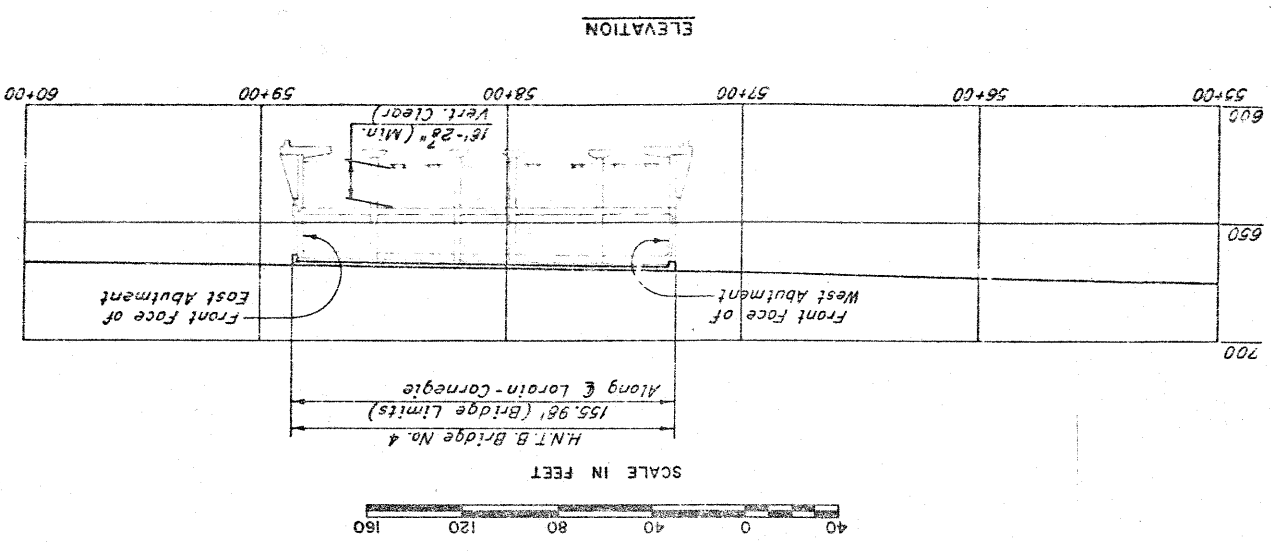
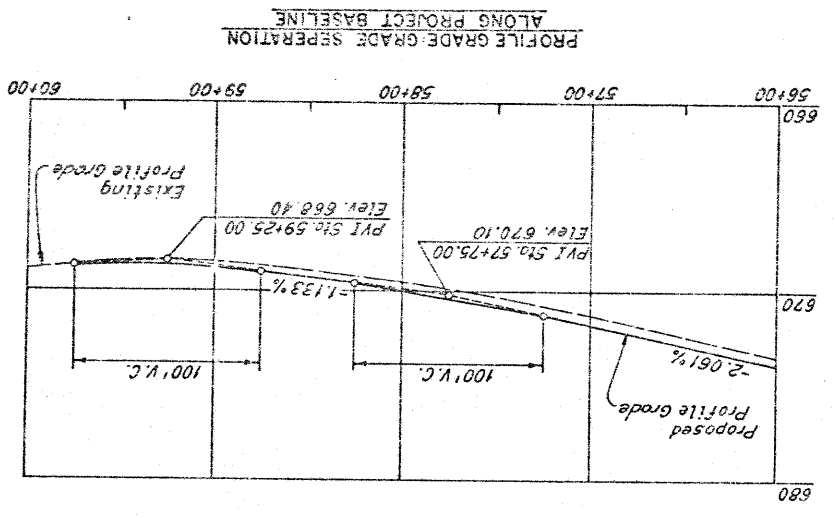
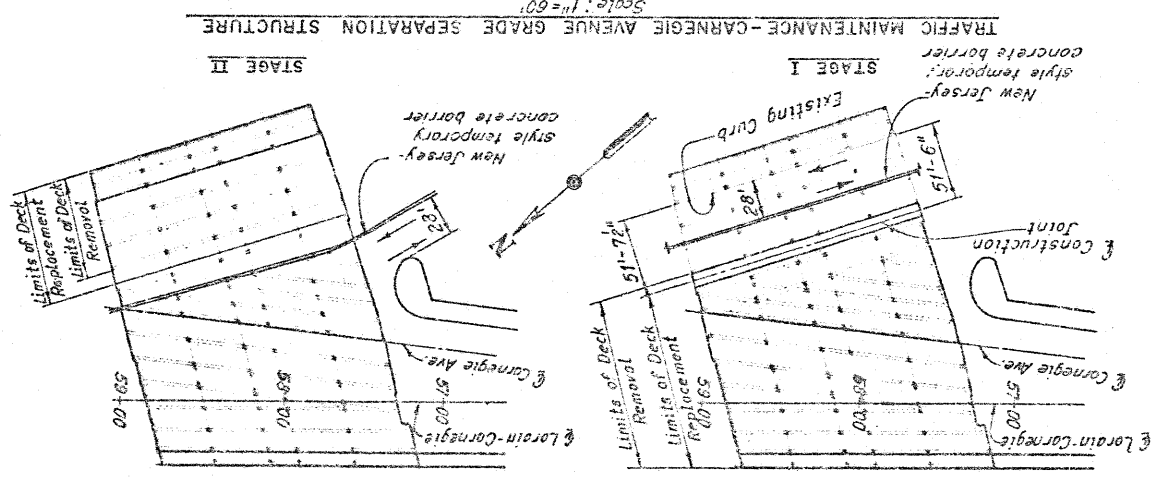
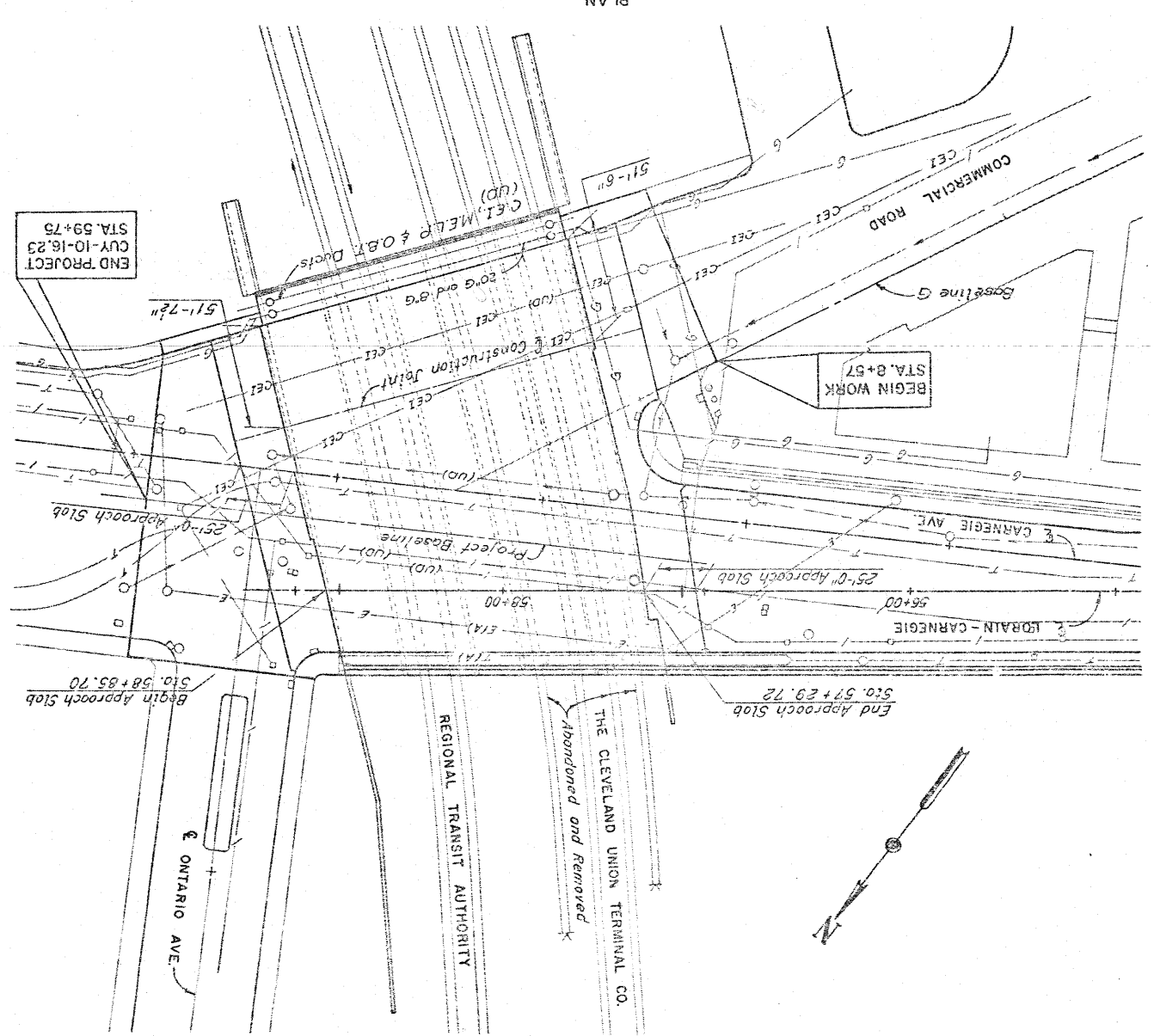


HOWARD NEEDLES TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 CLEVELAND, OHIO
HNTB
 HNTB BRIDGE NO. 4
SITE PLAN
 REHABILITATION OF THE
 CARNegie AVENUE GRADE SEPARATION STRUCTURE
 (SRIO OVER THE CLEVELAND UNION TERMINALS CO
 AND THE REGIONAL TRANSIT AUTHORITY)
 BR. NO. CUY-10-1685
 STA. 57+29.72
 STA. 58+85.70
 OHIO
 SHEET 131



- UTILITY LEGEND**
- (A) - Indicates a utility to be abandoned
 - (UD) - Indicates an underdeck utility
 - E - Indicates Municipal Electric Light and Power Line (M.E.L.P.)
 - T - Indicates Ohio Bell Telephone Line (O.B.T.)
 - l - Indicates water line
 - g - Indicates gas line
 - - Indicates sewer line
 - - Indicates Electric Illuminating Company line (C.E.I.)

Note: Underground and underdeck utilities not indicated as being abandoned shall remain. The information shown on this drawing concerning type and location of underground and underdeck utilities is not guaranteed to be accurate or all inclusive. The contractor is responsible for making his own determination as to the type and location of underground and underdeck utilities as may be necessary to avoid damage thereto. Full expense involved in relocating the affected utility, except where the relocation is covered in these plans, shall be borne by the Owner of the utility. The Contractor and Owner are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.



Notes:
 Subured linework indicates existing conditions.
 For Project Baseline Data, and Baseline G Data,
 See Roadway Plans.
 The stage construction applies within the bridge and approach slab limits. All repair work shall be coordinated with the stage construction as shown.

PROPOSED STRUCTURE DATA ON CONCRETE GIRDERS
 BRIDGE NO. CUY-10-1685
 TYPE: Reinforced Concrete Girders, Deck and Substructure
 SPAN: See Framing Plan, Sheet No. 150.
 ROADWAY: Varies
 LOADING: HS 20-44 Case II and the Alternate Military Loading
 SKEW: Varies
 WEARING SURF: 2 1/2" Asphalt Concrete (Rubberized)
 ALIGN: Tangent

148	185
REGION	PROJECT
STATE	
OHIO	
5	
CUYAHOGA COUNTY	
CUY-10-16.23	

MEMBER IDENTIFICATION PLANS
 REHABILITATION OF THE
 CARNEGIE AVENUE SEPARATION STRUCTURE
 (SRIO OVER THE CLEVELAND UNION TERMINALS CO
 AND THE REGIONAL TRANSIT AUTHORITY)
 BR. NO. CUY-10-1685
 STA. 57+29.72
 STA. 58+85.70
 OHIO
 CUYAHOGA COUNTY

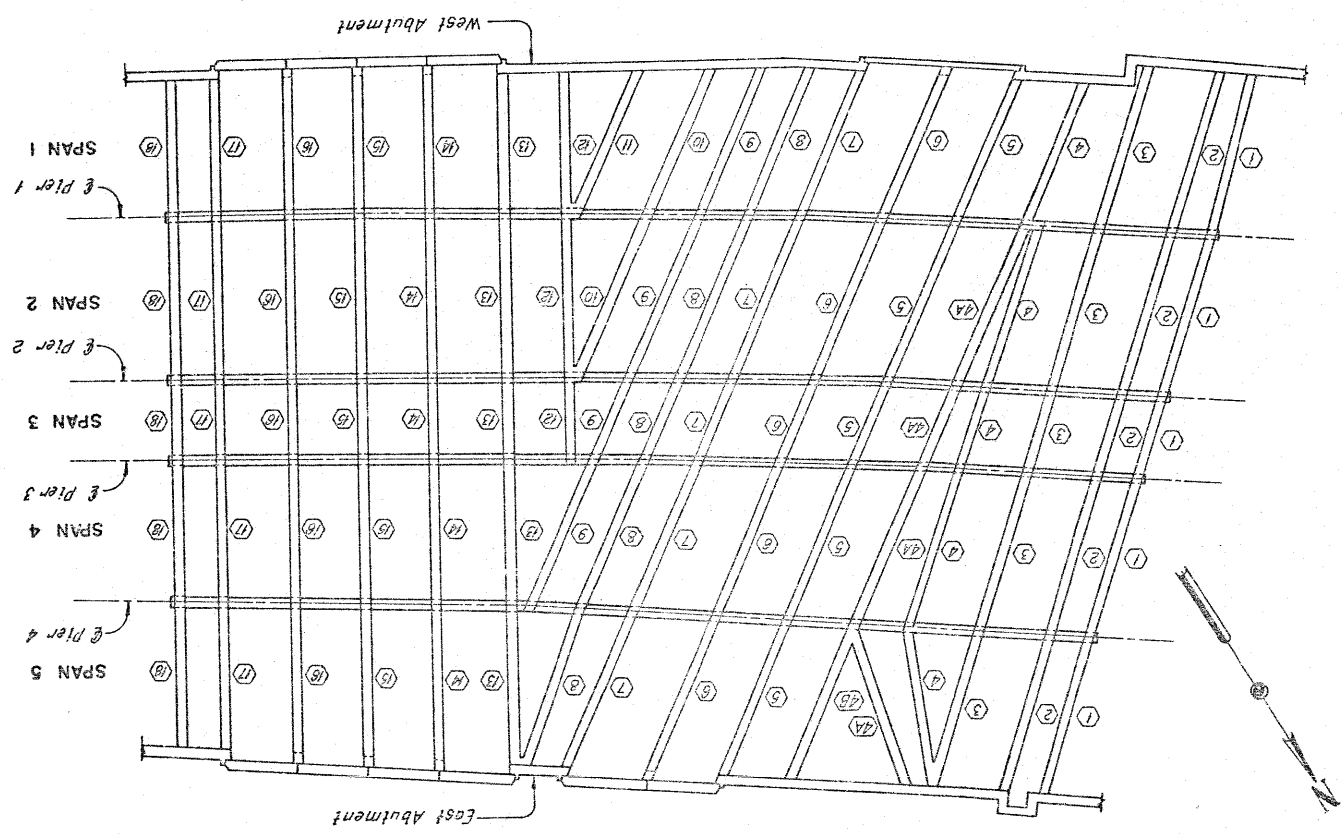
HNTB
 HOWARD NEEDLES TAMMEN & BERGENDOFF
 ENGINEERS
 CLEVELAND

HNTB BRIDGE NO. 4

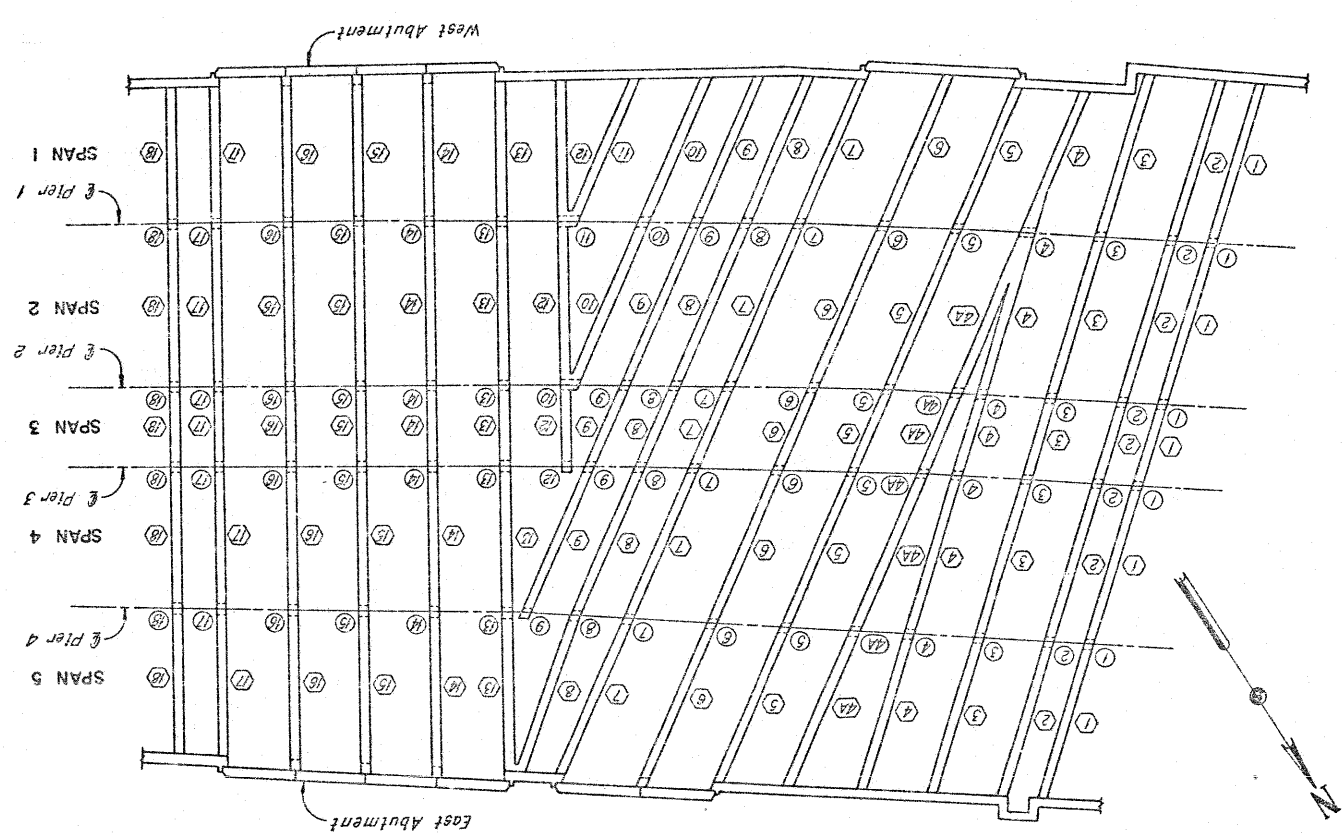
DATE: _____ CHECKED: _____ DESIGNED: _____ DRAWN: _____ SHEET 2 | 3 |

LEGEND:
 ○ Strut or Girder
 ● Column

STRUT AND PIER IDENTIFICATION PLAN
 (Lower Level Framing)



GIRDER AND COLUMN IDENTIFICATION PLAN
 (Upper Level Framing)



CUYAHOGA COUNTY
 CUY-10-16.23

149	REGION	STATE	PROJECT
185	5	OHIO	

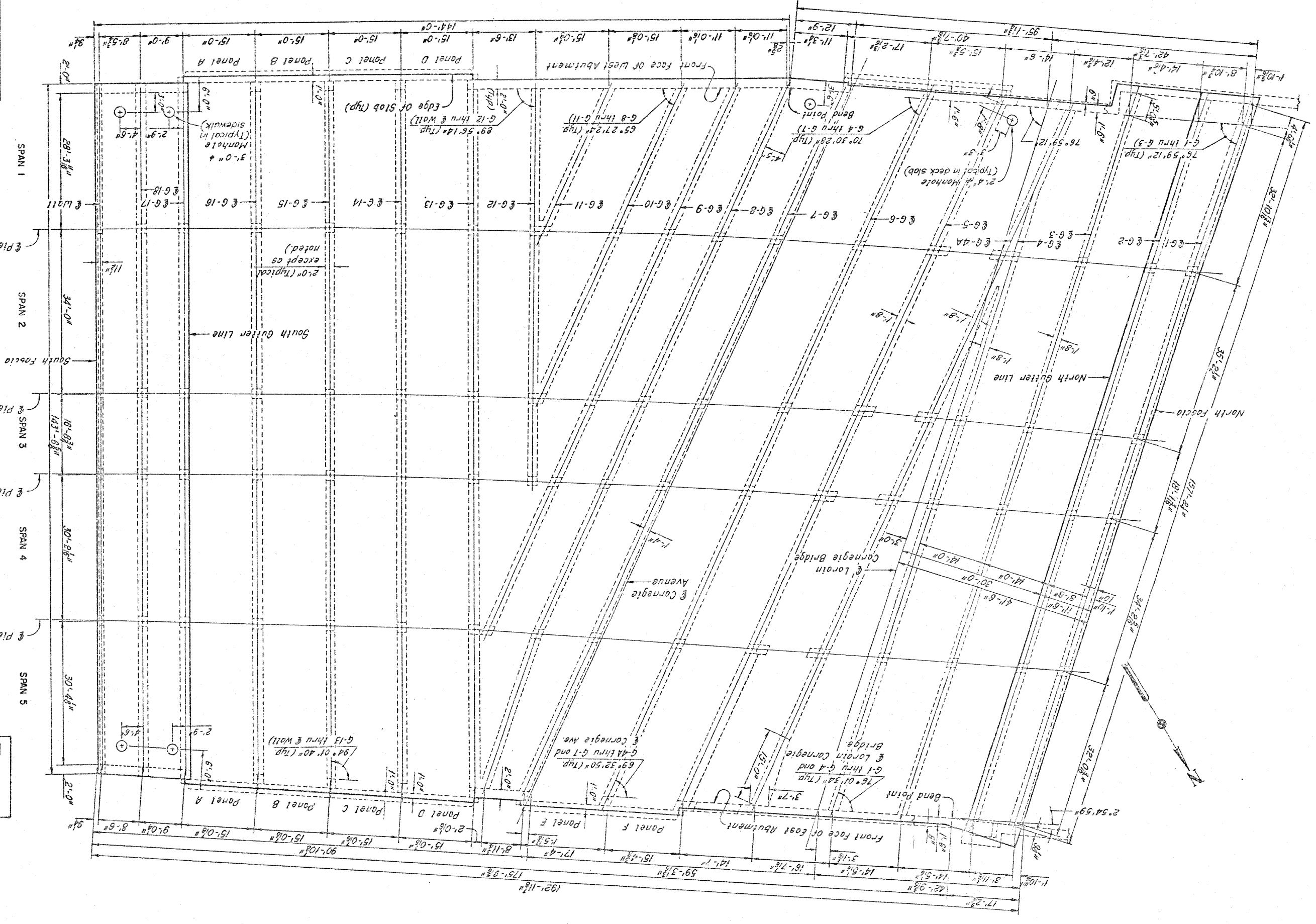
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 DRAWN BY: J. B. ...
 CHECKED BY: ...
 REVIEWED BY: ...
 CUYAHOGA COUNTY
 BR NO. CUY-10-16.23
 STA 57+29.72
 STA 58+85.70
 OHIO

DECK PLAN

HNTB
 HOWARD NEEDLES TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 CLEVELAND, OHIO

HITS BRIDGE NO. 4

Notes:
 For typical deck and girder removal details, see Sheet 4/31. The existing manholes shall be reconstructed to grade. For details, see Sheets 25/31 and 27/31. For strut and column removal details, see Sheet 6/31. For removal plans at the West Abutment, see Sheets 7/31 thru 9/31. For removal plans at the East Abutment, see Sheets 10/31 thru 12/31. For removal plans along Pier 3, see Sheets 4/31 and 5/31. For slope construction, see Sheet 1/31.



Note:
 Prior to deck removal over the girders, Girders 2 thru 18 shall be shored. For Girders 2 thru 18 removal, see removal plans, typical section along Pier 3, Sheet 4/31.

CUYAHOGA COUNTY
 CUY-10-16.23

150	185
REGION	STATE
PROJECT	5 OHIO

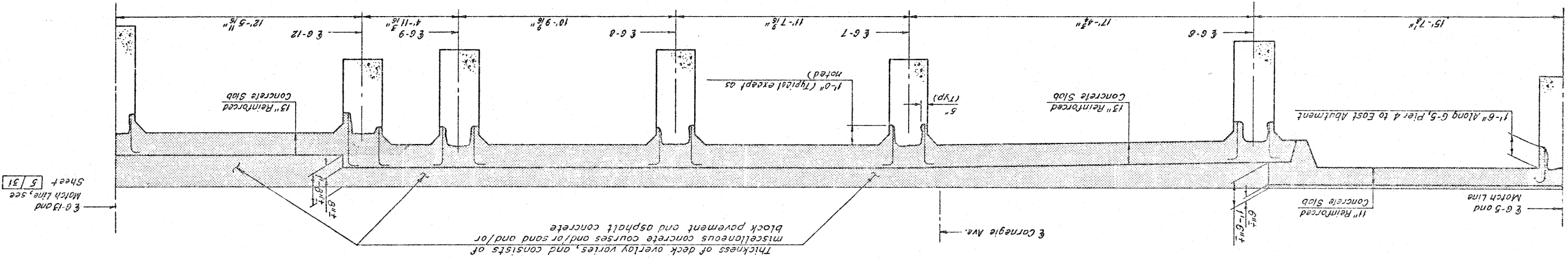
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DRAWN			TRACED		
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CUYAHOGA COUNTY					
REHABILITATION OF THE					
CARNegie AVENUE GRADE SEPARATION STRUCTURE					
(S.N.10 OVER THE CLEVELAND UNION TERMINALS CO					
AND THE REGIONAL TRANSIT AUTHORITY)					
BR. NO. CUY-10-1685					
STA. 57+29.72					
STA. 58+85.70					
OHIO					
REMOVAL PLANS					
TYPICAL SECTION ALONG PIER 3					
HOWARD, NEEDLES, TAMMEN & BERGENDOFF					
ENGINEERS					
CONSULTING					
CLEVELAND					
HNTB					

HNTB BRIDGE NO. 4

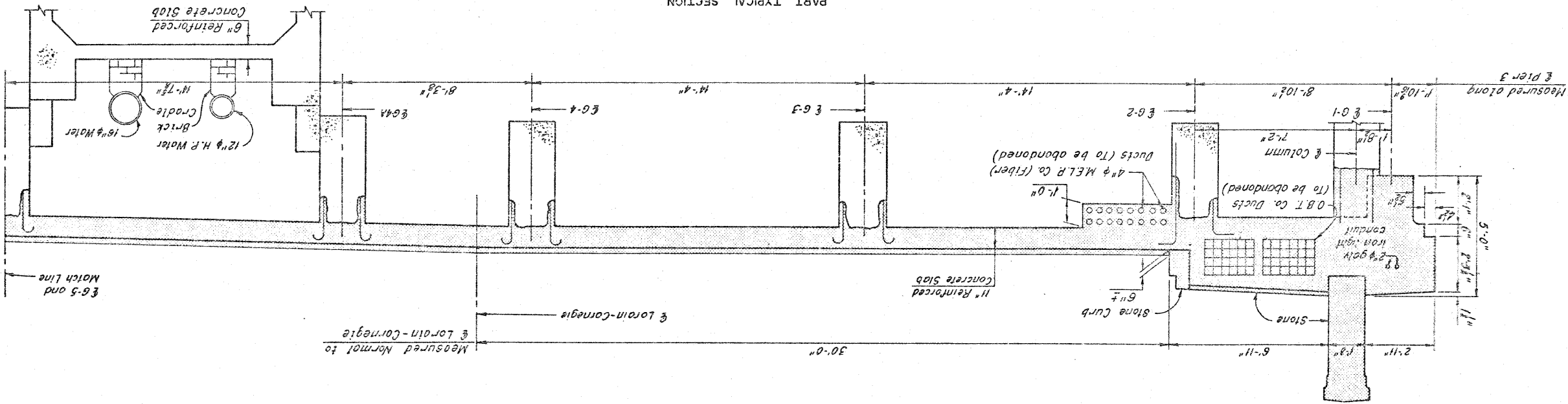
Notes:
 Zip-o-tone indicates portions of the structure to be removed.
 For Removal Details at Girders 2 thru 13, see Detail A, Sheet 5/31.
 For Framing Plan, see Sheet 3/31.
 For Modified Typical Section of Pier 3, see Sheets 22/31 and 23/31.
 The following abbreviations are used:
 Typ. = Typical
 O.E.T. = Ohio Bell Telephone Company
 C.E.L. = Cleveland Electric Illuminating Company
 M.C.L.P. = Municipality Electric Light and Power
 P.E.H.P. = Plain and High Pressure
 H.P. = High Pressure
 All existing reinforcing shall be retained. Other existing reinforcing shall be removed, except as noted in Detail A, Sheet 5/31.
 For Stage Construction, see Sheet 1/31.

1. The girders are under a compressive load from the abutments. Before Girder 1 replacement work begins the contractor shall temporarily support the abutments of the girder. The supports shall be preloaded to resist a total compressive force of 35 kips at each abutment and shall be retained until the replacement girder 1 attains its design strength. (For requirements and payment for temporary supports see General Note 9 on Sheet GN-1 and notes on Sheet E-1)
 2. Suggested deck removal sequence:
 a) Laterally support Girders 2 thru 18 of each pier before deck removal operations begin.
 b) Remove the deck between girders.
 c) Shore girders 2 thru 18 continually through-out their length. Preload the supports with an upward force equal to the weight of the girder and remaining deck (Shoring shall remain in place until the replacement deck attains its design strength).
 d) Remove the remaining portion of the deck.
 e) An alternate sequence may be submitted to the Director for consideration and approval.

PART TYPICAL SECTION
 (Columns not shown)



PART TYPICAL SECTION
 (Columns not shown)



Measured Normal to

CUYAHOGA COUNTY
 CUY-10-16.23

151	185
REGION	PROJECT
STATE	PROJECT
OHIO	PROJECT
5	PROJECT

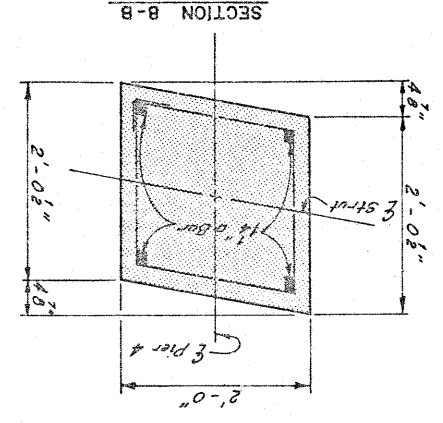
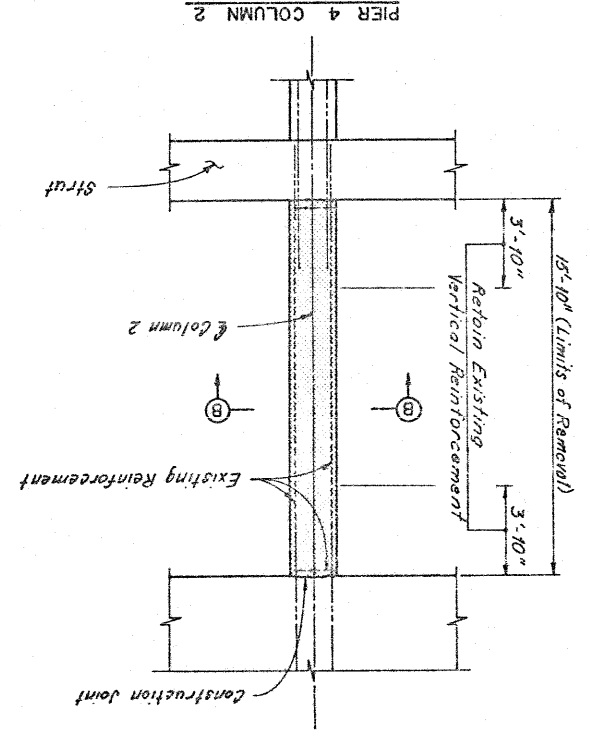
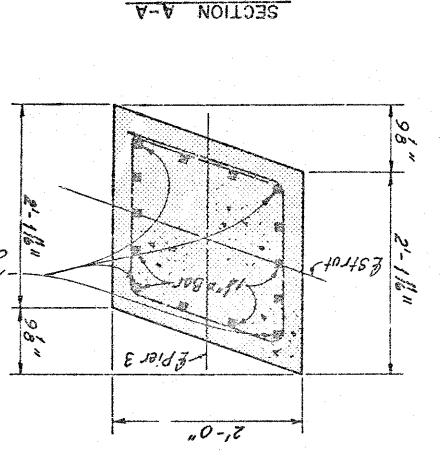
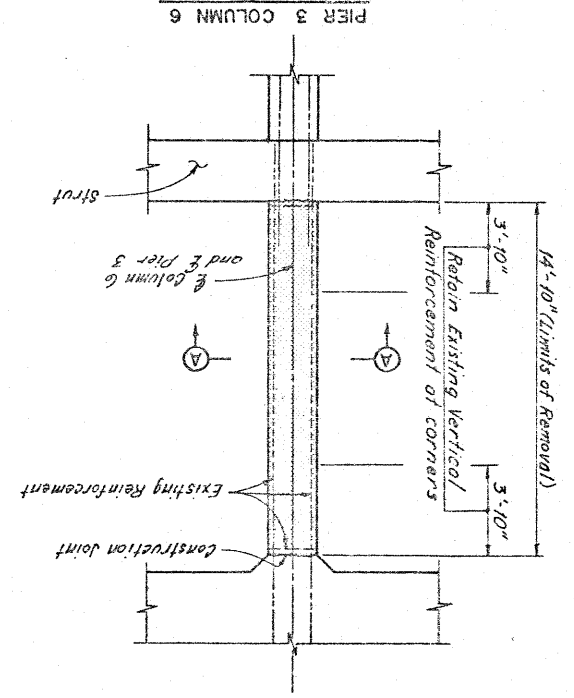
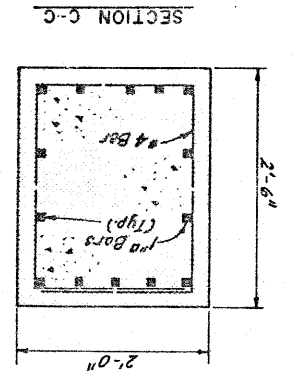
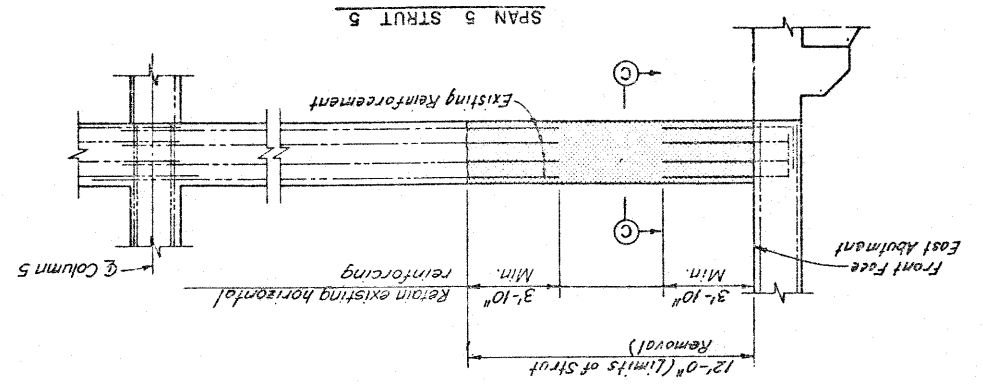
DATE: 8-1-78	DESIGNED BY: J. J. ...	CHECKED BY: ...	APPROVED BY: ...
STRUT AND COLUMN REMOVAL DETAILS REHABILITATION OF THE CARNEGIE AVENUE GRADE SEPARATION STRUCTURE (S.R.I.O. OVER THE CLEVELAND UNION TERMINALS CO. AND THE REGIONAL TRANSIT AUTHORITY) BR. NO. CUY-10-1685 STA. 57+29.72 STA. 58+85.70 OHIO CUYAHOGA COUNTY			
HOWARD, NEEDLES TAMMEN & BERGENDOFF CONSULTING ENGINEERS CLEVELAND		HNTB	

NHTB BRIDGE NO. 4

Note: Z-dapline indicates portions of structure to be removed.
 For strut and column repair details, see Sheet 19/31
 For member identification plans, see Sheet 2/31

Special Requirements for Strut Removal

- The strut removal and repair shall be accomplished prior to shoring the girders. The struts under a compressive load from the abutments. Before strut removal work begins, the Contractor shall install temporary supports between Column 5 and the East Abutment as close as possible to the strut top. The supports shall be preloaded with a total load of 153.5 kips and this load shall be retained until the replacement strut attains design strength.



193	5	OHIO	CUYAHOGA COUNTY
185			

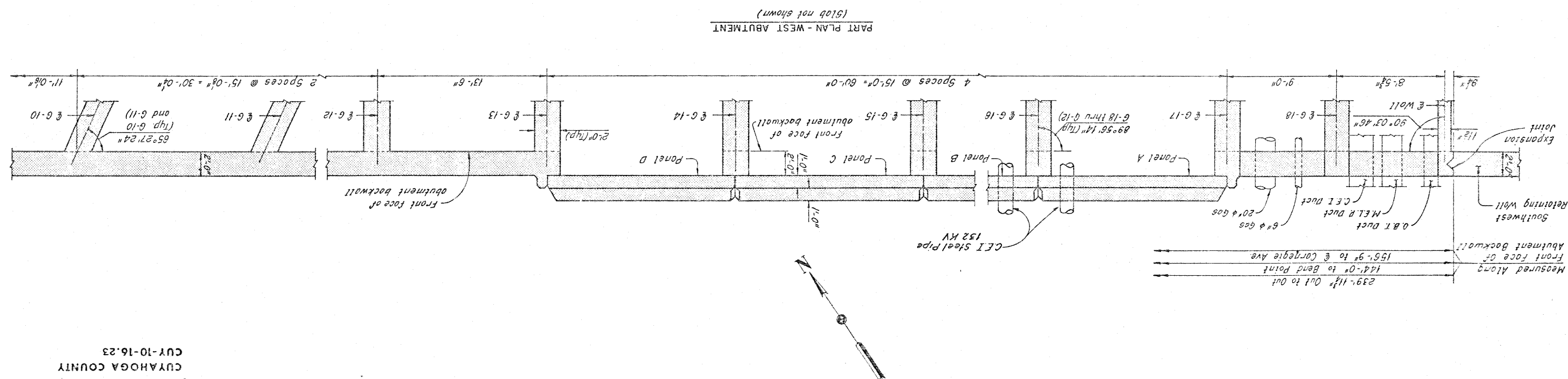
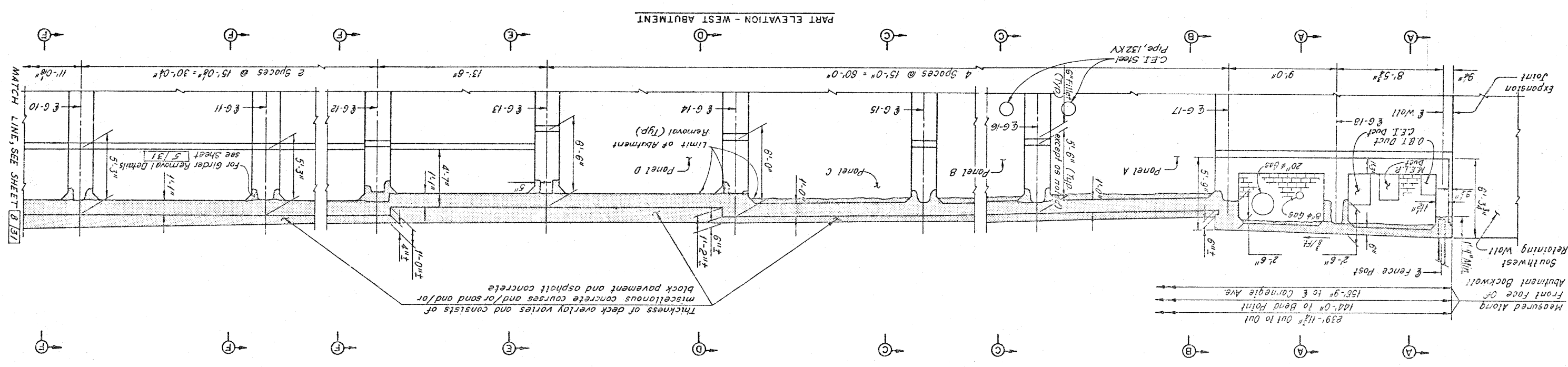
REGION STATE PROJECT

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DESIGNED BY: J.S.	CHECKED BY: J.S.	APPROVED BY: J.S.	DATE: 10-16-23	DATE: 10-16-23	DATE: 10-16-23	DATE: 10-16-23	DATE: 10-16-23	DATE: 10-16-23	DATE: 10-16-23
PROJECT: HNTB BRIDGE NO. 4	STATE: OHIO	REGION: 5	PROJECT: HNTB BRIDGE NO. 4	STATE: OHIO	REGION: 5	PROJECT: HNTB BRIDGE NO. 4	STATE: OHIO	REGION: 5	PROJECT: HNTB BRIDGE NO. 4

REMOVAL PLANS
WEST ABUTMENT
 REHABILITATION OF THE
 CARNegie AVENUE GRADE SEPARATION STRUCTURE
 AND THE REGIONAL TRANSIT AUTHORITY
 BR NO. CUY-10-1685
 STA. 57+29.72
 STA. 58+85.70
 CUYAHOGA COUNTY
 OHIO

Notes:
 Zip-o-tone indicates portions of the structure to be removed.
 For Sections A-A thru F-F, see Sheet 9/31.
 For Modified West Abutment Details, see Sheets 13/31 thru 15/31.
 The following abbreviations are used:
 M.E.L.P. = Municipal Electric Light and Power
 O.B.T. = Ohio Br. 1 Telephone Company
 C.E.I. = Cleveland Electric Illuminating Company
 For Stage Construction, see Sheet 1/31.

Note:
 All existing vertical abutment reinforcement and all existing horizontal abutment reinforcement below the bottom construction, except of new slab edge beams shown on Sheet 14/31. Horizontal reinforcement may be replaced in kind of no additional cost to the State.



154	185
REGION: 5	STATE: OHIO
PROJECT: HNTB BRIDGE NO. 4	PROJECT: HNTB BRIDGE NO. 4

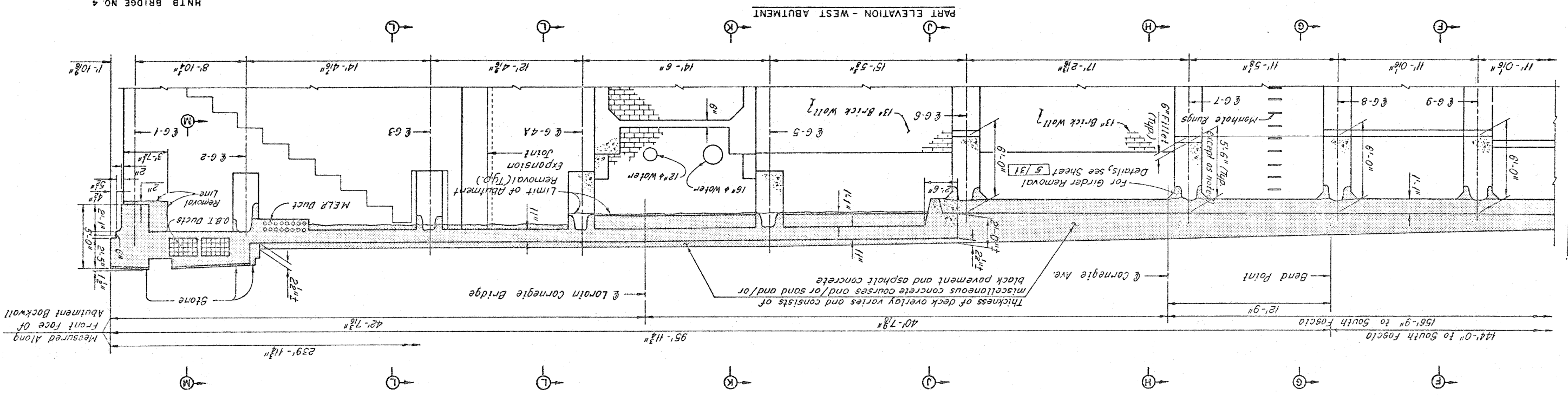
CUYAHOGA COUNTY
 CUY-10-16.23

REMOVAL PLANS
WEST ABUTMENT
 REHABILITATION OF THE
 CARNegie AVENUE SEPARATION STRUCTURE
 AND THE REGIONAL TRANSIT AUTHORITY
 BR. NO. CUY-10-16.23
 STA. 58+83.70
 STA. 57+29.72
 CUYAHOGA COUNTY
 OHIO

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 CLEVELAND
HNTB

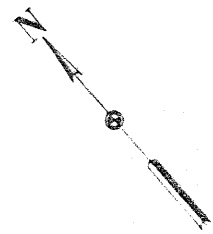
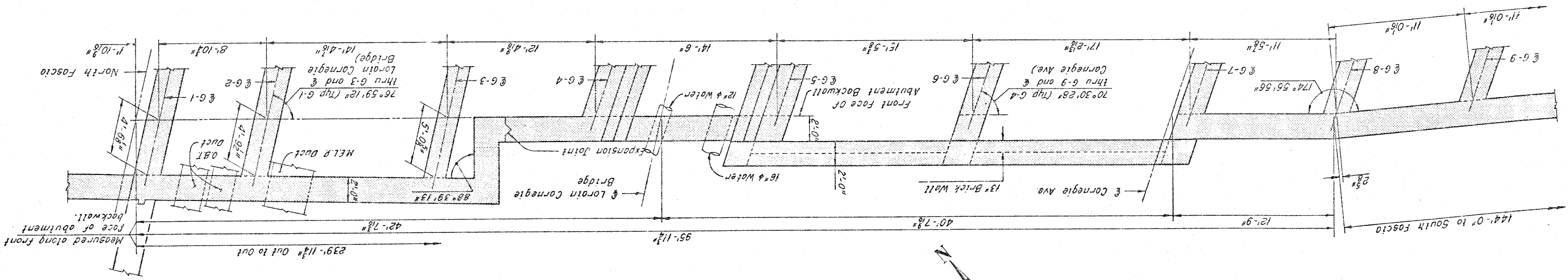
HNTB BRIDGE NO. 4

Notes:
 210-0-tone indicates portions of the structure to be removed.
 For Sections F-F thru M-M, see Sheet 9/31.
 For modified West Abutment details, see Sheets 13/31 thru 15/31.
 The following abbreviations are used:
 M.E.L.P. = Municipal Electric Light and Power
 O.B.T. = Ohio Bell Telephone Company
 C.E.I. = Cleveland Electric Illuminating Company
 Typ. = typical
 All existing vertical abutment reinforcement and all existing horizontal abutment reinforcement below the bottom of the new deck shall be retained as part of the new construction, except as new slab beams shown on Sheet 14/31. Horizontal reinforcement may be replaced in kind at no additional cost to the State.



MATCH LINE, SEE SHEET 7/31

PART PLAN - WEST ABUTMENT
 (Slab not shown)



CUYAHOGA COUNTY
 CUY-10-16.23

155	185
REGION	STATE
PROJECT	

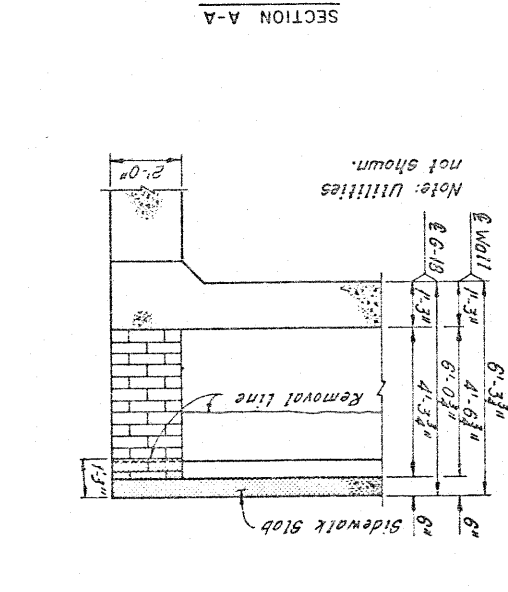
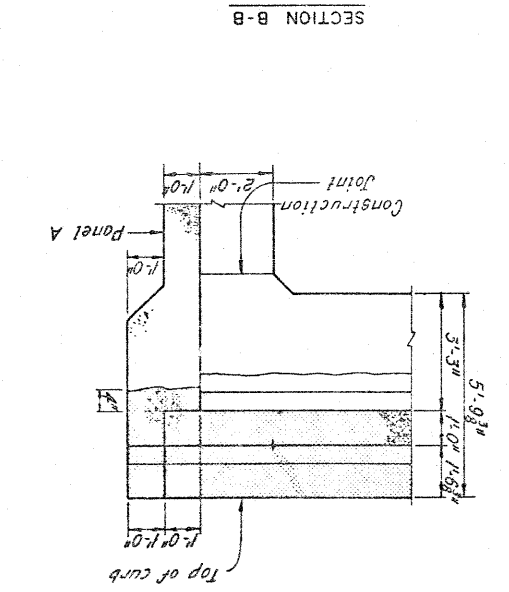
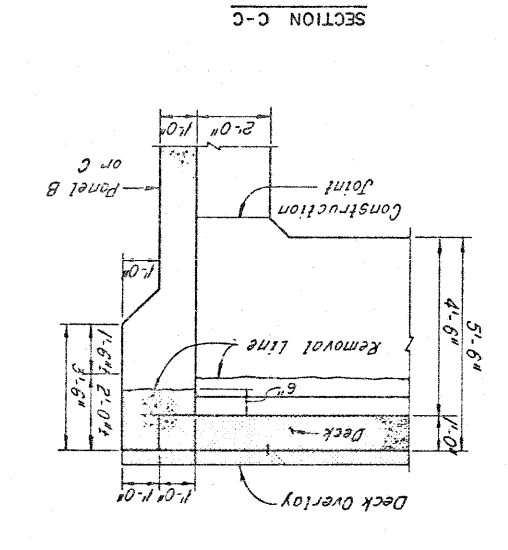
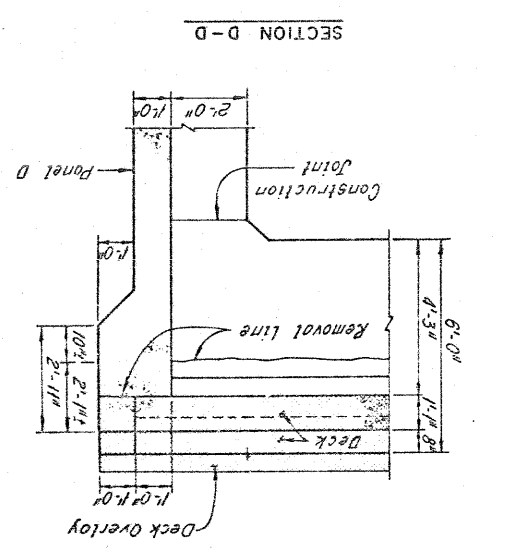
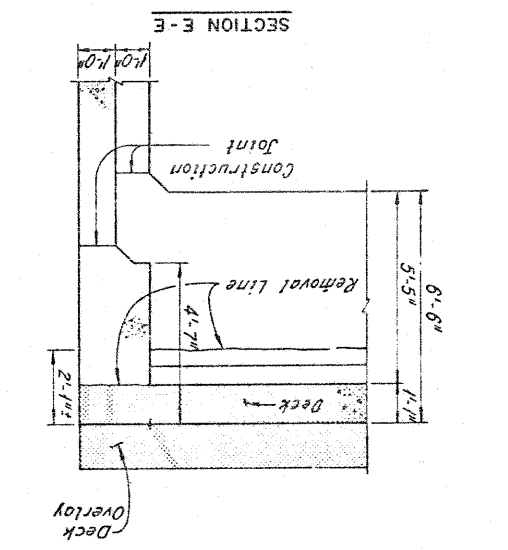
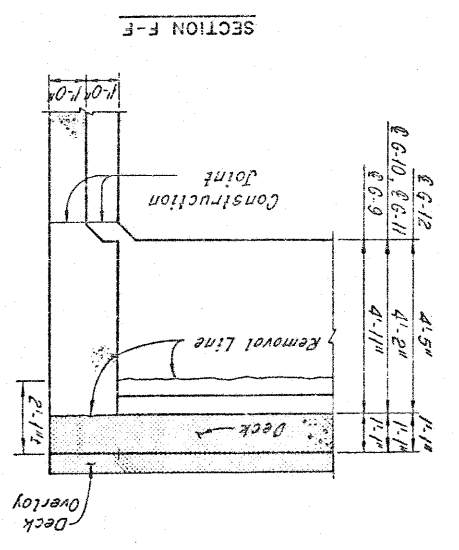
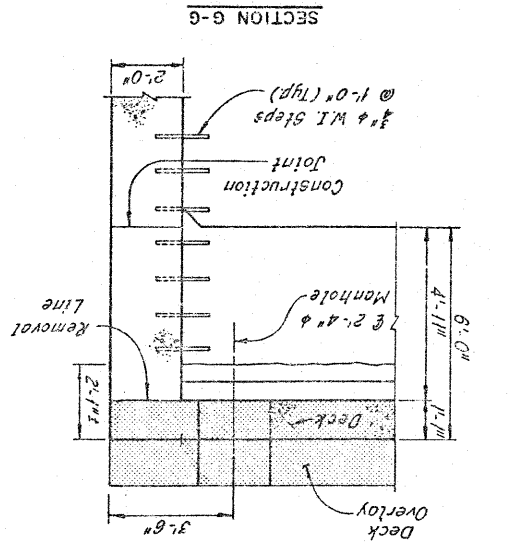
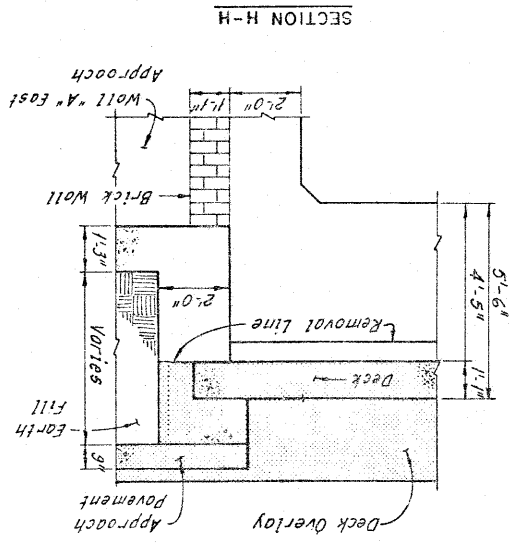
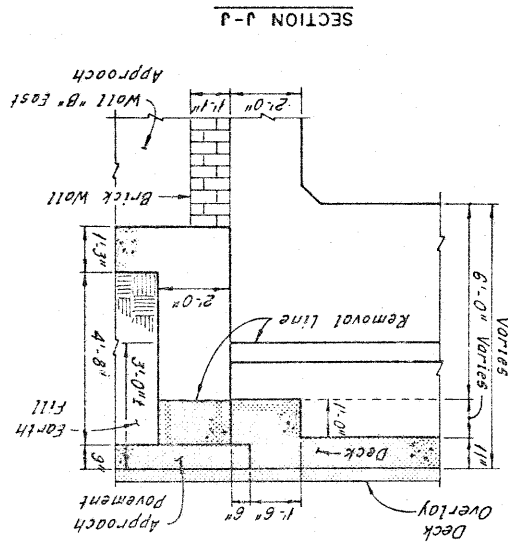
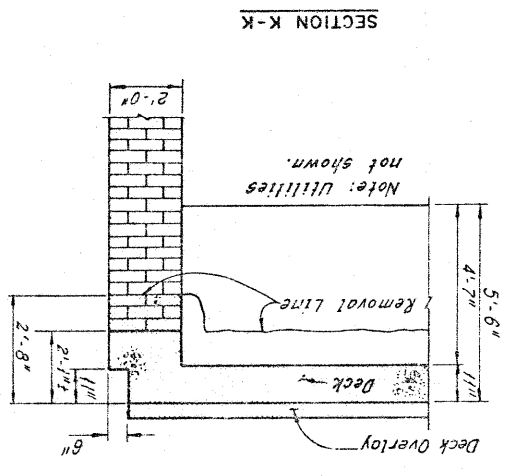
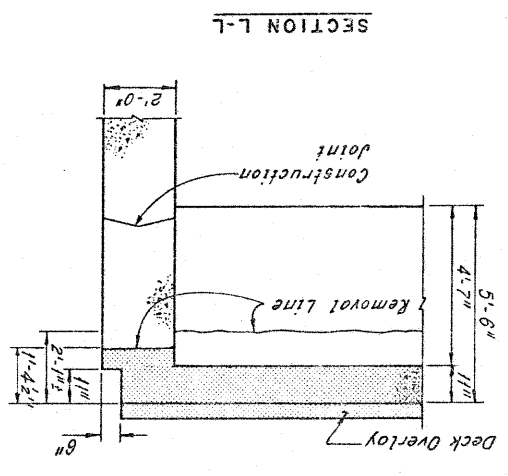
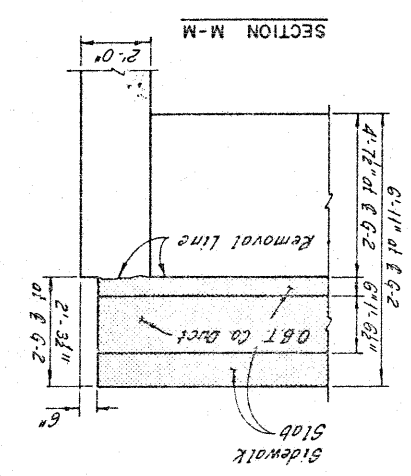
HNTB
 HOWARD, NEEDLES TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 CLEVELAND, OHIO
 HNTB BRIDGE NO. 4

REMOVAL PLANS
 WEST ABUTMENT
 REHABILITATION OF THE
 CARNEGIE AVENUE GRADE SEPARATION STRUCTURE
 (SR 10 OVER THE CLEVELAND UNION TERMINALS CO
 AND THE REGIONAL TRANSIT AUTHORITY)
 BR NO CUY-10-1685
 STA 57+29.72
 STA 58+85.70
 CUYAHOGA COUNTY
 OHIO

DRAWN BY: []
 CHECKED BY: []
 REVISIONS: []
 DATE: []
 SHEET 9 OF 31

Notes:
 Zip-tone indicates portions of structure to be removed.
 For limits of existing girder removal, see Detail A.
 Sheet 5/31 For limits of existing girder removal, see Detail A.
 Sheet 7/31 For location of Sections A-A thru F-F, see
 Sheet 8/31 For location of Sections F-F, thru M-M, see

Note:
 Existing reinforcement not shown. All existing vertical abutment reinforcement and all existing horizontal abutment reinforcement below the bottom of the new deck slab shall be retained as part of the new construction, except at new slab edge beams shown on Sheet 14/31. Horizontal reinforcement may be replaced in kind at no additional cost to the State.

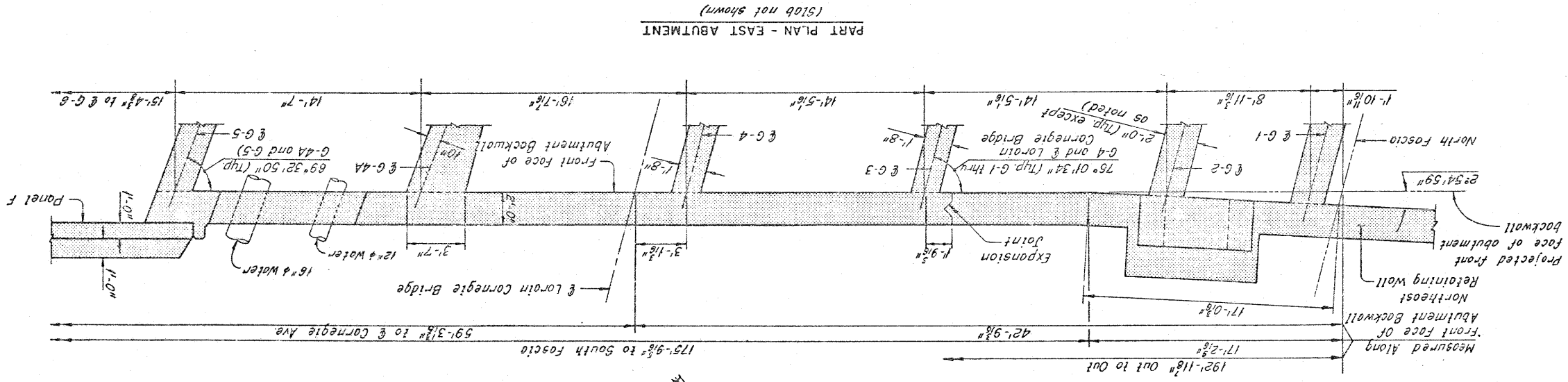
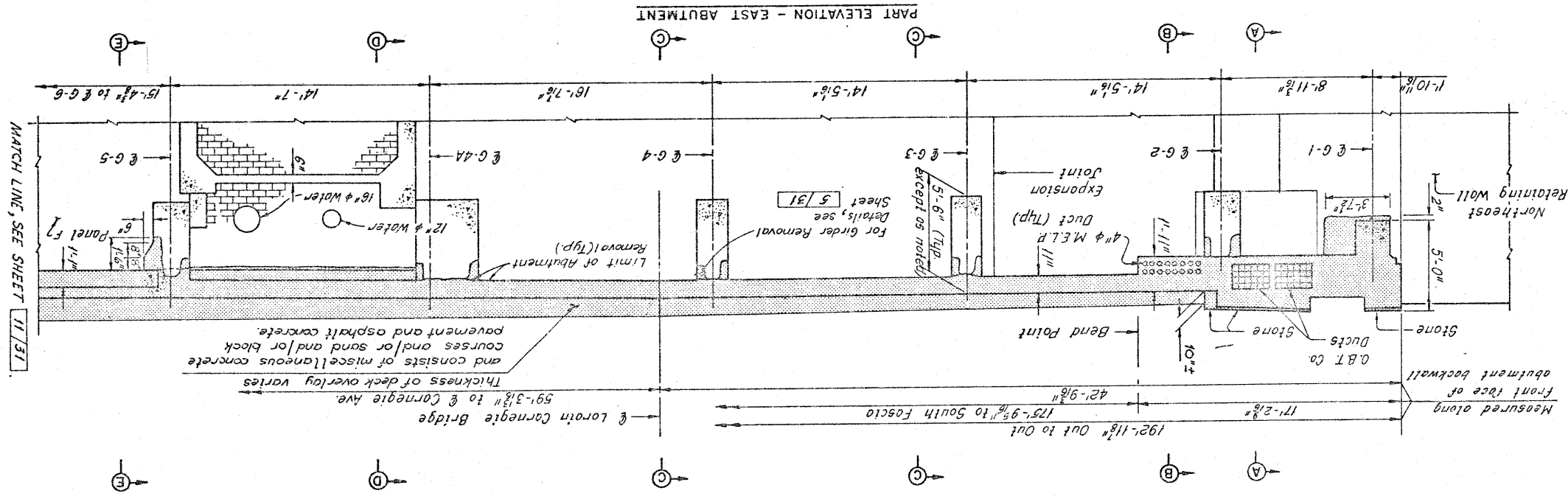


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DR. HNTB	CHK. HNTB	REV. HNTB	REV. HNTB	REV. HNTB	REV. HNTB	REV. HNTB	REV. HNTB	REV. HNTB	REV. HNTB
REMOVAL PLANS EAST ABUTMENT REHABILITATION OF THE CARNegie AVENUE GRADE SEPARATION STRUCTURE (SR10 OVER THE CLEVELAND UNION TERMINALS CO AND THE REGIONAL TRANSIT AUTHORITY) BR. NO. CUY-10-1685 STA. 57+29.72 STA. 58+85.70 CUYAHOGA COUNTY OHIO									
HOWARD NEEDLES TAMMEN & BERGENDOORF CONSULTING ENGINEERS CLEVELAND HNTB									

HNTB BRIDGE NO. 4

Notes:
 Zip-d-tone indicates portions of the structure to be removed.
 For Sections A-A thru E-E, see Sheet 12/31.
 For modified East Abutment details, see Sheets 16/31 thru 18/31.
 The following abbreviations are used:
 M.E.L.P. = Municipal Electric Light and Power
 O.B.T. = Ohio Bell Telephone Company
 C.E.L. = Cleveland Electric Illuminating Company
 Typ. = typical

Note:
 All existing vertical abutment reinforcement and all existing horizontal abutment reinforcement below the bottom of the new deck slab shall be retained as part of the new construction, except of new slab edge beams shown on Sheet 15/31. Horizontal reinforcement may be replaced in kind at no additional cost to the State.



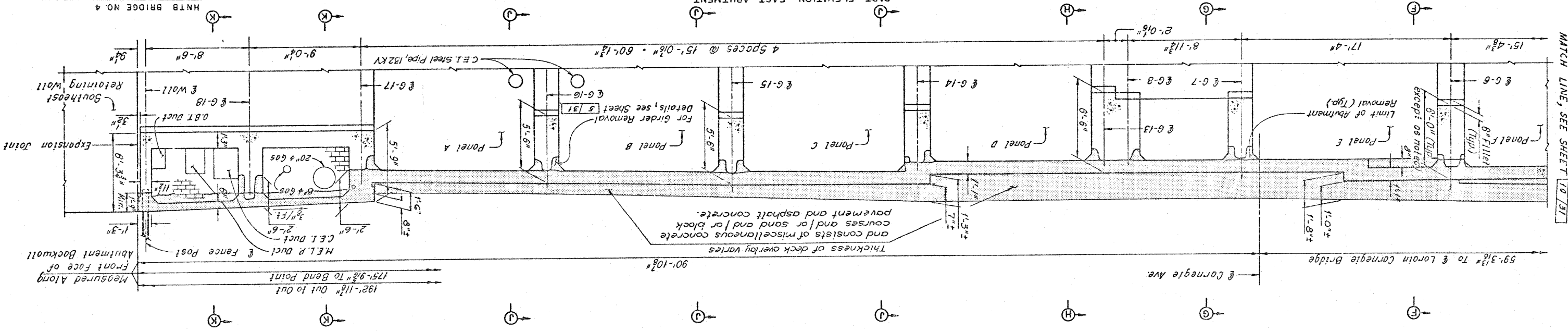
157	185
REGION	PROJECT
STATE	
OHIO	
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CUYAHOGA COUNTY
 CUY-10-16.23

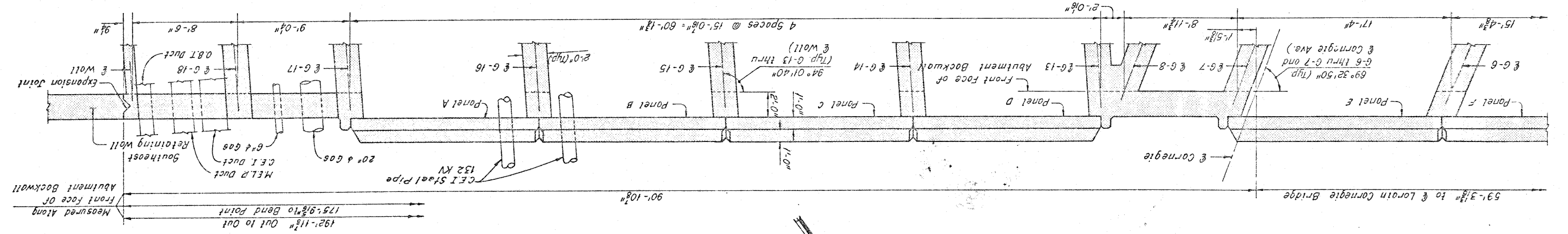
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PROJECT: CUYAHOGA COUNTY	BR NO: CUY-10-1685	STA: 57+29.72	STA: 58+85.70
REMOVAL PLANS EAST ABUTMENT REHABILITATION OF THE CARNEGIE AVENUE GRADE SEPARATION STRUCTURE (SR10 OVER THE CLEVELAND UNION TERMINALS CO. AND THE REGIONAL TRANSIT AUTHORITY) M.E.L.P. = Municipal Electric Light and Power O.B.T. = Ohio Bell Telephone Company C.E.I. = Cleveland Electric Illuminating Company			
HOWARD, NEEDLES, TAMMEN & BERGENDOFF ENGINEERS CONSULTING ENGINEERS CLEVELAND, OHIO			

Notes:
Zig-zag line indicates portions of the structure to be removed.
For Sections F-F thru K-K, see Sheet 16/31.
For modified East Abutment details, see Sheets 16/31 thru 18/31.
The following observations are used:
Typ. = typical
M.E.L.P. = Municipal Electric Light and Power
O.B.T. = Ohio Bell Telephone Company
C.E.I. = Cleveland Electric Illuminating Company
For stage construction, see Sheet 18/31.

Note:
All existing vertical abutment reinforcement and all existing horizontal abutment reinforcement below the bottom of the new deck shall be retained as part of the new construction, except of new slab edge beams shown on Sheet 16/31.
Horizontal reinforcement may be replaced in kind of no additional cost to the State.



PART PLAN - EAST ABUTMENT
(Slab not shown)

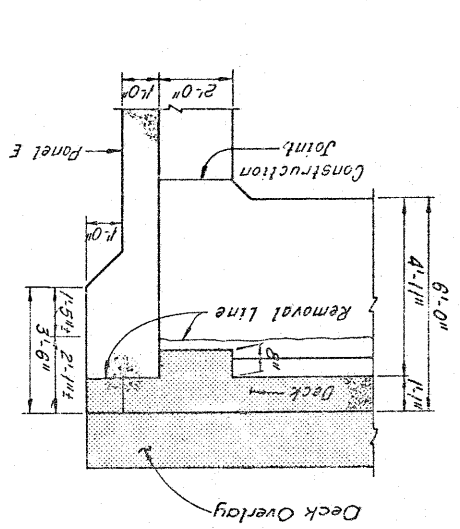


158	185
REGION	PROJECT
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OHIO	
CUYAHOGA COUNTY	
CUY-10-16.23	

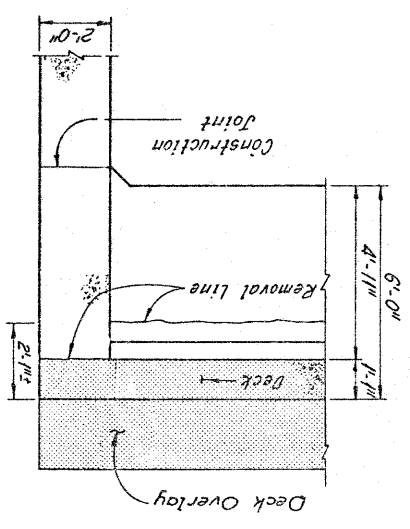
Notes:
 Zip-tone indicates portions of structure to be removed.
 For limits of existing girder removal, see Detail A, Sheet 5/31.
 For location of Sections A thru E, see Sheet 10/31.
 For location of Sections F thru K, see Sheet 11/31.

Note:
 Existing reinforcement not shown. All existing horizontal abutment reinforcement and all existing vertical abutment reinforcement below the bottom of the new deck slab shall be retained as part of the new construction, except at new slab edge beams shown on Sheet 16/31. Horizontal reinforcement may be replaced in kind of no additional cost to the State.

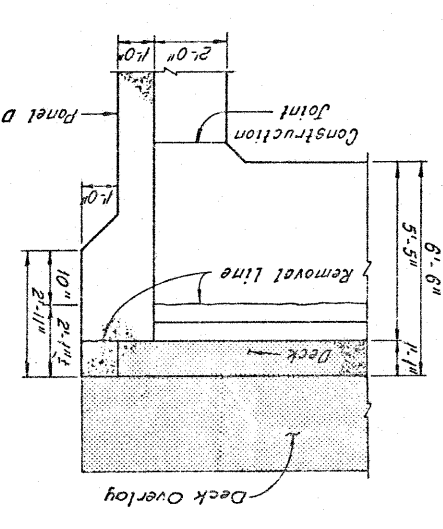
SECTION F-F



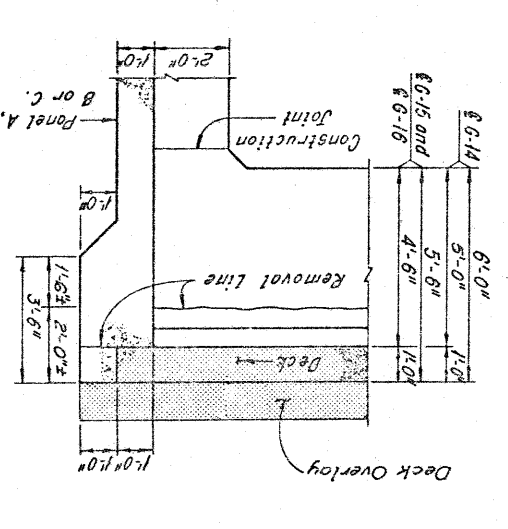
SECTION G-G



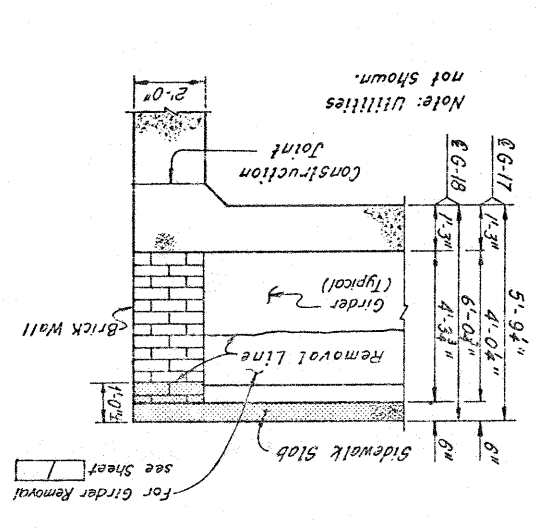
SECTION H-H



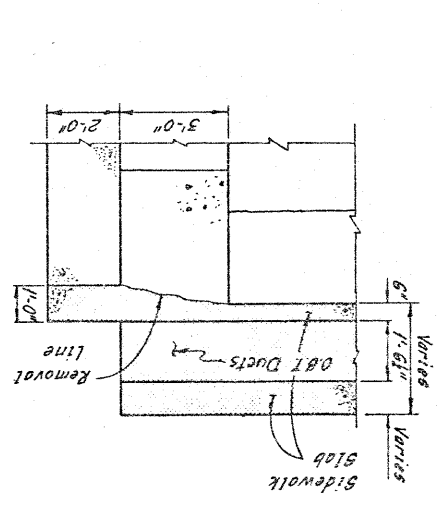
SECTION J-J



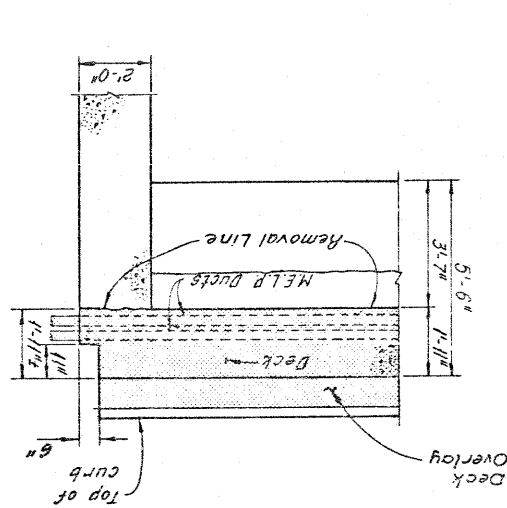
SECTION K-K



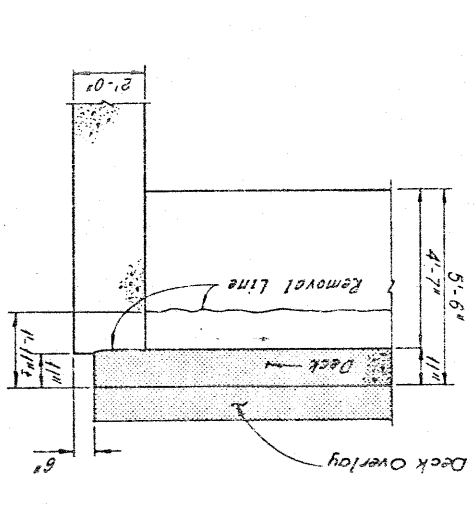
SECTION A-A



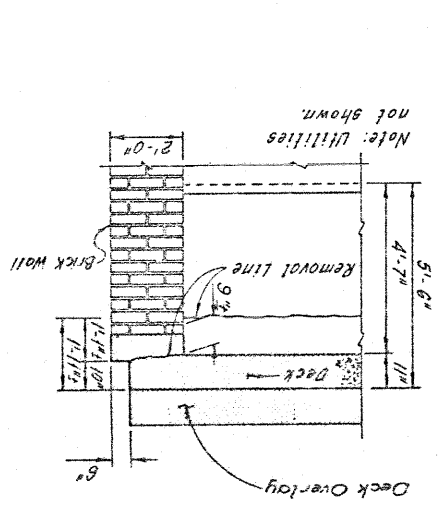
SECTION B-B



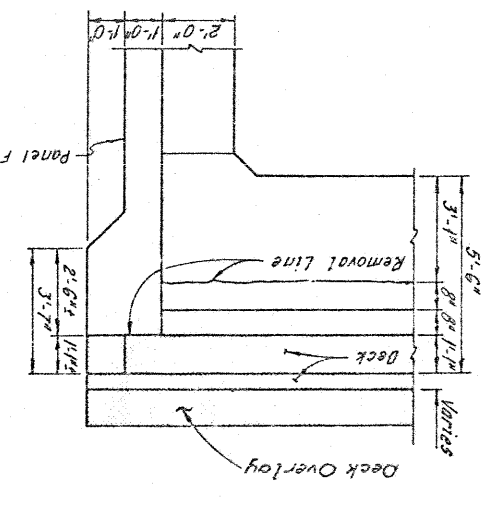
SECTION C-C



SECTION D-D



SECTION E-E



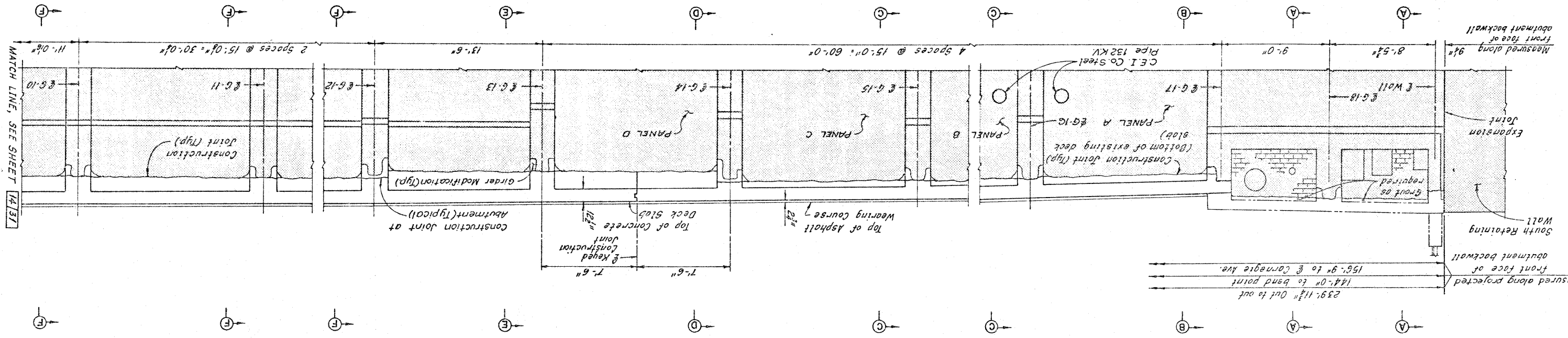
HNTB
HOWARD, NEEDLES TAMMEN & BERGENDOFF
ENGINEERS
CONSULTING
CLEVELAND, OHIO

**PART MODIFIED PLAN AND ELEVATION
WEST ABUTMENT**
REHABILITATION OF THE
CARNegie AVENUE GRADE SEPARATION STRUCTURE
(S.R.10 OVER THE CLEVELAND UNION TERMINALS CO
AND THE REGIONAL TRANSIT AUTHORITY)
BR NO. CUY-10-1685
STA 51+29.72
STA 58+55.70
CUYAHOGA COUNTY
OHIO

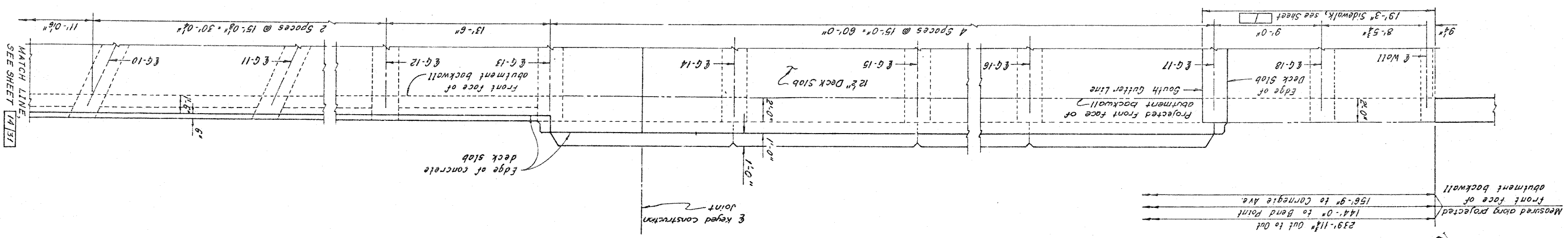
DATE: 10/16/23
DRAWN: JMT
CHECKED: JMS
REVIEWED: JMS
SHEET: 13/31

Notes:
Zlip-d-tone indicates existing structure.
For removal of West Abutment, see
Sheets 7/31 thru 9/31.
For typical girder modification repair,
see Sheet 23/31.
For Sections A-F thru F-F, see
Sheet 15/31.
For Sidewalk Details, see Sheet 27/31.
For Stage Construction, see Sheet 1/31.
For Contour Plan, see Sheet 30/31.

PART ELEVATION - WEST ABUTMENT
(Deck slab, girder and retained abutment reinforcement not shown)



PART PLAN - WEST ABUTMENT



CUYAHOGA COUNTY
CUY-10-16.23

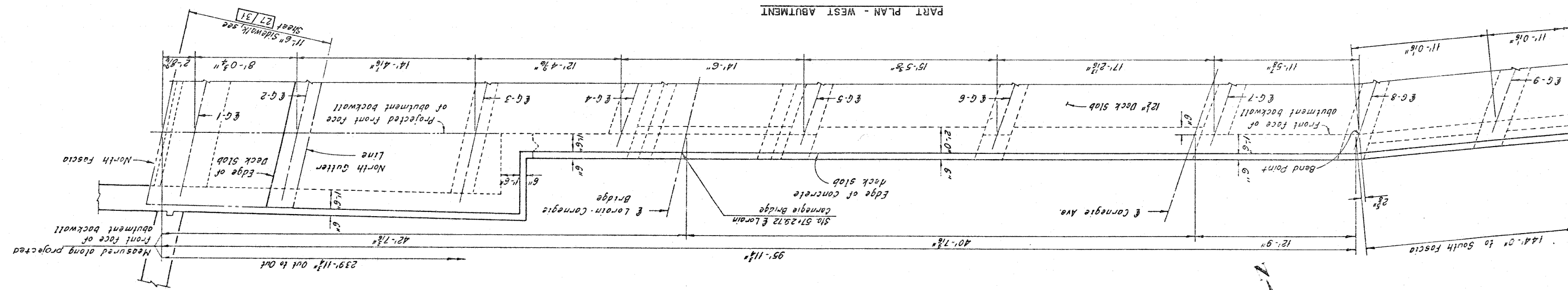
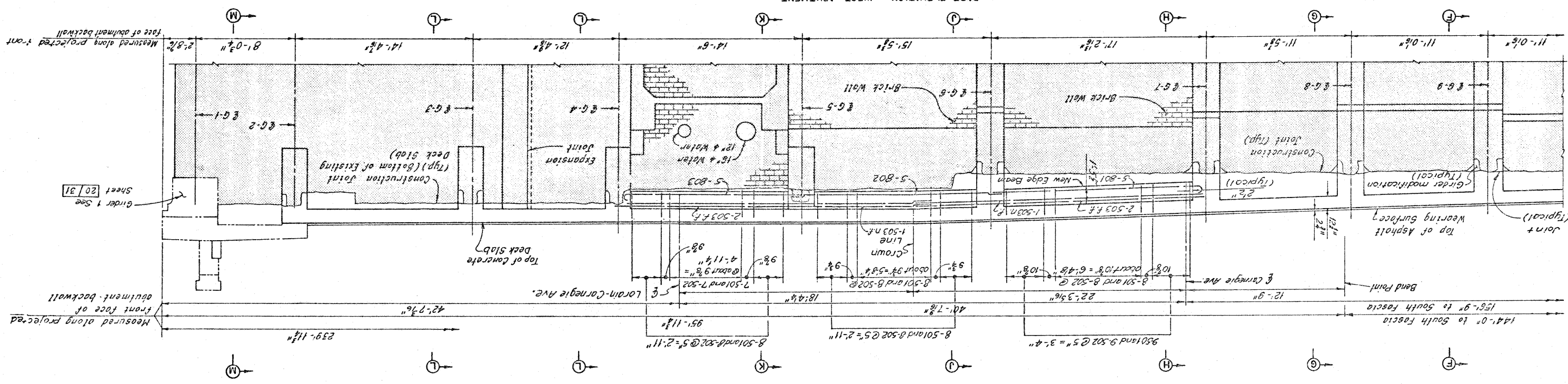
160	REGION	PROJECT
185	STATE	
5	OHIO	

DATE: 10/24/23	TRACED: R.S.	CHECKED: R.S.	DATE: 10/23/23
DRAWN BY: HNTB		DATE: 10/23/23	
CUYAHOGA COUNTY			
BR NO. CUY-10-1685			
STA. 56+85.70			
STA. 57+29.72			
AND THE REGIONAL TRANSIT AUTHORITY			
(SR10 OVER THE CLEVELAND UNION TERMINALS CO.			
CARNEGIE AVENUE GRADE SEPARATION STRUCTURE			
REHABILITATION OF THE			
WEST ABUTMENT			
PART MODIFIED PLAN AND ELEVATION			
HNTB			
HOWARD NEEDLES TAMMEN & BERGENDOFF			
ENGINEERS			
CLEVELAND			

HNTB BRIDGE NO. 4

Notes:
 Z-D-tone indicates existing structure.
 Phantom lines indicate new construction.
 details of which are shown elsewhere in these plans.
 For Sections F-F thru M-M, see Sheet 15/31.
 For Reinforcement Schedule, see Sheet R/4.
 For Stage Construction, see Sheet 1/31.
 For Contour Plan, see Sheet 30/31.
 For additional notes, see Sheet 13/31.

Note:
 All reinforcing bar marks shall be prefixed WA.



161	5	OHIO	CUY-10-16.23
185		STATE	
		PROJECT	

MATCH LINE, SEE SHEET 13/31

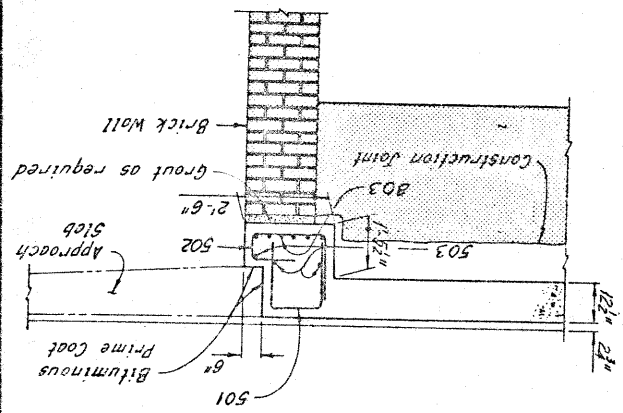
MATCH LINE, SEE SHEET 13/31

DATE: 12/15/31	DATE: 12/15/31	DATE: 12/15/31	DATE: 12/15/31	DATE: 12/15/31	DATE: 12/15/31
DRAWN: HNTB	CHECKED: HNTB	APPROVED: HNTB	DATE: 12/15/31	BY: HNTB	PROJECT: HNTB
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS CLEVELAND, OHIO					
HNTB MODIFIED TYPICAL CROSS SECTIONS WEST ABUTMENT REHABILITATION OF THE CARNEGIE AVENUE GRADE SEPARATION STRUCTURE (S.R. OVER THE CLEVELAND UNION TERMINALS CO. AND THE REGIONAL TRANSIT AUTHORITY) BR. NO. CUY-10-1685 STA. 57+29.72 STA. 58+85.70 CUYAHOGA COUNTY OHIO					

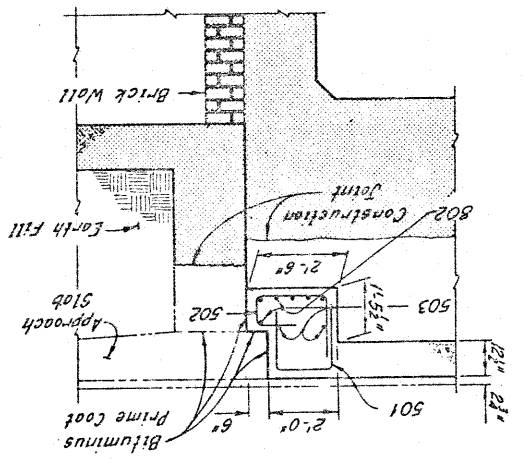
Notes:
 1. Zone indicates existing structure.
 2. Stewalk, deck, girder and retained existing
 abutment reinforcement is not shown.
 3. For location of Sections A-D thru F-F, see
 Sheet 13/31.
 4. For location of Sections G-G thru M-M, see
 Sheet 14/31.
 5. For manhole locations, see Sheet 26/31.
 6. The cost of grouting shall be included with
 the unit price bid for Item 511, Class C Concrete,
 Abutments Above Footings, for payment.
 7. For reinforcement Schedule, see Sheet 18/31.

Note:
 All reinforcing bar marks
 shall be prefixed MA.

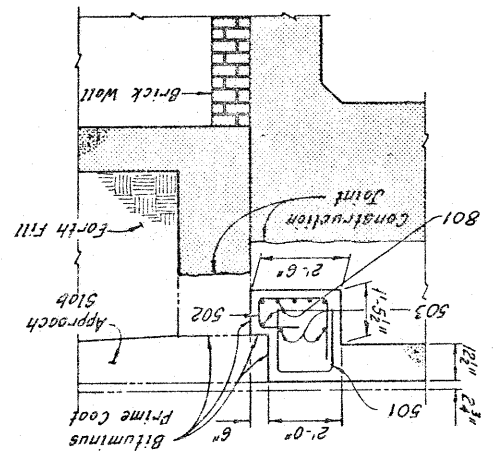
SECTION K-K



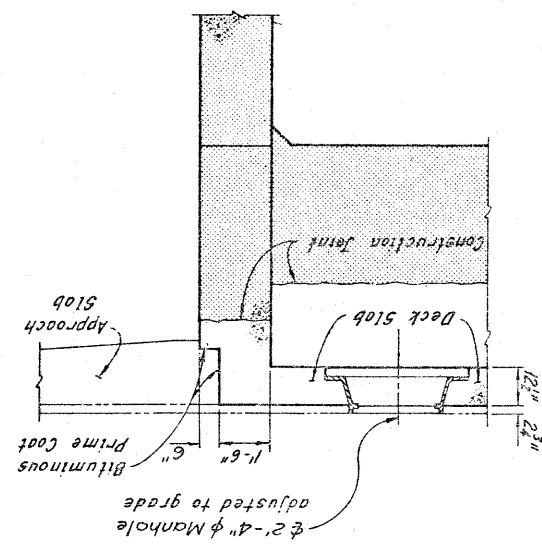
SECTION J-J



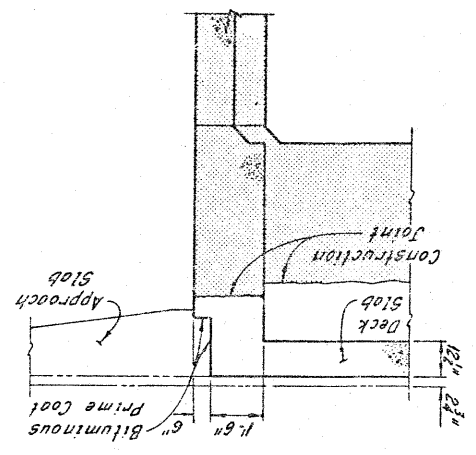
SECTION H-H



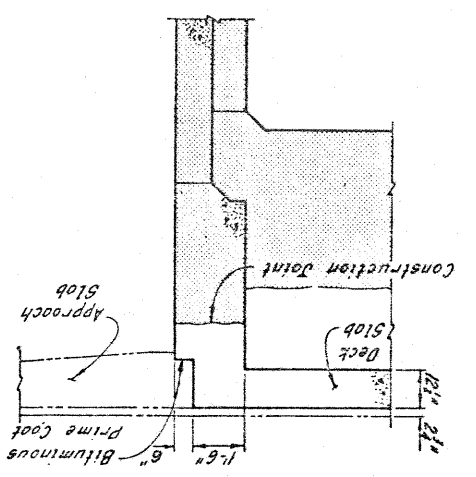
SECTION G-G



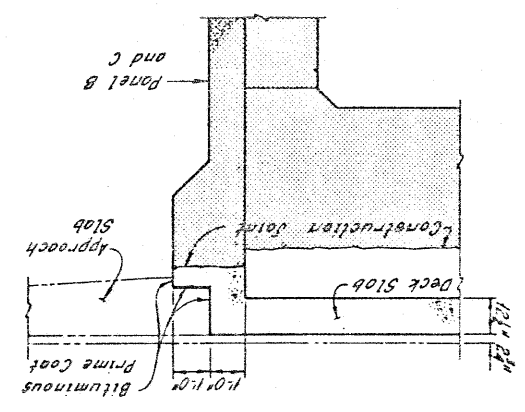
SECTION F-F



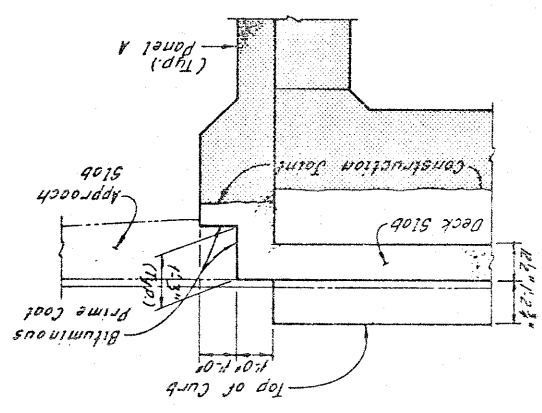
SECTION E-E



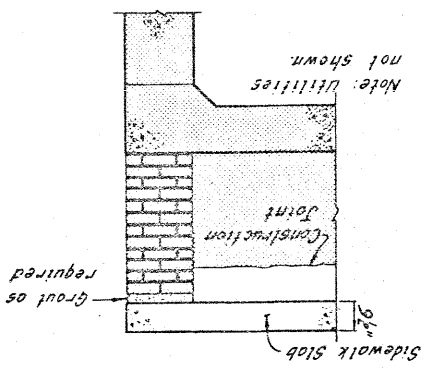
SECTION C-C



SECTION B-B



SECTION A-A

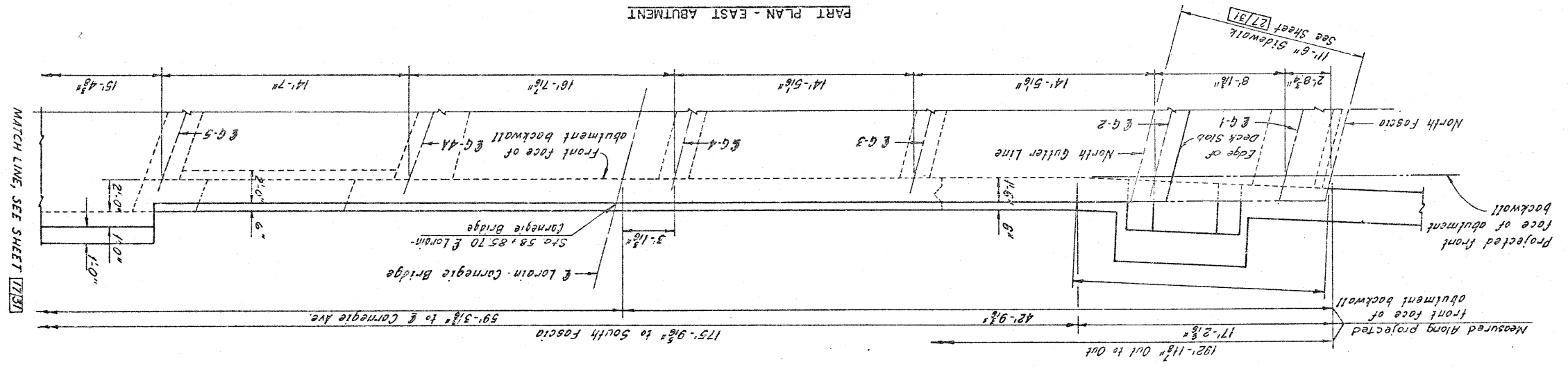


CUYAHOGA COUNTY
 CUY-10-16.23

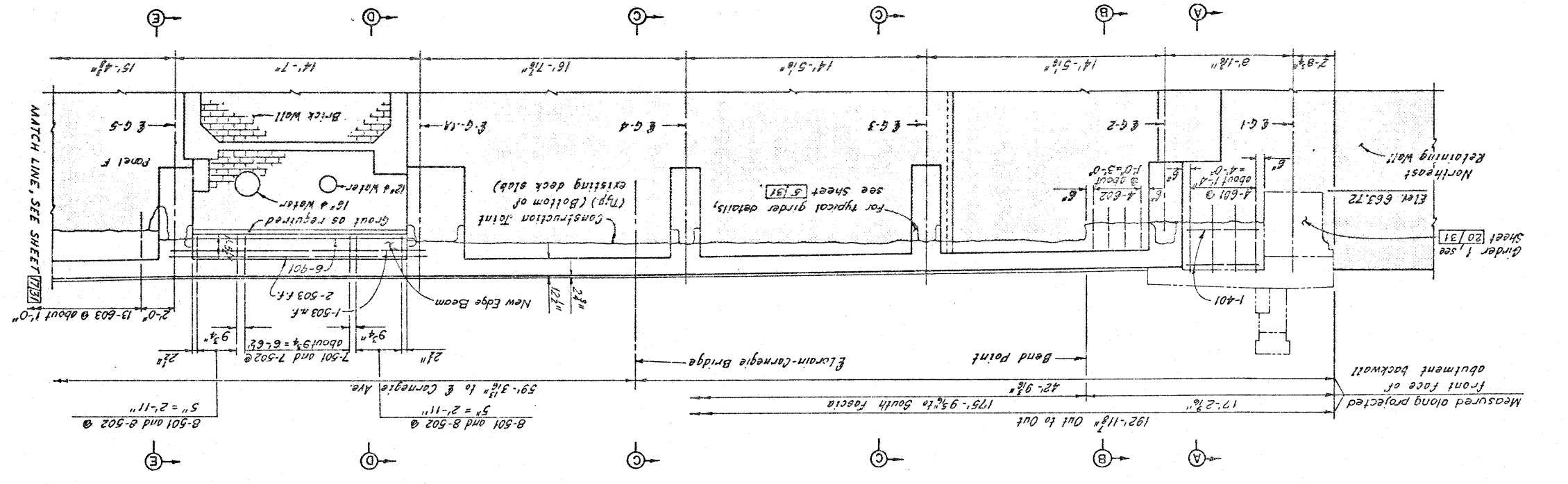
162	185
REGION	PROJECT
STATE	PROJECT
5 OHIO	PROJECT

DATE: 10/13/31	REVISIONS:	DATE: 10/13/31	REVISIONS:
DESIGNED BY: J.T.S.	CHECKED BY: J.T.S.	DATE: 10/13/31	REVISIONS:
CUYAHOGA COUNTY BR. NO. CUY-10-1685 STA. 57+29.72 STA. 58+85.70 OHIO			
GARNEGIE AVENUE GRADE SEPARATION STRUCTURE REHABILITATION OF THE EAST ABUTMENT PART MODIFIED PLAN AND ELEVATION			
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS CLEVELAND			
HNTB			

Notes:
 Zip-tone indicates existing structure.
 Phantom lines indicate new construction
 details of which are shown elsewhere on these
 plans.
 For Removal of East Abutment, see Sheets
 10/31 thru 12/31.
 For Typical Girder Repair, see Sheet 23/31.
 For Approach Slab Details, see roadway plans.
 For Sections A thru E-E, see Sheet 18/31.
 For Contour Plan, see Sheet 30/31.
 For reinforcement schedule see Sheet R/7.
 HNTB BRIDGE NO. 4



Note:
 All reinforcing bar marks
 shall be prefixed EA.



(Deck slab, girder and retained
 abutment reinforcement not shown)

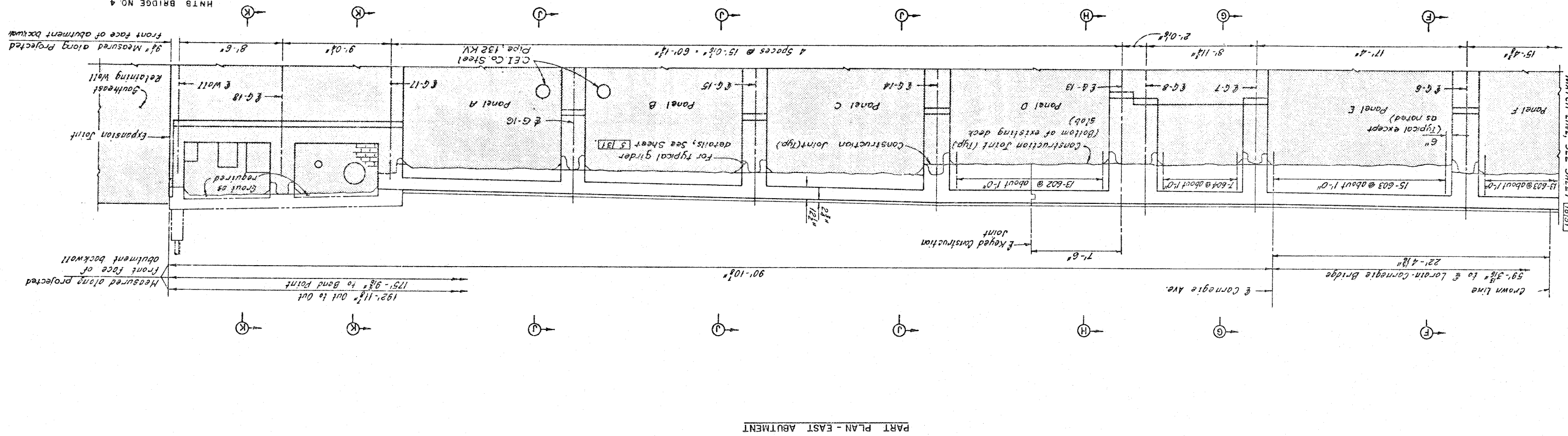
163	185
REGION	PROJECT
5 OHIO	CUY-10-16.23
CUYAHOGA COUNTY	

HOWARD, NEEDLES, TAMMEN & BERGENDORF
 CONSULTING ENGINEERS
 CLEVELAND, OHIO
HNTB
 PART MODIFIED PLAN AND ELEVATION
 REHABILITATION OF THE
 EAST ABUTMENT
 CARNEGIE AVENUE GRADE SEPARATION STRUCTURE
 (SR10 OVER THE CLEVELAND UNION TERMINALS CO.
 AND THE REGIONAL TRANSIT AUTHORITY)
 BR. NO. CUY-10-1623 STA. 57+29.72
 STA. 58+85.70
 CUYAHOGA COUNTY
 OHIO
 SHEET 17/31

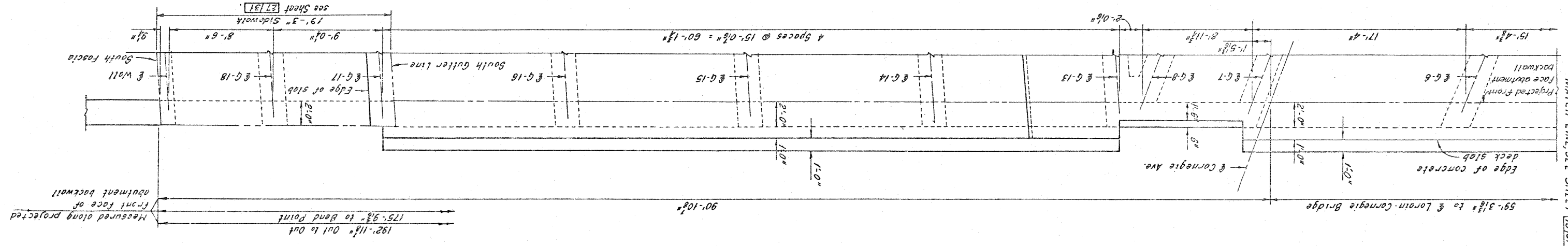
Notes:
 Zip-a-tone indicates existing structures.
 For Removal of East Abutment, see Sheets
 10/31 thru 12/31.
 For Typical Girder Repair, see Sheet 23/31.
 For Approach Slab Details, see roadway plans.
 For Sections F-F thru K-K, see Sheet 18/31.
 For Contour Plan, see Sheet 30/31.
 For reinforcement schedule, see Sheet R/4.

Note:
 All reinforcing bar marks
 shall be prefixed EA.

PART ELEVATION - EAST ABUTMENT
 (Deck slab, girder, and retained
 abutment reinforcement not shown)

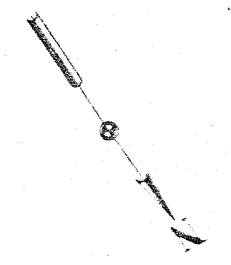


PART PLAN - EAST ABUTMENT



PART ELEVATION - EAST ABUTMENT

CUYAHOGA COUNTY
 CUY-10-16.23
 REGION PROJECT STATE OHIO 5
 154 185



DATE: 10/15/72	DESIGNED BY: JCS	CHECKED BY: JCS	DATE: 10/15/72
REVISIONS:	NO. 1	DATE: 10/15/72	BY: JCS
HOWARD, NEEDLES, TAMMEN & BERGENDOORF ENGINEERS CONSULTING ENGINEERS CLEVELAND, OHIO			
HNTB			

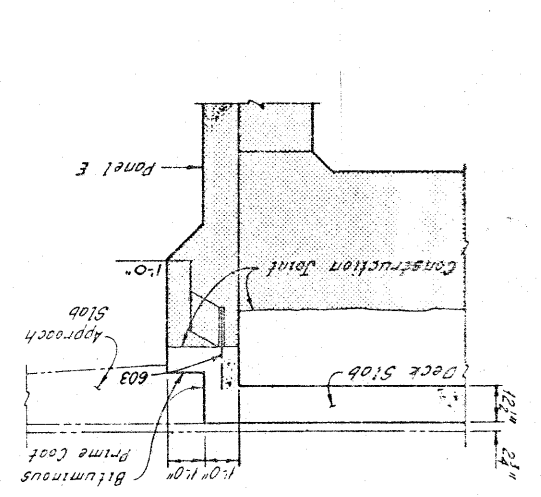
NHTB BRIDGE NO. 4

MODIFIED TYPICAL CROSS SECTIONS
EAST ABUTMENT
REHABILITATION OF THE
GARNEGIE AVENUE GRADE SEPARATION STRUCTURE
(S.R. 10 OVER THE CLEVELAND UNION TERMINALS CO.
AND THE REGIONAL TRANSIT AUTHORITY)
BR. NO. CUY-10-1685
STA. 57+29.72
STA. 58+93.70
CUYAHOGA COUNTY
OHIO

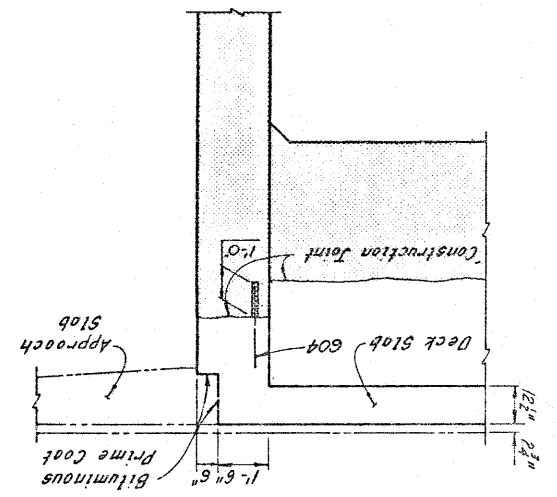
Notes:
Zig-zag indicates existing structures.
Sidewalk, deck, existing girder and retained
abutment reinforcement is not shown.
The cost of grouting shall be included with
the unit price bid for Item 511, Class C Concrete.
Abutments above footings, for payment,
for reinforcement schedule see sheet R/4.

Note:
All reinforcing bar marks
shall be prefixed EA.

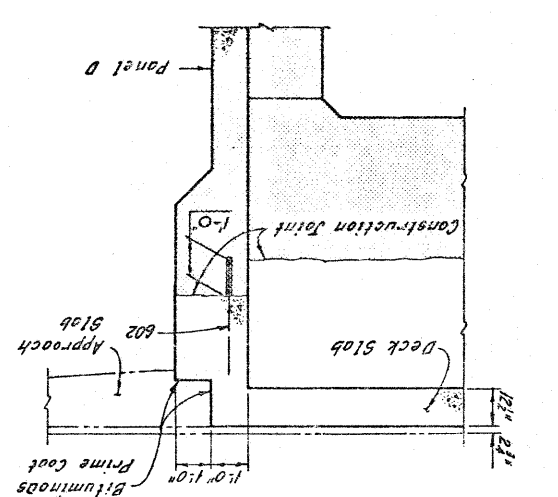
SECTION F-F



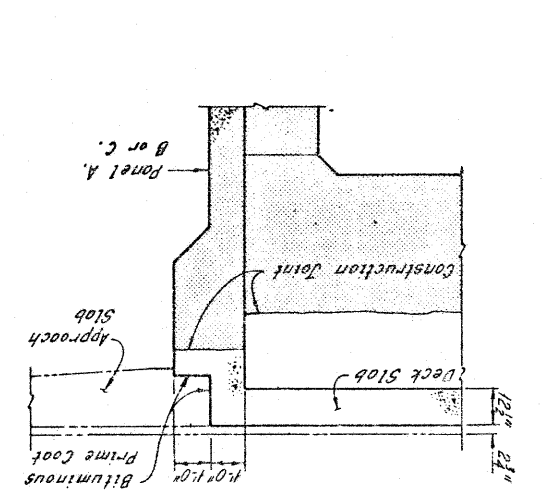
SECTION G-G



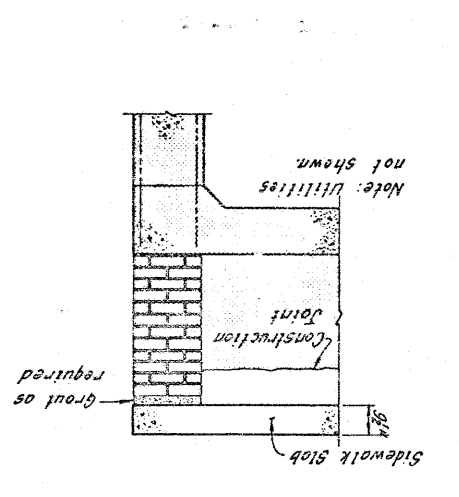
SECTION H-H



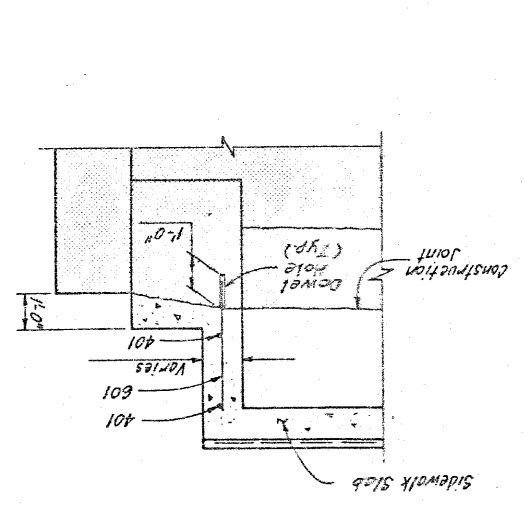
SECTION J-J



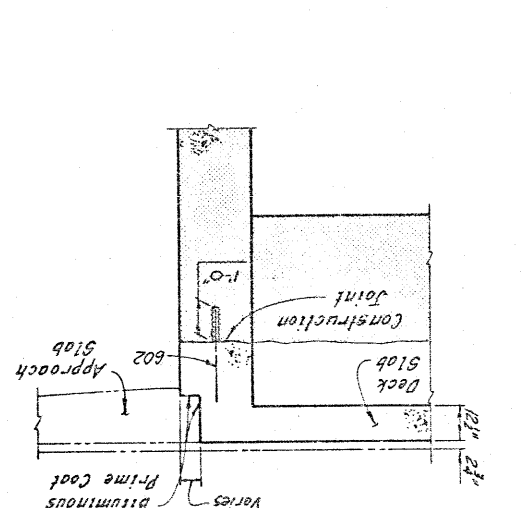
SECTION K-K



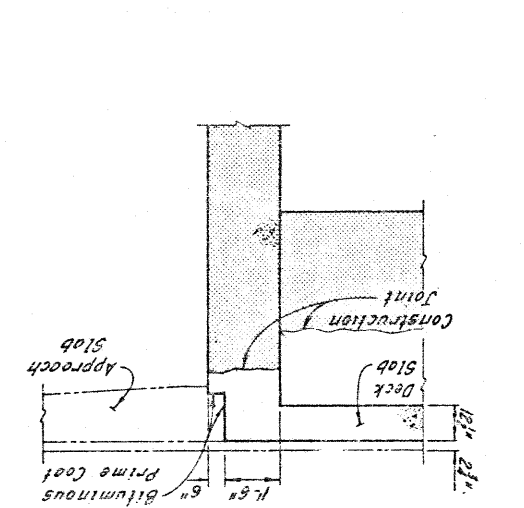
SECTION A-A



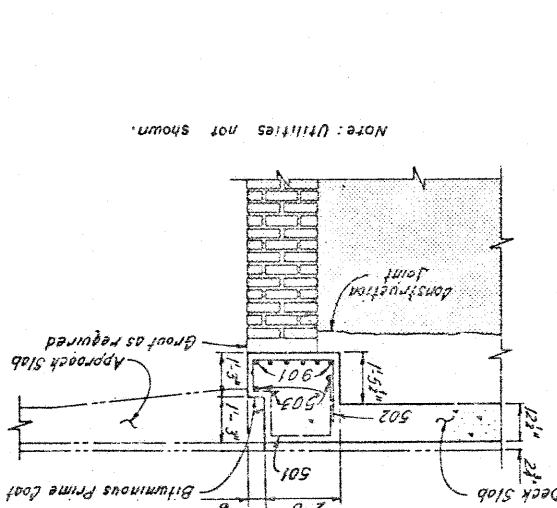
SECTION B-B



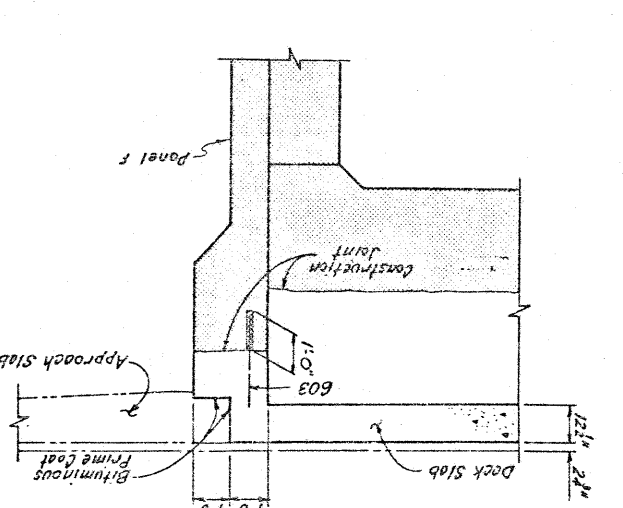
SECTION C-C



SECTION D-D



SECTION E-E

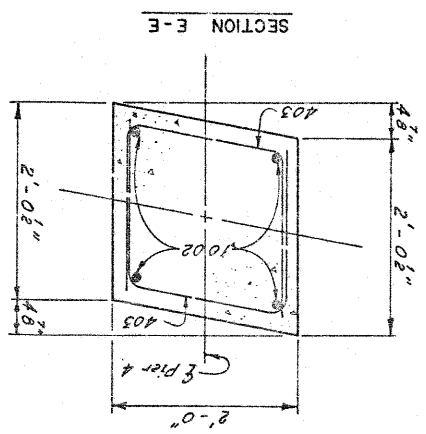
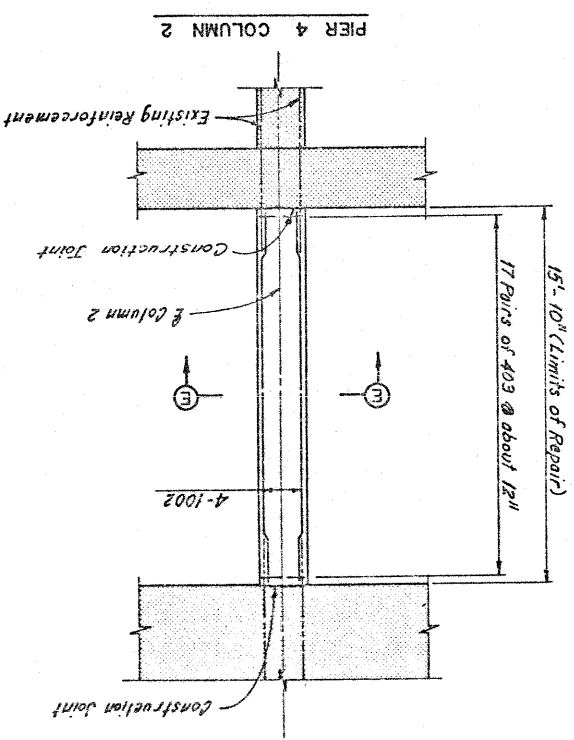
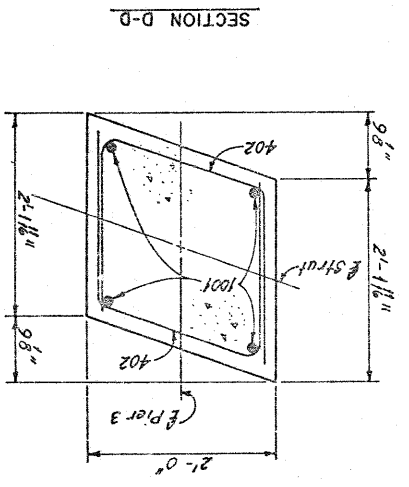
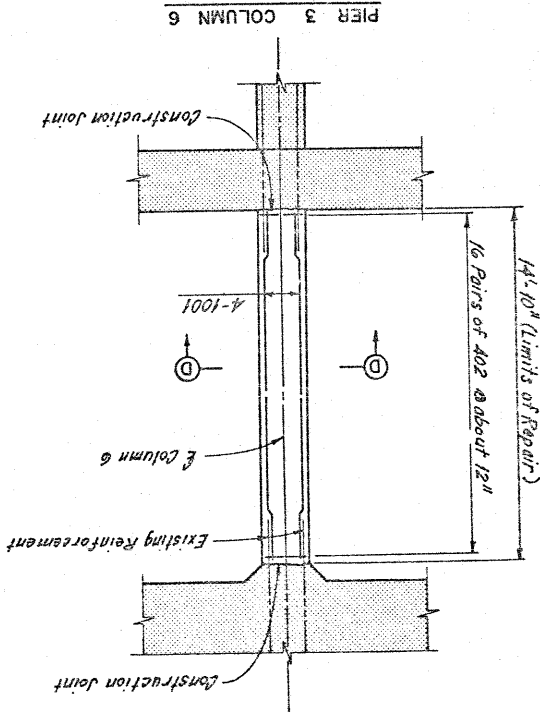
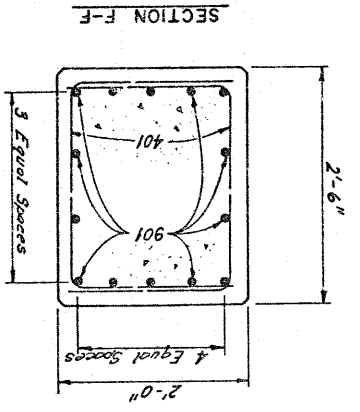
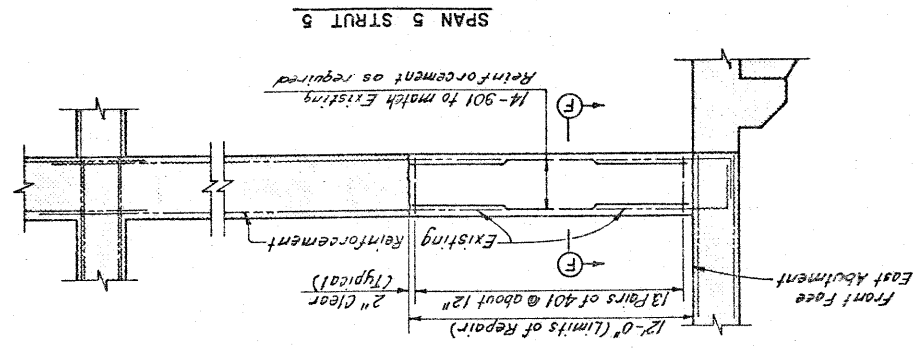


CUYAHOGA COUNTY
CUY-10-16.23

163	PROJECT	OHIO	5
185		OHIO	5

DATE: 7/75	DATE: 8/75	DATE: 9/75	DATE: 9/75	DATE: 9/75	DATE: 9/75	DATE: 9/75	DATE: 9/75	DATE: 9/75	DATE: 9/75
DESIGNED BY: [Blank]	CHECKED BY: [Blank]	REVIEWED BY: [Blank]	APPROVED BY: [Blank]	DATE: 9/75	DATE: 9/75	DATE: 9/75	DATE: 9/75	DATE: 9/75	DATE: 9/75
HNTB BRIDGE NO. 4 HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS CLEVELAND HNTB									
STRUT AND COLUMN REPAIR DETAILS REHABILITATION OF THE CARNegie AVENUE GRADE SEPARATION STRUCTURE (SR) OVER THE CLEVELAND UNION TERMINALS CO. AND THE REGIONAL TRANSIT AUTHORITY) BR. NO. CUY-10-1685 STA. 57+29.72 STA. 58+85.70 OHIO CUYAHOGA COUNTY									
SHEET 19 OF 31									

Notes: All reinforcing bar marks shall be prefixed SC.



Notes:
 Zip-a-tone indicates existing structure.
 For strut and column removal details, see Sheet 6/31.
 For reinforcement schedule, see Sheet R/5.

REGION	STATE	PROJECT
5	OHIO	CUY-10-16.23
165		

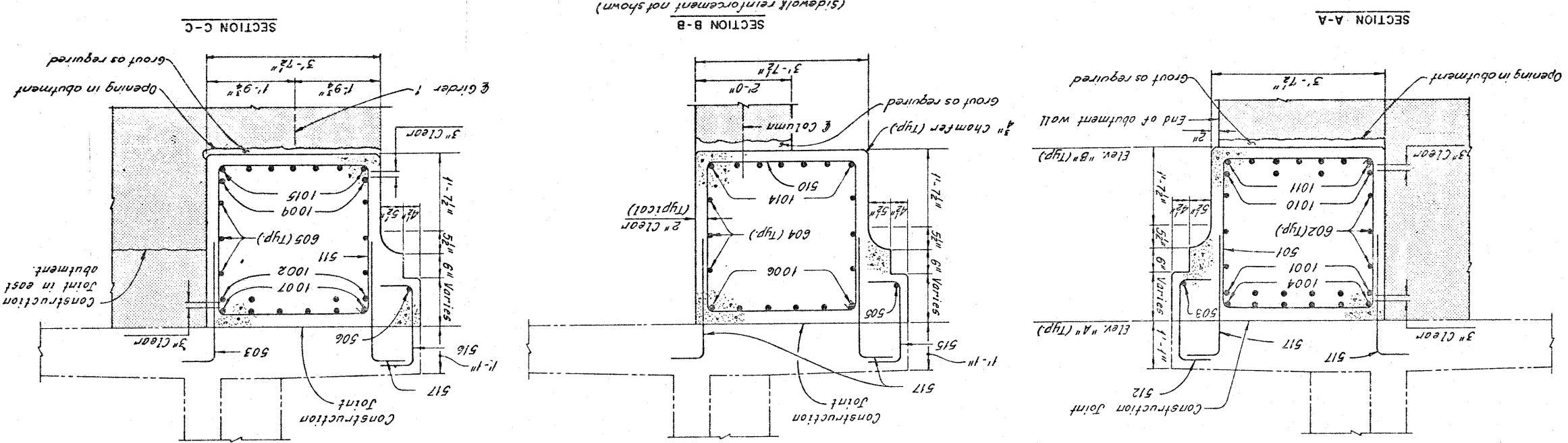


REHABILITATION OF THE
 GIRDERS-1 REPLACEMENT
 CARNegie AVENUE SEPARATION STRUCTURE
 (SR 10 OVER THE CLEVELAND UNION TERMINALS CO.
 AND THE REGIONAL TRANSIT AUTHORITY)
 BR. NO. CUY-10-1685
 STA. 57+29.72
 STA. 58+65.70
 CUYAHOGA COUNTY
 OHIO

Notes:
 Zebra-tone indicates existing structure.
 Phantom lines indicate new construction,
 details of which are shown elsewhere in these
 plans.
 For removal Plans, see Sheets 4/31
 For Sidewalk Plans, see Sheets 27/31
 For Reinforcement Schedule, see Sheet R/5
 The following abbreviations are used:
 Typ. = typical
 Bot. = Bottom
 e.f. = each face
 f.f. = for face
 The cost of grouting shall be included
 with the unit price bid for Item 511, Class
 C Concrete, Abutments Above Footings, for
 payment.

* Given to the actual front face of
Abutment backwall

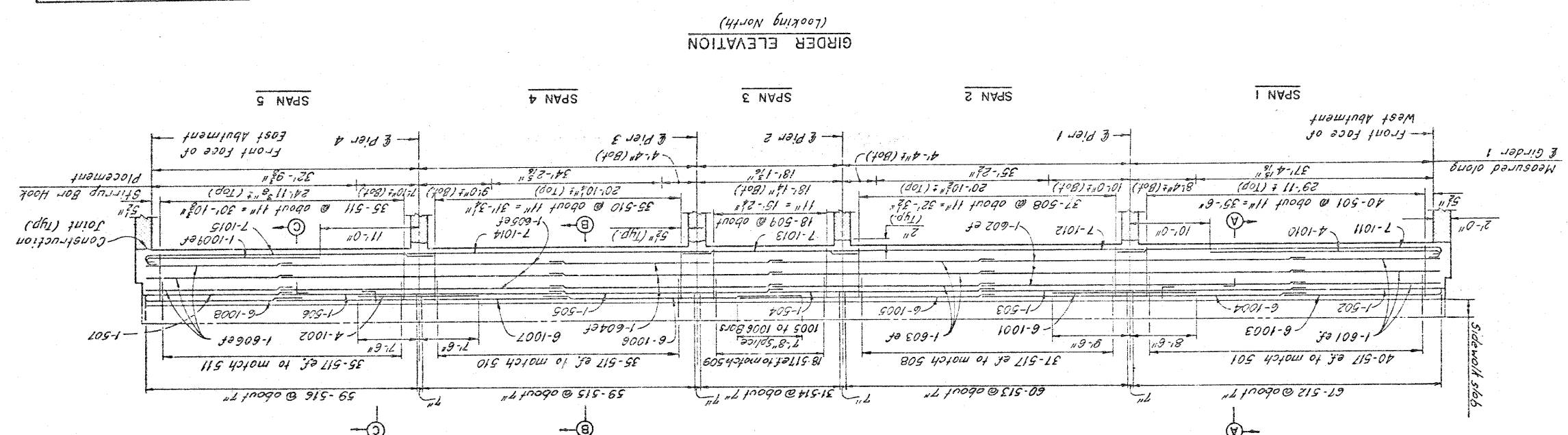
GIRDER DEPTH	Location	Elev. A	Elev. B
	Front face of west abutment	670.95	667.60
	£ Pier 1	670.27	666.83
	£ Pier 2	669.22	666.13
	£ Pier 3	669.36	665.77
	£ Pier 4	668.91	665.07
	Front face of east abutment	668.48	663.72



MINIMUM LAP LENGTHS
(Except as noted)

Bar No.	Lengths
5	1' - 7 1/2"
6	1' - 11"
10	3' - 2 1/2"

Notes: All reinforcing bar marks shall be prefixed GM.



HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 CLEVELAND, OHIO
HNTB

GIRDER REINFORCEMENT
GIRDERS 2 THRU 18
REHABILITATION OF THE
CARNegie AVENUE GRADE SEPARATION STRUCTURE
(S.R.I.O. OVER THE CLEVELAND UNION TERMINALS CO.
AND THE REGIONAL TRANSIT AUTHORITY)
 BR. NO. CUY-10-1685
 STA. 57+29.72
 STA. 58+85.70
 OHIO
 CUYAHOGA COUNTY

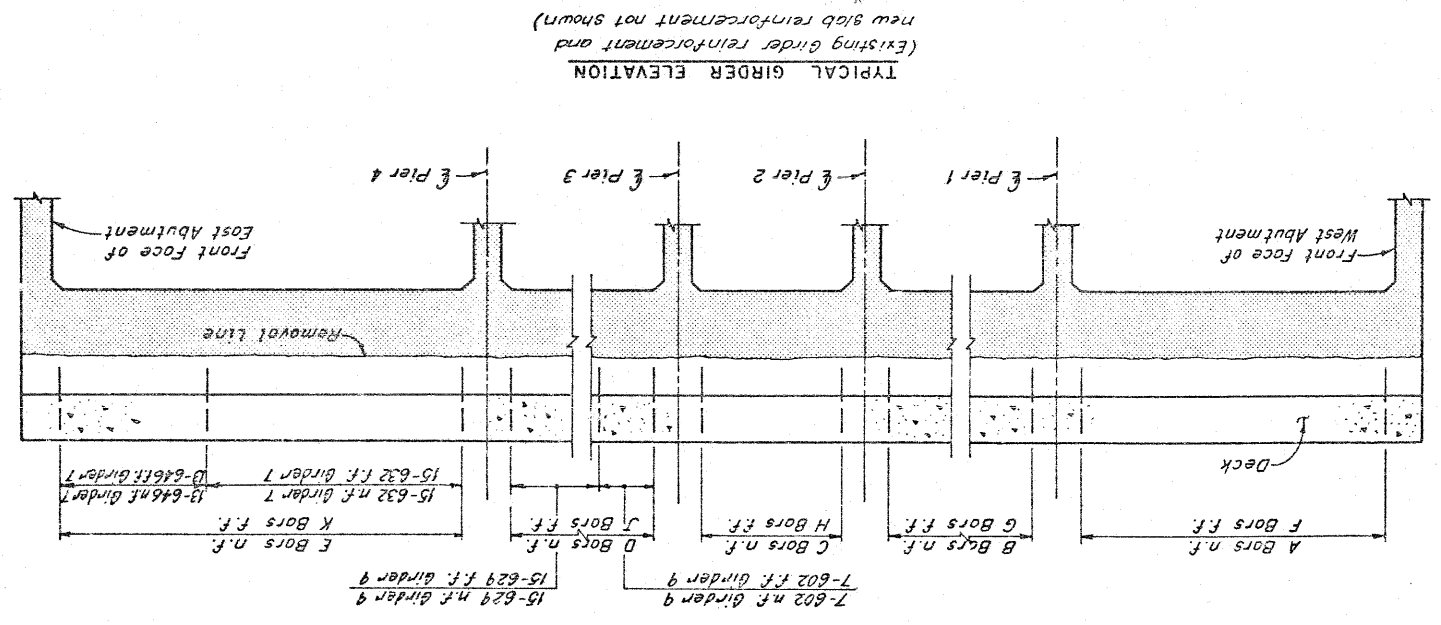
DRAWN: []
 DES. AN: []
 CHECKED: []
 REVISIONS: []
 SHEET: 22/31

NHTB BRIDGE NO. 4

± denotes epoxy coated reinforcing steel

Note: All reinforcing bar marks shall be prefixed GR.

GIRDER	BAR A	BAR B	BAR C	BAR D	BAR E	BAR F	BAR G	BAR H	BAR J	BAR K							
2	602	602	605	1 Ser. 16	607	1 Ser. 16	609	24	601	22	601	4	603	1 Ser. 16	606	1 Ser. 16	608
3	610	610	611	1 Ser. 20	612	1 Ser. 18	613	26	610	24	610	4	611	1 Ser. 20	612	1 Ser. 18	613
4	616	614	615	1 Ser. 16	617	1 Ser. 20	618	16	614	18	615	4	611	1 Ser. 16	616	1 Ser. 20	617
4A	-	-	615	1 Ser. 16	618	1 Ser. 20	619	-	615	18	615	4	611	1 Ser. 16	618	1 Ser. 20	619
5	611	611	620	1 Ser. 4	621	1 Ser. 20	622	22	611	22	620	1 Ser. 4	621	1 Ser. 20	622	1 Ser. 22	624
6	626	626	627	1 Ser. 32	628	1 Ser. 23	629	25	628	25	629	1 Ser. 32	628	1 Ser. 23	629	1 Ser. 22	629
7	629	629	630	1 Ser. 23	631	1 Ser. 23	632	22	630	28	630	8	630	1 Ser. 23	631	1 Ser. 22	635
8	603	603	633	1 Ser. 17	634	1 Ser. 17	635	26	603	19	603	8	601	1 Ser. 17	634	1 Ser. 22	635
8	603	603	633	1 Ser. 17	634	1 Ser. 17	635	26	603	19	603	8	601	1 Ser. 17	634	1 Ser. 22	635
9	601	601	605	1 Ser. 16	602	1 Ser. 16	603	19	601	19	601	8	602	1 Ser. 16	603	1 Ser. 22	635
10	636	636	605	1 Ser. 16	637	1 Ser. 16	638	21	636	21	637	8	605	1 Ser. 16	638	1 Ser. 22	635
11	637	637	605	1 Ser. 16	638	1 Ser. 16	639	21	637	21	637	8	605	1 Ser. 16	638	1 Ser. 22	635
12	638	638	640	1 Ser. 21	639	1 Ser. 21	640	29	638	29	639	8	636	1 Ser. 21	640	1 Ser. 22	635
13	601	601	633	1 Ser. 24	602	1 Ser. 24	603	24	601	24	601	8	601	1 Ser. 24	602	1 Ser. 22	635
14	620	620	641	1 Ser. 32	621	1 Ser. 32	622	32	620	32	620	8	601	1 Ser. 32	621	1 Ser. 22	635
15	644	644	620	1 Ser. 17	645	1 Ser. 17	646	20	644	20	644	7	620	1 Ser. 17	645	1 Ser. 22	635
16	611	611	620	1 Ser. 16	612	1 Ser. 16	613	25	611	25	611	7	620	1 Ser. 16	612	1 Ser. 22	635
17	617	617	611	1 Ser. 20	618	1 Ser. 20	619	17	617	17	617	8	611	1 Ser. 20	612	1 Ser. 22	635
18	604	604	641	1 Ser. 18	605	1 Ser. 18	606	28	604	28	604	7	641	1 Ser. 18	605	1 Ser. 22	635
18	604	604	641	1 Ser. 18	605	1 Ser. 18	606	28	604	28	604	7	641	1 Ser. 18	605	1 Ser. 22	635
17	617	617	611	1 Ser. 20	618	1 Ser. 20	619	17	617	17	617	8	611	1 Ser. 20	612	1 Ser. 22	635
16	611	611	620	1 Ser. 16	612	1 Ser. 16	613	25	611	25	611	7	620	1 Ser. 16	612	1 Ser. 22	635
15	644	644	620	1 Ser. 17	645	1 Ser. 17	646	20	644	20	644	7	620	1 Ser. 17	645	1 Ser. 22	635
14	620	620	641	1 Ser. 32	621	1 Ser. 32	622	32	620	32	620	8	641	1 Ser. 32	621	1 Ser. 22	635
13	601	601	633	1 Ser. 24	602	1 Ser. 24	603	24	601	24	601	8	633	1 Ser. 24	602	1 Ser. 22	635
12	638	638	640	1 Ser. 21	639	1 Ser. 21	640	29	638	29	639	8	636	1 Ser. 21	640	1 Ser. 22	635
11	637	637	605	1 Ser. 16	638	1 Ser. 16	639	21	637	21	637	8	605	1 Ser. 16	638	1 Ser. 22	635
10	636	636	605	1 Ser. 16	637	1 Ser. 16	638	21	636	21	637	8	605	1 Ser. 16	638	1 Ser. 22	635
9	601	601	605	1 Ser. 16	602	1 Ser. 16	603	19	601	19	601	8	602	1 Ser. 16	603	1 Ser. 22	635
8	603	603	633	1 Ser. 17	604	1 Ser. 17	605	26	603	19	603	8	601	1 Ser. 17	604	1 Ser. 22	635
7	629	629	630	1 Ser. 23	631	1 Ser. 23	632	22	629	22	629	8	630	1 Ser. 23	631	1 Ser. 22	635
6	626	626	627	1 Ser. 32	628	1 Ser. 23	629	25	626	25	629	1 Ser. 32	628	1 Ser. 23	629	1 Ser. 22	635
5	611	611	620	1 Ser. 4	621	1 Ser. 20	622	22	611	22	620	1 Ser. 4	621	1 Ser. 20	622	1 Ser. 22	635
4A	-	-	615	1 Ser. 16	618	1 Ser. 20	619	-	615	18	615	4	611	1 Ser. 16	618	1 Ser. 20	619
4	616	614	615	1 Ser. 16	617	1 Ser. 20	618	16	614	18	615	4	611	1 Ser. 16	616	1 Ser. 20	617
3	610	610	611	1 Ser. 20	612	1 Ser. 18	613	26	610	24	610	4	611	1 Ser. 20	612	1 Ser. 18	613
2	602	602	605	1 Ser. 16	607	1 Ser. 16	609	24	601	22	601	4	603	1 Ser. 16	606	1 Ser. 16	608

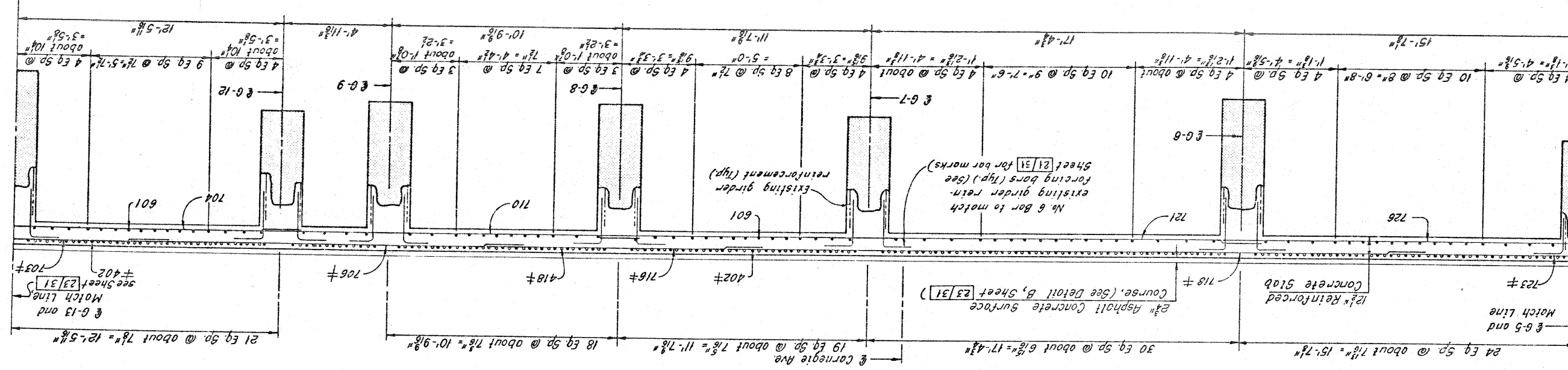


Note: Reinforcing bars shall be spaced to match existing girder reinforcement.

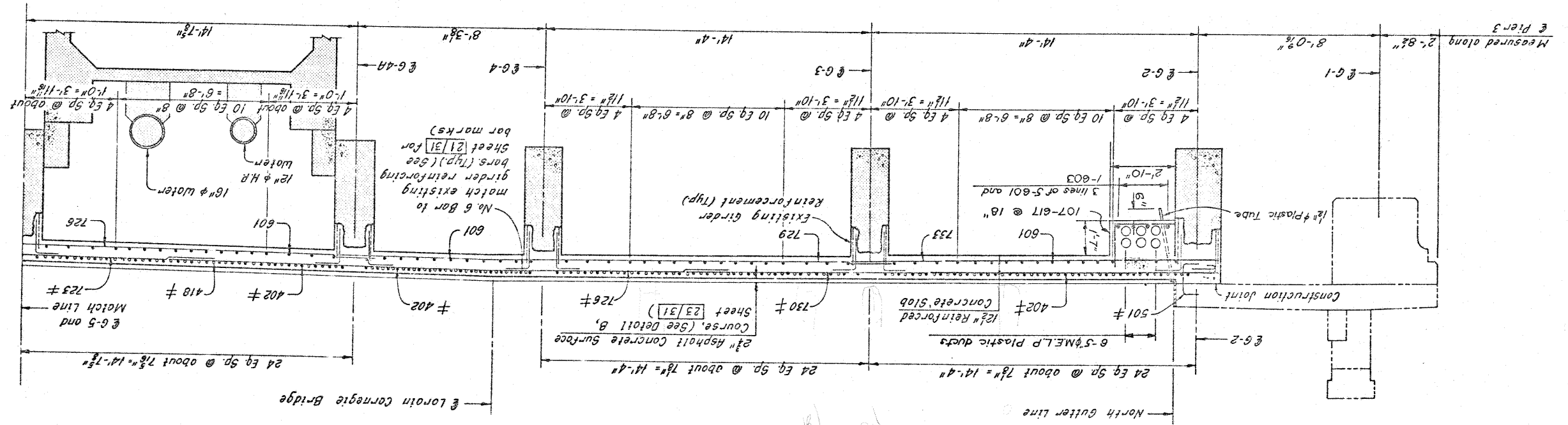
Notes:
 Zip-a-tone indicates existing structure.
 For girder replacement details, see Sheet 20/31.
 For Reinforcement Schedule, see Sheet R/5.
 For Member Identification Plans, see Sheet 2/31.
 For typical Section thru girders, see Modified Typical Section Along Pier 3, see Sheet 22/31.

DRAWN BY: [REDACTED] CHECKED BY: [REDACTED] DATE: 10-23-85
 REVISIONS: [REDACTED]
 CUYAHOGA COUNTY
 BR. NO. CUY-10-1623
 STA. 57+29.72
 STA. 58+85.70
 (S.R.) OVER THE CLEVELAND UNION TERMINALS CO
 CARNegie AVENUE GRADE SEPARATION STRUCTURE
 REHABILITATION OF THE
 ALONG PIER 3
 MODIFIED TYPICAL SECTION
 HNTB CONSULTING ENGINEERS
 HOWARD, NEEDLES TAMMEN & BERGENDOFF
 CLEVELAND, OHIO
 HNTB BRIDGE NO. 4

PART TYPICAL SECTION
(Columns Not Shown)



PART TYPICAL SECTION
(Columns Not Shown)



The following abbreviations are used:
 Typ. = Typical
 H.P. = High Pressure
 Eq. Sp. = Equal Spaced
 For Slab Plans, see Sheets 24/31, 25/31 and 26/31
 For Reinforcement Schedule, see Sheet R/4
 The following abbreviations are used:
 Typ. = Typical
 H.P. = High Pressure
 Eq. Sp. = Equal Spaced
 For Slab Plans, see Sheets 24/31, 25/31 and 26/31
 For Reinforcement Schedule, see Sheet R/4
 For Removal Plans, see Sheet 4/31
 For Sidewalk Details, see Sheet 30/31
 For Girder 1 Details, see Sheet 30/31
 Zip-tone indicates existing structures, details of which are shown elsewhere in these plans.
 Notes:
 Zip-tone indicates existing structures, details of which are shown elsewhere in these plans.
 For Removal Plans, see Sheet 4/31
 For Sidewalk Details, see Sheet 30/31
 For Girder 1 Details, see Sheet 30/31
 For Reinforcement Schedule, see Sheet R/4
 The following abbreviations are used:
 Typ. = Typical
 H.P. = High Pressure
 Eq. Sp. = Equal Spaced
 For Slab Plans, see Sheets 24/31, 25/31 and 26/31
 For Reinforcement Schedule, see Sheet R/4

Note: Reinforcing bars shown shall be prefixed as follows:
 BR = Bottom Transverse Reinforcing
 TR = Top Transverse Reinforcing
 LR = Longitudinal Reinforcing

Note:
 Existing longitudinal girder reinforcement not shown

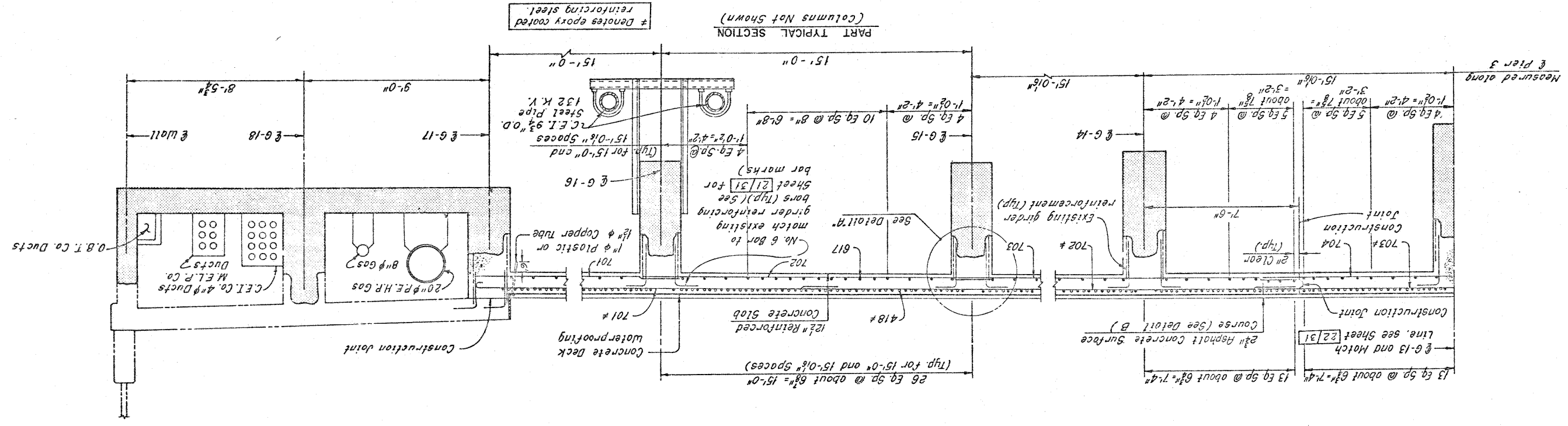
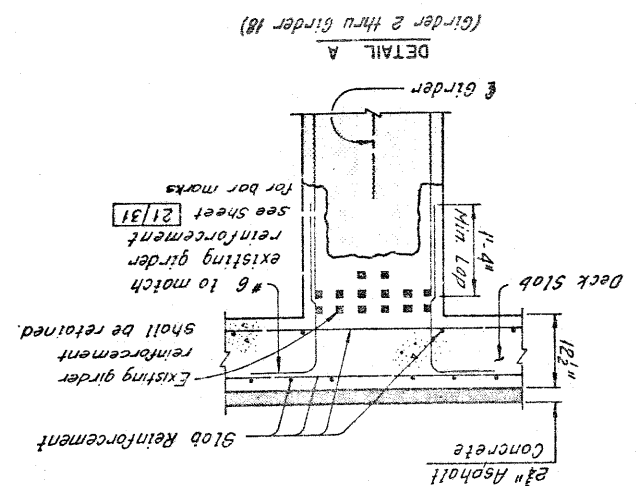
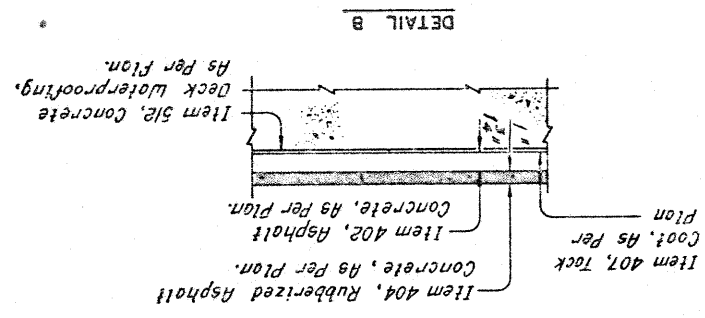
DATE: 4/25/72	CHECKED: J.S.	DESIGNED: J.S.	DRAWN: J.S.
CUYAHOGA COUNTY			
BR. NO. CUY-10-1685 STA. 57+29.72 STA. 58+85.70			
OHIO			
HOWARD NEEDLES TAMMEN & BERGENDOFF CONSULTING ENGINEERS CLEVELAND			
HNTB			

HNTB BRIDGE NO. 4

MODIFIED TYPICAL SECTION
ALONG PIER 3
REHABILITATION OF THE
CARNEGIE AVENUE GRADE SEPARATION STRUCTURE
(S.R. OVER THE CLEVELAND UNION TERMINALS CO.
AND THE REGIONAL TRANSIT AUTHORITY)
BR. NO. CUY-10-1685
STA. 57+29.72
STA. 58+85.70
CUYAHOGA COUNTY
OHIO

NOTE:
REINFORCING BARS SHOWN SHALL BE
PREFIXED AS FOLLOWS:
BR = Bottom Transverse Reinforcing
TR = Top Transverse Reinforcing
LR = Longitudinal Reinforcing

FOR NOTES, SEE SHEET 22/31



170	REGION	PROJECT	STATE	OHIO	5
185					

CUYAHOGA COUNTY
CUY-10-16.23

SLAB PLAN
TOP TRANSVERSE REINFORCEMENT
 HOWARD, NEEDLES, TAMMEN & BERENDORF
 CONSULTING ENGINEERS
 CLEVELAND, OHIO
HNTB

HNTB BRIDGE NO. 4
 BR NO CUY-10-1685
 STA. 57+29.72
 STA. 58+85.70
 OHIO

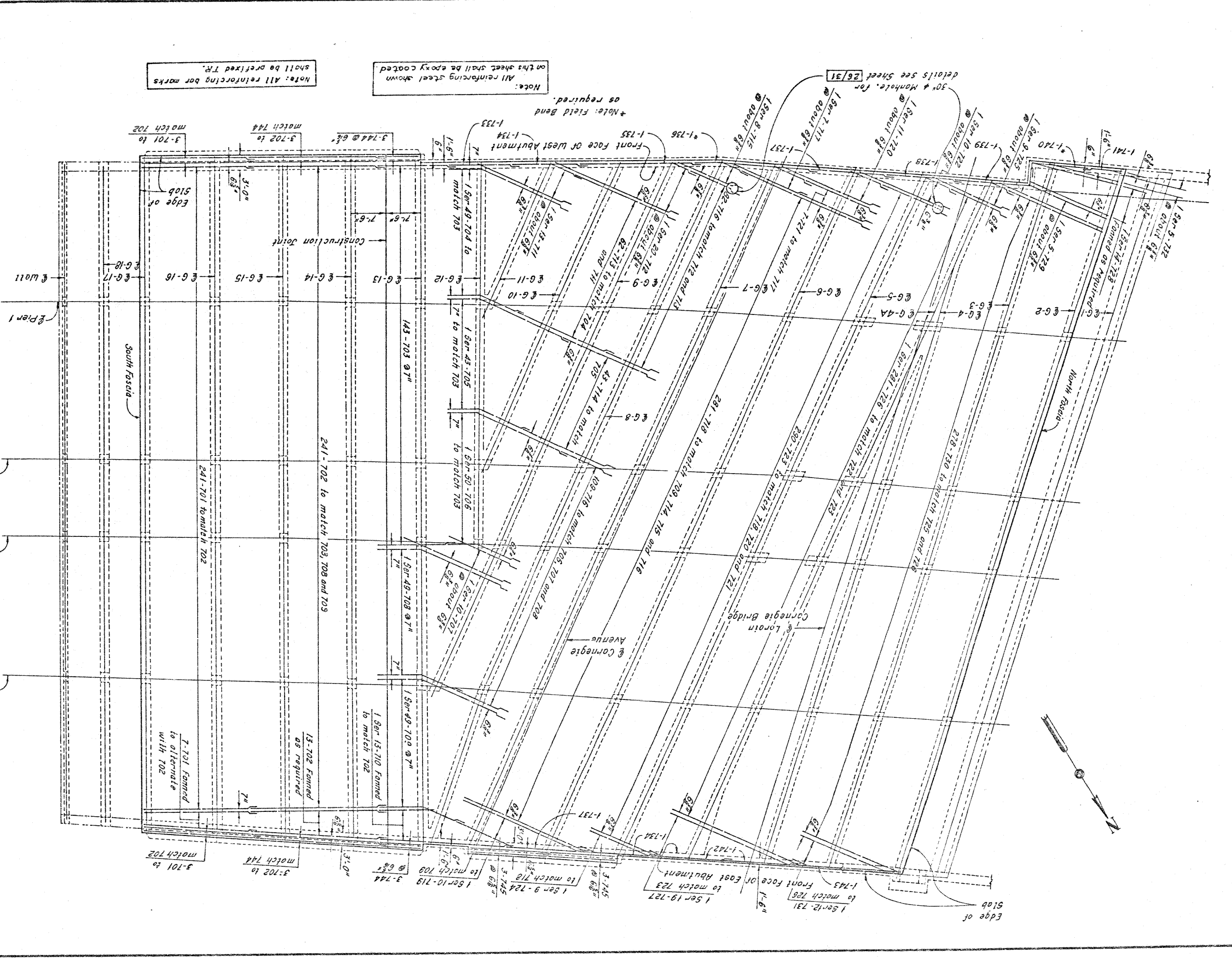
SPAN 1
 Edge of Slab
 Wall
 Pier 1
SPAN 2
 Pier 2
 Pier 3
SPAN 3
 Pier 3
SPAN 4
 Pier 4
SPAN 5
 Pier 4

Notes:
 For longitudinal deck slab reinforcement, see Sheet 26/31.
 For bottom transverse deck slab reinforcement, see Sheet 25/31.
 For modified typical section of Pier 3, see Sheet 22/31.
 For sidewalk Plans and Details, see Sheet 27/31.
 For railing Plans and Details, see Sheet 29/31.
 For Approach Slab Details, see roadway plans.
 For reinforcement Schedule and Bending Diagrams, see Sheet R/4.
 For additional reinforcement of 30" Manholes, see Detail A, Sheet 26/31.
 For slope construction, see Sheet 1/31.

REQUIRED LAP LENGTHS
 No. 7 Bar 21-0" Min.

CUYAHOGA COUNTY
 CUY-10-16.23

171	185
REGION	PROJECT
STATE	
5	
OHIO	

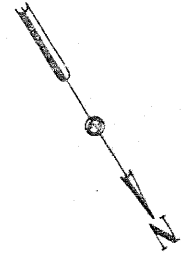


Note: All reinforcing bar marks shall be prefixed TR.

Note: All reinforcing steel shown on this sheet shall be epoxy coated.

Note: Field Bend as required.

30" Manhole, for details see Sheet 26/31



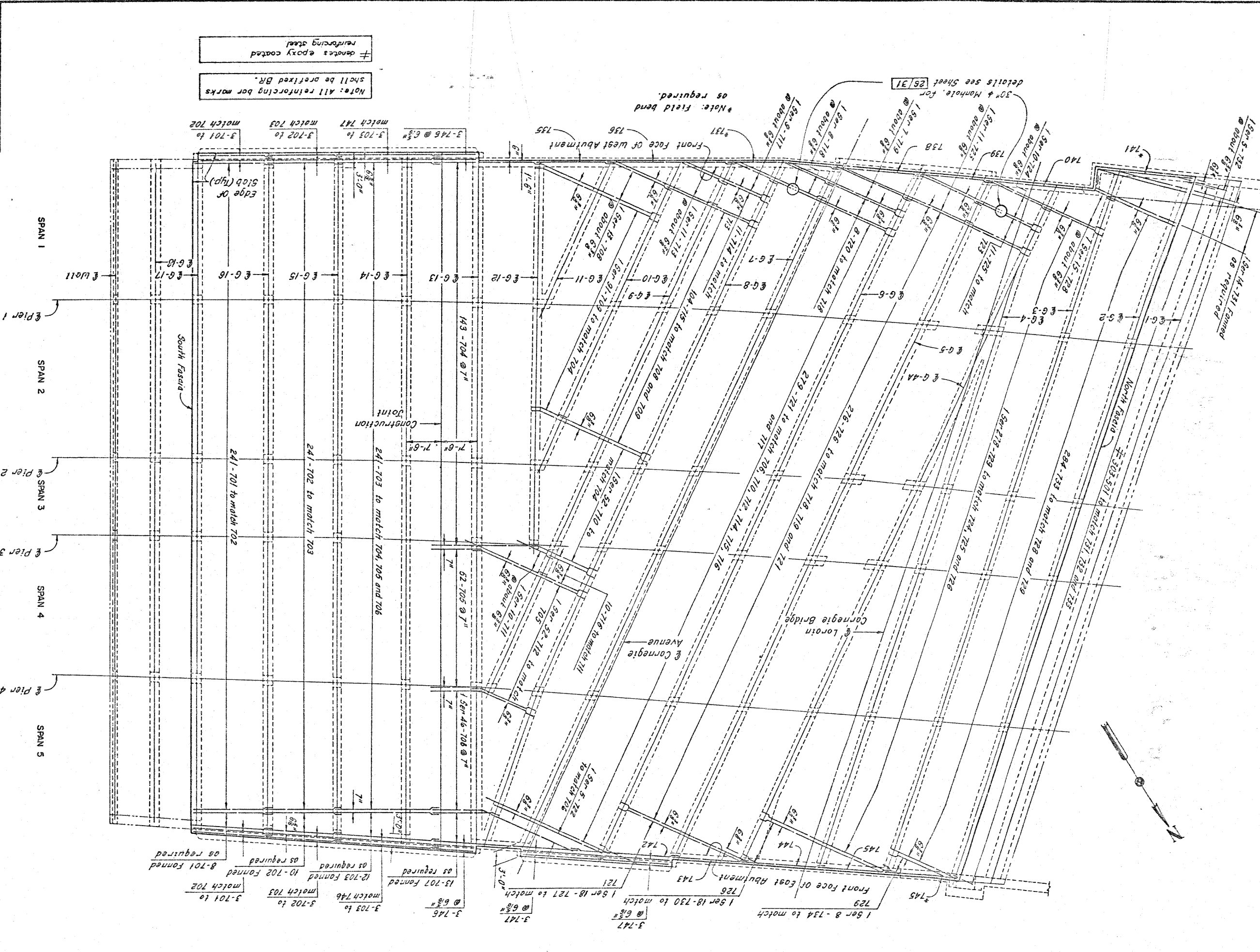
HNTB BRIDGE NO. 4
 HOWARD, NEEDLES TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 CLEVELAND, OHIO
HNTB
SLAB PLAN
BOTTOM TRANSVERSE REINFORCEMENT
 REHABILITATION OF THE
 CARNegie AVENUE GRADE SEPARATION STRUCTURE
 AND THE REGIONAL TRANSIT AUTHORITY
 BR. NO. CUY-10-16.23
 STA. 57+29.72
 STA. 58+85.70
 CUYAHOGA COUNTY
 OHIO
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 DATE: 10/21/2013
 SHEET 25/31

Notes:
 For longitudinal deck slab reinforcement, see Sheet 26/31.
 For top transverse deck slab reinforcement, see Sheet 24/31.
 For modified typical section at Pier 3, see Sheet 22/31.
 For Sidewalk Plans and Details, see Sheet 27/31.
 For Rolling Plans and Details, see Sheet 29/31.
 For Approach Slab Details, see Sheet 29/31.
 For Reinforcement Schedule and Bending Diagrams, see Sheet R/4.
 For additional reinforcement at 30" Manhole, see Detail A, Sheet 26/31.
 For storage construction, see Sheet 1/31.

REQUIRED LAP LENGTHS
 No. 7 Bar 2'-0" Min.

FWMA REGION	STATE	PROJECT
5	OHIO	CUY-10-16.23

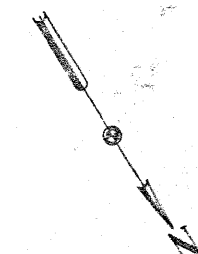
CUYAHOGA COUNTY
 CUY-10-16.23



Note: All reinforcing bar marks shall be prefixed BR.
 † denotes epoxy coated reinforcing steel.

Note: Field bend as required.

30" Manhole, for details see Sheet 26/31



DATE: 10-22-85	DATE: 10-22-85	DATE: 10-22-85	DATE: 10-22-85	DATE: 10-22-85	DATE: 10-22-85	DATE: 10-22-85
DRN	CHKD	REVISED	REVISED	REVISED	REVISED	REVISED
5	18	18	18	18	18	18
CUYAHOGA COUNTY	CUYAHOGA COUNTY	CUYAHOGA COUNTY	CUYAHOGA COUNTY	CUYAHOGA COUNTY	CUYAHOGA COUNTY	CUYAHOGA COUNTY

SLAB PLAN
LONGITUDINAL REINFORCEMENT
 REHABILITATION OF THE
 CARNegie AVENUE SEPARATION STRUCTURE
 (SR10 OVER THE CLEVELAND UNION TERMINALS CO.
 AND THE REGIONAL TRANSIT AUTHORITY)
 BR NO CUY-10-1685
 STA. 57+29.72
 STA. 58+65.70
 OHIO

HOWARD, NEEDLES TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 CLEVELAND
HNTB

CUYAHOGA COUNTY
 CUY-10-16.23

FHWA	STATE	PROJECT
173	OHIO	

185

HNTB BRIDGE NO. 4

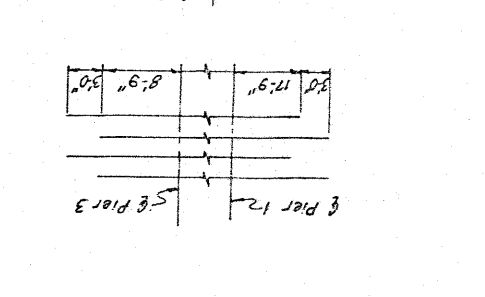
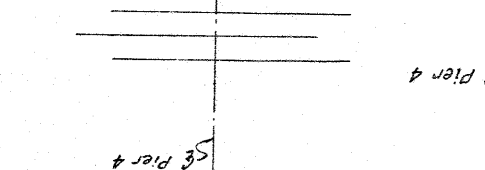
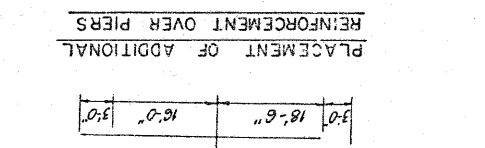
NOTES:
 * Indicates additional reinforcement over piers or at abutments.
 For placement of longitudinal slab reinforcement, see Sheets 22/31 and 23/31.
 For additional notes, see Sheet 24/31.
 For Approach Slab Details, see roadway plans.
 For Stage construction, see Sheet 1/31.

MINIMUM REQUIRED BAR SPICE LENGTH

Bar No.	Splice Length
4	1'-0"
6	1'-5"

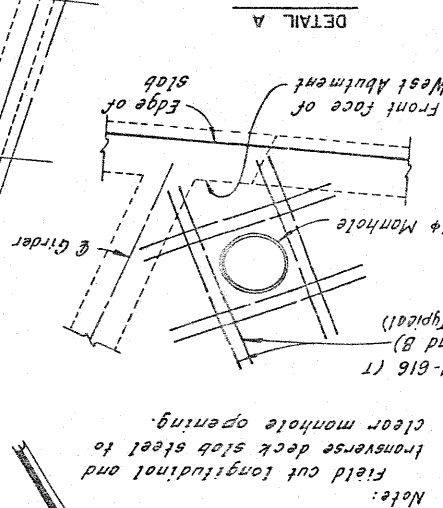
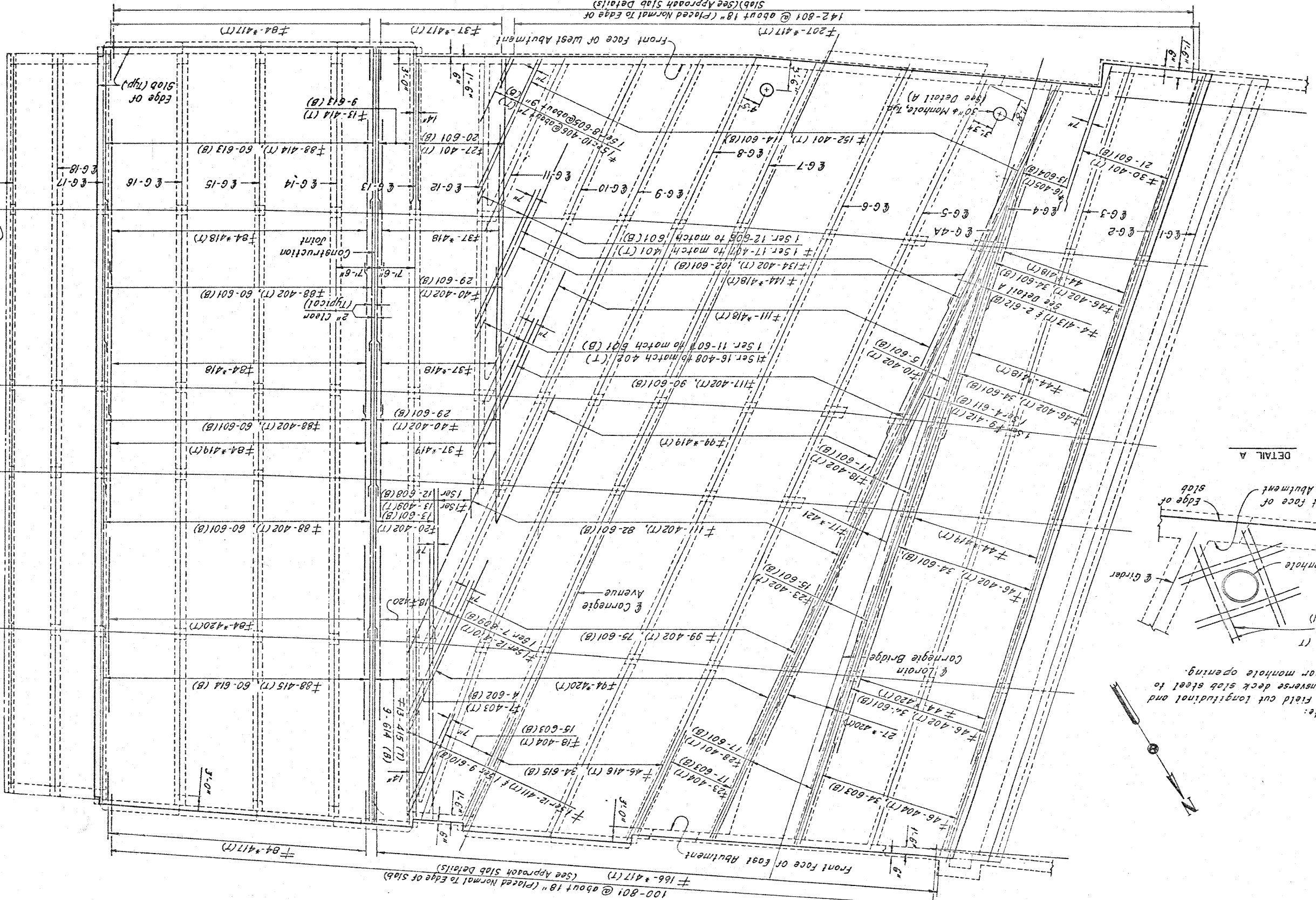
PLACEMENT OF ADDITIONAL REINFORCEMENT OVER PIERS

Span	Span 1	Span 2	Span 3	Span 4	Span 5
Reinforcement					



Note: All reinforcing bar marks shall be prefixed L.R.

± denotes epoxy coated reinforcing steel



SPAN 1
 SPAN 2
 SPAN 3
 SPAN 4
 SPAN 5

Edge of Slab (typ.)

Front face of West Abutment

Front face of East Abutment

100-801 @ about 18" (Placed Normal to Edge of Slab) (See Approach Slab Details)

142-801 @ about 18" (Placed Normal to Edge of Slab) (See Approach Slab Details)

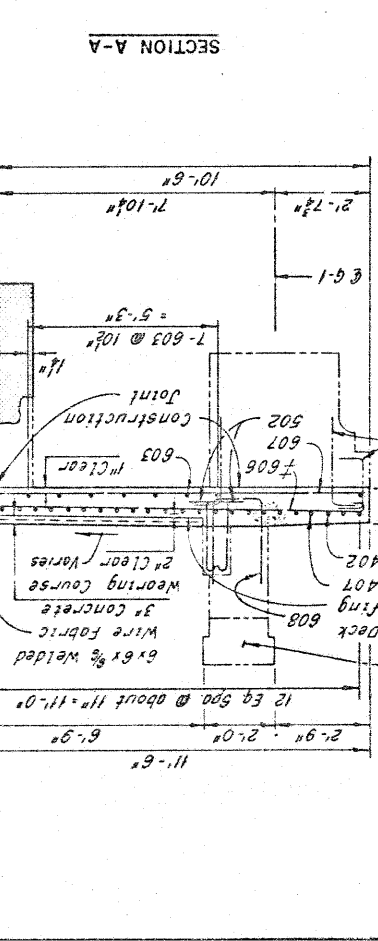
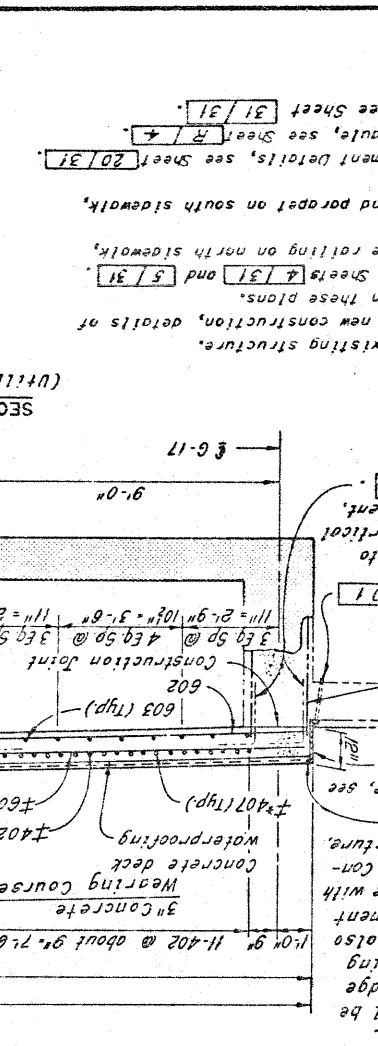
Note:
 Field cut longitudinal and transverse deck slab steel to clear manhole opening.

DATE 7/27/51	SHEET 17
DATE 7/27/51	DATE 7/27/51
DATE 7/27/51	DATE 7/27/51
DATE 7/27/51	DATE 7/27/51
DATE 7/27/51	DATE 7/27/51
DATE 7/27/51	DATE 7/27/51
DATE 7/27/51	DATE 7/27/51
DATE 7/27/51	DATE 7/27/51
DATE 7/27/51	DATE 7/27/51
DATE 7/27/51	DATE 7/27/51

HOWARD, NEEDLES, TAMMEN & BERGENOFF
 CONSULTING ENGINEERS
 CLEVELAND
HNTB

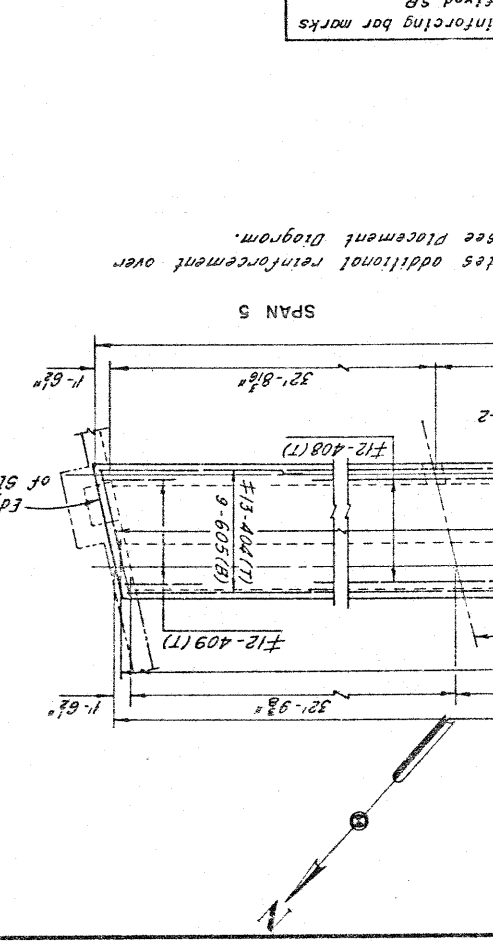
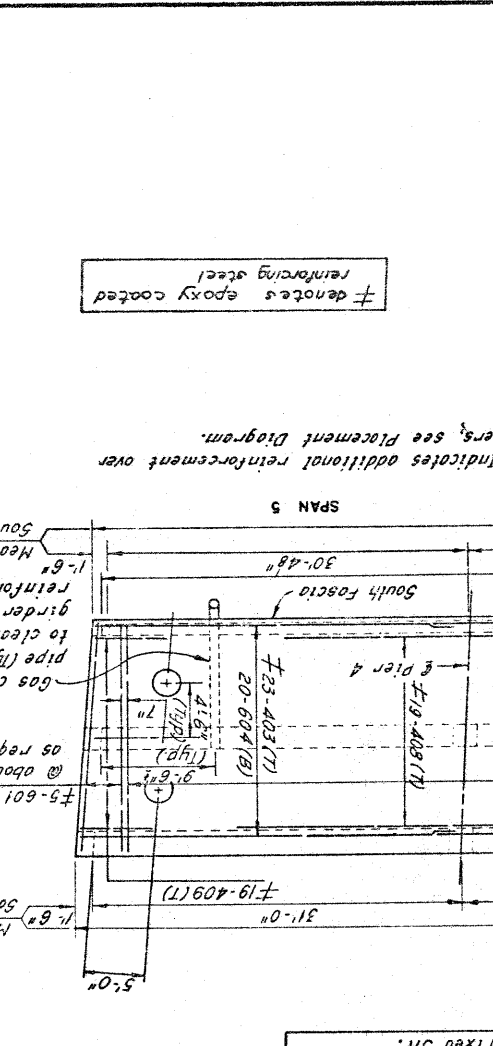
SIDEWALK PLANS
 REHABILITATION OF THE
 CARNegie AVenUE GRADE SEPARATION STRUCTURE
 (S.R.) OvER THE CLEVELAND UNION TERMINALS CO.
 AND THE REGIONAL TRANSIT AUTHORITY)
 BR NO. CUY-10-16.23
 STA. 59+85.70
 STA. 57+29.72
 OHIO
 CUYAHOGA COUNTY

174	PROJECT	OHIO	STATE	5	REGION
185					



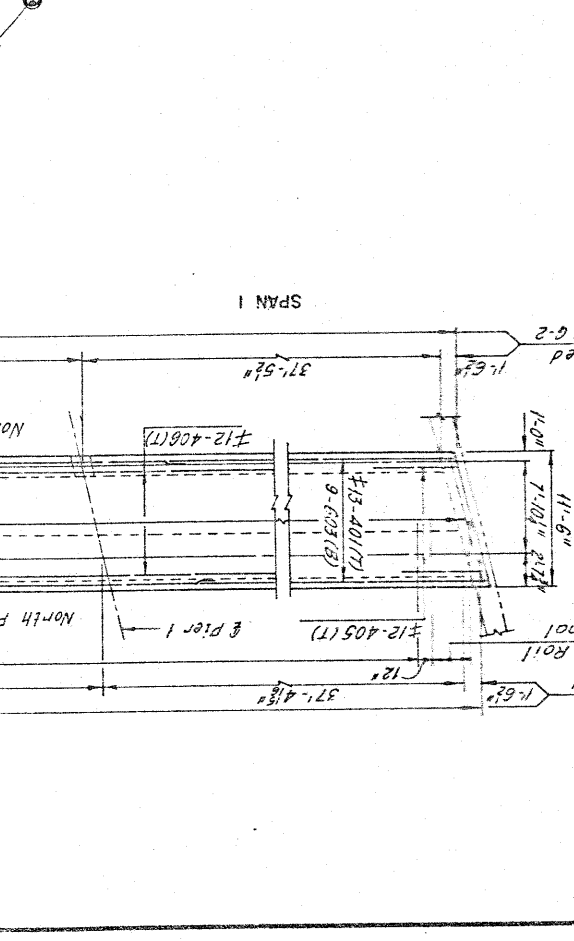
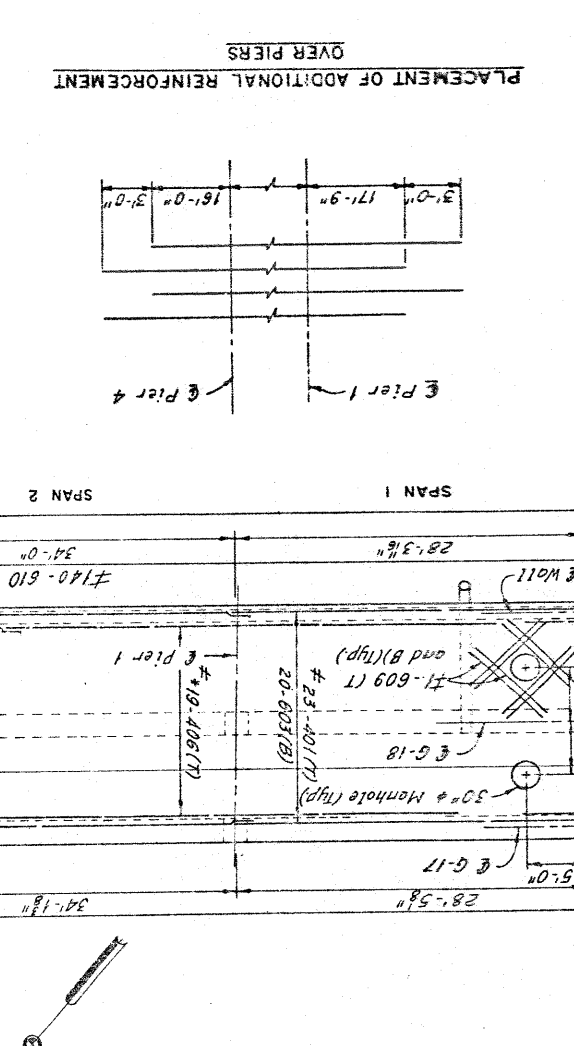
Notes:
 Zip-a-tone indicates existing structure.
 Phantom lines indicate new construction, details of which are shown elsewhere in these plans.
 For removal Plans, see Sheets 4/31 and 5/31.
 For details of concrete railing on north sidewalk, see Sheet 29/31.
 For details of fence and parapet on south sidewalk, see Sheet 28/31.
 For girder I replacement details, see Sheet 20/31.
 For reinforcement Schedule, see Sheet 7/31.
 For Gas Vent Detail, see Sheet 31/31.

Notes:
 Material shall be Joint Sealer. Material shall be hot applied bridge deck waterproofing material, which also meets the requirement of 705.01. Include with concrete, Superstructure, for wearing course. Wire fabric welded 6x6% wire fabric. 3" concrete. Concrete deck #608. Waterproofing #407. Wearing course #402. 1/2" curf plate, see Sheet CD1. #5 bars placed with girder I reinforcement. #5 bar placed with transverse deck reinforcement. Tube, see Sheet CD1. 1/2" plastic or 1/2" copper joint. Construction joint. 1" Clear. #607. #606. #502. #501. #500. #402. #407. #608. Wire fabric welded 6x6% wire fabric. 3" concrete. Wearing course #402. 1/2" curf plate, see Sheet CD1. #5 bars placed with girder I reinforcement. #5 bar placed with transverse deck reinforcement. Tube, see Sheet CD1. 1/2" plastic or 1/2" copper joint. Construction joint. 1" Clear. #607. #606. #502. #501. #500. #402. #407. #608. Wire fabric welded 6x6% wire fabric. 3" concrete. Wearing course #402. 1/2" curf plate, see Sheet CD1. #5 bars placed with girder I reinforcement. #5 bar placed with transverse deck reinforcement. Tube, see Sheet CD1. 1/2" plastic or 1/2" copper joint. Construction joint. 1" Clear. #607. #606. #502. #501. #500. #402. #407. #608.



Note A: Bars SR502 shall be placed at 2 equal spaces (3 sets of 2 bars) between railing posts and at 1 space (2 sets of 2 bars) between railing posts and deflection joints and or railing posts and open joints. Bars SR 608 shall be placed at each face of railing posts.
 Indicates additional reinforcement over piers, see Placement Diagram.
 South gutter line
 Measured along 1'-6"
 South fascia
 Gas chamber vent pipe (Typ.) (Spaced to clear existing girder and wall reinforcement.
 Measured along 1'-6"
 South fascia
 South gutter line
 Measured along 1'-6"
 South fascia
 Gas chamber vent pipe (Typ.) (Spaced to clear existing girder and wall reinforcement.

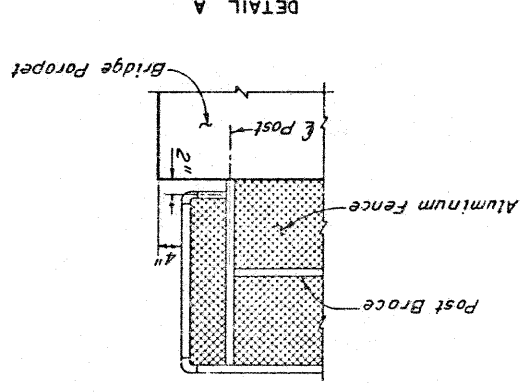
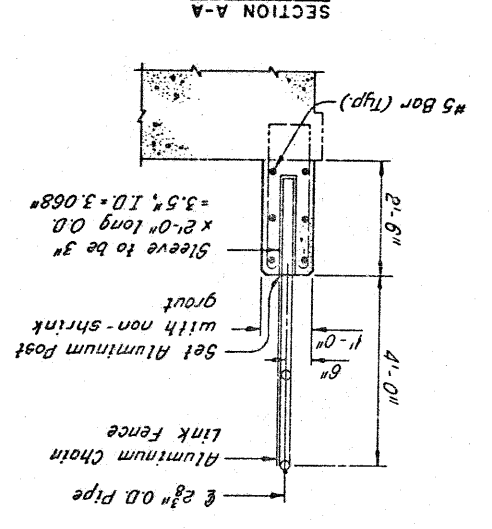
Note: All reinforcing bar marks shall be prefixed SR.
 Indicates additional reinforcement over piers, see Placement Diagram.
 North gutter line
 Measured along 1'-6"
 North fascia
 5'-608 Roll Terminal
 Measured long & 6'-1" along & G-1
 5'-608 Roll Terminal
 Measured long & 6'-1" along & G-2



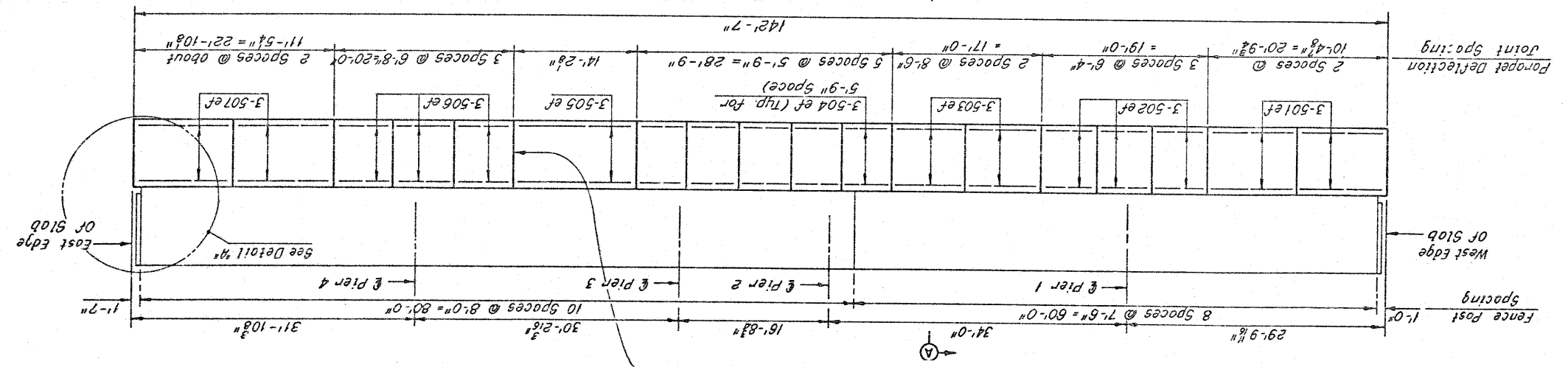
HNTB BRIDGE NO. 4

MARK	NO.	LENGTH	TYPE	WEIGHT (LBS)
RB501	12	10'-0"	STR.	125
RB502	18	6'-0"	STR.	113
RB503	12	8'-3"	STR.	103
RB504	30	5'-6"	STR.	172
RB505	6	13'-9"	STR.	86
RB506	18	6'-3"	STR.	117
RB507	12	11'-0"	STR.	138
TOTAL WEIGHT =				854

Note:
All reinforcing bar marks shall
be prefixed RB.



SOUTH PARAPET AND FENCE DETAILS
(Looking North)



Performed Expansion Joint Filler in the fencing parapet
deflection joints may be either 1" gray sponge rubber or
1" gray cellular polyvinyl chloride (PVC) sponges. Either
material shall meet the requirements of AASHTO M-153, Type 1
except the density of PVC sponge shall be not less than
20 lb. per cu. ft.

Notes:
Payment for parapet and fence shall be
made at the contract unit price for Item 517,
Holding (Concrete Parapet with Chain-Link
Fence-AASHTO Designation M-181-Type III
Aluminum alloy fabric, posts, hardware and
fittings.) Payment length shall be the over-
all length of the parapets. Sleeves, parapet
expansion joint material, grout and longi-
tudinal reinforcing steel in the parapets
shall be included with the unit price bid
for Item 517, Holding (Concrete Parapet with
Chain-Link Fence-AASHTO Designation
M-181-Type III Aluminum alloy fabric, posts,
hardware and fittings.), for payment. All other
reinforcing steel in the parapets is included
with Item 509, Reinforcing Steel, for payment.
Concrete parapets shall be placed in
alternate sections by the use of bulkheads.
Closing sections shall be placed after removal
of bulkheads and after placement of sponge
filler. Filler shall be flush with surface
of mortar. The anchor posts shall be set in
non-shrink grout.
The following abbreviation is used:
ef = each face

175	185
REGION	PROJECT
STATE	
OHIO	
5	
CUYAHOGA COUNTY	
CUY-10-16,23	

REHABILITATION OF THE
NORTH RAILING DETAILS

HOWARD NEEDLES TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND

HNTB

HNTB BRIDGE NO. 4

CUYAHOGA COUNTY

BR NO CUY-10-1685
STA. 57+29.72
STA. 58+85.70
OHIO

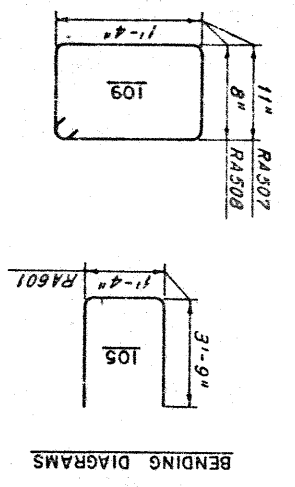
DATE: 11/17/85
DESIGNED BY: H.C.B.
CHECKED BY: H.C.B.
REVIEWED BY: H.C.B.
DRAWN BY: H.C.B.

PROJECT NO. 176
REGION 5
STATE OHIO
PROJECT

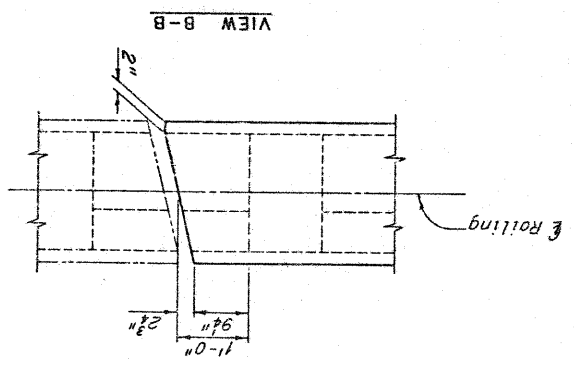
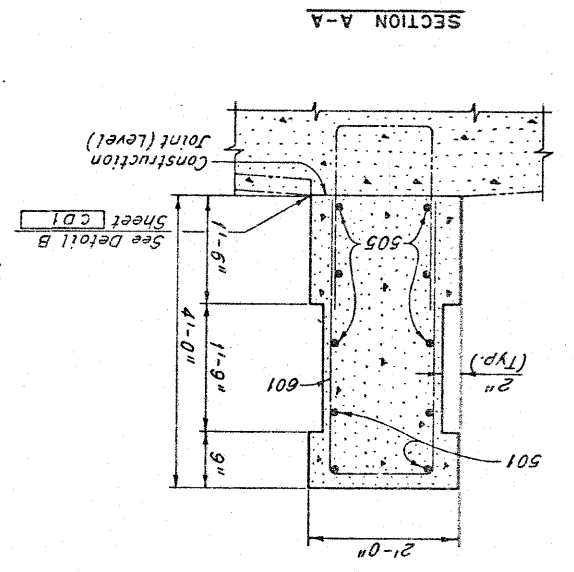
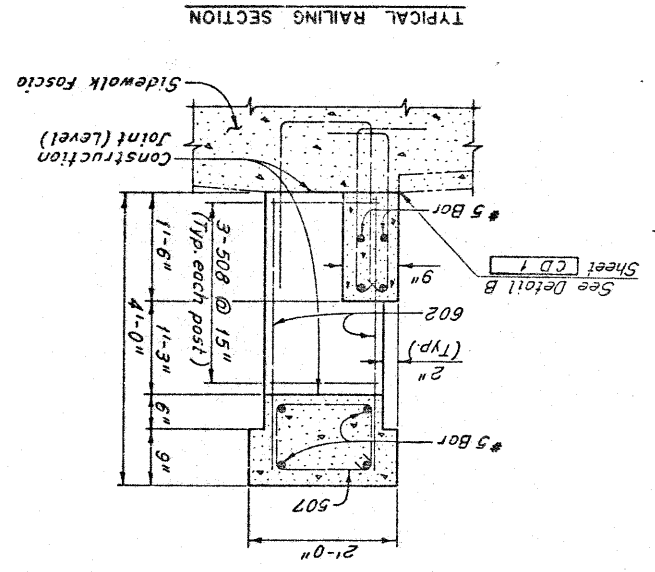
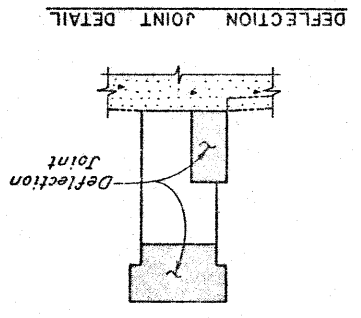
Notes:

Payment for the rolling shall be made of the contract unit price bid for Items 517, rolling, as per Plan. Payment length shall be the overall length of the rollings. Rolling expansion joint and deflection joint material and all reinforcing steel that does not extend into the sidewalk shall be included with Item 517 for payment. Reinforcing steel extending from the sidewalk is included with Item 509, Reinforcing Steel, for payment. Rollings shall be placed in alternate sections by the use of bulkheads. Closing sections shall be placed after removal of bulkheads and after placement of sponge filler. The filler shall be attached to the face of the concrete on one side, flush with the surface of concrete and exposed edges shall be free of mortar.

The following abbreviations are used:
e.f. = each face n.f. = near face
Typ. = typical f.f. = far face

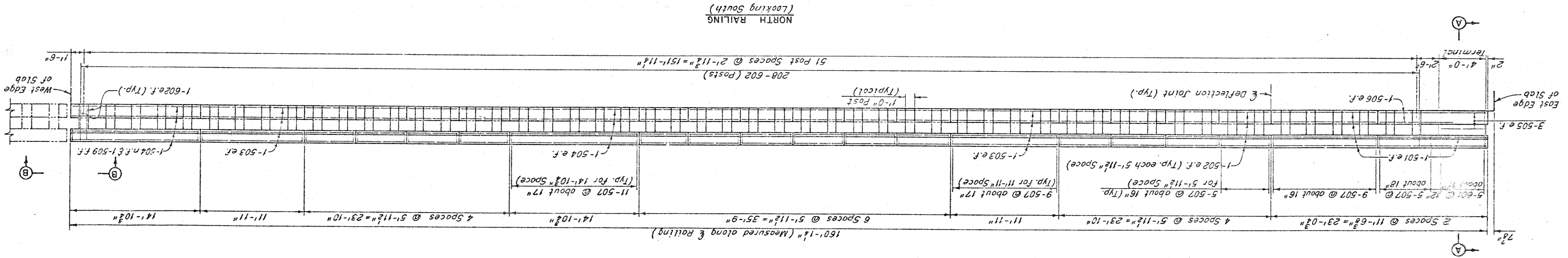


MARK	NO.	LENGTH	TYPE	WEIGHT (LBS)
RA501	12	11'-3"	Str.	141
RA502	112	5'-6"	Str.	643
RA503	16	11'-6"	Str.	192
RA504	12	14'-6"	Str.	181
RA505	6	3'-9"	Str.	24
RA506	4	8'-9"	Str.	37
RA507	124	5'-2"	Str.	668
RA508	156	4'-8"	Str.	759
RA509	4	14'-3"	Str.	59
RA601	5	8'-6"	Str.	64
RA602	208	3'-9"	Str.	1172
TOTAL WEIGHT =				3940



Note: The deflection joints in the railing may be either gray sponge rubber or 1/2" gray cellular polyvinyl chloride (PVC) sponge. Either material shall meet the requirements of AASHTO M-153, Type I, except the density of the (PVC) sponge shall be not less than 20 lb. per cu. ft.

Note: All reinforcing bar marks shall be prefixed RA.



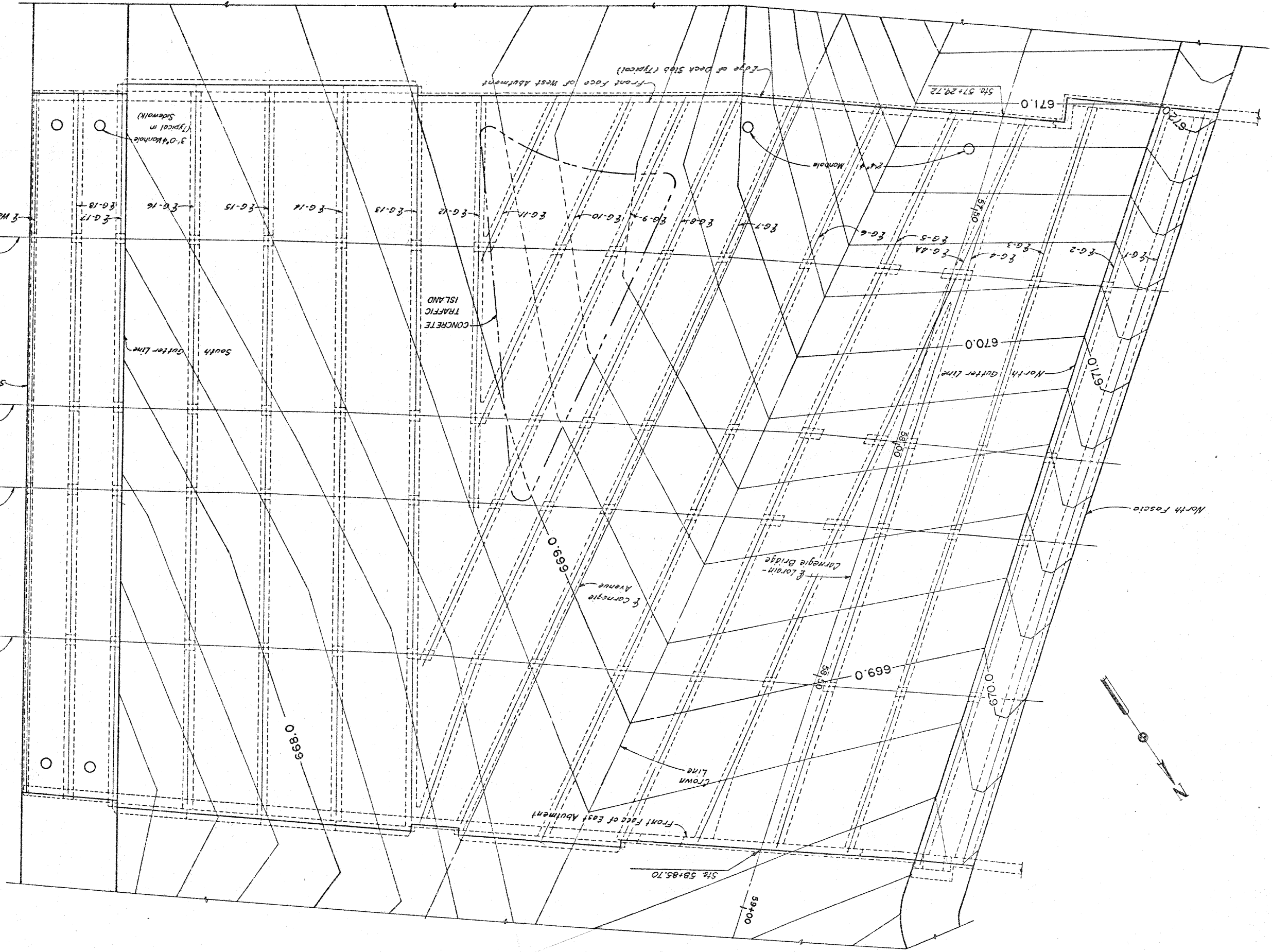
CUYAHOGA COUNTY
CUY-10-16.23

REGION 5
STATE OHIO
PROJECT

176
185

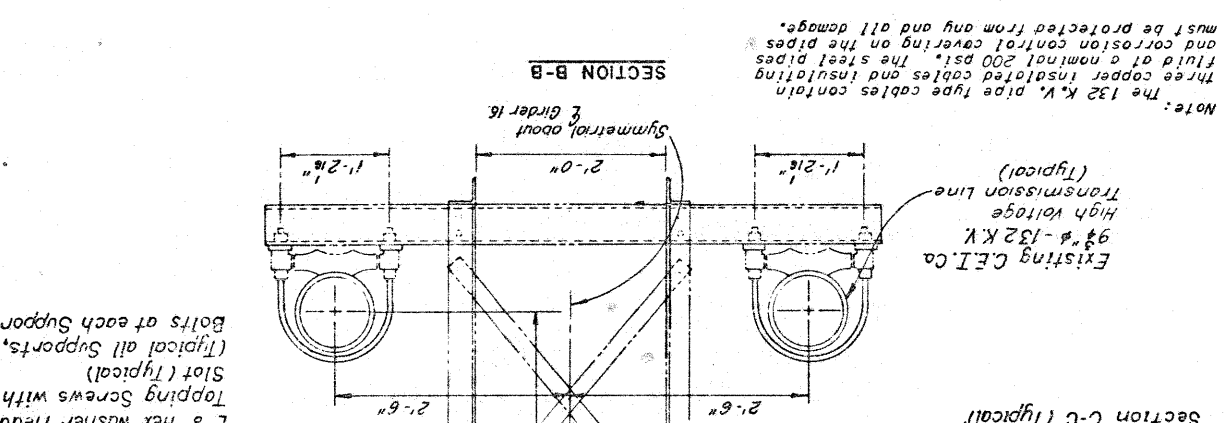
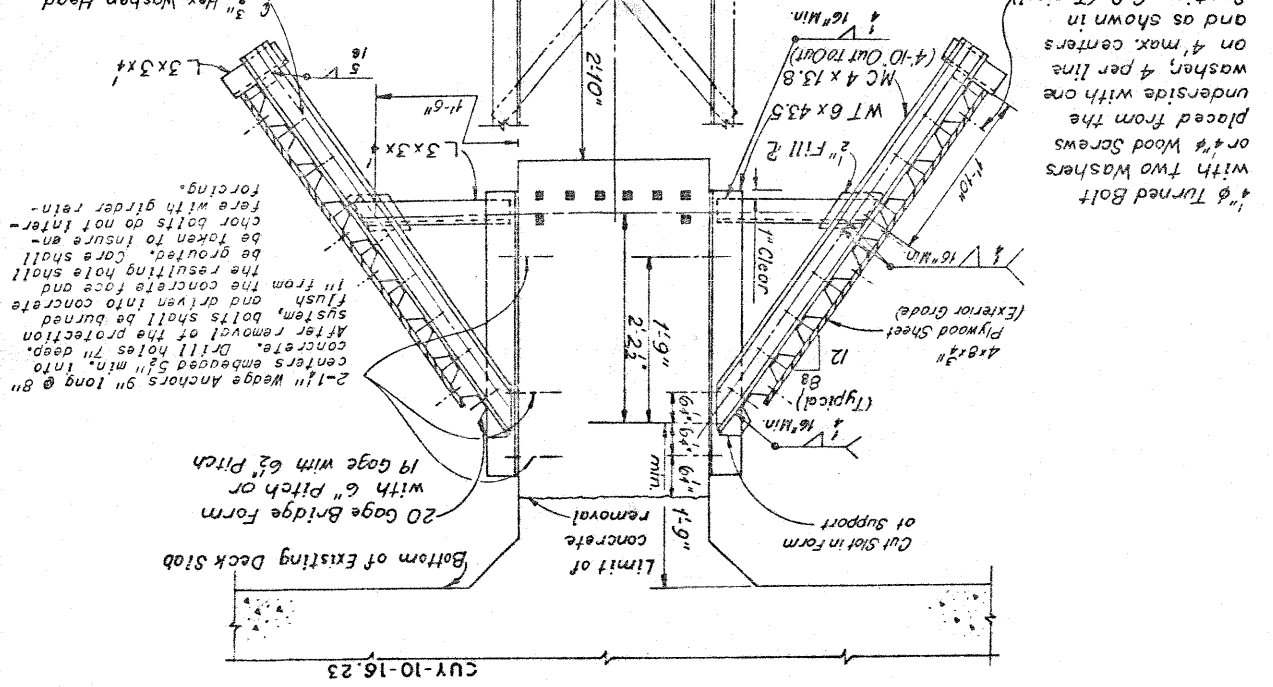
SHEET 30/31
 DATE 10/18/72
 PROJECT 177
 REGION 5
 STATE OHIO
 COUNTY CUYAHOGA
 BR NO CUY-10-1685
 STA 57+29.72
 STA 58+85.70
 (SR 10 OVER THE CLEVELAND UNION TERMINALS CO
 CARNEGIE AVENUE GRADE SEPARATION STRUCTURE
 REHABILITATION OF THE
 CONTOUR PLAN
 HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 CLEVELAND
 HNTB

CONTOUR PLAN



HNTB BRIDGE NO. 4
 SCALE IN FEET
 10 5 0 5 10
 Note:
 Contours are shown at top of the
 asphalt concrete surface course.
 For details of concrete traffic
 island see roadway plans

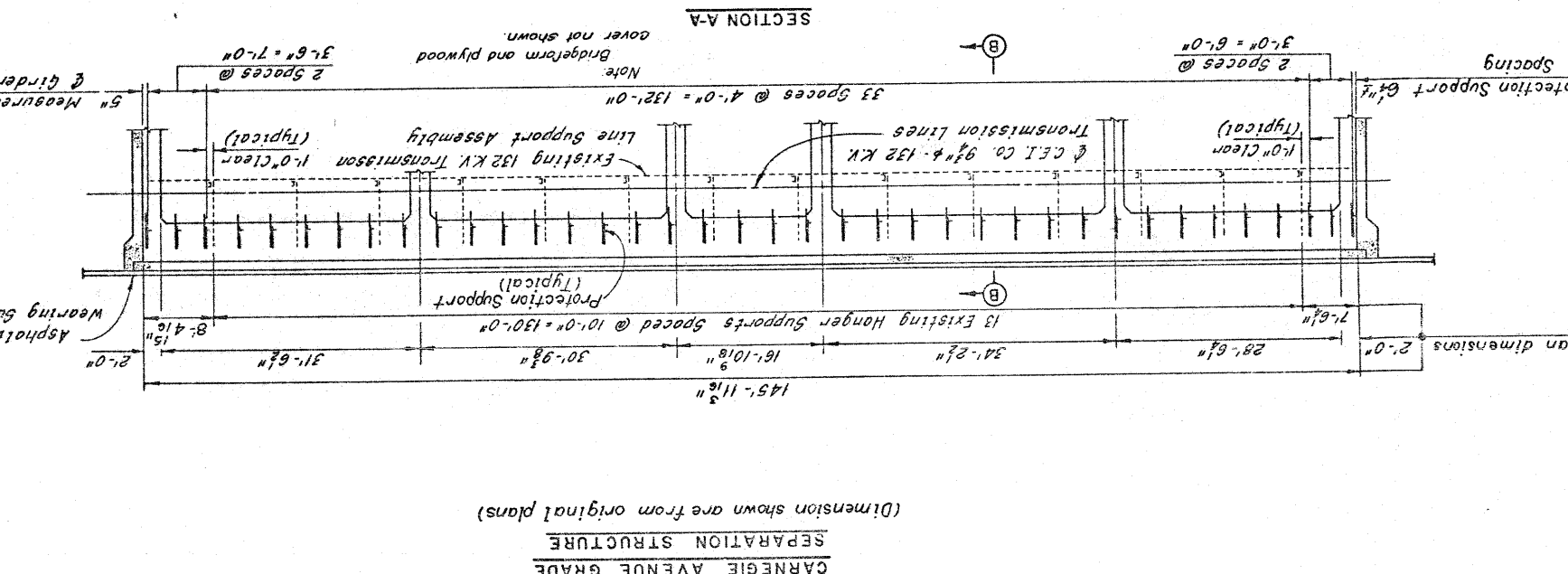
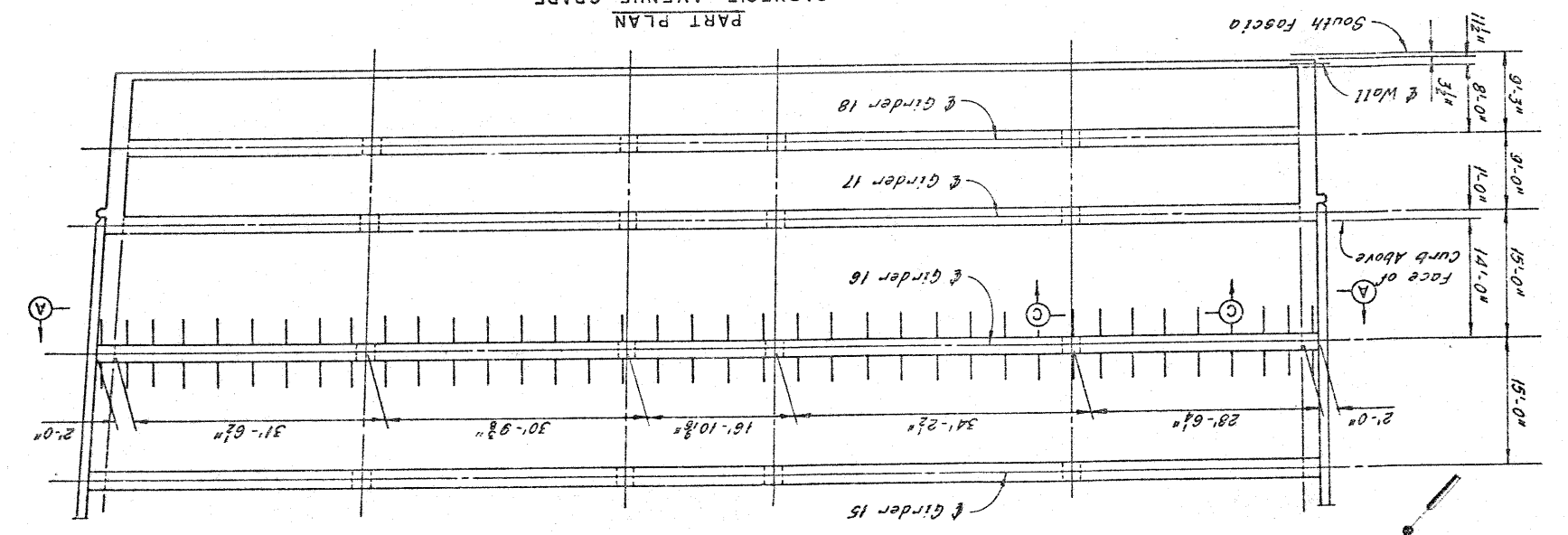
CUYAHOGA COUNTY
 CUY-10-16.23
 PROJECT 177
 REGION 5
 STATE OHIO
 COUNTY CUYAHOGA



All labor, material and equipment required for the placement and removal of all temporary trans-mission line protection devices, as per plan, shall be included in the unit price bid for Item Special, Temporary Protection at 132 K.V. Transmission Lines. Materials used in the protection system shall become the property of the Contractor upon completion of the work, and shall be removed by him from the site. The Contractor shall assume full responsibility for any damage to the 132 K.V. lines and its supports, and for damages resulting from damage to these lines. The Contractor shall take extraordinary precautions during erection and removal of the temporary protection system and against the dropping between Girders 15 and 17. The protection system is designed only for an accidental occurrence of a 50 lb. block of concrete dropping from the level of the deck. If any concrete pieces drop on the protection system, the Contractor shall cease operations, inspect the protection system and make necessary repairs to the system subject to the approval, prior to resuming operations, by the State of Ohio Project Engineer assigned to implement the contract.

Supporting members have been designed for basic allowable stresses increased 50%. Anchors have been designed for a 1.6 Factor of Safety.

The Contractor or his agents must notify the Cleveland Electric Illuminating Company (623-1350, Extension 2445) at least 24 hours in advance if any work is to be performed in the vicinity of the two C.E.I. 132 K.V. pipe type cables. The Illuminating Company will provide a field representative during the time any work is performed near the 132 K.V. cables.



Notes:
All structural steel shall be ASTM A572 except as noted. (Approx. 16,000 lbs.)
ASTM A572 shall be given one shop coat of primer as per Article 514, System B.
Bridge form, similar to Bethlehem Bridgeform, shall be ASTM A446, Grade E with the following properties:
Thickness = 20 gage
Pitch = 6 in. Depth = 2 in.
 $I = .400 \text{ in.}^4/\text{ft.}$
 $S.M. = 0.372 \text{ in.}^3/\text{ft.}$
 $F_y = 80,000 \text{ psi}$
Wedge anchors shall be equivalent to Phillips and a minimum pullout load of 40,600 lbs. All turned bolts shall be ASTM A307.
Wedge anchors shall be ASTM A307.
All temporary protection of the 132 K.V. Trans-mission Lines, as per plan, shall be in place prior to concrete deck and girder removal between Girder 15 and Girder 17, and shall remain in place until all required work is complete on the permanent structure between Girder 15 and Girder 17.

