CUY-90-14.90

PID 77332/85531

APPENDIX EX-58

CUY-090-1538 PID 0.705
(Reference Document)

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

Innerbelt Bridge
Construction Contract Group 1 (CCG1)

Revision Date: 1956

Q-13

8.0

CUY-90-15.38

I-1057(2)

FED. ROAD DIV. NO.	STATE	PROJ.	
2	OHIO	I-1057(2)	

CUY-42R-17.43

1 / 67

ROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR OF HIGHWAYS IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 REVISED CODE OF OHIO.

MICROFILMED
FEB 25 1963

APR 11 1962
GROUND PHOTOLAB

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

INNER BELT FREEWAY

CUY-42R-17.43
CUYAHOGA COUNTY
CITY OF CLEVELAND

LIMITED ACCESS

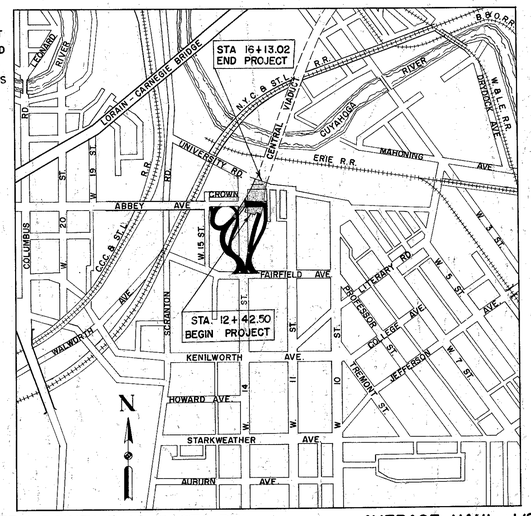
PART 4 - WEST APPROACH TO CENTRAL VIADUCT

INDEX OF SHEETS

LINE DATA

BEGIN PROJECT STA. 12+42.50	
END PROJECT STA. 16+13.02	
NET LENGTH OF PROJECT (STRUCTURE)=	370.52 LIN. FT. OR 0.070 MILE.
ADDITIONS	
FREEWAY STA. 5+00(±) TO STA. 12+42.50	742.50± LIN. FT.
ABBEY AVE. STA. 6+97.42 TO STA. 7+86.87	689.45 LIN. FT.
TOTAL NET LENGTH OF WORK	1802.47 LIN. FT. OR 0.341 MILE

NOTE:
THIS SET OF PLANS, PART 4 OF THE INNER BELT FREEWAY, EXTENDS FROM WEST END PIER OF CENTRAL VIADUCT WESTWARD TO STA. 12+42.50.
PARTS 1 THRU 3 ARE UNDER PREVIOUS CONTRACTS.



DELIVERY POINT: N.Y.C. & ST.L.RR. AVERAGE HAUL. 1/2 MILE

LOCATION PLAN

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO DEPARTMENT OF HIGHWAYS, 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 TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH IN THE PLANS AND ESTIMATE.

THE RIGHT OF WAY FOR THIS IMPROVEMENT WILL BE PROVIDED BY THE STATE OF OHIO.

APPROVED Louis R. Kressler
DATE 6/7/56 DIRECTOR OF PUBLIC SERVICE, CITY OF CLEVELAND
APPROVED Arthur M. Sanders
DATE 6-7-56 DIVISION DEPUTY DIRECTOR
APPROVED John J. Heer ess
DATE 6-21-56 DEPUTY DIRECTOR OF PLANNING AND PROGRAMMING
APPROVED Dan Overman
DATE 6-18-56 ENGINEER OF BRIDGES
APPROVED C. E. Stanton
DATE 6-18-56 ENGINEER OF LOCATION AND DESIGN
APPROVED A. F. Sandel
DATE 6-19-56 DEPUTY DIRECTOR OF DESIGN AND CONSTRUCTION
APPROVED V. F. Chamblin
DATE 6-21-56 FIRST ASSISTANT DIRECTOR
APPROVED S. D. Singer
DATE 6-21-56 DIRECTOR OF HIGHWAYS

APR 11 1962
GROUND PHOTOLAB

Revised As-Built

PREPARED AND RECOMMENDED BY
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
K.W. Bergendoff

H. G. SOURS
ASSOCIATE
COLUMBUS

FILE NO.	CUYAHOGA COUNTY 00079-R
	SEC.
	DATE OF LETTING _____, 195__
	CONTRACT NO. _____

SUPPLEMENTAL SPECIFICATIONS

NUMBER	DATE	NUMBER	DATE
B-119 REV.	12-14-55	M-206.14	7-15-43
L-209.12	7-17-54	M-109.23 REV.	4-20-56
5	6-8-55		
M-110.27	9-9-52		
S-114	8-30-55		

0 400 800 1600 2400 3200
SCALE IN FEET

PORTION TO BE IMPROVED
OTHER HIGHWAYS & STREETS

STANDARD DRAWINGS

NUMBER	DATE	NUMBER	DATE
L-3	4-1-50	I-8 M.H. NO. 1	5-1-52
L-3-A	4-1-50	I-15 NO. 1	8-1-55
RI-1	1-3-55	I-15 NO. 2	12-1-54
B-T-71R	3-2-53	BT 50-70-71E	10-1-47
LJ NO. 1	7-1-55	AS-1-54	12-1-54
I-1, 2, 3, 4, & 5	2-20-45	G-7.07	6-1-56
I-8CBNO.2-2A&B	5-1-52	I-8MH NO. 1-A	1-3-55
I-8CB NO. 3	5-1-52	I-12	7-1-54
I-8CB NO. 3 A	5-1-52	L-1	4-1-50
I-8 I NO. 2	12-1-54	TJ	5-1-56
OS-1	7-1-55	I-8 M.H. NO. 2	5-1-52
		I-15 NO. 2 A	7-2-56

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED

DISTRICT ENGINEER DATE

REV. 7-5-56
REV. 7-27-56

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS
2	OHIO		

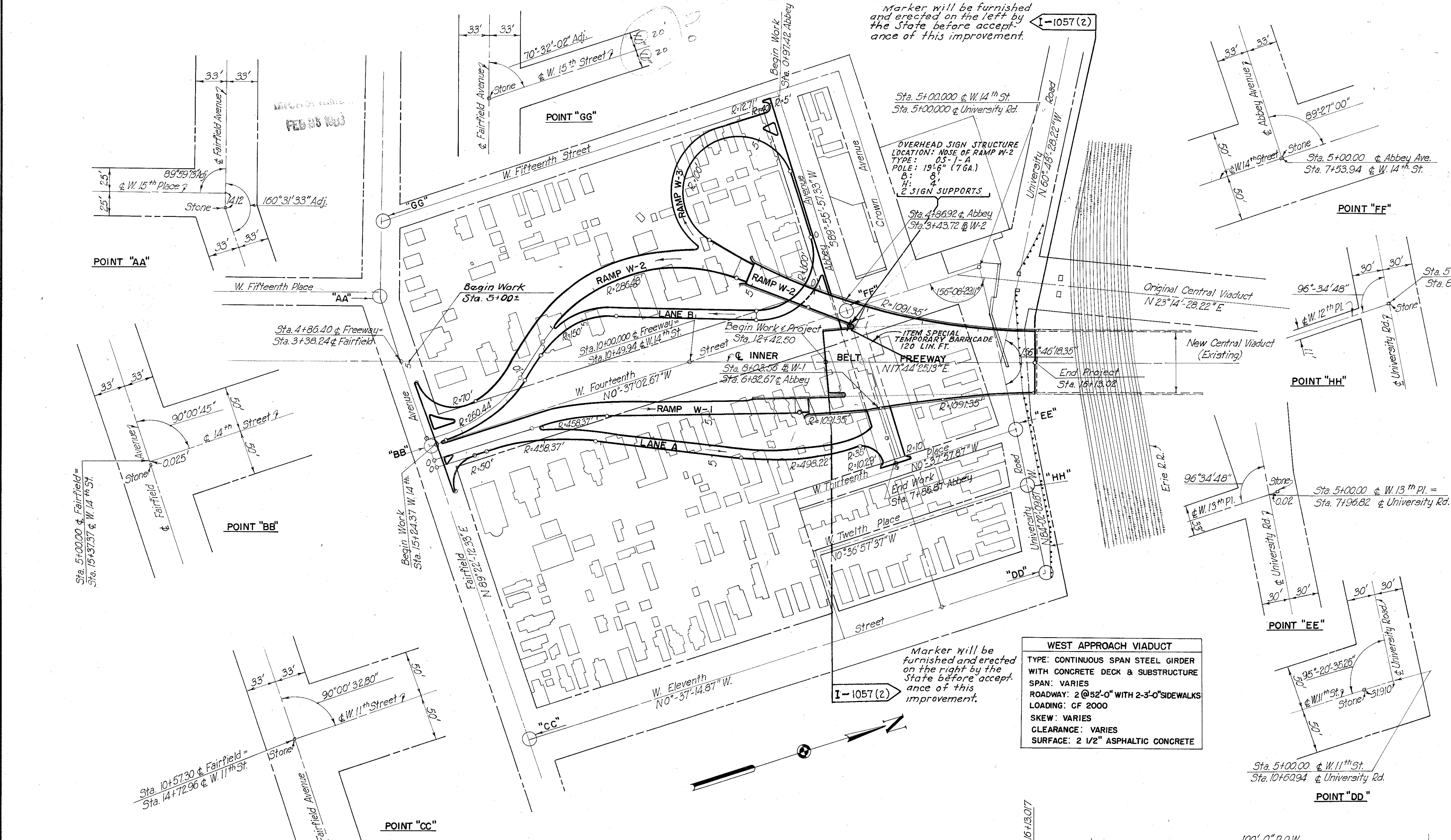
2 / 67

CUYAHOGA COUNTY
CITY OF CLEVELAND

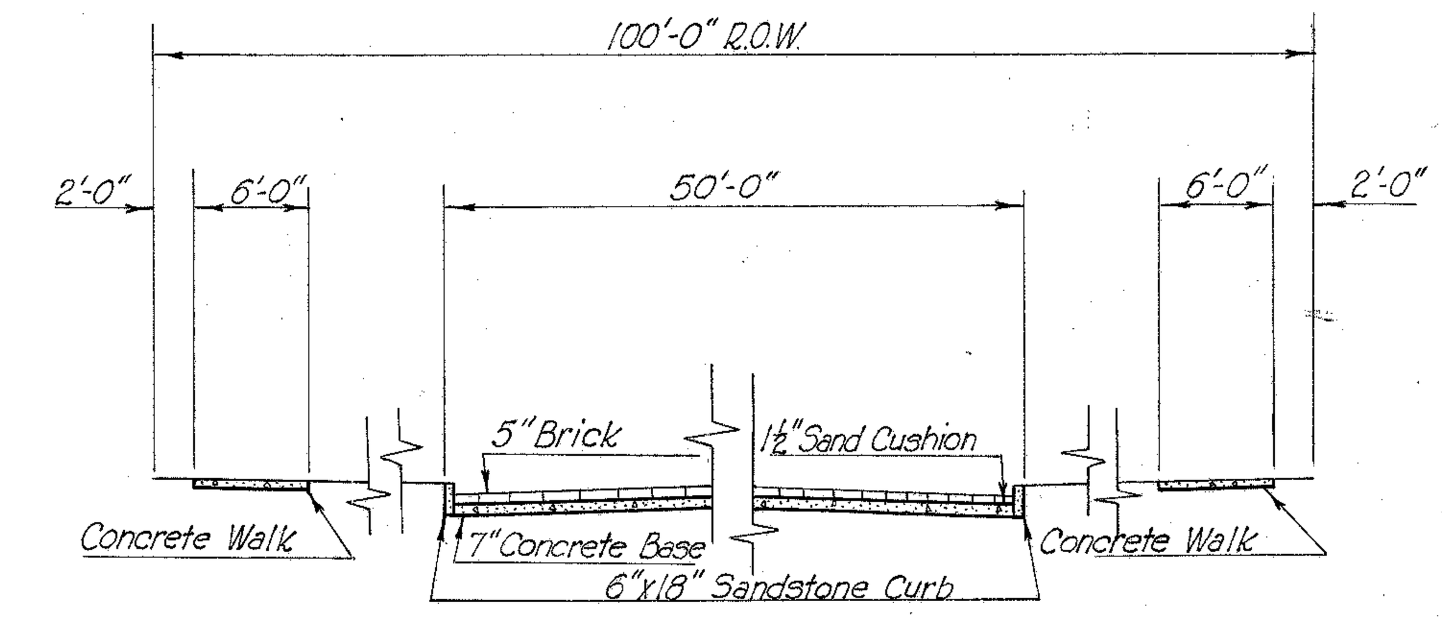
INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT

CUY - 42 R - 17.43

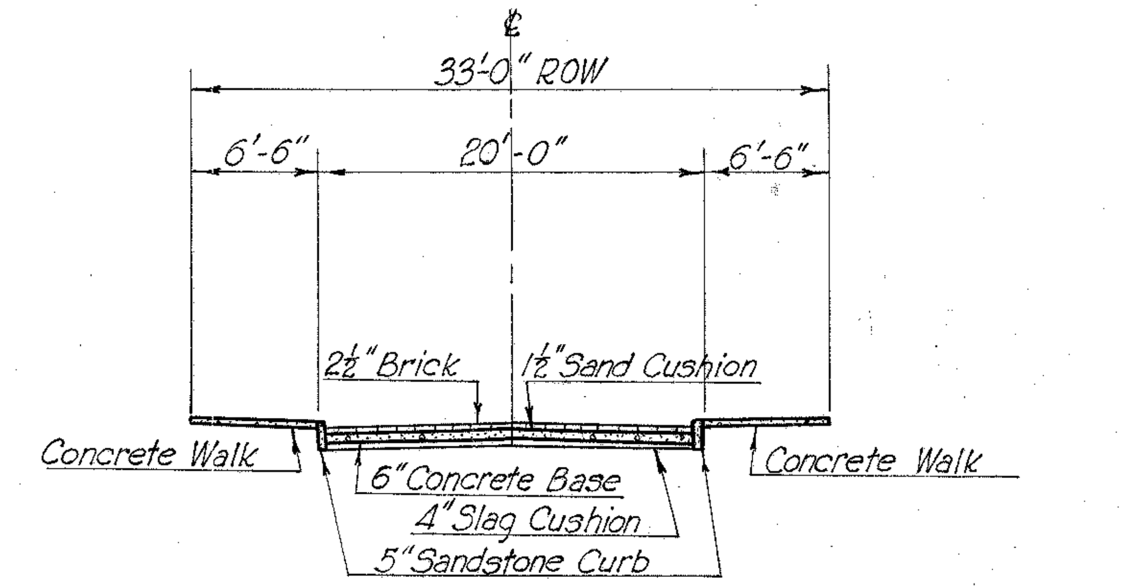
SCHEMATIC PLAN AND PROFILE



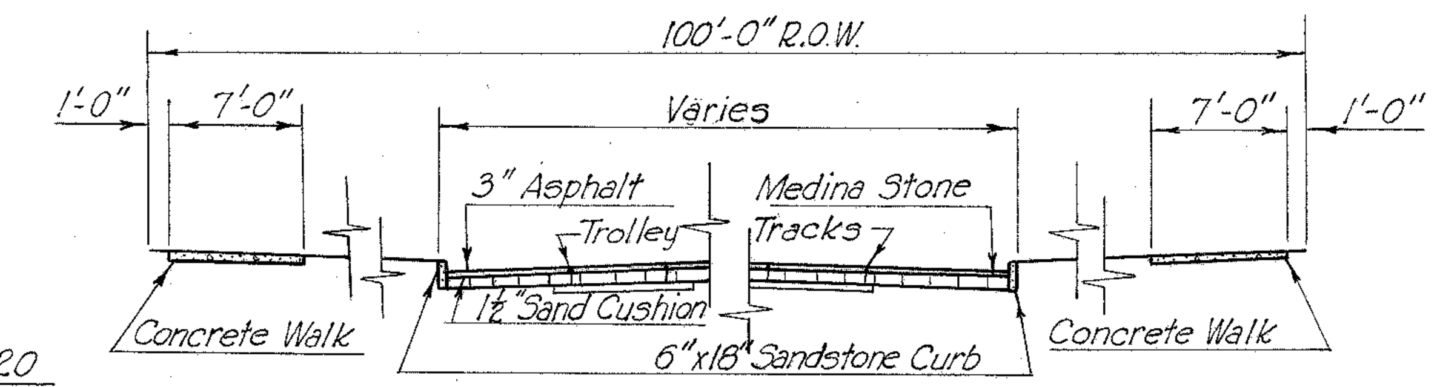
WEST APPROACH VIADUCT
TYPE: CONTINUOUS SPAN STEEL GIRDER WITH CONCRETE DECK & SUBSTRUCTURE
SPAN: VARIES
ROADWAY: 2 @ 52'-0" WITH 2-3'-0" SIDEWALKS
LOADING: CF 2000
SKEW: VARIES
CLEARANCE: VARIES
SURFACE: 2 1/2" ASPHALTIC CONCRETE



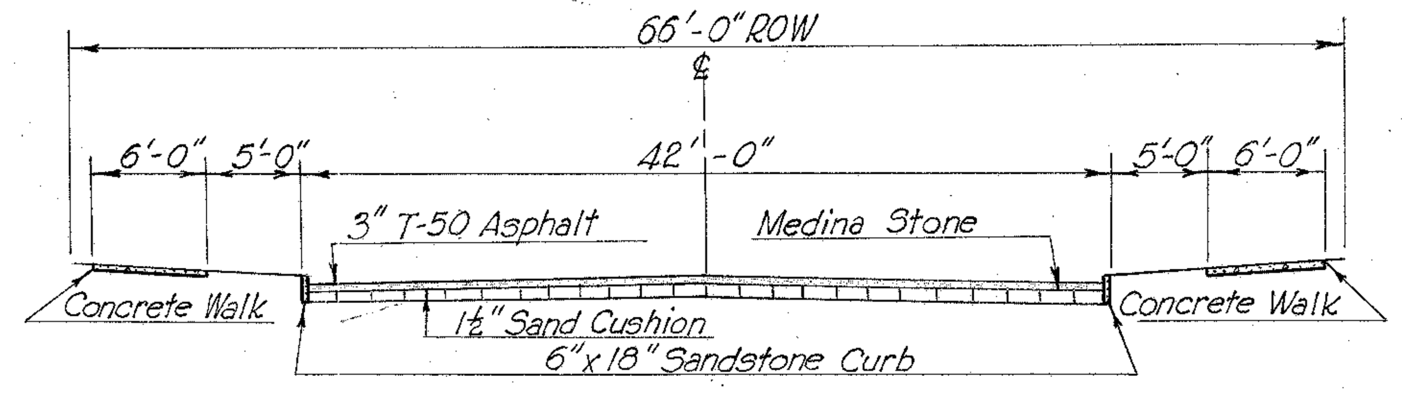
PARTIAL CROSS SECTION OF EXISTING WEST 14TH STREET
ABBEY AVENUE TO KENILWORTH AVENUE
Scale: 1" = 10'



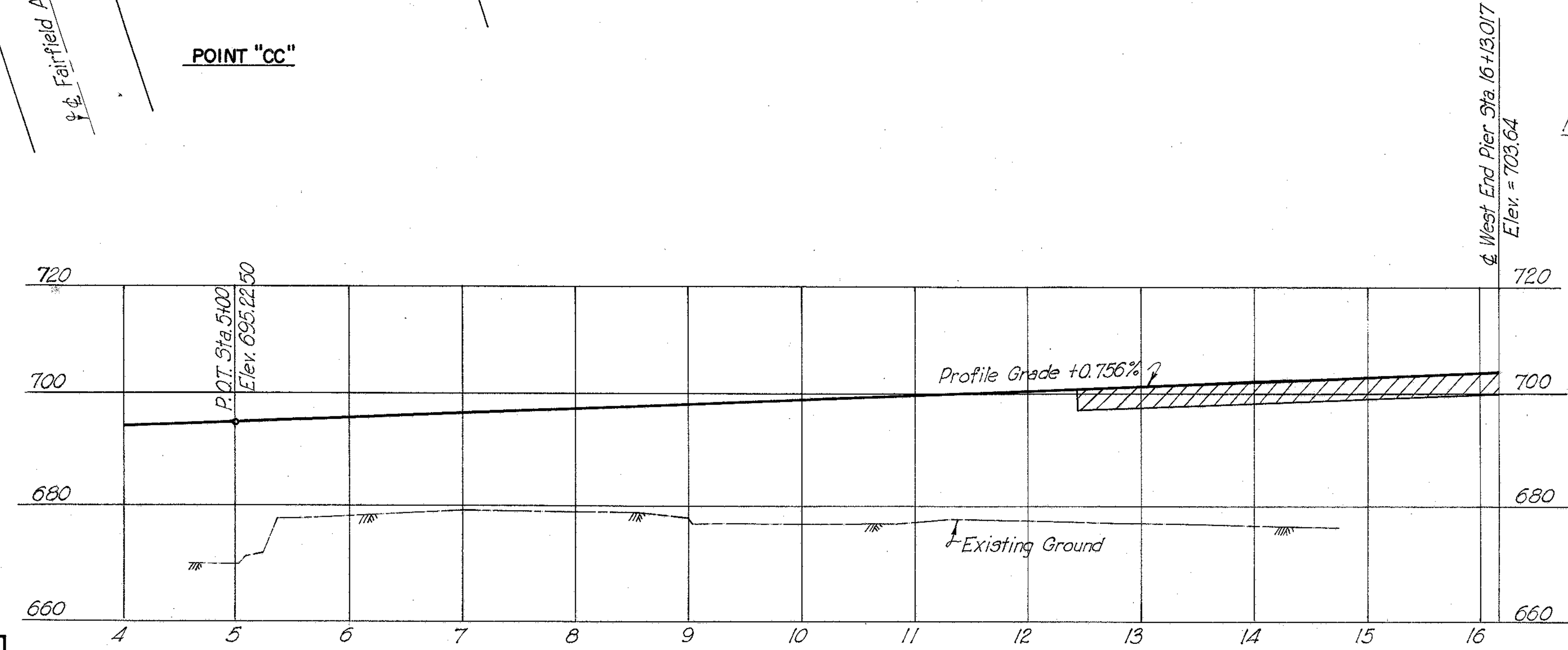
CROSS SECTION OF EXISTING WEST 13 TH PLACE
UNIVERSITY ROAD TO THE END
Scale: 1" = 10'



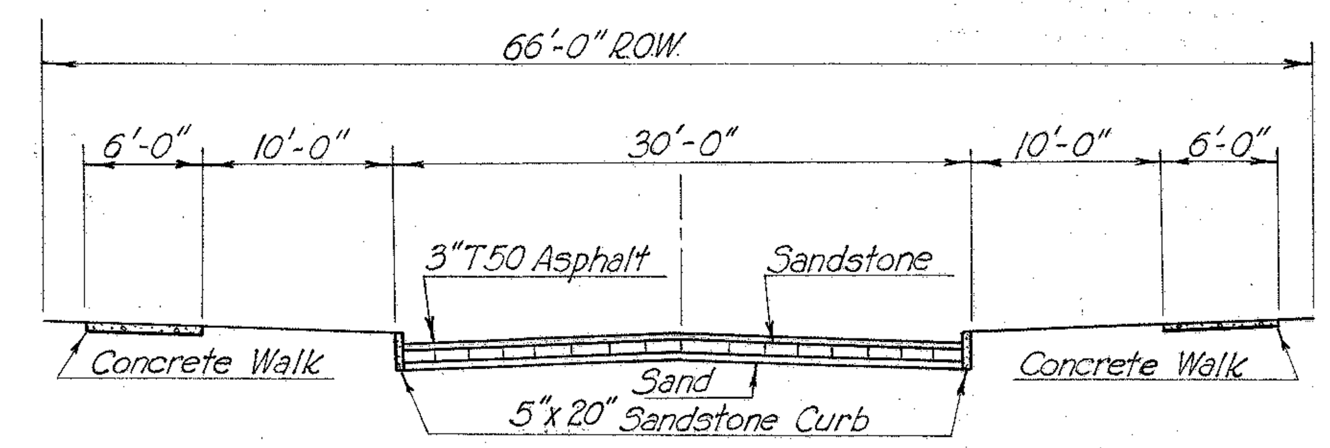
PARTIAL CROSS SECTION OF EXISTING WEST 14TH STREET
ABBEY AVENUE TO UNIVERSITY ROAD
Scale: 1" = 10'



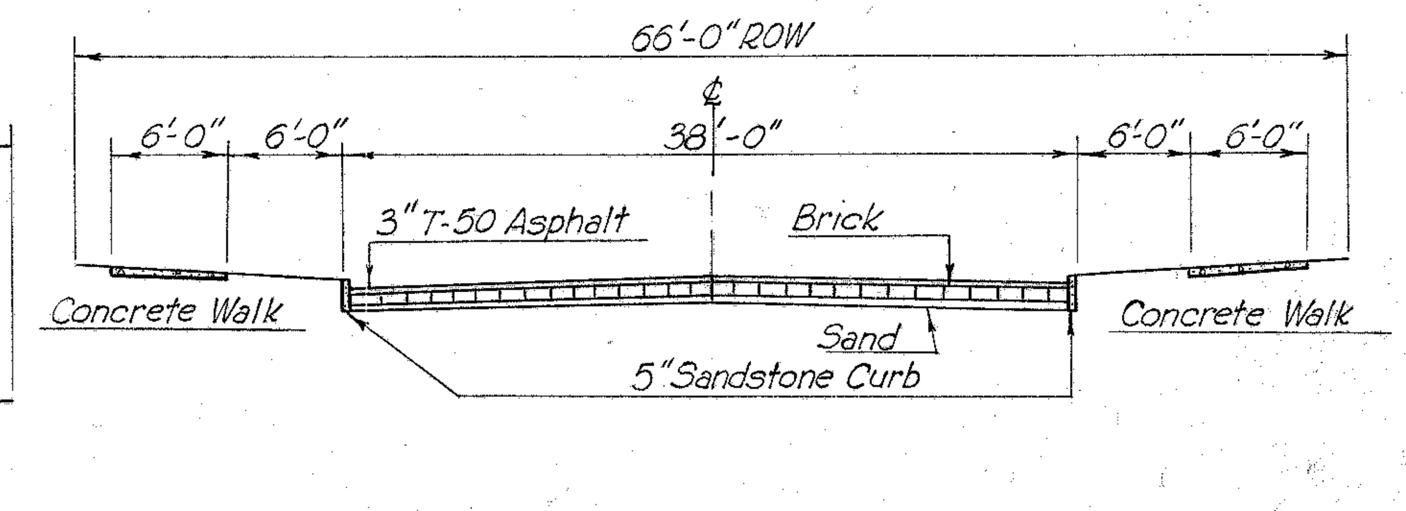
CROSS SECTION OF EXISTING ABBEY AVENUE
W. 14TH STREET TO W. 20TH STREET
Scale: 1" = 10'



INNER BELT FREEWAY PROFILE
Scale: Hor.: 1" = 100'
Vert.: 1" = 20'



CROSS SECTION OF EXISTING FAIRFIELD AVENUE
W. 14TH STREET TO SCRANTON ROAD
Scale: 1" = 10'



CROSS SECTION OF EXISTING FAIRFIELD AVENUE
W. 14TH. STREET TO W. 10TH STREET
Scale: 1" = 10'

SCALE As Shown
MADE D.L.B. DATE 8-3-55
TRCD B.M.O. DATE 12-14-55
CKD. H.K.M. DATE 12-16-55

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914 SHEET 2

REV. 7-5-56
REV. 7-27-56

FED. ROAD DIV NO	STATE	FED. AID PROJ. NO	TYPE FUNDS
2	OHIO		

3 / 67

CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY-42 R-17.43

RIGHT OF WAY

Sq. FT. DEED AREA	Sq. FT. TAKE	PARCEL NO.	OWNER	Sq. FT. RESIDUE
16,352.00	4,844.00	11	~~Reserve Cleaning Co.~~ Hillcomb Realty Co.	11,508.00
3,360.00	ALL	12	Thos. & J. Barylski	0.00
3,360.00	"	13	Mary Babinchek	0.00
3,584.00	"	14	Meribette & Wm. Mihalik	0.00
3,472.00	"	15	Mike & Anna Fekete	0.00
1,058.14	"	16-A	P.F.I. Sabienza & J.P. Arcara	0.00
926.29	"	16-B	Homer & Agnes Cox	0.00
928.29	"	16-C	John R. & Birdie T. Meltsch	0.00
921.94	"	16-D	Esther T. Williams	0.00
923.05	"	16-E	Dale & Vera Yeager	0.00
1,233.29	"	16-F	Roy & Helen Bartoszek	0.00
6,144.12	"	24	Rev. Andrew Chernyshin	0.00
9,153.20	"	25	Joseph & Theodora Borczuk	0.00
21,063.40	"	26	John F. & Helen Marshal	0.00
30,233.28	29,208.28	27	Michael Mizenko	1,025.00
15,122.25	12,861.75	28	John Lisa	2,260.50
7,562.94	5,962.44	29	Sam Broszko	1,600.50
22,693.77	16,011.27	30	Anthony J. Toman	6,682.50
15,133.14	9,754.14	31	Rose Thomas & E.C. Zigair	5,379.00
9,174.20	5,914.20	32	Carl & Anna Lemmermann	3,260.00
6,900.00	ALL	33	Sinclair Refining Co.	0.00
15,048.00	230.50	34	Greek Orthodox Church	14,817.50
18,468.00	1,630.12	35	Caroline Rice	16,837.87
11,628.00	1,867.87	36	Estelle Zwolinski & Agnes S. Toman	9,760.12
15,048.00	3,993.00	37	Dr. Martin Luther Evangelical Church	11,055.00
22,572.00	10,098.00	38	~~Slovak Lutheran Church Congregation~~ Same Owner, Parc. 37	12,474.00
7,524.00	4,422.00	39	~~Slovak Lutheran Church Congregation~~ Same Owner, Parc. 37	3,102.00
8,778.00	5,813.50	40	David Murad	2,964.50
8,778.00	6,525.75	41	David Murad	2,252.25
15,048.00	12,870.00	42	Walter & Amy R. Higs	2,178.00
7,980.00	ALL	43	Constatine Nicholan	0.00
7,980.00	"	44	~~George F. & Isabel Siebert~~ M & E. Adamczyk	0.00
11,019.24	"	45	Julius, Margt. & Wm. F. McGuire	0.00
11,019.24	"	46	Nellie Bukheir	0.00
11,343.00	"	47	Marvin & Ethel M. Cary	0.00
10,716.00	"	48	Earl T. Benjamin, TRS.	0.00
10,228.96	"	49	Cleveland Trust Co.	0.00
6,124.61	"	50	Vincent & Mary Triner	0.00
5,375.63	"	51	Catherine Zemba	0.00
5,375.63	"	52	Petro Petrick	0.00
3,000.00	0.00	39-A	Same Owner, Parcel 37	3,000.00
12,656.25	ALL	1	~~Sophia M. Maska~~ W.G. Lewicky	0.00
5,263.78	"	22	~~Josephine Delitto~~ H. Cesar & G.M. Finesilver	0.00
1,849.10	"	23	~~Ernesto Rodriquez~~ Nelson N. Moss	0.00

SCALE 1" = 50'
MADE JHV DATE 12-19-55
TRCD BMO DATE 1-12-56
CKD HKM DATE 2-4-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914 SHEET 3

Rev. 2-27-62

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY - 42R - 17.43

GENERAL NOTES

GENERAL NOTES

GENERAL

DESIGN STANDARDS

THE GEOMETRIC DESIGN FOR THE ROADWAY AND STRUCTURES WHICH COMPRISE THIS PROJECT IS BASED ON THE FOLLOWING DESIGN SPEEDS AS OUTLINED BY THE A.A.S.H.O. POLICIES ON GEOMETRIC HIGHWAY DESIGN:

FREEWAY	50 MPH
RAMPS	35 MPH

MINIMUM HORIZONTAL AND VERTICAL SIGHT DISTANCES HAVE BEEN PROVIDED, BASED ON THE A.A.S.H.O. POLICIES ON GEOMETRIC HIGHWAY DESIGN, AND CONSISTENT WITH THE DESIGN SPEEDS OF THE VARIOUS ROADWAYS.

FIELD OFFICE

THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE IN ACCORDANCE WITH SEC. S-0.01(b) HAVING A MINIMUM OF 500 SQ. FT. OF FLOOR SPACE. THE CONTRACTOR SHALL HAVE A TELEPHONE INSTALLED AND MAINTAINED DURING CONSTRUCTION OF THIS PROJECT.

PERMITS, LAWS AND REGULATIONS

THE CONTRACTOR SHALL SECURE, AT HIS OWN EXPENSE, ALL NECESSARY PERMITS FROM THE MUNICIPAL OR OTHER PUBLIC AUTHORITIES, SHALL GIVE ALL NOTICES REQUIRED BY LAW OR MUNICIPAL ORDINANCES, AND SHALL PAY ALL FEES AND CHARGES INCIDENT TO THE DUE AND LAWFUL PROSECUTION OF THE WORK COVERED BY THIS CONTRACT.

UNDERGROUND UTILITIES

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN OBTAINED BY DILIGENT FIELD CHECKS AND SEARCHES OF AVAILABLE RECORDS. IT IS BELIEVED THEY ARE ESSENTIALLY CORRECT, BUT THE STATE OF OHIO MAKES NO GUARANTEES AS TO THEIR ACCURACY OR COMPLETENESS.

UTILITY NOTE

ANY AND ALL WORK REQUIRED FOR REMOVING, RELOCATING AND CONSTRUCTION OF NEW FACILITIES FOR PRIVATE OR PUBLIC UTILITIES WILL BE DONE BY AND AT THE EXPENSE OF THE RESPECTIVE OWNERS UNLESS OTHERWISE NOTED ON THE PLANS.

WATER METER BOXES

THE CITY WATER DEPARTMENT WILL RELOCATE ALL PRIVATELY OWNED WATER METER BOXES AND THIS ITEM WILL NOT BE INCLUDED AS A PART OF THE WORK TO BE PERFORMED BY THE STATE CONTRACTOR.

WORK BY THE CITY OF CLEVELAND

THE CITY WILL PROVIDE FOR THE REMOVAL OR DISPOSAL OF ALL EXISTING BUILDINGS WITHIN THE LIMITS OF THE EASEMENT LINES TO THE TOP OF THE EXISTING FOUNDATIONS.

TRAFFIC

WHERE ANY OF THE WORK CALLED FOR UNDER THIS CONTRACT INVOLVES THE CLOSING OF EXISTING STREETS AND/OR THE RE-ROUTING OF TRAFFIC, THE CONTRACTOR FOR THIS PROJECT SHALL PROSECUTE TO THE FULLEST EXTENT THE WORK INVOLVED SO AS TO REDUCE TO A MINIMUM THE LENGTH OF TIME THAT THE STREETS CONCERNED WILL BE CLOSED TO TRAFFIC.

IN ADDITION TO THE ABOVE, SECTION G-4.05 "MAINTENANCE OF LOCAL TRAFFIC" WILL BE IN FORCE DURING THE ENTIRE LIFE OF THE CONTRACT.

ATTENTION IS DIRECTED PARTICULARLY TO THE NEED FOR PROVIDING ADEQUATE FACILITIES TO ACCOMMODATE SCHOOL CHILDREN AND OTHER PEDESTRIAN TRAFFIC IN THE VICINITY OF THE PROJECT. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SUCH TEMPORARY BOARD WALKS, CINDER WALKS, HANDRAILS ADJACENT TO EXCAVATIONS, ETC. AS MAY BE NECESSARY TO ACCOMMODATE IN A REASONABLE AND SAFE MANNER PEDESTRIAN TRAFFIC IN THE VICINITY OF THE PROJECT.

ALL OF THE ABOVE ARE INCLUDED IN THE LUMP SUM BID FOR "MAINTAINING TRAFFIC".

AGGREGATE AND CALCIUM CHLORIDE ARE CARRIED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER, FOR THE MAINTENANCE OF LOCAL TRAFFIC.

PAVEMENT

PLACING AND FINISHING CONCRETE PAVEMENT

APPROVED FLEXIBLE FORMS SHALL BE USED FOR CONSTRUCTION OF CIRCULAR PAVEMENT EDGES HAVING A RADIUS OF 200 FT. OR LESS, CIRCULAR CONCRETE CURBS AND CONCRETE CURB TRANSITIONS OF SHORT RADII.

PARTICULAR CARE SHALL BE EXERCISED BY THE CONTRACTOR IN OBTAINING IN A UNIFORM MANNER THE CURB TRANSITIONS CALLED FOR ON THE PLANS.

SIDEWALK

IN LIEU OF THE SURFACE GROOVING CALLED FOR IN THE SPECIFICATIONS, STEEL PLATES 1/8 INCH IN THICKNESS SHALL BE USED TO DIVIDE THE WALK, FOR ITS FULL WIDTH AND THICKNESS, INTO BLOCKS APPROXIMATELY 5 FEET IN LENGTH UNLESS OTHERWISE ORDERED BY THE ENGINEER. THE STEEL PLATES SHALL BE REMOVED AS SOON AS THE CONCRETE HAS SUFFICIENTLY SET THAT THE REMOVAL OF THE PLATE WILL NOT DISTURB OR DAMAGE THE FORMED JOINT.

THE LIMITS AND QUANTITY OF NEW SIDEWALK AS SHOWN ON THE PLANS MAY BE ADJUSTED BY THE ENGINEER.

ROADWAY

REMOVAL OF TREES AND STUMPS

ALL TREES AND STUMPS WITHIN THE LIMITS OF THE RIGHT OF WAY SHALL BE DISPOSED OF AS SPECIFIED IN SECTION E-1.03 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

TREES SHALL NOT BE REMOVED, REGARDLESS OF SIZE, UNTIL SPECIFICALLY AND CONSPICUOUSLY MARKED BY THE ENGINEER.

PAYMENT FOR THE REMOVAL OF TREES AND STUMPS IS INCLUDED IN THE UNIT PRICE BID FOR ITEM E-1, ROADWAY EXCAVATION.

REMOVAL OF REFUSE AND DEBRIS

ANY EXISTING REFUSE, DEBRIS OR ANY OTHER UNSUITABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH ITEM E-1. THE QUANTITY OF REFUSE OR DEBRIS, OR OTHER UNSUITABLE MATERIAL REMOVED AND DISPOSED OF WILL BE DETERMINED BY FINAL CROSS SECTIONS, AND THE YARDAGE SO DETERMINED WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR ROADWAY EXCAVATION, ITEM E-1.

REMOVAL, MISCELLANEOUS

THE REMOVAL AND DISPOSAL OF ANY EXISTING PAVEMENT, SIDEWALK, BUILDING FOUNDATIONS, STEPS, CELLAR FLOORS, WELL COVERS, CISTERN COVERS, SEPTIC TANKS, CONCRETE BASES, WALLS, CURB, CURB AND GUTTER, RAILS, TIES, POLE STUBS, HEADWALLS, PIPES, DRIVEWAYS AND GARAGE FLOORS, OR OTHER MASONRY LYING WITHIN THE LIMITS OF RIGHT OF WAY (AND NOT SPECIFICALLY PAID FOR UNDER A SEPARATE ITEM) SHALL BE CLASSIFIED AS EXCAVATION AND PAID FOR UNDER THE EXCAVATION ITEM OF WHICH THEY ARE A PART. WHERE REMOVAL OF ANY PAVEMENT LYING WITHIN THE LIMITS OF ROADWAY EXCAVATION, ITEM E-1, OR EXCAVATION FOR STRUCTURES, ITEM E-2, IS PAID FOR UNDER A SEPARATE ITEM, THE PAY LIMITS FOR EXCAVATION, ITEM E-1 OR E-2, SHALL BE TO THE BOTTOM OF PAVEMENT.

PAVEMENTS, SIDEWALKS, STEPS, CELLAR FLOORS OR OTHER MASONRY SHALL BE REMOVED TO A DEPTH OF THREE(3) FEET BELOW THE PROPOSED PAVEMENT SUBGRADE IF LOCATED WITHIN THE PROPOSED PAVEMENT AREA, AND TO A DEPTH OF THREE (3) FEET BELOW THE PROPOSED FINISHED SURFACE IF LOCATED OUTSIDE THE PROPOSED PAVEMENT AREA.

PAVEMENTS, SIDEWALKS, CELLAR FLOORS OR OTHER MASONRY BELOW THE ABOVE LIMITS SHALL BE BROKEN UP INTO PORTIONS WHOSE AREA DOES NOT EXCEED ONE (1) SQUARE FOOT, BUT NEED NOT BE REMOVED.

PAYMENT FOR ALL OF THE ABOVE OPERATIONS SHALL BE INCLUDED IN CONTRACT UNIT PRICE BID FOR ROADWAY EXCAVATION, ITEM E-1, AND EXCAVATION FOR STRUCTURES, ITEM E-2.

ADDITIONAL EXCAVATION NECESSARY TO PERFORM ANY OF THE ABOVE OPERATIONS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER CUBIC YARD FOR ROADWAY EXCAVATION, ITEM E-1, AND EXCAVATION FOR STRUCTURES, ITEM E-2.

BASEMENTS, WELLS, CISTERNS, SEPTIC TANKS, AND UNNATURAL DEPRESSIONS WITHIN THE LIMITS OF THE RIGHT OF WAY SHALL BE BACKFILLED WITH BROKEN FOUNDATION MASONRY OR ROCK PLACED AS ROCK EMBANKMENT ACCORDING TO SECTION E-1.08 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

SANDSTONE CURB RESET

All salavageable sandstone curb removed for reuse under Item E-8 shall be reset. An estimated quantity of 2,000 Lin. Ft. has been assumed to be salvageable and listed in the general summary.

New sandstone curb, furnished and placed, shall not be interspersed with salvaged curb.

COMPACTION OF SOIL BACKFILL

SPECIAL CARE SHALL BE TAKEN TO PROPERLY COMPACT SOIL BACKFILL PLACED ADJACENT TO AN EXISTING PAVEMENT EDGE.

ROUNDING OF CORNERS ON CROSS SECTIONS

THE ROUNDED CORNERS, SHOWN ON STANDARD DRAWING RI-1, APPLY TO ALL CROSS SECTIONS EVEN THOUGH OTHERWISE SHOWN IN THESE PLANS.

SPECIAL DITCHES

FOR SPECIAL DITCH GRADES, SEE CROSS SECTIONS AND DRAINAGE PLANS.

TILE FOR SUB-GRADE DRAINAGE

6 IN. DRAIN TILE SHALL BE FURNISHED AND PLACED BY THE CONTRACTOR, IN MANHOLES, CATCH BASINS AND INLETS FOR SUBGRADE DRAINAGE, WHERE AND AS DIRECTED BY THE ENGINEER. PAYMENT FOR SAME SHALL BE INCLUDED IN THE PRICE BID PER "EACH" FOR MANHOLES, CATCH BASINS AND INLETS.

CONNECTIONS TO EXISTING SEWERS

AT PLACES WHERE THE PLANS PROVIDE FOR PROPOSED DRAINAGE PIPE TO BE CONNECTED TO EXISTING PIPES, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE, BEFORE HE STARTS TO LAY THE PROPOSED SEWER. THE COST OF THIS OPERATION SHALL BE INCLUDED IN THE PRICE BID FOR ITEM I-2 STORM SEWER.

THE CONTRACTOR SHALL SO CONDUCT HIS OPERATIONS THAT THE FLOW OF ALL EXISTING SEWERS WILL BE MAINTAINED AT ALL TIMES. ANY ADDITIONAL LABOR OR COST INVOLVED IN MAINTAINING THIS FLOW BY PUMPING OR BY ANY OTHER APPROVED METHOD WHICH IS NECESSARY FOR THE COMPLETION OF THIS PROJECT SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF STORM SEWERS, ITEM I-2.

SEEDING AND PROTECTING

QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN LINES TEN (10) FEET OUTSIDE THE CONSTRUCTION LIMITS AS SHOWN ON THE CROSS SECTIONS OR TO THE R/W LINE IF SUCH LINE IS LESS THAN TEN (10) FEET FROM THE CONSTRUCTION LIMITS.

ALL AREAS OUTSIDE THESE LIMITS WHERE THE VEGETATIVE GROWTH HAS BEEN INJURIOUSLY DISTURBED OR DESTROYED BY THE CONTRACTOR SHALL BE RESTORED AND SEEDED IN ACCORDANCE WITH THE PROVISIONS OF ITEM L-9 BY THE CONTRACTOR AT HIS OWN EXPENSE.

L-9 COMMERCIAL FERTILIZER

ALL AREAS TO BE SEEDED OR SODDED SHALL HAVE COMMERCIAL FERTILIZER (10-6-4) APPLIED AT THE RATE OF TWENTY (20) POUNDS PER 1,000 SQ. FT. THE FOLLOWING SEED MIX SHALL BE USED ON ALL AREAS:

20% KENTUCKY BLUEGRASS	(POA PRATENSIS)
20% KENTUCKY, 31 FESCUE	(FESTUCA ELATIOR VAR KY. 31)
40% CREEPING REDFESCUE	(FESTUCA RUBRA)
15% RED TOP	(AGROSTIS ALBA)
5% WHITE DUTCH CLOVER	(TRIFOLIUM REPENS)

UTILITIES

FOLLOWING, IS A LIST OF THE UTILITIES WITHIN THE LIMITS OF PART 4 CONSTRUCTION:

EAST OHIO GAS CO.
CITY OF CLEVELAND WATER DEPT.
CLEVELAND ELECTRIC ILLUMINATING CO.
MUNICIPAL ELECTRIC LIGHT AND POWER CO.
OHIO BELL TELEPHONE CO.

OTHER NOTES

LIGHTING - SHEET - 5
DRAINAGE - SHEET - 17
STRUCTURES - SHEET - 30

SCALE None
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HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY, CLEVELAND, NEW YORK

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS
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CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY-42-R-17.43

LIGHTING NOTES

LIGHTING NOTES

ROADWAY AND UNDERDECK LIGHTING

1. GENERAL

THIS SPECIFICATION SHALL GOVERN FOR THE MATERIALS USED AND FOR THE INSTALLATION OF COMPLETE SERIES ROADWAY AND MULTIPLE UNDERDECK LIGHTING SYSTEMS FOR THE WEST APPROACH TO THE CENTRAL VIADUCT. THE TYPE AND LOCATION OF LIGHTS, THE CIRCUITS AND THE LOCATION OF CABLES AND CONDUITS SHALL BE AS INDICATED ON THE PLANS. THE CABLES FOR ROADWAY LIGHTS SHALL BE IN FIBER OR ASBESTOS-CEMENT CONDUIT, CONCRETE ENCASED. FOR THE ROADWAY LIGHTING, 15,000 LUMEN AND 10,000 LUMEN INCANDESCENT LIGHTS ARE TO BE INSTALLED WHERE AND AS INDICATED ON THE PLANS, AND ARE TO BE OPERATED ON THREE 6.6 AMP. SERIES CIRCUITS. THE UNDERDECK LIGHTS ARE TO BE 100 WATT, THEIR BRANCH CIRCUITS ARE TO BE IN RIGID CONDUIT, AND ARE TO BE INSTALLED FOR 115 VOLT SECONDARY OPERATION FROM ONE TRANSFORMER.

THE CONTRACTOR SHALL CONSULT AND COOPERATE WITH THE CLEVELAND DIVISION OF LIGHT AND POWER AND THE CLEVELAND ELECTRIC ILLUMINATING COMPANY, BUT HE WILL NOT BE REQUIRED TO FURNISH, INSTALL OR CONNECT CONSTANT CURRENT OR MULTIPLE SERVICES, METERS, METER MOUNTS, METERING EQUIPMENT OR HOUSINGS FOR SAME. THE CONTRACTOR SHALL PROVIDE PROPER CONNECTIONS TO THE EXISTING SERIES CIRCUITS INSTALLED ON THE MAIN VIADUCT BY OTHERS.

THE CONTRACTOR SHALL FURNISH AND INSTALL LIGHTING EQUIPMENT, INCLUDING ALL LAMPS, LUMINAIRES, UNDERDECK LIGHTING FIXTURES, WIRING, LUMINAIRE BRACKETS, POLES, EXPANSION COUPLINGS, FLEXIBLE COUPLINGS, TOPS OF POSTS (BASES FOR POLES), POLE CAP SCREWS, CABLE, CONCRETE POLE BASES, INSULATING TRANSFORMERS, POTHEADS, TRANSFORMER BASES, GROUNDS, ALL CONDUIT FOR LIGHTING CIRCUITS, AND ALL INCIDENTALS NECESSARY AND INDICATED FOR COMPLETE CIRCUIT INSTALLATIONS, INSTALLED, ACCEPTED AND CONNECTED FOR OPERATION. THE LOOPS OF ALL SERIES LIGHTING CIRCUITS SHALL BE COMPLETE, AND THE CONTRACTOR SHALL FURNISH AND INSTALL ALL EQUIPMENT NECESSARY FOR THE SATISFACTORY OPERATION OF THE CIRCUITS AND FOR THE COMPLETE OPERATION OF THE LIGHTING SYSTEMS, (EXCLUDING PRIMARY SERVICE LEADS, DISTRIBUTION TRANSFORMERS, CONSTANT CURRENT REGULATORS, SECONDARY ARRESTERS, TIME CLOCKS, CONTACTORS, POWER POLES, PLATFORMS, PRIMARY FUSE CUTOUTS, PRIMARY ARRESTERS, AND PRIMARY CONNECTIONS TO THE POWER SOURCES) WHETHER SPECIFICALLY MENTIONED OR NOT.

THE LIGHTING INSTALLATION, WHEN COMPLETED SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF THE A.I.E.E. STANDARDS AND PRACTICES, AMERICAN STANDARDS, AND NATIONAL ELECTRIC MANUFACTURERS' ASSOCIATION STANDARDS, AND SHALL CONFORM TO ALL LOCAL AND SPECIAL LAWS OR ORDINANCES GOVERNING SUCH INSTALLATION, AND TO THE SPECIAL REQUIREMENTS HEREIN SET FORTH. SHOULD THE PLANS AND DETAIL SPECIFICATIONS BE IN CONFLICT WITH THESE REQUIREMENTS, THROUGH ERROR OR OMISSION, THE CONTRACTOR SHALL CALL SUCH CONFLICT TO THE ATTENTION OF THE ENGINEER, AND THE CONTRACTOR SHALL MAKE THE NECESSARY CORRECTIONS IN THE INSTALLATION AS MAY BE DIRECTED BY THE ENGINEER.

INSOFAR AS PRACTICABLE, ALL MAJOR ITEMS OF ELECTRICAL EQUIPMENT SUCH AS LUMINAIRES, CABLE, POLES, INSULATING TRANSFORMERS, ETC., SHALL CONSIST OF PRODUCTS OF THE SAME MANUFACTURER IN ORDER TO SECURE SINGLE RESPONSIBILITY AND MOST SATISFACTORY SERVICE. UNLESS SPECIFICALLY NOTED OTHERWISE, ALL ELECTRICAL EQUIPMENT SHALL BE EQUAL TO THE BEST GRADE OF THAT TYPE OF EQUIPMENT AS MANUFACTURED BY THE GENERAL ELECTRIC COMPANY, THE WESTINGHOUSE ELECTRIC COMPANY, OR THE LINE MATERIAL COMPANY, REFERENCE TO ANY NAME, MAKE OR MANUFACTURER'S NUMBER FOR AN ARTICLE OF EQUIPMENT OR MATERIAL IS INTENDED TO BE DESCRIPTIVE, BUT NOT RESTRICTIVE, AND IS INTENDED TO INDICATE THE MATERIALS THAT WILL BE ACCEPTABLE.

A LAYOUT WIRING DIAGRAM SHOWING IN GENERAL THE ARRANGEMENTS AND LOCATION OF THE EQUIPMENT IS SHOWN ON THE PLANS. THIS SHALL BE CONSIDERED ONLY AS ILLUSTRATIVE AND, SUBJECT TO THE APPROVAL OF THE ENGINEER, THE CONTRACTOR SHALL MODIFY IT AS NECESSARY FOR COMPLETE AND PROPER CONSTRUCTION AND OPERATION. THE LOCATION OF THE TRANSFORMERS, SERVICES, CONDUIT AND LUMINAIRES SHOWN ON THE PLANS ARE DIAGRAMMATIC ONLY, AND MAY BE SUBJECT TO SLIGHT SHIFTING AS THE ENGINEER MAY DIRECT IN ORDER TO CONFORM TO LOCAL CONDITIONS.

BEFORE COMMENCEMENT OF INSTALLATION OF THE ROADWAY AND UNDERDECK LIGHTING SYSTEMS, A COMPLETE SCHEDULE OF MATERIALS AND EQUIPMENT PROPOSED FOR INSTALLATION SHALL BE SUBMITTED FOR THE APPROVAL OF THE ENGINEER. THE SCHEDULE SHALL INCLUDE CATALOGS, CUTS, DIAGRAMS, DRAWINGS, AND OTHER SUCH DESCRIPTIVE DATA AS MAY BE REQUIRED BY THE ENGINEER. IN THE EVENT ANY ITEMS OF MATERIAL OR EQUIPMENT CONTAINED IN THE SCHEDULE FAIL TO COMPLY WITH SPECIFICATION REQUIREMENTS, SUCH ITEMS WILL BE REJECTED.

2. MATERIALS AND EQUIPMENT

ALL BOLTS, NUTS, STUDS, WASHERS, PINS, TERMINALS, SPRINGS, AND SIMILAR FASTENINGS AND FITTINGS SHALL BE, WHERE PRACTICABLE, OF AN APPROVED CORROSION-RESISTING MATERIAL SUCH AS BRASS OR BRONZE, OR OF A MATERIAL TREATED IN AN APPROVED MANNER TO RENDER IT ADEQUATELY RESISTANT TO CORROSION, HOT-DIP GALVANIZING SHALL BE CONSIDERED SUCH APPROVED TREATMENT, ALL MATERIALS FURNISHED SHALL BE NEW, SHALL BE OF THE BEST QUALITY AND WORKMANSHIP, SHALL BE THE BEST STANDARD PRODUCT OF A MANUFACTURER REGULARLY ENGAGED IN THE PRODUCTION OF THIS TYPE OF EQUIPMENT AND SHALL BE OF THE MANUFACTURER'S LATEST APPROVED DESIGN.

EACH ROADWAY LIGHTING UNIT SHALL COMPRISE A POLE WITH AN 8 FT., 10FT. OR 15 FT. BRACKET AND A 15,000 LUMEN LUMINAIRE SIMILAR TO WESTINGHOUSE AK-14 OR GENERAL ELECTRIC FORM 79-AR OR A 10,000 LUMEN LUMINAIRE SIMILAR TO WESTINGHOUSE AK-10 AS INDICATED ON SHEET 16. LUMINAIRES LIGHTING THE ROADWAY ON THE STRUCTURE, LANES, RAMPS AND ROADS SHALL MEET THE GENERAL REQUIREMENTS OF I.E.S. TYPE III OR TYPE IV DISTRIBUTION AS INDICATED, LUMINAIRES SHALL OVERHANG FROM 3 FT. TO 6 FT. OUT FROM CURB AS SHOWN.

LIGHT STANDARDS SHALL CONFORM AS NEARLY AS POSSIBLE TO THE SPECIFICATIONS AND DRAWING M-20, 35, OF THE CITY OF CLEVELAND AS TO GENERAL DESIGN AND FINISH, HEIGHT, BASE, MAST ARM AND DIMENSIONS. IN GENERAL, EACH STANDARD SHALL CONSIST OF A CAST STEEL ANCHOR BASE TO WHICH SHALL BE WELDED A TAPERED STEEL POLE, TO THE STEEL POLE SHALL BE FASTENED AN ORNAMENTAL POLE TOP TO WHICH SHALL BE WELDED A MAST ARM FOR SUPPORTING THE LIGHTING UNIT.

TO MOUNT LIGHT STANDARDS ON THE BRIDGE STRUCTURE A CAST STEEL ANCHOR BASE OF ADEQUATE STRENGTH AND OF THE SHAPE AND SIZE SHOWN ON SHEET NO. 66 IN THE STRUCTURAL PLANS SHALL BE SECURED TO THE LOWER END OF THE SHAFT BY MEANS OF A DOUBLE ELECTRIC WELD. TO OBTAIN THIS CONSTRUCTION, THE BASE SHALL TELESCOPE THE SHAFT, AND ONE WELD SHALL BE ON THE OUTSIDE OF THE SHAFT AT THE END OF THE SHAFT AND THE OTHER SHALL BE ON THE INSIDE AT THE TOP OF THE BASE. THE TRANSFORMER BOX FOR ALL OTHER STANDARDS SHALL BE A PART OF THE POLE BASE FOUNDATION AS INDICATED ON THE PLANS, WITH CLASS E CONCRETE USING NO. 4 AGGREGATE.

THE STEEL SHAFT OF THE LIGHTING STANDARDS FOR SINGLE LUMINAIRES SHALL BE FABRICATED FROM NOT LESS THAN NO. 11 MANUFACTURERS' STANDARD GAUGE. THE SHAFT SHALL BE FORMED AND WELDED WITH ONLY ONE LONGITUDINAL, AUTOMATICALLY ELECTRICALLY WELDED JOINT AND SHALL HAVE NO HORIZONTAL JOINTS OR WELDS. THE WELD SHALL BE OF FULL PENETRATION. AFTER FORMING AND WELDING, THE TAPERED SHAFT SHALL BE COLD ROLLED OR WORKED UNDER SUFFICIENT PRESSURE TO FLATTEN OUT THE WELD, TO INCREASE THE ELASTIC LIMIT OF THE METAL IN THE COMPLETED SHAFT, AND TO PRODUCE A TRUE TAPERED TUBE WITHOUT FLAT SPOTS AND A CIRCULAR CROSS-SECTION THROUGHOUT THE LENGTH OF THE SHAFT, IF THE SHAFT IS FABRICATED BY MEANS OF A BRAKE OR OTHER PROCESS WHICH DOES NOT UTILIZE THE COLD ROLLING PRINCIPLE, IT SHALL BE FABRICATED FROM A STEEL SHEET HAVING A THICKNESS OF NO. 7 MANUFACTURERS' STANDARD GAUGE.

EACH STANDARD SHALL HAVE A MAST OR BRACKET ARM MADE OF STANDARD PIPE OF THE SIZE AND LENGTH AS SHOWN ON THE PLANS. THE INNER END OF THE BRACKET SHALL BE WELDED TO A CAST STEEL HEAD BLOCK SO DESIGNED THAT THE BLOCK CAN BE BOLTED THROUGH A CAST IRON NECK PIECE TO A PLATE WELDED TO THE TOP OF THE POLE TO PERMIT RADIAL ADJUSTMENT OF THE BRACKET ARM. PROVISIONS SHALL BE MADE TO PERMIT PASSAGE OF THE CONCEALED WIRES TO BRACKET ARM, THE ORNAMENTAL CASTING WELDED TO THE OUTER END OF THE BRACKET SHALL BE ARRANGED WITH A LEVELING DEVICE OR "PLUMBIZER" FOR ADJUSTMENT OF A PENDANT LIGHTING FIXTURE AND SHALL BE TAPPED FOR 1-1/4 INCH PIPE CONNECTION. ALL 15 FT. BRACKETS SHALL BE EQUIPPED WITH WIND BRACING AND THE POLES SHALL BE MODIFIED AS SHOWN ON SHEET 16.

THE STANDARDS WITH WIND BRACING SHALL BE EQUIPPED WITH A "J" HOOK PLACED INSIDE AND ABOVE THE BRACKET MOUNTING AT A HEIGHT SUFFICIENT TO ATTACH A CABLE GRIP IN SUCH MANNER TO PREVENT THE CABLE FROM HANGING IN THE POLE AND BRACKET BUSHING AT THE POINT OF BRACKET ATTACHMENT TO POLE. ALL STANDARDS FOR THE LIGHTING OF RAMPS AND LANES SHALL BE OF THE ANCHOR BASE TYPE WITH THE STANDARD SIMILAR TO UNION METAL CO. DESIGN NO. 70161Y10. THE 8'-0" DUAL BRACKET POLE AT STATION 0 + 24 "RAMP W-1" SHALL BE 7-GAUGE WITH BRACKETS NORMAL TO THE EDGES OF OF THE PAVEMENT. THE POLE BASE FOUNDATIONS SHALL BE CLASS "E" CONCRETE WITH 1-1/4" X 4'-0" CADIUM COATED STEEL ANCHOR BOLTS EXTENDED 3-1/16" ABOVE BASE WITH 4" L-BEND. EACH ROD SHALL HAVE TWO GALVANIZED AMERICAN STANDARD HEX-NUTS, FOR LEVELING THE POLE, PRIOR TO GROUTING WITH NON-SHRINK PRE-MIXED GROUT. EACH CABLE SHALL ENTER THE STANDARD THROUGH (1) 3" Ø TRANSITE CONDUIT OR EQUAL, INSTALLED IN THE CONCRETE FOUNDATION FROM TRANSFORMER POLE BASE BOX. CONDUIT SHALL EXTEND AT LEAST 3" ABOVE TOP OF FOUNDATION.

EACH STANDARD SHALL HAVE TWO 9/16 INCH HOLES PROVIDED, WHERE SHOWN ON SHEET NO. 16. PAINTING FOR ALL STANDARDS SHALL BE AS SPECIFIED UNDER PARAGRAPH 14-E-1-d, SHEET 30.

EACH LUMINAIRE SHALL CONSIST OF A SUPPORTING HOOD, AND EXTERNAL BODY OR CASING, AN INTERNAL MAIN REFLECTOR, AND A REFRACTOR GLOBE. THE HOOD SHALL BE MADE OF CAST ALUMINUM AND SHALL BE TAPPED FOR 1-1/4" STANDARD PIPE. THE EXTERNAL BODY OR CASING SHALL BE MADE OF CAST ALUMINUM AND SHALL BE FIRMLY ATTACHED TO THE HOOD BY MEANS OF ADEQUATE SCREWS OR BOLTS. THE MAIN REFLECTOR SHALL BE MADE OF HEAVY GAUGE ALUMINUM SHEET, ALZAK FINISHED AND POLISHED. THE ENTIRE REFLECTING ELEMENT SHALL BE RIGIDLY ATTACHED TO THE EXTERNAL BODY BY MEANS OF SCREWS OR BOLTS.

THE GLOBES SHALL BE SUPPLIED WITH A NON-RUSTING METAL SUPPORTING RING OR BAND WITH CLAMPS AROUND THE RIM OR FLANGE OF THE GLOBE. THE SUPPORTING RING SHALL BE SO DESIGNED THAT BROKEN GLOBES CAN BE REPLACED AT THE LAMP LOCATION WITH THE USE OF SIMPLE HAND TOOLS. ALL SCREWS, NUTS, WASHERS, ETC., WHICH MUST BE REMOVED IN ORDER TO REPLACE A BROKEN GLOBE SHALL BE NON-FERROUS AND CORROSION-PROOF. THE GLOBE SUPPORTING RING SHALL BE ATTACHED TO THE REFLECTOR BY MEANS OF A HINGE OR ITS EQUIVALENT ON ONE SIDE AND A LATCH, THUMB SCREW, OR EQUIVALENT ON THE OPPOSITE SIDE. THESE DEVICES SHALL BE SO DESIGNED THAT WITH THE GLOBE IN PLACE, THE LATCH OR THUMB SCREW CAN BE RELEASED BY HAND, THE GLOBE SWUNG DOWN AND THEN LIFTED OFF THE HINGE SO THAT THE GLOBE CAN BE WASHED SEPARATELY FROM THE FIXTURE. THE DESIGN SHALL BE SUCH THAT AFTER WASHING, THE GLOBE CAN BE HOOKED ON TO THE HINGE AND THEN PUSHED UP INTO PLACE AGAINST THE GASKET WITH ONE HAND WHILE THE LATCH OR THUMB SCREW IS TIGHTENED WITH THE OTHER HAND. THE BEST DESIGN SHALL BE THAT WHICH COMBINES SIMPLICITY AND EASE OF OPERATION WITH THE MOST EFFECTIVE SEAL BETWEEN THE GLASS GLOBE AND THE REFLECTOR, FIXTURES HAVING THE REFLECTOR PERMANENTLY ATTACHED OR "SPUN ON" TO THE GLASS GLOBE WILL NOT BE ACCEPTED. A SKELETON TYPE MOGUL MULTIPLE SOCKET SHALL BE MOUNTED IN THE HOOD AND SHALL BE SUITABLE FOR 10,000 OR 15,000 LUMEN 20 AMPERE LAMPS. THE LUMINAIRES SHALL PRODUCE AN I.E.S. TYPE IV LIGHT DISTRIBUTION CURVE EQUAL TO THE CURVE PRODUCED BY THE GENERAL ELECTRIC FORM 79 AR OR AN I.E.S. TYPE III PRODUCED BY **WESTINGHOUSE** AK-10.

LAMPS FOR UNDERDECK LUMINAIRES SHALL BE 100 WATT, FLUORESCENT 1 AMP, CW/RS, AND FOR ROADWAY UPRIGHT LUMINAIRES SHALL BE 10,000 LUMEN OR 15,000 LUMEN, PS-40 BULBS, MOGUL BASE, AS INDICATED ON SHEET NO. 16.

EXTERNAL PARTS OF ALL LUMINAIRES SHALL BE FINISHED ALUMINUM, GASKETS USED FOR SEALING THE JOINT BETWEEN GLOBES AND REFLECTORS OR CASINGS SHALL BE PREFORMED CORK OR FELT AND SHALL BE CEMENTED IN PLACE. THE FIXTURES AS SPECIFIED ARE PRECISION OPTICAL DEVICES AND IN ORDER TO DELIVER THE PERFORMANCE REQUIRED THEY MUST HAVE THE LAMP FILAMENT CORRECTLY LOCATED WITH REFERENCE TO THE REFLECTING OR REFRACTING ELEMENTS. THE SOCKETS SHALL PREFERABLY BE SOLIDLY MOUNTED, WITH THE LAMP FILAMENT AT THE CORRECT OPTICAL CENTER. IF THE MANUFACTURER'S DESIGN PROVIDES FOR VERTICAL ADJUSTMENT OF THE SOCKET, HE SHALL FURNISH A DRAWING SHOWING THE PROPER DIMENSION TO SOME CONVENIENT REFERENCE POINT, SUCH AS THE LOWER EDGE OF THE REFLECTOR OR CASING, SO THAT THE PURCHASER CAN MAKE A GAUGE TO BE USED FOR ACCURATELY SETTING AND LOCKING THE SOCKETS. REFRACTING GLOBES SHALL PREFERABLY BE KEYED TO THE SUPPORTING REFLECTOR SO THAT THEY CANNOT BE PLACED IN ANY OTHER THAN THE CORRECT ANGULAR LOCATION. IN ANY EVENT, THE GLOBES MUST BE PLAINLY MARKED TO INDICATE THE "STREET SIDE" AND THE "HOUSE" OR "SIDEWALK SIDE". ALL LAMPS USED IN THESE FIXTURES WILL BE STANDARD 20 AMPERE, BASE UP, MAZDA TYPE WITH MOGUL BASES AND 7 INCH LIGHT CENTER.

LAMP SOCKETS USED IN ENCLOSED FIXTURES OF THE TYPES SPECIFIED ARE SUBJECTED TO HIGH TEMPERATURES AND THE SOCKETS FURNISHED SHALL BE FOR HEAVY DUTY AND SHALL INCORPORATE ALL THE LATEST DESIGN FEATURES AVAILABLE SUCH AS CENTER SPRING LOADED CONTACTS, PLATED PARTS AND EXTRA HEAVY CAST TERMINALS, TO REDUCE THE POSSIBILITY OF CONTACT TROUBLES AND WELDING OF THE LAMP BASE TO THE SOCKET SHELL, EACH FIXTURE SHALL PREFERABLY BE COMPLETELY ASSEMBLED AT THE FACTORY AND SHIPPED IN A SINGLE CONTAINER AS A COMPLETE UNIT.

ALL OF THE SERIES STREET LIGHTING INSULATING TRANSFORMERS WILL BE CONNECTED WITH THEIR PRIMARY WINDINGS IN A 6.6 AMPERE 60 CYCLE REGULATED CIRCUIT, AND SHALL BE LOCATED EITHER IN CONCRETE POLE BASE BOXES OR IN PARAPET JUNCTION BOXES: TRANSFORMERS FOR LIGHTING UNITS ON RAMPS, ROADWAYS AND LANES SHALL BE LOCATED IN THE POLE BASE BOX OF EACH POLE. THE SECONDARY OF THE 10,000/15,000 LUMEN TRANSFORMERS WILL SUPPLY 20 AMPERES TO ONE LAMP RATED 10,000 OR 15,000 LUMENS. WHEN THE LAMP WATTAGE VARIES BETWEEN 8% ABOVE AND 20% BELOW NORMAL, THE SECONDARY OR LAMP CURRENT SHALL NOT VARY MORE THAN 1% FROM 20 AMPERES WITH 6.6 AMPERES AT 60 CYCLES SUPPLIED TO THE PRIMARY WINDING. EACH TRANSFORMER SHALL BE GIVEN A DIELECTRIC TEST BY THE MANUFACTURER AND SHALL WITHSTAND 22,000 VOLTS BETWEEN PRIMARY WINDING AND ALL OTHER PARTS OF THE TRANSFORMER AND 1,500 VOLTS BETWEEN THE SECONDARY WINDING AND ALL OTHER PARTS OF THE TRANSFORMER. BOTH OF THE ABOVE TESTS SHALL BE APPLIED FOR ONE MINUTE, WITHOUT FAILURE. THE STREET LIGHTING TRANSFORMERS SHALL BE, AS NEARLY AS OBTAINABLE, LIKE THAT SHOWN ON DRAWING NO. 3863 OF THE DIVISION OF LIGHT AND POWER OF THE CITY OF CLEVELAND, WHICH IS THE TYPE PREFERRED BY THE CITY AND WILL BE THE CRITERION IN JUDGING THE ADEQUACY OF THE TYPE PROPOSED BY THE CONTRACTOR. INDIVIDUAL TRANSFORMERS SHALL BE FURNISHED FOR EACH LIGHT.

EACH TRANSFORMER SHALL BE SUPPLIED WITH A NONCORROSIVE NAME PLATE SHOWING THE FOLLOWING DATA:

MAKER'S NAME AND STYLE OR CATALOG NUMBER
RATING IN LUMENS
PRIMARY CURRENT
SECONDARY CURRENT
FREQUENCY

ALL CONDUITS, CABLES AND CONNECTIONS SHALL BE FURNISHED AND INSTALLED TO CONNECT THE EXISTING SERIES CIRCUITS ON THE MAIN VIADUCT TO THE NEW SERIES CIRCUITS TO BE INSTALLED UNDER THIS CONTRACT, AS INDICATED ON SHEET 16, IN ADDITION, THE CONTRACTOR SHALL RECONNECT NAVIGATION LIGHTS THROUGH INSULATING TRANSFORMERS FROM EXISTING TEMPORARY MULTIPLE CIRCUITS TO SERIES CIRCUITS. INSULATING TRANSFORMERS ARE PROVIDED BY OTHERS IN JUNCTION BOXES.

CONDUCTORS FOR ROADWAY LIGHTING SHALL BE NO. 8 AWG SOLID SOFT DRAWN COPPER OF NOT LESS THAN 98% CONDUCTIVITY AND SHALL BE COATED WITH LEAD, TIN, OR ANTIMONY ALLOY, INSULATION SHALL CONSIST OF 10/64 INCH OF RUBBER-LIKE COMPOUND KNOWN COMMERCIALLY AS OZONE RESISTANT TYPE INSULATION. THE INSULATING COMPOUND SHALL CONFORM IN EVERY RESPECT AND SHALL BE TESTED IN ACCORDANCE WITH ASTM DESIGNATION D574-46T, OR THE LATEST REVISION THEREOF. THE OUTSIDE JACKET OR SHEATH SHALL BE 4/64 INCH THICK AND SHALL BE MADE OF GR-M POLYCHLOROPRENE (NEO PRENE) SHEATH COMPOUND. THE SHEATH COMPOUND SHALL CONFORM IN EVERY RESPECT AND SHALL BE TESTED IN ACCORDANCE WITH ASTM DESIGNATION D753-44T, OR THE LATEST REVISION THEREOF, THE CABLE SHALL BE SHIPPED ON REELS, EACH REEL SHALL BE MARKED "STREET LIGHTING CABLE" AND MARKING CARD SHALL CARRY MANUFACTURER'S DESCRIPTIVE DATA FOR THE CONDUCTOR AND INSULATION. ALL CONDUCTORS SHALL BE PLACED IN CONDUIT.

THE JUNCTION BOXES AT EACH ROADWAY LIGHTING UNIT ON STRUCTURE FOR BRANCHES TO LIGHTS FROM THE 3" LONGITUDINAL CONDUIT RUNS SHALL BE WATERTIGHT AND SUITABLY ATTACHED IN PARAPETS WHERE INDICATED, BRASS OR MONEL SCREWS SHALL HOLD COVER TIGHTLY. THE FINISH INSIDE SHALL BE HOT-DIP GALVANIZING; BOXES SHALL BE SIZE 24 x 10 x 9, WITH NO LUGS. SEE SHEET 66 FOR DETAIL OF WELDED SHEET METAL JUNCTION BOX.

CONDUCTORS IN PARAPETS OF BRIDGE SHALL BE IN ASBESTOS CEMENT CONDUIT CONFORMING TO SUPPLEMENTAL SPECIFICATION NO. M-206.14 OR IN FIBER CONDUIT EQUIVALENT TO ORANGEBURG NOCRETE. THE CONDUITS SHALL BE 3 INCH INSIDE DIAMETER AND BE PLACED AS SHOWN ON SHEET 66.

UNDERDECK LUMINAIRES SHALL BE EQUAL TO GE FORM 205, CAT. NO. A29G1AJ WITH ONE, 1-AMP, STREET LIGHTING, RAPID START FLUORESCENT LAMP, PRE-HEATED CATHODE, CAT. NO. 100T12-CW-RS, COMPLETE WITH 110 VOLT AS MULTIPLE BALLASTS. THE JUNCTION BOX FOR EACH UNDERDECK LUMINAIRE SHALL BE CAST IRON, WATERTIGHT, AND EQUAL TO O.Z. TYPE YH CAT. NO. 060603. A PRE-ASSEMBLED SELF-SUPPORTED 600V CABLE EQUAL TO RO-PRENE WITH 2 NO. 8 AWG AND ONE STRANDED MESSENGER SHALL EXTEND FROM THE TRANSFORMER POLE TO THE JUNCTION BOX IN THE PARAPET AS SHOWN ON PLANS AND WIRING DIAGRAM, WHERE IT SHALL BE SPLICED WITH TYPE RW CABLES IN CONDUIT ON STRUCTURE AND ON POLE, THROUGH A WEATHERHEAD.

RIGID METAL CONDUIT FOR UNDERDECK LIGHTS SHALL BE 3/4 OR 1 INCH AS INDICATED, AND NATIONAL "SHERARDUCT" OR AN APPROVED EQUIVALENT, THIS CONDUIT SHALL BE FURNISHED WITH TAPERED THREADED FITTINGS AS REQUIRED. RIGID METAL CONDUITS BETWEEN JUNCTION BOXES SHALL BE 1 INCH, AS SHOWN ON PLANS. ALL CONDUIT RISERS SHALL BE RIGID CONDUIT OF SAME CONSTRUCTION.

THE CIRCUIT CONDUCTORS IN CONDUIT FOR THE 110/220 VOLT MULTIPLE CIRCUITS TO THE UNDERDECK LIGHTING UNITS SHALL BE THREE NO. 10 OR NO. 8 AWG, AS SPECIFIED ON SHEET NO. 16. CONDUCTORS AT FIXTURES SHALL BE NO. 12 AWG, 600 V., STRANDED. THE CONDUCTORS SHALL BE CONTINUOUS FROM BOX TO BOX, AND NO SPLICES SHALL BE MADE EXCEPT WITHIN JUNCTION BOXES. THE CONDUCTORS SHALL HAVE 3/64 INCH INSULATION AND 1/64 INCH NEOPRENE JACKET INSIDE CONDUIT AND 3/64 INCH NEOPRENE JACKET OUTSIDE CONDUIT.

3. CONSTRUCTION METHODS

THE INSTALLATION AS A WHOLE SHALL BE CARRIED OUT IN CONFORMANCE WITH THE REQUIREMENTS HEREIN STATED AND IMPLIED, AND UPON COMPLETION OF THE WORK SHALL PRESENT A NEAT AND WORKMANLIKE FINISHED APPEARANCE. SAFE CONSTRUCTION AND OPERATING PRACTICES MEETING THE REQUIREMENTS OF THE NATIONAL ELECTRIC SAFETY CODE SHALL BE MAINTAINED. ALL WIRING TO UNDERDECK LIGHTS IS TO BE PLACED IN RIGID METAL CONDUIT FASTENED BY SUITABLE CLAMPS.

POLES SHALL BE CAREFULLY SET, THEY SHALL BE RAKED AS SHOWN ON SHEET 16, AND THE LUMINAIRES SHALL BE SUPPORTED WITH BRACKETS ABOUT 28'-0" ABOVE PAVEMENT AS INDICATED. THE CAREFUL ALIGNING AND GRADING OF POLES IS CONSIDERED TO BE AN ESSENTIAL FEATURE OF THE INSTALLATION. THE WORK SHALL BE AS NEARLY PERFECT AS PRACTICABLE, AND NO PERCEPTIBLE TOLERANCES WILL BE PERMITTED. IN ORDER TO ACCOMPLISH THE DESIRED PERFECTION OF ALIGNMENT OF THE LUMINAIRES, THE POLES SHALL BE CAREFULLY ALIGNED AND WELDED IN PLACE, OR ALIGNED BY LEVELING NUTS AS REQUIRED.

THE INSTALLATION OF ALL LUMINAIRES AND WIRING SHALL CONFORM TO THE RECOMMENDATIONS OF THE EQUIPMENT MANUFACTURERS AND THE PRACTICE OF THE POWER COMPANY. CABLE ENDS AT THE LUMINAIRES SHALL BE REINFORCED BACK SIX INCHES FROM THE ENDS BY WRAPPING WITH GLASS TAPE, AND COVERING WITH CLEAR INSULATING LACQUER.

CABLES SHALL BE INSTALLED IN CONTINUOUS LENGTHS WITHOUT SPLICES, FROM TERMINAL TO TERMINAL, AT THE TERMINALS, CABLE SHALL BE SPLICED TO THE EQUIPMENT LEADS IN STRICT CONFORMITY WITH THE MANUFACTURER'S INSTRUCTIONS AND AS DIRECTED. CARE SHALL BE TAKEN TO INSURE WATERTIGHT JOINTS. SPLICES MAY BE MADE IN CONCRETE PULL BOXES.

SPLICES SHALL NOT BE MADE IN CONDUITS, SPLICES OF CONDUCTORS SHALL BE MADE MECHANICALLY AND ELECTRICALLY SECURE AND FLOODED WITH SOLDER, AND WRAPPED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER OF THE CABLE SO THAT THE INSULATION AND THE MECHANICAL AND ELECTRICAL QUALITIES OF THE SPLICES SHALL BE EQUAL TO THAT OF THE REMAINDER OF THE CONDUCTOR.

CONDUITS SHALL BE FIRMLY CLAMPED TO THE STRUCTURES TO PREVENT RATTLING, SHALL BE RUN IN LINES PARALLEL AND PERPENDICULAR TO LINES OF STRUCTURES AND SHALL BE SO PLACED THAT DIRT WILL NOT ACCUMULATE AROUND THEM. SUPPORTS SHALL BE AT NOT MORE THAN 6 FT. CENTERS. THERE SHALL BE AT LEAST ONE INCH CLEARANCE BETWEEN CONDUITS. IF ON A HORIZONTAL SURFACE FOR OVER ONE FOOT, THEY SHALL CLEAR THE SURFACE BY AT LEAST THREE INCHES. ADEQUATE APPROVED PROVISION FOR THE MOVEMENT OF CONDUITS SHALL BE MADE WHEREEVER CONDUITS CROSS EXPANSION OR FIXED JOINTS IN THE SUPPORTING STRUCTURES. WHERE ASBESTOS CEMENT CONDUIT IS ON THE STRUCTURES, ONE FACTORY EXPANSION COUPLING WITH RUBBER RING SHALL BE USED AT EXPANSION JOINTS. RIGID CONDUIT ACROSS EXPANSION JOINTS WHERE USED SHALL HAVE AN EXPANSION COUPLING SIMILAR TO O.Z. TYPE EX OR AX AS REQUIRED, COMPLETE WITH BONDING JUMPER, OR BE IN FLEXIBLE COUPLINGS EQUAL TO CROUSE HINDS TYPE EC.

ALL PARTS OF THE SUPERSTRUCTURE STEELWORK AND THE ENTIRE ROADWAY LIGHTING SYSTEM ON STRUCTURE SHALL BE THOROUGHLY GROUNDED AT PIER SHAFTS. THE CONTRACTOR WILL EMBED IN THE CONCRETE OF EACH OF THESE PIER SHAFTS A NO. C SOLID COPPER WIRE BRAZED AT ITS LOWER END TO A STEEL CONCRETE PILE CASING, AND AT ITS UPPER END EXTENDING SUFFICIENTLY ABOVE TOP OF CONCRETE TO PROVIDE FOR CONVENIENT SPLICING AND EXTENSION. AT EACH SUCH PIER SHAFT THE GIRDERS SHALL BE GROUNDED BY A NO. 6 COPPER WIRE BOLTED OR BRAZED TO THE BOTTOM FLANGE AND TO THE BOTTOM CASTING OF THE SHOE, AND CARRIED TO CONNECTION WITH THE GROUND WIRE EXTENDING TO THE FOUNDATION PILE. ACROSS ALL ROADWAY EXPANSION JOINTS THERE SHALL BE PROVIDED A NO. 6 STRANDED TINNED COPPER WIRE SUITABLY LOOPED TO ALLOW FOR EXPANSION OF THE STEELWORK, AND CONNECTED TO EACH SIDE OF THE EXPANSION JOINT BY BOLTING OR BRAZING SO AS TO PROVIDE AN EFFECTIVE ELECTRICAL CONNECTION FOR GROUNDING THE ENTIRE STRUCTURAL STEELWORK.

ALL STANDARDS OFF THE STRUCTURE SHALL BE INDIVIDUALLY GROUNDED, AS SHOWN ON SHEET 16. GROUND RODS SHALL BE AS SHOWN. IF ADDITIONAL GROUND RODS ARE REQUIRED TO OBTAIN A MAXIMUM OF 15 OHMS RESISTANCE THEY MAY BE DRIVEN 5 FT. OR MORE FROM THE BASE OF THE STANDARD AND LEADS EXTENDED. THE TOP OF ALL GROUNDING RODS AND LEADS SHALL BE AT LEAST ONE FOOT BELOW THE GRADE LINE.

4. TESTS

THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT AND APPLIANCES NECESSARY TO TEST THE COMPLETED CABLE SYSTEMS. A BURNING TEST WILL BE REQUIRED FOR THE LIGHTS, IN ADDITION THE CITY OF CLEVELAND WILL MAKE A "MEGGER" TEST OF ALL CIRCUITS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DEMONSTRATE TO THE SATISFACTION OF THE DIRECTOR OF HIGHWAYS, THAT ALL LIGHTING CIRCUITS ARE CONTINUOUS AND FREE FROM SHORT CIRCUITS AND UNSPECIFIED GROUNDS, THAT ALL CIRCUITS ARE PROPERLY CONNECTED IN ACCORDANCE WITH THE APPLICABLE WIRING DIAGRAMS AND THAT THE RESISTANCE TO GROUND OF NONGROUNDED SERIES CIRCUITS IS NOT LESS THAN 50,000 OHMS AND PARALLEL UNGROUNDED CIRCUITS IS NOT LESS THAN 100,000 OHMS.

6. PAYMENT FOR ROADWAY AND UNDERDECK LIGHTING

PAYMENT FOR THE UNDERDECK AND ROADWAY LIGHTING INCLUDING STANDARDS; CONCRETE POLE BASES; CONDUITS; DUCTS; GROUNDS; POLE BASE BOXES; BRACKETS; REMOVING WASTE; PULL BOXES; THREE INCH DIAMETER CONDUIT IN THE PARAPETS; 1-1/2 INCH CONDUIT FROM JUNCTION BOXES TO LIGHT STANDARDS; THE 1 INCH OR 3/4 INCH CONDUIT TO THE UNDERDECK FLUORESCENT LIGHTING; MOUNTING BRACKETS; ATTACHMENTS; PAINTING; REMOVING TEMPORARY MULTIPLE NAVIGATION LIGHTING CIRCUITS; CONNECT EXISTING NAVIGATION LIGHTS TO SERIES INSULATING TRANSFORMERS; CONDUIT ATTACHMENTS AND U-BOLT HANGERS; JUNCTION BOXES; COUPLINGS; EXPANSION COUPLINGS; STANDARDS ON STRUCTURE, BASE CASTINGS; MAST ARMS ON STRUCTURE, ORNAMENTAL POLE TOPS; PLUMBIZERS; AND ALL BOLTS, NUTS, SCREWS, FITTINGS, CLAMPS AND OTHER MISCELLANEOUS ACCESSORIES SHALL BE MADE IN A LUMP SUM PAYMENT FOR ITEM S-25, ELECTRICAL LIGHTING SYSTEM PART A.

PAYMENT FOR ALL UNDERDECK AND ROADWAY LIGHTING, INCLUDING ALL ITEMS NOT INCLUDED UNDER PART A, BUT REQUIRED FOR LIGHTING ; CABLES AND CONNECTIONS; WIRING; BALLASTS, MULTIPLE CIRCUIT OVERCURRENT PROTECTION; SPLICES; LUMINAIRES; GROUND CONNECTIONS; GLOBES; **VAULT**, SOCKETS; LAMPS, INSULATING TRANSFORMERS; PAINTING; CLAMPS; TESTS; REMOVING WASTE; AND ALL INCIDENTALS NECESSARY FOR COMPLETING THE ROADWAY AND UNDERDECK LIGHTING SYSTEMS IN AN ACCEPTABLE OPERATING CONDITION AS INDICATED ON SHEET 16, SHALL BE MADE IN A LUMP SUM FOR ITEM S-25, ELECTRICAL LIGHTING SYSTEM, PART B.

PAYMENT FOR ITEM S-25 ELECTRICAL GROUNDS, SHALL INCLUDE ALL MATERIALS AND WORK REQUIRED FOR GROUNDING STRUCTURE.

SCALE None
MADE ATH DATE 2-10-56
TRCD. MJ DATE 2-28-56
CKD. GJC DATE 2-27-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY, CLEVELAND, NEW YORK
914 SHEET 5

REV. 7-27-56

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS	6 / 67
2	OHIO			

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY-42R-17.43

QUANTITIES

EARTHWORK QUANTITIES

ITEM	QUANTITY
Total Excavation	19,059
Total Embankment	20,870
Total Embankment +1.15	24,000
Total Borrow	5,000

GENERAL SUMMARY
ESTIMATED QUANTITIES

TYPE CODE 7221

ITEM NO.	RAMPS W-1	RAMPS W-2	RAMPS W-3	LANES A	LANES B	STREETS ABBEY	STREETS FAIRFIELD	STREETS W. 13TH. PL.	STREETS W. 14TH.	STREETS W. 15TH.		GENERAL	TOTAL	ITEM NO.	UNIT	DESCRIPTION
PAVEMENT																
B-33	249	174	241	385	262								1311	B-33	Sq. Yds.	3" Bituminous Macadam Base Course, Type "A"
B-119	35	24	33	53	36								181	B-119	Cu. Yds.	Crushed Aggregate Base Course
I-7	75	96											171	I-7	Sq. Yds.	Reinforced Concrete Approach Slabs (T=13")
I-11													2000	I-11	Lin. Ft.	Sandstone Curb Reset.
I-11	682	896	576	762	997	790							2703	I-11	Lin. Ft.	6" x 18" Sandstone Curb, as per plan.
I-12				164									164	I-12	Lin. Ft.	Standard Type 2 Modified Curb and Gutter
I-22			225	712	627	103							1667	I-22	Cu. Yds.	Subbase, Grading "C" or "D"
T-30	87	61	84	135	96								463	T-30	Gal.	Bituminous Prime Coat, Sec. M.5.7. Rt-2 of Rt-3, or Sec. M.5.3, MC-0 or MC-1
T-31	62	44	60	96	66								328	T-31	Gal.	Bituminous Surface Treatment - Bituminous Material As per plan.
T-31	2	2	2	3	2								11	T-31	Cu. Yds.	Bituminous Surface Treatment - No. 6 Aggregate
T-71	1730	2190	1082	1631	1422	1293							9348	T-71	Sq. Yds.	9" Reinforced Portland Cement Concrete Pavement
ROADWAY																
E-1			862	3509	12,738	1950							19,059	E-1	Cu. Yds.	Roadway Excavation, as per plan.
E-1												10,574	10,574	E-1	Sq. Yds.	Compacted Subgrade
E-4												5,000	5,000	E-4	Cu. Yds.	Borrow
E-8						117	24	13	4516	3			4673	E-8	Sq. Yds.	Removal and Disposal of Existing Rigid Pavement
E-8						356	109	60	1645				2170	E-8	Lin. Ft.	Removal for Reuse of Existing Curb (Sandstone)
Special												120	120	Special	Lin. Ft.	Temporary Barricade
Special												1	1	Special	Each	Single Pole Overhead Sign Assembly, Type "A"
E-11												156	156	E-11	M. Gal.	Water
I-13						4808	819						5627	I-13	Sq. Ft.	4" Concrete Sidewalk, as per plan.
I-15	6625	400	300										1362.5	I-15	Lin. Ft.	Guard Rail, Steel Beam Type (Deep), As per plan
L-9			3,117	10,551	10,737	1217							25,622	L-9	Sq. Yds.	Seeding and Protecting, as per plan
L-9												2.31	2.31	L-9	Tons	Commercial Fertilizer (10-6-4)
L-10	83												83	L-10	Sq. Yds.	Sodding Including 2" galvanized wire mesh
T-10												50	50	T-10	Cu. Yds.	Traffic Compacted Surface Course for Maintaining Traffic
M-10												1	1	M-10	Tons	Calcium chloride Furnished and Applied for Maintaining Traffic
S-25												Lump	Lump	# S-25	Lump Sum	Electrical Lighting System Part A
S-25												Lump	Lump	‡ S-25	Lump Sum	Electrical Lighting System Part B
S-25												Lump	Lump	S-25	Lump Sum	Electrical Grounds for Structure

DRAINAGE

ITEM NO.	DESCRIPTION	UNIT	TOTAL
I-2	12" Class A Storm Sewers	Lin. Ft.	247
I-2	12" Class A Storm Sewers Under Pavement or Approaches, Sec. M-6.5(b) or Sec. M-6.8(b)	Lin. Ft.	89
I-2	12" Class B Storm Sewers	Lin. Ft.	381
I-2	12" Class B Storm Sewers Under Pavement or Approaches	Lin. Ft.	545
I-2	15" Class B Storm Sewers	Lin. Ft.	145
I-2	15" Class B Storm Sewers Under Pavement or Approaches	Lin. Ft.	442
I-4	6" Underdrains	Lin. Ft.	4565
I-8	Standard No. 2-2-A Catch Basins	Each	10
I-8	Standard No. 3 Catch Basins	Each	4
I-8	Standard No. 3-A Catch Basins	Each	7
I-8	Standard No. 2-6 Inlets	Each	3
I-8	Standard No. 2-10 Inlets	Each	5
I-8	Standard No. 1 Manholes	Each	2
I-8	Standard No. 2 Manholes	Each	1
I-8	Manholes Adjusted to Grade	Each	4 *
I-8	Manhole Frames and Covers Furnished and Placed (City Standard Casting)	Each	4*
I-16	Manholes Abandoned	Each	1
I-16	Inlets Abandoned	Each	8

STRUCTURES OVER 20 FT. SPAN
For Quantities, Bridge No. CUY-42R-17.50, see Sheet No. 31.

‡ 100% City Participation
# No Federal Participation on Abbey Ave.
* State and Federal Funds Do Not Participate on 1 San. M.H. Adjusted to Grade and 1 M.H. Frame and Cover Furnished and Placed. See sheet 19-A for Frame and Cover.

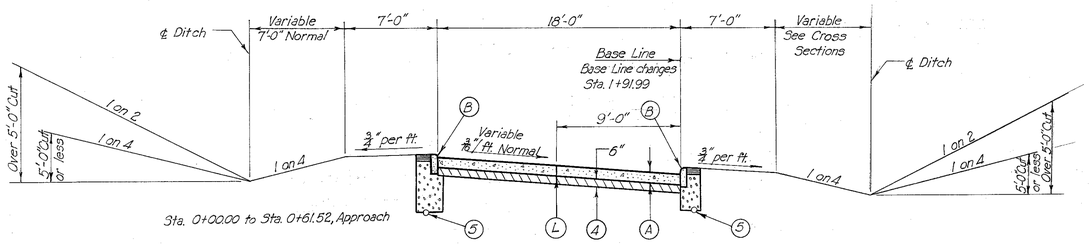
SCALE None
MADE JLB DATE 1-24-56
TRCD BMO DATE 1-27-56
CKD HKM DATE 1-27-56
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914 SHEET 6

REV. 7-5-56

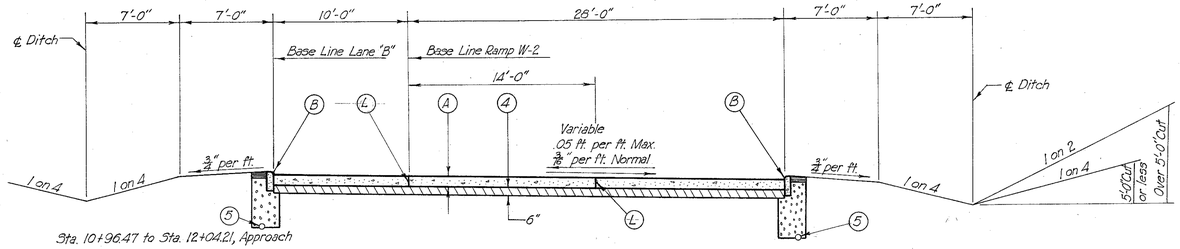
TYPE T-71

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS	7 / 67
2	OHIO			

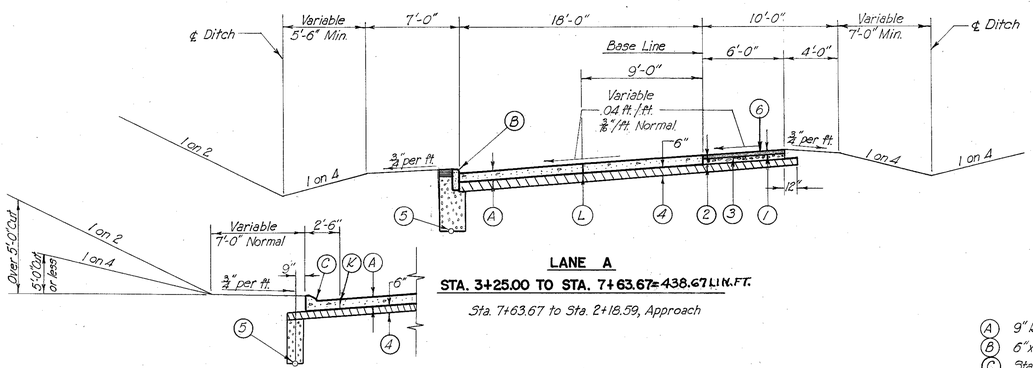
CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY-42 R-17.43
TYPICAL CROSS SECTIONS



LANE B
STA. 0+61.52 TO STA. 2+40.00=178.48 LIN. FT.

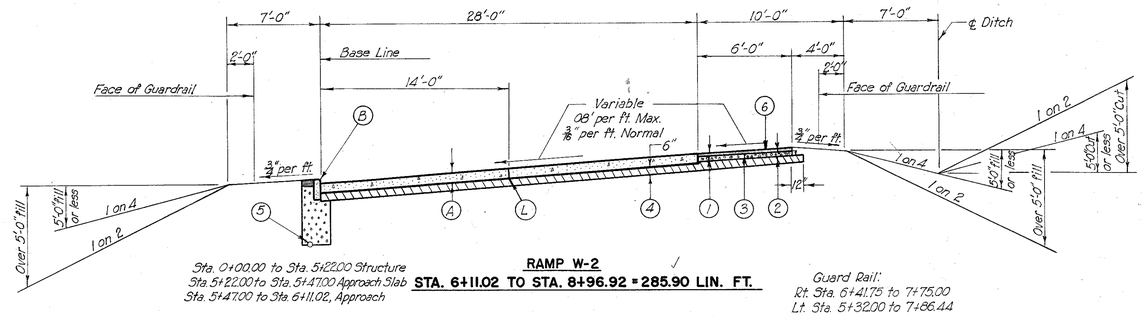


RAMP W-2 ✓
STA. 8+96.92 TO STA. 10+96.47 = 199.55 LIN. FT.



LANE A
STA. 3+25.00 TO STA. 7+63.67=438.67 LIN.FT.

PARTIAL SECTION
LANE A
Sta. 6+05.00 to Sta. 7+68.59

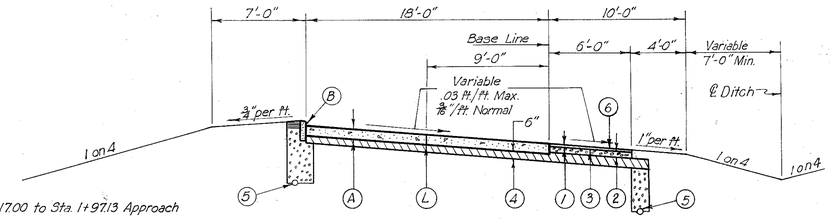


RAMP W-2 ✓
STA. 6+11.02 TO STA. 8+96.92 = 285.90 LIN. FT.

Guard Rail:
Rt. Sta. 6+41.75 to 7+75.00
Lt. Sta. 5+32.00 to 7+86.44

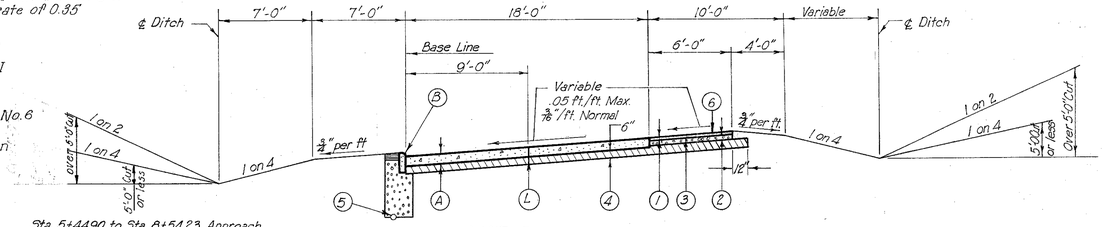
LEGEND

- (A) 9" Reinforced Portland Cement Concrete Pavement, Item T-71
- (B) 6"x18" Sandstone Curb (See Pav't. Details for Gutter), Item I-11
- (C) Standard Type 2 Modified Curb and Gutter, Item I-12
- (K) Standard Longitudinal Key Joint.
- (L) Standard Longitudinal Joint
- (1) 3" Penetration Macadam Base Course, Item B-33
- (2) 5" Crushed Aggregate Base, Item B-119
- (3) Bituminous Prime Coat, Item T-30, Sec. M-5.7 RT-2 or RT-3 or Sec. M-5.8 MC-0 or MC-1 applied at rate of 0.35 gal. per sq. yd.
- (4) Subbase (Grading Cor D), Item I-22
- (5) 6" Underdrain - See Sheet 14, Detail I For Details of Underdrain Trench.
- (6) Item T-31 Seal Coat using 0.25 gal. bituminous material and 0.008 c.y. No.6 Aggregate per sq. yd. (For type of Bituminous Material see table on Sheet 8)



LANE A ✓
STA. 1+97.13 TO STA. 3+25.00=127.87 LIN. FT.

Note:
Stabilized Shoulder to be sloped 1/2" per ft. for Normal Pavement Slope of 3/8" per ft.



LANE B ✓
STA. 2+40.00 TO STA. 5+44.90=304.90 LIN. FT.

SCALE 3/16" = 1'-0"
MADE S.L.B. DATE 7-22-55 HOWARD, NEEDLES, TAMMEN & BERGENDOFF
TRCD. B.M.C. DATE 12-22-55 CONSULTING ENGINEERS
CKD. J.H.K. DATE 12-24-55 KANSAS CITY CLEVELAND NEW YORK
914 SHEET 7

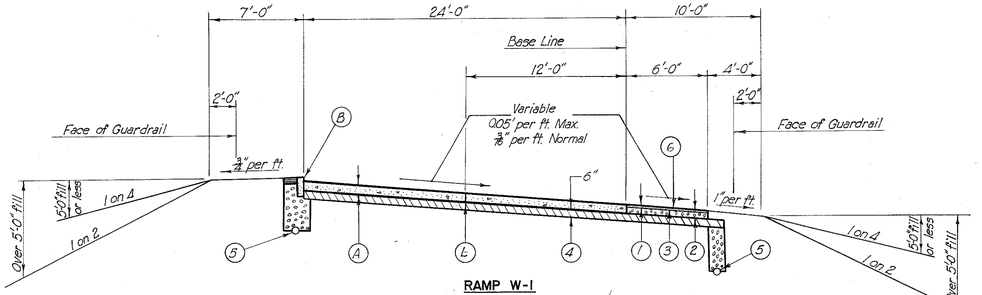
TYPE T-71

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS	8 / 67
2	OHIO			

CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY-42 R-17.43

TYPICAL CROSS SECTIONS



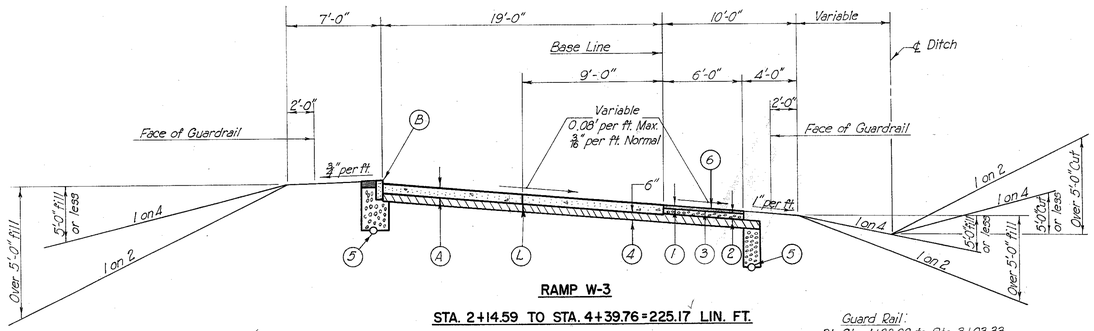
RAMP W-1

STA. 2+01.39 TO STA. 6+52.31 = 450.92 LIN. FT.

Sta. 0+17.00 to Sta. 2+01.39, Approach
Sta. 6+52.31 to Sta. 6+77.44, Approach Slab
Sta. 6+77.44 to Sta. 10+78.59, Structure

Guard Rail:
Rt. Sta. 3+54.50 to Sta. 6+67.00
Lt. Sta. 2+33.51 to Sta. 5+78.00

Note:
Stabilized Shoulder to be sloped 1/2" per ft. for Normal Pavement slope of 3/16" per ft.

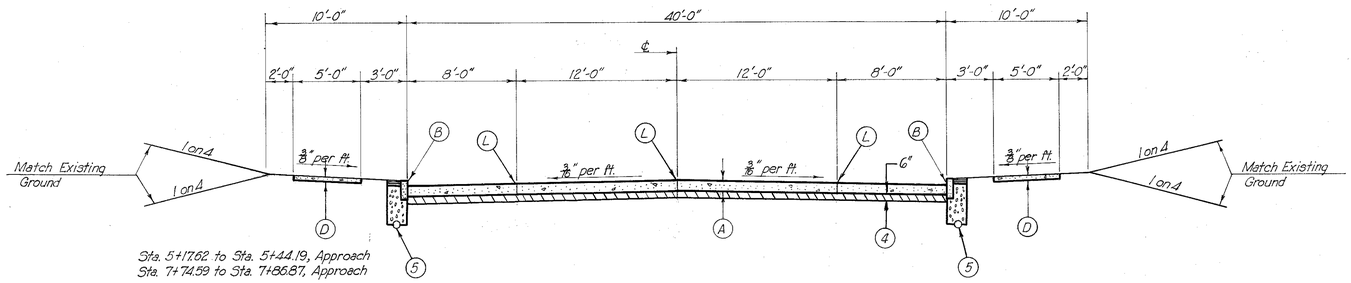


RAMP W-3

STA. 2+14.59 TO STA. 4+39.76 = 225.17 LIN. FT.

Sta. 0+00.00 to Sta. 1+21.75, Structure
Sta. 1+22.25 to Sta. 1+47.45, Approach Slab
Sta. 1+47.45 to Sta. 2+14.59, Approach
Sta. 4+39.76 to Sta. 5+96.84, Approach

Guard Rail:
Rt. Sta. 1+33.00 to Sta. 3+03.33
Lt. Sta. 2+40.00 to Sta. 3+50.89



ABBEY AVENUE EXTENSION

STA. 5+44.19 TO STA. 7+74.59 = 230.40 LIN. FT.

Sta. 5+17.62 to Sta. 5+44.19, Approach
Sta. 7+74.59 to Sta. 7+86.87, Approach

LEGEND

- (A) 9" Reinforced Portland Cement Concrete Pavement, Item T-71
- (B) 6" x 18" Sandstone Curb, Item I-11
- (D) 4" Portland Cement Concrete Sidewalk, Item I-13
- (L) Standard Longitudinal Joint
- (1) 3" Penetration Macadam Base Course, Item B-33
- (2) 5" Crushed Aggregate Base, Item B-119
- (3) Bituminous Prime Coat, Item T-30, Sec. M 5.7 RT-2 or RT-3 or Sec. M 5.3 MC-0 or MC-1 applied at rate of 0.35 gal. per sq. yd.
- (4) Subbase (Grading C or D), Item I-22
- (5) 6" Underdrain. See Sheet 14, Detail I for Details of Underdrain Trench.
- (6) *Item T-31 Seal Coat using 0.25 gal. bituminous material and 0.008 cu. yd. No. 6 Aggregate per sq. yd.

* Item T-31. The variety and grade of bituminous material used in the seal coat shall depend upon the type of bituminous material used in the B-33 Bituminous Macadam Base Course as specified in the following table:

Bituminous Material Used in Item B-33	Bituminous Material to be used for Item T-31
Sec. M-5.7 RT-11 or RT-12	Sec. M-5.7 RT-8 or RT-9
Sec. M-5.1 (85-100) or Sec. M-5.5 RS-1	Sec. M-5.2 RC-3; Sec. M-5.3 MC-5; Sec. M-5.5 RS-1 or RS-2; or Sec. M-5.12 CBAE-3

SCALE 3/16" = 1'
MADE SJ. B DATE 8-19-55 HOWARD, NEEDLES, TAMMEN & BERGENDOFF
TRCD. BMO DATE 1-20-56 CONSULTING ENGINEERS
CKD. JH K DATE 1-25-56 KANSAS CITY CLEVELAND NEW YORK
914 SHEET 8

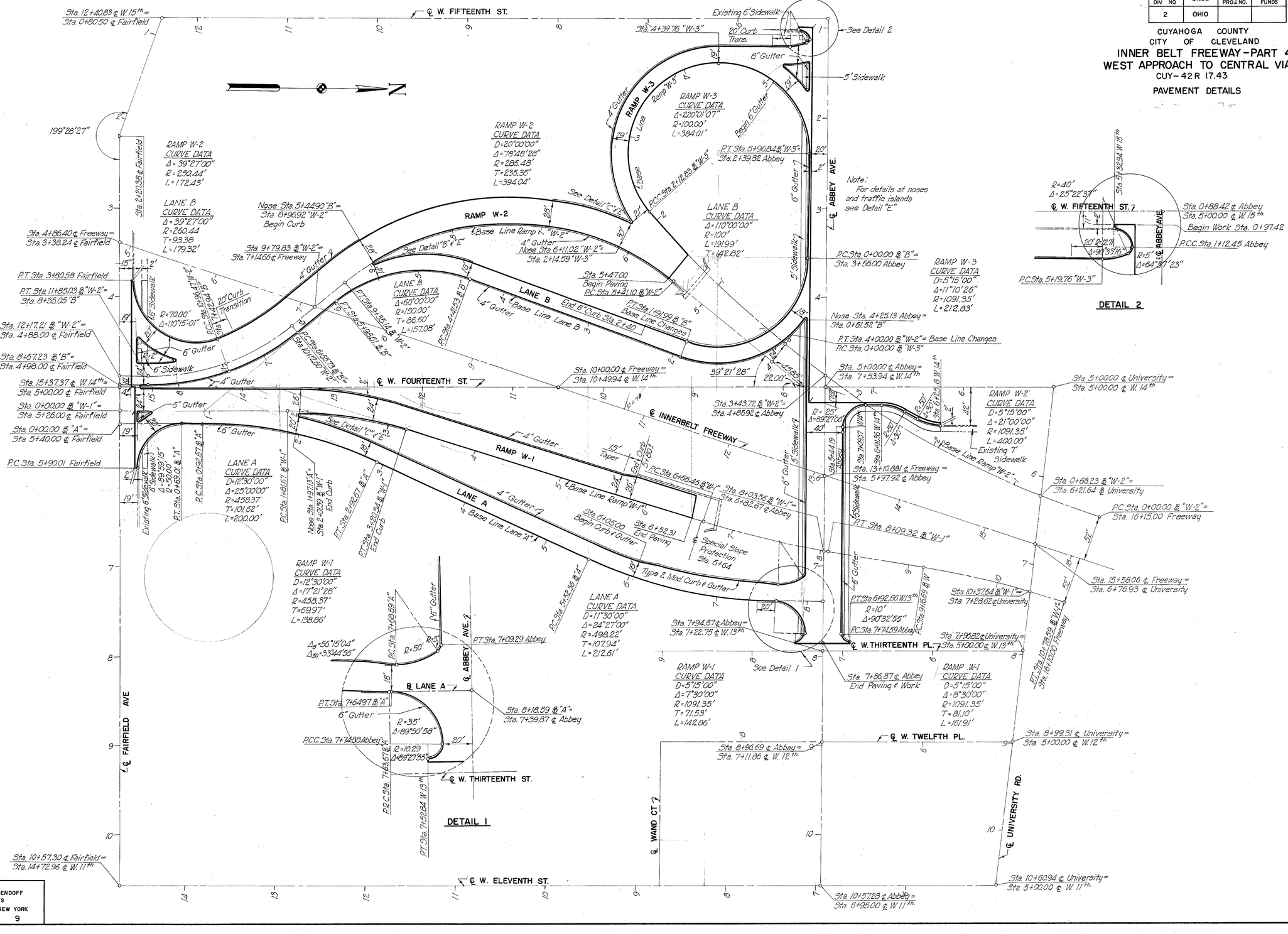
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS	9/67
2	OHIO			

CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY-PART 4
WEST APPROACH TO CENTRAL VIADUCT

CUY-42R 17.43

PAVEMENT DETAILS



SCALE 1" = 50'
MADE SLB DATE
TRCD. BMO DATE 1-4-56
CKD. H.K.M. DATE 1-9-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914 SHEET 9

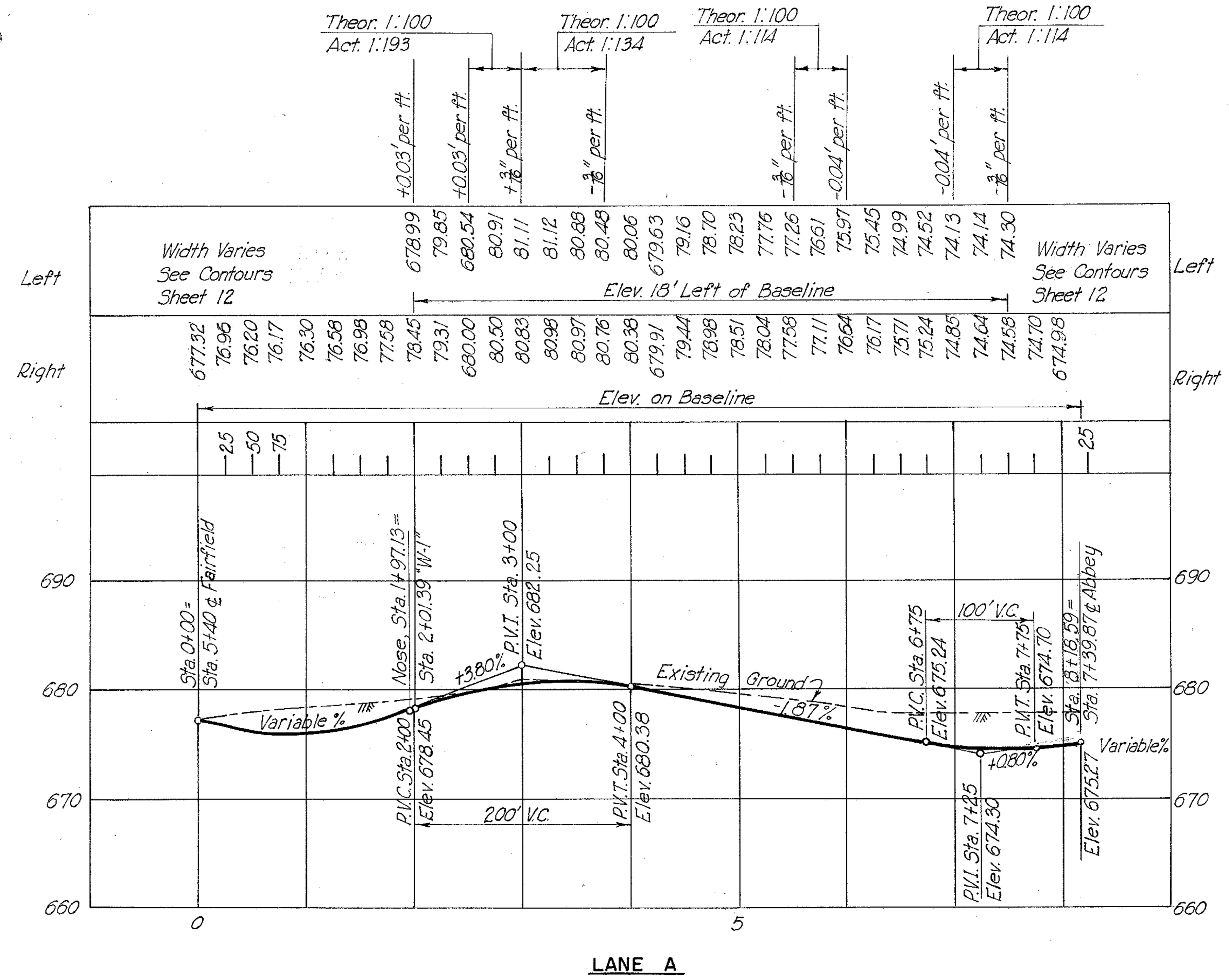
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND

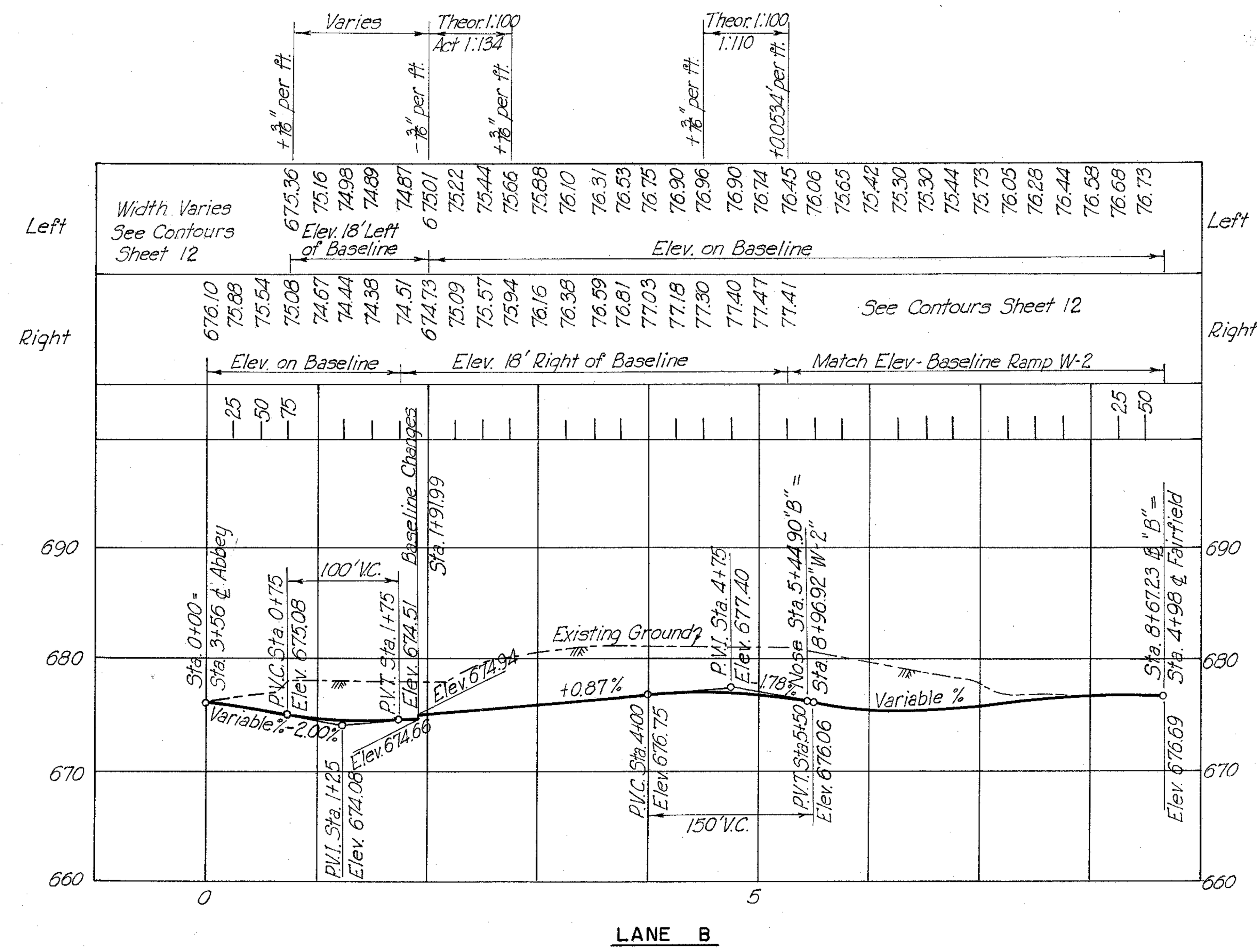
INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY - 42 R - 17.43

PROFILES OF LANES AND RAMPS

Note: Profile Grade is on Baseline.

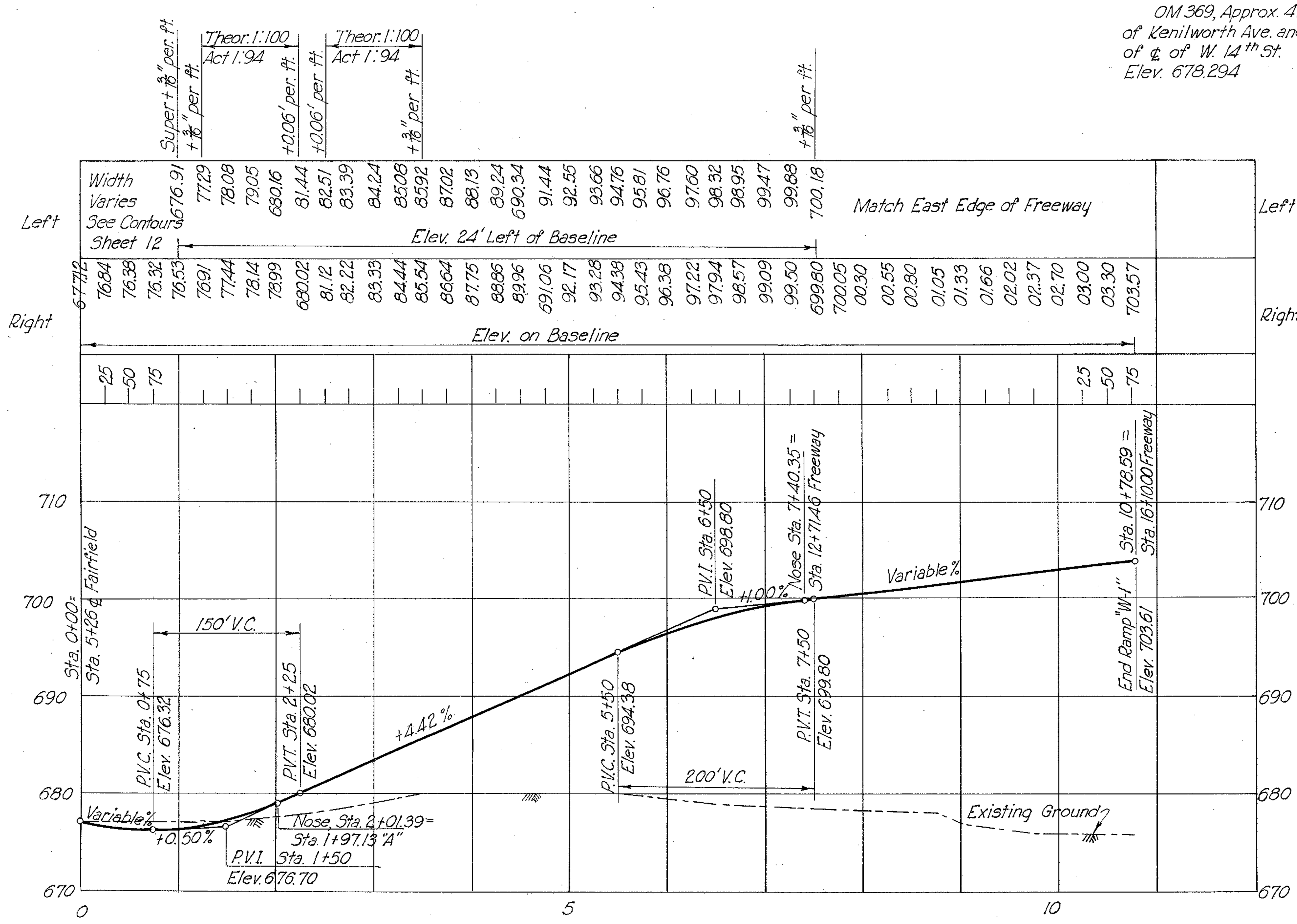


LANE A

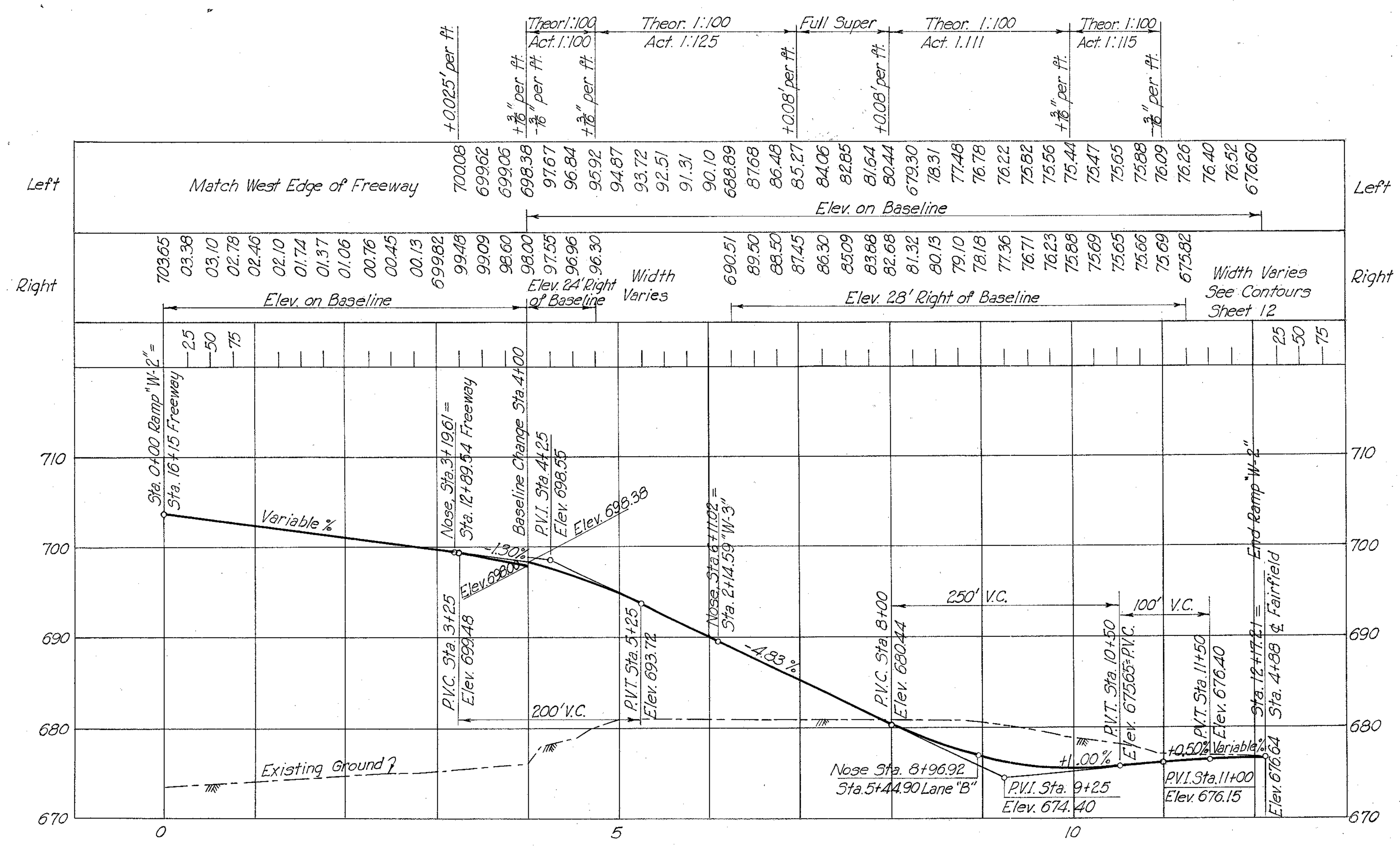


LANE B

Bench Mark:
OM 369, Approx. 41' N of ¢ of Kenilworth Ave. and 39' E. of ¢ of W. 14th St.
Elev. 678.294



RAMP "W-1"



RAMP "W-2"

SCALE Hor. 1"=100' Ver. 1"=10'
MADE S.L.B. DATE 10-13-55
TRCD B.M.O. DATE 12-19-55
CKD H.K.M. DATE 5-4-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914 SHEET 10

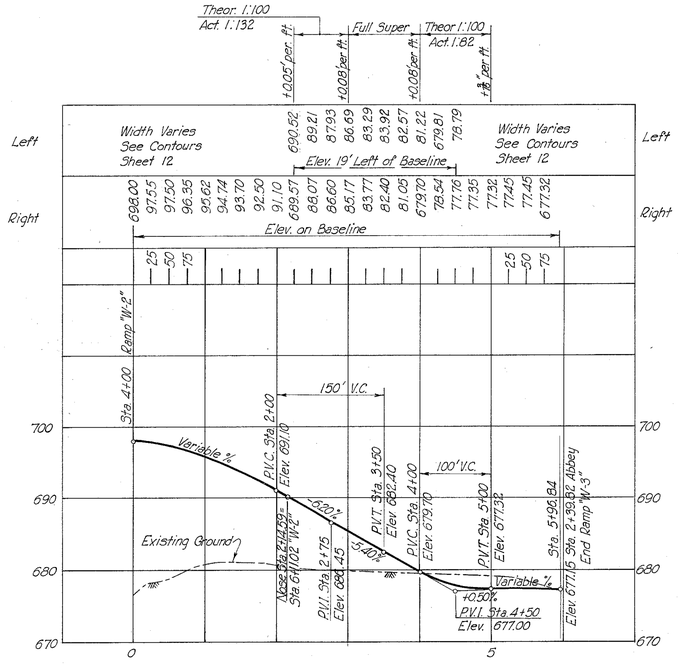
MICROFILMED
FEB 25 1957

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS	11 / 67
2	OHIO			

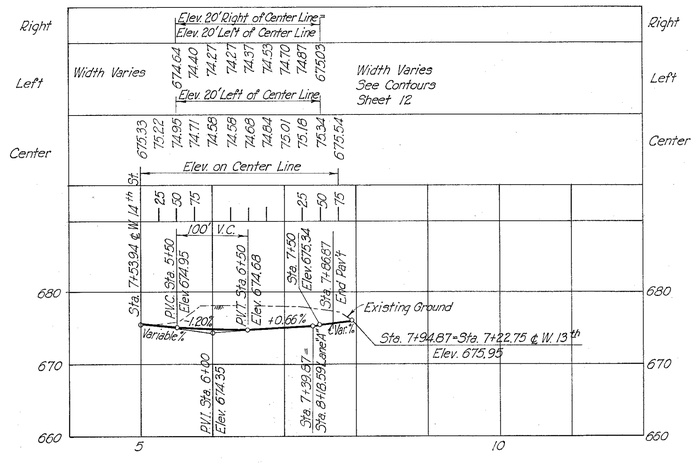
CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY- 42 R - 17.43

PROFILE OF
RAMPS AND STREETS



RAMP W-3



ABBEY AVENUE EXTENSION

Bench Mark:
OM 369, Approx. 41' N. of ℄
of Kenilworth Ave. and 39' E.
of ℄ of W. 14th St.
Elev. 678.294

SCALE Hor: 1"=100'
Vert: 1"=10'
MADE S.L.B. DATE 10-13-55
TRCD. E.M.O. DATE 12-20-55
CKD. W.K.W. DATE 2-4-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914 SHEET 11

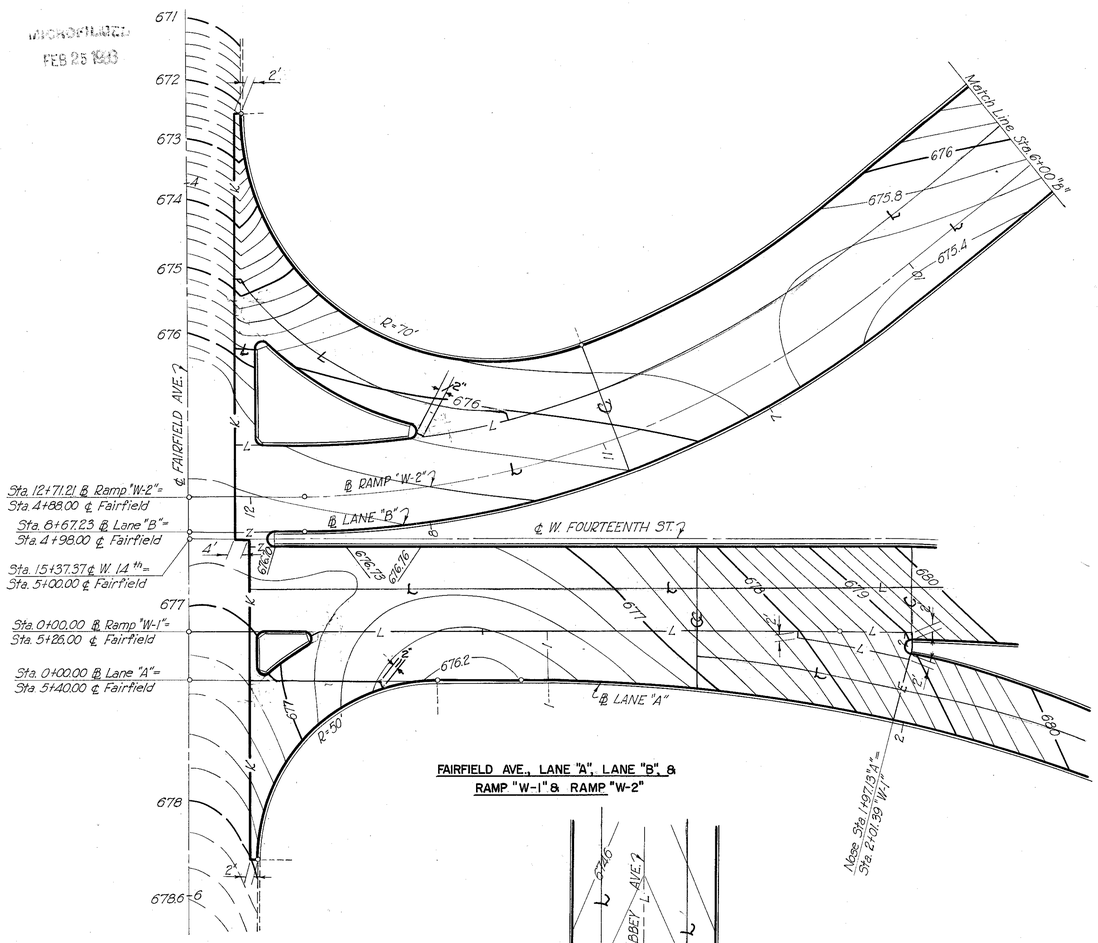
FED. ROAD DIV. NO	STATE	FED. AID PROJ. NO.	TYPE FUNDS
2	OHIO		

12
67

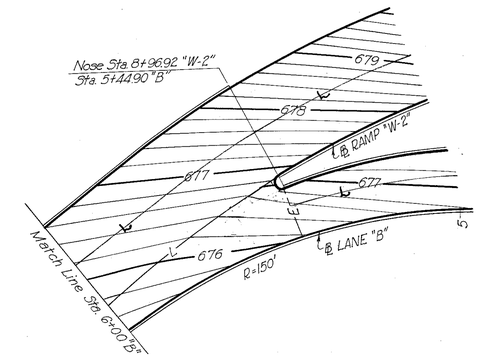
CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY- 42R-17.43

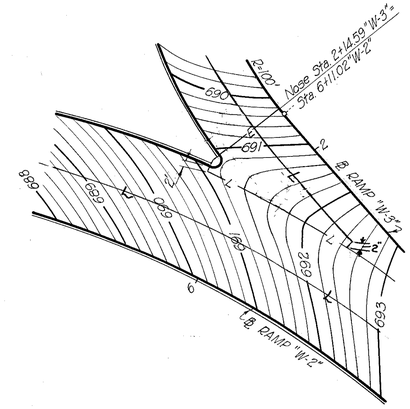
INTERSECTION DETAILS AND CONTOURS



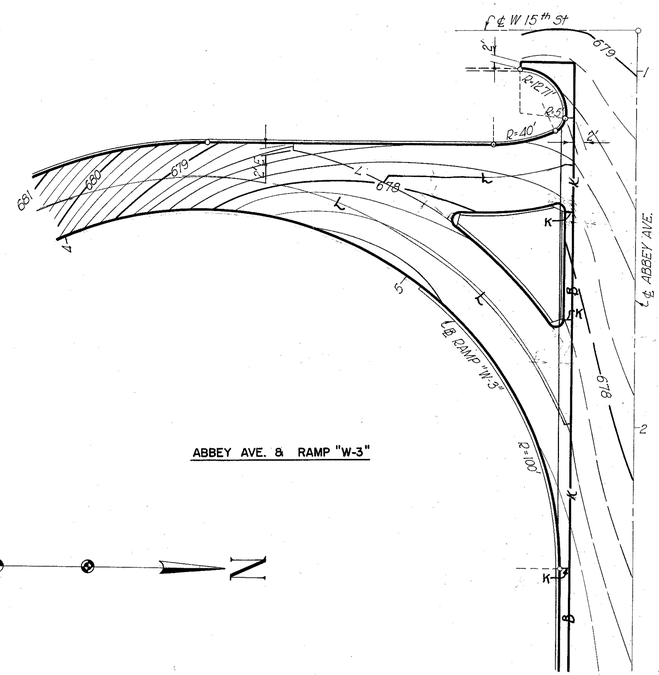
FAIRFIELD AVE., LANE "A", LANE "B", & RAMP "W-1" & RAMP "W-2"



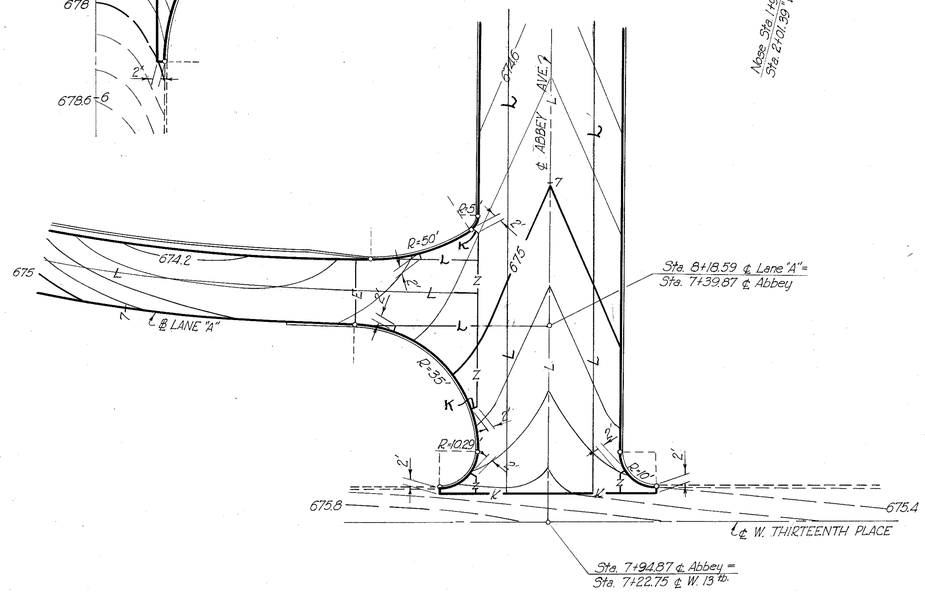
LANE "B" & RAMP "W-2"



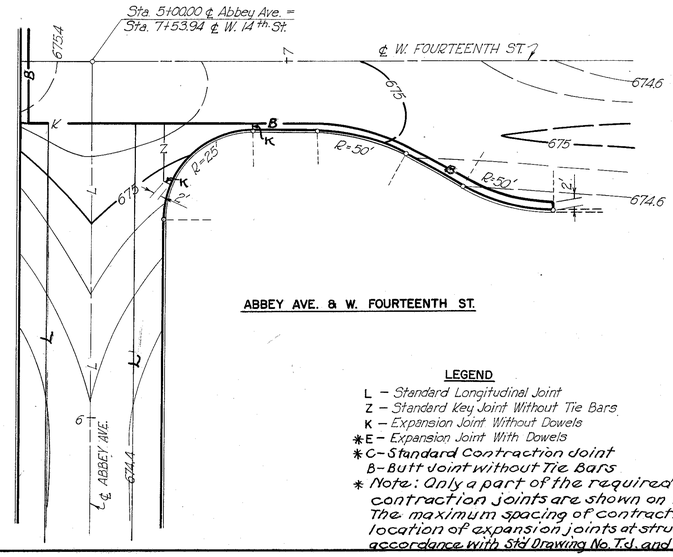
RAMP "W-2" & RAMP "W-3"



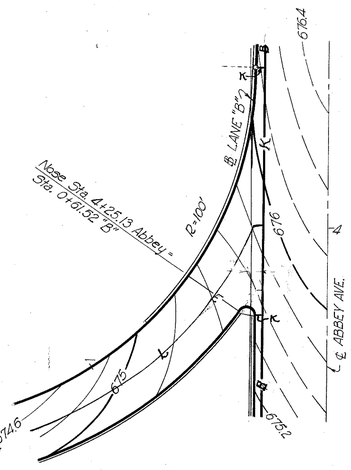
ABBEY AVE. & RAMP "W-3"



ABBEY AVE., LANE "A" & W. THIRTEENTH PLACE



ABBEY AVE. & W. FOURTEENTH ST.



ABBEY AVE. & LANE "B"

LEGEND

L – Standard Longitudinal Joint
Z – Standard key Joint Without Tie Bars
K – Expansion Joint Without Dowels
*E – Expansion Joint With Dowels
*C – Standard Contraction Joint
B – Butt Joint without Tie Bars
* Note: Only a part of the required expansion and contraction joints are shown on these details. The maximum spacing of contraction joints and the location of expansion joints at structures shall in all cases be in accordance with Std Drawing No. T-1, and the specifications.

SCALE 1"=20'
MADE J.H.K. DATE 1-5-56
TRCD. B.M.O. DATE 1-17-56
CKD H.K.M. DATE 2-4-56
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914 SHEET 12

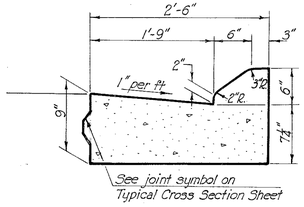
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS
2	OHIO		

13
67

CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY- 42 R-17.43

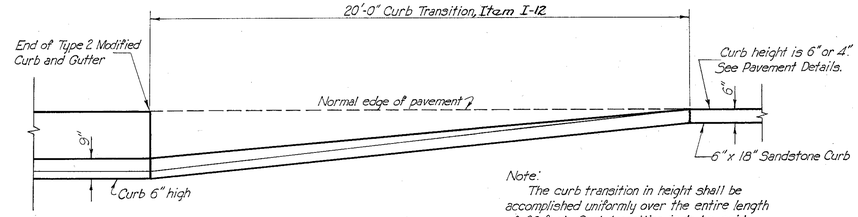
MISCELLANEOUS DETAILS



DETAIL "A"

TYPE 2 MODIFIED CURB AND GUTTER

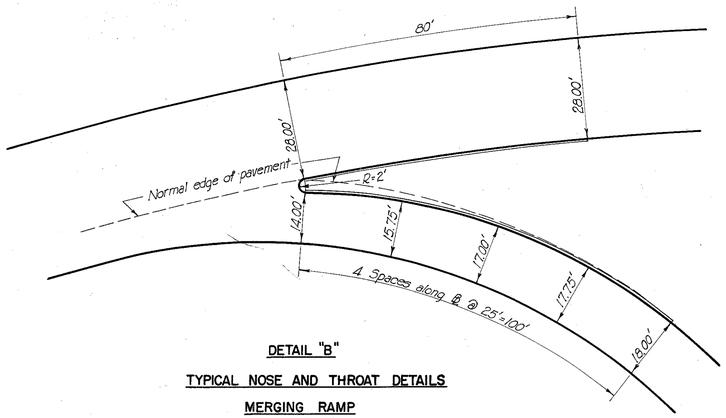
Not to Scale



DETAIL "D"

PLAN OF CURB AND GUTTER TRANSITION

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

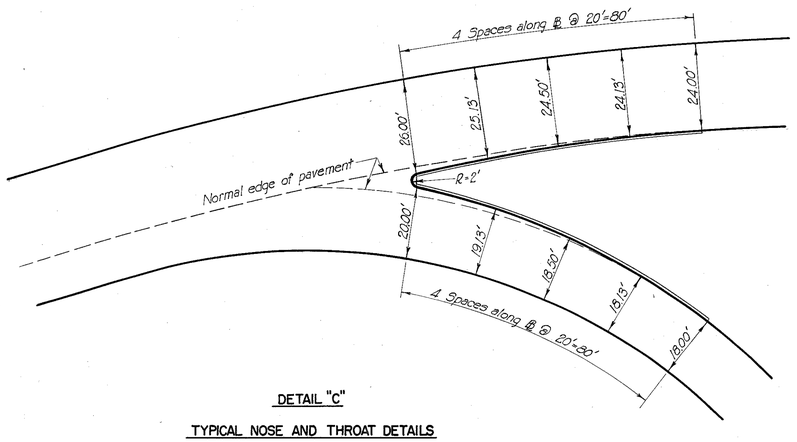


DETAIL "B"

TYPICAL NOSE AND THROAT DETAILS

MERGING RAMP

Scale: 1"=20'

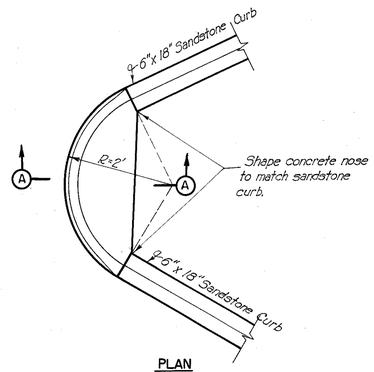


DETAIL "C"

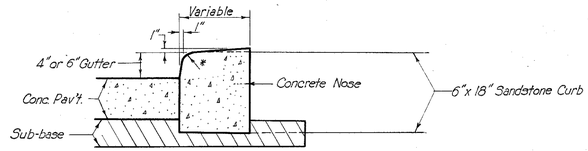
TYPICAL NOSE AND THROAT DETAILS

DIVERGING RAMP

Scale: 1"=20'



PLAN



SECTION "A-A"

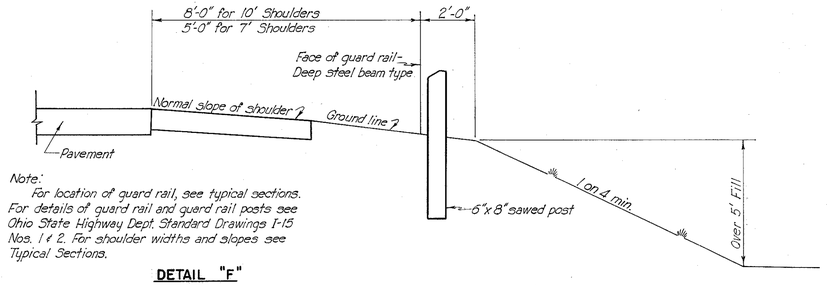
Scale: 3/4" = 1'-0"

**Note:*
1" Radius for 6" Gutter
5" Radius for 4" Gutter
Concrete nose to be Class "D" concrete and shall be included in price bid per linear foot of Item 1-11, 6"x 18", Sandstone Curb.

DETAIL "E"

NOSE TERMINATION OF SANDSTONE CURB

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



Note:
For location of guard rail, see typical sections. For details of guard rail and guard rail posts see Ohio State Highway Dept. Standard Drawings I-15 Nos. 1 & 2. For shoulder widths and slopes see Typical Sections.

DETAIL "F"

GUARD RAIL DETAILS

Not to Scale

SCALE As Shown
MADE DATE
TRCD. BMO DATE 1-23-56
CKD. HKM DATE 5-4-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

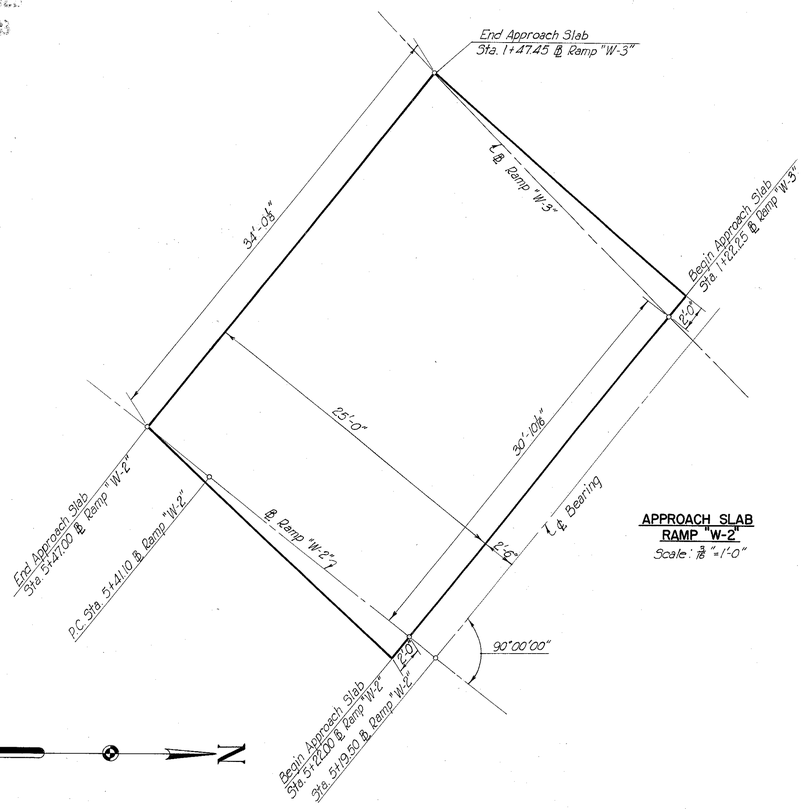
914 SHEET 13

FED.ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS
2	OHIO		

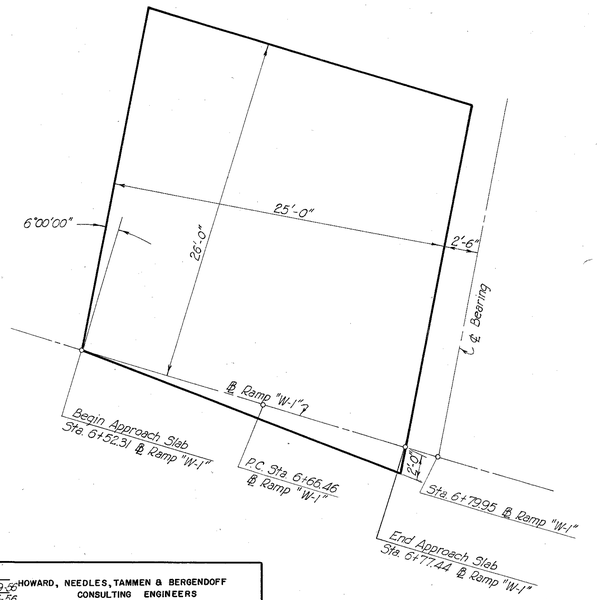
14
67

CUYAHOGA COUNTY.
CITY OF CLEVELAND
INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY - 42 R-17.43

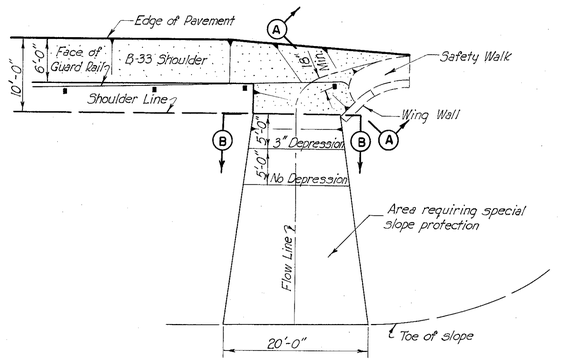
MISCELLANEOUS DETAILS AND APPROACH SLABS

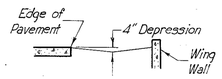


APPROACH SLAB
RAMP "W-2"
Scale: ⅜"=1'-0"

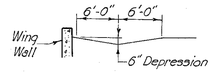


APPROACH SLAB
RAMP "W-1"
Scale: ⅜"=1'-0"





SECTION A-A



SECTION B-B

Note:
Prior to placement of sod, galvanized Straight Line Poultry Fence or equivalent having 2" mesh and all wires No. 20 Gauge shall be placed on the finished grade. The 4' wide strands shall be placed at right angles to the direction of flow. The edges of each strand shall be staked with 1"x 1"x 8" wood stakes, placed at a maximum spacing of 4' and driven flush with finished grade.

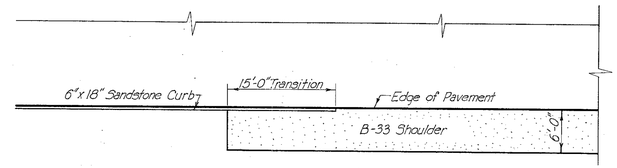
Each strand of fencing shall be fastened together at twelve inch intervals by means of hog rings and the fence shall be secured to the wood stakes by metal staples.

Sod shall be laid in accordance with Construction and Material specifications, Section L-10.07.

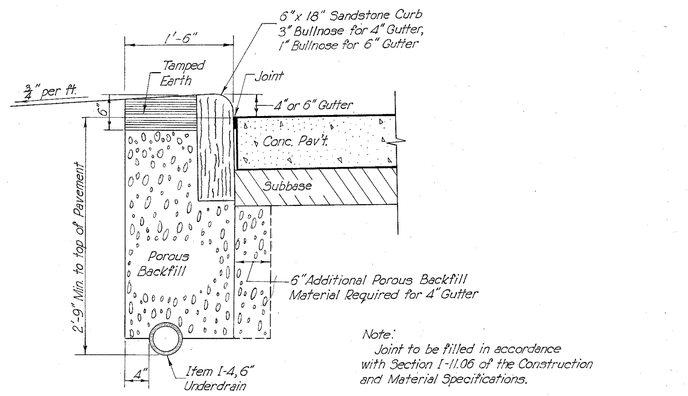
The price bid per sq. yd. for Sodding (Including 2" galvanized wire mesh) shall constitute full compensation for furnishing all labor, equipment, tools, and incidentals necessary to complete this item in place, completed and accepted.

For location of Special Berm and Slope Protection see Paving Plans, Sheet No. 9

DETAIL "G"
SPECIAL BERM AND SLOPE PROTECTION
Not to Scale



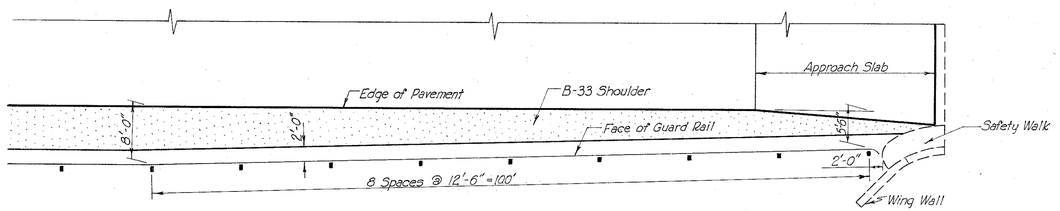
DETAIL "H"
CURB AND SHOULDER TRANSITION
Not to Scale



Note:
Joint to be filled in accordance with Section I-11.06 of the Construction and Material Specifications.

DETAIL "I"
CURB-UNDERDRAIN DETAILS
Scale: 1"=1'-0"

ESTIMATED QUANTITIES			
Item	Description	Ramp "W-1"	Ramp "W-2"
I-7	Reinforced Concrete Approach Slabs (T=13")	75 Sq. Yds.	96 Sq. Yds.



DETAIL "J"
TYPICAL SHOULDER TRANSITION
AT WING WALL
Not to Scale

SCALE As Shown
MADE JHK DATE 1-19-56
TRCD. BMO DATE 1-25-56
CKD. H.K.M DATE 1-27-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

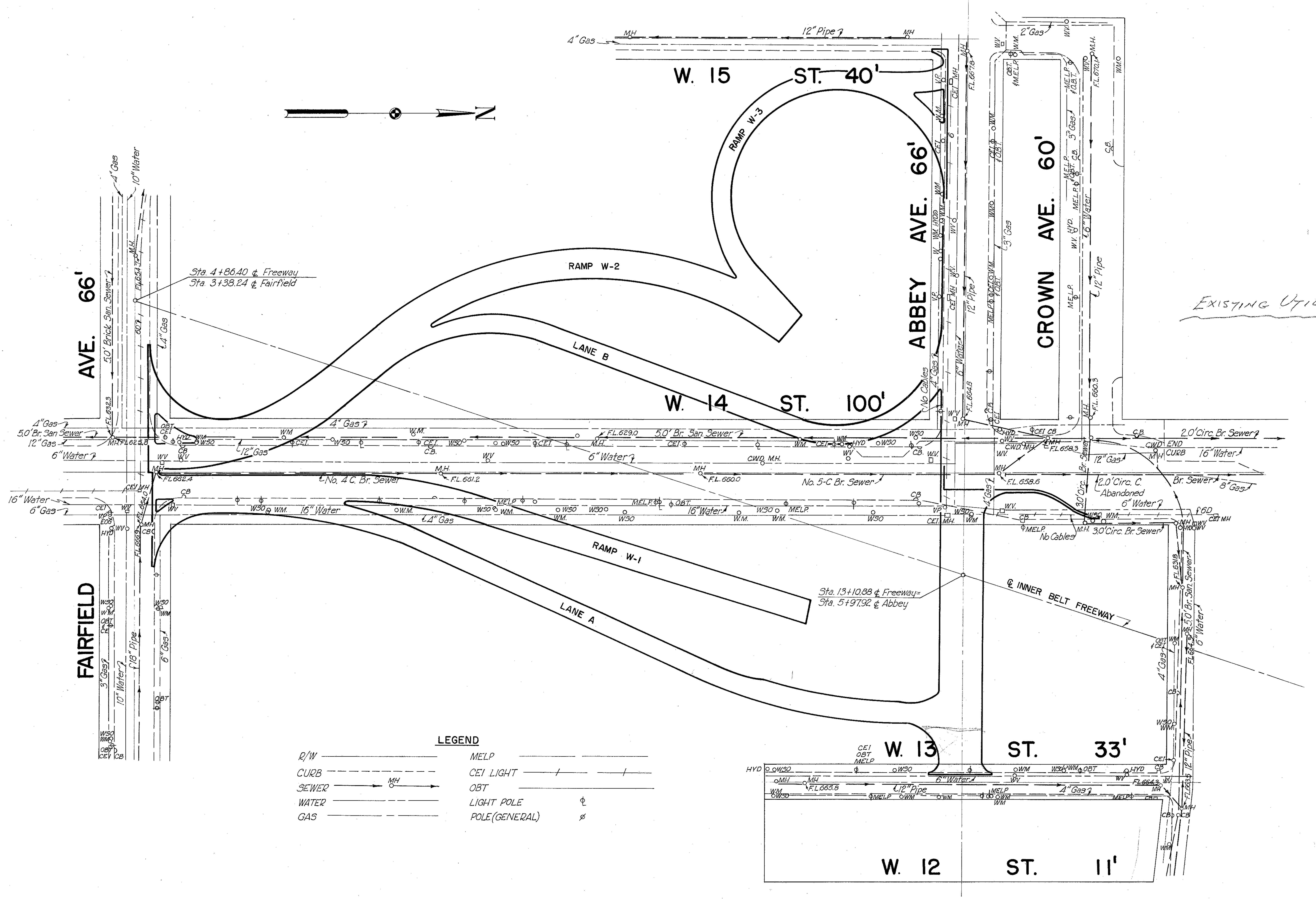
914 SHEET 14

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS	15 / 67
2	OHIO			

CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY-PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY-42 R-17.43

EXISTING UTILITIES



SCALE 1"=50'
MADE BMO DATE 1-5-56
TRCD. BMO DATE 1-7-56
CKD. HKM DATE 5-4-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

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FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO	TYPE FUNDS
2	OHIO		

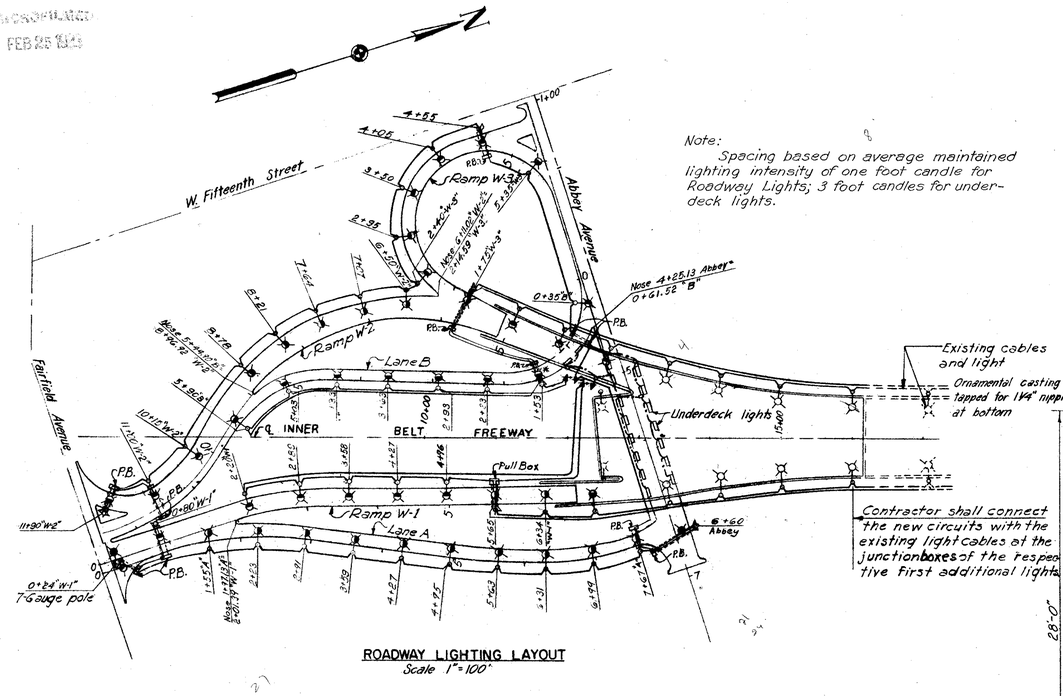
16
67

CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY-42 R-17.43

LIGHTING DETAILS

Note:
Spacing based on average maintained lighting intensity of one foot candle for Roadway Lights; 3 foot candles for underdeck lights.

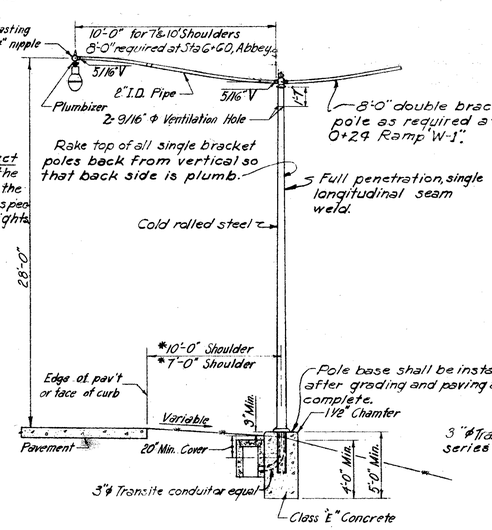


ROADWAY LIGHTING LAYOUT
Scale 1"=100'

Existing cables and light

Ornamental casting tapped for 1¼" nipple at bottom

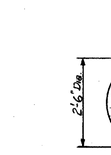
Contractor shall connect the new circuits with the existing light cables at the junction boxes of the respective first additional lights.



8'-0" double bracket pole as required at Sta. 0+24 Ramp "W-1".

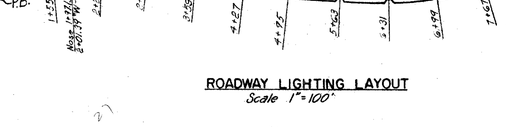
* Add 8" where Guard Rail is encountered

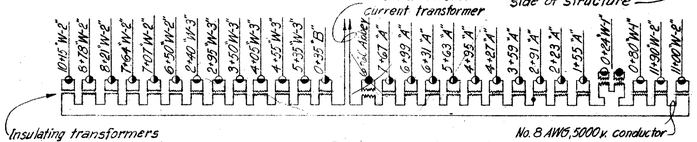
TYPICAL ROADWAY LIGHTING UNIT
No Scale

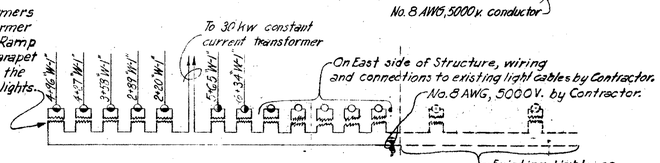


Note:
Conduit and conduit encasement shall extend between boxes and be sloped to drain from center of run.

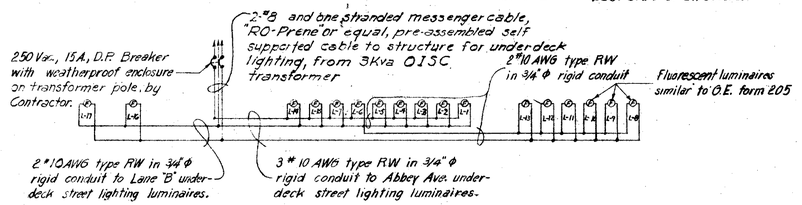
SECTION OF CONDUIT RUN UNDER PAVEMENT
Scale 3/4"=1'-0"







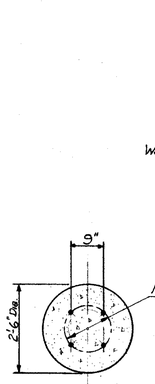
STREET LIGHTING-SERIES WIRING DIAGRAMS

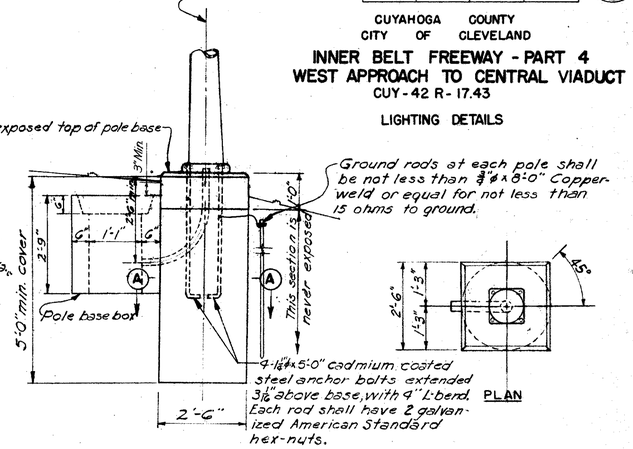


UNDERDECK LIGHTING-MULTIPLE WIRING DIAGRAM

LEGEND

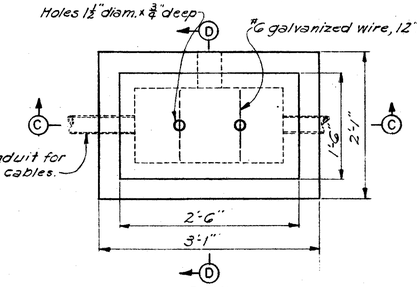
- Underdeck lighting luminaire equal to G.E. Form 205
- III, 15000 lumens, 10' bracket
- III, 15000 lumens, 10' bracket, use 8' bracket at Sta. 6+60 Abbey. & at sta. 0+24 - Ramp "W-1"
- III, 10000 lumens, 10' bracket. Use 8' brackets at Sta. 0+24, Ramp "W-1"
- III, 10000 lumens, 15' bracket.
- Glare shield
- Future roadway lights. Conduits and parapet junction boxes by Contractor.
- ▲ OISC distribution transformer, 3 Kva, 110/220 Vac. sec. for underdeck lighting, by Power Co.
- No. 8 AWG, 5000 V. cable, 6.6 A. Series street lighting circuit.
- Underdeck lighting circuit
- Transite duct designation, 3" ϕ, with Pull Box at the end, by Contractor.
- Constant current transformers, 30 kw, 6.6 Amp., 7200 V. primary, 60 cycle, by Power Co.

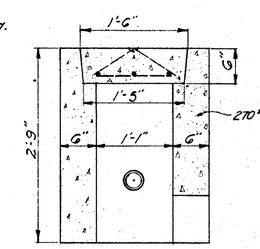


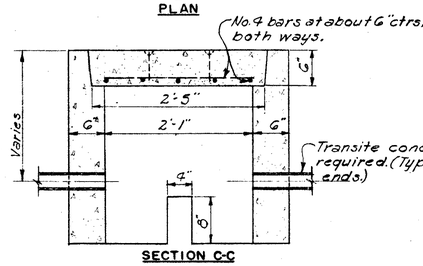


ELEVATION

TYPICAL POLE BASE
Scale: ½"=1'-0"







CONCRETE PULL BOX
Scale: 1"=1'-0"

3" ϕ Transite conduit for series circuit cables.

SCALE	As Shown		
MADE	JHK	DATE 8-8-56	HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS
TRCD.		DATE	KANSAS CITY, CLEVELAND, NEW YORK
CKD.	HKM	DATE 8-8-56	914 SHEET 16

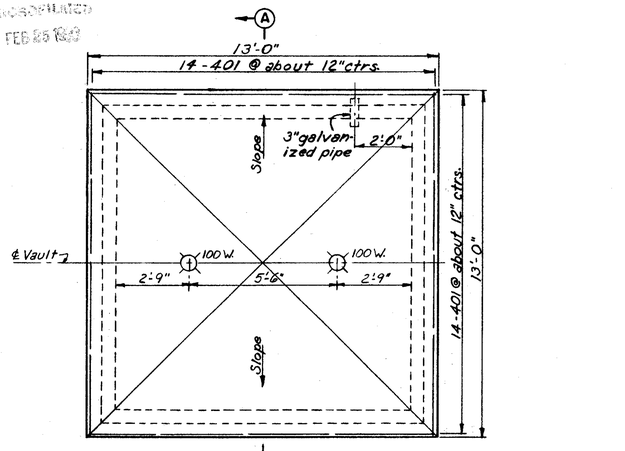
Rev. 9-5-56

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS	16A / 67
2	OHIO			

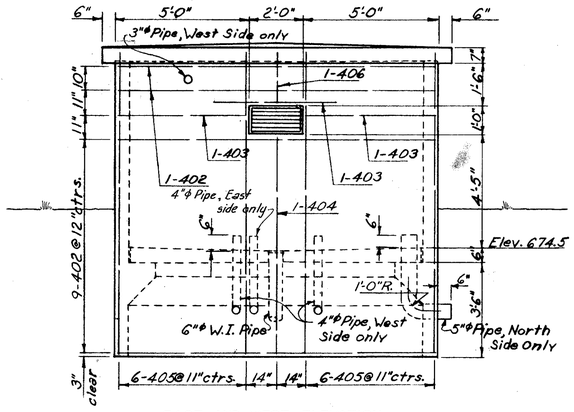
CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY - 42 R - 17, 43

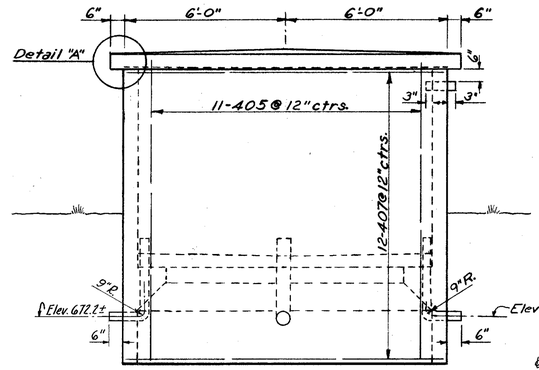
TRANSFORMER VAULT



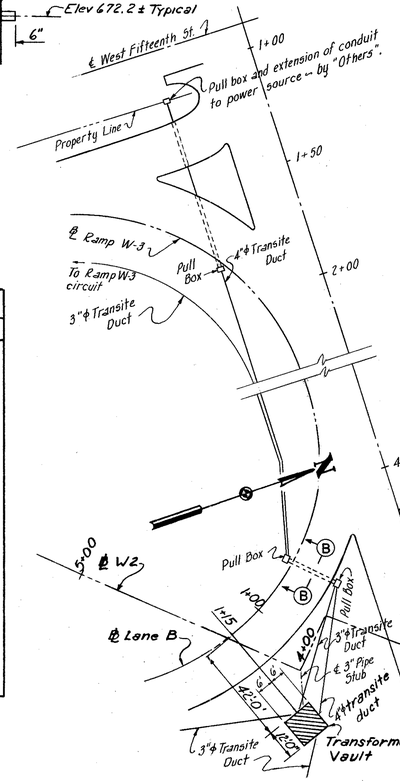
ROOF PLAN



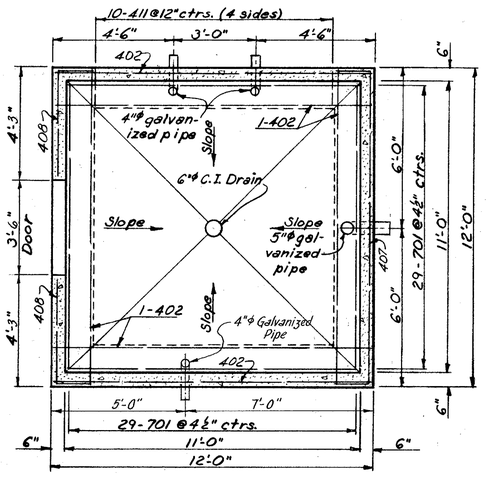
EAST AND WEST ELEVATION



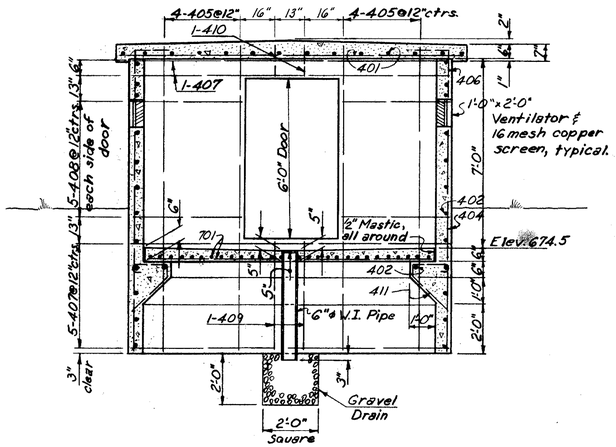
NORTH ELEVATION



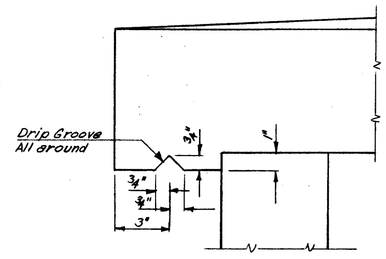
LOCATION PLAN
Scale 1" = 30'-0"



FLOOR PLAN



SECTION A-A



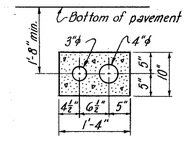
DETAIL "A"
Scale 3"=1'-0"

REINFORCEMENT SCHEDULE

Mark	Size	No.	Length	Type	Weight	Bending Diagrams
						410 0'-11"; 405 11'-0"; 406 1'-6"; 408 3'-11"
401	#4	28	12'-9"	Str.	239	
402		26	11'-9"		204	
403		6	4'-9"		19	
404		2	8'-0"	Str.	11	
405		43	12'-3"	104	352	104
406		2	2'-9"	104	4	
407		19	14'-2"	105	160	11'-8"; 105 1'-2"
408		10	5'-2"	104	35	
409		2	4'-0"	Str.	5	
410		2	2'-2"	104	3	
411	#4	40	3'-7"	123	96	
701	#7	58	10'-6"	Str.	1,245	6"hook; 123
			Total		2,393	

ESTIMATED QUANTITIES

Item	Unit	Total
Class C Concrete	Cu.Yds.	16
Reinforcing Steel	Lbs.	2393
Excavation	Cu.Yds.	12



Note: Conduits to be Johns-Manville transite or equal.

SECTION B-B
(Conduit run under Pavement)
Scale: ¾"=1'-0"

Note:
All reinforcement to have 2" clear cover unless shown.
Door to be Class "A" N.B.F.U.
All concrete to be Class C.
Estimated quantities are for information only, and are not pay items.
Vault and 4" conduit run to West Fifteenth St. to be included for payment under lump sum bid for Electric Lighting System - Part B. State funds do not participate.

SCALE 3/4"=1'-0" unless shown
MADE R.S.G. DATE 7-16-56
TRCD. ____ DATE ____
CKD. T.D.D. DATE 7-19-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914 SHEET 16A

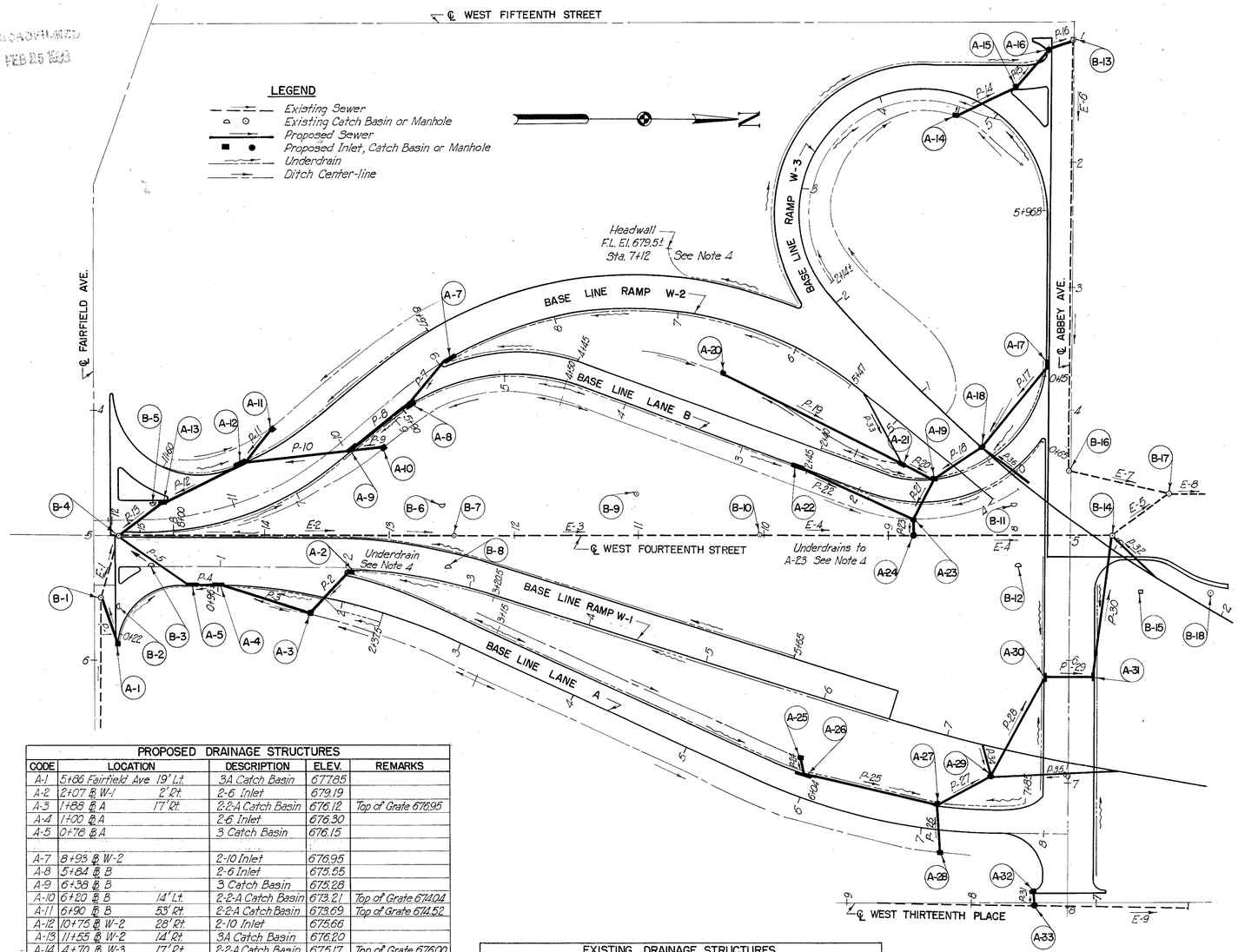
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS
2	OHIO		

17
67

CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY- 42 R-17.43

DRAINAGE PLAN



GENERAL NOTES

Sewers are designed by the Rational Formula based on a 10-year storm frequency flowing full.

Minimum Velocity of flow is 3.0 F.P.S. for main lines and 2.5 F.P.S. for laterals.

All stubs for bridge drainage are to be 12-inch diameter concrete pipe, set on line and grade as specified on the profiles and on the bridge plans. The stubs shall extend a minimum distance of 1 foot 0 inch outside the drainage structures.

Pipe sewers connected to existing catch basins are not shown on the plans. Where sewer pipes not shown are encountered during construction, the pipes shall be cut at the limits of construction and plugged to the satisfaction of the Engineer. Payment for cutting and plugging shall be included in the unit price bid for item E-1, "Excavation."

Payment for the removal and/or abandoning of pipe outlets necessitated by the abandoning of existing catch-basins or manholes, will be included in the unit price bid for Item 1-16, "Manholes, Catch Basins, or Inlets Abandoned," unless payment is otherwised authorized specifically under other items in the plans.

Where it is necessary under Item 1-8, "Manholes adjusted to grade" to replace unsatisfactory manhole frame and cover castings, payment for the new castings shall be made at the contract unit price bid per each for Item 1-8 "Manhole Frame and Cover (Light)" and Item 1-8 "Manhole Frame and Cover (Heavy)". Payment shall constitute full compensation for furnishing, hauling and placing all castings and any incidentals necessary to complete the item to the satisfaction of the Engineer.

PROPOSED DRAINAGE STRUCTURES

CODE	LOCATION	DESCRIPTION	ELEV.	REMARKS
A-1	5+86 Fairfield Ave 19' Lt.	3A Catch Basin	677.85	
A-2	2+07 ℄ W-1 2' Rt.	2-6 Inlet	679.19	
A-3	1+88 ℄ A 17' Rt.	2-2-A Catch Basin	676.12	Top of Grate 676.95
A-4	1+00 ℄ A	2-6 Inlet	676.30	
A-5	0+76 ℄ A	3 Catch Basin	676.15	
A-7	8+93 ℄ W-2	2-10 Inlet	676.95	
A-8	5+84 ℄ B	2-6 Inlet	675.55	
A-9	6+38 ℄ B	3 Catch Basin	675.28	
A-10	6+20 ℄ B 14' Lt.	2-2-A Catch Basin	673.21	Top of Grate 674.04
A-11	6+90 ℄ B 53' Rt.	2-2-A Catch Basin	673.69	Top of Grate 674.52
A-12	10+75 ℄ W-2 28' Rt.	2-10 Inlet	675.66	
A-13	11+55 ℄ W-2 14' Rt.	3A Catch Basin	676.20	
A-14	4+70 ℄ W-3 17' Rt.	2-2-A Catch Basin	675.17	Top of Grate 676.00
A-15	5+04 ℄ W-3 24.5' Lt.	3A Catch Basin	677.98	
A-16	1+11 Abbey Ave. 20' Rt. of ℄	3A Catch Basin	678.55	
A-17	0+10 ℄ B	2-10 Inlet	676.02	
A-18	1+00 ℄ B 11.5' Rt.	2-2-A Catch Basin	673.50	Top of Grate 674.33
A-19	1+48 ℄ B	3 Catch Basin	674.38	
A-20	3+35 ℄ B 49.5' Rt.	2-2-A Catch Basin	670.90	Top of Grate 671.73
A-21	1+75 ℄ B 11' Rt.	2-2-A Catch Basin	673.51	Top of Grate 674.34
A-22	2+50 ℄ B	2-10 Inlet	675.44	
A-23	1+62 ℄ B 32' Lt.	2-2-A Catch Basin	672.97	Top of Grate 673.80
A-24	1+61.5 ℄ B 45'± Lt.	2 Manhole	673.80	Top of Cover
A-25	5+90 ℄ A 30' Lt.	2-2-A Catch Basin	675.78	Top of Grate 676.61
A-26	6+00 ℄ A 17' Lt.	2-10 Inlet	675.97	
A-27	7+10 ℄ A 19' Lt.	3 Catch Basin	674.11	
A-28	7+16 ℄ A 18' Rt.	2-2-A Catch Basin	672.87	Top of Grate 673.10
A-29	7+55 ℄ A 45' Lt.	1 Manhole	678.0±	Top of Cover
A-30	6+14.52 Abbey Ave. 20' Rt. of ℄	3A Catch Basin	674.26	
A-31	6+14.52 Abbey Ave. 20' Lt. of ℄	3A Catch Basin	674.26	
A-32	7+49 W. 13th Pl. 10' Rt. of ℄	3A Catch Basin	675.61	
A-33	7+49 W. 13th Pl. 3' Rt. of ℄	1 Manhole	675.10±	Top of Cover

EXISTING DRAINAGE STRUCTURES

CODE	LOCATION	DESCRIPTION	ELEV.	REMARKS
B-1	5+50 Fairfield Ave. 6' Lt. ℄	Manhole		Undisturbed
B-2	5+57 Fairfield Ave. 18' Lt. ℄	Catch Basin		Abandon
B-3	14+92 W. 14th St. 22' Lt. ℄	Catch Basin		Abandon
B-4	5+00 Fairfield 19' Lt. ℄	Manhole	676.7±	Adjust to Grade
B-5	14+92 W. 14th St. 25' Rt. ℄	Catch Basin		Abandon
B-6	12+58 W. 14th St. 25' Rt. ℄	Catch Basin		Abandon
B-7	12+48 ℄ W. 14th St.	Manhole		Abandon
B-8	12+54 W. 14th St. 25' Lt. ℄	Catch Basin		Abandon
B-9	11+01 W. 14th St. 33' Rt. ℄	Manhole (Sanitary)	675.8±	Adjust to Grade
B-10	10+03 ℄ W. 14th St.	Manhole	676.2±	Adjust to Grade
B-11	7+97 W. 14th St. 25' Rt. ℄	Catch Basin		Abandon
B-12	8+00 W. 14th St. 25' Lt. ℄	Catch Basin		Abandon
B-13	1+01 ℄ Abbey Ave.	Manhole		Undisturbed
B-14	7+20 ℄ W. 14th St.	Manhole		Undisturbed
B-15	6+98 W. 14th St. 45' Lt. ℄	Catch Basin		Abandon
B-16	4+49 Abbey Ave. 1'± Rt. ℄	Manhole		Undisturbed
B-17	6+76 W. 14th St. 33' Rt. ℄	Manhole		Undisturbed
B-18	6+40 W. 14th St. 48' Lt. ℄	Manhole	675.1±	Adjust to Grade

EXISTING SEWERS

CODE	LOCATION STREET	FROM	TO	SIZE	LENGTH	REMARKS
E-1	Fairfield	B-1	B-4	18	48	Undisturbed
E-2	W. Fourteenth	B-4	B-7	No. 4C	264	Undisturbed
E-3	W. Fourteenth	B-7	B-10	No. 4C	241	Undisturbed
E-4	W. Fourteenth	B-10	B-14	No. 5C	278	Undisturbed
E-5	W. Fourteenth	B-14	B-17	No. 5C	51	Undisturbed
E-6	Abbey Ave.	B-13	B-16	12	345	Undisturbed
E-7	W. Fourteenth	B-16	B-17	12	78	Undisturbed
E-8	W. Fourteenth	B-17	North	24		Undisturbed
E-9	W. Thirteenth	A-31	North	12		Undisturbed

PROPOSED SEWERS

CODE	LOCATION STREET	FROM	TO	ITEM 1-2 LIN. FT. CLASS A 12"	CL. A. U.P. 15"	CLASS B 12"	CL. B. U. P. 15"	12"	15"
P-1	Fairfield Ave.	A-1	B-1						35
P-2	Lane A	A-2	A-3						42
P-3	Rt. of Lane A	A-3	A-4			85			
P-4	Lane A	A-4	A-5						19
P-5	Lane A - Ramp W-1	A-5	B-4						65
P-7	Lane B	A-7	A-8						46
P-8	Lane B	A-8	A-9						51
P-9	Left of Lane B	A-10	A-9	21					
P-10	Lane B - Ramp W-2	A-9	A-12						85
P-11	Right of Ramp W-2	A-11	A-12	29					
P-12	Ramp W-2	A-12	A-13						72
P-13	Ramp W-2 - Lane B	A-13	B-4						45
P-14	Ramp W-3	A-14	A-15		52				
P-15	Ramp W-3	A-15	A-16						37
P-16	Abbey Ave.	A-16	B-13						19
P-17	Rt. of Lane B	A-17	A-18			81			
P-18	Rt. of Lane B	A-18	A-19			44			
P-19	Rt. of Lane B	A-20	A-21	157					
P-20	Rt. of Lane B	A-21	A-19	26					
P-21	Lane B	A-19	A-23						34
P-22	Lt. of Lane B	A-22	A-23			96			
P-23	Lt. of Lane B	A-23	A-24				10		
P-24	Lt. of Lane A	A-25	A-26	14					
P-25	Lane A	A-26	A-27						102
P-26	Lane A	A-28	A-27		57				
P-27	Lt. of Lane A	A-27	A-29				47		
P-28	Rt. of Abbey Ave.	A-29	A-30				88		
P-29	Abbey Ave.	A-30	A-31						38
P-30	Lt. of Abbey Ave.	A-31	B-14						112
P-31	West 13th Pl.	A-32	A-33						10
P-32	West 14th St.	Dier2A	B-14						30
P-33	Abutment W-2		A-21			50			
P-34	Lt. of Lane A	I-W-1	A-29			26			
P-35	Abbey Ave.	Dier2A	A-29					90	
P-36	Lane B	I-W-2	A-18					50	

NOTES

1. Abbreviations:
   Rt. - Right
   Lt - Left
   U.P.-Under Pavement
   Directions are noted as: E, W, So. & No.

2. Call-Letters:
   Drainage structures and pipes are prefixed with the following call letters.
   A - Proposed Structures
   P - Proposed Pipe Sewers
   B - Existing Structures
   E - Existing Pipe Sewers
   For sewer profiles see Sheets 18 and 19
   The direction of sewer flow is indicated by arrows.

3. Elevations:
   Elevations shown in the tables are normal grade or gutter elevations for the center-line of the structure at the curb face for 3, and 3A catch basins; normal ditch and center of structure for 2-2-A catch basins; top of cover at the center for manholes; normal grade at the intersection of the center-line of cover and at curb face for all 2-6 and 2-10 inlets.

4. Underdrain Connections:
   For details of Pipe Underdrain Outlet see Standard Construction Drawings I-1, 2, 3, 4 & 5

SCALE 1"=50'
MADE SK DATE 1-15-56
TRCD. B.M.O DATE 2-15-56
CKD. H&M DATE 2-16-56
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY, CLEVELAND, NEW YORK
914 SHEET 17

MISCELLANEOUS
FEB 25 1960

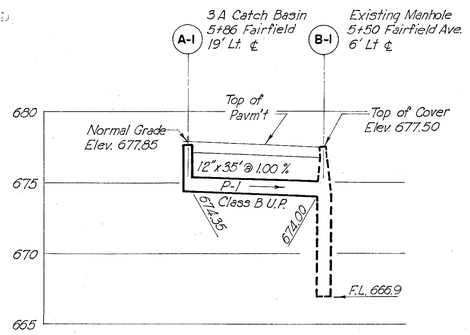
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS
2	OHIO		

18
67

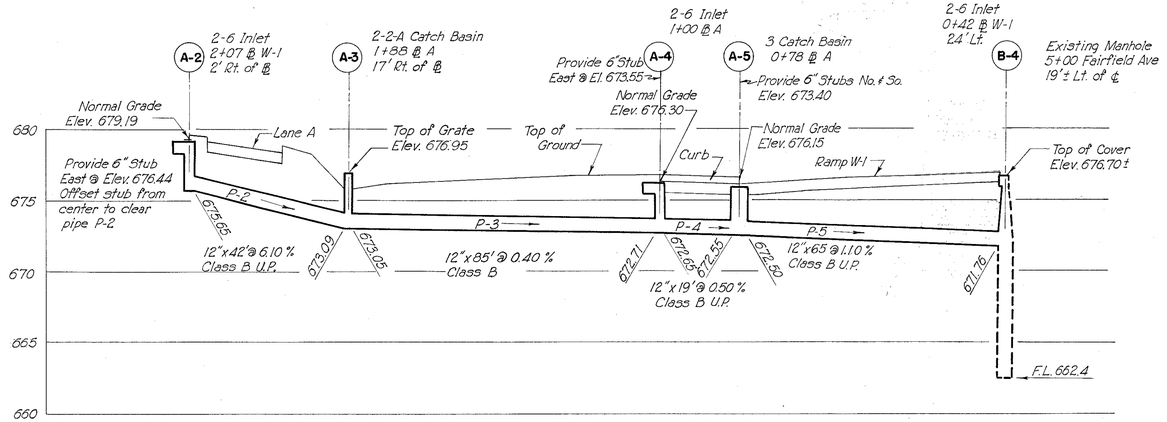
CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY-42 R-17.43

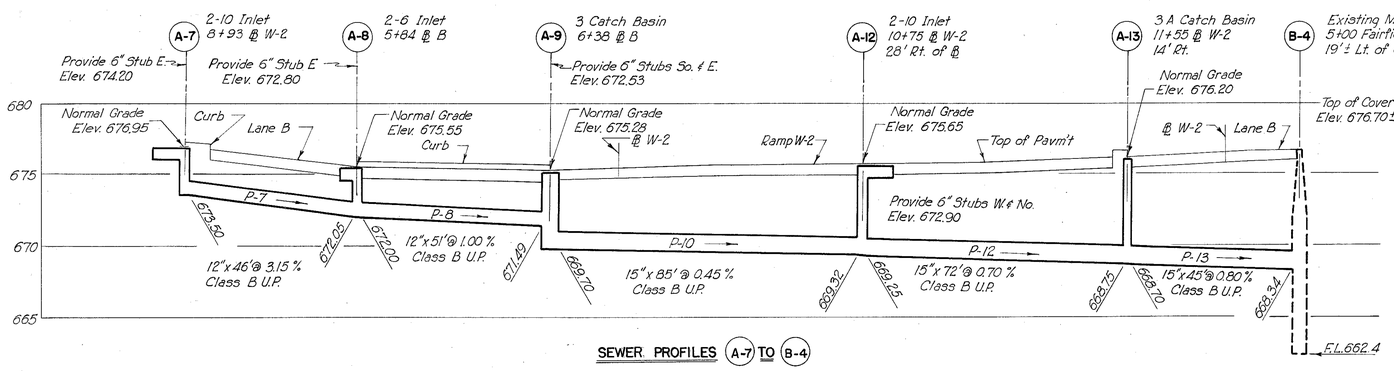
DRAINAGE PROFILES



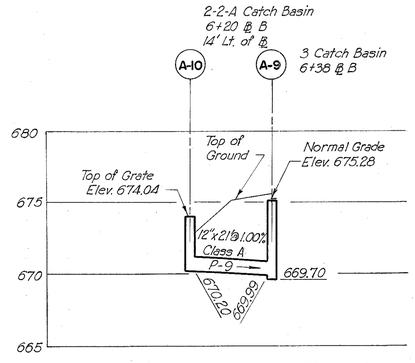
SEWER PROFILE A-1 TO B-1



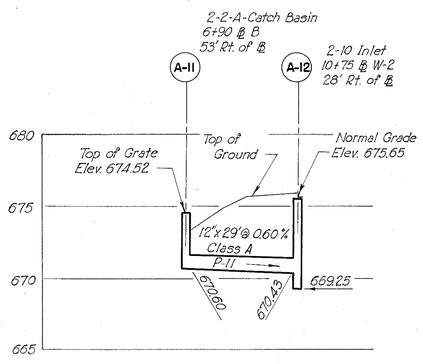
SEWER PROFILE A-2 TO B-4



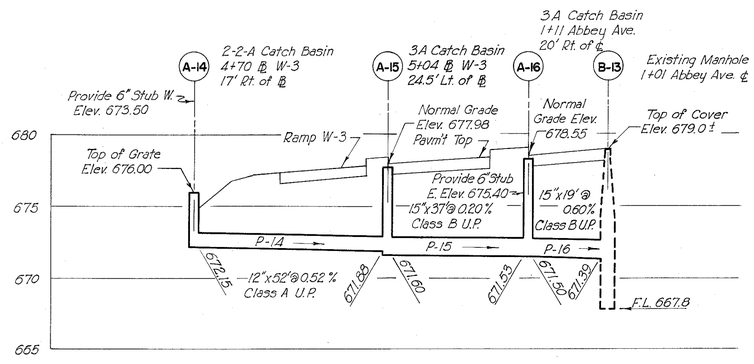
SEWER PROFILES A-7 TO B-4



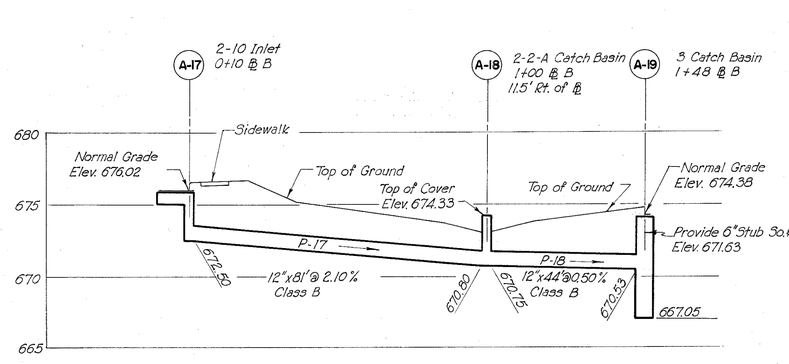
SEWER PROFILE A-10 TO A-9



SEWER PROFILE A-11 TO A-12



SEWER PROFILES A-14 TO B-13



SEWER PROFILES A-17 TO A-19

LIST OF SEWER PROFILES
On This Sheet

P-1	P-10
P-2	P-11
P-3	P-12
P-4	P-13
P-5	P-14
P-6	P-15
P-7	P-16
P-8	P-17
P-9	P-18

Note:
Scales: Horz.: 1"=20'
Vert. 1"=5'

SCALE See Note
MADE J.K. DATE 2-3-56
TRCD. BMO DATE 2-8-56
CKD. H.K.M. DATE 2-9-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914 SHEET 18

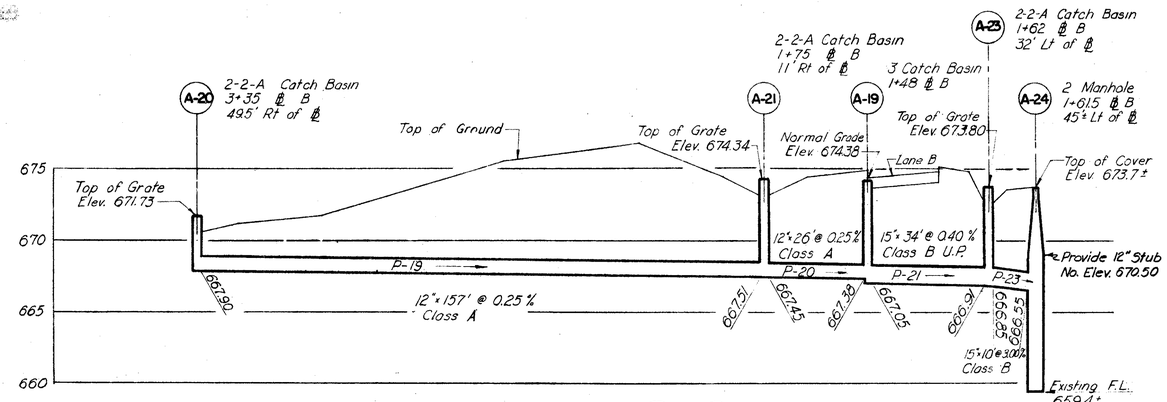
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS
2	OHIO		

19
67

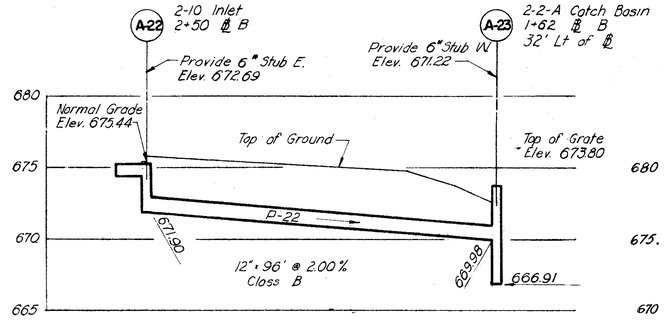
CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY - 42 R - 17.43

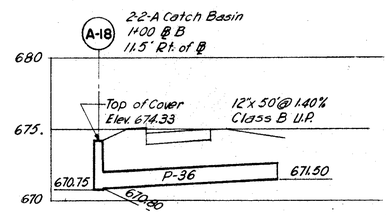
DRAINAGE PROFILES



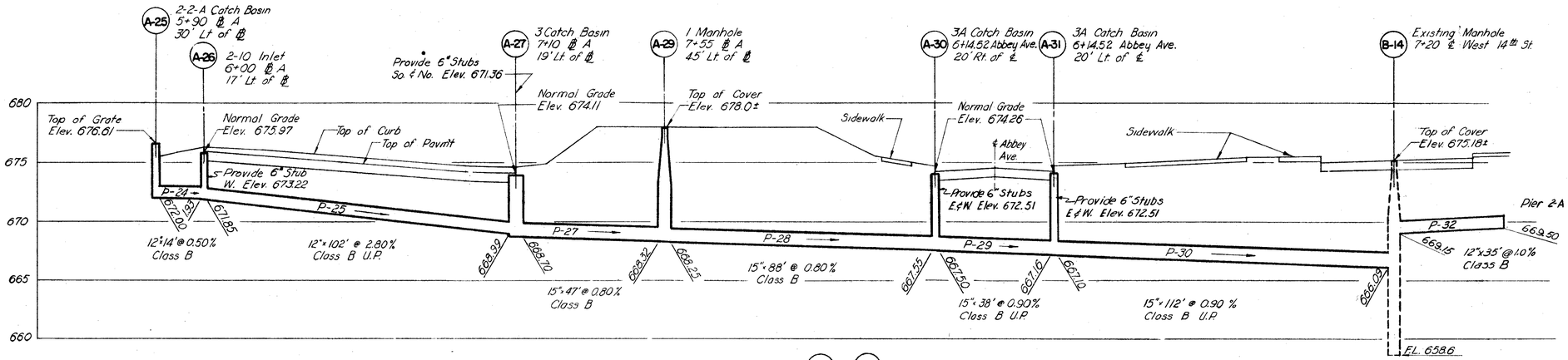
SEWER PROFILES A-20 TO A-24



SEWER PROFILE A-22 TO A-23

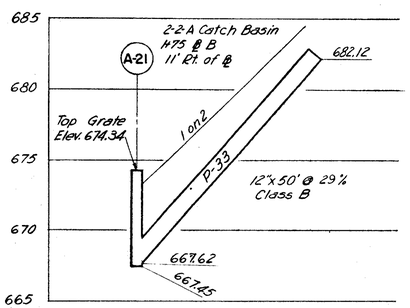


SEWER PROFILE A-18 TO PIER 1-W-2

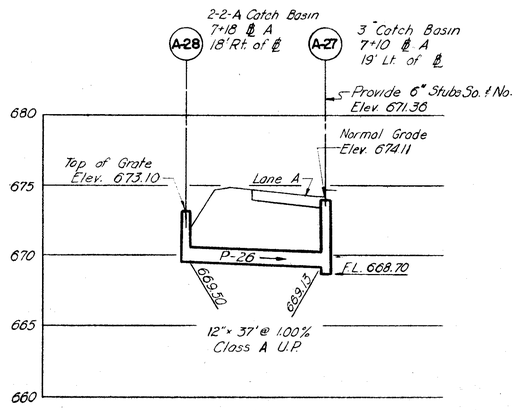


SEWER PROFILES A-25 TO B-14

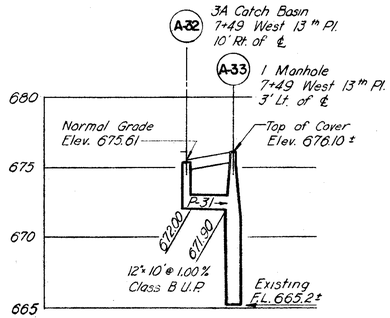
LIST OF SEWER PROFILES ON THIS SHEET	
P-19	P-25
P-20	P-26
P-21	P-27
P-22	P-28
P-23	P-29
P-24	P-30
	P-31
	P-32
	P-33
	P-34
	P-35
	P-36



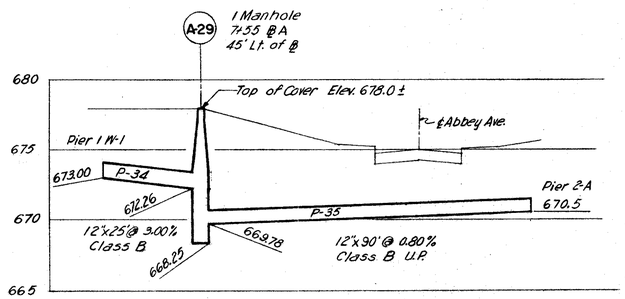
SEWER PROFILE A-21 TO ABUTMENT W-2



SEWER PROFILE A-28 TO A-27



SEWER PROFILE A-32 TO A-33



SEWER PROFILE A-29 TO PIER 1W1 AND PIER 2A

SCALE Hor: 1"=20' Ver: 1"=5'
MADE SK DATE 2-6-56
TRCD. SK DATE 2-6-56
CHKD. H.K.M. DATE 5-A-56

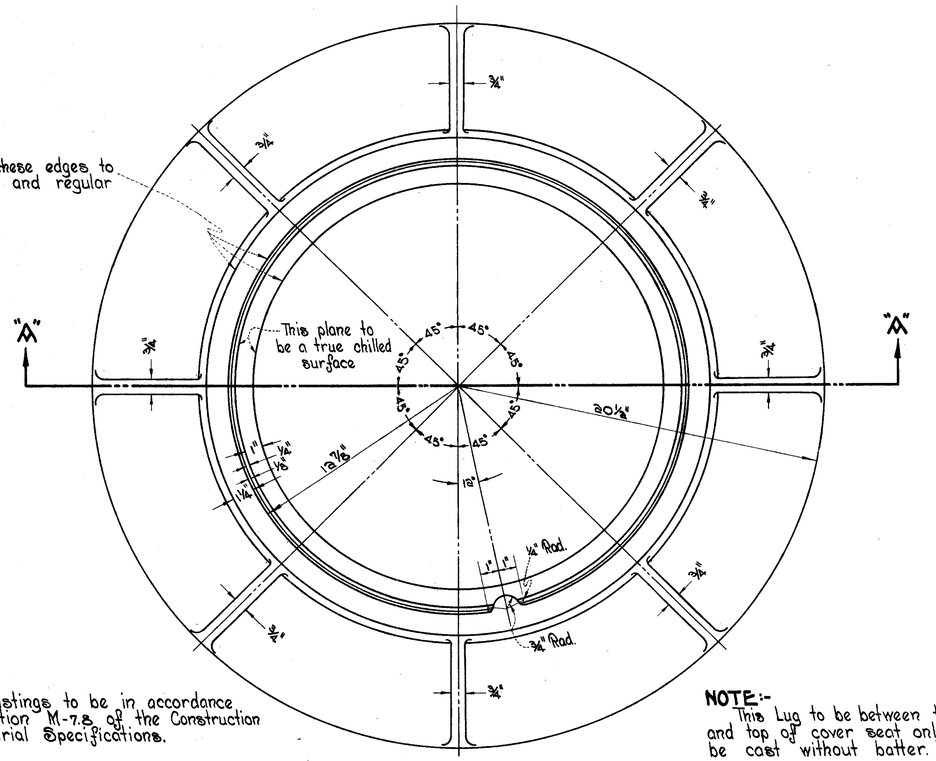
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY, CLEVELAND, NEW YORK

914 SHEET: 19

SPECIAL MANHOLE FRAME

STANDARD CITY TYPE

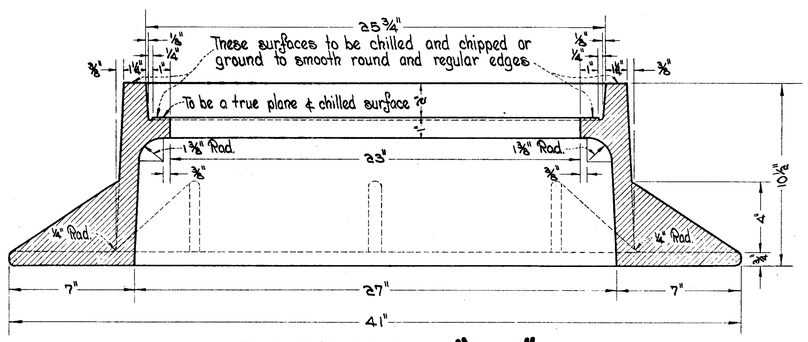
Scale 3" = 1'-0"



NOTE:-
All castings to be in accordance with Section M-7.8 of the Construction and Material Specifications.

NOTE:-
This Lug to be between top of frame and top of cover seat only and shall be cast without batter.

PLAN



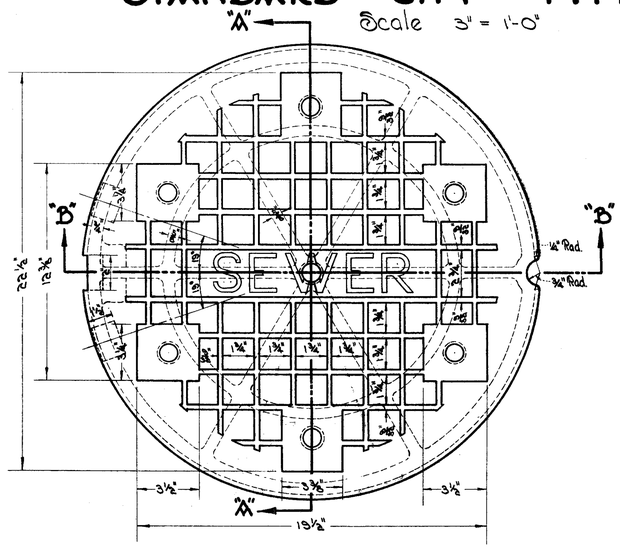
SECTION "A-A"

Weight of Frame 355 lbs.

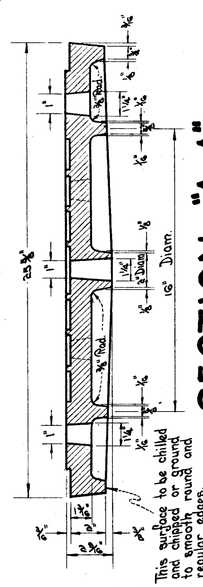
SPECIAL COVER

STANDARD CITY TYPE

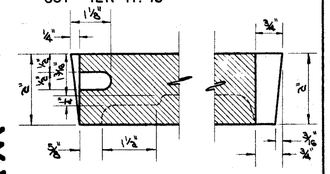
Scale 3" = 1'-0"



PLAN

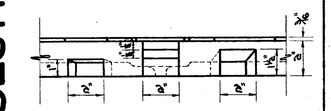


SECTION "A-A"



PART SECTION "B-B"

Scale ½" = 1"



SIDE ELEVATION OF NOTCHES

Weight of Cover 195 lbs.

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

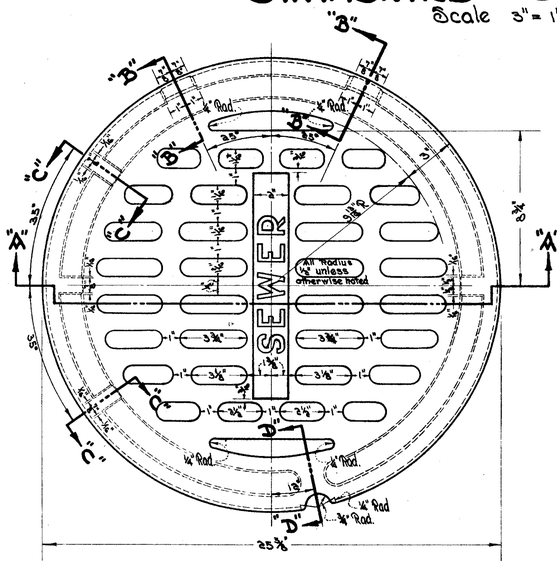
19 A
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY - 42 R - 17.43

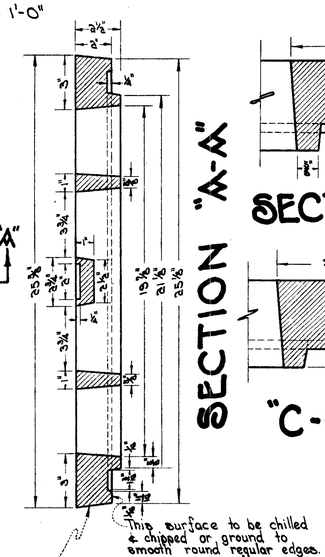
SPECIAL GRATED COVER

STANDARD CITY TYPE

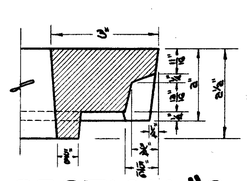
Scale 3" = 1'-0"



PLAN

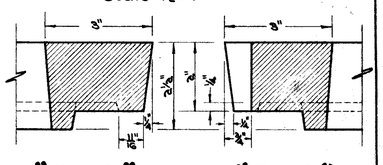


SECTION "A-A"



SECTION "B-B"

Scale ½" = 1"



"C-C" "D-D"

Scale ½" = 1"

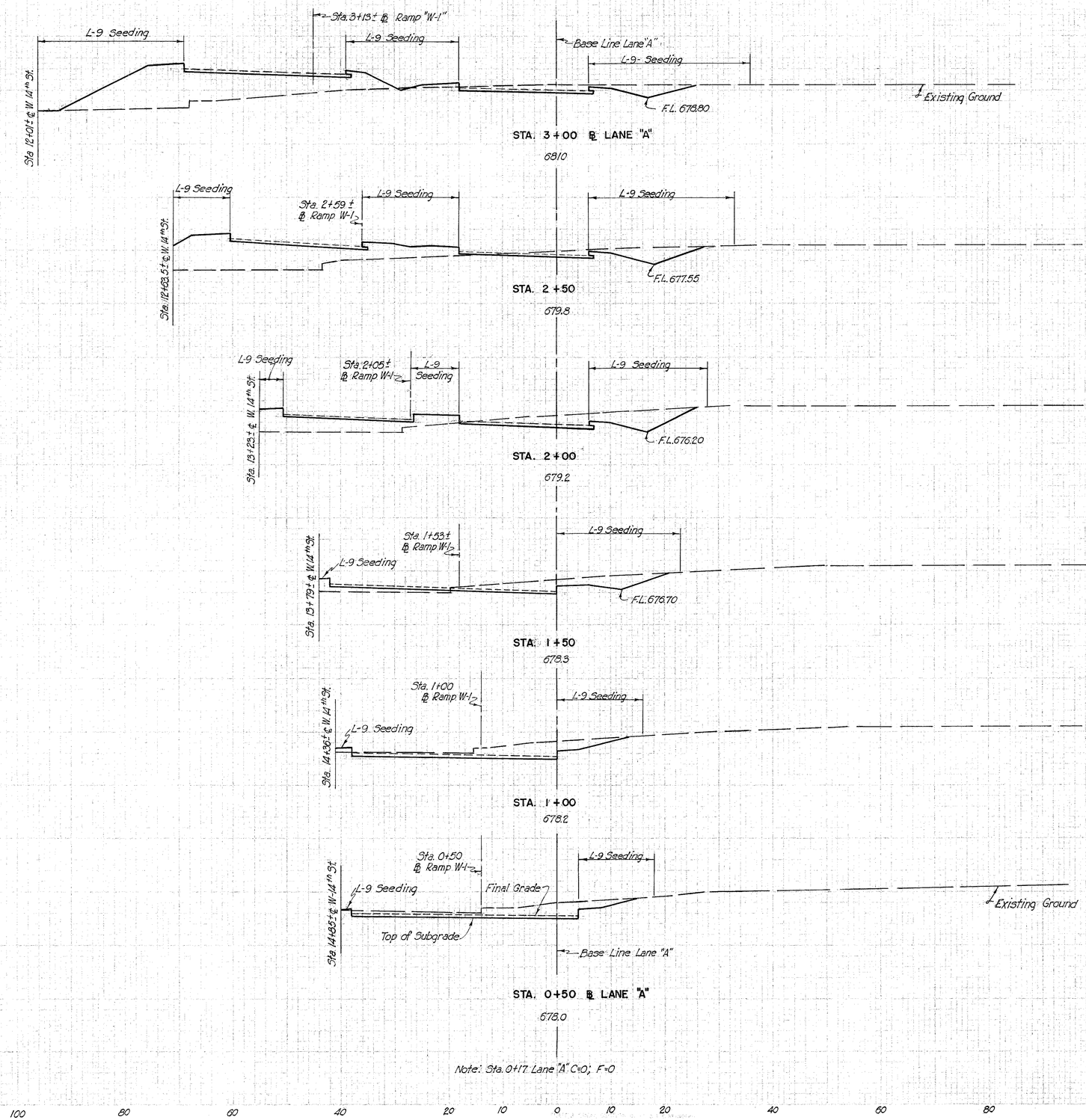
FED. ROAD DIV. NO.	STATE	FED. AID. PROJ. NO.	TYPE FUNDS
2	OHIO		

20
67

CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY - 42R - 17.43

CROSS SECTIONS



	SEEDING		SUBBASE		EARTHWORK			
	WIDTH	AREA	AREA	VOL.	END AREA		VOLUME	
	L.F.	SQ.YD.	S.F.	C.Y.	EXC.	EMB.	EXC.	EMB.
3+00	81		29		65	280		
		380		50			111	468
2+50	555		25		55	225		
		250		46			136	296
2+00	55		25		92	94		
		167		43			147	106
1+50	25		21		67	20		
		122		37			132	21
1+00	19		19		76	2.5		
		97		37			150	3
0+50	16		21		86	1		
		29		13			53	1
0+17	0		0			0		

SCALE 1" = 10'-0"
MADE J.H.K. DATE 2-2-56 HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS
TRCD. B.M.O. DATE 2-21-56 KANSAS CITY CLEVELAND NEW YORK
CKD. H.K.M. DATE 5-4-56 914 SHEET 20

LANE "A" STA. 0+17± TO STA. 3+00

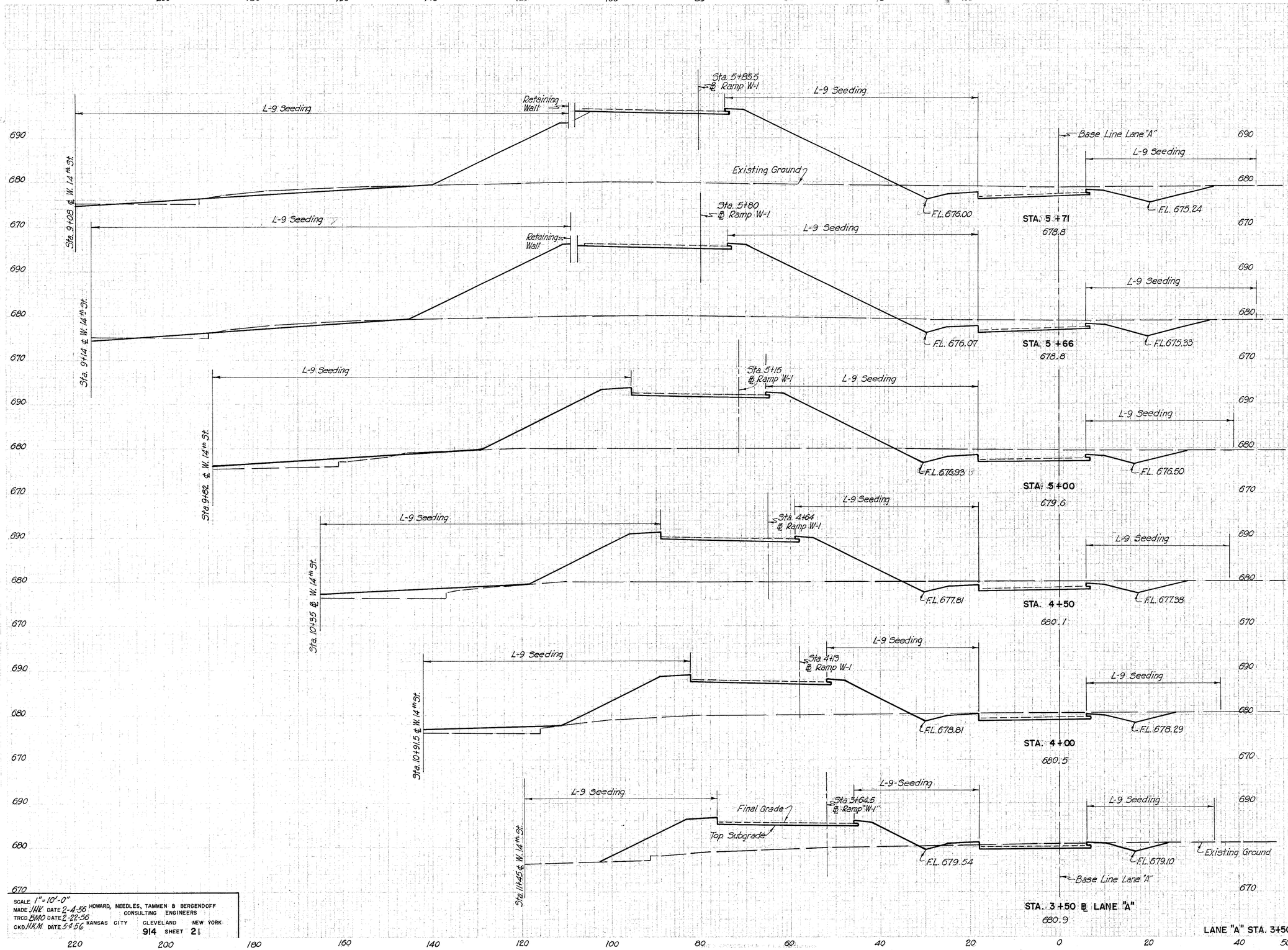
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS
2	OHIO		

21
67

CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY-42 R-17.43

CROSS SECTIONS



	SEEDING		SUBBASE		EARTHWORK			
	WIDTH	AREA	AREA	VOL.	END AREA		VOLUME	
	L. F.	SQ YD.	S.F.	C.Y.	EXC.	EMB.	EXC.	EMB.
5+71	215		29		178	1158		
		118		54			31	220
5+66	211		29		160	1208		
		1441		53			363	2550
5+00	182		28		137	879		
		938		52			217	1442
4+50	156		28		97	681		
		791		52			155	1090
4+00	129		28.5		70	497		
		646		53			111	801
3+50	104		28.5		50	368		
		515		53			107	600

SCALE 1"=10'-0"
MADE JHK DATE 2-4-56
TRCD BMO DATE 2-22-56
CKD HKM DATE 5-4-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914 SHEET 21

LANE "A" STA. 3+50 TO STA. 5+71

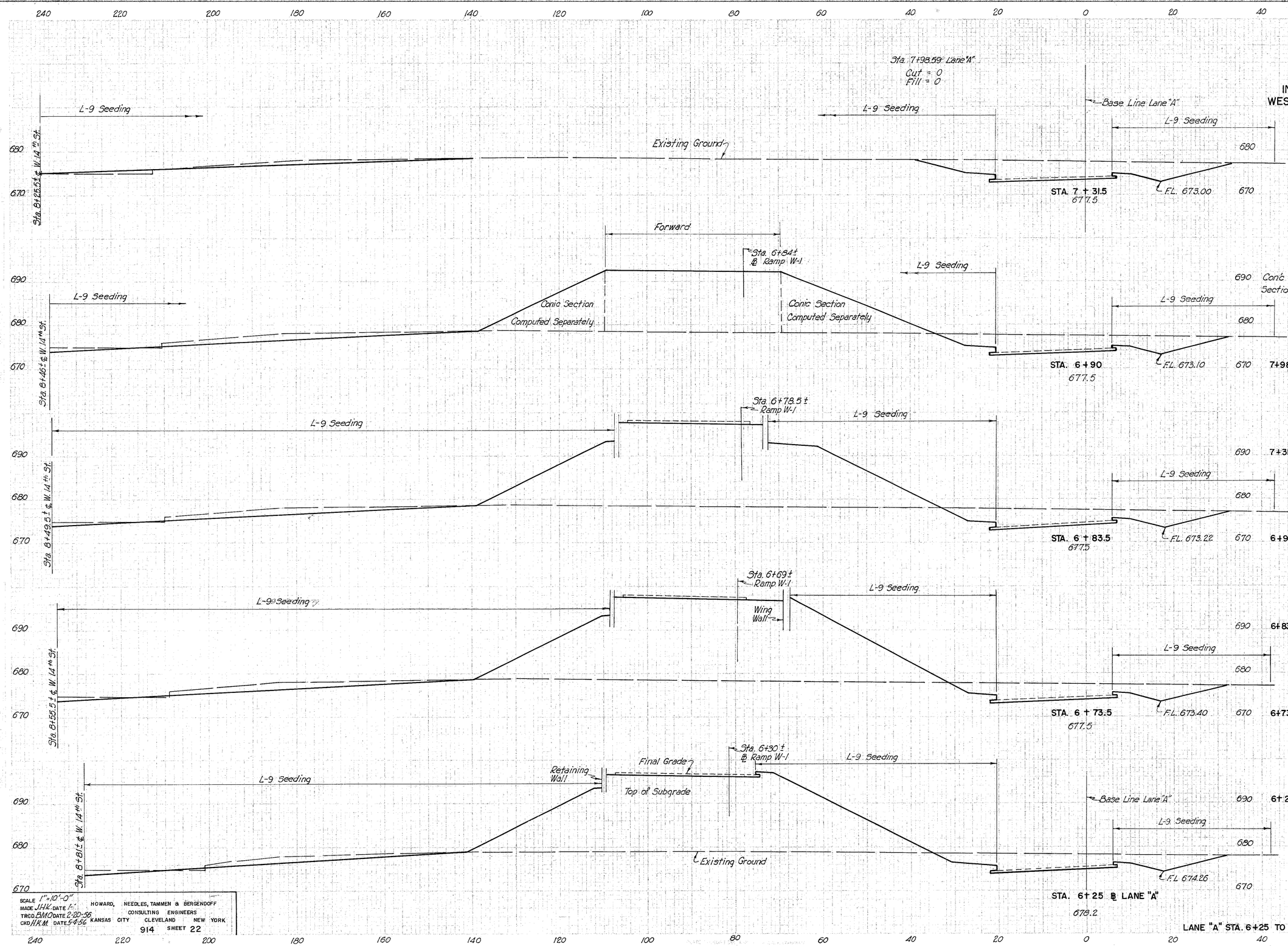
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS
2	OHIO		

22
67

CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY - 42 R-17.43

CROSS SECTIONS



SEEDING		SUBBASE		EARTHWORK			
WIDTH	AREA	AREA	VOL.	END	AREA	VOLUME	
L.F.	SQ. YD.	S.F.	C.Y.	EXC.	EMB.	EXC.	EMB.
	957		18			323	16
	1190		22			403	440
					Conic Sections		166
							114
	175		5			64	221
	249		11			100	491
	1186		53			471	2360
	1300		60			435	2410

690	Conc Section			
690	7+98.59	0	0	0
690	7+31.5±	257	14.5	260
680				
690	6+90	259	14.5	264
690	6+83.5±	225	28.5	270
680				
690	6+73.5±	222	28.5	267
690	6+25	218	31	257
680				

SCALE 1"=10'-0"
MADE JHK DATE 1-
TRCD BMO DATE 2-20-56
CKD HKM DATE 5-4-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914 SHEET 22

LANE "A" STA. 6+25 TO STA. 7+98.59

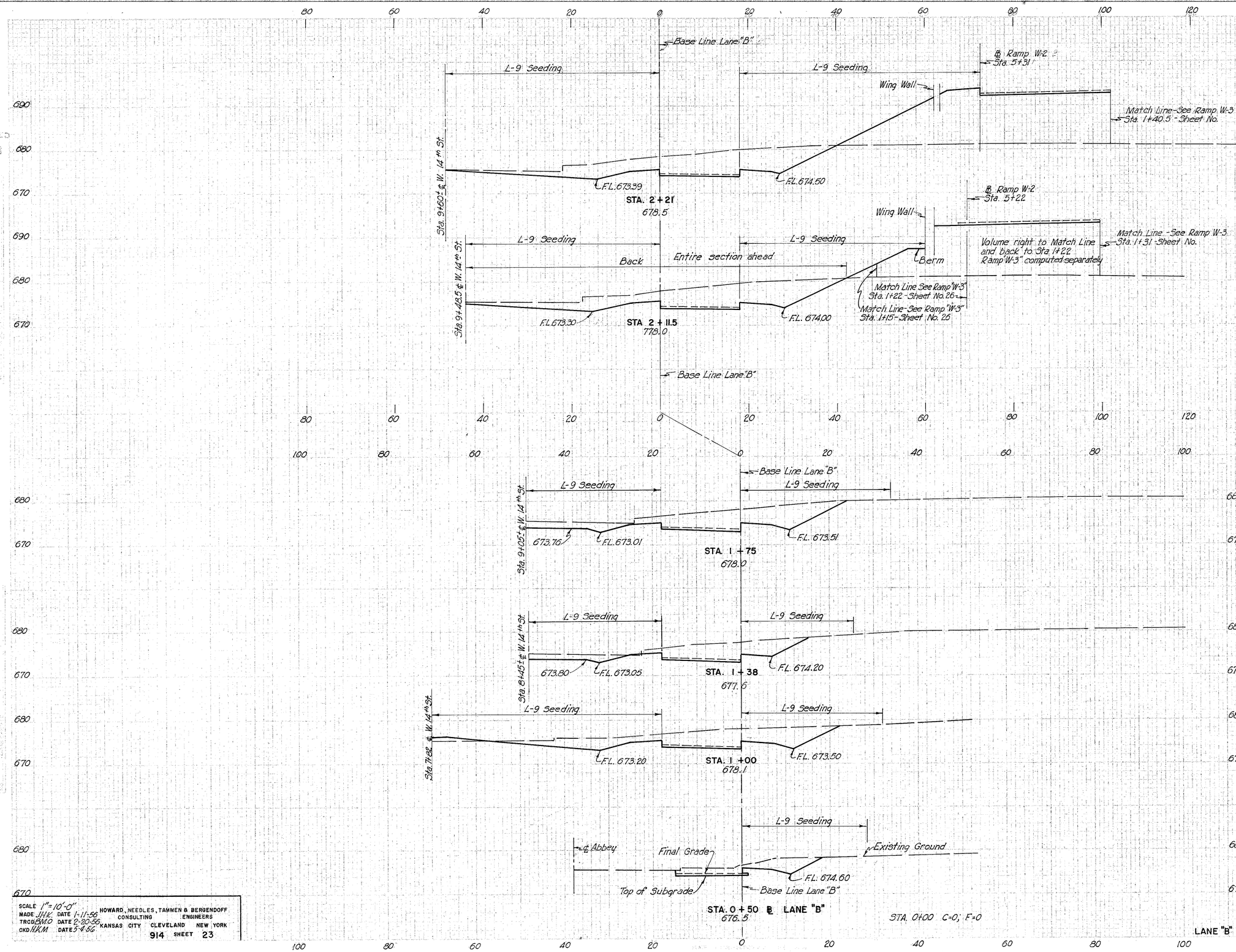
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS
2	OHIO		

23
67

CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY - 42R - 17.43

CROSS SECTIONS



	SEEDING		SUBBASE		EARTHWORK			
	WIDTH	AREA	AREA	VOL.	END AREA		VOLUME	
	L.F.	SQ.YD.	S.F.	C.Y.	EXC.	EMB.	EXC.	EMB.
2+21	108		24		277	583		
		104		8			95	195
2+11.5	89		24 (Ahead) 9 (Back)	261	523 (Ahead) 0 (Back)			
		316		12			308	0
					Wedge			57
1+75	67		9		194	0		
		257		12			227	1
1+38	58		9		137	1		
		302		13			239	6
1+00	85		9		202	7		
		316		16			246	6
0+50	29		8		63	0		
		81		7			58	0
0+00	0		0		0	0		

SCALE 1" = 10'-0"
MADE JHK DATE 1-11-56
TRCD DMO DATE 2-20-56
CKD HKM DATE 5-4-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914 SHEET 23

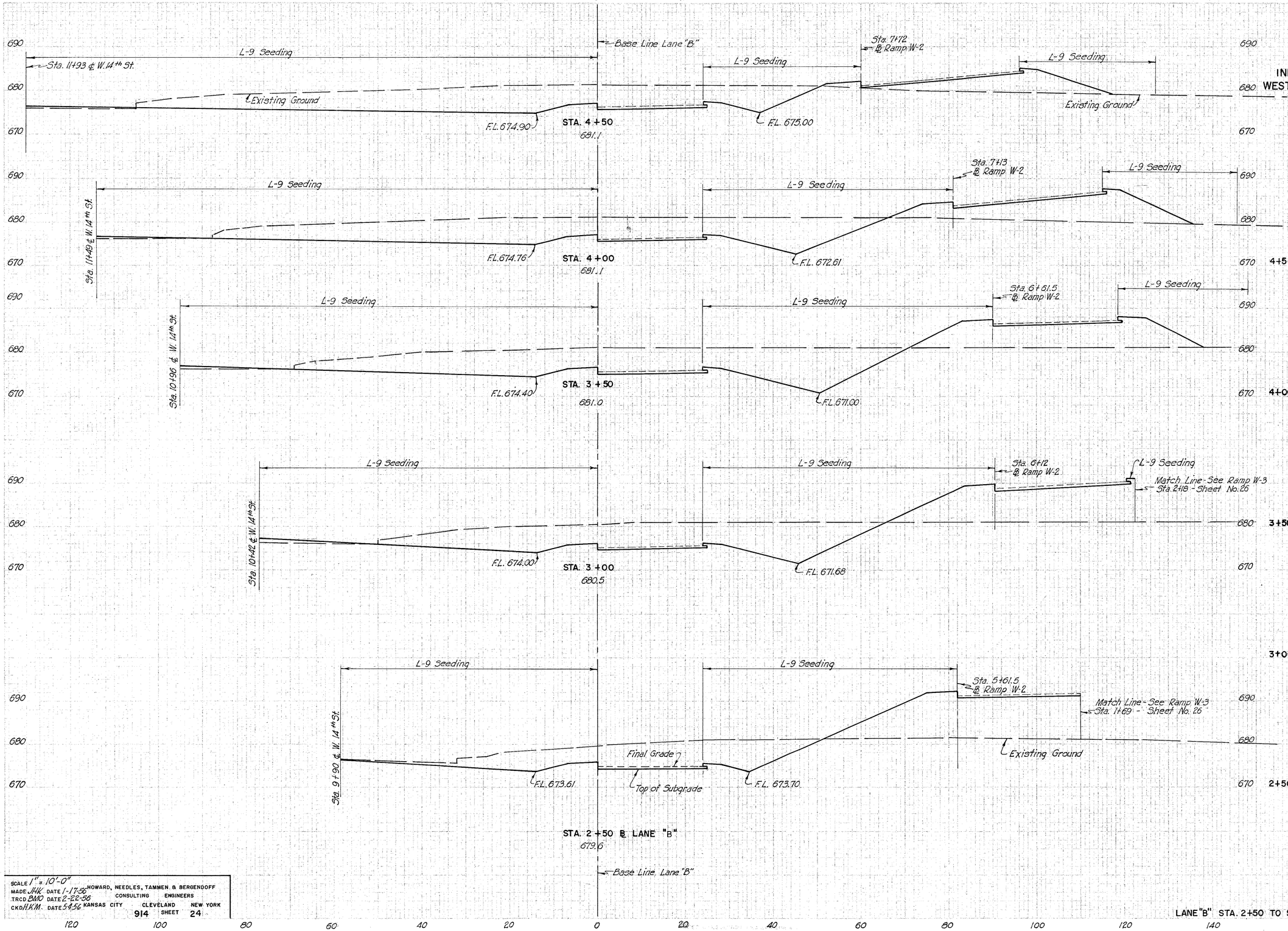
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS
2	OHIO		

24
67

CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY – PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY-42R-17.43

CROSS SECTIONS



	SEEDING		SUBBASE		EARTHWORK			
	WIDTH	AREA	AREA	VOL.	END AREA		VOLUME	
	L.F.	SQ.YD.	S.F.	C.Y.	EXC.	EMB.	EXC.	EMB.
4+50	200		31		685	163		
		1131		56			1329	416
4+00	207		30		748	286		
		1122		53			1378	568
3+50	197		27		471	327		
		964		51			1250	679
3+00	150		28		609	406		
		756		50			948	816
2+50	122		26.5		415	475		
		371		27			372	568

SCALE 1" = 10'-0"
MADE JHK DATE 1-17-56
TRCD BMO DATE 2-22-56
CKD H.K.M. DATE 5-4-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914 SHEET 24

LANE "B" STA. 2+50 TO STA. 4+50

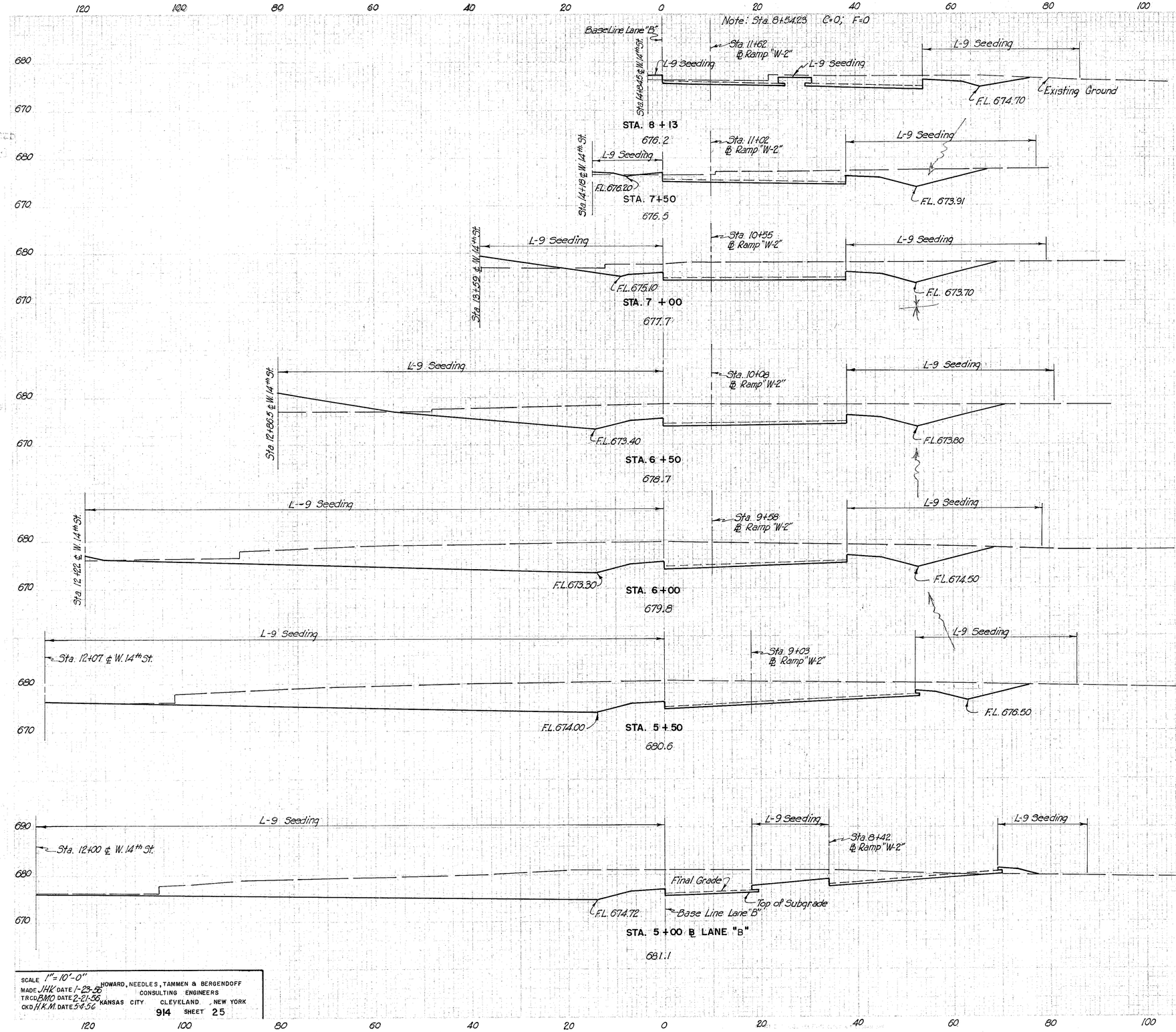
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS
2	OHIO		

25
67

CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY-42R-17.43

CROSS SECTIONS



	SEEDING		SUBBASE		EARTHWORK			
	WIDTH	AREA	AREA	VOL.	END AREA		VOLUME	
	L.F.	SQ.YD.	S.F.	C.Y.	EXC.	EMB.	EXC.	EMB.
8+54.23	0		0		0	0		
		98		19			88	2
8+13	43		25		115	3		
		340		51			298	7
7+50	54		19		140	3		
		375		35			356	29
7+00	61		19		245	28		
		573		35			633	70
6+50	125		19		439	48		
		797		35			1040	46
6+00	162		19		684	2		
		903		42			1326	2
5+50	163		26.5		747	0		
		914		50			1302	6
5+00	166		28		661	7		
		1017		55			1245	157

LANE "B" STA. 5+00 TO STA. 8+54.32

SCALE 1"=10'-0"
MADE JHK DATE 1-23-56
TRCD BMO DATE 2-21-56
CKD H.K.M. DATE 5-4-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914 SHEET 25

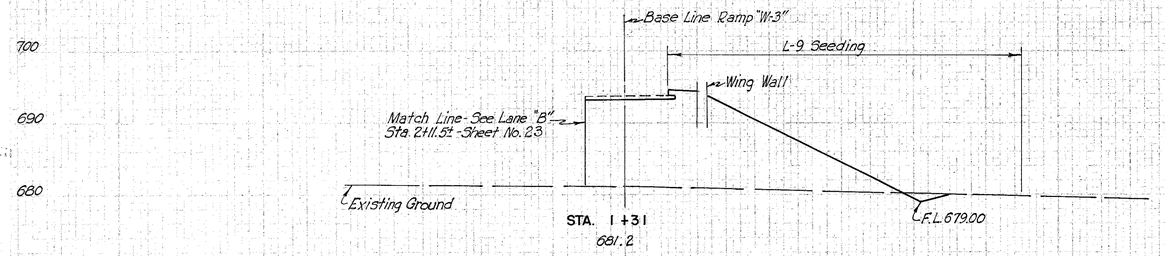
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS
2	OHIO		

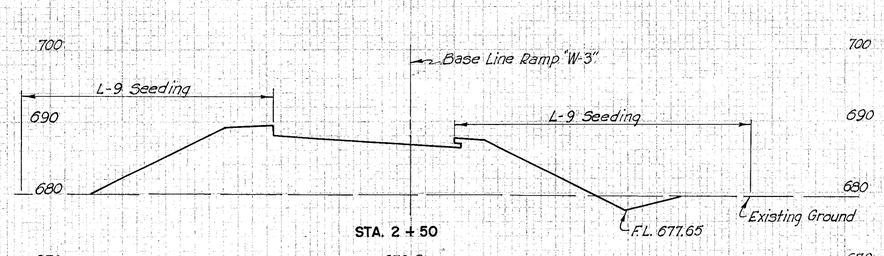
26
67

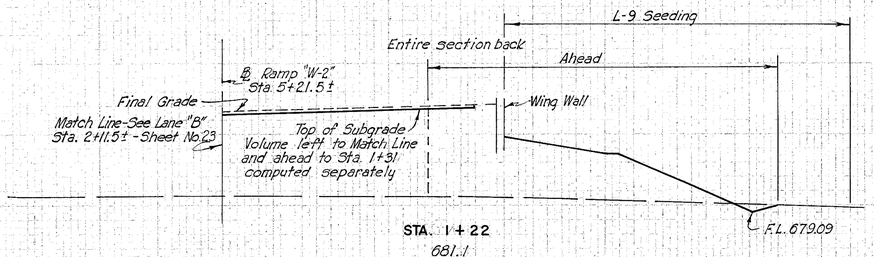
CUYAHOGA COUNTY
CITY OF CLEVELAND

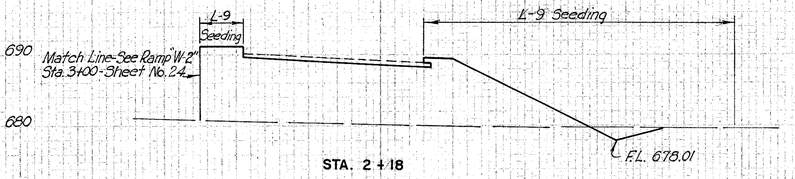
INNER BELT FREEWAY – PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY – 42 R – 17.43

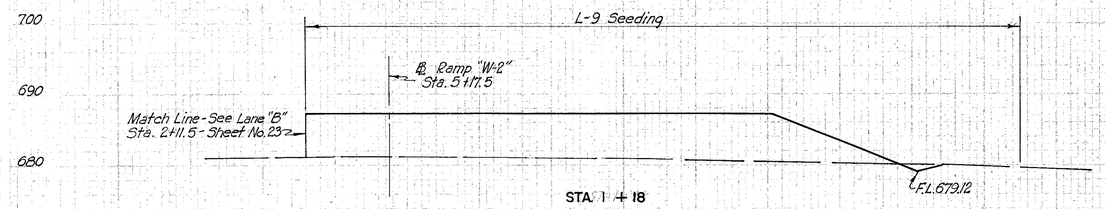
CROSS SECTIONS

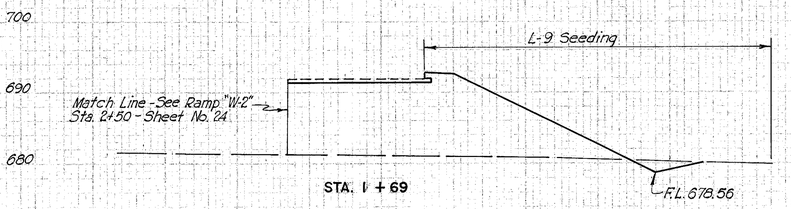


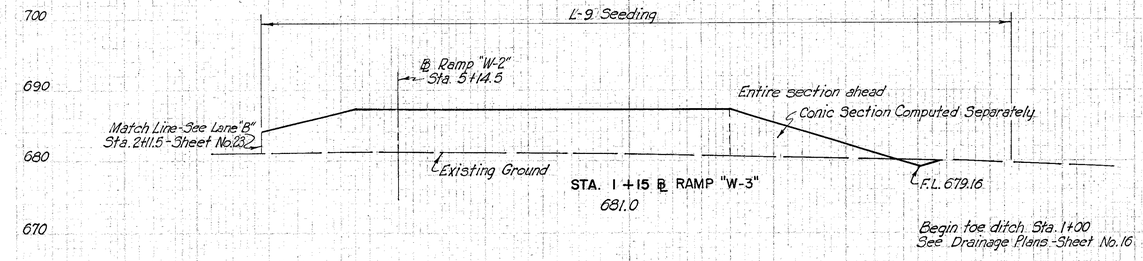


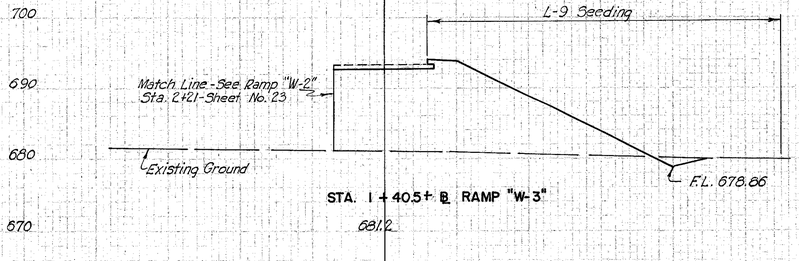












	SEEDING		SUBBASE		EARTHWORK			
	WIDTH	AREA	AREA	VOL.	END AREA		VOLUME	
	L.F.	SQ.YD.	S.F.	C.Y.	EXC.	EMB.	EXC.	EMB.
2+50	82		13		12	432		
		238		15			12	500
2+18	52		13		9	411		
		283		21			15	719
1+69	52		10		8	380		
		165		9			7	403
1+40.5	52		7		5	383		
		55		2			1	135
1+31	53		6		3	385		
		52		2			1	115
1+22	50		3		3	645	302 (Ahead)	
		34		0			0	83
1+18	101		0		3	480		
		35		0			1	52
1+15	107		0		3	382	457 (Ahead)	
		153		0			1	99
1+01	90		0		0	0	Conic Section	35

+2 (Wedge)

STA. 1+01 C=0; F=0; Seeding = 90'

RAMP "W-3" STA. 1+01 TO STA. 2+50

SCALE 1" = 10'-0"
MADE JHK DATE 12-14-56
TRCD EMD DATE 2-22-56
CKD HKM DATE 5-4-56

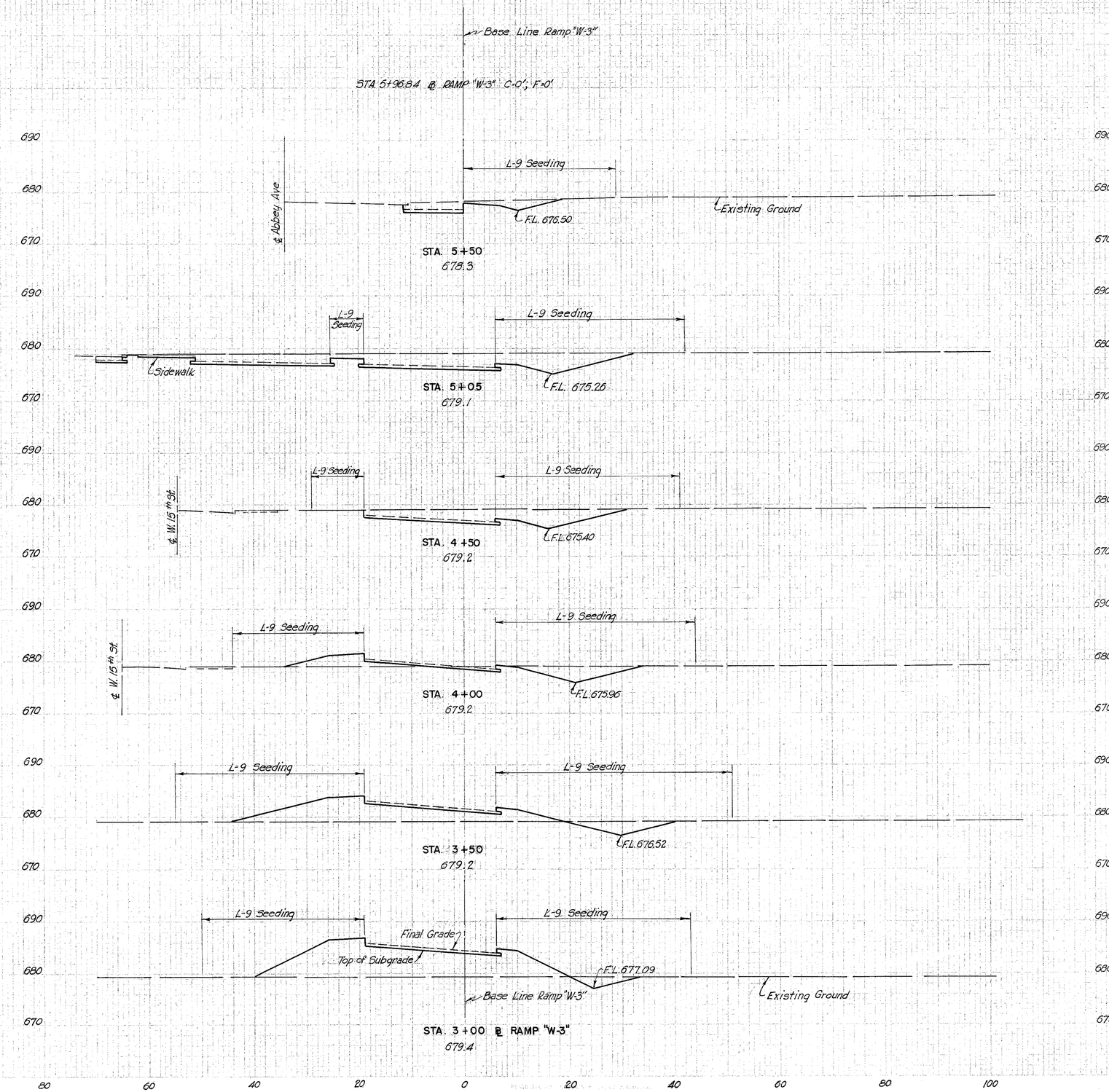
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914 SHEET 26

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TYPE FUNDS	27 / 67
2	OHIO			

CUYAHOGA COUNTY
CITY OF CLEVELAND

INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY-42R-17.43

CROSS SECTIONS



	SEEDING		SUBBASE		EARTHWORK			
	WIDTH	AREA	AREA	VOL.	END AREA		VOLUME	
	L.F.	SQ.YD.	S.F.	C.Y.	EXC.	EMB.	EXC.	EMB.
5+97±	0		0		0	0		
		78		5			35	0
5+50	30		6		40	0		
		223		37			197	0
5+05	43		30		196	0		
		223		36			314	0
4+50	46		13		113	0		
		308		24			146	30
4+00	65		13		45	32		
		411		24			65	182
3+50	83		13		30	165		
		431		24			42	412
3+00	72		13		15	279		
		428		24			25	658

RAMP "W-3" STA. 3+00 TO STA. 5+96.84

SCALE 1" = 10'-0"
MADE JHK DATE 12-7-55
TRCD BMO DATE 2-21-56
CKD HKM. DATE 5-4-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914 SHEET 27

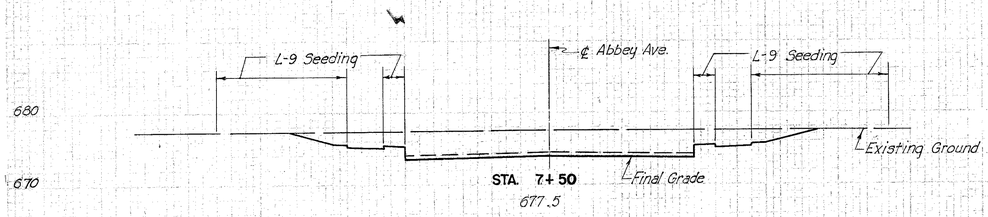
FED. ROAD DIV. NO.	STATE	FED. AID PRO. NO.	TYPE FUNDS	28 / 67
2	OHIO			

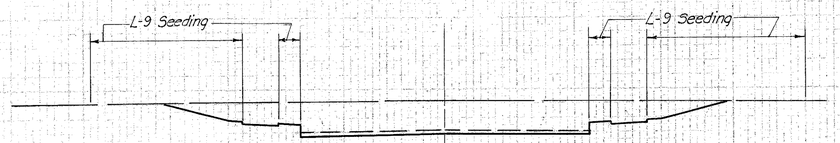
CUYAHOGA COUNTY
CITY OF CLEVELAND

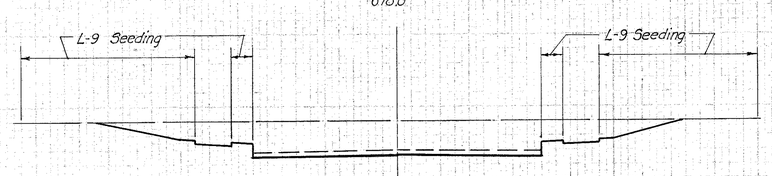
INNER BELT FREEWAY - PART 4
WEST APPROACH TO CENTRAL VIADUCT
CUY - 42R - 17.43

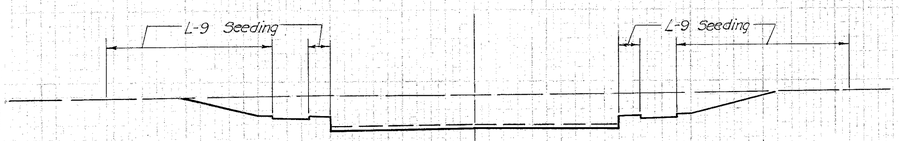
CROSS SECTIONS

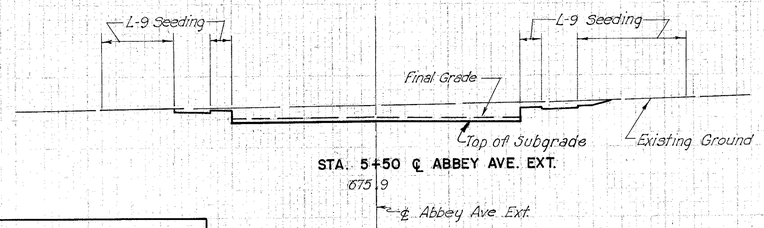
Note: Sta. 7+87± C=0; F=0











Note: Sta. 5+17± C=0; F=0

	SEEDING		SUBBASE		EARTHWORK			
	WIDTH	AREA	AREA	VOL.	END AREA		VOLUME	
	L. F.	SQ.YD.	S.F.	C.Y.	EXC.	EMB.	EXC.	EMB.
7+87	0		0		0	0		
				8				
		88					131	0
7+50	43		12		192			
		256		22			423	
7+00	49		12		265			
		280		22			494	
6+50	52		12		268			
		297		22			506	
6+00	55		12		278			
		239		22			341	
5+50	31		12		90			
		57		7			66	0
5+17±	0		0		0	0		

ABBEY AVE. EXT. STA. 5+17± TO STA. 7+87±

SCALE 1" = 10'-0"
MADE JHK DATE 1-3-56
TRCD. BMO DATE 2-3-56
CKD. HKM. DATE 5-4-56

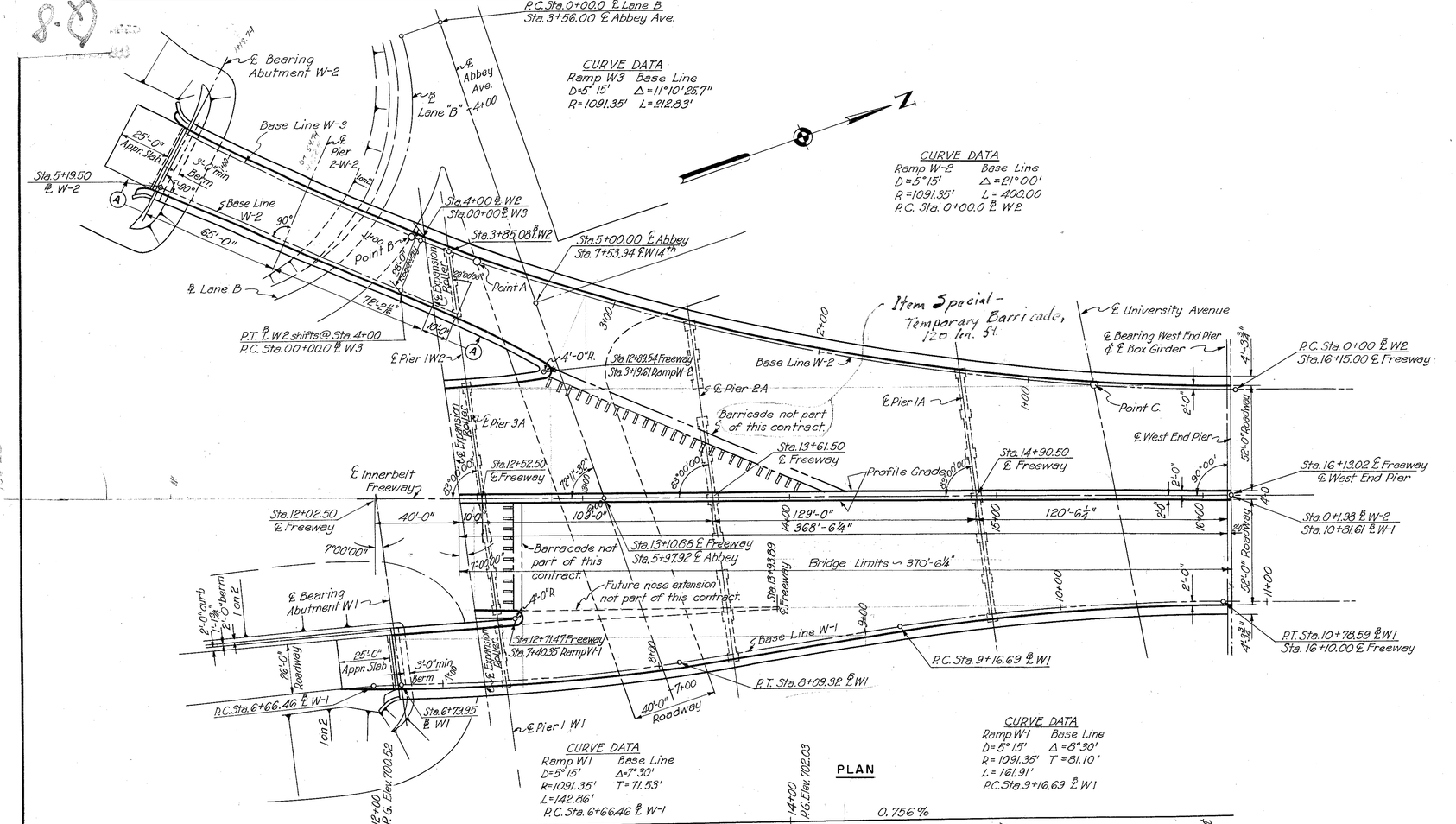
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914 SHEET 28

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	29 / 67
2	OHIO			

CUYAHOGA COUNTY
CITY OF CLEVELAND

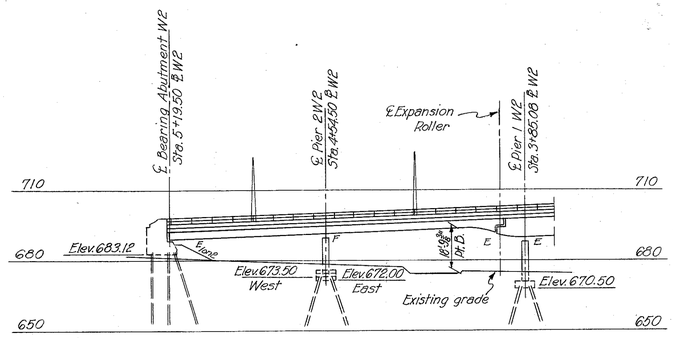
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43



ELEVATION

PROPOSED STRUCTURE

Type: Continuous steel beams and girders with concrete deck and substructure.
Span: Varies (see plan)
Roadway: 2@52'-0" with 2'-3'-0" sidewalks
Loading: C.F. 2000
Skew: Varies.
Surface Course: 2½" asphaltic concrete (not part of this contract)



ELEVATION A-A

Note:
Average vertical pile length for all piers, abutments, and for the retaining wall = 60'-0".

Rev. 11-26-56
Rev. 7-5-56

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

GENERAL PLAN AND ELEVATION

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE 1"=30' 0"
MADE A.S.R. DATE 2-17-56
TRCD M.A.C. DATE 4-4-56
CKD C.C.F. DATE 8-27-56

HOWARD, NEEDLES TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET 29

GENERAL NOTES

1. SPECIFICATIONS

A. DESIGN SPECIFICATIONS - Specifications for design of Highway structures of the State of Ohio Department of Highways, October 1, 1951, together with revisions thereof dated July 15, 1952, April 1, 1954, and February 1, 1955, with a load frequency rating CF-2000-51.

B. CONSTRUCTION SPECIFICATIONS - Construction and Material Specifications of the State of Ohio Department of Highways, dated January 1, 1955.

Supplemental Specifications of the State of Ohio Department of Highways number S-114, dated August 30, 1955.

2. DATUM FOR ELEVATIONS

All elevations are Regional Geodetic Survey Data.

3. BORINGS

Boring information, logs and samples of materials encountered may be examined in the Cleveland City Engineer's Office, but the borings are not guaranteed to present a complete picture of subsurface conditions to be encountered.

4. PILING

A. Piles shall be driven to a minimum bearing capacity of 40 tons for the abutments and retaining wall and 50 tons for the piers. The length of penetration of every pile shall be at least 80% of the estimated average pay length of the pertinent piers, abutment or retaining wall as indicated on the plans unless a lesser penetration is approved by the Director.

B. The pile space dimensions given on the plans are at the level of the bottom of footing.

5. UTILITIES

Any utility facilities encountered at the site of the work which will interfere with portions of the finished Freeway or structures, will be removed or relocated by others, unless otherwise shown. The Contractor shall coordinate his operations with the work of the utility owners or others who may be making the relocations and shall notify the owners of the utilities of his schedule sufficiently in advance to permit them to make the necessary alterations.

6. CLASS OF CONCRETE

All superstructure concrete shall be Class "C".

All substructure concrete shall be either Class "C" or Class "E" as shown in the plans.

7. GRAVEL

Gravel, if used as coarse aggregate, shall be according to Section M-3.93 instead of M-3.91 for Class "C" concrete in the superstructure. Gravel meeting the requirements of Section M-3.93 also may be used for other concrete in this structure.

8. CONCRETE FINISH

The railing parapets, curb faces, fascias of decks and exposed surfaces of substructure units and retaining wall shall receive a rubbed surface finish. All other exposed surfaces shall be governed by the provisions of Item S-1.

9. REINFORCING STEEL

Reinforcing steel shall conform to Item S-4 of the Construction and Material Specifications. Bars shall have deformations conforming to A.S.T.M. Designation A-305.

All laps in reinforcing bars at splices will be 30 bar diameters.

Bars shall be, unless otherwise shown, 3 inches clear from the face of the concrete in the bottoms of footings, 1 inch clear in slabs and 2 inches clear elsewhere.

Bar sizes are designated on the plans by numbers, the first digit in three digit marks and the first two digits in four digit marks indicate the size of the bar.

10. WATERPROOFING

Expansion and contraction joints shall be waterproofed as shown on the plans.

Type "C" waterproofing, for surfaces in contact with bituminous wearing surface, shall be furnished under another contract.

11. BITUMINOUS WEARING SURFACE

The bituminous wearing surface shall be furnished under another contract.

12. SUB DRAINAGE FOR BITUMINOUS WEARING SURFACE

The copper tubes required on the bridge deck slab, for sub-drainage, will be paid for at the contract unit price per cubic yard of superstructure concrete under Item S-1.

The steel angles over the copper tubes shall be furnished under another contract.

13. DIMENSIONS

Dimensions given on the plans are measured horizontally and at 60° F. unless shown otherwise.

14. STRUCTURAL STEEL

A. WELDED STEEL - The steel for beams A, B, C, D and E shall conform to A.S.T.M. Designation A-373. All other structural steel shall conform to either A.S.T.M. A-7 (as per Section M-7.4(a) of the Construction and Material Specifications) or to A-373.

B. All welding shall be Class "A".

C. CARBON STEEL CASTINGS - ~~Erected~~ Erection only, Item S-7, refers to the castings for the expansion joint at the West End Pier. They are on the construction site and shall be erected under this contract.

D. PAYMENT FOR STRUCTURAL STEEL - In accordance with Sec. S-7.28, the weight of waste material, such as is removed by burning, cutting, coping, clipping, machining, punching, drilling, etc., shall not be considered as pay weight. However, material removed to form rivet and bolt holes shall be included in the pay quantity provided that only those portions of the rivets and bolts projecting beyond the holes are included in the pay quantity. Furthermore, any thickness and weight of members in excess of that called for on the plans (due to overweight or other cause) shall not be included in determining the weight to be paid for, unless an increase in the size of a member has been requested by the Director.

E. Painting of superstructure metalwork shall be according to Item S-8 of the Construction and Material Specifications except as modified herein.

1. Coats of Paint

The paint shall be applied by brushing in four coats as follows:

a. A first coat of red lead paint applied in the shop on clean metal surfaces prepared for painting as specified in Section S-8.03.

b. A second coat of red lead paint applied in the field after erection. For surfaces that will be inaccessible after erection, this second coat may be applied either in the shop or in the field.

c. A third and a fourth coat consisting of white lead paint. The fourth coat shall be tinted a medium shade of gray that meets the approval of the Director of Highways and the City of Cleveland.

d. Light standards and the steel parts of handrails shall be painted with a first and a second coat of red lead paint as specified for the remainder of the structural steel, but the third and fourth coats shall be of aluminum paint.

2. Materials

a. The paint to be used for the first and second red lead coats shall be of the following composition and properties:

Pigment	Vehicle
Red lead (97% grade) - 99.6% (minimum)	Raw linseed oil 35% to 50%
Aluminum Stearate - 0.3 - 0.4%	* Pale heat bodied linseed oil (Z_2) 15% to 30%
	Volatile mineral spirits and drier 35% (maximum)

* The acid number of this oil shall not be over 11, the color not darker than 7 (Gardener 1933) and shall have a Wijs iodine value of 110 - 125.

Paint	First Coat	Second Coat
Pigment	73% (minimum)	77% (minimum)
Vehicle	27% (maximum)	23% (maximum)
Weight per gallon	21.0 Lbs. (minimum)	24.0 Lbs. (minimum)
Consistency	175 Gr to 250 Gr. (A.S.T.M. Method D562-42T or Federal Specification TT-P-141a, Method 428.1)	
Fineness of grind	5 (minimum)	

Drying Time-Set to Touch-6 Hours (maximum) and Dry through-36 Hours (maximum)

The paint shall be well ground, shall not settle excessively or cake in the container, shall be readily broken up with a paddle to a smooth uniform paint having good brushing properties. The paint, when brushed on a clean, smooth steel panel maintained in a vertical position, shall dry to a smooth uniform finish free from roughness, grit, unevenness, streaking, separation, running, curtaining and sagging. For contrast between the first and second coats, the second coat shall be tinted with lampblack-in-oil to change its color to a chocolate brown.

b. The white lead third and fourth coats of paint shall conform to Section M-9.6(b) of the Construction and Material Specifications.

c. The aluminum third and fourth coats of paint shall conform to Section M-9.12 of the Construction and Material Specifications.

15. HANDRAIL

The finished handrail shall be free of burrs, sharp corners and rough surfaces.

The final adjustment of the handrail shall be such that the aluminum tubing shall not depart more than 1/8 inch from correct line or grade, and shall show no abrupt kinks.

The Contractor shall furnish a pattern of the cast aluminum handrail post to the City of Cleveland for use in future replacement of damaged posts.

16. ROADWAY DRAINAGE SYSTEM

This item consists of all 6 inch round galvanized steel or wrought iron pipe, cleanouts, reducers, elbows, scuppers, and Type A and B hangers.

The 12 inch round pipe, including tees, from the piers and abutment to the inlets is included in the roadway quantities.

17. ELECTRIC LIGHTING SYSTEM

For general notes and payment for lighting system see Sheet 5.

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

30
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY - 42 R - 17.43

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

GENERAL NOTES

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE
MADE RSG DATE 2-1-56
TRCD. DATE
CKD. JPS DATE 2-10-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET 30

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

31
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY—42R—17.43

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	UNIT	SUPER-STRUCTURE	ABUTMENT W-1	RAMP W-1 RET. WALL	PIER 1W-1	ABUTMENT W-2	PIER 1W-2	PIER 2W-2	PIER 1A	PIER 2A	PIER 3A	WEST END PIER	GENERAL	TOTAL	AS BUILT	
E-2	COFFERDAMS, CRIBS AND SHEETING	LUMP SUM												Lump Sum			
E-2	UNCLASSIFIED EXCAVATION	CU. YDS.		90	193	65	119	74	74	222	314	~~204~~ 209			~~1,355~~	C-3, +5	1360
S-1	CLASS "C" CONCRETE - PIER COLUMNS AND CAPS	CU. YDS.				20		31	16	108	125	90			390		
S-1	CLASS "C" CONCRETE - SUPERSTRUCTURE	CU. YDS.	1,805										~~10~~ 20		~~1,815~~	C-15, +10	1825
S-1	CLASS "E" CONCRETE - ABUTMENTS, RET. WALL AND WEST END PIER	CU. YDS.		63	~~94~~ 106		83						~~350~~ 366		~~590~~	C-4, +12 C-15, +16	618
S-1	CLASS "E" CONCRETE - FOOTINGS	CU. YDS.				23		27	24	85	130	~~86~~ 90			~~375~~	C-3, +4	379
S-3	WATERPROOFING - PREMOLDED SEALING STRIP	LIN. FT.			15										~~15~~		
S-3	TYPE "B" WATERPROOFING	SQ. YDS.			2										2		
S-4	REINFORCING STEEL	LBS.	563,601	4,369	6,882	6,058	5,290	9,757	5,907	31,501	35,954	~~28,897~~ 23,728	20,695	819	~~718,635~~	C-3, +781 C-16, +824	719,332
S-7	STRUCTURAL STEEL	LBS.	3,498,000												~~3,498,000~~	C-16, -32,781	3,536,781
S-7	CARBON STEEL CASTINGS	LBS.	30,600												~~30,600~~	C-15, -11,390	13,410
* S-7	CARBON STEEL CASTINGS - ERECTION ONLY	LBS.	14,300												~~14,300~~	C-15, +210	14,710
S-7	HIGH STRENGTH STEEL CASTINGS AND FORGINGS	LBS.	30,700												~~30,700~~	C-15, -8,618	22,082
S-8	FIELD PAINTING OF STRUCTURAL STEEL AND CASTINGS (3 COATS)	LBS.	3,573,800												~~3,573,800~~	C-16, +19,183	3,592,983
S-9	1" GRAY RUBBER PREFORMED EXPANSION JOINT FILLER	SQ. FT.			20					65	54	51			190		
S-14	RAILING (ALUMINUM RAIL AND SUPPORTS, CONCRETE PARAPET AND END POSTS)	LIN. FT.	~~1,354~~ 1,384												~~1,354~~	C-15, +30	1384
S-16	FIRST TEST PILE (14" CAST-IN-PLACE REINFORCED CONCRETE)	LUMP SUM												Lump Sum			
S-17	FIRST PILE TEST LOAD	LUMP SUM												Lump Sum			
S-17	SUBSEQUENT PILE TEST LOADS	EACH												+0-	+	C-14, -1	-0-
S-18	12" CAST-IN-PLACE REINFORCED CONCRETE PILES	LIN. FT.		729	1,215		729								2,673	C-14, -1170	1503
S-18	14" CAST-IN-PLACE REINFORCED CONCRETE PILES	LIN. FT.				840		900	735	3,660	5,834	2,880			~~14,849~~	C-14, -8695	6154
S-29	POROUS BACKFILL	CU. YDS.		3	12		5								20		
△ S-29	ROADWAY DRAINAGE SYSTEM	LBS.	2,300			500	100	500			1,100				4,500		

* SEE NOTE 14 ON SHEET 30.

△ SEE NOTE 16 ON SHEET 30.

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

ESTIMATED QUANTITIES

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE
MADE RSG DATE 3-27-56
TRCD RSG DATE 3-31-56
CKD JSH DATE 3-28-56

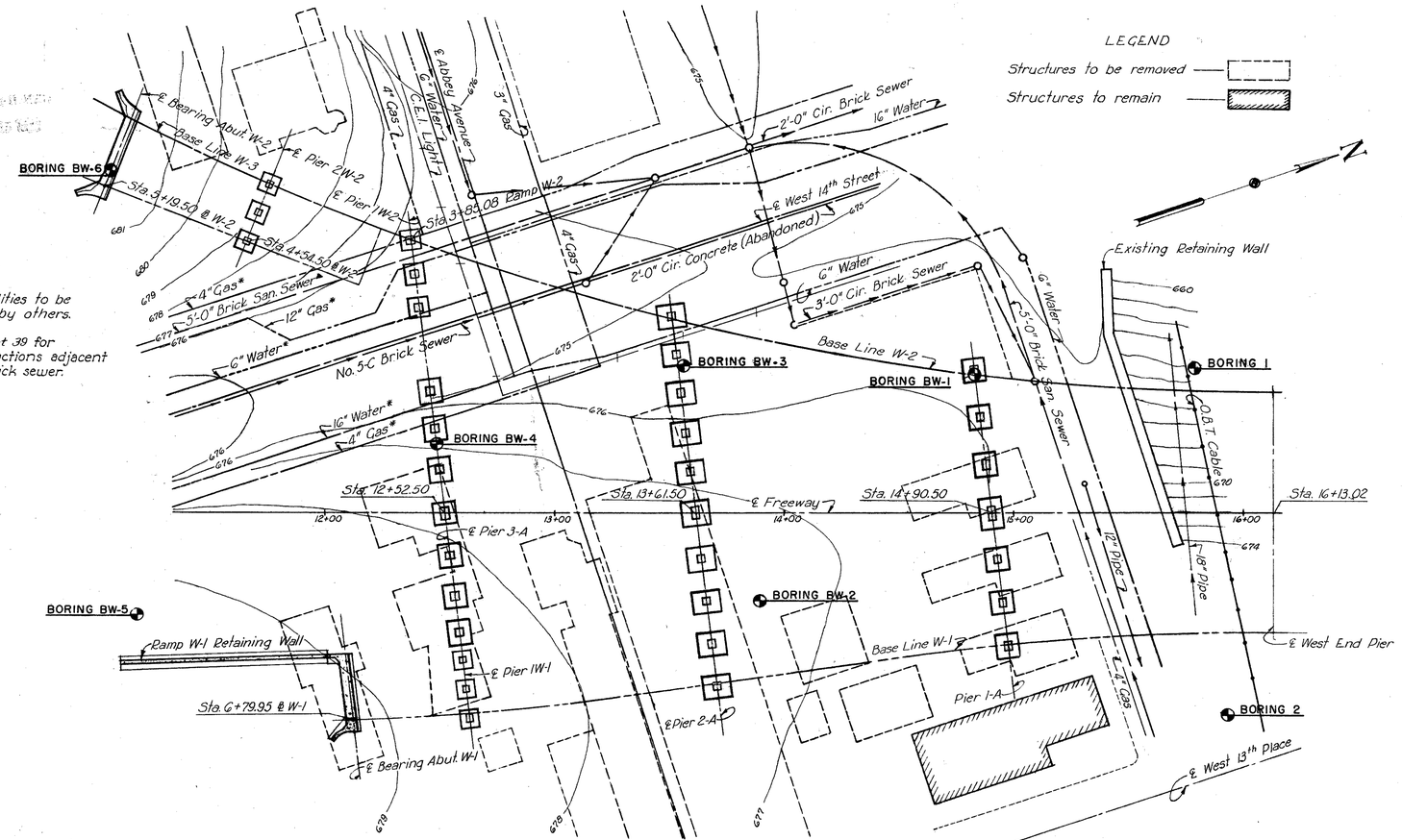
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET- 31

6-17-59 Revised As-Built JER

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	32
2	OHIO			67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43

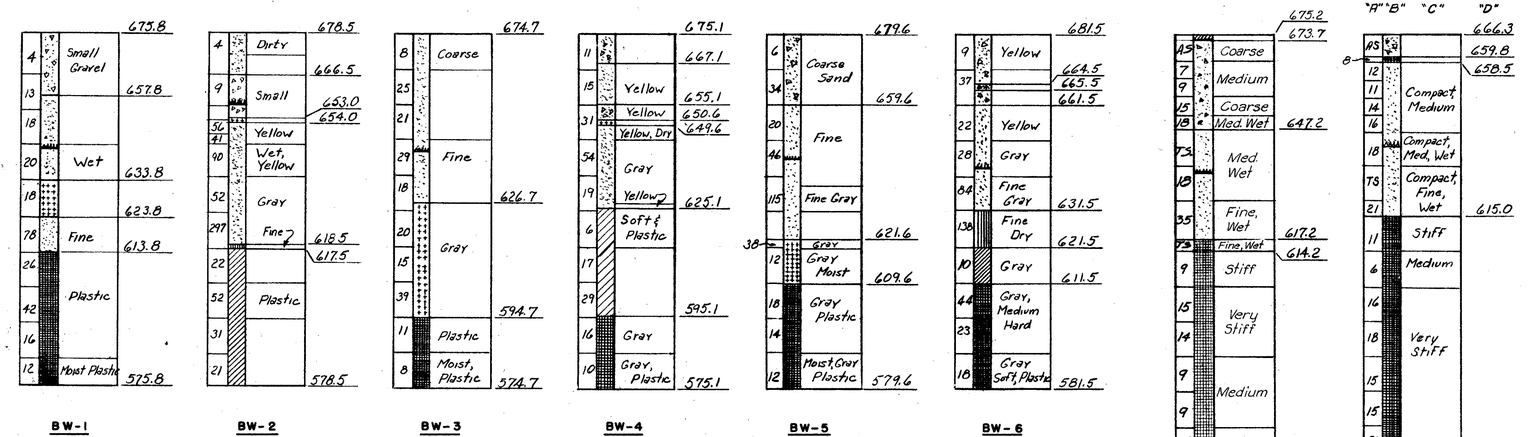
LEGEND
Structures to be removed
Structures to remain



* These utilities to be removed by others.

▲ See sheet 39 for constructions adjacent to 5' brick sewer.

GROUND PLAN
Scale: 1" = 30'-0"



BORING LOGS
Scale: 1"=20' vert.

BORING LEGEND

	AS	TS	
Ground Water	Auger Sample	Tube Sample	Silt, Sand & Gravel
Fill	Clay	Sand	Silt
Silty Sand	Silty Clay	Sand & Gravel	Gravel

BORING NOTES:
With reference to Boring 1:
1. In column "A", the figures 12, 11, 14 etc. are the hammer blows required to advance the casing one foot.
2. Column "B" shows the legend of soil types and ground water elevation.
3. Column "C" shows soil classification.
4. Column "D" shows elevations of soil levels. Elevation at top is top of ground, elevation at bottom is bottom of hole.

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

GROUND PLAN AND BORING DATA

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE As shown
MADE WEG DATE 2-28-56
TRCD ____ DATE ____
CKD JJN DATE 3-1-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914(2)WB SHEET- 32

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

33
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42R – 17.43

RECEIVED
FEB 25 1963

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENT	WEIGHT (LBS.)
SUPERSTRUCTURE									
401	193	40'-0"	Str.						5,157
402	9	10'-0"	Str.						60
403	1408	7'-8"	111	1'-4"	1'-4"	1'-4"	3'-8"		7,211
404	1492	3'-9"	Str.						3,737
405	1577	4'-11"	104	10"	1'-3"	4½"			5,179
406	9	4'-9"	Str.						29
407	3	7'-2"	103	2'-6"	2'-4"				14
408	3	11'-8"	103	2'-6"	4'-7"				23
409	2	12'-3"	103	3'-1"	4'-7"				16
410	3	4'-10"	103	2'-4"	1'-3"				10
411	3	7'-5"	109	1'-2"	3'-7"	1'-11"			15
412	1	16'-0"	109	3'-10"	12'-0"	2'-0"			11
413	2	6'-7"	109	1'-2"	3'-7"	1'-6"			9
414	14	6'-10"	112	4'-3"	1'-4"	1'-3"	4"		64
415	1	11'-8"	113	6'-6"	1'-4"	1'-3"	4"		8
416	1	9'-10"	113	4'-8"	1'-4"	1'-3"	4"		7
417	11	9'-7"	104	10"	3'-7"	4½"			70
418	2	4'-8"	110	8"	1'-8"	1'-6"	4"		6
419	1	14'-0"	110	3'-10"	10'-0"	2'-0"	4"		9
420	3	6'-4"	110	8"	1'-8"	2'-4"	4"		13
421	6	4'-1"	108	1'-3"	10"	2'-0"			16
422	1	7'-0"	Str.						5
423	1	6'-3"	Str.						4
424	1	4'-9"	Str.						3
425	738	6'-0"	114	1'-3"	1'-0"	1'-6"	2½"		2,958
426	84	4'-9"	112	3'-9"	11"	4'-0"	2½"		267
427	16	22'-0"	Str.						235
428	95	6'-8"	111	1'-4"	1'-4"	1'-4"	2'-8"		423
429	95	2'-9"	Str.						175
430	9	16'-3"	Str.						98
431	9	26'-0"	Str.						156
501	1538	40'-0"	Str.						64,165
502	68	37'-9"	Str.						2,677
503	189	36'-0"	Str.						7,097
504	1 Series 6	7'-0" to 35'-9"	Str.					5'-9"	134
505	1 Series 7	7'-0" to 34'-9"	Str.					4'-7½"	152
506	1 Series 9	4'-6" to 36'-6"	Str.					4'-0"	192
507	1 Series 10	5'-0" to 35'-9"	Str.					3'-5"	213
508	1 Series 3	10'-3" to 29'-6"	Str.					9'-7½"	62
509	1	30'-0"	Str.						31
510	6	15'-3"	Str.						95
511	1 Series 3	21'-0" to 35'-0"	Str.					7'-0"	88
512	1	27'-0"	Str.						28
513	1 Series 38	38'-0" to 46'-0"	Str.					0'-2⅝"	1,665
514	1 Series 65	22'-9" to 29'-3"	Str.					0'-1¼"	1,763
515	73	38'-9"	Str.						2,950
516	196	25'-6"	Str.						5,213
517	1 Series 62	16'-0" to 22'-6"	Str.					0'-1¼"	1,245
518	1 Series 35	15'-0" to 16'-6"	Str.					0'-0½"	575
519	3	22'-9"	Str.						71
520	3	22'-6"	Str.						70
601	128	18'-0"	Str.						3,461
602	2 Series 61	18'-0" to 20'-0"	Str.					0'-0⅜"	3,482
603	2 Series 61	20'-0" to 23'-9"	Str.					0'-0¾"	4,008
604	1 Series 61	24'-0" to 29'-0"	Str.					0'-1"	2,428
605	1 Series 111	29'-3" to 40'-0"	Str.					0'-1 5/16"	5,773
606	118	20'-0"	Str.						3,545
607	1 Series 85	24'-3" to 30'-6"	Str.					0'-0⅞"	3,495
608	1 Series 33	30'-9" to 32'-9"	Str.					0'-0⅜"	1,574
609	1 Series 44	35'-9" to 38'-6"	Str.					0'-0¾"	2,454
610	2517	40'-0"	Str.						151,221
611	4	14'-6"	Str.						87
612	3	18'-9"	Str.						85
613	4	16'-0"	Str.						96
614	20	20'-6"	Str.						616
615	4	9'-0"	Str.						54
616	4	22'-9"	Str.						137
617	86	30'-9"	Str.						3,972
618	1 Series 110	7'-3" to 17'-6"	Str.					0'-1⅛"	2,045
619	1 Series 61	18'-0" to 25'-6"	Str.					0'-1½"	1,993
620	1 Series 61	26'-0" to 35'-0"	Str.					0'-1 3/16"	2,795
621	1 Series 5	9'-0" to 36'-6"	Str.					6-10½"	171
622	65	38'-9"	Str.						3,783
623	245	19'-0"	Str.						6,992
624	1 Series 64	17'-0" to 28'-6"	Str.					0'-2 3/16"	2,187
625	1	37'-0"	Str.						56
626	1	35'-0"	Str.						53
627	4	22'-0"	Str.						132
628	1 Series 5	8'-0" to 40'-0"	Str.					8'-0"	180
629	1 Series 6	28'-0" to 40'-0"	Str.					2'-4 13/16"	306
630	1 Series 12	4'-6" to 30'-0"	Str.					2'-3 13/16"	311
631	8	20'-0"	Str.						240
632	1 Series 49	33'-0" to 36'-9"	Str.					0'-0 15/16"	2,567
633	1 Series 46	31'-0" to 33'-0"	Str.					0'-0 9/16"	2,211
634	1 Series 18	7'-0" to 9'-9"	Str.					0'-1 15/16"	226
635	13	10'-6"	Str.						205
636	1 Series 24	4'-0" to 30'-0"	Str.					1'-1 9/16"	613
637	30	4'-0"	Str.						180
638	1 Series 48	26'-0" to 32'-0"	Str.					0'-1 15/16"	2,091
639	1 Series 76	18'-0" to 23'-3"	Str.					0'-0 13/16"	2,354
640	1 Series 6	8'-0" to 35'-0"	Str.					5'-4 13/16"	194
641	1 Series 3	4'-0" to 14'-0"	Str.					5'-0"	41
642	4	25'-9"	Str.						155
643	227	17'-3"	Str.						5,881
644	1 Series 6	4'-6" to 32'-0"	Str.					5'-6"	164
645	1 Series 3	2'-0" to 12'-0"	Str.					5'-0"	32
646	1 Series 48	18'-9" to 24'-9"	Str.					0'-1 9/16"	1,568
647	4	25'-3"	Str.						152
648	6	32'-0"	Str.						288
649	1 Series 24	17'-0" to 18'-6"	Str.					0'-0 13/16"	640
650	3	17'-0"	Str.						77
651	3	18'-6"	Str.						83
652	4	13'-0"	Str.						78
698	20	6'-9"	Str.						203
701	116	20'-9"	Str.						4,920
702	2 Series 61	20'-9" to 22'-9"	Str.					0'-0⅜"	5,424
703	2 Series 61	23'-0" to 26'-9"	Str.					0'-0¾"	6,203
704	1 Series 61	26'-9" to 32'-0"	Str.					0'-1 1/16"	3,663
705	1 Series 82	32'-0" to 40'-0"	Str.					0'-1 5/16"	6,034
706	1 Series 191	23'-0" to 29'-3"	Str.					0'-0⅜"	10,199
707	1 Series 108	20'-6" to 27'-0"	Str.					0'-0¾"	5,243
708	1 Series 82	27'-0" to 29'-9"	Str.					0'-0 15/16"	4,756
709	84	30'-9"	Str.						5,280
710	1 Series 75	21'-0" to 26'-0"	Str.					0'-0 13/16"	3,603
711	1 Series 6	5'-6" to 32'-3"	Str.					5'-4 9/16"	232
712	1 Series 4	4'-0" to 19'-0"	Str.					5'-0"	94
713	1097	37'-6"	Str.						84,085
714	26	19'-9"	Str.						1,050
715	1 Series 6	4'-6" to 32'-0"	Str.					5'-6"	224
716	1 Series 3	4'-0" to 14'-0"	Str.					5'-0"	55
717	244	18'-9"	Str.						9,351
718	1 Series 105	10'-3" to 20'-3"	Str.					0'-1⅛"	3,273
719	1 Series 61	20'-3" to 28'-3"	Str.					0'-1⅜"	3,024
720	1 Series 76	28'-3" to 40'-0"	Str.					0'-1⅝"	5,301
721	1 Series 6	8'-6" to 34'-0"	Str.					5'-1⅜"	261
722	1 Series 55	32'-9" to 36'-3"	Str.					0'-0¼"	3,879
723	1 Series 58	22'-6" to 37'-0"	Str.					0'-3 5/16"	3,527
724	1 Series 4	32'-6" to 36'-6"	Str.					1'-4"	282
725	1 Series 49	33'-0" to 36'-9"	Str.					0'-0 15/16"	3,493
726	1 Series 46	31'-0" to 33'-0"	Str.					0'-0 9/16"	3,009
727	1 Series 24	4'-0" to 30'-0"	Str.					1'-1 9/16"	834
								TOTAL	519,508

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENT	WEIGHT (LBS.)
RAMP W-2 SUPERSTRUCTURE									
401	18	8'-0"	Str.						96
402	45	40'-0"	Str.						1,202
403	1 Series 9	36'-6" to 38'-6"	Str.					0'-3"	225
404	1 Series 9	15'-9" to 17'-0"	Str.					0'-1⅞"	99
405	389	7'-8"	111	1'-4"	1'-4"	1'-4"	3'-8"		1,993
406	403	3'-9"	Str.						1,010
407	434	4'-11"	104	10"	1'-3"	4½"			1,425
408	14	8'-8"	112	3'-9"	11"	4'-0"	4"		81
501	38	8'-6"	Str.						337
502	107	40'-0"	Str.						4,464
503	1 Series 30	2'-0" to 15'-9"	Str.					0'-5 11/16"	278
504	1 Series 5	38'-6" to 39'-9"	Str.					0'-3¾"	204
505	36	20'-9"	Str.						779
506	3	5'-6"	Str.						17
601	41	8'-6"	Str.						523
602	108	40'-0"	Str.						6,489
603	1 Series 4	38'-3" to 39'-3"	Str.					0'-4"	233
604	1 Series 29	2'-0" to 15'-9"	Str.					0'-5⅞"	387
605	1 Series 24	2'-0" to 30'-9"	Str.					1'-3"	590
606	29	30'-9"	Str.						1,339
607	1 Series 28	31'-0" to 31'-6"	Str.					0'-0¼"	1,314
608	1 Series 43	31'-6" to 32'-9"	Str.					0'-0⅜"	2,075
609	1 Series 38	32'-9" to 34'-9"	Str.					0'-0⅝"	1,926
610	1 Series 43	34'-9" to 37'-6"	Str.					0'-0 13/16"	2,333
611	4	13'-6"	Str.						81
612	28	16'-9"	Str.						704
613	4	7'-0"	Str.						42
614	4	14'-0"	Str.						84
615	20	17'-3"	Str.						518
616	4	19'-0"	Str.						114
617	5	6'-0"	Str.						45
698	5	6'-9"	Str.						51
701	1 Series 24	2'-0" to 30'-9"	Str.					1'-3"	803
702	29	30'-9"	Str.						1,823
703	1 Series 28	31'-0" to 31'-6"	Str.					0'-0¼"	1,789
704	1 Series 43	31'-6" to 32'-9"	Str.					0'-0⅜"	2,824
705	1 Series 38	32'-9" to 34'-9"	Str.					0'-0⅝"	2,621
706	1 Series 43	34'-9" to 37'-6"	Str.					0'-0 13/16"	3,175
								TOTAL	44,093
ABUTMENT W-1									
401	2	5'-6"	Str.						7
402	4	2'-9"	107	2'-0"	9"				7
403	20	7'-1"	109	8"	2'-1"	2'-6"			94
404	25	4'-1"	103	2'-1"	1'-0"				68
405	25	2'-6"	Str.						42
501	8	34'-9"	Str.						290
502	2	31'-0"	Str.						65
503	15	5'-6"	Str.						86
504	1 Series 3	4'-11" to 6'-2"	107	4'-2"	to 5'-5"	9"		0'-7½"	17
505	2	11'-0"	107	10'-3"	9"				23

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENT	WEIGHT (LBS.)
506	2	10'-0"	107	9'-3"	9"				21
507	4	6'-3"	107	5'-6"	9"				26
508	3	6'-6"	Str.						20
509	15	3'-10"	117	1'-5"	0'-5"	2'-0"			60
510	2	17'-0"	104	5'-5"	3'-8"	5"			36
511	1	18'-2"	104	5'-5"	3'-3"	5"			19
512	1	20'-2"	104	5'-5"	4'-3"	5"			21
513	4	10'-10"	118	7'-4"	3'-6"	9'-9"			45
514	4	11'-5"	118	7'-11"	3'-6"	10'-6"			48
515	2	7'-4"	119	7'-4"	9'-9"				15
516	2	7'-11"	119	7'-11"	10'-6"				17
517	1	4'-9"	119	4'-9"	9'-9"				5
518	1	5'-2"	119	5'-2"	10'-6"				5
519	1	7'-10"	120	2'-5"	5'-5"	11'-3"	9'-9"		9
520	1	8'-5"	120	2'-7"	5'-10"	11'-3"	10'-6"		8
521	6	4'-3"	Str.						27
522	4	7'-8"	121	3'-1"	1'-5"	2'-7"	8"		32
523	5	9'-10"	121	4'-1"	1'-5"	3'-9"	3"		51
524	3	19'-8"	104	5'-9"	3'-8"	5"			62
525	2	7'-8"	119	7'-8"	13'-4"				16
526	8	5'-6"	Str.						46
527	4	6'-6"	Str.						27
528	2	5'-2"	118	3'-8"	1'-6"	2'-4"			11
601	18	20'-4"	105	3'-2"	5'-0"				550
602	15	5'-6"	Str.						124
603	2	6'-9"	Str.						20
604	1 Series 3	4'-11" to 6'-2"	107	4'-2"	to 5'-5"	9"		0'-7½"	25
605	2	11'-0"	107	10'-3"	9"				33
606	2	10'-0"	107	9'-3"	9"				30
607	4	6'-3"	107	5'-6"	9"				38
608	7	8'-3"	Str.						87
609	7	5'-2"	103	3'-2"	1'-0"				54
801	14	34'-9"	Str.						1,299
802	6	13'-0"	Str.						208
803	2	11'-0"	Str.						59
804	2	12'-8"	118	8'-4"	4'-4"	9'-9"			68
805	1	11'-9"	118	7'-5"	4'-4"	9'-9"			31
806	1	13'-2"	118	8'-10"	4'-4"	9'-9"			35
807	1	7'-6"	Str.						20
808	1	8'-6"	Str.						23
809	2	9'-6"	Str.						51
810	8	7'-6"	Str.						160
811	4	12'-0"	Str.						128
								TOTAL	4,369

Note:
See Sheet 35 for bending diagrams.
All bar dimensions are "out" to "out."

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

REINFORCEMENT SCHEDULE

CLEVELAND CUYAHOGA COUNTY OHIO

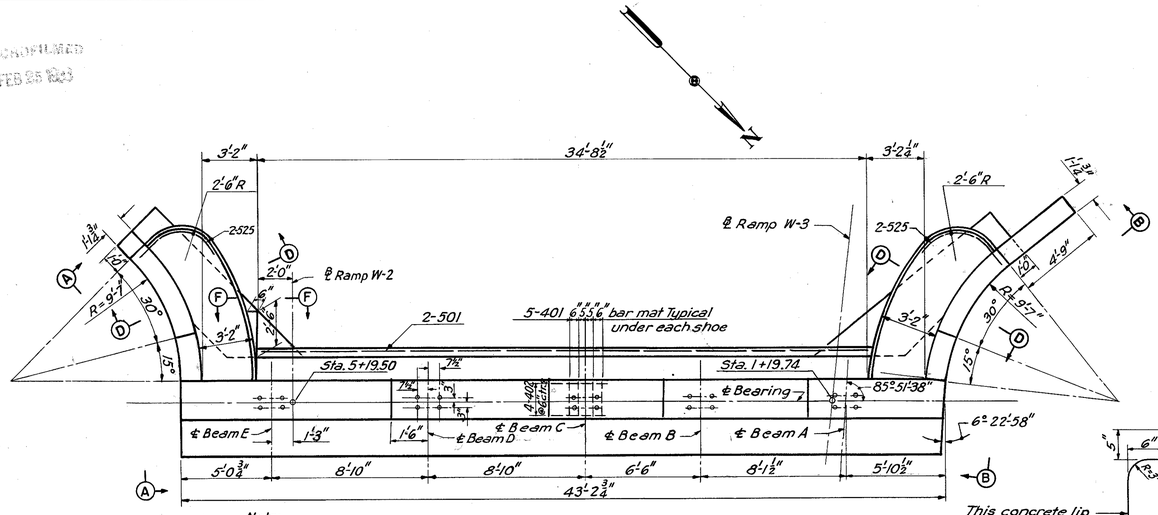
SCALE
MADE RSG DATE 5-9-56
TRCD R.R. DATE 5-11-56
CKD TDD DATE 5-10-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914(2)WB SHEET 33

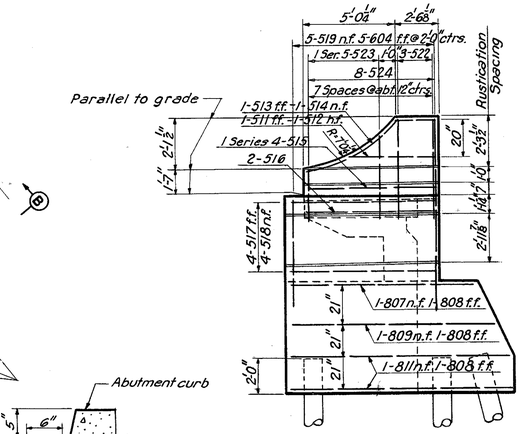
FED. ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	38 / 67
2	OHIO			

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY — 42 R — 17.43

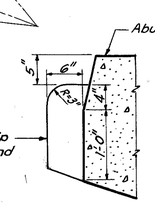


Note:
Anchor bolt setting shown for Beam D is similar for Beams A thr E.

PLAN

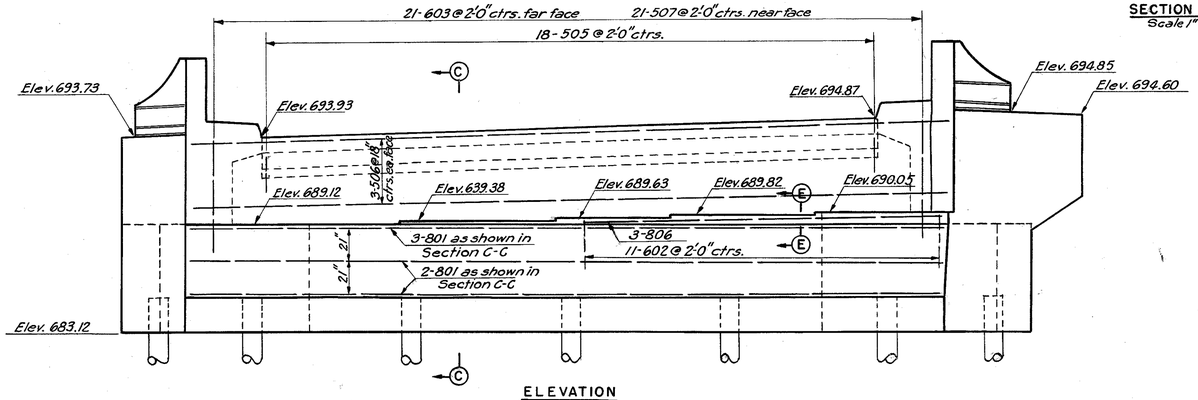


ELEVATION A-A

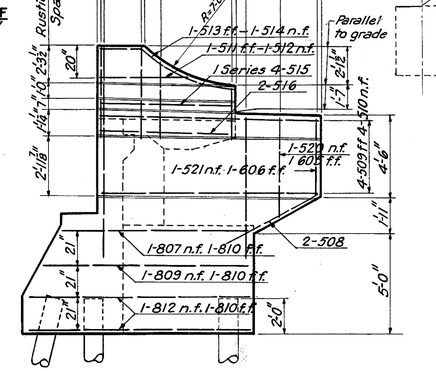


SECTION F-F
Scale 1"=1'-0"

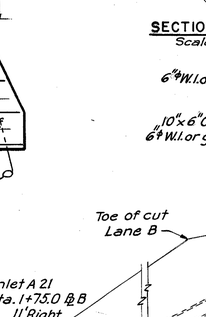
This concrete lip to match abuting end 4" sandstone curb



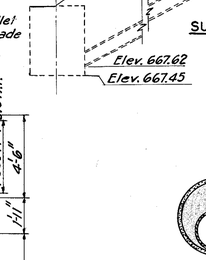
ELEVATION



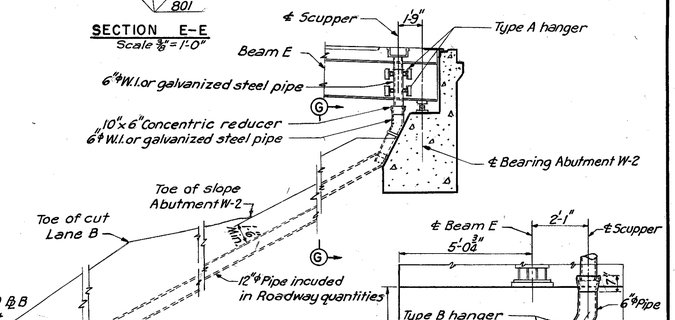
ELEVATION B-B



SECTION E-E
Scale ⅜"=1'-0"



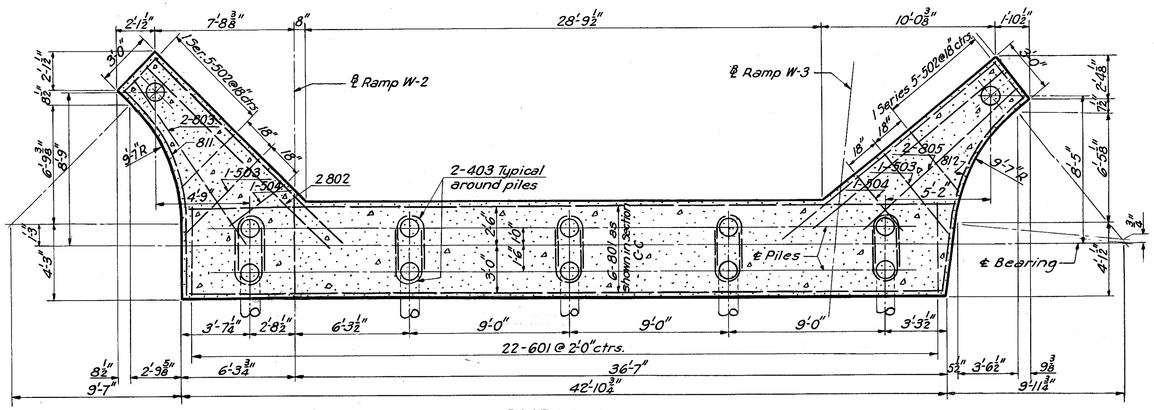
SECTION H-H
Scale 1"=1'0"



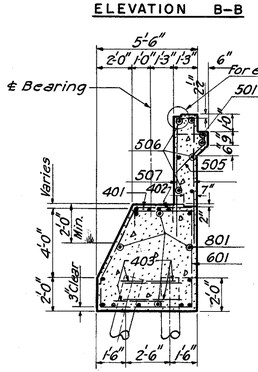
SECTION G-G
Scale ⅜"=1'-0"

Legend:
n.f. indicates near face
f.f. indicates far face

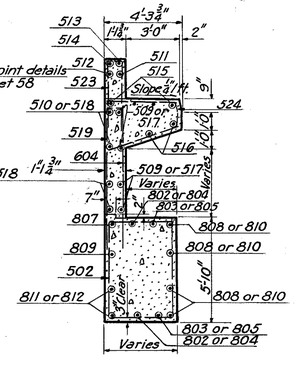
Notes:
All piles are 12" Cast-in-Place, reinforced concrete, battered 3 in 12 where shown.
For Type A and B hanger details and for scupper details, see Sheet 65.
Rustications shall parallel grade, for rustication detail see Sheet 36.
Entire abutment to be class E concrete.
Abutment backwall is to be poured after expansion joint is attached to superstructure.
Average vertical pile length = 60'-0".
All backfill under overhanging safety walk to be porous backfill.



FOOTING PLAN



SECTION C-C



SECTION D-D

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

ABUTMENT W2

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE ¼"=1'-0" unless shown
MADE RSC-AEB DATE 1-23-56
TRCD C.T.H. DATE 6-6-56
CKD R.E.Y. DATE 2-14-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914(2)WB SHEET- 38

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

34
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY — 42R — 17.43

MISCELLANEOUS
FEB 25 1963

RETAINING WALL RAMP W-1

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENT	WEIGHT (LBS.)
401	6	29'-6"	Str.						118
402	43	3'-1"	107	2'-4"	9"				89
501	45	5'-6"	Str.						258
502	1	28'-3"	Str.						30
503	1 Series 12	9'-3" to 10'-0"	Str.					0'-0 13/16"	120
504	45	7'-4"	121	2'-9"	1'-6"	2'-6"	7"		344
505	33	29'-6"	Str.						1,015
506	1 Series 15	10'-0" to 11'-0"	Str.					0'-0 7/8"	164
507	1 Series 15	11'-0" to 11'-9"	Str.					0'-0 7/8"	178
508	1	5'-9"	106	3'-0"	1'-3"	1'-6"	1'-3"		6
509	2	12'-3"	107	11'-3"	1'-0"				26
510	1	11'-3"	107	10'-3"	1'-0"				12
511	1	10'-4"	107	9'-4"	1'-0"				11
512	1	10'-1"	107	9'-1"	1'-0"				11
513	2	7'-7"	120	2'-3"	5'-4"	7'-3"	Straight		16
514	2	4'-6"	Str.						9
515	1	6'-11"	121	2'-9"	1'-1"	2'-6"	6"		7
601	30	9'-3"	106	6'-6"	9"	1'-0"	1'-0"		417
602	30	10'-3"	106	7'-6"	9"	1'-0"	1'-0"		462
603	30	11'-3"	106	8'-6"	9"	1'-0"	1'-0"		507
604	5	5'-6"	107	4'-6"	1'-0"				41
701	18	46'-0"	Str.						1,692
702	90	7'-4"	102	5'-8"	10"				1,349
								TOTAL	6,882

PIER 1 W-1

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENT	WEIGHT (LBS.)
401	15	4'-8"	103	2'-8"	1'-0"				47
501	22	11'-6"	104	2'-2"	3'-2"	5"			264
502	54	11'-6"	104	2'-8"	2'-8"	5"			648
601	4	28'-9"	Str.						173
602	32	9'-6"	102	8'-2"	8"				457
603	16	9'-0"	102	7'-8"	8"				216
1001	4	28'-9"	Str.						495
1002	24	13'-0"	Str.						1,343
1003	36	7'-4"	101	5'-11"	1'-5"				1,136
1004	4	33'-10"	122	25'-6"	2'-6"	1'-8"	1'-7"		582
1005	12	13'-6"	Str.						697
								TOTAL	6,058

ABUTMENT W-2

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENT	WEIGHT (LBS.)
401	25	4'-1"	103	2'-1"	1'-0"				68
402	20	2'-3"	Str.						30
403	10	7'-1"	109	8"	2'-1"	2'-6"			47
501	2	34'-3"	Str.						71
502	2 Series 5	16'-8" to 20'-0"	104	2'-6" to 4'-2"	5'-5"	5"		0'-1"	191

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENT	WEIGHT (LBS.)
503	2	16'-5"	103	5'-5"	5'-6"				34
504	2	12'-11"	103	5'-5"	3'-9"				27
505	18	3'-10"	117	1'-5"	0'-5"	2'-0"			72
506	6	42'-6"	Str.						266
507	21	6'-0"	Str.						131
508	2	5'-9"	Str.						12
509	4	12'-8"	118	8'-1"	4'-7"	10'-6"			53
510	4	12'-0"	118	7'-5"	4'-7"	9'-9"			50
511	2	5'-6"	119	5'-6"	10'-6"				12
512	2	5'-0"	119	5'-0"	9'-9"				10
513	2	8'-5"	120	2'-7"	5'-10"	11'-3"	10'-6"		18
514	2	7'-10"	120	2'-5"	5'-5"	11'-3"	9'-9"		16
515	2 Series 4	7'-3" to 10'-3"	119	7'-3" to 10'-3", 9'-9" + 3'-9"				1'-0"	73
516	4	9'-6"	119	9'-6"	12'-6"				40
517	4	8'-11"	118	8'-1"	10"	10'-6"			37
518	4	8'-3"	118	7'-5"	10"	9'-9"			34
519	10	7'-11"	107	7'-2"	9"				83
520	1	6'-3"	107	5'-6"	9"				7
521	1	4'-11"	107	4'-2"	9"				5
522	6	11'-7"	103	9"	5'-5"				73
523	2 Series 5	7'-1" to 9'-9"	103	9"	3'-2" to 4'-6"			0'-8"	88
524	16	9'-10"	121	4'-1"	1'-5"	3'-9"	3"		164
525	4	5'-2"	118	3'-8"	1'-6"	2'-4"			22
601	22	20'-4"	105	3'-2"	5'-0"				672
602	11	4'-8"	103	2'-8"	1'-0"				77
603	21	6'-6"	Str.						205
604	10	7'-11"	107	7'-2"	9"				119
605	1	6'-3"	107	5'-6"	9"				9
606	1	5'-0"	107	4'-3"	9"				8
801	13	42'-6"	Str.						1475
802	2	13'-3"	Str.						71
803	2	11'-0"	Str.						59
804	2	14'-0"	Str.						75
805	2	12'-0"	Str.						64
806	3	20'-0"	Str.						160
807	2	10'-8"	118	8'-7"	2'-1"	9'-10"			57
808	4	14'-3"	Str.						152
809	2	11'-8"	118	8'-7"	3'-1"	9'-10"			62
810	4	14'-6"	Str.						155
811	2	12'-8"	118	8'-7"	4'-1"	9'-10"			68
812	2	12'-9"	118	8'-7"	4'-2"	9'-10"			68
								TOTAL	5,290

PIER 1 W-2

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENT	WEIGHT (LBS.)
401	16	4'-8"	103	2'-8"	1'-0"				50
402	6	3'-0"	Str.						12
501	61	13'-6"	104	3'-2"	3'-2"	5"			859
502	79	13'-6"	104	2'-8"	3'-8"	5"			408
601	48	10'-0"	102	8'-8"	8"				721
602	4	33'-3"	Str.						200
1101	40	7'-10"	101	6'-3"	1'-7"				1,665
1102	14	15'-3"	Str.						1,134

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENT	WEIGHT (LBS.)
1103	12	14'-6"	Str.						924
1104	14	14'-9"	Str.						1,097
1105	7	35'-3"	Str.						1,237
1106	7	39'-0"	122	29'-8"	2'-9"	1'-11"	1'-9"		1,450
								TOTAL	9,757

PIER 2 W-2

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENT	WEIGHT (LBS.)
401	15	3'-8"	103	1'-8"	1'-0"				37
501	40	9'-6"	104	1'-8"	2'-8"	5"			396
502	48	9'-6"	104	2'-2"	2'-2"	5"			476
601	4	29'-9"	Str.						179
602	54	8'-10"	102	7'-6"	8"				716
901	10	16'-0"	Str.						544
902	20	15'-6"	Str.						1,054
903	30	6'-10"	101	5'-7"	1'-3"				697
1101	4	35'-3"	122	26'-3"	2'-9"	1'-9"	1'-9"		749
1102	3	8'-0"	Str.						128
1103	3	18'-9"	Str.						299
1104	4	29'-9"	Str.						632
								TOTAL	5,907

PIER 1A

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENT	WEIGHT (LBS.)
401	49	4'-8"	103	2'-8"	1'-0"				153
402	24	3'-0"	Str.						48
501	150	13'-6"	104	3'-2"	3'-2"	5"			2,112
502	56	12'-1"	104	2'-5 1/2"	3'-2"	5"			706
503	74	13'-6"	104	2'-8"	3'-8"	5"			1,042
504	16	13'-8	104	2'-8"	3'-9"	5"			228
505	17	13'-10"	104	2'-8"	3'-10"	5"			245
601	74	11'-0"	102	9'-8"	8"				1,223
602	60	11'-6"	102	10'-2"	8"				1,036
603	8	31'-3"	Str.						376
604	8	32'-6"	Str.						391
605	34	12'-2"	104	1'-11"	3'-8"	6"			621
606	14	9'-9"	Str.						205
801	15	13'-9"	Str.						551
901	12	16'-2"	102	13'-8"	1'-3"				660
902	2	10'-9"	Str.						73
1001	4	35'-0"	106	30'-4"	2'-9"	1'-11"	1'-7"		603

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENT	WEIGHT (LBS.)
1101	92	7'-10"	101	6'-3"	1'-7"				3,829
1102	12	18'-0"	Str.						1,148
1103	24	17'-6"	Str.						2,232
1104	36	17'-9"	Str.						3,395
1105	20	18'-6"	Str.						1,966
1106	8	36'-5"	106	31'-7"	2'-9"	2'-1"	1'-9"		1,548
1107	2	32'-9"	Str.						348
1108	1	29'-0"	Str.						154
1109	5	11'-9"	Str.						312
1110	3	13'-9"	Str.						219
1111	2	28'-9"	Str.						306
1112	8	22'-9"	Str.						967
1113	4	23'-0"	Str.						489
1114	4	22'-0"	Str.						468
1115	3	11'-0"	Str.						175
1116	3	25'-9"	Str.						410
1117	4	36'-11"	106	30'-4"	2'-9"	2'-1"	1'-9"		785
1118	3	15'-3"	Str.						243
1119	2	32'-0"	Str.						340
1120	3	34'-6"	Str.						550
1121	2	14'-0"	Str.						149
1122	4	23'-6"	Str.						499
1123	4	23'-9"	Str.						505
1124	3	12'-0"	Str.						191
								TOTAL	31,501

PIER 2A

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENT	WEIGHT (LBS.)
401	70	4'-8"	103	2'-8"	1'-0"				218
501	166	13'-6"	104	3'-2"	3'-2"	5"			2,337
502	46	12'-1"	104	2'-5 1/2"	3'-2"	5"			580
503	123	13'-6"	104	3'-8"	2'-8"	5"			1,732
601	200	11'-6"	102	10'-2"	8"				3,455
602	11	12'-0"	Str.						198

Note:
See Sheet 35 for bending diagrams.
All bar dimensions are "out" to "out."

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

REINFORCEMENT SCHEDULE

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE
MADE EJG DATE 5-10-56
TRCD RLP DATE 5-23-56
CKD RGC DATE 5-11-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET- 34

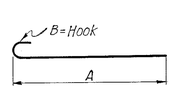
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENT	WEIGHT (LBS.)
PIER 2A CONTINUED									
603	13	10'-0"	Str.						195
604	4	43'-6"	Str.						261
605	4	21'-6"	Str.						129
606	4	38'-3"	Str.						230
607	4	36'-3"	Str.						218
801	50	14'-4"	102	12'-2"	1'-1"				1,913
1001	4	27'-11"	122	18'-5"	2'-6"	2'-3"	1'-7"		481
1002	4	44'-8"	122	35'-2"	2'-6"	2'-3"	1'-7"		769
1003	3	17'-6"	Str.						226
1101	128	7'-10"	101	6'-3"	1'-7"				5,327
1102	16	10'-10"	101	9'-3"	1'-7"				921
1103	12	13'-9"	Str.						877
1104	12	14'-0"	Str.						893
1105	16	14'-3"	Str.						1,211
1106	12	15'-0"	Str.						956
1107	20	15'-3"	Str.						1,620
1108	36	17'-0"	Str.						3,252
1109	15	16'-9"	Str.						1,335
1110	12	17'-3"	Str.						1,100
1111	4	49'-10"	122	40'-2"	2'-9"	2'-1"	1'-9"		1,059
1112	3	17'-6"	Str.						279
1113	4	43'-6"	Str.						924
1114	4	21'-6"	Str.						457
1115	4	38'-3"	Str.						813
1116	4	42'-6"	122	32'-10"	2'-9"	2'-1"	1'-9"		903
1117	4	36'-3"	Str.						770
1118	3	19'-9"	Str.						315
								TOTAL	35,954
PIER 3A									
401	42	4'-8"	103	2'-8"	1'-0"				131
501	84	13'-6"	104	2'-8"	3'-8"	5"			1,183
502	123	13'-6"	104	3'-2"	3'-2"	5"			1,732
503	44	12'-1"	104	2'-5 1/2"	3'-2"	5"			554
601	92,76	11'-0"	102	9'-8"	8"				1,190
602	16	28'-6"	Str.						685
603	10	9'-6"	Str.						143
801	15	10'-0"	Str.						401
802	4	17'-6"	Str.						187
901	12	12'-8"	102	10'-2"	1'-3"				517
902	2	9'-0"	Str.						61
1001	20	14'-0"	102	11'-2"	1'-5"				1,205
1002	40	13'-0"	102	10'-2"	1'-5"				2,238
1003	8	15'-6"	Str.						534

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENT	WEIGHT (LBS.)
1101	24	11'-4"	101	9'-9"	1'-7"				1,445
1102	92	7'-10"	101	6'-3"	1'-7"				3,829
1103	24	13'-9"	Str.						1,753
1104	12	13'-6"	Str.						861
1105	20	14'-3"	Str.						1,514
1106	12	14'-9"	Str.						940
1107	24	16'-0"	Str.						2,040
1108	10	38'-6"	Str.						2,046
1109	10	20'-0"	Str.						1,063
1110	12	32'-4"	106	27'-6"	2'-9"	2'-1"	1'-9"		2,061
1111	4	12'-9"	Str.						271
1112	4	10'-3"	Str.						218
								TOTAL	28,802
WEST END PIER									
501	34	13'-11"	107	12'-3"	1'-8"				494
502	10	17'-11"	107	16'-3"	1'-8"				187
503	4	24'-4"	107	22'-8"	1'-8"				102
504	84	16'-1"	103	12'-1"	2'-0"				1409
505	2 Series 21	15'-6" to 17'-0"	Str.					0'-0 15/16"	712
506	10	16'-6"	Str.						172
507	8	15'-3"	107	9'-6"	5'-9"				127
508	44	14'-0"	Str.						643
509	2 Series 7	28'-8" to 29'-8"	116	14'-10" to 15'-4	2'-0" to 2'-3"	3'-2"	1'-9"	0'-2"	426
510	6	36'-4"	104	14'-7"	3'-2"	5"			227
511	6	12'-0"	Str.						75
512	20	10'-7"	115	3'-11"	3'-1"	3'-0"	7"		221
513	12	7'-6"	Str.						94
514	44	13'-3"	107	11'-6"	1'-9"				608
601	32	12'-0"	Str.						577
602	22	16'-3"	Str.						537
603	14	8'-0"	Str.						168
604	12	10'-8"	103	4'-8"	3'-0"				192
605	10	11'-5"	103	5'-5"	3'-0"				172
801	42	27'-0"	Str.						3,028
802	18	18'-0"	Str.						865
803	40	20'-9"	Str.						3,177
804	28	20'-6"	Str.						1,533
805	38	14'-3"	Str.						1,446
806	26	11'-0"	Str.						764
807	6	12'-0"	107	6'-0"	6'-0"				192
808	72	13'-3"	Str.						2,547
								TOTAL	20,695
REPLACEMENT BARS									
499	4	3'-3"	Str.						9
599	14	3'-6"	Str.						51
699	28	4'-0"	Str.						168
799	20	4'-3"	Str.						174
899	4	4'-6"	Str.						48
999	2	4'-9"	Str.						32
1099	2	5'-3"	Str.						45
1199	10	5'-6"	Str.						292
								TOTAL	819

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

35
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42R – 17.43



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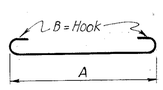

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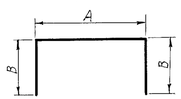

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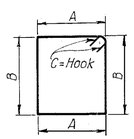

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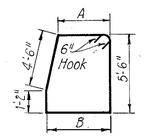

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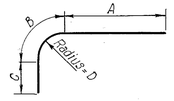

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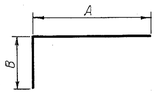

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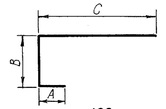

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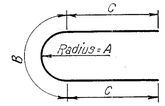

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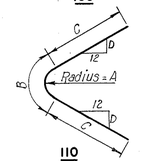

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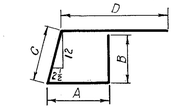

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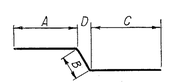

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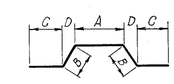

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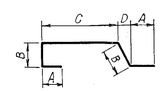

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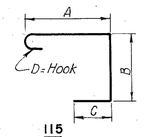

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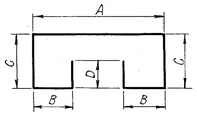

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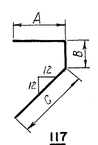

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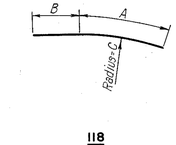
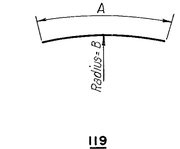


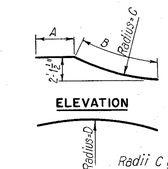
118

May be bent in field



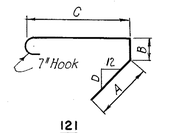
119

May be bent in field.



PLAN
120

Radii C & D may be bent in field.



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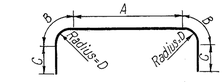


122

BENDING DIAGRAMS

Note:
All bar dimensions are "out" to "out."

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

REINFORCEMENT SCHEDULE

CLEVELAND CUYAHOGA COUNTY OHIO

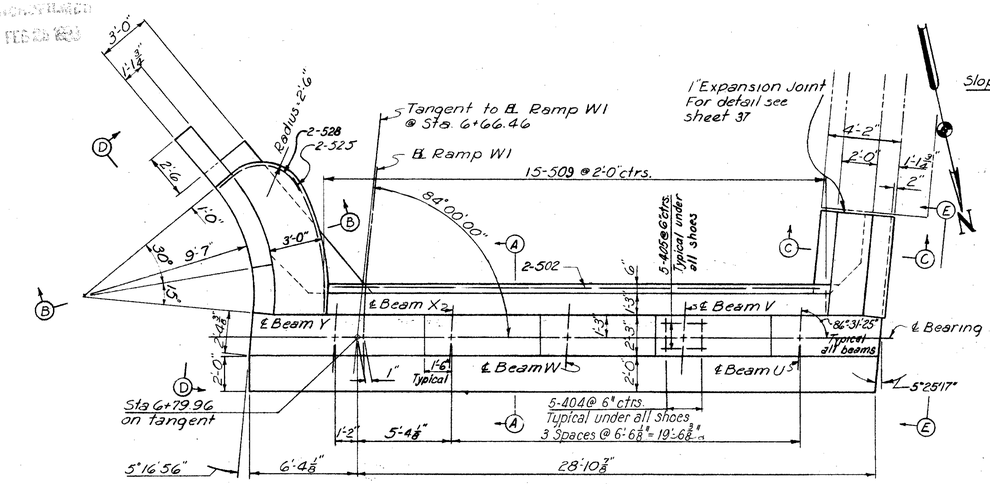
SCALE
MADE RSG DATE 5-10-56
TRCD. RR DATE 5-24-56
CKD. RGC DATE 5-11-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET-35

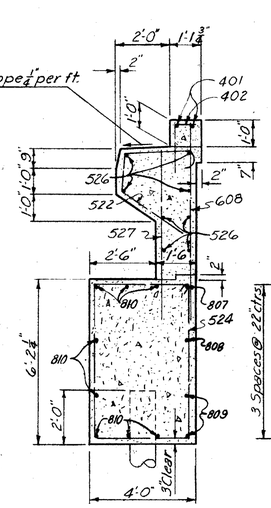
6-17-59 Revised As Built J.E.P.

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	36 / 67
2	OHIO			

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43



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



SECTION C-C
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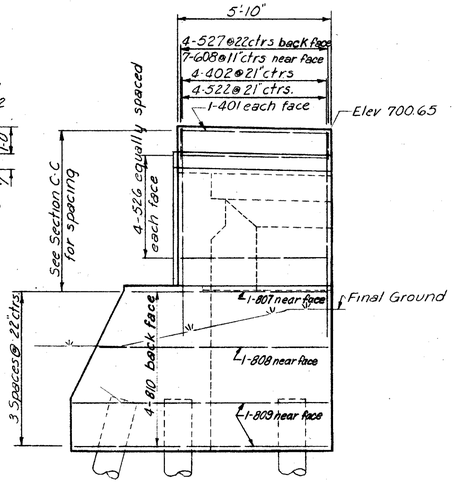
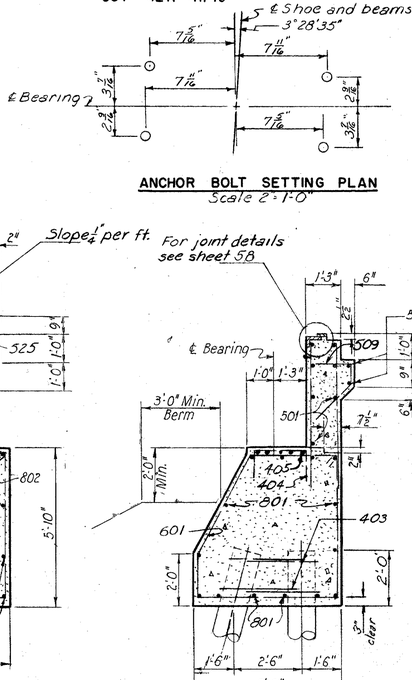
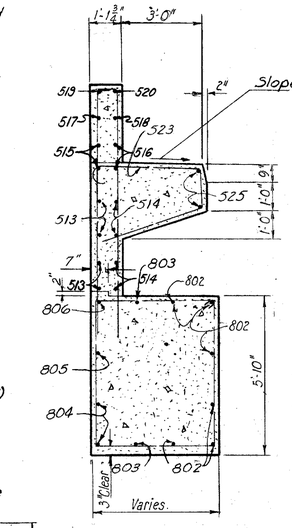
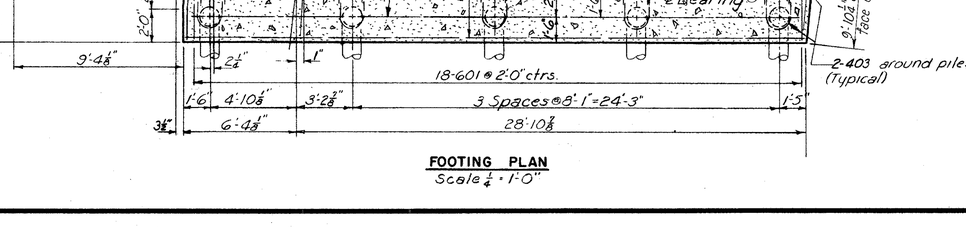


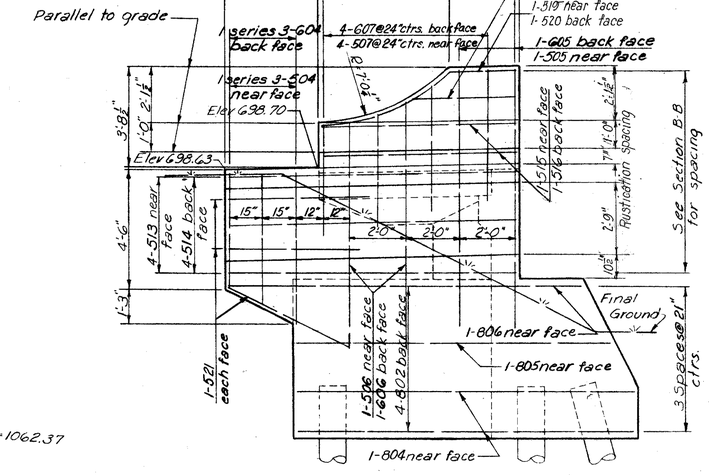
ELEVATION E-E
Scale 3/8" = 1'-0"



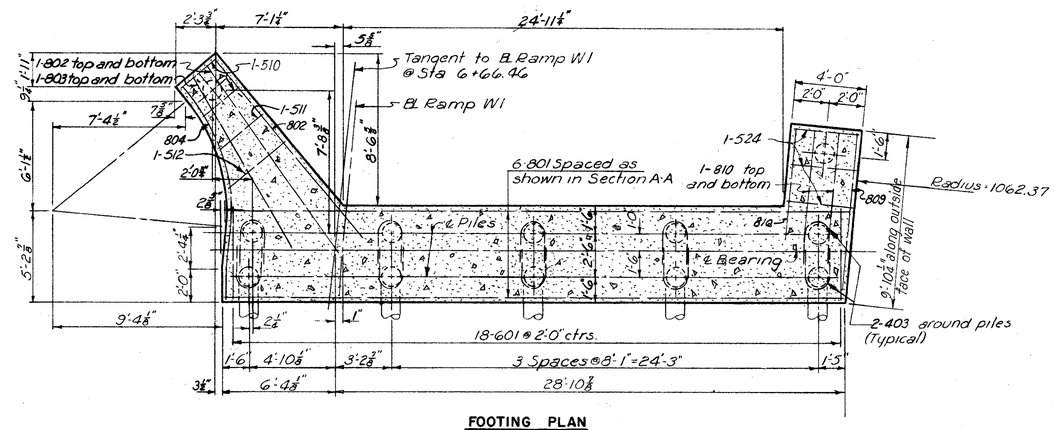




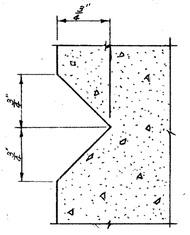
ELEVATION
Scale 1/4" = 1'-0"



ELEVATION D-D
Scale 3/8" = 1'-0"



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



Note: All piles to be 12"φ cast-in-place reinforced concrete, battered 3 in 12 where shown.
Rustication shall be parallel to grade.
Entire abutment to be Class E concrete.
Abutment backwall is to be poured after expansion joint is attached to superstructure.
For handrail post spacing on west wingwall, see Sheet 63.
Average vertical pile length = 60'-0"
All backfill under overhanging safety walk to be porous backfill.

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

ABUTMENT W1

CLEVELAND CUYAHOGA COUNTY OHIO

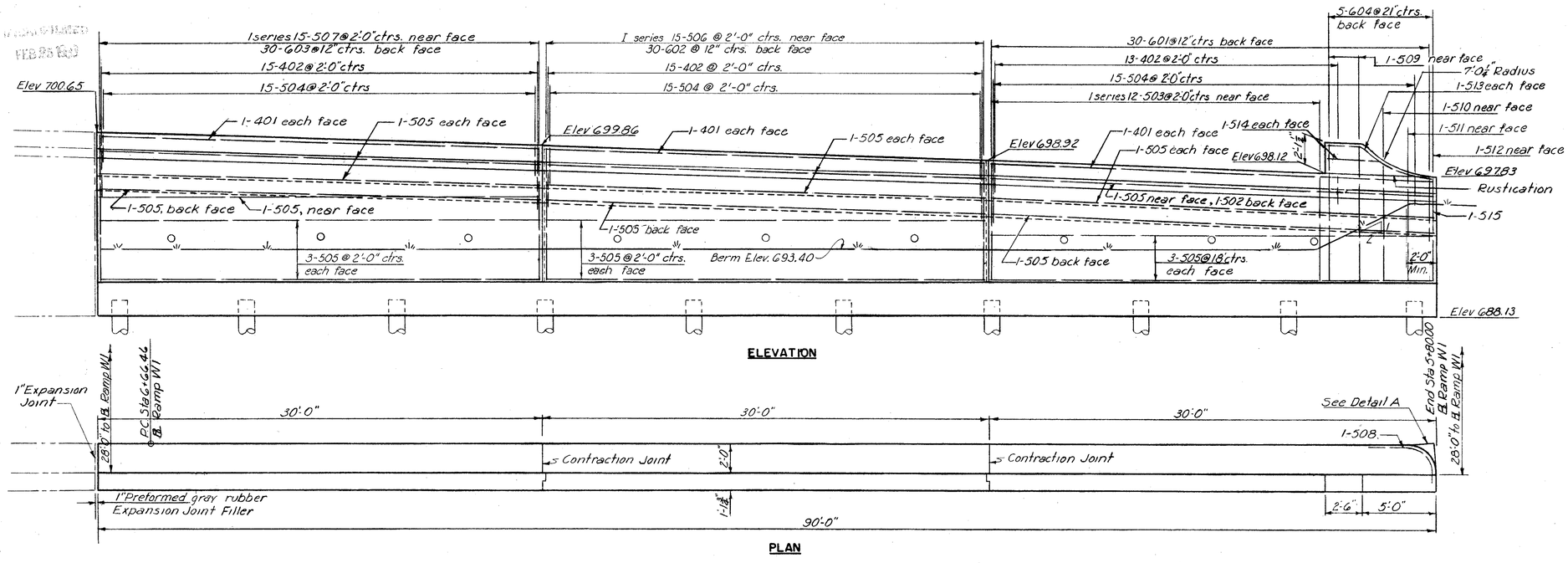
SCALE As Noted
MADE DFB DATE 1-21-36
TRCD ____ DATE ____
CKD PCY DATE 3-14-36

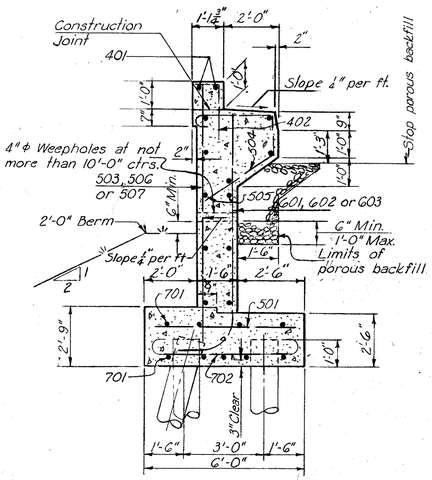
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET- 36

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

37
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43





TYPICAL SECTION
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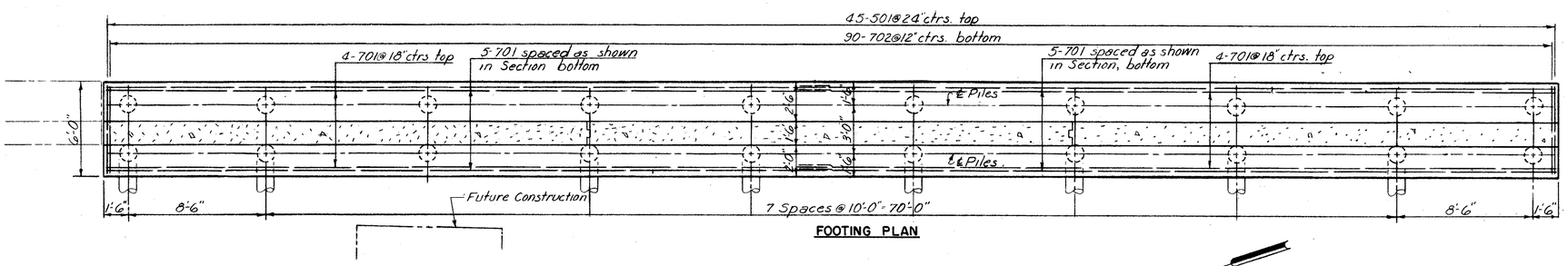
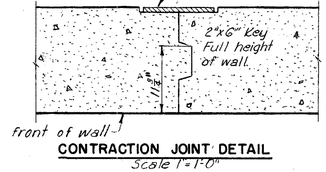
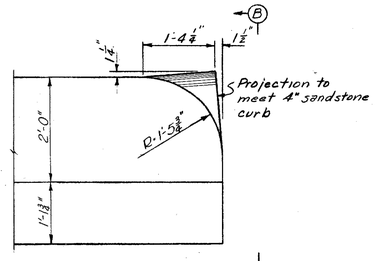


FOOTING PLAN

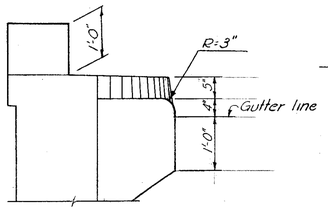


CONTRACTION JOINT DETAIL
Scale 1" = 1'-0"

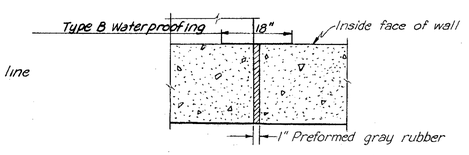
NOTES:
All piles are 12" ϕ cast in place reinforced concrete battered 3 in 12 where shown.
For handrail details see sheet G7.
For rustication detail see sheet 3G.
Entire retaining wall including footing shall be Class "E" concrete.
For handrail post spacing see sheet G3.
Average vertical pile length = 60'-0".



DETAIL "A"
Scale 3/4" = 1'-0"



ELEVATION B-B
Scale 3/4" = 1'-0"



EXPANSION JOINT DETAIL
Scale 1" = 1'-0"

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

RAMP W1 RETAINING WALL

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE 1/8" = 1'-0" unless noted
MADE DFB DATE 1-20-56
TRCD ____ DATE ____
CKD WPO DATE 2-13-56

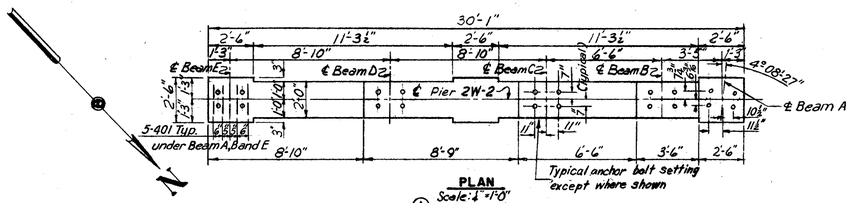
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914(2)WB SHEET- 37

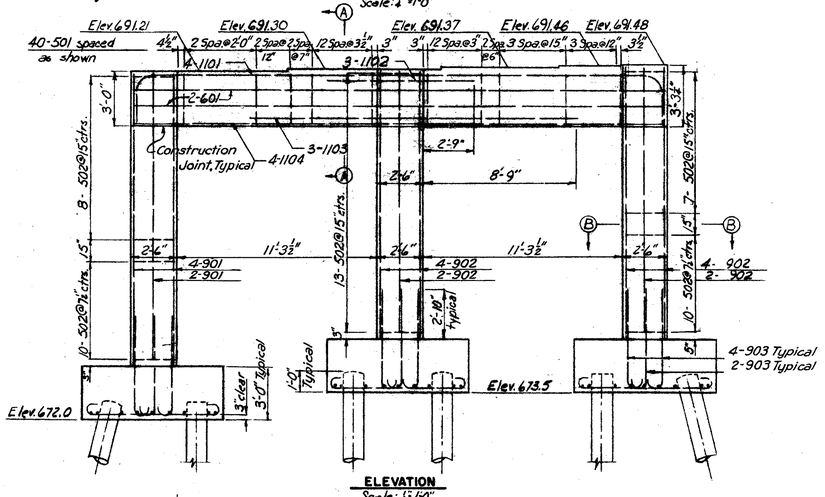
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

39
67

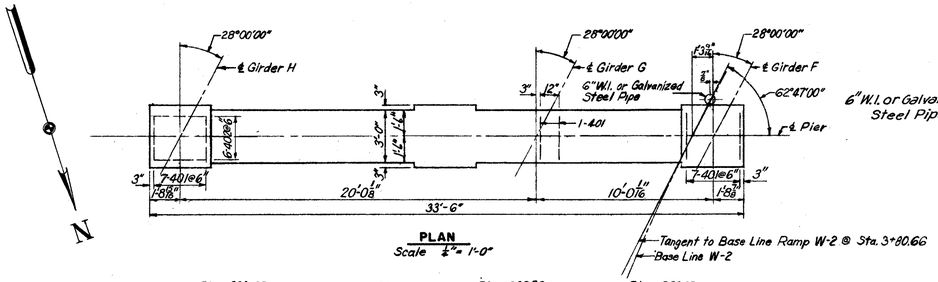
CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY — 42 R — 17.43



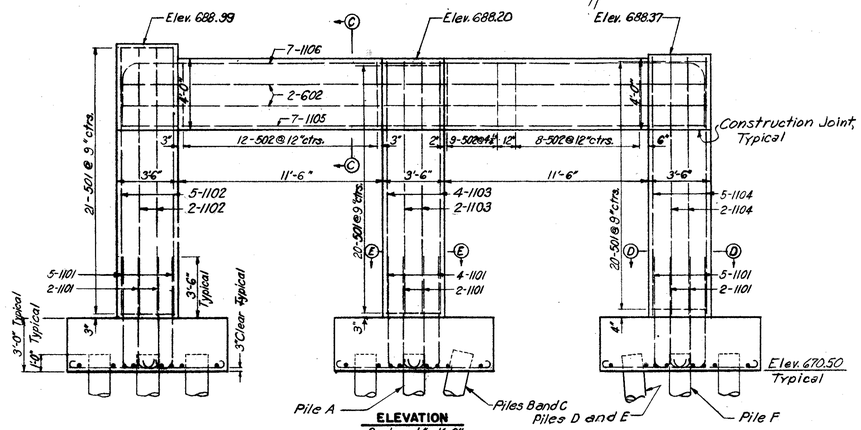
PLAN
Scale: ¼"=1'-0"



ELEVATION
Scale: ¼"=1'-0"



PLAN
Scale ¼"=1'-0"



ELEVATION
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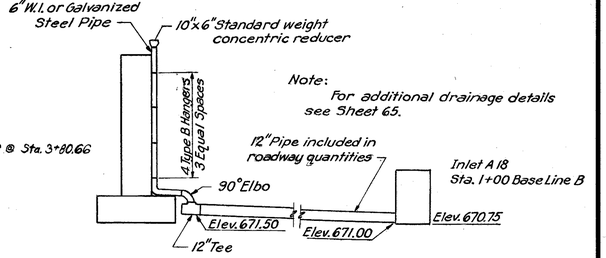
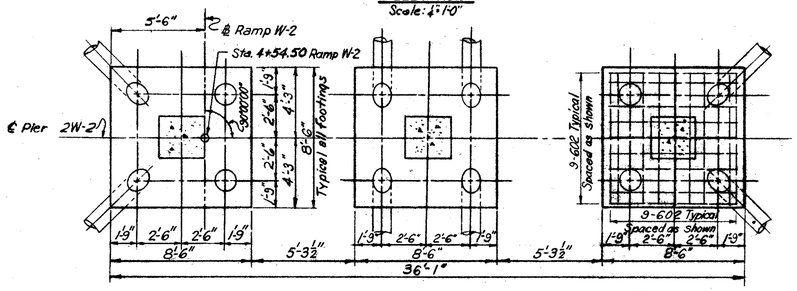
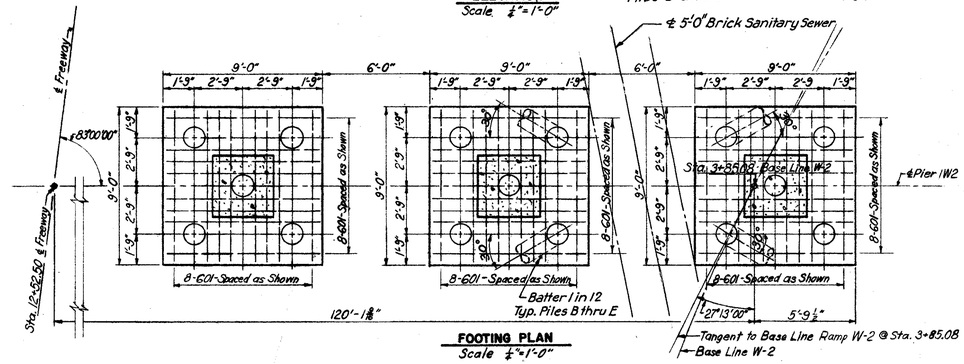


Note:
For additional drainage details see Sheet 65.

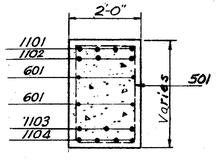
DRAINAGE DETAILS PIER IW2
Scale: ⅛"=1'-0"



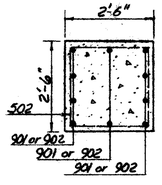
FOOTING PLAN
Scale: 1¼"=1'-0"



FOOTING PLAN
Scale ¼"=1'-0"

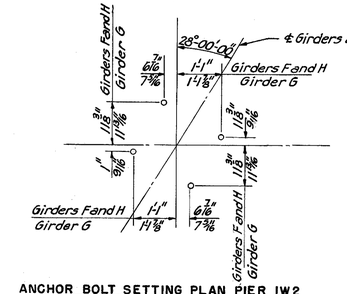


SECTION A-A
Scale: ½"=1'-0"

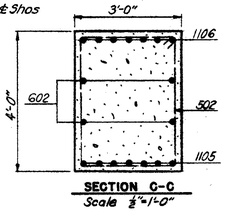


SECTION B-B
Scale: 1½"=1'-0"

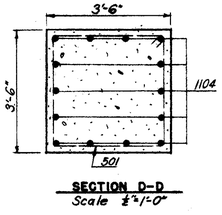
PIER 2W2



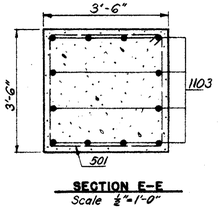
ANCHOR BOLT SETTING PLAN PIER IW2
No Scale



SECTION C-C
Scale ½"=1'-0"



SECTION D-D
Scale ½"=1'-0"



SECTION E-E
Scale ½"=1'-0"

PIER IW2

Notes for Driving Piles "A" Through "F"

The location of the 5 ft. brick sewer as shown on the plans is to be considered approximate only and before proceeding with any construction operations which might cause damage to the sewer, the contractor shall determine the exact location by borings, excavations, surveys, or other suitable means. If the location varies considerably from that shown and interferes with the piling, the design of the pier will be modified as required.

Pile driving operations shall be so conducted as to minimize vibration which might cause damage to the sewer. Driving shall be supplemented by air jetting or by pre-boring. Piling shall be driven successively on alternate sides of the sewer to avoid cumulative displacement.

The contractor shall, at his own expense and to the satisfaction of the city, repair any damage which may result from his construction operations.

Payment for the protection of the sewer against damage due to pile driving and payment for air jetting or pre-boring shall be considered as included in the price bid per linear foot of pile.

Note:
All piles are 14"ϕ cast in place reinforced concrete, battered 3 in 12 unless otherwise shown.
Average pile length Pier IW2-60'-0"
Average vertical pile length Pier 2W2-60'-0"
Contractor to adjust top cap reinforcing to clear drilled holes for anchor bolts.
All footings to be class "E" concrete, columns and cap beams to be Class "C" concrete.
Flow line Elev. of 5'-0" Brick Sanitary Sewer at ℄ Pier IW2 is 631±.

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

PIER IW2 AND PIER 2W2

CLEVELAND CUYAHOGA COUNTY OHIO

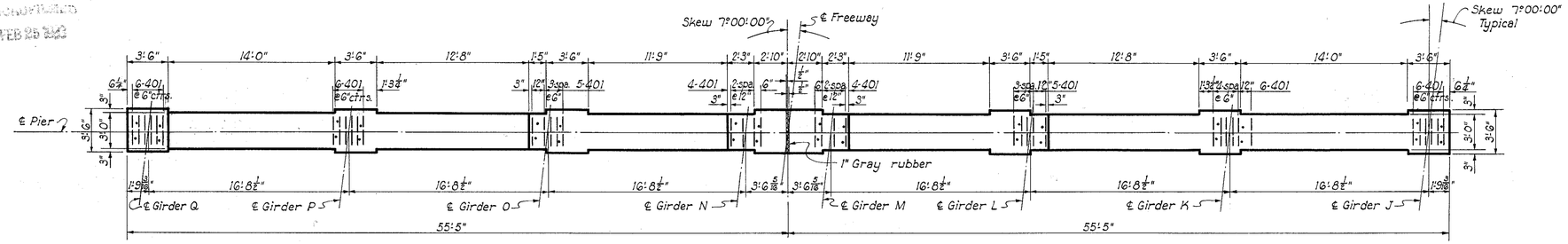
SCALE As Shown
MADE JJH DATE 2-24-56
TRCD ____ DATE ____
CKD JSH DATE 3-3-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY, CLEVELAND, NEW YORK
914(2)WB SHEET- 39

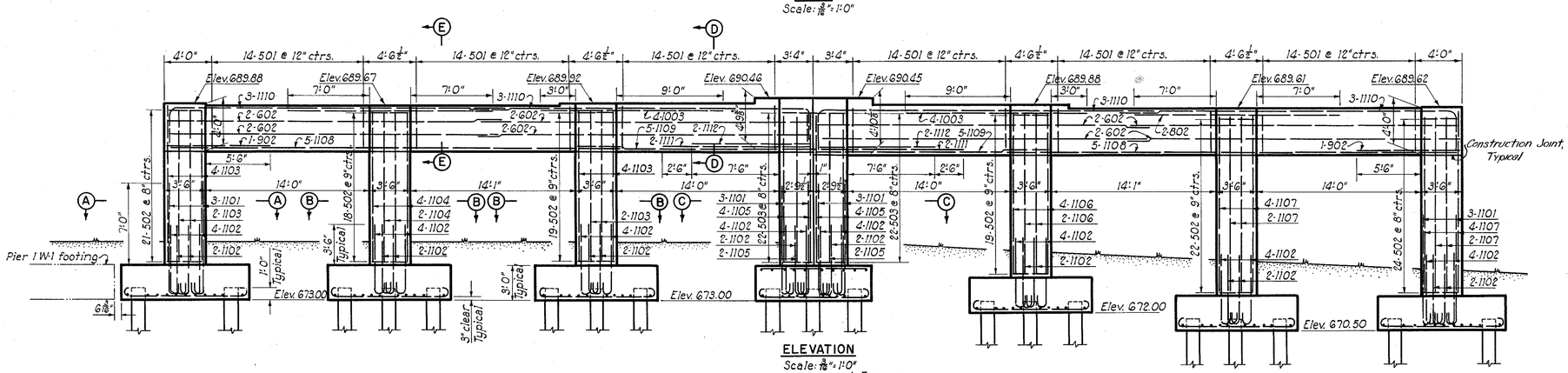
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

40
67

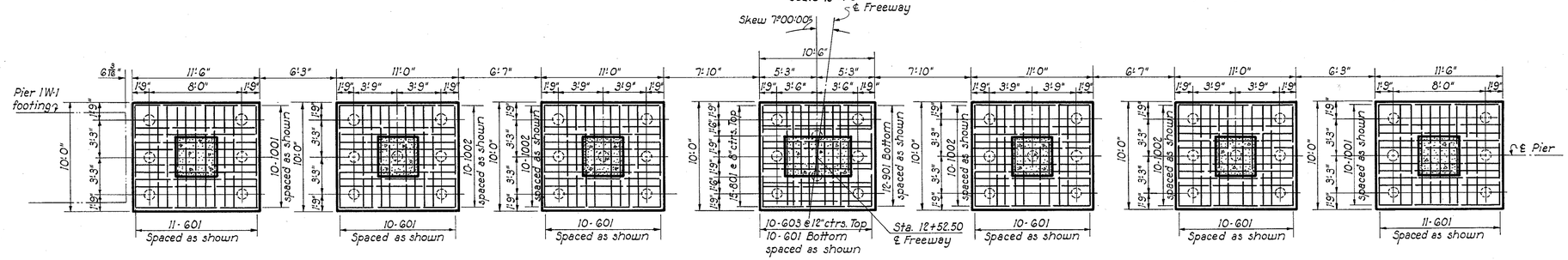
CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY - 42R - 17.43



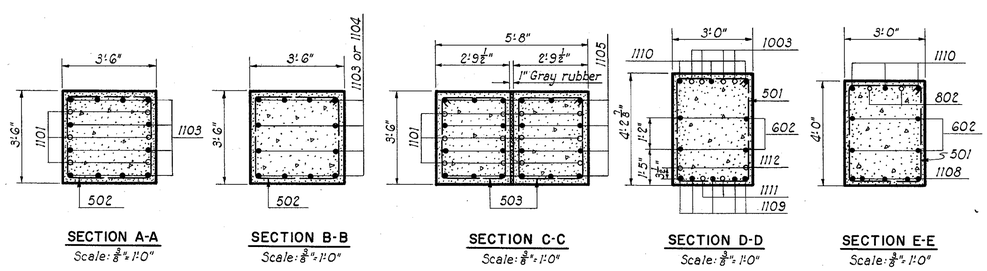
PLAN
Scale: 3/16" = 1'0"



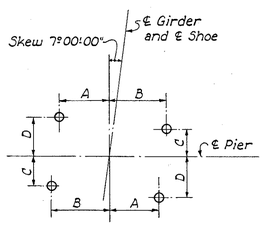
ELEVATION
Scale: 3/16" = 1'0"



FOOTING PLAN
Scale: 3/16" = 1'0"



Scale: 3/8" = 1'0"



ANCHOR BOLT SETTING PLAN
No Scale

Girder	Dimensions			
	A	B	C	D
Q	10 15/16"	1'-0 3/8"	6 1/2"	9 3/8"
J, M, N	11 1/16"	1'-0 3/8"	5 1/8"	8 2/16"
K, L, O, P	11 1/16"	1'-1 1/8"	6 1/16"	9 7/16"

Notes:
All piles are 14" cast-in-place reinforced concrete.
Average pile length = 60'0"

Contractor to adjust top cap reinforcing to clear drilled holes for anchor bolts.

All footings to be Class E concrete, columns and cap beams to be Class C concrete.

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

PIER 3A

CLEVELAND CUYAHOGA COUNTY OHIO

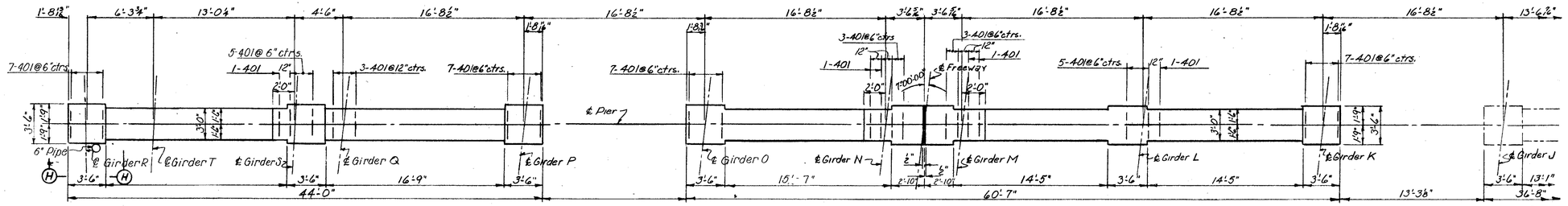
SCALE As shown
MADE CCF DATE 2-12-56
TRCD. CAL DATE 3-30-56
CKD. ASR DATE 2-24-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY · CLEVELAND · NEW YORK
914(2)WB SHEET 40

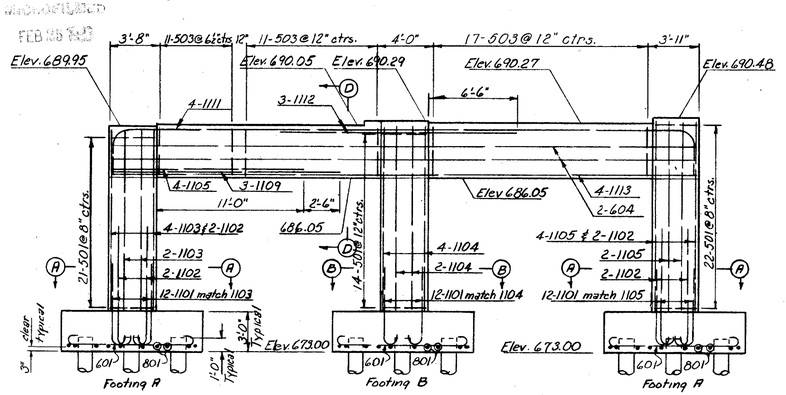
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

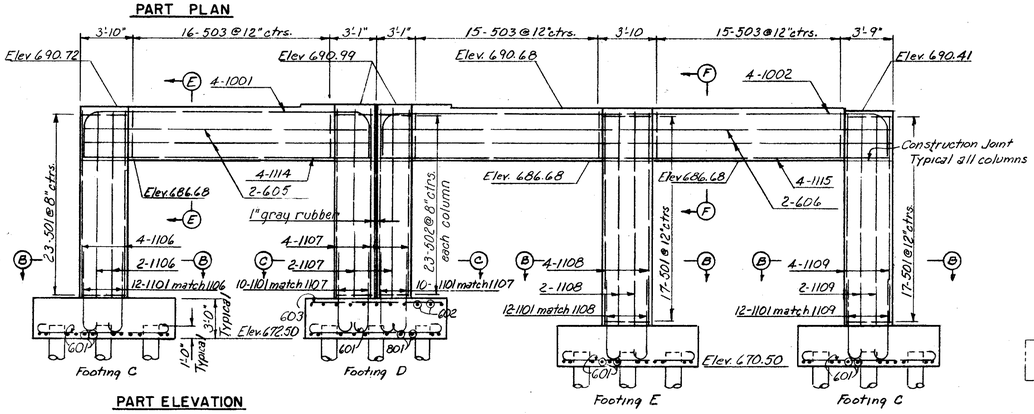
41
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43

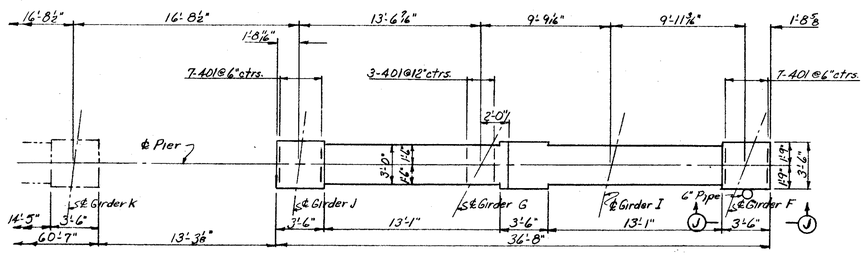


PART PLAN

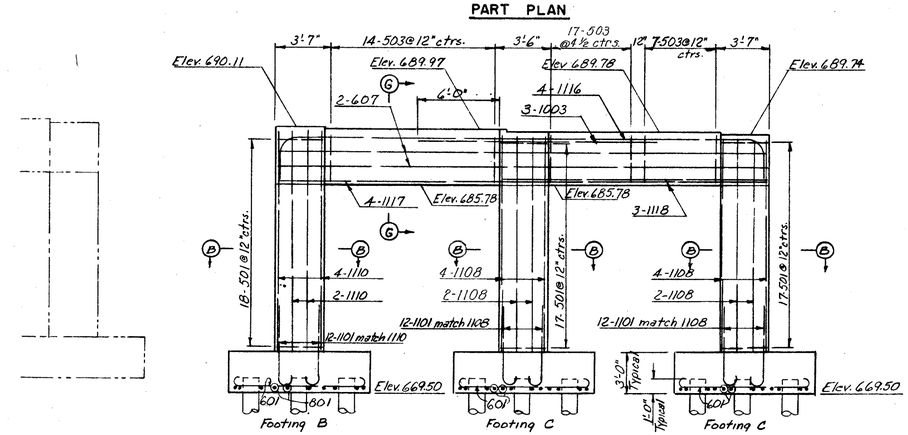




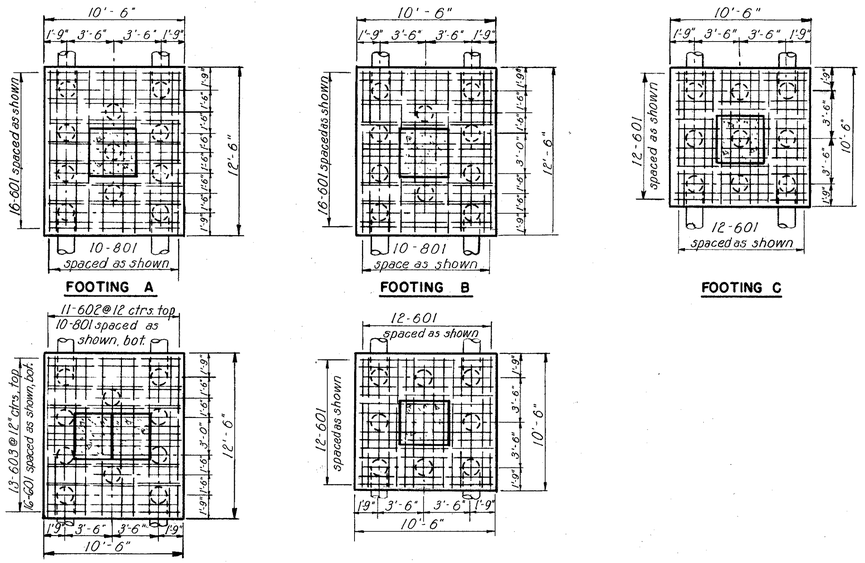
PART ELEVATION

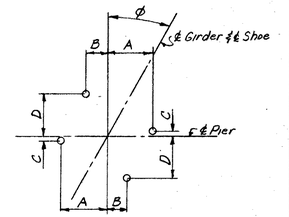


PART PLAN



PART ELEVATION





DIMENSIONS					
Girder	ϕ	A	B	C	D
F	21°-01'-09"	11'-5 7/8"	8"	7/8"	8 3/16"
I	13°-35'-50"	11'-3 7/8"	9"	2 3/8"	7 3/16"
G	28°-00'-00"	11'-9 7/8"	6 5/16"	1/2"*	9 3/8"
J	7°-00'-00"	11'-0 3/4"	11 1/16"	5 1/2"	8 7/16"
K.L.O.P.	7°-00'-00"	11'-0 3/8"	11 3/16"	4 7/8"	7 7/16"
M.N.Q.	7°-00'-00"	11'-0"	9 15/16"	3 1/16"	6 1/4"
S.T	3°-28'-35"	10'-9 3/16"	10 3/16"	4 3/16"	5 3/16"
R	1°-30'-00"*	10'-9 1/8"	10 1/8"	5 1/16"	4 3/16"

*Indicates dimension or angle is on opposite side of reference line to that shown on sketch

ANCHOR BOLT SETTING PLAN

DIMENSIONS					
Girder	ϕ	A	B	C	D
F	21°-01'-09"	12 1/2"	8 15/16"	7/16"	8 13/16"
I	13°-35'-50"	12 3/8"	10"	2 1/8"	7 3/16"
G	28°-00'-00"	12 1/2"	7 13/16"	1"*	9 13/16"
J	7°-00'-00"	12 3/4"	11 1/16"	5 1/2"	8 7/16"
K.L.O.P.	7°-00'-00"	12 7/8"	11 3/16"	4 1/2"	7 7/16"
M.N.Q.	7°-00'-00"	12"	10 1/16"	3 1/16"	6 3/16"
S.T	3°-28'-35"	11 3/4"	11 3/16"	4 5/16"	5 1/16"
E	1°-30'-00"*	11 7/8"	11 3/8"	5 5/16"	4 1/16"

Notes:
For sections and Footing plan see Sheet 42.
All piles to be 14" ϕ cast in place reinforced concrete, batter 3 in 12 where shown.
Contractor to adjust top cap reinforcing to clear drilled holes for anchor bolts.
All Footings to be Class E Concrete, columns and cap beams to be Class C Concrete.
Average vertical pile length = 60'-0".

Revised – 4-10-57

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

PIER 2A

CLEVELAND CUYAHOGA COUNTY OHIO

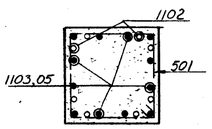
SCALE 3/8" = 1'-0"
MADE RSG DATE 5-12-56
TRCD ____ DATE ____
CKD ASR DATE 5-16-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET- 41

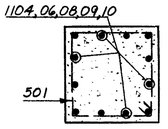
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

42
67

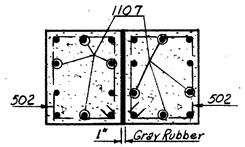
CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42R – 17.43



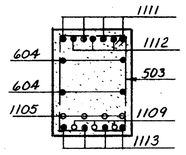
SECTION A-A



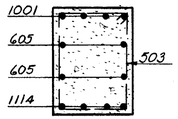
SECTION B-B



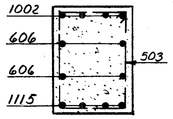
SECTION C-C



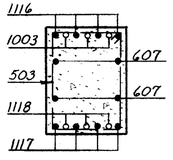
SECTION D-D



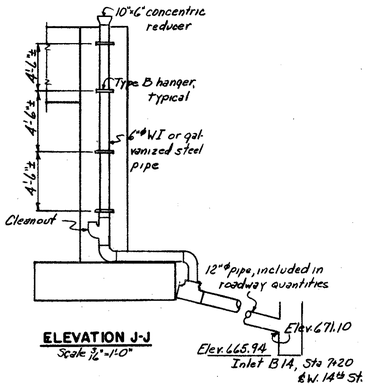
SECTION E-E



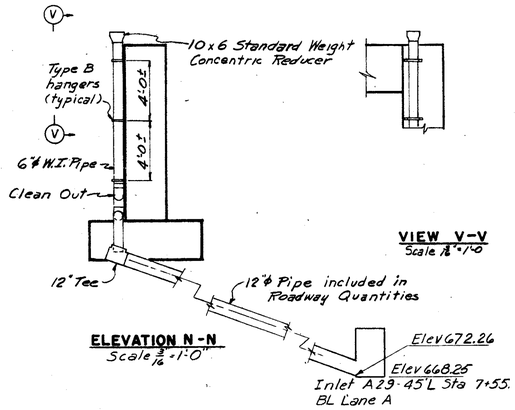
SECTION F-F



SECTION G-G

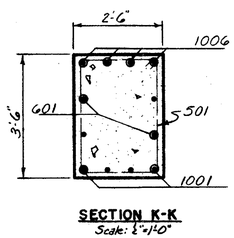


ELEVATION J-J
Scale 1/2"=1'-0"

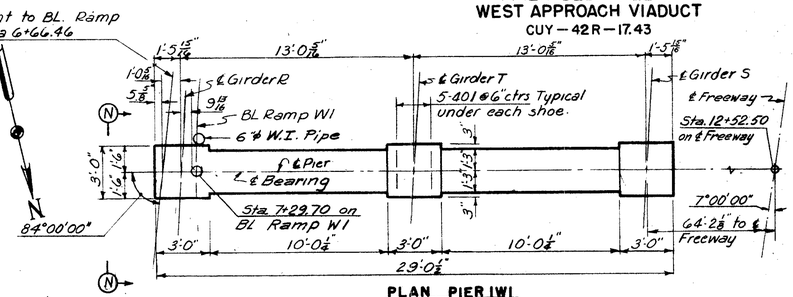


VIEW V-V
Scale 1/8"=1'-0"

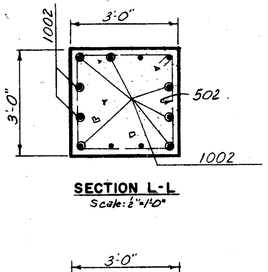
ELEVATION N-N
Scale 3/16"=1'-0"



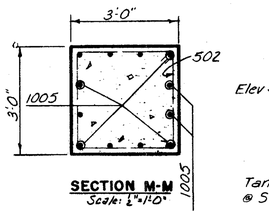
SECTION K-K
Scale: 1/2"=1'-0"



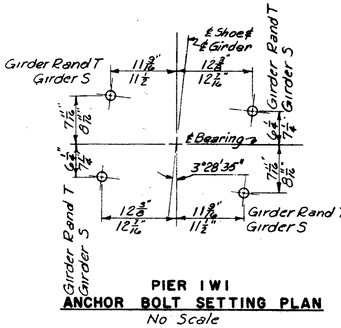
PLAN PIER IWI
Scale 1/4"=1'-0"



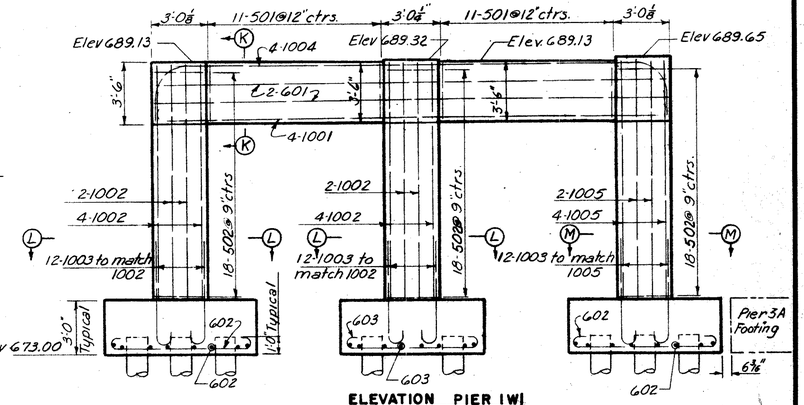
SECTION L-L
Scale: 1/2"=1'-0"



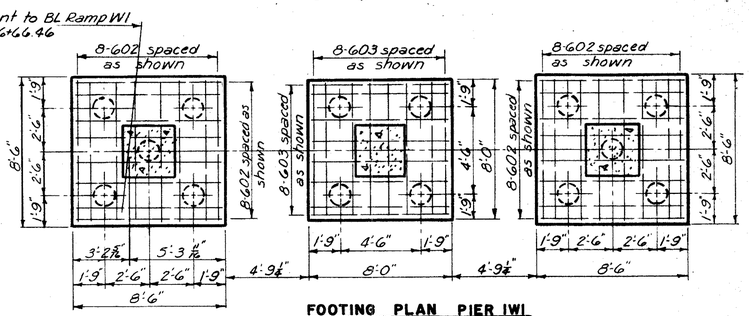
SECTION M-M
Scale: 1/2"=1'-0"



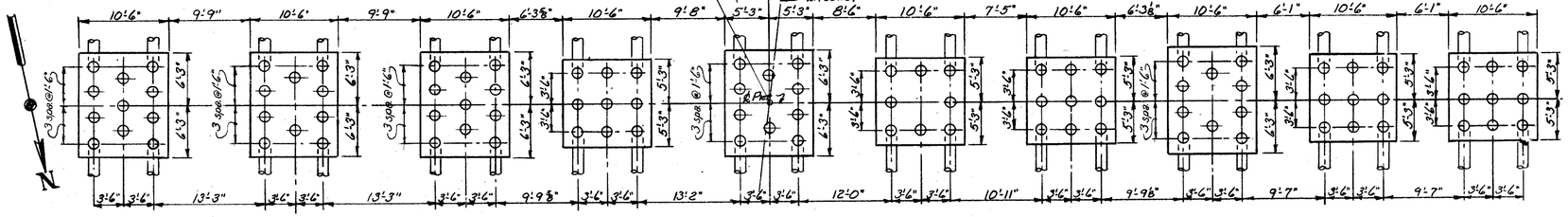
PIER IWI
ANCHOR BOLT SETTING PLAN
No Scale



ELEVATION PIER IWI
Scale 1/4"=1'-0"



FOOTING PLAN PIER IWI
Scale 1/4"=1'-0"



PIER 2A FOOTING PLAN
Scale: 3/8"=1'-0"

Notes:
Contractor to adjust top cap reinforcing steel to clear drilled holes for anchor bolts
For additional drainage details see sheet 65.

Note
All piles to be 14" ϕ Cast-in-place reinforced concrete battered 3 in 12 where shown.
Average pile length for Pier IWI = 60'-0"
All footings are class "E" concrete, all columns and cap beams are class "C" concrete.

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

PIER IWI AND PIER 2A DETAILS

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE 3/8"=1'-0" unless shown
MADE DFB DATE 2-27-56
TRCD ___ DATE ___
CKD PCY DATE 3-12-56

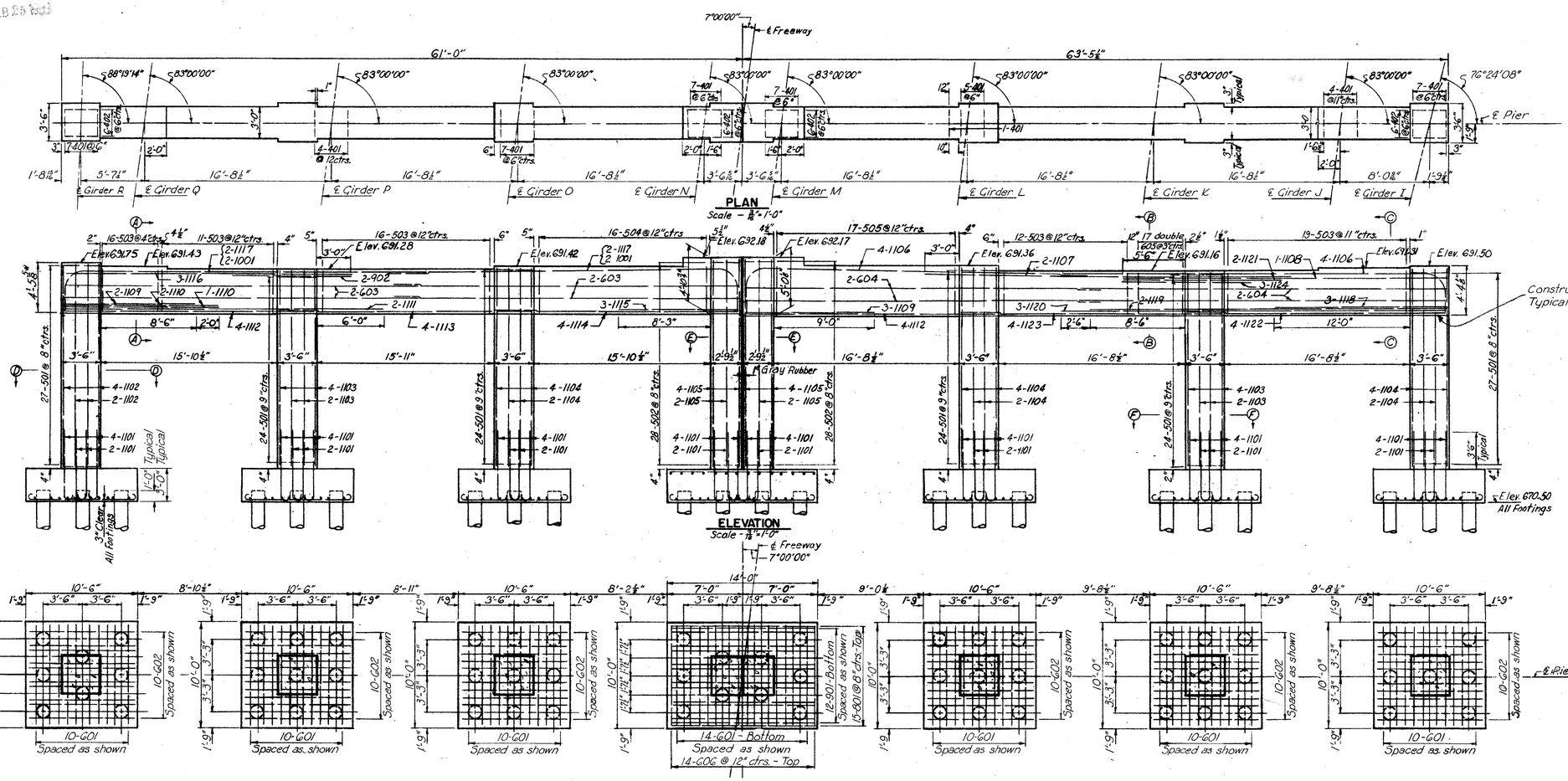
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914(2)WB SHEET- 42

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

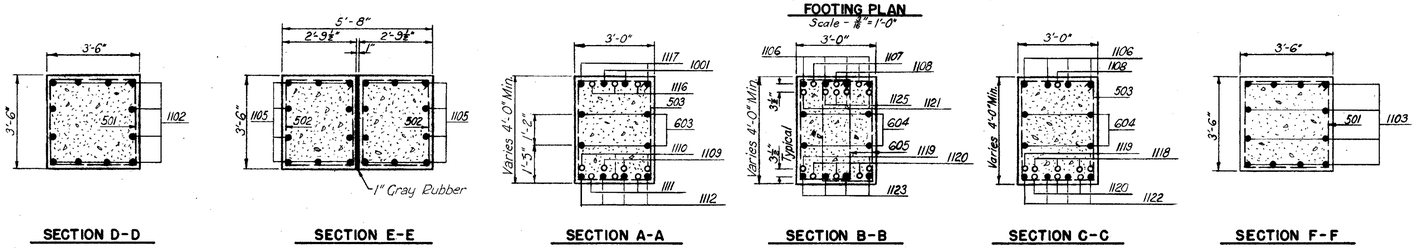
43
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY — 42 R — 17.43



ANCHOR BOLT SETTING PLAN
No Scale

ANCHOR BOLT SETTING DIMENSIONS				
GIRDER	DIMENSIONS			
	A	B	C	D
I.M.N.R.	11⅛"	1'-0¾"	5½"	8⅜"
J.Q.	11⅜"	1'-1⅛"	6⅜"	9⅜"
K.L.O.P	11⅝"	1'-2⅛"	8⅜"	11½"



NOTES:
All piles are 14" cast in place reinforced concrete.
Contractor to adjust top cap reinforcing to clear drilled holes for anchor bolts.
Average pile length = 60'-0".
All footings to be Class "E" concrete, columns and cap beams to be Class "C" concrete.

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

PIER 1A

CLEVELAND CUYAHOGA COUNTY OHIO

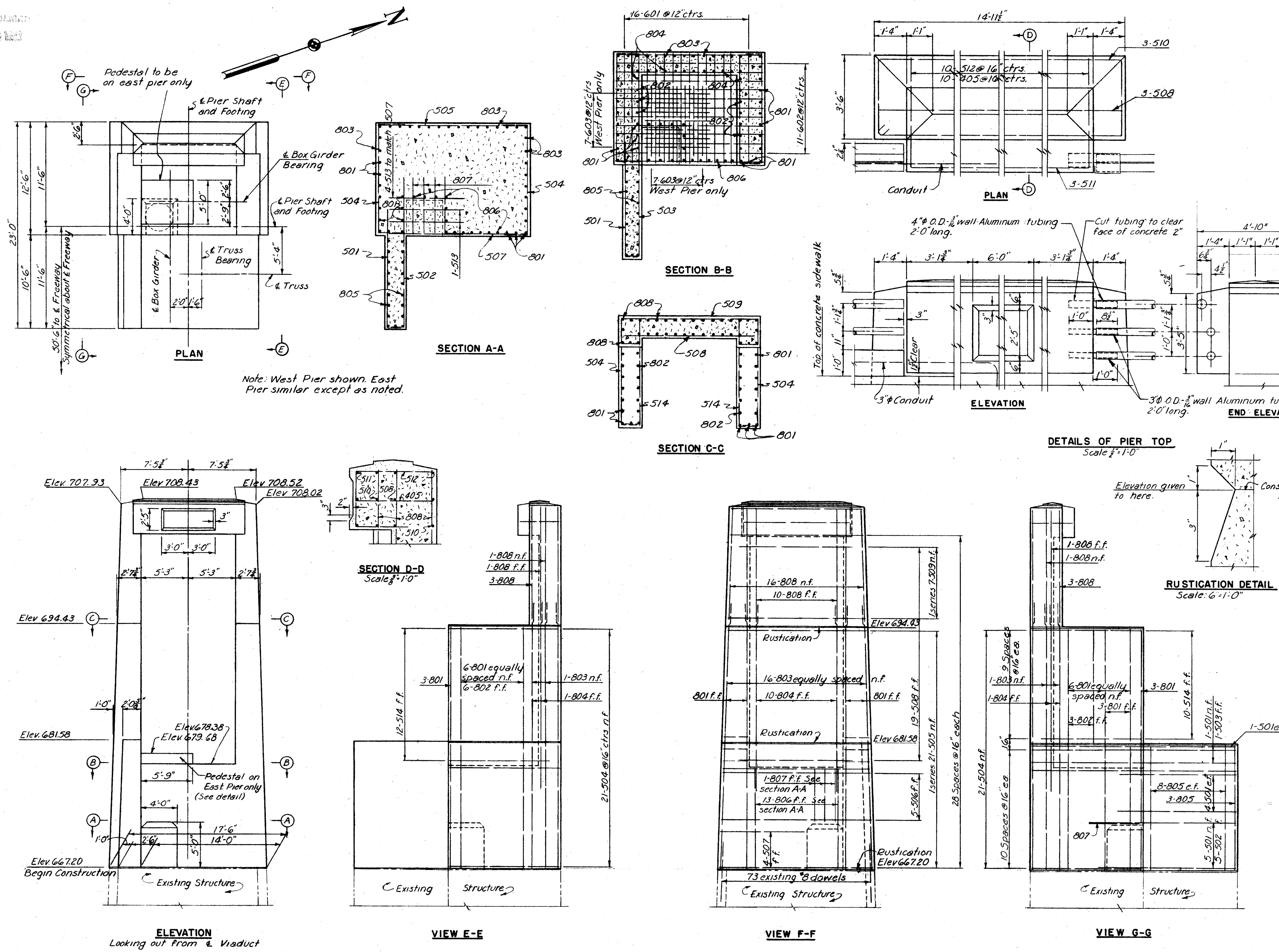
SCALE 3/8"=1'-0" unless shown
MADE WJN DATE 2-21-56
TRCD ___ DATE ___
CKD PHH DATE 3-14-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET- 43

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

44
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43



Legend:
n.f. denotes near face.
f.f. denotes far face.
e.f. denotes each face.

Note:
Entire pier is to be Class E Concrete, except portion above top of side walk which shall be Class C Concrete.

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY - 42R - 1750

WEST END PIER

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE 3/16"=1'-0" ones shown
MADE DFB DATE 1-6-56
TRCD ___ DATE ___
CKD RSG DATE 3-13-56

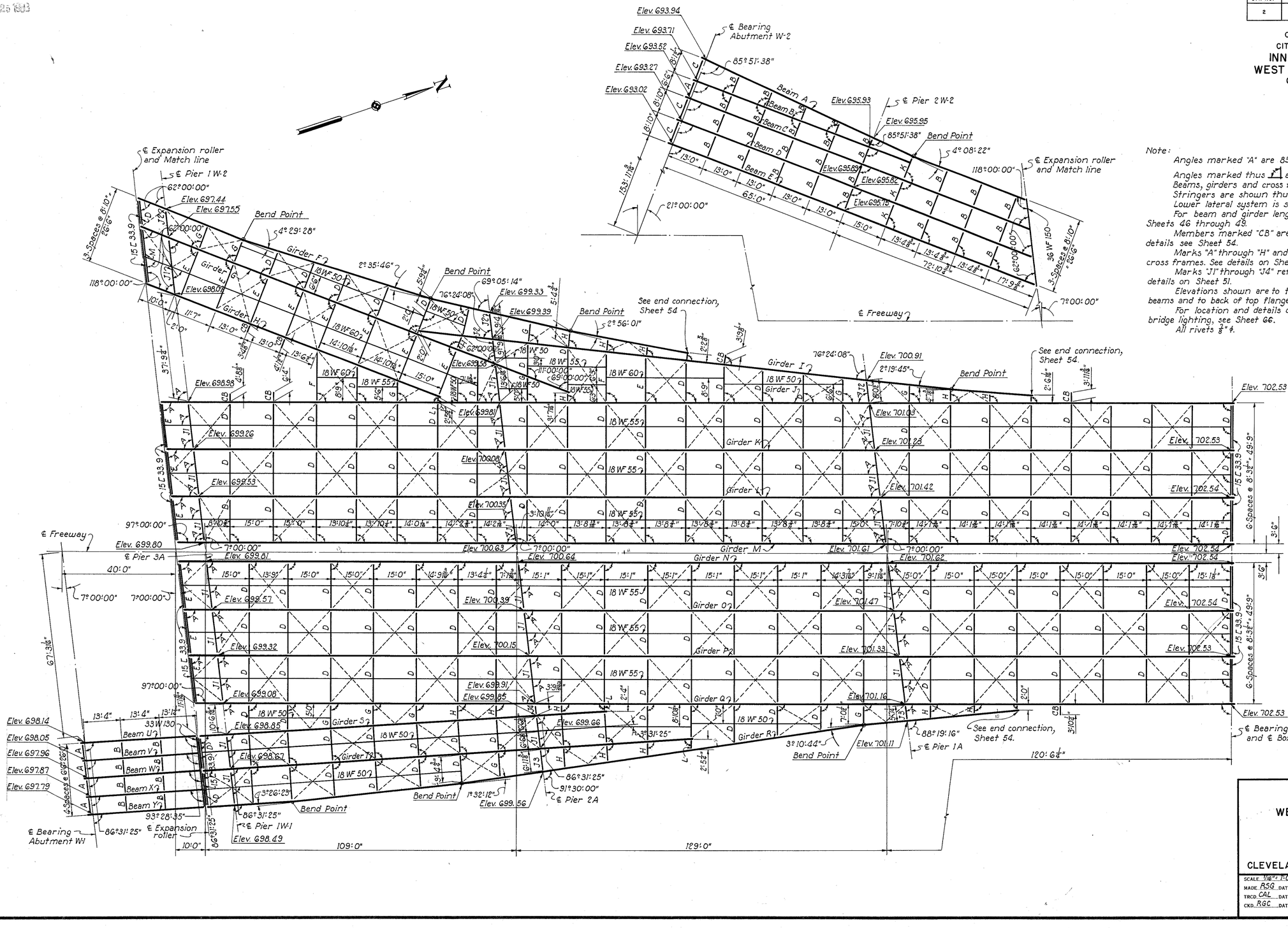
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914(2)WB SHEET- 44

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

45
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY - 42R - 17.43



U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

FRAMING PLAN

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE 1/16" = 1'0"
MADE RSG DATE 12-27-55
TRCD CAL DATE 3-27-56
CKD. RGC DATE 3-19-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914 (2) WB SHEET 45

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	46 / 67
2	OHIO			

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY-42R-17.43

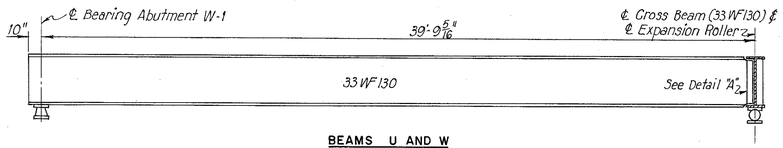
FIELD SPLICE WELDING PROCEDURE

1. Raise the abutment ends of beams A, C, D and E the following amounts:

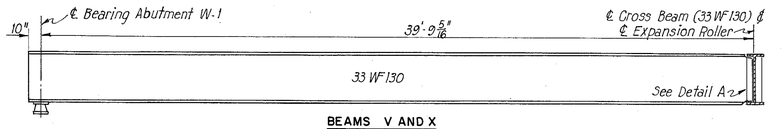
BEAM A	BEAM C	BEAM D	BEAM E
$1\frac{1}{4}$"	$1\frac{3}{8}$"	$1\frac{7}{16}$"	$1\frac{5}{8}$"

2. Butt-weld the beam flanges and web. Make one pass in each flange, then one pass in the web; repeat until welds are completed.
3. Weld the bottom and top cover plates.
4. Lower the beam ends to final position.

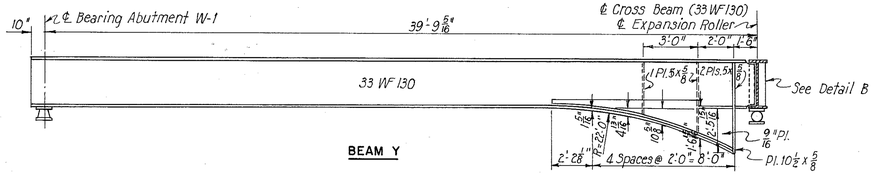
Note:
For Dead Load Deflection Diagrams, see Sheet 52.



BEAMS U AND W

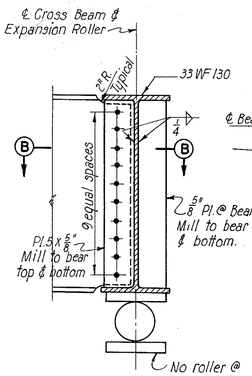


BEAMS V AND X

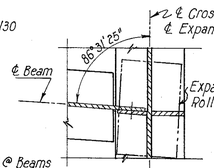


BEAM Y

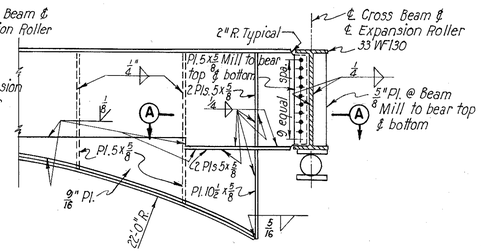
BEAM ELEVATIONS-RAMP W-1
No Scale



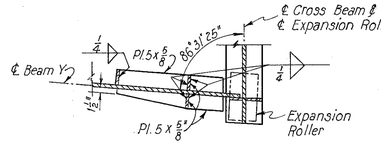
DETAIL A
Scale: 1"=1'-0"



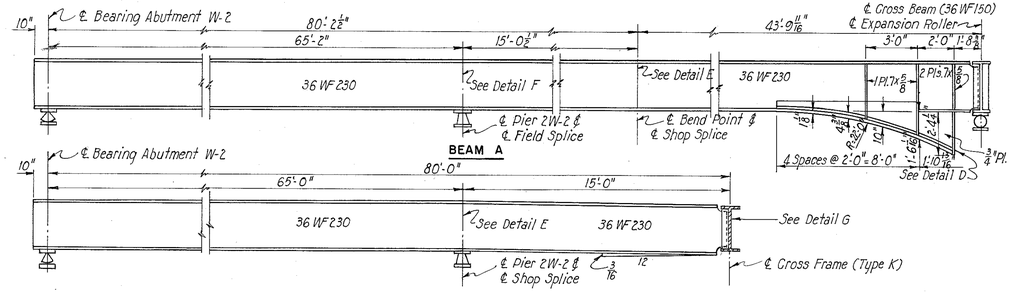
SECTION B-B
Scale: 1"=1'-0"



DETAIL B

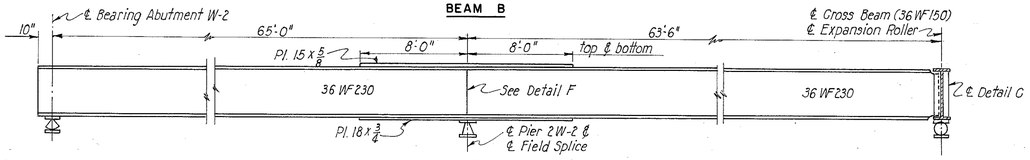


SECTION A-A
Scale: 1/2"=1'-0"

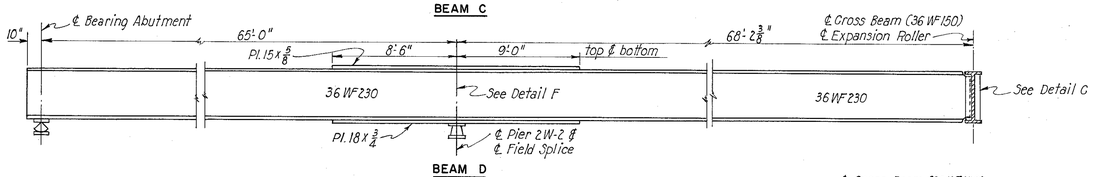


BEAM A

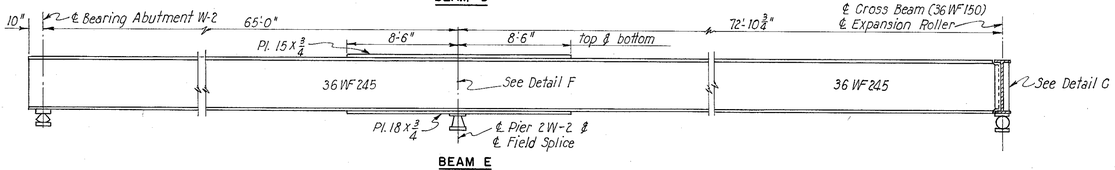
BEAM B



BEAM C

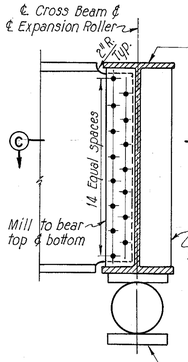


BEAM D

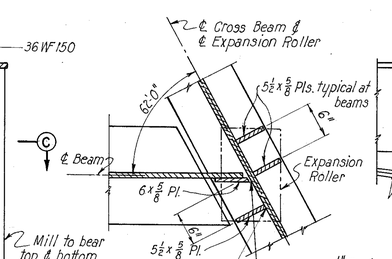


BEAM E

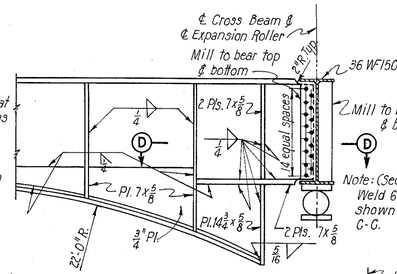
BEAM ELEVATIONS-RAMP W-2
No Scale



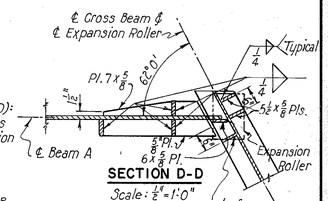
DETAIL C
Scale: 1"=1'-0"



SECTION C-C
Scale: 1"=1'-0"

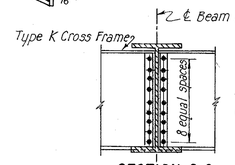


DETAIL D
Scale: 1"=1'-0"

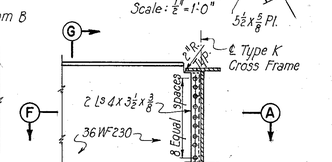


SECTION D-D
Scale: 1"=1'-0"

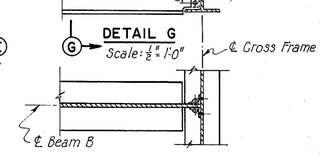
Note: (Section D-D): Weld 6 x 5/8 Pl. as shown in Section C-C.



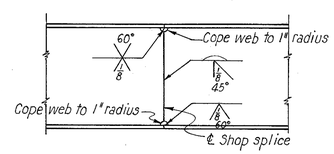
SECTION G-G
Scale: 1"=1'-0"



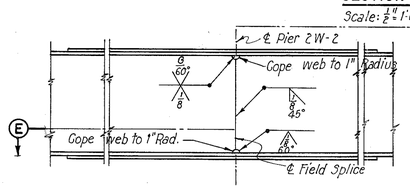
DETAIL G
Scale: 1"=1'-0"



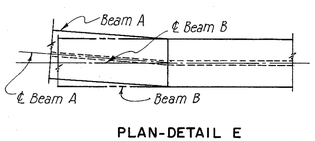
SECTION F-F
Scale: 1"=1'-0"



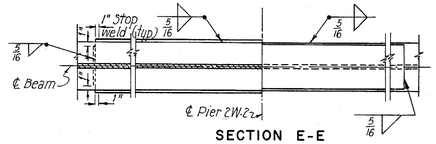
DETAIL E
Scale: 1"=1'-0"



DETAIL F
Scale: 1"=1'-0"



PLAN-DETAIL E
Scale: 1"=1'-0"



SECTION E-E
Scale: 1"=1'-0"

Note:
No cover plates at beam A.

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

BEAM ELEVATIONS AND DETAILS

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE As noted
MADE W.F.G. DATE 1-9-56
TRCD R.R. DATE 6-4-56
CKD. R.S.G. DATE 3-14-56

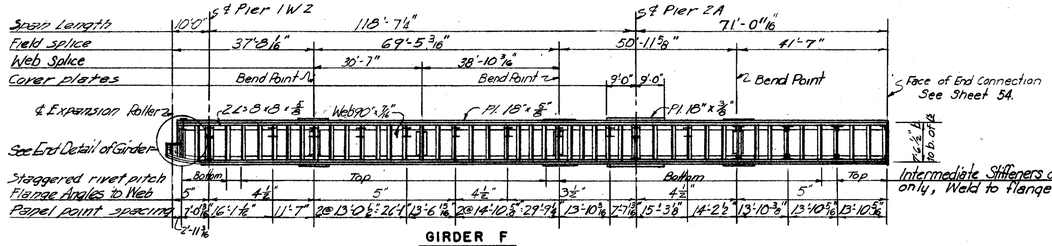
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914(2)WB SHEET 46

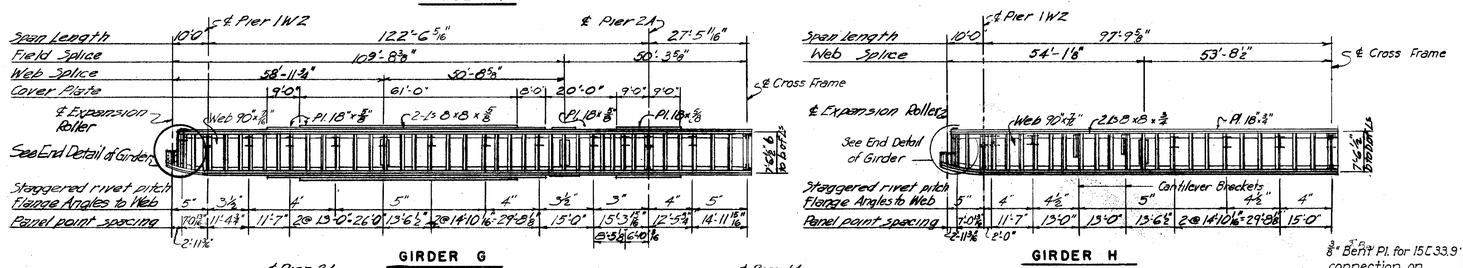
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

47
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43

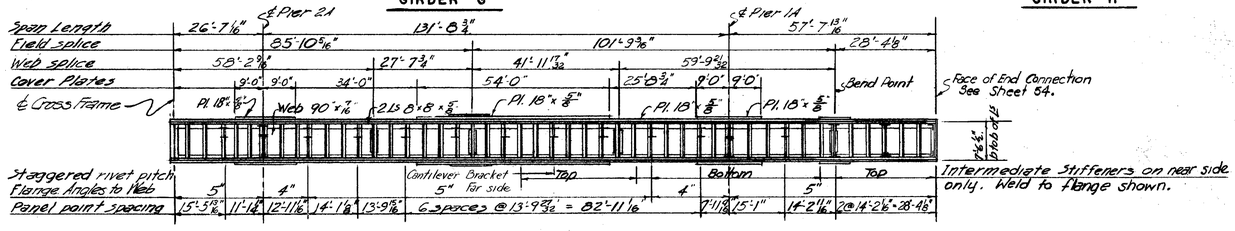


GIRDER F

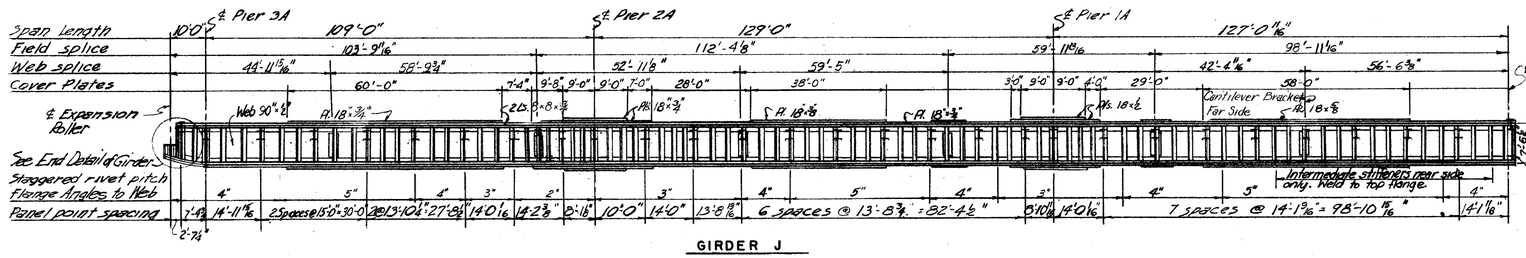


GIRDER G

GIRDER H



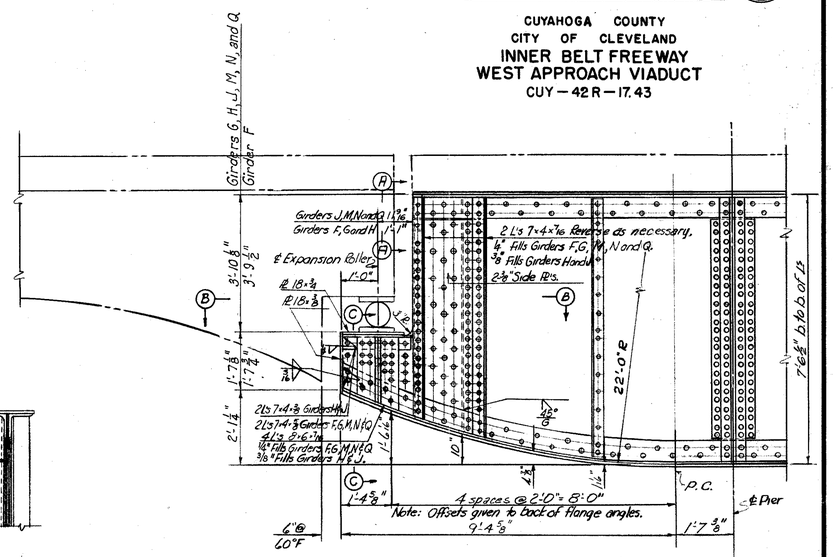
GIRDER I



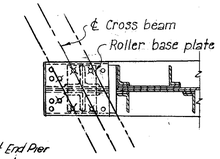
GIRDER J

GIRDER ELEVATIONS
No Scale

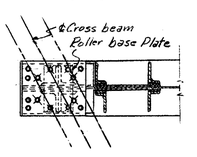
SECTION A-A
Scale: ½"=1'-0"



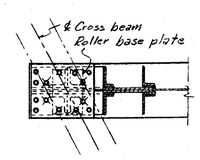
END DETAIL OF GIRDERS F, G, H, J, M, N AND Q
Scale: ½"=1'-0"



GIRDERS F AND G



GIRDER H



GIRDERS J, M, N AND Q

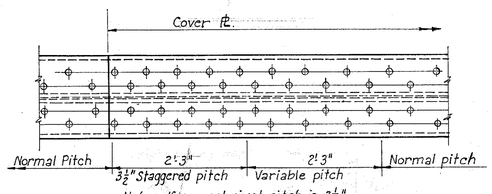
SECTION B-B
Scale ½"=1'-0"

GIRDERS F, G, M, N AND Q

GIRDERS H AND J

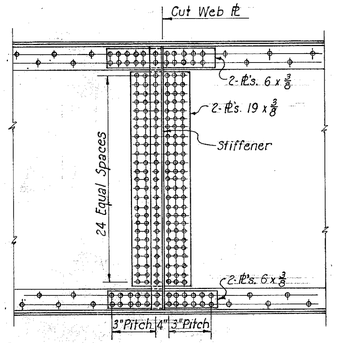
SECTION C-C
Scale ½"=1'-0"

Notes:
Intermediate stiffeners are 2 L's 5x3x5/16 crimped unless called for on one side only, then they are 1-L 5x3½x5/16 welded to flange shown.
Floor beam connection angles at panel points are 7x4x⅞ angles on extended fills. See Sheet 53.
For bearing and intermediate stiffener detail see Sheet 51.
For field splices see Sheet 50.
Material, dimensions and rivet pitch shown are common to top and bottom of Girder.



Note: If normal rivet pitch is 3½" or less no additional rivets will be required for end of cover plate.

END OF COVER PLATE DETAIL
Scale: ¾"=1'-0"



TYPICAL WEB SPLICE
Scale: ½"=1'-0"

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

GIRDER ELEVATIONS

CLEVELAND CUYAHOGA COUNTY OHIO

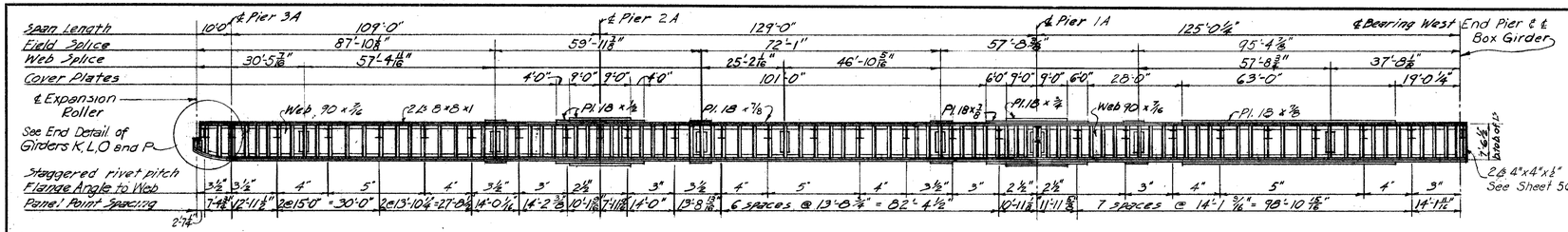
SCALE As Shown
MADE WEG DATE 2-10-56
TRCD DATE
CKD TDD DATE 3-19-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET- 47

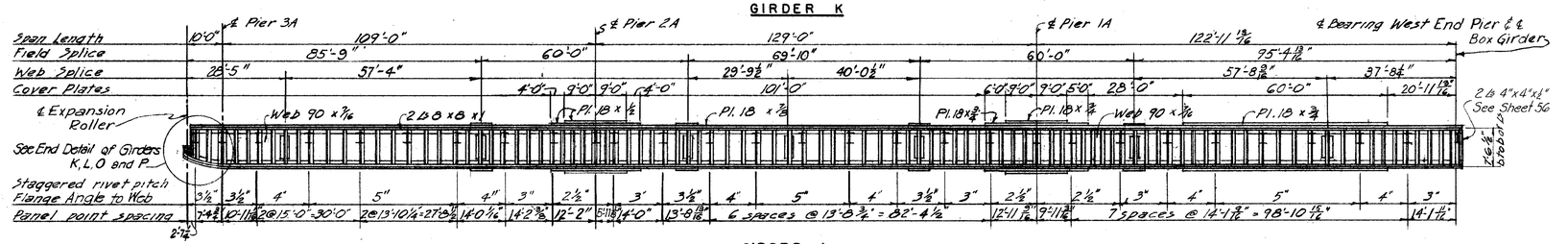
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

48
67

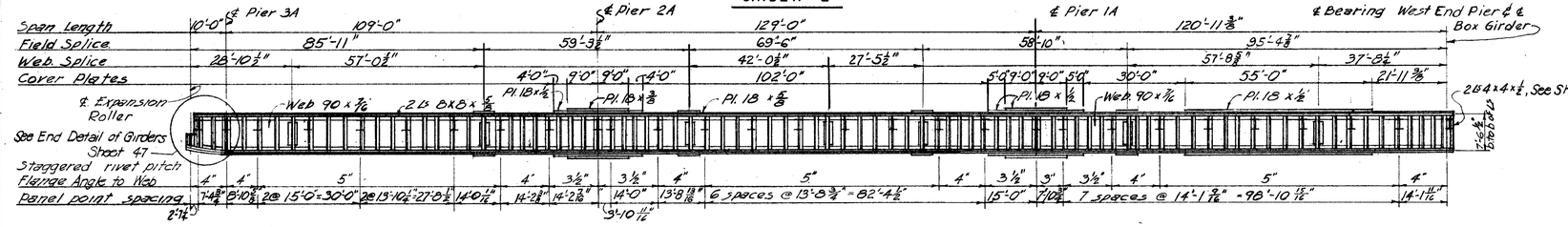
CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43



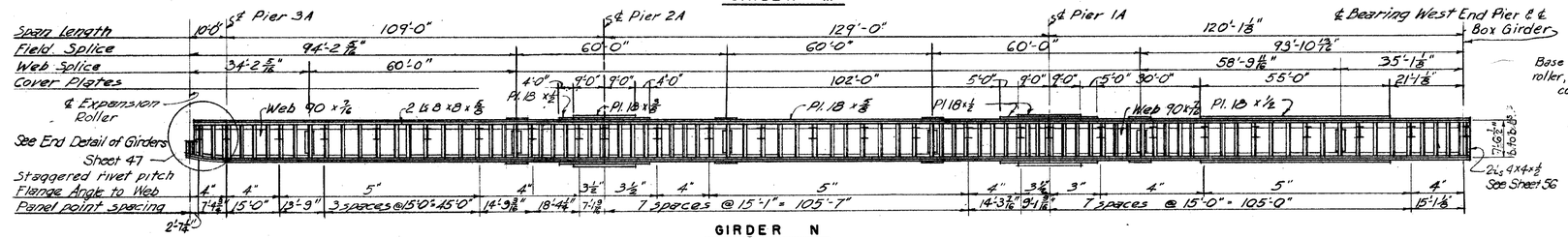
GIRDER K



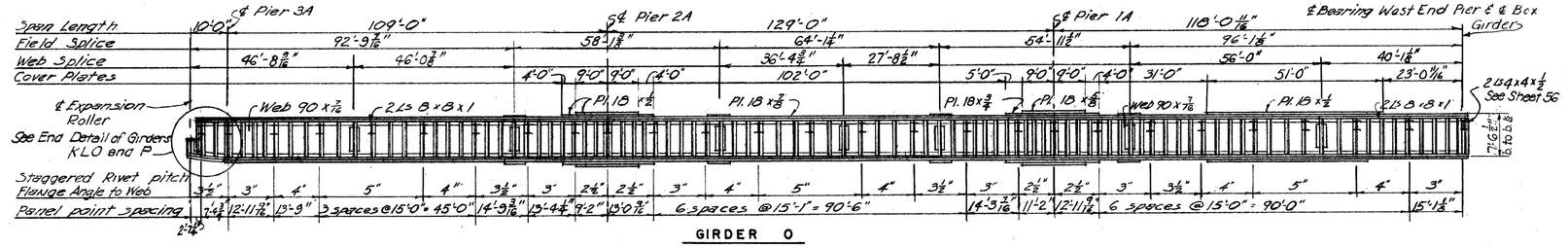
GIRDER L



GIRDER M

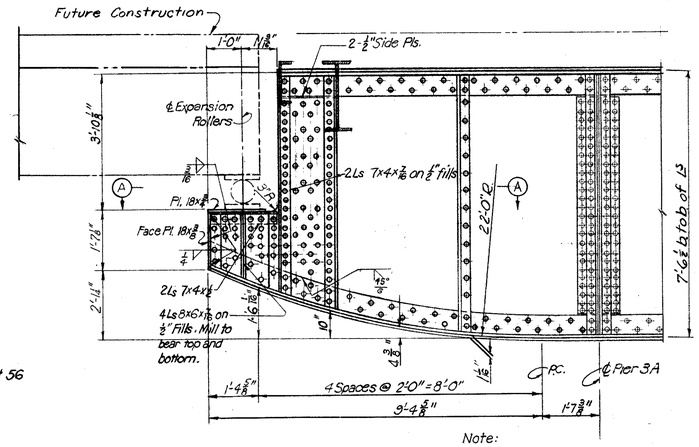


GIRDER N

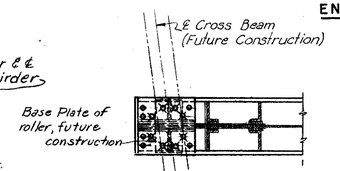


GIRDER O

GIRDER ELEVATIONS
No Scale



END DETAIL OF GIRDERS K, L, O AND P
Scale ½"=1'-0"



SECTION A-A
Scale ½"=1'-0"

NOTES:
Intermediate stiffener angles are 2 Ls 5"x3½"x⅝" crimped on girders M & N, and crimped on ½" Fill on girders K, L & O.
Floorbeam connection angles at panel points are 2 Ls 7"x4"x⅞" on 1" Fill for girders K, L & O and on ⅜" Fill on girders M & N.
For Bearing Stiffener sizes & details See Sheet 51
For end of cover plate and web splice detail See Sheet 47.
For field splice details See Sheet 50
Material, dimensions and rivet pitch shown are common to top & bottom of girder.

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

GIRDER ELEVATIONS

CLEVELAND CUYAHOGA COUNTY OHIO

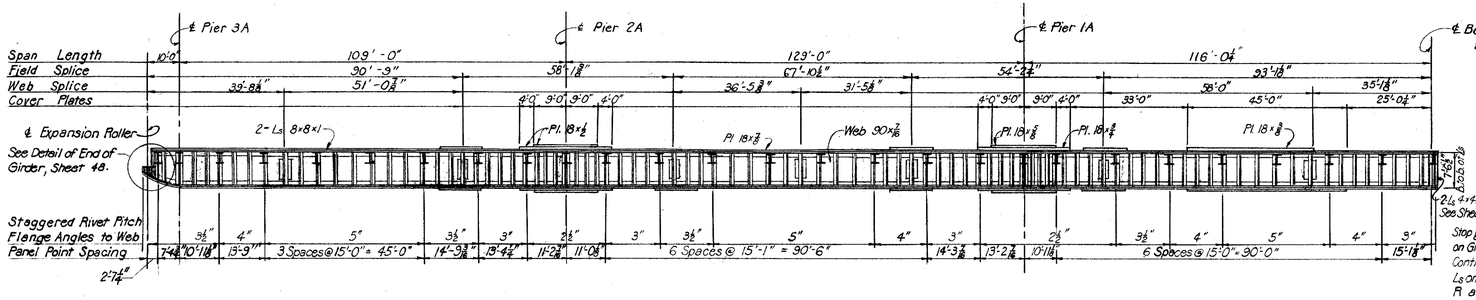
SCALE As Shown
MADE WEG DATE 2-5-54
TRCD ____ DATE ____
CKD WPO DATE 3-15-54

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET- 48

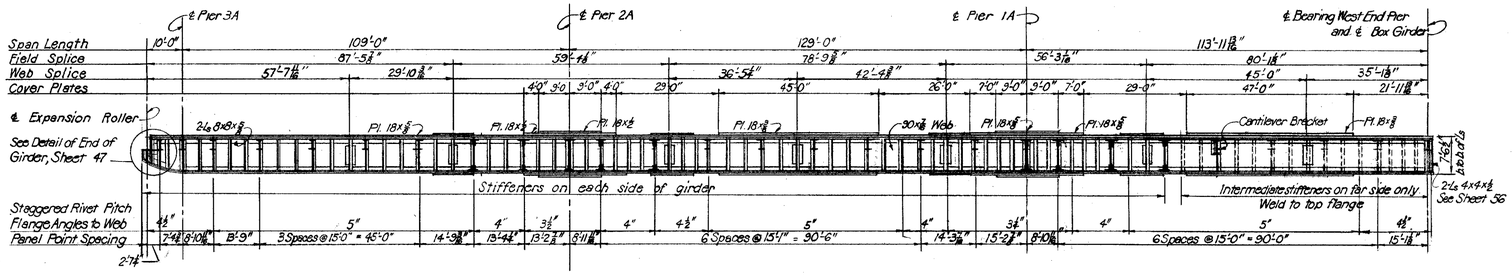
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

49
67

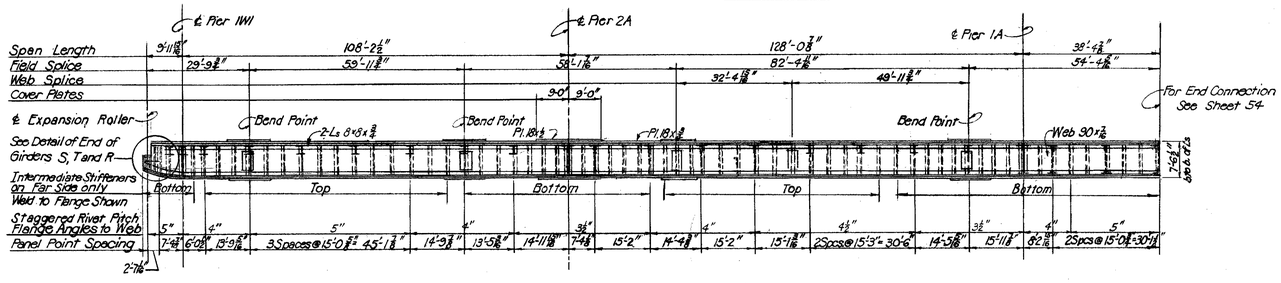
CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42R – 17.43



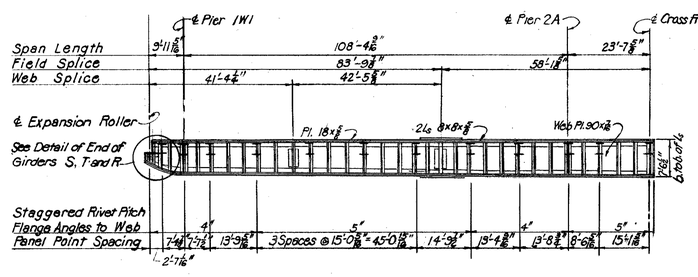
GIRDER P



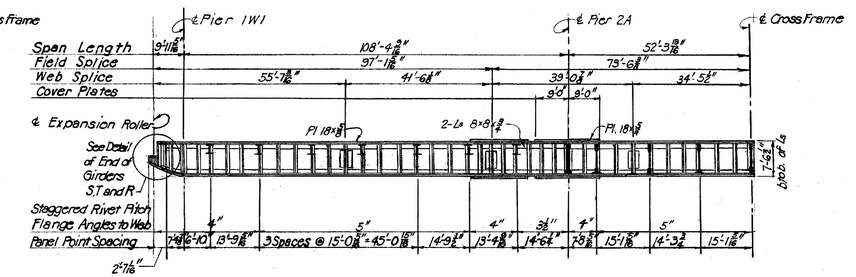
GIRDER Q



GIRDER R

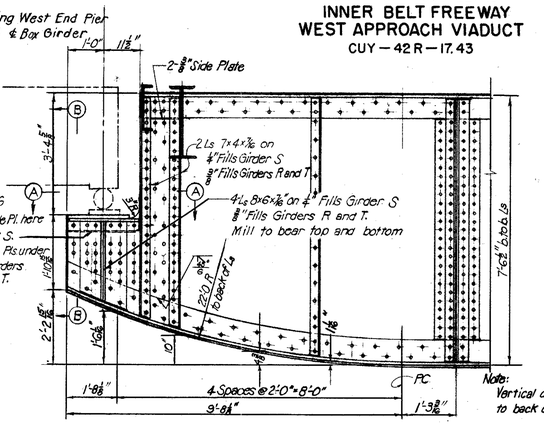


GIRDER S



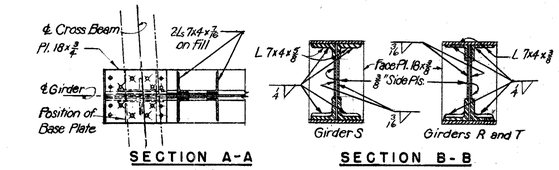
GIRDER T

GIRDER ELEVATIONS
No Scale



END DETAIL OF GIRDERS R, S AND T
Scale ½"=1'-0"

Note: Vertical offsets are to back of angles.



SECTION A-A
Scale ½"=1'-0"

SECTION B-B
Scale ½"=1'-0"

Notes:

Intermediate stiffeners are 2 Ls 5×3½×5/16, unless called for on one side only, then they are 1 L 5×3½×3/16 welded to flange shown. Crimp on girders Q, R, S and T, crimp and fill ¼ on girder P.

Floor beam connection angles at panel points are L 7×4×7/16 on extended fills. see Sheet 53.

For bearing stiffener sizes and details, and for intermediate stiffener details see Sheet 51.

For end of cover plate and web splice, see Sheet 47.

For Field Splice Detail see Sheet 50.

Material, dimensions and rivet pitch shown are commom to top and bottom of girder.

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

GIRDER ELEVATIONS

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE As Shown
MADE JSH DATE 2-16-56
TRCD ___ DATE ___
CKD WPQ DATE 3-15-56

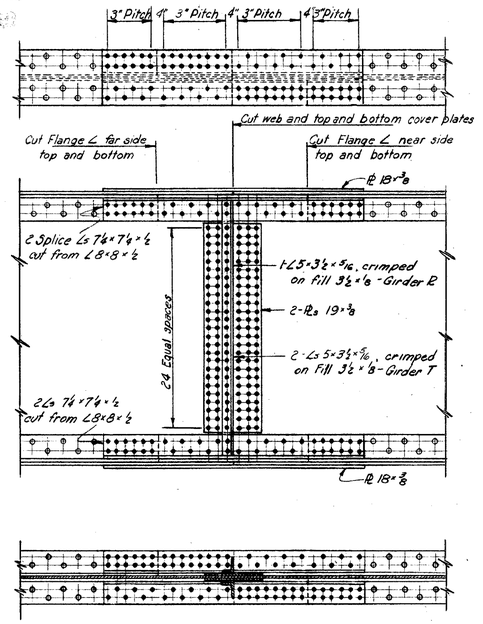
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914(2)WB SHEET- 49

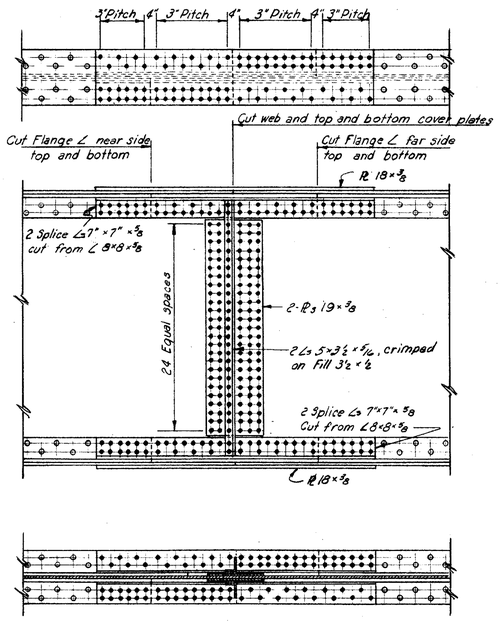
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

50
67

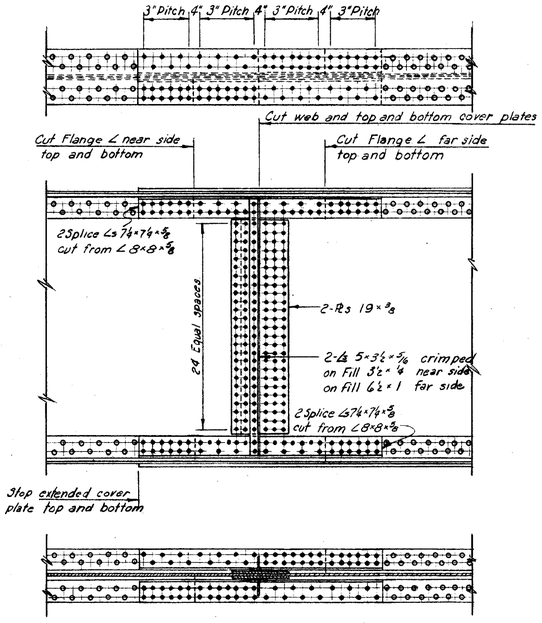
CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43



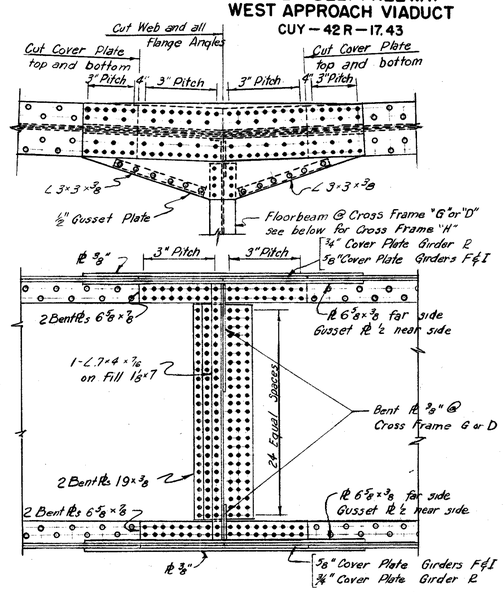
FIELD SPLICE-GIRDERS R & T

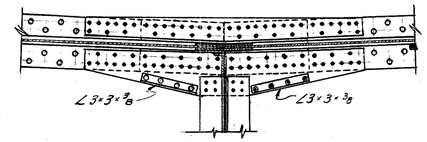


FIELD SPLICE-GIRDERS K,L,O & P

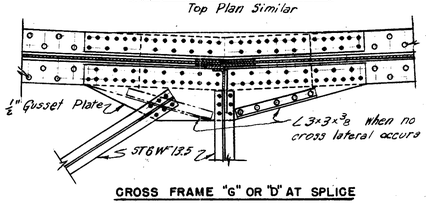


FIELD SPLICE-GIRDER J
NEAR PIER 2A





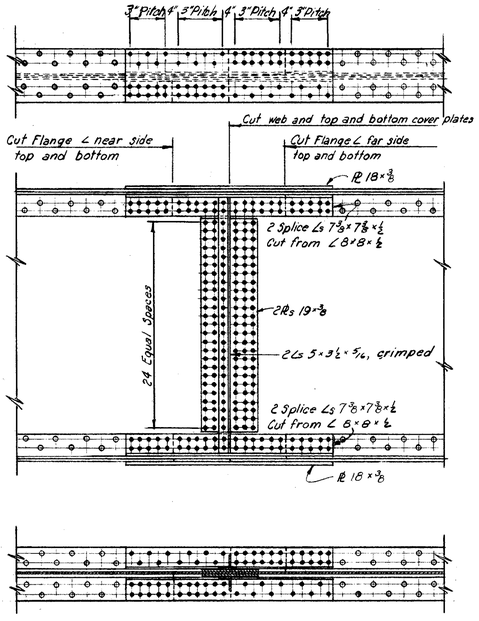
CROSS FRAME "H" AT SPLICE
Top Plan Similar



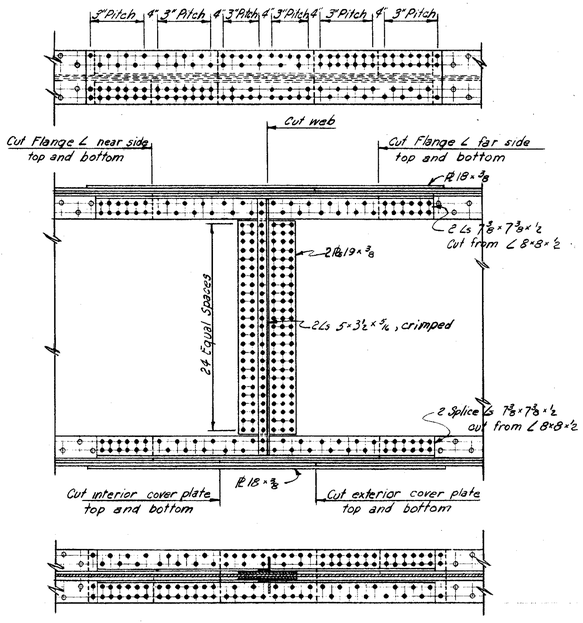
CROSS FRAME "G" OR "D" AT SPLICE

FIELD SPLICE AT BEND POINTS
GIRDERS F, I & R

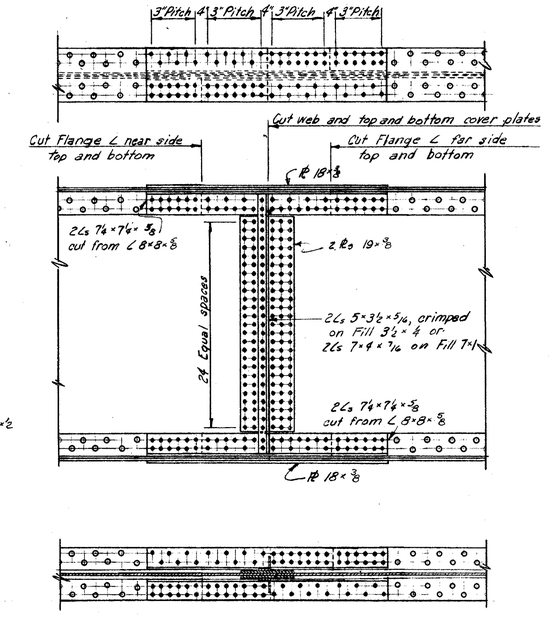
Note:
Splice shown is for Girders "F" and "I"
Splice for Girder "R" is similar by rotation.



FIELD SPLICE-GIRDERS G,M,N,Q & S



FIELD SPLICE-GIRDER I



FIELD SPLICE-GIRDER J
NEAR PIER 1A

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

GIRDER FIELD SPLICES

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE 1"=1'-0
MADE WAO DATE 2-14-56
TRCD ____ DATE ____
CKD ASR DATE 3-13-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914(2)WB SHEET- 50

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

51
67

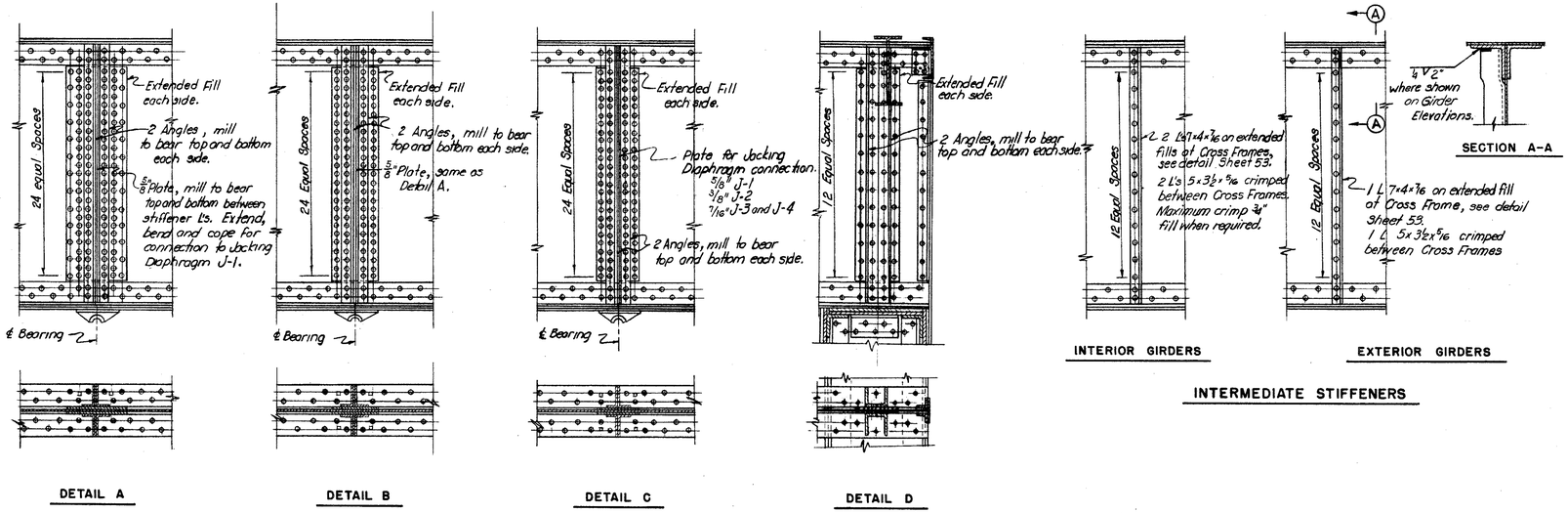
CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43

TABLE OF BEARING STIFFENERS AND FILL PLATES

	Fills	Pier 3A, 1W1 or 1W2		Pier 2A		Pier 1A		West End Pier	
		Brg. Stiff.	Detail	Brg. Stiff.	Detail	Brg. Stiff.	Detail	Brg. Stiff.	Detail
Girder F	5/8"	4 Ls 7"×4"×7/16	C	4 Ls 7"×4"×5/8	C	———	—	———	—
Girder G	5/8"	4 Ls 7"×4"×5/8	C	4 Ls 7"×4"×3/4	C	———	—	———	—
Girder H	3/4"	4 Ls 7"×4"×7/16	C	———	—	———	—	———	—
Girder I	5/8"	———	—	4 Ls 7"×4"×5/8	C	4 Ls 7"×4"×5/8	C	———	—
Girder J	3/4"	4 Ls 7"×4"×5/8	C	4 Ls 7"×4"×7/8	A	4 Ls 7"×4"×7/8	C	4 Ls 7"×4"×5/8	D
Girders K,L,O&P	1"	4 Ls 7"×4"×7/8	B	4 Ls 7"×4"×7/8	B	4 Ls 7"×4"×1"	A	4 Ls 7"×4"×5/8	D
Girders M&N	5/8"	4 Ls 7"×4"×5/8	C	4 Ls 7"×4"×5/8	C	4 Ls 7"×4"×3/4	C	4 Ls 7"×4"×5/8	D
Girder Q	5/8"	4 Ls 7"×4"×5/8	C	4 Ls 7"×4"×7/8	C	4 Ls 7"×4"×7/8	C	4 Ls 7"×4"×5/8	D
Girder R	3/4"	4 Ls 7"×4"×5/8	C	4 Ls 7"×4"×5/8	C	4 Ls 7"×4"×5/8	C	———	—
Girder S	5/8"	4 Ls 7"×4"×1/2	C	4 Ls 7"×4"×1/2	C	———	—	———	—
Girder T	3/4"	4 Ls 7"×4"×5/8	C	4 Ls 7"×4"×5/8	C	———	—	———	—

TABLE OF DEAD LOAD REACTIONS FOR JACKING (IN TONS)

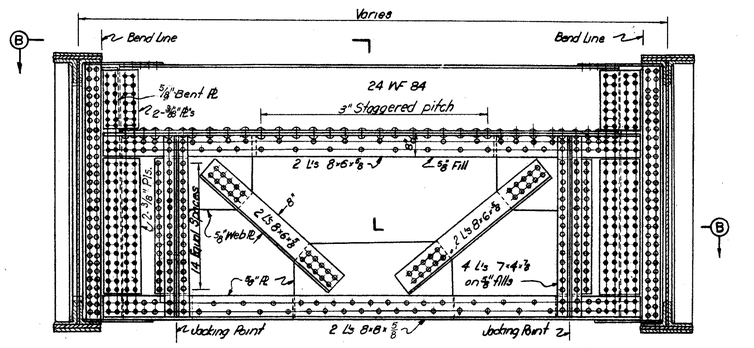
Girder	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Pier 1A	—	—	—	145	184	230	223	171	171	218	215	167	110	—	—
Pier 2A	129	111		110	231	202	202	157	157	202	202	145	140	97	125
Pier 3A	—	—	—	—	119	115	115	93	93	115	115	95	—	—	—
Pier 1W1	—	—	—	—	—	—	—	—	—	—	—	—	74	85	91
Pier 1W2	80	105	108	—	—	—	—	—	—	—	—	—	—	—	—



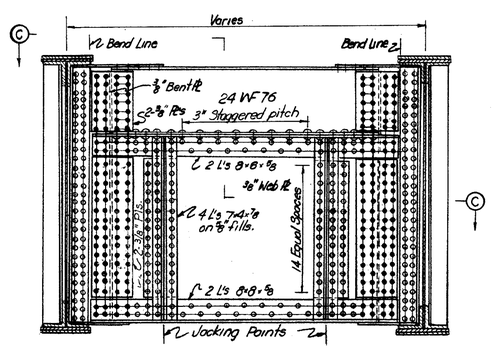
DETAIL A | DETAIL B | DETAIL C | DETAIL D

BEARING STIFFENERS

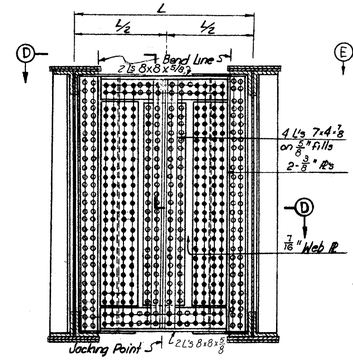
INTERMEDIATE STIFFENERS



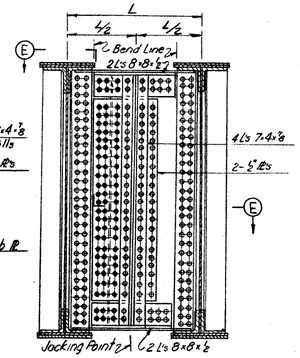
JACKING DIAPHRAGM J-1



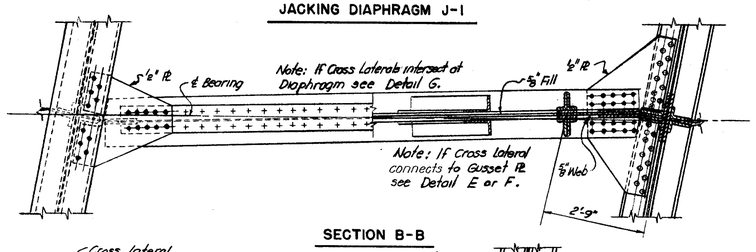
JACKING DIAPHRAGM J-2



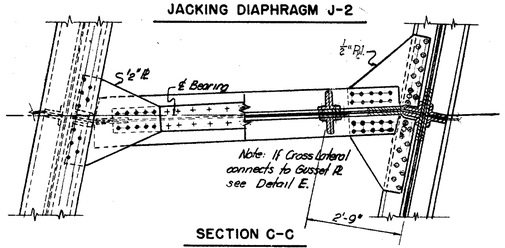
JACKING DIAPHRAGM J-3



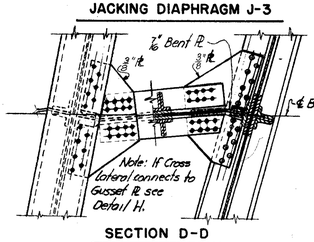
JACKING DIAPHRAGM J-4



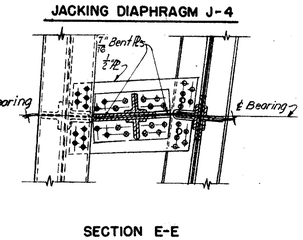
SECTION B-B



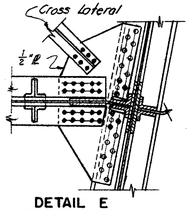
SECTION C-C



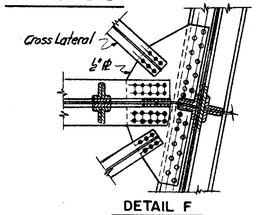
SECTION D-D



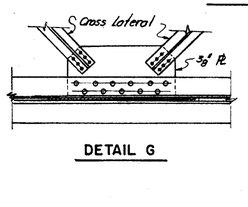
SECTION E-E



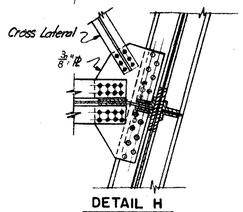
DETAIL E



DETAIL F



DETAIL G



DETAIL H

Note: 7"×4"×⅞ Stiffener Angles at Jacking Points shall be milled to bear top and bottom.
Stiffener Angles at Jacking Points shall be normal to floor beams or to Flange angles.
For location of Jacking Diaphragms see Framing Plan Sheet No. 45

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750
STIFFENER AND JACKING DIAPHRAGM DETAILS
CLEVELAND CUYAHOGA COUNTY OHIO

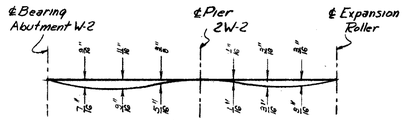
SCALE ½"=1'-0"
MADE RGC DATE 2-7-56
TRCD ——— DATE ———
CKD TDD DATE 3-14-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET- 51

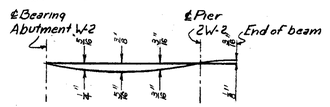
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

52
67

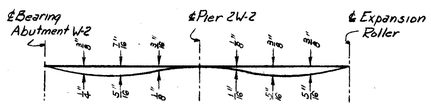
CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43



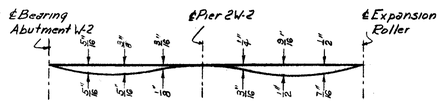
BEAM "A"



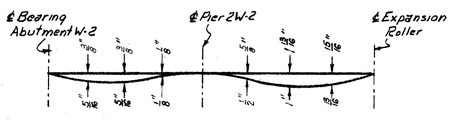
BEAM "B"



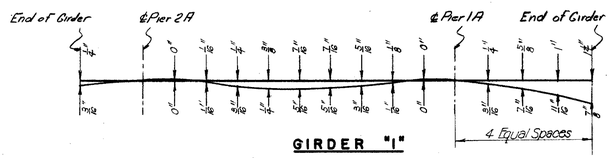
BEAM "C"



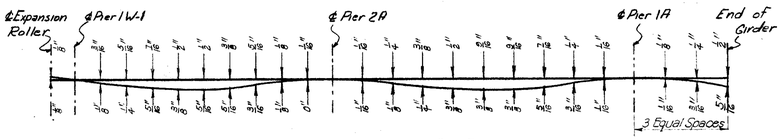
BEAM "D"



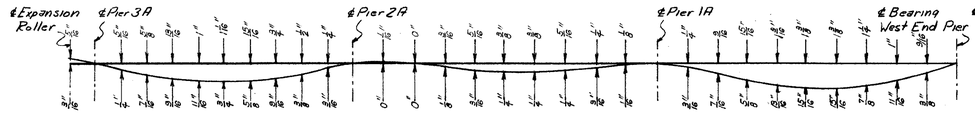
BEAM "E"



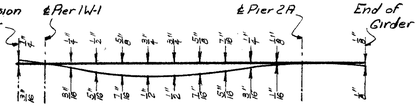
GIRDER "I"



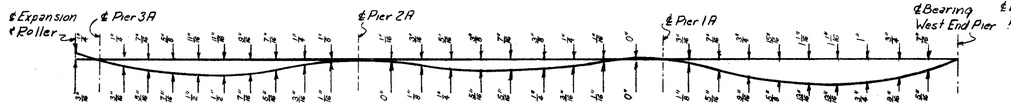
GIRDER "R"



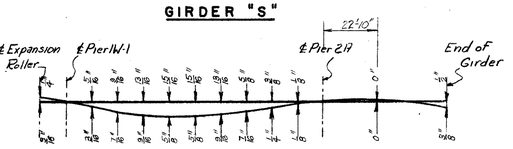
GIRDER "J"



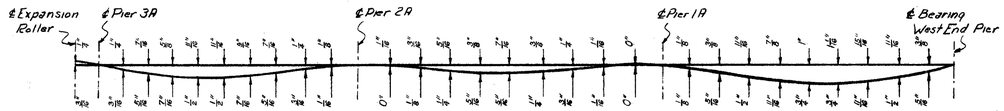
GIRDER "S"



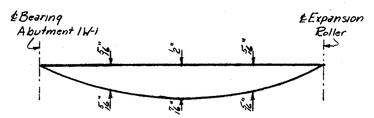
GIRDER "K"



GIRDER "T"

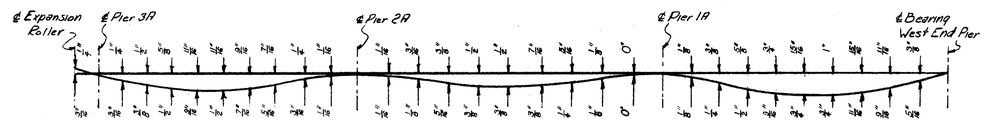


GIRDER "L"

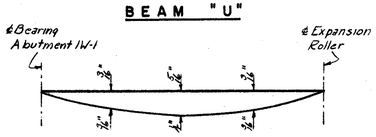


BEAM "U"

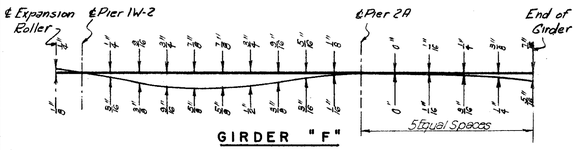
BEAM "Y"



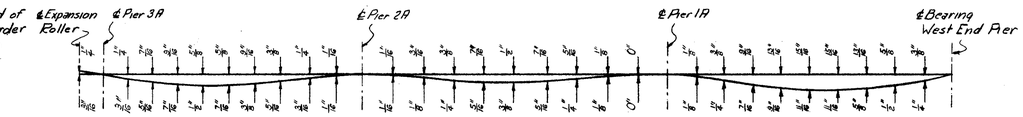
GIRDERS "M" & "N"



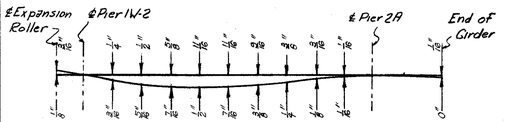
BEAMS "V" "W" & "X"



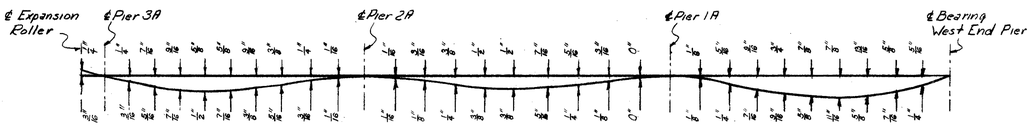
GIRDER "F"



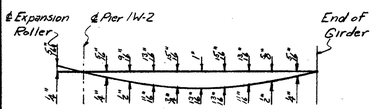
GIRDER "O"



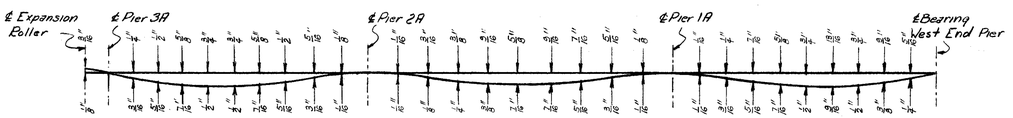
GIRDER "G"



GIRDER "P"



GIRDER "H"



GIRDER "Q"

Notes:
Amount of total dead load deflection is shown above diagram, amount of dead load deflection due to concrete only is shown below diagram.
Girder deflections are shown at tenth points of spans unless shown otherwise
Rolled beam deflections are shown at quarter points of spans.
Rolled beams shall not be cambered.
Girders will be cambered for total dead load deflection plus vertical curve correction.
For vertical curve data see sheets 29 & 63

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750
DEAD LOAD DEFLECTION DIAGRAMS
CLEVELAND CUYAHOGA COUNTY OHIO

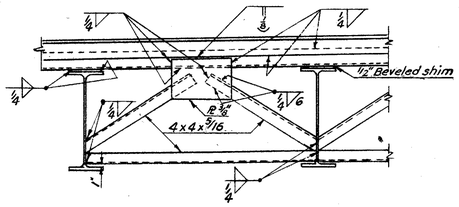
SCALE No scale
MADE PSG DATE 1-31-56
TRCD ____ DATE ____
CKD CCF DATE 3-1-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET-52

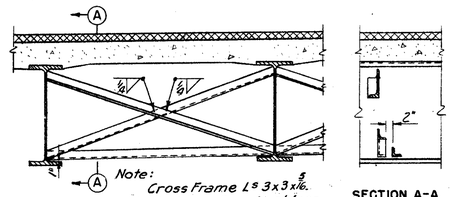
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

53
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43

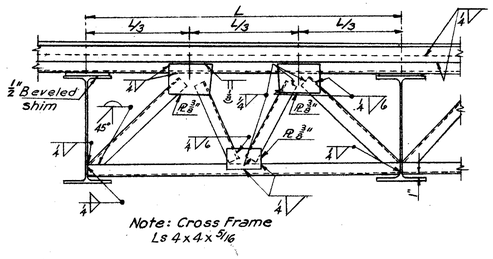


CROSS FRAME A

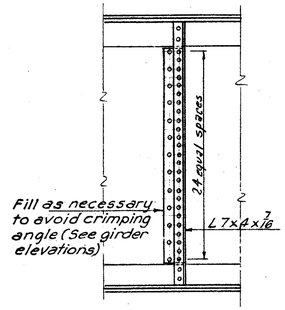


SECTION A-A

CROSS FRAME B

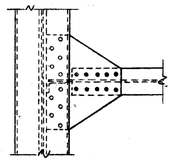


CROSS FRAME C

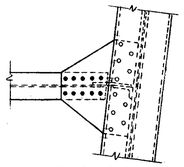


TYPICAL CROSS FRAME CONNECTION ANGLE

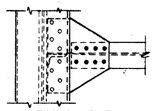
Note:
For details of expansion joint at Cross Frames A and C see Sheet 64.



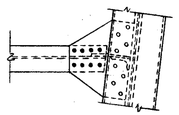
SECTION B-B
CROSS FRAMES E AND F



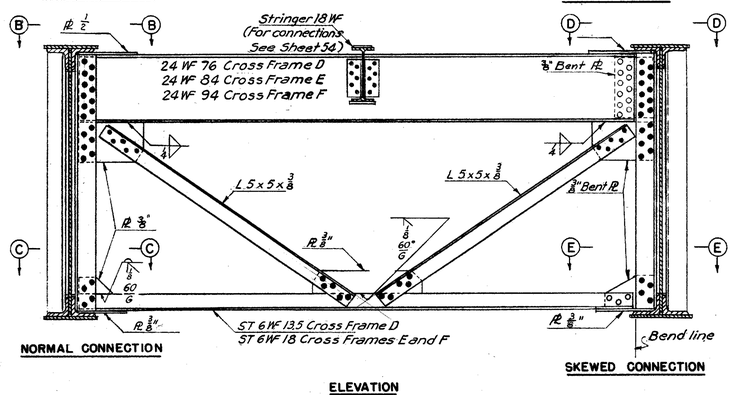
SECTION D-D
CROSS FRAMES E AND F



SECTION B-B
CROSS FRAME D



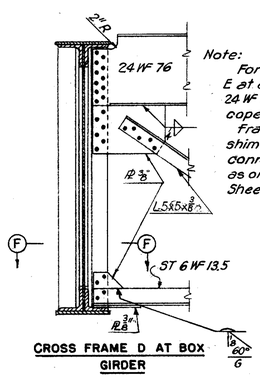
SECTION D-D
CROSS FRAME D



NORMAL CONNECTION

SKEWED CONNECTION

ELEVATION



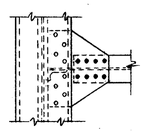
Note:
For Cross Frames D and E at expansion rollers, 24 WF shall be raised and coped as on cross-frame M. and beveled shims shall be used to connect ST 6 WF to girders as on crossframe M. see Sheet 54.

CROSS FRAME D AT BOX GIRDER

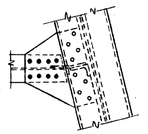
NORMAL CONNECTION

SKEWED CONNECTION

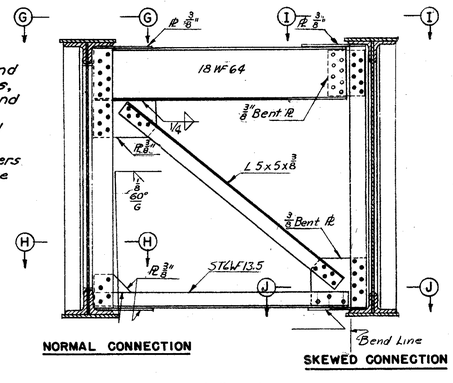
ELEVATION

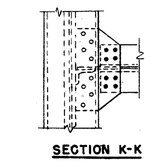


SECTION G-G

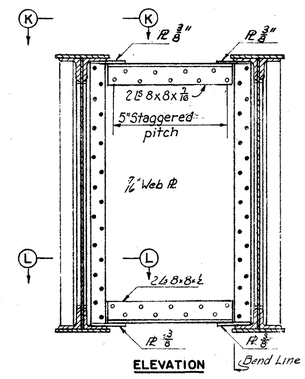


SECTION I-I

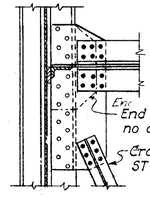




SECTION K-K

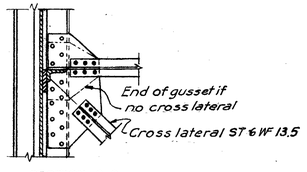


ELEVATION

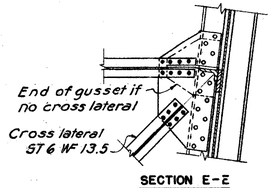


SECTION L-L

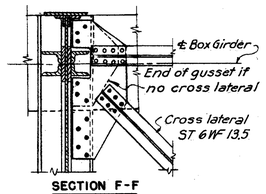
CROSS FRAME H



SECTION C-C

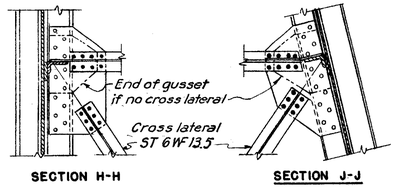


SECTION E-E



SECTION F-F

CROSS FRAMES D, E AND F



SECTION H-H

SECTION J-J

CROSS FRAME G

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY- 42R-1750

CROSS FRAMES

CLEVELAND CUYAHOGA COUNTY OHIO

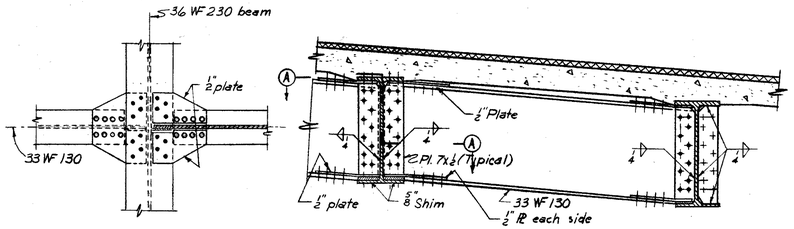
SCALE 1/2" = 1'-0"
MADE RSG DATE 2-18-56
TRCD ___ DATE ___
CKD RGC DATE 3-13-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET- 53

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

54
67

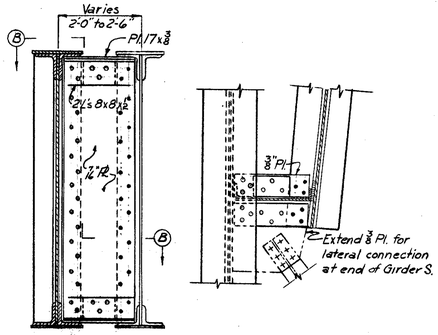
CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY — 42 R — 17.43



SECTION A-A

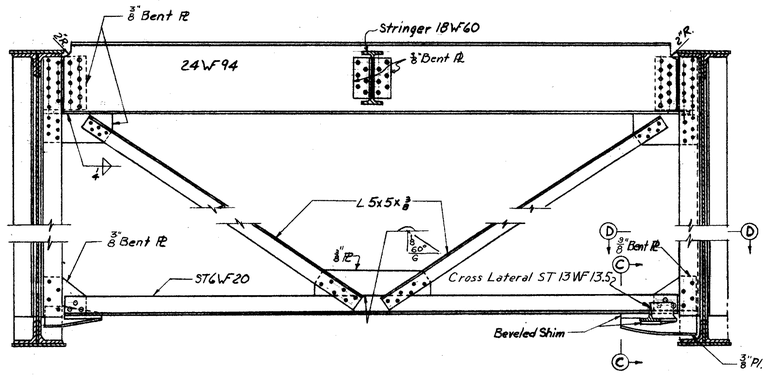
CROSS FRAME K

Note:
See Sheet 46 for connection of Beam B to Cross Frame K.

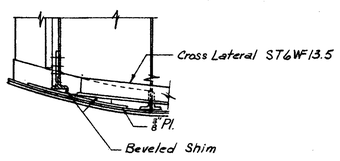


CROSS FRAME L

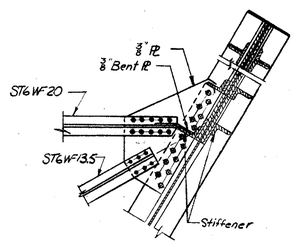
SECTION B-B



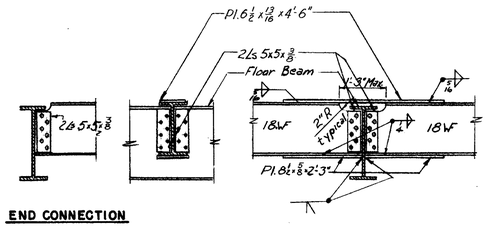
CROSS FRAME M



SECTION C-C

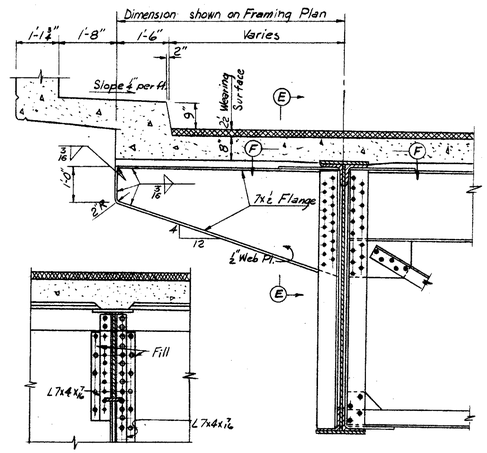


SECTION D-D



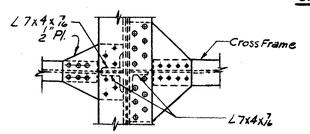
END CONNECTION

CONTINUOUS STRINGER CONNECTION

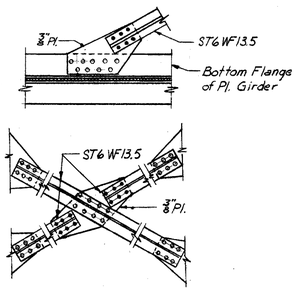


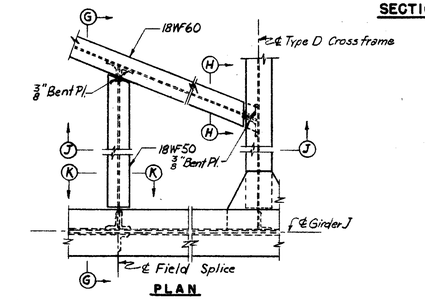
SECTION E-E

CANTILEVER BRACKET DETAIL

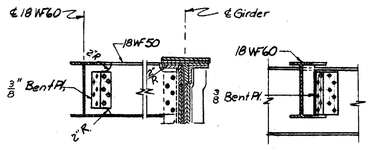


SECTION F-F



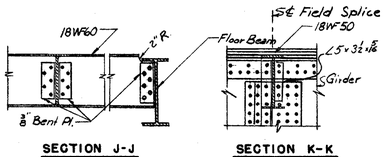


PLAN



SECTION G-G

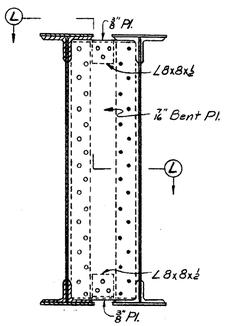
SECTION H-H



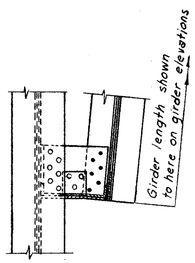
SECTION J-J

SECTION K-K

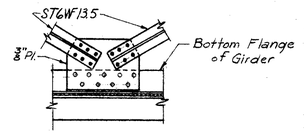
TRANSVERSE STRINGER CONNECTION



SECTION L-L



END CONNECTION
GIRDER F TO I
GIRDER I TO J
GIRDER R TO Q



TYPICAL LATERAL CONNECTIONS

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

SUPERSTRUCTURE DETAILS

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE 1" = 1'-0"
MADE JFH DATE 2-10-56
TRCD ___ DATE ___
CKD RGC DATE 3-14-56

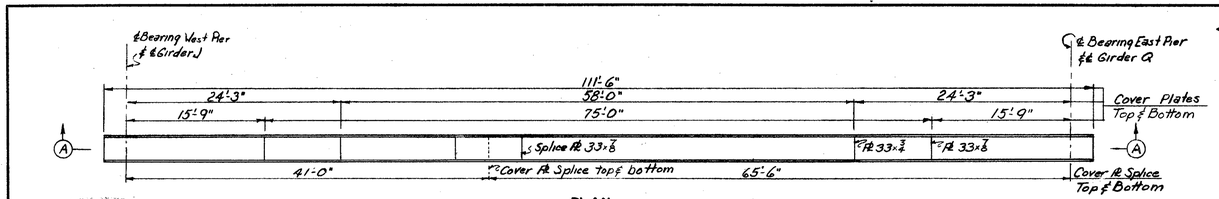
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914(2)WB SHEET- 54

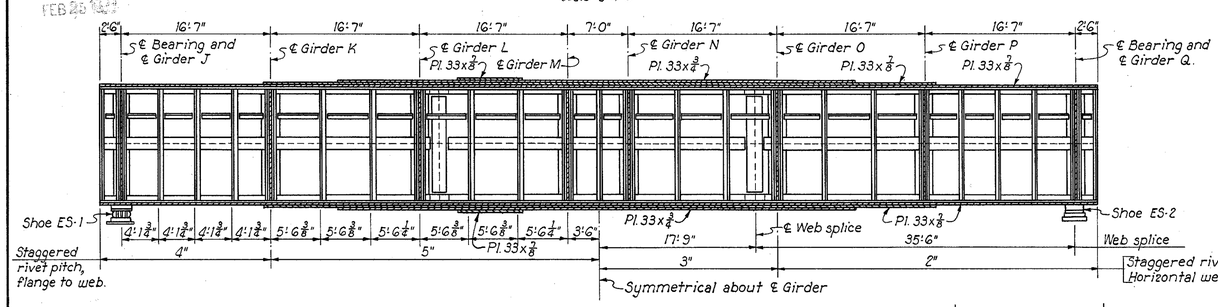
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

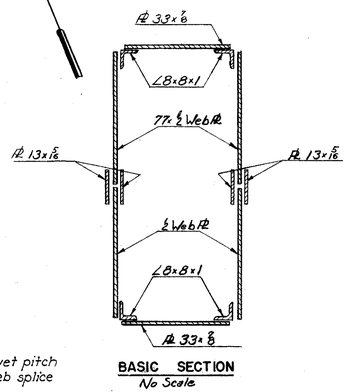
55
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43

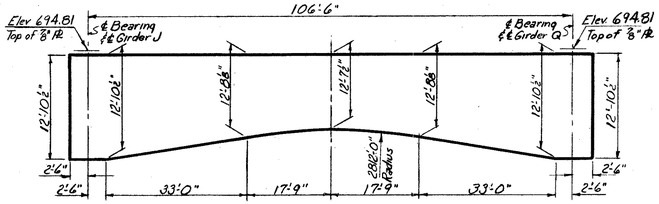


PLAN
Scale: ⅛"=1'-0"





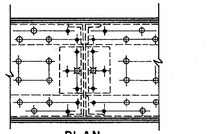
BASIC SECTION
No Scale



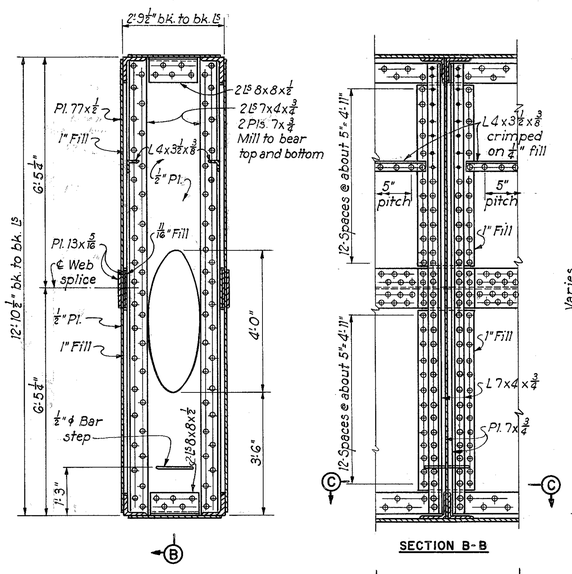
Note:
Vertical dimensions are back to back of flange angles.

GEOMETRICS
No Scale

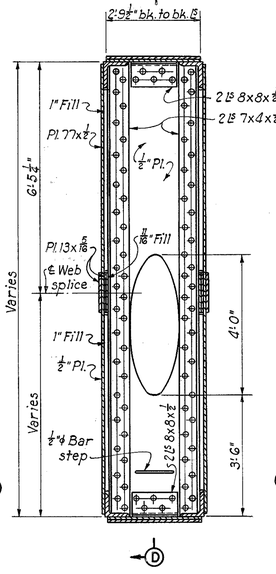
SECTION A-A
Scale: ⅛"= 1'-0"

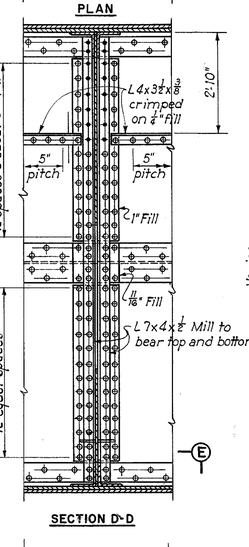


PLAN

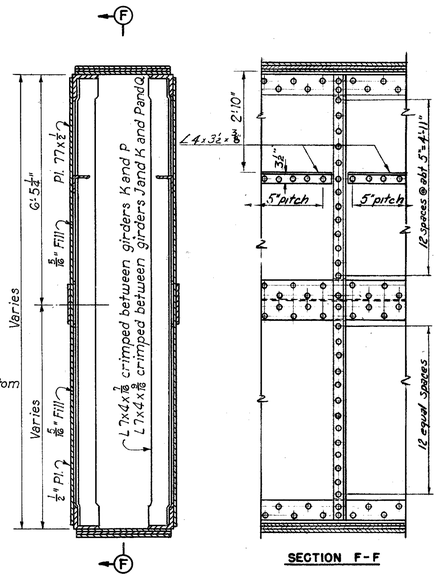


SECTION B-B

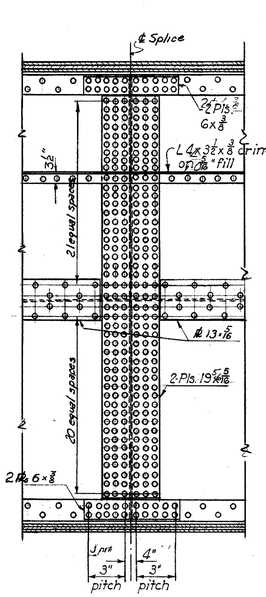




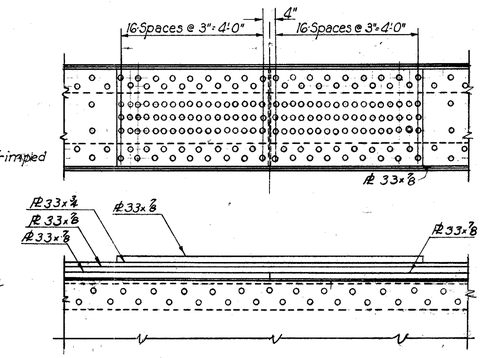
SECTION D-D



SECTION F-F



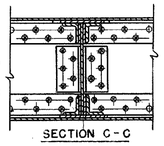
WEB SPLICE
Scale: ½"=1'-0"



COVER PLATE SPLICE
Scale: ½"=1'-0"

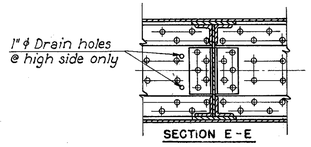
Note:
Use 10" pitch for all stitch rivets in cover plates.
For details of shoes ES-1 and ES-2 see Sheet 56.
For box girder end details and for plate girder connection details see Sheet 56.

Note:
Use field rivets through bearing stiffener on side of girder which has connection for plate girder only.
Plan view of Section B-B is similar to plan of Section D-D.



SECTION C-C

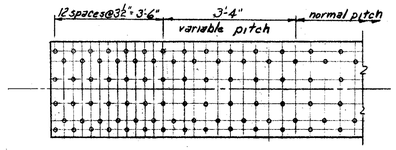
BEARING STIFFENERS AT ℄ BEARINGS
(at ℄ Girders J and Q)
Scale: ½"=1'-0"



SECTION E-E

BEARING STIFFENERS AT ℄ GIRDERS K THRU P
Scale: ½"=1'-0"

INTERMEDIATE STIFFENERS
Scale: ½"=1'-0"



END OF COVER PLATE DETAIL
Scale: ½"=1'-0"

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750
BOX GIRDER
CLEVELAND CUYAHOGA COUNTY OHIO

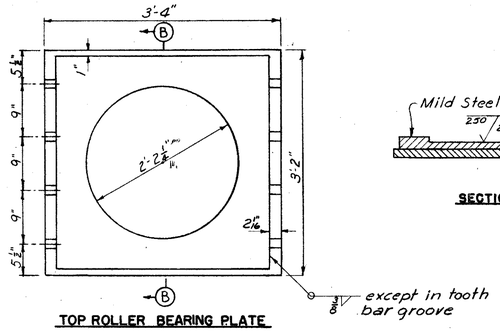
SCALE As Shown
MADE RSG DATE 1-7-56
TRCD ____ DATE ____
CKD DFB DATE 3-12-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET- 55

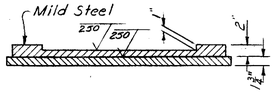
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

56
67

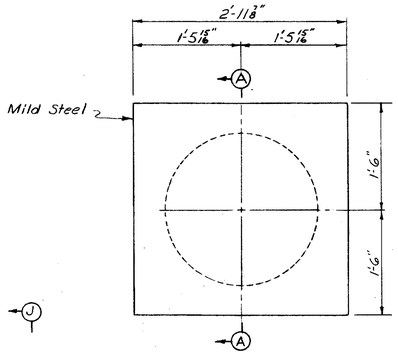
CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43



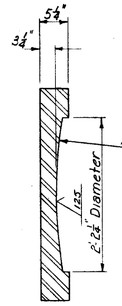
TOP ROLLER BEARING PLATE



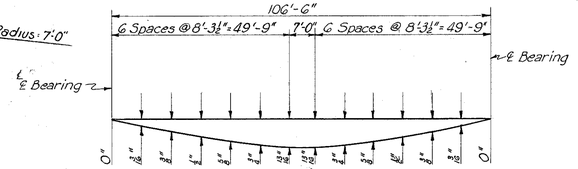
SECTION B-B



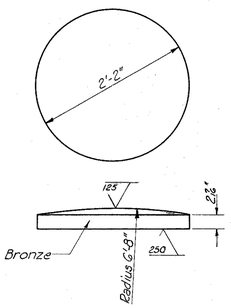
DISC BEARING PLATE



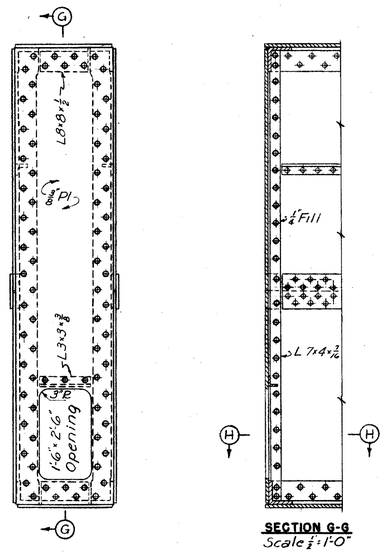
SECTION A-A



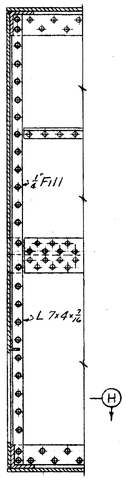
BOX GIRDER DEFLECTION DIAGRAM
No Scale



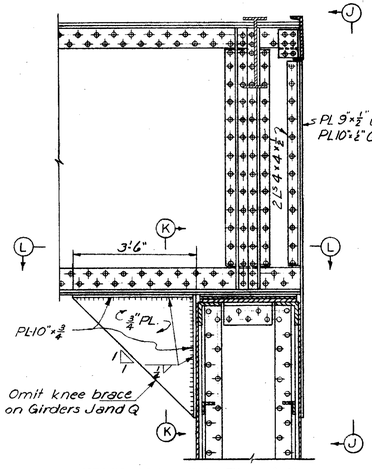
BRONZE BEARING DISC



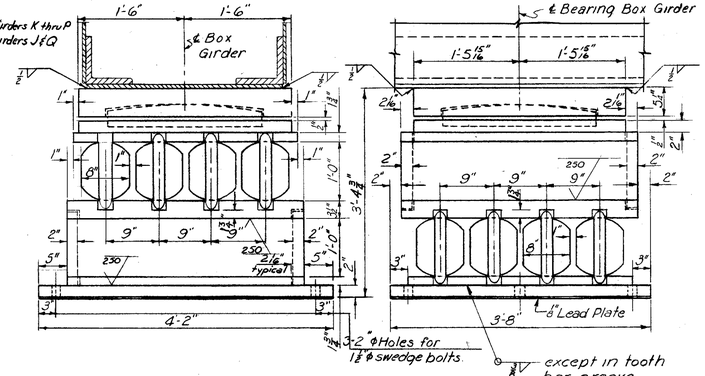
BOX GIRDER END DETAIL
Scale ½"=1'-0"



SECTION G-G
Scale ½"=1'-0"

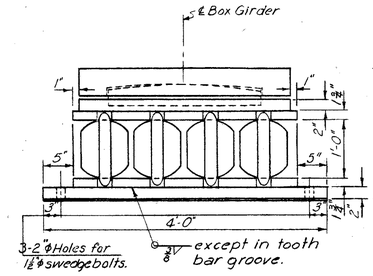


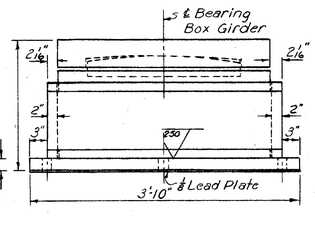
GIRDER CONNECTION TO BOX GIRDER
Scale ½"=1'-0"
(Girder K shown, all others similar)



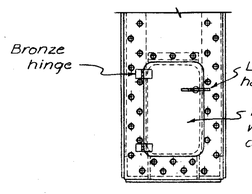
EXPANSION SHOE ES-1

Note: For dimensions not shown on shoe ES-2, see shoe ES-1.

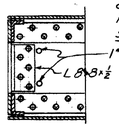




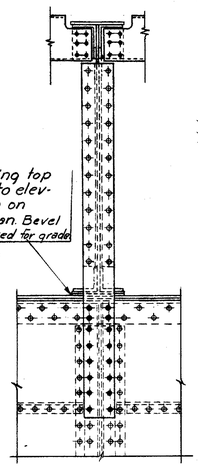
EXPANSION SHOE ES-2



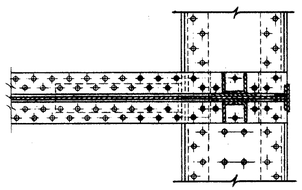
END ACCESS DOOR
Scale ½"=1'-0"



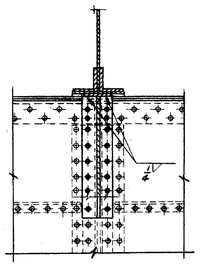
SECTION H-H
Scale ½"=1'-0"



SECTION J-J
Scale ½"=1'-0"

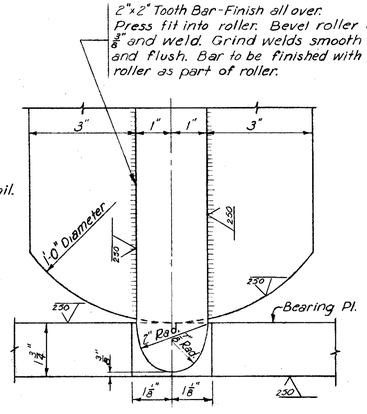


SECTION L-L
Scale ½"=1'-0"



SECTION K-K
Scale ½"=1'-0"

Notes: (Shoes)
Rollers shall be set vertical under full dead loads at 60°F.
Machined surfaces of rollers which bear on base plates and all exposed surfaces shall be painted.
Spaces around anchor bolts in base plates shall be filled with an approved metallic filler, such as babbitt, poured in place before setting nuts. See sheet 59 for anchor bolt detail.
All contact surfaces between metal parts shall be finished as shown.
All base plates and bearing plates shall be scribed with longitudinal and transverse center lines.
Use Structural Steel Spec. M 7A (a) except as noted.



ROLLER AND TOOTH BAR DETAIL
Scale 6"=1'-0"

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY - 42R - 1750

BOX GIRDER DETAILS

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE 1'-1'-0" unless noted
MADE DFB DATE 1-10-56
TRCD ____ DATE ____
CKD WPO DATE 3-13-56

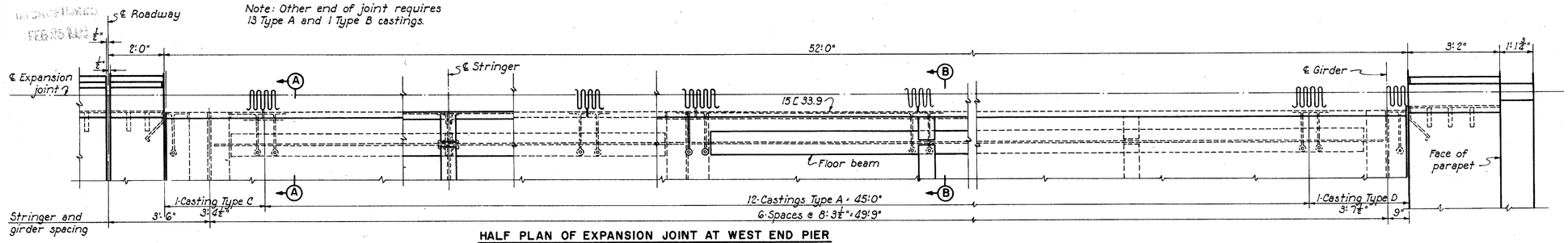
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

914(2)WB SHEET- 56

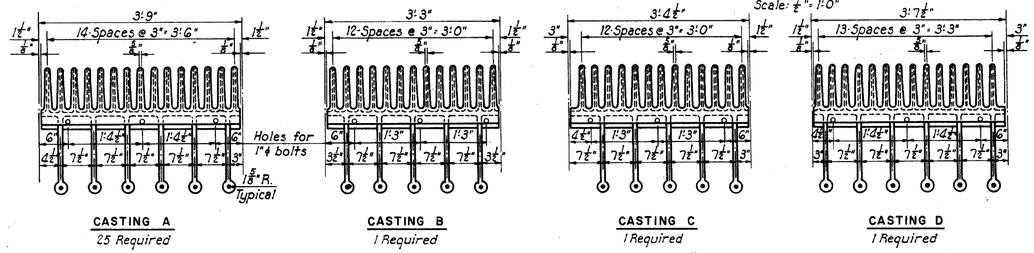
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

57
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY - 42R - 17.43



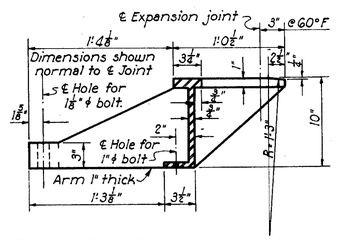
HALF PLAN OF EXPANSION JOINT AT WEST END PIER
Scale: 1/2" = 1'-0"



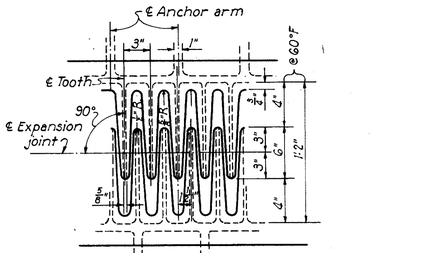
CASTING A — 25 Required
CASTING B — 1 Required
CASTING C — 1 Required
CASTING D — 1 Required

EXPANSION CASTINGS - WEST END PIER *
Scale: 3/8" = 1'-0"

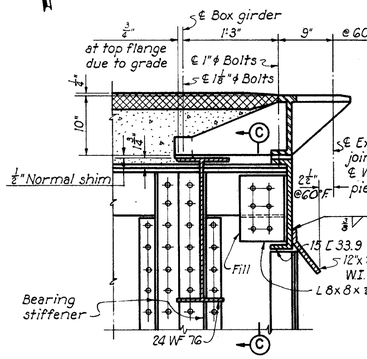
* These castings are not to be furnished, but only erected. See Note 14.c, Sheet 30.



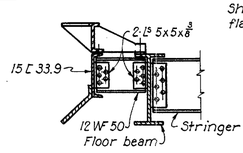
SECTION OF CASTING AT WEST END PIER
Scale: 1 1/2" = 1'-0"



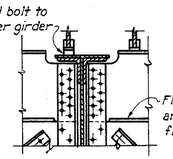
TYPICAL PLAN EXPANSION JOINT AT WEST END PIER
Scale: 1 1/2" = 1'-0"



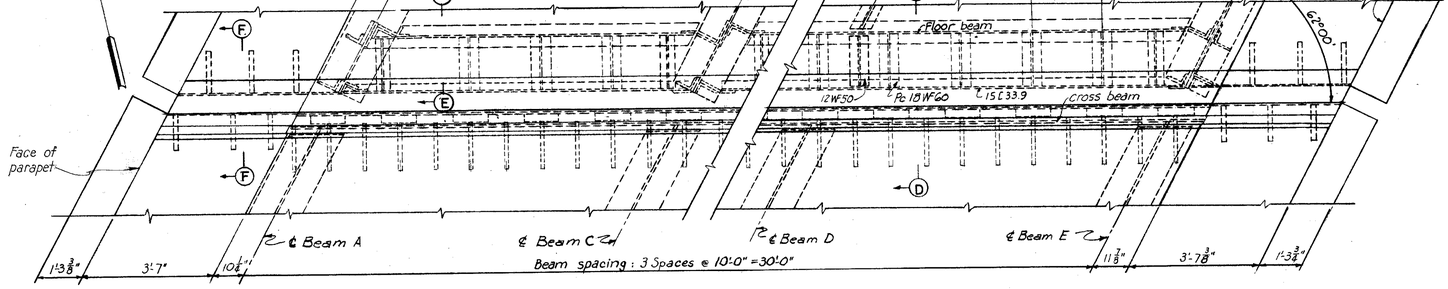
SECTION A-A
Scale: 1" = 1'-0"



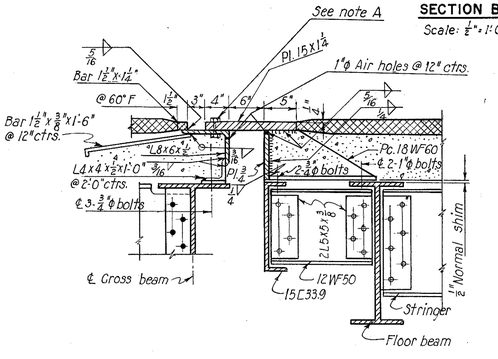
SECTION B-B
Scale: 1/2" = 1'-0"



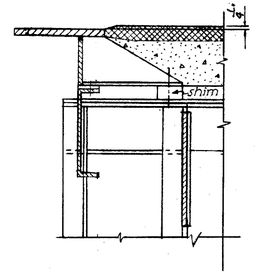
SECTION C-C
Scale: 1/2" = 1'-0"



EXPANSION JOINT AT EXPANSION ROLLER RAMP W-2
Scale: 1/2" = 1'-0"

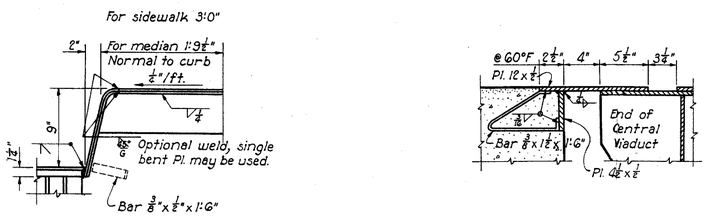


SECTION D-D
Scale: 1" = 1'-0"

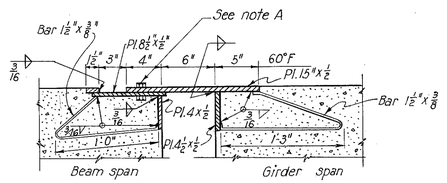


SECTION E-E
Scale: 1" = 1'-0"

Note: Details not shown are similar to Section D-D.



SLIDING PLATE JOINT ON WALK AND MEDIAN AT WEST END PIER
Scale: 1" = 1'-0"



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

Note: For Elevation of Expansion Joint at curbs see sheet 58

Note A: 5/8 x 2 1/2 bolts at about 2'-0" ctrs. Weld nuts to angle. Remove bolts within 2 hours after Pour 3 is poured. Fill holes with bituminous material.

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-17.50
EXPANSION JOINTS

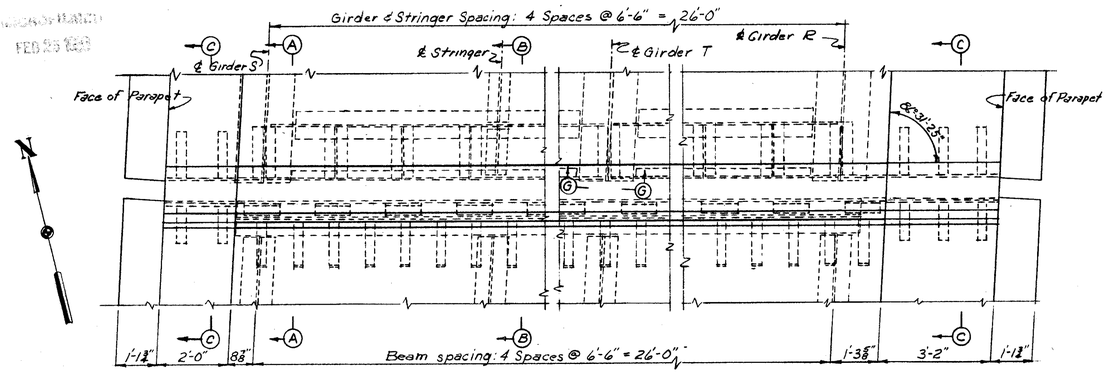
CLEVELAND CUYAHOGA COUNTY OHIO

SCALE: As shown
MADE C.C.F. DATE 1-17-55
TRCD C.A.L. DATE 3-23-56
CKD R.G.C. DATE 3-9-56

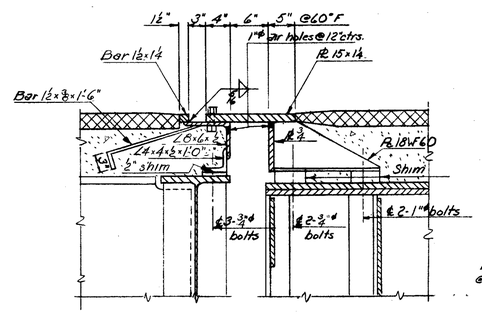
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914 (2) WB SHEET 57

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	58 / 67
2	OHIO			

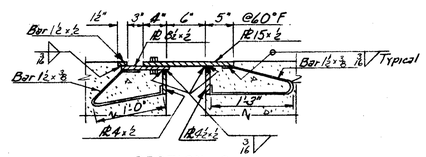
CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY — 42 R — 17.43



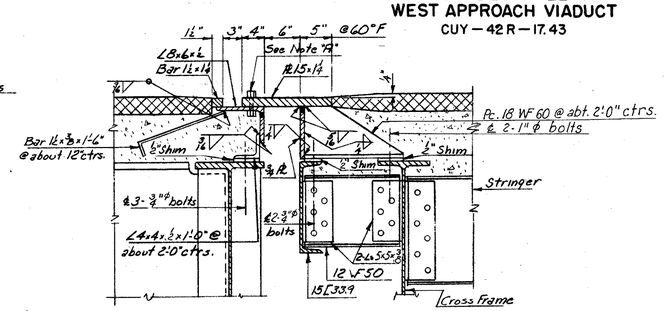
EXPANSION JOINT AT EXPANSION ROLLER RAMP W-1
Scale: ½" = 1'-0"



SECTION A-A
Scale: 1"-1'-0"

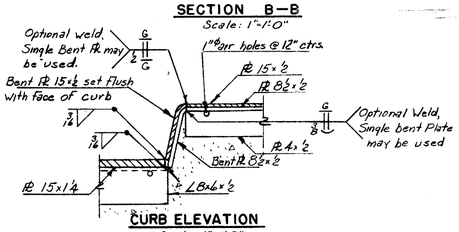


SECTION C-C
Scale: 1"-1'-0"

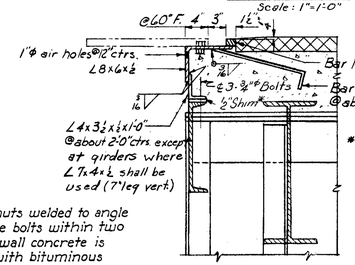


SECTION B-B
Scale: 1"-1'-0"

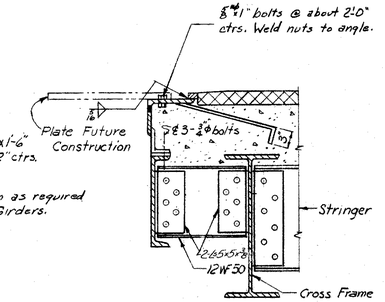
Note A:
⅝"ϕ x 2¼" bolts at about 2'-0" ctrs. Weld nuts to angle. Remove bolts within 2 hours after Pour 7 is poured. Fill holes with bituminous material.



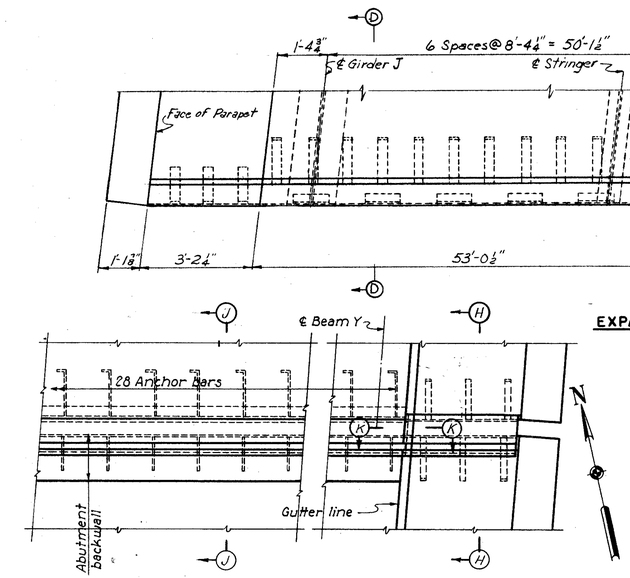
CURB ELEVATION
Scale: 1"=1'-0"



SECTION D-D
Scale 1"-1'-0"

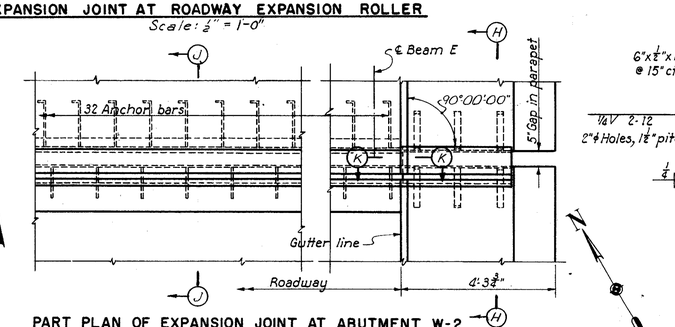


SECTION E-E
Scale: 1"-1'-0"

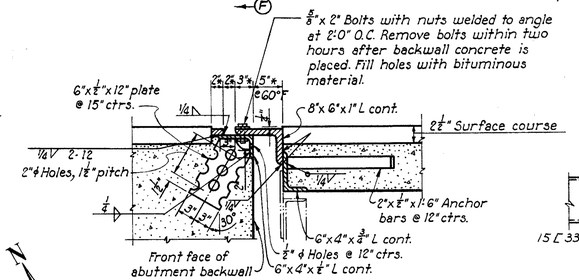


EXPANSION JOINT AT ROADWAY EXPANSION ROLLER
Scale: ½" = 1'-0"

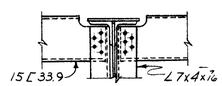
PART PLAN OF EXPANSION JOINT AT ABUTMENT W-1
Scale: ½" = 1'-0"



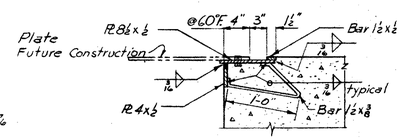
PART PLAN OF EXPANSION JOINT AT ABUTMENT W-2
Scale: ½" = 1'-0"



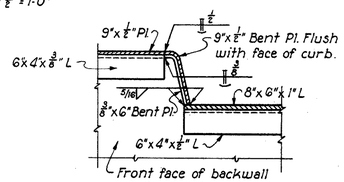
SECTION J-J
Scale 1"=1'-0"



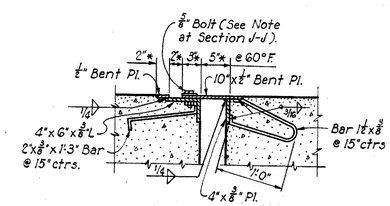
SECTION G-G
Scale 1"=1'-0"



SECTION F-F
Scale 1"-1'-0"



SECTION K-K
Scale: 1"=1'-0"



SECTION H-H
Scale: 1"=1'-0"

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

EXPANSION JOINTS

CLEVELAND CUYAHOGA COUNTY OHIO

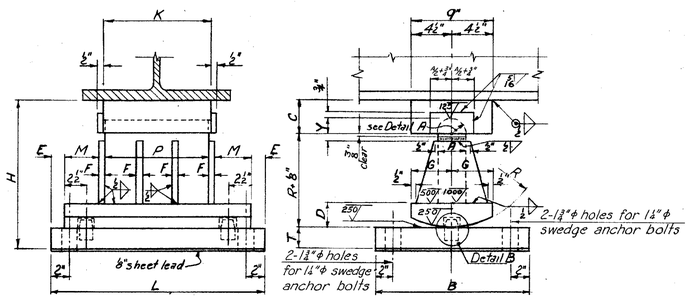
SCALE As Shown
MADE RSC/RK DATE 5-4-56
TRCD ____ DATE ____
CKD RSC/RSC DATE 5-5-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET 58

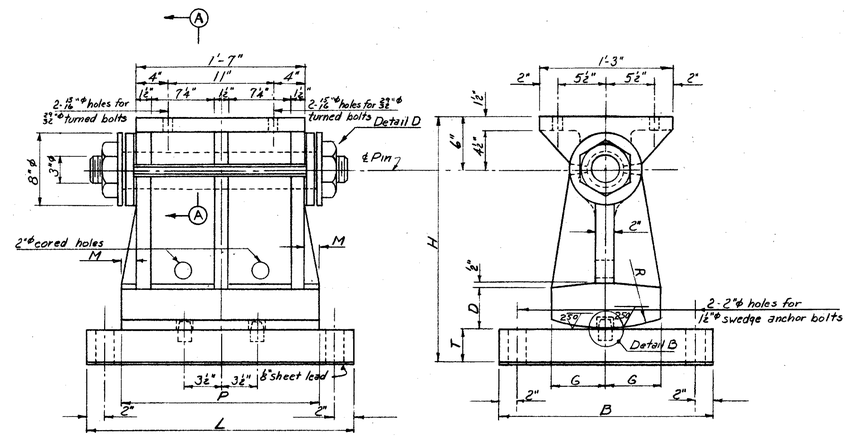
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

59
67

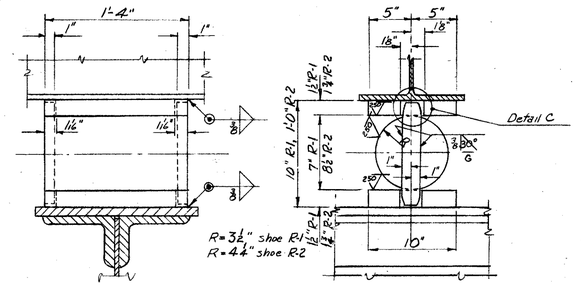
CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43



E-1, E-2 AND E-3

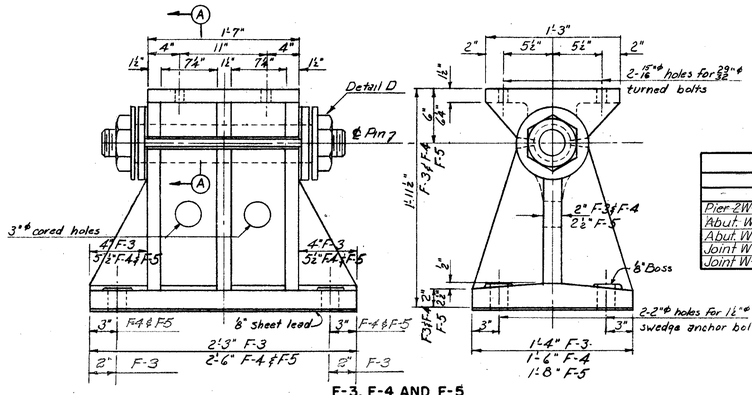


E-4, E-5 AND E-6

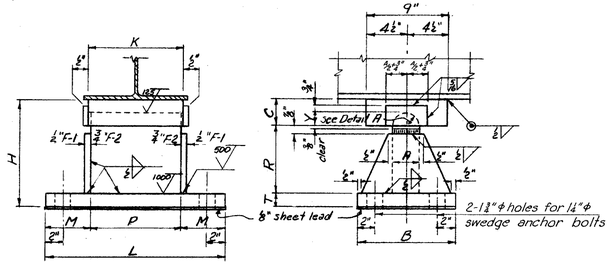


R-1 AND R-2

EXPANSION SHOES
No Scale



F-3, F-4 AND F-5



F-1 AND F-2

SHOE DIMENSIONS

EXPANSION SHOES

	A	B	C	D	E	F	G	H	K	L	M	P	R	T	Y
E-1	2½"	10"	2⅛"	2"	1"	½"	3⅜"	10⅜"	9"	1'-7"	3⅜"	8⅜"	6¼"	1¼"	1⅜"
E-2	3½"	1'-6"	3½"	6⅜"	1¼"	⅜"	5"	1'-5⅜"	1'-1"	2'-2"	4⅜"	1'-0⅜"	1'-1"	2⅛"	1⅛"
E-3	3½"	1'-8"	3½"	3½"	1¼"	⅜"	6"	1'-7½"	1'-2"	2'-4"	4⅜"	1'-1⅜"	1'-0½"	3"	1⅛"
E-4	–	1'-6"	–	3½"	–	–	5"	1'-5"	–	2'-4"	1"	1'-8"	1'-0"	3"	–
E-5	–	1'-8"	–	3⅜"	–	–	6"	2'-0¼"	–	2'-4⅜"	⅜"	1'-8⅛"	1'-3"	3¼"	–
E-6	–	2'-0"	–	4"	–	–	7"	2'-3⅜"	–	2'-6"	1⅛"	1'-10"	1'-6"	3⅜"	–

FIXED SHOES

	A	B	C	H	K	L	M	P	R	T	Y
F-1	2½"	10"	2⅛"	10⅜"	9"	1'-7"	5⅛"	8⅜"	6⅛"	1⅛"	1⅜"
F-2	3½"	1'-6"	3½"	1'-5⅜"	1'-1"	2'-2"	6⅛"	1'-0⅜"	1'-1⅜"	2⅛"	1⅛"

LOCATION OF SHOES

BEAMS	A	B	C	D	E	U	V	W	X	Y
Pier 2W-2	F-2	F-2	F-2	F-2	F-2	–	–	–	–	–
Abut. W-1	–	–	–	–	–	F-1	F-1	F-1	F-1	F-1
Abut. W-2	E-1	E-1	E-1	E-1	E-1	–	–	–	–	–
Joint W-1	–	–	–	–	P-1	–	P-1	–	P-1	–
Joint W-2	P-1	–	P-2	P-2	–	–	–	–	–	–

GIRDERS	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Pier 1-A	–	–	–	E-4	E-5	E-6	E-6	E-4	E-4	E-6	E-6	E-5	E-4	–	–
Pier 2-A	F-3	F-3	–	F-3	F-5	F-4	F-4	F-3	F-3	F-4	F-4	F-3	F-3	F-3	F-3
Pier 3-A	–	–	–	–	E-4	E-5	E-5	E-4	E-4	E-5	E-5	E-3	–	–	–
Pier 1W-1	–	–	–	–	–	–	–	–	–	–	–	–	E-4	E-3	E-4
Pier 1W-2	E-2	E-4	E-2	–	–	–	–	–	–	–	–	–	–	–	–

NUMBER OF SHOES REQ'D

E-1	5
E-2	2
E-3	2
E-4	10
E-5	6
E-6	4
F-1	5
F-2	5
F-3	9
F-4	4
F-5	1
P-1	4
P-2	2

NOTES:

Shoes E-1, E-2, E-3, F-1 and F-2 shall be structural steel, Sec. M-7.4.

Shoes F-3, F-4, F-5 and top castings for shoes E-4 thru E-6 shall be steel castings Sec. M-7.7.

Rocker castings and base plates of shoes E-4 thru E-6 shall be high strength steel castings, A.S.T.M. A148 Grade 80-55.

Rollers and base plates for shoes P-1 and P-2 shall be steel forgings, A.S.T.M. A237 Grade 80-55, Class B.

All pins, nuts, washers, rings, pintles, and tooth bars (on shoes P-1 and P-2) shall be structural steel.

Bolts to girder flanges shall have hex heads and self locking nuts. Provide washers under heads and nuts.

Lower portions of shoes shall be centered in both directions under top portion for a temp. of 60°F.

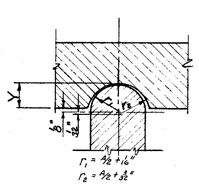
All base plates, rockers and sole plates shall be scribed with centerlines in both directions

All fillets on castings to be ⅜" unless shown.

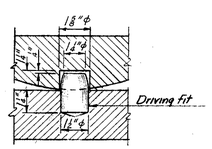
Spaces around anchor bolts in base plates shall be filled with an approved metallic filler before setting nuts.

Threaded ends of pins on shoes E-4 thru E-6 and F-3 thru F-5 shall be upset, battered or welded after field assembly.

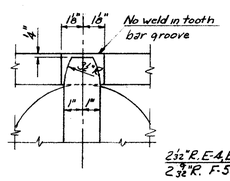
Sole plates of shoes E-1 and F-1 shall be beveled to grade of finished roadway surface at Abutments W-2 and W-1 respectively.



DETAIL "A"
Scale: 3"=1'-0"

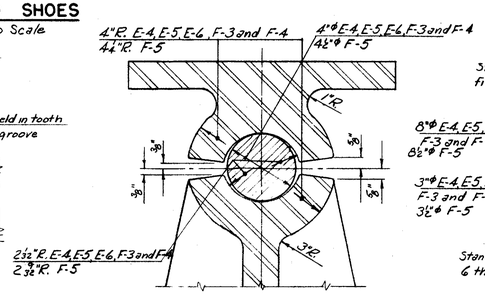


DETAIL "B"
Scale: 3"=1'-0"

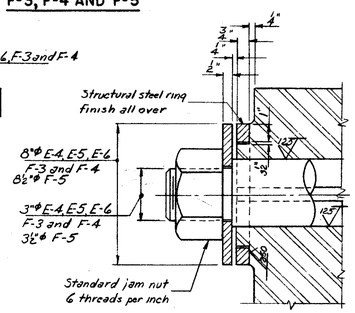


DETAIL "C"
Scale: 3"=1'-0"

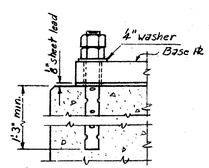
FIXED SHOES
No Scale



SECTION A-A
Scale: 3"=1'-0"



DETAIL "D"
Scale: 3"=1'-0"



ANCHOR BOLT DETAIL
No Scale

Revised - 4-10-57

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY- 42R-1750

SHOES

CLEVELAND CUYAHOGA COUNTY OHIO

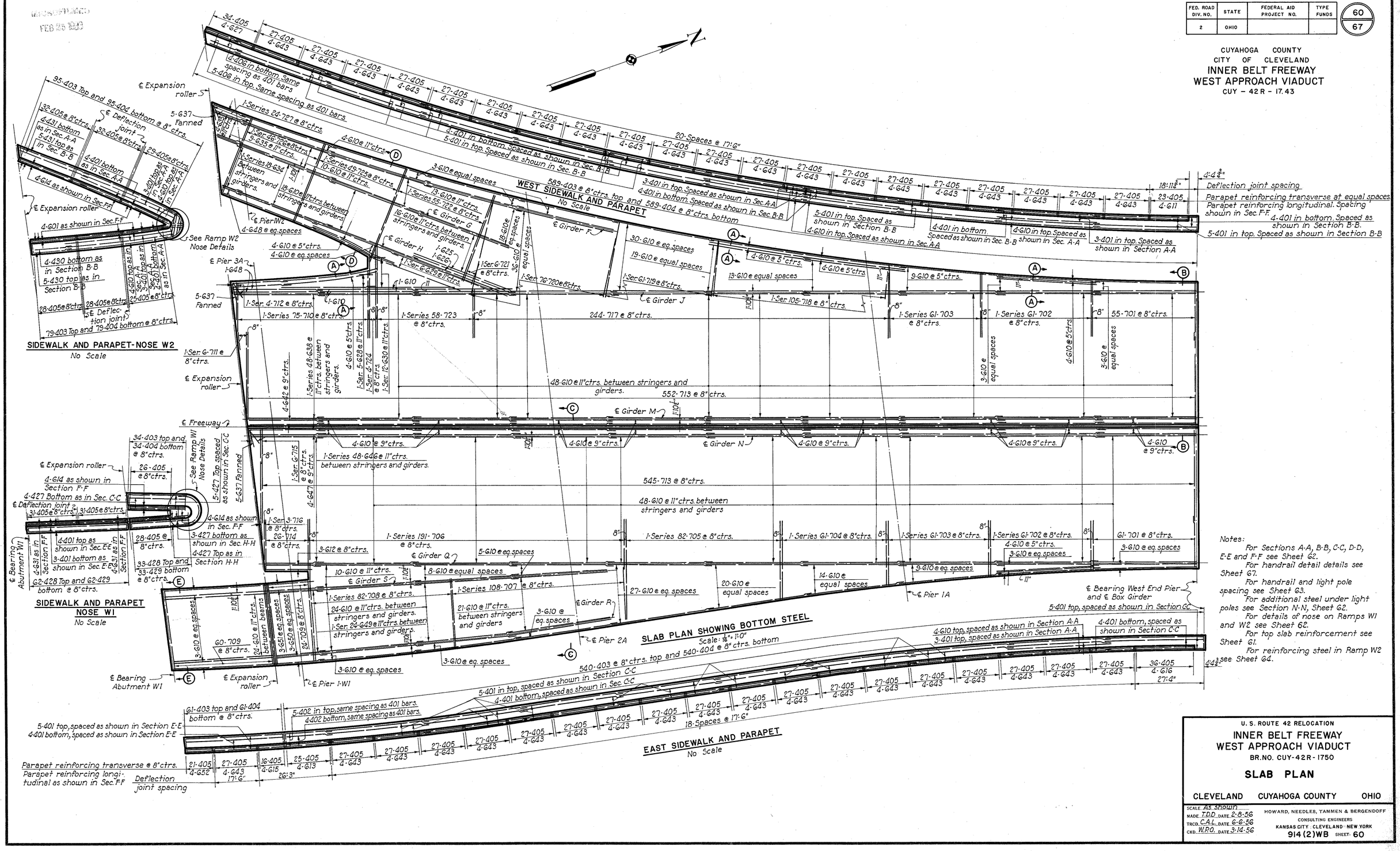
SCALE As Noted
MADE RSG DATE 1-18-56
TRCD ____ DATE ____
CKD DFB DATE 3-13-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET- 59

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

60
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY - 42 R - 17.43



Notes:
For Sections A-A, B-B, C-C, D-D, E-E and F-F see Sheet 62.
For handrail detail details see Sheet 67.
For handrail and light pole spacing see Sheet 63.
For additional steel under light poles see Section N-N, Sheet 62.
For details of nose on Ramps W1 and W2 see Sheet 62.
For top slab reinforcement see Sheet 61.
For reinforcing steel in Ramp W2 see Sheet 64.

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

SLAB PLAN

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE As shown
MADE T.D.D. DATE 2-8-56
TRCD. C.A.L. DATE 6-6-56
CKD. W.P.O. DATE 3-14-56

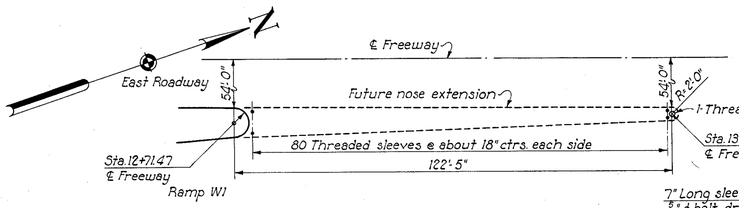
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY · CLEVELAND · NEW YORK

914(2)WB SHEET 60

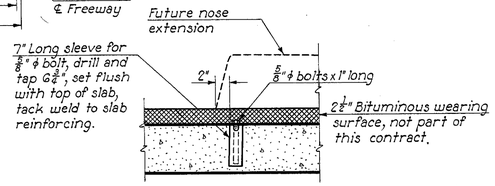
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

61
67

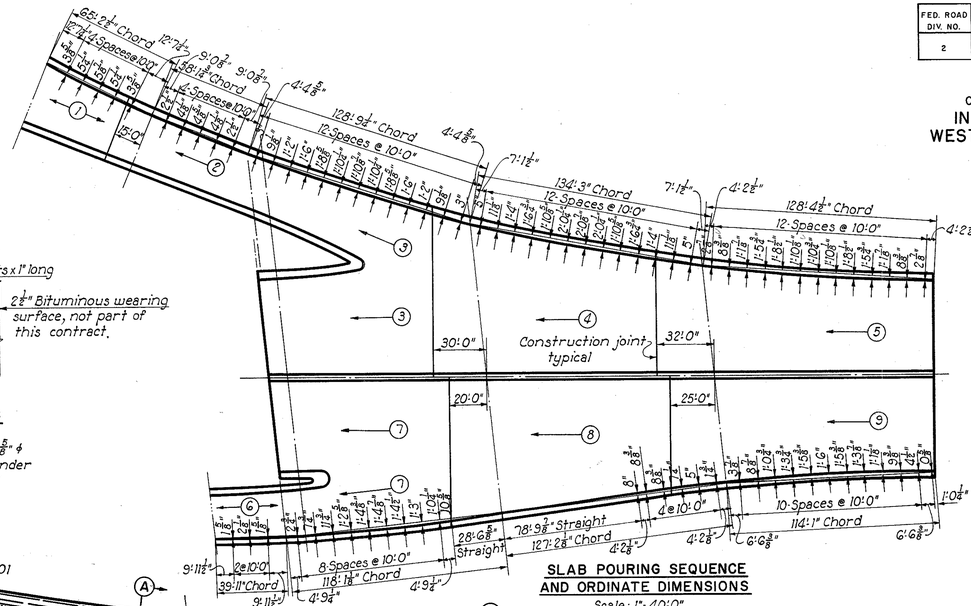
CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY - 42R - 17.43



LOCATION OF THREADED SLEEVES
FUTURE NOSE EXTENSION ON RAMP W1
Scale: 1" = 20'-0"

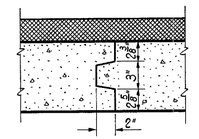


DETAIL OF
THREADED SLEEVES
Scale: 1" = 1'-0"
Note: Threaded sleeves and 5/8" ϕ x 1" bolts will be furnished under Item 5-7, "Structural Steel."



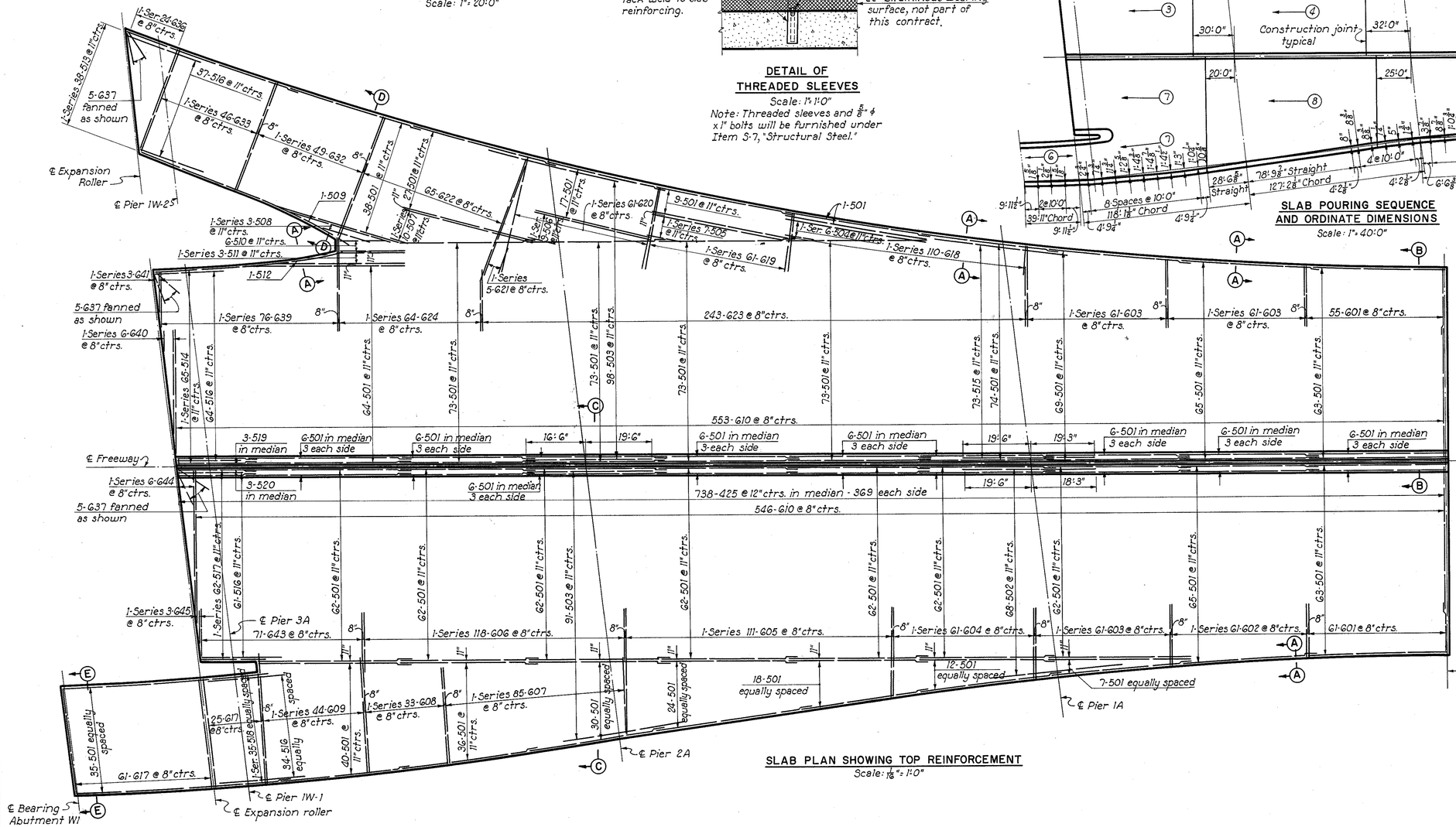
SLAB POURING SEQUENCE
AND ORDINATE DIMENSIONS
Scale: 1" = 40'-0"

Notes:
All slab pours shall be complete prior to pouring any sidewalks or medians.
The Contractor may use an alternate pouring sequence, subject to the approval of the Engineer.
Pours shall extend the full width of the roadway.
Sequence and direction of pours noted thus ← (2)



TYPICAL SLAB CONSTRUCTION JOINT
Scale: 1 1/2" = 1'-0"

Notes:
For bottom slab reinforcing and sidewalk and parapet reinforcing see Sheet G0.
For additional reinforcing over cantilever brackets see sidewalk reinforcing.
For Sections A-A thru E-E see Sheet G2.
For nose offsets and additional slab dimensions see Sheet G3.



SLAB PLAN SHOWING TOP REINFORCEMENT
Scale: 1/16" = 1'-0"

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY - 42R - 1750

SLAB PLAN AND POURING SEQUENCE

CLEVELAND CUYAHOGA COUNTY OHIO

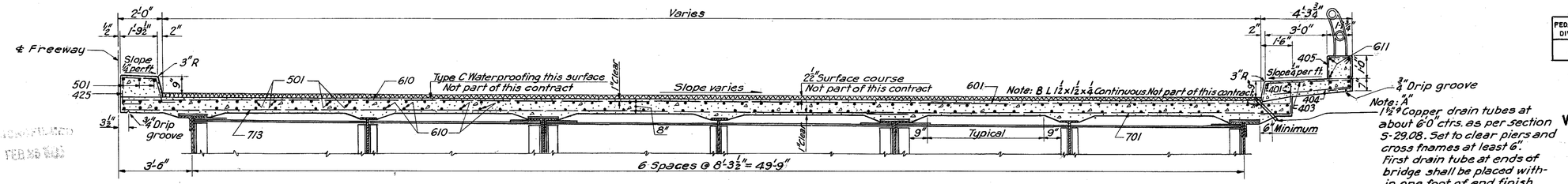
SCALE As shown
MADE R.S.G. DATE 2-3-56
TRCD. C.A.L. DATE 6-2-56
CKD. W.P.O. DATE 3-14-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914 (2) WB SHEET 61

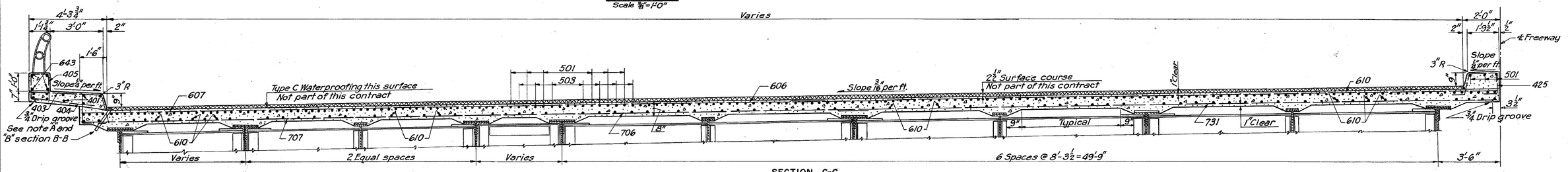
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO		

62
67

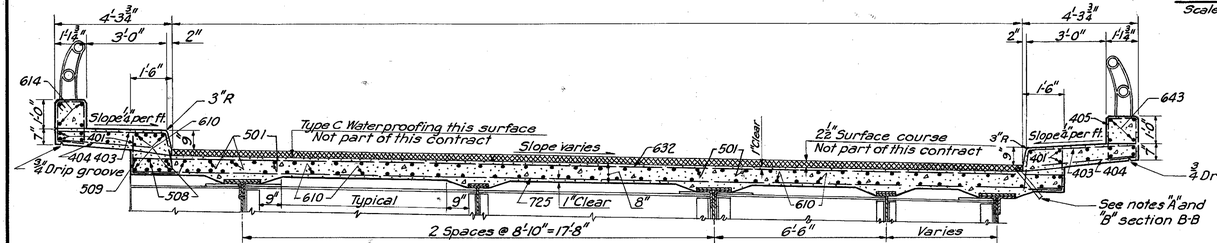
CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY—42 R—17.43



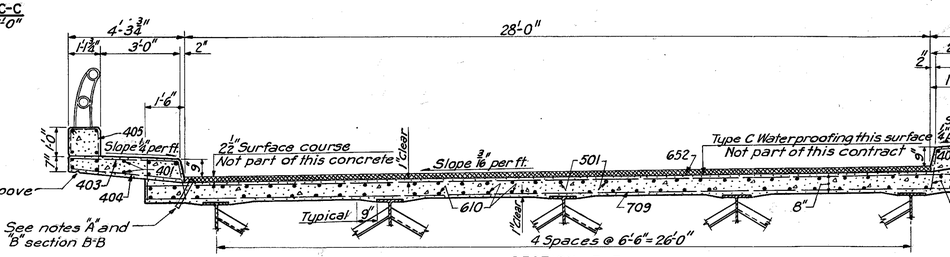
SECTION B-B
Scale ⅜"=1'0"



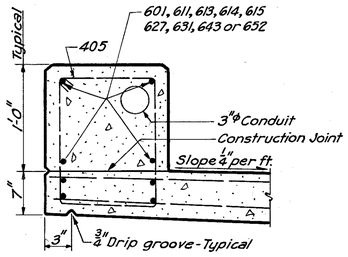
SECTION C-C
Scale ⅜"=1'0"



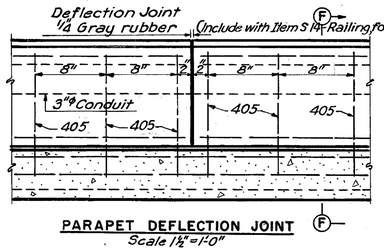
SECTION D-D
Scale ⅜"=1'0"



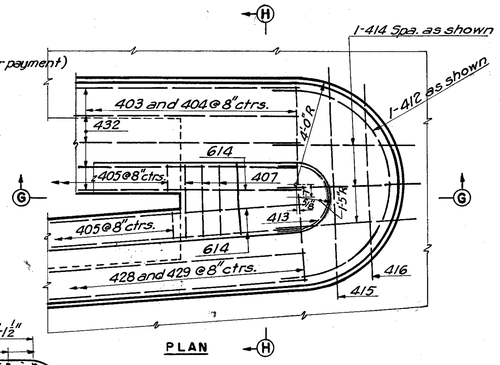
SECTION E-E
Scale ⅜"=1'0"



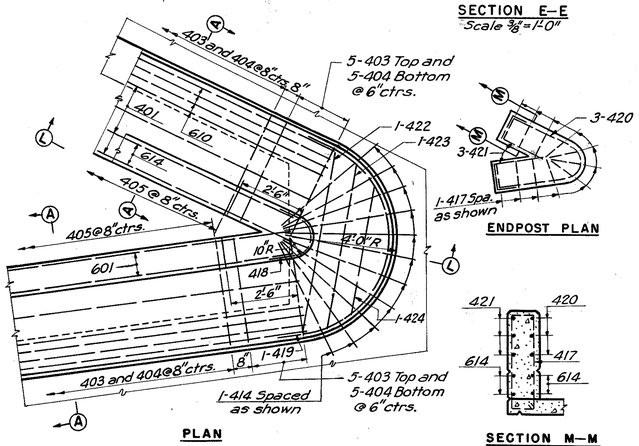
SECTION F-F
Scale 1½"=1'-0"



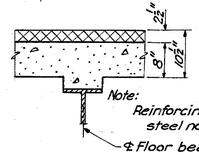
PARAPET DEFLECTION JOINT
Scale 1½"=1'-0"



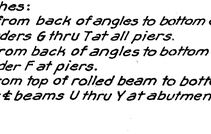
PLAN



PLAN

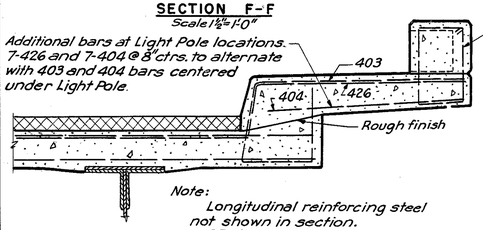


TYPICAL FLOORBEAM HAUNCH DETAIL
Scale ¾"=1'-0"

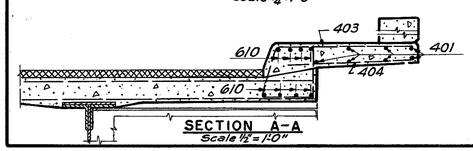


SECTION M-M

Notes:
For station location of Nose Ramp W1 and W2 see Sheet no. 63.
For handrail and Light Pole locations see Sheet 63.
Haunches:
2½" from back of angles to bottom of slab at ℄ girders G thru T at all piers.
⅝" from back of angles to bottom of slab at ℄ girder F at piers.
0" from top of rolled beam to bottom of slab at ℄ beams U thru Y at abutment W1.

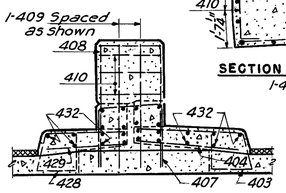


SECTION N-N
Scale ¾"=1'0"

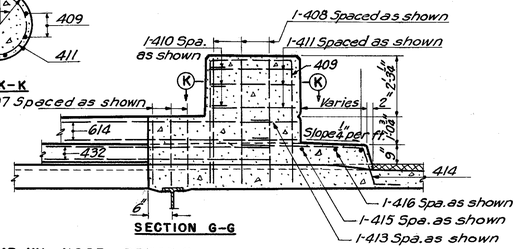


SECTION A-A
Scale 1½"=1'0"

SECTION K-K
1-407 Spaced as shown

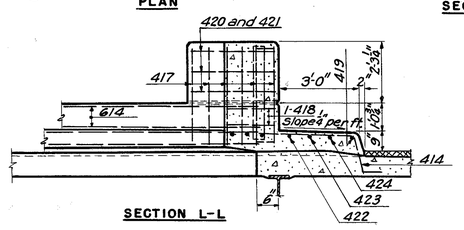


SECTION H-H



SECTION G-G

RAMP W1 NOSE DETAILS
Scale ⅜"=1'-0"



SECTION L-L

RAMP W2 NOSE DETAILS
Scale ⅜"=1'-0"

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY - 42 R - 1750

SLAB DETAILS

CLEVELAND CUYAHOGA COUNTY OHIO

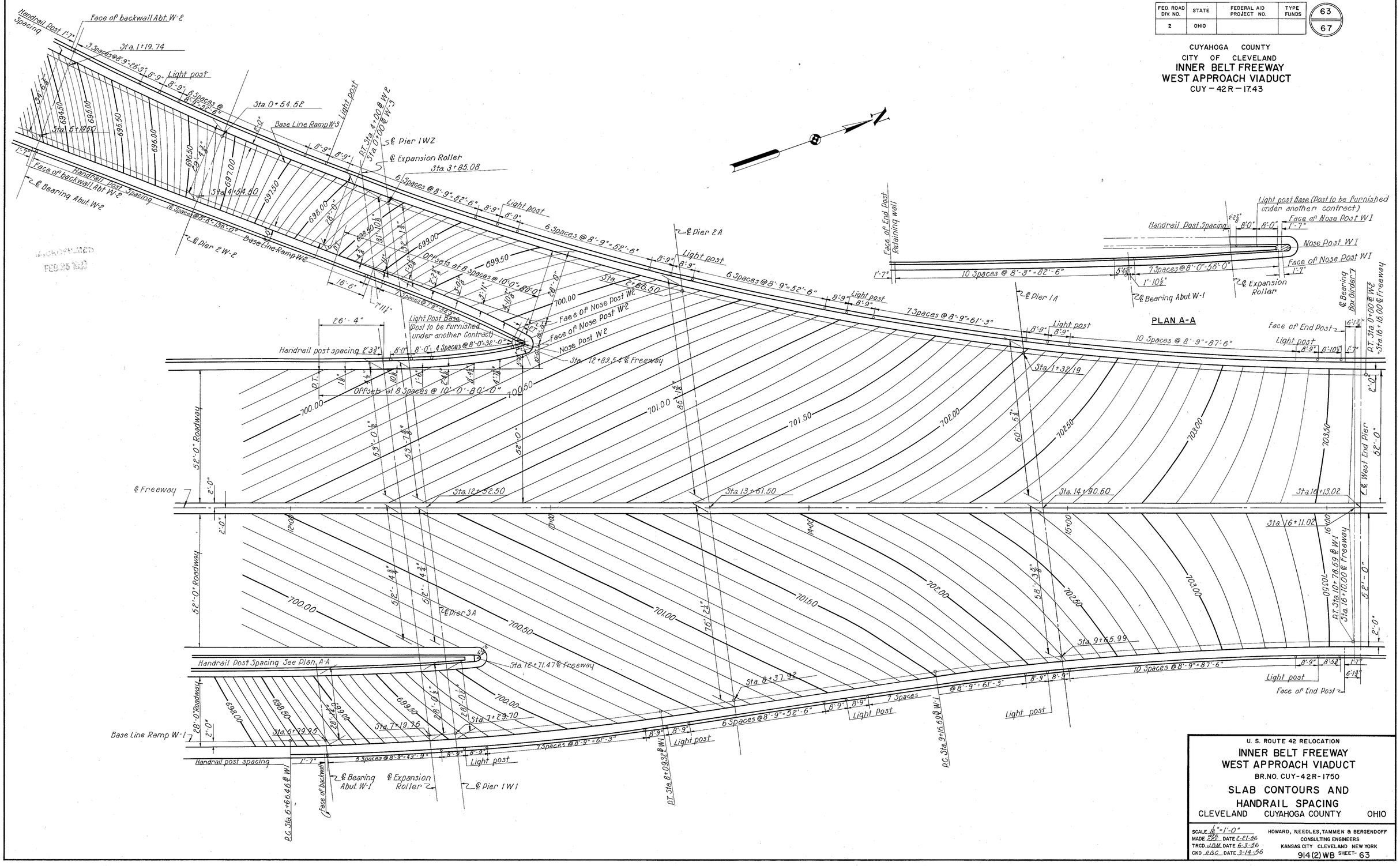
SCALE As Shown
MADE T.D.D. DATE 2-8-56
TRCD C.T.H. DATE 6-5-56
CKD. W.R.D. DATE 3-14-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)W B SHEET 62

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

63
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43



U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750
SLAB CONTOURS AND HANDRAIL SPACING
CLEVELAND CUYAHOGA COUNTY OHIO

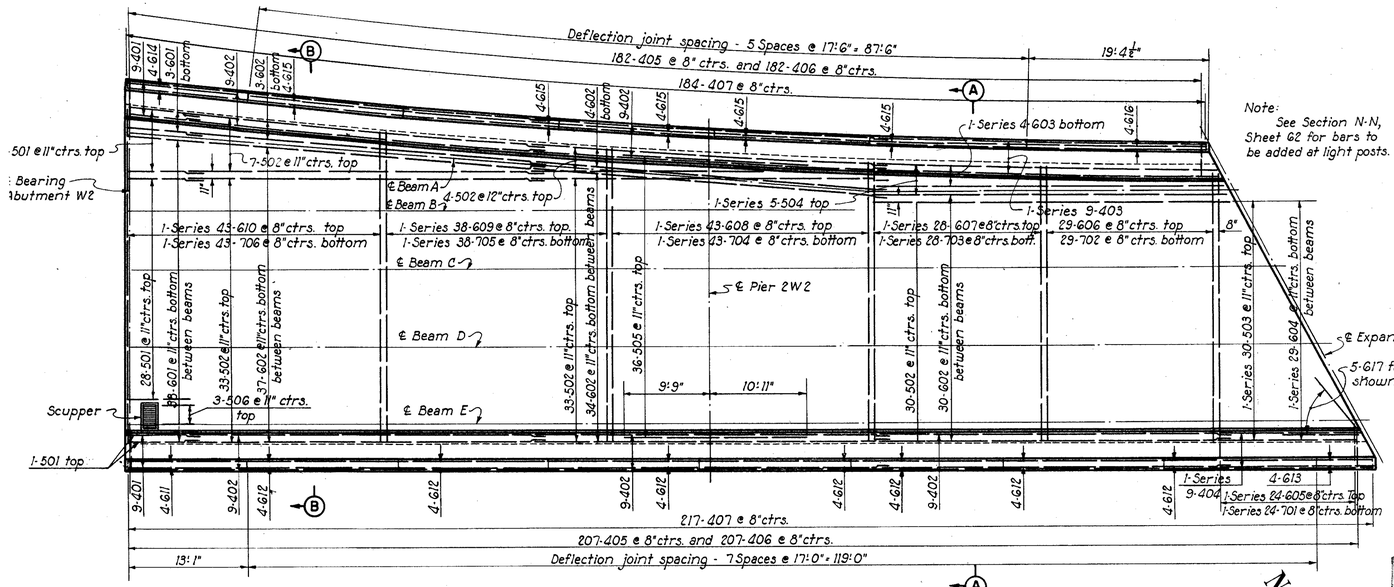
SCALE 1" = 1'-0"
MADE WEB DATE 2-21-96
TRCD JBM DATE 6-3-96
CKD PGC DATE 3-19-96

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET- 63

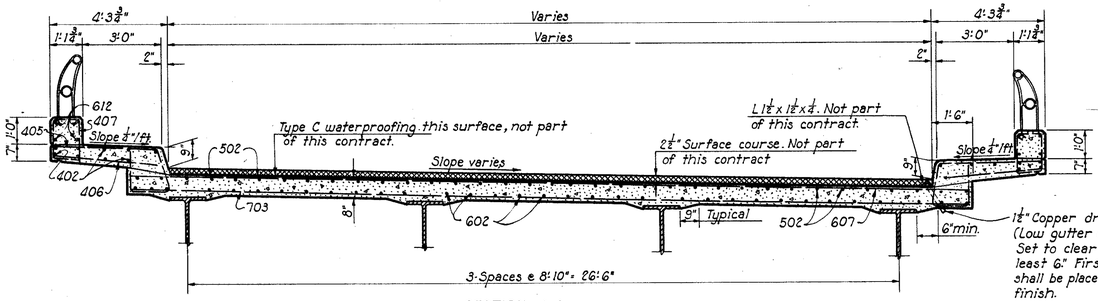
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

64
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY - 42R - 17.43

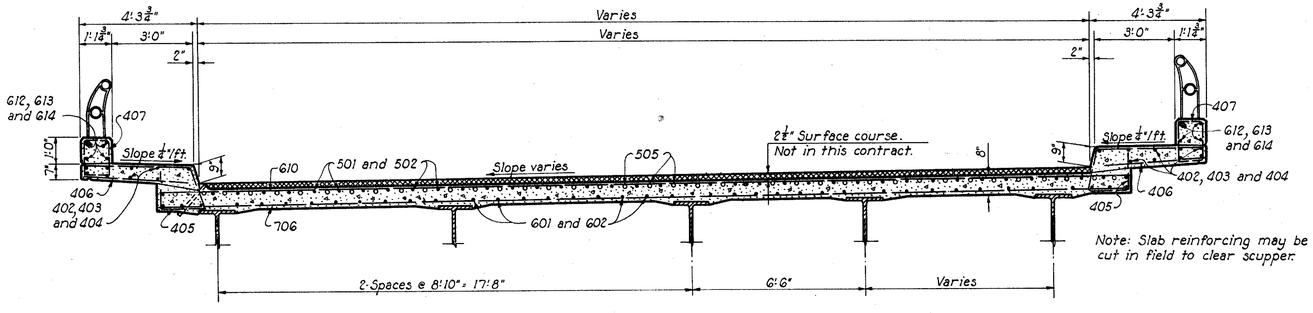


SLAB PLAN RAMP W-2
Scale: ⅛" = 1'-0"



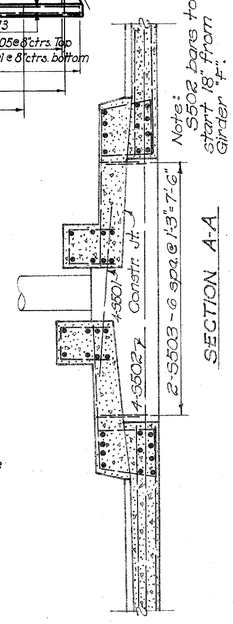
SECTION A-A
Scale: ⅜" = 1'-0"

½" Copper drain tubes at about 6'-0" ctrs. (Low gutter only.) as per section S-29.08. Set to clear piers and cross frames at least 6". First drain tube at ends of bridge shall be placed within one foot of end of finish.

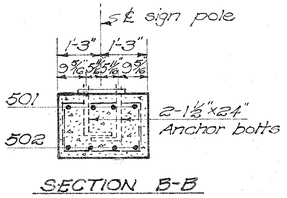


SECTION B-B
Scale: ⅜" = 1'-0"

Note: Slab reinforcing may be cut in field to clear scupper.

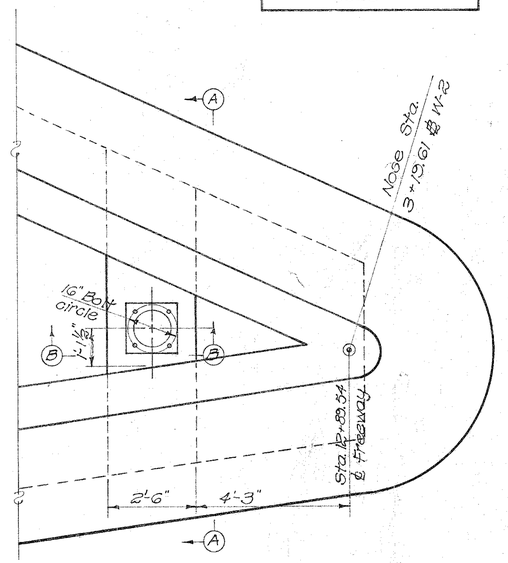


SECTION A-A



SECTION B-B

REINFORCEMENT SCHEDULE			
Mark	No.	Length	Type
S501	4	6'-4"	Str.
S502	4	17'-0"	Str.
S503	14	4'-4"	Bent



PLAN OF NOSE AT RAMP W-2
scale ½" = 1'-0"

Notes:
For handrail and light post spacing see Sheet 63.
For handrail details see Sheet 67.
A ⅜" haunch, measured from top of rolled beam flanges to bottom of slab at ℄ beams, has been provided at Abutment W-2 and Pier 2W-2.

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

SLAB PLAN RAMP W-2

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE As shown
MADE WEG DATE 1-4-56
TRCD. CAL DATE 4-4-56
CKD. RGC DATE 3-13-56

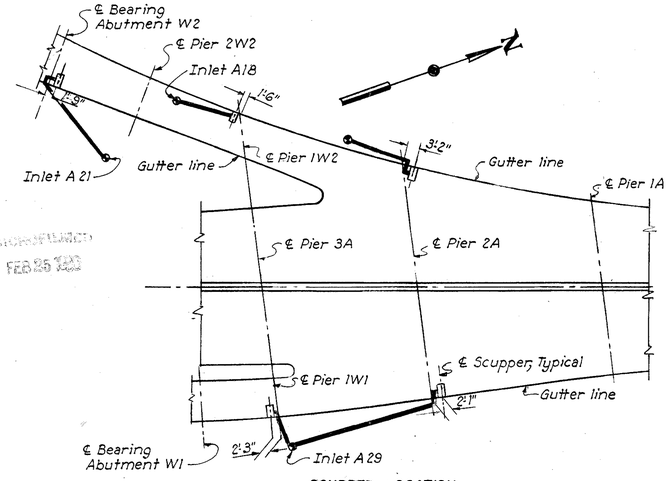
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914 (2) WB SHEET- 64

Revised 1-3-58

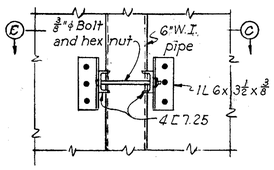
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

65
67

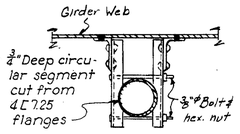
CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43



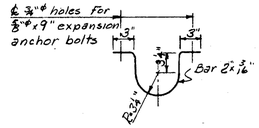
SCUPPER LOCATION
Scale: 1" = 50'-0"



TYPE "A" HANGER

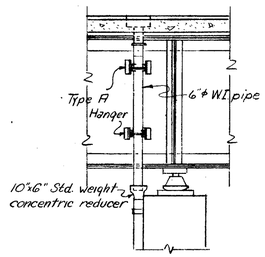


SECTION C-C

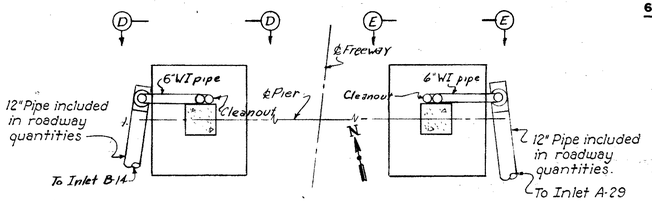


TYPE "B" HANGER

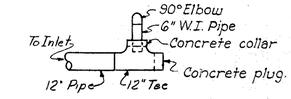
PIPE HANGER DETAILS
Scale: 1½"=1'-0"



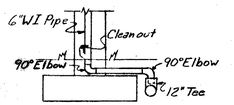
DOWNSPOUT CONNECTION TO GIRDERS
Scale: ½"=1'-0"



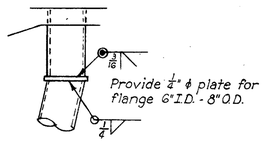
PIER 2A



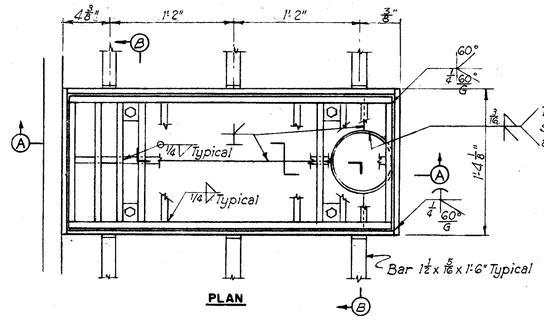
TYPICAL CONNECTION
6"W.I. PIPE TO 12" PIPE
Scale: 4"=1'-0"



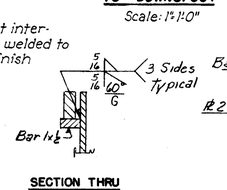
SECTION D-D
Section E-E opposite hand



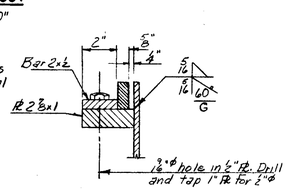
SCUPPER CONNECTION TO DOWNSPOUT
Scale: 1"=1'-0"



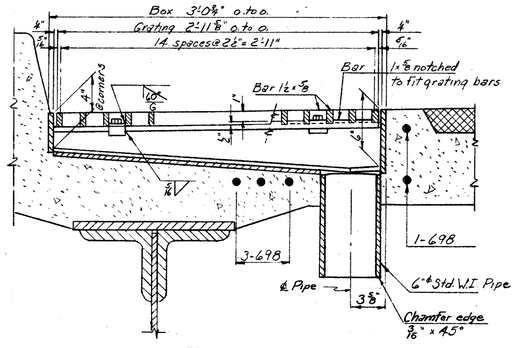
PLAN



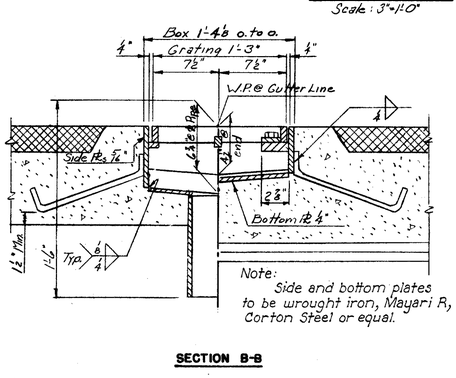
SECTION THRU GRATING SUPPORT
Scale: 3"=1'-0"



SECTION THRU GRATING FASTENING
Scale: 3"=1'-0"

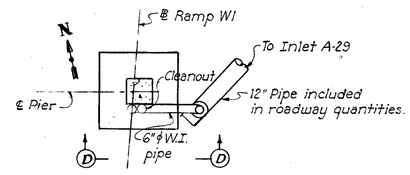


SECTION A-A

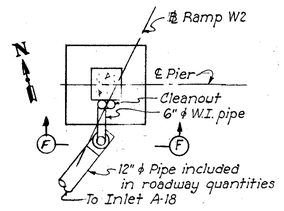


SECTION B-B

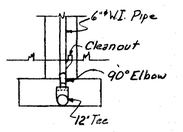
SCUPPER DETAILS
Scale: ½"=1'-0" unless shown



PIER 1W1



PIER 1W2



SECTION F-F

Note:
For additional drainage details at piers, see individual pier drawings.
For drainage at Abutment W2 see Sheet 38.

DRAINAGE DETAILS AT PIER FOOTINGS
Scale: ⅛" = 1'-0" unless shown

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY - 42R - 1750

DRAINAGE DETAILS

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE As shown
MADE RSG DATE 5-3-56
TRCD ____ DATE ____
CKD ASR DATE 5-7-56

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

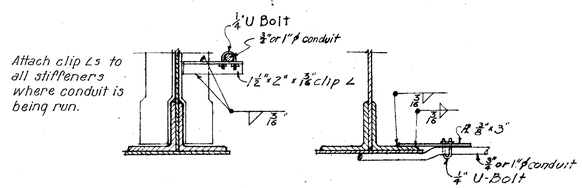
914(2)WB SHEET- 65

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

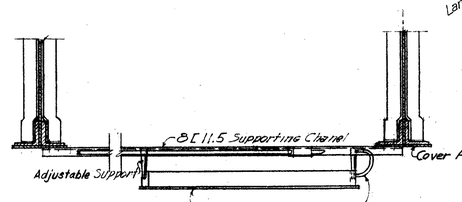
66
67

CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43

Note:
Luminaires to be located 6" back of Gutter Line on Ramp "B" and Abbey Ave. as shown on Lighting Plan



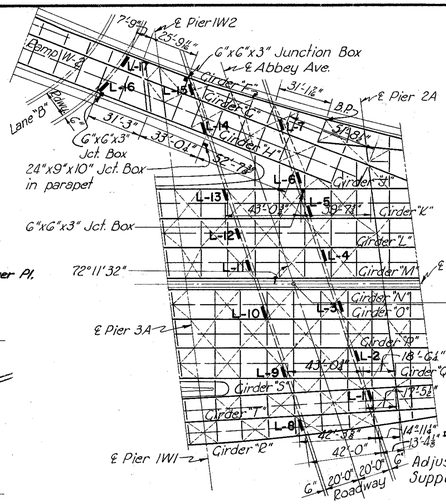
CONDUIT SUPPORTS
Scale: 1½"=1'-0"



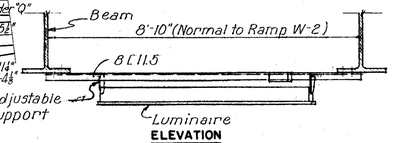
ELEVATION

PLAN

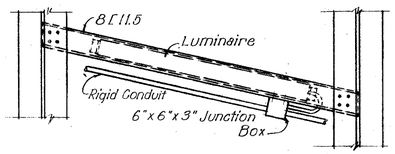
MOUNTING DETAIL
LUMINAIRES L-1, L-2, L-4, L-6, L-10, L-12
Scale: ¾"=1'-0"



LOCATION OF UNDER DECK LUMINAIRES
Scale: 1"=40'-0"

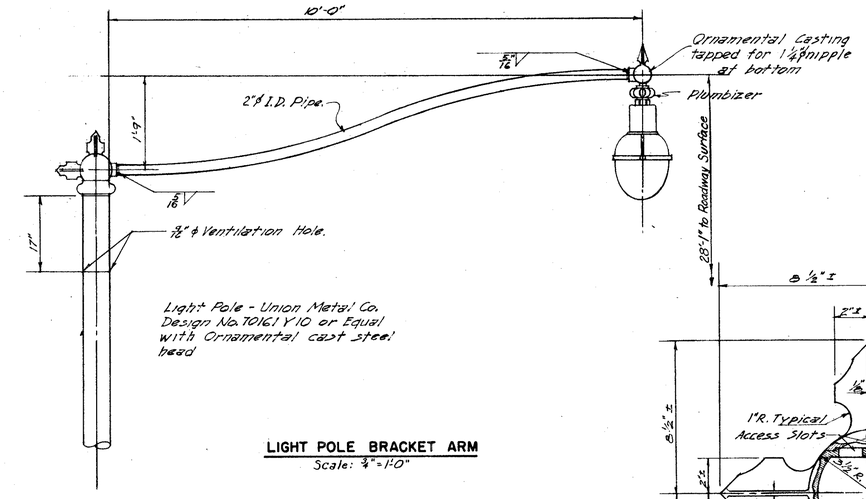


ELEVATION



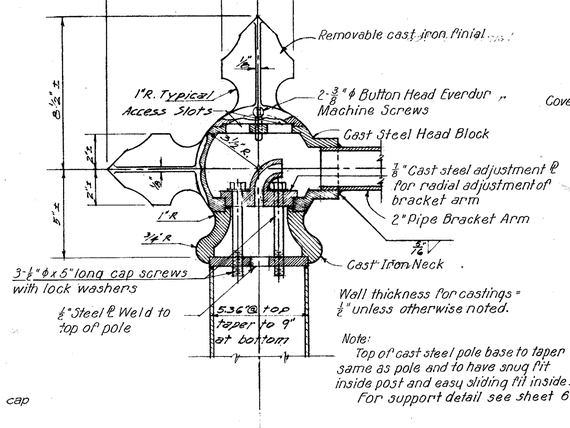
PLAN

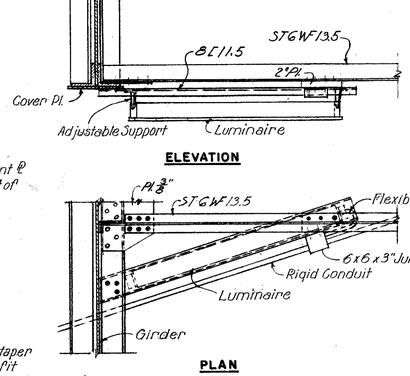
MOUNTING DETAIL
LUMINAIRES L-16 & L-17
Scale: ¾"=1'-0"



LIGHT POLE BRACKET ARM
Scale: ¾"=1'-0"

Note:
For light pole location, see sheet 63.

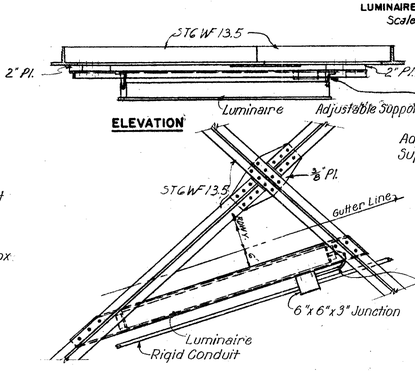




ELEVATION

PLAN

MOUNTING DETAIL
LUMINAIRES L-5, L-7, L-9, L-13, L-14, L-15
Scale: ¾"=1'-0"

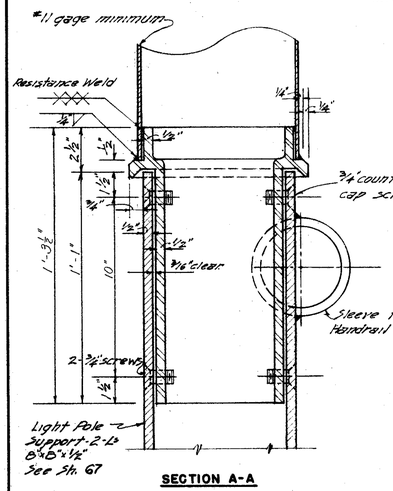


ELEVATION

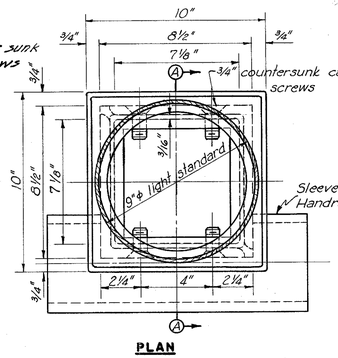
SECTION B–B
Scale: 1½"=1'-0"

PLAN

MOUNTING DETAIL
LUMINAIRES L-3, L-8, L-11
Scale: ¾"=1'-0"



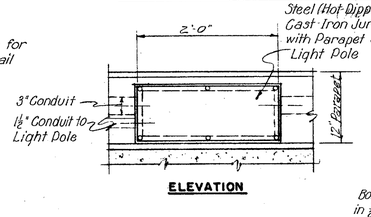
SECTION A-A



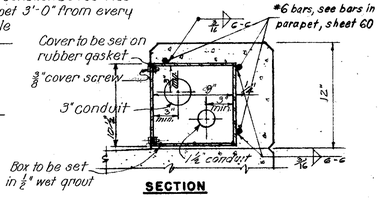
PLAN

LIGHT POLE BASE
Scale: 3"=1'-0"

ORNAMENTAL LIGHT POLE HEAD

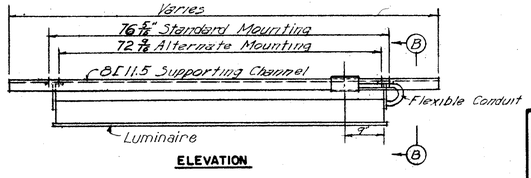


ELEVATION



SECTION

PARAPET JUNCTION BOX
Scale: 1"=1'-0"



ELEVATION

UNDER DECK LIGHTING INSTALLATION
Scale: ¾"=1'-0"

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY-42R-1750

LIGHTING DETAILS

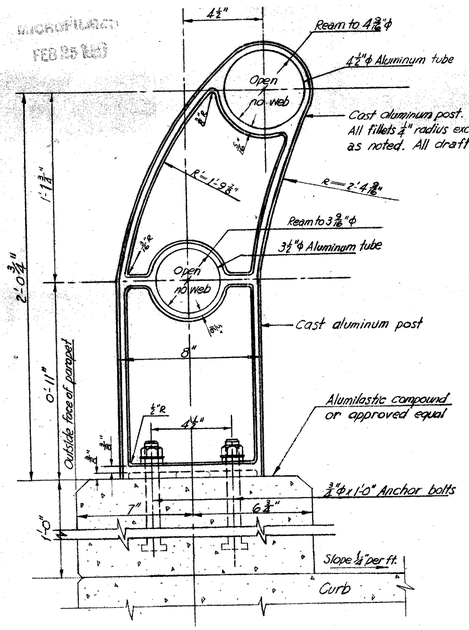
CLEVELAND CUYAHOGA COUNTY OHIO

SCALE As shown
MADE WEG DATE 2-10-56
TRCD ____ DATE ____
CKD ASR DATE 3-5-56

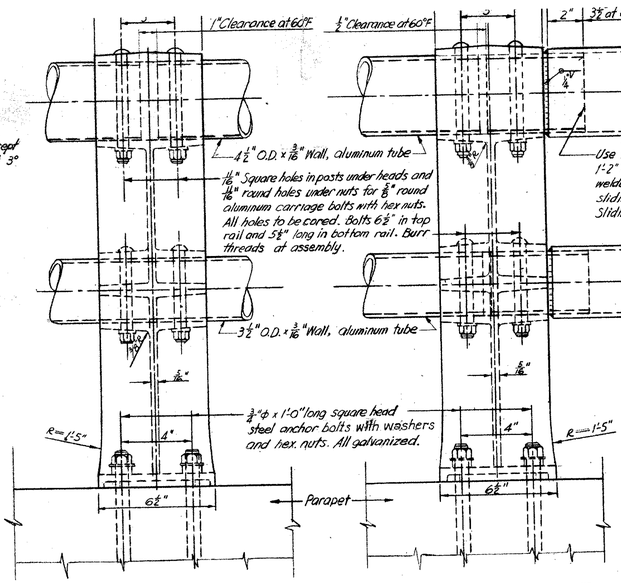
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
914(2)WB SHEET- 66

DIV. NO.		FUNDS
2	OHIO	

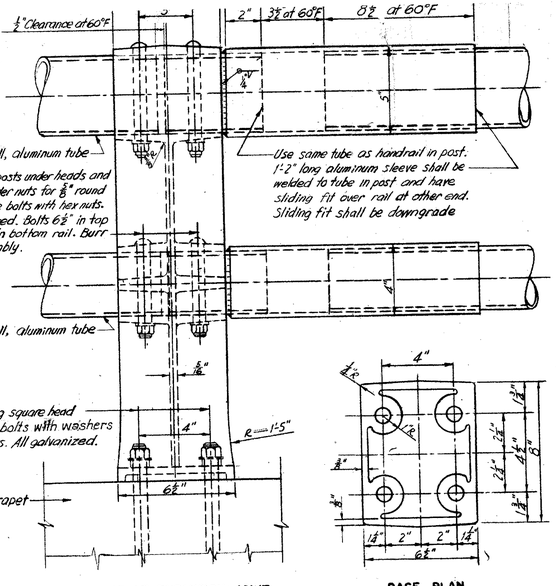
CUYAHOGA COUNTY
CITY OF CLEVELAND
INNER BELT FREEWAY
WEST APPROACH VIADUCT
CUY – 42 R – 17.43



TYPICAL HANDRAIL POST



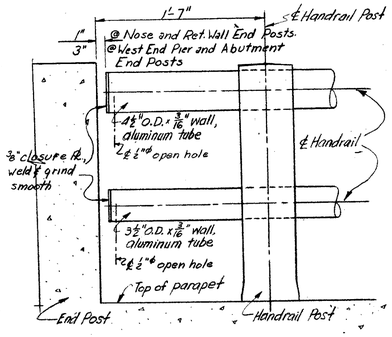
POST ELEVATION



HANDRAIL POST AT EXPANSION JOINT

At each expansion joint use detail shown above on one side of joint and typical post on other side

BASE PLAN



END OF HANDRAIL
Scale 1½" = 1'-0"

Notes:

For aluminum refer to supplemental specification No. S-114.

Handrail shall be fabricated in lengths equal to 1 space, see sheet G3 for exact spacing.

Bolt holes in tubes shall be 7/16" ϕ at one end. Other end shall have slotted holes 7/16" x 1" except at expansion joint where no holes are required at expansion end. Bolts to be centered in slots at 60°F.

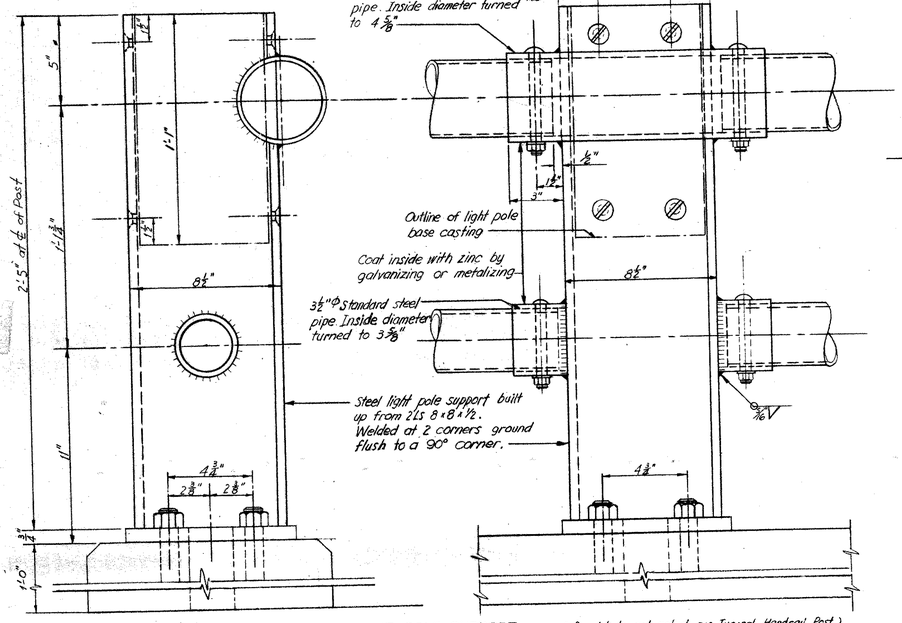
Aluminum washer shims may be used between steel and post base to align posts. Maximum thickness shall be ⅝". Space below post base plate shall be thoroughly caulked with Aluminum-impregneated caulking compound

Handrail posts shall be set normal to grade and tubes shall parallel grade

Light pole supports shall be set vertical, lighting details see sheet GG

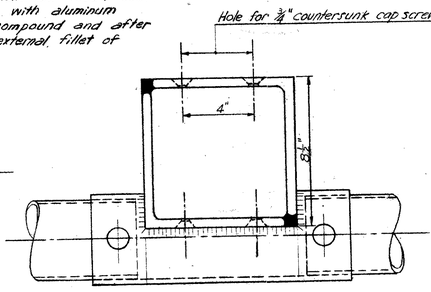
TYPICAL HANDRAIL DETAILS
Scale: 3" = 1'-0"

Note (Light Pole Support):
Before inserting aluminum tube, coat the inside of sleeve with aluminum impregnated caulking compound and after insertion form an external fillet of caulking compound

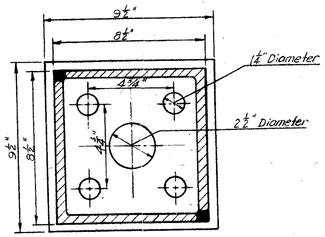


LIGHT POLE SUPPORT
Scale 3" = 1'-0"
No. required 14

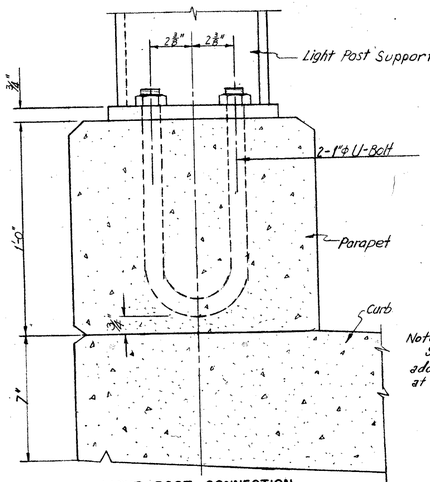
(for details not noted see Typical Handrail Post)



TOP PLAN



BASE PLAN



Note:
See sheet G2 for additional reinforcing at Light Posts.

LIGHT POST CONNECTION
Scale 3" = 1'-0"

U. S. ROUTE 42 RELOCATION
INNER BELT FREEWAY
WEST APPROACH VIADUCT
BR. NO. CUY - 42R - 1750

HANDRAIL DETAILS

CLEVELAND CUYAHOGA COUNTY OHIO

SCALE As Shown	HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS	
MADE CCF DATE 1-31-56	KANSAS CITY CLEVELAND NEW YORK	
TRCD ___ DATE ___	914(2)WB	SHEET 67
CKD DFR DATE 3-13-56		