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Sheet No. 3 of 3

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