



**CUY-90-14.90**

**PID 77332/85531**

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**APPENDIX EX-89**

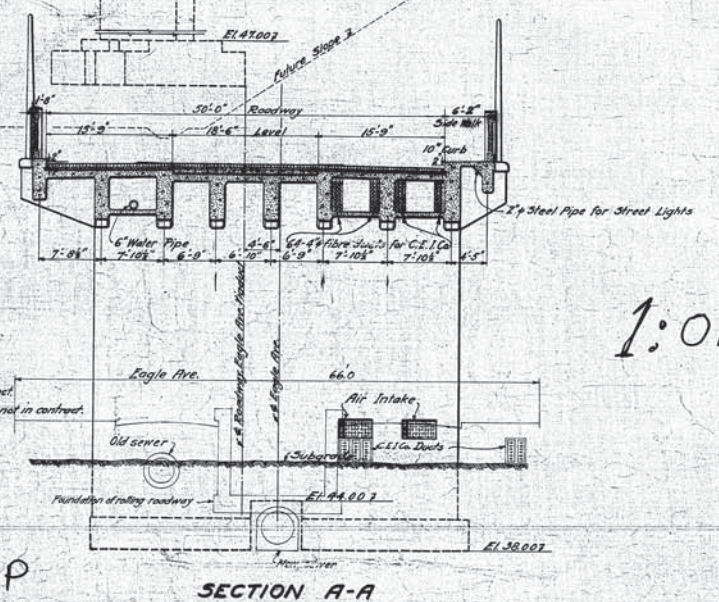
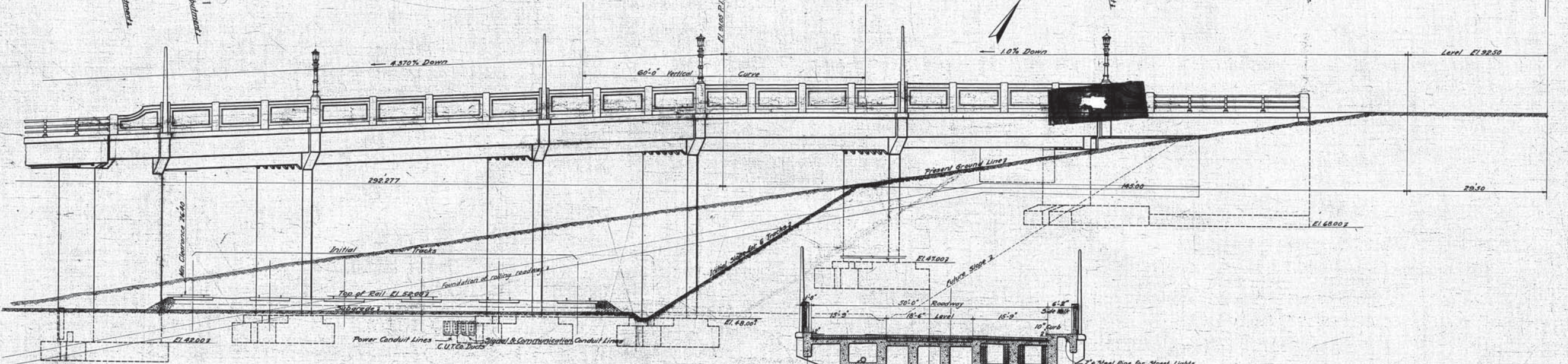
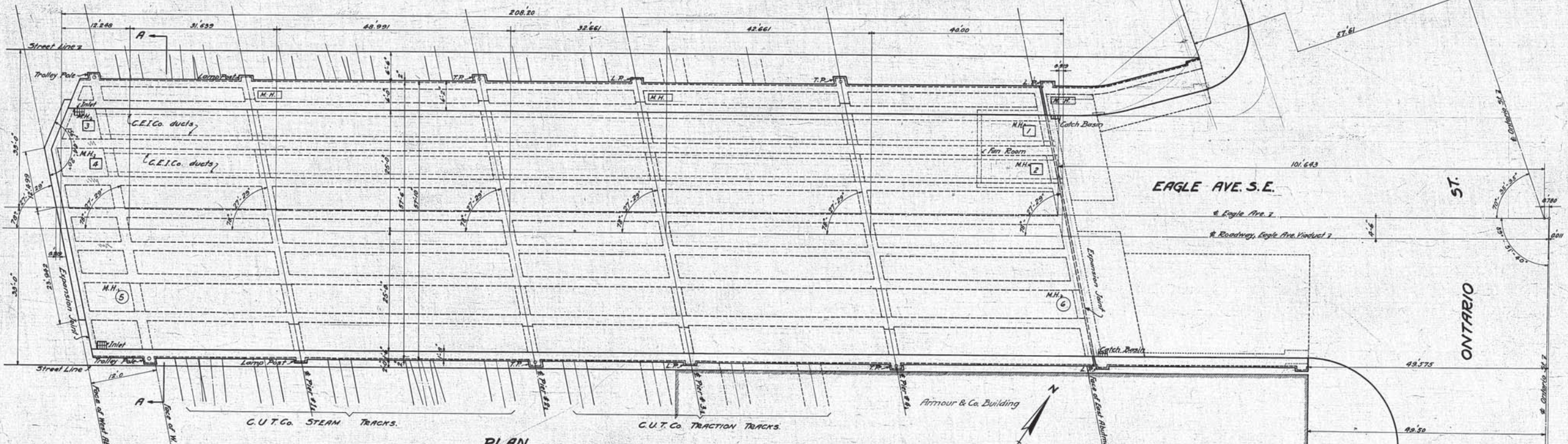
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**Eagle Avenue Viaduct  
(Reference Document)**

State of Ohio  
Department of Transportation  
Jolene M. Molitoris, Director

**Innerbelt Bridge  
Construction Contract Group 1 (CCG1)**

Issue No. A - June 8, 1926  
 Revisions:  
 Issue No. B - June 11, 1926  
 Revised piers & W.L.E. Connection to conform to new scheme for W.L.E. connection.  
 Issue No. C - June 18, 1926  
 Added Description of Tracks on Profile.  
 Issue No. D - June 19, 1926  
 Added roadway elevation and floor beams to plan.  
 Issue No. E - Sept. 22, 1926  
 Revised, Redesignated and Redrawn.  
 Issue No. F - Dec. 2, 1926  
 Minor changes, Drawing checked.  
 Issue No. G - Mar. 24, 1927  
 Revised north wing wall of East Abutment. Removed paving dams.  
 Issue No. H - June 20, 1927  
 Number of Initial Tracks changed from 7 to 6. Added notes about chamfer and concrete surfaces, trolley poles, and street lights.  
 Issue No. I - August 10, 1927  
 Signed by Chief Engineer.  
 Issue No. 2 - Aug. 24, 1927  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3 - May 25, 1931  
 Plan conforms to structure as built.



EAGLE AVE. RAMP.  
 1:010M

SOUTH ELEVATION  
 Grades along E Roadway.

SECTION A-A

1:010M EAGLE RAMP

THE CLEVELAND UNION TERMINALS COMPANY  
**EAGLE AVE. VIADUCT, SECTION "A"**  
 PORTION FROM W.&L.E.R. TO ONTARIO ST.  
 GENERAL PLAN, ELEVATION & SECTION  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES.

SCALE: 1"=10'  
 ISSUE No. 2

DATE:   
 REVISED: May 25, 1931

*C.P. Marsh* 7/24/27  
 Engineer of Structures  
*H.P. Baidoo* 7/27/31  
 Chief Engineer

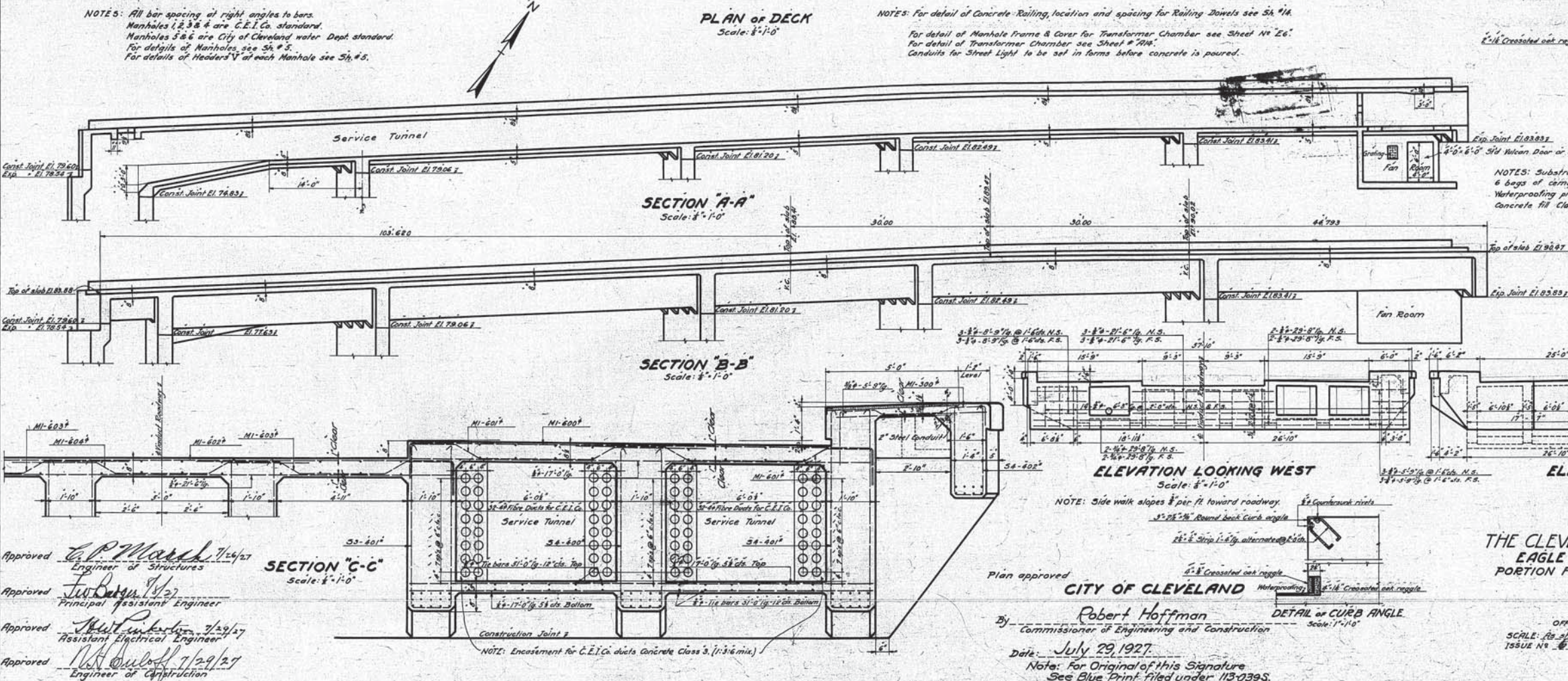
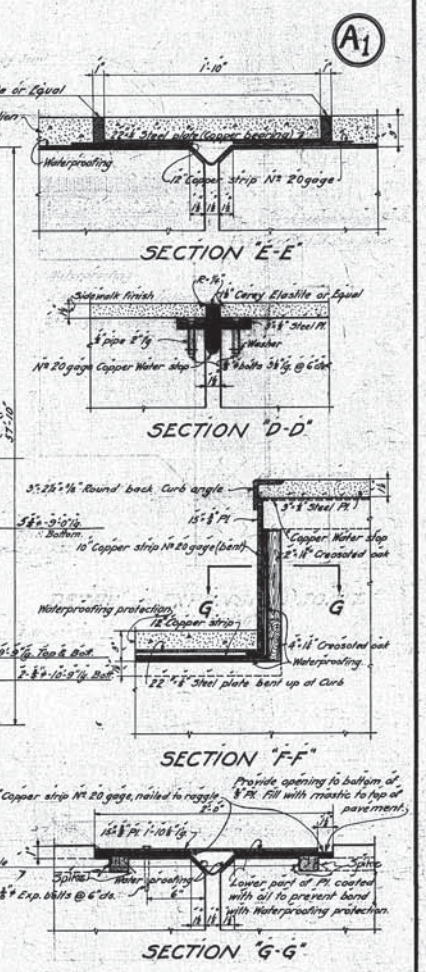
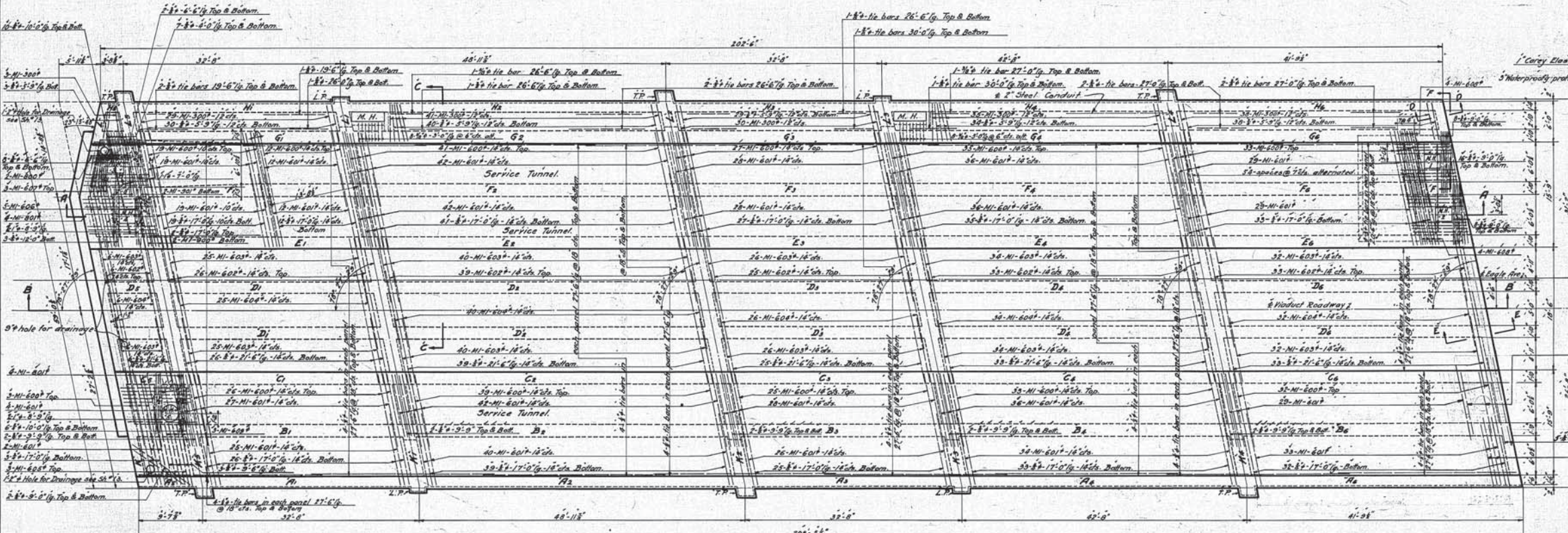
NOTES: Substructure and Superstructure Concrete Class 2 (Approx. mix 1:2:4) 6 bags of cement to a cu. yd.  
 Concrete for Waterproofing protection Class 2 (Approx. mix 1:3:6) 6 bags cement to a cu. yd.  
 Concrete fill for slot for Car tracks Class 3 (Approx. mix 1:3:6) 4 1/2 bags cement to a cu. yd. not in contract.  
 Pavement: 4" Machine finished concrete on 6" compacted sand cushion, not in contract.  
 Max. Soil Pressure 6000 per sq. ft.  
 Chamfer all exposed edges and corners 3/4" unless otherwise shown.  
 All exposed concrete to have a hard dense smooth surface uniform in texture and color.  
 Trolley Poles are not in this contract.  
 Street Lights to be furnished and installed by others.

Plan approved  
**CITY OF CLEVELAND**  
 By *Robert Hoffman*  
 Commissioner of Engineering and Construction  
 Date: July 29, 1927.

Note: for Original of this Signature See Blue Print filed under 113-0393.

Designed by *E.R. & E.R.P.* 9/20/26  
 Detailed by *E.R.W.* 9/23/26  
 Traced by *E.R.W.* 9/23/26  
 Checked by *B.E.P.* 12/2/26  
 Correct May 5, 1927  
*H. J. Dorman*  
 Designing Engineer  
 Approved *C.P. Marsh* 7/24/27  
 Engineer of Structures  
 Approved *H.P. Baidoo* 7/27/31  
 Chief Engineer  
 Approved *W.H. Sullivan* 7/29/27  
 Assistant Electrical Engineer  
 Approved *W.H. Sullivan* 7/29/27  
 Engineer of Construction

Issue No. A Feb. 24, 1926  
 Revisions  
 Issue No. B Oct. 9, 1926  
 Revised and Redrawn.  
 Issue No. C Oct. 29, 1926  
 Bearing Plates added, Dimension of Service-Tunnel at West Abutment changed.  
 Issue No. D April 8, 1927  
 Paving dams omitted, expansion joint changed.  
 Issue No. E June 4, 1927  
 Openings in Fan Room rearranged. Minor changes. Location of Street Light conduit changed. Added two 3" holes for drainage. Added Manholes for transformer chambers.  
 Issue No. 1 August 10, 1927  
 Signed by Chief Engineer  
 Issue No. 2 Aug. 24, 1927  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3 Oct. 17, 1927  
 Minor Changes  
 Issue No. 4 Apr. 9, 1928  
 Minor changes.  
 Issue No. 5 May 8, 1928  
 Man hole 156 G Removed.  
 Issue No. 6 May 23, 1931  
 Plan conforms to structure as built.



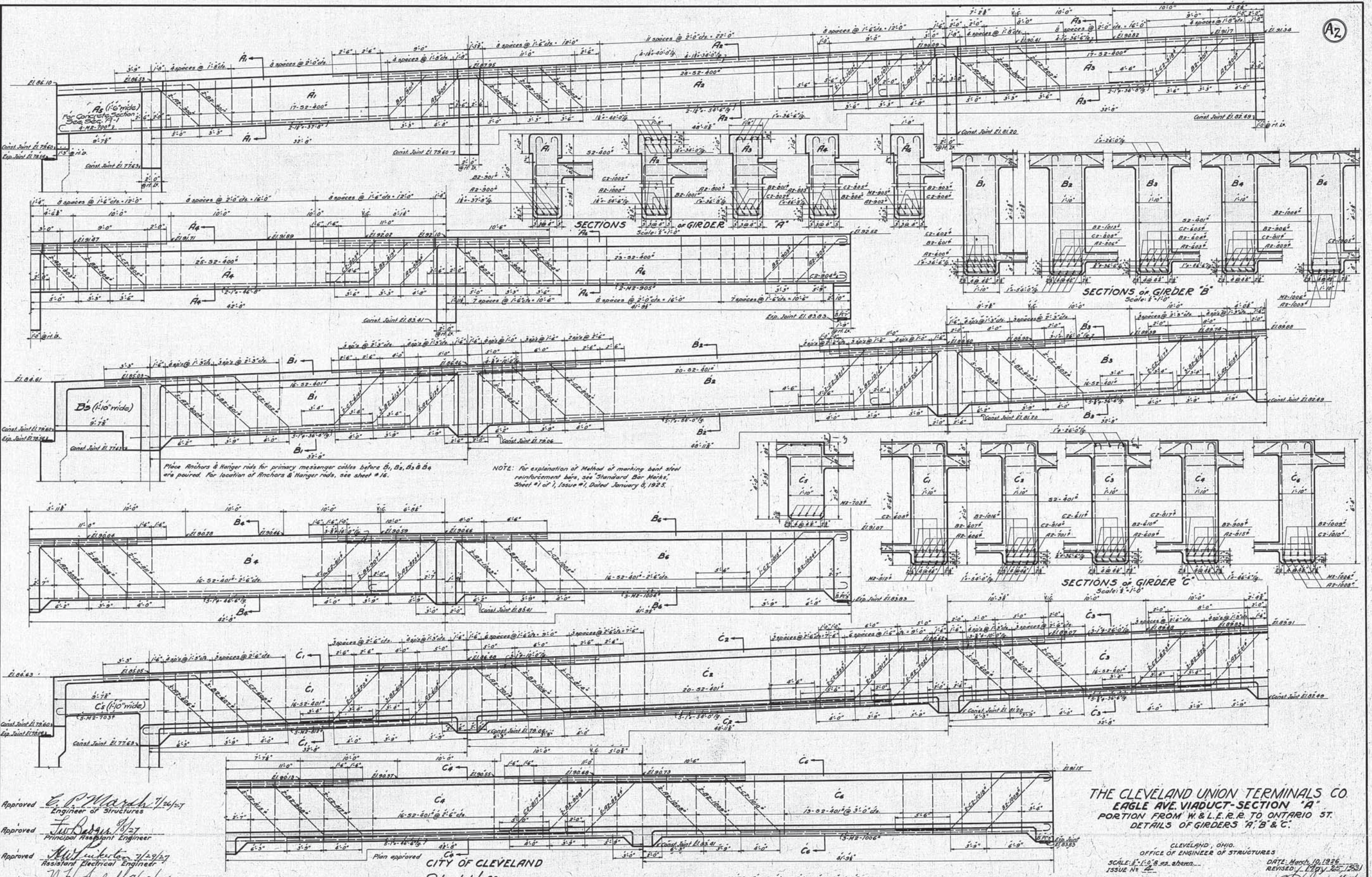
The Handy Engineer who will make drawings as built.  
 C.P. Marsh 7/10/31  
 H.D. Dierker 7/21/31  
 Designed by E.E.B. & F.A.W. 9/20/26  
 Detailed by F.A.W. 10/9/26  
 Traced by E.A.W. 2/16/27  
 Checked by D.R.A. 5/4/27  
 Corrected 5-5-27  
 G.L. Gorman Designing Engineer

Approved C.P. Marsh 7/24/27  
 Engineer of Structures  
 Approved J.W. Dierker 7/27/27  
 Principal Assistant Engineer  
 Approved H.D. Dierker 7/29/27  
 Assistant Electrical Engineer  
 Approved H.D. Dierker 7/29/27  
 Engineer of Construction

Plan approved  
 CITY OF CLEVELAND  
 Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date: July 29, 1927.  
 Note: For Original of this Signature See Blue Print filed under 113-039S.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT-SECTION "A"  
 PORTION FROM W.&L.E.R.R. TO ONTARIO ST.  
 DETAILS OF DECK  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES.  
 SCALE: AS SHOWN.  
 ISSUE NO. 6  
 DATE: Feb. 24, 1926.  
 REVISED: April 25, 1931  
 G.L. Gorman  
 CHIEF ENGINEER  
 FILE NO: 113-039

Issue No. A March 10, 1926  
 Revisions  
 Issue No. B October 10, 1926  
 Revised and Redrawn  
 Issue No. C October 20, 1926  
 Bearing Plates added.  
 Issue No. D November 11, 1926  
 Stringer 'A' revised for Concrete Railing, ISSUE H.C. July 11, 1927  
 Minor changes.  
 Issue No. 1 August 10, 1927  
 Signed by Chief Engineer.  
 Issue No. 2 Aug. 20, 1927  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3 Oct 17-27  
 Minor Revisions  
 Issue No. 4 May 25, 1931  
 Plan conforms to structure as built.



To locate this plan  
 when on site.  
 C.P. Marsh 7/16/27  
 H.L. Bishop 7/27/31

Designed by F.E.B. & E.A.B. 9/20/26  
 Detailed by E.A.W. 10/16/26  
 Traced by E.A.W. 2/2/27  
 Checked by H.R.A. 5/4/27  
 Correct 5-5-27  
 G.L. Gorman  
 Designing Engineer

Approved C.P. Marsh 7/16/27  
 Engineer of Structures  
 Approved H.L. Bishop 7/27/31  
 Principal Assistant Engineer  
 Approved H.L. Bishop 7/27/31  
 Assistant Electrical Engineer  
 Approved H.L. Bishop 7/27/31  
 Engineer of Construction

Approved C.P. Marsh 7/16/27  
 Approved H.L. Bishop 7/27/31  
 Approved H.L. Bishop 7/27/31  
 Approved H.L. Bishop 7/27/31

Plan approved  
 CITY OF CLEVELAND  
 Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date: July 29, 1927

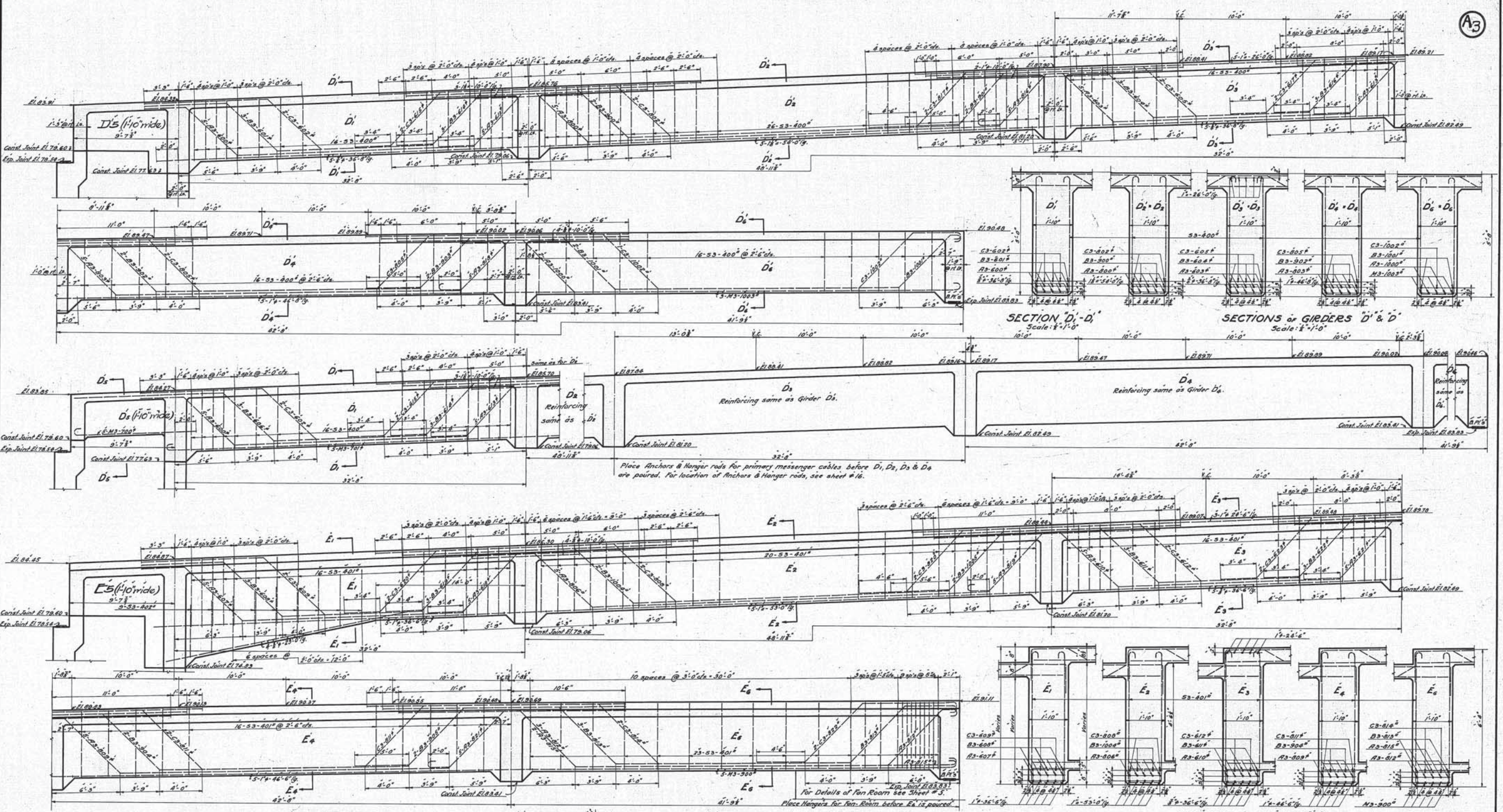
THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT-SECTION "A"  
 PORTION FROM W & L.E.R.R. TO ONTARIO ST.  
 DETAILS OF GIRDERS 'A', 'B' & 'C'.

CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/4" = 1'-0" as shown.  
 ISSUE No. 2

DATE: March 10, 1926  
 REVISED: May 25, 1931  
 Chief Engineer

Note: For Original of this Signature See Blue Print filed under 113-039S.

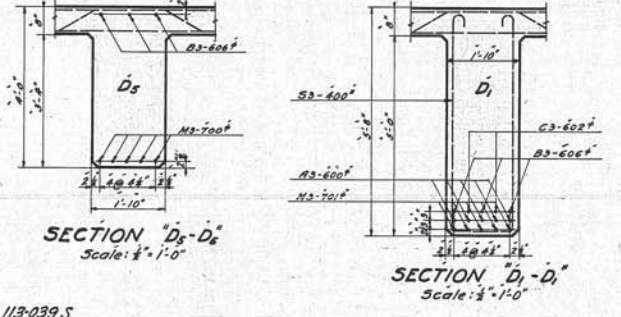
Issue No. A March 3, 1926  
 Revisions  
 Issue No. B Oct. 21, 1926  
 Revised and Redrawn  
 Issue No. C Oct. 29, 1926  
 Bearing Plates added, Girder 'E' changed  
 Issue No. D July 11, 1927  
 Minor changes.  
 Issue No. 1 August 10, 1927  
 Signed by Chief Engineer  
 Issue No. 2 Aug. 24, 1927  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.  
 Issue No. 3 May 25, 1931  
 Plan conforms to structure  
 as built.



Designed by F.E.B. & F.A.B. 9/20/26  
 Detailed by E.A.W. 10/21/26  
 Traced by E.A.W. 2/25/27  
 Checked by D.R.A. 5/4/27  
 Correct 5-5-27  
 G.L. Gorman  
 Designing Engineer

Approved by G.P. Marsh 7/24/27  
 Engineer of Structures  
 Approved by J.W. Bogan 4/12/27  
 Principal Assistant Engineer  
 Approved by W.H. Weston 7/24/27  
 Assistant Electrical Engineer  
 Approved by W.H. Bussell 7/24/27  
 Engineer of Construction

Plan approved  
 CITY OF CLEVELAND  
 Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date: July 29, 1927  
 Note: For Original of this Signature See Blue Print filed under 113-039 S



NOTES: For bearing Plates see Sheet #3.  
 For explanation of Method of marking bent steel reinforcement bars, see 'Standard Bar Marks', Sheet #1 of 1, Issue #1, Dated January 8, 1925.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT-SECTION 'A'  
 PORTION FROM W.&L.E.R.R. TO ONTARIO ST.  
 DETAILS OF GIRDERS 'D', 'D' & 'E'.  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/2"=1'-0" as shown.  
 DATE: March 3, 1926  
 REVISED: May 25, 1931  
 G.P. Marsh  
 Chief Engineer

Issue No. A. March 23, 1926.

Revisions

Issue No. B. Oct. 28, 1926.

Revised and Redrawn July 11, 1927

Issue No. C. Aug. 24, 1927.

Issue No. 1. August 10, 1927.

Issue No. 2. Aug. 24, 1927.

Issue No. 3. Oct. 17, 1927.

Issue No. 4. May 25, 1931.

Issue No. 5. May 25, 1931.

Issue No. 6. May 25, 1931.

Issue No. 7. May 25, 1931.

Issue No. 8. May 25, 1931.

Issue No. 9. May 25, 1931.

Issue No. 10. May 25, 1931.

Issue No. 11. May 25, 1931.

Issue No. 12. May 25, 1931.

Issue No. 13. May 25, 1931.

Issue No. 14. May 25, 1931.

Issue No. 15. May 25, 1931.

Issue No. 16. May 25, 1931.

Issue No. 17. May 25, 1931.

Issue No. 18. May 25, 1931.

Issue No. 19. May 25, 1931.

Issue No. 20. May 25, 1931.

Issue No. 21. May 25, 1931.

Issue No. 22. May 25, 1931.

Issue No. 23. May 25, 1931.

Issue No. 24. May 25, 1931.

Issue No. 25. May 25, 1931.

Issue No. 26. May 25, 1931.

Issue No. 27. May 25, 1931.

Issue No. 28. May 25, 1931.

Issue No. 29. May 25, 1931.

Issue No. 30. May 25, 1931.

Issue No. 31. May 25, 1931.

Issue No. 32. May 25, 1931.

Issue No. 33. May 25, 1931.

Issue No. 34. May 25, 1931.

Issue No. 35. May 25, 1931.

Issue No. 36. May 25, 1931.

Issue No. 37. May 25, 1931.

Issue No. 38. May 25, 1931.

Issue No. 39. May 25, 1931.

Issue No. 40. May 25, 1931.

Issue No. 41. May 25, 1931.

Issue No. 42. May 25, 1931.

Issue No. 43. May 25, 1931.

Issue No. 44. May 25, 1931.

Issue No. 45. May 25, 1931.

Issue No. 46. May 25, 1931.

Issue No. 47. May 25, 1931.

Issue No. 48. May 25, 1931.

Issue No. 49. May 25, 1931.

Issue No. 50. May 25, 1931.

Issue No. 51. May 25, 1931.

Issue No. 52. May 25, 1931.

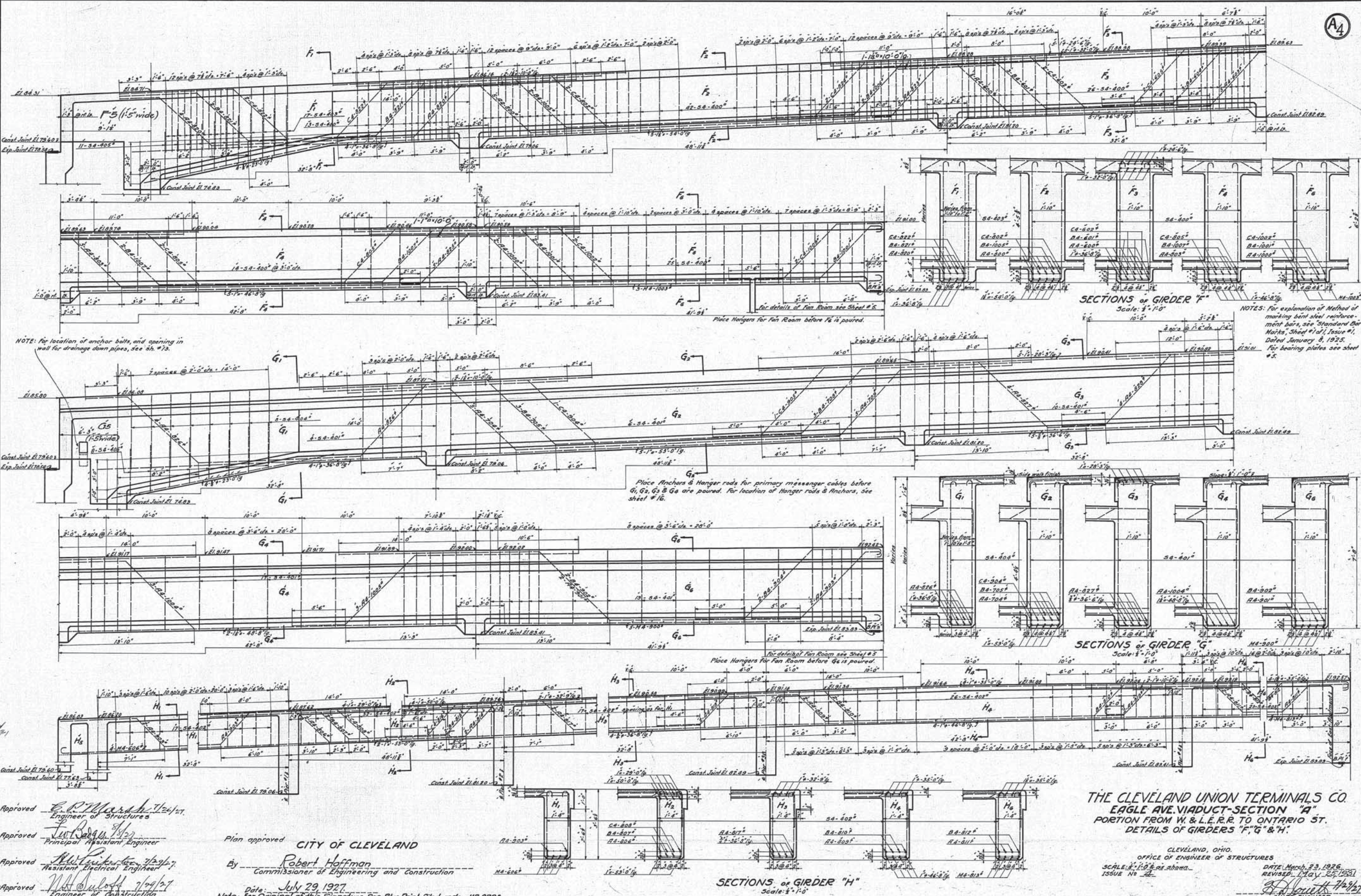
Issue No. 53. May 25, 1931.

Issue No. 54. May 25, 1931.

Issue No. 55. May 25, 1931.

Issue No. 56. May 25, 1931.

Issue No. 57. May 25, 1931.



NOTE: For location of anchor bolts, and opening in wall for drainage down pipes, see sheet #13.

Place Anchors & Hanger rods for primary messenger cables before G<sub>1</sub>, G<sub>2</sub>, G<sub>3</sub> & G<sub>4</sub> are poured. For location of Hanger rods & Anchors, see sheet #16.

Place Hangers for Fan Room before G<sub>4</sub> is poured.

NOTES: For explanation of Method of marking steel reinforcement, see Standard Bar Marks, Sheet #1 of Issue #1, Dated January 8, 1925. For bearing plates see sheet #3.

Approved by  
*E. P. Marsh* 7/24/27  
 Engineer of Structures  
*H. L. Riegel* 7/27/31  
 Assistant Engineer of Construction

Designed by F.E.B. & E.A.B. 9/20/26  
 Detailed by E.A.W. 10/28/26  
 Traced by E.A.W. 3/31/27  
 Checked by D.R.A. 5/4/27  
 Corred 5-5-27  
*Y. L. Gorman*  
 Designing Engineer

Approved  
*E. P. Marsh* 7/24/27  
 Engineer of Structures  
*J. W. Ragan* 7/27/27  
 Principal Assistant Engineer  
*W. L. Gorman* 7/29/27  
 Assistant Engineer  
*W. L. Gorman* 7/29/27  
 Engineer of Construction

Plan approved  
 CITY OF CLEVELAND  
 By *Robert Hoffman*  
 Commissioner of Engineering and Construction  
 Date: July 29, 1927.  
 Note: For Original of this Signature See Blue Print filed under 113-0395

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT-SECTION "A"  
 PORTION FROM W. & L.E.R.R. TO ONTARIO ST.  
 DETAILS OF GIRDERS "F", "G" & "H".  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/4" = 1'-0" as shown.  
 ISSUE No. 24  
 DATE: March 23, 1926.  
 REVISED: May 25, 1931.  
*E. P. Marsh* 7/24/27  
 CHIEF ENGINEER

A4

Issue No. A Nov. 3, 1926

Revisions

Issue No. B June 8, 1927

Details of Fan Room changed.

Issue No. C July 5, 1927

Section "M-M" revised.

Steel added in top of sidewalk brackets. Minor changes.

Issue No. 1 August 10, 1927

Signed by Chief Engineer.

Issue No. 2 Aug. 24, 1927

Approved by Commissioner of Engineering and Construction of the City of Cleveland.

Issue No. 3 Oct. 17, 1927

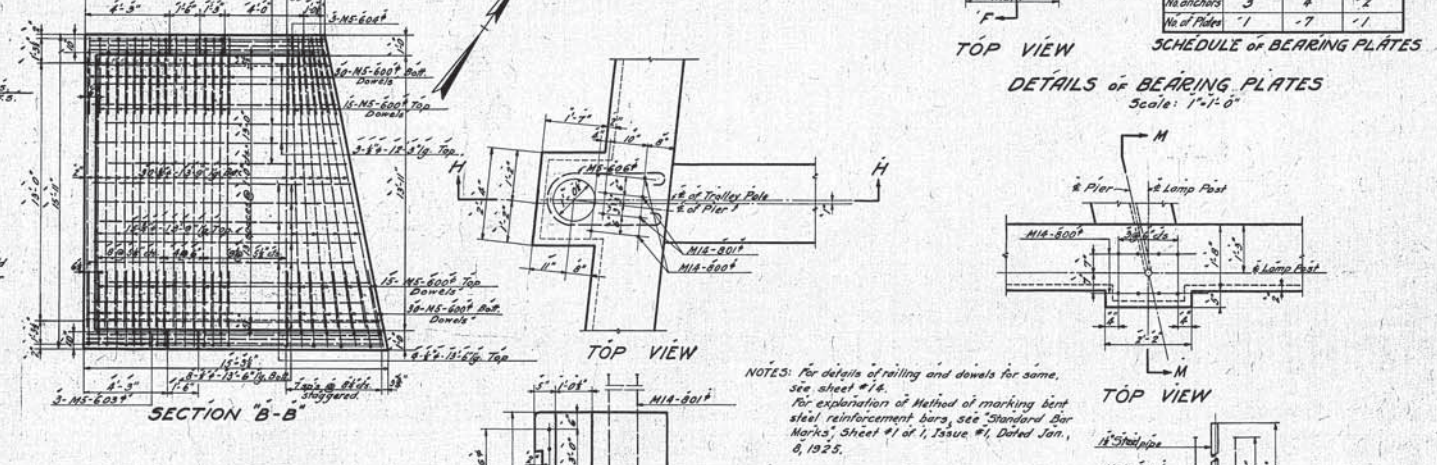
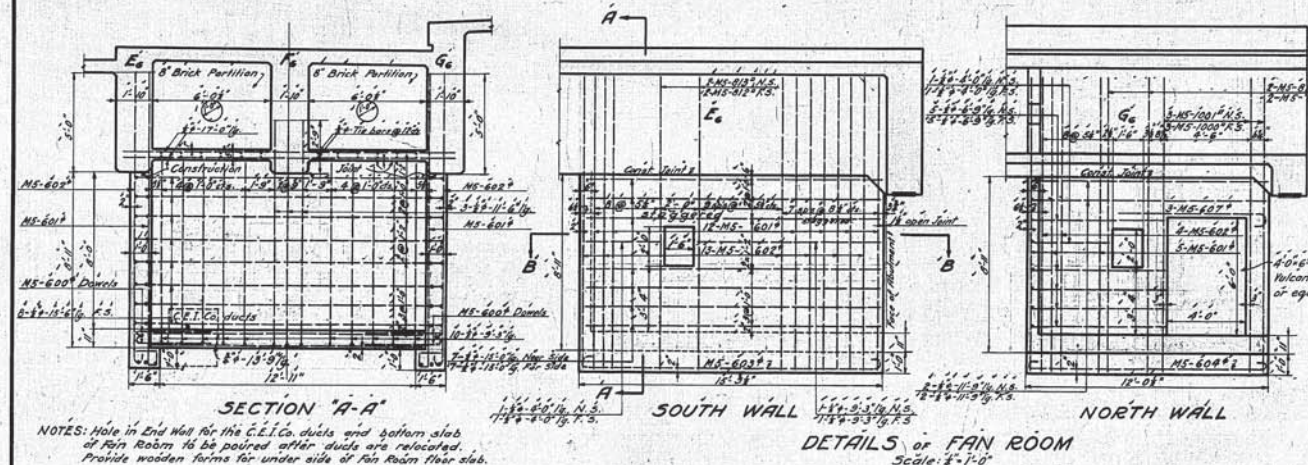
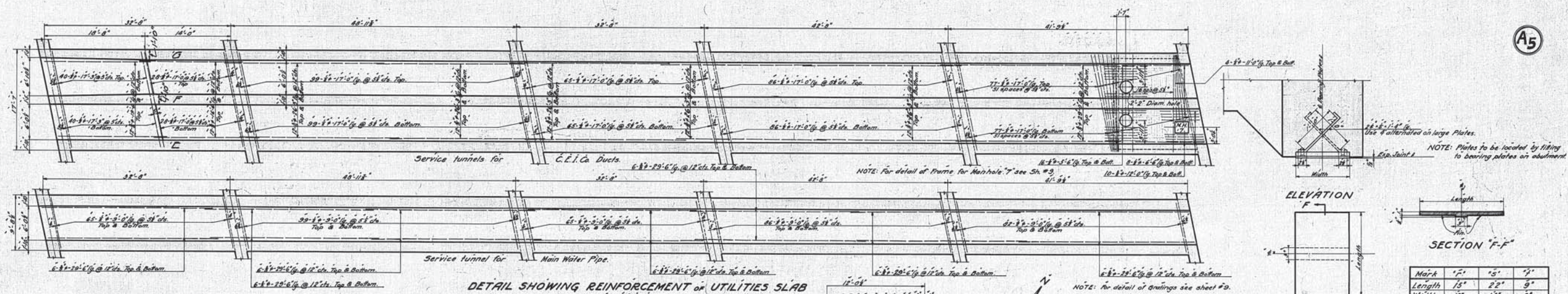
Minor Revisions

Issue No. 4 Apr. 9, 1928

Minor changes.

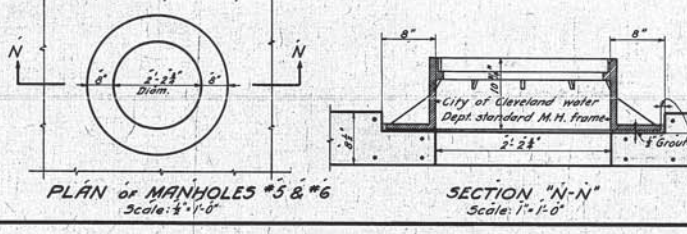
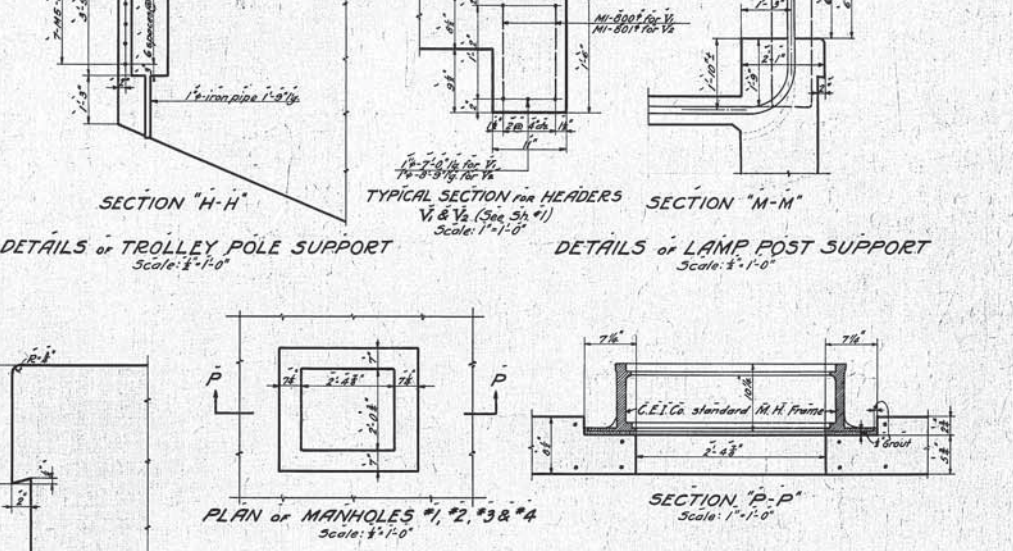
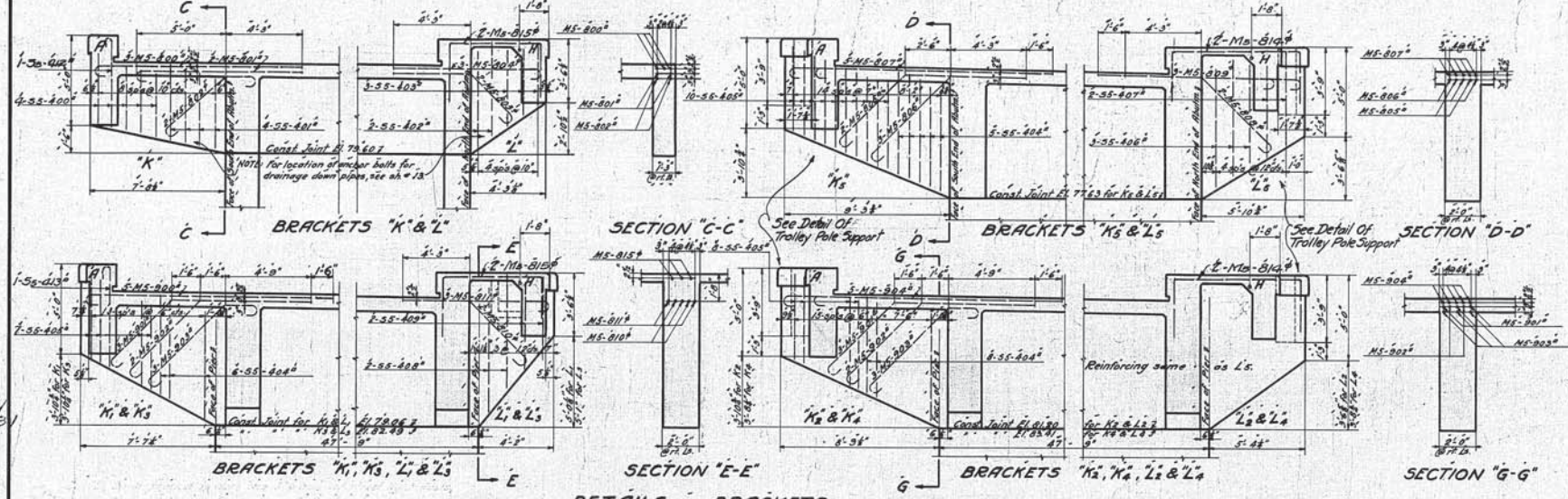
Issue No. 5 May 25, 1931

Plan conforms to structure as built.



SCHEDULE OF BEARING PLATES

Mark	1"	5"	7"
Length	15"	22"	9"
Width	12"	14"	8"
Manchors	3	4	2
No. of Plates	1	7	1



Correct that this Plan  
be constructed as built.

*C.P. Marsh* 7/24/27  
Engineer of Structures

*H.L. Backus* 7/27/28  
Chief Engineer of Construction

Designed by F.E.B. & E.R.B. 9/20/26  
Detailed by E.R.W. 11/3/26  
Traced by E.R.W. 3/9/27  
Checked by D.R.A. 5/4/27  
Correct May 5, 1927  
*Y. L. Gorman*  
Designing Engineer

Approved *C.P. Marsh* 7/24/27  
Engineer of Structures

Approved *J.W. Backus* 8/22/27  
Principal Assistant Engineer

Approved *W.H. Backus* 7/29/27  
Assistant Electrical Engineer

Approved *W.H. Backus* 7/29/27  
Engineer of Construction

Plan approved  
CITY OF CLEVELAND  
By *Robert Hoffman*  
Commissioner of Engineering and Construction  
Date: July 29, 1927

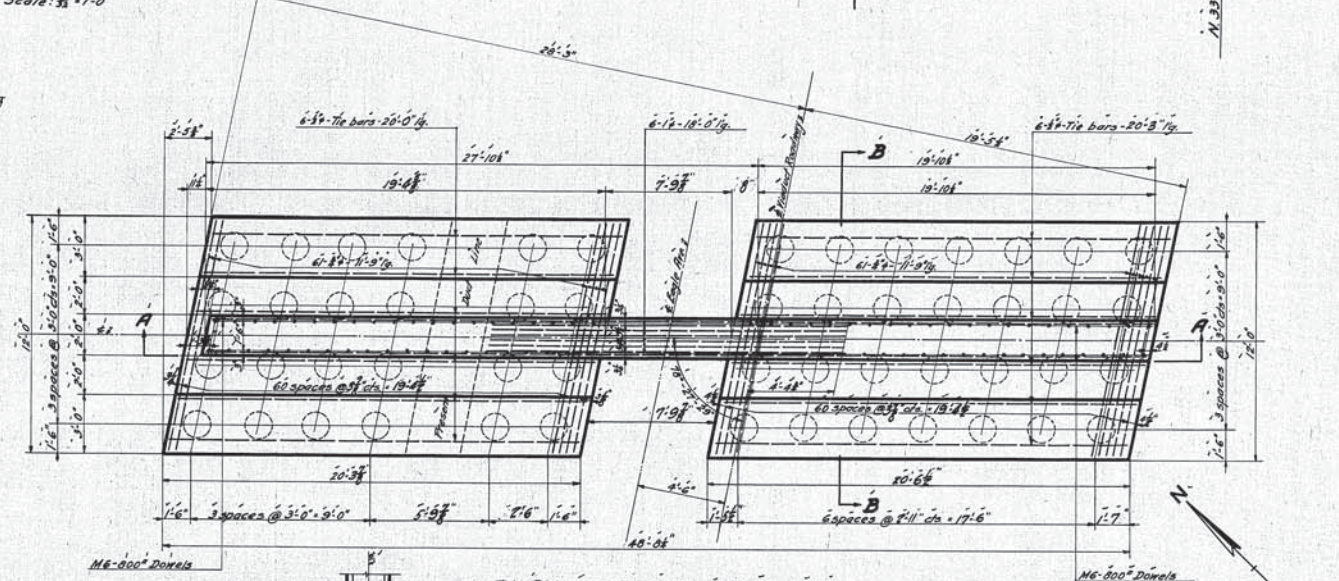
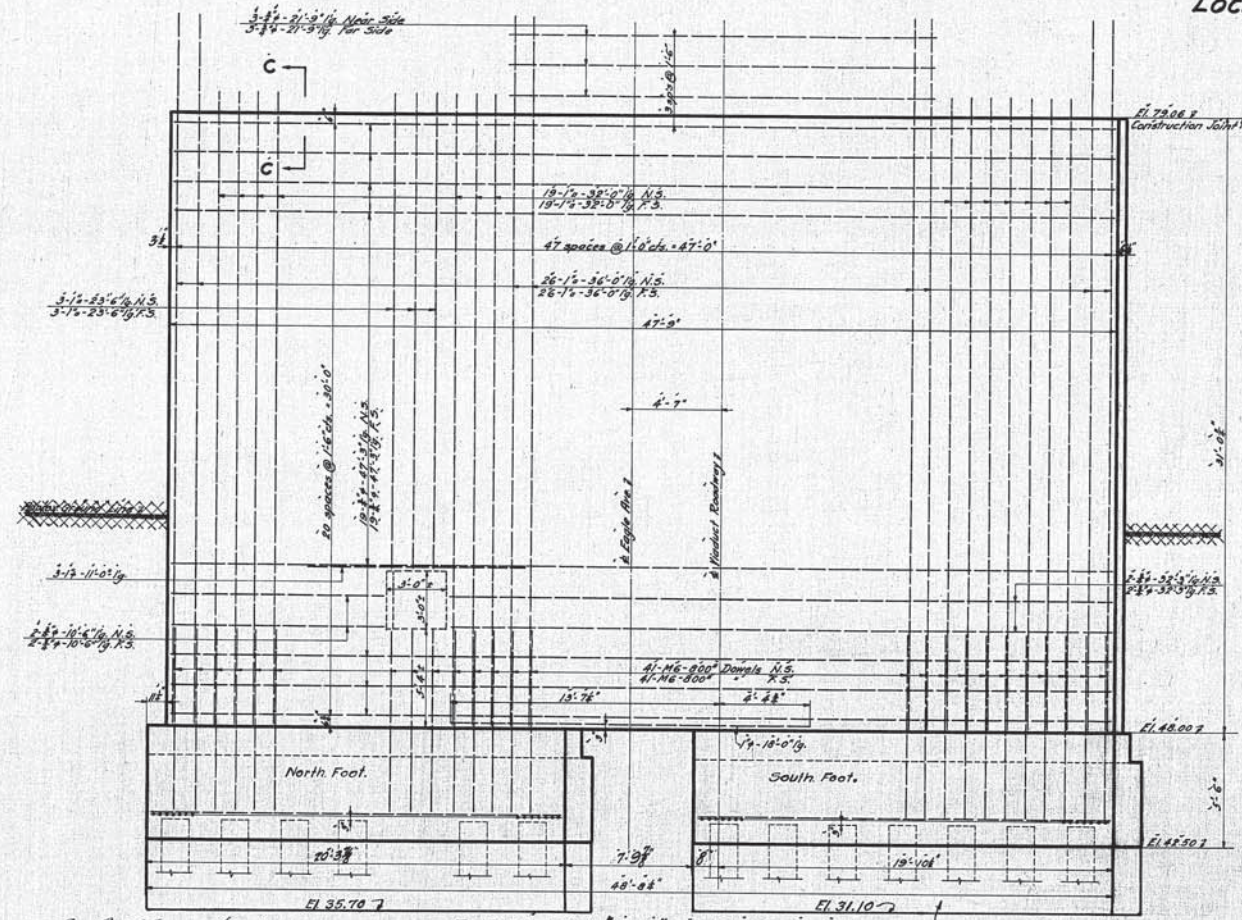
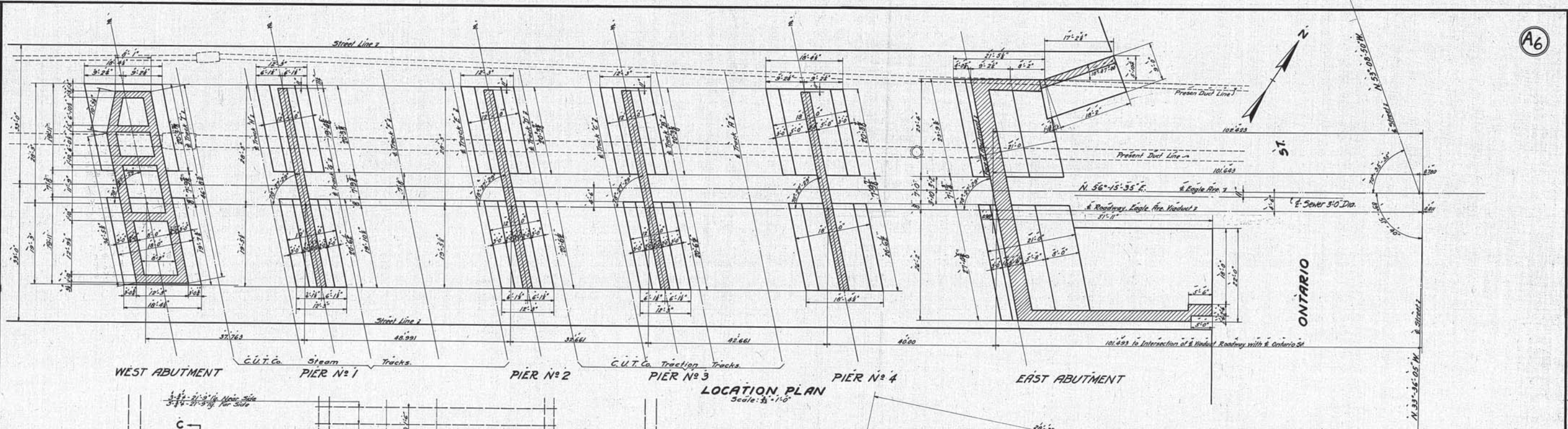
Note: For Original of this Signature See Blue Print filed under 1130393

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE. VIADUCT-SECTION "A"  
PORTION FROM W. & L.E.R.R. TO ONTARIO ST.  
MISCELLANEOUS DETAILS

CLEVELAND, OHIO.  
OFFICE OF ENGINEER OF STRUCTURES.  
SCALE: As shown.  
DATE: November 3, 1926.  
REVISED: NOV. 25, 1931.  
*C.P. Marsh* 7/24/27  
Chief Engineer

F.I.F. No. 113-039

Issue No. A April 7, 1926  
 Revisions:  
 Issue No. B August 29, 1926  
 Revised and Redrawn.  
 Issue No. C Dec. 15, 1926  
 Footings revised.  
 Issue No. D May 4, 1927  
 Drawing checked.  
 Issue No. 1 August 10, 1927  
 Signed by Chief Engineer.  
 Issue No. 2 Aug. 24, 1927  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.  
 Issue No. 3 Oct. 19, 27  
 Width Of Openings In Footings For  
 Sewer Increased  
 Issue No. 4 April 24, 1931  
 Plan corrected to conform  
 to structure as built.



Designed by F.E.D. 2/19/26  
 Detailed by E.A.W. 8/29/26  
 Traced by E.A.W. 11/27/27  
 Checked by D.R.A. 5/14/27  
 Correct 5-5-27  
 G.L. Gorman  
 Designing Engineer

Approved C.P. Marsh 7/26/27  
 Engineer of Structures  
 Approved J.W. Bogan 4/27  
 Principal Assistant Engineer  
 Approved M.H. ... 7/29/27  
 Assistant Electrical Engineer  
 Approved W.H. ... 7/29/27  
 Engineer of Construction

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date: July 29, 1927.

NOTES: Spacing for Dowels same as shown for vertical bars.  
 Hole shown dotted in Elevation 'A-A' to be filled after ducts are moved.  
 Location of temporary hole for existing ducts is approximate.

Piles not used.

NOTE: For explanation of Method of marking bent steel reinforcement bars, see Standard Bar Marks, Sheet #1 of 1, Issue #1, Dated January 8, 1925.

We hereby certify that this Plan shows the structure as built.  
 C.P. Marsh 4/10/31  
 Engineer of Structures  
 H.L. Bigelow 4/27/31  
 Asst. Engineer of Construction

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT-SECTION 'A'  
 PORTION FROM W.&L.E.R.R. TO ONTARIO ST.  
 LOCATION PLAN OF PIERS & ABUTMENTS  
 DETAILS OF PIER No. 1  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES.  
 SCALE: As shown.  
 DATE: April 7, 1926  
 REVISED: Dec. 15, 1926  
 G.L. Gorman  
 Chief Engineer

Note: For Original of this Signature See Blue Print filed under 113-039 S



Issue No. A - April 7, 1926

Revisions:

Issue No. B - August 26, 1926

Revised and Redrawn

Issue No. C - December 18, 1926

Footings revised

Issue No. 1 - August 10, 1927

Signed by Chief Engineer

Issue No. 2 - Aug. 29, 1927

Approved by Commissioner of Engineering and Construction of the City of Cleveland

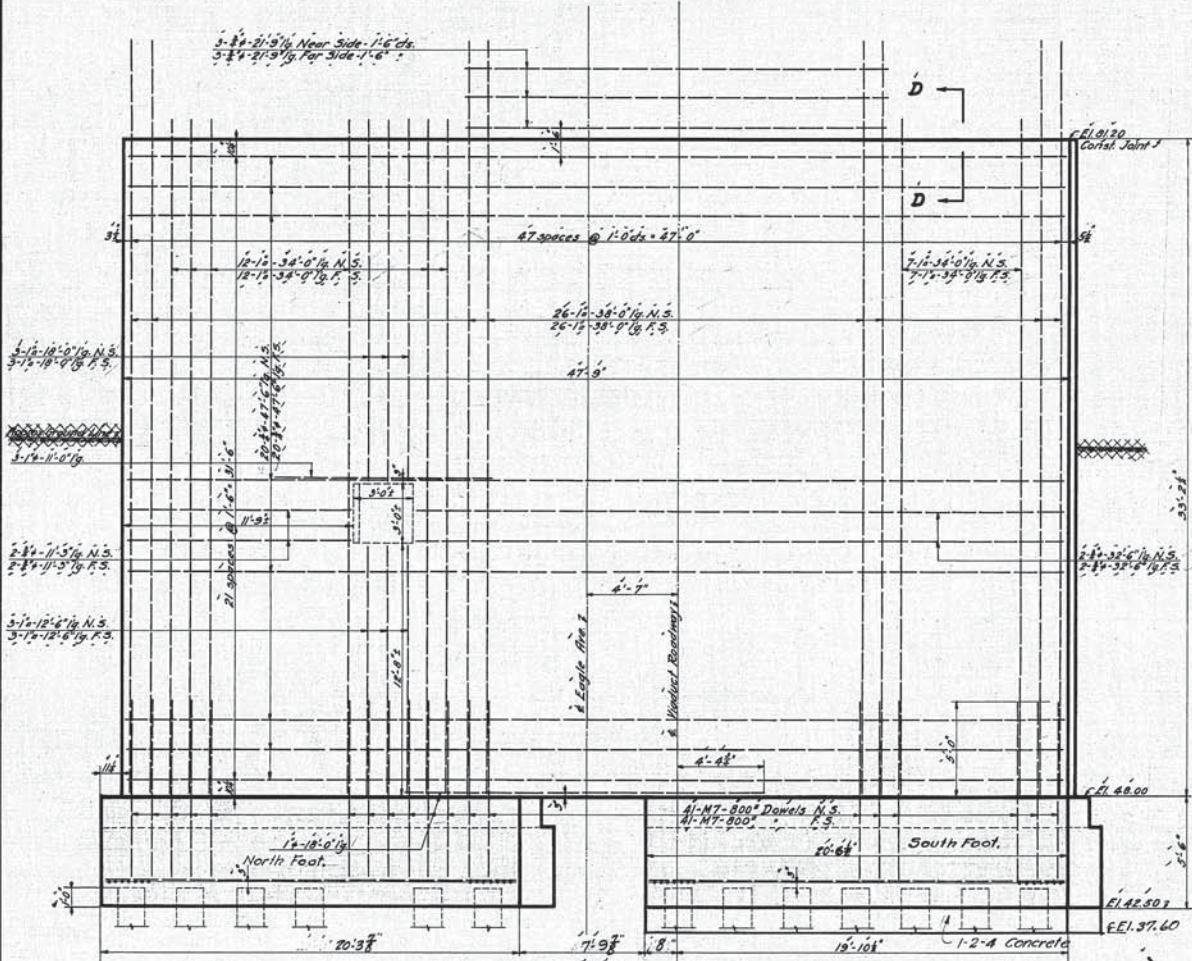
Issue No. 3 - Oct 19/27

Width Of Openings In Footings For Sewer Increased

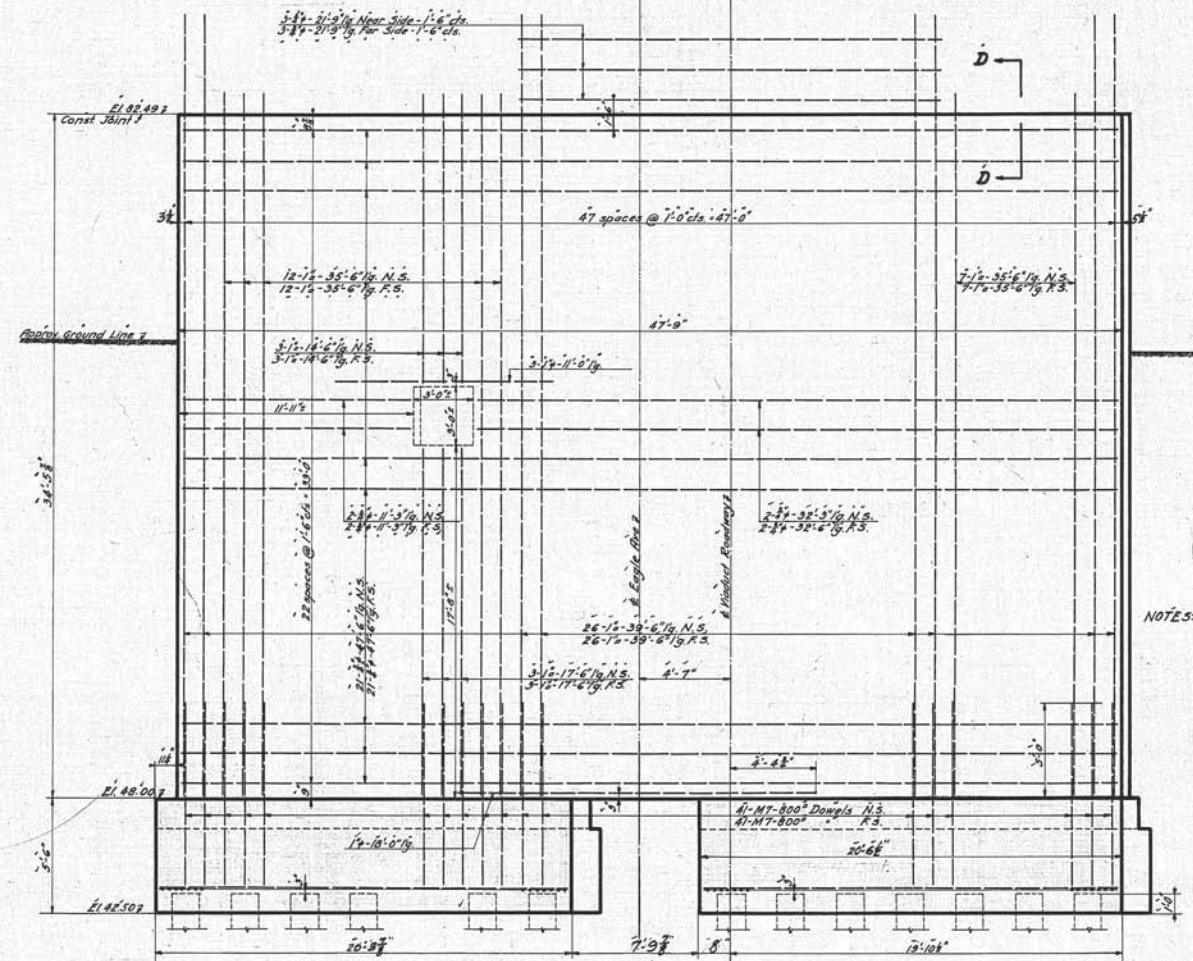
Issue No. 4 - Apr 24, 1931

Plans corrected to conform to structure as built

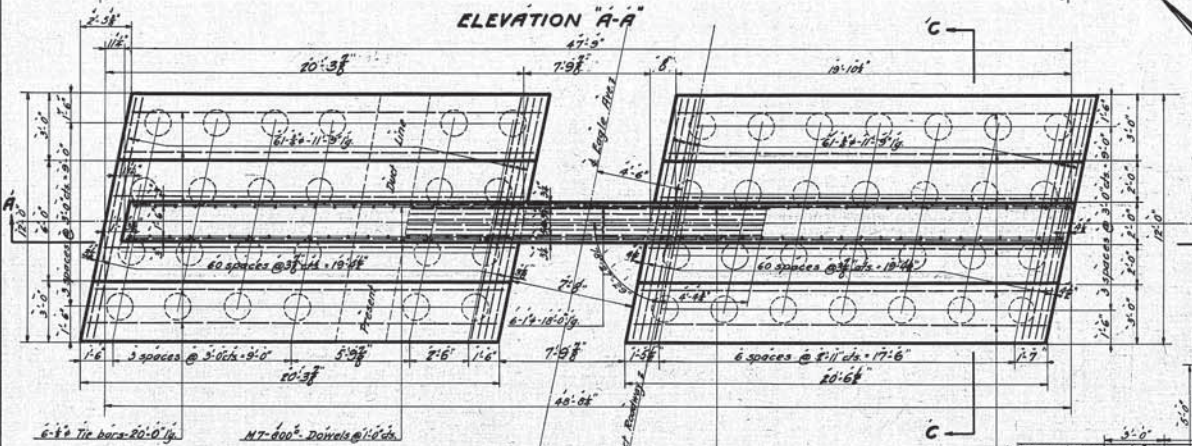
NOTE: Location of temporary hole for existing ducts is approximate.



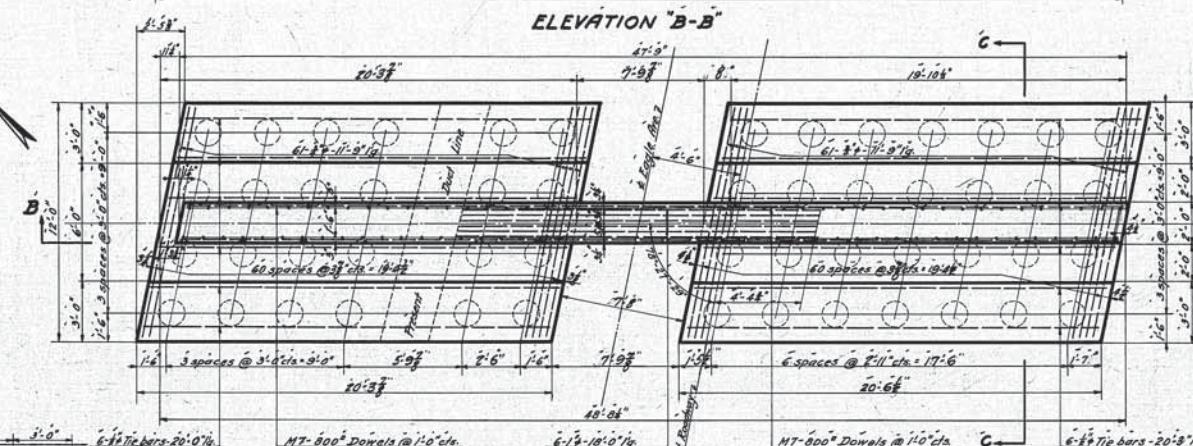
ELEVATION "A-A"



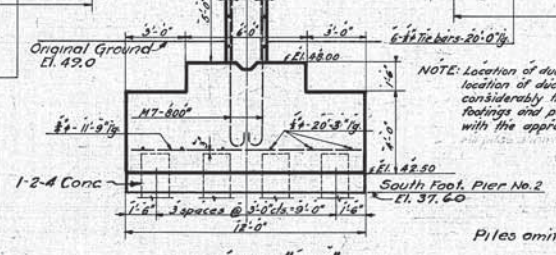
ELEVATION "B-B"



PLAN OF FOOTING PIER No. 2



PLAN OF FOOTING PIER No. 3



SECTION "C-C"

SECTION "D-D"

NOTE: For explanation of Method of marking bent steel reinforcement bars, see Standard Bar Marks, Sheet #1 of Issue #1, Dated January 8, 1925. Holes shown dotted in Elevations to be filled after ducts are moved. Spacing for Dowels same as shown for vertical bars.

Designed by F.E.D. 2/19/26  
 Detailed by E.A.W. 8/26/26  
 Traced by E.A.W. 2/2/27  
 Checked by D.K.A. 5/4/27  
 Correct 5-5-27  
 G.L. Gorman  
 Designing Engineer

Approved C.P. Marsh 7/10/27  
 Engineer of Structures  
 Approved J.W. Bogan 7/10/27  
 Principal Assistant Engineer  
 Approved M. J. ... 7/9/27  
 Assistant Electrical Engineer  
 Approved M. ... 7/9/27  
 Engineer of Construction

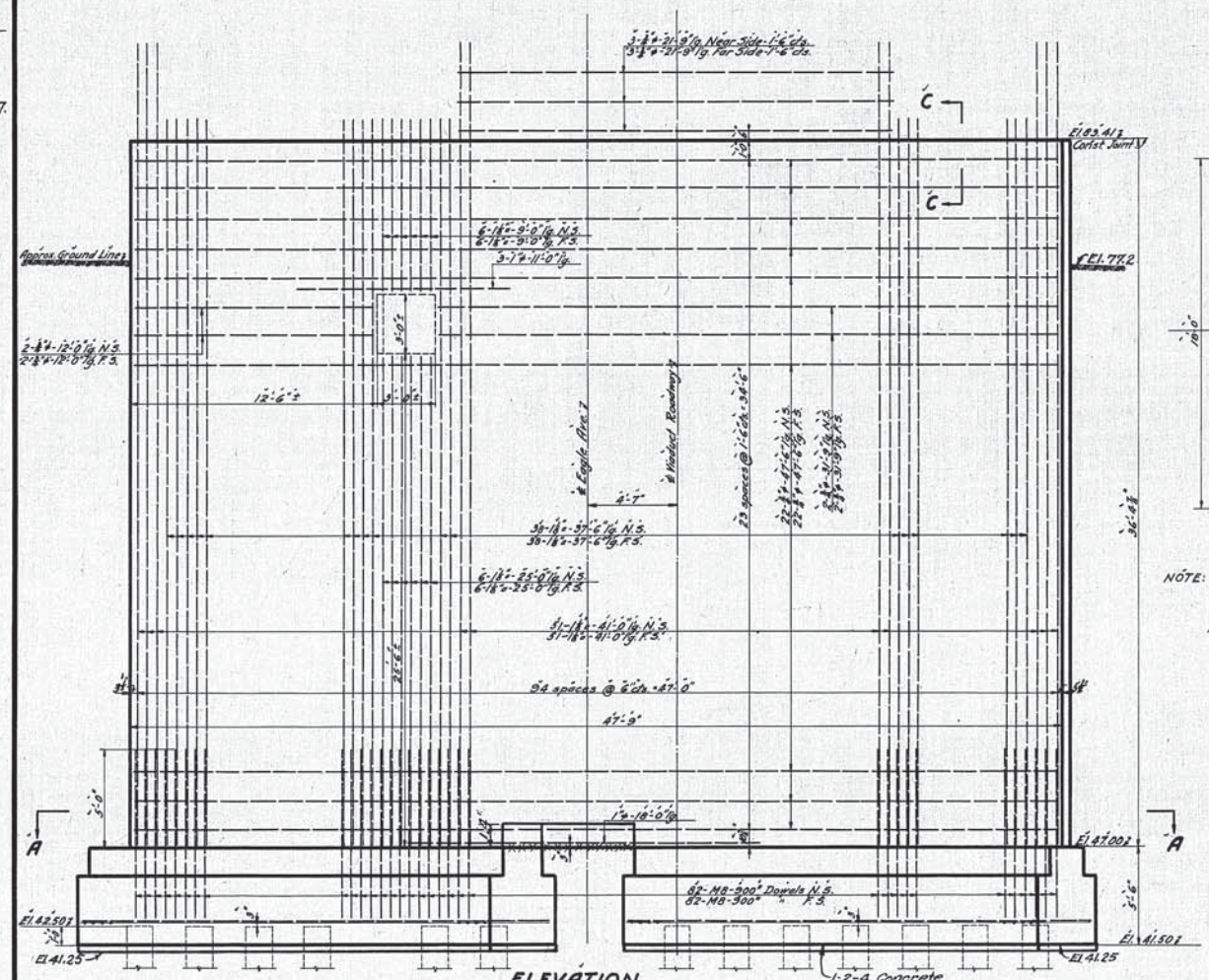
City of Cleveland  
 Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date July 29, 1927  
 Note: For Original of this Signature See Blue Print filed under 113-0393

NOTE: Location of duct line is approximate. In case location of duct line should be found to vary considerably from that shown, alterations to footings and positions of bars may be made with the approval of the Engineer.  
 Piles omitted in structures as built.

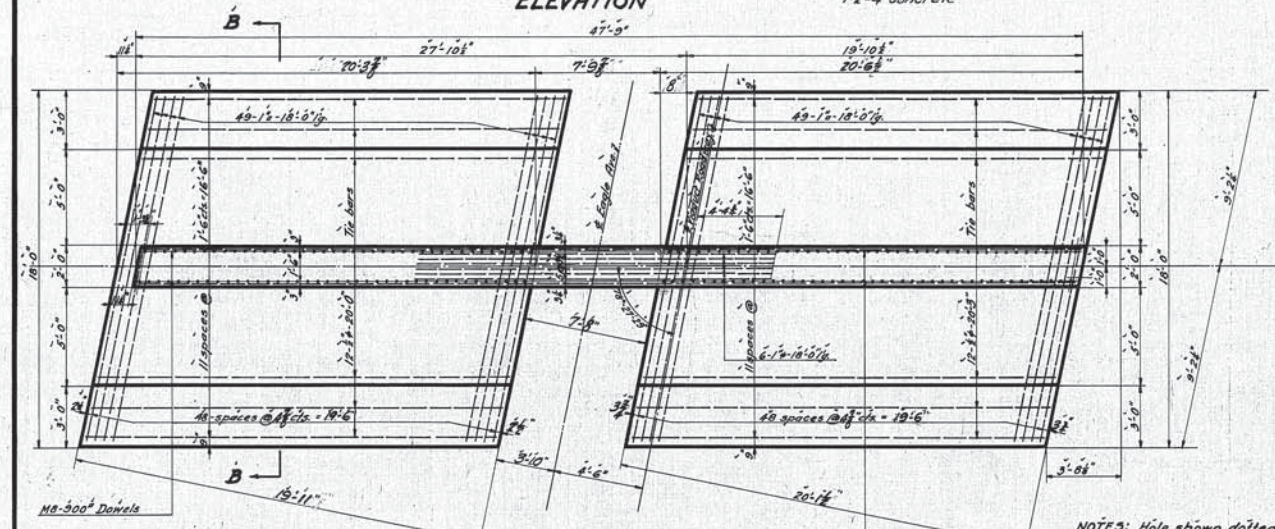
C.P. Marsh 7/10/27  
 Engineer of Structures  
 J.W. Bogan 7/21/27  
 Chief Engineer

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT-SECTION "A"  
 PORTION FROM W. & L.E.R.R. TO ONTARIO ST.  
 DETAILS OF PIER No. 2 & PIER No. 3  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE 1/4" = 1'-0"  
 ISSUE No. 4  
 DATE April 7, 1926  
 REVISED: Apr. 24, 1931

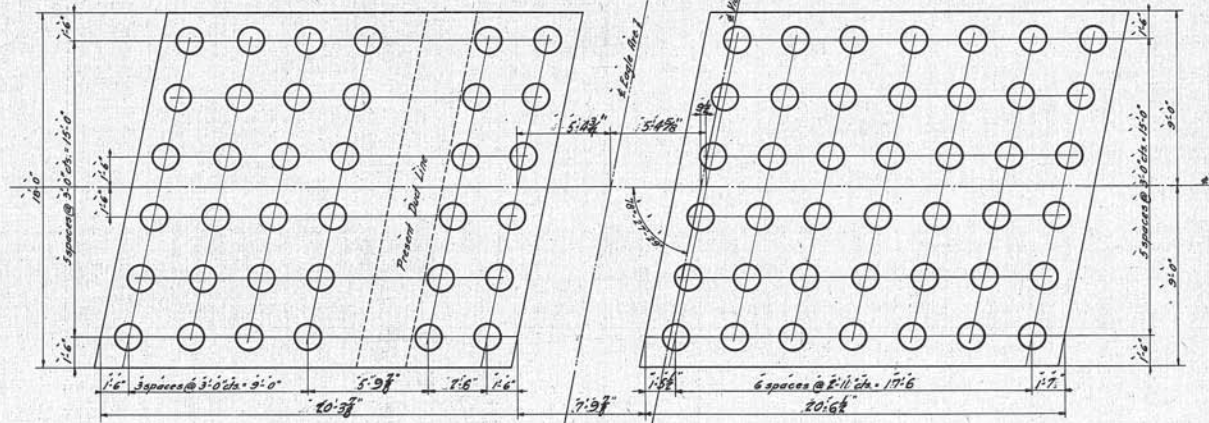
Issue No. A Oct. 15, 1926  
 Revisions  
 Issue No. B Dec. 21, 1926  
 Footing & Shaft reinforcing revised.  
 Issue No. 1 August 10, 1927  
 Signed by Chief Engineer.  
 Issue No. 2 Aug. 24, 1927  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.  
 Issue No. 3 Oct. 19, 1927  
 Width of Openings in Footings for  
 Sewer Increased  
 Issue No. 4 Apr. 24, 1931  
 Plan corrected to conform to  
 structure as built.



ELEVATION



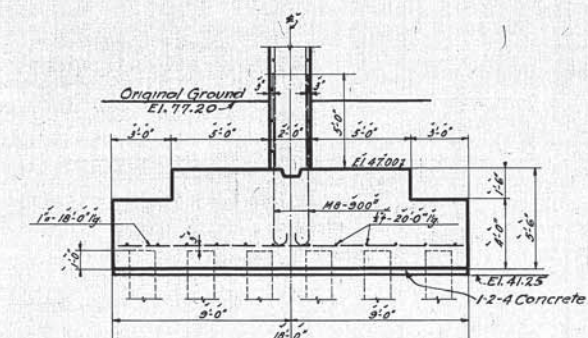
SECTION 'A-A'



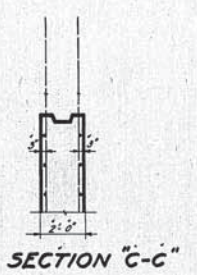
PILING PLAN

NOTE: Location of duct line is approximate. In case location of duct line should be found to vary considerably from that shown, alterations to footings and positions of piles may be made with the approval of the Engineer.

Piles omitted in structure as built.



SECTION 'B-B'



SECTION 'C-C'

NOTES: Hole shown dotted in Elevation, to be filled after ducts are moved. Spacing for Dowels same as shown for vertical bars. For explanation of Method of marking bent steel reinforcement bars, see 'Standard Bar Marks Sheet #1 of 1, Issue #1, dated January 8, 1925. Location of temporary hole for existing ducts is approximate.

Designed by E.A.B. 9-23-26  
 Detailed by F.O. 10-15-26  
 Traced by E.R.V. 2-10-27  
 Checked by D.K.A. 5/9/27  
 Correct 5-5-27  
 F.L. Gorman  
 Designing Engineer

Approved C.P. Marsh 7/26/27  
 Engineer of Structures  
 Approved J.W. Dyer 7/27  
 Principal Assistant Engineer  
 Approved W.H. Sullivan 7/29/27  
 Assistant Electrical Engineer  
 Approved W.H. Sullivan 7/29/27  
 Engineer of Construction

Showing Bottom bars & Location of Dowels.  
 Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date: July 29, 1927.  
 Note: For Original of this Signature See Blue Print filed under 113-039S.

We hereby certify that this Plan complies with the conditions as built.  
 C.P. Marsh 4/19/31  
 H.P. Bigelow 4/22/31  
 H.P. Bigelow  
 Chief Engineer of Construction

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT-SECTION 'A'  
 PORTION FROM W.&L.E.R.R. TO ONTARIO ST.  
 DETAILS OF PIER No. 4  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES.  
 SCALE: 1/4" = 1'-0"  
 ISSUE No. 4  
 DATE: October 15, 1926  
 REVISED: DEC. 24, 1931  
 C.H. Hester  
 Chief Engineer

Issue No. A Sept. 8, 1926

Revisions:  
Issue No. B April 26, 1927

Further details added.

Issue No. C June 9, 1927

Details of Grating in Service Tunnel omitted.

Minor changes in Service Shafts, Details of

Frame for Manhole "7" added.

Issue No. D July 11, 1927

Traps added in Sec. "K-K".

Gratings shown in Sections "G-G" & "T-T"

note added about gratings.

Issue No. 1 August 10, 1927

Signed by Chief Engineer

Issue No. 2 Aug. 24, 1927

Approved by Commissioner of

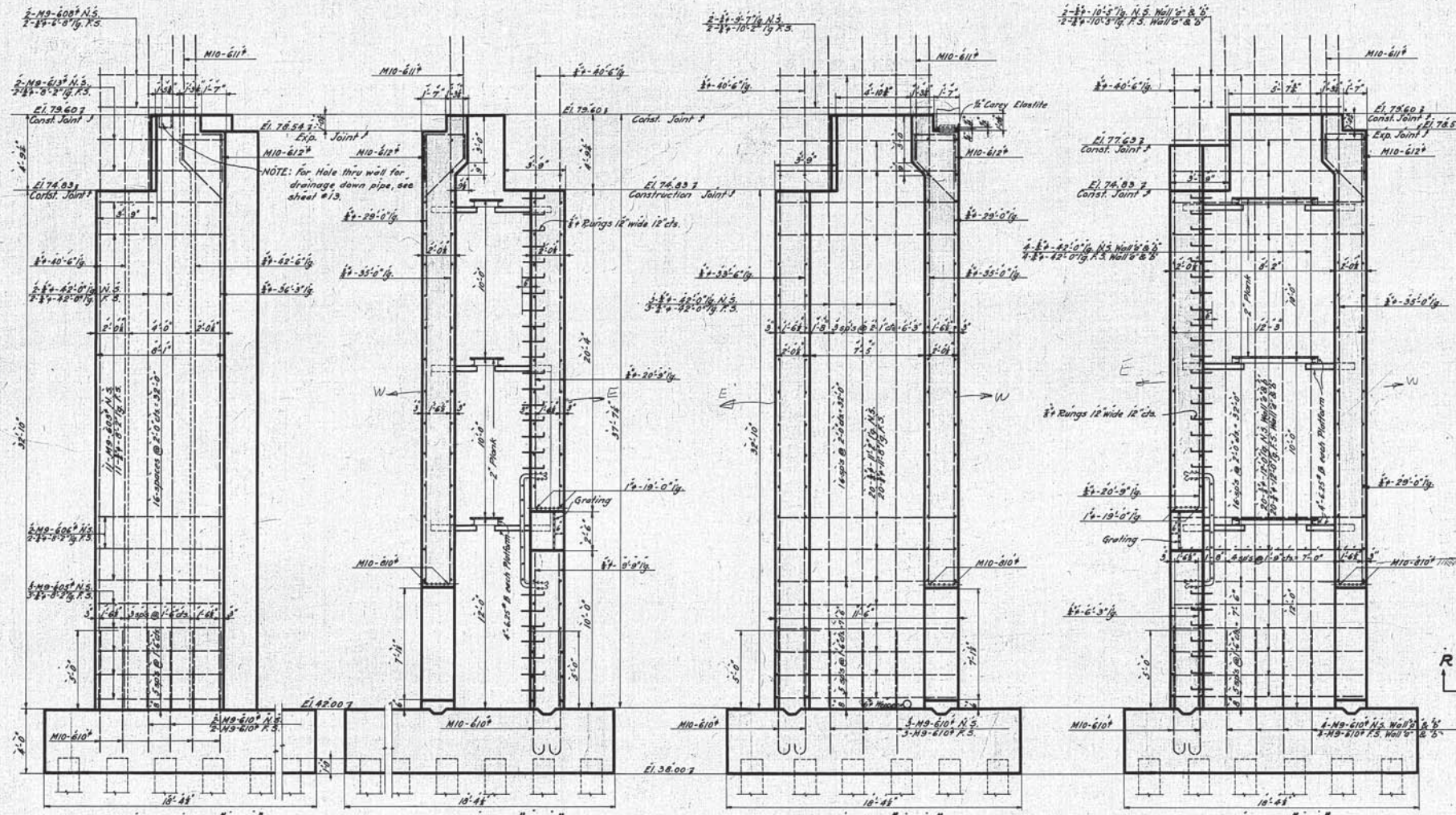
Engineering and Construction of

the City of Cleveland.

Issue No. 3 Apr. 29, 1931

Plan corrected to conform to

structure as built.

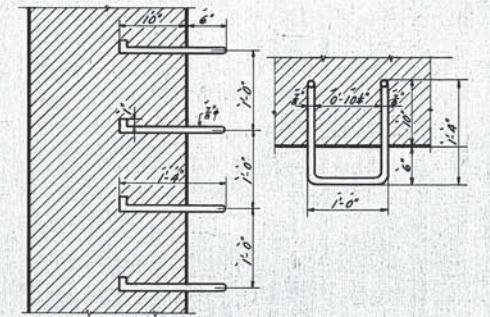


END VIEW "F-F" (See Sheet #10)

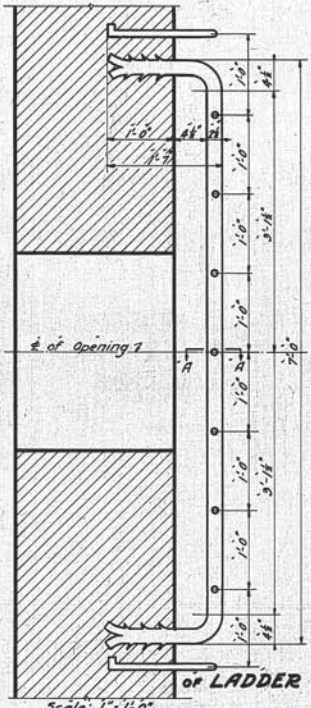
SECTION "G-G" (See Sheet #10)

SECTION "H-H" (See Sheet #10)

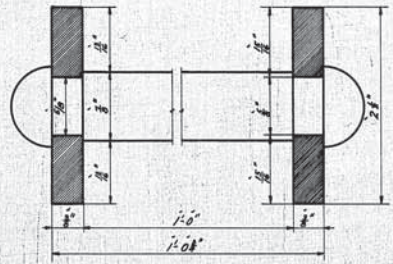
SECTION "I-I" (See Sheet #10)



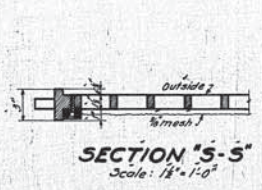
DETAILS OF STEPS Scale: 1"=1'-0"



DETAILS OF LADDER Scale: 1"=1'-0"

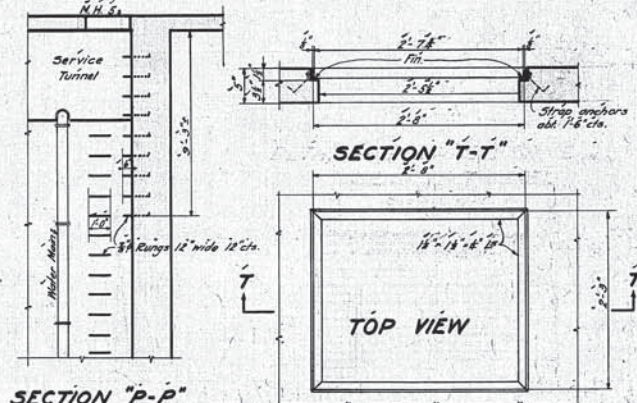


SECTION "A-A" Full size

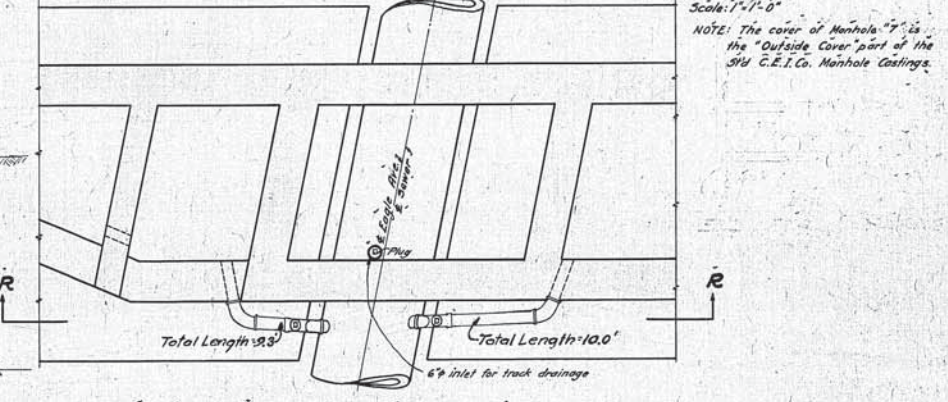


SECTION "S-S" Scale: 1/2"=1'-0"

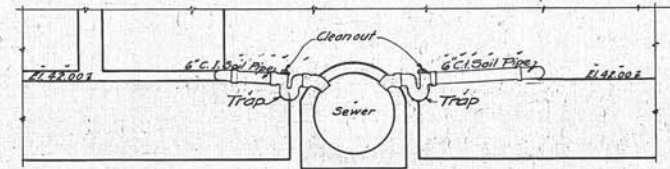
NOTES: For other details of Abutment see Sheet #10.  
Spacing for Dowels same as shown for vertical bars.  
For explanation of Method of marking bent steel reinforcement bars, see "Standard Bar Marks" Sheet #1 of Issue #1, Dated January 8, 1925.  
For location of anchor bolts, and opening in wall for drainage down pipes, see sheet #13.  
Gratings to be set in the forms, before concrete is poured.



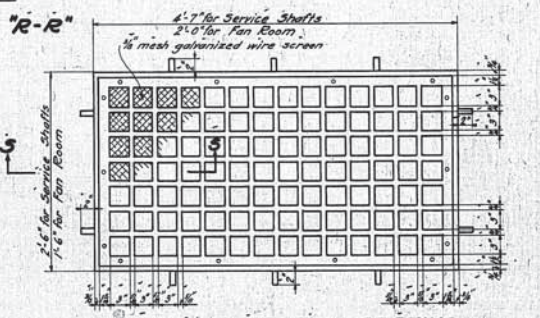
SECTION "T-T" (See Sheet #5) DETAILS OF FRAME FOR MANHOLE "7" Scale: 1/2"=1'-0"



PLAN OF DRAINAGE FOR SERVICE CHAMBERS



SECTION "R-R"



DETAIL OF CAST IRON GRATING Scale: 1"=1'-0" Required two of each.

Designed by F.E.B. 2/19/26  
Detailed by E.A.W. 9/8/26  
Traced by E.A.W. 2/8/27  
Checked by D.R.A. 5/4/27  
Corrected May 5, 1927  
Y.L. Gorman  
Designing Engineer

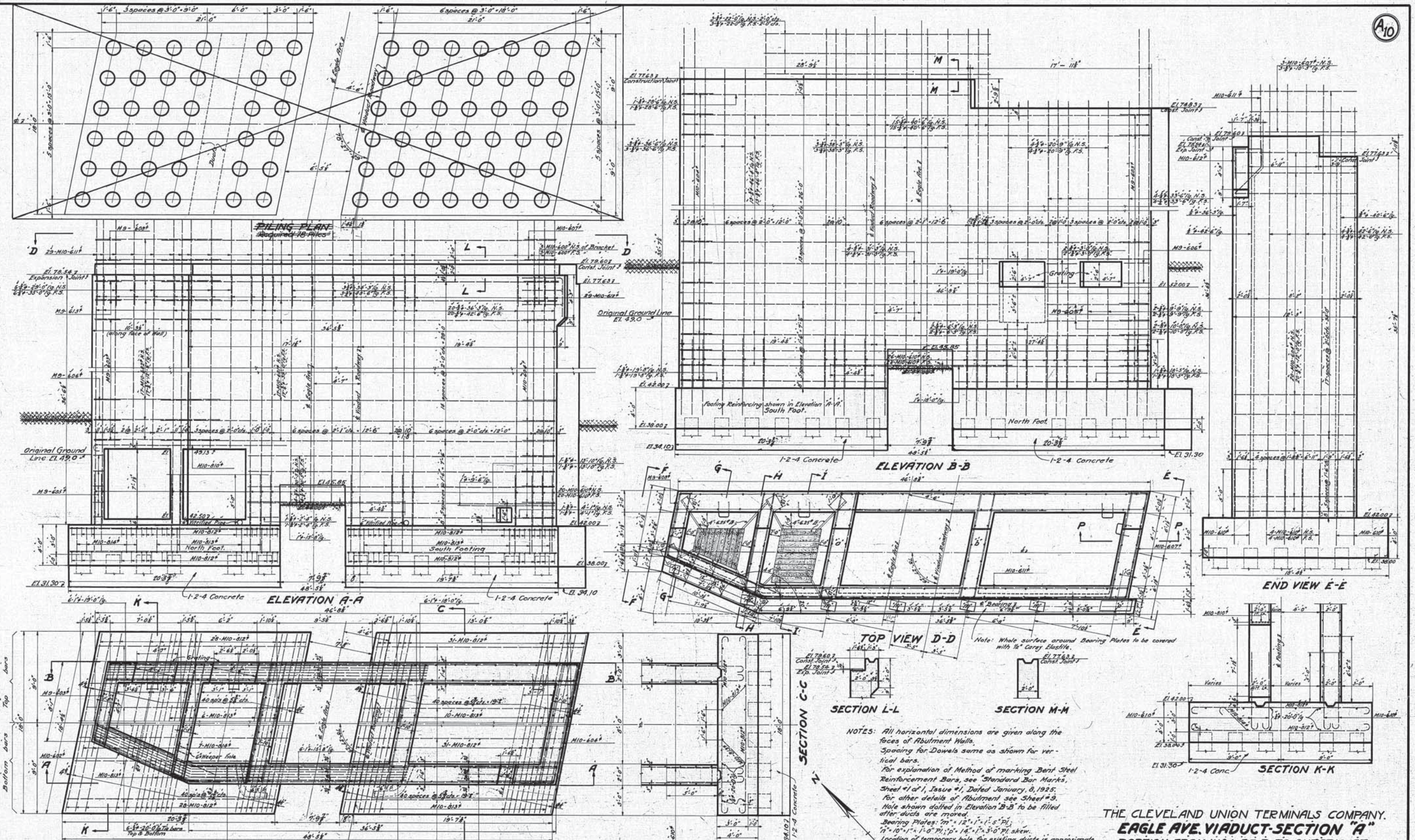
Approved E.P. Marsh 7/26/27  
Engineer of Structures  
Approved J.W. Radwin 4/27  
Principal Assistant Engineer  
Approved K.W. Fisher 7/29/27  
Assistant Electrical Engineer  
Approved M.D. Ouloff 7/29/27  
Engineer of Construction

Plan Approved CITY OF CLEVELAND  
By Robert Hoffman  
Commissioner of Engineering and Construction  
Date: July 29, 1927.  
Note: For Original of this Signature See Blue Print filed under 113-039 S.

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE. VIADUCT-SECTION "A"  
PORTION FROM W.&L.E.R.R. TO ONTARIO ST.  
DETAILS OF WEST ABUTMENT

CLEVELAND, OHIO.  
OFFICE OF ENGINEER OF STRUCTURES  
SCALE: 1/2"=1'-0" SHOWN.  
ISSUE No. 3  
DATE: Sept. 8, 1926.  
REVISED: DEC. 29, 1931.  
H.L. Bigelow  
Chief Engineer

Issue No. A Sept. 3, 1926  
 Revisions:  
 Issue No. B Oct. 29, 1926  
 Bearing Plates added.  
 Issue No. C Jan. 4, 1927  
 Horizontal clearance and Elevation of bottom slab of service tunnel changed.  
 Issue No. D May 4, 1927  
 Platforms changed, Drawing checked.  
 Issue No. E July 11, 1927  
 Minor changes.  
 Issue No. 1 August 10, 1927  
 Signed by Chief Engineer.  
 Issue No. 2 Aug. 24, 1927  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3 Oct. 17, 1927  
 Width of Openings in Footings for Sewer Increased.  
 Issue No. 4 Apr. 25, 1931  
 Plan corrected to conform to structure as built.



Designed by F.E.B. 2/19/26  
 Detailed by E.A.W. 9/3/26  
 Traced by E.A.W. 11/1/27  
 Checked by D.R.B. 5/2/27  
 Correct May 5, 1927  
 G.L. Porman  
 Designing Engineer

Approved C.P. Marsh  
 Engineer of Structures  
 Approved J.W. ...  
 Principal Assistant Engineer  
 Approved ...  
 Assistant Electrical Engineer  
 Approved ...  
 Engineer of Construction

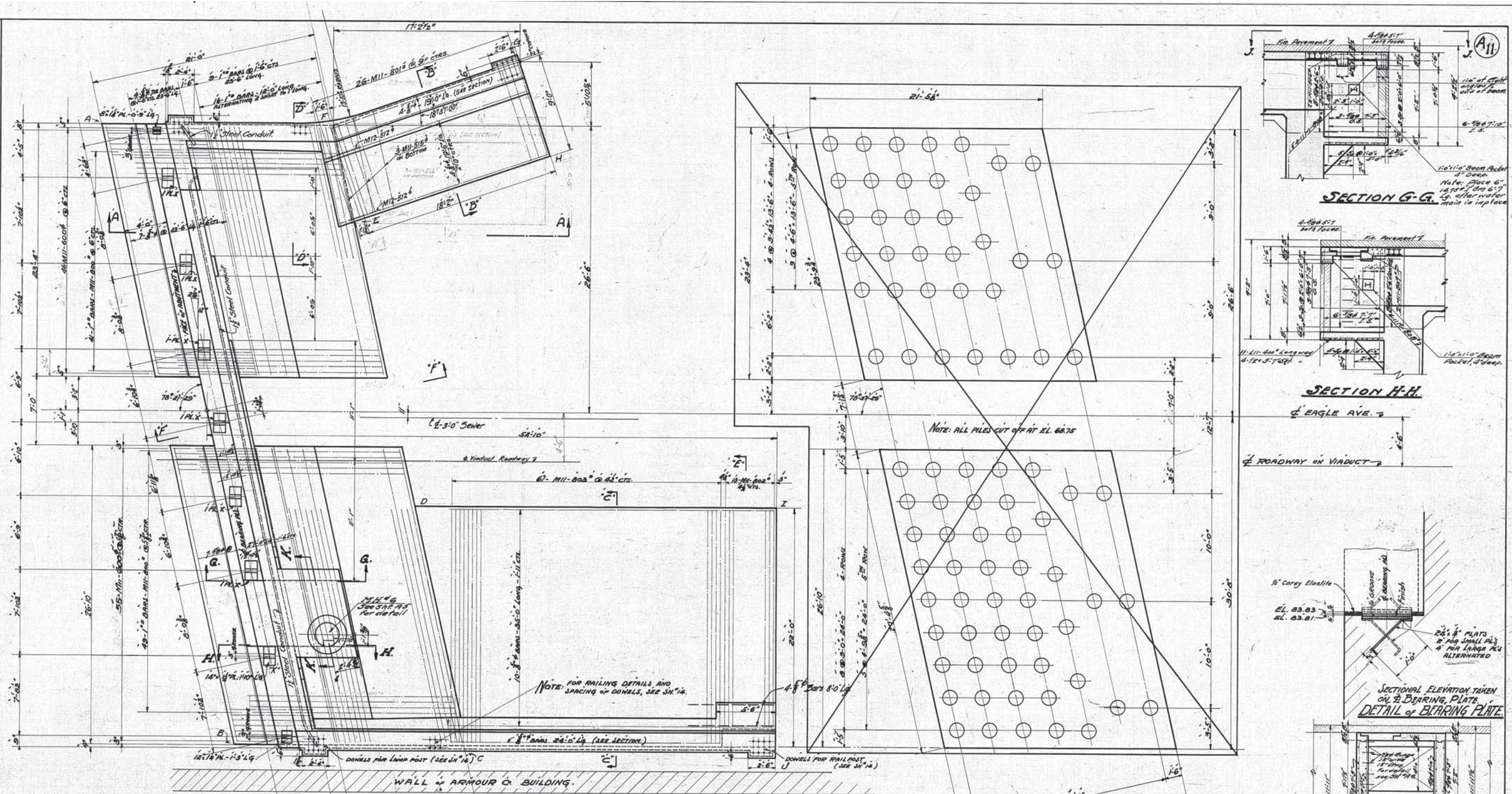
PLAN OF FOOTING  
 Showing Top & Bottom bars & Location of Dowels.  
 NOTES: Two north service chambers for the C.E.C.A. to be meter-proofed with 'Tronite' on inside surfaces up to Elev. 52.00. For detail of gratings, and drainage for service chambers, see sheet # 9.

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date: July 29, 1927.  
 Note: For Original of this Signature See Blue Print filed under 113-039-S.

NOTES: All horizontal dimensions are given along the faces of Abutment Walls.  
 Spacing for Dowels same as shown for vertical bars.  
 For explanation of Method of marking Bent Steel Reinforcement Bars, see Standard Bar Marks, Sheet #1 of 1, Issue #1, Dated January 8, 1925.  
 For other details of Abutment see Sheet # 9.  
 Hole shown dotted in Elevation B-B to be filled after ducts are moved.  
 Bearing Plates: 7' x 12' x 1'-5" Pl.  
 7' x 10' x 1'-0" Pl.; 5' x 14' x 3'-0" Pl. skew.  
 Location of temporary hole for existing ducts is approximate.  
 Location of duct line is approximate. In case location of duct line should be found to vary considerably from that shown, alterations to footings and positions of piles may be made with the approval of the Engineer.  
 For location of anchor bolts, and opening in wall for drainage down pipes, see sheet # 13.

THE CLEVELAND UNION TERMINALS COMPANY.  
**EAGLE AVE. VIADUCT-SECTION "A"**  
 PORTION FROM W.&L.E.R.R. TO ONTARIO ST.  
 DETAILS OF WEST ABUTMENT  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES.  
 SCALE: 1/4" = 1'-0"  
 ISSUE No. A  
 DATE: Sept. 3, 1926.  
 REVISED: Apr. 25, 1931.  
 G.L. Porman  
 CHIEF ENGINEER  
 FILE No. 113-039

**REVISIONS.**  
 Issue No. 5, July 11, 1927  
 Footing Bars Hooked.  
 Added shelf for piling base.  
 Issue No. 1, August 10, 1927  
 Signed by Chief Engineer.  
 Issue No. 2, Aug. 24, 1927  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.  
 Issue No. 3, Nov. 17, 27  
 Width of Openings in Footings for  
 Sewer Increased.  
 Issue No. 4, May 8, 1928  
 Added details for Chamber  
 on back of East Abutment  
 at East end of Service Tunnel  
 for Water Main.  
 Issue No. 5, May 14, 1928  
 Added 6" I-Beam and Top  
 Ledger Strings to Water Main  
 Chamber.  
 Issue No. 6, June 15, 1928  
 Revisions approved by Commissioner  
 of Engineering and Construction of  
 the City of Cleveland.  
 Issue No. 7, Apr. 28, 1931  
 Plan corrected to conform to  
 structure as built.



**PLAN.**

**PILING PLAN.**

Original Ground Elevations  
 Elevations given at points 6' outside  
 of neat lines of footings as marked on Plan.

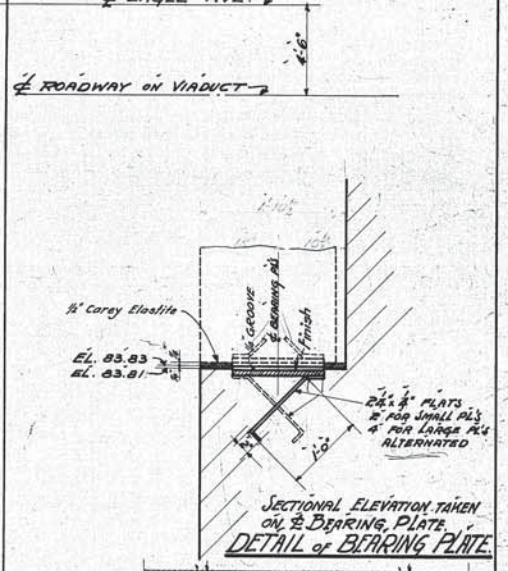
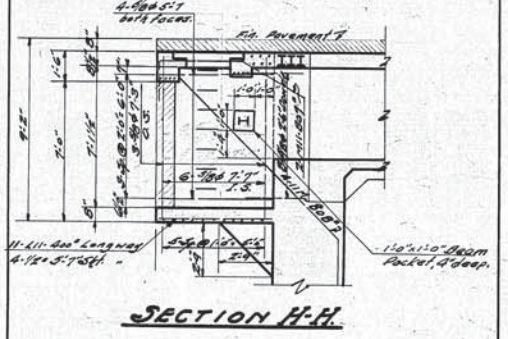
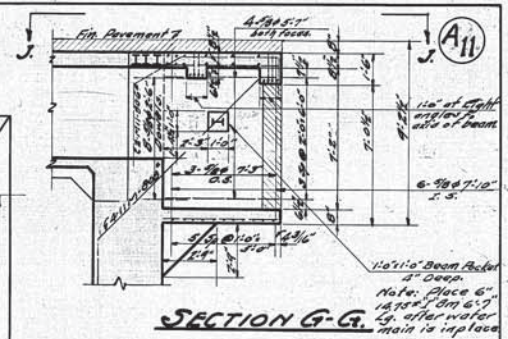
Point	Elevation
A	83.6
B	84.0
C	87.3
D	85.2
E	86.2
F	86.5
G	89.3
H	89.3
I	89.8
J	91.0

NOTE: FOR SECTIONS SEE SH. #12.

FOR METHOD OF MARKING, BUTT STEEL REINFORCEMENT BARS, SEE 1/2" BAR MARKS, SHEET No. 1 of 1, ISSUE No. 1, DATED Jan. 8, 1925.  
 ALL PILES SHOWN TO BE CONCRETE.  
 FOR ANCHORS FOR C.I. DRAINS SEE SH. #13.

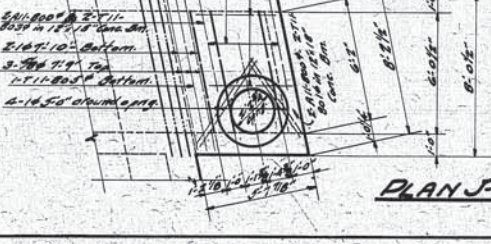
Revisions of May 13, 1928  
 APPROVED  
 Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date June 15, 1928  
 Note: For original of this Signature See Blue Print filed under 113-0395.

PLAN APPROVED  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date July 29, 27  
 Note: For Original of this Signature See Blue Print filed under 113-0395.



DESIGNED BY: E. R. B. Oct. 16, 26  
 DETAILED BY: M. J. O. Oct. 16, 26  
 TRACED BY: M. J. O. Mar. 10, 27  
 CHECKED BY: D. R. A. 5/4/27  
 CORRECT: May 5, 1927  
 G. L. Workman  
 DESIGNING ENGINEER

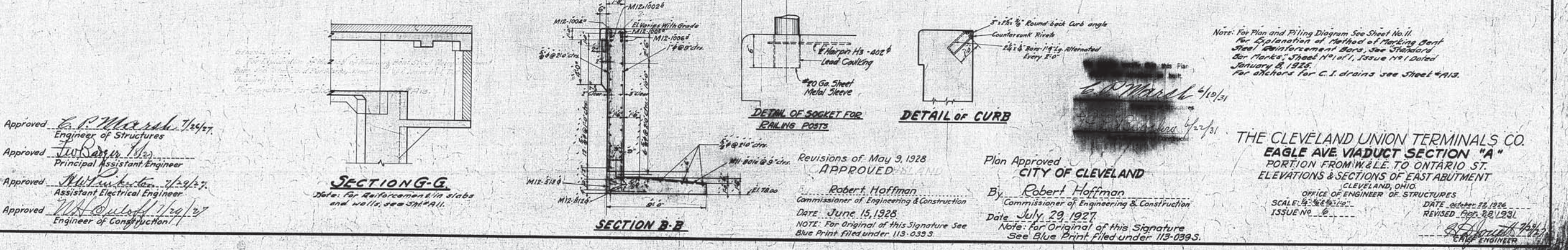
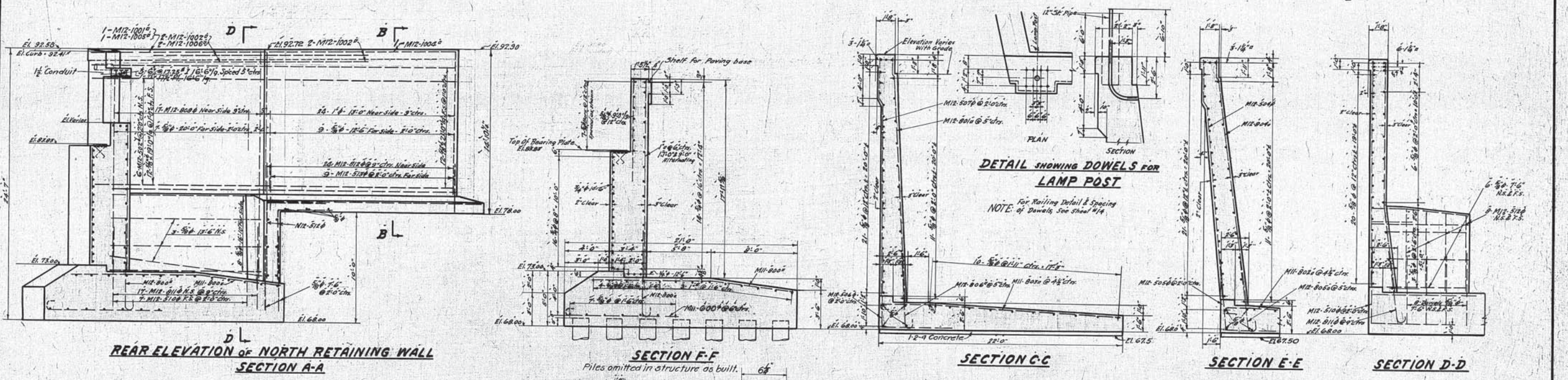
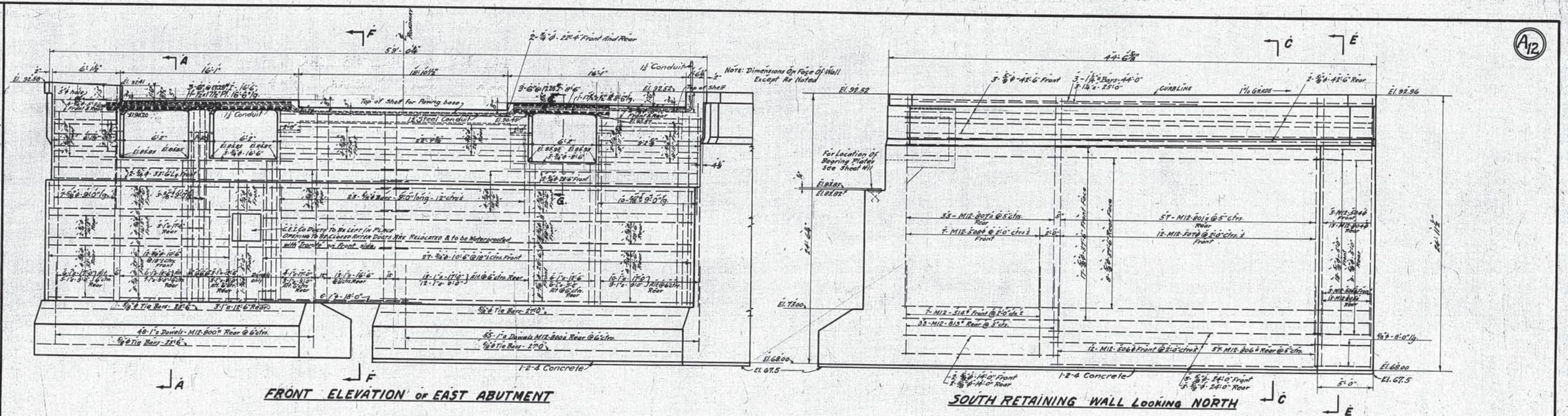
APPROVED: E. P. Marsh 7/26/27  
 ENGINEER OF STRUCTURES  
 APPROVED: J. W. Sullivan 4/27  
 PRINCIPAL ASSISTANT ENGINEER  
 APPROVED: H. W. Webster 7/29/27  
 ASSISTANT ELECTRICAL ENGINEER  
 APPROVED: M. J. Duloff 7/14/27  
 ENGINEER OF CONSTRUCTION



**PLAN S-J.**

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT - SECTION 'A'  
 PORTION FROM W. & L. E. R.R. TO ONTARIO ST.  
 DETAILS OF EAST ABUTMENT.  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES.  
 SCALE 3/4" = 1'-0"  
 DATE: OCT. 16, 1926.  
 REVISED: Apr. 28, 1931  
 ISSUE No. 7  
 FILE NO. 113-0395

Issue No. A Oct. 22, 1926.  
 Revisions:  
 Issue No. B Mar. 10, 1927.  
 Minor Changes  
 Issue No. C July 11, 1927.  
 Note added. Minor changes.  
 Shelf added for paving base.  
 Issue No. 1 August 10, 1927  
 Signed by Chief Engineer  
 Issue No. 2 Aug. 24, 1927.  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.  
 Issue No. 3 Oct. 17, 1927.  
 Minor Revisions  
 Issue No. 4 May 9, 1928  
 Added chamber on Service  
 Tunnel for Water Main.  
 Issue No. 5 June 15, 1928  
 Revisions approved by Commissioner  
 of Engineering and Construction of  
 the City of Cleveland.  
 Issue No. 6 Apr. 28, 1931  
 Plan corrected to conform  
 to structure as built.



Designed By E.A.B. Oct. 22, 1926.  
 Detailed By M.J.P. Oct. 22, 1926.  
 Traced By F.H.B. March 10, 1927.  
 Checked By D.R.A. 5/14/27.  
 Correct May 5, 1927.  
 J.S. Hoffman  
 Designing Engineer

Approved E.P. Maxrud 7/24/27  
 Engineer of Structures  
 Approved J.W. Smith 7/24/27  
 Principal Assistant Engineer  
 Approved H.W. ... 7/24/27  
 Assistant Electrical Engineer  
 Approved M.A. ... 7/24/27  
 Engineer of Construction

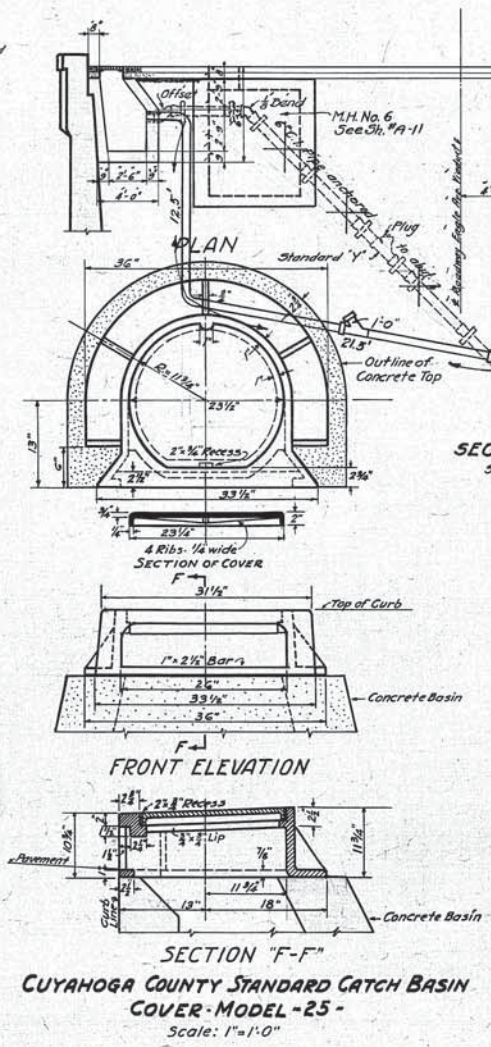
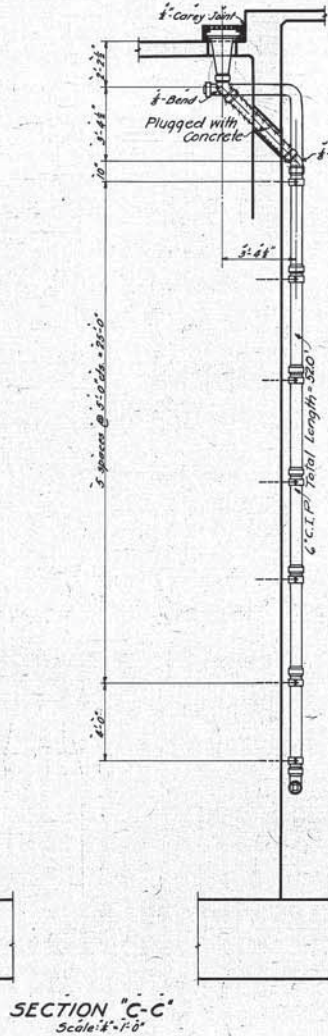
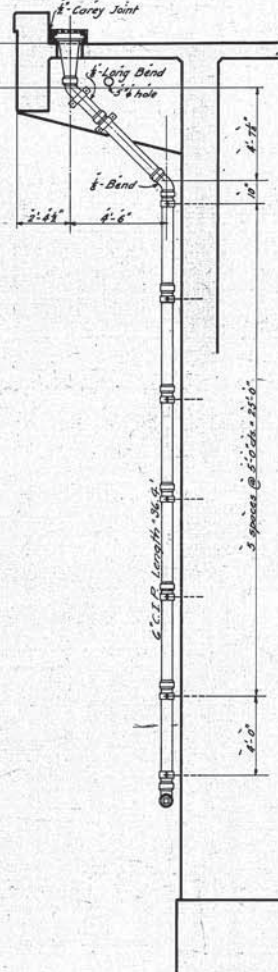
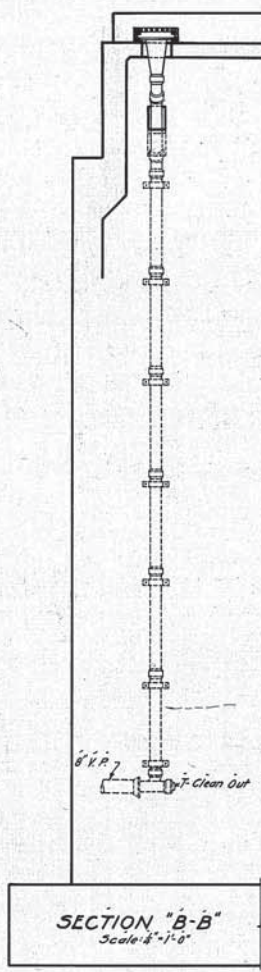
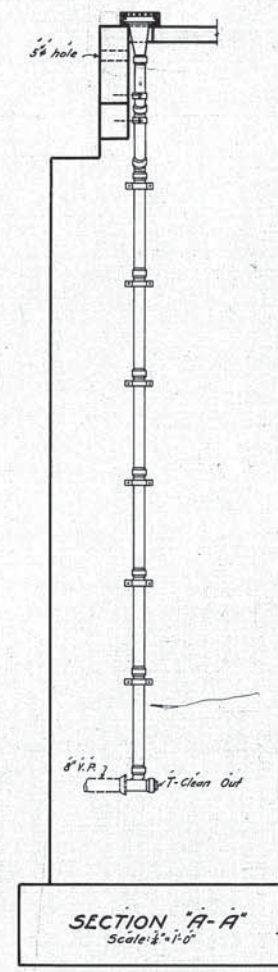
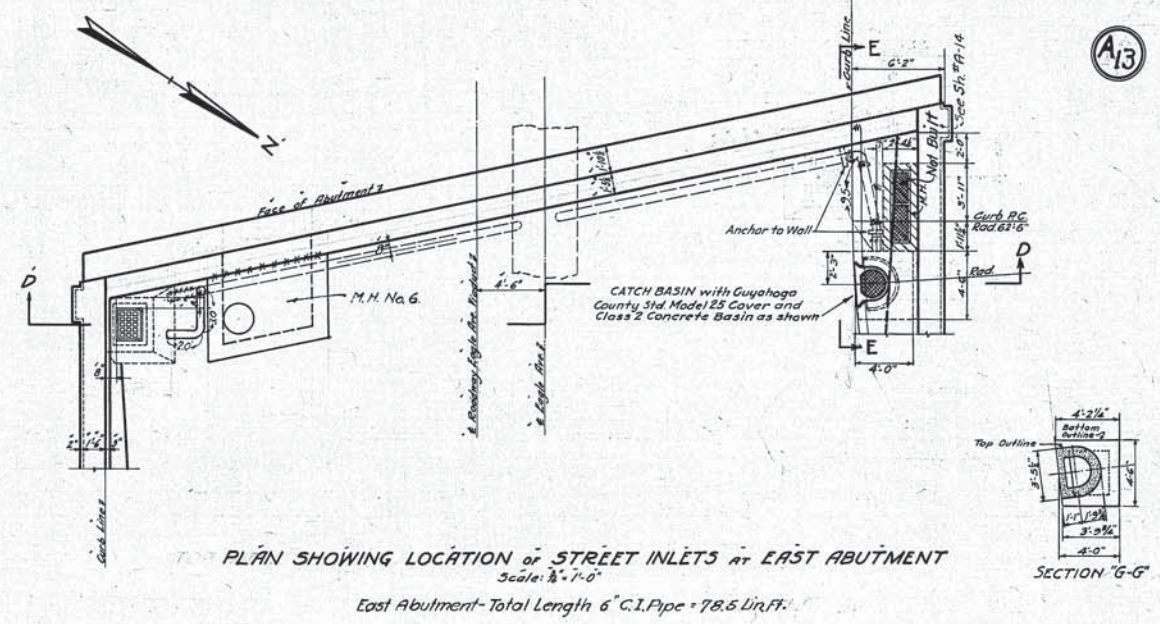
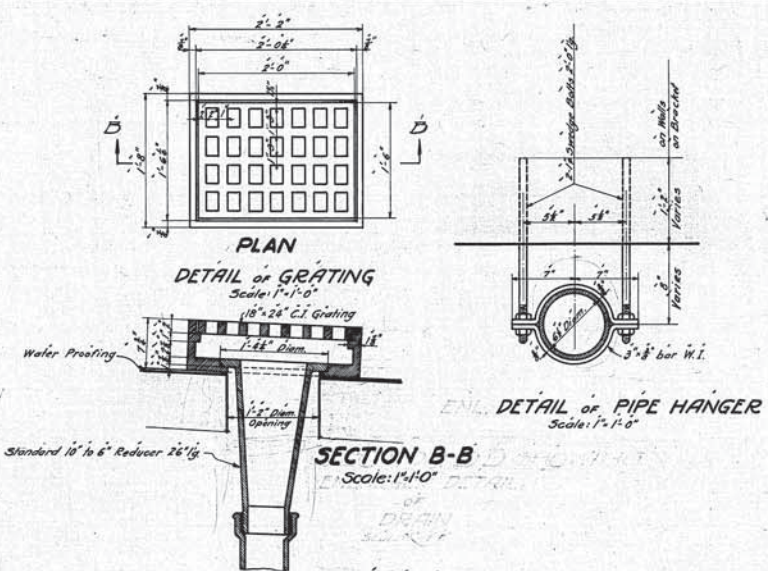
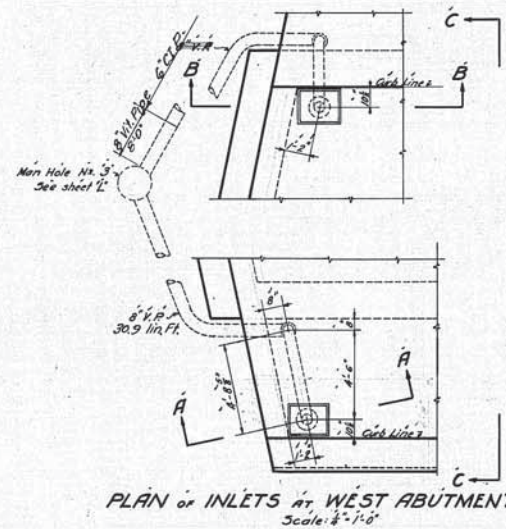
SECTION G-G  
 Note: For Reinforcement in slabs  
 and walls, see SPT-111.

Revisions of May 9, 1928  
 APPROVED  
 Robert Hoffman  
 Commissioner of Engineering & Construction  
 DATE June 15, 1928  
 NOTE: For Original of this Signature See  
 Blue Print filed under 113-0393.

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date July 29, 1927  
 Note: For Original of this Signature  
 See Blue Print filed under 113-0393.

Note: For Plan and Piling Diagram See Sheet No. 11  
 For Explanation of Method of Marking Bent  
 Steel Reinforcement Bars, See Standard  
 Bar Plans & Tables No. 1, Issue No. 1 Dated  
 January 5, 1925.  
 For anchors for C.I. drains see Sheet #112.  
 THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT SECTION "A"  
 PORTION FROM W.&L.E. TO ONTARIO ST.  
 ELEVATIONS & SECTIONS OF EAST ABUTMENT  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/4" = 1'-0"  
 ISSUE NO. 6  
 DATE October 22, 1926  
 REVISED Dec. 20, 1931  
 J.S. Hoffman  
 Chief Engineer

Issue No. A Oct. 20, 1926.  
 Revisions  
 Issue No. B July 11, 1927.  
 Drains altered on East Abut.  
 Issue No. C July 26, 1927.  
 Title changed on detail of grating.  
 Provided connections for Street car track drains.  
 Issue No. 1 August 10, 1927.  
 Signed by Chief Engineer.  
 Issue No. 2 Aug. 24, 1927.  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3 June 28, 1928.  
 Location and details of North Catch Basin revised to allow clearances for C.E.I. Co. Ducts.  
 Issue No. 4 Apr. 30, 1931.  
 Plan corrected to conform to structure as built.



NOTE: All pipes & fittings to be 6" Extra Heavy C.I. Soil pipe in 5'-0" length. Connections to Street car track drains not to be constructed until after the tracks are installed.  
 NOTE: See Sheet J5 for Details of Catch Basins and Inlets not otherwise shown.

Designed by \_\_\_\_\_  
 Detailed by A.O. 10/20/26.  
 Traced by E.A.W. 3/12/27.  
 Checked by D.R.A. 5/4/27.  
 Correct May 5, 1927  
G.L. Gorman  
 Designing Engineer

Approved E.P. Marsh 7/26/27  
 Engineer of Structures  
 Approved F.W. Davis 8/2/27  
 Principal Assistant Engineer  
 Approved W.H. ... 7/29/27  
 Assistant Electrical Engineer  
 Approved W.H. ... 7/29/27  
 Engineer of Construction

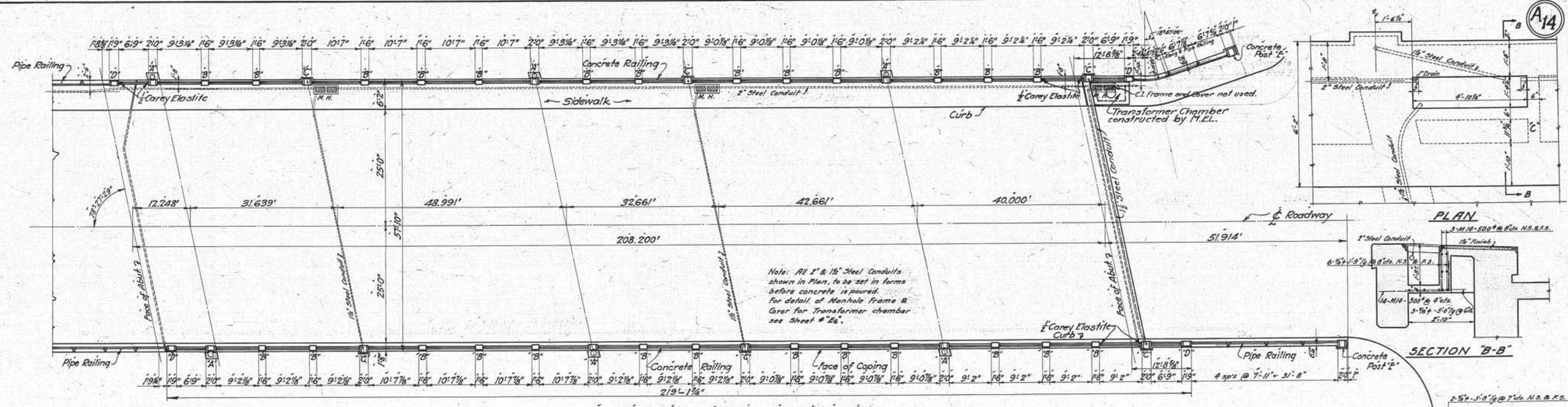
I hereby certify that this Plan shows the structure as built.  
E.P. Marsh 10/31  
 Engineer of Structures  
H.L. Bigelow 6/2/31  
 Ass't Engineer of Construction

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date: July 29, 1927  
 Note: For Original of this Signature See Blue Print filed under 113-0395

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT - SECTION "A"  
 PORTION FROM W. & L.E.R.R. TO ONTARIO ST.  
 DETAILS FOR DRAINAGE  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: As shown.  
 DATE: October 20, 1926  
 REVISED: April 30, 1931  
 ISSUE No. 4  
G.L. Gorman 7/29/27  
 CHIEF ENGINEER

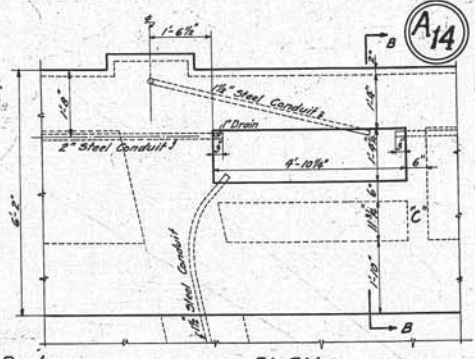
Issue No A Nov. 18, 1926

**REVISIONS:**  
 Issue No B July 11, 1927  
 Minor changes.  
 Issue No 1 August 10, 1927  
 Details of Transformer chamber added  
 Signed by Chief Engineer  
 Issue No 2 Aug. 24, 1927  
 Approved by Commissioner of  
 Engineering and Construction  
 of the City of Cleveland.  
 Issue No 3 Oct. 17, 1927  
 Minor Revisions  
 Issue No 4 Apr. 30, 1931  
 Plan corrected to conform to  
 structure as built.

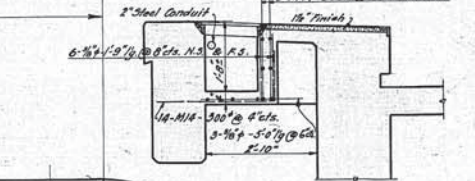


Note: All Dimensions for Railing along Face of Coping, except as noted.

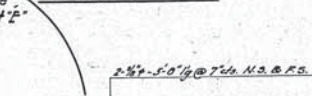
PLAN  
 Scale: 1" = 10'-0"



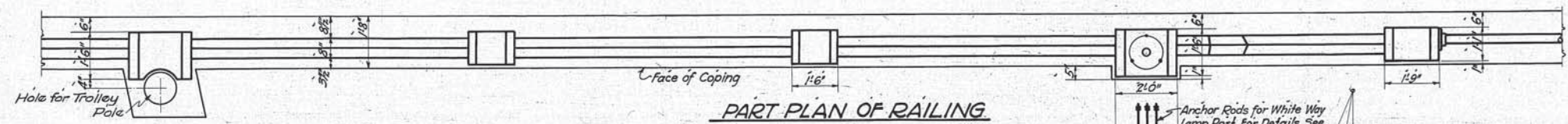
SECTION B-B



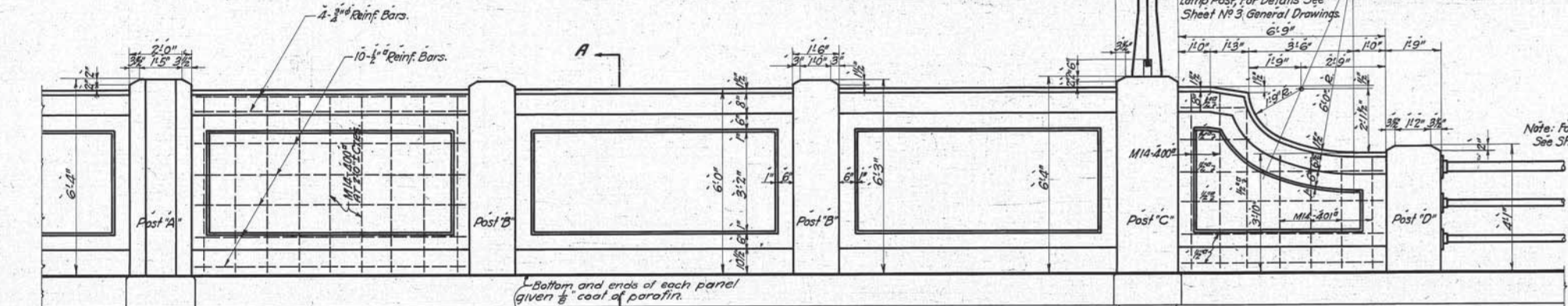
ELEVATION OF WALL C



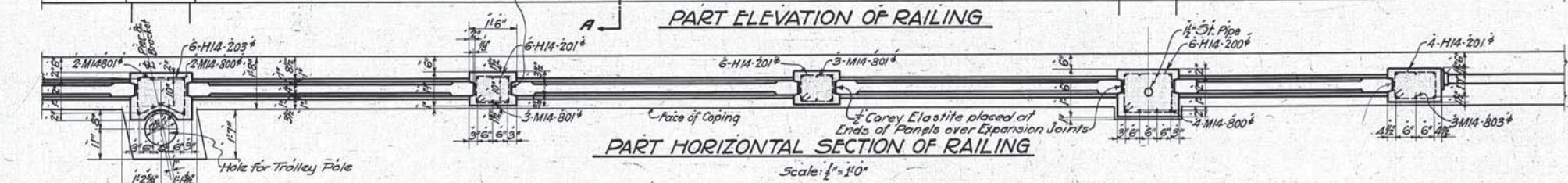
DETAILS OF TRANSFORMER CHAMBER



PART PLAN OF RAILING

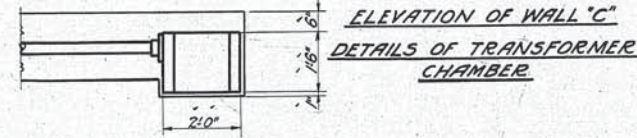


PART ELEVATION OF RAILING



PART HORIZONTAL SECTION OF RAILING

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



SECTION A-A

Designed By M.J.O. Nov. 18, 1926  
 Detailed By M.J.O. Nov. 18, 1926  
 Traced By S.H. Mar. 12, 1927  
 Checked By D.R.A. 5/4/1927  
 Correct M.J.O. 5/1927  
 Designing Engineer

Approved E.P. Marsh 7/24/27  
 Engineer of Structures  
 Approved T.W. Sadler 8/22/27  
 Principal Assistant Engineer  
 Approved W.W. Sullivan 7/29/27  
 Assistant Electrical Engineer  
 Approved W.H. Duley 7/29/27  
 Engineer of Construction

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date July 29, 1927  
 Note: For Original of this Signature See  
 Blue Print Filed under 113-039 S.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT SECTION "A"  
 PORTION FROM W.&L.E. R.R. TO ONTARIO ST.  
 PLAN & DETAILS OF CONCRETE RAILING  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/16" = 1'-0"  
 ISSUE NO. 4  
 DATE: NOV. 18, 1926  
 REVISED: APR. 30, 1931  
 CHIEF ENGINEER



Issue No A Nov. 16, 1926

REVISIONS:-

Issue No B Dec. 28, 1926  
Dimensions of Service Tunnel changed at West-Abutment.

Issue No C Jan. 20, 1927  
Added Manholes in Vertical Shafts. Added door in Fan Room. Removed earth in front of fan Room exhaust opening. Changed platform in Vertical shafts.  
Lowered Splicing Chamber No 6.

Issue No D Feb. 8, 1927  
Shape of Manholes changed.

Issue No E Apr. 6, 1927  
East end of Viaduct and location of Duct Line "A" Relocated changed.  
Section "D-D" added.

Issue No F Apr. 12, 1927  
Drawing Checked.

Issue No G June 4, 1927  
Openings in Fan Room rearranged.

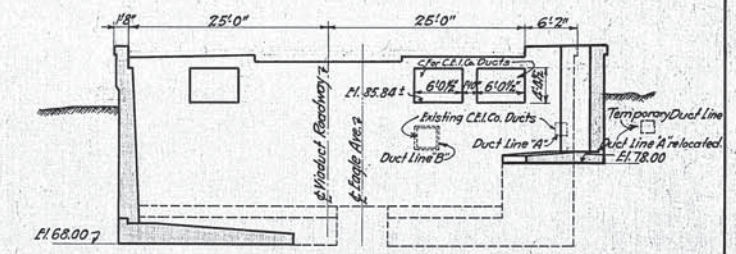
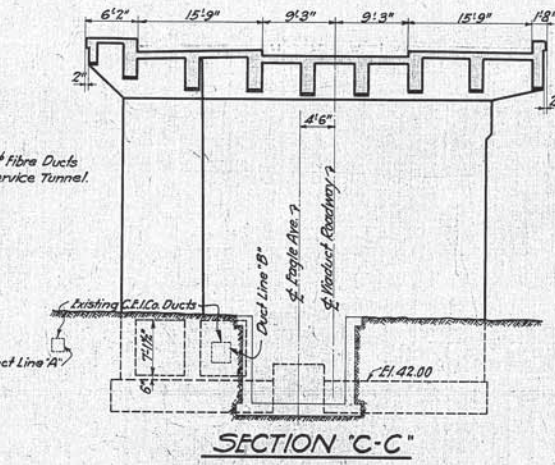
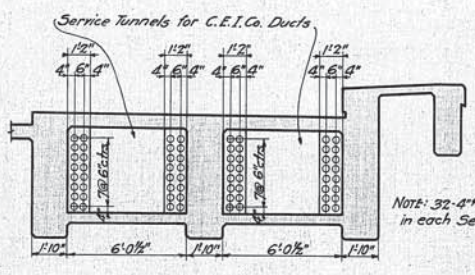
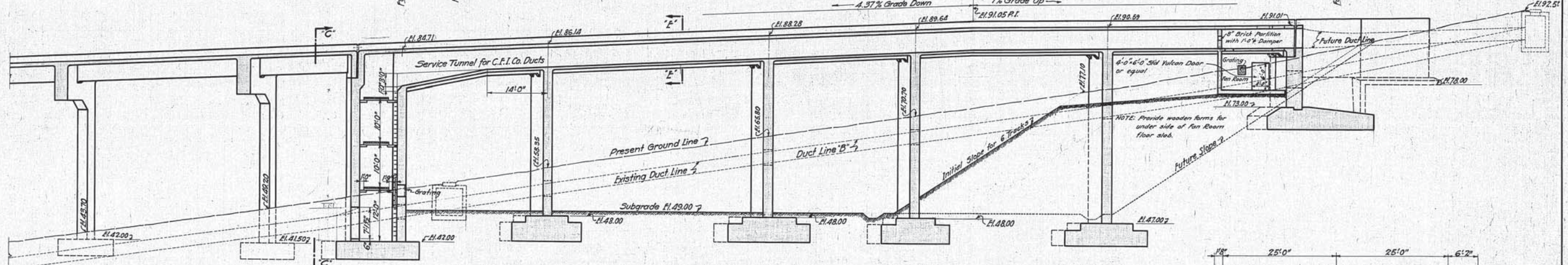
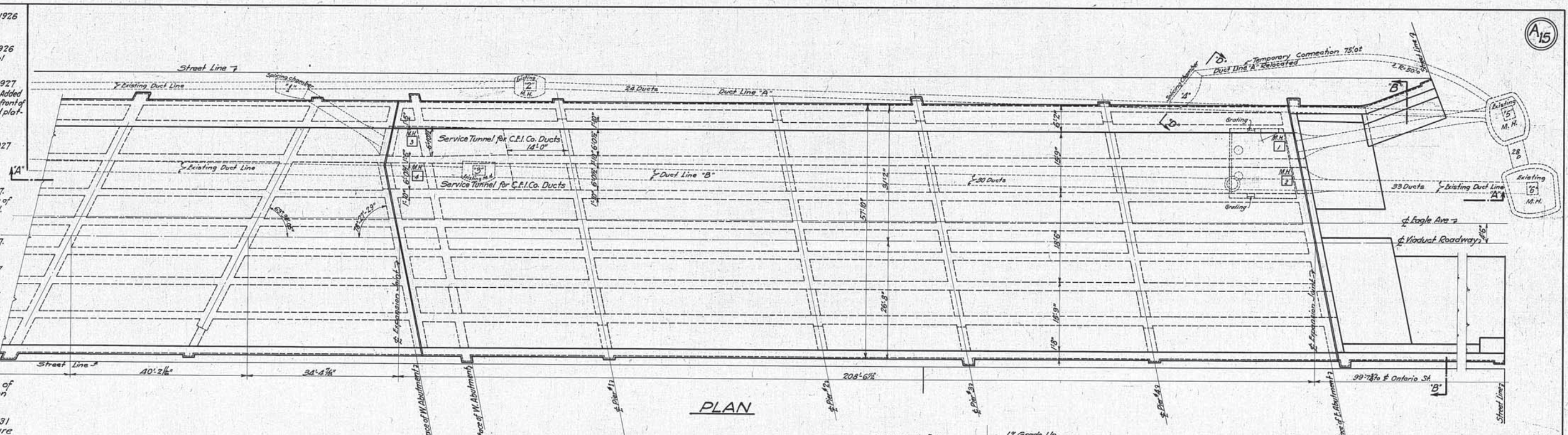
Issue No H June 18, 1927  
Section "E-E" added.

Issue No J June 20, 1927  
Slope for initial tracks changed to provide for 6 instead of 7 tracks.

Issue No 1 August 10, 1927  
Signed by Chief Engineer.

Issue No 2 Aug. 24, 1927  
Approved by Commissioner of Engineering and Construction of the City of Cleveland.

Issue No 3 May 25, 1931  
Plan conforms to structure as built.



Note: Location of Duct Line is approximate. In case location of Duct Line should be found to vary considerably from that shown, alterations to footings may be made with approval of the Engineer.  
For detail of Gratings See Sheet No. 9.

SECTION 'D-D'

We hereby certify that this Plan shows the structure as built.  
*C.P. Marsh* 7/24/31  
Engineer of Structures  
*H.L. Bigelow* 7/27/31  
Asst. Engineer of Construction

Plan Approved  
THE CLEVELAND ELECTRIC ILLUMINATING CO.  
By \_\_\_\_\_  
Date \_\_\_\_\_

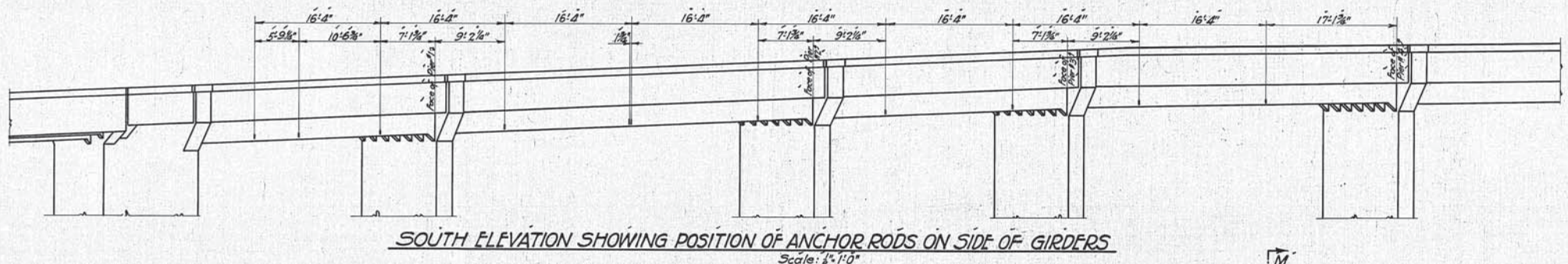
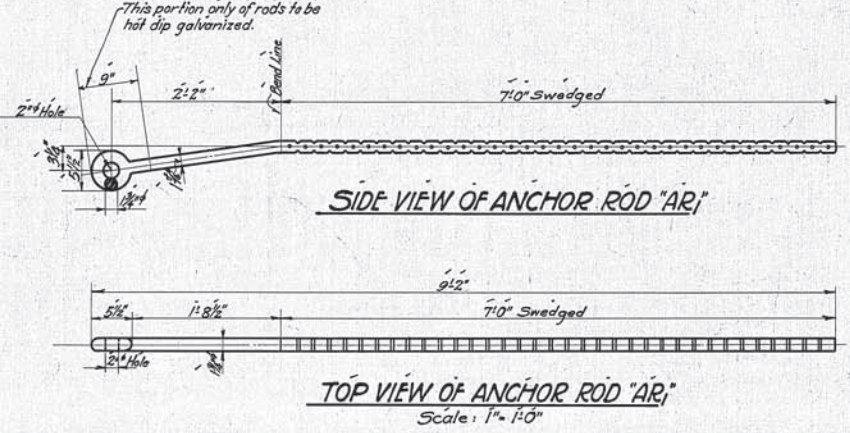
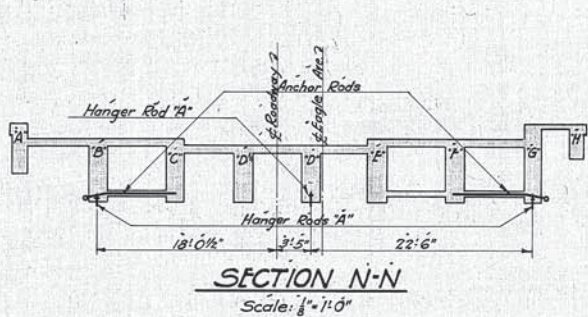
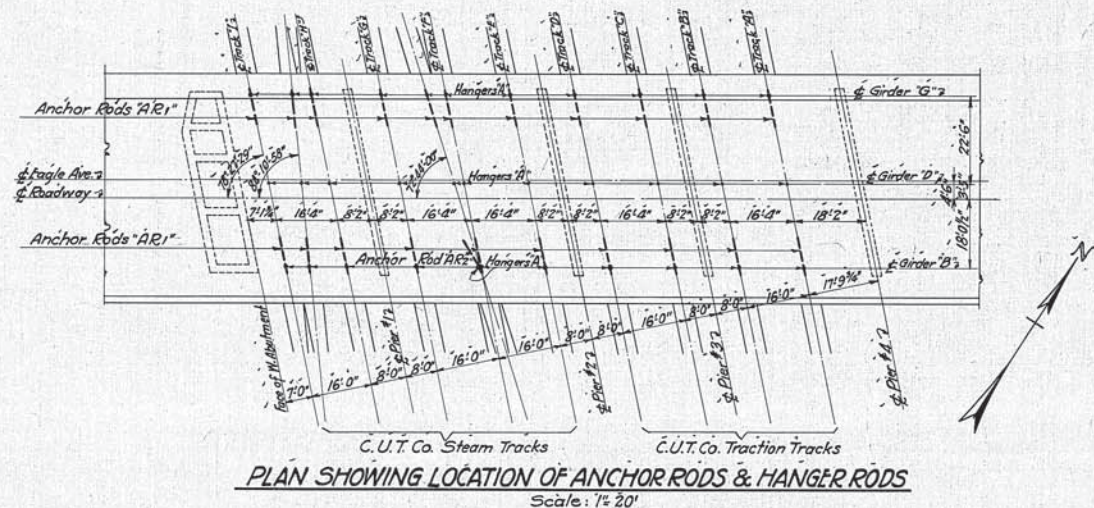
Plan Approved  
CITY OF CLEVELAND  
By *Robert Hoffman*  
Commissioner of Engineering & Construction.  
Date July 29, 1927.  
Note: For original of this Signature See Blue Print filed under 113-039 S.

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE. VIADUCT SECTION "A"  
PORTION FROM W. & L.P.R. TO ONTARIO ST.  
PLAN SHOWING SUGGESTED CHANGES  
IN C.E.I. CO. DUCT LINES  
CLEVELAND, OHIO.  
OFFICE OF ENGINEER OF STRUCTURES  
SCALE: 1"=10'-0" & 1"=4'-0"  
DATE: Nov. 16, 1926  
REVISED: May 25, 1931  
*H.L. Bigelow* 7/27/31  
CHIEF ENGINEER

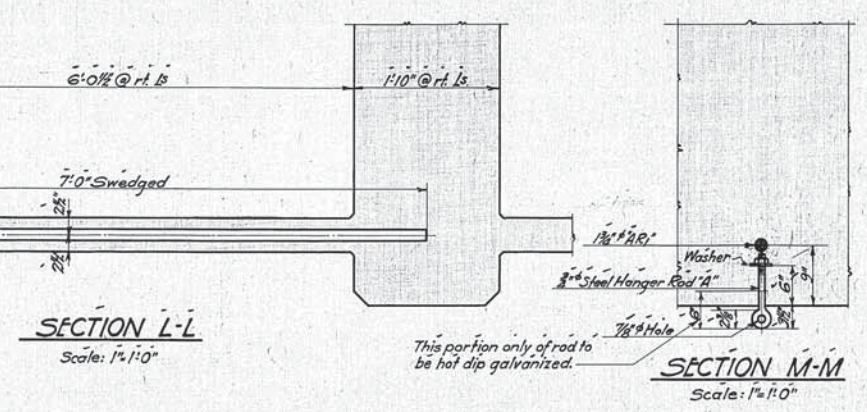
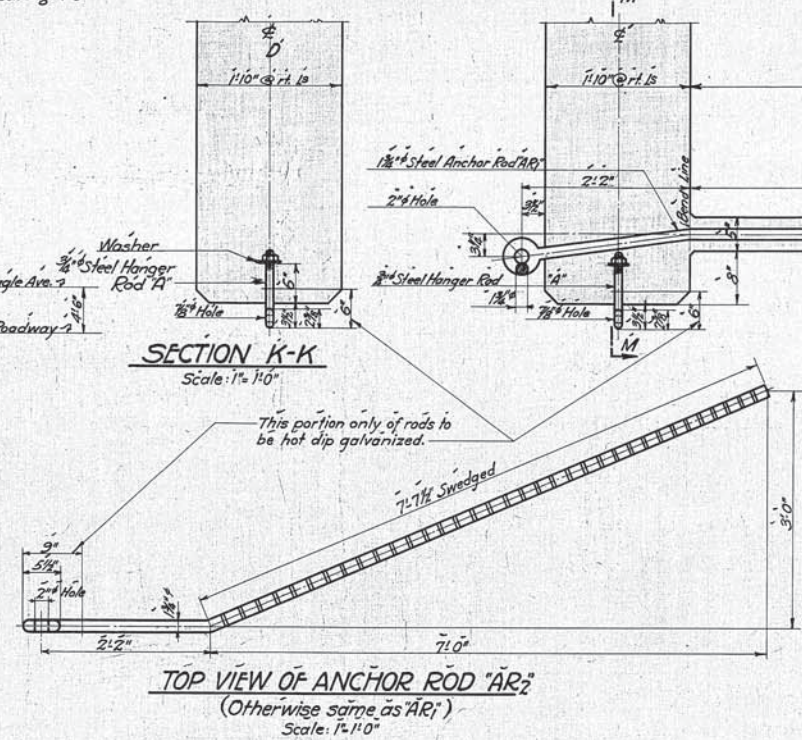
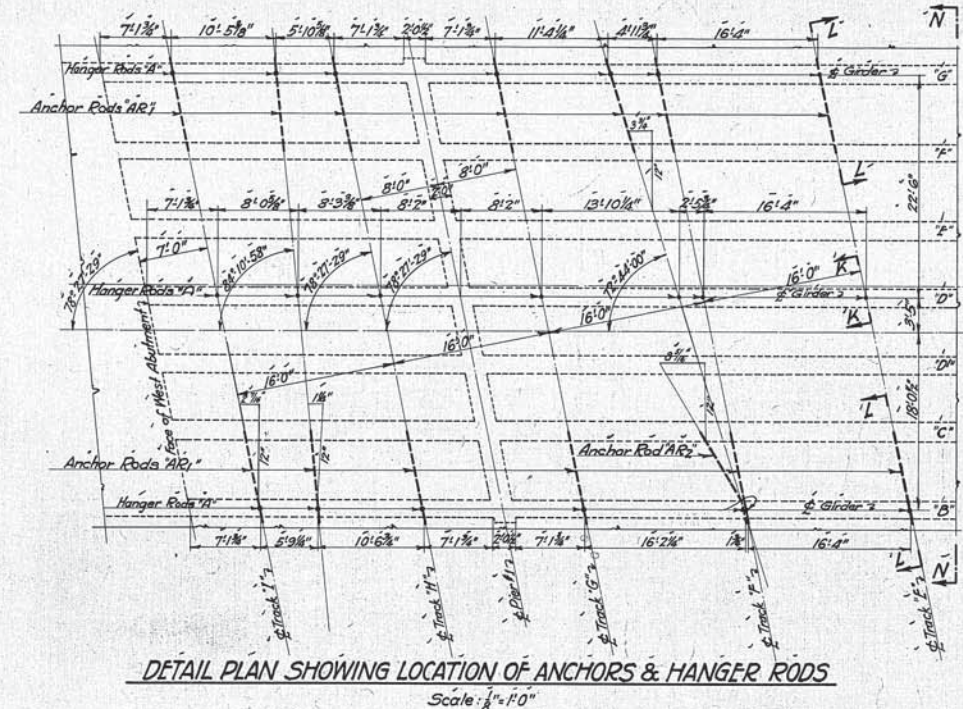
Designed By *L.A.W.* Nov. 16, 1926  
Detailed By *L.A.W.* Nov. 16, 1926  
Traced By *S.H.* Mar. 17, 1927  
Checked By *R.E.P.* April 12, 1927  
Correct *May 5, 1927*  
*A.S. Dorman*  
Designing Engineer  
Approved *C.P. Marsh* 7/24/31  
Engineer of Structures  
Approved *J.W. Sadler* 7/27/31  
Principal Assistant Engineer  
Approved *W.H. Richardson* 7/29/27  
Assistant Electrical Engineer  
Approved *M.A. Culbert* 7/29/27  
Engineer of Construction

Issue No A Nov. 20, 1926

REVISIONS:-  
 Issue No B July 11-1927.  
 Changed details of hanger rods.  
 Issue No 1 August 10, 1927  
 Signed by Chief Engineer  
 Issue No 2 Aug. 20, 1927.  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3 May 25, 1931  
 Plan conforms to structure as built.



NOTES:- Anchors required: 21 Anchor Rods 'AR1' & 1 Anchor Rod 'AR2'  
 Hangers required: 33 Hanger Rods 'A'



Designed By \_\_\_\_\_ 19  
 Detailed By E.A.W. Nov. 20, 1926  
 Traced By S.H. Mar. 22, 1927  
 Checked By D.R.A. 5/4/1927  
 Corrected May 5, 1927  
 F.L. Orman  
 Designing Engineer

Approved E.P. Marsh 7/22/27  
 Engineer of Structures  
 Approved J.W. Sadra 7/22/27  
 Principal Assistant Engineer  
 Approved H.W. Fisher 7/29/27  
 Assistant Electrical Engineer  
 Approved W.H. Duleff 7/29/27  
 Engineer of Construction

We hereby certify that this Plan shows the structure as built.  
 E.P. Marsh 7/18/31  
 H.P. Bishaw 7/27/31

Note:- Anchor Rod "AR2" is bent in vertical plane as shown for "AR2" and in horizontal plane as shown above.

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date July 29, 1927.  
 Note: For Original of this Signature See Blue Print filed under 113-039 S.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT-SECTION "A"  
 PORTION FROM W. & L.F.R.R. TO ONTARIO ST.  
 ANCHORAGE FOR PRIMARY MESSINGER CABLES  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: AS SHOWN  
 ISSUE NO. 3  
 DATE: NOV. 20, 1926  
 REVISED: May 25, 1931

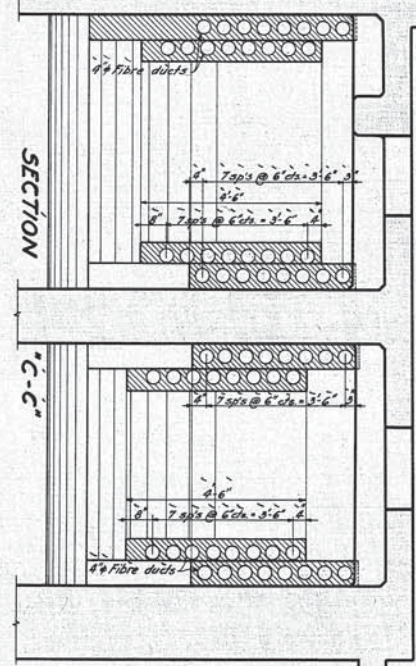
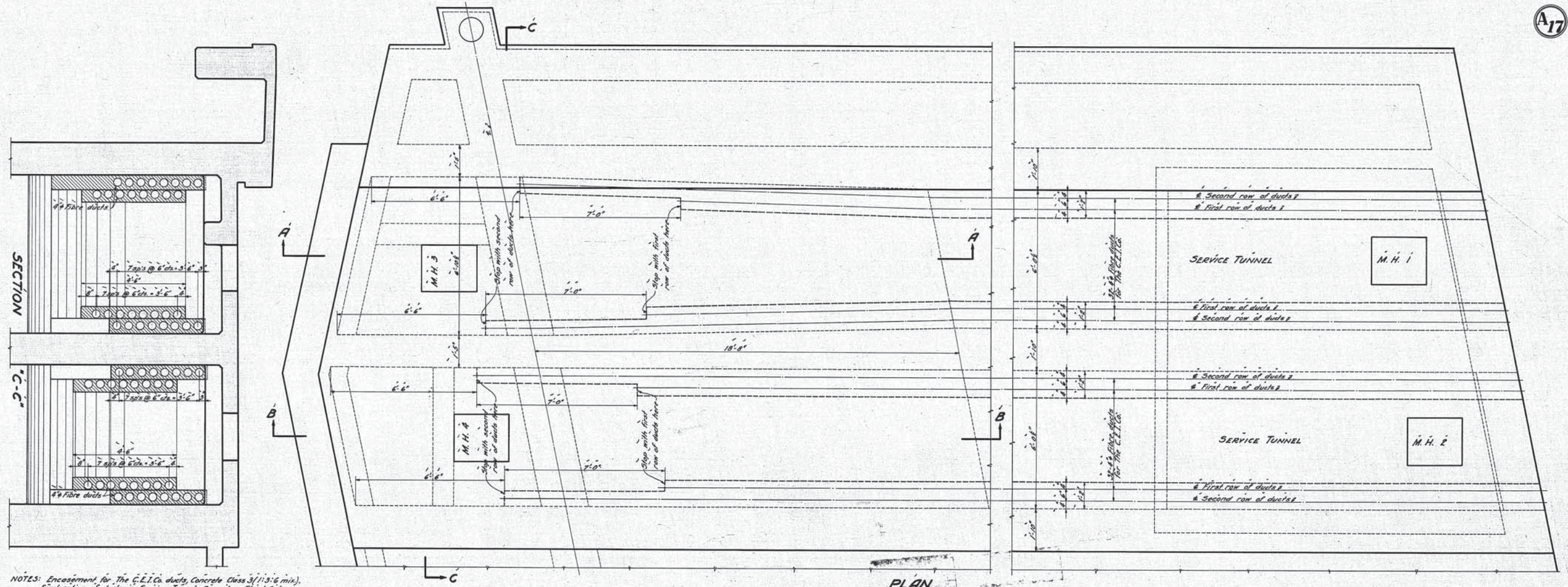
Issue No. B May 6, 1927

Revisions:  
Issue No. B June 9, 1927

Encasement for second row of ducts in  
northerly Service Tunnel changed.  
Issue No. 1 August 10, 1927  
Signed by Chief Engineer.

Issue No. 2 Aug. 20, 1927.  
Approved by Commissioner  
of Engineering and Construction  
of the City of Cleveland.

Issue No. 3 May 25, 1931  
Plan conforms to structure  
as built.



NOTES: Encasement for The C.E.I. Co. ducts, Concrete Class 3 (1:2:4 mix).  
For location of ducts in Service Tunnels, See also Sheet # 1.  
Cross-hatched part in Section "C-C" shows the vertical face  
of Encasement.

Plan approved  
THE CLEVELAND ELECTRIC ILLUMINATING Co.

By \_\_\_\_\_  
Date: \_\_\_\_\_

*C. P. Marsh* 7/18/27  
*H. P. Bigelow* 7/27/27

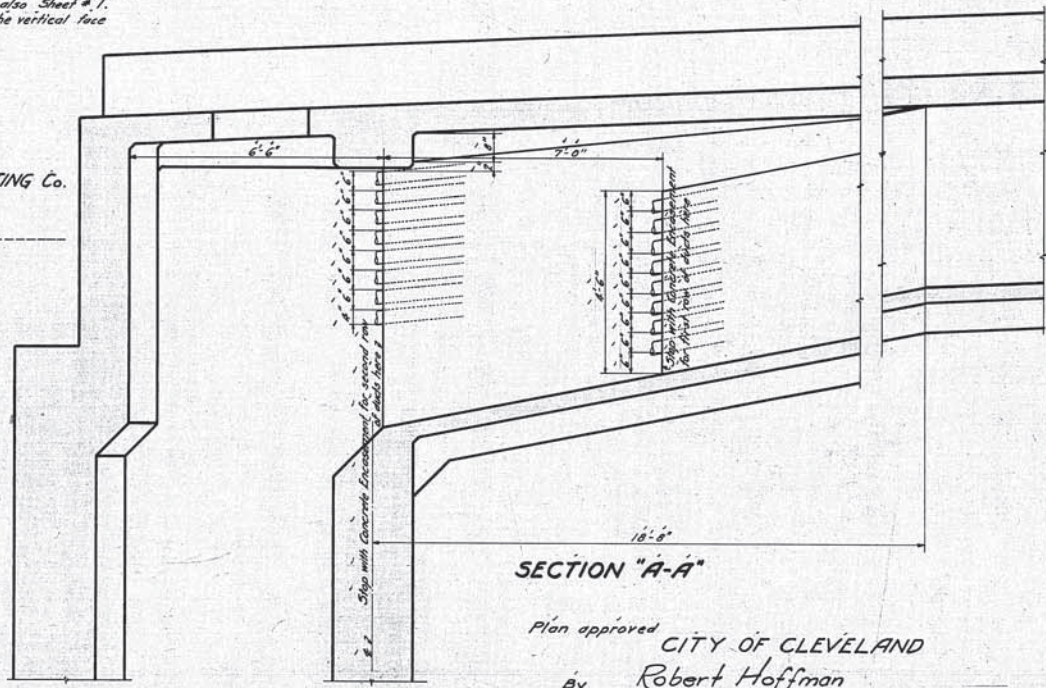
Approved *C. P. Marsh* 7/26/27  
Engineer of Structures

Approved *J. W. Radin* 7/27/27  
Principal Assistant Engineer

Approved *W. L. S. ...* 7/29/27  
Assistant Electrical Engineer

Approved *W. L. S. ...* 7/29/27  
Engineer of Construction

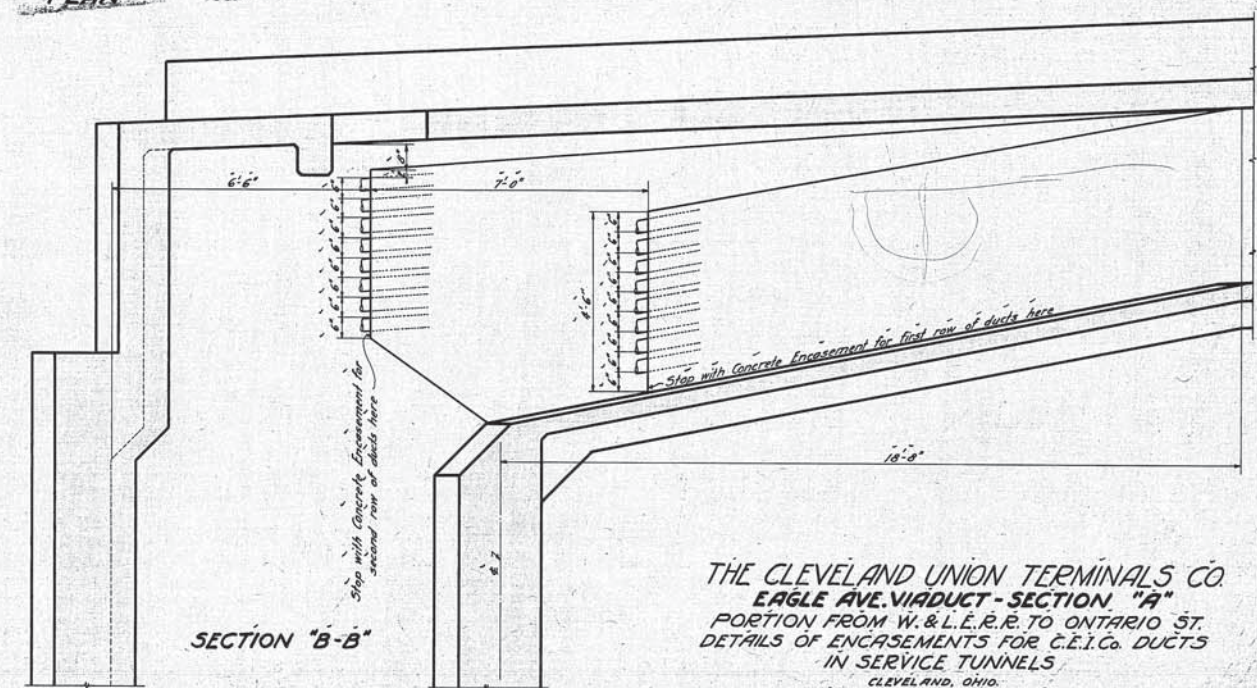
Designed by \_\_\_\_\_  
Detailed by *E. A. W.* 5-6-27  
Traced by *E. A. W.* 6-13-27  
Checked by *D. R. A.* 6-21-27  
Correct *G. - 24 - 27*  
*L. S. Dorman*  
Designing Engineer



SECTION "A-A"

Plan approved  
CITY OF CLEVELAND  
By *Robert Hoffman*  
Commissioner of Engineering and Construction

Date: July 29, 1927  
Note: For Original of this Signature See  
Blue Print filed under 113-039S.

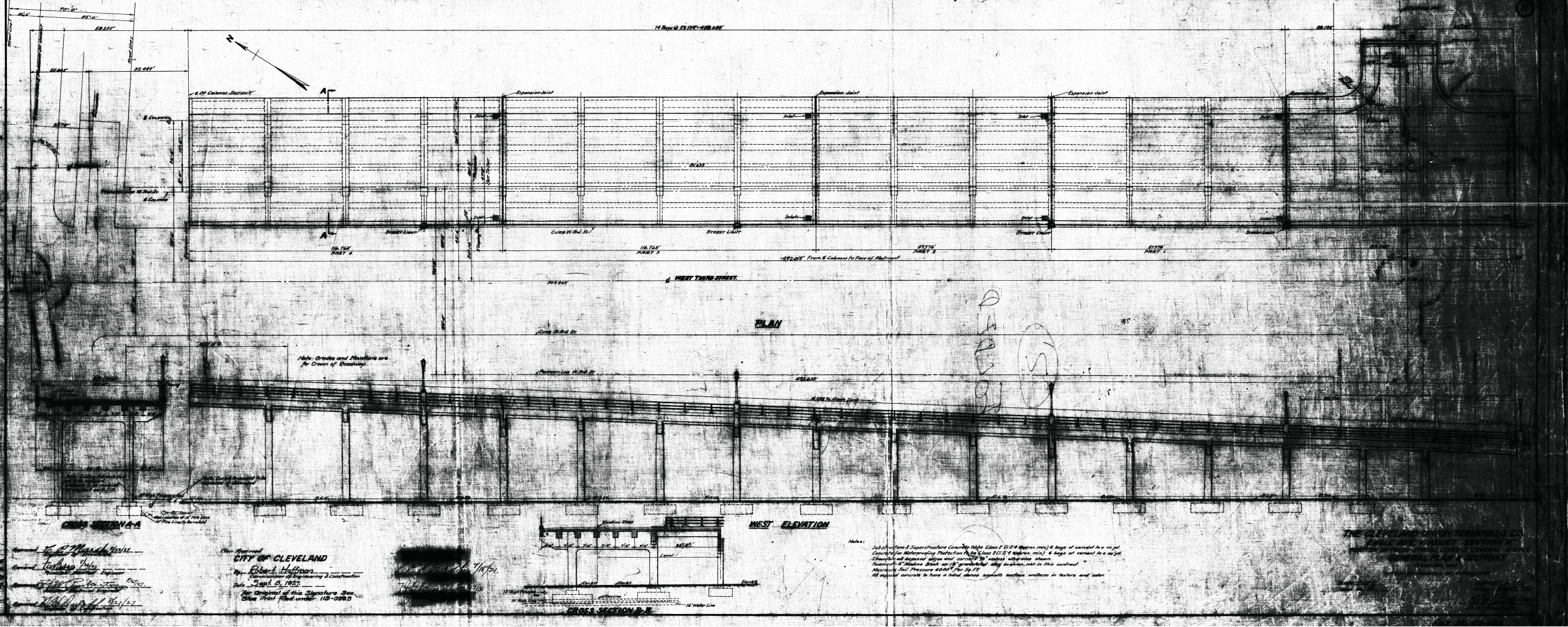


SECTION "B-B"

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE. VIADUCT - SECTION "A"  
PORTION FROM W. & L. E. R. R. TO ONTARIO ST.  
DETAILS OF ENCASEMENTS FOR C.E.I. CO. DUCTS  
IN SERVICE TUNNELS

CLEVELAND, OHIO.  
OFFICE OF ENGINEER OF STRUCTURES  
SCALE: 1/4" = 1'-0"  
DATE: May 6, 1927  
REVISED: Nov 25, 1931  
*A. C. ...* 7/29/27  
Chief Engineer

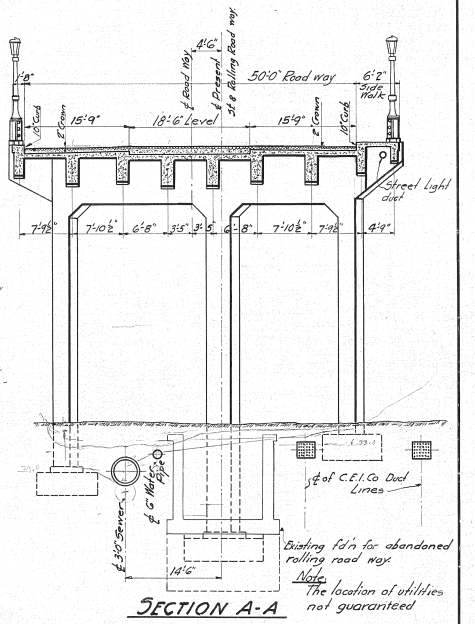
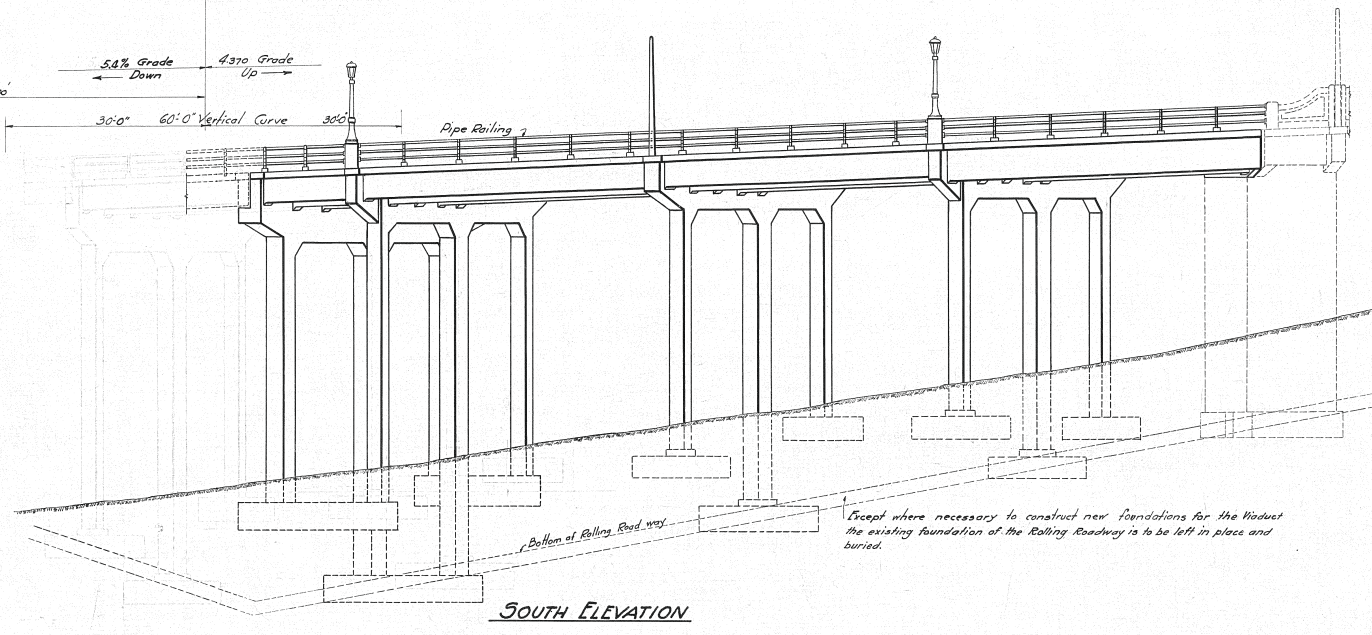
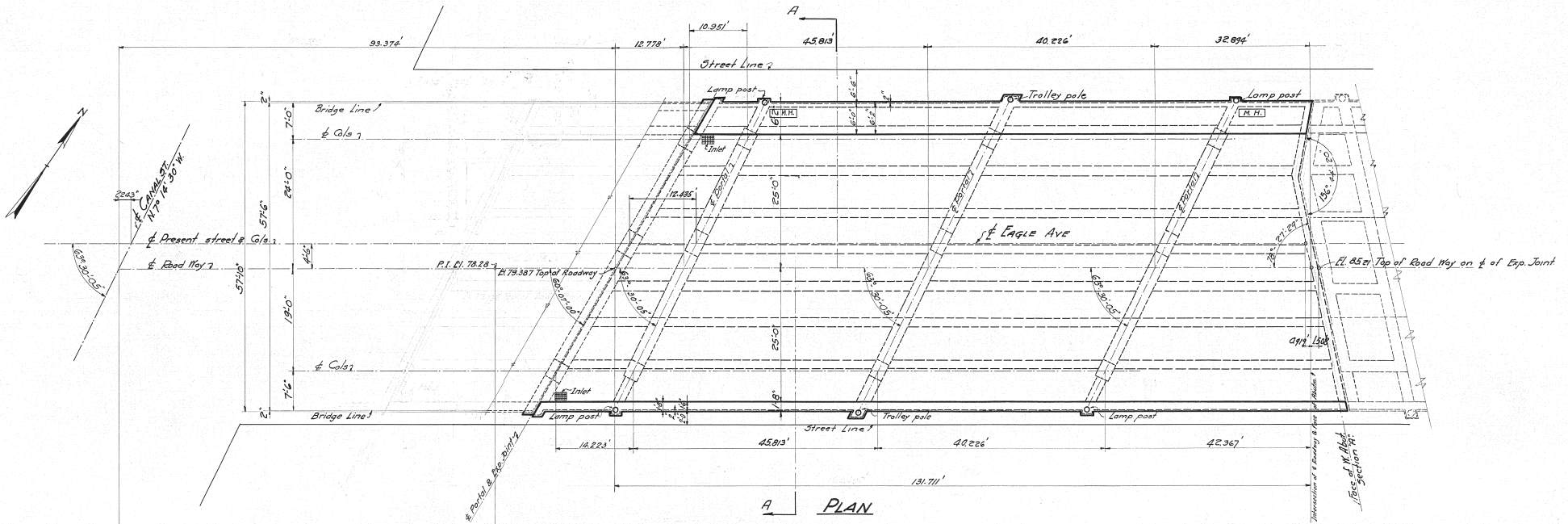
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Revision: No. 1  
Drawn No. 2  
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Date 1912  
Checked by Chief Engineer  
Scale No. 2  
Checked by Chief Engineer  
Date 1913  
Checked by Chief Engineer  
Date 1914  
Checked by Chief Engineer  
Date 1915  
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Date 2022  
Checked by Chief Engineer  
Date 2023  
Checked by Chief Engineer  
Date 2024  
Checked by Chief Engineer  
Date 2025  
Checked by Chief Engineer



CITY OF CLEVELAND  
Robert Hoffman  
Chief Engineer  
Date 5/15/12  
In Original of this Signature See  
Ohio Rev. Code under 113-2003

Notes:  
1. All work to be done in accordance with the specifications and drawings.  
2. The contractor shall be responsible for obtaining all necessary permits.  
3. The contractor shall be responsible for the safety of the work.  
4. The contractor shall be responsible for the quality of the work.  
5. The contractor shall be responsible for the completion of the work.

Issue No. 1 Oct 15, 1925  
 Revisions:  
 Issue No. 2 Dec 10, 1925  
 Dimensions changed, cross section, outside etc.  
 Issue No. 3 Dec 14, 1925  
 Signed by Chief Engr.  
 Issue No. 4 Sept 15, 1926  
 Revised & redrawn.  
 Issue No. 5 Dec 6, 1926  
 Minor revisions & additions.  
 Dwg retraced & checked.  
 Issue No. 6 Mar 24, 1927  
 Removed paving clams.  
 Changed 5.391% grade to 5.4%  
 Issue No. 7 July 12, 1927  
 Revised rate, added dimension  
 at west end of general plan.  
 Issue No. 8 August 10, 1927  
 Signed by department heads.  
 Issue No. 9 Aug 24, 1927  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.  
 Issue No. 10 Feb 8, 1928  
 Revised for changes in span over W&L E.R.R.  
 Issue No. 11 Feb 27, 28  
 Revisions Approved by Commissioner of  
 Engineering and Construction of  
 The City of Cleveland  
 Issue No. 12 May 25, 1931  
 Plan conforms to structure  
 as built.



Designed by M.J.O. 8-1-1926  
 Detailed by R.O. 8-12-1926  
 Traced by R.O. 9-15-1926  
 Checked by R.E.P. 12-6-1926  
 Corrected May 5-1927  
 F.L. Gorman  
 Designing Engineer

Approved: *[Signature]*  
 Engineer of Structures  
 Approved: *[Signature]*  
 Principal Assistant Engineer  
 Approved: *[Signature]* 7/29/27  
 Assistant Electrical Engineer  
 Approved: *[Signature]* 7/29/27  
 Engineer of Construction

REVISIONS OF E.E.E. APPROVED  
 CITY OF CLEVELAND  
 By: Robert Waffers  
 Commissioner of Engineering & Const.  
 Date Feb. 16-28  
 Note: For Original of this Signature  
 See Blue Print filed under 113-039.5.

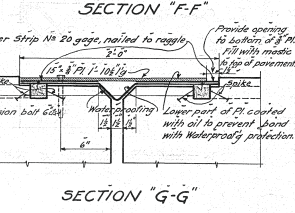
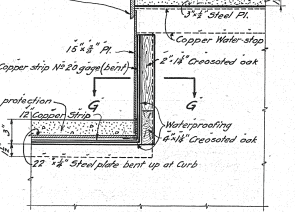
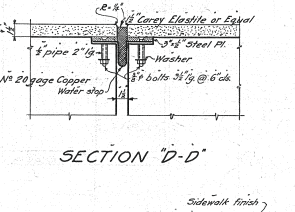
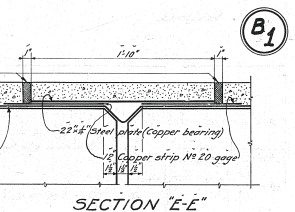
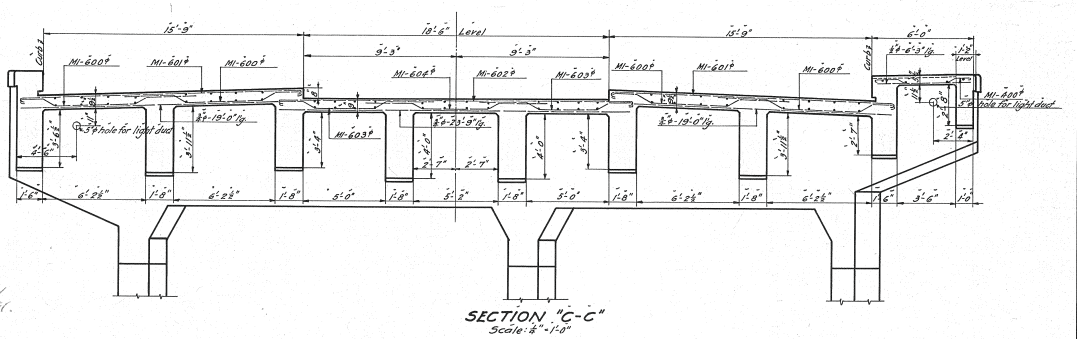
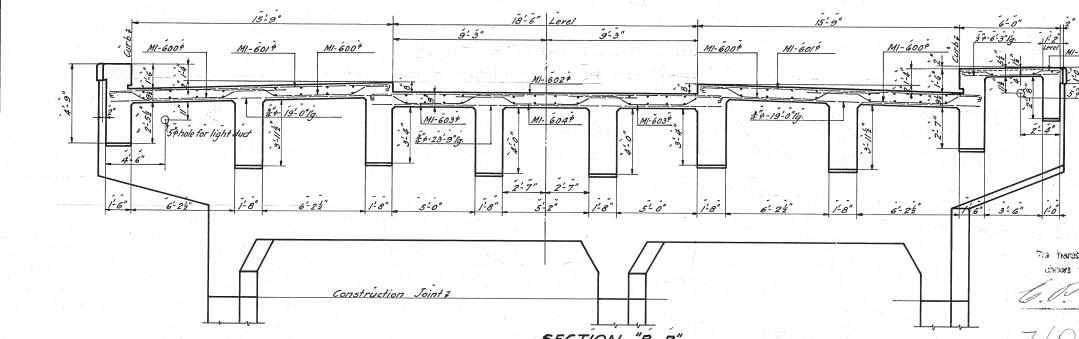
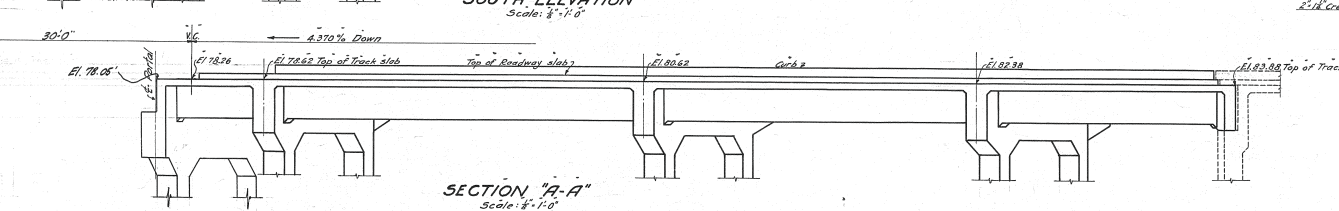
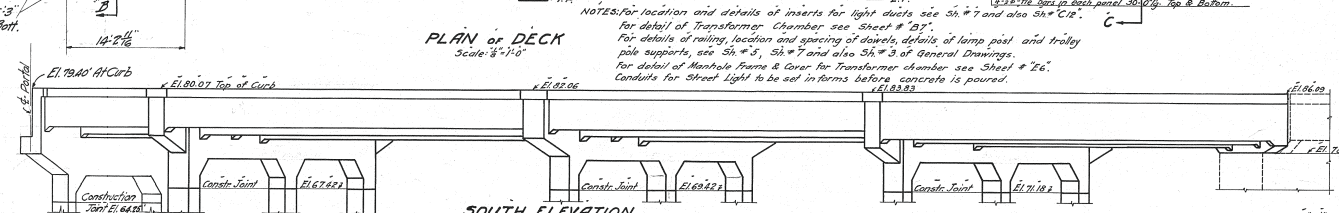
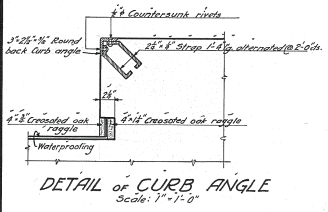
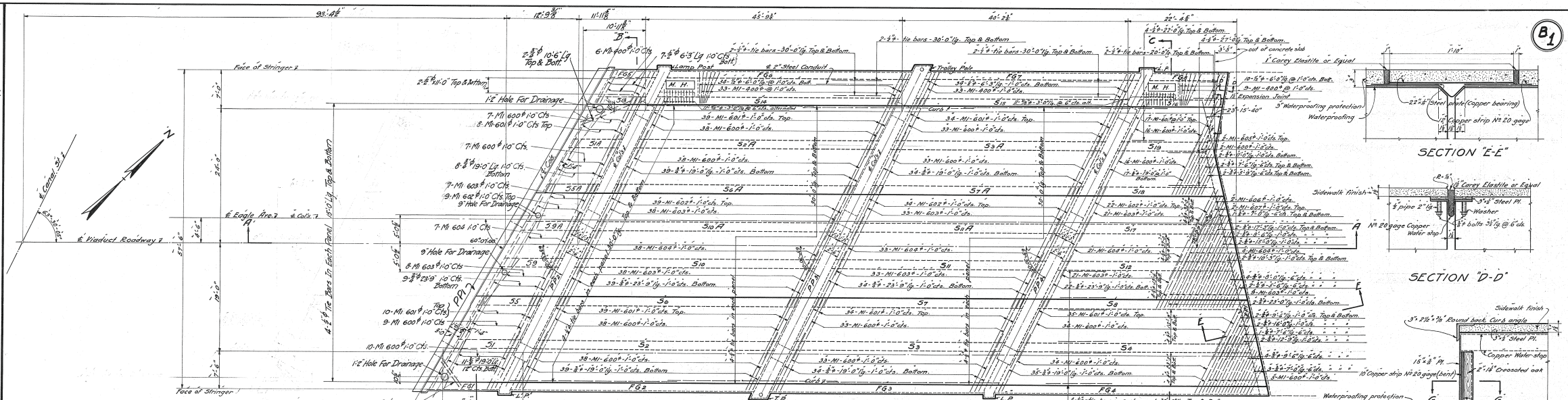
PLAN APPROVED  
 CITY OF CLEVELAND  
 By: Robert Hoffman  
 Commissioner of Engineering & Construction.  
 Date July 29-27  
 Note: For Original of this Signature  
 See Blue Print filed under 113-039.5.

Notes:  
 Substructure and Superstructure to be Class II (Approx. mix 1:2:4) 6 bags of cement to a cu. yd.  
 Concrete for waterprooing protection to be Class II (Approx. mix 1:2:4) 6 bags cement to a cu. yd.  
 concrete fill for slot for car tracks to be Class II (Approx. mix 1:2:4) 6 bags cement to a cu. yd.  
 and will be placed by paving contractor.  
 Coverment of Medina Block by 1/2" greenlighted slag cushion.  
 Max Soil Pressure, 6000 per sq. ft.  
 Chamfer all exposed edges and corners "W" unless otherwise shown.  
 All exposed concrete to have a hard dense smooth surface uniform in texture and color.

*[Signature]* 7/27/27  
 H.R. Bigelow  
 Chief Engineer

THE CLEVELAND UNION TERMINALS COMPANY  
 EAGLE AVE VIADUCT-SECTION B  
 PORTION OVER W&L E. TRACKS  
 GENERAL PLAN & SECTIONS  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 Date: 8-18-1926  
 Issue No. 1  
 Chief Engineer

Issue No. 1 Aug. 1, 1926.  
 Revisions  
 Issue No. 2 April 2, 1927.  
 Paving dams omitted, Exp. Joint changed  
 Issue No. 3 July 10, 1927.  
 Note added in regard to placing slab steel.  
 Added two 5/8" hole for Drainage. Minor  
 changes. Added Manholes for transformer  
 chambers.  
 Issue No. 4 August 10, 1927.  
 Signed by Chief Engineer  
 Issue No. 5 Aug. 24, 1927.  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.  
 Issue No. 6 Feb. 8, 28.  
 Revised for Changes in Span Over W.L.E.R.R.  
 Issue No. 7 Feb. 21/28  
 Revisions Approved by Commissioner  
 of Engineering & Construction of  
 the City of Cleveland  
 Issue No. 8 Apr. 9, 1928.  
 Minor changes.  
 Issue No. 9 May 25, 1931  
 Plan conforms to structures  
 as built.



Designed by M.I.O. 8-1-26.  
 Detailed by A.O. 8-19-26.  
 Traced by F.A.W. 3-18-27.  
 Checked by R.E.P.D.W.A. 5/14/27.  
 Corrected 5-5-27.  
 Designing Engineer

Approved E.C. Marsh 7/27/27.  
 Approved J.W. Brown 8/22/27.  
 Approved J.W. Brown 7/29/27.  
 Approved N.H. Hoffman 7/29/27.  
 Engineer of Structures  
 Principal Assistant Engineer  
 Assistant Electrical Engineer  
 Engineer of Construction

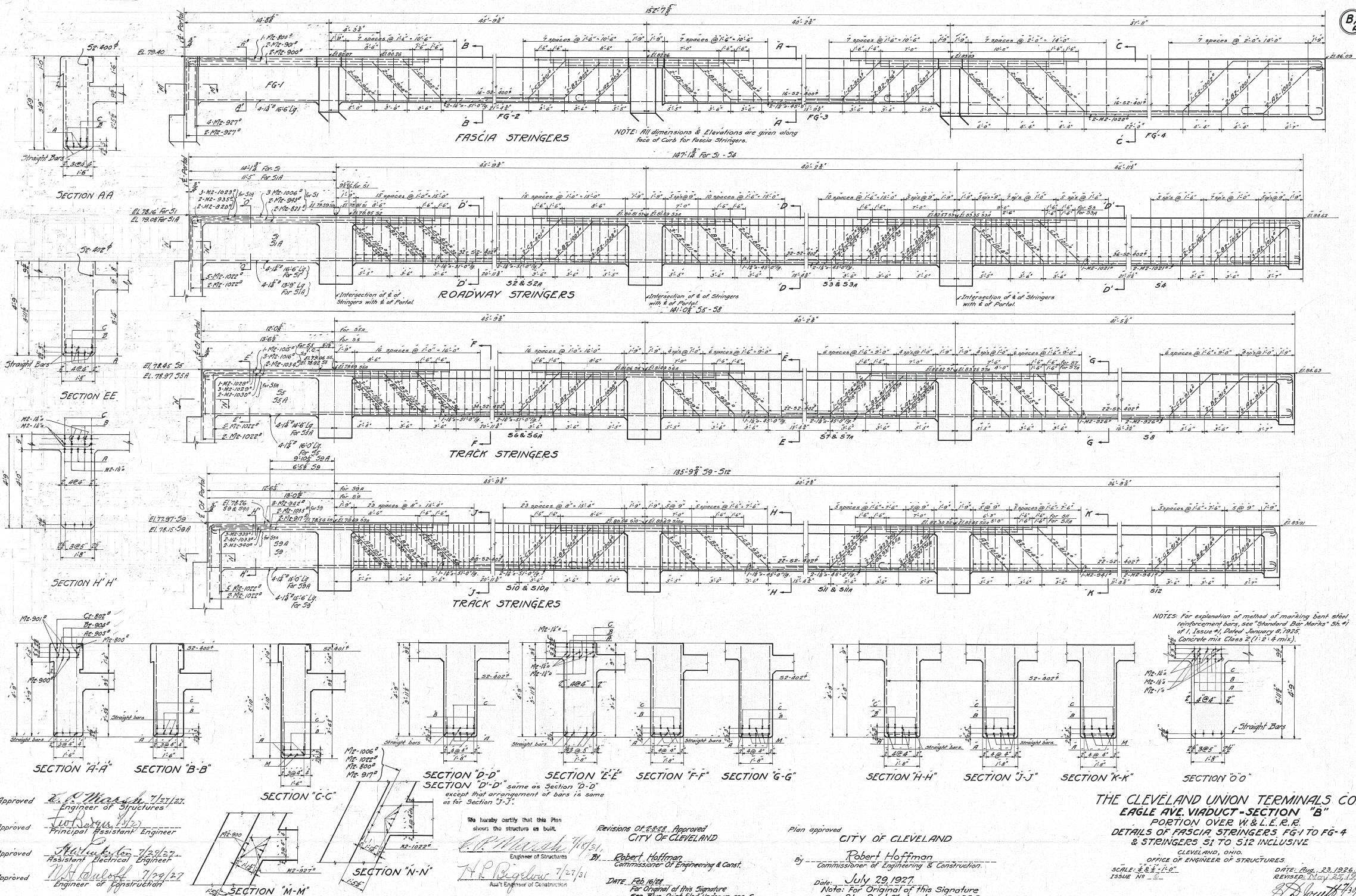
Plan approved  
**CITY OF CLEVELAND**  
 by **Robert Hoffman**  
 Commissioner of Engineering and Construction  
 July 29, 1927.  
 Note: For Original of this Signature See Blue Print filed under 113-039 S.

I hereby certify that this Plan shows the structure as built.  
 G.O. Marsh  
 Engineer of Structures  
 H.P. Brown  
 Asst. Engineer of Construction

NOTES: For explanation of method of marking bent steel reinforcement bars, see Standard Bar Marks, Sheet 21 of 1, Issue #1, Dated January 8, 1925.  
 Substructure and superstructure Concrete Class 2 (Approx. mix 1:2:4) 6 bags cement to a cu. yd. Waterproofing protection Concrete Class 2 (Approx. mix 1:2:4) 6 bags cement to a cu. yd. Concrete Fill (Under car tracks) Class 3 (Approx. mix 1:3:6) 4.5 bags cement to a cu. yd., not in this contract.  
 All slab steel shall be placed 1" clear from the surface.  
 For class of Waterproofing see specifications.

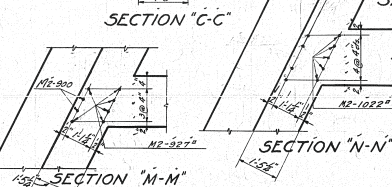
**THE CLEVELAND UNION TERMINALS CO.**  
**EAGLE AVE. VIADUCT-SECTION "B"**  
**PORTION OVER W.L.E.R.R.**  
**PLAN & SECTIONS OF DECK**  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES.  
 DATE: August 1, 1926.  
 SCALE: As shown.  
 ISSUE NO. 1  
 G.O. Marsh  
 Chief Engineer

Issue No. 1 Aug. 23, 1926.  
 Revisions  
 Issue No. 2 July 21, 1927.  
 Minor changes.  
 Issue No. 1 August 10, 1927.  
 Signed by Chief Engineer.  
 Issue No. 2 Aug. 24, 1927.  
 Approved by Commissioner of Engineering & Construction of the City of Cleveland.  
 Issue No. 3 Feb. 8, 28.  
 Revised for Changes in Span Over W.L.E.R.R.  
 Issue No. 4 Feb. 27, 28.  
 Revisions Approved by Commissioner of Engineering & Construction of the City of Cleveland.  
 Issue No. 5 March 12, 1928.  
 Minor changes.  
 Issue No. 6 April 9, 1928.  
 Minor revisions.  
 Issue No. 6 May 25, 1931.  
 Plan conforms to structures as built.



Designed by M.J.O. 8-15-1926.  
 Detailed by B.O. 8-23-1926.  
 Traced by E.A.W. 3-28-1927.  
 Checked by R.E.P. & D.R.A. 5/14/27.  
 Correct 5-5-27.  
 Designing Engineer

Approved *[Signature]* 7/27/27.  
 Engineer of Structures  
 Approved *[Signature]*  
 Principal Assistant Engineer  
 Approved *[Signature]* 7/29/27.  
 Assistant Electrical Engineer  
 Approved *[Signature]* 7/29/27.  
 Engineer of Construction



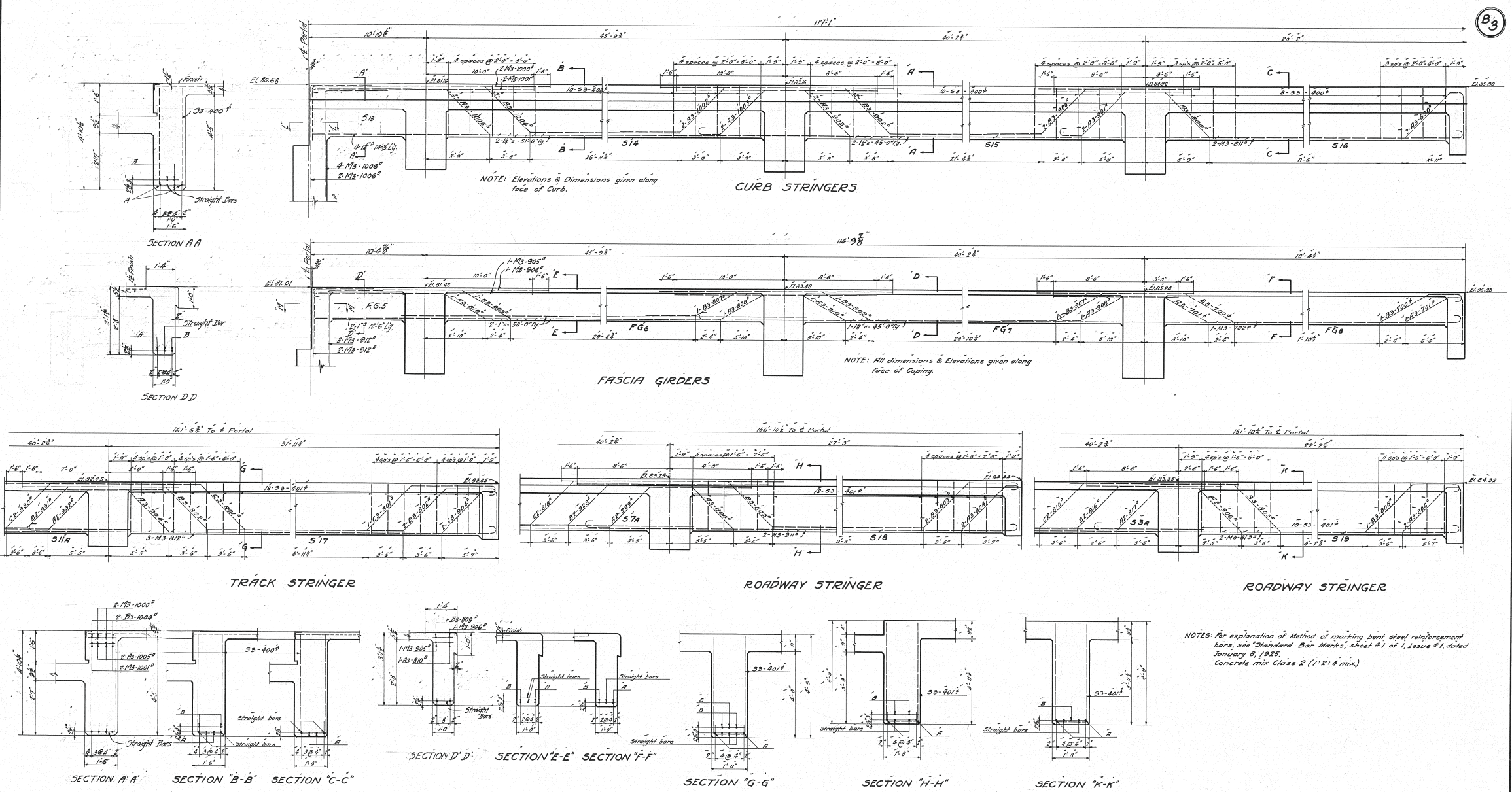
We hereby certify that this Plan shows the structure as built.

Revisions DELETED. Approved  
 CITY OF CLEVELAND  
 Plan approved  
 CITY OF CLEVELAND  
 Robert Hoffman  
 Commissioner of Engineering & Const.  
 Date: Feb. 16, 28.  
 For Original of this Signature See Blue Print filed under 113-039-5.

DATE: July 29, 1927.  
 Note: For Original of this Signature See Blue Print filed under 113-039-5.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT-SECTION "B"  
 PORTION OVER W.L.E.R.R.  
 DETAILS OF FASCIA STRINGERS FG-1 TO FG-4 & STRINGERS S1 TO S12 INCLUSIVE  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 DATE: Aug. 23, 1926.  
 REVISION: May 25, 1927.  
 ISSUE No. 6  
 Chief Engineer

Issue No. 1 Aug. 25, 1926  
 Revisions  
 Issue No. 2 July 21, 1927  
 Minor changes.  
 Issue No. 1 August 10, 1927  
 Signed by Chief Engineer  
 Issue No. 2 Aug. 24, 1927  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.  
 Issue No. 3 Feb. 8, 1928  
 Revised for Changes in Span Over W.L.E.R.R.  
 Issue No. 4 Feb. 21, 28  
 Revisions Approved by Commissioner  
 of Engineering & Construction of  
 the City of Cleveland  
 Issue No. 5 May 25, 1931  
 Plan conforms to structure  
 as built.



Designed by M.J.O. 8-16-26  
 Detailed by A.O. 9-25-26  
 Traced by E.A.V. 4-8-27  
 Checked by R.E.P., J.R.A. 5/4/27  
 Corrected 5-5-27  
 G.L. Williams  
 Designing Engineer

Approved C.P. Marsh 7/27/27  
 Engineer of Structures  
 Approved F.H. Williams 7/27/27  
 Principal Assistant Engineer  
 Approved H.P. Ogden 7/27/27  
 Assistant Electrical Engineer  
 Approved W.H. Gault 7/27/27  
 Engineer of Construction

Plan approved  
 CITY OF CLEVELAND  
 Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date July 29, 1927.  
 Note: For Original of this Signature  
 See Blue Print filed under 113-039.3

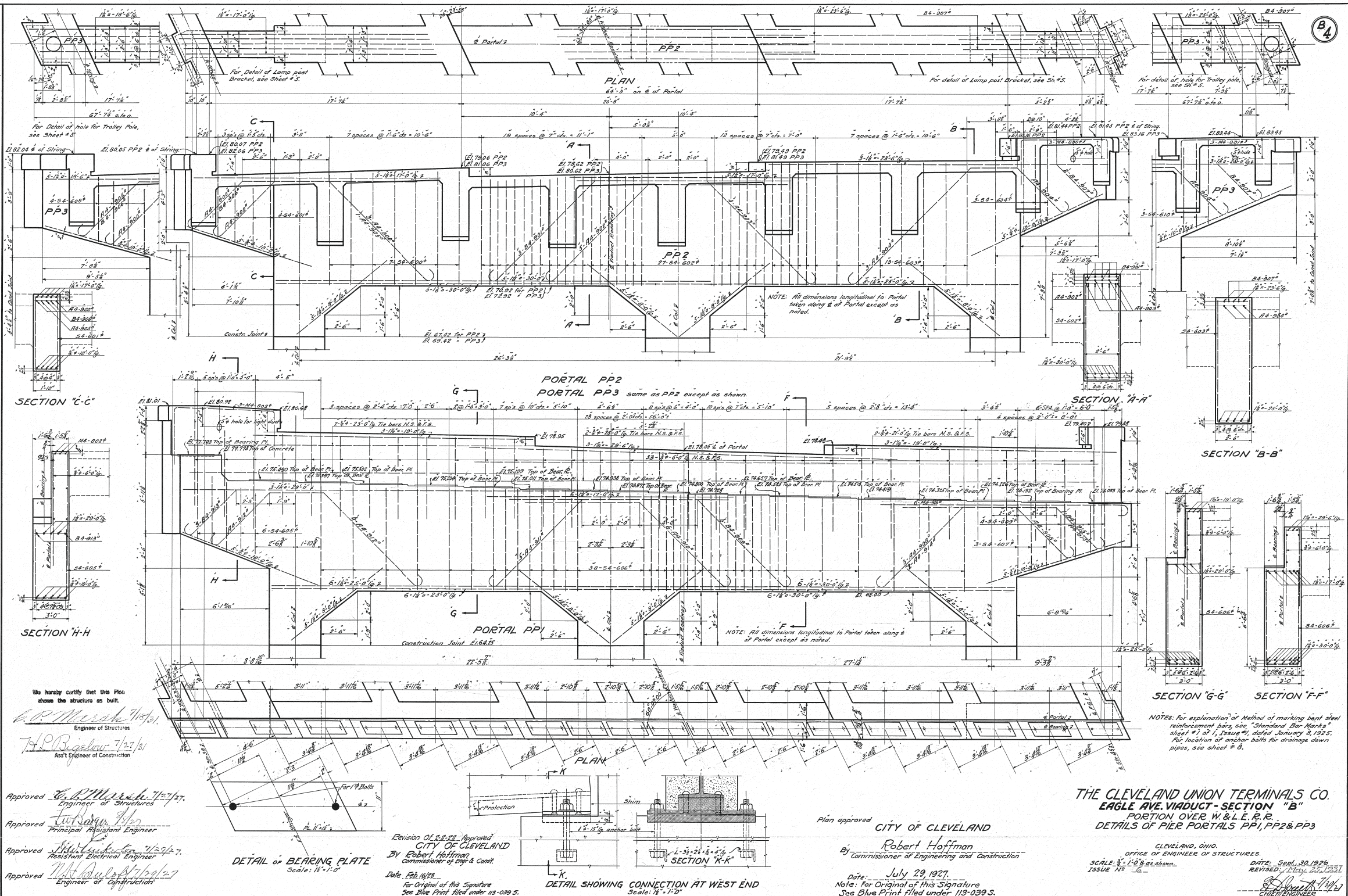
Revisions O.E.B.B. Approved  
 CITY OF CLEVELAND  
 Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date Feb. 16, 1928  
 For Original of this Signature  
 See Blue Print filed under 113-039.5

I do hereby certify that this Plan  
 shows the structure as built.  
 C.P. Marsh 7/27/27  
 Engineer of Structures  
 H.P. Ogden 7/27/27  
 Ass't Engineer of Construction

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT - SECTION "B"  
 PORTION OVER W. & L. E. R.R.  
 DETAILS OF FASCIA STRINGERS FG-5 TO FG-8  
 & STRINGERS S13 TO S19 INCLUSIVE  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES.  
 SCALE: 3/8" = 1'-0"  
 ISSUE NO. 2  
 DATE: Aug. 25, 1926  
 REVISED: May 25, 1927  
 G.L. Williams 5/25/27  
 Chief Engineer



Issue No. 1 Sept. 30, 1926  
 Revisions  
 Issue No. 2 April 25, 1927  
 Paving dams omitted  
 Issue No. 3 July 21, 1927  
 Steel added in sidewalk cantilever on portals, and in top of Portal PPI.  
 Issue No. 4 August 10, 1927  
 Signed by Chief Engineer  
 Issue No. 5 Aug. 24, 1927  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 6 Feb. 8, 1928  
 Revised for Changes in Portal PP1  
 Issue No. 7 Feb. 21, 1928  
 Evisions Approved by Commission of Engineering & Construction of the City of Cleveland  
 Issue No. 8 March 12, 1928  
 Minor changes.  
 Issue No. 9 May 25, 1931  
 Plan conforms to structure as built.



Designed by M.J.O. 9-15-26  
 Detailed by A.O. 9-30-26  
 Traced by F.R.W. 4-27-27  
 Checked by R.E.P. J.B.A. 5/14/27  
 Corrected by S.E. 27  
 Y.L. Gorman  
 Designing Engineer

Approved by G.P. Marsh 7/14/27  
 Engineer of Structures  
 H.P. Bigelow 7/27/27  
 Asst. Engineer of Construction

Approved by J.W. Brown 7/27/27  
 Principal Assistant Engineer

Approved by J.W. Brown 7/27/27  
 Assistant Electrical Engineer

Approved by W.H. Daulton 7/27/27  
 Engineer of Construction

Revision of P.P. 22 Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Eng'g & Const.  
 Date: Feb. 16/28  
 For Original of this Signature  
 See Blue Print filed under 113-039 S.

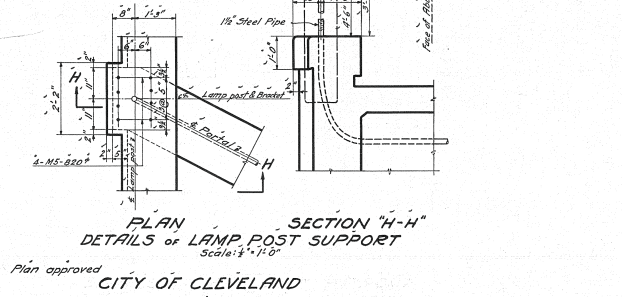
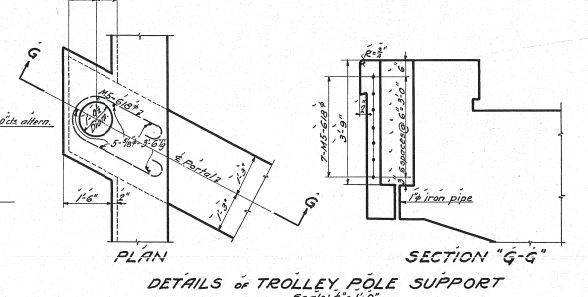
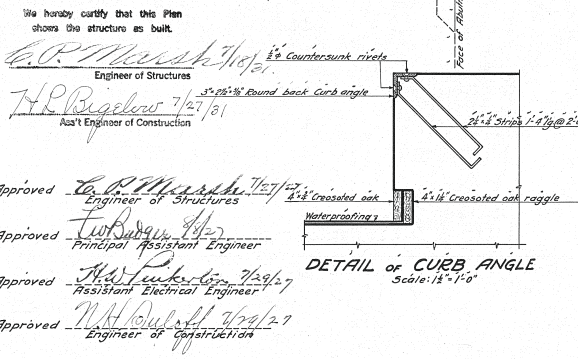
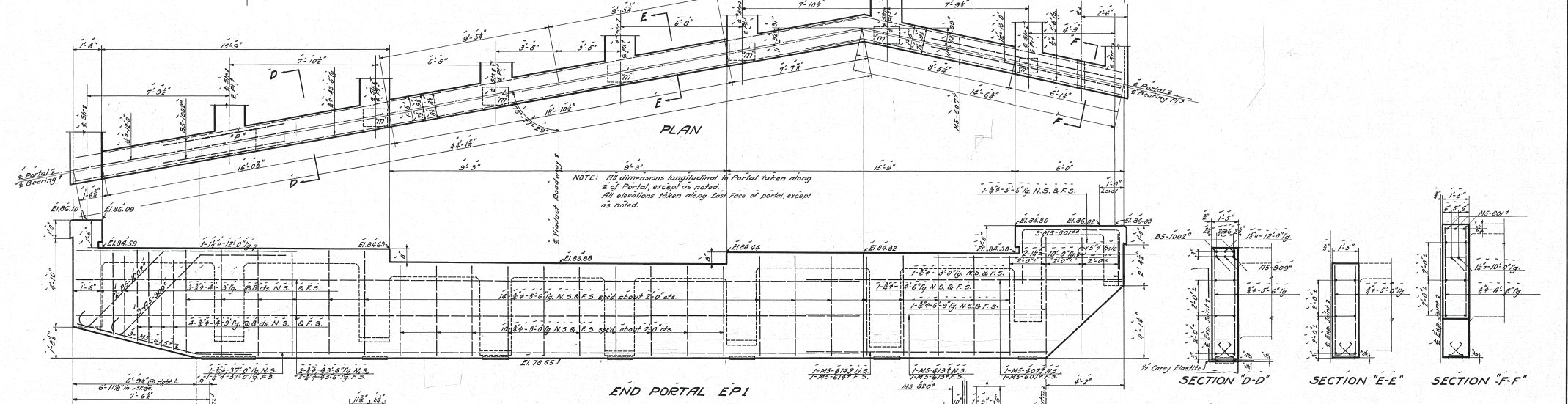
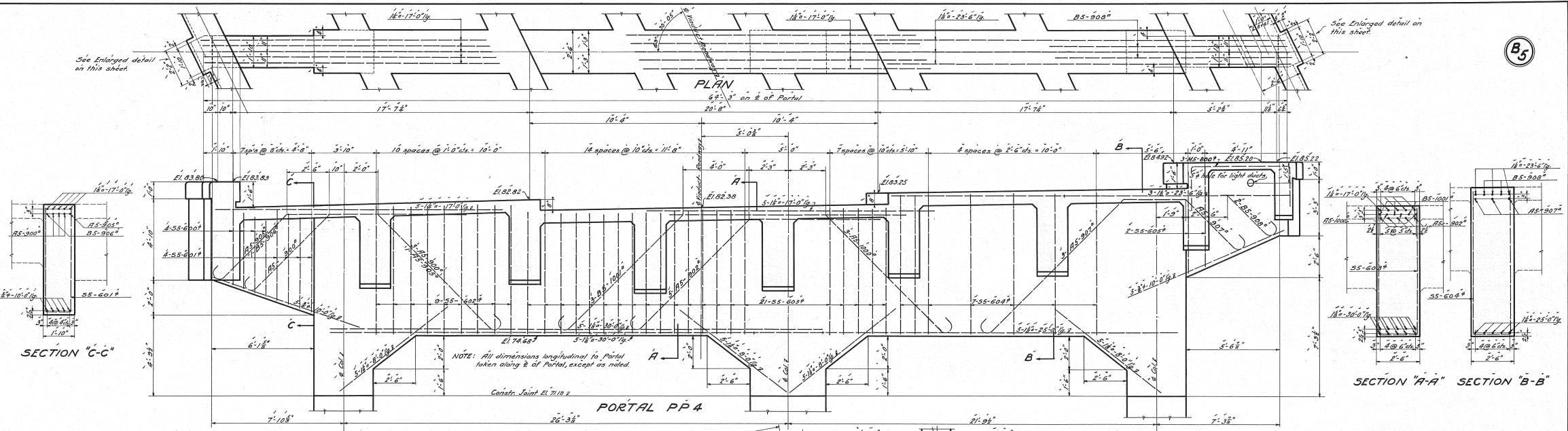
Plan approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date: July 29, 1927.  
 Note: For Original of this Signature  
 See Blue Print filed under 113-039 S.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT - SECTION "B"  
 PORTION OVER W. & L. E. R.R.  
 DETAILS OF PIER PORTALS PPI, PP2 & PP3

CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES.  
 SCALE: 1/8" = 1'-0" as shown.  
 DATE: Sept. 30, 1926  
 REVISED: May 25, 1931  
 ISSUE NO. 9

FILE NO. 113-039

Issue No. A Oct. 2, 1926.  
 Revisions:  
 Issue No. B April 28, 1927.  
 Paving dams omitted.  
 Issue No. C July 21, 1927.  
 Minor changes.  
 Issue No. 1 August 10, 1927.  
 Signed by Chief Engineer.  
 Issue No. 2 Aug. 24, 1927.  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.  
 Issue No. 3 March 12, 1928.  
 Minor changes.  
 Issue No. 4 May 25, 1931.  
 Plan conforms to structure  
 as built.



NOTES: For explanation of Method of marking bent steel reinforcement bars, see sheet #071, Issue #1 dated January 3, 1925.  
 For location of anchor bolts for drainage down pipes, see sheet #0.  
 Plates to be located by fitting to bearing plates on abutment.  
 Bearing plates: 7" x 12" x 1/2"; 7 1/2" x 10" x 1/2"; 7" x 18" x 1/2"; 3/4" x 18" x 1/2".  
 For details of railing and details for same, see sheet #7 & also sheet #3 of General Drawings.

Designed by M.J.O. 9-25-26.  
 Detailed by A.Q. 10-2-26.  
 Traced by E.A.W. 5-12-27.  
 Checked by R.E.P. 5-4-27.  
 Correct May 5, 1927.  
 Y.L. Corman  
 Designing Engineer

Approved G.P. Marsh 7/27/27  
 Engineer of Structures  
 Approved T.W. Ryan 7/27/27  
 Principal Assistant Engineer  
 Approved H.W. Leach 7/27/27  
 Resident Electrical Engineer  
 Approved N.H. Coult 7/27/27  
 Engineer of Construction

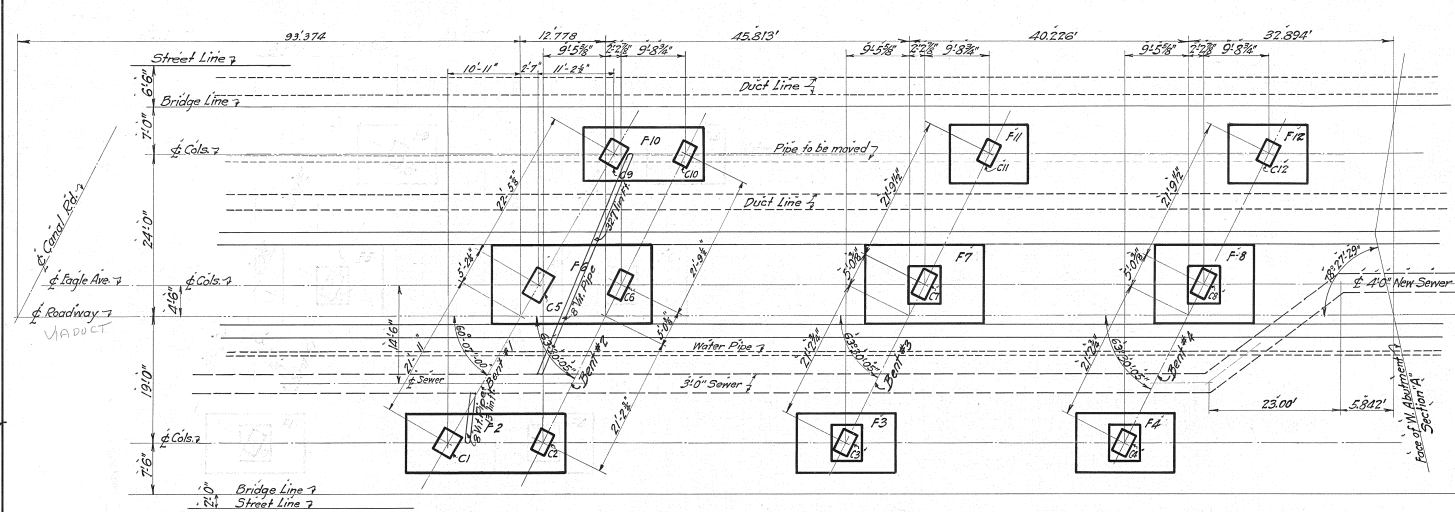
Plan approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date: July 29, 1927.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT-SECTION "B"  
 PORTION OVER W.&L.E. P.R.  
 DETAILS OF PIER PORTALS PP 4 & EPI

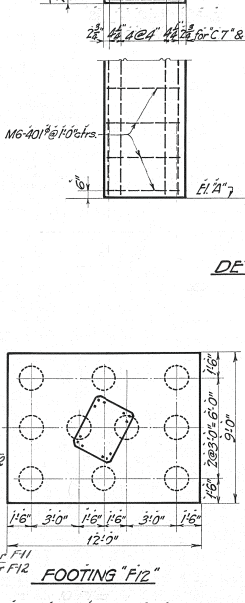
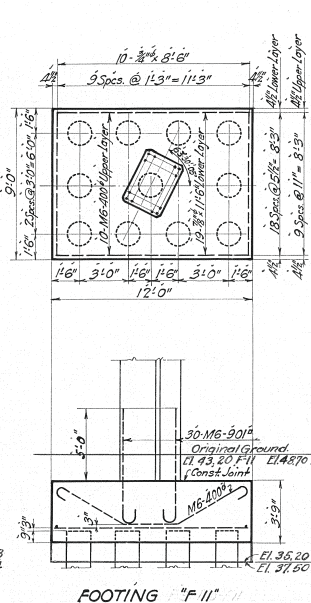
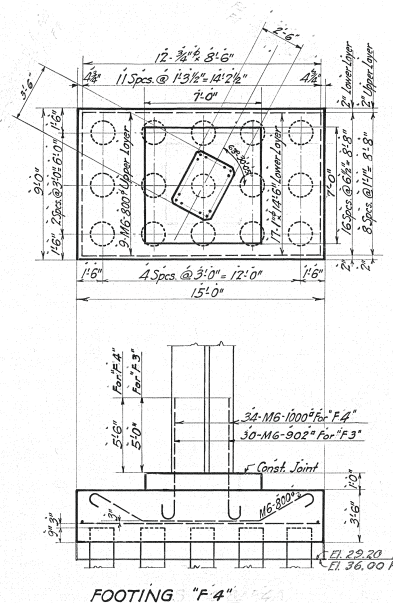
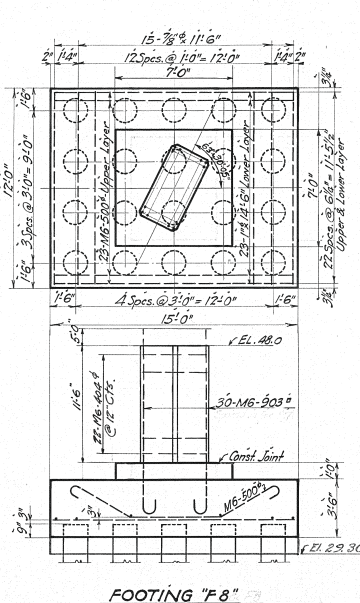
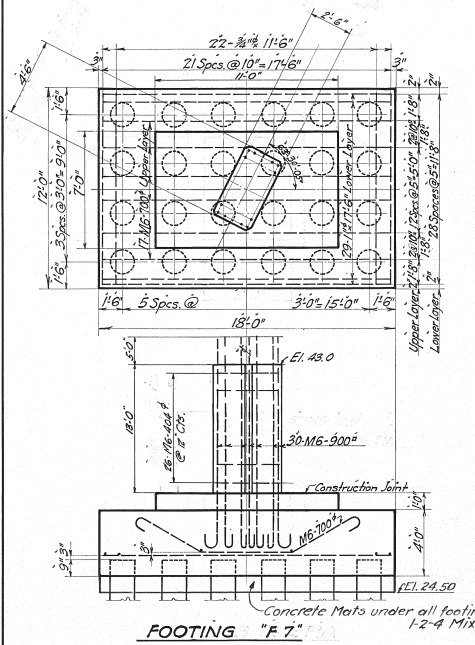
CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 3/4" = 1'-0" & as shown.  
 DATE: October 2, 1926.  
 REVISED: 7/27/1927  
 ISSUE NO. 1

Note: For Original of this Signature See Blue Print filed under 113-039.S.

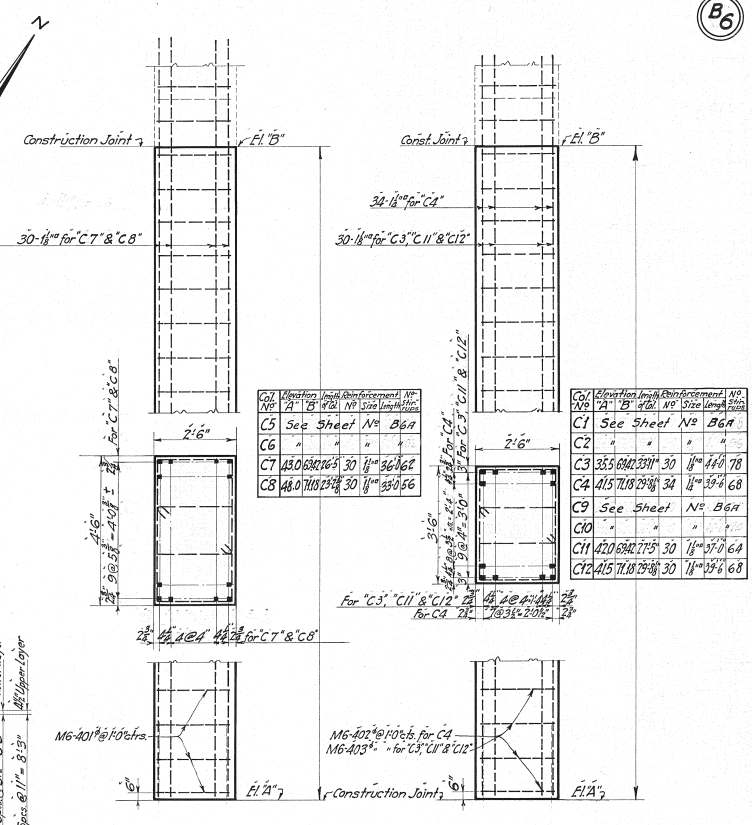
Issue No A 10-21-1926  
**REVISIONS:**  
 Issue No B 2-12-1927 Drawing Traced.  
 Issue No C 7-14-1927 Revised Hoops in Columns and top step of Footings.  
 Issue No 1 8-10-1927 Signed by Chief Engineer.  
 Issue No 2 3-24-1927 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No 3 10-15-1927 Revised Footing Marks.  
 Issue No 4 10-28-1927 Top of footing "F3" lowered.  
 Issue No 5 12-10-1927 Revised for changes in span over N.W.L.E.R.R.  
 Issue No 6 12-30-1927 Revised Column Bars & Footings F1 & F3.  
 Issue No 7 Feb 21-28 Revisions Approved by Commissioner of Engineering & Construction of the City of Cleveland.  
 Issue No 8 Apr. 30, 1931 Plan corrected to conform to structure as built.



LOCATION PLAN OF FOOTINGS  
 Scale: 1/4" = 1'-0"



DETAIL OF COLUMNS  
 Scale: 1/4" = 1'-0"



DETAIL OF CENTER ROW COLUMNS  
 Showing how bottom of rolling roadway has to be broken thru before driving piles.

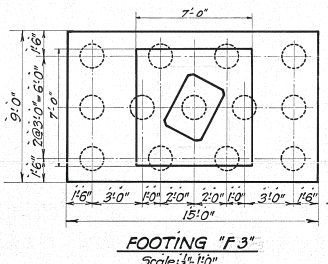
ELEVATIONS OF PILE CUT-OFF

Col. No.	Elevation
C3	31.75
C4	32.75
C7	32.75
C8	32.75
C11	32.00
C12	32.50

NOTES:  
 For explanation of method of marking bent steel reinforcement bars, see "S18" Bar-Marks Sheet No. 1 of 1, Issue No. 1, Dated Jan. 3, 1925. Concrete-Class 2 (1:2:4 Mix). All Piles to be Concrete. For location of anchor bolts for drainage down spouts on columns #C1 and #C9 See Sheet No. 8. For location of footing dowels, see Sheet # 6.

Designed By M.J.O. 10-1-1926  
 Detailed By A.O. 10-21-1926  
 Traced By S.H. 2-12-1927  
 Checked By R.E.P. + D.R.A. 5/1/1927  
 Corrected by M.S. 1/21/1927  
 Designing Engineer

Approved E.O. Marshall 1/27/27  
 Engineer of Structures  
 Approved J.W. Saden 1/27/27  
 Principal Assistant Engineer  
 Approved R.H. ... 7/29/27  
 Assistant Electrical Engineer  
 Approved M.T. ... 1/22/27  
 Engineer of Construction

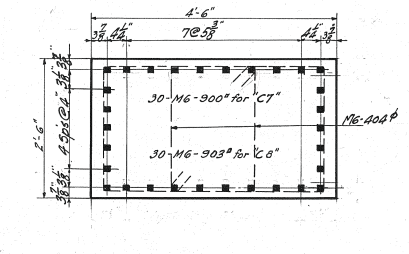
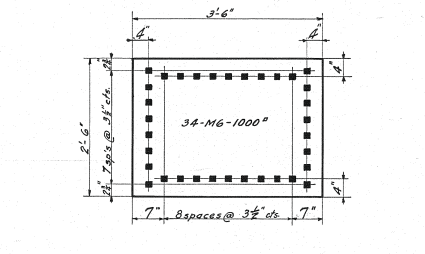
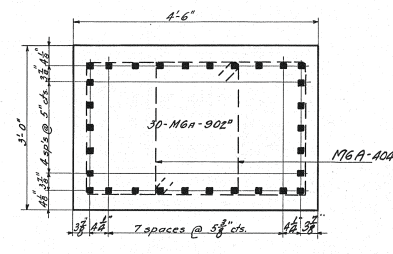
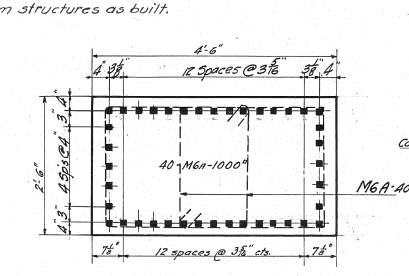
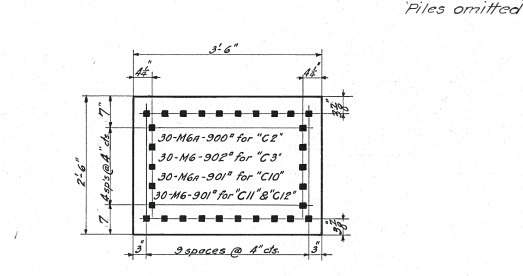
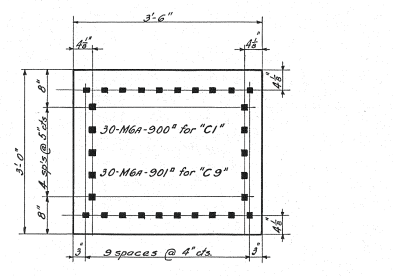
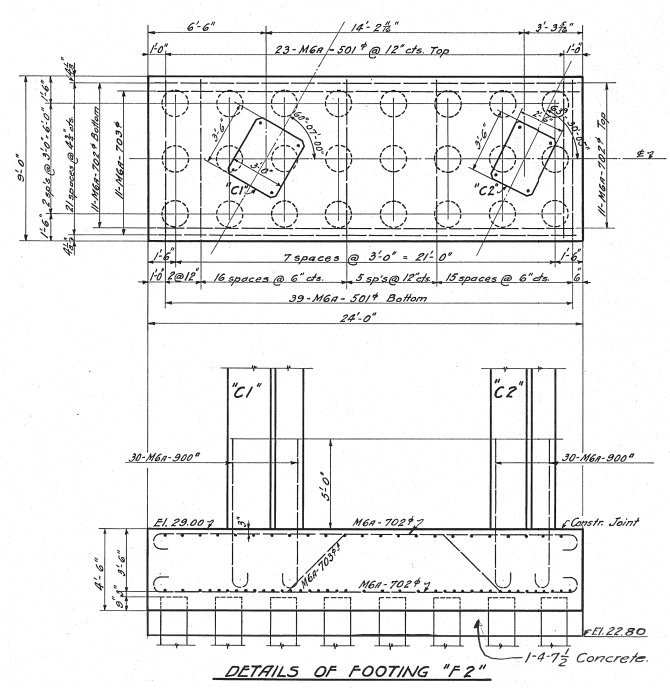
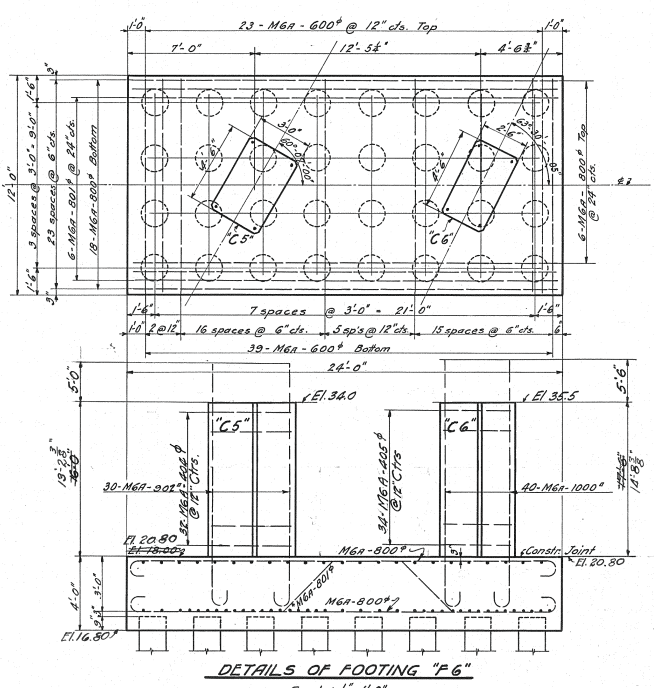
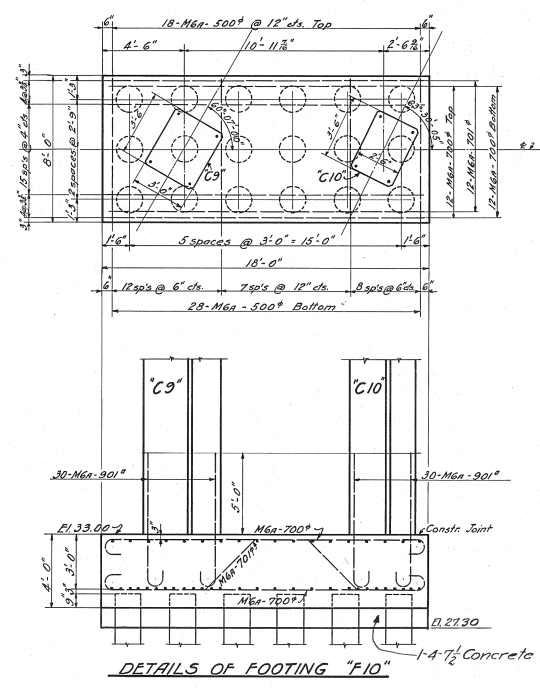


Note: Footing "F3" same as "F4" except for spacing & number of piles, and footing dowels.  
 Revisions O.E. ... Approved CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 DATE Feb 16/28  
 For Original of this Signature See Blue Print filed under 113-039.5

Plan Approved CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date July 29, 1927  
 Note: For Original of this Signature See Blue Print filed under 113-039.5

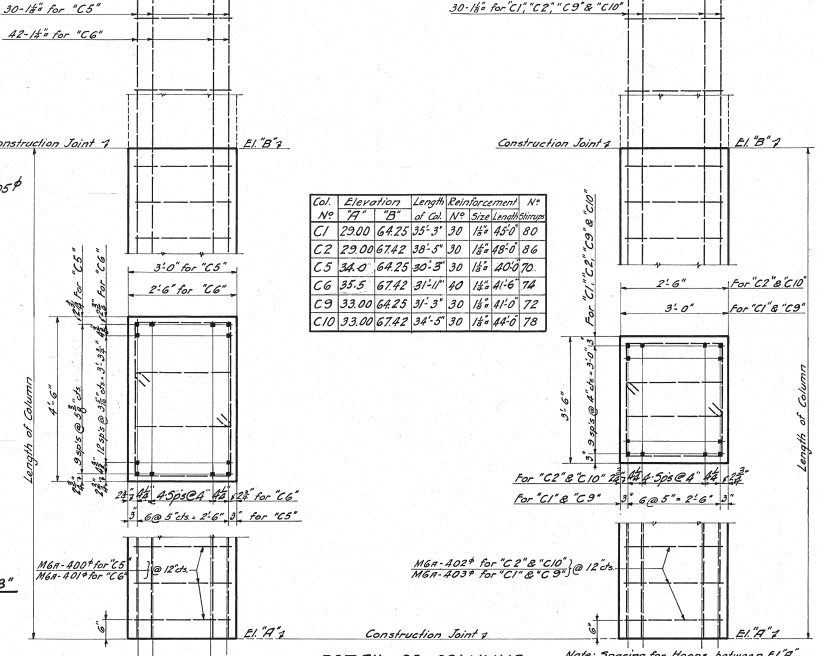
THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT-SECTION "B"  
 PORTION OVER W. & L.E. R.R.  
 DETAILS OF FOOTINGS & COLUMNS  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: AS SHOWN DATE: 10-21-26  
 ISSUE NO. ...  
 CHIEF ENGINEER

Issue No. A Dec. 9, 1927.  
 Revisions:  
 Issue No. L Dec. 15, 1927.  
 Approved by Chief Engineer.  
 Issue No. 2 Dec. 30, 1927.  
 Revised Column Bars and Footing Fe  
 Issue No. 3 Feb. 21/28  
 Approved by Commissioner of  
 Engineering & Construction, of  
 the City of Cleveland  
 Issue No. 4 Apr. 30, 1931  
 Plan corrected to conform to  
 structure as built.



ELEVATIONS OF PILE CUT-OFF

"C1"	"C2"	"C5"	"C6"	"C9"	"C10"
25.25	25.25	14.75	14.75	29.75	29.75



Col. No.	Elevation	Length	Reinforcement	N <sup>o</sup>
C1	29.00	64.25	35-3" 30 1/2" 450	80
C2	29.00	67.42	38-3" 30 1/2" 450	86
C5	34.0	64.25	30-3" 30 1/2" 200	70
C6	35.5	67.42	31-0" 30 1/2" 416	74
C9	33.00	64.25	31-3" 30 1/2" 410	72
C10	33.00	67.42	34-5" 30 1/2" 440	78

DETAIL OF COLUMNS  
 Scale: 3/4" = 1'-0"

Designed by E.A.B. 12-5-27  
 Detailed by E.A.W. 12-9-27  
 Traced by E.A.W. 12-9-27  
 Checked by E.A.B. 12-12-27  
 Correct 12-13-27  
E.L. Dorman  
 Designing Engineer

Approved E.P. Martin 12/21  
 Engineer of Structures  
 Approved W.J. Sawyer 12/27  
 Principal Assistant Engineer  
 Approved W.L. ... 12/27  
 Assistant Electrical Engineer  
 Approved W.H. ... 12/27  
 Engineer of Construction

We hereby certify that this Plan shows the structure as built.  
H.P. ...  
 Engineer of Structures  
H.L. Bigelow  
 Ass't Engineer of Construction

Notes: For explanation of method of marking bent steel reinforcement bars, see "Standard Bar Marks" Sheet #1 of 1, Issue #1, dated January 8, 1925. Concrete Class 2 (Approx. mix 1:2:4). All piles to be concrete. For location of anchor bolts for drainage down spouts on columns "C1" & "C9", see Sheet # 8.

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date: Feb 16 28  
 For Original of this Signature See Blue Print filed under 113-039

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT SECTION "B"  
 PORTION OVER W. & L. E. R. R.  
 DETAILS OF FOOTINGS & COLUMNS  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: AS SHOWN  
 ISSUE NO. 2  
 DATE: Dec. 9, 1927  
 REVISED: April 30, 1931  
W.L. ...  
 Chief Engineer

Issue No. A Oct. 7, 1926.  
REVISIONS:

Issue No. B Nov. 26, 1926.  
Railing redesigned, Part of Sec. "A" added. Sheet redrawn.

Issue No. C July 21, 1927.  
Details of Transformer Chamber added. Minor changes.

Issue No. 1 August 10, 1927.  
Signed by Chief Engineer

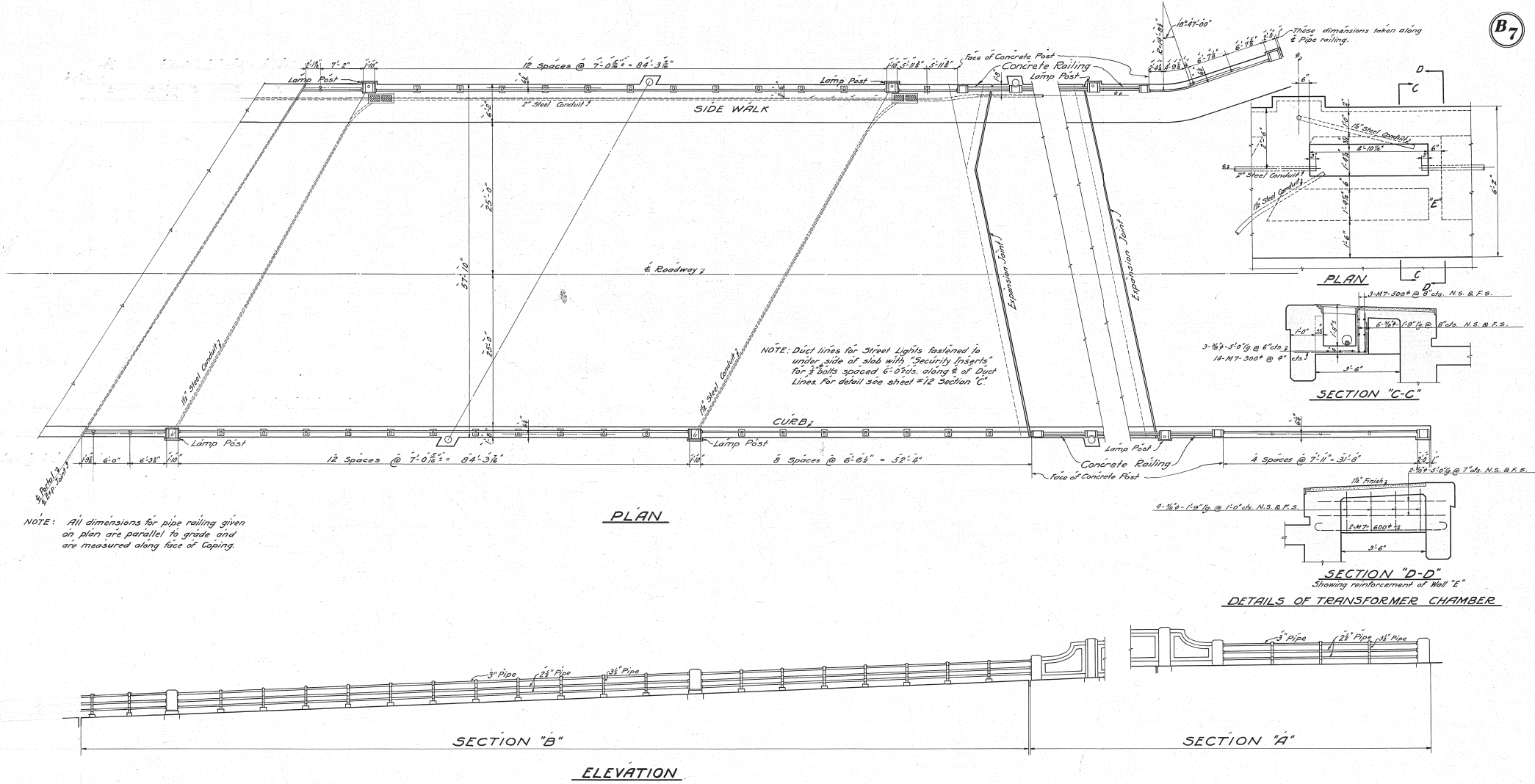
Issue No. 2 Aug. 24, 1927.  
Approved by Commissioner of Engineering and Construction of the City of Cleveland.

Issue No. 3 Dec. 5, 1927.  
Revised for changes in span over W.&L.E.R.R.

Issue No. 4 Feb. 8, 1928.  
MINOR CHANGES

Issue No. 5 Feb. 21, 1928.  
Revisions Approved by Commissioner of Engineering & Construction of the City of Cleveland

Issue No. 6 May 25, 1931.  
Plan conforms to structure as built.



NOTE: All dimensions for pipe railing given on plan are parallel to grade and are measured along face of coping.

I hereby certify that this Plan shows the structure as built.  
*G. P. McLaughlin*  
Engineer of Structures  
7-27-31  
Asst. Engineer of Construction

Plan approved  
**CITY OF CLEVELAND**  
By *Robert Hoffman*  
Commissioner of Engineering and Construction  
Date: July 29, 1927.  
Note: For Original of this Signature See Blue Print filed under 113-039 S.

NOTES: For details of Concrete Railing on Section "A" & part of "B" see Sheet # 14 Section "A".  
For details of pipe railing & Lamp Posts, see Sheet # 3 of General Drawings.  
All 1 1/2" Steel Conduits shown in Plan, to be set in forms before concrete is poured.  
For detail of Manhole Frame & Cover for Transformer chamber see Sheet # "E".

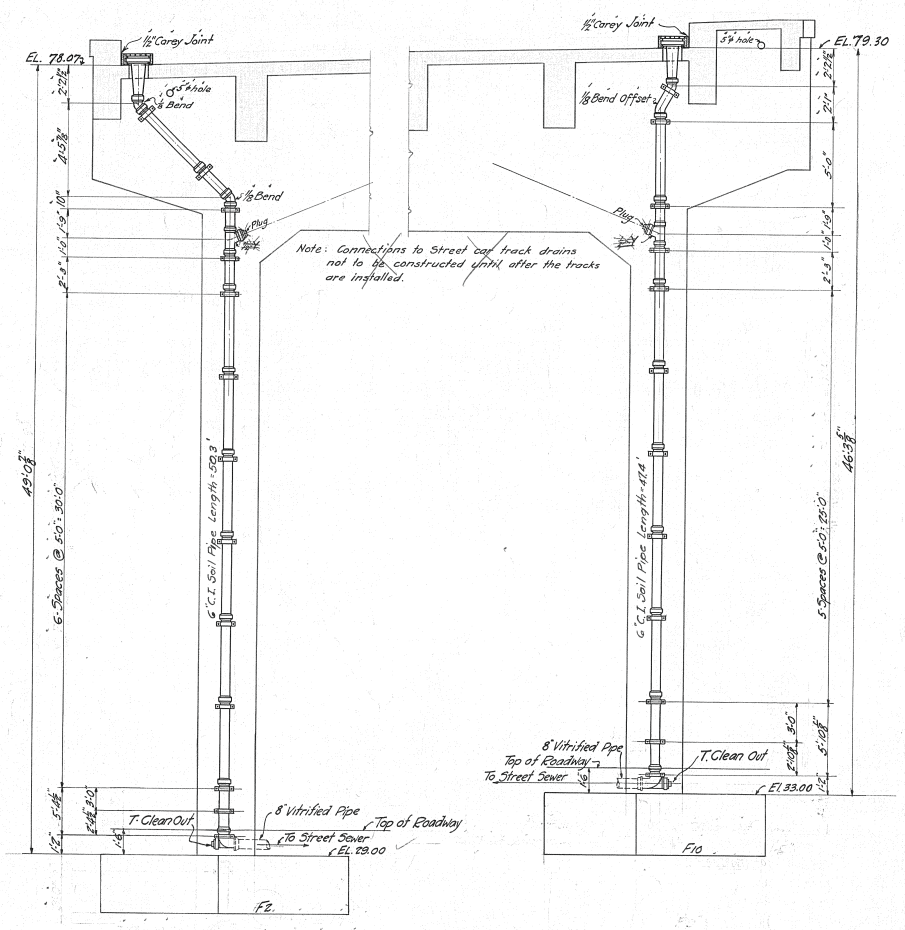
Revisions of 2.8.28. Approved  
**CITY OF CLEVELAND**  
By *Robert Hoffman*  
Commissioner of Engineering & Const.  
DATE: Feb. 16, 28.  
For Original of this Signature See Blue Print filed under 113-039 S.

**THE CLEVELAND UNION TERMINALS CO.**  
**EAGLE AVE. VIADUCT-SECTION "B"**  
PORTION OVER W.&L.E.R.R.  
PLAN & ELEVATION OF PIPE RAILING

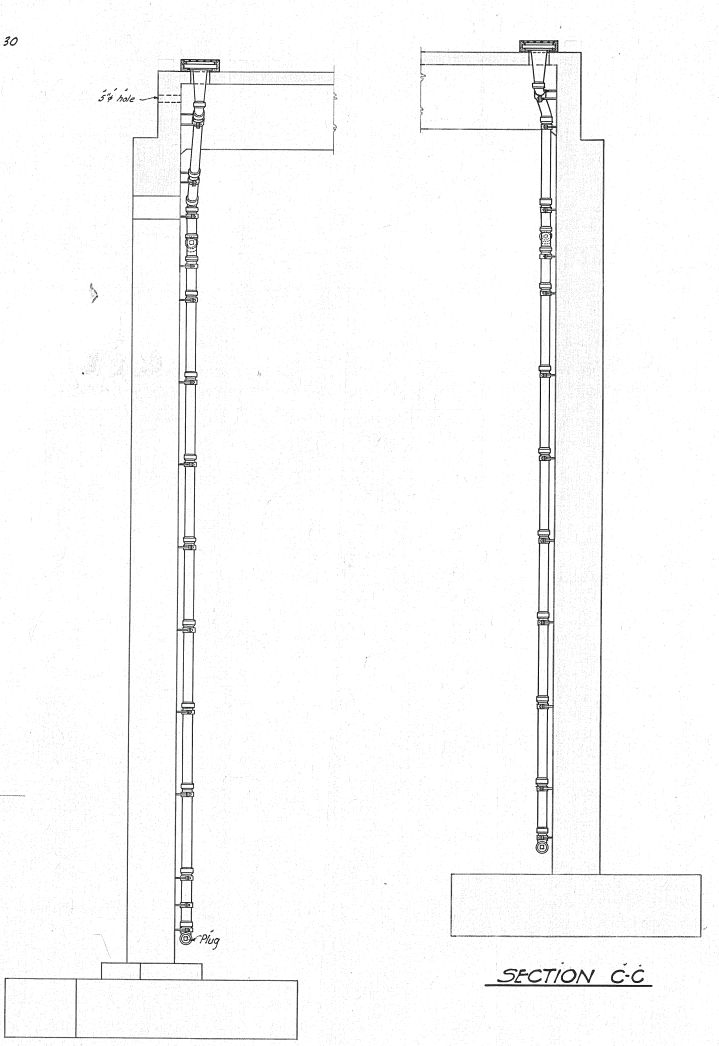
CLEVELAND, OHIO.  
OFFICE OF ENGINEER OF STRUCTURES  
DATE: October 7, 1926.  
REVISION: July 26, 1931.  
ISSUE No. 6  
*G. P. McLaughlin*  
CHIEF ENGINEER

Designed by *W.L.F.* 11-6-1926  
Detailed by *S.H.* 11-26-1926  
Traced by *E.A.W.* 6-9-1927  
Checked by *D.R.A.* 6/23/27  
Correct *May 5, 1927*  
*H. L. Gorman*  
Designing Engineer  
Approved *G. P. McLaughlin* 7/17/27  
Engineer of Structures  
Approved *J. W. B. [Signature]* 7/27/27  
Principal Assistant Engineer  
Approved *W. L. [Signature]* 7/29/27  
Assistant Electrical Engineer  
Approved *W. H. Bullock* 7/29/27  
Engineer of Construction

Issue No. A Jan. 31, 1927.  
**REVISIONS:**  
 Issue No. B July 29, 1927.  
 Provided connections for street car track drains.  
 Issue No. 1 August 10, 1927.  
 Signed by Chief Engineer.  
 Issue No. 2 Aug. 24, 1927.  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3 Oct. 20, 1927.  
 Elevation of top of "F" changed.  
 Issue No. 4 Feb. 6, 1928.  
 Revised for changes in Portal P.P.I.  
 Issue No. 5 Feb. 21, 1928.  
 Revisions Approved by Commissioner of Engineering & Construction of the City of Cleveland.  
 Issue No. 6 May 1, 1931.  
 Plan corrected to conform to structure as built.

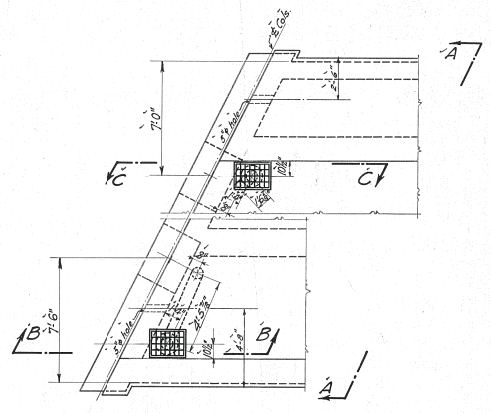


SECTION A-A

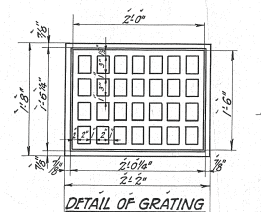


SECTION B-B

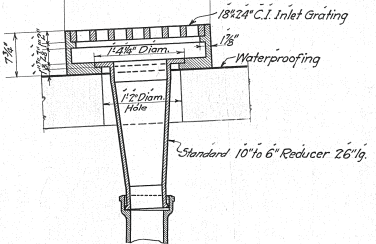
Scale: 1/4" = 1'-0"



PLAN OF INLETS AT PORTAL "P.P.I."  
 Scale: 1/4" = 1'-0"

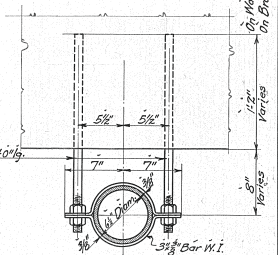


DETAIL OF GRATING



DETAIL OF DRAIN

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



DETAIL OF PIPE HANGER

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

NOTE: All pipe and fittings to be 6" extra heavy C.I. Soil Pipe in 5'-0" lengths.

EAGLE AVE VIADUCT - CONTRACT NO. 4  
 SEE NOTE ON SH. 1 OF 15

Designed By: W. H. R. R. 19  
 Detailed By: E.A.W. 1-31-1927.  
 Traced By: S.H. 3-31-1927.  
 Checked By: R.E.R. & J.R.A. 5/1/1927  
 Correct: W.H.R. 5-1-1927  
 Designing Engineer  
 Approved: E. P. M. 7/27/27  
 Engineer of Structures  
 Approved: J. B. R.  
 Principal Assistant Engineer  
 Approved: M. L. C. 7/29/27  
 Assistant Electrical Engineer  
 Approved: W. H. R. 7/27/27  
 Engineer of Construction

I hereby certify that this Plan shows the structure as built.  
E. P. M. 7/27/27  
 Engineer of Structures  
W. H. R. 7/27/31  
 Ass't Engineer of Construction

Revisions of E.S. & C. Approved  
 CITY OF CLEVELAND  
 By: Robert Hoffman  
 Commissioner of Engineering & Const.  
 Date: Feb. 15, 28.  
 For Original of this Signature See Blue Print filed under 113-039 5

Plan Approved  
 CITY OF CLEVELAND  
 By: Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date: July 29, 1927.

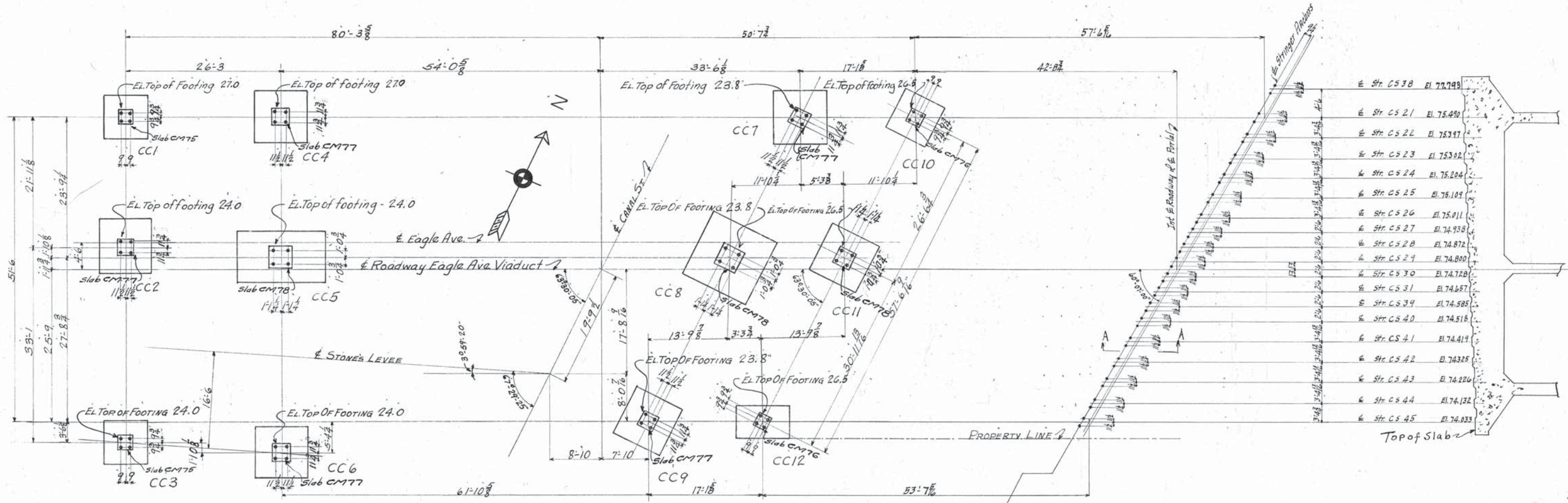
THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT SECTION "B"  
 PORTION OVER W. & L. E. R. R.  
 DETAILS FOR DRAINAGE  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: AS SHOWN  
 ISSUE NO. 6  
 DATE: JAN. 31, 1927.  
 REVISED: May 1, 1931.  
W. H. R. 7/27/27  
 CHIEF ENGINEER

Note: For Original of this Signature See Blue Print filed under 113-039 5.

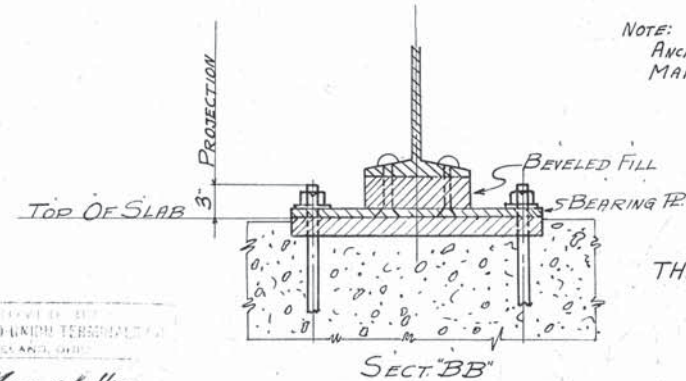
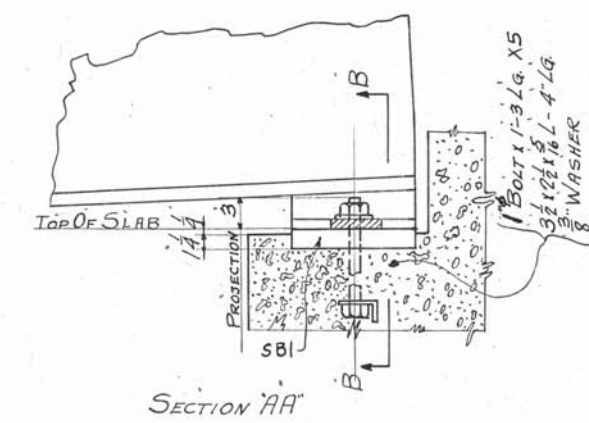
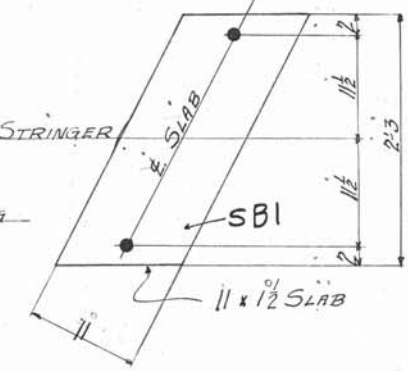
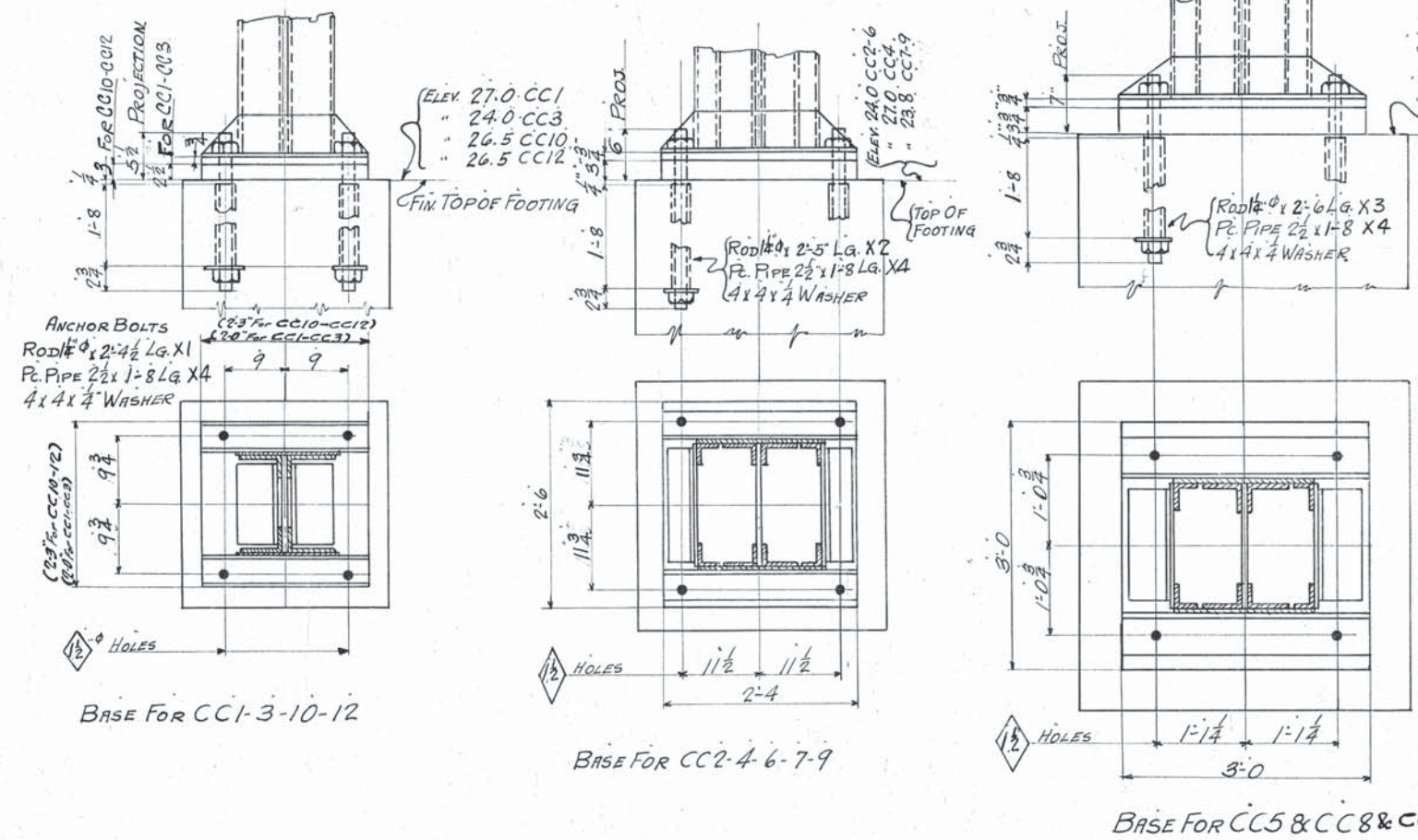
FILE NO 113-039

B8

2



**ANCHOR BOLT PLAN**

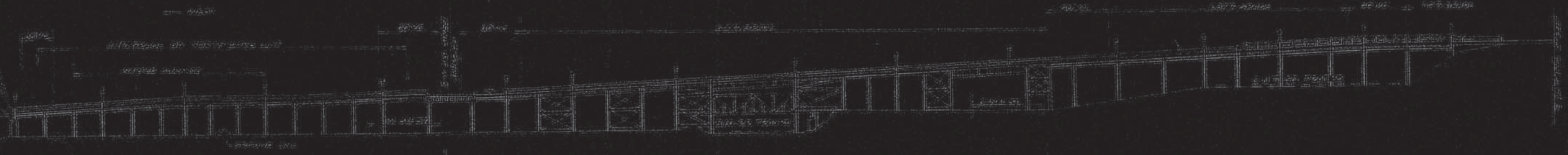


NOTE: ANCHOR BOLTS FURNISHED BY McCLINTIC MARSHALL COMPANY AND SET BY OTHERS.

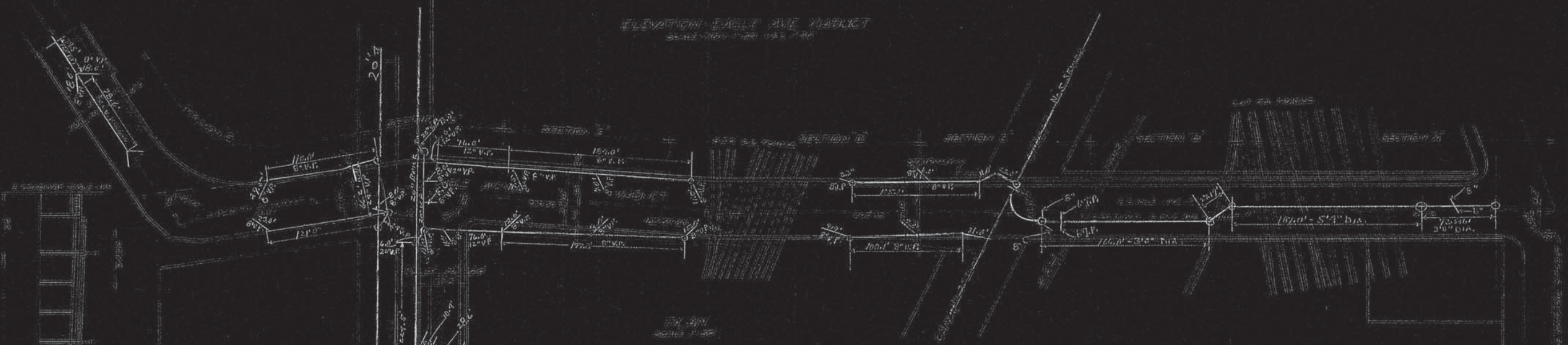
**THE CLEVELAND UNION TERMINAL CO  
 EAGLE AVENUE VIADUCT  
 SECTION C  
 ERECTION DIAGRAM**

THE CLEVELAND UNION TERMINAL CO.  
 E. P. Marsh 1/11/28  
 H. H. Young 1/11/28  
 R.E.P. 1-31-28 F.L.G. 1-31-28

McCLINTIC-MARSHALL CONST. CO.  
 RANKIN WORKS PITTSBURGH, PA.  
 IN CHARGE HEFAIR  
 MADE BY V.R.B. DATE CHECKED BY DATE  
 TRACED BY E.H.G. DATE REVISION BY DATE  
 SCALE: INCH=1 FOOT LAST ASSEMBLING MARK  
 CONT. NO. 3280 SHEET NO. E1



ELEVATION - EAGLE AVE VIADUCT  
Scale 1/8" = 1'-0" (1/4" = 1'-0")



ELEVATION - WEST 38th STREET APPROACH  
Scale 1/8" = 1'-0" (1/4" = 1'-0")



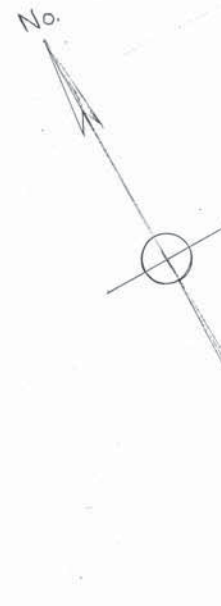
CITY OF CLEVELAND  
BUREAU OF PUBLIC WORKS  
ENGINEERING DIVISION  
ROADS & STREETS DEPARTMENT

PROJECT: EAGLE AVE VIADUCT  
DATE: 1912

DESIGNED BY: [Name]  
CHECKED BY: [Name]  
APPROVED BY: [Name]

NO.	DATE	REVISION





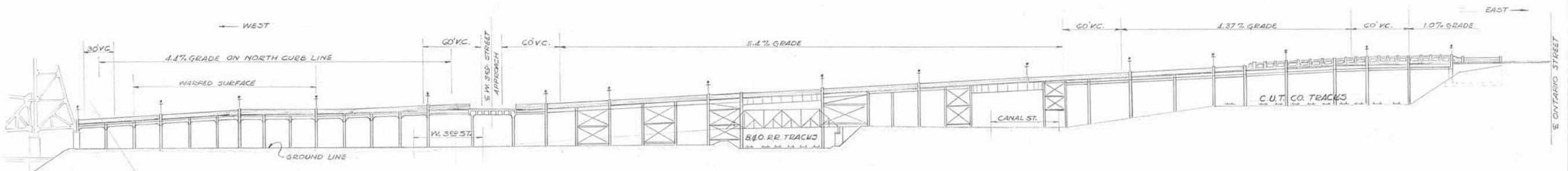
NO.	DATE	BY	CHKD.

SCALE 1"=100'0"

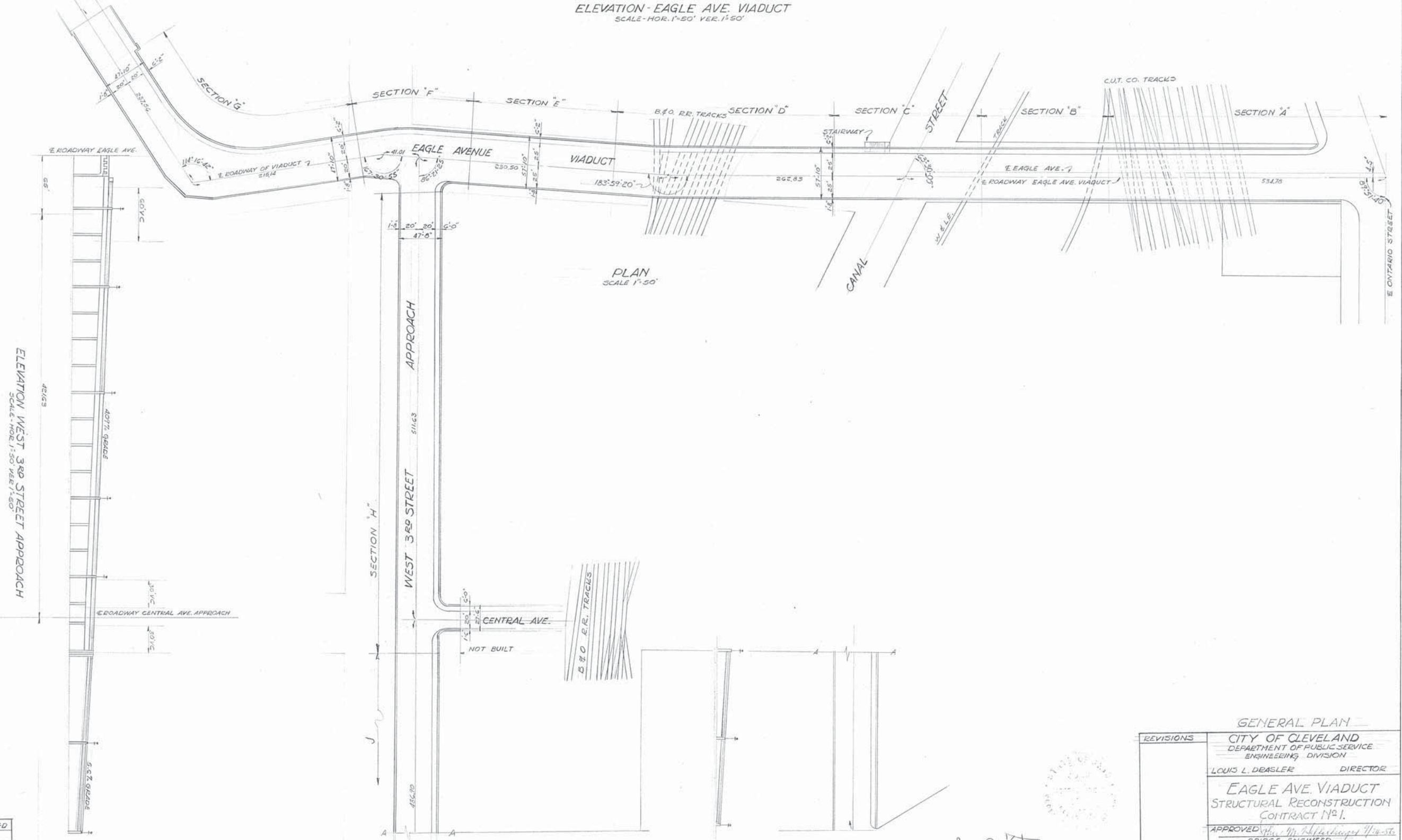
APPROVED \_\_\_\_\_ DATE \_\_\_\_\_

COMM. OF ENGS. & CONVT.

REVISIONS		CITY OF CLEVELAND	
		DEPARTMENT OF PUBLIC SERVICE	
		"BRIDGING A VISION"	
		LOUIS L. BRASLER	DIRECTOR
		APPROVED _____	
		BRIDGE ENGINEER	
SH.	OF	DRWG NO.	FILE NO.



ELEVATION - EAGLE AVE. VIADUCT  
SCALE - HOR. 1"=50' VER. 1"=50'



PLAN  
SCALE 1"=50'

ELEVATION WEST 3RD STREET APPROACH  
SCALE - HOR. 1"=50' VER. 1"=50'

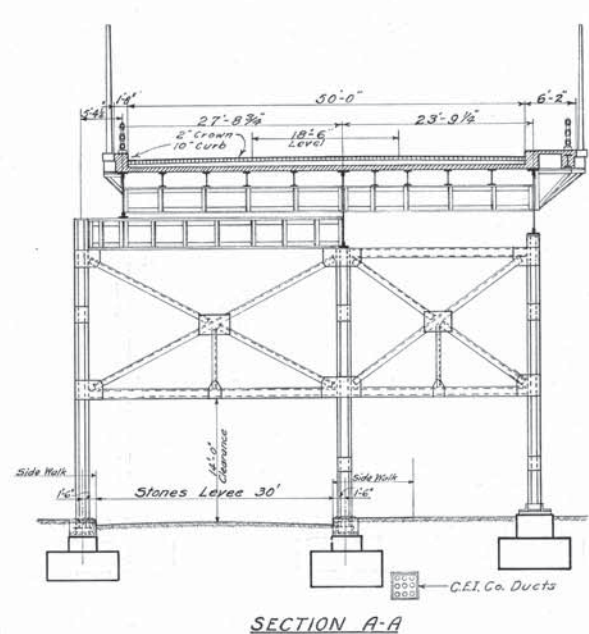
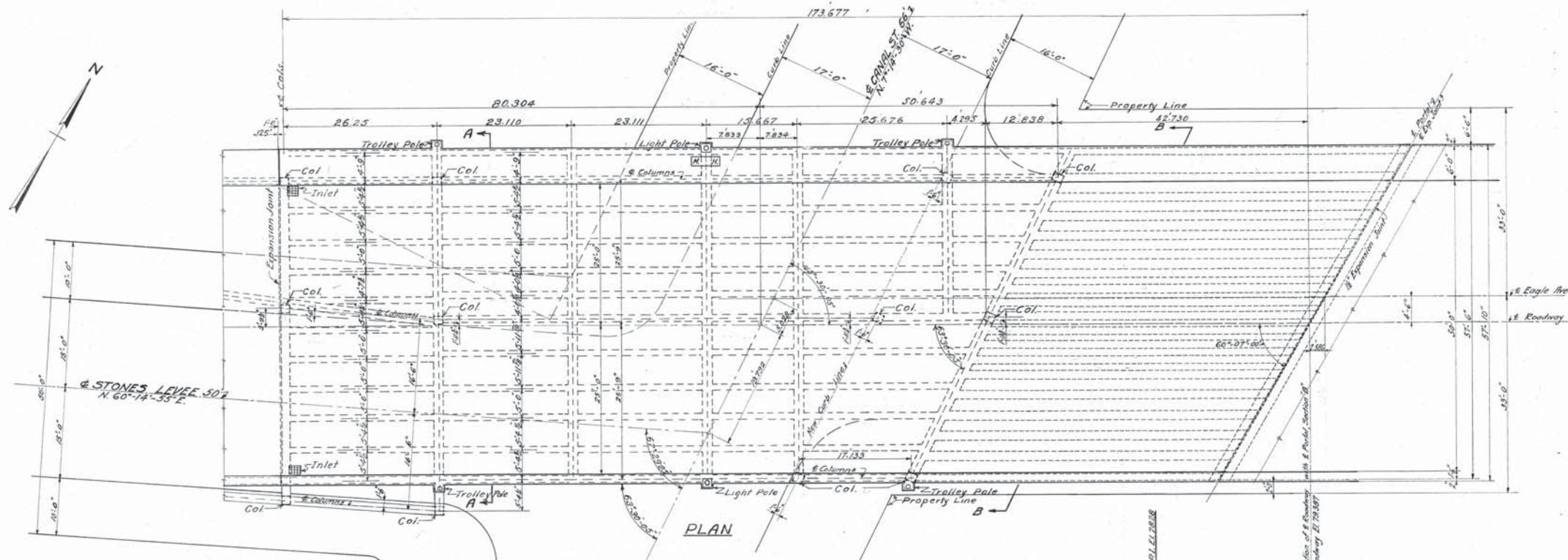
	DRAWN	TRACED	CHECKED
BY	E.L.B.		
DATE	JAN. '56		
PROJ. NO.	4380		

APPROVED *R. Katz* DATE 9-26-56  
COMM. OF ENGS. & SURV. ST.

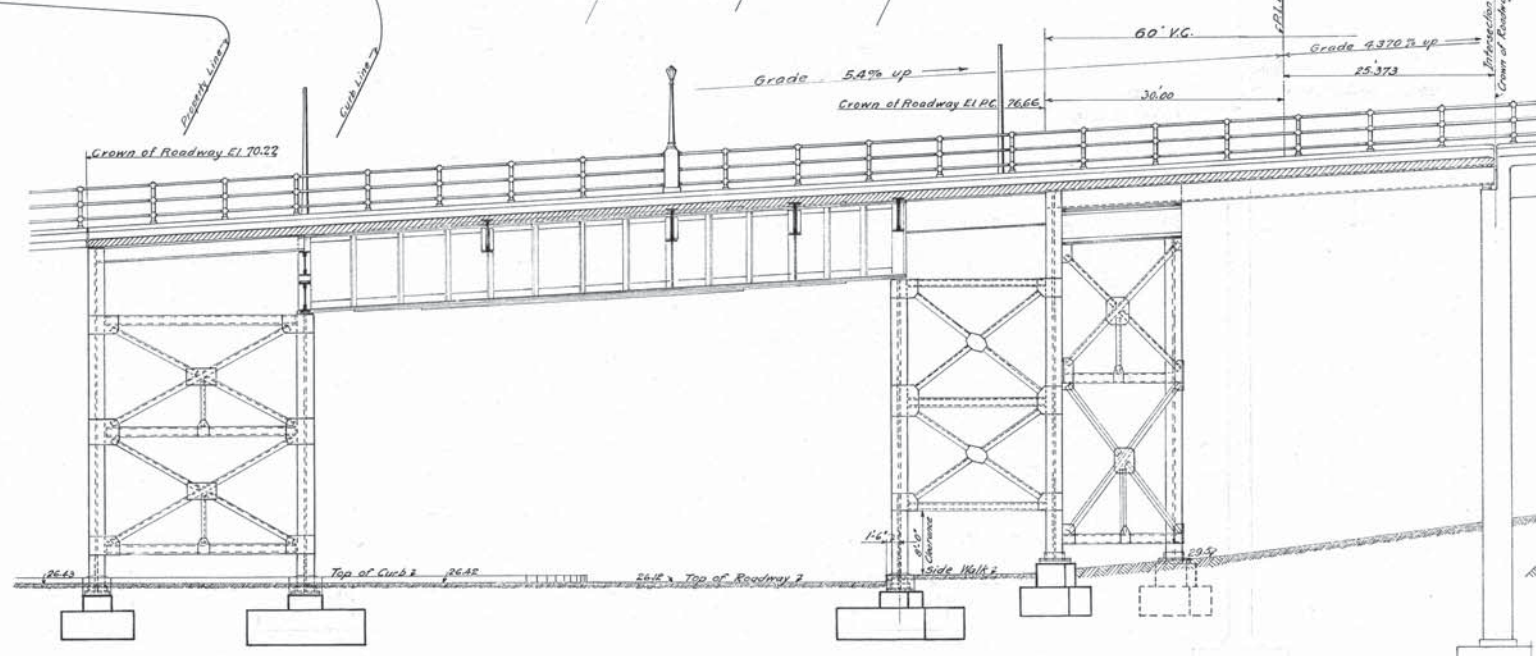


REVISIONS	
GENERAL PLAN CITY OF CLEVELAND DEPARTMENT OF PUBLIC SERVICE ENGINEERING DIVISION	
LOUIS L. DEASLER	DIRECTOR
EAGLE AVE. VIADUCT STRUCTURAL RECONSTRUCTION CONTRACT NO. 1.	
APPROVED <i>R. Katz</i> 9-26-56 BRIDGE ENGINEER	
SH. 1 OF 6	DRWG. NO. 2121 FILE NO. R 16

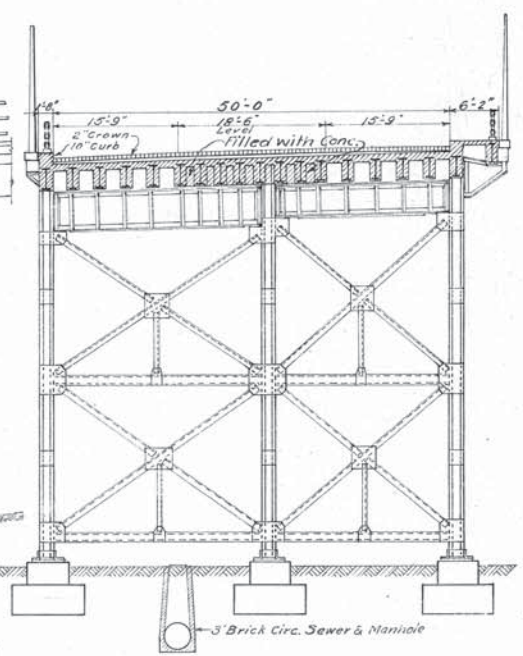
Issue No A Oct. 17 1925  
 Revisions  
 Issue No B Dec. 12 1925  
 Added Sections A-A & B-B  
 Changed Expansion Joint  
 Changed Title  
 Issue No 1 Dec. 14 1925  
 Signed by Chief Engineer  
 Issue No 2 Jan. 6 1926  
 Added Note  
 Issue No 3 Jan. 19 1926  
 Changed Expansion Joint  
 Issue No 4 Sept. 14 1926  
 Changed Section Limits  
 Redesign. Redrawn.  
 Issue No 5 Dec., 7, 1926  
 Minor changes, Drawing checked.  
 Issue No 6 Mar. 24, 1927.  
 Removed paving dams.  
 Changed 5.537% Grade to 5.4%.  
 Issue No 7 July 15, 1927  
 Revised note. Minor changes.  
 Issue No 8 Aug. 17, 1927  
 Signed by department heads  
 Issue No 9 Sept. 13, 1927.  
 Approved by Commissioner of  
 Engineering and Construction  
 of the City of Cleveland.  
 Issue No 10 Dec., 6, 1927  
 Revised for changes in span over W&L.R.R.  
 Issue No 11 Feb. 21-28  
 Revisions Approved By Commissioner  
 of Engineering & Construction  
 of the City of Cleveland  
 Issue No 12 May 28, 1931  
 Plan corrected to conform  
 to structure as built.



SECTION A-A



LONGITUDINAL SECTION



SECTION B-B

Dimensions are given at right angles.

Designed by G.I.G. Sept. 14 1926  
 Detailed by W.L.C. Sept. 16 1926  
 Traced by W.L.C. Sept. 14 1926  
 Checked by R.E.P. Dec. 1, 1926  
 Corrected May 5, 1927  
 Designing Engineer

Approved *E.P. Marsh* 9/14/27  
 Engineer of Structures  
 Approved *Frank Brown* 11-1-27  
 Principal Assistant Engineer  
 Approved *W.L. Calkins* 11-2-27  
 Assistant Electrical Engineer  
 Approved *W.H. Doolittle* 8/15/27  
 Engineer of Construction

*E.P. Marsh* 9/14/27  
 Structures  
*H.L. Bigelow* 11/1/27  
 A 11/1/27  
 Plan approved  
 CITY OF CLEVELAND  
 By *Robert Hoffman*  
 Commissioner of Engineering & Construction.  
 Date Sept. 8, 1927  
 For Original of this Signature See  
 Blue Print filed under 113-039 S.

Revisions O.K. & Approved  
 CITY OF CLEVELAND  
 By *Robert Hoffman*  
 Commissioner of Engineering & Const.  
 Date Feb. 17-28  
 For Original of this Signature See  
 Blue Print filed under 113-039 S

NOTE  
 All structural steel designed in accordance  
 with The Cleveland Union Terminals Co's Spec-  
 ifications for Steel Highway Bridges and Viaducts,  
 except as noted on the General Plan and Elevations  
 Sheet No. 1  
 Substructure & Superstructure Concrete Class 2 (Approx. mix 1:2:4) & bags cement to cu. yd.  
 Waterproofing, protection Class 2 (Approx. mix 1:2:4) & bags cement to cu. yd. concrete.  
 Concrete Fill Class 3 (Approx. mix 1:2:4) 1/2 bags cement to cu. yd., not in this contract.  
 Trolley poles & Street Lights to be furnished & installed by others.  
 Pavement 4" Medium Block on 1 1/2" granulated slag cushion  
 Max Soil Pressure 8000 per sq. ft.  
 Chamfer all exposed concrete edges and corners 1/4", unless  
 otherwise shown.  
 All exposed concrete to have a hard dense smooth surface  
 uniform in texture and color.

THE CLEVELAND UNION TERMINALS COMPANY  
 EAGLE AVE VIADUCT SECTION C  
 PORTION FROM W&L.R.R. TO WEST SIDE OF CANAL ST.  
 GENERAL PLAN AND SECTIONS  
 CLEVELAND OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/4" = 1'-0"  
 ISSUE No. \_\_\_\_\_  
 DATE Oct 17 1926  
 REVISION  
*R.D. Touche* 11/1/27  
 CHIEF ENGINEER  
 FILE NO 113-039

**ISSUE No. A** DEC. 20, 1925

**REVISIONS:**

**ISSUE No. B** JULY 27, 1926  
CHANGED SECTION A-A, ADDED 26'-3" PANEL ON WEST END. CHANGED REINFORCING STEEL.

**ISSUE No. C** AUG. 25, 1926  
REDESIGNED AND RE-DRAWN. LIMITS OF SECTION CHANGED.

**ISSUE No. D** FEB. 29, 1927  
DRAWING CHECKED AND TRACED. REINFORCING STEEL CHANGED. SECTION A-A & B-B CHANGED. SOME DIMENSIONS ALTERED.

**ISSUE No. E** APR. 25, 1927  
Grade Changed + Paving Dam Removed

**ISSUE No. F** JULY 22, 1927  
Notes & details for drip added. Minor changes. Two 3" holes for drainage added. Added Manhole for Transformer chamber.

**ISSUE No. 1** AUG. 17, 1927  
Signed by Chief Engineer

**ISSUE No. 2** SEPT. 13, 1927  
Approved by Commissioner of Engineering and Construction of the City of Cleveland.

**ISSUE No. 3** DEC. 13<sup>th</sup>, 1927  
Revised For Changes In Span Over W&L.E.R.R.

**ISSUE No. 4** FEB. 8, 1928  
ADDED SECTION D-D

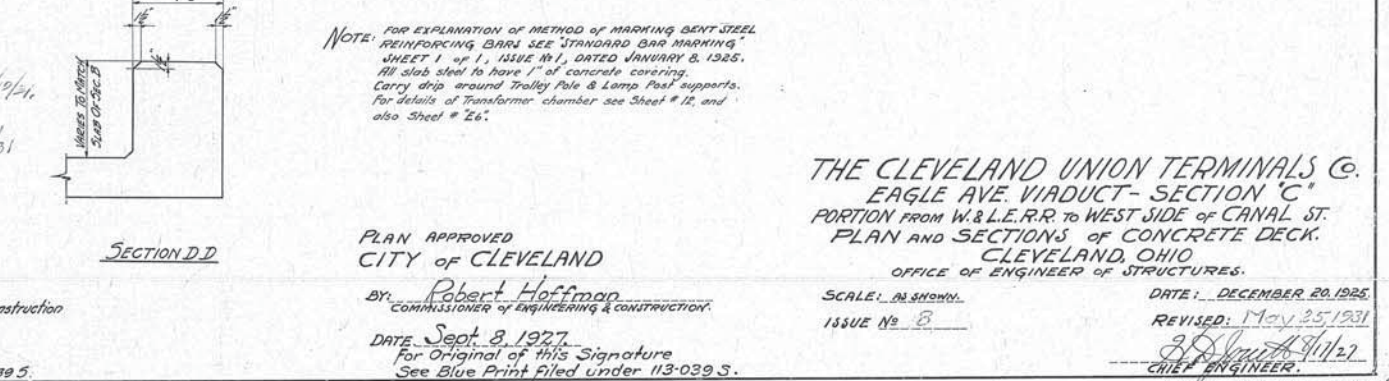
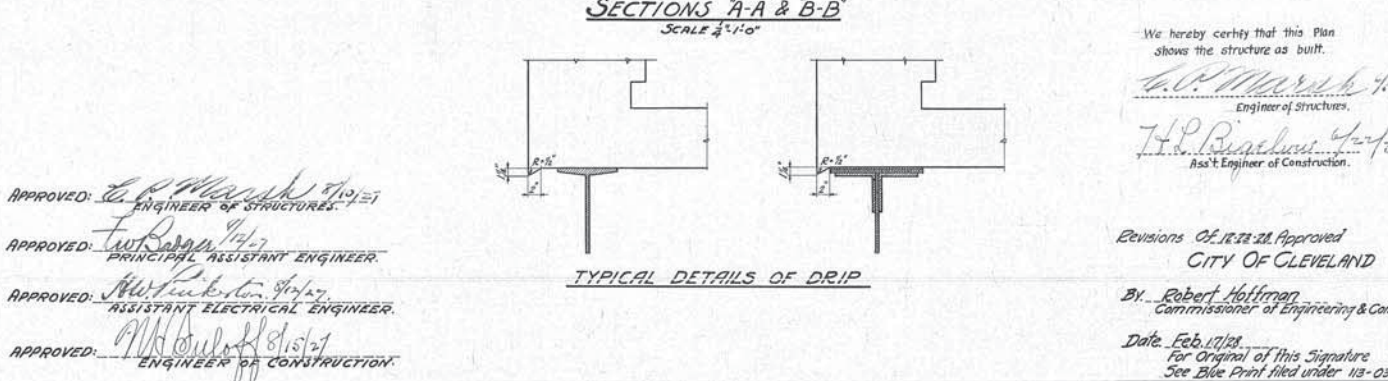
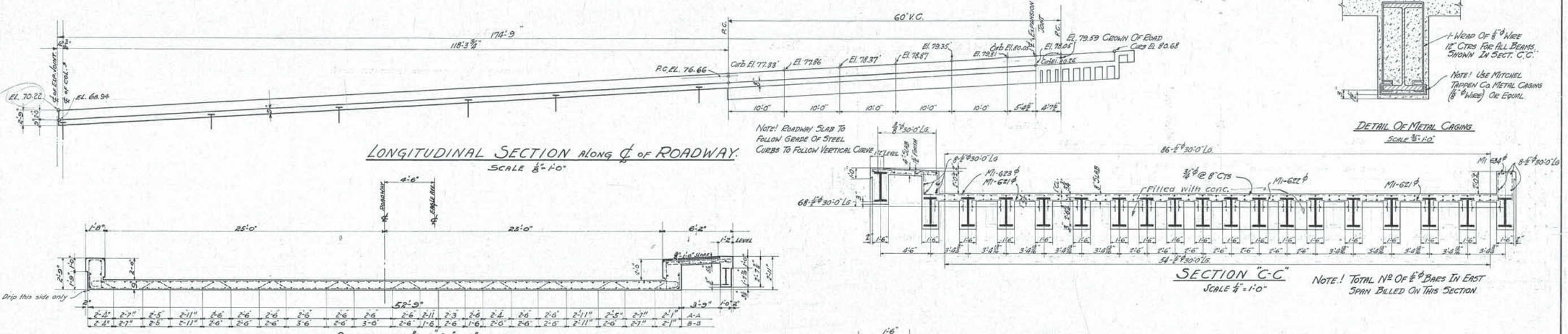
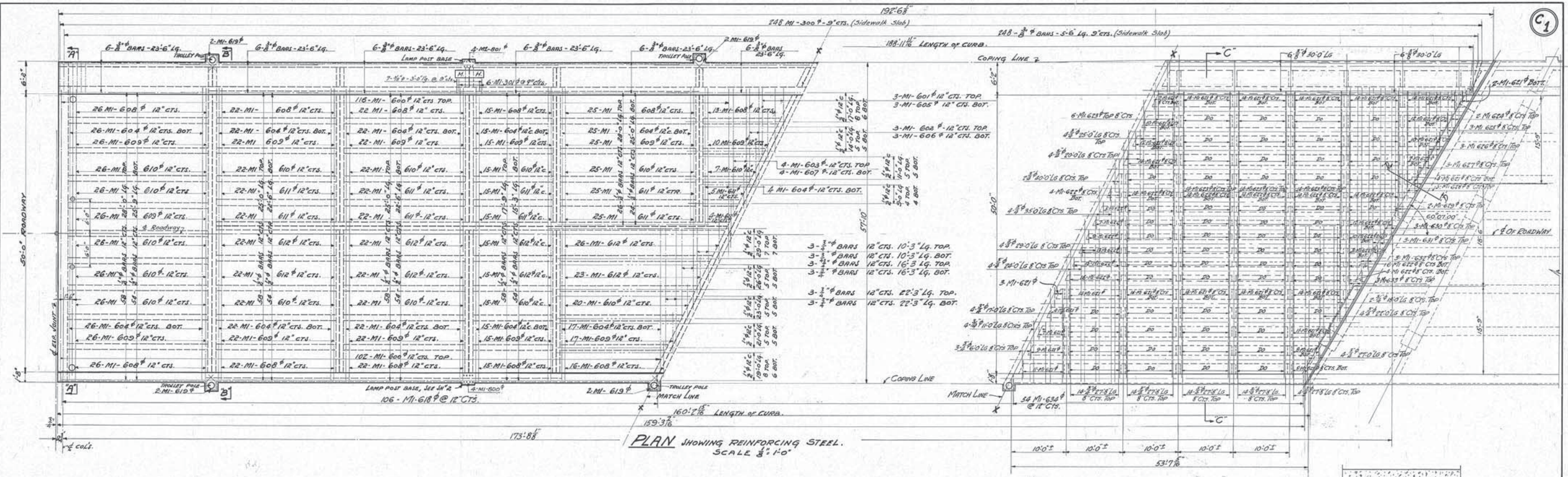
**ISSUE No. 5** FEB. 21, 28  
Revisions Approved by Commissioner of Engineering & Construction of the City of Cleveland.

**ISSUE No. 6** MAR. 1, 28  
Minor Revisions

**ISSUE No. 7** MAY 31, 1928  
Expansion Joint Curbs at east end located on Plan.

**ISSUE No. 8** MAY 27, 1931  
Plan corrected to conform to structure as built.

DESIGNED BY: S.T.C. AUG. 4, 1926  
DETAILED BY: JEN & K.O. AUG. 25, 1926  
TRACED BY: M.V.O. FEB. 29, 1927  
CHECKED BY: J.H.B. MAY 4, 1927  
CORRECTED BY: M.V.O. MAY 5, 1927  
DESIGNING ENGINEER



We hereby certify that this Plan shows the structure as built.

*H.P. Ruppel* 7/1/27  
Engineer of Structures.

*H.P. Ruppel* 7/1/27  
Ass't Engineer of Construction.

Revisions Of 12/28/28 Approved  
CITY OF CLEVELAND

By: *Robert Hoffman*  
Commissioner of Engineering & Construction

Date: Feb. 17/28  
For Original of this Signature  
See Blue Print filed under 113-039 S.

NOTE: FOR EXPLANATION OF METHOD OF MARKING BENT STEEL REINFORCING BARS SEE STANDARD BAR MARKING SHEET 1 OF 1, ISSUE No. 1, DATED JANUARY 8, 1925. All slab steel to have 1" of concrete covering. Carry drip around Trolley Pole & Lamp Post supports. For Details of Transformer chamber see Sheet # 12, and also Sheet # 26.

PLAN APPROVED  
CITY OF CLEVELAND

By: *Robert Hoffman*  
COMMISSIONER OF ENGINEERING & CONSTRUCTION.

DATE: Sept. 8, 1927  
For Original of this Signature  
See Blue Print filed under 113-039 S.

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE. VIADUCT - SECTION C  
PORTION FROM W & L.E.R.R. TO WEST SIDE OF CANAL ST.  
PLAN AND SECTIONS OF CONCRETE DECK.  
CLEVELAND, OHIO  
OFFICE OF ENGINEER OF STRUCTURES.

SCALE: AS SHOWN.  
DATE: DECEMBER 20, 1925  
ISSUE No. 8  
REVISED: MAY 25, 1931  
*R.D. Smith* 5/11/27  
CHIEF ENGINEER.

Issue No. A. Jan. 26, 1926

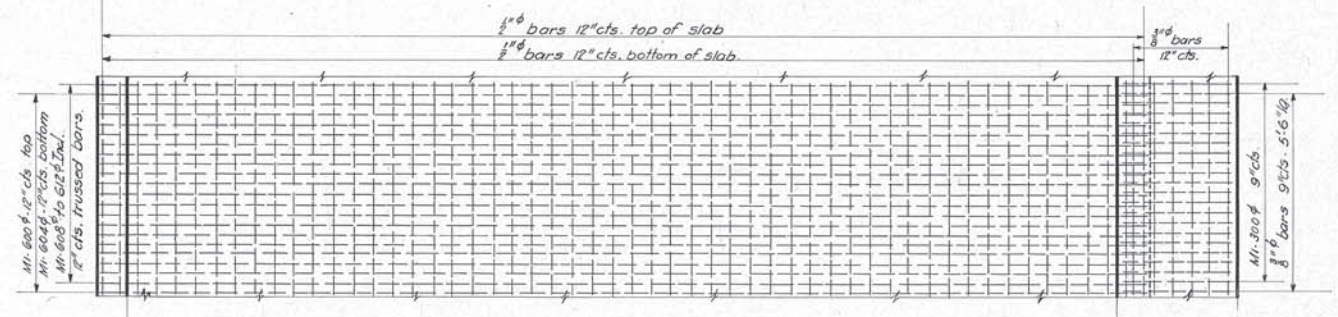
Revisions:  
 Issue No. B. Aug. 31, 1926  
 Limits of Section Changed  
 Redrawn and redesigned  
 Issue No. C. Mar. 12, 1927  
 Revised expansion joint in Sidewalk  
 West End. Changed Details of  
 Sidewalk. Other minor revisions.  
 Issue No. D. Apr. 25, 1927  
 Expansion Joints Changed  
 Issue No. E. July 22, 1927  
 Notes added, minor changes.  
 Issue No. 1. Aug. 17, 1927  
 Signed by Chief Engineer

Issue No. 2. Sept. 13, 1927.  
 Approved by Commissioner of  
 Engineering and Construction  
 of the City of Cleveland.

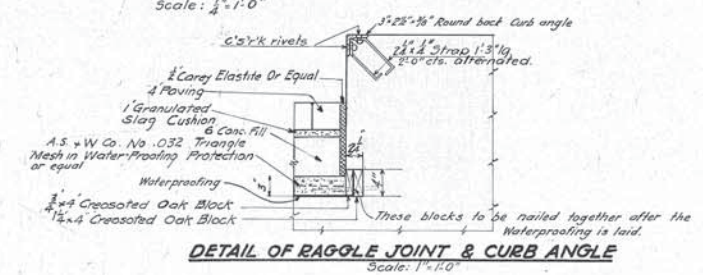
Issue No. 3. Dec. 23, 1927  
 Revised for Changes in Span Over W.L.E.R.R.

Issue No. 4. Feb. 21, 1928  
 Revisions Approved by Commissioner  
 of Engineering & Construction  
 of the City of Cleveland

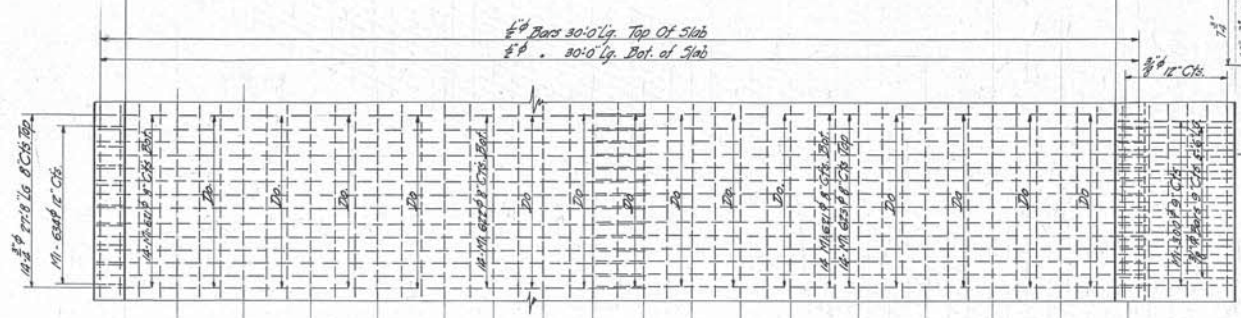
Issue No. 5. May 25, 1931  
 Plan conforms to structure  
 as built.



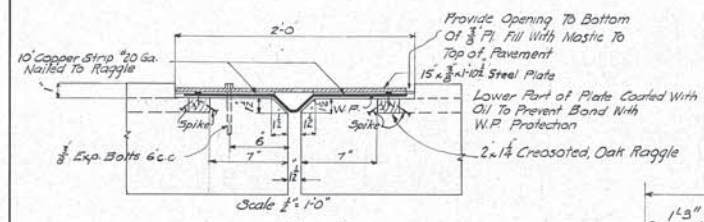
**PART PLAN**  
 Showing reinforcement from W. & L.E.R.R. Span West  
 Scale: 1/4" = 1'-0"



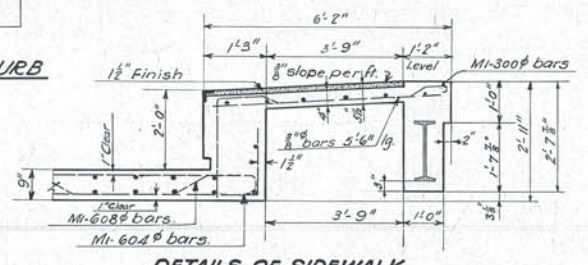
**DETAIL OF RAGGLE JOINT & CURB ANGLE**  
 Scale: 1" = 1'-0"



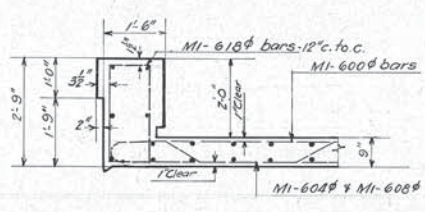
**PART PLAN**  
 Showing reinforcement for span over W. & L.E. proposed tracks.  
 Scale: 1/4" = 1'-0"



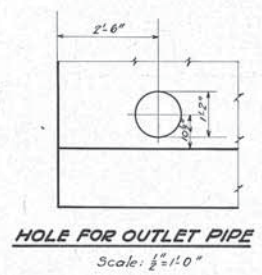
**HORIZ. SECTION 'Q-Q' THRU CURB AT EXP. JOINT**  
 Scale: 1/2" = 1'-0"



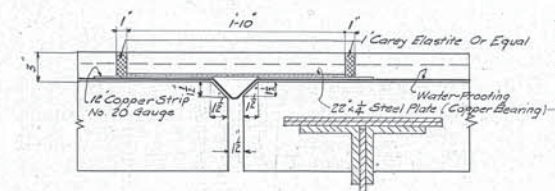
**DETAILS OF SIDEWALK**  
 Scale: 1/2" = 1'-0"



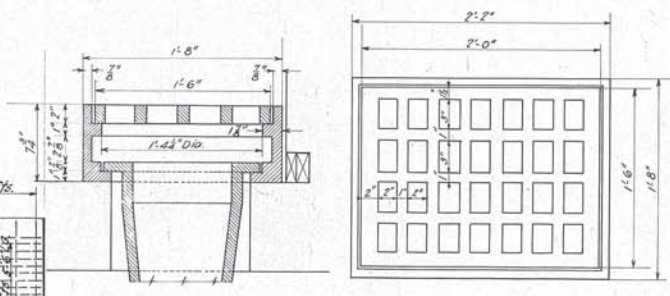
**DETAILS OF CURB**  
 Scale: 1/2" = 1'-0"



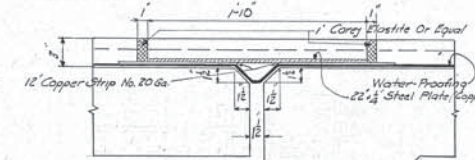
**HOLE FOR OUTLET PIPE**  
 Scale: 1/2" = 1'-0"



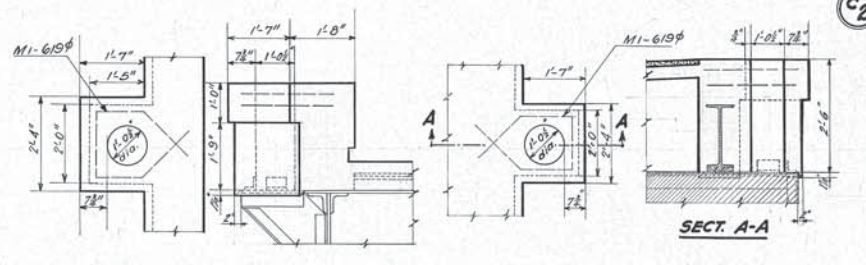
**EXPANSION JOINT IN ROADWAY WEST END**  
 Scale: 1/2" = 1'-0"



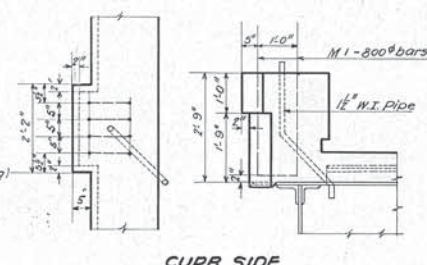
**CAST IRON INLET FRAME AND GRATING**  
 Scale: 1/2" = 1'-0"



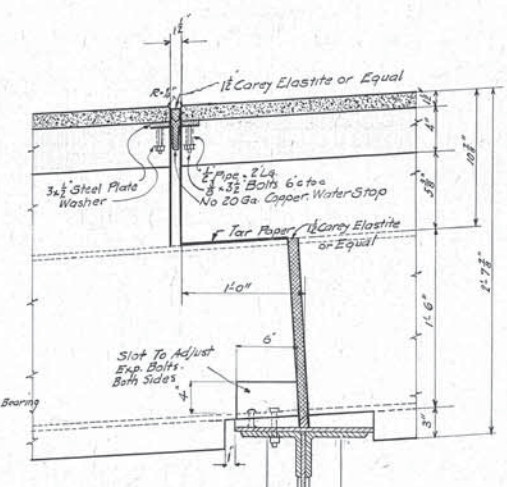
**EXPANSION JOINT IN ROADWAY EAST END**  
 Scale: 1/2" = 1'-0"



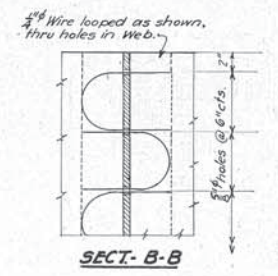
**DETAILS OF TROLLEY POLE SOCKET**  
 Scale: 1/2" = 1'-0"



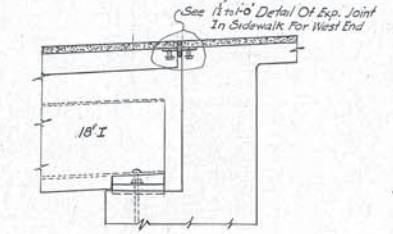
**DETAILS OF LAMP POST BASE**  
 Scale: 1/2" = 1'-0"



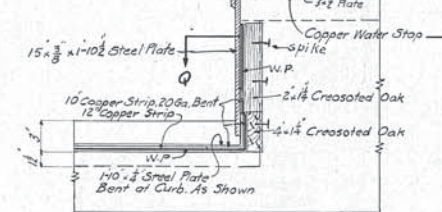
**SECTION THRU SIDEWALK (WEST END) AT EXPANSION JOINT**  
 Scale: 1/2" = 1'-0"



**DETAIL OF METAL CAGING**  
 Scale: 1/2" = 1'-0"



**EXPANSION JOINT IN SIDEWALK EAST END**  
 Scale: 1/2" = 1'-0"



**SECTION THRU CURB AT EXP. JOINT**  
 Scale: 1/2" = 1'-0"

We hereby certify that this Plan shows the structure as built.

*G.P. Marsh* 7/19/31  
 Engineer of Structures

*H.P. Cigelski* 7/27/31  
 Asst. Engineer of Construction

Notes: All slab steel to have 1" of concrete covering. For class of waterproofing see specifications.

Revisions Of 12-23-28 Approved  
 CITY OF CLEVELAND

Plan Approved  
 CITY OF CLEVELAND

By *Robert Hoffman*  
 Commissioner of Engineering & Const.

By *Robert Hoffman*  
 Commissioner of Engineering and Construction

Date: Feb. 17, 1931  
 For Original of this Signature  
 See Blue Print filed under 113-039.5.

Date: Sept. 8, 1927.  
 For Original of this Signature  
 See Blue Print filed under 113-039S.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT SECTION "C"  
 PORTION FROM W. & L.E. R.R. TO  
 W. SIDE OF CANAL ST.

DETAILS OF CONCRETE DECK  
 CLEVELAND, OHIO.

OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: As shown  
 ISSUE No. 5

DATE: Jan. 26, 1926  
 REVISED: Jan. 25, 1931

*G.P. Marsh*  
 CHIEF ENGINEER

Issue No. A. Dec. 21, 1925

Revisions:

Issue No. B. Feb. 5, 1926  
Changed No. of sheet.

Issue No. C. Oct. 18, 1926  
Changed limits of section.  
Redesigned & Redrawn.

Issue No. D. May 9, 1927  
Draw Checked & Changes In grade  
Issue No. E. July 28, 1927  
Battens changed to lacing in  
compression members of Bracing  
Dimensions added.

Issue No. 1. Aug. 17, 1927  
Signed by Chief Engineer.

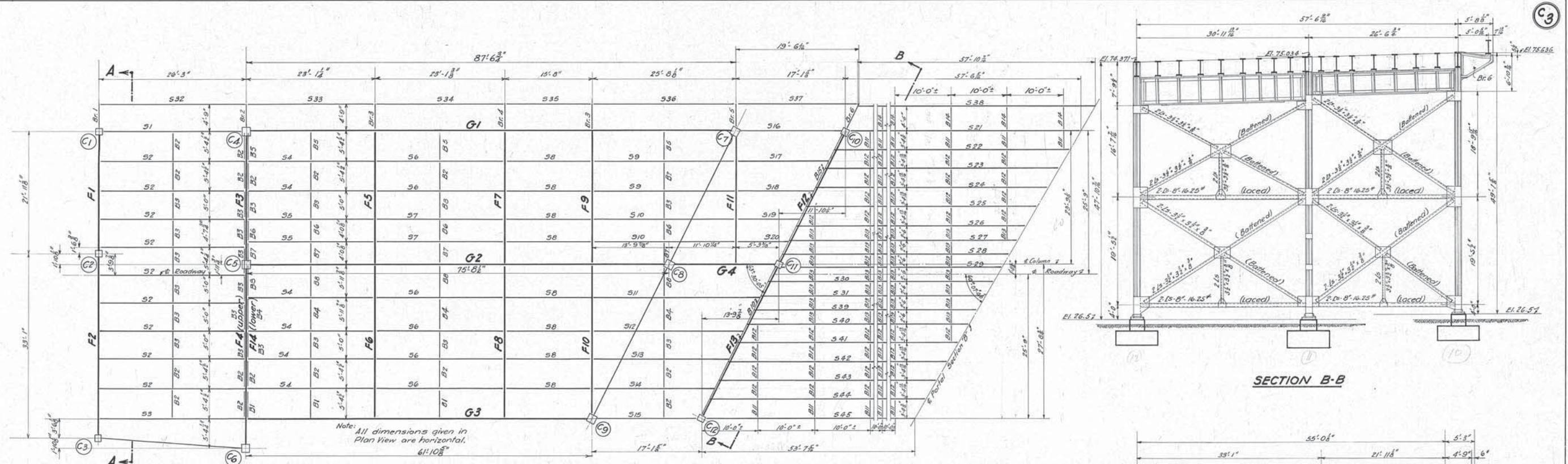
Issue No. 2. Sept. 13, 1927.  
Approved by Commissioner of  
Engineering and Construction  
of the City of Cleveland.

Issue No. 3. Oct. 29, 1927.  
Length of Columns "C10", "C11" & "C12"  
changed.

Issue No. 4. Nov. 23, 1927.  
Revised for changes in span over W&L.E.R.R.

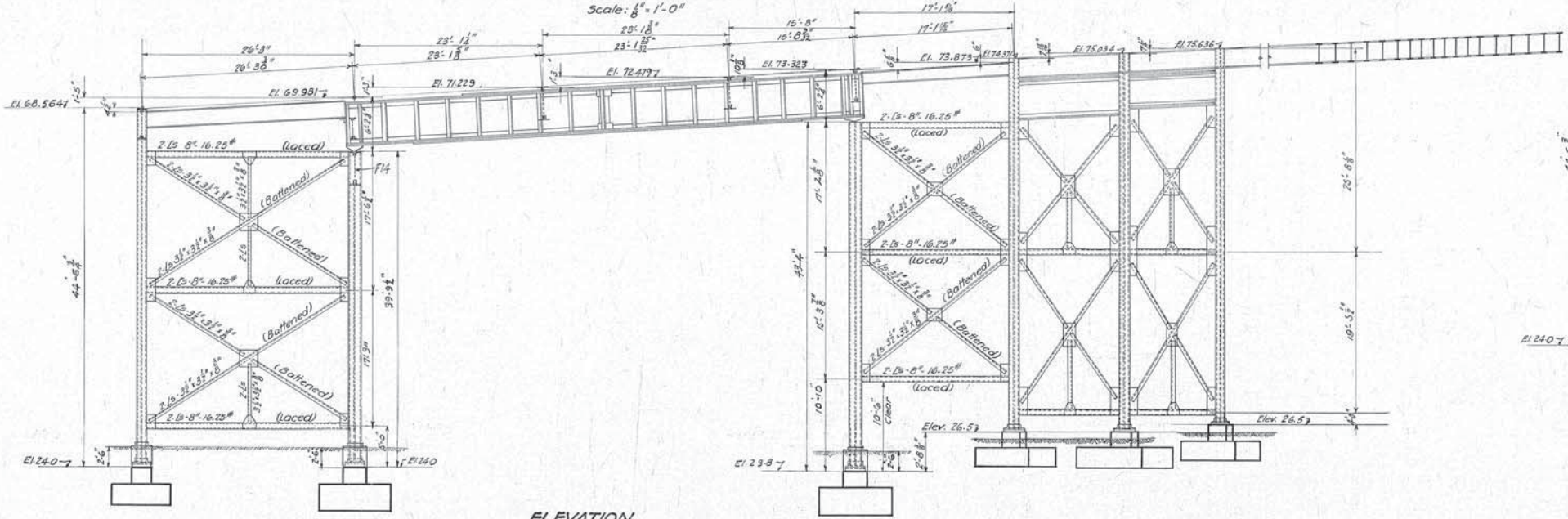
Issue No. 5. Feb. 21, 1928  
Revisions Approved by Commissioner  
of Engineering & Construction  
of the City of Cleveland

Issue No. 6. May 25, 1931  
Plan conforms to structure  
as built.

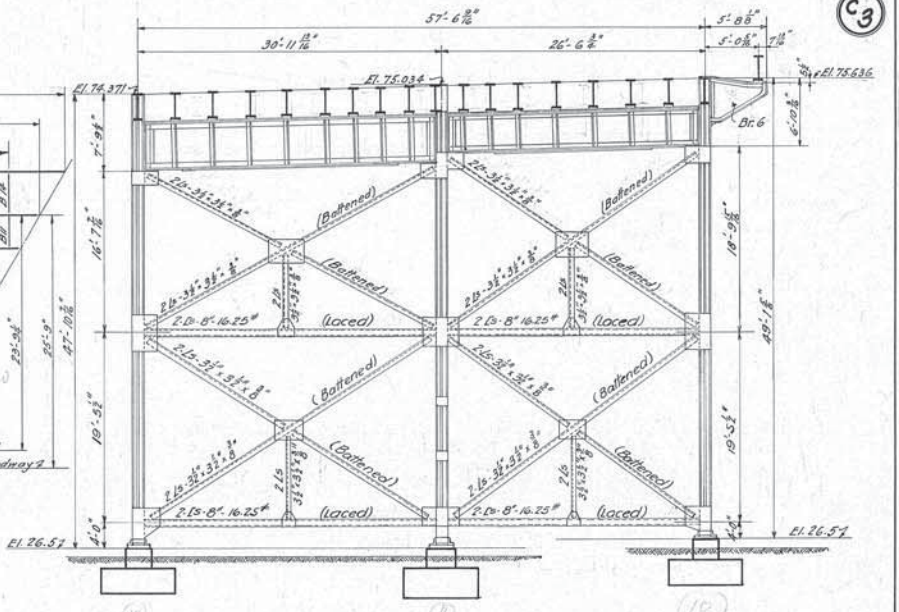


STEEL FRAMING PLAN

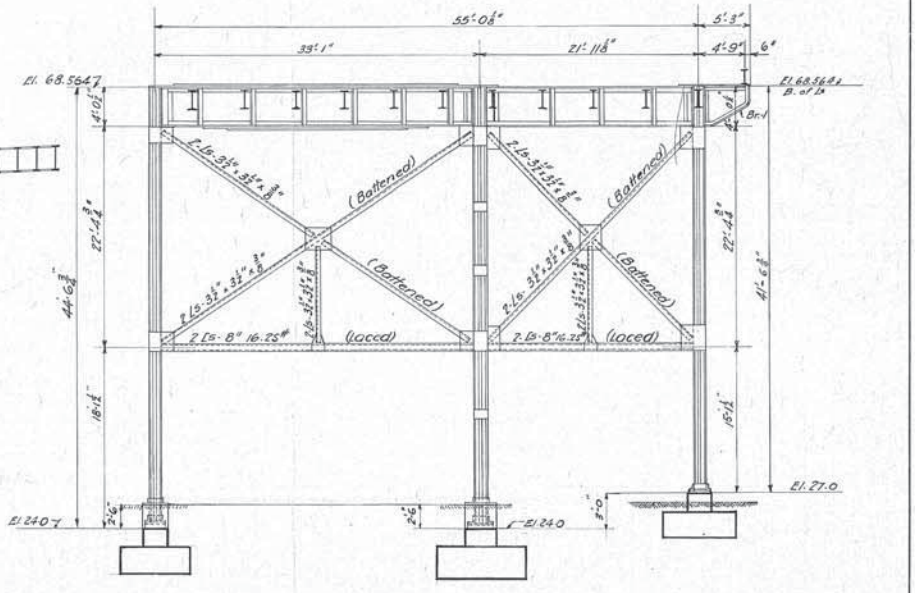
Scale: 3/8" = 1'-0"



ELEVATION



SECTION B-B



SECTION A-A

Designed by G.T.C. Oct. 11, 1926  
 Detailed by J.E.W. & E.G. Oct. 11, 1926  
 Traced by K.O. Feb. 19, 1927  
 Checked by J.H.B. 3-2-1927  
 Corrected by J.H.B. 3-2-1927  
 Designing Engineer

Approved E.P. Morsh 11/19/27  
 Engineer of Structures  
 Approved J.W. Ruppel 5/1/27  
 Principal Assistant Engineer  
 Approved H.P. Bigelow 7/27/31  
 Asst. Engineer of Construction  
 Approved H. Howland 9/5/27  
 Engineer of Construction

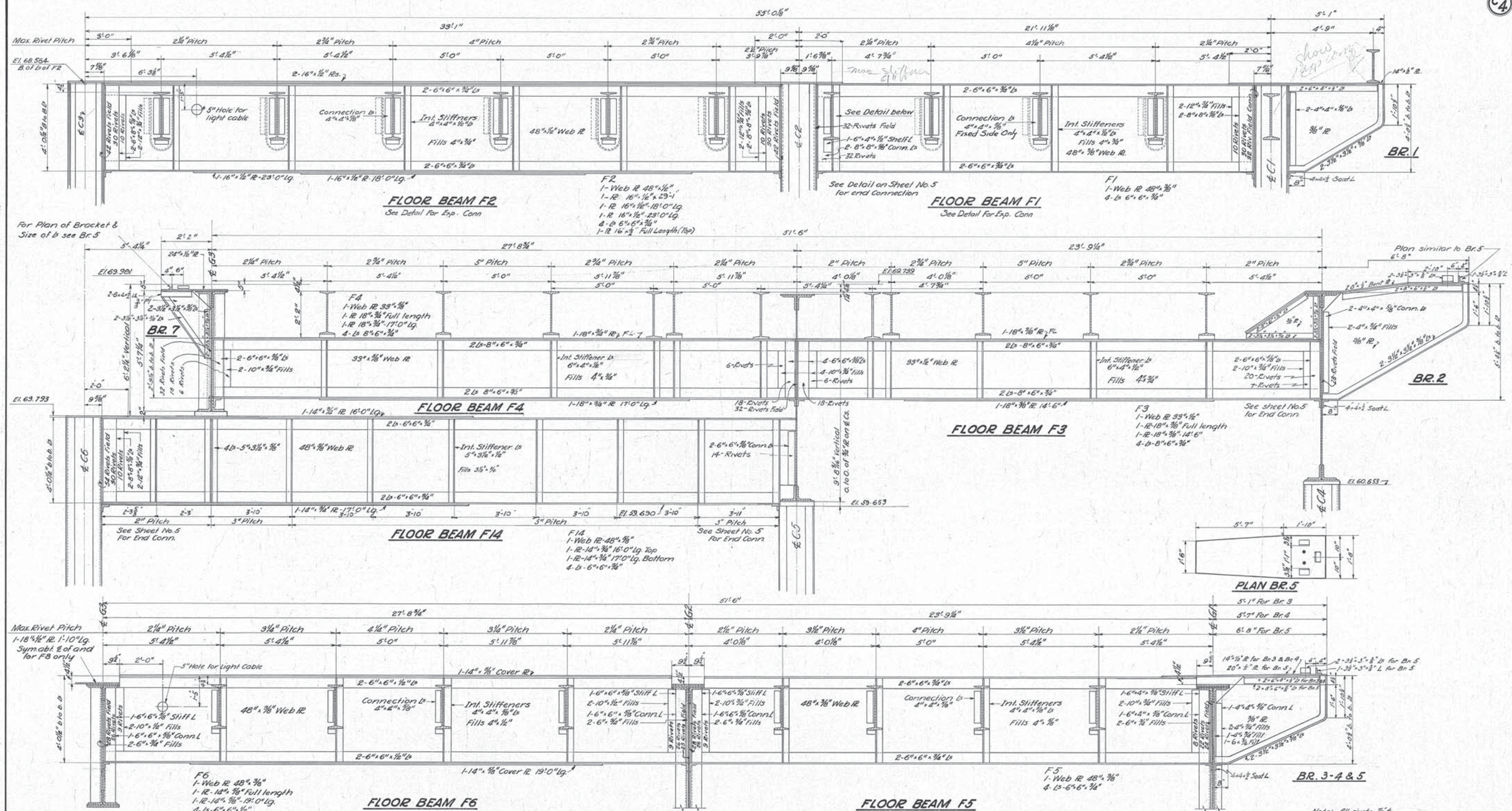
I hereby certify that this Plan  
 shows the structure as built.  
 E.P. Morsh 11/19/27  
 Engineer of Structures  
 H.P. Bigelow 7/27/31  
 Asst. Engineer of Construction

Revisions Of 11-23-27 Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Const.  
 Date Feb. 17, 1928  
 For Original of this Signature  
 See Blue Print filed under 113-039 5

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date Sept. 8, 1927.  
 For Original of this Signature  
 See Blue Print filed under 113-039 5

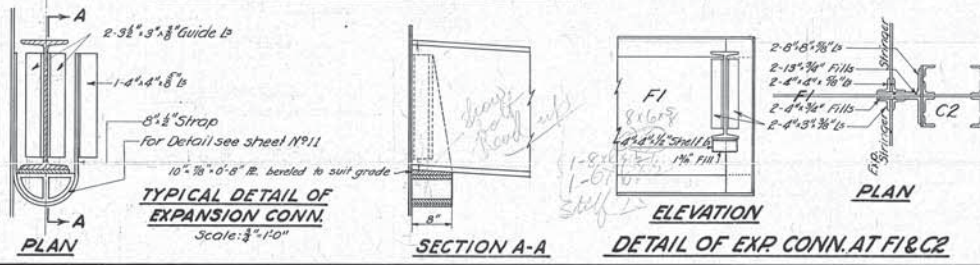
THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT SECTION "C"  
 PORTION FROM W. & L. E. R. R. TO  
 W. SIDE OF CANAL ST.  
 FRAMING PLAN AND ELEVATION  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 3/8" = 1'-0"  
 ISSUE No. 6  
 DATE: Dec. 21, 1925  
 REVISED: May 25, 1931  
 J.D. Smith  
 CHIEF ENGINEER

Issue No. A Sept. 15, 1926  
 Revisions:  
 Issue No. B: Feb. 24, 1927  
 Minor revisions  
 Issue No. C: May 9, 1927  
 Checked, Changes in Grade  
 Issue No. D: July 22, 1927  
 Revised bracket Br. 2, 3, 4 & 5.  
 Minor changes.  
 Issue No. 1: Aug. 17, 1927  
 Signed by Chief Engineer  
 Issue No. 2: Sept. 13, 1927  
 Approved by Commissioner of  
 Engineering and Construction  
 of the City of Cleveland.  
 Issue No. 3: May 25, 1931  
 Plan conforms to structure  
 as built.



Designed by G.T.C. Sept. 1, 1926  
 Detailed by J.E.W. Sept. 15, 1926  
 Traced by H.B. Feb. 24, 1927  
 Checked by J.H.B. 5-4-1927  
 Corrected by J.H.B. 5-4-1927  
 Designing Engineer

Approved *E.P. Marshall* 9/10/27  
 Engineer of Structures  
 Approved *J.H. ...*  
 Principal Assistant Engineer  
 Approved *J.W. ...*  
 Assistant Electrical Engineer  
 Approved *W.H. ...*  
 Engineer of Construction

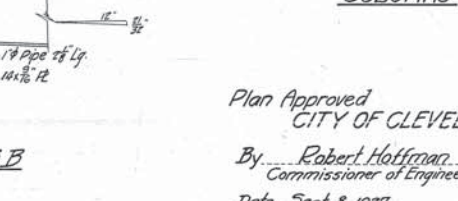
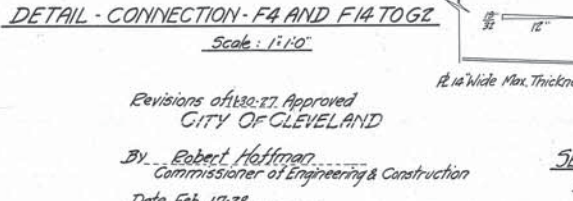
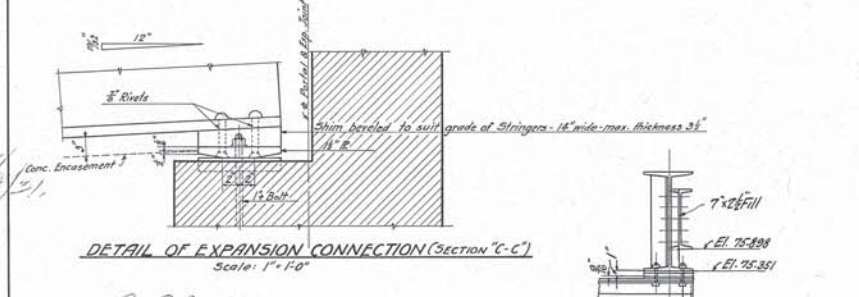
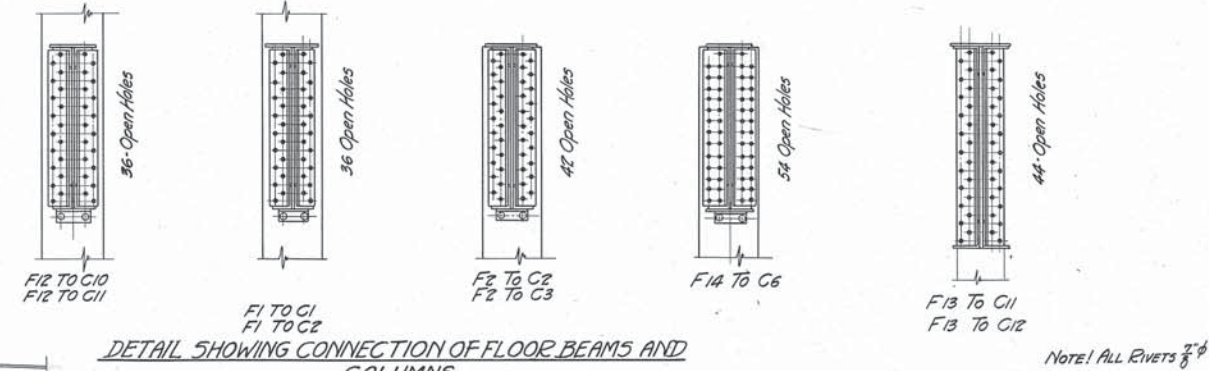
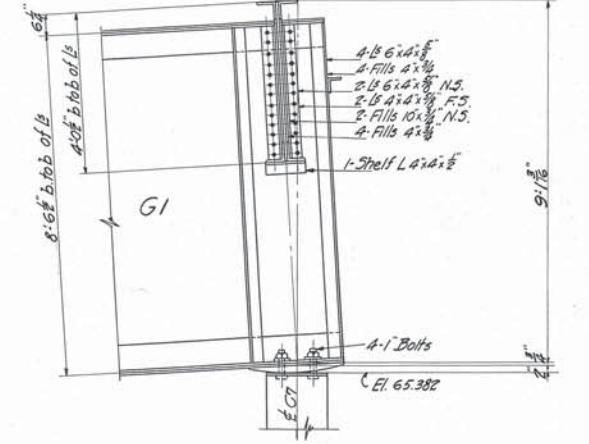
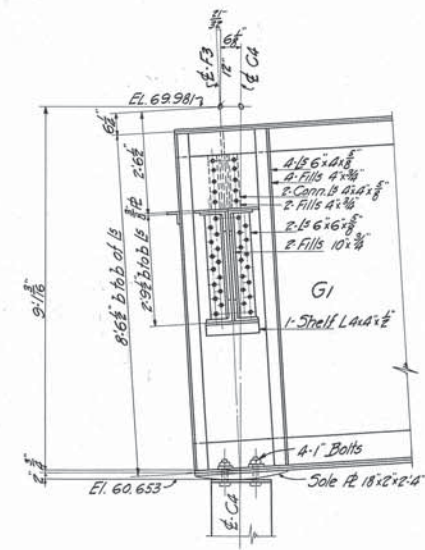
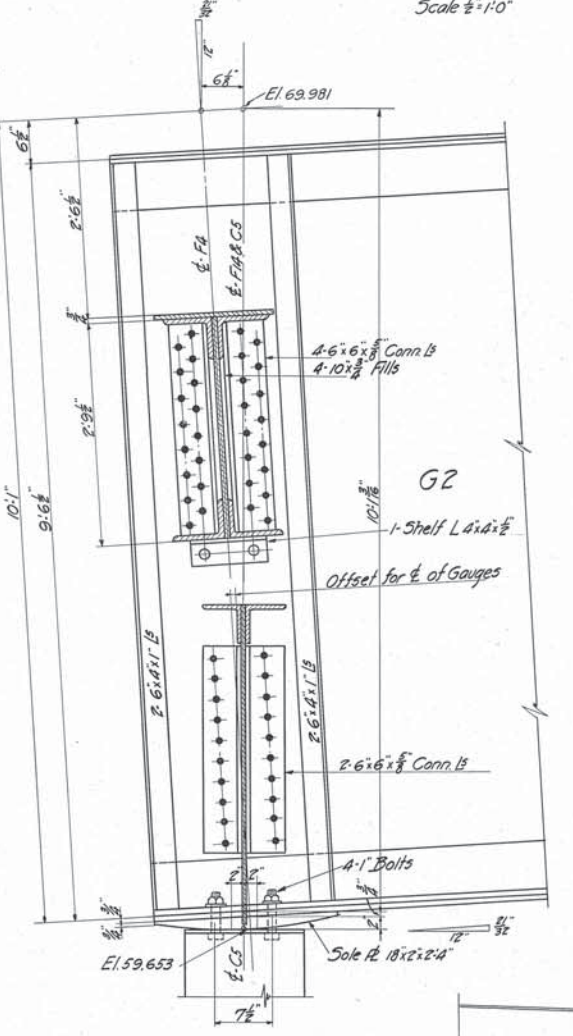
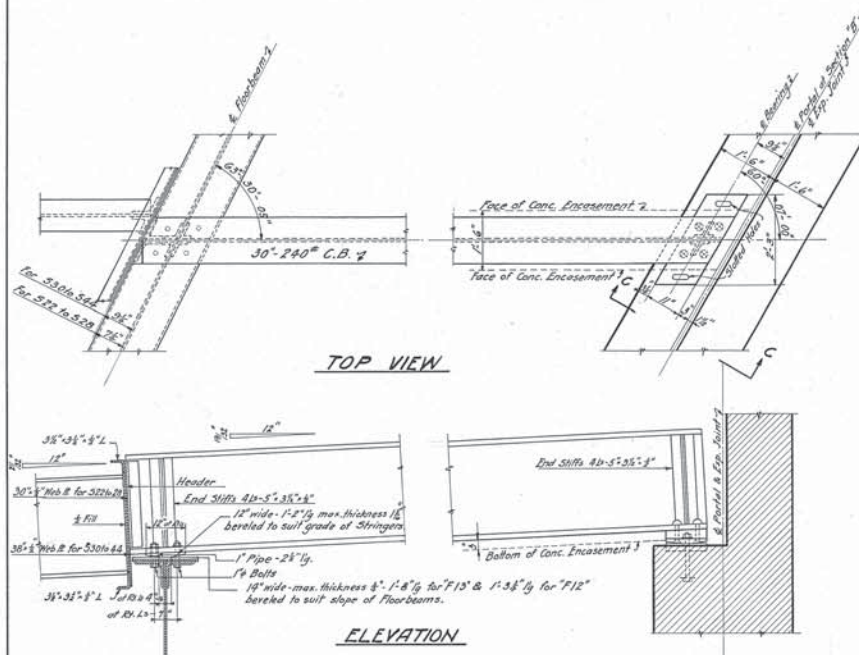
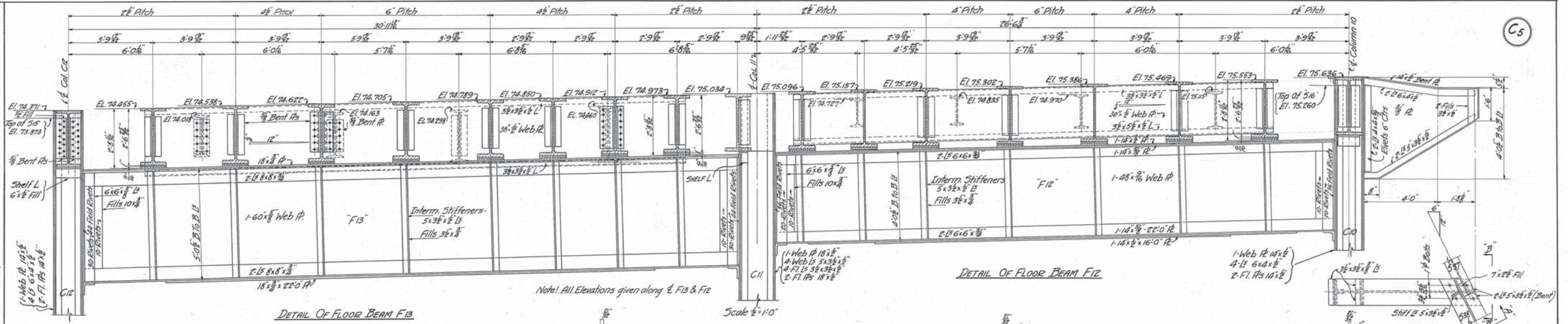


I do hereby certify that this Plan shows the structure as built.  
*E.P. Marshall*  
 Engineer of Structures  
*H.P. ...*  
 Asst. Engineer of Construction

Plan Approved  
**CITY OF CLEVELAND**  
 By *Robert Hoffman*  
 Commissioner of Engineering & Construction  
 Date Sept. 2-27  
 for Original of this Signature  
 See Blue Print filed under 113-039 S.

THE CLEVELAND UNION TERMINALS CO.  
**EAGLE AVE VIADUCT SECTION "C"**  
 PORTION FROM W.&L.E.R.R. TO W. SIDE OF CANAL ST.  
 DETAILS OF FLOOR BEAMS 1 TO 11 INCL.  
 & FLOOR BEAM F14  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/4\"/>

Issue No. A Sept 27, 1926  
 REVISIONS:  
 Issue No. B FEB 16, 1927  
 DRAWING TRACED.  
 Issue No. C MAY 9, 1927  
 DRAWING CHECKED GRADE CHANGED  
 Issue No. D JULY 28, 1927  
 REMOVED STIFFENERS FROM SHELF  
 ANGLES  
 Issue No. 1 AUG. 17, 1927  
 SIGNED BY CHIEF ENGINEER  
 Issue No. 2 SEPT. 13, 1927  
 APPROVED BY COMMISSIONER OF  
 ENGINEERING AND CONSTRUCTION  
 OF THE CITY OF CLEVELAND.  
 Issue No. 3 Nov. 30, 1927  
 Revised for changes in span over W.&L.E.R.R.  
 Redrawn.  
 Issue No. 4 FEB 21, 28  
 Revisions Approved By Commissioner  
 of Engineering & Construction  
 Of The City of Cleveland.  
 Issue No. 5 May 25, 1931  
 Plan conforms to structure  
 as built.



We hereby certify that this Plan shows the structure as built.  
 H.P. Bissler 7/2/31  
 Asst. Engineer of Construction

Designed By G.I.C. 9-1-1926  
 Detailed By J.E.W. 9-21-1926  
 Traced By J.H. 2-16-1927  
 Checked By J.H.B. 5-4-1927  
 Correct May 5, 1927  
 Approved C.P. Marsh 8-10-27  
 Approved W. Badger 8/12/27  
 Approved S.W. Inkerton 9/1/27  
 Approved W. Mulaff 9/15/27

Revisions of 1/13/27 Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date Feb 17-28  
 For Original of this Signature  
 See Blue Print filed under 113-039 5

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date Sept. 8, 1927  
 For Original of this Signature  
 See Blue Print filed under 113-039 5.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT SECTION "C"  
 PORTION FROM W.&L.E.R.R. TO W. SIDE OF CANAL ST.  
 DETAILS OF FLOOR BEAMS F12 AND  
 F13 - BRACKET BR. 6  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE AS SHOWN  
 ISSUE NO. 5  
 DATE 9-27-1926  
 REVISED May 25, 1931  
 Chief Engineer



Issue No. A. Sept. 29, 1926

Revisions:  
Issue No. B. Feb. 24, 1927  
Minor revisions.

Issue No. C. May 9, 1927  
Drawing Checked, Grade Changed  
Issue No. D. July 23, 1927  
Removed stiffeners from  
shelf angles. Revised G3  
and necessary details.

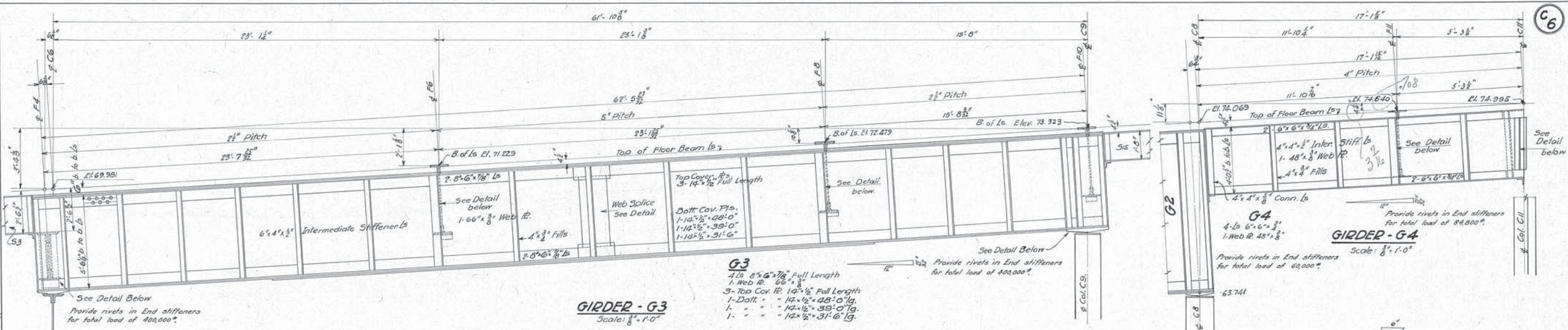
Issue No. 1. Aug. 17, 1927  
Signed by Chief Engineer

Issue No. 2. Sept. 13, 1927.  
Approved by Commissioner of  
Engineering and Construction  
of the City of Cleveland.

Issue No. 3. Nov. 25, 1927.  
Revised for changes in span over W.&L.E.R.R.

Issue No. 4. Feb. 21-28  
Revisions Approved by Commissioner  
of Engineering & Construction  
of the City of Cleveland

Issue No. 5. May 25, 1931  
Plan conforms to structure  
as built.

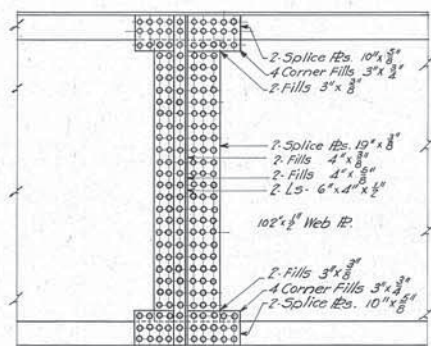


See Detail Below  
Provide rivets in End stiffeners  
for total load of 400,000\*

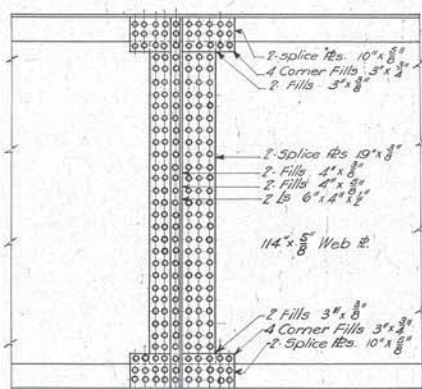
**GIRDER - G3**  
Scale: 3/8" = 1'-0"

**G3**  
4 Ls 8x6x7/8 Full Length  
1 Web R. 10x8x3/8  
3 Top Cor. R. 14x1/2 Full Length  
1 Dolt. 14x1/2x48x0 1/2  
1 " 14x1/2x39x0 1/2  
1 " 14x1/2x31x0 1/2  
Provide rivets in End stiffeners  
for total load of 400,000\*

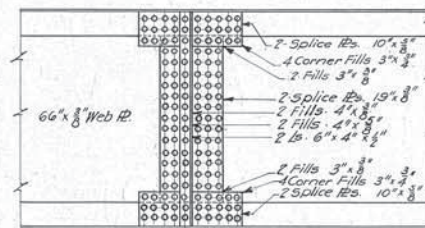
**GIRDER - G4**  
Scale: 3/8" = 1'-0"  
4 Ls 6x6x3/8  
1 Web R. 48x8/8  
Provide rivets in End stiffeners  
for total load of 60,000\*



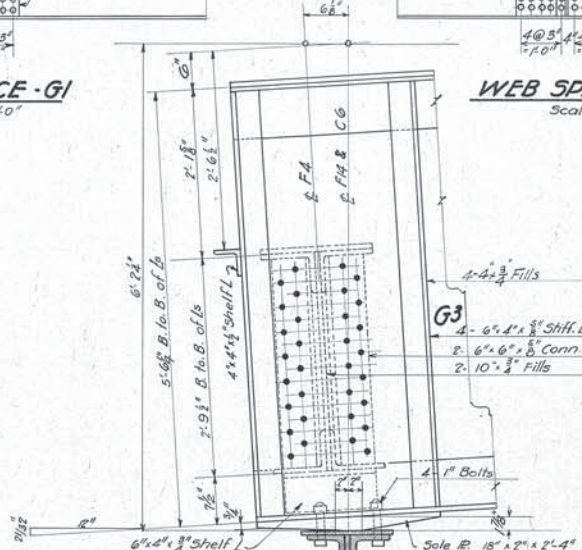
**WEB SPLICE - G1**  
Scale: 3/8" = 1'-0"



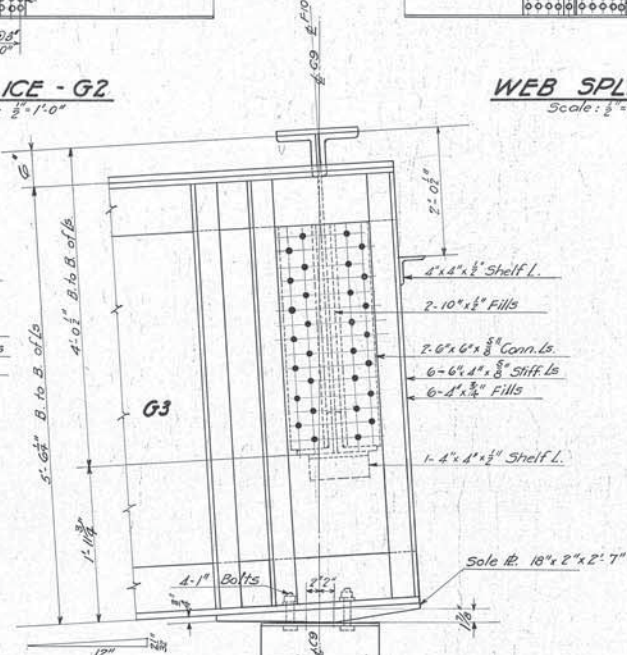
**WEB SPLICE - G2**  
Scale: 3/8" = 1'-0"



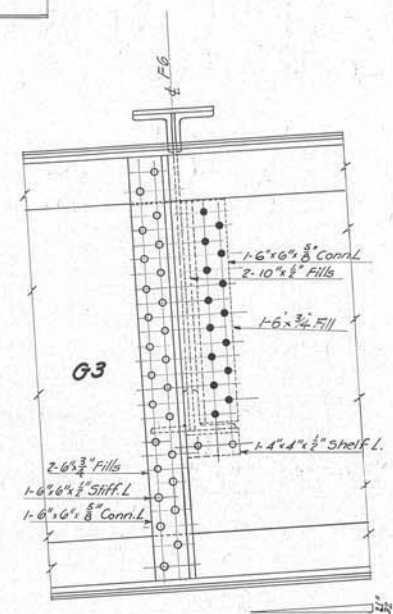
**WEB SPLICE - G3**  
Scale: 3/8" = 1'-0"



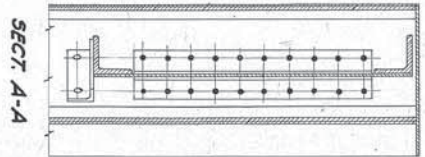
**DETAIL-CONNECTION - F4 TO G3**  
Scale: 1" = 1'-0"



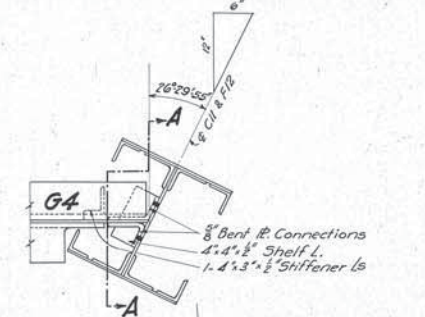
**DETAIL-CONNECTION - F10 TO G3**  
Scale: 1" = 1'-0"



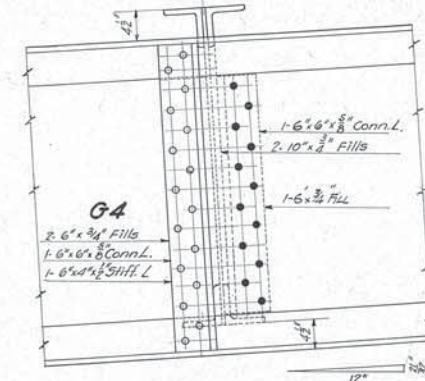
**DETAIL-CONNECTION - F6 & F8 TO G3**  
Scale: 1" = 1'-0"



**DETAIL-CONNECTION - G4 TO C11**  
Scale: 1" = 1'-0"



**DETAIL-CONNECTION - F11 TO G4**  
Scale: 1" = 1'-0"



Note: All rivets 7/8"

Designed by G.T.C. Sept. 1, 1926  
Detailed by J.E.W. Sept. 29, 1926  
Traced by K.O. Feb. 24, 1927  
Checked by J.H.B. 5-4-1927  
Correct 5-5-27  
Designing Engineer

Approved E.P. Marshall 7/10/27  
Engineer of Structures  
Approved J.H. B. 7/10/27  
Principal Assistant Engineer  
Approved M. H. 7/10/27  
Assistant Electrical Engineer  
Approved N. H. 7/10/27  
Engineer of Construction

We hereby certify that this Plan  
shows the structure as built.  
H.L. Bigelow 7/27/31  
Asst. Engineer of Construction

Revisions Checked and Approved  
CITY OF CLEVELAND  
By Robert Hoffman  
Commissioner of Engineering & Const.  
DATE FEB 12 1928  
For Original of this Signature  
See Blue Print filed under 113-039.5

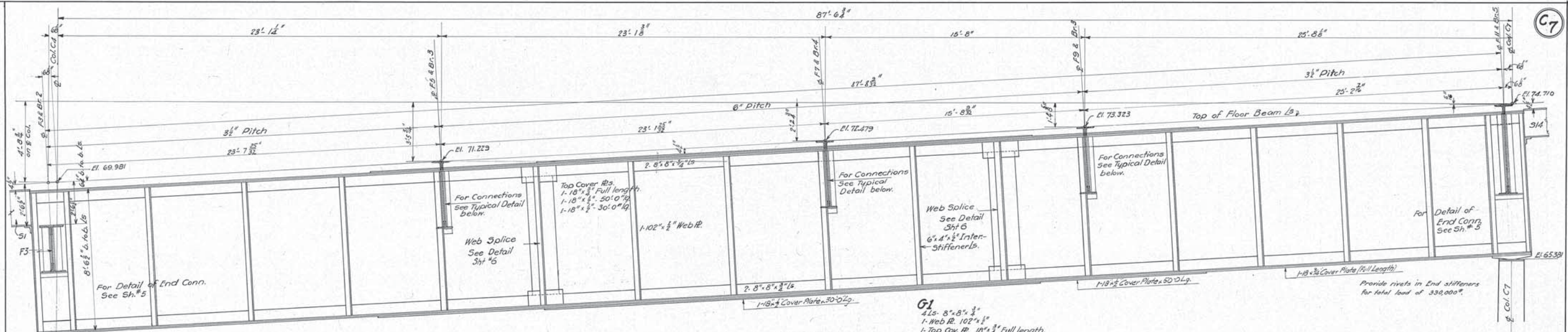
Plan Approved  
CITY OF CLEVELAND  
By Robert Hoffman  
Commissioner of Engineering & Construction  
Date Sept. 8, 1927.  
For Original of this Signature  
See Blue Print filed under 113-039.5.

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE. VIADUCT SECTION "C"  
PORTION FROM W.&L.E.R.R. TO W. SIDE OF CANAL ST.  
DETAILS OF GIRDERS G3 & G4  
SPICES & CONNECTIONS  
OFFICE OF ENGINEER OF STRUCTURES  
CLEVELAND, OHIO.  
SCALE AS SHOWN  
ISSUE NO. 5  
DATE: Sept. 29, 1926  
REVISED: 11/27/25, 1931  
CHIEF ENGINEER

FILE NO 113-039

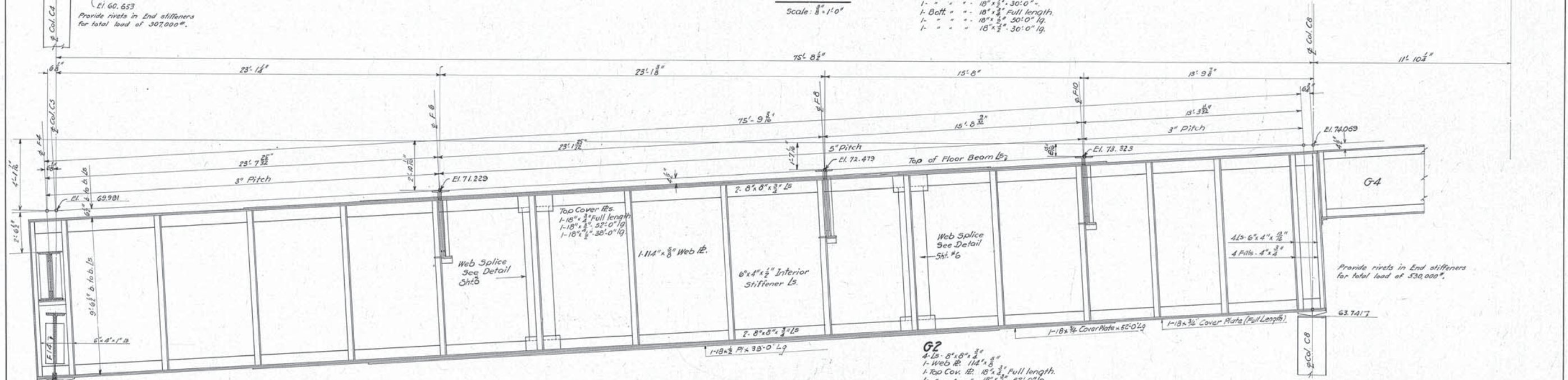
Issue No. A. Sept. 25, 1926  
 Revisions:  
 Issue No. B. Feb. 26, 1927  
 Minor revisions:  
 Issue No. C. May 9, 1927  
 Drawing Checked Grades Changed  
 Issue No. D. July 27, 1927  
 Minor revisions  
 Issue No. 1. Aug. 17, 1927  
 Signed by Chief Engineer  
 Issue No. 2. Sept. 13, 1927  
 Approved by Commissioner of  
 Engineering and Construction  
 of the City of Cleveland.

Issue No. 3. May 25, 1931  
 Plan conforms to structure  
 as built.



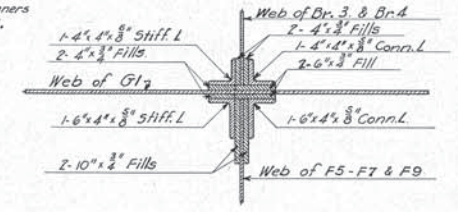
**GIRDER - G1**  
 Scale: 3/8" = 1'-0"

- G1**  
 4 Ls. 8" x 8" x 3/8"  
 1 Web R. 10 1/2" x 1/2"  
 1 Top Cov. R. 18" x 3/4" Full length  
 1 Bot. R. 18" x 3/4" Full length  
 1 18" x 3/4" Cover Plate 50' 0" Lg.



**GIRDER - G2**  
 Scale: 3/8" = 1'-0"

- G2**  
 4 Ls. 8" x 8" x 3/8"  
 1 Web R. 114" x 5/8"  
 1 Top Cov. R. 18" x 3/4" Full length  
 1 Bot. R. 18" x 3/4" Full length  
 1 18" x 3/4" Cover Plate 50' 0" Lg.



**TYPICAL DETAIL OF FLOOR BEAM & BRACKET CONNECTIONS TO G1**  
 Scale: 1" = 1'-0"

Designed by G.T.C. Sept. 1, 1926  
 Detailed by J.E.W. Sept. 25, 1926  
 Traced by K.O. Feb. 26, 1927  
 Checked by J.H.B. 5-2-1927  
 Corrected by J.S. 5-5-27  
 Designing Engineer

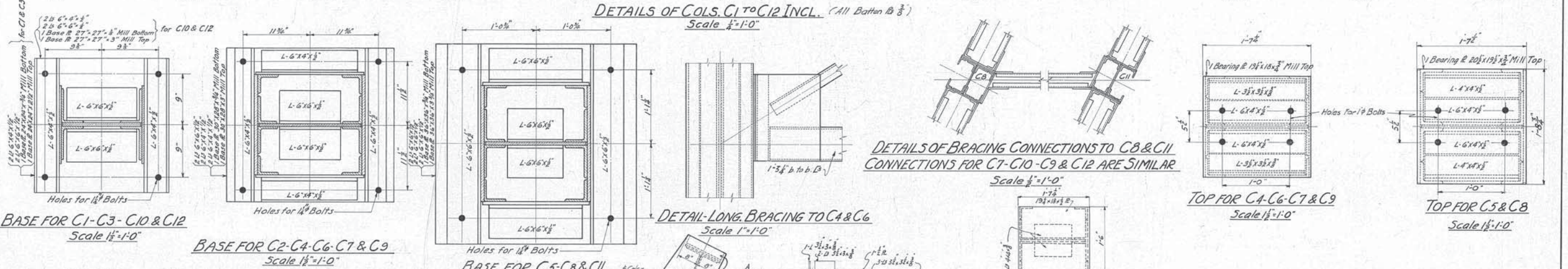
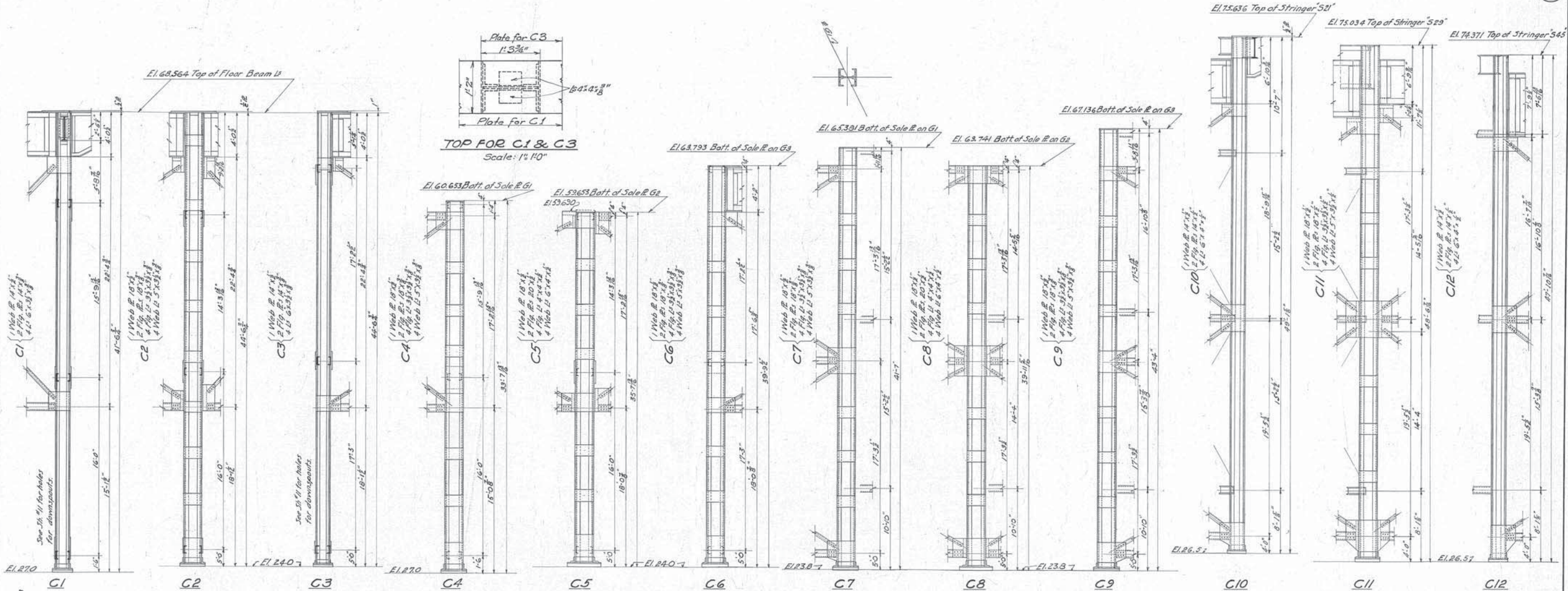
Approved *E. C. Mendenhall* 7/2/27  
 Engineer of Structures  
 Approved *J. H. B.* 7/2/27  
 Principal Assistant Engineer  
 Approved *H. P. Bepko* 8/12/27  
 Assistant Electrical Engineer  
 Approved *M. S. Wolf* 8/15/27  
 Engineer of Construction

We hereby certify that this Plan shows the structure as built.  
*E. C. Mendenhall* 7/2/27  
 Engineer of Structures  
*H. P. Bepko* 7/2/27  
 Ass't Engineer of Construction

Plan Approved  
**CITY OF CLEVELAND**  
 By *Robert Hoffman*  
 Commissioner of Engineering and Construction  
 Date: Sept. 8, 1927  
 for Original of this Signature  
 See Blue Print filed under 113-039 S.

**THE CLEVELAND UNION TERMINALS CO.**  
**EAGLE AVE. VIADUCT SECTION "C"**  
 PORTION FROM W. & L.E. R.R. TO  
 W. SIDE OF CANAL ST.  
 DETAILS OF GIRDERS G1 & G2  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 3/8" = 1'-0"  
 DATE: Sept. 25, 1926  
 REVISED: May 25, 1927  
 ISSUE NO. 3  
*J. S. Wolf* 7/2/27  
 Chief Engineer

Issue No. A Oct. 28, 1926  
 Revisions:  
 Issue No. B May 9, 1927  
 Drawing Checked, Change in Grade  
 Issue No. C July 28, 1927  
 Revised Battens on Columns.  
 Other Minor Revisions.  
 Issue No. 1 Aug. 17, 1927  
 Signed by Chief Engineer  
 Issue No. 2 Sept. 13, 1927  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.  
 Issue No. 3 Oct. 14, 1924.  
 Revised anchor bolt holes in  
 column bases.  
 Issue No. 4 Oct. 23, 1927.  
 Length of Columns "C10," "C11" & "C12"  
 changed.  
 Issue No. 5 Nov. 25, 1927.  
 Revised for changes in span over W.B.L.E.R.R.  
 Issue No. 6 Feb. 21, 28  
 Revisions Approved by Commissioner  
 of Engineering & Construction of the  
 City of Cleveland  
 Issue No. 7 May 25, 1931  
 Plan conforms to structure  
 as built.



DESIGNED BY G.T.C. AUG. 4, 1926  
 DETAILED BY J.E.V. OCT. 28, 1926  
 TRACED BY W.H.T. MARCH 10, 1927  
 CHECKED BY J.H.B. 5-4-1927  
 CORRECT 5-5-27  
 DESIGNING ENGINEER

APPROVED [Signature] 10/27  
 ENGINEER OF STRUCTURES  
 APPROVED [Signature] 11/27  
 PRINCIPAL ASSISTANT ENGINEER  
 APPROVED [Signature] 12/27  
 ASSISTANT ELECTRICAL ENGINEER  
 APPROVED [Signature] 1/27  
 ENGINEER OF CONSTRUCTION

NOTES:  
 All base plates riveted to columns  
 and countersunk for bearing on slab.  
 All rivets 3/4\"/>

REVISIONS DE 11-25-27 APPROVED  
 CITY OF CLEVELAND  
 BY Robert Hoffman  
 Commissioner of Engineering & Const.  
 For Original of this Signature  
 DATE 3/1/27 See Blue Print filed under 113-039.5

PLAN TROLLEY POLE BRACKET - COL C12  
 Scale 3/4\"/>

DETAILS OF BRACING CONNECTIONS TO C8 & C11  
 CONNECTIONS FOR C7-C10-C9 & C12 ARE SIMILAR  
 Scale 1/2\"/>

TOP FOR C11 & C12  
 Scale 1/2\"/>

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT SECTION "C"  
 PORTION FROM W.B.L.E.R.R. TO WEST SIDE OF CANAL STREET  
 DETAILS OF COLUMNS 1 TO 12 INCLUSIVE  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE AS SHOWN  
 DATE: Oct. 28, 1926  
 REVISED: May 25, 1931  
 ISSUE NO. 7  
 [Signature]  
 CHIEF ENGINEER

Issue No A Oct. 20, 1926

REVISIONS:

Issue No B May 9, 1926

Drawing Checked, Grade Changed

Issue No C July 27, 1927

Changed Battens on Struts to Lacing.

Issue No 1 Aug. 17, 1927

Signed by Chief Engineer

Issue No 2 Sept. 13, 1927

Approved by Commissioner of Engineering and Construction of the City of Cleveland.

Issue No 3 Oct. 29, 1927

Length of Columns "C10", "C11" & "C12" changed.

Issue No 4 Nov. 25, 1927

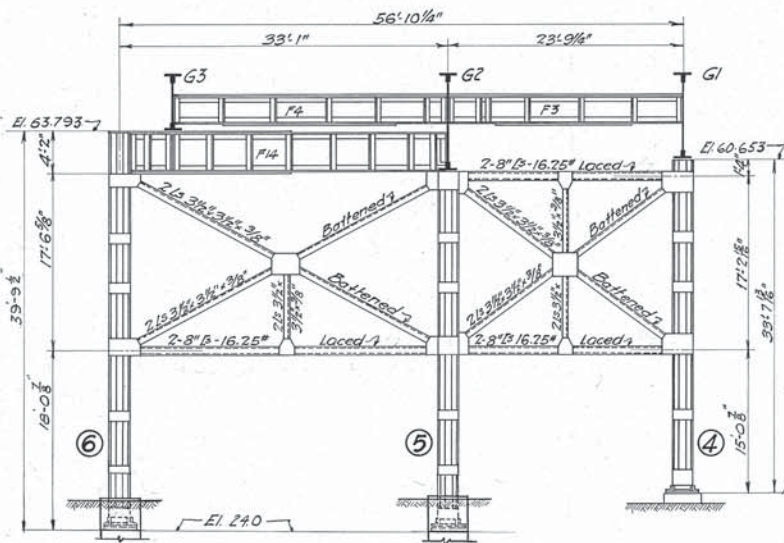
Revised for changes in span over W.&L.E.R.R.

Issue No 5 Feb. 21, 1928

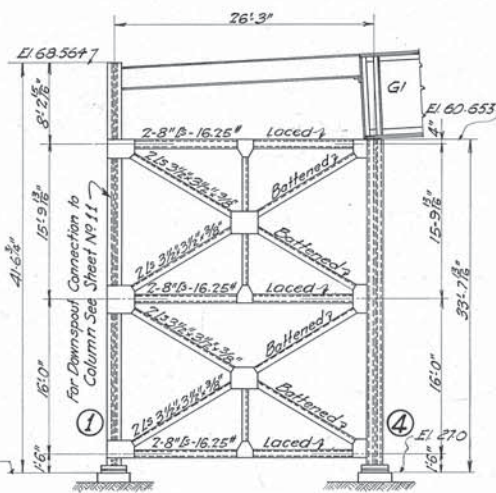
Revisions Approved by Commissioner of Engineering & Construction of the City of Cleveland

Issue No 6 May 24, 1931

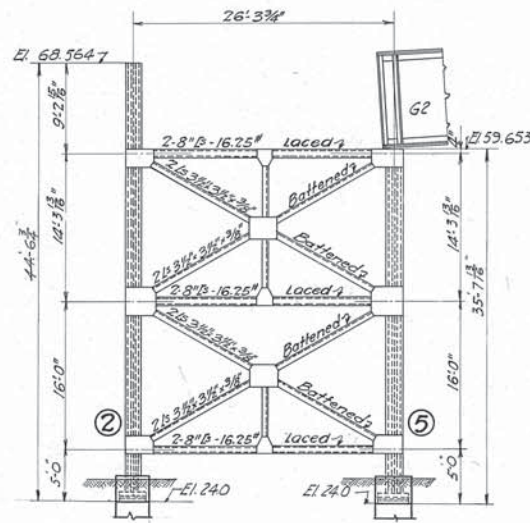
Plan conforms to structure as built.



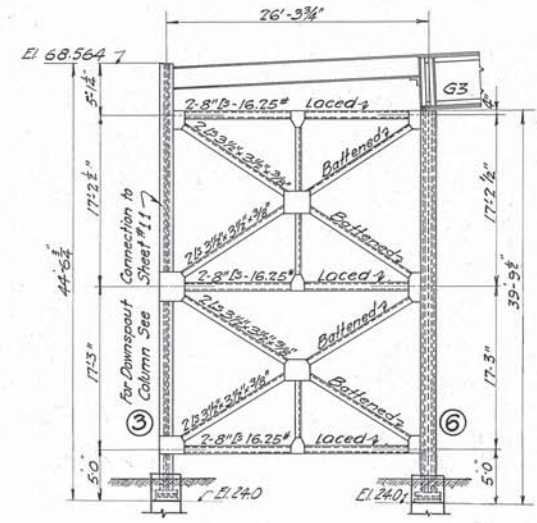
BRACING BETWEEN COLUMNS 4-5 & 6



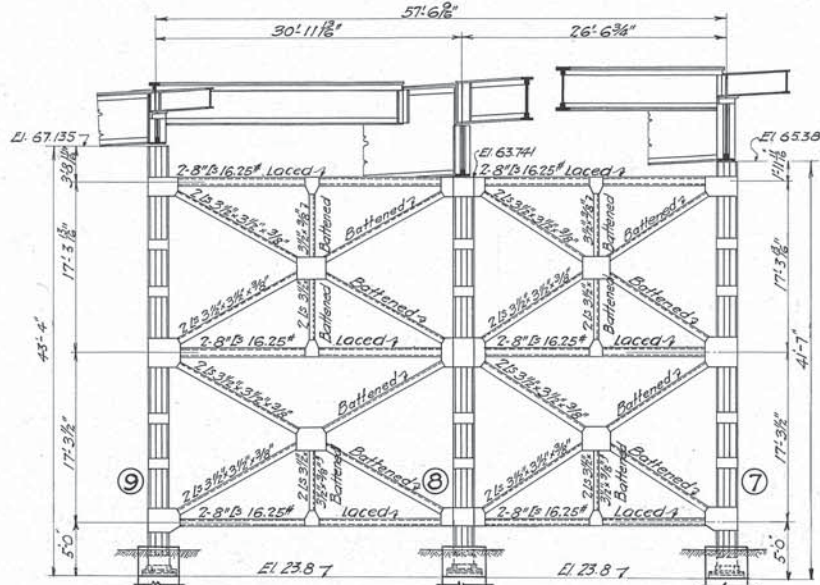
BRACING COLUMNS 1-4



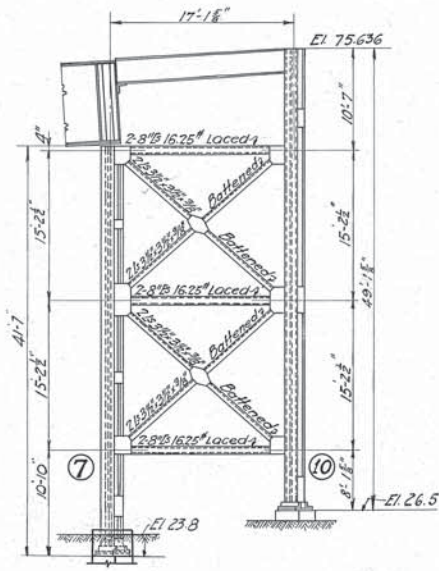
BRACING COLUMNS 2-5



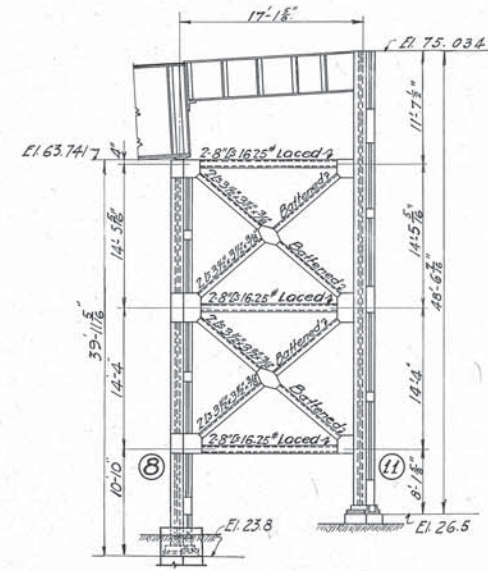
BRACING COLUMNS 3-6



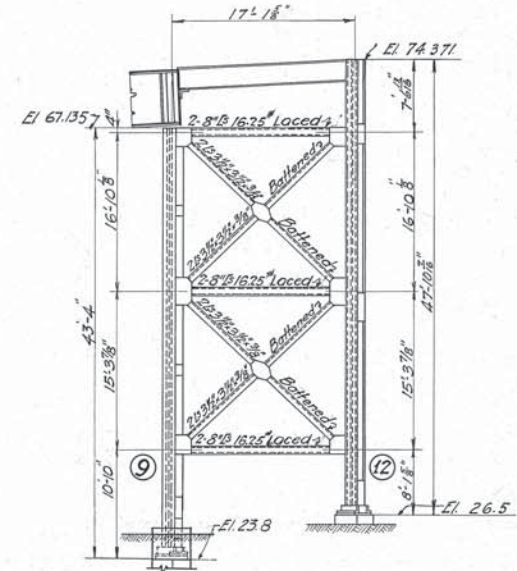
BRACING BETWEEN COLUMNS 7-8 & 9



BRACING COLUMNS 7-10



BRACING COLUMNS 8-11



BRACING COLUMNS 9-12

Note: All rivets 7/8\"/>

Designed By G.T.C. Aug. 4 - 1926

Detailed By J.H.C. Oct. 20 - 1926

Traced By S.H. Feb. 25 1927

Checked By T.H.B. 5-4 1927

Correct May 5 1927

J. J. Symmes  
Designing Engineer

Approved E. P. Marsh 8/14/27  
Engineer of Structures

Approved F. H. Brown 9/21/27  
Principal Assistant Engineer

Approved W. L. Anderson 10/27/27  
Assistant Electrical Engineer

Approved W. A. Duley 8/15/27  
Engineer of Construction

We hereby certify that this Plan  
shows the structure as built.

E. P. Marsh 7/18/27  
Engineer of Structures

H. L. Bigelow 7/27/31  
Asst. Engineer of Construction

Revision Of 11-25-27 Approved  
CITY OF CLEVELAND

By Robert Hoffman  
Commissioner of Engineering & Const.

Date Feb 17, 28  
For Original of this Signature  
See Blue Print filed Under 113-039 S.

Plan Approved  
CITY OF CLEVELAND

By Robert Hoffman  
Commissioner of Engineering & Construction

Date Sept. 8, 1927  
For Original of this Signature  
See Blue Print filed under 113-039 S.

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE VIADUCT SECTION "C"  
PORTION FROM W.&L.E. R.R. TO W. SIDE OF CANAL ST.  
DETAILS OF BRACING

CLEVELAND, OHIO  
OFFICE OF ENGINEER OF STRUCTURES

SCALE: 1/8" = 1'-0" DATE OCT 20, 1926

ISSUE No. 6 REVISED May 26, 1931

CHIEF ENGINEER

FILE No 113-039

Issue No. A. Dec. 18, 1925

Revisions:  
 Issue No. B. Jan. 13, 1926  
 Changed dimensions. Changed F-1. Changed Sheet Number. Added F-3 & F-4. Added Anchor Bolt Assembly.

Issue No. C. Sept. 28, 1926  
 Changed Section Limits. Redesigned and redrawn.

Issue No. D. Mar. 2, 1927  
 Minor revisions.

Issue No. E. May 3, 1927  
 Drawing Checked. Grade Changed. Issue No. F. July 27, 1927  
 Revised footings 1104, 6, 8, 10, 11.

Issue No. 1. Aug. 17, 1927  
 Signed by Chief Engineer.

Issue No. 2. Sept. 7, 1927  
 Put hooks on footing bars.

Issue No. 3. Sept. 13, 1927  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.

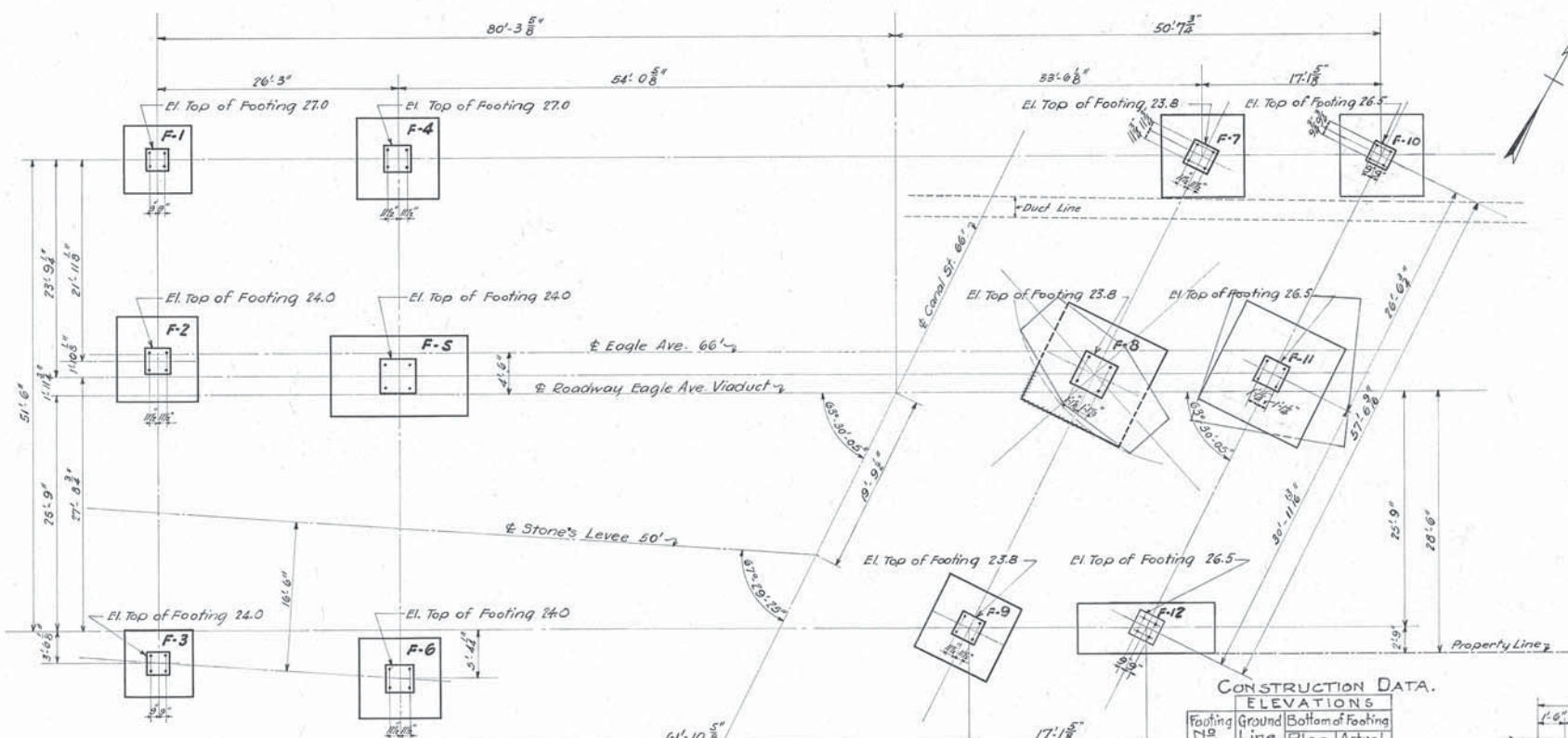
Issue No. 4. Oct. 14, 1927  
 Revised anchor bolt assembly. Changed Elevation of Top of Footings F-1 & F-4. Revised location of anchor bolts.

Issue No. 5. Oct. 29, 1927  
 Elevation of Top of Footings F-10, F-11 & F-12 changed.

Issue No. 6. 11-25-27  
 Revised for changes in F10, F11 & F12.

Issue No. 7. FEB-21-28  
 Revisions Approved by Commissioner of Engineering & Construction of the City of Cleveland.

Issue No. 8. March 27, 1931.  
 Plan corrected to conform to structure as built.

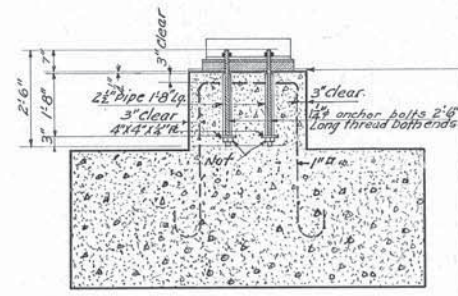


**CONSTRUCTION DATA.**

Footing No.	Ground Line	Bottom of Footing
F-1	25.70	21.75
F-2	26.30	18.25
F-3	26.40	18.15
F-4	26.70	17.25
F-5	26.30	17.50
F-6	26.40	18.25
F-7	27.00	18.30
F-8	26.60	14.55
F-9	26.60	18.05
F-10	28.30	21.00
F-11	27.30	20.25
F-12	30.00	20.50

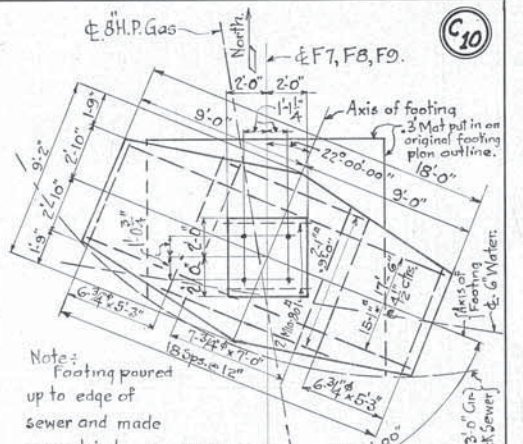
Note:  
 Mats of 1-2-4 Concrete were placed under footings from Plan Elev. to Actual Elev. shown in the table, excepting for footing F-3 where 1-4-7 1/2 was used.  
 All Piles were omitted from footings in Section C.

PLAN Scale: 1/4" = 1'-0"

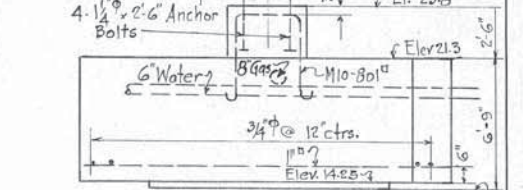


TYPICAL ANCHOR BOLT ASSEMBLY Scale: 1/2" = 1'-0"

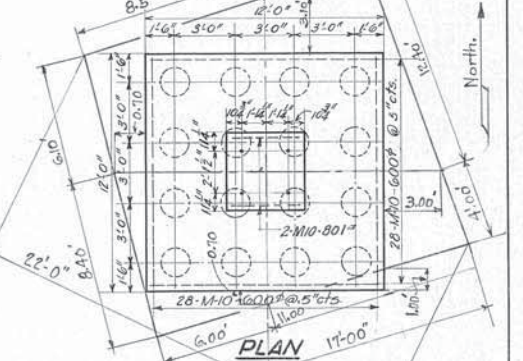
When pouring the footings, pour the top 1/2 higher than the required elevation. When concrete is set, push hammer top of footing down to required elevation before setting steel slabs. Pipe sleeve for all bolts to be set to an elevation 1/4" lower than top of footing. All bolts to be set in proper position by template then securely grouted in pipe sleeve.



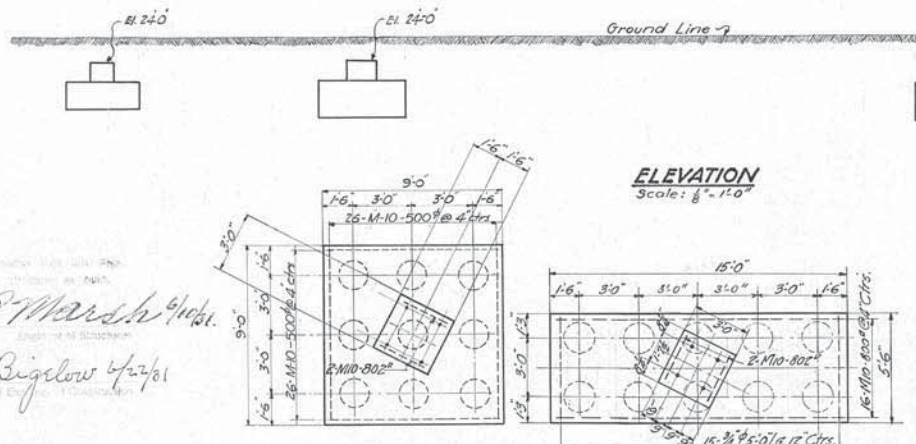
FOOTING F-8 Scale: 1/2" = 1'-0"



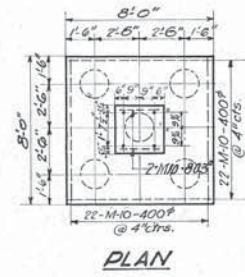
FOOTING F-3 Scale: 1/2" = 1'-0"



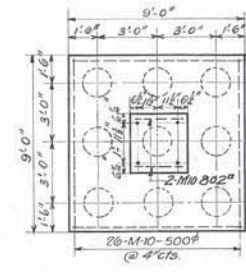
FOOTING F-10 Scale: 1/2" = 1'-0"



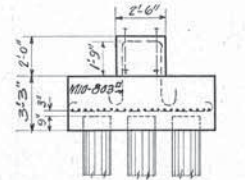
ELEVATION Scale: 1/2" = 1'-0"



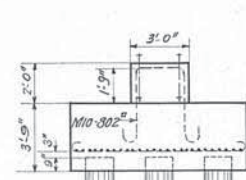
PLAN



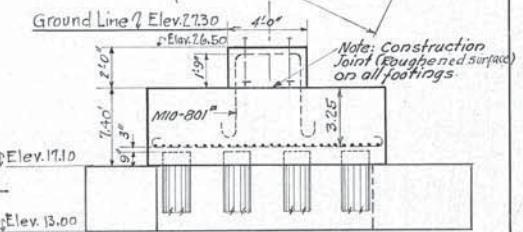
PLAN



ELEVATION F-1 Scale: 1/2" = 1'-0"



ELEVATION F-2 Scale: 1/2" = 1'-0"

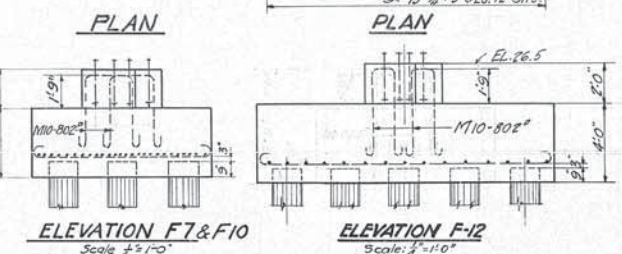


ELEVATION F-8 Scale: 1/2" = 1'-0"

Approved: *G. C. Marsh* 1/10/27  
 Engineer of Structures  
 Approved: *J. W. Barry* 1/27  
 Principal Assistant Engineer  
 Approved: *J. H. B. S. A.* 1/22  
 Assistant Electrical Engineer  
 Approved: *M. D. O'Connell* 1/27  
 Engineer of Construction

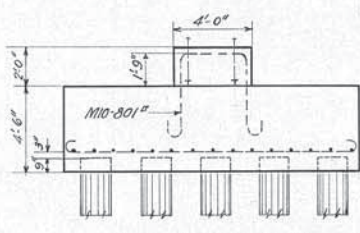
Designed by G.T.C. Sept. 28, 1926  
 Detailed by J.H.C. Sept. 28, 1926  
 Traced by K.O. Mar. 7, 1927  
 Checked by J.H.B. S.A. 1/22  
 Corrected by S.E. 2/7  
 Designing Engineer: *F. L. O'Connell*

Approved: *G. C. Marsh* 1/10/27  
 Engineer of Structures  
 Approved: *J. W. Barry* 1/27  
 Principal Assistant Engineer  
 Approved: *J. H. B. S. A.* 1/22  
 Assistant Electrical Engineer  
 Approved: *M. D. O'Connell* 1/27  
 Engineer of Construction



ELEVATION F-7 & F-10 Scale: 1/2" = 1'-0"

ELEVATION F-12 Scale: 1/2" = 1'-0"

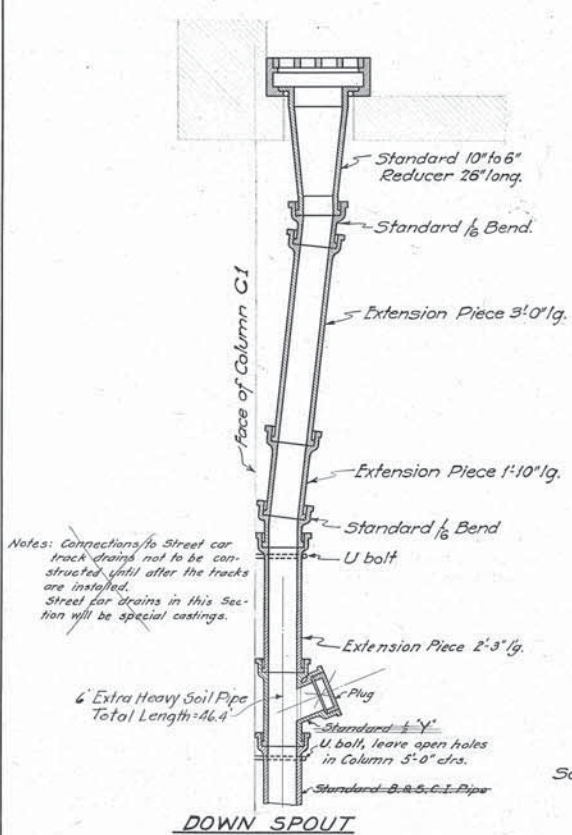


ELEVATION F-5 Scale: 1/2" = 1'-0"

Revisions Checked and Approved: *Robert Hoffman* 1/28  
 City of Cleveland  
 Plan Approved: *Robert Hoffman* 1/28  
 City of Cleveland  
 Date: Feb. 17, 28  
 For Original of this Signature See Blue Print filed under 113-0395.  
 Date: Sept. 8, 1927  
 For Original of this Signature See Blue Print filed under 113-0395.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT SECTION "C"  
 PORTION FROM W. & L. E. R. R. TO W. SIDE OF CANAL ST.  
 PLAN AND DETAILS OF FOUNDATIONS  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: AS SHOWN  
 ISSUE N° 8  
 DATE: Dec. 18, 1925  
 REVISED: 1/27  
 FILE N° 113-039

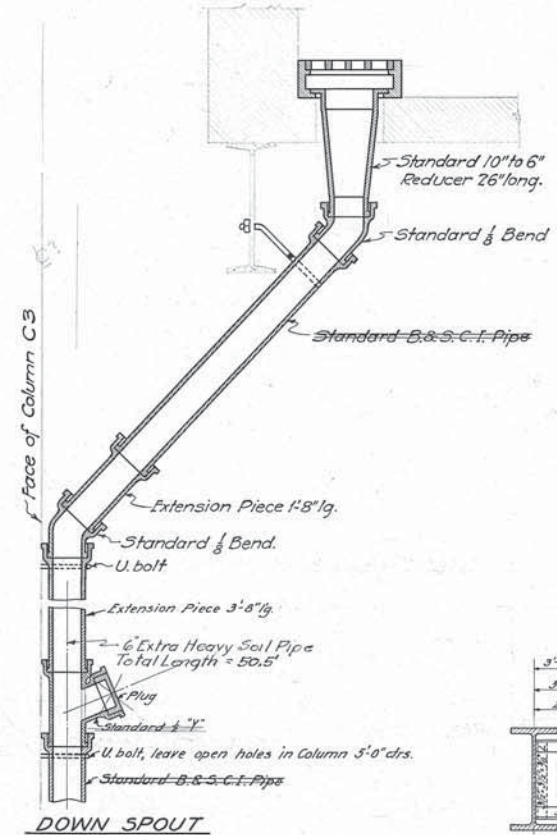
Issue No. A 10-21-1926  
**REVISIONS:**  
 Issue No. B May 9 1926  
 Drawing Checked  
 Issue No. C July 29, 1927  
 Provide connections for Street car track drains.  
 Issue No. 1 Aug. 17, 1927  
 Signed by Chief Engineer  
 Issue No. 2 Sept. 13, 1927  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3 Nov. 28, 1927  
 Revised for changes in span over W.&L.E.R.R.  
 Issue No. 4 Feb. 21-28  
 Revisions Approved by Commissioner of Engineering & Construction of the City of Cleveland  
 Issue No. 5 May 1, 1931  
 Plan corrected to show structures as built.



Notes: Connections to Street car track drains not to be constructed until after the tracks are installed. Steel for drains in this Section will be special castings.

6 Extra Heavy Soil Pipe Total Length = 46.4  
 Plug  
 U bolt, leave open holes in Column 5'-0\"/>

Scale: 3/4\"/>



6 Extra Heavy Soil Pipe Total Length = 50.5  
 Plug  
 U bolt, leave open holes in Column 5'-0\"/>

Scale: 3/4\"/>

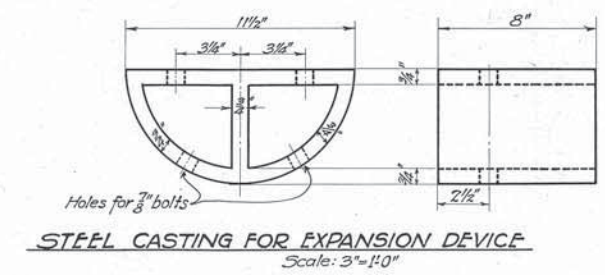
LIST OF STRINGERS				LIST OF STRINGERS			
MARK NO	SIZE	LENGTH	REMARKS	MARK NO	SIZE	LENGTH	REMARKS
S1	26'-91" B.I.	25'-8 7/8"	See G1	S21	30'-240" C.B.	57'-6 1/2"	See Details for both ends
S2	26'-91" B.I.	25'-8 7/8"		S22	30'-240" C.B.	57'-3 1/4"	" " " "
S3	26'-91" B.I.	25'-8 7/8"	See G3 & Sheet #11	S23	30'-240" C.B.	57'-0 1/4"	" " " "
S4	24'-84.5" B.I.	23'-7 3/8"	See G1, G2, G3 & Detail.	S24	30'-240" C.B.	56'-9"	" " " "
S5	24'-73.5" B.I.	23'-7 3/8"	" " " "	S25	30'-240" C.B.	56'-5 1/2"	" " " "
S6	24'-84.5" B.I.	23'-1 3/8"	" " " "	S26	30'-240" C.B.	56'-2 1/4"	" " " "
S7	24'-73.5" B.I.	23'-1 3/8"	" " " "	S27	30'-240" C.B.	56'-0 1/4"	" " " "
S8	20'-59.5" B.I.	15'-8"	" " " "	S28	30'-240" C.B.	55'-10 1/2"	" " " "
S9	24'-99.5" B.I.	25'-8 1/8"	" " " "	S29	30'-240" C.B.	55'-7 1/2"	" " " "
S10	24'-73.5" B.I.	25'-8 1/8"	" " " "	S30	30'-240" C.B.	55'-3 1/2"	" " " "
S11	30'-121" B.I.	27'-11 1/2"	See F13	S31	30'-240" C.B.	55'-3 1/2"	" " " "
S12	28'-106" B.I.	24'-11 1/2"	" " " "	S32	18'-49" B.I.	25'-8 7/8"	" " " "
S13	24'-84.5" B.I.	22'-5 1/2"	" " " "	S33	18'-49" B.I.	23'-7 3/8"	" " " "
S14	22'-65.5" B.I.	19'-9 1/2"	" " " "	S34	18'-49" B.I.	23'-1 3/8"	" " " "
S15	20'-59.5" B.I.	17'-1 1/2"	" " " "	S35	18'-49" B.I.	15'-8"	" " " "
S16	22'-65.5" B.I.	17'-1 1/2"	See F12	S36	18'-49" B.I.	25'-8 1/2"	" " " "
S17	20'-59.5" B.I.	14'-5 1/2"	" " " "	S37	18'-49" B.I.	19'-6 1/2"	" " " "
S18	18'-54.5" B.I.	12'-9 1/2"	" " " "	S38	30'-180" C.B.	57'-10 1/2"	See Details for both ends
S19	15'-54.5" B.I.	9'-3 1/2"	" " " "	S39	30'-240" C.B.	55'-1 1/2"	" " " "
S20	15'-54.5" B.I.	7'-3 1/2"	" " " "	S40	30'-240" C.B.	54'-10 1/2"	" " " "
				S41	30'-240" C.B.	54'-7 1/2"	" " " "
				S42	30'-240" C.B.	54'-4 1/2"	" " " "
				S43	30'-240" C.B.	54'-1 1/2"	" " " "
				S44	30'-240" C.B.	53'-10 1/2"	" " " "
				S45	30'-240" C.B.	53'-7 1/2"	" " " "

Notes: Length of Stringers given c-c of Floorbeams & Partial respectively on horizontal line. For overall length see details on Sheet # C5.

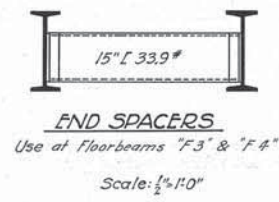
Designed By G.T.C. 10-21-1926  
 Detailed By G.T.C. 10-21-1926  
 Traced By S.H. 3-2-1927  
 Checked By J.H.B. 5-4-1927  
 Correct May 5 1927  
 Designing Engineer

Approved E.P. Marsh 8/10/27  
 Engineer of Structures  
 Approved J.W. Brown 4/2/27  
 Principal Assistant Engineer  
 Approved H.P. Bigelow 4/2/27  
 Assistant Electrical Engineer  
 Approved W.H. Gifford 4/10/27  
 Engineer of Construction

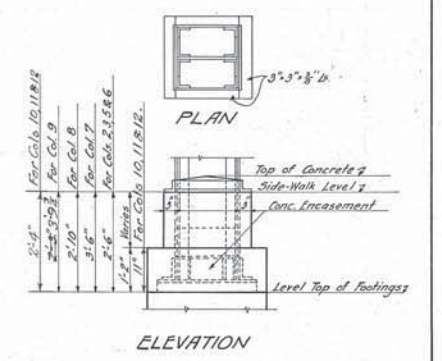
We hereby certify that this Plan shows the structure as built.  
 E.P. Marsh  
 Engineer of Structures  
 H.P. Bigelow  
 Ass't Engineer of Construction



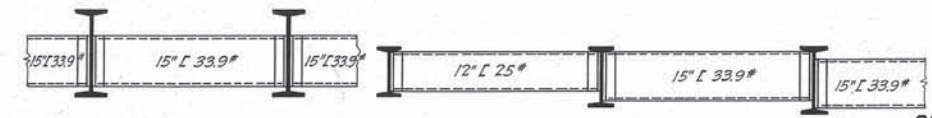
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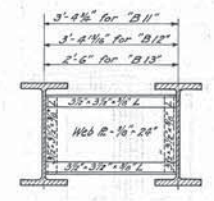
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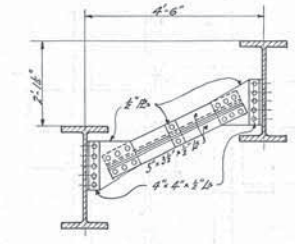
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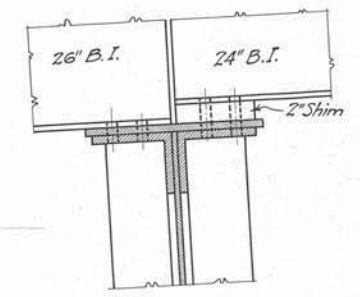
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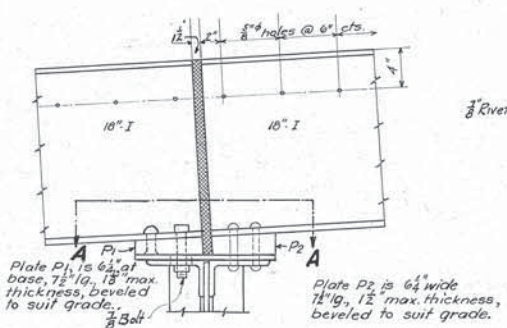
Scale: 1/2\"/>



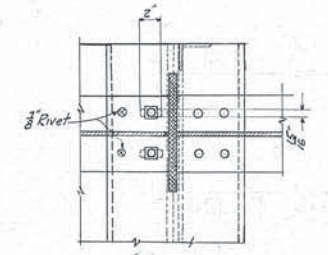
Scale: 1/2\"/>



Use End Spacers As Shown On Framing Plan  
 STRINGER CONNECTIONS-F3 & F4



Scale: 1 1/2\"/>



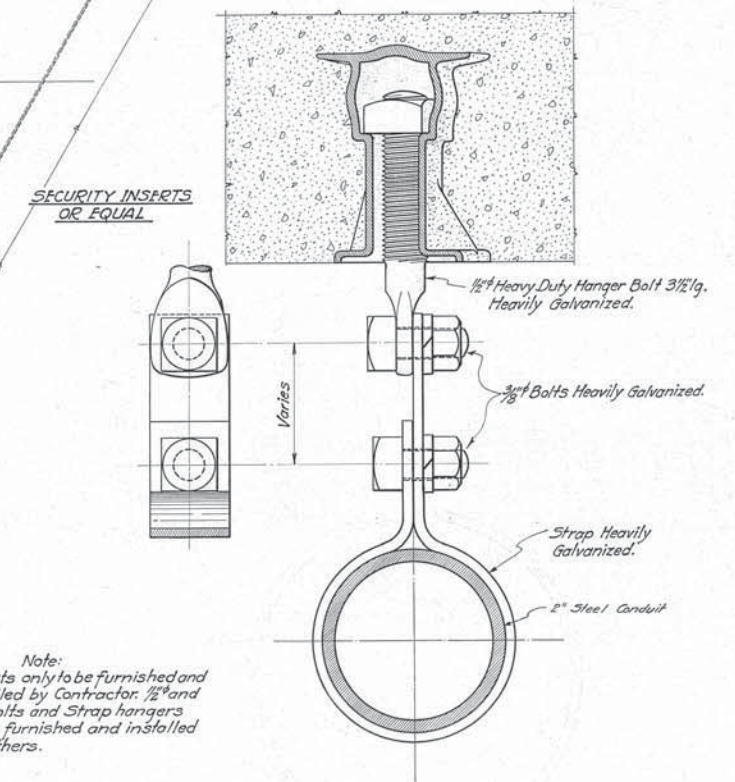
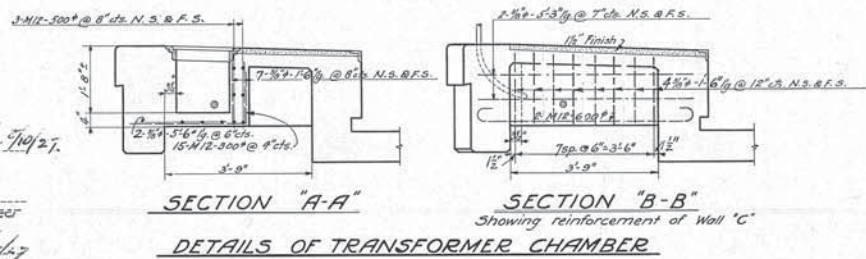
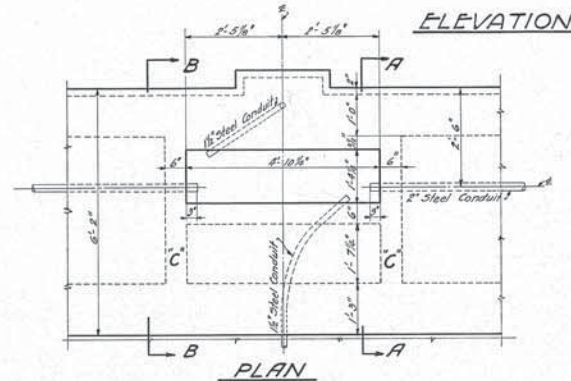
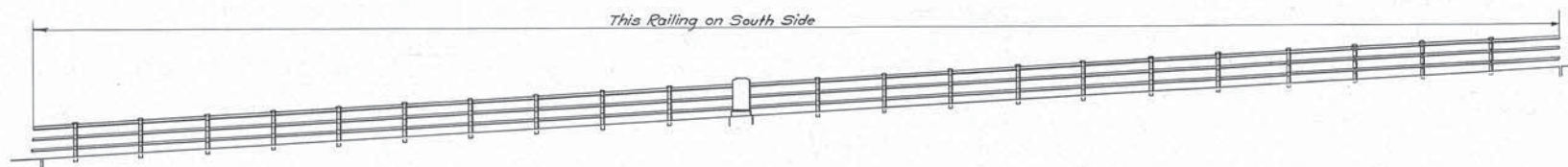
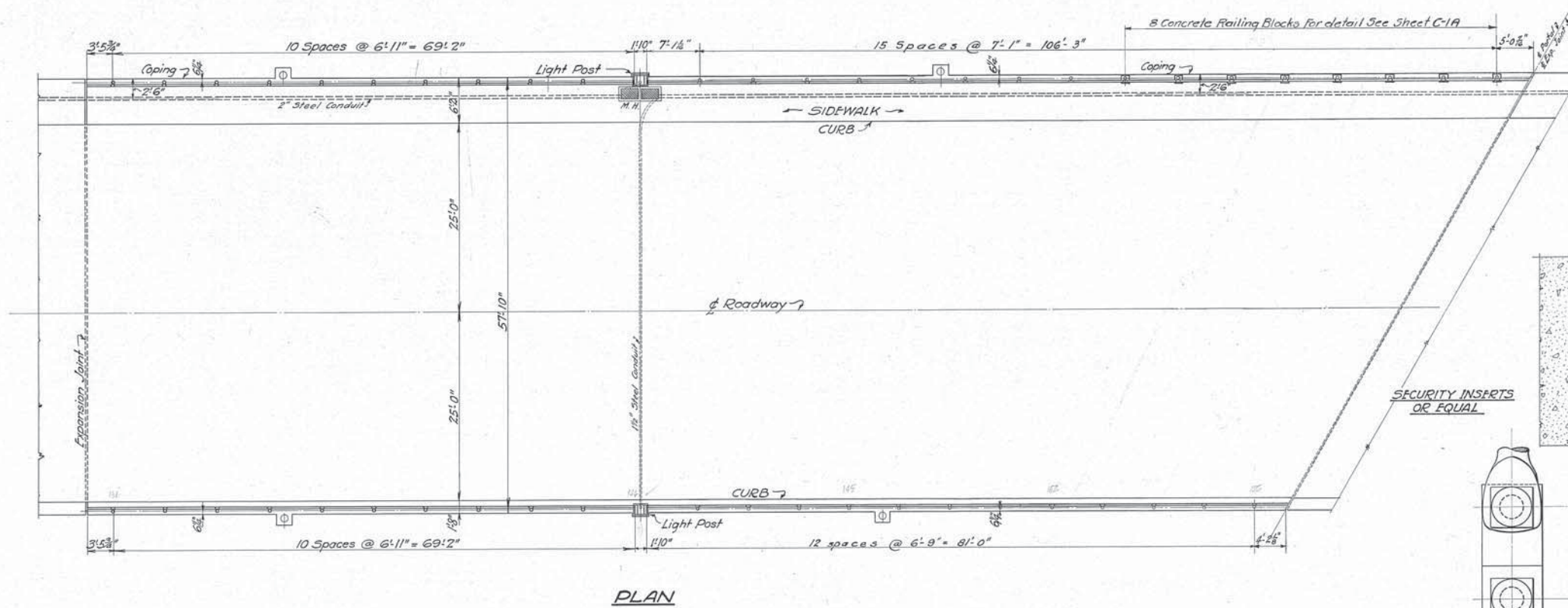
Scale: 1 1/2\"/>

Note: All rivets 3/4\"/>

Issue No. A Nov. 10, 1926

REVISIONS:

- Issue No. B May 2, 1927 Drawing checked and Traced.
- Issue No. C July 27, 1927 Minor revisions. Alternate 2" steel conduit for 4" fibre duct shown.
- Issue No. D Aug. 10, 1927 Detail of Strap hanger changed. Added details of Transformer chamber.
- Issue No. 1 Aug. 17, 1927 Signed by Chief Engineer
- Issue No. 2 Sept. 13, 1927 Approved by Commissioner of Engineering and Construction of the City of Cleveland.
- Issue No. 3 Nov. 7, 1927 Minor revisions of Transformer Chamber.
- Issue No. 4 Dec. 5, 1927 Revised for changes in span over W.&L.E.R.R.
- Issue No. 5 FEB 21-28 Revisions Approved By Commissioner of Engineering & Construction of the City of Cleveland.
- Issue No. 6 May 1, 1931 Plan corrected to conform to structure as built.



Note:  
Inserts only to be furnished and installed by Contractor. 1/2" and 3/8" Bolts and Strap hangers to be furnished and installed by others.

NOTES:  
For details of railing See Sheet No. 3 of General Plans. Duct Lines for Street Lights shall be supported from Inserts spaced about 6'-0" on centers. All dimensions for Pipe Railing given on Plan are parallel to grade.  
For details of Manhole Frame & Cover for Transformer chamber see Sheet # 26.  
All 1 1/2" Steel Conduits to be set in forms before concrete is poured.

We hereby certify that this Plan shows the structure as built.  
G. P. M...  
Engineer of Structures  
H. P. Bigelow  
Ass't Engineer of Construction

Designed By W.L.F. Nov. 5, 1926.  
Detailed By S.H. Nov. 10, 1926.  
Traced By S.H. May 2, 1927.  
Checked By J.H.B. 5-4-1927.  
Corrected May 5, 1927.  
Designing Engineer

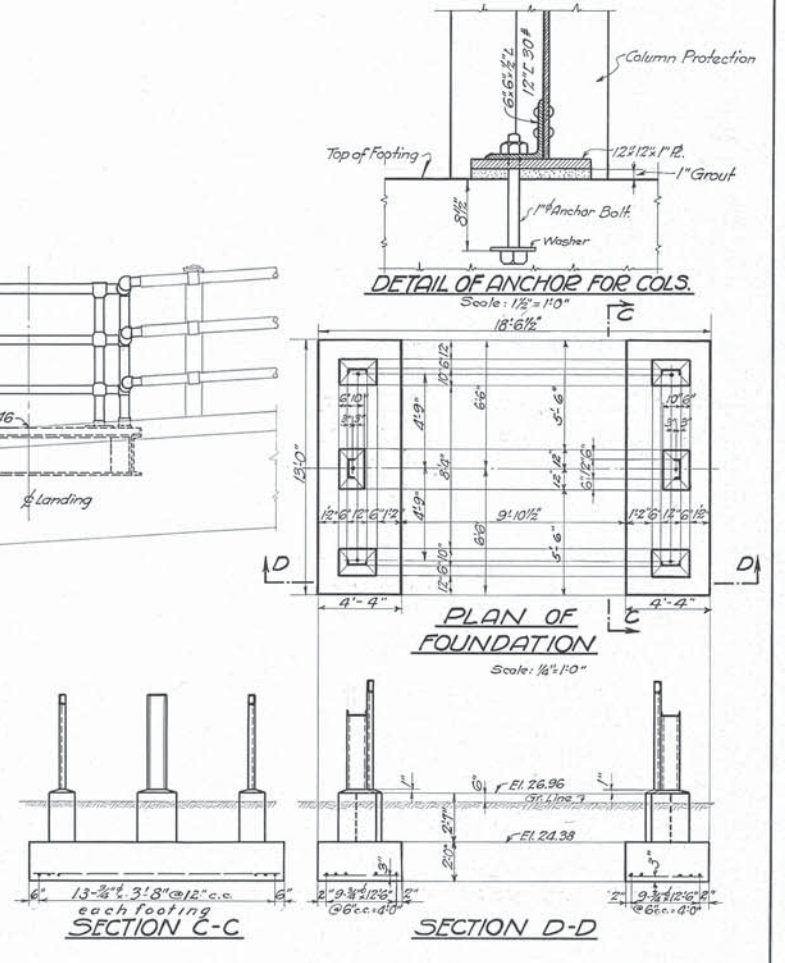
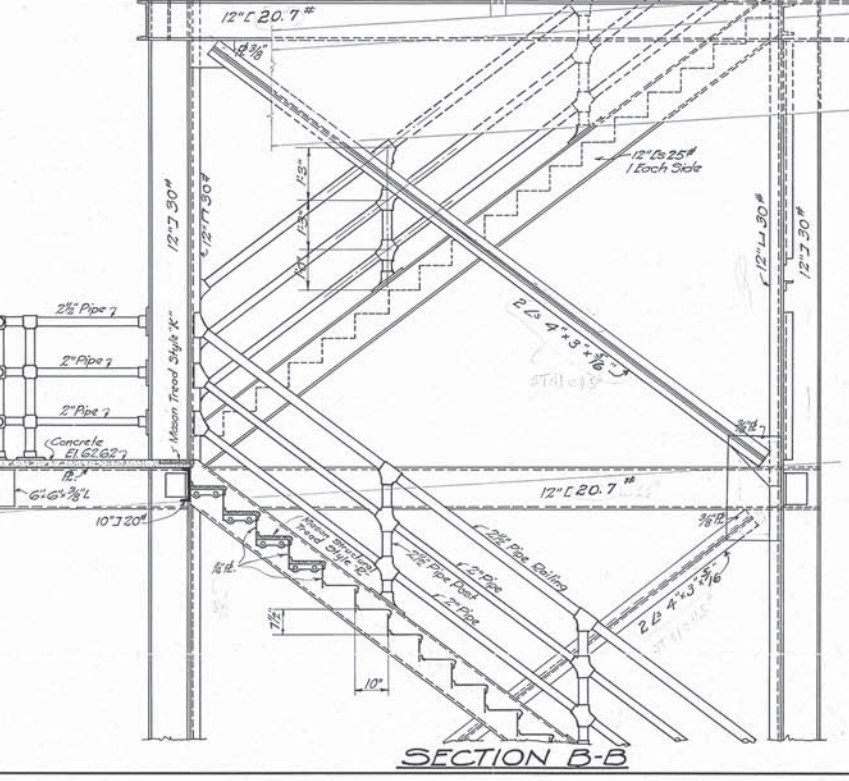
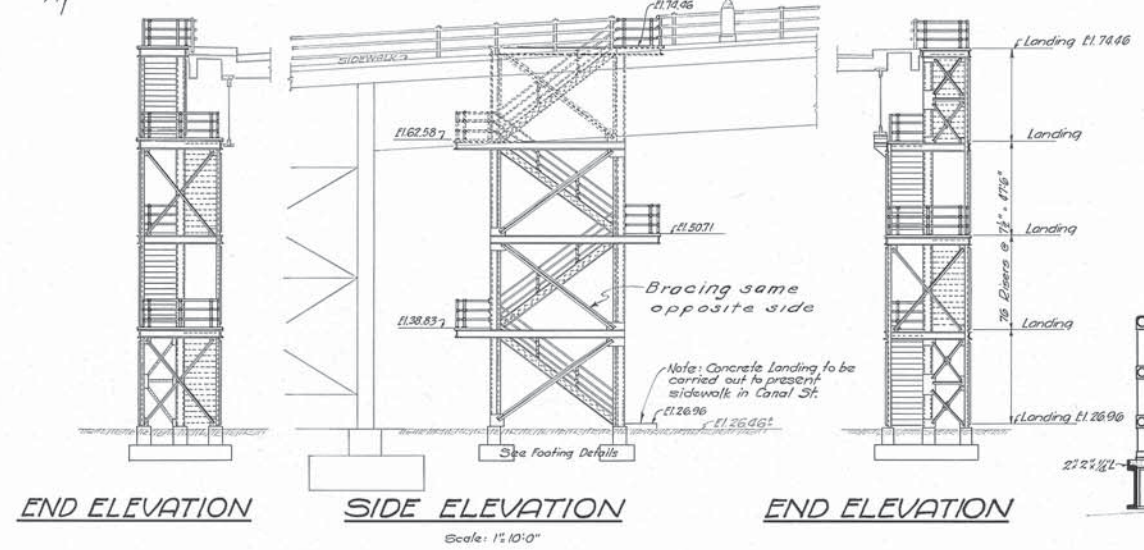
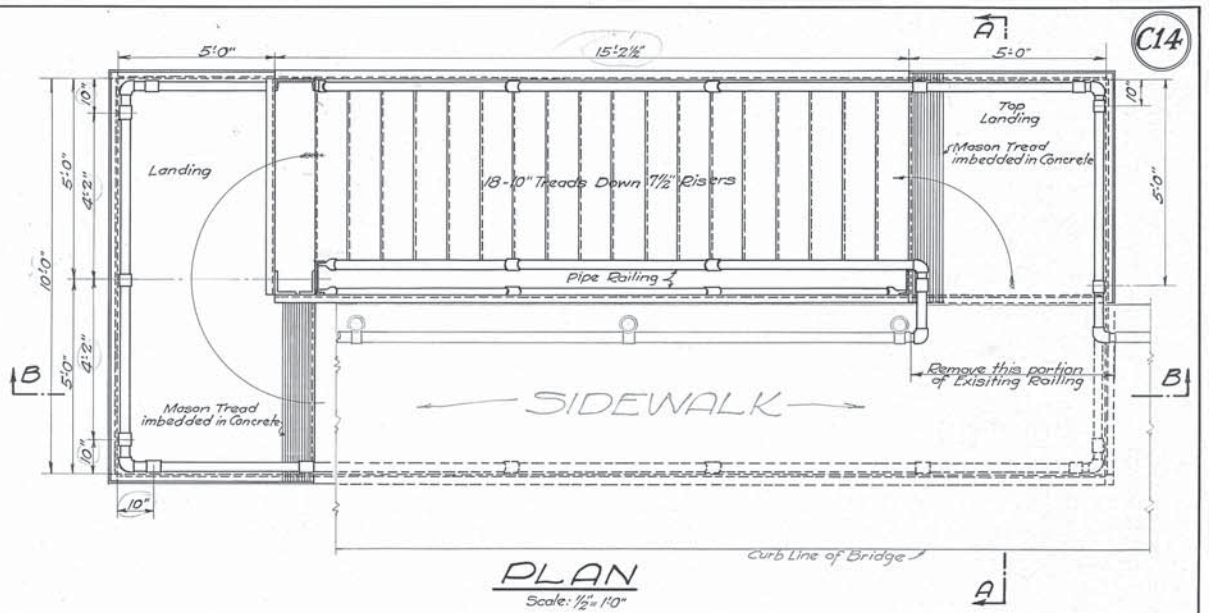
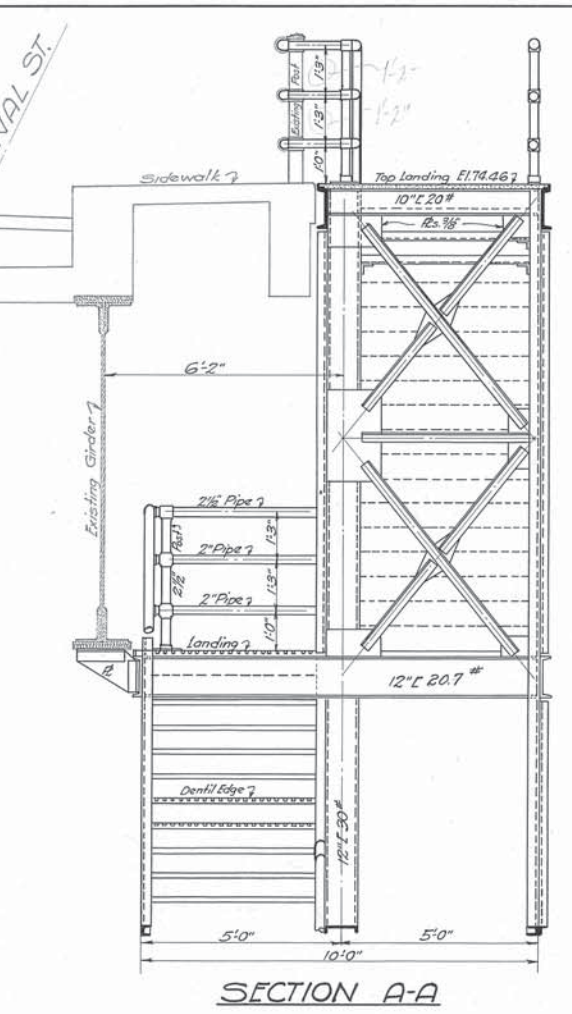
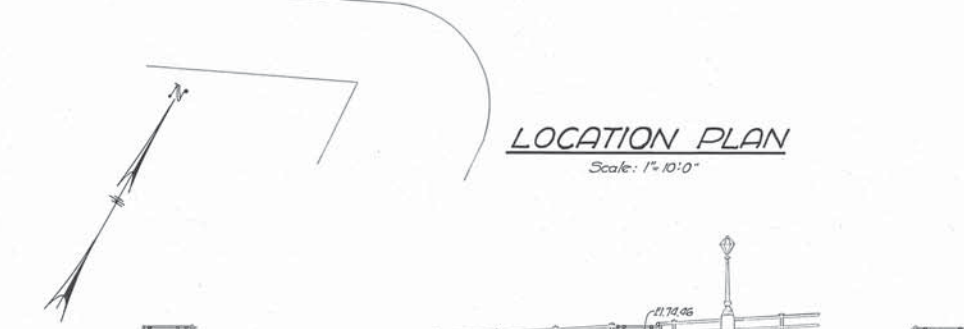
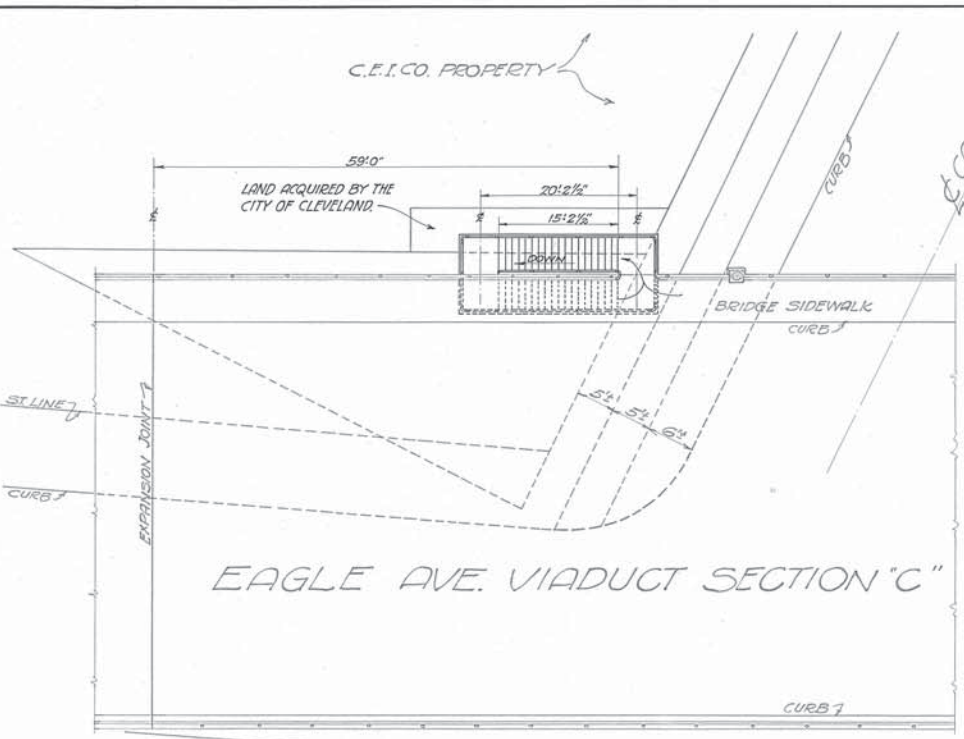
Approved G.P. M... 7/10/27  
Engineer of Structures  
Approved J.H.B. 4/2/27  
Principal Assistant Engineer  
Approved S.H. 8/10/27  
Assistant Electrical Engineer  
Approved M.H. 8/10/27  
Engineer of Construction

Revisions of 113-522 Approved  
CITY OF CLEVELAND  
By Robert Hoffman  
Commissioner of Engineering & Construction  
Date Feb 17, 28  
For Original of this Signature  
See Blue Print filed under 113-0395.

Plan Approved  
CITY OF CLEVELAND  
By Robert Hoffman  
Commissioner of Engineering & Construction  
Date Sept. 8, 1927  
For Original of this Signature  
See Blue Print filed under 113-0395.

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE VIADUCT SECTION "C"  
PORTION FROM W.&L.E.R.R. TO WEST SIDE OF CANAL ST.  
PLAN & ELEVATION OF PIPE RAILING  
CLEVELAND, OHIO.  
OFFICE OF ENGINEER OF STRUCTURES  
SCALE: 1/4" = 1'-0"  
ISSUE No. 1  
DATE NOV. 10, 1926  
REVISED MAY 1, 1931  
G.P. M...  
CHIEF ENGINEER

Issue No A June 5, 1929.  
**REVISIONS:-**  
 Issue No B June 20, 1929.  
 Traced and Checked  
 Issue No 1 June 29, 1929.  
 Approved By Department Heads.  
 Signed By The Chief Engineer  
 Issue No 2 July 27, 1929.  
 Approved By The City of Cleveland.  
 Issue No 3 Oct. 26, 1929.  
 Details of Foundations Revised  
 to agree with the Shop Details  
 and Erection Plans.  
 Issue No 4 May 26, 1931  
 Plan conforms to structure  
 as built.



Designed By S.H. May 22, 1929.  
 Detailed By S.H. June 5, 1929.  
 Traced By S.H. June 20, 1929.  
 Checked By G.T.C. June 20, 1929.  
 Corrected June 24, 1929.  
 G.P. Gorman  
 Assistant Engineer of Structures

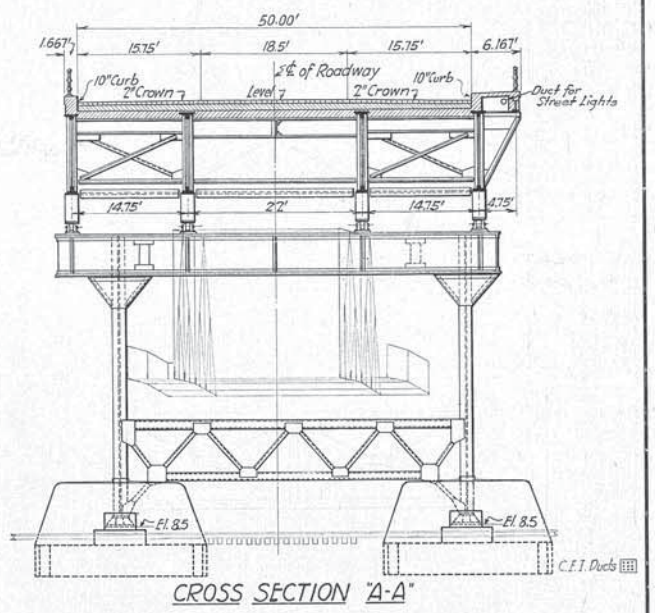
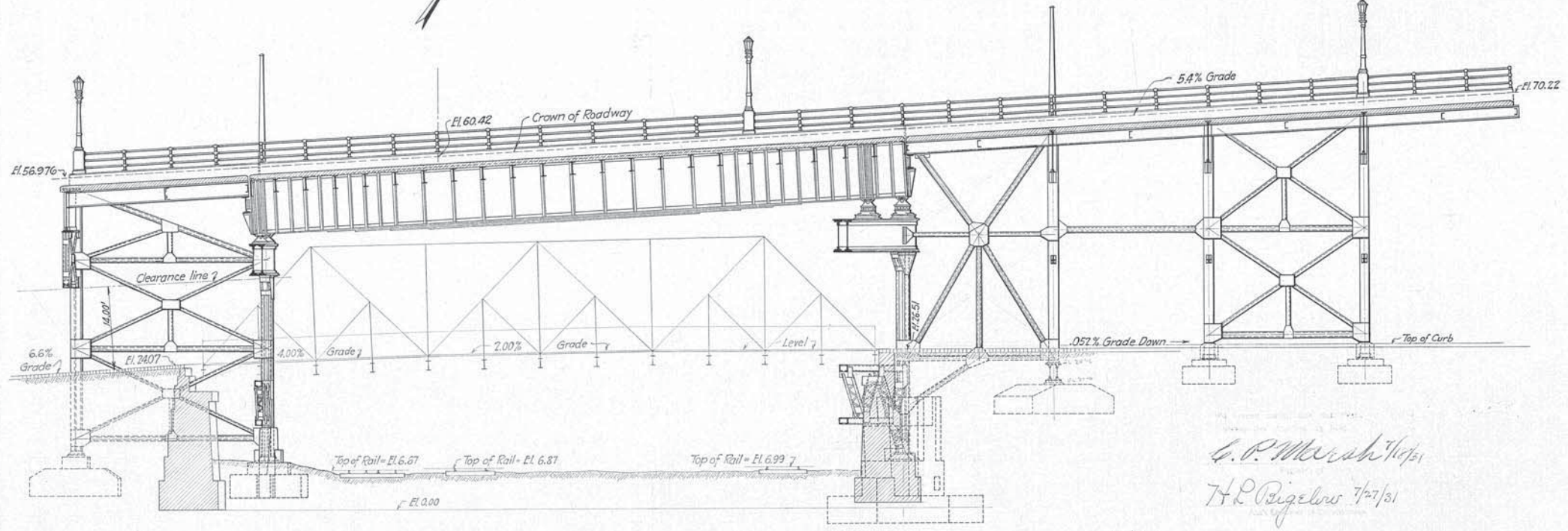
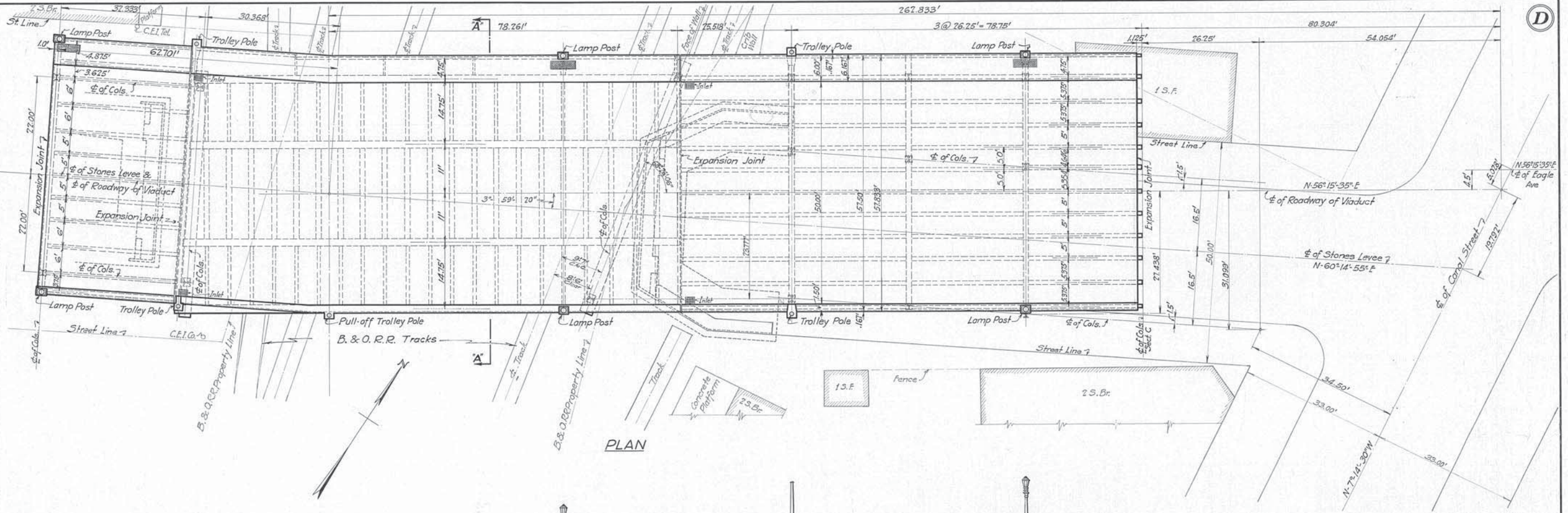
Approved *G.P. Marak* 6/29/29  
 Engineer of Structures  
 Approved *J.W. Sauer* 7/1/29  
 Principal Assistant Engineer  
 Approved *H.P. Beckwith* 6/29/29  
 Assistant Electrical Engineer  
 Approved *W. W. ...* 6/29/29  
 Engineer of Construction

We hereby certify that this Plan shows the structure as built.  
 Plan Approved *G.P. Marak* 7/1/29  
 CITY OF CLEVELAND  
 By **ROBERT HOFFMANN**  
 Commissioner of Engineering & Construction  
 Date July 27, 1929.  
 For Original of this Signature See Blue Print filed under No 113-039 S

THE CLEVELAND UNION TERMINALS CO.  
**EAGLE AVE. VIADUCT-SECTION "C"**  
 PLAN AND DETAILS OF STAIRWAY TO CANAL ST.  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: AS SHOWN  
 ISSUE: 7  
 DATE: 6-5-29  
 REVISED: May 26, 1931  
 Chief Engineer



- Issue No. A Oct. 10, 1925  
**REVISIONS:-**  
 Issue No. B Oct. 16, 1925  
 Changed Spacing of Cols. East of B. & O. R.R. Changed Existing Truss over B. & O. R.R.  
 Issue No. C Dec. 10, 1925  
 Added Cross Section of Roadway. Revised Expansion Joint. Changed Title.  
 Issue No. 1 Dec. 14, 1925  
 Signed By Chief Engineer.  
 Issue No. 2 Jan. 6, 1926.  
 Added Note.  
 Issue No. 3 Oct. 1, 1926  
 Lengthened Span over B. & O. R.R. Drawing Traced.  
 Issue No. 4 Dec. 9, 1926  
 Minor Changes. Drawing Checked.  
 Issue No. 5 Mar. 25, 1927.  
 Removed paving dams. Changed 5.597% Grade to 5.4%. Revised Bracing between Columns.  
 Issue No. 6 Sept. 29, 1927  
 Manholes for transformers added. Notes revised and added. Revised Section A-A and longitudinal section.  
 Issue No. 7 Oct. 11, 1927  
 Made a few minor corrections.  
 Issue No. 8 Nov. 7, 1927  
 Approved by Commissioner of Engineering and Construction, City of Cleveland.  
 Issue No. 9 May 26, 1931  
 Plan conforms to structure as built.



Approved \_\_\_\_\_  
 Engineer of Structures  
 Approved \_\_\_\_\_  
 Principal Assistant Engineer  
 Approved \_\_\_\_\_  
 Assistant Electrical Engineer  
 Approved \_\_\_\_\_  
 Engineer of Construction

Designed By: H.S.N. Sept. 23, 1926  
 Detailed By: H.S.N. Sept. 28, 1926  
 Traced By: S.H. Oct. 1, 1926  
 Checked By: P.E.B. Dec. 9, 1926  
 Correct: M.S. 1927  
 J.L. Graham  
 Designing Engineer

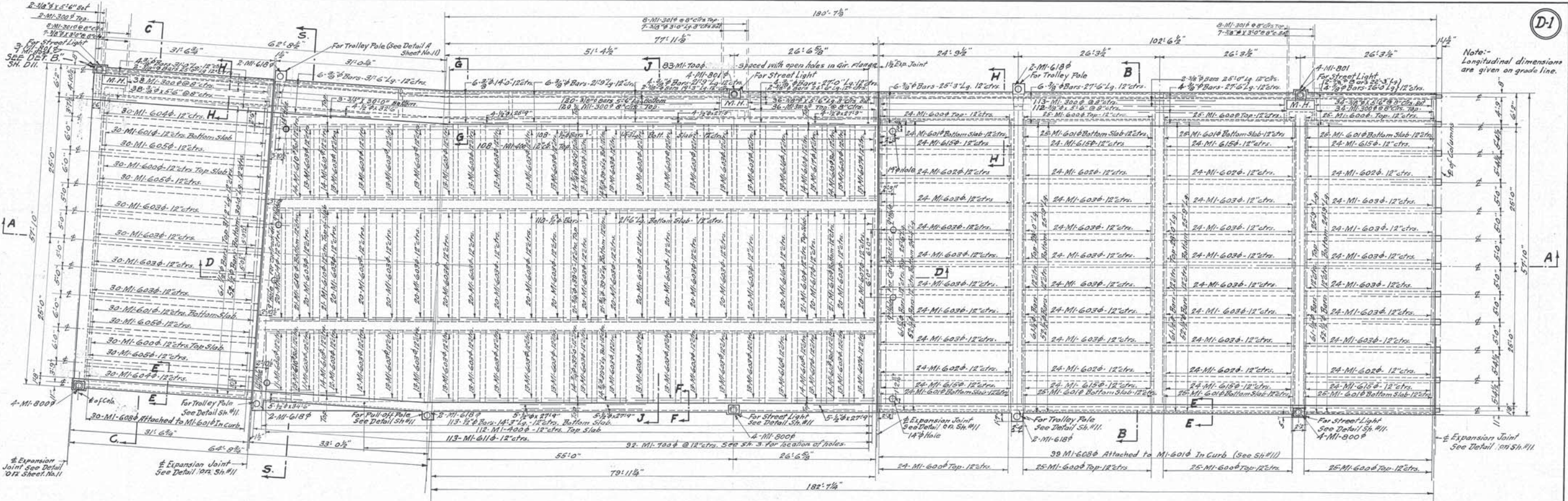
PLAN APPROVED:  
**CITY OF CLEVELAND**  
 By: *Robert Hoffman*  
 Commissioner of Engineering & Construction  
 Date: Oct. 26, 1927. For Original of this Signature, see blue print filed under: M113-0393.

Note:  
 All exposed concrete to have a hard dense smooth surface uniform in texture and color.

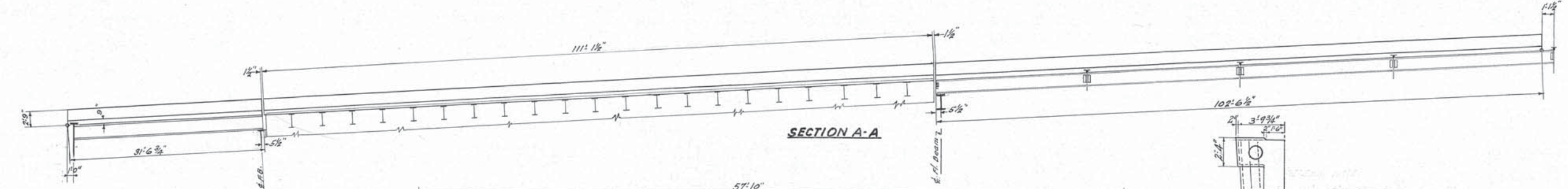
Note:-  
 Substructure and Superstructure:-  
 Concrete Class-2-(1-2-4) Approx. Mix (6 bags of cement to cu yd)  
 Waterproofing Protection:-  
 Concrete Class-2-(1-2-4) Approx. Mix (6 bags of cement to cu yd)  
 Concrete Fill:- Class-3-(1-3-6) Approx. Mix (4 1/2 bags of cement to cu yd)  
 All Structural Steel Designed in Accordance (Not in this contract) with The Cleveland Union Terminals Co's "Specifications for Steel Highway Bridges and Viaducts", except as Noted on the General Plan and Elevations - Sheet No. 1  
 Trolley Poles and Light Poles furnished and installed by others.  
 Pavement 4" Medina Block on 1 1/2" granulated Slag Cushion. - Not in this Contract.  
 Max. Soil Pressure - 6000 lbs per sq. ft.  
 Chamfer all exposed edges and corners of concrete 3/8" unless otherwise shown.

**THE CLEVELAND UNION TERMINALS CO.**  
**EAGLE AVE. VIADUCT SECTION "D"**  
**PORTION IN STONES LEEVE BETWEEN CANAL ST. & WEST LINE OF B. & O. R.R.**  
**GENERAL PLAN AND SECTIONS**  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 Scale: 1" = 10'  
 Date: Oct. 13, 1926.  
 Revised: \_\_\_\_\_  
 Issue No. \_\_\_\_\_  
*B.S. Smith*  
 CHIEF ENGINEER

Issue No. A Dec. 31, 1925.  
**REVISIONS:-**  
 Issue No. B Oct. 9, 1926.  
 Span over B.&O. R.R. changed.  
 Minor Revisions. Steel Redrawn.  
 Issue No. C Apr. 22, 1927.  
 Revised for Changes in Expansion  
 Joint & Grade.  
 Issue No. D Sept. 28, 1927.  
 Added manholes for transformer  
 chamber.  
 Added holes for track drainage.  
 Minor revisions.  
 Issue No. 1 Oct. 17, 1927.  
 Signed by Chief Engineer.  
 Issue No. 2 Nov. 7, 1927.  
 Approved by Commissioner of  
 Engineering and Construction  
 City of Cleveland.  
 Issue No. 3 Nov. 14, 1927.  
 Minor revisions.  
 Issue No. 4 Feb. 17, 1928.  
 Changed locations of drain holes.  
 Issue No. 5 May 26, 1931.  
 Plan conforms to structure  
 as built.



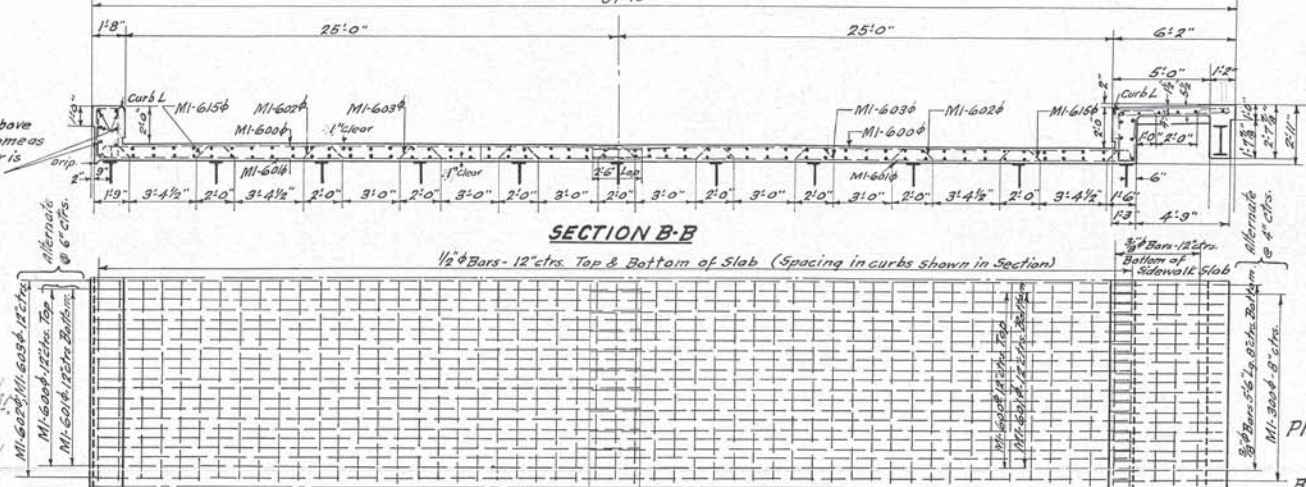
**PLAN**



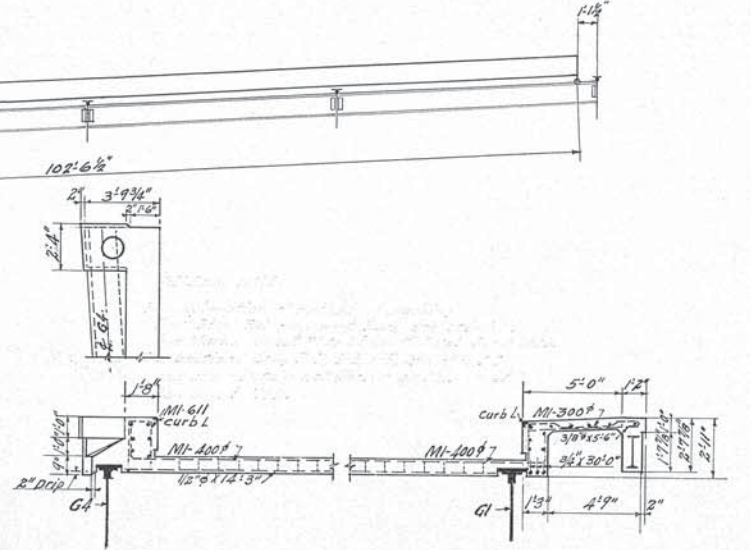
**SECTION A-A**

**GENERAL NOTE:**  
 FOR EXPLANATION OF METHOD OF  
 MARKING BENT STEEL REINFORCEMENT  
 BARS, SEE STANDARD BAR MARKS, SH. I,  
 OF ISSUE No. 1, DATED JAN. 3, 1926. FOR  
 SECTIONS C-C, D-D, E-E, F-F, G-G, H-H,  
 J-J AND OTHER DETAILS NOT SHOWN  
 ON THIS SHEET SEE SHEET No. D11.  
 ALL S&B STEEL TO HAVE 1" OF CONCR.  
 COVERING.  
 DETAIL OF TRANSFORMER CHAMBER  
 ON SHEET D11.

Note: All bars in both curbs above  
 middle of floor slab are the same as  
 top bars in slab. The number is  
 included in the figure billed.



**SECTION B-B**



**SECTION S-S**  
 SCALE 1/4"=1'-0"

Designed by... R.C.N. Dec. 22, 1925.  
 Detailed by... S.H. Oct. 9, 1926.  
 Traced by... F.H.D. June 19, 1927.  
 Checked by... E.A.B. May 4, 1927.  
 Corrected by... May 5, 1927.  
 DESIGNING ENGINEER

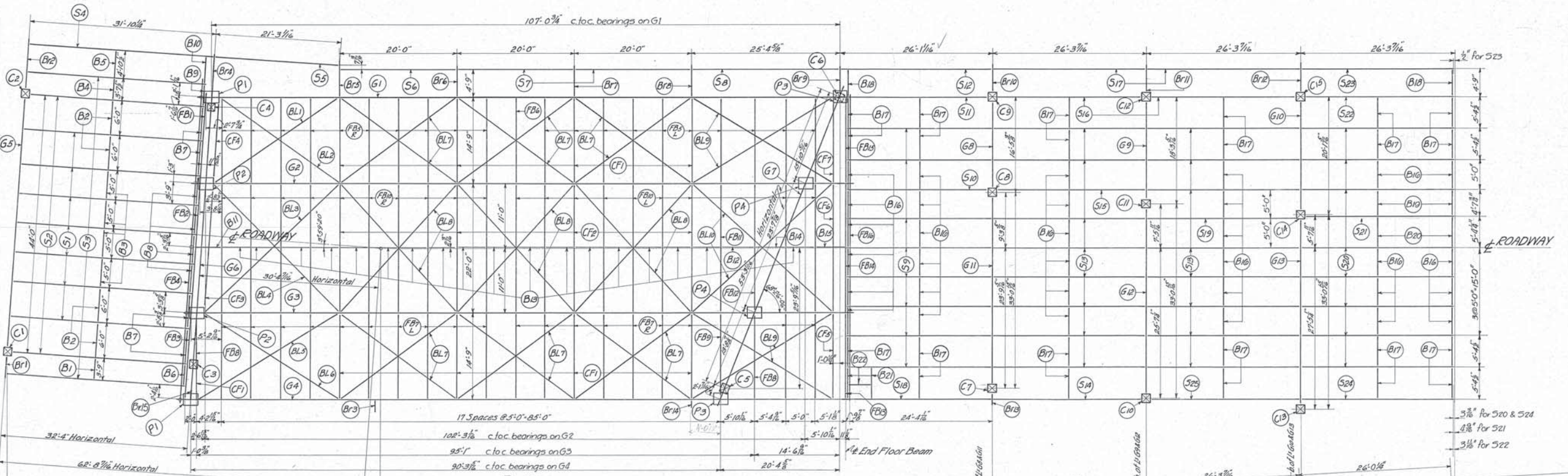
Approved... *[Signature]* 10/10/27  
 Engineer of Structures  
 Approved... *[Signature]* 11/1/27  
 Principal Assistant Engineer  
 Approved... *[Signature]* 11/17/27  
 Assistant Electrical Engineer  
 Approved... *[Signature]* 12/15/27  
 Engineer of Construction.

*[Signature]* 7/27/31  
 Chief Engineer

2" Top For MI-6006 & MI-6016  
**PART PLAN**  
 Scale 1/4"=1'-0"

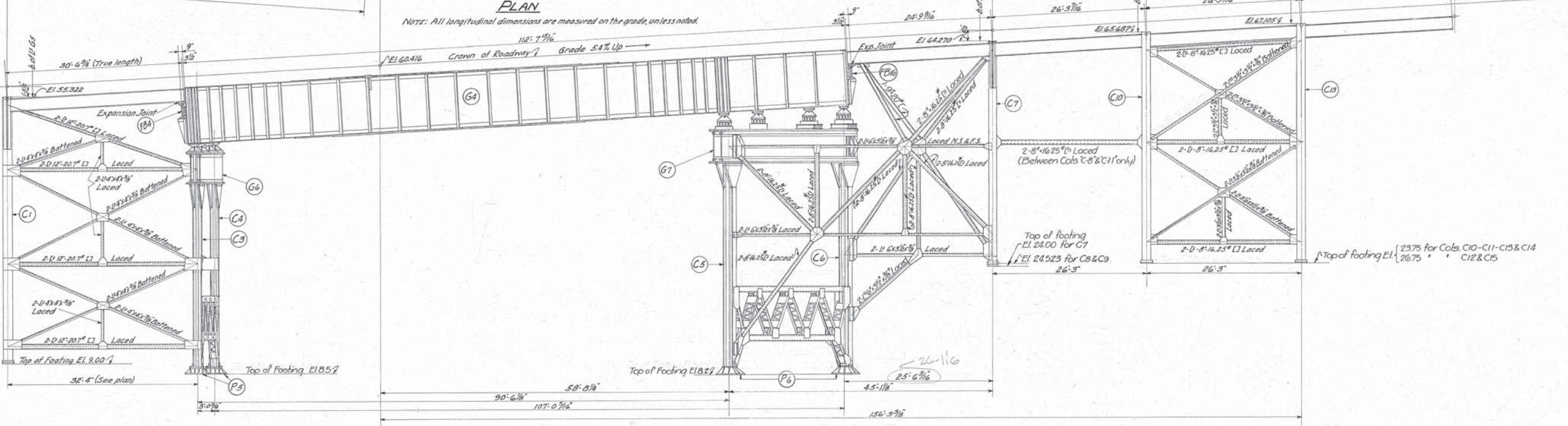
Plan Approved  
**CITY OF CLEVELAND**  
 By *[Signature]*  
 Commissioner of Engineering & Construction  
 Date Oct. 26, 1927. -- blue print filed under No. 113-0395.  
 THE CLEVELAND UNION TERMINALS CO.  
**EAGLE AVE. VIADUCT SECTION "D"**  
 PORTION IN STONES LEVEE BETWEEN  
 CANAL ST. & WEST LINE OF B.&O. R.R.  
 PLAN & SECTIONS OF CONCRETE DECK.  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 3/8"=1'-0" Unless Noted  
 ISSUE No. 1  
 DATE, December 31, 1925  
 REVISIONS  
*[Signature]*  
 CHIEF ENGINEER

Issue No. A Dec. 30, 1925  
 Revisions:  
 Issue No. B Jan. 5, 1926  
 Added lateral bracing on girder spans.  
 Issue No. C Oct. 21, 1926  
 Revised and redrawn.  
 Issue No. D April 28, 1927  
 Bracing revised.  
 Issue No. E Aug. 22, 1927  
 Revised marks and dimensions.  
 Issue No. 1 Sept. 29, 1927  
 Approved by Chief Engineer.  
 Changed elevations for bottoms of Columns C7 to C15 inclusive.  
 Changed erection marks and stringer spacing at East End.  
 Issue No. 2 Oct. 8, 1927  
 Revised wind bracing, changed some erection marks & made other minor revisions.  
 Issue No. 3 Oct. 21, 1927  
 Minor revisions made.  
 Issue No. 4 Nov. 5, 1927  
 Changed weights of 8" x 8" in bracing from 14.5 to 16.25 to agree with sheet "D9".  
 Issue No. 5 Nov. 7, 1927  
 Approved by Commissioner of Engineering and Construction City of Cleveland.  
 Issue No. 6 Nov. 29<sup>th</sup>, 1927  
 Changed Elevation for Top of Footing for Cols C5 & C6 from 8.00 to 8.2.  
 Issue No. 7 May 27, 1931  
 Plan conforms to structure as built.



PLAN

NOTE: All longitudinal dimensions are measured on the grade, unless noted.



ELEVATION

Designed by H.S.N. Oct. 15, 1926  
 Detailed by F.A.B. Oct. 21, 1926  
 Traced by W.H.T. Aug. 22, 1927  
 Checked by H.S.N. May 4<sup>th</sup>, 1927  
 Corrected May 5, 1927  
 J.S. Dorman  
 Designing Engineer

Approved G.P. Mersick 7/27/27  
 Engineer of Structures  
 Approved J.W. Borden 7/27/27  
 Principal Assistant Engineer  
 Approved H.W. Lusk 7/27/27  
 Assistant Electrical Engineer  
 Approved W.M. Dulo 7/27/27  
 Engineer of Construction

We hereby certify that this Plan shows the structure as built.  
 G.P. Mersick 7/27/27  
 Engineer of Structures  
 H.P. Bigelow 7/27/27  
 Asst. Engineer of Construction

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date Oct. 26, 1927.  
 For Original of this signature see blue print filed under No. 113-0395.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT SECTION "D"  
 PORTION IN STONES LEEVE BETWEEN CANAL ST & WEST LINE OF B. & O. R.R.  
 STRUCTURAL STEEL FRAMING PLAN  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/4" = 1'-0"  
 ISSUE NO. 7  
 DATE: DEC. 30, 1925  
 REVISED: May 27, 1931  
 J.S. Dorman  
 Chief Engineer

Issue No A Dec. 24, 1925.

REVISIONS: Issue No B July 14, 1927. Made Several Corrections and Additions after Checking. Drawing Traced. Issue No 1 Sept. 29, 1927. Approved by Chief Engineer. Issue No 2 Oct. 15, 1927. Added List for Floor Beams & Cross Frames. Minor changes. Issue No 3 October 17, 1927. Made minor changes. List of Stringers added. Issue No 4 October 21, 1927. Changed Flange splice angles on "G4". Issue No 5 Nov. 7, 1927. Approved by Commissioner of Engineering and Construction City of Cleveland. Issue No 6 May 26, 1931. Plan conforms to structure as built.

LIST OF STRINGERS

Table with 4 columns: MARK, NO, SECTION, REMARKS. Rows include stringers 55, 56, 57, 58.

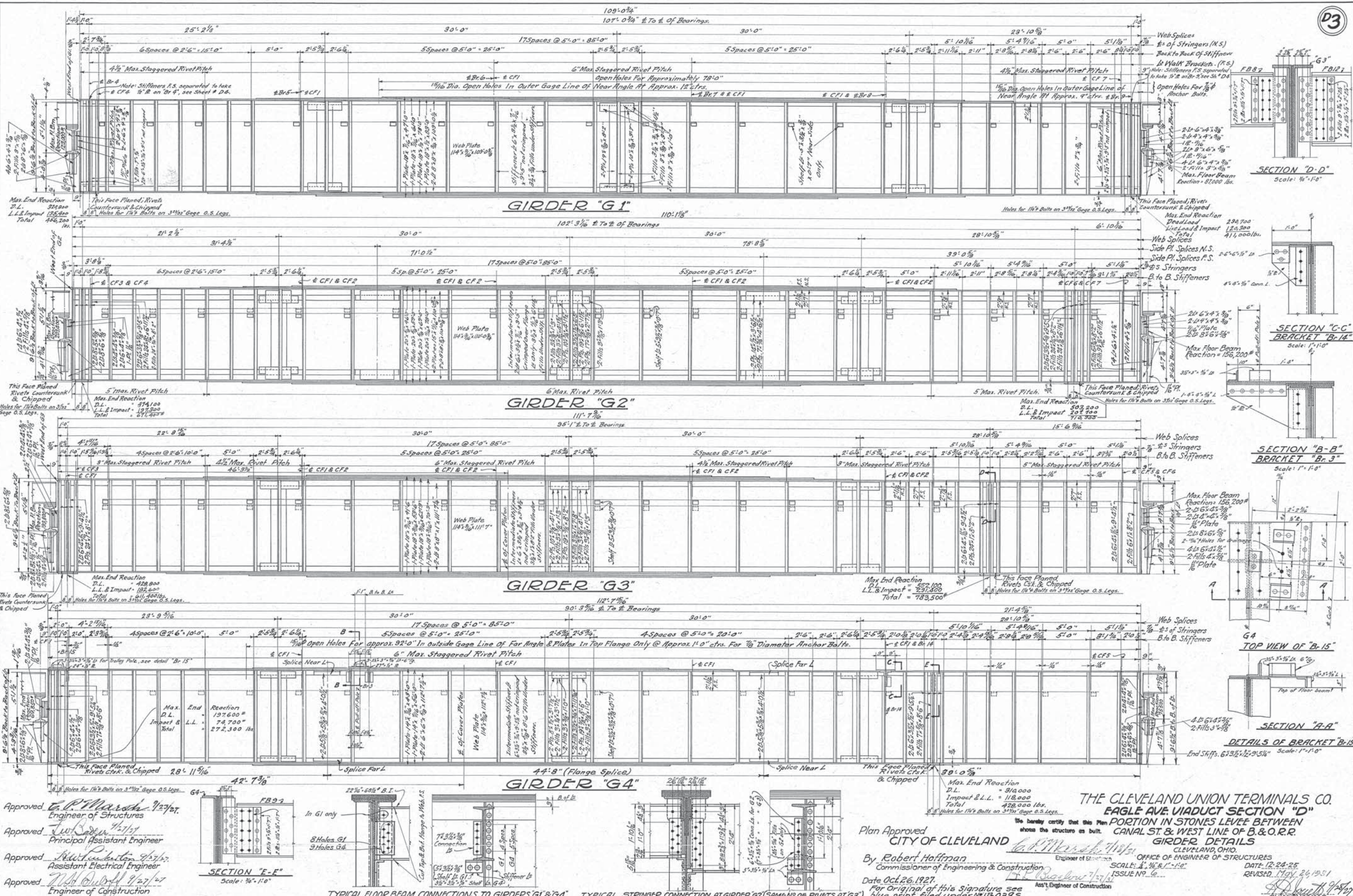
LIST OF FLOOR BEAMS

Table with 4 columns: MARK, NO, SECTION, REMARKS. Rows include floor beams FB1 through FB16.

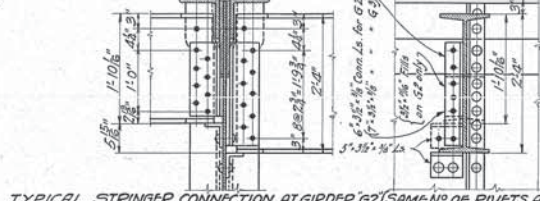
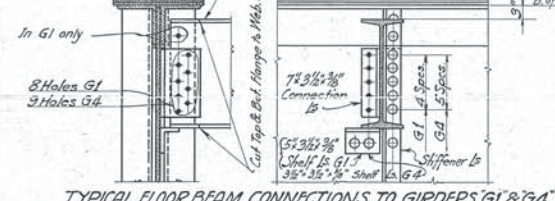
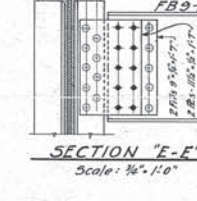
LIST OF CROSS FRAMES

Table with 4 columns: MARK, NO, SECTION, REMARKS. Rows include cross frames B11 through B15.

Designed By H.S.N. Dec. 24, 1925. Detailed By M.J.D. Dec. 24, 1926. Traced By F.H.D. and S.H.J. 1927. Checked By H.S.N. 5-4-1927. Correct May 5, 1927. Designing Engineer.

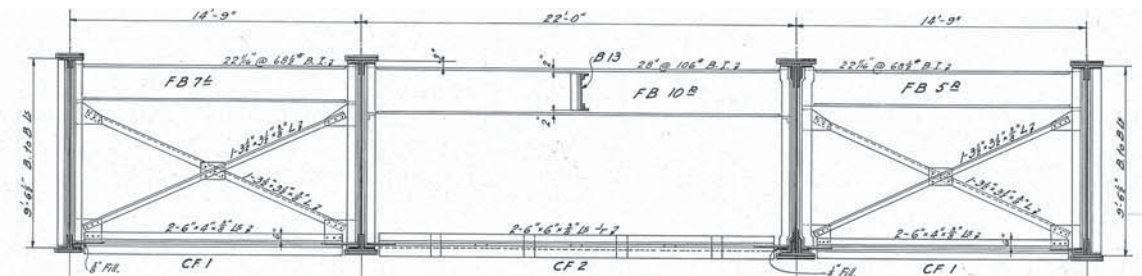


Approved by C.P. Marsh, Engineer of Structures. Approved by W.C. ... Principal Assistant Engineer. Approved by ... Assistant Electrical Engineer. Approved by ... Engineer of Construction.

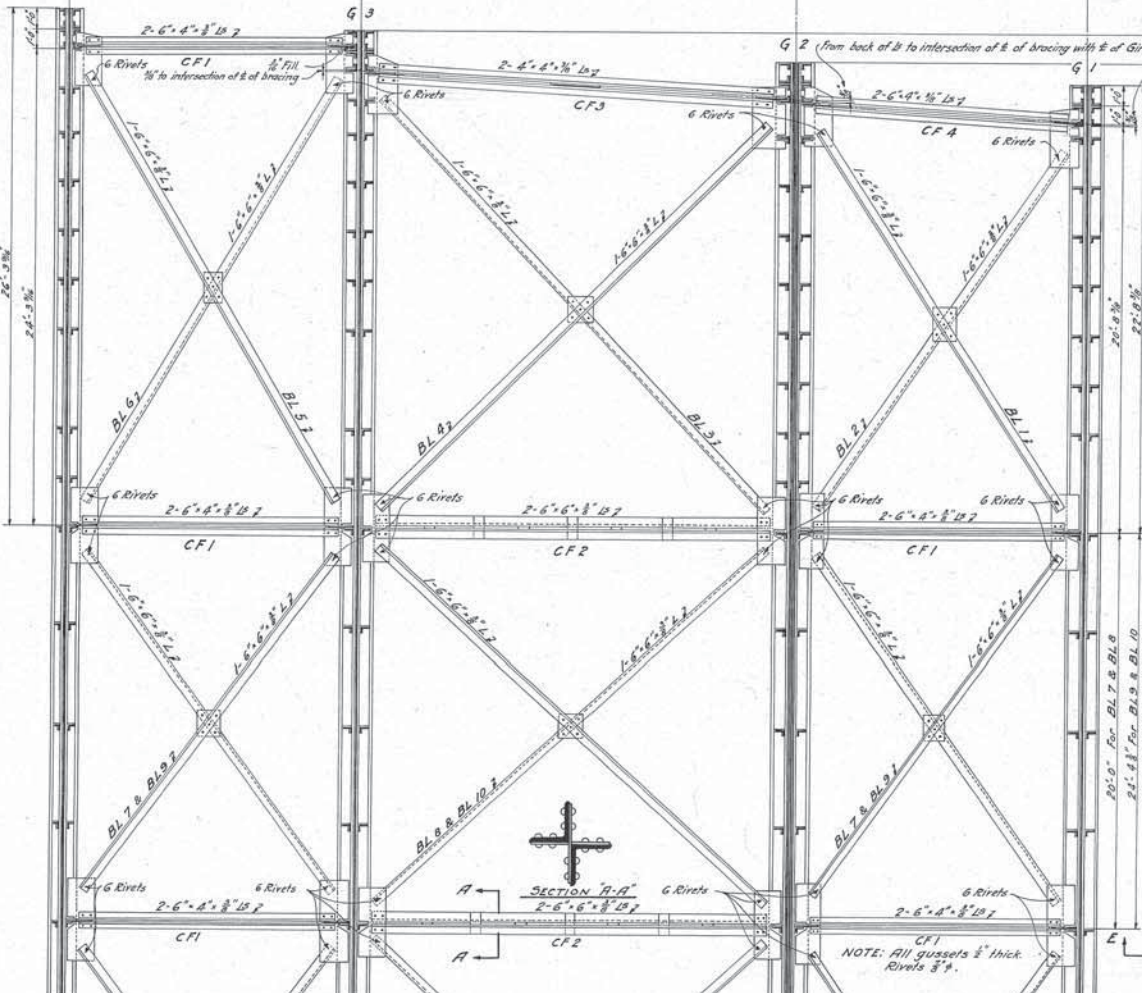


THE CLEVELAND UNION TERMINALS CO. EAGLE AVE VIADUCT SECTION "D" PORTION IN STONES LEVEE BETWEEN CANAL ST. & WEST LINE OF B.&O.R.R. GIRDER DETAILS. Plan Approved by City of Cleveland. By Robert Hoffman, Commissioner of Engineering & Construction. Date Oct. 26, 1927. For Original of this Signature see blue print filed under N113-0395.

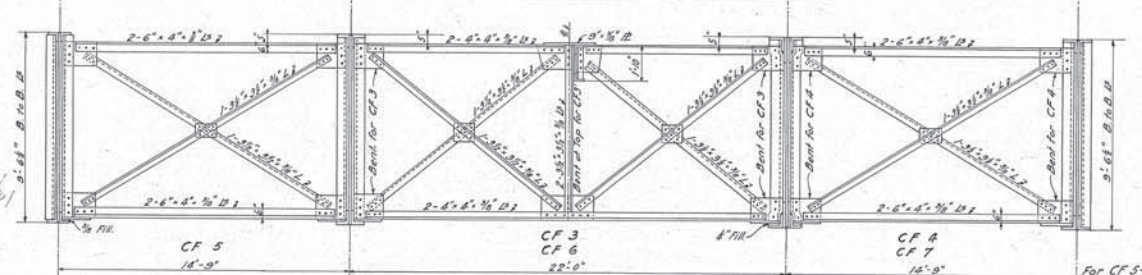
Revisions:  
 Issue No. B Jan. 31, 1927.  
 Revised and redrawn.  
 Issue No. C July 1, 1927.  
 Revised, redrawn & more details added.  
 Issue No. 1 Sept. 29, 1927.  
 Approved by Chief Engineer.  
 Issue No. 2 Oct. 13, 1927.  
 Added Section "G-G" & Section "H-H".  
 Minor changes.  
 Issue No. 3 Oct. 21, 1927.  
 Minor changes.  
 Issue No. 4 Nov. 7, 1927.  
 Approved by Commissioner of  
 Engineering and Construction  
 City of Cleveland.  
 Issue No. 5 May 26, 1931.  
 Plan conforms to structure  
 as built.



INTERMEDIATE CROSS BRACING



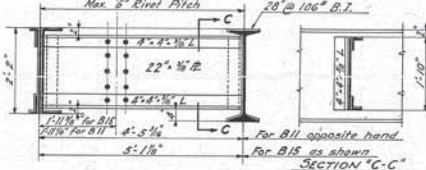
PLAN SHOWING BOTTOM LATERAL BRACING



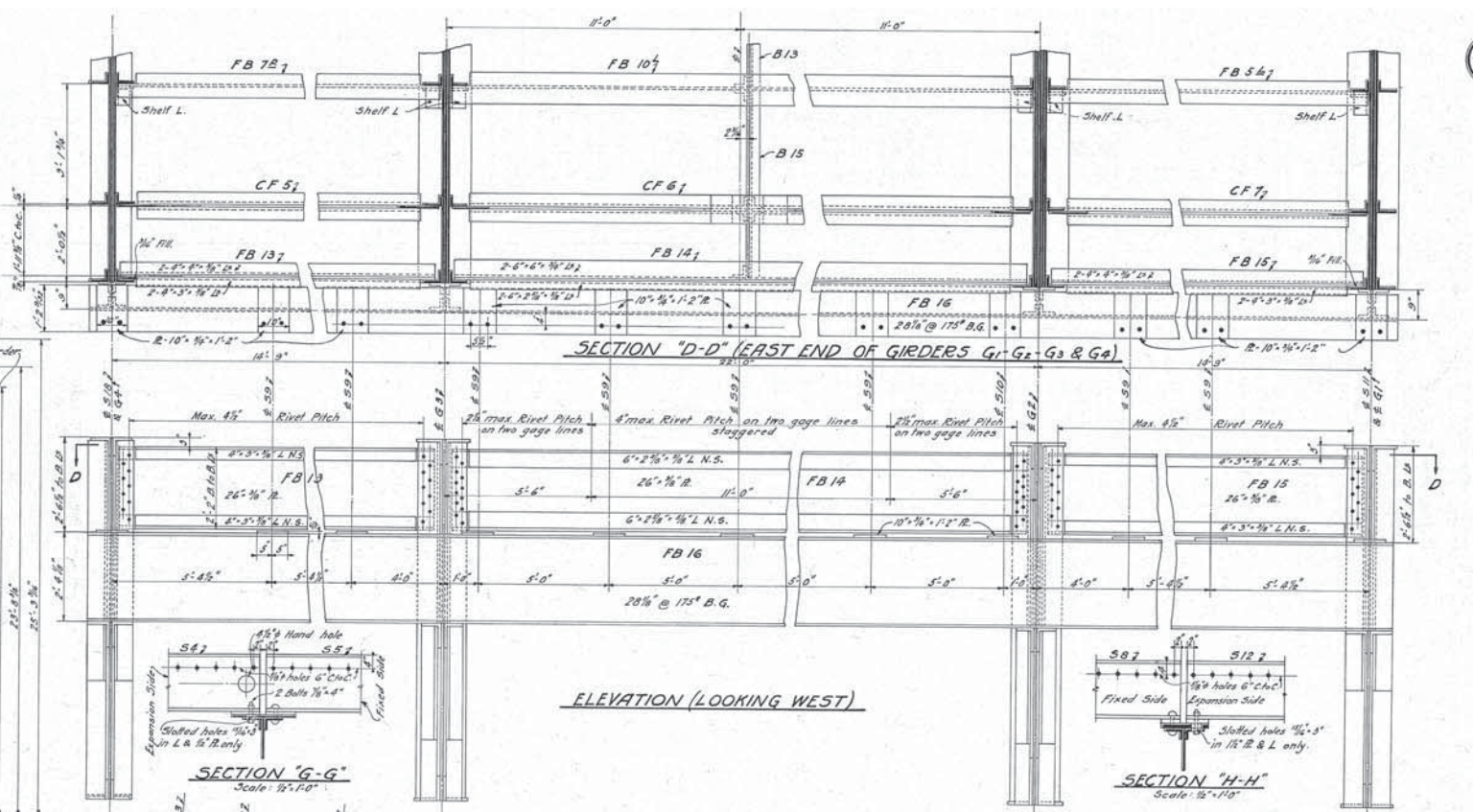
END CROSS BRACING



DETAILS OF CROSS FRAMES B12, B13 & B14



DETAILS OF CROSS FRAMES B11 & B15

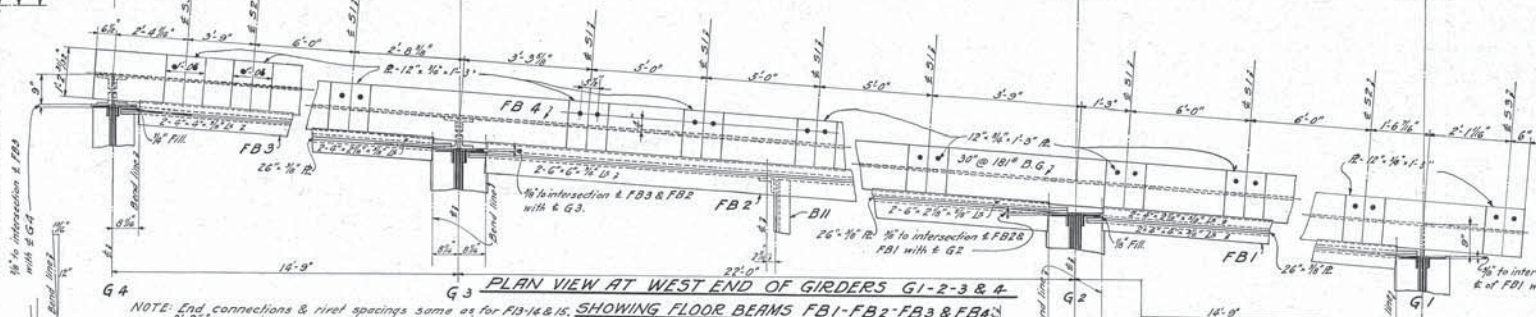


SECTION "D-D" (EAST END OF GIRDERS G1-G2-G3 & G4)

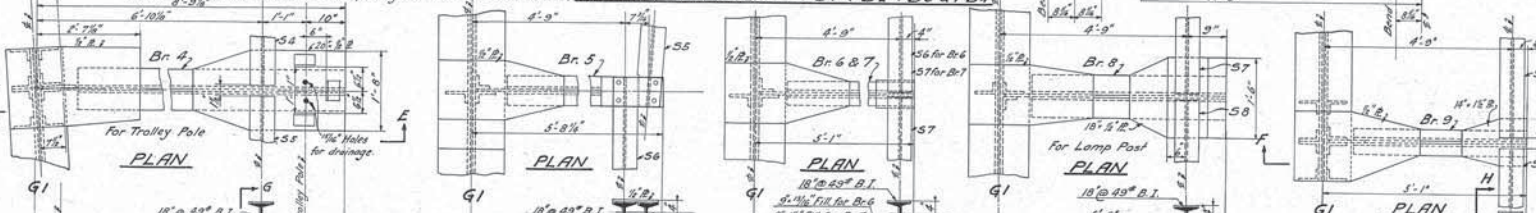
ELEVATION (LOOKING WEST)

SECTION "G-G"

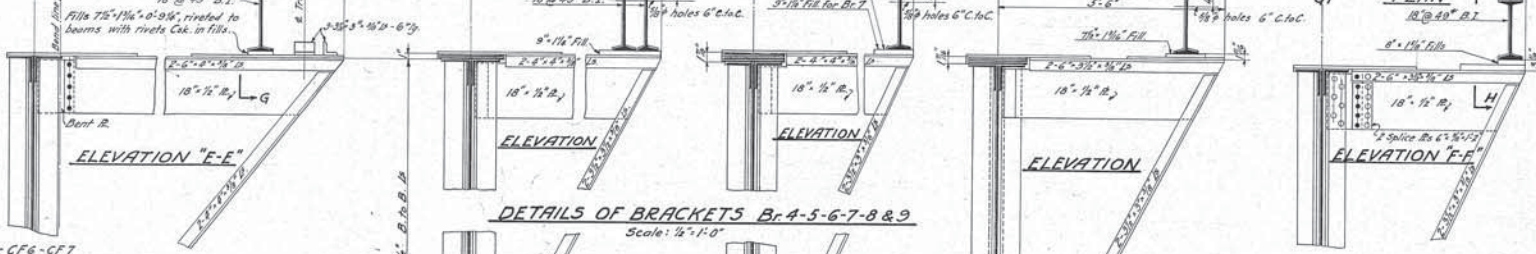
SECTION "H-H"



PLAN VIEW AT WEST END OF GIRDERS G1-2-3 & 4, SHOWING FLOOR BEAMS FB1-FB2-FB3 & FB4



DETAILS OF BRACKETS Br 4-5-6-7-8 & 9



ELEVATION "E-E"

ELEVATION

ELEVATION

ELEVATION

ELEVATION "F-F"

We hereby certify that this Plan shows the structure as built.  
 C. P. Marsh  
 Engineer of Structures  
 J. L. Bigelow  
 Ass't Engineer of Construction

Designed by H.S.N. 1-31-1927.  
 Detailed by E.A.W. 5-28-1927.  
 Traced by E.A.W. 7-20-1927.  
 Checked by H.S.N. 5-4-1927.  
 Correct May 5, 1927.  
 J. S. Brennan  
 Designing Engineer

Approved C. P. Marsh 7/1/27  
 Engineer of Structures  
 Approved J. L. Bigelow 7/1/27  
 Principal Assistant Engineer  
 Approved J. W. ... 7/1/27  
 Assistant Electrical Engineer  
 Approved ... 7/1/27  
 Engineer of Construction

Plan Approved CITY OF CLEVELAND

Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date Oct. 26, 1927.  
 For Original of this Signature see blue print filed under N° 113-0375.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT-SECTION "D"  
 PORTION IN STONES LEVEE BETWEEN  
 CANAL ST. & WEST LINE OF B.&O.R.R.  
 MISCELLANEOUS DETAILS  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/8" = 1'-0"  
 ISSUE N° 5  
 DATE: December 24, 1926.  
 REVISED: May 26, 1931.  
 J. S. Brennan  
 Chief Engineer

Issue No A Dec. 30, 1925.

REVISIONS:-

Issue No B Oct. 30, 1926. Dimensions and Marks changed. Details and Material Added.

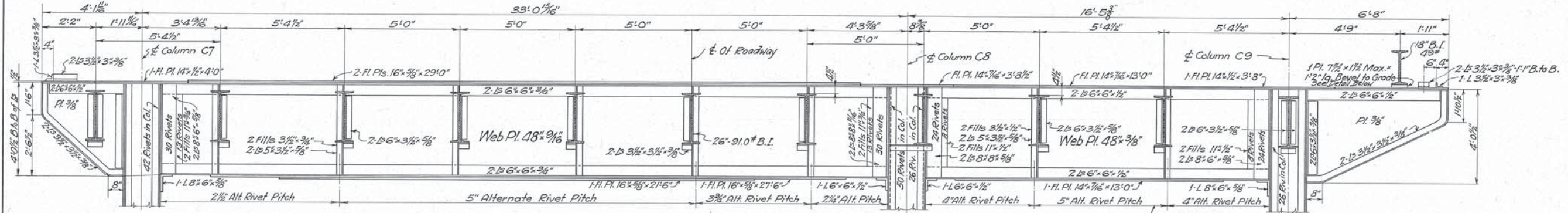
Issue No C Sept. 22, 1927. Redesigned and Redrawn. More Details Added.

Issue No 1 Sept. 29, 1927. Approved by Chief Engineer

Issue No 2 Oct 22, 1927. Minor Revisions Made

Issue No 3 Nov. 7, 1927. Approved by Commissioner of Engineering and Construction City of Cleveland.

Issue No. 4 May 26, 1931. Plan conforms to structure as built.

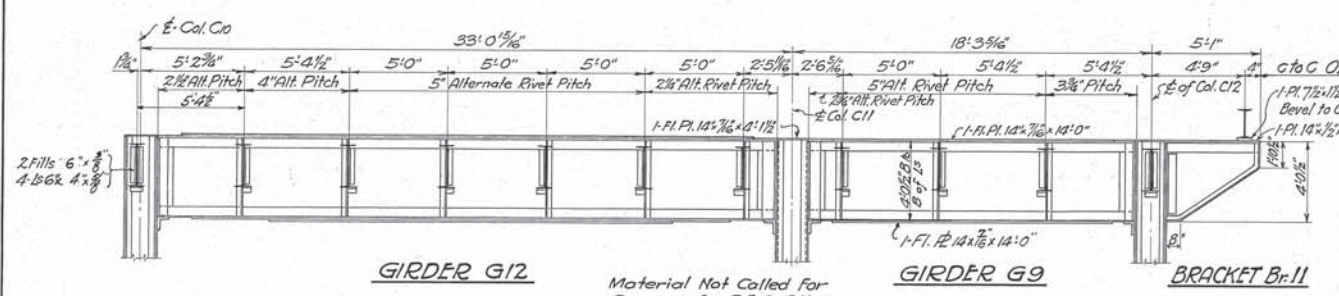


BRACKET Br.13

GIRDER G11

GIRDER G8

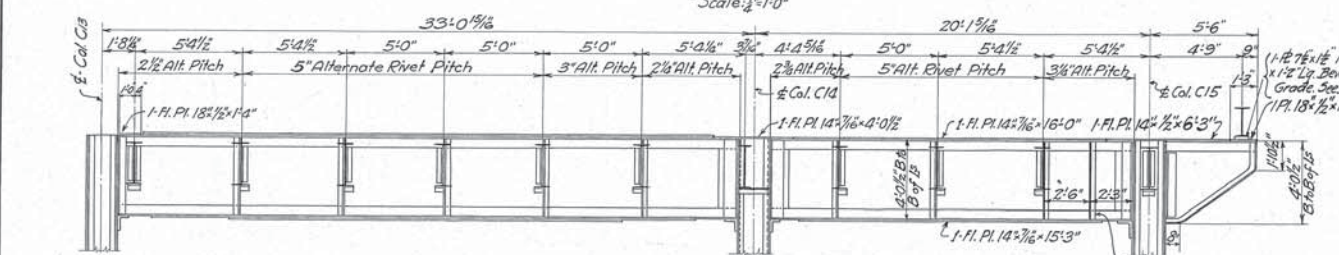
BRACKET Br.10



GIRDER G12

GIRDER G9

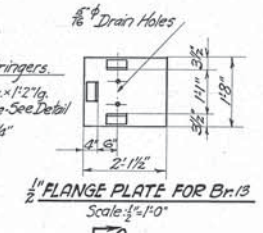
BRACKET Br.11



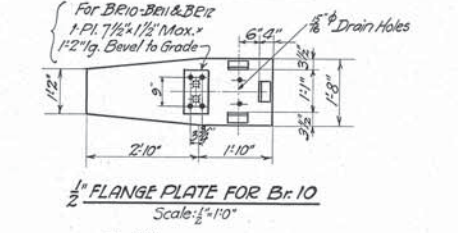
GIRDER G13

GIRDER G10

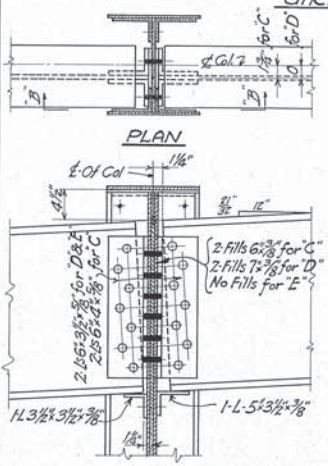
BRACKET Br.12



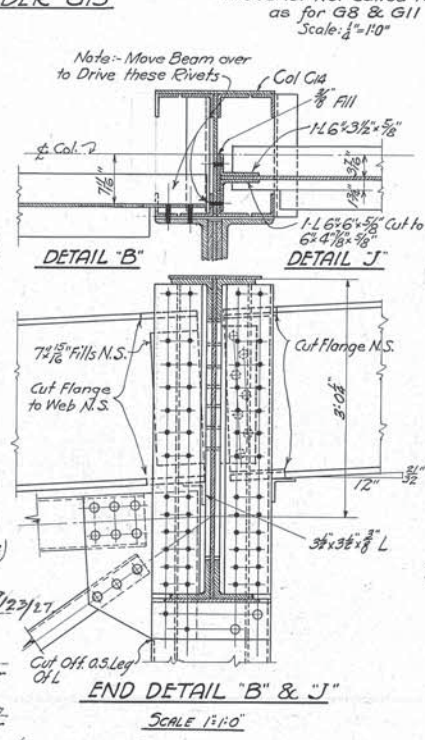
END DETAIL 'A' AT COLUMN C8



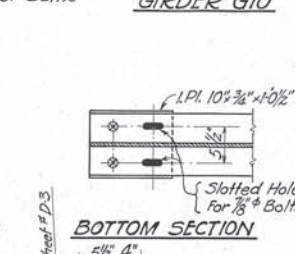
SECTION A-A



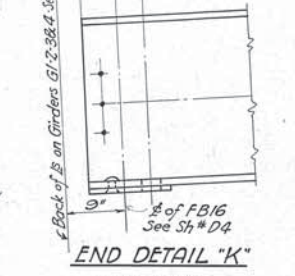
END DETAIL 'C' (At Col. C7)  
END DETAIL 'D' (At Col. C8)  
END DETAIL 'E' (At Br. 13 & G8)  
SECTION B-B



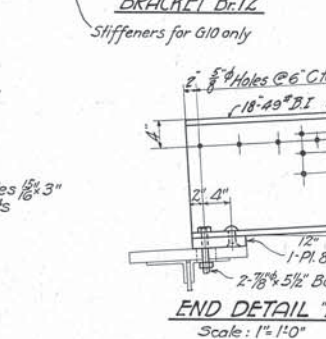
DETAIL 'B' & 'J'



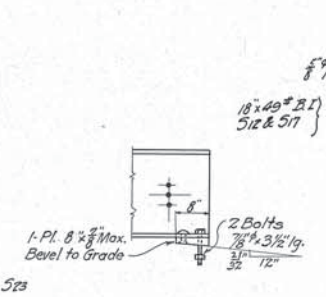
BOTTOM SECTION



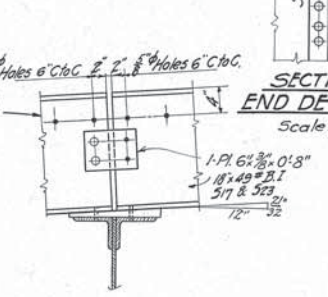
END DETAIL 'K'



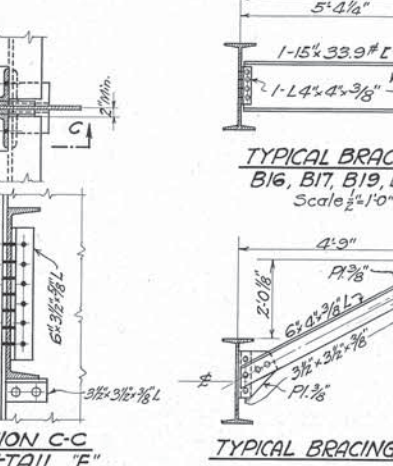
END DETAIL 'L'



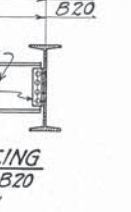
END DETAIL 'G'



END DETAIL 'H'



SECTION C-C  
END DETAIL 'F'



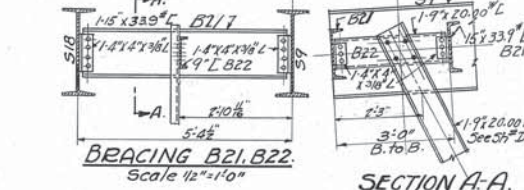
TYPICAL BRACING  
B16, B17, B19, B20



TYPICAL BRACING B18

LIST OF STRINGERS				
NO	MARK	SIZE	END DETAILS	
			EAST END	WEST END
8	S9	26"-91.0# B.I.	"F"	"K"
1	S10	Do	"A"	"K"
1	S11	Do	"D"	"K"
1	S12	18"-49# B.I.	"H"	"L"
16	S13	26"-91.0# B.I.	"F"	"F"
1	S14	Do	"C"	"E"
1	S15	Do	"F"	"A"
2	S16	Do	"D"	"D"
2	S17	18"-49# B.I.	"H"	"H"
1	S18	26"-91.0# B.I.	"E"	"K"
1	S19	Do	"B"	"F"
8	S20	Do	"G"	"F"
1	S21	Do	"G"	"J"
1	S22	Do	"G"	"D"
1	S23	18"-49# B.I.	"M"	"H"
1	S24	26"-91.0# B.I.	"G"	"E"
1	S25	Do	"E"	"C"

BRACING			
NO	MARK	SIZE	DETAIL
32	B16	15"-33.9# L	See Detail
23	B17	Do	Do
2	B18	6"x4"x3/8" L	Do
2	B19	15"-33.9# L	Do
2	B20	Do	Do
2	B21	15"-33.9# L	Do
1	B22	9"-20.00# L	Do



BRACING B21, B22



SECTION A-A

Designed By A.C.N. 12-30-1925  
Detailed By J.E.W. 10-30-1926  
Traced By S.H. 9-22-1927  
Checked By H.S.N. 5-4-1927  
Corrected May 5, 1927  
Designing Engineer

Approved E.L. Marsh 7/27/27  
Engineer of Structures  
Approved J.W. Adams 9/27/27  
Principal Assistant Engineer  
Approved H.W. Johnston 7/27/27  
Assistant Electrical Engineer  
Approved W.H. Oulafson 7/27/27  
Engineer of Construction

We hereby certify that this Plan shows the structure as built.  
E.L. Marsh 7/27/27  
Engineer of Structures  
H.P. Riggs 7/27/31  
Ass't Engineer of Construction  
Plan Approved  
CITY OF CLEVELAND  
By Robert Hoffman  
Commissioner of Engineering & Construction  
Date Oct. 26, 1927.  
For Original of this signature see blue print filed under No. 113-039.

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE. VIADUCT SECTION "D"  
PORTION IN STONES LEVEL BETWEEN CANAL ST. & WEST LINE OF B.&O.R.R.  
MISCELLANEOUS STEEL DETAILS  
CLEVELAND, OHIO.  
OFFICE OF ENGINEER OF STRUCTURES  
SCALE: AS SHOWN. DATE: 12-30-25.  
ISSUE NO. 4. REVISED: May 26, 1931  
Chief Engineer

Issue No. A Feb. 7, 1927  
Revisions

Issue No. B May 4, 1927  
Material in girders G5 & G6 modified

Issue No. C Aug. 24, 1927  
Changed the lower bracing in West and East bents.

Issue No. D Aug. 26, 1927  
Changed location of bolt holes in box girders, added detail of pedestals and other minor corrections.

Issue No. E Sept. 14, 1927  
Minor corrections made and drawing traced

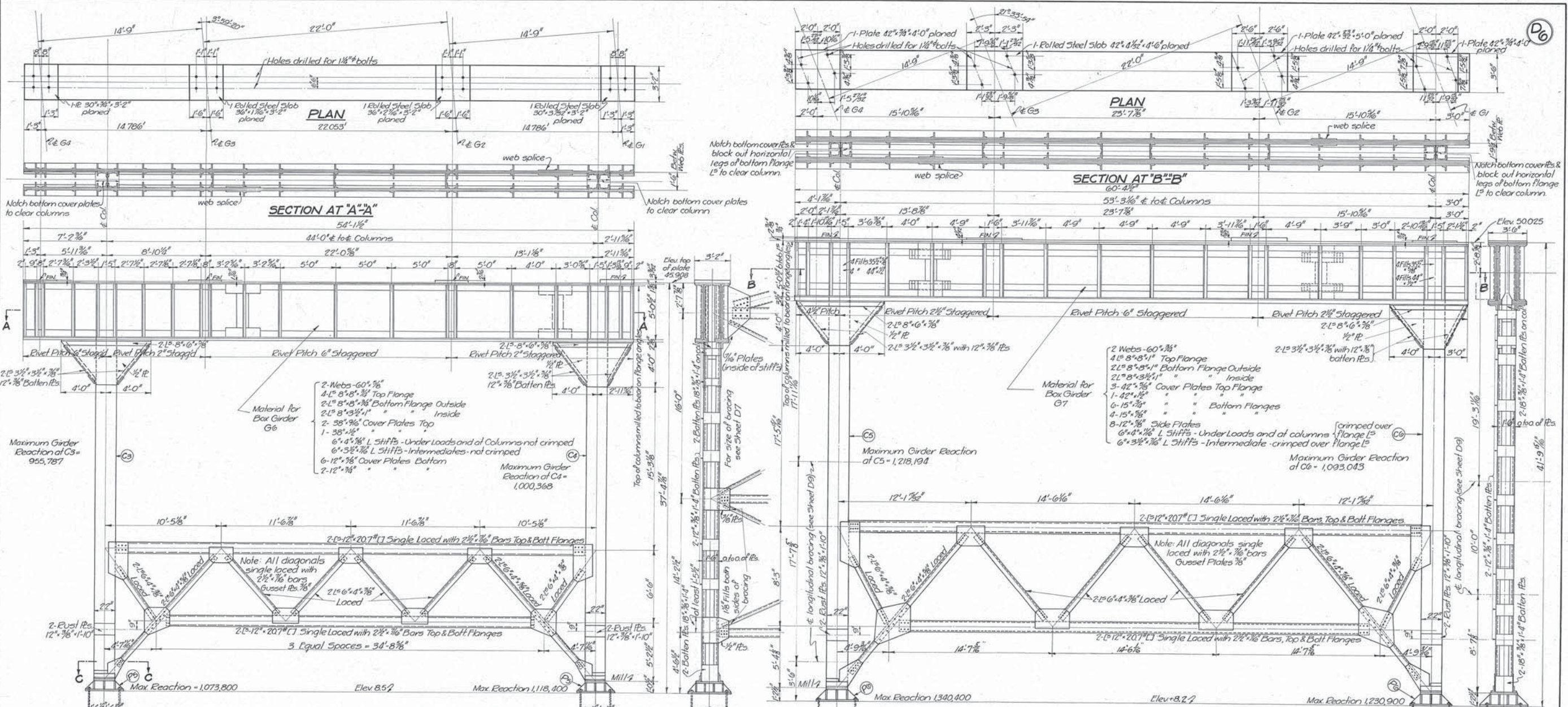
Issue No. F Sept. 29, 1927  
Approved by Chief Engineer.

Issue No. 2 Oct. 25, 1927  
Minor revisions made

Issue No. 3 Nov. 7, 1927  
Approved by Commissioner of Engineering and Construction City of Cleveland.

Issue No. 4 Nov. 29, 1927  
Changed Elevation of Bottom of Cols C5 & C6 to suit Column Material as ordered and revised dimensions affected by this change

Issue No. 5 May 26, 1931  
Plan conforms to structure as built.



See heavily certify that this Plan shows the structure as built.

*E. P. Marsh* 7/23/27  
Engineer of Structures

*H. P. Bigelow* 7/27/31  
Asst. Engineer of Construction

Designed By... H.S.N. Feb. 7, 1927.  
Detailed By... M.E.O. Feb. 9, 1927.  
Traced By... J.T.C. Sept. 14, 1927.  
Checked By... H.S.N. May 4, 1927.  
Corrected By... J.S. Cornman May 5, 1927.  
Designing Engineer

Approved *E. P. Marsh* 7/23/27  
Engineer of Structures

Approved *J. T. C.* 7/27/27  
Principal Assistant Engineer

Approved *H. P. Bigelow* 7/27/31  
Assistant Electrical Engineer

Approved *M. E. O.* 7/27/31  
Engineer of Construction

Note:  
For details of roller nests and pin bearings on top of girders see 5h D8.  
For details of footings see 5h D10 & D13.  
For details of protection piers see 5h D12.

Plan Approved  
**CITY OF CLEVELAND**  
By *Robert Hoffman*  
Commissioner of Engineering and Construction  
Date Oct. 26, 1927.  
For Original of this Signature see blue print filed under No. 113-0375.

**THE CLEVELAND UNION TERMINALS CO.**  
**EAGLE AVE. VIADUCT SECTION "D"**  
PORTION IN STONES LEEVE BETWEEN CANAL ST. & WEST LINE OF B. & O. R.R.  
DETAILS OF BENTS SUPPORTING MAIN GIRDERS  
CLEVELAND, OHIO  
OFFICE OF ENGINEER OF STRUCTURES  
SCALE: 3/8" = 1'-0"  
ISSUE NO. 5  
DATE: FEB. 7, 1927  
REVISED: MAY 26, 1931  
*E. P. Marsh* 7/23/27  
Chief Engineer

Issue NPA Dec. 30, 1925

Issue NPB Jan. 20, 1926  
 Revised size of angles in bracing.

Issue NPC Feb. 5, 1926  
 Changed length of Col. C9.

Issue NPD Nov. 3, 1926  
 Redesigned and Redrawn.  
 Elevation of Three Bents omitted.  
 Title of this Sheet changed.

Issue NPE July 1, 1927  
 Revised after checking.  
 Drawing Traced.

Issue NPF Sept. 17, 1927  
 Minor Revisions.

Issue NG Sept. 29, 1927  
 Approved by Chief Engineer.

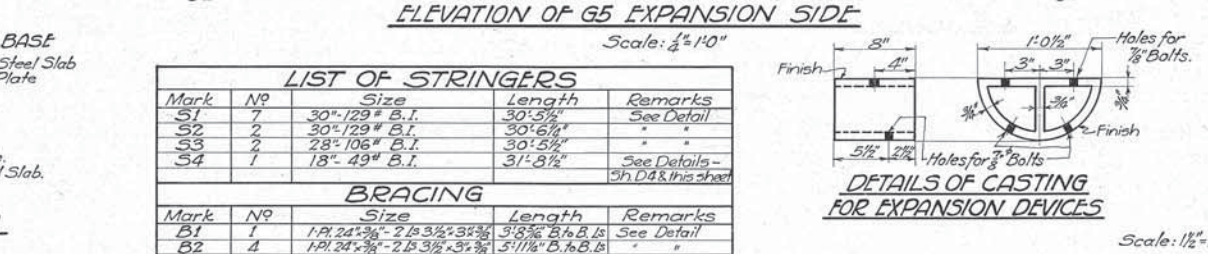
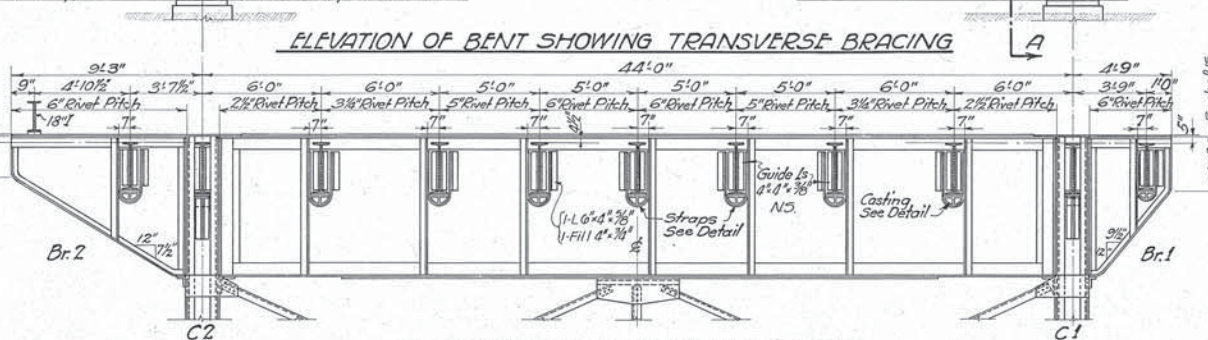
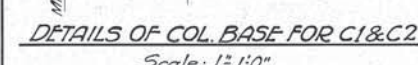
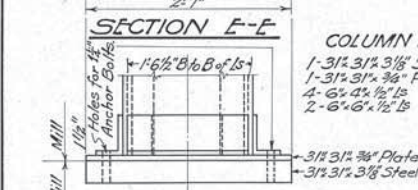
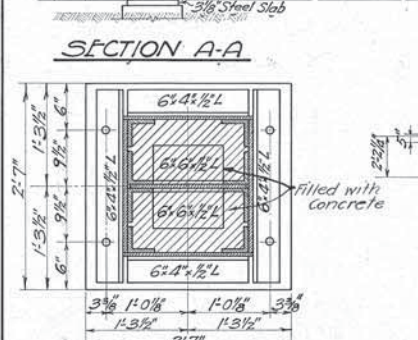
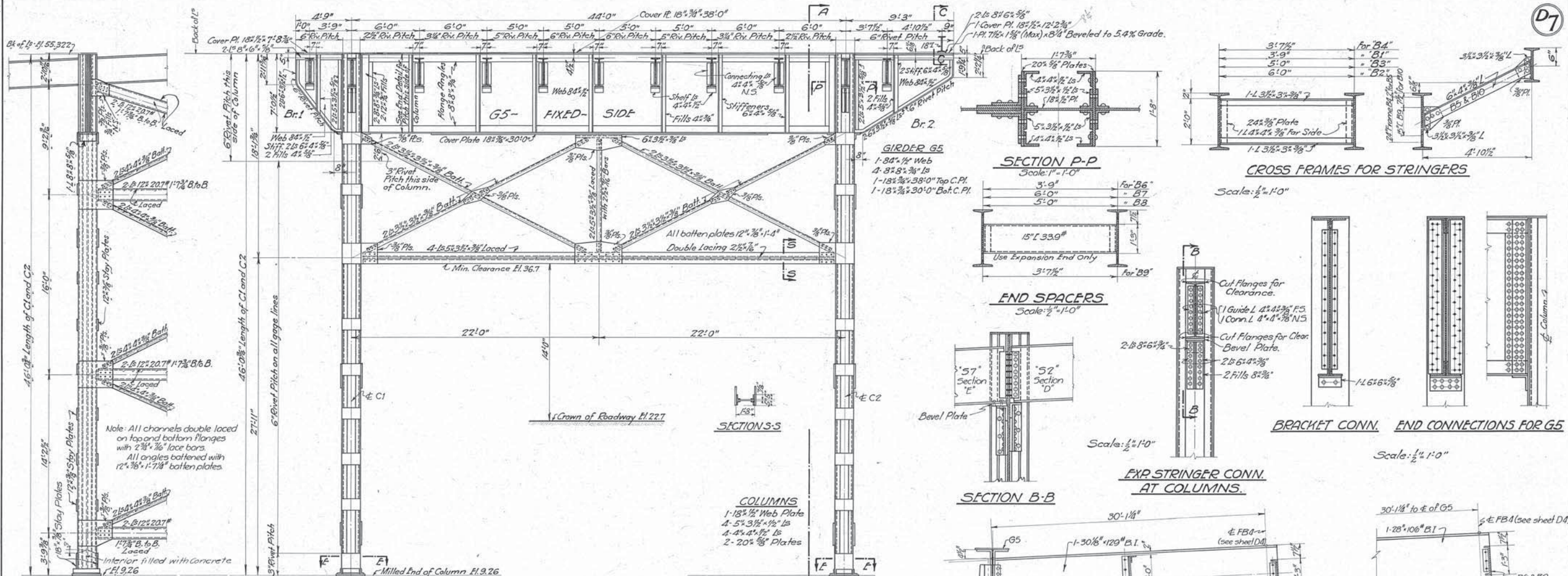
Issue N2 Oct. 15, 1927  
 Revised bolt holes in col. bases.

Issue N3 Oct. 18, 1927  
 Revised spacing of anchor bolt holes  
 in Column bases.

Issue N4 Oct. 28, 1927  
 Minor revisions made. Stringer  
 details added.

Issue N5 Nov. 7, 1927  
 Approved by Commissioner of  
 Engineering and Construction  
 City of Cleveland.

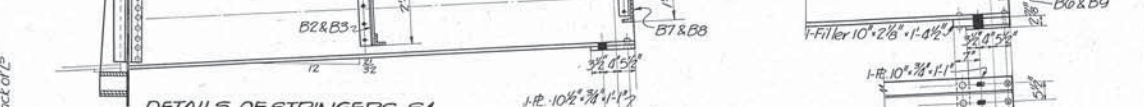
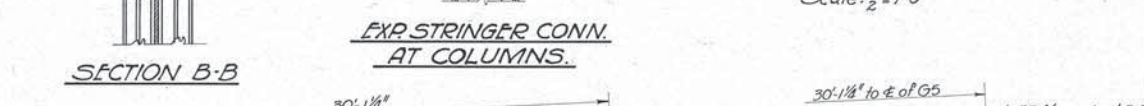
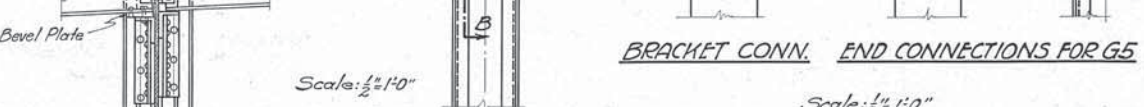
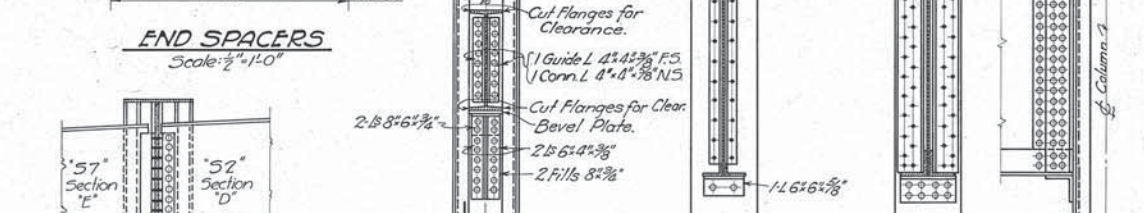
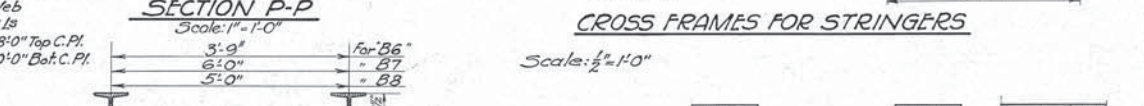
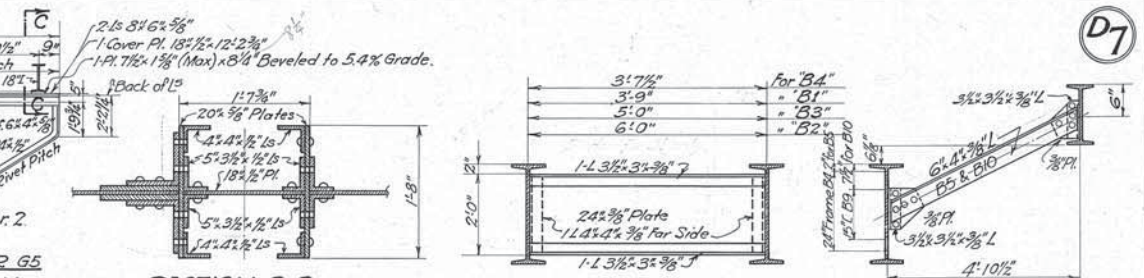
Issue N6 May 4, 1931  
 Plan corrected to conform to  
 structure as built.



LIST OF STRINGERS				
Mark	No	Size	Length	Remarks
S1	7	30\"	30'5\"	See Detail
S2	2	30\"	30'6\"	\"
S3	2	28\"	30'5\"	\"
S4	1	18\"	31'8\"	See Details - In D4 & this sheet

BRACING				
Mark	No	Size	Length	Remarks
B1	1	1-1/2\"	3'8\"	See Detail
B2	4	1-1/2\"	5'11\"	\"
B3	4	1-1/2\"	4'11\"	\"
B4	1	1-1/2\"	3'6\"	\"
B5	1	1-1/2\"	4'9\"	\"
B6	1	1-1/2\"	3'8\"	\"
B7	4	1-1/2\"	5'11\"	\"
B8	4	1-1/2\"	4'11\"	\"
B9	1	1-1/2\"	3'6\"	\"
B10	1	1-1/2\"	4'9\"	See Detail



Designed By A.C.N. Dec. 30, 1925  
 Detailed By S.H. Nov. 3, 1926  
 Traced By S.H. July 1, 1927  
 Checked By H.S.N. May 4, 1927  
 Corrected May 5, 1927  
 J.D. Gorman  
 Designing Engineer

Approved E.O. Marsh 1/23/27  
 Engineer of Structures  
 Approved F.W. Radwin 1/27/27  
 Principal Assistant Engineer  
 Approved H.H. Lupton 1/27/27  
 Assistant Electrical Engineer  
 Approved M.H. Duloff 1/27/27  
 Engineer of Construction

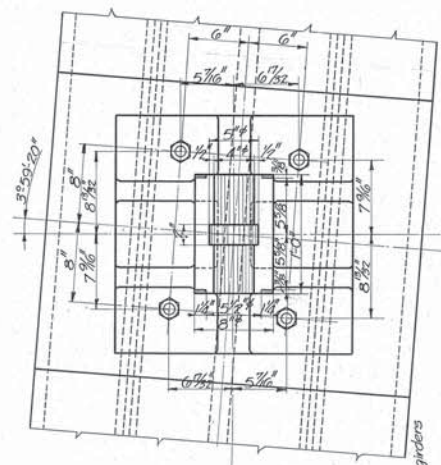
We hereby certify that this Plan shows the structure as built.  
 E.O. Marsh 1/23/27  
 Engineer of Structures  
 H.P. Bigelow 1/27/31  
 Ass't Engineer of Construction

Plan Approved CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date Oct. 26, 1927.  
 For Original of this signature see blue print filed under N 113-039.

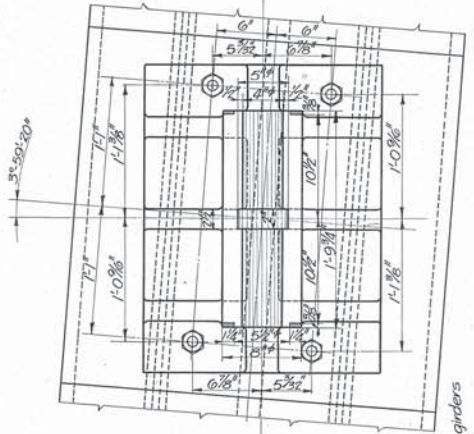
THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT SECTION "D"  
 PORTION IN STONES LEVEL BETWEEN CANAL ST. & WEST LINE OF B.&O.R.R.  
 MISCELLANEOUS STEEL DETAILS  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: AS SHOWN  
 ISSUE NO. 6  
 DATE: Dec. 30, 25  
 REVISED: May 3, 1931  
 H. D. Gorman  
 CHIEF ENGINEER



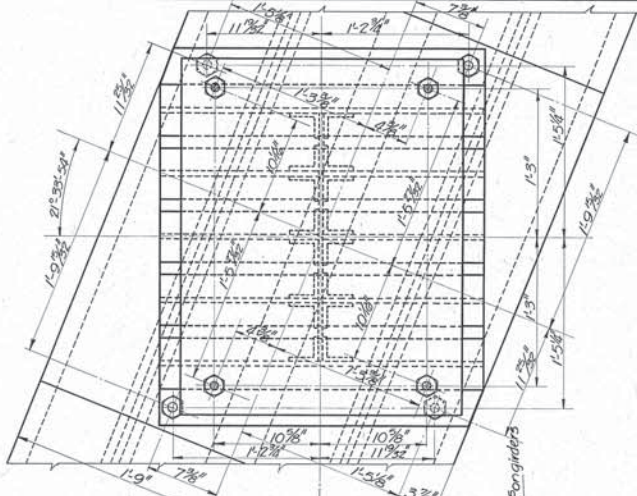
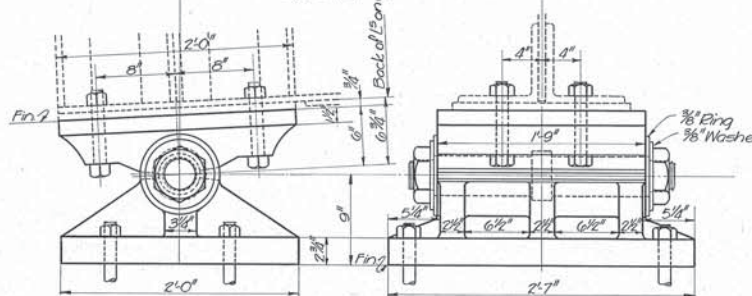
Issue No. A Dec. 21, 1925  
 Revisions:  
 Issue No. B Dec. 1, 1926  
 Drawing redrawn, revisions due to changes in design, added details  
 Issue No. C Aug. 3, 1927  
 Drawing redrawn, revisions due to changes in design, added details  
 Issue No. D Sept. 22, 1927  
 Drawing traced.  
 ISSUE No. 1 SEPT. 29, 1927  
 Approved by Chief Engineer.  
 Issue No. 2 Nov. 3, 1927  
 Minor revisions made.  
 Issue No. 3 Nov. 7, 1927.  
 Approved by Commissioner of Engineering and Construction City of Cleveland.  
 Issue No. 4 May 26, 1931  
 Plan conforms to structure as built.



**HINGED BEARING P1 FOR WEST END OF GIRDERS G1 & G4**

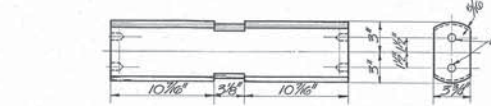
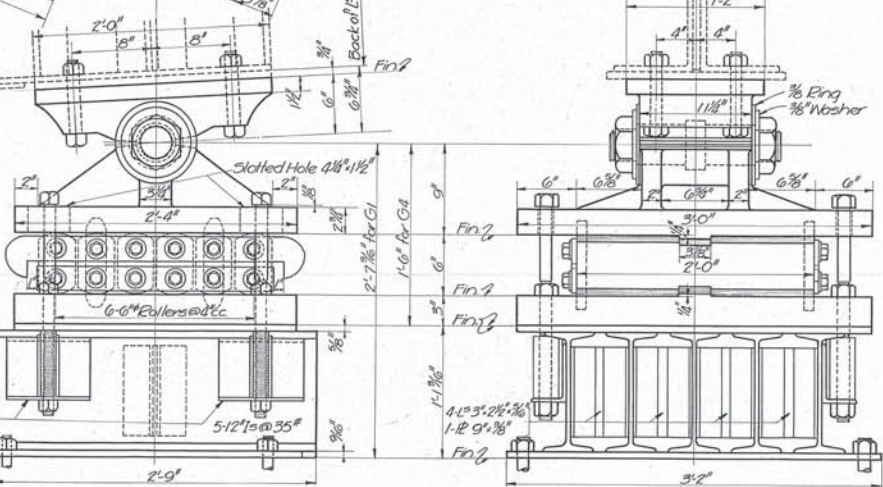


**HINGED BEARING P2 FOR WEST END OF GIRDERS G2 & G3**

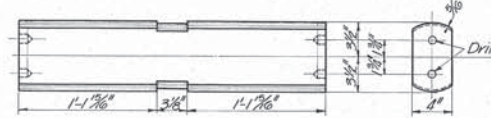


**ROLLER BEARING P3 FOR EAST END OF GIRDERS G1 & G4**

Note: Dimensions not given are the same as for P1



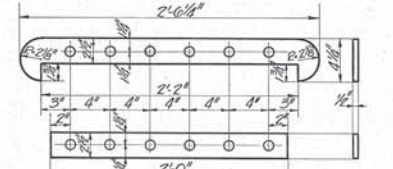
**ROLLER FOR P3**



**ROLLER FOR P4**

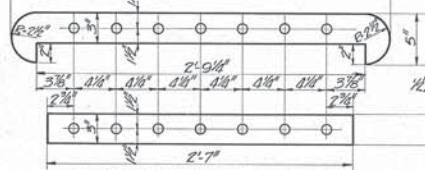
Rollers, tooth bars and tap bolts to be finished all over.  
 Rollers with tooth bars to have a 2" x 1" slot cut in each end, holes to be drilled and tapped for 3/8" bolts.  
 Tap bolts in rollers with tooth bars are 3/8" with 1/2" shoulder at tooth bar and 3/4" shoulder at spacer bar.

NOTES:  
 All castings to be of cast steel.  
 Pins, rollers, spacer bars, tooth bars, bed plates etc. to be rolled steel.  
 All bolts to be 1/4" unless noted otherwise.

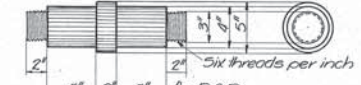


**SPACER BARS FOR P3**

Holes in spacer bars drilled 7/8" for 3/4" shoulder on 7/8" tap bolts

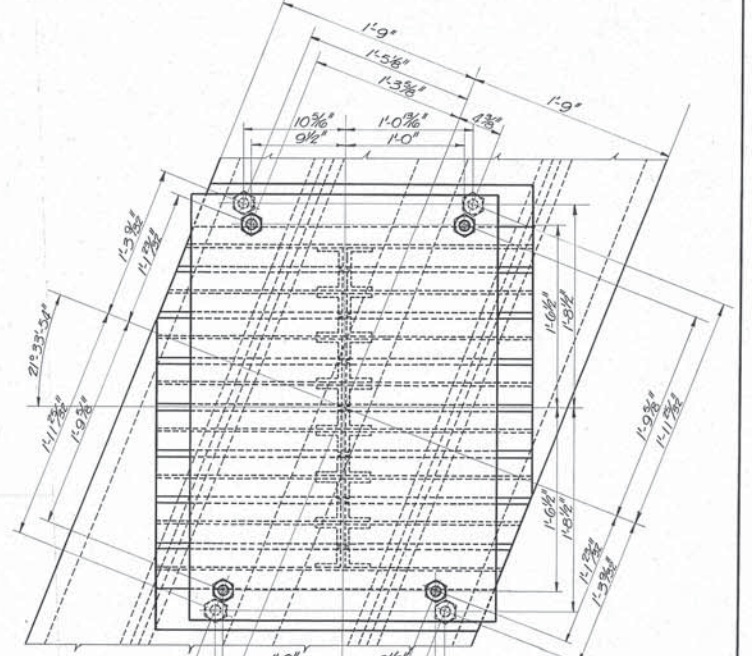


**SPACER BARS FOR P4**



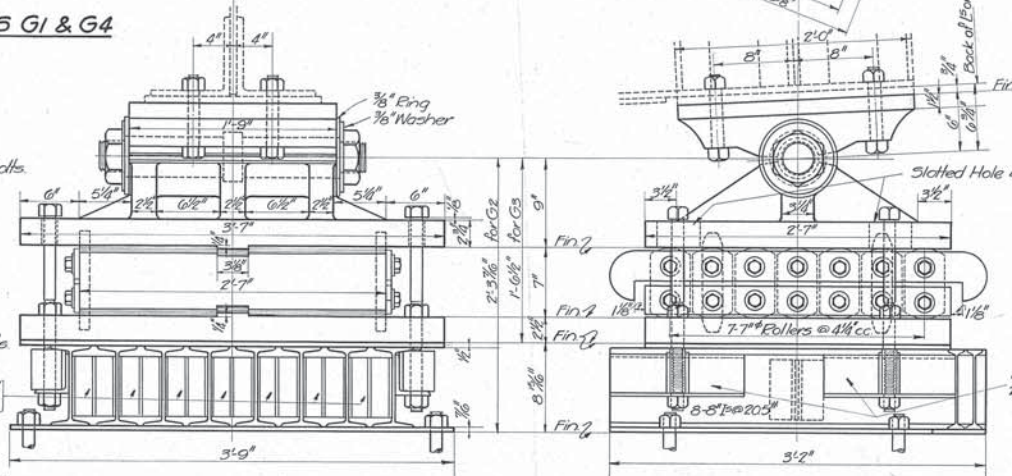
**DETAIL OF PINS**

Six threads per inch  
 Pins to be finished all over  
 Nuts to be standard 3" hexagonal nut cut in half



**ROLLER BEARING P4 FOR EAST END OF GIRDERS G2 & G3**

Note: Dimensions not given are the same as for P2



Designed By A.C.N. Dec. 21, 1925  
 Detailed By W.H.T. Aug. 3, 1927  
 Traced By J.T.C. Sept. 22, 1927  
 Checked By H.S.N. May 4, 1927  
 Corrected May 5, 1927  
 J.S. Sherman  
 Designing Engineer

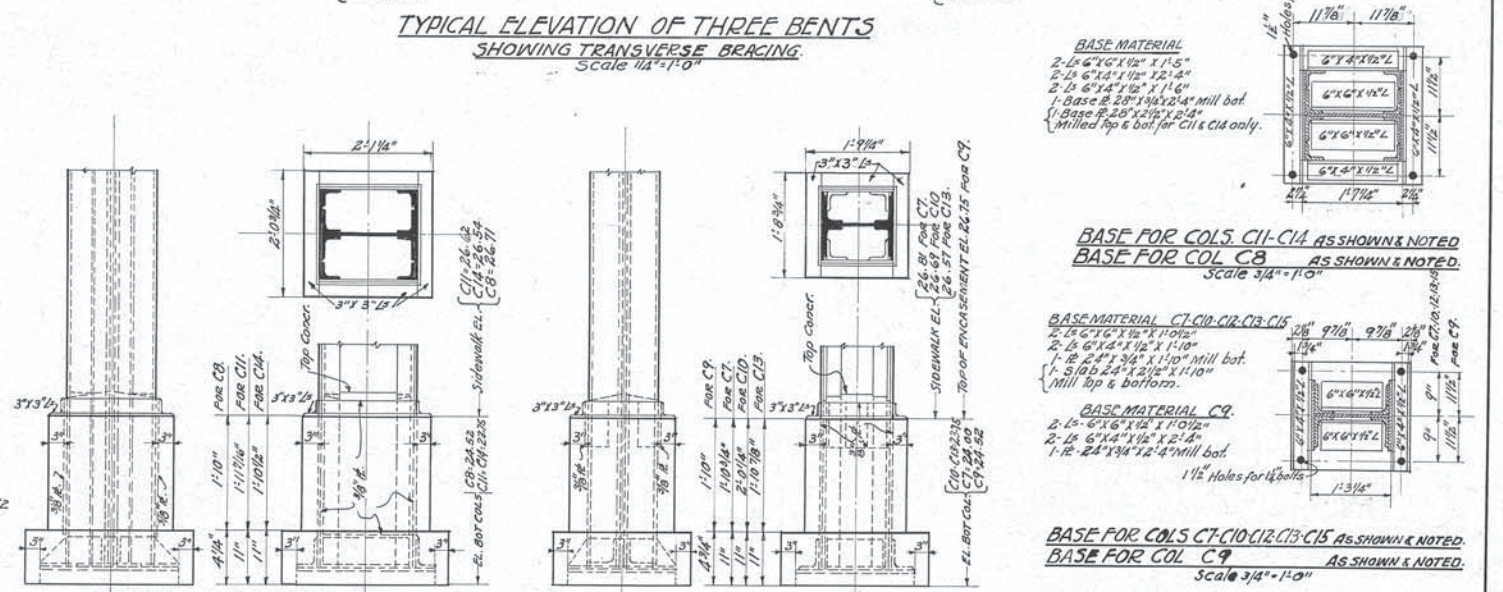
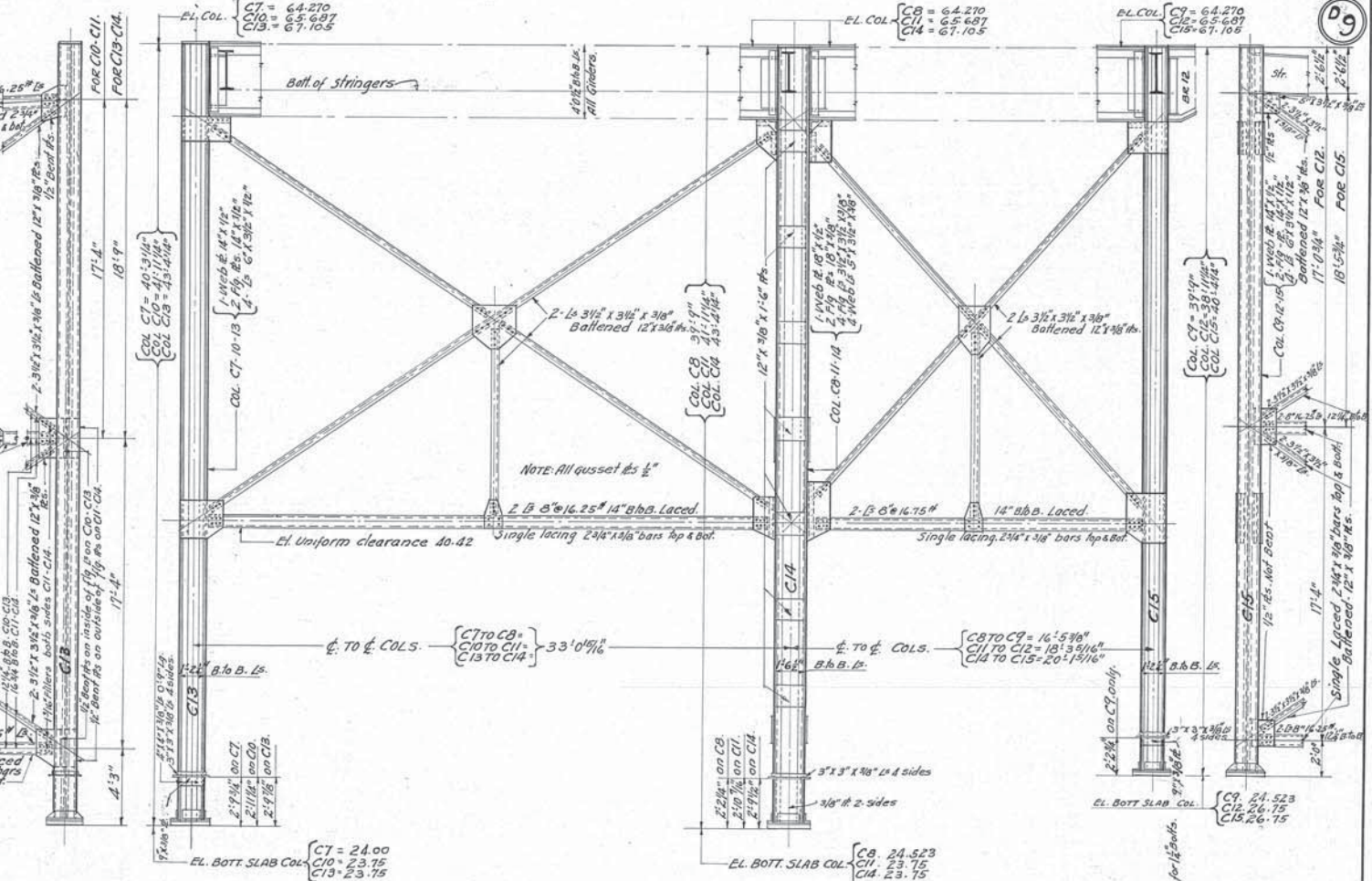
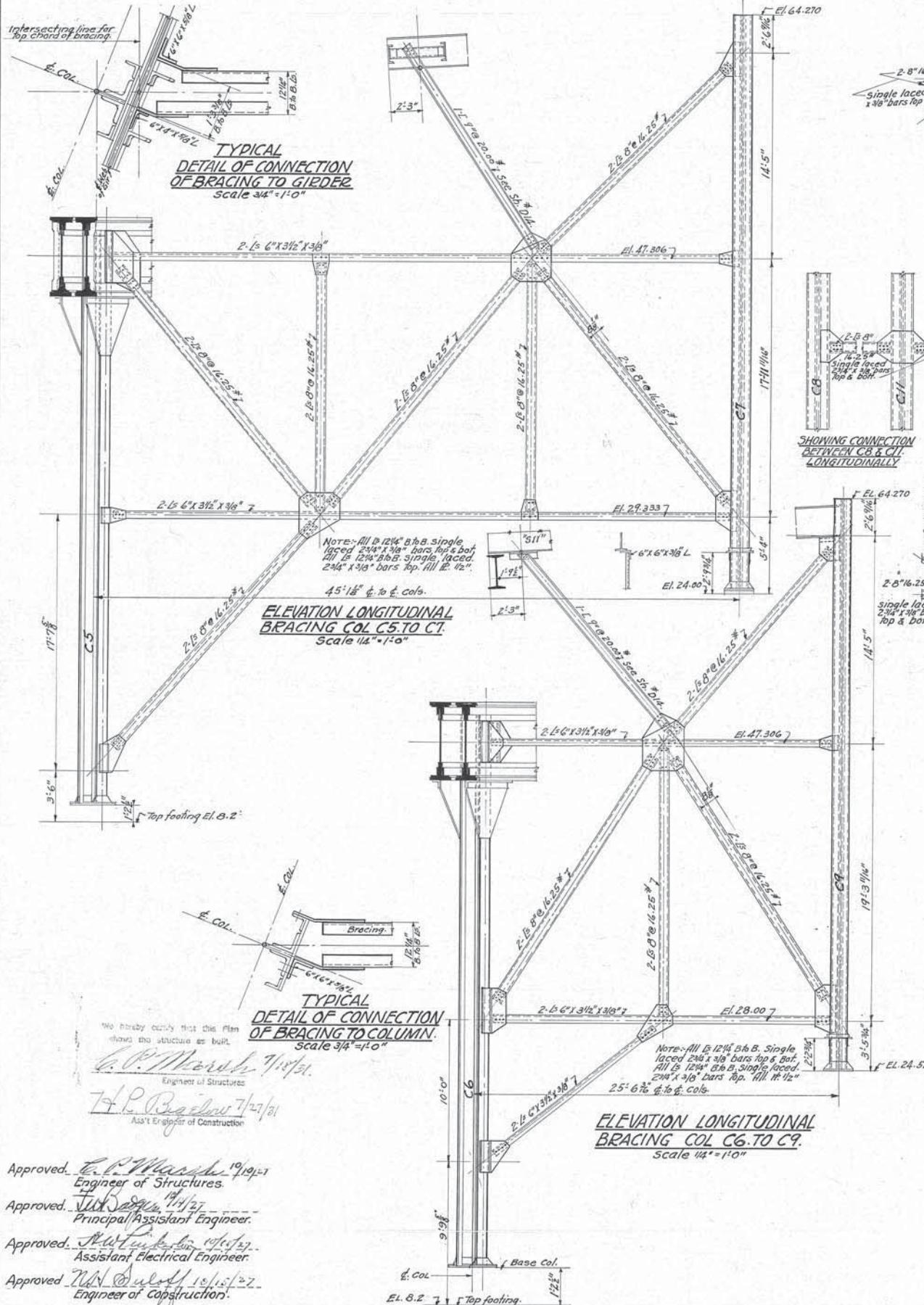
Approved E.C. Marsh 9/23/27  
 Engineer of Structures  
 Approved F.W. Hayden 9/27/27  
 Principal Assistant Engineer  
 Approved J.W. Johnston 9/27/27  
 Assistant Electrical Engineer  
 Approved W.H. D. [unclear] 9/27/27  
 Engineer of Construction

We hereby certify that this Plan shows the structure as built.  
 E.C. Marsh 7/18/31  
 Engineer of Structures  
 H.P. [unclear] 7/27/31  
 Asst. Engineer of Construction

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date Oct. 26, 1927.  
 For Original of this Signature see blue print filed under N° 113-039.5.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT SECTION "D"  
 PORTION IN STONES LEEVE BETWEEN CANAL ST. & WEST LINE OF B.&O. R.R.  
 DETAILS OF BEARINGS  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/4" = 1'-0"  
 ISSUE No. 4  
 DATE: DEC. 21, 1925  
 REVISED: May 26, 1927  
 J.S. Sherman  
 Chief Engineer

Issue No. A. Dec. 30, 1925  
 Revisions:  
 Issue No. B. Jan. 20, 1926. Changed size of bin bracing.  
 Issue No. C. Feb. 5, 1926. Changed length of col. C7.  
 Issue No. D. Nov. 13, 1926. Revised & Redrawn.  
 Issue No. E. Apr. 28, 1927. Revised longitudinal bracing.  
 Issue No. F. Oct. 10, 1927. Redrawn & traced after revising bracing & adding det. of protection of column bases.  
 Issue No. G. Oct. 12, 1927. Minor Revisions.  
 Issue No. J. Oct. 17, 1927. Signed by Chief Engineer.  
 Issue No. 2. Oct. 18, 1927. Revised spacing of Anchor bolt holes in Column bases.  
 Issue No. 3. Nov. 5, 1927. Minor Revisions.  
 Issue No. 4. Nov. 7, 1927. Approved by Commissioner of Engineering and Construction City of Cleveland.  
 Issue No. 5. Nov. 29, 1927. Changed Elevations of Bottom of Cols. C5 & C6 and two vertical dimensions affected by this change.  
 Issue No. 6. May 26, 1931. Plan conforms to structure as built.



**BASE MATERIAL**  
 2-1/2 6"x6"x12' x 1'-5"  
 2-1/2 6"x4"x12' x 1'-5"  
 2-1/2 6"x4"x12' x 1'-11 1/2"  
 1-Base 2 20"x20"x4" mill bot.  
 1-Base 2 20"x20"x4" mill bot.  
 Milled top & bot for C11 & C14 only.

**BASE FOR COLS. C11-C14 AS SHOWN & NOTED**  
**BASE FOR COL C8 AS SHOWN & NOTED**  
 Scale 3/4" = 1'-0"

**BASE MATERIAL C7-C9-C10-C13**  
 2-1/2 6"x6"x12' x 1'-5"  
 2-1/2 6"x4"x12' x 1'-10"  
 1-12 2 1/2"x2 1/2"x1'-10" mill bot.  
 1-12 2 1/2"x2 1/2"x1'-10" mill top & bottom.

**BASE MATERIAL C9**  
 2-1/2 6"x6"x12' x 1'-10"  
 2-1/2 6"x4"x12' x 2'-0"  
 1-12 2 1/2"x2 1/2"x4" mill bot.  
 1 1/2" Holes for 1/2" bolts.

**BASE FOR COLS. C7-C9-C10-C13-C15 AS SHOWN & NOTED**  
**BASE FOR COL C9 AS SHOWN & NOTED**  
 Scale 3/4" = 1'-0"

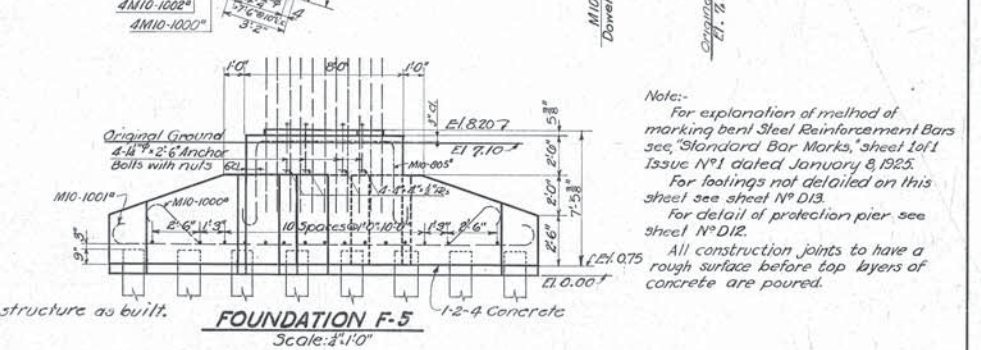
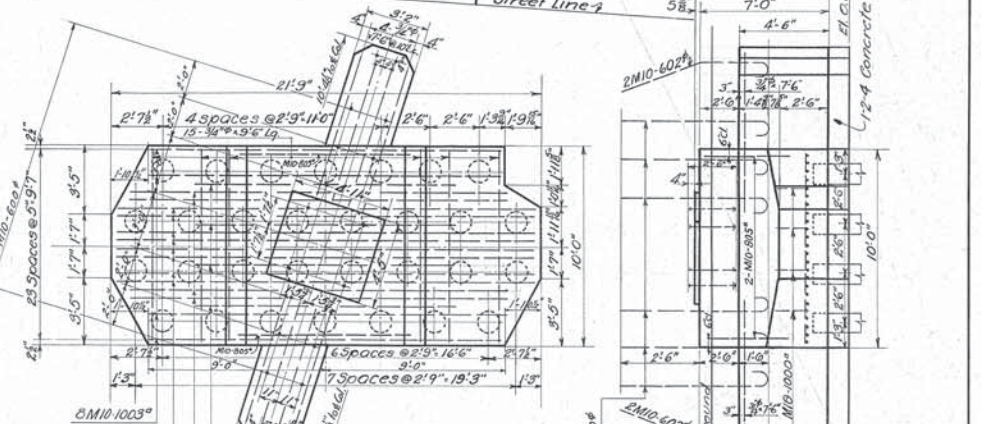
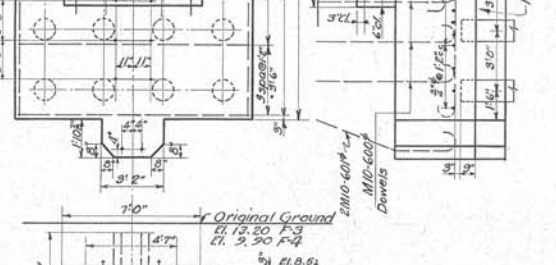
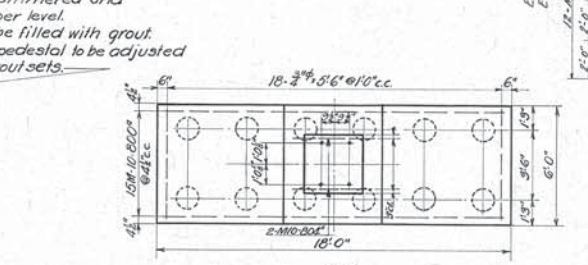
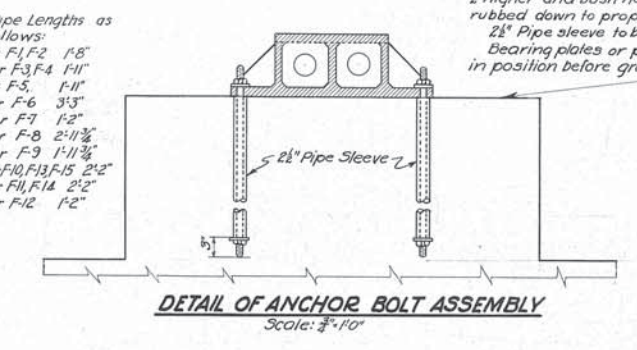
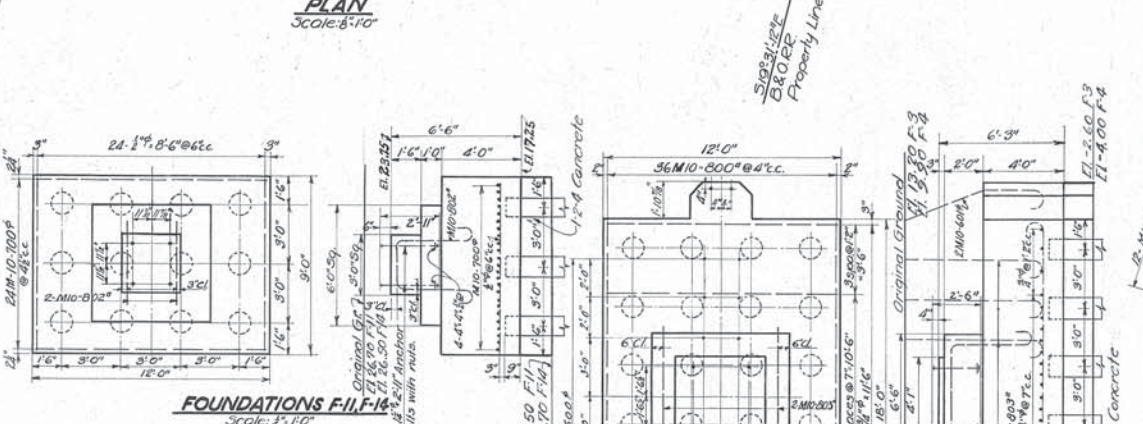
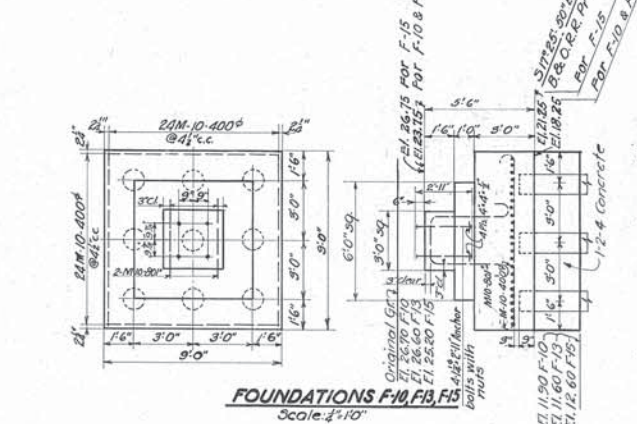
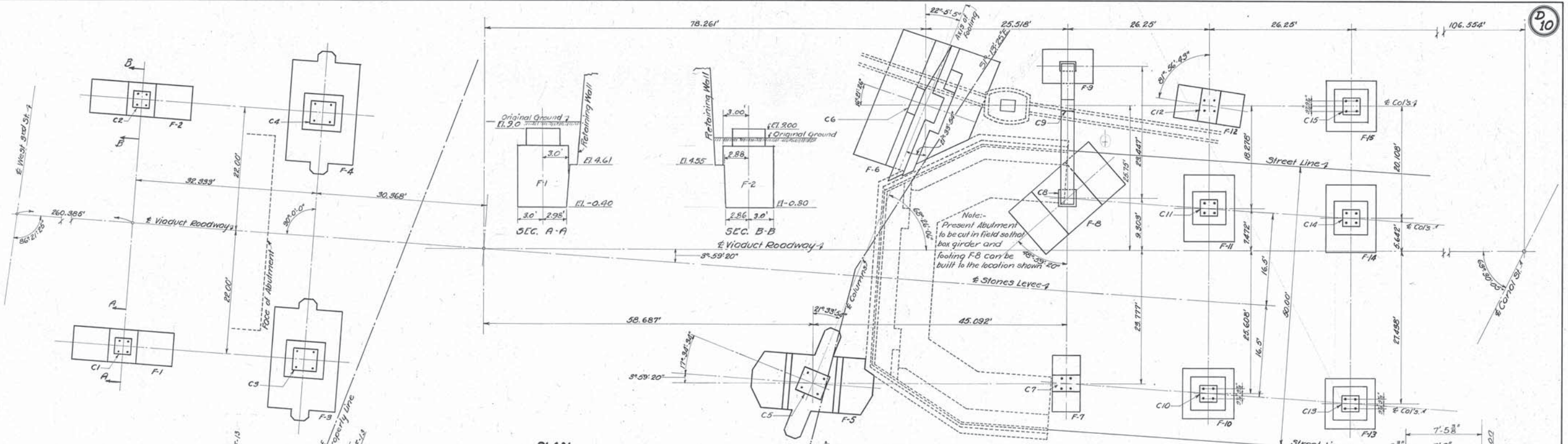
Designed By: A. C. N. Dec. 30, 1925  
 Detailed By: J. E. W. Nov. 13, 1926  
 Traced By: H. E. M. Oct. 10, 1927  
 Checked By: H. S. N. May 4, 1927  
 Correct May 5, 1927  
 F. S. Orman  
 Designing Engineer.

Approved: E. P. Marsh 10/19/27  
 Engineer of Structures.  
 Approved: J. W. S. 11/1/27  
 Principal Assistant Engineer.  
 Approved: J. W. L. 10/1/27  
 Assistant Electrical Engineer.  
 Approved: W. N. Dulody 10/15/27  
 Engineer of Construction.

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction.  
 Date Oct. 26, 1927.  
 For Original of This Signature See  
 blue print filed under No. 113-0395.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT. SECTION "D".  
 PORTION IN STONES LEVEE BETWEEN  
 CANAL ST & WEST LINE OF B. & O. R.R.  
 DETAILS OF COLUMNS AND BRACING.  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: AS SHOWN  
 ISSUE No. 6  
 DATE: Dec. 30, 1925.  
 REVISED: May 26, 1931  
 Chief Engineer

- Issue No A Dec. 15, 1925
- Revisions:-
- Issue No B Feb. 5, 1926  
Changed elevation top of Foundation Col No 9 from 21.25 to 24.25
- Issue No C Aug. 11, 1927  
Revised and redrawn
- Issue No D Sept. 13, 1927  
Revised Foundations F-2, F-3 & F-6 and drawing traced
- Issue No 1 Sept. 23, 1927  
Approved by Chief Engineer.  
Changed elev. of footings F-1, F-5. Added elev. of footing F-2.
- Issue No 2 Oct. 15, 1927  
Revised Footing numbers. Revised Anchor Bolt Assembly.
- Issue No 3 Oct. 17, 1927  
Minor revisions.
- Issue No 4 Nov. 7, 1927  
Approved by Commissioner of Engineering and Construction City of Cleveland.
- Issue No 5 Nov. 25, 1927  
Revised Footing F-5
- Issue No 6 May 2, 1931  
Plan corrected to conform to structure as built.



Designed By... A.C.N. Dec. 15, 1925  
 Detailed By... H.B. Aug. 11, 1927  
 Traced By... H.B. Sept. 13, 1927  
 Checked By... E.A.B. May 4, 1927  
 Correct May 5, 1927  
 H.S. Dorman  
 Designing Engineer

Approved *E.P. Murch* 7/24/27  
 Engineer of Structures

Approved *J.W. Sullivan* 11/1/27  
 Principal Assistant Engineer

Approved *H.W. Jackson* 4/27/27  
 Assistant Electrical Engineer

Approved *W.M. Duffell* 4/27/27  
 Engineer of Construction

I hereby certify that this Plan shows the structure as built.  
*E.P. Murch* 7/24/27  
 Engineer of Structures

*H.R. Bigelow* 4/27/31  
 Ass't Engineer of Construction

Plan Approved  
**CITY OF CLEVELAND**

By *Robert Hoffman*  
 Commissioner of Engineering & Construction

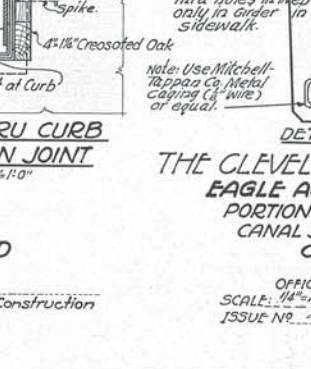
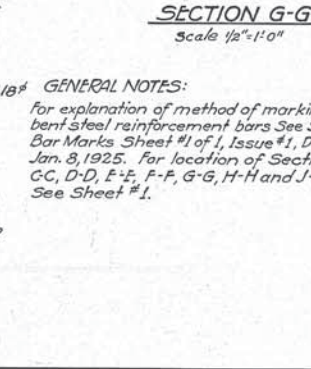
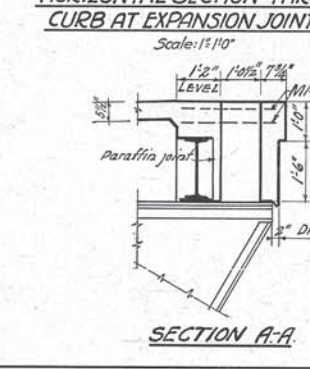
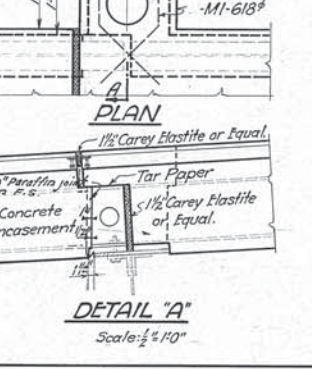
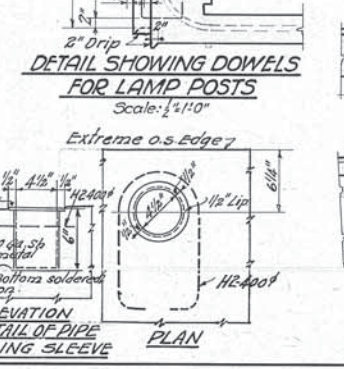
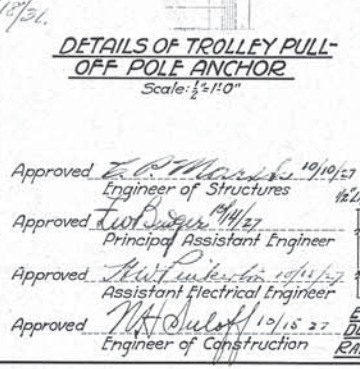
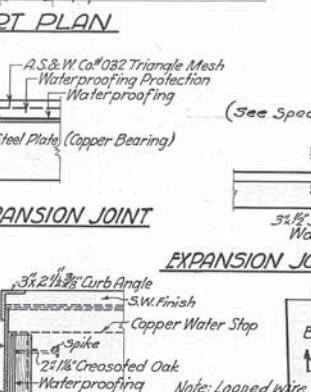
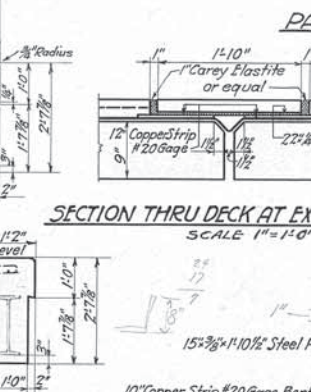
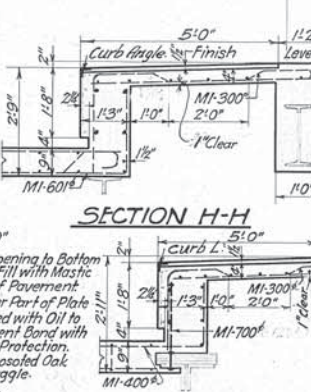
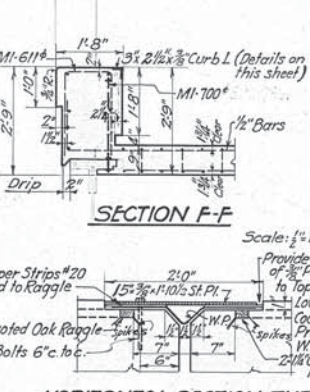
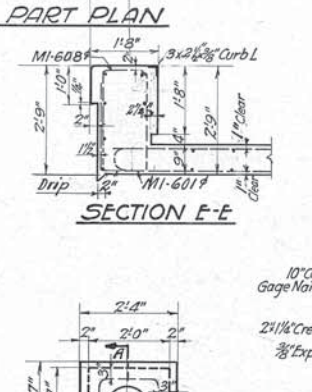
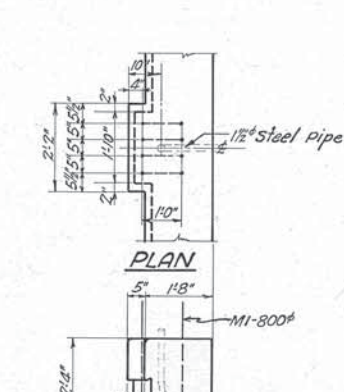
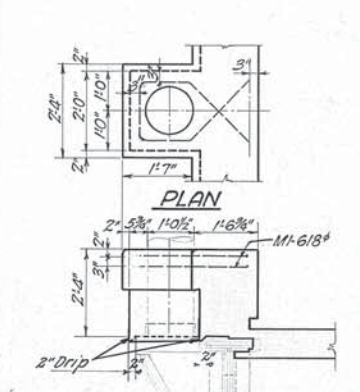
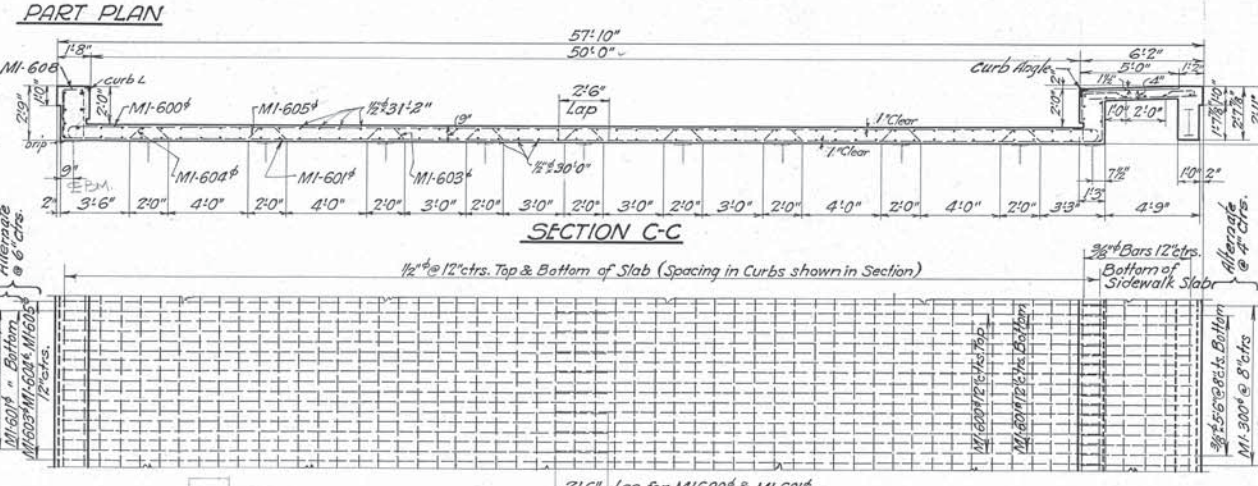
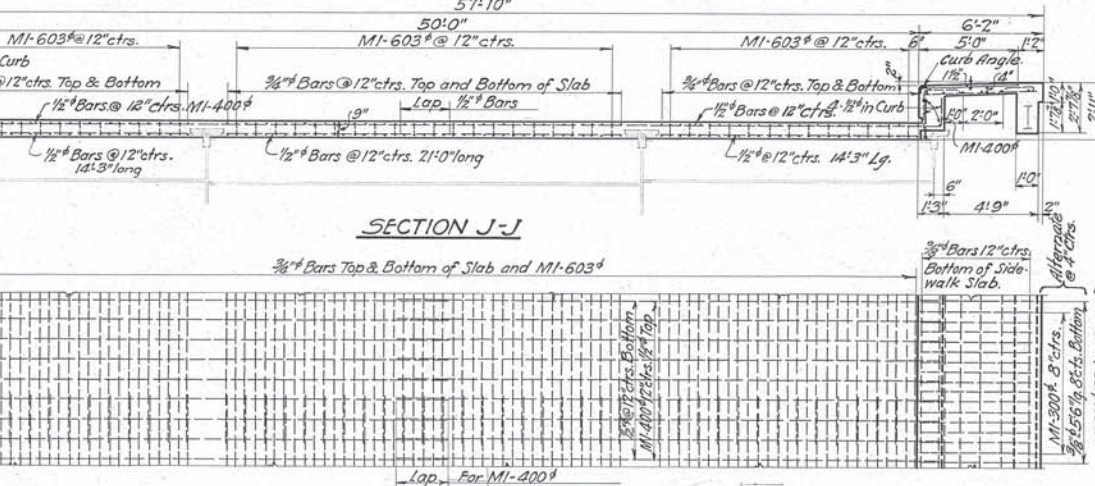
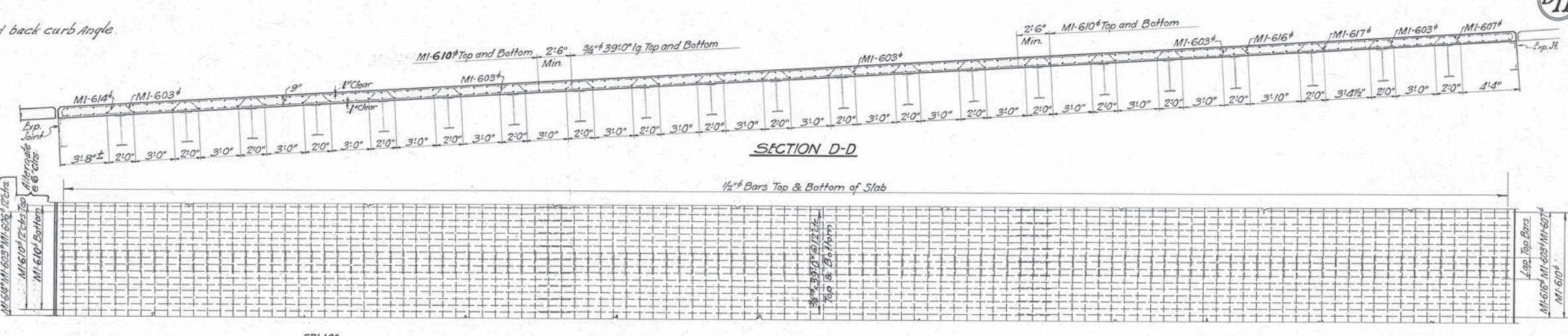
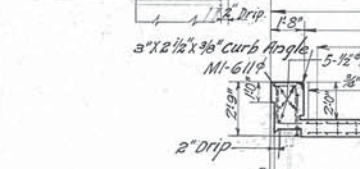
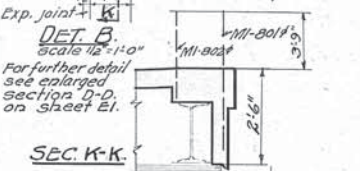
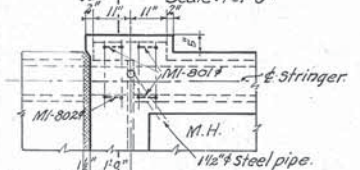
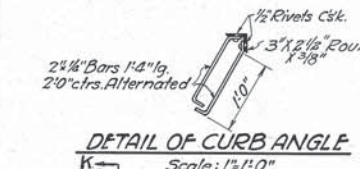
Date Oct. 26, 1927.  
 For Original of this Signature see blue print filed under No. 113-0395.

**THE CLEVELAND UNION TERMINALS CO.**  
**EAGLE AVE. VIADUCT SECTION "D"**  
 PORTION IN STONES LEVEL BETWEEN CANAL ST. & WEST LINE OF B.&O.R.R.  
**PLAN & DETAILS OF FOUNDATIONS**  
 CLEVELAND OHIO

OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: As shown.  
 ISSUE No. 6...

DATE: Dec. 15, 1925  
 REVISED: May 2, 1931.  
*R.D. Smith* 7/27/31  
 CHIEF ENGINEER

Issue No. A Jan. 25, 1926.  
**REVISIONS:**  
 Issue No. B Oct. 21, 1926.  
 Section J-J Added.  
 Other Minor Revisions.  
 Issue No. C Apr. 27, 1927.  
 Revised for Changes in  
 Expansion Joints and Grade.  
 Issue No. D June 23, 1927.  
 Sections Rearranged  
 Drawing Traced.  
 Issue No. E Sept. 28, 1927.  
 Curb Angle changed.  
 Drip provided on South side.  
 Minor Revisions.  
 Issue No. 1 Oct. 17, 1927.  
 Signed by Chief Engineer.  
 Issue No. 2 Nov. 7, 1927.  
 Approved by Commissioner of  
 Engineering and Construction  
 City of Cleveland.  
 Issue No. 3 Nov. 14, 1927.  
 Minor revisions.  
 Issue No. 4 May 26, 1931.  
 Plan conforms to structure  
 as built.

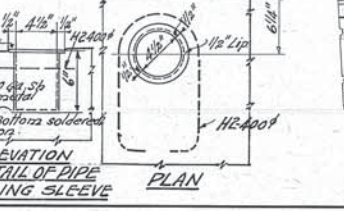


**HORIZONTAL SECTION THRU CURB AT EXPANSION JOINT**  
 Scale: 1/2"=1'-0"  
 Provide Opening to Bottom of P.I. Fill with Mastic to Top of Pavement  
 Lower Part of Plate Coated with Oil to Prevent Bond with W.P. Protection.  
 2 1/2" Creosoted Oak Raggle - 3/4" x 7"  
 2 1/2" Creosoted Oak Raggle - 3/4" x 7"  
 3/8" Exp. Bolts 6" c.c.

**GENERAL NOTES:**  
 For explanation of method of marking bent steel reinforcement bars See Standard Bar Marks Sheet #1 of 1, Issue #1, Dated Jan. 8, 1925. For location of Sections C-C, D-D, E-E, F-F, G-G, H-H and J-J See Sheet #1.

We hereby certify that this Plan shows the structure as built.  
 L. P. Marshall  
 Engineer of Structures  
 J. P. Richards  
 Asst. Engineer of Construction  
 Designed By A.C.N. Dec. 22, 1925.  
 Detailed By S.H. Oct. 21, 1926.  
 Traced By S.H. June 13, 1927.  
 Checked By F.A.B. May 4, 1927.  
 Corrected May 5, 1927.  
 Designing Engineer

Approved 10/10/27  
 Engineer of Structures  
 Approved 11/17/27  
 Principal Assistant Engineer  
 Approved 10/11/27  
 Assistant Electrical Engineer  
 Approved 10/15/27  
 Engineer of Construction



Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date Oct. 26, 1927.  
 For Original of this Signature see blue print filed under No. 113-039.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT SECTION "D"  
 PORTION IN STONES LEVEE BETWEEN CANAL ST. & WEST LINE OF B. & O.R.R.  
 CONCRETE DETAILS  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/2"=1'-0" & AS SHOWN.  
 ISSUE No. 4  
 DATE: 1-25-26  
 REVISED May 26, 1931  
 CHIEF ENGINEER

Issue No A Dec. 30, 1925

REVISIONS:

Issue No B Mar. 30, 1926  
Removed Coping Line in Sections F-F and D-D.

Issue No C Sept. 12, 1927  
Redesigned, Redrawn & Traced.  
Issue No 1. Sept. 29, 1927.  
Approved by Chief Engineer.

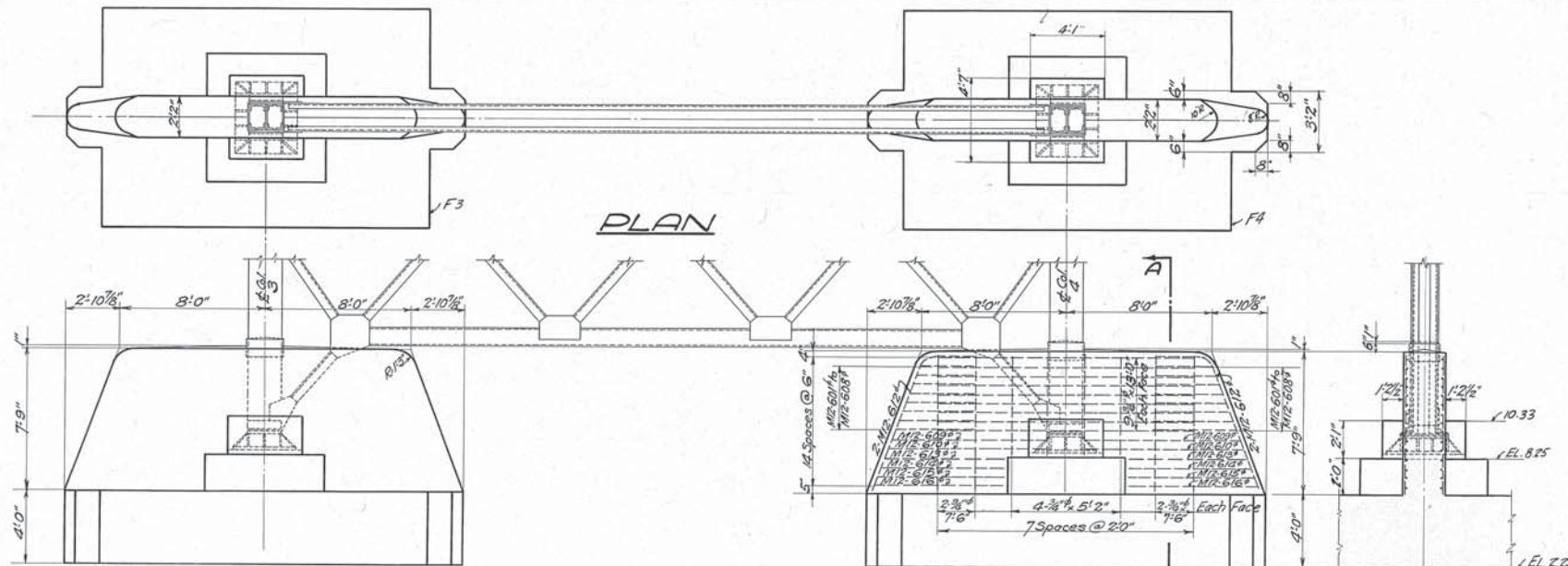
Issue No 2. Oct. 15, 1927.  
Revised protection pier col. C.5.

Issue No 3. Oct. 27, 1927.  
Minor Revisions.

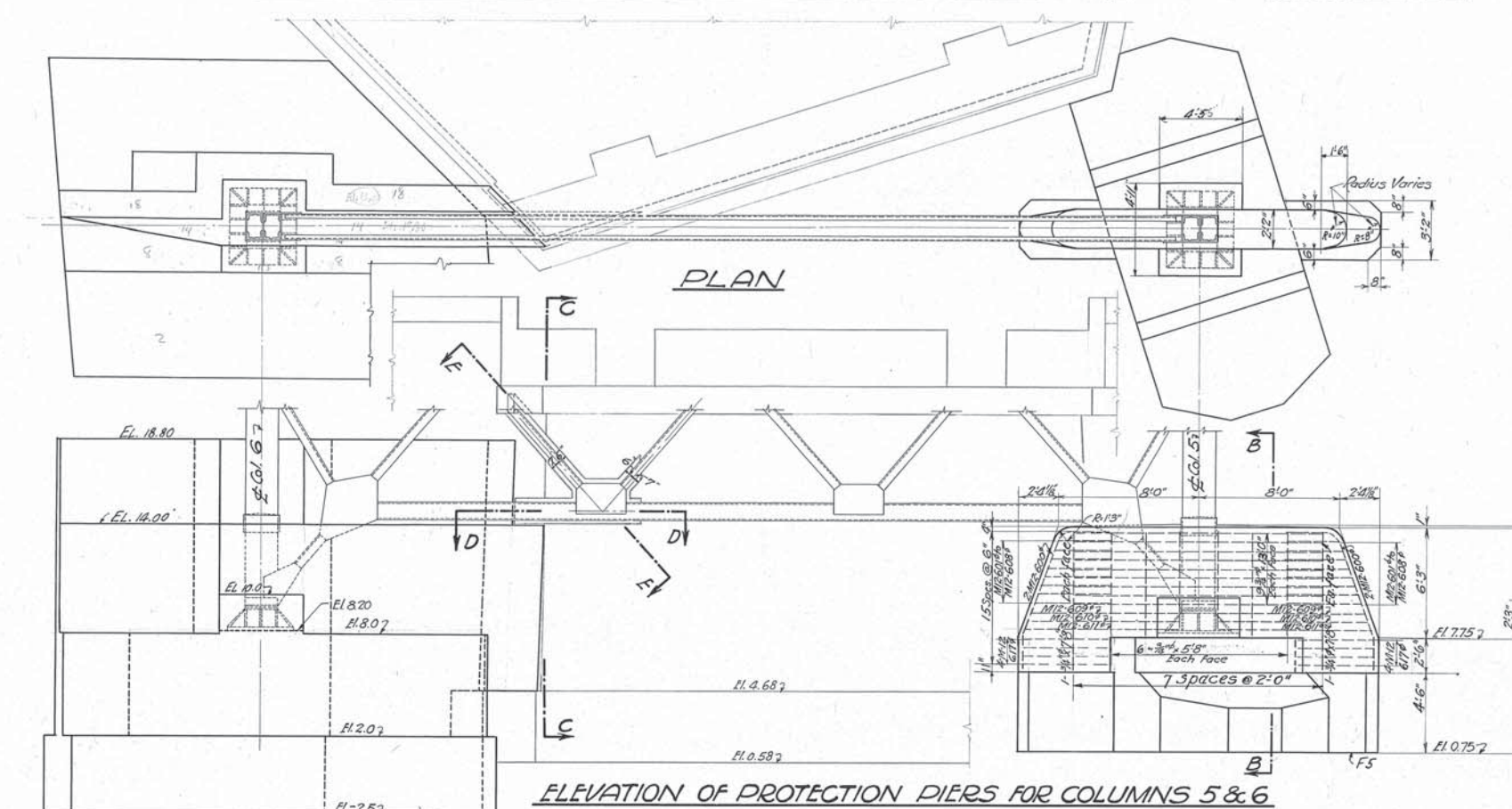
Issue No 4. Nov. 7, 1927.  
Approved by Commissioner of Engineering and Construction City of Cleveland.

Issue No 5. Nov. 25, 1927.  
Revised protection piers for Cols C5 and C6. Other minor Revisions

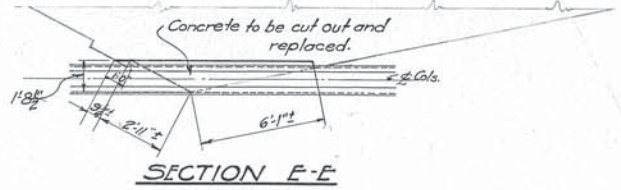
Issue No 6. May 26, 1931  
Plan conforms to structure as built.



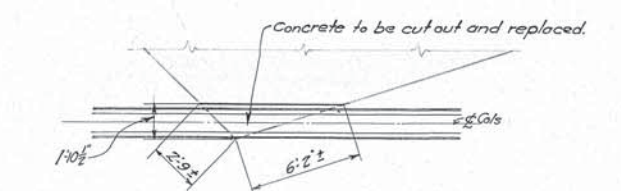
ELEVATION OF PROTECTION PIERS FOR COLUMNS 3 & 4



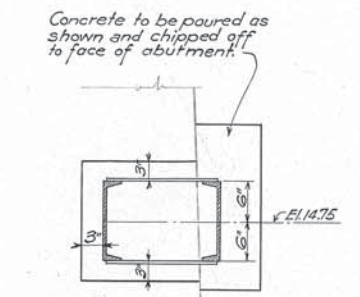
ELEVATION OF PROTECTION PIERS FOR COLUMNS 5 & 6



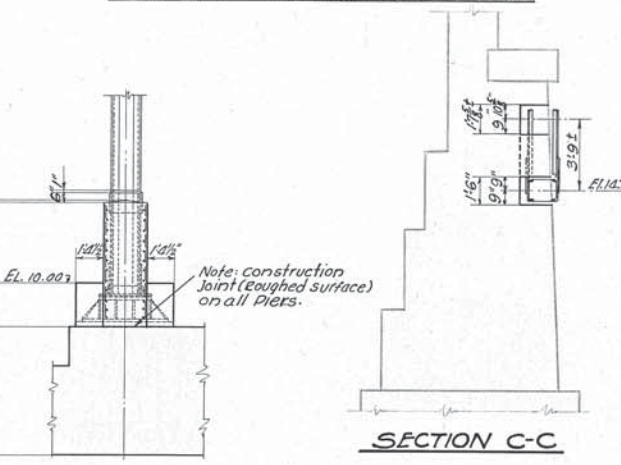
SECTION E-E  
DIMENSIONS MEASURED ON A PLANE THRU CENTER OF BEARINGS



SECTION D-D  
DIMENSIONS MEASURED ON HORIZONTAL PLANE AT EL. 14.75



SECTION THRU BRACING  
Scale: 1" = 1'-0"



SECTION C-C

Designed By A.C.N. 12-30-25  
 Detailed By A.C.N. & W.H.I. 8-28-27  
 Traced By S.H. 9-12-27  
 Checked By H.S.N. 5-4-27  
 Correct May 5, 27  
 Designing Engineer

Approved C.P. Marsh 7/27/27  
 Engineer of Structures  
 Approved F.W. Budge 7/27/27  
 Principal Assistant Engineer  
 Approved T.H. Suber 8/27/27  
 Assistant Electrical Engineer  
 Approved W.N. Duleff 7/27/27  
 Engineer of Construction

We hereby certify that this Plan shows the structure as built.  
 C.P. Marsh 7/27/27  
 Engineer of Structures  
 H.E. Regelow 7/27/31  
 Asst. Engineer of Construction

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date Oct. 26, 1927  
 For Original of this Signature see blue print filed under No 113-0395.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT SECTION "D"  
 PORTION IN STONES LEVEL BETWEEN CANAL ST. & WEST LINE OF B.&O. R.R.  
 DETAILS OF PROTECTION PIERS FOR COLUMNS 3, 4, 5 & 6  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1" = 1'-0"  
 ISSUE No. 6  
 DATE: 12-30-25  
 REVISED May 26, 1931  
 C.H. Smith 9/27/27  
 CHIEF ENGINEER

ISSUE No A Aug 9, 1926

Revisions:-

ISSUE No B Sept 16, 1927

Made a new detail for F6 and several minor changes after checking, drawing traced.

Issue No 1 Sept 29, 1927. Approved by Chief Engineer. Changed elevations of footings F7, F10. Added elevations of fgs. F8-F9.

Issue No 2 Oct 15, 1927. Changed footing numbers & revised Anchor Bolts.

Issue No 3 Oct 19, 1927. Minor Revisions.

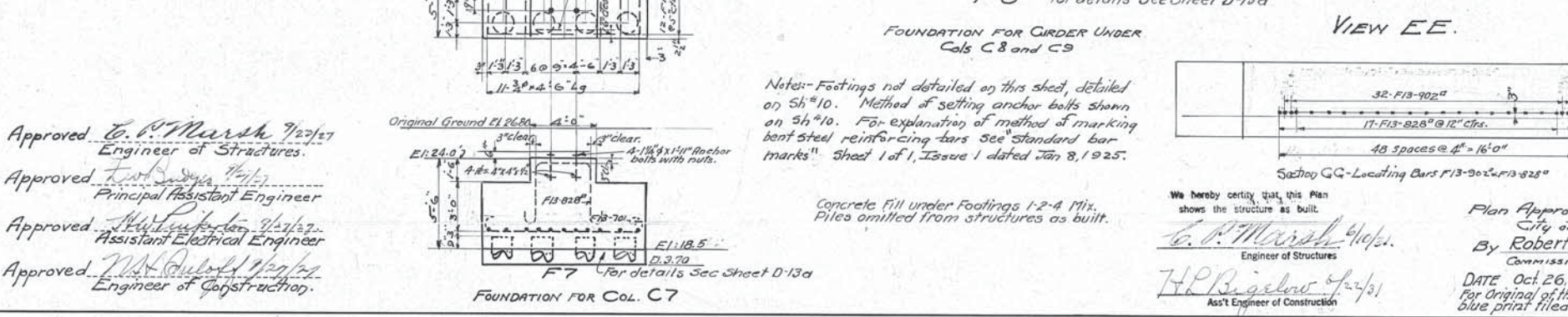
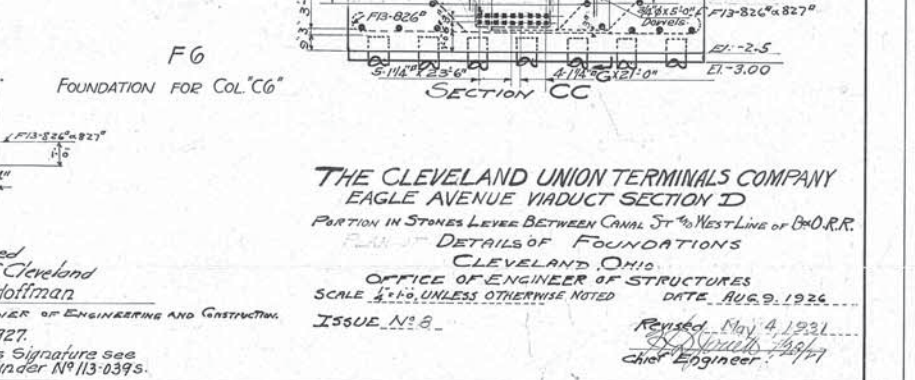
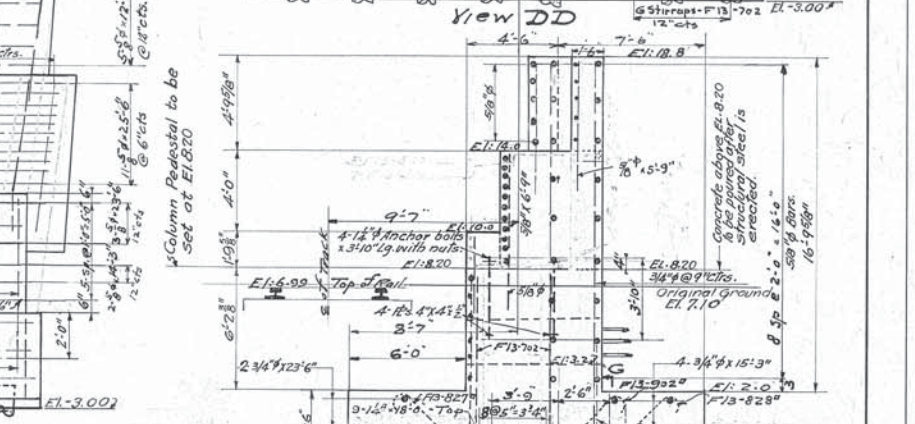
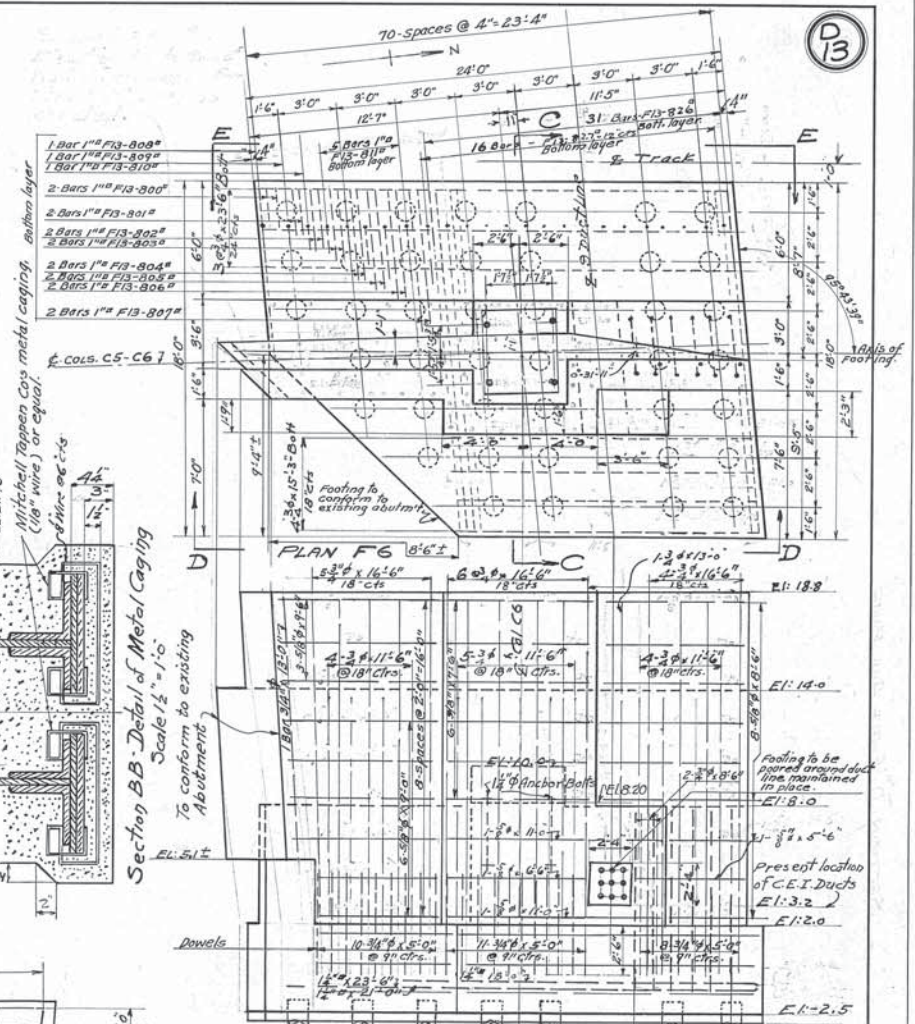
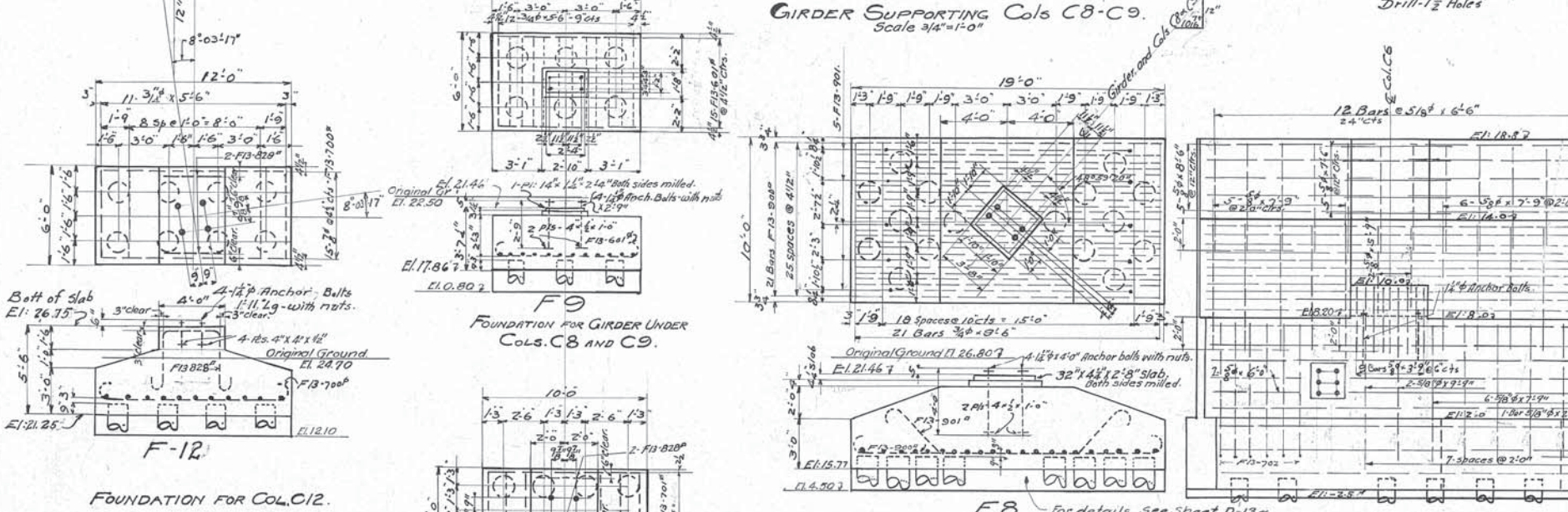
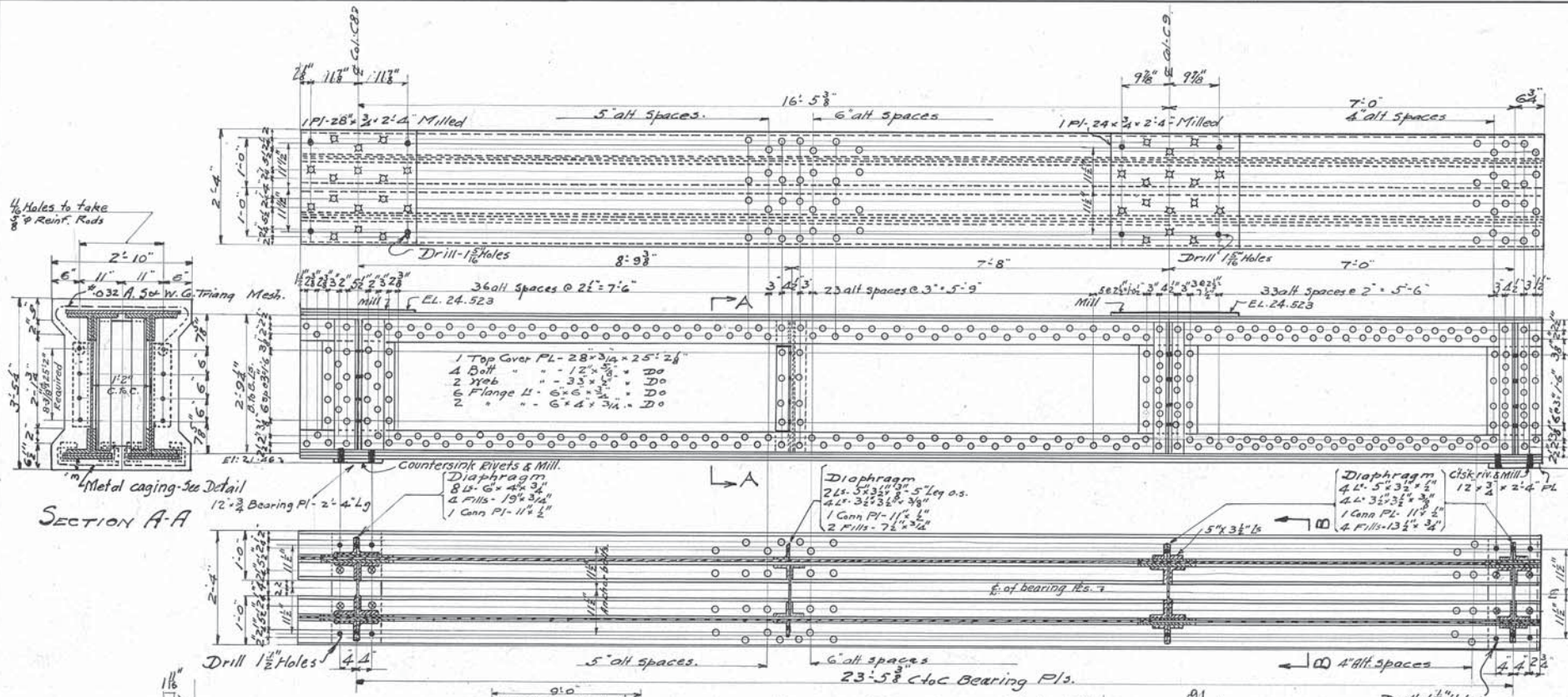
Issue No 4 Oct 25, 1927. Footing F6 Revised & minor revisions.

Issue No 5 Nov 7, 1927. Approved by Commissioner of Engineering and Construction City of Cleveland.

Issue No 6 Nov 19, 1927. Minor revisions.

Issue No 7 Nov 25, 1927. Elevations of F6 revised.

Issue No 8 May 4, 1931. Plan corrected to conform to structure as built.



Notes:- Footings not detailed on this sheet, detailed on Sh 10. Method of setting anchor bolts shown on Sh 10. For explanation of method of marking bent steel reinforcing bars see standard bar marks" Sheet 1 of 1, Issue 1 dated Jan 8, 1925.

Concrete Fill under Footings 1-2-4 Mix. Piles omitted from structures as built.

We hereby certify that this Plan shows the structure as built. G.P. Marsh, Engineer of Structures. H.P. Bigelow, Ass't Engineer of Construction.

Plan Approved City of Cleveland By Robert Hoffman, Commissioner of Engineering and Construction. DATE Oct. 26, 1927. For Original of this Signature see blue print filed under No 113-0395.

DESIGNED BY J.E.W. Aug 9, 1926. DETAILED BY J.E.W. Aug 10, 1926. CHECKED BY J.H.B. Sept 16, 1927. CORRECTED BY E.A.B. May 4, 1927. Y.L. Dorman, DESIGNING ENGINEER.

Approved G.P. Marsh, Engineer of Structures. Approved J.H.B., Principal Assistant Engineer. Approved H.P. Bigelow, Assistant Electrical Engineer. Approved W.L. Dorman, Engineer of Construction.

THE CLEVELAND UNION TERMINALS COMPANY EAGLE AVENUE VIADUCT SECTION D PART IN STONES LEVER BETWEEN CANAL ST & WEST LINE OF C.O.R.R. DETAILS OF FOUNDATIONS CLEVELAND, OHIO OFFICE OF ENGINEER OF STRUCTURES SCALE 1/2"=1'-0" UNLESS OTHERWISE NOTED DATE AUG 9, 1926. ISSUE No 8. Revised May 4, 1931. Chief Engineer.

Issue No A Dec. 23, 1925.

REVISIONS:

Issue No B Jan. 29, 1927. Sections and Elevations changed. New Drawing made.

Issue No C Apr. 28, 1927. Revised for changes in bracing.

Issue No D Sept. 16, 1927. Revised for Protection Piers and to provide for Street Car Track Drains.

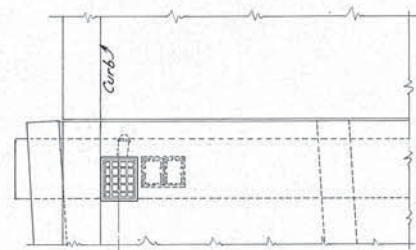
Issue No 1 Sept. 29, 1927. Approved by Chief Engineer.

Issue No 2 Nov. 7, 1927. Approved by Commissioner of Engineering and Construction City of Cleveland.

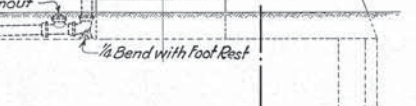
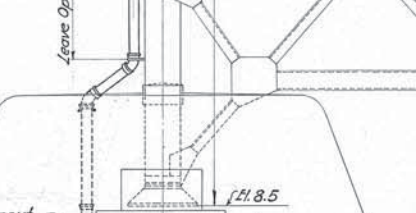
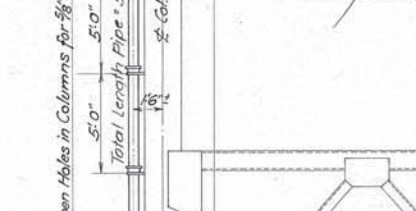
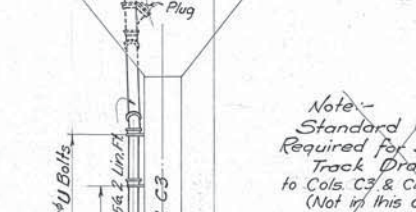
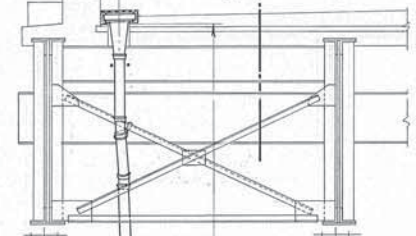
Issue No 3 Mar. 17, 1928. Revised pipe layout to agree with steel as built.

Issue No 4 May 4, 1931. Plan corrected to conform to structure as built.

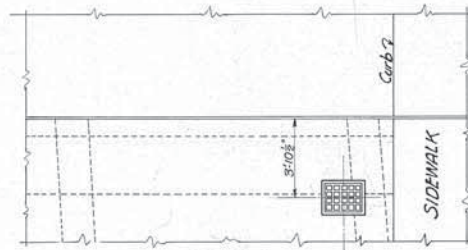
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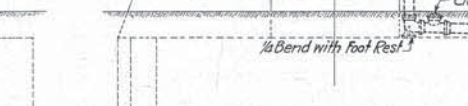
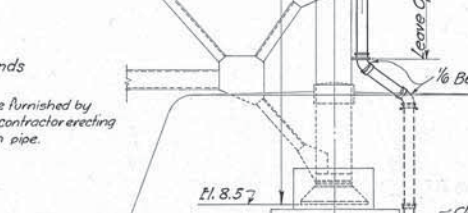
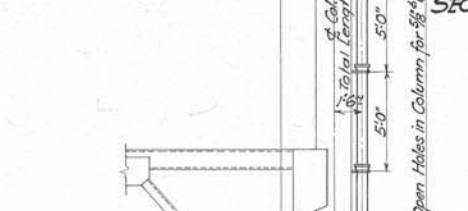
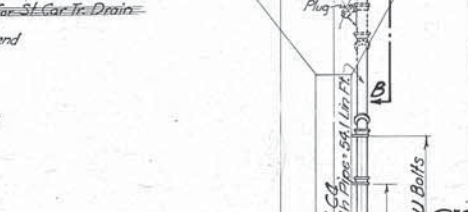
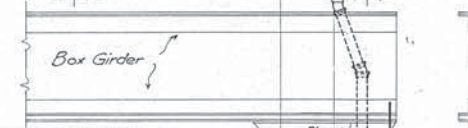
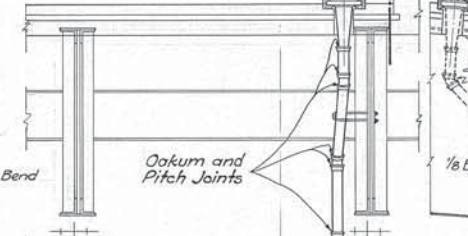
PLAN A



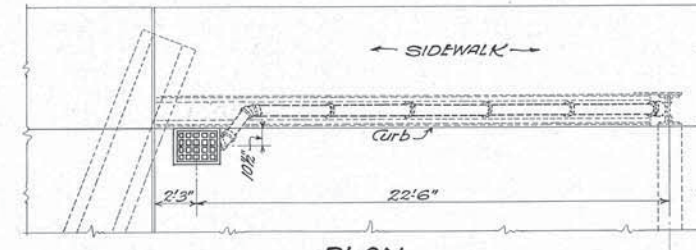
DOWN SPOUT AT COLUMN 3



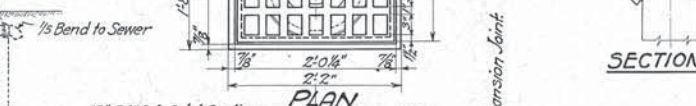
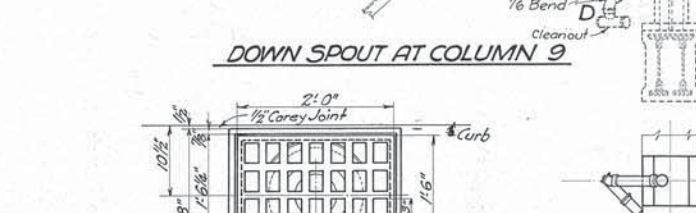
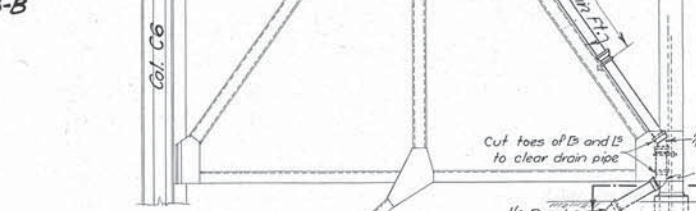
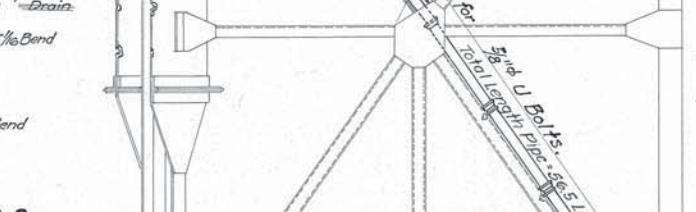
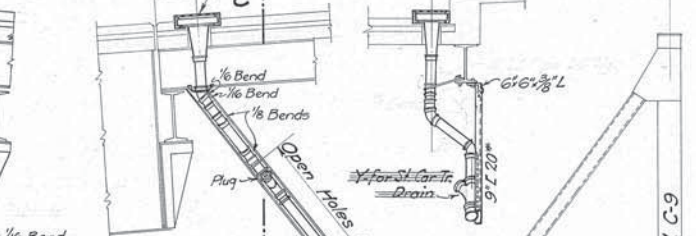
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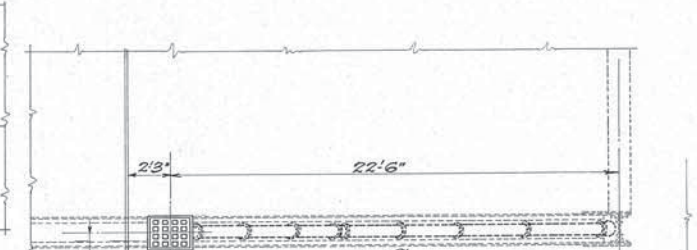
DOWN SPOUT AT COLUMN 4



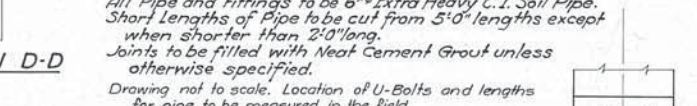
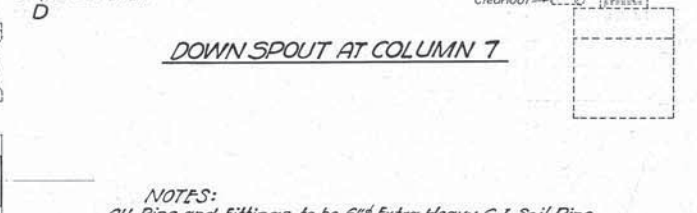
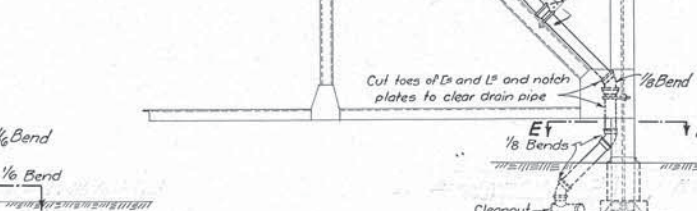
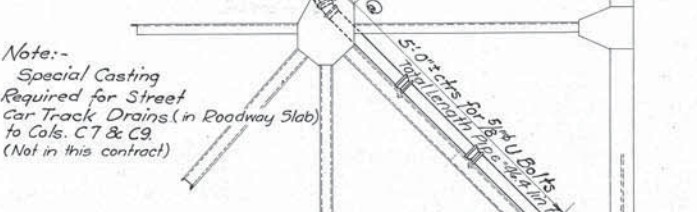
PLAN C



DOWN SPOUT AT COLUMN 9



PLAN D



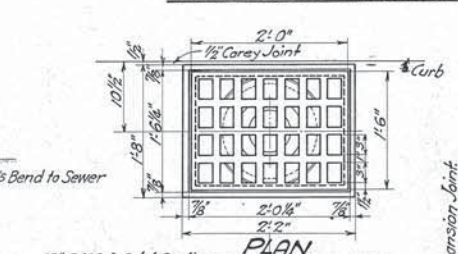
DOWN SPOUT AT COLUMN 7

Note - Standard Casting Required for Street Car Track Drain in Roadway Slab to Cols. C7 & C9. (Not in this contract)

Note - Special Casting Required for Street Car Track Drains (in Roadway Slab) to Cols. C7 & C9. (Not in this contract)

NOTES: All Pipe and Fittings to be 6" Extra Heavy C.I. Soil Pipe. Short lengths of Pipe to be cut from 5'0" lengths except when shorter than 2'0" long. Joints to be filled with Neat Cement Grout unless otherwise specified. Drawing not to scale. Location of U-Bolts and lengths for pipe to be measured in the field.

EAGLE AVE. VIADUCT - CONTRACT #4 SEE NOTE ON SH. 1 OF 15



DETAIL OF CAST IRON INLET

Designed By A.C.N. Dec. 23, 1925.

Detailed By S.H. Jan. 29, 1927.

Traced By S.H. Sept. 6, 1927.

Checked By F.A.B. May 4, 1927.

Correct May 5, 1927.

Designing Engineer

Approved E.P. Marsh 4/23/27. Engineer of Structures

Approved J.W. Radwin 4/27/27. Principal Assistant Engineer

Approved H.W. Wickert 4/27/27. Assistant Electrical Engineer

Approved W.N. Aulick 4/27/27. Engineer of Construction

We hereby certify that this Plan shows the structure as built.

E.P. Marsh 4/23/27. Engineer of Structures

H.P. Bigelow 4/27/27. Asst. Engineer of Construction

Plan Approved CITY OF CLEVELAND

By Robert Hoffman, Commissioner of Engineering & Construction

Date Oct. 26, 1927. For Original of this Signature see blue print filed under N° 113-0395.

THE CLEVELAND UNION TERMINALS CO. EAGLE AVE. VIADUCT SECTION "D" PORTION IN STONES LEVEL BETWEEN CANAL ST. & WEST LINE OF B.&O.R.R. DRAINAGE DETAILS

OFFICE OF ENGINEER OF STRUCTURES CLEVELAND, OHIO. SCALE: 3/8" = 1'-0". DATE: 12-23-25. REVISED May 1, 1931. ISSUE N° 4.

FILE N° 113-039

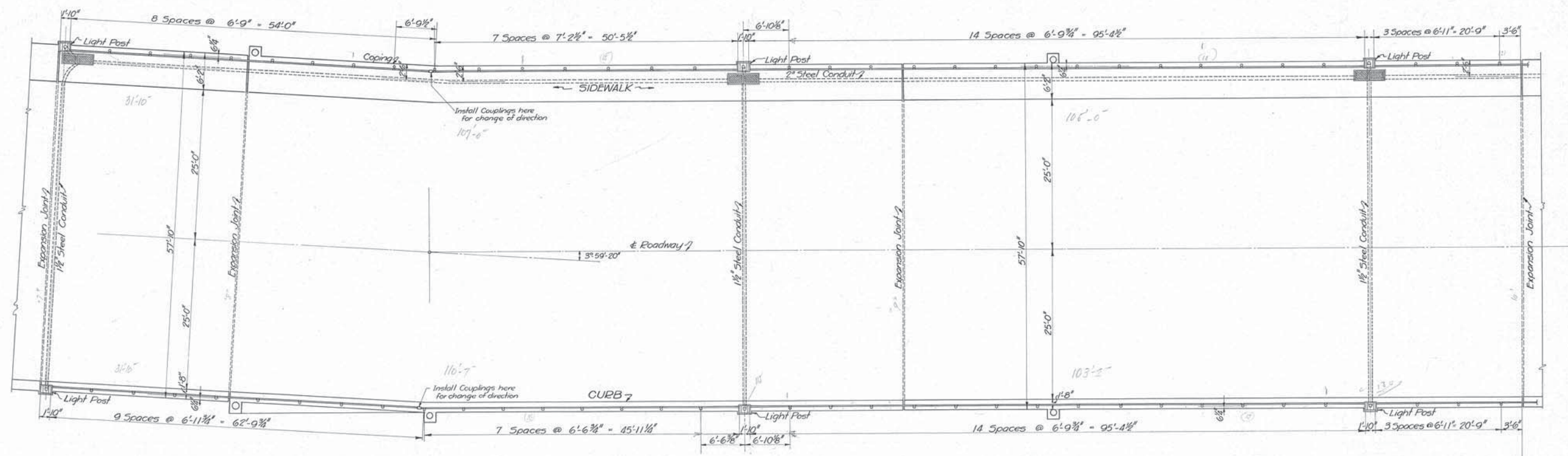
D14

Issue No A March 18, 1926

Revisions:  
Issue No B Nov 11, 1926  
Redesigned  
Issue No 1. Sept. 29, 1927  
Approved by Chief Engineer.  
Added details of transformer chamber.

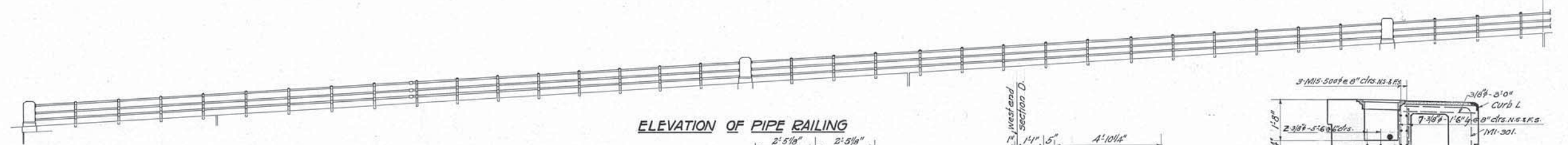
Issue No 2. Nov. 7, 1927.  
Approved by Commissioner of Engineering and Construction City of Cleveland.

Issue No 3 May 24, 1931  
Plan conforms to structure as built.

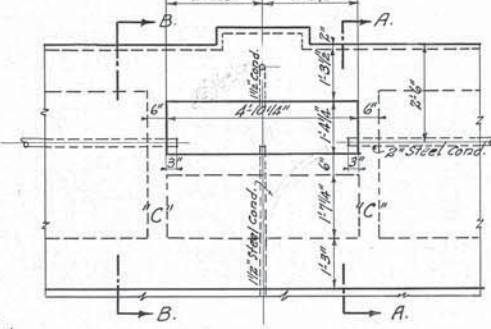


Note:  
Dimensions shown are parallel to grade.

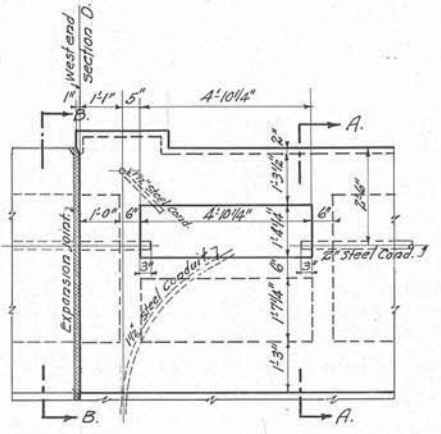
PLAN



ELEVATION OF PIPE RAILING

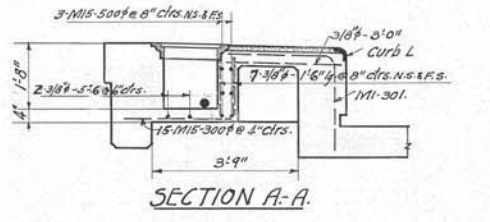


PLAN "A"

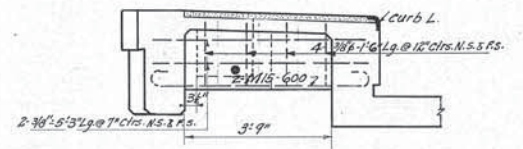


PLAN "B"

DETAILS OF TRANSFORMER CHAMBER  
Scale 1/2" = 1'-0"



SECTION A-A



SECTION B-B  
Showing Reinforcement wall "C"

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE VIADUCT SECTION "D"  
PORTION IN STONES LEVEE BETWEEN  
CANAL ST & WEST LINE OF B & O R.R.  
RAILING AND LIGHTING DETAILS  
CLEVELAND, OHIO

OFFICE OF ENGINEER OF STRUCTURES  
SCALE: 1/8" = 1'-0"  
ISSUE No. 3

DATE: MARCH 18, 1926  
REVISED: May 26, 1931

CHIEF ENGINEER

Designed By W.L.F. Nov 5, 1926  
Detailed By S.H. Nov 11, 1926  
Traced By J.I.C. Aug 3, 1927  
Checked By F.A.B. May 4, 1927  
Correct M.A.S. 5/22/27  
Designing Engineer

Approved E.C. Marsh 7/18/27  
Engineer of Structures  
Approved F.W. Sadler 9/27/27  
Principal Assistant Engineer  
Approved H.W. Pugh 9/27/27  
Assistant Electrical Engineer  
Approved W.N. Bullock 11/27/27  
Engineer of Construction

We hereby certify that this Plan shows the structure as built.  
E.C. Marsh 7/18/31  
Engineer of Structures  
H.P. Bigelow 7/27/31  
Ass't Engineer of Construction

Notes:  
For details of Railing see Sheet No 3 of General Drawings  
2" conduit lines for street lights shall be supported from inserts spaced about 6'-0" on centers. See Sheet No 12 of Section "C" for detail of insert.  
1 1/2" conduit lines laid in concrete slab.

Plan Approved  
CITY OF CLEVELAND  
By Robert Hoffman  
Commissioner of Engineering and Construction  
Date Oct. 26, 1927.  
For Original of this Signature see blue print filed under No 113-039 S.



Issue No. A Oct. 17, 1925.

Revisions:

Issue No. B Dec. 12, 1925.

Added Cross-Section and changed title.

Issue No. 1 Dec. 14, 1925.

Signed by Chief Engineer.

Issue No. 2 Jan. 6, 1926.

Added Note.

Issue No. 3 Sept. 16, 1926.

Length of Section changed Redesignated and sheet redrawn.

Issue No. 4 Dec. 10, 1926.

Dimensions added, Drawing checked.

Issue No. 5 Mar. 26, 1927.

Removed paving dams.

Changed 5.597% Grade to 5.4%.

Revised Bracing between Columns.

Issue No. 6 Aug. 2, 1927.

Added M.H. Revised Notes.

Issue No. 7 Aug. 18, 1927.

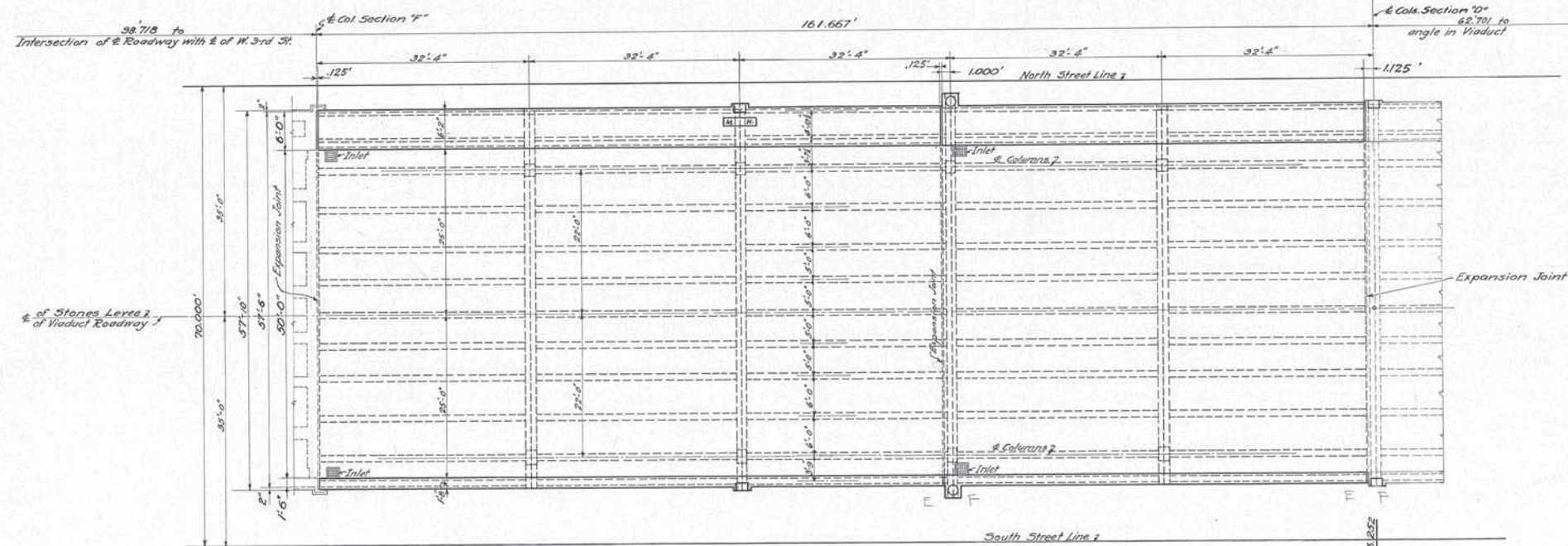
Signed by department heads.

Issue No. 8 Sept. 12, 1927.

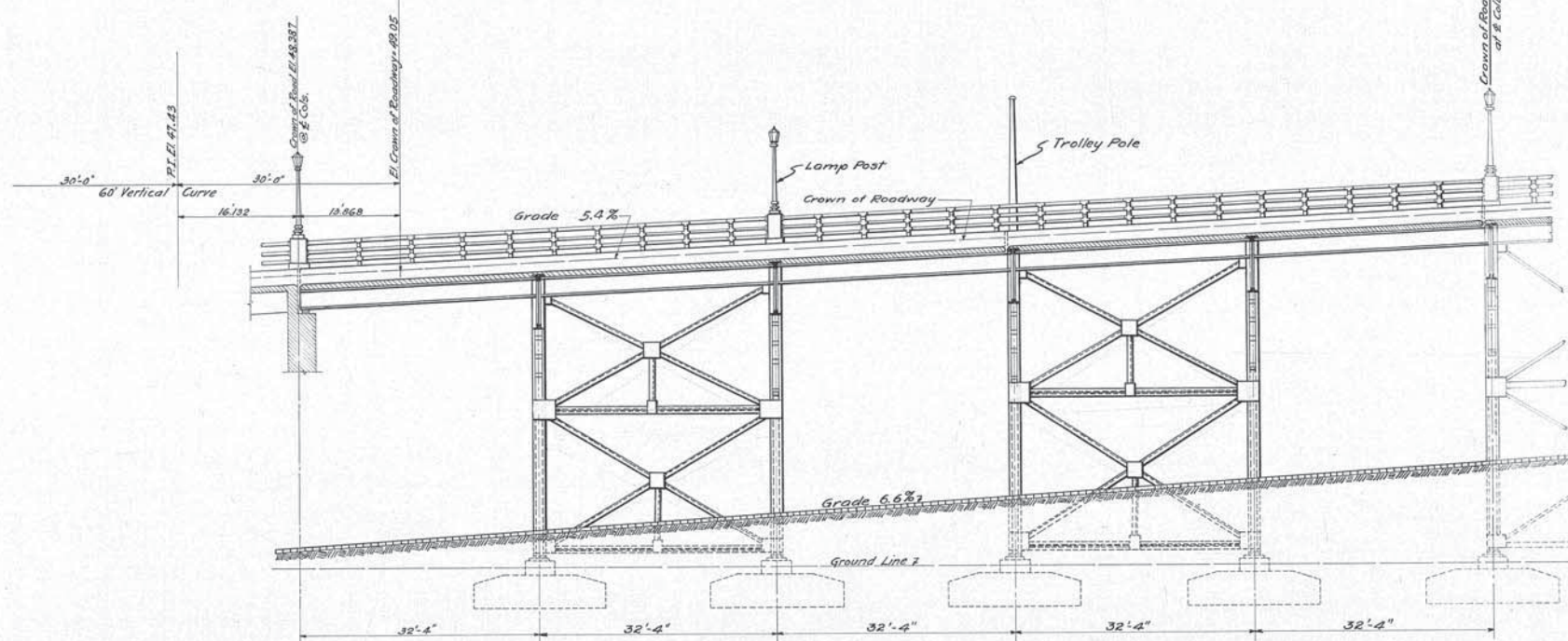
Approved by Commissioner of Engineering and Construction of the City of Cleveland.

Issue No. 9 May 26, 1931.

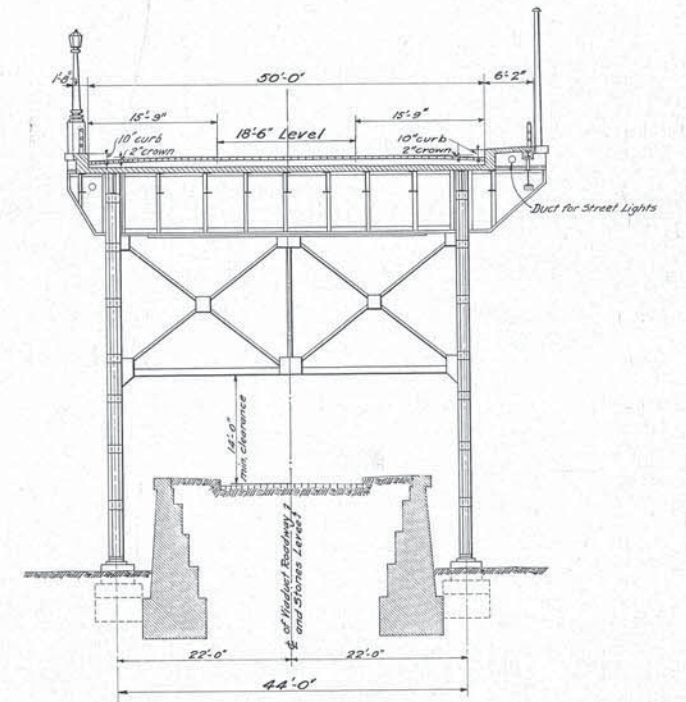
Plan conforms to structure as built.



PLAN



LONGITUDINAL SECTION



CROSS SECTION

Approved *E.P. Marsh* 10/27  
Engineer of Structures  
Approved *J.W. Sadler* 9/17/27  
Principal Assistant Engineer  
Approved *J.H. Winkler* 8/17/27  
Assistant Electrical Engineer  
Approved *W.H. Couloff* 8/17/27  
Engineer of Construction

Designed by H.S.N.G.T.C. 9-16-26  
Detailed by G.T.C. 9-16-26  
Traced by H.B. 9-21-26  
Checked by R.E.P. 12-10-26  
Correct *M.H. 5-14-27*  
*H.L. Johnson*  
Designing Engineer

Plan Approved  
CITY OF CLEVELAND  
By: *Robert Hoffman*  
Commissioner of Engineering and Construction  
Date *Sept 8, 1927*  
For Original of this Signature  
See Blue Print filed under 113-0395

*E.P. Marsh* 7/18/31  
*H.R. Bigelow* 7/27/31

Notes:  
Substructure and Superstructure to be Concrete Class 2 (Approx. mix 1:2:4) 6 bags of cement to a cu. yd.  
Concrete for Waterproofing protection to be Class 2 (approx. mix 1:2:4) 6 bags of cement to a cu. yd.  
Concrete fill for slot for Car Tracks to be Class 2 (approx. mix 1:3:6) 4 1/2 bags of cement to a cu. yd., not in this contract.  
All structural steel designed in accordance with the Cleveland Union Terminals Co.'s Specifications for Steel Highway Bridges and Viaducts, except as noted on the General Plan and Elevations, Sheet No. 1.  
Trolley Poles & Light Poles furnished & installed by others.  
Pavement: 4" Medial block on 1 1/2" granulated slag cushion  
Maximum soil pressure 6000<sup>lb</sup> per sq. ft.  
Chamfer all exposed edges & corners of conc. 3/8" unless otherwise shown.  
All exposed concrete to have a hard dense smooth surface uniform in texture and color.

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE. VIADUCT SECTION "E"  
PORTION BETWEEN B.&O. R.R. & EAST LINE OF W.3<sup>RD</sup> STREET  
GENERAL PLAN & SECTIONS  
CLEVELAND, OHIO.  
OFFICE OF ENGINEER OF STRUCTURES  
Scale: 1"=10'-0"  
Date: Oct. 17, 1925.  
Issue No. *E*  
*E.P. Marsh*  
Chief Engineer

Issue No A Oct. 22, 1926

REVISIONS:

Issue No B 1-19-1926  
Removed one panel.

Issue No C 1-20-1926  
Changed Title, Raggle and Reinforcing Steel. Added details of Curb Angle and C.I. Inlet Frame and Grating.

Issue No D 9-23-1926  
Length of Section changed, redesigned & Sheet redrawn.

Issue No E 4-26-1927  
Expansion Joint details added Dams & C.I. Inlet detail removed.

Issue No F 5-5-1927  
Minor Revisions. Sheet Traced.

Issue No G 8-1-1927  
Added Drip, Transformer Chamber, Minor details.

Issue No I 8-18-1927  
Signed by Chief Engineer

Issue No 2 Sept. 12, 1927  
Approved by Commissioner of Engineering and Construction of the City of Cleveland.

Issue No 3 Nov 14, 1927  
Minor revisions

Issue No 4 May 25, 1931  
Plan conforms to structure as built.

Issue No 5 May 25, 1931  
Plan conforms to structure as built.

Issue No 6 May 25, 1931  
Plan conforms to structure as built.

Issue No 7 May 25, 1931  
Plan conforms to structure as built.

Issue No 8 May 25, 1931  
Plan conforms to structure as built.

Issue No 9 May 25, 1931  
Plan conforms to structure as built.

Issue No 10 May 25, 1931  
Plan conforms to structure as built.

Issue No 11 May 25, 1931  
Plan conforms to structure as built.

Issue No 12 May 25, 1931  
Plan conforms to structure as built.

Issue No 13 May 25, 1931  
Plan conforms to structure as built.

Issue No 14 May 25, 1931  
Plan conforms to structure as built.

Issue No 15 May 25, 1931  
Plan conforms to structure as built.

Issue No 16 May 25, 1931  
Plan conforms to structure as built.

Issue No 17 May 25, 1931  
Plan conforms to structure as built.

Issue No 18 May 25, 1931  
Plan conforms to structure as built.

Issue No 19 May 25, 1931  
Plan conforms to structure as built.

Issue No 20 May 25, 1931  
Plan conforms to structure as built.

Issue No 21 May 25, 1931  
Plan conforms to structure as built.

Issue No 22 May 25, 1931  
Plan conforms to structure as built.

Issue No 23 May 25, 1931  
Plan conforms to structure as built.

Issue No 24 May 25, 1931  
Plan conforms to structure as built.

Issue No 25 May 25, 1931  
Plan conforms to structure as built.

Issue No 26 May 25, 1931  
Plan conforms to structure as built.

Issue No 27 May 25, 1931  
Plan conforms to structure as built.

Issue No 28 May 25, 1931  
Plan conforms to structure as built.

Issue No 29 May 25, 1931  
Plan conforms to structure as built.

Issue No 30 May 25, 1931  
Plan conforms to structure as built.

Issue No 31 May 25, 1931  
Plan conforms to structure as built.

Issue No 32 May 25, 1931  
Plan conforms to structure as built.

Issue No 33 May 25, 1931  
Plan conforms to structure as built.

Issue No 34 May 25, 1931  
Plan conforms to structure as built.

Issue No 35 May 25, 1931  
Plan conforms to structure as built.

Issue No 36 May 25, 1931  
Plan conforms to structure as built.

Issue No 37 May 25, 1931  
Plan conforms to structure as built.

Issue No 38 May 25, 1931  
Plan conforms to structure as built.

Issue No 39 May 25, 1931  
Plan conforms to structure as built.

Issue No 40 May 25, 1931  
Plan conforms to structure as built.

Issue No 41 May 25, 1931  
Plan conforms to structure as built.

Issue No 42 May 25, 1931  
Plan conforms to structure as built.

Issue No 43 May 25, 1931  
Plan conforms to structure as built.

Issue No 44 May 25, 1931  
Plan conforms to structure as built.

Issue No 45 May 25, 1931  
Plan conforms to structure as built.

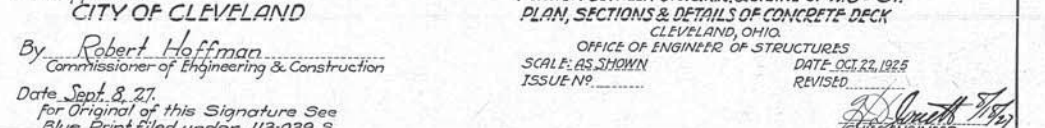
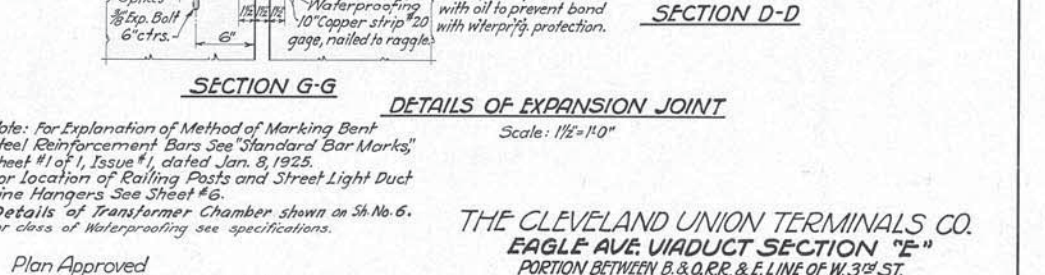
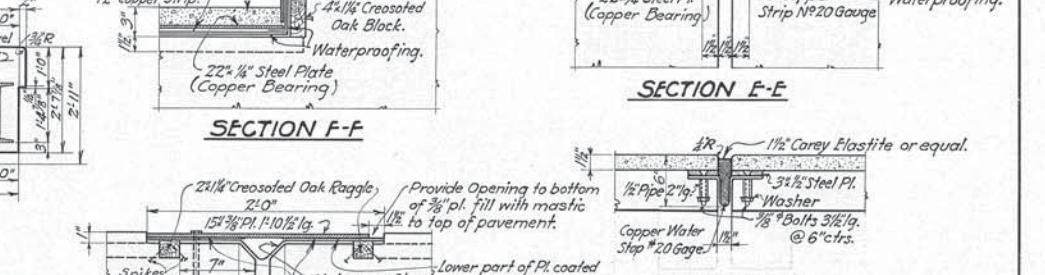
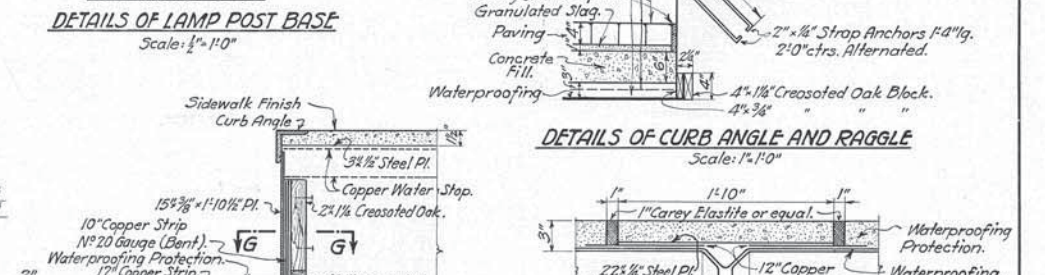
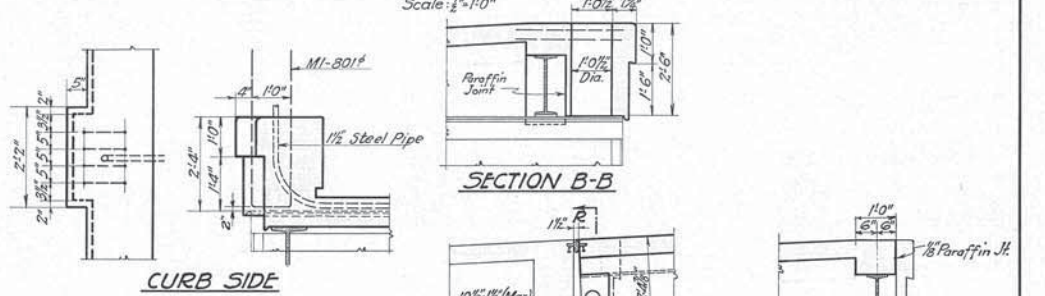
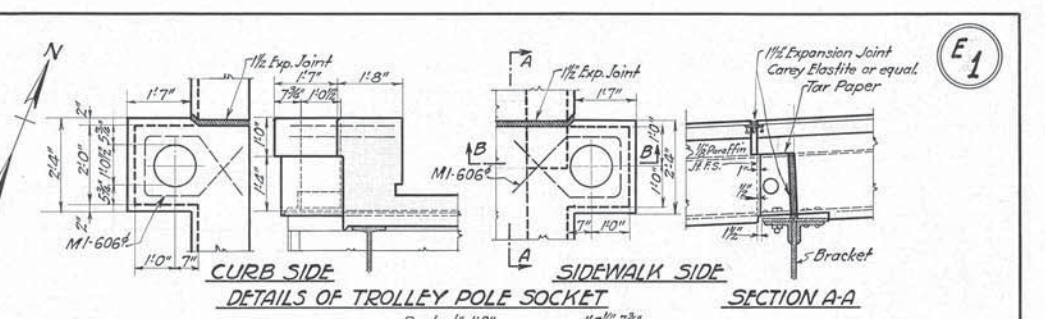
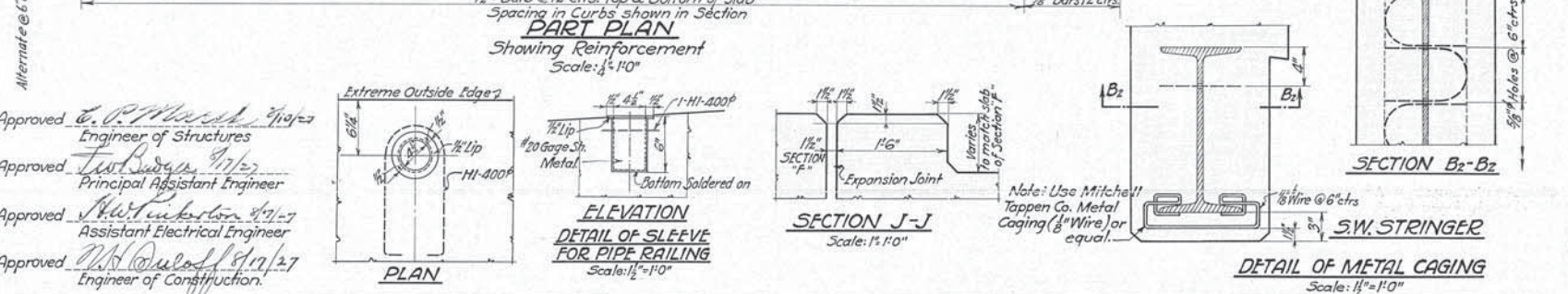
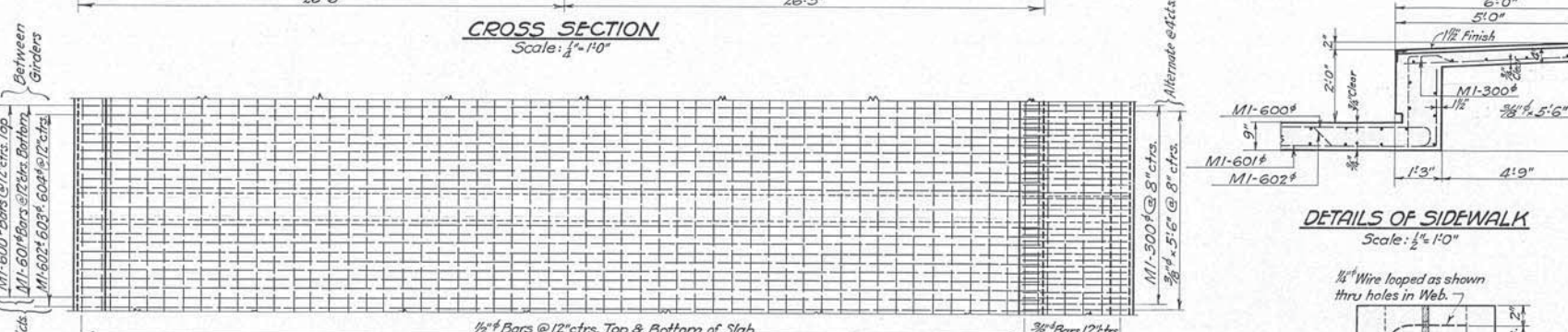
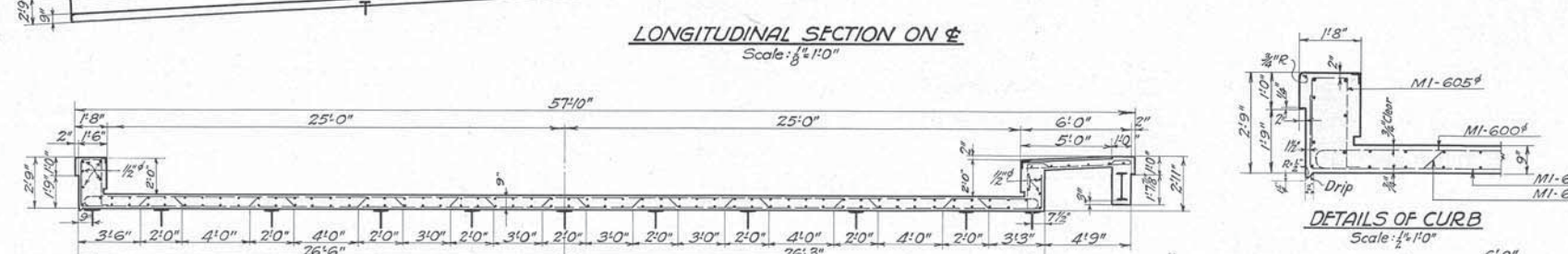
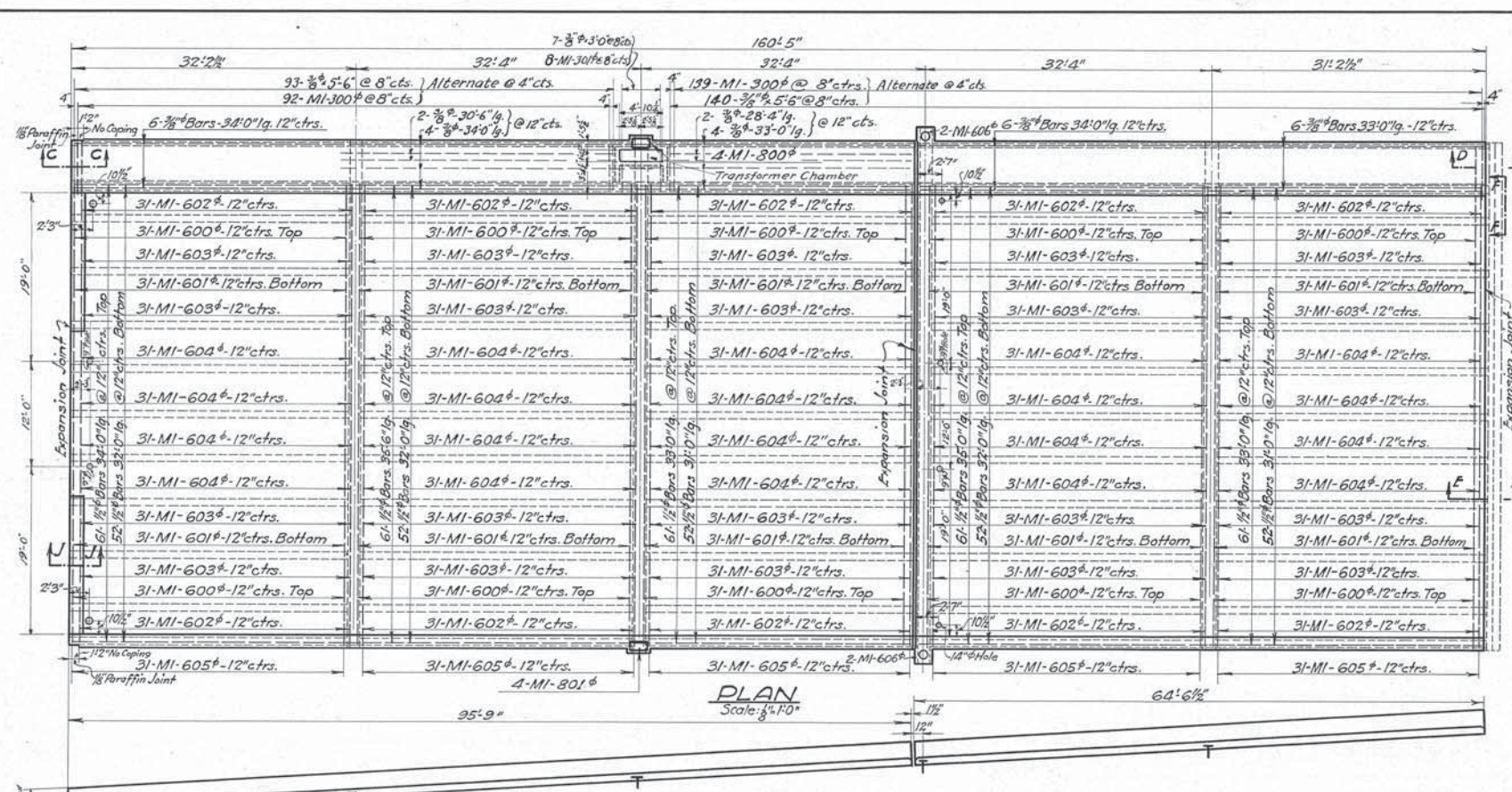
Issue No 46 May 25, 1931  
Plan conforms to structure as built.

Issue No 47 May 25, 1931  
Plan conforms to structure as built.

Issue No 48 May 25, 1931  
Plan conforms to structure as built.

Issue No 49 May 25, 1931  
Plan conforms to structure as built.

Issue No 50 May 25, 1931  
Plan conforms to structure as built.

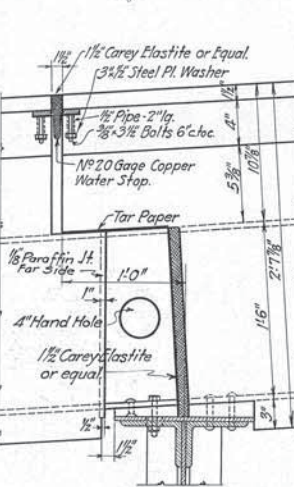


Note: For Explanation of Method of Marking Bent Steel Reinforcement Bars See "Standard Bar Marks", Sheet #1 of 1, Issue #1, dated Jan. 8, 1925. For location of Railing Posts and Street Light Duct Line Hangers See Sheet #6. Details of Transformer Chamber shown on Sh. No. 6. For class of Waterproofing see specifications.

Plan Approved  
**CITY OF CLEVELAND**  
By **Robert Hoffman**  
Commissioner of Engineering & Construction  
Date **Sept. 8, 27**  
for Original of this Signature See Blue Print filed under 113-039 S.

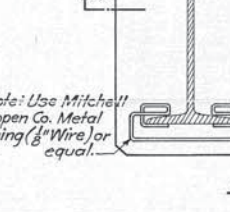
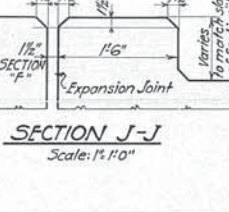
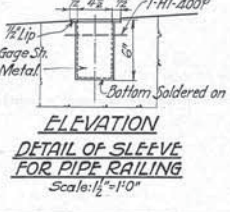
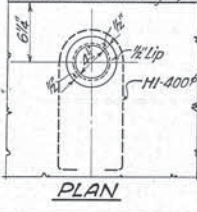
**THE CLEVELAND UNION TERMINALS CO.**  
**EAGLE AVE. VIADUCT SECTION "E"**  
PORTION BETWEEN B & O.R.R. & E. LINE OF W. 3<sup>RD</sup> ST.  
CLEVELAND, OHIO.  
OFFICE OF ENGINEER OF STRUCTURES  
SCALE: AS SHOWN  
DATE: OCT. 22, 1926  
ISSUE NO. 1  
REVISIONS:  
By **Smith**  
CHIEF ENGINEER

*C. P. Marshall*  
*H. L. Bigelow 7/27/31*



Designed By **H.S.N. & G.T.C.** 9-23-26.  
Detailed By **G.T.C.** 9-23-26.  
Traced By **S.H.** 5-5-27.  
Checked By **E.A.B.** 5-4-27.  
Correct **5-5-27**  
**F. J. Gorman**  
Designing Engineer

Approved **C. P. Marshall** 7/27/31  
Engineer of Structures  
Approved **J. W. Rogers** 7/27/31  
Principal Assistant Engineer  
Approved **A. W. Johnston** 7/27/31  
Assistant Electrical Engineer  
Approved **M. H. Pauloff** 8/17/27  
Engineer of Construction.



E1

E4

Issue No A Nov 12, 1925  
Revisions:

Issue No B Jan 4, 1926  
Changed Framing Plan  
Elevation and Title.

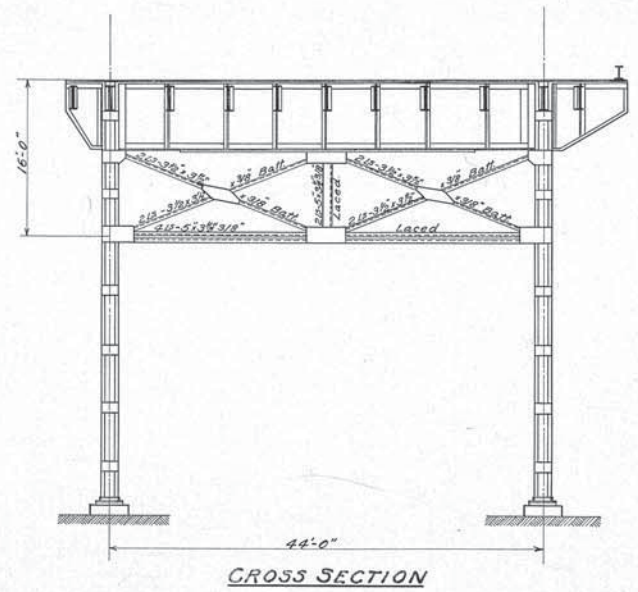
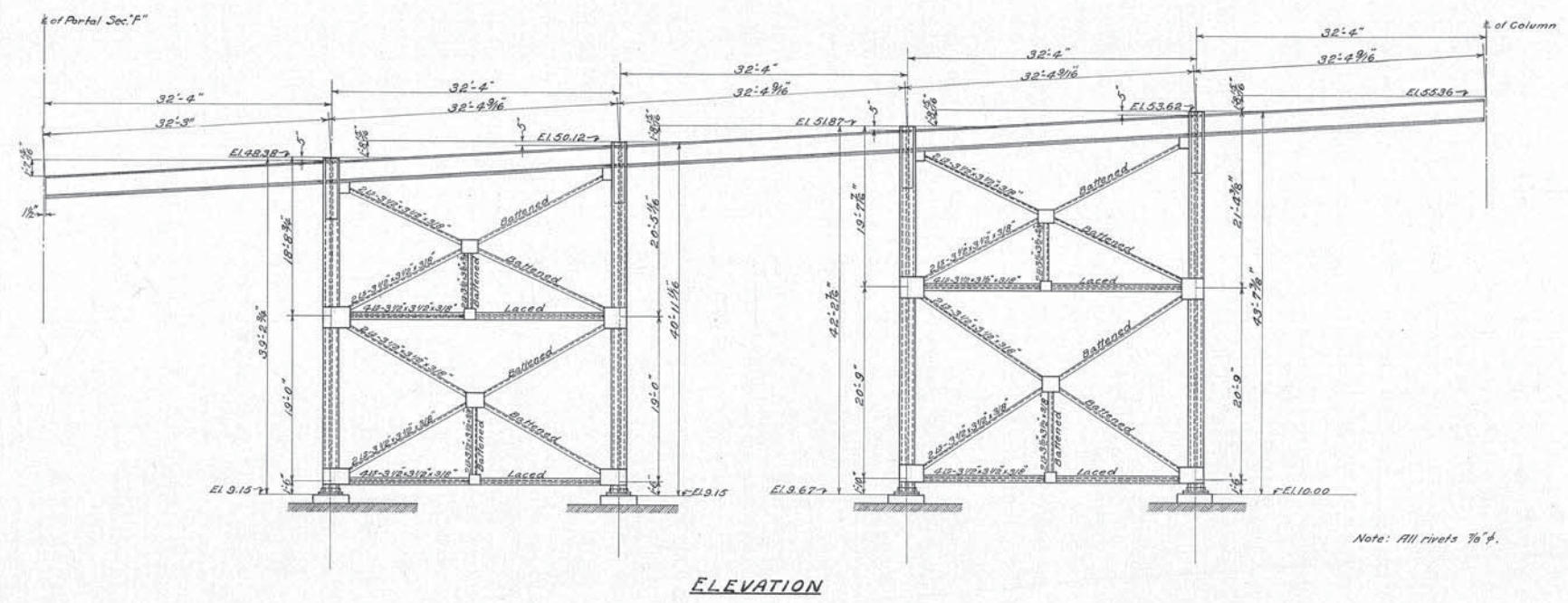
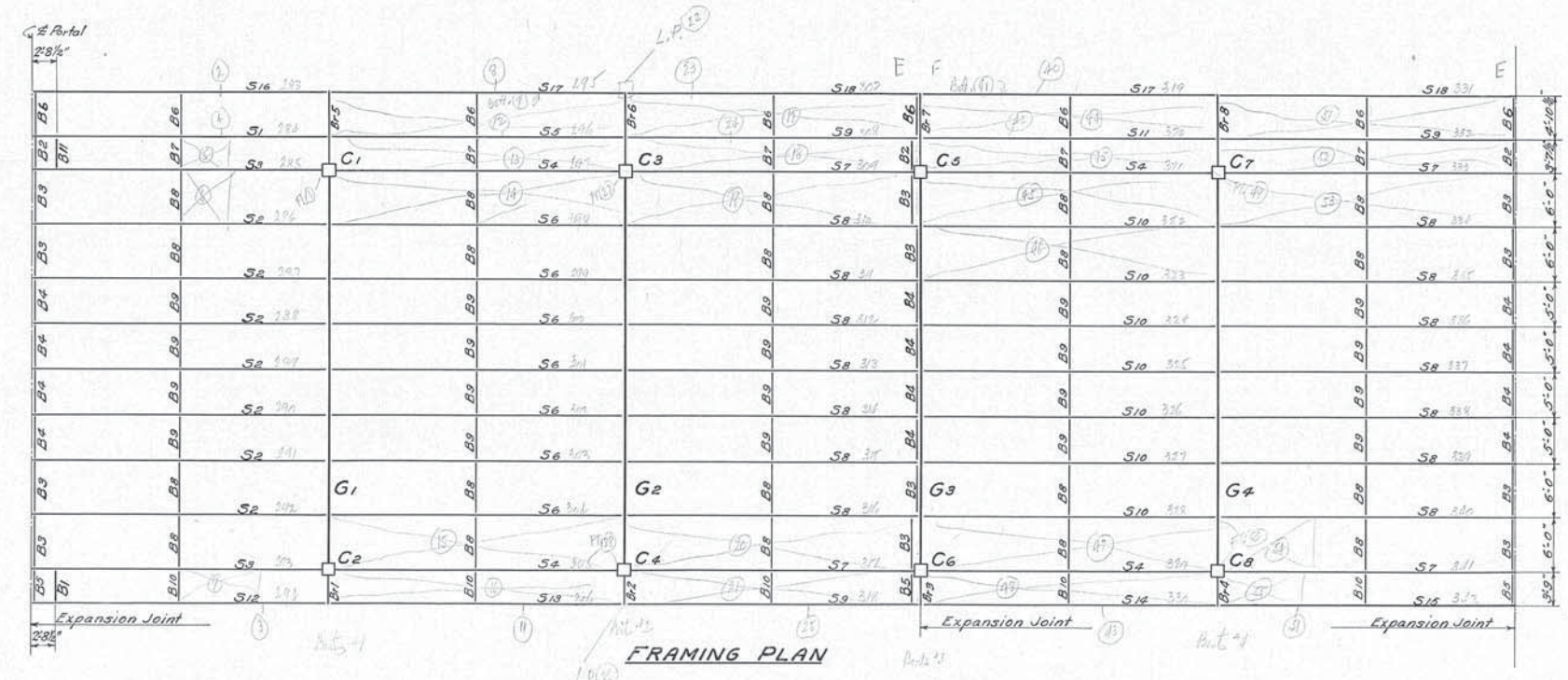
Issue No C Sept 28, 1926  
Length of Section changed.  
Redesigned and sheet redrawn.

Issue No D March 24, 1927  
Revised Grade and changed  
Bracing Details.

Issue No 1 Aug 18, 1927  
Signed by Chief Engineer

Issue No 2 Sept 12, 1927  
Approved by Commissioner of  
Engineering and Construction  
of the City of Cleveland

Issue No 3 May 26, 1931  
Plan conforms to structure  
as built.



Designed by H.S.N. & G.C. Sept. 28, 1926  
Detailed by G.T.C. Sept. 28, 1926  
Traced by J.H.G. March 24, 1927  
Checked by E.A.B. May 4, 1927  
Corrected by J.S. 5-5-27  
Designing Engineer

Approved *E.P. Marsh* 9/19/27  
Engineer of Structures

Approved *J.H.G.* 4/1/27  
Principal Assistant Engineer

Approved *M.H. Duleff* 8/17/27  
Assistant Electrical Engineer

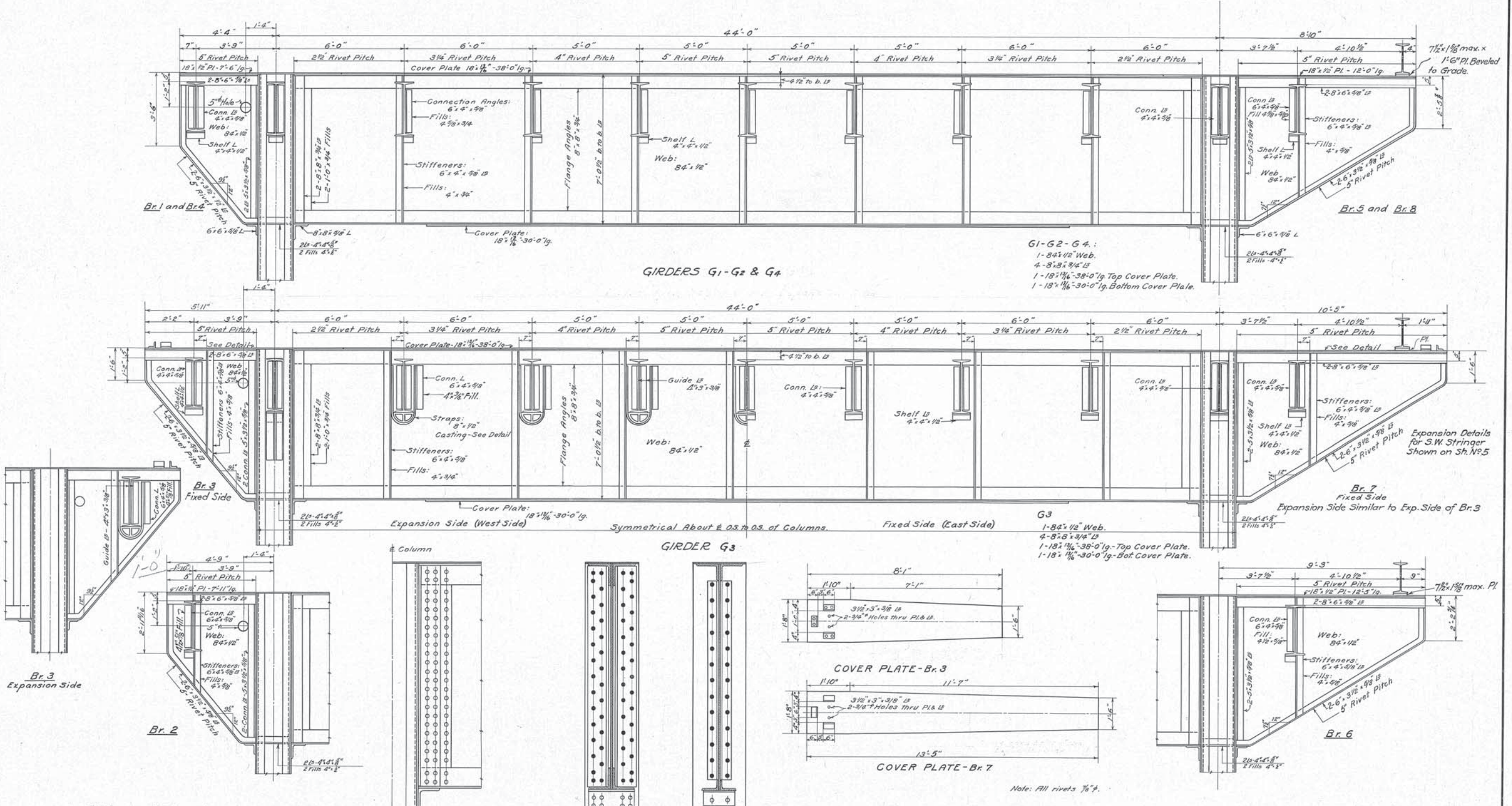
Approved *M.H. Duleff* 8/17/27  
Engineer of Construction

*E.P. Marsh* 7/19/31  
*H.L. Bigelow* 7/27/31

Plan Approved  
CITY OF CLEVELAND  
By *Robert Hoffman*  
Commissioner of Engineering & Construction  
Date Sept. 8, 1927  
for Original of this Signature See  
Blue Print filed under 113-039 S.

THE CLEVELAND UNION TERMINALS CO  
EAGLE AVE VIADUCT SECTION E  
PORTION BETWEEN B&ORR & EAST LINE OF W. 3<sup>RD</sup> ST.  
STEEL FRAMING PLAN AND ELEVATION  
CLEVELAND OHIO  
OFFICE OF ENGINEER OF STRUCTURES  
SCALE: 1/8" = 1'-0"  
DATE: Sept. 28, 1926  
ISSUE NO. \_\_\_\_\_  
REVISION \_\_\_\_\_  
*J.S.*  
CHIEF ENGINEER

Issue No A 11-12-1925  
 REVISIONS:-  
 Issue No B 1-20-1926  
 Changed Title.  
 Issue No C 10-5-1926  
 Length of Section changed. Re-designed and Sheet Redrawn.  
 Issue No D 4-2-1927  
 Drawing Revised and Traced.  
 Issue No E 7-29-1927  
 Added strut angles on columns at lower flange of floor beams. Changed bracket dimensions. Minor revisions.  
 Issue No 1 8-18-1927  
 Signed by Chief Engineer  
 Issue No 2 Sept. 12, 1927  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3 May 26, 1931  
 Plan conforms to structure as built.



Designed By G.T.C. 9-9-26  
 Detailed By G.T.C. 10-5-26  
 Traced By J.H.C. 4-2-27  
 Checked By F.A.B. 5-4-27  
 Correct 5-5-27  
 Designing Engineer

Approved E.P. Marsh 7/1/27  
 Engineer of Structures  
 Approved J.P. Kelly 7/1/27  
 Principal Assistant Engineer  
 Approved M.H. Lusk 8/1/27  
 Assistant Electrical Engineer  
 Approved W.H. Paulson 8/1/27  
 Engineer of Construction

We hereby certify that this Plan shows the structure as built.  
 E.P. Marsh 7/1/27  
 Engineer of Structures  
 H.L. Bigelow 7/27/27  
 Ass't Engineer of Construction

END CONNECTIONS FOR GIRDERS  
 Scale: 3/4"=1'-0"

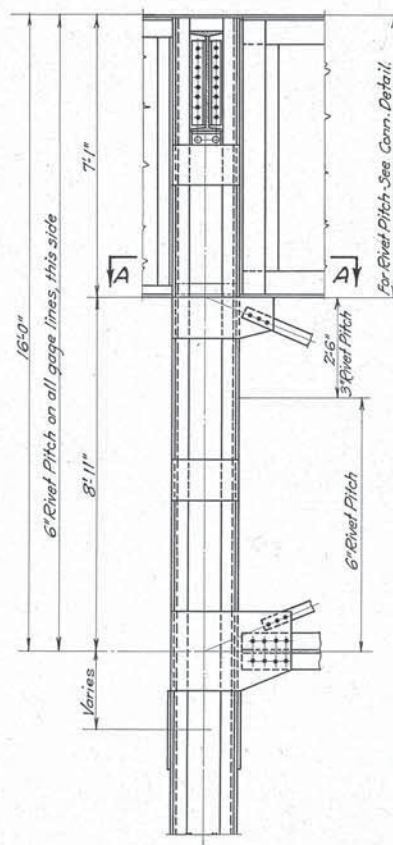
BRACKET CONNECTION  
 Scale: 3/4"=1'-0"

Plan Approved CITY OF CLEVELAND

By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date Sept. 8, 27  
 For Original of this Signature See Blue Print filed under 113-039 S.

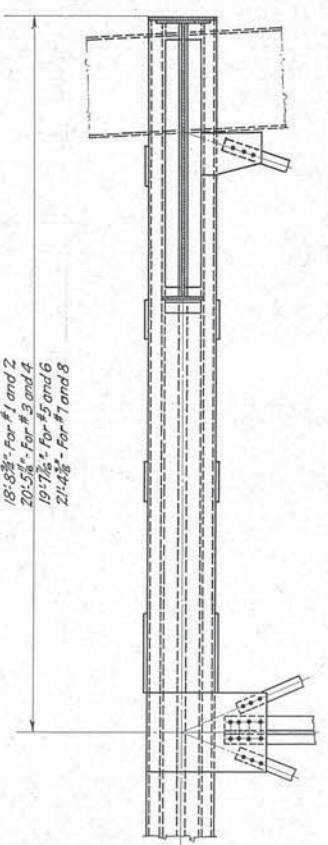
THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT SECTION "E"  
 PORTION BETWEEN B.&O.R.R. & E. LINE OF W. 3<sup>RD</sup> ST.  
 DETAILS OF GIRDERS & BRACKETS  
 CLEVELAND OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 3/4" EXCEPT AS NOTED DATE: NOVEMBER 17, 1925  
 ISSUE No. 3 REVISED May 24, 1931  
 J.S. Smith  
 CHIEF ENGINEER

Issue No A Nov. 19, 1925.  
**REVISIONS:-**  
 Issue No B Jan. 20, 1926.  
 Removed Cs, and changed Title.  
 Issue No C Oct. 12, 1926.  
 Length of Section changed. Re-designed and Sheet redrawn.  
 Issue No D Apr. 5, 1927.  
 Drawing revised and Traced.  
 Issue No E July 29, 1927.  
 Added strut Angles on columns at lower flange of floor beams.  
 Issue No 1 Aug. 18, 1927.  
 Signed by Chief Engineer  
 Issue No 2 Sept. 12, 1927.  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No 3 Oct. 15, 1927.  
 Revised bolt holes in col. bases.  
 Issue No 4 Oct. 10, 1927.  
 Revised spacing of Anchor bolt holes in Column bases.  
 Issue No 5 May 5, 1931.  
 Plan corrected to conform to structure as built.

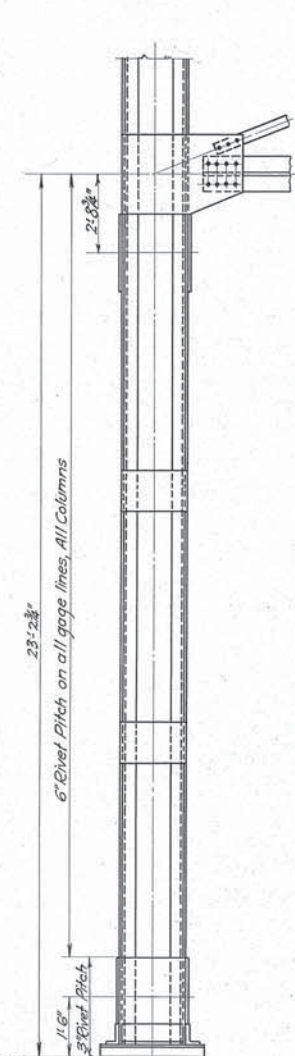


ALL COLUMNS

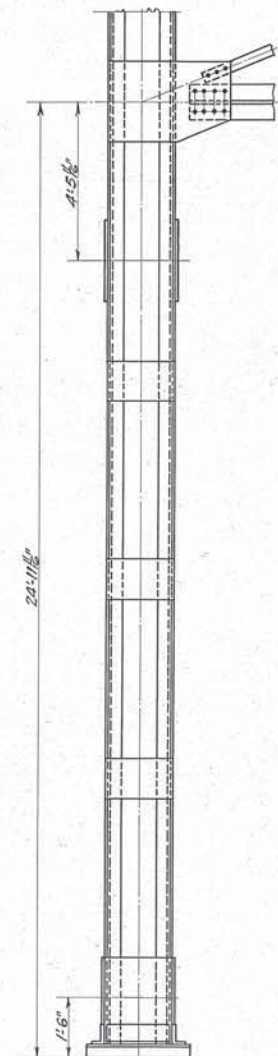
Scale: 1/4"=1'-0"



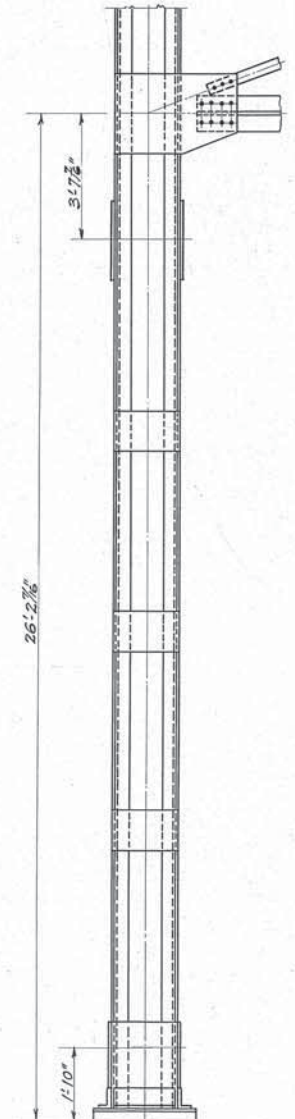
ALL COLUMNS



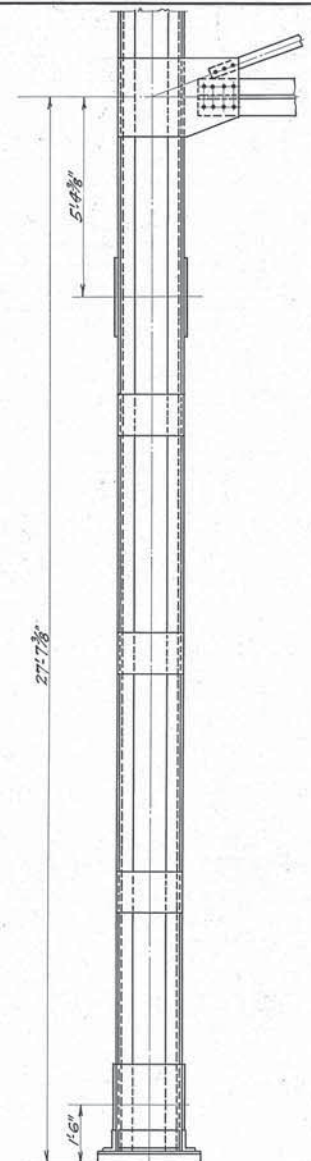
COLUMNS NO 1 AND 2



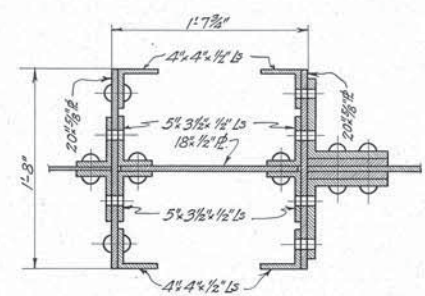
COLUMNS NO 3 AND 4



COLUMNS NO 5 AND 6

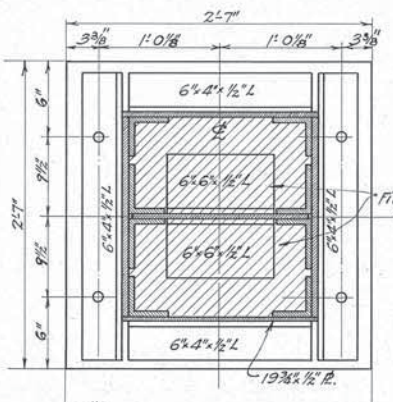


COLUMNS NO 7 AND 8



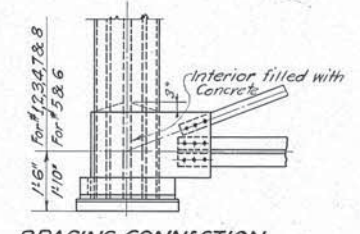
SECTION A-A

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



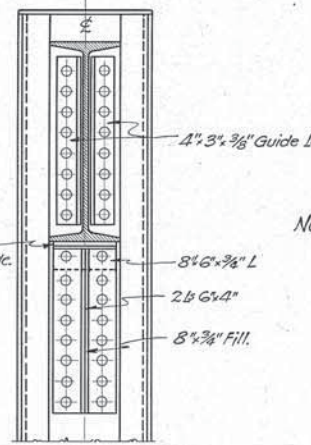
DETAILS OF COLUMN BASE

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



BRACING CONNECTION

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



EXPANSION STRINGER CONNECTION TO COL.

Scale: 1"=1'-0"

Columns:-  
 1- 18" x 1/2" Web Plate  
 4- 5" x 3 1/2" x 1/2" Ls  
 4- 4" x 4" x 1/2" Ls  
 2- 20" x 5/8" Plates

Note: All rivets 7/8"

NOTE: For location of open holes for drain pipe hangers See Sheet No 5

Designed By H.S.N.G.T.C. 9-28-26.  
 Detailed By G.T.C. 10-12-26.  
 Traced By S.H. A-5-27.  
 Checked By E.A.B. 5-4-27.  
 Corrected By S-27.  
 Designing Engineer

Approved E.C. Marsh 7/1/27.  
 Engineer of Structures  
 Approved J. P. ... 9/1/27  
 Principal Assistant Engineer  
 Approved H.W. ... 8/1/27  
 Assistant Electrical Engineer  
 Approved M.H. ... 8/1/27  
 Engineer of Construction

I hereby certify that this Plan shows the structure as built.  
 E.C. Marsh 7/1/27  
 Engineer of Structures  
 H.P. Bigelow 7/2/31  
 Asst Engineer of Construction

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date Sept. 8, 1927.  
 For Original of this Signature See Blue Print filed under 113-039.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT SECTION "E"  
 PORTION BETWEEN B.&O. R.R. & E. LINE OF W. 3rd ST.  
 DETAILS OF COLUMNS  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE AS SHOWN DATE: NOV. 19, 1925  
 ISSUE NO. 5 REVISED May 5, 1931  
 Chief Engineer

Issue No A 11-23-25.

REVISIONS:  
 Issue No B 1-21-26.  
 Changed Title, Footing, Stringer and Bracing Lists.  
 Removed one View.  
 Changed D 1-2-3-4.  
 Added Anchor Bolt Assembly.

Issue No C 10-15-26.  
 Length of Section changed.  
 Redesigned & Sheet redrawn.

Issue No D 4-25-27.  
 Drawing Revised and Traced.

Issue No E 7-30-27.  
 Minor revisions  
 Issue No 1 8-18-27  
 Signed by Chief Engineer

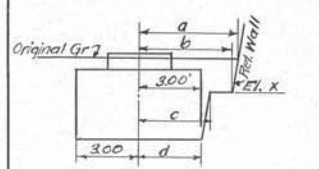
Issue No 2 Sept. 12, 1927.  
 Approved by Commissioner of Engineering and Construction of The City of Cleveland.

Issue No 3 Oct. 14, 1927  
 Numbered Footings. Revised Anchor Bolt Assembly.

Issue No 4 Oct. 18, 1927.  
 Revised spacing of Anchor bolts in footings.

Issue No 5 May 5, 1931  
 Plan corrected to conform to structure as built.

Foot. No.	Original Ground Elevation	Plan Elev. Bottom of Footing	Actual El. Bottom of Conc. Mat.
F-1	7.80	1.65	-0.90
F-2	8.80	1.65	-0.70
F-3	8.00	1.65	-0.90
F-4	8.60	1.65	-0.60
F-5	8.10	2.17	-1.00
F-6	9.10	2.17	-0.40
F-7	8.00	2.50	-0.50
F-8	9.80	2.50	-0.10

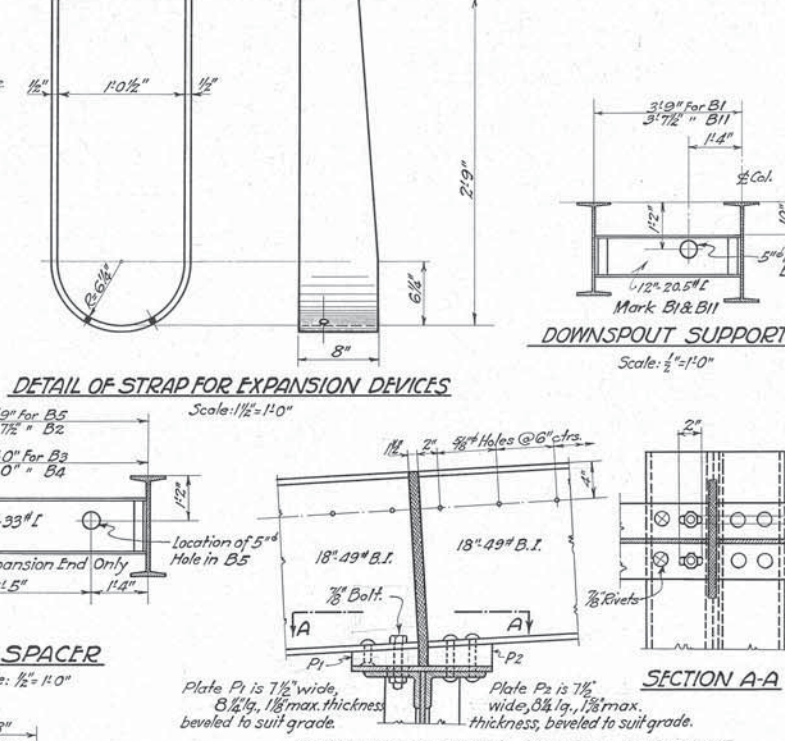
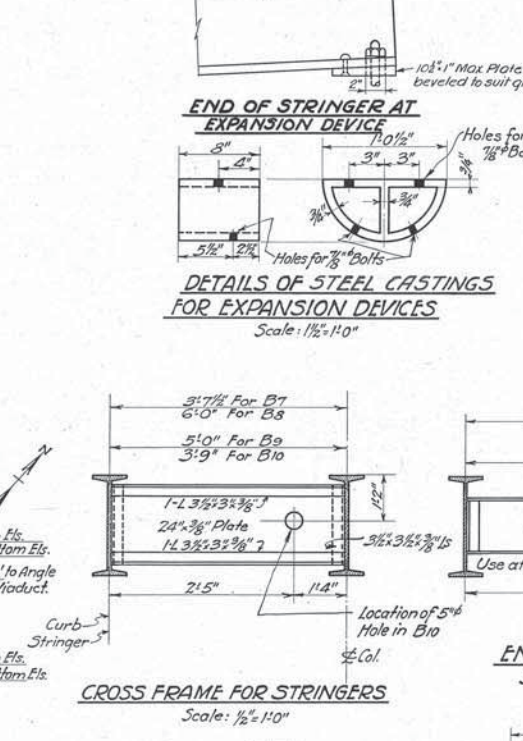
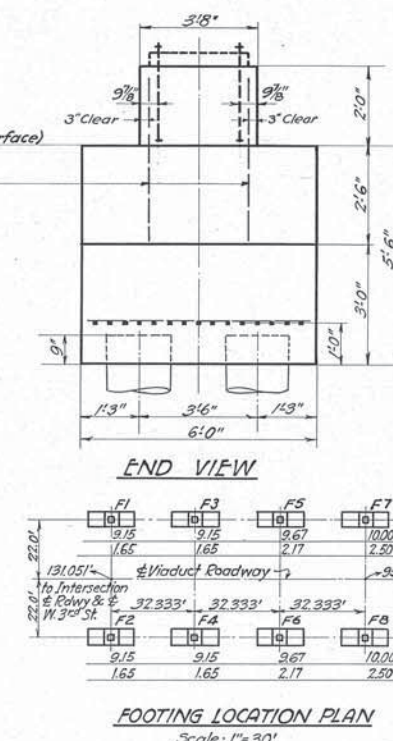
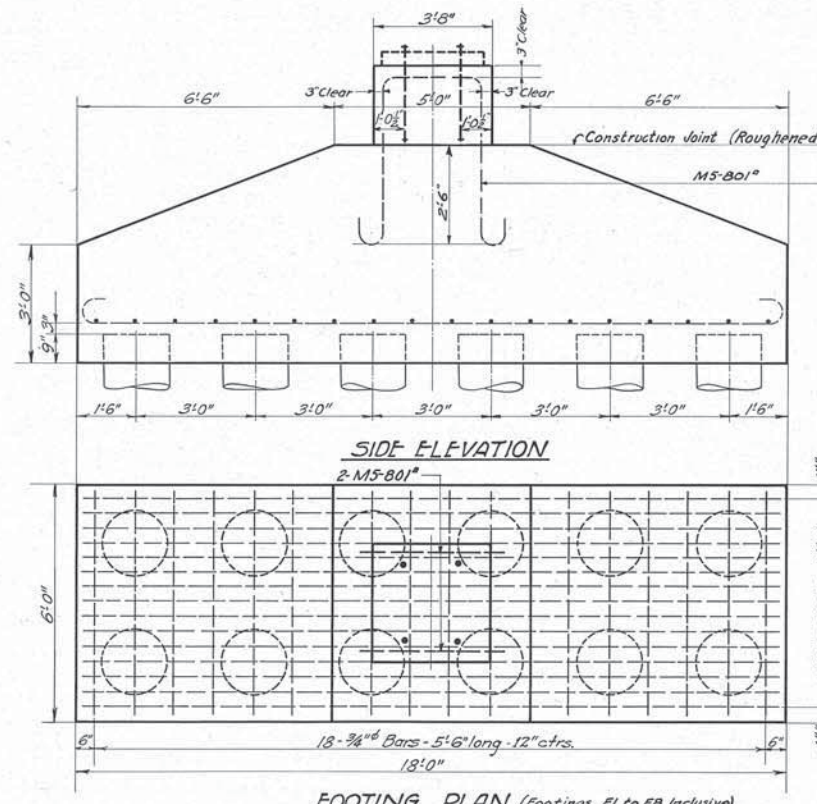


SECTION SHOWING OFFSETS FROM EAST AND WEST AXES OF FOOTINGS TO RETAINING WALL ALONG STONES LEVEE

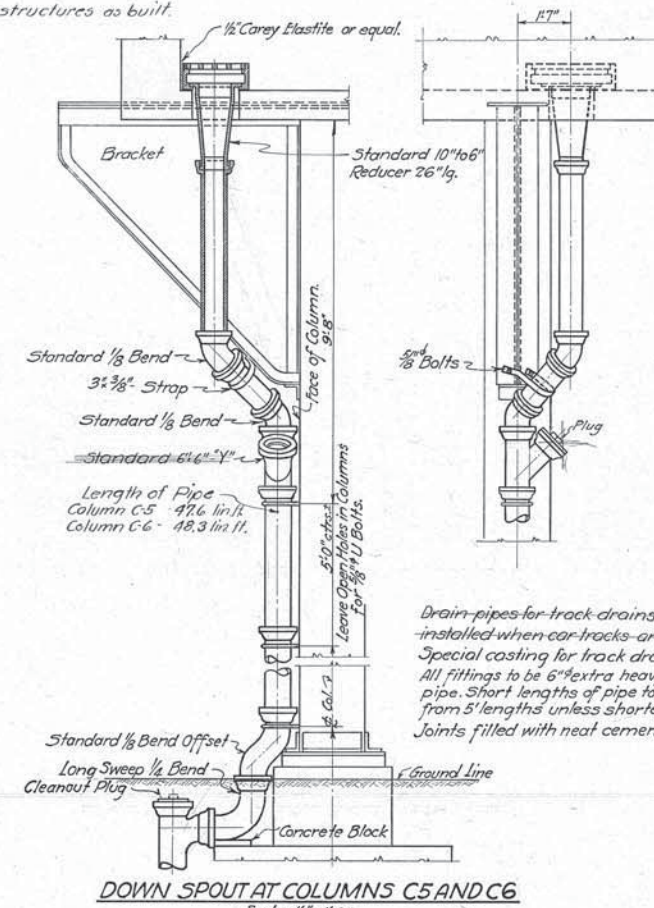
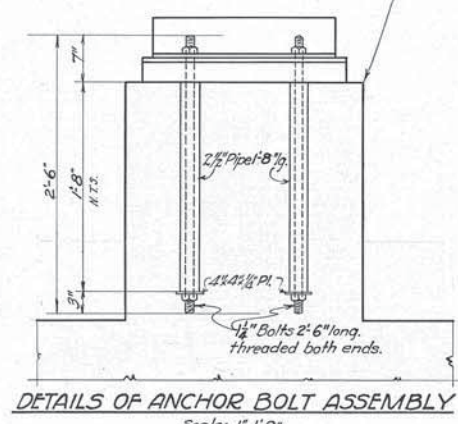
Foot.	a	b	c	d	El. X
F-1	4.60	3.44	3.01	3.01	4.65
F-2	4.52	4.38	2.97	2.88	4.70
F-3	4.51	4.26	3.04	3.04	4.77
F-4	4.46	4.23	2.82	2.76	4.59
F-5	4.42	4.28	3.14	3.08	4.65
F-6	4.35	4.22	3.06	2.91	4.77
F-7	4.32	4.16	3.00	2.96	4.61
F-8	4.30	4.20	2.92	2.93	4.70

Designed By G.T.C. 10-12-26.  
 Detailed By G.T.C. 10-15-26.  
 Traced By S.H. 4-25-27.  
 Checked By E.A.B. 5-4-27.  
 Corrected By W.S. 5-27.  
 Designing Engineer

Approved *C.O. Marsh* 9/14/27  
 Engineer of Structures  
 Approved *J.W. Bogan* 8/1/27  
 Principal Assistant Engineer  
 Approved *M.W. Lusk* 8/1/27  
 Assistant Electrical Engineer  
 Approved *M.S. Goulet* 8/1/27  
 Engineer of Construction



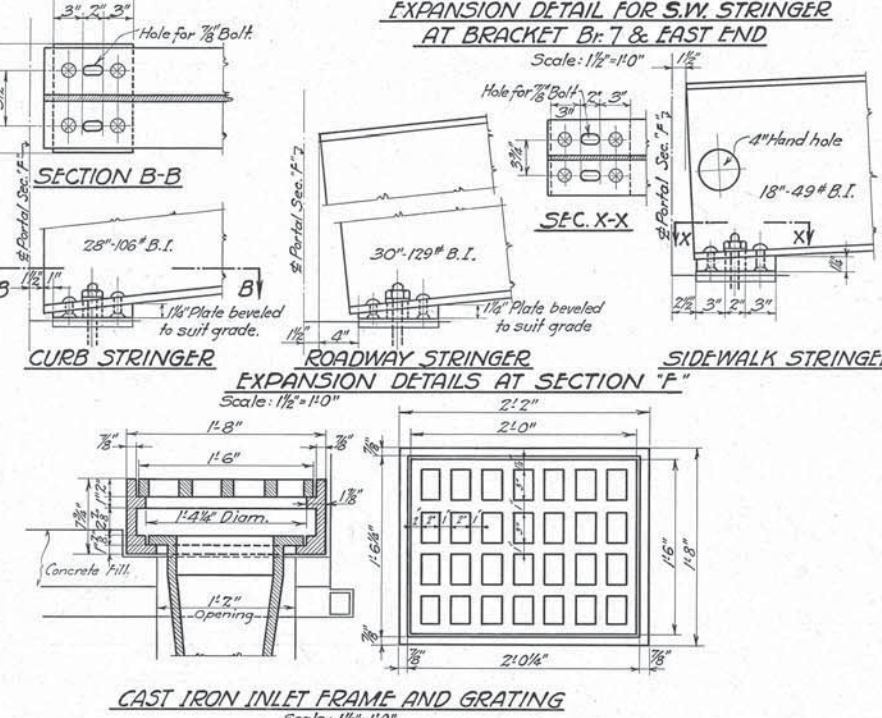
Note: Footing to be poured to approximately 1/2" above finished elevation and bush-hammered. 2 1/2" pipe to be filled with grout. Bearing plate to be set and adjusted in position before grout sets.



LIST OF STRINGERS

Mark No	Size	Length	Remarks
S1	1 28" 106# B.I.	32'-4"	Slotted Holes Exp. End.
S2	7 30" 129# B.I.	32'-4"	Slotted Holes Exp. End.
S3	2 30" 129# B.I.	32'-4"	Slotted Holes Exp. End.
S4	4 30" 129# B.I.	32'-4"	
S5	1 28" 106# B.I.	32'-4"	
S6	7 30" 129# B.I.	32'-4"	
S7	4 30" 129# B.I.	32'-4"	Slotted Holes Exp. End.
S8	14 30" 129# B.I.	32'-4"	Slotted Holes Exp. End.
S9	3 28" 106# B.I.	32'-4"	Slotted Holes Exp. End.
S10	7 30" 129# B.I.	32'-4"	
S11	1 28" 106# B.I.	32'-4"	
S12	1 28" 106# B.I.	32'-4"	Slotted Holes Exp. End.
S13	1 28" 106# B.I.	32'-4"	
S14	1 28" 106# B.I.	32'-4"	
S15	1 28" 106# B.I.	32'-4"	Slotted Holes Exp. End.
S16	1 18" 49# B.I.	32'-4"	See Detail
S17	2 18" 49# B.I.	32'-4"	
S18	2 18" 49# B.I.	32'-4"	See Detail

Lengths of Stringers given c-c of Girders.

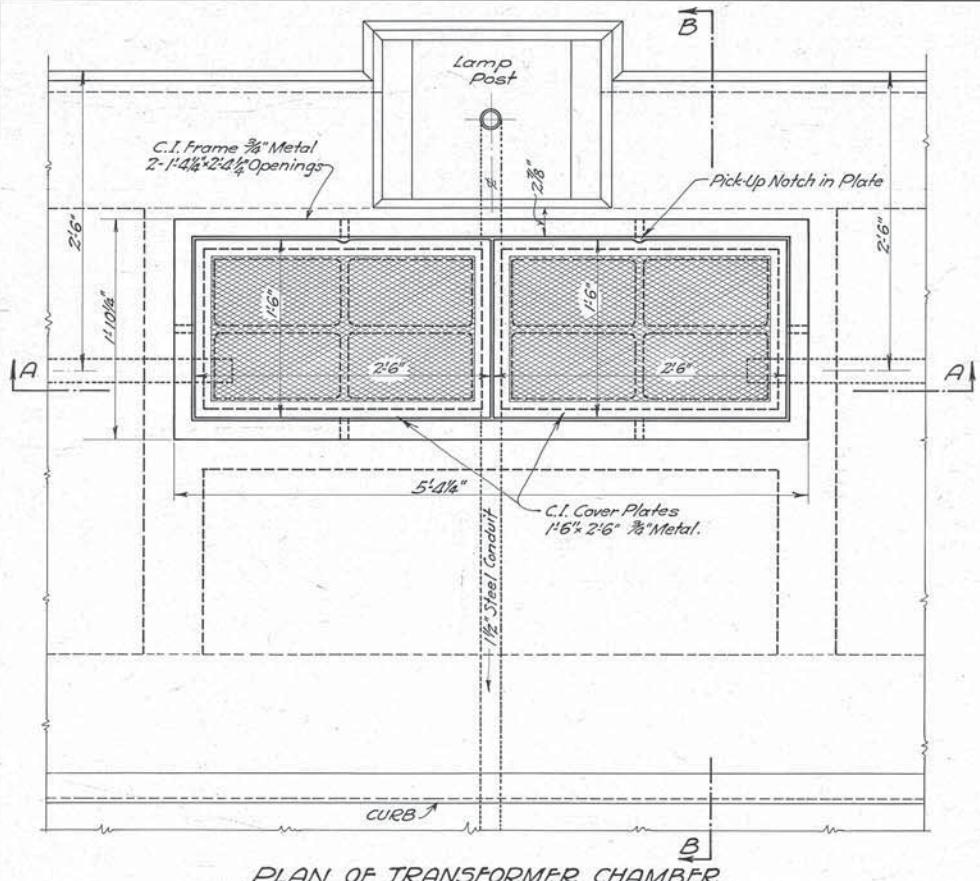


We hereby certify that this Plan shows the structure as built.  
*H.P. Bigelow*  
 Ass't Engineer of Construction

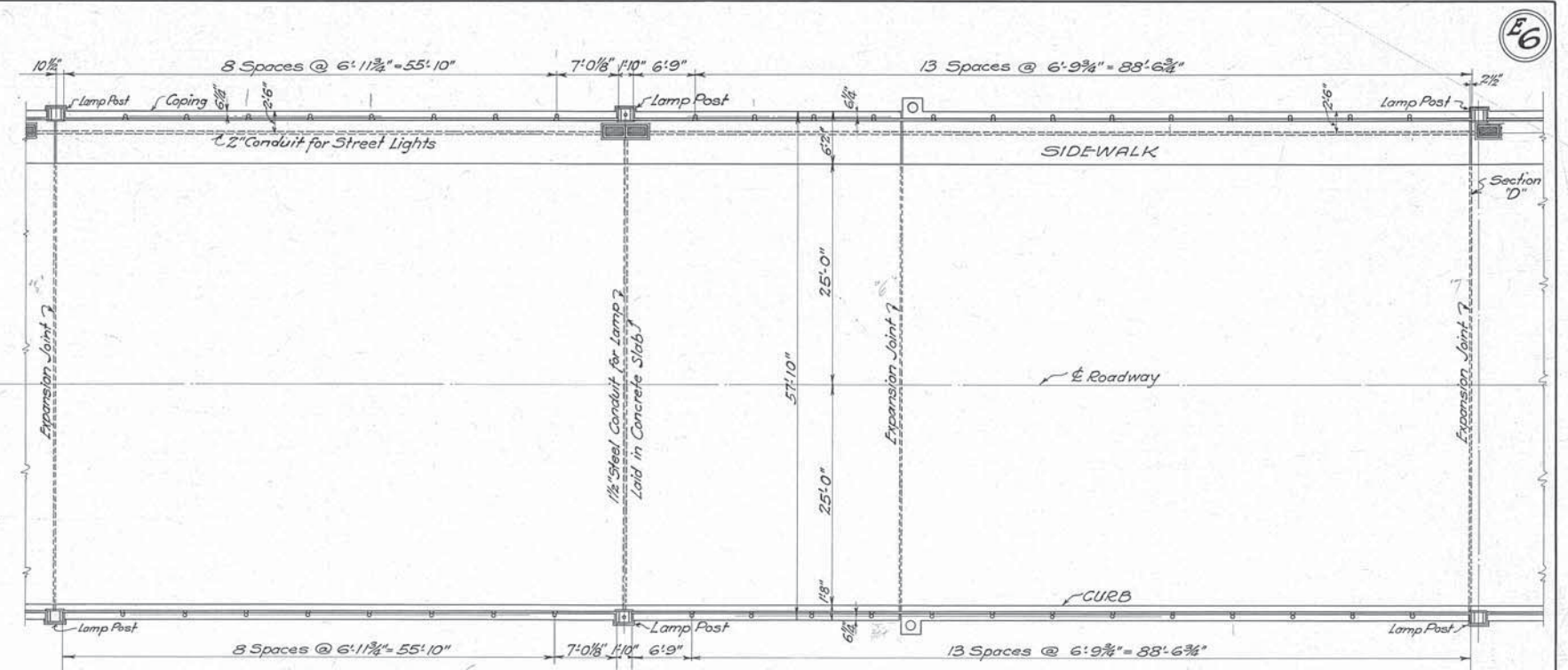
Plan Approved  
 CITY OF CLEVELAND  
 By *Robert Hoffman*  
 Commissioner of Engineering & Construction  
 Date Sept. 8-27  
 For Original of this Signature See Blue Print filed under 113-039 S.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT - SECTION "E"  
 PORTION BETWEEN B.&O.R.R. & E. LINE OF W. 3<sup>RD</sup> ST.  
 MISCELLANEOUS DETAILS AND FOOTINGS  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: AS SHOWN  
 ISSUE NO. 5  
 DATE: NOV 23, 1925  
 REVISED: May 5, 1931

Issue No. A Nov. 15, 1926.  
**REVISIONS:**  
 Issue No. B Aug. 2, 1927.  
 Details of Transformer Chamber Added.  
 Issue No. 1 Aug. 18, 1927.  
 Signed by Chief Engineer  
 Issue No. 2 Sept. 12, 1927.  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3 May 26, 1931.  
 Plan conforms to structure as built.

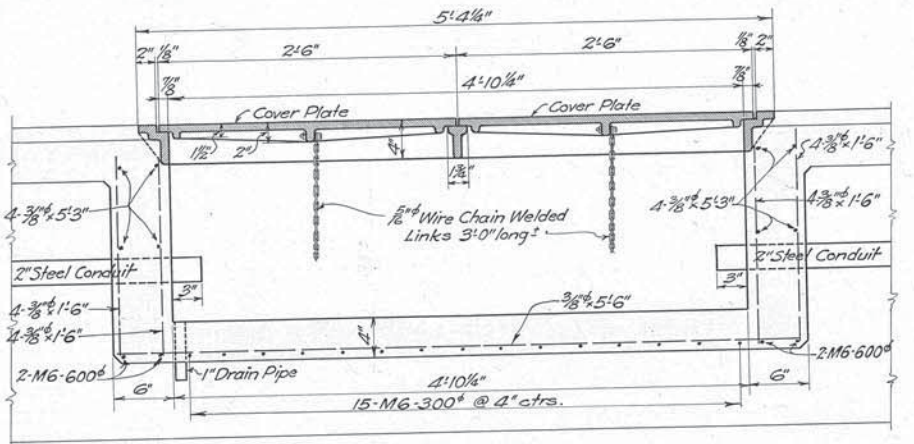


PLAN OF TRANSFORMER CHAMBER



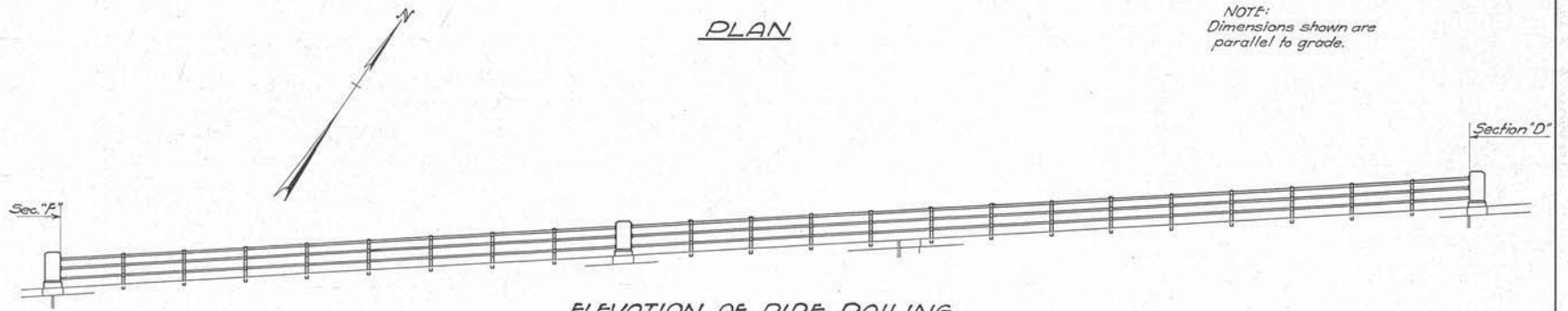
PLAN

NOTE:  
 Dimensions shown are parallel to grade.



SECTION A-A

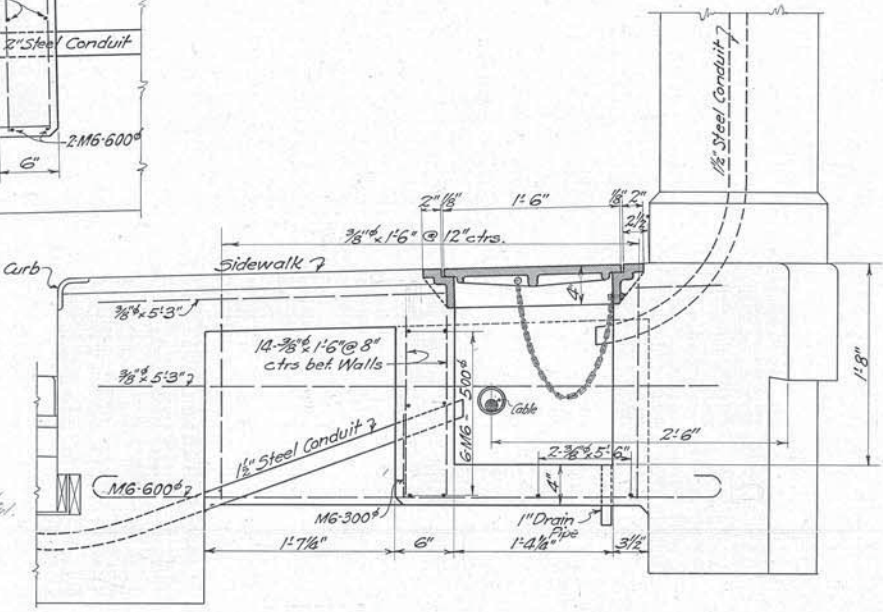
Scale 1/2" = 1'-0"



ELEVATION OF PIPE RAILING

Scale: 3/8" = 1'-0"

NOTES:  
 For Details of Pipe Railing and Concrete Posts See Sheet No. 3 of General Drawings.  
 2" Steel Conduits for Street Lights shall be supported from Inserts spaced about 6'-0" on centers See Sheet No. C12 for detail of Insert.



SECTION B-B

Designed By W.L.F. Nov. 5, 1926.  
 Detailed By S.H. Nov. 15, 1926.  
 Traced By S.H. Aug. 2, 1927.  
 Checked By E.A.B. May 4, 1927.  
 Correct 5-5-1927.  
 Designing Engineer

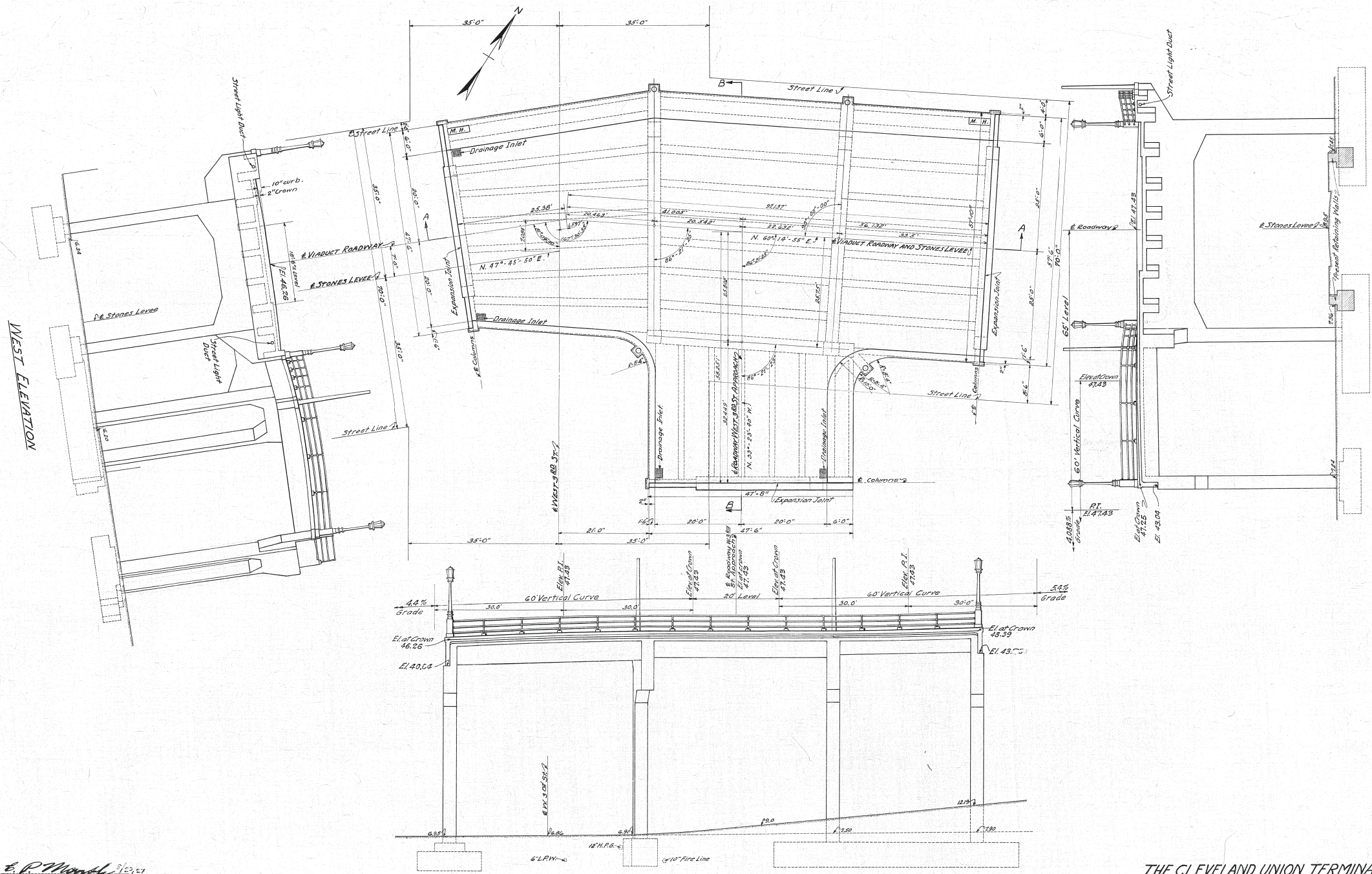
Approved E.C. Marsh 7/27/27.  
 Engineer of Structures  
 Approved J.W. Lusk 7/1/27.  
 Principal Assistant Engineer  
 Approved H.W. Lusk 7/1/27.  
 Assistant Electrical Engineer  
 Approved W.H. Suleff 8/1/27.  
 Engineer of Construction

We hereby certify that this Plan shows the structure as built.  
 E.C. Marsh 7/13/31.  
 Engineer of Structures  
 H.P. Rigelow 7/27/31.  
 Ass't Engineer of Construction

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date Sept. 8, 27  
 For Original of this Signature See Blue Print filed under 113-039 S.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT SECTION "E"  
 PORTION BETWEEN B.&O.R.R. & E. LINE OF W. 3<sup>RD</sup> ST  
 RAILING AND LIGHTING DETAILS  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: AS NOTED DATE: 11-15-26  
 ISSUE NO. 3 REVISED 11/26/1931  
 Chief Engineer

Issue No. A Oct. 19, 1925  
 Revisions:  
 Issue No. B Dec. 10, 1925  
 Changed title  
 Issue No. 1 Dec. 14, 1925  
 Signed by Chief Engineer  
 Issue No. 2 Feb. 16, 1926  
 Drawing Traced, changed number and location of stringers, added Tralley pole brackets and inlets.  
 Issue No. 3 Aug. 20, 1926  
 Revisions due to change in grade and crown of roadway and changes in design.  
 Issue No. 4 Dec. 13, 1926  
 Minor additions, drawing checked.  
 Issue No. 5 Mar. 28, 1927  
 Removed paving dams. Changed Grades: 5.597% to 5.44%, 4.655% to 4.6% and 3.639% to 4.033%.  
 Issue No. 6 Aug. 1, 1927  
 Notes added. Added Manholes for transformer chamber.  
 Issue No. 7 Aug. 30, 1927  
 Approved by Department Heads.  
 Issue No. 8 Sept. 14, 1927  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 9 Feb. 14, 1928  
 Minor revisions.  
 Issue No. 10 May 26, 1931  
 Plan conforms to structure as built.



Approved *E. P. Marsh* 9/27/27  
 Engineer of Structures  
 Designed by *W. H. T.* Oct. 19, 1925  
 Detailed by *W. H. T.* Oct. 19, 1925  
 Traced by *W. H. T.* Feb. 16, 1926  
 Checked by *E. A. B.* Dec. 13, 1926  
 Correct *W. S. 1731*  
*J. L. Gorman*  
 Designing Engineer  
 Approved *F. H. ...* 9/27/27  
 Assistant Electrical Engineer  
 Approved *W. S. 1731* 8/27/27  
 Engineer of Construction

PLAN APPROVED  
 CITY OF CLEVELAND  
 By *Robert Hoffman*  
 COMMISSIONER OF ENGINEERING AND CONSTRUCTION  
 DATE 9-8-27  
 For Original of this Signature  
 See Blue Print filed under 113-0393

SECTION A-A  
*E. P. Marsh* 7/1/31  
*H. R. Bigelow* 7/27/31

NOTES:  
 Substructure and superstructure concrete to be Class 2 (1:2:4 Approx. Mix) 6 bags of cement to a cubic yard.  
 Concrete for Waterproofing Protection to be Class 2 (1:2:4 Approx. Mix) 6 bags of cement to a cubic yard.  
 Concrete for cap tracks to be Class 3 (1:3:6 Approx. Mix) 4 1/2 bags of cement to a cubic yard. Not in this contract.  
 Pavement to be 4" Reddish Brick on 12" granulated slag subbase.  
 Max. Soil Pressure - 6000 per sq. ft.  
 Tralley poles & street lights to be furnished and installed by others.  
 Chamfer all exposed edges and corners 3/4" unless otherwise shown.  
 All exposed concrete to have a hard dense smooth surface uniform in texture and color.

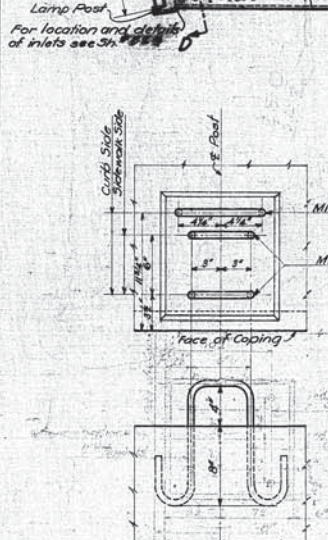
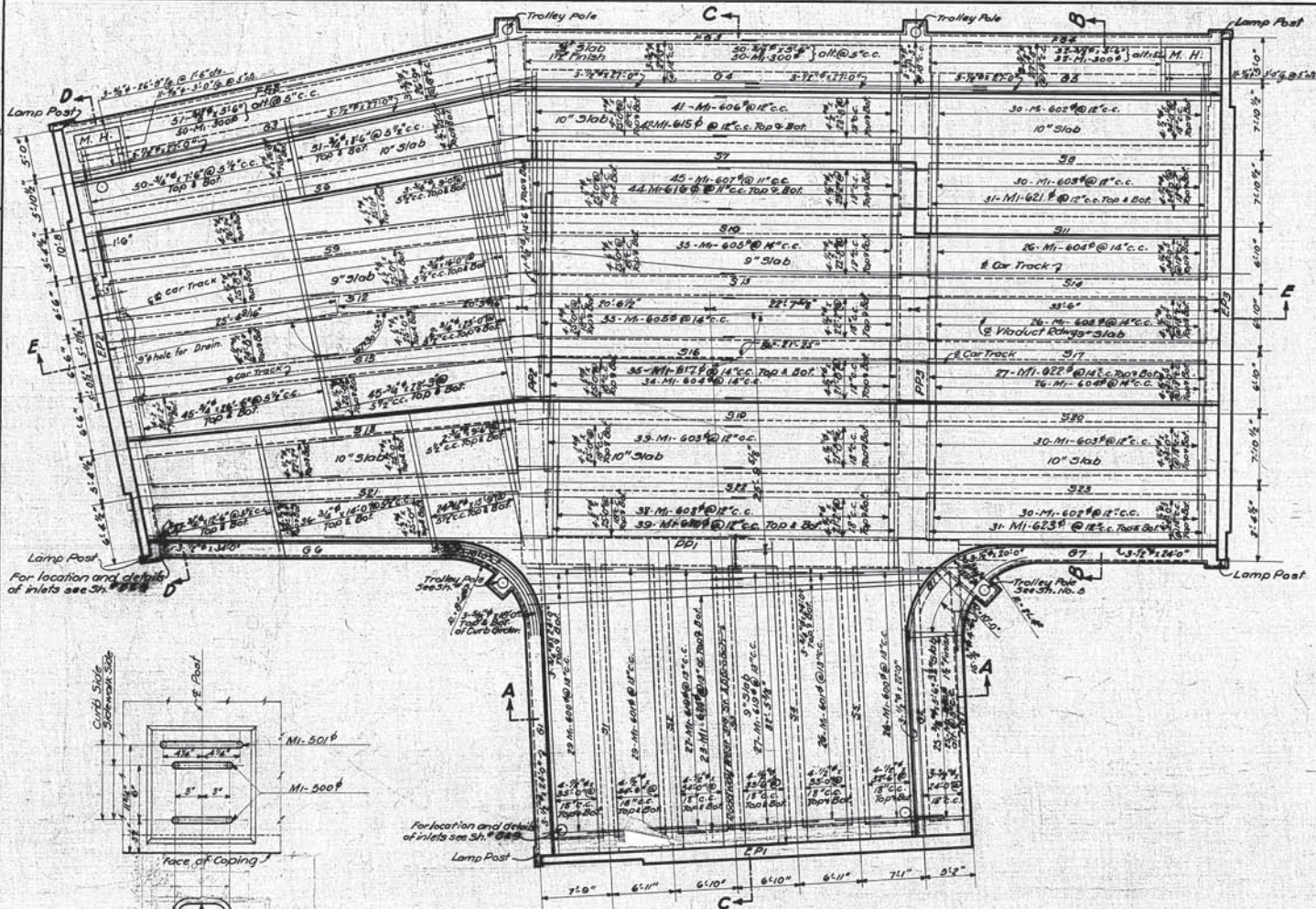
THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT, SECTION "F"  
 INTERSECTION OF VIADUCT AND W. 3<sup>RD</sup> ST APPROACH  
 GENERAL PLAN, SECTIONS AND ELEVATIONS  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE 1"=10'-0"  
 DATE: OCT 19, 1925  
 ISSUE No. ...  
 REVISIONS  
*H. R. Bigelow* 7/27/31  
 CHIEF ENGINEER

FILE NO. 113-039

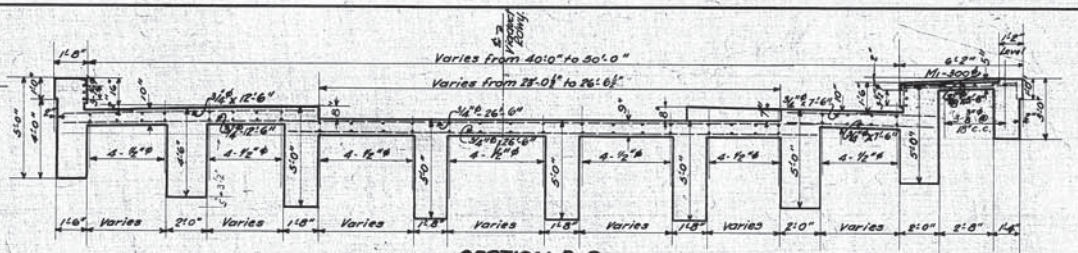


Issue No. A Nov. 11, 1925.

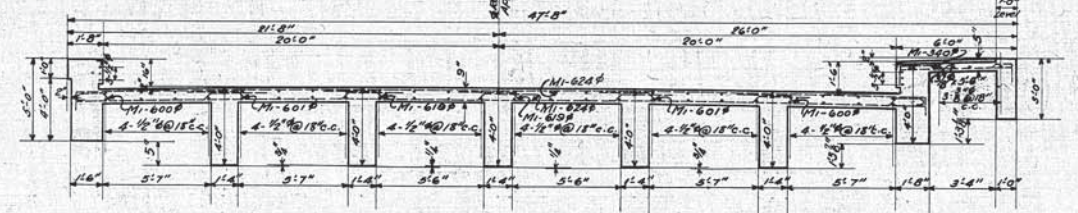
Revisions:  
 Issue No. B Aug. 23, 1926.  
 Revisions due to change in grade and crown of roadway and changes in design.  
 Issue No. C Dec. 18, 1926.  
 Minor revisions.  
 Issue No. D Feb. 24, 1927.  
 Drawing checked.  
 Issue No. E Apr. 18, 1927.  
 Revised For Changes In Exp. Joint.  
 Issue No. F Aug. 1, 1927.  
 Holes for track drains provided, note added. Manholes for Lights provided.  
 Issue No. 1 Aug. 30, 1927.  
 Approved by Chief Engineer.  
 Issue No. 2 Sept. 14, 1927.  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3 Apr. 27, 1928.  
 Revised slab detail of Portal EP2.  
 Issue No. 4 May 26, 1931.  
 Plan conforms to structure as built.



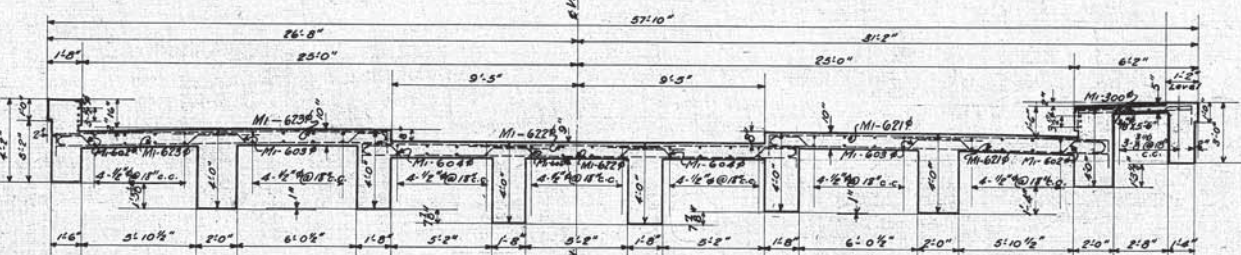
PLAN  
SCALE 1/4"=1'-0"



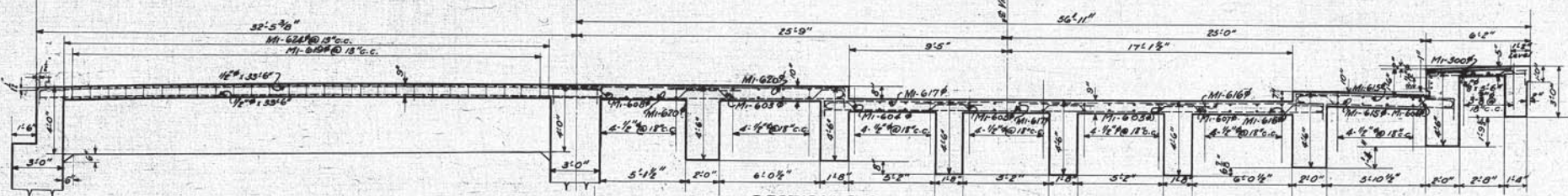
SECTION D-D  
SCALE 1/4"=1'-0"



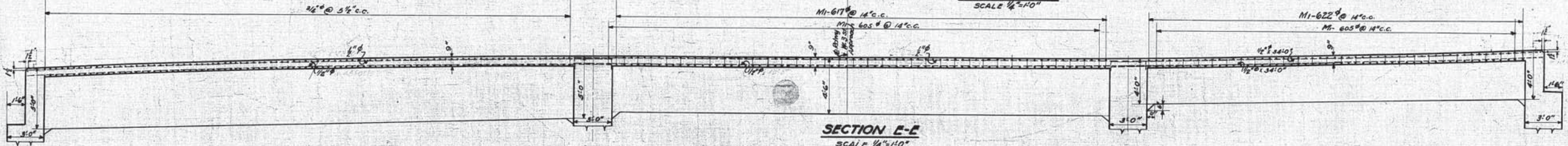
SECTION A-A  
SCALE 1/4"=1'-0"



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



SECTION C-C  
SCALE 1/4"=1'-0"



SECTION E-E  
SCALE 1/4"=1'-0"

NOTE:  
 See Railing Plan, Sh. # 10, for location and details of hangers for carrying lighting ducts.  
 For explanation of method of marking Bent Steel Reinforcing Bars, see Standard Bar Marks Sheet #1 of 1, Issue #1, dated January 8, 1925.  
 For location of Lamp Post dowels see details of Portals.  
 All slab steel to have 1" of concrete covering.  
 For details of Transformer Chamber see Sh. # 10.

Approved *E. P. Marsh* 9/23/27  
 Engineer of Structures

Designed by W. H. T. Nov. 11, 1925

Approved *J. W. Rupp* 9/24/27  
 Principal Assistant Engineer

Traced by W. H. T. Nov. 11, 1925

Approved *H. W. Rupp* 9/27/27  
 Assistant Electrical Engineer

Traced by K. O. Sept. 27, 1926

Approved *W. H. Outloff* 9/27/27  
 Engineer of Construction

Checked by E. A. B. Feb. 24, 1927

correct 5-5-27

*J. L. Gorman*  
 Designing Engineer

PLAN APPROVED  
 CITY OF CLEVELAND

By *Robert Hoffman*  
 Commissioner of Engineering and Construction

Date: Sept. 8, 1927  
 For Original of this Signature  
 See Blue Print filed under 113-039

*E. P. Marsh* 11/8/27  
*H. P. Rupp* 1/27/31

THE CLEVELAND UNION TERMINALS COMPANY  
 EAGLE AVE. VIADUCT - SECTION "F"  
 INTERSECTION OF VIADUCT AND W. 38<sup>th</sup> ST. APPROACH  
 PLAN AND SECTIONS OF DECK

CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES

SCALE: AS NOTED

DATE: NOV. 11, 1925.  
 REVISED: 1/26/1931  
*J. L. Gorman*  
 Chief Engineer

FILE NO. 113-039

Issue No. A Nov. 30, 1925

Revisions:  
Issue No. B Aug. 27, 1926  
Revisions due to change in grade and crown of roadway and changes in design.  
Issue No. C Feb. 24, 1927  
Drawing checked.

Issue No. D Apr. 19, 1927  
Revised for Changes in Exp. Joint + Grade

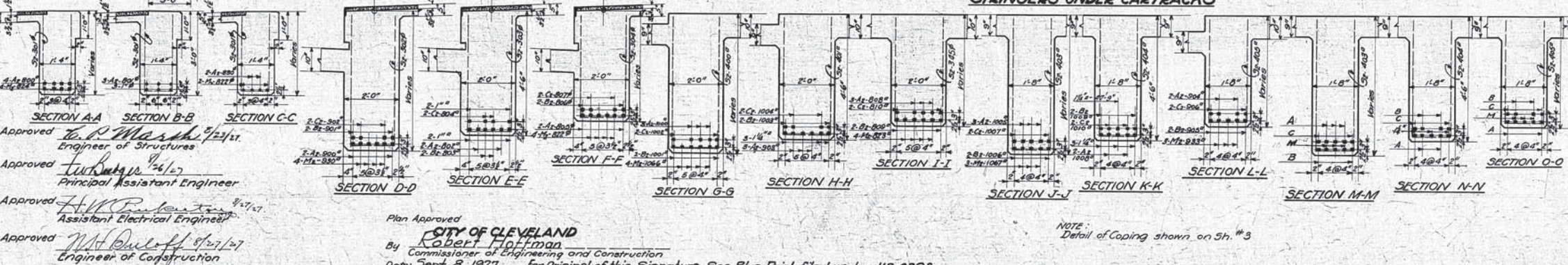
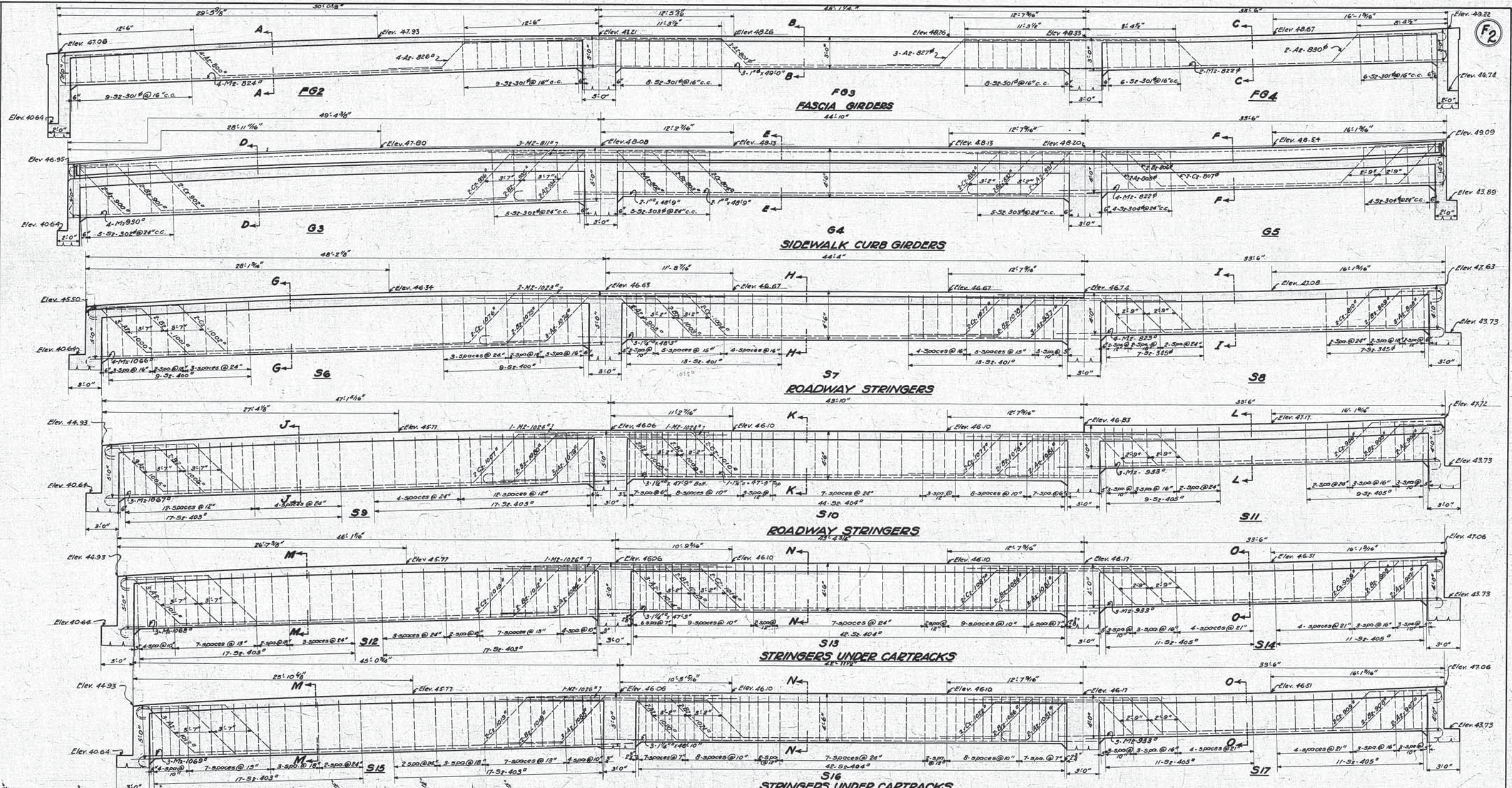
Issue No. E Aug. 1, 1927  
Minor revisions.

Issue No. 1 Aug. 30, 1927  
Approved by Chief Engineer.

Issue No. 2 Sept. 14, 1927  
Approved by Commissioner of Engineering and Construction of the City of Cleveland.

Issue No. 3 Feb. 14, 1928  
Minor revisions.

Issue No. 4 May 27, 1931  
Plan conforms to structure as built.



Note:  
All elevations and dimensions are on  $\frac{1}{2}$  of girders.  
For explanation of method of marking Bent Steel Reinforcing Bars, see Standard Bar Marks Sheet #1 of 1, Issue 1, dated January 8, 1925.

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE. VIADUCT-SECTION "F"  
INTERSECTION OF VIADUCT AND W. 3<sup>RD</sup> ST. APPROACH  
DETAILS OF GIRDERS  
CLEVELAND, OHIO  
OFFICE OF ENGINEER OF STRUCTURES  
DATE: Nov. 30, 1925  
REVISED: May 22, 1931  
ISSUE NO. 4  
G. L. Dorman  
Chief Engineer

Designed by W.H.T. Nov. 30, 1925  
Detailed by W.H.T. Nov. 30, 1925  
Traced by K.O. Sept. 30, 1926  
Checked by E.A.B. Feb. 24, 1927  
Correct 5-5-27  
G. L. Dorman  
Designing Engineer

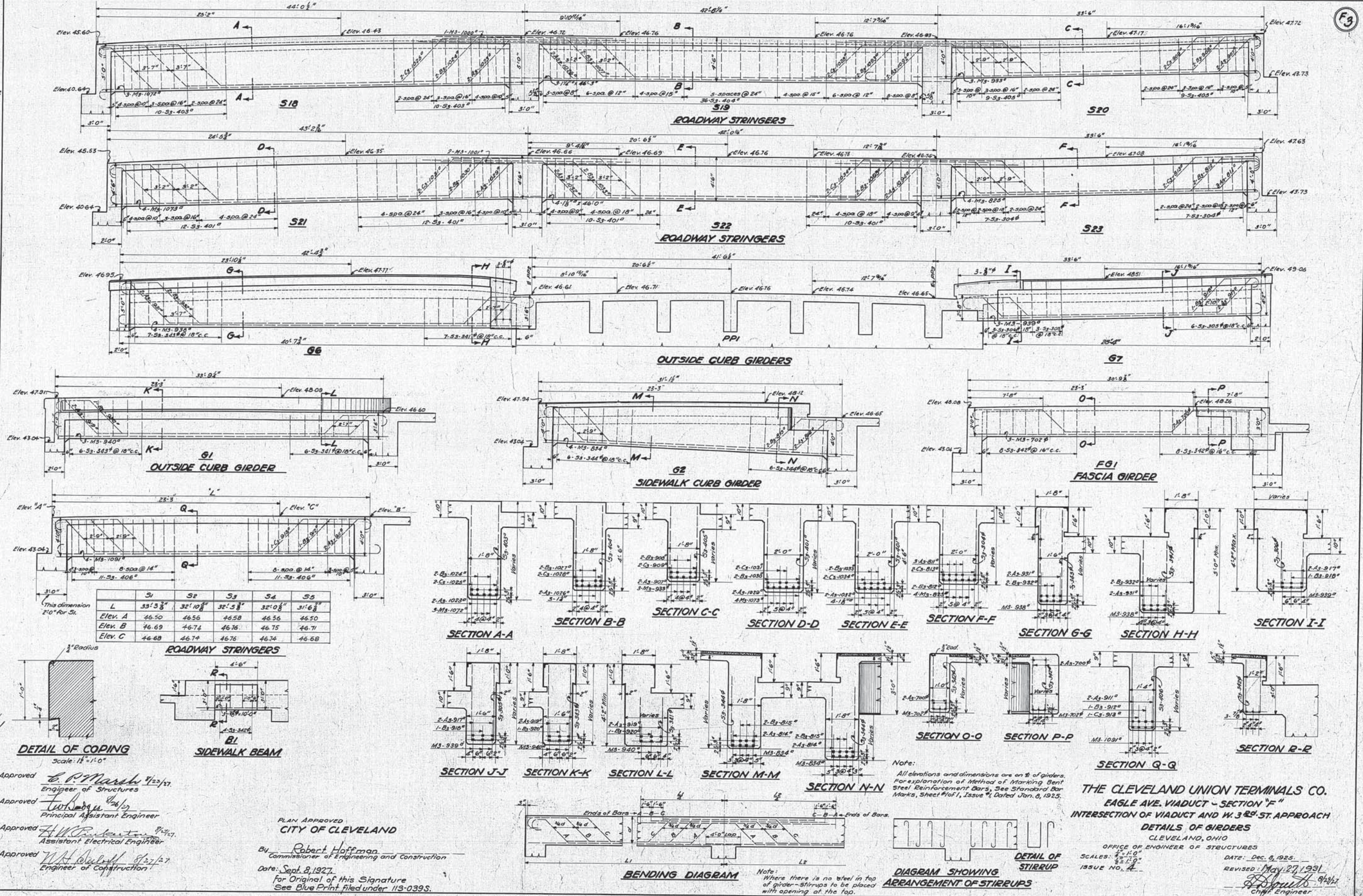
Approved T. P. Marsh 12/21/27  
Engineer of Structures  
Approved T. P. Marsh 12/21/27  
Principal Assistant Engineer  
Approved H. W. P. 9/27/27  
Assistant Electrical Engineer  
Approved M. D. 9/27/27  
Engineer of Construction

Plan Approved  
CITY OF CLEVELAND  
By Robert Hoffman  
Commissioner of Engineering and Construction  
Date: Sept. 8, 1927. For Original of this Signature See Blue Print filed under 113-039S.

NOTE:  
Detail of Coping shown on Sh. #3

Issue No. A Dec. 8, 1925

Revisions:  
 Issue No. B. Aug. 30, 1926.  
 Revisions due to change in grade and crown of roadway, and changes in design.  
 Issue No. C. Feb. 24, 1927.  
 Drawing checked.  
 Issue No. D. Apr. 20, 1927.  
 Revised for changes in Exp Joint + Grade.  
 Issue No. E. Aug. 1, 1927.  
 Minor revisions.  
 Issue No. 1. Aug. 30, 1927.  
 Approved by Chief Engineer.  
 Issue No. 2. Sept. 14, 1927.  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3. Feb. 18, 1928.  
 Minor revisions.  
 Issue No. 4. May 27, 1931.  
 Plan conforms to structure as built.



We hereby certify that this Plan shows the structure as built.

*E. P. Marsh* 7/23/27  
 Engineer of Structures

*H. P. Beal* 7/27/31  
 Assistant Electrical Engineer

Approved *E. P. Marsh* 7/23/27  
 Engineer of Structures

Approved *H. P. Beal* 7/27/31  
 Assistant Electrical Engineer

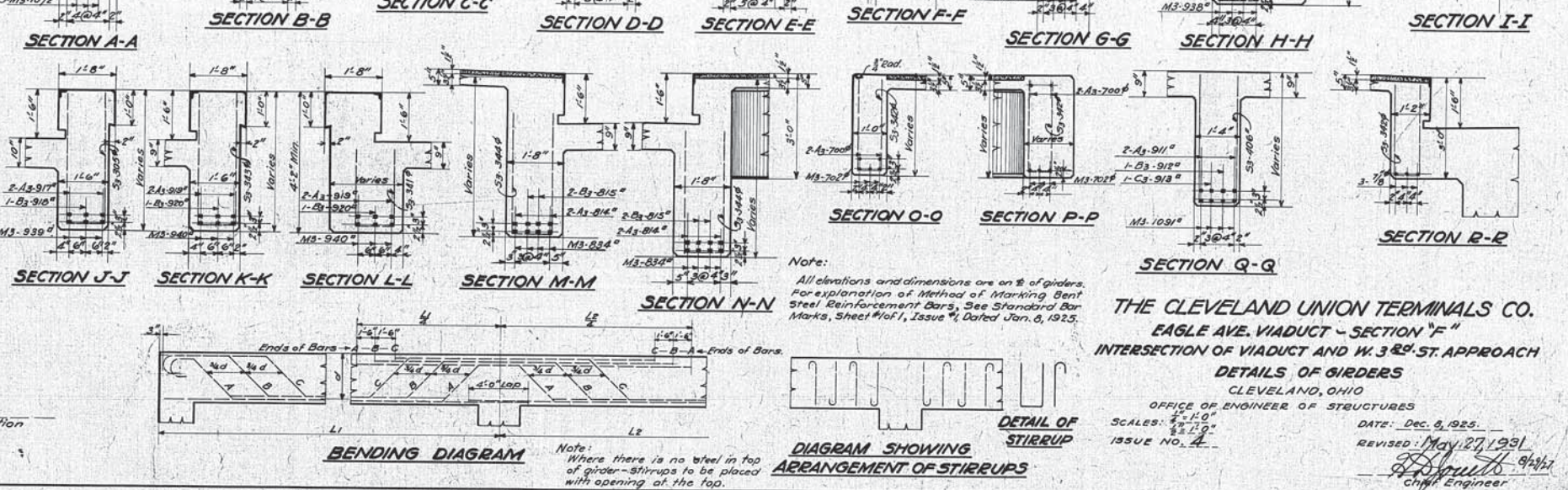
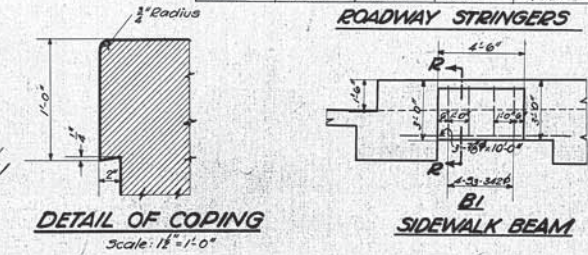
Approved *W. H. T. Nov. 30, 1925*  
 Principal Assistant Engineer

Approved *K. O. Oct. 12, 1926*  
 Assistant Electrical Engineer

Checked by *F. A. B. Feb. 24, 1927*

Correct *5-5-27*

*Y. L. Gorman*  
 Designing Engineer



THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT - SECTION "F"  
 INTERSECTION OF VIADUCT AND W. 32<sup>ND</sup> ST. APPROACH  
 DETAILS OF GIRDERS  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES

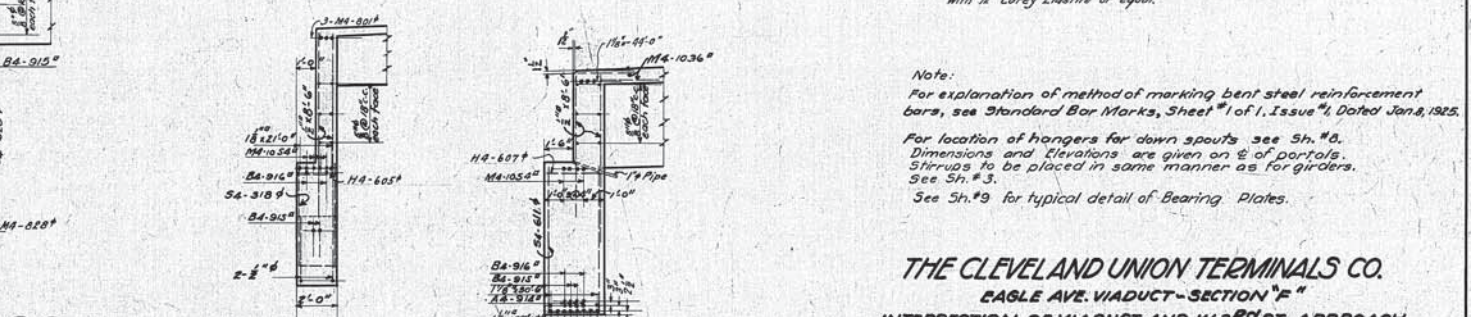
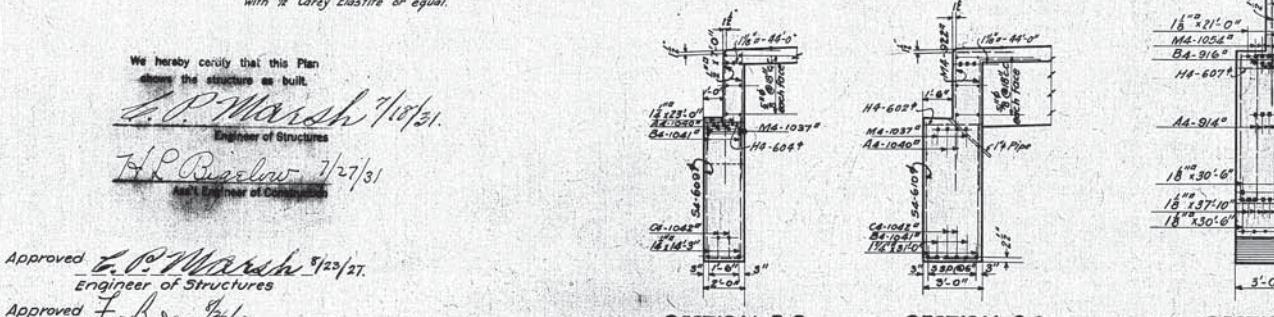
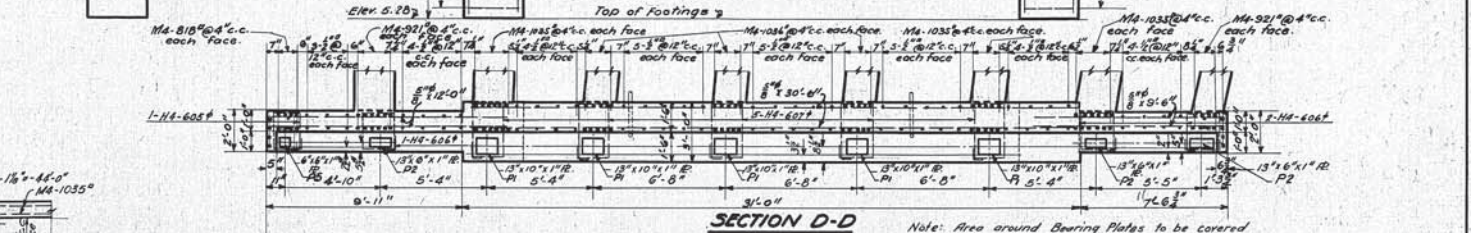
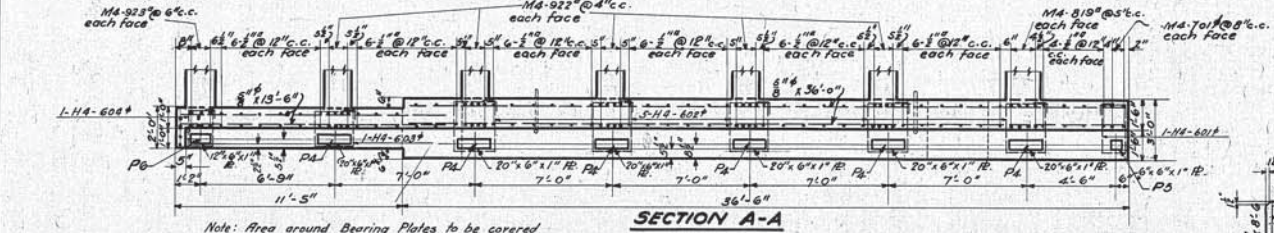
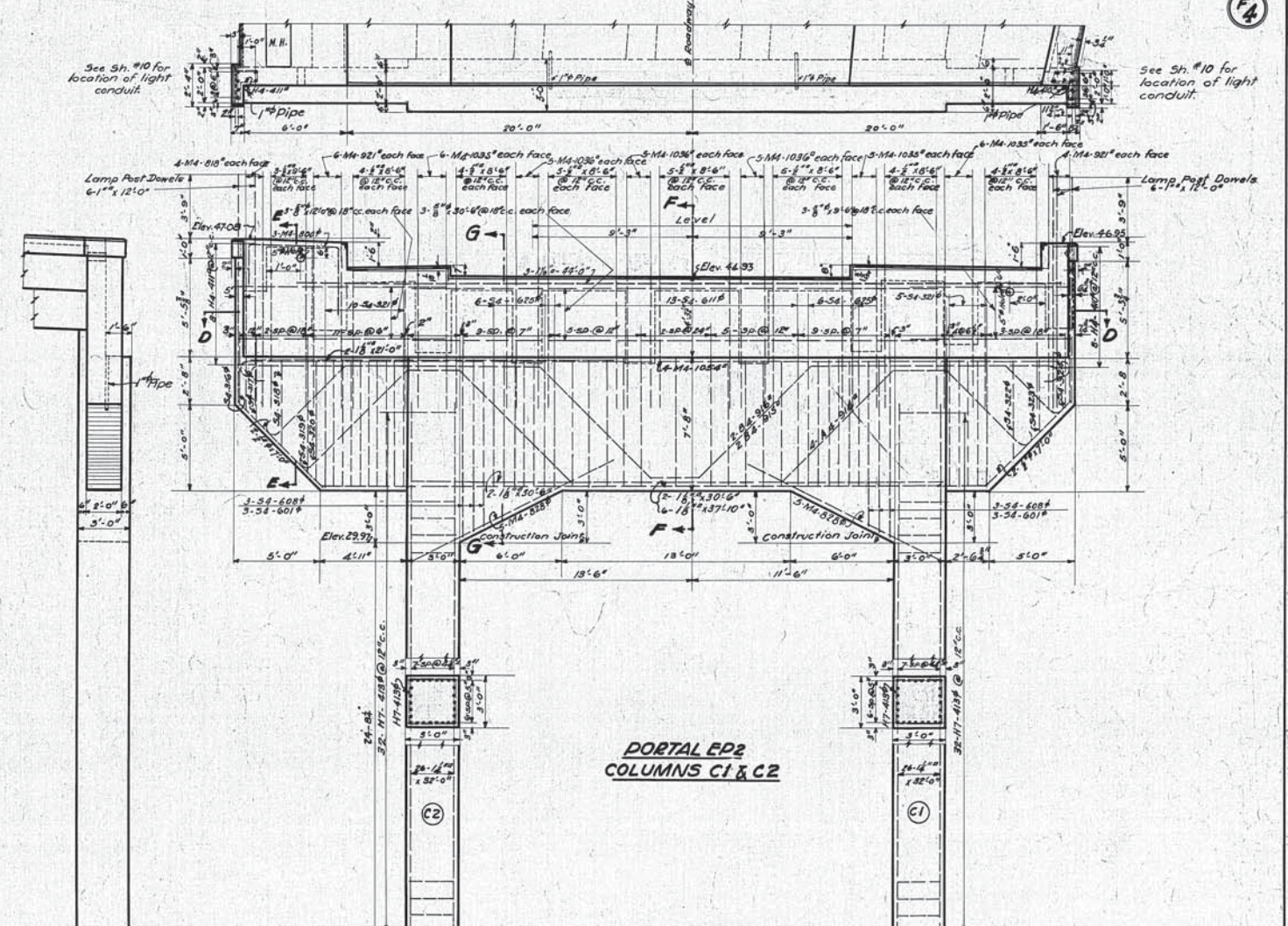
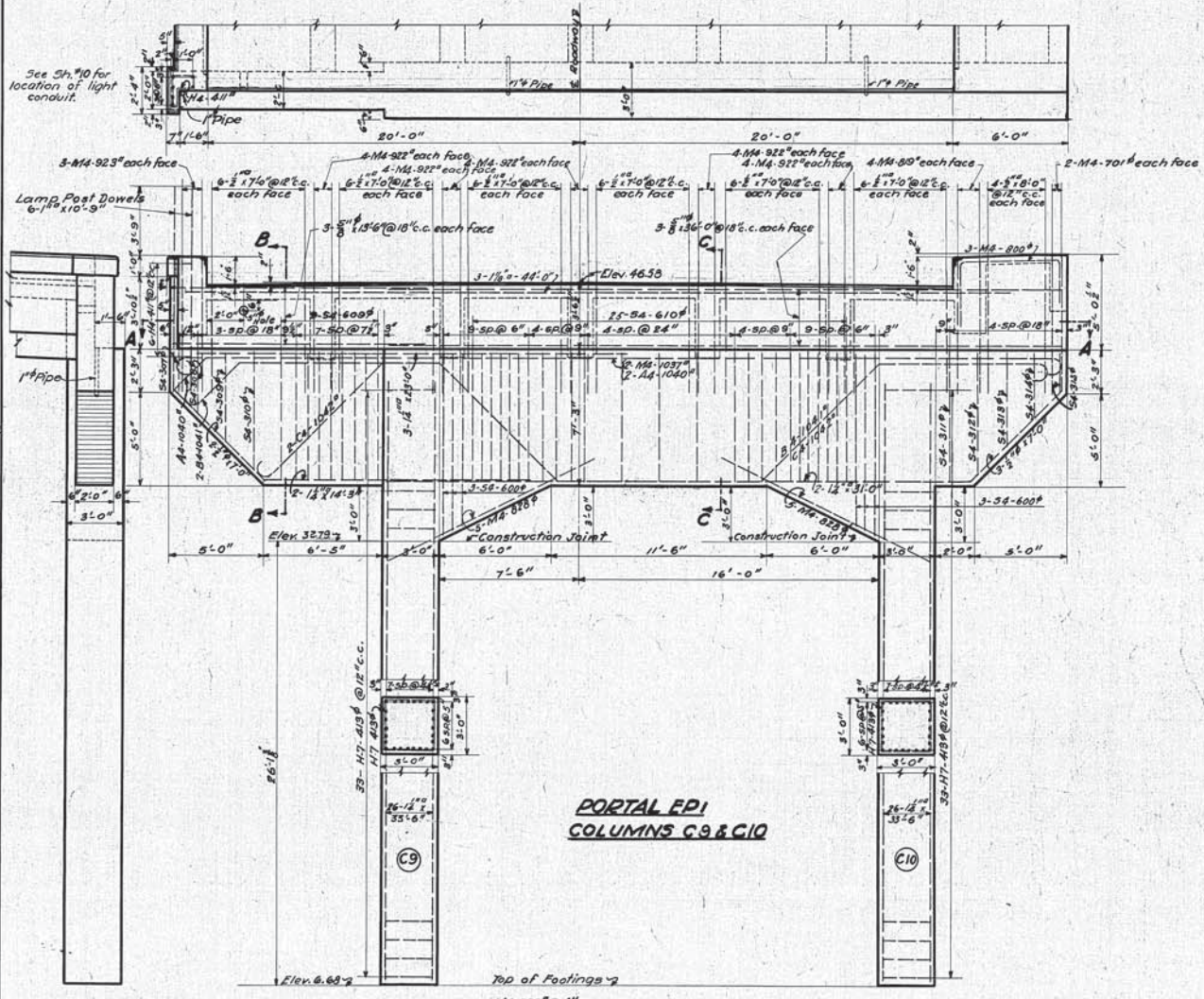
DATE: Dec. 8, 1925.  
 REVISION: May 27, 1931.  
 Chief Engineer

SCALE: 1/2" = 1'-0"  
 ISSUE NO. 4

FILE NO. 113-039

Issue No. A. Sept. 14, 1926

Revisions:  
 Issue No. B. Feb. 24, 1927  
 Drawing checked.  
 Issue No. C. Apr. 18, 1927  
 Revised For Changes In Exp. Joint And Grade  
 Issue No. D. Aug. 1, 1927  
 Note added, providing 1/2" Carey Elastite around Bearing Plates. Minor changes.  
 Issue No. 1. Aug. 30, 1927  
 Approved by Chief Engineer.  
 Issue No. 2. Sept. 14, 1927  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3. Oct. 14, 1927  
 Revised col. numbers.  
 Issue No. 4. Feb. 14, 1928  
 Minor revisions.  
 Issue No. 5. May 27, 1931  
 Plan conforms to structure as built.



We hereby certify that this Plan shows the structure as built.

*L.P. Marsh* 7/1/27  
 Engineer of Structures

*H.P. Ruslow* 7/27/27  
 Chief Engineer of Construction

Approved *L.P. Marsh* 9/22/27  
 Engineer of Structures

Approved *J.W. Sullivan* 9/24/27  
 Principal Assistant Engineer

Approved *H.W. Robertson* 9/17/27  
 Assistant Electrical Engineer

Approved *W.H. Duleff* 8/27/27  
 Engineer of Construction

Designed by *W.H.T.* Dec. 22, 1923  
 Detailed by *W.H.T.* Sept. 14, 1926  
 Traced by *K.O.* Oct. 30, 1926  
 Checked by *E.A.B.* Feb. 28, 1927  
 Correct *5-5-27*  
*F.L. Gorman*  
 Designing Engineer

PLAN APPROVED  
 CITY OF CLEVELAND

By *Robert Hoffman*  
 Commissioner of Engineering and Construction

Date: Sept. 8, 1927  
 For Original of this Signature See Blue Print filed under 113-0395.

Note:  
 For explanation of method of marking bent steel reinforcement bars, see Standard Bar Marks, Sheet #1 of 1, Issue #1, Dated Jan. 8, 1925.  
 For location of hangers for down spouts see Sh. #8. Dimensions and elevations are given on E of portals. Struts to be placed in same manner as for girders. See Sh. #3.  
 See Sh. #9 for typical detail of Bearing Plates.

**THE CLEVELAND UNION TERMINALS CO.**  
 EAGLE AVE. VIADUCT-SECTION "F"  
 INTERSECTION OF VIADUCT AND W. 3<sup>RD</sup> ST. APPROACH  
 DETAILS OF PORTALS AND COLUMNS

CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES

SCALE: 1/2"=1'-0"  
 ISSUE NO. 5

DATE: Sept. 14, 1926  
 REVISED: May 27, 1931  
*H.P. Ruslow*  
 Chief Engineer

FILE NO. 113-039

Issue No. A Sept. 23, 1926

Revisions:  
Issue No. B. Feb. 24, 1927  
Drawing checked.  
Issue No. C. Apr. 19, 1927  
Revised for Changes in Exp. Joint  
And Grade

Issue No. D. May 24, 1927  
Revised portal EP3 to provide  
for Expansion of Section E

Issue No. E. Aug. 1, 1927  
Note added providing 1/2" Carey Elaste  
around Bearing Plates. Minor changes.

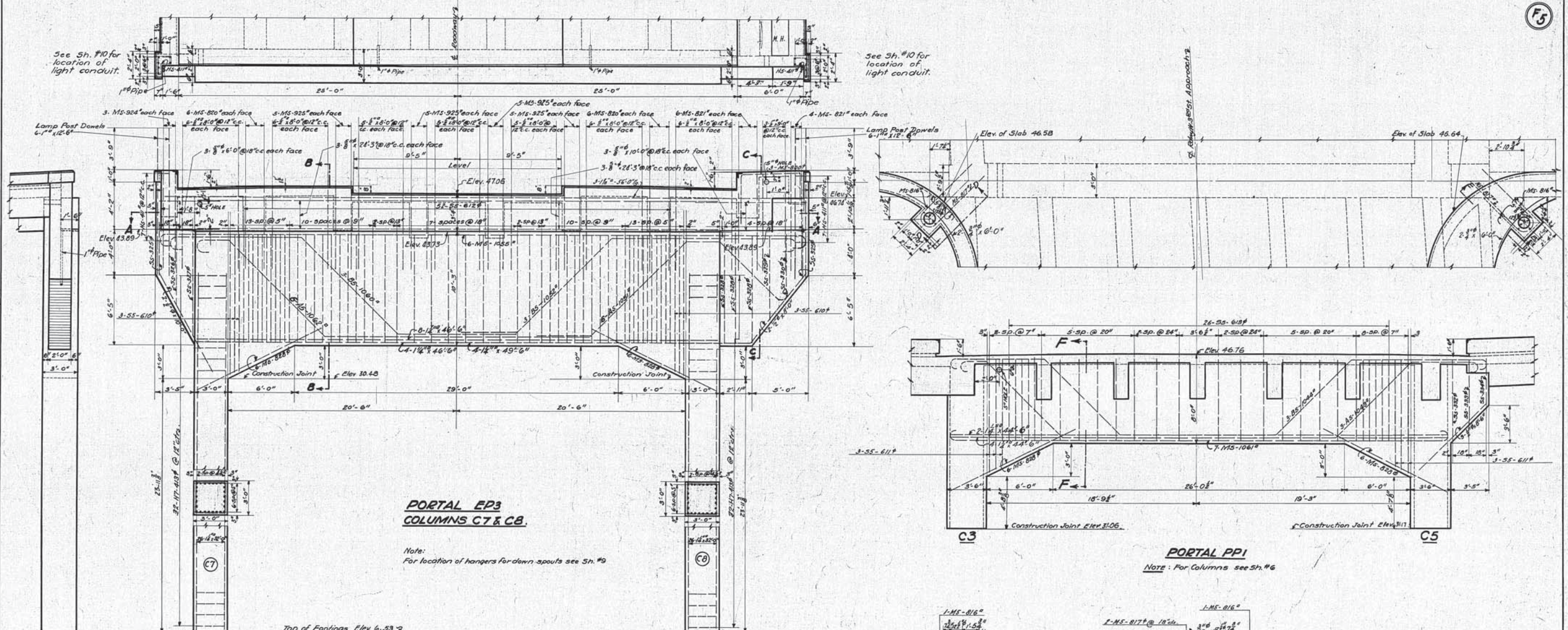
Issue No. 1. Aug. 30, 1927  
Approved by Chief Engineer.

Issue No. 2. Sept. 10, 1927.  
Approved by Commissioner of  
Engineering and Construction  
of the City of Cleveland.

Issue No. 3. Oct. 14, 1927.  
Revised column numbers.

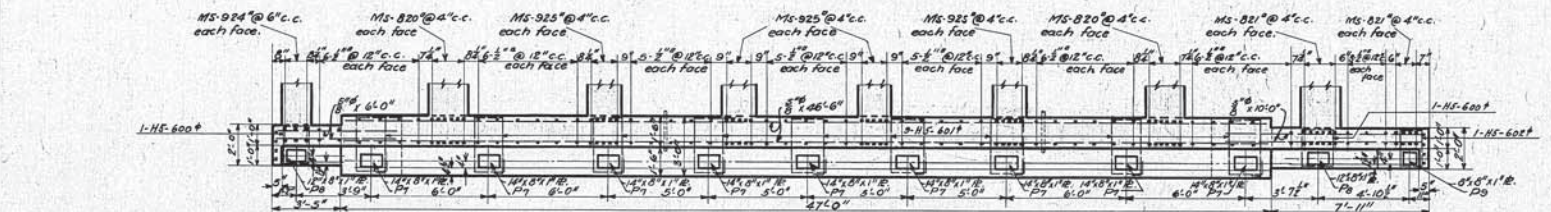
Issue No. 4. Feb. 14, 1928.  
Minor revisions. Added elevations  
on EP3.

Issue No. 5. May 27, 1931  
Plan conforms to structure  
as built.

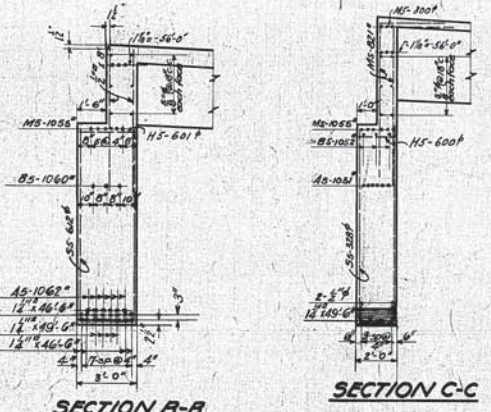


**PORTAL EP3  
COLUMNS C7 & C8.**

Note:  
For location of hangers for down spouts see Sh. #9

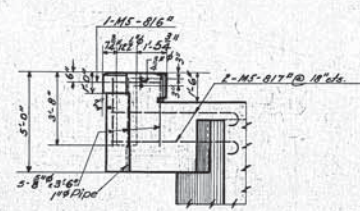


SECTION A-A

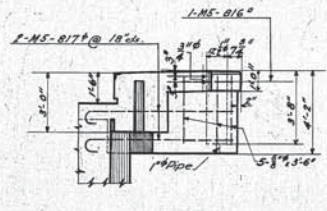


SECTION B-B

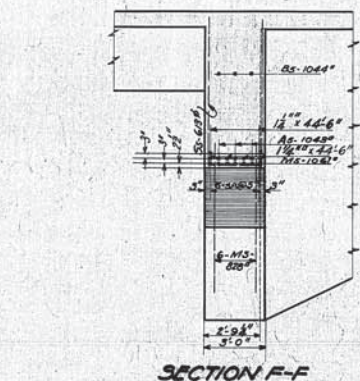
SECTION C-C



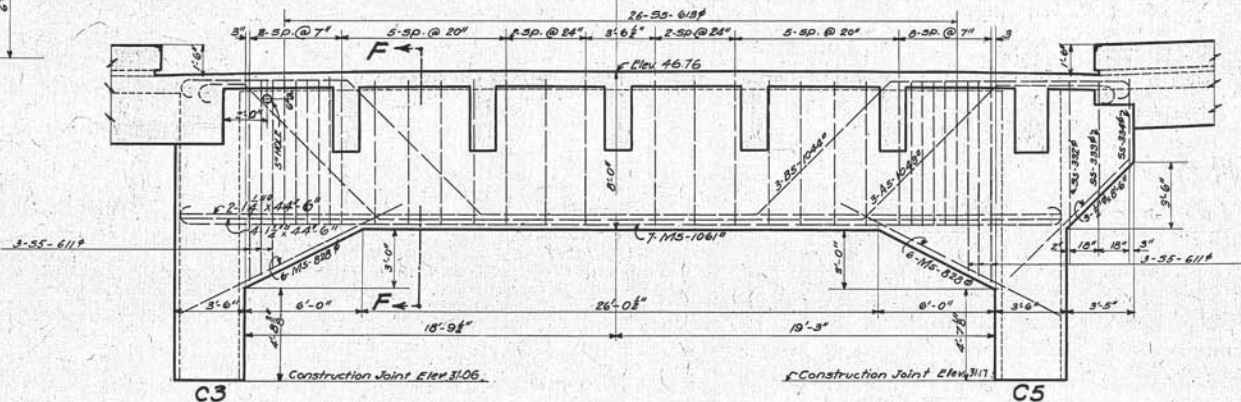
SECTION D-D



SECTION E-E



SECTION F-F



**PORTAL PPI**

NOTE: For Columns see Sh. #6

NOTE:  
For explanation of method of marking bent steel  
reinforcement bars, see Standard Bar Marks,  
Sheet #1 of 1, Issue #1, Dated January 6, 1925.  
Dimensions and Elevations are given on  
2 of portals. Stirrups to be placed in  
same manner as for girders. See Sh. #3.  
For details of Bearing Plates see Sh. #9.

**THE CLEVELAND UNION TERMINALS CO.**  
EAGLE AVE. VIADUCT- SECTION "F"  
INTERSECTION OF VIADUCT AND W. 3<sup>RD</sup> ST. APPROACH  
DETAILS OF PORTALS AND COLUMNS  
CLEVELAND, OHIO.

OFFICE OF ENGINEERS OF STRUCTURES  
SCALE: 1/4" = 1'-0"  
ISSUE NO. 5

DATE: Sept. 23, 1926  
REVISED: May 27, 1931  
Chief Engineer

Approved *E.P. Marsh* 7/23/27  
Engineer of Structures  
Approved *Leo Radtke* 7/24/27  
Principal Assistant Engineer  
Approved *H.W. Buckner* 8/24/27  
Assistant Electrical Engineer  
Approved *W.H. Duffell* 8/27/27  
Engineer of Construction

Plan Approved  
CITY OF CLEVELAND  
By *Robert Hoffman*  
Commissioner of Engineering and Construction  
Date: Sept. 8, 1927.  
For Original of this Signature  
See Blue Print filed under 113-039S.

Designed by *W.H.T.* Dec. 22, 1925  
Detailed by *W.H.T.* Sept. 23, 1926  
Traced by *K.O.* Oct. 26, 1926  
Checked by *E.A.B.* Feb. 24, 1927  
Correct *5-5-27*  
*J.L. Corman*  
Designing Engineer

Issue No. A. Sept. 30, 1926

Revisions:  
Issue No. B. Feb. 24, 1927  
Drawing checked.

Issue No. C. Apr. 19, 1927  
Revised For Changes In Grade

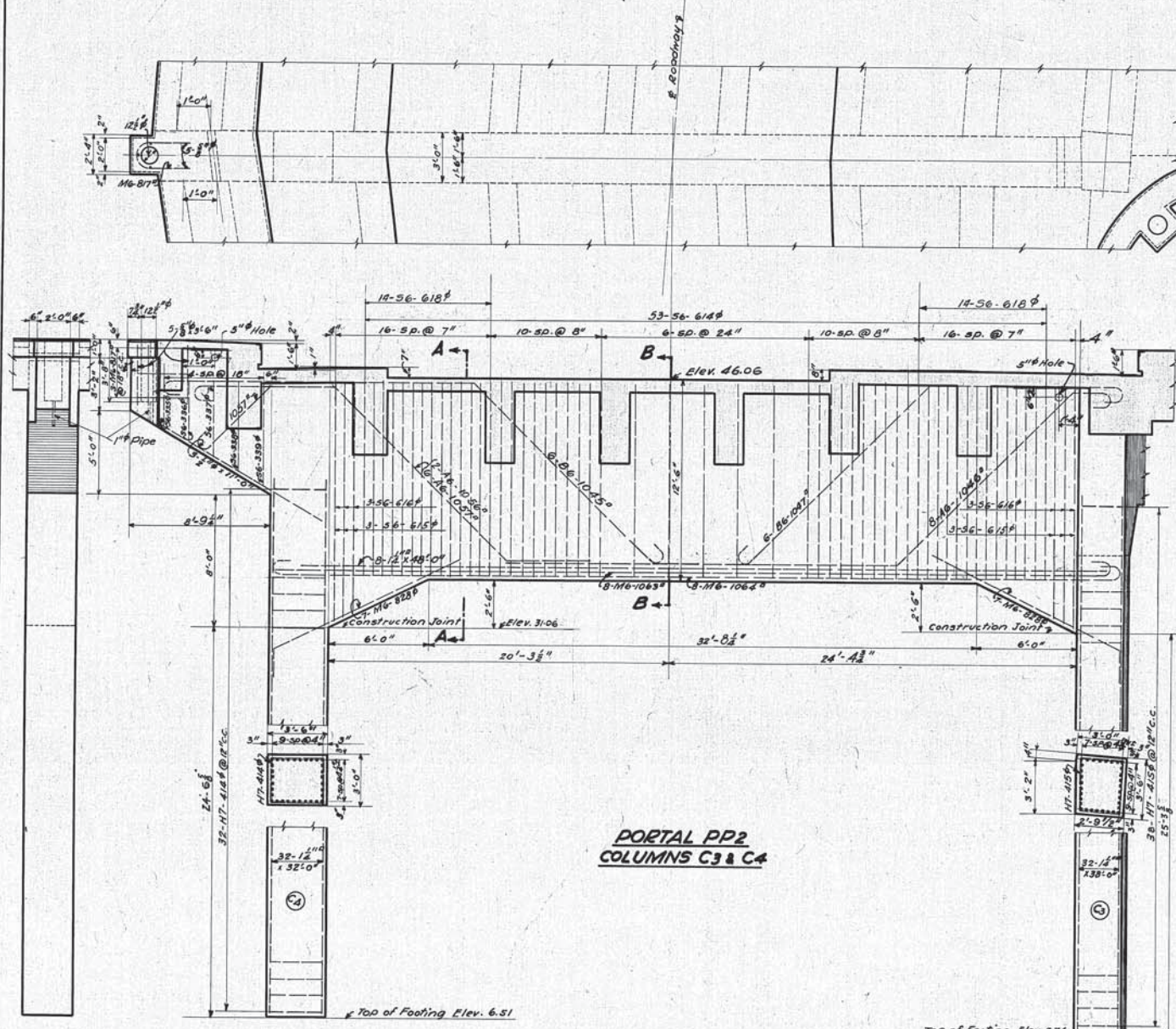
Issue No. D. Aug. 1, 1927  
Minor revisions.

Issue No. L. Aug. 30, 1927  
Approved by Chief Engineer.

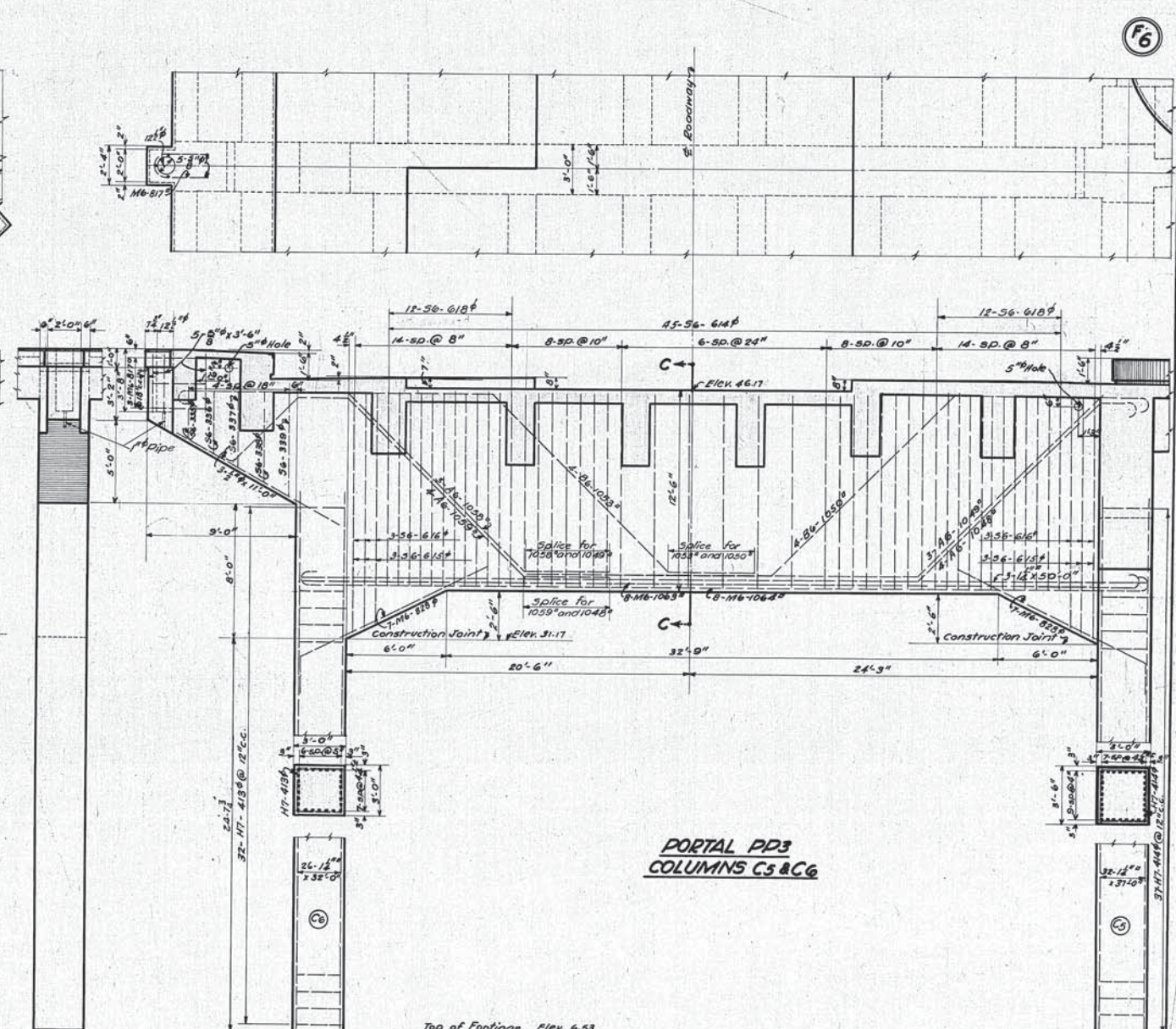
Issue No. 2. Sept. 14, 1927  
Approved by Commissioner of  
Engineering and Construction  
of the City of Cleveland.

Issue No. 3. Feb. 14, 1928.  
Minor revisions.

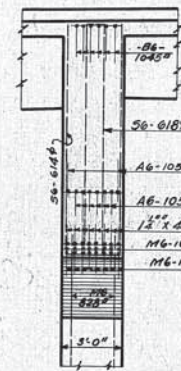
Issue No. 4. May 27, 1931  
Plan conforms to structure  
as built.



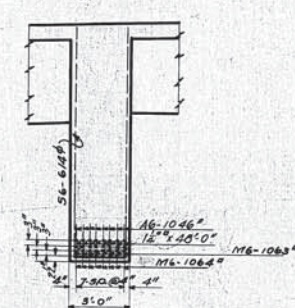
PORTAL PP2  
COLUMNS C3 & C4



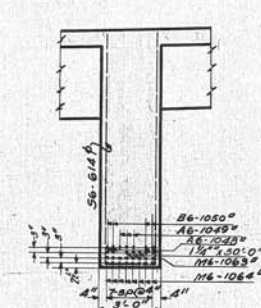
PORTAL PP3  
COLUMNS C5 & C6



SECTION A-A



SECTION B-B



SECTION C-C

We hereby certify that this Plan  
shows the structure as built.  
*C. P. Marsh* 7/14/31  
Chief Engineer of Structures  
*H. P. ...* 7/27/31  
Assistant Engineer of Construction

PLAN APPROVED  
**CITY OF CLEVELAND**  
By *Robert Hoffman*  
Commissioner of Engineering and Construction  
Date: 9-8-27  
for Original of this Signature  
See Blue Print filed under No. 113-0395.

Approved *C. P. Marsh* 7/27/27  
Engineer of Structures  
Approved *F. ...* 8/24/27  
Principal Assistant Engineer  
Approved *H. W. ...* 8/24/27  
Assistant Electrical Engineer  
Approved *M. H. ...* 8/27/27  
Engineer of Construction

Designed by W.H.T. Dec. 22, 1925  
Detailed by W.H.T. Sept. 30, 1926  
Traced by K.O. Nov. 3, 1926  
Checked by E.A.B. Feb. 24, 1927  
Correct 5-5-27  
*F. J. ...*  
Designing Engineer

Note:  
For explanation of method of marking bent steel  
reinforcement bars, see Standard Bar Marks,  
Sheet #1 of Issue #1 Dated January 8, 1925.  
Dimensions and Elevations are given on  $\frac{1}{4}$ " of  
portals. Stirrups are to be placed in same  
manner as for girders - See Sh. #3.

**THE CLEVELAND UNION TERMINALS CO.**  
EAGLE AVE. VIADUCT - SECTION "F"  
INTERSECTION OF VIADUCT AND W. 385 ST. APPROACH  
DETAILS OF PORTALS AND COLUMNS  
CLEVELAND, OHIO  
OFFICE OF ENGINEER OF STRUCTURES  
SCALE:  $\frac{1}{4}$ " = 1'-0"  
DATE: SEPT. 30, 1926.  
ISSUE NO. 4  
REVISED: MAY 27, 1931  
*F. J. ...*  
Chief Engineer

Issue No. A. Dec. 18, 1925.

Revisions:  
 Issue No. B. Oct. 4, 1926.  
 Revisions due to change in design and location of footings.  
 Issue No. C. Feb. 24, 1927.  
 Drawing checked.

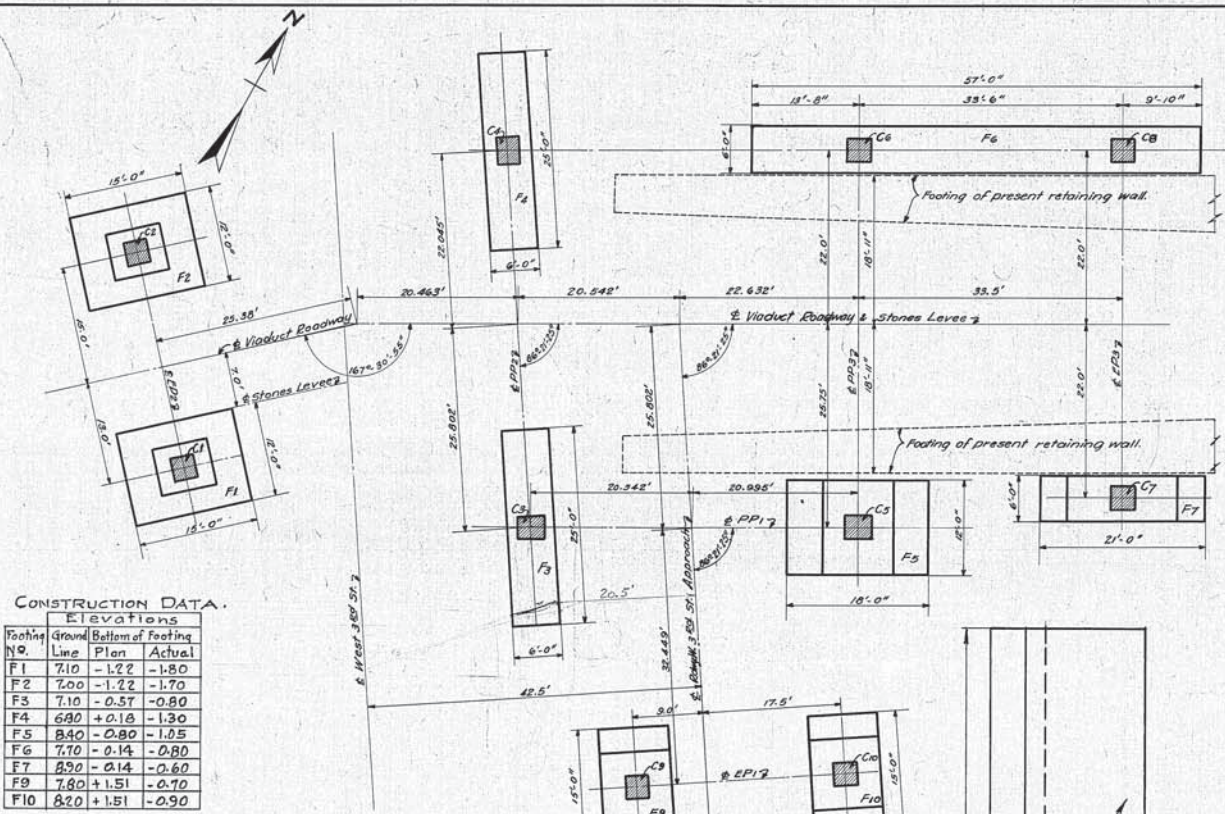
Issue No. D. May 24, 1927.  
 Hoops in footings added.

Issue No. E. Aug. 1, 1927.  
 Minor revisions.  
 Issue No. 1. Aug. 30, 1927.  
 Approved by Chief Engineer.

Issue No. 2. Sept. 14, 1927.  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.

Issue No. 3. Oct. 14, 1927.  
 Revised footing numbers.

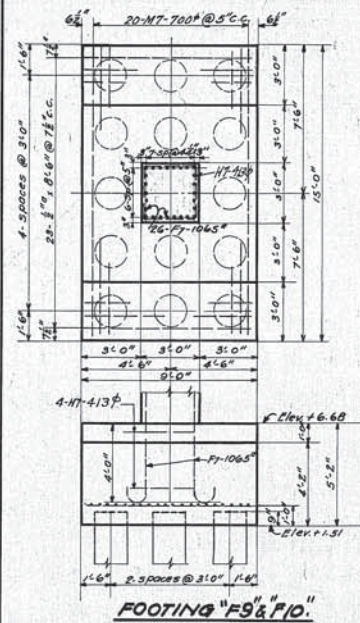
Issue No. 4. March 25, 1931.  
 Plan corrected to conform to structure as built.



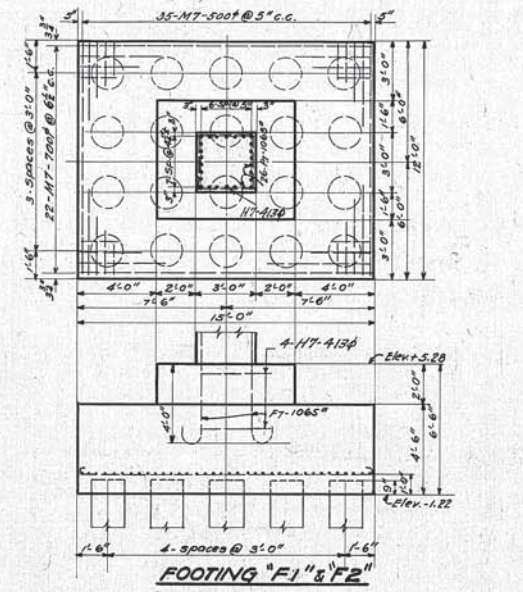
**CONSTRUCTION DATA.**

Footing No.	Elevations	
	Ground Line	Bottom of Footing
F1	7.10	-1.22
F2	7.00	-1.22
F3	7.10	-0.57
F4	6.80	+0.15
F5	8.40	-0.80
F6	7.70	-0.14
F7	8.90	-0.14
F9	7.80	+1.51
F10	8.20	+1.51

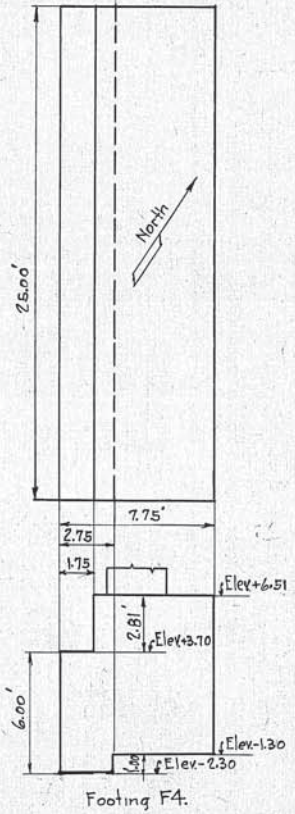
Note - Mats of 1-4 1/2" Concrete were placed under footings from Plan Elev. to Actual Elev. shown in above table.  
 All Piles were omitted from footings in Section 'F'



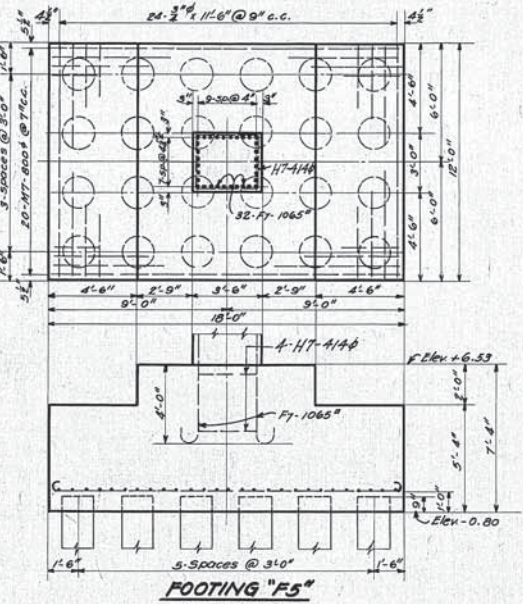
FOOTING "F9" & "F10"



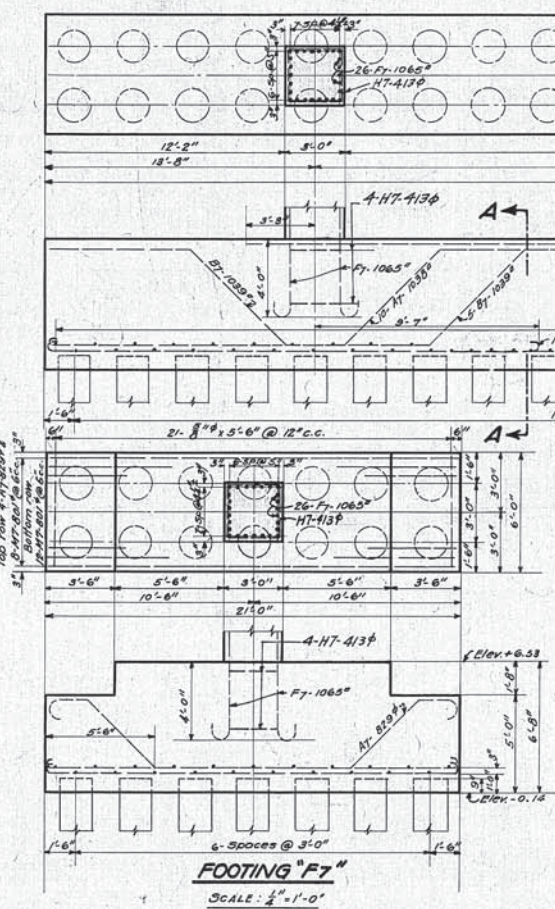
FOOTING "F1" & "F2"



Footing F4.



FOOTING "F5"



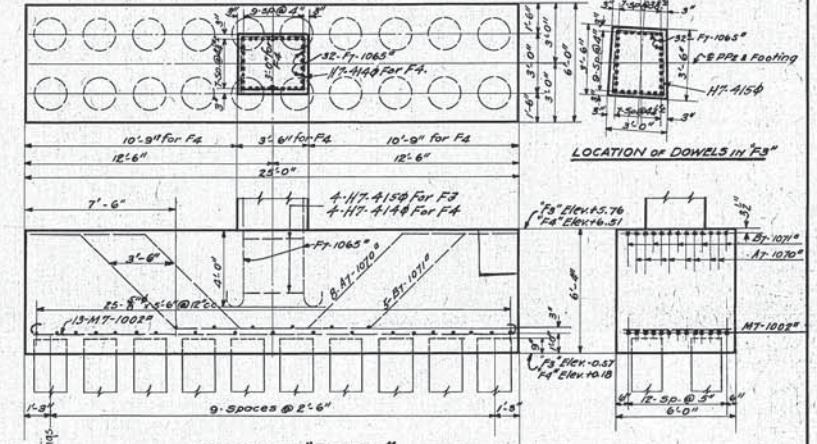
FOOTING "F6"

SCALE: 1/2" = 1'-0"

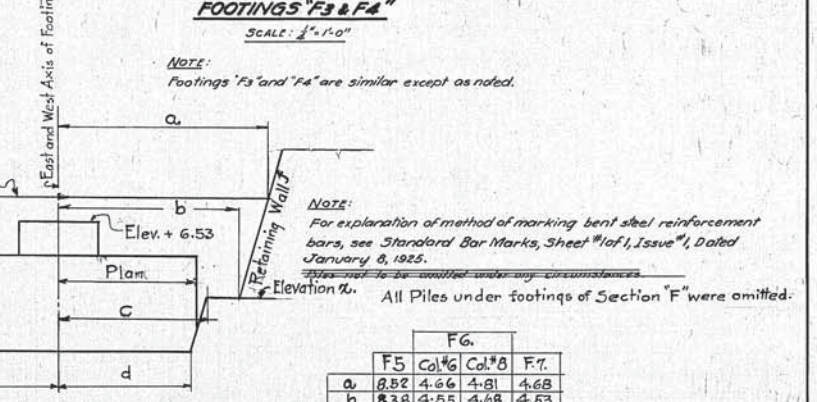
NOTE: Footing "F6" supports Cols. "C6" & "C8"

FOOTING "F7"

SCALE: 1/2" = 1'-0"



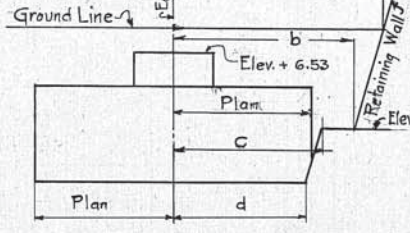
SECTION A-A



FOOTINGS "F3" & "F4"

SCALE: 1/2" = 1'-0"

NOTE: Footings "F3" and "F4" are similar except as noted.



Section Showing Offsets from East/West Axes of Footings F5; F6; F7 to Retaining Walls along Stones Levee.

	F5	Col. #6	Col. #8	F7.
a	8.52	4.66	4.81	4.68
b	8.38	4.55	4.68	4.53
c	6.75	3.10	3.16	3.18
d	6.55	3.02	3.05	2.95
Elev. X	+4.67	+4.67	+4.67	+4.72

Approved *E. P. Marsh* 12/27/27  
 Engineer of Structures  
 Approved *John B. ...* 12/27/27  
 Principal Assistant Engineer  
 Approved *H. W. ...* 8/27/27  
 Assistant Electrical Engineer  
 Approved *W. H. ...* 8/27/27  
 Engineer of Construction

Plan Approved  
 CITY OF CLEVELAND  
 By *Robert Hoffman*  
 Commissioner of Engineering and Construction  
 Date: Sept. 8, 1927.  
 For Original of this Signature  
 See Blue Print Filed under No. 113-0395.

We hereby certify that this Plan shows the structure as built.  
*E. P. Marsh* 12/27/27  
 Engineer of Structures  
*H. L. ...* 12/27/27  
 Asst. Engineer of Construction

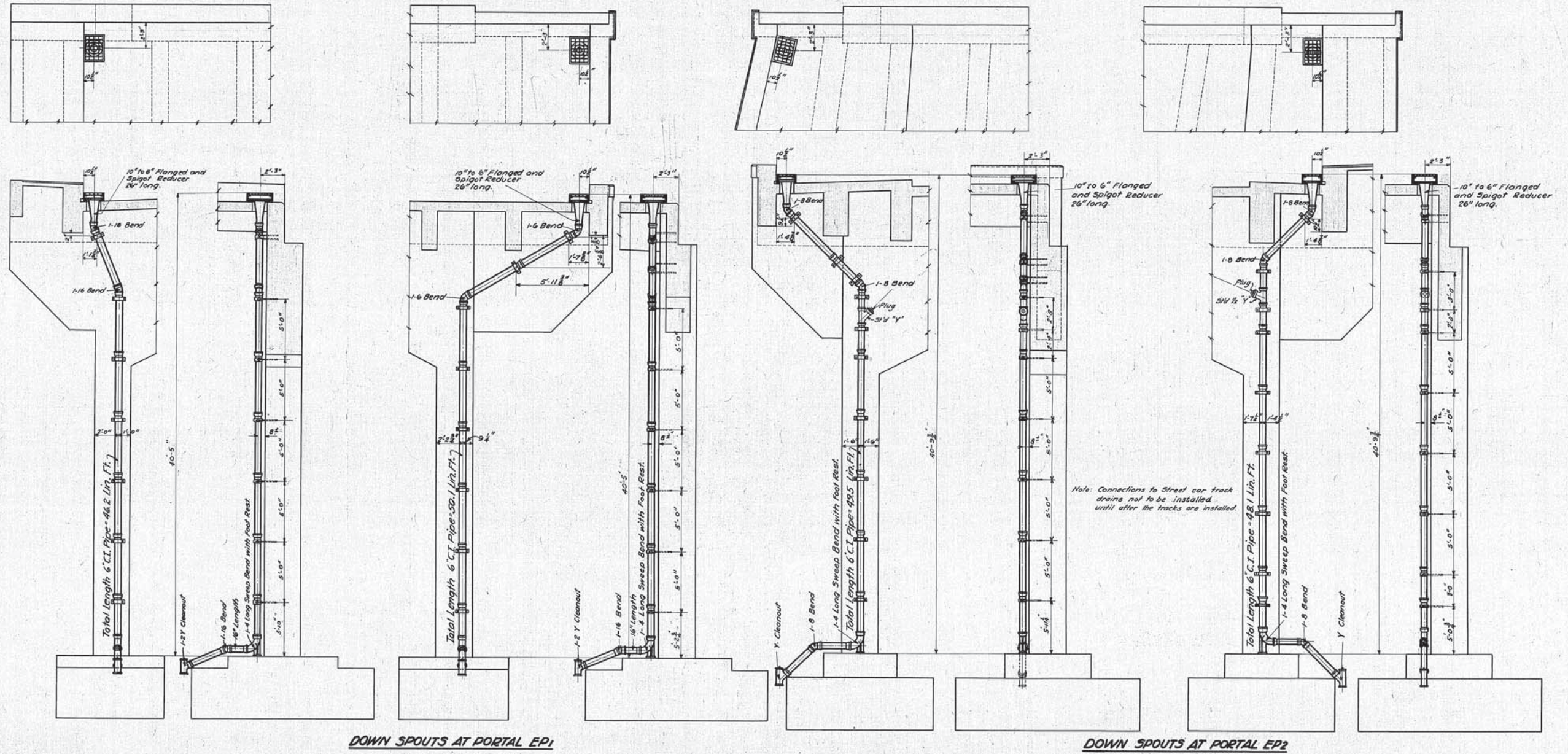
THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT - SECTION "F"  
 INTERSECTION OF VIADUCT AND W. 3<sup>RD</sup> ST. APPROACH  
 PLAN AND DETAILS OF FOOTINGS  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: As Noted. DATE: Dec. 18, 1925.  
 ISSUE No. 4. REVISED: March 25, 1931.  
*...* 3/25/31  
 Chief Engineer

Issue No. A. Oct 12, 1926

Revisions:  
 Issue No. B. Feb. 24, 1927  
 Drawing checked.  
 Issue No. C. Apr. 20, 1927  
 Revised For Changes In Exp. Joint & Grade.  
 Issue No. D. Aug. 1, 1927  
 Provision made for Street car track drains.  
 Issue No. 1. Aug. 30, 1927.  
 Approved by Chief Engineer.

Issue No. 2. Sept. 14, 1927.  
 Approved by Commissioner of  
 Engineering and Construction  
 of the City of Cleveland.

Issue No. 3. May 6, 1931  
 Plan corrected to conform to  
 structure as built.



Note: Connections to Street car track drains not to be installed until after the tracks are installed.

NOTE:  
 All pipe and fittings to be 6\"/>

Approved E.P. Marsh 9/23/27  
 Engineer of Structures  
 Designed by W.H.T. March 1, 1926  
 Detailed by W.H.T. Oct. 12, 1926  
 Traced by K.O. Nov. 5, 1926  
 Checked by E.A.B. Feb. 24, 1927  
 Correct 5-5-27  
Y.L. Gorman  
 Designing Engineer

Approved L.H. Bigelow 9/24/27  
 Principal Assistant Engineer  
 Approved H.W. Robertson 9/17/27  
 Assistant Electrical Engineer  
 Approved W.H. Sulzoff 8/27/27  
 Engineer of Construction

PLAN APPROVED  
**CITY OF CLEVELAND**  
 By Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date: Sept. 8, 1927.  
 For Original of this Signature  
 See Blue Print filed under N<sup>o</sup> 113-039.S.

We hereby certify that this Plan shows the structure as built.  
E.P. Marsh 4/10/31  
 Engineer of Structures  
H.L. Bigelow 6/22/31  
 Asst. Engineer of Construction

**THE CLEVELAND UNION TERMINALS CO.**  
 EAGLE AVE. VIADUCT - SECTION "F"  
 INTERSECTION OF VIADUCT AND W. 3<sup>RD</sup> ST. APPROACH  
 DETAILS FOR DRAINAGE  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE:  $\frac{3}{4}$ " = 1'-0"  
 ISSUE NO. 3  
 DATE: Oct. 12, 1926  
 REVISOR: May 6, 1931  
E.P. Marsh 9/24/27  
 Chief Engineer





Issue No A March 16, 1926

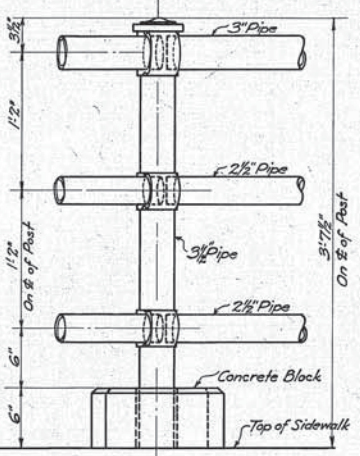
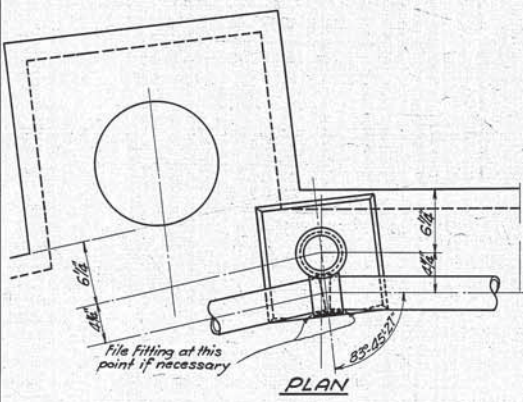
REVISIONS:  
Issue No B Nov. 20, 1926.  
Railing Redesigned  
Plan Redrawn.

Issue No C Aug. 1, 1927.  
Added details of Transformer chamber  
for Lights.

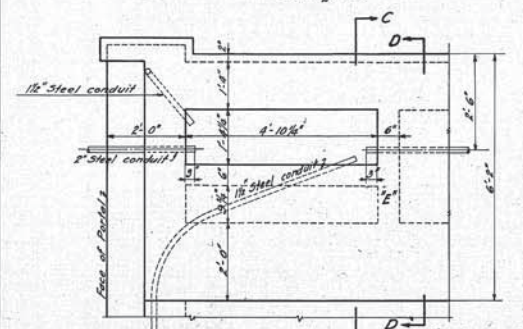
Issue No 1 Aug. 30, 1927  
Approved by Chief Engineer.

Issue No 2 Sept. 14, 1927.  
Approved by Commissioner of  
Engineering and Construction  
of the City of Cleveland.

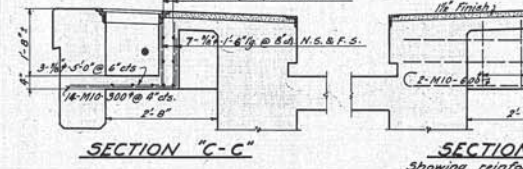
Issue No 3 May 27, 1931  
Plan conforms to structure  
as built.



ELEVATION OF PIPE POST 'C'  
Scale: 1/2" = 1'-0"



PLAN



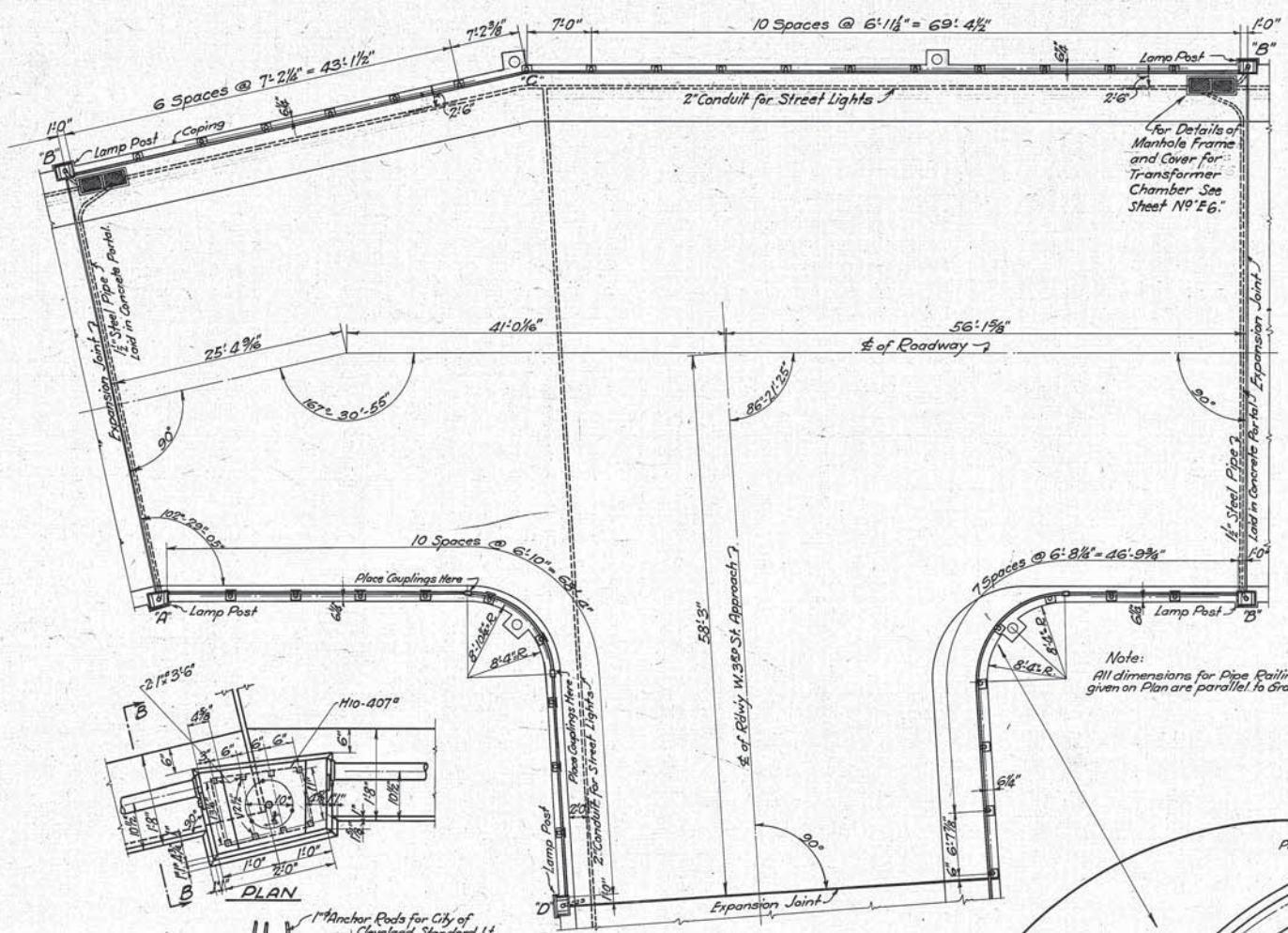
SECTION 'C-C' SECTION 'D-D'  
Showing reinforcing of Wall 2'

DETAILS OF TRANSFORMER CHAMBER

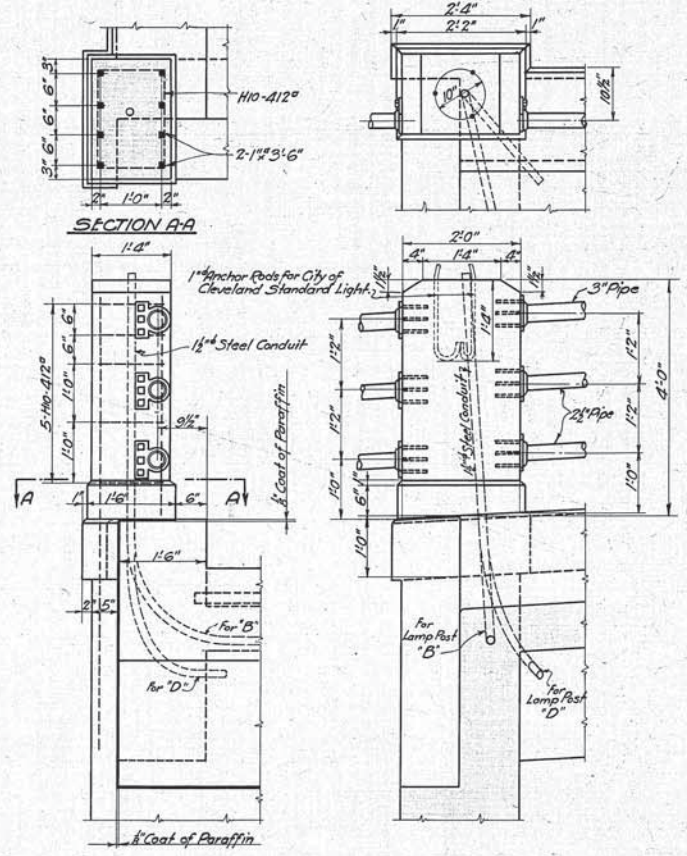
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Detailed By S.H. Nov. 20, 1926.  
Traced By S.H. July 20, 1927.  
Checked By F.A.B. May 4, 1927.  
Correct 5-5-1927  
F.S. Gorman  
Designing Engineer

Approved E.P. Marsh 1/27/27  
Engineer of Structures  
Approved W. R. ... 12/2/27  
Principal Assistant Engineer  
Approved H.W. ... 8/27/27  
Assistant Electrical Engineer  
Approved W. ... 8/27/27  
Engineer of Construction

We hereby certify that this Plan  
shows the structure as built.  
E.P. Marsh 7/13/31  
Engineer of Structures  
H.P. ... 7/27/31  
Asst. Engineer of Construction

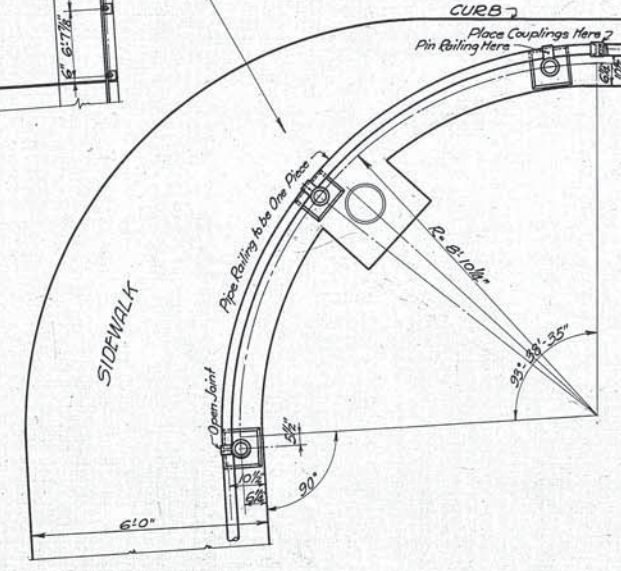


PLAN  
Scale: 1/8" = 1'-0"



DETAILS OF CONCRETE POSTS 'B' & 'D'  
Scale: 3/8" = 1'-0"

GENERAL NOTES:  
For Pipe Railing and Fittings See Sheet No. 3 of General Drawings.  
2" Conduits for Street Lights shall be supported from Inserts  
spaced about 6'-0" on centers. See Sheet No. C72 for  
details of Insert.  
For Explanation of Method of Marking Bent Steel Reinforcement  
Bars, See "Standard Bar Marks," Sheet No. 1 of 1, Issue No. 1,  
Dated January 8, 1925.

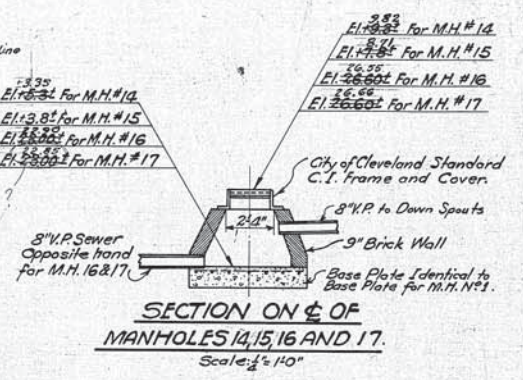
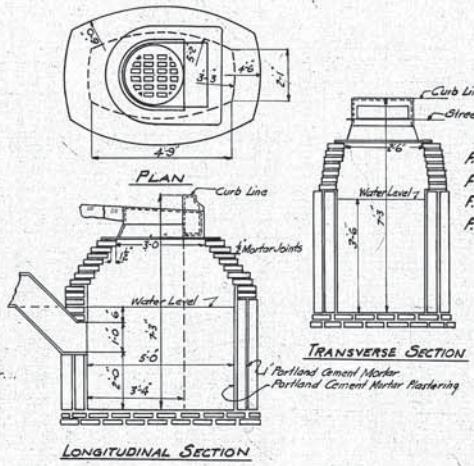
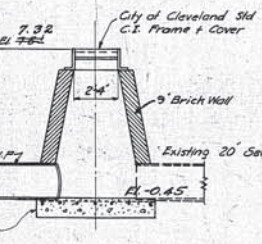
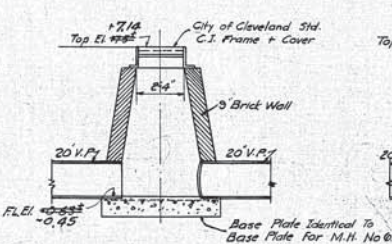
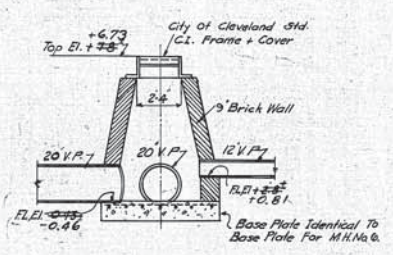
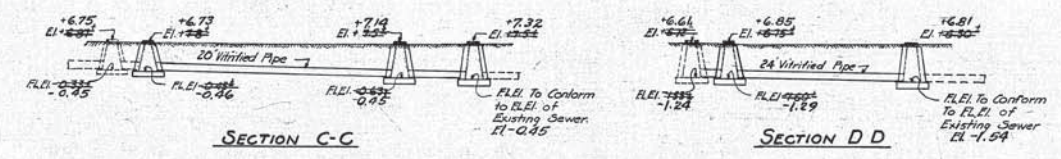
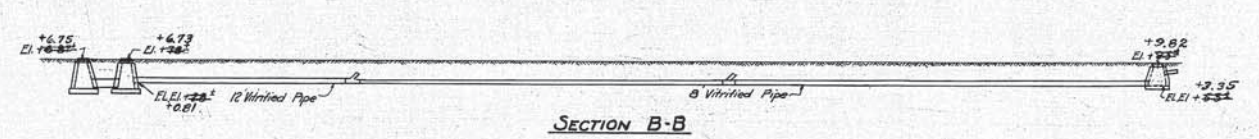
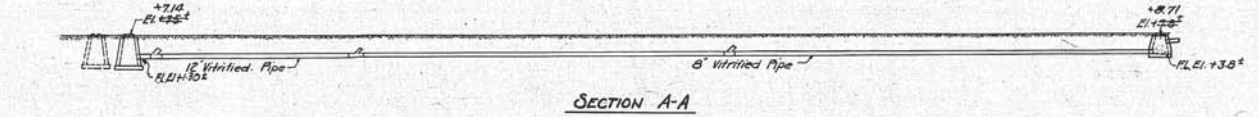
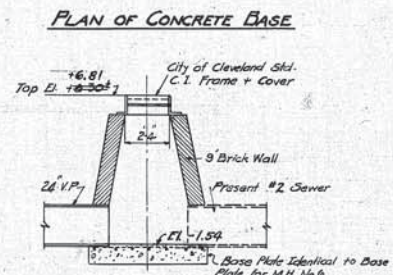
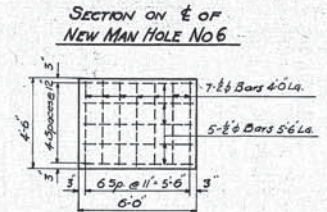
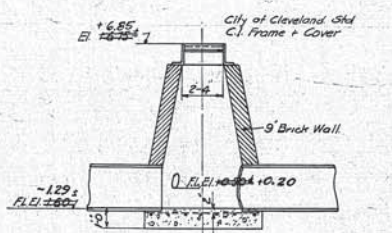
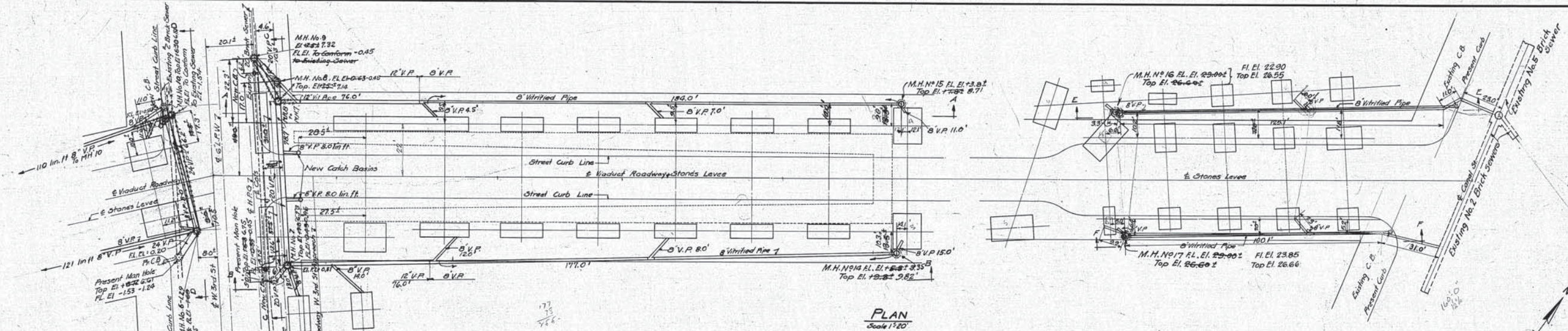


PLAN AT CURVE  
Scale: 1/2" = 1'-0"

Plan Approved  
CITY OF CLEVELAND  
By Robert Hoffman  
Commissioner of Engineering & Construction  
Date 9-8-27.  
For Original of this Signature  
See Blue Print filed under No. 113-039.

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE VIADUCT SECTION "F"  
INTERSECTION OF VIADUCT & W. 3<sup>RD</sup> ST APPROACH  
RAILING AND LIGHTING DETAILS  
CLEVELAND, OHIO  
OFFICE OF ENGINEER OF STRUCTURES  
SCALE: AS NOTED  
ISSUE NO. 3  
DATE 3-16-26  
REVISED May 27, 1931  
Chief Engineer

Issue No A Nov. 15, 1926  
 Revised  
 Issue No B May 13, 1927  
 Removed Drainage Plan For Section G  
 Issue No 1 Aug. 30, 1927  
 Approved by Chief Engineer.  
 Issue No 2 Sept. 16, 1927.  
 Manholes #14, #15, #16 & #17 added.  
 Issue No 3 Feb. 14, 1928.  
 Minor revisions.  
 Issue No 4 May 6, 1931.  
 Plan corrected to conform to structure as built.



Designed By A.O. Nov. 15, 1926  
 Detailed By A.O. Nov. 15, 1926  
 Traced By L.C.B. May 13, 1927  
 Checked By F.A.B. May 4, 1927  
 Correct 5-5-27  
 F.R. Dorman  
 Designing Engineer

Approved E.P. Marsh 11/17/27  
 Engineer of Structures  
 Approved F.W. Smith 5/1/27  
 Principal Assistant Engineer  
 Approved H.W. Condit 5/27/27  
 Assistant Electrical Engineer  
 Approved M.W. Dulak 5/27/27  
 Engineer of Construction

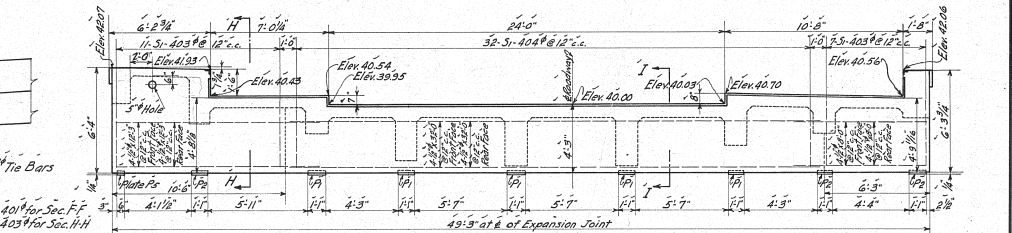
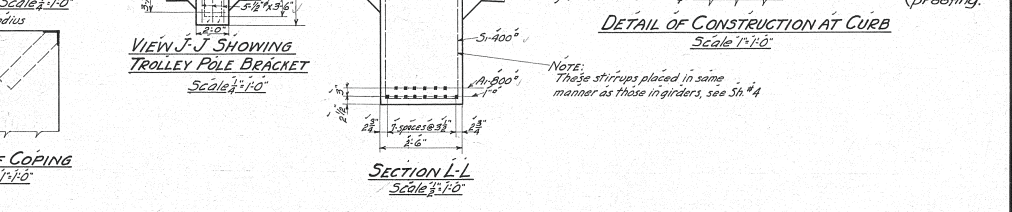
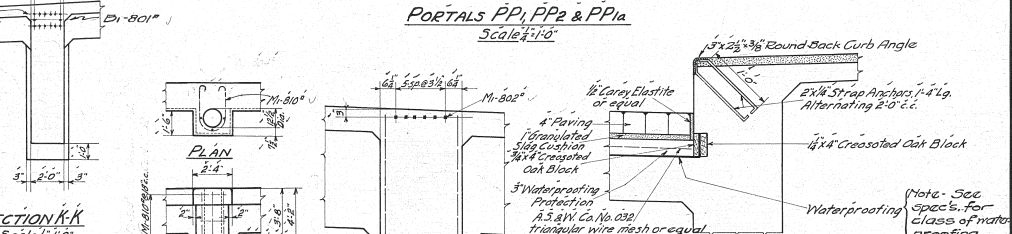
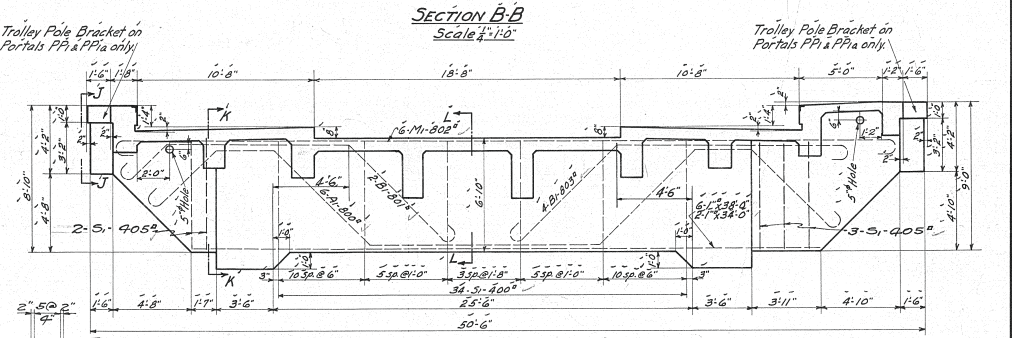
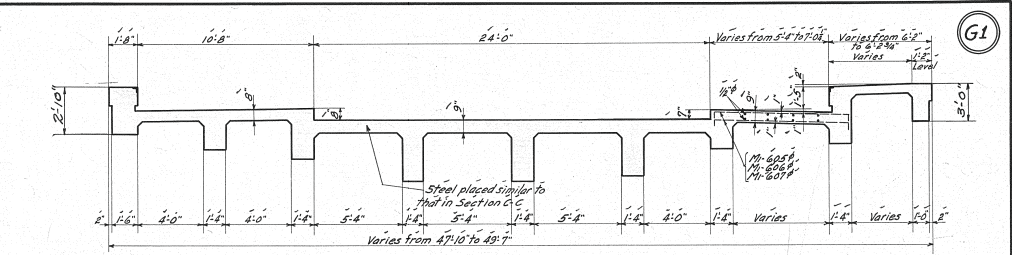
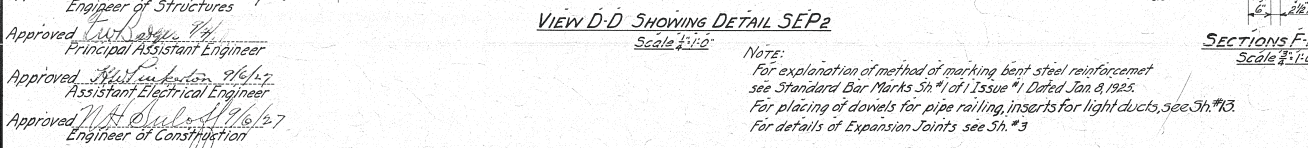
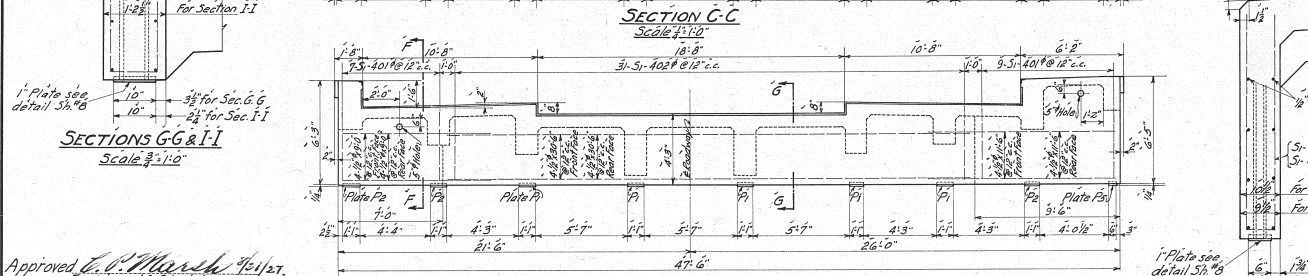
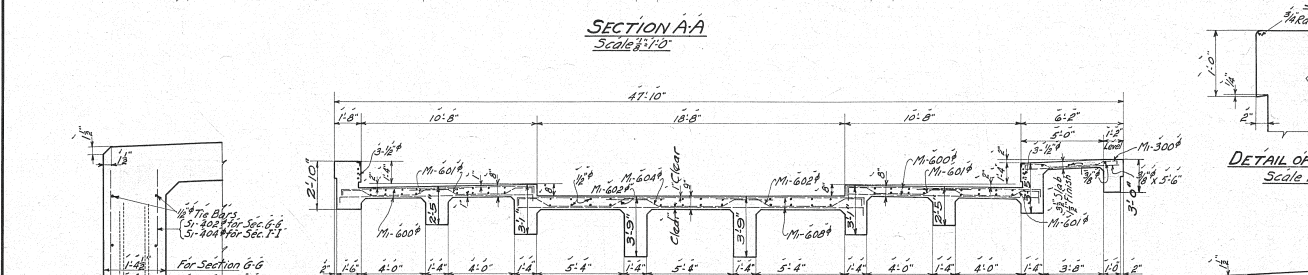
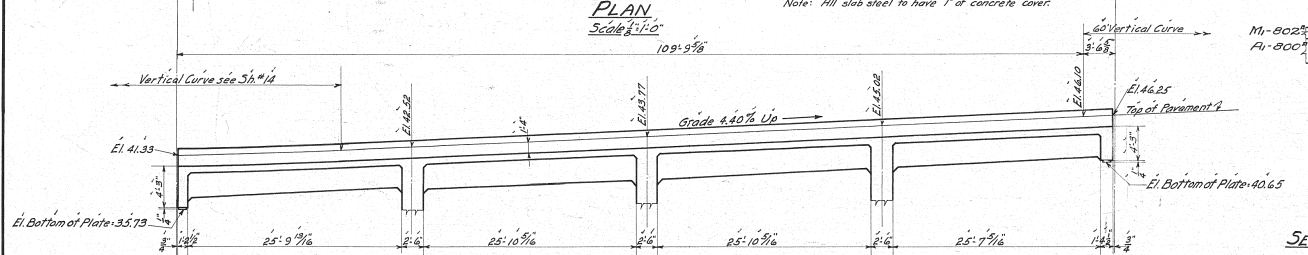
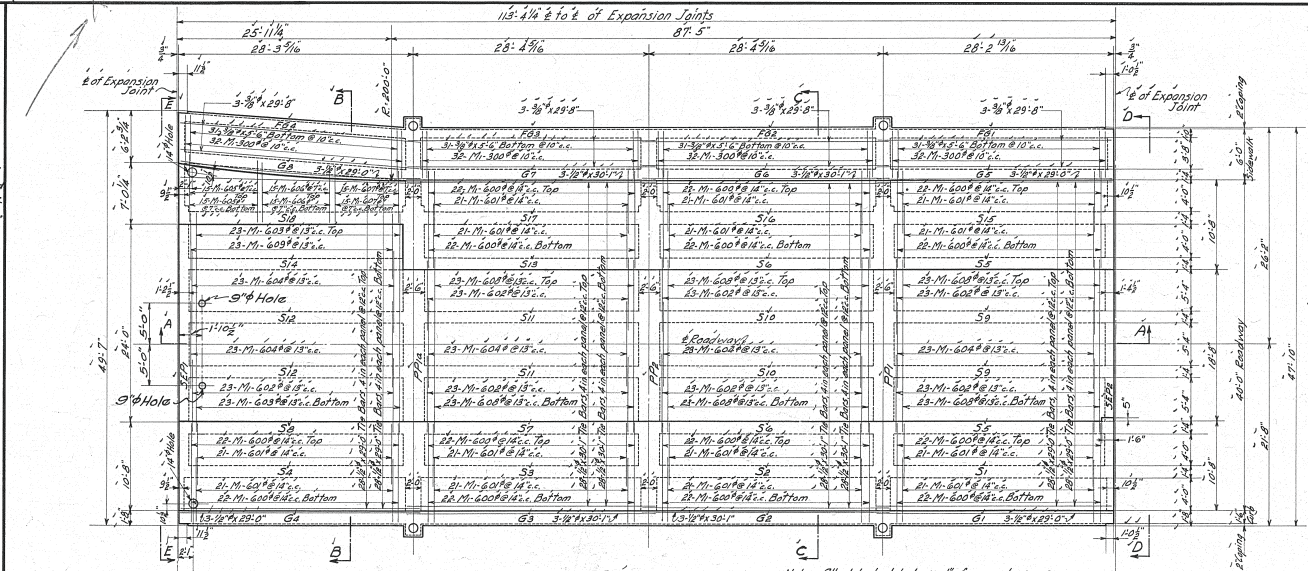
Plan Approved  
 CITY OF CLEVELAND  
 By  
 Commissioner of Engineering & Construction

We hereby certify that this Plan  
 shows the structure as built.  
 E.P. Marsh 11/17/31  
 Engineer of Structures  
 H.P. Bigelow 6/22/31  
 Chief Engineer of Construction

CITY OF CLEVELAND  
 STANDARD CATCH BASIN  
 Scale 3/4"=1'-0"  
 THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT SECTION "F"  
 INTERSECTION OF VIADUCT AND WEST 3RD STREET  
 DRAINAGE PLAN  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE AS SHOWN  
 ISSUE NO. 6  
 DATE Nov. 15, 1926  
 REVISED May 6, 1931  
 Chief Engineer



Issue No A Nov 30, 1925  
 Revisions:  
 Issue No B April 11, 1927 Revised grades and elevations, and details of expansion joints.  
 Issue No C May 17, 1927 Corrections made after checking.  
 Issue No D Aug. 1, 1927 Changed curb angle - added note to waterproofing - added 3/4" holes for street car track drains - other minor changes.  
 Issue No 1 Sept 7, 1927 Approved by Chief Engineer.  
 Issue No 2 Oct 3, 1927 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No 3 Dec 5-27 Minor Revisions.  
 Issue No 4 Apr. 10, 1928 Note added for slab steel.  
 Issue No 5 Apr. 27, 1928 Revised slab detail of SEP2.  
 Issue No 6 May 27, 1931 Plan conforms to structure as built.



We hereby certify that this Plan shows the structure as built.

C. C. Marshall 7/27/31  
 Engineer of Structures

H. B. Bigelow 7/27/31  
 Asst. Engineer of Construction

Plan Approved  
 CITY OF CLEVELAND

By Robert Hoffman  
 COMMISSIONER OF ENGINEERING AND CONSTRUCTION  
 For Original of this signature  
 Date Sept. 1927 See Blue Print Filed under 113-0395

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT SECTION G  
 PORTION FROM WEST 382 STREET TO CUYAHOGA RIVER  
 PLAN & SECTIONS OF DECK AND DETAILS - EAST PORTION  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE AS NOTED  
 ISSUE NO. 6

DATE NOV. 30, 1925  
 REVISED MAY 27, 1931  
 DATE 9/1/31  
 DATE 9/1/31

Designed by M. S. B. Oct. 19, 1925  
 Detailed by F. H. D. Nov. 30, 1925  
 Traced by W. H. T. June 10, 1927  
 Checked by K. B. S. & D. R. A. 5/14/27  
 Correct 5-5-27  
 Designing Engineer

Approved C. C. Marshall 7/27/31  
 Engineer of Structures

Approved H. B. Bigelow 7/27/31  
 Principal Assistant Engineer

Approved J. H. ... 7/6/27  
 Assistant Electrical Engineer

Approved W. H. D. ... 7/6/27  
 Engineer of Construction

NOTE:  
 For explanation of method of marking bent steel reinforcement see Standard Bar Marks Sh. #1 of Issue #1 Dated Jan. 8, 1925.  
 For placing of dowels for pipe railing, inserts for light ducts, see Sh. #3.  
 For details of Expansion Joints see Sh. #3

Revisions:

Issue No. C Nov. 27, 1926  
Drawing redrawn. Revisions due to changes in grade and design.

Issue No. D April 5, 1927  
Revised grades and elevations, changed curb lines and detail of expansion joint.

Issue No. E May 17, 1927  
Corrections made after checking.

Issue No. F Aug. 1, 1927  
Changed Curb Angle - Added 9" Holes for track drains.

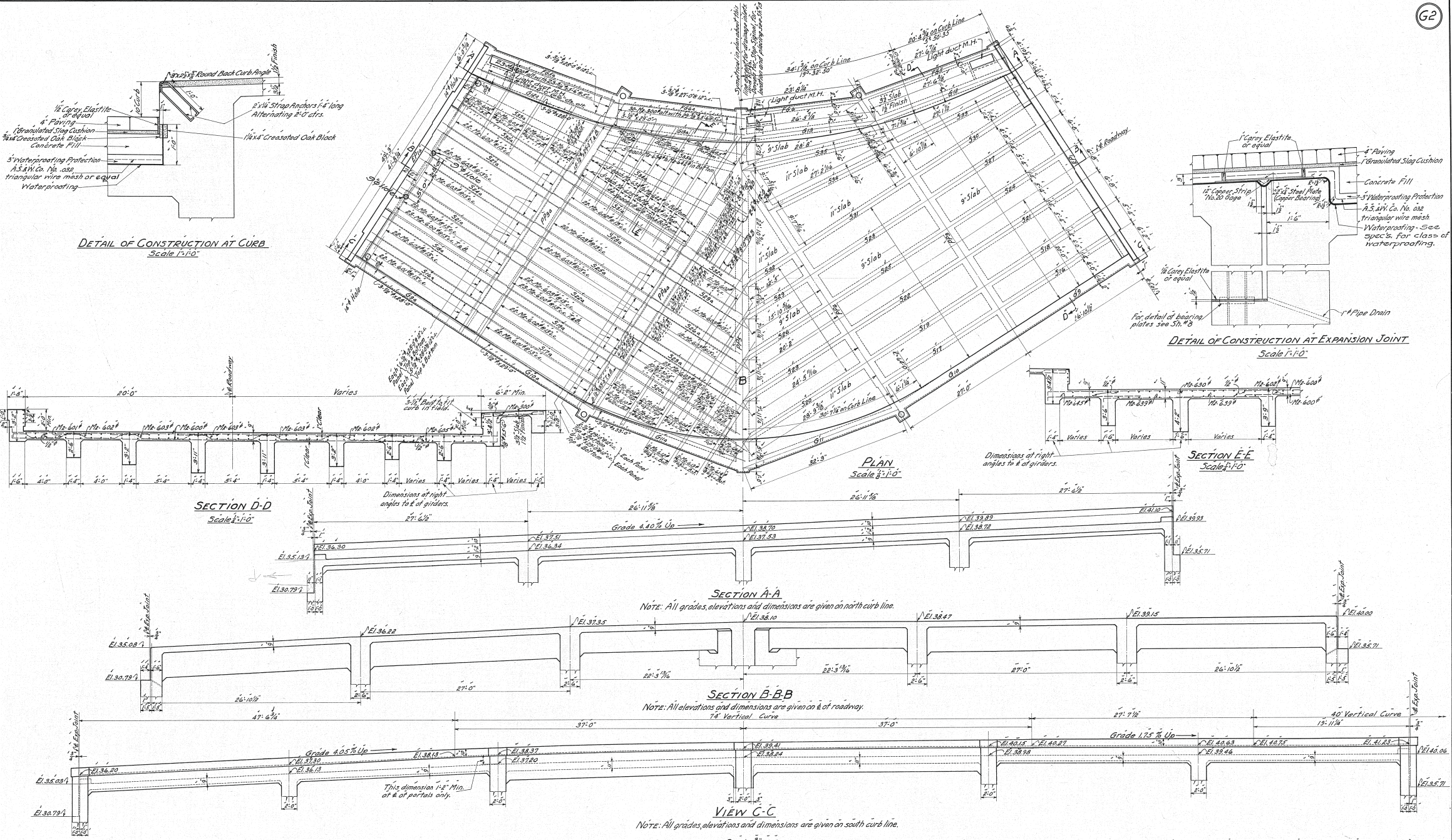
Issue No. 1 Sept. 7, 1927  
Approved by Chief Engineer.

Issue No. 2 Oct. 3, 1927  
Approved by Commissioner of Engineering and Construction of the City of Cleveland.

Issue No. 3 Dec. 5, 1927  
Minor Revisions.

Issue No. 4 Apr. 10, 1928  
Note added for slab steel.

Issue No. 5 May 27, 1931  
Plan conforms to structure as built.



Designed by M.S.P. Oct. 15, 1925  
Detailed by W.H.T. Nov. 27, 1926  
Traced by W.H.T. June 3, 1927  
Checked by K.B.S. & J.R.A. 5/4/27  
Correct 5-5-27  
Designing Engineer

Approved *E. J. ...* 1/31/27  
Engineer of Structures  
Approved *F. ...*  
Principal Assistant Engineer  
Approved *...* 7/16/27  
Assistant Electrical Engineer  
Approved *...* 7/27  
Engineer of Construction

We hereby certify that the above shows the structure as built.

*E. P. Marsh* 7/16/27  
Engineer of Construction  
*H. R. ...* 7/27/27  
Engineer of Construction

Note:  
For explanation of method of marking bent steel reinforcement see Standard Bar Marks Sheet #1 of Issue #1 Dated Jan. 8, 1925  
For placing of dowels for pipe railing, inserts and man-holes for light ducts, see Sh. #13.  
All slab steel to have 1" of concrete cover.

Plan Approved  
CITY OF CLEVELAND  
By *Robert ...*  
COMMISSIONER OF ENGINEERING AND CONSTRUCTION  
Date Sept. 15, 1927  
For Original of this Signature See Blue Print Filed under 113-039

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE VIADUCT-SECTION 6  
PORTION FROM WEST 38th STREET TO CUYAHOGA RIVER  
PLAN SECTIONS & DETAILS OF DECK - MIDDLE PORTION  
CLEVELAND, OHIO  
OFFICE OF ENGINEER OF STRUCTURES  
SCALE AS NOTED  
DATE NOV. 27, 1926  
REVISED 1/31/27  
ISSUE NO. 1  
*...* 9/1/27  
SHEET ENGINEER



Issue No. A Dec 6, 1926  
 Revisions  
 Issue No. B Apr 12, 1927  
 Revised elevations and details at expansion joints  
 Issue No. C May 11, 1927  
 Corrections made after checking Issue No. 1  
 Issue No. 2 Oct 3, 1927  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland  
 Issue No. 3 Dec 5, 1927  
 Minor Changes  
 Issue No. 4 May 27, 1931  
 Plan conforms to structure as built.



Designed By M.S.B. Oct 19, 1926  
 Detailed By F.H.D. Dec 6, 1926  
 Traced By L.C.B. May 20, 1926  
 Checked By H.B.S. + D.R.A. 5/14/27  
 Correct 5-5-27  
 A.S. Chapman  
 Designing Engineer

Approved E.P. Marshall 7/27/31  
 Engineer of Structures  
 Approved J.W. ...  
 Principal Assistant Engineer  
 Approved ...  
 Assistant Electrical Engineer  
 Approved ...  
 Engineer of Construction

General Note:  
 For Explanation of Method of Marking Bent Steel Reinforcement  
 See Standard B.S. Marks 544 of Issue No. 1 Dated Jan 8, 1925.  
 All Elevations and Depths of Sinks are given on Et of Orders  
 Unless Otherwise Noted

We hereby certify that this Plan  
 shows the structure as built.

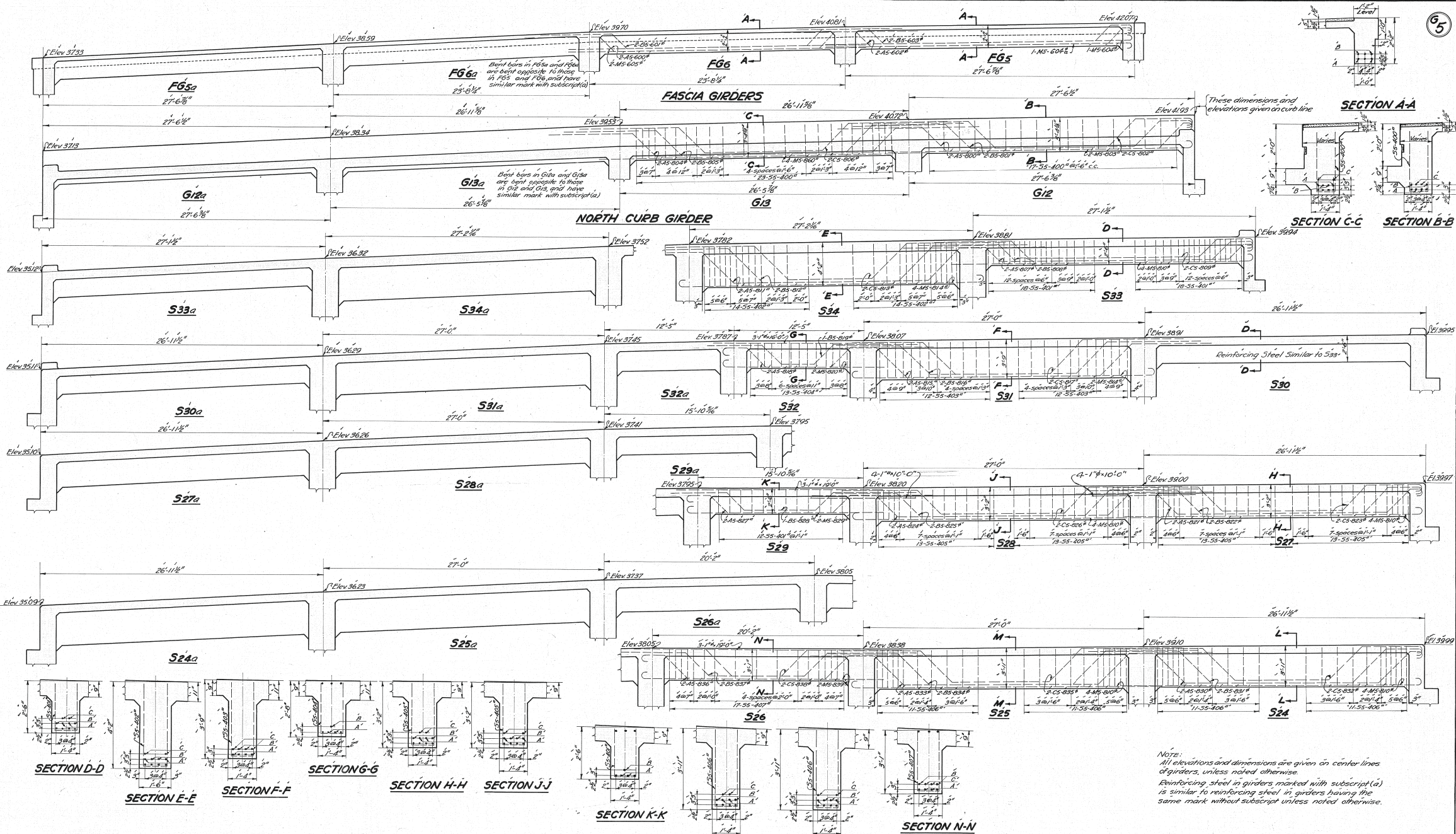
Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date Sep 15, 1927  
 For Original of this Signature  
 See Blue Print Filed under 113-0895

THE CLEVELAND UNION TERMINALS Co.  
 EAGLE AVE VIADUCT-SECTION "G"  
 FROM W. 3RD ST. TO CUYAHOGA RIVER  
 DETAILS OF BIRDERS-EASTERN PORTION  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/2" = 1'-0" UNLESS NOTED  
 DATE: DEC 6, 1926  
 REVISED Nov 27, 1931  
 ISSUE No. 4  
 H.P. Bigelow 7/27/31  
 Ass't Engineer of Construction  
 SECTION Q-Q  
 Scale 1/2" = 1'-0"

FILE No. 113-039 (64)



Revisions  
 Issue No C Dec. 23, 1926  
 Drawing redrawn. Revisions due to changes in grade and design.  
 Issue No D April 6, 1927  
 Revised elevations, changed lengths of curb and fascia girders.  
 Issue No E May 11, 1927  
 Corrections made after checking.  
 Issue No 1 Sept. 7, 1927  
 Approved by Chief Engineer.  
 Issue No 2 Oct. 3, 1927  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No 3 Apr. 10, 1928  
 Minor changes.  
 Issue No 4 May 27, 1931  
 Plans conform to structure as built.



Note:  
 All elevations and dimensions are given on center lines of girders, unless noted otherwise.  
 Reinforcing steel in girders marked with subscript (a) is similar to reinforcing steel in girders having the same mark without subscript unless noted otherwise.

Designed By... M.S.B. Dec. 1, 1925  
 Detailed By... W.H.T. Dec. 23, 1926  
 Traced By... J.T.C. June 28, 1927  
 Checked By... K.B. & D.R.A. 5/14/27  
 Correct 5-5-27  
 Designing Engineer

Approved... E.P. Marsh 7/24/27  
 Engineer of Structures  
 Approved... J.W. Sadler 7/14/27  
 Principal Assistant Engineer  
 Approved... H.W. Leckman 9/14/27  
 Assistant Electrical Engineer  
 Approved... H.R. Bagelow 7/27/31  
 Ass't Engineer of Construction

We hereby certify that this Plan shows the structure as built.  
 E.P. Marsh 7/18/31  
 Engineer of Structures  
 H.R. Bagelow 7/27/31  
 Ass't Engineer of Construction

Note:  
 For explanation of method of marking bent steel reinforcement bars, see Standard Bar Marks, Sheet #1 of 1, Issue #1, Dated Jan. 8, 1925.

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date Sept. 15, 1927

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT-SECTION "G"  
 PORTION FROM WEST 380 STREET TO CUNYHOGA RIVER GIRDER DETAILS MIDDLE PORTION  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/4" = 1'-0"  
 DATE DEC. 23, 1926  
 REVISED May 27, 1931  
 ISSUE No. 4  
 H.R. Bagelow 7/27/31  
 Chief Engineer

Revisions:

Issue No. B Jan 5, 1927  
Drawing redrawn. Revisions due to changes in grade and design.

Issue No. C April 6, 1927  
Revised elevations, added S35 and S36

Issue No. D May 11, 1927  
Corrections made after checking.

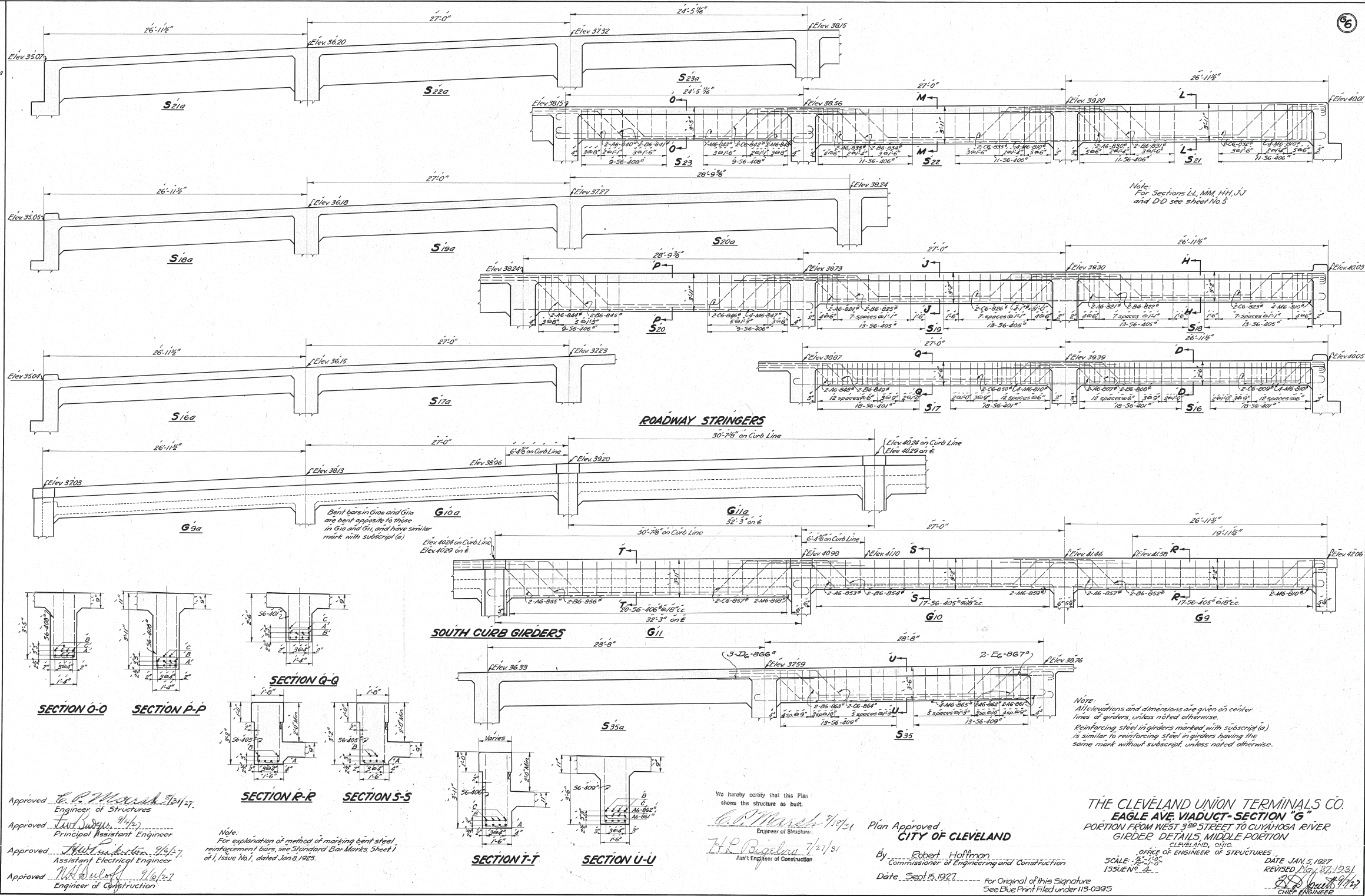
Issue No. E Aug. 1, 1927  
Bars added in S35.

Issue No. 1 Sept. 7, 1927  
Approved by Chief Engineer.

Issue No. 2 Oct. 3, 1927  
Approved by Commissioner of Engineering and Construction of the City of Cleveland.

Issue No. 3 Apr. 10, 1928  
Minor changes.

Issue No. 4 May 27, 1931  
Plan conforms to structure as built.



Designed By... M.S.B. Dec. 1, 1925.  
Detailed By... M.H.T. Jan. 5, 1927.  
Traced By... J.T.C. June 17, 1927.  
Checked By... K.B.S. & D.R.A. 5/4/27.  
Correct... S.S. 2/7.  
A.S.D. Designing Engineer

Approved... E.P. Marshall 7/11/27  
Engineer of Structures

Approved... J.W. Sullivan 9/1/27  
Principal Assistant Engineer

Approved... H.W. Jackson 9/1/27  
Assistant Electrical Engineer

Approved... W.S. Cook 11/12/27  
Engineer of Construction

Note:  
For explanation of method of marking bent steel reinforcement bars, see Standard Bar Marks, Sheet 1 of 1, Issue No. 1, dated Jan. 6, 1925.

We hereby certify that this Plan shows the structure as built.

E.P. Marshall 7/11/27  
Engineer of Structure

H.L. Bagelara 7/27/27  
Asst. Engineer of Construction

Plan Approved  
**CITY OF CLEVELAND**

By... Robert Hoffman  
Commissioner of Engineering and Construction

Date... Sept. 15, 1927

For Original of this Signature  
See Blue Print Filed under 113-0395

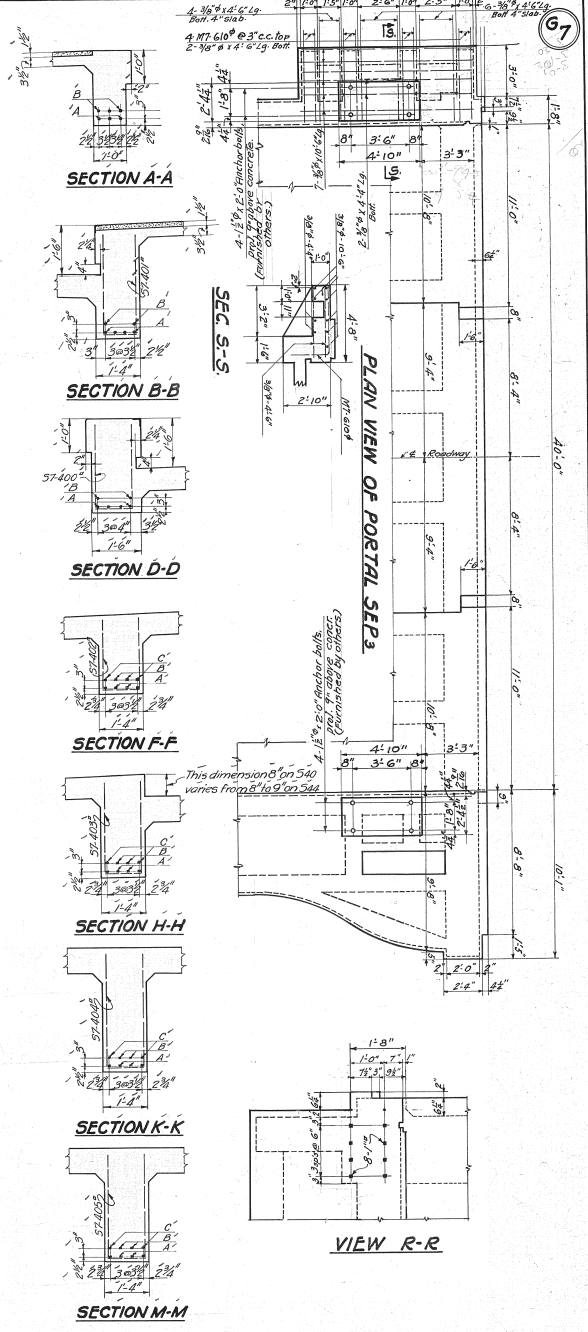
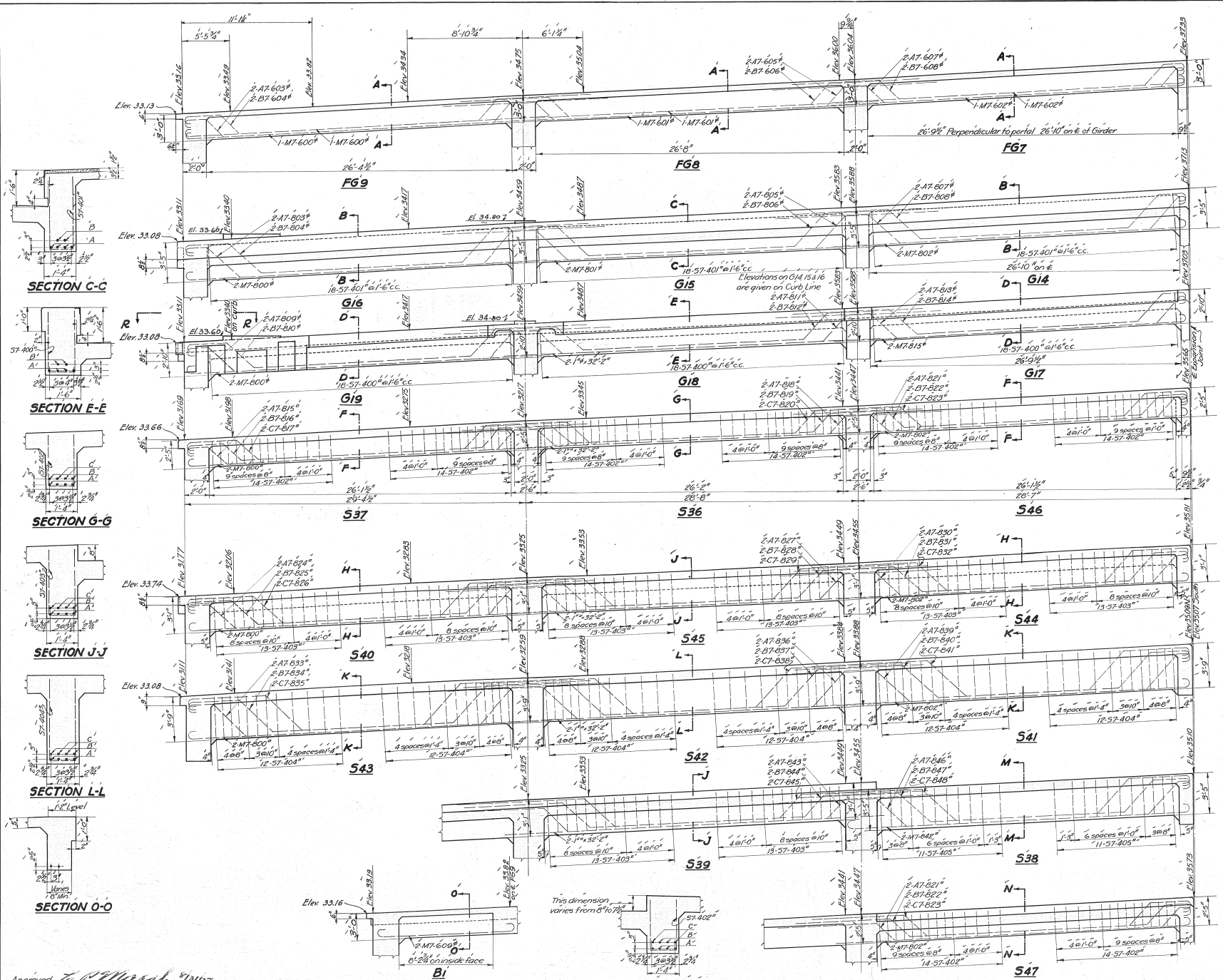
THE CLEVELAND UNION TERMINALS CO.  
**EAGLE AVE. VIADUCT-SECTION "G"**  
PORTION FROM WEST 3<sup>RD</sup> STREET TO CUYAHOGA RIVER  
GIRDER DETAILS, MIDDLE PORTION  
CLEVELAND, OHIO.

OFFICE OF ENGINEER OF STRUCTURES  
SCALE: 1/4" = 1'-0"  
1355UN<sup>o</sup> 27-12

DATE JAN. 5, 1927  
REVISED 12/14/27  
1355UN<sup>o</sup> 27-12

Chief Engineer

Issue No A May 26, 1927  
 Revisions:  
 Issue No B Aug. 1, 1927  
 F67-B43 deepened  
 Issue No 1 Sept. 7, 1927  
 Approved by Chief Engineer  
 Issue No 2 Oct. 3, 1927  
 Approved by Commissioner of  
 Engineering and Construction  
 of the City of Cleveland.  
 Issue No 3 Mar. 2, 1928  
 Revised West Side of Portal S2P3  
 to fit Tower Span.  
 Issue No 4 May 16, 1928  
 Extension added to provide for  
 Barrier Gate at River span.  
 Issue No 5 May 27, 1931  
 Plan conforms to structure  
 as built.



Designed By... W.H.T. May 26, 1927.  
 Detailed By... W.H.T. May 26, 1927.  
 Traced By... J.T.C. July 11, 1927.  
 Checked By... K.B.S. & D.R.A. 5/14/27  
 Correct  
 Designing Engineer

Approved... *[Signature]* 7/11/27.  
 Engineer of Structures  
 Approved... *[Signature]*  
 Principal Assistant Engineer  
 Approved... *[Signature]*  
 Assistant Electrical Engineer  
 Approved... *[Signature]* 7/6/27  
 Engineer of Construction

We hereby certify that this Plan  
 shows the structure as built.  
*[Signature]*  
 Engineer of Structures  
*[Signature]*  
 Ass't Engineer of Construction

Note:  
 For explanation of method of marking bent steel reinforcement  
 see Standard Bar Marks, Sheet #1 of 1, Issue #1 Dated Jan. 8, 1925.  
 All dimensions and elevations given are of girders unless noted otherwise.

Plan Approved  
 CITY OF CLEVELAND

By... *[Signature]*  
 Commissioner of Engineering and Construction  
 Date... Sept. 15, 1927

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT SECTION "G"  
 PORTION FROM WEST 3RD STREET TO CUYAHOGA RIVER  
 GIRDER DETAILS - WEST PORTION  
 CLEVELAND, OHIO

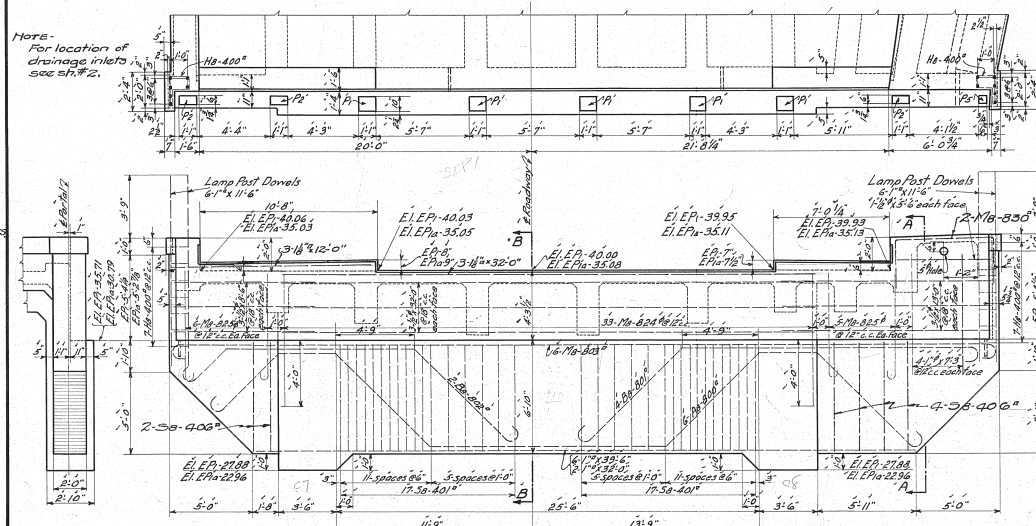
OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/4" = 1'-0"  
 ISSUE NO. 5  
 DATE... MAY 26, 1927  
 REVISED 12 Oct. 27, 1931  
 Chief Engineer

FILE NO 113-039

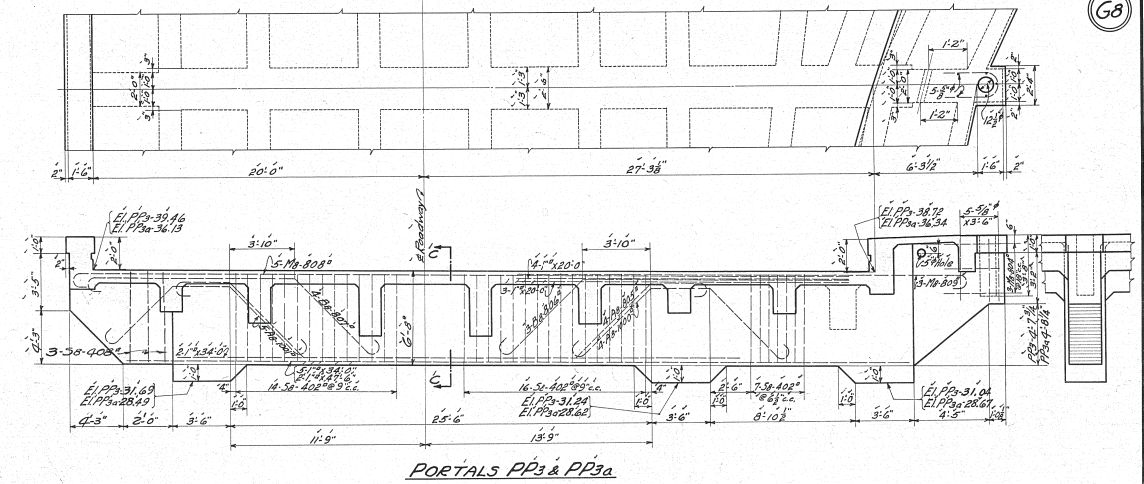
Revisions:

- Issue No. D Jan. 20, 1927  
Drawing redrawn. Revisions due to changes in grade and design.
- Issue No. E April 7, 1927  
Revised elevations, changed design of portals for new location of curbs.
- Issue No. F May 17, 1927  
Corrections made after checking.
- Issue No. G Aug. 1, 1927  
M. Hole added on Portal EPI - Portals PP3, PP3a and PPS disappeared - Other minor changes.
- Issue No. 1 Sept. 7, 1927  
Approved by Chief Engineer.
- Issue No. 2 Oct. 3, 1927  
Approved by Commissioner of Engineering and Construction of the City of Cleveland.
- Issue No. 3 Dec. 5, 1927  
Bearing Plate P6 Added.
- Issue No. 4 Mar. 10, 1928  
Minor changes.
- Issue No. 5 May 27, 1931  
Plan conforms to structure as built.

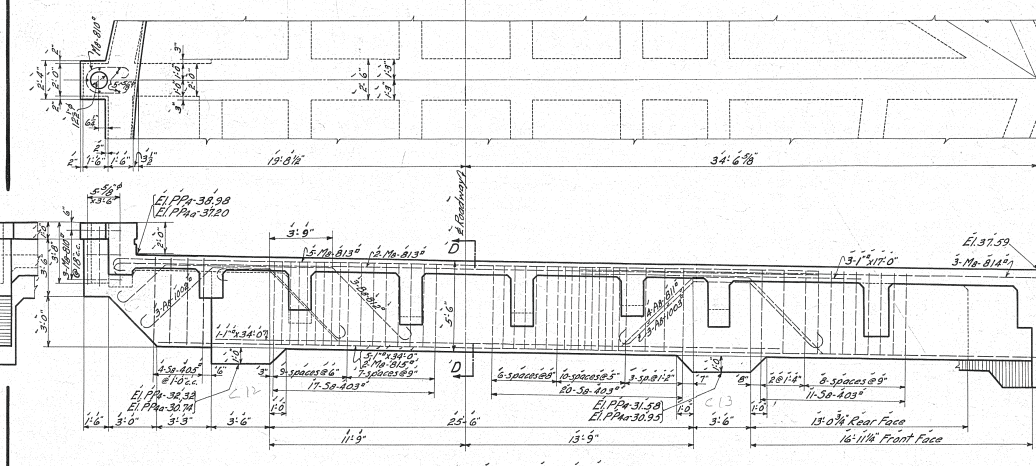
Note - For location of drainage inlets see sheet #2.



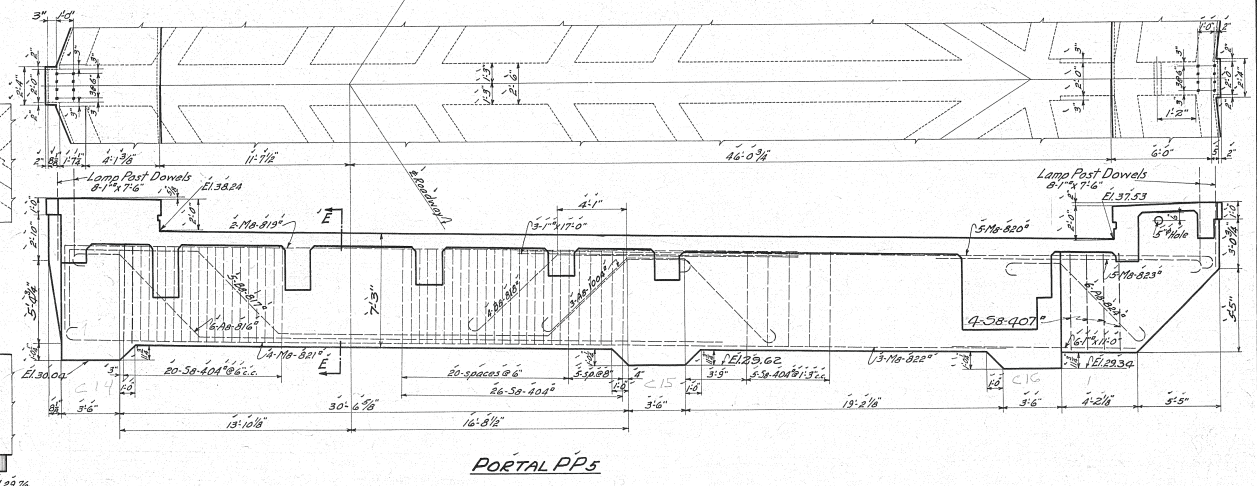
SECTION A-A



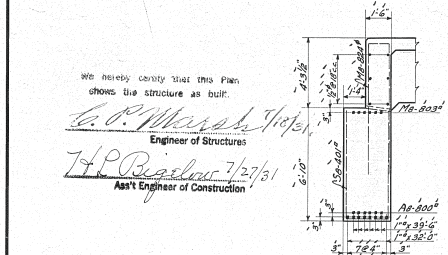
PORTALS PP3 & PP3a



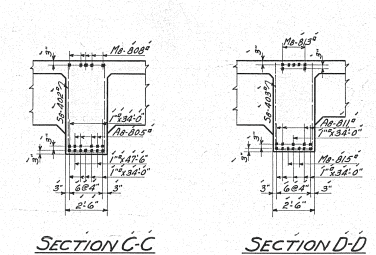
PORTALS PPA & PPAa



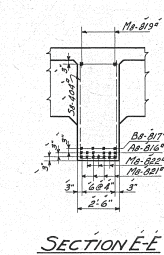
PORTAL PPS



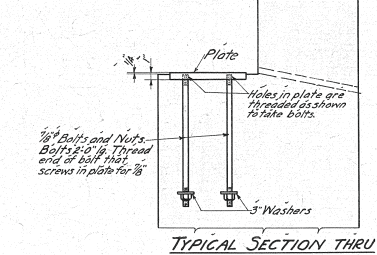
SECTION B-B



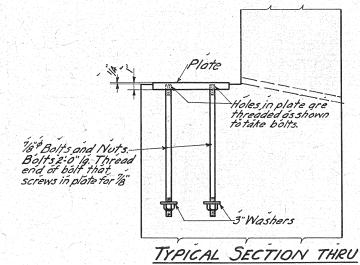
SECTION C-C



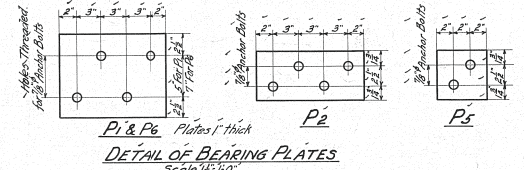
SECTION D-D



SECTION E-E



TYPICAL SECTION THRU BEARING PLATES Scale 1"=1'-0"



DETAIL OF BEARING PLATES Scale 1/4"=1'-0"

NOTES:  
All elevations are given on center lines of portals.  
Portals marked with subscript (a) are similar to portals having same mark without subscript except for elevations, as noted.  
For location of anchor bolts for down spouts see Sh. #12  
For location of conduits for street lights see Sh. #13

Designed by M.S.B. Dec. 1, 1925  
Detailed by W.H.T. Jan. 20, 1927  
Traced by W.H.T. June 16, 1927  
Checked by K.B.S. & J.W.R. 5/14/27  
Correct 5-5-27  
A.S. Chapman  
Designing Engineer

Approved E.C. Marshall 9/21/27  
Engineer of Structures  
Approved J.W. Suber 4/4/27  
Principal Assistant Engineer  
Approved J.W. Suber 9/14/27  
Assistant Electrical Engineer  
Approved W.H. Duffell 9/16/27  
Engineer of Construction

NOTE:  
For explanation of method of marking bent steel reinforcement, see Standard Bar Marks, Sheet #1 of 13 Issue #1 Dated Jan. 6, 1925.

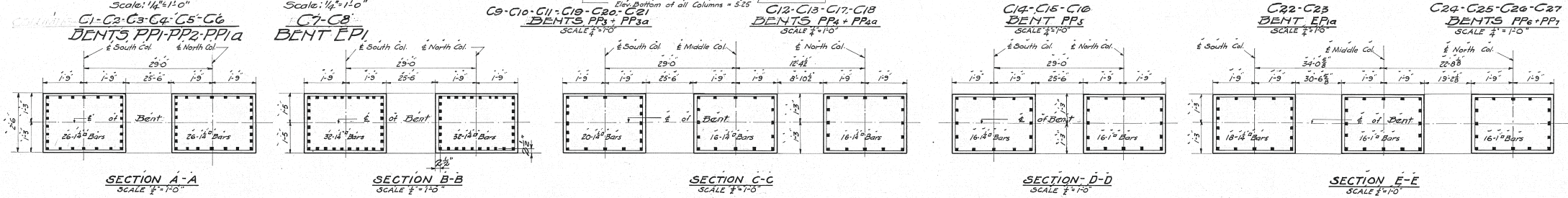
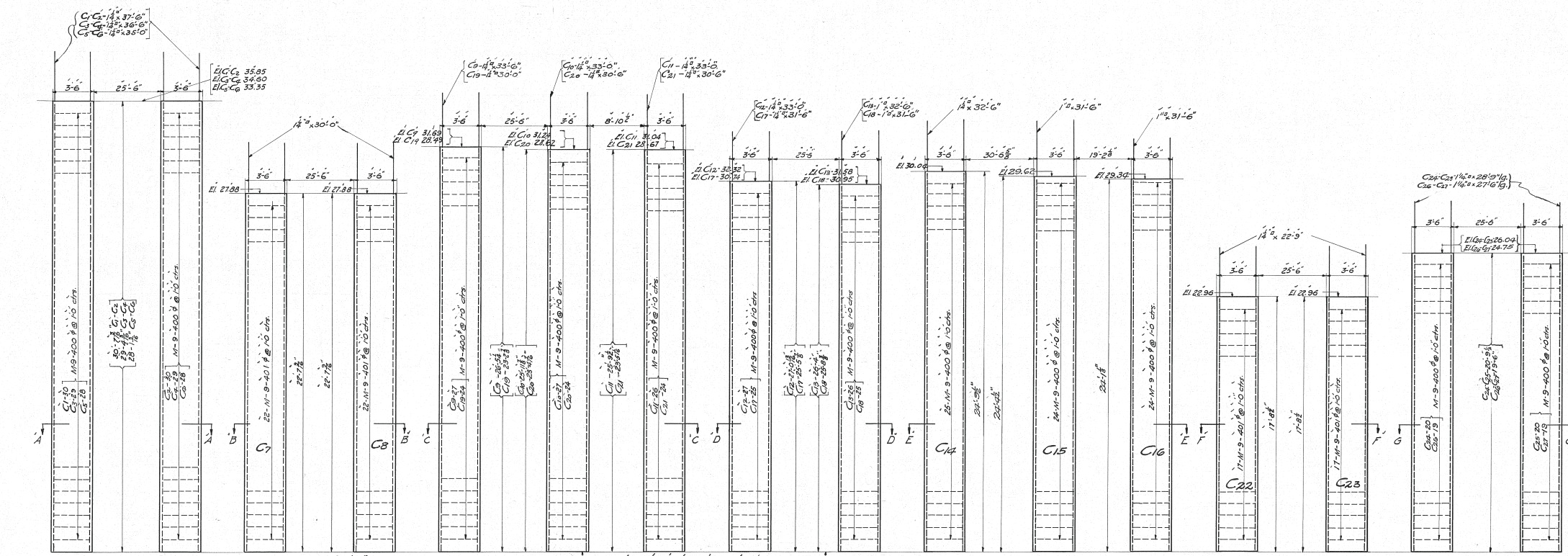
Plan Approved  
CITY OF CLEVELAND

By Robert Hoffman  
COMMISSIONER OF ENGINEERING AND CONSTRUCTION  
For Original of this Signature  
Date: Sept. 15, 1927  
See Blue Print Filed under 113-0395

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE. VIADUCT-SECTION G  
PORTION FROM WEST 3<sup>RD</sup> STREET TO CUYAHOGA RIVER  
DETAILS OF PORTALS, MIDDLE PORTION  
CLEVELAND, OHIO  
OFFICE OF ENGINEER OF STRUCTURES  
SCALE 1/4"=1'-0" UNLESS NOTED.  
DATE JAN. 20, 1927  
REVISED FEB. 27, 1931  
ISSUE NO. 5

FILE NO. 113-039

Issue No. A Dec. 11, 1925  
 Revisions  
 Issue No. B Jan. 22, 1926  
 Revised Sections And  
 Added Steel To Elevations  
 Issue No. C Feb. 9, 1926  
 Revised Sections And Elevations  
 Issue No. D Jan. 25, 1927  
 Revised Elevations And Lengths  
 Issue No. E April 7, 1927  
 Revised Elevations And Lengths of  
 Columns. Added Lengths of Reinforcement  
 Issue No. F May 11, 1927  
 Corrections Made After Checking  
 Issue No. G Aug. 1, 1927  
 Elev. of Tops of Cols. for PPs,  
 PPs a & PPs changed - Vert.  
 Col. Bars lengthened.  
 Issue No. 1 Sept. 7, 1927  
 Approved by Chief Engineer.  
 Issue No. 2 Sept. 27, 1927.  
 PPs + PPs changed.  
 Issue No. 3 Oct. 3, 1927.  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.  
 Issue No. 4 Oct. 15, 1927  
 Column Nos. changed  
 Issue No. 5 May 25, 1931  
 Plan conforms to structure  
 as built.



We hereby certify that this Plan  
 shows the structure as built.  
 E. P. Maish 7/21/31  
 Engineer of Structures  
 H. P. Bagelow 7/27/31  
 Asst. Engineer of Construction

Designed By M.S.B. Dec. 11, 1925  
 Detailed By M.S.B. Dec. 11, 1925  
 Traced By L.C.B. May 16, 1929  
 Checked By K.B.S. + D.R. May 4, 1927  
 Correct 5-5-27  
 Designing Engineer

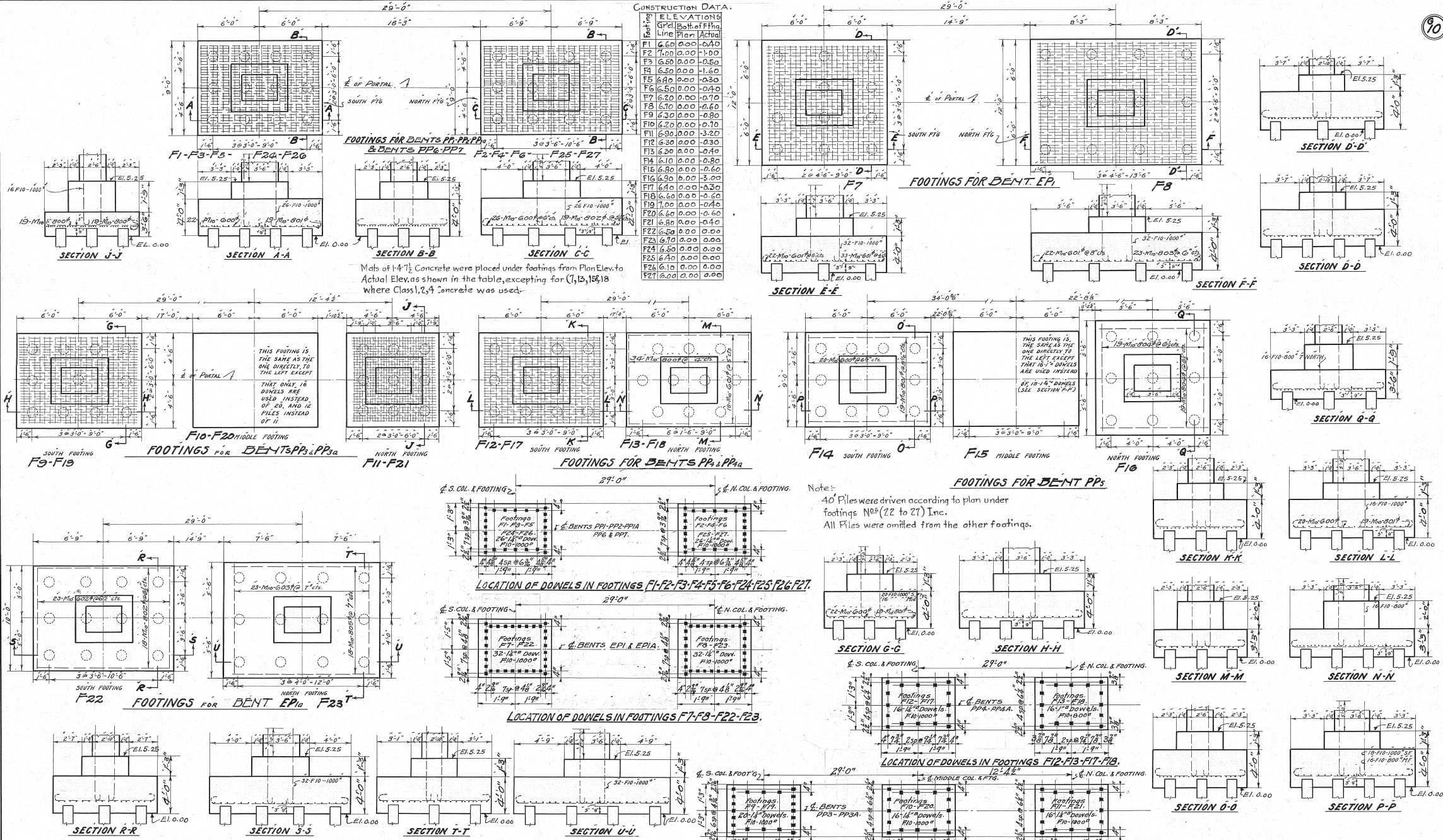
Approved E. P. Maish 7/21/31  
 Engineer of Structures  
 Approved L. C. Bagelow 7/27/31  
 Principal Assistant Engineer  
 Approved H. P. Bagelow 7/27/31  
 Assistant Electrical Engineer  
 Approved W. H. Duffell 7/27/31  
 Engineer of Construction

Note:  
 For Explanation of Method of Marking Bent  
 Steel Reinforcement Bars, See Standard Bar  
 Marks, Sheet # of 1, Issue #, Dated Jan 8, 1925  
 For Location of Anchor Bolts for Downspouts, See Sfr. #12

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date Sept. 15, 1927  
 For Original of this Signature  
 See Blue Print Filed under 113-0393

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT-SECTION "G"  
 PORTION FROM W 3rd St. TO CUYAHOGA RIVER  
 COLUMBIA, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/4" = 1'-0"  
 ISSUE No. 5  
 DEC. 11, 1925  
 REVISED 11/25/27  
 Chief Engineer

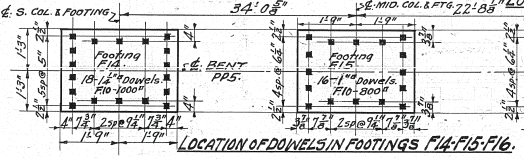
Issue No A Dec. 15, 1925  
 REVISIONS  
 Issue No B Jan 18, 1926 Revised pile layouts and footing steel. Added dowels.  
 Issue No C Jan 22, 1926 Completed above revisions.  
 Issue No D Feb 12, 1926 Revised all footings. Added new sections.  
 Issue No E Apr. 21, 1927 Revised after checking.  
 Issue No F May 31, 1927 Added Footings for PPs & PPI.  
 Issue No G Aug. 1, 1927 Footing bars hooked on ends, and sizes changed to increase spacing. Footings deepened.  
 Issue No I Sept. 7, 1927 Approved by Chief Engineer.  
 Issue No J Sept. 27, 1927 PPs & PPI made like PPI, Ia-2.  
 Issue No K Oct. 3, 1927 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No L Oct. 15, 1927 Changed Portals to Bents and Added Marks for Footings.  
 Issue No M Nov. 4, 1927 Added location of dowels on all footings.  
 Issue No N March 28, 1931. Plan corrected to conform to Structure as built.



Designed By M.S.B. Dec. 14, 1925  
 Detailed By M.S.B. Dec. 15, 1925  
 Traced By J.C. Apr. 21, 1927  
 Checked By K.B.S. & D.R.A. 9/4/27  
 Corrected  
 Designing Engineer

Approved [Signature] 7/4/27  
 Engineer of Structures  
 Approved [Signature] 4/6/27  
 Principal Assistant Engineer  
 Approved [Signature] 4/6/27  
 Assistant Electrical Engineer  
 Approved [Signature] 9/4/27  
 Engineer of Construction

We hereby certify that this plan shows the Structure as built.  
 NOTES:  
 1. BASE OF ALL FOOTINGS AT EL. 0.00  
 2. FOOTINGS TO BE PAURED CONTINUOUSLY FROM EL. 0.00 TO EL. 5.25  
 3. DOWELS TO BE SAME NUMBER, SIZE AND HAVE SAME LOCATION AS COL. BARS SHOWN IN SHEET "G"  
 4. FOR EXPLANATION OF MARKING BENT STEEL REINFORCEMENT BARS, SEE STANDARD BAR MARKS SHEET "I" OF ISSUE I, DATED JAN. 8, 1925.



Note:  
 40 Piles were driven according to plan under footings Nos (22 to 27) Inc.  
 All Piles were omitted from the other footings.

Plan Approved:  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date Sept. 5, 1927  
 For Original of this Signature See Blue Print Filed under 113-0395

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT-SECTION "G"  
 PORTION FROM 14.3<sup>rd</sup> STREET TO CUYAHOGA RIVER  
 PLAN AND DETAILS OF FOOTINGS  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE 1/4" & 1/2" = 1'-0"  
 DATE DEC. 15, 1925  
 REVISED 3-23-1931  
 ISSUE No. 5  
 [Signature]  
 Chief Engineer

Issue No A Jan 24, 1927

Revisions:

Issue No B April 12, 1927  
Revised dimension close PPa and EP, added drainage and changed title

Issue No C May 31, 1927  
Added Footings to PPa & PP, Note added.

Issue No D Sept. 1, 1927  
Approved by Chief Engineer.

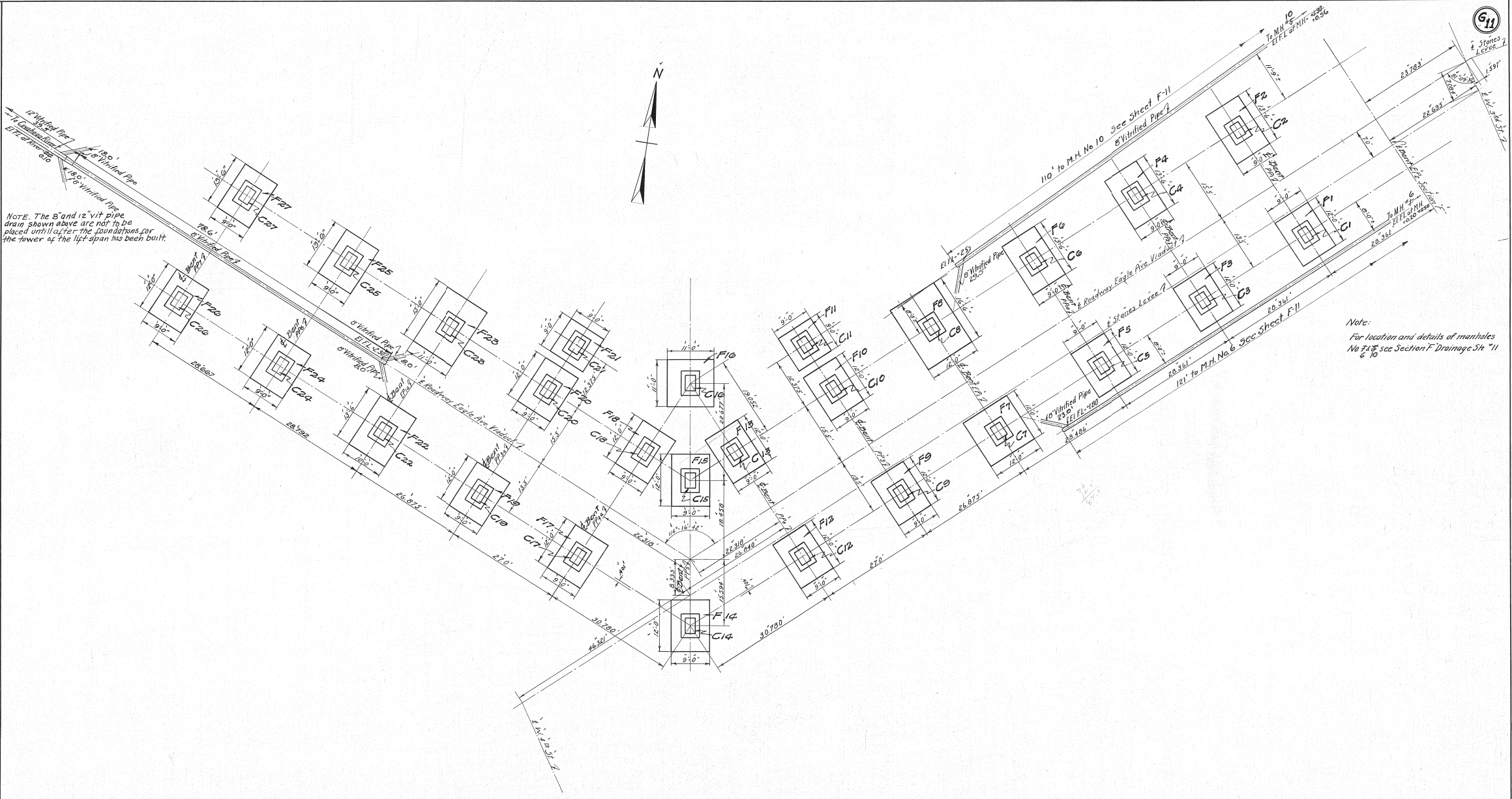
Issue No E Sept. 27, 1927.  
PPa & PP' changed.

Issue No F Oct. 3, 1927  
Approved by Commissioner of Engineering and Construction of the City of Cleveland.

Issue No G Oct 15, 1927  
Added Marks for Footings & Cais.

Issue No H May 6, 1931  
Plan corrected to conform to structure as built.

NOTE: The 8" and 12" vit pipe drain shown above are not to be placed until after the foundations for the tower of the lift span has been built.



Designed by M.S.D. Dec. 13, 1925

Detailed by W.H.T. Jan. 24, 1927

Traced by J.T.C. Apr. 14, 1927

Checked by H.S. ADRA 5/2/27

Correct 5-5-27

Y.P. Gorman Designing Engineer

Approved E.P. March 7/24/27  
Engineer of Structures

Approved J.W. Rogers 4/4/27  
Principal Assistant Engineer

Approved H.W. Robinson 9/1/27  
Assistant Electrical Engineer

Approved W.H. Smith 9/6/27  
Engineer of Construction

E.P. March 4/10/27

H.R. Bigelow 4/27/27

Plan Approved  
CITY OF CLEVELAND

By Robert Hoffman  
Commissioner of Engineering and Construction

Date Sept. 15, 1927

For Original of this Signature  
See Blue Print Filed under 113-0395

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE VIADUCT SECTION "G"  
PORTION FROM WEST 3<sup>RD</sup> STREET TO CUYAHOGA RIVER  
FOOTING AND DRAINAGE PLAN  
CLEVELAND, OHIO.

OFFICE OF ENGINEER OF STRUCTURES  
SCALE: 1"=10'-0"

JAN 24, 1927  
REVISED 11/15/1931  
ISSUE NO. 7

D. J. Smith 11/27/27  
CHIEF ENGINEER

FILE NO 113-039

611

611

Issue No. A Feb. 5, 1927

Revisions:

Issue No. B April 12, 1927  
Revised dimensions and details at expansion joints.

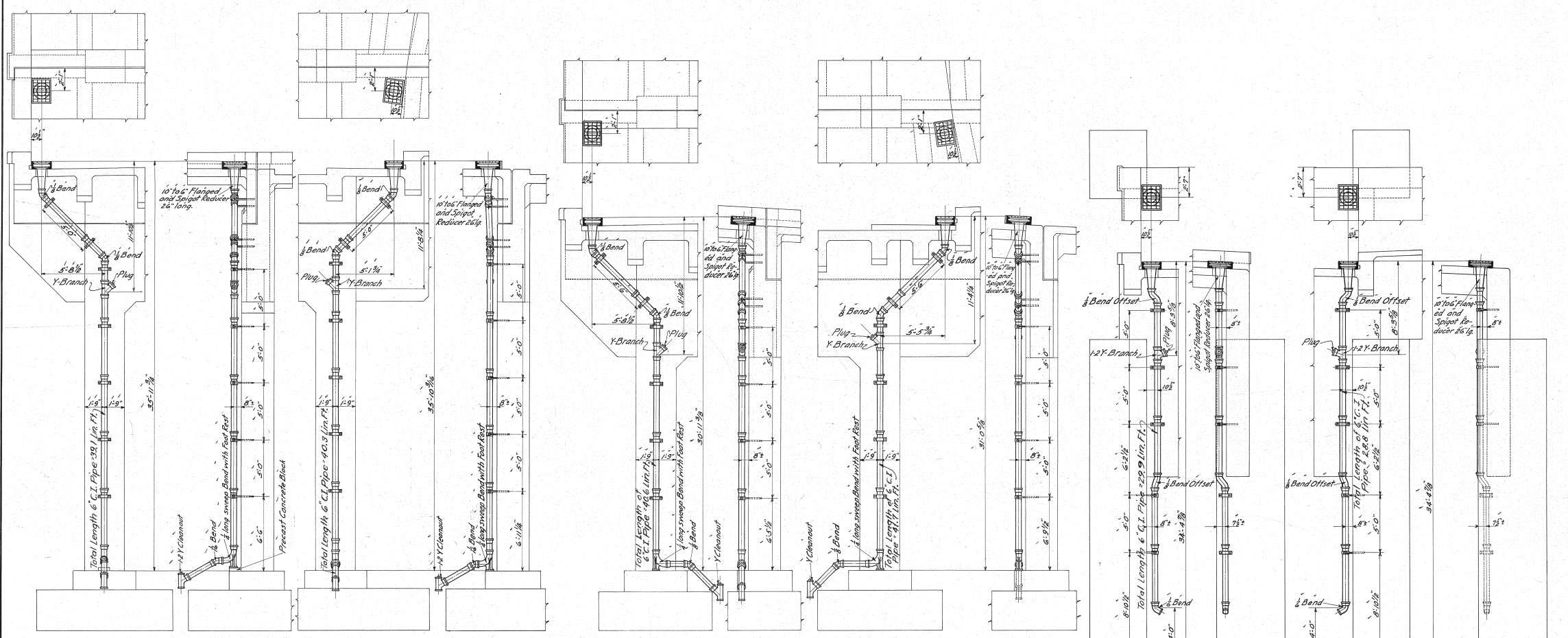
Issue No. C July 14, 1927  
Added down spouts for rear pier of east tower span.

Issue No. D Aug. 8, 1927  
Added Y Branches for street car track drains.

Issue No. 1 Sept. 7, 1927  
Approved by Chief Engineer.

Issue No. 2 Oct. 3, 1927  
Approved by Commissioner of Engineering and Construction of the City of Cleveland.

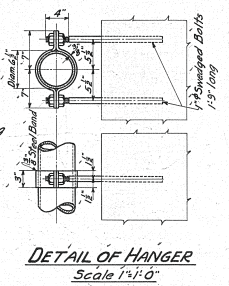
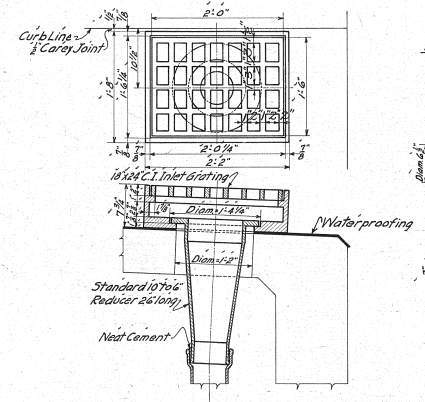
Issue No. 3 May 7, 1931  
Plan corrected to conform to structure as built.



DOWN SPOUTS AT PORTAL E P I  
Scale 1/2"=1'-0"

DOWN SPOUTS AT PORTAL E P I a  
Scale 1/2"=1'-0"

DOWN SPOUTS AT REAR PIER OF EAST TOWER SPAN  
Scale 1/2"=1'-0"



NOTE:  
All pipe and fittings to be 6" Extra Heavy C.I. Soil Pipe.  
Short lengths of pipe to be cut from 5'-0" lengths except when shorter than 2'-0".

Designed by W.H.T. Feb. 5, 1927.  
Detailed by W.H.T. Feb. 5, 1927.  
Traced by W.H.T. July 13, 1927.  
Checked by K.B.S. & D.R.B. 5/16/27  
Correct 5-5-27  
F.F. Thorman  
Designing Engineer

Approved E.P. Marsh 2/5/27  
Engineer of Structures

Approved J.W. Rogers 7/14/27  
Principal Assistant Engineer

Approved J.H. Anderson 8/16/27  
Assistant Electrical Engineer

Approved W.H. Doherty 9/6/27  
Engineer of Construction

I do hereby certify that this Plan shows the structure as built.

W.H. Marsh 4/12/27  
Engineer of Structures

H.P. Riggle 4/22/31  
Asst. Engineer of Construction

Plan Approved  
CITY OF CLEVELAND

By Robert Hoffman  
COMMISSIONER OF ENGINEERING AND CONSTRUCTION  
Date Sept. 15, 1927  
For Original of this Signature See Blue Print Filed under 113-0395

THE CLEVELAND UNION TERMINALS CO  
EAGLE AVE VIADUCT-SECTION G  
PORTION FROM WEST 382 STREET TO CUYAHOGA RIVER  
DETAILS FOR DRAINAGE  
CLEVELAND, OHIO  
OFFICE OF ENGINEER OF STRUCTURES  
DATE FEB. 5, 1927  
REVISED May 7, 1931  
ISSUE NO. 3

W.H. Doherty  
Chief Engineer

FILE NO. 113-039



Issue No. A Feb. 3, 1927.  
**REVISIONS:**

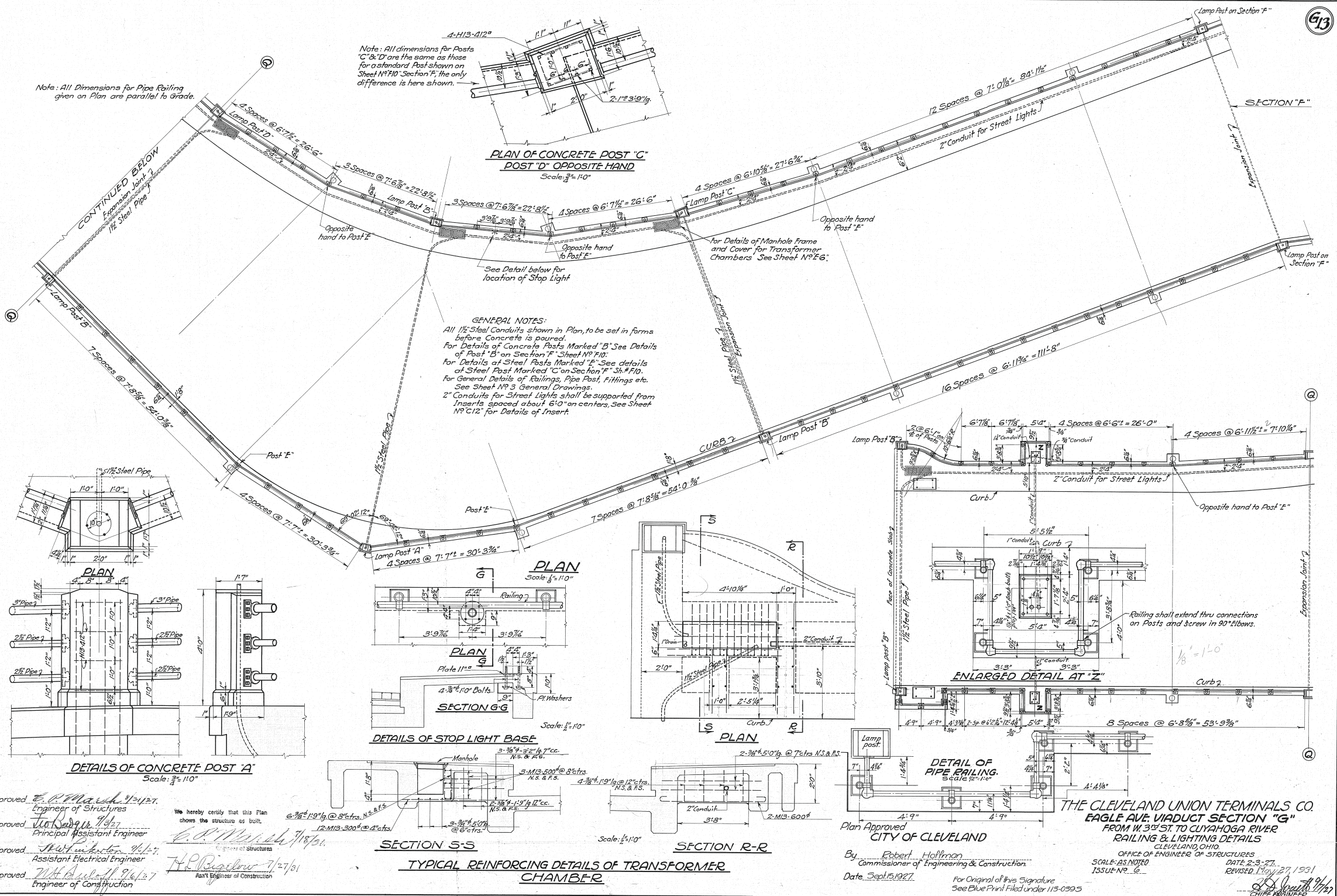
Issue No. B Aug. 10, 1927.  
 Revised Generally.  
 Issue No. 1 Sept. 7, 1927  
 Approved by Chief Engineer

Issue No. 2 Oct. 3, 1927.  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.

Issue No. 3 Mar. 2, 1928  
 Revised West End to All Tower Span.  
 Issue No. 4 May, 16, 1928.  
 Extension added to provide for  
 Barrier Gate at River Span.

Issue No. 5 July 9, 1928.  
 Changed anchor bolt spacing  
 at railroad crossing gate and  
 added 1/2" conduit at north crossing  
 gate.

Issue No. 6 May 27, 1931  
 Plan conforms to structure  
 as built.

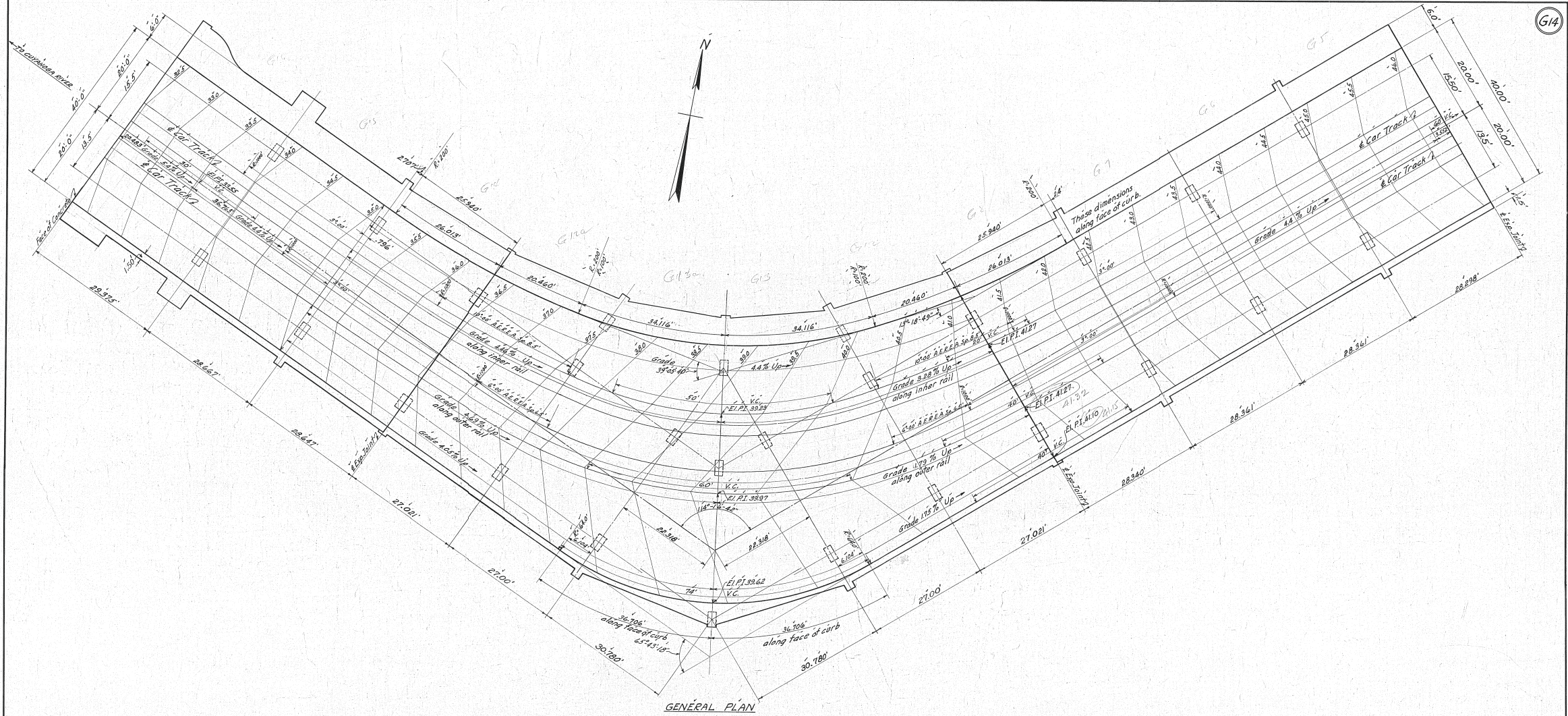


Designed By: W.L.F. Nov. 5, 1926.  
 Detailed By: S.H. Feb. 3, 1927.  
 Traced By: S.H. Aug. 23, 1927.  
 Checked By: D.R.A. May 4, 1927.  
 Correct: S.S. May 1927.  
 Designing Engineer

Approved: E.P. March 24/27.  
 Engineer of Structures  
 Approved: J.W. May 1927  
 Principal Assistant Engineer  
 Approved: J.H. May 1927  
 Assistant Electrical Engineer  
 Approved: W.H. May 1927  
 Engineer of Construction

We hereby certify that this Plan shows the structure as built.  
 H.P. Bigelow 7/27/31  
 Asst. Engineer of Construction

Issue No A August 9, 1926  
 Revisions:  
 Issue No B Sept. 11, 1926  
 Substituted 2" Crown for 6" and revised grade to eliminate warped surface in deck slab.  
 Issue No C Nov. 8, 1926  
 Changed location of car tracks and revised grades and elevations.  
 Issue No D Dec. 21, 1926  
 Removed one column in part of angle in the roadway.  
 Issue No E March 28, 1927  
 Revised north and south curb lines, changed location of car tracks and changed grades and elevations.  
 Issue No F June 12, 1927  
 Changed length of spans at west end and sheet number.  
 Issue No 1 Sept. 7, 1927  
 Approved by Chief Engineer.  
 Issue No 2 Oct. 13, 1927  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No 3 May, 16, 1928  
 Extension added to provide for Barrier Gate at River Span.  
 Issue No 4 May 27, 1931  
 Plan conforms to structure as built.



GENERAL PLAN

Approved *E. P. Marsh* 9/1/27  
 Engineer of Structures  
 Designed by *H. A. B.* Sept. 10, 1926  
 Detailed by *H. A. B.* Sept. 11, 1926  
 Traced by *M. H. T.* March 28, 1927  
 Checked by *K. B. S. & D. R. A.* 3/14/27  
 Correct *F. S.* 2/7  
*J. F. Green*  
 Designing Engineer

Approved *J. W. S.* 9/27  
 Principal Assistant Engineer  
 Approved *W. T. Johnston* 9/1/27  
 Assistant Electrical Engineer  
 Approved *M. A. C.* 9/1/27  
 Engineer of Construction  
 PLAN APPROVED  
 CITY OF CLEVELAND  
 By *Robert Hoffman*  
 COMMISSIONER OF ENGINEERING AND CONSTRUCTION  
 DATE Sept. 15, 1927  
 For Original of this Signature  
 See Blue Print Filed under 113-0395

We hereby certify that this Plan shows the structure as built.  
*E. P. Marsh* 7/18/31  
 Engineer of Structures  
*J. P. Bigelow* 7/27/31  
 Assistant Engineer of Construction

THE CLEVELAND UNION TERMINALS COMPANY  
 EAGLE AVENUE VIADUCT-SECTION 6  
 PORTION FROM WEST 380 STREET TO CUYAHOGA RIVER  
 CONTOUR MAP  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE 1"=10'-0"  
 ISSUE No. 4  
 DATE August 9, 1926  
 REVISED May 27, 1931  
*J. F. Green* 1/14/31  
 CHIEF ENGINEER  
 FILE NO. 113-039

Issue No. A. Oct 2, 1925

Revisions:

Issue No. B. May 15, 1926  
Changed Portals

Issue No. C. Aug. 27, 1926  
Noted Elevations, Changed Crown of Roadway, Changed Position of Light Posts.

Issue No. D. Mar. 8, 1927  
Revised after checking.

Issue No. E. Apr. 25, 1927  
Revised for changes in expansion joint and in grades.

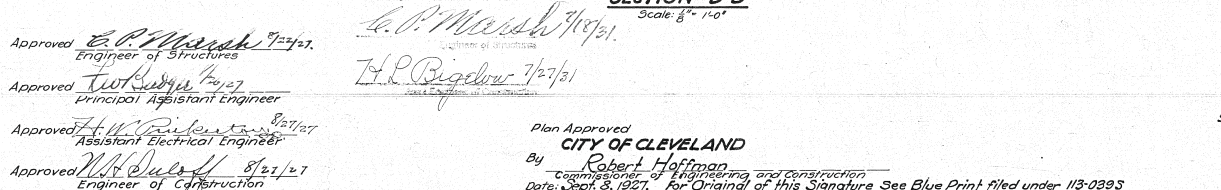
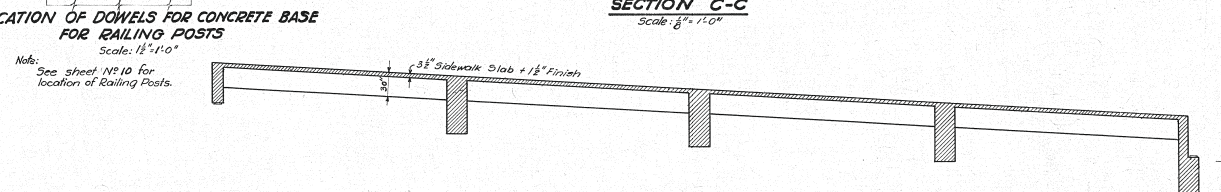
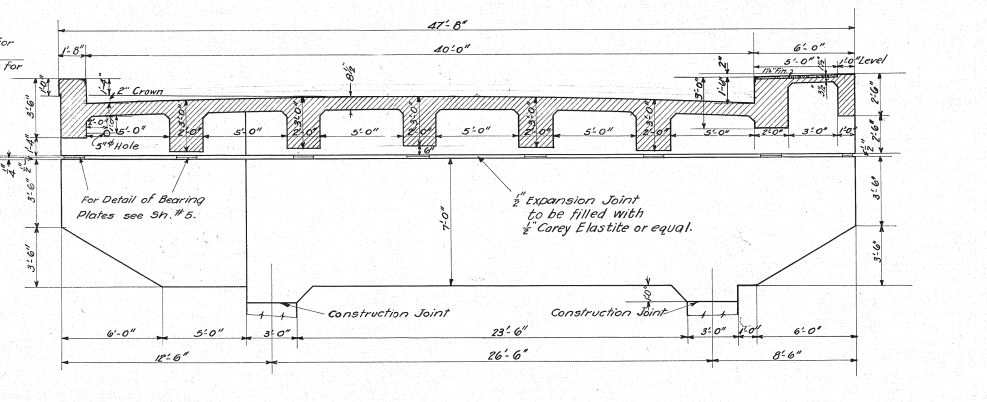
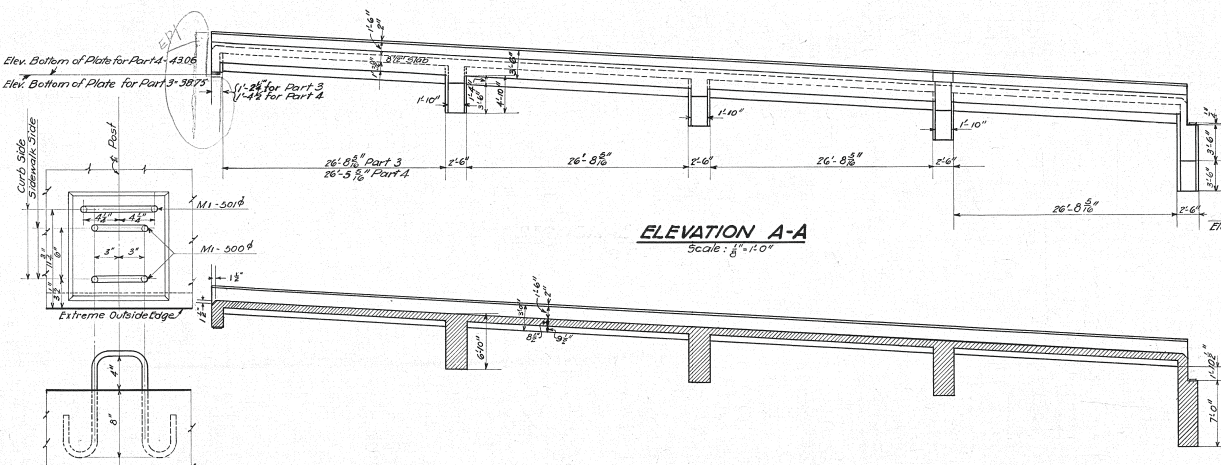
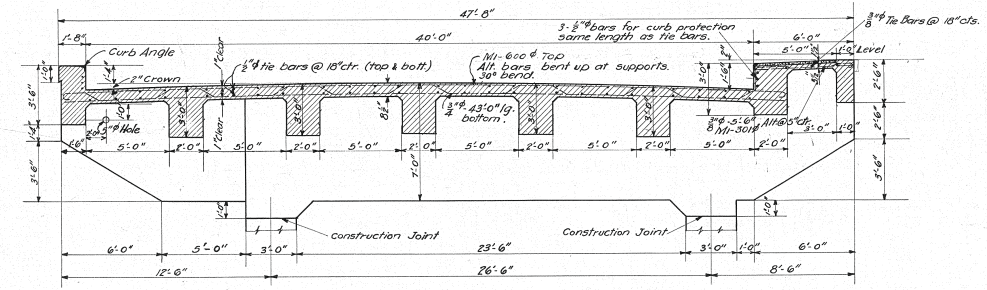
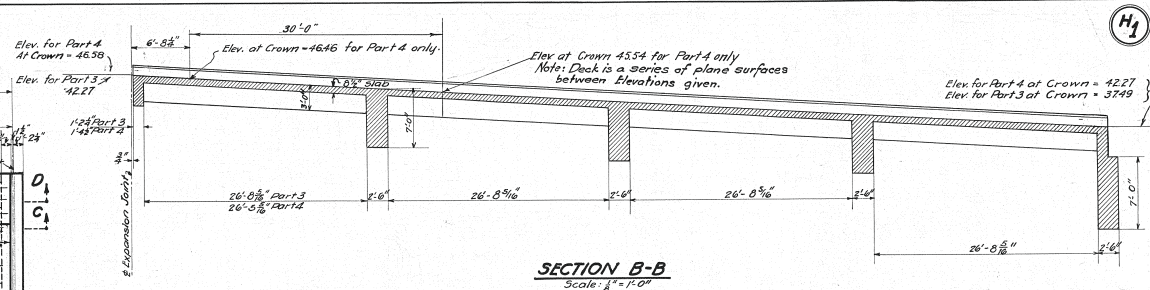
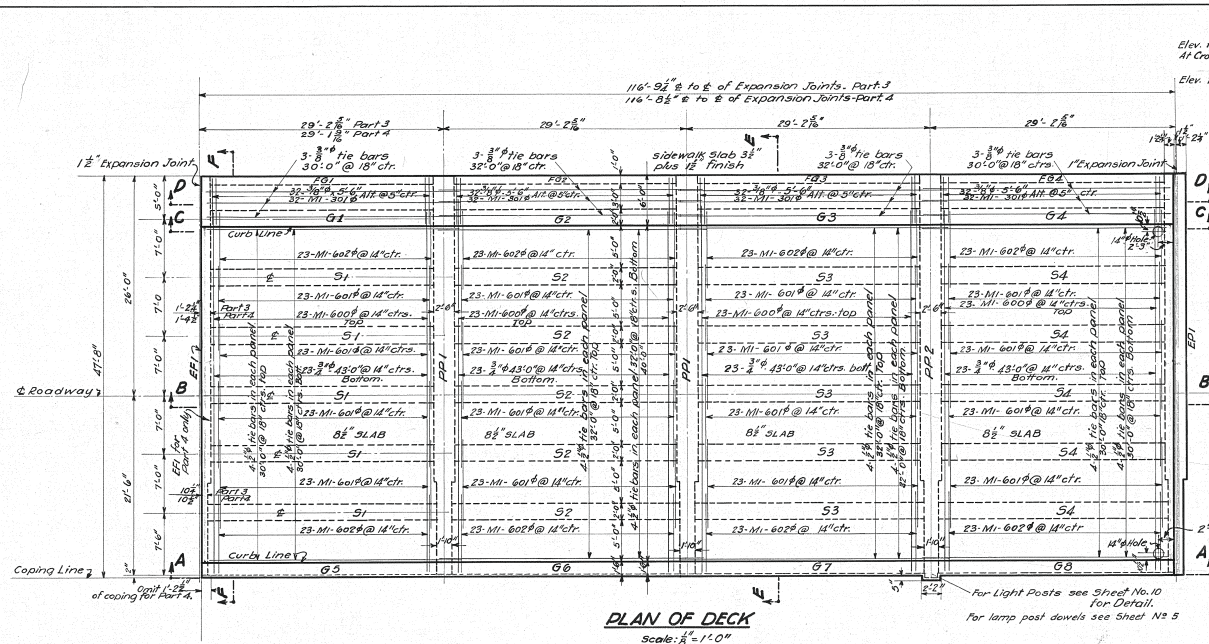
Issue No. F. Aug. 6, 1927  
Minor Revisions.

Issue No. 1. Aug. 30, 1927  
Approved by Chief Engineer.

Issue No. 2. Sept. 12, 1927  
Approved by Commissioner of Engineering and Construction of the City of Cleveland.

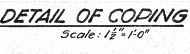
Issue No. 3. Feb. 8, 1928  
Note added.

Issue No. 4. May 27, 1931  
Plan conforms to structure as built.



NOTE: For Explanation of Method of Marking Bent Steel Reinforcement Bars, see Standard Bar Marks, Sheet #1 of 1, Issue #1, dated January 8, 1923. All slab steel to have 1" of concrete cover.

For location and Details of Hangers for lighting ducts see Sh. #10.



Designed by F.E.B. Oct 2, 1925

Detailed by F.E.B. & F.H.D. Oct 2, 1925

Traced by K.O. Dec. 14, 1926

Checked by E.A.B. Mar 8, 1927

Corrected by S.H. 5/1/27

Designing Engineer

Approved *E.P. Marsh* 7/27/27  
Engineer of Structures

Approved *H.P. Bigelow* 7/27/27  
Principal Assistant Engineer

Approved *H.W. ...* 8/27/27  
Assistant Electrical Engineer

Approved *...* 8/27/27  
Engineer of Construction

Plan Approved  
**CITY OF CLEVELAND**  
By *Robert Hoffman*  
Commissioner of Engineering and Construction  
Date: Sept. 8, 1927. For Original of this Signature See Blue Print filed under 113-0293

**THE CLEVELAND UNION TERMINALS CO.**  
EAGLE AVE VIADUCT - SECTION "H"  
W. 3<sup>RD</sup> ST. APPROACH FROM STONES LEVEL TO CENTRAL AVE.  
PLAN & DETAILS OF DECK - PARTS 3 & 4  
CLEVELAND, OHIO

OFFICE OF ENGINEERS OF STRUCTURES

Scale: As shown

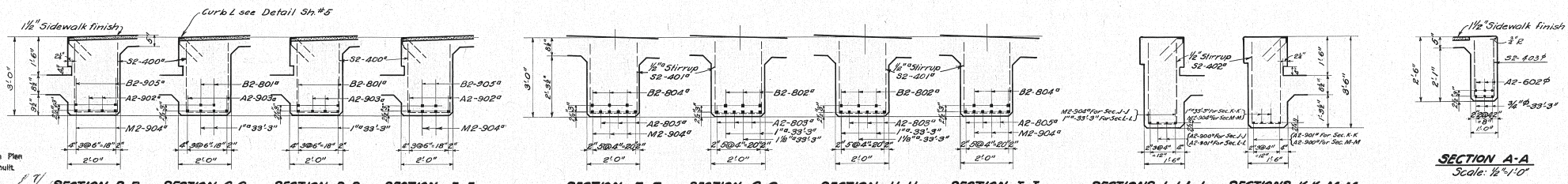
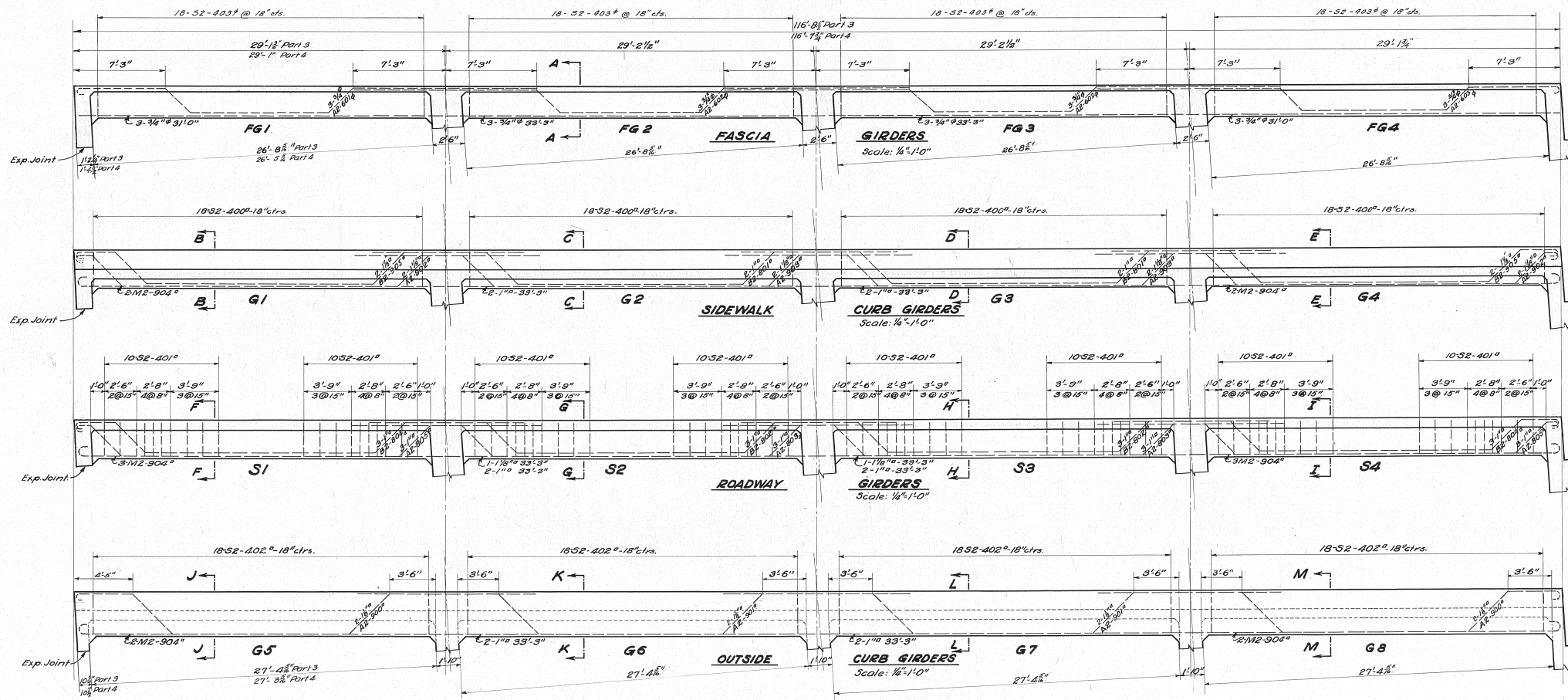
Date: Oct. 2, 1926

Issue No. ...

Revised: *...* 9/2/27  
Chief Engineer

FILE NO. 113-039

Issue No. A Oct. 12, 1925.  
 Revisions:  
 Issue No. B. Jan. 22, 1926. Changed Reinforcing.  
 Issue No. C. May 13, 1926. Changed Reinforcing.  
 Issue No. D. Aug. 27, 1926. Revised for change of Grade.  
 Issue No. E. March 8, 1927. Drawing Checked.  
 Issue No. F. April 25, 1927. Revised for changes in expansion joint.  
 Issue No. G. Aug. 6, 1927. Minor revisions.  
 Issue No. I. Aug. 30, 1927. Approved by Chief Engineer.  
 Issue No. 2. Sept. 12, 1927. Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3. Feb. 8, 1928. Minor changes.  
 Issue No. 4. May 27, 1931. Plans conform to structure as built.



We hereby certify that this Plan shows the structure as built.

*H.P. Begulas*  
 7/27/31  
 Asst. Engineer of Construction

Designed by F.E.B. Oct. 12, 1925.  
 Detailed by F.E.B. & F.H.D. Oct. 12, 1925.  
 Traced by H.B. Nov. 27, 1926.  
 Checked by E.A.B. Mar. 8, 1927.  
 Correct S.S. 27  
G.L. Johnson  
 Designing Engineer

Approved E.P. Marsh 7/27/31  
 Engineer of Structures

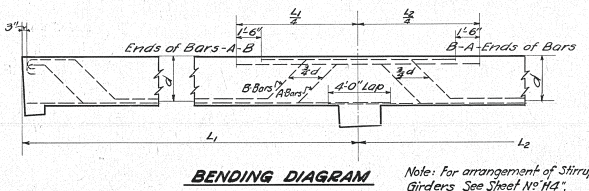
Approved J.P. Sullivan 11/26/27  
 Principal Assistant Engineer

Approved H.M. ... 7/27/27  
 Assistant Electrical Engineer

Approved W.H. ... 8/27/27  
 Engineer of Construction

NOTE: For explanation of Method of Marking Bent Steel Reinforcement Bars see "STANDARD BAR MARKINGS" sheet No. 1, Issue 5, dated Jan. 8, 1925. For method of placing stirrups see diagram on sheet No. 4.

Plan Approved  
 CITY OF CLEVELAND  
 By: Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date: Sept. 3, 1927 for Original of this Signature See Blue Print filed under 113-0393



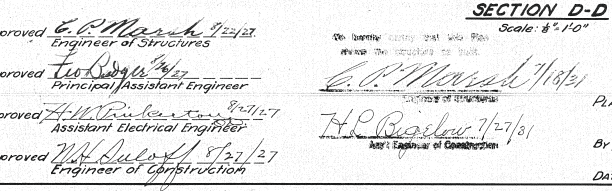
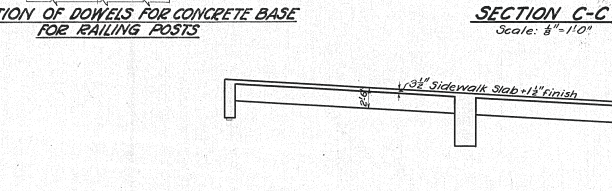
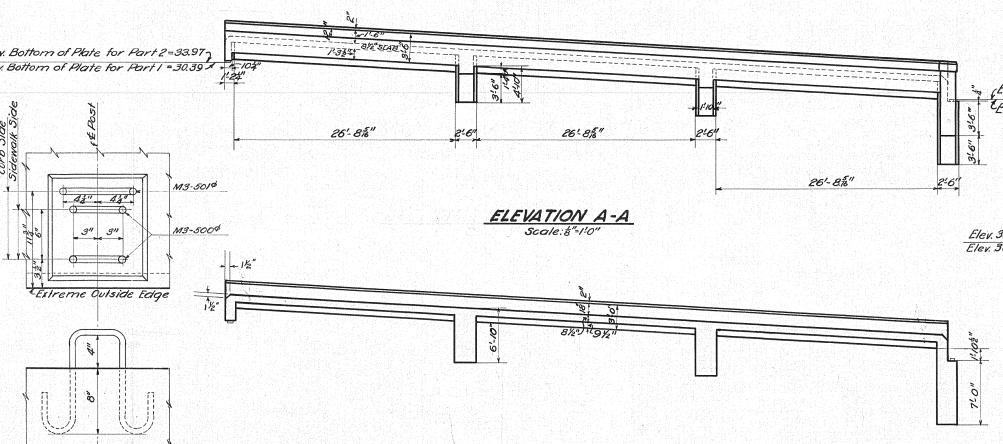
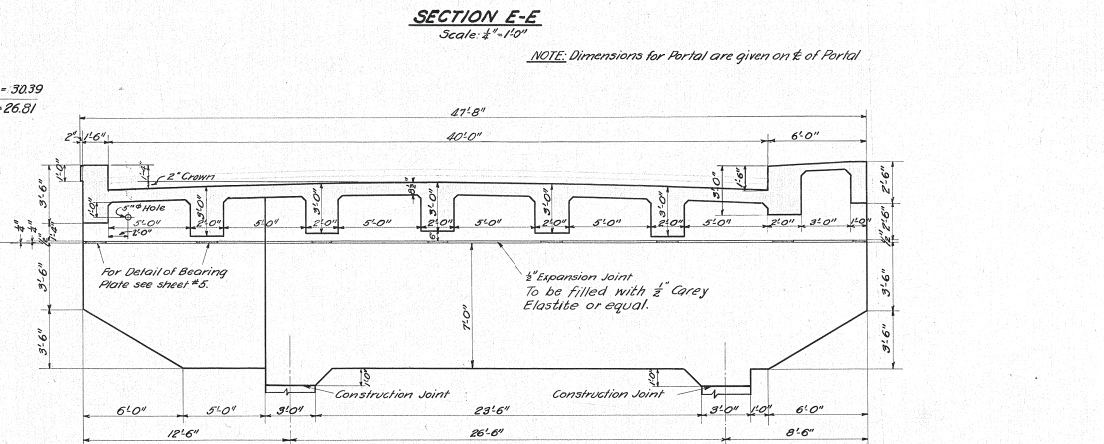
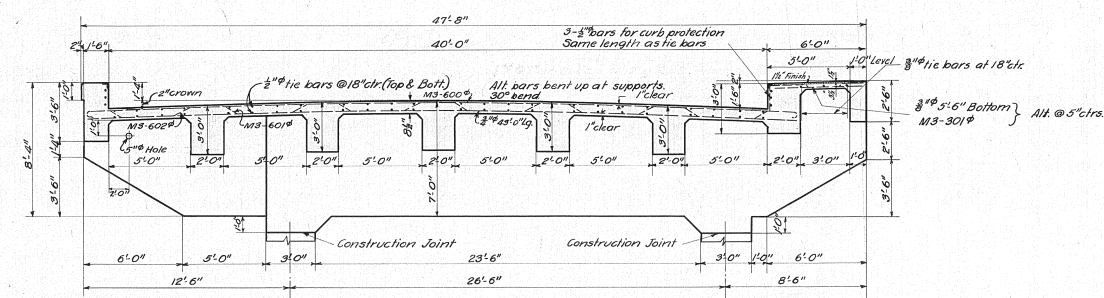
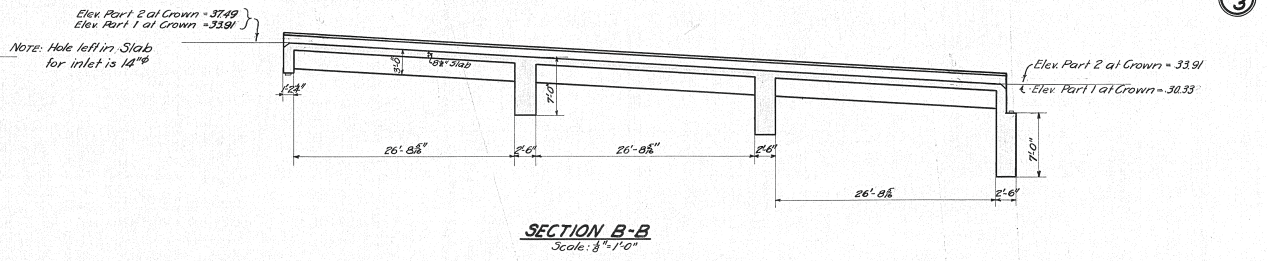
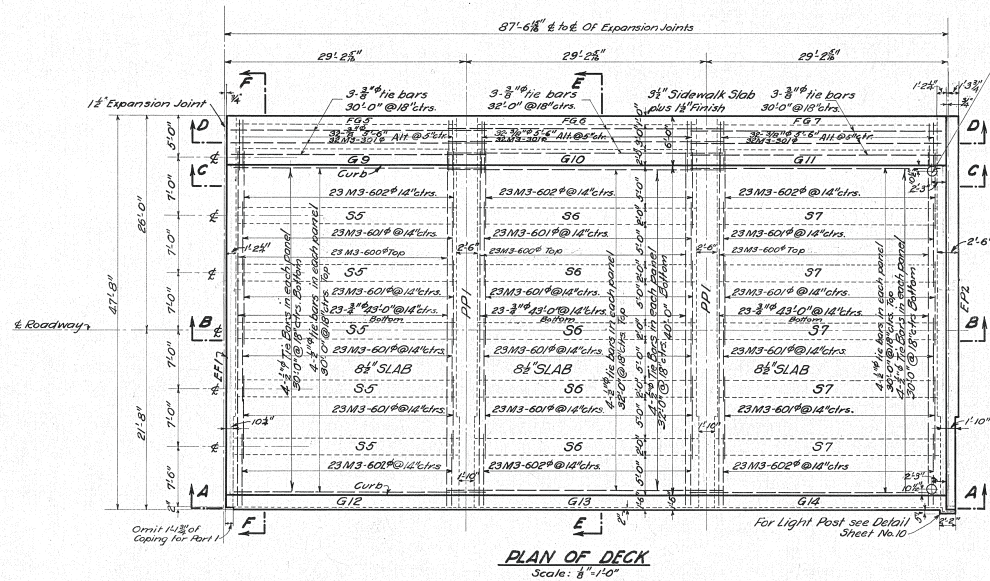
THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT SECTION "H"  
 W. 3<sup>RD</sup> ST. APPROACH FROM STONES LEVEE TO CENTRAL AVE.  
 DETAIL OF GIRDERS - PARTS 3 & 4  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES

SCALE: As shown.  
 ISSUE No. A

DATE: Oct. 12, 1925.  
 REVISED: May 27, 1931

E.P. Marsh  
 CHIEF ENGINEER

Issue No. A Oct. 18, 1925.  
 Revisions:  
 Issue No. B May 17, 1926. Changed Portals.  
 Issue No. C Aug. 27, 1926. Added Elevation and changed crown of Roadway.  
 Issue No. D March 8, 1927. Drawing Checked.  
 Issue No. E Apr. 26, 1927. Revised for changes in expansion joint and in grade.  
 Issue No. F Aug. 6, 1927. Minor revisions.  
 Issue No. 1 Aug. 30, 1927. Approved by Chief Engineer.  
 Issue No. 2 Sept. 12, 1927. Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3 May 27, 1931. Plan conforms to structure as built.



NOTE: For Explanation of Method of Marking Bent Steel Reinforcing Bars see "STANDARD BARE MARKS," Sheet Mark, Issue #1, Dated Jan. 8, 1925.  
 For Location of Railing Post see sheet No. 10  
 For Location and Details of Hangers for Lighting Ducts see sheet No. 10  
 All slab steel to have 1" of concrete cover.

Designed by F.E.B. Oct. 18, 1925.  
 Detailed by F.E.B. & F.H.D. Oct. 18, 1925.  
 Traced by H.B. Dec. 10, 1926.  
 Checked by E.A.B. Mar. 9, 1927.  
 Correct 5-5-27  
 J.L. Brown Designing Engineer

Approved C.P. Marsh 7/21/27  
 Engineer of Structures  
 Approved F.H.D. 7/21/27  
 Principal Assistant Engineer  
 Approved H.W. Ridenour 8/11/27  
 Assistant Electrical Engineer  
 Approved W.H. Daulton 5/21/27  
 Engineer of Construction

PLAN APPROVED  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date 9-8-27. For Original of this Signature See Blue Print filed under 113-039S.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT - SECTION "H"  
 W 3<sup>RD</sup> ST APPROACH FROM STONES LEEVEE TO CENTRAL AVE.  
 PLAN & DETAILS OF DECK - PARTS 1 & 2  
 CLEVELAND OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: As shown  
 DATE: Oct. 18, 1925  
 ISSUE No. ---  
 REVISION: ---  
 J.L. Brown 9/17/27  
 CHIEF ENGINEER

Issue No. A Oct. 26, 1925

Revisions:

Issue No. B Jan. 22, 1926  
Changed Reinforcing.

Issue No. C May 21, 1926  
Changed Reinforcing.

Issue No. D Aug. 27, 1926  
Revised for change in grade.

Issue No. E Feb. 8, 1927  
Minor Revisions.

Issue No. F March 8, 1927  
Drawing Checked.

Issue No. G April 25, 1927  
Revised for change in expansion joints.

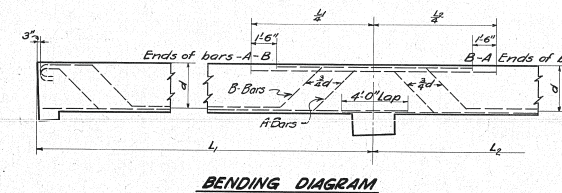
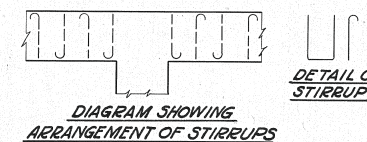
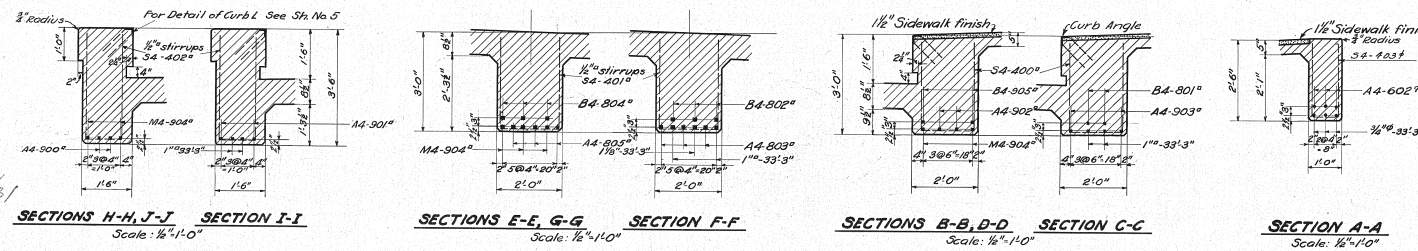
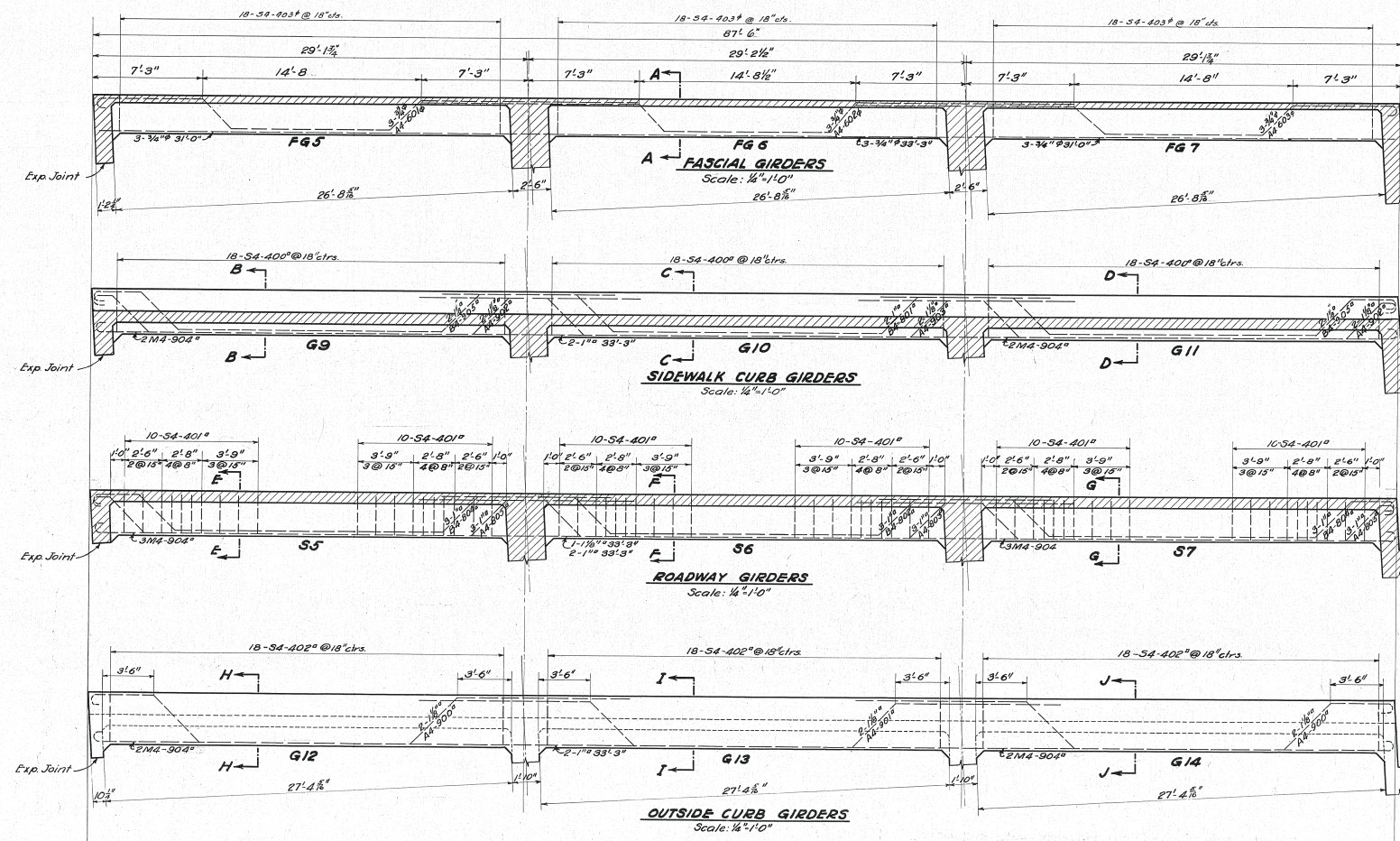
Issue No. H Aug. 6, 1927  
Minor revisions.

Issue No. I Aug. 30, 1927  
Approved by Chief Engineer.

Issue No. J Sept. 12, 1927  
Approved by Commissioner of Engineering and Construction of the City of Cleveland.

Issue No. K Feb. 2, 1928  
Minor changes.

Issue No. L May 27, 1931  
Plan conforms to structure as built.



I hereby certify that this Plan shows the structure as built.

*C. P. Marsh* 7/27/31  
Engineer of Structures

*H. P. Bessler* 7/27/31  
Asst. Engineer of Construction

NOTE: For Explanation of Method of Marking Bent Steel Reinforcement Bars see Standard Bar Marks, Sheet #1 of 1, Issue #1 dated Jan. 8, 1925.

Designed by F.E.B. Oct. 26, 1925

Detailed by E.E.B. & E.H.D. Oct. 26, 1925

Traced by H.B. Nov. 23, 1926

Checked by E.A.B. Mar. 8, 1927

Correct 5-5-27

*F. L. Chapman*  
Designing Engineer

Approved *C. P. Marsh* 7/27/31  
Engineer of Structures

Approved *J. D. Sullivan* 7/27/31  
Principal Assistant Engineer

Approved *H. W. B. Jones* 8/27/27  
Assistant Electrical Engineer

Approved *W. H. Dwyer* 8/27/27  
Engineer of Construction

Plan Approved  
CITY OF CLEVELAND  
By: *C. P. Marsh*  
Commissioner of Engineering & Construction  
Date: *Nov. 8, 1927* For Original of this Signature See Blue Print filed under 113-039 S.

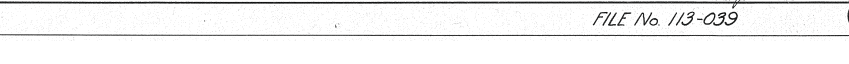
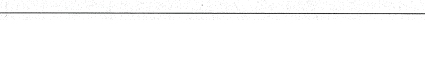
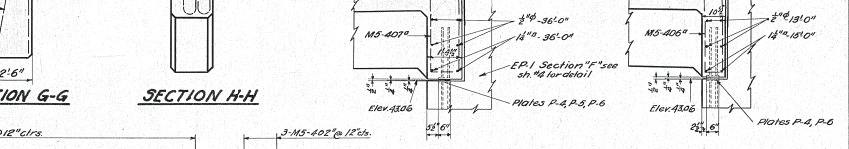
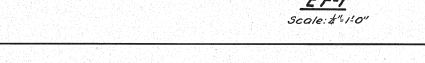
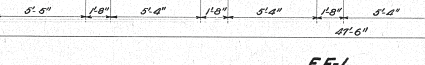
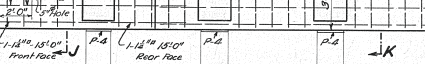
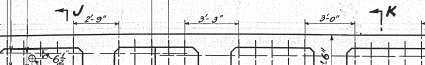
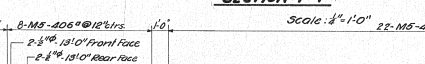
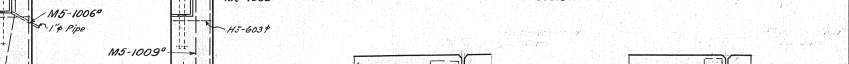
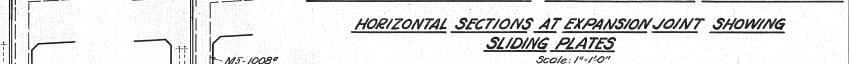
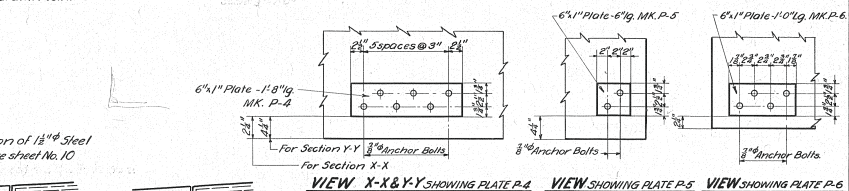
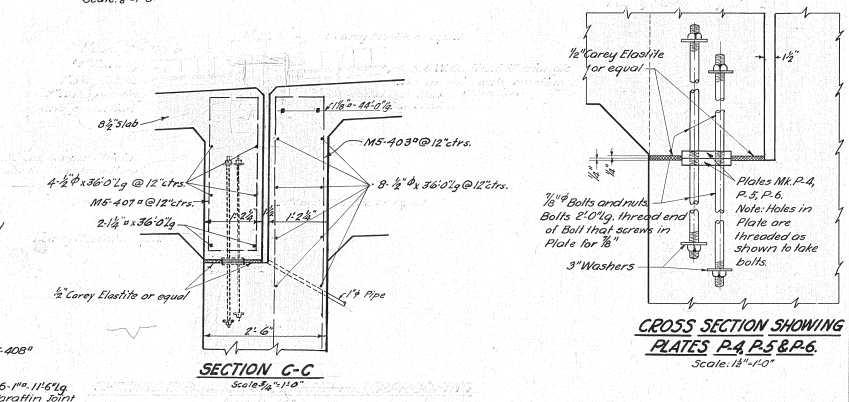
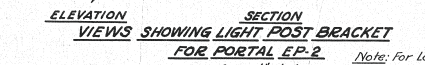
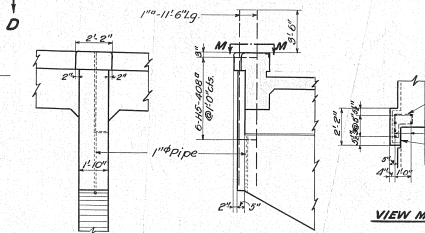
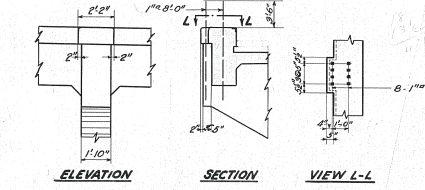
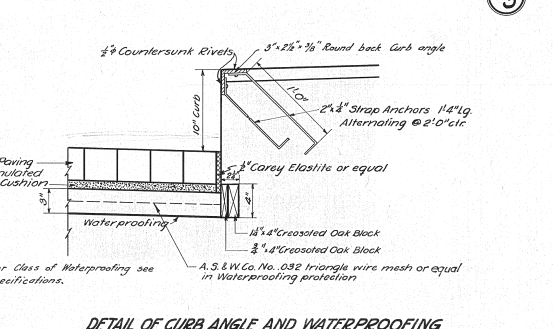
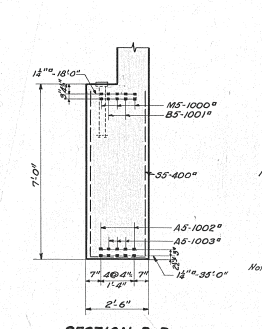
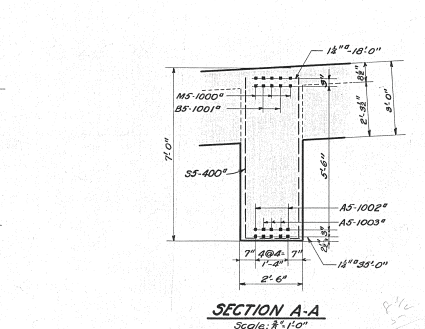
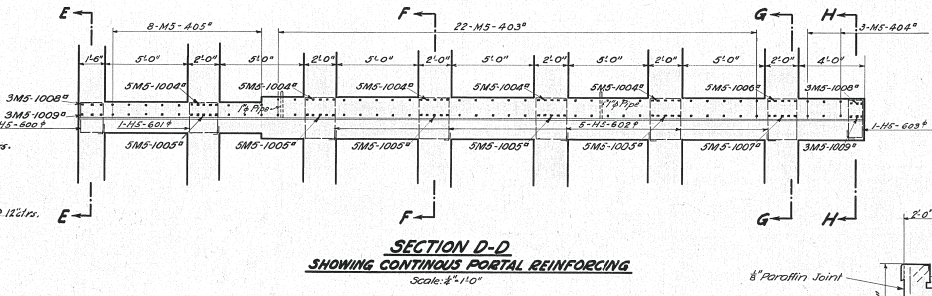
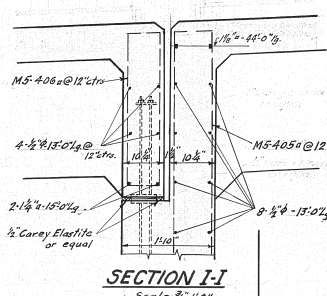
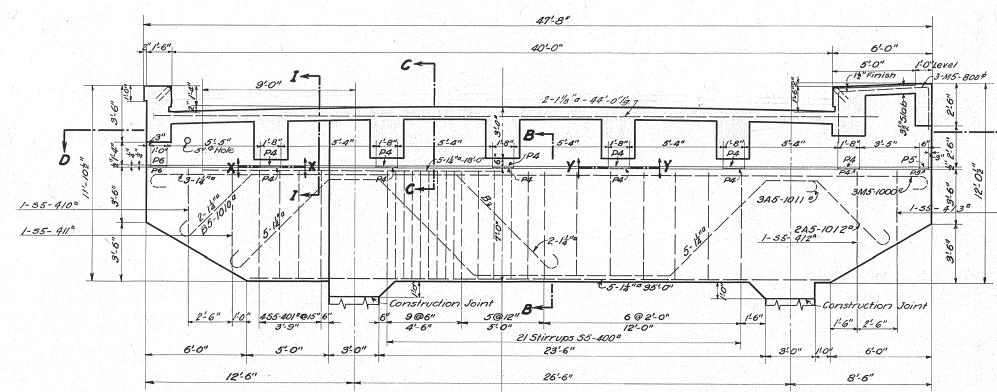
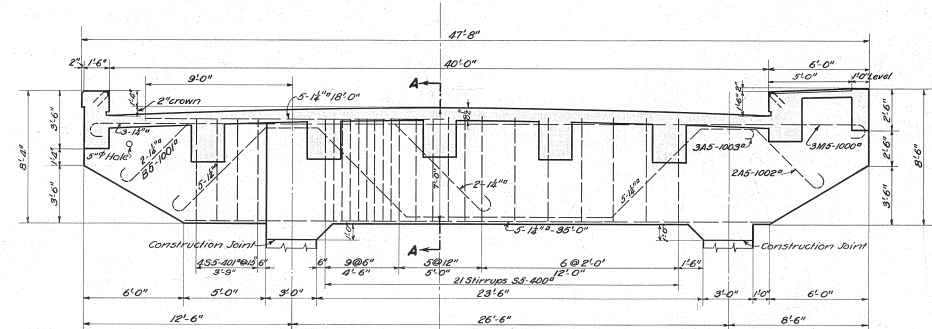
THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE. VIADUCT SECTION "H"  
W. 3<sup>RD</sup> ST. APPROACH FROM STONES LEVEE TO CENTRAL AVE.  
DETAILS OF GIRDERS - PARTS 1 & 2

CLEVELAND, OHIO.  
OFFICE OF ENGINEER OF STRUCTURES

SCALE: As shown  
ISSUE No. 4

DATE: Oct. 26, 1925  
REVISED: May 27, 1931  
*C. P. Marsh* 9/27/27  
CHIEF ENGINEER

Issue No. A Nov. 6, 1925  
 Revisions:  
 Issue No. B June 8, 1926  
 Changed Portals and Reinforcing  
 Issue No. C Aug. 22, 1926  
 Changed crown of Roadway  
 Revised expansion joint details  
 Issue No. D March 8, 1927  
 Drawing Checked  
 Issue No. E April 25, 1927  
 Revised for changes in expansion joint  
 and in grade  
 Issue No. F Aug. 6, 1927  
 Minor revisions  
 Issue No. G Aug. 30, 1927  
 Approved by Chief Engineer  
 Issue No. H Sept. 12, 1927  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.  
 Issue No. I Feb. 8, 1928  
 Minor changes  
 Issue No. J May 27, 1931  
 Plans conform to structure  
 as built.



Designed by E.E.B. Nov. 6, 1925  
 Traced by E.E.B. & F.H.R. Nov. 6, 1925  
 Checked by H.B. Jan. 20, 1927  
 Corrected by E.A.B. Mar. 9, 1927  
 Designing Engineer

Approved E.C. Marshall 7/27/27  
 Engineer of Structures  
 Approved Geo. Brown 2/27/27  
 Principal Assistant Engineer  
 Approved H.H. Brown 2/27/27  
 Assistant Electrical Engineer  
 Approved W.C. Crotty 5/27/27  
 Engineer of Construction

Do hereby certify that the Plans shown the structure as built.  
 E.C. Marshall 7/27/27  
 Engineer of Structures  
 Plan approved  
 CITY OF CLEVELAND  
 Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date Sept. 8, 1927  
 For Original of this Signature See Blue Print Filed under 113-039 S.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT SECTION "H"  
 W3 RD. ST. APPROACH FROM STONES LEVEL TO CENTRAL AVE  
 DETAILS OF PORTALS  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: AS SHOWN  
 ISSUE NO. 1  
 DATE: Nov. 6, 1925  
 REVISED: 2/27/27, 5/27/27, 7/27/27  
 Chief Engineer

Issue No. A Dec. 16, 1925  
 Revisions:  
 Issue No. B Jan. 11, 1926  
 Changed Footing Elevation  
 Issue No. C June 14, 1926  
 Changed Columns & Footings  
 Issue No. D March 8, 1927  
 Drawing Checked  
 Issue No. E May 16, 1927  
 Revised for change in grade and to provide for building Section 'K' at a future date.  
 Issue No. F Aug. 6, 1927  
 Increased depth of Footings. Minor revisions.  
 Issue No. 1 Aug. 30, 1927  
 Approved by Chief Engineer.  
 Issue No. 2 Sept. 12, 1927  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3 Sept. 27, 1927  
 Pier numbers added.  
 Issue No. 4 Oct. 14, 1927  
 Footing numbers revised.  
 "Piers" changed to "Bents".  
 Issue No. 5 May 8, 1931  
 Plan corrected to conform to structures as built.

**CONSTRUCTION DATA**

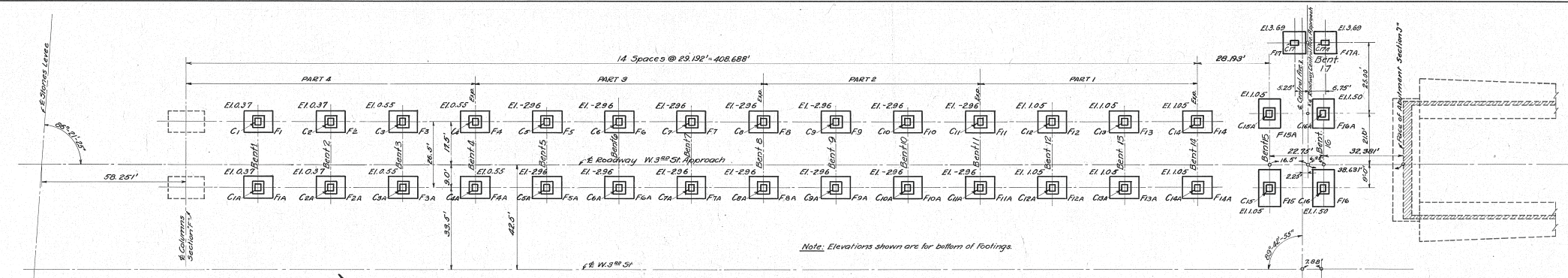
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F-1	8.50	0.37	+0.10	
F-2	8.60	0.37	-0.10	
F-3	7.70	0.25	0.00	
F-4	9.30	0.55	+0.30	
F-5	8.00	-2.96	-3.20	
F-6	6.30	-2.96	-3.20	
F-7	4.30	-2.96	-3.20	
F-8	4.70	-2.96	-3.20	
F-9	5.70	-2.96	-3.20	
F-10	16.00	-2.96	-3.20	
F-11	9.50	-2.96	-3.20	
F-12	8.80	1.05	-2.80	
F-13	9.00	1.05	-2.80	
F-14	8.80	1.05	+0.80	
F-15	8.20	1.05	+0.40	
F-16	8.10	1.50	+0.90	
F-17	9.10	3.69	+1.50	
F-1A	7.30	0.37	-0.60	
F-1B	7.60	0.37	-0.10	
F-1C	7.70	0.25	+0.30	
F-1D	8.40	0.55	-0.70	
F-1E	6.70	-2.96	-3.20	
F-1F	7.40	-2.96	-3.20	
F-1G	7.50	-2.96	-3.20	
F-1H	7.70	-2.96	-3.20	
F-1I	7.90	-2.96	-3.20	
F-1J	9.10	-2.96	-3.20	
F-1K	8.90	-2.96	-4.10	
F-1L	8.80	1.05	+0.50	
F-1M	8.80	1.05	+0.80	
F-1N	8.60	1.05	+0.60	
F-1O	9.00	1.05	+0.80	
F-1P	9.10	1.50	+0.90	
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Mats of 1:4:7 1/2 concrete were placed under footings from Plan Elevation to Actual Elevation shown in the table.

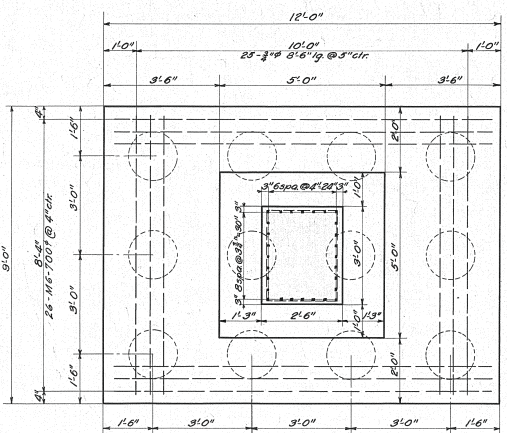
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 Checked by E.A.B. Mar. 8, 1927  
 Corrected by E.A.B.  
 H.S. Gorman  
 Designing Engineer

Approved by E.C. Marsh  
 Engineer of Structures  
 Approved by H.P. Siglow  
 Principal Assistant Engineer  
 Approved by H.P. Siglow  
 Assistant Electrical Engineer  
 Approved by W.H. Dulon  
 Engineer of Construction

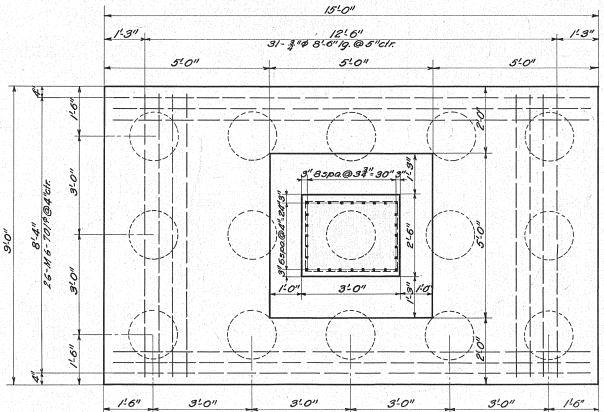
PLAN APPROVED  
**CITY OF CLEVELAND**  
 BY Robert Hoffman  
 Commissioner of Engineering and Construction  
 DATE Sept. 8-27  
 For Original of this Signature See Blue Print filed under 113-039 S.



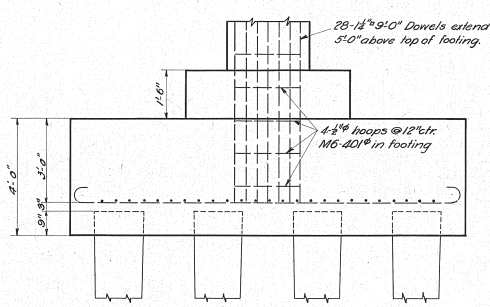
**LOCATION PLAN**  
 Scale: 1"=20'-0"



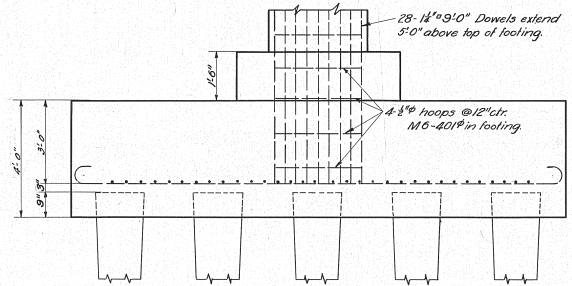
**PLAN OF F1 TO F14 INCL. & F1A TO F14A INCL.**  
 Scale: 1/2"=1'-0"



**PLAN OF F15 & F16.**  
 Scale: 1/2"=1'-0"



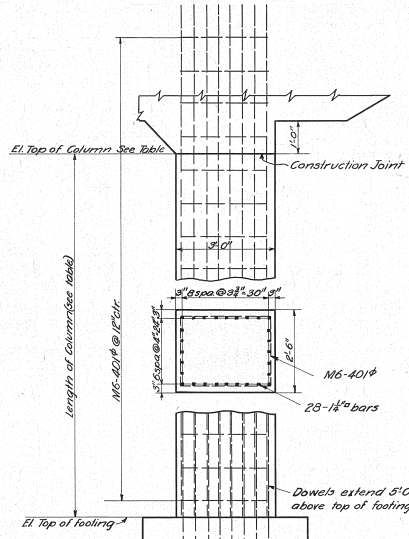
**ELEVATION OF F1 TO F14 INCL. & F1A TO F14A INCL.**  
 Scale: 1/2"=1'-0"



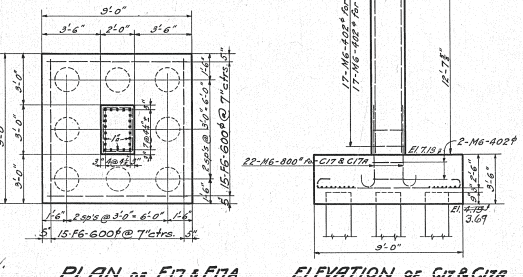
**ELEVATION OF F15 & F16.**  
 Scale: 1/2"=1'-0"

Piles omitted from structures as built.

We hereby certify that the plan shows the structure as built.  
 E.C. Marsh  
 Engineer of Structures  
 H.P. Siglow  
 Ass't Engineer of Construction



**ELEVATION & SECTION OF TYPICAL COLUMN**  
 Scale: 1/2"=1'-0"



**PLAN OF F17 & F18A**  
 Scale: 1/2"=1'-0"

**TABLE OF COLUMNS**

Column No.	El. Top of Footing	El. Top of Column	Length	Size	Vert. Steel	Hoops	Remarks
C1 & C1A	5.87	37.83	31.96'	30x36	56-1/2" x 37'-2"	74-M6-40#	Steel banded for bottom 5'
C2 & C2A	5.87	36.65	30.78'	"	56-1/2" x 36'-0"	72-M6-40#	"
C3 & C3A	6.05	35.46	29.41'	"	56-1/2" x 34'-7"	68-M6-40#	"
C4 & C4A	6.05	30.72	24.67'	"	56-1/2" x 29'-10"	58-M6-40#	"
C5 & C5A	2.54	33.07	30.53'	"	56-1/2" x 35'-9"	70-M6-40#	"
C6 & C6A	2.54	31.88	29.34'	"	56-1/2" x 34'-7"	68-M6-40#	"
C7 & C7A	2.54	30.69	28.15'	"	56-1/2" x 33'-4"	66-M6-40#	"
C8 & C8A	2.54	25.95	23.41'	"	56-1/2" x 28'-7"	56-M6-40#	"
C9 & C9A	2.54	28.30	25.76'	"	56-1/2" x 31'-0"	62-M6-40#	"
C10 & C10A	2.54	27.11	24.57'	"	56-1/2" x 29'-10"	58-M6-40#	"
C11 & C11A	2.54	22.37	19.83'	"	56-1/2" x 25'-0"	50-M6-40#	"
C12 & C12A	6.55	24.72	18.17'	"	56-1/2" x 23'-4"	46-M6-40#	"
C13 & C13A	6.55	23.53	16.98'	"	56-1/2" x 22'-2"	44-M6-40#	"
C14 & C14A	6.55	18.79	12.24'	"	56-1/2" x 17'-5"	34-M6-40#	"
C15 & C15A	6.55	20.92	14.37'	"	56-1/2" x 19'-7"	38-M6-40#	"
C16 & C16A	7.00	20.55	13.55'	"	56-1/2" x 18'-7"	36-M6-40#	"
C17 & C17A	7.19	19.83	12.64'	24x36	44-1" x 17'-0"	34-M6-40#	"

Note: For Explanation of Method of Marking Bent Steel Reinforcing bars see "STANDARD SAE MARKS" Sheet #1 of 1, Issue No. 1, dated Jan. 8, 1925.

**THE CLEVELAND UNION TERMINALS COMPANY.**  
**EAGLE AVE. VIADUCT - SECTION "H"**  
**W 3<sup>RD</sup> ST. APPROACH FROM STONES LEVEE TO CENTRAL AVE.**  
**DETAILS OF COLUMNS AND FOOTINGS**  
 CLEVELAND OHIO  
 OFFICE OF ENGINEER OF STRUCTURES

SCALE: As shown  
 Issue No. 2  
 DATE: Dec. 16, 1925  
 Revised: 5-8-31  
 Chief Engineer



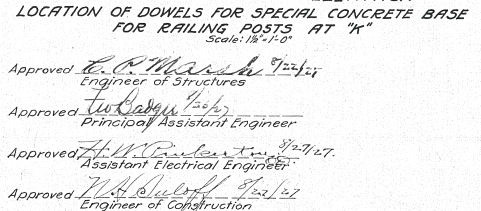
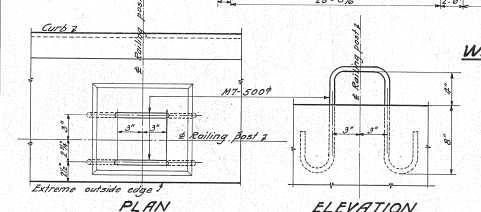
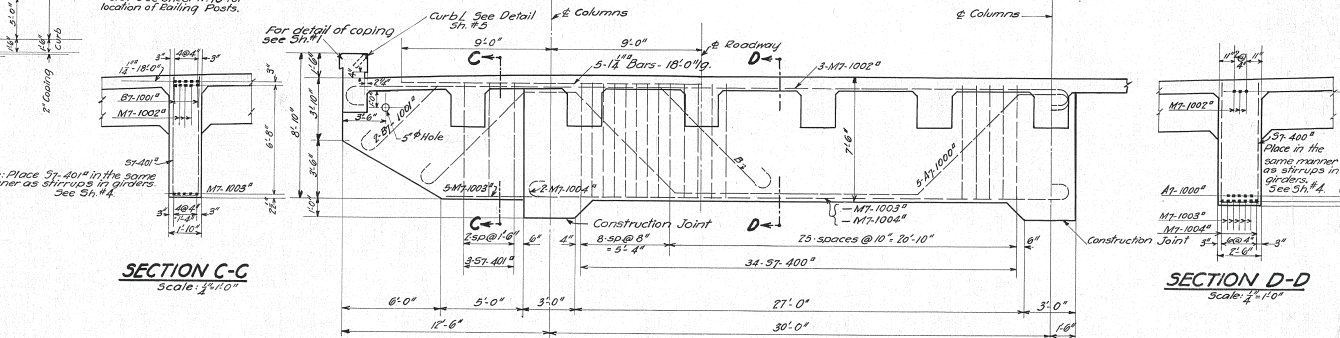
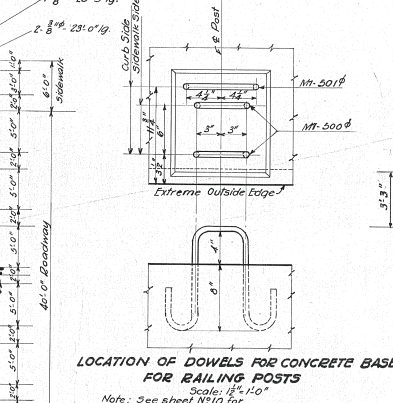
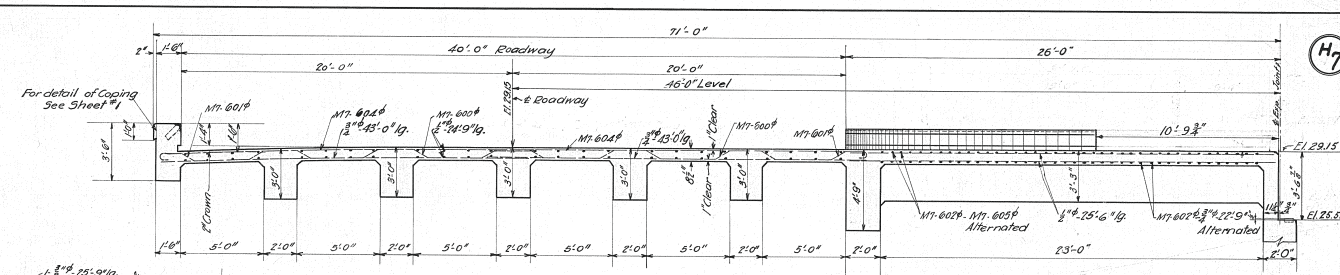
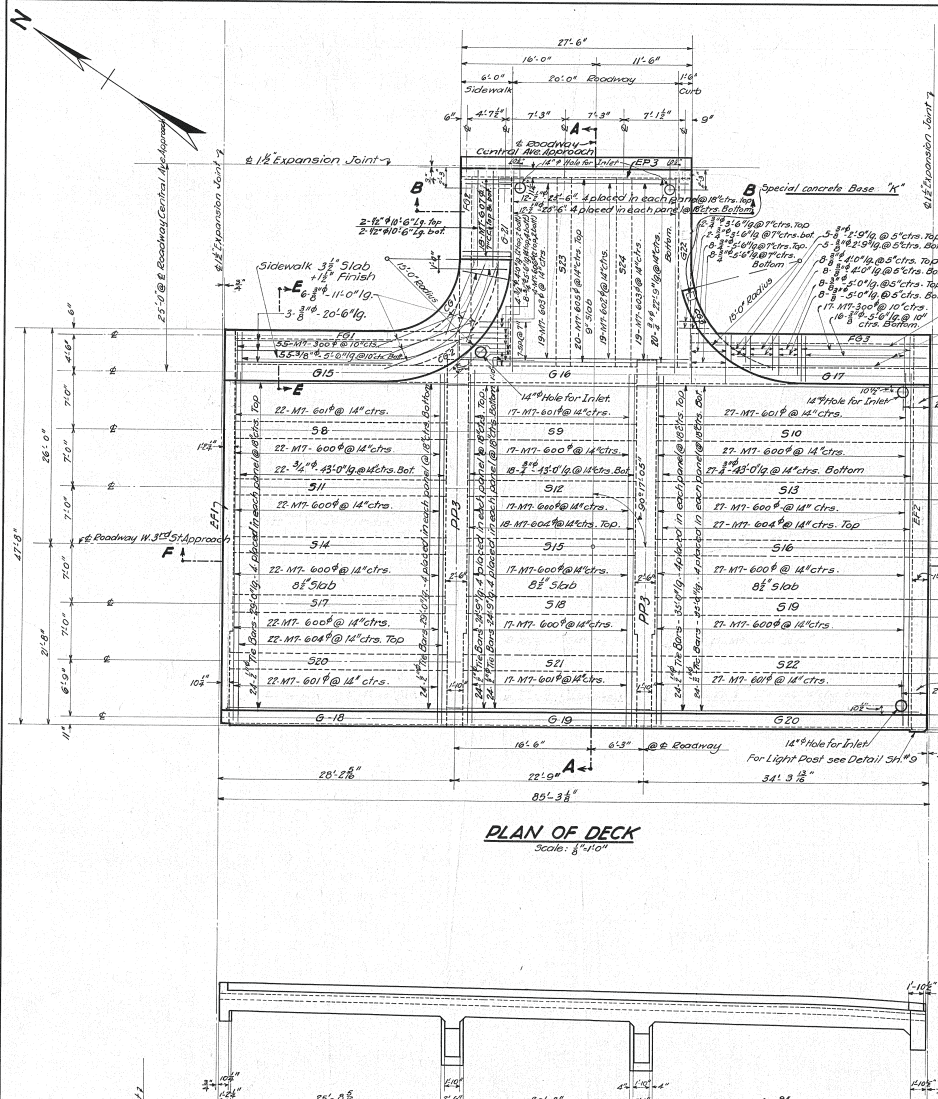
Issue No. A. Oct 11, 1926  
 Revisions:  
 Issue No. B. Mar. 8, 1927  
 Revised after being checked.  
 Issue No. C. Apr. 27, 1927  
 Revised for changes in expansion joint and in grade.  
 Issue No. D. May 11, 1927  
 Revised to provide for building Section "K" at a later date.  
 Issue No. E. Aug. 6, 1927  
 More details added. Minor revisions.  
 Issue No. F. Aug. 30, 1927  
 Approved by Chief Engineer.

Issue No. 2. Sept. 12, 1927.  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.

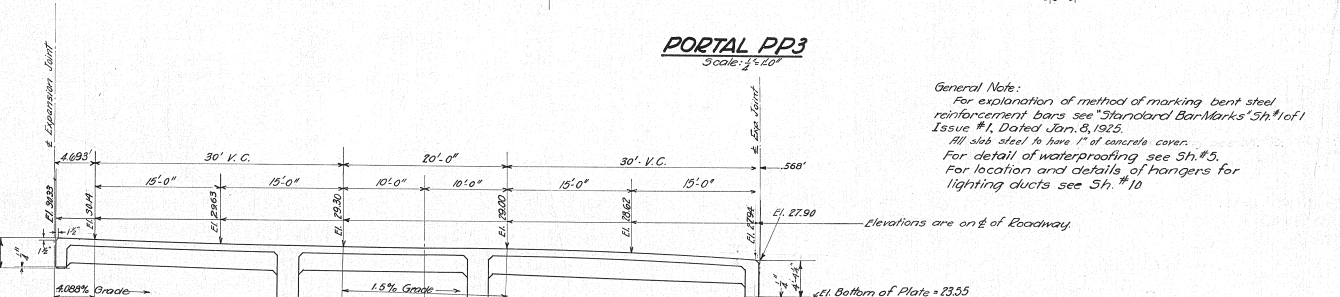
Issue No. 3. Feb. 8, 1928.  
 Minor changes.

Issue No. 4. Mar. 12, 1928.  
 Revised to provide for possible change in alignment of Section "K".

Issue No. 5. May 27, 1931  
 Plans conform to structure as built.



Plan Approved  
**CITY OF CLEVELAND**  
 By Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date Sept. 8, 1927  
 For Original of this Signature See  
 Blue Print filed under 113-039.



General Note:  
 For explanation of method of marking bent steel reinforcement bars see "Standard Bar-Marks" Sh. #1 of Issue #1, Dated Jan. 8, 1925.  
 All slab steel to have 1" of concrete cover.  
 For detail of waterproofing see Sh. #5.  
 For location and details of hangers for lighting ducts see Sh. #10.

**THE CLEVELAND UNION TERMINALS CO.**  
**EAGLE AVE. VIADUCT SECTION "H"**  
 W. 322 ST. APPROACH FROM STONES LEVEL TO CENTRAL AVE.  
 INTERSECTION AT W. 322 ST. & CENTRAL AVE.  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE As shown  
 DATE: Oct. 11, 1926  
 REVISION:  
 H. P. Reglar 7/27/31  
 Chief Engineer

Designed by F.E.B. May 8, 1926  
 Detailed by F.H.D. Oct. 11, 1926  
 Traced by K.O. Jan. 29, 1927  
 Checked by E.A.B. Mar. 8, 1927  
 Correct 5-5-27  
H. P. Reglar  
 Designing Engineer

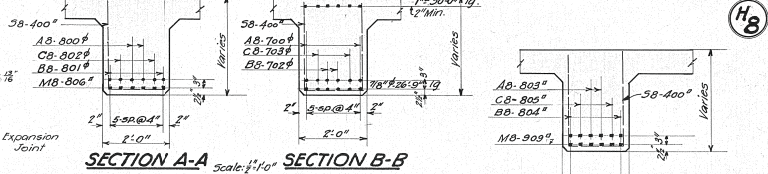
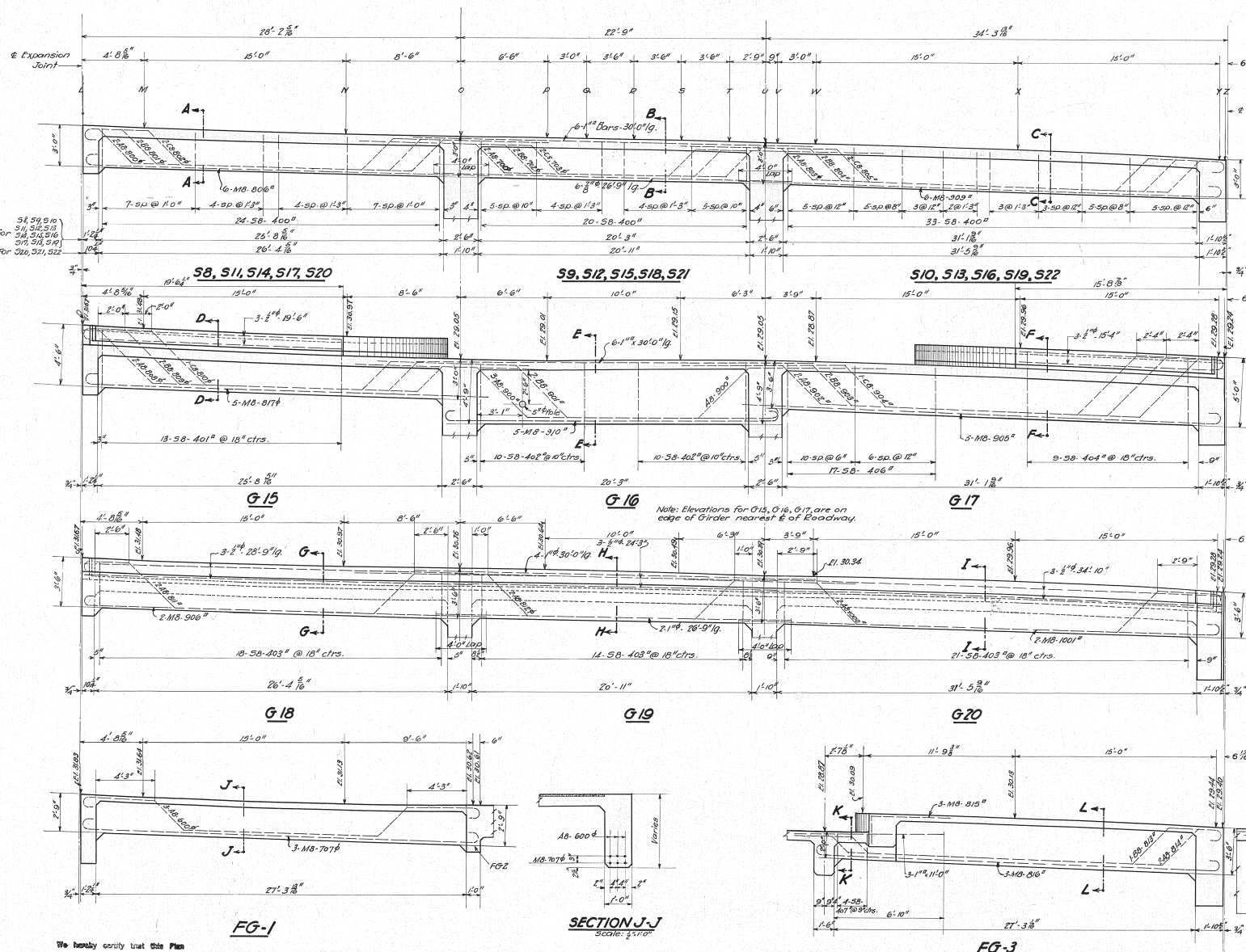
Approved E.P. Marsh 7/27/27  
 Engineer of Structures  
 Approved J. W. ...  
 Principal Assistant Engineer  
 Approved H. M. ... 7/27/27  
 Assistant Electrical Engineer  
 Approved H. A. ... 7/27/27  
 Engineer of Construction

Issue No. A Oct. 11, 1926

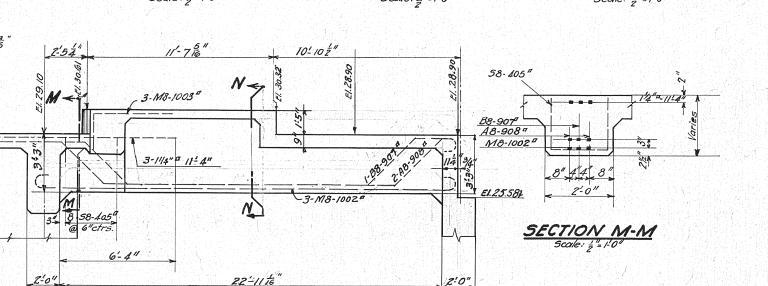
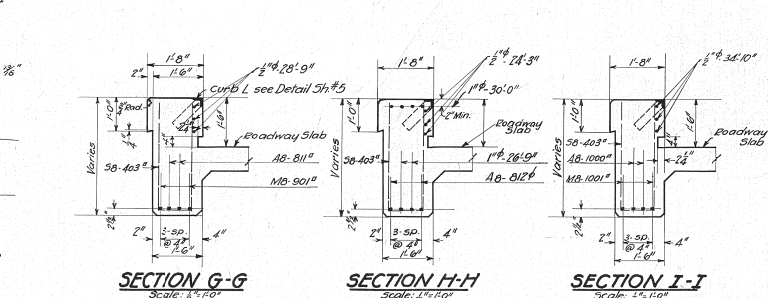
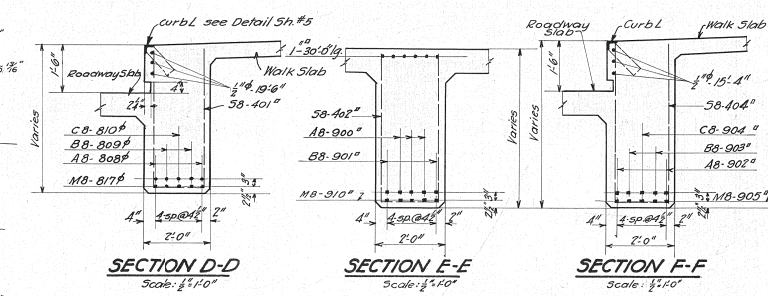
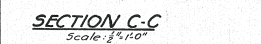
Revisions:  
 Issue No. B. Mar. 6, 1927  
 Revised after being checked.  
 Issue No. C. Apr. 26, 1927  
 Revised for changes in expansion joint and in grade.  
 Issue No. D. May 11, 1927  
 Revised to provide for building Section "K" at a future date.  
 Issue No. E. Aug. 6, 1927  
 Minor revisions.  
 Issue No. 1. Aug. 30, 1927  
 Approved by Chief Engineer

Issue No. 2. Sept. 12, 1927.  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3. Feb. 6, 1928.  
 Minor changes.  
 Issue No. 4. Mar. 12, 1928.  
 Revised to provide for possible change in alignment of Section "K".

Issue No. 5. May 27, 1931  
 Plan conforms to structure as built.



Member	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Remarks
58, 59, 510	14.25	34.05	19.25	29.34	29.23	29.09	29.14	29.12	29.06	29.01	27.78	27.81	27.86	27.90	27.94	On E of Girder
511, 512, 513	30.12	30.12	29.84	29.84	29.21	29.14	29.12	29.06	29.01	27.78	27.81	27.86	27.90	27.94	27.98	
514, 515, 516, 517	30.14	30.14	29.86	29.86	29.23	29.16	29.14	29.08	29.03	27.80	27.83	27.88	27.92	27.96	28.00	
518, 519, 520, 521	30.16	30.16	29.88	29.88	29.25	29.18	29.16	29.10	29.05	27.82	27.85	27.90	27.94	27.98	28.02	
522, 523, 524, 525	30.18	30.18	29.90	29.90	29.27	29.20	29.18	29.12	29.07	27.84	27.87	27.92	27.96	28.00	28.04	



We hereby certify that this Plan shows the structure as built.  
 C. P. Marsh 1/10/31  
 Engineer of Structures  
 H. P. Bigelow 7/27/31  
 Asst. Engineer of Construction

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date: Sept. 8, 1927  
 For Original of this Signature See Blue Print filed under 113-039 S.

Note: For explanation of method of marking bent steel reinforcement bars See Standard Bar-Marks 5/21/07, Issue 4, Dated Jan. 3, 1925. All elevations and dimensions are given on E of Girders, except as noted. For method of placing steel in Girders See Sh. #4

Designed by F.E.B. May 6, 1926  
 Detailed by F.H.D. Oct. 11, 1926  
 Traced by K.O. Feb. 7, 1927  
 Checked by E.A.B. Mar. 8, 1927  
 Correct 5-5-27  
 J. L. Johnson  
 Designing Engineer

Approved C. P. Marsh 8/22/27  
 Engineer of Structures  
 Approved J. L. Johnson 1/25/27  
 Principal Assistant Engineer  
 Approved H. P. Bigelow 8/27/27  
 Assistant Electrical Engineer  
 Approved W. B. Duffell 8/22/27  
 Engineer of Construction

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT SECTION "H"  
 W. 320 ST. APPROACH FROM STONES LEVEE TO CENTRAL AVE.  
 CHECKED DETAILS  
 INTERSECTION AT W. 320 ST. & CENTRAL AVE.  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/4" = 1'-0" except as noted  
 DATE: Oct. 11, 1926  
 REVISED: [Signature] 7/19/31  
 ISSUE No. 5  
 [Signature] Chief Engineer

Issue No. A Oct. 28, 1926.

Revisions: Issue No. B April 28, 1927.

Revised for change in expansion joint.

Issue No. C May 17, 1927.

Revised for changes in grade and to provide for building Sect. 'K' at a future date.

Issue No. D Aug. 6, 1927.

Minor revisions.

Issue No. 1 Aug. 30, 1927.

Approved by Chief Engineer.

Issue No. 2 Sept. 12, 1927.

Approved by Commissioner of Engineering and Construction of the City of Cleveland.

Issue No. 3 Feb. 8, 1928.

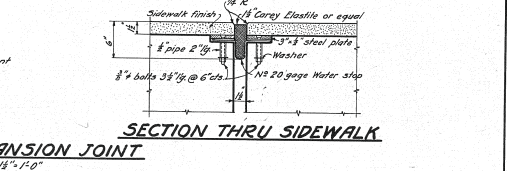
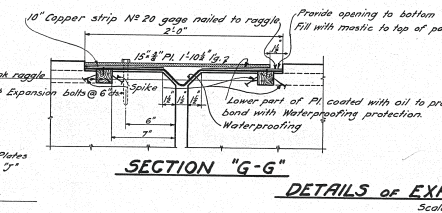
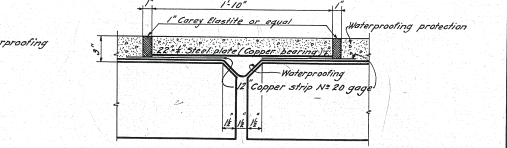
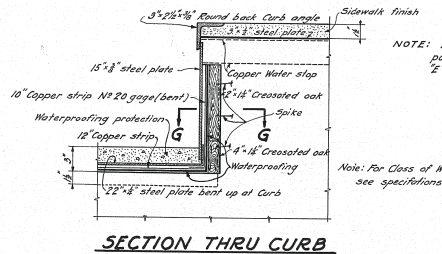
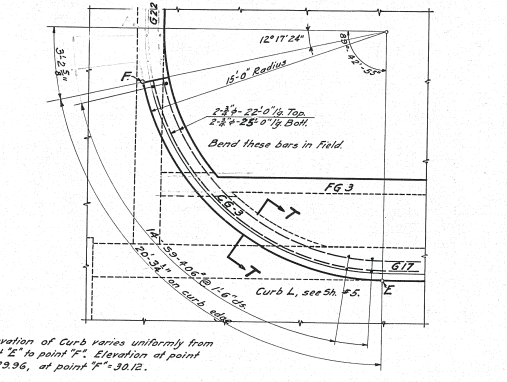
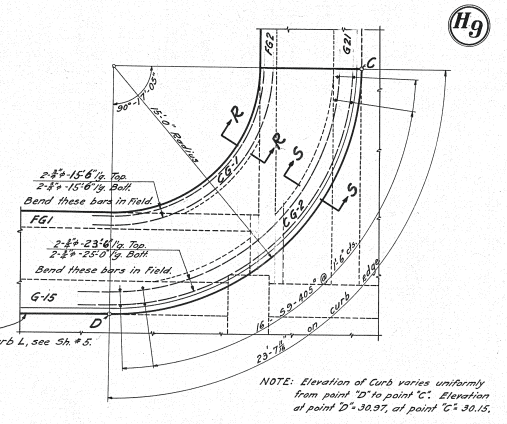
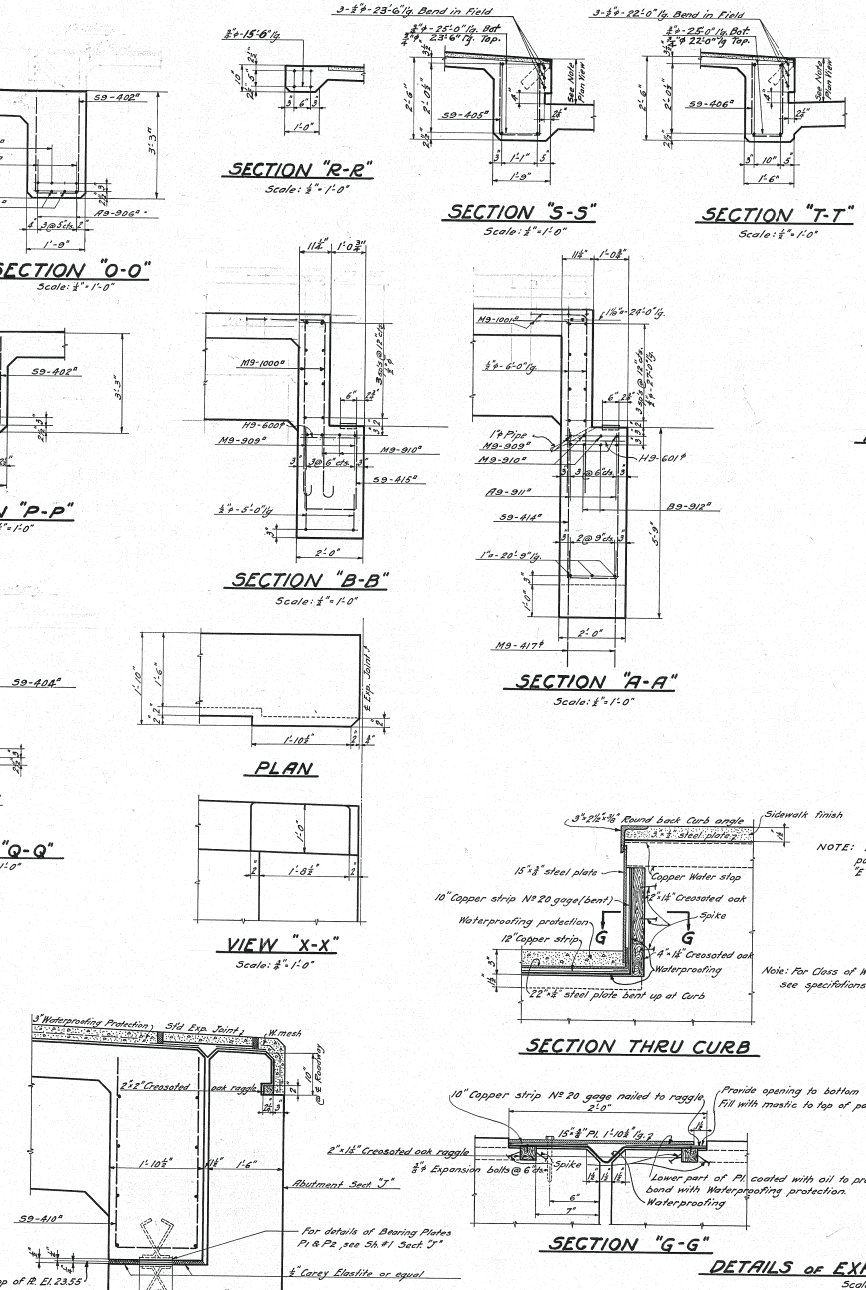
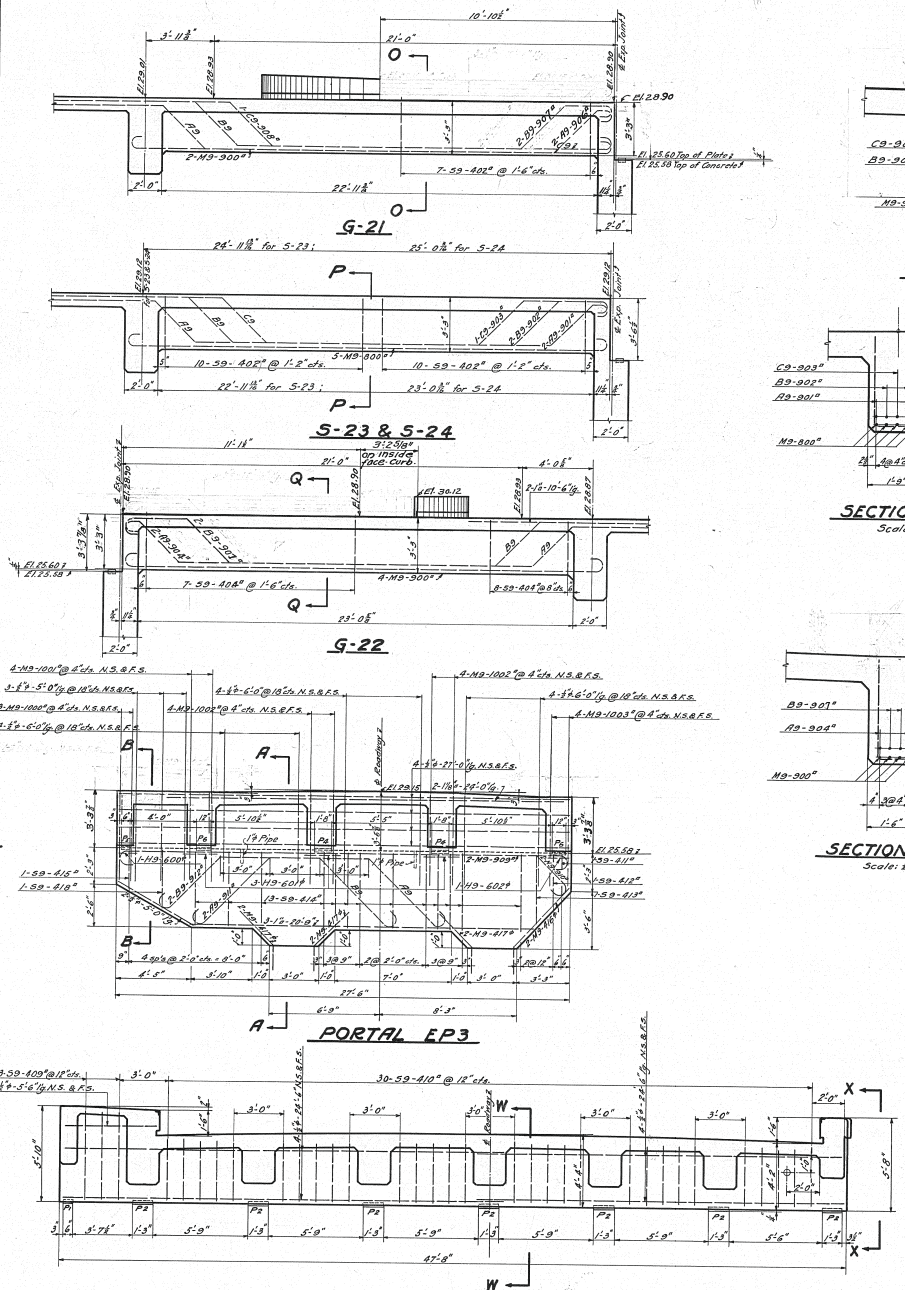
Minor changes.

Issue No. 4 Mar. 12, 1928.

Revised to provide for possible change in alignment of Section 'K'.

Issue No. 5 May 27, 1931.

Plan conforms to structure as built.



**SECTION "W-W"**  
Scale: 1/2" = 1'-0"

NOTE: For explanation of Method of marking bent steel reinforcement bars, see "Standard Bar Marks" Sh. #1 of 4, Issue #1, Dated January 8, 1925. For Method of placing stirrups and bent bars in Girders see Sh. #4. All Elevations and Dimensions are on E of Girders except as noted. For detail of expansion joint between Sections H & K see Sheet # 10.

We hereby certify that this Plan shows the structure as built.

*E. P. Marshall*  
Chief Engineer of Construction

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE VIADUCT - SECTION "H"  
W. 3<sup>RD</sup> ST. APPROACH FROM STONES LEVEL TO CENTRAL AVE.  
MISCELLANEOUS DETAILS - INTERSECTION AT W. 3<sup>RD</sup> ST. & CENTRAL AVE.

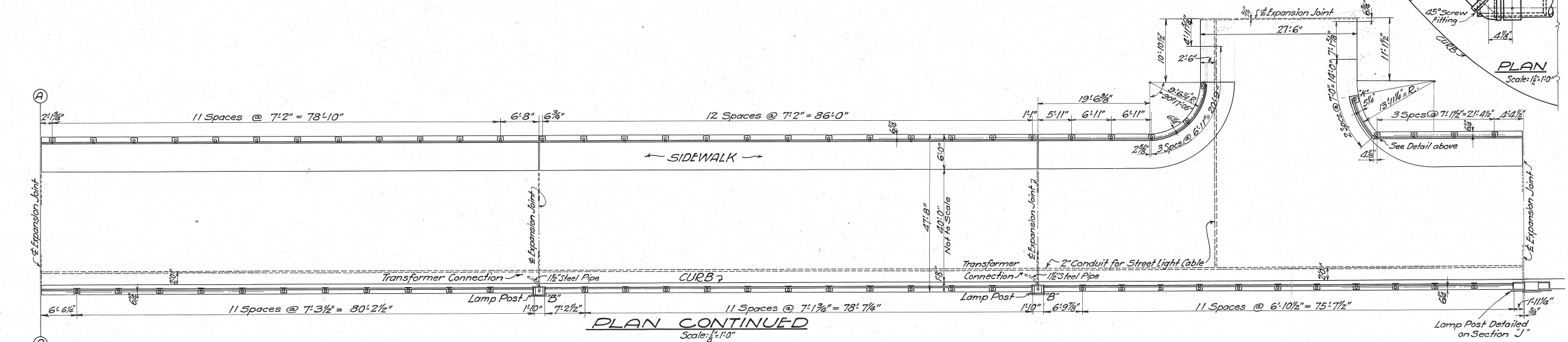
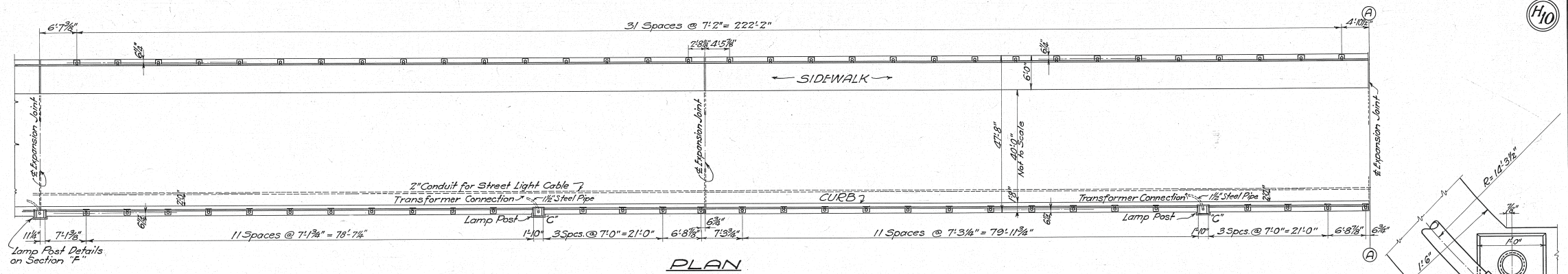
CLEVELAND, OHIO.  
OFFICE OF ENGINEER OF STRUCTURES.  
SCALE: 1/2" = 1'-0" & as shown.  
DATE: October 28, 1926.  
REVISED: May 27, 1931.

Designed by E.A.B. 5-8-1926.  
Detailed by F.H.D. 11-28-1926.  
Traced by E.A.W. 5-27-1927.  
Checked by E.A.B. 5-4-1927.  
Corrected 5-5-27.  
*E.A. Brown*  
DESIGNING ENGINEER

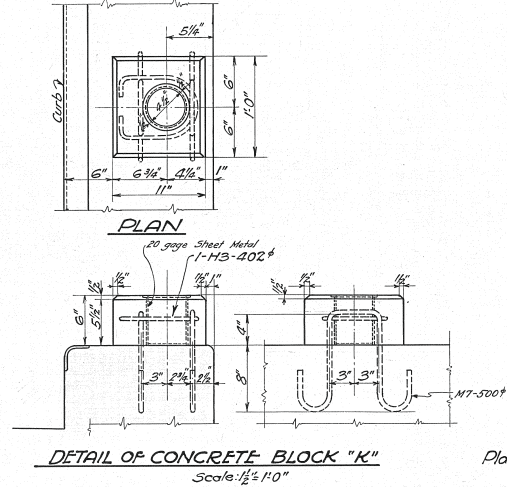
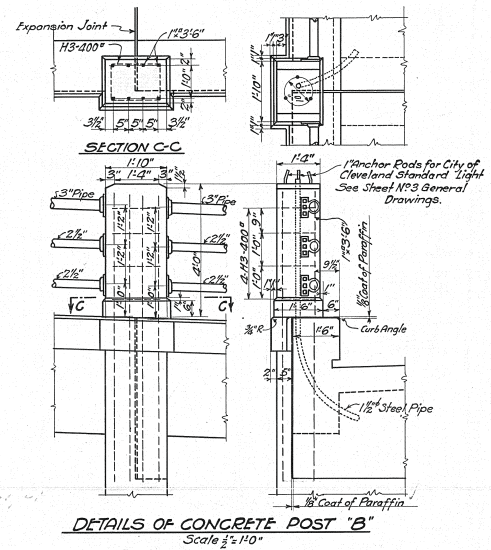
Approved *E.P. Marshall* 7/27/27  
Engineer of Structures  
Approved *J. J. ...* 4/26/27  
Principal Assistant Engineer  
Approved *W. H. ...* 8/21/27  
Assistant Chief Engineer  
Approved *M. H. ...* 8/21/27  
Engineer of Construction

Plan approved  
**CITY OF CLEVELAND**  
By *Robert Hoffman*  
Commissioner of Engineering and Construction  
Date: Sept. 8, 1927.  
For Original of this Signature See Blue Print filed under 113-039.

Issue No. A Dec. 1, 1926.  
**REVISIONS:**  
 Issue No. B Apr. 28, 1927.  
 Sheet No. Changed.  
 Issue No. C Aug. 4, 1927.  
 Drawing Checked and Traced.  
 Issue No. 1 Aug. 30, 1927.  
 Approved by Chief Engineer.  
 Issue No. 2 Sept. 12, 1927.  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.  
 Issue No. 3 Mar. 3, 1928.  
 Portion of sidewalk omitted on  
 Central Ave. approach.  
 Issue No. 4 May 27, 1931.  
 Plan conforms to structure  
 as built.



**NOTE:**  
 All Dimensions for Pipe Railing  
 given on Plan are parallel to  
 Grade of Roadway.



**GENERAL NOTES:**  
 For Details of Pipe Railing and Fittings not shown on  
 this Drawing See Sheet No. 3 General Drawings.  
 2" Conduits for Street Lights shall be supported from  
 Inserts spaced about 6'0" on centers. See Sheet No. 3/2.  
 For Details of Lamp Post "C" See Typical Lamp Post  
 Details Sheet No. 3 General Drawings.  
 Transformers for Street Lamps to be fastened to beams  
 or portals.

Designed By W.L.F. Nov. 5, 1926.  
 Detailed By S.H. Dec. 1, 1926.  
 Traced By S.H. Aug. 4, 1927.  
 Checked By E.A.B. May 4, 1927.  
 Correct May 5, 1927.  
 Designing Engineer

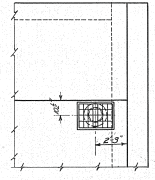
Approved *[Signature]* 7/10/31  
 Engineer of Structures  
 Approved *[Signature]* 7/20/27  
 Principal Assistant Engineer  
 Approved *[Signature]* 8/27/27  
 Assistant Electrical Engineer  
 Approved *[Signature]*  
 Engineer of Construction

Plan Approved  
**CITY OF CLEVELAND**  
 By *[Signature]*  
 Commissioner of Engineering & Construction  
 Date 9-8-27  
 For Original of this Signature See  
 Blue Print filed under 113-039 S.

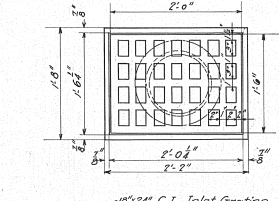
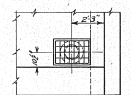
**THE CLEVELAND UNION TERMINALS CO.**  
**EAGLE AVE VIADUCT SECTION "H"**  
 W. 3<sup>rd</sup> ST. APPROACH FROM STONES LEVEE TO CENTRAL AVE.  
 RAILING AND LIGHTING DETAILS  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: AS NOTED  
 ISSUE NO. 4  
 DATE 12-1-26  
 REVISED May 27, 1931  
*[Signature]*  
 CHIEF ENGINEER

Issue No. 1 Nov. 4, 1926  
Issue No. 2 Feb. 11, 1927  
Issue No. 3 Mar. 6, 1927  
Issue No. 4 Apr. 27, 1927  
Issue No. 5 Aug. 30, 1927  
Issue No. 6 Sept. 12, 1927  
Issue No. 7 May 27, 1931

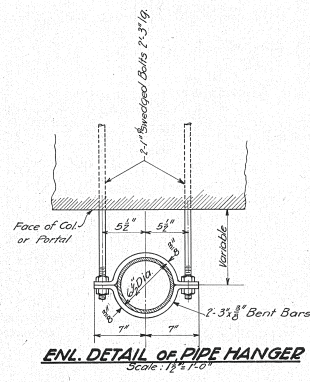
Approved by Chief Engineer.  
Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
Plan conforms to structure as built.



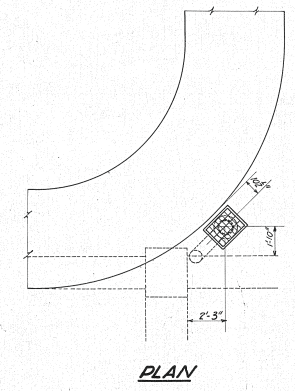
PLAN Scale: 3/4" = 1'-0"



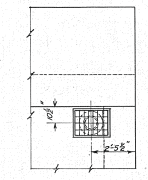
ENLARGED DETAIL OF INLET Scale: 1" = 1'-0"  
18x24" C.I. Inlet Grating  
1 1/2" Dia. Opening  
Standard 10" to 6" Reducer 26" long  
Neat Cement unless otherwise specified



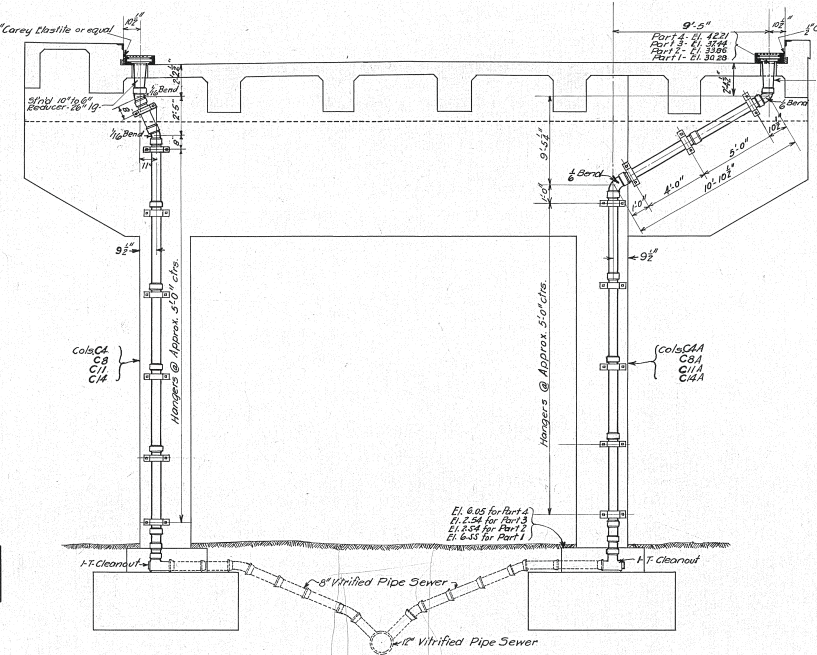
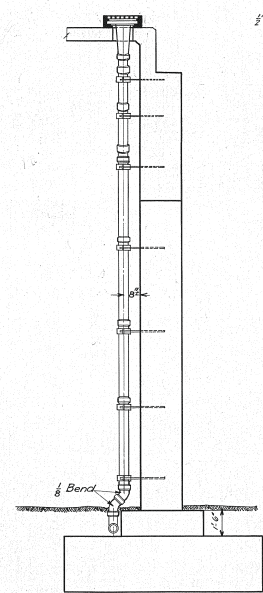
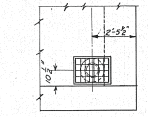
ENL. DETAIL OF PIPE HANGER Scale: 1/2" = 1'-0"



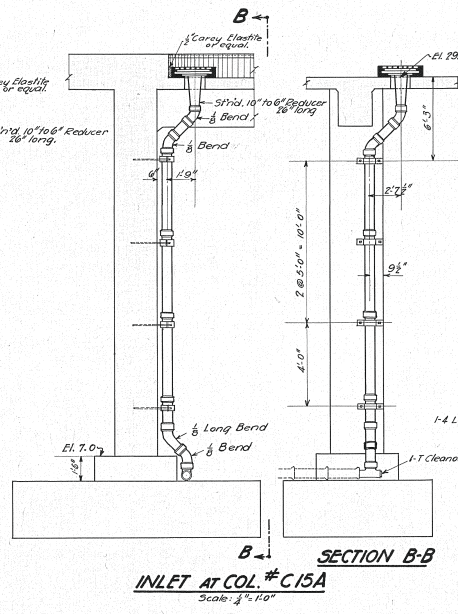
PLAN



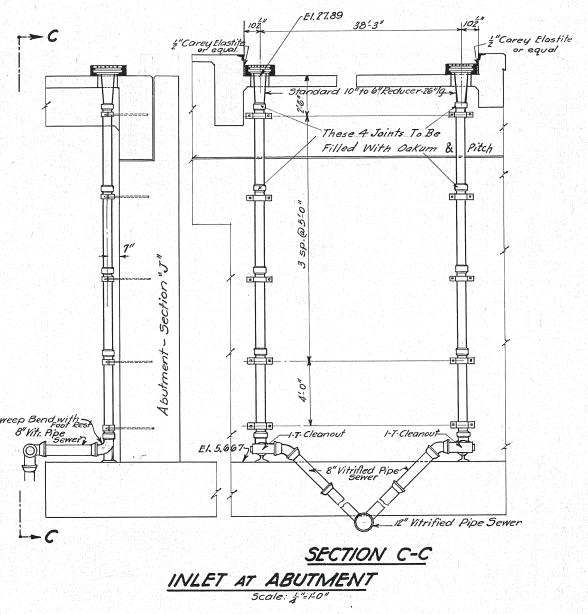
PLAN



TYPICAL CROSS SECTION Scale: 3/4" = 1'-0"



INLET AT COL. # C15A Scale: 3/4" = 1'-0"



INLET AT ABUTMENT Scale: 3/4" = 1'-0"

Note: All pipe and fittings to be Extra Heavy 8" C.I. Salt Pipe. Short lengths of pipe to be cut from 5'-0" lengths unless shorter than 5'-0". For drainage details for columns C17 & C17A see sheet No. 12.

Note: All Vitrified Sewers shown on this Sheet are in Contract for Viaduct.

Designed by A.O. Nov. 4, 1926  
Detailed by A.O. & F.H.D. Nov. 4, 1926  
Traced by K.O. Feb. 11, 1927  
Checked by E.A.B. Mar. 8, 1927  
Correct 5-5-27  
L. Chapman Designing Engineer

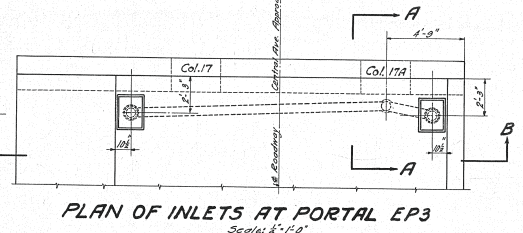
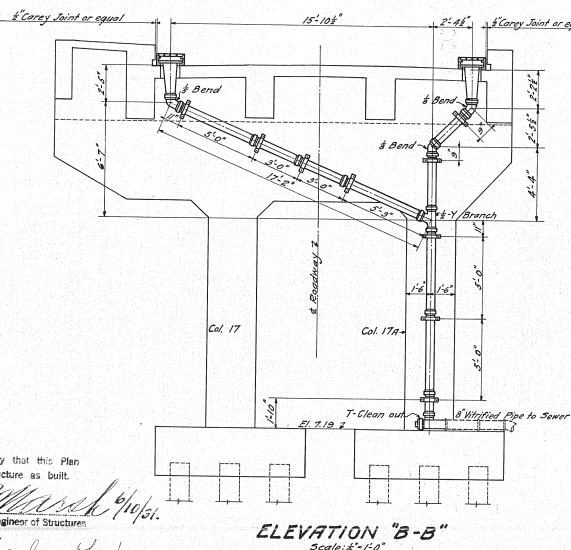
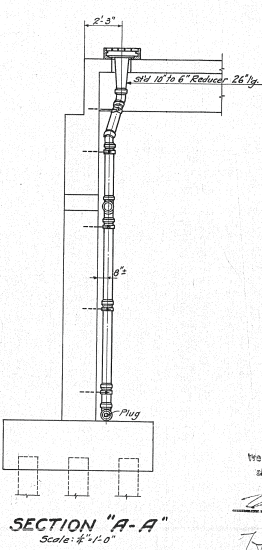
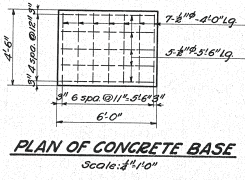
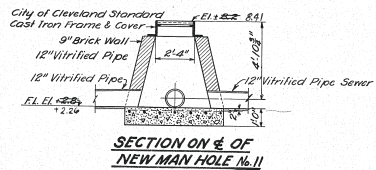
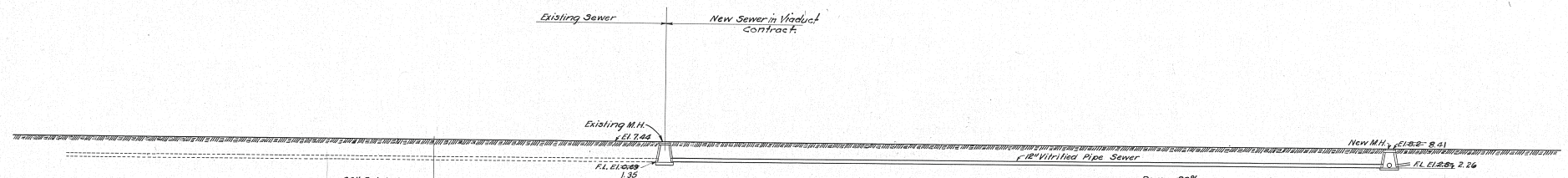
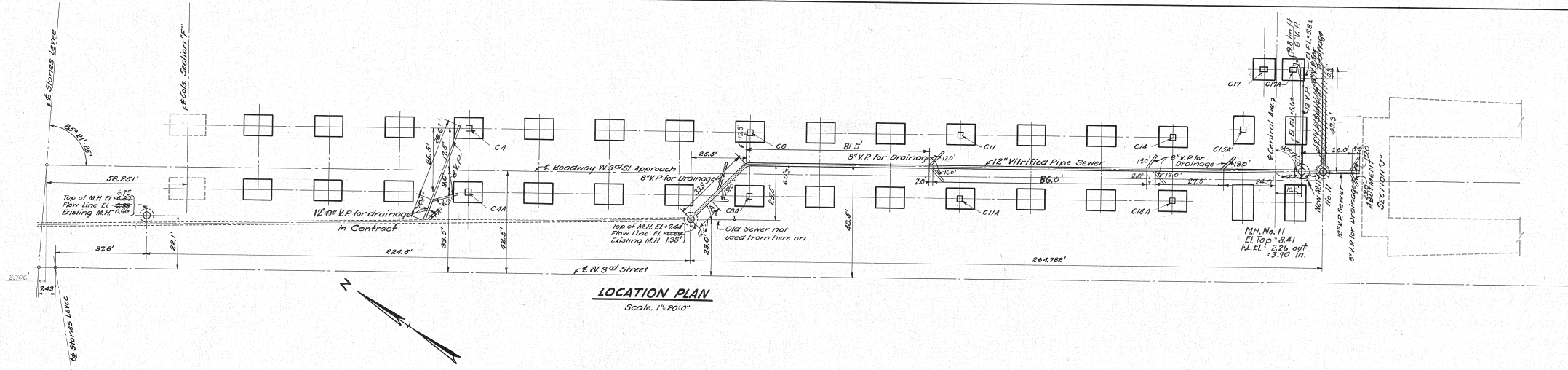
Approved E.C. Marsh 1/24/27 Engineer of Structures  
Approved J.W. Deane 2/20/27 Principal Assistant Engineer  
Approved H.W. Keaster 2/21/27 Assistant Electrical Engineer  
Approved W.H. Seeloff 8/27/27 Engineer of Construction

I hereby certify that this Plan shows the structure as built.  
E.C. Marsh 7/17/31 Engineer of Structures  
W.P. Bigelow 7/27/31 Asst. Engineer of Construction

Plan Approved CITY OF CLEVELAND  
By Robert Hoffman Commissioner of Engineering and Construction  
Date: Sept. 8, 1927.  
For Original of this Signature See Blue Print filed under 113-0393.

THE CLEVELAND UNION TERMINALS CO.  
EAGLE AVE VIADUCT SECTION "H"  
W. 322 ST. APPROACH FROM STONES LEVEE TO CENTRAL AVE.  
DETAILS FOR DRAINAGE  
CLEVELAND, OHIO.  
OFFICE OF ENGINEER OF STRUCTURES  
SCALE: AS SHOWN  
DATE: NOV. 4, 1926  
REVISED: FEB. 11, 1927  
J.W. Deane  
CIVIL ENGINEER  
FILE NO. 113-039

Issue No. A Nov 6, 1926  
 Revisions:  
 Issue No. B Feb. 12, 1927  
 Minor Revisions.  
 Issue No. C March 8, 1927  
 Drawing Checked  
 Issue No. D April 25, 1927  
 Changed St. No. from 12 to 13.  
 Issue No. E May 19, 1927  
 Revised to provide for building Sect. "K"  
 at a future date. Drainage details added.  
 Sheet No. changed from 13 to 12.  
 Issue No. F Aug. 30, 1927.  
 Approved by Chief Engineer.  
 Issue No. G Sept. 12, 1927.  
 Approved by Commissioner of  
 Engineering and Construction  
 of the City of Cleveland.  
 Issue No. H May 7, 1931  
 Plan corrected to conform to  
 structure as built.



SECTION H  
 Actual lengths of 6" Heavy  
 Cast Iron Soil Pipe Downspouts

Column No.	Length
C17	34.1
C17A	34.2
C17B	36.8
C17C	43.4
C17D	30.5
C17E	31.8
C17F	24.3
C17G	30.3
C17H	24.4
C17I	39.7
E. Flout	18.0
W. Flout	19.5

NOTE: For other details of Drainage, see Sheet # 11.

Designed By: A.O. Nov 6, 1926  
 Detailed By: A.O. & E.H.D. Nov 6, 1926  
 Traced By: H.B. Feb. 12, 1927  
 Checked By: E.A.B. Mar. 2, 1927  
 Correct: 5-5-27  
 Designing Engineer

Approved: E.C. March 8/22/27  
 Engineer of Structures

Approved: Leo B. ... 4/26/27  
 Principal Assistant Engineer

Approved: ... 8/27/27  
 Assistant Electrical Engineer

Approved: W.H. Dulany 8/22/27  
 Engineer of Construction

We hereby certify that this Plan  
 shows the structure as built.

E.C. March 6/10/31  
 Engineer of Structures

H.P. Bigelow 4-27/31  
 Asst. Engineer of Construction

Plan Approved  
 CITY OF CLEVELAND  
 By: Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date: 5-8-27  
 For Original of this Signature See  
 Blue Print filed under 113-039 B.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT SECTION "H"  
 W. 3<sup>RD</sup> ST. APPROACH FROM STONES LEVEE TO  
 CENTRAL AVE.  
 DETAILS OF SEWER & DRAINAGE  
 CLEVELAND, OHIO.  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: AS SHOWN.  
 ISSUE NO. 3  
 DATE: Nov 6, 1926  
 REVISED: 1/21/27  
 8/22/27  
 CHIEF ENGINEER

FILE NO 113-039

Issue No. A... Oct 8, 1925

Revisions:

Issue B Oct 28, 1925  
 Changed footing elevations.  
 Rounded curb at low end of wall.  
 Changed dimensions. Changed title.

Issue NP1 Dec 14, 1925  
 Signed by Chief Engineer.

Issue NP2 Dec 22, 1925  
 Specified class of concrete.  
 Changed title.

Issue NP3 July 28, 1926  
 Change in grade and length with  
 other minor revisions.

Issue NP4 Sept 17, 1926  
 Revised Sections C-C and D-D.  
 Traced Drawing.

Issue NP5 Dec 23, 1926  
 Minor Additions.  
 Drawing Checked.

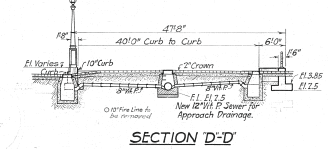
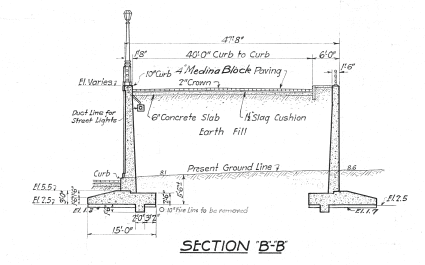
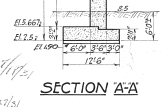
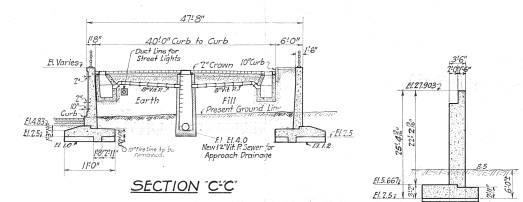
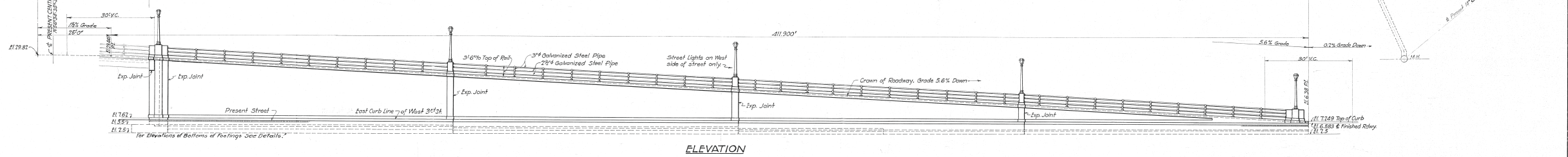
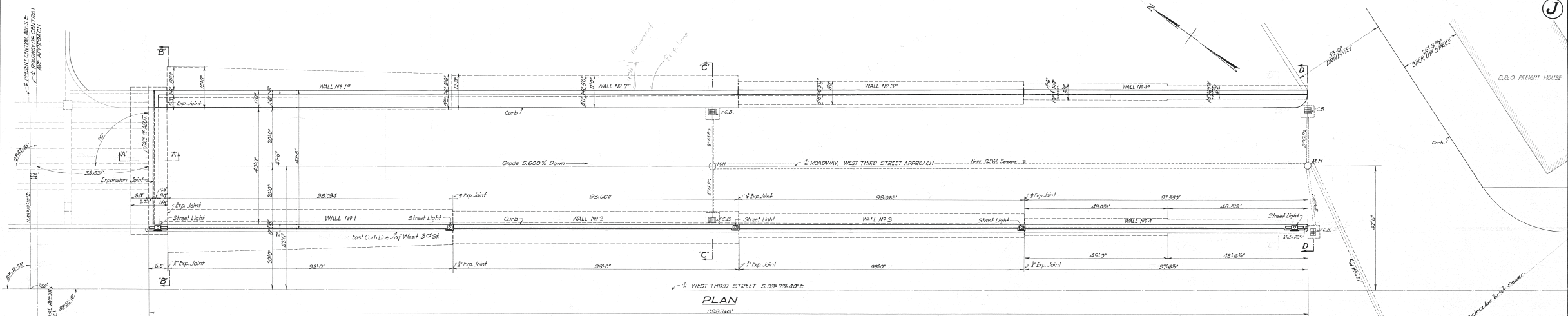
Issue NP6 Mar 30, 1927  
 Removed paving dams.

Issue NP7 May 16, 1927  
 Notes added as to Chamber  
 Surface Finish, Waterproofing  
 Notes concerning Concrete  
 Mixes revised.  
 Other minor changes.

Issue No. 8 Sept 7, 1927  
 Approved by Dept. Heads.

Issue No. 9 Oct 3, 1927  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.

Issue No. 10 May 7, 1928  
 Plans corrected to conform  
 to structure as built.



NOTE: Isating Concrete and Wall Concrete, Catch Basin and Manhole  
 Concrete Class 2 (1:2:4 Approx. mix) 6 bags of Cement per cu. yd.  
 Pavement 4" Madina Block on 11" Granulated Slag, not in this Contract.  
 Pavement Base 6" Concrete Class 17.  
 (1:2:4 Approx. mix on Earth Fill, not in this Contract.  
 But embankment to be Class 3 Concrete (3:3:6 Approx. mix) 4 1/2 bags of Cement per cu. yd, not in this Contract.  
 Max. Soil Pressure 4000' per sq. ft.  
 Waterproofing: The rear of vertical walls  
 to be waterproofed down to tops of  
 footings with either Class #3 or #3  
 waterproofing as called for by the  
 Engineer.  
 Chamfer all exposed edges and  
 corners & unless otherwise shown.  
 All exposed concrete to have a  
 hard dense smooth surface uniform  
 in texture and color.

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE VIADUCT SECTION J  
 W 3<sup>RD</sup> ST APPROACH SOUTH OF CENTRAL AVE  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 Scale: 1"=10'  
 Issue No. \_\_\_\_\_  
 Revised \_\_\_\_\_  
 Oct. 8, 1925  
 Chief Engineer

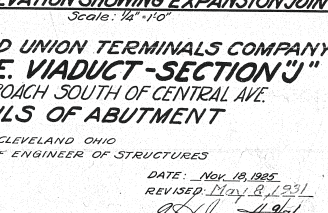
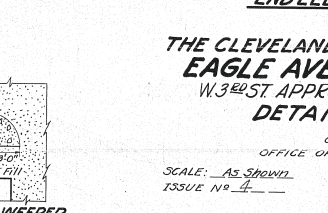
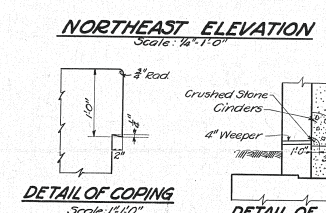
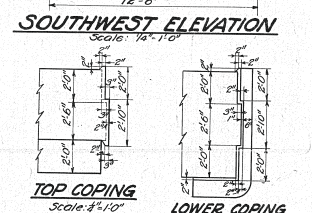
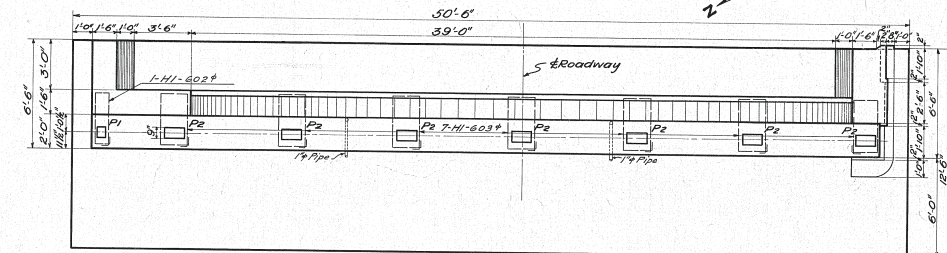
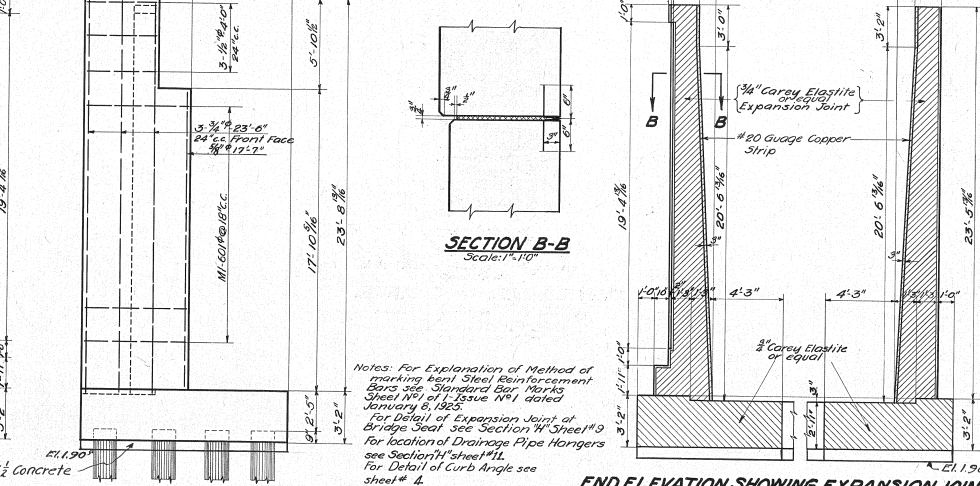
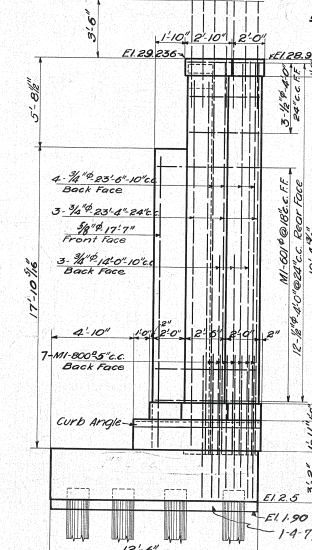
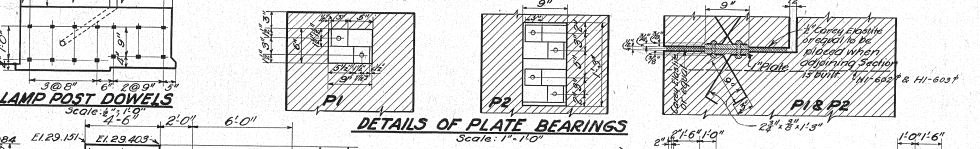
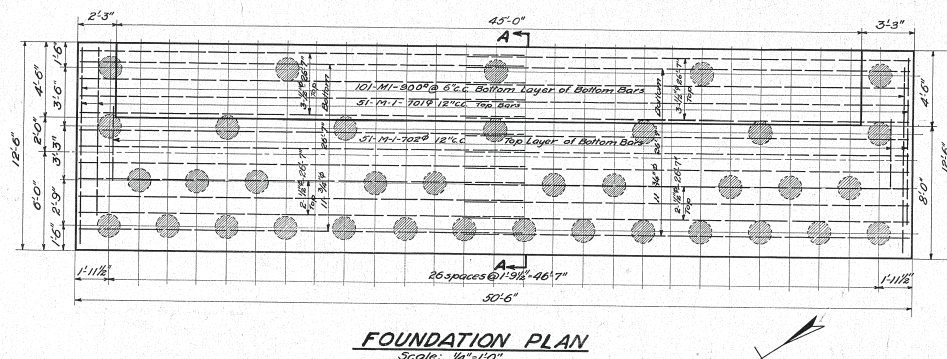
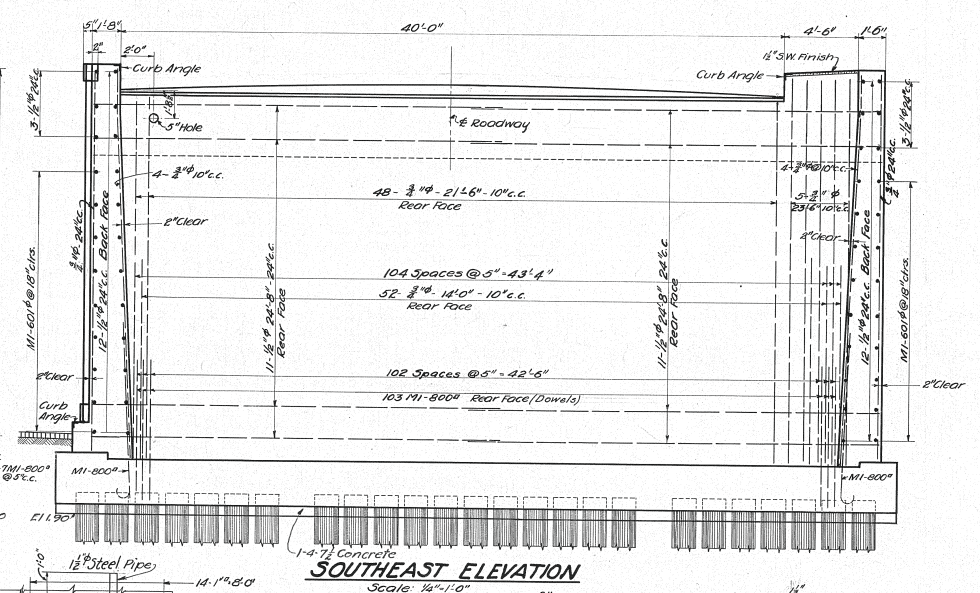
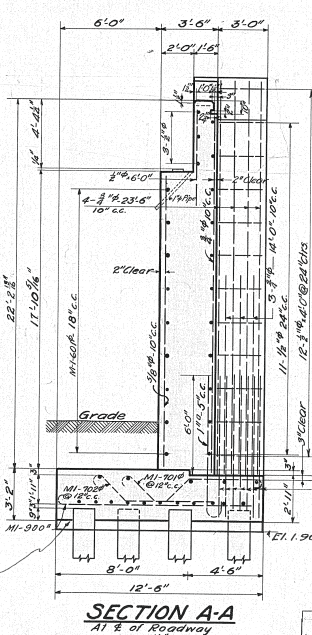
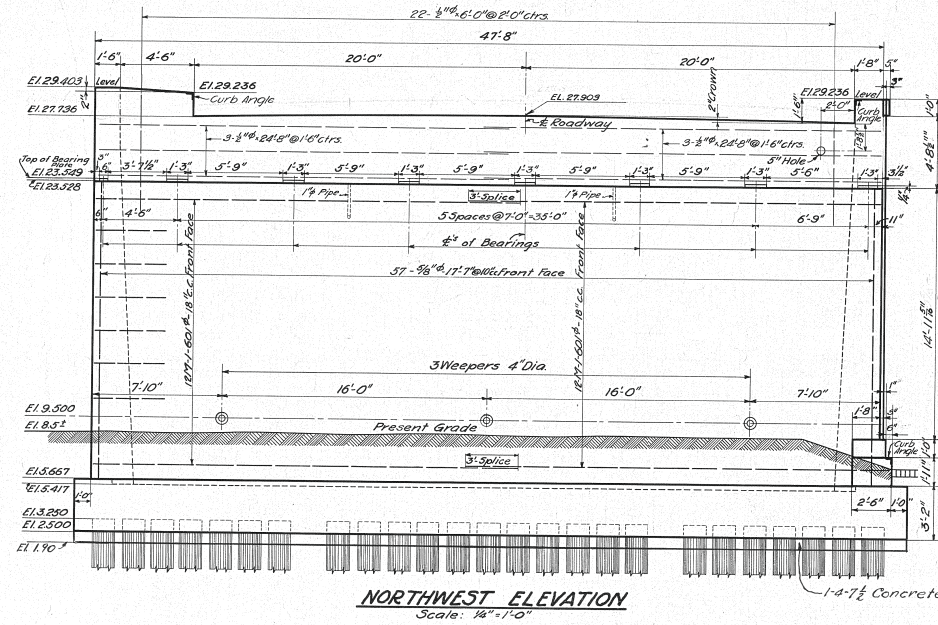
Designed by F.E.B. Oct 8, 1925  
 Detailed by F.E.B. Oct 8, 1925  
 Traced by S.H. Sept 17, 1926  
 Checked by R.E.P. Dec. 23, 1926  
 Corrected by S.H. Sept 17, 1926

Approved by [Signature] Engineer of Structures  
 Approved by [Signature] Principal Assistant Engineer  
 Approved by [Signature] Assistant Electrical Engineer  
 Approved by [Signature] Engineer of Construction

Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering and Construction  
 Date Sept. 19, 1927

For Original of this Signature  
 See Blue Print Filed Under 113-039

Issue No. A Nov. 18, 1925  
 Revisions:  
 Issue No. B Aug. 4, 1926  
 Change in Grade and other minor revisions. Redrawn.  
 Issue No. C April 20, 1927  
 Revised Expansion Joints, added Detail of Coping and Weepers.  
 Issue No. D Aug. 6, 1927  
 Minor revisions.  
 Issue No. 1 Sept. 7, 1927  
 Approved by Chief Engineer.  
 Issue No. 2 Oct. 3, 1927  
 Approved by Commissioner of Engineering and Construction of the City of Cleveland.  
 Issue No. 3 Oct. 17, 1927  
 Minor Revisions.  
 Issue No. 4 May 8, 1931  
 Plan corrected to conform to structure as built.



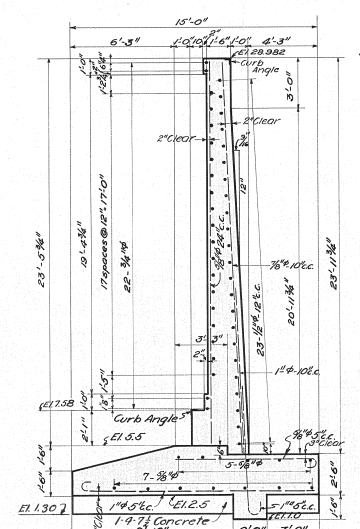
Designed by F.E.B. Nov. 18, 1925  
 Detailed by J.H.G. Aug. 4, 1926  
 Traced by H.B. Sept. 30, 1926  
 Checked by F.A.B. May 4, 1927  
 Correct 5-5-27  
 L. L. Orman  
 Designing Engineer

Approved *[Signature]* 7/1/27  
 Engineer of Structures  
 Approved *[Signature]* 7/1/27  
 Principal Assistant Engineer  
 Approved *[Signature]* 7/1/27  
 Assistant Electrical Engineer  
 Approved *[Signature]* 7/1/27  
 Engineer of Construction  
 Approved *[Signature]* 7/1/27  
 Engineer of Construction  
 Piles omitted from structure as built.  
 Plan approved  
 CITY OF CLEVELAND  
 We hereby certify that this Plan shows the structure as built.  
 Approved by Robert Hoffman, Commissioner of Engineering & Construction, Date: Sept. 15, 1927.  
 For Original of this Signature See Blue Print Filed under 113-0393

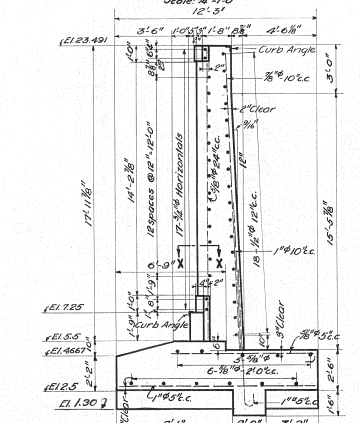
**THE CLEVELAND UNION TERMINALS COMPANY**  
**"EAGLE AVE. VIADUCT-SECTION J"**  
 W. 342<sup>RD</sup> APPROACH SOUTH OF CENTRAL AVE.  
**DETAILS OF ABUTMENT**  
 CLEVELAND OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: As Shown  
 ISSUE No. 4  
 DATE: Nov. 18, 1925  
 REVISED: May 8, 1931  
 Approved *[Signature]* 7/1/27  
 Chief Engineer  
 FILE No. 113-039



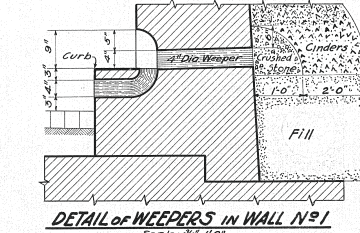
Issue No A Nov. 28, 1925  
 Revisions:-  
 Issue No B Aug. 18, 1926  
 Change of Grade and Length with  
 other minor revisions.  
 Issue No C March 21, 1927  
 Added Section X-X. Minor Revisions  
 Issue No D June 3, 1927  
 Removed 12" Drain  
 Revised detail of Weeper  
 Issue No E Aug. 6, 1927  
 Minor revisions.  
 Issue No 1 Sept. 7, 1927  
 Approved by Chief Engineer.  
 Issue No 2 Oct. 3, 1927  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.  
 Issue No 3 Oct. 17, 1927  
 Minor Revisions  
 Issue No 4 May 9, 1931  
 Plan revised to conform to  
 structure as built.



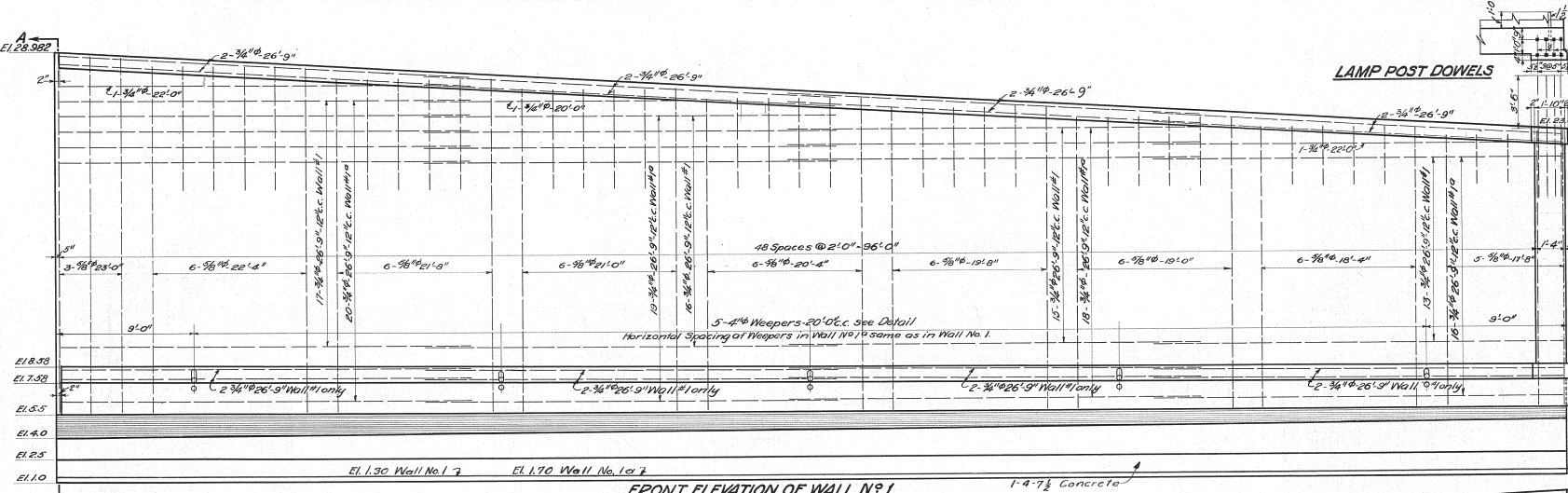
SECTION A-A  
 Applies to Wall No 1  
 Scale: 1/4"=1'-0"



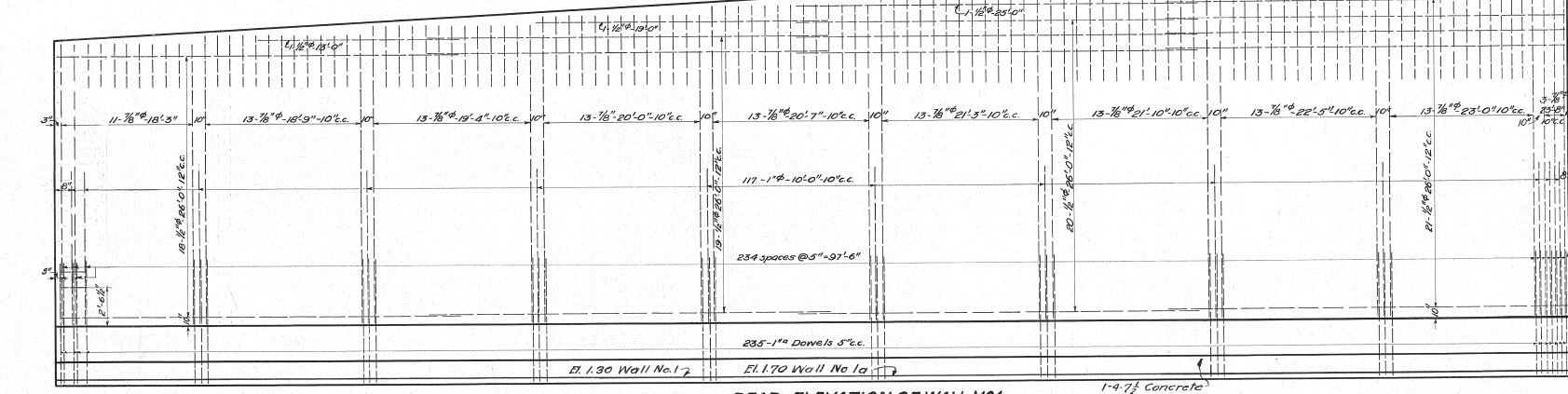
END ELEVATION AT LOW END OF WALL NO 1  
 Scale: 1/4"=1'-0"



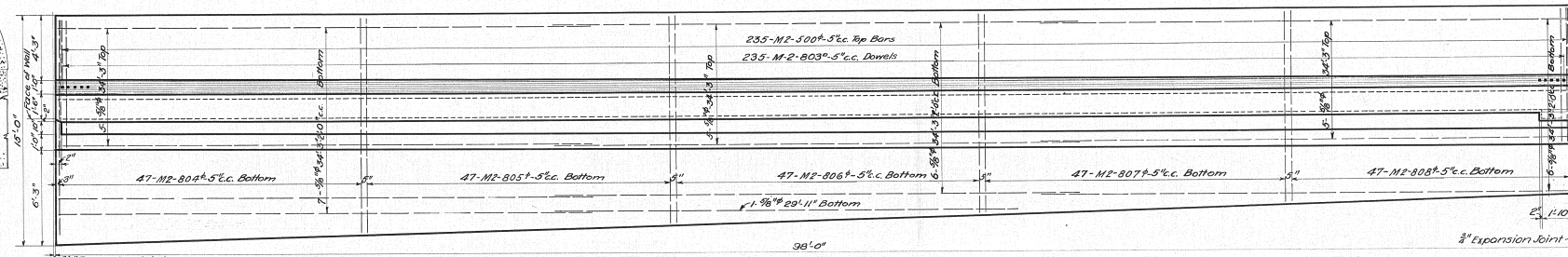
DETAIL OF WEEPERS IN WALL NO 1  
 Scale: 3/8"=1'-0"



FRONT ELEVATION OF WALL NO 1  
 showing Reinforcement in Front Face of Walls No 1 & 1a  
 Scale: 1/4"=1'-0"

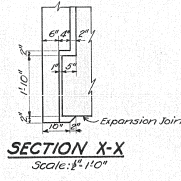


REAR ELEVATION OF WALL NO 1  
 Reinforcing Steel applies to Walls No 1 & 1a  
 Scale: 1/4"=1'-0"

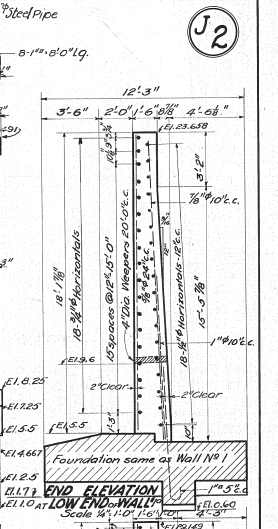


PLAN OF WALL NO 1  
 Showing Foundation Reinforcement for Walls No 1 & 1a  
 Scale: 1/4"=1'-0"

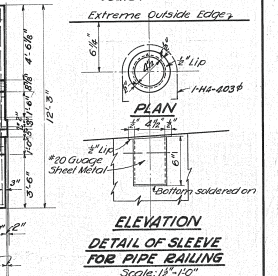
Notes: For Explanation of Method of marking bent Steel Reinforcement  
 Bars see "STANDARD BAR MARKS" Sheet No. 1, Issue No. 1, dated Jan. 15, 1925.  
 For Detail of Expansion Joint at high End of Wall see Section J "Sheet #1"  
 Expansion Joint at low End of Wall is shown on sheet #3 Section J"  
 For Detail of Curb Angle see Sh. # 4  
 For Location of Sleeve for Pipe Railing see Sh. # 6



SECTION X-X  
 Scale: 1/2"=1'-0"



END ELEVATION AT HIGH END OF WALL NO 1  
 Scale: 1/4"=1'-0"



DETAIL OF SLEEVE FOR PIPE RAILING  
 Scale: 1/2"=1'-0"

Designed by F.E.B. Nov. 28, 1925.  
 Detailed by E.G. Nov. 28, 1925.  
 Traced by H.B. Nov. 2, 1926.  
 Checked by E.A.B. May 4, 1927.  
 Correct 5-5-27  
 J.L. Gorman  
 Designing Engineer

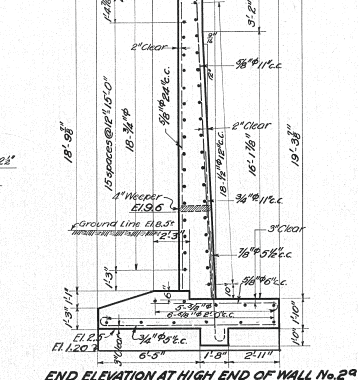
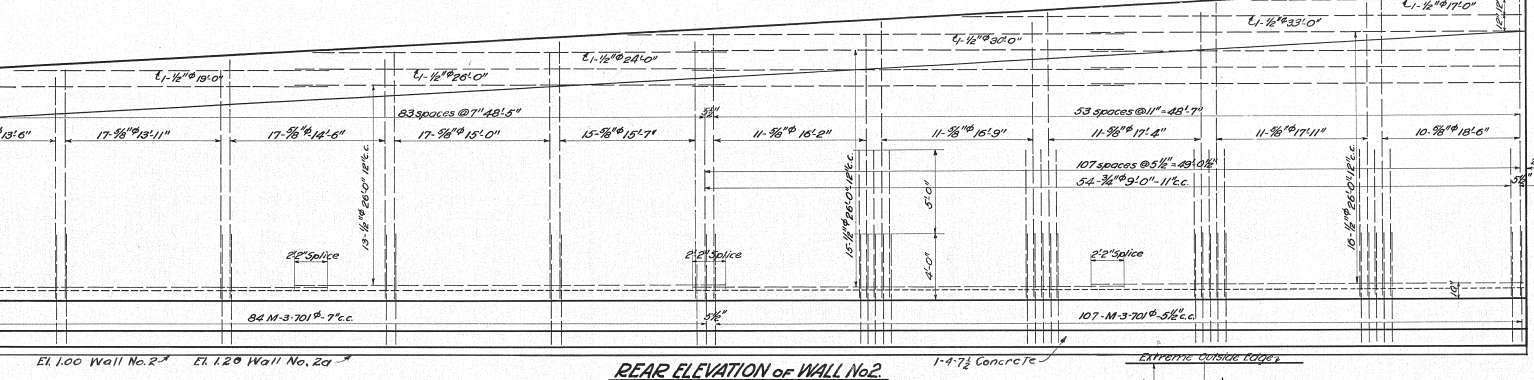
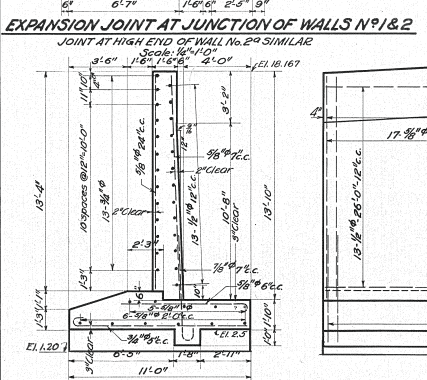
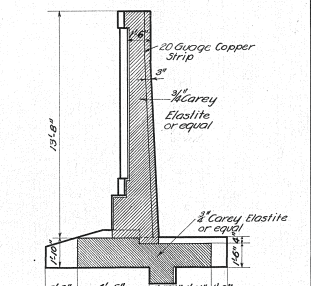
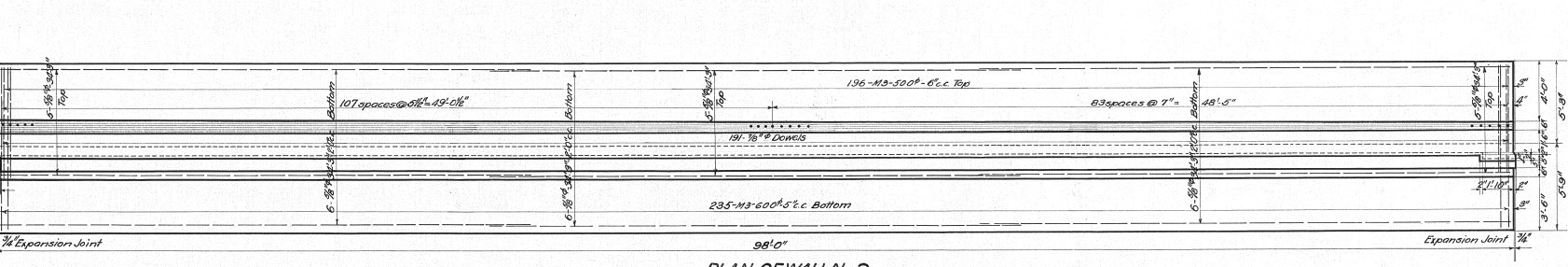
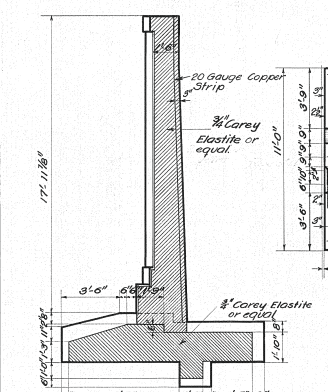
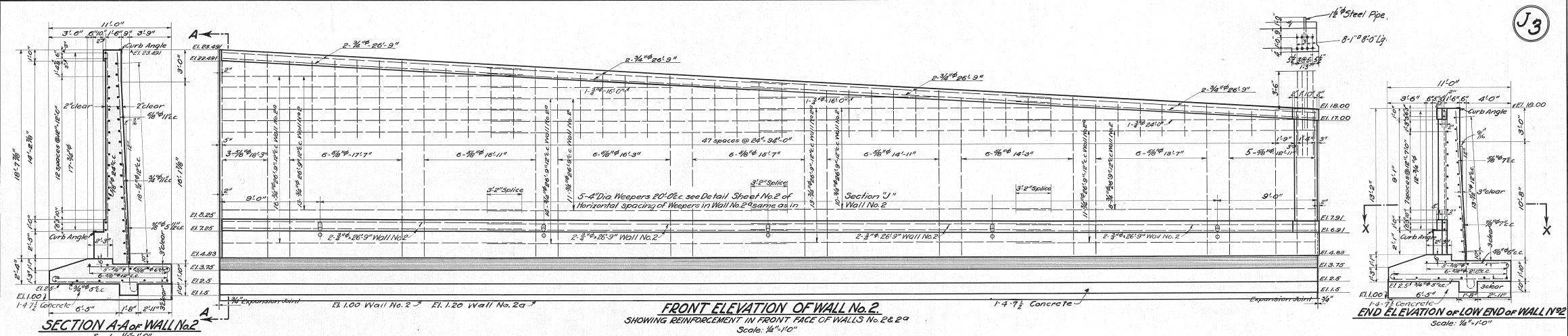
Approved E.O. Marsh  
 Engineer of Structures  
 Approved J. Jordan  
 Principal Assistant Engineer  
 Approved H.W. Jackson  
 Assistant Electrical Engineer  
 Approved J.H. Guleff  
 Engineer of Construction

Plan approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 For Original of this Signature  
 See Blue Print Filed under 113-0395  
 Date Sept. 15, 1927.

THE CLEVELAND UNION TERMINALS COMPANY  
**EAGLE AVE. VIADUCT - SECTION "J"**  
 W. 3rd ST. APPROACH SOUTH OF CENTRAL AVE.  
 DETAILS OF WALLS NO 1 & NO 1a  
 CLEVELAND OHIO  
 OFFICE OF ENGINEER OF STRUCTURES

DATE: NOV. 28, 1925  
 REVISED: FEB. 28, 1927  
 J.L. Gorman  
 CHIEF ENGINEER

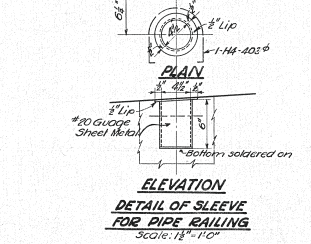
Issue No. A Dec 7, 1925  
 Revisions:  
 Issue No. B Aug. 18, 1926  
 Changed grade and length with  
 other minor revisions.  
 Issue No. C April 6, 1927  
 Added sleeve for Pipe Railing, Revised  
 Expansion Joints.  
 Issue No. D Aug. 6, 1927  
 Minor revisions.  
 Issue No. 1 Sept. 7, 1927  
 Approved by Chief Engineer  
 Issue No. 2 Oct. 3, 1927  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.  
 Issue No. 3 Oct. 17, 1927  
 Minor Revisions.  
 Issue No. 4 May 8, 1931  
 Plan corrected to conform to  
 structure as built.



DESIGNED BY F.E.B. Dec. 7, 1925  
 Detailed by E.G. Dec. 7, 1925  
 Traced by H.B. Nov. 10, 1926  
 Checked by E.A.B. May 4, 1927  
 Correct 5-5-27  
 J.L. Gorman  
 Designing Engineer

APPROVED [Signature] 12/7/27  
 Engineer of Structures  
 APPROVED [Signature] 1/3/28  
 Principal Assistant Engineer  
 APPROVED [Signature] 4/4/27  
 Assistant Electrical Engineer  
 APPROVED [Signature] 9/16/27  
 Engineer of Construction  
 Plan approved  
 CITY OF CLEVELAND  
 Robert Hoffman  
 Commissioner of Engineering & Construction.  
 For Original of this Signature  
 see Blue Print Filed under 113-039-5

Notes: For Explanation of Method of marking bent Steel Reinforcement  
 Bars see "STANDARD BAR MARKS" Sheet #1 of 1, Issue No. 1, dated Jan. 8, 1925.  
 For additional Details of Expansion Joints see Section J' Sheet No. 1.  
 For Detail of Coping see sheet No. 1, Section J'.  
 For Detail of Curb Angle see sheet No. 4.  
 For Location of sleeve for Pipe Railing see sheet No. 6.  
 For Section X-X see sheet No. 2.



THE CLEVELAND UNION TERMINALS COMPANY  
**EAGLE AVE VIADUCT-SECTION J'**  
 W 3<sup>RD</sup> ST. APPROACH SOUTH OF CENTRAL AVE.  
 DETAILS OF WALLS No. 2 & 2'  
 CLEVELAND OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/4\"/>

Issue No A Dec. 15, 1925  
 Revisions

Issue No B Feb. 13, 1926  
 Reinforced Steel added

Issue No C Feb. 20, 1926  
 Changed Bar Marks  
 M4-401 to M4-414  
 M4-402 to M4-415  
 M4-403 to M4-416

Issue No D Aug. 18, 1926  
 Change in grade and length  
 with other minor revisions  
 Sheet redrawn

Issue No E April 26, 1927  
 Minor Revisions

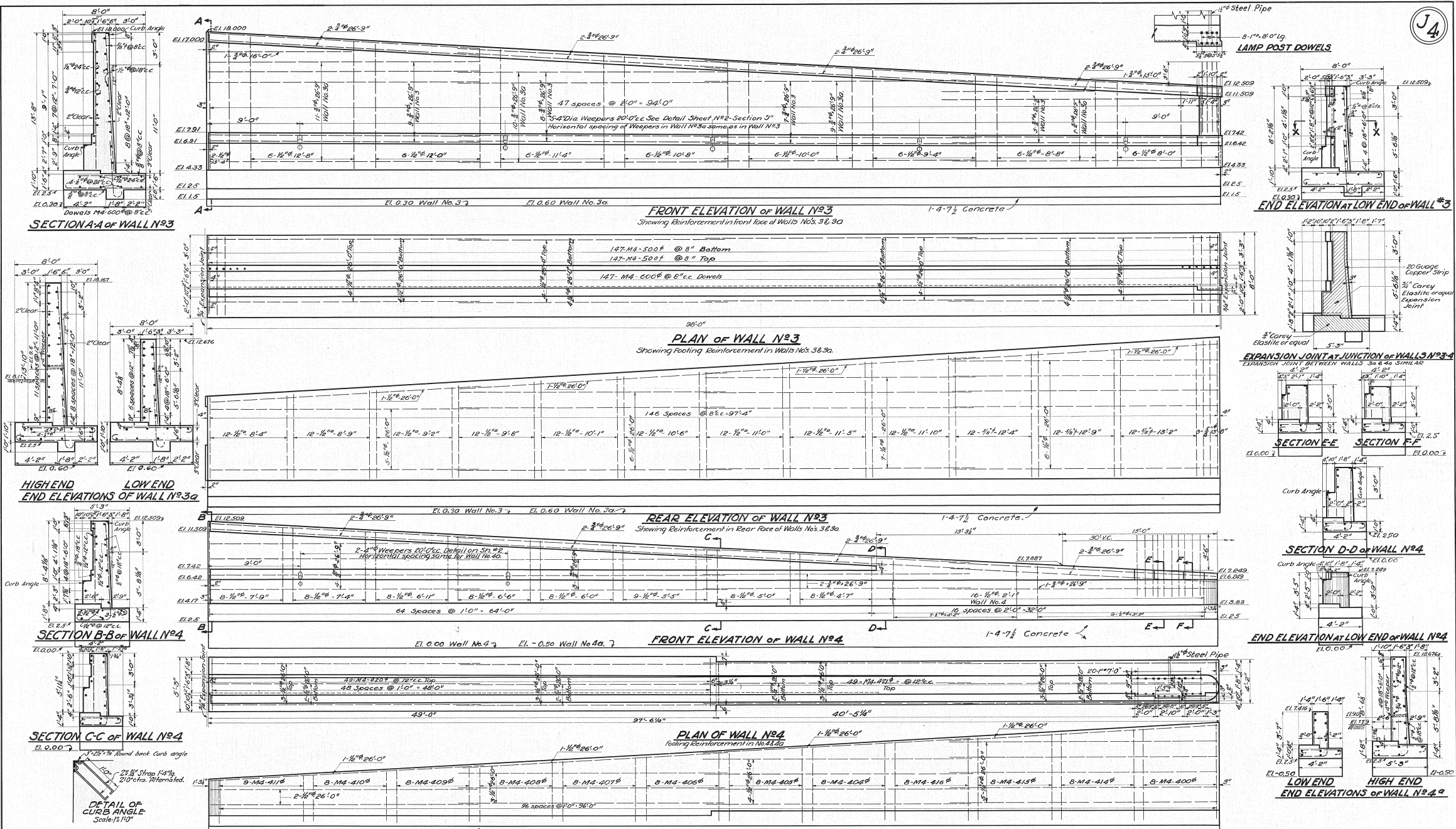
Issue No F Aug. 6, 1927  
 Minor revisions.

Issue No 1 Sept. 7, 1927  
 Approved by Chief Engineer

Issue No 2 Oct. 3, 1927  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.

Issue No 3 Oct. 17, 1927  
 Minor Revisions

Issue No 4 May 8, 1931  
 Plan corrected to conform to  
 structure as built.



Designed by F.E.B. Dec. 15, 1925.  
 Detailed by J.H.C. Aug. 13, 1926.  
 Traced by H.B. Oct. 19, 1926.  
 Checked by E.A.B. May 4, 1927.  
 Correct 5-5-27  
 Y. L. Cowman  
 Designing Engineer

Approved *[Signature]* 7/24/27  
 Engineer of Structures

Approved *[Signature]* 7/27/27  
 Principal Assistant Engineer

Approved *[Signature]* 9/6/27  
 Assistant Electrical Engineer

Approved *[Signature]* 9/6/27  
 Engineer of Construction

CITY OF CLEVELAND  
 Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date Sept. 15, 1927  
 For Original of this Signature  
 See Blue Print Filed under 113-0395

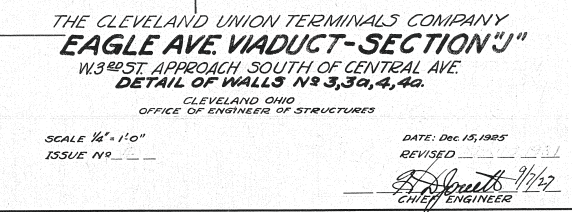
THE CLEVELAND UNION TERMINALS COMPANY  
**EAGLE AVE VIADUCT-SECTION "J"**  
 W 3<sup>RD</sup> ST APPROACH SOUTH OF CENTRAL AVE.  
 DETAIL OF WALLS No. 3, 3a, 4, 4a.

CLEVELAND OHIO  
 OFFICE OF ENGINEER OF STRUCTURES

SCALE 1/4" = 1'-0"  
 ISSUE NO. \_\_\_\_\_

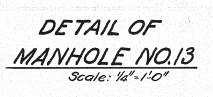
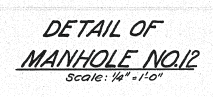
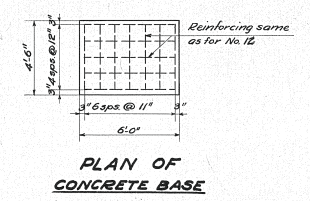
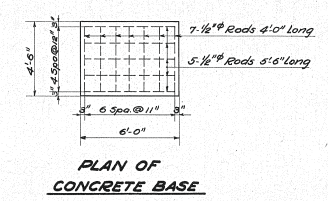
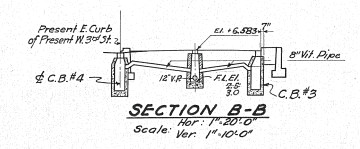
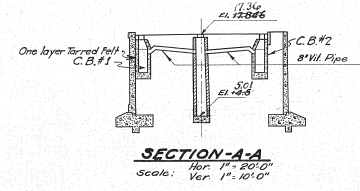
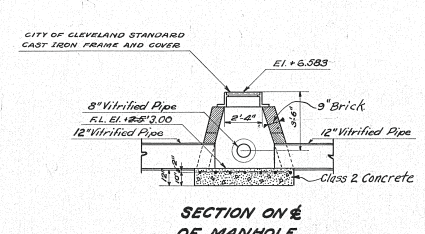
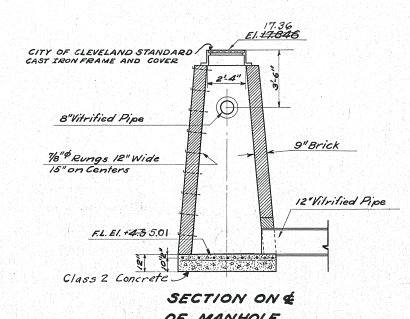
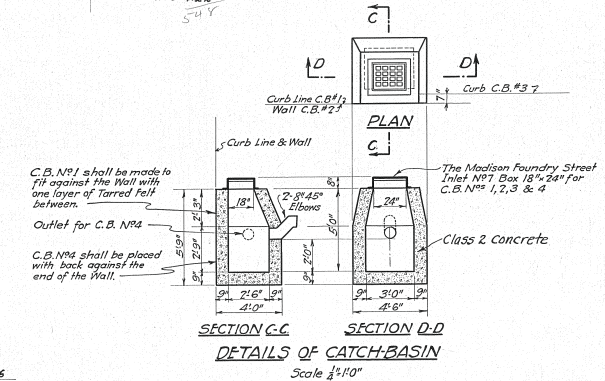
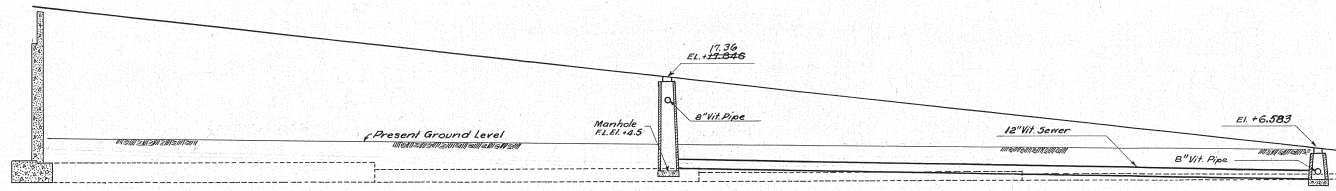
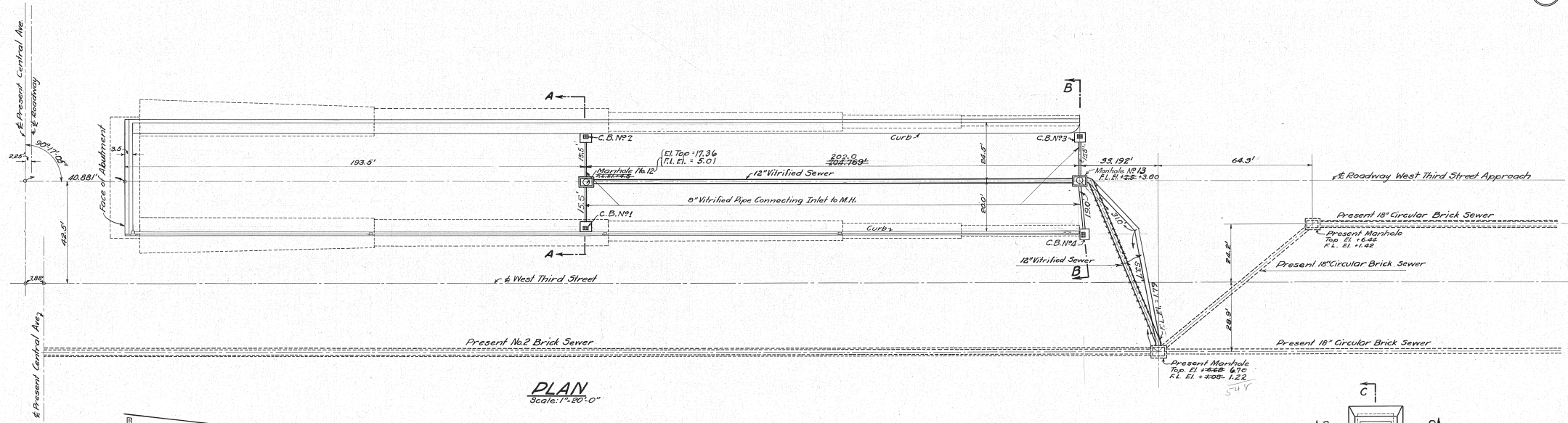
DATE: Dec. 15, 1925  
 REVISED 9/1/27  
*[Signature]*  
 CHIEF ENGINEER

FILE NO. 113-039



Issue No. A Oct. 15, 1926  
 Revisions:  
 Issue No. B May 2, 1927  
 Minor Revisions  
 Issue No. C June 3, 1927  
 Removed 12" drains back of  
 walls.  
 Issue No. D Aug. 6, 1927  
 Minor Revisions  
 Issue No. 1 Sept. 7, 1927  
 Approved by Chief Engineer.  
 Issue No. 2 Oct. 3, 1927  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.  
 Issue No. 3 Oct. 17, 1927  
 Minor Revisions  
 Issue No. 4 May 7, 1931  
 Plan corrected to conform  
 to structure as built.

J5



Designed by J.E.W. Oct. 15, 1926  
 Detailed by W.L.F. Oct. 15, 1926  
 Traced by H.B. Nov. 15, 1926  
 Checked by E.A.B. May 4, 1927  
 Corrected 5-5-27  
 J.E. Gorman  
 Designing Engineer

Approved E.V. Marsh 7/27/27  
 Engineer of Structures  
 Approved Geo. Bedgen 7/27/27  
 Principal Assistant Engineer  
 Approved A.W. Pinkerton 7/6/27  
 Assistant Electrical Engineer  
 Approved W.H. Culiff 9/16/27  
 Engineer of Construction

We hereby certify that this Plan  
 shows the structure as built.  
E.V. Marsh 7/27/27  
 Engineer of Structures  
H.P. Bigelow 4/27/31  
 First Engineer of Construction

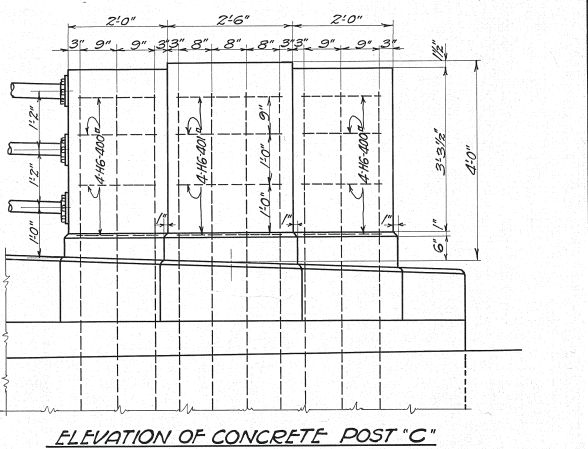
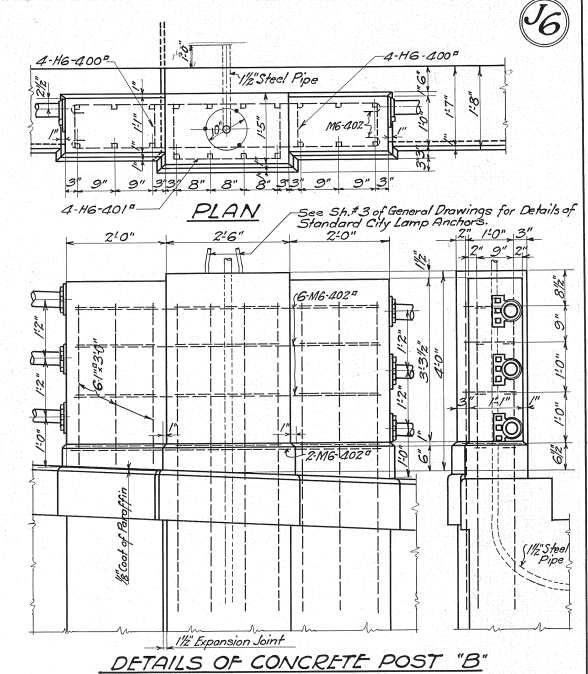
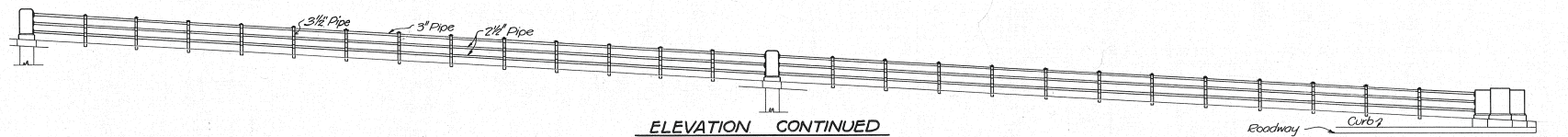
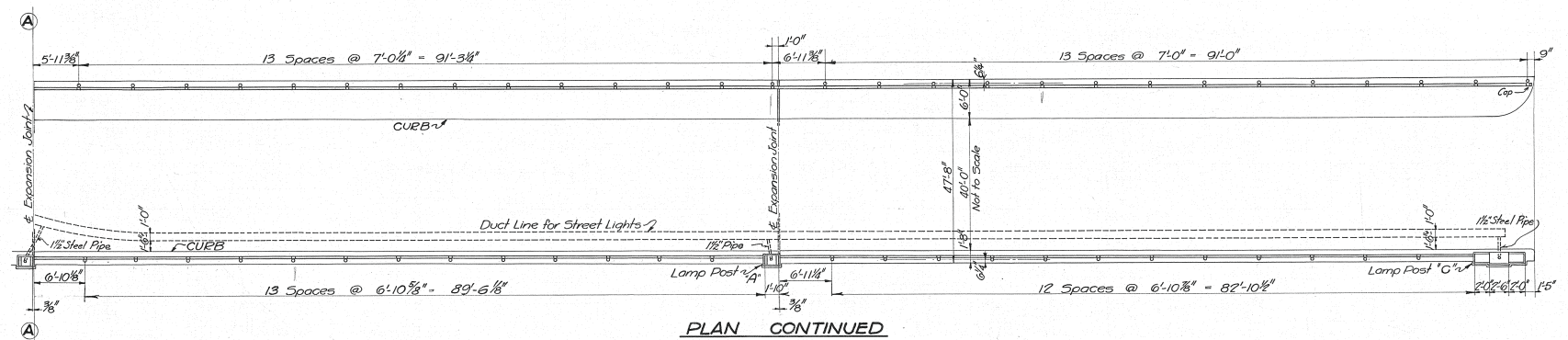
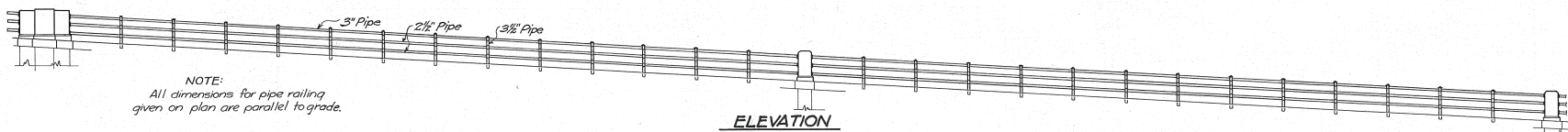
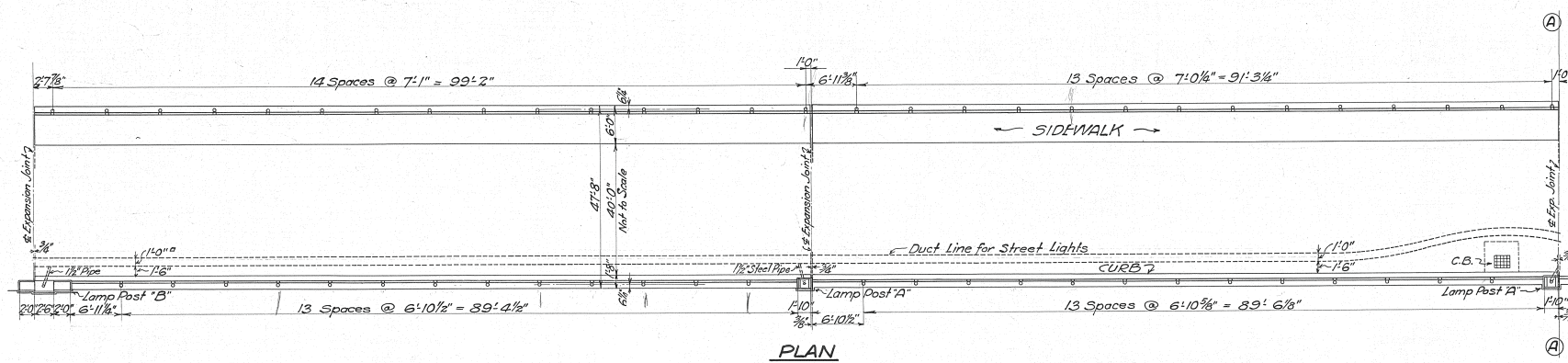
Plan Approved  
 CITY OF CLEVELAND  
 By Robert Hoffman  
 Commissioner of Engineering & Construction  
 Date: Sept. 15, 1927  
 For Original of this Signature  
 See Blue Print Filed under 113-039-5

THE CLEVELAND UNION TERMINALS CO.  
 EAGLE AVE. VIADUCT - SECTION "J"  
 W. 3<sup>RD</sup> ST. APPROACH SOUTH OF CENTRAL AVE.  
 DRAINAGE PLANS, SECTIONS AND DETAILS  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: As Shown  
 DATE: Oct. 15, 1926  
 REVISION: May 7, 1931  
J.E. Gorman 9/16/27  
 CHIEF ENGINEER

FILE No 113-039

5

Issue No. A Dec. 14, 1926.  
**REVISIONS:-**  
 Issue No. B Aug. 6-1927  
 Minor Revisions.  
 Issue No. 1 Sept. 7, 1927  
 Approved by Chief Engineer.  
 Issue No. 2 Oct. 3, 1927  
 Approved by Commissioner of  
 Engineering and Construction of  
 the City of Cleveland.  
 Issue No. 3 Oct. 17, 1927  
 Minor Revisions.  
 Issue No. 4 May 27, 1931  
 Plan conforms to structure  
 as built.



**NOTES:-**  
 For Details of Pipe Railing and Fittings, See Sheet No. 3 of General Drawings.  
 Lamp Post 'A' is Standard Lamp Post detailed on Sh. No. 3 of General Drawings.  
 For explanation of method of marking Bent Steel Reinforcement Bars, See Standard Bar Marks, Sheet No. 1 of 1, Issue No. 1, Dated January 8, 1925.

Designed By W.L.F. Nov. 5, 1926.  
 Detailed By S.H. Dec. 14, 1926.  
 Traced By J.T.G. & S.H. 8-12-1927.  
 Checked By F.A.B. May 4, 1927.  
 Correct May 5, 1927.  
 Designing Engineer

Approved *G. V. Marshall* 7/27/27.  
 Engineer of Structures  
 Approved *J. H. Adams* 7/27/27.  
 Principal Assistant Engineer  
 Approved *J. H. Adams* 9/4/27.  
 Assistant Electrical Engineer  
 Approved *M. A. O'Connell* 9/12/27.  
 Engineer of Construction

We hereby certify that this Plan shows the structure as built.  
*G. V. Marshall* 7/27/27.  
 Engineer of Structures  
*H. P. Riegelow* 7/27/31  
 Chief Engineer of Construction

Plan Approved  
**CITY OF CLEVELAND**  
 By *Robert Hoffman*  
 Commissioner of Engineering & Construction  
 Date Sept. 15, 1927.  
 For Original of this Signature See Blue Print Filed under 113-0395

**THE CLEVELAND UNION TERMINALS CO.**  
**EAGLE AVE VIADUCT SECTION "J"**  
**W. 3<sup>RD</sup> ST. APPROACH SO. OF CENTRAL AVE.**  
**RAILING AND LIGHTING DETAILS**  
 CLEVELAND, OHIO  
 OFFICE OF ENGINEER OF STRUCTURES  
 SCALE: 1/8" = 1'-0"  
 ISSUE No. 4  
 DATE DEC. 14, 1926.  
 REVISED (PLAN) 27, 1931  
*G. V. Marshall* 7/27/27  
 Chief Engineer

MICROFILMED  
OCT 20 1995

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	DE-0025(802)



CUYHOGA COUNTY  
EAGLE AVENUE BRIDGE, PHASE II

# REHABILITATION OF THE EAGLE AVENUE VIADUCT

OVER CHESSIE, G.C.R.T.A. AND CANAL ROAD-PHASE II

DE-0025 (802)

**DESIGN DESIGNATION**

CURRENT A.D.T. 6950 (1990)  
DESIGN YEAR A.D.T. 7340 (2010)  
D.H.V. 695  
D. (DIRECTIONAL DISTRIBUTION) 55 %  
T. (PERCENT B. & C. TRUCKS) 10 %  
V. (DESIGN SPEED) 35 MPH  
V. (LEGAL SPEED) 25 M.P.H.  
FUNCTIONAL CLASSIFICATION (URBAN ARTERIAL)  
DESIGN EXCEPTIONS: NONE

**CONVENTIONAL SIGNS**

WATER LINE (EXISTING) ---W--- (PROPOSED) ---W---  
CORPORATION LINE  
FENCE LINE (EXISTING) ---I--- (PROPOSED) ---I---  
CENTER LINE ---112--- (PROPOSED) ---113---  
UTILITY POLES TELEPHONE  $\phi$  POWER  $\phi$  LIGHT  $\phi$   
GAS LINE ---G---  
TREES  $\odot$  STUMPS  $\otimes$  (TO BE REMOVED)  $\otimes$   $\otimes$   
RIGHT OF WAY ---R/W---  
CATCH BASIN (EXISTING)  $\square$  (PROPOSED)  $\blacksquare$   
PROPERTY LINE ---P--- (IN EXISTING FENCE) ---P---  
GUARD RAIL (EXISTING) ---G.R.--- (PROPOSED) ---G.R.---  
WORK LIMITS ---W.L.---

**UNDERGROUND UTILITIES**

2 WORKING DAYS  
**BEFORE YOU DIG**  
CALL: 800-362-2764  
(TOLL FREE)  
OHIO UTILITIES  
PROTECTION SERVICE  
NON-MEMBER MUST  
BE CALLED DIRECTLY

**INDEX OF SHEETS**

TITLE SHEET	1
SCHEMATIC PLAN	2
TYPICAL SECTIONS (TEMPORARY ROAD)	3
GENERAL NOTES	4
GENERAL SUMMARY AND CALCULATIONS	5
DETOUR PLAN	6
PLAN AND PROFILE (TEMPORARY ROAD)	7
PLAN AND SECTIONS (STONES LEVEE ROAD)	8
PLAN AND SECTIONS (EAGLE AVENUE)	9
CROSS SECTIONS (TEMPORARY ROAD)	10
DRAINAGE PLAN AND TYPICAL SECTIONS	11
TYPICAL BARRIER DETAILS	12
STRUCTURE PLANS	13 - 67, 29A
ELECTRICAL PLANS	68 - 71
(SHEET 19 NOT USED)	
RIGHT OF WAY PLAN	7A

**LINE DATA**

EAGLE AVE. FIXED SPAN BRIDGE  
NET LENGTH OF PROJECT 0.00 L.F. or 0.000 Mile  
BEGIN WORK STA. 5+00.42  
END WORK STA. 19+51.00  
LENGTH OF WORK 1450.58 L.F. OR 0.275 MILES



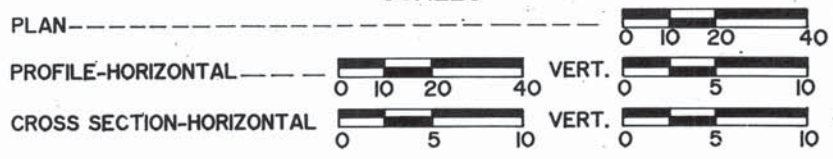
BEGIN WORK  
STA. 5+00.42

END WORK  
STA. 19+51.00

LOCATION MAP  
SCALE IN FEET

PORTION TO BE IMPROVED  
STATE AND FEDERAL ROUTES  
OTHER ROADS

**SCALES**



SUPPLEMENTAL SPECIFICATIONS	
836	11-12-85
802	4-13-90
852	6-10-87
952	12-14-88

**1991 SPECIFICATIONS**

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING OF THE HIGHWAY TO TRAFFIC AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON THE PLANS.

APPROVED: *[Signature]*  
DATE: 5-23-91  
DIRECTOR OF PUBLIC SERVICE, CITY OF CLEVELAND

Approved: *[Signature]*  
Date: 7/2/91  
District Deputy Director of Transportation

Approved: *[Signature]*  
Date: 7/25/91  
Engineer, Bureau of Bridges and Structural Design

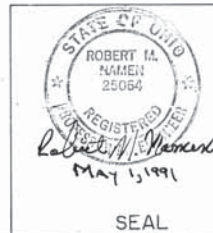
Approved: *[Signature]*  
Date: 5/4/92  
Deputy Director, Planning and Design

Approved: *[Signature]*  
Date: 5-4-92  
Director, Department of Transportation

PLANS PREPARED BY  
**THE OSBORN ENGINEERING COMPANY**  
CONSULTING ENGINEERS CLEVELAND, OHIO

1:010 M EAGLE RAMP

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS							
DWG. No	DATE	DWG. No	DATE	DWG. No	DATE	DWG. No	DATE
BP-4	10-1-87	MC-9.2	5-6-91	EXJ-4-87	1-5-89		
BP-5	10-1-87	MT-99.10	11-14-86	HL-50.21	5-1-87		
BP-7	10-1-87			HL-40.10	5-1-87		
F-1	11-10-83	MH-1	12-18-84	HL-60.31	5-1-87		
GR-1.1	5-6-91	MC-4	7-26-76				
GR-1.2	5-6-91	MC-11	8-1-78				
GR-2.1	5-6-91						
GR-4.2	5-6-91	CB-2-2A & B	5-1-79				
MC-9A	1-11-85						



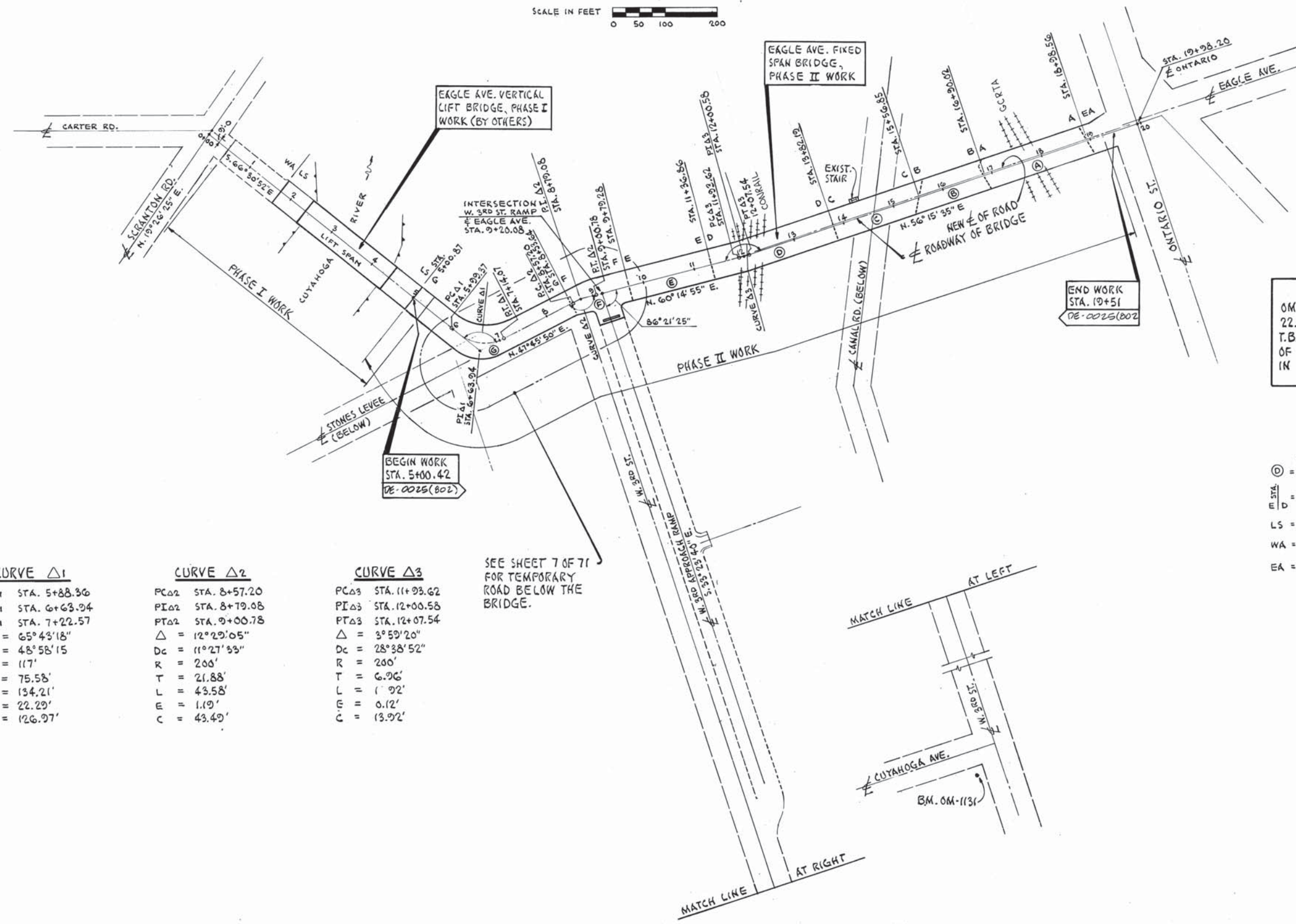
Project: CUY - EAGLE AVENUE (PHASE II)  
Date of Letting: 1991, Contract No. \_\_\_\_\_

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

APPROVED \_\_\_\_\_  
DIVISION ADMINISTRATOR DATE \_\_\_\_\_



# SCHEMATIC PLAN



**BENCH MARK**  
 0M-1131 EL. 581.72, 27.0' WEST OF E W. 3RD ST.  
 22.0' SOUTH OF E CUYAHOGA AVENUE  
 T.B.M. NO. 1 EL. 582.81 NAIL IN S.W. CORNER  
 OF COLUMN PF2N, T.B.M. NO. 2 EL. 582.8 NAIL  
 IN N.W. CORNER OF COLUMN PG6S.

- LEGEND**
- ⊙ = EXISTING BRIDGE SECTION
  - STA. = STA. AT INTERSECTION OF BRIDGE SECTIONS.
  - LS = LIFT SPAN
  - WA = WEST APPROACH
  - EA = EAST APPROACH

**CURVE Δ1**

PCΔ1	STA. 5+88.86
PIΔ1	STA. 6+63.94
PTΔ1	STA. 7+22.57
Δ	= 65°43'18"
Dc	= 48°58'15"
R	= 117'
T	= 75.58'
L	= 134.21'
E	= 22.29'
C	= 126.97'

**CURVE Δ2**

PCΔ2	STA. 8+57.20
PIΔ2	STA. 8+79.08
PTΔ2	STA. 9+00.78
Δ	= 12°29'05"
Dc	= 11°27'33"
R	= 200'
T	= 21.88'
L	= 43.58'
E	= 1.19'
C	= 43.49'

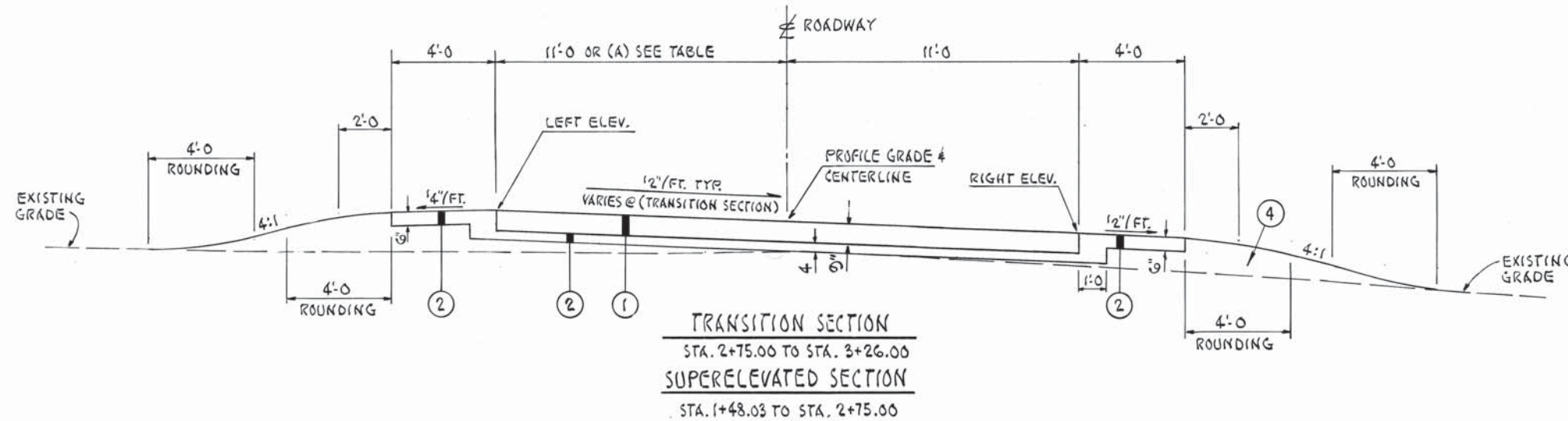
**CURVE Δ3**

PCΔ3	STA. 11+93.62
PIΔ3	STA. 12+00.58
PTΔ3	STA. 12+07.54
Δ	= 3°59'20"
Dc	= 28°38'52"
R	= 200'
T	= 6.96'
L	= 1' 02"
E	= 0.12'
C	= 13.92'

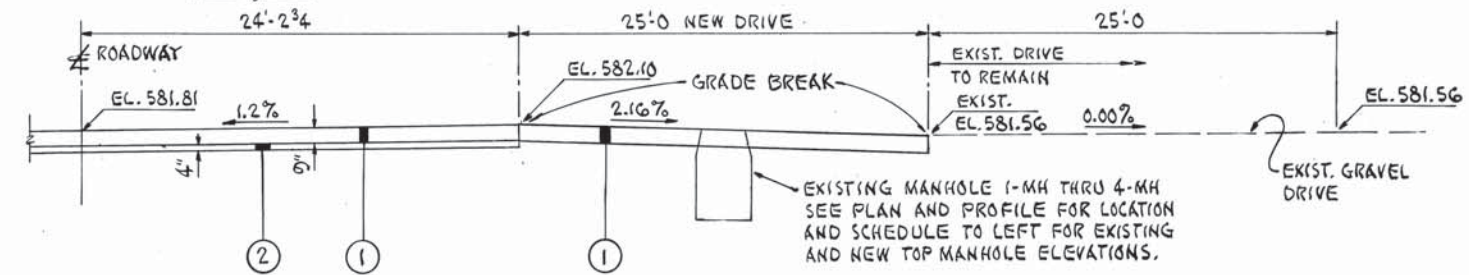
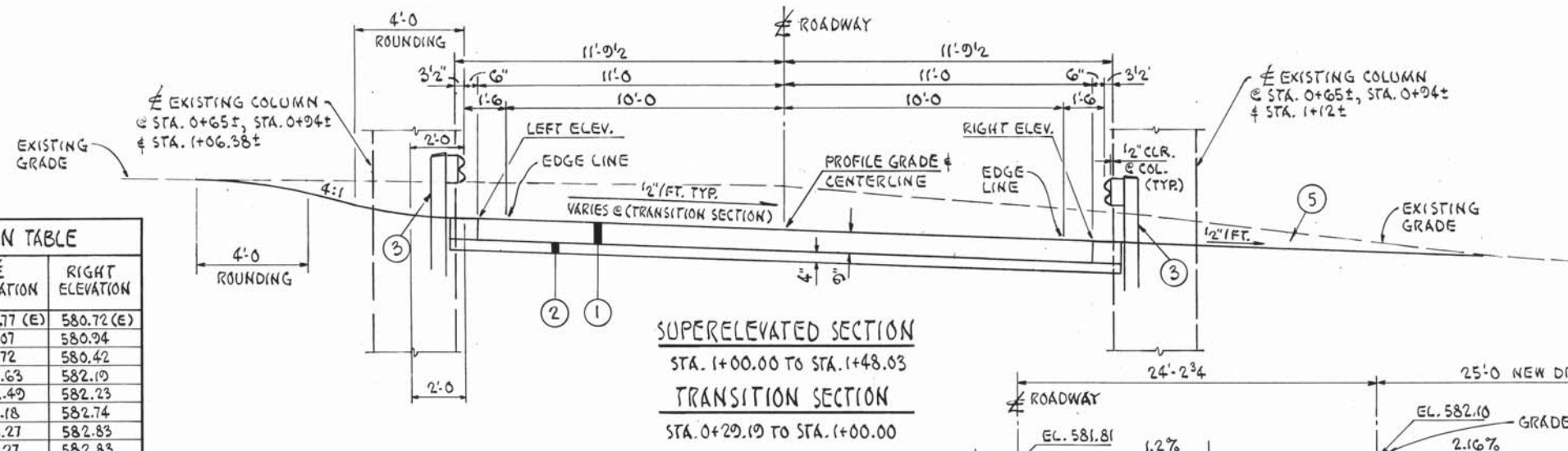
SEE SHEET 7 OF 71  
FOR TEMPORARY  
ROAD BELOW THE  
BRIDGE.

# TYPICAL SECTIONS

## TYPE 452



- LEGEND:**
- ① ITEM 452 - PLAIN CONCRETE PAVEMENT
  - ② ITEM 304 - AGGREGATE BASE
  - ③ ITEM 606 - GUARDRAIL TYPE 5
  - ④ ITEM 203 - EMBANKMENT
  - ⑤ ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION



SUPERELEVATION TABLE				
STATION	LEFT WIDTH (A)	LEFT ELEVATION	EXIST. ELEVATION	RIGHT ELEVATION
0+29.19		580.82 (E)	580.77 (E)	580.72 (E)
0+50		581.24	581.07	580.94
0+75		582.02	581.72	580.42
1+00		583.07	582.63	582.19
1+14.13		583.13	582.49	582.23
1+25		582.62	583.18	582.74
1+48.03		583.71	583.27	582.83
1+75		583.71	583.27	582.83
2+00		583.71	583.27	582.83
2+25		583.71	583.27	582.83
2+48.26		583.54	583.12	582.66
2+75	18.0'	583.00	582.60	582.29
3+00	23.0'	582.46	582.04	581.92
3+26	25.0'	581.87 (E)	581.67 (E)	581.54 (E)

MANHOLE ADJUSTMENT SCHEDULE		
MANHOLE NO.	EXIST. T/MANHOLE EL.	NEW T/MANHOLE EL.
1-MH	581.20	581.77
2-MH	580.87	581.82
3-MH (1)	580.36	581.92
4-MH	581.17	581.35

(1) = THIS MANHOLE TO BE RECONSTRUCTED.

(E) = EXISTING ELEVATION.  
(A) = IF DIFFERENT THAN 11'-0".



# GENERAL NOTES

DATE: JA	DE-0025(802)	OHIO	4
DATE: 10/90		F.H.W.A. REGION 5	
DATE: 08			
DATE: 10/90			

CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II

## GENERAL

### PROJECT DATUM

ALL ELEVATIONS ARE BASED ON UNITED STATES GEODETIC SURVEY (U.S.G.S.) DATUM PLANE.

### EXISTING CONDITIONS

THE EXISTING CONDITIONS SHOWN ON THE PLANS AND TYPICAL SECTIONS HAVE BEEN TAKEN FROM EXISTING RECORDS AND ARE BELIEVED TO REPRESENT EXISTING CONDITIONS, BUT THE STATE OF OHIO DOES NOT GUARANTEE THEIR ACCURACY.

### CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIAL OR PERFORM WORK FOR PLAN ITEMS SET UP TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEERS DISCRETION SHALL BE MADE A MATTER OF RECORD BY COMPLETION OF THE PROJECT.

UNDERGROUND UTILITIES:- THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 ORC.

UTILITY OWNERSHIP: THE FOLLOWING IS A LIST OF THE OWNERS OF UTILITIES KNOWN TO BE WITH IN THE AREA OF THE PROJECT

CLEVELAND ELECTRIC ILLUMINATING CO.  
P.O. BOX 5000  
CLEVELAND, OHIO 44113  
216-662-9800

CLEVELAND PUBLIC POWER  
1201 LAKESIDE AVENUE  
CLEVELAND, OHIO 44114  
216-664-3922

OHIO BELL TELEPHONE  
1020 BOLIVAR ROAD  
CLEVELAND, OHIO 44115  
216-822-6291

EAST OHIO GAS COMPANY  
P.O. BOX 5759  
CLEVELAND, OHIO 44101  
216-432-6803

CITY OF CLEVELAND  
DIVISION OF WATER  
1201 LAKESIDE AVENUE  
CLEVELAND, OHIO 44114  
216-217-4263

CITY OF CLEVELAND  
DIVISION OF SEWERS  
1825 LAKESIDE AVE.  
CLEVELAND, OHIO 44114  
216-664-2513

GREATER CLEVELAND REGIONAL  
TRANSIT AUTHORITY  
615 SUPERIOR AVE., N.W.  
CLEVELAND, OHIO 44113  
216-566-5140

## ROADWAY

### LOCATION OF GUARDRAIL RUNS

THE LOCATIONS OF THE GUARDRAIL RUNS, AS SHOWN IN THESE PLANS, ARE SUBJECT TO ADJUSTMENT PRIOR TO FINAL ACCEPTANCE, THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

### ITEM 608 - 4" CONCRETE WALK, AS PER PLAN

ALL CONCRETE WALK SHALL HAVE TRANSVERSE EXPANSION JOINTS CONSISTING OF 1/2" WIDE, 705.03 PREFORMED FILLER. EXPANSION JOINTS SHALL BE CONSTRUCTED AT INTERVALS OF NOT MORE THAN 25 FEET UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THEY SHALL BE PLACED AT THE GROOVED DIVISION LINES AND SHALL BE TRULY NORMAL TO THE GRADE. THE COST OF THE MATERIAL AND LABOR ASSOCIATED WITH THIS WORK IS INCLUDED IN CONTRACT UNIT BID PRICE FOR ITEM 608, 4" CONCRETE WALK AS PER PLAN

### ROUNDING OF CORNERS SHOWN IN CROSS SECTIONS

THE ROUND CORNERS SHOWN ON THE TYPICAL SECTIONS SHALL APPLY TO ALL CROSS SECTIONS EVEN THOUGH OTHERWISE SHOWN ON THE PLANS.

### ITEM 202, CONCRETE BARRIER REMOVED FOR STORAGE

THE CONCRETE BARRIER SHALL BE STORED ON THE SITE IN AN APPROVED LOCATION TO BE PICKED UP BY THE CITY OF CLEVELAND.

## DRAINAGE

### REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT, AND AGAIN BEFORE FINAL ACCEPTANCE BY THE REPRESENTATIVES OF THE STATE, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF THE EXISTING SEWERS WITHIN THE WORK LIMITS WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS FOR THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL CONDUITS, INLETS, CATCH BASINS AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARED TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE PERTINENT 603 CONDUIT ITEMS OF THE CONTRACTOR.

## PAVEMENT

### ITEM 407, TACK COAT

THE APPLICATION OF ITEM 407-TACK COAT SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INCLUDE AN APPLICATION RATE OF 0.075 GAL./SQ. YD. FOR ESTIMATING PURPOSES.

## MAINTENANCE OF TRAFFIC

### MAINTENANCE OF TRAFFIC

TWO WAY TRAFFIC WILL BE MAINTAINED AT ALL TIMES ON STONES LEVEES ROAD DURING THE CONSTRUCTION OF THE TEMPORARY ROAD AND DRIVE. ACCESS TO STONES LEVEE ROAD AND THE EXISTING DRIVE TO THE EAST OF THE TEMPORARY ROAD WILL BE MAINTAINED AT ALL TIMES BY USE OF TEMPORARY ROADS CONSTRUCTED OF TRAFFIC COMPACTED SURFACE AS DIRECTED BY THE ENGINEER. THE LIMITS AND DURATION OF TEMPORARY DRIVES SHALL BE HELD TO A MINIMUM AND IN ALL CASES SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BE INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC:

ITEM 410- TRAFFIC COMPACTED SURFACE,  
TYPE A OR B- 50 CU. YD.

SEPARATE PAYMENT SHALL BE MADE FOR 410 AS NOTED ABOVE.

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR DUST CONTROL PURPOSES:

ITEM 616- WATER- 50 M-GAL.  
ITEM 616- CALCIUM CHLORIDE- 10 TON

ALL OTHER WORK REQUIRED FOR TRAFFIC MAINTENANCE SHALL BE INCLUDED WITH PAYMENT FOR ITEM 614, MAINTAINING TRAFFIC.

THE CONTRACTOR SHALL PROVIDE ALL OTHER NECESSARY SAFEGUARDS UNDER ITEM 614, MAINTAINING TRAFFIC, TO AVOID DAMAGE TO VEHICLES AND/ OR PERSONS USING THE ROADWAY DURING CONSTRUCTION.

FOR ADDITIONAL MAINTENANCE OF TRAFFIC NOTES, SEE SHEET 6/71

# STATE OF OHIO DEPARTMENT OF TRANSPORTATION

## EMERGENCY REPAIRS TO THE EAGLE AVENUE VIADUCT OVER STONES LEVEE ROAD CITY OF CLEVELAND BRIDGE NO. 1:009m CUYAHOGA COUNTY

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	



CUYAHOGA COUNTY  
EAGLE AVENUE BRIDGE

**DESIGN DESIGNATION**

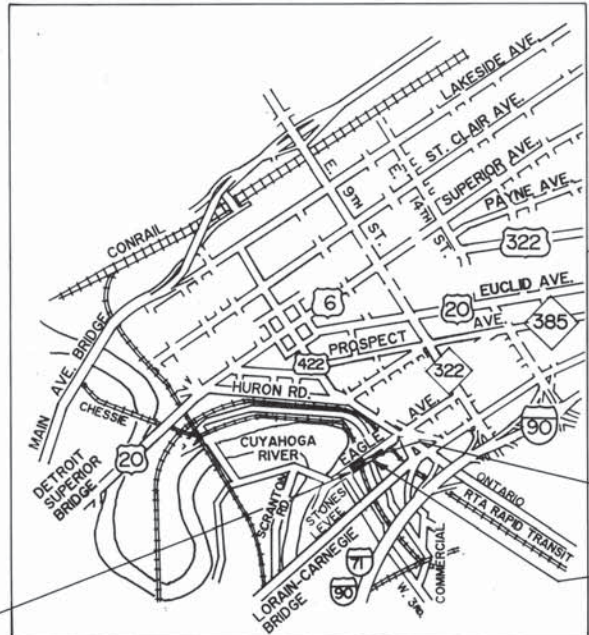
CURRENT A.D.T. 6950 (1990)  
 DESIGN YEAR A.D.T. 7340 (2090)  
 D.H.V. 695  
 D. (DIRECTIONAL DISTRIBUTION) 55 %  
 T. (PERCENT B. & C. TRUCKS) 10 %  
 V. (DESIGN SPEED) 35 MPH  
 V. (LEGAL SPEED) 25 M.P.H.  
 FUNCTIONAL CLASSIFICATION (URBAN ARTERIAL)

**CONVENTIONAL SIGNS**

WATER LINE (EXISTING) ---W--- (PROPOSED) ---W---  
 CORPORATION LINE ---C--- (PROPOSED) ---C---  
 FENCE LINE (EXISTING) ---F--- (PROPOSED) ---F---  
 CENTER LINE ---CL---  
 UTILITY POLES TELEPHONE Ø POWER Ø LIGHT Ø  
 GAS LINE ---G---  
 TREES (TO BE REMOVED) (X)  
 RIGHT OF WAY ---R/W---  
 CATCH BASIN (EXISTING) (C) (PROPOSED) (C)  
 PROPERTY LINE ---P--- (IN EXISTING FENCE) ---P---  
 GUARD RAIL (EXISTING) ---G.R.--- (PROPOSED) ---G.R.---  
 WORK LIMITS ---W.L.---

**UNDERGROUND UTILITIES**

2 WORKING DAYS  
**BEFORE YOU DIG**  
 CALL: 800-362-2764  
 (TOLL FREE)  
 OHIO UTILITIES  
 PROTECTION SERVICE  
 NON-MEMBER MUST  
 BE CALLED DIRECTLY



BEGIN WORK  
STA. 9+70.00

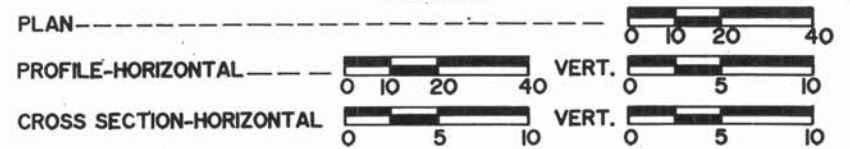
END WORK  
STA. 10+00.00

EAGLE AVE. VIADUCT

LOCATION MAP  
SCALE IN FEET

PORTION TO BE IMPROVED  
STATE AND FEDERAL ROUTES  
OTHER ROADS

**SCALES**



**INDEX OF SHEETS**

- TITLE SHEET \_\_\_\_\_ 1
- ESTIMATED QUANTITIES AND GENERAL NOTES \_\_\_\_\_ 2
- REPAIR PLAN, ELEVATION & SECTIONS AT PIER BENT PF-1 \_\_\_\_\_ 3

**LINE DATA**

BEGIN WORK= STA. 9+70.00  
 END WORK= STA. 10+00.00  
 WORK LIMITS= 30 L.F. OR 0.006 MILE

**1989 SPECIFICATIONS**

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

APPROVED \_\_\_\_\_  
 DATE 5/14/90 DIRECTOR OF PUBLIC SERVICE, CITY OF CLEVELAND

APPROVED \_\_\_\_\_  
 DATE 5-14-90 COMMISSIONER OF ENGINEERING AND CONSTRUCTION, CITY OF CLEVELAND

APPROVED \_\_\_\_\_  
 DATE 5-14-90 CHIEF BRIDGE ENGINEER, CITY OF CLEVELAND

**SUPPLEMENTAL SPECIFICATIONS**

853	6-26-78
956	6-26-78

PLANS PREPARED BY  
THE OSBORN ENGINEERING COMPANY

**SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS**

DWG. No	DATE	DWG. No	DATE	DWG. No	DATE	DWG. No	DATE
		MC-9A	1-11-85				

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR \_\_\_\_\_ DATE \_\_\_\_\_

Project: \_\_\_\_\_  
 Date of Letting \_\_\_\_\_ 19\_\_\_\_, Contract No. \_\_\_\_\_

SEAL

ESTIMATED QUANTITIES

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
202		LUMP	LUMP	PORTIONS OF STRUCTURES REMOVED
509		557	LBS.	EPOXY COATED REINFORCING STEEL, GRADE 60
510		46	EA.	DOWEL HOLES, AS PER PLAN
511		6	CU. YDS.	CLASS "S" CONCRETE, SUPERSTRUCTURE, AS PER PLAN
513		5765	LBS.	STRUCTURAL STEEL, A36 (AISC CERTIFICATION NOT REQUIRED)
SPECIAL		200	SQ. YDS.	PLYWOOD PROTECTION
SPECIAL		LUMP	LUMP	FALSEWORK AND TEMPORARY SHORING
SPECIAL		800	SQ. FT.	CHIPPING CONCRETE SURFACES
SPECIAL		LUMP	LUMP	CITY LIABILITY INSURANCE

1. DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE FOLLOWING SPECIFICATIONS ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS: "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES", 1989 EDITION AND THE OHIO SUPPLEMENT TO THESE SPECIFICATIONS.

DESIGN DATA

DESIGN LOADING-HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING

CONCRETE CLASS S - UNIT STRESS 1500 PSI FOR SUPERSTRUCTURE.

CONCRETE CLASS C - UNIT STRESS 1333 PSI FOR SUBSTRUCTURE.

REINFORCING STEEL- ASTM A615, A616, A617 - GRADE 60 - UNIT STRESS 24,000 PSI.

STRUCTURAL STEEL ASTM A36 - UNIT STRESS 20,000 PSI.

2. EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF EXISTING STRUCTURE AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK, BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO O.D.O.T. CMS SECTIONS 102.05, 105.02 AND 513.02 WITH REGARDS TO HIS RESPONSIBILITY TO VERIFY EXISTING CONDITIONS.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD. EXISTING BRIDGE PLANS AND SHOP DRAWING CAN BE OBTAINED FROM THE CITY OF CLEVELAND, DIVISION OF ENGINEERING, ROOM 518, CITY HALL, MR. CLYDE RIFFLE, CHIEF ENGINEER, 216-664-2379.

3. SCOPE OF WORK

THE EMERGENCY REPAIR WORK WITHIN THE LIMITS OF THIS PROJECT INCLUDES THE FOLLOWING ITEMS AS SHOWN ON THE PLANS, STIPULATED IN THE NOTES OR AS DIRECTED BY THE ENGINEER. THE MAJOR ITEMS OF WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:

- INSTALL SHORING AT THE 6 STRINGER EAST OF PIER BENT PF-1 AS SHOWN ON THE PLANS.
- REMOVE THE EXISTING DECK BETWEEN THE SECOND AND FOURTH STRINGER FROM THE SOUTH AS SHOWN ON THE PLANS.
- CHIP UNSOUND CONCRETE FROM THE FACE OF THE PIER BENT, AND BEHIND THE NEW SUPPORTS AS SHOWN ON THE PLANS AND AT BOTTOM OF DECK AREAS DESIGNATED BY THE ENGINEER.
- INSTALL NEW SUPPORTS UNDER FIVE STRINGERS INCLUDING NEW SHIM PLATES AND POUR CONCRETE BEHIND THE SUPPORTS AS SHOWN ON THE PLANS.
- REMOVE AND REPLACE THE BUCKLED END OF THE THIRD STRINGER FROM THE SOUTH AS SHOWN ON THE PLANS INCLUDING REPLACING THE SEAT STIFFENER PLATE AND INSTALLING NEW SHIM PLATES.
- INSTALL NEW CONCRETE DECK AS SHOWN ON THE PLANS.
- INSTALL PLYWOOD PROTECTION BETWEEN STRINGERS IN AREAS BETWEEN WEST 3RD STREET AND CANAL ROAD WHERE CONCRETE IS FALLING FROM THE BOTTOM OF THE DECK IN AREAS DESIGNATED BY THE ENGINEER.
- CLEAN UP THE AREA AND HAVE ENGINEER INSPECT AND ACCEPT ALL REPAIR PRIOR TO REMOVING SHORING.

4. ITEM SPECIAL - FALSEWORK AND TEMPORARY SHORING

ITEM SPECIAL, FALSEWORK AND TEMPORARY SHORING, SHALL COVER PAYMENT FOR ALL MATERIALS, LABOR, AND EQUIPMENT REQUIRED TO INSTALL TEMPORARY SHORING UNDER THE EXISTING STRINGERS CAPABLE OF SUPPORTING A DEAD LOAD OF 35,000 POUNDS AT EACH STRINGER DESIGNATED ON THE PLANS TO BE SHORED AND THE CONSTRUCTION AND REMOVAL ALL TEMPORARY CONSTRUCTIONS REQUIRED TO COMPLETE THIS EMERGENCY REPAIR OF THIS STRUCTURE EXCLUSIVE OF FORMWORK AND ITEMS WHICH ARE SPECIFICALLY INCLUDED ELSEWHERE FOR PAYMENT. THIS ITEM SHALL INCLUDE PAYMENT OF EQUIPMENT, PLATFORMS OR STAGING AS NEEDED TO PERMIT ACCESS FOR INSPECTION, FOR TEMPORARY PLATFORM OR OTHER MEANS PROVIDED FOR CATCHING BROKEN CONCRETE AND OTHER REMOVED MATERIALS AND FOR ALL TEMPORARY SUPPORTS AND BRACING UNDER EXISTING STRINGER REQUIRED TO MAINTAIN A COMPLETELY STABLE STRUCTURE AT ALL TIMES.

5. REMOVAL OF PORTIONS OF EXISTING STRUCTURE

REMOVAL OF PORTIONS OF EXISTING STRUCTURE AS SHOWN ON THE CONTRACT DRAWINGS OR AS DIRECTED BY THE ENGINEER SHALL CONFORM IN ALL RESPECTS TO ITEM 202 OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, CONSTRUCTION AND MATERIALS SPECIFICATIONS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND PROPER DISPOSAL OF ALL REMOVED ITEMS. THE WORK FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

- REMOVAL OF PORTIONS OF EXISTING STRINGERS AS SHOWN ON THE PLANS AFTER THEY HAVE BEEN PROPERLY SHORED.
- REMOVAL OF PORTIONS OF THE DECK AS SHOWN ON THE PLANS.
- REMOVAL OF SEAT PLATE AND SHIMS UNDER BEAM BEING PARTIALLY REPLACED AS SHOWN ON THE PLANS
- CONTRACTOR SHALL NOT PERMIT CONCRETE TO DROP. MEANS SHALL BE PROVIDED FOR CATCHING BROKEN CONCRETE FROM FALLING ONTO THE PAVEMENT OR RAILING BELOW. CONTRACTOR SHALL SUBMIT DETAILS OF HIS MEANS OF PROTECTION TO THE ENGINEER FOR APPROVAL.

ALL MATERIAL TO BE REMOVED AND NOT REUSED IN THE NEW CONSTRUCTION SHALL UNLESS OTHERWISE SPECIFIED BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LEGAL MANNER. UNDER NO CIRCUMSTANCES SHALL SAID MATERIAL BE PERMITTED TO REMAIN ON THE PREMISES, RIGHT OF WAY, OR ADJACENT STREETS PENDING DISPOSAL OF SAME OR FOR ANY OTHER PURPOSE UNLESS OTHERWISE PERMITTED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING ACTUAL REMOVAL QUANTITIES FOR THE DEVELOPMENT OF HIS BID PRICE FOR ITEM 202, PORTIONS OF STRUCTURES REMOVED.

6. ITEM SPECIAL - CHIPPING CONCRETE STRUCTURES

DESCRIPTION: THE CONTRACTOR SHALL PROVIDE LABOR, MATERIALS AND EQUIPMENT NECESSARY TO CHIP AND REMOVE ALL LOOSE CONCRETE FROM EXISTING CONCRETE SURFACES AS DIRECTED BY THE ENGINEER AT LOCATIONS INDICATED ON THE PLANS OR DESIGNATED BY THE ENGINEER. THE CONTRACTOR WILL PROVIDE SAFE ACCESS TO THE ENGINEER AS REQUESTED TO ALL WORK AREAS AT ANY TIMES DURING THE COURSE OF PROJECT. THE ENGINEER WILL SOUND AND MARK AREA TO BE CHIPPED PRIOR TO THE START OF THE CHIPPING OPERATION. THIS ITEM WILL CONSIST OF THE REMOVAL OF LOOSE AND DISINTEGRATED CONCRETE ON THE FACE AND BOTTOM OF PIER BENT PF-1 AS

FED. RD. DIVISION	STATE	FEDERAL AID PROJECT
5	OHIO	

CUYAHOGA COUNTY  
EAGLE AVENUE

INDICATED ON THE PLANS OR AS DESIGNATED BY THE ENGINEER AND SECTIONS OF THE BOTTOM OF THE DECK BETWEEN WEST 3RD STREET AND CANAL ROAD IN AREAS DESIGNATED BY THE ENGINEER. ALL LOOSE CONCRETE SHALL BE REMOVED USING PNEUMATIC OR HAND TOOLS IRRESPECTIVE OF THE DEPTH OR THICKNESS OF CONCRETE REMOVED. THE ENGINEER WILL THEN INSPECT AND SOUND THE CHIPPED AREA TO DETERMINE IF ADDITIONAL CONCRETE IS TO BE REMOVED. THE CHIPPING OPERATION WILL NO BEGIN UNTIL THE EXISTING STRINGERS ARE PROPERLY SHORED PER ITEM SPECIAL - FALSEWORK AND TEMPORARY SHORING.

METHOD OF PAYMENT: THE QUANTITY SHALL BE THE MEASURED ACTUAL SQUARE FOOT QUANTITY OF CONCRETE SURFACE CHIPPED IRRESPECTIVE OF THE DEPTH OR THICKNESS OF CONCRETE REMOVED AS DESIGNATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE ENGINEER SHALL MEASURE SURFACES CHIPPED BY THE CONTRACTOR AND PAYMENT WILL BE BASED ON HIS MEASUREMENTS.

BASIS OF PAYMENT: PAYMENT:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ. FT.	CHIPPING CONCRETE SURFACES

7. DOWEL HOLES AS PER PLAN

DRILLING OF HOLES INTO CONCRETE AND THE FURNISHING AND PLACING OF GROUT INTO THE HOLES SHALL BE IN ACCORDANCE WITH O.D.O.T. SUPPLEMENTAL SPECIFICATION 853 AND 956 EXCEPT FOR BASIS OF PAYMENT. DRILLING DOWEL HOLES, FURNISHING AND PLACING NONSHRINKING EPOXY MORTAR AND SETTING OF STEEL DOWELS WILL BE MEASURED AS A UNIT AND PAID FOR UNDER ITEM 510- DOWEL HOLES AS PER PLAN. THIS PRICE WILL INCLUDE PAYMENT FOR ALL MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE PLANS.

8. ITEM SPECIAL - PLYWOOD PROTECTION

DESCRIPTION: THE CONTRACTOR SHALL PROVIDE LABOR, MATERIALS AND EQUIPMENT NECESSARY INSTALL 3/4" PLYWOOD PROTECTION BETWEEN EXISTING STINGERS IN AREAS WHERE LOOSE CONCRETE IS FALLING FROM THE BOTTOM OF THE DECK IN AREAS BETWEEN WEST 3RD STREET AND CANAL ROAD AS DIRECTED BY THE ENGINEER.

METHOD OF PAYMENT: THE QUANTITY SHALL BE THE MEASURED ACTUAL SQUARE YARD QUANTITY OF PLYWOOD PROTECTION INSTALLED AS DIRECTED BY THE ENGINEER. THE ENGINEER SHALL MEASURE THE QUANTITY OF PLYWOOD PROTECTION INSTALLED BY THE CONTRACTOR AND PAYMENT WILL BE BASED ON HIS MEASUREMENTS.

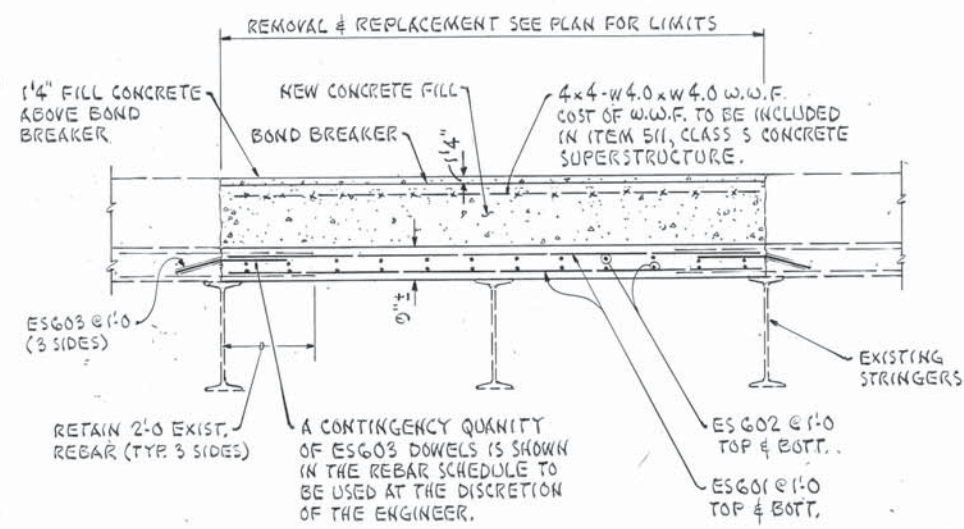
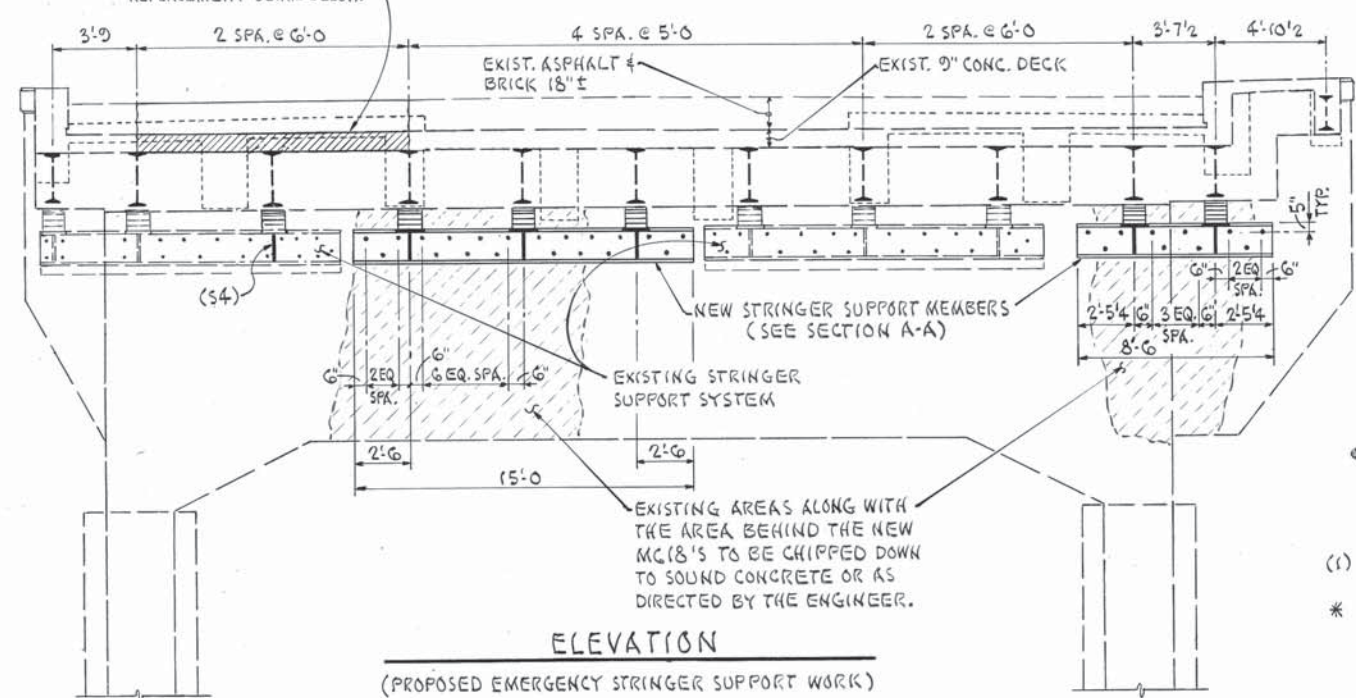
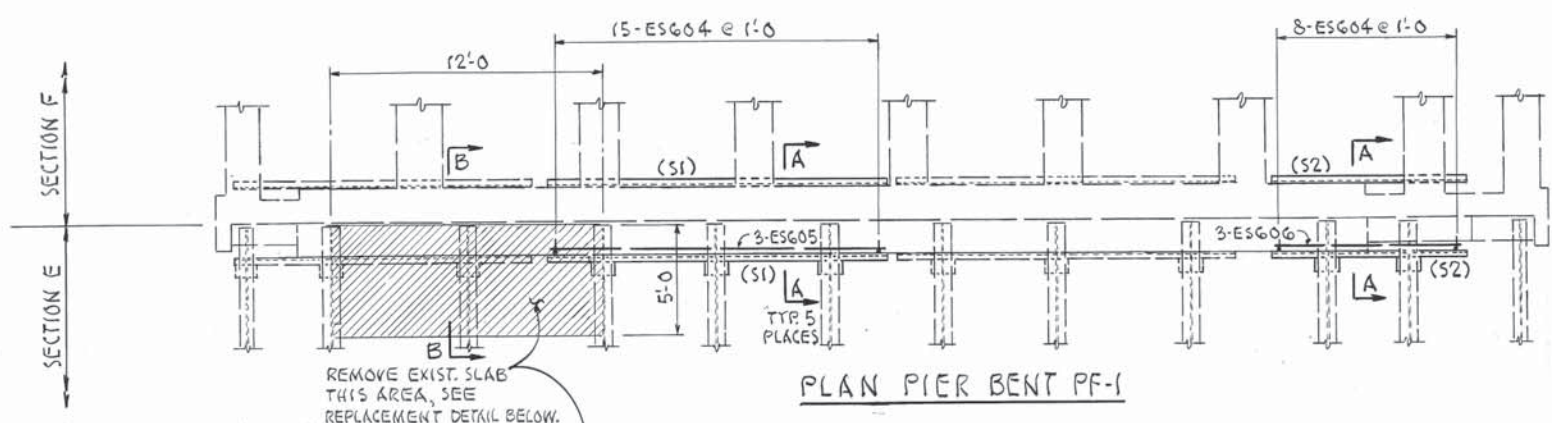
BASIS OF PAYMENT: PAYMENT:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ. YD.	PLYWOOD PROTECTION

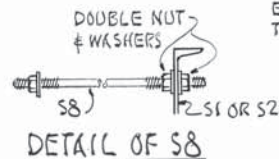
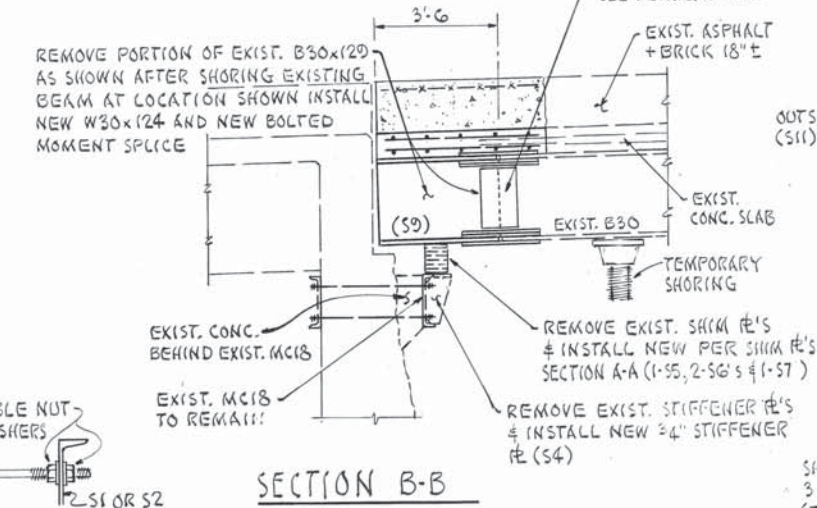
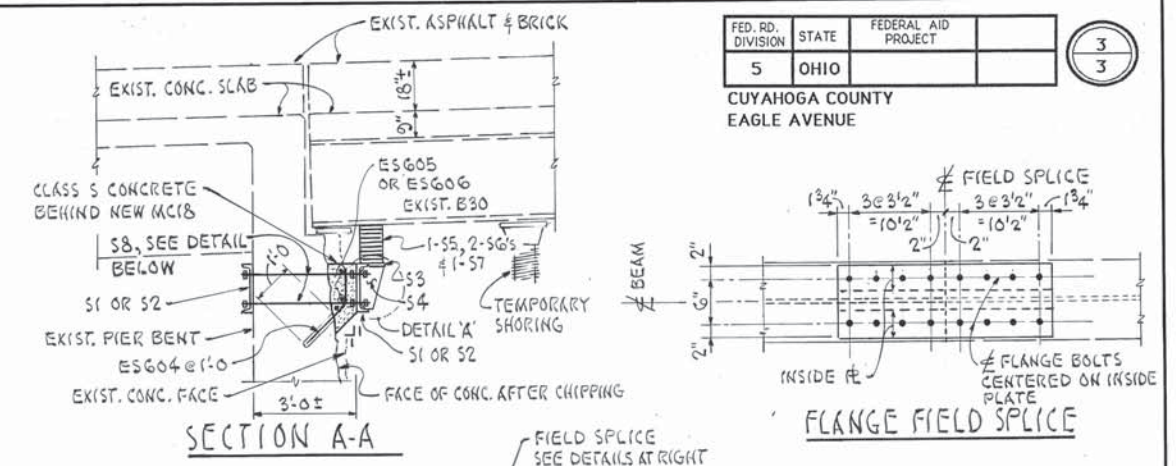
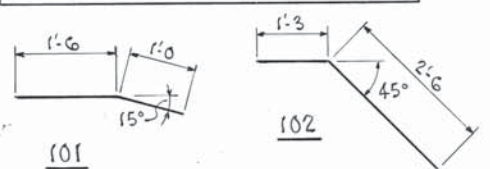
THE OSBORN ENGINEERING COMPANY  
CONSULTING ENGINEERS, CLEVELAND, OHIO 44114  
CITY OF CLEVELAND  
DIVISION OF ENGINEERING AND CONSTRUCTION  
CUYAHOGA COUNTY ENGINEER

ESTIMATED QUANTITIES AND GENERAL NOTES  
EMERGENCY REPAIRS TO THE EAGLE AVENUE  
VIADUCT OVER STONES LEVEE ROAD  
CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
CLEVELAND CUYAHOGA COUNTY OHIO

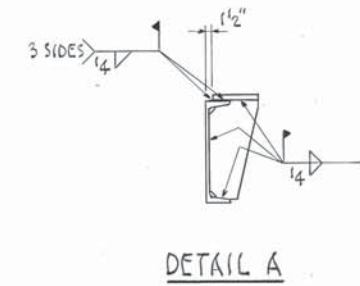
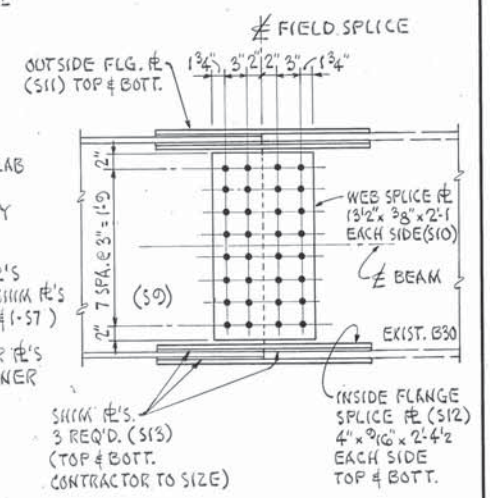
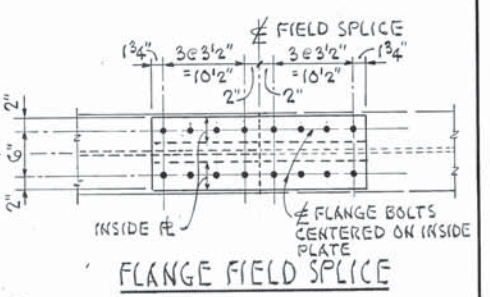
DESIGNED	DRAWN	CHECKED	REVIEWED DATE	REVISED
D.S.	L.B.	J.A.	J.S. 4/90	



MARK	NO.	LENGTH	TYPE	WEIGHT
ESG01	10	11'-6"	STR.	173
ESG02	24	4'-6"	STR.	162
ESG03	23	2'-6"	101	86
ESG04	23	3'-0"	102	35
ESG05	3	14'-6"	STR.	65
ESG06	3	8'-0"	STR.	36
TOTAL				557



(1) ROD WITH 6" OF THREADING ON EACH END AND 3 HEX HEAD NUTS AND WASHER AS SHOWN ABOVE.  
 \* FINAL SHIM RE MAY VARY IN DEPTH FROM 2" TO 14" TO MEET ACTUAL FIELD CONDITIONS. ESTIMATED QUANTITY IS BASED ON 2" FOR THE TOP PLATE AT BEARING SEATS AND AT THE FIELD SPLICE AT THE W30. PAYMENT SHALL BE BASED ON ACTUAL THICKNESS PROVIDED.



PLYWOOD PROTECTION SECTION  
 \* CONTRACTOR TO INSTALL 3/4" PLYWOOD PROTECTION IN AREAS BETWEEN W. 3RD ST. AND CANAL RD. AS DIRECTED BY THE ENGINEER.

MARK	NO. REQ'D.	DISCRIPTION	LENGTH FT. IN.	WEIGHT LBS.	REMARKS
S1	2	MC18x58	15 0	1740	
S2	2	MC18x58	8 6	986	
S3	5	RE 1"x8"	1 0	136	
S4	6	RE 3/4"x7 1/2"	1 5	162	CUT PER DETAIL
S5	6	RE 3"x8"	1 0	492	BOTT SHIM RE
S6	12	RE 3"x6"	1 0	734	MIDDLE SHIM RE
S7	6	RE 2"x6"	1 0	245	TOP SHIM RE
S8	31	ROD 1" DIA.	4 0	360	(1)
S9	1	W30x124	3 6	434	
S10	2	RE 3/8"x13 1/2"	2 1	71	WEB RE
S11	2	RE 7/8"x10"	2 4 1/2	70	OUTSIDE FLG. RE
S12	4	RE 9/16"x4"	2 4 1/2	72	INSIDE FLG. RE
S13	6	RE 3/4"x4"	2 4 1/2	143	SHIM RE'S
H.S. A.S.T.M A325 HEAVY HEX BOLT W/HEAVY HEX NUT & FLAT WASHER					
a	32	1" DIA.	0 4 1/2	53	WEB BOLTS
b	32	1" DIA.	0 6 1/2	67	FLG. BOLTS
TOTAL STRUCTURAL STL. CERTIFICATION NOT REQ'D. = 5765 LBS					

# TEMPORARY SIGN SUPPORT REQUIREMENTS

## A. PLACEMENT OF SIGNS WHICH WILL REMAIN MORE THAN ONE DAY:

- 1) LATERAL PLACEMENT TO NEAREST EDGE OF SIGNS SHALL BE AS FOLLOWS:
  - a) ON THE RIGHT SIDE OF THE ROAD FOR APPROACHING TRAFFIC (EXCEPT FOR DUAL MOUNTED SIGNS AND SIGNS DESIGNATED IN THE PLANS FOR LEFT SIDE MOUNTING).
  - b) CURBED ROADWAY - PREFERABLY 2 FT. (MINIMUM 1 FT.) BEHIND FACE OF CURB.
  - c) UNCURBED ROADWAY-12 FT. FROM EDGE OF TRAFFIC LANE OR 6 FT. FROM EDGE OF PAVED OR USEABLE SHOULDER, WHICHEVER IS GREATER.
  - d) BEHIND GUARDRAIL OR BARRIER - PREFERABLY 2 FT. BEHIND FACE OF GUARDRAIL (MINIMUM 1 FT.) FOR SIGNS ON CLASS A SUPPORTS: 4 FT. FOR CLASS B OR C SUPPORTS 1 FT. BEHIND FACE OF CONCRETE BARRIER UNLESS BARRIER TOP MOUNTING IS REQUIRED BY THE PLAN.
- 2) VERTICAL CLEARANCE OF SIGNS, MEASURED ABOVE ROADWAY ELEVATION; SHALL BE AS FOLLOWS:
  - a) RURAL - 5 FT. WHEN PARKED CARS, CONSTRUCTION EQUIPMENT, ETC WILL NOT OBSCURE SIGN VISIBILITY.
  - b) RURAL AREAS WITH PARKED CARS OR CONSTRUCTION EQUIPMENT - 7 FT.
  - c) URBAN - 7 FT.
  - d) CARE SHALL BE TAKEN TO ASSURE THAT SIGNS WILL NOT BE OBSCURED BY CONSTRUCTION EQUIPMENT, TREES, WEEDS OR OTHER OBSTACLES. BRUSH, WEEDS OR GRASS WITHIN THE RIGHT OF WAY SHALL BE TRIMMED AS NECESSARY. SIGNS SHALL NORMALLY BE VISIBLE TO TRAFFIC 400 TO 600 FT. IN ADVANCE OF THE SIGN.
- 3) SUPPORTS FOR SIGNS WHICH WILL REMAIN IN PLACE MORE THAN ONE DAY SHALL BE FIXED RATHER THAN PORTABLE EXCEPT IN SITUATIONS WHERE THE SIGN MUST REST ON PERMANENT PAVEMENT OR OTHER SURFACE WHICH WOULD BE DAMAGED BY INSERTION OF POST TYPE SUPPORTS.

## B. PLACEMENT OF SIGNS WHICH WILL REMAIN FOR ONE DAY OR LESS:

- 1) SAME AS A-1 ABOVE EXCEPT THAT SIGNS MAY BE PLACED ON THE ROADWAY ONLY IF THEY DO NOT INTRUDE INTO A TRAFFIC LANE IN USE.
- 2) MINIMUM OF 1 FT. ABOVE ROADWAY

## C. CLASSES OF SUPPORTS:

ALL TEMPORARY SIGN SUPPORTS SHALL BE OF THE FOLLOWING TYPES:

### 1) CLASS A:

SUPPORTS SHALL BE USED FOR EXPOSED LOCATIONS ON HIGHWAYS WHERE TRAFFIC APPROACH SPEEDS OF 40 MPH AND HIGHER ARE ENCOUNTERED. THEY ARE ALSO SUITABLE FOR USE IN ALL OTHER LOCATIONS.

### 2) CLASS B:

SUPPORTS SHALL BE USED FOR EXPOSED LOCATIONS ON HIGHWAYS WHERE TRAFFIC APPROACH SPEEDS OF LESS THAN 40 MPH ARE ENCOUNTERED. THEY ARE ALSO SUITABLE FOR USE IN ALL APPLICATIONS DEFINED FOR CLASS C SUPPORTS.

### 3) CLASS C:

SUPPORTS MAY ONLY BE USED WHERE FULLY PROTECTED BY GUARDRAIL, CONCRETE BARRIER AND IN LOCATIONS POSITIVELY PROTECTED FROM TRAFFIC SUCH AS ON RETAINING WALLS OR WHERE TRAFFIC APPROACH SPEEDS ARE LESS THAN 25 MPH.

## D. TRAFFIC APPROACH SPEEDS:

TRAFFIC APPROACH SPEEDS SHALL BE THE LOCALLY POSTED SPEED (NOT ADVISORY SPEED SIGNS) OR THE MEASURED ACTUAL (85TH PERCENTILE) SPEED (IF AVAILABLE) OF APPROACHING TRAFFIC, WHICHEVER IS HIGHER, ADJACENT TO THE SIGN LOCATION.

### TABLE

APPROACH SPEED (MPH)	COMPLETELY PROTECTED BY GUARDRAIL OR BARRIER	PARTLY PROTECTED BY GUARDRAIL OR BARRIER *	GREATER THAN 30' FROM EDGE OF PAVEMENT	WITHIN 30' FROM EDGE OF PAVEMENT
40 AND HIGHER	A, B OR C	A OR B	A OR B **	A ONLY
26 TO 39	A, B OR C	A OR B	A OR B	A OR B
0 TO 25	A, B OR C	A, B OR C	A, B OR C	A, B OR C

\* IF SUPPORTS ARE BEHIND GUARDRAIL BUT NOT FULLY 5.5' BEHIND FACE OF RAIL OR IF SIGN IS NOT 1' BEHIND FACE OF CONCRETE BARRIER.

\*\* 30' CRITERION IS BASED UPON STRAIGHT ROADWAY AND A SLOPE OF 6:1 OR FLATTER. SUPPORTS ON THE OUTSIDE OF CURVES OR LOCATED DOWN A SLOPE (STEEPER THAN 6:1) WILL REQUIRE USE OF CLASS A SUPPORTS.

## E. BALLASTING

BALLASTING OF PORTABLE SUPPORTS SHALL BE WITH SANDBAGS PLACED WITHIN 1 FT. OF THE GROUND. IN NO CASE SHALL HARD OBJECTS BE USED FOR BALLAST.

## F. STRENGTH OF SIGN SUPPORTS

THE CONTRACTOR SHALL CHOOSE SIGN SUPPORTS OF ADEQUATE STRENGTH AND WITH ADEQUATE FOUNDATIONS AND ANCHORAGE TO SUPPORT THE SIGN SIZES ERECTED. PROPRIETARY DEVICES SHALL NOT BE LOADED BEYOND THE LIMITS RECOMMENDED BY THE MANUFACTURER. SLIP BASE TYPE BREAKAWAY BEAM CONNECTIONS SHALL BE AT LEAST PARTIALLY EMBEDDED IN CONCRETE CONSISTING OF A 1 FT. DEEP BY 12" DIAMETER COLLAR. SIGN SUPPORTS WHICH FAIL UNDER TYPICAL WIND LOAD CONDITIONS SHALL BE IMMEDIATELY MODIFIED OR REPLACED WITH A SUPPORT OF ADEQUATE STRENGTH.

## G. PROHIBITED SUPPORTS

THE FOLLOWING SUPPORT TYPES SHALL NOT BE PERMITTED ON PROJECTS:

- 1) SUPPORTS FABRICATED FROM AUTOMOTIVE AXLE DIFFERENTIAL ASSEMBLIES AND SIMILARLY HEAVY ASSEMBLIES WHICH CANNOT BE CONSIDERED BREAKAWAY TYPE.
- 2) SUPPORTS CONSISTING OF VERTICAL POSTS WITH ANGLED BRACES MADE FROM DRIVEPOST OR OTHER RIGID ELEMENTS.

CALC BY \_\_\_\_\_  
DATE \_\_\_\_\_  
CHKD BY \_\_\_\_\_  
DATE \_\_\_\_\_

CUYAHOGA COUNTY  
EAGLE AVE. BRIDGE PHASE II

OHIO  
FHWA REGION 5

4A  
71

## CLASS A SUPPORTS

### FIXED SUPPORTS

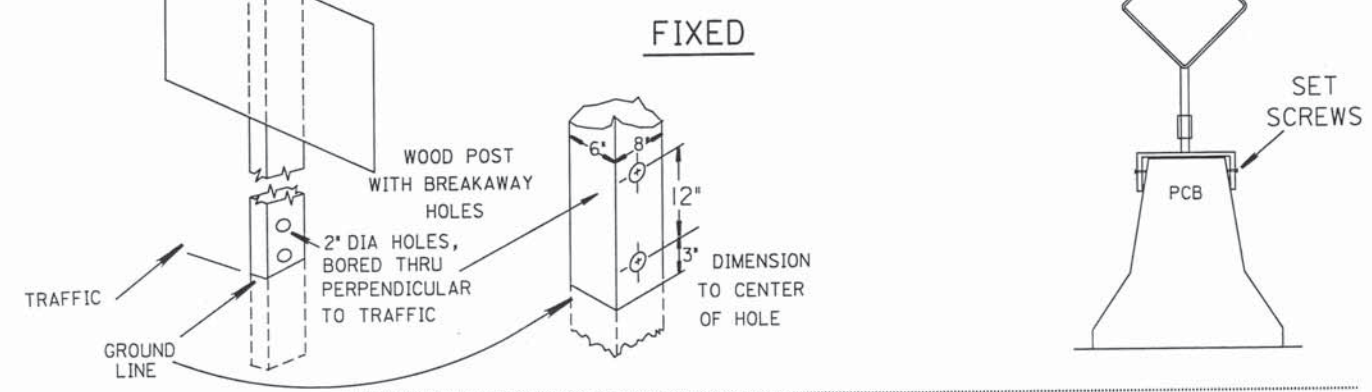
- 1) ALL #2, #3, AND #4 POST WHEN INSTALLED SINGLY OR IN PAIRS ACCORDING TO THE DETAILS OF TC-41.20. THE NUMBER OF SUPPORTS SHALL BE AS SHOWN ON TC-52.10 AND TC-52.20.
- 2) THE FOLLOWING POST TYPES, WHEN INSTALLED SINGLY, BY IMBEDMENT OR DRIVING INTO EARTH TO A DEPTH OF ABOUT 42 INCHES:
  - a) - UP TO 4" X 4" WOOD
  - b) - UP TO 2 INCH DIAMETER SCHEDULE 40 STEEL PIPE
  - c) - UP TO 3 INCH DIAMETER SCHEDULE 40 ALUMINUM PIPE
  - d) - UP TO 2 1/4 INCH SQUARE, 12 GAUGE WALL, PUNCHED STEEL POST
  - e) - UP TO 6" X 8" WOOD WITH BREAKAWAY HOLES SHOWN BELOW
- 3) THE FOLLOWING POST TYPES WHEN INSTALLED IN PAIRS WITH LESS THAN 7 FT. BETWEEN POSTS, BY IMBEDMENT OR DRIVING INTO EARTH TO A DEPTH OF ABOUT 42 INCHES:
  - a) - UP TO 4" X 4" WOOD
  - b) - UP TO 2 INCH DIAMETER SCHEDULE 40 STEEL PIPE
  - c) - UP TO 3 INCH DIAMETER SCHEDULE 40 ALUMINUM PIPE
  - d) - UP TO 2 INCH SQUARE, 14 GAUGE WALL, PUNCHED STEEL POST
- 4) FIXED TYPE III BARRICADES:
- 5) ALL BREAKAWAY CONNECTION BEAM SUPPORTS, WHEN INSTALLED ACCORDING TO THE PROPER DETAILS SHOWN ON TC-41.10 WITH A MINIMUM CLEAR DISTANCE BETWEEN SUPPORTS OF 7 FT. FOR SUPPORTS LARGER THAN W6 X 9.
- 6) ANY BREAKAWAY POST OR POST AND CONNECTION WHICH HAS BEEN CRASH TESTED AND APPROVED BY THE FHWA AS SATISFYING THE BREAKAWAY CRITERIA DESCRIBED IN 630.06.

( CONTINUED ON SHT. 4B )

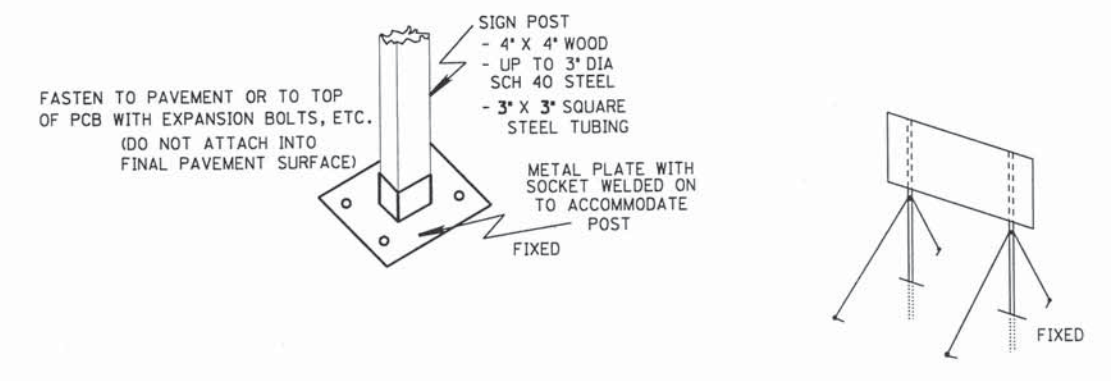
ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE C & M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF THE OMTCD. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

REVISED BY:	DATE:
210510	DATE
TEMPORARY SIGN SUPPORT	
PLAN INSERT SHEET	
	05/07/90

## CLASS A SUPPORTS

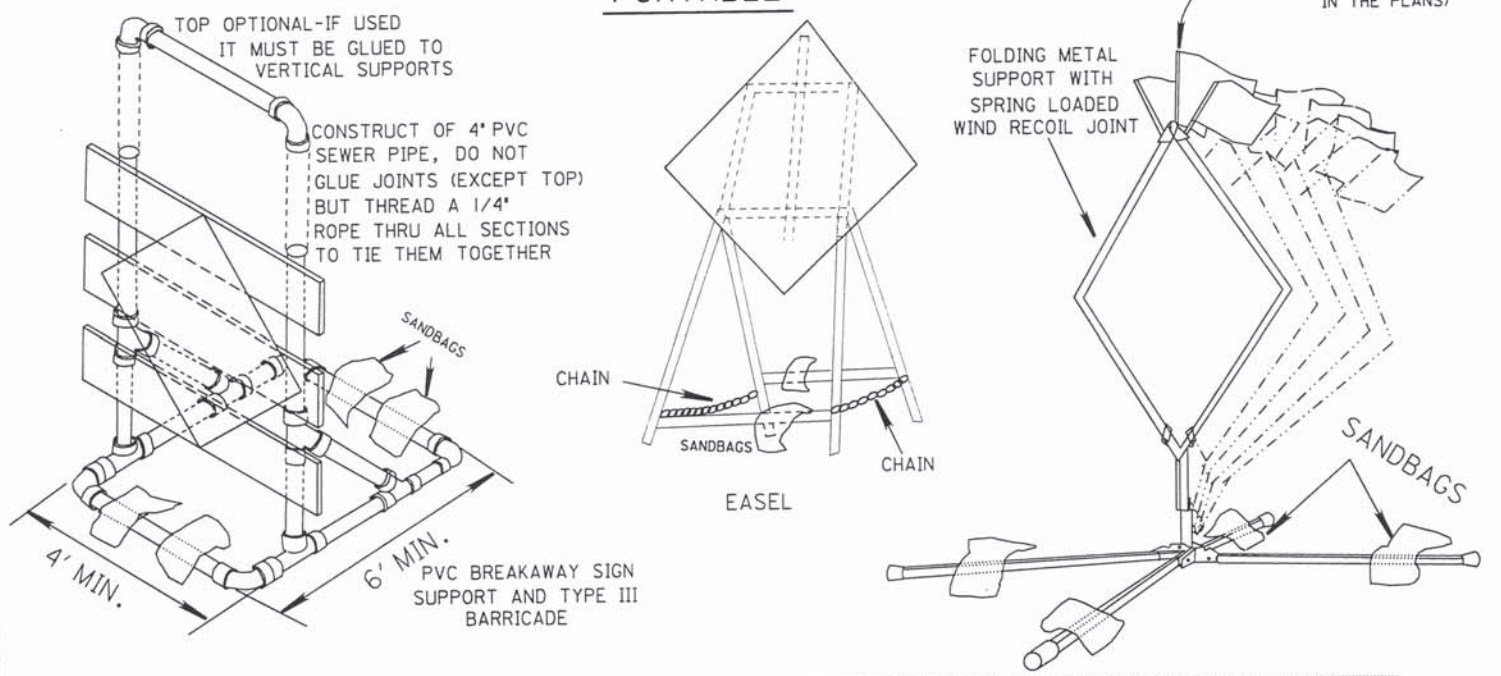


## CLASS B SUPPORTS



ANY CLASS A SIGN POST WITH GUY WIRES ADDED TO INCREASE SIGN CARRYING ABILITY. (GUY WIRES SHALL NOT BE HEAVIER THAN 1/8" DIA. BRAIDED CABLE. GUY ANCHORS SHALL NOT EXTEND MORE THAN 6" ABOVE GROUND SURFACE).

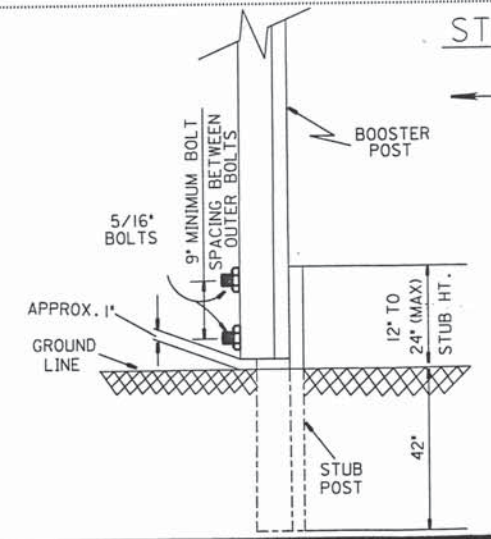
## PORTABLE



## CLASS C SUPPORTS

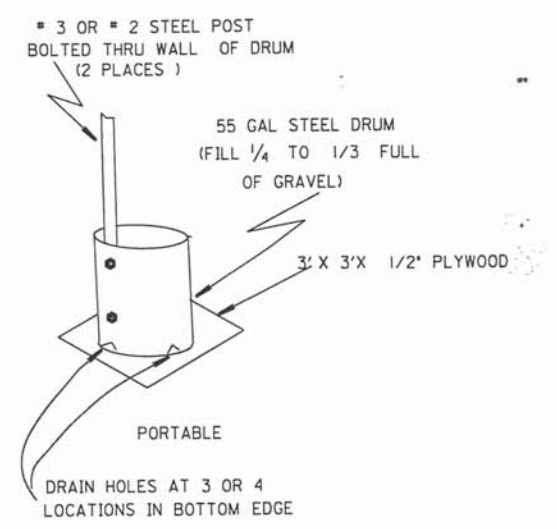
1. ALL BEAM TYPE SUPPORTS WITHOUT BREAKAWAY CONNECTIONS.
2. SUPPORTS SIMILAR TO BUT LARGER THAN PERMITTED FOR CLASS A OR B.
3. THE STEEL DRUM(S) SHOWN BELOW MAY BE USED ONLY WHEN LOCATED BEHIND GUARDRAIL OR BARRIER.

## STUBBING STANDARD



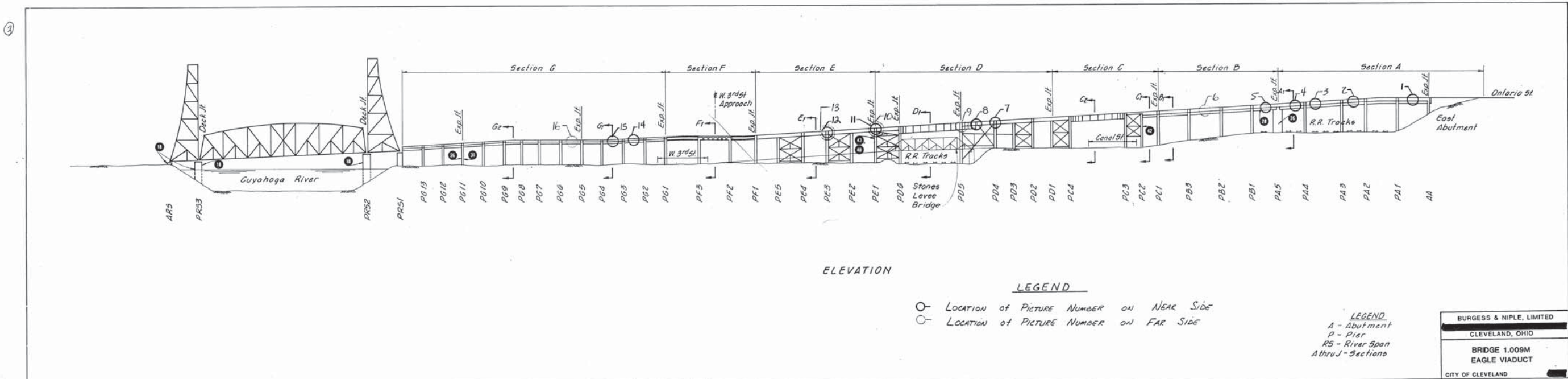
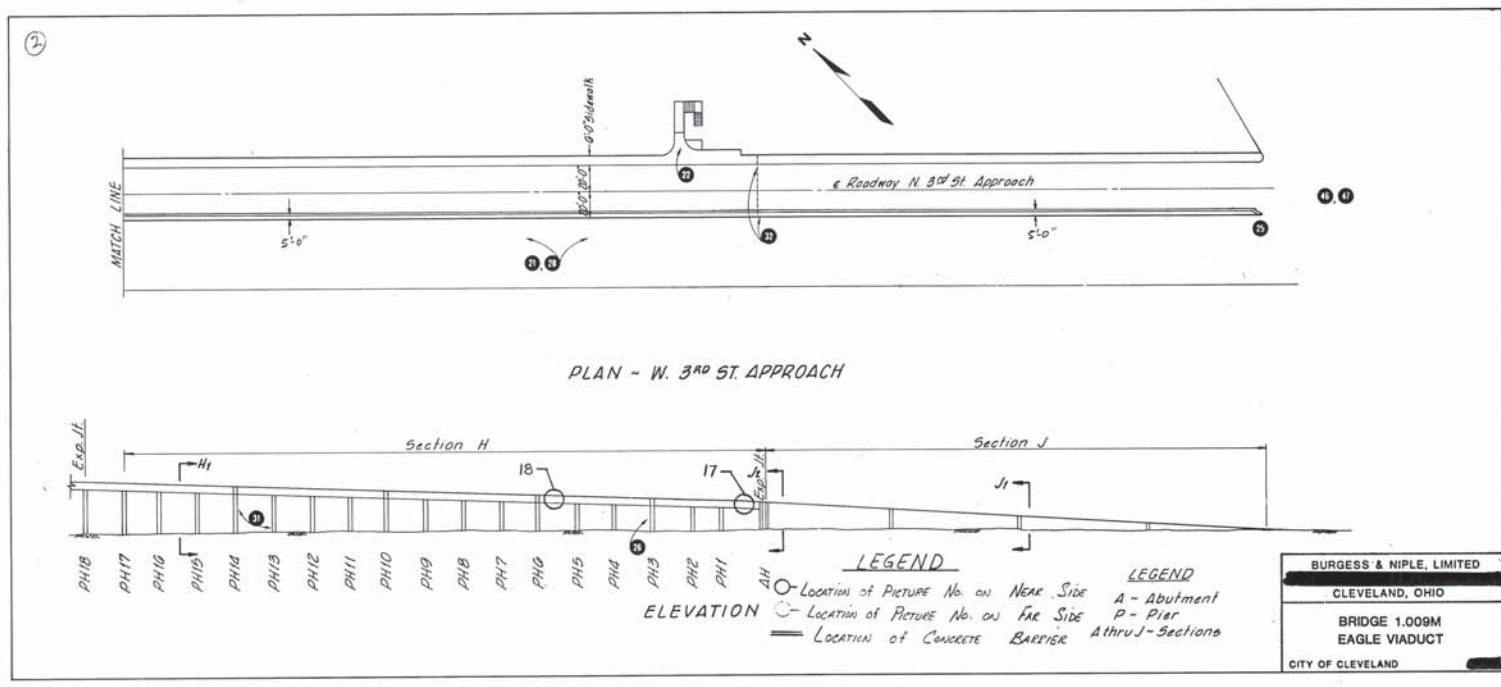
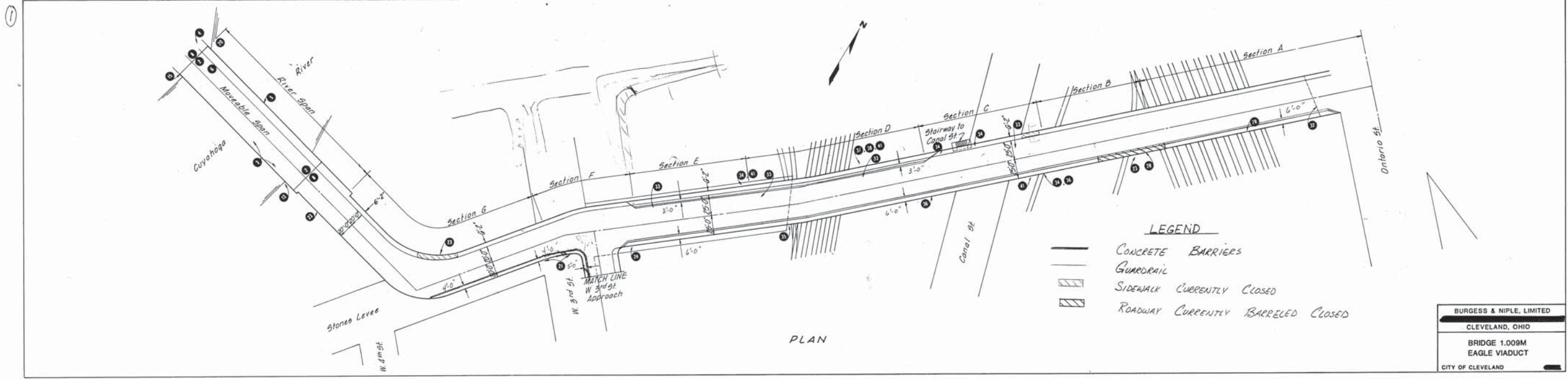
### NOTES

1. FOR USE WITH #3 POST OR SMALLER ONLY
2. BOLTS SHALL BE STEEL OR ALUMINUM
3. A MINIMUM OF TWO FASTENERS SHALL BE USED PER ASSEMBLY
4. BOOSTER POST SHALL BE MOUNTED BEHIND STUB POST
5. BOOSTER POST SHALL BE THE SAME OR 1 LB./FT. LESS THAN STUB POST



ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE C & M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF THE OMTCD. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

REVISED BY:	DATE:
210511	DATE
TEMPORARY SIGN SUPPORT	
PLAN INSERT SHEET	
	05/07/90



# CALCULATIONS

LINE	ITEM	DESCRIPTION	SHEET				QUANTITY	UNIT
			8 OF 71	9 OF 71	10 OF 71	TOTAL		
1	203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION		1	334	= 335	335	C.Y.
2	203	EMBANKMENT		1	65	= 66	66	C.Y.
3	452	9" PLAIN CONCRETE PAVEMENT (SHT. 7 OF 71)						
4		ROADWAY AREA (BY PLANIMETER)				= 7454 S.F.		
5		DRIVEWAY AREA (BY PLANIMETER)				= 530 S.F.		
6						TOTAL = 7984 S.F.		
7		TOTAL (LINE 8) 7984 S.F./9 = 887 S.Y.					887	S.Y.
8	304	AGGREGATE BASE (ALL AREAS LISTED BELOW BY PLANIMETER)						
9		ROADWAY AREA (LINE 4) = 7454 S.F. x 4"/12)/27				= 92.0 C.Y.		
10		1'-1" DEEP SHOULDER AREA LEFT = (336 S.F. x 1'-1)/27				= 13.5 C.Y.		
11		6" DEEP SHOULDER AREA LEFT = (745 S.F. x 6"/12)/27				= 13.8 C.Y.		
12		1'-1" DEEP SHOULDER AREA RIGHT = (260 S.F. x 1'-1)/27				= 10.4 C.Y.		
13		6" DEEP SHOULDER AREA RIGHT = (468 S.F. x 6"/12)/27				= 8.7 C.Y.		
14						TOTAL = 138.4 C.Y.	138	C.Y.
15		ASPHALT AREA						
16	254	PAVEMENT PLANING, BITUMINOUS (SHT. 9 OF 71)						
17	404	ASPHALT CONCRETE, AC-20						
18		ROADWAY (LINE 16) (2071 S.F. x 1'4"/12)/27				= 8.52 C.Y.	9	C.Y.
19	407	TACK COAT (LINE 16) (2071 S.F./9) x 0.075 GAL./S.Y.				= 17.25 GAL.	17	GAL.
20	642	EDGE LINE						
21		TEMPORARY ROAD STA. 0+00 TO STA. 3+50				= 350 L.F.		
22		EAGLE AVE. ROAD STA. 5+30 TO STA. 19+51				= 1421 L.F.		
23								
24		TOTAL LINE 21 (350 L.F. x 2)/5280 L.F./MILE = 0.13 MILE					0.70	MILE
		TOTAL LINE 22 (1421 L.F. x 2)/5280 L.F./MILE = 0.54 MILE						
25	642	CENTER LINE						
26		TEMPORARY ROAD STA. 0+00 TO STA. 3+50				= 350 L.F.		
27		EAGLE AVE. ROAD STA. 5+00 TO STA. 19+51				= 1421 L.F.		
28						1771 L.F.		
29		(1771 L.F.)/5280 L.F./MILE = 0.35 MILE					0.35	MILE
30	642	STOP LINE						
31		AT STA. 19+51 (20 L.F.) + TEMP. ROAD STONES LEVEE (18 L.F.)					38	L.F.
32	202	CONCRETE BARRIER REMOVED FOR STORAGE						
33		148 BARRIER SECTIONS x 10'-0				= 1480 L.F.	1480	L.F.

GENERAL SUMMARY												
SHEET NUMBER							ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	REMARKS
4	5	6	7	8	9	10						
			2		5			7	S.Y.	PAVEMENT REMOVED		
							35	35	L.F.	PIPE REMOVED, 24" AND UNDER		
					67			67	S.F.	WALK REMOVED		
			25		22			47	L.F.	CURB REMOVED		
	335							335	C.Y.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION		
	66							66	C.Y.	EMBANKMENT		
			187.5					187.5	L.F.	GUARDRAIL, TYPE 5		
					113			113	S.F.	4" CONCRETE WALK, AS PER PLAN	4/71	
				950				950	S.F.	4" BITUMINOUS WALK		
										EROSION CONTROL		
					33			33	C.Y.	DUMPED ROCK FILL, TYPE D		
										DRAINAGE		
							112	112	L.F.	12" CONDUIT, TYPE C, 706.08		
							4	4	EA.	MANHOLE NO. 1		
			3		1			4	EA.	MANHOLE ADJUSTED TO GRADE		
			1					4	EA.	MANHOLE RECONSTRUCTED TO GRADE		
								4	EA.	CATCH BASIN NO. 2-2-B		
										PAVEMENT		
	138							138	C.Y.	AGGREGATE BASE		
	9							9	C.Y.	ASPHALT CONCRETE, AC-20		
	17							17	GAL.	TACK COAT		
	887							887	S.Y.	9" PLAIN CONCRETE PAVEMENT		
					37			37	L.F.	CURB, TYPE 6		
					230			230	S.Y.	PAVEMENT PLANING, BITUMINOUS		
										MAINTENANCE OF TRAFFIC		
50								50	C.Y.	TRAFFIC COMPACTED SURFACE, TYPE A OR B		
50								50	M. GAL.	WATER		
10								10	TON	CALCIUM CHLORIDE		
										TRAFFIC CONTROL		
	1480							1480	L.F.	CONCRETE BARRIER REMOVED FOR STORAGE	4	
	0.70							0.70	MILE	EDGE LINE, TYPE 2		
	0.35							0.35	MILE	CENTER LINE, TYPE 2		
	38							38	L.F.	STOP LINE, TYPE 2		
					70			70	L.F.	PORTABLE CONCRETE BARRIER, 32"		
					4			4	EA.	BARRIER REFLECTOR, TYPE B		
										MOBILIZATION		
										FIELD OFFICE, TYPE B		
										CONSTRUCTION LAYOUT STAKES		
										MAINTAINING TRAFFIC		
										FOR STRUCTURES 20'-0 AND OVER,		
										GENERAL SUMMARY, SEE SHEET 14 OF 71		
										FOR LIGHTING, GENERAL SUMMARY,		
										SEE SHEET 71 OF 71		



**MAINTENANCE OF TRAFFIC**

THE EAGLE AVENUE BRIDGE AT THIS LOCATION HAS ALREADY BEEN CLOSED AND THE TRAFFIC CONTROL DEVICES ON THE DETOUR ROUTES SHOWN HAVE BEEN PROVIDED BY THE CITY OF CLEVELAND FOR THIS PROJECT.

TWO-WAY TRAFFIC FORMERLY USING THE EAGLE AVENUE BRIDGE IS BEING MAINTAINED ON THE FOLLOWING EXISTING AND NEW DETOUR ROUTES SHOWN AND NOTED ON THIS SHEET.

**THE EXISTING DETOUR ROUTES ARE AS FOLLOWS:**

1. SCRANTON AND CARTER ROADS-FROM EAGLE AVENUE AT ONTARIO- PROCEED SOUTH ON ONTARIO TO INTERSTATE 90, TURN RIGHT ONTO INTERSTATE 90 AND PROCEED SOUTHWEST ON INTERSTATE 90 TO THE ABBEY AVENUE EXIT, EXIT AT THE ABBEY AVENUE EXIT AND PROCEED SOUTHEAST TO FAIRFIELD, TURN RIGHT AT FAIRFIELD AND PROCEED WEST TO SCRANTON TURN RIGHT AT SCRANTON AND PROCEED NORTH TO CARTER FROM SCRANTON ROAD AT CARTER - PROCEED SOUTH ON SCRANTON TO FAIRFIELD, TURN LEFT AT FAIRFIELD PROCEED TO WEST 14TH STREET, TURN LEFT THE INTERSTATE 90 ENTRANCE RAMP AND PROCEED NORTH ONTO INTERSTATE 90, PROCEED NORTHEAST ON INTERSTATE 90 TO THE ONTARIO EXIT, AT THE ONTARIO EXIT TURN RIGHT PROCEED TO ONTARIO, AND TAKE ONTARIO NORTH TO EAGLE.
2. CANAL ROAD-FROM EAGLE AVENUE AT ONTARIO- PROCEED SOUTH ON ONTARIO TO CARNEGIE, TURN RIGHT AT CARNEGIE AND YEER LEFT TO THE MIDDLE TURN LANE AT COMMERCIAL, TURN LEFT AT COMMERCIAL AND PROCEED SOUTH TO CANAL, TURN RIGHT AT CANAL AND PROCEED NORTH TO STONES LEVEE. FROM CANAL AT STONES LEVEE- PROCEED SOUTH ON CANAL TO COMMERCIAL, TURN LEFT AT COMMERCIAL AND PROCEED NORTH TO CARNEGIE, YEER LEFT TO THE MIDDLE TURN LANE ON CARNEGIE AT ONTARIO, LEFT AT ONTARIO AND PROCEED NORTH TO EAGLE.

3. STONES LEVEE AND WEST 3RD STREET-FROM EAGLE AVENUE AT ONTARIO- PROCEED SOUTH ON ONTARIO TO CARNEGIE, TURN RIGHT AT CARNEGIE AND YEER LEFT TO THE MIDDLE TURN LANE AT COMMERCIAL, TURN LEFT AT COMMERCIAL AND PROCEED SOUTH TO WEST 3RD STREET, TURN RIGHT AT WEST 3RD STREET AND PROCEED NORTH TO STONES LEVEE. FROM STONES LEVEE AT WEST 3RD STREET- PROCEED SOUTH ON WEST 3RD STREET TO COMMERCIAL, TURN LEFT AT COMMERCIAL AND PROCEED NORTH TO CARNEGIE, YEER LEFT TO THE MIDDLE TURN LANE ON CARNEGIE AT ONTARIO, LEFT AT ONTARIO AND PROCEED NORTH TO EAGLE.

ALL REQUIRED CONSTRUCTION TRAFFIC SIGNS WITH IN THE WORK LIMITS AND ALL NECESSARY SAFEGUARDS SUCH AS BARRICADES, CONES, DRUMS, LIGHTING, TEMPORARY GUARDRAIL AND OTHER TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS AND SHALL BE PROVIDED, ERECTED, MAINTAINED AND REMOVED BY THE CONTRACTOR FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING SIGNS AND TRAFFIC CONTROL DEVICES ON THE EXISTING DETOUR ROUTES LISTED ABOVE FOR THE DURATION OF THE PROJECT AND RETURN ALL DETOUR SIGNS TO THE CITY AT THE END OF THE PROJECT. THE ERECTION, MAINTENANCE AND REMOVAL OF TRAFFIC CONTROL DEVICES AS SHOWN ON THE PLANS AND NOTED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, MAINTAINING TRAFFIC.

**COOPERATION BETWEEN CONTRACTORS**

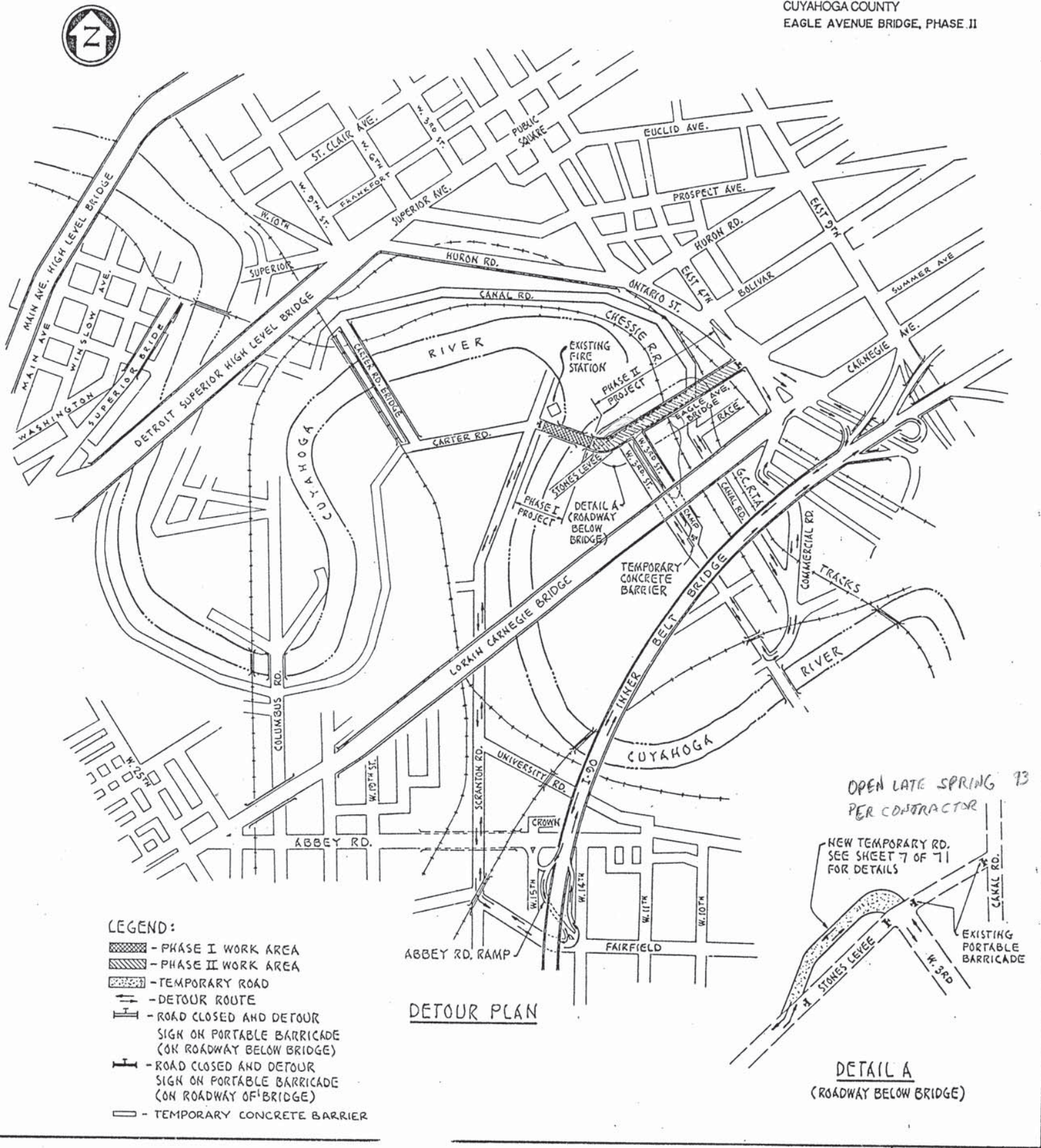
THE CONTRACTOR SHALL COOPERATE AND COORDINATE HIS OPERATIONS WITH THE CONTRACTORS ON OTHER PROJECTS THAT MAY BE IN FORCE DURING THE LIFE OF THIS CONTRACT INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:

**EAGLE AVENUE, PHASE I LIFT SPAN**

NO WAIVER OF ANY PROVISION OF 105.07 OF THE CONSTRUCTION AND MATERIAL SPECIFICATION'S IS INTENDED.

**SCHEDULE OF OPERATIONS**

THE CONTRACTOR SHALL BEGIN WORK AT THE WESTERLY END OF THE PROJECT AND COMPLETE THE WORK AS SOON AS POSSIBLE BETWEEN THE LIFT BRIDGE AND THE WEST 3RD STREET RAMP INCLUDING THE EAGLE - WEST 3RD STREET INTERSECTION. IF THE DECISION IS MADE TO OPEN THIS SECTION OF THE BRIDGE, THE BARRIERS ACROSS WEST 3RD STREET SHALL BE NON- PERFORMED AND THE BARRIERS ALONG EAGLE AVENUE SHALL BE TERMINATED AS DIRECTED BY THE ENGINEER...



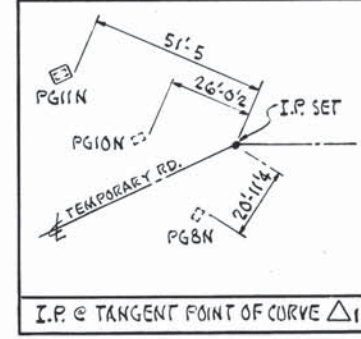
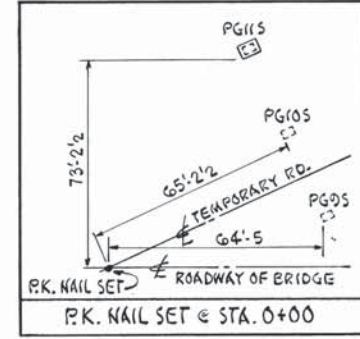
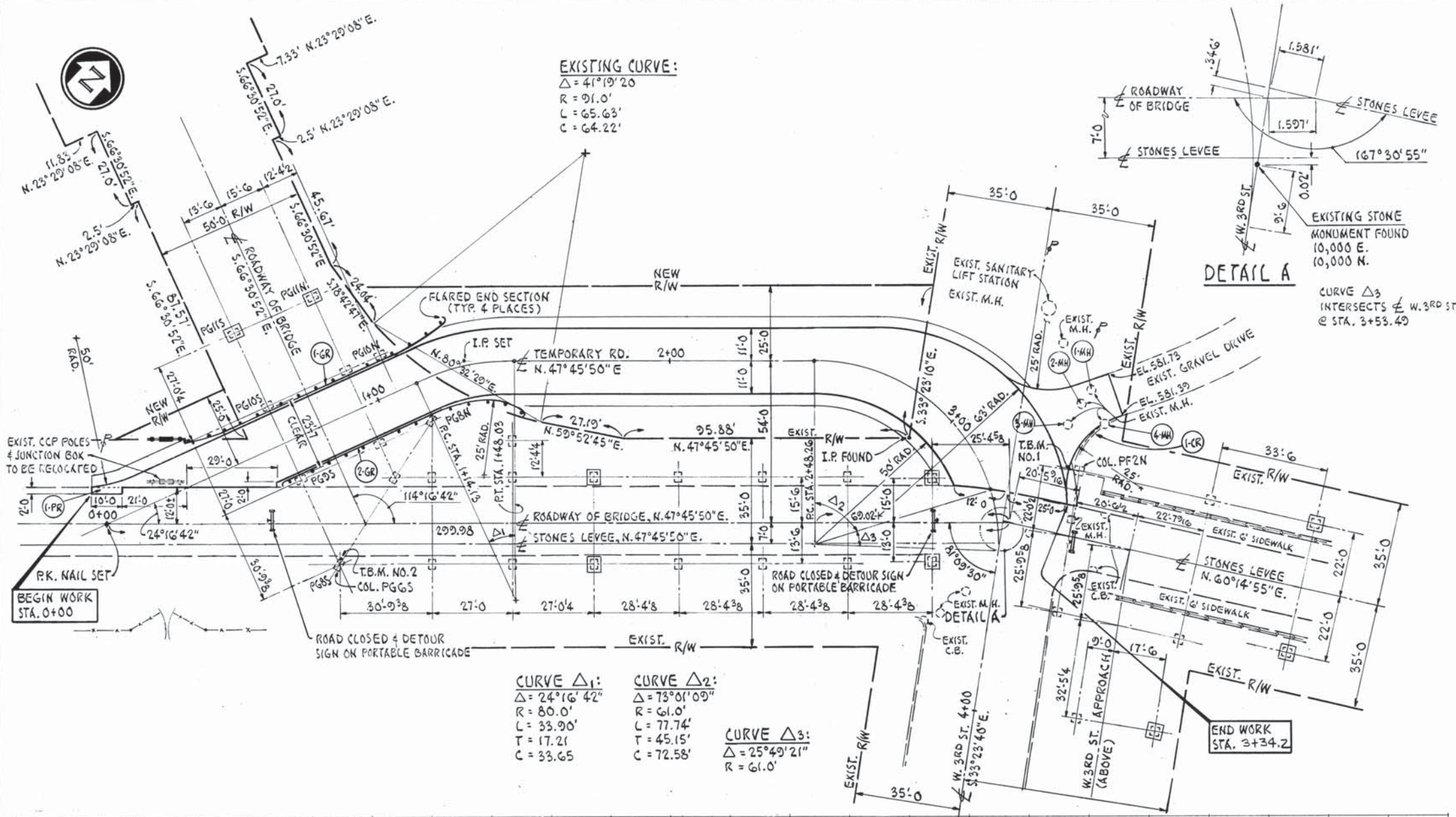
- LEGEND:**
- PHASE I WORK AREA
  - PHASE II WORK AREA
  - TEMPORARY ROAD
  - DETOUR ROUTE
  - ROAD CLOSED AND DETOUR SIGN ON PORTABLE BARRICADE (ON ROADWAY BELOW BRIDGE)
  - ROAD CLOSED AND DETOUR SIGN ON PORTABLE BARRICADE (ON ROADWAY OF BRIDGE)
  - TEMPORARY CONCRETE BARRIER

**DETOUR PLAN**

**DETAIL A  
(ROADWAY BELOW BRIDGE)**

CUYAHOGA COUNTY  
 EAGLE AVENUE BRIDGE, PHASE II

**BENCH MARK**  
 0M-1131 EL. 581.72, 27.0' WEST OF W. 3RD ST.  
 22.0' SOUTH OF E. CUYAHOGA AVENUE  
 T.B.M. NO. 1 EL. 582.81 NAIL IN S.W. CORNER  
 OF COLUMN PF2N, T.B.M. NO. 2 EL. 582.8 NAIL  
 IN N.W. CORNER OF COLUMN PGGS.



STATION	PROPOSED ELEVATIONS	EXISTING ELEVATIONS	REMARKS
0+00	580.87	581.07	P.V.I. STA. 0+60, EL. 581.07, e = -.225
1+00	584.17	584.17	P.V.I. STA. 1+15, EL. 583.27, e = .25 (Carried to Sheet 5)
2+00	583.27	583.27	P.V.I. STA. 2+50, EL. 583.27, e = .168
3+00	581.67	581.67	P.V.I. STA. 3+00, EL. 581.93, e = .105

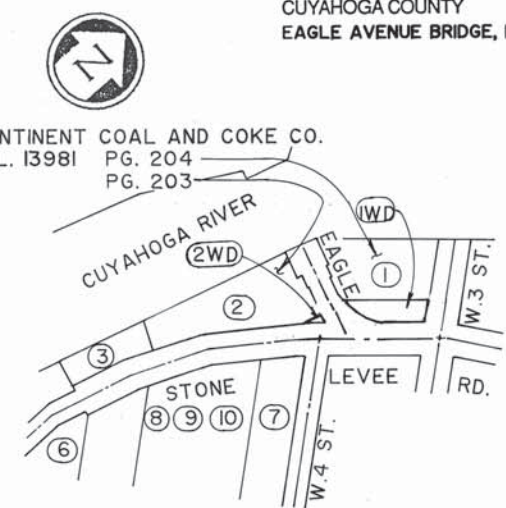
STATION	PROPOSED ELEVATIONS	EXISTING ELEVATIONS	REMARKS
0+00	581.07	581.07	
1+00	581.30	581.30	
1+72	581.72	581.72	
2+63	582.63	582.63	
3+18	583.18	583.18	
3+27	583.27	583.27	
3+27	583.27	583.27	
3+27	583.27	583.27	
3+10	583.10	583.10	
3+00	582.00	582.00	
3+04	582.04	582.04	
3+07	581.67	581.67	

REF. NO.	STATION	FROM	TO	DESCRIPTION	QTY.	UNIT	TOTAL
1-GR	0+36.0	1+28.0	LI	GRAVEL DRIVE	44	LT.	
2-GR	0+60.0	1+51.0	RT	GRAVEL DRIVE	39	LT.	
1-MH	3+15.3			MANHOLE	1	EA.	
2-MH	3+15.2			MANHOLE	1	EA.	
3-MH	3+17.5			MANHOLE	1	EA.	
4-MH	3+20.7			MANHOLE	1	EA.	
1-PR	0+00			PORTABLE BARRICADE	2		
1-CR	3+20	3+26	LI	CURB	25	LI.	
					2		
					25		
					2		
					25		
					187.5		
					3		
					1		
					100	LN. FT.	
					87.5		

PLAN AND PROFILE (TEMPORARY ROAD) STA. 0+29.19 TO STA. 3+26

\*-AREA CALCULATED BY PLANIMETER

CUYAHOGA COUNTY  
EAGLE AVENUE BRIDGE, PHASE II



LOCATION MAP

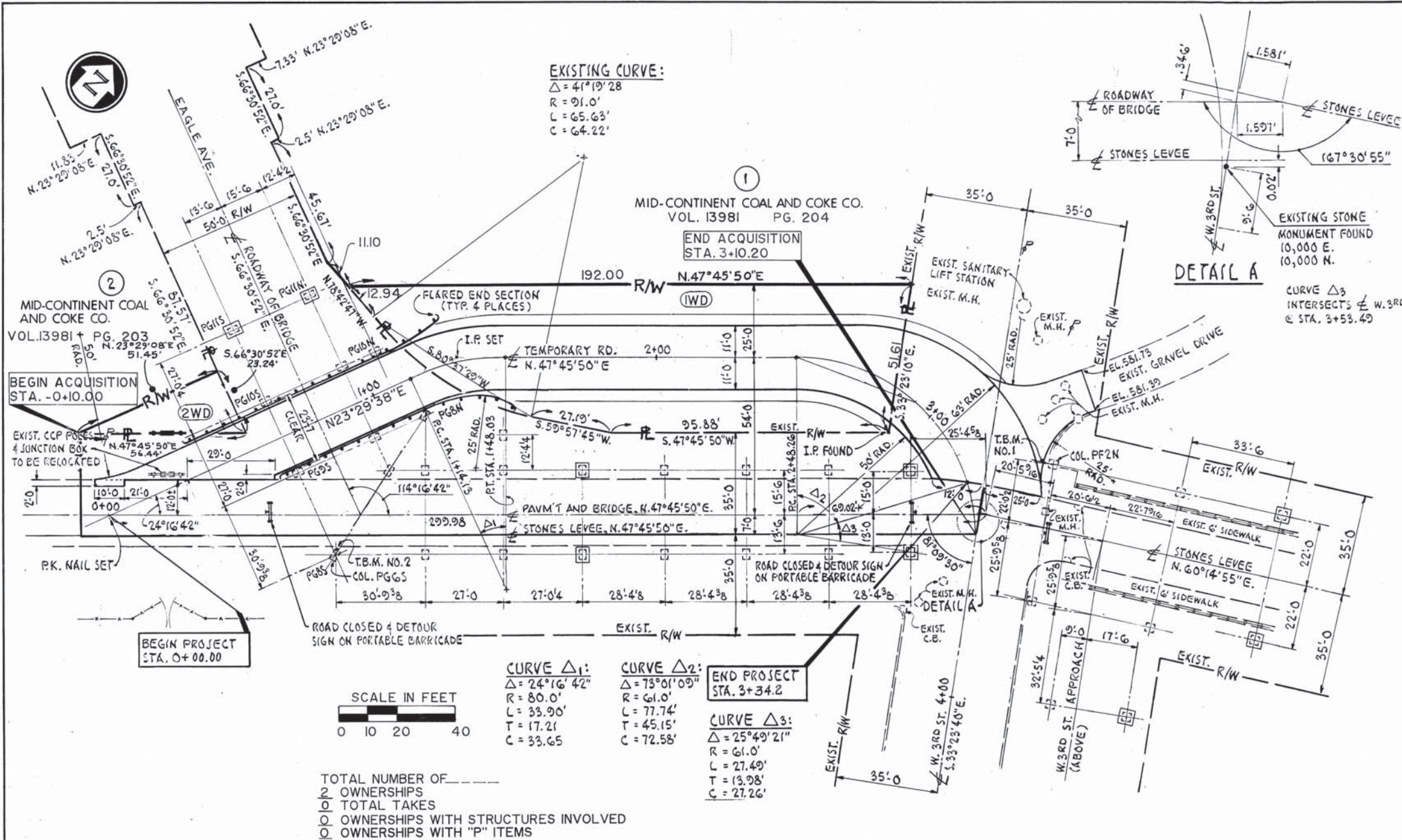
**STATIONING**  
ALL STATIONING IS BASED ON THE CENTERLINE OF SURVEY UNLESS OTHERWISE SPECIFIED.

**BEARING**  
ALL BEARINGS ARE BASED UPON AN ASSUMED MERIDIAN AND ARE USED ONLY FOR THE PURPOSE OF ANGULAR MEASUREMENTS.

**UNDERGROUND UTILITIES**  
THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 ORC.

**UTILITY OWNERSHIP**  
THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT:

- EAST OHIO GAS CO.  
1201 E. 55TH ST.  
CLEVELAND, OHIO 44103  
PHONE: 432-6803
- CITY OF CLEVELAND  
DEPARTMENT OF PUBLIC UTILITIES  
DIVISION OF WATER AND HEAT  
1201 LAKESIDE AVE.  
CLEVELAND, OHIO 44113  
PHONE: 271-4264
- SANITARY & STORM SEWERS  
NORTH EAST REGIONAL SEWER DISTRICT  
3826 EUCLID AVE.  
CLEVELAND, OHIO 44115  
PHONE: 881-6600
- CLEVELAND PUBLIC POWER  
1201 LAKESIDE AVE.  
CLEVELAND, OHIO 44114  
PHONE: 216-664-3922
- OHIO BELL TELEPHONE  
1020 BOLIVAR ROAD  
CLEVELAND, OHIO 44115
- GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY  
615 SUPERIOR AVENUE, N.W.  
CLEVELAND, OHIO 44113  
216-566-5140



TOTAL NUMBER OF \_\_\_\_\_  
2 OWNERSHIPS  
0 TOTAL TAKES  
0 OWNERSHIPS WITH STRUCTURES INVOLVED  
0 OWNERSHIPS WITH "P" ITEMS

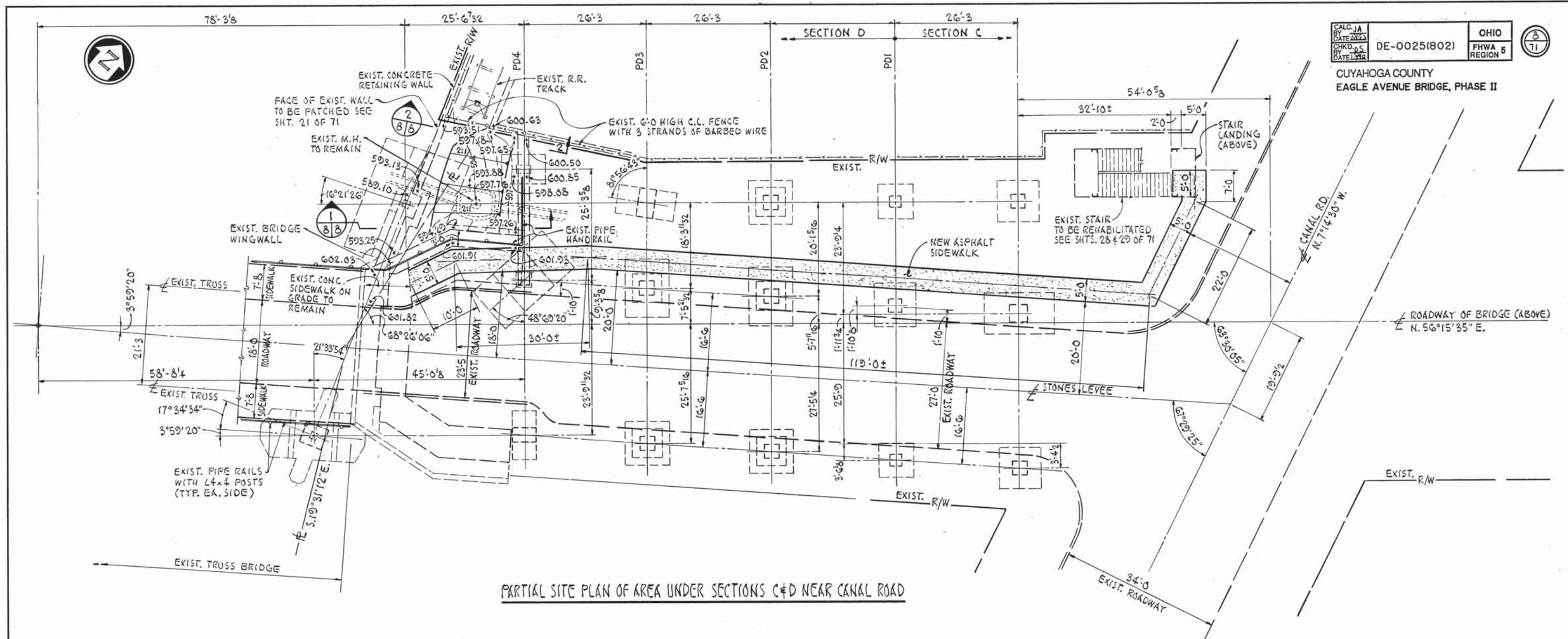
PARCEL	OWNER	OWNERS RECORD		RECORD AREA ACRES	TOTAL P.R.O. ACRES	GROSS TAKE ACRES	PRO. IN TAKE ACRES	NET TAKE		NET RESIDUE	TYPE FUND	REMARKS AND PERSONALTY	AS ACQUIRED	
		VOL.	PAGE					LAND ACRES	STRUC-TURE SQ. FT.				BOOK	PAGE
1WD	MID-CONTINENT COAL	13981	204	0.905	0.00	0.209	0.000	0.209	9117	NONE	0.696			
2WD	MID-CONTINENT COAL	13981	203	0.928	0.00	0.014	0.000	0.014	597	NONE	0.914			

**HIGHWAY EASEMENTS**

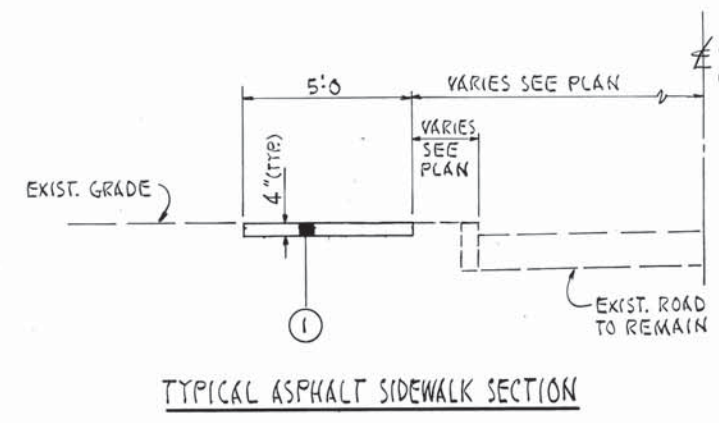
PARCEL	COURSE	DISTANCE FT.	BEARING
1WD	1-2	209.30	S47°45'50"W
	2-3	80.36	N66°30'52"W
	3-4	31.02	N23°29'08"E
	4-5	192.00	N47°45'50"E
	5-6	35.00	N56°36'20"E
	6-1	81.56	S33°23'40"E
2WD	7-8	99.66	S47°45'50"W
	8-9	35.00	N42°14'10"W
	9-10	76.45	N23°29'08"E
	10-7	72.88	S66°30'52"E

REV.	DATE	DESCRIPTION
1	6-19-91	REVISED PARCELS 1WD & 2WD DIMENSIONING & TAKES

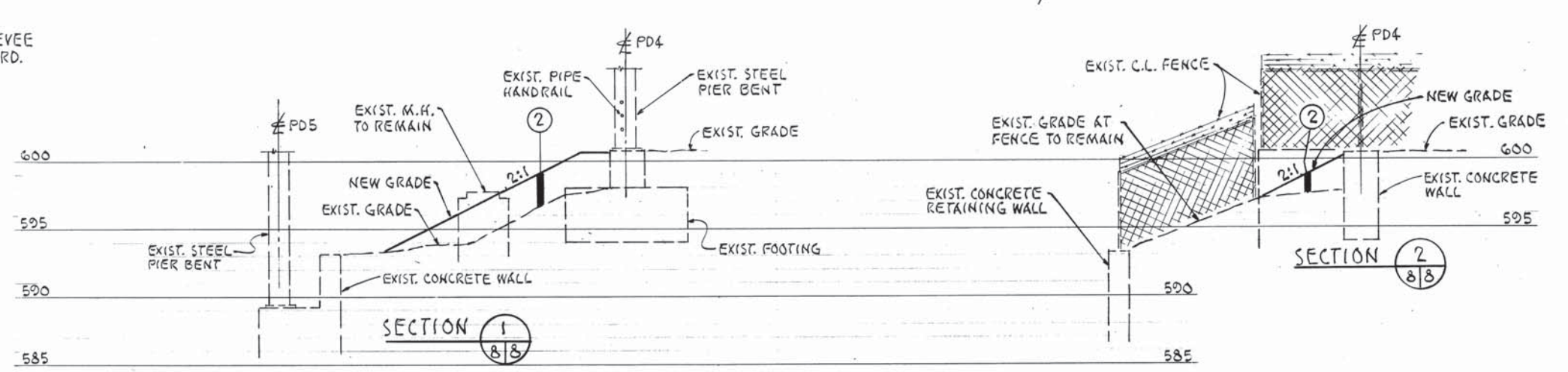
DETAIL RIGHT OF WAY PLAN AND SUMMARY OF ADDITIONAL RIGHT OF WAY



PARTIAL SITE PLAN OF AREA UNDER SECTIONS C & D NEAR CANAL ROAD



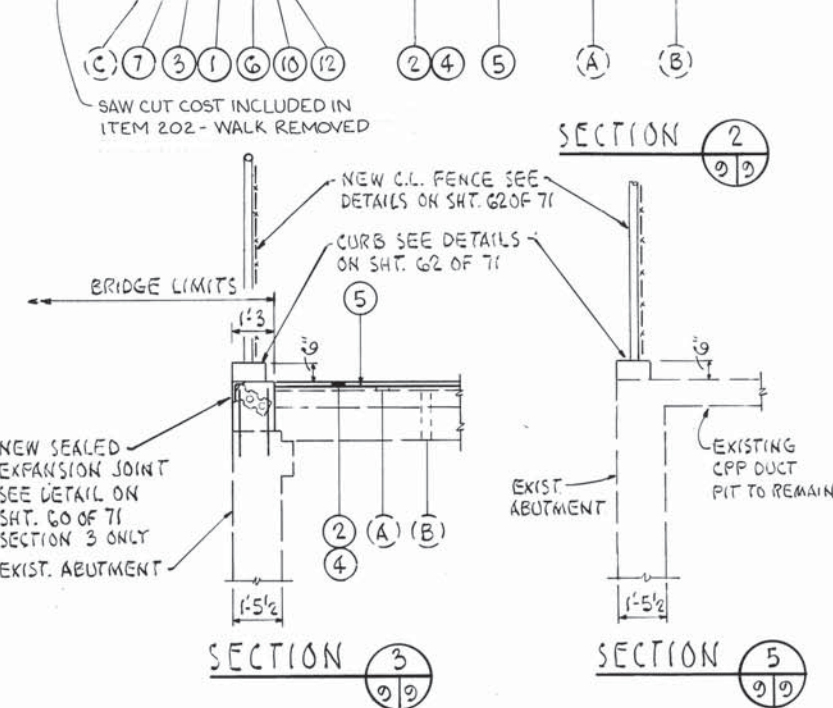
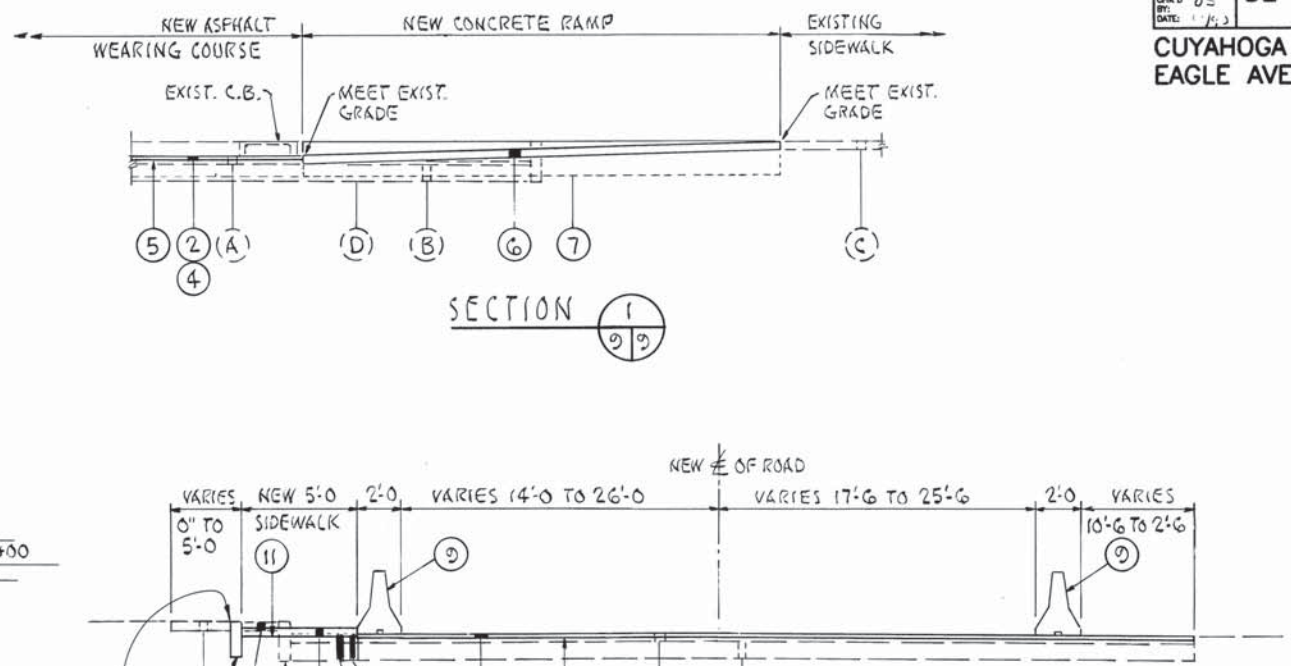
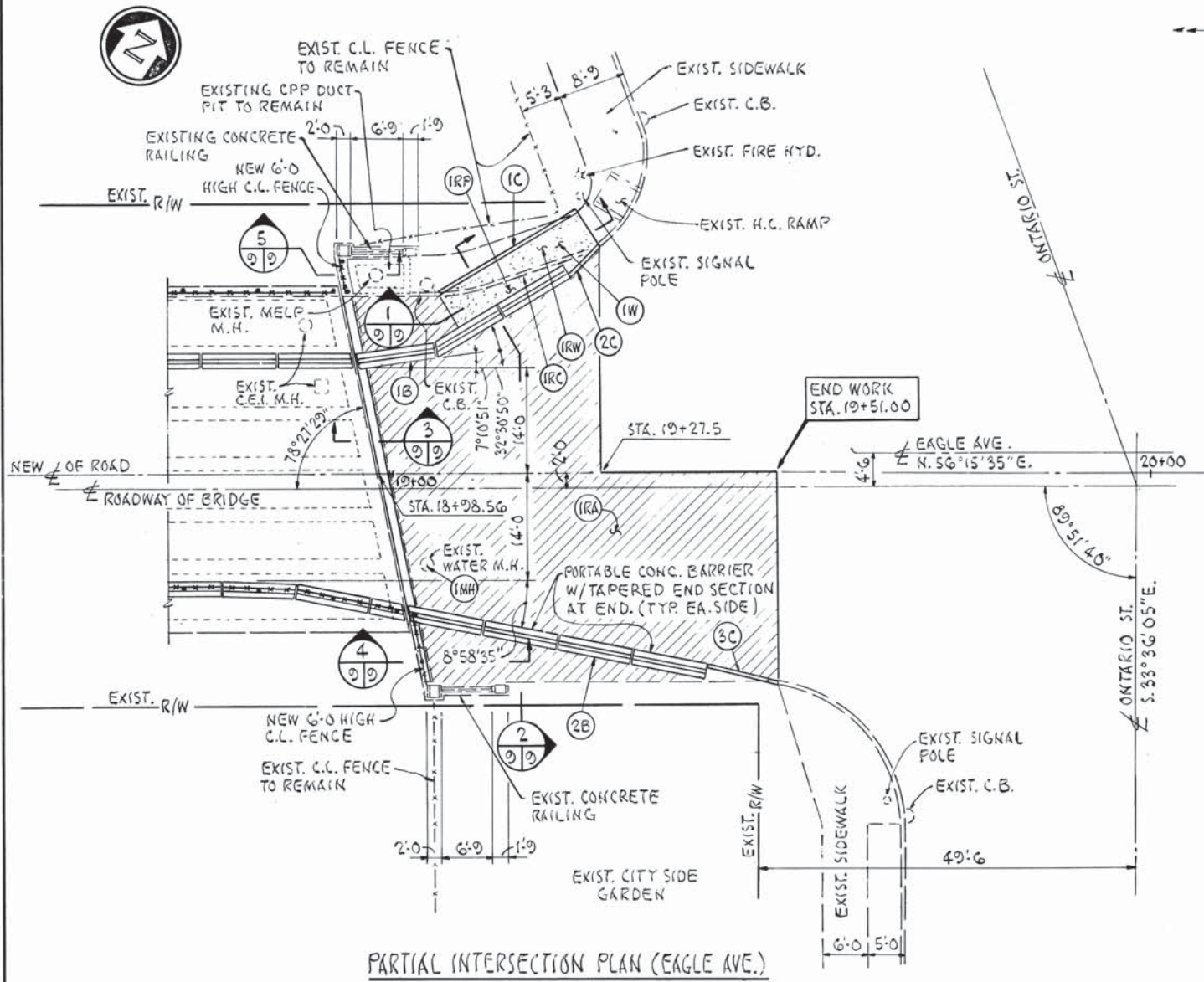
TYPICAL ASPHALT SIDEWALK SECTION



ITEM 601, DUMPED ROCK FILL, TYPE D  
 SECTION 1 38 S.F. x 17'/27' = 24 C.Y.  
 SECT. 1 + SECT. 2 38 S.F. + 11 S.F. x 10'/27' = 9 C.Y.  
 33 C.Y.

ITEM 608, BITUMINOUS WALK  
 (10' + 30' + 110' + 22' + 7' + 2') x 5' = 950 S.F.

- LEGEND:  
 ① --- ITEM 608, 4' BITUMINOUS WALK  
 ② --- ITEM 601, DUMPED ROCK FILL, TYPE D



- LEGEND:**
- ① ITEM 202, CURB REMOVED
  - ② ITEM 254, 1" PAVEMENT PLANING, BITUMINOUS
  - ③ ITEM 202, WALK REMOVED
  - ④ ITEM 404, 1" ASPHALT CONCRETE, AC-80
  - ⑤ ITEM 407, TACK COAT
  - ⑥ ITEM 608, 4" CONCRETE WALK, AS PER PLAN
  - ⑦ ITEM 609, CURB TYPE G
  - ⑧ ITEM 604, MANHOLE ADJUSTED TO GRADE
  - ⑨ ITEM 622, CONCRETE BARRIER
  - (A) EXISTING ASPHALT WEARING COURSE
  - (B) EXISTING PAVEMENT
  - (C) EXISTING SIDEWALK
  - (D) EXISTING CURB
  - (E) EXISTING ASPHALT WEARING COURSE
  - (F) EXISTING PAVEMENT
  - (G) EXISTING SIDEWALK
  - (H) EXISTING CURB
  - (I) EXISTING ASPHALT WEARING COURSE
  - (J) EXISTING PAVEMENT
  - (K) EXISTING SIDEWALK
  - (L) EXISTING CURB
  - (M) EXISTING ASPHALT WEARING COURSE
  - (N) EXISTING PAVEMENT
  - (O) EXISTING SIDEWALK
  - (P) EXISTING CURB
  - (Q) EXISTING ASPHALT WEARING COURSE
  - (R) EXISTING PAVEMENT
  - (S) EXISTING SIDEWALK
  - (T) EXISTING CURB

ITEM 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION (AT (W))  
 $(113 \text{ S.F. (W)} \times .5/2) / 27 = 1.0 \text{ C.Y.}$

ITEM 203 EMBANKMENT (AT (RP))  
 $(5 \text{ S.F. (RP)} \times 1.25/2) / 27 = 1.0 \text{ C.Y.}$

ITEM 254 PAVEMENT PLANING, BITUMINOUS (AREA BY PLANIMETER)  
 $2071 \text{ S.F.} / 9 = 230 \text{ S.Y.}$

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
802	PORTABLE CONCRETE BARRIER TYPE B	LN. FT.	4
622	PORTABLE CONCRETE BARRIER TYPE B	LN. FT.	70
608	CURB TYPE G	LN. FT.	37
608	4" CONCRETE WALK, AS PER PLAN	SQ. FT.	113
604	MANHOLE ADJUSTED TO GRADE	EACH	1
254	PAVEMENT PLANING BITUMINOUS TO GRADE	SQ. YD.	230
202	PAVEMENT REMOVED	SQ. YD.	5
202	WALK REMOVED	SQ. FT.	67
202	CURB REMOVED	LN. FT.	22
<b>H/D/M</b>			
<b>J/D/S</b>			
STATION	FROM	TO	
	1-RW 19+06.00	19+27.5	LT.
	1-RA 18+28.56	19+51.00	CL
	1-RC 19+06.00	19+27.5	LT.
	1-MH 19+04.5		RT.
	1-W 19+06.75	19+27.5	LT.
	1-C 19+06.00	19+24.25	LT.
	2-C 19+23.5	19+27.5	LT.
	3-C 19+41.25	19+51.00	RT.
	1-B 18+25.5	19+23.5	LT.
	2-B 19+02.00	19+41.25	RT.
	1-RP 19+06.00	19+27.5	LT.
<b>TOTAL</b>			

PLAN AND SECTIONS (EAGLE AVENUE)

SEEDING  
END WIDTH SQ YDS

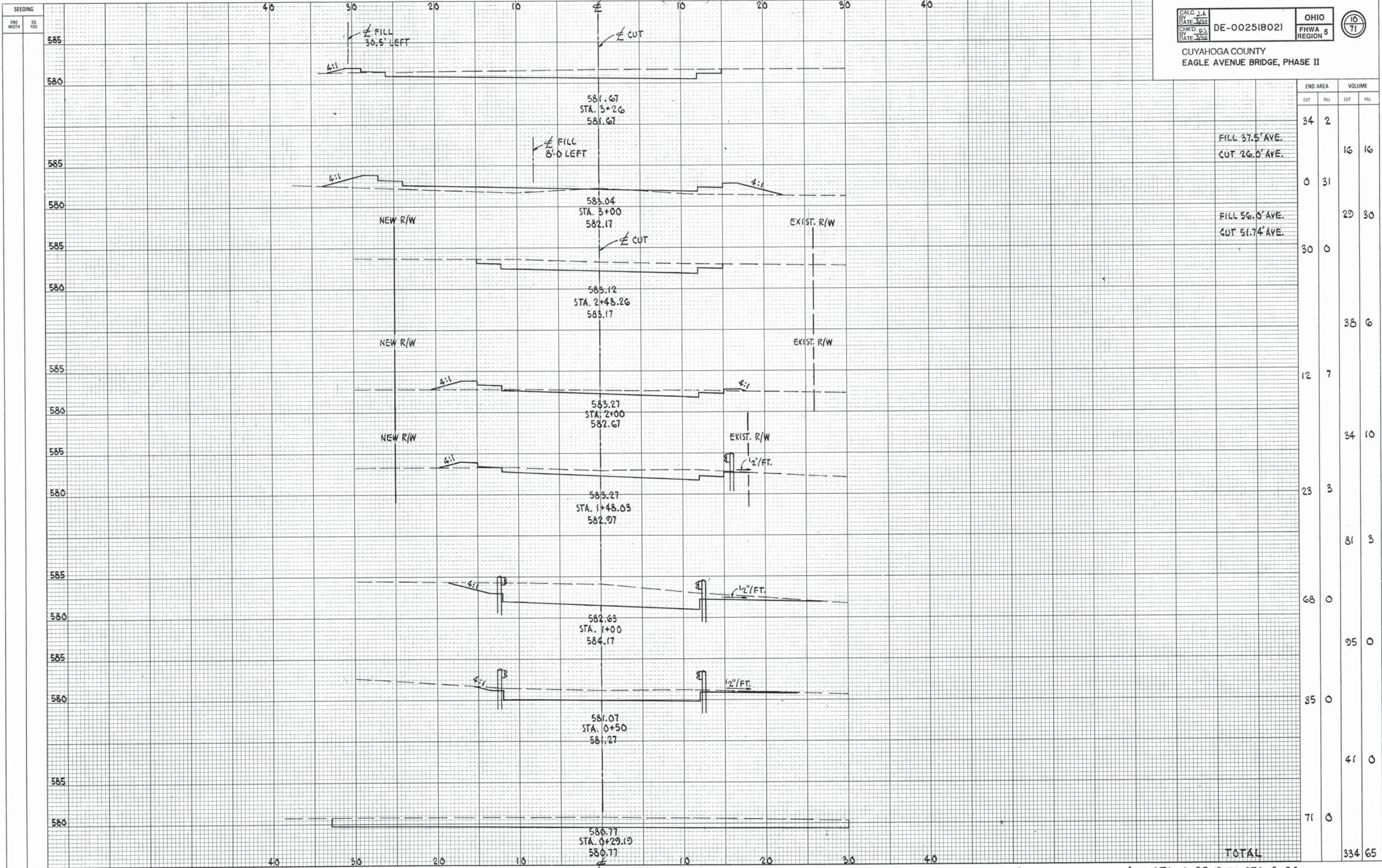
CALC. J.A.  
BY DATE 3/98  
CHKD. D.S.  
BY DATE 3/98

DE-002518021

OHIO  
FHWA REGION 5

10  
71

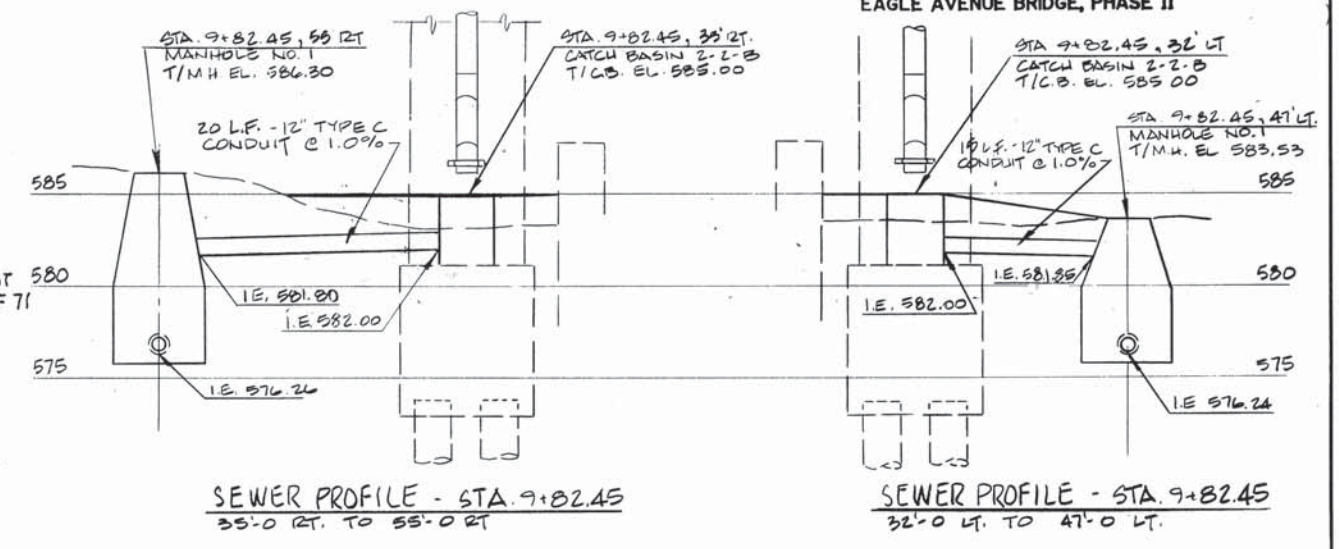
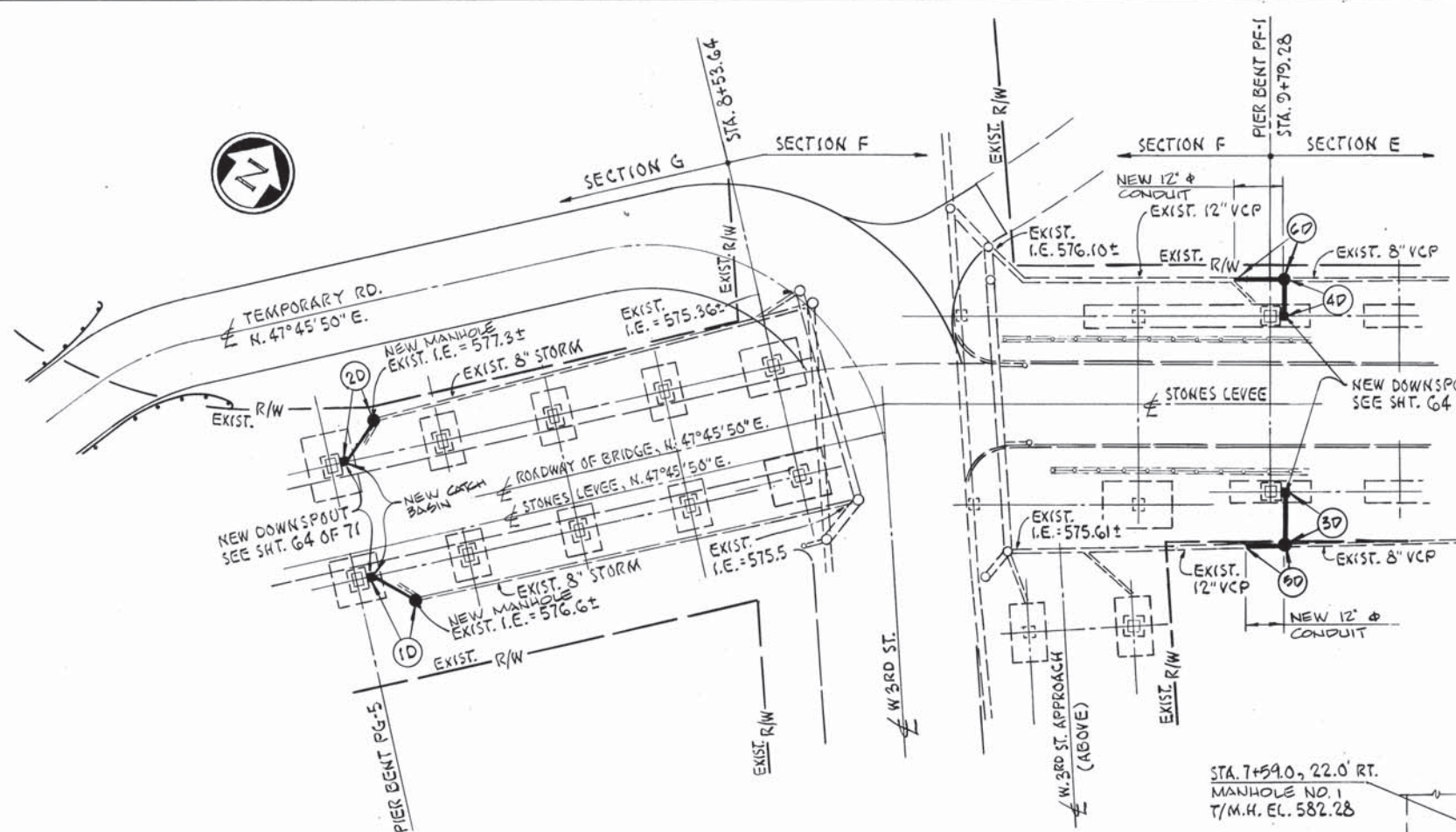
CUYAHOGA COUNTY  
EAGLE AVENUE BRIDGE, PHASE II



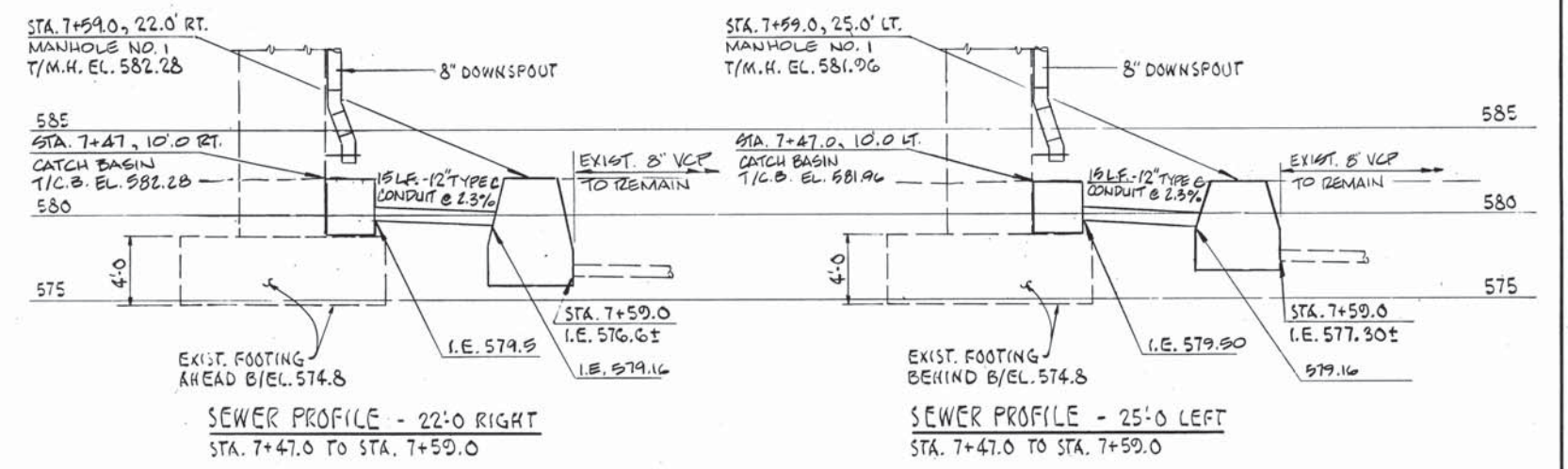
END AREA		VOLUME	
CUT	FILL	CUT	FILL
34	2		
		16	16
0	31		
		29	30
30	0		
		38	6
12	7		
		34	10
23	3		
		81	3
68	0		
		95	0
35	0		
		41	0
71	0		
TOTAL		334	65

CROSS SECTIONS (TEMPORARY ROAD) STA. 0+29.19 TO STA. 3+26

CUYAHOGA COUNTY  
EAGLE AVENUE BRIDGE, PHASE II

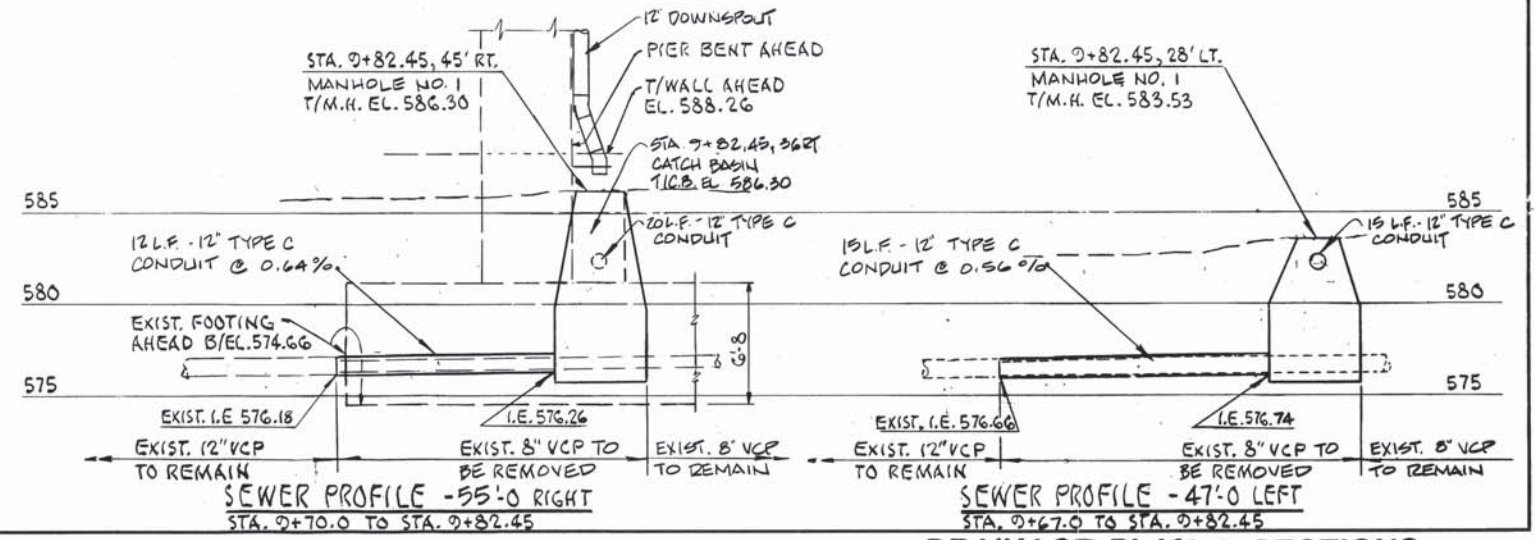


DRAINAGE PLAN



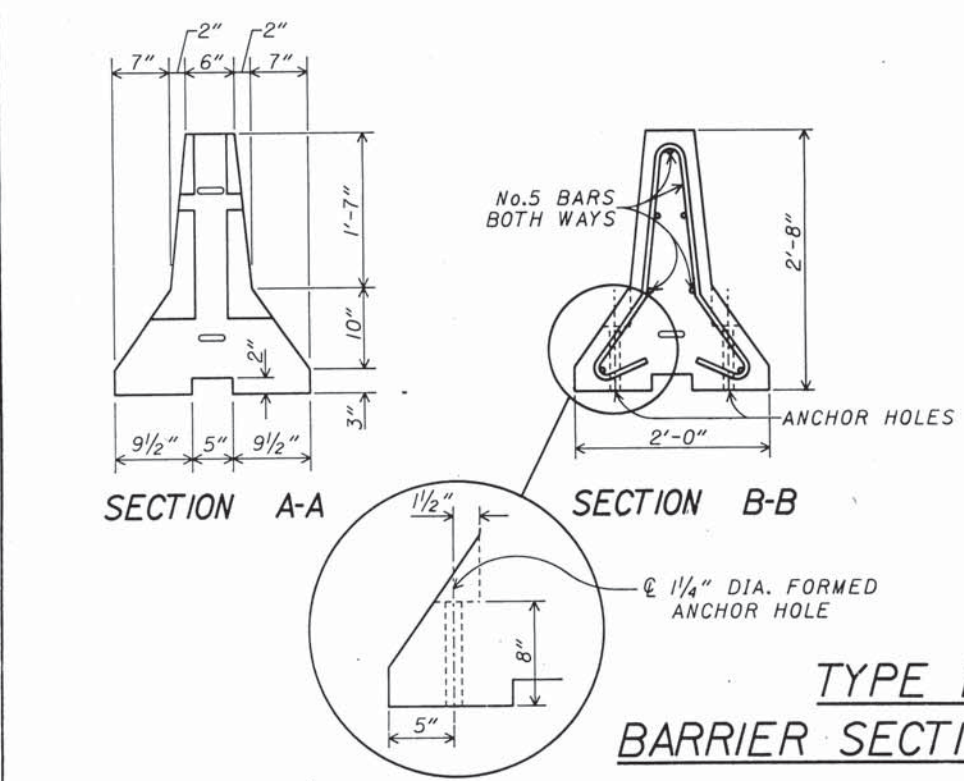
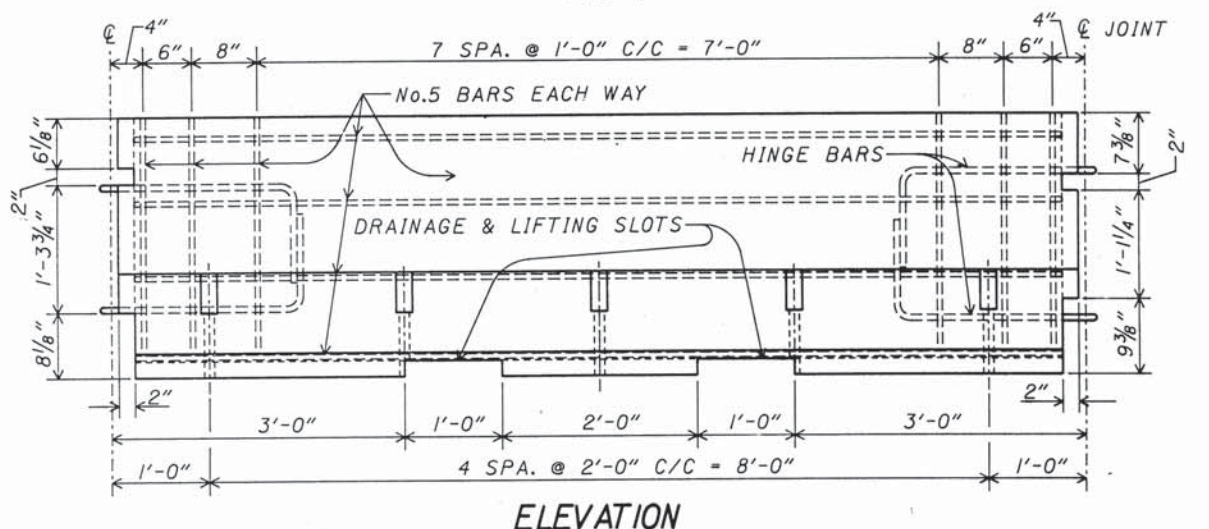
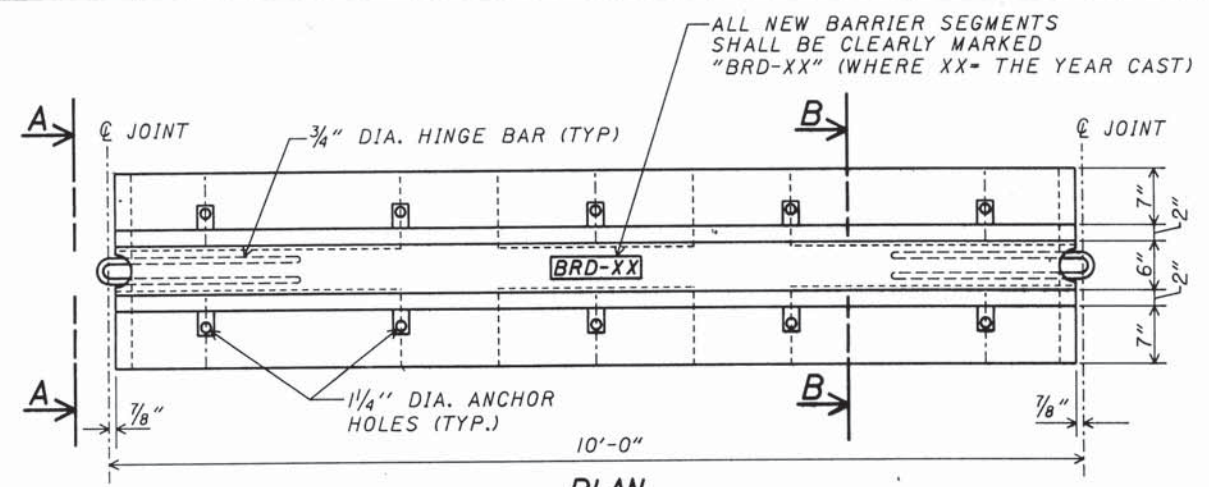
DRAINAGE							
REF. NO.	STATION		SIDE	603	202	604	604
	FROM	TO		12\"/>			
1-D	7+47.0	7+59.0	RT.	15			
2-D	7+47.0	7+59.0	LT.	15			
3-D	9+82.45		RT.	20			
4-D	9+82.45		LT.	15			
5-D	9+70.0	9+82.45	RT.	12	16		
6-D	9+70.0	9+82.45	LT.	15	19		
	SEE SEWER NOTE 1			20			
TOTAL				112	35	4	4

**SEWER NOTES:**  
1. THE NEW MANHOLE SHALL BE INSTALLED AROUND THE EXISTING 8\"/>



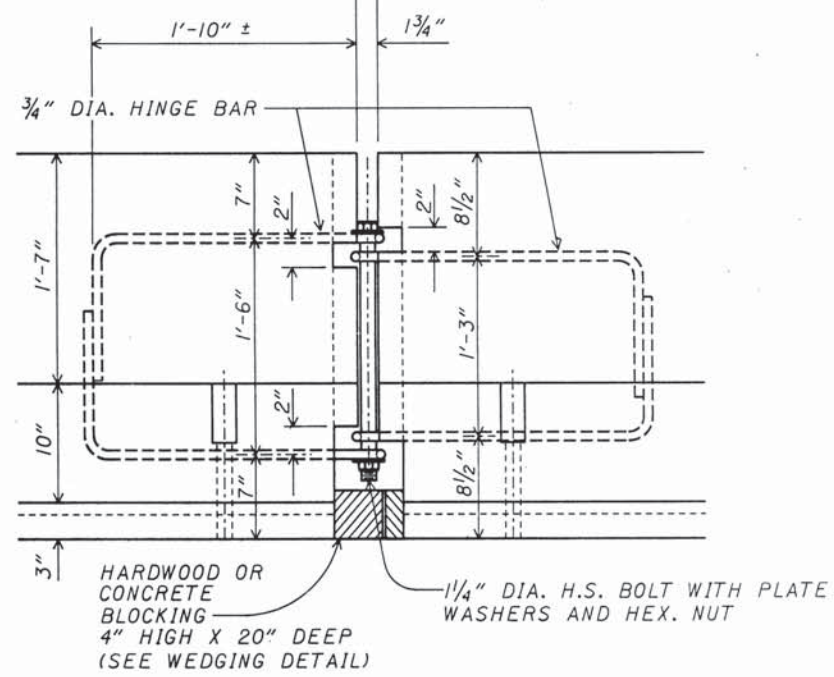
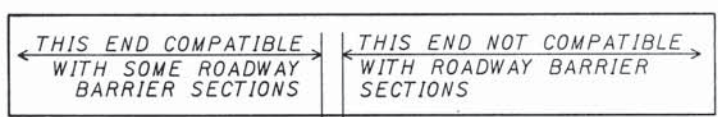
DRAINAGE PLAN & SECTIONS

ZFA2:L200005JBRDBARI.DGN

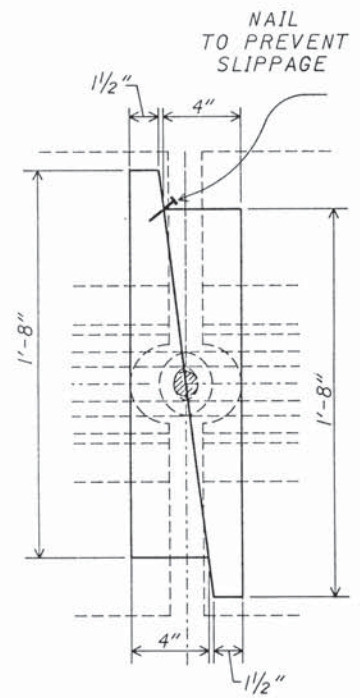


**MATERIAL REQUIREMENTS:**

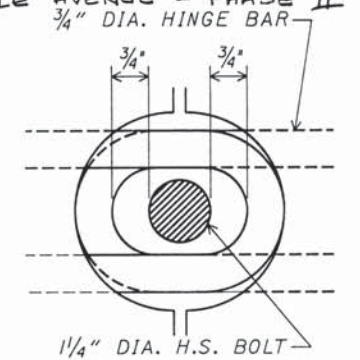
1. THE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI. AND SHALL CONTAIN A CALCIUM NITRITE CORROSION INHIBITING ADMIXTURE. THE ADMIXTURE SHALL BE ADDED TO THE CONCRETE AT THE RATE OF 4.0 GALLONS PER CUBIC YARD OF CONCRETE AND SHALL BE ADDED AS AN AQUEOUS SOLUTION, SUCH AS W.R. GRACE'S DCI CORROSION INHIBITOR (30% SOLIDS) OR APPROVED EQUAL. THE WATER IN SUCH SOLUTION SHALL BE COUNTED AS MIXING WATER FOR THE PURPOSE OF DETERMINING THE WATER TO CEMENT RATIO OF THE CONCRETE. THE CALCIUM NITRITE MUST BE ADDED TO THE MIX IMMEDIATELY AFTER THE AIR-ENTRAINING AND RETARDING ADMIXTURES HAVE BEEN INTRODUCED TO THE BATCH.
2. ALL REINFORCING STEEL AND STEEL ROD CONNECTING LOOPS SHALL BE GRADE 60 REINFORCING STEEL WITH A MINIMUM YIELD STRENGTH OF 60,000 PSI.



DETAIL AT HINGED CONNECTION

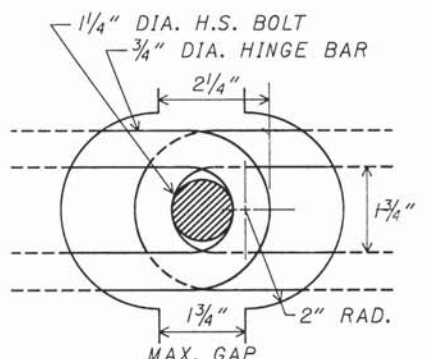


BARRIER WEDGING DETAIL (HARDWOOD)



INITIAL JOINT

BARRIER SEGMENTS SHOULD INITIALLY BE PLACED CLOSER TOGETHER SO THAT BOLTS CAN BE EASILY INSERTED THROUGH HINGE BAR LOOPS.



FINAL JOINT

BARRIER JOINTS MUST BE FULLY OPEN BEFORE OPENING IS BLOCKED WITH CONCRETE OR HARDWOOD.

**COMMON NOTES:**

**ALL TEMPORARY CONCRETE BARRIERS ON STRUCTURES**

**BRIDGE DECK SURFACE PREPARATION**

1. THE BRIDGE DECK SURFACE AREA ON WHICH THE PRECAST CONCRETE BARRIER SEGMENTS WILL REST SHALL BE CLEARED OF ALL LOOSE SAND, GRAVEL, DIRT AND DEBRIS.
2. ANY IRREGULARITIES IN THE BRIDGE DECK AREA, UNLESS JUDGED BY THE ENGINEER TO BE INCONSEQUENTIAL, SHALL BE LEVELED WITH GROUT AND/OR ASPHALT.
3. ASPHALT ROLL ROOFING SHALL BE PLACED ON THOSE BRIDGE DECK AREAS, AS JUDGED BY THE ENGINEER, TO HAVE A SURFACE ROUGHNESS WHICH WOULD INHIBIT FRICTION CONTACT BETWEEN BARRIER SEGMENTS AND DECK.

**BOLTED JOINT CONNECTIONS**

4. WHEN STANDARD MC-9A BARRIER SECTIONS OR TYPE BRD BARRIER SECTIONS ARE USED ON STRUCTURES, THEY SHALL BE BOLTED TOGETHER AND BLOCKED AS SHOWN ABOVE (BOLTING AND BLOCKING DIMENSIONS FOR MC-9A BARRIER MAY VARY FROM THOSE SHOWN).

**CONCRETE BARRIER, TYPE BRD, ANCHORED**

ALL ANCHORS SHALL BE 1" DIAMETER, HIGH STRENGTH, THRU BOLTS OR APPROVED RESIN ANCHORS. WHEN RESIN ANCHORS ARE USED, THEY MUST BE EMBEDDED A MINIMUM OF 6" INTO FIRM CONCRETE. THE NUMBER OF ANCHORS SHALL BE AS SHOWN BELOW AND SHALL BE PLACED SYMMETRICALLY ABOUT THE TRANSVERSE C/O OF BARRIER SECTION ON THE ROADWAY SIDE OF THE BARRIER.

BRIDGE NO.	TRAFFIC CONTROL PHASE	NO. ANCHORS / 10' SECTION
EAGLE AVE	ALL	2*

\* TWO ANCHORS IN ALL SECTIONS WITHOUT REGARD TO LENGTH. SOME BARRIERS AT EXPANSION JOINTS ARE CUT TO DIMENSIONS SHOWN ON PLANS





ESTIMATED QUANTITIES							
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTS.	PIERS	GEN.
202	11201	LUMP SUM		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (Sht. 16)			LUMP
202	23500	5,610	SQ. YD.	WEARING COURSE REMOVED			5,610
404	20000	206	CU. YD.	ASPHALT CONCRETE, AC-20			206
407	10000	464	GAL	TACK COAT			464
509	12400	31,305	POUND	REINFORCING STEEL, GRADE 60		30,305	1,000
509	15800	78,179	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60			78,179
510	12200	3,000	LIN. FT.	DOWEL HOLES			3,000
511	34401	657	CU. YD.	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN			657
511	43001	215	CU. YD.	CLASS C CONCRETE, PIERS, AS PER PLAN		215	
513	20000	124	EACH	WELDED STUD SHEAR CONNECTOR		124	
513	16001	179,200	POUND	STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN (AISC CATEGORY I) (See Sht. 16)			179,200
SPECIAL	51316800	766	EACH	STRUCTURAL STEEL, MISC.: REPLACE EXISTING RIVETS WITH NEW HIGH STRENGTH BOLTS (See Sht. 16)		766	
514	01500	179,200	POUND	FIELD PAINTING OF NEW STRUCTURAL STEEL, SYSTEM A			179,200
516	11211	453	LIN. FT.	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN			453
516	43100	18	EACH	ELASTOMERIC BEARING 8 1/2" x 12" x 1 1/2" WITH INTERNAL LAMINATES ONLY (NEOPRENE)		18	
516	44000	7	EACH	ELASTOMERIC BEARING 7" x 11" x 1 3/8" WITH INTERNAL LAMINATES AND LOAD PLATE 8" x 12" x 1 1/2" (NEOPRENE)		7	
516	45305	10	EACH	REFURBISH BEARING DEVICE, AS PER PLAN (See Sht. 16)		10	
516	46900	19	EACH	BEARING DEVICE, MISC.: SLIDING PLATES		19	
518	51100	76	LIN. FT.	8" PIPE DOWNSPOUT, INCLUDING SPECIALS, (70717)		76	
518	51200	83	LIN. FT.	12" PIPE DOWNSPOUTS, INCLUDING SPECIALS, (70717)		83	
SPEC.	51862100	98	LIN. FT.	STRUCTURE DRAINAGE, MISC.: TRENCH DRAIN (See Sht. 17)			98
519	11101	1,544	SQ. FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN (See Sht. 17)		335	1,209
SPECIAL	53000200	LUMP SUM		STRUCTURE, MISC.: STAIR TOWER REHABILITATION (See Sht. 18)			LUMP
SPECIAL	53000200	LUMP SUM		STRUCTURE, MISC.: INSPECTION OF EXISTING CONCRETE ELEMENTS (See Sht. 17)			LUMP
SPECIAL	53000600	994	SQ. FT.	STRUCTURE, MISC.: CHIPPING CONCRETE SURFACES (See Sht. 18)			994
607	20001	2,198	LIN. FT.	FENCE TYPE CL, 4'-0" HIGH, AS PER PLAN (See Sht. 17)			2,198
607	20001	424	LIN. FT.	FENCE TYPE CL, 6'-0" HIGH, AS PER PLAN (See Sht. 17)			424
607	20001	60	LIN. FT.	FENCE TYPE CL, 8'-0" HIGH, AS PER PLAN (See Sht. 17)			60
607	20001	60	LIN. FT.	FENCE TYPE CL, 10'-0" HIGH, AS PER PLAN (See Sht. 17)			60
622	40050	2,715	LIN. FT.	PORTABLE CONCRETE BARRIER, TYPE BRD ANCHORED (See Sht. 18)			2,715
802	00200	250	EACH	BARRIER REFLECTOR TYPE B			250

# GENERAL NOTES

**CUYAHOGA COUNTY**  
**EAGLE AVENUE - PHASE II**

## I. DESIGN SPECIFICATIONS

MODIFICATIONS TO THIS STRUCTURE CONFORM TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1989 AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN LOADING-HS20-44-CASE II AND THE ALTERNATE MILITARY LOADING.

### DESIGN STRESSES

CONCRETE CLASS S - UNIT STRESS 1500 PSI FOR SUPERSTRUCTURE.

CONCRETE CLASS C - UNIT STRESS 1333 PSI FOR SUBSTRUCTURE.

REINFORCING STEEL - ASTM A615, A616, A617 - GRADE 60 - UNIT STRESS 24,000 PSI.

STRUCTURAL STEEL ASTM A36 - UNIT STRESS 20,000 PSI.

MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK, BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO O.D.O.T. CMS SECTIONS 102.05, 105.02 AND 513.02 WITH REGARDS TO HIS RESPONSIBILITY TO VERIFYING EXISTING CONDITIONS.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING BRIDGE PLANS AND SHOP DRAWINGS CAN BE OBTAINED FROM THE CITY OF CLEVELAND DIVISION OF ENGINEERING, ROOM 518, CITY HALL, MR. CLYDE RIFFLE, CHIEF ENGINEER, (216) 664-2379.

## 2. REFERENCE SHALL BE MADE TO SUPPLEMENTAL SPECIFICATION:

952 DATED 12-14-88

## 3. PROPOSED WORK

THE PROPOSED WORK SHALL INCLUDE THE FOLLOWING MAJOR ITEMS OF WORK:

- REHABILITATION OF THE SOUTH COLUMN AT PIER PC2 BY CONCRETE ENCASEMENT.
- PATCHING OF CONCRETE PIERS PD4 AND PD5.
- REMOVAL AND REPLACEMENT OF REINFORCED CONCRETE CAPS AT PIERS PFI, PGI, PG5, PGII.
- REMOVAL OF DETERIORATED PORTIONS OF SUPERSTRUCTURE DECK AND STEEL FRAMING IN SECTIONS A THRU G AT SELECTED LOCATIONS SHOWN ON THE PLANS.
- PATCHING AND REPLACEMENT OF CONCRETE SUPERSTRUCTURE DECK AND FRAMING IN SECTIONS A THRU G AT SELECTED LOCATIONS SHOWN ON THE PLANS.
- REPAIR AND REPLACEMENT OF STRUCTURAL STEEL FRAMING AND BRACING IN SECTIONS C, D AND E AT SELECTED LOCATIONS SHOWN ON THE PLANS.
- REHABILITATION OF SLIDING BEARINGS AT BEAM REPLACEMENTS.
- REPLACEMENT OF EXISTING RIVETS WITH NEW HIGH STRENGTH BOLTS AT SELECTED LOCATIONS.
- CONSTRUCTION OF CONCRETE BARRIER ANCHORED TO SUPERSTRUCTURE, INCLUDING CHAIN LINK FENCE.
- CONSTRUCTION OF CONCRETE CURB WITH CHAIN LINK.
- REPAIR AND REHABILITATION OF THE STAIR TOWER NEAR CANAL STREET.

## 5. REPLACEMENT OF EXISTING REINFORCING STEEL

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT HIS COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. AN ALLOWANCE OF 1000 POUNDS IS INCLUDED IN ITEM 509 FOR THIS PURPOSE.

## 6. DIMENSIONS

DIMENSIONS GIVEN IN PLAN VIEWS ARE MEASURED HORIZONTALLY AT 60 DEGREES F UNLESS OTHERWISE NOTED.

## 7. CONCRETE DECK

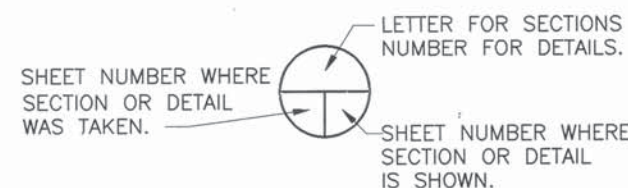
THE STEEL BEAMS SHALL BE FABRICATED WITH CAMBER, AS SPECIFIED ON THE PLANS, TO COMPENSATE FOR THE DEFLECTIONS DUE TO WEIGHT OF CONCRETE AND STEEL AND FOR VERTICAL CURVATURE OF THE ROADWAY. THE THEORETICAL DEAD LOAD DEFLECTIONS ARE TABULATED ON THE PLANS.

THE FINAL SURFACE OF THE ROADWAY SHALL CONFORM TO A STRING LINE RUNNING FROM THE EXISTING CONCRETE SURFACE TO REMAIN ON BOTH SIDES OF THE NEW CONCRETE DECK. TO COMPENSATE FOR DEFLECTIONS DUE TO THE DEAD LOAD OF THE CONCRETE, THE SCREEDS USED TO STRIKE OFF THE SURFACE OF THE CONCRETE TO THE DESIRED GRADE SHALL BE ADJUSTED BY AN AMOUNT EQUAL TO DEFLECTIONS SHOWN FOR THE DEAD LOAD. SCREEDS MAY REQUIRE FURTHER ADJUSTMENTS DUE TO IRREGULARITIES IN THE NEW FABRICATED STEEL. THE THEORETICAL TOP OF CONCRETE DECK ELEVATIONS AT THE GUTTER LINES BEFORE THE DEFLECTIONS FROM THE CONCRETE HAVE OCCURRED WILL BE FIELD DETERMINED BY THE CONTRACTOR SUBJECT TO REVIEW AND APPROVAL OF THE ENGINEER. PAYMENT FOR SCREED ELEVATION CALCULATIONS SHALL BE INCLUDED WITH THE RESPECTIVE CONCRETE REPLACEMENT ITEM.

THE CONCRETE SLAB SHALL BE OF UNIFORM THICKNESS BETWEEN BEAMS WITH ADJUSTMENTS OBTAINED BY VARYING THICKNESS OF THE HAUNCHES OVER THE BEAMS.

## 4. EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF EXISTING STRUCTURE AND/OR FROM FIELD OBSERVATIONS AND



### SECTION OR DETAIL BALLOON LEGEND

THE OSBORN ENGINEERING COMPANY		2/56
ROBERT P. MADISON INTERNATIONAL, INC. (MBE) CONSULTING ENGINEERS CLEVELAND, OHIO 44114		
CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER		
ESTIMATED QUANTITIES AND GENERAL NOTES EAGLE AVENUE VIADUCT OVER CHESSIE, O.C.R.T.A. AND CANAL ROAD-PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1009M CLEVELAND CUYAHOGA COUNTY OHIO		
DESIGNED	DRAWN	TRACED
RCK	RCK	JRS
CHECKED	REVIEWED	DATE
RS	RS	10/90
REVISED		

# GENERAL NOTES

CALC. BY: _____	OHIO	15
DATE: _____	DE-0025(802)	71
DR'D BY: _____	F.H.W.A. REGION 5	
DATE: _____		

**CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II**

**8. ELASTOMERIC BEARING PADS**

THE CONTRACTOR SHALL FURNISH AND INSTALL ELASTOMERIC BEARING PADS IN THE SIZES AND LOCATIONS SHOWN ON THE PLANS. BEARING PADS SHALL BE PLACED UPON BRIDGE SEAT AREAS WHICH ARE PLANE AND SMOOTHLY FINISHED. IF THE BRIDGE SEAT AREA IS LOW, THE PROPER ELEVATION SHALL BE SECURED BY THE USE OF 1/8" THICK PREFORMED BEARING PADS OF THE SAME BEARING AREA AS THE BEARING PAD.

**9. REQUIREMENTS OF CHESSIE RAILROAD AND GCRTA**

ALL REFERENCE TO "RAILROAD", "THE RAILROAD" OR THE RAILROAD COMPANY" HEREIN SHALL BE MEANT TO APPLY TO CHESSIE AND/OR THE GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY (GCRTA).

**A. GENERAL**

THE CONTRACTOR SHALL:

1. COOPERATE AT ALL TIMES WITH THE LOCAL OFFICIALS OF THE RAILROAD COMPANY.
2. USE CARE AND DILIGENCE IN THE WORK IN ORDER TO AVOID ACCIDENTS, DAMAGE OR UNNECESSARY DELAY TO, OR INTERFERENCE WITH, THE TRAINS AND OTHER PROPERTY OF THE RAILROAD COMPANY.
3. CONDUCT HIS WORK IN A MANNER SATISFACTORY TO THE CHIEF ENGINEER OF THE RAILROAD COMPANY OR IT'S AUTHORIZED REPRESENTATIVE, IN SUCH MANNER AND AT SUCH TIME AS TO NOT UNNECESSARILY INTERFERE WITH THE MOVEMENT OF TRAINS OR RAILROAD TRAFFIC, AND TO HOLD THE WORK AT ALL TIMES OPEN TO INSPECTION BY RAILROAD COMPANY INSPECTORS.
4. COOPERATE WITH PUBLIC UTILITIES, RAILROAD COMPANIES OR OTHER ORGANIZATIONS HAVING OCCASION TO DO WORK ON AND IN CONNECTION WITH THE IMPROVEMENT.
5. AVOID UNNECESSARY USE OF RAILROAD PROPERTY WITHOUT WRITTEN PERMISSION OF THE RAILROAD COMPANY AND LEAVE RAILROAD RAILBED AND PROPERTY IN A CONDITION ACCEPTABLE TO THE CHIEF ENGINEER OF THE RAILROAD COMPANY.

PRIOR TO COMMENCING ANY WORK INVOLVING THE REMOVAL OF THE EXISTING STRUCTURE, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER AND RAILROADS FOR APPROVAL, COMPLETE DETAILS OF THE PROPOSED METHOD FOR REMOVING THE EXISTING STRUCTURE. NO DEMOLITION SHALL BEGIN UNTIL WRITTEN APPROVAL IS RECEIVED FROM THE RAILROADS AND THE ENGINEER.

ALL WORK ABOVE OR DIRECTLY ADJACENT TO THE RAILROAD SHALL BE SUBJECT TO INSPECTION AT ALL TIMES BY ITS PROPERLY DESIGNATED REPRESENTATIVE. SAFETY AND CONTINUITY OF OPERATIONS OF THE RAILROAD TRAFFIC AND THE PROTECTION OF RAILROAD COMMUNICATION AND TOWER LINES SHALL BE OF MAJOR IMPORTANCE AND SHALL AT ALL TIMES BE PROTECTED AND SAFEGUARDED. THE CONTRACTOR SHALL GIVE WRITTEN NOTICE TO THE DULY AUTHORIZED REPRESENTATIVE OF THE RAILROAD AT LEAST TEN WORKING DAYS IN ADVANCE OF THE TIME THE CONTRACTOR INTENDS TO COMMENCE ANY WORK ABOVE OR DIRECTLY ADJACENT TO THE RAILROAD. WHENEVER PERFORMING ANY WORK WHICH, IN THE OPINION OF THE ENGINEER, COULD AFFECT RAILROAD OPERATION, THE CONTRACTOR SHALL SUBMIT COMPLETE PLANS AND DETAILS OF THE PROPOSED WORK TO BOTH THE RAILROAD AND THE ENGINEER FOR APPROVAL. NO SUCH WORK SHALL BE COMMENCED OR PROSECUTED WITHOUT PRIOR APPROVAL OF BOTH AGENCIES. APPROVAL OF SUCH WORK SHALL NOT BE CONSTRUED AS A RELEASE FROM RESPONSIBILITY OR LIABILITY FOR ANY DAMAGE WHICH THE RAILROAD MAY SUFFER.

THE CONTRACTOR SHALL NOT AT ANY TIME PERMIT EQUIPMENT IN HIS USE TO ENTER UPON OR FOUL THE RAILROAD COMPANY'S TRACKS EXCEPT WHEN SUCH EQUIPMENT IS PROTECTED BY AUTHORIZED EMPLOYEES OF THE RAILROAD COMPANY.

*ALL WORK OVER GCRTA TRACKS SHALL BE DONE WITH THE OVERHEAD POWER OFF. IF THE CONTRACTOR REQUIRES THE DE-ENERGIZATION OF THE OVERHEAD POWER TO THE CATENARY SYSTEM BETWEEN 1:00 A.M. TO 3:00 A.M., HE SHOULD MAKE A WRITTEN REQUEST TO THE DIRECTOR OF RAIL TRANSPORTATION AT LEAST 72 WORK-DAY HOURS AHEAD OF SCHEDULED NEED.*

CONSTRUCTION ADJACENT TO TRACKS: THE FOLLOWING CONSTRUCTION CLEARANCES SHALL BE MAINTAINED AT ALL TIMES:

HORIZONTALLY FROM THE CENTER OF THE TRACK:

GCRTA - 6'-0"  
CHESSIE - 10'-0"

VERTICALLY FROM A POINT LEVEL WITH THE TOP OF THE HIGHER RAIL, AND 4 FEET FROM THE CENTER OF TRACKS:

GCRTA - 21' - 0"  
CHESSIE - 21' - 0"

NO OBSTRUCTION CLOSER TO THE TRACK THAN PERMITTED BY THE CONSTRUCTION CLEARANCE SHALL EXTEND ABOVE THE TOP OF RAIL.

**B. REMOVAL**

THE CONTRACTOR SHALL REMOVE THE DESIGNATED PORTIONS OF THE EXISTING BRIDGE TO THE LIMITS SHOWN ON THE PLAN OR TO THE LIMITS DIRECTED BY THE ENGINEER. PARTS DESIGNATED BY THE PLANS FOR REMOVAL MAY BE REMOVED BY METHODS OF THE CONTRACTOR'S SELECTION. NO PART OR DEBRIS SHALL BE PERMITTED TO BE DROPPED ON THE GROUND OR ON THE RAILROAD.

**C. RESTRICTIONS BY GCRTA**

1. ALL WORK OVER GCRTA TRACKS SHALL BE COORDINATED WITH AUTHORITY PERSONNEL. AUTHORITY PERSONNEL WILL PERFORM ALL WORK NECESSARY FOR MAINTENANCE OF REGULAR, CONTINUOUS RAPID TRANSIT SERVICE.
2. WHILE PERFORMING THE FOLLOWING MAJOR WORK OVER AND ADJACENT TO (WITHIN TEN (10) FEET FROM CENTERLINE) ANY GCRTA TRACK, THE FOLLOWING RESTRICTIONS APPLY:

DEMOLITION AND PORTIONS OF STRUCTURE REMOVAL SHALL BE DONE BY NIGHTTIME WORK ONLY.

THE FOLLOWING DEFINE THE NIGHTTIME OPERATION PERIODS FOR THE GCRTA TRACKS.

NIGHTTIME WORK\* BETWEEN 1:00 A.M. AND 3:30 A.M.

\*DURING THE NIGHTTIME PERIOD BETWEEN 1:00 A.M. AND 3:30 A.M., THE OVERHEAD POWER TO THE CATENARY SYSTEM WILL BE DE-ENERGIZED BY THE GCRTA PERSONNEL. AT ALL OTHER TIMES, THE OVERHEAD POWER WILL BE ENERGIZED. THE CONTRACTOR MUST VERIFY WITH GCRTA DAILY, THE EXACT DE-ENERGIZATION TIMING.

3. NO AT-GRADE CROSSING OF GCRTA TRACKS WILL BE PERMITTED.
4. THE CONTRACTOR SHALL PROVIDE, INSTALL, ERECT AND MAINTAIN SUITABLE LIGHTING AND PROTECTIONS FOR SAFE AND EFFICIENT PROGRESS OF NIGHTTIME WORK AND FOR ANY WORK THAT IS TO BE PERFORMED AFTER DAYLIGHT HOURS.

5. GCRTA FLAGMEN WILL BE REQUIRED WHENEVER WORK IS PERFORMED OVER OR WITHIN 10 FEET OF THE CENTERLINE OF EITHER TRACK. REQUEST FOR FLAGMEN MUST BE SUBMITTED TO THE DIRECTOR OF RAIL TRANSPORTATION A MINIMUM OF 48 WORK-DAY HOURS IN ADVANCE OF DATE NEEDED.

6. CONTRACTOR PERSONNEL SHALL WEAR SAFETY VESTS WHENEVER WORK IS PERFORMED WITHIN 10 FEET OF THE CENTERLINE OF EITHER TRACK.

7. NO SEPARATE PAYMENT WILL BE MADE TO THE CONTRACTOR FOR ADDITIONAL COSTS DUE TO WORK RESTRICTIONS FOR NIGHTTIME OPERATION. THE COSTS SHALL BE INCLUDED WITH THE UNIT PRICE BID FOR WORK ITEMS OF THE CONTRACT SO RESTRICTED.

**D. TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES (CHESSIE RAILROAD AND GCRTA)**

**1. GENERAL**

THIS WORK SHALL CONSIST OF CONSTRUCTING AND REMOVING RIDGID TEMPORARY CONSTRUCTIONS REQUIRED TO COMPLETE THE WORK IN ADDITION TO THE FORMWORK AND ITEMS WHICH ARE SPECIFICALLY INCLUDED ELSEWHERE. THE WORK INCLUDES TEMPORARY PLATFORMS OR OTHER MEANS TO PREVENT LOOSE MATERIALS FROM FALLING DURING THE STRUCTURE REMOVAL AND CONSTRUCTION OF SUPERSTRUCTURE OVER THE RAILROAD'S TRACKS.

**2. REQUIREMENTS**

IN ORDER TO PROTECT RAILROAD TRAFFIC AGAINST DAMAGE FROM FALLING MATERIAL AND DEBRIS WHILE REMOVING ELEMENTS OF THE EXISTING STRUCTURE OR WHILE WORK IS IN PROGRESS OVERHEAD, THE CONTRACTOR SHALL FURNISH AND ERECT TEMPORARY PROTECTIVE STRUCTURES UNDER THE SPANS THAT ARE DIRECTLY OVER THE RAILROAD'S TRACKS. PROTECTIVE STRUCTURES OVER GCRTA TRACKS SHALL BE ELECTRICALLY INSULATED.

THE FLOORING AND SIDING OF THE STRUCTURES SHALL HAVE NO CRACKS OR OPENINGS THROUGH WHICH MATERIAL PARTICLES MAY FALL. THE PROTECTION IN ALL CASES SHALL EXTEND BEYOND THE EXTERIOR STRUCTURAL BEAMS A SUFFICIENT DISTANCE TO PROTECT UNDER THE BRIDGE RAILINGS.

AFTER THE TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES HAVE SERVED THEIR PURPOSE, AND WHEN SO DIRECTED BY THE ENGINEER, THEY SHALL BE REMOVED. ALL MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR AT HIS OWN EXPENSE.

DETAILS OF THE TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES INCLUDING THE PROPOSED TEMPORARY UNDER CLEARANCES TO THE RAILROAD'S TRACKS, SHALL BE SUBMITTED TO THE ENGINEER AND RAILROAD FOR APPROVAL.

**3. PAYMENT**

TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED WITH THE UNIT PRICE BID FOR ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN.

**B. SINGLE TRACKING WILL BE PERMITTED BETWEEN 10:30 P.M. AND 1:00 A.M., IF NO OTHER SINGLE TRACKING IS IN OPERATION EAST OF TOWER CITY. THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO THE DIRECTOR OF RAIL TRANSPORTATION 72 WORK-DAY HOURS AHEAD OF SCHEDULED NEEDS.**

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CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER						
<b>GENERAL NOTES</b> EAGLE AVENUE VIADUCT OVER CHESSIE, GCRTA AND CANAL ROAD-PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1009M CLEVELAND CUYAHOGA COUNTY OHIO						
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## 10. ITEM 202 - PORTION OF STRUCTURES REMOVED, AS PER PLAN

REMOVAL OF PORTIONS OF EXISTING STRUCTURE AS SHOWN ON THE CONTRACTOR DRAWINGS OR AS DIRECTED BY THE ENGINEER SHALL CONFORM IN ALL RESPECTS TO ITEM 202 OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, CONSTRUCTION AND MATERIALS SPECIFICATIONS.

THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING AS MAY BE REQUIRED TO REMOVE PORTIONS OF THE STRUCTURE AND TO MAINTAIN STABILITY AND INSURE SAFETY TO THE PUBLIC. THE CONTRACTOR SHALL REMOVE AND REPLACE, AT HIS OWN EXPENSE ANY PART OF THE REMAINING STRUCTURE DAMAGED BY FAILURE OF HIS SHORING OR BRACING. TEMPORARY SHORING AND BRACING SHALL BE REMOVED WHEN NO LONGER NEEDED AND PRIOR TO FINAL ACCEPTANCE OF THE REHABILITATION OF THE STRUCTURE.

THE CONTRACTOR SHALL PREPARE DETAILED PLANS AND PROCEDURES FOR REMOVAL OF PORTIONS OF THE EXISTING STRUCTURE INCLUDING METHODS OF JACKING, SHORING, BRACING AND PROTECTING EXISTING UTILITIES, PEDESTRIAN AND RAILROAD TRAFFIC WITHIN THE LIMITS OF WORK. SUCH PLANS SHALL INCLUDE INFORMATION AS TO EQUIPMENT, METHODS OF REMOVAL, COLLECTION AND DISPOSAL, MATERIALS TO BE USED, PERSONNEL, SUPERVISION, HOURS OF OPERATION AND DURATION OF THE WORK. THESE PLANS SHALL BE APPROVED BY THE ENGINEER BEFORE COMMENCING ANY REMOVAL OPERATIONS. REVIEW AND APPROVAL BY THE ENGINEER SHALL NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR SAFE REMOVAL OPERATIONS. THE CONTRACTOR SHALL REMAIN SOLELY RESPONSIBLE FOR A SAFE REMOVAL OPERATION.

THIS ITEM SHALL INCLUDE:

1. REMOVAL OF REINFORCED CONCRETE PIER CAPS AT PIERS PGI, PF4, PG5 AND PGII.
2. REMOVAL OF PORTIONS OF REINFORCED CONCRETE DECK, CONCRETE FILL, BRICK AND ASPHALT PAVEMENT AT THE LOCATIONS DENOTED ON THE PLANS FOR REMOVAL AND REPLACEMENT.
3. REMOVAL OF STRUCTURAL STEEL MEMBERS, FULL LENGTH OR PARTIAL LENGTH, AS DENOTED ON THE PLANS.

ALL MATERIAL TO BE REMOVED AND NOT REUSED IN THE NEW CONSTRUCTION SHALL UNLESS OTHERWISE SPECIFIED BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LEGAL MANNER. UNDER NO CIRCUMSTANCES SHALL SAID MATERIAL BE PERMITTED TO REMAIN ON THE PREMISES, RIGHT OF WAY, OR ADJACENT STREETS PENDING DISPOSAL OF SAME OR FOR ANY OTHER PURPOSE UNLESS OTHERWISE PERMITTED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING ACTUAL REMOVAL QUANTITIES FOR THE DEVELOPMENT OF HIS BID PRICE FOR ITEM 202, PORTIONS OF STRUCTURES REMOVED, AS PER PLAN.

## 11. ITEM 511 - CLASS C CONCRETE AS PER PLAN

THIS ITEM SHALL CONFORM IN ALL RESPECTS TO ITEM 511 OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, CONSTRUCTION AND MATERIAL SPECIFICATIONS.

THIS ITEM SHALL INCLUDE:

1. CONCRETE ENCASEMENT OF THE EXISTING STRUCTURAL STEEL COLUMN AT PIER PC2 AS DETAILED ON THE PLANS.
2. CONCRETE PIER CAP REPLACEMENTS AT PIERS PFI, PGI, PG5 AND PGII AS DETAILED ON THE PLANS.

## 12. ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN:

THIS ITEM SHALL CONSIST OF FURNISHING, FABRICATING, CLEANING, SHOP PAINTING AND ERECTING OF ALL STRUCTURAL STEEL AS SPECIFIED ON THE PLANS. IT SHALL ALSO INCLUDE ANY WORK REQUIRED TO MAKE NECESSARY REPAIRS AND ALTERATIONS, AND TO CONNECT OR JOIN NEW WITH OLD CONSTRUCTION. AFTER PORTIONS OF STRUCTURE DENOTED ON THE PLANS ARE REMOVED TO THE LIMITS SHOWN, EXISTING MEMBERS SHALL BE PREPARED FOR CONNECTIONS OF NEW MEMBERS BY REMOVAL OF SCALE AND RUST TO THE SATISFACTION OF THE ENGINEER.

RIVET HOLES IN EXISTING MEMBERS THAT REMAIN OPEN AFTER COMPLETION OF ALL REMOVAL OF EXISTING MEMBERS AND ERECTION OF NEW MEMBERS SHALL BE REAMED AND FITTED WITH A LARGER HIGH STRENGTH BOLT, OR THE HOLE MAY BE PLUGGED AT THE CONTRACTOR'S OPTION.

THE REQUIREMENTS OF 513 APPLY TO THIS ITEM EXCEPT AS DESCRIBED HEREWITH. ALL STEEL SHALL BE STRUCTURAL STEEL ASTM A36. NEW STEEL MEMBERS SHALL BE SHOP PAINTED PER ITEM 514, SYSTEM A.

STRUCTURAL STEEL UNDER THIS ITEM WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. THE CONTRACTOR SHALL MAKE NECESSARY MEASUREMENTS, SURVEY MEMBER ELEVATIONS PRIOR TO REMOVAL AS REQUIRED AND PREPARE SKETCHES, DRAWINGS, TABLES, ETC. THE ENGINEER SHALL HAVE AUTHORITY AND RESPONSIBILITY FOR ENSURING THAT THE FABRICATED STEEL IS ACCEPTABLE. TECHNICAL ASSISTANCE WILL BE PROVIDED ON REQUEST BY THE BUREAU OF BRIDGES. MILL TEST REPORTS AND SHIPPING DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INCORPORATING STEEL ITEMS INTO THE WORK, AS REQUIRED BY 501.07. AFTER FABRICATION THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL TO ENSURE THAT THE DRAWINGS DEPICT THE STEEL AS ACTUALLY INCORPORATED INTO THE WORK. THE ENGINEER WILL THEN SEND ONE APPROVED SET TO THE BUREAU OF BRIDGES FOR INFORMATION. PAY WEIGHTS SHALL BE COMPUTED IN COMPLIANCE WITH 513 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS AND SUBMITTED TO THE ENGINEER FOR HIS REVIEW AND APPROVAL. THE FABRICATOR SHALL FURNISH A 35 MILLIMETER MICROFILM COPY OF EACH SHOP DRAWING, WHICH SHALL BE MOUNTED ON AN APERTURE CARD AS SPECIFIED IN 501.05.

## 13. ITEM 516 - REFURBISH BEARING DEVICE, AS PER PLAN

THIS ITEM SHALL INCLUDE FURNISHING ALL MATERIALS AND LABOR NECESSARY TO DISASSEMBLE, CLEAN, PREPARE, PAINT, RESURFACE, ASSEMBLE AND INSTALL EXISTING BEARING DEVICES AT LOCATIONS SHOWN ON THE PLANS, WHERE EXISTING STRINGERS ARE BEING REPLACED.

ALL REQUIREMENTS OF ITEM 516 OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL APPLY.

## 14. ITEM 516 - BEARING DEVICE, MISC.: SLIDING PLATES

THIS ITEM SHALL INCLUDE FURNISHING ALL MATERIALS AND LABOR TO FABRICATE, ASSEMBLE, CONSTRUCT, PAINT, COAT AND INSTALL NEW PLATE BEARING DEVICES OF THE TYPE AND SIZE SHOWN ON THE PLANS.

ALL REQUIREMENTS OF ITEM 516 OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL APPLY.

## 15. ITEM SPECIAL - STRUCTURAL STEEL, MISC.: REPLACE EXISTING RIVETS WITH HIGH STRENGTH BOLTS

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS AND EQUIPMENT TO REPLACE THE EXISTING RIVETS WITH HIGH STRENGTH BOLTS AT COLUMN LOCATIONS SHOWN ON THE PLANS AND AS DESIGNATED BY THE ENGINEER IN ACCORDANCE WITH THIS SPECIFICATION. ALL APPLICABLE PROVISIONS OF ITEM 513 SHALL APPLY.

AT EACH SPECIFIED MEMBER, EXISTING RIVETS EXHIBITING SECTION LOSS OR SEVERE HEAD DETERIORATION AS DETERMINED BY THE ENGINEER SHALL BE REPLACED WITH NEW 7/8 INCH DIAMETER HIGH STRENGTH BOLTS OR LARGER AS APPROVED BY THE ENGINEER. THE SEQUENCE OF WORK AND METHOD OF RIVET REMOVAL SHALL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. CARE SHALL BE TAKEN TO MAINTAIN THE COMPOSITE SECTION PROPERTIES OF THE BUILT-UP COLUMNS AND DETAILS OF THE CONTRACTOR'S PROPOSED WORK SHALL BE SUBMITTED, TO THE ENGINEER FOR APPROVAL.

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DIVISION OF ENGINEERING AND CONSTRUCTION					
CUYAHOGA COUNTY ENGINEER					
<b>GENERAL NOTES</b>					
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# GENERAL NOTES

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THE CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE THE HOLE IN THE EXISTING MEMBERS DURING RIVET REMOVAL OPERATIONS. IF THE HOLES ARE DAMAGED OR FOR ANY REASON DO NOT CONFORM TO THE REQUIREMENTS FOR 7/8 INCH DIAMETER BOLTS, THE CONTRACTOR SHALL TAKE THE FOLLOWING CORRECTIVE ACTION:

1. IF THE HOLE IS OVERSIZED BUT NOT LARGER THAN 1-1/16 INCH, A HARDENED WASHER SHALL BE INSTALLED OVER THE EXPOSED HOLE.
2. AT THE OPTION OF THE CONTRACTOR, SUBJECT TO APPROVAL OF THE ENGINEER, THE HOLE MAY BE REAMED AND FITTED WITH A LARGER HIGH STRENGTH BOLT OR THE HOLE MAY BE PLUGGED AND REDRILLED TO FIT A 7/8 INCH HIGH STRENGTH BOLT.

AFTER REMOVAL OF THE RIVET, THE HOLE PERIMETER AND ADJACENT METAL AREA SHALL BE CLEANED TO THE SATISFACTION OF THE ENGINEER.

APPROXIMATE LOCATIONS AND QUANTITIES OF RIVETS REQUIRING REPLACEMENT ARE SHOWN ON THE PLANS. THE ACTUAL LOCATIONS OF DETERIORATED RIVETS TO BE REMOVED SHALL BE MARKED BY THE ENGINEER. THE CONTRACTOR SHALL SUBMIT HIS CALCULATED QUANTITY TO THE ENGINEER FOR REVIEW AND APPROVAL. THE QUANTITY WILL BE MEASURED AS THE ACTUAL NUMBER OF RIVETS REPLACED WITH HIGH STRENGTH BOLTS AS SPECIFIED AND AS DIRECTED BY THE ENGINEER.

**16. ITEM SPECIAL - STRUCTURES, MISC.: INSPECTION OF EXISTING CONCRETE ELEMENTS**

PRIOR TO BEGINNING PATCHING WORK ON THE BRIDGE, THE CONTRACTOR SHALL PERFORM A THOROUGH INSPECTION OF THE CONCRETE SURFACES TO BE PATCHED. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MATERIAL, EQUIPMENT AND LABOR TO PERMIT INSPECTION OF DETERIORATED CONCRETE ELEMENTS. THE CONTRACTOR'S SUPERINTENDENT SHALL ACCOMPANY THE ENGINEER IN MAKING THE DETAILED INSPECTION TO ESTABLISH THE LIMITS OF ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN. THE CONTRACTOR SHALL SOUND THE CONCRETE MEMBERS DENOTED ON THE PLANS AND OUTLINE FOR REMOVAL AREAS OF LOOSE OR UNSOUND CONCRETE, SUBJECT TO APPROVAL OF THE ENGINEER. AEROSOL SPRAY PAINT FOR OUTLINING SHALL BE PROVIDED BY THE CONTRACTOR.

INSPECTION OF THE EXISTING CONCRETE ELEMENTS WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR ITEM SPECIAL - STRUCTURES, MISC.: INSPECTION OF EXISTING CONCRETE ELEMENTS. THIS PRICE SHALL INCLUDE PAYMENT IN FULL FOR ALL MATERIAL, EQUIPMENT AND LABOR NECESSARY TO COMPLETE THE WORK.

**17. ITEM 519 - PATCHING CONCRETE STRUCTURES AS PER PLAN**

ALL CONCRETE PATCHING WORK WHERE SHOWN ON THE PLANS OR AS ORDERED BY THE ENGINEER DURING CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ODOT SPECIFICATION ITEM 519 AND WITH THE MODIFICATIONS AND ADDITIONS DESCRIBED HEREIN.

- A. THE AREAS OUTLINED UNDER ITEM SPECIAL - INSPECTION OF EXISTING CONCRETE ELEMENTS SHALL FIRST BE SAW-CUT TO A MAXIMUM DEPTH OF 3/4". WHERE BOND BETWEEN THE CONCRETE AND A PRIMARY REINFORCING BAR HAS BEEN DESTROYED, OR WHERE MORE THAN ONE-HALF OF THE PERIPHERY OF SUCH A BAR HAS BEEN EXPOSED, THE ADJACENT CONCRETE SHALL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM 3/4" CLEARANCE AROUND THE BAR.

- B. DETERIORATED REINFORCEMENT SHALL BE RESTORED AT LOCATIONS AS DIRECTED BY THE ENGINEER, IN THE FOLLOWING MANNER: CONCRETE SHALL BE CHIPPED AWAY TO EXPOSE A LENGTH OF SOUND BAR ON EITHER SIDE OF THE CORRODED AREA. THE BAR WILL BE SANDBLASTED IF CORRODED LESS THAN 50% OR CUT OUT IF CORRODED MORE. A NEW BAR OF THE SAME AREA WILL BE LAPPED EITHER SIDE OF THE CORRODED OR CUT OUT AREA.
- C. SURFACE PREPARATION - CLEANING SHALL CLOSELY PRECEDE APPLICATION OF THE BONDING GROUT. THE SURFACE TO BE PATCHED AND THE EXPOSED REINFORCING STEEL SHALL BE THOROUGHLY CLEANED BY SANDBLASTING FOLLOWED BY AN AIR BLAST (STEEL CLEANED TO SA-1 QUALITY). IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL. IMMEDIATELY PRIOR TO PLACING THE CONCRETE PATCH MATERIAL, THE NEWLY EXPOSED CONCRETE SURFACES SHALL BE CLEANED WITH AN AIR BLAST AND COVERED WITH A THIN COATING OF BONDING GROUT.
- D. CLASS S CONCRETE SHALL BE PLACED, FINISHED AND CURED IN ACCORDANCE WITH SECTION 519.06 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS).
- E. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN. THE QUANTITY SHALL BE THE ACTUAL AREA IN SQUARE FEET, MEASURED IN ACCORDANCE WITH SECTION 519.07 OF THE CMS.

**18. BONDING NEW CONCRETE TO EXISTING CONCRETE**

BONDING GROUT SHALL BE USED FOR BONDING AT ALL LOCATIONS WHERE NEW CONCRETE IS PLACED IN CONTACT WITH EXISTING CONCRETE.

THE GROUT FOR BONDING SHALL CONSIST OF EQUAL PARTS BY VOLUME OF PORTLAND CEMENT AND SAND, MIXED WITH SUFFICIENT WATER TO FORM A STIFF SLURRY. THE CONSISTENCY OF THIS SLURRY SHALL BE SUCH THAT IT CAN BE APPLIED WITH A STIFF BRUSH OR BROOM TO THE EXISTING SURFACE IN A THIN, UNIFORM COATING. THE COATING OF GROUT SHALL BE SCRUBBED ONTO THE DRY SURFACE IMMEDIATELY BEFORE PLACING THE CONCRETE. CARE SHALL BE EXERCISED TO BE SURE THAT NO EXCESS GROUT IS PERMITTED TO COLLECT IN LOW SPOTS. IN NO CASE SHALL THE GROUT BE PERMITTED TO DRY BEFORE PLACING THE NEW CONCRETE. THINNED GROUT SHALL BE PAINTED OVER ALL JOINTS BETWEEN THE NEW AND EXISTING CONCRETE IMMEDIATELY AFTER THE FINISHING HAS BEEN COMPLETED.

NO SEPARATE PAYMENT WILL BE MADE FOR BONDING NEW CONCRETE TO OLD USING BONDING GROUT, BUT THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT CONCRETE ITEM. THIS PRICE SHALL INCLUDE ALL LABOR, MATERIAL AND EQUIPMENT INCLUDING CLEANING AND PREPARING OF THE EXISTING SURFACE.

**19. ITEM 607 - FENCE, TYPE CL 4'-0", 6'-0", 8'-0" OR 10'-0" HIGH AS PER PLAN**

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIAL, EQUIPMENT AND INCIDENTALS TO COMPLETE THE INSTALLATION OF ITEM 607 - FENCE, TYPE CL 4'-0", 6'-0", 8'-0" OR 10'-0" HIGH, AS PER PLAN AS SHOWN ON THE PLANS AND DESCRIBED IN THESE SPECIFICATIONS. ALL SECTIONS OF ITEM 607, FENCE IN THE C.M.S. SHALL APPLY UNLESS SPECIFICALLY MODIFIED ON THE DRAWINGS OR IN THESE SPECIFICATIONS.

TENSION BANDS SHALL BE A MINIMUM OF 12 GAUGE STEEL BY 7/8 INCHES WIDE ASSEMBLED WITH 5/16 INCH DIAMETER BY 1-1/4 INCH GALVANIZED OR CADMIUM PLATED BOLTS. ONE TENSION BAND SHALL BE REQUIRED FOR EACH FOOT OF FABRIC HEIGHT. FENCE POSTS AND ANCHOR BOLTS SHALL BE VERTICAL. RAILS SHALL BE PARALLEL TO GRADE. THE FABRIC AND RAILS SHALL BE FREE TO EXPAND OR CONTRACT ACROSS BRIDGE EXPANSION JOINTS. MATERIALS AND WORKMANSHIP SHALL MEET THE REQUIREMENTS OF ITEM 607 EXCEPT THAT ALUMINUM ALLOY POSTS AND BASE PLATES SHALL NOT BE USED. FABRIC TIES SHALL BE SPACED 14 INCH CENTER TO CENTER MAXIMUM ON ALL RAILS. ALL POSTS AND PIPE SIZES ARE NOTED IN TERMS OF THE NOMINAL INSIDE DIAMETER OF STANDARD WEIGHT PIPE, SCHEDULE 40. STRETCHER BARS AND MISCELLANEOUS HARDWARE SHALL BE OF THE CHAIN LINK INDUSTRY STANDARD. BASE PLATES AND MISCELLANEOUS BRACKETS FOR STEEL POSTS MAY BE OF ANY COMMERCIALY WELDABLE STEEL HAVING A YIELD STRENGTH OF NOT LESS THAN 33,000 P.S.I. ZINC-COATED STEEL FABRIC (AASHTO M-181, TYPE 1) SHALL BE USED THROUGHOUT. POST STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 30 K.S.I.

THE BRIDGE FENCING OVER G.C.R.T.A. TRACKS SHALL BE 8'-0" HIGH WITH THE TOP SEGMENT CURVED TO EXTEND 2'-0" OVER THE SIDEWALK. FENCE FABRIC FOR G.C.R.T.A. FENCING SHALL HAVE A 1 INCH MESH AND BE VINYL COVERED OF A UNIFORMLY MEDIUM GREEN COLOR. LIMITS OF G.C.R.T.A. FENCE ARE AS SHOWN ON THE PLANS.

THE CONTRACTOR SHALL USE THE POST SPACING SHOWN ON PLAN SHEETS 29 THROUGH 41 OF 56 AND BUILT USING THE BASE DETAILS, SECTIONS AND ELEVATIONS SHOWN ON SHEET 50 OF 56.

FENCE QUANTITIES WILL BE MEASURED IN ACCORDANCE WITH ITEM 607 IN THE C.M.S.

BASIS OF PAYMENT - THE ACCEPTED QUANTITIES OF FENCE WILL BE PAID FOR UNDER:

ITEM	UNIT	DESCRIPTION
607	LIN. FT.	FENCE, TYPE CL 4'-0" HIGH, AS PER PLAN
607	LIN. FT.	FENCE, TYPE CL 6'-0" HIGH, AS PER PLAN
607	LIN. FT.	FENCE, TYPE CL 8'-0" HIGH, AS PER PLAN
607	LIN. FT.	FENCE, TYPE CL 10'-0" HIGH, AS PER PLAN

**20. ITEM SPECIAL - STRUCTURE DRAINAGE, MISC: TRENCH DRAIN**

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIAL, EQUIPMENT AND INCIDENTALS TO INSTALL TRENCH DRAINS WITH BOLTED COVERS AT TWO LOCATIONS AS SHOWN ON SHEET 45 OF 56 BY THE FOLLOWING MANUFACTURERS:

1. NEENAH NO. R4999 EX, TYPE C WITH X FRAME
2. EAST JORDAN NO. 6901, TYPE M2
3. OR APPROVED EQUAL

THE TRENCH DRAIN COVERS SHALL BE INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS FOR INSTALLING THIS ITEM.

METHOD OF PAYMENT - THE QUANTITY WILL BE THE ACTUAL LINEAL FEET QUANTITY OF TRENCH DRAIN, COMPLETE IN PLACE.

BASIS OF PAYMENT - THE ACCEPTED QUANTITY OF TRENCH DRAIN WILL BE PAID FOR UNDER:

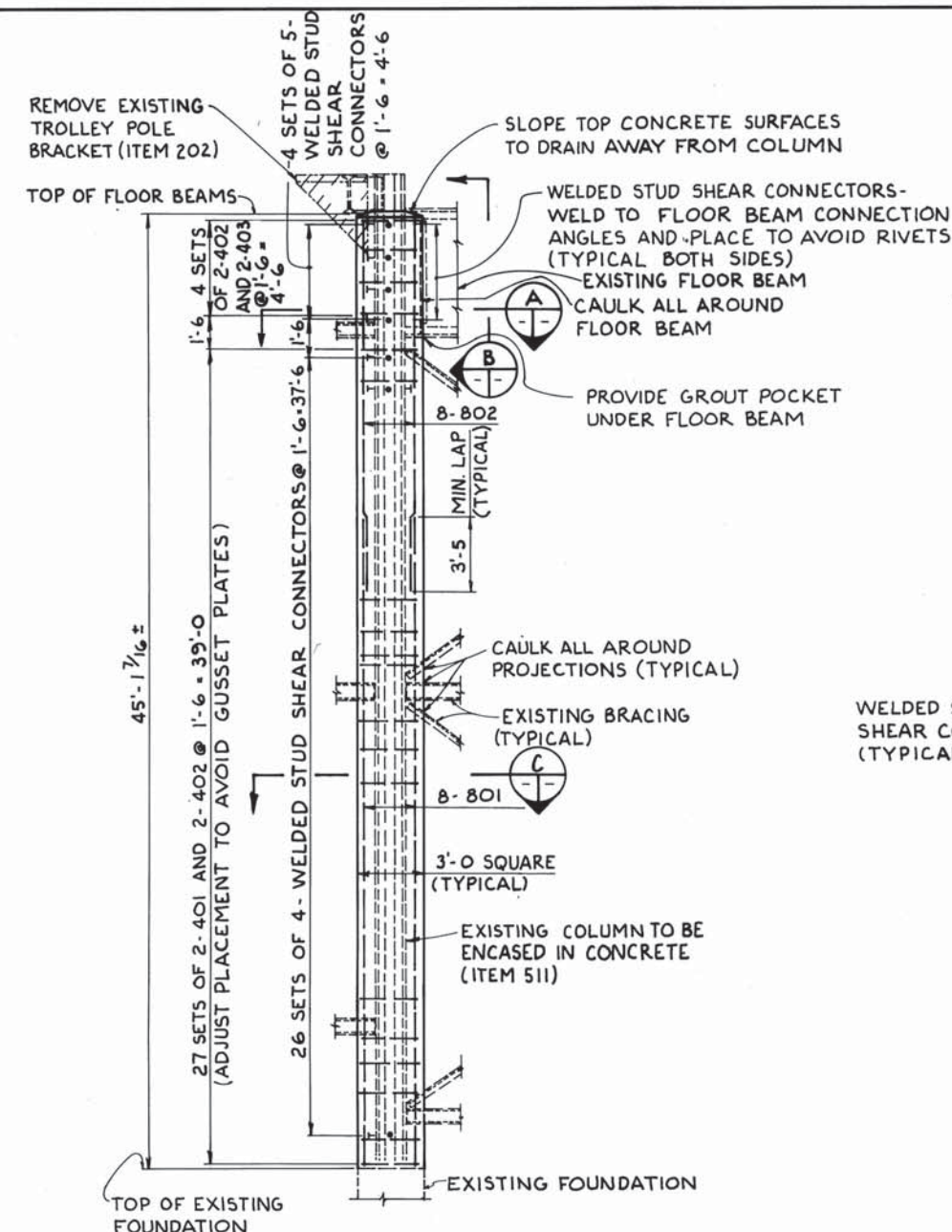
ITEM	UNIT	DESCRIPTION
SPECIAL	LIN. FT.	STRUCTURE DRAINAGE, MISC.: TRENCH DRAIN

<b>THE OSBORN ENGINEERING COMPANY</b>					<b>5 / 56</b>	
ROBERT P. MADISON INTERNATIONAL, INC. (MBE) CONSULTING ENGINEERS CLEVELAND, OHIO 44114						
CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER						
<b>GENERAL NOTES</b>						
EAGLE AVENUE VIADUCT OVER CHESSEE, G.C.R.T.A. AND CANAL ROAD-PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1009M CLEVELAND CUYAHOGA COUNTY OHIO						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RCK	RCK	---	JRS	RS	10/90	

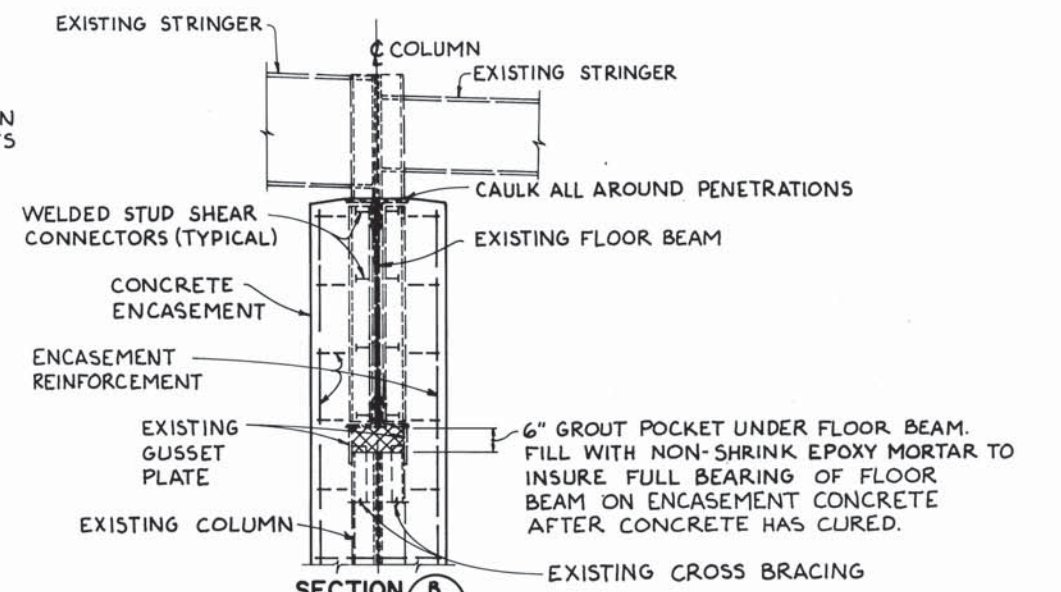


**CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II**

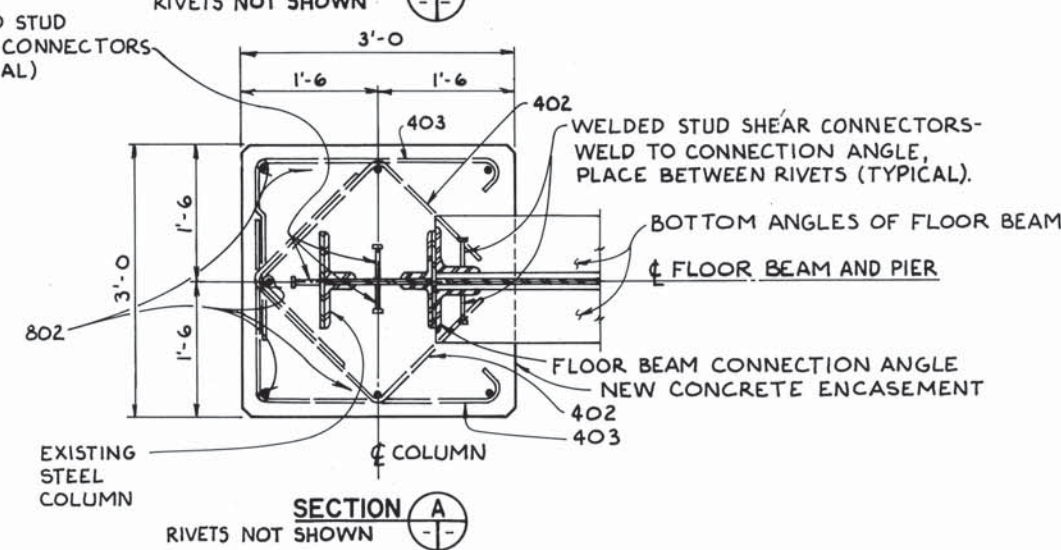
REINFORCING STEEL LIST						
MARK	NO.	LENGTH	WEIGHT	SHAPE	A	B
2PC801	8	30'-0"	641	STR		
2PC802	8	18'-5"	393	STR		
2PC401	54	7'-0"	253	1	2'-8"	2'-3"
2PC402	62	5'-5"	224	1	1'-11"	1'-10"
2PC403	8	5'-1"	27	16	2'-6"	2'-3"
TOTAL UNCOATED BARS = 1538						



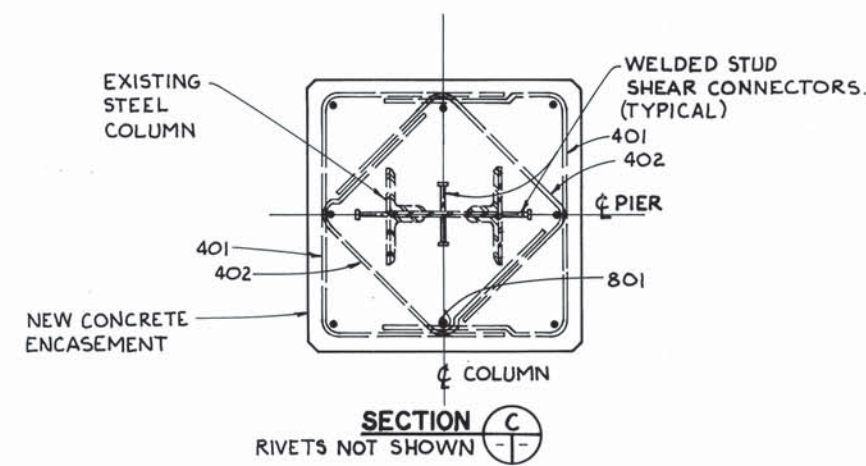
**ELEVATION**  
SOUTH COLUMN AT PIER PC2  
LOOKING NORTHWEST  
RIVETS NOT SHOWN



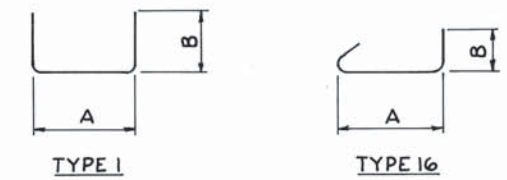
**SECTION B-B**  
RIVETS NOT SHOWN



**SECTION A-A**  
RIVETS NOT SHOWN

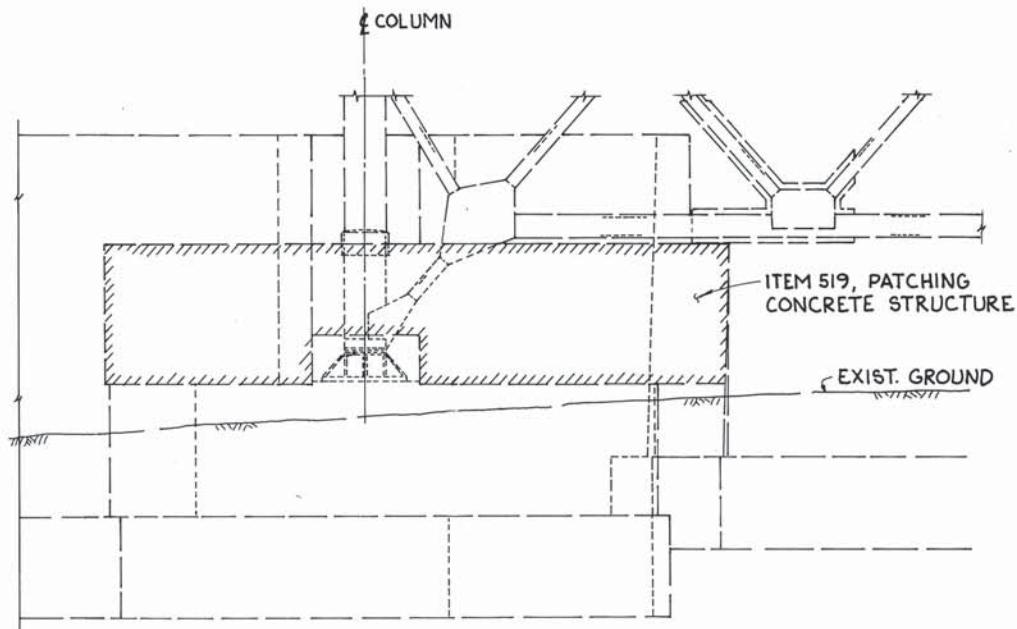


**SECTION C-C**  
RIVETS NOT SHOWN

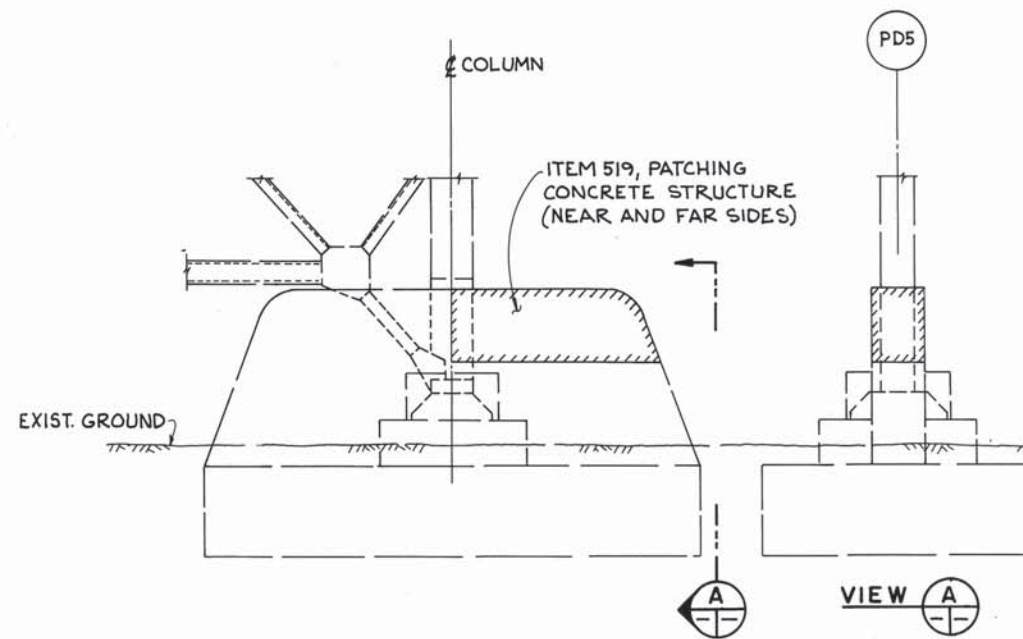


- NOTES
- REMOVE LOOSE RUST AND SCALE FROM STEEL SURFACES THAT WILL BE IN CONTACT WITH CONCRETE (SSPC-SP3). SURFACES WHERE STUD SHEAR CONNECTORS ARE TO BE INSTALLED SHALL BE CLEANED OF RUST TO BARE METAL. INCLUDE WITH ITEM 202, PORTIONS OF STRUCTURES REMOVED, AS PER PLAN FOR PAYMENT.
  - WELDED STUD SHEAR CONNECTORS SHALL BE 5/8" DIAMETER X 4" LONG.
  - REMOVAL OF PORTIONS OF SECTION C SUPERSTRUCTURE SHALL BE COMPLETED PRIOR TO PLACEMENT OF ITEM 511, CLASS C CONCRETE, AS PER PLAN.
  - ALL STEEL MEMBERS THAT PROJECT FROM CONCRETE ENCASEMENT SHALL BE CAULKED AT THE INTERFACE WITH THE CONCRETE, USING SILICONE CAULK. INCLUDE WITH ITEM 511, CLASS C CONCRETE, AS PER PLAN FOR PAYMENT.
  - POCKET UNDER FLOOR BEAM SHALL BE FILLED WITH NON-SHRINK EPOXY MORTAR PER SUPPLEMENTAL SPECIFICATION 952, EPOXY. GROUT SHALL BE HAND PACKED IF NECESSARY TO ACHIEVE CONSOLIDATION. INCLUDE WITH ITEM 511, CLASS C CONCRETE, AS PER PLAN FOR PAYMENT.
  - ALL REINFORCING BAR MARKS SHALL BE PREFIXED "2 PC".

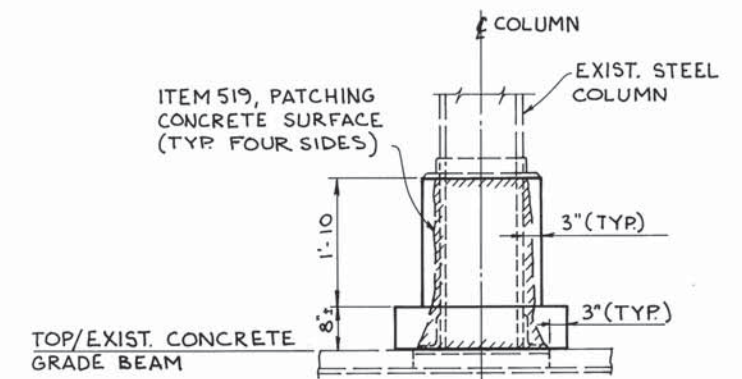
THE OSBORN ENGINEERING COMPANY 8/56						
ROBERT P. MADISON INTERNATIONAL, INC. CONSULTING ENGINEERS CLEVELAND, OHIO 44114						
CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER						
SOUTH COLUMN REHABILITATION AT PIER PC2 EAGLE AVENUE VIADUCT OVER CHESSE, G.C.R.T.A. AND CANAL ROAD-PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M CLEVELAND CUYAHOGA COUNTY OHIO						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RCK	BFG		JRS	RS	10/10	



**ELEVATION**  
PIER PD5 NORTH COLUMN  
LOOKING EAST



**ELEVATION**  
PIER PD5 SOUTH COLUMN  
LOOKING EAST

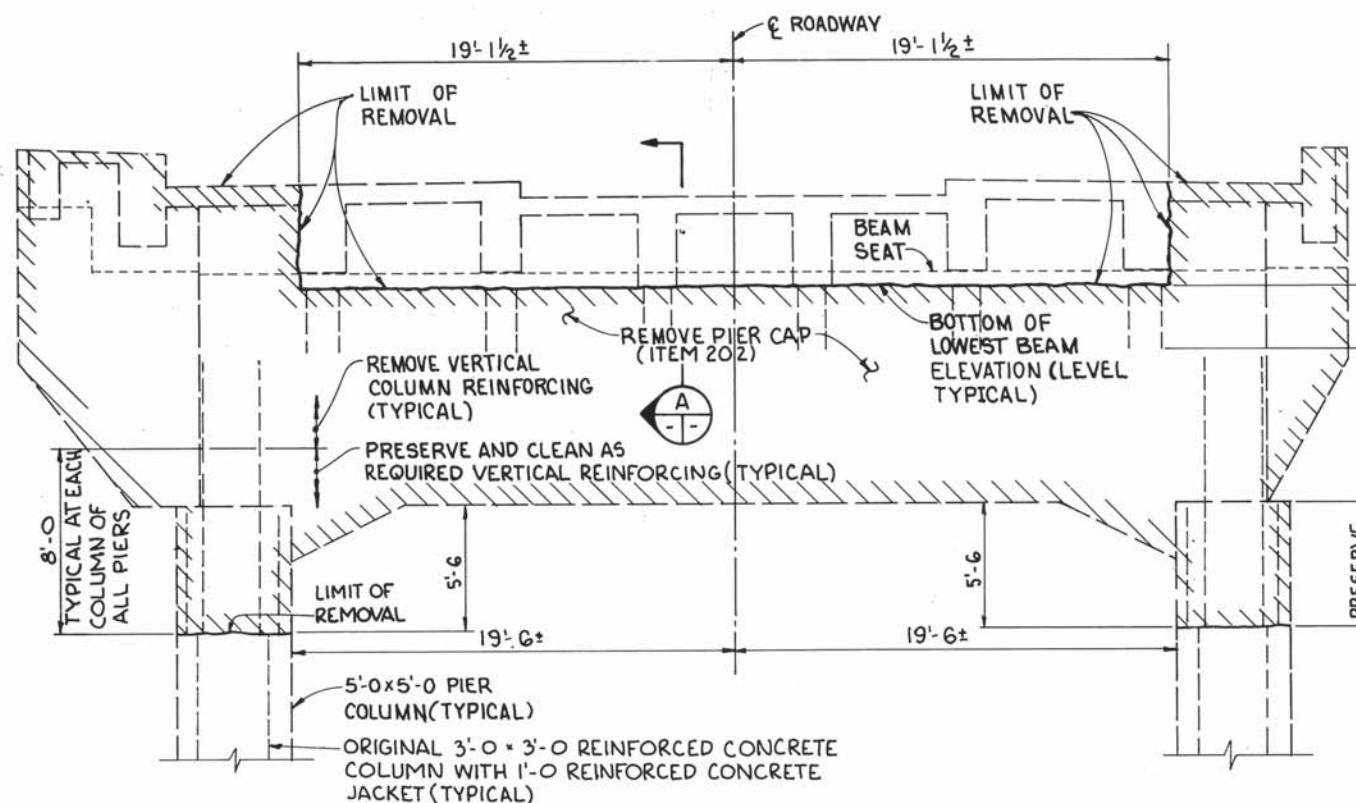


**ELEVATION**  
PIER PD4 NORTH COLUMN  
LOOKING EAST

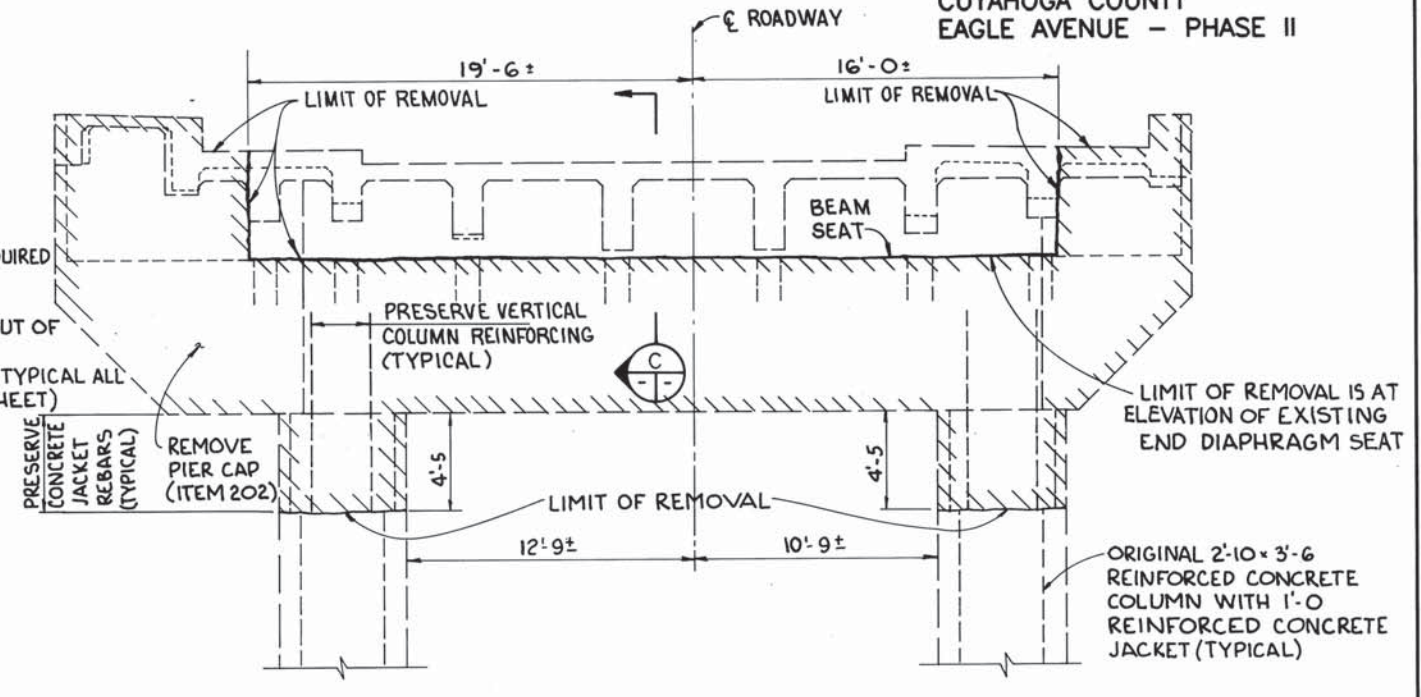
ITEM 519- PATCHING CONCRETE STRUCTURES		
	MEASURED	ESTIMATED
PIER PD5 NORTH COLUMN	150 SQ. FT.	210 SQ. FT. *
PIER PD5 SOUTH COLUMN	75 SQ. FT.	105 SQ. FT. *
PIER PD4 NORTH COLUMN	20 SQ. FT.	20 SQ. FT.

\* ESTIMATED QUANTITY HAS BEEN INCREASED 40% OVER MEASURED QUANTITY TO ALLOW FOR ADDITIONAL DETERIORATION. EXACT DIMENSIONS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.

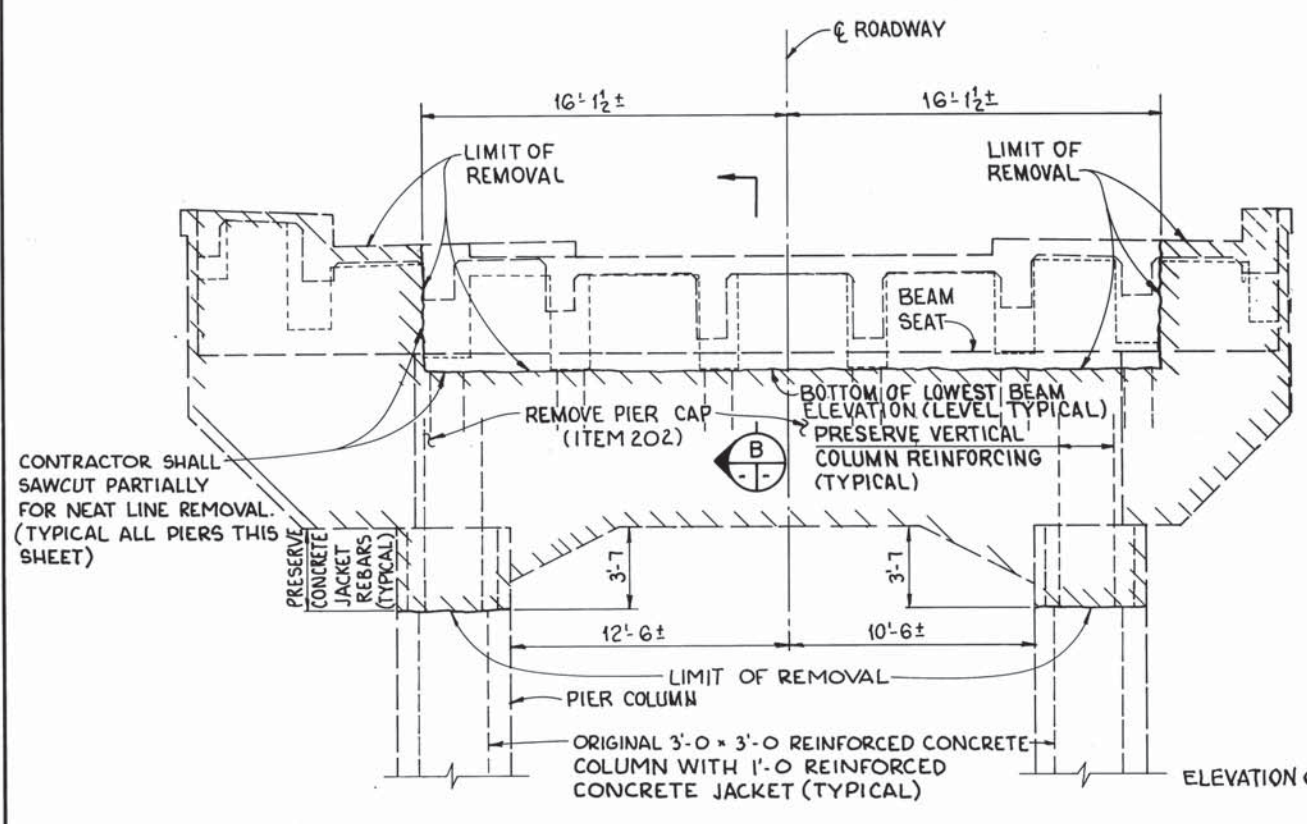




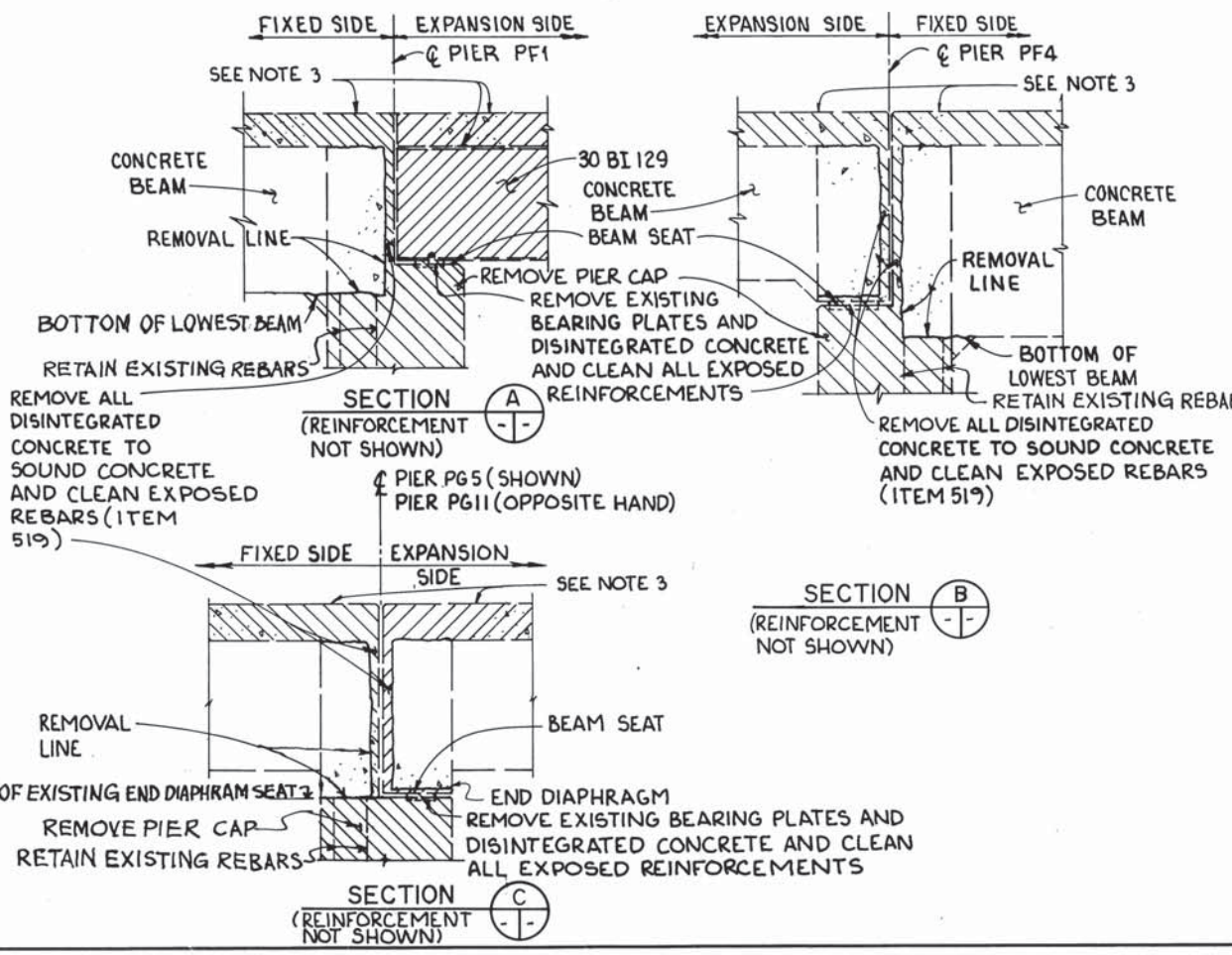
**ELEVATION PIER PF1  
(LOOKING EAST)**



**ELEVATION PIER PG5 (SHOWN)  
ELEVATION PIER PG11 (OPPOSITE HAND)**



**ELEVATION PIER PG1  
(LOOKING EAST)**



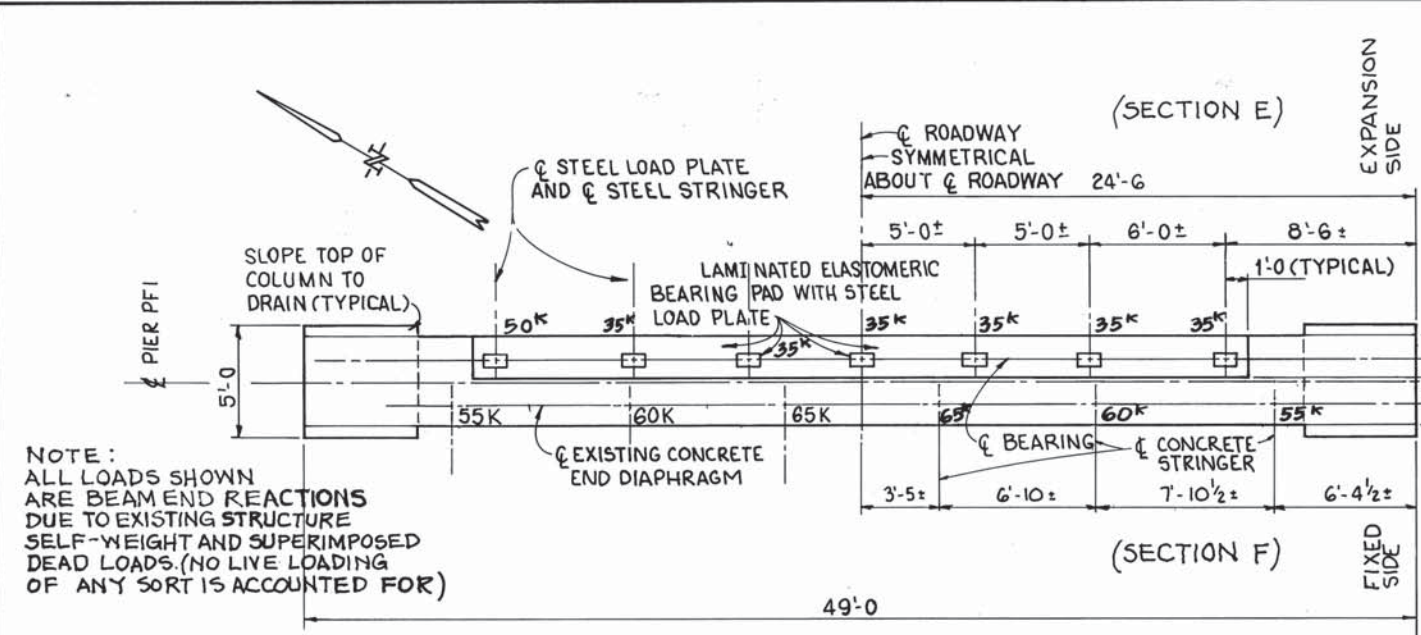
- NOTES:**
- CONTRACTOR SHALL PROVIDE SHORING WITH JACKING CAPABILITY TO MAINTAIN EXISTING DECK ELEVATIONS AT ALL TIMES AS REQUIRED PRIOR TO DEMOLITION.
  - DIMENSIONS SHOWN HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING BRIDGE AND ARE SHOWN FOR REFERENCE.
  - FOR SUPERSTRUCTURE REMOVAL LIMITS SEE ENLARGED PLANS, SHEET 37/56, 39/56, 41/56.
  - FOR PIER REHABILITATION DETAILS SEE SHEETS 11/56 THRU 13/56.
  - FOR SUGGESTED SEQUENCE OF CONSTRUCTION SEE SHEET 13/56.
  - FOR PIER LOCATIONS, SEE ELEVATION SHEET 1/56.

**THE OSBORN ENGINEERING COMPANY 10/56**  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER

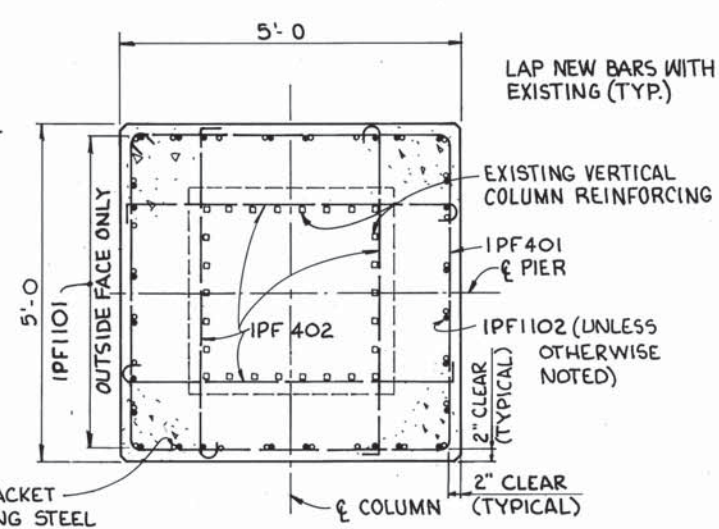
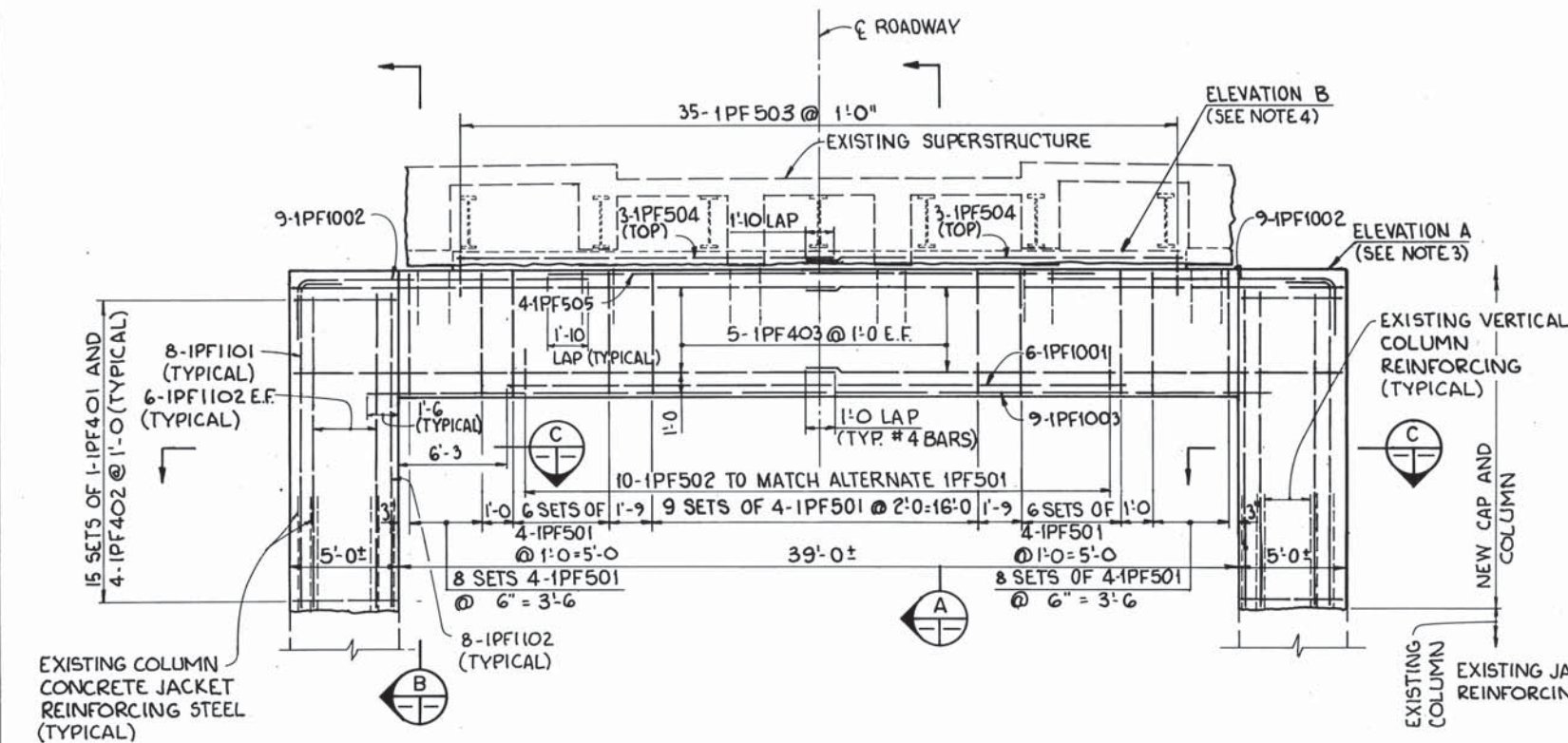
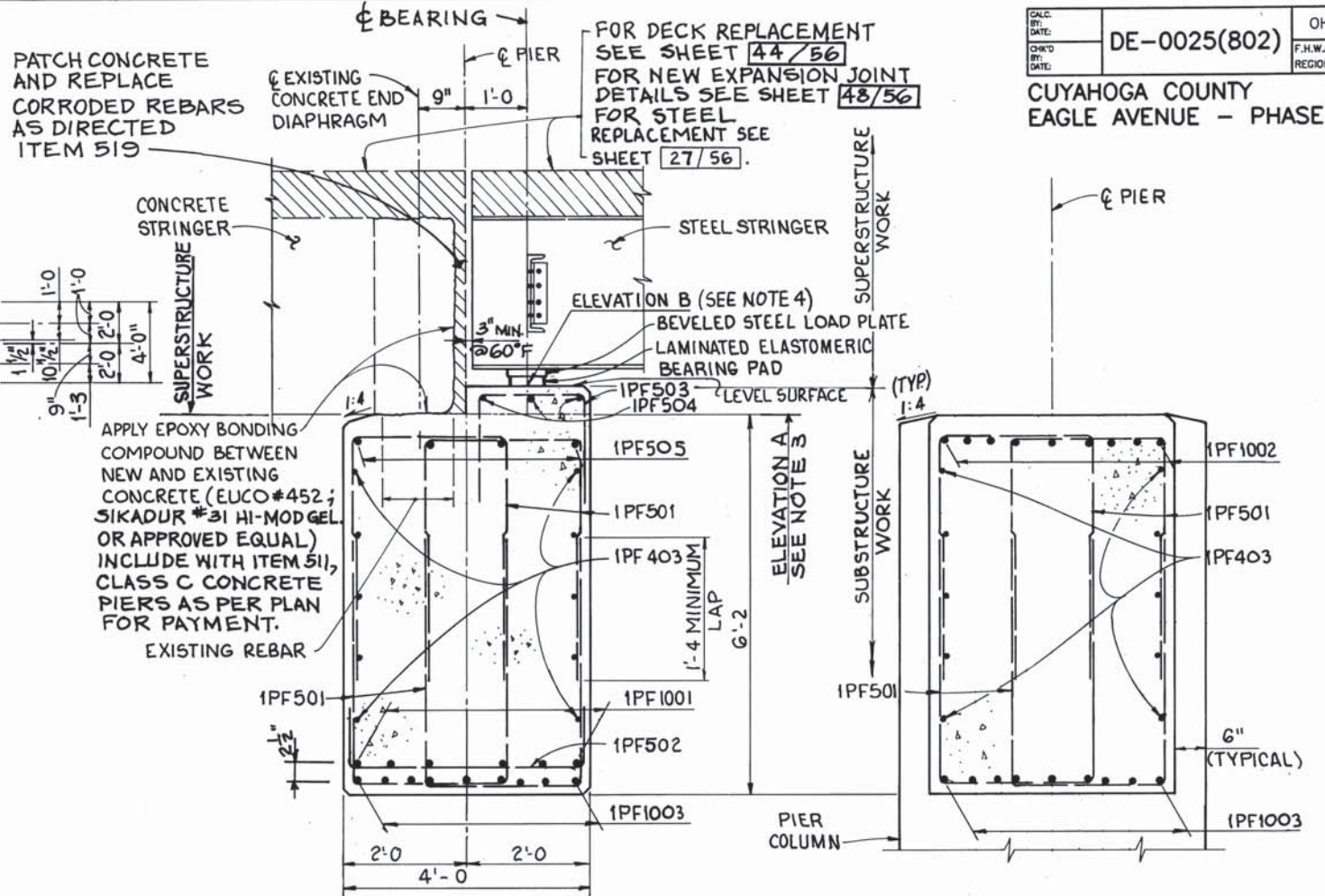
**PIER PF1, PG1, PG5, PG11 DEMOLITION**  
 EAGLE AVENUE VIADUCT OVER CHESSE, G.C.R.T.A. AND CANAL ROAD - PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
 CLEVELAND CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JRS	RCK		LYH	RS	10/90	

CUYAHOGA COUNTY  
 EAGLE AVENUE - PHASE II



NOTE:  
 ALL LOADS SHOWN ARE BEAM END REACTIONS DUE TO EXISTING STRUCTURE SELF-WEIGHT AND SUPERIMPOSED DEAD LOADS. (NO LIVE LOADING OF ANY SORT IS ACCOUNTED FOR)

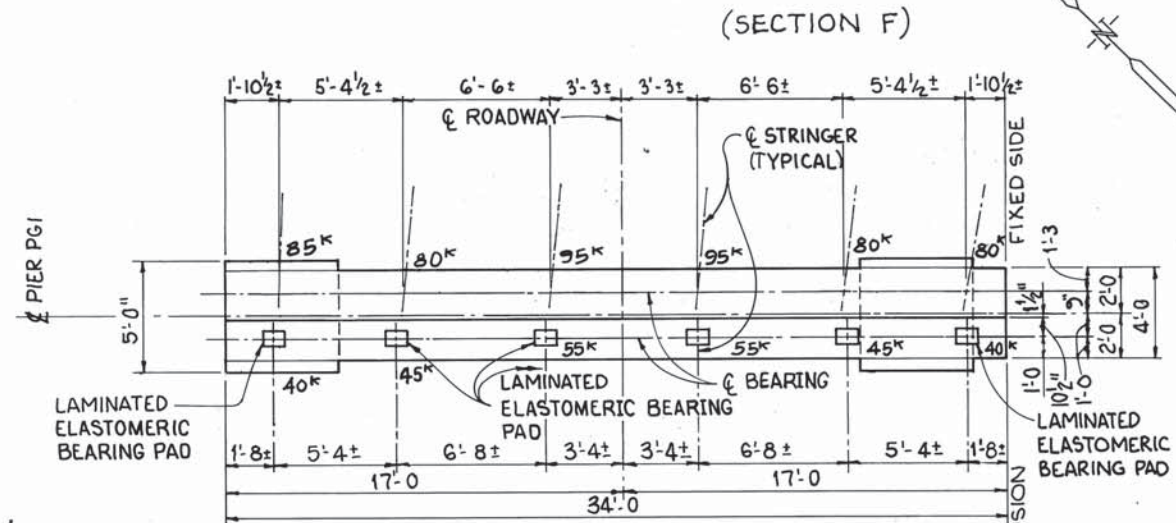


- NOTES:
- SEE GENERAL NOTES FOR AN ALLOWANCE OF REBARS FOR MISCELLANEOUS CONCRETE PATCHING AS DIRECTED BY ENGINEER.
  - FOR LAMINATED ELASTOMERIC BEARING DETAILS SEE SHEET 28/56.
  - ELEVATION A = BOTTOM OF LOWEST CONCRETE STRINGER ELEVATION.
  - ELEVATION B = 2 1/8" BELOW BOTTOM OF STEEL STRINGER ELEVATION.
  - FOR PIER DEMOLITION DETAILS SEE SHEET 10/56.
  - FOR REINFORCING BAR LIST SEE SHEET 53/56.
  - FOR SUGGESTED SEQUENCE OF CONSTRUCTION SEE SHEET 13/56.
  - FOR DEMOLITION DETAILS SEE SHEET 10/56.
  - LAMINATED ELASTOMERIC BEARINGS SEE SHEET 28/56.

THE OSBORN ENGINEERING COMPANY 11/56  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER

PIER PFI REHABILITATION  
 EAGLE AVENUE VIADUCT OVER CHESSE,  
 G.C.R.T.A. AND CANAL ROAD-PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1:0091M  
 CLEVELAND CUYAHOGA COUNTY OHIO

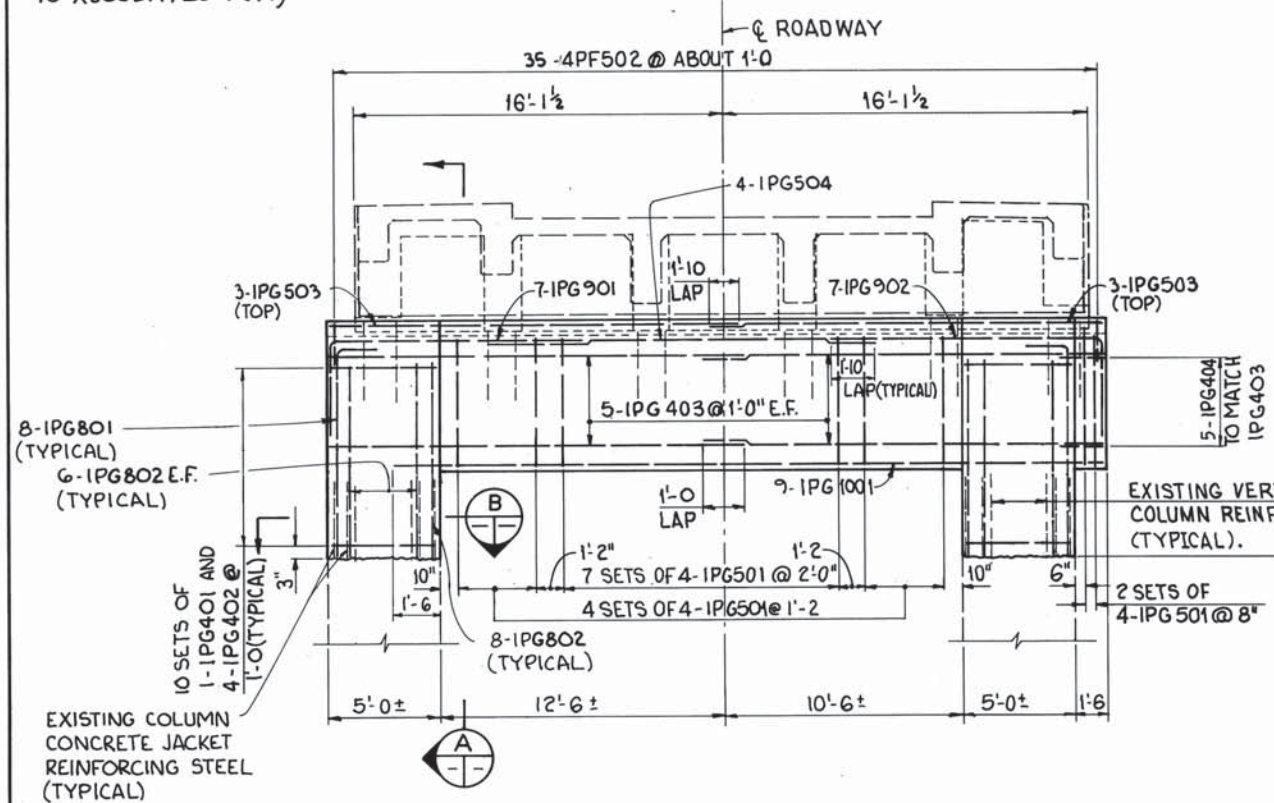
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JRS	RCK		LYH	RS	10/90	



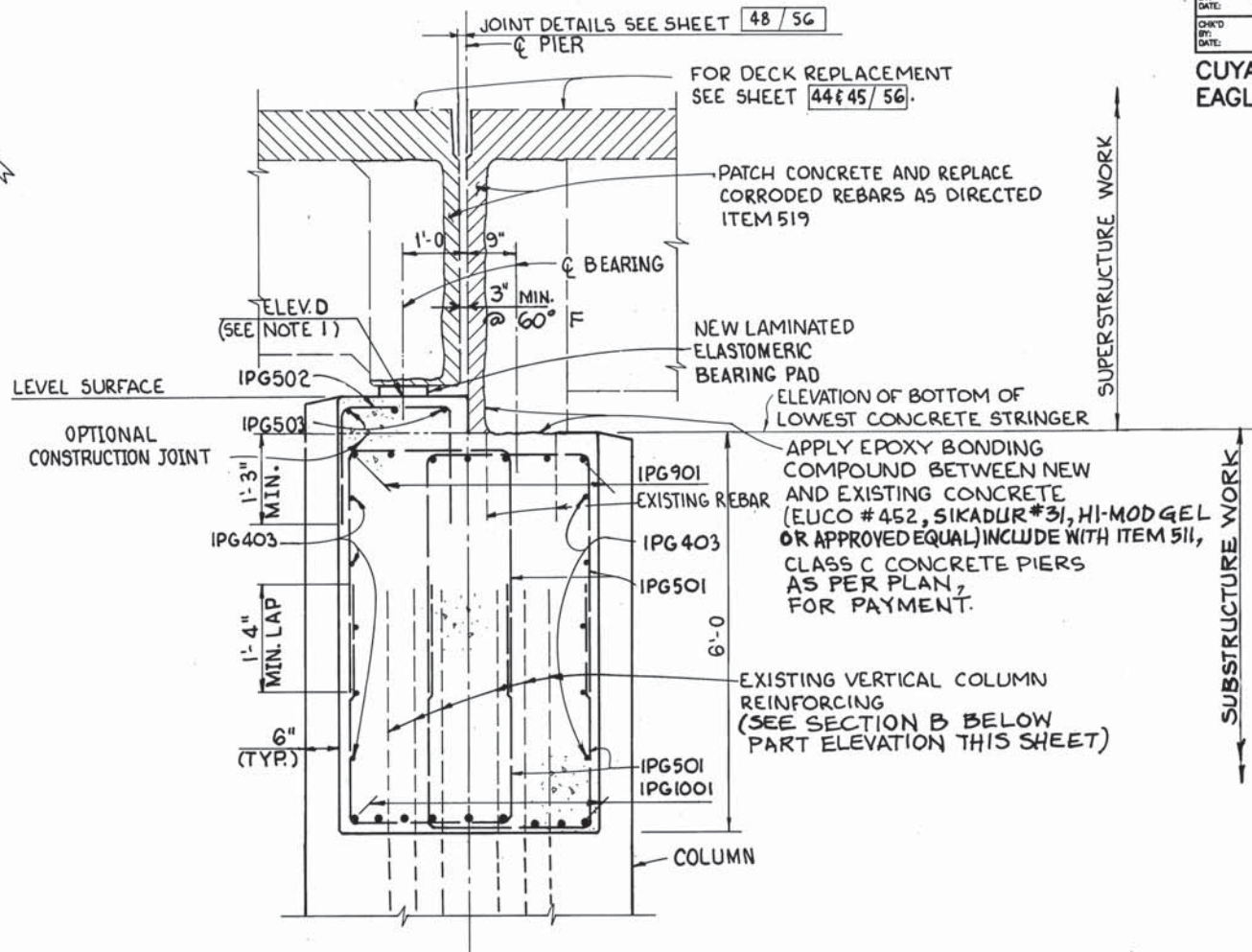
NOTE:  
ALL LOADS SHOWN ARE BEAM END REACTIONS  
DUE TO EXISTING STRUCTURE SELF-WEIGHT  
AND SUPERIMPOSED DEAD LOADS.  
(NO LIVE LOADING OF ANY SORT  
IS ACCOUNTED FOR)

(SECTION G)

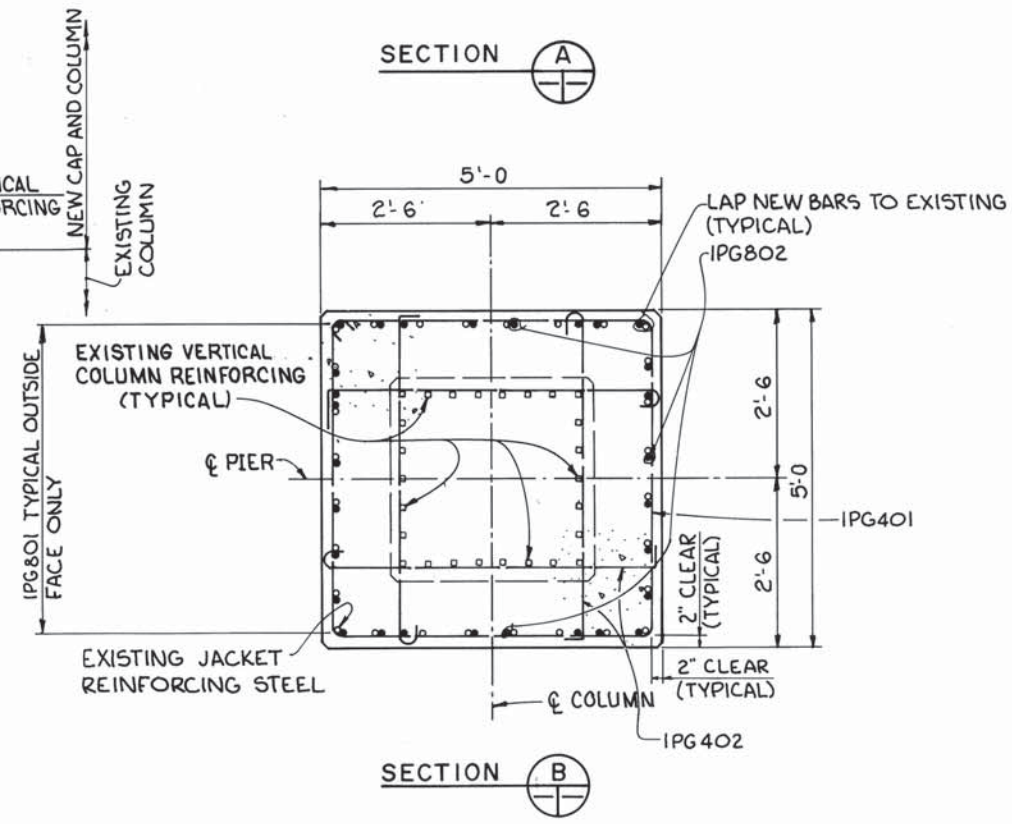
PLAN  
SUPERSTRUCTURE NOT  
SHOWN FOR CLARITY



PART ELEVATION



SECTION A



SECTION B

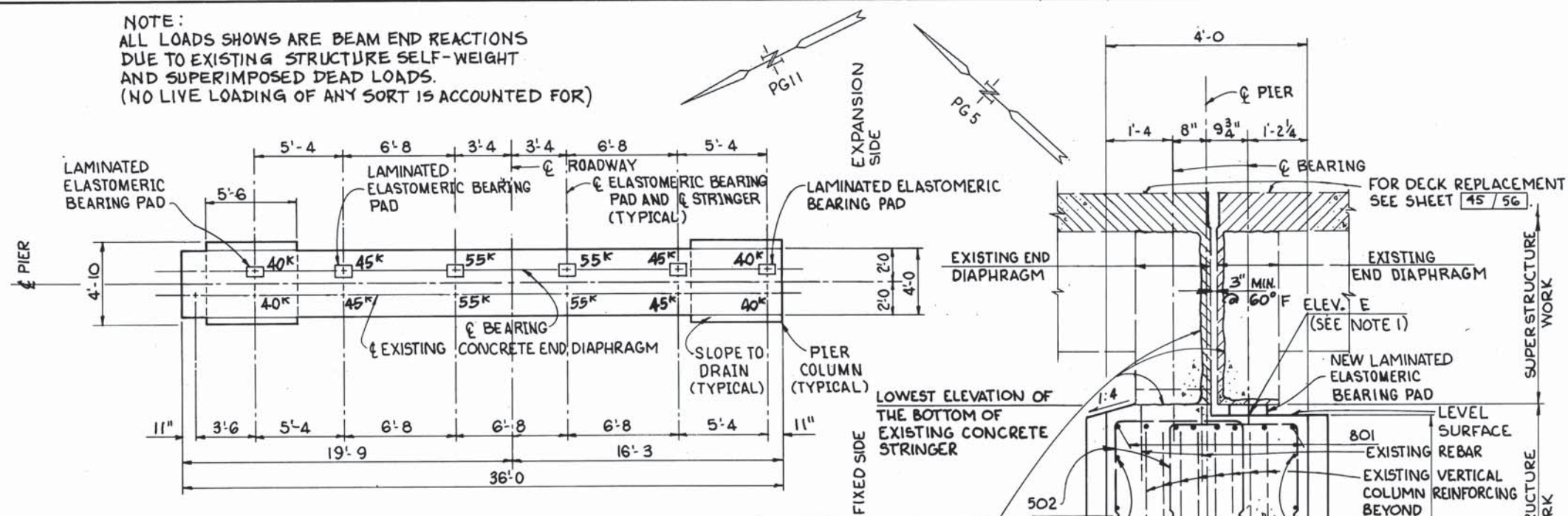
NOTES:

- ELEVATION D = 1 1/2" BELOW BOTTOM OF EXISTING END DIAPHRAGM ELEVATION.
- FOR REINFORCING BAR LIST SEE SHEET 53/56.
- FOR SUGGESTED SEQUENCE OF CONSTRUCTION SEE SHEET 13/56.
- FOR DEMOLITION DETAILS SEE SHEET 10/56.
- SEE GENERAL NOTES FOR AN ALLOWANCE OF REBAR FOR MISCELLANEOUS CONCRETE PATCHING AS DIRECTED BY ENGINEER.
- LAMINATED ELASTOMERIC BEARING PAD DETAILS SEE SHEET 28/56.

THE OSBORN ENGINEERING COMPANY 12/56 ROBERT P. MADISON INTERNATIONAL, INC. CONSULTING ENGINEERS CLEVELAND, OHIO 44114 CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER					
PIER PGI REHABILITATION EAGLE AVENUE VIADUCT OVER CHESSE, G.C.R.T.A. AND CANAL ROAD - PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M CLEVELAND CUYAHOGA COUNTY OHIO					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
JRS	RCK		LYH	R.S.	10/90

NOTE:  
ALL LOADS SHOWN ARE BEAM END REACTIONS  
DUE TO EXISTING STRUCTURE SELF-WEIGHT  
AND SUPERIMPOSED DEAD LOADS.  
(NO LIVE LOADING OF ANY SORT IS ACCOUNTED FOR)

CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II



PLAN

SUPERSTRUCTURE NOT SHOWN FOR CLARITY  
PIER PG5 SHOWN  
PIER PG11 OPPOSITE  
HAND ABOUT  $\phi$  PIER

FOR PIER PG5:  
19'-6"  $\pm$  NEAR SIDE  
16'-0"  $\pm$  FAR SIDE  
FOR PIER PG11:  
16'-0"  $\pm$  NEAR SIDE  
19'-6"  $\pm$  FAR SIDE

ALL BAR MARKS SHALL BE  
PREFIXED:  
5PG FOR PIER PG5  
11PG FOR PIER PG11

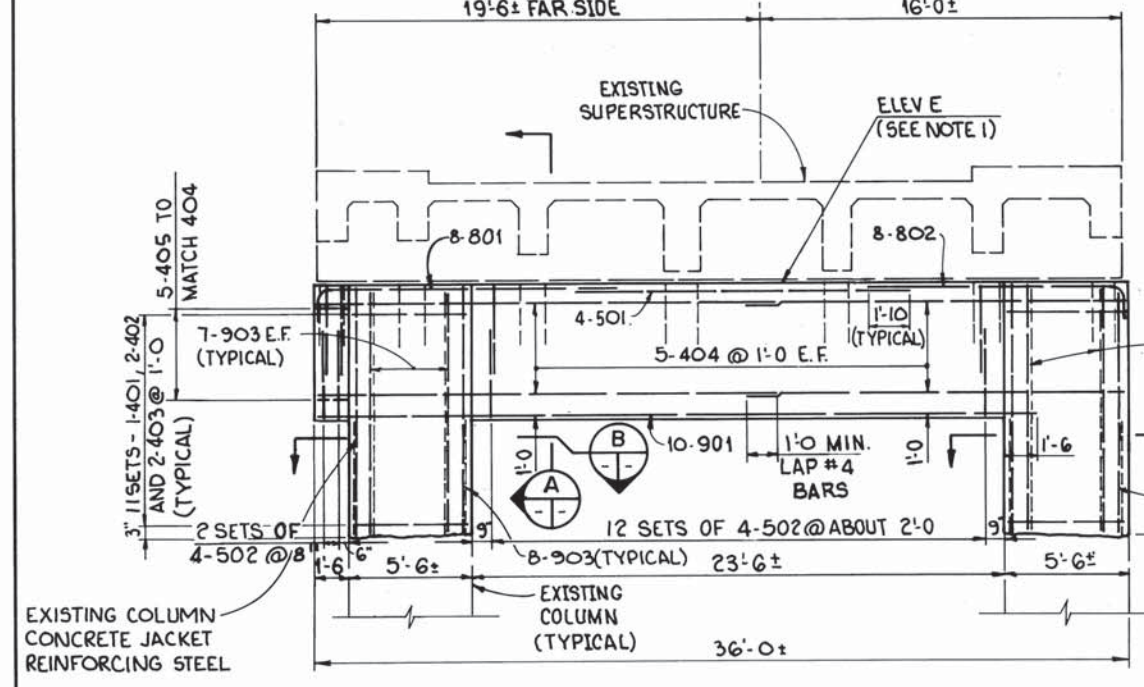
APPLY EPOXY BONDING  
COMPOUND BETWEEN  
NEW AND EXISTING  
CONCRETE (EUCCO #452,  
SIKADUR #31, HI-MOD GEL  
OR APPROVED EQUAL)  
INCLUDE WITH ITEM 511  
CLASS C CONCRETE PIERS  
AS PER PLAN,  
FOR PAYMENT.

SUGGESTED SEQUENCE OF CONSTRUCTION

1. INSTALL TEMPORARY BRACING, SHORING AND JACKS AS REQUIRED.
2. SURVEY ELEVATIONS OF BOTTOM OF EXISTING STRINGERS AND END DIAPHRAGMS FOR FUTURE USE.
3. JACK THE EXPANSION SIDE SUPERSTRUCTURE UNTIL THERE IS NO CONTACT BETWEEN THE BEARING PLATES AND THE BEAM SEATS. MAXIMUM LIFT OF SUPERSTRUCTURE SHALL BE  $\frac{1}{8}$ "
4. JACK THE FIXED SIDE SUPERSTRUCTURE A NOMINAL AMOUNT TO RELIEVE DEAD LOAD FROM THE MEMBERS BEING REMOVED. CARE SHALL BE EXERCISED THAT THE SUPERSTRUCTURE IS NOT JACKED TO EXCESS.
5. REMOVE PORTIONS OF STRUCTURES TO THE LIMITS SHOWN ON THE PLANS. PRESERVE REINFORCING AS SPECIFIED.
6. CONSTRUCT PROPOSED PIER CAP REPLACEMENTS AS SHOWN ON THE PLANS.
7. INSTALL PROPOSED BEARING PADS AND REPLACE PORTIONS OF SUPERSTRUCTURE AS SHOWN ON THE PLANS.
8. LOWER SUPERSTRUCTURE TO ORIGINAL RECORDED ELEVATIONS, AND REMOVE TEMPORARY SHORING AND BRACING.
9. SURVEY AS REQUIRED BY NOTE #2 SHALL BE INCLUDED WITH ITEM 511, CLASS C CONCRETE, SUPERSTRUCTURE AS PER PLAN FOR PAYMENT.

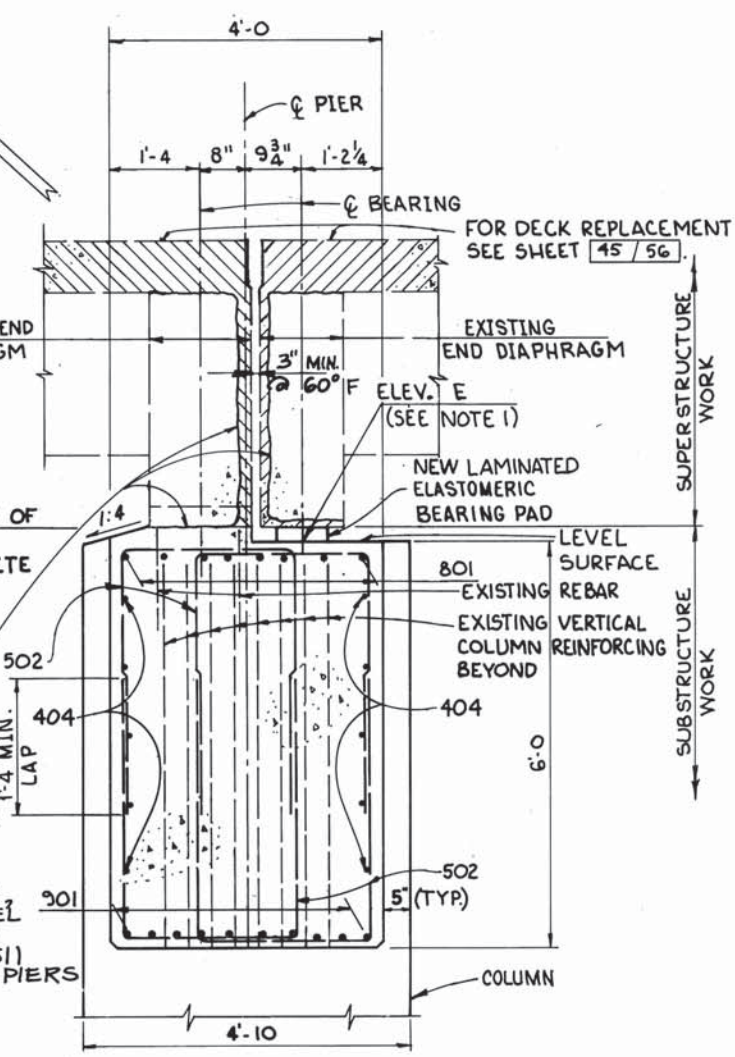
NOTES:

1. ELEVATION E + 1 1/2" BELOW BOTTOM OF EXISTING END DIAPHRAGM ELEVATION.
2. FOR PIER DEMOLITION DETAILS SEE SHEET [10/56].
3. FOR REINFORCING BAR LIST SEE SHEET [53/56].
4. FOR DEMOLITION DETAILS SEE SHEET [10/56].
5. LAMINATED ELASTOMERIC BEARING DETAILS, SEE SHEET [28/56].



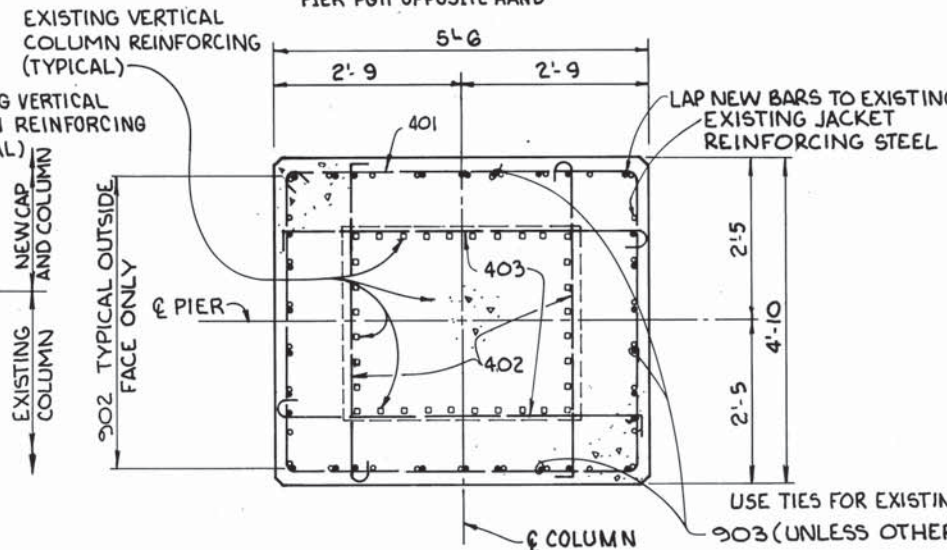
PART ELEVATION

PIER PG5 SHOWN (LOOKING EAST)  
PIER PG11 AS NOTED



SECTION A

PIER PG5 SHOWN  
PIER PG11 OPPOSITE HAND



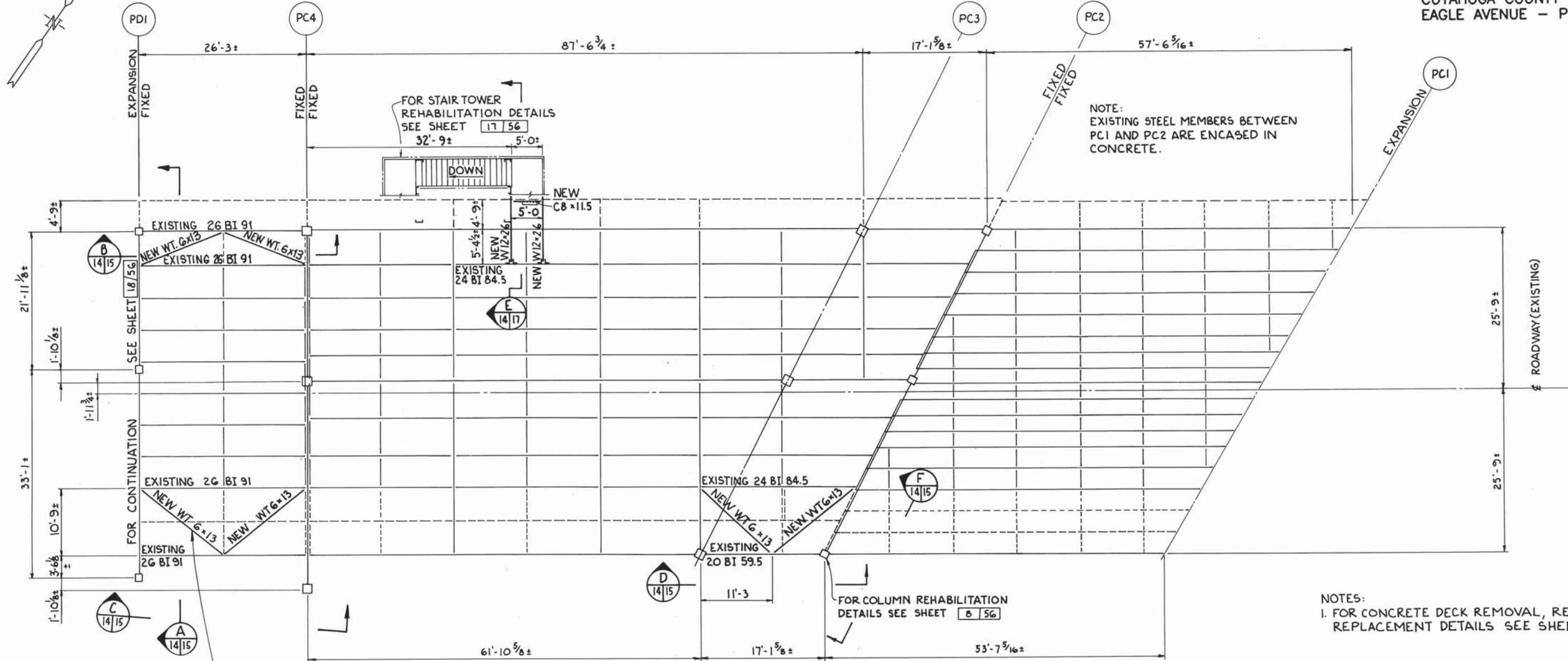
SECTION B

SECTION C

OPPOSITE HAND

THE OSBORN ENGINEERING COMPANY [13/56]						
ROBERT P. MADISON INTERNATIONAL, INC. CONSULTING ENGINEERS CLEVELAND, OHIO 44114						
CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER						
PIER PG5 AND PG11 REHABILITATION EAGLE AVENUE VIADUCT OVER CHESIE, G.C.R.T.A. AND CANAL ROAD-PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M CLEVELAND CUYAHOGA COUNTY OHIO						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JRS	RCK		LYH	RS	10/90	

CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II



NOTE:  
EXISTING STEEL MEMBERS BETWEEN  
PC1 AND PC2 ARE ENCASED IN  
CONCRETE.

NOTES:  
1. FOR CONCRETE DECK REMOVAL, REPAIR AND  
REPLACEMENT DETAILS SEE SHEET 33/56

FOR HORIZONTAL BRACING CONNECTION  
DETAILS SEE SHEET 27/56 (TYPICAL)

FOR COLUMN REHABILITATION  
DETAILS SEE SHEET 8/56

FOR STAIR TOWER  
REHABILITATION DETAILS  
SEE SHEET 17/56

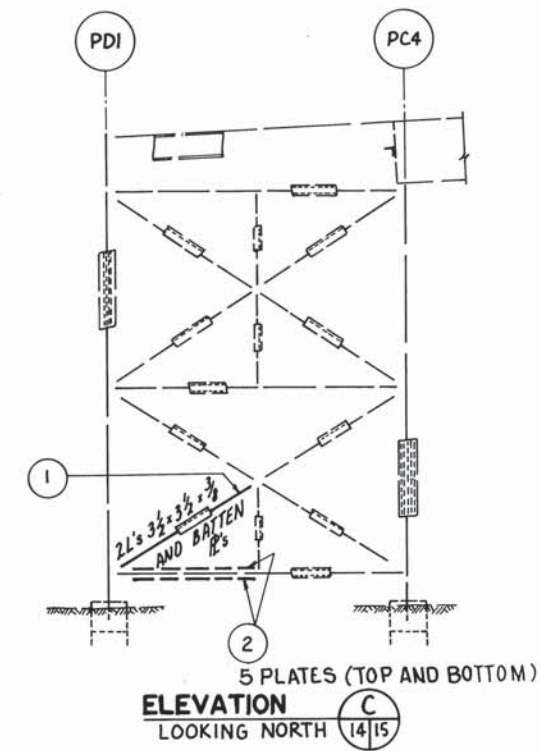
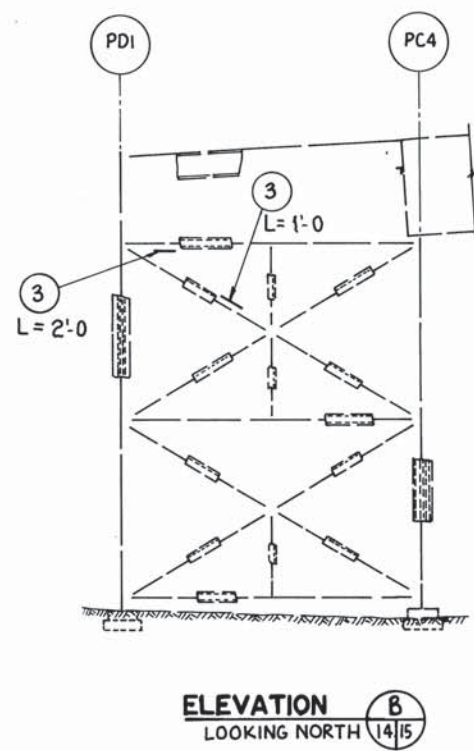
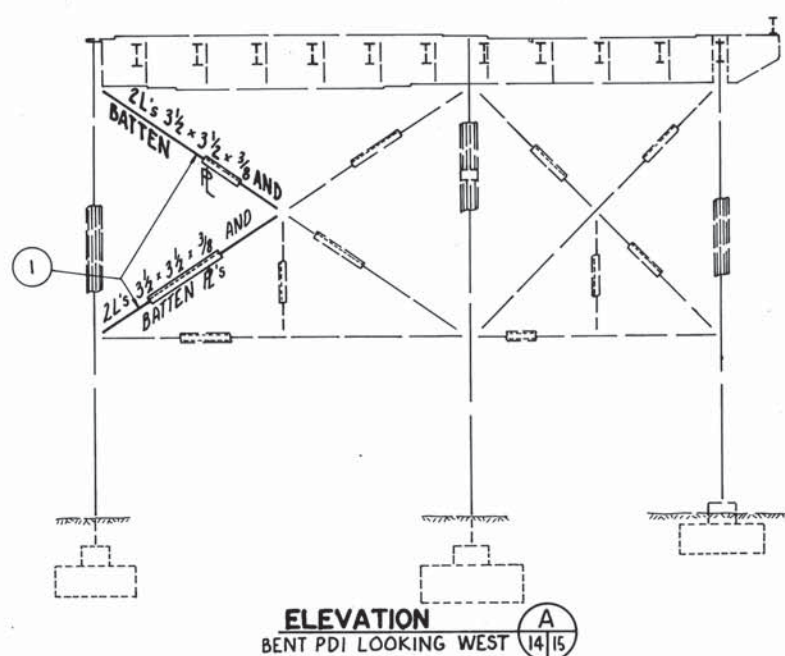
FRAMING PLAN

LEGEND

- EXISTING MEMBER TO BE REMOVED (ITEM 202)
- EXISTING MEMBER TO REMAIN
- NEW MEMBER (ITEM 513)

THE OSBORN ENGINEERING COMPANY 14/56					
ROBERT P. MADISON INTERNATIONAL, INC. CONSULTING ENGINEERS CLEVELAND, OHIO 44114					
CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER					
STEEL FRAMING REHABILITATION SECTION C EAGLE AVENUE VIADUCT OVER CHESSEE, G.C.R.T.A. AND CANAL ROAD - PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1:009M CLEVELAND CUYAHOGA COUNTY OHIO					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
RCK	BFG		JRS	RS	10/10
REVISED					

CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II

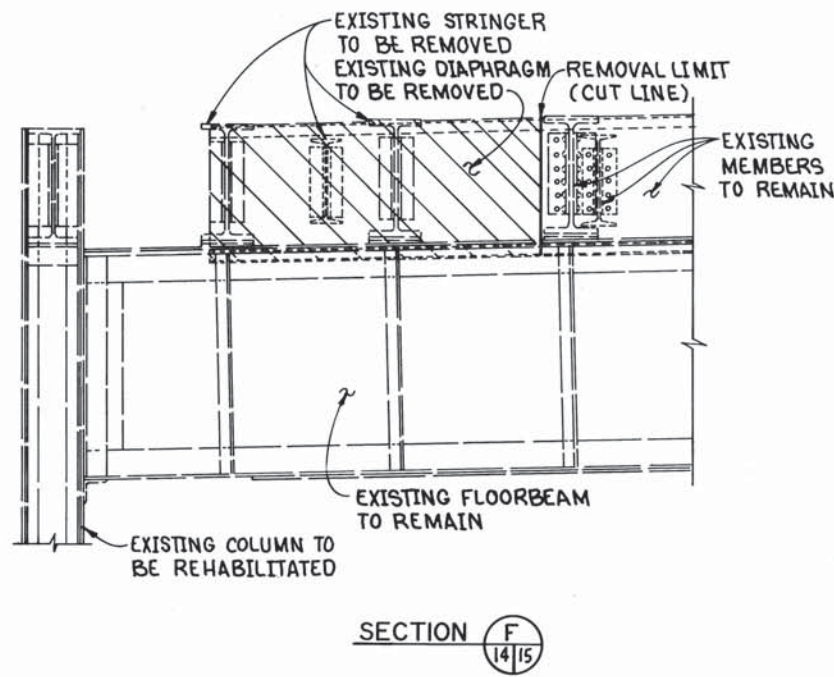
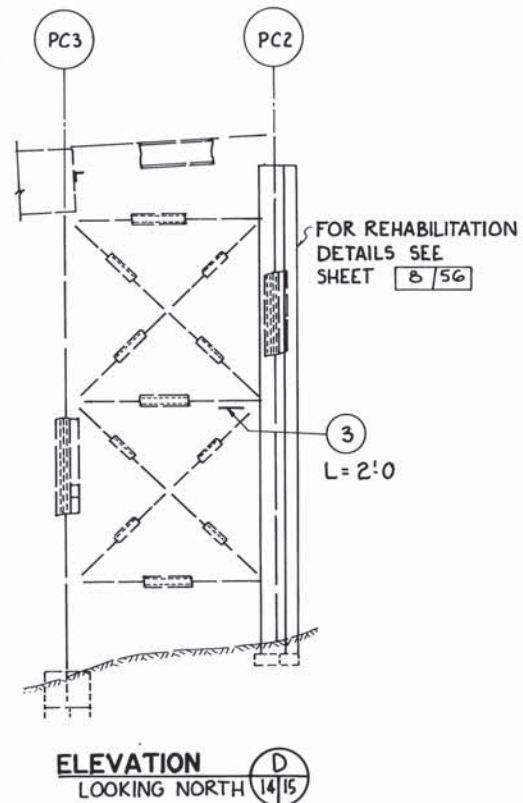


LEGEND

○ DENOTES REFERENCE NOTE NUMBER

NOTES

1. REMOVE DENOTED BRACE(S) AND INSTALL NEW BRACE(S). EXISTING GUSSET PLATES SHALL BE CLEANED AND REUSED UNLESS NOTED. EXISTING RIVETS OR BOLTS CONNECTING BRACE TO GUSSET PLATES SHALL BE REMOVED AND REPLACED WITH HIGH STRENGTH BOLTS. REMOVAL OF EXISTING MEMBERS IS INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN. INSTALLATION OF NEW MEMBERS AND BOLTS IS INCLUDED WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.
2. REMOVE DENOTED BATTEN PLATE(S) AND INSTALL NEW BATTEN PLATE(S) PER TYPICAL DETAILS. REMOVAL OF EXISTING MEMBERS IS INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN. INSTALLATION OF NEW MEMBERS AND BOLTS IS INCLUDED WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.
3. REMOVE DENOTED LACING PLATES(S) AND INSTALL NEW BATTEN PLATE(S) PER TYPICAL DETAILS. REMOVAL OF EXISTING MEMBERS IS INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN. INSTALLATION OF NEW MEMBERS AND BOLTS IS INCLUDED WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.



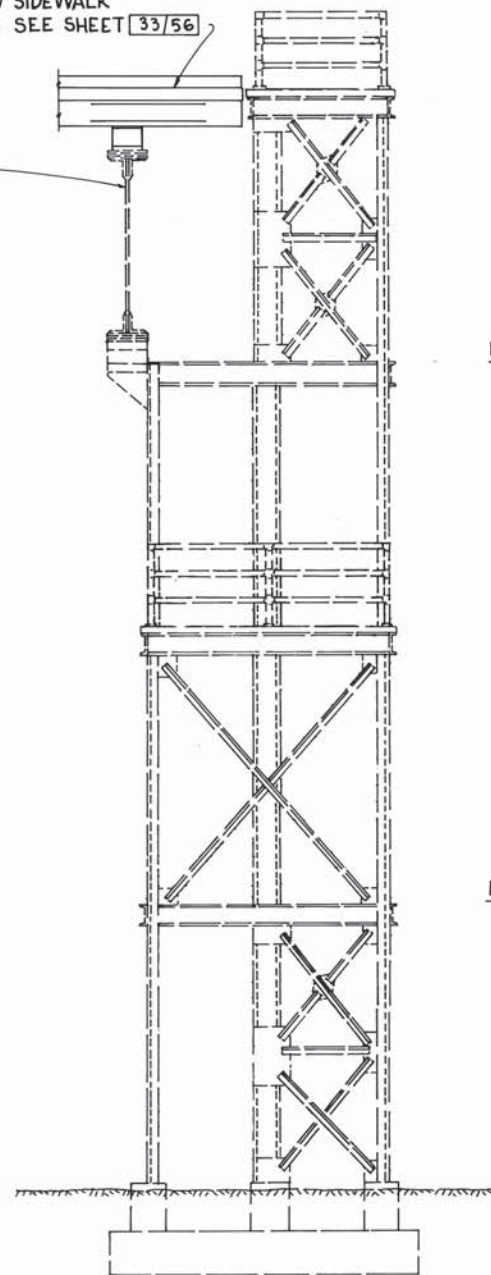
FOR FRAMING PLAN SEE SHEET 14/56.

FOR TYPICAL REPAIR DETAILS SEE SHEET 27/56.

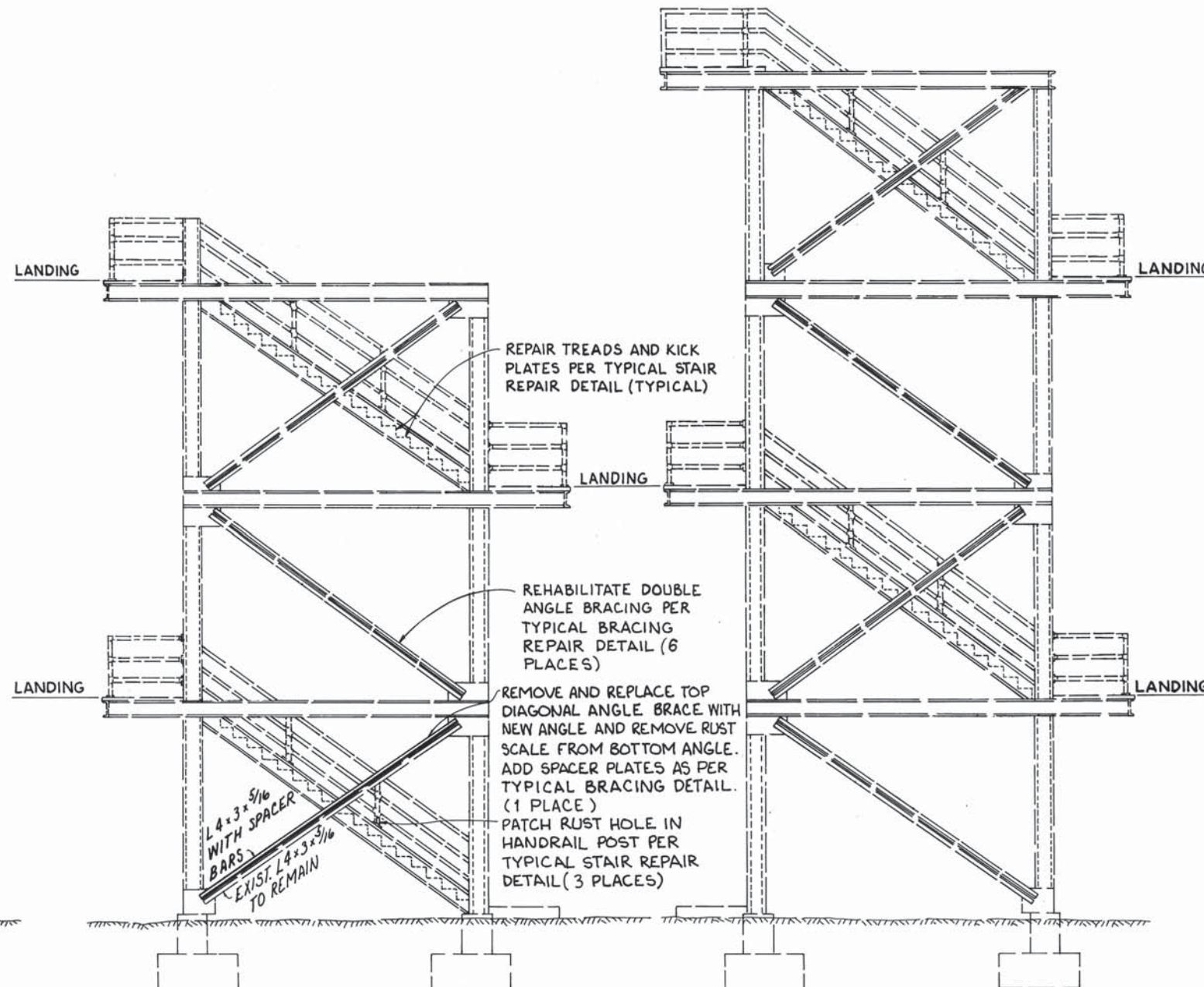
THE OSBORN ENGINEERING COMPANY 15/56						
ROBERT P. MADISON INTERNATIONAL, INC. CONSULTING ENGINEERS CLEVELAND, OHIO 44114						
CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER						
BRACING REHABILITATION SECTION C						
EAGLE AVENUE VIADUCT OVER CHESSIE, G.C.R.T.A. AND CANAL ROAD - PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1:009M CLEVELAND CUYAHOGA COUNTY OHIO						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RCK	BFG		JRS	RS	10/10	

FOR NEW SIDEWALK  
DETAILS SEE SHEET 33/56

EXIST.  
BRIDGE  
GIRDER



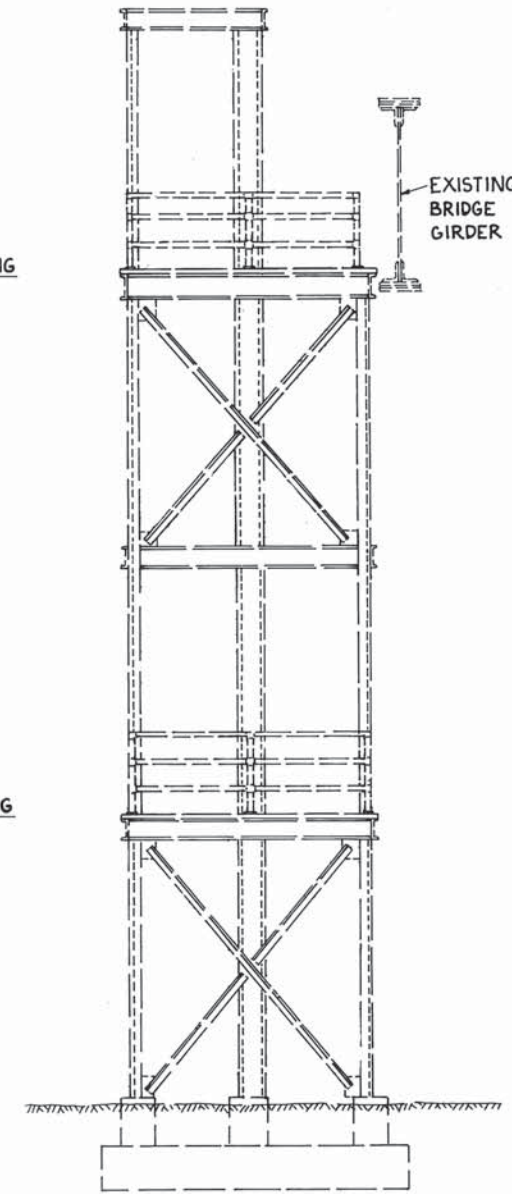
**EAST ELEVATION**  
(STAIRS NOT SHOWN)



**SOUTH ELEVATION**  
LOOKING NORTH

**NORTH ELEVATION**

FOR NOTES AND DETAILS  
SEE SHEET 17/56



**WEST ELEVATION**  
(STAIRS NOT SHOWN)

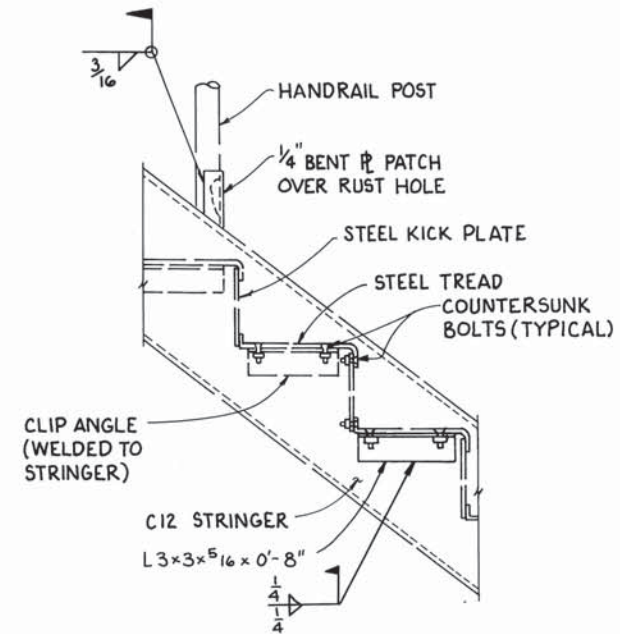
THE OSBORN ENGINEERING COMPANY 16/56  
ROBERT P. MADISON INTERNATIONAL, INC.  
CONSULTING ENGINEERS CLEVELAND, OHIO 44114

CITY OF CLEVELAND  
DIVISION OF ENGINEERING AND CONSTRUCTION  
CUYAHOGA COUNTY ENGINEER

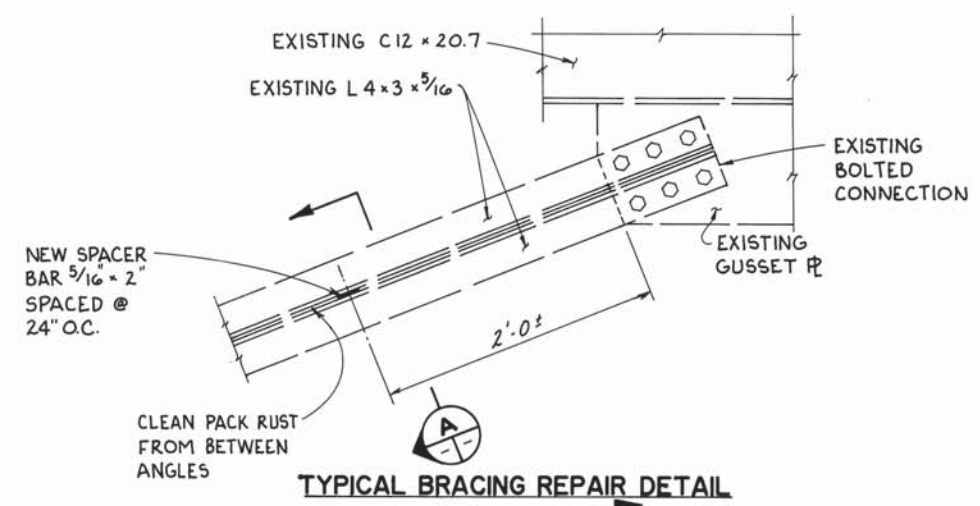
**STAIR TOWER  
REHABILITATION ELEVATIONS**  
EAGLE AVENUE VIADUCT OVER CHESIE,  
G.C.R.T.A. AND CANAL ROAD-PHASE II  
CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
CLEVELAND CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RCK	BFG		JRS	RS	10/10	

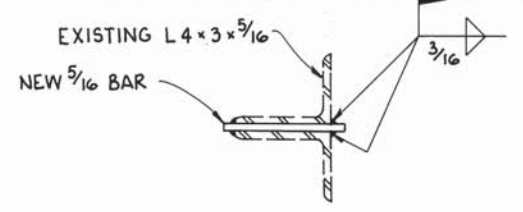
CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II



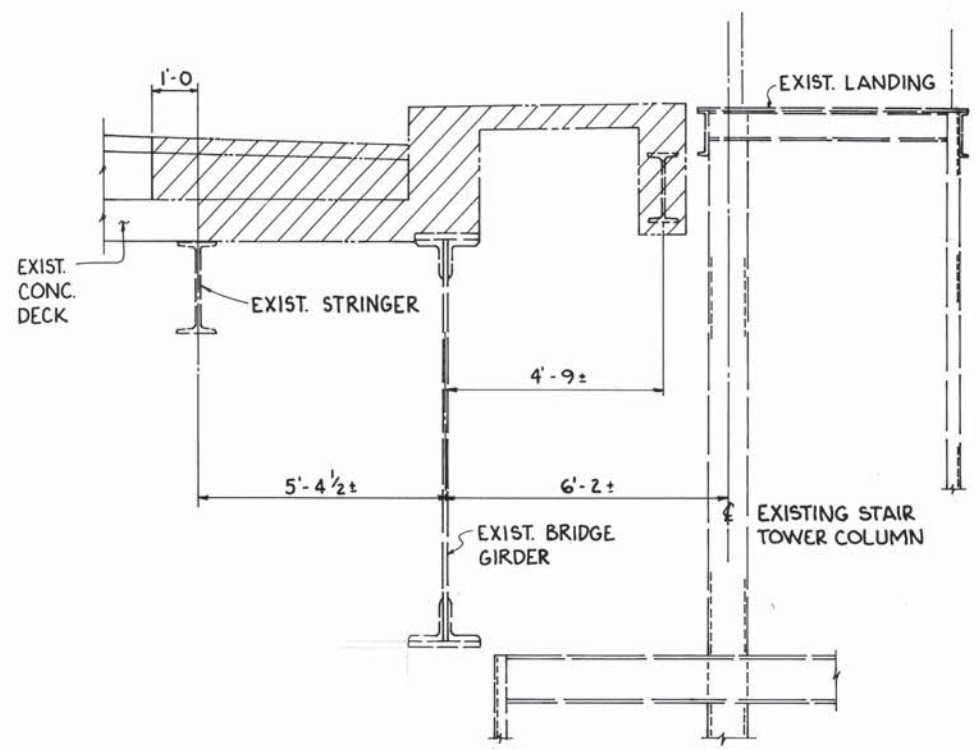
TYPICAL STAIR REPAIR DETAIL  
(SEE NOTES)



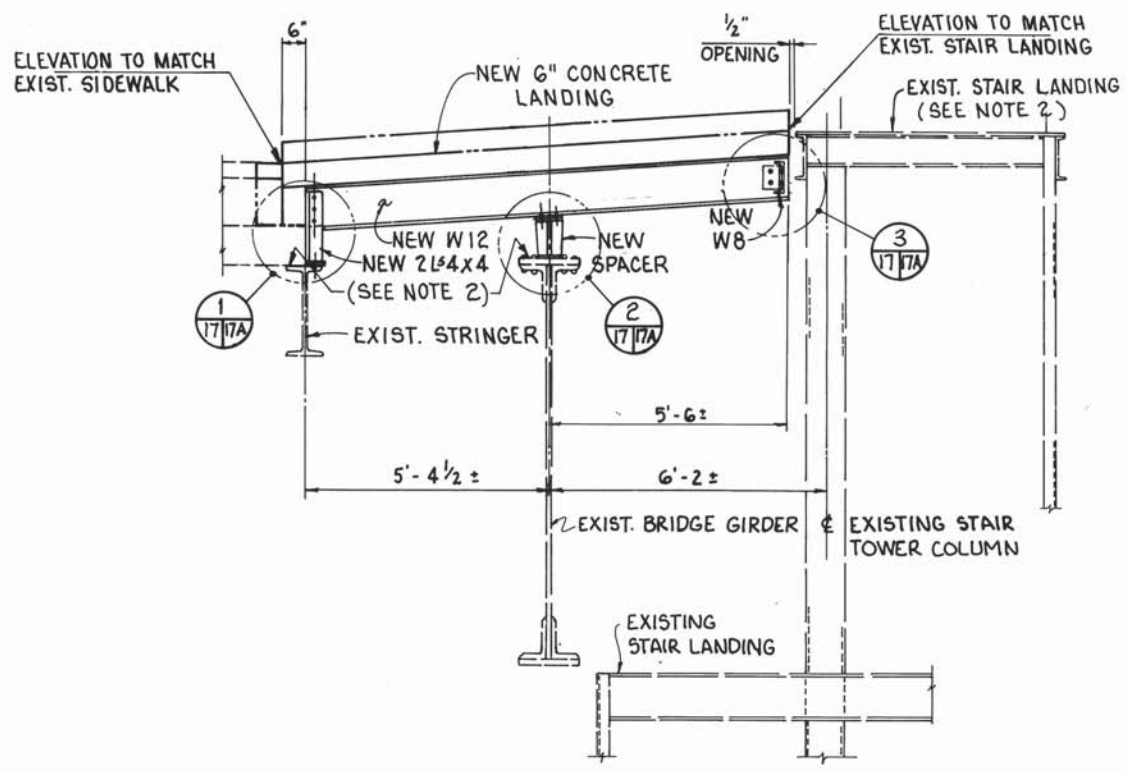
TYPICAL BRACING REPAIR DETAIL



SECTION A



SECTION E  
DEMOLITION 14/17



SECTION E  
REPLACEMENT 14/17

NOTES:

1. FOR STAIR TOWER REHABILITATION ELEVATIONS SEE SHEET 16/56.
2. CONTRACTOR SHALL SURVEY ELEVATIONS OF TOP OF EXISTING STRINGER, GIRDER, PAVEMENT AND STAIR LANDING FOR USE BY THE STEEL FABRICATOR IN DETAILING REPLACEMENT MEMBERS. INCLUDE SURVEY WORK WITH ITEM 513- STRUCTURAL STEEL FOR REHABILITATION FOR PAYMENT.
3. FOR NEW CONCRETE LANDING DETAILS SEE SHEET 33/56.

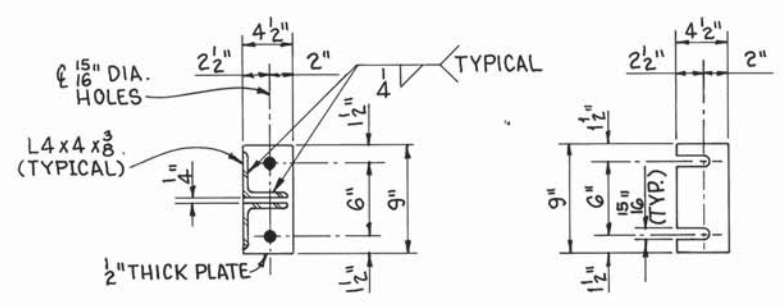
THE OSBORN ENGINEERING COMPANY 17/56  
ROBERT P. MADISON INTERNATIONAL, INC.  
CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
CITY OF CLEVELAND  
DIVISION OF ENGINEERING AND CONSTRUCTION  
CUYAHOGA COUNTY ENGINEER

STAIR TOWER REHABILITATION DETAILS  
EAGLE AVENUE VIADUCT OVER CHESSE, G.C.R.T.A. AND CANAL ROAD-PHASE II  
CITY OF CLEVELAND, CITY BRIDGE NO. 1:009M  
CLEVELAND CUYAHOGA COUNTY OHIO

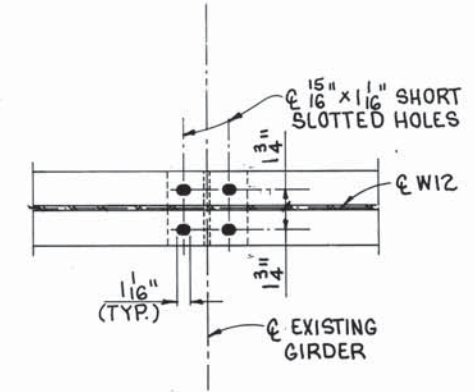
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RCK	BFG		JRS	RS	10/90	



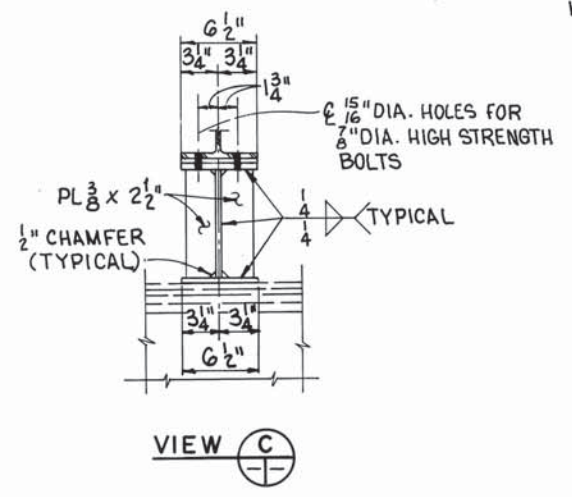
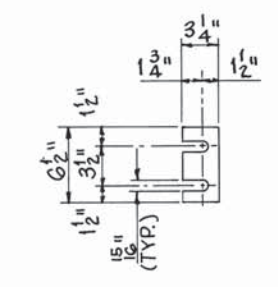
CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II



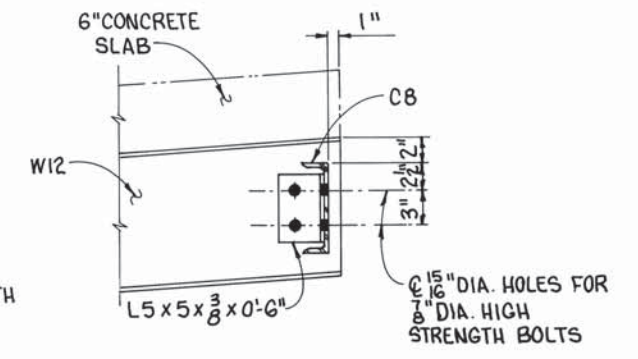
**SECTION A**  
**SHIM PACK 1 DETAIL**  
INCLUDE TWO-1/4" THICK  
AND TWO-3/8" THICK PLATES



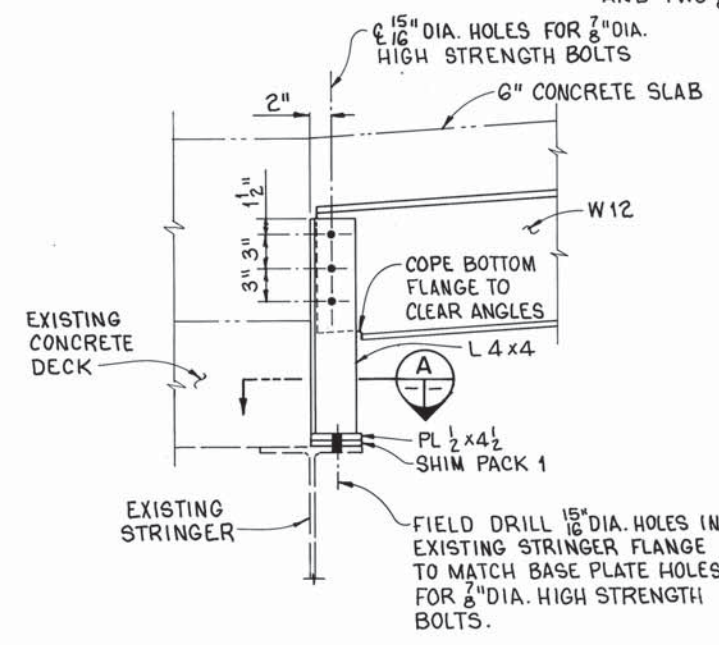
**SECTION B**  
**SHIM PACK 2 DETAIL**  
INCLUDE FOUR-1/4" THICK  
AND FOUR-3/8" THICK PLATES



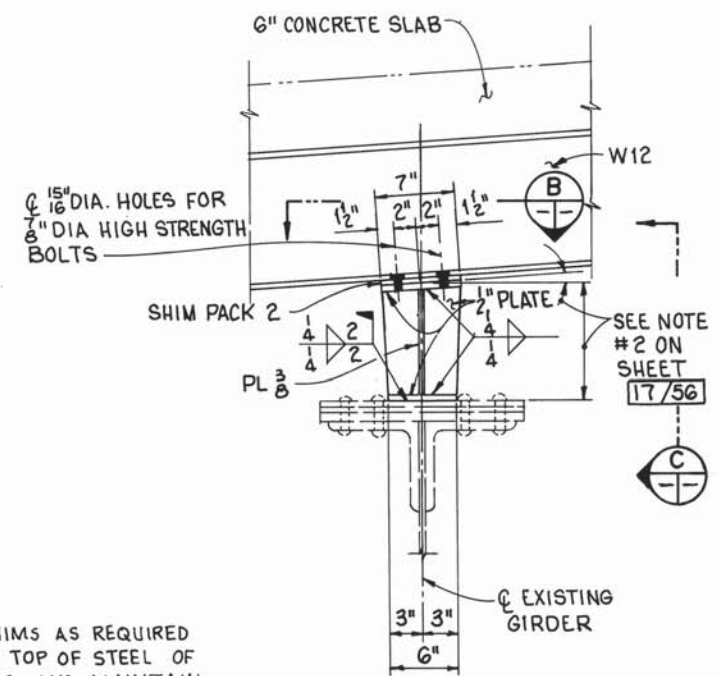
**VIEW C**



**DETAIL 3**  
17/17A



**DETAIL 1**  
17/17A

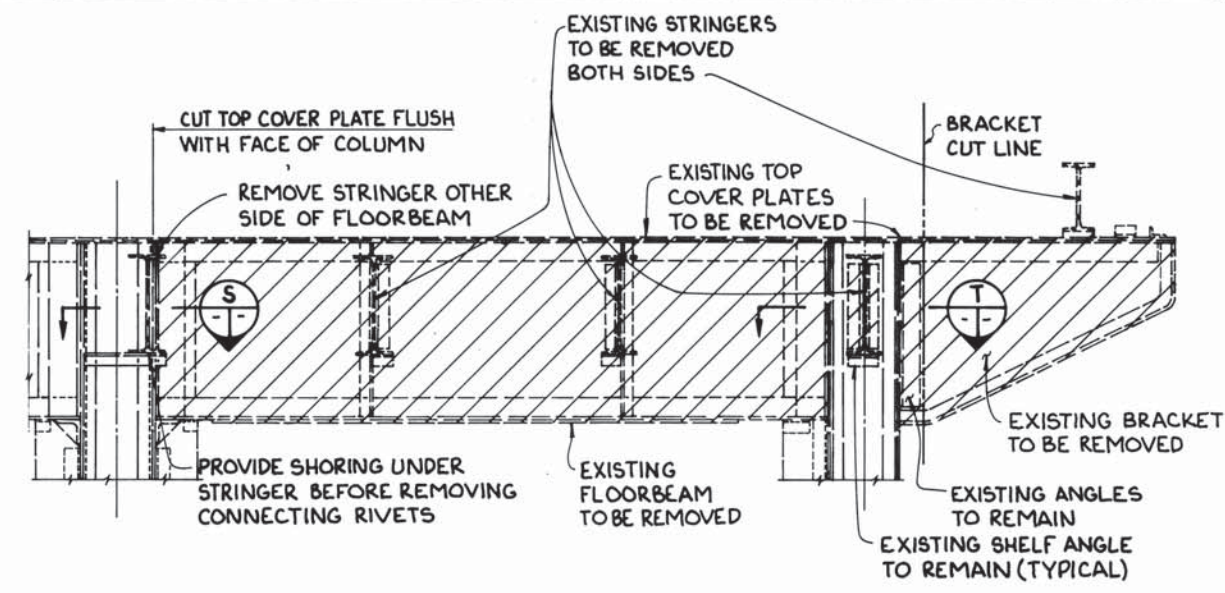


**DETAIL 2**  
17/17A

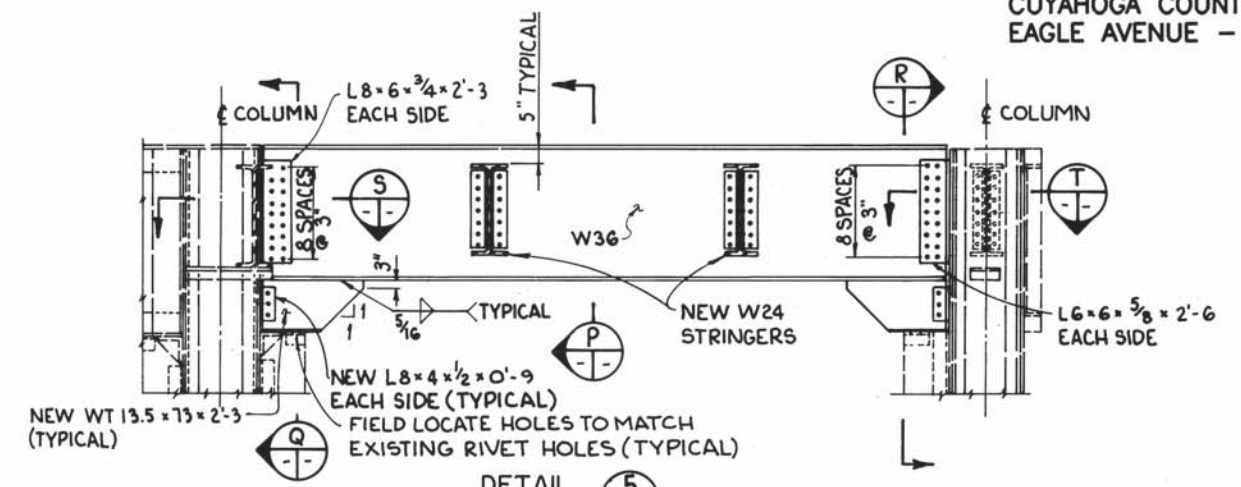
NOTE: INSTALL SHIMS AS REQUIRED TO ADJUST TOP OF STEEL OF NEW BEAMS AND MAINTAIN NEW CONCRETE SLAB THICKNESS.

THE OSBORN ENGINEERING COMPANY 17A/56						
ROBERT P. MADISON INTERNATIONAL, INC. CONSULTING ENGINEERS CLEVELAND, OHIO 44114						
CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER						
<b>STAIR TOWER</b> <b>REHABILITATION DETAILS</b> EAGLE AVENUE VIADUCT OVER CHESSEE G.C.R.T.A. AND CANAL ROAD-PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M CLEVELAND CUYAHOGA COUNTY OHIO						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RCK		RCK	JRS	DS	3/91	

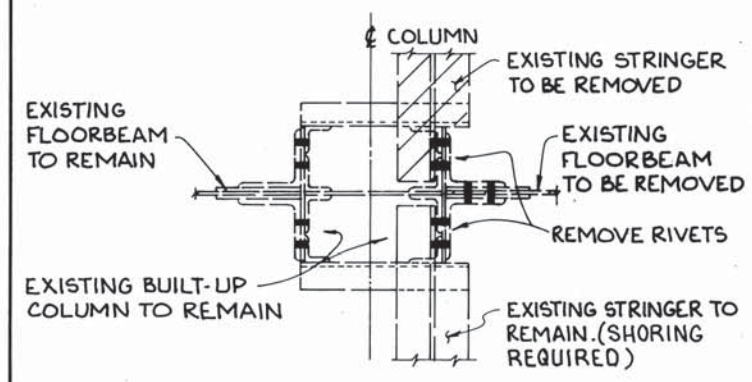
CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II



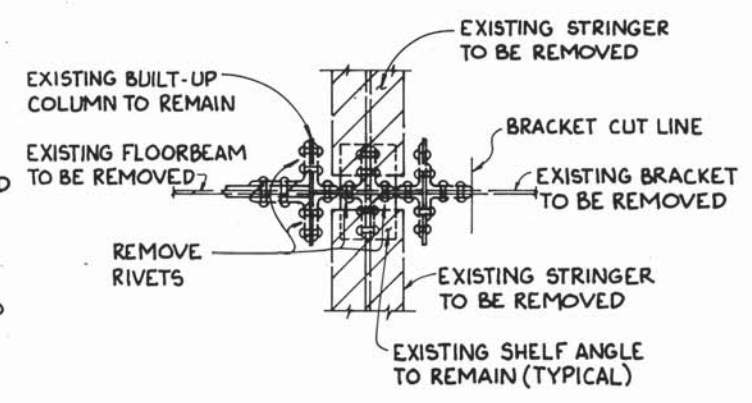
DETAIL 5  
DEMOLITION 22/19



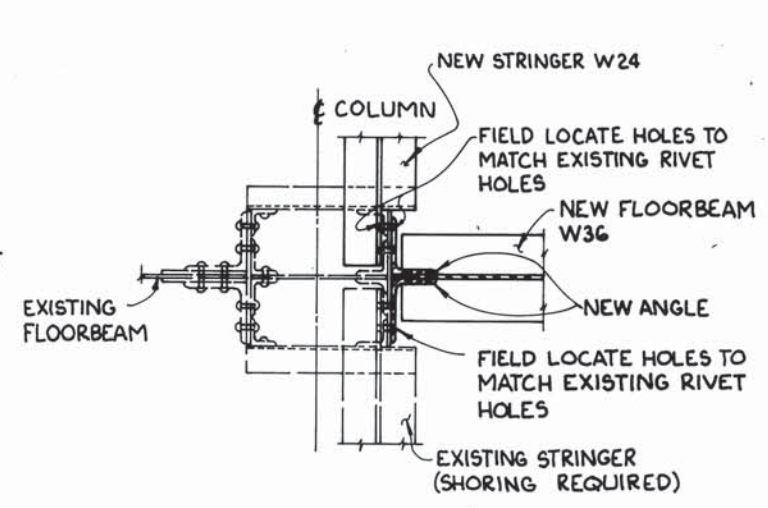
DETAIL 5  
REPLACEMENT 22/19



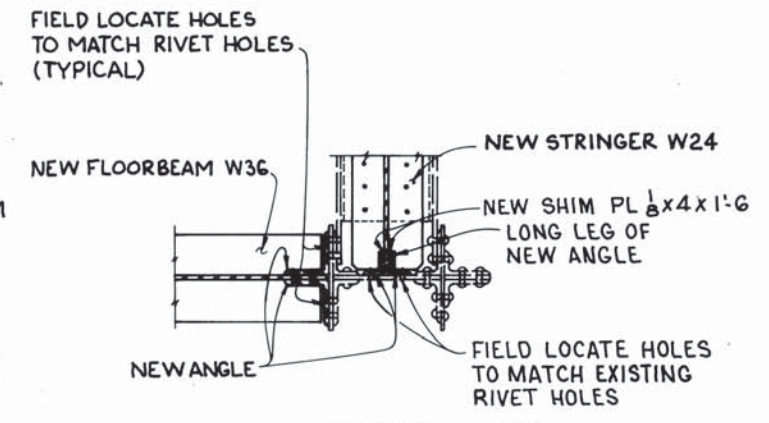
SECTION 5  
DEMOLITION



SECTION T  
DEMOLITION

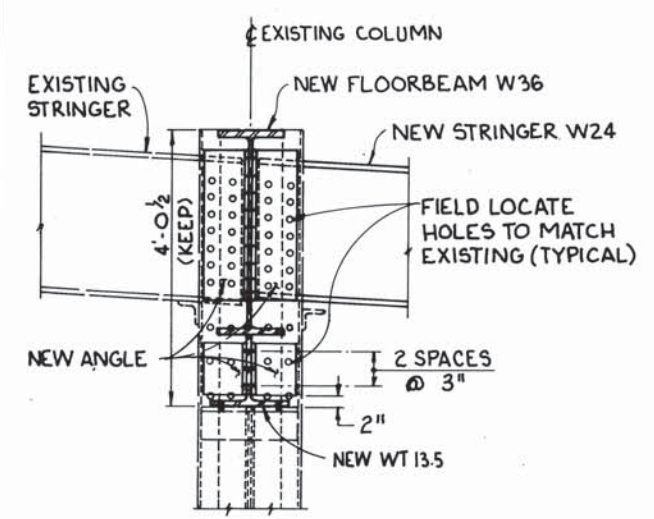


SECTION S  
REPLACEMENT

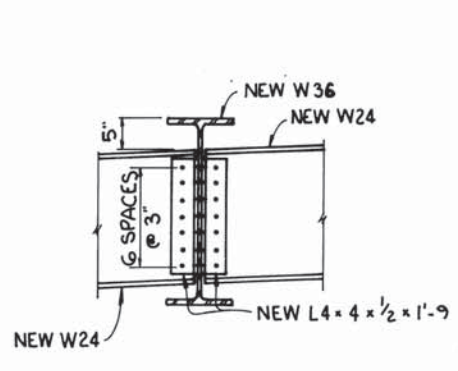


SECTION T  
REPLACEMENT

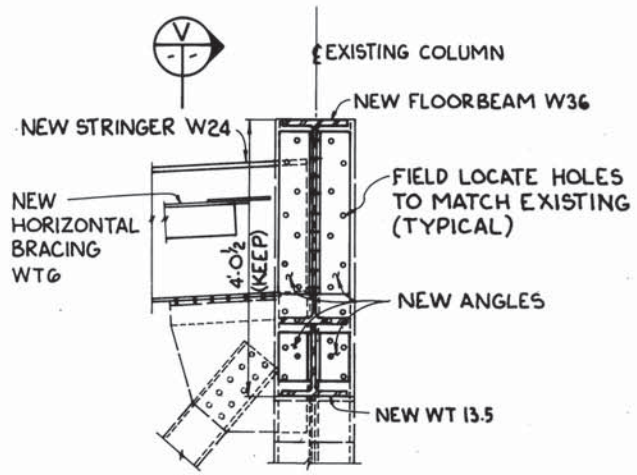
NOTE:  
1. FOR FRAMING PLAN AND ADDITIONAL NOTES  
SEE SHEET 18/56.



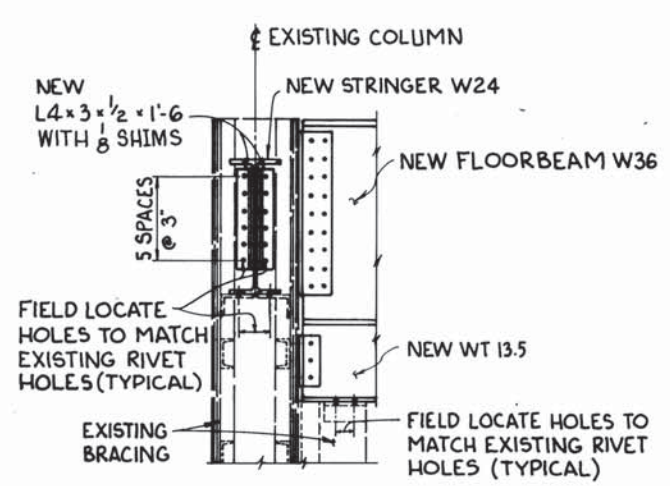
SECTION Q



SECTION P



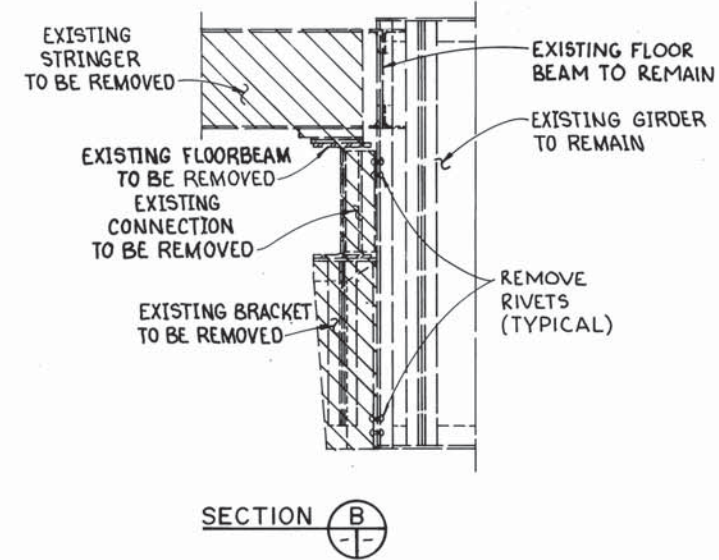
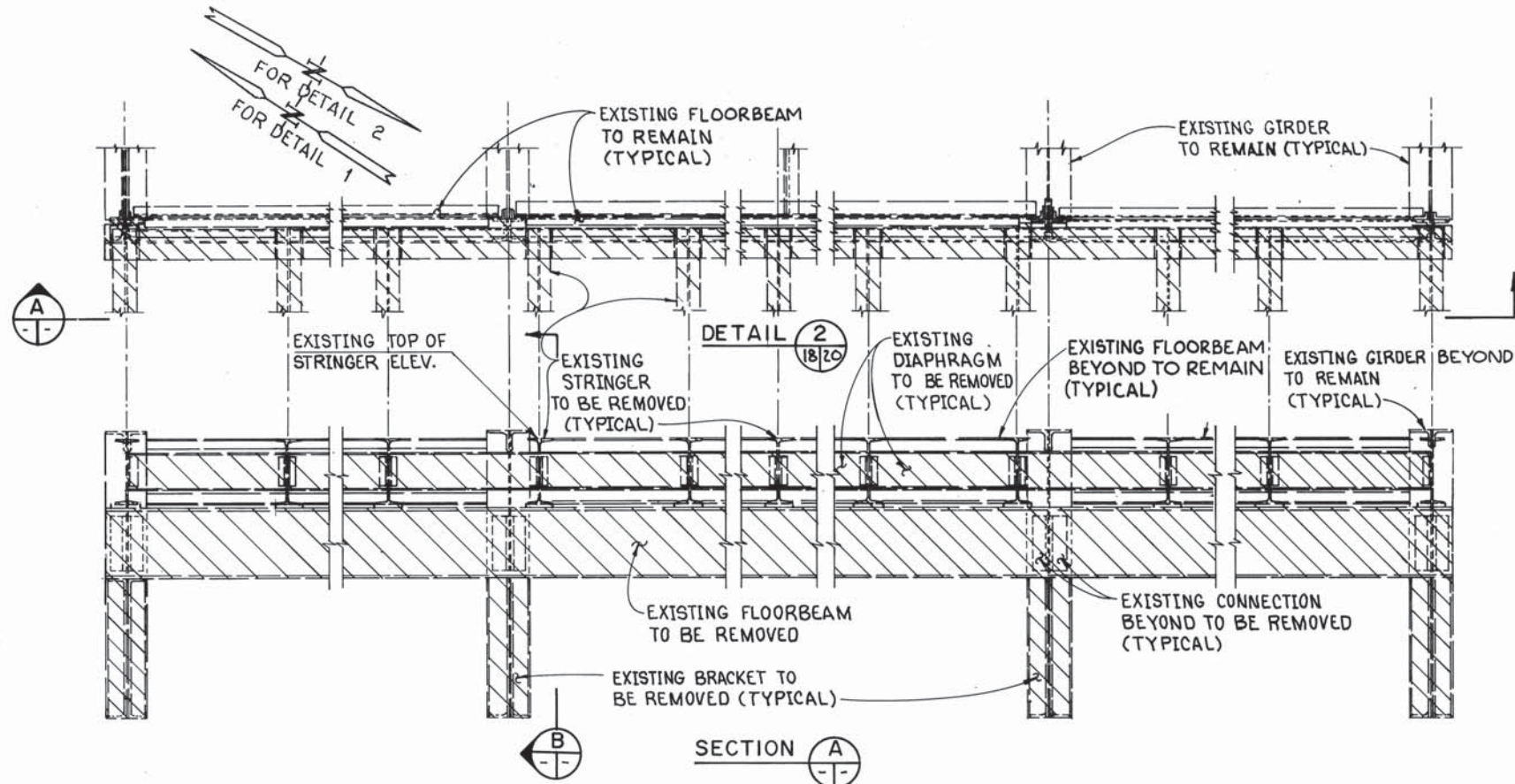
SECTION R



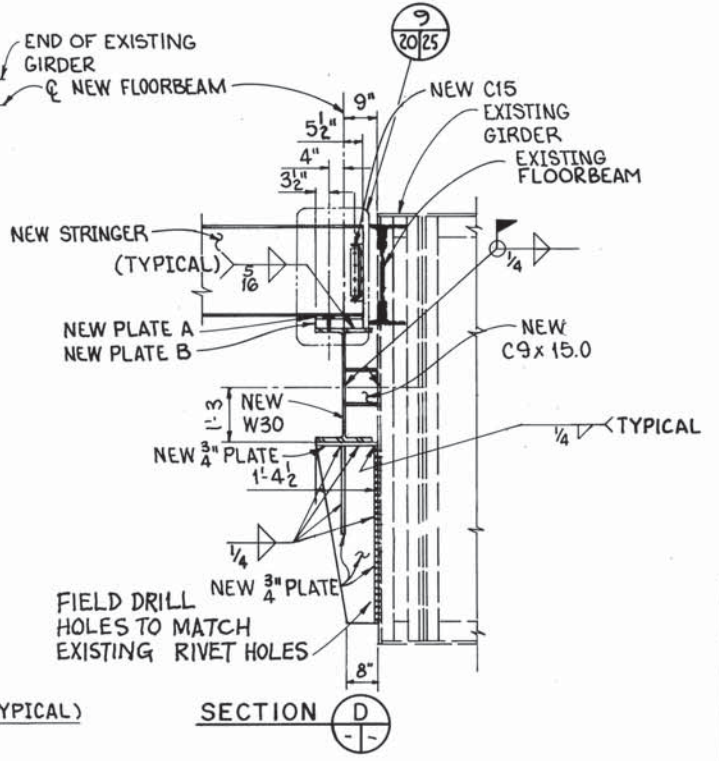
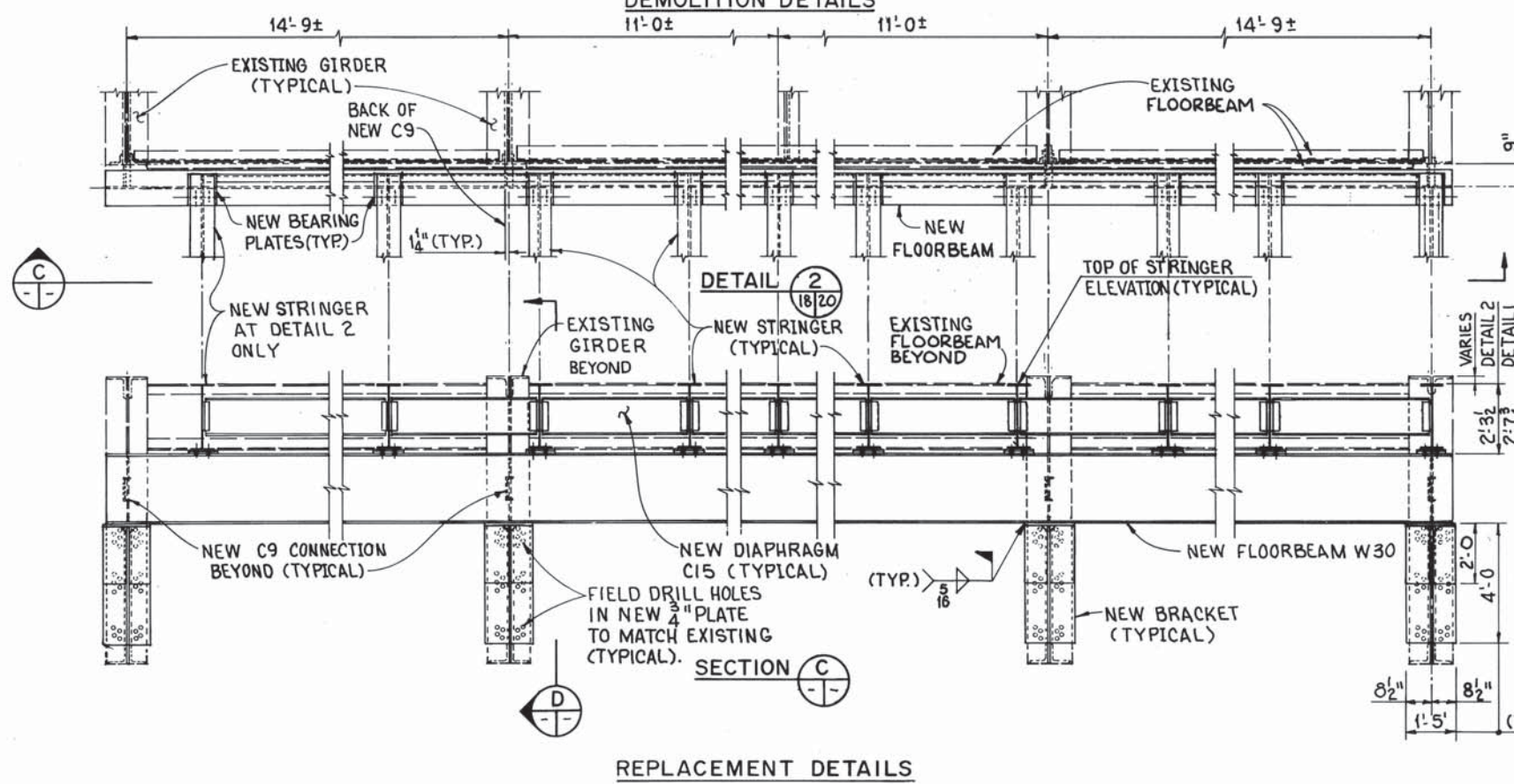
SECTION V

THE OSBORN ENGINEERING COMPANY 19/56						
ROBERT P. MADISON INTERNATIONAL, INC. CONSULTING ENGINEERS CLEVELAND, OHIO 44114						
CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER						
STEEL FRAMING REHABILITATION SECTION D						
EAGLE AVENUE VIADUCT OVER CHESSE, G.C.R.T.A. AND CANAL ROAD-PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1:009M CLEVELAND CUYAHOGA COUNTY OHIO						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RCK	BFG		JRS	RS	1964	

CUYAHOGA COUNTY  
 EAGLE AVENUE - PHASE II



NEW BEARING PLATE SIZES		
	DETAIL 1	DETAIL 2
PLATE A	3/4 x 1'-1" x 1'-1"	3/4 x 0'-11" x 1'-1"
PLATE B	3/4 x 1'-1" x 1'-1"	2 1/2 x 0'-11" x 1'-1"



- NOTES:
1. FOR FRAMING PLAN AND ADDITIONAL NOTES SEE SHEET 18/56.
  2. DETAIL 2 AS SHOWN, DETAIL 1 IS SIMILAR EXCEPT OPPOSITE HAND, SKEWED AND AS NOTED.
  3. THE SUPERSTRUCTURE DECK NOT SHOWN FOR CLARITY.

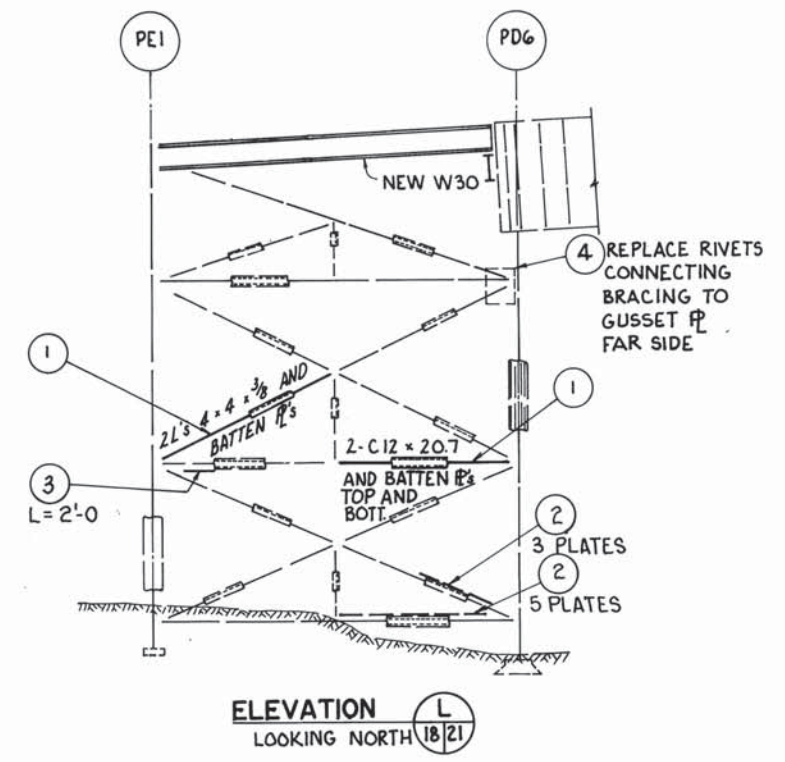
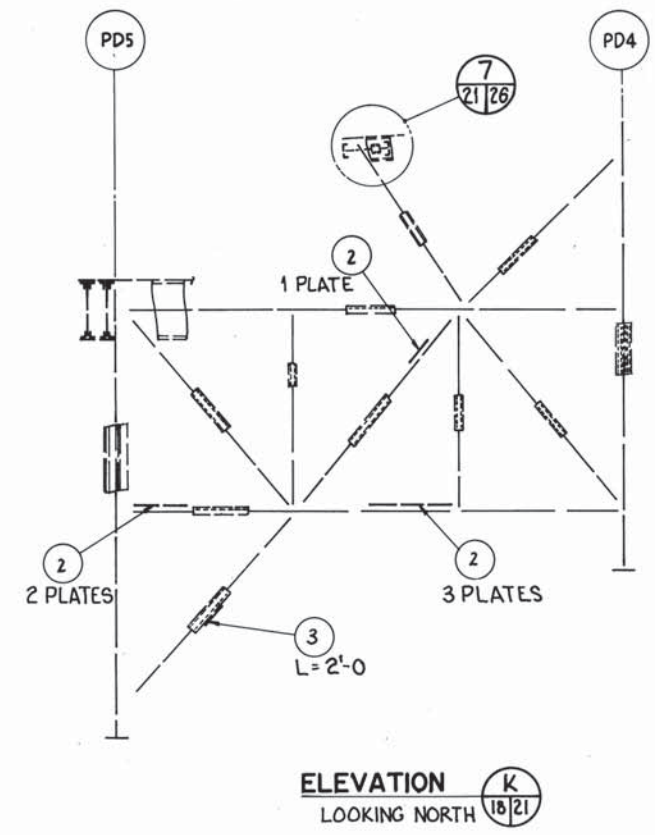
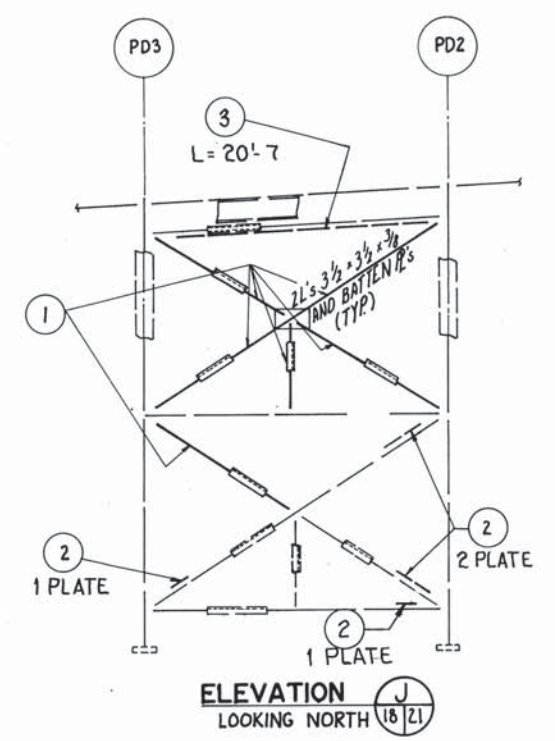
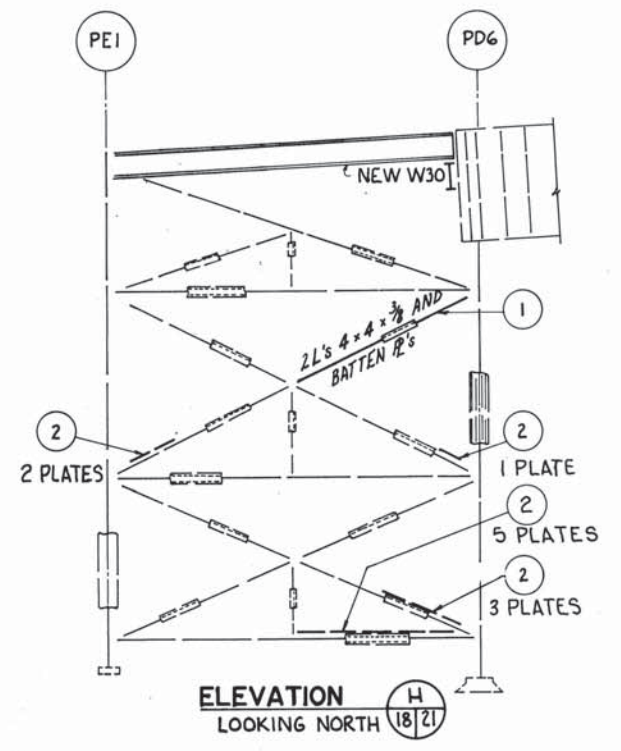
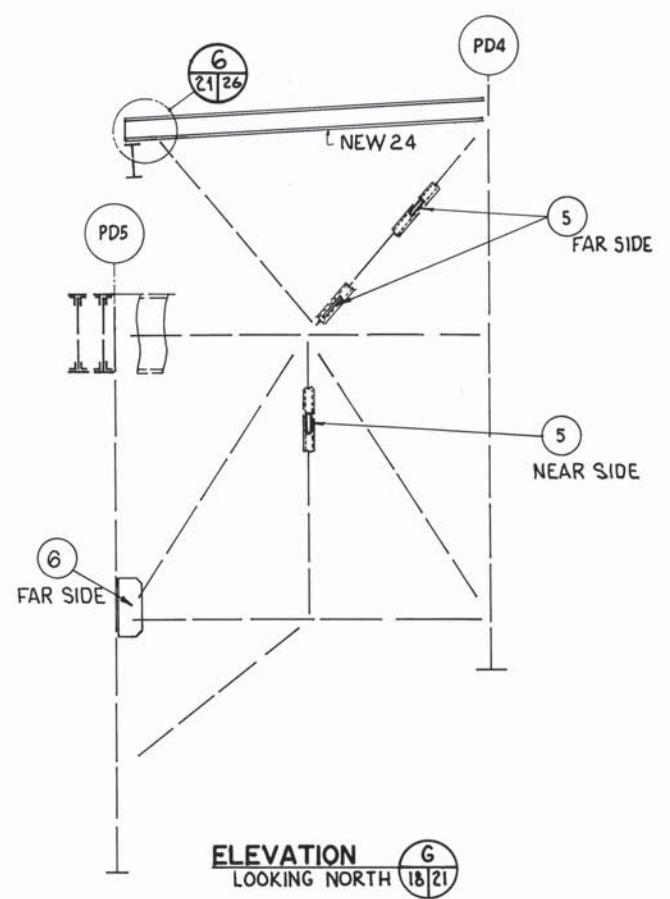
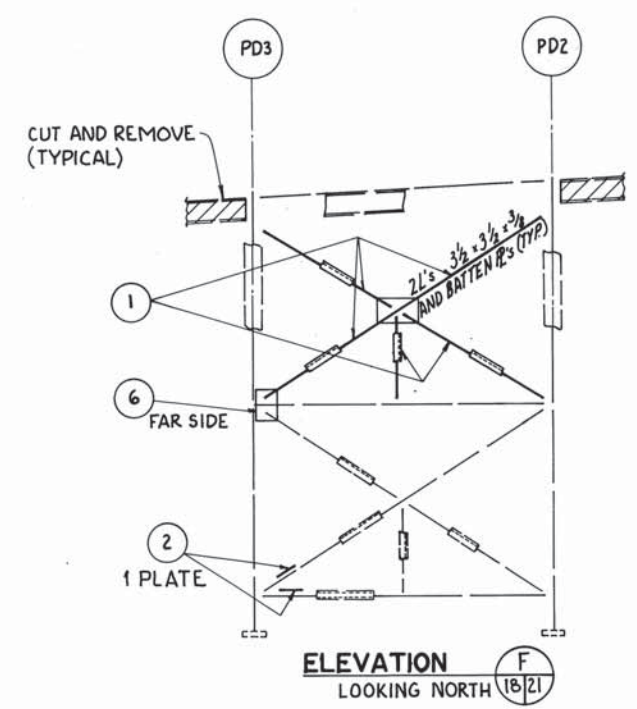
THE OSBORN ENGINEERING COMPANY 20/56  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER  
**STEEL FRAMING REHABILITATION**  
 SECTION D  
 EAGLE AVENUE VIADUCT OVER CHESSE,  
 G.C.R.T.A. AND CANAL ROAD - PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
 CLEVELAND CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RCK	RCK		JRS	RS	10/90	

CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II

NOTES

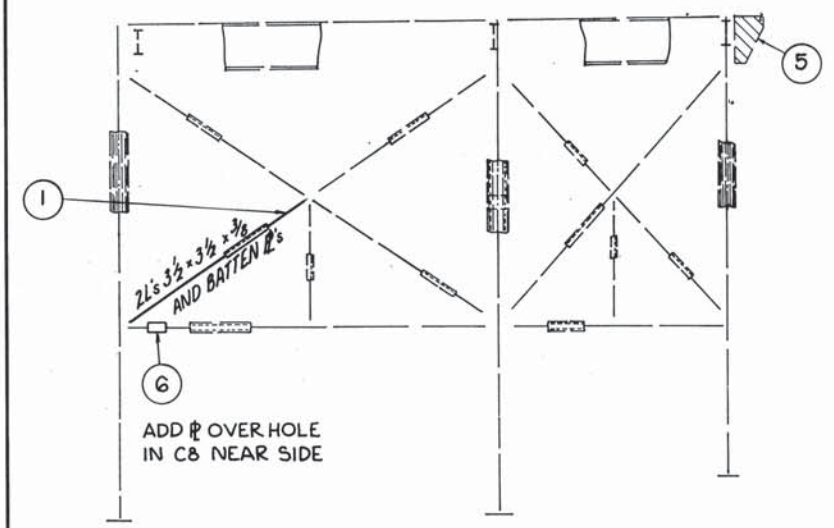
- REMOVE DENOTED BRACE(S) AND INSTALL NEW BRACE(S). EXISTING GUSSET PLATES SHALL BE CLEANED AND REUSED UNLESS NOTED. EXISTING RIVETS OR BOLTS CONNECTING BRACE TO GUSSET PLATES SHALL BE REMOVED AND REPLACED WITH HIGH STRENGTH BOLTS. REMOVAL OF EXISTING MEMBERS IS INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN. INSTALLATION OF NEW MEMBERS AND BOLTS IS INCLUDED WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.
- REMOVE DENOTED BATTEN PLATE(S) AND INSTALL NEW BATTEN PLATE(S) PER TYPICAL DETAILS. REMOVAL OF EXISTING MEMBERS IS INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN. INSTALLATION OF NEW MEMBERS AND BOLTS IS INCLUDED WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.
- REMOVE DENOTED LACING PLATES(S) AND INSTALL NEW BATTEN PLATE(S) PER TYPICAL DETAILS. REMOVAL OF EXISTING MEMBERS IS INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN. INSTALLATION OF NEW MEMBERS AND BOLTS IS INCLUDED WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.
- RIVETS SHALL BE REMOVED AND REPLACED WITH 7/8" DIAMETER HIGH STRENGTH BOLTS. INCLUDE WITH ITEM SPECIAL - STRUCTURAL STEEL, MISC.; REPLACE EXISTING RIVETS WITH NEW HIGH STRENGTH BOLTS.
- REMOVE DENOTED BRACKET(S) FROM COLUMN PER TYPICAL DETAILS. REMOVAL OF EXISTING MEMBERS IS INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN. INSTALLATION OF NEW MEMBERS AND BOLTS IS INCLUDED WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.
- PREPARE SURFACE OF EXISTING MEMBER AND ADD A PATCH PLATE OVER RUST HOLES PER TYPICAL DETAILS. INCLUDE WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.



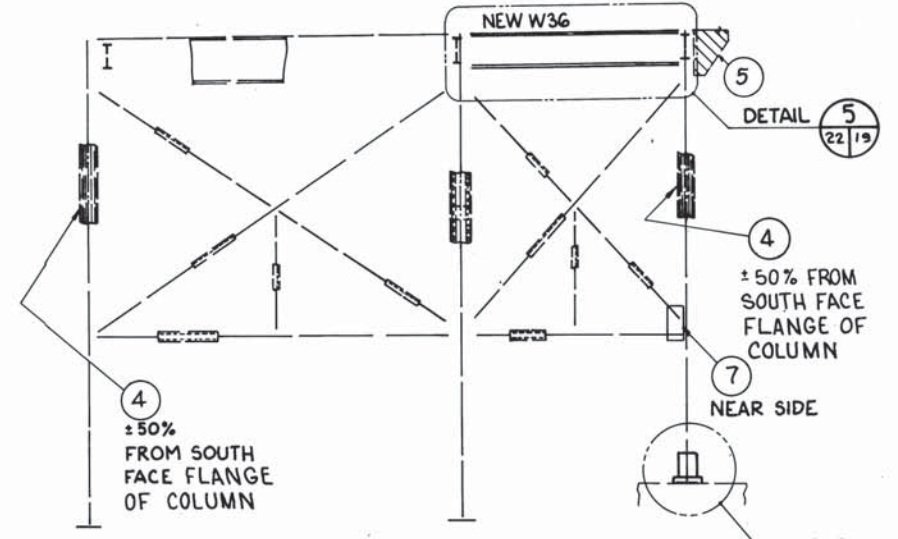
FOR FRAMING PLAN SEE SHEET 18/56  
FOR TYPICAL REPAIR DETAILS  
SEE SHEET 27/56.

THE OSBORN ENGINEERING COMPANY 21/56						
ROBERT P. MADISON INTERNATIONAL, INC. CONSULTING ENGINEERS CLEVELAND, OHIO 44114						
CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER						
BRACING REHABILITATION SECTION D EAGLE AVENUE VIADUCT OVER CHESSE, G.C.R.T.A. AND CANAL ROAD - PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1:009M CLEVELAND CUYAHOGA COUNTY OHIO						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RCK	BFG		JRS	25	10/70	

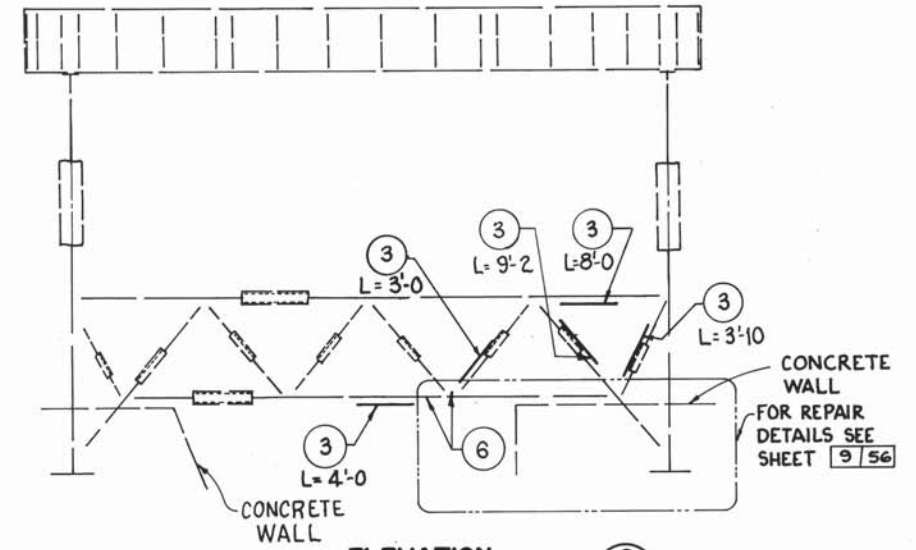
**CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II**



**ELEVATION A**  
BENT PD2 LOOKING WEST 18/22

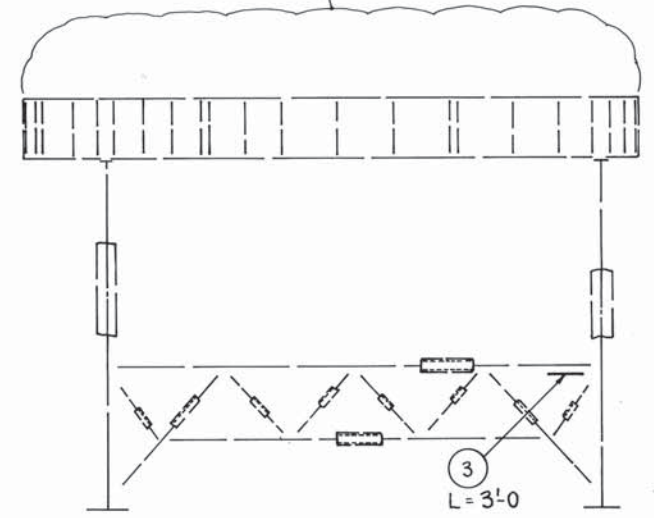


**ELEVATION B**  
BENT PD4 LOOKING WEST 18/22

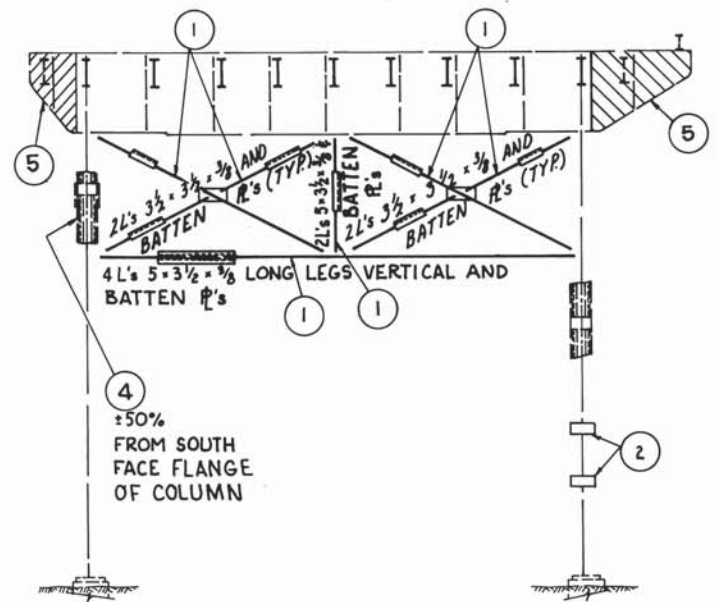


**ELEVATION C**  
BENT PD5 LOOKING WEST 18/22

NOTE: FOR FLOORBEAM WORK SEE FRAMING PLAN



**ELEVATION D**  
BENT PD6 LOOKING WEST 18/22



**ELEVATION E**  
BENT PE1 LOOKING WEST 18/22

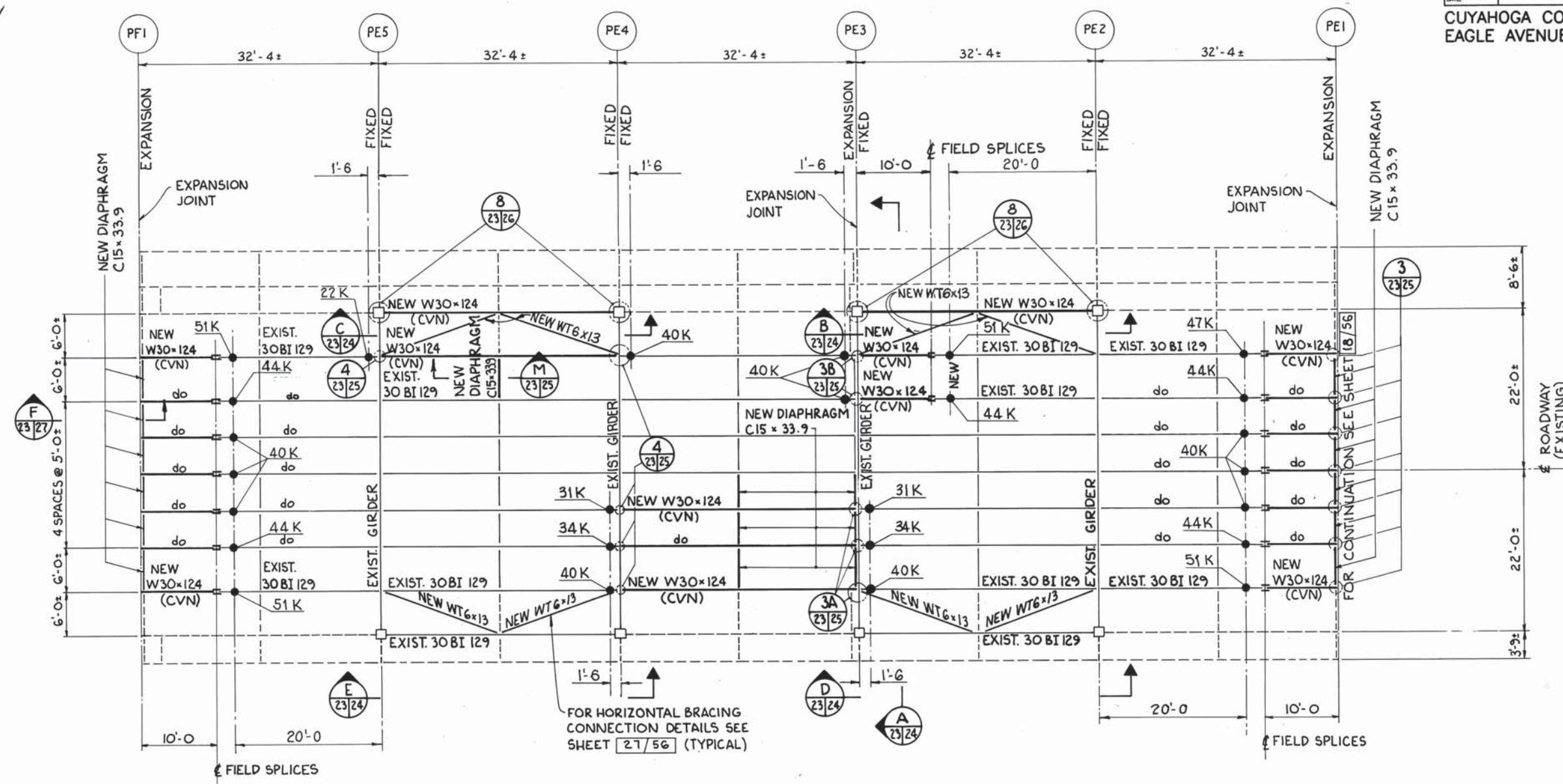
**LEGEND**  
○ DENOTES REFERENCE NOTE NUMBER.

- NOTES**
- REMOVE DENOTED BRACE(S) AND INSTALL NEW BRACE(S). EXISTING GUSSET PLATES SHALL BE CLEANED AND REUSED UNLESS NOTED. EXISTING RIVETS OR BOLTS CONNECTING BRACE TO GUSSET PLATES SHALL BE REMOVED AND REPLACED WITH HIGH STRENGTH BOLTS. REMOVAL OF EXISTING MEMBERS IS INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN. INSTALLATION OF NEW MEMBERS AND BOLTS IS INCLUDED WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.
  - REMOVE DENOTED BATTEN PLATE(S) AND INSTALL NEW BATTEN PLATE(S) PER TYPICAL DETAILS. REMOVAL OF EXISTING MEMBERS IS INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN. INSTALLATION OF NEW MEMBERS AND BOLTS IS INCLUDED WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.
  - REMOVE DENOTED LACING PLATES(S) AND INSTALL NEW BATTEN PLATE(S) PER TYPICAL DETAILS. REMOVAL OF EXISTING MEMBERS IS INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN. INSTALLATION OF NEW MEMBERS AND BOLTS IS INCLUDED WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.
  - RIVETS SHALL BE REMOVED AND REPLACED WITH 7/8" DIAMETER HIGH STRENGTH BOLTS. INCLUDE WITH ITEM SPECIAL - STRUCTURAL STEEL, MISC.: REPLACE EXISTING RIVETS WITH NEW HIGH STRENGTH BOLTS.
  - REMOVE DENOTED BRACKET(S) FROM COLUMN PER TYPICAL DETAILS. REMOVAL OF EXISTING MEMBERS IS INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN. INSTALLATION OF NEW MEMBERS AND BOLTS IS INCLUDED WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.
  - PREPARE SURFACE OF EXISTING MEMBER AND ADD A PATCH PLATE OVER RUST HOLES PER TYPICAL DETAILS. INCLUDE WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.
  - REPLACE DENOTED GUSSET PLATES IN KIND WITH NEW PLATE. RIVETS SHALL BE REPLACED WITH 7/8" DIAMETER HIGH STRENGTH BOLTS. INCLUDE WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.

FOR FRAMING PLAN SEE SHEET 18/56.  
FOR TYPICAL REPAIR DETAILS SEE SHEET 27/56.

THE OSBORN ENGINEERING COMPANY 22/56					
ROBERT P. MADISON INTERNATIONAL, INC. CONSULTING ENGINEERS CLEVELAND, OHIO 44114					
CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER					
BRACING REHABILITATION SECTION D EAGLE AVENUE VIADUCT OVER CHESSE, C.C.R.T.A. AND CANAL ROAD - PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1:009M CLEVELAND CUYAHOGA COUNTY OHIO					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
RCK	BFG		JRS	RS	10/15
					REVISED

CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II



NOTES:

- CONTRACTOR SHALL SHORE EXISTING MEMBERS PRIOR TO REMOVAL OPERATIONS TO IMPLEMENT MEMBER REPLACEMENT. COST OF SHORING SHALL BE INCLUDED FOR PAYMENT WITH ITEM 513- STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.
- SHORING LOADS SHOWN ON THE FRAMING PLAN INCLUDE DEAD LOADS ONLY FOR THE LOCATIONS SHOWN. CONTRACTOR SHALL INCREASE THESE LOADS TO ACCOUNT FOR CONSTRUCTION LOADS.
- WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01 OF CMS.
- HIGH STRENGTH BOLTS SHALL BE 7/8" DIAMETER A325 UNLESS NOTED OTHERWISE.
- NEW STRINGERS SHALL BE CAMBERED 5/16" AT MID-SPAN.
- ELEVATIONS OF PROPOSED TOP OF STRINGERS SHALL MATCH ELEVATIONS OF EXISTING TOP OF STRINGERS PRIOR TO REMOVAL (± 1/4").
- FOR FIELD SPlice DETAIL SEE SHEET 28/56.
- FOR BEARING DETAILS AT PIER PF1 SEE SHEET 28/56.
- FOR CONCRETE DECK REMOVAL, REPAIR AND REPLACEMENT DETAILS SEE SHEET 37/56.
- FOR PIER PF1 REHABILITATION DETAILS SEE SHEET 11/56.

LEGEND

- EXISTING MEMBER TO BE REMOVED (ITEM 202)
- EXISTING MEMBER TO REMAIN
- NEW MEMBER (ITEM 513)
- SHORING LOAD (SEE NOTE 2)

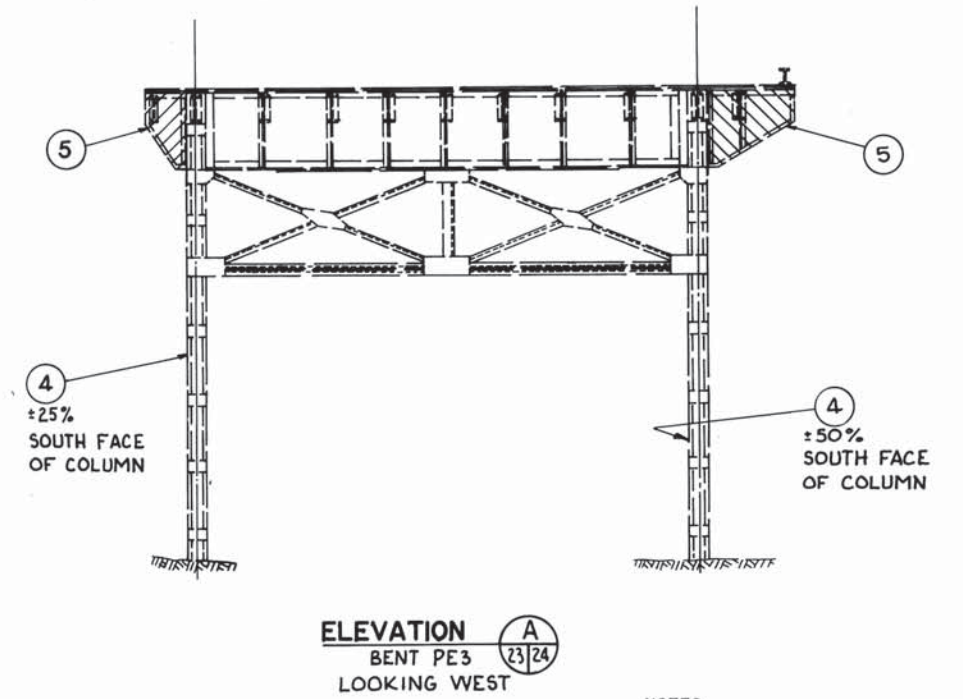
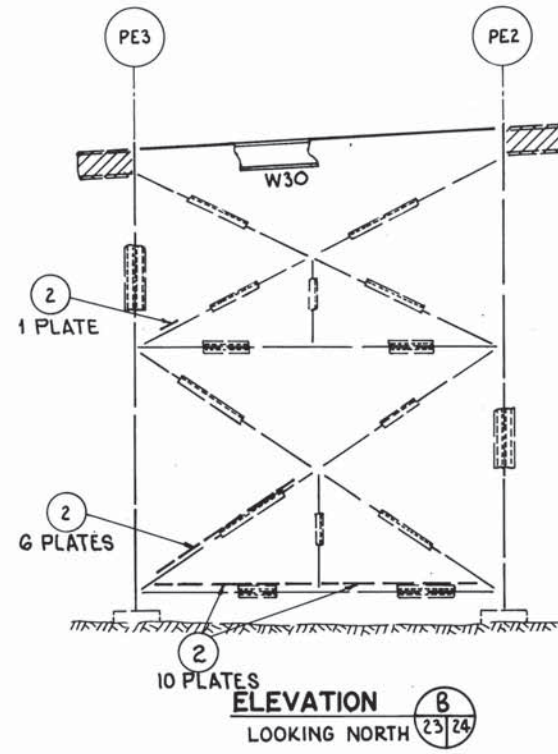
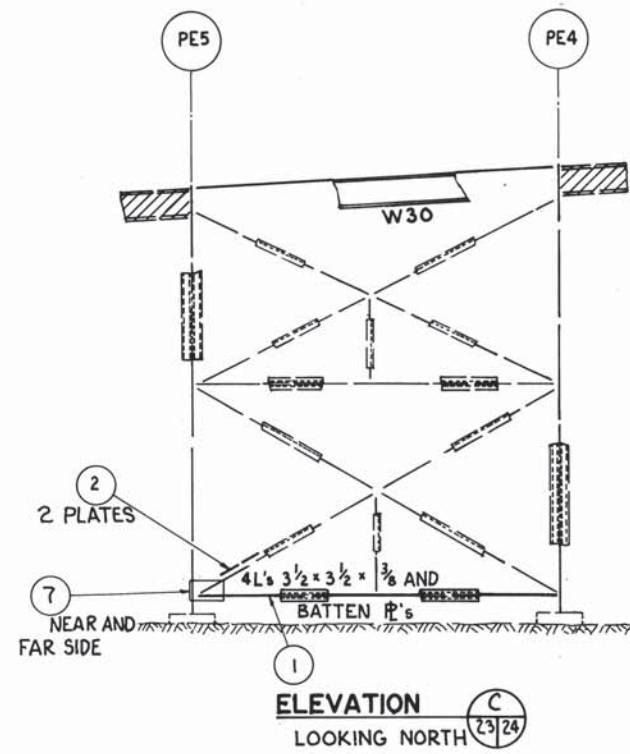
**THE OSBORN ENGINEERING COMPANY 23/56**  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114

CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER

**STEEL FRAMING REHABILITATION SECTION E**  
 EAGLE AVENUE VIADUCT OVER CHESIE,  
 G.C.R.T.A AND CANAL ROAD—PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1:009M  
 CLEVELAND CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RCK	BFG		JRS	R.S.	10/94	

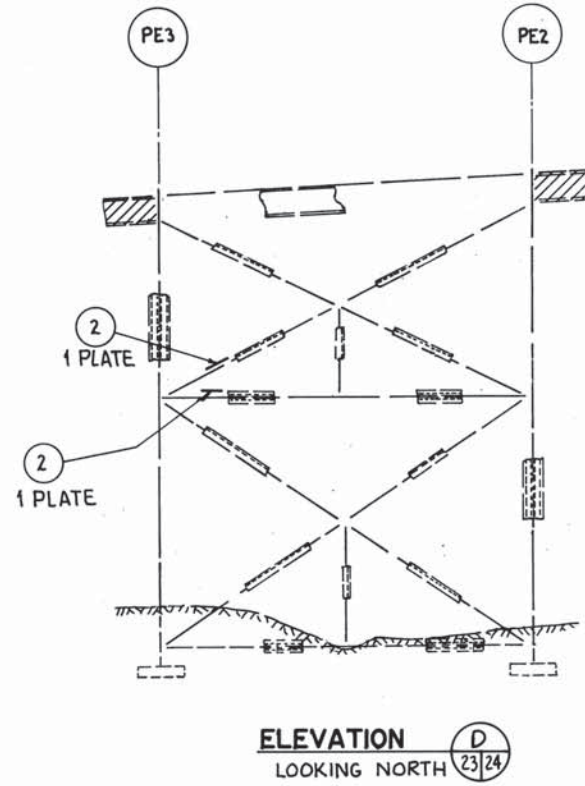
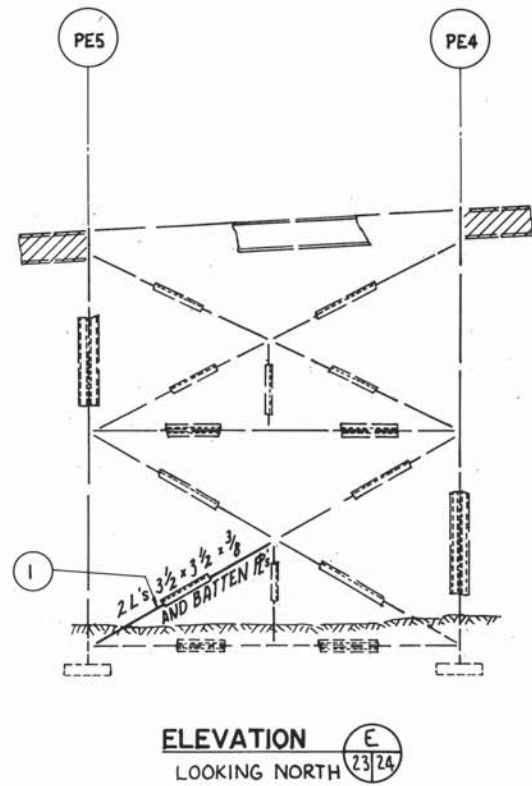
CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II



NOTES

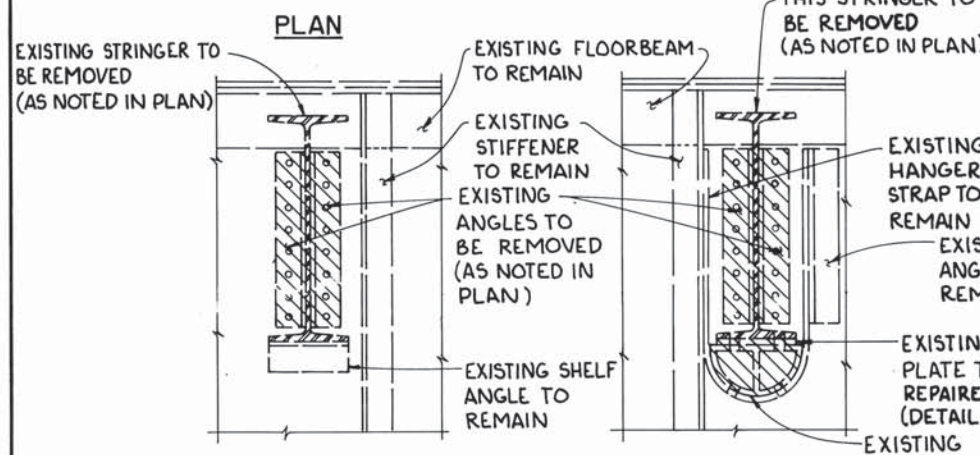
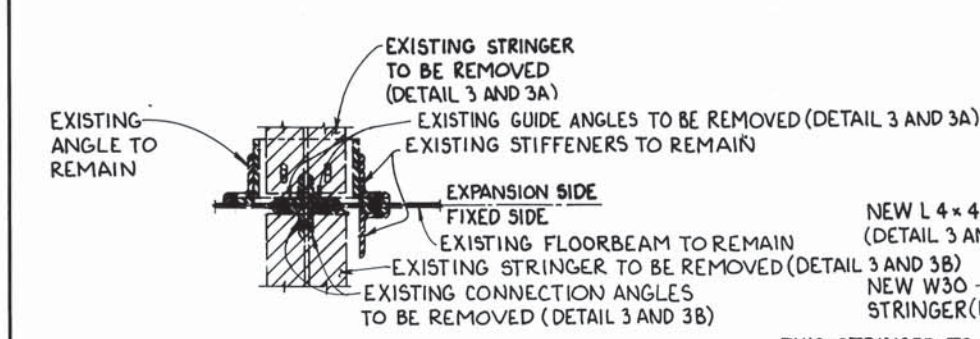
- REMOVE DENOTED BRACE(S) AND INSTALL NEW BRACE(S). EXISTING GUSSET PLATES SHALL BE CLEANED AND REUSED UNLESS NOTED. EXISTING RIVETS OR BOLTS CONNECTING BRACE TO GUSSET PLATES SHALL BE REMOVED AND REPLACED WITH HIGH STRENGTH BOLTS. REMOVAL OF EXISTING MEMBERS IS INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN. INSTALLATION OF NEW MEMBERS AND BOLTS IS INCLUDED WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.
- REMOVE DENOTED BATTEN PLATE(S) AND INSTALL NEW BATTEN PLATE(S) PER TYPICAL DETAILS. REMOVAL OF EXISTING MEMBERS IS INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN. INSTALLATION OF NEW MEMBERS AND BOLTS IS INCLUDED WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.
- RIVETS SHALL BE REMOVED AND REPLACED WITH 7/8" DIAMETER HIGH STRENGTH BOLTS. INCLUDE WITH ITEM SPECIAL - STRUCTURAL STEEL, MISC.; REPLACE EXISTING RIVETS WITH NEW HIGH STRENGTH BOLTS.
- REMOVE DENOTED BRACKET(S) FROM COLUMN PER TYPICAL DETAILS. REMOVAL OF EXISTING MEMBERS IS INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN. INSTALLATION OF NEW MEMBERS AND BOLTS IS INCLUDED WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.
- REPLACE DENOTED GUSSET PLATES IN KIND WITH NEW PLATE. RIVETS SHALL BE REPLACED WITH 7/8" DIAMETER HIGH STRENGTH BOLTS. INCLUDE WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.

FOR FRAMING PLAN SEE SHEET 23/56.  
FOR TYPICAL REPAIR DETAILS SEE SHEET 27/56.

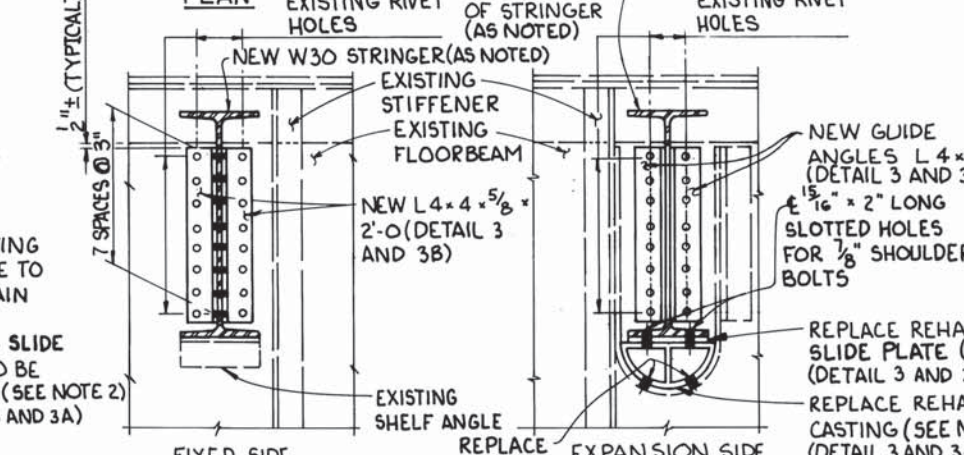


THE OSBORN ENGINEERING COMPANY 24/56						
ROBERT P. MADISON INTERNATIONAL, INC. CONSULTING ENGINEERS CLEVELAND, OHIO 44114						
CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER						
BRACING REHABILITATION SECTION E EAGLE AVENUE VIADUCT OVER CHESSE, C.G.R.T.A. AND CANAL ROAD-PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1:009M CLEVELAND CUYAHOGA COUNTY OHIO						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RCK	BFG		JRS	R.S.	10/90	

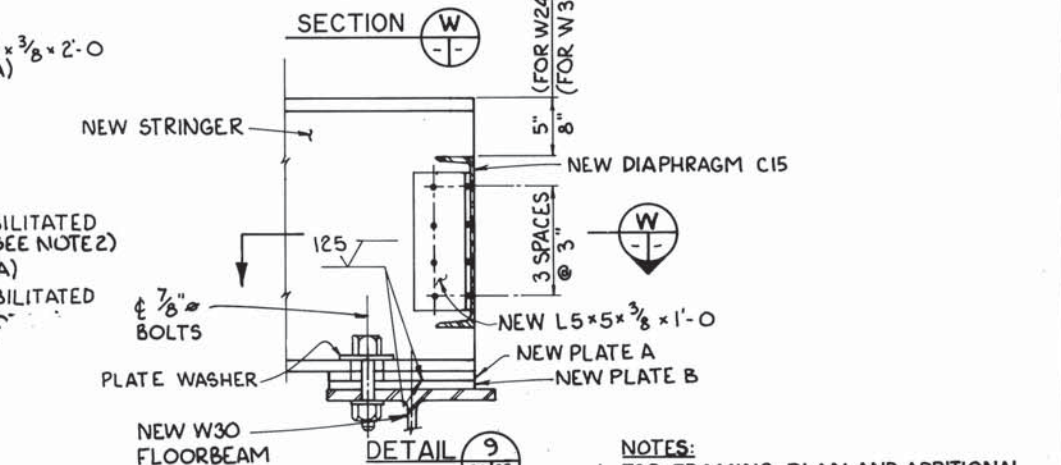
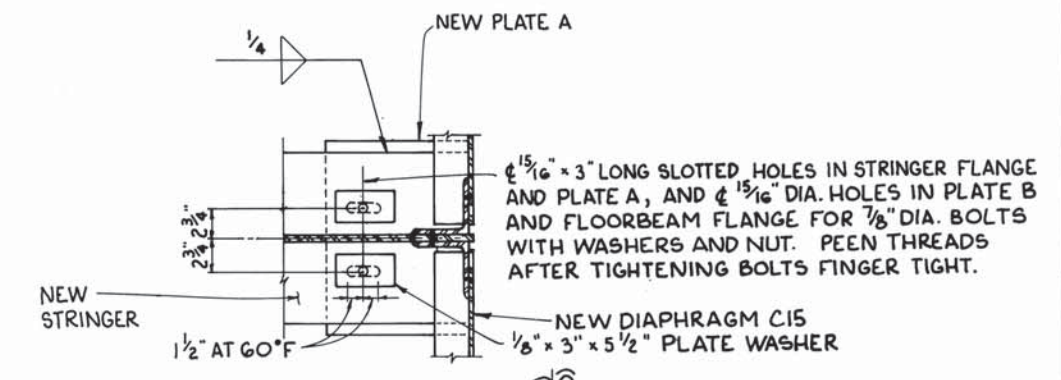
**CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II**



**ELEVATION DEMOLITION**  
**PLAN**

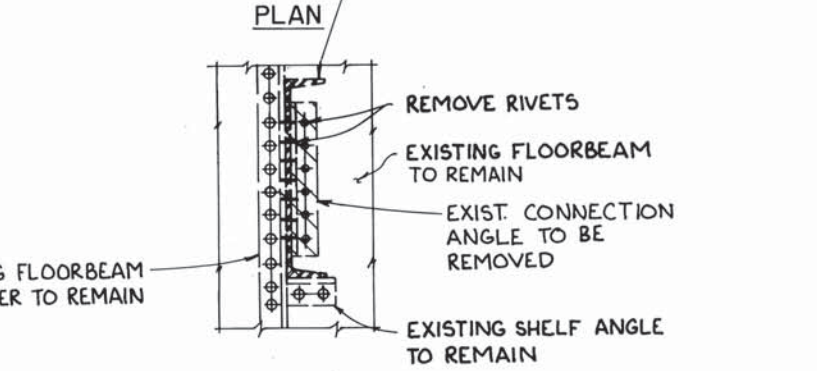
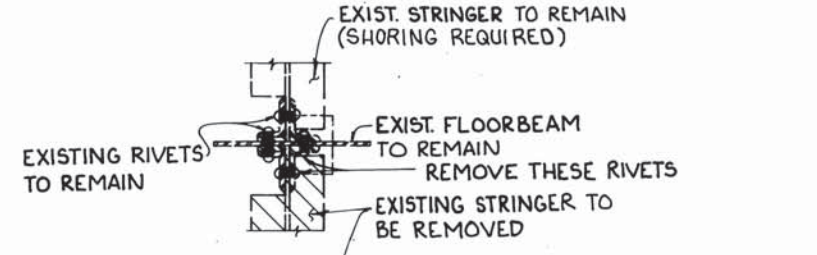


**ELEVATION REPLACEMENT**  
**PLAN**

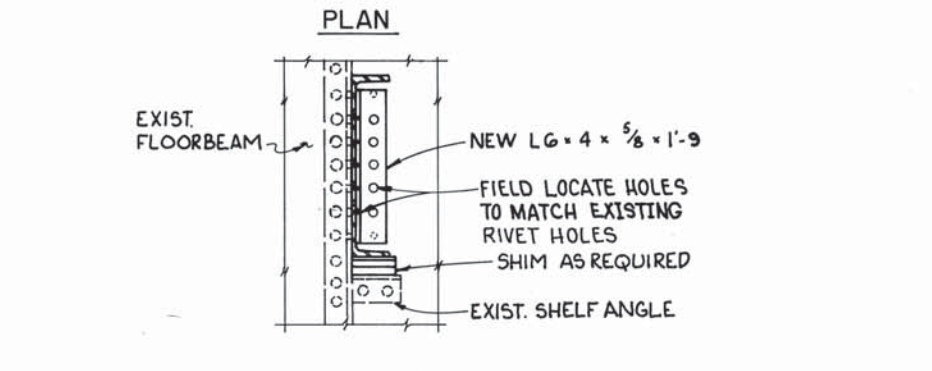
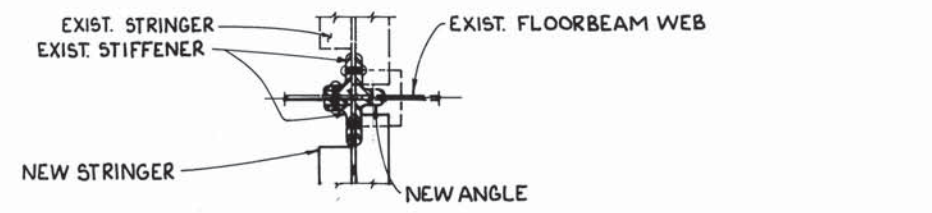


**SECTION W-W**  
**DETAIL 9**

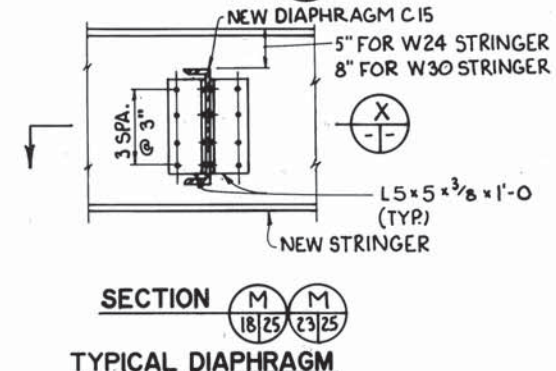
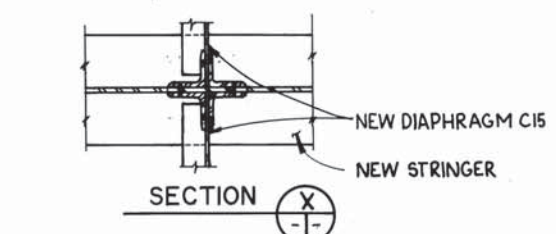
- NOTES:**
- FOR FRAMING PLAN AND ADDITIONAL NOTES SEE SHEET 18/56 AND 23/56.
  - EXISTING SLIDE PLATES AND CASTINGS SHALL BE REMOVED AND CLEANED OF ALL FOREIGN MATERIALS. THE SLIDING SURFACES SHALL BE FINISHED TO A ROUGHNESS HEIGHT OF 125 MICROINCHES. THE SLIDING SURFACES SHALL BE LUBRICATED WITH FLAKE GRAPHITE PRIOR TO REASSEMBLY. INCLUDE WITH ITEM 516 - REFURBISH BEARING DEVICE FOR PAYMENT.
  - PROVIDE END RETURNS ON FILLET WELDS.
  - SLIDING SURFACES OF PLATES A AND B SHALL BE LUBRICATED WITH FLAKE GRAPHITE PRIOR TO ASSEMBLY. INCLUDE PLATES A AND B, FLAKE GRAPHITE, HIGH STRENGTH BOLTS, WASHERS AND NUTS WITH ITEM 516 - BEARING DEVICE, MISC.: SLIDING PLATES FOR PAYMENT.



**ELEVATION DEMOLITION**  
**PLAN**



**ELEVATION REPLACEMENT**  
**PLAN**



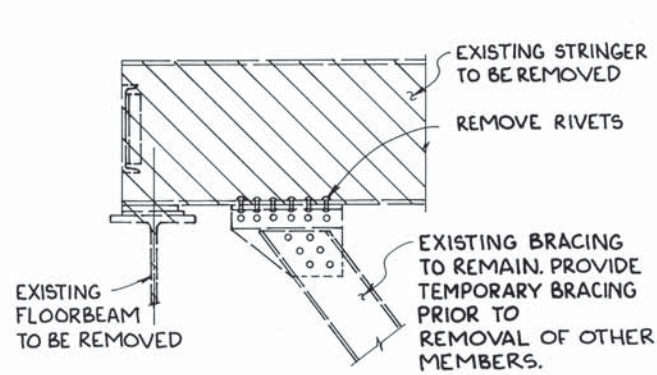
**SECTION X-X**  
**TYPICAL DIAPHRAGM CONNECTION DETAIL**

**DETAIL 4**

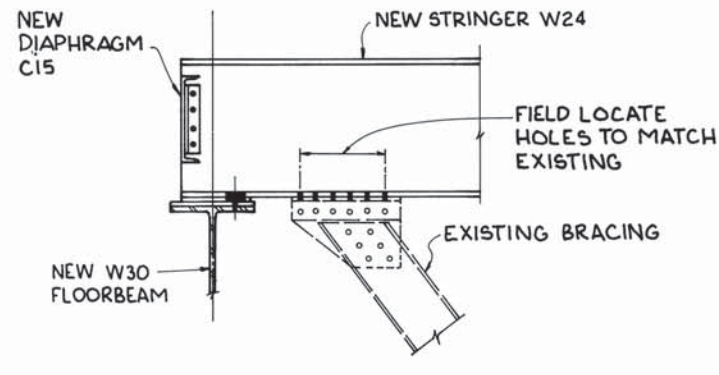
THE OSBORN ENGINEERING COMPANY 25/56						
ROBERT P. MADISON INTERNATIONAL, INC. CONSULTING ENGINEERS CLEVELAND, OHIO 44114						
CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER						
STEEL FRAMING DETAILS SECTIONS D AND E EAGLE AVENUE VIADUCT OVER CHESSE, G.C.R.T.A. AND CANAL ROAD-PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1:009M CLEVELAND CUYAHOGA COUNTY OHIO						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RCK	BFG		JRS	12.5.10	190	



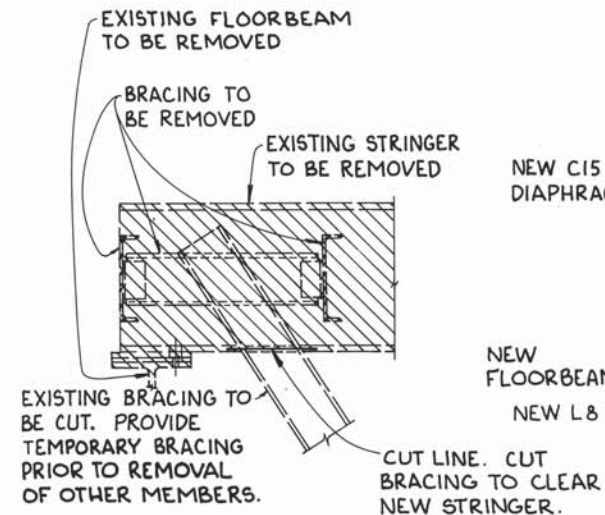
CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II



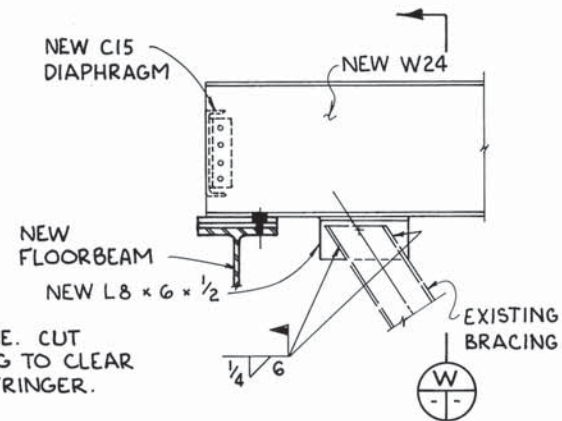
DETAIL 6  
REMOVAL 21/26



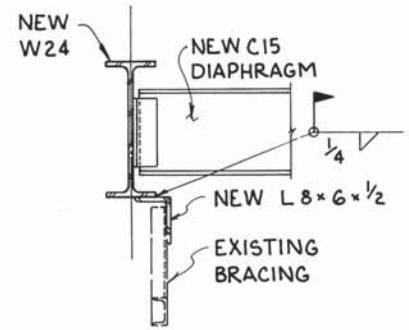
DETAIL 6  
REPLACEMENT 21/26



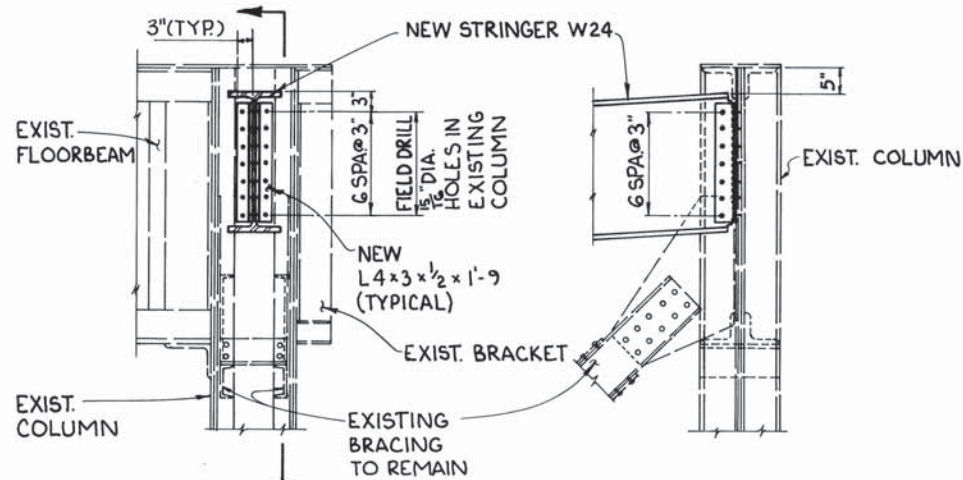
DETAIL 7  
REMOVAL 21/26



DETAIL 7  
REPLACEMENT 21/26

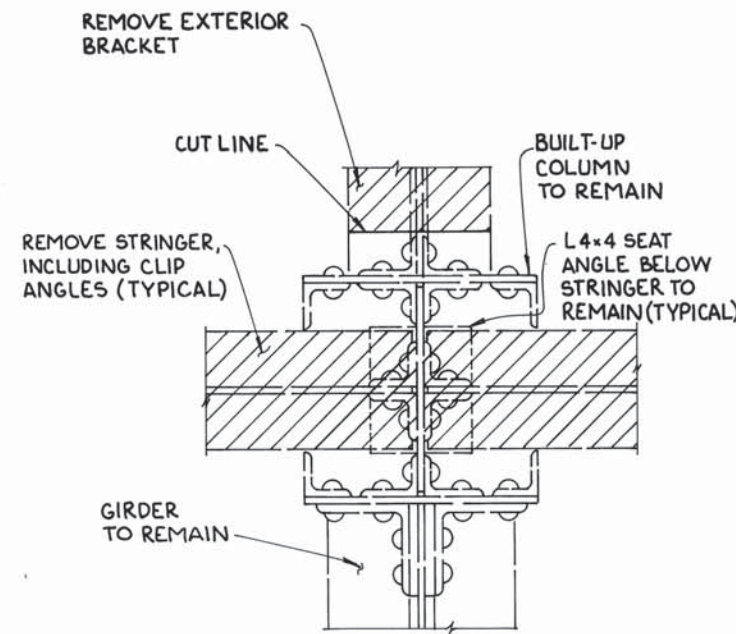


SECTION W-W

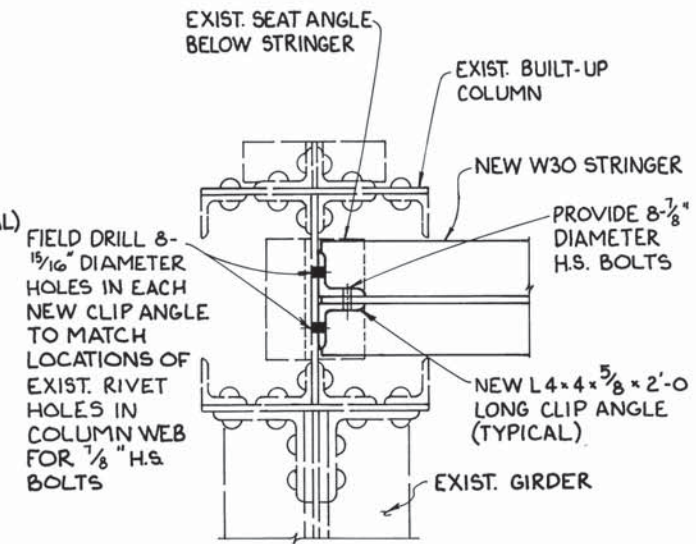


SECTION N-N 18/26

SECTION U-U



PLAN  
DEMOLITION



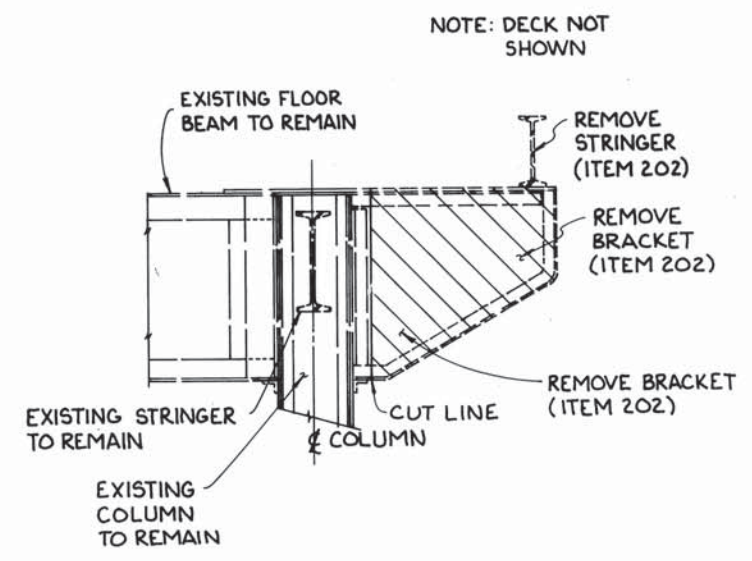
PLAN  
REPLACEMENT

DETAIL 8 8  
23/26 18/26

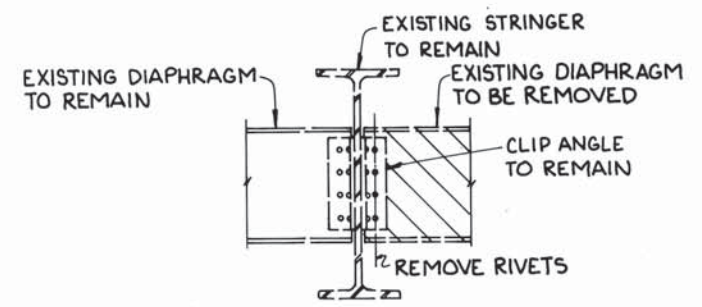
NOTE: FOR FRAMING PLAN AND  
ADDITIONAL NOTES SEE SHEET 18/56  
AND 23/56.

THE OSBORN ENGINEERING COMPANY 26/56						
ROBERT P. MADISON INTERNATIONAL, INC. CONSULTING ENGINEERS CLEVELAND, OHIO 44114						
CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER						
STEEL FRAMING DETAILS SECTIONS D AND E EAGLE AVENUE VIADUCT OVER CHESSIE, G.C.R.T.A. AND CANAL ROAD-PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M CLEVELAND CUYAHOGA COUNTY OHIO						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RCK	BFG		JRS	RS	10/19/0	

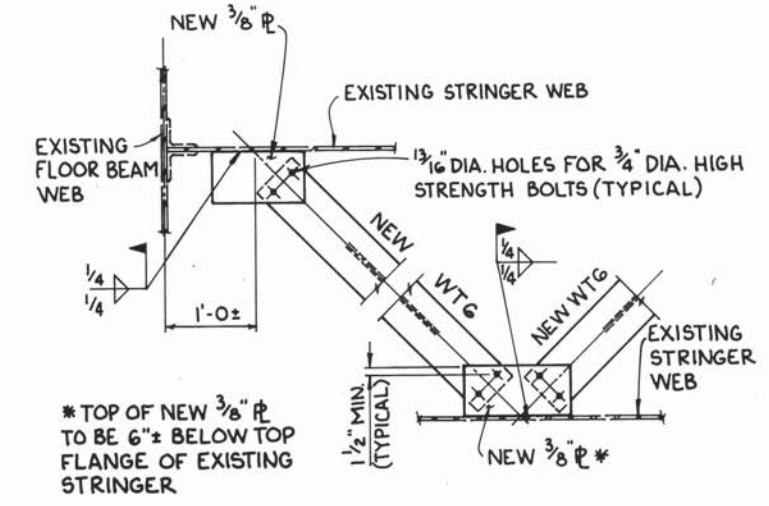
CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II



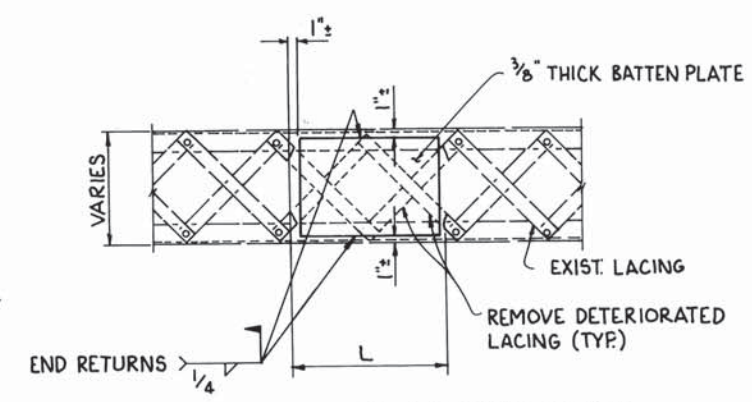
TYPICAL BRACKET REMOVAL DETAIL  
SEE FRAMING PLANS FOR LOCATIONS



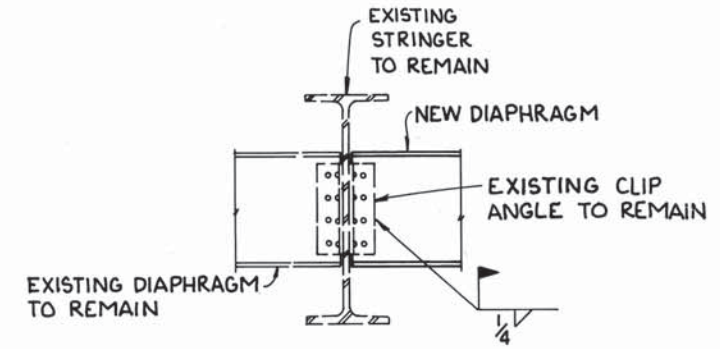
DIAPHRAGM REMOVAL DETAIL



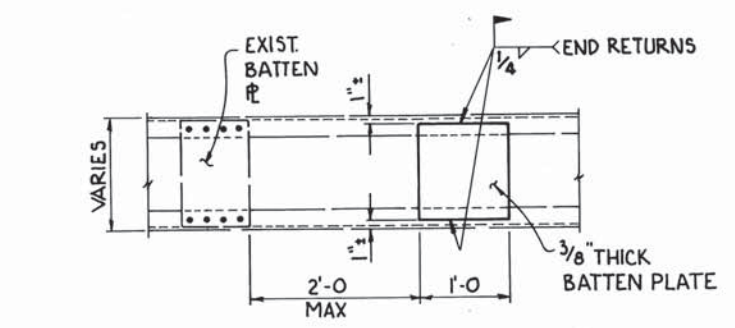
HORIZONTAL BRACING CONNECTION DETAILS



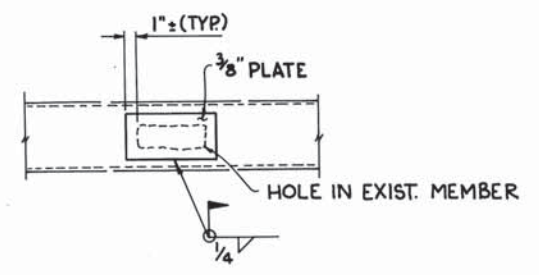
TYPICAL LACING REPLACEMENT DETAIL



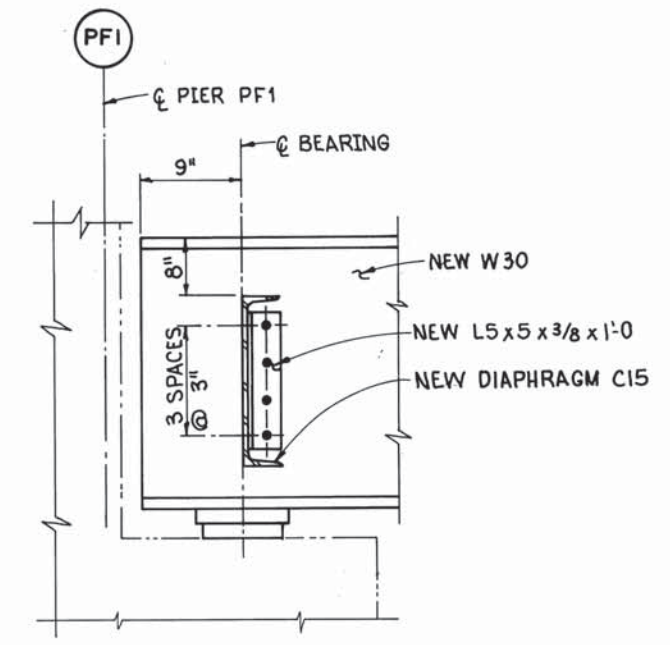
DIAPHRAGM REPLACEMENT DETAIL



TYPICAL BATTEN PLATE DETAILS



TYPICAL PATCH DETAIL



SECTION F  
(TYPICAL ALONG PF1)

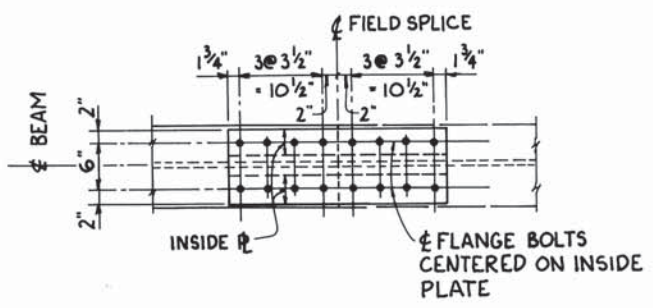
THE OSBORN ENGINEERING COMPANY 27/56					
ROBERT P. MADISON INTERNATIONAL, INC.					
CONSULTING ENGINEERS CLEVELAND, OHIO 44114					
CITY OF CLEVELAND					
DIVISION OF ENGINEERING AND CONSTRUCTION					
CUYAHOGA COUNTY ENGINEER					
TYPICAL FRAMING DETAILS					
EAGLE AVENUE VIADUCT OVER CHESSE, G.C.R.T.A. AND CANAL ROAD—PHASE II					
CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M					
CLEVELAND, CUYAHOGA COUNTY OHIO					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
RCK	BFG		JRS	RS	10/90

**CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II**

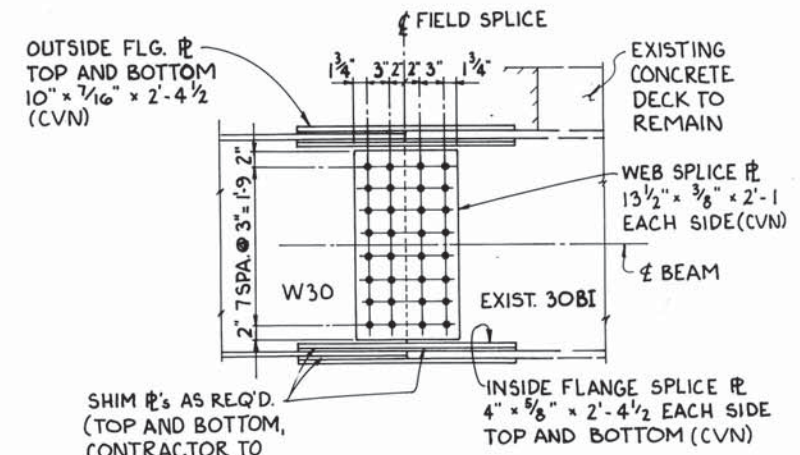
**LAMINATED ELASTOMERIC BEARINGS**

- TOLERANCES:**  
INDIVIDUAL ELASTOMER LAYER THICKNESS:  $\pm 20\%$  OF DESIGN VALUE (NOT TO EXCEED  $\pm 1/8"$ )  
PLAN DIMENSIONS  $-0", +1/4"$   
DESIGN THICKNESS  $\leq 1-1/4"$   $-0", +1/8"$   
DESIGN THICKNESS  $> 1-1/4"$   $-0", +1/4"$   
EDGE COVER OF EMBEDDED LAMINATES  $-0", +1/8"$
- LOAD PLATE:**  
THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS. STEEL LOAD PLATES SHALL BE 1-1/2 INCHES THICK MINIMUM FOR BEARINGS RATED UP TO AND INCLUDING 200 KIPS AND SHALL BE 2 INCHES THICK MINIMUM FOR BEARINGS RATED OVER 200 KIPS.  
WELDING OF THE LOAD PLATE TO THE SUPERSTRUCTURE SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE SHALL NOT EXCEED 400 DEGREES F. AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
- BEARING REPOSITIONING:**  
IF DECK CONCRETE IS PLACED AT AN AMBIENT TEMPERATURE HIGHER THAN 80 DEGREES F. OR LOWER THAN 40 DEGREES F. AND THE BEARING SHEAR DEFLECTION EXCEEDS ONE-SIXTH OF THE BEARING HEIGHT AT 60 DEGREES F.  $\pm 10$  DEGREES F., THE BEAMS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60 DEGREES F.  $\pm 10$  DEGREES F.
- BASIS OF PAYMENT:**  
THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS EITHER FIXED OR EXPANSION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516 - ELASTOMERIC BEARING PAD 7" X 12" X 1 3/8" INTERNAL LAMINATES AND LOAD PLATE 8" X 12" X 1 1/2" (NEOPRENE), OR ITEM 516 - ELASTOMERIC BEARING 8-1/2" X 12" X 1 1/2" WITH INTERNAL LOAD PLATES ONLY (NEOPRENE)

NOTE: ALL FASTENERS SHALL BE 1" H.S. BOLTS.



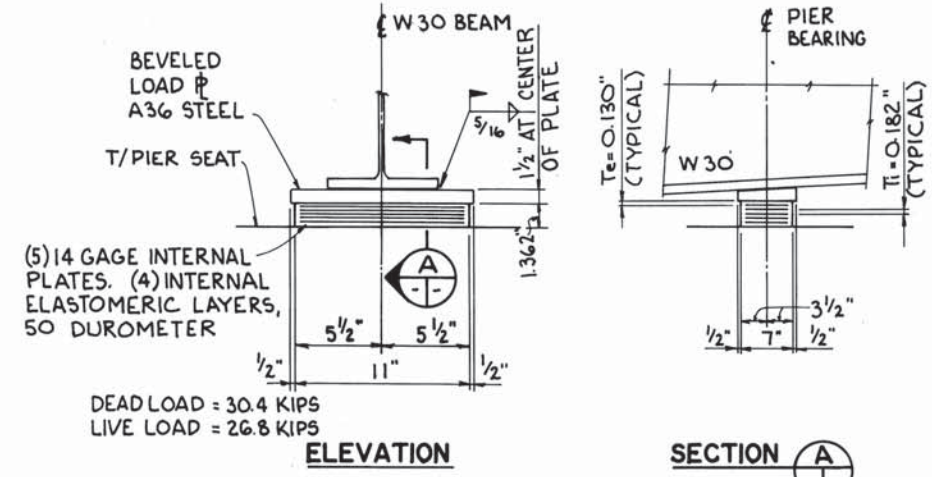
**FLANGE FIELD SPICE**



**FIELD SPICE ELEVATION  
(NEW TO EXISTING STRINGER)**

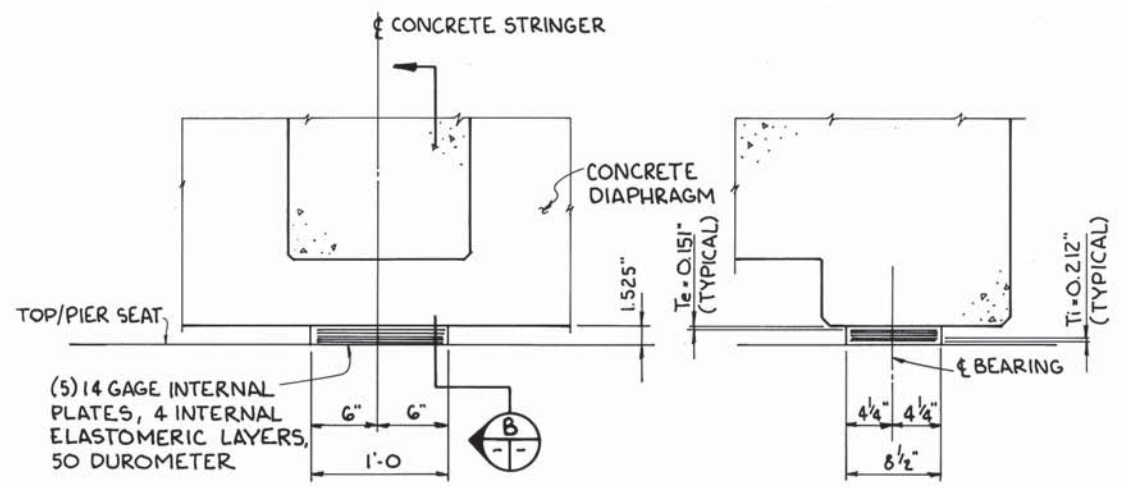
**FIELD SPLICES IN EXISTING STEEL STRINGERS**

- TEMPORARY SHORING AND BRACING SHALL BE INSTALLED PRIOR TO REMOVAL OPERATIONS. SHORING LOADS ARE SHOWN ON THE FRAMING PLANS.
- PORTIONS OF BEAMS SHALL BE REMOVED TO THE LOCATIONS SHOWN ON THE PLANS. METHODS OF REMOVAL AND CUTTING SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INITIATING WORK. STRUCTURAL STEEL MAY BE FLAME CUT, PROVIDED A SMOOTH SURFACE FREE FROM CRACKS AND NOTCHES IS SECURED AND PROVIDED AN ACCURATE PROFILE IS SECURED BY THE USE OF A MECHANICAL GUIDE.
- HOLES IN EXISTING BEAMS SHALL BE REAMED AND DRILLED USING THE SPLICE PLATES AS TEMPLATES WITH THE NEW MEMBERS ASSEMBLED IN POSITION. FILL PLATES SHALL BE PROVIDED AS REQUIRED DUE TO VARIATIONS IN CROSS SECTION OF NEW AND EXISTING BEAM SECTIONS.
- ALL REQUIREMENTS OF ITEM 513 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL APPLY.
- PAYMENT FOR ALL WORK INVOLVED IN INSTALLATION OF COMPLETE FIELD SPLICES SHALL BE INCLUDED WITH ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.



**TYPICAL LAMINATED ELASTOMERIC EXPANSION BEARING DETAIL  
(STEEL STRINGERS)**

DEAD LOAD = 30.4 KIPS  
LIVE LOAD = 26.8 KIPS

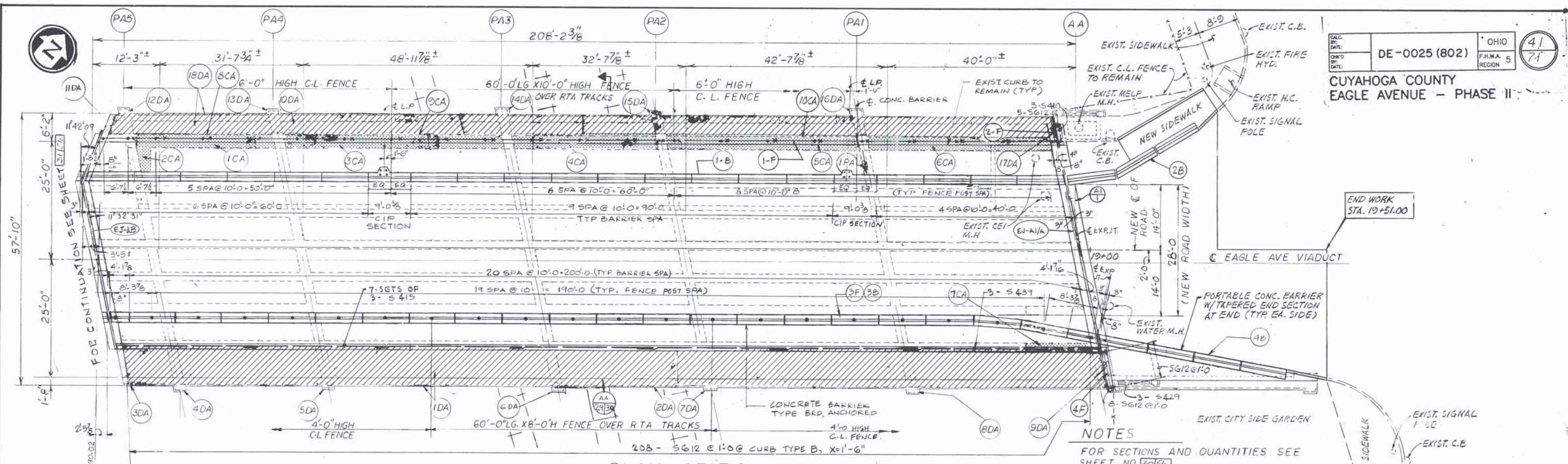


**TYPICAL LAMINATED ELASTOMERIC EXPANSION BEARING DETAIL  
(CONCRETE STRINGERS)**

DEAD LOAD = 49.1 KIPS  
LIVE LOAD = 36.6 KIPS

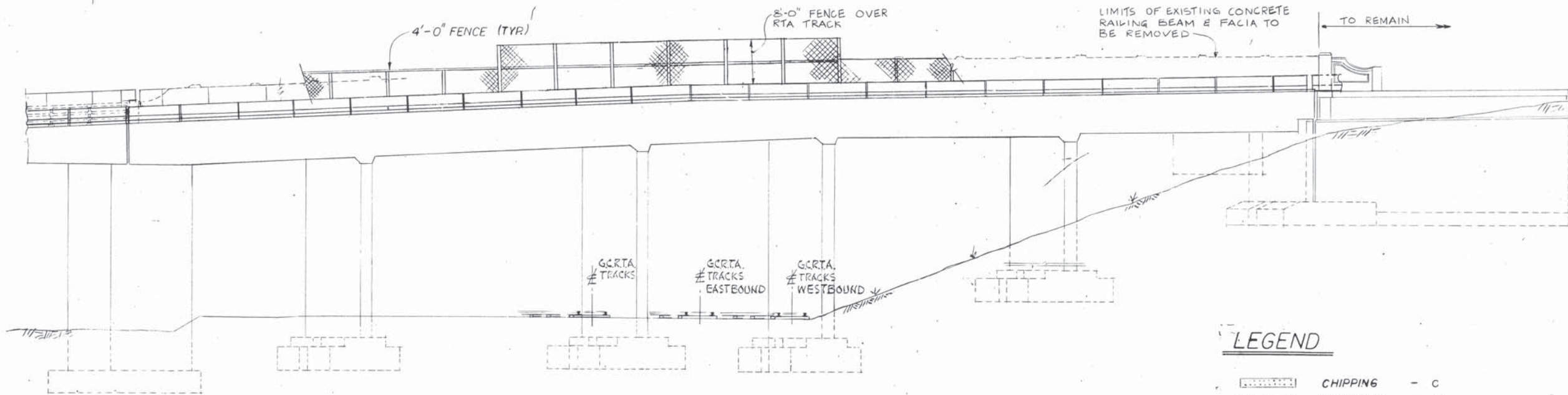
<b>THE OSBORN ENGINEERING COMPANY 28/56</b> ROBERT P. MADISON INTERNATIONAL, INC. CONSULTING ENGINEERS CLEVELAND, OHIO 44114						
CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER						
<b>TYPICAL FRAMING DETAILS</b> EAGLE AVENUE VIADUCT OVER CHESSE, G.C.R.T.A. AND CANAL ROAD - PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1:009M CLEVELAND CUYAHOGA COUNTY OHIO						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RCK	BFG		JRS	RS	10/90	

CUYAHOGA COUNTY  
 EAGLE AVENUE - PHASE II



PLAN - SECTION A

NOTES  
 FOR SECTIONS AND QUANTITIES SEE SHEET NO. 30/56  
 FOR CURB TYPE SEE DETAIL ON SHEET NO. 30/56



SOUTH ELEVATION

LEGEND

- CHIPPING - C
- PATCHING - P
- REMOVAL - D
- REPLACEMENT - R
- REFERENCE C (CHIPPING) SEE SHT. NO. 30/56
- REFERENCE LETTER (PATCHING) SEE SHT. NO. 30/56
- REFERENCE D (REMOVAL) SEE SHT. NO. 30/56
- REFERENCE R (REPLACEMENT) SEE DETAIL NOTE - SHT. NO. 30/56
- CONC. BARRIER & FENCE SHT. NO. 30/56
- EXPANSION JOINT - SEE SHT. NO. 30/56

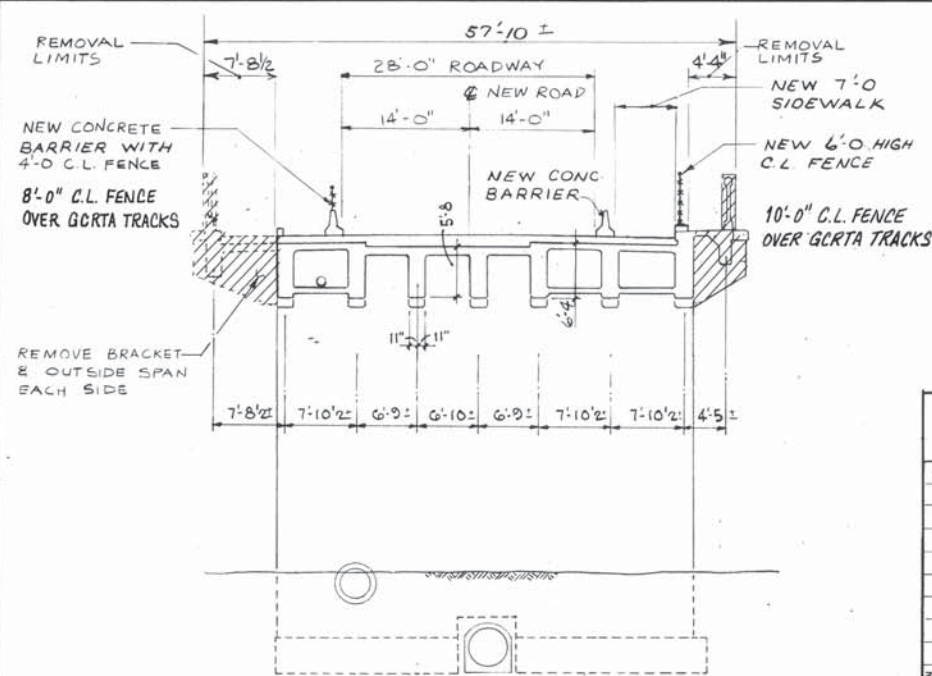
THE OSBORN ENGINEERING COMPANY 10/96  
 ROBERT P. MADISON INTERNATIONAL, INC. 5/25  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114

CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER

DECK & REMOVAL PLAN & ELEVATION A

EAGLE AVENUE VIADUCT OVER G.C.R.T.A. AND CANAL ROAD - PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
 CLEVELAND CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REMOVED	DATE	REVISION
MP	JMP		KP	LJ	10/90	



SECTION AA  
VIADUCT SECTION 'A'

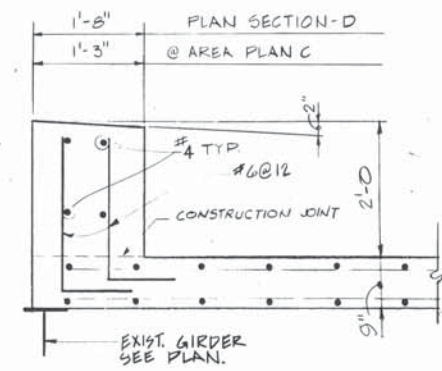
ITEM SPECIAL CHIPPING					
REFERENCE NO.	MEMBER TYPE	AREA SURFACE (SQ. FT.)			REMARKS
		LENGTH	WIDTH	TOTAL	
1-CA	BEAM	28.67	1.83	52.5	
2-CA	SLAB	3	5	15	
3-CA	BEAM	47	1.83	86	
4-CA	BEAM	30.5	1.83	55.8	
5-CA	BEAM	40.5	1.83	74	
6-CA	BEAM	38.0	1.83	69.5	
7-CA	BEAM	14.0	1.83	25.62	
TOTAL				378.42	

ITEM 202 PORTION OF STRUCT. REMOVED AS PER PLAN

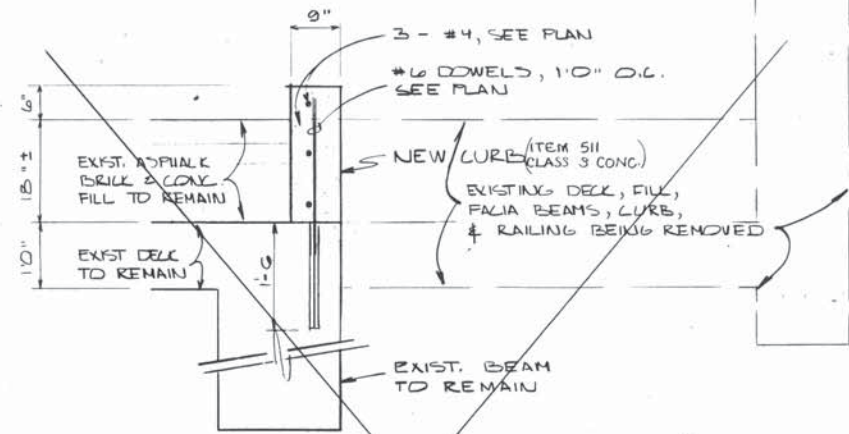
REF NO	MEMBER	REMARK	AREA SURFACE (SQ. FT.)			REMARKS
			LENGTH	HEIGHT	TOTAL	
1 DA	DECK	DECK & FACIA BEAM	25	7.3	181	
18 DA	DECK	"	35	7.3	253.7	
2 DA	RAILING	BRIDGE RAILING REMOVED	25	7.3	181	
10 DA	RAILING				615.7	

ITEM SPECIAL PATCHING

REFERENCE NO.	MEMBER TYPE	AREA SURFACE (SQ. FT.)			REMARKS
		LENGTH	HEIGHT	TOTAL	
1-PA	BEAM	5'-0"	3'-0"	15'-0"	

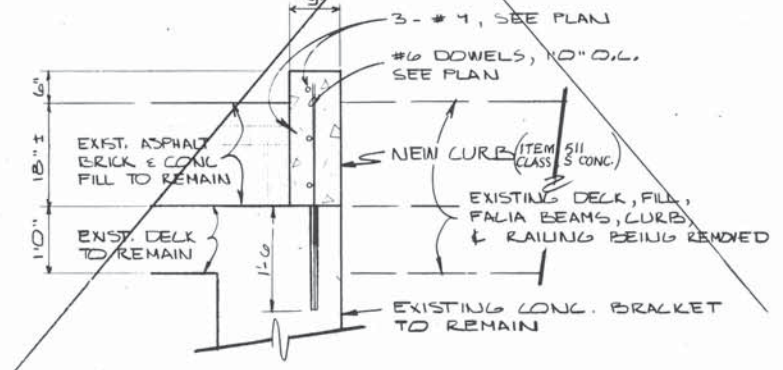


CURB TYPE - D

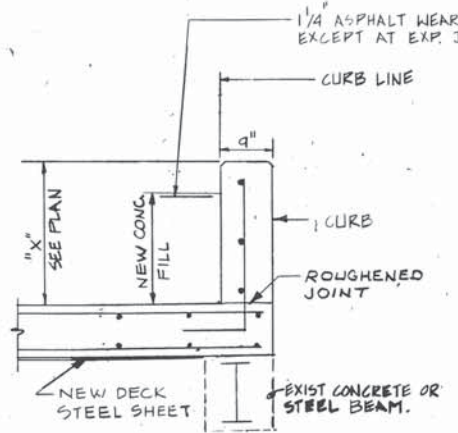


NEW CURB SECTION AB-AB  
2 DECK & FACIA BEAMS BEING REMOVED

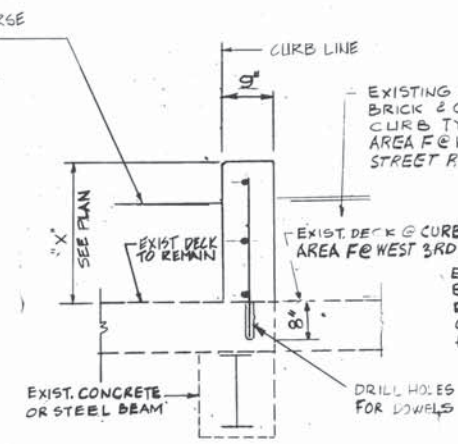
**DELETE**



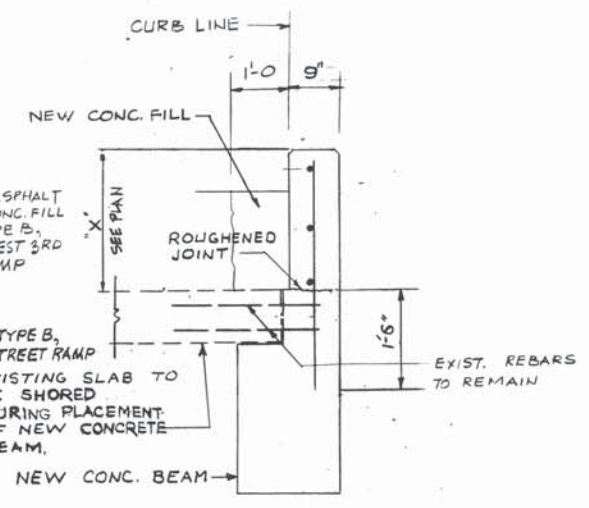
NEW CURB END SECTION AC-AC  
2 DECK & FACIA BEAMS BEING REMOVED



CURB TYPE - A

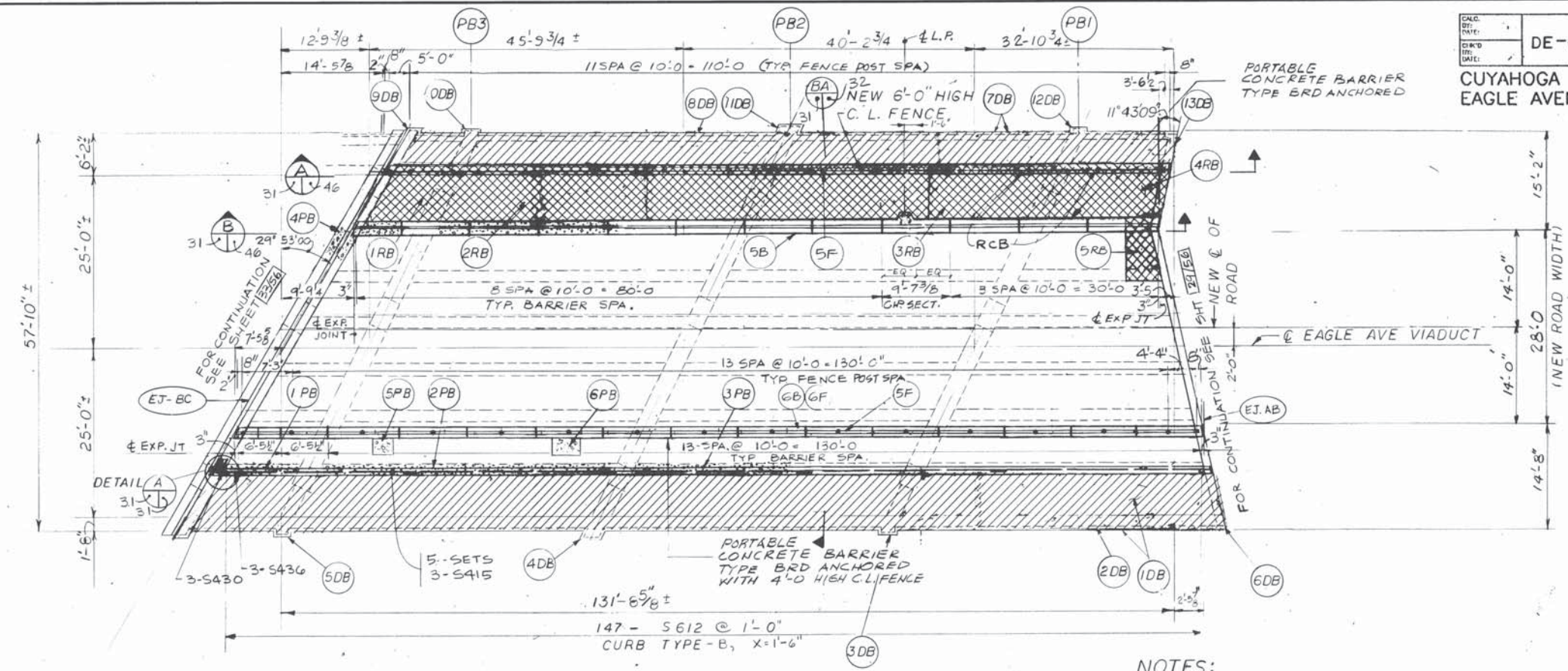


CURB TYPE - B



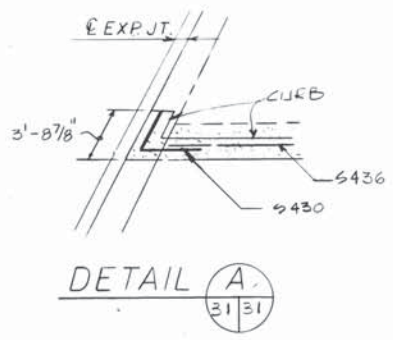
CURB TYPE - C

THE OSBORN ENGINEERING COMPANY 30/56  
 ROBERT P. MADISON INTERNATIONAL, INC. (MBE)  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER  
**TYP. SECTION & SCHEDULES-SECTION A**  
 EAGLE AVENUE VIADUCT OVER  
 G.C.R.T.A. AND CANAL ROAD-PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
 CLEVELAND CUYAHOGA COUNTY OHIO  
 DESIGNED: MP DRAWN: Jmp TRACED: KP CHECKED: LJ REVIEWED: 10/90

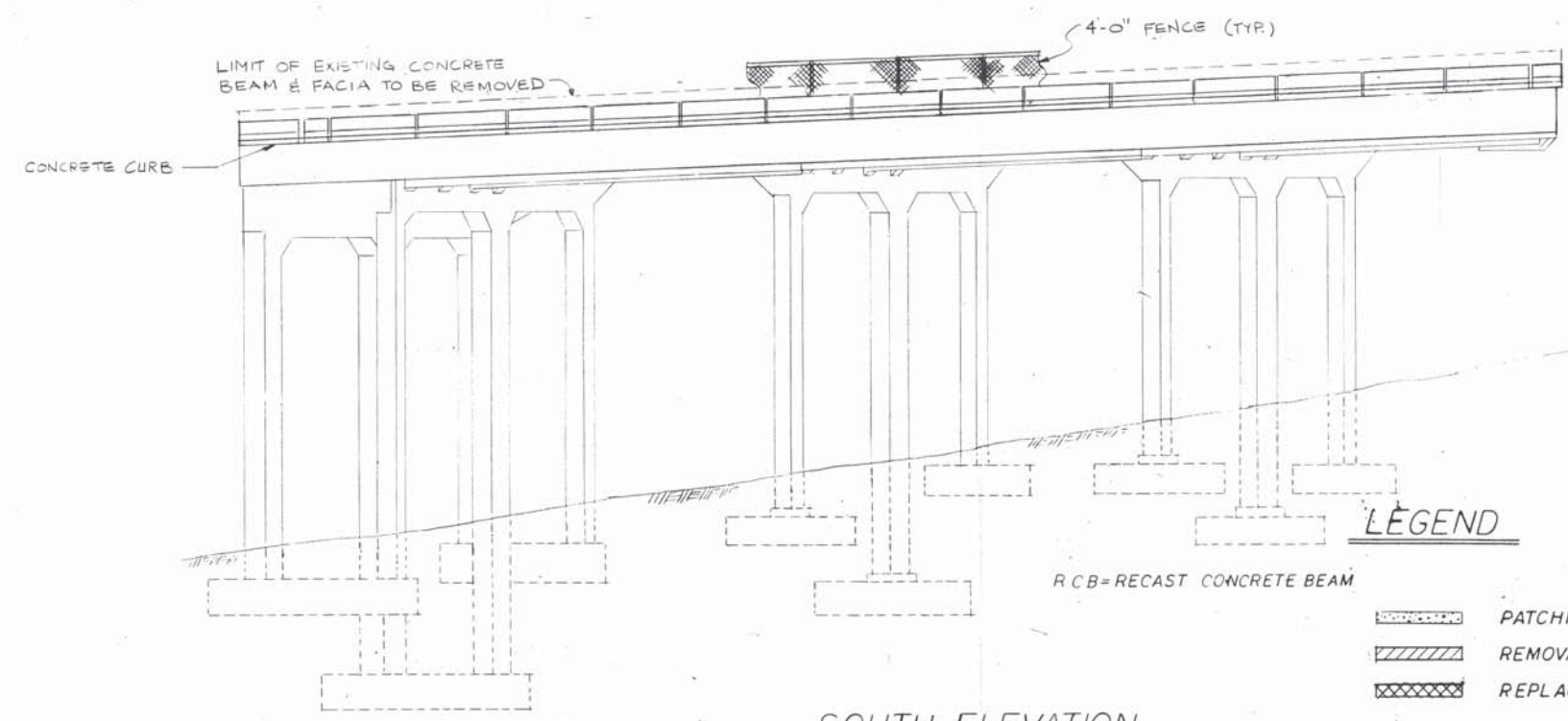


PLAN - SECTION 'B'

NOTES:  
FOR SECTIONS AND QUANTITIES SEE SHEET NO. 32/56  
FOR CURB TYPE DETAILS SEE SHT. NO. 30/56



DETAIL A



SOUTH ELEVATION

LEGEND

- PATCHING - P
- REMOVAL - D
- REPLACEMENT - R

- (P) REFERENCE LETTER (PATCHING) SEE SHT. NO. 32/56
- (D) REFERENCE D (REMOVAL) SEE SHT. NO. 32/56
- (R) REFERENCE R (REPLACEMENT) DETAIL & NOTE SEE SHT. NO. 44/56 & 46/56

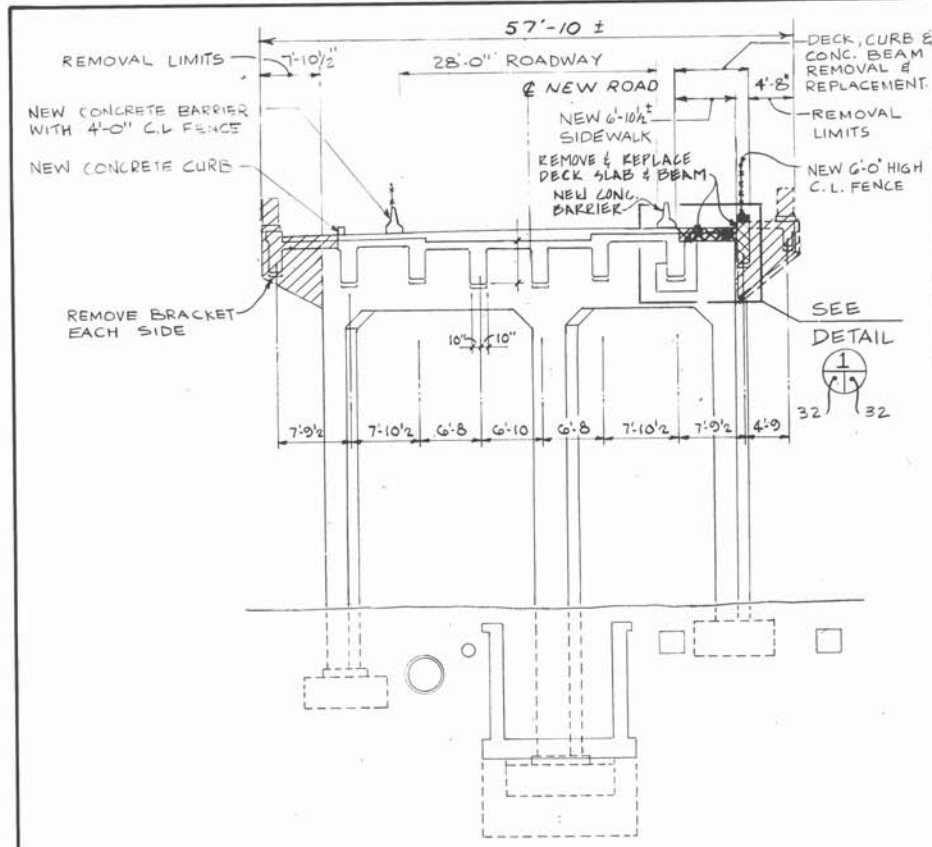
- (B)(F) CONC. BARRIER & FENCE SHT. NO. 50/56
- EJ EXPANSION JOINT SEE SHT. NO. 45/56 & 49/56

THE OSBORN ENGINEERING COMPANY 31/56  
ROBERT P. MADISON INTERNATIONAL, INC.  
CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
CITY OF CLEVELAND  
DIVISION OF ENGINEERING AND CONSTRUCTION  
CUYAHOGA COUNTY ENGINEER

DECK & REMOVAL PLAN & ELEV. SECTION-B  
EAGLE AVENUE VIADUCT OVER CHESSE, G.C.R.T.A. AND CANAL ROAD-PHASE II  
CITY OF CLEVELAND, CITY BRIDGE NO. 1-309M  
CLEVELAND CUYAHOGA COUNTY OHIO

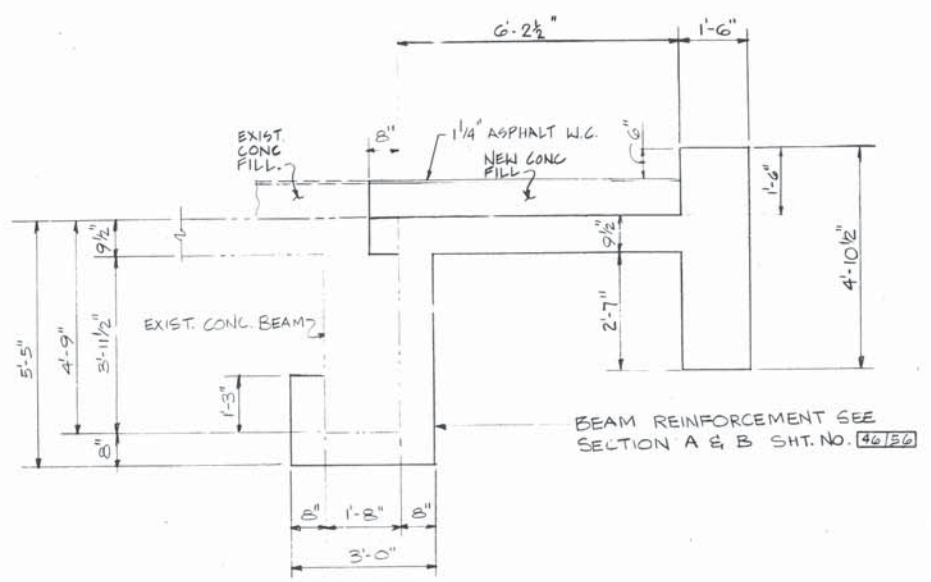
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MP	JMP		KP	LJ	10/50	

CUYAHOGA COUNTY  
 EAGLE AVENUE - PHASE II



ITEM SPECIAL PATCHING					ITEM 202 PORTION OF STRUCT. REMOVED AS PER. PLAN					
REFERENCE NO.	MEMBER TYPE	AREA SURFACE (SQ. FT.) BOTTOM			REMARKS	REFERENCE NO.	MEMBER TYPE	REMARKS		
		LENGTH	WIDTH	TOTAL						
1 PB	BEAM	11	1.67	18.37		1 RB	DECK			
2 PB	BEAM	42	1.67	70.14		2 RB	DECK			
3 PB	BEAM	30	1.67	50.1		3 RB	DECK			
4 PB	BEAM	12	3.0	36.0		4 RB	DECK			
5 PB	DECK	3	2.5	7.5		5 RB	DECK			
6 PB	DECK	4	2.5	10.0		1 DB				DECK FASCIA BEAM
TOTAL				192.11		7 DB				"
						2 PB	RAILING			BRIDGE RAILING REMOVED
						3 PB	RAILING			"
						3 DB TO G DB	BRACKETS			ITEM SPECIAL
						4 DB TO 13 DB	BRACKETS			"

SECTION VIADUCT SECTION B

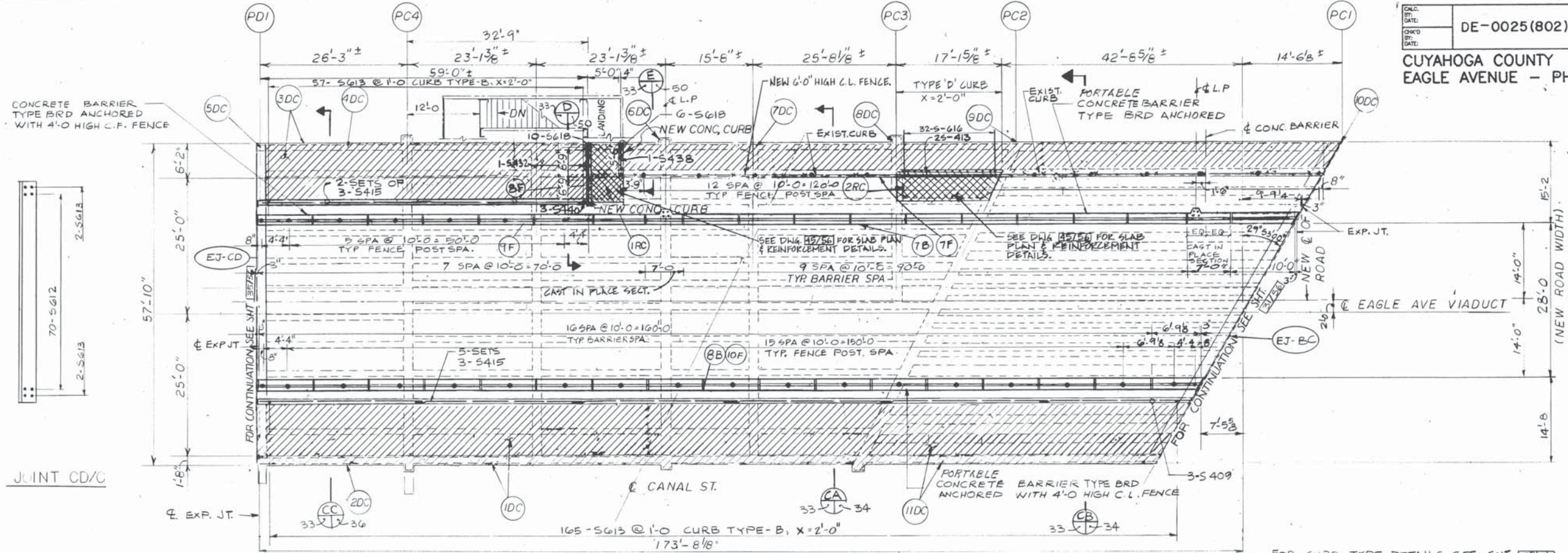


DETAIL 32/32

THE OSBORN ENGINEERING COMPANY 32/50  
 ROBERT P. MADISON INTERNATIONAL, INC. (MBE)  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER  
 TYP. SECTION B SCHEDULES-SECTION B  
 EAGLE AVENUE VIADUCT OVER CHESSE,  
 G.C.R.T.A. AND CANAL ROAD-PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
 CLEVELAND CUYAHOGA COUNTY OHIO  
 DESIGNED: KMP DRAWN: JMP TRACED: \_\_\_\_\_ CHECKED: MP REVIEWED: LD 10/90 DATE: \_\_\_\_\_ REVISION: \_\_\_\_\_

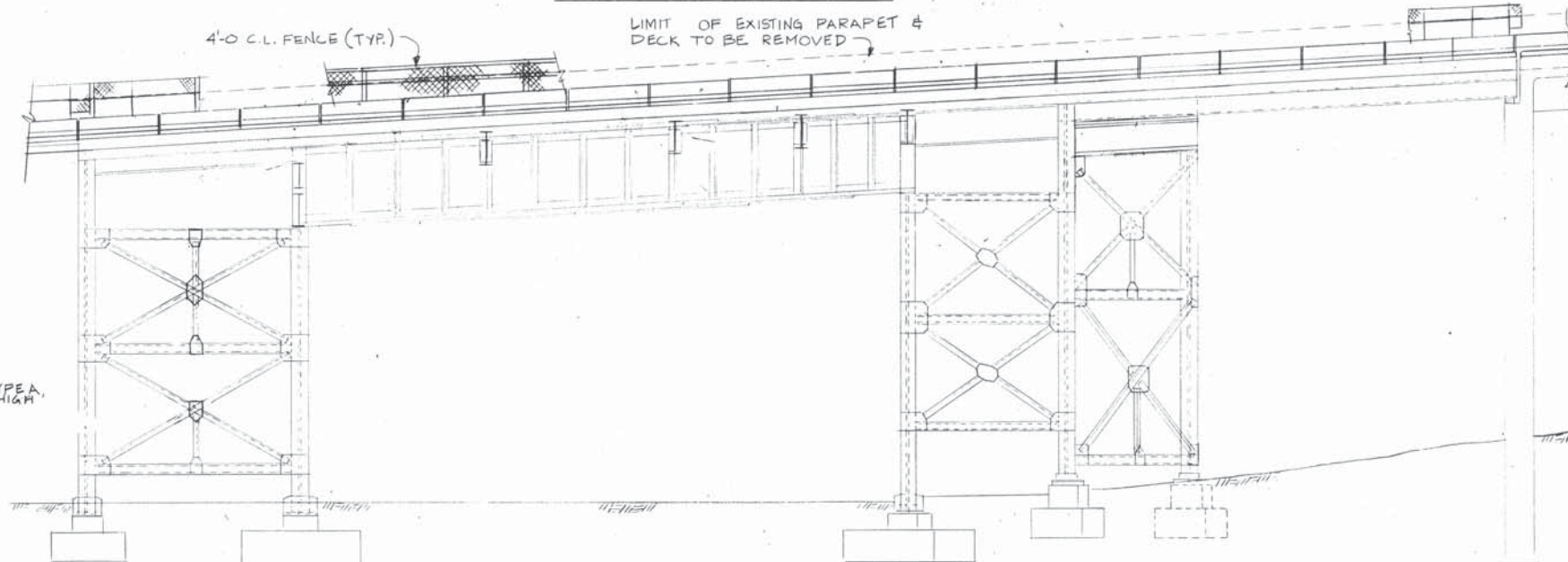


CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II

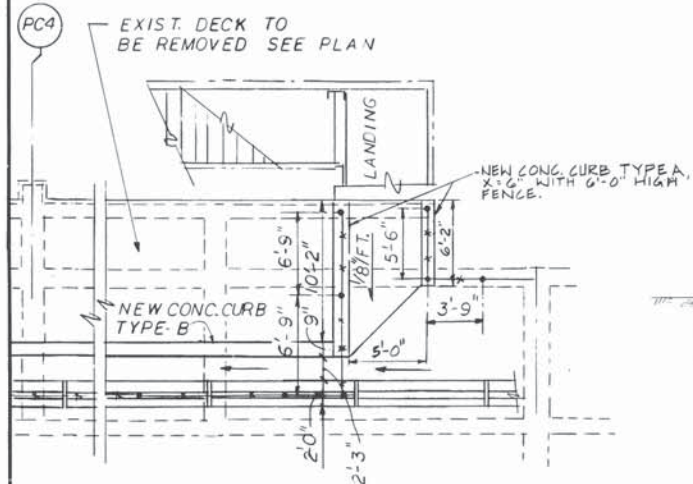


PLAN - SECTION 'C'

FOR CURB TYPE DETAILS SEE SHIT. 301E



SOUTH ELEVATION



ENLARGE PLAN AT STAIRCASE

LEGEND

- REMOVAL - D
- REPLACEMENT - R

- REFERENCE LETTER (PATCHING) SEE SHIT. NO. 312E
- REFERENCE D (REMOVAL) SEE SHIT. NO. 347E
- REFERENCE R (REPLACEMENT) SEE SHIT. NO. 357E DETAIL & NOTE

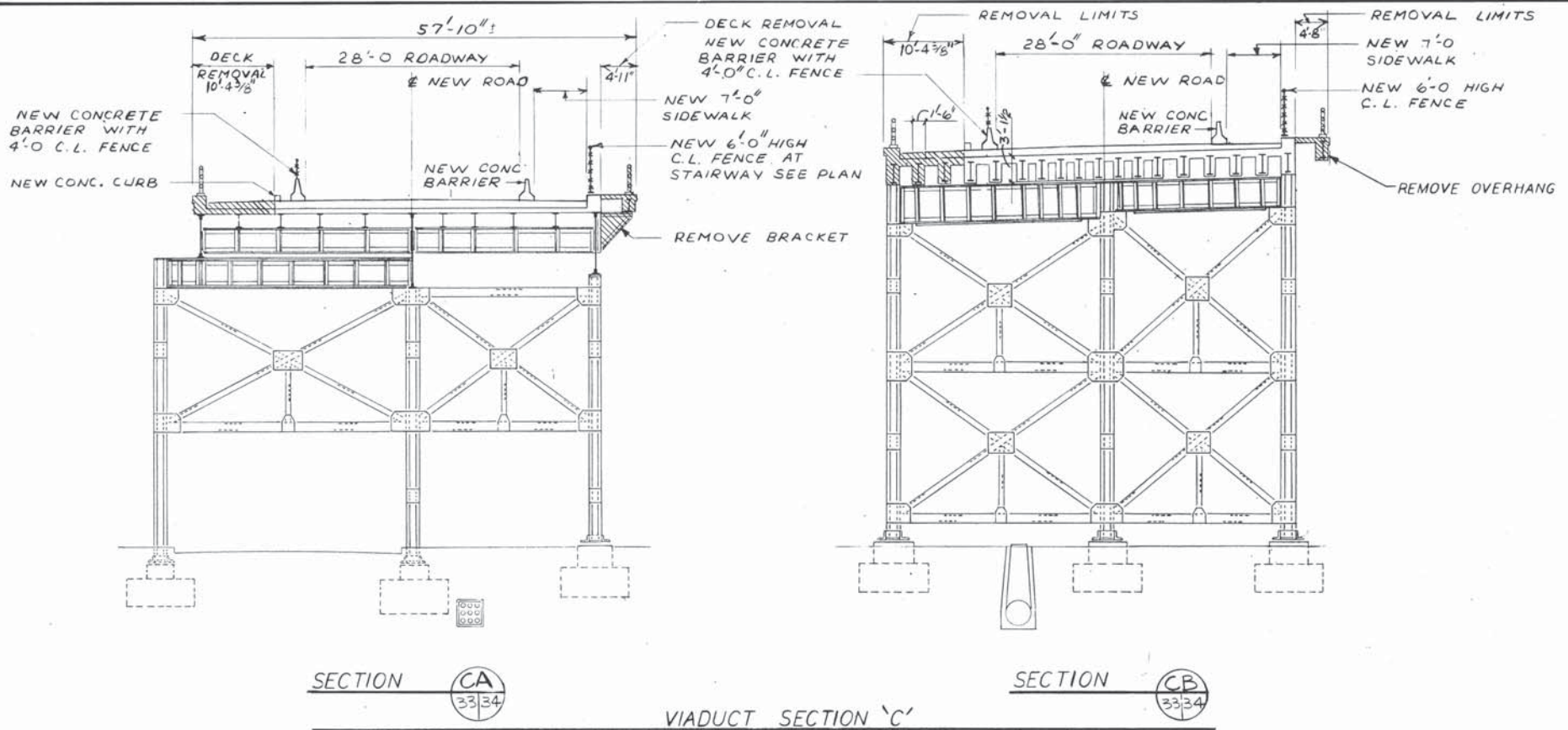
- FENCE SEE SHIT. NO. 305E
- EXPANSION JT. DET. SHIT. NO. 481E & 491E

THE OSBORN ENGINEERING COMPANY 33/96  
ROBERT P. MADISON INTERNATIONAL, INC.  
CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
CITY OF CLEVELAND  
DIVISION OF ENGINEERING AND CONSTRUCTION  
CUYAHOGA COUNTY ENGINEER  
DECK & REMOVAL PLAN & ELEV. SECTION - C  
EAGLE AVENUE VIADUCT OVER HESSE,  
G.C.R.T.A. AND CANAL ROAD - PHASE II  
CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
CLEVELAND CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
KP	RW		MP	LJ	10/90	



CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II



ITEM 202 PORTION OF STRUCTURE REMOVED AS PER PLAN

REF. NO	MEMBER TYPE	REMARKS
1 RC	DECK	
2 RC	DECK	
1 DC	DECK	PARAPET REMOVED
3 DC	DECK	FASCIA BEAM REMOVED
11 DC	DECK	BEAM, PAR. REMOVED
2 DC	RAILING	BRIDGE RAILING REMOVED
4 DC	RAILING	
5 DC TO 10DC	BRACKET	

THE OSBORN ENGINEERING COMPANY 34/30  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114

CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER

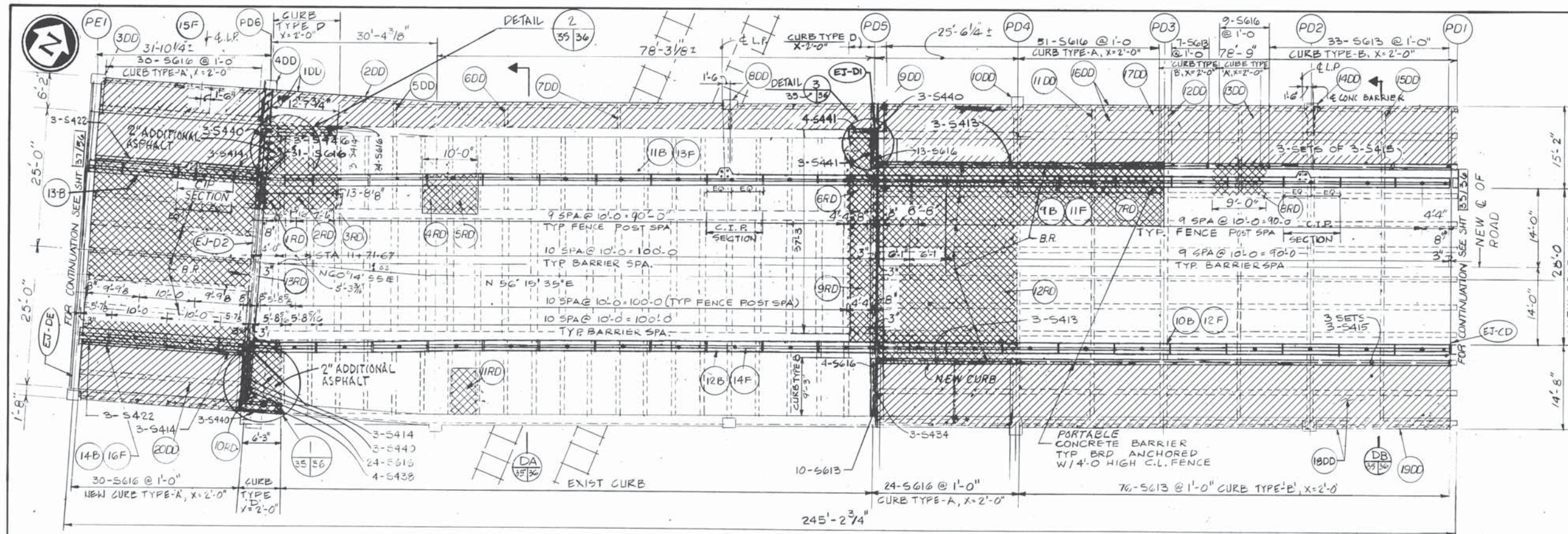
TYP. SECTION B SCHEDULES - SECTION C

EAGLE AVENUE VIADUCT OVER CHESSE, G.C.R.T.A. AND CANAL ROAD - PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
 CLEVELAND CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KP	JMP		MB	LW	10/90	

CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II

EAGLE AVE VIADUCT

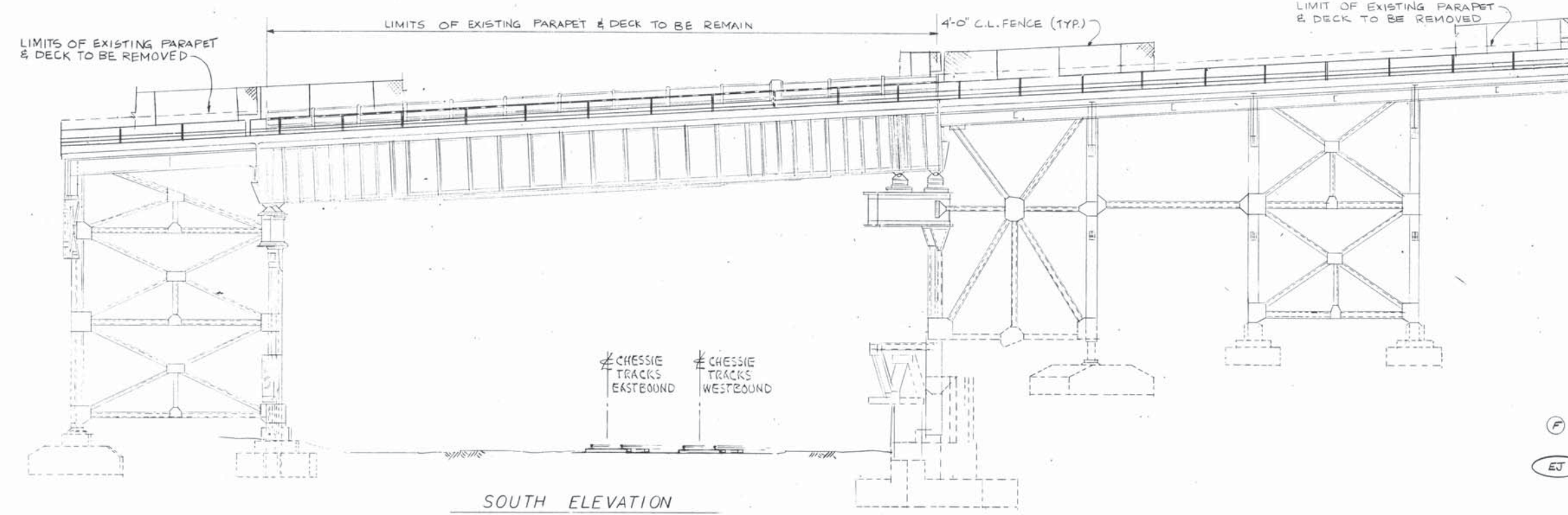
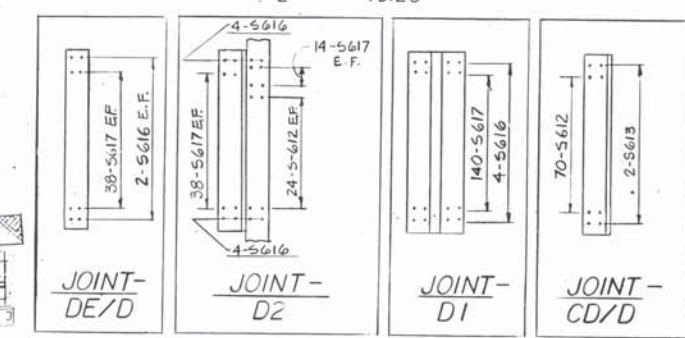


CURVE DATA

$\Delta = 3^\circ 59' 20''$   
 $T = 9.58'$   
 $R = 275.0'$   
 $L = 19.20'$

PLAN-SECTION D  
SCALE: 1" = 10'-0"

NOTE: 1 SEE DET 2/29/94 FOR BARRIER TRANSITION.  
 2 SEE CURVE DATA THIS SHEET  
 3 FOR CURB TYPE DETAIL 5BB SHEET NO. 507/56

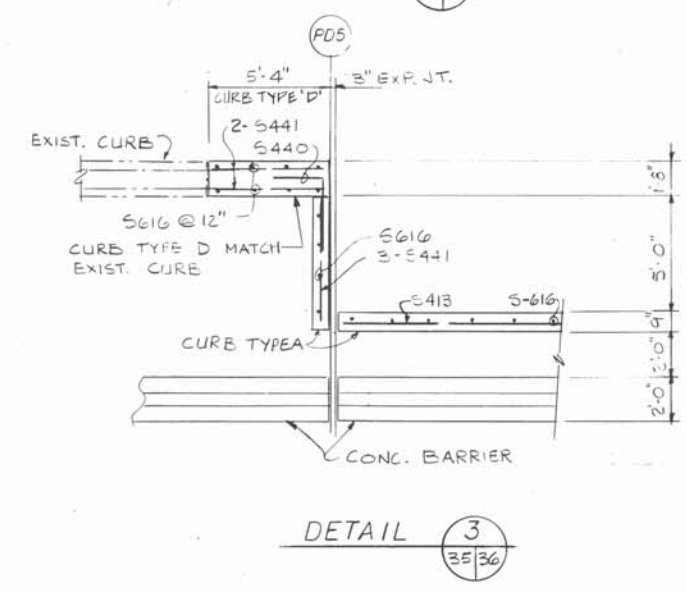
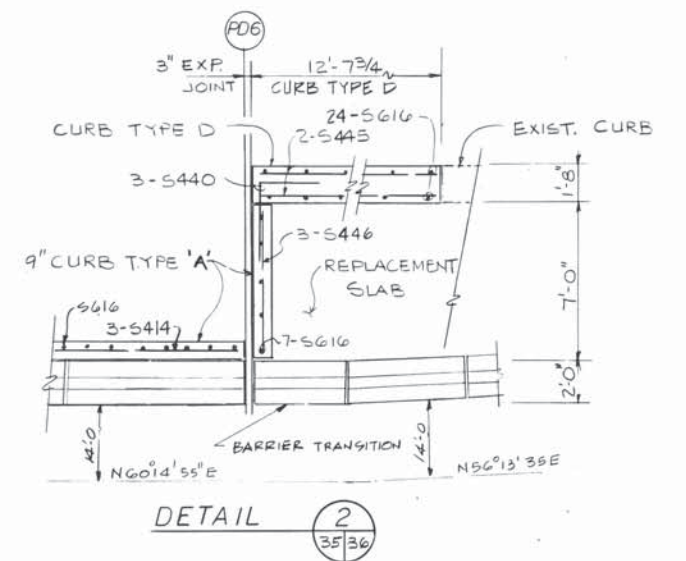
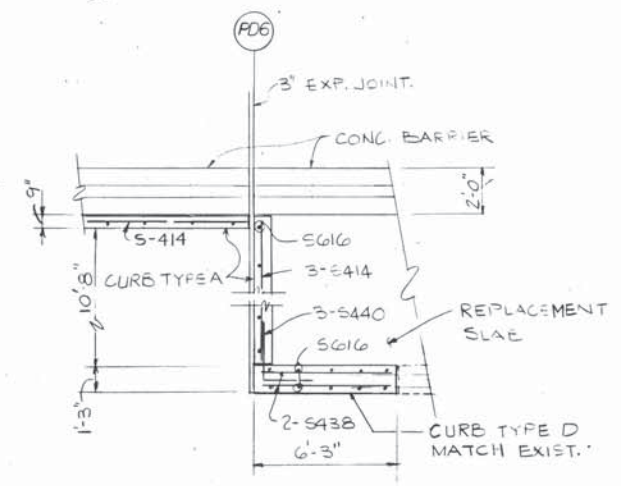
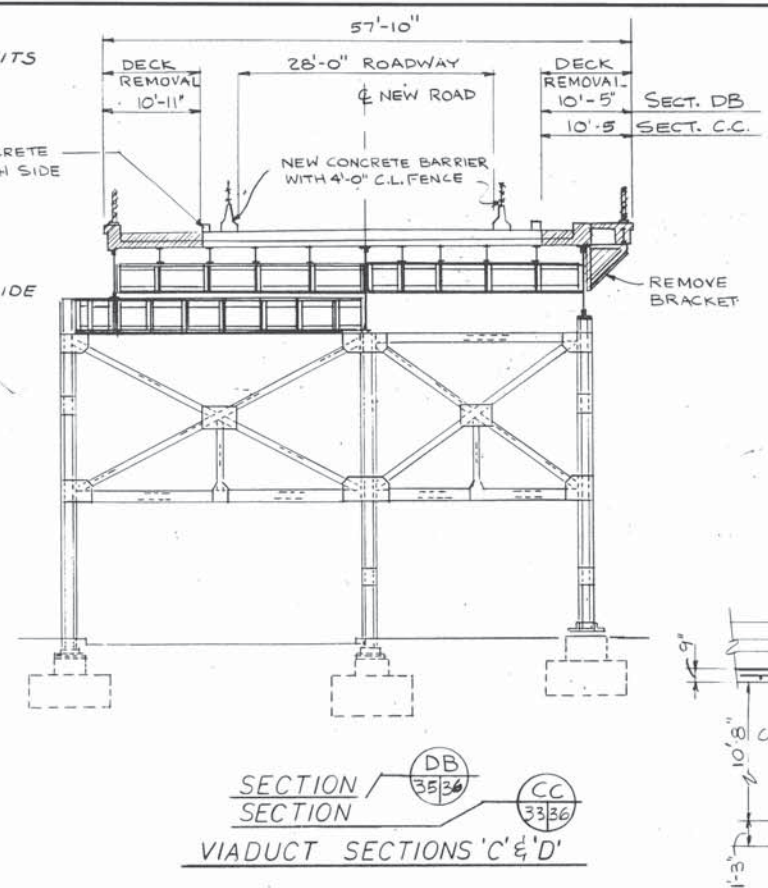
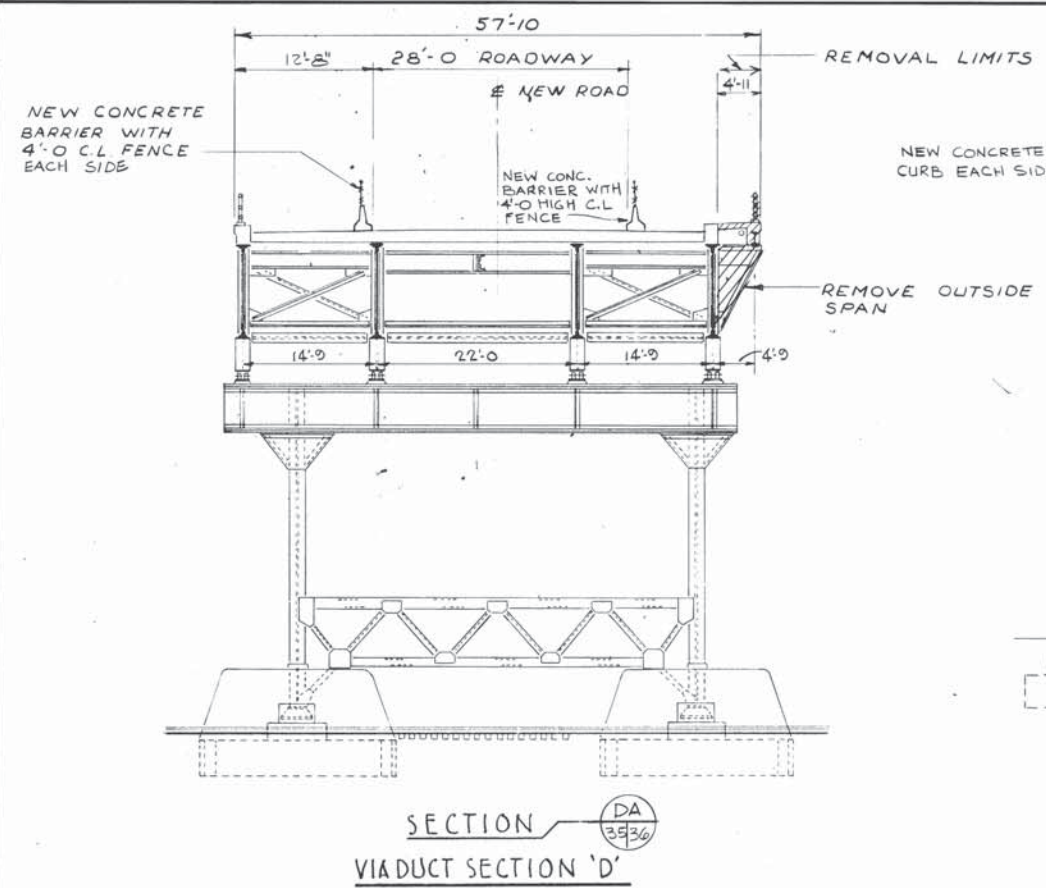


**LEGEND**

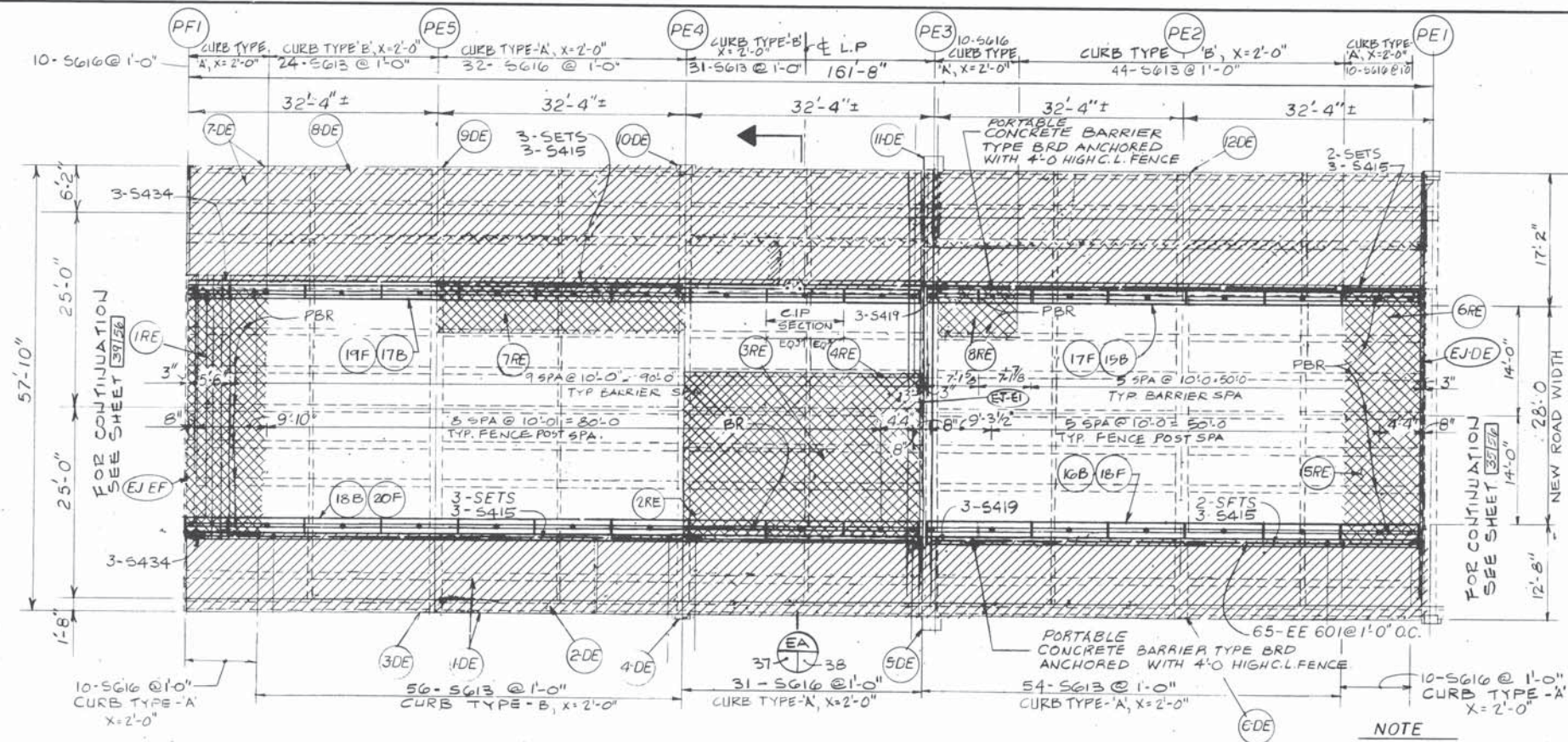
REMOVAL - D  
 REPLACEMENT - R  
 SLOPE TO LOW POINT  
 REFERENCE LETTER (PATCHING) SEE SHT NO. [ ]  
 REFERENCE D: (REMOVAL) SEE SHEET NO. [ ]  
 REFERENCE R: (REPLACEMENT) SEE DETAIL & NOTE SHT NO. [ ]

THE OSBORN ENGINEERING COMPANY 25/56  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER

DESIGNED: KP DRAWN: JMP TRACED: MP CHECKED: LJ REVENED: DATE: 10/90

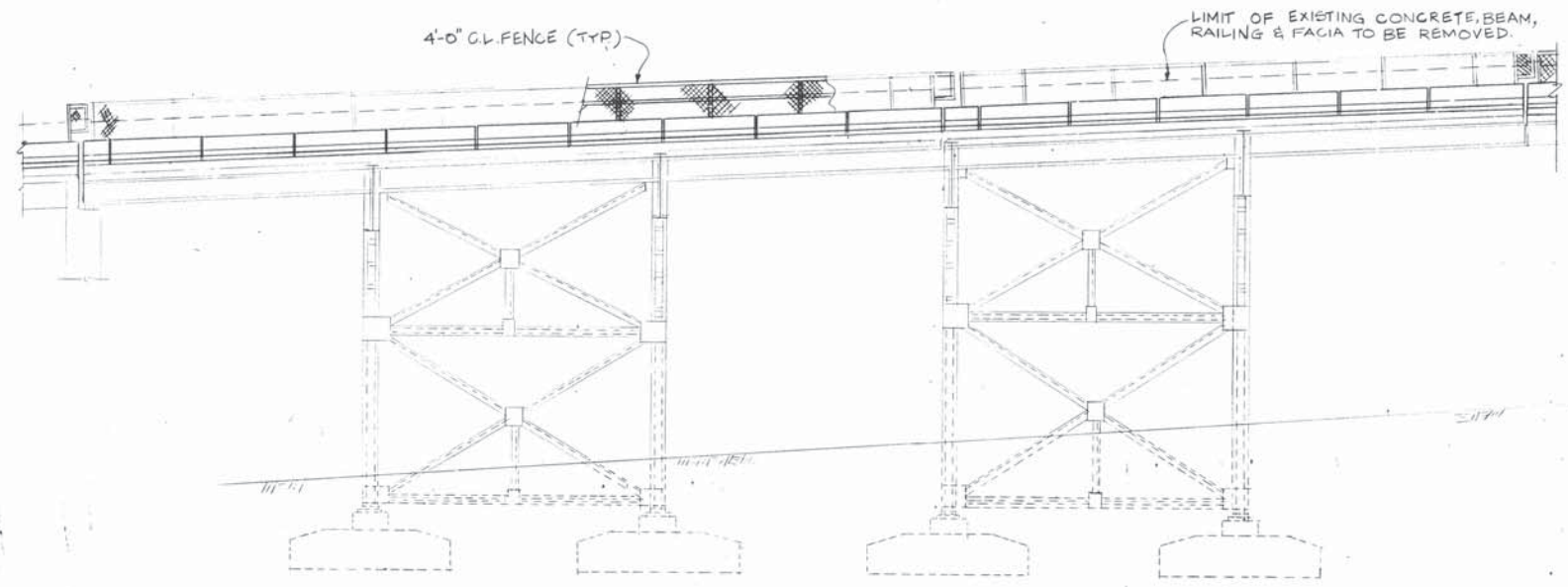


ITEM 202 PORTION OF STRUCTURE REMOVED AS PER PLAN				ITEM 202 PORTION OF STRUCTURE REMOVED AS PER PLAN			
REF NO.	MEMBER TYPE	REMARKS	REF NO.	MEMBER	REMARKS	REF NO.	MEMBER
1 RD	DECK		2 DD	RAILING	BRIDGE RAILING REM'D		
2 RD			17 DD	RAILING			
3 RD			19 DD	RAILING			
4 RD							
5 RD							
6 RD			3 DD TO 12 DD	RAILING			
7 RD							
8 RD							
9 RD							
10 RD							
11 RD							
12 RD							
13 RD							
1 DD		DECK & BEAMS					
16 DD		DECK & BEAMS					
18 DD							
20 DD							
TOTAL							



PLAN-SECTION 'E'

NOTE  
FOR SECTIONS AND QUANTITIES SEE SHEET NO. 38/36  
FOR CURB TYPE DETAILS SEE SHT. NO. 30/36



SOUTH ELEVATION

LEGEND

- REMOVAL - D
- REPLACEMENT - R
- REFERENCE LETTER (PATCHING) SEE SHT. NO. 36/36
- REFERENCE D (REMOVAL) SEE SHT. NO. 38/36
- REFERENCE R (REPLACEMENT) SEE DETAIL & NOTE-SHT. NO. 44/36
- FENCE-SEE SHT. NO. 50/36
- EXPANSION JOINT-SEE SHT. NO. 48/36

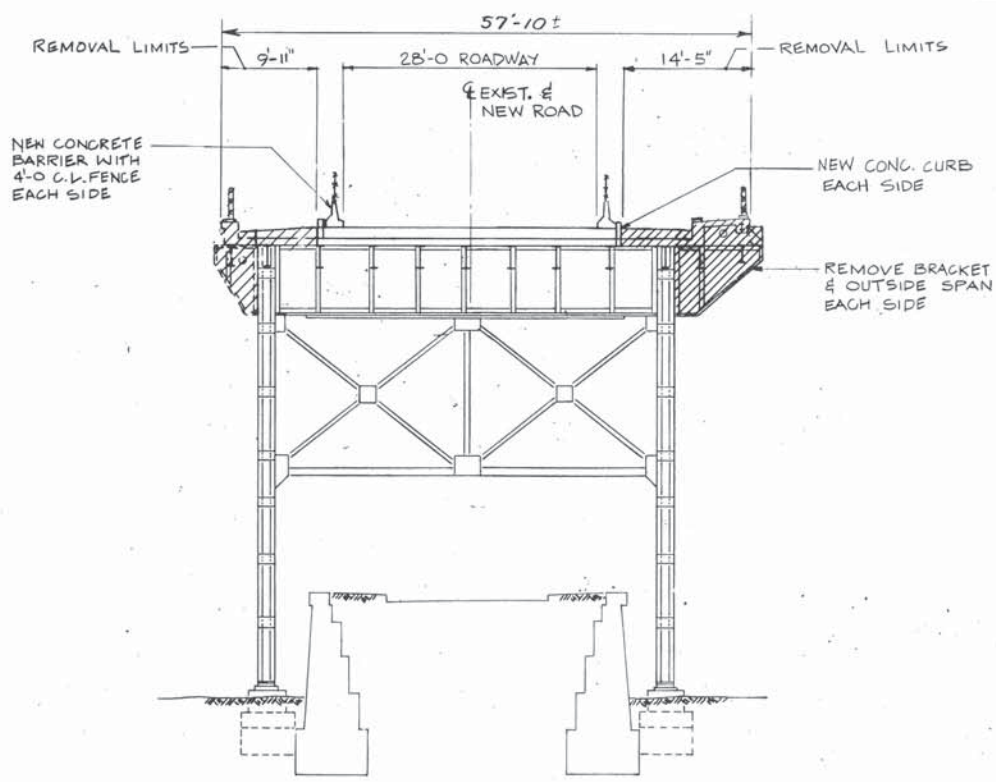
THE OSBORN ENGINEERING COMPANY 37/36  
ROBERT P. MADISON INTERNATIONAL, INC.  
CONSULTING ENGINEERS CLEVELAND, OHIO 44114

CITY OF CLEVELAND  
DIVISION OF ENGINEERING AND CONSTRUCTION  
CUYAHOGA COUNTY ENGINEER

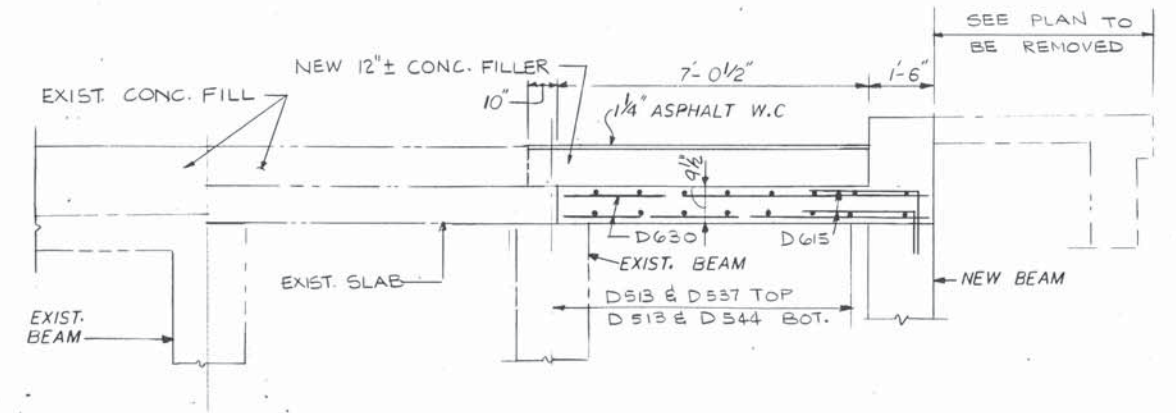
DECK & REMOVAL PLAN & ELEV-SECTION  
EAGLE AVENUE VIADUCT OVER CHESSE,  
G.C.R.T.A. AND CANAL ROAD-PHASE II  
CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
CLEVELAND CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KP	JMP		MP	LJ	10/90	

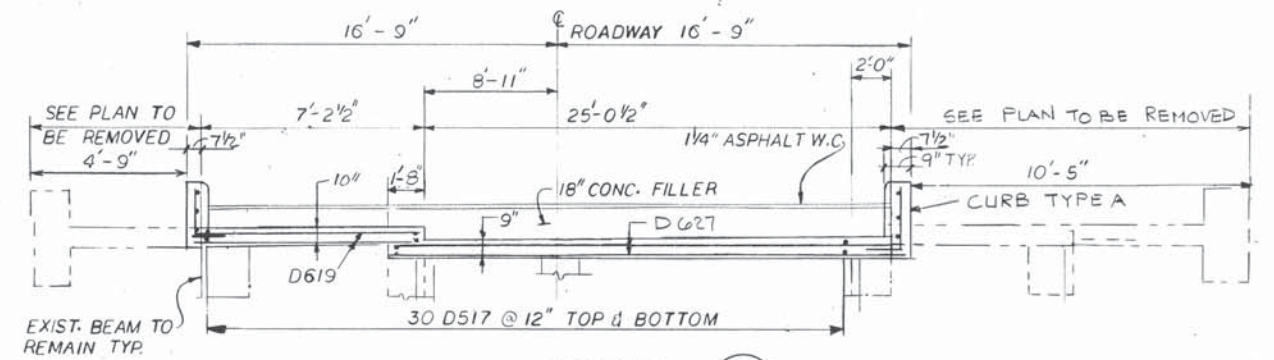
CUYAHOGA COUNTY  
 EAGLE AVENUE - PHASE II



SECTION EA 37/38  
VIADUCT SECTION



SECTION L 44/38



SECTION M 44/38

ITEM 202 PORTION OF STRUCTURE REMOVED AS PER PLAN

REF NO.	MEMBER TYPE	REMARKS
1 RE	DECK	
2 RE	DECK	
3 RE	DECK	
4 RE	DECK	
5 RE	DECK	
6 RE	DECK	
7 RE	DECK	
8 RE	DECK	
1 DE		DECK & FASCIA BEAM
7 DE		
2 DE	RAILING	BRIDGE RAILING REM
8 DE	RAILING	"
3 DE TO 6 DE	STL BRKT	ITEM SPECIAL
9 DE TO 12 DE	"	"

THE OSBORN ENGINEERING COMPANY 38/36  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114

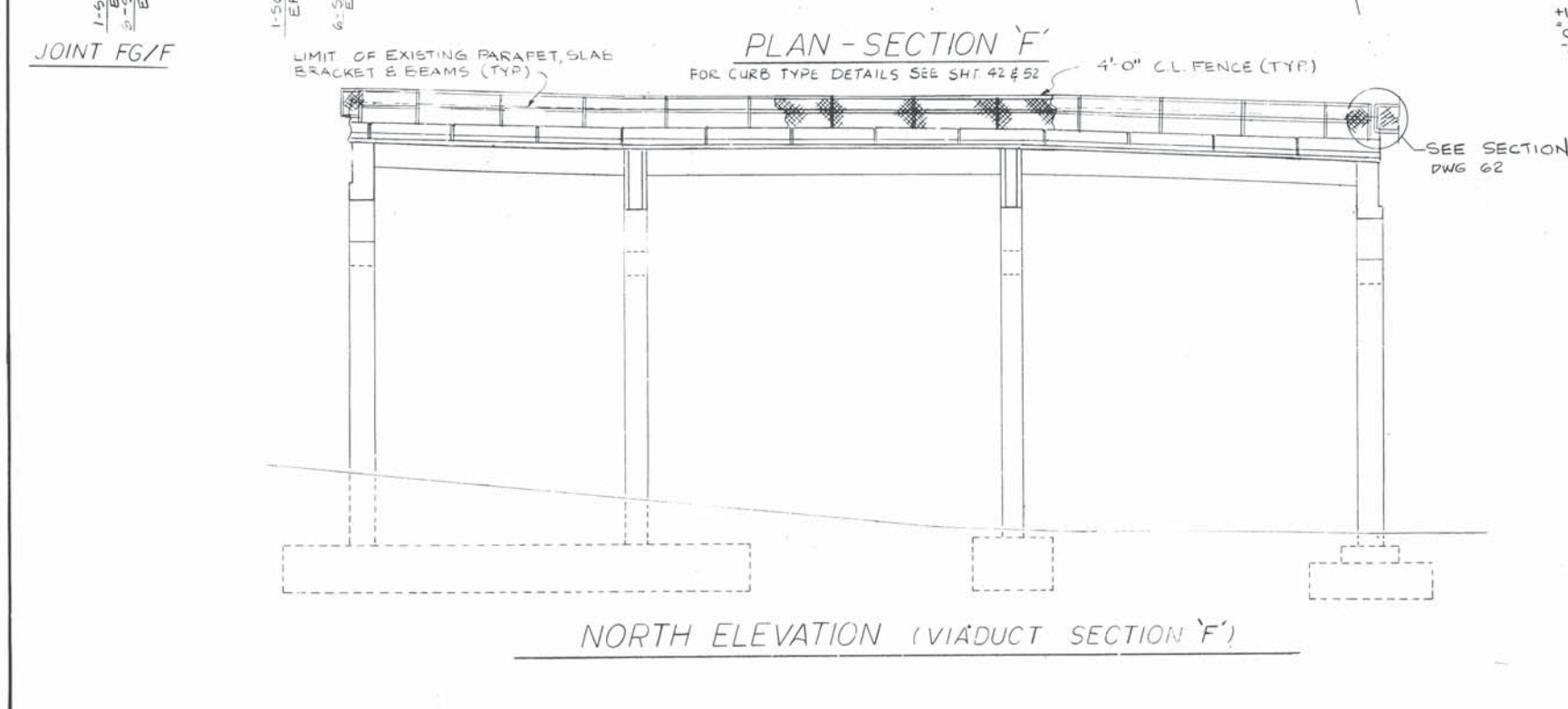
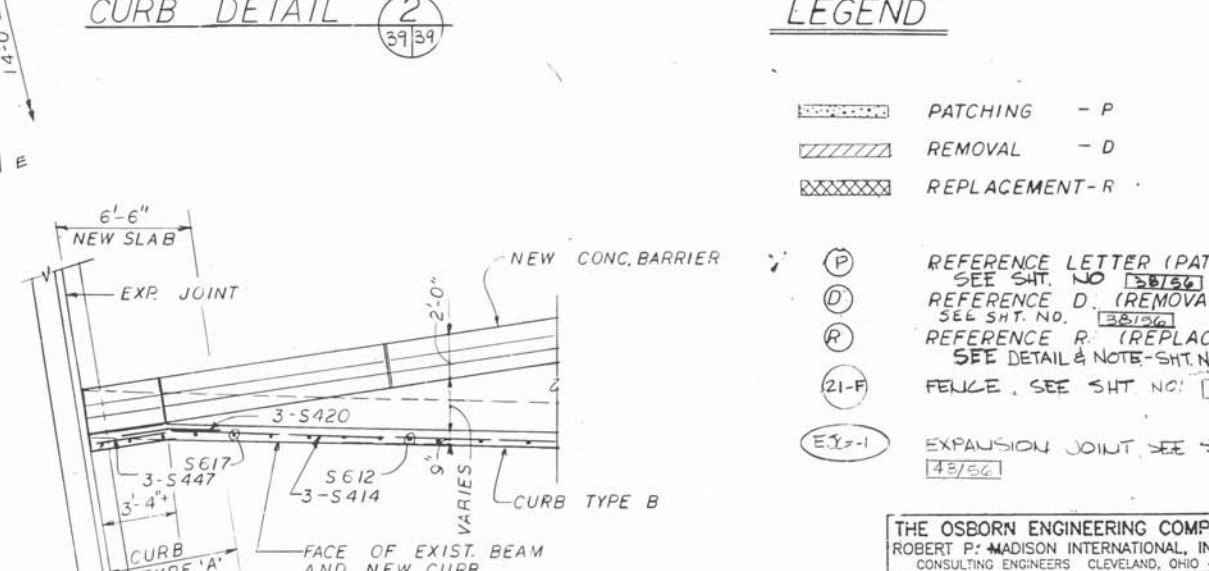
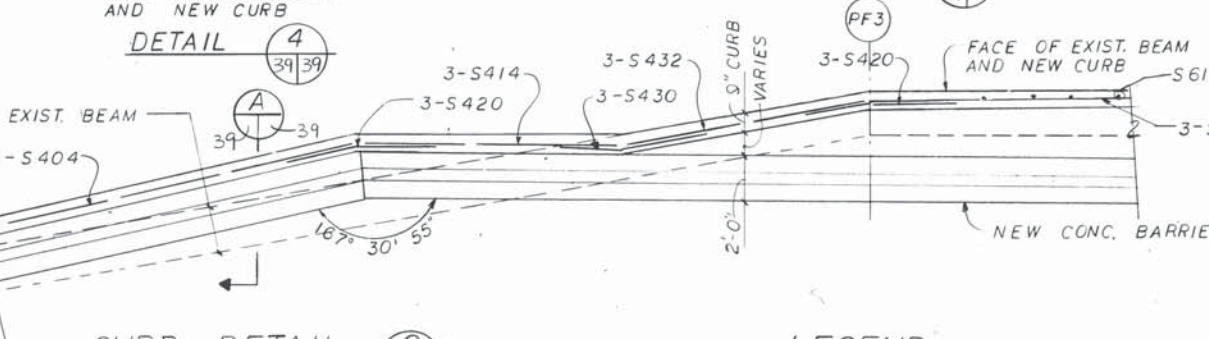
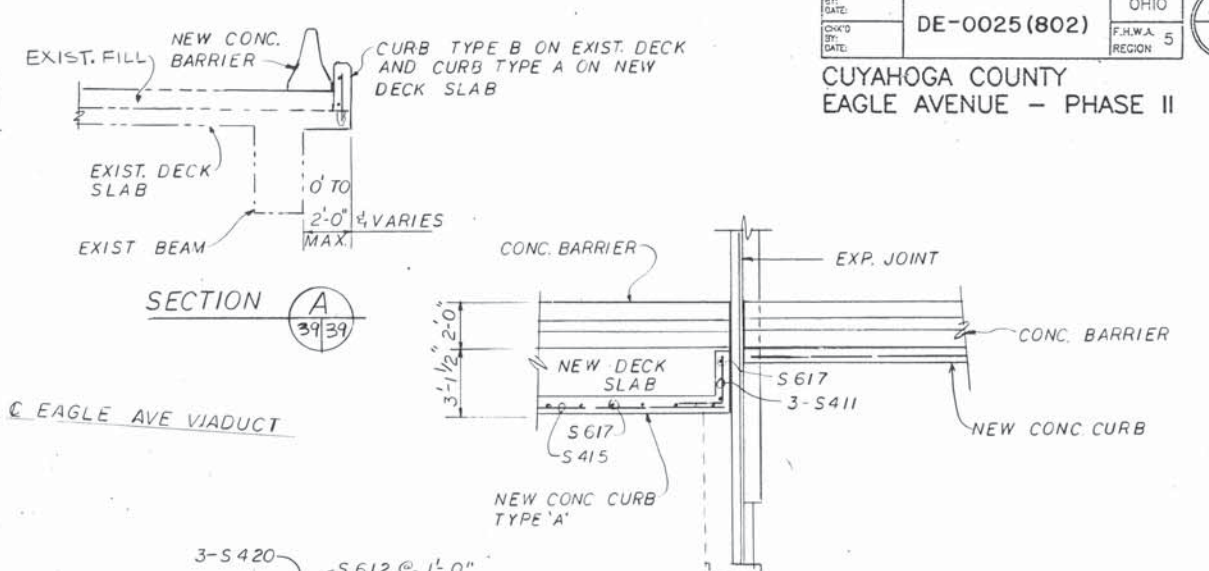
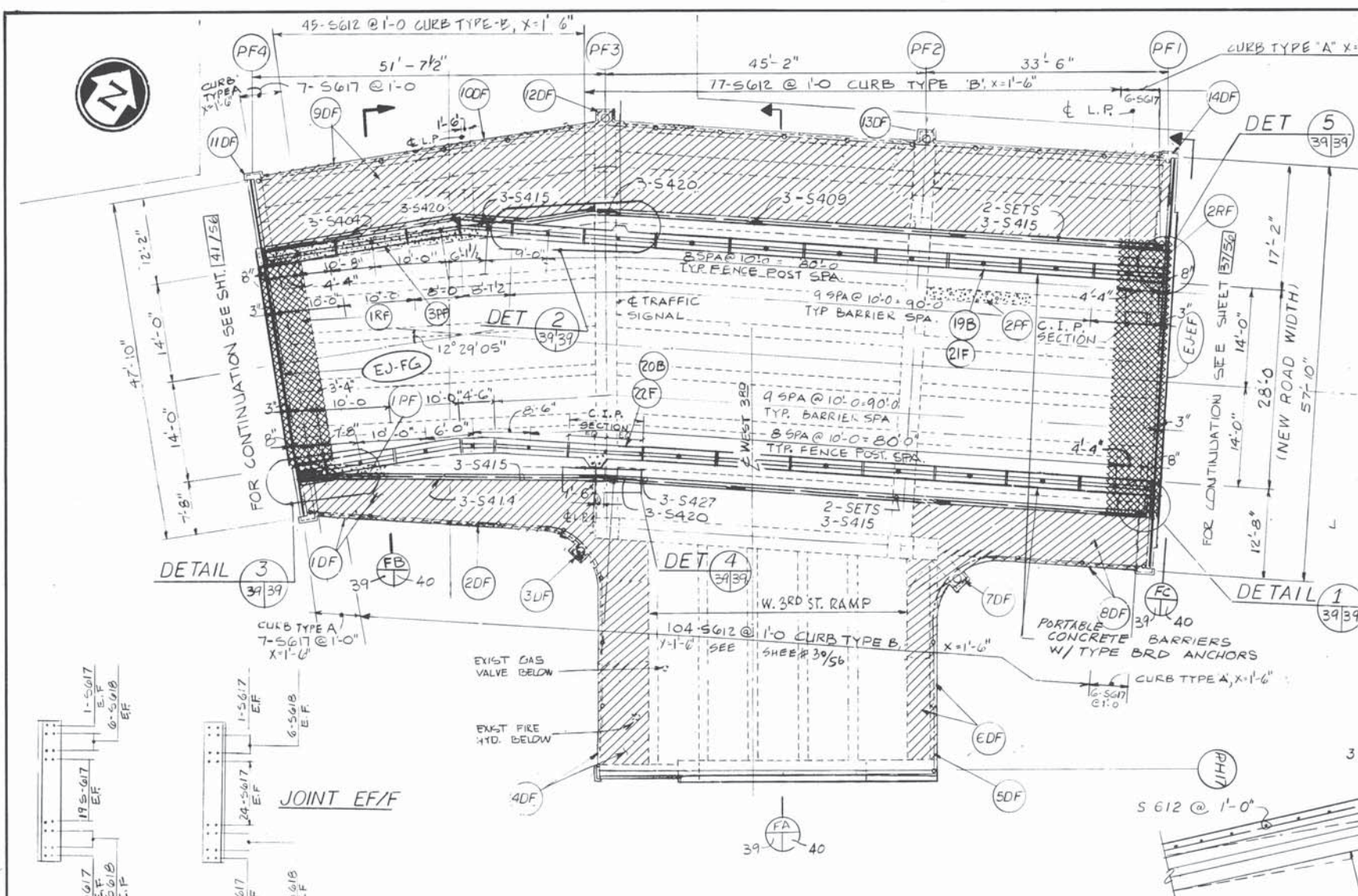
CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER

TYP. SECTION & SCHEDULES-SECTION E

EAGLE AVENUE VIADUCT OVER CHESSE,  
 G.C.R.T.A. AND CANAL ROAD-PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
 CLEVELAND CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
MP	JMP		KP	LJ	10/20	

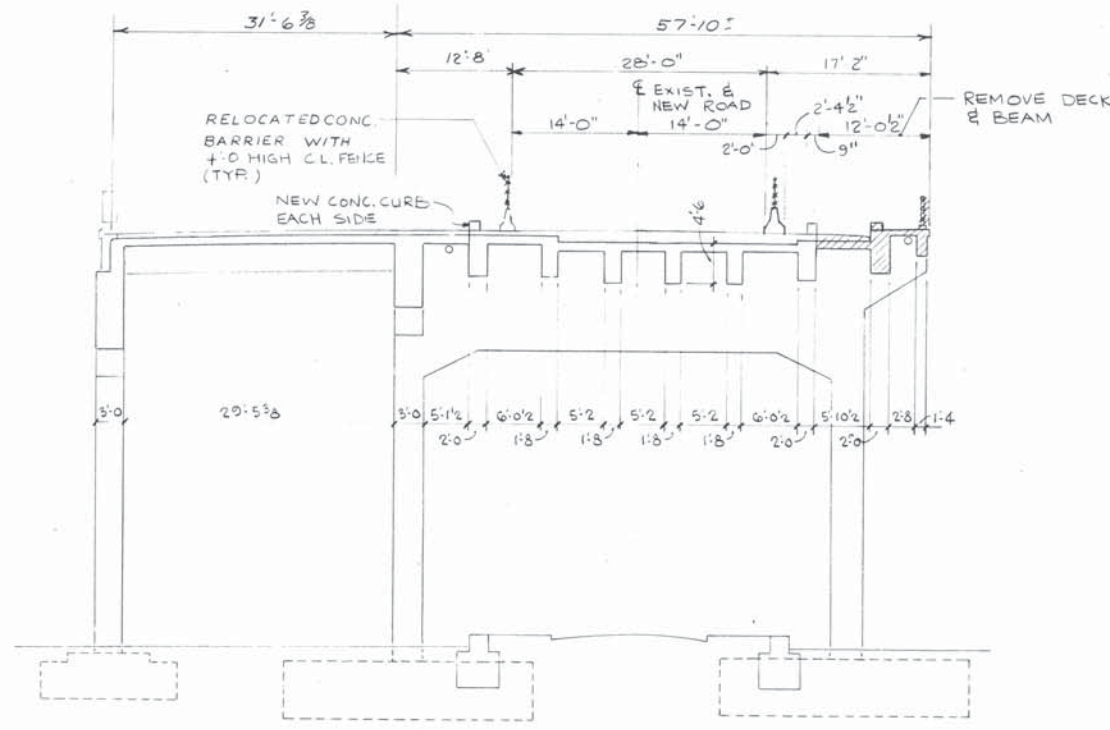
CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II



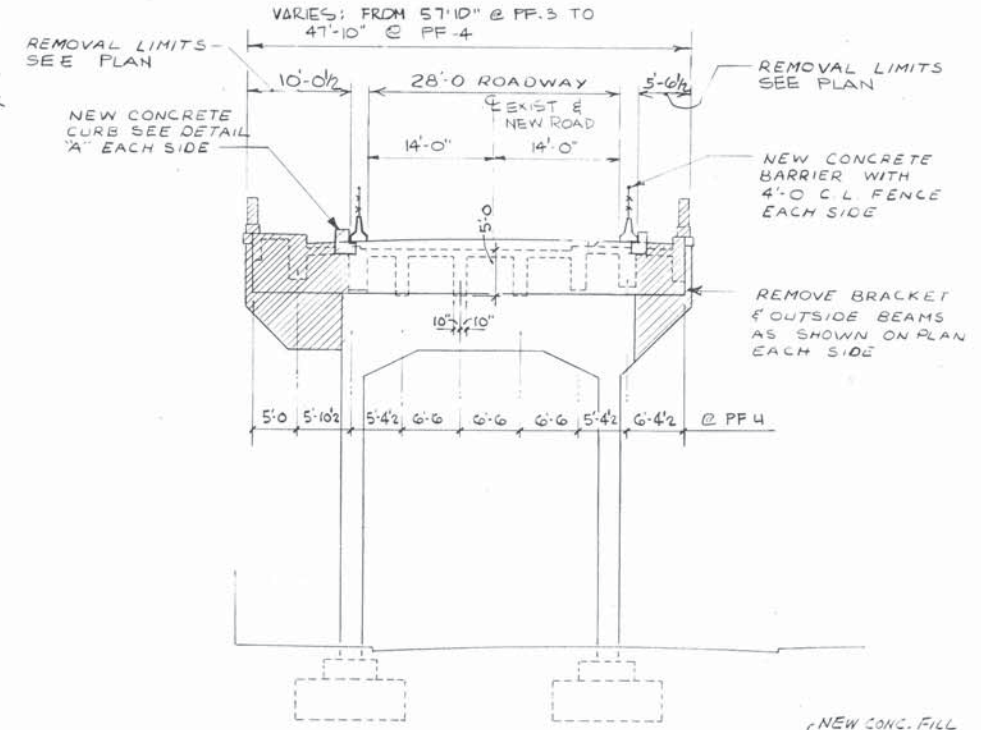
- LEGEND**
- PATCHING - P
  - REMOVAL - D
  - REPLACEMENT - R
  - REFERENCE LETTER (PATCHING) SEE SHT. NO. 38/56
  - REFERENCE D. (REMOVAL) SEE SHT. NO. 38/56
  - REFERENCE R. (REPLACEMENT) SEE DETAIL & NOTE - SHT. NO. 44/56
  - REFERENCE 21-F FENCE, SEE SHT. NO. 50/56
  - EXP. JOINT SEE SHT. NO. 48/56

THE OSBORN ENGINEERING COMPANY 39/56				
ROBERT P. MADISON INTERNATIONAL, INC.				
CONSULTING ENGINEERS CLEVELAND, OHIO 44114				
CITY OF CLEVELAND				
DIVISION OF ENGINEERING AND CONSTRUCTION				
CUYAHOGA COUNTY ENGINEER				
<b>DECK &amp; REMOVAL PLAN &amp; ELEV.-SECTION F'</b>				
EAGLE AVENUE VIADUCT OVER CHESSIE, C.O.R.T.A. AND CANAL ROAD - PHASE II				
CITY OF CLEVELAND, CITY BRIDGE NO. 1:009M				
CLEVELAND CUYAHOGA COUNTY OHIO				
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED
MP	JMP		KP	LJ
				10/90

CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II

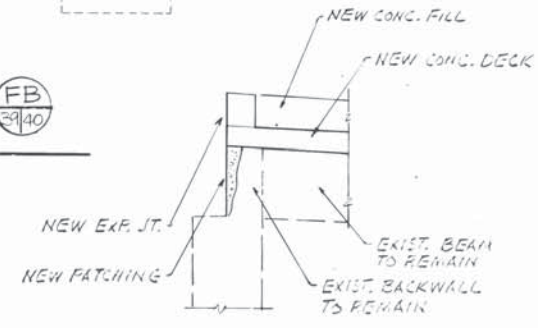


SECTION FA  
39/40

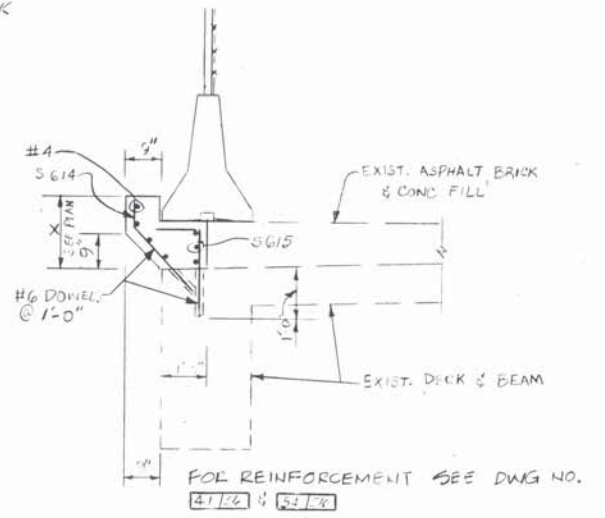


SECTION FB  
39/40

VIADUCT SECTION - F

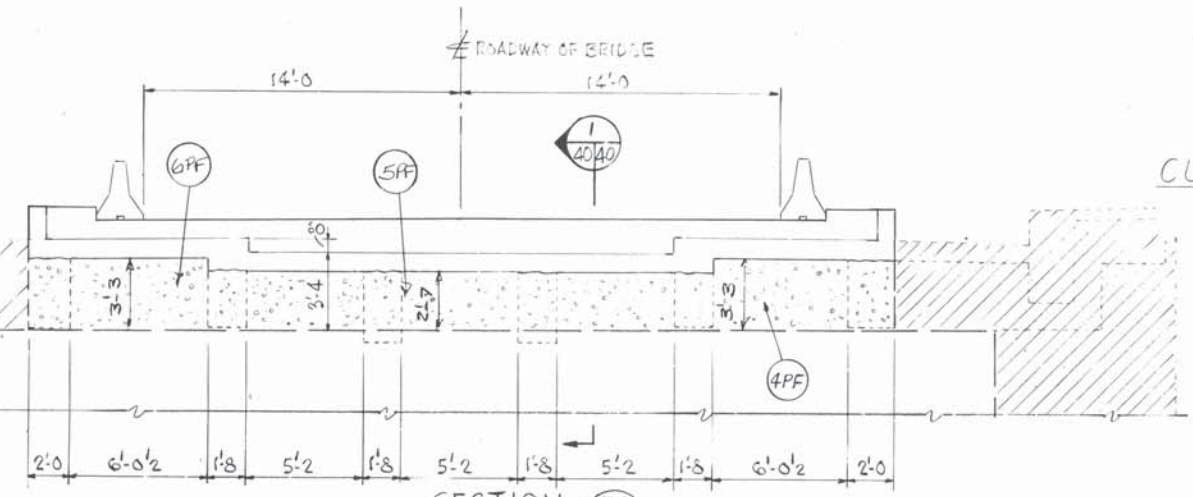


SECTION I  
40/40



CURE TYPE F

ITEM SPECIAL PATCHING					ITEM 212 PORTION OF STRUCTURE REMOVED AS PER PLAN				
REFERENCE NO.	MEMBER TYPE	AREA SURFACE (SQ. FT.)			REF NO.	MEMBER			REMARKS
		BOTTOM	WIDTH	TOTAL					
1 PF	BEAM	12	2.0	24	1 RF	DECK			
2 PF	BEAM	12	1.67	20.04	2 PF	DECK			
3 PF	BEAM	25	2.0	50.0					
VERTICAL					1 DF	DECK		DECK FASCIA BEAM	
		LENGTH	HEIGHT	TOTAL	4 DF	DECK		"	
4 PF	FR. FACE	5.04'	3.25'	16.38'	6 DF	DECK		"	
5 PF	FR. FACE	22.15'	3.25'	72.00'	8 DF	DECK		"	
6 PF	RD. FACE	5.04'	3.25'	16.38'	9 DF	DECK		"	
					2 DF	RAILING			
					5 DF	RAILING			
					10 DF	RAILING			
					3 DF	BRACKET		CONC BRACKET	
					11 DF TO 14 DF	BRACKET		"	
TOTAL				207.7					



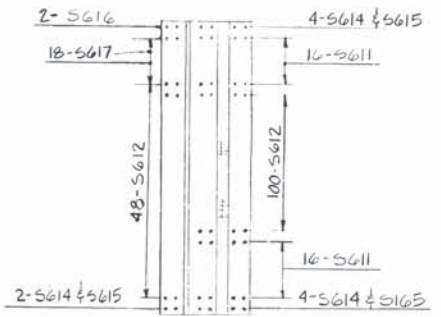
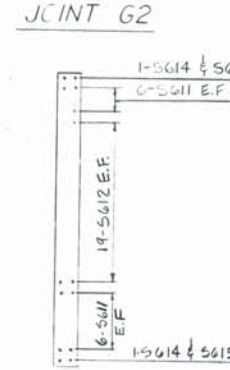
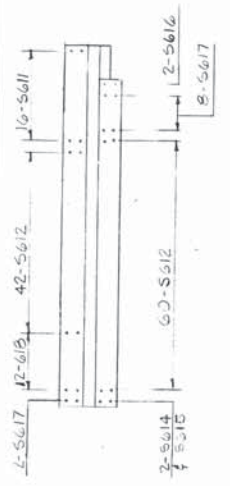
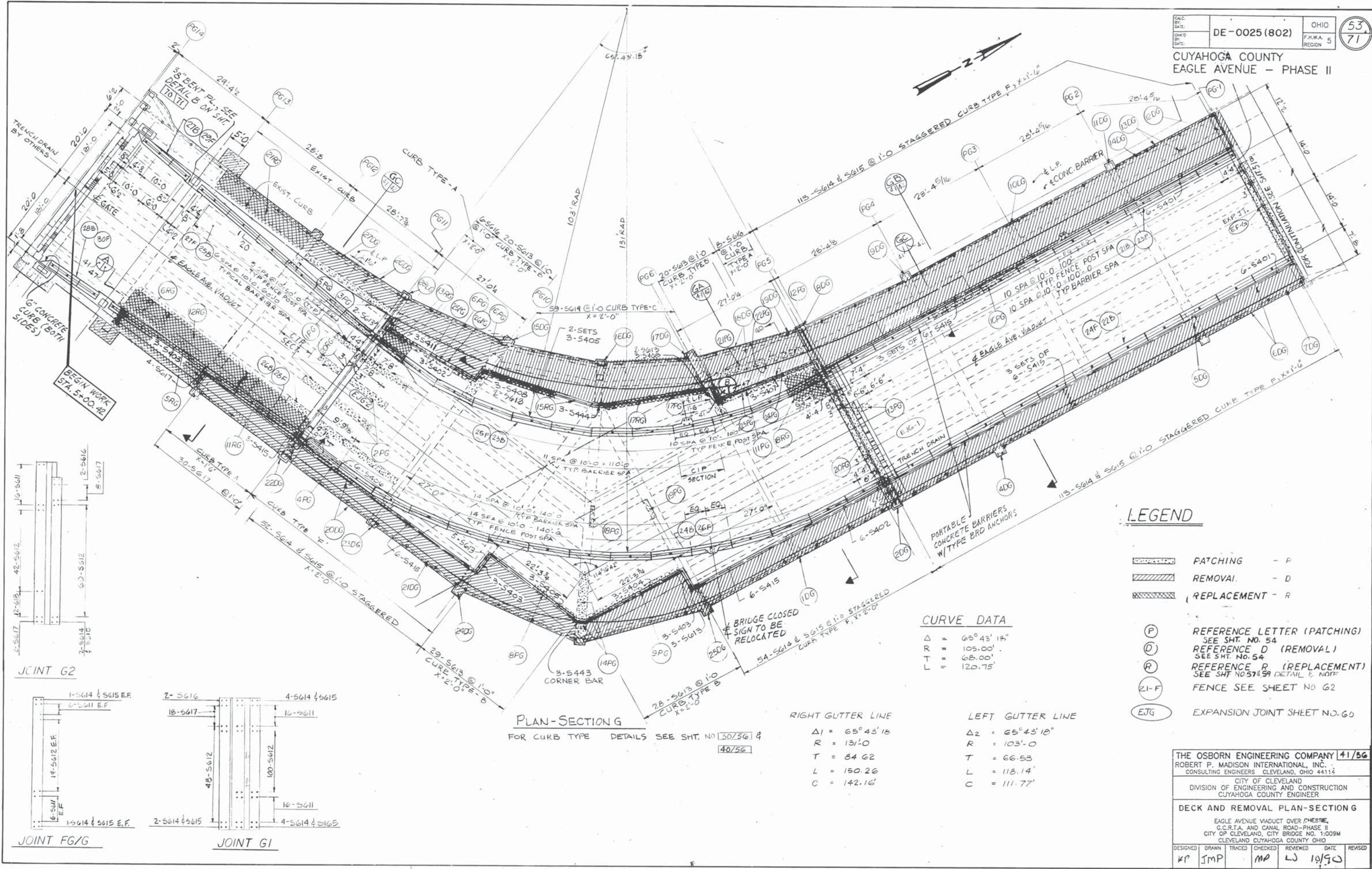
SECTION FC  
39/40

THE OSBORN ENGINEERING COMPANY **40/56**  
 ROBERT P. MADISON INTERNATIONAL, INC. (MBE)  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER

TYP. SECTION & SCHEDULE - SECTION F  
 EAGLE AVENUE VIADUCT OVER HESSICK,  
 G.C.R.T.A. AND CANAL ROAD - PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
 CLEVELAND CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.P.	J.M.P.		K.P.	L.J.	10/90	

**CUYAHOGA COUNTY**  
**EAGLE AVENUE - PHASE II**



**PLAN-SECTION G**  
 FOR CURB TYPE DETAILS SEE SHT. NO. 30/561 & 40/56

**CURVE DATA**

$\Delta = 65^{\circ} 43' 18''$   
 $R = 105.00'$   
 $T = 68.00'$   
 $L = 120.75'$

**RIGHT GUTTER LINE**

$\Delta_1 = 65^{\circ} 43' 18''$   
 $R = 131.0'$   
 $T = 84.62'$   
 $L = 150.26'$   
 $C = 142.16'$

**LEFT GUTTER LINE**

$\Delta_2 = 65^{\circ} 43' 18''$   
 $R = 103.0'$   
 $T = 66.53'$   
 $L = 118.14'$   
 $C = 111.77'$

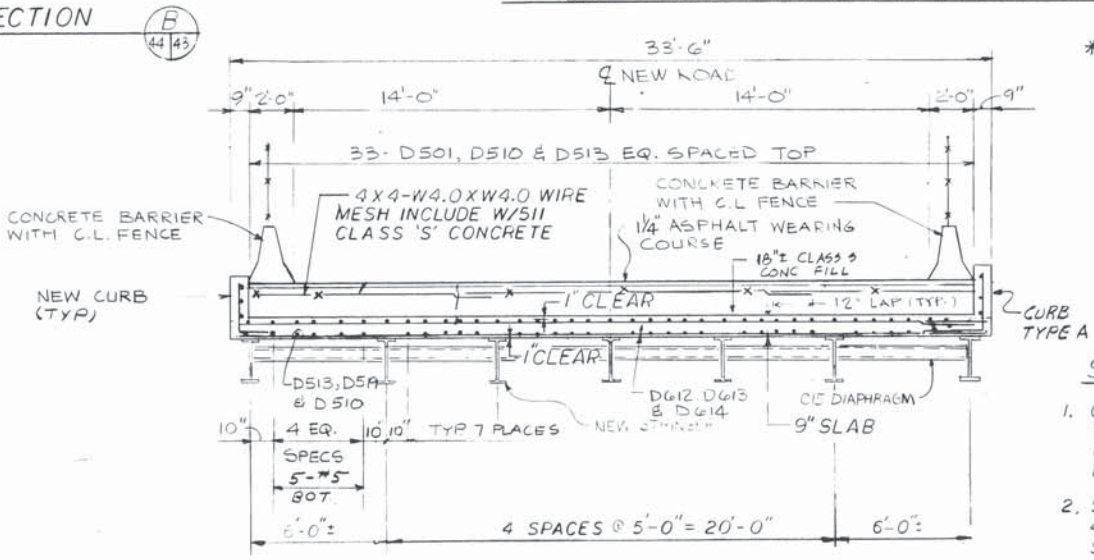
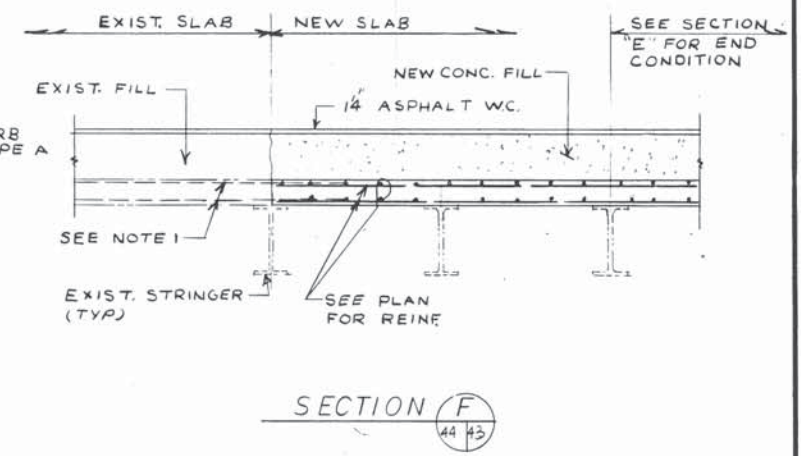
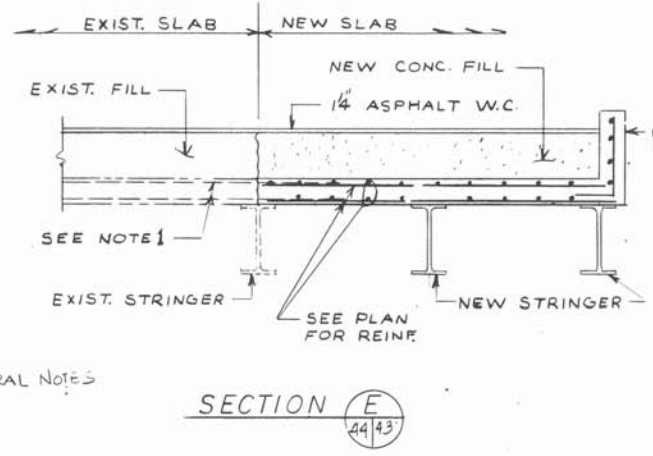
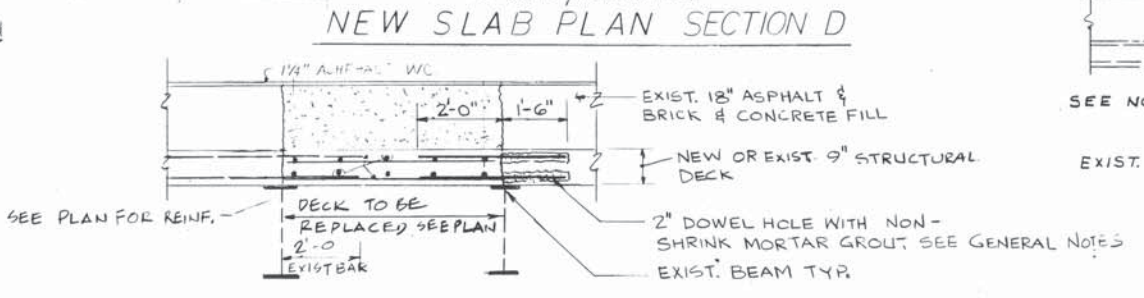
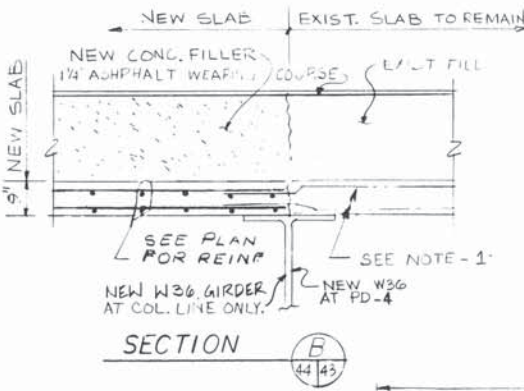
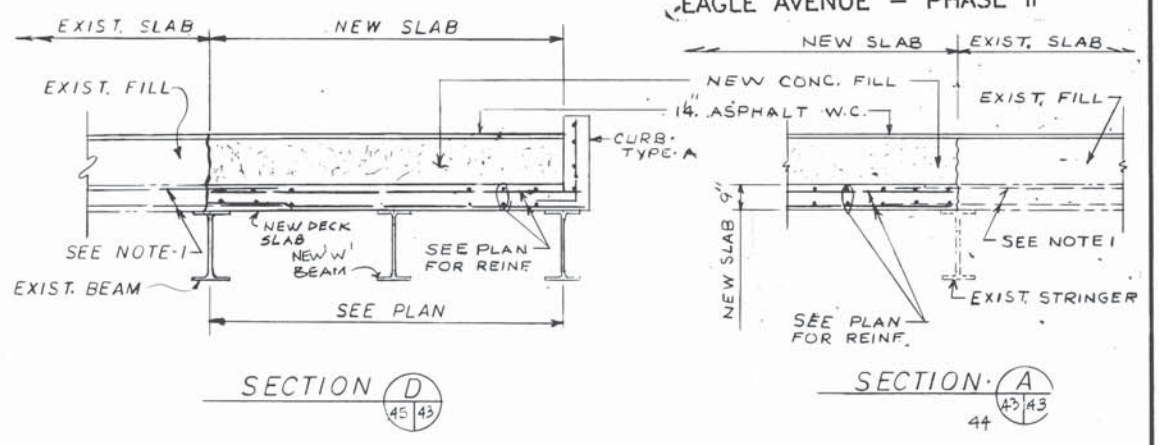
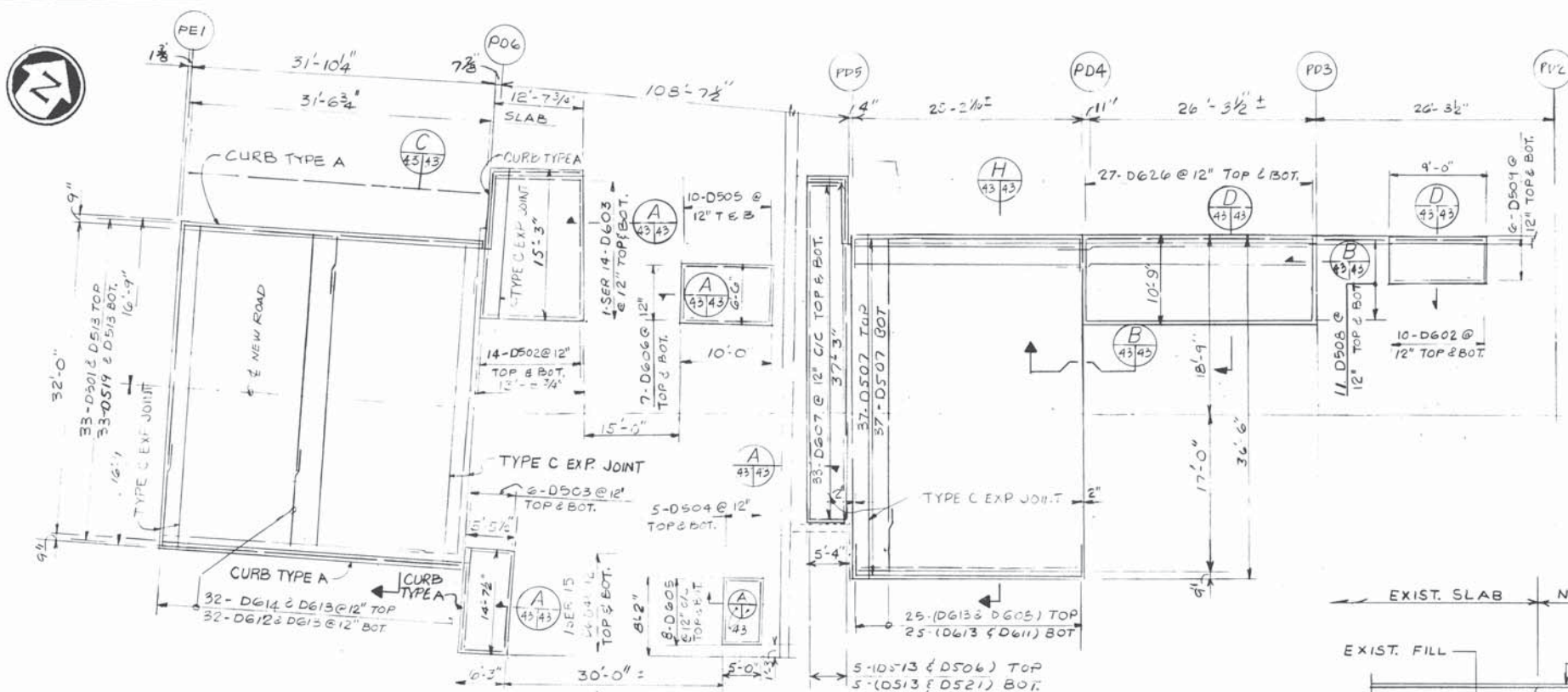
**LEGEND**

- PATCHING - P
- REMOVAL - D
- REPLACEMENT - R
- REFERENCE LETTER (PATCHING) SEE SHT. NO. 54
- REFERENCE D (REMOVAL) SEE SHT. NO. 54
- REFERENCE R (REPLACEMENT) SEE SHT. NO. 57 & 59 DETAIL & NOTE
- FENCE SEE SHEET NO. G2
- EXPANSION JOINT SHEET NO. G0

**THE OSBORN ENGINEERING COMPANY 41/56**  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER  
**DECK AND REMOVAL PLAN-SECTION G**  
 EAGLE AVENUE VIADUCT OVER CHESMERE, G.C.R.T.A. AND CANAL ROAD - PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
 CLEVELAND CUYAHOGA COUNTY OHIO  
 DESIGNED: KP    DRAWN: JMP    TRACED: \_\_\_\_\_    CHECKED: MP    REVIEWED: LJ    DATE: 10/90    REVISED: \_\_\_\_\_



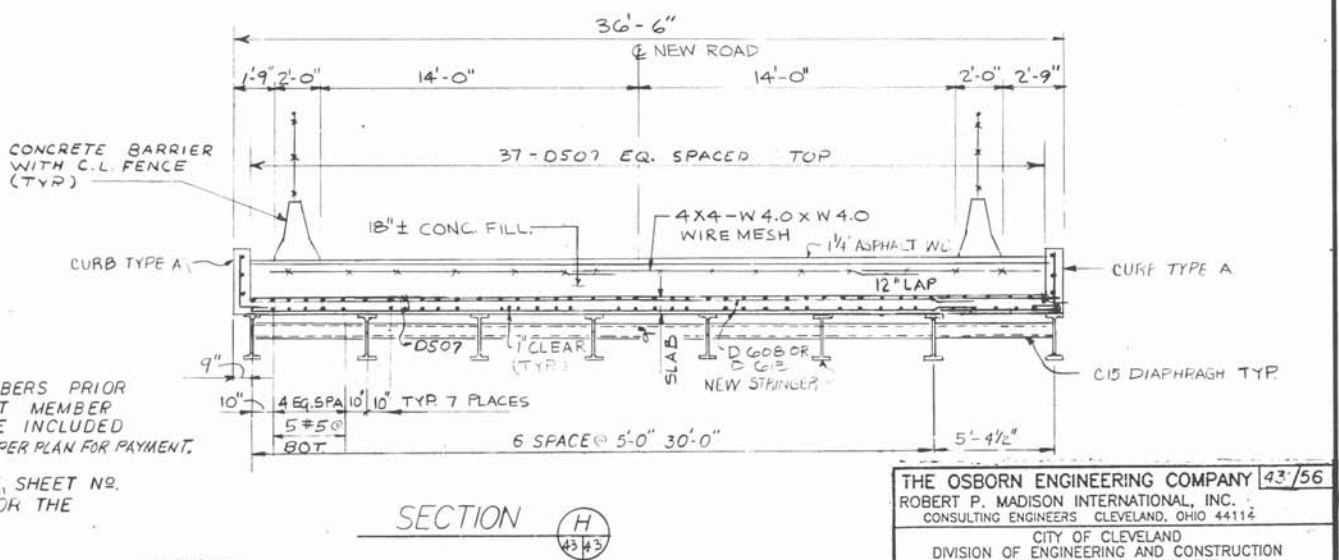




\* DOWELS SHALL BE REPLACED AS SHOWN IN THIS TYPICAL SECTION AT LOCATION WHERE THE ENGINEER DETERMINE THAT THE EXISTING STEEL HAS DETERIORATED TO THE POINT WHERE THERE IS 30% SECTION LOSS OR GREATER. REPLACEMENT DOWELS WILL BE PAID FOR UNDER ITEM 510, DOWEL HOLES AND ITEM 509 EPOXY COATED REINFORCING STEEL.

**SHORING NOTES:**

1. CONTRACTOR SHALL SHORE EXISTING MEMBERS PRIOR TO REMOVAL OPERATIONS TO IMPLEMENT MEMBER REPLACEMENT. COST OF SHORING SHALL BE INCLUDED ITEM 202 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN FOR PAYMENT.
2. SHORING LOADS AND LOCATION ON SECTION E, SHEET NO. 47/56 INDICATE DEAD LOAD & CONST. LOAD FOR THE SHORING DESIGN.



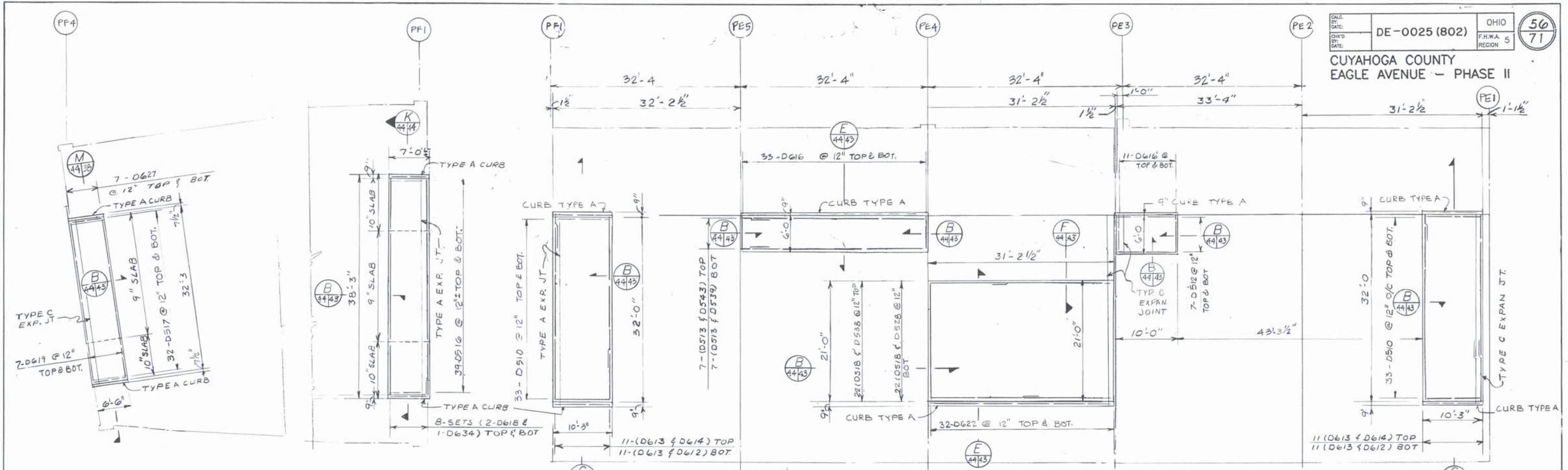
**NOTES**

1. EXIST. REINFORCEMENT TO REMAIN FOR LAP TO NEW REINF. FOR LAP LENGTH SEE DWG. NO. 53/56
2. FOR CURB TYPE DETAILS SEE DWG. NO. 30/56

THE OSBORN ENGINEERING COMPANY 43/56  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44112  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER  
 DECK PLANS & TYPICAL SECTIONS-SECTION-D  
 EAGLE AVENUE VIADUCT OVER CHESSIE,  
 G.C.R.T.A. AND CANAL ROAD-PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
 CLEVELAND CUYAHOGA COUNTY OHIO

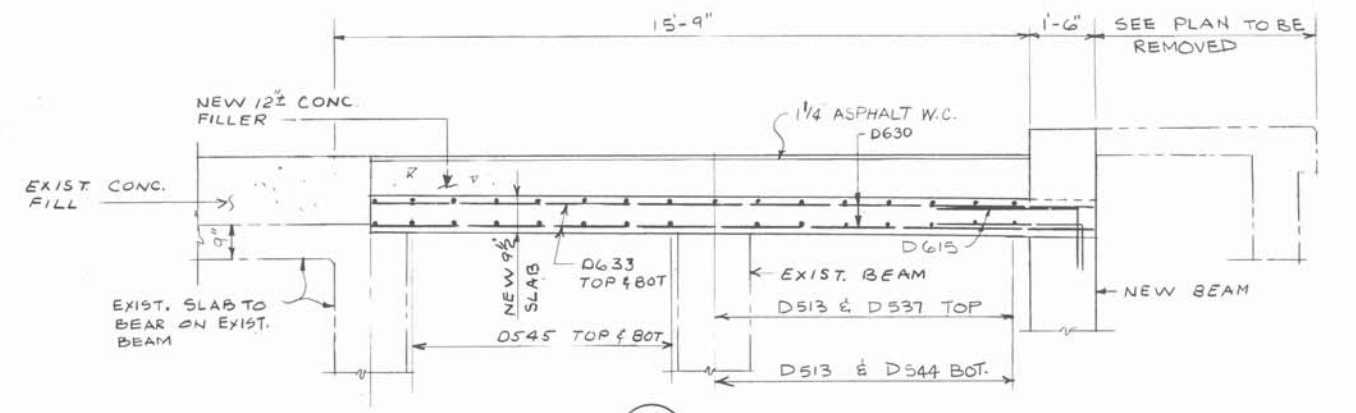
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MP	JMP		KP	LJ	10/90	

CUYAHOGA COUNTY  
 EAGLE AVENUE - PHASE II

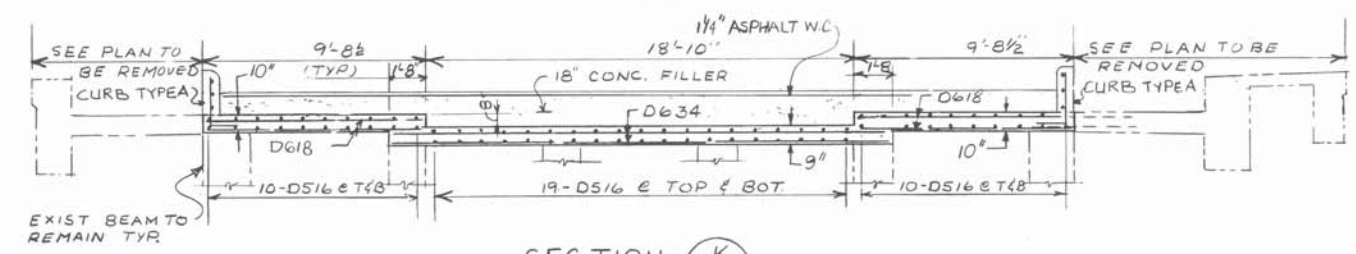


NEW SLAB PLAN - SECTION-F

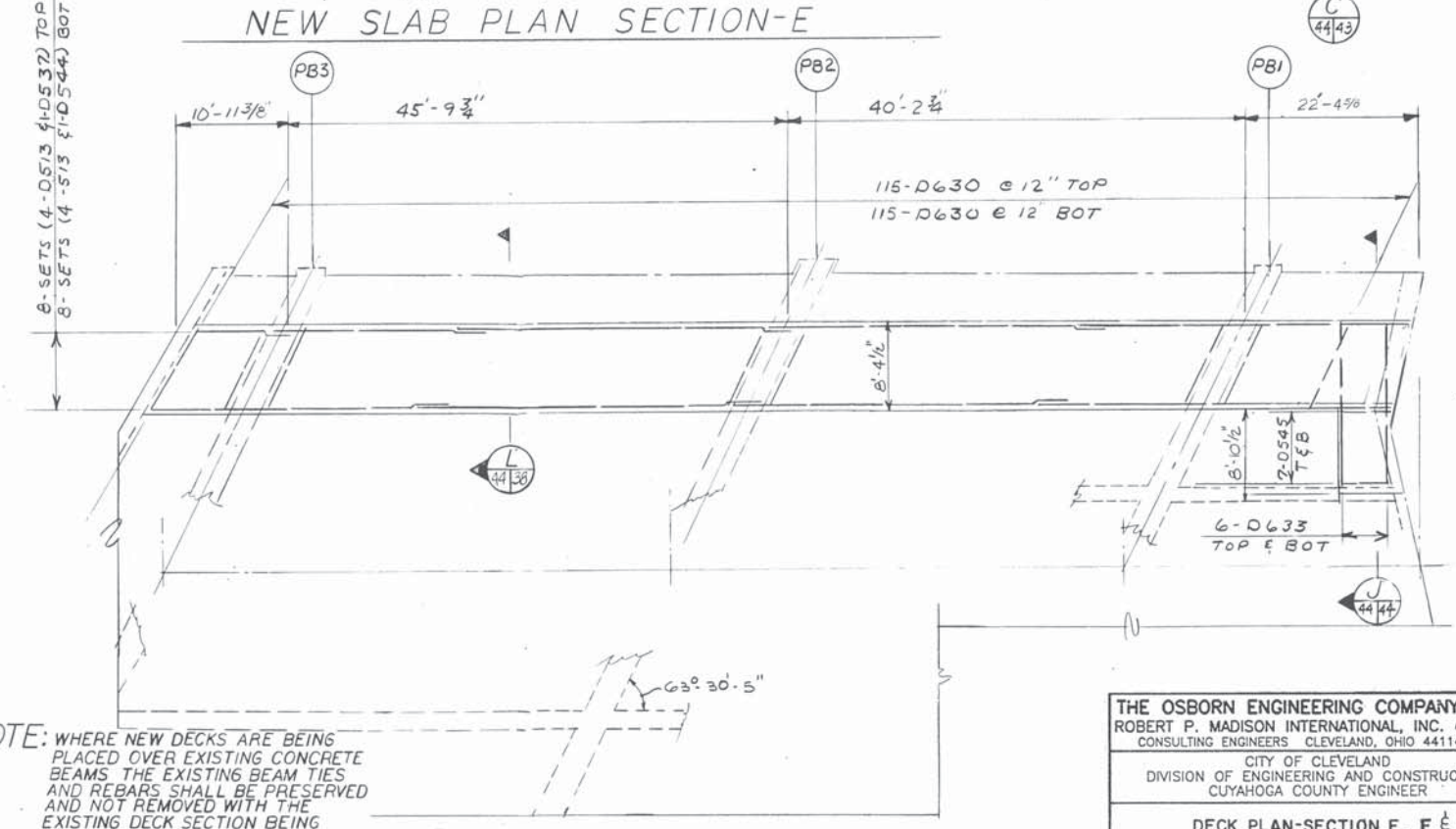
NEW SLAB PLAN SECTION-E



SECTION J



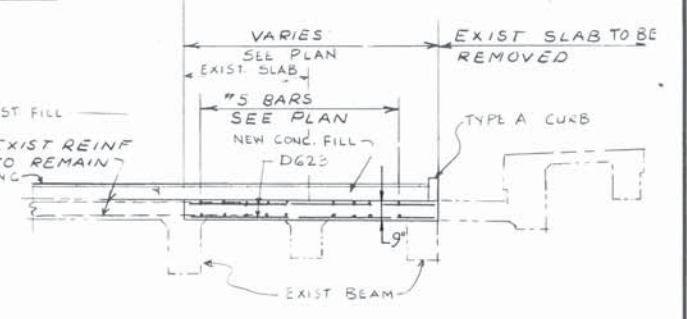
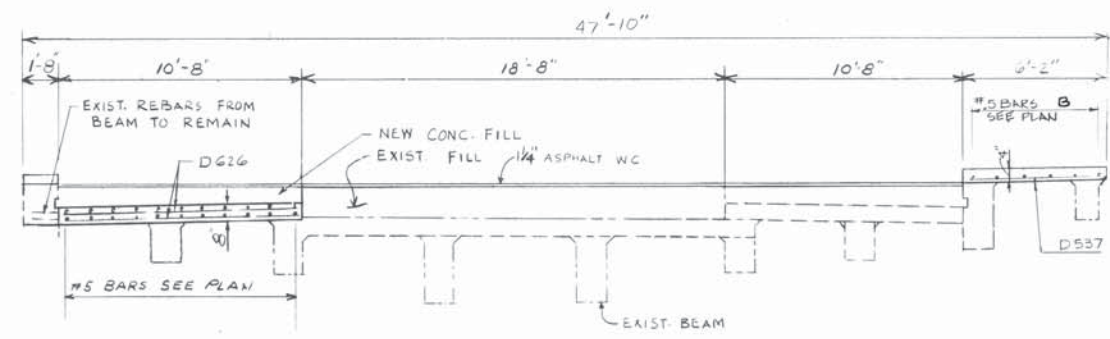
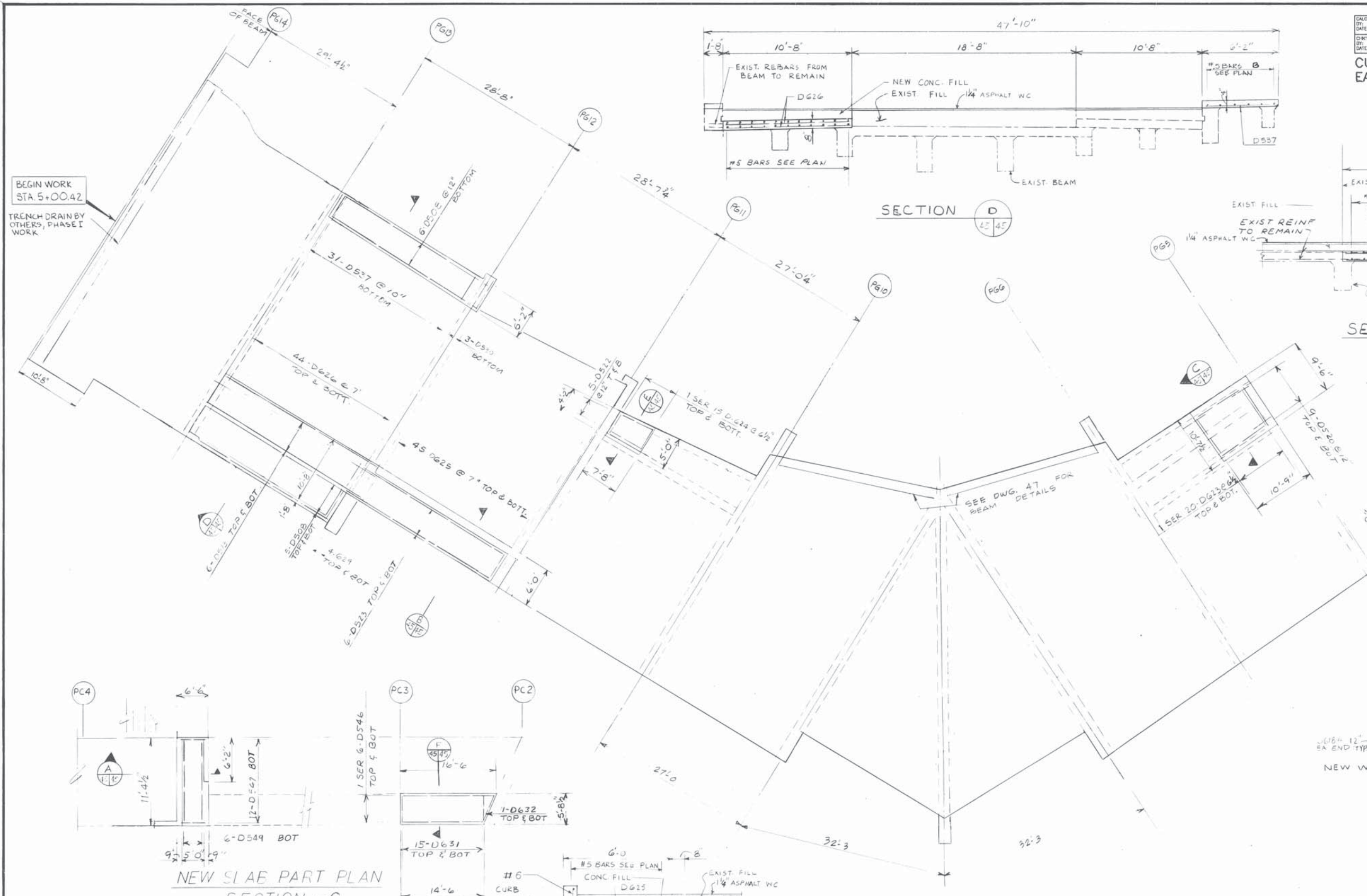
SECTION K



NEW SLAB PLAN SECTION-B

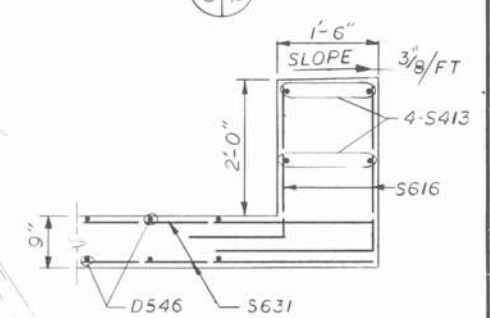
NOTE: WHERE NEW DECKS ARE BEING PLACED OVER EXISTING CONCRETE BEAMS THE EXISTING BEAM TIES AND REBAR SHALL BE PRESERVED AND NOT REMOVED WITH THE EXISTING DECK SECTION BEING REPLACED.

THE OSBORN ENGINEERING COMPANY 44/56 ROBERT P. MADISON INTERNATIONAL, INC. CONSULTING ENGINEERS CLEVELAND, OHIO 44114					
CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER					
DECK PLAN-SECTION E, F, & B. EAGLE AVENUE VIADUCT OVER CHESSE, C.C.R.T.A. AND CANAL ROAD-PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1:009M CLEVELAND CUYAHOGA COUNTY OHIO					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
KP	LJ		MP	LS	10/90

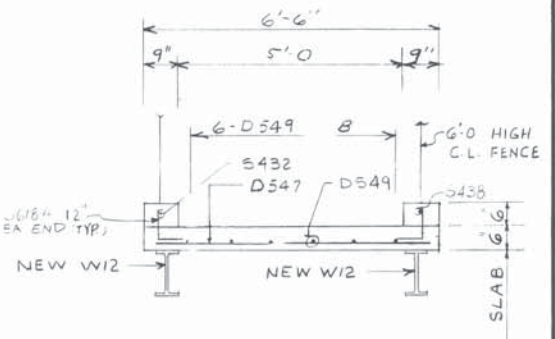


SECTION C AS SHOWN

SECTION E AS NOTED

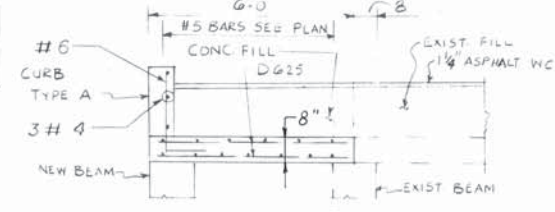


SECTION F AS SHOWN



SECTION A AS SHOWN

NEW SLAB PART PLAN SECTION - C



SECTION B AS SHOWN

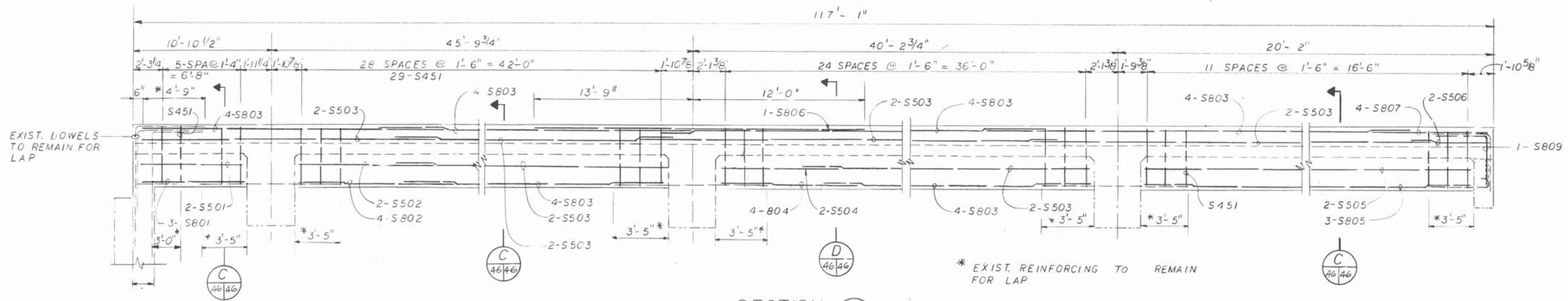
NEW SLAB PLAN - SECTION - G

NOTES:  
1 SEE DWG NO 55 FOR BEAM NOTE

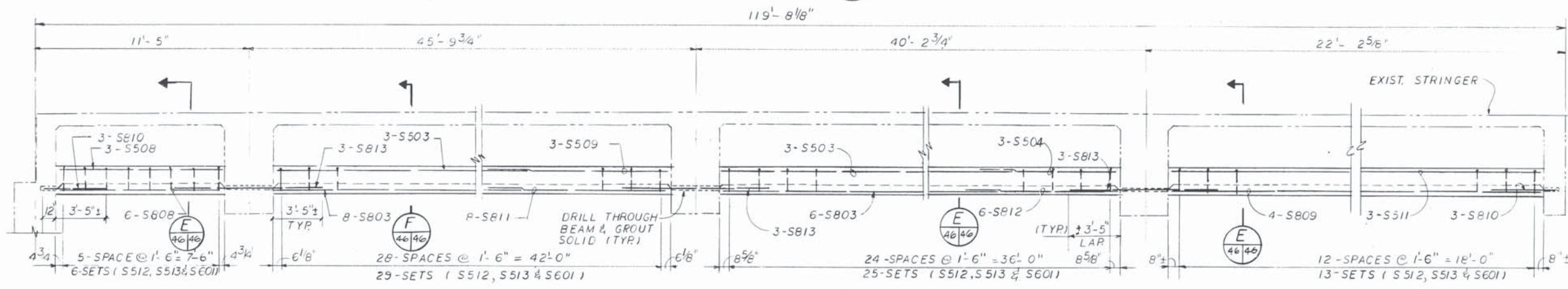
THE OSBORN ENGINEERING COMPANY 45/56  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER

DECK PLANS-SECTION-C & G  
 EAGLE AVENUE VIADUCT OVER C.S.S.I.E.,  
 G.C.R.T.A. AND CANAL ROAD-PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
 CLEVELAND CUYAHOGA COUNTY OHIO

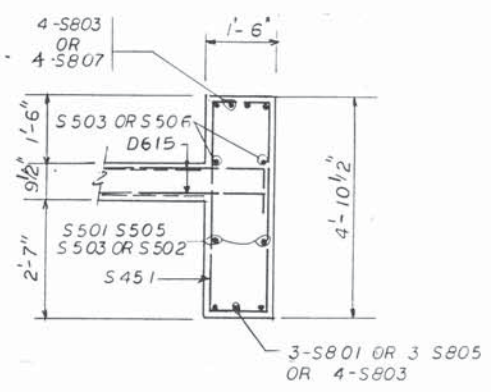
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MP	RW	KP	LJ	10/90		



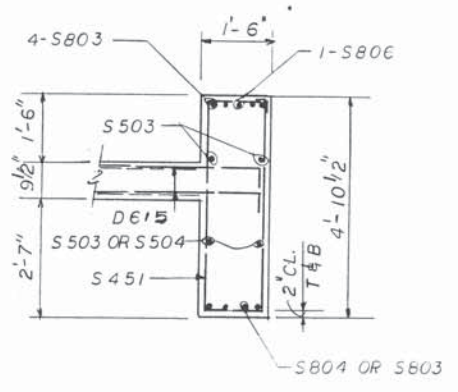
SECTION A  
46/46



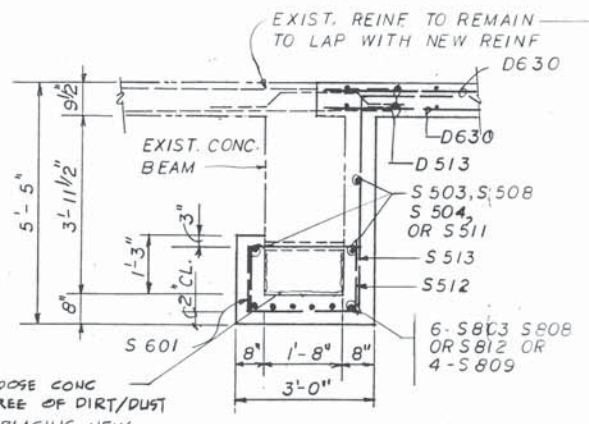
SECTION B  
46/46



SECTION C  
46/46

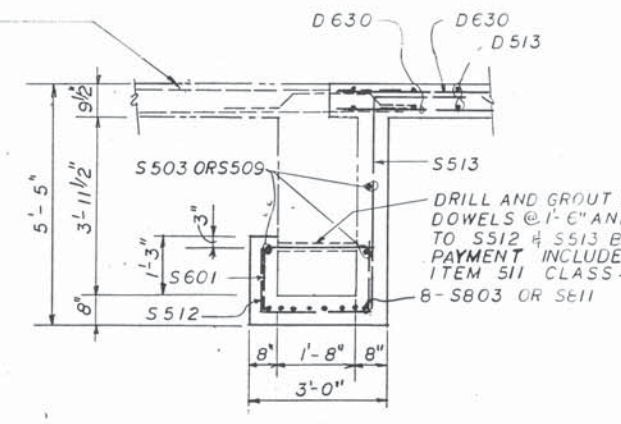


SECTION D  
46/46



REMOVE LOOSE CONC & CLEAN FREE OF DIRT/DUST PRIOR TO PLACING NEW CONC. TYP. COST OF REMOVAL INCLUDED IN PRICE FOR ITEM 511 CLASS 'S' CONCRETE.

SECTION E  
46/46



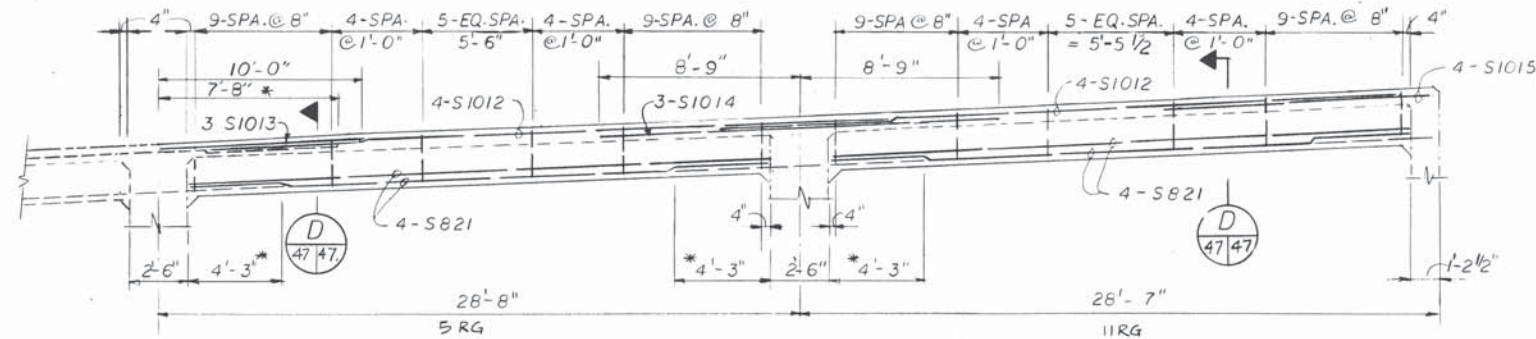
SECTION F  
46/46

THE OSBORN ENGINEERING COMPANY 46/56  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER

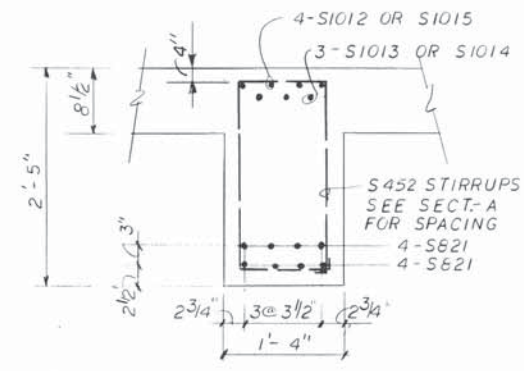
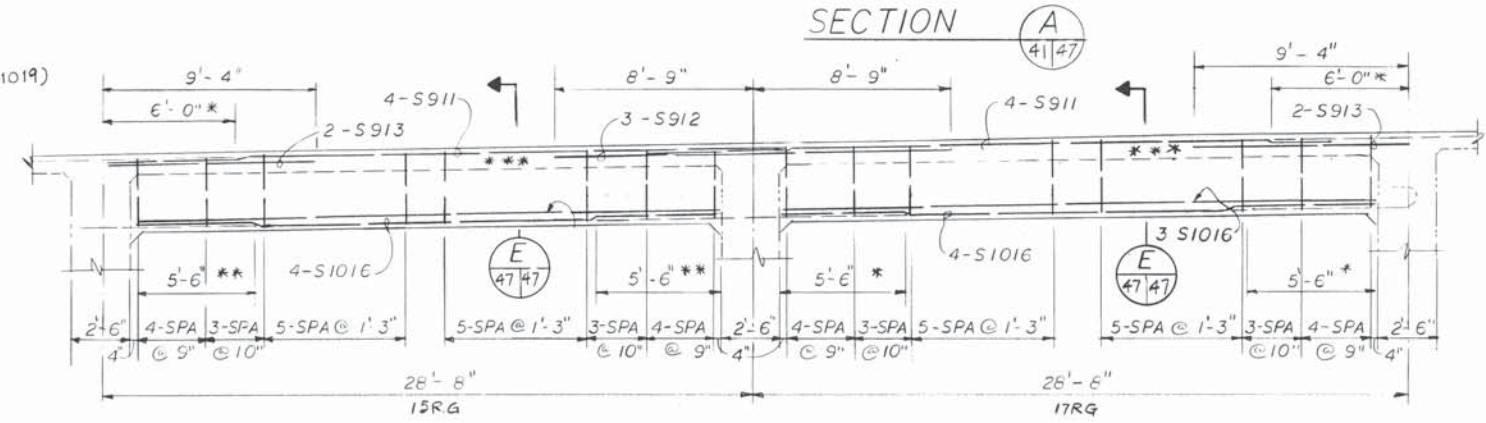
**BEAM REPLACEMENT ELEV. & SECTIONS**  
 EAGLE AVENUE VIADUCT OVER CHESIE,  
 G.C.R.T.A. AND CANAL ROAD-PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
 CLEVELAND CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MP	JMP		KP	LJ	10/90	

CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II

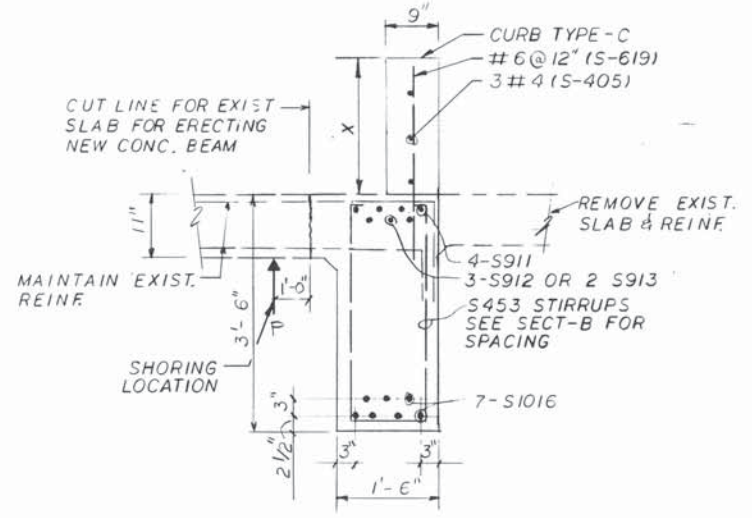


- \* EXIST. REINFORCING TO REMAIN FOR LAP
- \*\* USE 4-#10 X 7'-0 DOWELS 1'-6" (S-1019) DEEP DRILLED IN TO EXIST. PIER AND GROUTED FOR BOTTOM BARS LAP IF EXIST BARS ARE NOT AVAILAEL E.
- \*\*\* DECK SLAB REINFORCEMENT TO REMAIN.



SECTION B  
41/47

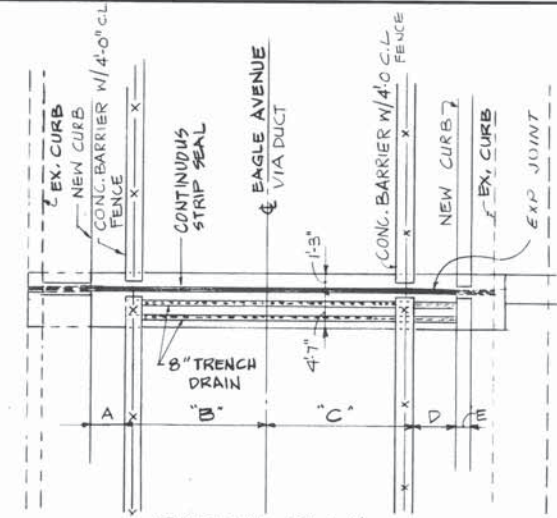
SECTION D  
47/47



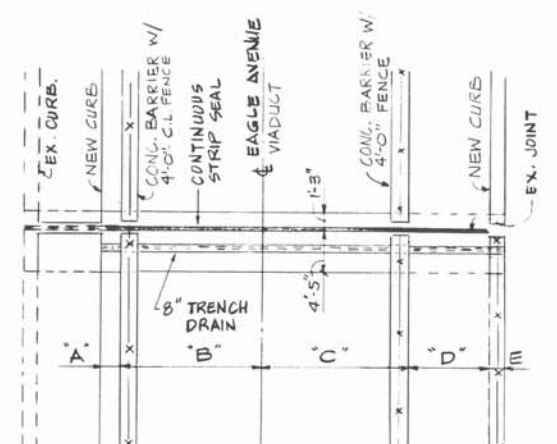
SECTION E  
47/47

$P = \text{SHORING LOAD} = D.L + \text{CONSTR. LOAD}$   
 $= 140 + 20 = 160 \text{ LB/FT.}$

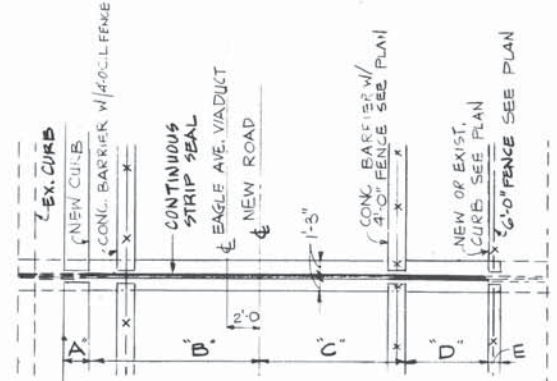
THE OSBORN ENGINEERING COMPANY 47/56						
ROBERT P. MADISON INTERNATIONAL, INC.						
CONSULTING ENGINEERS CLEVELAND, OHIO 44114						
CITY OF CLEVELAND						
DIVISION OF ENGINEERING AND CONSTRUCTION						
CUYAHOGA COUNTY ENGINEER						
<b>BEAM REPLACEMENT ELEV. &amp; SECTIONS</b>						
EAGLE AVENUE WADUCT OVER CHESSIE, G.C.R.T.A. AND CANAL ROAD-PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M CLEVELAND CUYAHOGA COUNTY OHIO						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MP	JMP		KP	LJ	10/90	



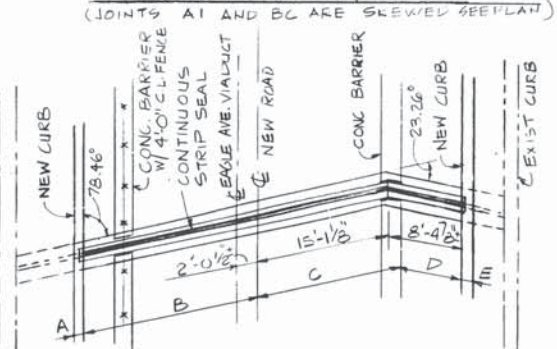
TYPICAL PLAN EXPANSION JOINT TYPE A



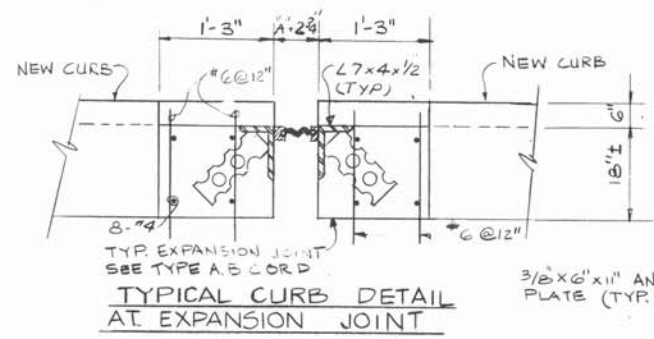
TYPICAL PLAN EXPANSION JOINT TYPE B



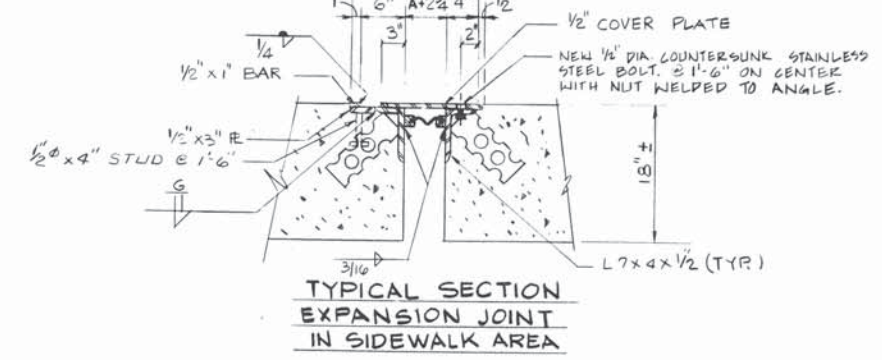
TYPICAL PLANS EXPANSION JOINT TYPE C



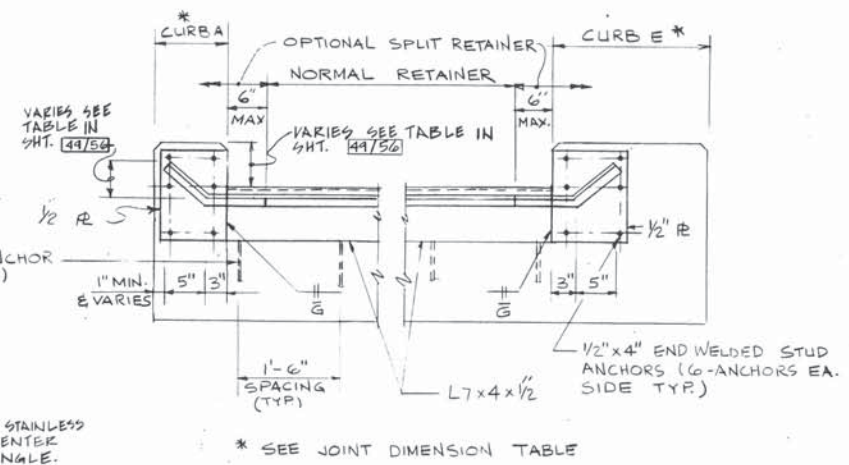
TYPICAL PLANS EXPANSION JOINT TYPE D



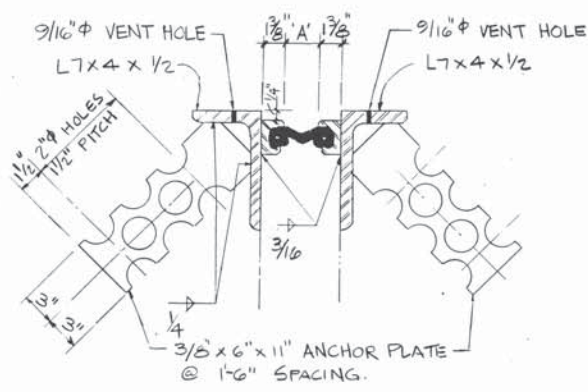
TYPICAL CURB DETAIL AT EXPANSION JOINT



TYPICAL SECTION EXPANSION JOINT IN SIDEWALK AREA



TYPICAL STRIP SEAL END CONDITION FOR JOINT TYPE A, B, C AND D



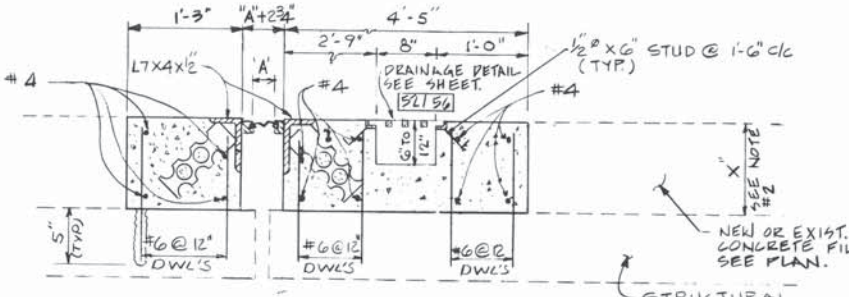
TYPICAL SECTION AT EXPANSION JOINT

JOINT DIMENSIONS		DIMENSIONS						
JOINT MARK	JOINT LOCATION	JOINT TYPE	A	B	C	D	CURB E	TOTAL
AI	A-1	C	0'-9 1/8"	20'-7 1/2"	16'-4"	8'-7 1/2"	1'-10 1/2"	46'-9 1/8"
AB	A-B	D	0'-9 1/8"	20'-6"	16'-4"	8'-7 1/2"	1'-10 1/2"	46'-7 5/8"
BC	B	C	3'-8 7/8"	20'-3"	18'-5 1/2"	8'-1"	1'-9"	52'-3 3/8"
BC	C	C	0'-10 3/8"	20'-3"	18'-5 1/2"	8'-1"	1'-9"	49'-4 7/8"
CD	C-D	C	0'-9"	17'-0"	16'-0"	2'-0"	0'-9"	36'-0"
DI	D	C	0'-9"	17'-0"	16'-0"	2'-0"	0'-9"	36'-0"
D2	D	C	0'-9 1/4"	16'-0 1/2"	16'-0 1/2"	5'-7 3/4"	0'-9 1/4"	39'-3 1/4"
DE	D-E	C	0'-9"	16'-0"	16'-0"		0'-9"	38'-6"
EI	E	C	0'-9"	16'-0"	16'-0"		0'-9"	33'-6"
EF	E	A	0'-9"	16'-0"	16'-0"		0'-9"	32'-9"
EF	F	A	3'-1 1/2"	16'-0"	16'-0"	2'-4 1/2"	0'-9"	38'-3"
FG	F-G	C	0'-9"	16'-0"	16'-0"		0'-9"	33'-6"
G1	G	B	0'-9"	16'-0"	16'-0"		0'-9"	34'-3 1/4"
G2	G	C	0'-9"	16'-0"	16'-0"	2'-9 1/4"	0'-9"	36'-3 1/4"

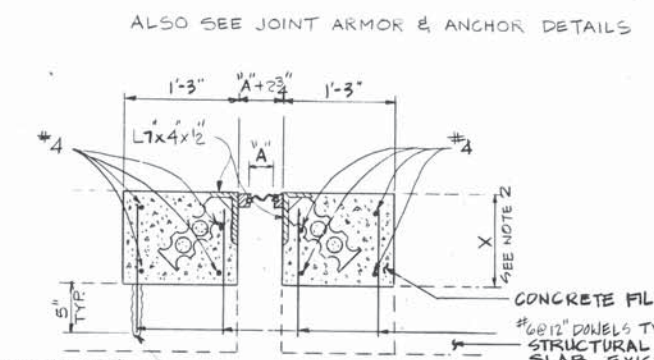
\*\* SIDE WALK  
 TOTAL 551'-4 3/4"

EXPANSION JOINT OPENING *	
AMBIENT TEMPERATURE	DIMENSION "A"
90°	1 3/4"
80°	1 5/16"
70°	1 7/16"
60°	1 1/2"
50°	1 9/16"
40°	1 11/16"
30°	1 3/4"

\* MIN. JOINT OPENING AT TIME OF SEAL GLAND INSTALLATION SHALL NOT BE LESS THAN 1 1/2"

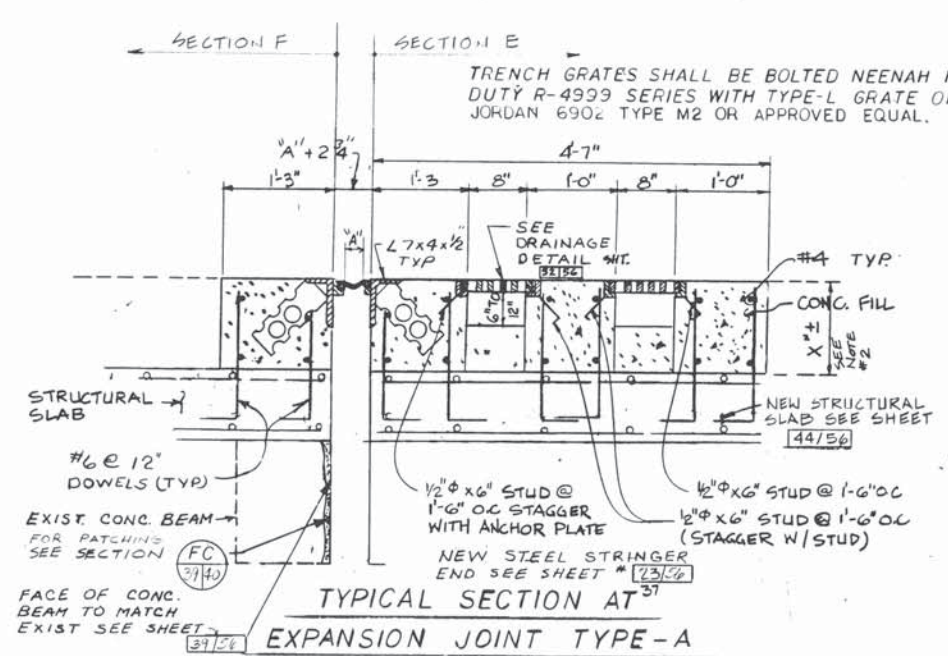


TYPICAL SECTION EXPANSION JOINT TYPE B



TYPICAL SECTION EXPANSION JOINT TYPE C AND D

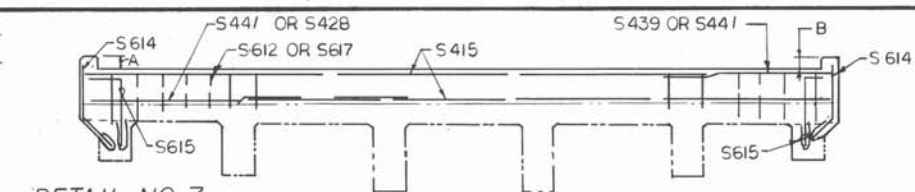
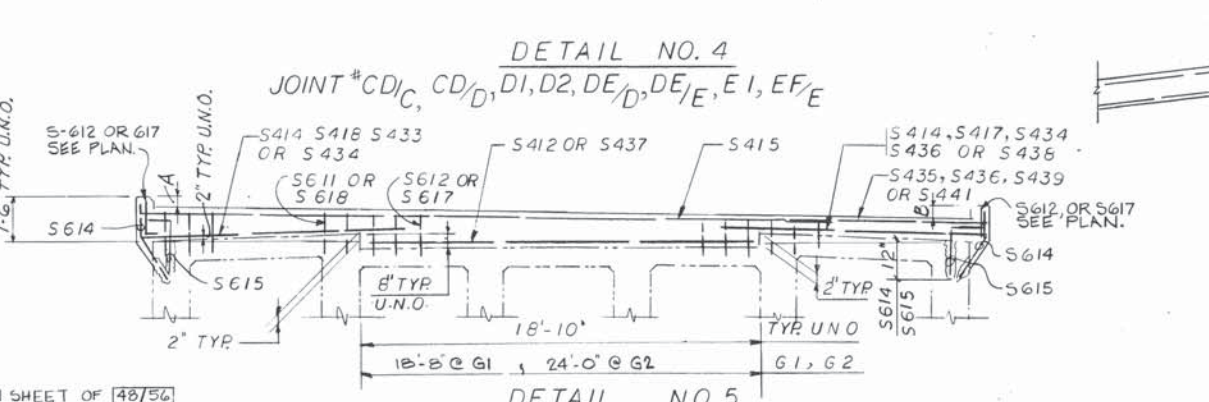
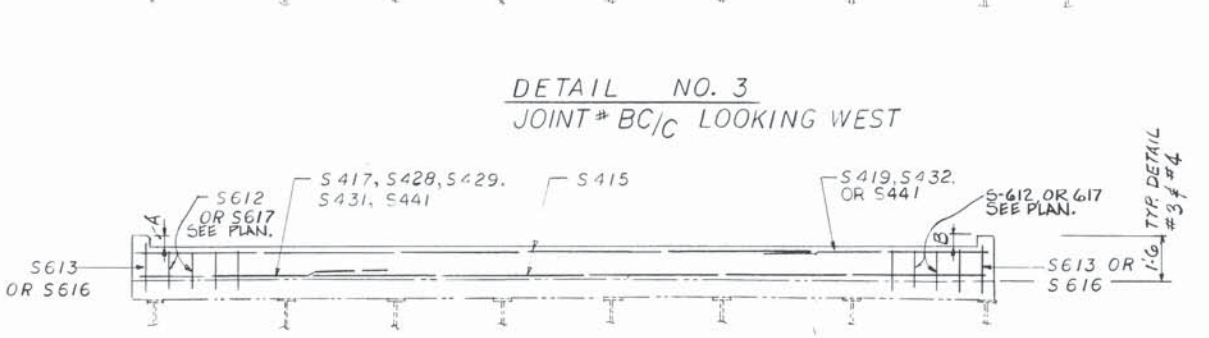
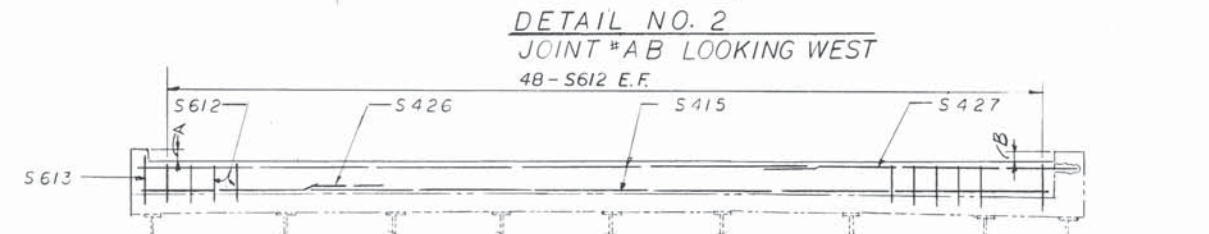
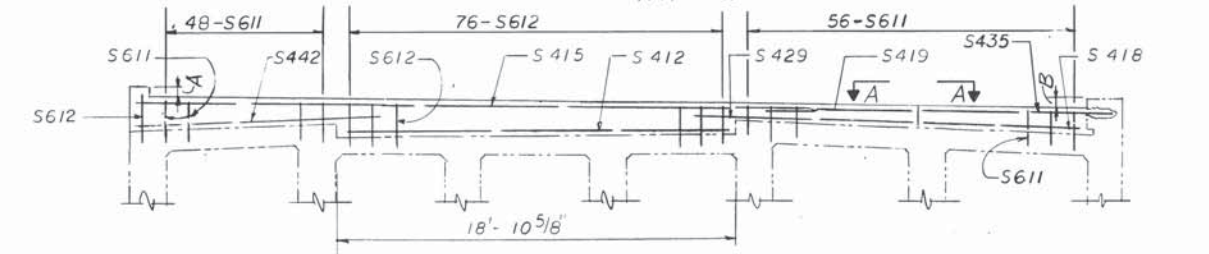
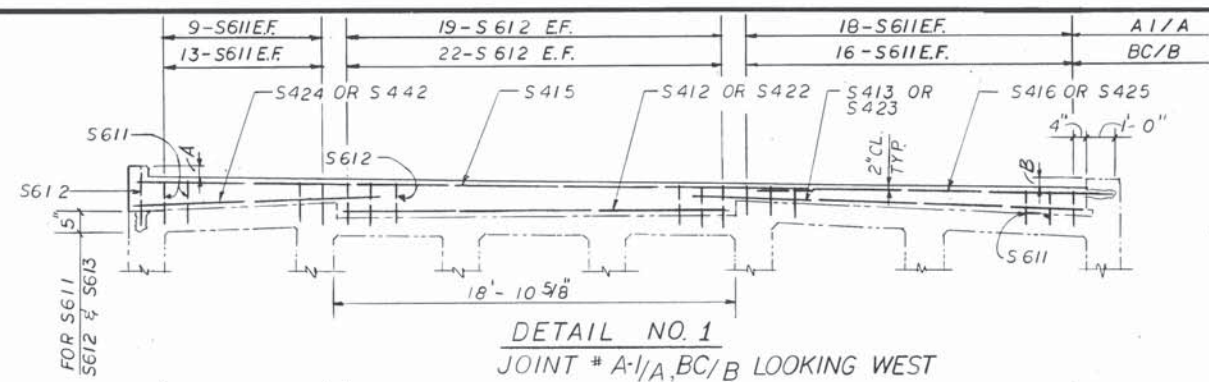
- NOTE:
- DIMENSION A, B, C, D & E ARE ALONG PARALLEL TO LENGTH OF EXPANSION JOINT.
  - DIMENSION MARKED X SEE DIMENSIONS ON DETAILS NO 1 THRU 6 ON SHEET 49-2



TYPICAL SECTION AT EXPANSION JOINT TYPE-A

NOTE:  
 FOR TYP. EXP. JOINT NOTES & DETAILS SEE DWG. EXP-4-B7

THE OSBORN ENGINEERING COMPANY 48/56  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER  
 EXPANSION JOINT TYPE, SECT. B & DETAILS  
 EAGLE AVENUE VIADUCT OVER CHESSE, C.C.R.T.A. AND CANAL ROAD-PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
 CLEVELAND CUYAHOGA COUNTY OHIO  
 DESIGNED: HP DRAWN: JMP TRACED: RP CHECKED: LP REVIEWED: LJ DATE: 10/90 REVISED:

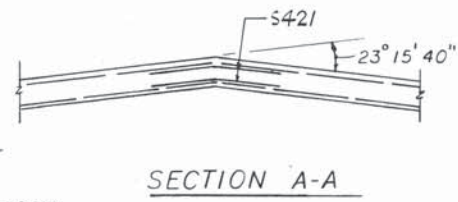


DETAIL NO. 7  
 JOINT # G1/RE, G2/FD

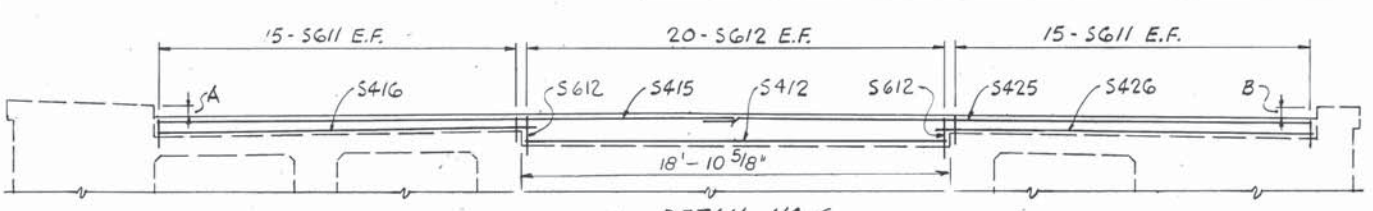
EXIST. CURB HEIGHT TABLE

MARK	DIM. A	DIM. B
A1	4"	4"
AB	11"	6"
BC	7"	7"
CD	6'2"	6'2"
D1	4"	3'2"
D2	4"	5"
DE	2'2"	3"
E1	4"	4"
EF	2"	2"*
FG	8"	8"*
G1	4'2"	4'2"*
G2	7"	6'2"

\* ESTIMATED DIMENSION CURB IS MISSING



SECTION A-A



DETAIL NO. 6  
 JOINT # A-1/1

REINFORCING STEEL SUB SUMMARY DECK EXPANSION JOINT

MARK	NO. OF BAR REQUIRED IN JOINT																TOTAL NOS.	REMARKS				
	A1/A1	A1/A	AB	BC/B	BC/C	CD/C	CD/D	D1	D2	DE/D	DE/E	E1	EF/E	EF/F	FG/F	FG/G			G1/RE	G1/FD	G2/RE	G2/FD
S412	2	2	4											2	2	2					14	JOINT MARK
S413		2																			2	
S414													4								4	CD/E PLAN SECTION
S415	2	2	4	2	4	4	4	8	8	4	4	8	12	2	2	2	4	4	2	4	86	
S416	2	2																			4	
S417														2							2	
S418		4																2			6	
S419		4			2	2	4														12	
S420									NOT USED													
S421		8																			8	
S422			2																		2	
S423			2																		2	
S424			2																		2	
S425	2		2																		4	
S426	2				2																4	
S427					2																2	
S428																			2		2	
S429		4			2	2	4														12	
S431									4												4	
S432									4												4	
S433														2							2	
S434														4	2	2					8	
S435		4											2								6	
S436																	4				4	
S437																	4	2			6	
S438																			2		2	
S439																		2	2		4	
S441									4	4	8	12		2	2	4	4				40	
S442	2	4																			6	
S611	60	54	104	58										24	32	16					348	
S612	40	38	80	46	96	70	70	48			74			38	48	100	42	60			850	
S613				2	4	4					4										14	
S614														4	2	8		2			16	
S615														4	2	8		2			16	
S616							8	8	4	4	4	12						2			44	
S617							140	104	76	64	54	192	52	42			18	2	8		752	
S618														24	24					12	60	

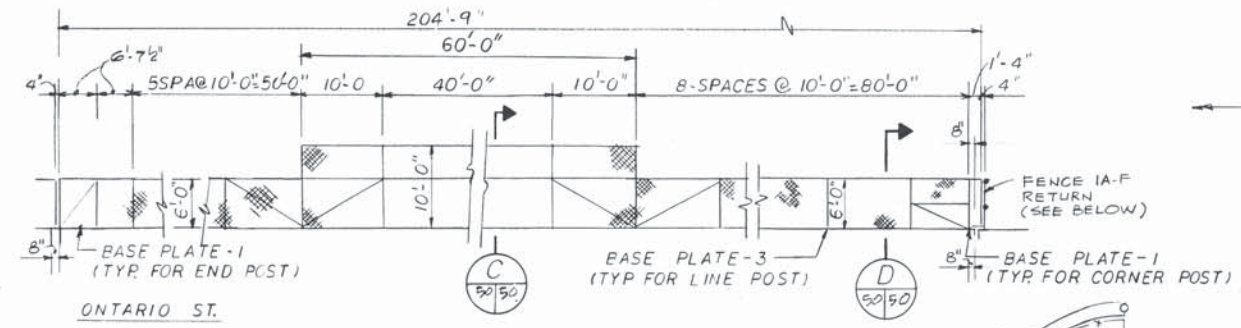
- NOTES:
- SEE PLAN ON SHEET OF 48/56 FOR HORIZONTAL JOINT DIM.
  - S-611, S-612 & S-613 ARE LOCATED AT EXISTING DECK SLAB EXP. JOINT
  - BAR S-616, S-617 & S-618 ARE LOCATED AT NEW DECK SLAB EXP. JOINT FOR LOCATION. SEE PLAN SHEET N. 29, 31, 33, 35, 37, 39, & 41 OF 56.

THE OSBORN ENGINEERING COMPANY 49/56  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER  
**EXPANSION JOINT REINF. & BAR SUMMARY**  
 EAGLE AVENUE VIADUCT OVER CHESSE, G.C.R.T.A. AND CANAL ROAD-PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
 CLEVELAND CUYAHOGA COUNTY OHIO

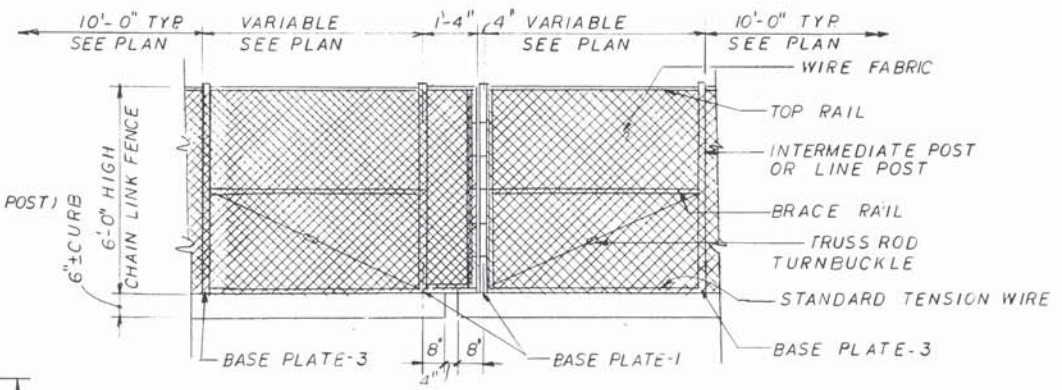
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.P.	JMP		RS	WJ	10/90	



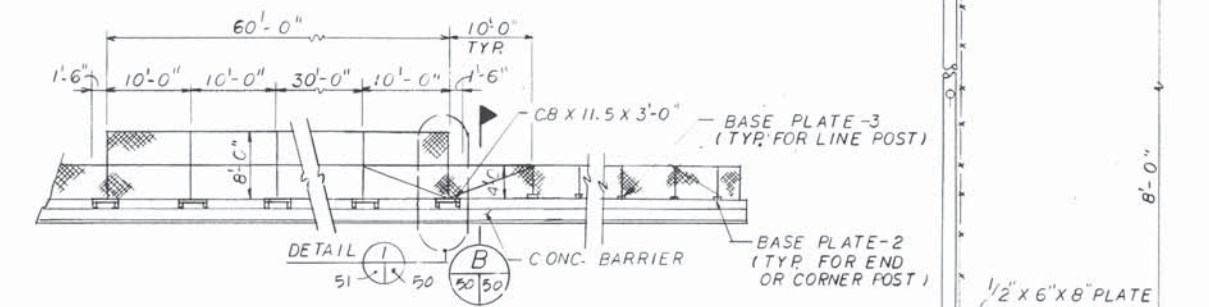
CUYAHOGA COUNTY  
 EAGLE AVENUE - PHASE II



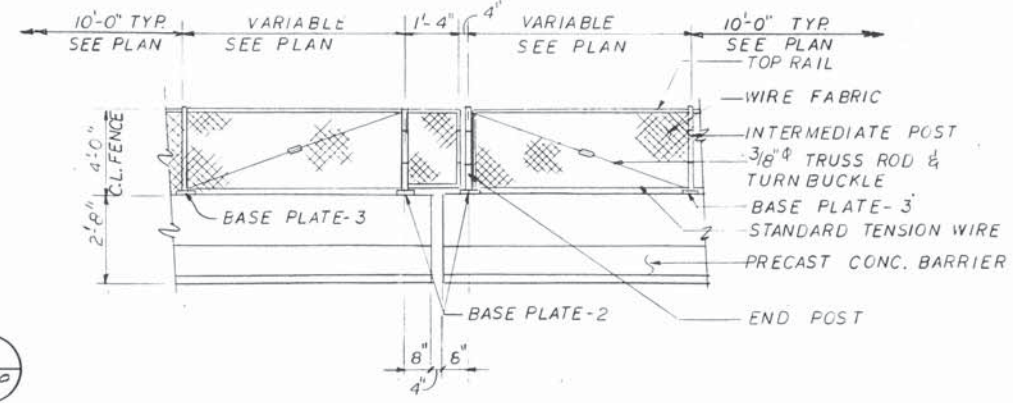
FENCE - NORTHWEST SIDE - SECTION A (I-F)  
 SCALE: 3/32" = 1'-0"



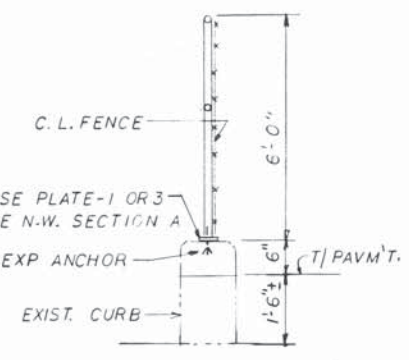
TYPICAL DETAIL "A" AT EXPANSION JOINT



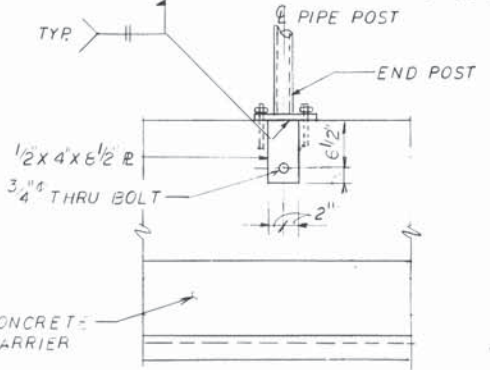
FENCE SOUTHEAST SIDE - SECTION A  
 SCALE: 3/32" = 1'-0"



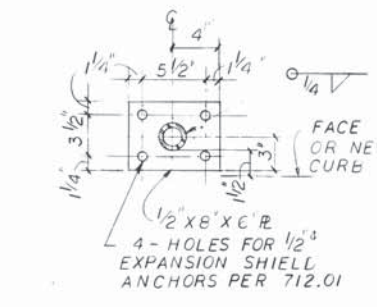
TYPICAL DETAIL "B" AT EXPANSION JOINT



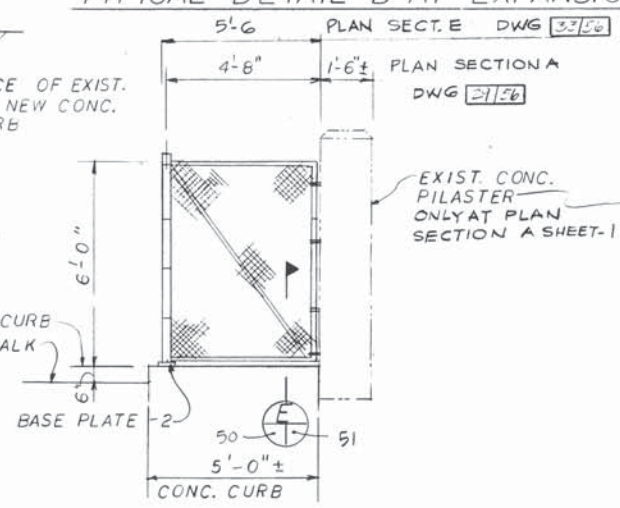
TYPICAL FENCE SECTION D



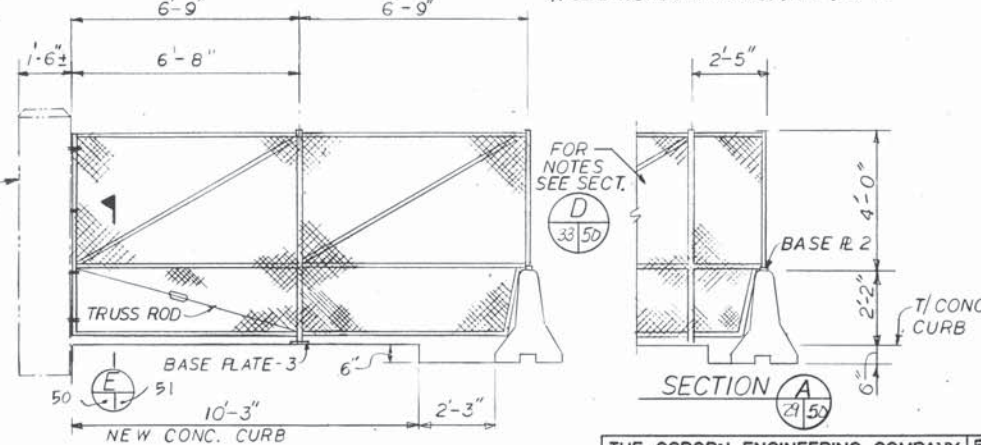
ELEVATION



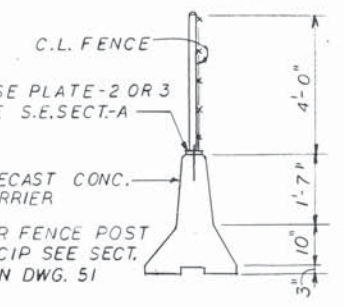
PLAN-BASE PLATE-1



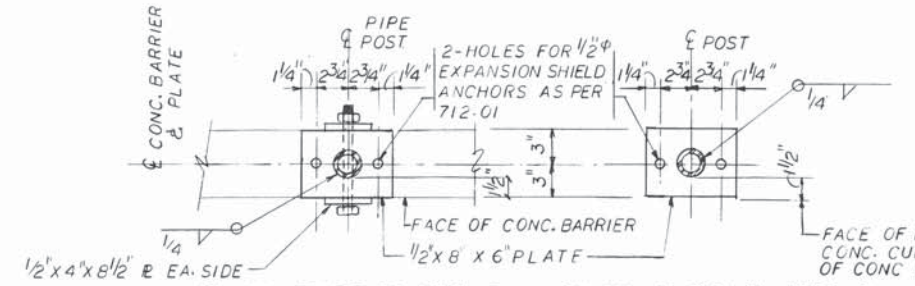
NORTH EAST ELEVATION (I-A-F)  
 (SHEET NO. 24/56 & 33/56)



SECTION D



SECTION B



PLAN-BASE PLATE-2 TYR FOR END OR CORNER POST AT CONCRETE BARRIER  
 PLAN-BASE PLATE-3 TYR FOR LINE POST AT EXIST. OR NEW CONC. CURB OR TYR AT CONC. BARRIER

SHEET NO.	PLAN SECTION	SIDE	REFERENCE NO.	622 CONCRETE BARRIER		607 CHAIN LINK FENCE				
				CONCRETE BARRIER TYPE BRD ANCHORED	CONCRETE BARRIER TAPERED END SECTION	REFERENCE NO.	4'-0" HEIGHT TYPE C.L.	6'-0" HEIGHT TYPE C.L.	8'-0" HEIGHT TYPE C.L.	10'-0" HEIGHT TYPE C.L.
41	A L	L	1B	20B.06	*	1F	148.06	60.00		
	A L	R	2B		*	2F	4.67			
	A R	L	3B	20B.28		3F	148.28	60.00		
	A R	R	4B		*	4F	9.08			
43	B L	L	5B	119.61		5F	119.61			
	B R	L	6B	142.92		6F	142.92			
45	C L	L	7B	184.0		7F	129.25			
	C R	L	8B			8F	13.52			
	C R	R	9B			9F	60.0			
	C R	R	10B	166.76		10F	166.76			
47	D L	L	11B	102.17		11F	102.17			
	D R	L	12B	102.17		12F	102.17			
	D R	R	13B	109.27		13F	109.27			
	D R	R	14B	111.55		14F	111.55			
	D R	R	15B	31.19		15F	31.19			
	D R	R	16B	31.19		16F	31.19			
49	E L	L	17B	64.29		17F	64.29			
	E R	L	18B	64.29		18F	64.29			
	E R	R	19B	95.5		19F	95.5			
	E R	R	20B	95.5		20F	95.5			
51	F L	L	21B	125.13		21F	125.13			
	F R	L	22B	107.83		22F	107.83			
53	G L	L	23B	113.0		23F	113.0			
	G R	L	24B	113.0		24F	113.0			
	G R	R	25B	117.67		25F	117.67			
	G R	R	26B	149.76		26F	149.76			
	G R	R	27B	60.0		27F	58.67			
	G R	R	28B	60.0		28F	58.67			
	G R	R	29B	16.0		29F	14.67			
	G R	R	30B	16.0		30F	14.67			
TOTAL				2715.14			2198.15	424.19	60.00	60.00

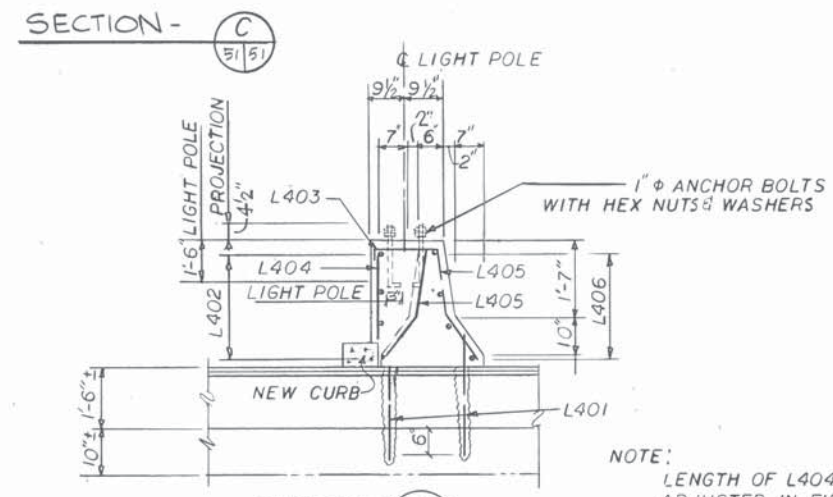
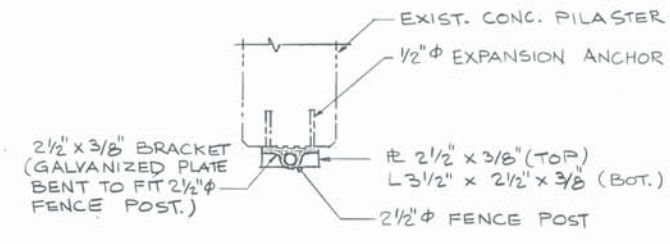
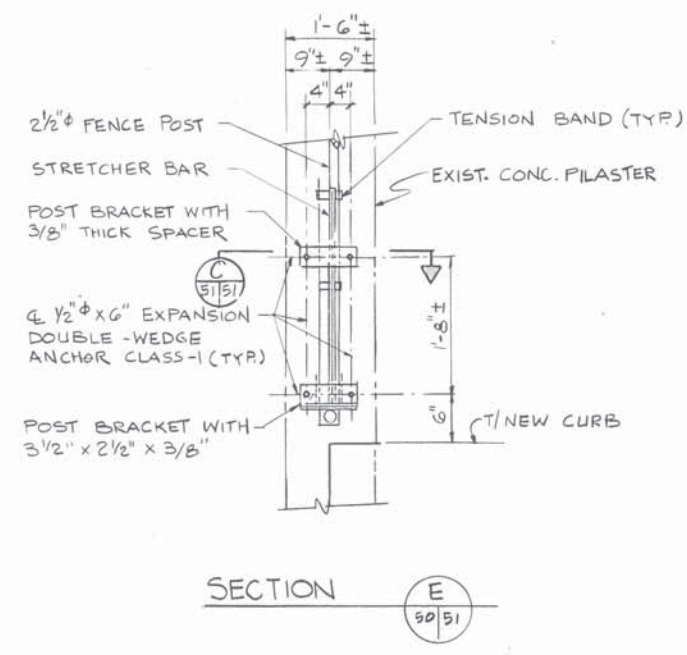
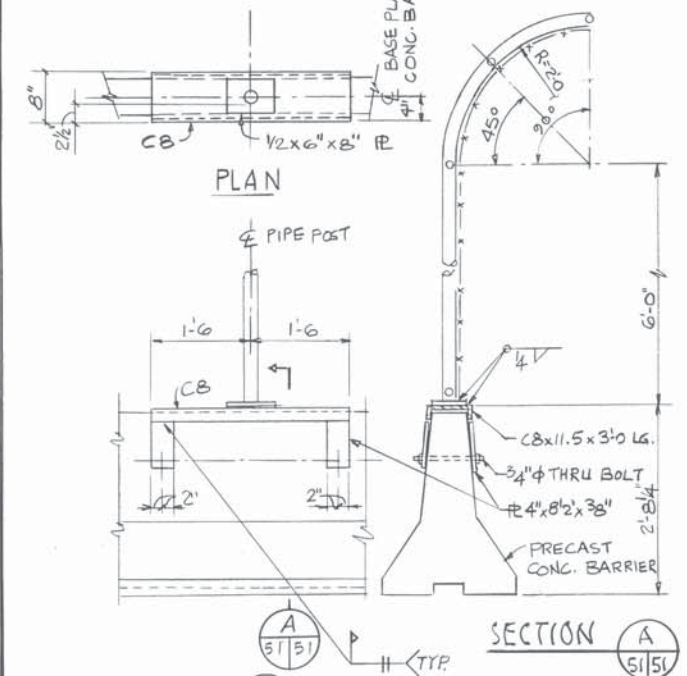
\* SEE ROADWAY DWG. SHT. D OF 71

THE OSBORN ENGINEERING COMPANY 50/56  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER

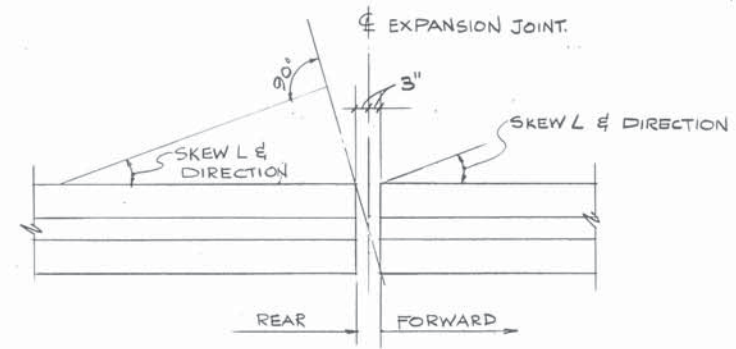
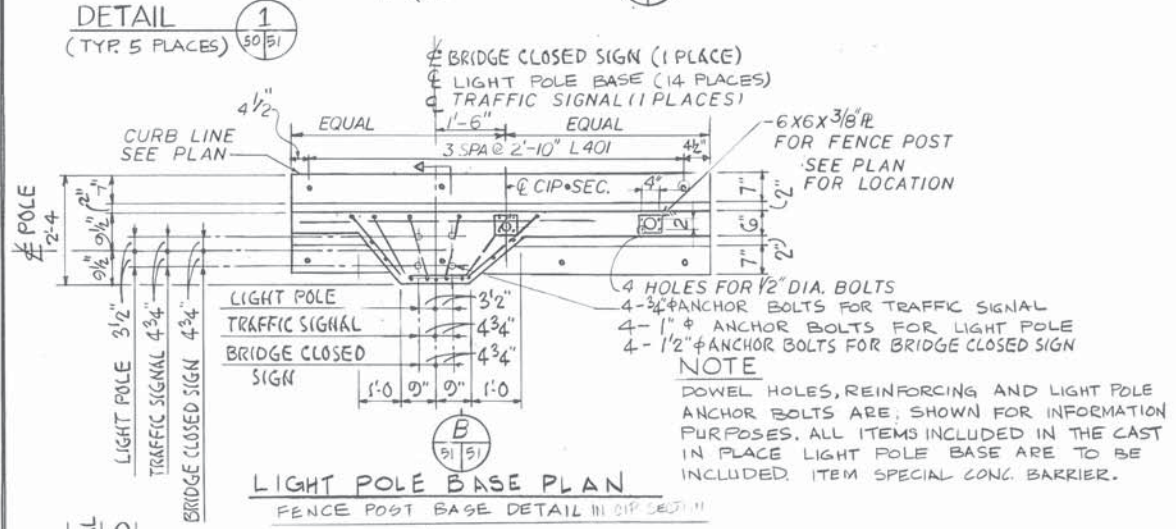
FENCE DETAILS & SCHEDULE  
 EAGLE AVENUE VIADUCT OVER CHESSE, G.C.R.T.A. AND CANAL ROAD-PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1.009M  
 CLEVELAND CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MP	JMP		EK	LJ	10/90	

CUYAHOGA COUNTY  
 EAGLE AVENUE - PHASE II

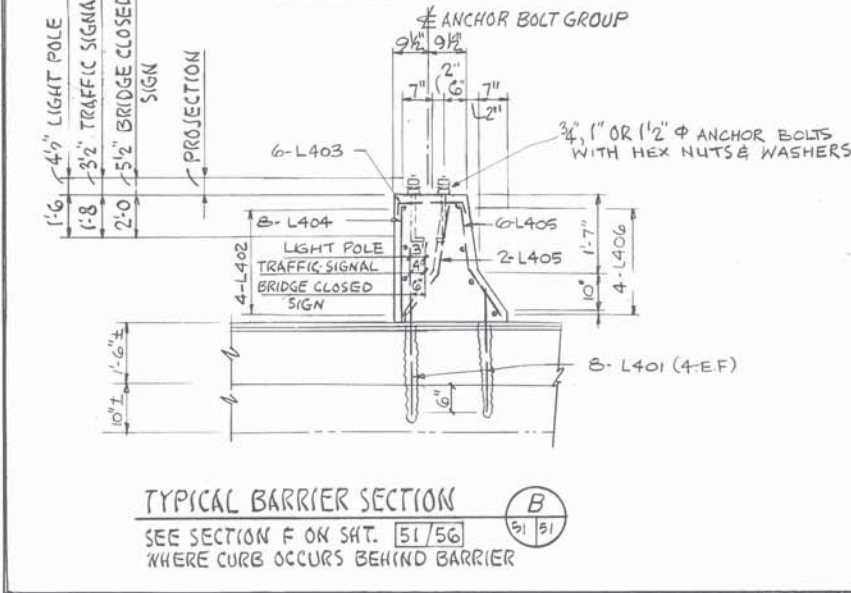


NOTE:  
 LENGTH OF L404 TO BE ADJUSTED IN FIELD AS REQUIRED.

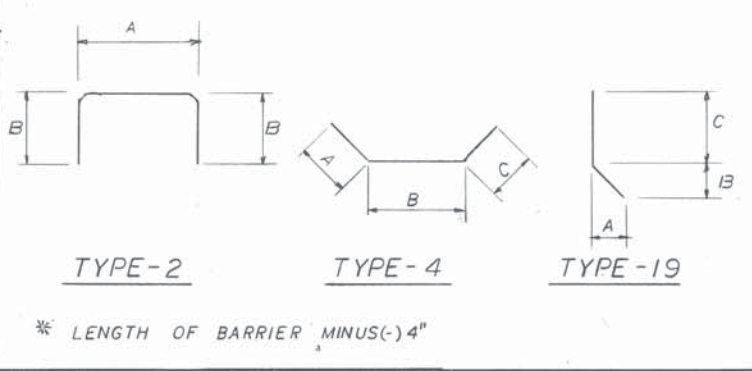


TYPICAL BARRIER END CUT OFF PLAN  
 ALL BARRIER END CUT ARE PERPENDICULAR TO THE CENTER LINE OF ROADWAY AND ALL BARRIER ARE PARALLEL TO ROADWAY UNLESS CALLED OUT IN SCHEDULE

BARRIER END CONDITION SCHEDULE							
LOCATION	SIDE	EXPANSION JOINT		REAR BARRIER		FORWARD BARRIER	
		SKEW	DIRECTION	SKEW	DIRECTION	SKEW	DIRECTION
EJ-A1	LT.	11°-32'-31"	REAR	-	-	21°-29'-25"	LEFT
EJ-A1	RT.	11°-32'-31"	REAR	8°-54'-35"	RIGHT	8°-54'-35"	RIGHT
EJ-AB	LT.	23°-15'-44"	FORWARD	-	-	-	-
EJ-AB	RT.	11°-32'-31"	REAR	-	-	-	-
EJ-BC	LT.	29°-53'-0"	FORWARD	-	-	-	-
EJ-BC	RT.	29°-53'-0"	FORWARD	-	-	-	-



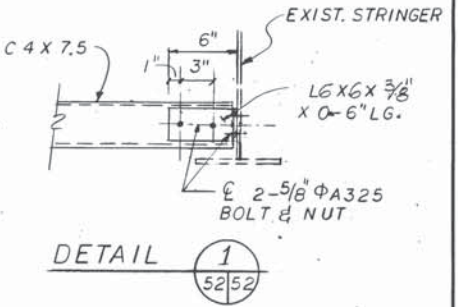
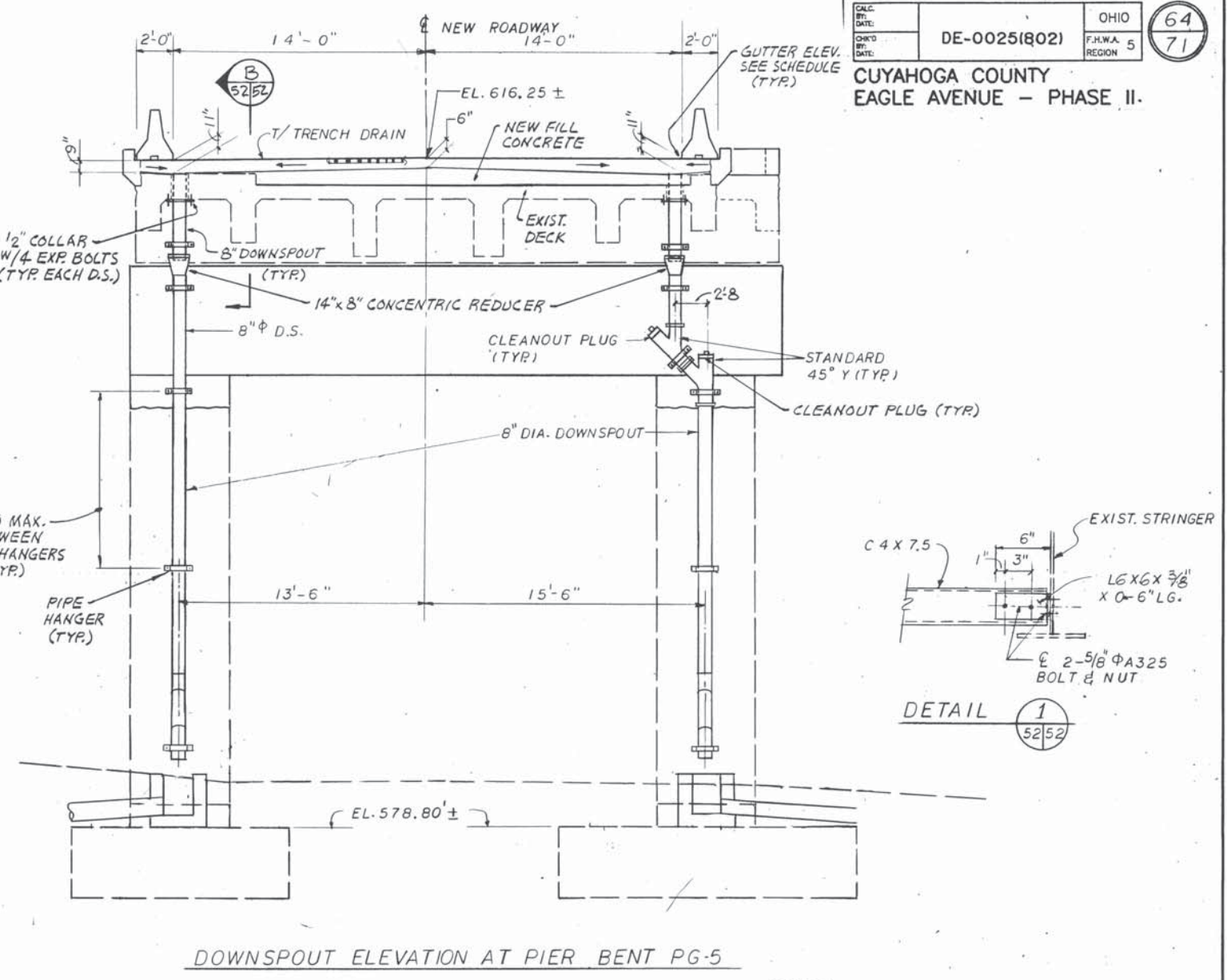
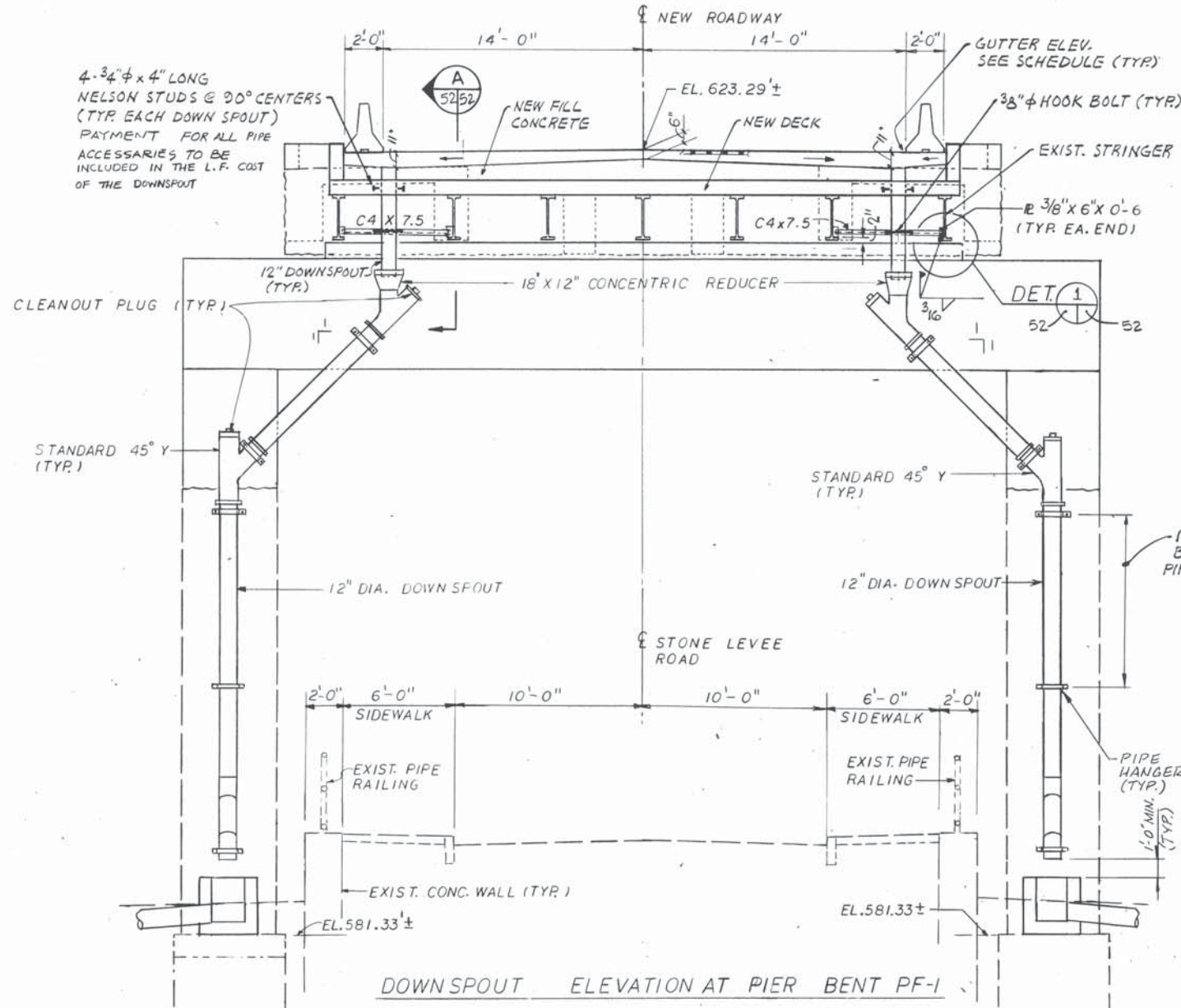
REINFORCING SCHEDULE										
MARK	NO. REQUIRED	LENGTH	TYPE	DIMENSIONS					SERIES INCR.	WEIGHT LBS.
				A	B	C	D	E		
L401	128	3'-0"	STR							
L402	64	4'-4"	4	1'-7"	1'-2"	1'-7"				
L403	96	2'-4 7/8"	2	1'-4"	1'-9"	0'-6"			2 1/2"	
L404	128	2'-3"	STR							
L405	128	2'-5"	19	0'-7"	0'-10"	1'-5"				
L406	64	4'-0"	STR							



THE OSBORN ENGINEERING COMPANY 51/56  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER  
 BARRIER & LIGHT POLE BASE DETAILS  
 EAGLE AVENUE VIADUCT OVER CHESSIE,  
 G.C.R.T.A. AND CANAL ROAD-PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1-000M  
 CLEVELAND CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Mf	Jmp		KP		1/10/90	

CUYAHOGA COUNTY  
 EAGLE AVENUE - PHASE II.



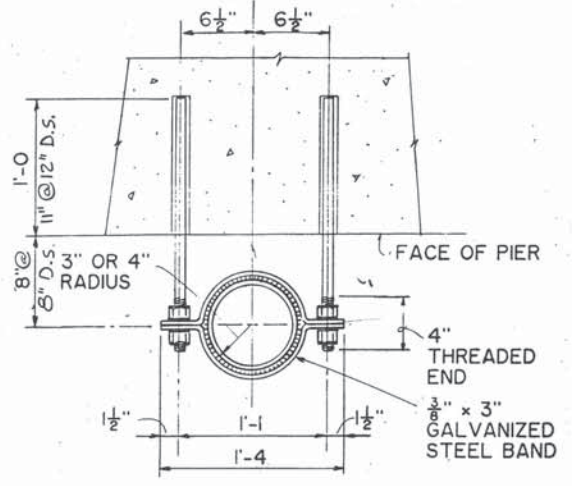
DOWN SPOUT ELEVATION AT PIER BENT PF-1

DOWN SPOUT ELEVATION AT PIER BENT PG-5

**NOTE**  
 ALL PIPE SHALL CONFORM TO ITEM 707.17 POLYVINYL CHLORIDE PLASTIC PIPE. ALL SPECIALS AND SUPPORT STEEL SHALL BE INCLUDED WITH ITEM 518 FOR PAYMENT WITH DOWN SPOUT. SUPPORT STEEL SHALL BE A588 UNPAINTED.

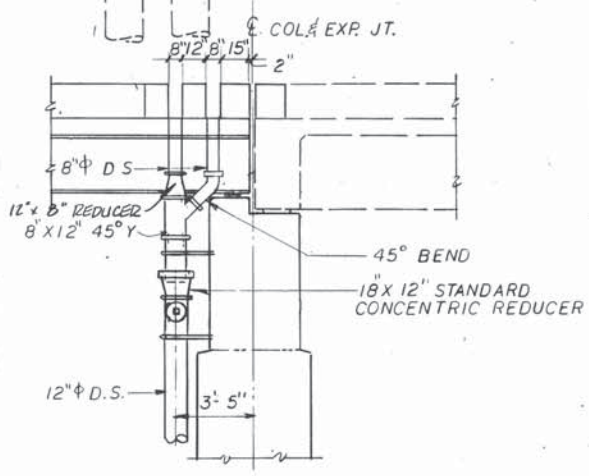
DOWN SPOUT SCHEDULE				
LOCATION	GUTTER ELEV.	INV. EL.	12" PIPE	8" PIPE
PIER PF1	623.07	580.00	83 LF	7 LF
PIER PG5	616.05	576.90	-	69 LF
<b>TOTAL</b>			<b>83 LF</b>	<b>76 LF</b>

NEW C.B. & STORM SEWER SEE SHEET 11 OF 71 FOR DETAILS

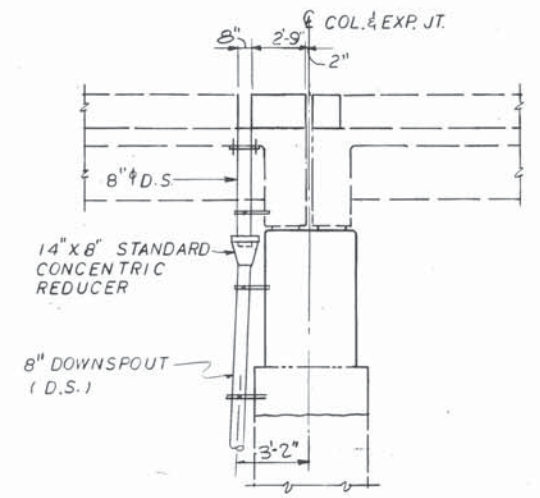


DRILL 1 1/2\"/>
 USE EPOXY GROUT (SS 852) AT 1\"/>

TYPICAL PIPE HANGER DETAIL



SECTION A  
 52/52



SECTION B  
 52/52

THE OSBORN ENGINEERING COMPANY 92/96  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER

DOWN SPOUT ELEV. & DETAILS  
 EAGLE AVENUE VIADUCT OVER CHESTER  
 G.C.R.T.A. AND CANAL ROAD-PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1-0099M  
 CLEVELAND CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
MR	JMP		WJ	KP	10/90	

MARK	NO. REQUIRED	LENGTH	TYPE	DIMENSIONS					SERIES INCR.	WEIGHT LBS.
				A	B	C	D	E		
				DECK SLAB						
D501	33	4'-3"	STR						146	
D502	28	15'-0"	STR						438	
D503	12	14'-6"	STR						181	
D504	10	7'-0"	STR						73	
D505	20	6'-4"	STR						132	
D506	5	9'-8"	STR						50	
D507	74	24'-7"	STR						1897	
D508	36	28'-8"	STR						1076	
D509	12	8'-10"	STR						111	
D510	132	10'-1"	STR						4388	
D511	NOT USED									
D512	14	9'-10"	STR						144	
D513	166	30'-0"	STR						5194	
D514	NOT USED									
D515	NOT USED									
D516	78	6'-10"	STR						556	
D517	64	6'-4"	STR						423	
D518	44	2'-4"	STR						979	
D519	33	3'-6"	STR						120	
D520	18	10'-7"	STR						199	
D521	5	8'-9"	STR						46	
D522	10	7'-6"	STR						78	
D523	10	28'-0"	STR						292	
D524	NOT USED									
D525	NOT USED									
D526	NOT USED									
D527	NOT USED									
D528	22	11'-7"	STR						266	
D529	NOT USED									
D530	3	6'-0"	STR						19	
D531	NOT USED									
D532	NOT USED									
D533	NOT USED									
D534	NOT USED									
D535	2-SER 19=38	9'-10" 8'-7"	STR					2"	325	
D536	NOT USED									
D537	31	5'-10"	STR						189	
D538	22	12'-4"	STR						283	
D539	7	3'-10"	STR						28	
D540	NOT USED									
D541	NOT USED									
D542	NOT USED									
D543	7	4'-7"	STR						33	
D544	8	2'-10"	STR						24	
D545	14	4'-0"	STR						58	
D546	2-SER 6=12	16'-4" 14'-4"	STR						192	
D547	12	6'-2"	STR						77	
D548	NOT USED									
D549	6	11'-0"	STR						69	
									TOTAL	15086
D601	NOT USED									
D602	20	8'-10"	STR						265	
D603	2-SER 14=28	13'-6" 12'-5"	STR					1"	545	
D604	2-SER 15=30	8'-7" 8'-3"	STR					1 1/2"	267	
D605	16	4'-10"	STR						116	
D606	14	9'-10"	STR						207	
D607	66	5'-0"	STR						496	
D608	25	9'-0"	STR						338	
D609	NOT USED									
D610	NOT USED									
D611	25	8'-2"	STR						307	
D612	54	5'-2"	STR						419	
D613	158	30'-0"	STR						7120	
D614	54	6'-0"	STR						487	
D615	230	5'-8"	4.	4'-10"	1'-0"				1959	
D616	88	6'-6"	STR						859	
D617	NOT USED									
D618	32	9'-4"	STR						448	
D619	14	7'-6"	STR						158	

MARK	NO. REQUIRED	LENGTH	TYPE	DIMENSIONS					SERIES INCR.	WEIGHT LBS.
				A	B	C	D	E		
D620	NOT USED									
D621	NOT USED									
D622	64	21'-6"	STR						2067	
D623	2-SER 20=40	10'-8" 10'-4"	STR					1"	593	
D624	2-SER 15=30	4'-10" 4'-0"	STR					1/2"	199	
D625	90	5'-10"	STR						788	
D626	142	10'-6"	STR						2239	
D627	14	27'-0"	STR						568	
D628	NOT USED									
D629	8	6'-0"	STR						72	
D630	230	9'-3"	STR						3196	
D631	30	5'-6"	STR						248	
D632	2	4'-11"	STR						15	
D633	12	15'-7"	STR						281	
D634	16	21'-10"	STR						525	
									TOTAL	24782

CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II

BAR SIZE	TOP BARS	OTHER BARS
#4	1'-10"	1'-4"
#5	2'-5"	1'-8"
#6	2'-10"	2'-0"
#7	3'-7"	2'-7"
#8	4'-9"	3'-5"
#9	6'-0"	4'-3"
#10	7'-8"	5'-6"

- NOTES:
- REINFORCING STEEL SAMPLES  
REFER TO CMS SECTIONS 106.03, 700, 709.01 THROUGH 709.05 AND 709.08. SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING. RANDOM SAMPLES SHALL BE REPLACED IN THE STRUCTURE BY THE ADDITIONAL STEEL, SPLICED IN ACCORDANCE WITH 509.08.
  - ALL DIMENSIONS ARE OUT TO OUT.
  - "STR." IN THE "TYPE" COLUMN INDICATES STRAIGHT BARS.
  - REFER TO CMS SECTION 509.05 FOR STANDARD BEND DIMENSIONS.
  - ALL REINFORCING STEEL SHOWN SHALL BE EPOXY COATED.

THE OSBORN ENGINEERING COMPANY 153/56					
ROBERT P. MADISON INTERNATIONAL, INC. (M&E) CONSULTING ENGINEERS CLEVELAND, OHIO 44114					
CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION CUYAHOGA COUNTY ENGINEER					
REINFORCING SCHEDULE					
EAGLE AVENUE VIADUCT OVER CHESAPEAKE, G.C.R.T.A. AND CANAL ROAD-PHASE II CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M, CLEVELAND, CUYAHOGA COUNTY OHIO					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
MP	SD		RW		10/18/90



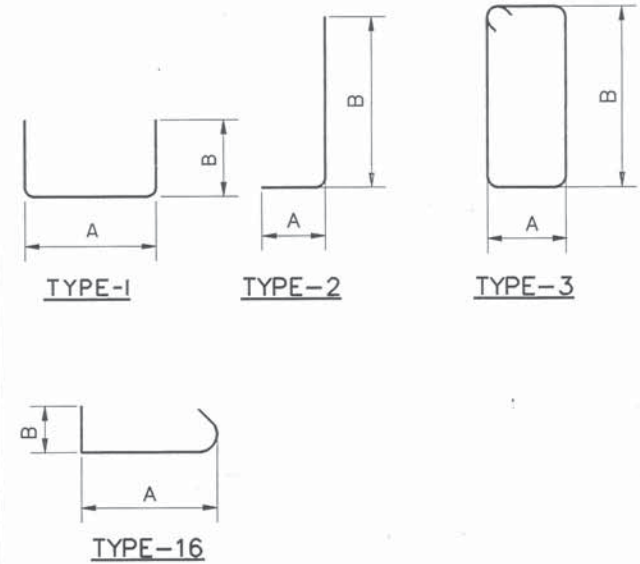
MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT	A	B	C	D
PIER PFI									
IPF1101	16	17'-4	2		1,473	2'-0	15'-8		
IPF1102	40	15'-8	STR.		3330				
IPF1001	6	26'-6	STR.		684				
IPF1002	18	15'-2	2		1175	2'-2	13'-4		
IPF1003	9	42'-0	STR.		1627				
IPF501	148	10'-3	1		1582	2'-6	4'-0		
IPF502	10	5'-3	1		55	3'-8	0'-11		
IPF503	35	5'-5	1		198	1'-8	2'-0		
IPF504	6	18'-0	STR.		113				
IPF505	4	25'-8	STR.		107				
					1627				
IPF401	30	19'-5	3		390	4'-8	4'-8		
IPF402	120	5'-8	16		454	4'-8	0'-8		
IPF403	20	22'-6	STR.		301				
					TOTAL WEIGHT UNCOATED =	13,116			
PIER PGI									
IPG1001	9	31'-0	STR.		1201				
IPG901	7	12'-11	1		307	2'-7	10'-7		
IPG902	7	13'-9	1		327	2'-7	11'-5		
IPG501	68	10'-3	1		727	2'-6	4'-0		
IPG502	35	5'-3	1		192	1'-6	2'-0		
IPG503	6	17'-6	STR.		110				
IPG504	4	16'-0	STR.		67				
IPG401	20	19'-5	3		261	4'-8	4'-8		
IPG402	80	5'-8	16		303	4'-8	0'-8		
IPG403	20	17'-9	STR.		237				
IPG404	5	5'-4	1		18	3'-6	1'-0		
					TOTAL WEIGHT UNCOATED =	3,750			
PIER PG5									
5PG901	10	32'-0	STR.		1088				
5PG902	16	12'-8	2		689	4'-8	0'-8		
5PG903	44	11'-4	STR.		1695				
5PG801	8	14'-2	2		303	1'-4	13'-0		
5PG802	8	12'-8	2		271	1'-4	11'-6		
5PG501	4	15'-0	STR.		63				
5PG502	56	10'-3	1		599	2'-6	4'-0		
5PG401	22	19'-10	3		291	4'-6	5'-2		
5PG402	44	6'-2	16		181	5'-2	0'-8		
5PG403	44	5'-6	16		161	4'-6	0'-8		
5PG404	20	18'-6	STR.		249				

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT	A	B	C	D
PIER PG5 CONTINUED									
5PG405	5	5'-4	1		18	3'-6	1'-0		
					TOTAL WEIGHT UNCOATED =	5,608			
PIER PGII									
IIPG901	10	32'-0	STR.		1088				
IIPG902	16	12'-8	2		689	1'-7	11'-4		
IIPG903	44	11'-4	STR.		1695		1'-0"		
IIPG801	8	14'-2	2		303	1'-4	13'-0		
IIPG802	8	12'-8	2		271	1'-4	11'-6		
IIPG501	4	15'-0	STR.		63				
IIPG502	56	10'-3	1		599	2'-6	4'-0		
DB01	23	5'-7"	12		343	3'-9"	1'-0"		
DB01	23	5'-7"	12		343	3'-9"	1'-0"		
IIPG401	22	19'-10	3		291	4'-6	5'-2		
IIPG402	44	6'-2	16		181	5'-2	0'-8		
IIPG403	44	5'-6	16		162	4'-6	0'-8		
IIPG404	20	18'-6	STR.		247				
IIPG405	5	5'-4	1		18	3'-6	1'-0		
					TOTAL WEIGHT UNCOATED =	6,293			

DESIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_ DATE: \_\_\_\_\_

CALC. BY: _____	DE-0025(802)	OHIO	67
DATE: _____		F.H.W.A. 5	71
CHECKED BY: _____		REGION	
DATE: _____			

CUYAHOGA COUNTY  
 EAGLE AVENUE - PHASE II



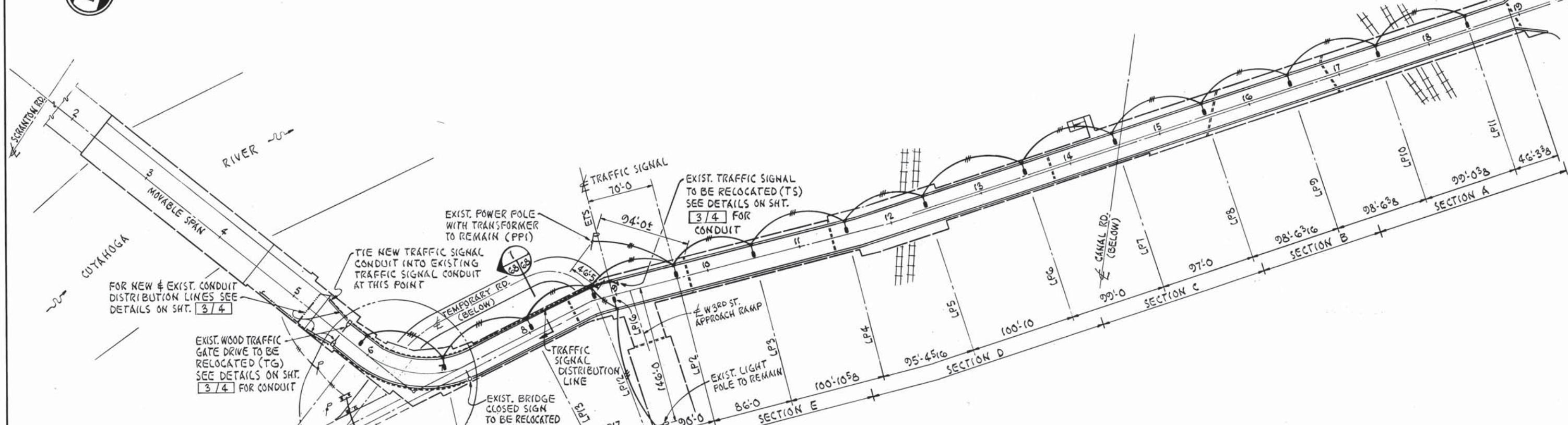
THE OSBORN ENGINEERING COMPANY 55/56  
 ROBERT P. MADISON INTERNATIONAL, INC. (MBE)  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114

CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER

REINFORCEMENT SCHEDULE

EAGLE AVENUE VIADUCT OVER CHESSIE,  
 G.C.P.T.A. AND CANAL ROAD-PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1409M  
 CLEVELAND CUYAHOGA COUNTY OHIO

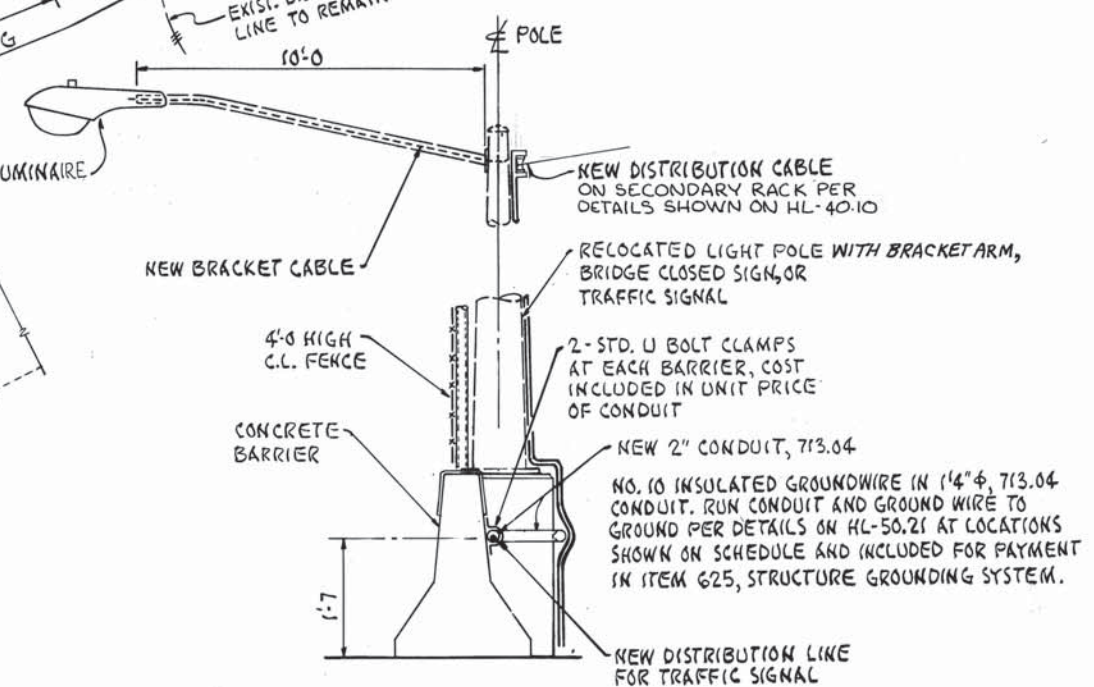
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JRS		JIM S.	LH	R.S.	10-90	



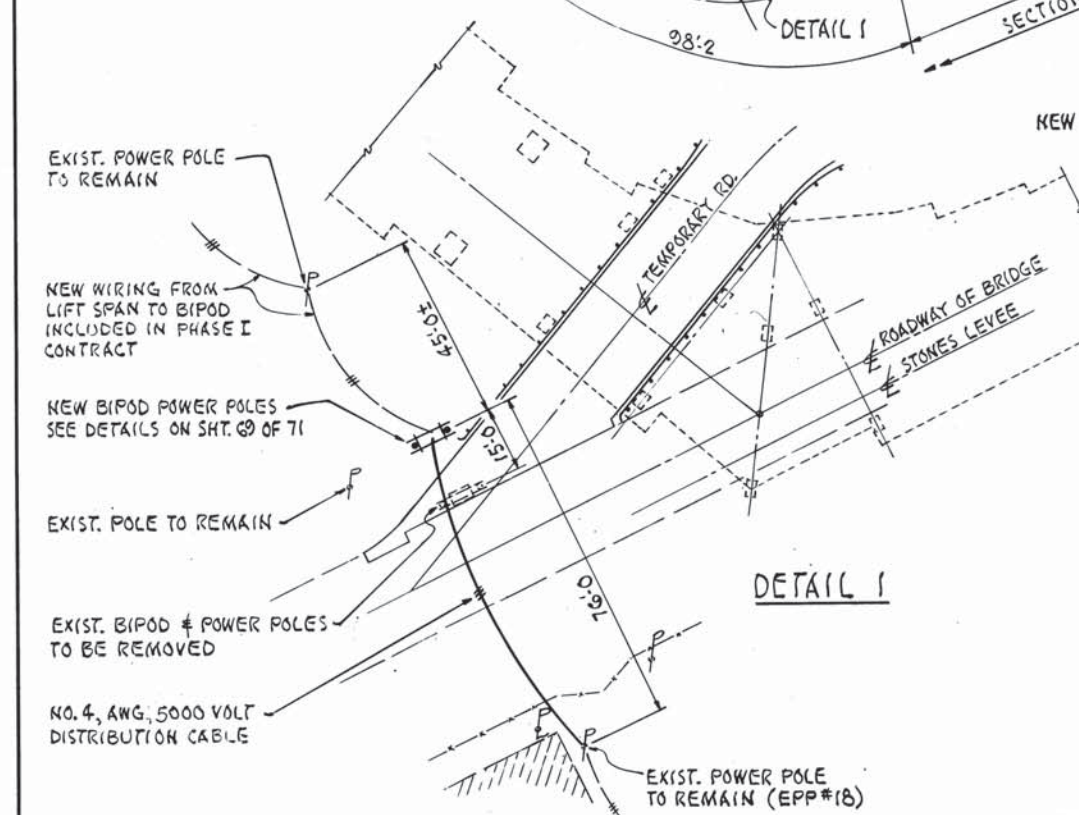
**LIGHTING PLAN**

**LEGEND:**

- EXISTING DISTRIBUTION CABLE.
- PROPOSED DISTRIBUTION CABLE.
- EXISTING LIGHT POLE TO REMAIN.
- RELOCATED LIGHT POLE WITH NEW 250 WATT HIGH PRESSURE SODIUM LUMINAIRE W/PHOTOCELL.
- EXISTING POWER POLE.
- EXISTING BIPOD AND POWER POLES TO BE REMOVED.
- NEW BIPOD AND POWER POLES.
- EXISTING TRAFFIC SIGNAL TO BE RELOCATED.
- EXISTING BRIDGE CLOSED SIGN TO BE RELOCATED.
- EXISTING WOOD TRAFFIC GATE DRIVE TO BE RELOCATED.
- NEW DISTRIBUTION LINE FOR RELOCATED TRAFFIC SIGNAL, BRIDGE CLOSED SIGN AND WOOD GATE DRIVE.
- EXIST. DISTRIBUTION LINE TO REMAIN



**TYPICAL BARRIER SECTION AT TRAFFIC SIGNAL**

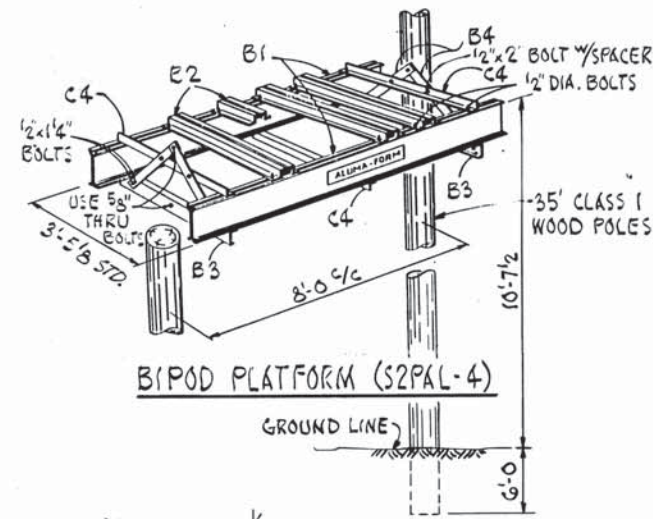


**DETAIL 1**

**THE OSBORN ENGINEERING COMPANY** 1/4  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER

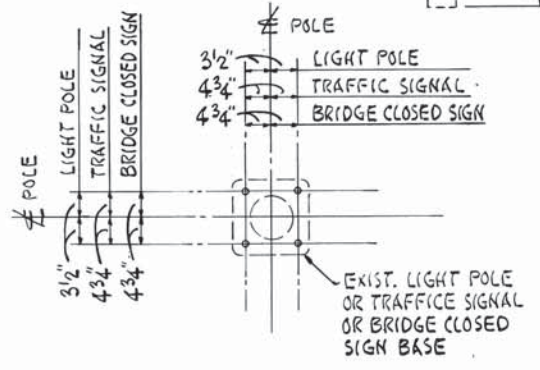
**LIGHTING PLANS**  
 EAGLE AVENUE VIADUCT OVER CHESSE, G.C.R.T.A. AND CANAL ROAD-PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M  
 CLEVELAND CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
EP	LEBRON BEUL		D.S.	R	10/94	



BILL OF MATERIALS		
ITEM	NO. REQ'D	MATERIAL FURNISHED
B1	2	8" ALUM. BEAM
B2	4	ALUM. CHANNEL, 41'8" LONG
B3	2	ALUM. CHANNEL, 41'8" LONG
B4	4	5/16" x 2 3/4" ALUM. BRACE
C1	3	ALUM. ANGLES (STABILIZER)
C2	2	5/16" ALUM. SPACERS
	36	1/2" x 1 1/4" GALV. MACHINE BOLTS WITH HEX NUTS
	2	1/2" x 2" GALV. MACHINE BOLTS WITH HEX NUTS
	38	1/2" GALV. MF LOCKNUTS
MATERIAL NOT FURNISHED THRU BOLTS, WOOD MEMBERS		

- NOTES:
- 12' CLEARANCE TO BOTTOM OF PLATFORM.
  - TRANSFORMER TIE DOWN KIT CAT. NO. 50417 REQ'D.



TYPICAL ANCHOR BOLT ARRANGEMENT DETAIL

SPECIFICATIONS

THESE NOTES ARE SUPPLEMENTAL TO ITEM 625 AND 713 OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS LISTED ON THE TITLE SHEET OF THESE PLANS.

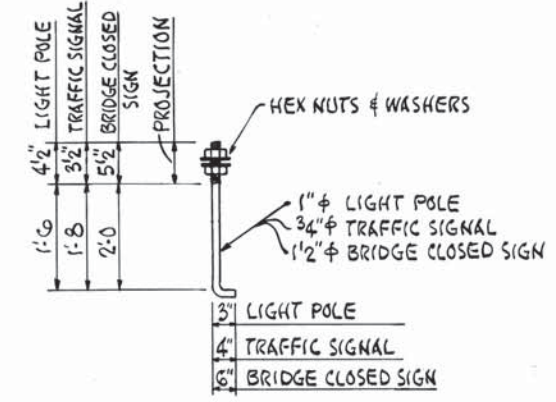
625.03 GENERAL

THE POWER SUPPLYING AGENCY FOR THE BRIDGE LIGHTING AND BIPOD WORK BELOW THE BRIDGE ON THIS PROJECT IS:

CLEVELAND PUBLIC POWER  
 1201 LAKESIDE AVENUE  
 CLEVELAND, OHIO 44114  
 PHONE: (216) 664-3922

THE EAGLE AVENUE BRIDGE LIGHTING CIRCUITRY IS DESIGNED ON THE BASIS OF A 5% MAXIMUM VOLTAGE DROP WITH A NO. 4 CIRCUIT CABLE. POWER FOR THIS BRIDGE WILL BE PROVIDED FROM A TRANSFORMER ON EXISTING POWER POLE NUMBER ONE LOCATED NORTH OF THE INTERSECTION OF WEST 3RD STREET AND STONES LEVEE ROAD AS SHOWN ON SHEET 68 OF 71. CLEVELAND PUBLIC POWER WILL INSTALL A NEW TRANSFORMER ON THE NEW BIPOD AFTER IT IS INSTALLED AND THE CONTRACTOR WILL THEN MAKE THE CONNECTIONS TO THE NEW TRANSFORMER AS SHOWN ON THE PLAN PRIOR TO REMOVING THE EXISTING BIPOD AND WIRING. POWER WILL BE SHUT OFF BY CLEVELAND PUBLIC POWER DURING THIS TIME WHICH WILL BE HELD TO A MINIMUM.

THE CONTRACTOR SHALL CONTACT CLEVELAND PUBLIC POWER FOR ADDITIONAL INFORMATION AS TO EXACT TIME PERIODS FOR MAKING THE TAP-IN. THE PROPOSED LIGHTING ON EAGLE AVE. WILL BE SERVICED BY 120/240 VOLTS, THREE-WIRE, GROUNDED NEUTRAL LINE.



TYPICAL LIGHT POLE & TRAFFIC SIGNAL ANCHOR BOLT DETAIL

UNDERGROUND UTILITIES

THE LOCATIONS OF UNDERGROUND SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITIES AS REQUIRED BY SECTION 153.63 OF THE C.M.S. UTILITIES SHALL BE NOTIFIED TWO DAYS PRIOR TO COMMENCING CONSTRUCTION AS CALLED FOR IN THE C.M.S. SEE SHEET 4 OF 71 FOR LIST OF UTILITIES.

ITEM 625, CABLE SPLICING KIT, AS PER PLAN

THIS ITEM SHALL CONSIST OF PROVIDING AND INSTALLING AN APPROVED CABLE SPLICING KIT AS DESCRIBED IN PARAGRAPH 5 OF SECTION 713.15 OF THE O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATIONS. THE COST OF ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID EACH FOR ITEM 625, CABLE SPLICING KIT, AS PER PLAN.

CONDUIT ON THE STRUCTURE

THE EXPANSION FITTINGS FOR THE NEW CONDUIT INSTALLED BETWEEN THE EXISTING STREET LIGHT BEING RELOCATED AND THE EXISTING LIFT BRIDGE AT THE STRUCTURE EXPANSION JOINTS SHALL BE OZ TYPE AX, CROUSE-HIND TYPE XJ-4 OR EQUAL AS APPROVED BY THE ENGINEER. EACH EXPANSION FITTING SHALL HAVE A COPPER EXTERNAL BONDING JUMPER.

HIGH VOLTAGE TEST

A HIGH VOLTAGE DIRECT CURRENT TEST, AS DESCRIBED IN SUPPLEMENTAL SPECIFICATION 1003, SHALL BE PERFORMED ON ALL DISTRIBUTION CABLE TO BE INSTALLED ON THIS PROJECT. THE TEST SHALL NOT BE PERFORMED UNTIL ALL NEW CONSTRUCTION IN THE VICINITY OF THE CABLE BEING TESTED, HAS BEEN COMPLETED.

ITEM 625-LIGHT POLE L-BOLT, AS PER PLAN

ANCHOR BOLTS FOR MOUNTING RELOCATED LIGHTS POLES AND TRAFFIC SIGNALS ON THE NEW CAST IN PLACE BASES ON THE STRUCTURE SHALL CONFORM TO THE REQUIREMENTS OF 713.01 AND DETAILS SHOWN ON THE PLANS AND STANDARD DRAWINGS, FOR THE RESPECTIVE POLES TO BE PLACED THEREON. PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ONE RELOCATED LIGHT OR SIGNAL POLE AND THIS PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING AND PLACING THE BOLTS.

ITEM 625-LUMINAIRE STYLE B, TYPE III, 250 WATT, HIGH PRESSURE SODIUM 713.11, 240 VOLT, AS PER PLAN

STYLE B LUMINAIRE SHALL HAVE A SINGLE RATED 240 VOLT/ 250 WATT INTERNAL REGULATOR BALLASTS FOR THE USE WITH HIGH PRESSURE SODIUM LAMPS AND SHALL BE GENERAL ELECTRIC M400, CROUSE-HINDS OVM, AMERICAN 25/26 WITH PHOTOCCELL OR EQUAL APPROVED BY THE ENGINEER.

HIGH PRESSURE SODIUM LAMPS SHALL BE GENERAL ELECTRIC "LUCALUX", WESTINGHOUSE "CERAMALUX", SYLVANIA "LUMALUX" OR EQUAL APPROVED BY THE ENGINEER.

ITEM SPECIAL-REMOVE, STORE AND REERECT EXISTING TRAFFIC SIGNAL, ITEM SPECIAL-REMOVE, STORE AND REERECT EXISTING WOOD TRAFFIC GATES, ITEM SPECIAL-REMOVE AND REERECT EXISTING BRIDGE CLOSED SIGN, ITEM 625-REMOVING AND REERECTING EXISTING LIGHT POLE, AS PER PLAN.

THIS ITEM SHALL CONSIST OF REMOVING, STORING AND REINSTALLING THE EXISTING TRAFFIC SIGNAL, EXISTING BRIDGE CLOSED SIGN, TWO EXISTING WOOD TRAFFIC GATES AND FIFTEEN EXISTING LIGHT POLES AND BRACKET ARMS, AS DESCRIBED IN ITEM 625 OF THE O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATIONS. THE ENGINEER AND CONTRACTOR SHALL INSPECT ALL LIGHTS POLES, BRIDGE CLOSED SIGN, WOOD TRAFFIC GATES AND TRAFFIC SIGNAL BEING REUSED PRIOR TO THEIR REMOVAL TO INSURE THAT THEY ARE

IN GOOD CONDITION AND CAN BE REUSED. ANY OF THESE ITEMS DAMAGED DURING THE CONTRACTORS REMOVAL AND STORAGE OPERATION OR WHILE THEY ARE BEING REERECTED SHALL BE REPLACED AT NO COST TO THE STATE. THE RELOCATED BRIDGE CLOSED SIGN, LIGHTS POLES AND TRAFFIC SIGNALS SHALL BE PLACED ON NEW CAST IN PLACE BASES ON THE STRUCTURE AND THE COST OF ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY, INCLUDING INSTALLING ANCHOR BOLTS FOR ALL ITEMS EXCEPT THE WOOD TRAFFIC GATES, FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID EACH FOR ITEM SPECIAL- REMOVE, STORE AND REERECT EXISTING TRAFFIC SIGNAL, ITEM SPECIAL-REMOVE, STORE AND REERECT EXISTING WOOD TRAFFIC GATES, ITEM SPECIAL-REMOVE AND REERECT EXISTING BRIDGE CLOSED SIGN, ITEM 625- REMOVING AND REERECTING EXISTING LIGHT POLE, AS PER PLAN

ITEM SPECIAL-NEW BIPOD, TRANSFORMER BASE AND POLES

THIS ITEM SHALL CONSIST OF INSTALLING A NEW BIPOD, TRANSFORMER BASE AND POLES AS SHOWN ON THE DRAWING. CALLING CLEVELAND PUBLIC POWER BIPOD AND TRANSFORMER BASE AFTER ERECTED SO THEY CAN INSTALL THE TRANSFORMER AND COMPLETING THE WIRING TO THE EXISTING POLES AFTER THE TRANSFORMER IS INSTALLED. THIS WORK SHALL ALSO INCLUDE REMOVING AND DISPOSING OF THE EXISTING BIPOD AND POLES ONCE THE ABOVE INSTALLATION IS COMPLETE AND TURNING THE EXISTING TRANSFORMER OVER TO CLEVELAND PUBLIC POWER FOR DISPOSAL. THE COST OF ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID EACH FOR ITEM SPECIAL- NEW BIPOD, TRANSFORMER BASE AND POLES.

NOTES FOR PERFORMING ELECTRICAL ITEMS INVOLVED IN ITEM SPECIAL-REMOVE, STORE AND REERECT EXISTING TRAFFIC SIGNAL, ITEM SPECIAL-REMOVE, STORE AND REERECT EXISTING WOOD TRAFFIC GATES, ITEM SPECIAL-REMOVE AND REERECT EXISTING BRIDGE CLOSED SIGN

THE CONTRACTOR SHALL DISCONNECT AND TAG WIRING TO THE CONTROLS FOR THE TRAFFIC SIGNAL, BRIDGE CLOSED SIGN AND THE WOOD TRAFFIC GATES AND THE DRIVE UNIT FOR THE WOOD TRAFFIC GATES PRIOR TO THEIR REMOVAL FOR STORAGE. THE CONTRACTOR SHALL RECONNECT THE NEW WIRING TO MATCH THE EXISTING CONDITION AFTER REINSTALLATION.

THE CONTRACTOR SHALL REPLACE THE CONDUIT AND WIRING BETWEEN THE JUNCTION BOX AND CONTROLS ON THE EAST PIER AND THE TRAFFIC SIGNAL, BRIDGE CLOSED SIGN AND THE WOOD TRAFFIC GATES AND THE DRIVE UNIT FOR THE WOOD TRAFFIC GATES TO MATCH THE EXISTING CONDITION.

STRUCTURE GROUNDING

THE STRUCTURE SHALL BE GROUNDED AS SHOWN IN SECTION 1 ON SHEET 68 OF 71 AND ON STANDARD DRAWING HL-50.21, DATED 5/1/87 AT THE LOCATIONS SHOWN IN SUBSUMMARY, SHEET 71 OF 71. THE COST OF ALL MATERIALS AND LABOR FOR THE INSTALLATION OF CONDUIT AND GROUND WIRE FROM THE TOP OF THE POLES TO THE GROUND RODS ARE INCLUDED FOR PAYMENT IN ITEM 625, STRUCTURE GROUNDING SYSTEM.

POWER CONNECTION

THE CONTRACTOR SHALL CONNECT THE ELECTRICAL CABLES TO THE POWER SOURCE AT LOCATION SHOWN ON SHEET 68 OF 71. THE COST OF THE POWER-CONNECTING, PER DETAILS SHOWN ON STD. DWG. HL-40.10 INCLUDING WEATHERHEAD, AND OTHER EQUIPMENT NEEDED TO COMPLETE THE WORK IS INCIDENTAL AND SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF ITEM 625, DISTRIBUTION CABLE.

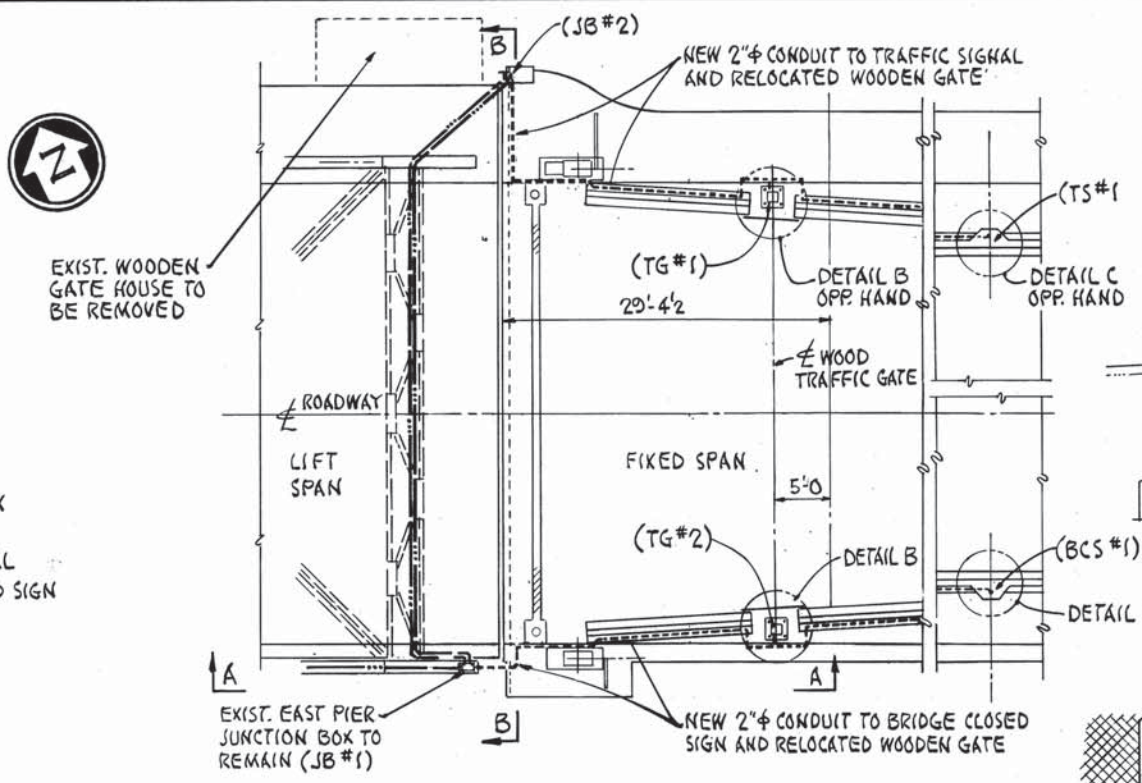
**THE OSBORN ENGINEERING COMPANY** 2/4  
 ROBERT P. MADISON INTERNATIONAL, INC.  
 CONSULTING ENGINEERS CLEVELAND, OHIO 44114  
 CITY OF CLEVELAND  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CUYAHOGA COUNTY ENGINEER

**LIGHTING GENERAL NOTES**  
 EAGLE AVENUE VIADUCT OVER CHESSEE,  
 C.C.R.T.A. AND CANAL ROAD-PHASE II  
 CITY OF CLEVELAND, CITY BRIDGE NO. 1:009M  
 CLEVELAND CUYAHOGA COUNTY OHIO

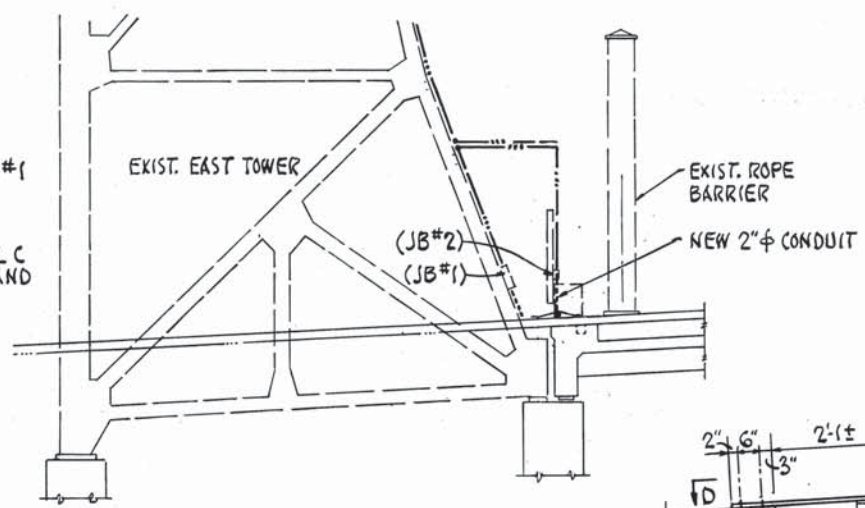
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
ED	LEBRON BELL	-	D.S.	RS	10/90	



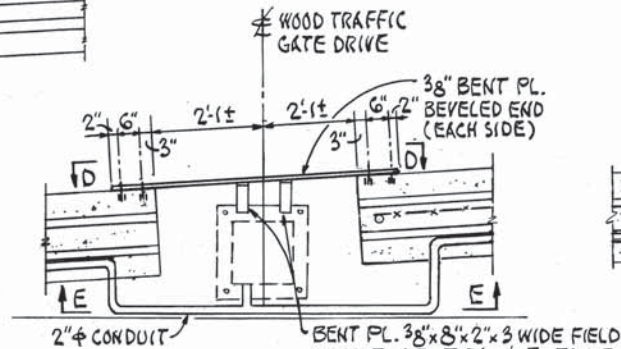
CUYAHOGA COUNTY  
EAGLE AVENUE - PHASE II



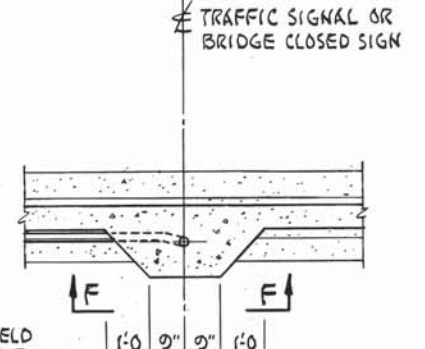
PARTIAL PLAN (AT EAST ROPE BARRIER)



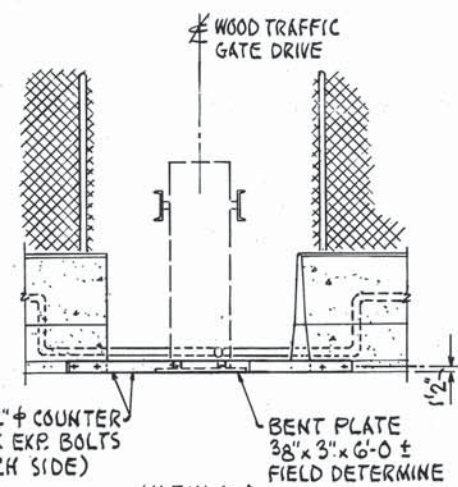
VIEW A-A



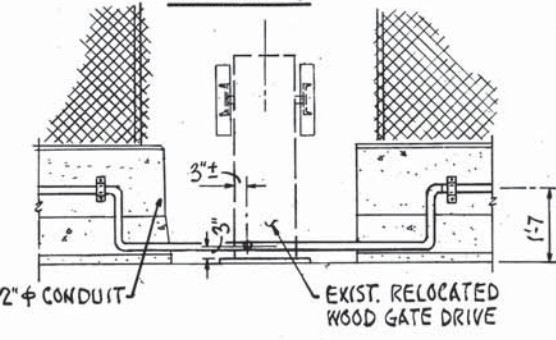
DETAIL B



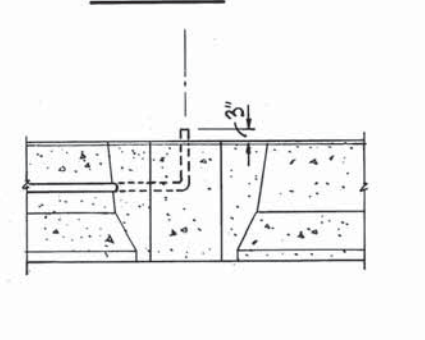
DETAIL C



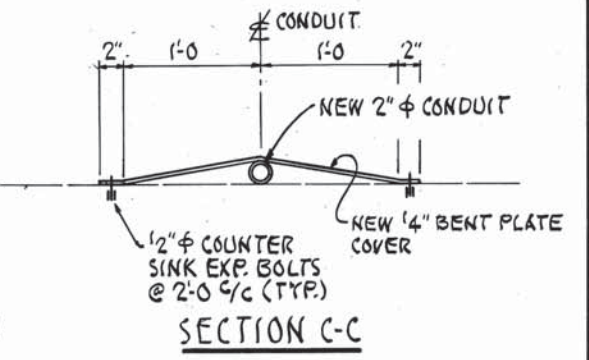
VIEW D-D



VIEW E-E

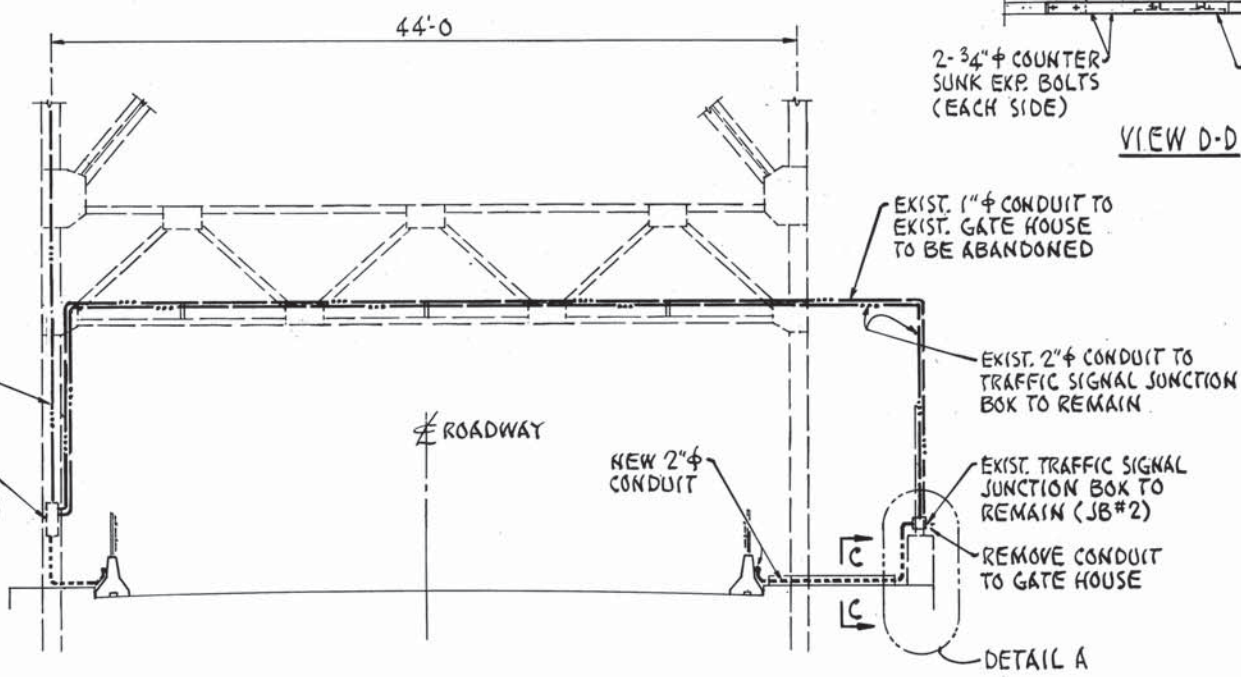


VIEW F-F

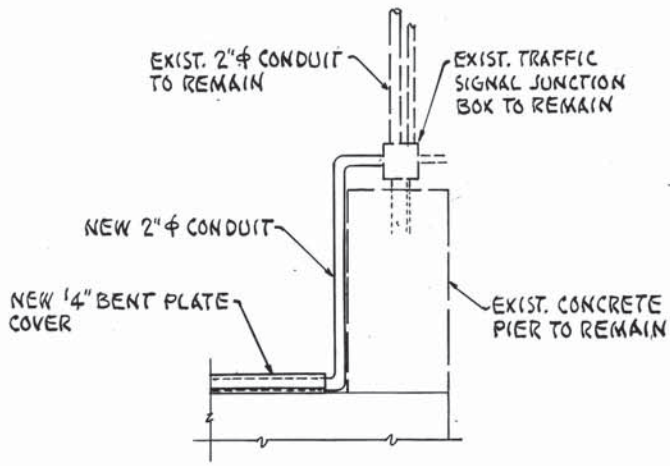


SECTION C-C

- LEGEND:
- JB JUNCTION BOX
  - TG TRAFFIC GATE
  - TS TRAFFIC SIGNAL
  - BCS BRIDGE CLOSED SIGN



VIEW B-B



DETAIL A

THE OSBORN ENGINEERING COMPANY 3/4						
ROBERT P. MADISON INTERNATIONAL, INC.						
CONSULTING ENGINEERS CLEVELAND, OHIO 44114						
CITY OF CLEVELAND						
DIVISION OF ENGINEERING AND CONSTRUCTION						
CUYAHOGA COUNTY ENGINEER						
WIRING PLANS AND DETAILS						
EAGLE AVENUE VIADUCT OVER CHESIE,						
G.C.R.T.A. AND CANAL ROAD—PHASE II						
CITY OF CLEVELAND, CITY BRIDGE NO. 1-009M						
CLEVELAND CUYAHOGA COUNTY OHIO						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
ED	LEBRON BELL	—	D.S.	R.S.	3/91	

61 Feb 200 11 30A 2004-0-00



# City of Cleveland

## Department of Public Service

### Division of Engineering and Construction

Frank G. Jackson, Mayor  
 Martin J. Sweeney, Council President

Councilman Joe Cimperman, Ward 13

Jomarie Wasik, Interim Director  
 Department of Public Service

## Eagle Avenue Pedestrian Access Way Reconstruction from Canal Road to Ontario Road

Index of Sheets

Title Sheet	1
Site Plan & Profile	2
Drainage Details	3
Stair Tower Details	4
CB-1.1	5

STANDARD CONSTRUCTION DRAWINGS

ODOT	COUNTY	CITY
CB-1.1		



Location Map  
 Not to Scale  
 Eagle Avenue Viaduct

Project Description

Reconstruction of the Eagle Avenue Pedestrian Access Way between Canal Road/Stones Levee at the East Bank Flats to Ontario Road at the Quiken Loans Arena Level. Work includes constructing a zebra crossing at Canal Road, an eight foot wide sidewalk up the hillside to the top of embankment at the GCRTA track level, a 3-story structural steel staircase rising from this embankment against the pier face to the top of the remnant of the Eagle Avenue Viaduct which spans over the GCRTA and Pier Restoration.

2005 Specifications

The Standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will not require the closing of Canal Road to vehicular traffic and that provisions for the maintenance and safety of traffic will be as set forth on the plans.

*Randall E. DeVaul* 2/16/05  
 Date  
 Randall E. DeVaul, P.E., Commissioner  
 Division of Engineering and Construction

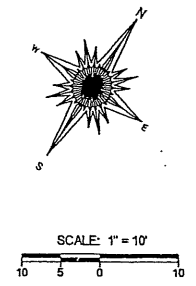
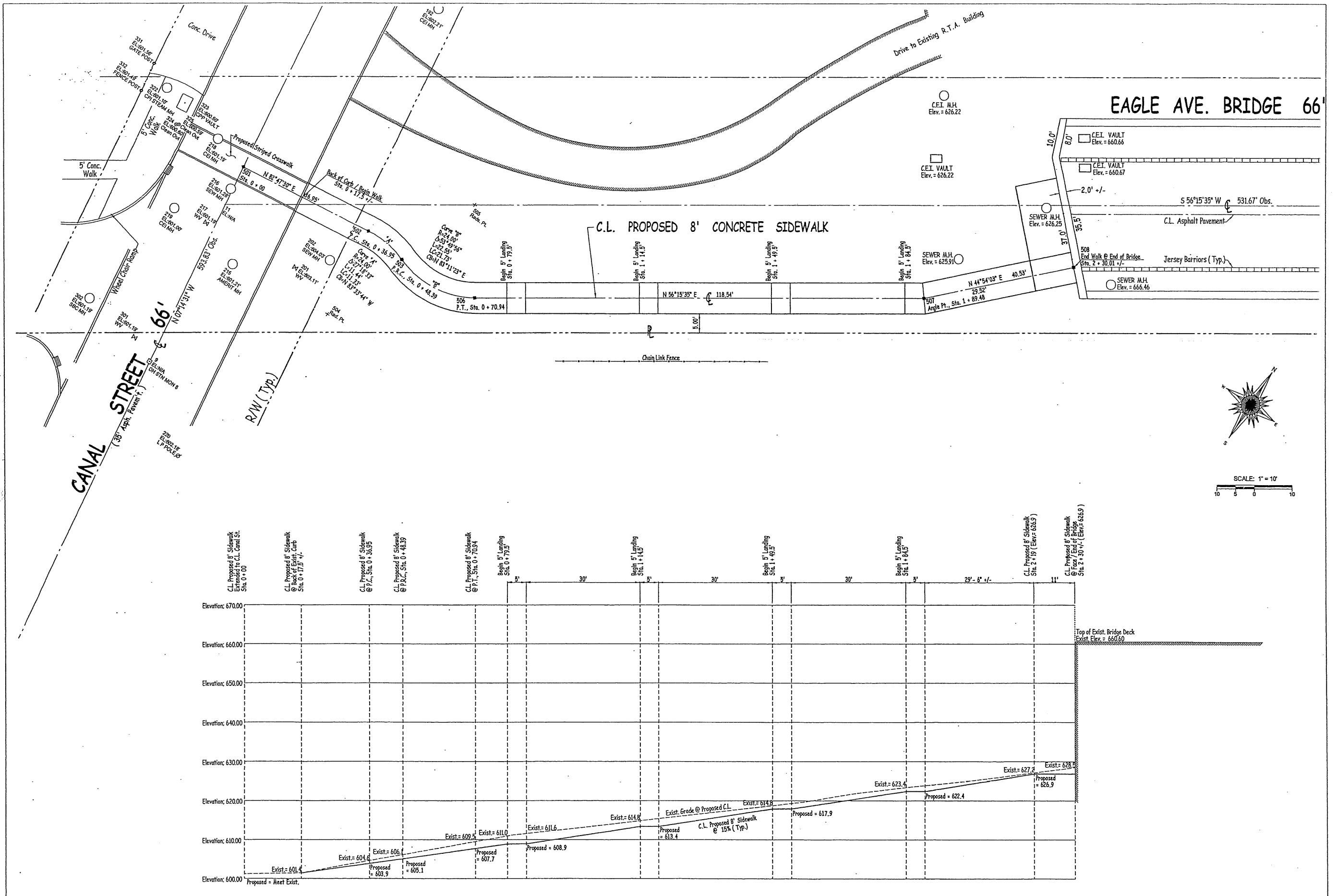
*Rob Mavec* 02-21/06  
 Date  
 Rob Mavec, Commissioner  
 Division of Traffic Engineering

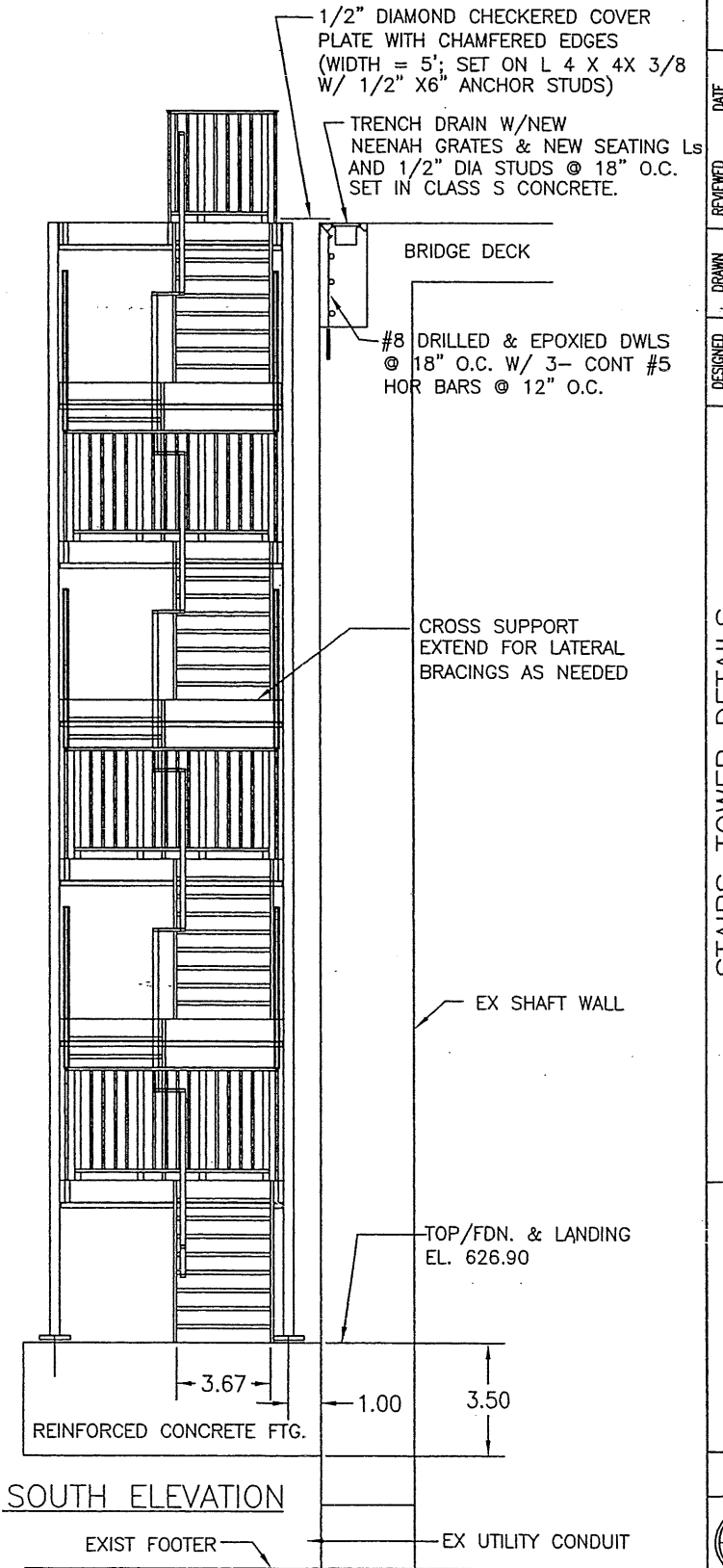
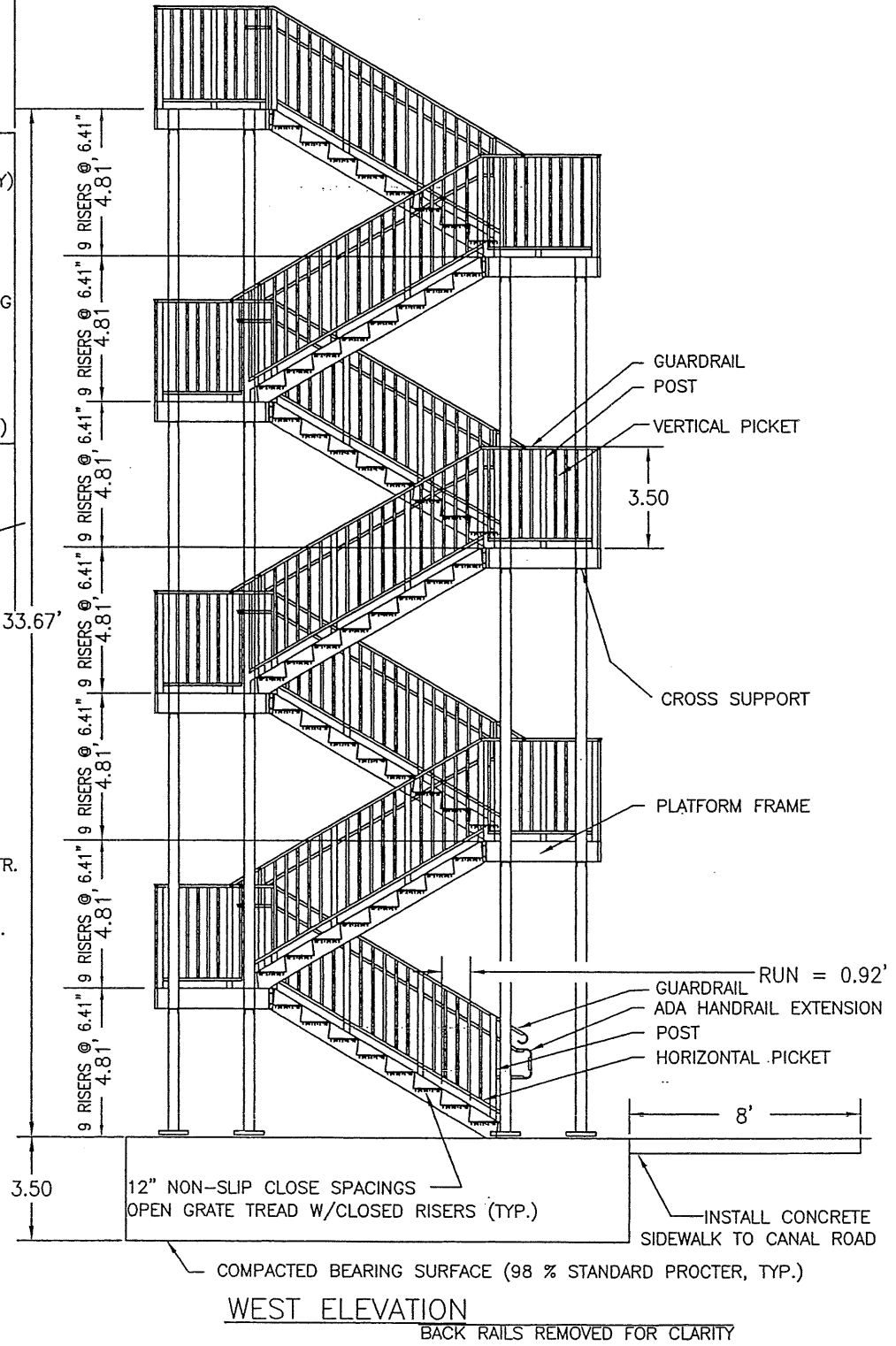
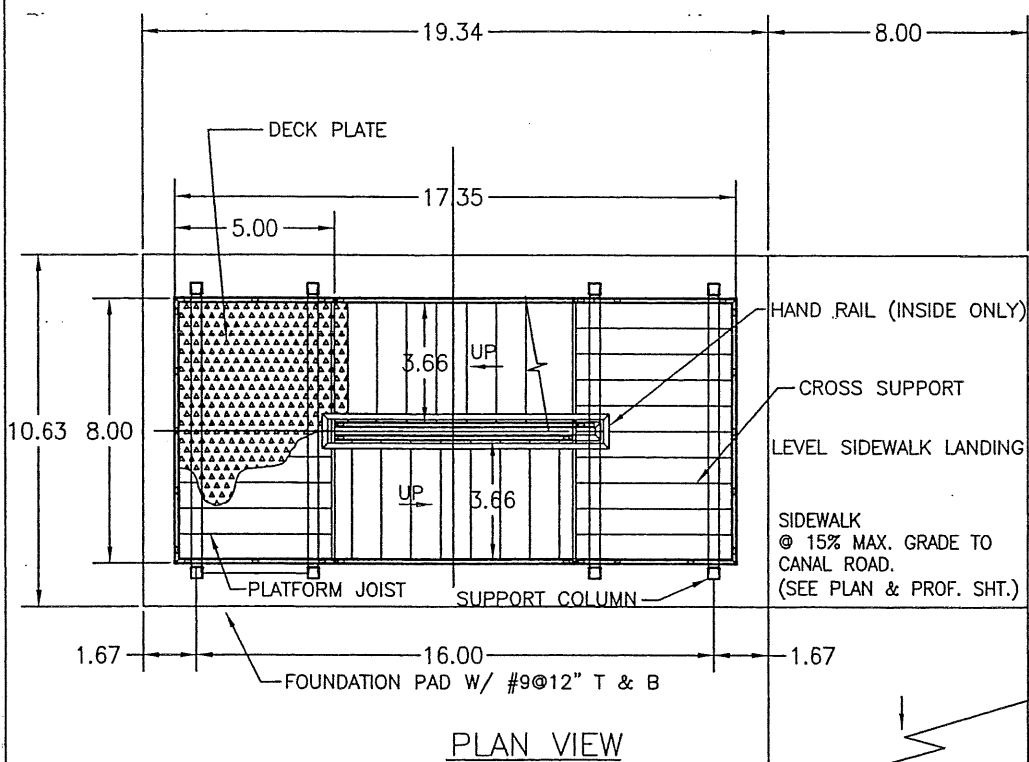
*Rick Colombo* 2/21/06  
 Date  
 Rick Colombo, Chief Construction Inspector  
 Division of Engineering and Construction

*Larry Ho* 2/21/06  
 Date  
 Larry Ho, P.E., Project Manager  
 Division of Engineering and Construction

**UNDERGROUND UTILITIES**  
 2 WORKING DAYS  
**BEFORE YOU DIG**  
 CALL 1.800.362.2764 (TOLL FREE)  
 OHIO UTILITIES PROTECTION SERVICE  
 NON-MEMBERS  
 MUST BE CALLED DIRECTLY  
 CALL 1.800.925.0988 (TOLL FREE)  
 OIL AND GAS PRODUCERS  
 UNDERGROUND PROTECTION SERVICE

PLANS PREPARED BY :  
 CITY OF CLEVELAND  
 DEPARTMENT OF PUBLIC SERVICE  
 DIVISION OF ENGINEERING AND CONSTRUCTION  
 CITY HALL, 601 LAKESIDE AVENUE, ROOM 518  
 CLEVELAND, OH - 44114





**NOTES:**

1. INSTALL PREPACKAGED DESIGN/BUILD IBC 2003 COMPLAINT FREE STANDING GALV. STEEL STAIR TOWER
2. DESIGN FOUNDATION BEARING PRESSURE = 3000 PSF
3. DESIGN WIND = 90 MPH
4. LIST ALL DESIGN REACTIONS ON SHOP DRAWINGS
5. ANCHOR BOLTS DESIGNED AND FURNISHED AS PART OF STAIR TOWER DESIGN, INSTALLED BY CONC. CONTR.
6. INCLUDE SHOP DETAILS FOR DECK PLATE THAT BRIDGES TOP LANDING AND EXIST BRIDGE DECK.
7. STAIRS TOWER PRICE TO INCLUDE BUT NOT LIMITED TO ALL ITEMS LISTED ABOVE
8. COLUMN LATERAL BRACES (WITH PROVISIONS FOR VERT. MOVEMENT) AGAINST SHAFT WALL ARE PERMITTED.
9. REWORK FENCE AT TOP LANDING TO INCLUDE WELDED END POSTS & ANCHORED CORNER POSTS.
10. THE ENGINEER WILL MARK THE AREAS OF THE EXISTING CONCRETE PIER SHAFT THAT WILL REQUIRE PATCHING. A QUANTITY OF 700 S.F. IS ALLOCATED FOR FULL DEPTH PATCHING. A QUANTITY OF 300 S.F. IS ALLOCATED FOR PARTIAL DEPTH PATCHING. THE CONTRACTOR WILL BE PAID FOR THE ACTUAL S.F. INSTALLED.
11. PROVIDE 1/2" P.E.J.F. TO ISOLATE EXIST. MANHOLE FROM THE NEW FOUNDATION PAD. THIS ITEM IS INCIDENTAL TO ITEM 511.

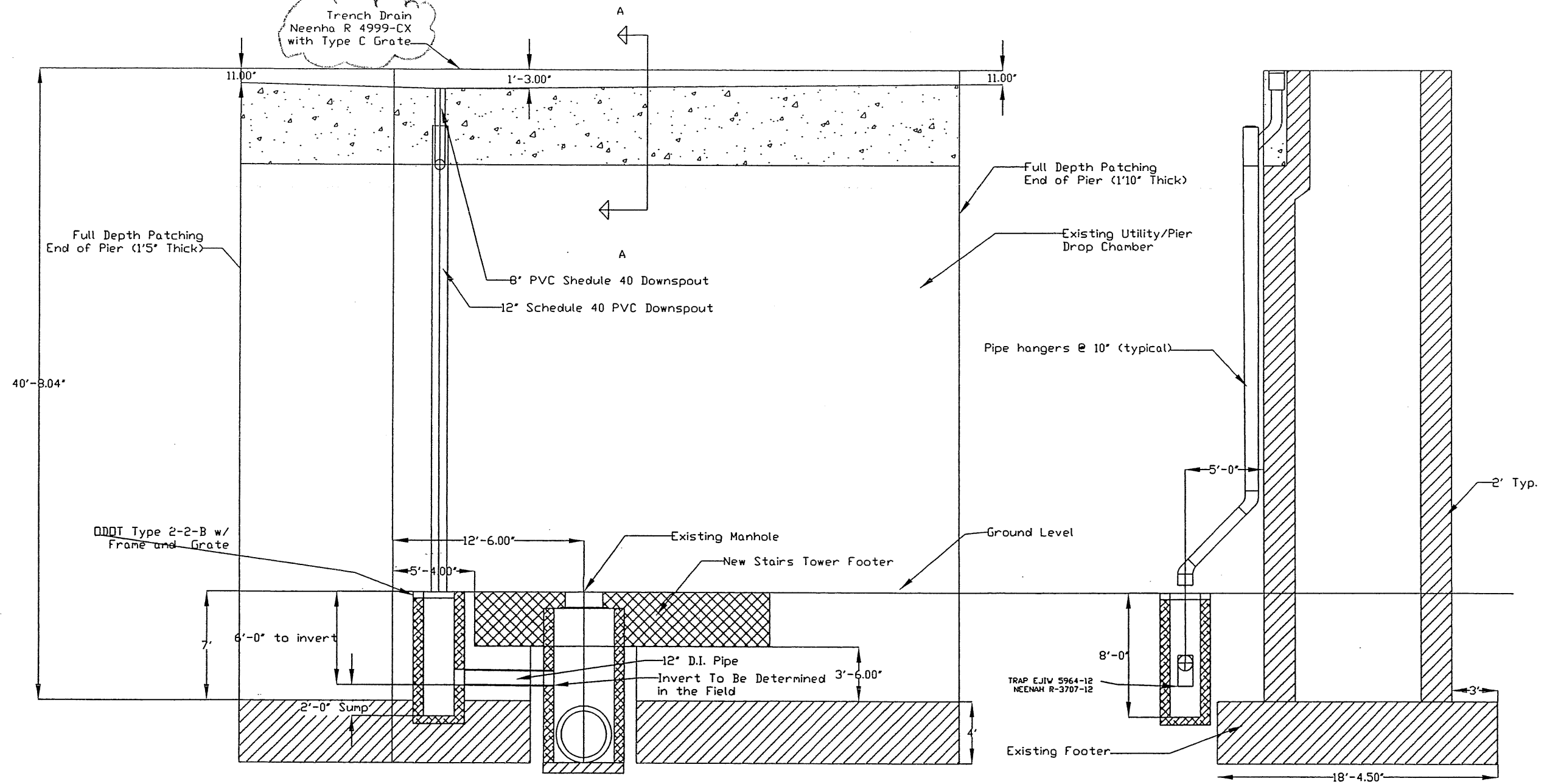
**STRUCTURE GROUNDING SYSTEM:**

ALL NEW FENCE INSTALLATIONS AND STAIRS TOWER SHALL BE GROUNDED OR CONNECTED TO EXISTING GROUNDED SYSTEM PER DETAILS COMPATIBLE WITH STANDARD DRAWING HL-50.21. GROUNDING SYSTEMS ARE INCIDENTAL TO THEIR RESPECTIVE PAY ITEMS.

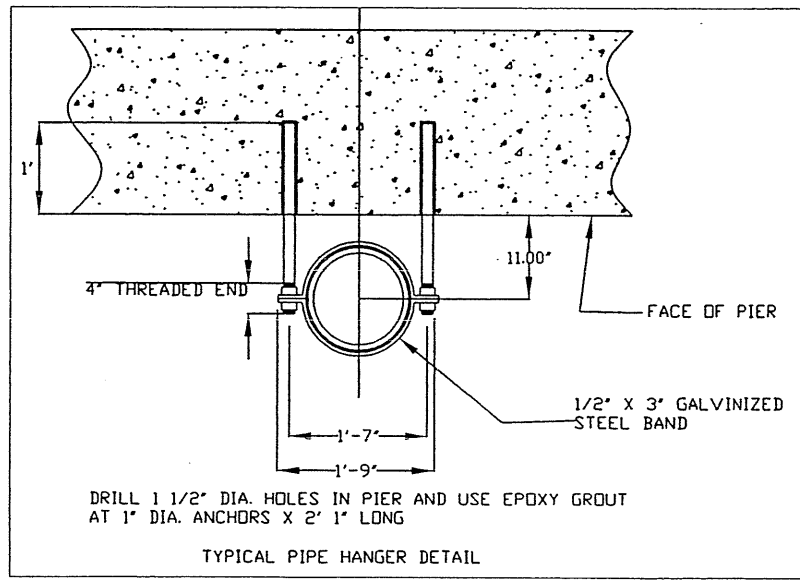
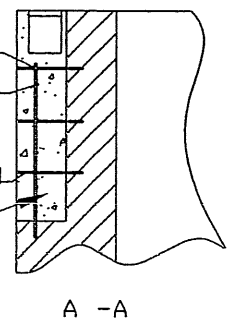
[C:\PUBLIC IMPROVEMENT PROJECTS\IMGS\BRIDGE\STAIRS TOWER DETAILS.dwg] 4/17/2005 2:53pm

DESIGN AGENCY <b>CITY OF CLEVELAND</b>	DATE 1-5-06	REVIEWED RED	DATE 1-5-06	DESIGNED LH	STRUCTURE FILE NUMBER 1870157
PROJECT <b>STAIRS TOWER DETAILS</b>	PROJECT CUY-EAGLE AVENUE VIADUCT OVER CSX RAILROAD, CANAL ROAD, STONES LEEVE ROAD AND GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY DRIVE	DESIGNED LH	CHECKED JED	DRAWN LH	REVIEWED
PROJECT <b>PEDESTRIAN ACCESSWAY</b>	PROJECT CUY-EAGLE AVENUE VIADUCT OVER CSX RAILROAD, CANAL ROAD, STONES LEEVE ROAD AND GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY DRIVE	DESIGNED LH	CHECKED JED	DRAWN LH	REVIEWED
PROJECT <b>1</b>	PROJECT CUY-EAGLE AVENUE VIADUCT OVER CSX RAILROAD, CANAL ROAD, STONES LEEVE ROAD AND GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY DRIVE	DESIGNED LH	CHECKED JED	DRAWN LH	REVIEWED

OK to use 12" D.I. pipe



# 8 Dowels drilled and epoxied @ 18" o.c.  
 #5 horizontal reinforcement bars @ 12" o.c.  
 #5 reinforcing bars @ 18" o.c. drilled and epoxied  
 New Concrete



# CITY OF CLEVELAND

ENGINEERING AND CONSTRUCTION DIVISION  
 EAGLE AVE. PEDESTRIAN ACCESSWAY

TRENCH DRAIN, DOWNSPOUT AND DRAINAGE DETAILS

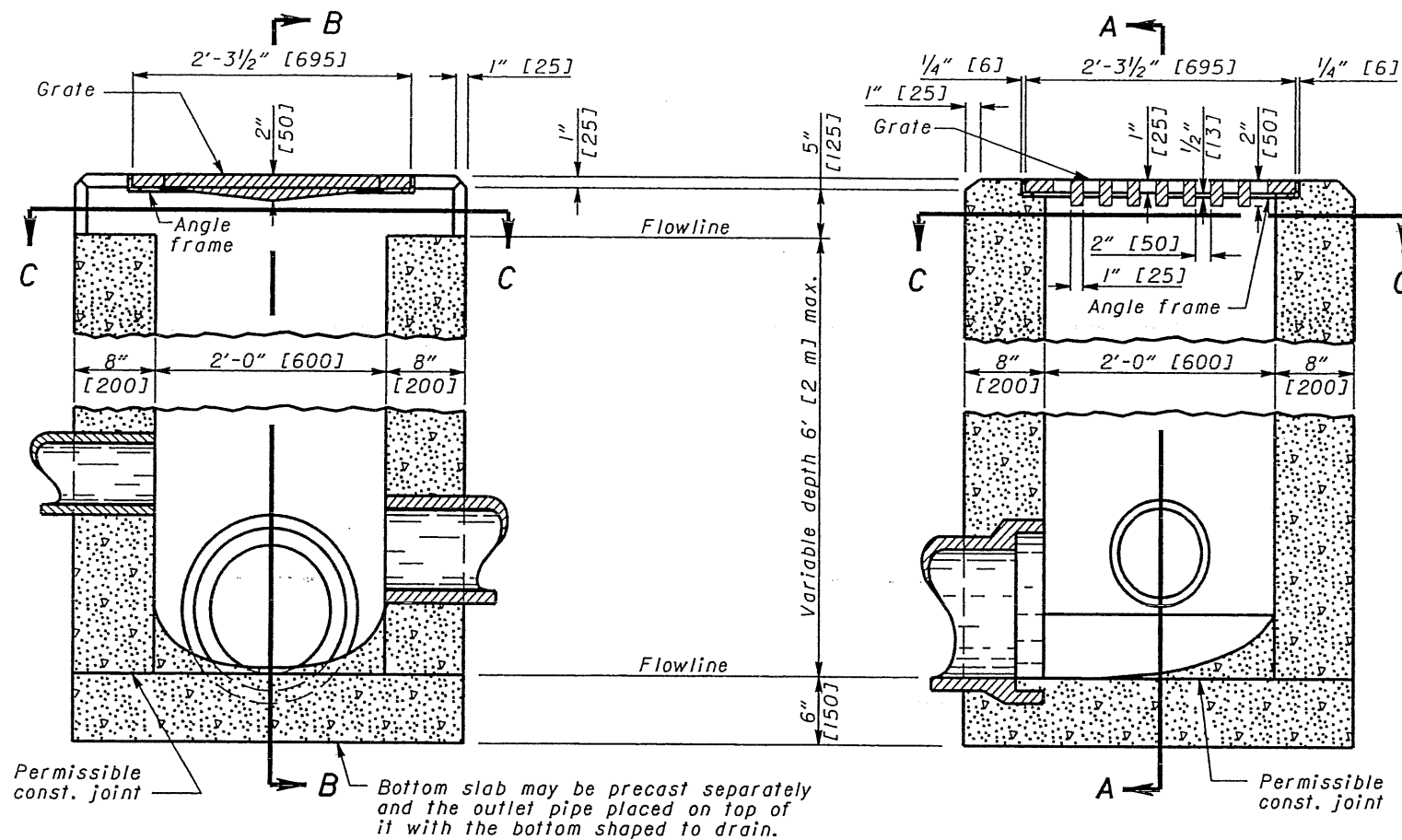
NOT TO SCALE

APPROVED: LARRY HO

DATE: 2-9-06

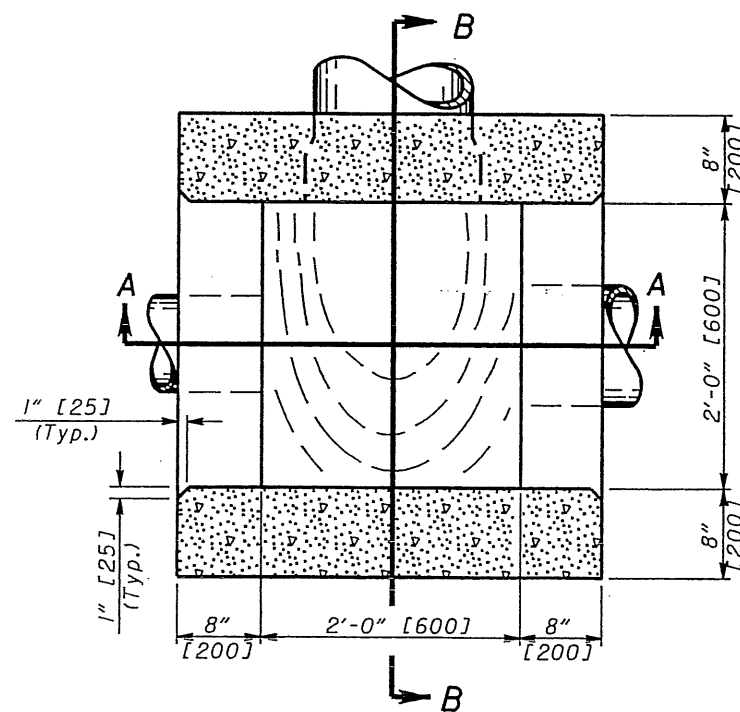
APPROVED: \_\_\_\_\_

DATE: \_\_\_\_\_



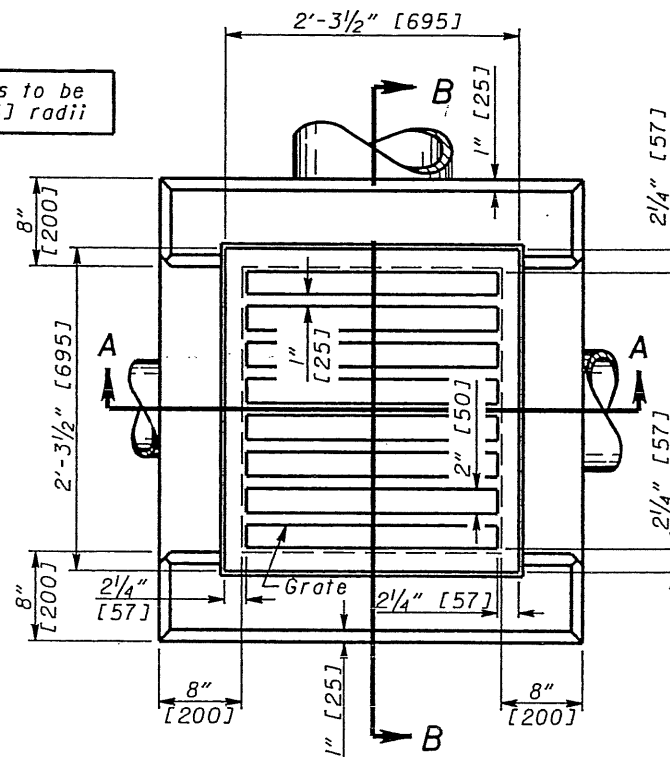
SECTION A-A

SECTION B-B



SECTION C-C

All grate edges to be rounded 1/4" [6] radii



PLAN

CATCH BASIN No. 2-2A

NOTES

**GENERAL:** Catch Basins 2-2A and 2-2B are not intended for traffic bearing applications.

**CATCH BASINS 2-2A & B:** This sheet depicts Catch Basin 2-2A. See Sheet 2 of 2 for Catch Basin 2-2B.

**GRATE AND FRAME:** The design shall be essentially the same and equally as strong as the one shown (see Construction Information table), or meet the requirements of CMS 711.14. Grate openings and dimensions shall not differ from those shown here unless otherwise shown in the plans.

As of January 1, 2003, the following text shall be cast into the top of the grate:

**"DUMP NO WASTE" and "DRAINS TO WATERWAY"**

Text shall be printed in bold, capital letters with a minimum height of 1/2". "WATERWAY" may be substituted with "STREAM", "RIVER", "LAKE", etc. Actual placement and logo may vary per manufacturer.

**WALLS:** Brick or cast-in-place walls have a nominal thickness of 8" [200]. Precast walls shall have a minimum thickness of 6" [150] and be reinforced sufficiently to permit shipping and handling without damage. Brick shall not be used above the flow line of the side opening for Type 2-2A.

**CONCRETE:** Cast-in-place concrete is to be Class C. All precast concrete shall meet the requirements of CMS 706.13 and marked with the catch basin number.

**PRECAST BASE:** If a precast base is used, it shall be set deep enough so that the top can be placed on the base to provide the grate elevation specified in the plans. Layers of brick shall not be used to adjust the top elevation.

**LOCATION AND ELEVATION:** When given on the plans, location is the top center of the grate and the elevation is the flow line of the side inlet.

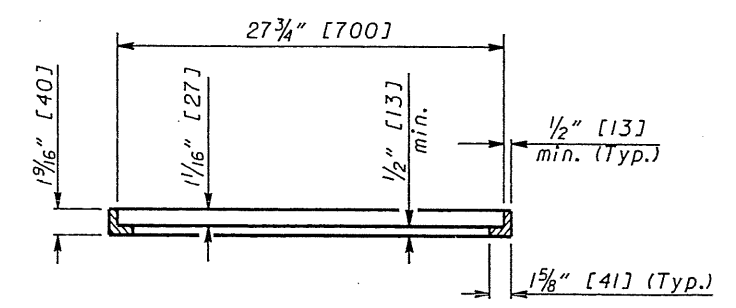
**MINIMUM DEPTH:** The minimum depth of CB No. 2-2A shall be the outside diameter (O.D.) of the outlet pipe plus 7" [175].

**OPENINGS:** Pipe openings shall be the O.D. of the pipe being supplied plus 2" [50] when fabricated or field cut. Fill any voids per CMS 601.

**2-2A SIDE INLETS:** Inlets shall be provided on both sides of the No. 2-2A catch basin in sags and on upstream side only where the ditch has a continuous down grade past the catch basin. CB 2-2A's shall not be used within the Clear Zone. The flow line should be 4" to 6" [100 to 150] below normal ditch returning to normal 10' to 15' [3 m to 5 m] each side of the inlet.

**PAYMENT:** All materials and labor, including excavation and backfilling, shall be paid for under **Item 604 - Catch Basin, No. 2-2A.**

CONSTRUCTION INFORMATION	
Minimum weight [mass] of grate,	120 lbs. [54 kg]
Minimum weight [mass] of frame,	40 lbs. [18 kg]



SECTION THRU ANGLE FRAME FOR STANDARD No. 2-2A CATCH BASIN

OHIO DEPARTMENT OF TRANSPORTATION  
STATE HYDRAULIC ENGINEER  
DATE  
7-20-01  
7-19-02  
7-15-05  
HYDRAULIC ENGINEER  
M. Wozniakiewicz  
All metric dimensions (in brackets [ ]) are in millimeters unless otherwise noted.  
OFFICE OF STRUCTURAL ENGINEERING  
STANDARD HYDRAULIC CONSTRUCTION DRAWING  
CATCH BASINS No's 2-2A & B  
NUMBER  
CB-1-J  
1/2

# CITY OF CLEVELAND

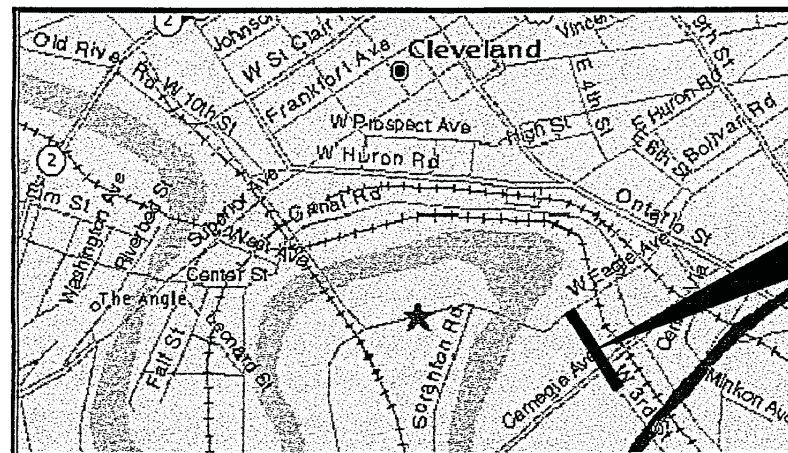
DEPARTMENT OF PUBLIC SERVICE  
DIVISION OF ENGINEERING AND CONSTRUCTION

## REHABILITATION OF W 3RD RAMP TO EAGLE AVENUE

THE CONTRACTOR IS ADVISED THAT  
THE EAGLE AVENUE LIFT BRIDGE  
SHALL NOT BE CLOSED UNTIL  
WEST 3<sup>RD</sup> STREET RAMP IS OPENED TO TRAFFIC

### INDEX OF SHEETS

TITLE SHEET	1
GENERAL NOTES	2,3
ESTIMATED QUANTITIES	4
ELECTRICAL GENERAL SUMMARY	5
DEMOLITION PLAN AND SECTIONS	6
GENERAL PLAN AND SECTIONS	7
NORTH ABUTMENT REPAIR ELEVATION & SECTION	8
STRINGER PLAN AND DETAILS	9
CAP BEAM ELEVATION & SECTIONS	10
EXPANSION JOINT DETAILS & MISCELLANEOUS DETAILS	11
NOT USED	12
ELECTRICAL	13-15



**LOCATION MAP**

SCALE: NTS

MICHAEL R. WHITE  
MAYOR

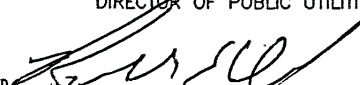
MICHAEL D. POLENSEK  
PRESIDENT OF COUNCIL

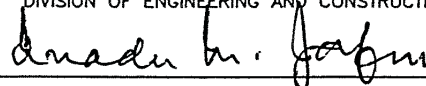
JOE CIMPERMAN  
COUNCILMAN, WARD 13


NELSON CINTRON, JR.  
COUNCILMAN, WARD 14

MARK RICCHIUTO  
DIRECTOR OF PUBLIC SERVICE

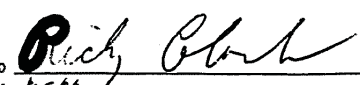
MICHAEL KONICEK  
DIRECTOR OF PUBLIC UTILITIES

APPROVED   
DATE 11/16/00 RANDALL E. DeVAUL, P.E., COMMISSIONER  
DIVISION OF ENGINEERING AND CONSTRUCTION

APPROVED   
DATE \_\_\_\_\_ QUADER M. JAFERY, P.E., CHIEF ENGINEER  
DIVISION OF ENGINEERING AND CONSTRUCTION

APPROVED   
DATE \_\_\_\_\_ RICHARD STEIN, P.E., CHIEF ENGINEER  
DEPARTMENT OF PUBLIC SERVICE  
BUREAU OF BRIDGE AND DOCKS

APPROVED   
DATE 10/9/00 JOMARIE WASIK, P.S., CHIEF SURVEYOR  
DIVISION OF ENGINEERING AND CONSTRUCTION

APPROVED   
DATE 11-6-00 RICK COLOMBO, CHIEF CONSTRUCTION INSPECTOR  
DIVISION OF ENGINEERING AND CONSTRUCTION



*Lal Bayaraman*

UNDERGROUND UTILITIES  
2 WORKING DAYS  
BEFORE YOU DIG  
CALL 1-800-362-2764 (TOLL FREE)  
OHIO UTILITIES PROTECTION SERVICE  
NON-MEMBERS  
MUST BE CALLED DIRECTLY

PROJECT NO. \_\_\_\_\_  
CONTRACT NO. \_\_\_\_\_  
DATE OF LETTING \_\_\_\_\_  
DATE OF COMPLETION \_\_\_\_\_  
CONSTRUCTED BY \_\_\_\_\_

PREPARED BY:

**ROBERT P. MADSON INTERNATIONAL, INC.**  
ARCHITECTS ~ ENGINEERS ~ PLANNERS  
2930 EUCLID AVENUE ~ CLEVELAND, OH 44115

STANDARD CONSTRUCTION DRAWINGS				SUPPLEMENTAL SPECIFICATIONS	
DWG. NO.	DATE	DWG. NO.	DATE	NO.	DATE
EXJ-4-87	1/5/89	PCB-91	4/24/92	952	12/14/88
				863	9/9/97
HL-40.10	5/1/87			1003	7/30/84
HL-50.21	5/1/87				

FILE NO. \_\_\_\_\_



### SUB-SUMMARY

CALC BY: SAD    DATE : 9/5/00  
CHKD BY: JMP    DATE : 9/6/00

REFERENCE NO.	SIDE	FROM	TO	DISTANCE	CONNECTOR KIT, TYPE 2	CABLE SPLICING KIT, AS PER PLAN	625			STRUCTURE GROUNDING SYSTEM	RE-ERECTING EXISTING LIGHT POLE, AS PER PLAN	HIGH VOLTAGE TEST	REMARKS
		POLE NO. OR STATION	POLE NO. OR STATION				EA	EA	L.F.				
					EA	EA	L.F.	L.F.	EA	LUMP SUM	EA	LUMP SUM	
1	RT	ELP1	ELP2	80	1	2	270	24	1				
2	LT	ELP2	RLP3	135	1	1	430	24	1		1		
3	LT	RLP3	RLP4	184	1	1	585	24	1		1		
4	LT	RLP4	RLP5	185	1	1	585	24	1		1		
5	RT	RLP5	ELP6	240	1	1	750	24	1				
TOTAL					5	6	2820	120	5	LUMP	3	LUMP SUM	

**NOTES:**

1. FOR LOCATION SEE ELECTRICAL LIGHTING PLAN SHEET NO. 13/15
2. FOR GENERAL NOTES AND DETAILS SEE SHEET NO. 14/15

ROBERT P. MADISON INTERNATIONAL, INC. <span style="float: right;">15/15</span> ARCHITECTS - ENGINEERS - PLANNERS 2809 EAGLE AVENUE CLEVELAND, OHIO 44115				
CITY OF CLEVELAND DEPARTMENT OF PUBLIC SERVICE DIVISION OF ENGINEERING AND CONSTRUCTION				
<b>SUB-SUMMARY</b> WEST 3RD RAMP TO EAGLE AVENUE CITY OF CLEVELAND, CITY BRIDGE				
REMOVED	DRAWN	CHECKED	REMOVED DATE	REMOVED
SAD	AF	MP	JMP 10/04/00	

# GENERAL NOTES

## DESIGN SPECIFICATIONS

Modifications to this structure conform to "standard specifications for highway bridges" adopted by the American Association of State Highway and transportation officials. Latest edition 1989 and the Ohio "supplement" to these specifications.

Design Loading—HS20-44—Case II and the alternate military loading.

Concrete — Design mix (CITY OF CLEVELAND MIX) as per D-20 specification.

Reinforcing Steel — ASTM A615, A616, A617 — Grade 60 — Yield stress 60,000 psi.

Structural Steel ASTM A36 — Yield stress 36,000 psi.

## PROPOSED WORK

The proposed work shall include the following major items of work:

- 1) Refacing of six cap beams at expansion joint.
- 2) Provide strip seal expansion joint at locations.
- 3) Provide new trench drain at 3 locations.
- 4) Refacing of North Abutment.
- 5) Re-erect existing 3 electrical poles.
- 6) Reinforce 10 existing stringer beams.
- 7) Demolishing drawing indicating removal of east side walk, deck beams overhang beams.
- 8) Relocate existing railing on the east side of east curb.
- 9) Install barriers between driveway and walk area.

## EXISTING STRUCTURE VERIFICATION

Details and dimensions shown on these plans pertaining to the existing structure have been obtained from plans of existing structure and/or from field observations and measurements. Consequently, they are indicative of the existing structure and the proposed work, but they shall be considered tentative and approximate. The contractor is referred to O.D.O.T. CMS sections 102.05, 105.02 and 51302 with regards to his responsibility to verifying existing conditions.

Contract bid prices shall be based upon a recognition of the uncertainties described above and upon a prebid examination of the existing structure by the contractor. However, all project work shall be based upon actual details and dimensions, which have been verified by the contractor in the field.

## ITEM 503 — UNCLASSIFIED EXCAVATION AS PER PLAN

This item of work consists of excavation of north abutment to reface below the existing grade to top of footing. Care shall be taken while excavation not to damage the existing abutment footing after refacing the area shall be back filled per ODOT item 503.10.

## ITEM 509 — REPLACEMENT OF EXISTING REINFORCING STEEL

Any existing reinforcing bars which are to be incorporated into the new work and which are made unusable by the contractor's concrete removal operations shall be replaced with new steel at his cost. Any existing reinforcing bars deemed by the engineer to be unusable because of corrosion shall be replaced with new steel. An allowance of 1000 pounds is included in item 509 for this purpose.

## ITEM 516 — ELASTOMERIC BEARING PADS

The contractor shall furnish and install elastomeric bearing pads in the sizes and locations shown on the plans. Bearing pads shall be placed under refaced cap beams areas which are plane and smoothly finished. If the area is low, the proper elevation shall be secured by the use of 1/8" thick performed bearing pads of the same bearing area as the bearing pad.

All requirements of item 516 of the State of Ohio, Department of Transportation, construction and material specifications shall apply.

Payment for these items will be under item 516 elastomeric bearing. Pad with internal laminates only (neoprene) as per plan.

Unit — Each.

## ITEM 516 — STRIP SEAL EXPANSION JOINT

A continuous strip seal joint shall be installed per ODOT standard drawing J-4-87 dated 2/14/97 and detailed in plan at expansion joint cap beams and abutment as furnished in the drawing.

Payment for this item shall be under item 516 structural expansion joint including misc: angles, retainer, elastomeric strip seal as per plan.

Item	Unit	Description
516	Ln. Ft.	Strip seal expansion

## ITEM 517 — RELOCATE RAILING AS PER PLAN

All items as described in item 517 of ODOT construction and material specification 1997 including painting will apply to this section and as modified herein. The existing railing on the east end shall be removed and relocated as furnished in the plans. The base details are modified to set it on top of existing concrete beam. Railing shall be painted per ODOT section 514.

Method of payment will be the lineal feet quantity of railing including, removing, storing and reinstalling new base complete in place.

Basis of Payment — The accepted quantity of railing will be paid for under:

Item	Unit	Description
517	Ln. Ft.	Relocate Railing, as per plan

## ITEM 517—RAILING AS PER PLAN

Provide new railing at each end of relocated railing to meet existing railing and to provide safety at sidewalk.

## ITEM SPECIAL—ABUTMENT REFACING

Item special — Abutment refacing shall include the removal of loose concrete on the north face of the abutment and for ten feet around the west face. Work shall include furnishing all necessary labor, material and equipment to install concrete—City of Cleveland mix, reinforcing steel, dowels and dowel holes at a spacing not to exceed 3'-0" on center, forms at the abutment and side wall face and other items needed to complete the work shown for item special — abutment refacing. Nine inches of concrete shall be pumped in the forms and properly vibrated. A quantity of 120 square yards is included in item special abutment refacing for payment at the location shown on the plans.

## ITEM SPECIAL—TRENCH DRAINS AND DOWN SPOUTS

Item Special — Trench drains and down spouts. Work shall include furnishing all necessary labor, materials and equipment to install trench drain frames, grates and down spouts on the west side of the structure and other items needed to complete the work shown for item special — trench drains and down spouts. Trench grates shall be bolted, Neenah heavy duty R-4999 series with L type grate or East Jordan 6902 or approved equal. A stud 1/2"x6" shall be welded to the frame at 1'-6" on center all around the frame. Frames shall extend from curb to curb at 3 locations shown at plan. Down spouts shall be 8" dia. P.V.C. pipe with clean outs and supports to existing columns at 6'-0" on center. Included in the each quantity for item special — trench drains and down spouts is a 8" wide x 34'-0" long trench drain frame and cover and 40 lin. ft. of 8" dia. P.V.C. down spouts. A quantity of 3 each is included in item special — trench drains and down spouts for payment at the location shown on the plans. This item should also include filling of concrete at locations where existing catch basins are being removed.

## ITEM 609—CURB TYPE A AS PER PLAN

A continuous curb at east of east end barrier. Rebars should be doweled to the deck as furnished in the drawings. Payment for all items including the dowels will be paid under item 609—curb as per plan.

## ITEM SPECIAL—EXPANSION JOINT REPAIR (BELOW EXPANSION JOINT & TRENCH PAVEMENT)

Item Special — Expansion joint repair shall include the removal of all loose concrete at the 6 locations, at the backs of stringers that are being repaired on both sides of the expansion joint. Work shall include furnishing all necessary labor, material and equipment to install concrete—City of Cleveland mix, reinforcing steel, dowels, dowel holes and strofoam at the expansion joint and other items need to complete the work shown for item special—expansion joint repair. Concrete shall be pumped into areas on each side of the strofoam expansion joint and properly vibrated. A quantity of 37 cu. yd. is included in item special — expansion joint repair for payment at the six locations shown on the plans.

## ITEM SPECIAL—CONCRETE PAVEMENT AT EXPANSION JOINTS AND TRENCH DRAINS

Item Special — Concrete at expansion joints and trench drains shall include the removal of asphalt and fill material at the 6 locations shown on the plans to the top of the existing concrete deck. Work shall include furnishing all necessary labor, material and equipment to install concrete — City of Cleveland mix, reinforcing steel, dowels, dowel holes and forms at the expansion joint, trench drain and other items needed to complete the work shown for item special — concrete at expansion joint and trench drains. Concrete shall be placed in the forms and properly vibrated. Expansion joint and trench drain steel and accessories are paid for under other items but will be installed under this item prior to pouring concrete. A quantity of 105 sq. yd. is included in item special — concrete at expansion joints and trench drains for payment at the 6 locations shown on the plans.

## ITEM SPECIAL—EXPANSION CAP BEAM REFACING

Item special — Expansion cap beam refacing shall include the removal of all loose concrete at the locations where the new facing is being installed. Work shall include furnishing all necessary labor, material and equipment to install concrete — City of Cleveland mix, reinforcing steel, dowels, dowel holes, forms and other items needed to complete the work shown for item special — expansion cap beam refacing. Where the dowel passes through the back of the existing beam before a 1'-0" embedment is reached the contractor shall weld a 3/8"x1'-0" square plate to the dowel at the back face of the beam at no additional cost. Concrete shall be pumped into forms and properly vibrated. A quantity of 85 cu. yd. is included in item special — expansion cap beam refacing for payment at the 6 locations shown on the plans.

## ITEM SPECIAL—FLOOR STRINGER REPAIR

Item special — Floor stringer repair shall include the removal of all loose concrete at the 10 locations at the bottom of the stringers that are being repaired. Work shall include furnishing all necessary labor, material and equipment to install concrete — City of Cleveland mix, reinforcing steel, dowels, dowel holes, forms and other items needed to complete the work shown for item special — floor stringer repair. Concrete shall be pumped into forms and properly vibrated. A quantity of 47 cu. yd. is included in item special — floor stringer repair for payment at the 10 locations shown on the plans.

## ITEM SPECIAL—LIGHT POLE BASE

Item special — Light pole base shall include the installation of the light pole base detailed on the plans at 3 locations to be determined in the field by the engineer. Work shall include furnishing all necessary labor, material and equipment to install concrete — City of Cleveland mix, reinforcing steel, dowels, dowel holes, forms and other items needed to complete the work shown for item special — light pole base. The 4 anchor bolts of each light pole base shall be 1"x2'-2" long w/3" hook, a 4 1/2" threaded projection and two hex head nuts and washers per bolt installed at locations shown on details. Concrete shall be poured into forms and properly vibrated. A quantity 4 each is included in item special — light pole bases for payment at the 3 locations to be determined in the field. These pole bases shall be cast along the item barrier misc.: concrete barrier type BRD anchored but paid under this item.

ROBERT P. MADISON INTERNATIONAL, INC. <span style="float: right;">2/15</span> ARCHITECTS - ENGINEERS - PLANNERS 2230 EUCLEID AVENUE CLEVELAND, OHIO 44116				
CITY OF CLEVELAND DEPARTMENT OF PUBLIC SERVICE DIVISION OF ENGINEERING AND CONSTRUCTION				
<b>GENERAL NOTES</b>  WEST 3RD RAMP TO EAGLE AVENUE CITY OF CLEVELAND, CITY BRIDGE				
DESIGNED	DRAWN	CHECKED	REVISION DATE	REVISION
LJ	MLM	MP	JMP 9/12/00	

# GENERAL NOTES

**ITEM SPECIAL - BARRIER, MISC.: CONCRETE BARRIER, TYPE BRD, ANCHORED**

This item shall consist of furnishing the necessary labor, material, equipment and incidentals to complete the installation of the item special - barrier, misc.: concrete barrier, type BRD, anchored as shown on the plans and described in these specifications. All sections of Item 622, concrete barrier in the C.M.S. shall apply unless specifically modified on the drawings or in these specifications. The quantity for item special, concrete barrier, type BRD, anchored concrete barriers shall include the following items:

Precast barriers as shown on sheet 7 of 15 including, providing and installing two anchors per barrier and cutting barrier as shown on sheet 7 of 15 to lengths less than 10' as shown on the plan sheets.


Method of Payment - The quantity will be the actual lineal foot quantity of item special - barrier, misc.: concrete barrier, type BRD, anchored.

**Basis of Payment**

Item	Unit	Description
Special	Ln. Ft.	Barrier, Misc.: Concrete Barrier, Type BRD, anchored

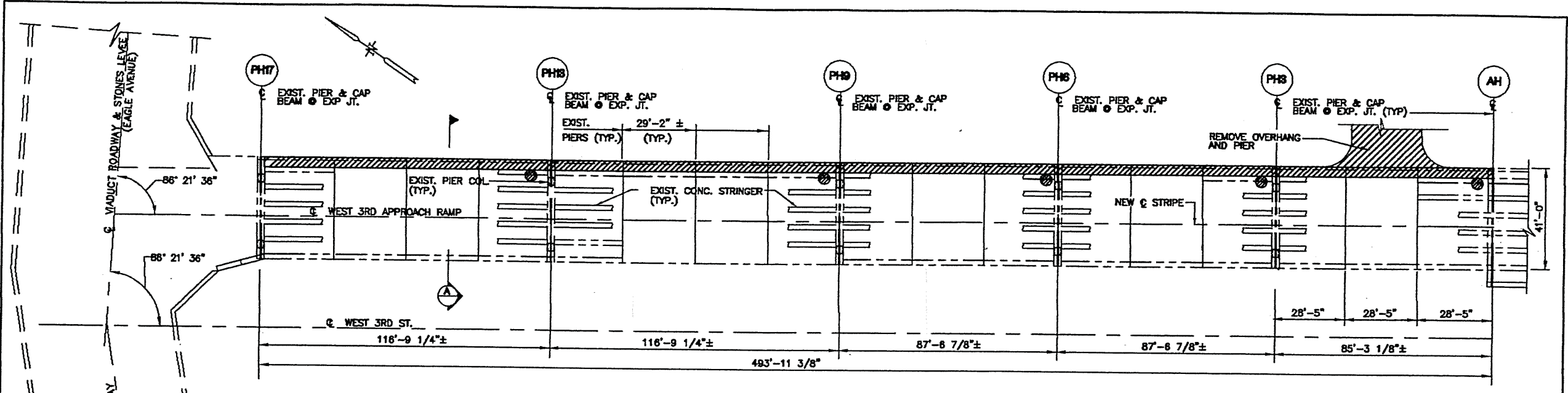
**ABBREVIATION**

E.F.	EACH FACE
F.F.	FAR FACE
DWL'S	DOWELS
EXIST.	EXISTING
℄	CENTER LINE
T.D.	TRENCH DRAIN

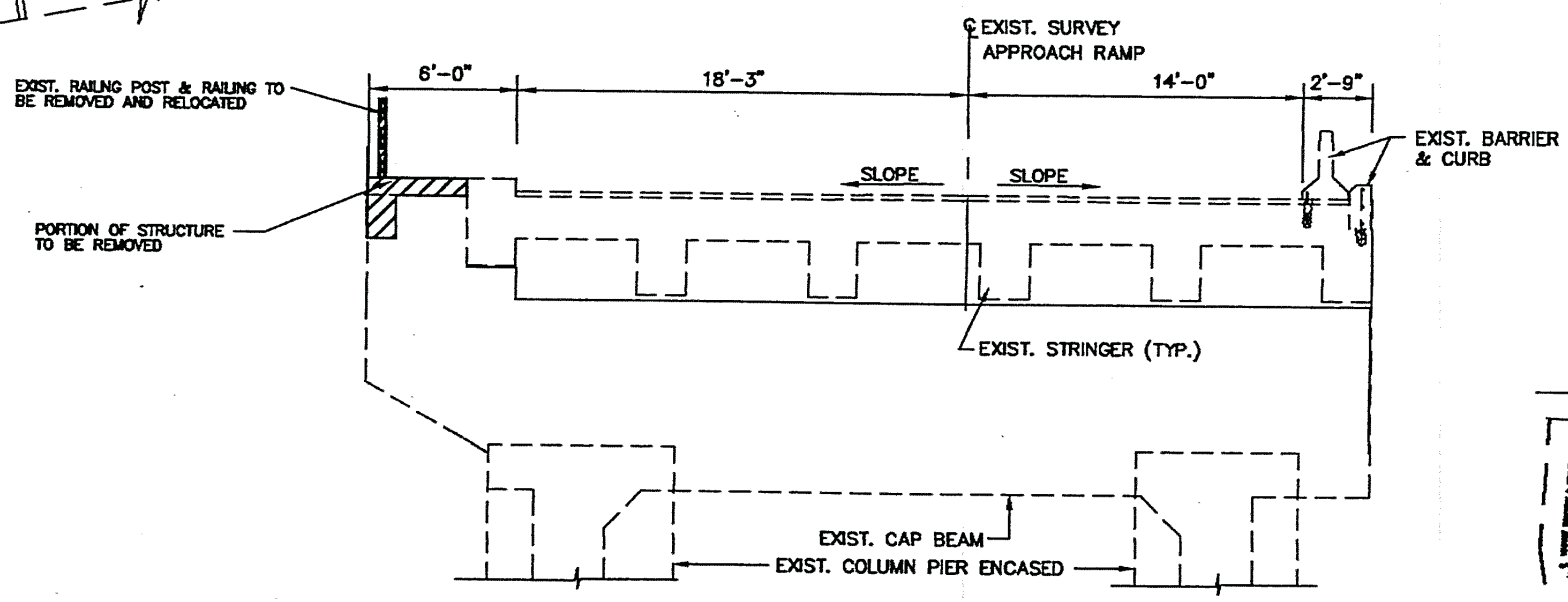
 ROBERT P. MADISON INTERNATIONAL, INC. <span style="float: right;">3/15</span> ARCHITECTS - ENGINEERS - PLANNERS 2500 EUCLID AVENUE, CLEVELAND, OHIO 44115				
CITY OF CLEVELAND DEPARTMENT OF PUBLIC SERVICE DIVISION OF ENGINEERING AND CONSTRUCTION				
<b>GENERAL NOTES</b>  WEST 3RD RAMP TO ENGLE AVENUE CITY OF CLEVELAND, CITY BRIDGE				
DESIGNED	DRAWN	CHECKED	REVISION DATE	REVISED
1.1	MIM	MP	JMP	9/12/00



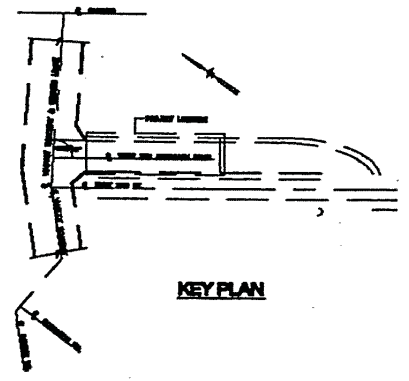




**DEMOLITION PLAN**  
 SCALE: 1"=20'-0"



**SECTION A-A**

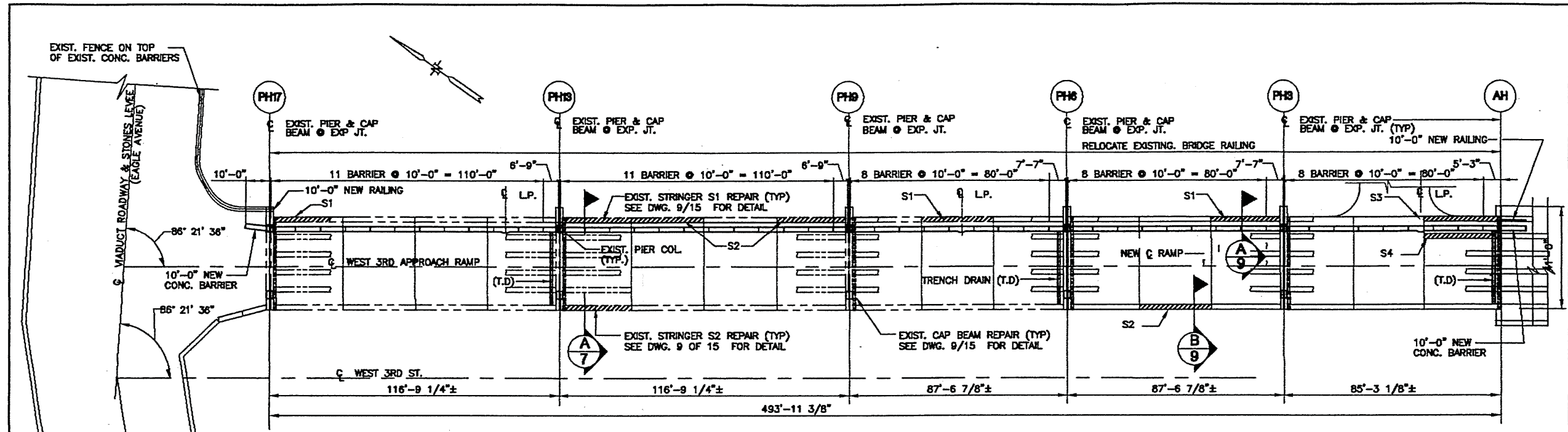


NOTE: FILL IN CONCRETE AFTER EXISTING CATCHBASIN REMOVED. SEE GENERAL NOTE SHEET, 2 OF 15

**DEMOLITION LEGEND:**

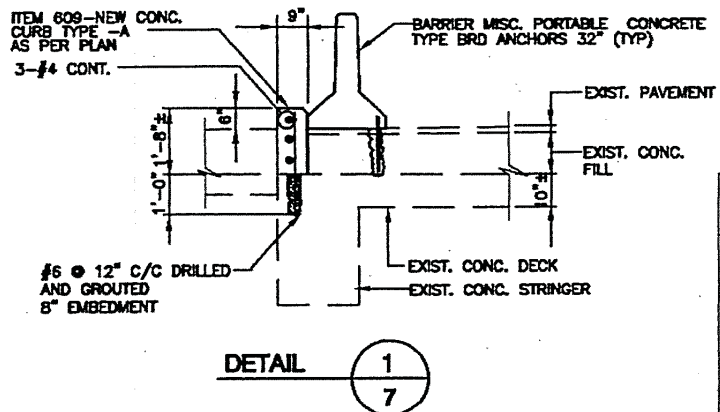
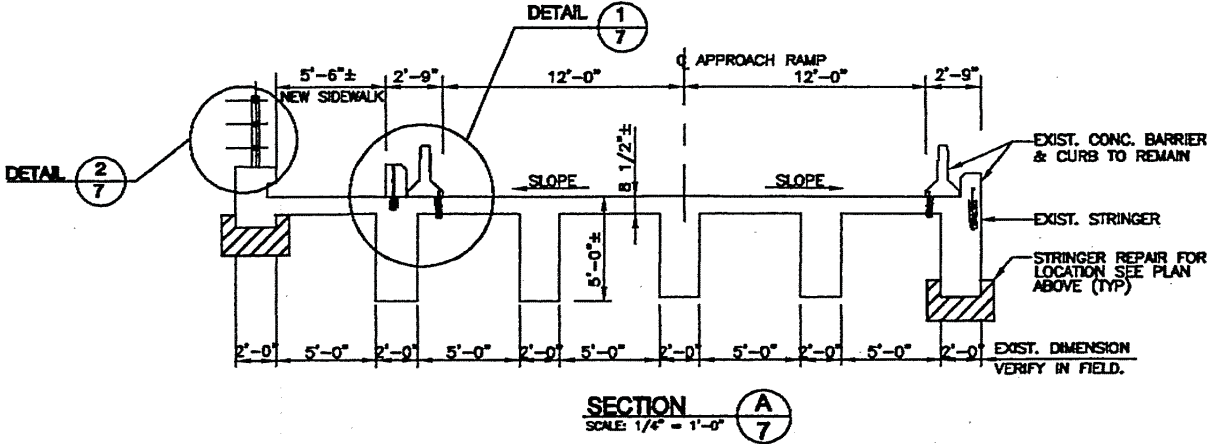
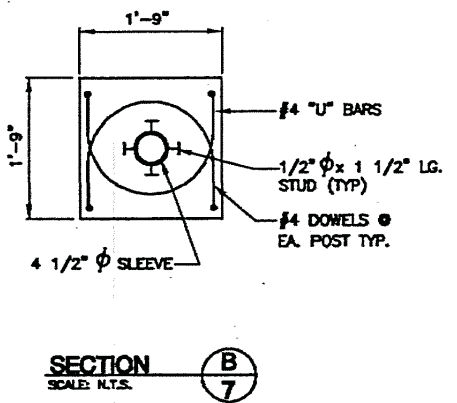
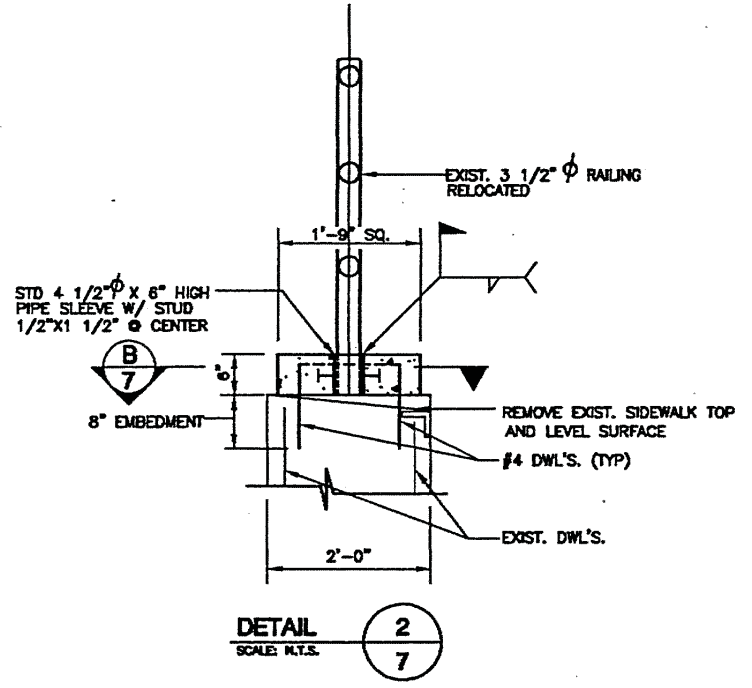
- EXISTING CONCRETE BEAM, CONCRETE WALK AND EXPANSION JOINT TO BE REMOVED
- EXISTING CATCH BASIN, DOWNSPOUT AND ALL ATTACHMENT TO BE REMOVED.

ROBERT P. MADISON INTERNATIONAL, INC. 6/15 ARCHITECTS - ENGINEERS - PLANNERS 2500 EAGLE AVENUE CLEVELAND, OHIO 44115				
CITY OF CLEVELAND DEPARTMENT OF PUBLIC SERVICE DIVISION OF ENGINEERING AND CONSTRUCTION				
<b>DEMOLITION PLAN &amp; SECTIONS</b> EAGLE AVENUE WEST 3RD RAMP CITY OF CLEVELAND, CITY BRIDGE NO. 1:000M				
DESIGNED	DRAWN	CHECKED	REVIEWED DATE	REVISION
RCW	JMP	LJ	LJ 10/4/00	

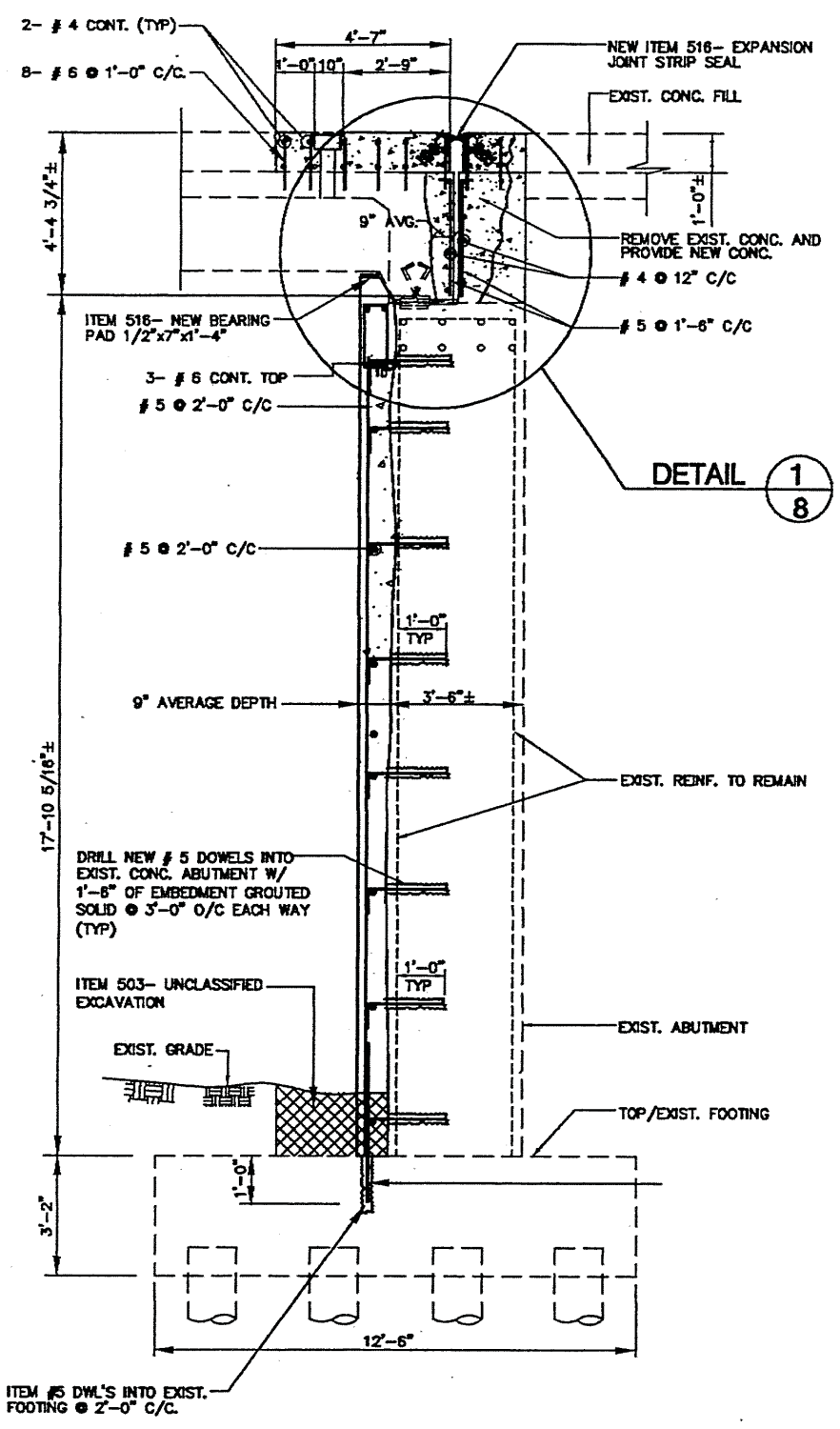


**GENERAL PLAN**  
SCALE: 1"=20'-0"

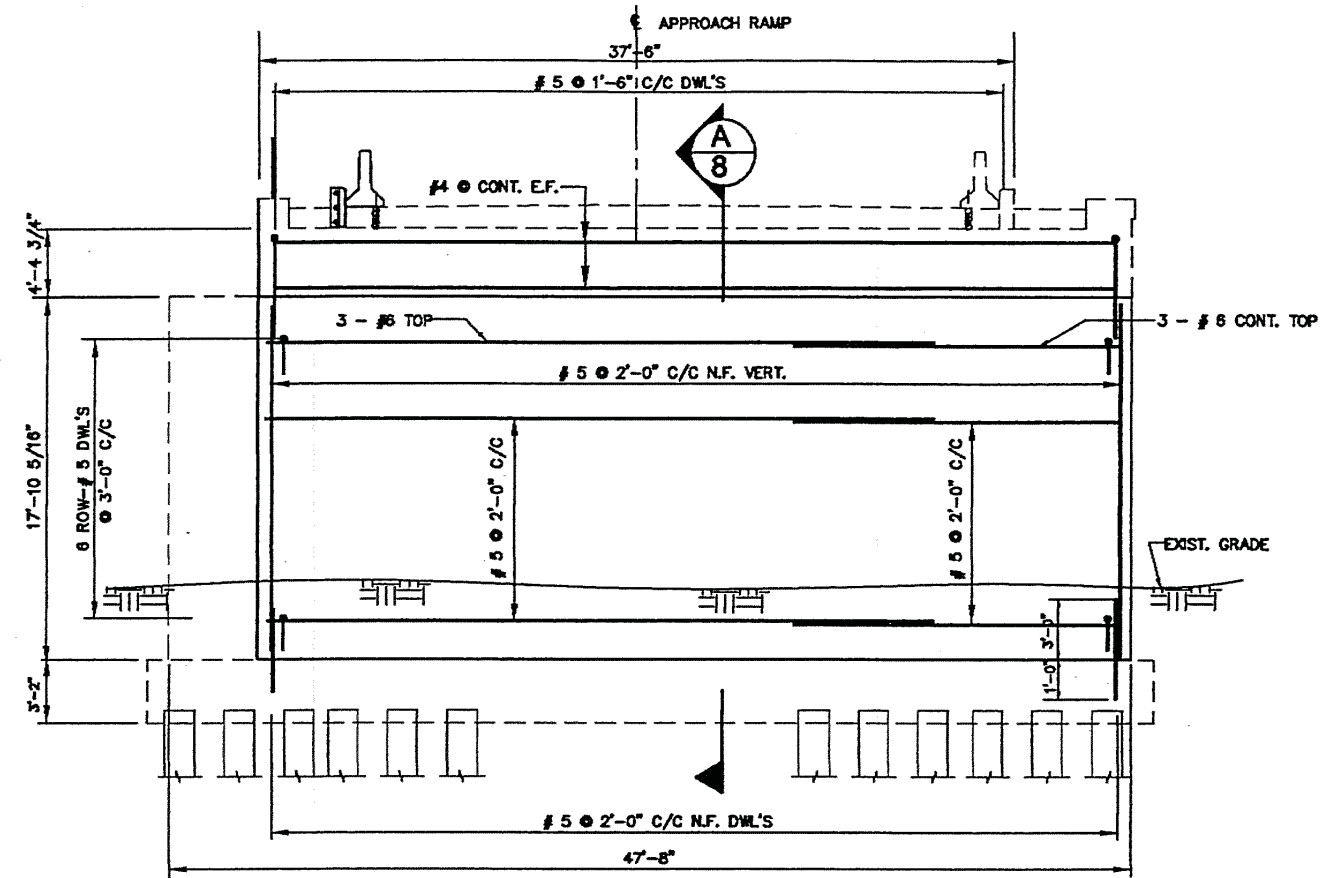
- NOTE:**
1. 10'-0" NE W BARRIER NEED NOT BE ANCHORED.
  2. NEW RAILING TO CONNECT TO EXISTING END OF BARRIER OR RAILING. BASE DETAILS SIMILAR TO DETAIL 2/7.



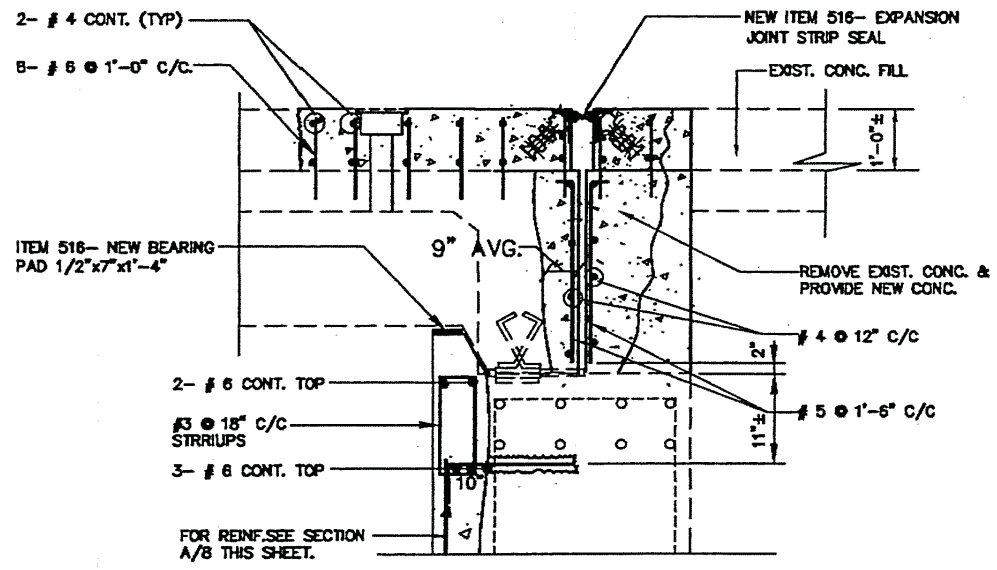
ROBERT P. MADISON INTERNATIONAL, INC. 7/15 ARCHITECTS - ENGINEERS - PLANNERS 2530 EAGLE AVENUE CLEVELAND, OHIO 44115				
CITY OF CLEVELAND DEPARTMENT OF PUBLIC SERVICE DIVISION OF ENGINEERING AND CONSTRUCTION				
<b>GENERAL PLAN</b> WEST 3RD RAMP TO EAGLE AVENUE CITY OF CLEVELAND, CITY BRIDGE				
DESIGNED	DRAWN	CHECKED	REVISION DATE	REVIEW
L.J.	JMP	M.P.	ROW 10/04/00	



SECTION **A**  
8



**NORTHWEST ABUTMENT ELEVATION**  
SCALE: 1/4" = 1'-0"

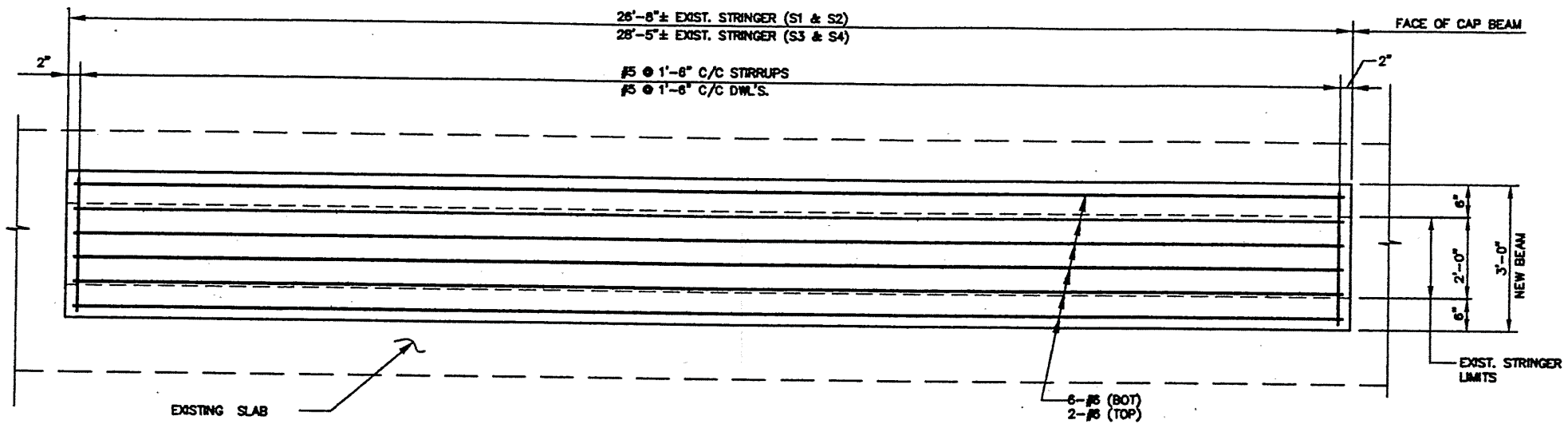


DETAIL **1**  
8

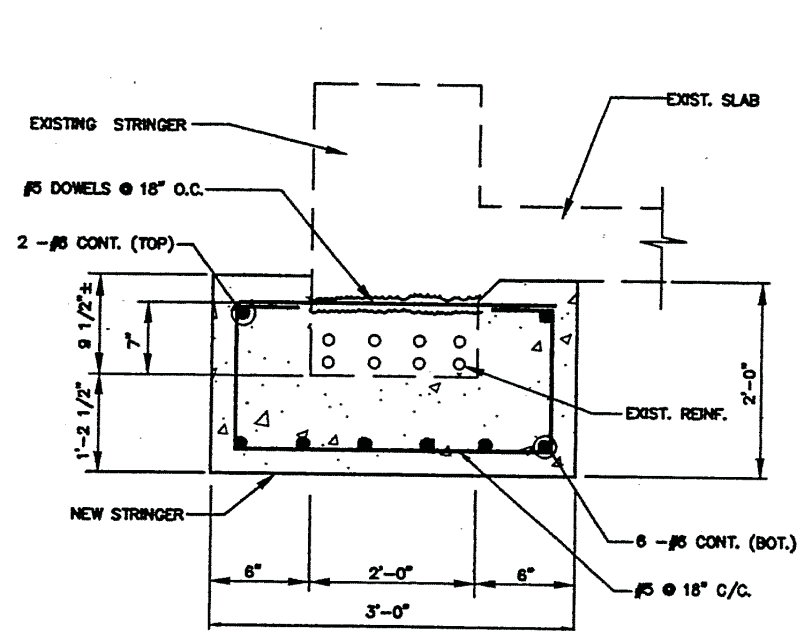
- NOTES:**
1. FOR DEMOLITION DETAILS SEE SHEET NO. **6/15**
  2. FOR GENERAL NOTES SEE SHEET NO. **2&3/15**

ROBERT P. MADISON INTERNATIONAL, INC. <b>8/15</b> ARCHITECTS - ENGINEERS - PLANNERS 2838 EUCLID AVENUE CLEVELAND, OHIO 44115				
CITY OF CLEVELAND DEPARTMENT OF PUBLIC SERVICE DIVISION OF ENGINEERING AND CONSTRUCTION				
<b>NORTH ABUTMENT REPAIR          ELEVATION &amp; SECTION</b> WEST 3RD RAMP TO EAGLE AVENUE CITY OF CLEVELAND, CITY BRIDGE				
DESIGNED	DRAWN	CHECKED	REVISION DATE	REVISED
LJ	JMP	M.P.	RCW 10/04/00	

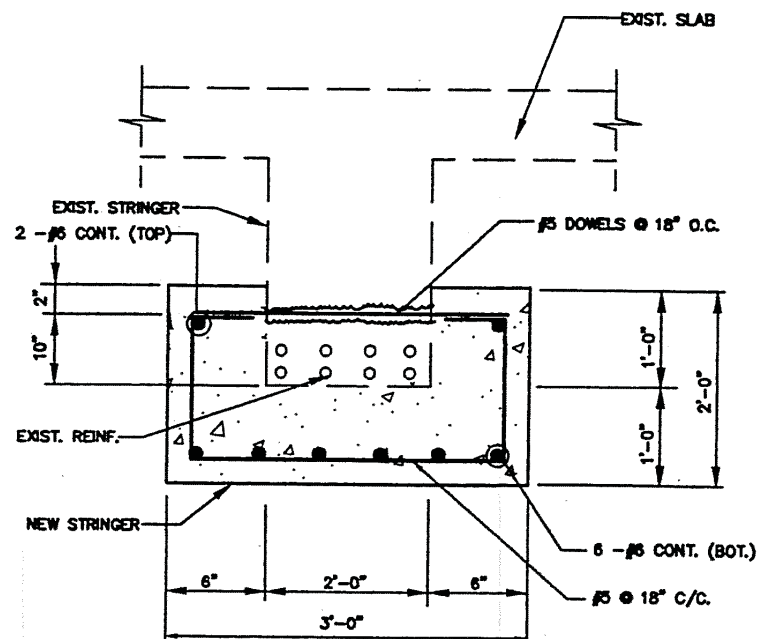




**TYPICAL STRINGER REINFORCING PLAN**  
SCALE: 3/8" = 1'-0"



**SECTION A**  
SCALE: 1 1/2" = 1'-0"  
(STRINGER S1 & S3)



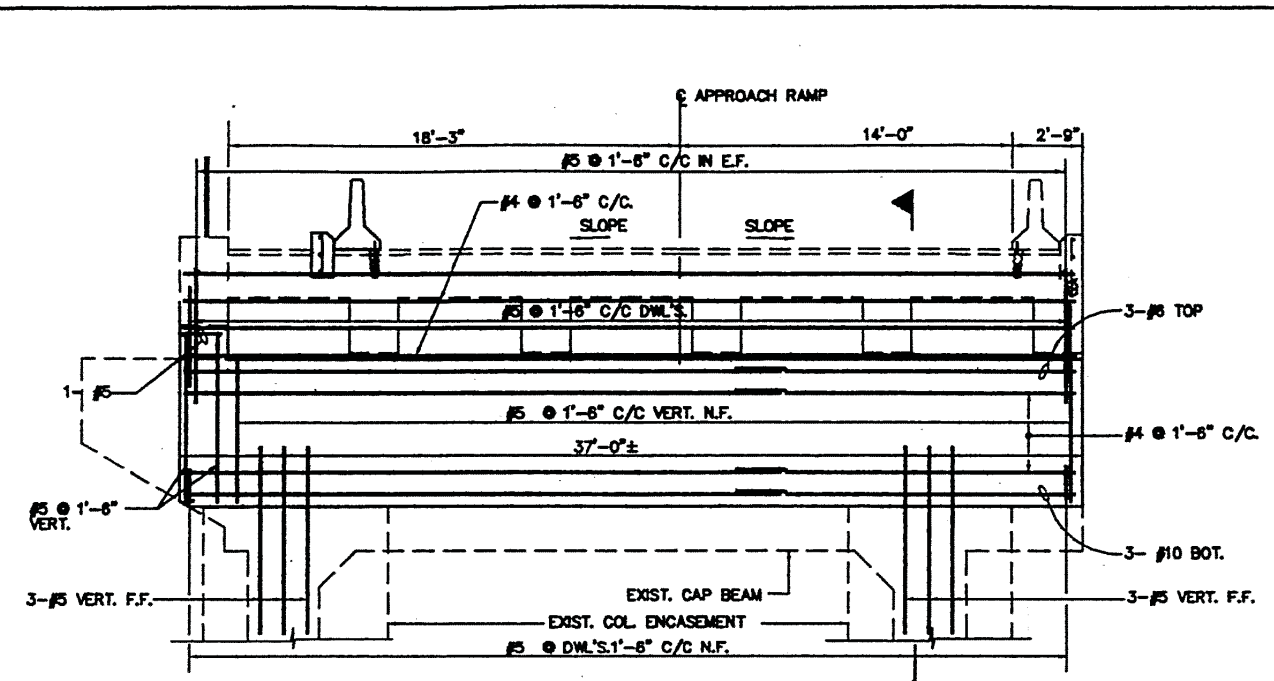
**SECTION B**  
SCALE: 1 1/2" = 1'-0"  
(STRINGER S2 & S4)

NOTE: S3 & S4 BEAM SPAN ARE DIFFERENT FROM S1 & S2.

**NOTES:**

1. FOR DEMOLITION DETAILS SEE SHEET NO. 6/15
2. FOR GENERAL NOTES SEE SHEET NO. 2/3/15
3. FOR GENERAL PLAN SEE SHEET NO. 7/15

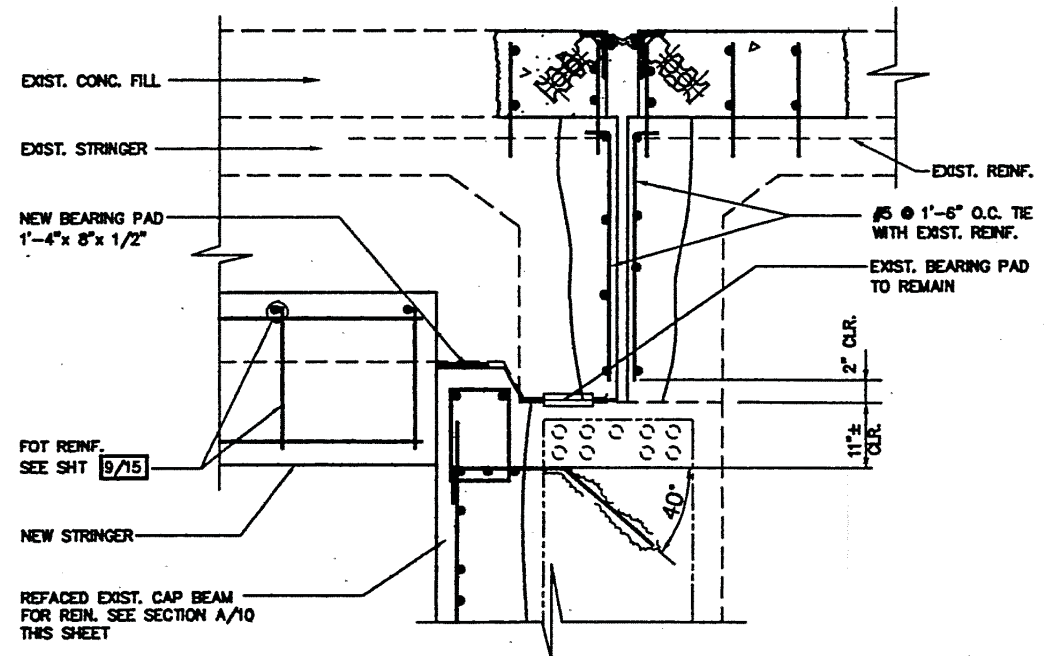
ROBERT P. MADISON INTERNATIONAL, INC. 9/15 ARCHITECTS - ENGINEERS - PLANNERS 2808 BUCKLE AVENUE CLEVELAND, OHIO 44116				
CITY OF CLEVELAND DEPARTMENT OF PUBLIC SERVICE DIVISION OF ENGINEERING AND CONSTRUCTION				
<b>STRINGER PLAN &amp; DETAILS</b> WEST 3RD RAMP TO EAGLE AVENUE CITY OF CLEVELAND, CITY BRIDGE				
DESIGNED	DRAWN	CHECKED	REVISION DATE	REVISION
LJ	JMP	MJP	RCW 10/04/00	



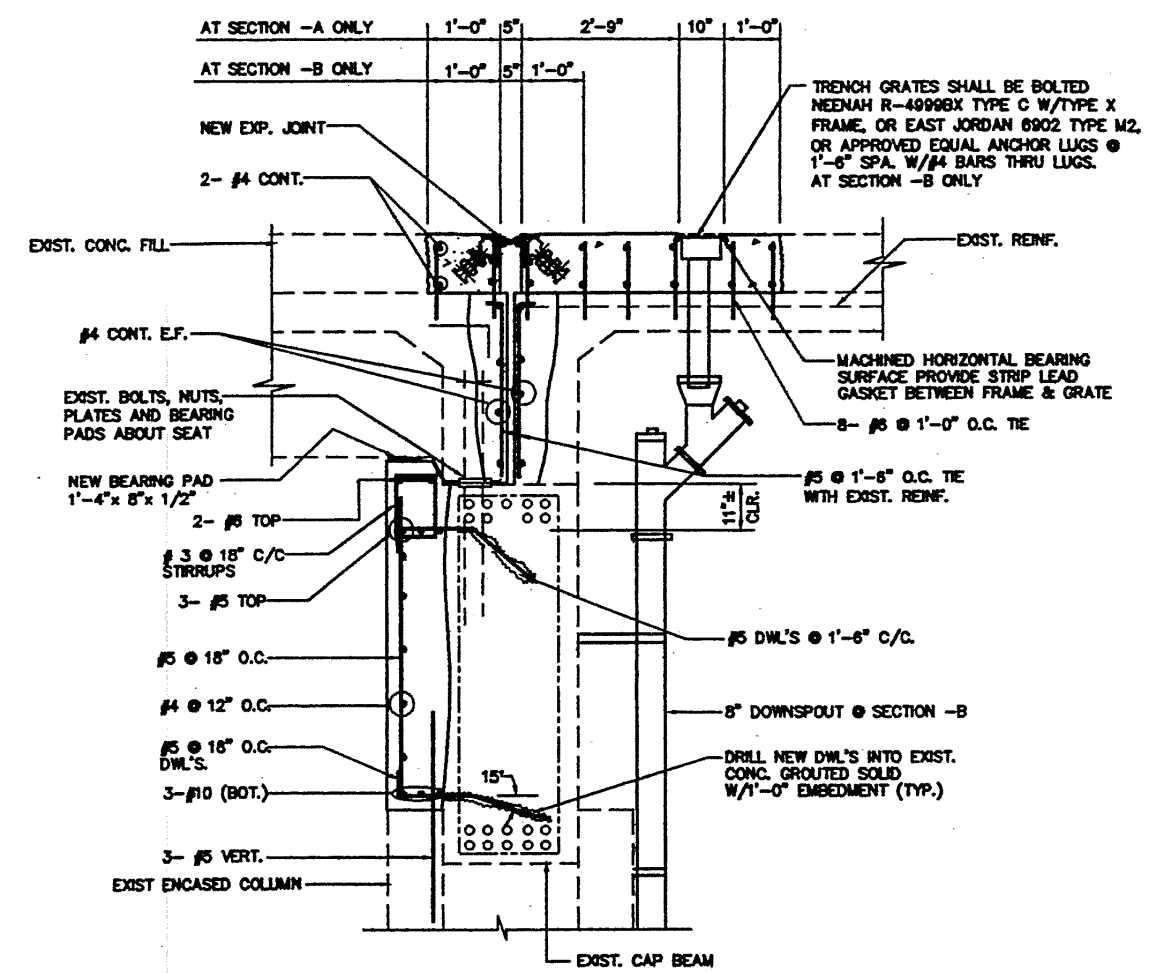
**CAP BEAM ELEVATION**  
NTS

(A) (TYP. 3 PLACES)

(B) (TYP. 2 PLACES)



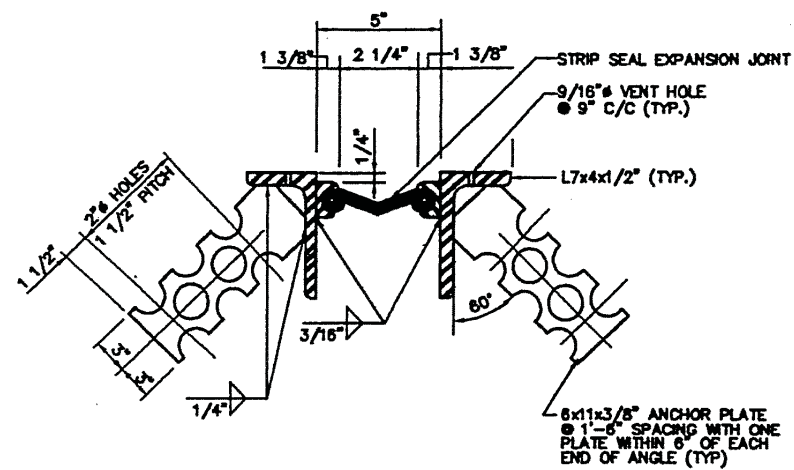
**TYP. NEW STRINGER AT REFACED EXPANSION BEAM DETAIL**



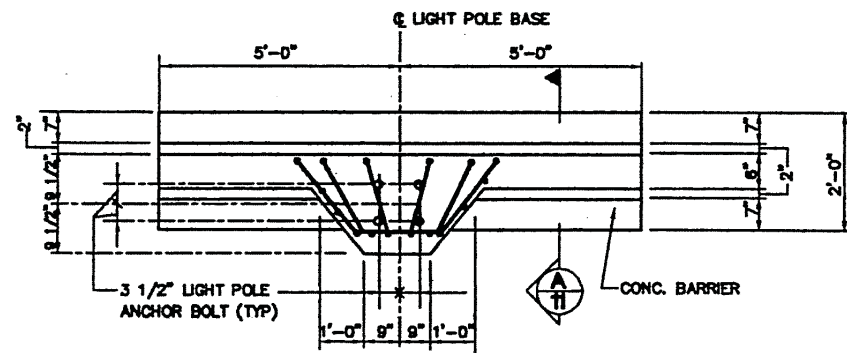
**SECTION (A)** (TYP. 3 PLACES)

**SECTION (B)** (TYP. 2 PLACES)

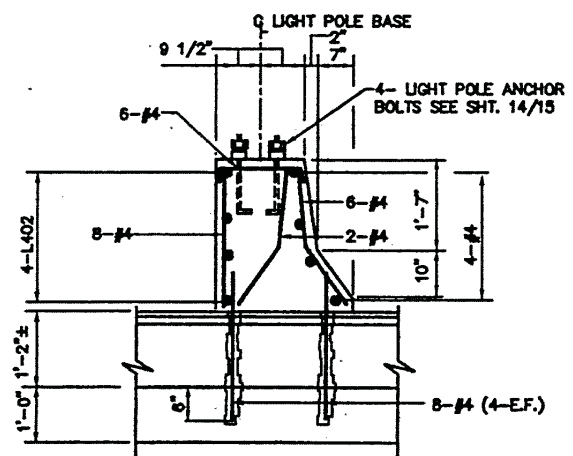
ROBERT P. MADISON INTERNATIONAL, INC. 10/15 ARCHITECTS - ENGINEERS - PLANNERS 2500 EIGHTH AVENUE CLEVELAND, OHIO 44115				
CITY OF CLEVELAND DEPARTMENT OF PUBLIC SERVICE DIVISION OF ENGINEERING AND CONSTRUCTION				
<b>CAP BEAM ELEVATION &amp; SECTIONS</b> WEST 3RD RAMP TO EAGLE AVENUE CITY OF CLEVELAND, CITY BRIDGE				
DESIGNED	DRAWN	CHECKED	REVISION DATE	REVISION
L.J.	J.M.P.	M.P.	RC.W. 10/04/00	



**TYPICAL EXPANSION JOINT DETAIL**  
SCALE: NTS

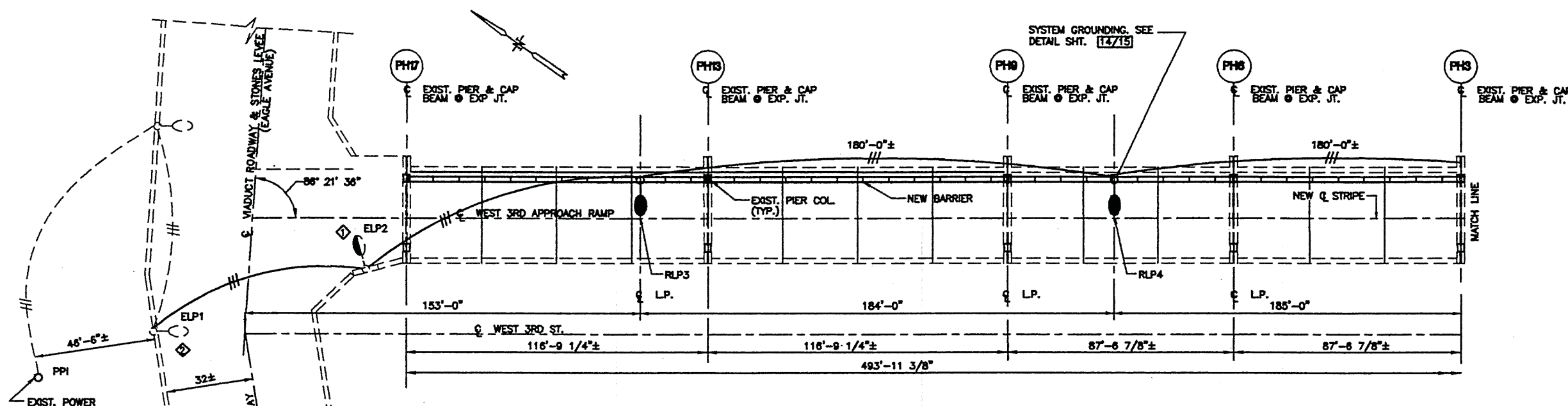


**LIGHT POLE BASE PLAN**



**SECTION A-A**

ROBERT P. MADISON INTERNATIONAL, INC. 11/15 ARCHITECTS - ENGINEERS - PLANNERS 3300 EUCLID AVENUE CLEVELAND, OHIO 44116				
CITY OF CLEVELAND DEPARTMENT OF PUBLIC SERVICE DIVISION OF ENGINEERING AND CONSTRUCTION				
<b>EXPANSION JOINT AND MISC DETAILS</b> WEST 3RD RAMP TO EAGLE AVENUE CITY OF CLEVELAND, CITY BRIDGE				
DESIGNED	DRAWN	CHECKED	REVISION DATE	REVISION
LJ	MM	MP	JMP 10/04/00	



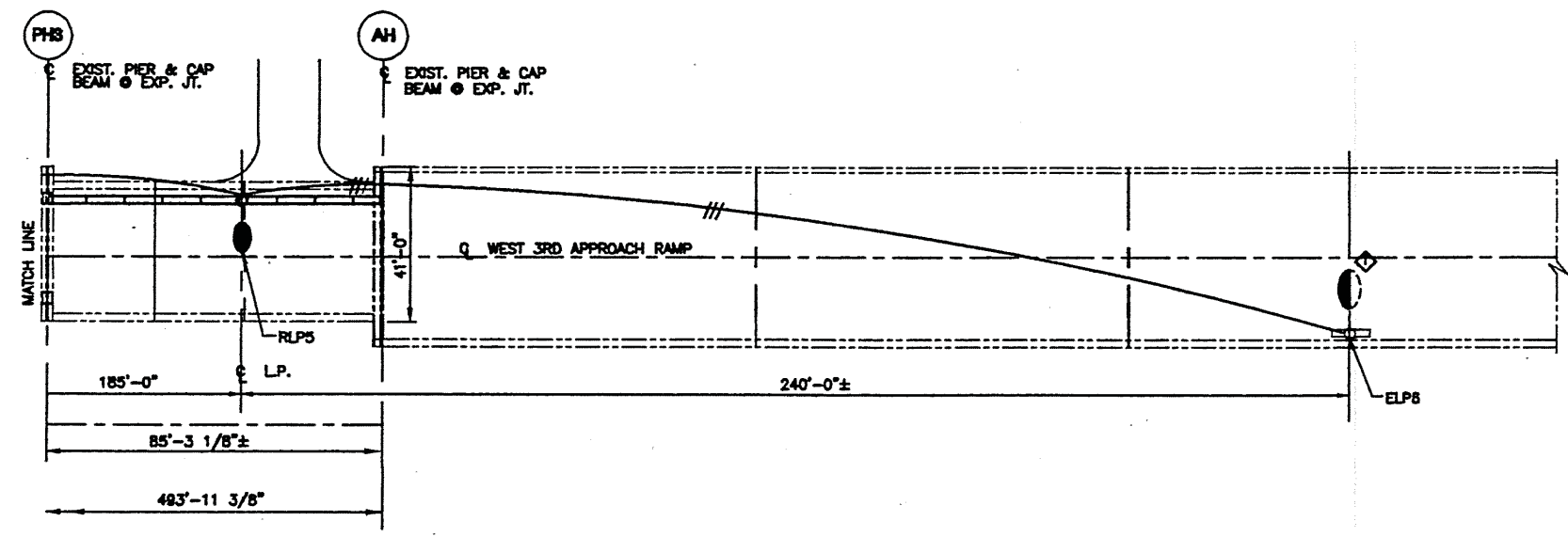
**ELECTRICAL LIGHTING PLAN**  
SCALE: 1"=20'-0"

**LEGEND**

- L.P. LIGHT POLE
- ε CENTERLINE
- EXISTING DISTRIBUTION CABLE
- PROPOSED DISTRIBUTION CABLE
- ELP1 EXISTING LIGHT POLE TO REMAIN
- RLP2 RELOCATED LIGHT POLE WITH NEW 250 WATT HIGH PRESSURE SODIUM LUMINAIRE WITH PHOTOCELL
- ELP6 EXISTING LIGHT POLE WITH NEW 250 WATT HIGH PRESSURE SODIUM LUMINAIRE WITH PHOTOCELL
- P EXISTING POWER POLE

**NOTES**

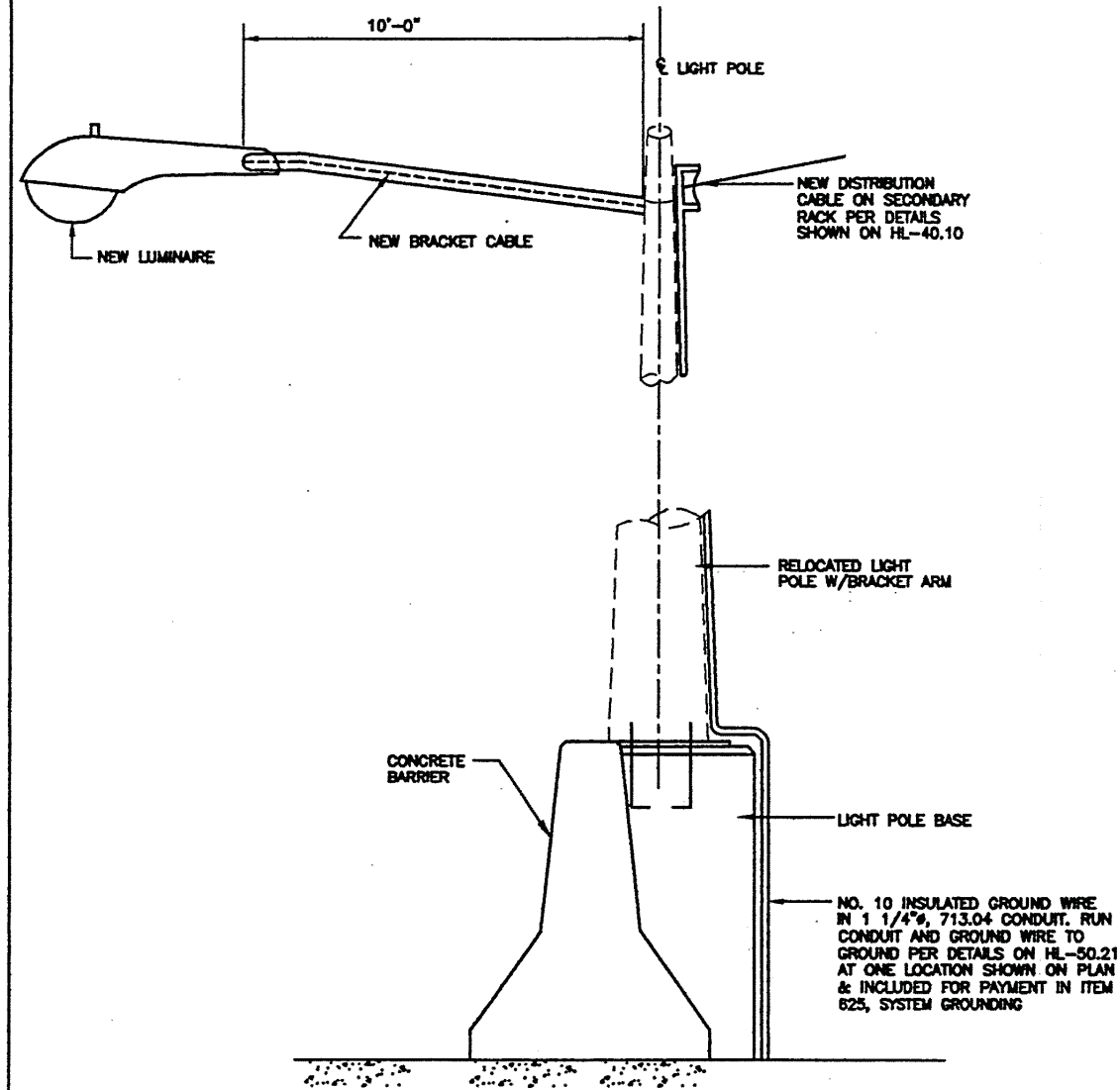
- FOR LIGHTPOLE DETAILS & GENERAL NOTES SEE SHEET NO. 14/15
- ◇ ADD A NEW 250 WATT HIGH PRESSURE SODIUM LUMINAIRE WITH PHOTOCELL TO THIS POLE.
- ◇ TAP OFF EXISTING POWER DISTRIBUTION CABLE AT THIS LIGHT POLE.



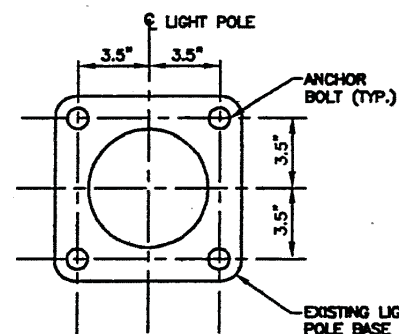
SHEET 12/15 NOT USE

ROBERT P. MADISON INTERNATIONAL, INC. 13/15 ARCHITECTS - ENGINEERS - PLANNERS 2830 BUCKLE AVENUE CLEVELAND, OHIO 44116				
CITY OF CLEVELAND DEPARTMENT OF PUBLIC SERVICE DIVISION OF ENGINEERING AND CONSTRUCTION				
<b>LIGHTING PLAN</b> WEST 3RD RAMP TO EAGLE AVENUE CITY OF CLEVELAND, CITY BRIDGE				
DESIGNED	DRAWN	CHECKED	REVISION DATE	REVISION
R.G.	S.D.	L.J.	J.M.P. 10/04/00	

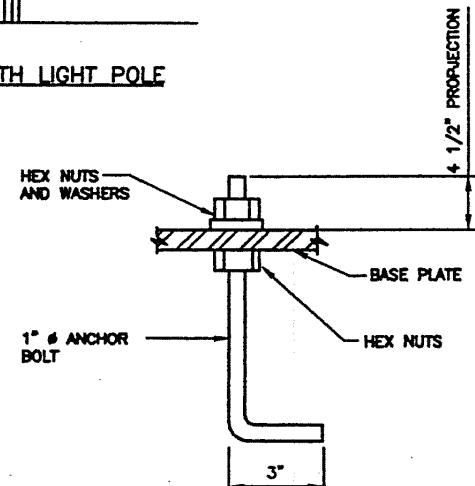
## ELECTRICAL GENERAL NOTES



**TYPICAL BARRIER SECTION WITH LIGHT POLE**  
(N.T.S.)



**TYPICAL ANCHOR BOLT ARRANGEMENT DETAIL**  
(N.T.S.)



**TYPICAL LIGHT POLE ANCHOR BOLT DETAIL**  
(N.T.S.)

PAY ITEM INCLUDED IN ITEM SPECIAL- LIGHT POLE BASES

### SPECIFICATIONS

THESE NOTES ARE SUPPLEMENTAL TO ITEM 625 AND 713 OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS LISTED ON THE TITLE SHEET OF THESE PLANS.

### 625.03 GENERAL

THE POWER SUPPLYING AGENCY FOR THE BRIDGE LIGHTING IS:

CLEVELAND PUBLIC POWER  
1300 LAKESIDE AVENUE  
CLEVELAND, OHIO 44114  
PHONE: (216) 664-3922

THE EAGLE AVENUE W 3rd RAMP BRIDGE LIGHTING CIRCUITRY IS DESIGNED ON THE BASIS OF A 5% MAXIMUM VOLTAGE DROP WITH A No. 4 CIRCUIT CABLE POWER FOR THIS BRIDGE WILL BE PROVIDED FROM AN EXISTING POWER POLE NO. ELP1 LOCATED NORTH WEST OF THE INTERSECTION OF WEST 3rd STREET RAMP AND EAGLE AVE. VIADUCT ROAD. WORK ON THIS PHASE WILL START WITH A TAP INTO THE EXISTING OVERHEAD LINES AT POLE NUMBER ELP1 AS SHOWN ON DRAWING No. 13 OF 15. THE CONTRACTOR SHALL CONTACT CLEVELAND PUBLIC POWER FOR ADDITIONAL INFORMATION AS TO EXACT TIME PERIODS FOR MAKING THE TAP-IN. THE PROPOSED LIGHTING ON EAGLE AVENUE WILL BE SERVICED BY 120/240 VOLTS, THREE-WIRE, GROUNDING NEUTRAL LINE.

### ITEM 625. UNDERGROUND UTILITY

THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITIES AS REQUIRED BY SECTION 153.63 OF THE C.M.S. UTILITY OWNERS SHALL BE NOTIFIED TWO DAYS PRIOR TO COMMENCING CONSTRUCTION AS CALLED FOR IN C.M.S.

### ITEM 625-LUMINAIRE STYLE B, TYPE III, 250 WATT, HIGH PRESSURE SODIUM 713.11, 240 VOLT, AS PER PLAN

THIS ITEM CONSISTS OF INSTALLING LUMINAIRES AT 5 ELECTRICAL POLES (3 ON RE-ERECTED POLES AND 2 ON EXISTING POLES) AS PER PLAN. STYLE B, LUMINAIRE SHALL HAVE A SINGLE RATED 240 VOLT, 250 WATT INTERNAL REGULATOR BALLAST FOR USE WITH HIGH PRESSURE SODIUM LAMPS AND SHALL BE GENERAL ELECTRIC M400, CROUSE-HINDS OVA, AMERICAN 25/26 WITH PHOTOCCELL OR EQUAL APPROVED BY THE ENGINEER. HIGH PRESSURE SODIUM LAMPS SHALL BE GENERAL ELECTRIC "LUCALUX", OSRAM SYLVANIA "LUMALUX", PHILLIPS "CERAMILLUX" OR APPROVED EQUAL BY THE ENGINEER.

### ITEM 625-RE-ERECTING EXISTING LIGHT POLES AS PER PLAN

THIS ITEM SHALL CONSIST OF REINSTALLING THE EXISTING THREE LIGHT POLES AND BRACKET ARMS, AS DESCRIBED IN ITEM 625 OF THE O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATIONS. THE ENGINEER AND CONTRACTOR SHALL INSPECT ALL LIGHT POLES, BEING REUSED PRIOR TO THEIR INSTALLATION TO INSURE THAT THEY ARE IN GOOD CONDITION AND CAN BE REUSED. ANY OF THESE ITEMS DAMAGED DURING THE CONTRACTORS STORAGE AND HANDLING OPERATION OR WHILE THEY ARE BEING RE-ERECTED SHALL BE REPLACED AT NO COST TO THE CITY. THE RELOCATED LIGHT POLES SHALL BE PLACED ON NEW CAST IN PLACE BASES ON THE STRUCTURE AND THE COST OF ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID EACH FOR ITEM 625-RE-ERECT EXISTING LIGHT POLE, AS PER PLAN.

### SYSTEM GROUNDING

THE STRUCTURE SHALL BE GROUNDING AS SHOWN ON STANDARD DRAWING HL-50.21, LATEST REVISION AT THE LOCATIONS SHOWN IN THE PLAN. THE COST OF ALL MATERIALS AND LABOR FOR THE INSTALLATION OF CONDUIT AND GROUND WIRE FROM THE TOP OF THE POLES TO THE GROUND RODS ARE INCLUDED FOR PAYMENT IN ITEM 625, STRUCTURE GROUNDING SYSTEM.

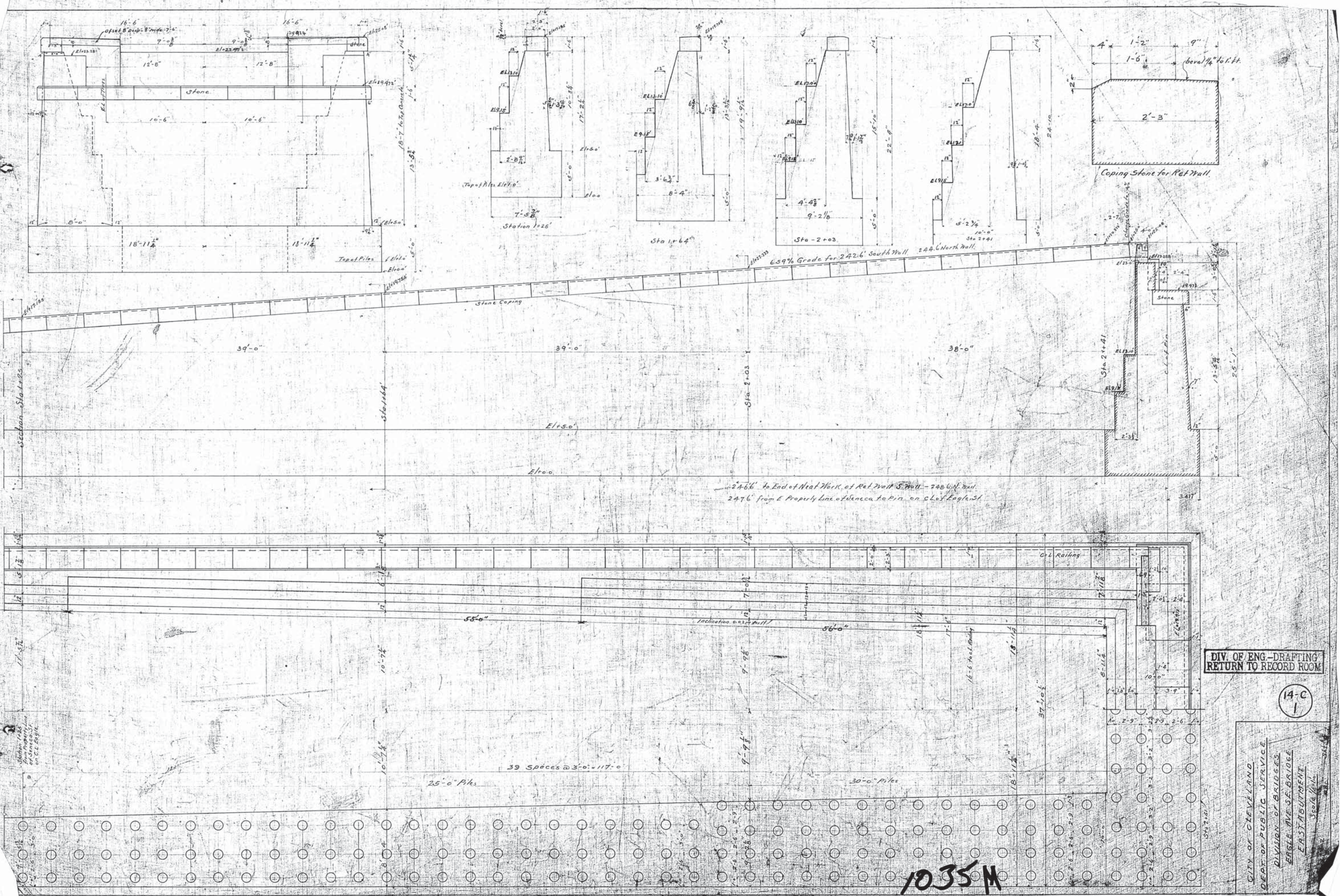
### POWER CONNECTION

THE CONTRACTOR SHALL CONNECT THE ELECTRICAL CABLES TO THE POWER SOURCE AT LOCATION SHOWN ON SHEET 13 OF 15. THE COST OF THE POWER-CONNECTING, PER DETAILS SHOWN ON STD. DWG. HL-40.10 INCLUDING WEATHER HEAD AND OTHER EQUIPMENT NEEDED TO COMPLETE THE WORK IS INCIDENTAL AND SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF ITEM 625, DISTRIBUTION CABLE.

### HIGH VOLTAGE TEST

A HIGH VOLTAGE DIRECT CURRENT TEST, AS DESCRIBED IN SUPPLEMENTAL SPECIFICATION 1003, SHALL BE PERFORMED ON ALL DISTRIBUTION CABLE TO BE INSTALLED ON THIS PROJECT. THE TEST SHALL NOT BE PERFORMED UNTIL ALL NEW CONSTRUCTION IN THE VICINITY OF THE CABLE BEING TESTED, HAS BEEN COMPLETED.

ROBERT P. MADSON INTERNATIONAL, INC. 14/15 ARCHITECTS - ENGINEERS - PLANNERS 2308 EAGLE AVENUE CLEVELAND, OHIO 44115				
CITY OF CLEVELAND DEPARTMENT OF PUBLIC SERVICE DIVISION OF ENGINEERING AND CONSTRUCTION				
<b>LIGHTING GENERAL NOTES &amp; DETAILS</b>				
WEST 3RD RAMP TO EAGLE AVENUE CITY OF CLEVELAND, CITY BRIDGE				
DESIGNED	DRAWN	CHECKED	REVISION DATE	REVISION
T.T.	R.J.G.	L.J.	J.M.P. 10/04/00	



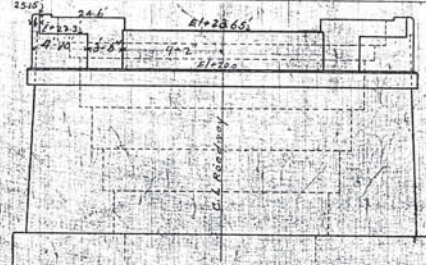
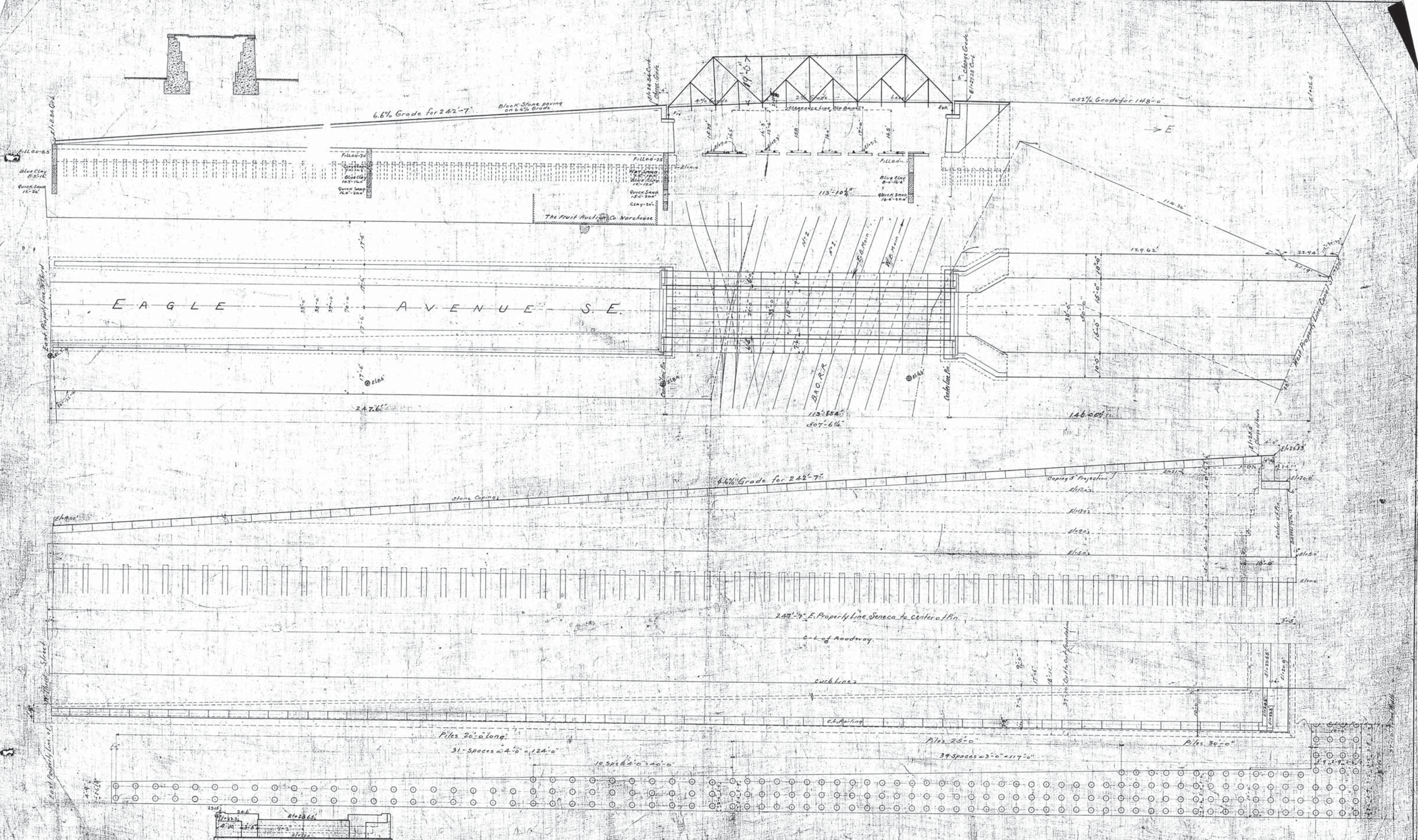
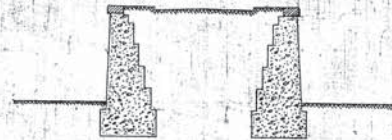
DIV. OF ENG.-DRAWING  
RETURN TO RECORD ROOM

14-C  
1

CITY OF CLEVELAND  
DEPT. OF PUBLIC SERVICE  
DIVISION OF BRIDGES  
EAGLE AVE. SE. BRIDGE  
EASTABTMENT  
Scale 1/4" = 1'-0"

1035M

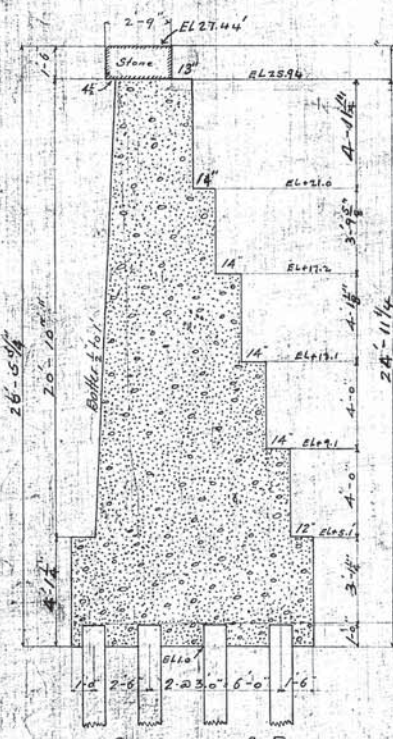
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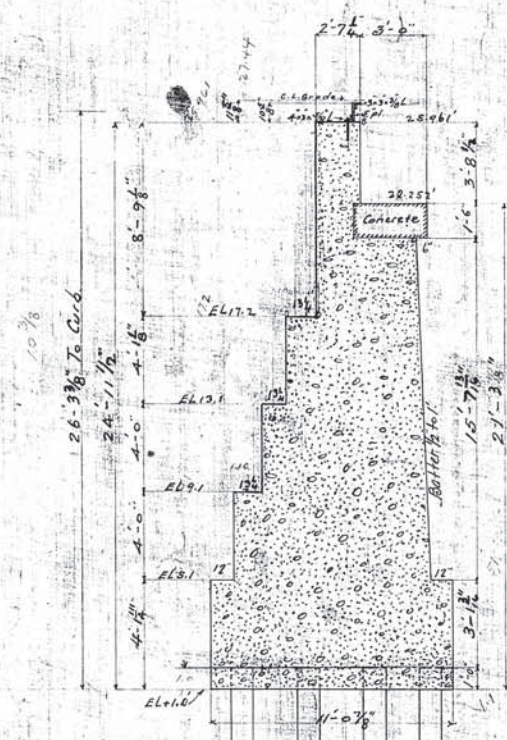
**DIV. OF ENG.—DRAFTING**  
**RETURN TO RECORD ROOM**

14-C  
 2

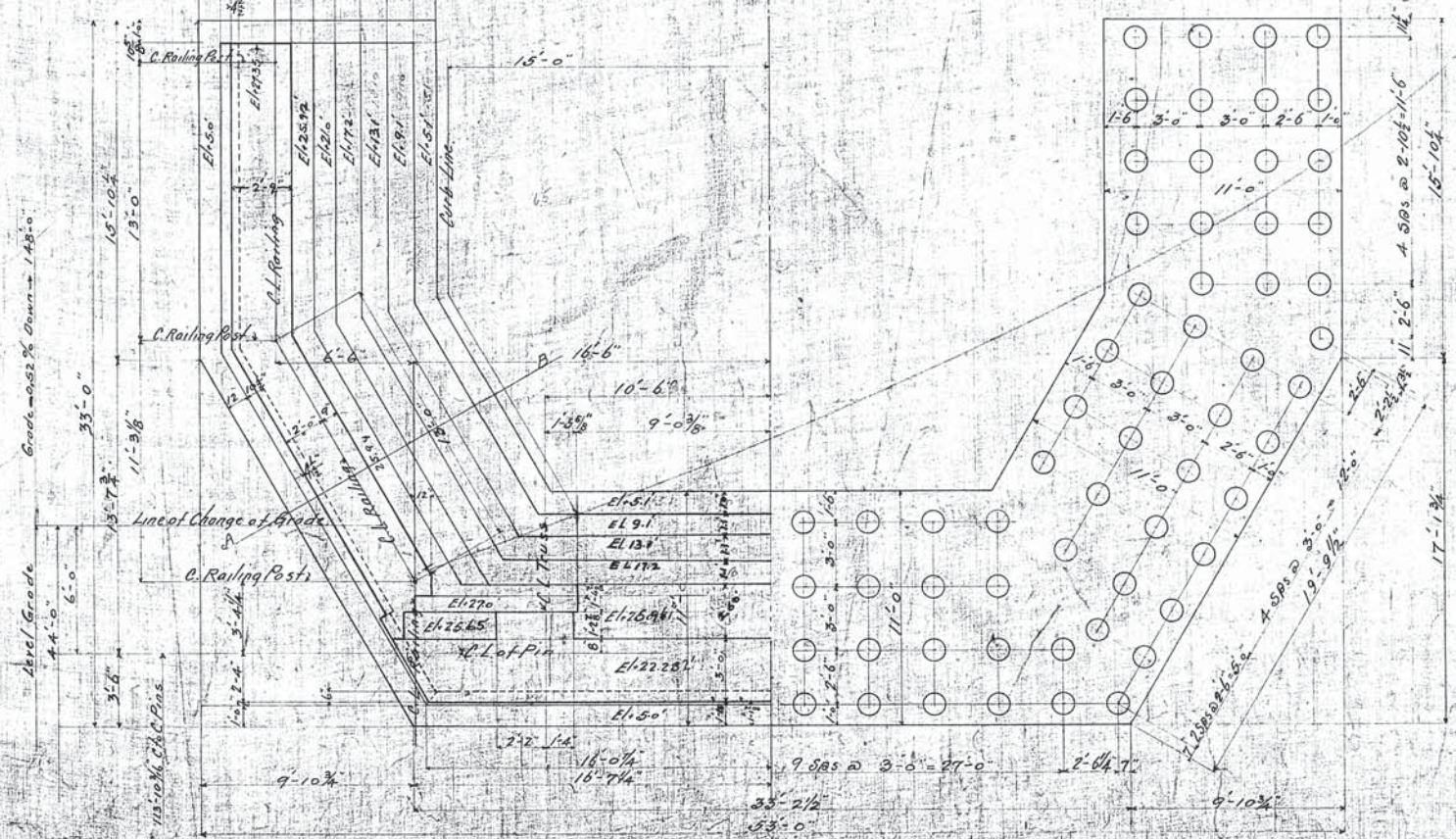
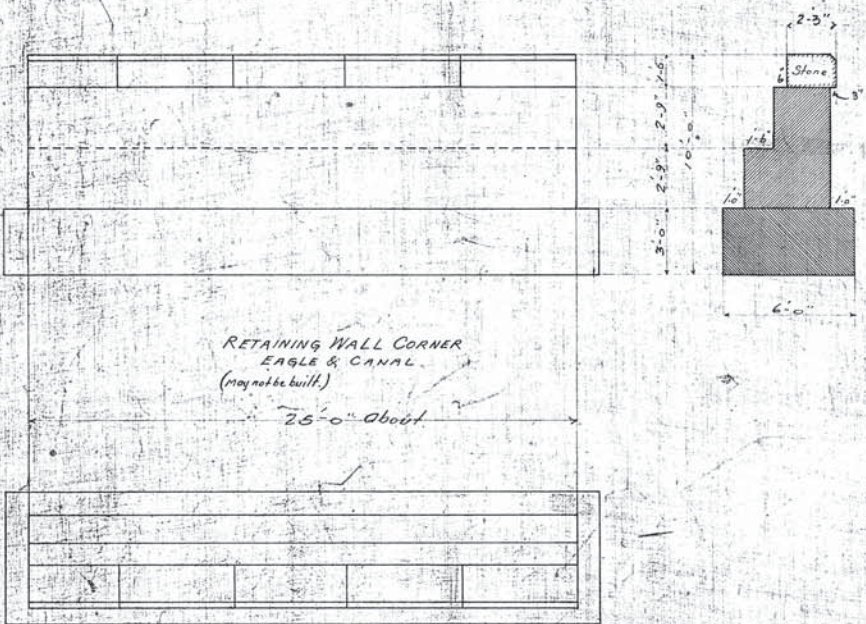
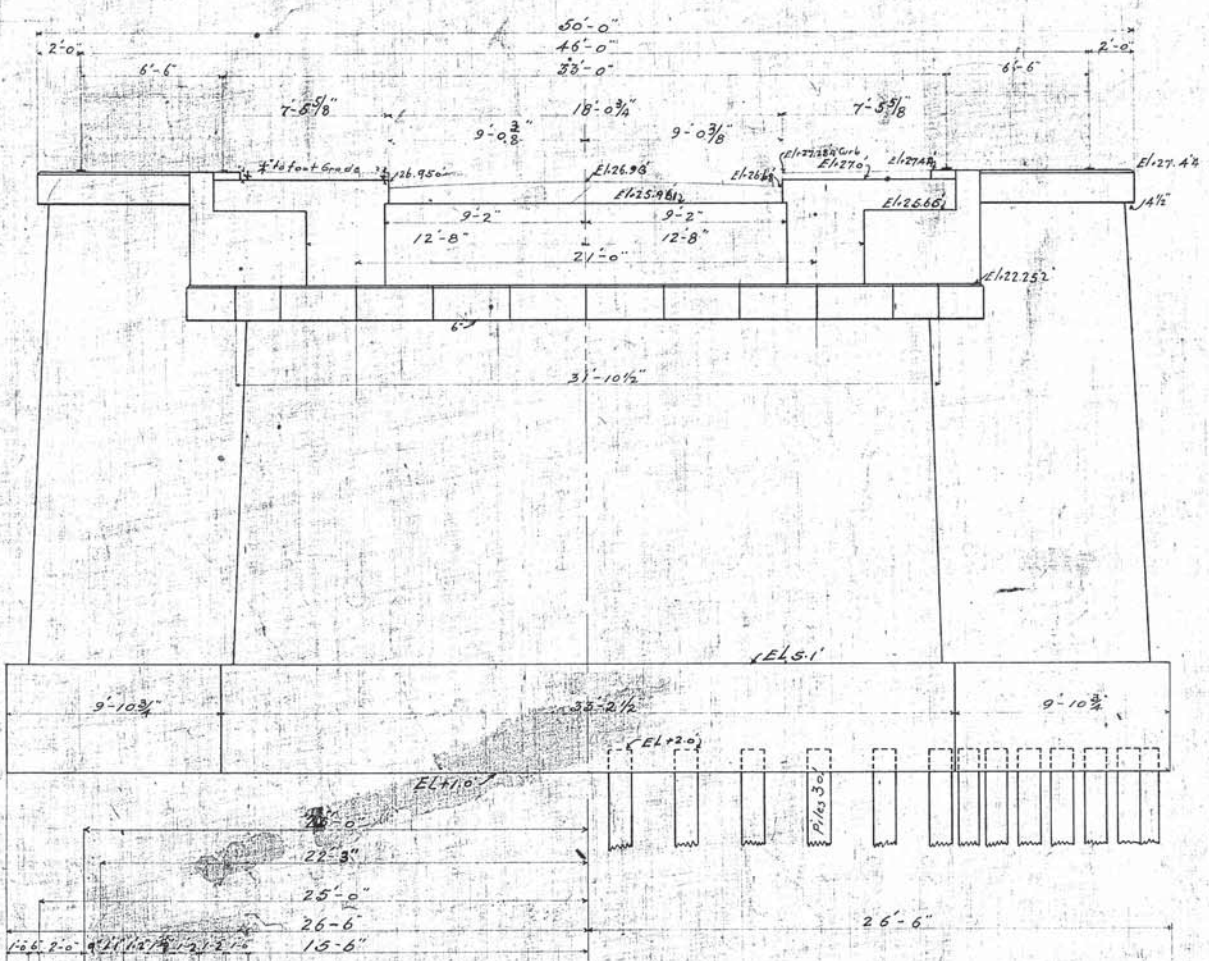
CITY OF CLEVELAND  
 DEPT. OF PUBLIC SERVICE  
 DIVISION OF BRIDGES  
 EAGLE AVENUE BRIDGE  
 GENERAL PLAN & PLAN RETAINING WALL  
 Scale 1" = 10'-0"  
 1/16" = 1'-0"  
 May 1907  
 CNE SKS



SECTION A.B.



CENTER LINE SECTION



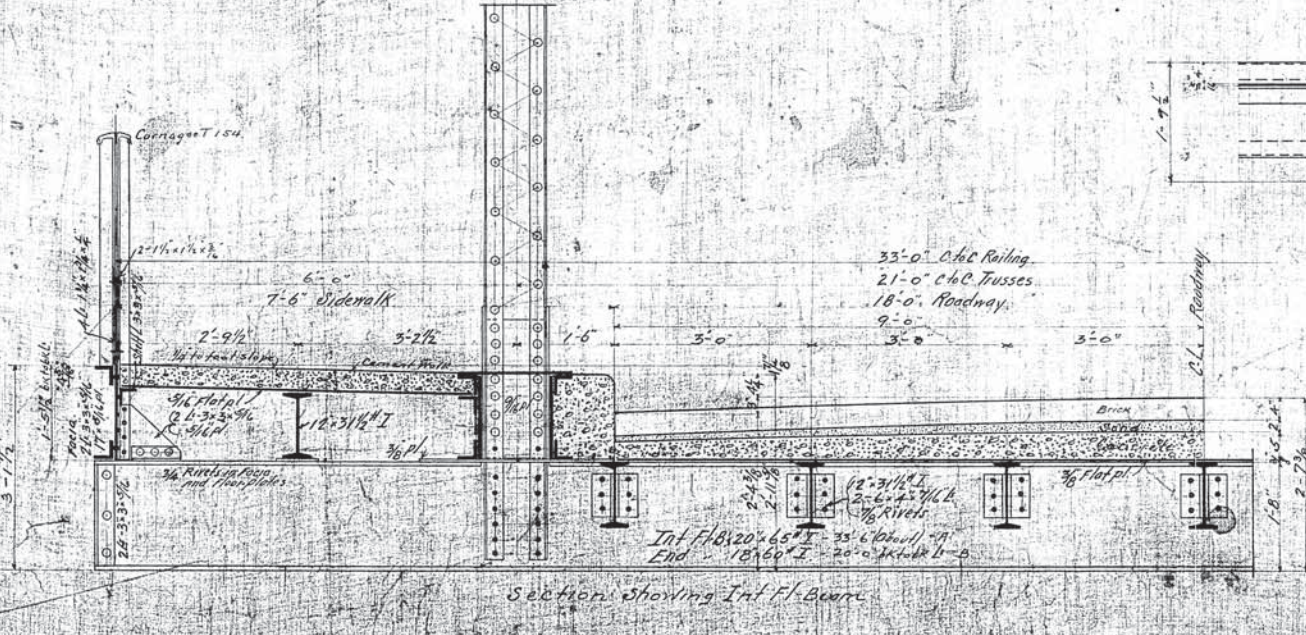
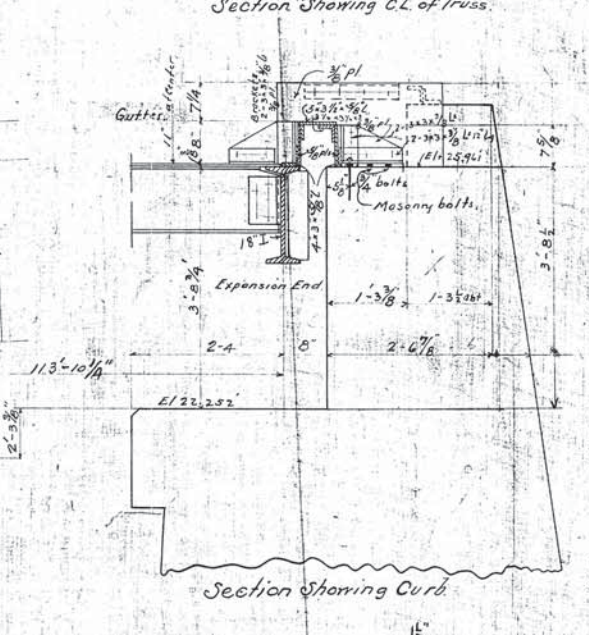
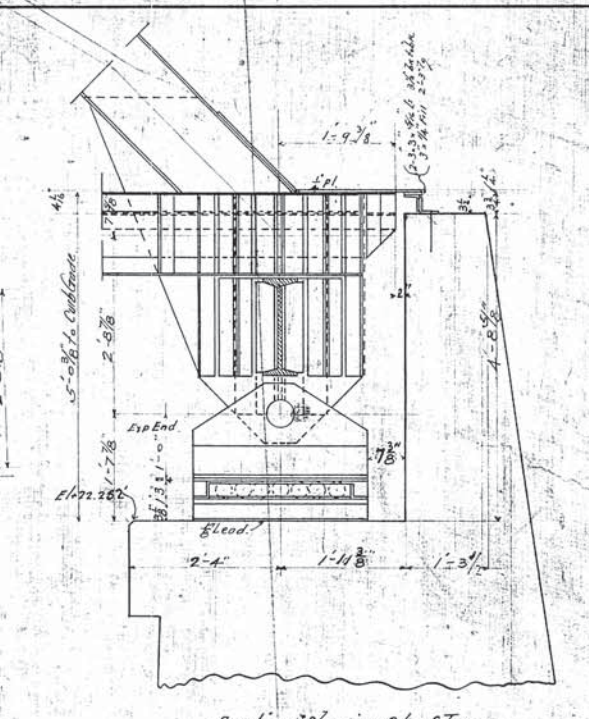
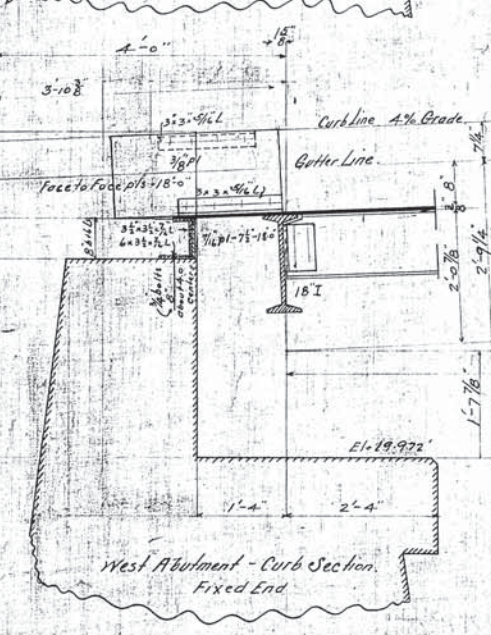
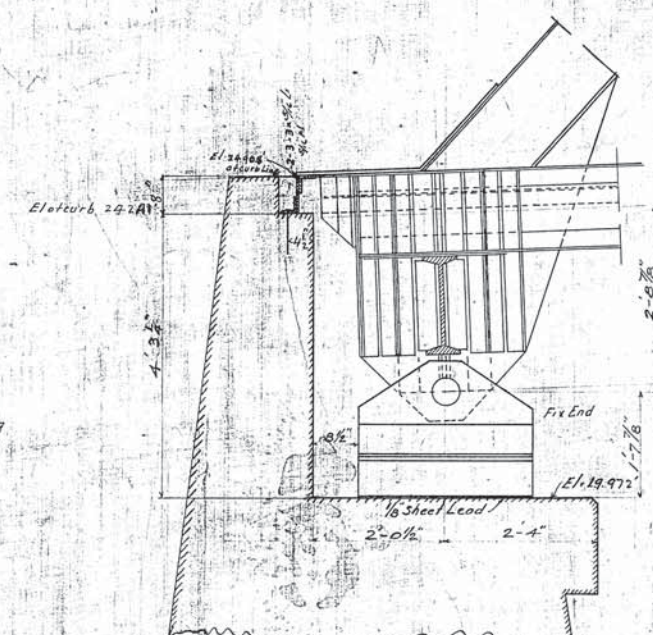
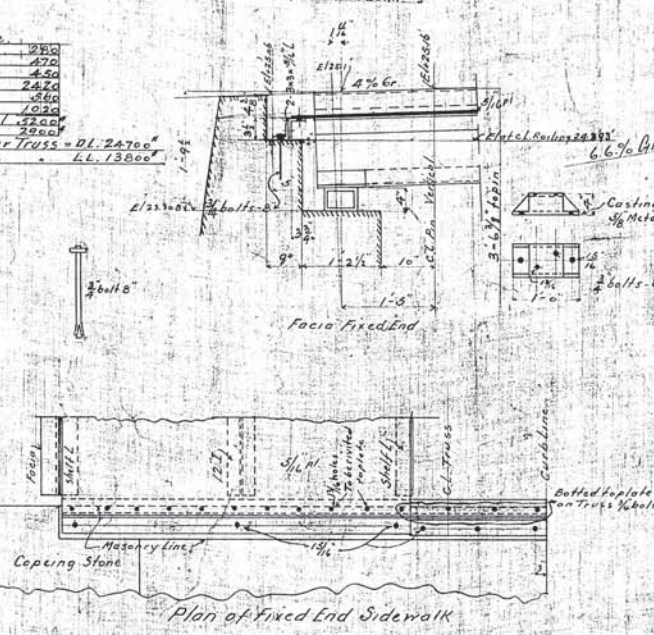
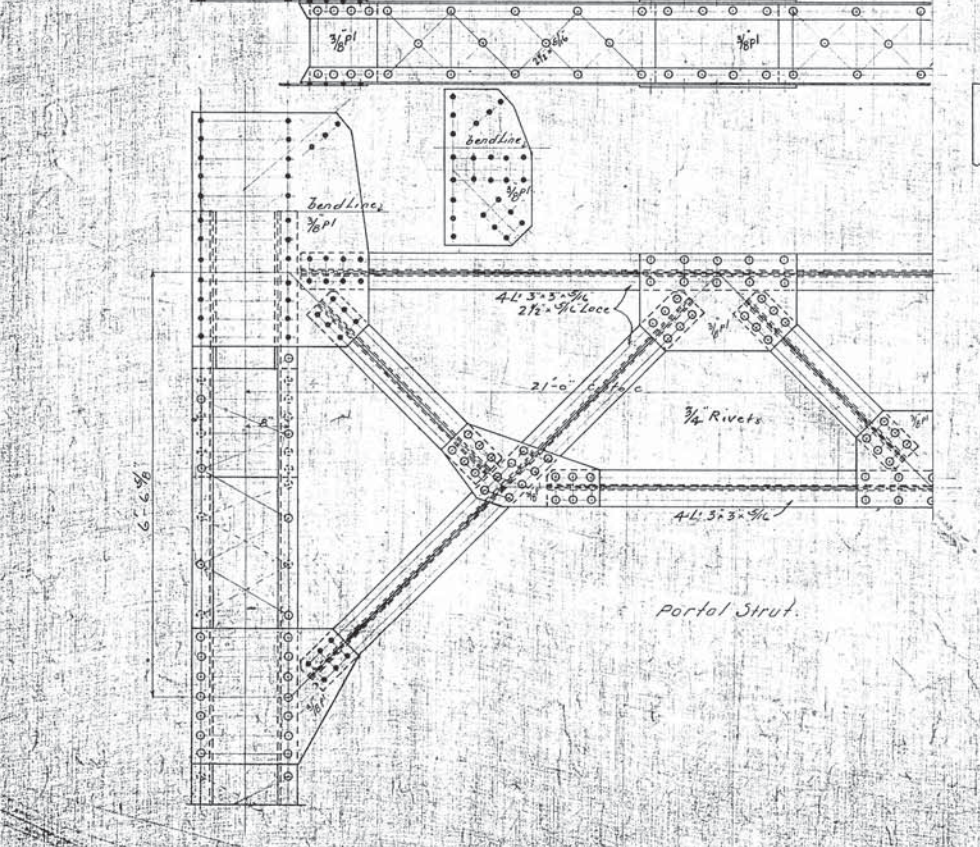
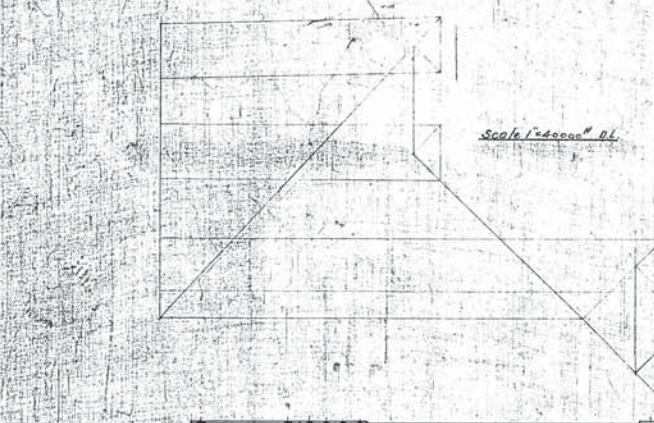
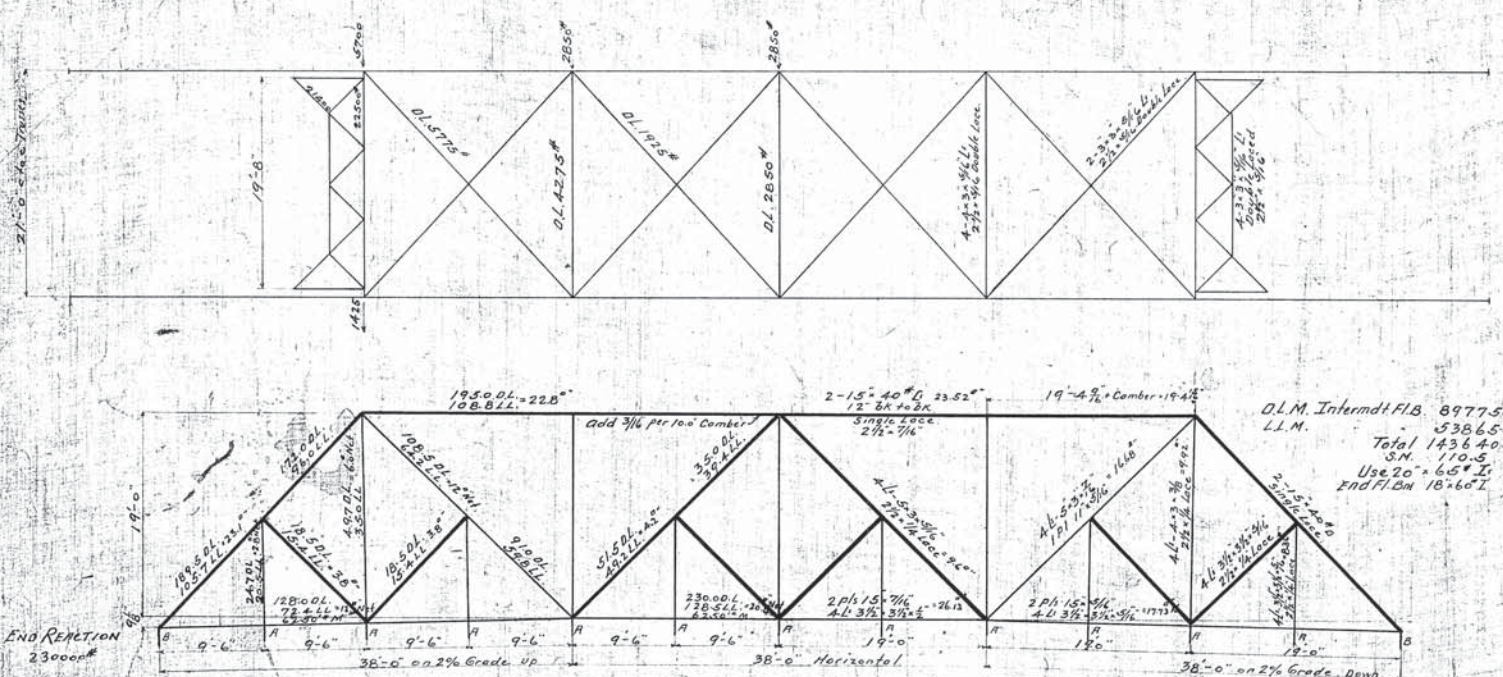
PLAN OF EAST ABUTMENT

DIV. OF ENG.-DRAFTING  
RETURN TO RECORD ROOM

14-C  
3

CITY OF CLEVELAND  
DEPT. OF PUBLIC SERVICE  
DIVISION OF BRIDGES  
EAGLE AVE. SE. BRIDGE  
EAST ABUTMENT  
Scale 1/4" = 1'-0"  
May 1907

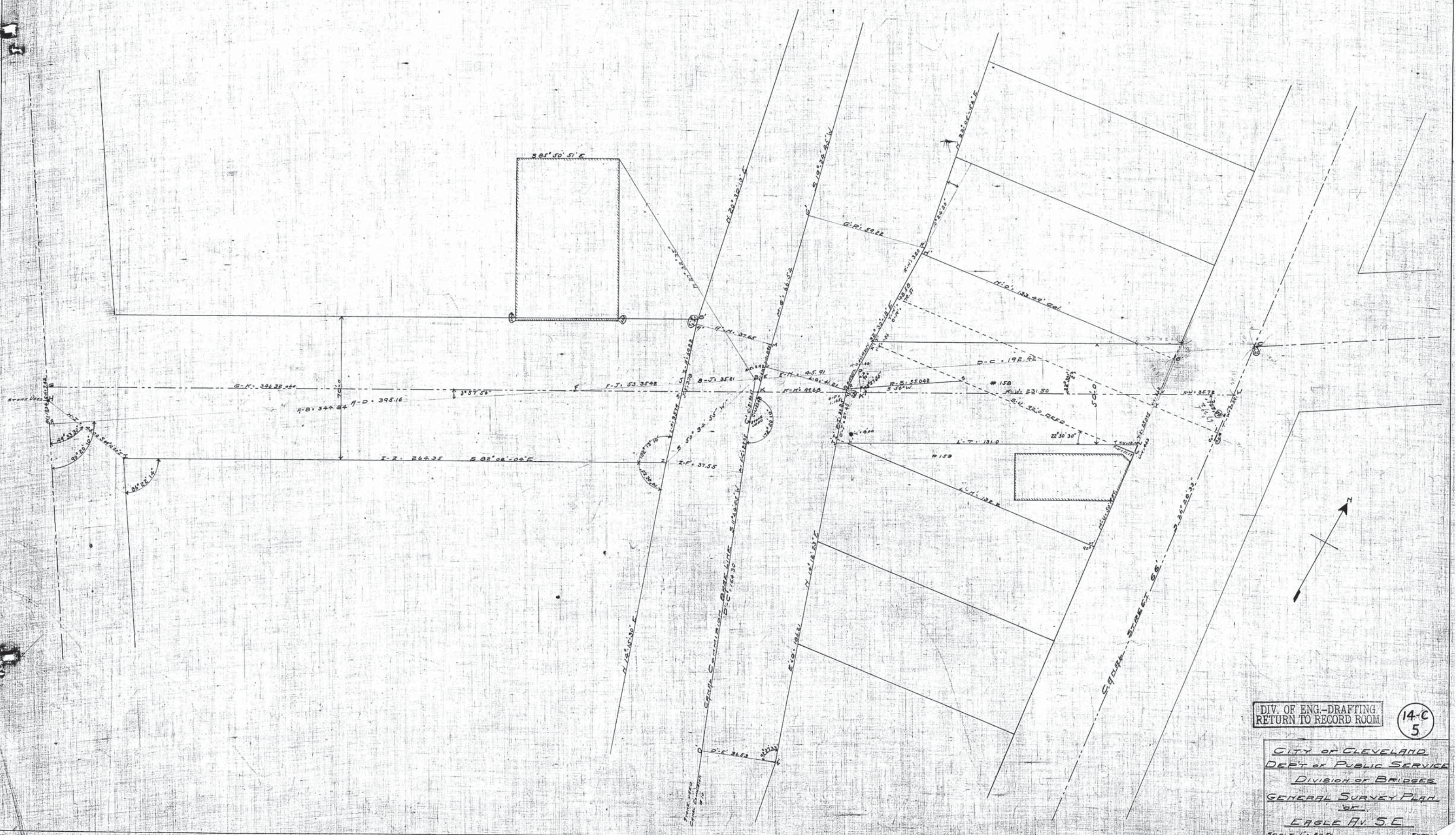




DIV. OF ENG.-DRAFTING  
RETURN TO RECORD ROOM

14-C  
4

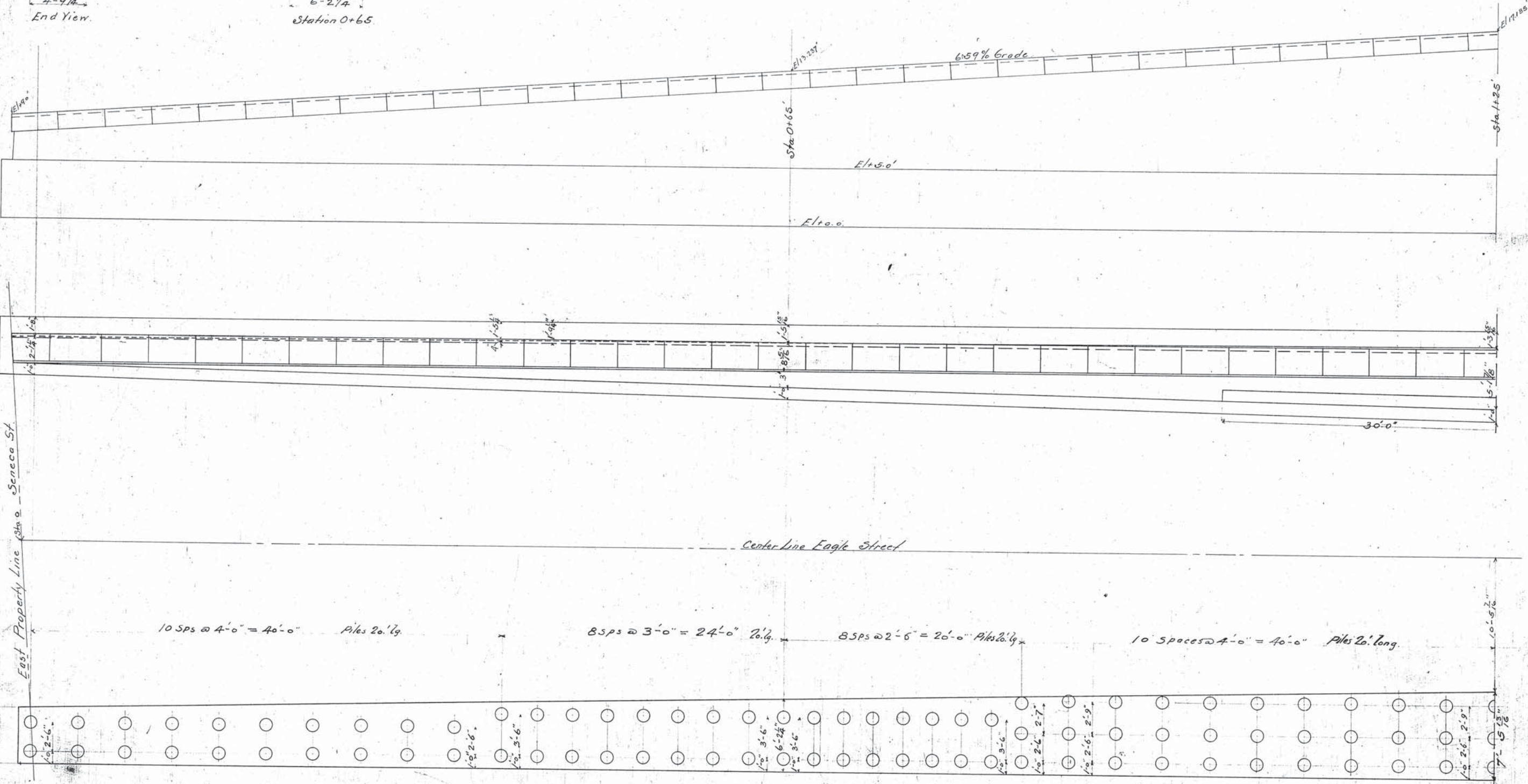
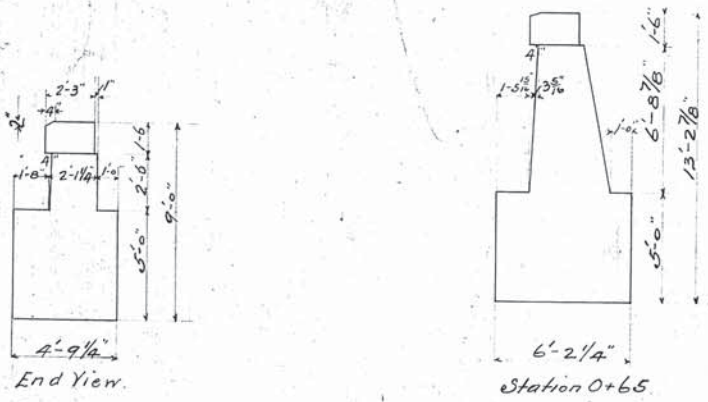
CITY OF CLEVELAND  
DEPT. OF PUBLIC SERVICE  
DIVISION OF BRIDGES  
EAGLE AVENUE BRIDGE  
DETAILS  
Scale 3/4" = 1'-0"  
MAY 1907



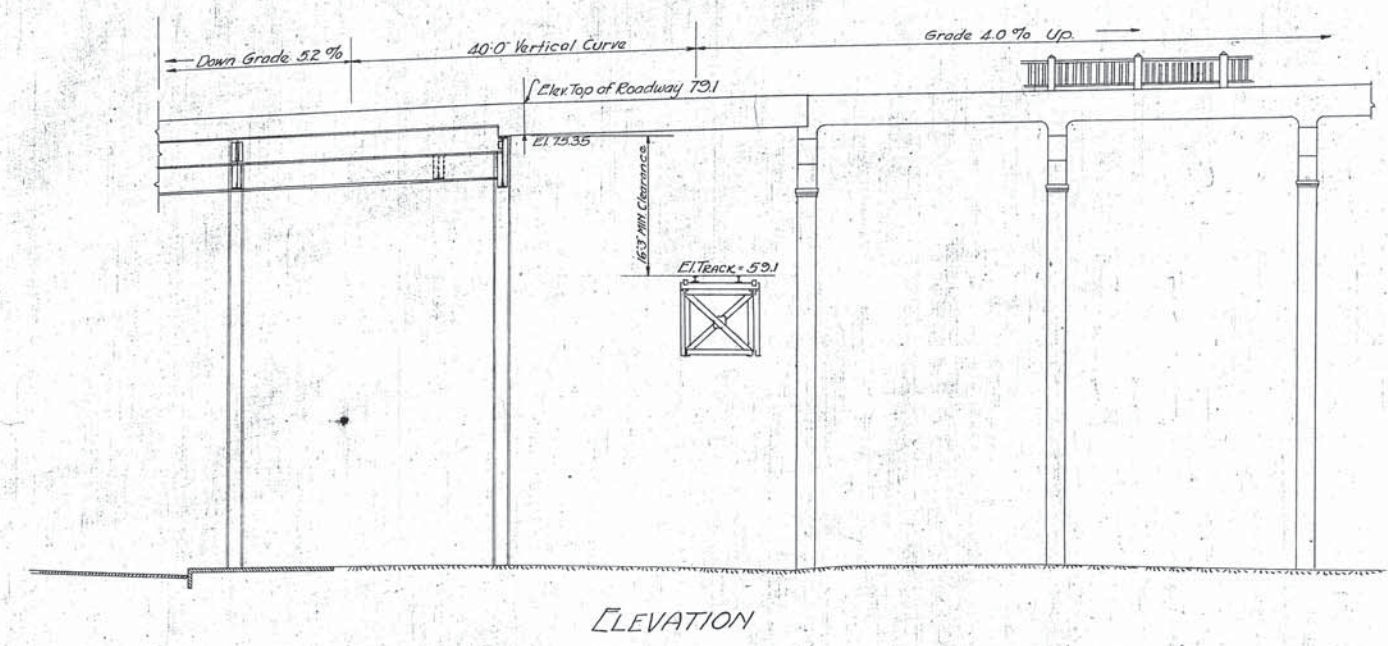
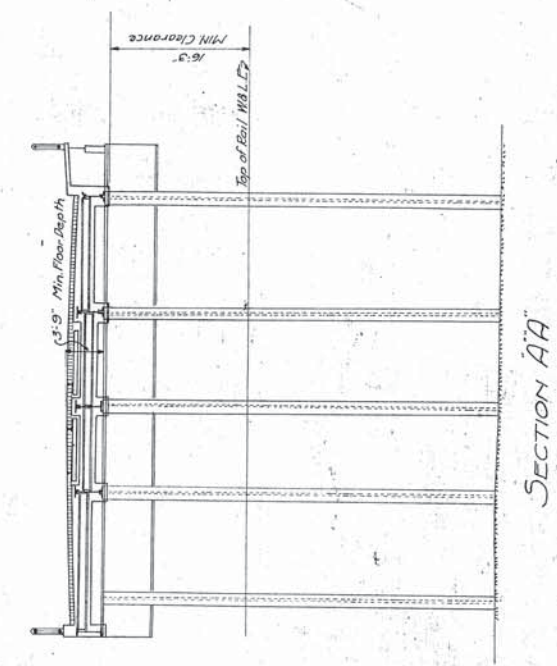
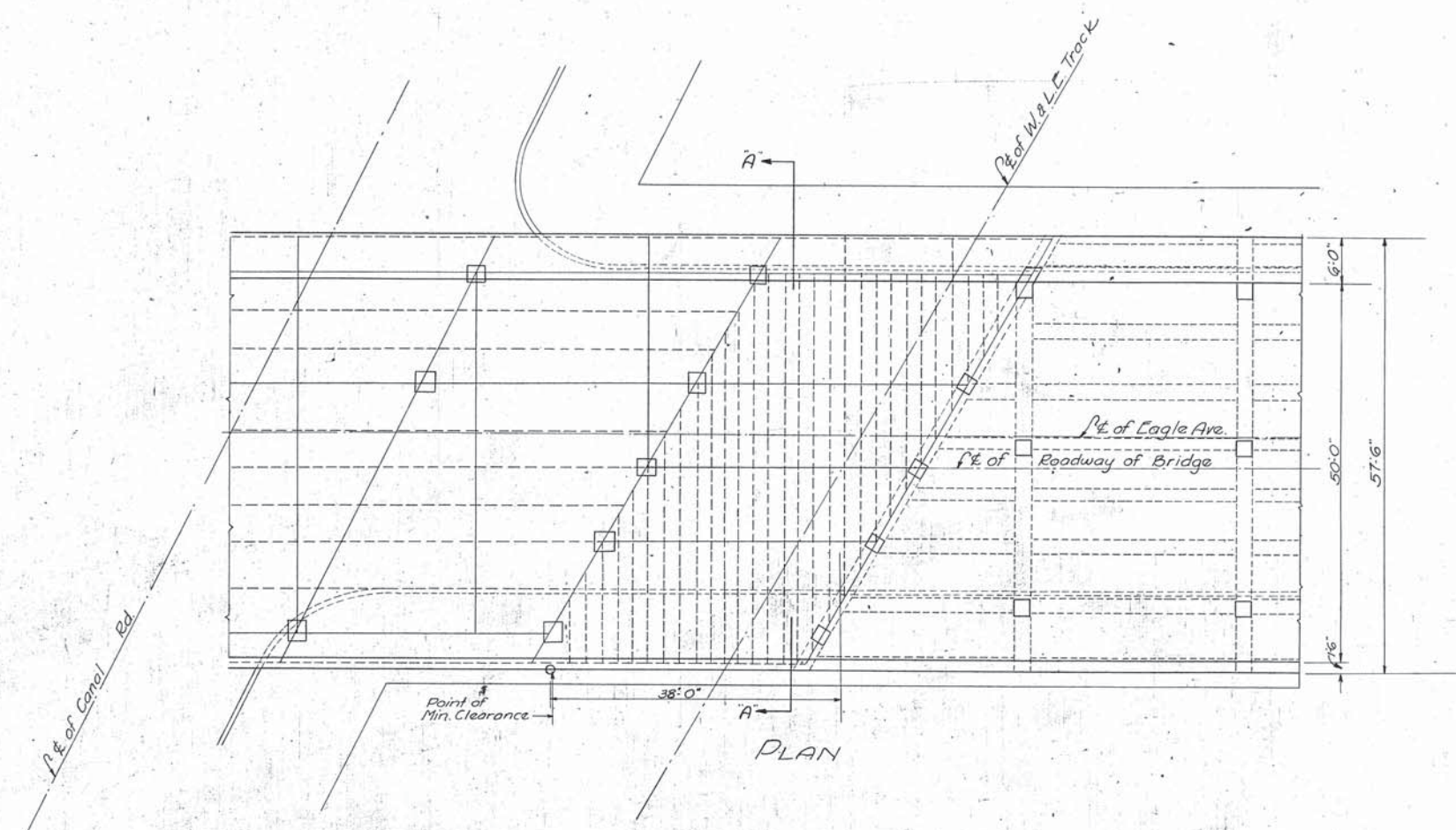
DIV. OF ENG.-DRAFTING  
 RETURN TO RECORD ROOM

14-C  
 5

CITY OF CLEVELAND  
 DEPT. OF PUBLIC SERVICE  
 DIVISION OF BRIDGES  
 GENERAL SURVEY PLAN  
 OF  
 EAGLE AV. S.E.  
 SCALE 1" = 20'



DIV. OF ENG.-DRAFTING  
RETURN TO RECORD ROOM



DIV. OF ENG.-DRAFTING  
RETURN TO RECORD ROOM

14-C  
7

32 W

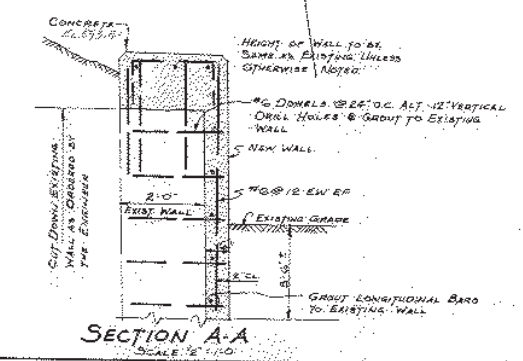
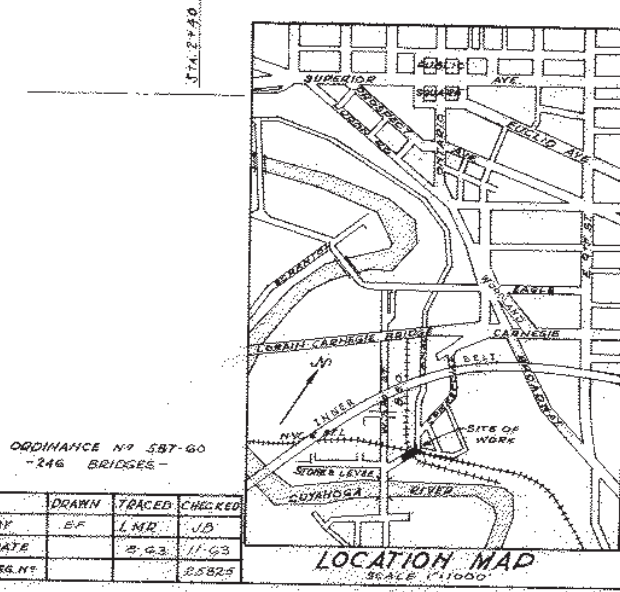
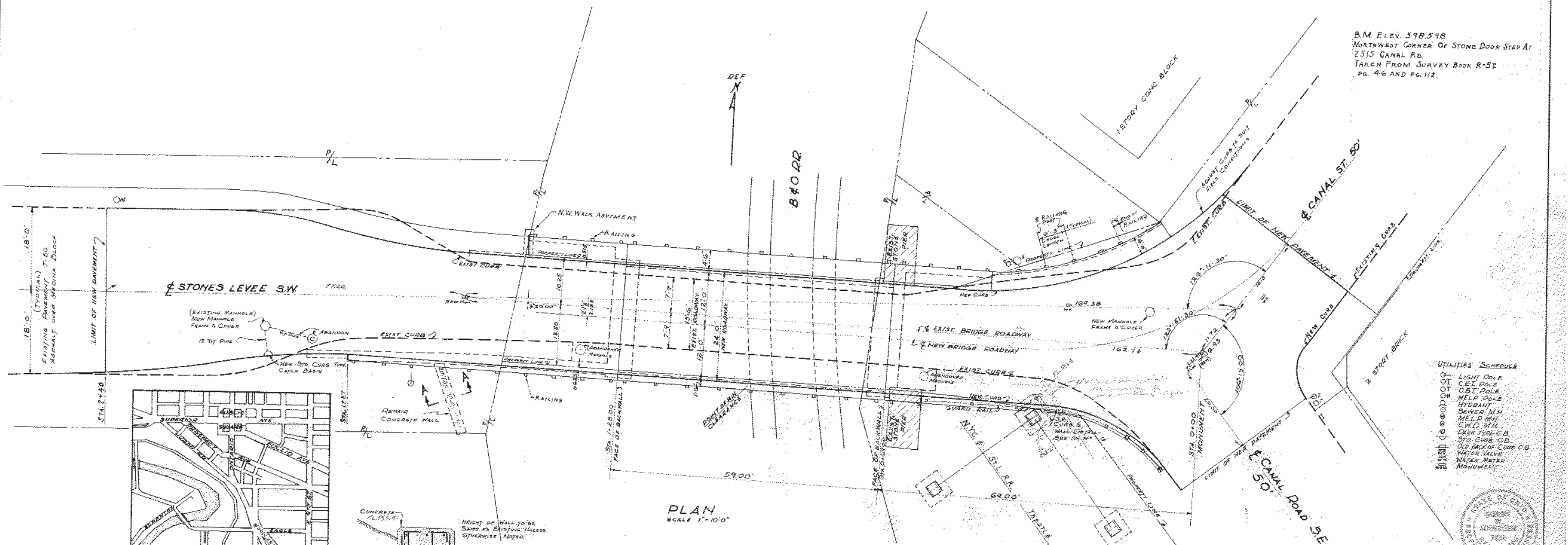
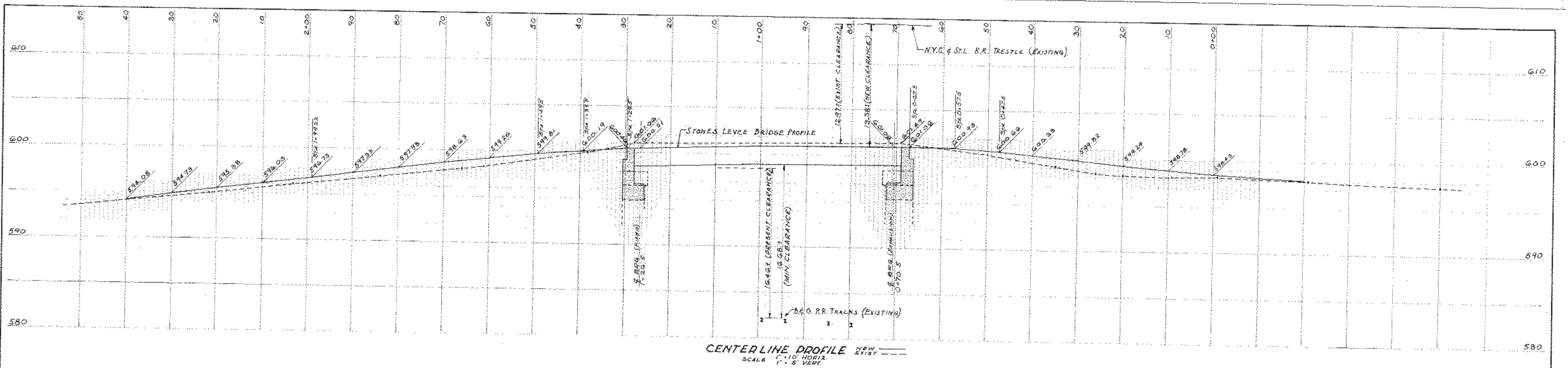
CITY OF CLEVELAND  
ENGINEERING DIVISION  
SECTION OF EAGLE AVE  
BRIDGE  
VICINITY OF THE W&L E. R.R.

SCALE: Horiz. 1"=10' Vert. 1"=10'

APPROVED: \_\_\_\_\_

Checked: \_\_\_\_\_ Date: \_\_\_\_\_

File No. \_\_\_\_\_



ORDINANCE NO 587-60  
-246 BRIDGES-

BY	DATE	TRACED	CHECKED
EF	5-63	LD	
			55825

NOTE:  
ALL UTILITIES TO BE DEEPER UNDER THIS CONTRACT SHOWN ON DRAWING PLAN 58-N-7.  
ALL OTHER UTILITIES TO BE REMOVED OR REPLY BY OTHERS.

APPROVED *[Signature]* DATE Oct 11, 1964  
COMM. OF ENGR. & CONSTR.

**GENERAL PLAN**

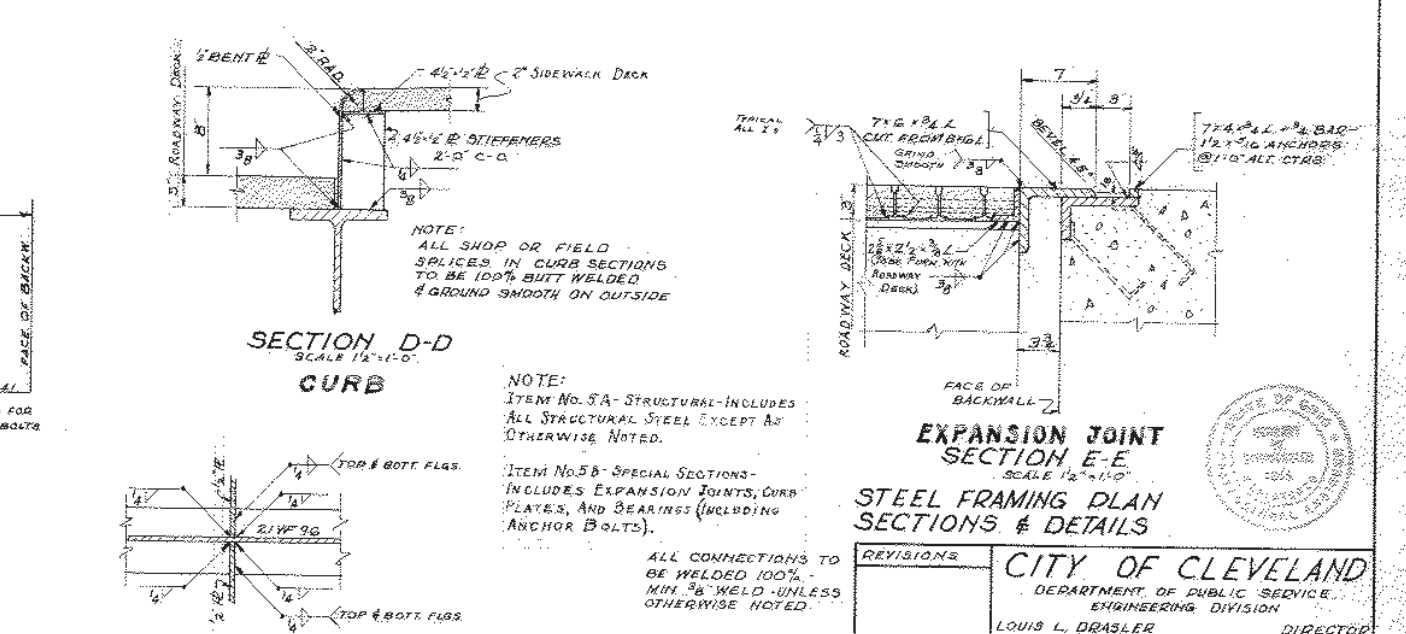
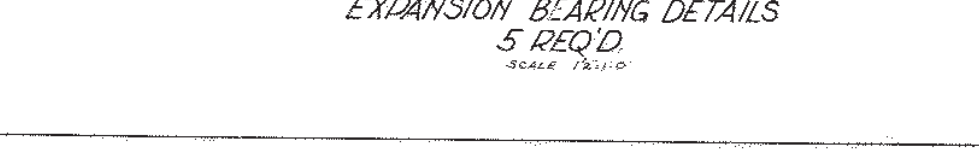
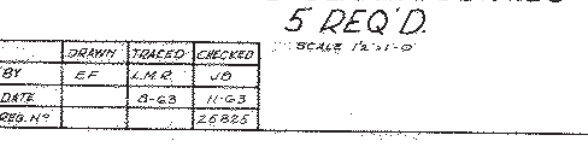
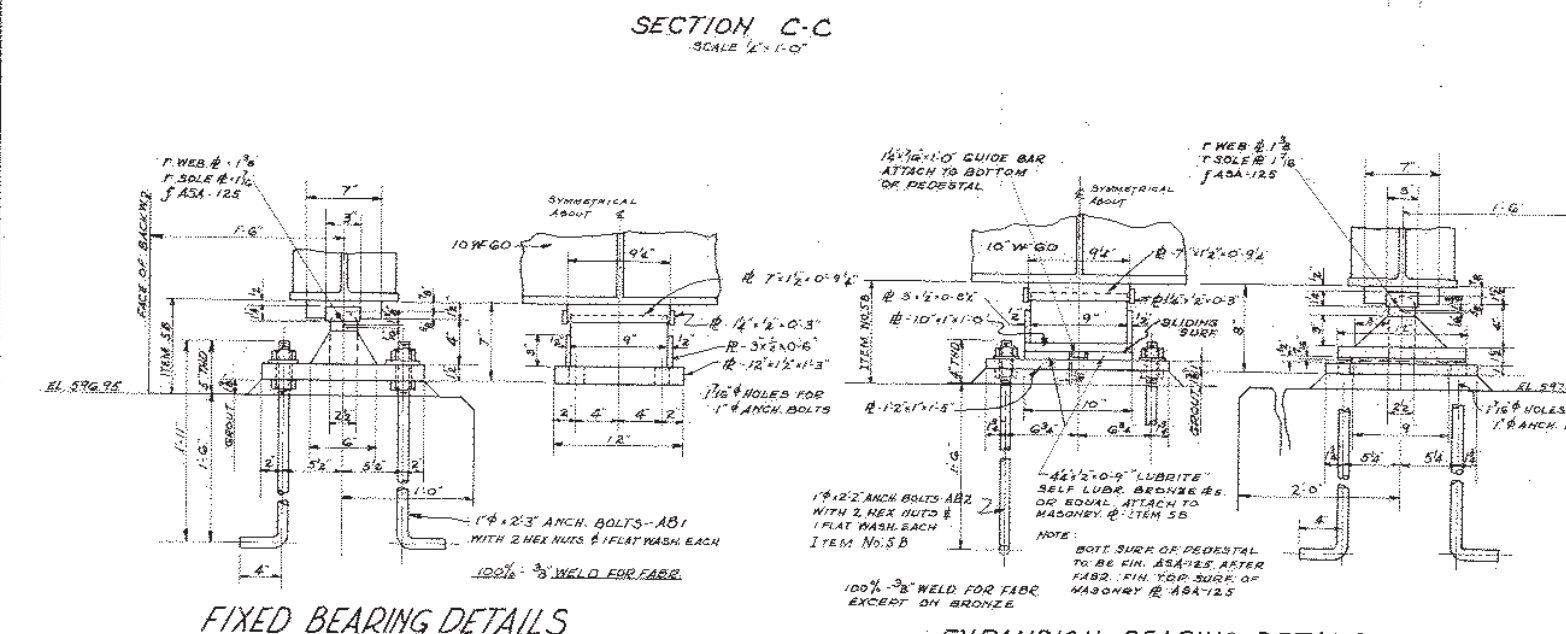
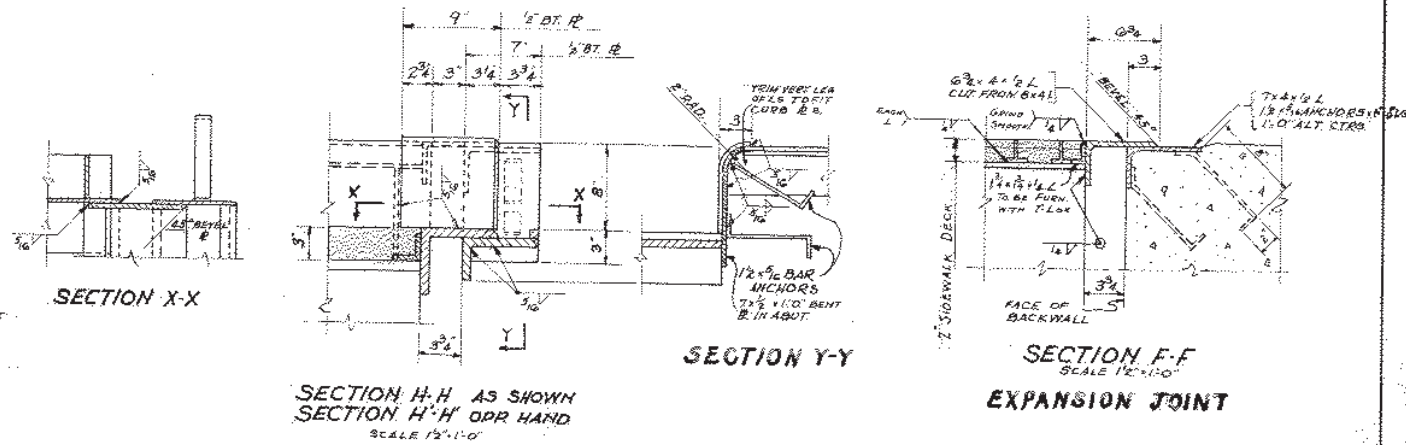
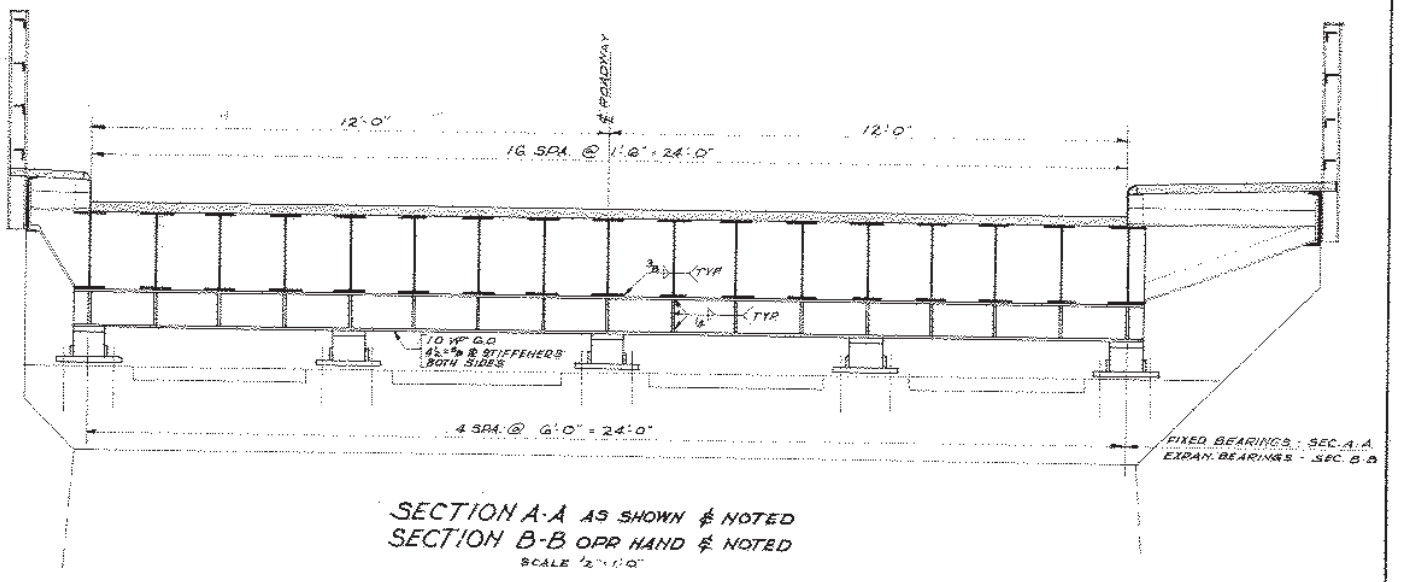
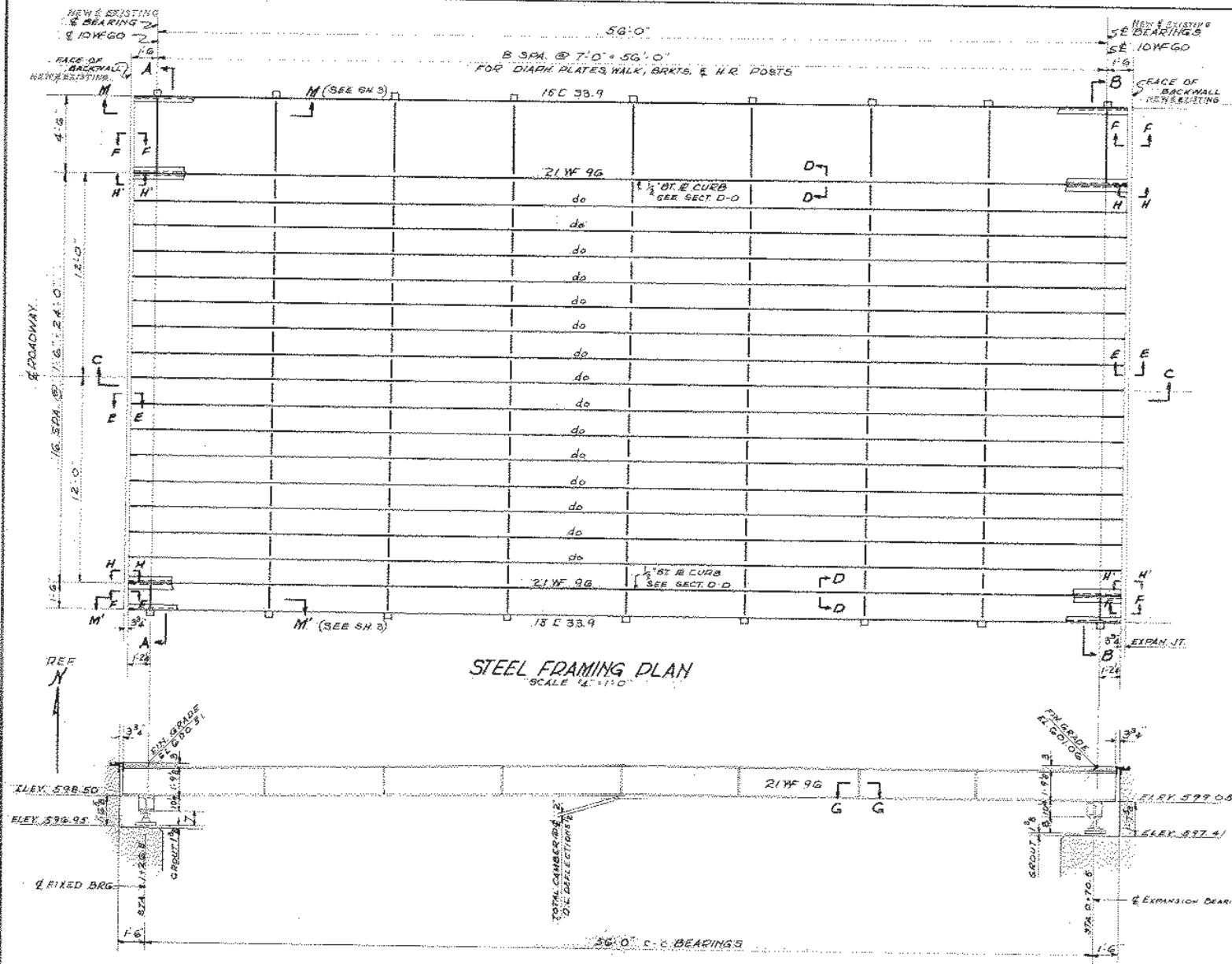
REVISIONS

CITY OF CLEVELAND  
DEPARTMENT OF PUBLIC SERVICE  
ENGINEERING DIVISION  
LOUIS L. CRASLER DIRECTOR

RECONSTRUCTION OF DECK  
STONES LEEVE BRIDGE  
OVER BALTIMORE & OHIO RAILROAD

APPROVED *[Signature]* 8-11-64  
BRIDGE ENGINEER

SH. 1 OF 8 DRWG. NO 2378 FILE NO B-0-12



DRAWN	TRACED	CHECKED
BY EF	LMR	JD
DATE	8-23	11-23
REV. NO.		26825

APPROVED  
COM. OF ENGR. & CONSTR.  
DATE Aug 11, 1945

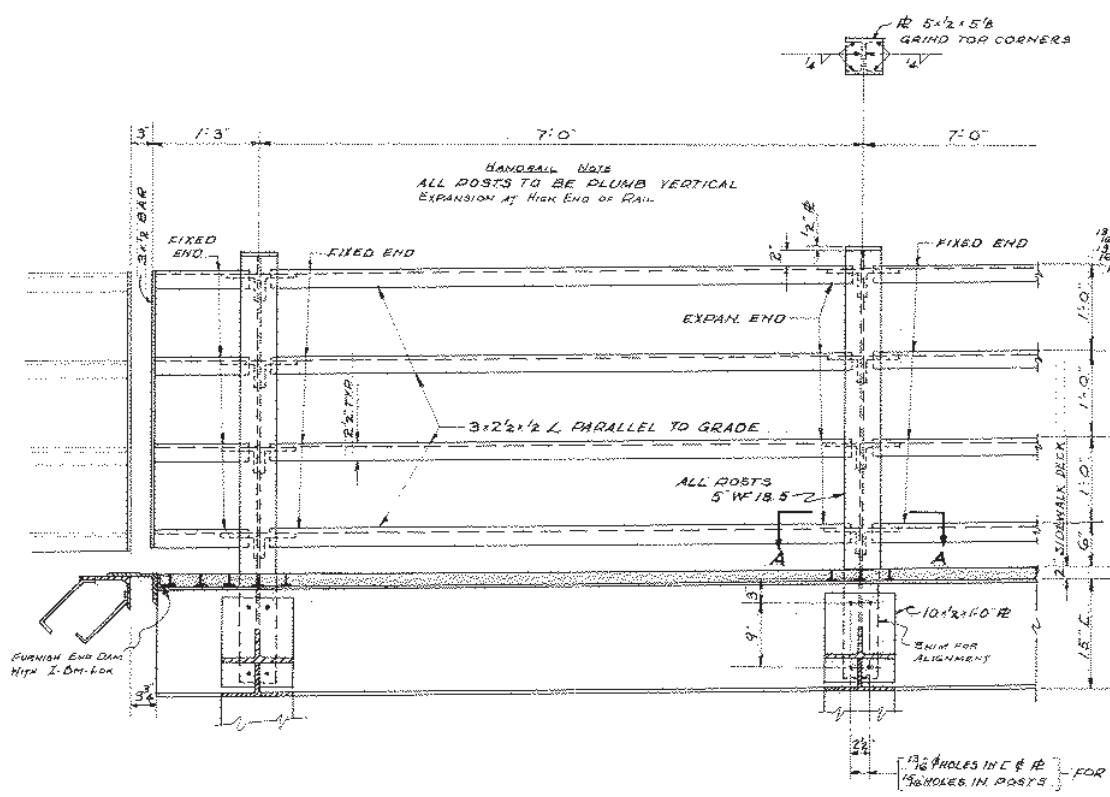
REVISIONS

CITY OF CLEVELAND  
DEPARTMENT OF PUBLIC SERVICE  
ENGINEERING DIVISION  
LOUIS L. DRASLER DIRECTOR

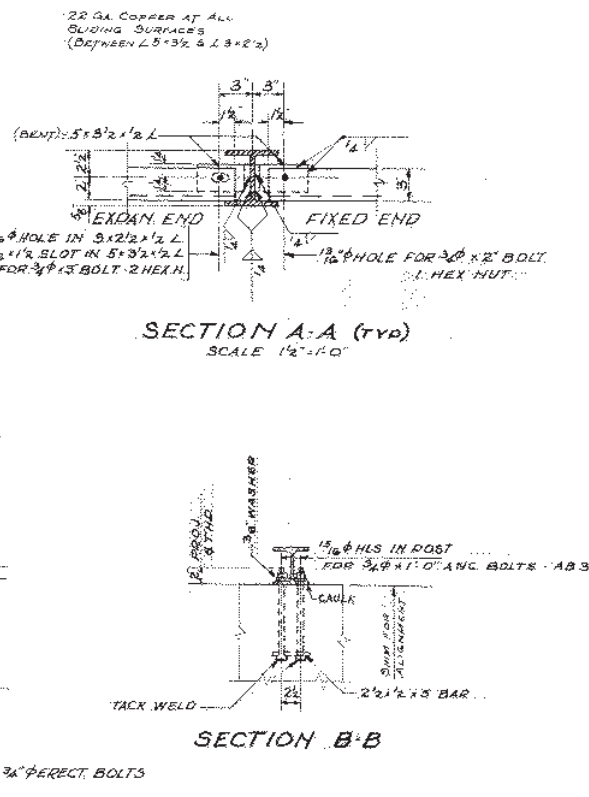
RECONSTRUCTION OF DECK  
STONES LEYEE BRIDGE  
OVER BALTIMORE & OHIO RAILROAD

APPROVED  
BRIDGE ENGINEER

SH. 2 OF 8  
DRWG. NO. 2379  
FILE NO. B.O. 12

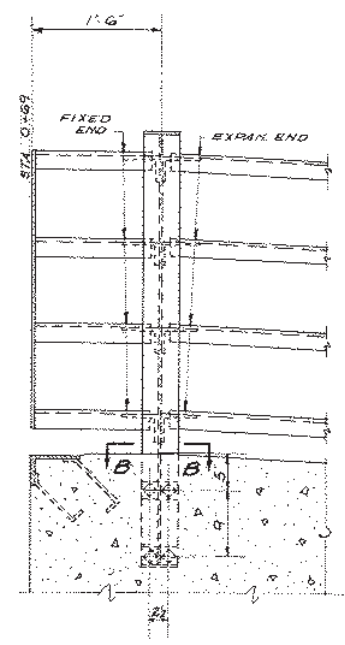


SECTION M-M AS SHOWN & NOTED SH. N° 2  
SECTION M-M' OPP. HAND & NOTED  
SCALE 1" = 1'-0"

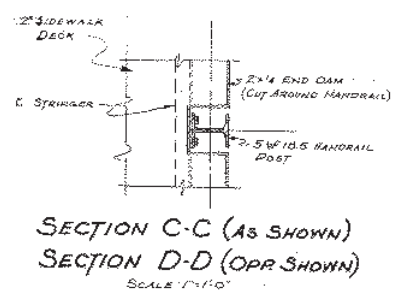


SECTION A-A (TYP)  
SCALE 1/2" = 1'-0"

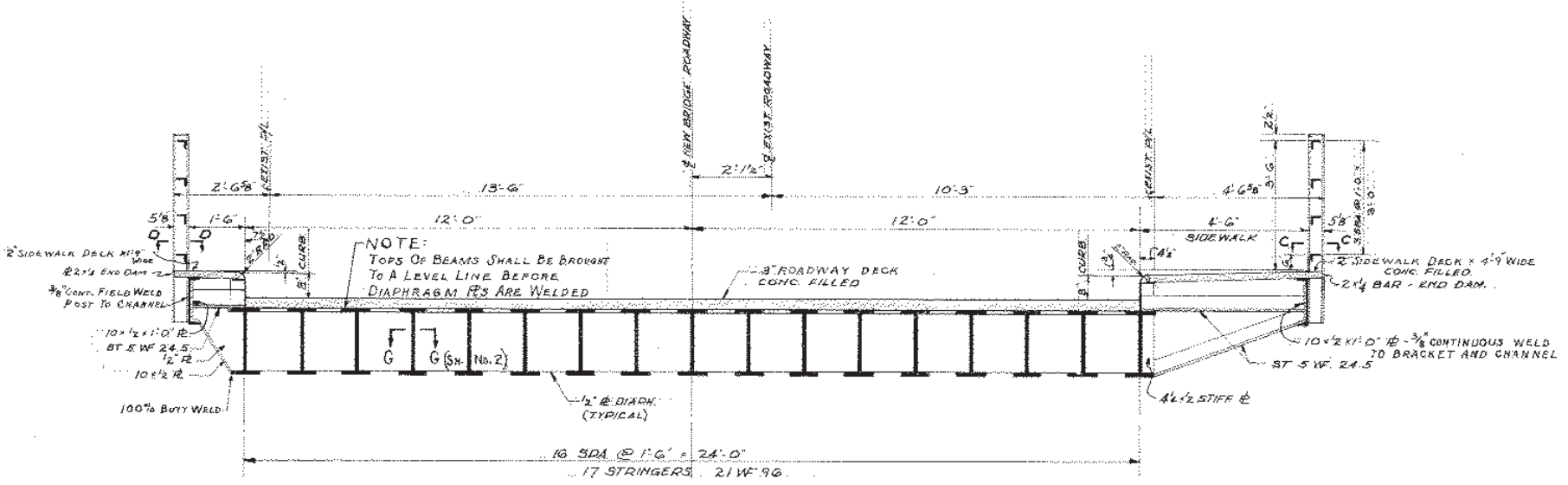
SECTION B-B



SECTION N-N AS SHOWN SH. N° 5  
SECTION N-N' OPP. HAND  
SCALE 1" = 1'-0"



SECTION C-C (AS SHOWN)  
SECTION D-D (OPP. SHOWN)  
SCALE 1" = 1'-0"



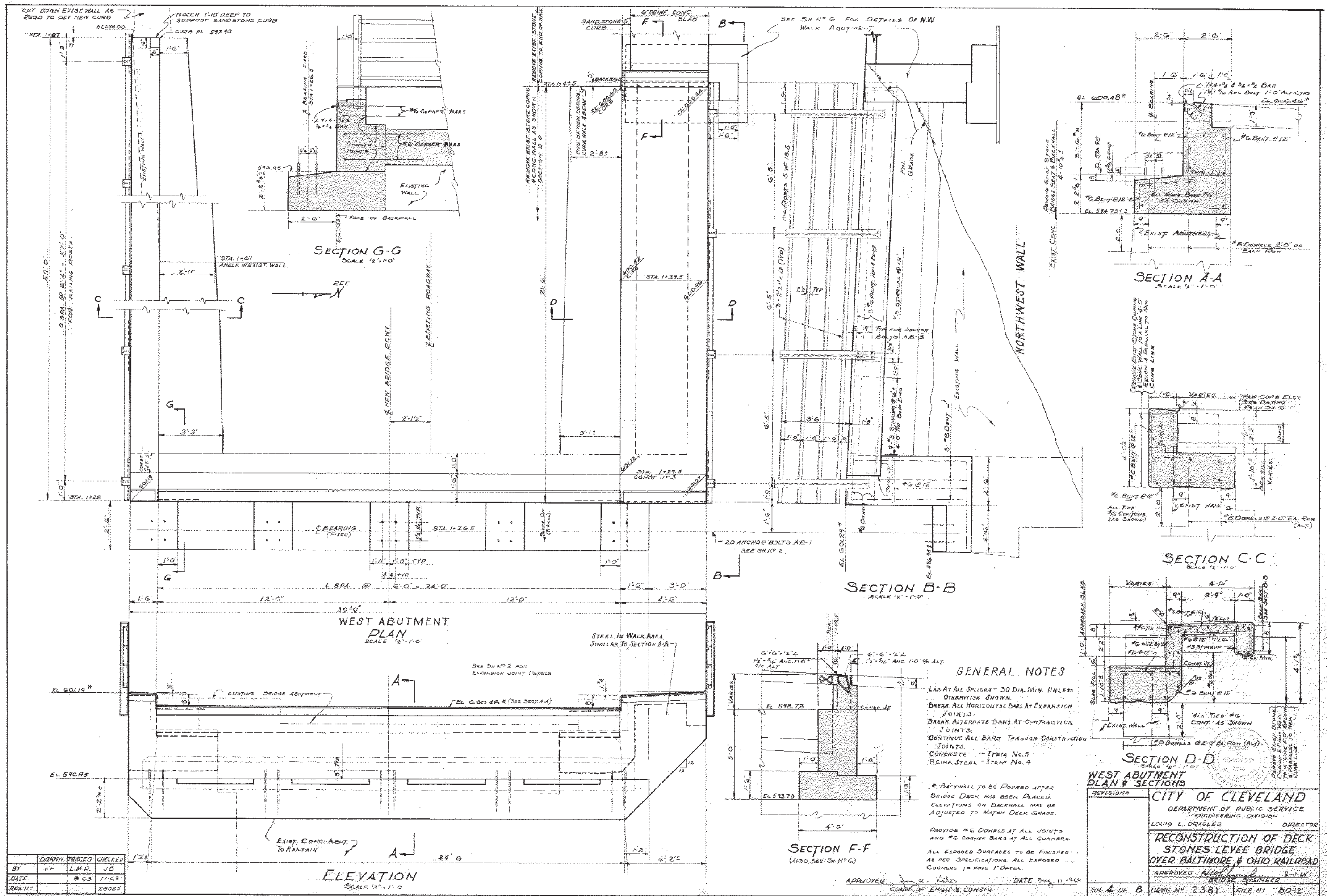
TYPICAL CROSS SECTION (LOOKING WEST)  
SCALE 1/2" = 1'-0"

BY	TRACED	CHECKED
EF	LHR	JB
DATE	8-53	11-53
REV. N°		25225

APPROVED *h. a. Kitz* DATE Aug 11, 1944  
COMM. OF ENGR & CONSTR.



REVISIONS		CITY OF CLEVELAND	
		DEPARTMENT OF PUBLIC SERVICE ENGINEERING DIVISION	
		LOUIS L. ORASLER	DIRECTOR
		RECONSTRUCTION OF DECK STONES LEVEE BRIDGE OVER BALTIMORE & OHIO RAILROAD	
		APPROVED <i>W. J. ...</i>	8-11-44
		SH. 3 OF 8	DRWG. N° 2380 FILE N° B.O. 12



BY	EF	LMR	JD
DATE	8-63	11-63	
REG. NO.	25025		

**ELEVATION**  
SCALE 1/2" = 1'-0"

**GENERAL NOTES**

- LAP AT ALL SPLICES - 30 DIA. MIN. UNLESS OTHERWISE SHOWN.
- BREAK ALL HORIZONTAL BARS AT EXPANSION JOINTS.
- BREAK ALTERNATE BARS AT CONTRACTION JOINTS.
- CONTINUE ALL BARS THROUGH CONSTRUCTION JOINTS.
- CONCRETE - ITEM NO. 8
- REIN. STEEL - ITEM NO. 4

\* BACKWALL TO BE POURED AFTER BRIDGE DECK HAS BEEN PLACED. ELEVATIONS ON BACKWALL MAY BE ADJUSTED TO MATCH DECK GRADE.

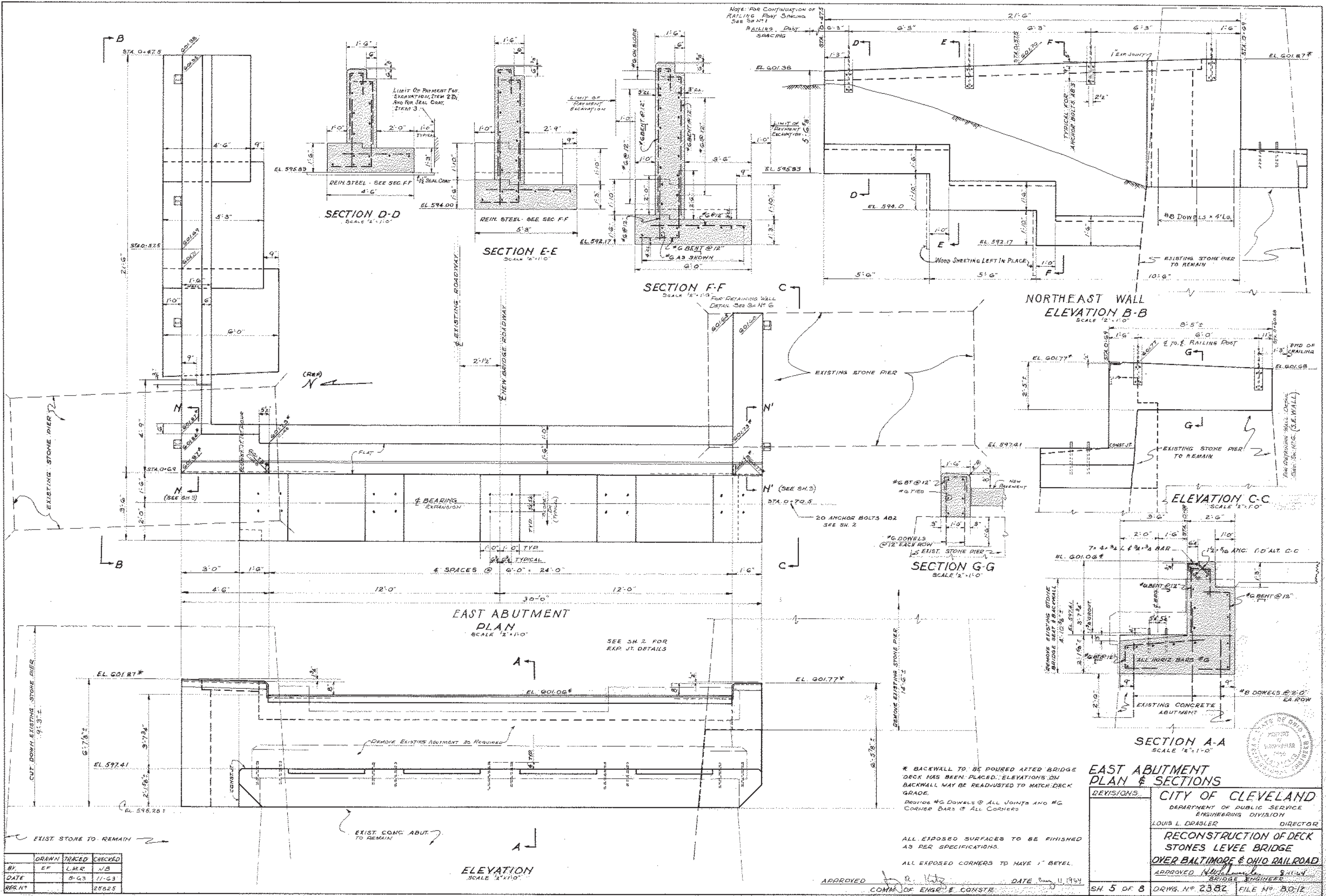
PROVIDE #6 DOWELS AT ALL JOINTS AND #6 CORNER BARS AT ALL CORNERS.

ALL EXPOSED SURFACES TO BE FINISHED AS PER SPECIFICATIONS. ALL EXPOSED CORNERS TO HAVE 1" BEVEL.

APPROVED: [Signature] DATE: Aug 11, 1944  
COMD. OF ENGR'G & CONSTR.

REVISOR	<b>CITY OF CLEVELAND</b>		
	DEPARTMENT OF PUBLIC SERVICE ENGINEERING DIVISION		
	LOUIS L. DRASLER	DIRECTOR	
	<b>RECONSTRUCTION OF DECK STONES LEDGE BRIDGE OVER BALTIMORE &amp; OHIO RAILROAD</b>		
	APPROVED: [Signature]	DATE: Aug 11, 1944	BRIDGE ENGINEER
SH 4 OF 8	DRWG. NO. 2381	FILE NO. B0-12	





NOTE: FOR CONTINUATION OF RAILING POST SPACING SEE SHEET 1

LIMIT OF PAYMENT FOR EXCAVATION, ITEM 23; AND FOR SEAL COAT, ITEM 3

LIMIT OF PAYMENT FOR EXCAVATION

LIMIT OF PAYMENT FOR EXCAVATION

WOOD SHEETING LEFT IN PLACE

EXISTING STONE PIER TO REMAIN

EXISTING STONE PIER TO REMAIN

NEW PAVEMENT

EXIST. STONE PIER

REMOVE EXISTING STONE BRIDGE SEAT & BACKWALL

EXISTING CONCRETE ABUTMENT

\* BACKWALL TO BE POURED AFTER BRIDGE DECK HAS BEEN PLACED. ELEVATIONS ON BACKWALL MAY BE READJUSTED TO MATCH DECK GRADE.

Provide #6 Dowels @ All Joints and #6 Corner Bars @ All Corners

ALL EXPOSED SURFACES TO BE FINISHED AS PER SPECIFICATIONS.

ALL EXPOSED CORNERS TO HAVE 1" BEVEL.

BY	DATE	REVISION	DRAWN	TRACED	CHECKED
EF	8-6-53		LMR		JB

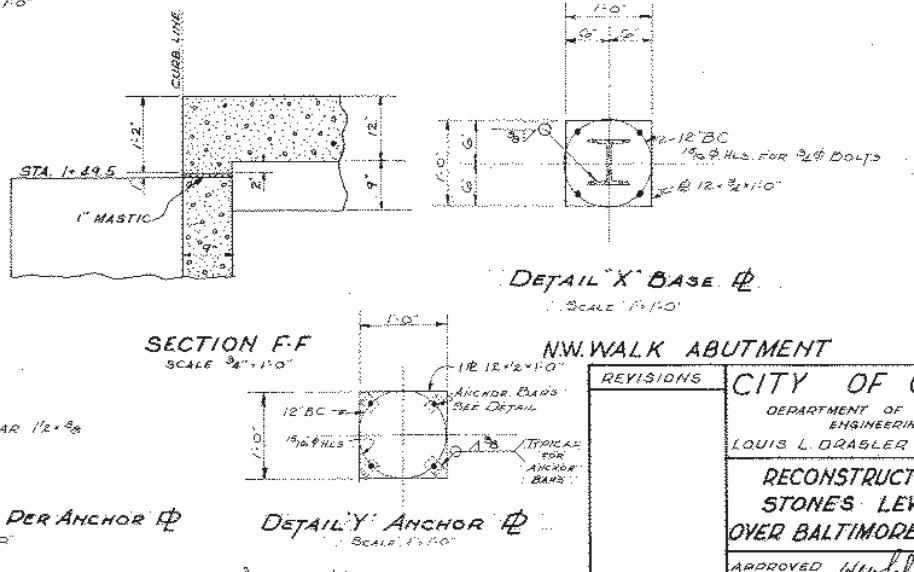
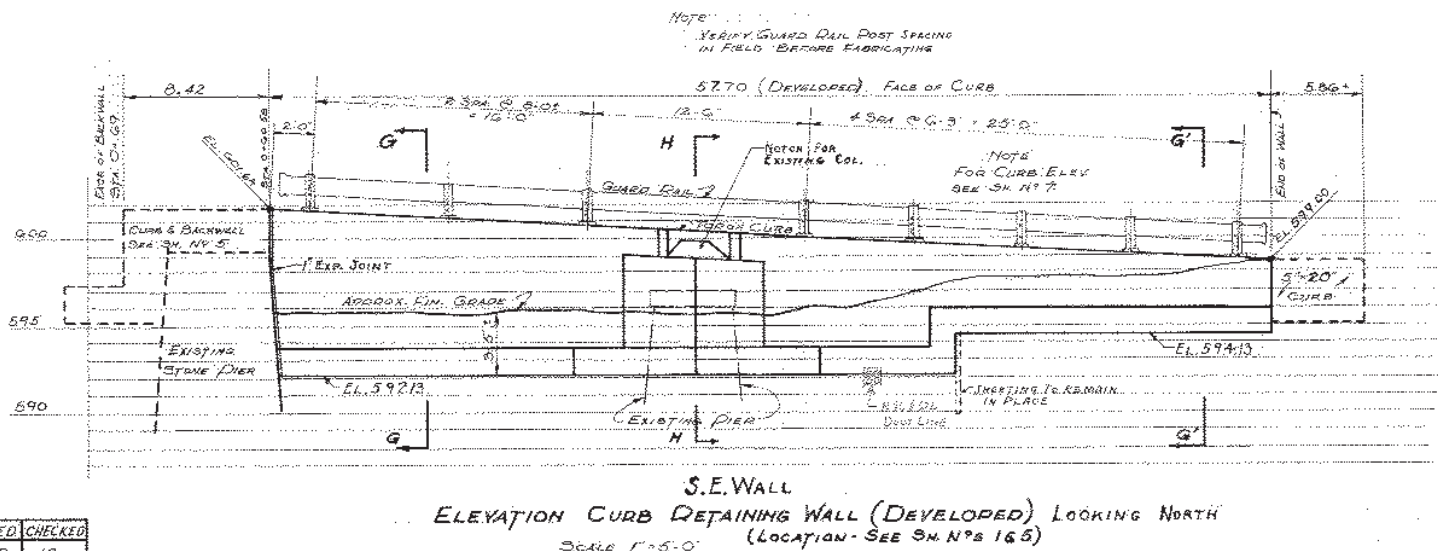
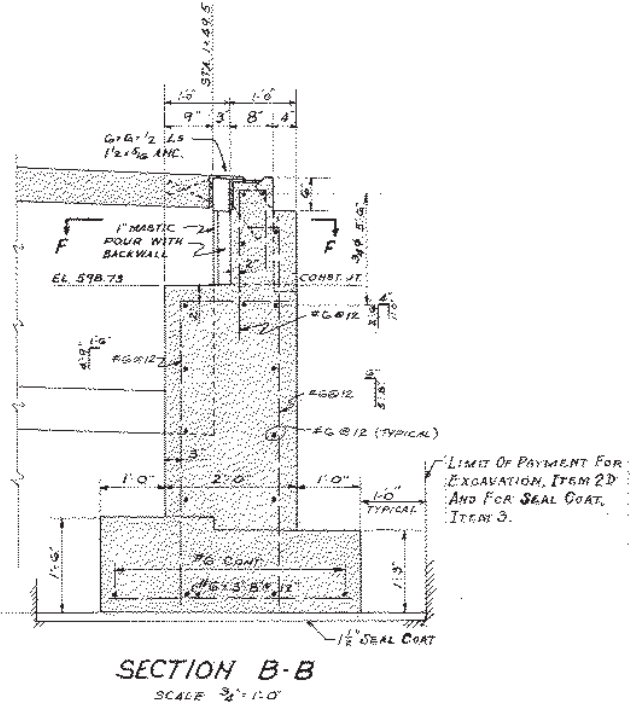
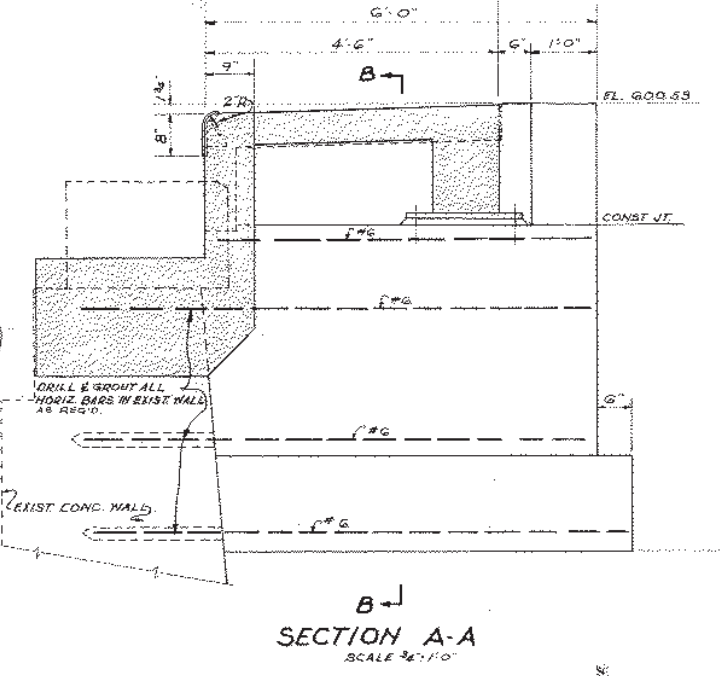
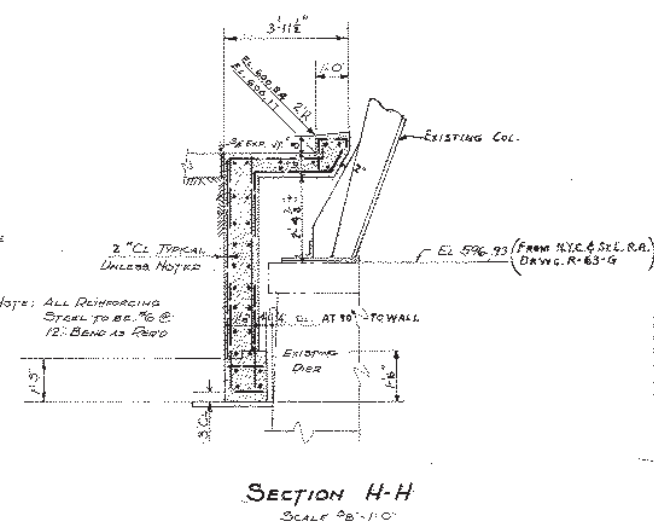
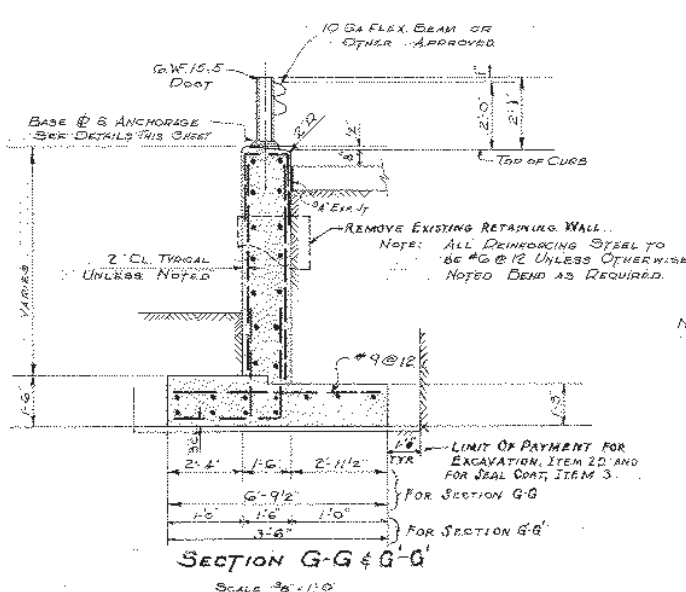
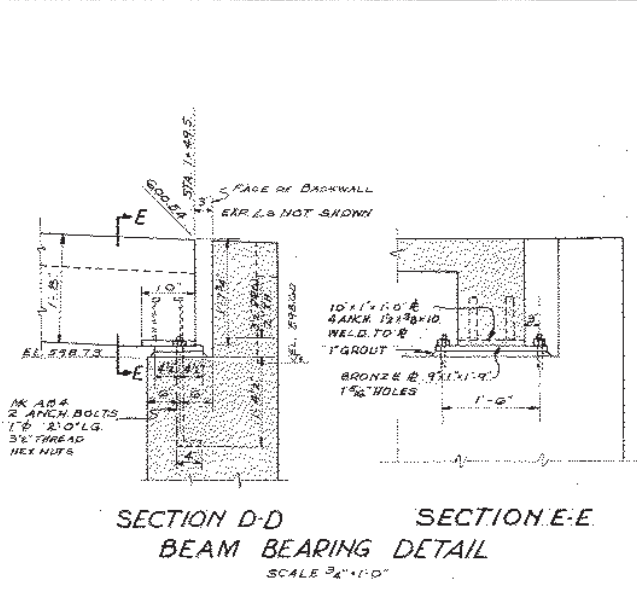
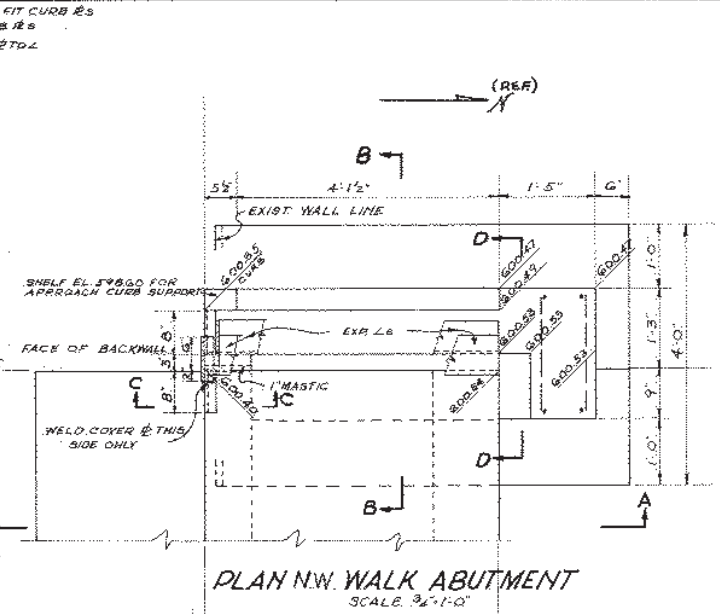
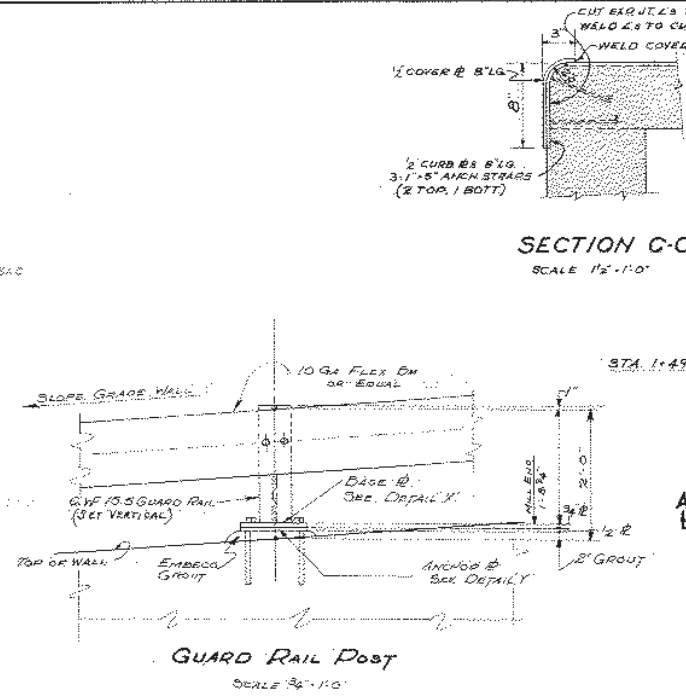
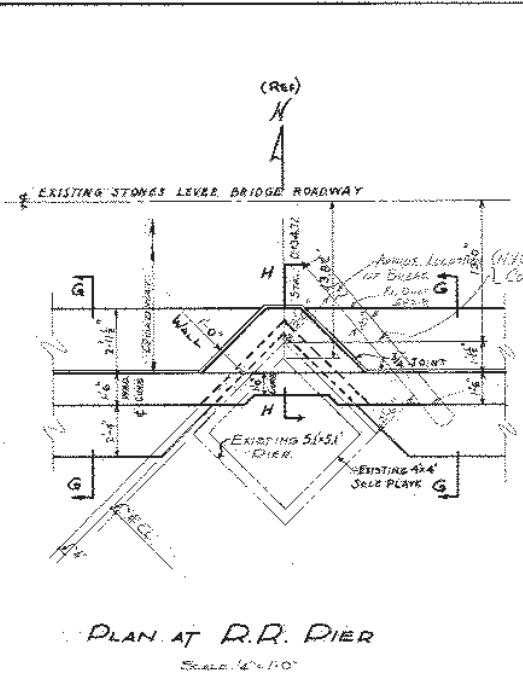
APPROVED: *[Signature]* DATE: Aug 11 1954  
COMM. OF ENGR' & CONSTE.

**CITY OF CLEVELAND**  
DEPARTMENT OF PUBLIC SERVICE  
ENGINEERING DIVISION  
LOUIS L. DRASLER DIRECTOR

**RECONSTRUCTION OF DECK STONES LEVEE BRIDGE OVER BALTIMORE & OHIO RAILROAD**

APPROVED: *[Signature]* DATE: 8-11-54  
BRIDGE ENGINEER

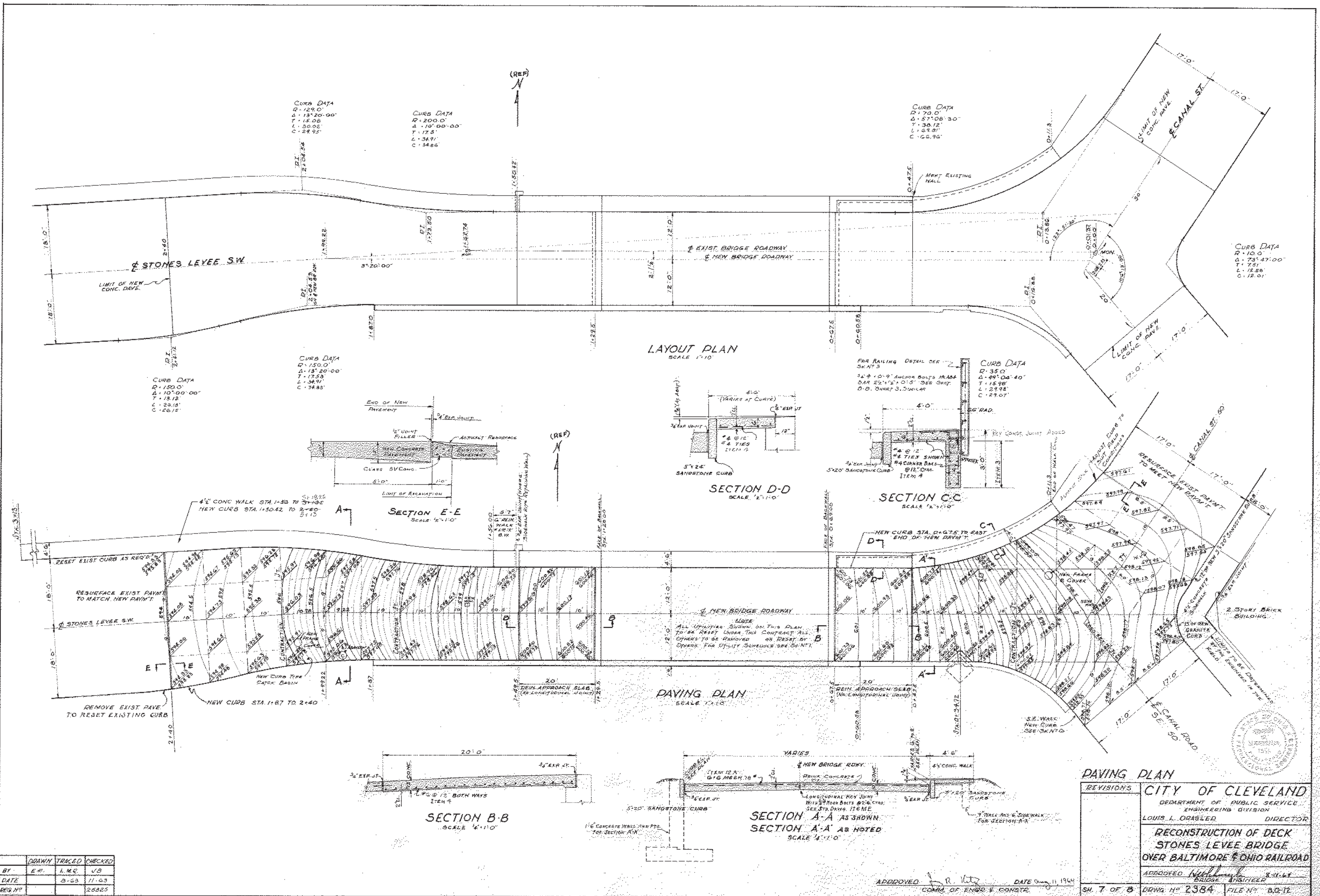
SH 5 OF 8 DRWS. NO. 2382 FILE NO. B0-12



BY	EF	LMR	JB
DATE	6-25	11-63	
REV. NO.		25825	

APPROVED: [Signature] DATE: Jun 11 1964  
COMM. OF ENGR. & CONSTR.

REVISIONS	CITY OF CLEVELAND DEPARTMENT OF PUBLIC SERVICE ENGINEERING DIVISION LOUIS L. DRASLER DIRECTOR
RECONSTRUCTION OF DECK STONES LEVEE BRIDGE OVER BALTIMORE & OHIO RAILROAD	
APPROVED: [Signature] BRIDGE ENGINEER	
SH 6 OF 8	DRWG NO 2383 FILE NO BQ-12



BY	EF	LMR	JB
DATE	8-63	11-63	
REG. NO.		26825	

REVISIONS	CITY OF CLEVELAND
	DEPARTMENT OF PUBLIC SERVICE ENGINEERING DIVISION LOUIS L. DRASLER DIRECTOR
	RECONSTRUCTION OF DECK STONES LEVEE BRIDGE OVER BALTIMORE & OHIO RAILROAD
	APPROVED <i>[Signature]</i> BRIDGE INSPECTOR
	SH. 7 OF 8 DRWG. NO. 2384 FILE NO. B-11

APPROVED *[Signature]* DATE *Aug 11 1964*  
 COMM. OF ENGR. & CONSTR.