



CUY-90-14.90

PID 77332/85531

APPENDIX EX-80

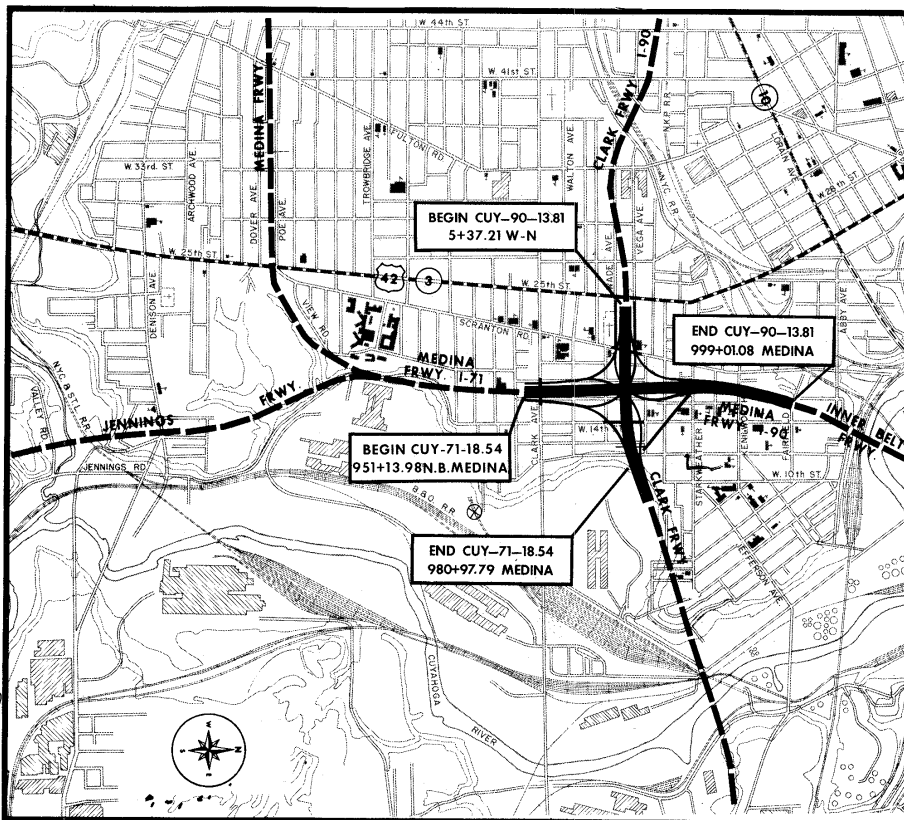
CUY-071-1854 and CUY-090-1381
(Reference Document)

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

Innerbelt Bridge
Construction Contract Group 1 (CCG1)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
CUY-71-18.54
CUY-90-13.81
CUYAHOGA COUNTY
CITY OF CLEVELAND

MEDINA-CLARK INTERCHANGE



DELIVERY POINT: B. & O. R.R. CLEVELAND, OHIO AVERAGE HAUL: 1 MILE

The Total Number of Sheets appearing on the Plans shall be considered to read 504 instead of 478.

FED. RD. DIVISION	STATE	PROJECT	1
2	OHIO	I-71-5(10) 245 I-90-1(57) 24	478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

Revise Sheet Nos. 6, 7, 9, 47, 50, 53, 55, & 119
C.E.H. 10-27-65
Sheet Nos. 174 & 405 revised 5-9-66
Revised Sheet No. 200
C.E.H. 12-9-65

I-71-5(10) 245
I-90-1(57) 24
LIMITED ACCESS

1963 SPECIFICATIONS

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 DATE 3/1/65
APPROVED DATE 1-29-65
APPROVED DATE 3-26-65
APPROVED DATE 4-7-65
APPROVED DATE 3-2-65
APPROVED DATE 4-7-65
APPROVED DATE 4/8/65

Louis L. Drasler
DIRECTOR OF PUBLIC SERVICE, CITY OF CLEVELAND
Charles M. Lurich
DIVISION DEPUTY DIRECTOR
C. H. Altwater
ENGINEER OF BRIDGES
R. N. Roberts
ENGINEER OF LOCATION AND DESIGN
T. H. Borner
DEPUTY DIRECTOR OF RIGHT OF WAY
R. W. Williams
DEPUTY DIRECTOR OF PLANNING AND PROGRAMMING
F. E. Washburn
FIRST ASSISTANT DIRECTOR
DIRECTOR OF HIGHWAYS

8/14/91 547.2
MISSING DJK
10/16/91 SHS 191-209
MISSING DJK

THIS IMPROVEMENT 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 OF THE REVISED CODE OF OHIO

MICROFILMED
OCT 26 1982

CONVENTIONAL SIGNS

CENTER LINE	— — — — —
FENCE LINE	— — — — — x — — — — —
GUARD RAIL	— — — — —
TREES OR STUMPS	⊗
RIGHT OF WAY - LIMITED ACCESS	— LA — R/W —
RIGHT OF WAY - NON LIMITED ACCESS	— R/W —

INDEX OF SHEETS

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3-5	GENERAL NOTES	122-123	UNDERDRAIN DETAILS
6-10	SUMMARY OF QUANTITIES	127A, 134A, 124-162	WATER MAIN RELOCATION
11-15	TYPICAL SECTIONS	163-169	LANDSCAPING PLANS
16	TYPICAL SECTION DETAILS	170-189A-190	TRAFFIC CONTROL PLANS
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76-81	DRAINAGE PLANS	453-468	BRIDGE NO. CUY-71-1886
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112	SEPARATION CHAMBERS	479-504	RELOCATION OF CITY OF CLEVELAND M.E.L.P. UTILITIES
113-117	DRAINAGE DETAILS		
118	MISCELLANEOUS DETAILS		

LINE DATA

	CUY-71-18.54	CUY-90-13.81
BEGIN PROJECT	STA. 951+13.98 N.B. MEDINA	STA. 5+37.21 LANE W-N (42+45.18 W-N = 990+93.35 MED)
END PROJECT	STA. 980+97.79 MEDINA	STA. 999+01.08 MEDINA
LENGTH OF PROJECT	2983.81 FT. OR 0.565 MILES	4515.70 FT. OR 0.855 MILES
BEGIN WORK	STA. 950+36.00 N.B. MEDINA	STA. 0+00-253' LANE W-N
END WORK	STA. 980+97.79 MEDINA	STA. 14+22 INNERBELT VIADUCT
LENGTH OF WORK	3061.79 FT. OR 0.577 MILES	6340.28 FT. OR 1.200 MILES
BEGIN WORK	STA. 928+50.00	
END WORK	STA. 959+55.00	
LENGTH OF WORK	3105.00 FT. OR 0.588 MILES	
LENGTH OF WORK	6166.79 FT. OR 1.167 MILES	
LENGTH OF PROJECTS	7499.51 FT. OR 1.420 MILES	
LENGTH OF WORK	12,507.07 FT. OR 2.368 MILES	

Sheet Nos. 357, 359 and 362 revised 6-29-65.

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

H.G. SOURS
ASSOCIATE
COLUMBUS

SUPPLEMENTAL SPECIFICATIONS

NUMBER	DATE	NUMBER	DATE
L-120	R 1-2-62	I-212	R G-23-61
S-101	7-12-62	M-106.6(c)	2-17-59
S-307	10-1-64	M-106.6(d)	R 4-1-58
C.E. 101.04	5-22-56	M-206.7	9-28-62
I-129	R 4-5-61	T-335	10-28-63
M-106.11	1-26-61	M-109.28	R 8-12-59

LOCATION MAP



PORTION TO BE IMPROVED
OTHER SCALES
PLAN 1"=50' 1"=20' 1"=200'
PROFILE HOR. 1"=100'
VER. 1"=20' 1"=10'
CROSS SECTIONS 1"=10'

STANDARD DRAWINGS

NUMBER	DATE	NUMBER	DATE
AS-1-54	7-5-62	G-7.07	4-1-64
L-1	4-1-50	I-1	11-15-60
L-2	4-1-50	I-8 M.H. No. 1	2-1-63
L-3	4-1-50	I-8 M.H. No. 1-A	2-1-63
L-3-A	4-1-50	I-8 M.H. No. 2	2-1-63
RI-1	9-1-64	I-8 I. No. 2	2-1-63
DR-1	1-3-55	I-8 I. No. 2-A	2-1-63
F-1	2-1-63	I-8 C.B. 2-2-A & B	2-1-63
F-3	2-1-63	I-8 C.B. No. 3	2-1-63
T-35	1-2-56	I-8 C.B. No. 3-A	2-1-63
B.T.70.71	11-15-60	I-8 C.B. No. 5	2-1-63
B-T-71 R	3-2-53	I-8 C.B. No. 6	2-1-63
L.J. No.1	7-1-55	I-14 G	1-22-52
T.J.	9-12-60	AR-1-57	4-2-62
FACI-1	2-25-64	FSB-1-62	1-15-63
FACI-2	2-25-64	RB-1-55	2-2-59
I-12	2-1-63	SD-1-63 (2 sheets)	11-12-63
I-15 No.1	11-15-60		
I-15 No. 2-A	8-17-60		
I-15 No. 6	2-1-63		
I-21-23	3-10-64		

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED: _____
DIVISION ENGINEER DATE _____

FILE NO.	CUYAHOGA COUNTY
SEC.	CUY-71-18.54, CUY-90-13.81
DATE OF LETTING	196
CONTRACT NO.	

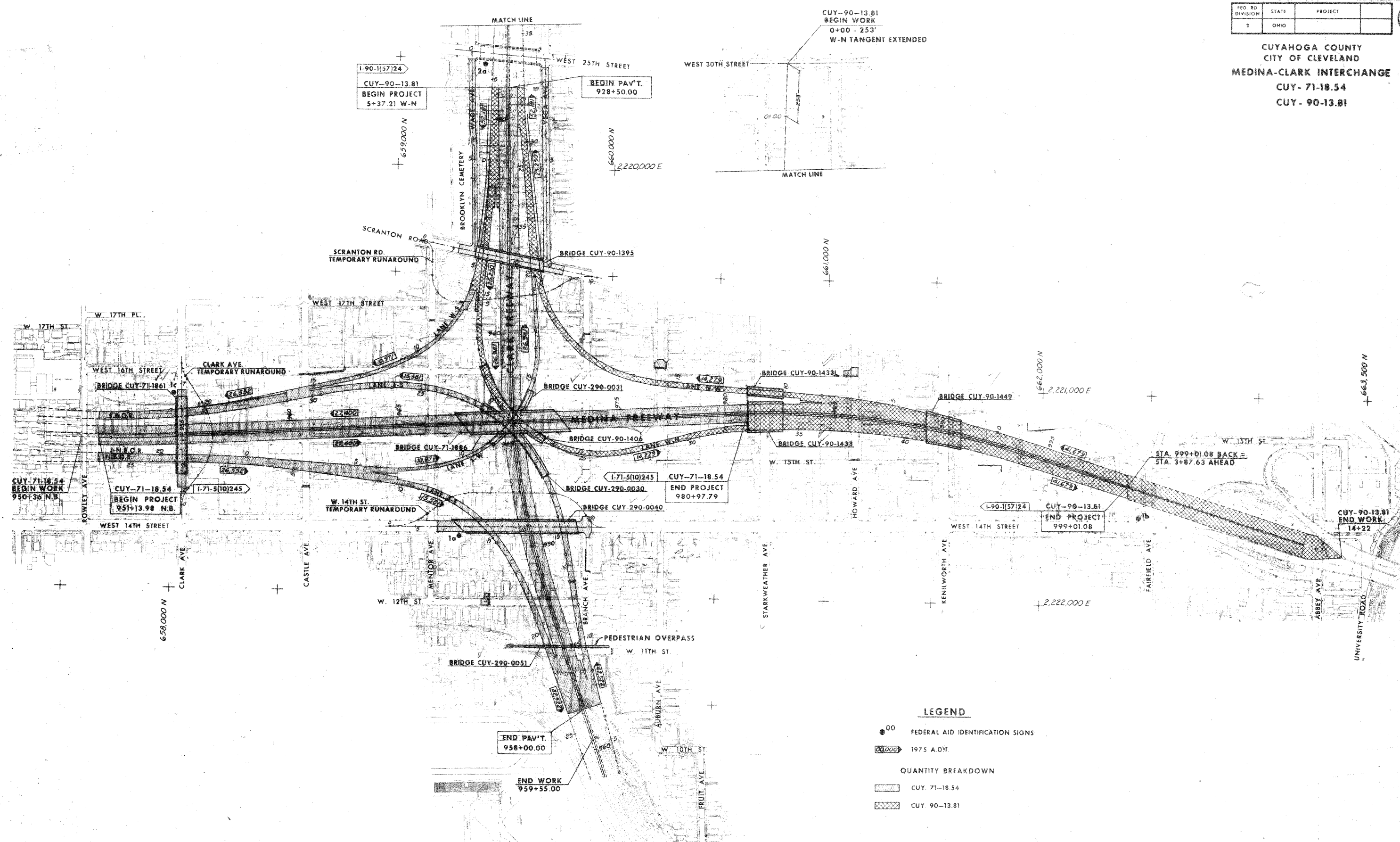


00327

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

2
476

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



- LEGEND**
- 00 FEDERAL AID IDENTIFICATION SIGNS
 - ▭ 1975 A.D.T.
 - QUANTITY BREAKDOWN**
 - ▭ CUY-71-18.54
 - ▭ CUY-90-13.81

SCALE 1" = 200'
 MADE BY: **HOWARD, NEEDLES, TAMMEN & BERGENDOFF**
 DATE: 4-2-64
 TRCD: **RHP** DATE: 4-6-64
 CND: **RHL** DATE: 4-8-64
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

SCHEMATIC PLAN

GENERAL NOTES

GENERAL

FED. RD. DIVISION	STATE	PROJECT	3 478
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

Scope of Work

The principal items of work to be performed under this contract include the following:

1. The complete construction of all items of Grading, Pavement, Drainage and Lighting for the entire interchange.
2. The complete construction of that portion of the main outfall sewer through the interchange from the vicinity of W. 25th Street to the Clark Playfield area.
3. The complete construction of the following bridges:
 - a. Bridge No. CUY-90-1395, Scranton Road over Clark Freeway
 - b. Bridge No. CUY-90-1406, Lane W-N over Clark Freeway
 - c. Bridge No. CUY-90-1449, Medina Freeway over Kenilworth Avenue
 - d. Bridge No. CUY-90-1433, Medina Freeway over Starkweather Avenue
 - e. Bridge No. CUY-90-1433L, Lane N-W over Starkweather Avenue
 - f. Bridge No. CUY-71-1886, Medina Freeway over Clark Freeway
 - g. Bridge No. CUY-71-1861, Clark Avenue over Medina Freeway
 - h. Bridge No. CUY-290-0031, Lane S-W over Clark Freeway
 - i. Bridge No. CUY-290-0030, Lane E-S over Clark Freeway
 - j. Bridge No. CUY-290-0040, W. 14th Street over Clark Freeway
 - k. Bridge No. CUY-290-0051, Pedestrian Bridge at W. 11th Street

Design Speed

The geometrics for this project have been planned for a minimum design speed of 60 miles per hour on the freeways and 42 miles per hour on the turning lanes.

Elevation Datum

All elevations shown on these plans are in feet above the Cleveland Regional Geodetic Survey Datum Plane.

Coordinates

All coordinates shown on these plans are based on the State Plane Coordinate System.

Field Office

The Contractor shall, in accordance with Sec. S-0.01(b), provide for the exclusive use of the State's employees, a suitable field office having a minimum of 500 square feet of floor space. The Contractor shall have a telephone installed and maintained in this field office during the construction of this project. The Contractor shall also provide and install wiring and outlets suitable for connecting electric lights and office equipment in the field office and provide 110-volt alternating current to the office during the entire period of construction of this project.

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 that they are essentially correct, but the State of Ohio makes no guarantee as to their accuracy or completeness.

Utility Adjustment

Any or all work required for Public or Private Utilities will be done by and at the expense of their respective owners, unless otherwise noted in these plans.

Utilities

Following is a list of the owners of utilities known to be within the limits of construction:

Municipal Electric Light and Power	Cleveland, Ohio
Cleveland Electric Illuminating Company	Cleveland, Ohio
East Ohio Gas Company	Cleveland, Ohio
City of Cleveland Water Department	Cleveland, Ohio
Ohio Bell Telephone Company	Cleveland, Ohio
City of Cleveland Police and Fire Communication System	Cleveland, Ohio

Adjacent Contracts

Contracts for construction of adjacent or overlapping projects may be let prior to or while construction under this contract is in progress. The Contractor for this project shall coordinate his operations with that of the Contractor for any adjacent or overlapping projects so as to complete all projects without undue delay or interference to the other Contractors.

The Contractor for this project should satisfy himself concerning all coordination necessary with such concurrent operations. Special attention should be given to the sequence of construction necessary on the southerly approaches where the outfall sewer facilities are to be constructed under a separate contract and to the connection of the main interchange sewer to the outfall sewer being constructed by others, through the park property and easterly to the Cuyahoga River.

Estimated Quantities

Specific locations and usage of estimated quantities set up in this plan to be used "as directed by the Engineer" shall be made a matter of record by incorporation into the final change order governing completion of the project. Materials necessary for the construction of these items shall not be ordered or stockpiled until directed by the Engineer.

Construction Layout Stakes

See note in proposal describing the work included in this lump sum pay item.

Federal Aid Construction Identification Signs

The Contractor shall furnish, erect, maintain, and subsequently remove Federal Aid Construction Identification Signs at each of the following locations:

1. Sign details shall be as specified in Standard Drawing FAC I-1 Code N-55(1)-132(3) at the following locations as shown on Sheet 2.
 - a. Right of Station 7+00 W. 14th St. (I-71)
 - b. S.W. corner of W. 14th St. and Fairfield Ave. (I-90)
 - c. Left of Station 6+50 Clark Ave. (I-71)
2. Sign details shall be as specified in Standard Drawing FAC I-1 Code N-55(1)-132(3) at the following location.
 - a. Right of Station 9+00 W. 25th St. (I-90)

The signs shall be erected in accordance with Standard Drawing FAC I-2. Additional requirements shall be in accordance with notes in the proposal.

Excavation at Cross Street Structures

Freeway excavation in the vicinity of the Clark Avenue, Scranton Road, and West 14th Street structures shall be to the proposed roadway template shown on the Cross Sections. Any additional depth of excavation required during construction of the bridges will be paid for as a bridge item. Payment for pumping or other operations necessary to drain and maintain such local excavations will be considered included in other bridge pay items.

Maintenance of Traffic

Where any of the work called for under this contract involves the partial or complete 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 existing roadways will be closed to traffic. He shall also be required to give the Division of Traffic Engineering and Parking of the City of Cleveland a notice in writing ten (10) days in advance of any such closing of any existing street. No street or alley will be closed until necessary for construction as determined by the Engineer.

Two way vehicular traffic and pedestrian traffic on Clark Avenue, Scranton Road, and West 14th Street will be maintained by means of temporary runarounds during the construction of the bridges and main sewers. During the rush hours of 7-9 A.M. and 4-6 P.M. a minimum of three lanes will be maintained during construction on these streets. On W. 25th St. two full lanes will be maintained during construction.

The Contractor's attention is invited to the need for providing adequate protection to school children and other pedestrian traffic in the vicinity of this project. The Contractor shall provide and maintain such temporary protection facilities as the Engineer deems necessary to accommodate in a reasonable and safe manner all pedestrian traffic.

In addition to the above, the requirements of Section G-4.05, "Maintaining Traffic" will be in force during the entire life of the contract.

An estimated quantity of 300 cu. yds. of aggregate (Item T-10), 7 tons calcium chloride (Item I-4), and 100 cu. yds. of asphaltic concrete surface course (Item T-35), or an approved Bituminous Premixed Surface Course, is carried in the Summary of Quantities to be used as directed by the Engineer for the purpose of maintaining traffic. An estimated quantity of 20 M-Gals. of Water for Dust Control has been provided in the General Summary. All of the above, except Item I-4, Calcium Chloride; Item T-10, Aggregate; and Item T-35, Asphaltic Concrete, shall be included for payment in the lump sum price bid for "Item I-3, Maintaining Traffic" and "Item S-15, Temporary Runaround Roads."

Protection of Traffic (Overhead Bridge Construction)

The Contractor shall safeguard the traveling public at Starkweather Avenue and Kenilworth Avenue by providing platforms, nets or other suitable protection above the traveled lanes. (Payment for this protection shall be included in the lump sum price bid for "Item I-3, Maintaining Traffic".)

Clark Avenue Temporary Runaround Road

The portion of the asphalt apron of the service station at 14th and Clark Avenue that is to be removed for construction of the temporary runaround will be replaced by the owner after this runaround is removed. Payment for this work will be included under the right of way work agreement with the owner.

Sequence of Construction

The construction of this project will require maintenance of traffic flow on Clark Avenue, West 14th Street and Scranton Road thru the use of temporary runarounds. Before construction of the bridges on West 14th Street and Scranton Road can proceed, provisions must be made to maintain the flow in existing sewers in these and in other streets. Therefore, the Contractor shall schedule as the first phase of his work the interrelated construction of the main trunk sewer and the temporary runarounds. A sequence of construction shall be submitted in writing to the Engineer for his approval or revision within 15 days after award of contract. This proposed sequence of construction shall be prepared in complete detail and shall include an acceptable time schedule for the individual operations which will be compatible with over-all project completion dates.

No special payment will be made for any inconvenience or costs incurred in scheduling the construction operations as noted herein. All costs will be considered covered by and included in the unit price bid for the pertinent construction item.

Cooperation-Traffic Control Devices

A separate traffic control device contractor will be required to install or erect traffic control devices within contract work limits prior to completion of work by the contractor.

The contractor shall cooperate with the separate contractor to arrange a suitable work schedule, subject to the approval of the engineer, to permit the separate contractor to work and operate necessary equipment within work limits to carry out the provisions of his contract. The engineer shall notify the contractor a minimum of thirty (30) days prior to any scheduled work by the separate contractor.

Each contractor shall be held responsible for any damage to him, or his agents, to the work performed by the other contractor.

Compensation for the above cooperation shall be incidental to the various pay items included within this construction project.

Temporary Run-around Roads-Fencing

The fencing and gates on the run-around roads may be reused at permanent locations as directed by the Engineer.

SODDING FOR SPECIAL BERM AND SLOPE PROTECTION, AS PER PLAN

The Sodding work shall be done at all four (4) corners of each bridge structure in accordance with the "Detail-Sod Gutter" shown on Sheet No. 116.

An estimated quantity of 935 Sq. Yds. of Sodding for Special Berm and Slope Protection (Item L-10) has been provided in the General Summary for all of the bridge structures.

SCALE None
MADE RHL DATE 10-28-64
TRCD. DATE
CKD. DATE
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

GENERAL NOTES

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

4
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

ROADWAY

PAVEMENT

Rounding of Corners on Cross Sections

The rounded corners shown on Standard Drawing RI-1, as modified by the typical sections, apply to all cross sections, even though shown otherwise on the plans.

Agricultural Liming Material

The location and need for agricultural liming materials will be determined by the Engineer on the basis of laboratory tests after rough grading operations have been performed. The quantity of agricultural liming materials shown on the plans is sufficient for application to the entire exposed soil area of the contract but may be partially or completely omitted, as may be directed by the Engineer, if laboratory tests indicate the item is not needed. Agricultural liming material is estimated at the rate of 100 pounds per 1000 square feet of surface area.

The quantity of agricultural liming material is estimated and is included for use only when and in amounts as directed by the Engineer. The amount of this item and its location shall be recorded as used, and payment will be included in the final payment estimate.

Seeding and Protecting

Quantities for seeding are calculated for the soil areas between the right-of-way lines unless indicated otherwise in the plans. Areas to be seeded outside the right-of-way lines are indicated in the plans. Vine Planting areas are not to be included in the Seeded Areas.
Seed shall be sown at the rate of three (3) pounds per 1000 square feet, and shall be a uniform mixture in the following proportions in lieu of the mixture listed in Section L-9.11.

65% Creeping Red
25% Kentucky Bluegrass
10% Red Top

See sheet No. 164 for Seeding and Sodding, Item Special-Mowing Seeded and Sodded Areas."

Removal of Trees and Stumps

Unless otherwise shown on the plans or directed by the Engineer, all trees and stumps lying within the construction limits of this project shall be removed under the lump sum price bid for Item E-9, Removal of Trees and Stumps.

The following is an approximate estimate of the number of trees to be removed.

Size	I-90	No. of Trees	I-71
12" - 18"	I-90	83	217
18" - 24"	I-90	38	20
24" - 30"	I-90	17	27
30" - 36"	I-90	3	5
36" - 42"	I-90	7	3
42" - 48"	I-90	7	171

The above estimate is approximate only and the State of Ohio reserves the right at any time during the duration of the contract to order the removal of additional trees or stumps outside of the limits of construction but within the right-of-way and or easement lines.

Payment for the removal of these additional trees or stumps shall be included in the lump sum price bid for Item E-9.

Commercial Fertilizer

All areas to be seeded under Item L-9 or sodded under Item L-10 shall have commercial fertilizer 12-12-12, applied at the rate of twenty (20) pounds per 1,000 square feet.

Special Ground Cover

A special ground cover consisting of vines and wood chip mulch shall be placed on slopes of 1 on 3 or greater as indicated in the plans.

Sod Adjacent to Paved Gutter

An 18" strip of sod will be placed adjacent to all paved gutters as indicated in the plans.

Removal of Existing Rigid Pavement

Existing rigid type pavements shall be removed under Item E-8 when they are located less than three feet below the proposed pavement, subgrade in proposed pavement areas or less than three feet below the proposed finished surface in areas outside the proposed pavement.

When existing rigid type pavements lie below the above limits, they shall not be removed. In lieu thereof they shall be broken up in place into portions not to exceed one square foot in area prior to placement of the proposed embankment. Payment for this operation shall be included in the unit price bid for Item E-1, Roadway Excavation.

Non-Rigid Pavement Removal

Removal and disposal of existing non-rigid pavement, unless otherwise indicated on these plans, shall be measured and paid for as Item E-1, Roadway Excavation.

Pavement, Sidewalk and Driveway Removal Outside Normal Construction Limits

After the existing pavement, sidewalks and driveways, as indicated on the plans, have been removed, the areas between the construction limits and the proposed right-of-way lines should be plowed, harrowed, and dragged to a smooth grade, the old ditches filled and the entire area sloped to drain and left in a neat condition ready for seeding. Payment for this work shall be included in the unit price bid for pavement removal, Item E-8. Seeding shall be measured and paid for in accordance with Item L-9.

Monument Assemblies

Item (10) Monument Assemblies are carried in the General Summary of Quantities and shall be placed as indicated on the plans.

The details for the construction of the monument assemblies are as shown in Standard Construction RI-1, Roadway Items.

All costs for construction of this item shall be included in the unit price bid for Item I-8, Monument Assemblies.

Item S.S. CE-101.04 Compaction Using Heavy Pneumatic Tired Roller

An estimated quantity for this item has been provided in the General Summary for use in proof rolling of subgrade on the mainline and ramp pavements as directed by the engineer. Proof rolling will not be requested where rock and shale occurs in subgrade and in areas where subbase has been thickened to replace frost susceptible silts. In lieu of the requirements of CE-101.04, a minimum of one coverage will be required to check the subgrade. Moisture content of the top 12" of subgrade shall not exceed optimum at the time of proof rolling. Tire pressure and total load shall be varied as directed by the engineer within the limits provided in Supplemental Specification No. CE-101.04.

Plugging Pipe

The exposed ends of all pipe or tile lines intercepted by earthwork operations shall be effectively blocked and covered, except as shown on the plans or as directed by the Engineer. The City of Cleveland will furnish to the Engineer all available data on existing pipe connections. This data will be reviewed by the Engineer and Contractor prior to the start of any earthwork operations. Broken pieces and portions of pipe or tile shall be removed until a whole length is encountered which shall be blocked with concrete, flat stone or brick laid in mortar, or a precast clay or concrete stopper.

Also, those pipe and tile lines to be plugged, as noted on the plans or as directed by the Engineer, shall be blocked in the same manner as stated above. Payment for the above work shall be included in the unit price bid for Item E-1, Roadway Excavation.

Guard Rail Adjacent to Bridges

One (1) additional guard rail post shall be provided in the center of each panel of guard rail adjacent to the bridge, payment for which shall be included in the unit price bid for Item I-15 Guard Rail.

Guard Rail Flares

Where proposed guard rail flares are constructed of rail elements which have not been fabricated exactly to fit the curvature shown on the plans, the two end posts of each flared section shall be encased in a minimum 4-inch thickness of Class "E" concrete for the full depth of the post below the ground line. Payment for encasement, if required, shall be included in the unit price bid for the guard rail.

For flaring median barrier guard rail at overhead sign supports see details, Sheet 130.

Temporary Guard Rail, as Per Plan

An estimated quantity of 870 lineal feet of Temporary Guard Rail, as per Plan, is carried in the General Summary of Estimated Quantities for use in controlling traffic at Lane W-N entrance to Medina Freeway and at Lane N-W exit from Medina Freeway. This guard rail shall be used, as shown in the plans or as directed by the Engineer. See note in proposal describing Temporary guard rail.

Flared Approach Slabs

Place additional A-bars in flared areas of approach slabs by maintaining the standard spacing along the wide end of the slab and fanning the bars in toward the bridge as directed by the Engineer.

Curbs on Approach Slabs

The height and face of curbs on approach slabs shall be transitioned from the standard section used on the approach pavement to the section used on the bridge curbing within the limits of the approach slab unless shown otherwise on the plans.

Joints in Approach Slabs

Longitudinal impressed or sawed joints shall be provided between lane elements, on all approach slabs, in accordance with Standard Construction Drawing L.I. No. 1, revised 7-1-55."

Contraction and Expansion Joints

Although specific locations of certain expansion and contraction joints have been detailed on this plan, no waiver of the specifications is intended. Provision of expansion joints at all major structures and the maximum spacing between contraction joints shall in all cases be in accordance with Standard Construction Drawing T.J.

Sandstone Curb

Existing sandstone curb shall be removed and reused as indicated on the plans. The curb that is to be reused shall be marked by the Engineer during construction. Payment for the removal of sandstone curb shall be made under Item E-8, Removal for Re-Use of Existing Curb. Payment for existing curb to be reset shall be made under Item I-11, Sandstone Curb Reset.

Item I-22, Subbase, Grading "A" or "B" As Per Plan

Material for this item shall meet the requirements of Grading "A" or "B" of Section I-22.02, except that for either grading, no more than 10% of the material shall pass a No. 200 sieve after all operations of placing and compacting have been completed.

SCALE None HOWARD, NEEDLES, TAMMEN & BERGENOFF
MADE RHL DATE 10-28-64 CONSULTING ENGINEERS
TRCD. DATE KANSAS CITY CLEVELAND NEW YORK
CKD. DATE

GENERAL NOTES

GENERAL NOTES

DRAINAGE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

5
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

Review of Project

Before any work is started on the project, representatives of the State, the City and the Contractor shall make a visual inspection of the existing storm, sanitary, and combined sewers which are to remain in service and which are within the limits of the work. A record of the inspection shall be kept in writing by the State. All new sewers, inlets and manholes constructed as a part of the project shall be free of all foreign matter and in a clean condition before the project will be accepted by the State. All existing sewers inspected initially by the above mentioned parties shall be maintained and left in the same condition as determined by the original inspection. Any change in the condition resulting from the Contractor's operations shall be corrected by the Contractor to the satisfaction of the Engineer. The cost of making inspections and any repairing or correcting of sewers as a result of construction operations shall be included in the unit prices bid for the respective pipe items of the contract.

Maintenance of Sewer Flows

The Contractor shall conduct his operations so as to maintain sewer flows at all times through any existing facilities to remain in place and through existing facilities to be replaced until new facilities are completed and placed into use.

Payment for any additional costs involved in maintaining these flows by pumping or by any other means approved by the Engineer shall be included in the unit prices bid for the respective pipe items.

Work Adjacent to Existing Utilities

When working in the area adjacent to existing utilities, the Contractor is to proceed with caution in order that no damage is done to the existing utility. Any damage to existing utilities resulting from the Contractor's operations or negligence, as determined by the Engineer, shall immediately be repaired by the Contractor at no additional cost to the State.

Control Elevations

The top of the structure elevations shown on the sewer profiles will be final elevations as shown on Sheets 87 to 111.

Connections to Existing Sewers

At those locations where the plans require the connection of: (1) a new sewer to an existing sewer or appurtenance, or (2) an existing sewer or existing appurtenance to a new sewer, it shall be the responsibility of the Contractor to locate the existing sewer or appurtenance both as to the line and grade before he starts construction of the proposed sewer. Payment for this operation shall be included in the unit price bid for the applicable Item I-1, Pipe.

Sealing of Pipe Joints

Where connections are made between rigid and flexible pipe sections or between pipe sections of different kind or type of end fabrication, whether required by the plans, arising from permissible use of optional materials, or encountered in connection to existing facilities, the joint shall be sealed by means of a Class "E" concrete collar having a minimum of 6 inches and a minimum length of 12 inches. Payment for sealing as described above shall be included in the unit price bid for the pertinent pipe item.

Manhole Steps

Steps shall be provided in all inlets, or catch basins, having a depth of 6 feet or greater, or at the direction of the Engineer. Payment for steps shall be included at the contract unit price bid per each Item I-8. The steps shall be built in accordance with Standard Drawing I-8, Manhole No. 1.

Removal of Existing Pipe

The removal of all existing pipe drains within the limits of proposed excavation items shall be included for payment in the unit price bid for the respective excavation item, unless otherwise itemized on the plans.

Existing Frames, Grates and Covers from Abandoned Structures

Where existing manholes, catch basins, or inlets are to be removed or abandoned, the existing frames, grates, covers and other appurtenances will become the property of the Contractor and are to be disposed of outside the limits of the work at the Contractor's expense.

Used frames, grates and covers shall not be used on this project except as specifically authorized in the plans or by the Engineer.

SANITARY SEWER PIPE ENCASEMENT

The Sanitary Sewer Piping Work shall be encased in Class "E" concrete in accordance with the Encasement Detail shown on Sheet No. 116. Additional excavation work shall be included with this Item.

The concrete encasement work shall be included in the unit price bid per lineal foot of the pertinent "Item I-1 Pipe encased as per plan". The additional excavation work shall be included in the unit price bid for the pertinent "Item I-1 Pipe Encased as per plan".

I-8 Furnish Complete Castings for Existing Manholes and or Catch Basins As Per Plan

All existing structures to be adjusted to grade have been field checked to determine that the existing castings are suitable for salvage and reuse of the particular structure to be adjusted to grade. However, existing castings may prove to be unsuitable, as determined by the Engineer, during construction of the project. To provide for this contingency, an estimated quantity of one (1) each "I-8, Furnish Complete Castings for Existing Manhole, As Per Plan" and one (1) each "I-8, Furnish Complete Castings for Existing Catch Basins, As Per Plan" have been included in the General Summary to be used in the quantity required, as determined by the Engineer. It shall be the Contractor's responsibility to provide the casting of the required type, size and strength for the particular structure in question.

The Contractor is cautioned to use extreme care in the removal, storage and placement of all existing castings. Any castings damaged by the Contractor's negligent operations, as determined by the Engineer, shall be replaced with the proper new casting by the Contractor, at no expense to the State.

Pipe Cutoffs

When bell and spigot pipe is used, any necessary pipe cutoffs will be made at the spigot end of the length of pipe adjacent to the end length. When tongue and groove pipe is used, the length of pipe next to the end length shall be cut and butt joint formed in accordance with Standard Construction Drawing I-1. The cost of the joint and collar shall be included in the contract unit price bid for the pertinent pipe item.

Underdrains

Where underdrains are located adjacent to light standards, the underdrains shall be positioned so as not to interfere with the placing of the light standard base.

I-1, 6" Class I-3 Pipe, Sec. M-6.4(h), As Per Plan

A quantity of 500 linear feet of underdrains has been carried in the General Summary of Estimated Quantities for use in cut slopes or at other locations as may be directed by the Engineer. Payment for this work will be made at the unit prices bid per linear feet for Item I-1, 6" Class I-3 Pipe, Sec. M-6.4(h), As Per Plan, which price shall constitute full compensation for all tools, labor, materials (furnishing and placing), excavation, backfill and any other incidentals necessary to complete the work to the satisfaction of the Engineer. Material necessary for the construction of this item shall not be ordered until directed by the Engineer.

Item I-8, Manhole Reconstructed to Grade, As Per Plan

This item shall consist of the careful removal of the existing manhole down to the spring line or lower if necessary, and reconstruction of the manhole to the new grade, conforming as nearly as practicable to the existing dimensions and type of construction and using the salvaged manhole frame and cover. See note below under "Manholes Adjusted to Grade" regarding non-standard castings.

MANHOLES ADJUSTED TO GRADE, As Per Plan

In the event that any of the castings on existing manholes to be adjusted to grade have frames and covers which are not City of Cleveland Standards, the Contractor will be furnished such standard castings by the City of Cleveland.

The Contractor is to pick up castings at the City's lower maintenance yard and return the castings that are replaced.

No additional payment will be made to the Contractor for any delay, or extra cost to the Contractor resulting from this procedure.

Item I-5 Pipe Special

Pipe without perforations will be permitted for use on this project for all Item I-5 Pipe Special.

REINFORCED PIPE ENDS F-4 PIPE

Reinforced Ends shall be provided for all corrugated metal pipe Class F-4, Sec. M-6.4(c) for all driveways and underdrain outlets, if the pipe ends are unprotected by headwalls, catch basins or manholes.

ITEM I-8 M.H. No. 1-A AND M.H. No. 1, MODIFIED, AS PER PLAN

The Drop Pipe shall be constructed in accordance with Standard Drawing No. 2. The Drop Pipes shall be provided with M.H. No. 1-A (Code 120) and M.H. No. 1 (Code 34) shown on sheets Nos. 82 and 105 and 96 and 97, respectively.

The cost of the Drop Pipes shall be included in the unit prices bid per each for the pertinent Item I-8, M.H. No. 1-A Modified as per plan and M.H. No. 1 Modified as per plan.

Miscellaneous Details

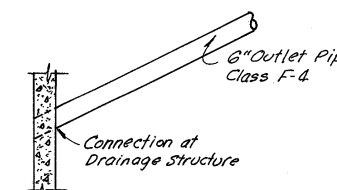
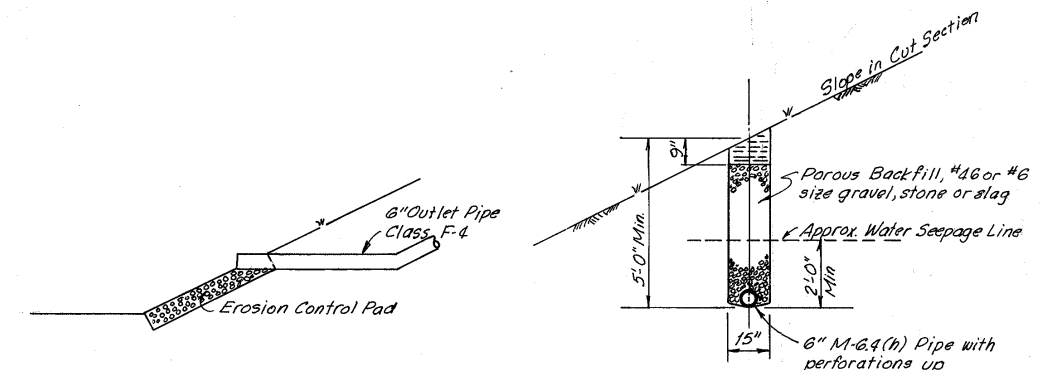
Title	Sheet No.
Separation Chambers	112 ✓
Catch Basin or Inlet with Trap	115 ✓
Standard No. 5 Catch Basin Modifications	115 ✓
Standard No. 1-A Manhole, Modified	115 ✓
Inlet Manhole No. 2-A	114 ✓
Type 2 Gutter, Modified	114 ✓
Gutter Transition	114 ✓
Sod Gutter	116 ✓
Transition to Ditch Inlet	116 ✓
Underdrain Details	122-123 ✓
Pipe Encasement Details	116 ✓
Pipe Cradle Details	116 ✓
Drainage Details	117 ✓
Miscellaneous Details	118 ✓

WORK LIMITS

In areas where proposed work is located on City property, & easement or right of way lines are not shown, the Contractor's operations shall be confined to the "limits of construction" as measured 20ft. at right angles on each side of the centerline of the 90" Outfall Sewer, unless otherwise approved in writing by the Director.

SEPARATION CHAMBERS

The work shall be performed in accordance with Item I-8 and payment shall be made at the unit price bid per each Item I-8 Separation Chambers.



Note: Outlet intercepting drains either into ditch drainage structure or onto an erosion control pad at roadway ditch line.

Estimated quantities listed below are to be at locations as directed by the Engineer to drain seepage in cut slopes.

ESTIMATED QUANTITIES	
Item I-1 6" Intercepting Drains, Sec. M-6.4(h)	500 L.F.
Class I-3, as per plan.	
Item I-1 6" Class F-4 Pipe	50 L.F.
Item I-5 6" Pipe Specials, Class F-4	5 Each

DETAIL FOR INTERCEPTING DRAIN

Scale: 3/8" = 1'

SCALE None HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE RES. DATE 12-29-64 CONSULTING ENGINEERS
TRCD. DATE KANSAS CITY CLEVELAND NEW YORK
CKD. DATE

GENERAL NOTES

GENERAL SUMMARY ESTIMATED QUANTITIES

FED. RD. DIVISION 2	STATE OHIO	PROJECT	8 478
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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

SHEET NUMBER																				INTERSTATE BREAKDOWN		GRAND TOTAL	UNIT	ITEM NO.	DESCRIPTION				
82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	CUY-71	CUY-90								
TOTALS PER SHEET																				DRAINAGE TYPE CODE 7221									
																					500	500		500	Lin.Ft.	I-1	6" Pipe Class I-3, Sec. M-6.4(h), as per plan		
																					50	1114		925	239	1,164	Lin.Ft.	I-1	6" Pipe Class F-4
																					30	114		22,943	7,171	30,114	Lin.Ft.	I-1	6" Pipe Class I-3
																					331	331		331		331	Lin.Ft.	I-1	6" Pipe Class B-1
																					70	10		70	60	70	Lin.Ft.	I-1	8" Pipe Class F-4, Sec. M-6.4(c)
																					110	16		267		267	Lin.Ft.	I-1	12" Pipe Class B-1
																					178	*152		633	331	964	Lin.Ft.	I-1	12" Pipe Class E-1
																					116	*393		3464	1769	5233	Lin.Ft.	I-1	15" Pipe Class B-1
																					201	262		308	157	465	Lin.Ft.	I-1	15" Pipe Class B-1, Sec. M-6.6(b) or Sec. M-6.8(b)
																					18	161		994	295	1289	Lin.Ft.	I-1	15" Pipe Class E-1
																					324	*55		274	156	274	Lin.Ft.	I-1	15" Pipe Class F-4
																					46	*200		228		228	Lin.Ft.	I-1	18" Pipe Class B-1
																					20	*89		174	179	353	Lin.Ft.	I-1	18" Pipe Class B-1, Sec. M-6.6(b) or Sec. M-6.8(b)
																					*66	*113		605		605	Lin.Ft.	I-1	18" Pipe Class E-1
																					503	102		370		370	Lin.Ft.	I-1	18" Pipe Class E-1, Sec. M-6.6(c)
																					370	125		240	137	377	Lin.Ft.	I-1	21" Pipe Class B-1
																					115	*137		142	209	351	Lin.Ft.	I-1	21" Pipe Class B-1, Sec. M-6.6(c)
																					142	*76		386		386	Lin.Ft.	I-1	21" Pipe Class B-1, Sec. M-6.6(d)
																					386	*133		516		516	Lin.Ft.	I-1	21" Pipe Class E-1
																					112	389		352		352	Lin.Ft.	I-1	21" Pipe Class E-1, Sec. M-6.6(d)
																					*74	126		74		74	Lin.Ft.	I-1	18" Pipe Class F-4
																					171	121		297		297	Lin.Ft.	I-1	24" Pipe Class B-1
																					121	170		121		121	Lin.Ft.	I-1	24" Pipe Class E-1, Sec. M-6.6(c)
																					50	116		170		170	Lin.Ft.	I-1	21" Pipe Class F-4
																					22	166		166		166	Lin.Ft.	I-1	27" Pipe Class B-1
																					18	22		22		22	Lin.Ft.	I-1	27" Pipe Class E-1
																					53	18		18		18	Lin.Ft.	I-1	30" Pipe Class B-1 Sec. M-6.6(c) Radius Pipe
																					300	53		53		53	Lin.Ft.	I-1	30" Pipe Class B-1
																					111	300		300		300	Lin.Ft.	I-1	30" Pipe Class B-1, Sec. M-6.6(c)
																					111	111		111		111	Lin.Ft.	I-1	30" Pipe Class E-1
																					99	99		99		99	Lin.Ft.	I-1	33" Pipe Class B-1
																					52	52		52		52	Lin.Ft.	I-1	42" Pipe Class B-1
																					205	205		205		205	Lin.Ft.	I-1	42" Pipe Class B-1, Sec. M-6.6(d)
																					64	64		64		64	Lin.Ft.	I-1	42" Pipe Class B-1, Sec. M-6.6(d), Radius Pipe
																					57	57		57		57	Lin.Ft.	I-1	42" Pipe Class E-1
																					100	100		100		100	Lin.Ft.	I-1	48" Pipe Class B-1, Sec. M-6.6(b)
																					20	20		20		20	Lin.Ft.	I-1	48" Pipe Class B-1, Sec. M-6.6(b), Radius Pipe
																					*114	114		114		114	Lin.Ft.	I-1	54" Pipe Class B-1, Sec. M-6.6(b)
																					75	75		75		75	Lin.Ft.	I-1	54" Pipe Class B-1, Sec. M-6.6(d)
																					80	80		80		80	Lin.Ft.	I-1	54" Pipe Class B-1 Sec. M-6.6(d) Radius Pipe
																					*235	90		325		325	Lin.Ft.	I-1	66" Pipe Class B-1
																					193	193		193		193	Lin.Ft.	I-1	66" Pipe Class B-1, Sec. M-6.6(a)
																					713	713		713		713	Lin.Ft.	I-1	66" Pipe Class E-1
																					49	49		49		49	Lin.Ft.	I-1	66" Pipe Class B-1, Radius Pipe Sec. M-6.6(c)
																					234	234		234		234	Lin.Ft.	I-1	72" Pipe Class E-1
																					30	30		30		30	Lin.Ft.	I-1	66" Pipe Class B-1 Radius Pipe
																					211	211		211		211	Lin.Ft.	I-1	84" Pipe Class E-1
																					123	123		123		123	Lin.Ft.	I-1	90" Pipe Class B-1
																					200	200		200		200	Lin.Ft.	I-1	90" Pipe Class B-1, Radius Pipe
																					648	648		648		648	Lin.Ft.	I-1	90" Pipe Class B-1, Sec. M-106.6(c)
																					158	49		207		207	Lin.Ft.	I-1	90" Pipe Class B-1, Sec. M-106.6(c), Radius Pipe
																					173	101		274		274	Lin.Ft.	I-1	90" Pipe Class E-1

*Denotes Payment Under CUY-90-13.81

SCALE: No Scale
 MADE: CPB, DATE: 12-23-64
 HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

GENERAL SUMMARY ESTIMATED QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	10 478
2	OHIO		

CUYAHOGA COUNTY
 CITY OF CLEVELAND
 MEDINA-CLARK INTERCHANGE
 CUY- 71-18.54
 CUY- 90-13.81

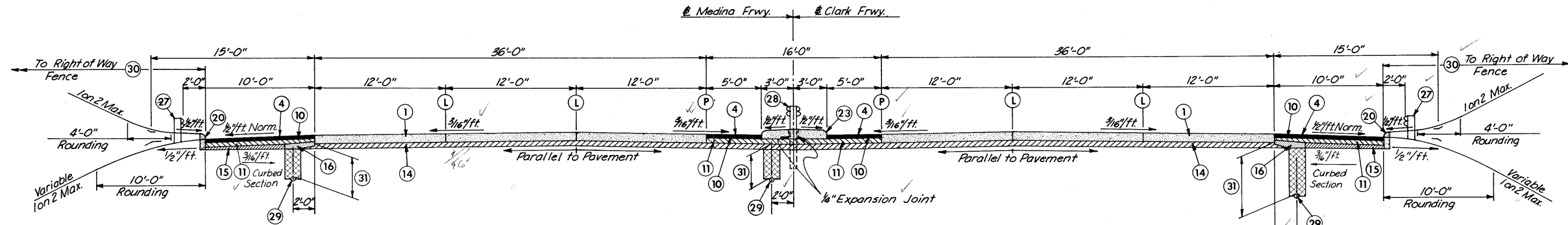
SHEET NUMBER																				INTERSTATE BREAKDOWN		GRAND TOTAL	UNIT	ITEM NO.	DESCRIPTION	
82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	CUY-71	CUY-90					
TOTALS PER SHEET																				SANITARY SEWERS CODE Y060						
																					18.54	13.81				

TYPE T-71

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

11
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



SIX LANE FREEWAY-TANGENT

SHOULDER A

MEDINA FREEWAY

CLARK FREEWAY

SHOULDER A

STA. 956+75 TO STA. 967+54.92 S.B. Bridge Approach Slab [CUY-71-18.86]
 STA. 957+50 TO STA. 967+54.92 N.B. [CUY-71-18.86]
 STA. 972+71+58 TO STA. 977+25 S.B.
 STA. 972+71+58 TO STA. 978+00 N.B.

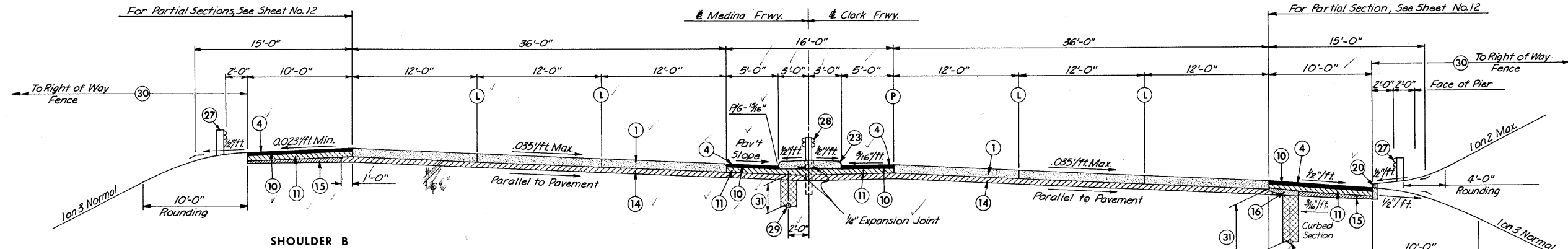
STA. 934+25 TO STA. 939+00 W.B. **
 STA. 934+25 TO STA. 938+25 E.B. **

** See Extra Depth Subbase Table.

EXTRA DEPTH SUBBASE (18")

LOCATION	STATION TO STATION
Medina Freeway	951+13.98 To 956+00
Clark Freeway	928+50 To 958+00
Lane S-E	12+50 To 21+50
Lane E-S	8+00 To 14+00
	36+00 To 38+50

The extra depth subbase will be transitioned from 18" to 6" in 100'.



SIX LANE FREEWAY-SUPERELEVATED

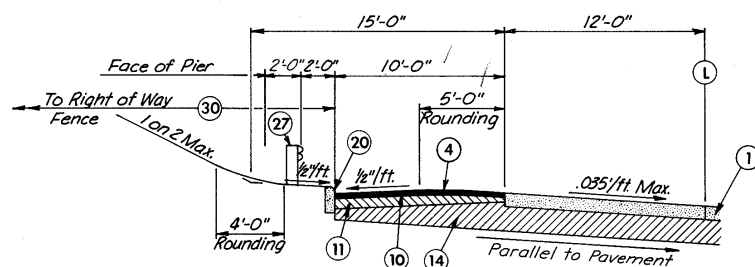
MEDINA FREEWAY

CLARK FREEWAY

SHOULDER A

STA. 951+15.00 TO STA. 956+75 S.B. (CURVE LT.) **
 STA. 951+13.98 TO STA. 957+50 N.B. (CURVE LT.) **
 STA. 977+25 TO STA. 980+72.79 S.B. (CURVE RT.)
 STA. 978+00 TO STA. 980+72.79 N.B. (CURVE RT.)
 STA. 982+88.30 TO STA. 984+36.35 S.B. (CURVE RT.)
 STA. 984+36.35 TO STA. 989+02.15 S.B. (CURVE RT.) Bridge Approach Slab [CUY-90-14.43]
 (SEE PARTIAL SECTION SHEET NO. 12)
 STA. 982+88.30 TO STA. 989+02.15 N.B. (CURVE RT.) Bridge Approach Slab [CUY-90-14.43]
 (SEE PARTIAL SECTION SHEET NO. 12)

** See Extra Depth Subbase Table.



SHOULDER C

SIX LANE SUPERELEVATED CUT

For complete Joint Details see Pavement Plans.
 For Shoulder Details see Sheet No. 16
 For underdrain locations see Drainage Sheets.

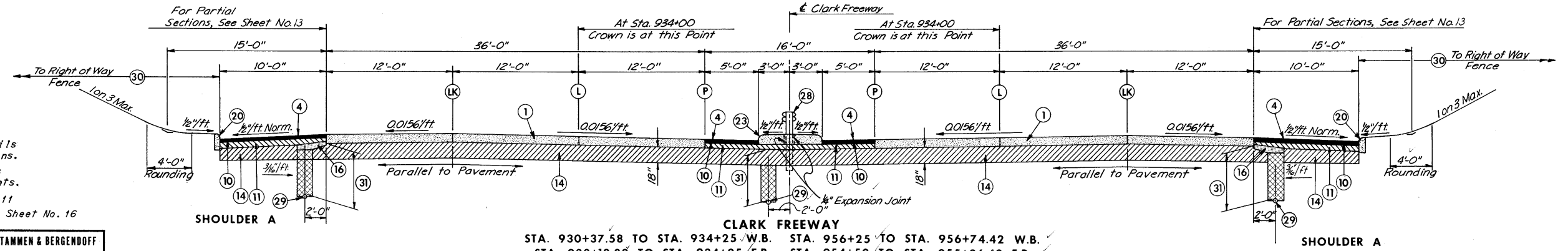
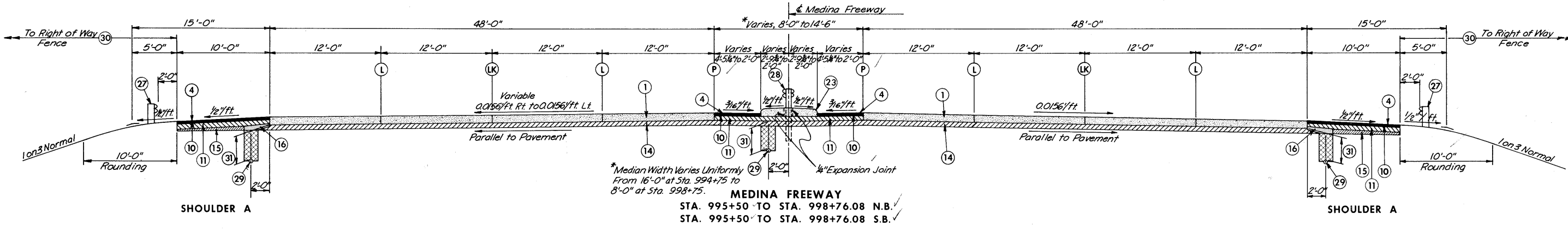
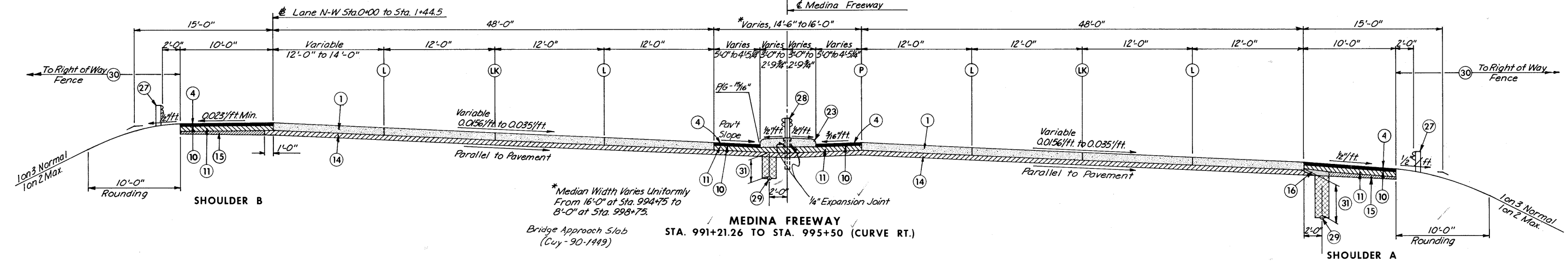
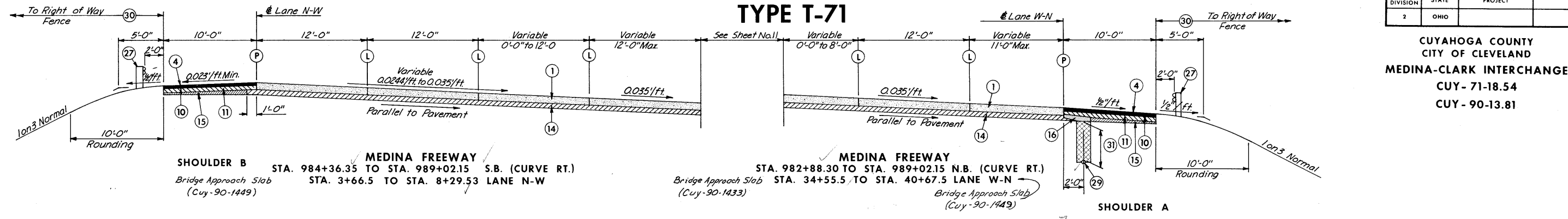
- LEGEND**
- ① T-71 10" Reinforced Portland Cement Concrete Pavement
 - ② T-71 9" Reinforced Portland Cement Concrete Pavement
 - ④ T-31 Bituminous Surface Treatment using 0.008 cu.yd. No. 6 Aggregate per sq.yd. and 0.25 gal. bituminous material per sq.yd. (See note in Proposal).
 - ⑩ B-21 Waterproofed Aggregate Base Course (Type "A" T-35 or T-335 Material may be used in construction of this course - see note in Proposal).
 - ⑪ B-19 Aggregate Base Course
 - ⑭ I-22 Subbase, Grading "A" or "B" as per plan (see General Note)
 - ⑮ I-22 Subbase, Regular Grading
 - ⑯ Item Special Drainage Connection, using No. 6 Aggregate (See Note in Proposal).
 - ⑳ I-12 Standard Type 6 Concrete Curb
 - ㉑ I-12 Standard Type 2A Concrete Curb
 - ㉓ I-21 Standard Concrete Median Pavement
 - ㉕ I-14 Standard Type 2 Paved Gutter-Modified
 - ㉖ I-13 4 1/2" Portland Cement Concrete Sidewalk
 - ㉗ I-15 Guardrail Standard Type (Deep) Steel Beam
 - ㉘ I-15 Guardrail Barrier Type (Deep) Steel Beam
 - ㉙ I-1 6" Pipe, Class I-3
 - ㉚ L-9 Seeding and Protection, as per plan
 - ㉛ Cover-Crown of pipe to bottom of pavement 56" in cut, 36" in fill
 - Ⓟ Profile Grade
 - Ⓛ Standard Longitudinal Joint
 - Ⓚ Standard Key Joint without Tie Bars
- SEQUENCE OF OPERATIONS**
1. Install pipe underdrain on outside shoulder. Installation of shallow underdrain in median may be deferred until T-71 is placed.
 2. Place subbase out to outside edge of underdrain or to one foot beyond edge of pavement where no underdrain is present.
 3. Construct T-71.
 4. Remove subbase and any contaminated backfill over drain and replace with No. 6 aggregate as shown by ⑯
 5. Complete shoulder construction.
 - Thicknesses shown are "designed" thicknesses as described in Section B-21.01 and Section T-35.01.

SCALE 3/16"=1'-0"
 HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 MADE RHL DATE 3-24-64 CONSULTING ENGINEERS
 TRCD. WMB DATE 3-25-64
 CKD. NAK DATE 5-20-64 KANSAS CITY CLEVELAND NEW YORK

TYPICAL SECTIONS

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY - 71-18.54
CUY - 90-13.81

TYPE T-71



For complete Joint Details see Pavement Plans.
For underdrain locations see Drainage Sheets.
For Legend see Sheet No. 11
For Shoulder Details see Sheet No. 16

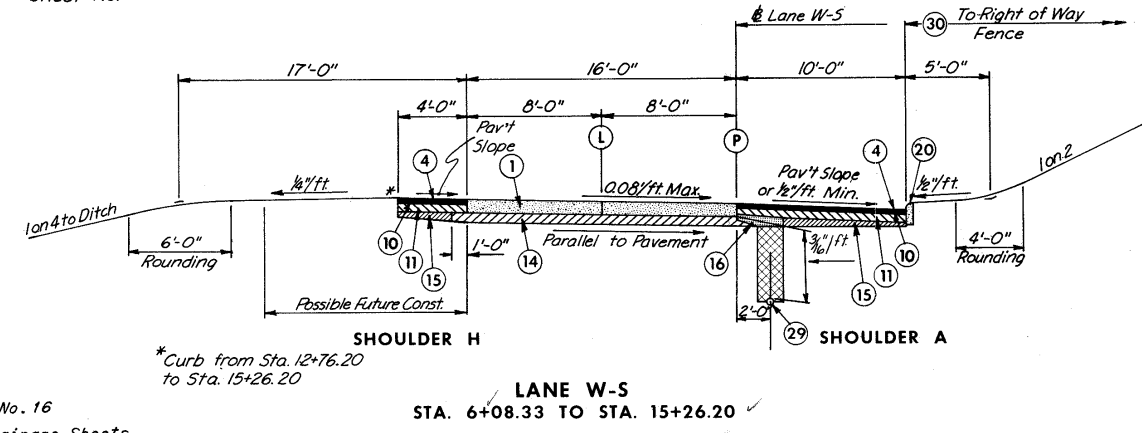
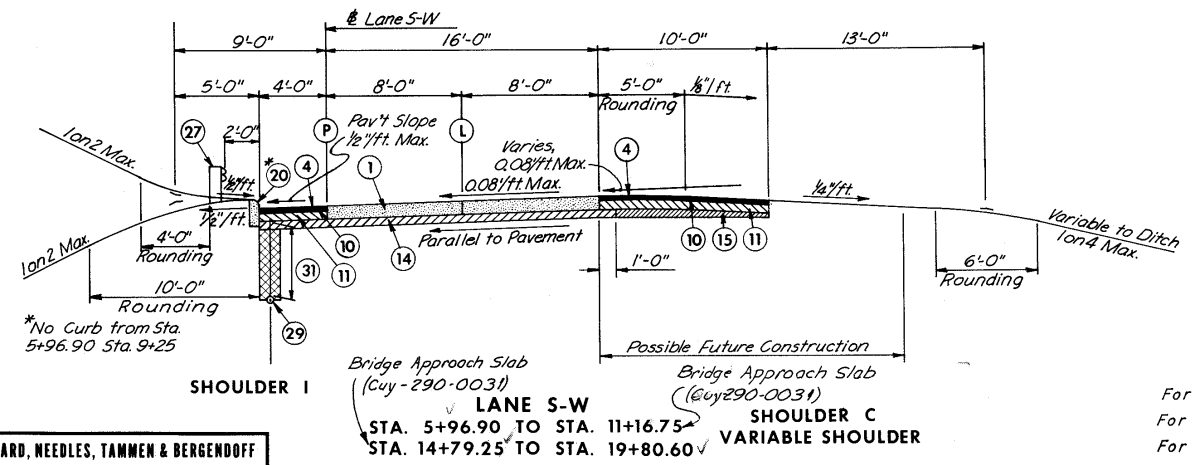
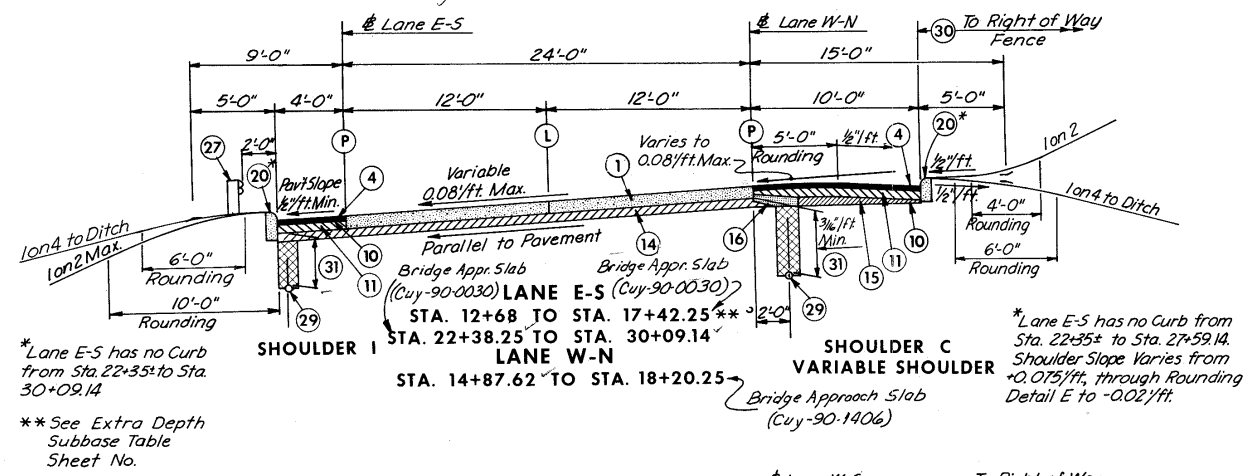
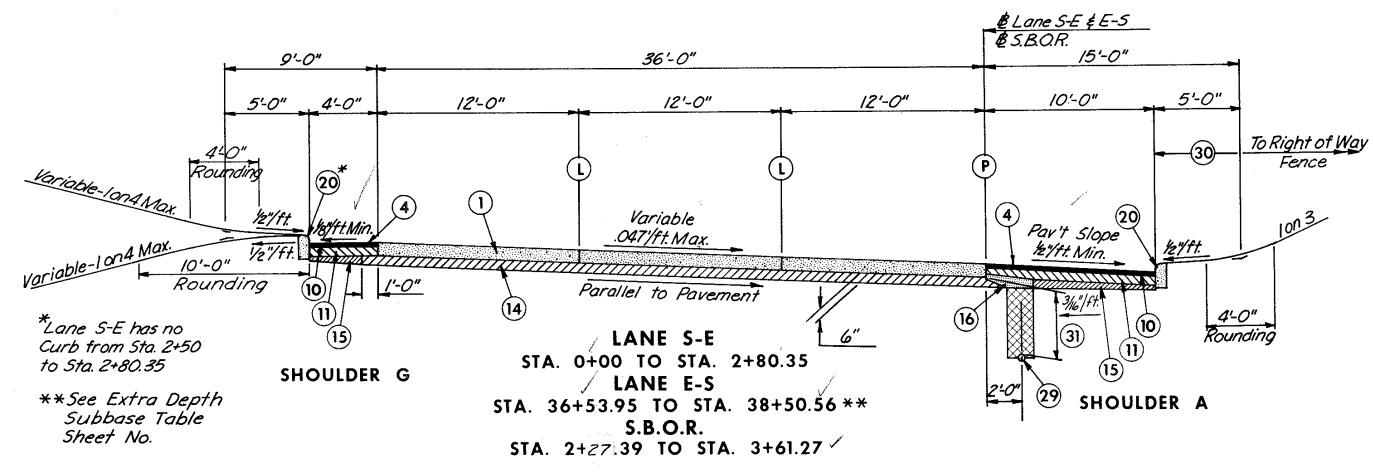
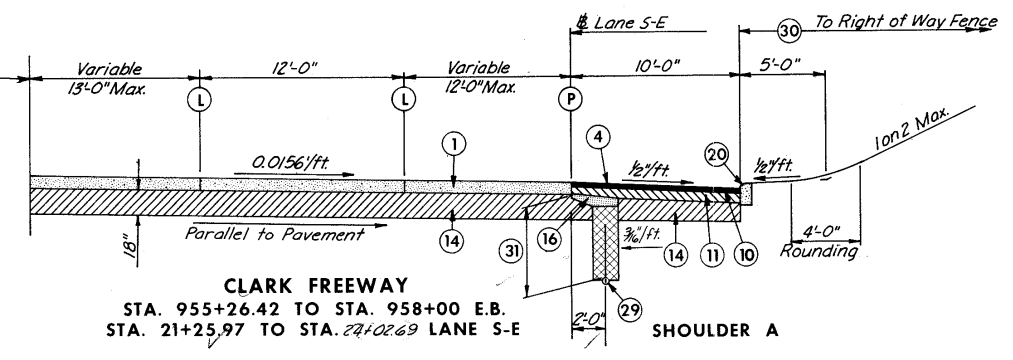
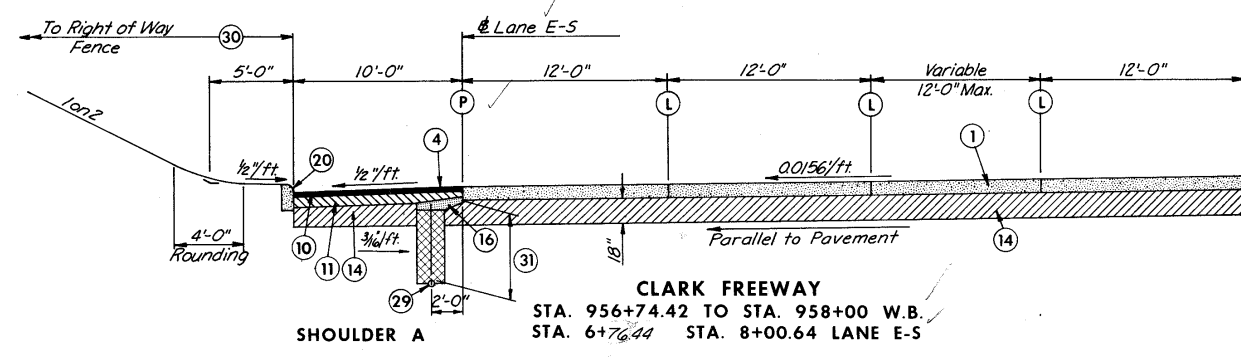
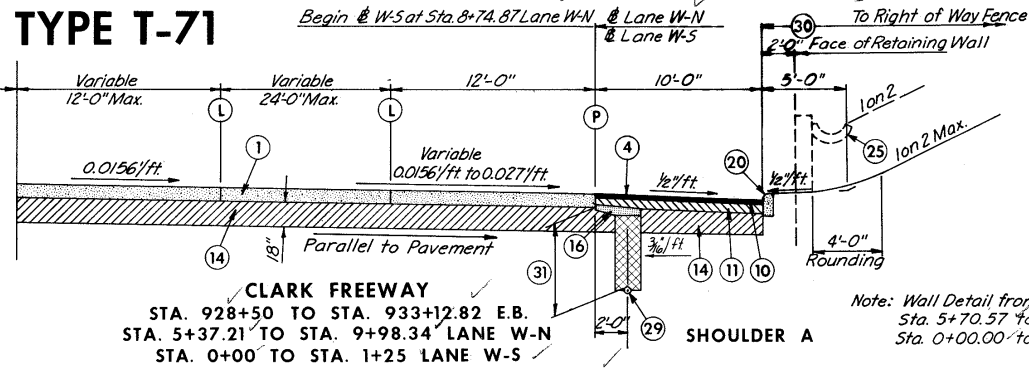
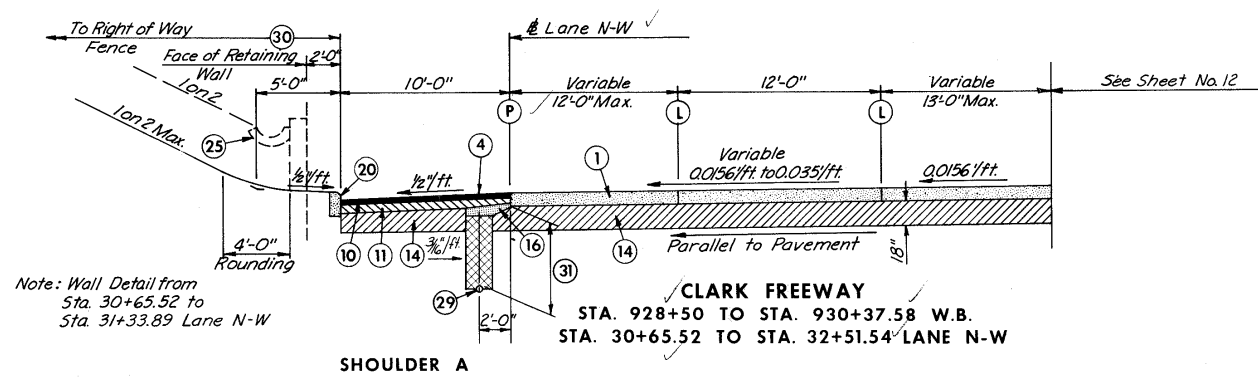
SCALE: 3/16" = 1'-0"
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE RHL DATE 3-24-64 CONSULTING ENGINEERS
TRCD. WMB DATE 3-26-64
CKD. NAK DATE 5-20-64 KANSAS CITY CLEVELAND NEW YORK

(SEE PARTIAL SECTION SHEET NO. 13) STA. 928+50 TO STA. 933+12.82 E.B. STA. 955+26.42 TO STA. 958+00 E.B. (SEE PARTIAL SECTION SHEET NO. 13)
(SEE PARTIAL SECTION SHEET NO. 13) STA. 928+50 TO STA. 930+37.58 W.B. STA. 956+74.42 TO STA. 958+00 W.B. (SEE PARTIAL SECTION SHEET NO. 13)

TYPICAL SECTIONS

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

TYPE T-71



SCALE 3/16"=1'-0"
MADE RHL DATE 3-28-64
TRCD. WMB DATE 3-26-64
CKD. NAK DATE 5-20-64

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

For Legend see Sheet No.11
For Shoulder Details see Sheet No.16
For underdrain locations see Drainage Sheets.
For complete Joint Details see Pavement Plans.

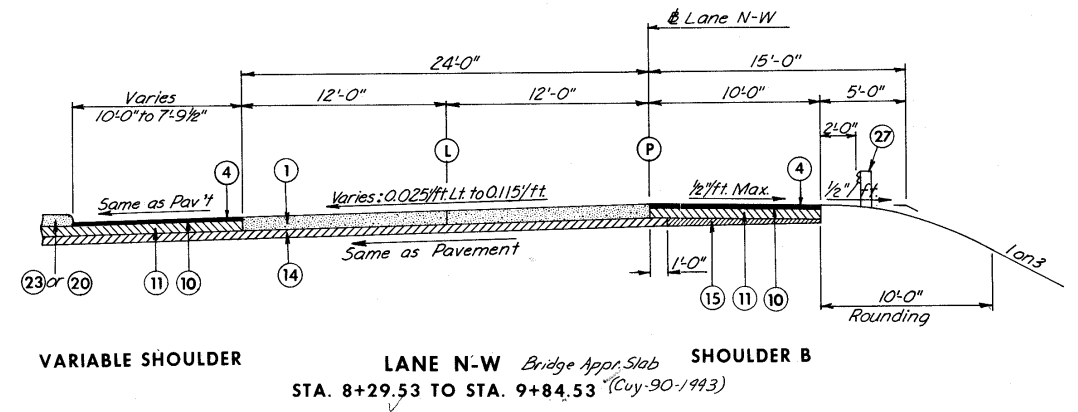
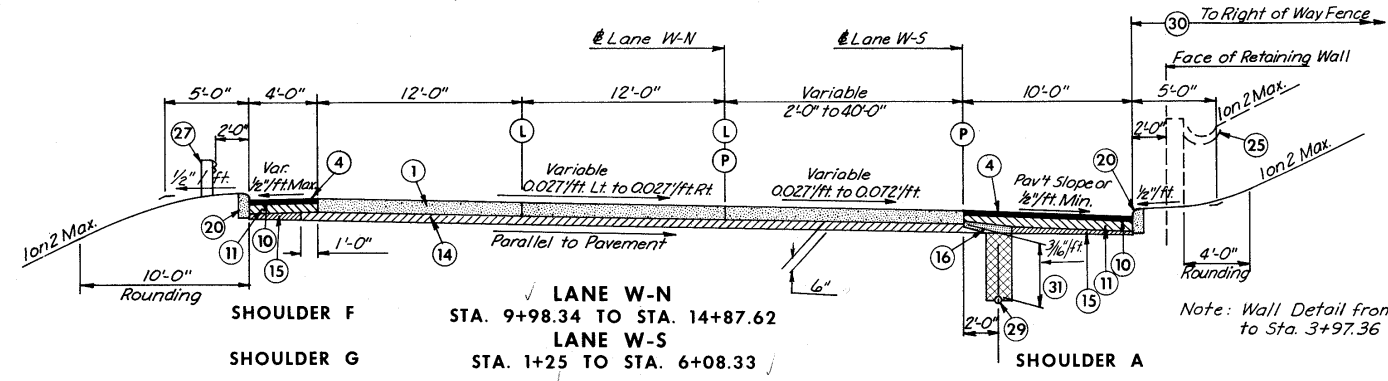
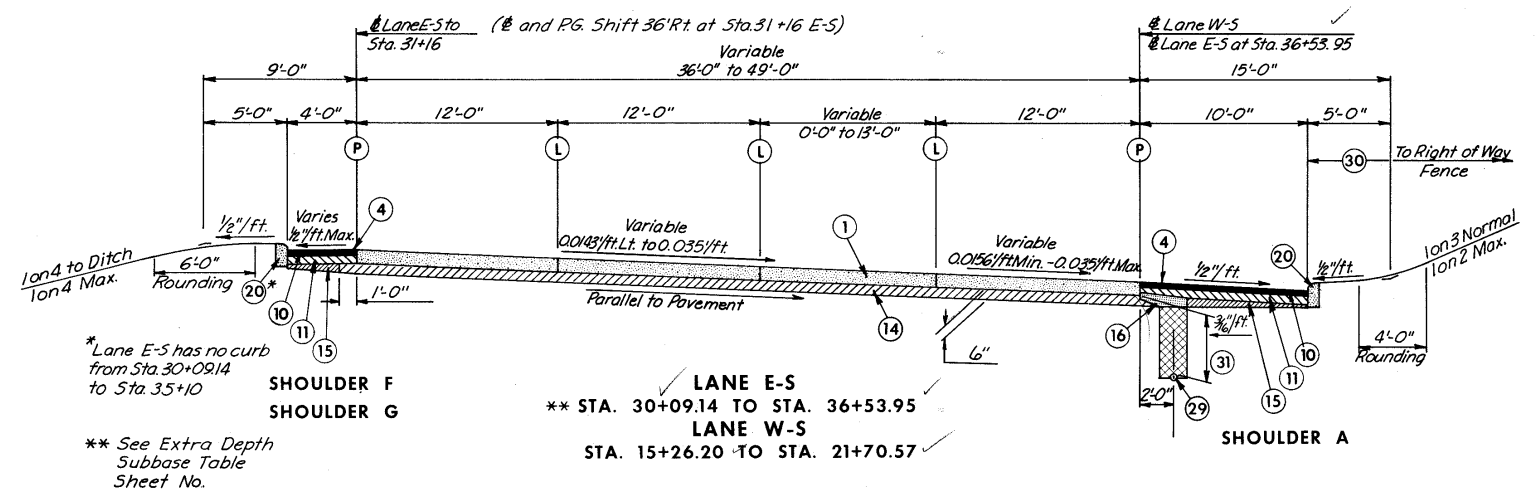
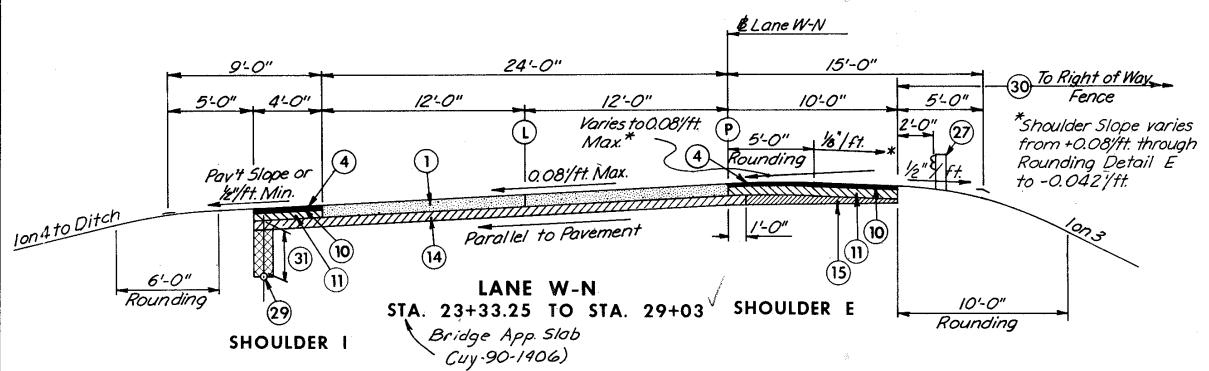
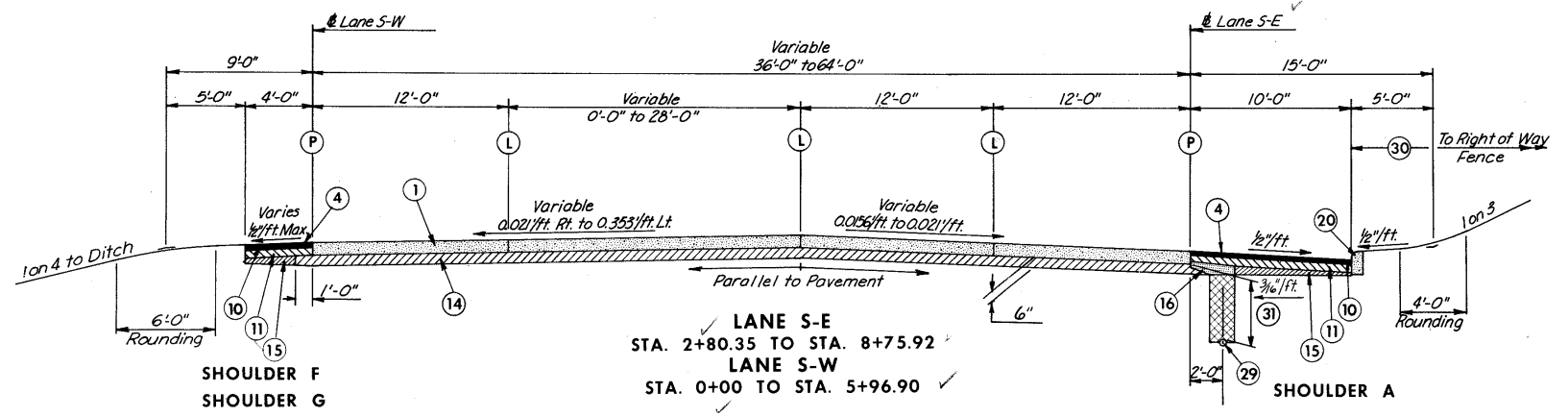
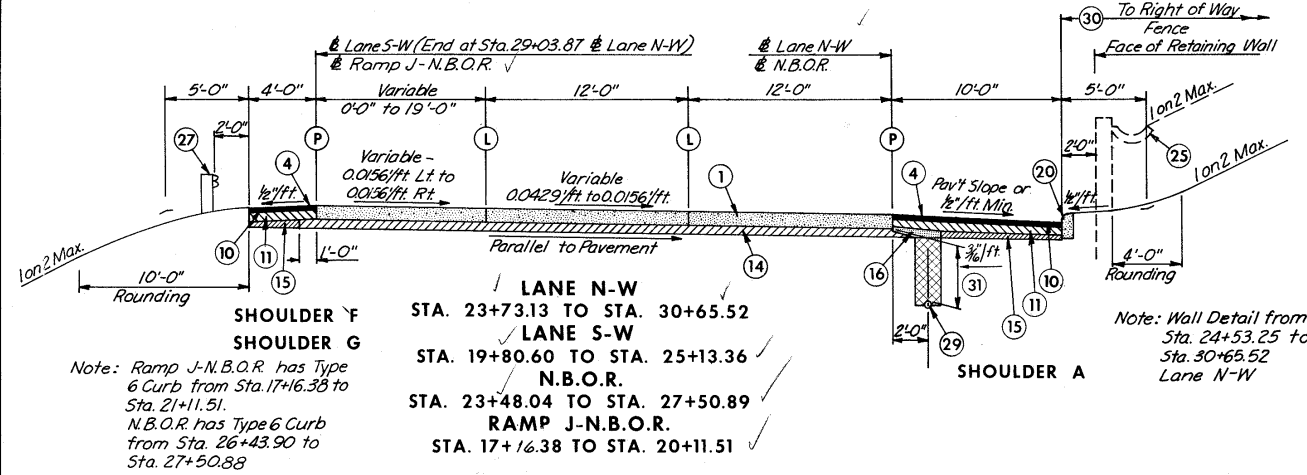
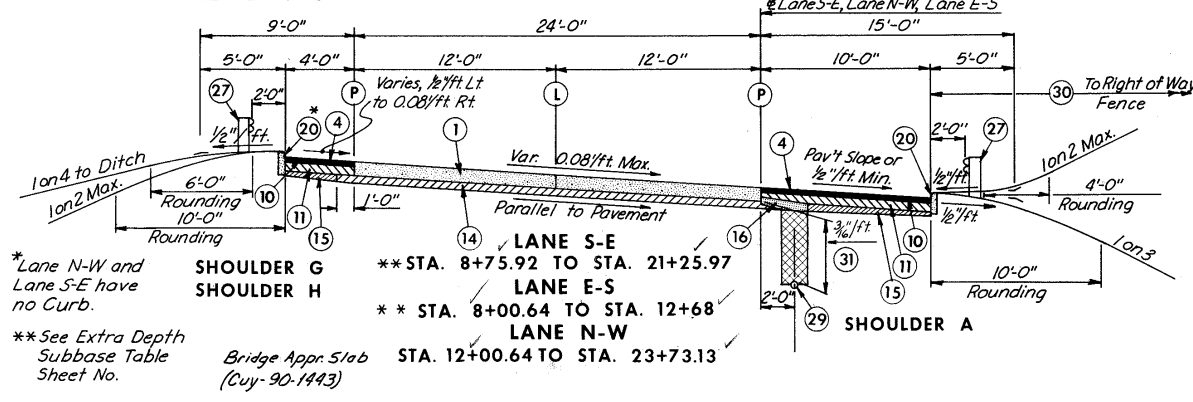
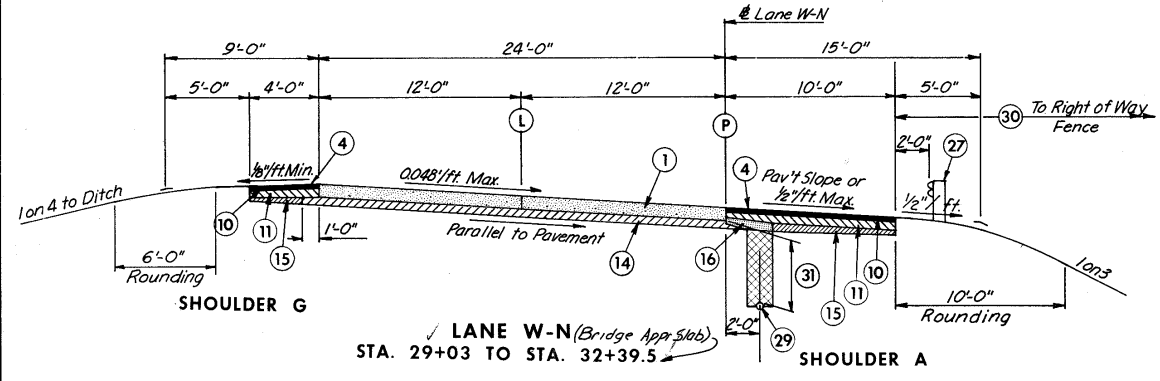
TYPICAL SECTIONS

TYPE T-71

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



SCALE: 3/16" = 1'-0"
MADE: RHL DATE: 3-25-64
TRCD: WMB DATE: 3-27-64
CKD: NAK DATE: _____
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

For Legend see Sheet No. 11
For Shoulder Details see Sheet No. 16
For underdrain locations see Drainage sheets.
For complete Joint Details see Pavement Plans.

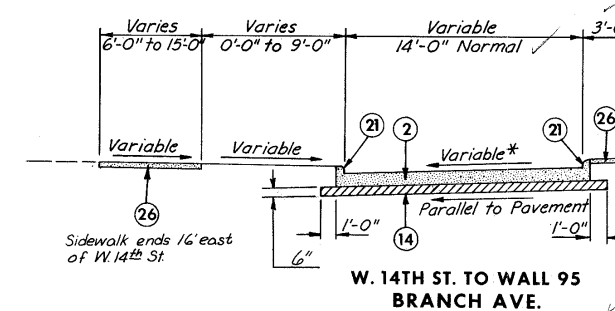
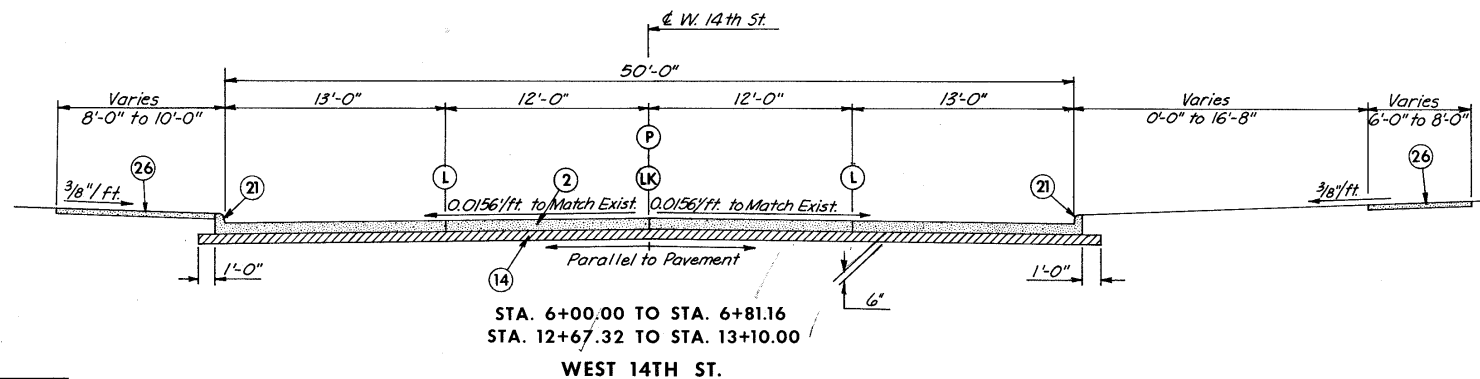
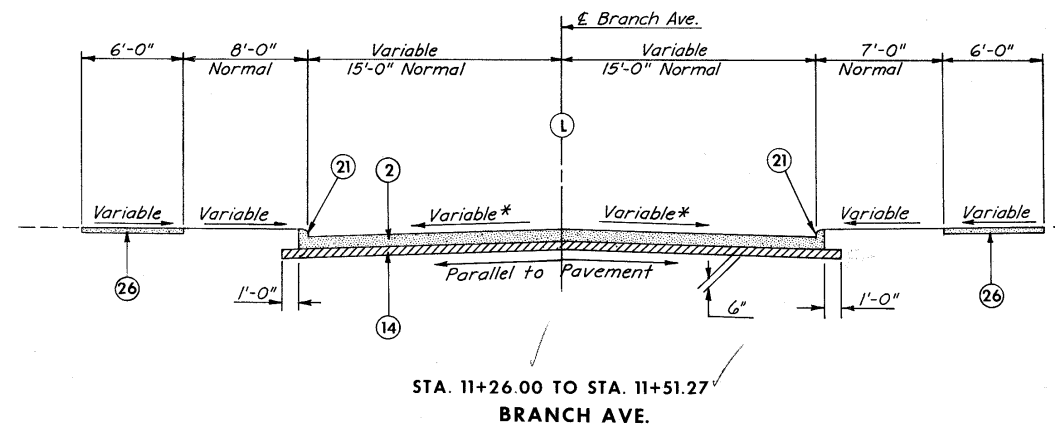
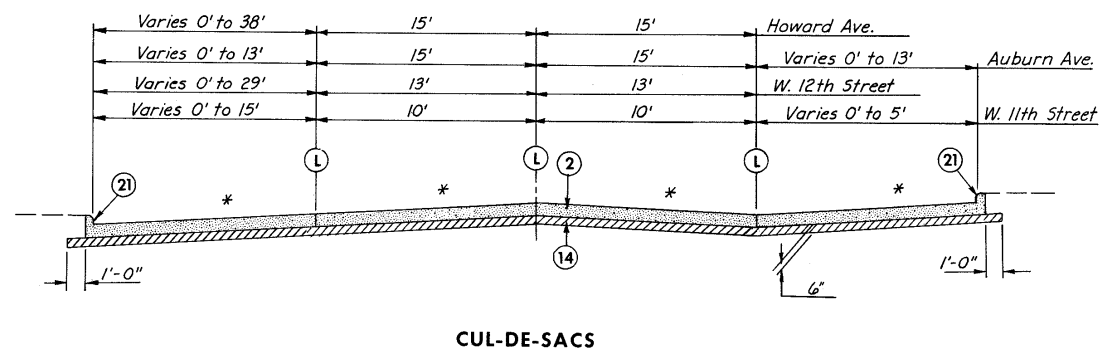
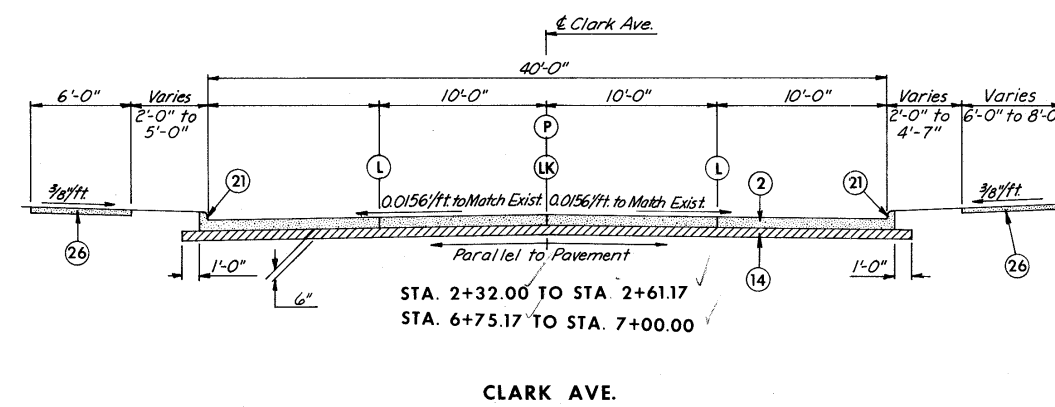
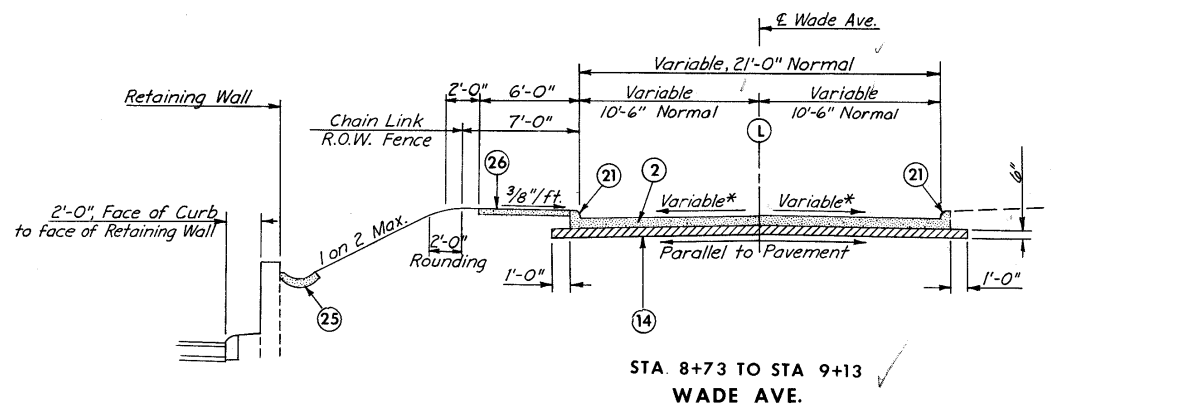
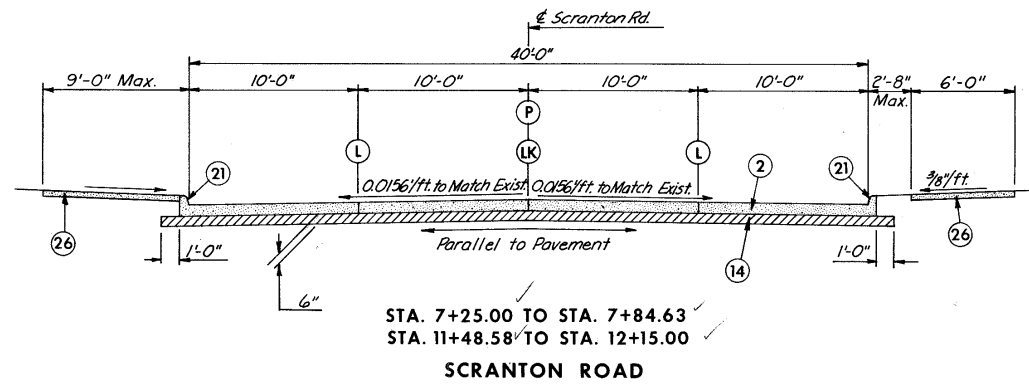
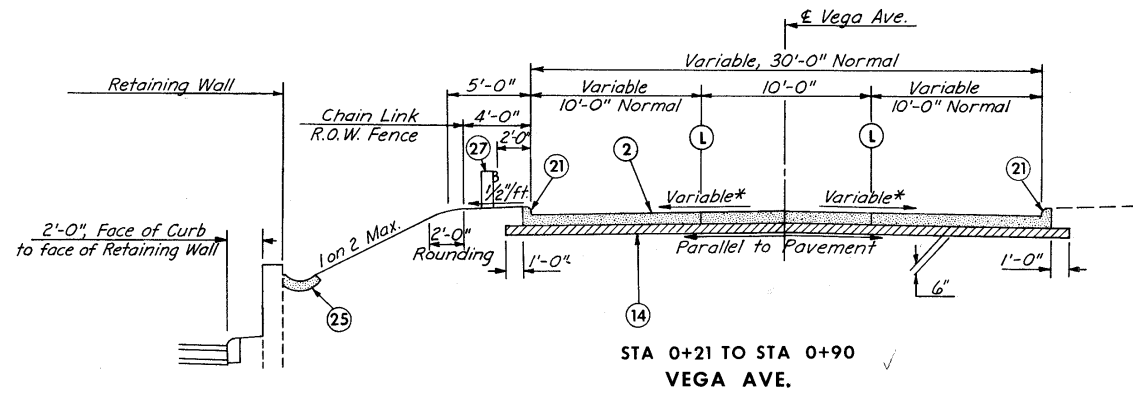
TYPICAL SECTIONS

TYPE T-71

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

15
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



SCALE: 3/16"=1'-0"
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE: RHL DATE: 3-26-64
TRCD: WMB DATE: 3-27-64
CKD: NAK DATE: 3-20-64
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

For complete Joint Details see Pavement Plans.
* For Cross Slopes see Pavement Detail Sheets.

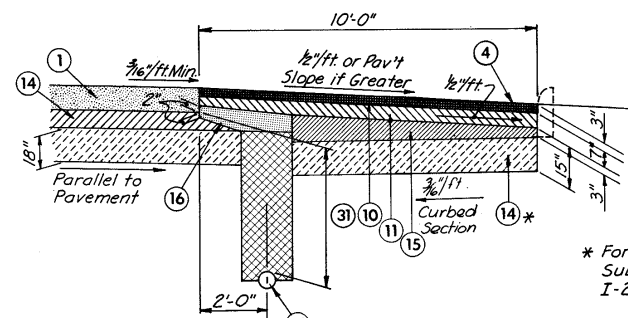
For Legend see Sheet No. 11

TYPICAL SECTIONS

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

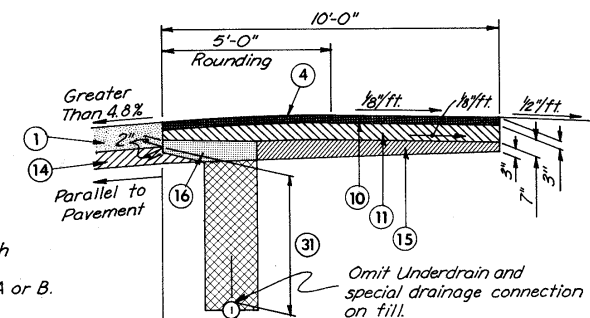
16
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



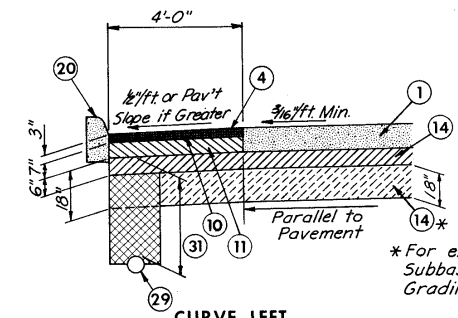
NORMAL OR CURVE RIGHT
Details Identical for Curbed Section
SHOULDER DETAIL A

* For extra depth Subbase use I-22 Grading A or B.



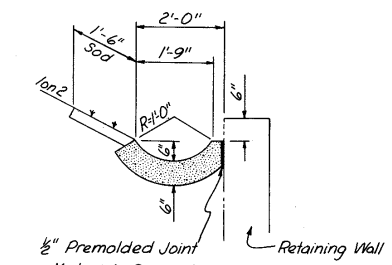
5' ROUNDING DETAIL
SHOULDER DETAIL E

Omit Underdrain and special drainage connection on fill.

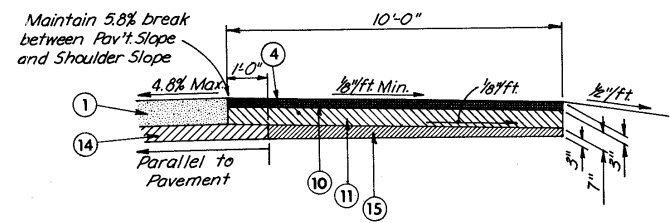


CURVE LEFT
Details Identical for Non-Curbed Section
SHOULDER DETAIL I

* For extra depth Subbase use I-22 Grading A or B.

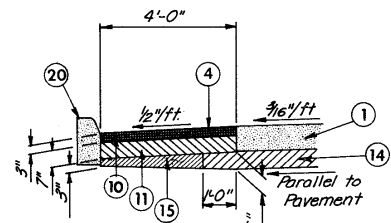


STANDARD TYPE 2
PAVED GUTTER MODIFIED, AS PER PLAN
Scale: 1/2"=1'-0"

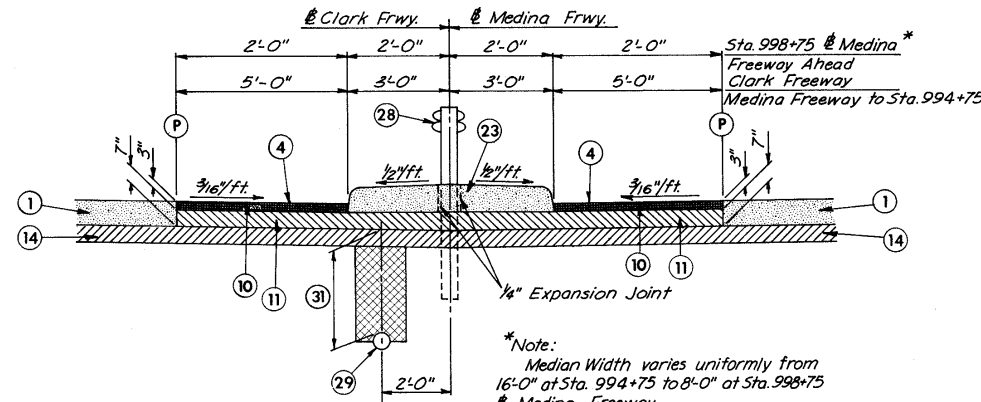


CURVE LEFT OR TRANSITION
SHOULDER DETAIL B

Maintain 5.8% break between Pav't Slope and Shoulder Slope.

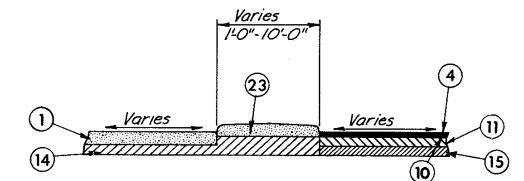


TANGENT SECTION
Details Identical for Non-Curbed Section
SHOULDER DETAIL F

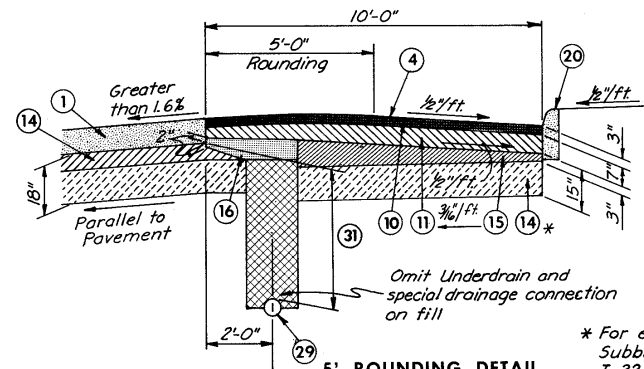


BARRIER MEDIAN
TANGENT SECTION
Scale: 3/8"=1'-0"

*Note: Median Width varies uniformly from 16'-0" at Sta. 994+75 to 8'-0" at Sta. 998+75 @ Medina Freeway.

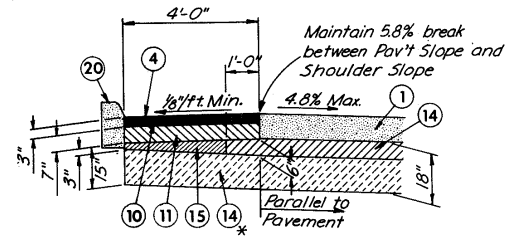


CONVERGING NOSE SECTION
Scale: 3/16"=1'-0"



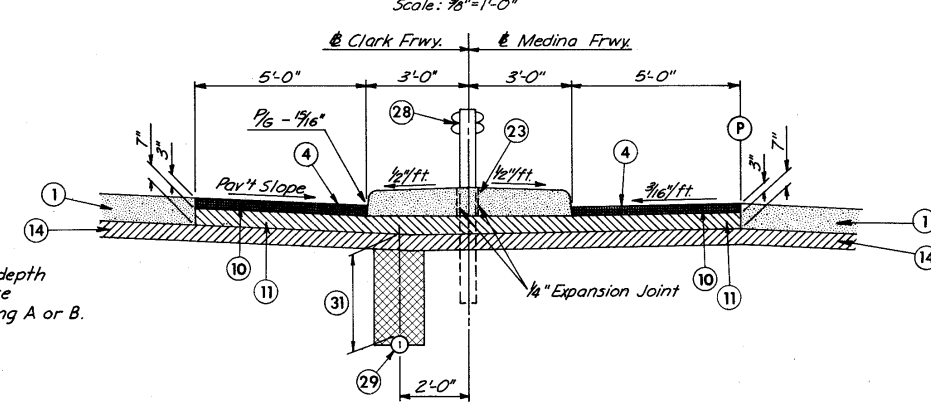
5' ROUNDING DETAIL
SHOULDER DETAIL C

* For extra depth Subbase use I-22 Grading A or B.

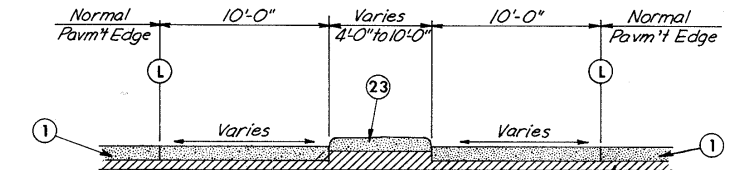


CURVE RIGHT OR TRANSITION
Details Identical for Non-Curbed Section
SHOULDER DETAIL G

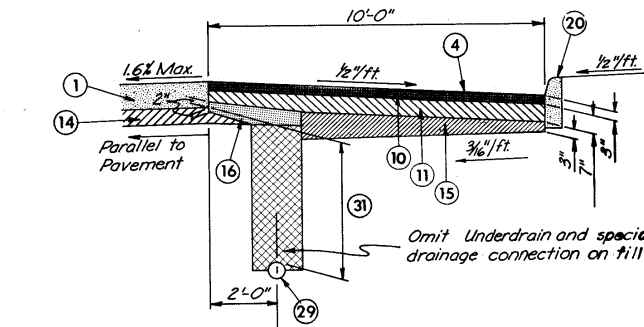
* For extra depth Subbase use I-22 Grading A or B.



BARRIER MEDIAN
SUPERELEVATED SECTION
Scale: 3/8"=1'-0"

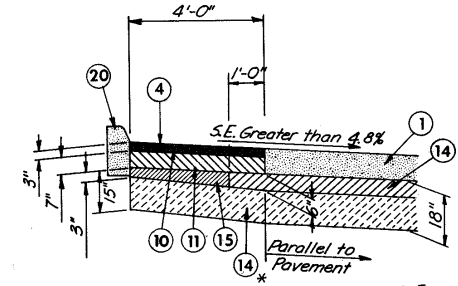


DIVERGING NOSE SECTION
Scale: 3/16"=1'-0"



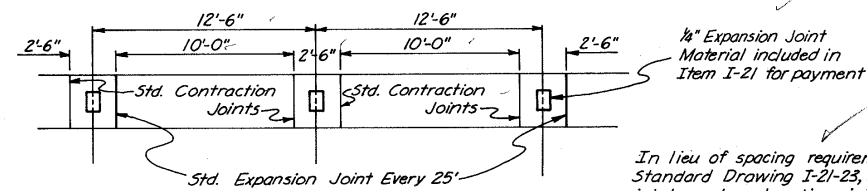
CURVE LEFT OR TRANSITION
SHOULDER DETAIL D

Omit Underdrain and special drainage connection on fill.



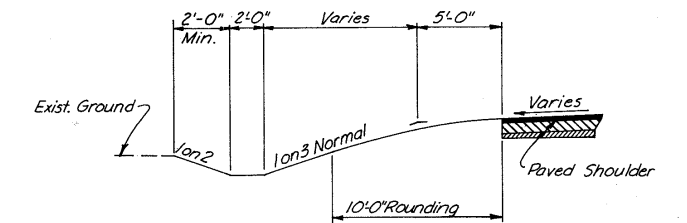
CURVE RIGHT
SHOULDER DETAIL H

* For extra depth Subbase use I-22 Grading A or B.

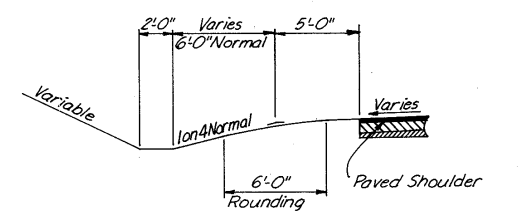


JOINT DETAIL AT GUARD RAIL POSTS
No Scale

In lieu of spacing requirements of Standard Drawing I-21-23, expansion joints and contraction joints shall be provided in Item I-21 Median Pavement, as detailed hereon, whenever guard rail is called for.



TOE OF SLOPE DITCH
Scale: 3/16"=1'-0"



SHOULDER DITCH
Scale: 3/16"=1'-0"

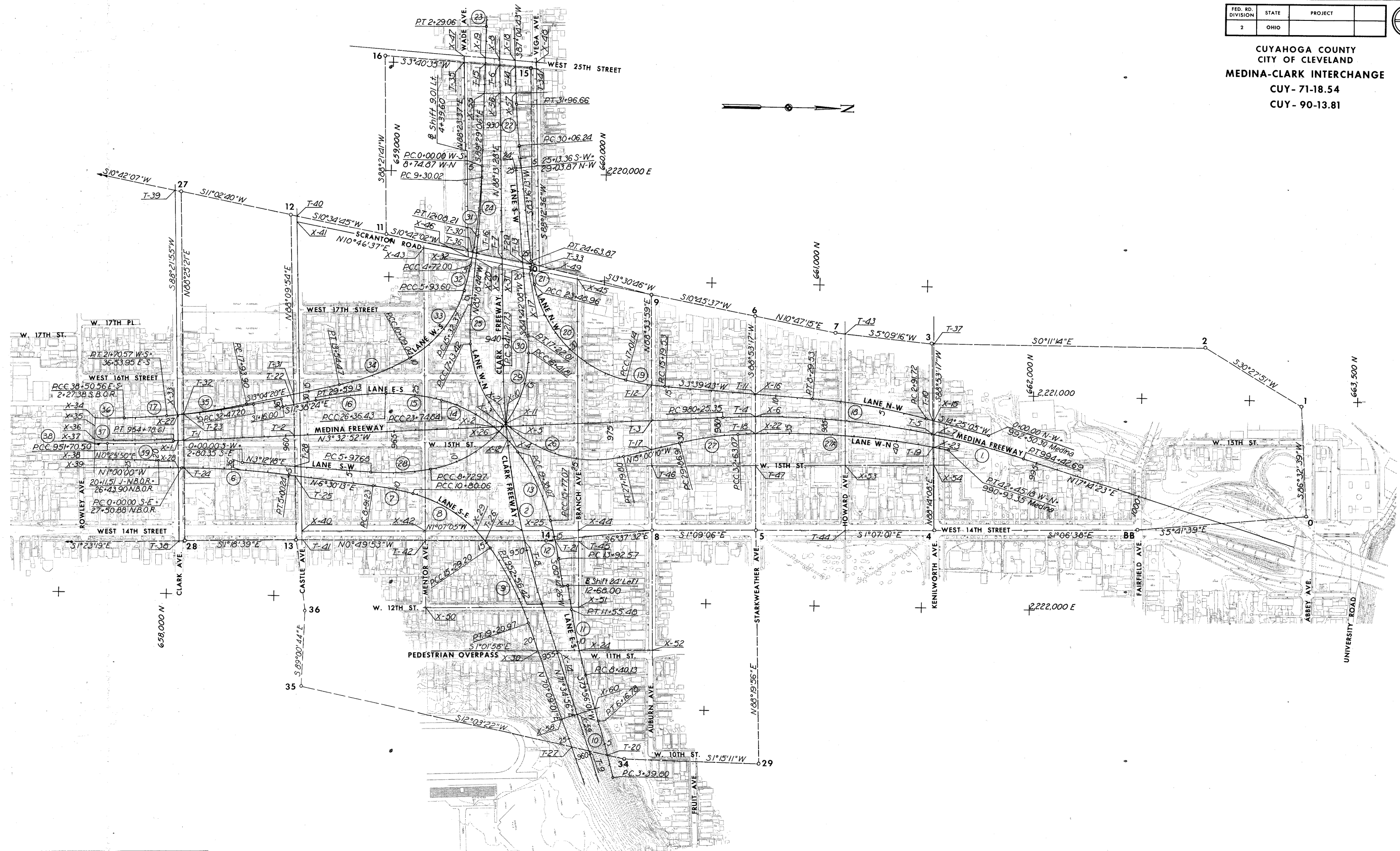
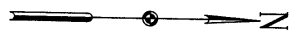
SCALE: 3/8"=1'-0" or Shown
HOWARD, NEEDLES, TAMMEN & BERGENOFF
MADE BY RHL DATE 3-27-64
TRCD WMB DATE 3-30-64
CKD NAK DATE 5-20-64
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

For Legend see Sheet No. 11

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY - 71-18.54
CUY - 90-13.81



SCALE 1"=200'
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE DIG DATE 3-25-64
TRCD DJG DATE 3-26-64
CKD NAK DATE 3-26-64
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

GEOMETRIC PLAN

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

CURVE DATA

NO.	LOCATION	STATION	P.I. COORDINATES		Δ	D	R	L	T
			NORTH	EAST					
			1	Medina					
2	Clark	946+93.10	659,558.18	2,221,473.51	16°38'32"	1°28'00"	3906.52	1134.69	571.37
6	Lane S-E	2+50.48	658,309.77	2,221,405.31	7°30'13"	1°30'00"	3819.72	500.24	250.48
7	Lane S-E	9+85.78	659,041.06	2,221,488.68	7°33'11"	4°00'00"	1432.39	188.83	94.55
8	Lane S-E	13+14.43	659,360.13	2,221,568.57	40°25'20"	9°00'00"	636.62	449.14	234.37
9	Lane S-E	17+26.32	659,610.82	2,221,919.76	15°40'16"	4°00'00"	1432.39	391.78	197.12
10	Lane E-S	4+78.30	660,047.70	2,222,694.31	1°23'06"	0°30'00"	11459.16	276.98	138.50
11	Lane E-S	9+97.96	659,903.88	2,222,194.94	6°18'25"	2°00'00"	2864.79	315.35	157.83
12	Lane E-S	14+84.89	659,797.64	2,221,718.81	5°32'06"	3°00'00"	1909.86	184.50	92.32
13	Lane E-S	17+56.50	659,725.95	2,221,456.68	21°39'36"	6°00'00"	954.93	361.00	179.43
14	Lane E-S	21+65.45	659,478.58	2,221,125.86	39°18'34"	9°00'00"	636.62	436.77	227.38
15	Lane E-S	25+06.46	659,129.85	2,221,040.62	15°41'42"	6°00'00"	954.93	261.58	131.62
16	Lane E-S	27+98.16	658,836.67	2,221,050.65	9°40'52"	3°00'00"	1909.86	322.71	161.74
17	Lane E-S	35+49.51	658,092.76	2,221,167.14	9°03'02"	1°30'00"	3819.72	603.37	302.31
18	Lane N-W	5+61.42	661,247.15	2,221,047.65	10°45'22"	2°00'00"	2864.79	537.81	269.70
19	Lane N-W	16+10.52	660,198.60	2,220,980.54	9°04'49"	5°00'00"	1145.92	181.61	90.99
20	Lane N-W	20+64.62	659,755.32	2,220,880.30	64°46'55"	10°00'00"	572.96	647.82	363.48
21	Lane N-W	24+06.46	659,664.37	2,220,469.25	5°44'45"	5°00'00"	1145.92	114.92	57.51
22	Lane N-W	31+01.49	659,582.91	2,219,778.92	3°48'30"	2°00'00"	2864.79	190.42	95.24
23	Lane W-N	1+14.55	659,432.01	2,219,210.88	2°17'26"	1°00'00"	5729.58	229.06	114.55
24	Lane W-N	10+69.18	659,423.43	2,220,165.50	4°10'22"	1°30'00"	3819.72	278.18	139.15
25	Lane W-N	16+23.08	659,378.15	2,220,717.68	9°03'10"	5°00'00"	1145.92	181.06	90.72
26	Lane W-N	24+04.02	659,437.62	2,221,496.72	100°38'15"	10°00'00"	572.96	1006.38	690.59
27	Lane W-N	31+25.42	660,496.46	2,221,212.95	11°02'47"	4°00'00"	1432.39	276.16	138.51
27A	Lane W-N	37+56.79	661,127.19	2,221,169.33	14°35'16"	1°29'07"	3857.39	982.10	493.72
28	Lane S-W	7+35.99	659,076.41	2,221,420.29	13°45'52"	5°00'00"	1145.92	275.29	138.31
29	Lane S-W	13+36.78	659,668.34	2,221,309.95	80°43'42"	10°30'00"	545.67	768.84	463.82
30	Lane S-W	16+81.92	659,657.02	2,220,806.14	4°00'36"	5°00'00"	1145.92	80.20	40.12
31	Lane W-S	2+36.54	659,423.05	2,220,207.73	9°26'24"	2°00'00"	2864.79	472.00	236.54
32	Lane W-S	5+32.86	659,371.64	2,220,500.64	6°04'47"	5°00'00"	1145.92	121.59	60.85
33	Lane W-S	8+11.97	659,294.51	2,220,769.00	43°37'16"	10°30'00"	545.67	415.44	218.37
34	Lane W-S	11+83.08	658,955.86	2,220,967.25	17°16'18"	5°00'00"	1145.92	345.44	174.04
35	Lane W-S	19+82.50	658,174.57	2,221,148.66	7°32'00"	2°00'00"	2864.79	376.67	188.61
36	S.B.O.R.	5+29.81	657,488.64	2,221,194.46	12°03'08"	2°00'00"	2864.79	602.62	302.42
37	S.B. Medina	947+84.78	657,320.72	2,221,319.10	13°56'45"	1°00'00"	5729.58	1394.59	700.76
38	N.B. Medina	944+47.79	656,986.20	2,221,308.55	10°52'24"	0°45'00"	7639.42	1449.78	727.07
39	N.B. Medina	953+24.59	657,867.33	2,221,301.24	3°04'21"	0°59'50"	5745.58	308.11	154.09

BENCH MARK DATA

B.M. NO.	DESCRIPTION	ELEVATION
7	N.E. Bolt on Hydrant, N.W. Corner of W.14th St. and Kenilworth Ave.	680.50
4	N.E. Bolt on Hydrant, S.W. Corner of W.14th St. and Starkweather Ave.	682.23
5	N.E. Bolt on Hydrant, West Side of Branch Ave. and Scranton Rd.	680.70
12	N.E. Bolt on Hydrant, S.W. Corner Castle Ave. and Scranton Rd.	684.61
13	N.E. Bolt on Hydrant, South Side of 1725 Clark Ave.	686.50
14	N.E. Bolt on Hydrant, S.E. Corner W.15th St. and Clark Ave.	685.55
15	N.E. Bolt on Hydrant, North Side of 1022 Starkweather Ave.	682.82
22	N.E. Bolt on Hydrant, East of Football Stand.	597.56
50	Drill Hole in Stone Monument, W.14th St. and Kenilworth Ave.	677.70
51	Drill Hole in Stone Monument, W.14th St. and Fairfield Ave.	675.73
52	Drill Hole in Stone Monument, Scranton Rd. and Kenilworth Ave.	676.03
53	Drill Hole in Stone Monument, W.14th St. and Starkweather Ave.	678.72
54	Drill Hole in Stone Monument, Scranton Rd. and Starkweather Ave.	678.11
55	Punch Mark in Pavement Opposite 2483 Scranton Rd.	678.37
56	Drill Hole in Stone Monument, Scranton Rd. and Auburn Ave.	676.61
57	Drill Hole in Stone Monument, W.14th St. and Auburn Ave.	679.93

TRAVERSE POINT DATA

POINT	COORDINATES	
	NORTH	EAST
BB	662,497.34	2,221,620.95
2	662,794.87	2,220,760.15
3	661,525.78	2,220,764.30
4	661,552.73	2,221,639.27
5	660,727.94	2,221,655.34
6	660,708.49	2,220,653.44
7	661,078.61	2,220,723.96
8	660,244.64	2,221,665.06
9	660,223.44	2,220,561.26
10	659,669.13	2,220,428.05
11	658,988.52	2,220,299.44
12	658,547.79	2,220,217.13
13	658,596.54	2,221,738.80
14	659,754.50	2,221,721.99
15	659,642.04	2,219,515.44
16	658,964.85	2,219,471.93
27	658,034.45	2,220,116.93
28	658,079.44	2,221,750.63
29	660,759.89	2,222,752.68
34	660,132.38	2,222,738.96
35	658,637.53	2,222,419.68
36	658,643.56	2,222,069.96

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

BASELINE INTERSECTION DATA

NO.	LOCATION	STATION	COORDINATES	
			NORTH	EAST
X-1	Medina Freeway Clark Ave.	954+97.65 4+68.91	658,039.63	2,221,282.54
X-2	Medina Freeway Lane E-S	969+63.40 21+00.04	659,502.57	2,221,191.84
X-3	Medina Freeway Lane S-W	970+07.42 12+74.39	659,546.50	2,221,189.12
X-4	Medina Freeway Clark Freeway	970+20.79 944+08.32	659,559.85	2,221,188.29
X-5	Medina Freeway Lane W-N	970+31.00 21+45.82	659,570.04	2,221,187.66
X-6	Medina Freeway Starkweather Ave.	981+80.55 5+35.85	660,717.54	2,221,119.60
X-7	Medina Freeway Kenilworth Ave.	990+11.50 4+50.03	661,543.99	2,221,189.32
X-8	Clark Freeway W. 25th St.	926+95.00 10+00.00	659,496.27	2,219,476.37
X-9	Clark Freeway Scranton Rd.	936+47.55 9+66.21	659,525.78	2,220,428.47
X-10	Clark Freeway Lane S-W	943+93.00 12+94.31	659,558.28	2,221,173.05
X-11	Clark Freeway Lane W-N	943+96.98 21+30.25	659,558.68	2,221,177.00
X-12	Clark Freeway Lane E-S	944+70.97 20+12.91	659,566.87	2,221,250.54
X-13	Clark Freeway W. 14th St.	949+04.08 10+20.96	659,642.60	2,221,676.76
X-14	Clark Freeway Ped. Overpass	954+86.06 4+44.13	659,811.26	2,222,233.49
X-15	Lane N-W Kenilworth Ave.	2+56.23 5+15.72	661,542.72	2,221,123.64
X-16	Lane N-W Starkweather Ave.	10+92.58 6+41.84	660,715.48	2,221,013.62
X-17	Lane N-W Scranton Rd.	24+20.94 11+06.36	659,663.46	2,220,454.67
X-18	Lane N-W W. 25th St.	33+99.51 10+71.62	659,567.72	2,219,481.22
X-19	Lane W-N W. 25th St.	3+75.51 9+33.25	659,429.66	2,219,471.86
X-20	Lane W-N Scranton Rd.	13+09.60 8+42.01	659,403.77	2,220,405.24
X-21	Lane W-N Lane S-W	21+27.60 12+91.72	659,556.78	2,221,175.16
X-22	Lane W-N Starkweather Ave.	33+47.64 4+56.95	660,719.07	2,221,198.48
X-23	Lane W-N Kenilworth Ave.	41+76.82 3+90.94	661,545.14	2,221,248.40
X-24	Lane E-S Ped. Overpass	9+59.14 3+38.36	659,917.01	2,222,231.59
X-25	Lane E-S W. 14th St.	15+31.36 11+63.20	659,784.81	2,221,673.98
X-26	Lane E-S Lane S-W	20+67.54 12+44.09	659,527.49	2,221,212.70
X-27	Lane E-S Clark Ave.	36+04.35 5+89.76	658,036.18	2,221,161.75
X-28	N.B.O.R. Clark Ave.	27+34.82 3+41.44	658,043.27	2,221,409.96
X-29	Lane S-E W. 14th St.	14+26.50 8+08.49	659,430.16	2,221,680.90
X-30	Lane S-E Ped. Overpass	20+59.06 5+30.75	659,724.65	2,222,235.05

BASELINE INTERSECTION DATA

NO.	LOCATION	STATION	COORDINATES	
			NORTH	EAST
X-31	Lane S-W Scranton Rd.	20+42.46 10+65.92	659,623.73	2,220,447.11
X-32	Lane W-S Scranton Rd.	4+33.12 8+26.59	659,388.62	2,220,402.36
X-33	Lane W-S Clark Ave.	21+20.95 5+89.87	658,036.18	2,221,161.64
X-34	S.B.O.R. Begin Project	3+61.27	657,656.90	2,221,183.72
X-35	S.B.O.R. - M Begin Project	0+00.00	657,656.85	2,221,219.71
X-36	S.B. Medina Begin Project	951+15.00	657,656.75	2,221,286.71
X-37	N.B. Medina Begin Project	951+13.98	657,656.72	2,221,302.78
X-38	J. - N.B.O.R. Begin Project	17+16.38	657,656.61	2,221,373.34
X-39	N.B.O.R. Begin Project	23+48.04	657,656.54	2,221,416.71
X-40	Castle Ave. W. 14th St.	0+41.75 0+00.00	658,621.83	2,221,696.68
X-41	Castle Ave. Scranton Rd.	14+91.34 0+00.00	658,576.61	2,220,247.80
X-42	Mentor Ave. W. 14th St.	13+26.12 5+71.30	659,193.02	2,221,685.53
X-43	Mentor Ave. Scranton Rd.	0+00.00 5+98.59	659,164.64	2,220,359.72
X-44	Branch Ave. W. 14th St.	11+76.27 12+79.96	659,901.54	2,221,671.70
X-45	Branch Ave. Scranton Rd.	0+00.00 13+25.32	659,878.76	2,220,495.65
X-46	Wade Ave. Scranton Rd.	9+33.24 8+01.23	659,363.71	2,220,397.62
X-47	Wade Ave. W. 25th St.	0+00.00 8+31.89	659,328.54	2,219,465.00
X-48	Vega Ave. W. 25th St.	9+73.55 11+70.27	659,666.15	2,219,487.89
X-49	Vega Ave. Scranton Rd.	0+00.00 11+40.06	659,696.56	2,220,460.97
X-50	Mentor Ave. W. 12th St.	16+81.17 0+00.00	659,200.49	2,222,040.51
X-51	Branch Ave. W. 12th St.	15+31.42 7+08.43	659,908.79	2,222,026.78
X-52	Auburn Ave. Ped. Overpass	16+64.53 0+00.00	660,255.31	2,222,225.49
X-53	Howard Ave. W. 15th St.	3+08.38 8+95.88	661,134.42	2,221,338.98
X-54	Kenilworth Ave. W. 15th St.	3+08.22 13+08.28	661,546.74	2,221,331.10
X-55	Lane W-N Begin Project	5+37.21	659,428.21	2,219,633.55
X-56	Clark Freeway Begin Project	928+50.00	659,501.07	2,219,631.30
X-57	Lane N-W Begin Project	32+51.54	659,575.26	2,219,628.99
X-58	Lane S-E End Project	24+02.69	659,841.33	2,222,558.27
X-59	Clark Freeway End Project	958+00.00	659,910.44	2,222,531.35
X-60	Lane E-S End Project	6+76.44	659,992.86	2,222,503.90

TRAVERSE INTERSECTION DATA

NO.	LOCATION	STATION	COORDINATES	
			NORTH	EAST
T-1	Medina Freeway Line 27-28	955+24.58 11+64.38	658,066.51	2,221,280.88
T-2	Medina Freeway Line 12-13	960+39.91 10+32.39	658,580.85	2,221,248.99
T-3	Medina Freeway Line 8-9	976+96.91 5+85.30	660,234.68	2,221,146.45
T-4	Medina Freeway Line 5-6	981+80.55 5+35.85	660,717.54	2,221,119.60
T-5	Medina Freeway Line 3-4	990+06.25 4+24.24	661,538.84	2,221,188.33
T-6	Clark Freeway Line 15-16	927+24.78 1+45.14	659,497.19	2,219,506.14
T-7	Clark Freeway Line 10-11	936+19.88 1+46.76	659,524.92	2,220,400.80
T-8	Clark Freeway Line 13-14	949+52.12 10+57.47	659,653.89	2,221,723.45
T-9	Clark Freeway Line 34-35	959+81.78 1+68.22	659,967.87	2,222,703.82
T-10	Lane N-W Line 3-4	2+62.35 3+57.99	661,536.80	2,221,122.12
T-11	Lane N-W Line 5-6	10+92.58 6+41.84	660,715.48	2,221,013.62
T-12	Lane N-W Line 8-9	15+77.67 4+19.99	660,231.50	2,220,981.17
T-13	Lane N-W Line 10-11	24+49.70 4+09.92	659,659.38	2,220,426.21
T-14	Lane N-W Line 15-16	33+69.92 0+72.96	659,569.23	2,219,510.77
T-15	Lane W-N Line 15-16	4+05.43 2+13.08	659,429.40	2,219,501.78
T-16	Lane W-N Line 10-11	12+82.60 2+67.81	659,405.98	2,220,378.32
T-17	Lane W-N Line 8-9	28+57.10 7+21.28	660,237.29	2,221,282.41
T-18	Lane W-N Line 5-6	33+47.64 4+56.95	660,719.07	2,221,198.48
T-19	Lane W-N Line 3-4	41+72.28 4+83.58	661,540.66	2,221,247.64
T-20	Lane E-S Line 34-35	4+49.49 0+79.64	660,054.50	2,222,722.32
T-21	Lane E-S Line 8-14	14+86.87 4+32.65	659,795.01	2,221,717.29
T-22	Lane E-S Line 12-13	30+63.32 8+87.62	658,576.21	2,221,104.30
T-23	Lane E-S Line 27-28	35+77.22 10+42.14	658,063.14	2,221,158.69
T-24	Lane S-E Line 27-28	0+10.72 12+93.07	658,070.05	2,221,409.51
T-25	Lane S-E Line 12-13	5+28.65 12+20.40	658,586.87	2,221,436.90
T-26	Lane S-E Line 13-14	14+87.37 8+74.45	659,470.90	2,221,726.11
T-27	Lane S-E Line 34-35	25+39.23 2+50.21	659,887.69	2,222,686.69

TRAVERSE INTERSECTION DATA

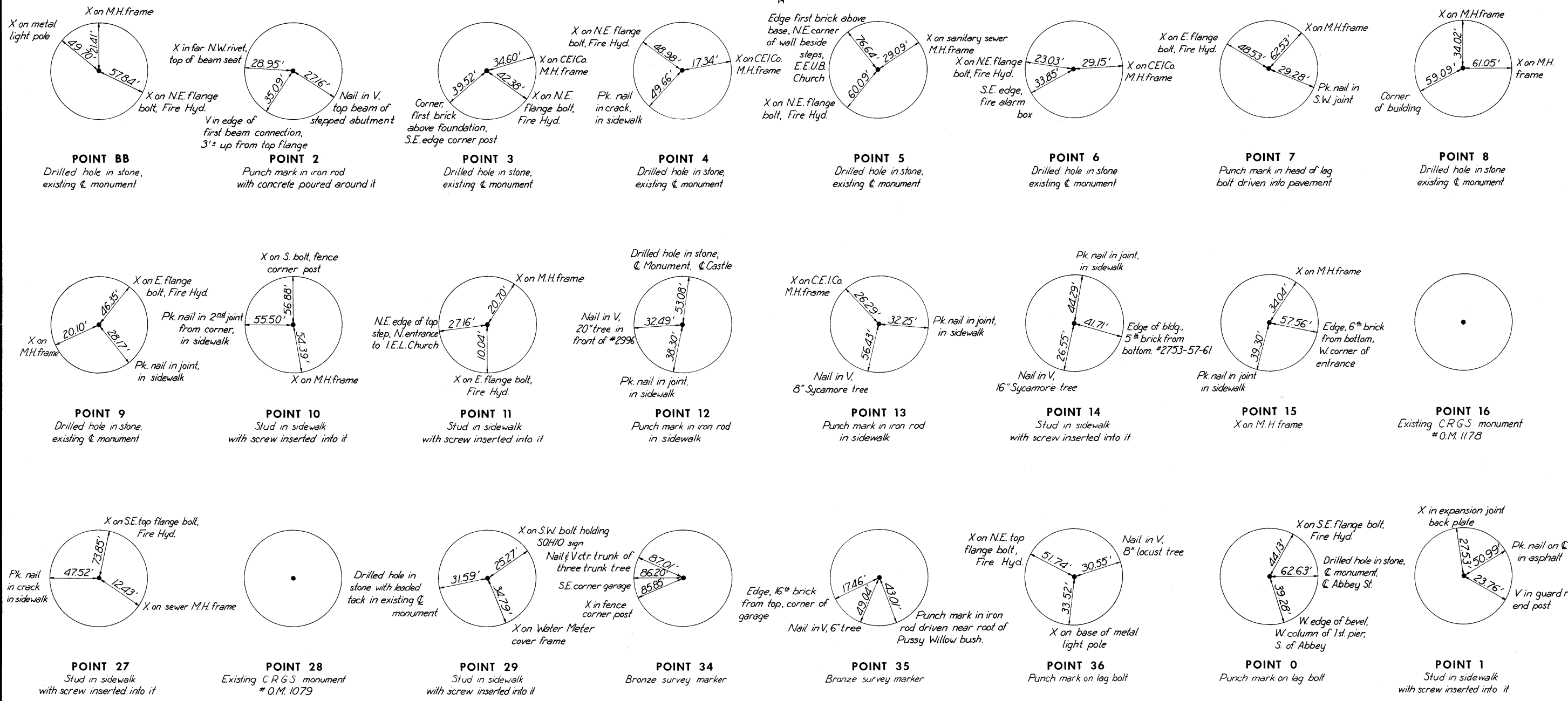
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			NORTH	EAST
T-28	Lane S-W Line 12-13	2+44.26 11+76.27	658,585.46	2,221,392.80
T-29	Lane S-W Line 10-11	20+70.72 0+48.86	659,621.12	2,220,418.98
T-30	Lane W-S Line 10-11	4+06.26 2+81.24	659,392.78	2,220,375.83
T-31	Lane W-S Line 12-13	15+71.78 8+39.06	658,574.66	2,221,055.76
T-32	Lane W-S Line 27-28	20+93.81 10+41.89	658,063.13	2,221,158.43
T-33	Vega Ave. Line 9-10	0+26.54 5+42.73	659,695.73	2,220,434.44
T-34	Vega Ave. Line 16-15 Ext.	9+44.38 0+25.08	659,667.06	2,219,517.05
T-35	Wade Ave. Line 15-16	0+30.44 3+13.29	659,329.39	2,219,495.36
T-36	Wade Ave. Line 10-11	9+05.80 3+11.61	659,362.94	2,220,370.19
T-37	Kenilworth Ave. Line 2-3	8+75.17 12+59.13	661,535.74	2,220,764.26
T-38	Clark Ave. Line 28-34	0+00.00 0+26.44	658,053.01	2,221,751.27
T-39	Clark Ave. Line 27-62	16+40.34 0+28.74	658,006.21	2,220,111.60
T-40	Castle Ave. Line 11-12	15+16.78 4+19.84	658,575.82	2,220,222.36
T-41	Castle Ave. Line 13-14	0+00.00 0+26.60	658,623.14	2,221,738.41
T-42	Mentor Ave. Line 13-14	13+70.72 5+97.48	659,193.96	2,221,730.13
T-43	Howard Ave. Line 3-7	9+19.56 4+44.56	661,122.54	2,220,727.92
T-44	Howard Ave. Line 4-5	0+00.00 4+12.38	661,140.42	2,221,647.30
T-45	Branch Ave. Line 13-14 Ext.	12+24.42 13+06.11	659,902.47	2,221,719.84
T-46	W. 15th St. Line 8-9	0+00.00 7+95.79	660,238.72	2,221,356.90
T-47	W. 15th St. Line 5-6	4+83.34 3+08.40	660,721.95	2,221,347.00

SCALE: None
 MADE: DUG DATE: 4-2-64
 TRCD: DATE: _____
 CKD: RHL DATE: 4-3-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

GEOMETRIC DATA

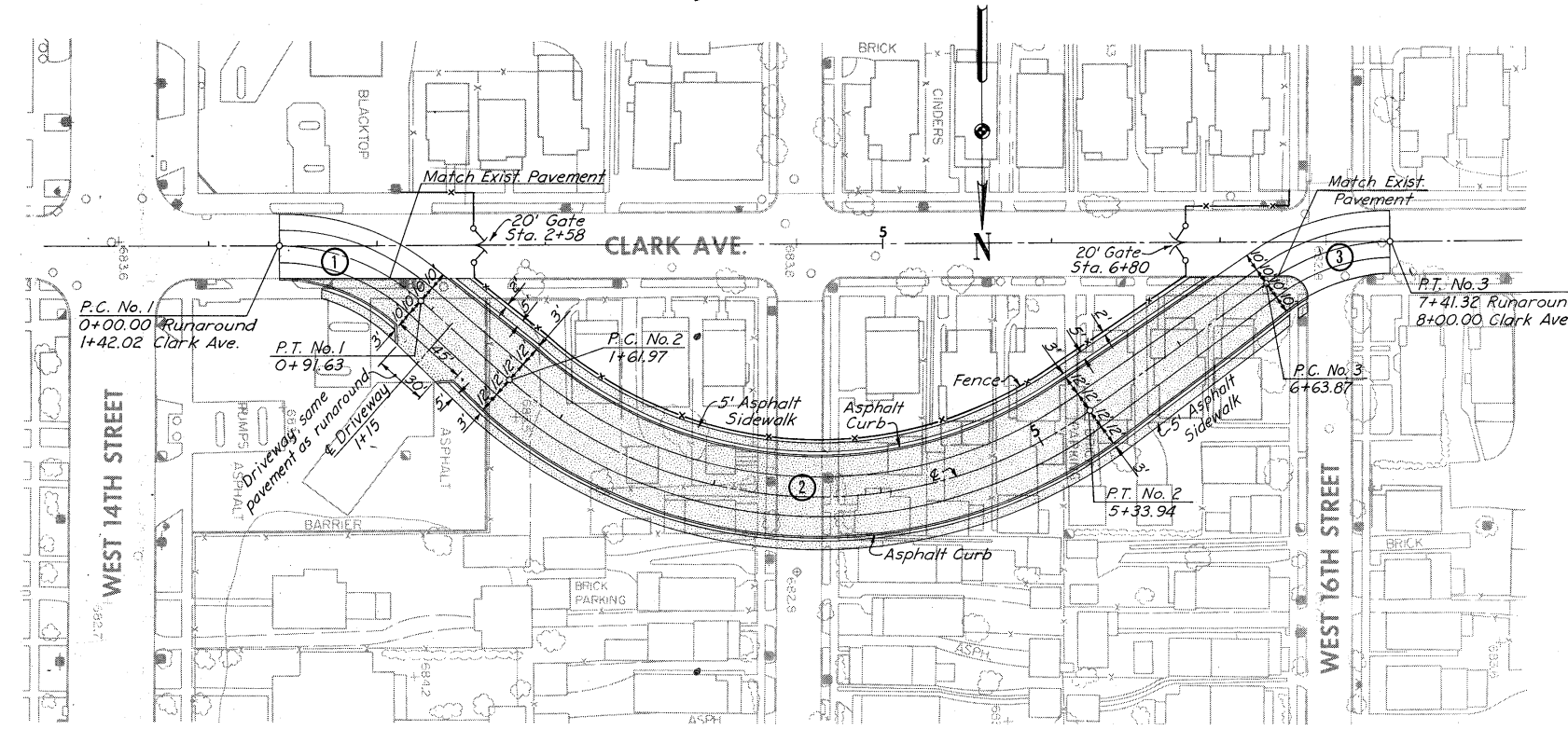
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
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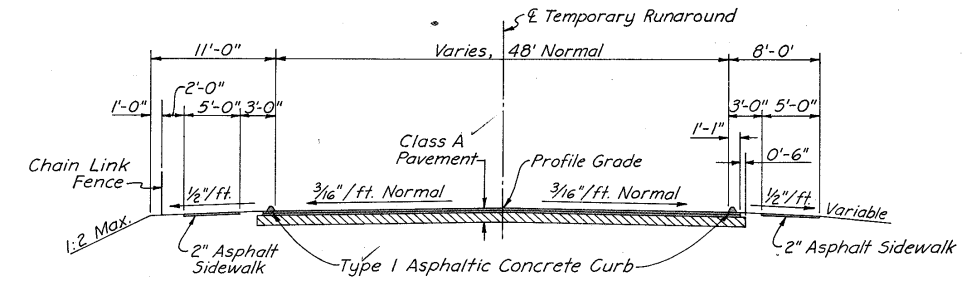


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TRCD. DATE
CKD. RHL DATE 3-19-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

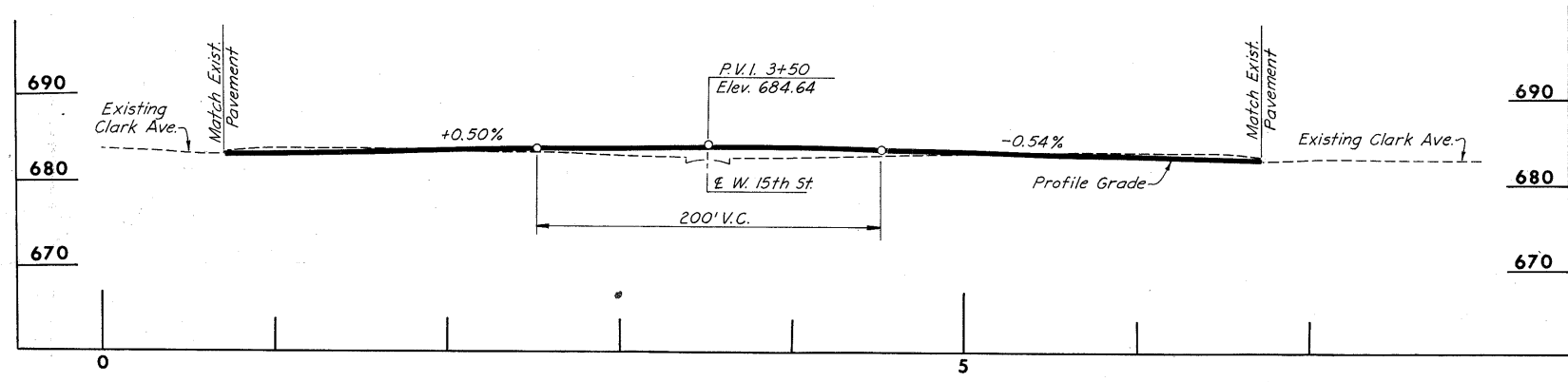
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
 CUY- 71-18.54
 CUY- 90-13.81



PLAN
Scale: 1" = 50'



TYPICAL SECTION
Scale: 1/8" = 1'-0"



PROFILE

CURVE DATA

NO.	STATION	P. I. COORDINATES		Δ	R	L	T
		NORTH	EAST				
1	0+47.98	658,047.59	2,221,561.34	42°00'00"	125'	91.63'	47.98'
2	3+82.68	658,267.16	2,221,303.03	77°30'00"	275'	371.97'	220.71'
3	7+03.88	658,031.32	2,220,991.59	35°30'00"	125'	77.45'	40.01'

- Runaround Notes:**
- ✓ The shaded portion of the runarounds indicates proposed construction. The unshaded portion indicates existing pavement to be used as part of the runaround.
 - ✓ The cross slopes on the runarounds will vary at each end to match the existing pavement at the gutter line.
 - ✓ The lanes on the runarounds will be indicated by 6" wide painted lane lines. These lines will be white beaded stripes applied in lengths of 15 feet and separated by gaps of 25 feet except for the centerline which will be solid.
 - ✓ The fencing and gates on the runarounds may be reused at the discretion of the Engineer.
 - ✓ One lump sum payment shall be for all three runarounds. Item 5-15, as per plan.
 - ✓ The Type I Asphaltic Concrete Curb shall be included in the Lump Sum Price Bid per each Item 5-15 Temporary Run-around Road, as per plan.

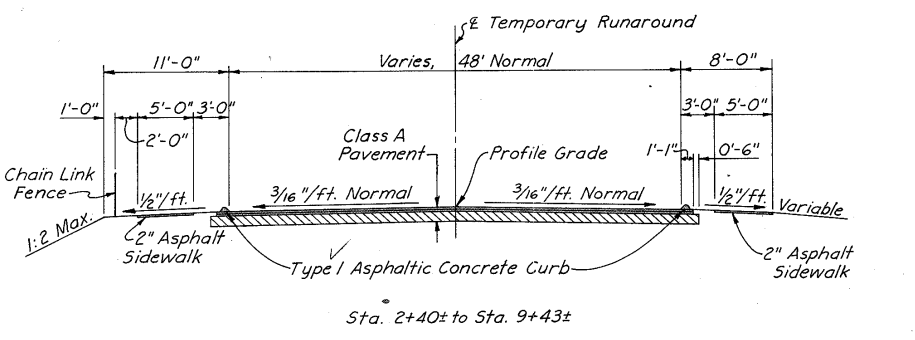
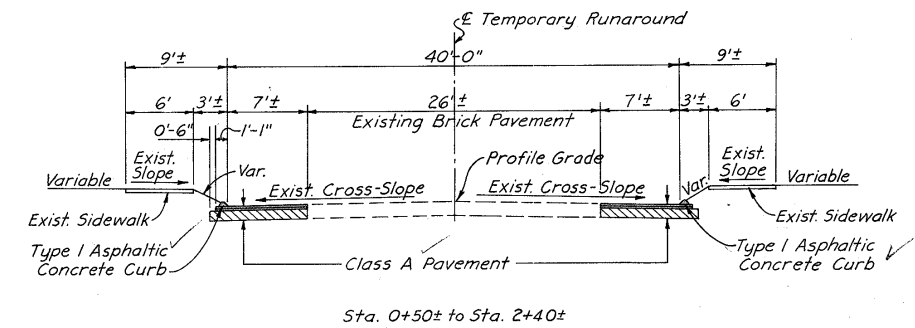
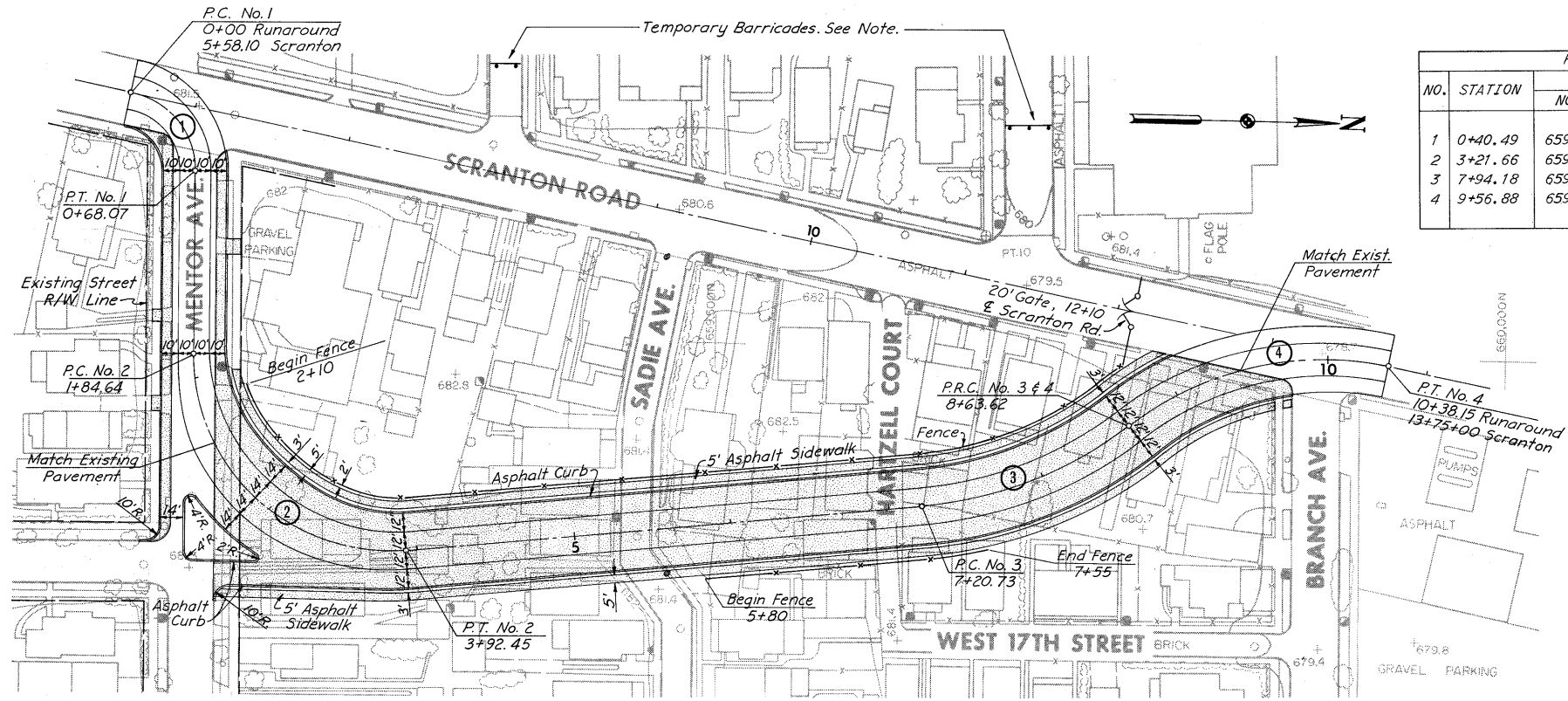
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 TRCD: RHP DATE: 7/14/64
 CKD: SNM DATE: 7/15/64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

CLARK AVENUE
TEMPORARY RUNAROUND

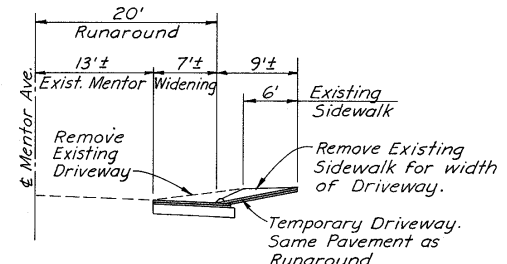
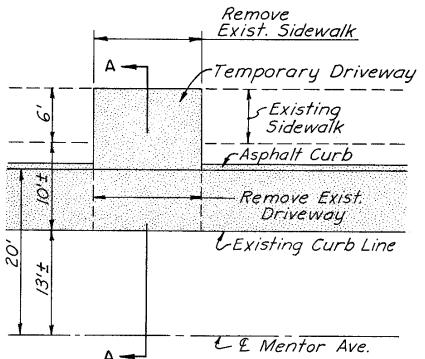
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

CURVE DATA

NO.	STATION	P.I. COORDINATES		Δ	R	L	T
		NORTH	SOUTH				
1	0+40.49	659,164.64	2,220,359.72	77°59'51"	50.00'	68.07'	40.49'
2	3+21.66	659,170.92	2,220,653.63	95°15'00"	125.00'	207.80'	137.01'
3	7+94.18	659,706.39	2,220,592.85	32°44'51"	250.00'	142.89'	73.45'
4	9+56.88	659,835.54	2,220,487.43	50°00'00"	200.00'	174.53'	93.26'

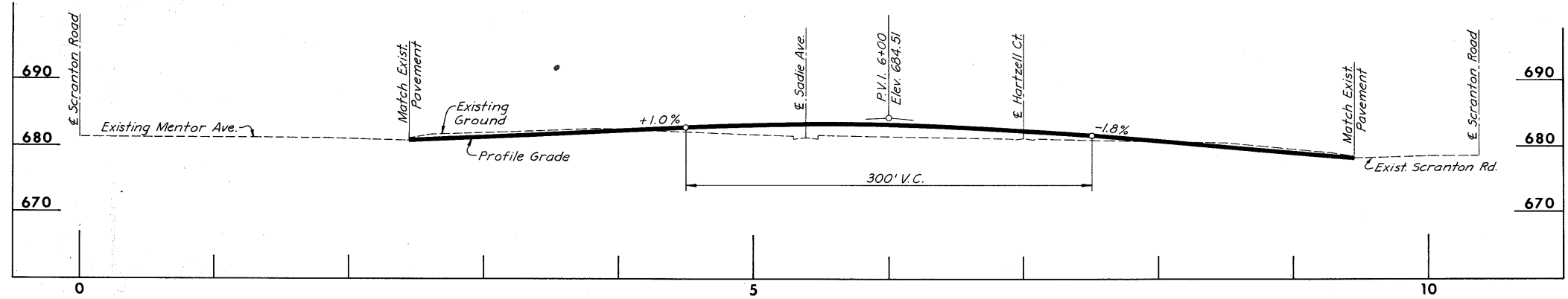


PLAN
Scale: 1" = 50'



TYPICAL DRIVEWAY DETAILS

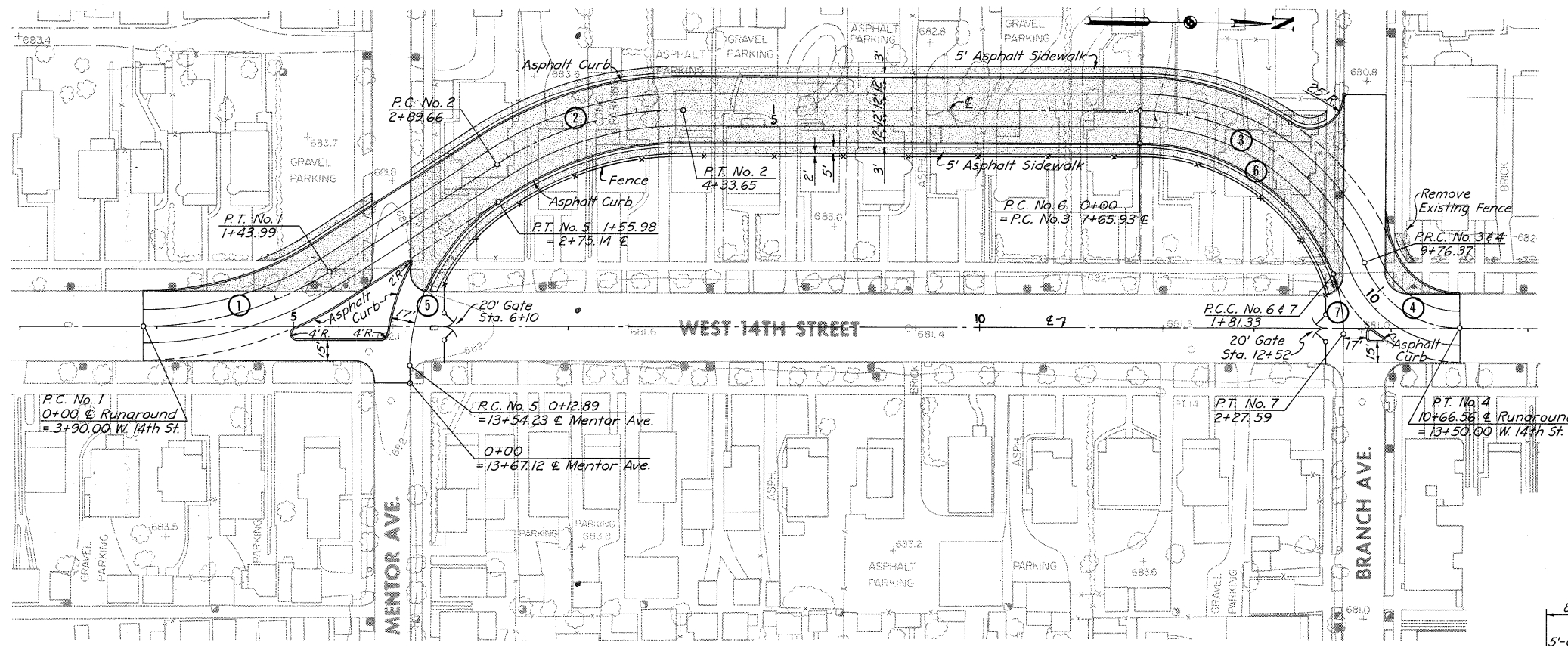
TYPICAL SECTIONS
Scale: 1/8" = 1'-0"



PROFILE

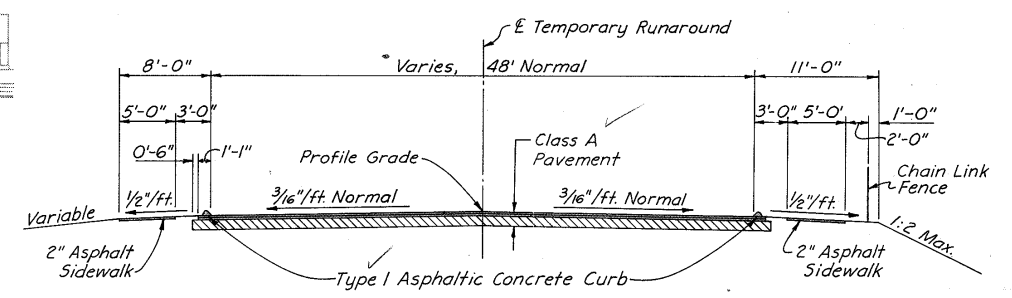
Notes:
For Runaround Notes see Sheet No. 21
Wade Ave. and Vega Ave. are to be temporarily barricaded during construction on Scranton Road. The location of the barricade shall be designated by the Engineer. All costs shall be included in Item 1-3, Maintaining Traffic.

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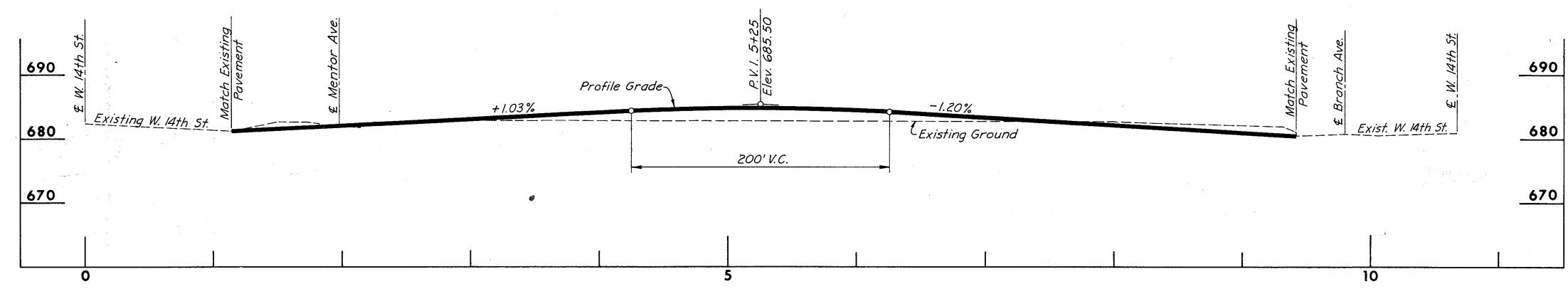


CURVE DATA

NO.	STATION	P. I. COORDINATES		Δ	R	L	T
		NORTH	EAST				
1	0+74.05	659,085.79	2,221,687.62	33°00'00"	250.00'	143.99'	74.05'
2	3+63.71	659,329.00	2,221,522.84	33°00'00"	250.00'	143.99'	74.05'
3	8+85.98	659,855.28	2,221,512.57	68°53'59"	175.00'	210.44'	120.05'
4	10+27.83	659,920.13	2,221,671.34	68°53'59"	75.00'	90.19'	51.45'
5	0+90.40	659,204.96	2,221,635.87	54°39'22"	150.00'	143.09'	77.51'
6	1+03.40	659,839.10	2,221,536.89	68°48'21"	151.00'	181.33'	103.40'
7	2+04.73	659,887.24	2,221,654.20	21°12'09"	125.00'	46.26'	23.40'

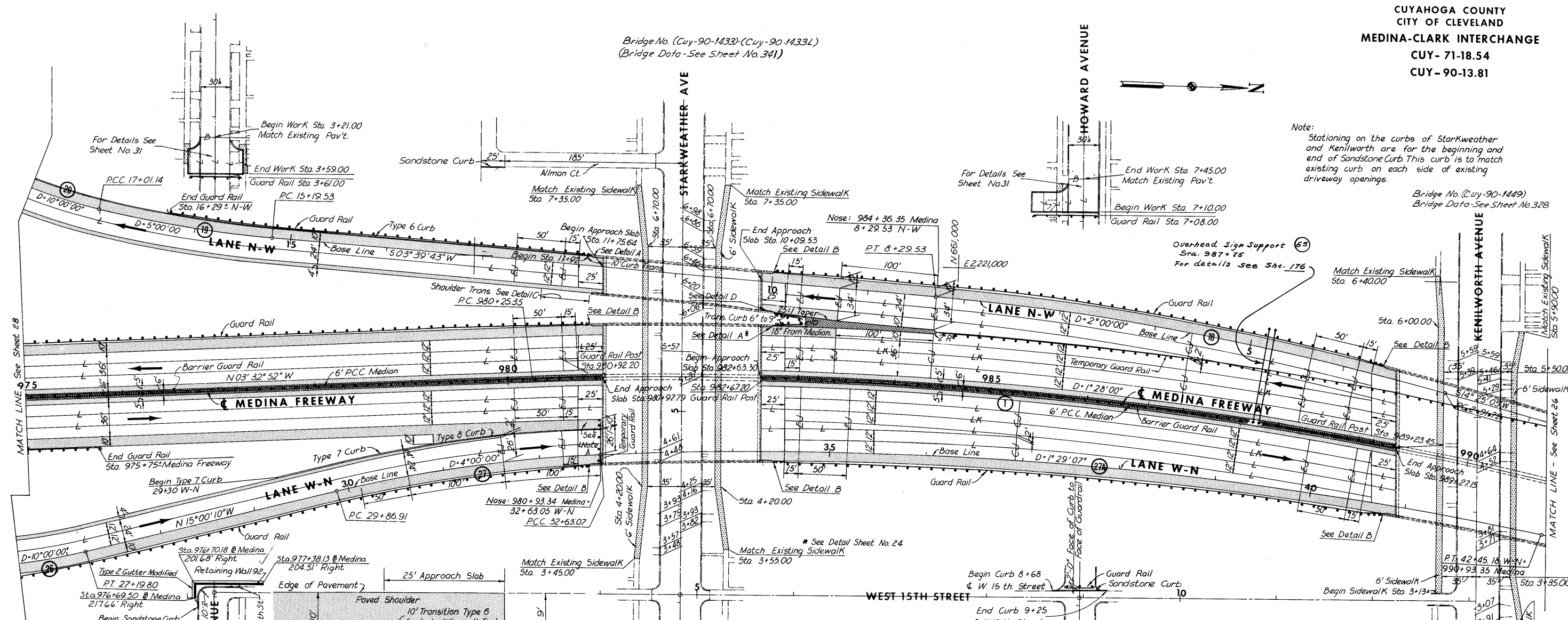


Note:
For Runaround Notes see Sheet No. 21



CUYAHOGA COUNTY
CITY OF CLEVELAND
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Bridge No. (Cuy-90-1433)-(Cuy-90-1433L)
(Bridge Data-See Sheet No.341)



Note:
Stationing on the curbs of Starweather and Kenilworth are for the beginning and end of Sandstone Curb. This curb is to match existing curb on each side of existing driveway openings.

Bridge No. (Cuy-90-1449)
Bridge Data-See Sheet No.328

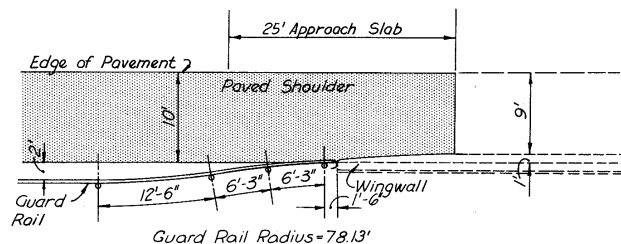
MATCH LINE - See Sheet 28

MATCH LINE - See Sheet 26

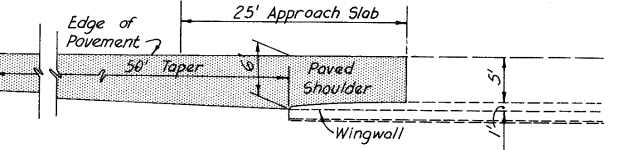
LEGEND

- B-21 Paved Shoulder
- I-13 4 1/2" P.C.C. Sidewalk
- I-21 P.C.C. Median Pavement
- T-35 Asphaltic Concrete
- T-70 7" P.C.C. Pavement
- 8" P.C.C. Pavement
- (00) Curve Number, See Sheet for Data
- L Standard Longitudinal Joint
- LK Standard Key Joint Without Tie Bars
- CJ Standard Contraction Joint
- EJ Standard Expansion Joint
- E Expansion Joint Without Dowels (Located on radial line, 2' Min. Length)
- B Butt Joint Without Tie Bars

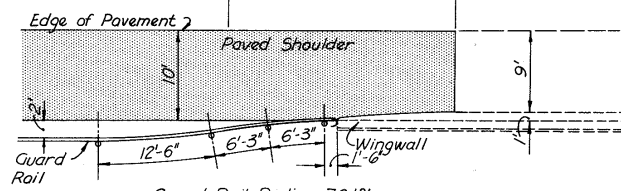
DETAIL A
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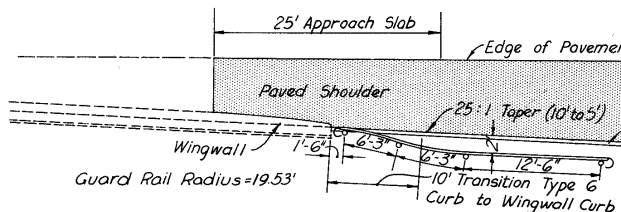
DETAIL C
Scale 1"=10'-0"



DETAIL B
Scale 1"=10'-0"



DETAIL D
Scale 1"=10'-0"



Note A:
T-31 Surface Treatment
Type 8 Integral Curb

SCALE 1"=50'
MADE CPB DATE 5-13-64
TRCD DATE 5-28-64
CKD RHL DATE 5-28-64
HOWARD, NEEDLES, TAMMEN & BERGENOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

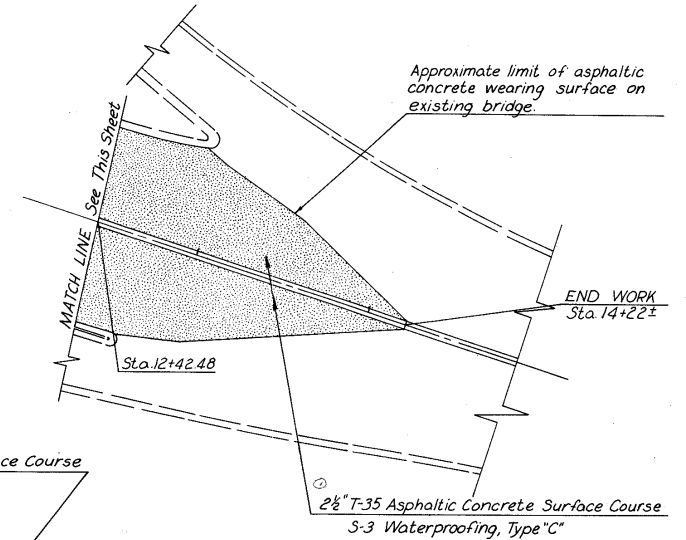
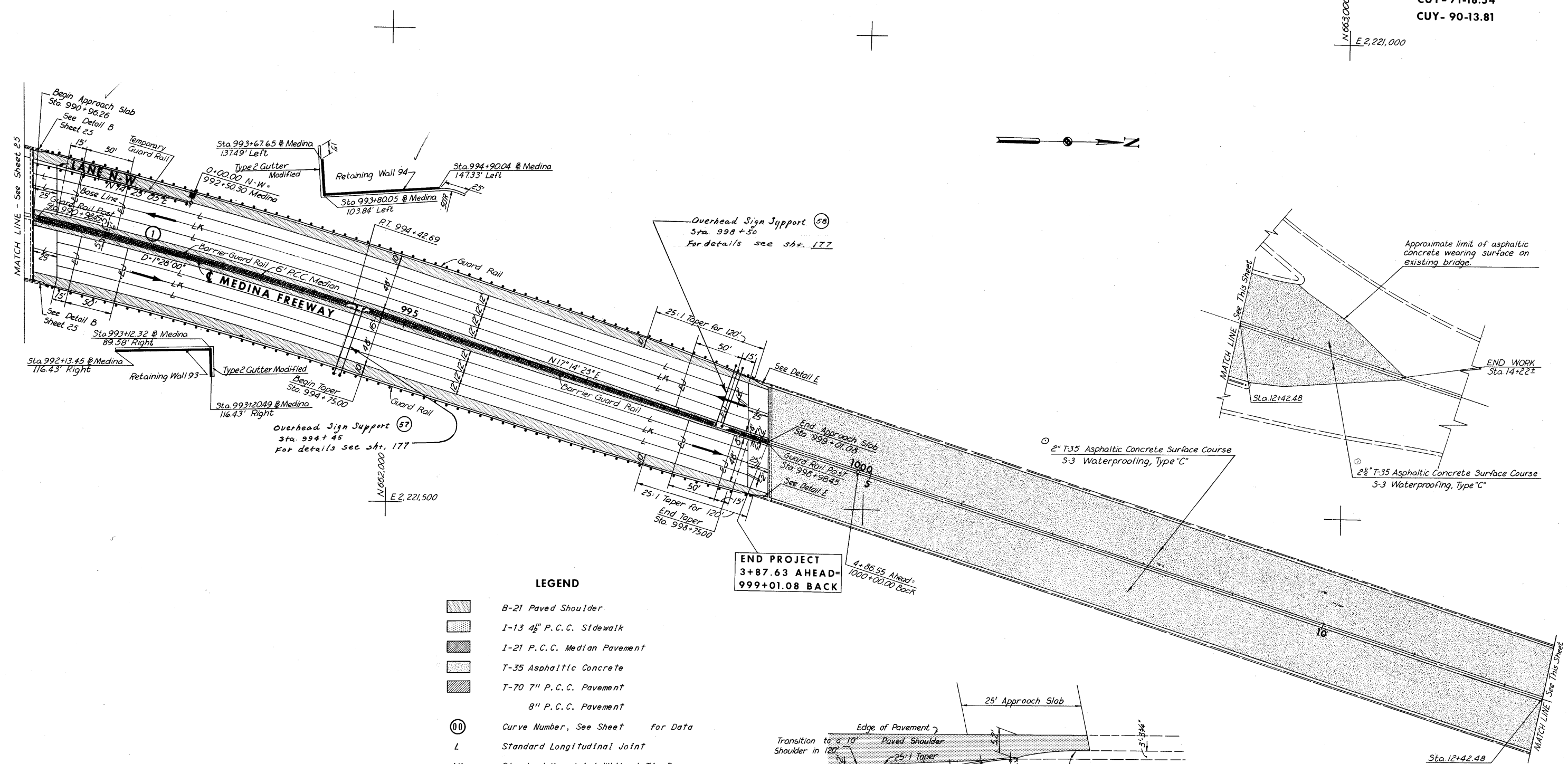
PAVEMENT PLAN

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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478

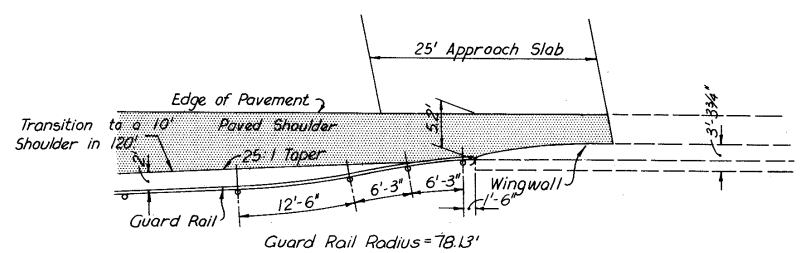
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

N 663,000
E 2,221,000



END PROJECT
3+87.63 AHEAD=
999+01.08 BACK

- LEGEND**
- B-21 Paved Shoulder
 - I-13 4 1/2" P.C.C. Sidewalk
 - I-21 P.C.C. Median Pavement
 - T-35 Asphaltic Concrete
 - T-70 7" P.C.C. Pavement
 - 8" P.C.C. Pavement
 - (00) Curve Number, See Sheet for Data
 - L Standard Longitudinal Joint
 - LK Standard Key Joint Without Tie Bars
 - CJ Standard Contraction Joint
 - EJ Standard Expansion Joint
 - E Expansion Joint Without Dowels (Located on radial line, 2' Min. Length)
 - B Butt Joint Without Tie Bars



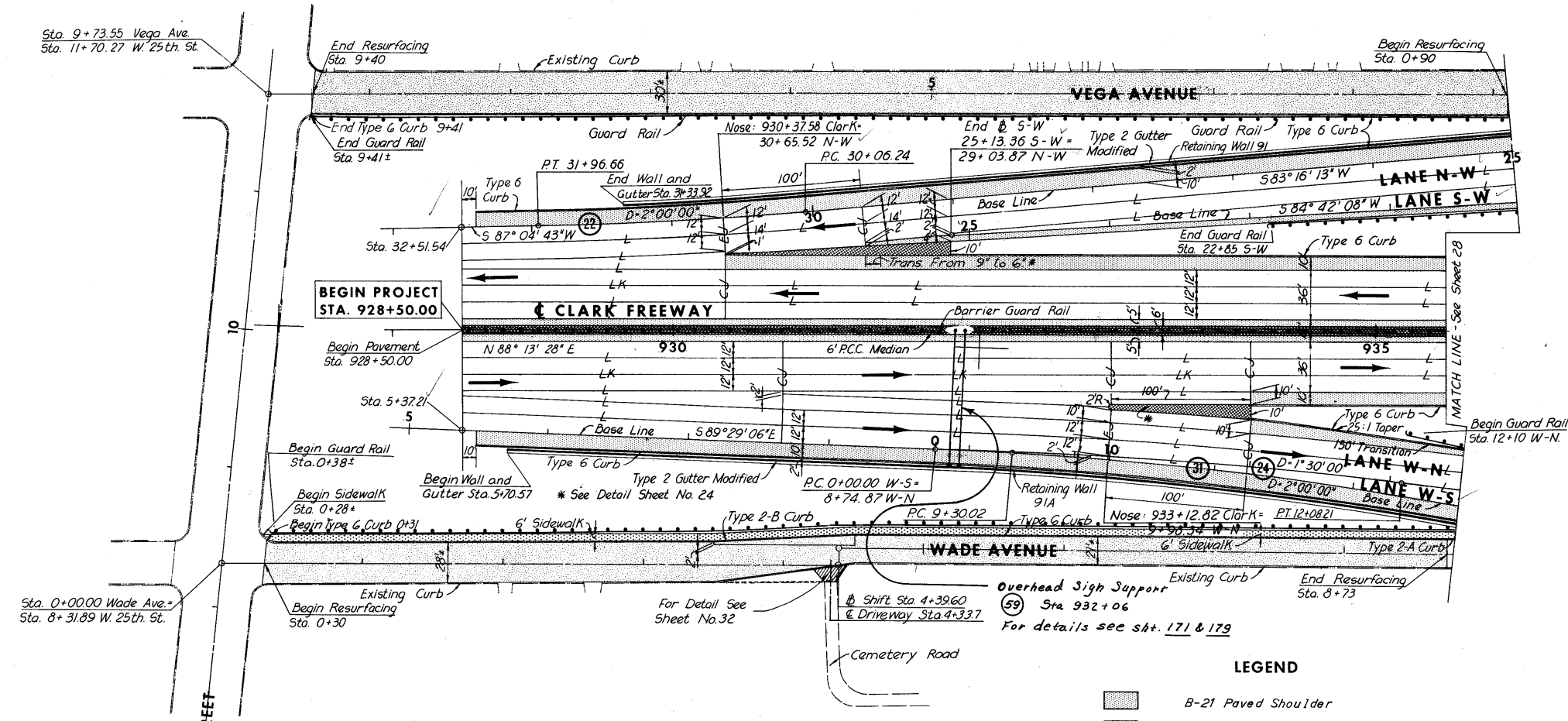
Thickness shown is designed "thickness" as described in Section T-35.01.

SCALE 1" = 50'
MADE CPB DATE 5-15-64
TRCD DATE 5-28-64
CKD RHL DATE 5-28-64

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
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PAVEMENT PLAN

CUYAHOGA COUNTY
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MEDINA-CLARK INTERCHANGE
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CUY-90-13.81



Note:
For details of Wade and Vega
resurfacing see sheet No.35

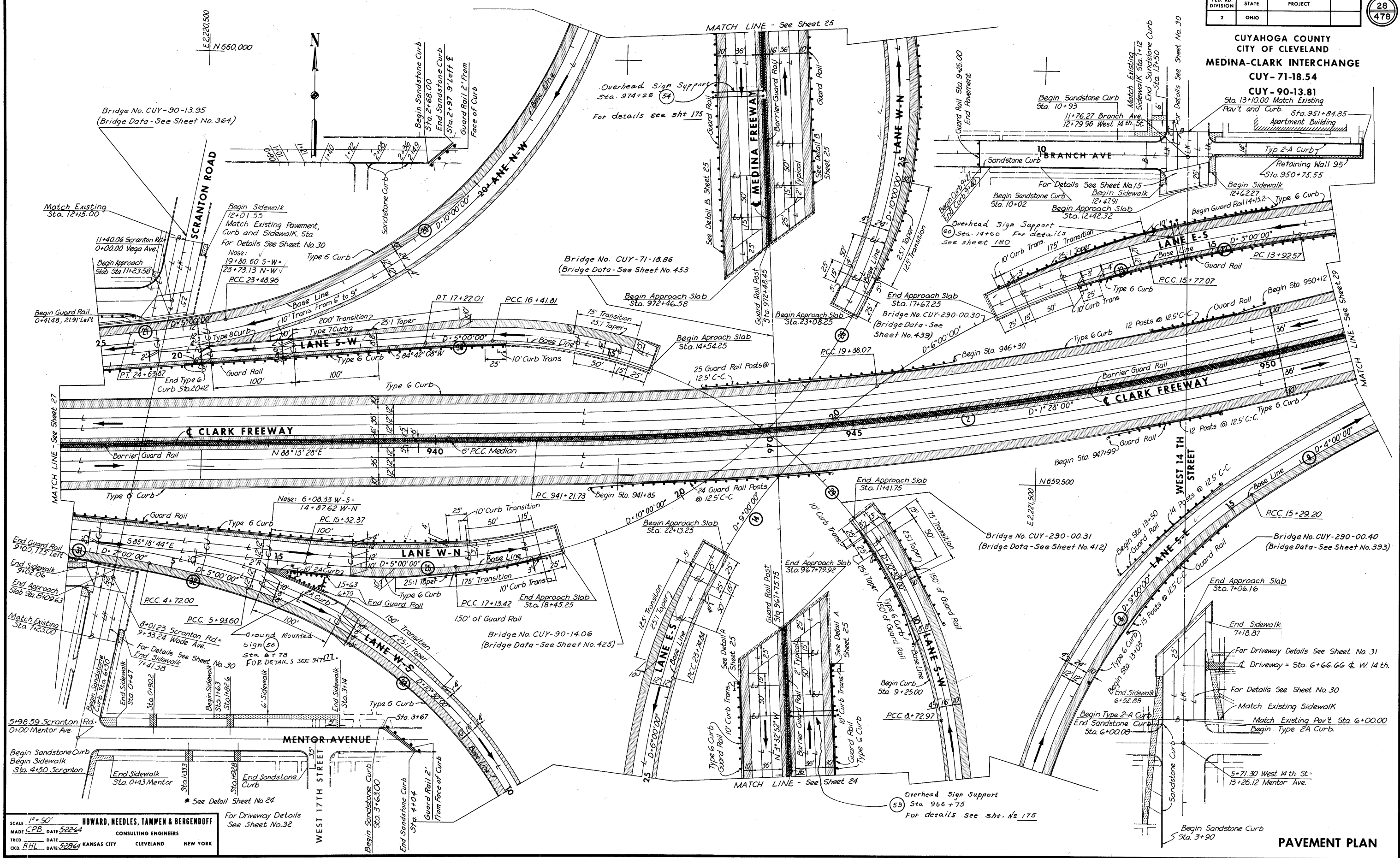
LEGEND

- B-21 Paved Shoulder
- I-13 4 1/2" P.C.C. Sidewalk
- I-21 P.C.C. Median Pavement
- T-35 Asphaltic Concrete
- T-70 7" P.C.C. Pavement
- 8" P.C.C. Pavement
- Curve Number, See Sheet for Data
- Standard Longitudinal Joint
- Standard Key Joint Without Tie Bars
- Standard Contraction Joint
- Standard Expansion Joint
- Expansion Joint Without Dowels (Located on radial line, 2' Min. Length)
- Butt Joint Without Tie Bars

SCALE 1" = 50'
MADE CPB DATE 5-19-64
TRCD _____ DATE _____
CKD RHL DATE 5-28-64 KANSAS CITY CLEVELAND NEW YORK
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

PAVEMENT PLAN

**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81**



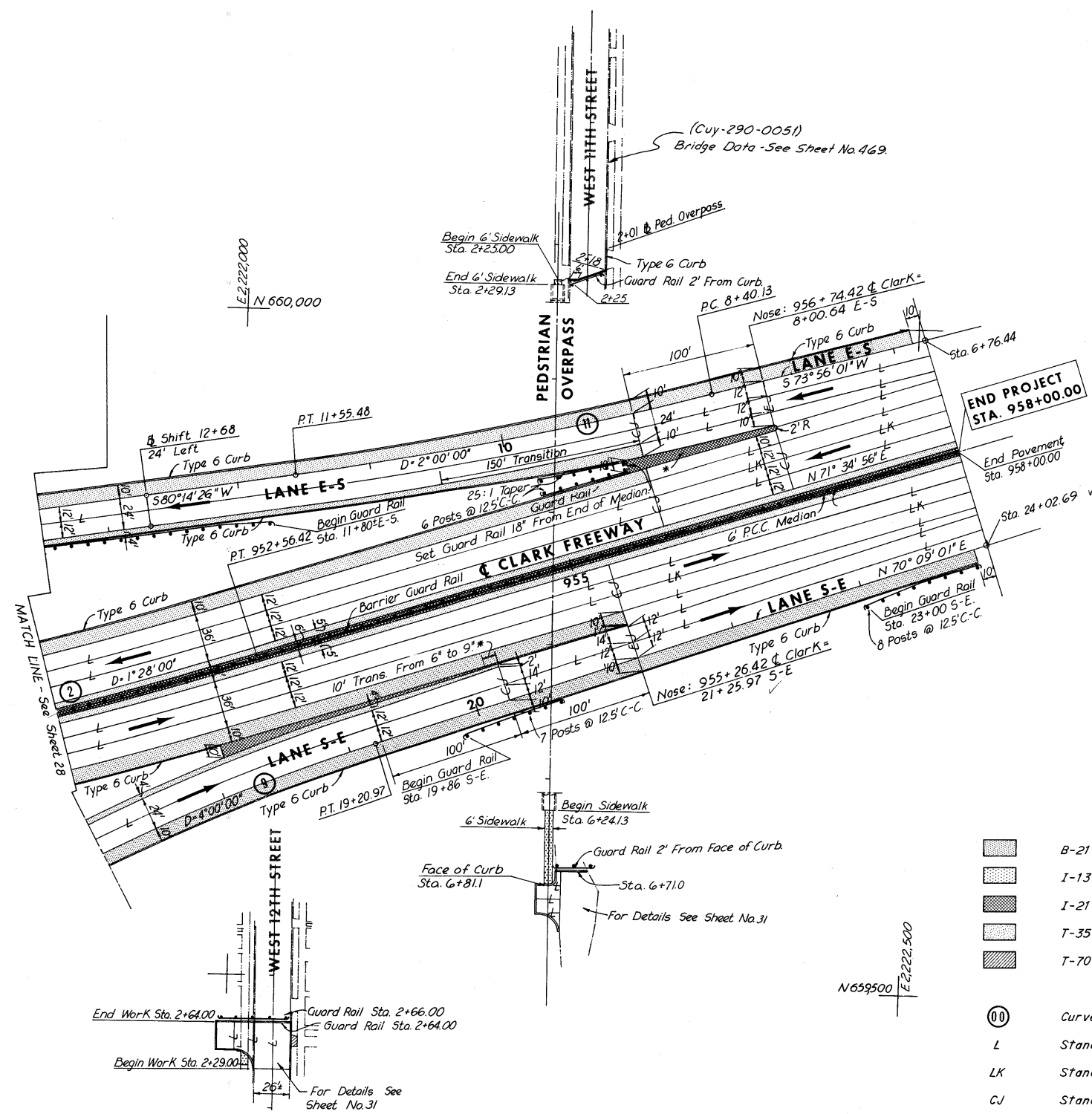
SCALE 1" = 50'
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 TRCD DATE 5-28-64
 CKD AHL DATE 5-28-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

PAVEMENT PLAN

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478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
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LEGEND

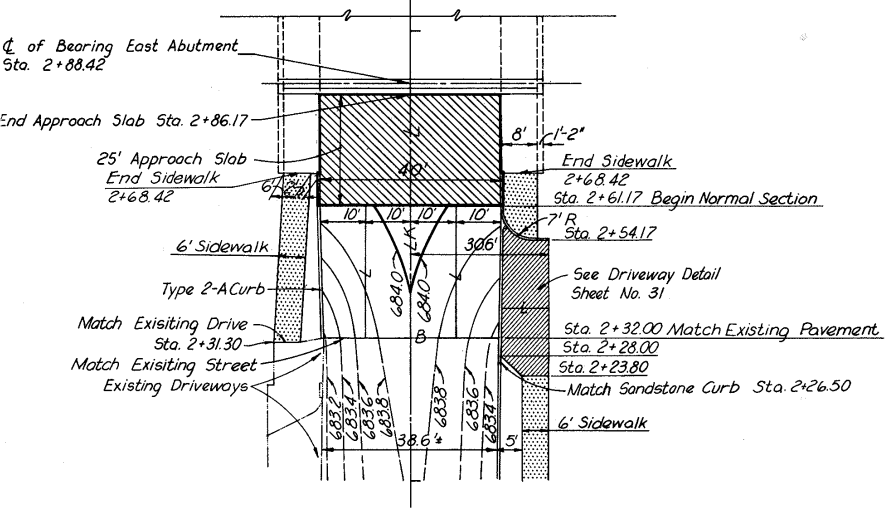
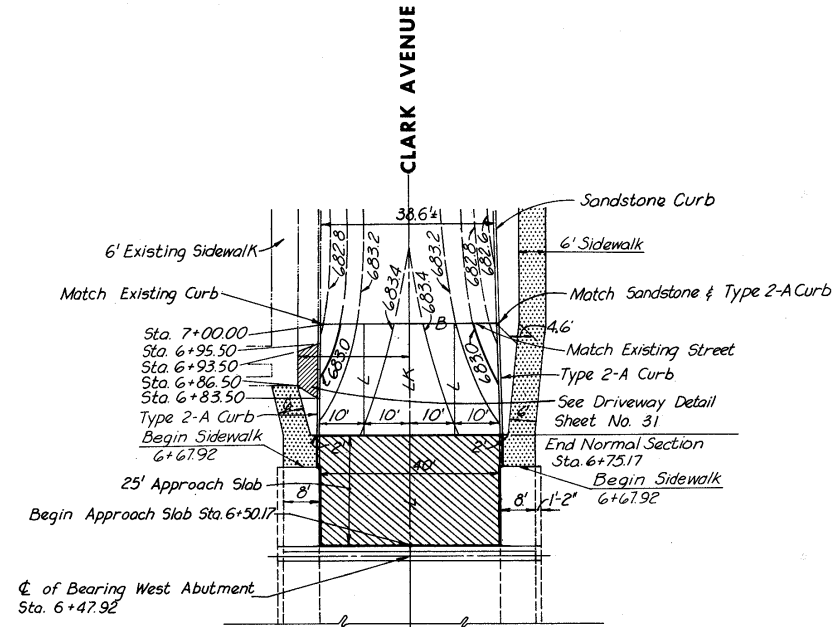
- B-21 Paved Shoulder
- I-13 4 1/2" P.C.C. Sidewalk
- I-21 P.C.C. Median Pavement
- T-35 Asphaltic Concrete
- T-70 7" P.C.C. Pavement
- 8" P.C.C. Pavement
- Curve Number, See Sheet for Data
- Standard Longitudinal Joint
- Standard Key Joint Without Tie Bars
- Standard Contraction Joint
- Standard Expansion Joint
- Expansion Joint Without Dowels (Located on radial line, 2' Min. Length)
- Butt Joint Without Tie Bars

See Detail Sheet No. 24

SCALE 1" = 50'
 MADE BY CPB DATE 5-26-64
 TRCD. DATE 5-28-64
 CKD. RHL DATE 5-28-64
 HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

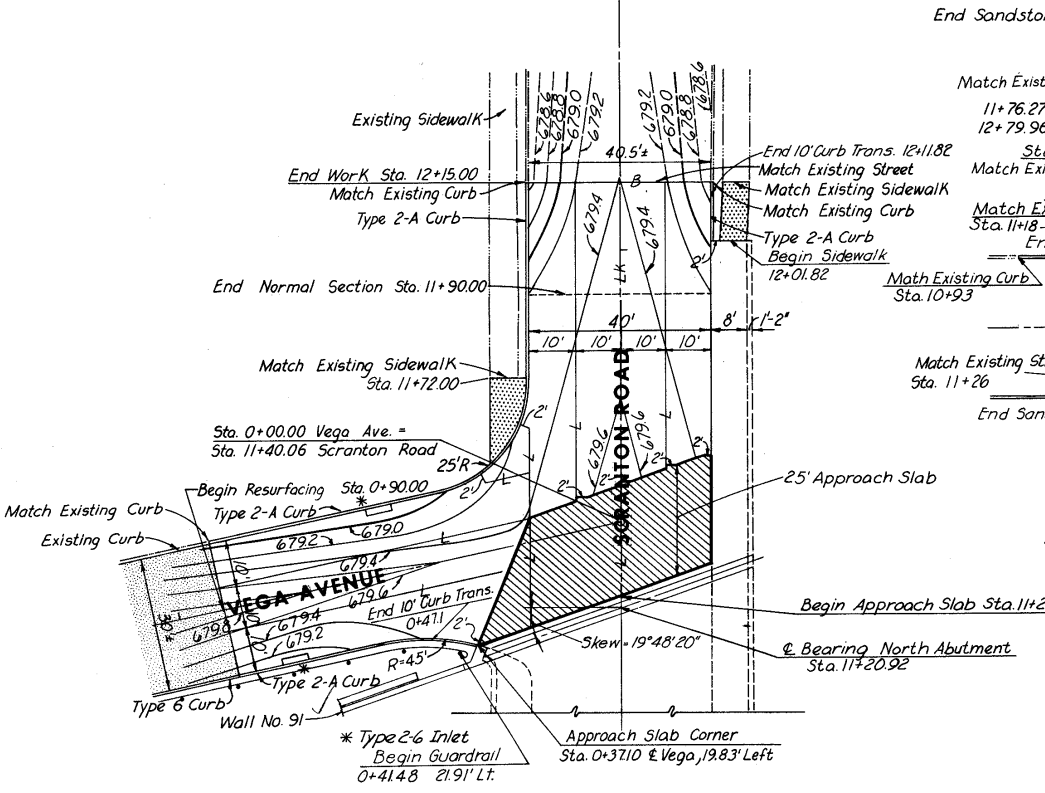
PAVEMENT PLAN

**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUI- 71-18.54
CUI- 90-13.81**

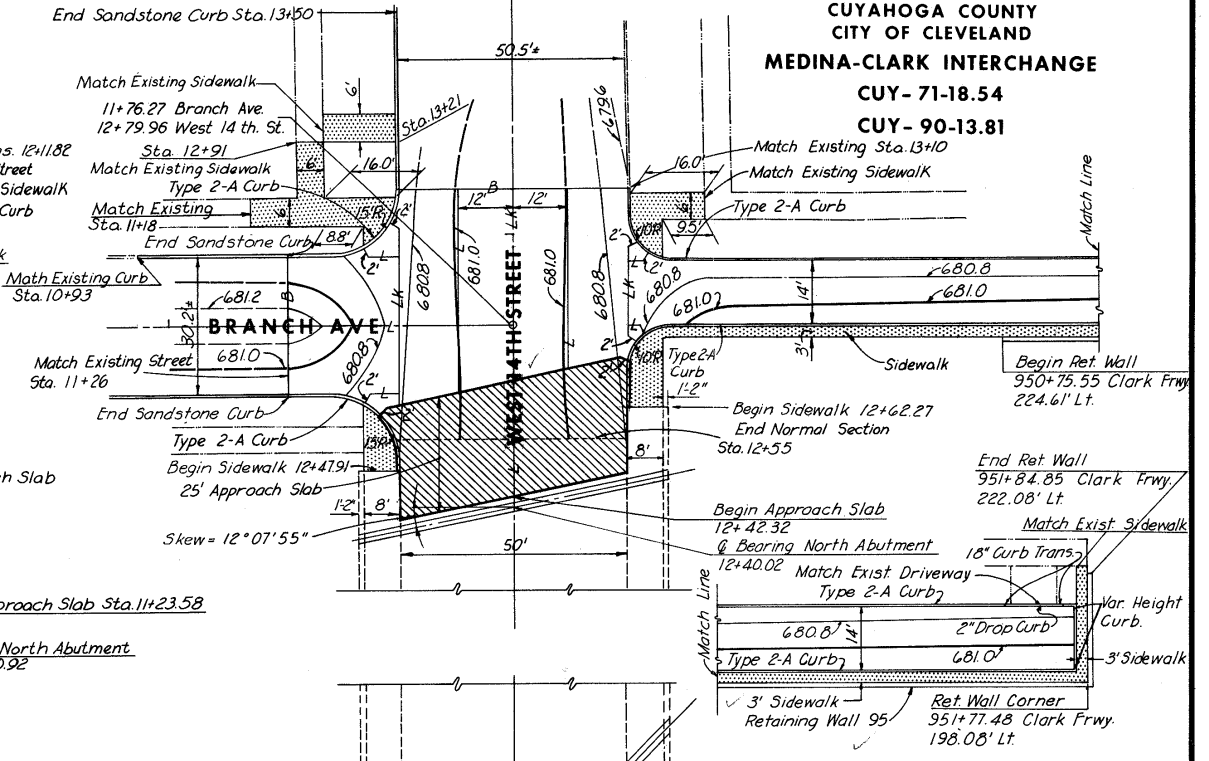


CLARK AVENUE DETAIL

Notes: Curb on approach slabs will transition from the 6" curb on the approach roadway to the 10" curb on the bridge.
 Joint Designation:
 L- Standard Longitudinal Joint
 LK- Standard Key Joint without Tie Bars
 B- Butt Joint without Tie Bars
 The 2" radial joints are expansion joints without dowels.
 For legend see Pavement Plans



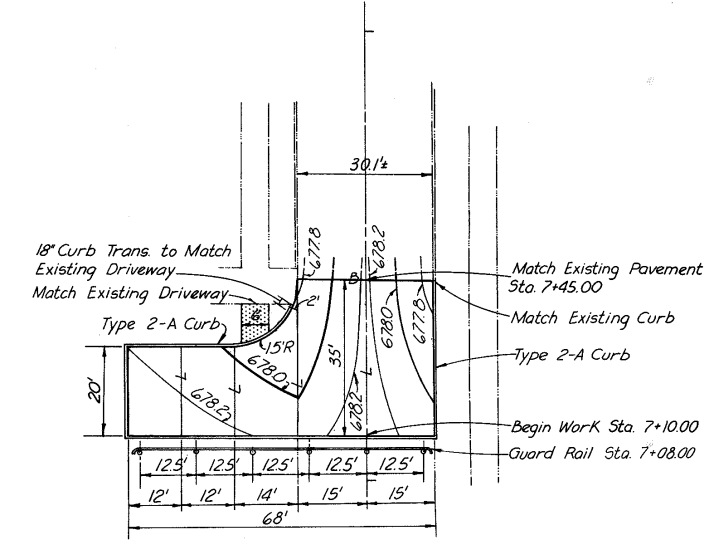
SCRANTON ROAD DETAIL



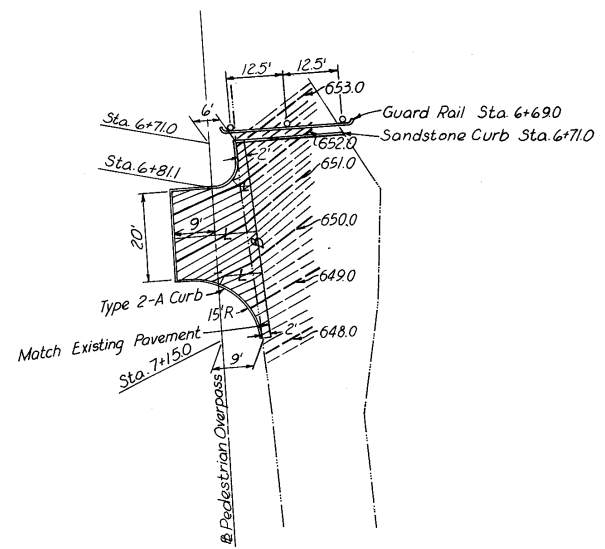
**WEST 14TH STREET DETAIL
APPROACH SLAB AND PAVEMENT DETAILS**

See 50 Scale Pavement Plans Sheet No. 28 For End of Sidewalk and Curb

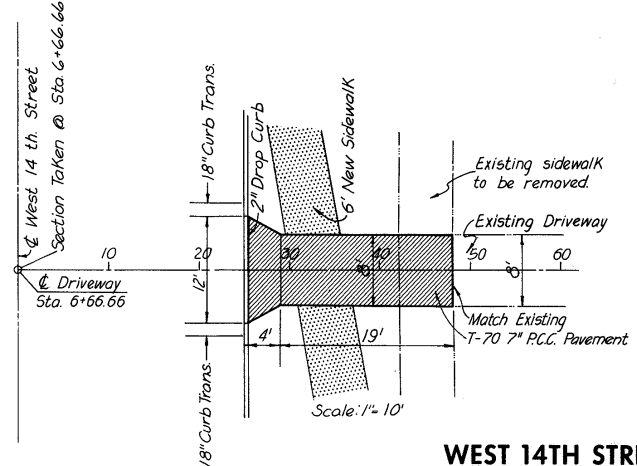
**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81**



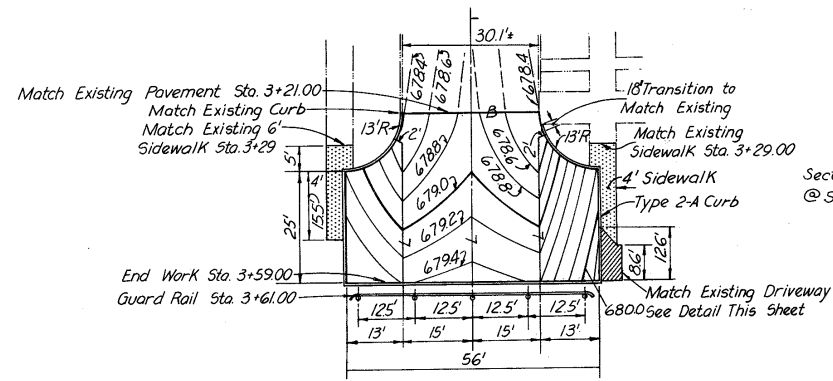
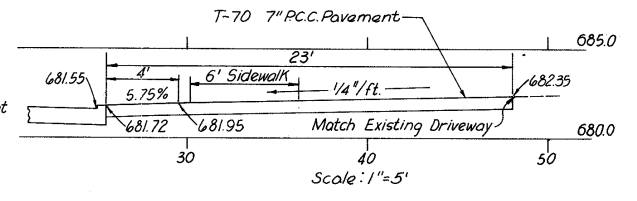
HOWARD AVENUE CUL-DE-SAC.
Scale 1" = 20'



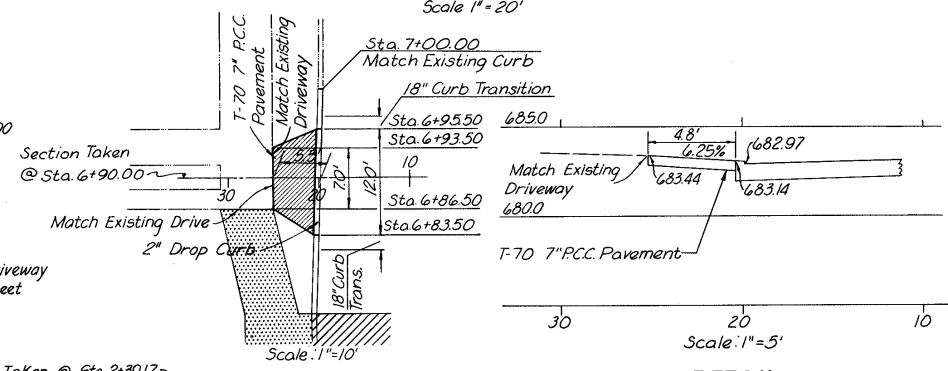
WEST 11TH STREET CUL-DE-SAC.
Scale 1" = 20'



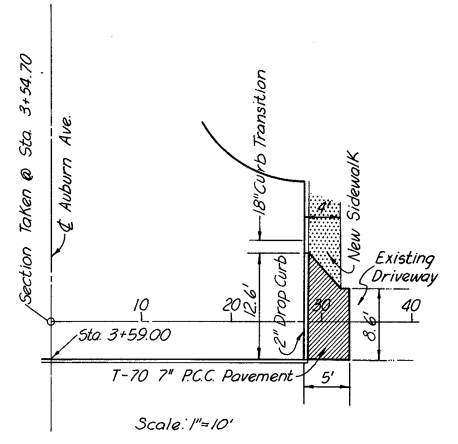
WEST 14TH STREET DRIVEWAY DETAIL
Scale: 1" = 10'



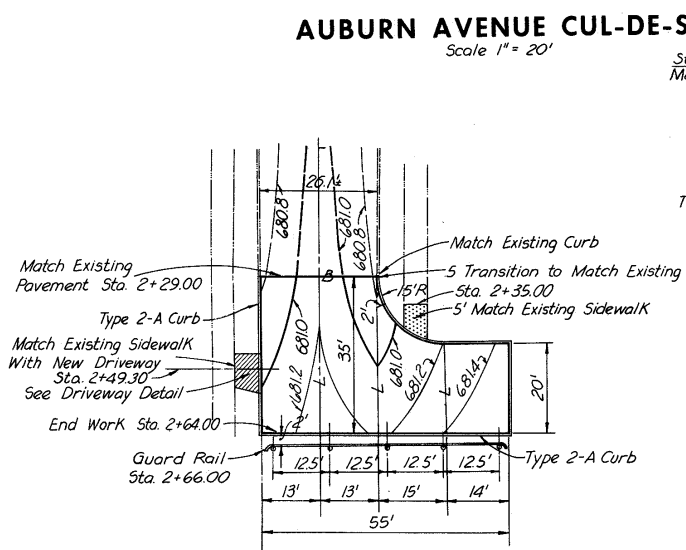
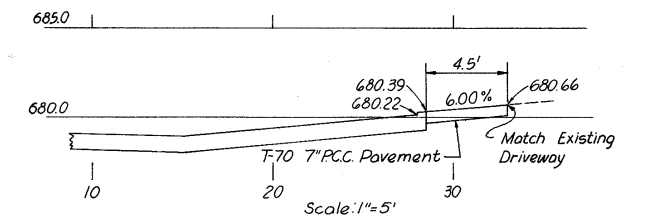
AUBURN AVENUE CUL-DE-SAC.
Scale 1" = 20'



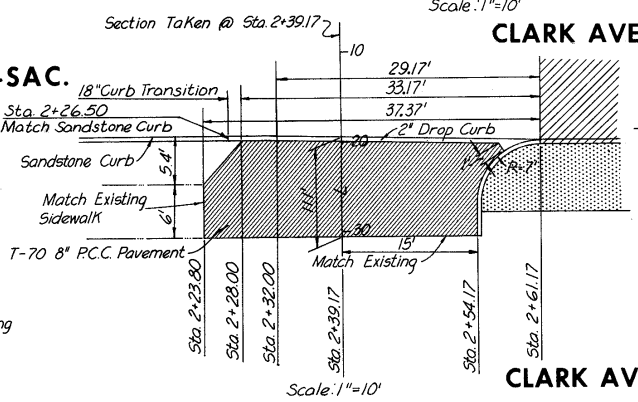
CLARK AVENUE DRIVEWAY DETAIL
Scale: 1" = 5'



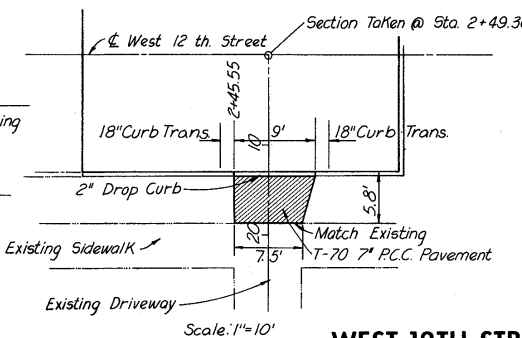
AUBURN AVENUE DRIVEWAY DETAIL
Scale: 1" = 10'



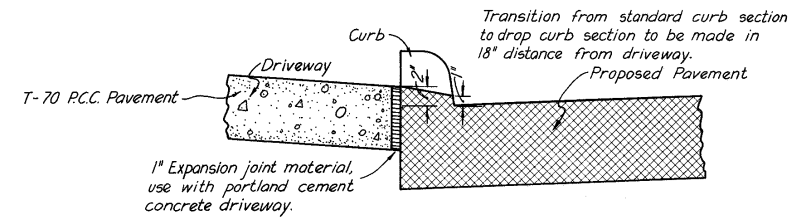
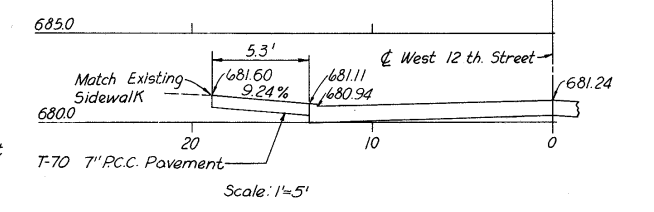
WEST 12TH STREET CUL-DE-SAC.
Scale 1" = 20'



CLARK AVENUE DRIVEWAY DETAIL
Scale: 1" = 10'



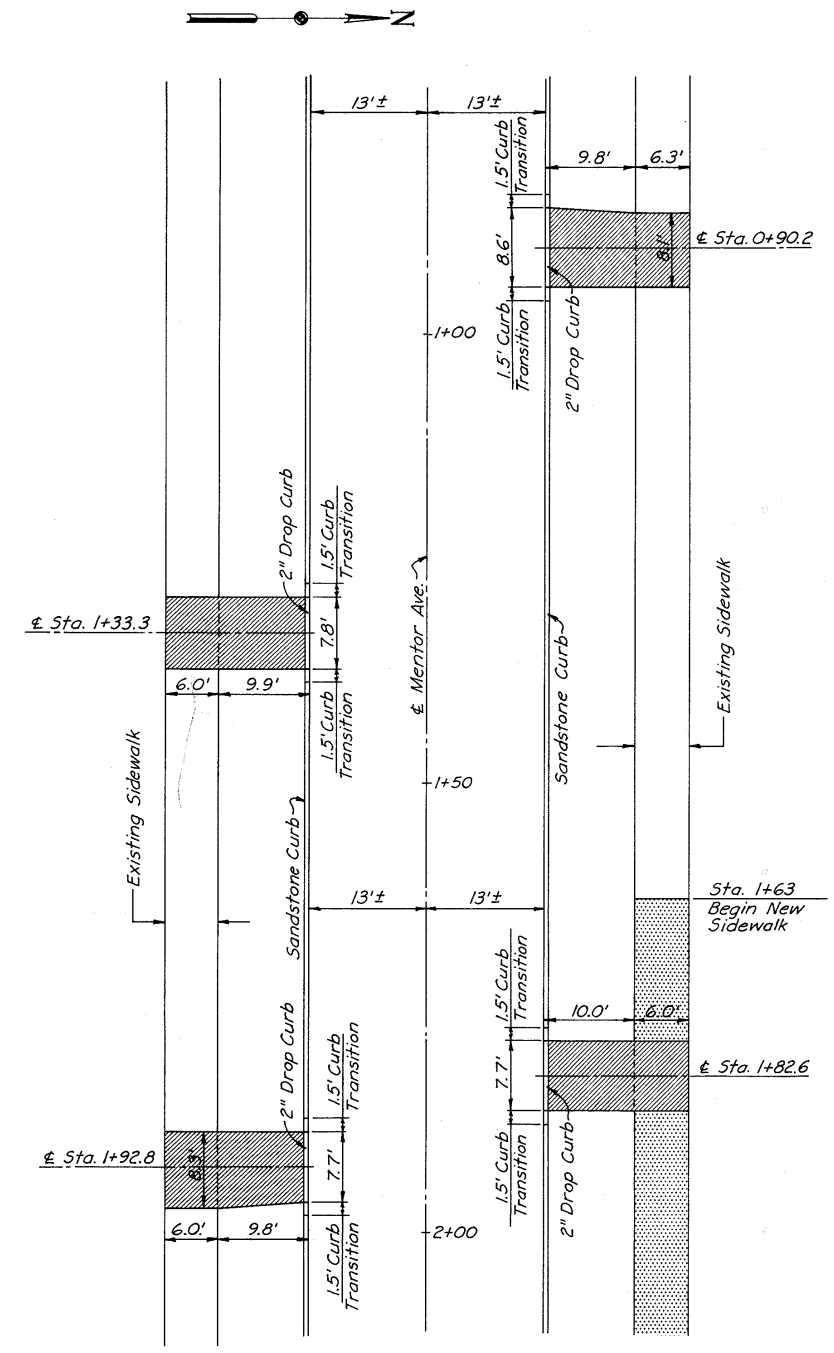
WEST 12TH STREET DRIVEWAY DETAIL
Scale: 1" = 10'



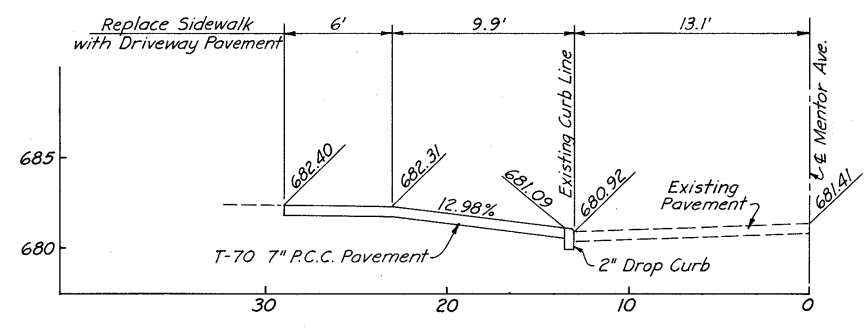
2" DROP CURB DETAIL
Scale 1" = 10'

Note: For legend see Pavement Plans

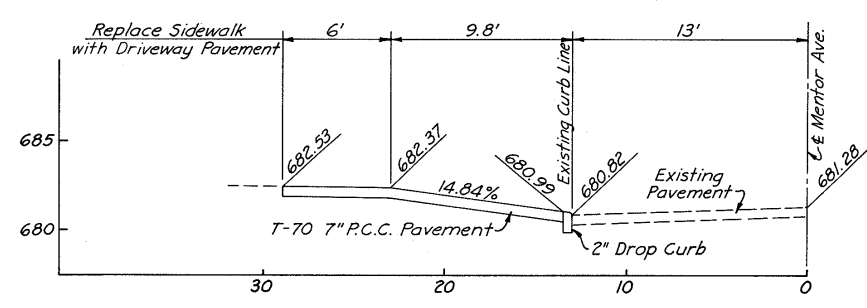
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



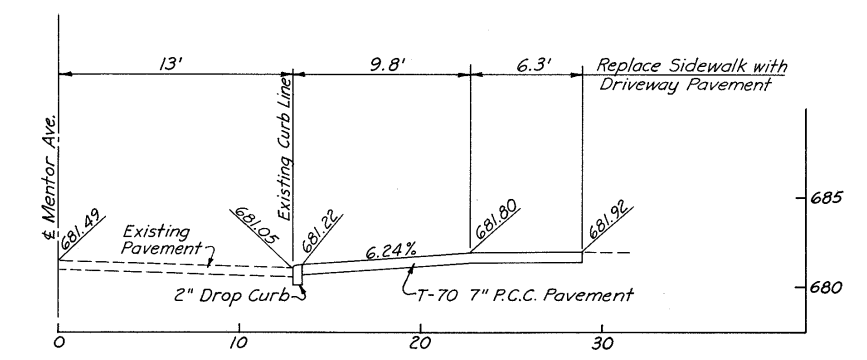
MENTOR AVE. DRIVEWAYS
Scale: 1" = 10'



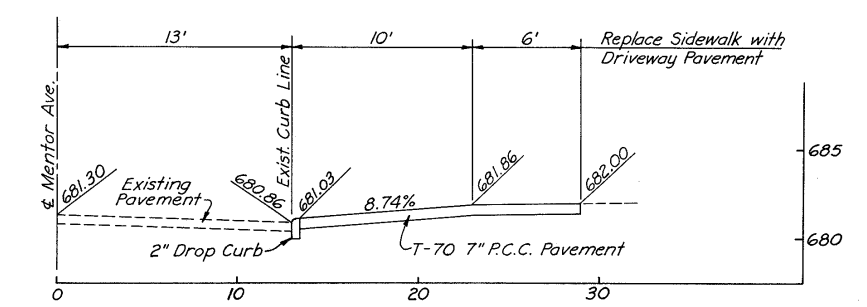
STA. 1+33.3 (SOUTH SIDE)



STA. 1+92.8 (SOUTH SIDE)

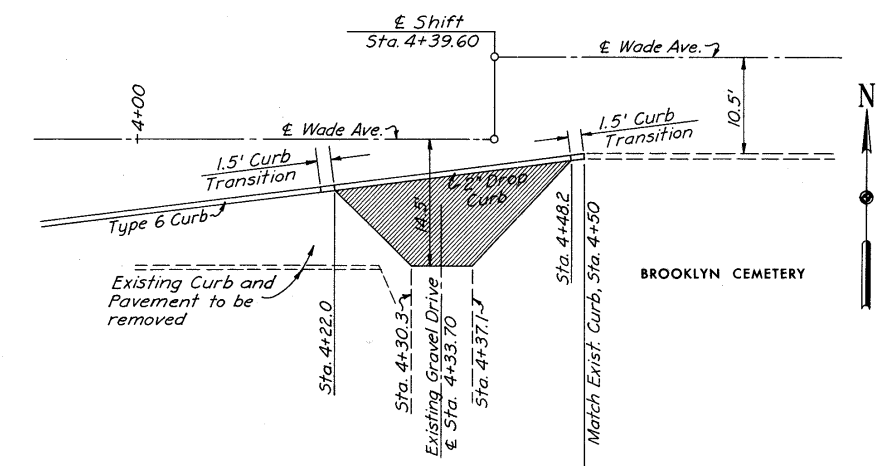


STA. 0+90.2 (NORTH SIDE)

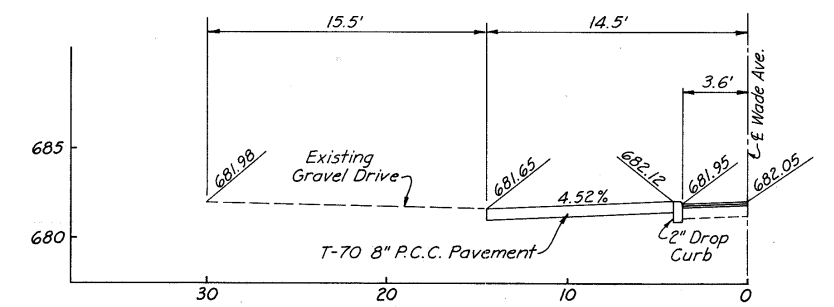


STA. 1+82.6 (NORTH SIDE)

MENTOR AVE. DRIVEWAYS
Scale: 1" = 5'



WADE AVE. DRIVEWAY
Scale: 1" = 10'



STA. 4+33.7

WADE AVE. DRIVEWAY
Scale: 1" = 5'

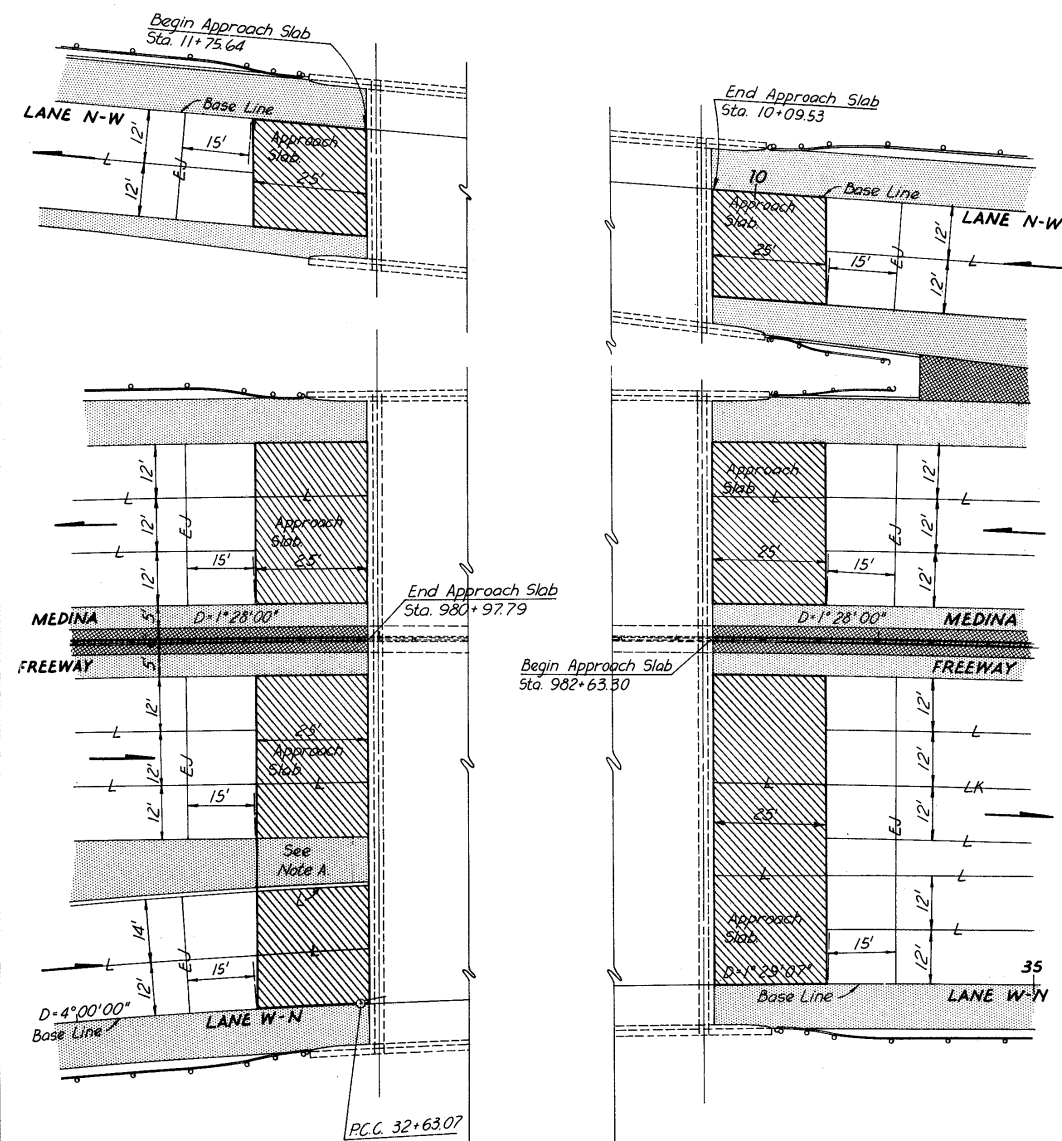
SCALE *As Noted*
MADE *RHL* DATE *9-15-64*
TRCD *RHP* DATE *9-24-64*
C/D *NAK* DATE *9-25-64*

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

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

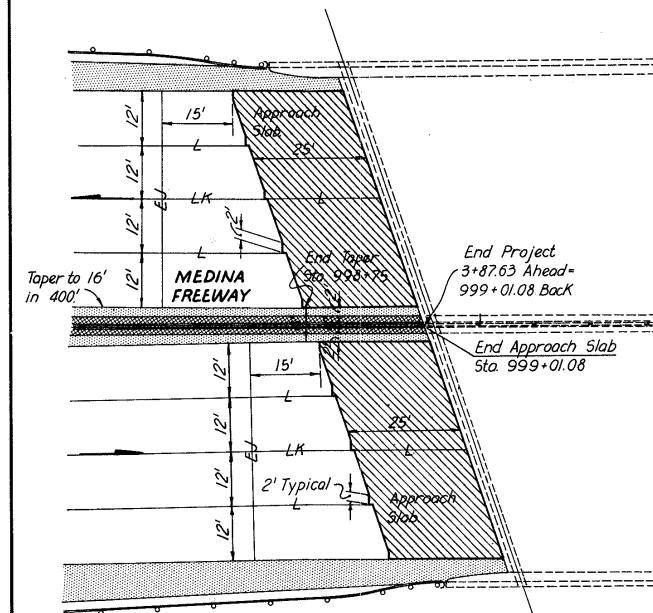


Note A: T-31 Surface Treatment
Type 8 Intergral Curb

STARKWEATHER OVERPASS



KENILWORTH OVERPASS



VIADUCT EXTENSION

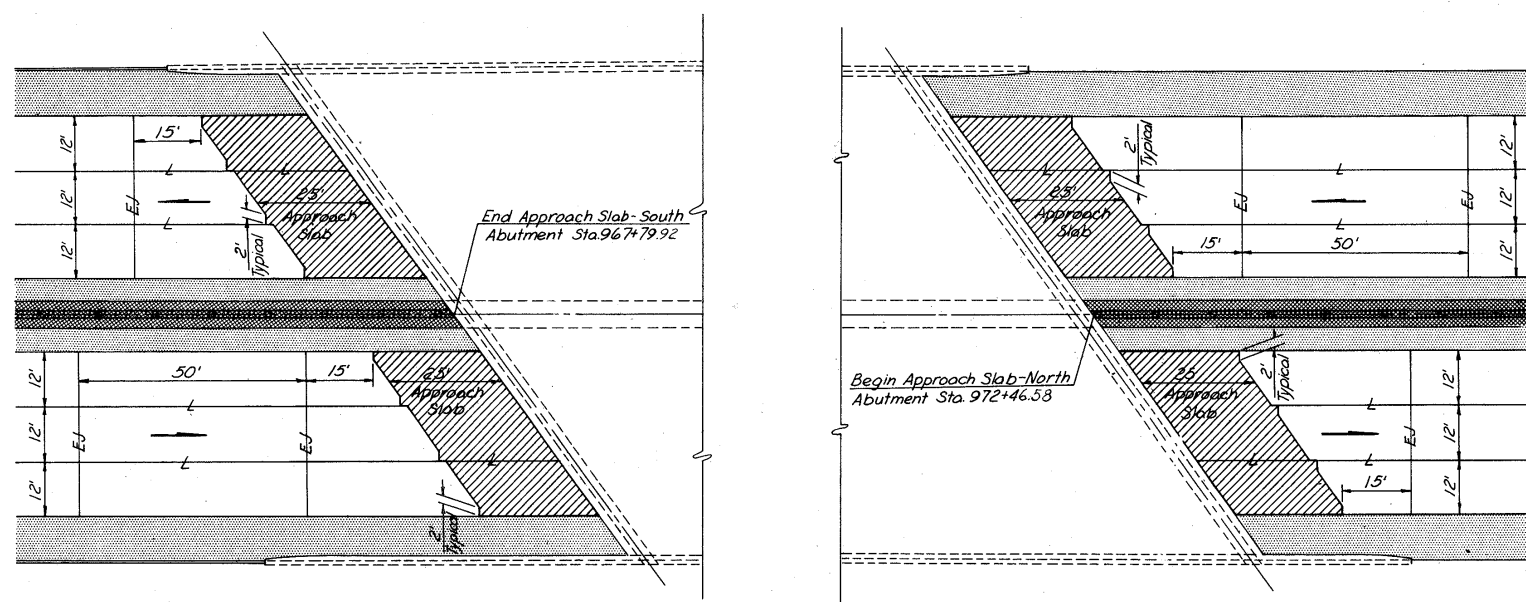
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TRCD DATE
CD. RHL DATE 5-15-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

APPROACH SLAB DETAILS

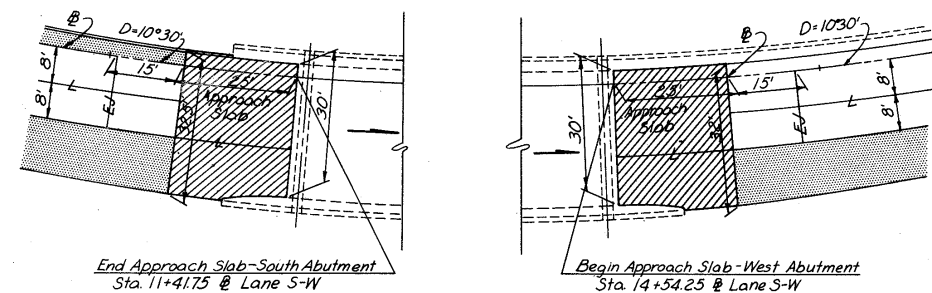
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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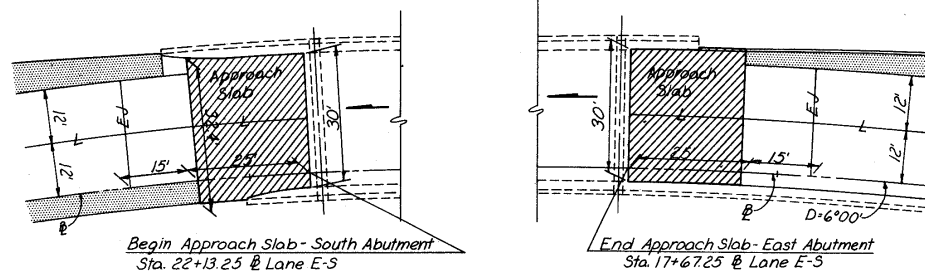
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



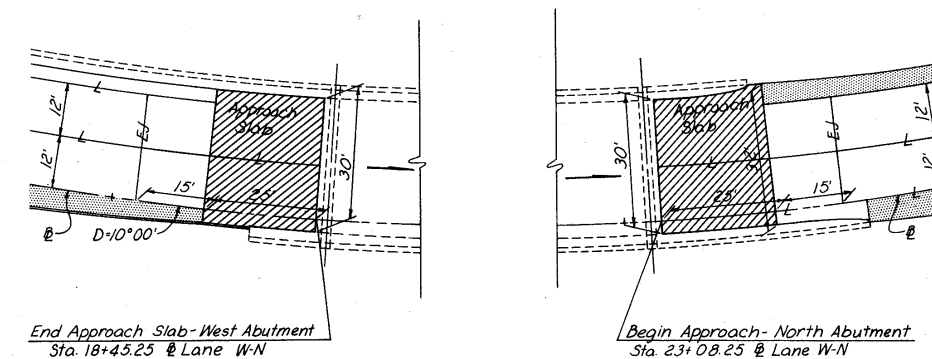
MEDINA FREEWAY



LANE S-W



LANE E-S

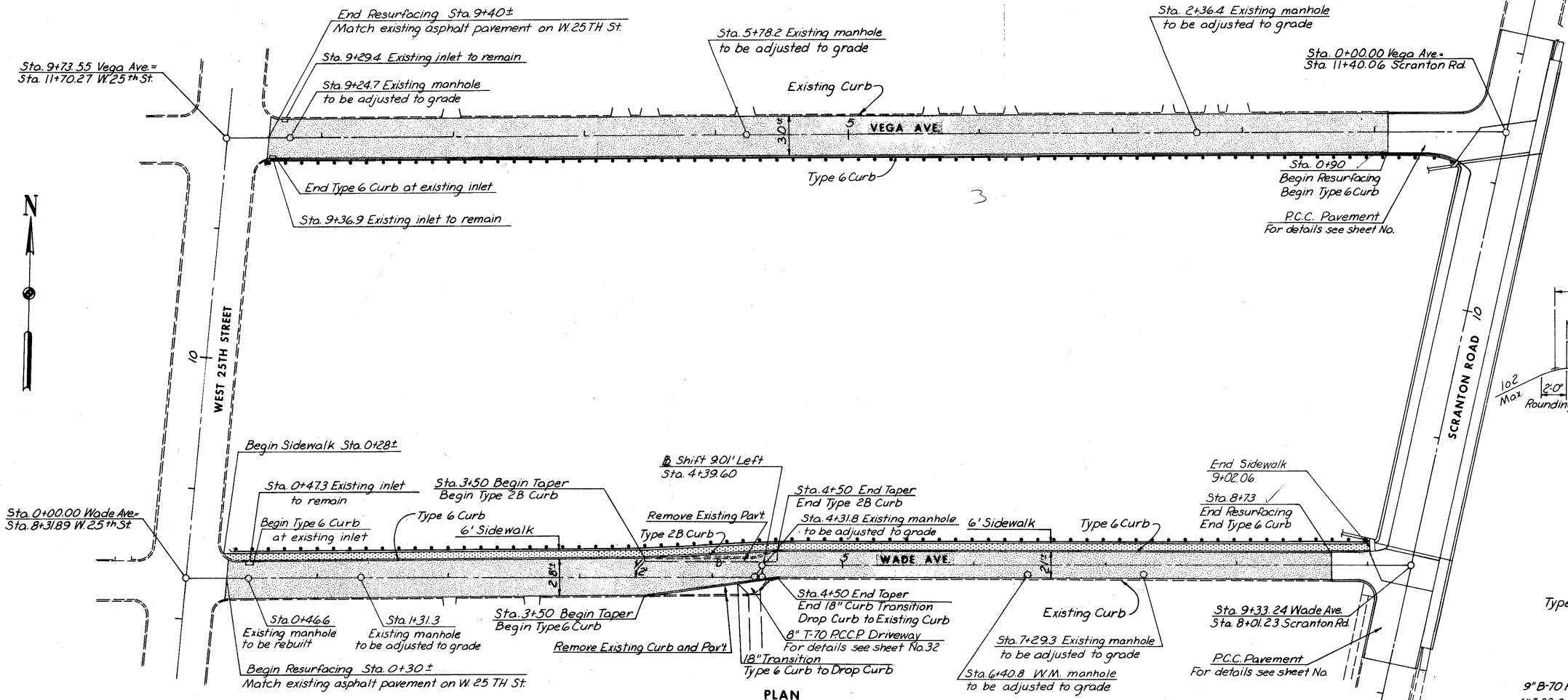


LANE W-N

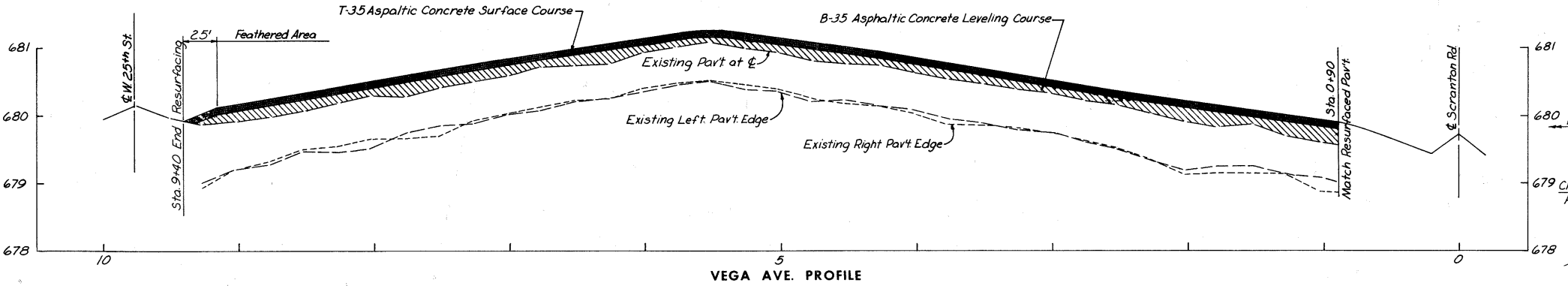
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TRCD. DATE
CRD. NAK DATE 12/18/64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

APPROACH SLAB DETAILS

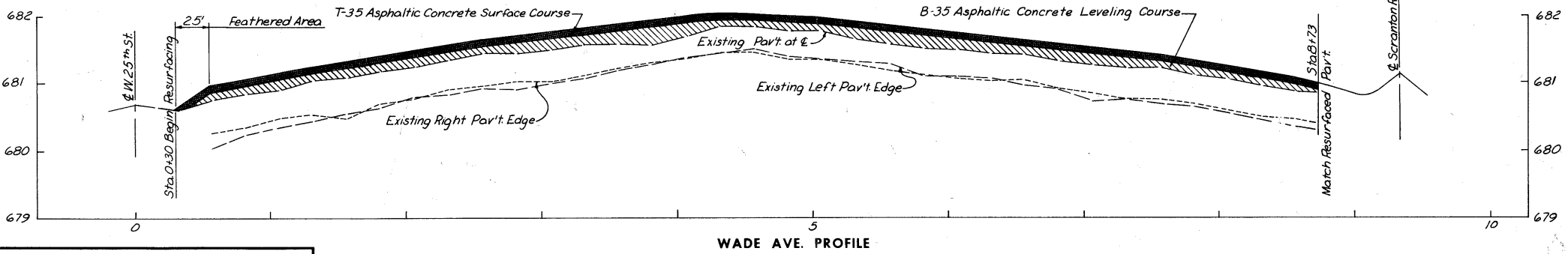
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



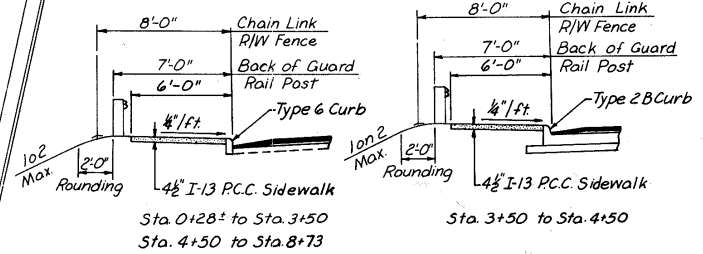
PLAN
Scale: 1"=50'



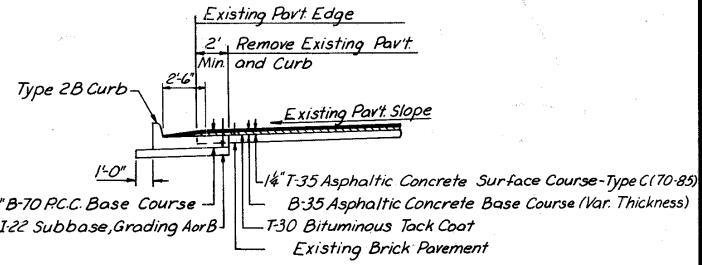
VEGA AVE. PROFILE



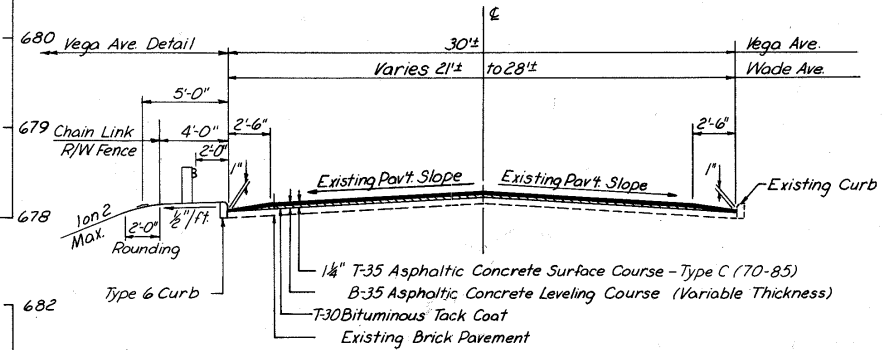
WADE AVE. PROFILE



WADE AVE. SIDEWALK AND SHOULDER DETAIL
Scale: 3/8"=1'



WIDENING DETAIL
Scale: 3/8"=1'



TYPICAL SECTION
Scale: 3/8"=1'

SCALE: As Shown
MADE: RHL DATE: 3-18-64
TRCD: DATE: 3-23-64
CRD: NAK DATE: 3-23-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

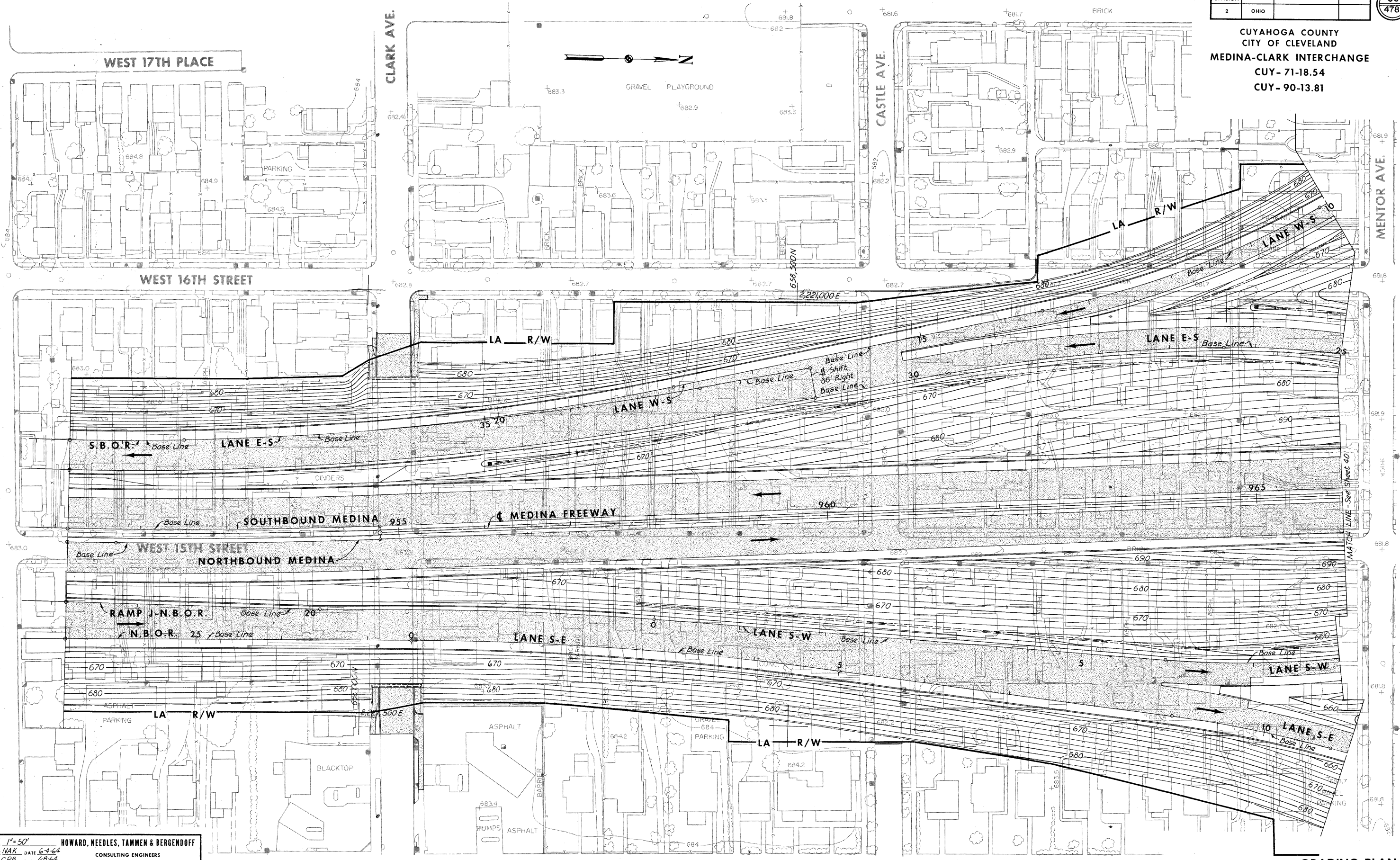
RE CING DETAILS

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M-18

FED. RD. DIVISION	STATE	PROJECT	36 478
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CUYAHOGA COUNTY
 CITY OF CLEVELAND
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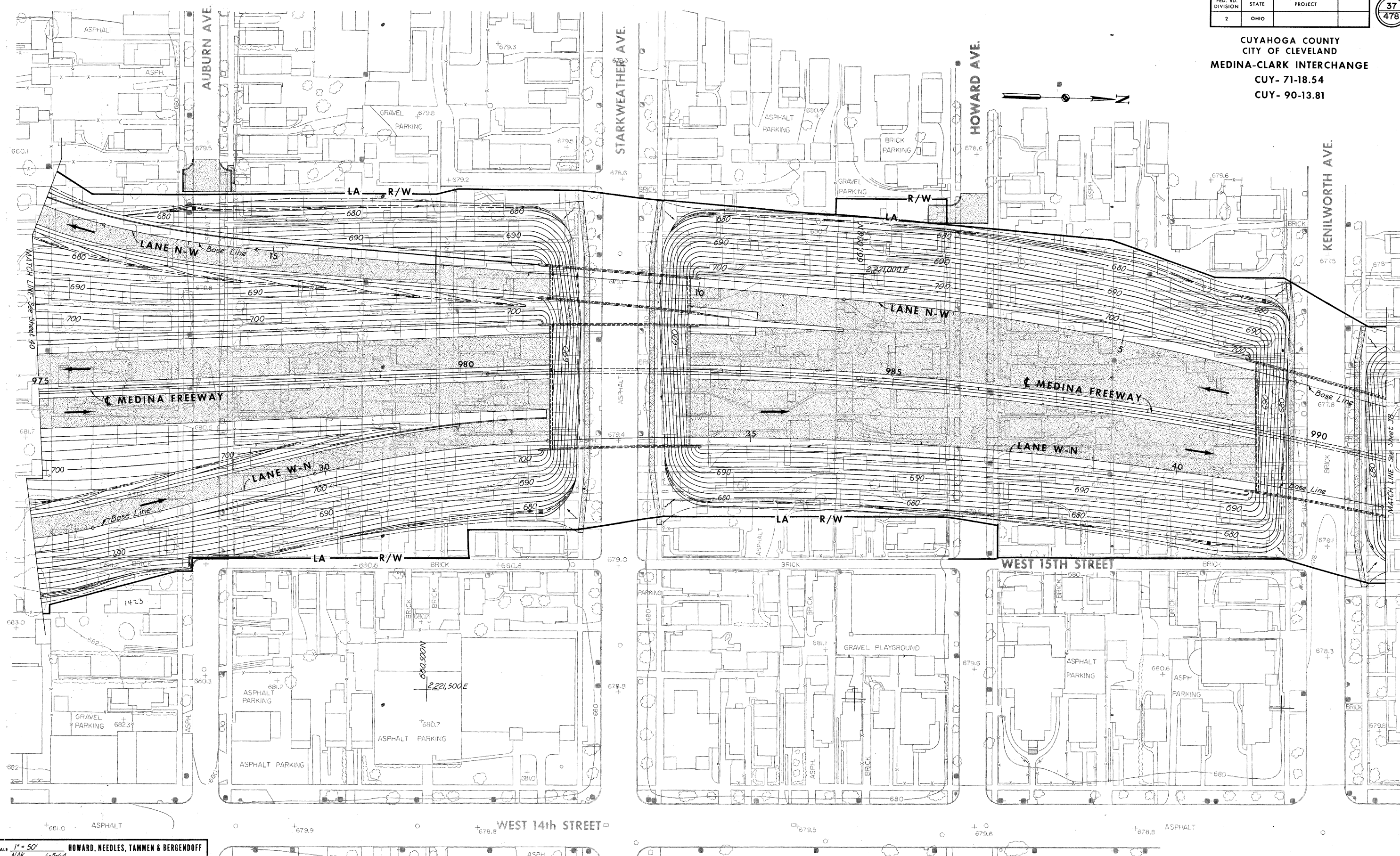
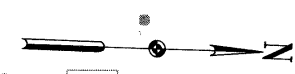
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 CKD RHL DATE 6-17-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
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 KANSAS CITY CLEVELAND NEW YORK

GRADING PLAN

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
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CUY- 90-13.81



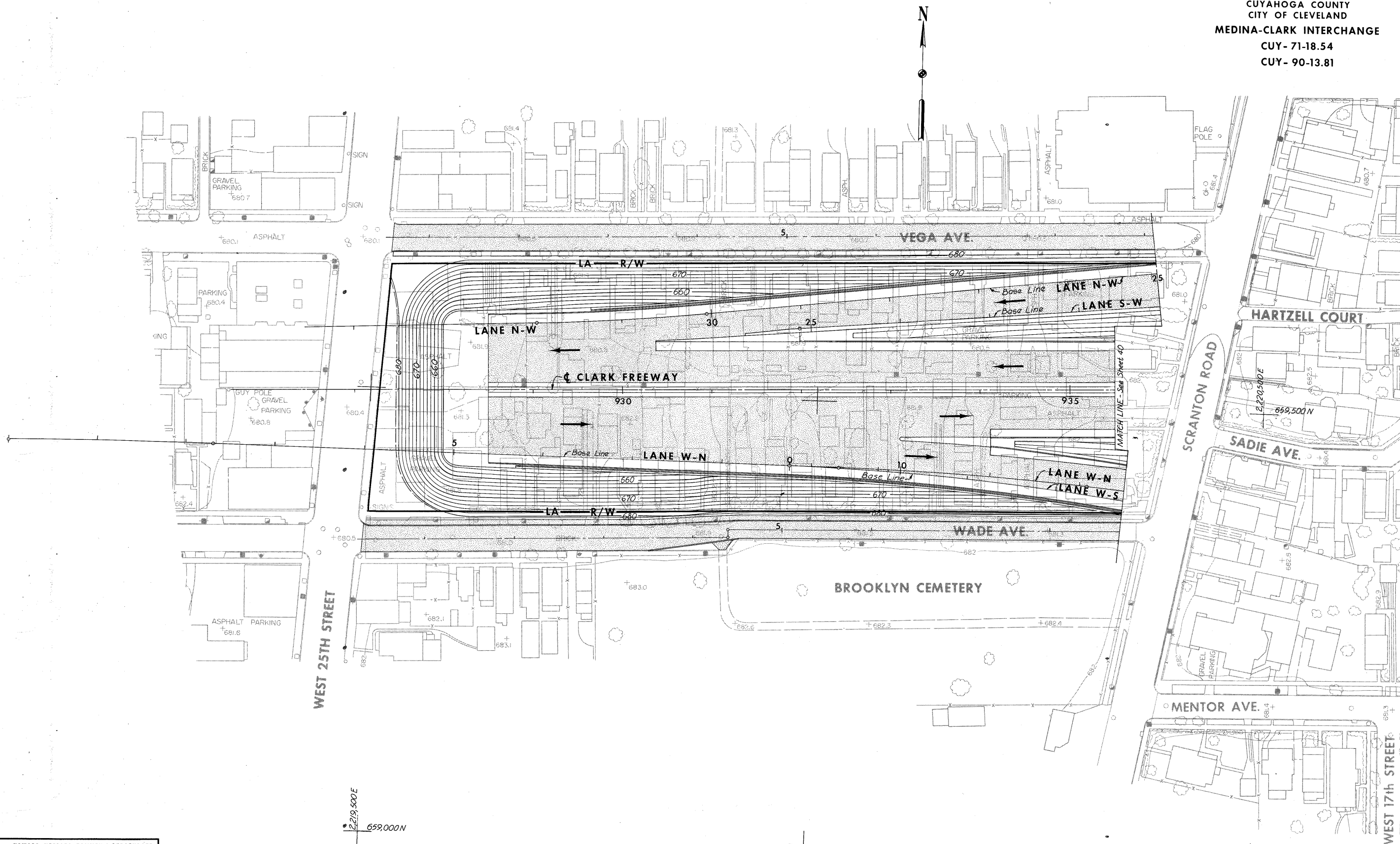
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 TRCD BY CPB DATE 6-8-64
 CKD BY RHL DATE 6-17-64
 HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

GRADING PLAN

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



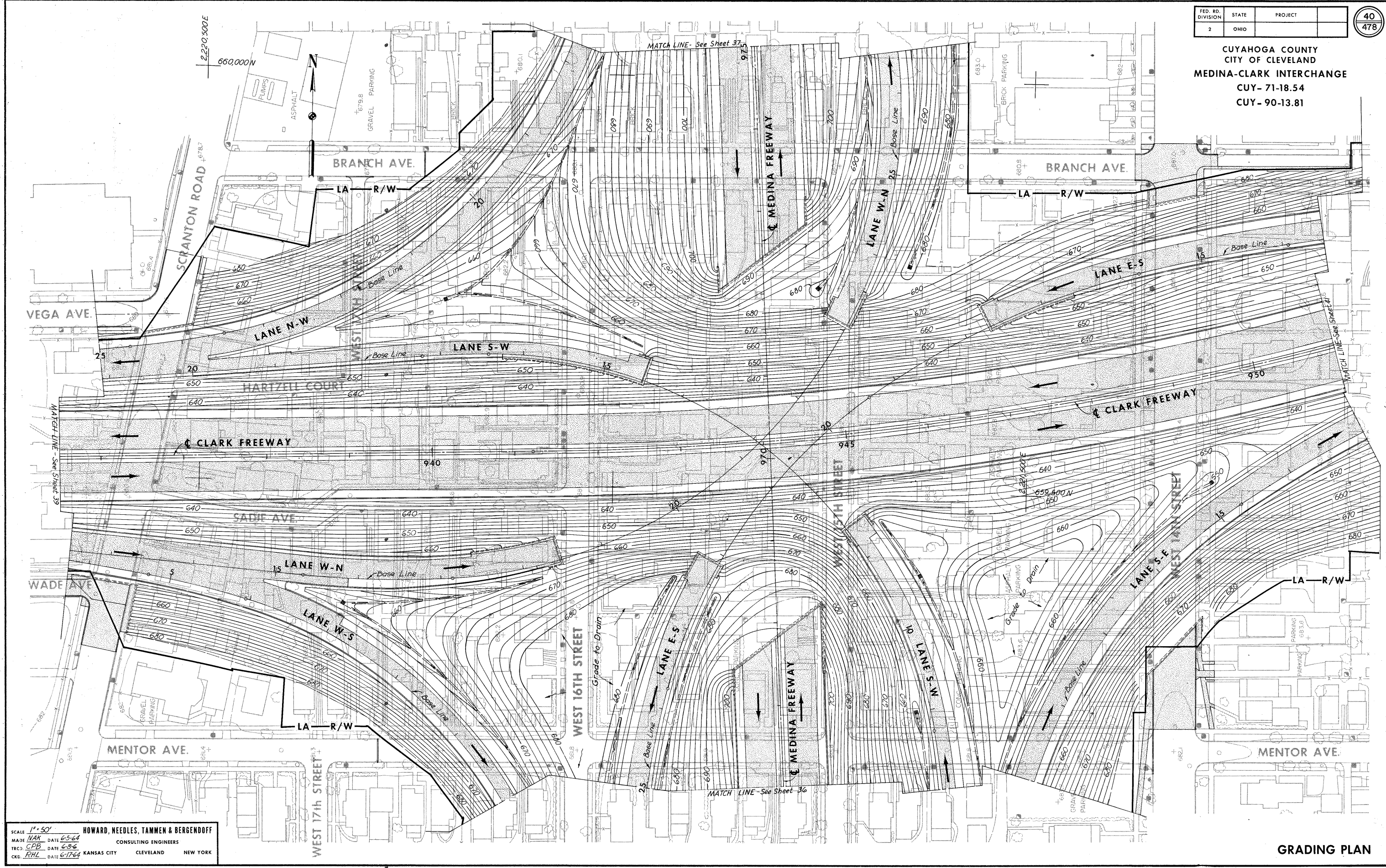
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TRCD: CPB DATE 6-8-64
CKD: RHL DATE 6-17-64

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

GRADING PLAN

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
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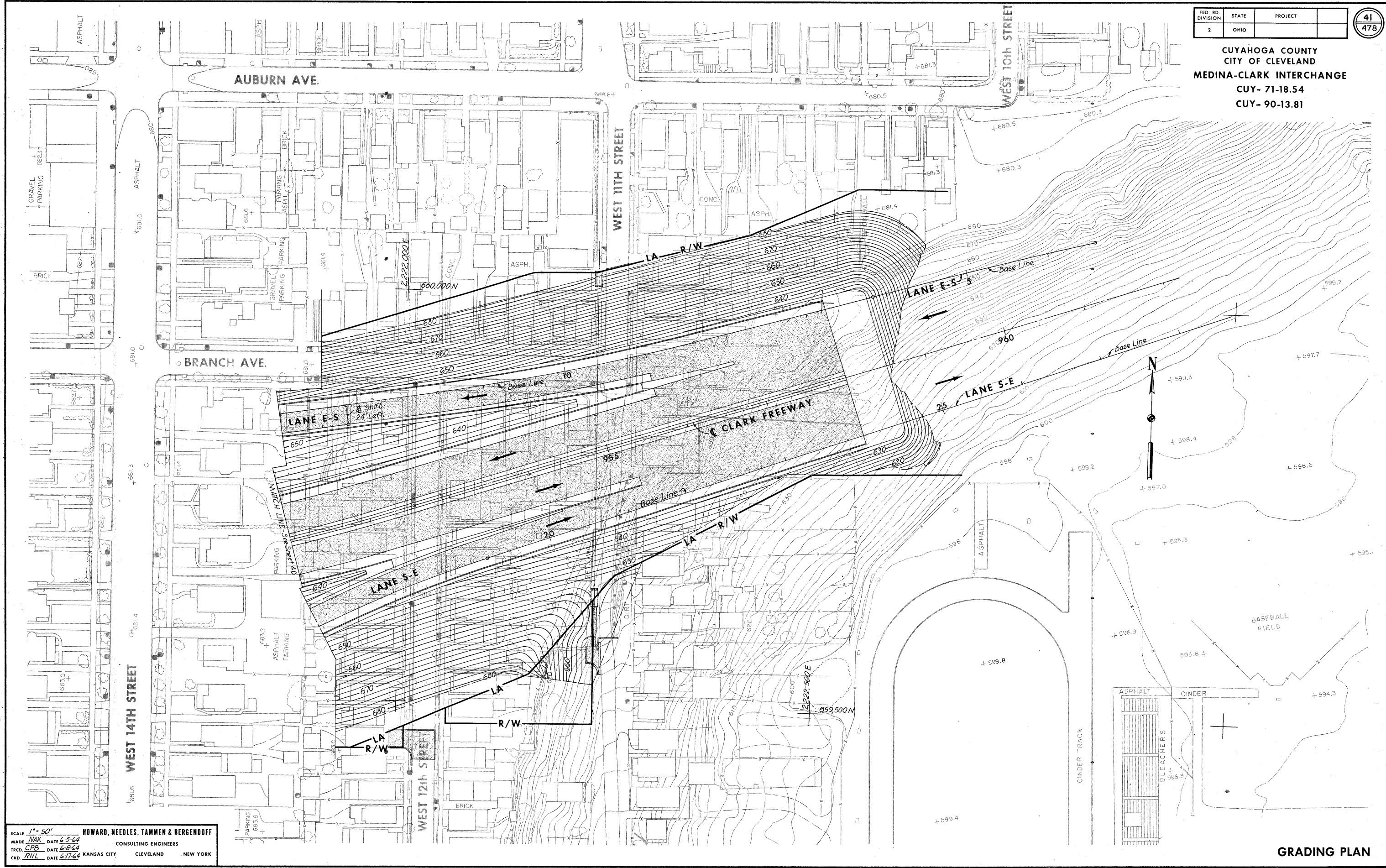
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MADE NAK DATE 6-5-64
TRCD CPB DATE 6-8-64
CKD RHL DATE 6-17-64
HOWARD, NEEDLES, TAMMEN & BERGENOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

GRADING PLAN

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81









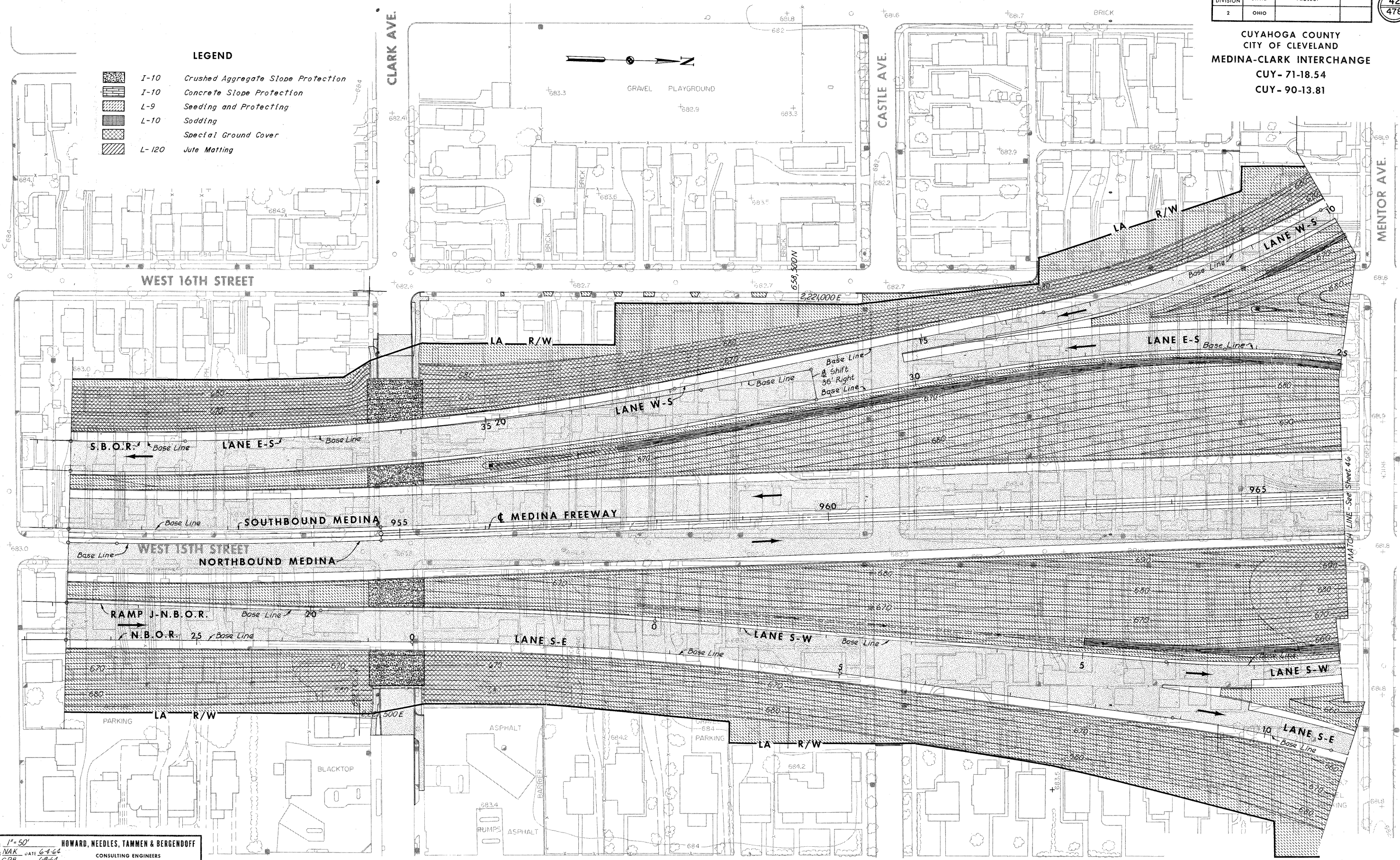
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 HOWARD, NEEDLES, TAMMEN & BERGENOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

GRADING PLAN

CUYAHOGA COUNTY
CITY OF CLEVELAND
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LEGEND

-  I-10 Crushed Aggregate Slope Protection
-  I-10 Concrete Slope Protection
-  L-9 Seeding and Protecting
-  L-10 Sodding
-  Special Ground Cover
-  L-120 Jute Matting

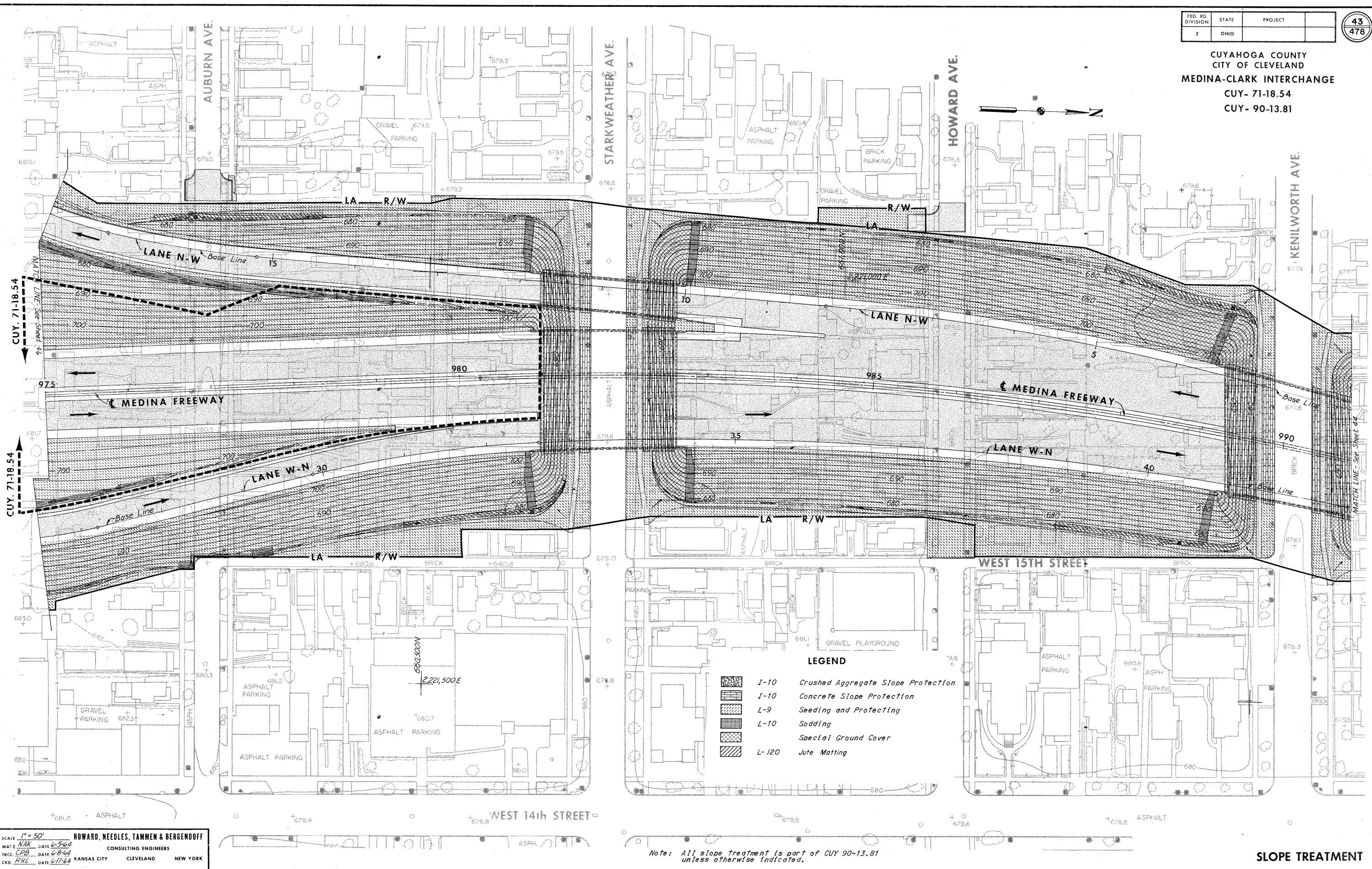


SCALE 1" = 50'
 MALE NAK DATE 6-9-64
 TRCL CPB DATE 6-8-64
 CKD RHL DATE 6-17-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

Note: All slope treatment is part of CUY 71-18.54.

SLOPE TREATMENT

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



LEGEND

	I-10	Crushed Aggregate Slope Protection
	I-10	Concrete Slope Protection
	L-9	Seeding and Protecting
	L-10	Sodding
		Special Ground Cover
	L-120	Jute Matting

Note: All slope treatment is part of CUY 90-13.81 unless otherwise indicated.

SCALE 1" = 50'
 DATE 6-5-64
 DATE 6-8-64
 DATE 6-17-64
 HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

SLOPE TREATMENT







FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

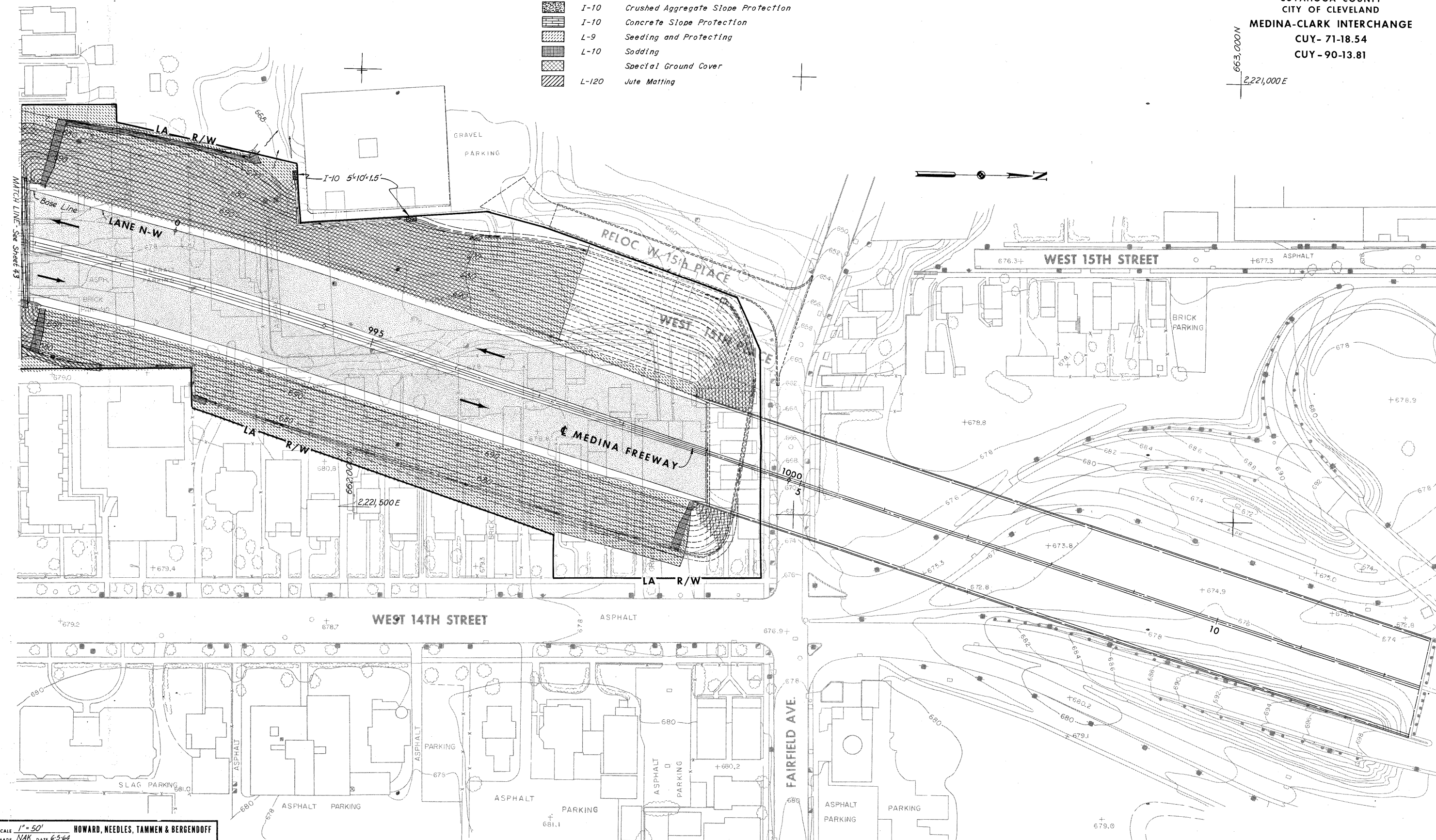
44
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

663,000N
2,221,000E

LEGEND

-  I-10 Crushed Aggregate Slope Protection
-  I-10 Concrete Slope Protection
-  L-9 Seeding and Protecting
-  L-10 Sodding
-  Special Ground Cover
-  L-120 Jute Matting

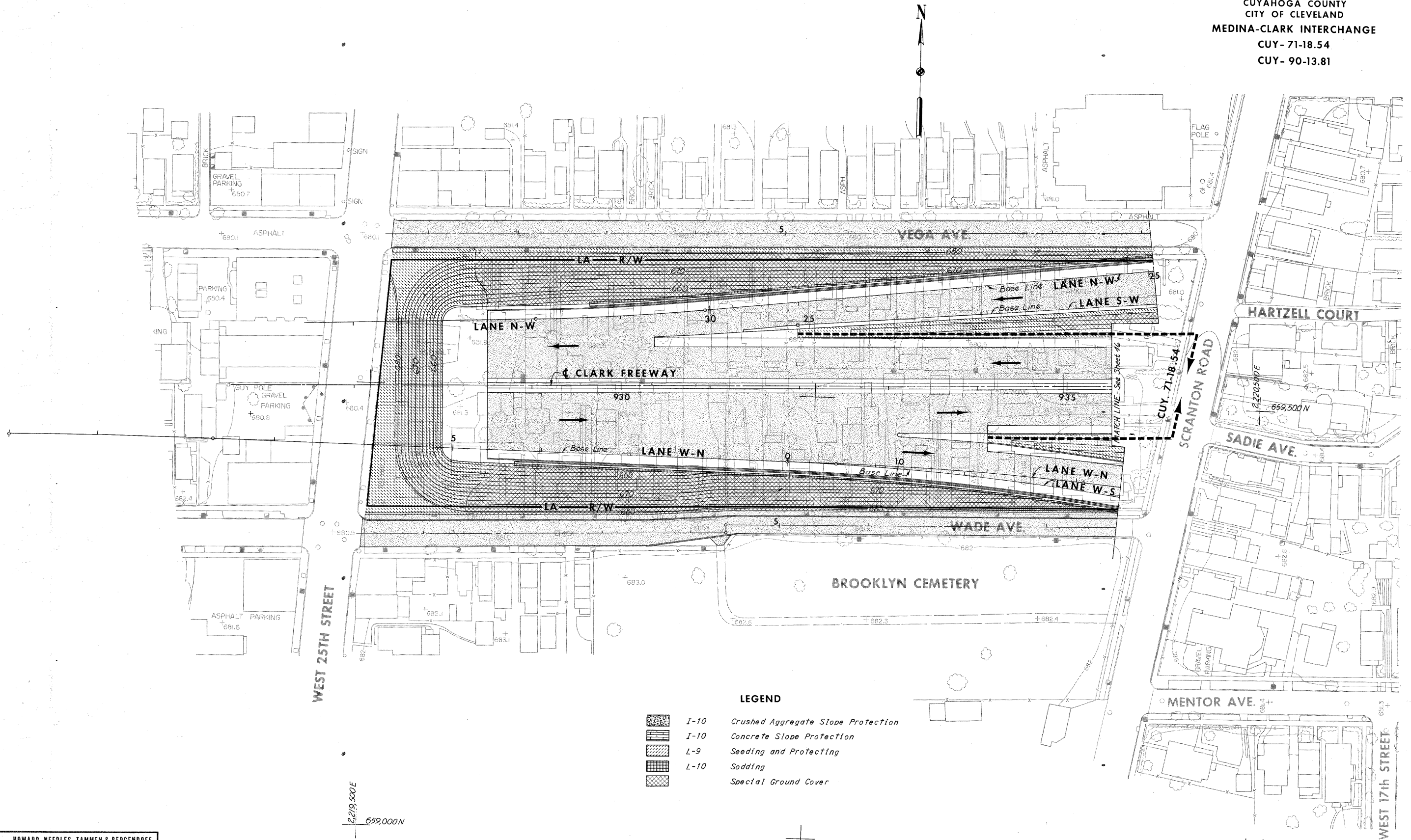


SCALE 1" = 50'
MADE NAK DATE 6-5-64
TRC CPB DATE 6-8-64
CKD RHL DATE 6-17-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

Note: All slope treatment is part of CUY 90-13.81.

SLOPE TREATMENT

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



LEGEND

	I-10	Crushed Aggregate Slope Protection
	I-10	Concrete Slope Protection
	L-9	Seeding and Protecting
	L-10	Sodding
		Special Ground Cover

Note: All slope treatment is part of CUY 90-13.81 unless otherwise indicated.







SCALE 1"=50'
MADE NAK DATE 6-5-64
TRCD CPB DATE 6-8-64
CKD RHL DATE 6-17-64

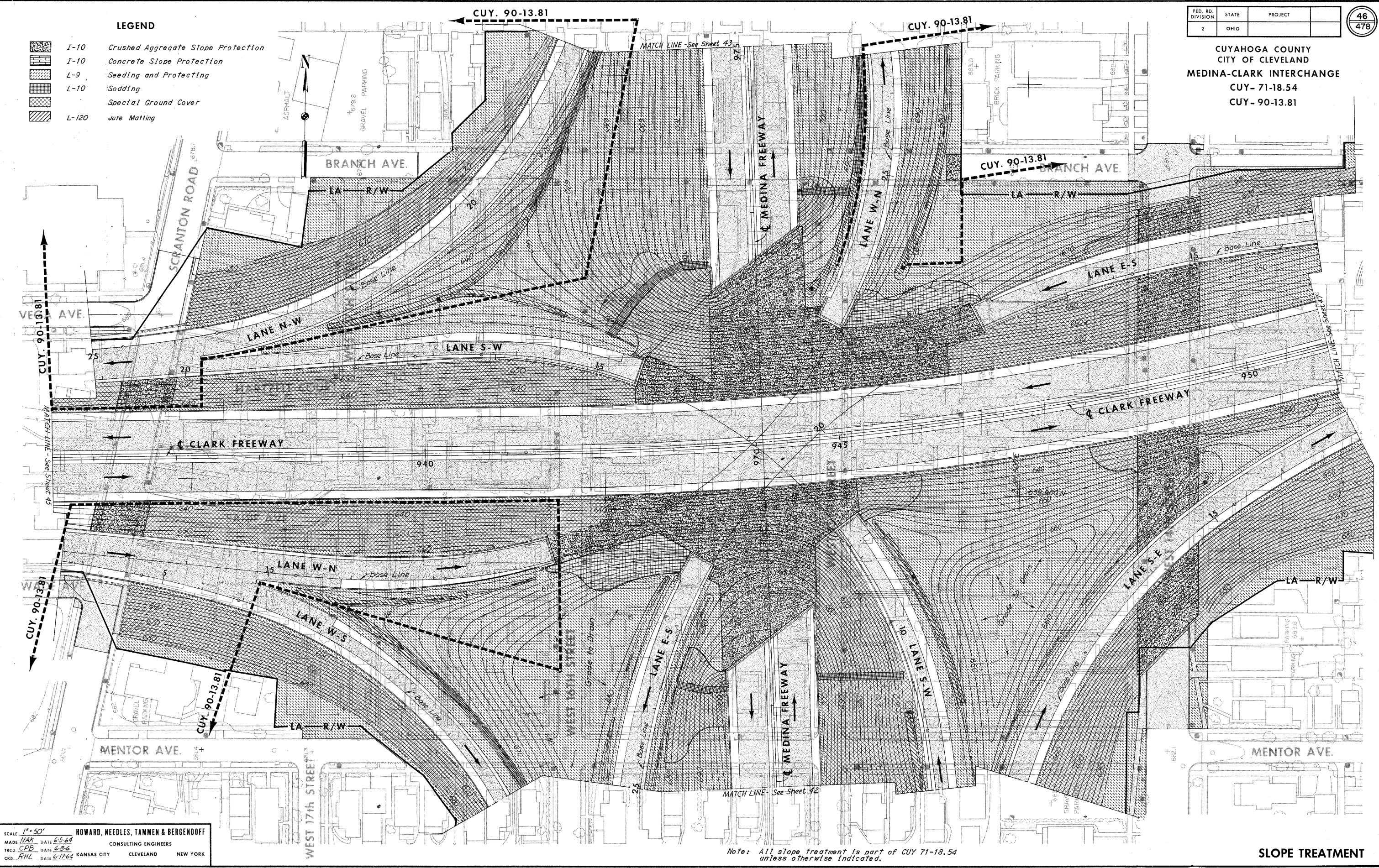
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SLOPE TREATMENT

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

LEGEND

-  I-10 Crushed Aggregate Slope Protection
-  I-10 Concrete Slope Protection
-  L-9 Seeding and Protecting
-  L-10 Sodding
-  Special Ground Cover
-  L-120 Jute Matting



Note: All slope treatment is part of CUY 71-18.54 unless otherwise indicated.

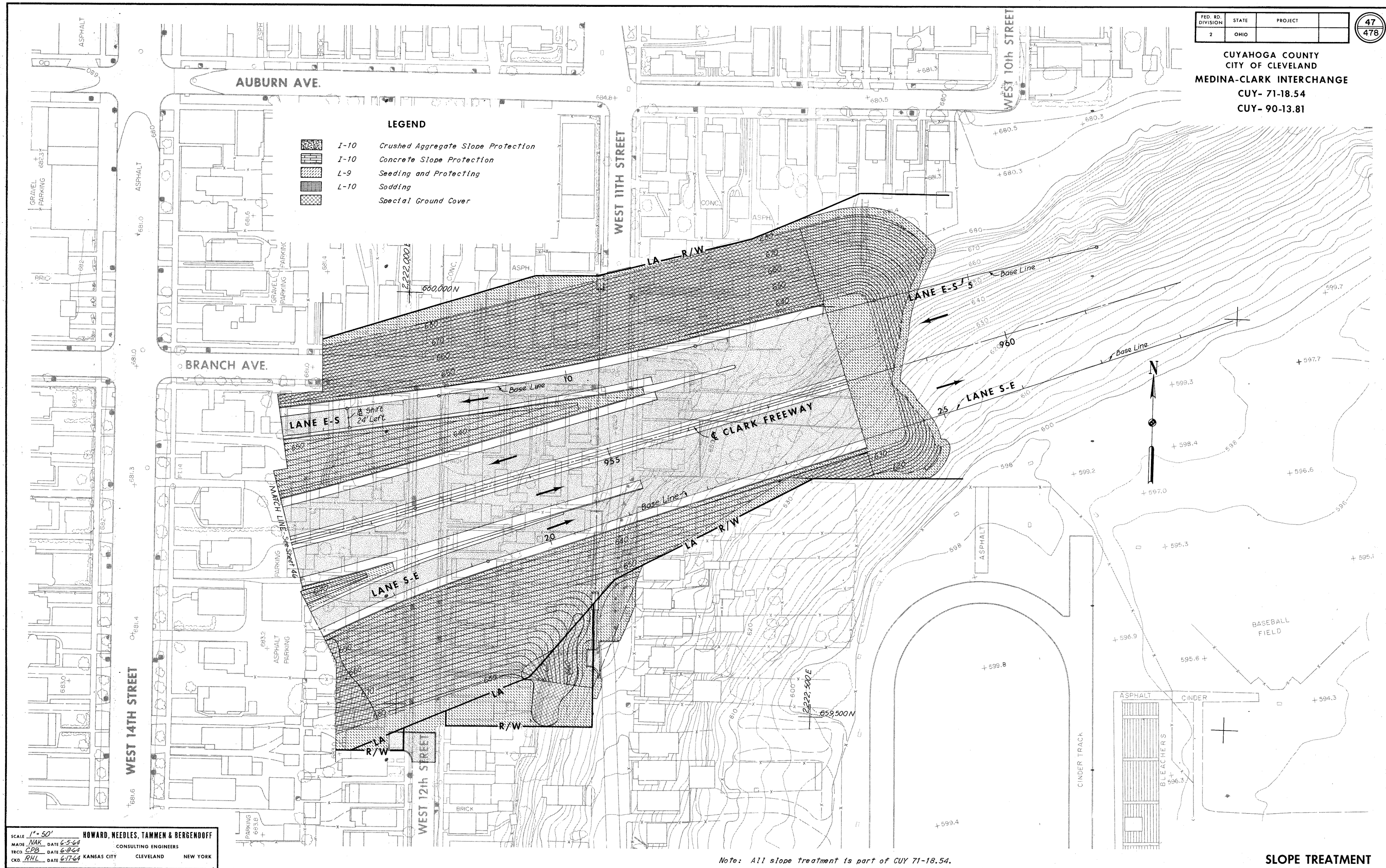
SCALE 1" = 50'
MADE NAK DATE 6-5-64
TRCD CPB DATE 6-8-64
CKD RHL DATE 6-17-64
HOWARD, NEEDLES, TAMMEN & BERGENOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SLOPE TREATMENT

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



LEGEND

	I-10	Crushed Aggregate Slope Protection
	I-10	Concrete Slope Protection
	L-9	Seeding and Protecting
	L-10	Sodding
		Special Ground Cover

SCALE 1" = 50'
 MADE NAK DATE 6-5-64
 TRCD CFB DATE 6-8-64
 CKD RHL DATE 6-17-64
 HOWARD, NEEDLES, TAMMEN & BERGENOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

Note: All slope treatment is part of CUY 71-18.54.

SLOPE TREATMENT

T-71 10" REINFORCED P.C.C. PAVEMENT

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

STATION TO STATION	LENGTH	LENGTH CORRECTION	CORR. LENGTH	WIDTH FEET	AREA SQ. YDS.	REMARKS
<i>CUY-71-18.54</i>						
<i>Southbound Medina</i>						
951+15.0	954+78.6	363.6	5711.6 ÷ 5729.6	362.5	36	1,450
<i>Northbound Medina</i>						
951+14.0	951+70.5	56.5	7657.4 ÷ 7639.4	56.6	36	227
951+70.5	954+78.6	308.1	5763.6 ÷ 5745.6	309.1	36	1,236
<i>Medina Freeway</i>						
954+78.6	967+56.3	1277.7		1277.7	72	10,222
972+69.7	980+25.4	755.7		755.7	72	6,046
980+25.4	980+72.8	47.4	3932.5 ÷ 3906.5	47.7	36	191 Lt.
980+25.4	980+72.8	47.4	3980.5 ÷ 3906.5	47.1	36	188 Rt.
<i>Ramp J-NBOR</i>						
17+16.4	19+20.0	203.6		203.6	45	102 * Ave. Width
<i>N.B.O.R.</i>						
23+48.0	27+50.9	402.9		402.9	36	1,611
<i>S.B.O.R.</i>						
2+27.4	3+61.3	133.9	2882.8 ÷ 2864.8	134.7	36	539
<i>Lane S-W</i>						
0+00.0	0+72.0	72.0		72.0	13*	104 * Ave. Width
0+72.0	5+97.7	525.7		525.7	12	701
3+51.5	5+97.7	246.2		246.2	9*	246 * Ave. Width
5+97.7	6+97.7	100.0	1166.9 ÷ 1145.9	101.8	10	113
5+97.7	8+73.0	275.3	1153.9 ÷ 1145.9	277.2	16	493
8+73.0	11+16.8	243.8	553.7 ÷ 545.7	247.0	16	439
14+79.2	16+41.8	162.6	553.7 ÷ 545.7	165.0	16	293
14+79.2	16+25.0	145.8	544.7 ÷ 545.7	145.5	3	48
16+41.8	17+22.0	80.2	1153.9 ÷ 1145.9	80.8	16	144
17+22.0	17+80.6	58.6		58.6	16	104
17+80.6	18+80.6	100.0		100.0	15*	167 * Ave. Width
18+80.6	19+80.6	100.0		100.0	15*	167 * Ave. Width
<i>Lane S-E</i>						
0+00.0	2+80.3	280.3	3837.7 ÷ 3819.7	281.7	36	1,127
2+80.3	5+00.2	219.9	3831.7 ÷ 3819.7	220.6	24	588
3+52.0	6+30.0	278.0		278.0	8*	247 * Ave. Width
5+00.2	8+91.2	391.0		391.0	24	1,043
6+30.0	8+75.9	245.9		245.9	12	328
8+75.9	9+75.9	100.0	1166.9 ÷ 1145.9	101.8	10	113
8+91.2	10+80.0	188.8	1444.4 ÷ 1432.4	190.4	24	508
10+80.0	15+29.2	449.2	648.6 ÷ 636.6	457.7	24	1,220
15+29.2	19+21.0	391.8	1444.4 ÷ 1432.4	395.1	24	1,054
19+21.0	19+26.0	5.0		5.0	24	13
19+26.0	20+26.0	100.0		100.0	25*	278 * Ave. Width
20+26.0	21+26.0	100.0		100.0	27*	300 * Ave. Width
21+26.0	23+99.0	273.0		273.0	24	728
<i>Lane E-S</i>						
6+75.5	8+40.1	164.6		164.6	24	439
6+75.5	8+00.6	125.1		125.1	9*	125 * Ave. Width
8+00.6	9+00.6	100.0		100.0	10	111
8+40.1	11+55.5	315.4	2876.8 ÷ 2864.8	316.7	24	844
11+55.5	13+92.6	237.1		237.1	24	632
13+92.6	15+77.1	184.5	1921.8 ÷ 1909.8	185.7	24	495
15+77.1	17+42.3	165.2	966.9 ÷ 954.9	167.3	24	446
16+67.5	17+42.3	74.8	953.4 ÷ 954.9	74.7	3	25
22+38.2	23+74.8	136.6	648.6 ÷ 636.6	139.2	24	371
23+74.8	26+36.4	261.6	966.9 ÷ 954.9	264.9	24	706
26+36.4	29+59.1	322.7	1921.8 ÷ 1909.8	324.7	24	866
29+59.1	32+47.2	288.1		288.1	24	768
30+09.1	34+50.0	440.9		440.9	7.5*	367 * Ave. Width
32+47.2	36+54.0	406.8	3843.7 ÷ 3819.7	409.3	24	1,091
36+54.0	38+50.6	196.6	3837.7 ÷ 3819.7	197.5	36	790

T-71 10" REINFORCED P.C.C. PAVEMENT

STATION TO STATION	LENGTH	LENGTH CORRECTION	CORR. LENGTH	WIDTH FEET	AREA SQ. YDS.	REMARKS
<i>CUY-71-18.54 (Cont.)</i>						
<i>Lane W-S</i>						
6+08.3	7+08.3	100.0		100.0	10	111
6+08.3	10+09.0	400.7	553.7 ÷ 545.7	406.6	16	723
10+09.0	13+26.2	317.2	1153.9 ÷ 1145.9	319.4	16	568
13+26.2	14+26.2	100.0		100.0	15*	167 * Ave. Width
14+26.2	15+26.2	100.0		100.0	15*	167 * Ave. Width
15+26.2	17+93.9	267.7		267.7	12	357
17+93.9	19+67.5	173.6	2870.8 ÷ 2864.8	173.9	12	232
19+67.5	21+70.6	203.1	2870.8 ÷ 2864.8	203.5	13*	294 * Ave. Width
<i>Clark Frwy.</i>						
928+50.0	958+00.0	2950.0		2950.0	72	23,600
955+74.4	956+74.4	100.0		100.0	10	111
956+74.4	958+00.0	125.6		125.6	12	168
955+26.4	958+00.0	273.6		273.6	9.5*	289 * Ave. Width
<i>CUY-71-18.54 Total 67,241 Sq. Yds.</i>						
<i>CUY-90-13.81</i>						
<i>Medina Frwy.</i>						
982+88.3	989+02.2	613.9	3932.5 ÷ 3906.5	618.0	36	2,472 Lt.
982+88.3	989+02.2	613.9	3880.5 ÷ 3906.5	609.8	36	2,439 Rt.
983+36.4	984+36.4	100.0		100.0	10	111 Lt.
984+36.4	986+97.0	260.6	3956.5 ÷ 3906.5	260.6	12	352 Lt.
986+97.0	988+90.0	193.0		193.0	8.5*	182 Lt. * Ave. Width
982+88.3	985+31.0	242.7		242.7	5*	135 Rt. * Ave. Width
991+21.3	992+50.3	129.0	3932.5 ÷ 3906.5	129.9	36	520 Lt.
992+50.3	994+42.7	192.4	3838.5 ÷ 3906.5	194.0	48	1,035 Lt.
991+21.3	994+42.7	321.4	3874.5 ÷ 3906.5	318.8	48	1,700 Rt.
994+42.7	998+76.1	433.4		433.4	96	4,623
<i>Lane S-W</i>						
19+80.6	20+42.0	61.4		61.4	12	82
20+42.0	25+13.4	471.4		471.4	8*	419 * Ave. Width
<i>Lane W-S</i>						
1+11.0	4+08.5	297.5		297.5	8*	264 * Ave. Width
4+08.5	4+72.0	63.5	2870.8 ÷ 2864.8	63.6	12	85
4+72.0	5+93.6	121.6	1151.9 ÷ 1145.9	122.2	12	163
4+08.5	5+36.5	128.0		128.0	8*	114 * Ave. Width
5+36.5	5+93.6	57.1	1163.9 ÷ 1145.9	58.0	12	77
5+93.6	6+08.3	14.7	557.7 ÷ 545.7	15.0	24	40
<i>Lane N-W</i>						
0+00.0	1+46.0	146.0		146.0	13*	211 * Ave. Width
3+70.5	8+29.5	459.0	2852.8 ÷ 2864.8	457.1	24	1,219
8+29.5	9+29.5	100.0		100.0	10	111
8+29.5	9+84.5	155.0		155.0	24	413
5+61.5	8+29.5	268.0		268.0	7*	208 * Ave. Width
12+00.6	15+19.5	318.9		318.9	24	850
15+19.5	17+01.1	181.6	1157.9 ÷ 1145.9	183.5	24	489
17+01.1	23+49.0	647.9	585.0 ÷ 573.0	661.4	24	1,764
23+49.0	24+63.9	114.9	1157.9 ÷ 1145.9	116.1	24	310
24+63.9	29+03.9	440.0		440.0	24	1,173
23+73.1	24+32.1	59.0		59.0	4.5*	30 * Ave. Width
29+03.9	29+65.5	61.6		61.6	26	178
29+65.5	30+65.5	100.0	2878.8 ÷ 2864.8	100.3	27*	301 * Ave. Width
30+65.5	31+96.7	131.2	2876.8 ÷ 2864.8	131.7	24	351
31+96.7	32+47.5	50.8		50.8	24	136
<i>Clark Frwy.</i>						
928+50.0	933+12.8	462.8		462.8	12	617
933+12.8	934+12.8	100.0		100.0	10	111
928+50.0	930+37.6	187.6		187.6	9.5*	198 * Ave. Width

SCALE None HOWARD, NEEDLES, TAMMEN & BERGENOFF
MADE NAK DATE 12-18-64 CONSULTING ENGINEERS
TRCD DATE KANSAS CITY CLEVELAND NEW YORK
CKD SNM DATE 12-18-64

QUANTITY CALCULATIONS

T-71 10" REINFORCED P.C.C. PAVEMENT

STATION TO STATION	LENGTH	LENGTH CORRECTION	CORR. LENGTH	WIDTH FEET	AREA SQ. YDS.	REMARKS
CUY-90-13.81 (Cont.)						
Lane W-N						
5+37.2	7+66.0	228.8		228.8	12	305
5+37.2	7+66.0	228.8		228.8	9*	229 *Ave. Width
7+66.0	9+30.0	164.0		164.0	24	437
7+66.0	9+98.3	232.3		232.3	7*	181 *Ave. Width
9+98.3	10+98.3	100.0	3831.7 ÷ 3819.7	100.3	10	111
9+30.0	12+08.2	278.2	3831.7 ÷ 3819.7	279.0	24	744
12+08.2	15+32.4	324.2		324.2	24	864
15+32.4	17+13.4	181.0	1133.9 ÷ 1145.9	179.1	24	478
16+85.0	18+20.3	135.3	1120.4 ÷ 1145.9	132.3	3	44
14+87.6	15+87.6	100.0		100.0	10	111
14+14.0	14+87.6	73.6		73.6	9*	74 *Ave. Width
17+13.4	18+20.3	106.9	585.0 ÷ 573.0	109.1	24	291
23+33.2	27+19.8	386.6	561.0 ÷ 573.0	378.5	24	1,009
23+33.2	23+58.2	25.0		25.0	4*	11 *Ave. Width
27+19.8	29+86.9	267.1		267.1	24	712
29+86.9	30+63.0	76.1	1444.4 ÷ 1432.4	76.7	24	204
30+63.0	31+63.0	100.0	1444.9 ÷ 1432.4	100.9	25*	280 *Ave. Width
31+63.0	32+40.0	77.0	1445.9 ÷ 1432.4	77.7	27*	233 *Ave. Width
34+54.0	36+92.5	238.5	3869.6 ÷ 3857.6	239.2	24	638
36+92.5	40+64.5	372.0	3868.6 ÷ 3857.6	373.1	22.5*	933 *Ave. Width
CUY-90-13.81 Total 31,372 Sq. Yds.						

T-70 7" P.C.C. PAVEMENT

STATION TO STATION	LENGTH FEET	WIDTH FEET	AREA SQ. YDS.	REMARKS
CUY-71-18.54				
W. 14th St.				
6+66.7	8	19	17	
6+66.7	10	3.5	4	A = (B/2) W
Auburn Ave.				
3+55.7	8.6	1	1	
3+55.7	10.6	3.5	4	A = (B/2) W
W. 12th St.				
2+49.3	8.3	5.3	5	A = (B/2) W
Clark Ave.				
6+90.0	4.8	9.5	5	A = (B/2) W
Mentor Ave.				
0+92	8	15	13	
1+82.6	8	15	13	
1+33.3	9	13	13	
1+92.8	8	13	12	
CUY-71-18.54 Total 87 Sq. Yds.				

T-70 8" P.C.C. PAVEMENT

STATION TO STATION	LENGTH FEET	WIDTH FEET	AREA SQ. YDS.	REMARKS
CUY-71-18.54				
Clark Ave.				
2+23	2+28	5	8.5	5 A = (B/2) W
2+28	2+54.2	26.2	10.7	31
2+54.2	7	2	2	A = R(T-L/2)
Wade Ave.	4+33.7		18	
CUY-71-18.54 Total 38 Sq. Yds.				

I-21 P.C.C. MEDIAN PAVEMENT

STATION TO STATION	LENGTH FEET	WIDTH FEET	AREA SQ. YDS.	REMARKS
CUY-71-18.54				
Northbound Medina				
951+14.0	954+78.6	364.6	6	243
Medina Frwy.				
954+78.6	967+81.3	1302.7	6	872
972+44.7	980+97.8	853.1	6	569
Clark Frwy.				
928+50.0	958+00.0	2950.0	6	1,967
930+37.6	931+99.2	161.6	5.5*	99 * Ave. Width
933+12.8	934+12.8	100.0	7*	78 * Ave. Width
952+12.0	955+26.4	314.4	5.5*	192 * Ave. Width
955+61.0	956+74.4	113.4	7*	88 * Ave. Width
Lane S-E				
8+75.9	9+43.9	68.0	7*	53 * Ave. Width
CUY-71-18.54 Total 4,161 Sq. Yds.				
CUY-90-13.81				
Medina Frwy.				
982+63.3	989+27.2	663.9	6	443
990+96.3	994+75.0	378.7	6	252
994+75.0	998+75.0	400.0	5*	222 * Ave. Width
998+75.0	999+01.1	26.1	4	12
983+03.0	984+36.4	133.4	7*	104 * Ave. Width
Lane W-N				
14+87.6	15+14.6	27.0	7*	21 * Ave. Width
CUY-90-13.81 Total 1,054 Sq. Yds.				

S-3, TYPE C WATERPROOFING

CUY-90-13.81	
Viaduct Ext.	11,425 Sq. Yds.
3+87.67 - 14+22	

T-71 9" REINFORCED P.C.C. PAVEMENT

STATION TO STATION	LENGTH FEET	WIDTH FEET	AREA SQ. YDS.	REMARKS
CUY-71-18.54				
Howard Ave.				
7+10	7+45	35	30	117
7+10	7+30	20	38	84 LT.
7+30	7+45	15	3.2	5 LT. A = R(T-L/2)
Auburn Ave.				
3+21	3+59	38	30	127
3+34	3+59	25	13	36 RT.
3+34	3+59	25	13	36 LT.
3+21	3+34	13	2.8	4 RT. A = R(T-L/2)
3+21	3+34	13	2.8	4 LT. A = R(T-L/2)
W. 12th St.				
2+29	2+64	35	26	101
2+44	2+64	20	29	64 LT.
2+29	2+44	15	3.2	5 LT. A = R(T-L/2)
W. 11th St.				
6+76	6+81	5	1.1	1 RT. A = R(T-L/2)
6+76	6+81	5	4	2 RT.
6+81	7+01	20	20	44 RT.
7+01	7+16	15	3.2	5 RT. A = R(T-L/2)
7+01	7+16	15	2	3 RT.
Clark Ave.				
2+32	2+61.2	29.2	39.3	128
6+75.2	7+00.0	24.8	39.3	108
Scranton Road				
7+25.0	7+84.3	59.3	40	264
7+67.0	7+87.0	15.0	5.4	9 LT. A = R(T-L/2)
11+48.4	11+55.0	7	40	31 A = 1/2 (LxW)
11+55.0	12+15.0	60	40	267
11+51.0	11+71.0	25	3.1	9 LT. A = R(T-L/2)
W. 14th St.				
6+00.0	6+60.0	60	50	333
6+60.0	7+11.5	51.5	25	143 A = 1/2 (LxW)
12+61.5	12+72.5	11	25	30 A = 1/2 (LxW)
12+72.5	13+10.0	37.5	50	208
Branch Ave.				
11+26	11+51	25	30.2	84
11+36	11+51	15	3.2	5 LT. A = R(T-L/2)
11+36	11+51	15	3.2	5 RT. A = R(T-L/2)
12+01	12+26	25	14	39
12+01	12+11	10	2.1	2 LT. A = R(T-L/2)
12+01	12+11	10	2.1	2 RT. A = R(T-L/2)
Wade Ave.				
8+73	9+02.5	29.5	21	69
9+02.5	9+08.5	3	19	6 A = 1/2 (LxW)
Vega Ave.				
0+37	0+90	53	30	177
0+20	0+37	17	11.5	22 A = 1/2 (LxW)
0+17	0+37	19	10	21
0+37	0+55	9	6	6 LT. A = 1/2 (LxW)
CUY-71-18.54 Total 2,606 Sq. Yds.				

B-35 ASPHALTIC CONCRETE LEVELING COURSE

STATION TO STATION	LENGTH FEET	WIDTH FEET	AREA SQ. YDS.	REMARKS
CUY-71-18.54				
Vega Ave.				
0+90.0	9+40.0	850	30	2,833
Wade Ave.				
0+30.0	3+50.0	320	28	996
3+50.0	4+50.0	100	24.5	272
4+50.0	8+73.0	423	21	987
CUY-71-18.54 Total 5,088 X 0.1042 ÷ 3 = 177 Cu. Yds. †				

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

I-7 REINFORCED CONCRETE APPROACH SLABS

STATION TO STATION	LENGTH FEET	WIDTH FEET	AREA SQ. YDS.	REMARKS
CUY-71-18.54				
Medina Frwy.				
967+56.3	967+81.3	25	72	200
972+44.7	972+69.7	25	72	200
980+72.8	980+97.8	25	109	303
Lane S-W				
11+16.8	11+41.8	25	31	86
14+54.2	14+79.2	25	31	86
Lane E-S				
17+42.3	17+67.3	25	30	83
22+13.2	22+38.2	25	32	89
Clark Ave.				
W. 14th	W. 16th	25	80	222
Scranton Road				
Wade	Vega	25	80	222
W. 14th St.				
Mentor	Branch	25	100	279
CUY-71-18.54 Total 1,770 Sq. Yds.				
CUY-90-13.81				
Medina Frwy.				
982+63.3	982+88.3	25	105	292
989+02.2	989+27.2	25	111	308
990+96.3	991+21.3	25	99	275
998+76.1	999+01.1	25	96	267
Lane N-W				
9+84.5	10+09.5	25	24	67
11+75.6	12+00.6	25	24	67
Lane W-N				
18+20.3	18+45.3	25	30	83
23+08.2	23+33.2	25	30	83
CUY-90-13.81 Total 1,442 Sq. Yds.				

T-35 ASPHALTIC CONCRETE SURFACE COURSE

STATION TO STATION	LENGTH FEET	WIDTH FEET	AREA SQ. YDS.	REMARKS
CUY-71-18.54				
Vega Ave.				
0+90.0	9+40.0	850	30	2,833
Wade Ave.				
0+30.0	3+50.0	320	28	996
3+50.0	4+50.0	100	24.5	272
4+50.0	8+73.0	423	21	987
CUY-71-18.54 Total 5,088 X 0.1042 ÷ 3 = 177 Cu. Yds. †				
CUY-90-13.81				
Viaduct Ext.				
3+87.67	14+22			654
CUY-90-13.81 Total 654 Cu. Yds.				

†95% State & 5% City
QUANTITY CALCULATIONS

Rev. 10-21-65 C.E.H.

SCALE None HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE NAK DATE 12-18-64 CONSULTING ENGINEERS
TRCD DATE KANSAS CITY CLEVELAND NEW YORK
CKD SNIM DATE 12-18-64

I-12 CONCRETE CURB

STATION TO STATION	LOC	LENGTH	CORR. LENGTH	TYPE					REMARKS
				2A	2B	6	7	8	
CUY-71-18.54									
Southbound Medina									
951+15.0	954+78.6	R	363.6	5683.6 ÷ 5729.6	360.7				361
Northbound Medina									
951+14.0	951+70.5	R	56.5	7685.5 ÷ 7639.4	56.9				57
951+70.5	954+78.6	R	308.1	5786.6 ÷ 5745.6	310.6				311
Medina Frwy.									
954+78.6	967+26.0	L	1247.4		1247.4				1247
954+78.6	967+36.5	R	1257.9		1257.9				1258
Ramp J-N.B.O.R.									
17+16.4	20+11.5	L	295.1		295.1				295
N.B.O.R.									
23+48.0	27+50.9	R	402.9		402.9				403
26+43.9	27+50.9	L	107.0		107.0				107
S.B.O.R.									
2+27.4	3+61.3	L	133.9	2904.8 ÷ 2864.8	135.8				136
2+27.4	3+61.3	R	133.9	2854.8 ÷ 2864.8	133.4				133
Lane S-E									
0+00.0	2+50.0	L	250.0	3859.7 ÷ 3819.7	252.6				253
0+00.0	5+00.2	R	500.2	3809.7 ÷ 3819.7	498.9				499
5+00.2	8+91.2	R	391.0		391.0				391
8+91.2	10+80.0	R	188.8	1422.4 ÷ 1432.4	187.5				188
10+80.0	15+29.2	R	449.2	626.6 ÷ 636.6	442.1				442
15+29.2	19+21.0	R	391.8	1422.4 ÷ 1432.4	387.4				387
19+21.0	23+92.7	R	471.7		471.7				472
9+40.0	9+75.0	L	35.0		35.0	35			
Lane S-W									
6+62.0	6+97.0	R	35.0		35.0	35			
9+25.0	11+26.0	L	201.0	541.7 ÷ 545.7	199.5				200
16+25.0	16+41.8	L	16.8		16.8				17
16+41.8	17+22.0	L	80.2	1141.9 ÷ 1145.9	79.9				80
17+22.0	19+80.6	L	258.6		258.6				259
17+30.6	19+07.1	R	176.5		176.5			176	
19+07.1	19+80.6	R	73.5		73.5			74	
Lane E-S									
6+86.4	8+40.1	R	153.7		153.7				154
8+40.1	11+55.5	R	315.4	2854.8 ÷ 2864.8	314.3				314
9+13.6	10+50.6	L	137.0		137.0				137
10+50.6	11+55.5	L	104.9	2892.8 ÷ 2864.8	105.9				106
11+55.5	13+92.6	L&R	237.1	237.1 X 2	474.2				474
13+92.6	15+77.1	L	184.5	1905.8 ÷ 1909.8	184.1				184
13+92.6	15+73.3	R	180.7	1943.8 ÷ 1909.8	183.9				184
15+77.1	16+67.5	L	90.4	950.9 ÷ 954.9	90.0				90
15+73.3	17+52.6	R	179.3	985.4 ÷ 954.9	185.0				185
35+10.0	38+50.6	L	340.6	3859.7 ÷ 3819.7	344.1				344
36+54.0	38+50.6	R	196.6	3809.7 ÷ 3819.7	196.1				196
Lane W-S									
6+33.3	7+08.3	L	75.0		75.0	75			
6+08.3	10+09.0	R	400.7	535.7 ÷ 545.7	393.4				393
10+09.0	13+54.4	R	345.4	1135.9 ÷ 1145.9	342.4				342
13+54.4	17+93.9	R	439.5		439.5				440
17+93.9	21+70.6	R	376.7	2854.8 ÷ 2864.8	375.4				375
11+77.5	13+06.2	L	128.7	1165.9 ÷ 1145.9	130.9			131	
13+06.2	15+26.2	L	220		220.0			220	
Clark Frwy.									
932+98.6	934+12.8	L	114.2						114
934+12.8	952+12.0	L&R	1799.2	1799.2 X 2	3598.4				3598
952+12.0	955+61.0	L	349.0		349.0				349
Clark Ave.									
2+31.3	2+68.4	L	37.1		37.1	37			
2+22.3	2+68.4	R	46.1		46.1	46			
2+54.2	2+61.2	R	7.0	2π (7) ÷ 4+3.6	14.6	15			
6+67.9	7+00.2	L	32.3		32.3	32			
6+67.9	7+00.2	R	32.3		32.3	32			

SCALE None HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 MADE NAK DATE 12-18-64 CONSULTING ENGINEERS
 TRCD DATE KANSAS CITY CLEVELAND NEW YORK
 CKD SNM DATE 12-18-64

I-12 CONCRETE CURB

STATION TO STATION	LOC	LENGTH	CORR. LENGTH	TYPE					REMARKS
				2A	2B	6	7	8	
CUY-71-18.54 (Cont.)									
Scranton Road									
7+25.0	7+41.4	R	16.4		16.4	16			
7+25.0	7+67.5	L	42.5		42.5	43			
7+67.5	7+83.0	L		15 x 1.78023584	26.7	27			
12+0	12+15.0	R	13.2		13.2	13			
11+46.5	11+71.0	L		25 x 1.35263017	33.8	34			
11+71.0	12+15.0	L	44.0		44.0	44			
W. 14th St.									
6+00.0	6+52.1	L	52.1		52.1	52			
6+00.0	7+18.9	R	118.9		118.9	119			
12+62.3	12+70.0	R	7.7		7.7	8			
12+47.9	12+50.0	L	2.1		2.1	2			
12+70.0	12+80.0	R	10.0	2π 10 ÷ 4	15.7	16			
12+94.0	13+04.0	R	10.0	2π 10 ÷ 4	15.7	16			
13.04.0	13+10.0	R	6.0		6.0	6			
12+50.0	12+65.0	L	15.0	2π 15 ÷ 4	23.6	24			
12+95.0	13+10.0	L	15.0	2π 15 ÷ 4	23.6	24			
Howard Ave.									
7+10.0	7+45.0	R	35.0		35.0	35			
7+10.0			68.0		68.0	68			
7+10.0	7+30.0	L	20.0		20.0	20			
7+30.0		L	23.0		23.0	23			
7+30.0	7+45.0	L	15.0	2π 15 ÷ 4	23.6	24			
Auburn Ave.									
3+31.0	3+34.0	R	13.0	2π 13 ÷ 4	20.4	20			
3+34.0	3+59.0	R	25.0		25.0	25			
3+59.0			56.0		56.0	56			
3+21.0	3+34.0	L	13.0	2π 13 ÷ 4	20.4	20			
3+34.0	3+59.0	L	25.0		25.0	25			
W. 12th St.									
2+29.0	2+69.0	R	40.0		40.0	40			
2+29.0	2+44.0	L	15.0	2π 15 ÷ 4+13	36.6	37			
2+44.0	2+64.0	L	20.0		20.0	20			
2+64.0			55.0		55.0	55			
W. 11th St.									
6+76.1	6+81.1	R	5.0	2π 5 ÷ 4	7.8	8			
6+81.1	7+01.1	R	20.0		20.0	20			
7+01.1	7+14.8	R	13.7	2π 15 ÷ 4	23.6	24			
Vega Ave.									
0+38.0	0+90.0	R	52.0		52.0	52			
0+38.0	0+58.0	L	20.0		20.0	20			
0+58.0	0+90.0	L	32.0		32.0	32			
0+90.0	9+29.4	L	839.4		839.4	839			
Wade Ave.									
0+47.3	8+73.0	L	825.7		825.7	826			
8+73.0	9+02.1	L	29.1		29.1	29			
3+50.0	4+50.0	R	100.0		100.0	100			
Branch Ave.									
11+26.5	11+36.0	L&R	9.5	2 x 9.5	19.0	19			
12+11.5	12+26.5	L&R	15.0	2 x 15.0	30.0	30			
12+26.5	13+86.5	L&R	334		334.0	334			
W. 16th St.									
Castle	Alley								235
CUY-71-18.54 Totals									
			1,787		17,240	307	294	235	

I-14
Type 1
Paved
Gutter
Modified

See
Detail-
Sheet
No. 114

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

S.S. CE 101.04 COMPACTION USING
HEAVY PNEUMATIC TIRED ROLLER

CUY-71-18.54	
E-1 Compacted Subgrade	103,715
Less Areas of Extra depth	-40,684
Total	63,031
63,031 Sq. Yds. = 32 Hrs. ✓ 2000 Sq. Yds. / Hr.	
CUY-90-13.81	
E-1 Compacted Subgrade	44,667
Less Areas of Extra depth	-2,172
Total	42,495
42,495 Sq. Yds. = 21 Hrs. ✓ 2000 Sq. Yds. / Hr.	

I-14 PAVED GUTTER
(Standard Type 2, Modified)

Location	Length Ft.
CUY-71-18.54	
Medina Frwy.	
976+69.5-977+38.1 Rt.	Total 86
992+13.4-993+20.5 Rt.	130
993+67.6-994+90.0 Lt.	198
Lane W-W	
24+70.0-31+33.9	663
Lane W-N	
5+70.6-8+74.0	303
Lane W-S	
0+00.0-3+80.0	380
CUY-90-13.81 Total 1,674 ✓	

(See Detail - Sheet No. 114)

≠ 95% State & 5% City

Rev. 10-27-65 C.E.H.

QUANTITY CALCULATIONS

**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81**

I-15 GUARD RAIL, STEEL BEAM (DEEP)

STATION TO STATION	LOCATION	BARRIER	STANDARD
CUY-71-18.54			
W. 11th Street			
2+27			25
6+69			25
W. 12th Street			
2+66			50
CUY-71-18.54 Total 5,470 9,502			
CUY-90-13.81			
Medina Frwy.			
982+63	989+27	€	664
990+96	999+01	€	805
992+50	998+63	LT.	613
991+25	999+01	RT.	776
982+76	983+00	LT.	24
Lane N-W			
0+00	1+59	RT.	159
3+65	9+95	RT.	630
9+68	9+92	LT.	24
11+92	16+30	RT.	438
Lane S-W			
19+80	22+85	LT.	305
Lane W-N			
12+10	16+85	LT.	475
16+75	18+25	RT.	150
23+60	32+50	RT.	890
34+45	40+75	RT.	630
CUY-90-13.81 Total 1,469 5,114			

I-26 CHAIN LINK FENCE GATES

LOCATION	NO.
CUY-71-18.54	
Medina Frwy.	4
Clark Frwy.	3
CUY-71-18.54 Total 7	
CUY-90-13.81	
Median Frwy.	11
Clark Frwy.	3
CUY-90-13.81 Total 14	

E-11 WATER

Location	Volume
CUY-90-13.81	
B-19 Aggregate	2,556
I-22 Subbase	81,335
E-1 Embankment	272,058
Total 282,649	
282,649 x 0.005 = 1,413 M. Gal.	
CUY-71-18.54	
B-19 Aggregate	6,105
I-22 Subbase	33,933
E-1 Embankment	188,882
Total 228,920	
228,920 x 0.005 = 1,145 M. Gal.	

QUANTITY CALCULATIONS

I-11 SANDSTONE CURB RESET

STATION TO STATION	LOC	LENGTH FEET	REMARKS
CUY-71-18.54			
Clark Ave.			
1+50	2+28	N	78
7+00	7+38	N	38
7+38	7+52	N	14
Castle Ave.			
2+22.2			30
Auburn Ave.			
7+90	8+00	S	16
8+00	8+10	S	10
7+90			34
Allman Ct.			
		E	25
Branch Ave.			
9+27	9+40	S	13
0+90	2+08	S	66
2+36	2+49	S	13
2+68	2+97		38
10+02	11+26.5	S	124
10+93	11+26.5	N	34
Mentor Ave.			
3+63	4+04		56
0+20	3+63	N	353
0+20	2+77	S	300
W. 11th Street			
2+01	2+18	W	17
2+18	2+25		30
6+71			23
W. 14th Street			
3+90	13+50	E	250
W. 15th Street			
8+68	9+25	W	57
W. 16th Street			
1+68	1+85	E	17
2+12	2+29	E	17
2+51	2+65	E	14
2+85	3+02	E	17
3+40	3+54	E	14
4+11	4+33	E	22
Alley			
Castle	Mentor	E	20
CUY-71-18.54 Total 1740			
CUY-90-13.81			
Starkweather Ave.			
3+48	3+57	S	9
3+79	3+93	S	14
4+48	4+61	S	13
3+82	3+93	N	11
4+16	4+25	N	9
5+37	5+57	N	20
6+06	6+20	N	14
6+46	6+59	N	13
6+86	6+98	N	12
Kenilworth Ave.			
5+39	5+59	S	20
2+91	3+07	N	16
3+71	3+81	N	10
4+52	4+64	N	12
5+29	5+41	N	12
5+46	5+59	N	13
CUY-90-13.81 Total 198			

I-12 CONCRETE CURB

STATION TO STATION	LOC	LENGTH	CORR. LENGTH	TYPE					REMARKS	
				2A	2B	6	7	8		
CUY-90-13.81										
Medina Frwy.										
982+71.0	983+03.0	L	32.0						32	
Lane N-W										
11+87.6	15+19.5	R	331.9						332	
15+19.5	17+01.1	R	181.6	1135.9 ÷ 1145.9	180.0				180	
17+01.1	23+49.0	R	647.9	563.0 ÷ 573.0	636.6				637	
23+49.0	24+63.9	R	114.9	1135.9 ÷ 1145.9	113.9				114	
24+63.9	30+06.2	R	542.3		542.3				542	
30+06.2	31+96.7	R	190.5	2854.8 ÷ 2864.8	189.8				190	
31+96.7	32+41.5	R	44.8		44.8				45	
9+61.0	9+93.0	L	32.0		32.0				32	
Lane W-N										
5+47.2	8+74.9	R	327.7		327.7				328	
10+98.3	12+48.3	L	150.0		150.0				150	
12+48.3	15+32.4	L	284.1		284.1				284	
15+32.4	16+85.0	L	152.6		148.9				149	
15+12.6	15+87.6	R	75	1155.9 ÷ 1145.9	75.7	76				
15+87.6	18+30.3	R	242.7		242.7				243	
29+30.0	30+96.0	L	166	1458.4 ÷ 1432.4*	167.5		168			*(83.0' x Corr.)+83.0'
30+96.0	32+64.0	L	168.0	1458.4 ÷ 1432.4	171.0			171		
Lane W-S										
0+00.0	4+72.0	R	472.0	2854.8 ÷ 2864.8	470.4				470	
4+72.0	5+93.6	R	121.6	1135.9 ÷ 1145.9	120.5				120	
5+93.6	6+08.3	R	14.7		14.7				15	
Lane S-W										
19+80.6	20+00.0	L	19.4		19.4				19	
CUY-90-13.81 Totals 76 3,882 168 171										

EARTHWORK SUMMARY

CUY-71-18.54	
E-1 Excavation = 1,526,477 Cu. Yds.	
E-1 Embankment = 188,882 Cu. Yds.	
E-1 Embankment + Swell = $\frac{188,882}{.85} = 222,214$ Cu. Yds.	
CUY-90-13.81	
E-1 Excavation = 294,070 Cu. Yds.	
E-1 Embankment = 272,058 Cu. Yds.	
E-1 Embankment + Swell = $\frac{272,058}{.85} = 320,068$ Cu. Yds.	

E-1 COMPACTED SUBGRADE

Location	Area	Area
CUY-71-18.54		
T-71 Pavement	69,847	31,372
B-21 Base Course	27,949	10,799
I-21 Median	4,161	1,054
I-7 Approach Slabs	1,758	1,442
Total 103,715 Sq. Yds.		44,667 Sq. Yds.

I-26 CHAIN LINK FENCE

ROADWAY	LOC	LENGTH	REMARKS
CUY-71-18.54			
Medina Frwy.			
951+31 - 954+70	Lt.	341	
951+38 - 954+51	Rt.	355	
955+45 - 966+32	Lt.	1,161	
966+32 - 939+18*	Lt.	102	*Clark Frwy.
955+35 - 967+11	Rt.	1,243	
Clark Frwy.			
938+18 - 939+18	Rt.	116	
947+00 - 949+00	Lt.	262	
949+00 - 954+40	Rt.	617	
950+00 - 958+80	Lt.	1,117	
954+50 - 957+75	Rt.	431	
CUY-71-18.54 Total 5,745 Ft.			
CUY-90-13.81			
Medina Frwy.			
974+09 - 981+39	Lt.	1,112	
973+12 - 981+28	Rt.	835	
982+23 - 982+30	Lt.	340	
982+30 - 989+91	Lt.	1,060	
982+33 - 989+91	Rt.	728	
990+31 - 990+98	Lt.	269	
990+31 - Abut.	Lt.	1,099	
990+98 - Abut.	Rt.	951	
Clark Frwy.			
927+33 - 935+70	Rt.	968	
927+69 - 936+40	Lt.	1,007	
936+38 - 938+18	Rt.	233	
937+43 - 974+09*	Lt.	423	*Medina Frwy.
CUY-90-13.81 Total 9,025 Ft.			

B-21 WATERPROOFED AGGREGATE BASE COURSE

STATION TO STATION	LENGTH	LENGTH CORRECTION	CORR. LENGTH	WIDTH FEET	AREA - SQ. YDS.		REMARKS
					T=3"	T=6"	
CUY-71-18.54							
Southbound Medina							
951+15.0	954+78.6	363.6	5732.1 ÷ 5729.6	363.8	5	202	Lt.
951+15.0	954+78.6	363.6	5688.6 ÷ 5729.6	361.0	10	401	Rt.
Northbound Medina							
951+14.0	951+70.5	56.5	7636.9 ÷ 7639.4	36.5	5	31	Lt.
951+70.5	954+78.6	308.1	5743.1 ÷ 5745.6	308.0	5	171	Lt.
951+14.0	951+70.5	56.5	7680.4 ÷ 7639.4	56.8	10	63	Rt.
951+70.5	954+78.6	308.1	5786.6 ÷ 5745.6	310.3	10	345	Rt.
Medina Frwy.							
954+78.6	967+81.3	1302.7		1302.7	30	4,342	
972+44.7	980+25.4	780.7		780.7	30	2,602	
980+25.4	980+97.8	72.4		72.4	20	161	
980+25.4	980+71.0	45.6		45.6	10	51	Rt.
979+20.0	980+71.0	151.0		151.0	5*	84	Rt. * Ave. Width
Ramp J-N.B.O.R.							
17+16.4	20+11.5	295.1		295.1	4	131	Lt.
19+20.0	20+11.5	91.5		91.5	1*	10	Lt. * Ave. Width
N.B.O.R.							
23+48.0	27+50.9	402.9		402.9	10	448	Rt.
26+43.9	27+50.9	107.0		107.0	4	48	Lt.
S.B.O.R.							
2+27.4	3+61.3	133.9	2902.8 ÷ 2864.8	135.7	4	60	Lt.
2+27.4	3+61.3	133.9	2859.8 ÷ 2864.8	133.7	10	148	Rt.
Clark Frwy.							
928+50.0	930+37.6	187.6		187.6	10	208	
930+37.6	934+12.8	375.2		375.2	20	834	
934+12.8	955+26.4	2113.6		2113.6	30	7,045	
955+26.4	955+74.4	48.0		48.0	20	107	
955+74.4	958+00.0	225.6		225.6	10	251	
Lane S-E							
0+00.0	5+00.2	500.2	3814.7 ÷ 3819.7	499.6	10	555	Rt.
0+00.0	2+80.4	280.4	3857.7 ÷ 3819.7	283.1	4	126	Lt.
5+00.2	8+91.2	391.0		391.0	10	434	Rt.
8+91.2	10+80.0	188.8	1427.4 ÷ 1432.4	188.1	10	209	Rt.
9+75.0	11+25.0	150.0		150.0	7*	117	Lt. * Ave. Width
10+80.0	15+29.2	449.2	631.6 ÷ 636.6	445.7	10	495	Rt.
11+25.0	15+29.2	404.2	662.6 ÷ 636.6	420.7	4	187	Lt.
15+29.2	19+21.0	391.8	1427.4 ÷ 1432.4	390.4	10	434	Rt.
15+29.2	19+21.0	391.8	1458.4 ÷ 1432.4	398.9	4	177	Lt.
19+21.0	23+92.7	471.7		471.7	10	524	Rt.
19+21.0	19+26.0	5.0		5.0	4	2	Lt.
19+26.0	20+26.0	100.0		100.0	3*	33	Lt. * Ave. Width
Lane S-W							
0+00.0	5+97.7	597.7		597.7	4	266	Lt.
5+97.7	8+73.0	275.3	1143.9 ÷ 1145.9	274.8	4	122	Lt.
6+96.9	8+73.0	176.1	1166.9 ÷ 1145.9	179.3	10	199	Rt.
8+73.0	11+16.8	243.8	543.7 ÷ 545.7	242.9	4	108	Lt.
8+73.0	11+16.8	243.8	566.7 ÷ 545.7	253.2	10	281	Rt.
14+79.2	16+41.8	162.6	566.7 ÷ 545.7	168.8	10	188	Rt.
16+25.0	16+41.8	16.8		16.8	4	8	Lt.
16+41.8	17+22.0	80.2	1143.9 ÷ 1145.9	80.1	4	36	Lt.
16+41.8	16+80.6	38.8	1166.9 ÷ 1145.9	39.5	10	44	Rt.
16+80.6	18+80.6	200.0		200.0	6*	133	Rt. * Ave. Width
17+22.0	19+80.6	258.6		258.6	4	115	Lt.
Lane W-S							
6+08.3	10+09.0	400.7	540.7 ÷ 545.7	397.1	10	441	Rt.
7+08.3	8+58.3	150.0		150.0	7*	117	Lt. * Ave. Width
8+58.3	10+09.0	150.7	563.7 ÷ 545.7	155.7	4	69	Lt.
10+09.0	13+54.5	345.5	1140.9 ÷ 1145.9	345.9	10	384	Rt.
10+09.0	12+76.2	267.2	1163.9 ÷ 1145.9	271.4	4	121	Lt.
12+76.2	14+26.2	150.0		150.4	3*	50	Lt. * Ave. Width
13+54.5	17+93.9	439.4		439.4	10	488	Rt.
17+93.9	21+70.6	376.7	2859.8 ÷ 2864.8	376.6	10	418	Rt.

SCALE None
 MADE NAK DATE 12-18-64
 TRCD: DATE
 CKD SNM DATE 12-18-64 KANSAS CITY CLEVELAND NEW YORK
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

52
478

CUYAHOGA COUNTY
 CITY OF CLEVELAND
 MEDINA-CLARK INTERCHANGE
 CUY-71-18.54
 CUY-90-13.81

B-21 WATERPROOFED AGGREGATE BASE COURSE

STATION TO STATION	LENGTH	LENGTH CORRECTION	CORR. LENGTH	WIDTH FEET	AREA - SQ. YDS.		REMARKS
					T=3"	T=6"	
Lane E-S CUY-71-18.54							
6+86.4	8+40.1	153.7		153.7	10	171	Rt.
8+40.1	11+55.5	315.4	2859.8 ÷ 2864.8	314.8	10	350	Rt.
9+00.6	10+50.6	150.0		150.0	4	117	Lt.
10+50.6	11+55.5	104.9		104.9	4	47	Lt.
11+55.5	13+92.6	237.1		237.1	14	369	
13+92.6	15+71.6	179.0	1938.8 ÷ 1909.8	181.7	10	202	Rt.
13+92.6	15+77.1	184.5	1907.8 ÷ 1909.8	184.3	4	82	Lt.
15+71.6	17+42.3	170.7	985.4 ÷ 954.9	176.2	6.5*	128	Rt. * Ave. Width
15+77.1	16+67.5	90.4	952.9 ÷ 954.9	90.2	4	40	Lt.
22+38.2	23+74.8	136.6		136.6	4	60	Lt.
22+52.5	23+74.8	122.3		122.3	5.5*	75	Rt. * Ave. Width
23+74.8	24+27.5	52.7		52.7	9*	53	Rt. * Ave. Width
23+74.8	26+36.4	261.6	952.9 ÷ 954.9	261.0	4	116	Lt.
24+27.5	26+36.4	208.9	983.9 ÷ 954.9	215.2	10	239	Rt.
26+36.4	29+59.1	322.7	1907.8 ÷ 1909.8	322.4	4	103	Lt.
26+36.4	29+59.1	322.7	1938.8 ÷ 1909.8	327.6	10	364	Rt.
27+89.1	29+59.1	170.0	1948.8 ÷ 1909.8	173.5	5*	96	Rt. * Ave. Width
29+59.1	32+47.2	288.1		288.1	4	128	Lt.
29+59.1	30+09.1	50.0		50.0	10	56	Rt.
32+47.2	38+50.6	603.4	3857.7 ÷ 3819.7	609.4	4	271	Lt.
36+54.0	38+50.6	196.6	3814.7 ÷ 3819.7	196.4	10	218	Rt.
CUY-71-18.54 Total 27,949 Sq. Yds. = 2329 Cu. Yds.							
CUY-90-13.81							
Medina Frwy.							
982+63.3	989+27.2	663.9		663.9	10	738	£
990+96.3	994.75.0	378.7		378.7	10	421	£
994+75.0	998+75.0	400.0		400.0	7*	311	£ * Ave. Width
998+75.0	999+01.1	26.1		26.1	4	12	£
982+63.0	983+36.4	73.1		73.1	10	81	Lt.
992+50.3	994+42.7	192.4	3967.5 ÷ 3906.5	195.4	10	217	Lt.
994+42.7	997+45.0	302.3		302.3	10	336	Lt.
997+45.0	998+83.0	138.0		138.0	7.5*	115	Lt. * Ave. Width
991+10.0	994+42.7	332.7	3845.5 ÷ 3906.5	327.5	10	364	Rt.
994+42.7	997+83.0	340.3		340.3	10	378	Rt.
997+83.0	999+18.0	135.0		135.0	7.5*	112	Rt. * Ave. Width
Lane N-W							
0+00.0	1+72.0	172.0		172.0	10	191	Rt.
3+44.5	8+29.5	485.0	2869.8 ÷ 2864.8	485.8	10	540	Rt.
8+29.5	10+09.5	180.0		180.0	10	200	Rt.
9+29.5	10+09.5	80.0		80.0	8.5*	76	Lt. * Ave. Width
11+75.6	15+19.5	343.9		343.9	10	382	Rt.
11+75.6	15+19.5	343.9		343.9	4	153	Lt.
15+19.5	17+01.1	181.6	1171.9 ÷ 1145.9	185.7	4	82	Lt.
15+19.5	17+01.1	181.6	1140.9 ÷ 1145.9	180.8	10	201	Rt.
17+01.1	23+49.0	647.9	599.0 ÷ 573.0	677.3	4	301	Lt.
17+01.1	23+49.0	647.9	568.0 ÷ 573.0	642.2	10	714	Rt.
23+49.0	24+63.9	114.9	1140.9 ÷ 1145.9	114.4	10	127	Rt.
23+49.0	23+73.1	24.1	1171.9 ÷ 1145.9	24.6	4	11	Lt.
23+00.1	23+73.1	73.0		73.0	5*	41	Lt. * Ave. Width
24+63.9	30+06.2	542.3		542.3	10	603	Rt.
30+06.2	31+86.7	190.5	2859.8 ÷ 2864.8	190.2	10	211	Rt.
31+86.7	32+41.5	44.8		44.8	10	50	Rt.
29+03.9	29+65.5	61.6		61.6	3*	20	Lt. * Ave. Width
Lane S-W							
19+80.6	25+13.4	532.8		532.8	4	237	Lt.
Lane W-N							
5+47.2	8+74.9	327.7		327.7	10	364	Rt.
10+98.3	12+48.3	150.0		150.0	7*	117	Lt. * Ave. Width
12+48.3	15+32.4	284.1		284.1	4	126	Lt.
15+32.4	16+85.0	152.6	1119.9 ÷ 1145.9	149.1	4	66	Lt.
15+87.6	16+45.3	57.7		57.7	10	64	Rt.
16+45.3	18+20.3	175.0		175.0	6.5*	126	Rt. * Ave. Width
23+33.2	27+19.8	386.6	547.0 ÷ 573.0	369.0	4	164	Lt.

QUANTITY CALCULATIONS

B-21 WATERPROOFED AGGREGATE BASE COURSE

STATION TO STATION	LENGTH	LENGTH CORRECTION	CORR. LENGTH	WIDTH FEET	AREA - SQ. YDS.		REMARKS
					T=3"	T=6"	
Lane W-N (Cont) CUY-90-13.81							
23+57.0	25+32.0	175.0		175.0	6.5*	126	Rt. * Ave. Width
25+32.0	27+19.8	187.8	578.0 ÷ 573.0	189.4	10	210	Rt.
27+19.8	29+86.9	267.1		267.1	10	297	Rt.
27+19.8	29+86.9	267.1		267.1	4	119	Lt.
29+86.9	30+63.0	76.1	1458.4 ÷ 1432.4	77.5	4	34	Lt.
30+63.0	31+63.0	100.0	1458.4 ÷ 1432.4	101.8	3	34	Lt.
29+86.9	32+65.0	278.1	1427.4 ÷ 1432.4	277.1	10	308	Rt.
34+29.0	40+89.5	660.5	3852.6 ÷ 3857.6	659.6	10	733	Rt.
Lane W-S							
0+00.0	1+11.0	111.0	2863.8 ÷ 2864.8	111.0	1*	12	Rt. * Ave. Width
0+00.0	4+72.0	472.0	2859.8 ÷ 2864.8	471.1	10	528	Rt.
4+72.0	5+93.6	121.6	1140.9 ÷ 1145.9	121.1	10	135	Rt.
5+93.6	6+08.3	14.7		14.7	10	16	Rt.
CUY-90-13.81					Total 10,799 Sq. Yds. = 900 Cu. Yds.		

I-13 4 1/2" P.C.C. SIDEWALK

STATION TO STATION	LOC	LENGTH FEET	WIDTH FEET	AREA SQ. FT.	REMARKS
CUY-71-18.54					
W. 14th St.					
4+73	6+00	Lt.	127	6	762
6+00	6+52.1	Lt.	52.1	8.5	391
6+00	6+37.5	Rt.	63.5	6	225
6+25.5	6+29.5	Rt.	5	7	35
6+37.5	6+85	Rt.	47.5	6	285
6+78.7	6+82.6	Rt.	3.9	15	58
6+85	7+18.9	Rt.	33.9	7.5	254
12+37	12+47.9	Lt.	10.9	7.5	82
12+62.3	12+78	Rt.	10.7	7.5	118
12+96	13+03	Rt.	7	7.5	52
Scranton Road					
4+50	4+80	Rt.	30	7	210
7+25	7+41.4	Rt.	16.4	6	98
7+67	7+80	Lt.	13	9	117
12+01.8	12+15	Rt.	13.8	6	83
11+57	11+72	Lt.	15	7	105
W. 12th St.					
2+35	2+42	Lt.	7	5	35
Mentor Ave.					
0+25	0+43	Rt.	18	6	108
1+63	3+14	Lt.	140	6	840
Auburn Ave.					
3+29	3+34	Rt.	5	6	30
3+34	3+45.5	Rt.	15.5	3.5	54
3+29	3+34	Lt.	5	6	30
3+34	3+46.4	Lt.	12.4	3.5	43
3+46.4	3+50.4	Lt.	2	3.5	7
Howard Ave.					
7+30	7+40	Lt.	10	6	60
Wade Ave.					
0+28	9+02.1	Lt.	874.1	6	5,245
Branch Ave.					
11+12	11+44	Lt.	32	6	192
12+01	12+17	Lt.	16	6	96
12+10	13+87	Rt.	184	3	552
Clark Ave.					
1+65.0	2+23.8	Rt.	58.8	6.5	382
2+54.2	2+68.8	Rt.	14.6	7.5	110
6+67.9	6+75.2	Rt.	7.3	7.5	55
6+75.2	7+50.0	Rt.	75.2	6	451
7+40.0	7+45.0	Rt.	14	5	70
2+31.3	2+68.4	Lt.	37.1	6	223
6+67.9	6+75.2	Lt.	7.3	7.5	55
6+75.2	6+86.5	Lt.	11.3	6	68
Ped. Overpass					
6+24	6+81	Rt.	57	6	342
CUY-71-18.54 Total 11,923 Sq. Ft.					
CUY-90-13.81					
Starkweather					
3+45.0	7+35.0	South	390	6	2340
3+55.0	7+35.0	North	380	6	2280
Kenilworth					
3+13.0	6+40.0	South	327	6	1962
2+84.0	5+90.0	North	306	6	1836
CUY-90-13.81 Total 8,418 Sq. Ft.					

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

I-22 SUBBASE GRADING A OR B

LOCATION	AREA SQ. YDS.	DEPTH IN.	VOLUME CU. YDS.
CUY-71-18.54			
Under T-71			
Normal depth	33,658	6	5,592
Extra depth	1,616	12	540
Extra depth	34,818	18	17,410
Under I-21 Median			
Normal depth		6	324
Extra depth		12	22
Extra depth		18	1,407
Under I-7 Approach Slabs	1,759	6	293
Under B-21			7,483
CUY-71-18.54 Total 32,971			
CUY-90-13.81			
Under T-71			
Normal depth	20,591	6	4,747
Extra depth	500	12	167
Extra depth	2,398	18	1,199
Under I-21 Median			
Normal depth	1,055	6	176
Under I-7 Approach Slabs	1,443	6	240
Under B-21			1,146
CUY-90-13.81 Total 7,675			

I-22 SUBBASE AND B-19 AGGREGATE UNDER PAVED SHOULDERS

CODE	SHOULDER DESCRIPTION	LENGTH - FEET	I-22 SUBBASE				B-19 AGGREGATE	
			A OR B GRADING		REGULAR		YD. ³ /FT.	CU. YDS.
			YD. ³ /FT.	CU. YDS.	YD. ³ /FT.	CU. YDS.		
CUY-71-18.54								
A	10' Exp., Normal or Curved Rt. d=18"	8630.4	0.5092	4394.6	----	----	0.2378	2052.3
B	10' Exp., Normal or Curved Rt. d=12"	200.0	0.2791	55.8	----	----	0.2378	47.6
C	10' Exp., Normal or Curved Rt. d=6"	6987.5	0.0509	355.7	0.0900	628.9	0.2378	1661.6
D	10' Exp., Normal or Curved Rt. d=18"	121.4	0.5246	63.7	----	----	0.2378	28.9
E	10' Exp., Normal or Curved Rt. d=12"	100.0	0.3395	34.0	----	----	0.2378	23.8
F	10' Exp., Normal or Curved Rt. d=6"	1934.4	0.1851	358.0	----	----	0.2378	460.0
G	10' Exp., Curved Lt. d=18"	1003.1	0.5556	557.3	----	----	0.2378	238.5
H	10' Exp., Curved Lt. d=12"	200.0	0.3704	74.1	----	----	0.2378	47.6
I	10' Exp., Curved Lt. d=6"	416.4	0.0189	7.9	0.1391	57.9	0.2378	99.0
J	10' Exp., 5' Round. S.E. under 5% d=18"	1626.4	0.5294	861.0	----	----	0.2378	386.8
K	10' Exp., 5' Round. S.E. under 5% d=6"	71.6	0.0530	3.8	0.1061	7.6	0.2378	17.0
L	10' Exp., 5' Round. S.E. over 5% d=6"	176.2	0.0586	10.3	0.1208	21.3	0.2378	41.9
M	10' Exp., 5' Round. (W/O under.) d=6"	991.6	0.0196	19.4	0.1603	159.0	0.2378	235.8
N	8' Exp., Curved Lt. d=6"	254.1	0.0180	4.6	0.0933	23.7	0.1902	48.3
O	5' Exp., Curved Lt. d=6"	270.0	0.0176	4.8	0.0518	14.0	0.1289	34.8
P	4' Exp., (W/O underdrain) d=18"	262.5	0.2222	58.3	----	----	0.1050	27.6
Q	4' Exp., (W/O underdrain) d=6"	2636.8	0.0741	195.4	----	----	0.1050	276.9
R	4' Exp., Normal or Curved Rt. d=18"	1395.3	0.2038	284.4	----	----	0.1050	146.5
S	4' Exp., Normal or Curved Rt. d=12"	304.0	0.1298	39.4	----	----	0.1050	31.9
T	4' Exp., Normal or Curved Rt. d=6"	1574.2	0.0174	27.4	0.0383	60.3	0.1050	165.3
U	4' Exp., Curved Lt. d=12"	100.0	0.1482	14.8	----	----	0.1050	10.5
V	10'-4' Transition Curved Rt. d=18"	150.0	0.3888	58.0	----	----	0.1289	19.3
CUY-71-18.54 Totals				7482.7	972.7	6101.9		

I-22 SUBBASE AND B-19 AGGREGATE UNDER PAVED SHOULDERS

CODE	SHOULDER DESCRIPTION	LENGTH - FEET	I-22 SUBBASE				B-19 AGGREGATE	
			A OR B GRADING		REGULAR		YD. ³ /FT.	CU. YDS.
			YD. ³ /FT.	CU. YDS.	YD. ³ /FT.	CU. YDS.		
CUY-90-13.81								
A	10' Exp., Normal or Curved Rt. d=6"	8172.9	0.0509	416.0	0.0400	326.9	0.1750	1430.0
B	10' Exp., Normal or Curved Rt. d=6"	1042.6	0.1851	193.0	----	----	0.1750	182.5
C	10' Exp., Curved Lt. d=6"	1469.3	0.0189	27.8	0.1295	190.3	0.1750	257.0
D	10' Exp., Curved Lt. d=12"	100.0	0.3704	37.0	----	----	0.1750	17.5
E	10' Exp., Curved Lt. d=18"	503.1	0.5556	279.6	----	----	0.1750	88.0
F	10' Exp., 5' Round. S.E. under 5% d=6"	627.5	0.0530	33.2	0.1061	66.6	0.1750	110.0
G	10' Exp., 5' Round. S.E. over 5% d=6"	32.0	0.0555	1.8	----	----	0.1750	5.6
H	4' Exp., (W/O underdrain) d=6"	856.8	0.0741	63.5	----	----	0.0530	45.5
I	4' Exp., Normal or Curved Rt. d=12"	480.0	0.1298	62.3	----	----	0.0530	25.4
J	4' Exp., Normal or Curved Rt. d=6"	1799.7	0.0174	31.3	0.0405	72.9	0.0530	95.4
CUY-90-13.81 Totals				1145.5	656.7	2256.9		

T-31 BITUMINOUS SURFACE TREATMENT

CUY-71-18.54
Area B-21 = 27,843 Sq. Yds.
Bituminous Material = 27,843 x 0.25 = 6,961 Gal.
No. 6 Aggregate = 27,843 x 0.008 = 223 Cu. Yds.

CUY-90-13.81
Area B-21 = 10,758 Sq. Yds.
Bituminous Material = 10,758 x 0.25 = 2,690 Gal.
No. 6 Aggregate = 10,758 x 0.008 = 86 Cu. Yds.

T-30 BITUMINOUS TACK COAT

CUY-71-18.54
Area T-35 = 5,088 Sq. Yds.
T-30 = 5,088 x 0.25 = 1,272 Gal.

≠ 95% State & 5% City

QUANTITY CALCULATIONS

Rev. 10-27-65 G.E.H.

SPECIAL DRAINAGE CONNECTION

STATION TO STATION	LENGTH FEET	FACTOR YD ³ /FT.	VOLUME CU. YDS.	REMARKS
CUY-71-18.54				
<i>Medina Frwy.</i>				
951+15.0	967+25.0	1610.0	0.0471	76 Lt.
972+40.0	980+72.0	832.0	0.0471	39 Lt.
955+30.0	978+90.0	1260.0	0.0471	59 Rt.
973+03.0	980+73.0	770.0	0.0471	36 Rt.
<i>Ramp J-N.B.O.R.</i>				
17+16.4	20+11.5	295.1	0.0471	14 Lt.
<i>N.B.O.R.</i>				
23+48.0	27+50.9	402.9	0.0471	19 Rt.
26+43.9	27+50.9	107.0	0.0471	5 Lt.
<i>Lane S-E</i>				
0+00.0	23+92.7	2392.7	0.0471	113 Rt.
0+00.0	2+80.4	283.1	0.0471	13 Lt.
<i>Lane E-S</i>				
6+86.4	17+42.3	1063.5	0.0471	50 Rt.
12+68.0	16+67.5	399.1	0.0471	19 Lt.
22+38.2	30+35.0	795.9	0.0471	37 Lt.
36+54.0	38+50.6	196.6	0.0471	9 Rt.
<i>S.B.O.R.</i>				
2+27.4	3+61.3	133.9	0.0471	6 Rt.
<i>Lane W-S</i>				
6+08.3	21+70.6	1562.3	0.0471	74 Rt.
<i>Lane S-W</i>				
0+00.0	11+17.8	1117.8	0.0471	53 Lt.
16+25.0	19+80.6	355.6	0.0471	17 Lt.
<i>Clark Frwy.</i>				
230+55.0	955+65.0	2565.0	0.0471	121 Lt.
934+15.0	955+25.0	2110.0	0.0471	99 Rt.
Total CUY-71-18.54 859 Cu. Yds.				
CUY-90-13.81				
<i>Medina Frwy.</i>				
995+50.0	998+55.0	305.0	0.0471	14 Lt.
991+35.0	998+90.0	755.0	0.0471	36 Rt.
<i>Lane N-W</i>				
12+00.0	32+41.5	2041.5	0.0471	96 Rt.
<i>Lane W-N</i>				
5+47.2	8+74.9	327.7	0.0471	15 Rt.
15+90.0	18+20.3	230.3	0.0471	11 Rt.
14+00.0	16+85.0	281.5	0.0471	13 Lt.
23+55.0	29+00.0	545.0	0.0471	26 Lt.
29+00.0	32+40.0	340.0	0.0471	16 Rt.
34+54.0	40+68.0	614.0	0.0471	29
<i>Lane S-W</i>				
19+80.6	19+95.0	14.4	0.0471	1 Lt.
<i>Lane W-S</i>				
0+00.0	6+08.3	608.3		29 Rt.
Total CUY-90-13.81 286 Cu. Yds.				

L-9 SEEDING AND PROTECTING

STATION	WIDTH -FEET	AVE. WIDTH	LENGTH -FEET	AREA -SQ.YDS.
CUY-71-18.54				
<i>N.B.O.R.</i>				
23+48 R	79	79	259	2270
26+07 R	79			
26+07 R	15	15	102	170
27+09 R	15			
<i>S.B.O.R.</i>				
2+30 R	15	15	130	220
3+60 R	15			
<i>Lane S-E</i>				
0+13 R	5	5	174	100
1+87 R	5			
1+87 R	64	65	184	1330
3+71 R	66			
3+71 R	90	73	219	1820
5+93 R	60			
5+93 R	64	84	498	4650
11+00 R	104			
9+40 L	8	32	160	570
11+00 L	56			
11+00 R	5	5	600	330
17+00 R	5			
11+00 R	40	25	115	320
12+35 R	10			
14+00 R	10	10	200	220
16+00 R	10			
11+00 L	34	62	200	1380
13+00 L	90			
13+00 L	73	73	162	1310
14+50 L	73			
15+00 L	47	35	192	750
17+00 L	23			
17+00 L	158	175	250	4870
19+50 R	192			
17+00 L	37	37	110	450
18+10 L	37			
19+50 R	0	78	375	3250
23+25 R	156			
<i>Lane E-S</i>				
9+10 L	9	23	440	1120
13+50 L	37			
6+86 R	15	15	664	1110
13+50 R	15			
13+50 R	31	31	200	690
15+50 R	31			
15+50 R	35	65	150	1080
17+00 R	95			
17+00 R	90	105	100	1170
18+00 R	120			
22+20 L	0	23	100	260
23+20 L	46			
22+05 L	13	13	295	430
23+00 L	13			
24+30 L	80	80	70	620
25+00 L	80			
22+50 R	78	78	250	2170
25+00 R	78			
36+40 R	15	15	210	350
38+50 R	15			
<i>Lane W-S</i>				
4+75 R	25	25	1615	4490
20+90 R	25			
6+35 L	6	71	365	2880
10+00 L	136			
10+00 L	8	73	300	2430
13+00 L	138			

L-9 SEEDING AND PROTECTING

STATION	WIDTH -FEET	AVE. WIDTH	LENGTH -FEET	AREA -SQ.YDS.
CUY-71-18.54 (Cont.)				
<i>Medina Frwy.</i>				
951+14 L	16	66	1486	10,900
966+00 L	116			
951+14 R	18	72	1386	11,090
965+00 R	126			
972+28 L	118	118	272	3570
975+00 L	118			
972+00 R	44	67	300	2230
975+00 R	90			
975+00 L	10	75	590	4920
980+90 L	140			
975+00 R	10	33	420	1540
979+20 R	56			
<i>Lane S-W</i>				
8+25 R	62	62	300	2070
11+25 R	62			
15+00 L	130	76	400	3380
19+00 L	0			
<i>Clark Frwy.</i>				
945+25 R	117	117	300	3900
948+25 R	117			
950+00 L	75	75	100	830
951+00 L	75			
951+00 L	0	18	460	920
955+60 L	36			
955+60	275	275	140	4270
957+00	275			
CUY-71-18.54 Total 92,430				
CUY-90-13.81				
<i>Lane W-N</i>				
4+00 R	202	202	100	2270
5+00 R	202			
11+00 L	10	22	150	370
13+50 L	34			
15+20 R	52	52	460	2660
18+80 R	52			
23+50 R	66	66	325	2380
26+75 R	66			
28+50 R	92	92	542	5640
32+50 R	92			
34+00 R	72	72	810	6470
41+30 R	72			
26+50 L	46	23	450	1150
31+00 L	0			
<i>Lane N-W</i>				
0+25 R	75	75	334	2790
5+00 R	75			
5+00 R	117	117	500	6500
10+00 R	117			
12+00 R	88	59	575	3770
17+75 R	30			
17+75 R	79	79	530	4650
23+90 L	79			
25+00 L	16	16	400	720
29+00 L	16			
<i>Medina Frwy.</i>				
991+00 R	26	26	463	1340
993+00 R	26			
993+00 R	75	75	710	5900
999+00 R	75			
992+50 L	25	25	620	1710
998+70 L	25			
CUY-90-13.81 Total 48,320				

L-9 COMMERCIAL FERTILIZER

CUY-71-18.54

Area L-9 Seeding + Sodding + Jute Matting
 $92,430 \text{ S.Y.} + 1,689 \text{ S.Y.} + 800 \text{ S.Y.} + 380 \text{ S.Y.}$
 $= 95,299 \text{ S.Y.} \times 9 = 857,691 \text{ S.F.}$
 $857,691 \times 20 \times \frac{1}{1000} \times \frac{1}{2000} = 8.58 \text{ Tons}$

CUY-90-13.81

Area L-9 Seeding + Sodding + Jute Matting
 $48,320 \text{ S.Y.} + 1,762 \text{ S.Y.} + 1,309 \text{ S.Y.} + 555 \text{ S.Y.}$
 $= 51,946 \text{ S.Y.} \times 9 = 467,514 \text{ S.F.}$
 $467,514 \times 20 \times \frac{1}{1000} \times \frac{1}{2000} = 4.68 \text{ Tons}$

L-9 SEEDING & PROTECTING

CUY-71-18.54

Seeding 92,430 S.Y.
L-120 800
Total 93,230 S.Y.

CUY-90-13.81

Seeding 48,320 S.Y.
L-120 1,309
Total 49,629 S.Y.

CUYOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

L-10 SODDING

STATION TO STATION	LENGTH FEET	WIDTH FEET	AREA SQ. YDS.	REMARKS
CUY-71-18.54				
<i>Lane E-S</i>				
25+00	33+40	840	11	1025 Lt.
<i>Lane W-S</i>				
8+55	11+00	245	6	163 Lt.
<i>Lane S-W</i>				
5+00	7+50	250	5.5	153 Lt.
<i>Medina Frwy.</i>				
973+50	976+30	380	6	187 Rt.
977+75	979+20	145	9	145 Lt.
976+69	977+38	93	1.5	16 Rt.
CUY-71-18.54 Total 1,689 Sq. Yds.				
CUY-90-13.81				
<i>Median Frwy.</i>				
991+25	991+30	50	8*	44 Ave Width Rt.
991+20	991+30	10	53	60
993+25	993+40	15	6	10 Rt.
992+50	993+20	70	6	47 Lt.
993+70		15	6	10 Lt.
995+00	995+25	25	8	22 Lt.
992+13	993+20	118	1.5	20 Rt.
993+68	994+90	147	1.5	25 Lt.
999+00		60	8.5*	57 Ave Width Rt.
<i>Lane N-W</i>				
0+00	1+55	155	4.5	77 Rt.
1+58	1+64	13	80	110
1+60		75	8.6*	72 Ave Width Rt.
3+50		65	8.6*	62 Ave Width Rt.
3+55	3+61	9	69	70
9+94	10+00	10	76	80
9+95		75	8.6*	72 Ave Width Rt.
11+88	11+94	10	70	80
11+90		65	8.6*	62 Ave Width Rt.
15+00	19+75	475	6	317 Lt.
<i>Lane W-N</i>				
28+00	28+15	15	8	13 Rt.
29+00	29+25	25	8	22 Rt.
32+47	32+53	9	73	70
32+50		80	8.6*	76 Ave Width Rt.
34+42	34+48	10	68	80
34+45		65	8.6*	62 Ave Width Rt.
40+77	40+83	11	65	80
40+80		65	8.6*	62 Ave Width Rt.
CUY-90-13.81 Total 1,762 Sq. Yds.				

L-9 AGRICULTURAL LIMING MATERIAL

CUY-71-18.54

Area L-9 Seeding + Sodding + Jute Matting
 $= 95,299 \text{ S.Y.} \times 9 = 857,691 \text{ S.F.}$
 $857,691 \times 109/1000 \times \frac{1}{2000} = 42.88 \text{ Tons}$

CUY-90-13.81

Area L-9 Seeding + Sodding + Jute Matting
 $= 51,94$

E-8 REMOVAL & DISPOSAL OF EXISTING PAVEMENT, SIDEWALK & CURB

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

55
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

ROADWAY	LIMITS	EXISTING PAVEMENT			EXISTING SIDEWALK			EXISTING CURB		REMARKS
		LENGTH FEET	WIDTH FEET	AREA SQ. YDS.	LOC.	LENGTH FEET	WIDTH FEET	AREA SQ. FT.	LENGTH FEET	
CUY-71-18.54										
W. 11th Street	Mentor - Branch	345	16	613	E	118	5	590	37	
	Branch - Auburn	123	26	355	W	110	5	550	90	Inc. driveways walks
					E	172	5	860	125	" " "
W. 12th Street	Mentor - Branch	464	26	1340	W	476	5	2380	469	" " "
					E	471	5	2355	469	" " "
W. 14th Street	Mentor - Branch	710	50	3944	W	1082	7	7384	654	" " "
				E	981	6	5886	652	" " "	
	Branch - Auburn				W	41	6	246		" " "
W. 15th Street	Rowley - Clark	382	26	1104	W	425	5	2125	369	" " "
				E	419	5	2095	370	" " "	
	Clark - Castle	571	26	1650	W	600	5	3000	550	" " "
				E	603	5	3015	550	" " "	
	Castle - Mentor	96	26	277	W	80	5	400	87	" " "
				E	80	5	400	87	" " "	
Mentor - Branch		486	26	1404	W	608	5	3040	486	" " "
				E	618	5	3090	486	" " "	
W. 16th Street	Clark - Castle				E	63	5	315		" " "
	Castle - Mentor	456	26	1317	W	436	5	2180	392	" " "
				E	581	5	2905	537	" " "	
Mentor - Branch		495	26	2008	W	744	5	3720	693	" " "
				E	788	5	3940	692	" " "	
W. 17th Street	Hartzell - Branch	260	14	404	W	235	4	940	247	" " "
					E	246	4	984	260	" " "
Scranton Road	Wade - Vega	493	42	2301	W	350	6	2100	378	" " "
				E	590	5	2950	526	" " "	
Clark Ave.	W. 14th - W. 15th	205	38	865	S	337	6	2022	196	" " "
					N	314	6	1884	277	" " "
		238	38	1005	S	238	6	1428	229	" " "
W. 15th - W. 16th				N	333	6	1998	285	" " "	
Castle Ave.	W. 14th - W. 15th	213	30	710	S	249	6	1494	202	" " "
					N	290	6	1740	202	" " "
		289	30	963	S	327	6	1962	285	" " "
W. 15th - W. 16th				N	303	6	1818	285	" " "	
Mentor Ave.	W. 14th - W. 15th	355	28	1104	S	411	6	2466	363	" " "
					N	402	6	2412	364	" " "
	W. 15th - W. 16th	126	28	392	S	126	6	756	117	" " "
					N	133	6	798	116	" " "
	W. 16th - W. 17th	204	28	634	S	177	6	1062	178	" " "
					N	324	6	1944	218	" " "
W. 17th - Scranton				S	56	5	280	300	" " "	
				N	183	5	915	277	" " "	
Wade Ave.	Scranton - W. 25th	49	21	114	S			38		" " "
					N	1133	6	6798	867	" " "
Sadie Ave.	W. 16th - Scranton	513	18	1026	S	495	4	1980	513	" " "
					N	451	5	2255	513	" " "
Hartzell Ct.	W. 17th - Scranton	212	14	330	S			10		" " "
					N			10		" " "
Vega Ave.	Scranton - W. 25th	68	30	227	S	1077	6	6462	889	" " "
					N			78		" " "
Branch	W. 11th - W. 12th	214	30	713	S	231	6	1386	200	" " "
					N	260	6	1560	220	" " "
	W. 12th - W. 14th	504	15	840	S	353	7	2471	314	" " "
					N	181	6	1086	175	" " "
	W. 14th - W. 15th	77	30	257	S	291	6	1746	71	" " "
					N	101	6	606	71	" " "
W. 16th - W. 17th	235	30	783	S	331	6	1986	204	" " "	
				N	270	6	1620	222	" " "	
W. 17th - Scranton				S	74	6	444		" " "	

E-8 REMOVAL & DISPOSAL OF EXISTING PAVEMENT, SIDEWALK & CURB

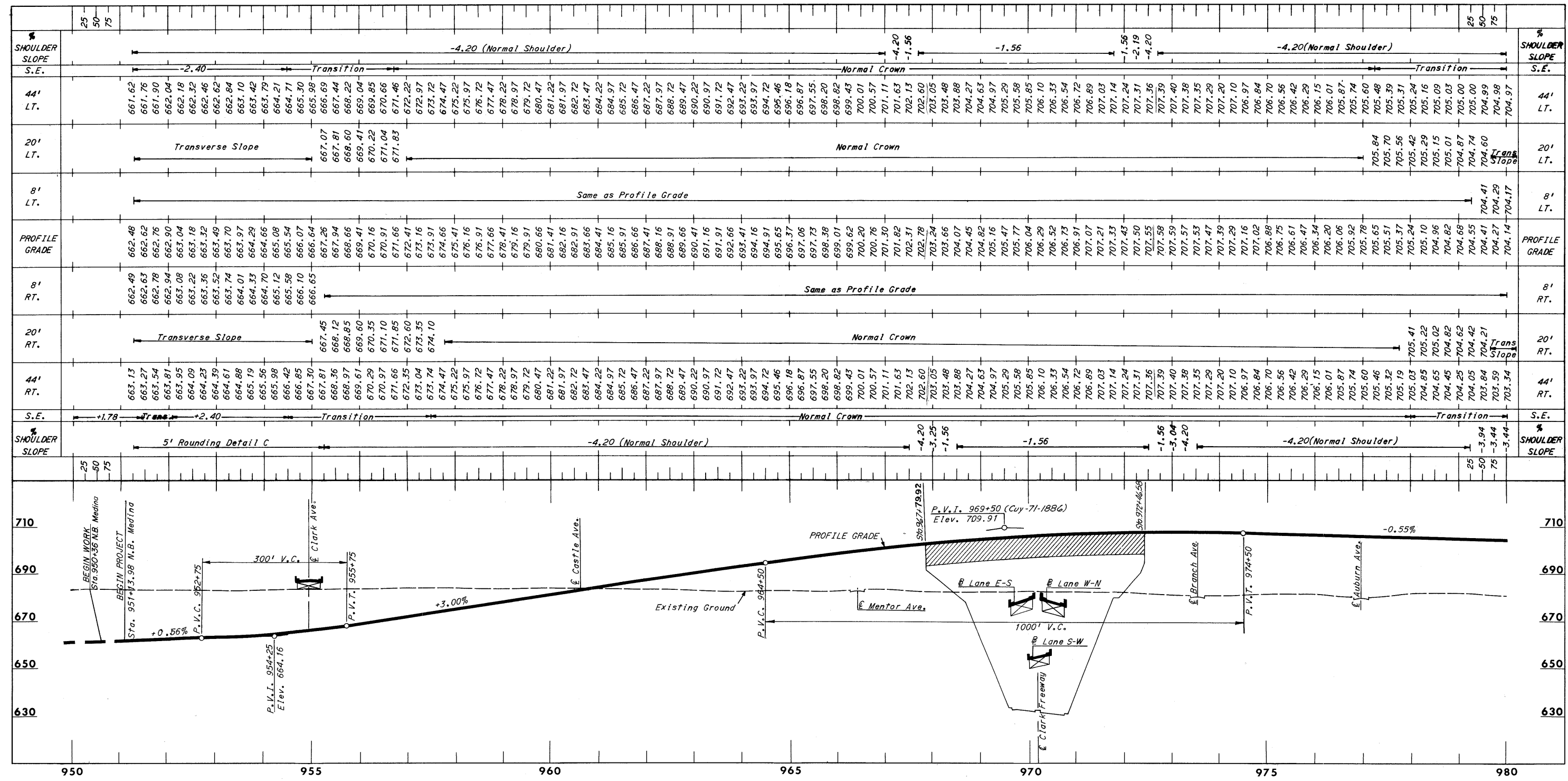
ROADWAY	LIMITS	EXISTING PAVEMENT			EXISTING SIDEWALK			EXISTING CURB		REMARKS
		LENGTH FEET	WIDTH FEET	AREA SQ. YDS.	LOC.	LENGTH FEET	WIDTH FEET	AREA SQ. FT.	LENGTH FEET	
CUY - 71-18.54 (Cont.)										
Auburn Ave.	W. 14th - Scranton	97	30	323	S	71	6	426	97	Inc. Driveways Walks
					N	122	7	85	105	Inc. Driveways Walks
Allman Ct.	W. 14th - Scranton	44	15	73	S	44	4	176	44	
TOTAL CUY-71-18.54				27,076				114,285	17,741	
CUY - 90-13.81										
Howard Ave.	W. 15th - W. 16th	139	31	478	S	154	6	924	139	Inc. Driveways Walks
					N	132	6	792	139	Inc. Driveways Walks
Kenilworth Ave.	W. 15th - Scranton	-	-	-	S	420	6	2520	-	Inc. Driveways Walks
					N	486	6	2916	-	Inc. Driveways Walks
Starkweather Ave.	W. 15th - Scranton	-	-	-	S	514	6	3084	-	Inc. Driveways Walks
					N	650	6	3900	-	Inc. Driveways Walks
TOTAL CUY-90-13.81				478				14,136	278	

SCALE None HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE NAK DATE 12-18-64 CONSULTING ENGINEERS
TRCO DATE KANSAS CITY CLEVELAND NEW YORK
CKD 3NM DATE 12-18-64

△ 74 Sq. Yd. Normal Partic.; 40 Sq. Yd. 95% State & 5% City
□ 767 L.F. Normal Partic.; 100 L.F. 95% State & 5% City

Rev. 10-27-65 C.E.H.
QUANTITY CALCULATIONS

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

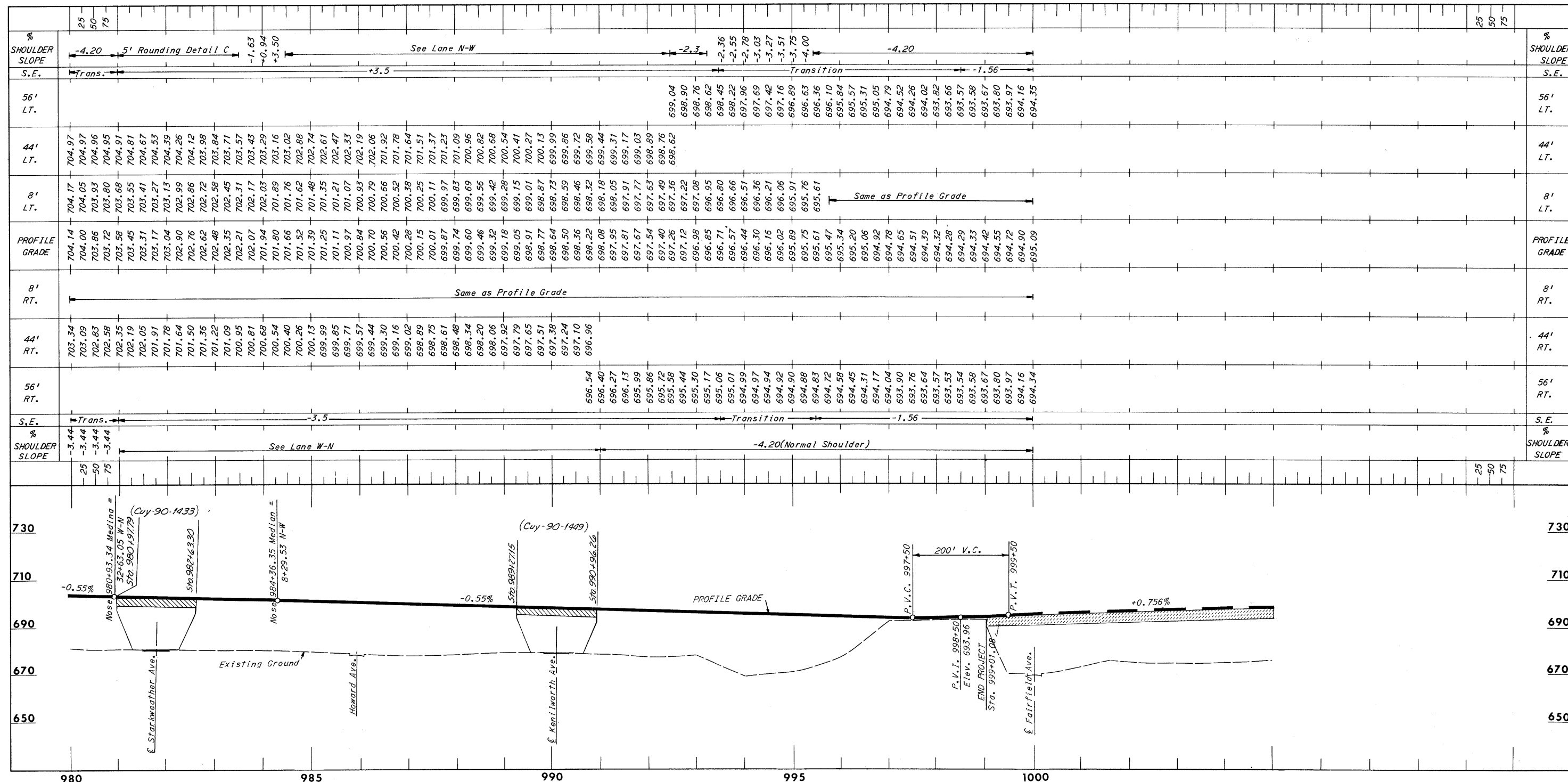


SCALE: Ver. 1/20, Hor. 1/100 HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE LEE DATE 4-27-64
TRCD. DATE CONSULTING ENGINEERS
CK: CPB DATE 4-28-64 KANSAS CITY CLEVELAND NEW YORK

MEDINA FREEWAY
60 M.P.H.

PROFILES

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY - 71-18.54
CUY - 90-13.81

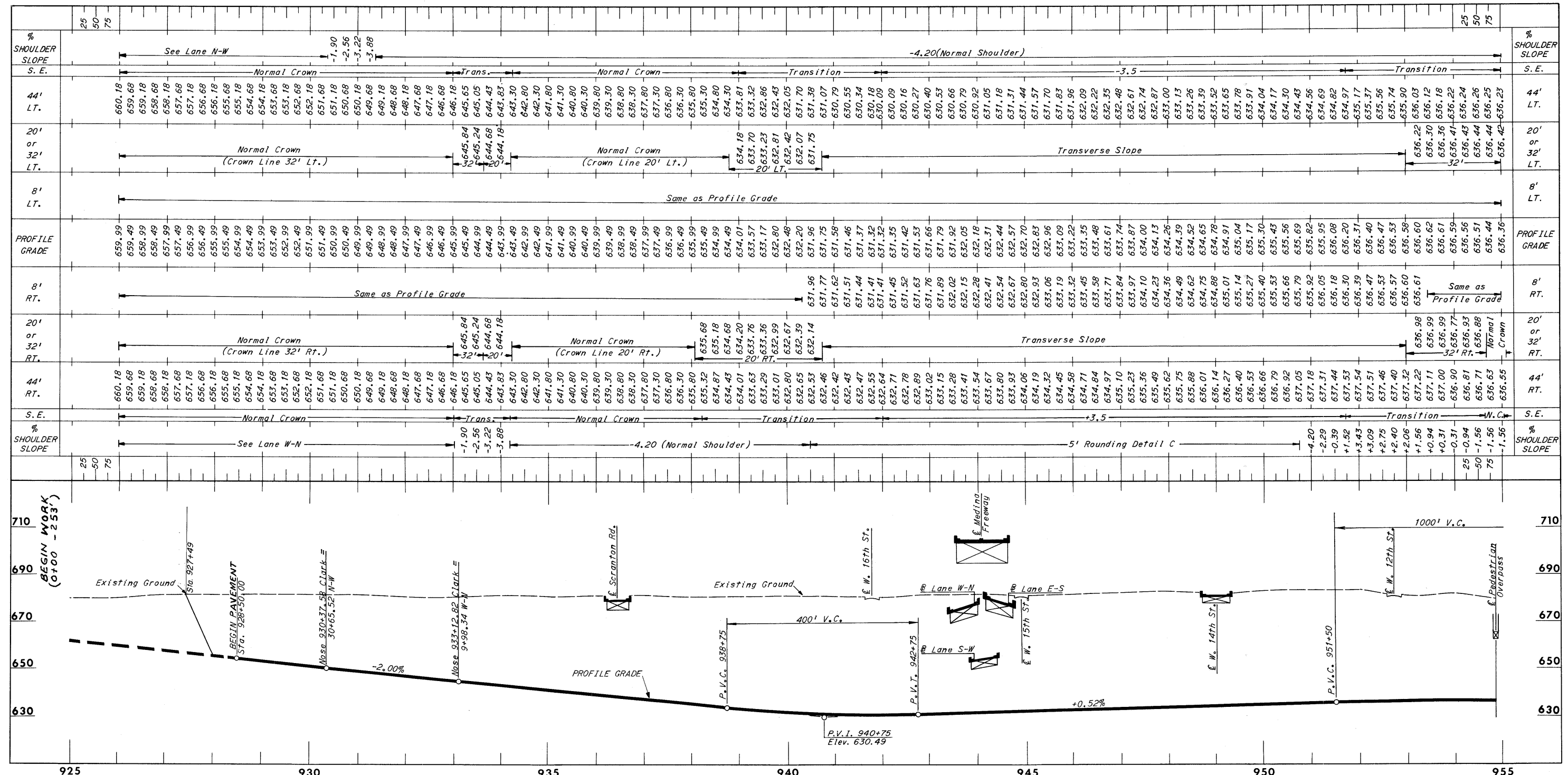


SCALE: Vert. 1"=20', Hor. 1"=100'
 MADE BY: LEE DATE: 8-27-64
 TRCD: DATE: 8-28-64
 CDD: CPB DATE: 8-28-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

MEDINA FREEWAY
 60 M.P.H.

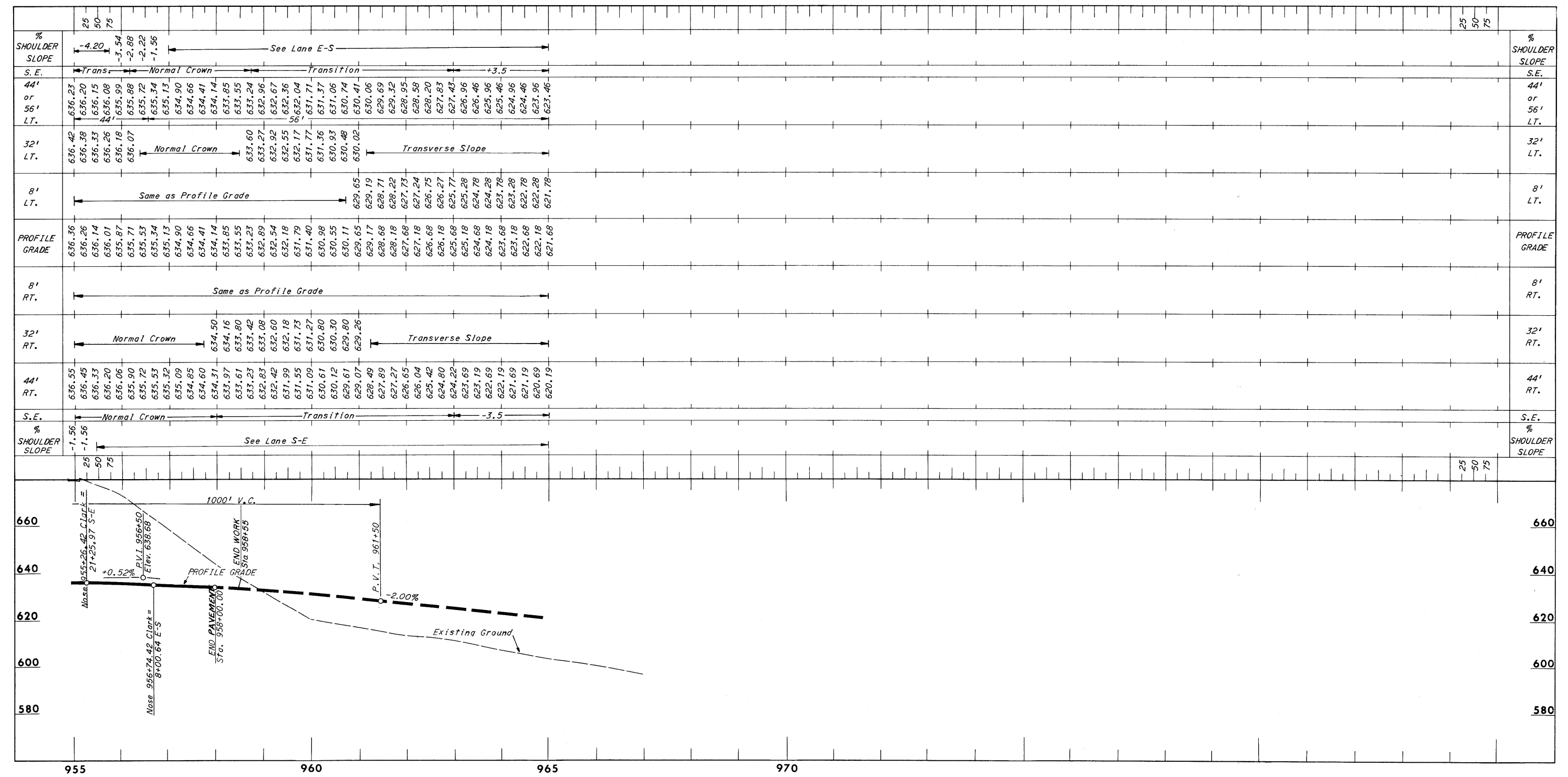
PROFILES

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
 CUY- 71-18.54
 CUY- 90-13.81



SCALE: Ver. 1/2"=20', Hor. 1"=100'
 MADE: LEE DATE: 4-29-64
 TRCD: CPB DATE: 4-30-64
 HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



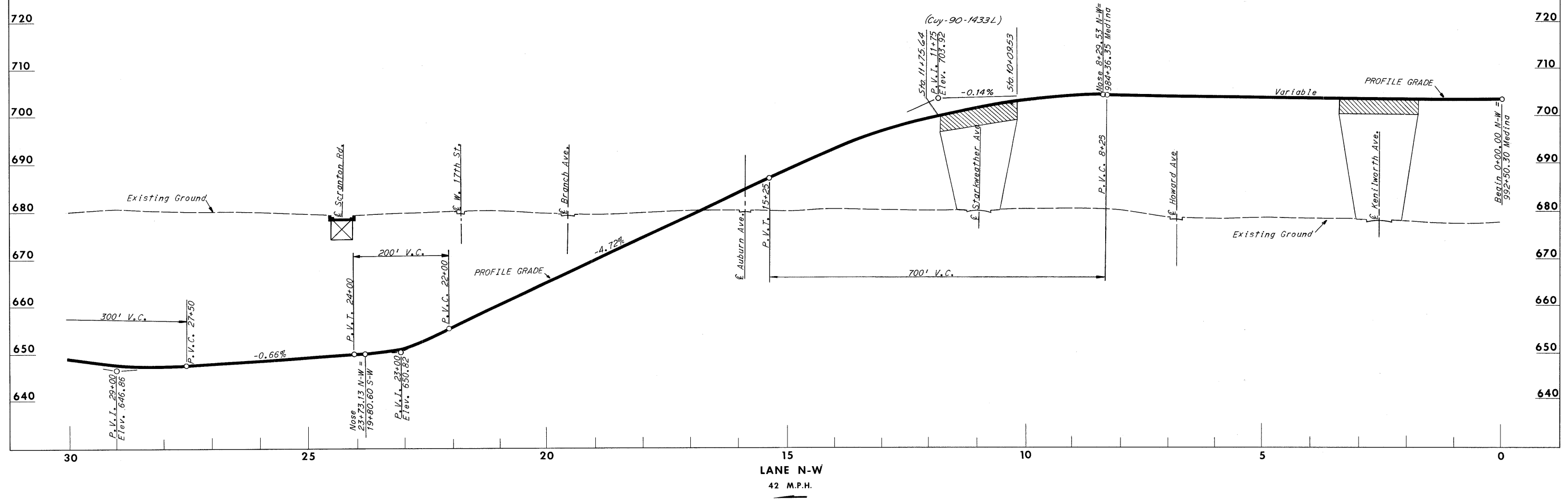
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 MADE: LEE DATE 4-29-64
 TRCD: DATE
 CRD: CPB DATE 4-30-64
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

CLARK FREEWAY
60 M.P.H.

PROFILES

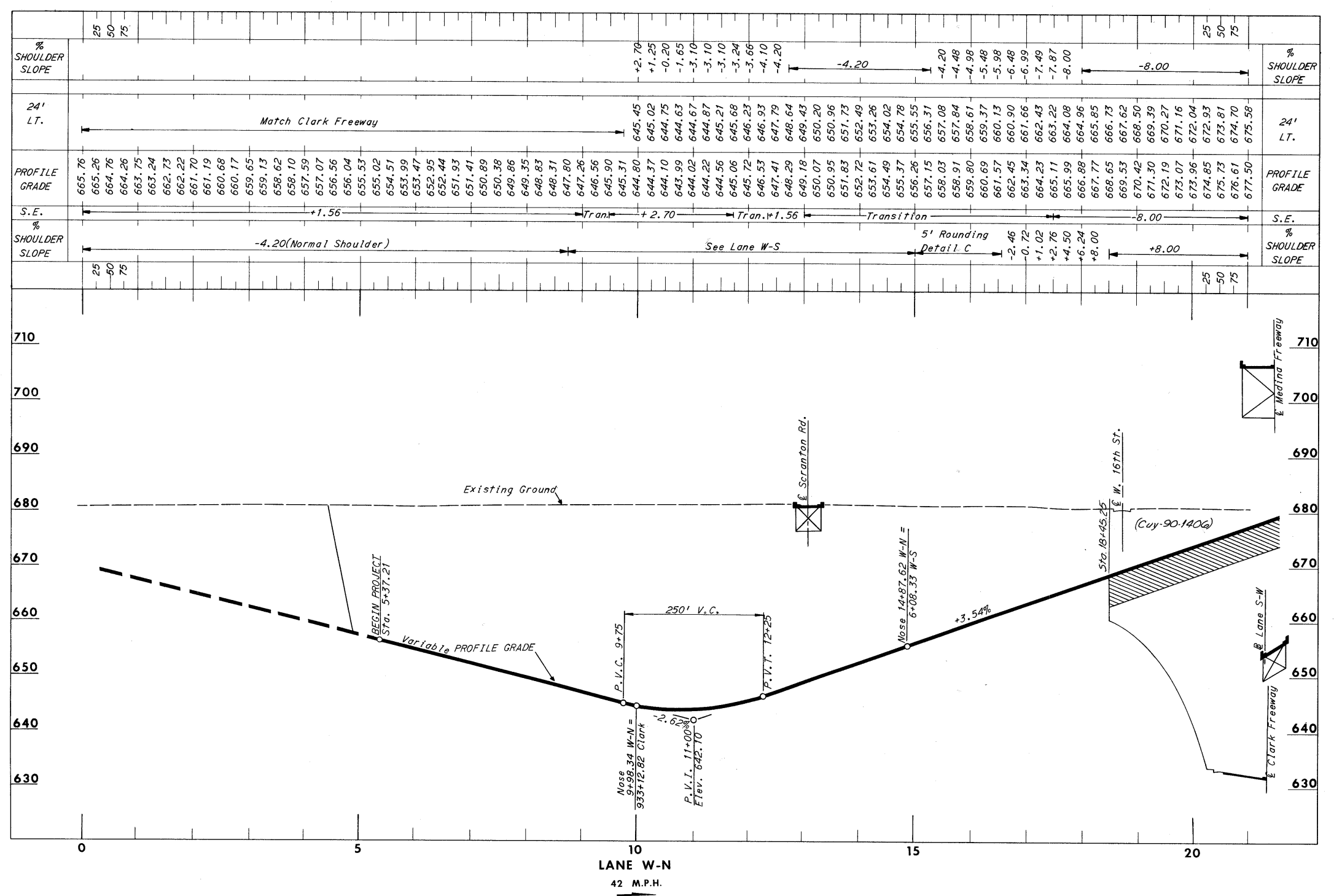
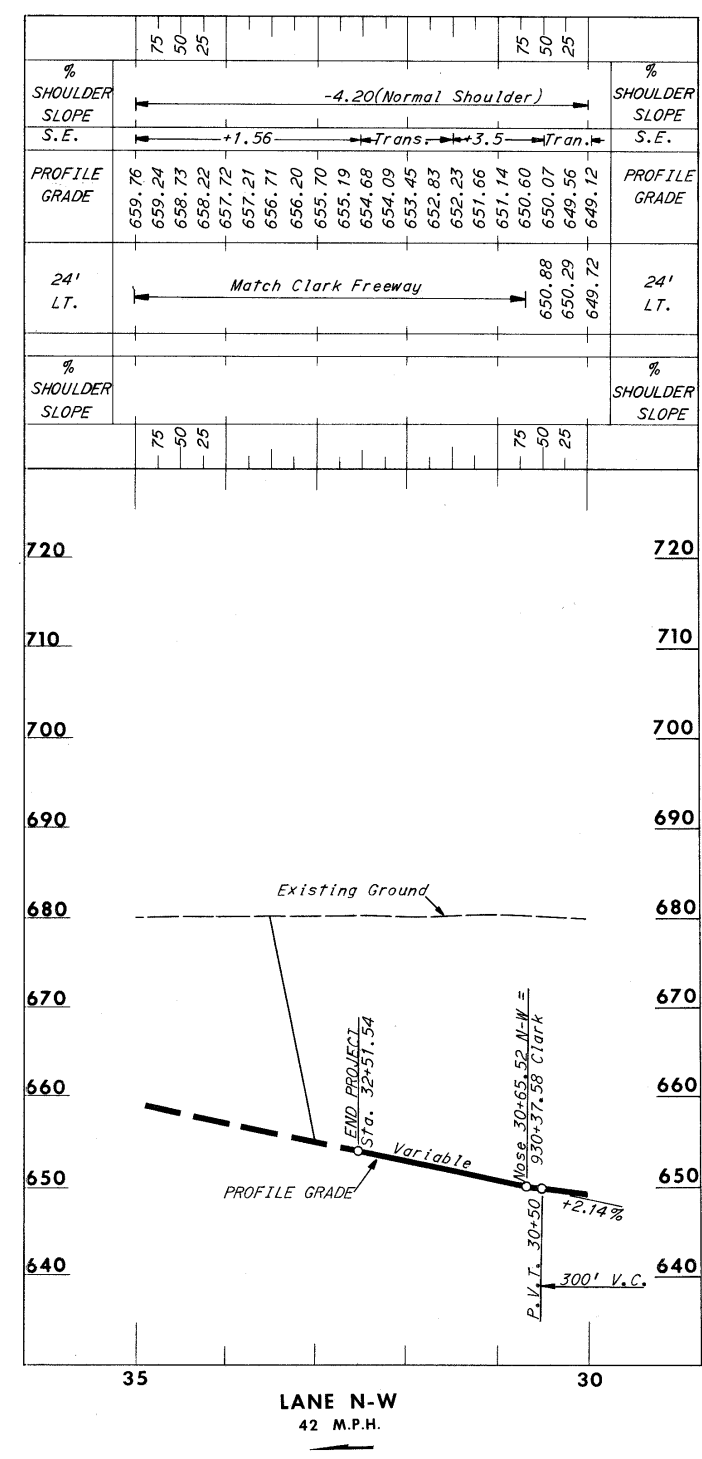
**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81**

	75 50 25			75 50 25
SHOULDER SLOPE		-4.20(Normal Shoulder)		
S. E.		+1.56	+8.00	
PROFILE GRADE		Transition	Transition	
24' LT.		Match Medina Freeway		
SHOULDER SLOPE		See Lane S-W		
	75 50 25			75 50 25



SCALE: Vert. 1"=10', Hor. 1"=100' HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 MADE: LEE DATE: 5-1-64 CONSULTING ENGINEERS
 TRCD: DATE: KANSAS CITY CLEVELAND NEW YORK
 CKD: CPB DATE: 5-6-64

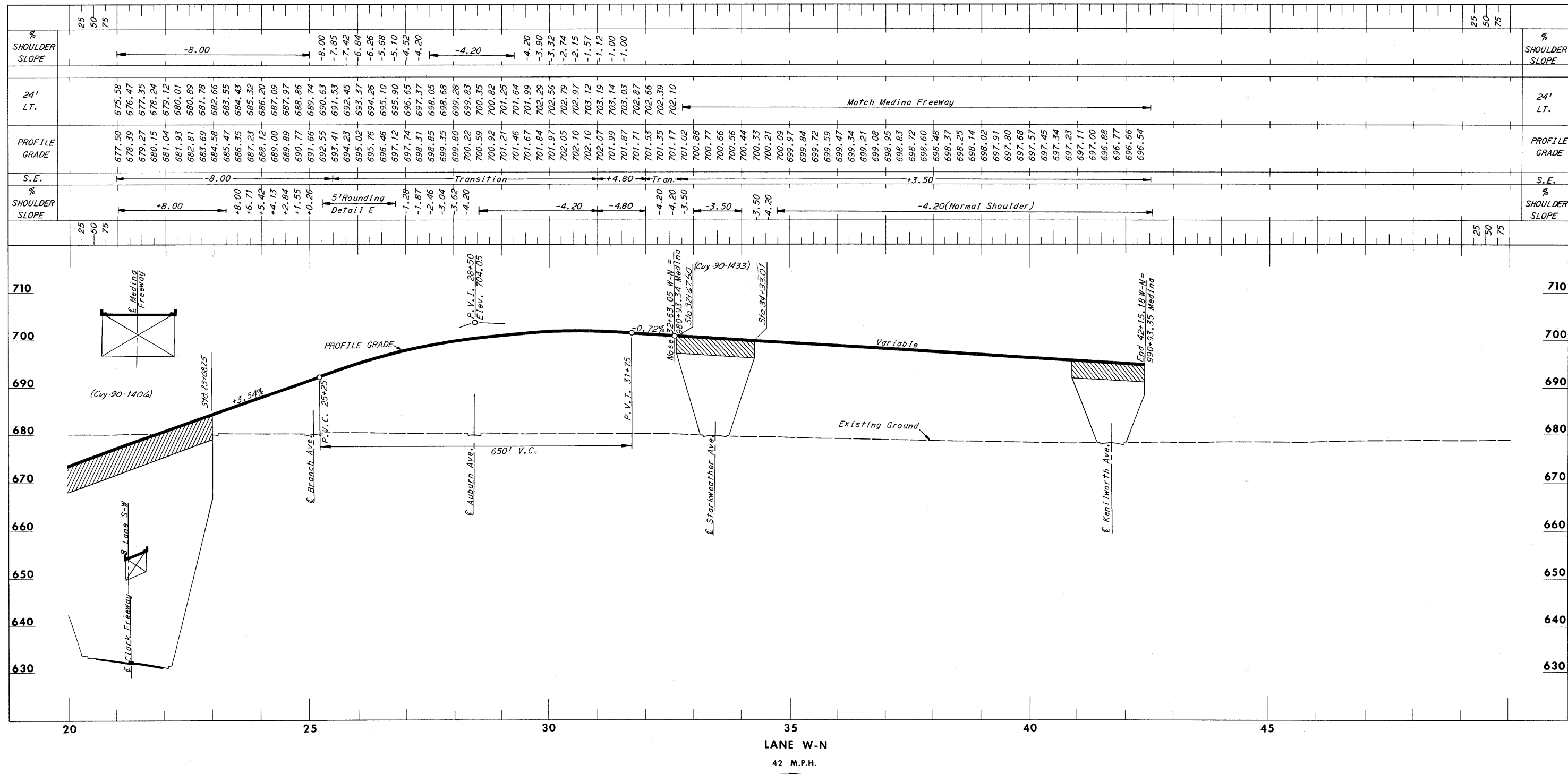
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



SCALE: Ver. 1/2" = 100' HOWARD, NEEDLES, TAMMEN & BERGENOFF
 MADE: LEE DATE: 5-1-64 CONSULTING ENGINEERS
 TRCD: DATE: KANSAS CITY CLEVELAND NEW YORK
 CKD: CPB DATE: 5-6-64

PROFILES

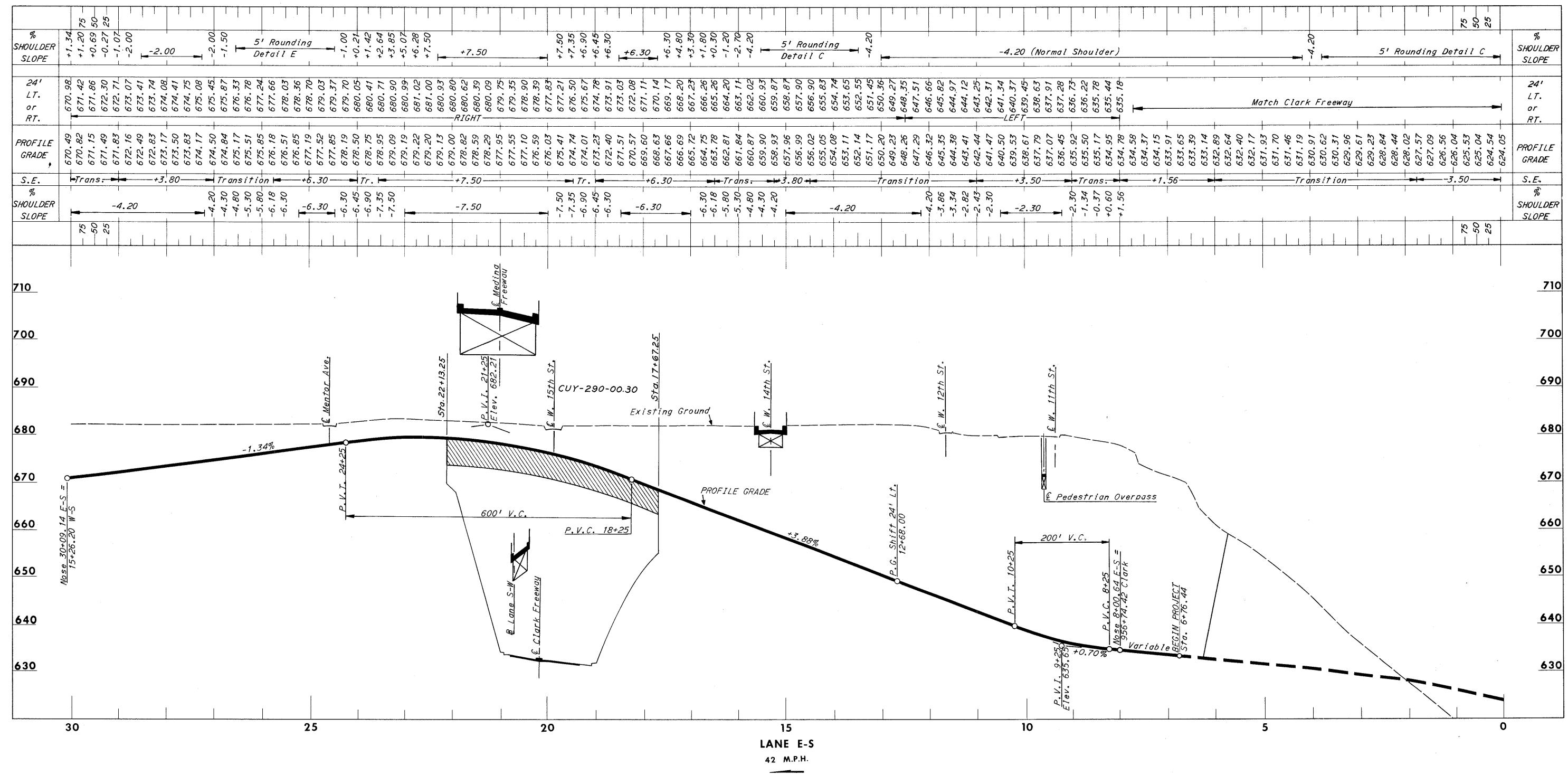
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



SCALE: Ver. 1/4"=10', Hor. 1"=100' HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 MADE: LEE DATE: 5-4-64 CONSULTING ENGINEERS
 TRCD: DATE: KANSAS CITY CLEVELAND NEW YORK
 CVD: CPB DATE: 5-6-64

PROFILES

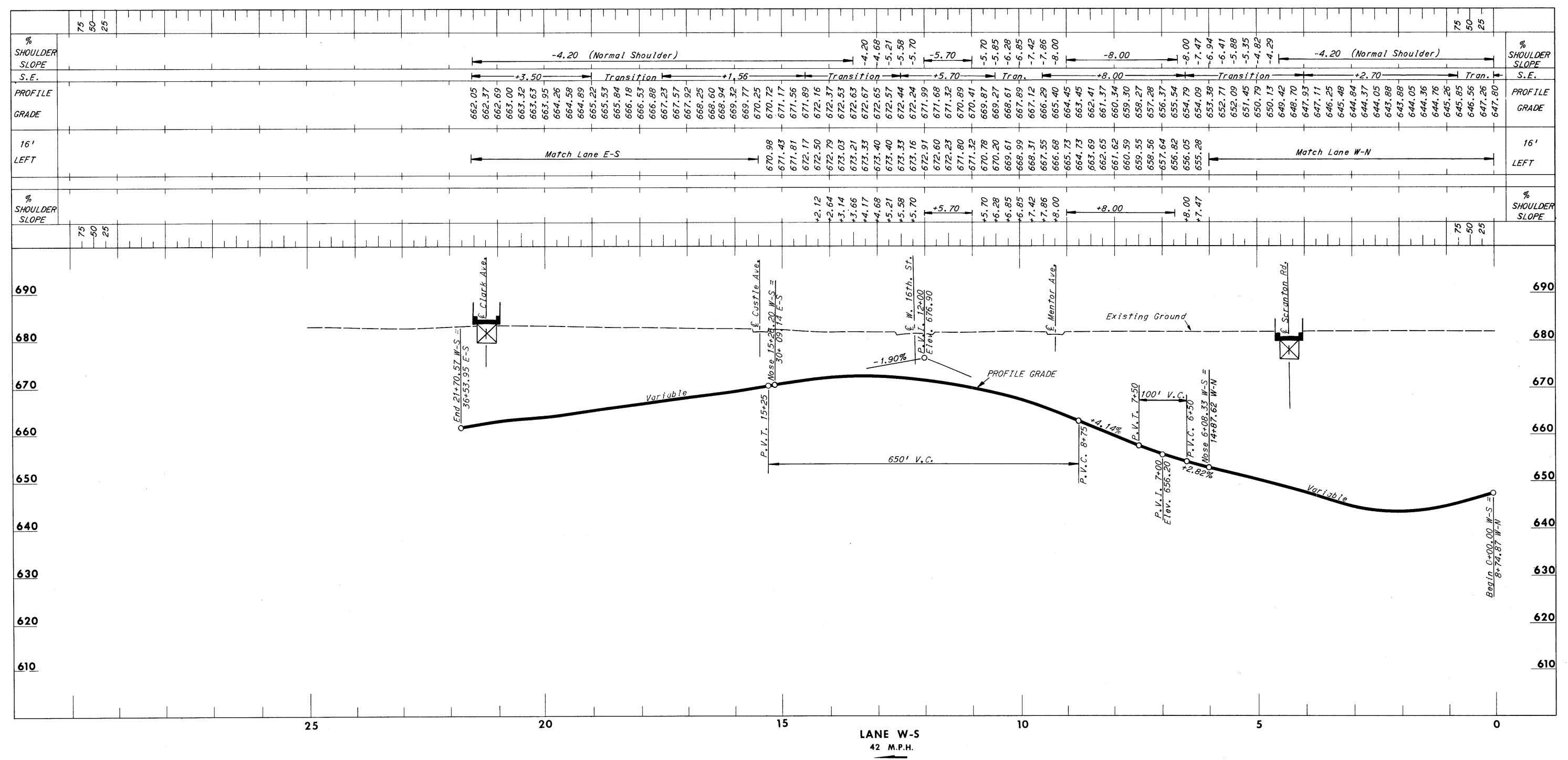
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



SCALE: Vert. 1"=10' Hor. 1"=100' HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE LEE DATE 5-4-64 CONSULTING ENGINEERS
TRCD. DATE CONSULTING ENGINEERS
CKD. SNM DATE 5-8-64 KANSAS CITY CLEVELAND NEW YORK

PROFILES

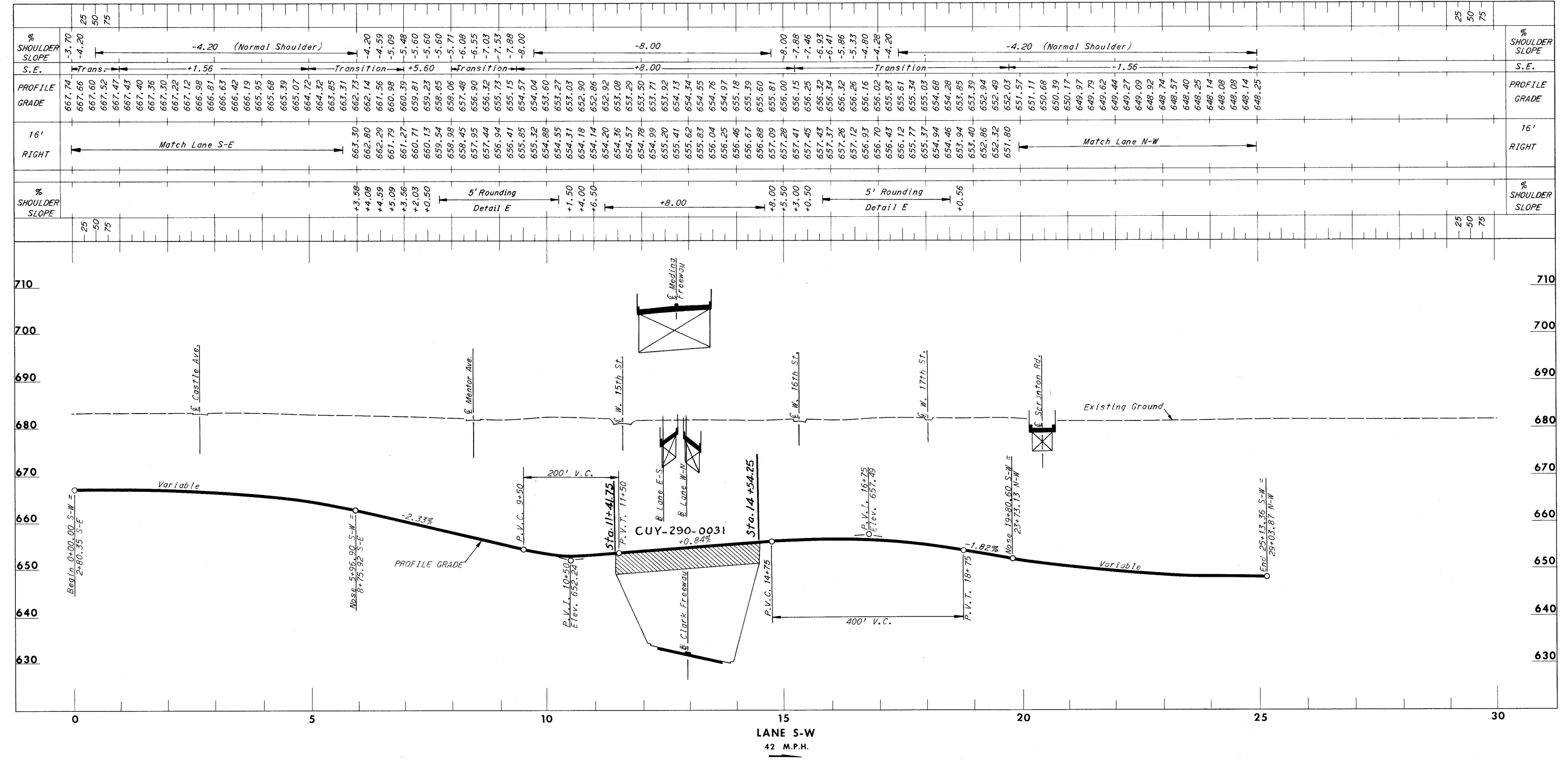
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



SCALE: Ver. 1"=10' Hor. 1"=100'
MADE: LEE DATE 5/18/64
TRCD: DATE 5/18/64
CKD: SNM DATE 5/19/64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

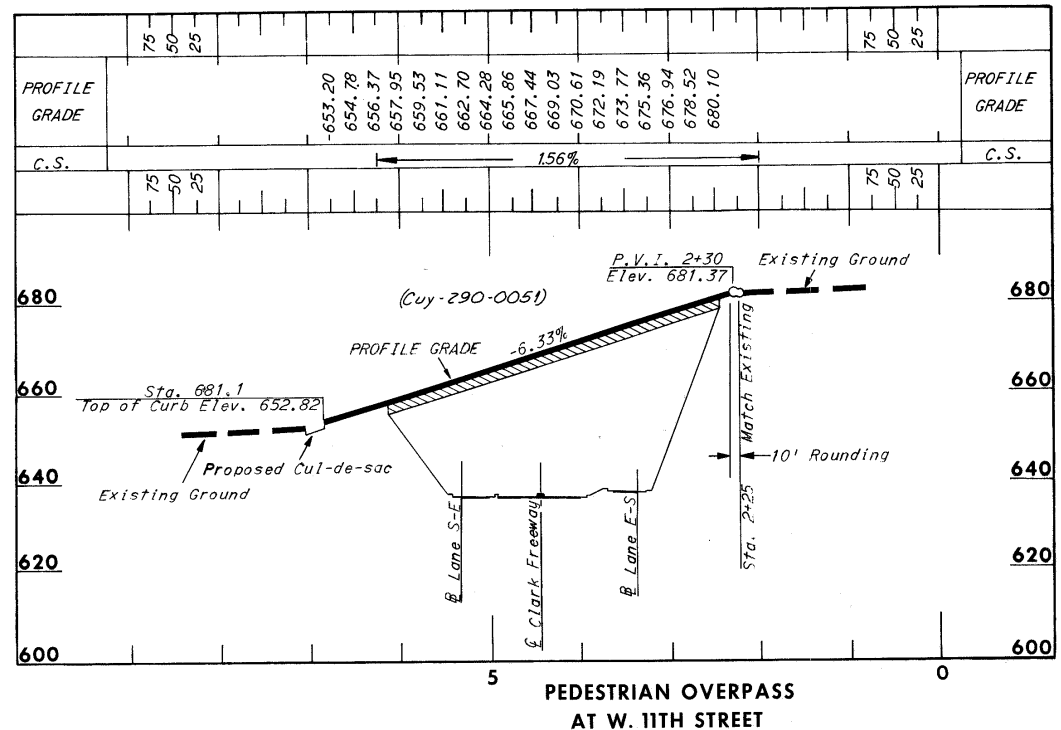
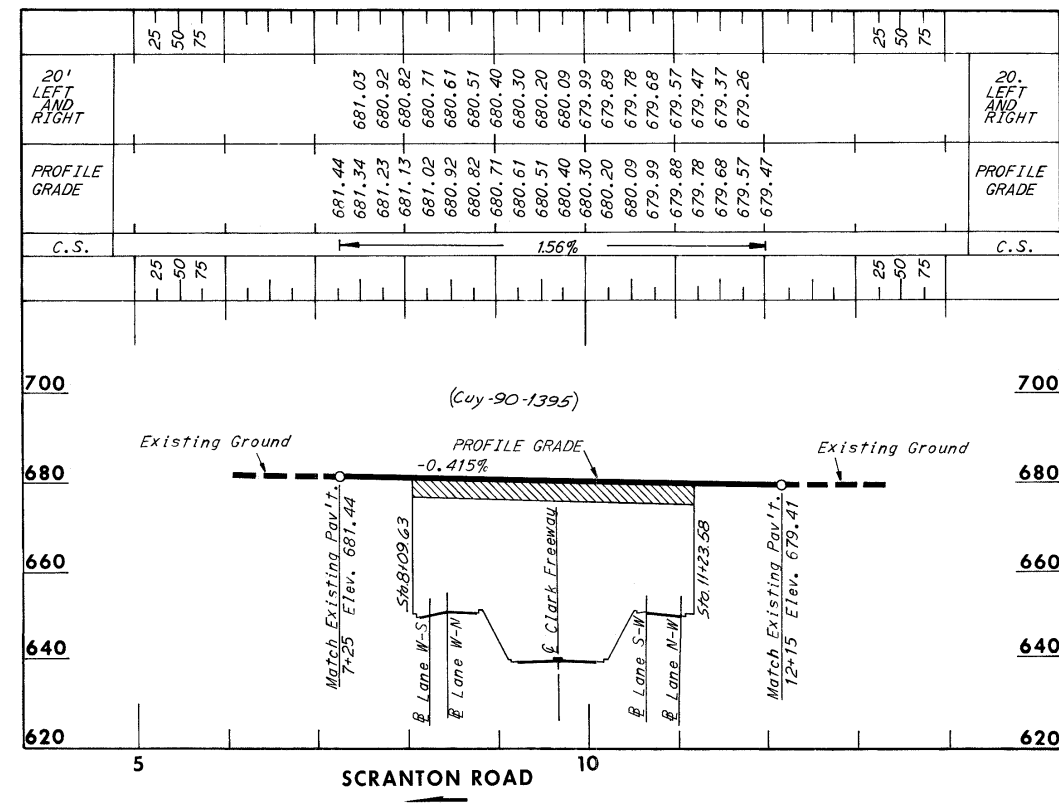
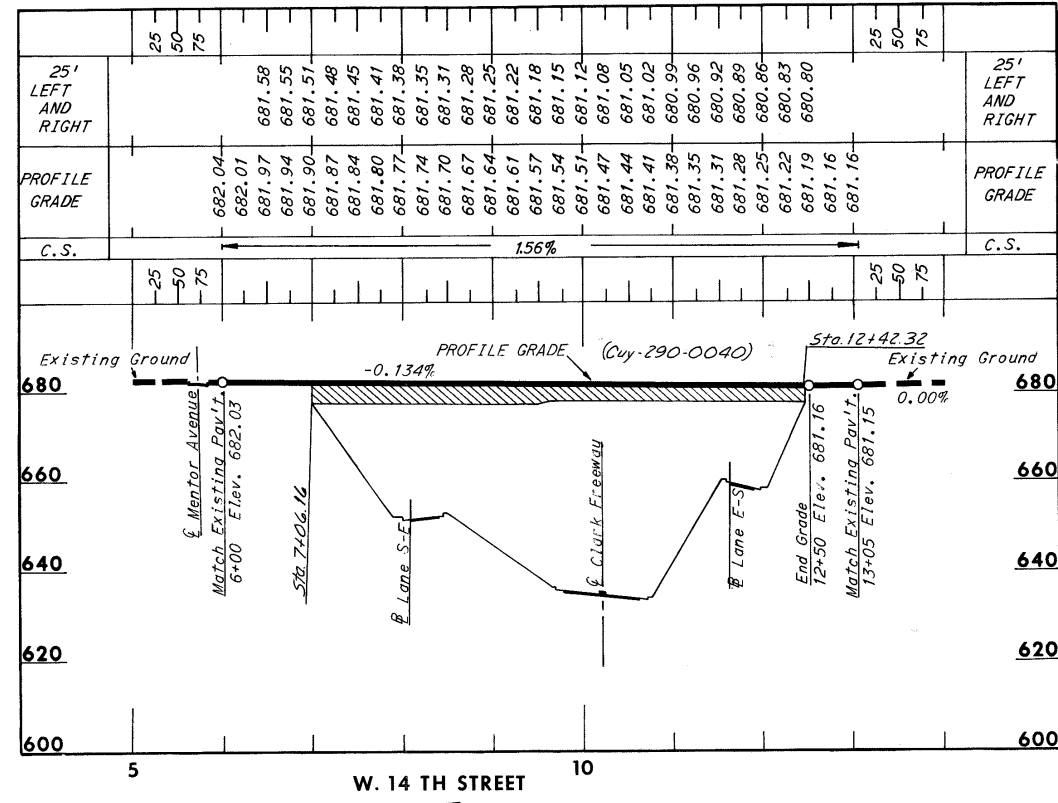
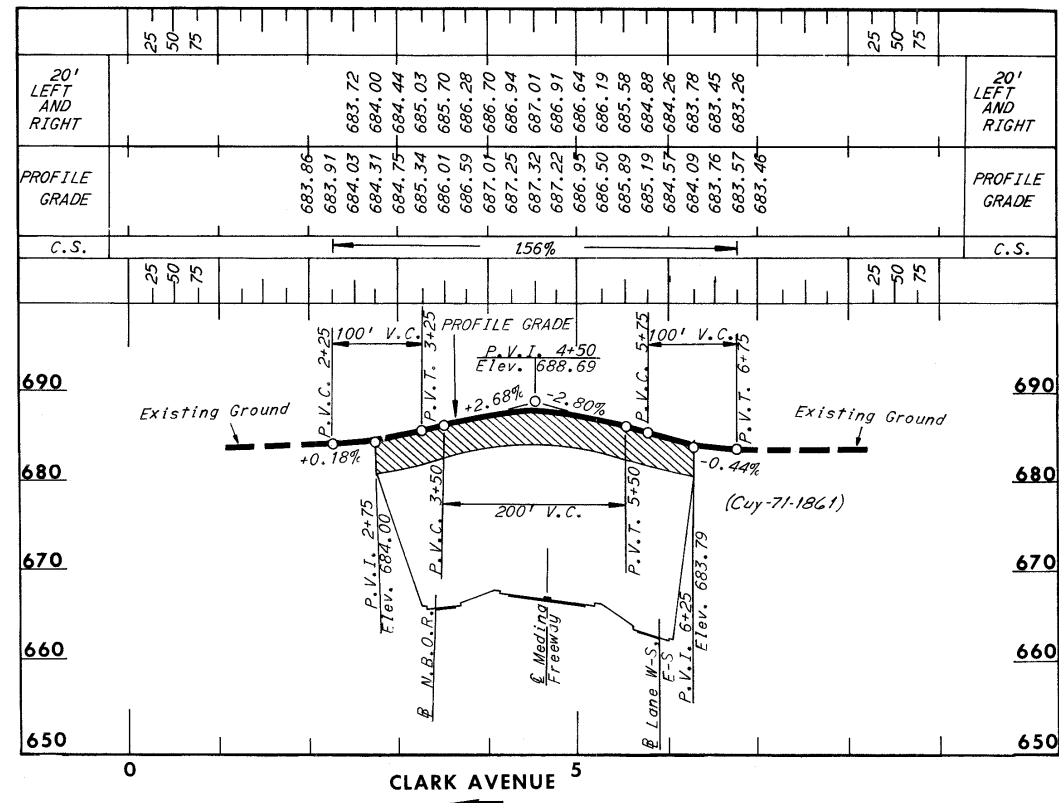
PROFILES

CUYAHOGA COUNTY
 CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
 CUY- 71-18.54
 CUY- 90-13.81



SCALE: Vert. 1"=10', Hor. 1"=100'
 MADE BY: LEE DATE: 5-12-64
 TRCD: DATE: DATE: DATE:
 CRD: SNM DATE: 5-15-64 KANSAS CITY CLEVELAND NEW YORK
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY - 71-18.54
CUY - 90-13.81



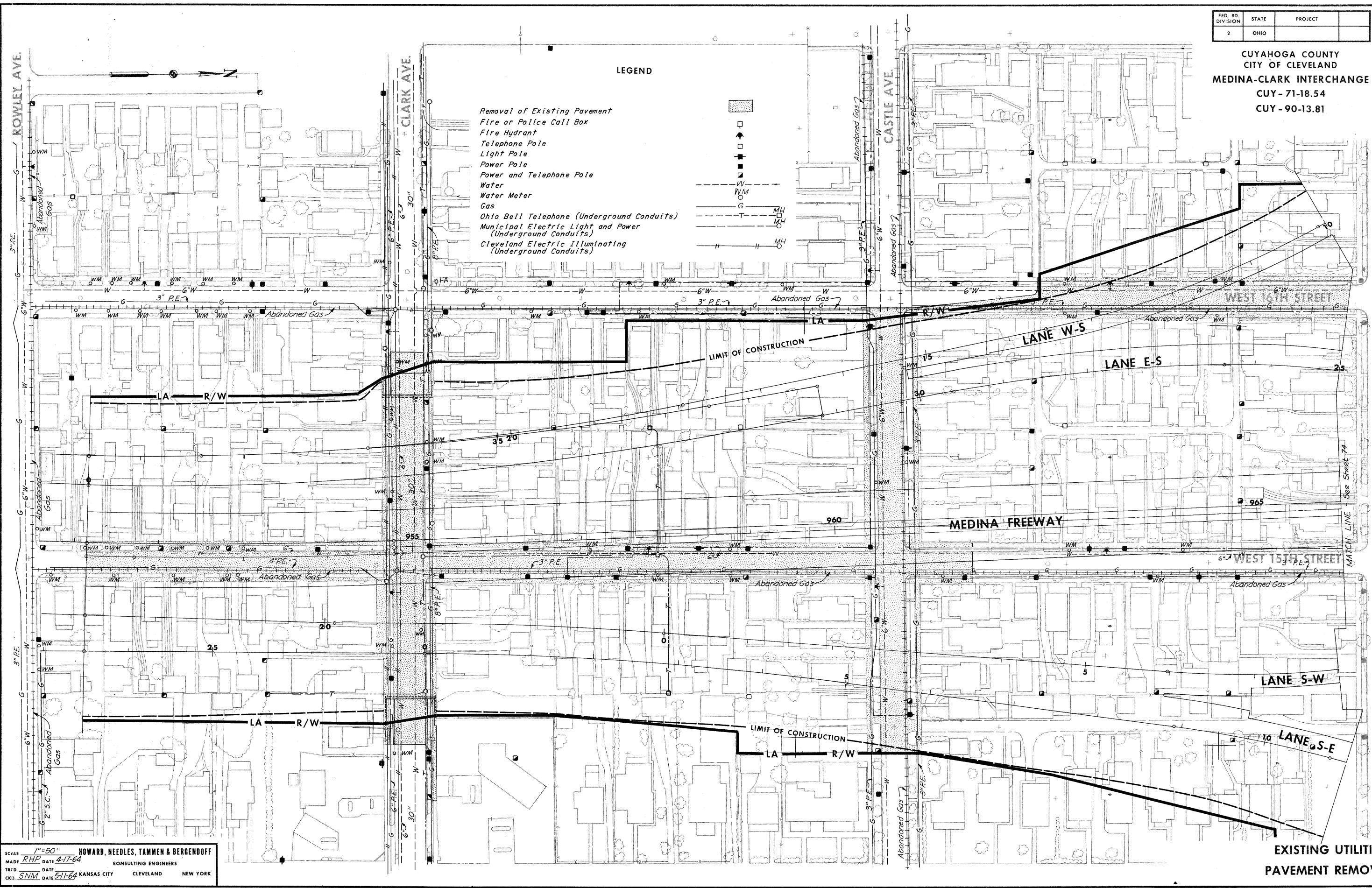
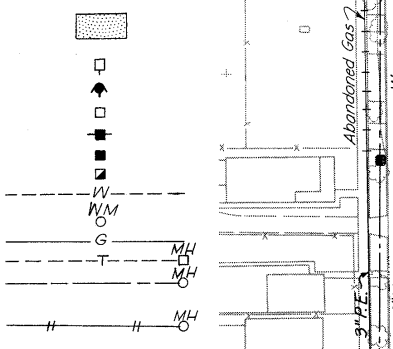
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

69
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY - 71-18.54
CUY - 90-13.81

LEGEND

- Removal of Existing Pavement
- Fire or Police Call Box
- Fire Hydrant
- Telephone Pole
- Light Pole
- Power Pole
- Power and Telephone Pole
- Water
- Water Meter
- Gas
- Ohio Bell Telephone (Underground Conduits)
- Municipal Electric Light and Power (Underground Conduits)
- Cleveland Electric Illuminating (Underground Conduits)



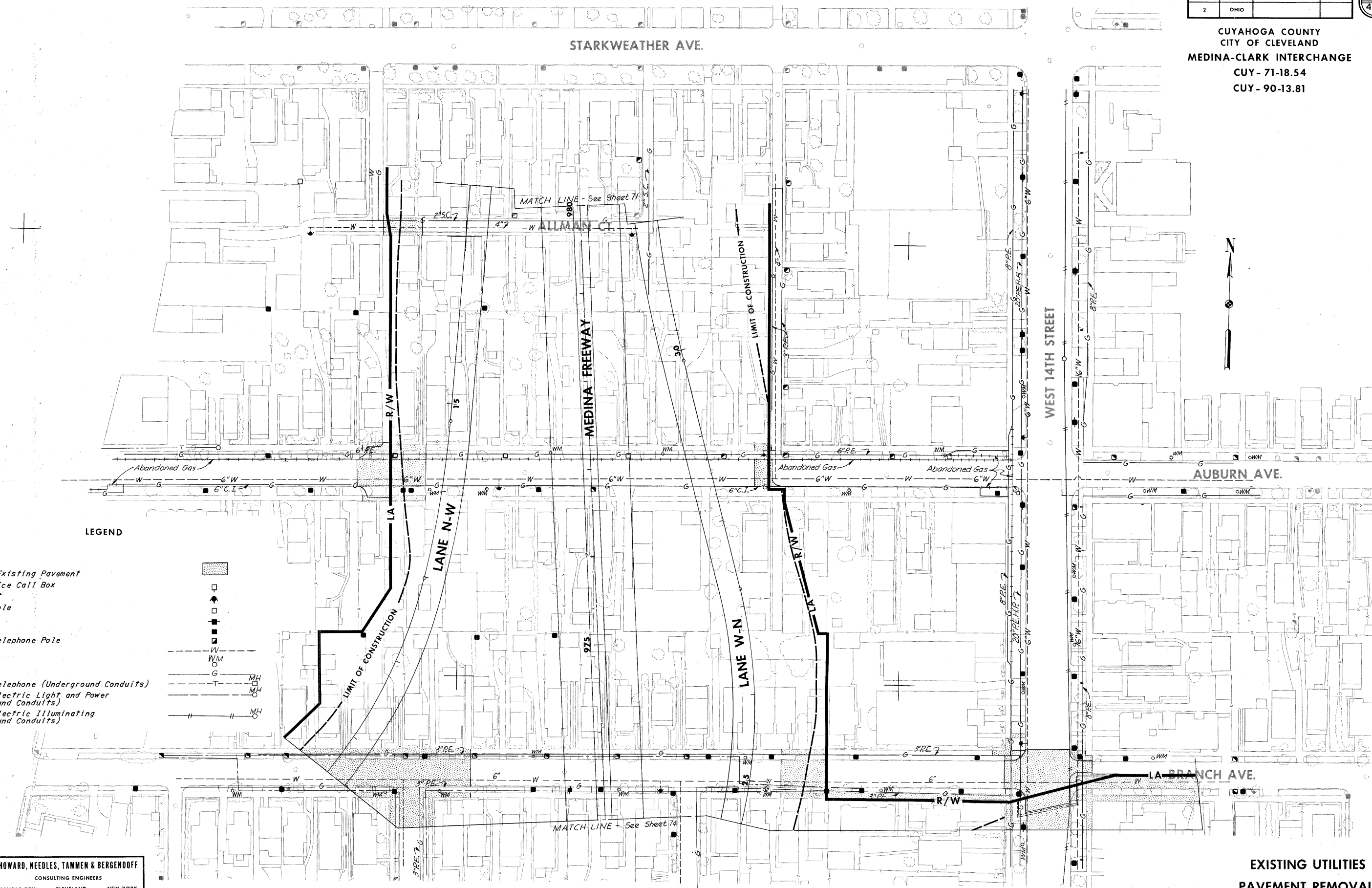
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MADE RHP DATE 4-17-64
TRCD. DATE
CKD. SNM DATE 5-11-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

EXISTING UTILITIES
PAVEMENT REMOVAL

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

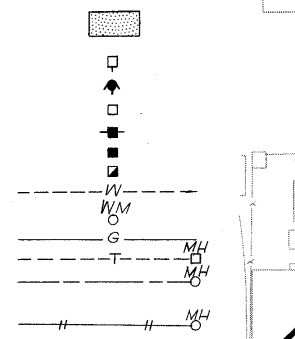
70
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



LEGEND

- Removal of Existing Pavement
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- Telephone Pole
- Light Pole
- Power Pole
- Power and Telephone Pole
- Water
- Water Meter
- Gas
- Ohio Bell Telephone (Underground Conduits)
- Municipal Electric Light and Power (Underground Conduits)
- Cleveland Electric Illuminating (Underground Conduits)



SCALE 1"=50'
MADE BY NMB DATE 4-28-64
TRCD DATE
CKD SNM DATE 5-11-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

**EXISTING UTILITIES
PAVEMENT REMOVAL**

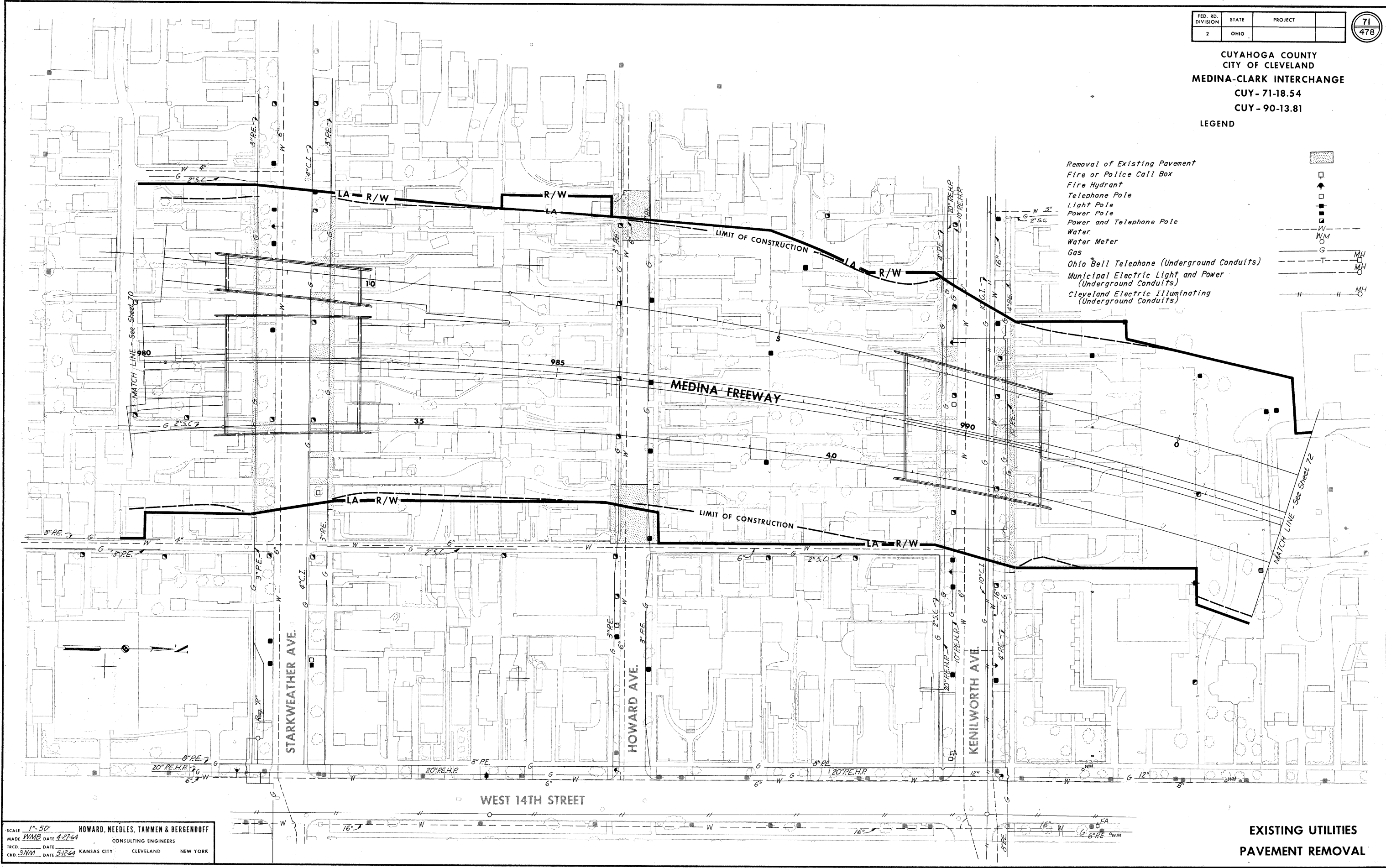
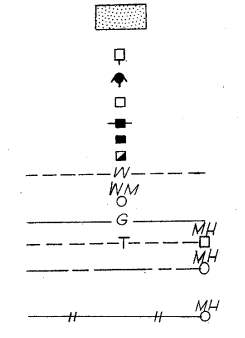
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

71
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

LEGEND

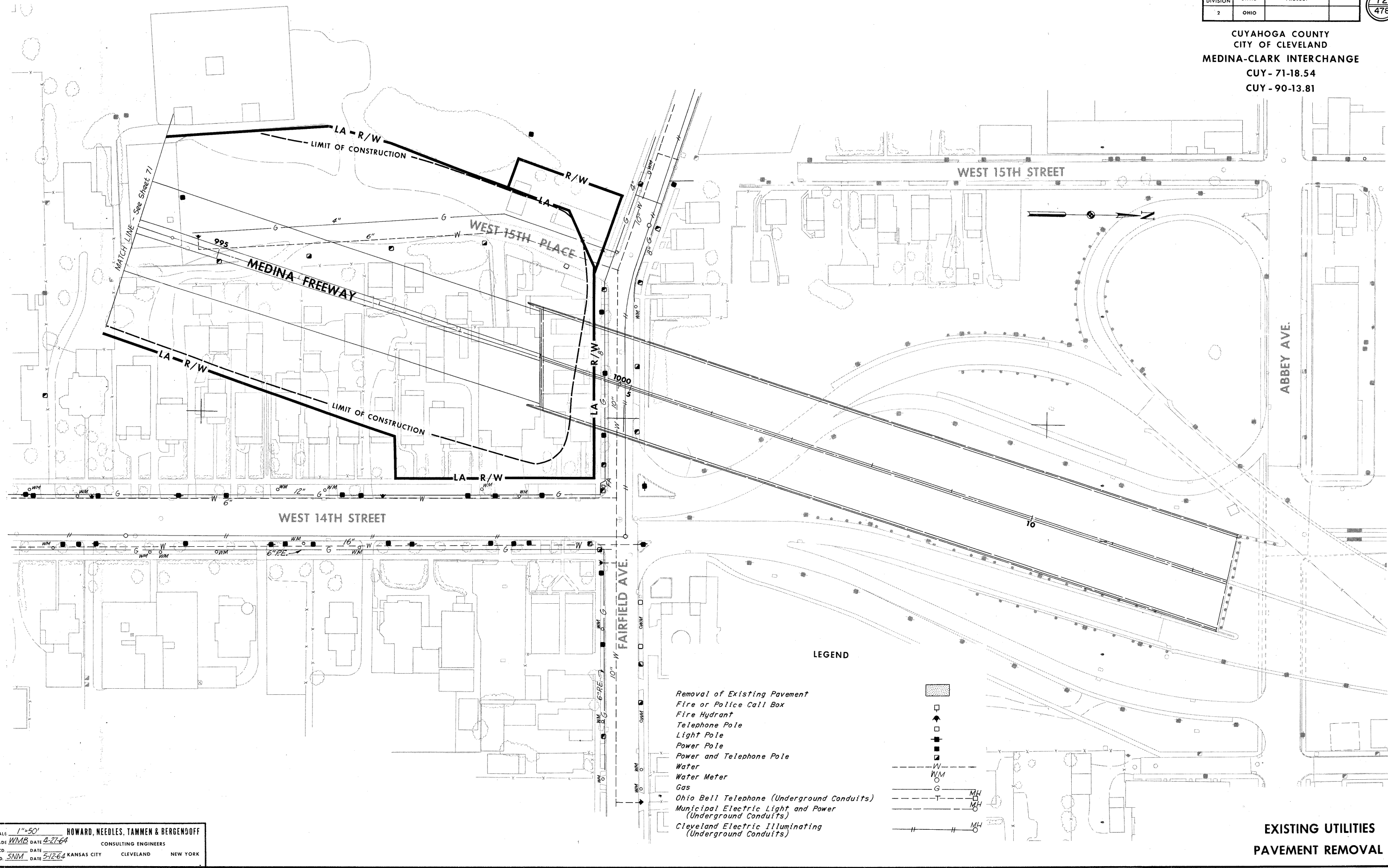
- Removal of Existing Pavement
- Fire or Police Call Box
- Fire Hydrant
- Telephone Pole
- Light Pole
- Power Pole
- Power and Telephone Pole
- Water
- Water Meter
- Gas
- Ohio Bell Telephone (Underground Conduits)
- Municipal Electric Light and Power (Underground Conduits)
- Cleveland Electric Illuminating (Underground Conduits)



SCALE 1"=50'
MADE WMB DATE 4-27-64
TRCD DATE
CKD:SNM DATE 5-12-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

EXISTING UTILITIES
PAVEMENT REMOVAL

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY - 71-18.54
CUY - 90-13.81



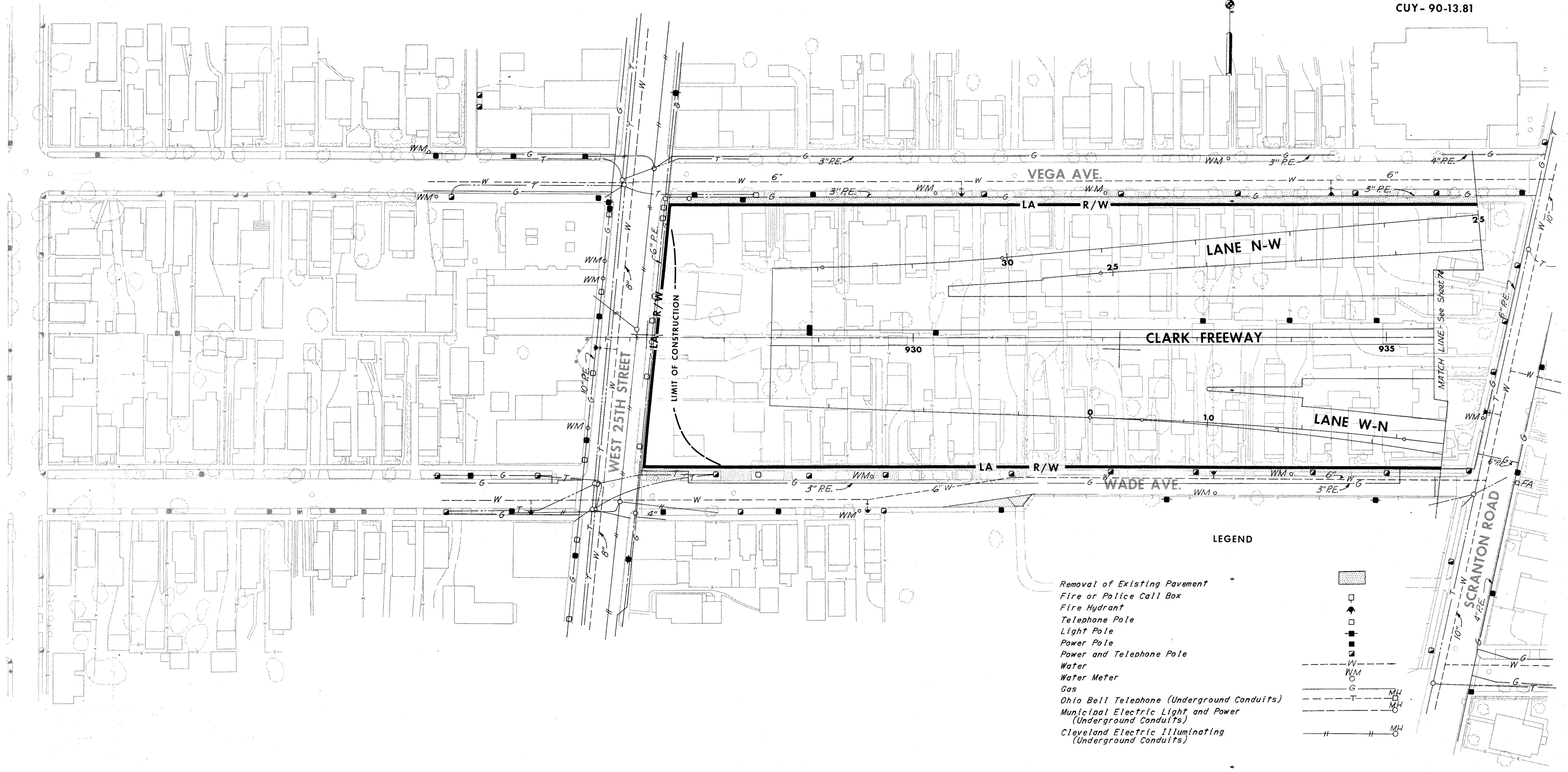
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MADE BY **HOWARD, NEEDLES, TAMMEN & BERGENDOFF** CONSULTING ENGINEERS
DATE 9-27-64
TRCD DATE
CKD **SNM** DATE 5-12-64 KANSAS CITY CLEVELAND NEW YORK

EXISTING UTILITIES
PAVEMENT REMOVAL

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

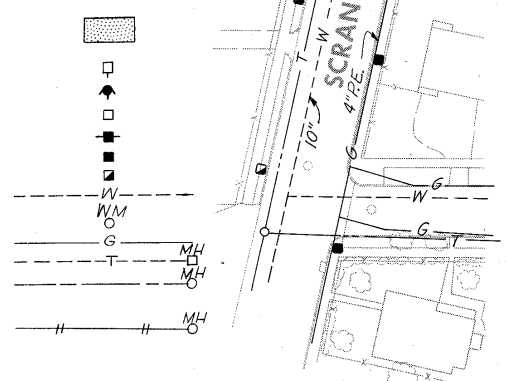
73
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



LEGEND

- Removal of Existing Pavement
- Fire or Police Call Box
- Fire Hydrant
- Telephone Pole
- Light Pole
- Power Pole
- Power and Telephone Pole
- Water
- Water Meter
- Gas
- Ohio Bell Telephone (Underground Conduits)
- Municipal Electric Light and Power (Underground Conduits)
- Cleveland Electric Illuminating (Underground Conduits)



SCALE 1"=50'
MADE BY HNB DATE 4-29-64
TRCD DATE
CKD SNM DATE 5/26/64 KANSAS CITY CLEVELAND NEW YORK

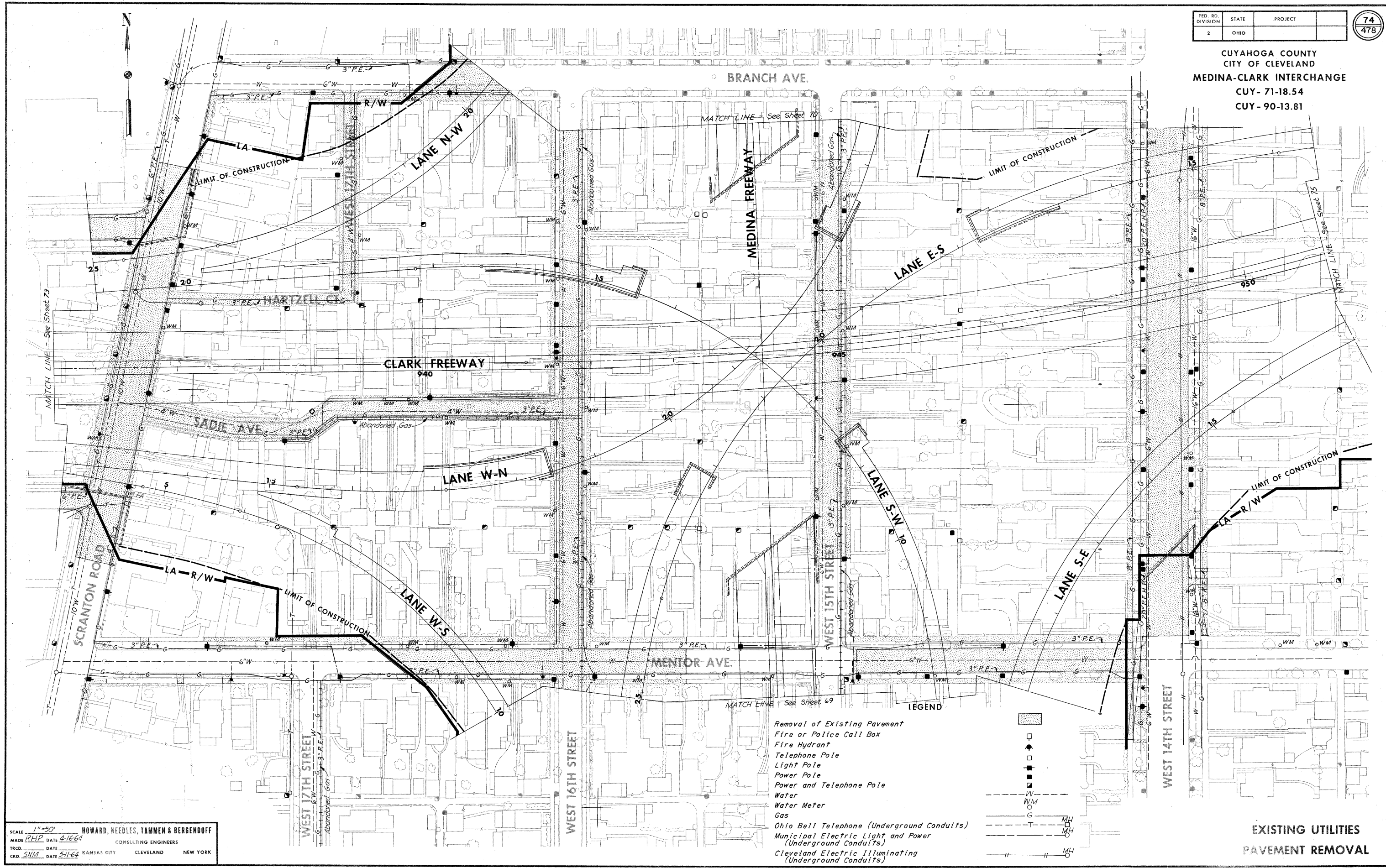
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

EXISTING UTILITIES
PAVEMENT REMOVAL

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

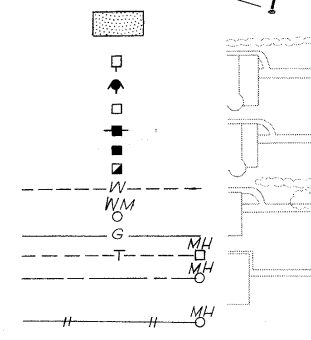
74
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



SCALE 1"=50'
MADE RHP DATE 4-16-64
TRCD DATE
CKD SNM DATE 5-11-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

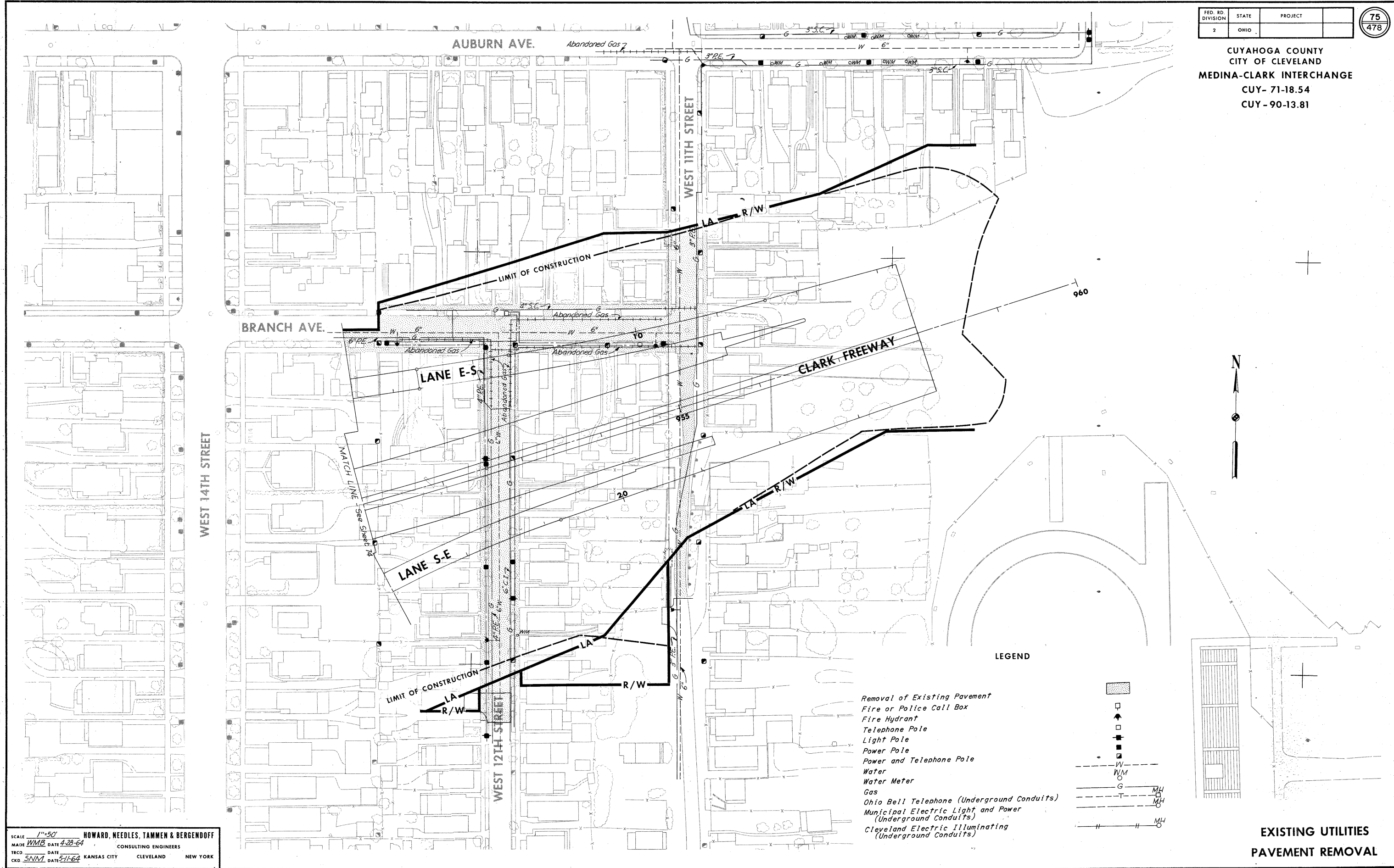
- LEGEND
- Removal of Existing Pavement
 - Fire or Police Call Box
 - Fire Hydrant
 - Telephone Pole
 - Light Pole
 - Power Pole
 - Power and Telephone Pole
 - Water
 - Water Meter
 - Gas
 - Ohio Bell Telephone (Underground Conduits)
 - Municipal Electric Light and Power (Underground Conduits)
 - Cleveland Electric Illuminating (Underground Conduits)



EXISTING UTILITIES
PAVEMENT REMOVAL

FED. RD. DIVISION	STATE	PROJECT	75 478
2	OHIO		

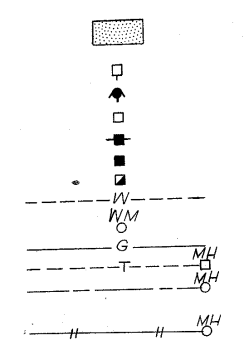
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



SCALE 1"=50'
MADE WMB DATE 4-28-64
TRCO DATE
CKD SNM DATE 5-11-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

LEGEND

- Removal of Existing Pavement
- Fire or Police Call Box
- Fire Hydrant
- Telephone Pole
- Light Pole
- Power Pole
- Power and Telephone Pole
- Water
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- Gas
- Ohio Bell Telephone (Underground Conduits)
- Municipal Electric Light and Power (Underground Conduits)
- Cleveland Electric Illuminating (Underground Conduits)



EXISTING UTILITIES
PAVEMENT REMOVAL

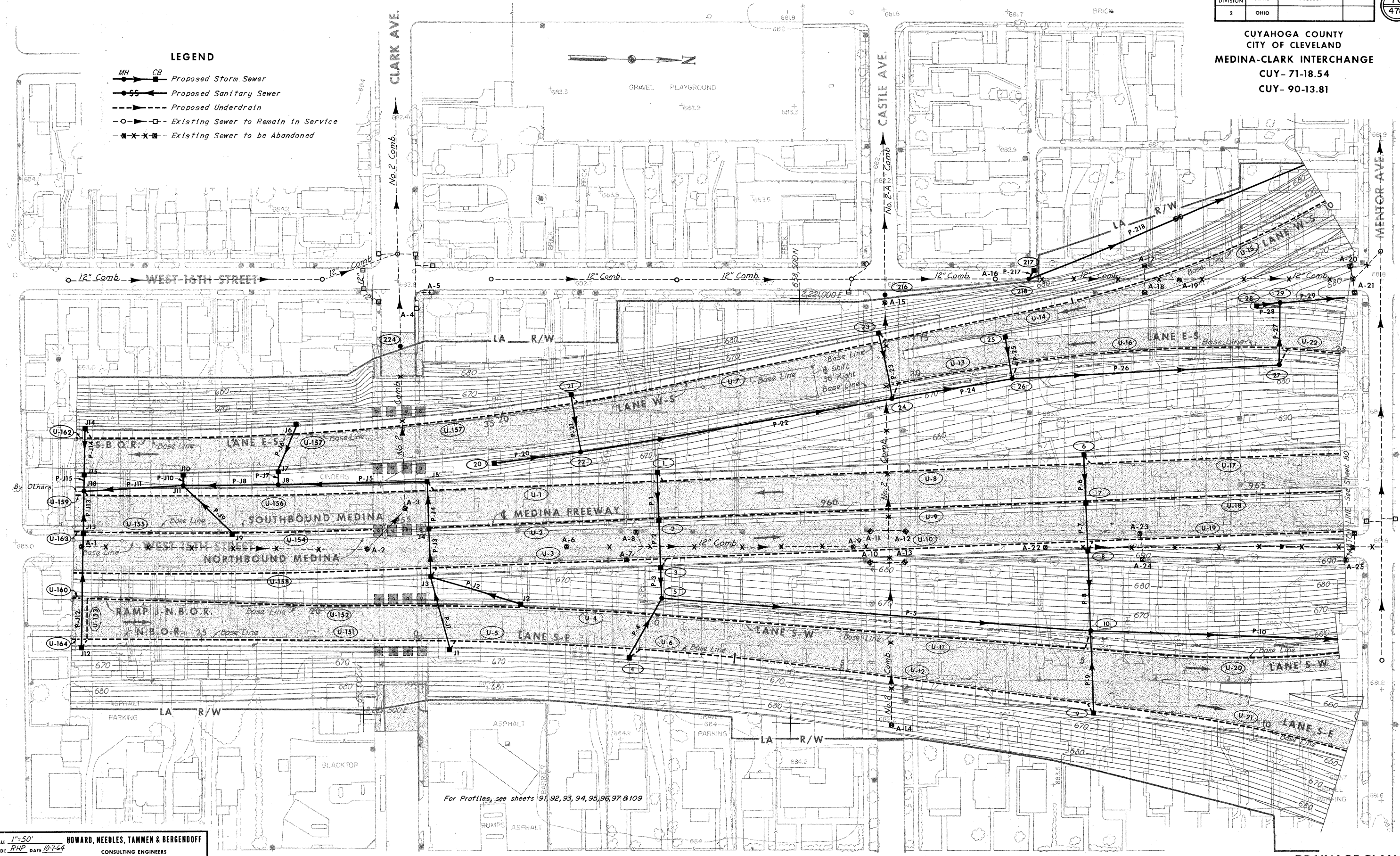
M-18

FED. RD. DIVISION	STATE	PROJECT	76 478
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

LEGEND

- MH — CB Proposed Storm Sewer
- SS Proposed Sanitary Sewer
- Proposed Underdrain
- - - Existing Sewer to Remain in Service
- x - Existing Sewer to be Abandoned



For Profiles, see sheets 91, 92, 93, 94, 95, 96, 97 & 109

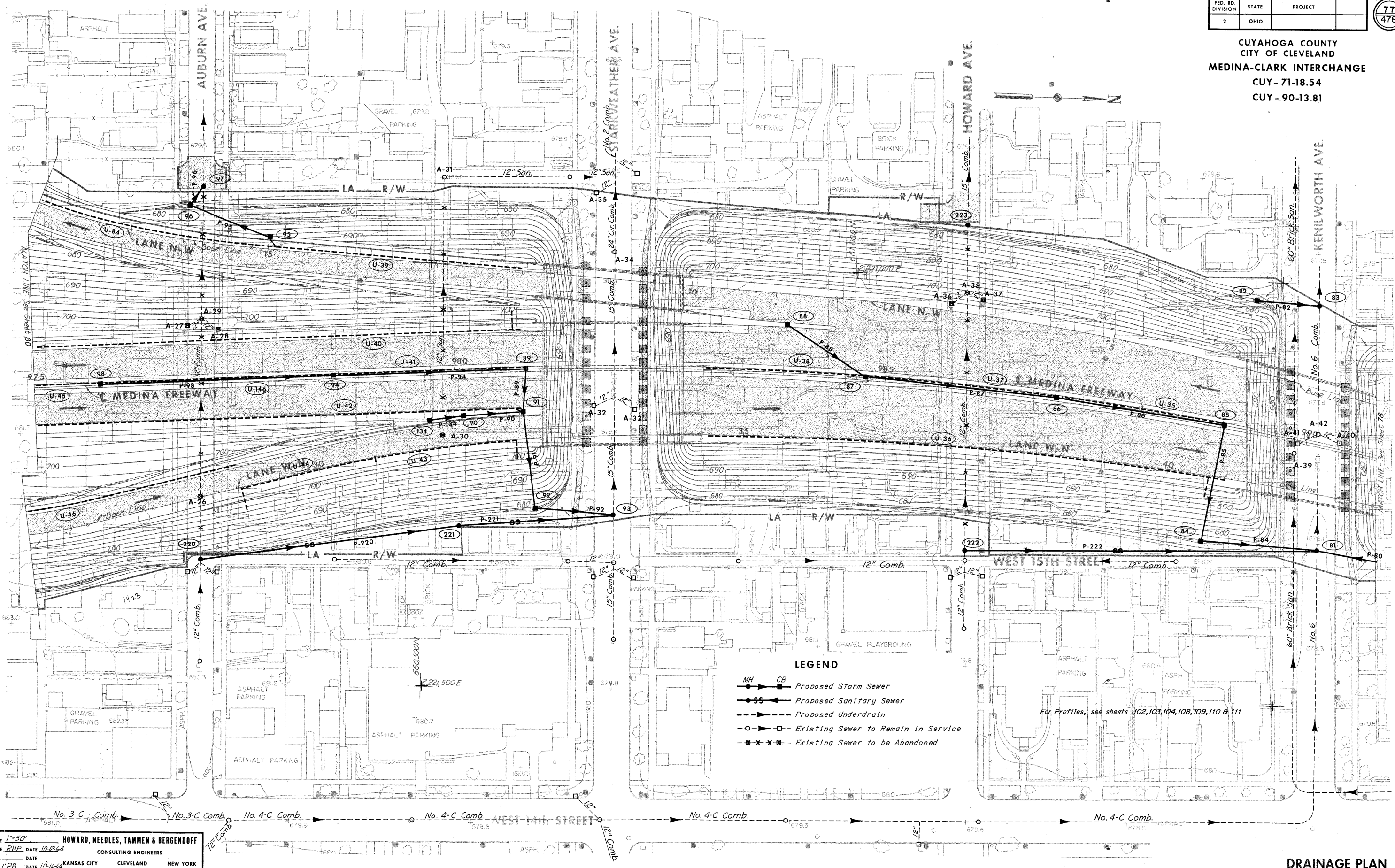
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MADE RHP DATE 10-7-64
TRCD DATE
CKD CPB DATE 10-16-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DRAINAGE PLAN

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

77
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY - 71-18.54
CUY - 90-13.81



- LEGEND**
- MH CB Proposed Storm Sewer
 - SS Proposed Sanitary Sewer
 - Proposed Underdrain
 - Existing Sewer to Remain in Service
 - x-x- Existing Sewer to be Abandoned

For Profiles, see sheets 102, 103, 104, 108, 109, 110 & 111

SCALE 1"=50'
MADE RHP DATE 10-12-64
TRCD DATE
CKD L.P.B. DATE 10-16-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

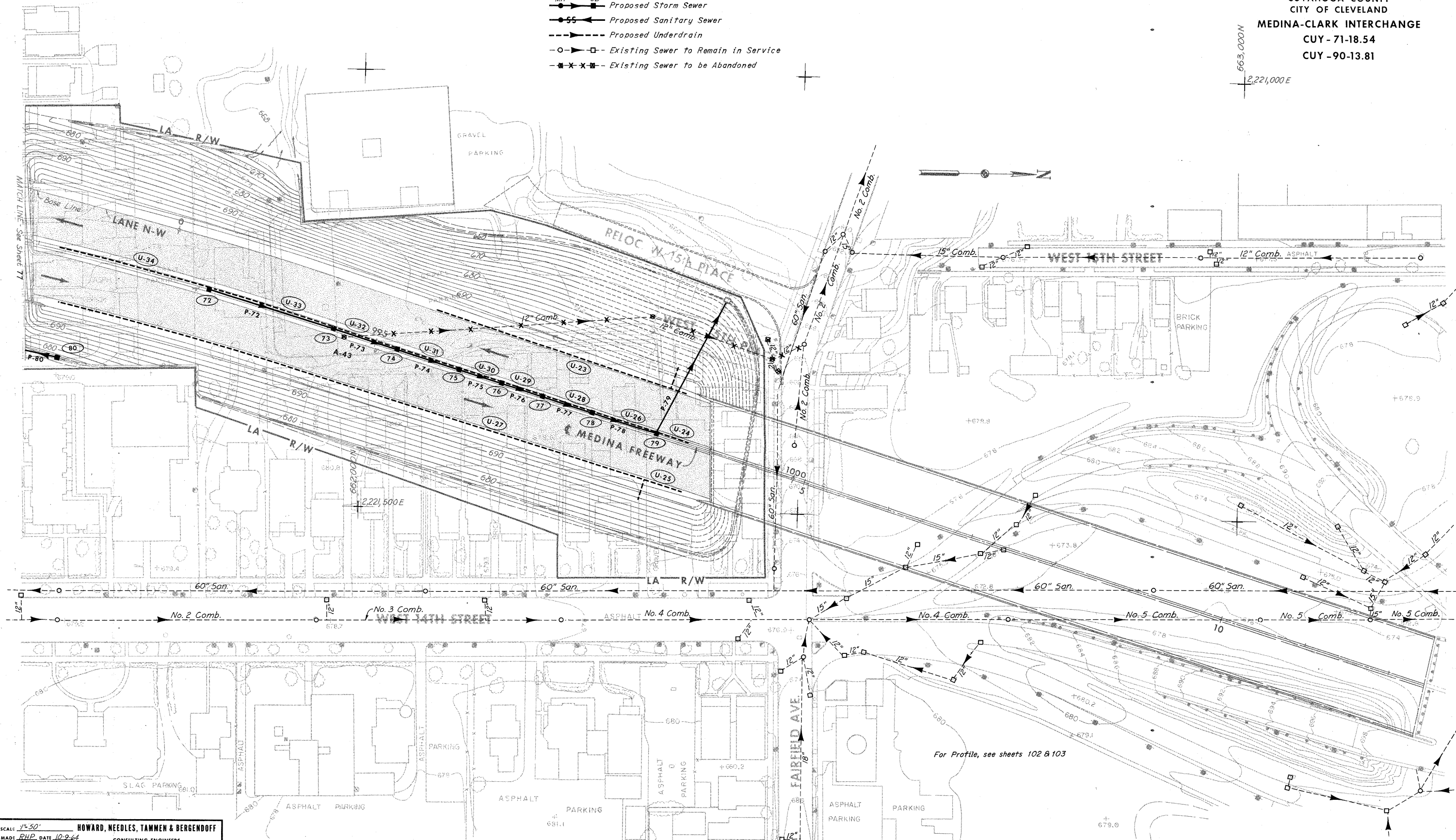
DRAINAGE PLAN

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

663,000 N
2,221,000 E

LEGEND

- MH — CB Proposed Storm Sewer
- Proposed Sanitary Sewer
- - - - Proposed Underdrain
- Existing Sewer to Remain in Service
- x-x- Existing Sewer to be Abandoned

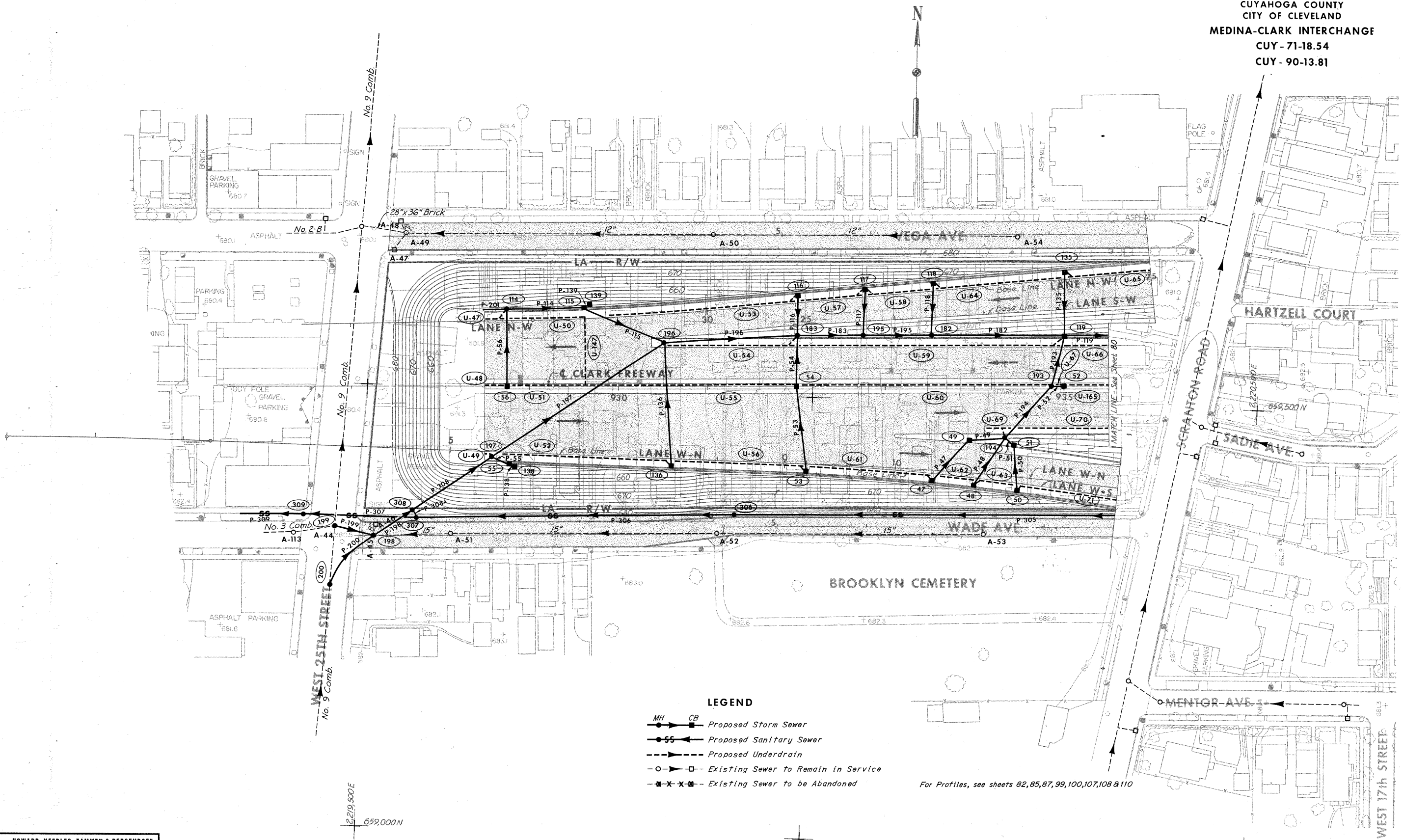


For Profile, see sheets 102 & 103

SCALE: 1"=50'
MADE RHP, DATE 10-2-64
TRCD DATE
CKD: CPB DATE 10/16/64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DRAINAGE PLAN

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



LEGEND

- MH → CB Proposed Storm Sewer
- SS → Proposed Sanitary Sewer
- Proposed Underdrain
- Existing Sewer to Remain in Service
- x-x-x- Existing Sewer to be Abandoned

For Profiles, see sheets 82, 85, 87, 99, 100, 107, 108 & 110

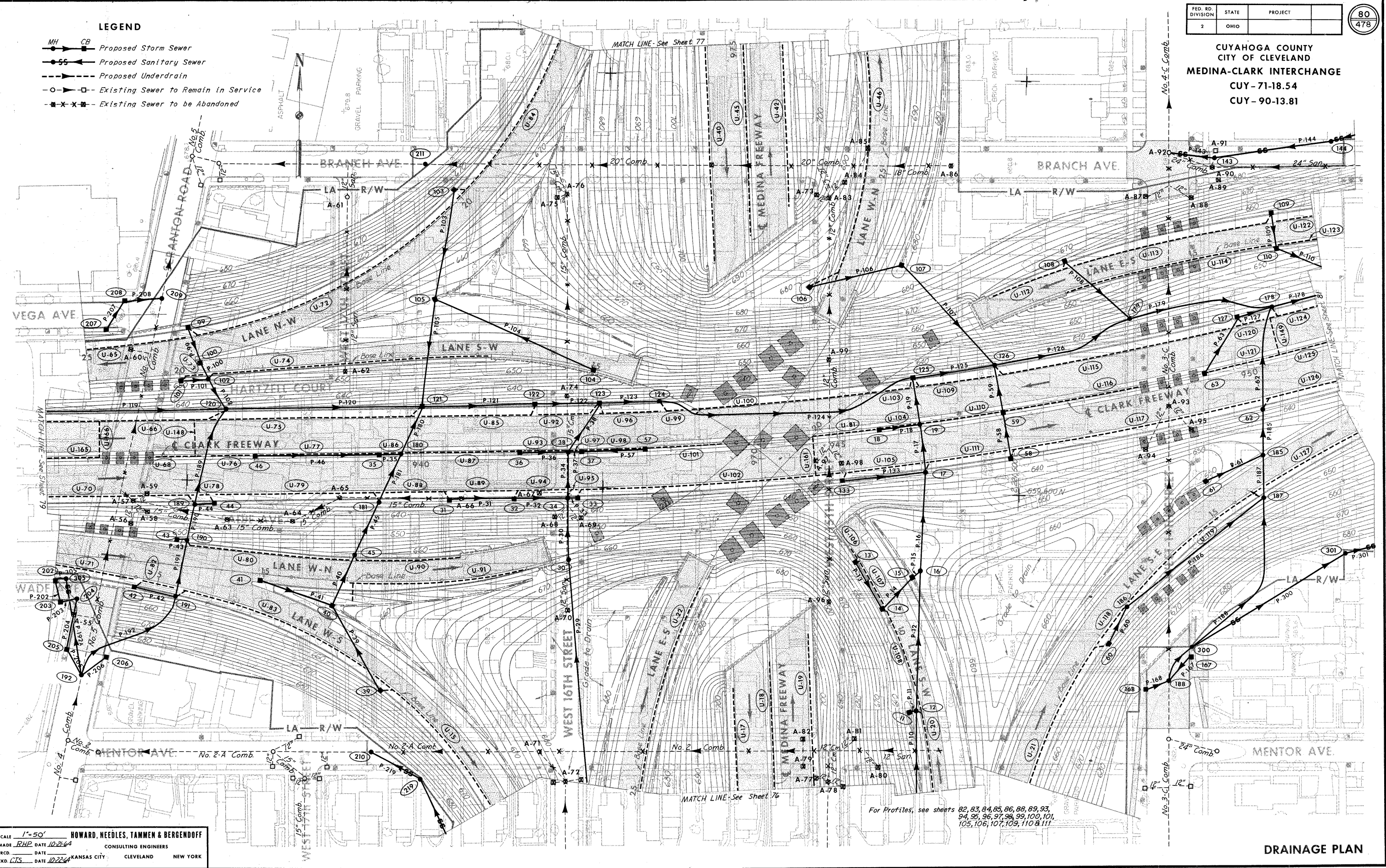
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TRCD. DATE
CKD. CPB DATE 10-16-64
HOWARD, NEEDLES, TAMMEN & BERGENOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DRAINAGE PLAN

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

LEGEND

- MH CB Proposed Storm Sewer
- Proposed Sanitary Sewer
- - - Proposed Underdrain
- Existing Sewer to Remain in Service
- x—x—x Existing Sewer to be Abandoned



For Profiles, see sheets 82, 83, 84, 85, 86, 88, 89, 93, 94, 95, 96, 97, 98, 99, 100, 101, 105, 106, 107, 109, 110 & 111

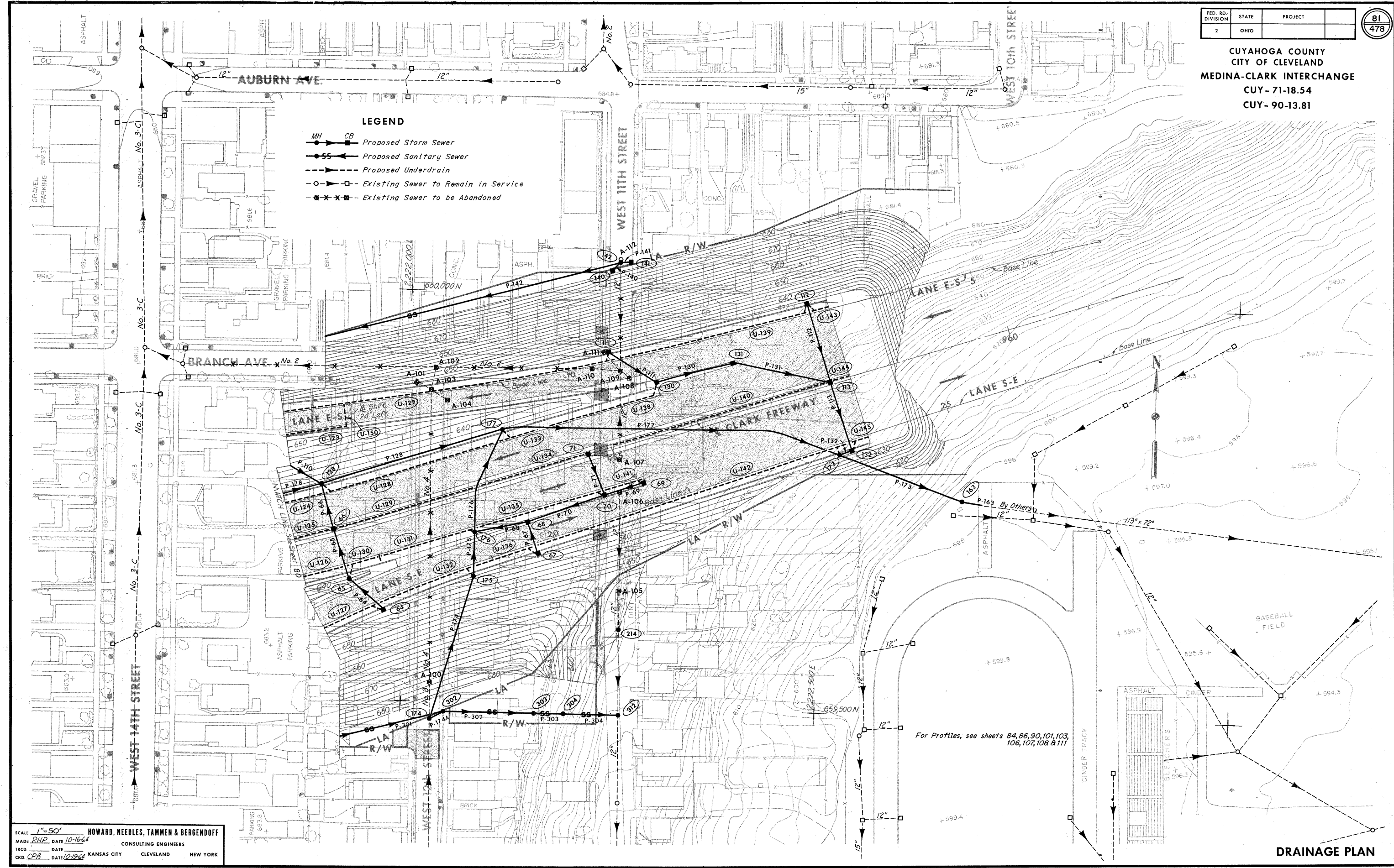
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TRCD DATE
CKD CTS DATE 10-22-64
HOWARD, NEEDLES, TAMMEN & BERGENOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DRAINAGE PLAN

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

LEGEND

- MH — CB Proposed Storm Sewer
- 55 — Proposed Sanitary Sewer
- - - Proposed Underdrain
- — Existing Sewer to Remain in Service
- X — Existing Sewer to be Abandoned

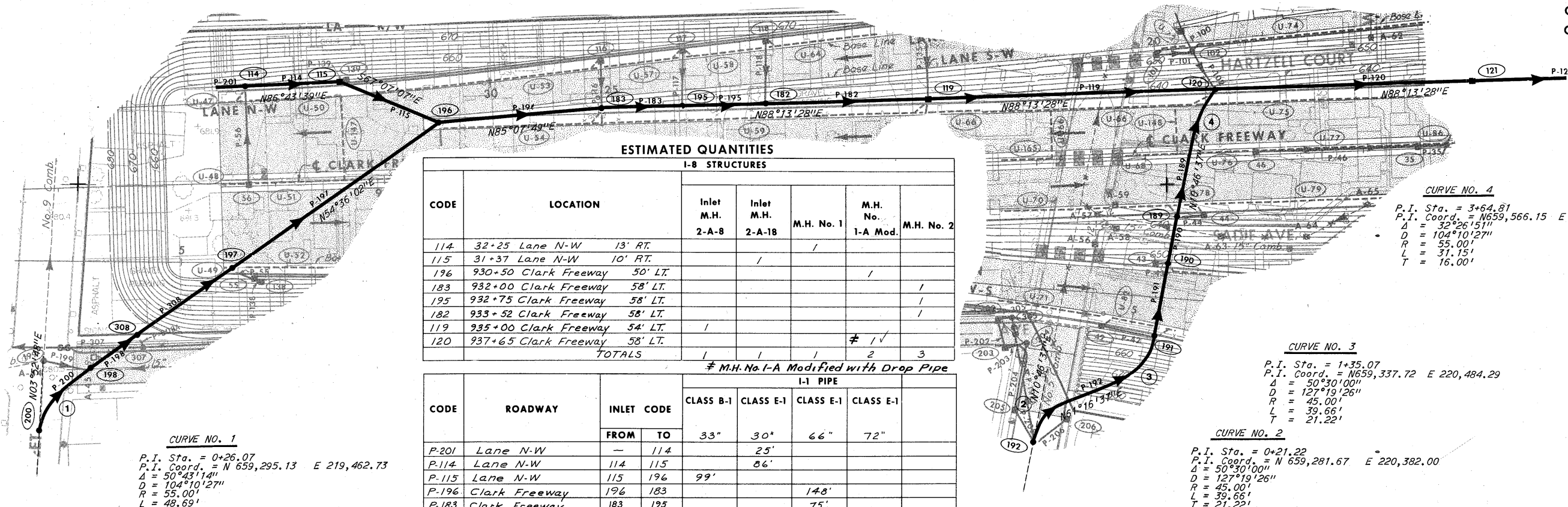


SCALE: 1" = 50'
 MADE: RHP DATE 10-16-64
 TRCD DATE
 CKD: CBR DATE 10-19-64
 HOWARD, NEEDLES, TAMMEN & BERGENOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

For Profiles, see sheets 84, 86, 90, 101, 103, 106, 107, 108 & 111

DRAINAGE PLAN

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



ESTIMATED QUANTITIES

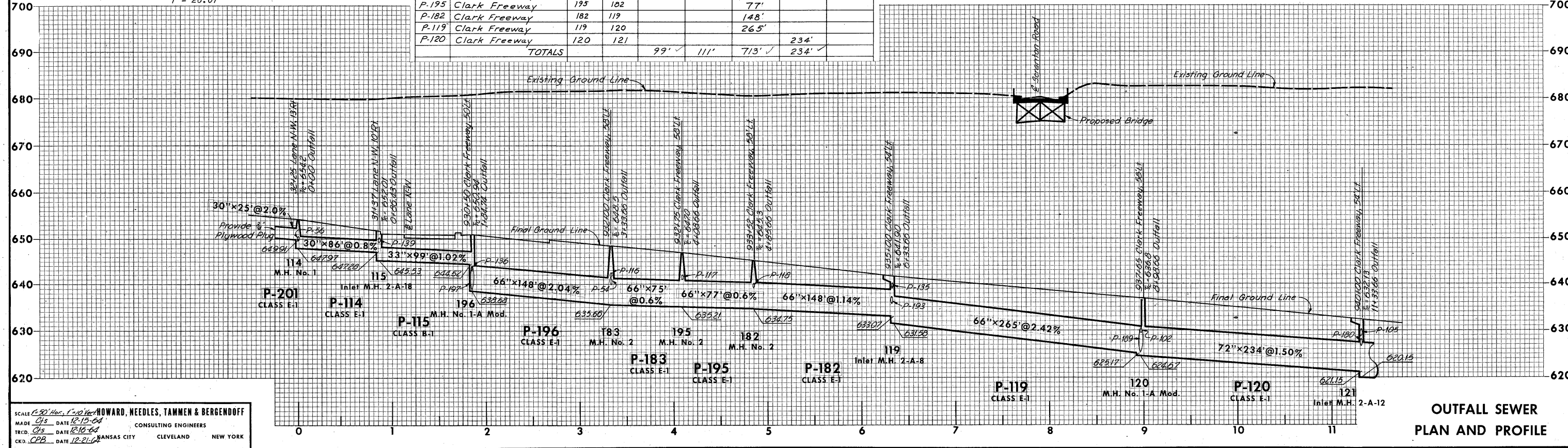
I-B STRUCTURES

CODE	LOCATION	Inlet M.H. 2-A-8	Inlet M.H. 2-A-18	M.H. No. 1	M.H. No. 1-A Mod.	M.H. No. 2
114	32+25 Lane N-W 13' RT.			/		
115	31+37 Lane N-W 10' RT.		/			
196	930+50 Clark Freeway 50' LT.			/		
183	932+00 Clark Freeway 58' LT.				/	/
195	932+75 Clark Freeway 58' LT.				/	/
182	933+52 Clark Freeway 58' LT.				/	/
119	935+00 Clark Freeway 54' LT.	/			≠ 1	
120	937+65 Clark Freeway 58' LT.					
TOTALS		1	1	1	2	3

≠ M.H. No. 1-A Modified with Drop Pipe

I-1 PIPE

CODE	ROADWAY	INLET CODE		CLASS			
		FROM	TO	CLASS B-1	CLASS E-1	CLASS E-1	CLASS E-1
P-201	Lane N-W	-	114	33"	30"	66"	72"
P-114	Lane N-W	114	115		25'		
P-115	Lane N-W	115	196	99'			
P-196	Clark Freeway	196	183		148'		
P-183	Clark Freeway	183	195		75'		
P-195	Clark Freeway	195	182		77'		
P-182	Clark Freeway	182	119		148'		
P-119	Clark Freeway	119	120		265'		
P-120	Clark Freeway	120	121				234'
TOTALS				99' ✓	111'	713' ✓	234' ✓



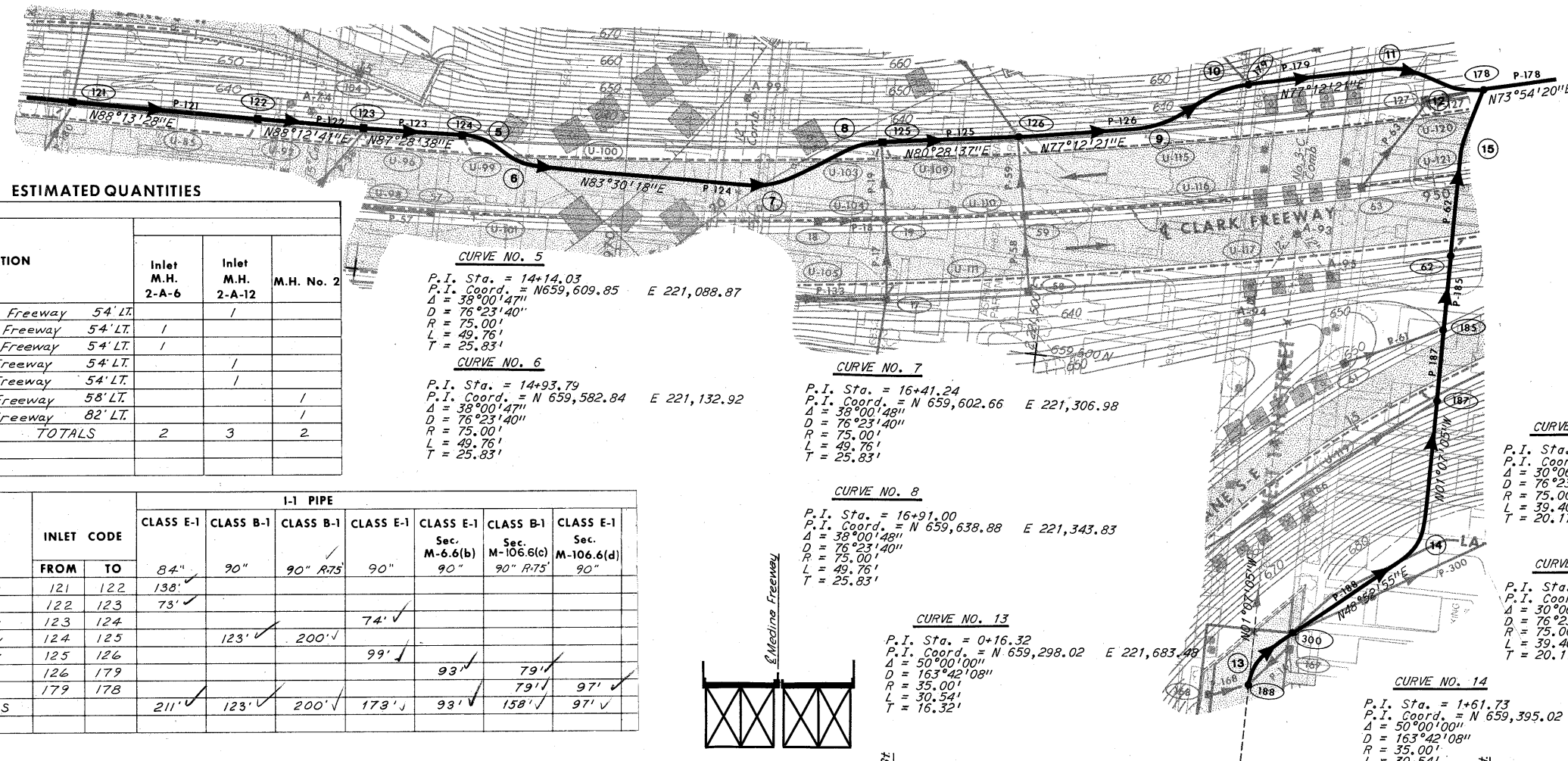
SCALE: 1" = 40' HOR. 1" = 10' VERT. **HOWARD, NEEDLES, TAMMEN & BERGENDOFF**
MADE: 05 DATE: 12-15-64 CONSULTING ENGINEERS
TRCD: 05 DATE: 12-16-64
CKD: CPB DATE: 12-21-64 KANSAS CITY CLEVELAND NEW YORK

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

ESTIMATED QUANTITIES

CODE	LOCATION	Inlet	Inlet	M.H. No. 2
		M.H. 2-A-6	M.H. 2-A-12	
121	940+00 Clark Freeway	54' LT.		
122	941+38 Clark Freeway	54' LT.	1	
123	942+12 Clark Freeway	54' LT.	1	
124	942+87 Clark Freeway	54' LT.		1
125	946+00 Clark Freeway	54' LT.		1
126	947+00 Clark Freeway	58' LT.		1
179	948+71 Clark Freeway	82' LT.		1
TOTALS			2	3

CODE	ROADWAY	INLET CODE	I-1 PIPE											
			FROM	TO	CLASS E-1	CLASS B-1	CLASS B-1	CLASS E-1	CLASS E-1	CLASS B-1	CLASS E-1			
			84"	90"	90" R75	90"	Sec. M-6.6(b)	Sec. M-106.6(c)	Sec. M-106.6(d)	90"	90" R75	90"		
P-121	Clark Freeway	121	122	130'										
P-122	Clark Freeway	122	123	75'										
P-123	Clark Freeway	123	124				74'							
P-124	Clark Freeway	124	125		123'	200'								
P-125	Clark Freeway	125	126				99'							
P-126	Clark Freeway	126	179					93'	79'					
P-179	Clark Freeway	179	178						79'	97'				
TOTALS				211'	123'	200'	173'	93'	158'	97'				



CURVE NO. 5
P.I. Sta. = 14+14.03
P.I. Coord. = N 659,609.85 E 221,088.87
Δ = 38°00'47"
D = 76°23'40"
R = 75.00'
L = 49.76'
T = 25.83'

CURVE NO. 6
P.I. Sta. = 14+93.79
P.I. Coord. = N 659,582.84 E 221,132.92
Δ = 38°00'47"
D = 76°23'40"
R = 75.00'
L = 49.76'
T = 25.83'

CURVE NO. 7
P.I. Sta. = 16+41.24
P.I. Coord. = N 659,602.66 E 221,306.98
Δ = 38°00'48"
D = 76°23'40"
R = 75.00'
L = 49.76'
T = 25.83'

CURVE NO. 8
P.I. Sta. = 16+91.00
P.I. Coord. = N 659,638.88 E 221,343.83
Δ = 38°00'48"
D = 76°23'40"
R = 75.00'
L = 49.76'
T = 25.83'

CURVE NO. 13
P.I. Sta. = 0+16.32
P.I. Coord. = N 659,298.02 E 221,683.48
Δ = 50°00'00"
D = 163°42'08"
R = 35.00'
L = 30.54'
T = 16.32'

CURVE NO. 9
P.I. Sta. = 19+52.63
P.I. Coord. = N 659,683.20 E 221,577.19
Δ = 30°06'01"
D = 76°23'40"
R = 75.00'
L = 39.40'
T = 20.17'

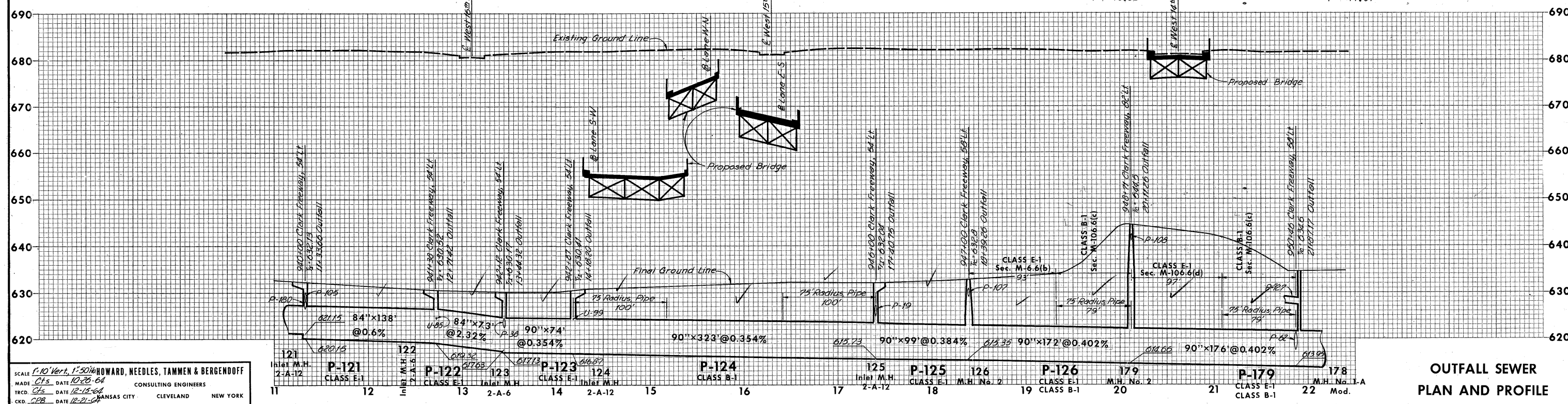
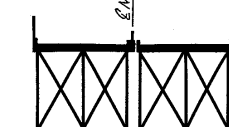
CURVE NO. 10
P.I. Sta. = 19+92.03
P.I. Coord. = N 659,710.66 E 221,606.74
Δ = 30°06'01"
D = 76°23'40"
R = 75.00'
L = 39.40'
T = 20.17'

CURVE NO. 11
P.I. Sta. = 21+28.54
P.I. Coord. = N 659,741.09 E 221,740.77
Δ = 30°06'01"
D = 76°23'40"
R = 75.00'
L = 39.40'
T = 20.17'

CURVE NO. 12
P.I. Sta. = 21+67.94
P.I. Coord. = N 659,729.09 E 221,779.28
Δ = 30°06'01"
D = 76°23'40"
R = 75.00'
L = 39.40'
T = 20.17'

CURVE NO. 14
P.I. Sta. = 1+61.73
P.I. Coord. = N 659,395.02 E 221,794.61
Δ = 50°00'00"
D = 163°42'08"
R = 35.00'
L = 30.54'
T = 16.32'

CURVE NO. 15
P.I. Sta. = 4+72.82
P.I. Coord. = N 659,697.14 E 221,788.50
Δ = 30°47'12"
D = 143°14'22"
R = 40.00'
L = 21.49'
T = 11.01'



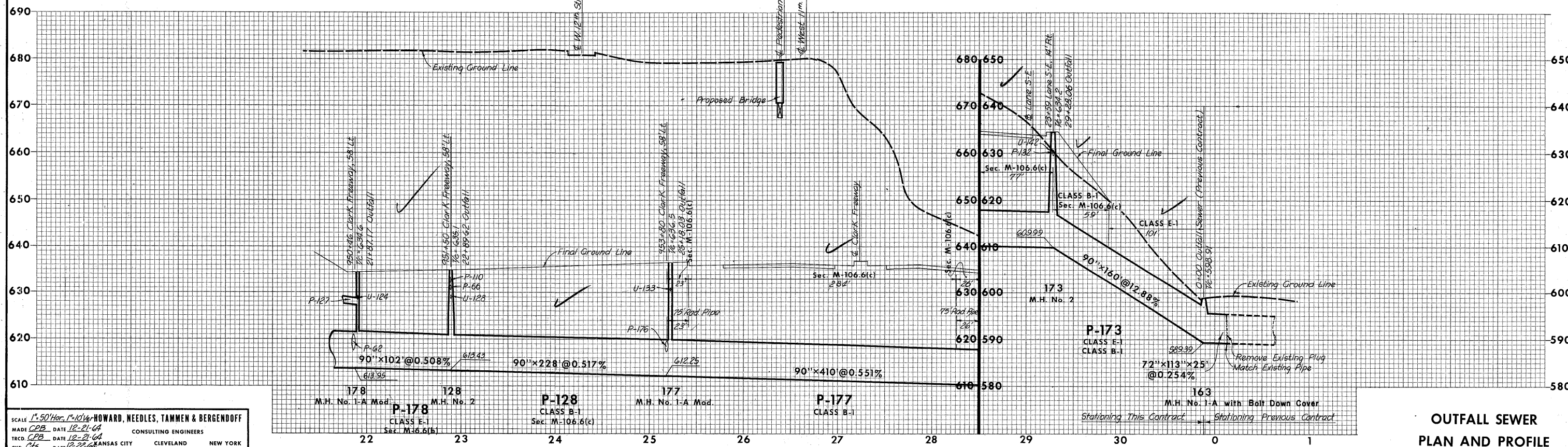
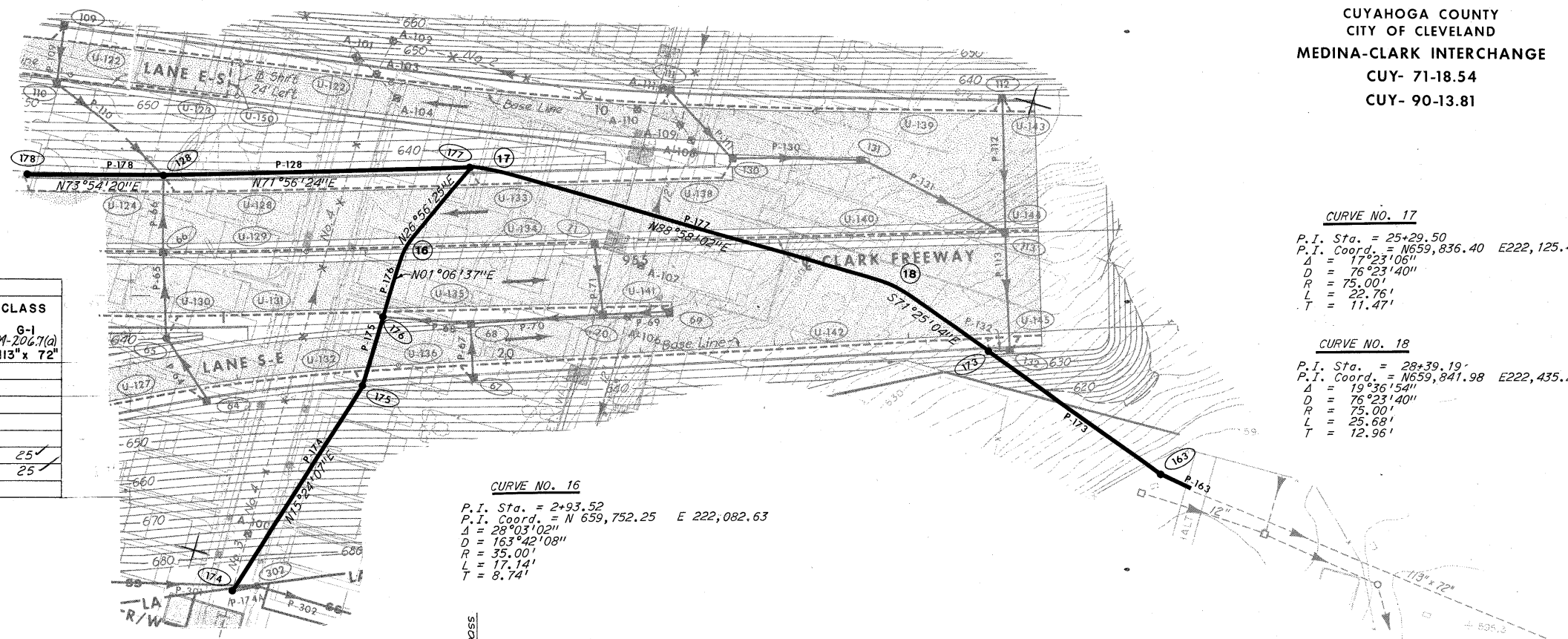
SCALE: 1" = 10' Vert., 1" = 50' Hor.
MADE: CTS DATE 10-28-64
TRCD: CTS DATE 12-15-64
KANSAS CITY CLEVELAND NEW YORK

OUTFALL SEWER
PLAN AND PROFILE

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

I-B STRUCTURES				
CODE	LOCATION	M.H. No.	M.H. No. 2	M.H. No. I-A Bolt Down Cover
178	950+46 Clark Freeway 58' LT.	1		
128	951+50 Clark Freeway 58' LT.		1	
177	953+80 Clark Freeway 58' LT.	1		
173	23+59 Lane S-E 14' RT.			1
163	0+00 Outflow Sewer			1
TOTALS		2	2	1

I-1 PIPE						
CODE	ROADWAY	INLET CODE		CLASS B-1	CLASS B-1	CLASS E-1
		FROM	TO	Sec. M-106.6(c) 90"	Sec. M-106.6(c) 90" R=75'	Sec. M-6.6(b) 90"
P-178	Clark Freeway	178	128			
P-128	Clark Freeway	128	177	228		
P-177	Clark Freeway	177	173	361	49	
P-173	Lane S-E	173	163	59		101
P-163	Outfall Sewer	163	-			25
TOTALS				648	49	101



SCALE: 1" = 50' Hor., 1" = 10' Ver.
MADE: CPB DATE 12-21-64
TRCD: CPB DATE 12-21-64
CKD: Cts DATE 12-22-64

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

**OUTFALL SEWER
PLAN AND PROFILE**

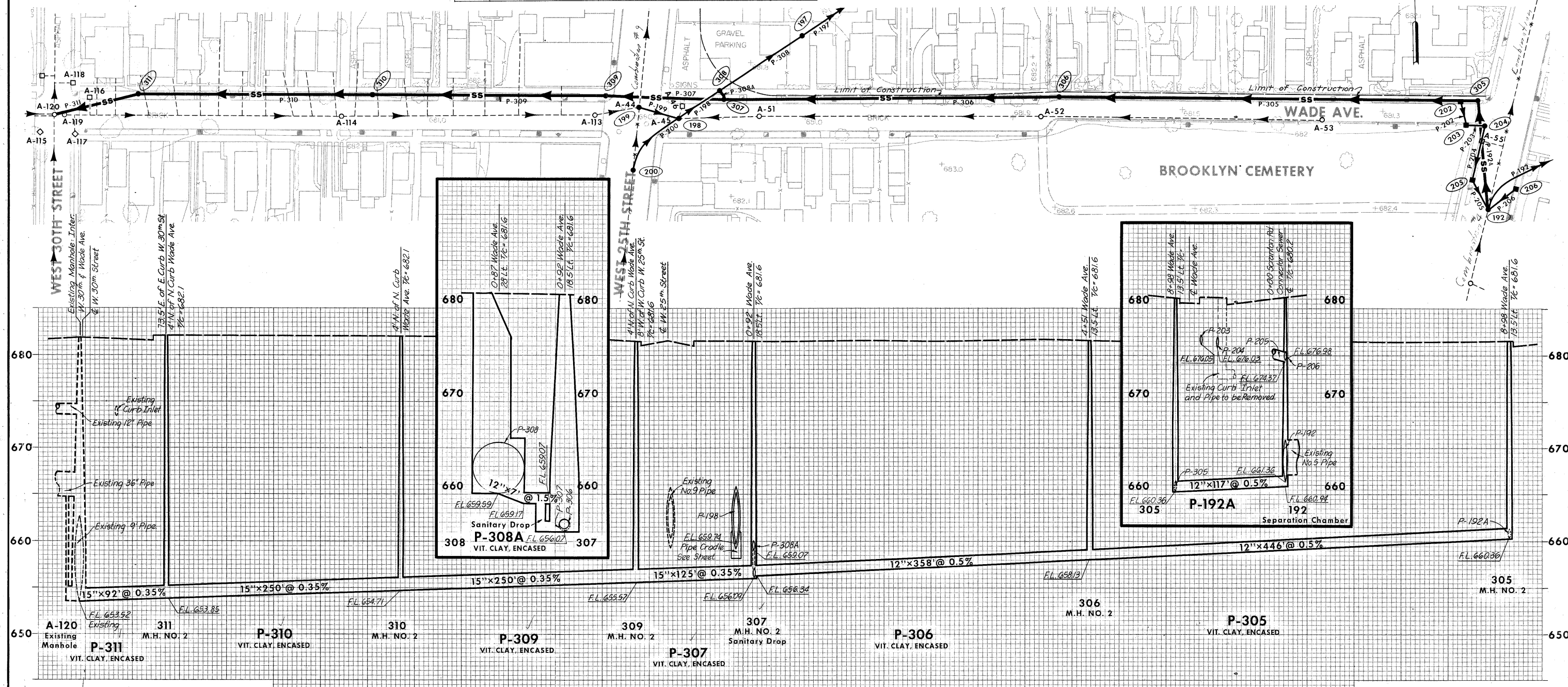
ESTIMATED QUANTITIES

CODE	ROADWAY	INLET CODE		I-1 PIPE	
		FROM	TO	Vit. Clay Encased	Vit. Clay Encased
192A	Scranton Road	192	305	117'	
305	Wade Ave.	305	306	446'	
306	Wade Ave.	306	307	358'	
307	Wade Ave.	307	309		125'
308A	Wade Ave.	308	307	7'	
309	Wade Ave.	309	310		250'
310	Wade Ave.	310	311		250'
311	Wade Ave.	311	A-120		92'
TOTALS				928'	717'

CODE	LOCATION	I-8 STRUCTURES		
		Separation Chamber	M.H. No. 2 w/ Drop Pipe	M.H. No. 2 w/ Drop
192	0+00 Scranton Road Connector Sewer	1		
305	8+98 Wade Ave. 13.5' Lt.		1	
306	4+51 Wade Ave. 13.5' Lt.		1	
307	0+92 Wade Ave. 18.5' Lt.			1
308	0+87 Wade Ave. 28' Lt.	1		
309	4' N. of N. Curb Wade Ave. 13' W. of W. Curb W. 25th St.		1	
310	4' N. of N. Curb Wade Ave.		1	
311	73.5' E. of E. Curb W. 30th St. 4' N. of N. Curb Wade Ave.		1	
TOTALS		2	5	1

CODE NO.	LOCATION	REMARKS
A-113	E Wade Ave. 45' West of E. W. 25th St.	Undisturbed
A-114	E Wade Ave. 315' West of E. W. 25th St.	Undisturbed
A-115	S.W. Corner West 30th St. and Wade Ave.	Undisturbed
A-116	North Side of Wade Ave. 40' East of E. W. 30th St.	Undisturbed
A-117	S.E. Corner West 30th St. and Wade Avenue	Undisturbed
A-118	East Side of West 30th St. 35' North of E Wade Ave.	Undisturbed
A-119	E Wade Ave. 10' East of E West 30th St.	Undisturbed
A-120	Intersection of Wade Ave. and W. 30th St.	Connect P-311

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



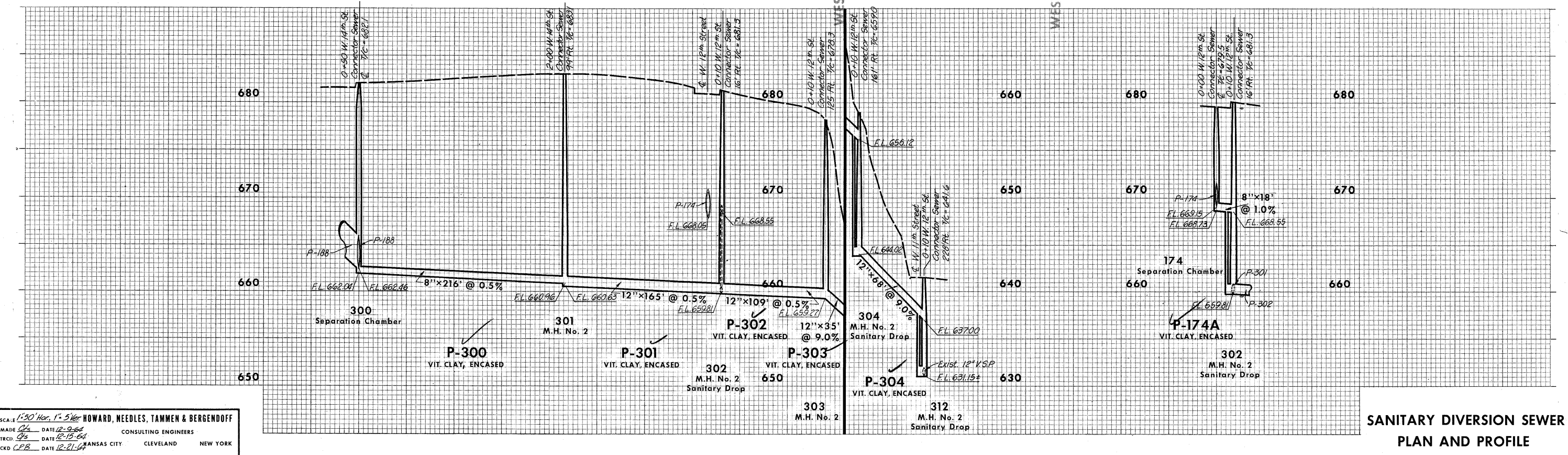
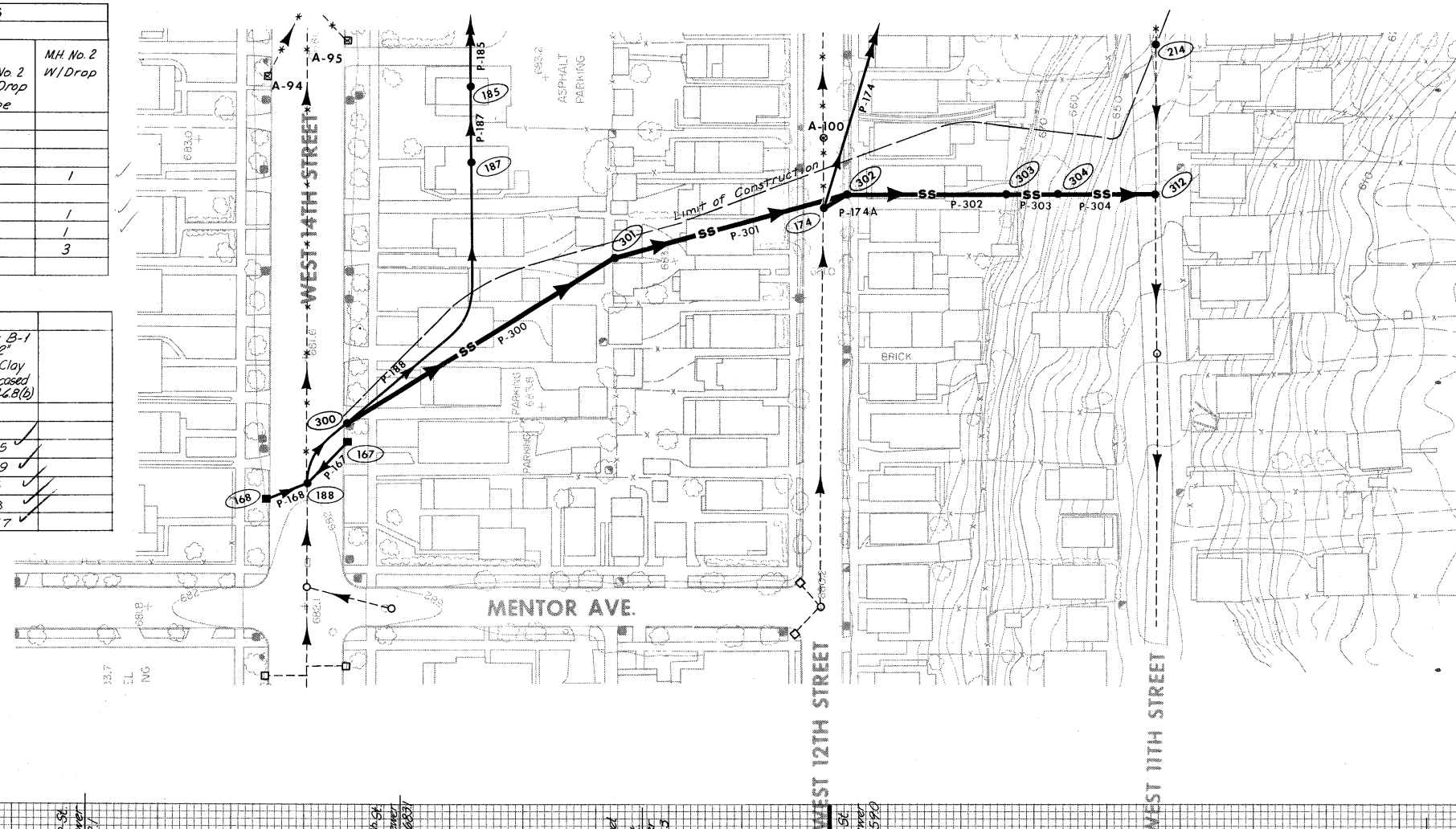
SCALE 1"=50' Hor. 1"=5' Ver. HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE CFB DATE 12-2-64 CONSULTING ENGINEERS
TRCD. DATE _____
CKD. CFB DATE 12-21-64 CLEVELAND NEW YORK

SANITARY DIVERSION SEWER
PLAN AND PROFILE

ESTIMATED QUANTITIES

I-B STRUCTURES				
CODE	LOCATION	Separation Chamber	M.H. No. 2 W/O Drop Pipe	M.H. No. 2 W/Drop
174	0+00 W. 12 th St. Connector Sewer	1		
300	0+50 W. 14 th St. Connector Sewer	1		
301	2+00 W. 14 th St. Connector Sewer		1	
302	0+10 W. 12 th St. Connector Sewer			1
303	0+10 W. 12 th St. Connector Sewer		1	
304	0+10 W. 12 th St. Connector Sewer			1
312	0+10 W. 12 th St. Connector Sewer			1
TOTALS		2	2	3

CODE	ROADWAY	INLET CODE		Class B-1 8" Vit. Clay Encased Sec. M. & B. (b)	Class B-1 12" Vit. Clay Encased Sec. M. & B. (b)
		FROM	TO		
174A	W. 12 th Street	174	302	18	
300	W. 14 th Street	300	301	216	
301	W. 14 th Street	301	302		165
302	W. 12 th Street	302	303		109
303	W. 12 th Street	303	304		35
304	W. 12 th Street	304	312		68
TOTALS				234	377

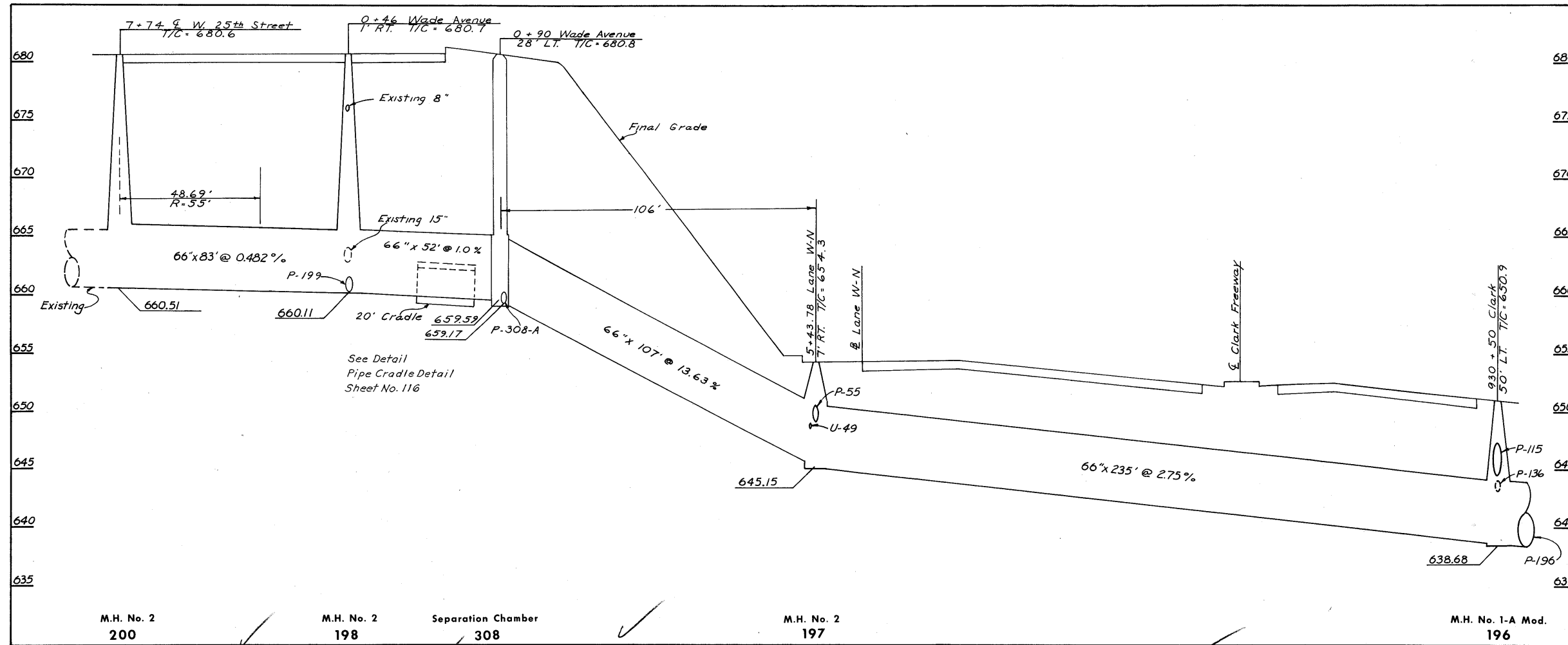


CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY - 71-18.54
CUY - 90-13.81

SCALE: 1"=30' Hor., 1"=5' Ver. HOWARD, NEEDLES, TAMMEN & BERGENOFF
MADE BY: DATE: 12-9-64 CONSULTING ENGINEERS
TRCD: DATE: 12-15-64
CKD: DATE: 12-21-64 ANSAS CITY CLEVELAND NEW YORK

**SANITARY DIVERSION SEWER
PLAN AND PROFILE**

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



M.H. No. 2 200 M.H. No. 2 198 Separation Chamber 308 M.H. No. 2 197 M.H. No. 1-A Mod. 196

P-200
CLASS B-1
Sec. M-6.6(c)

P-198
CLASS B-1
Sec. M-6.6(c)

P-308
CLASS B-1
Sec. M-6.6(c)

P-197
CLASS B-1

ESTIMATED QUANTITIES

I-B STRUCTURES		
CODE	LOCATION	w/o Drop Pipe M.H. No. 2
198	O + 46 Wade Avenue 1' RT.	1
200	7 + 74 W. 25 th Street C	1
CUY-71-18.54 TOTALS		2

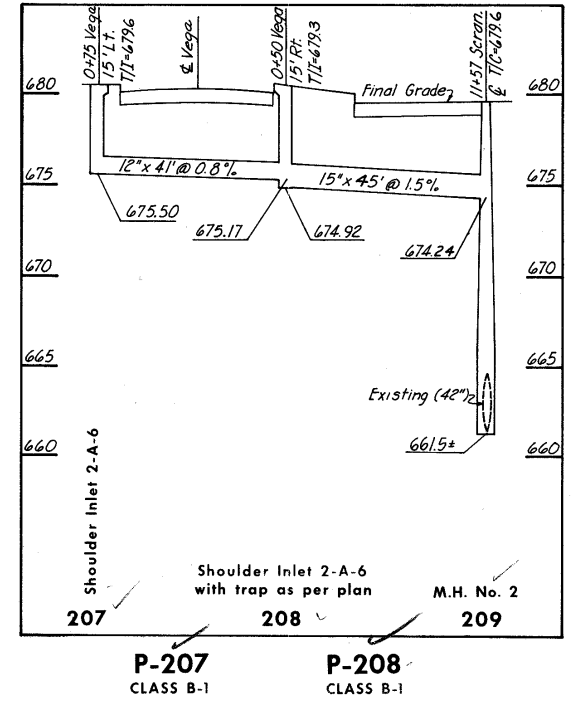
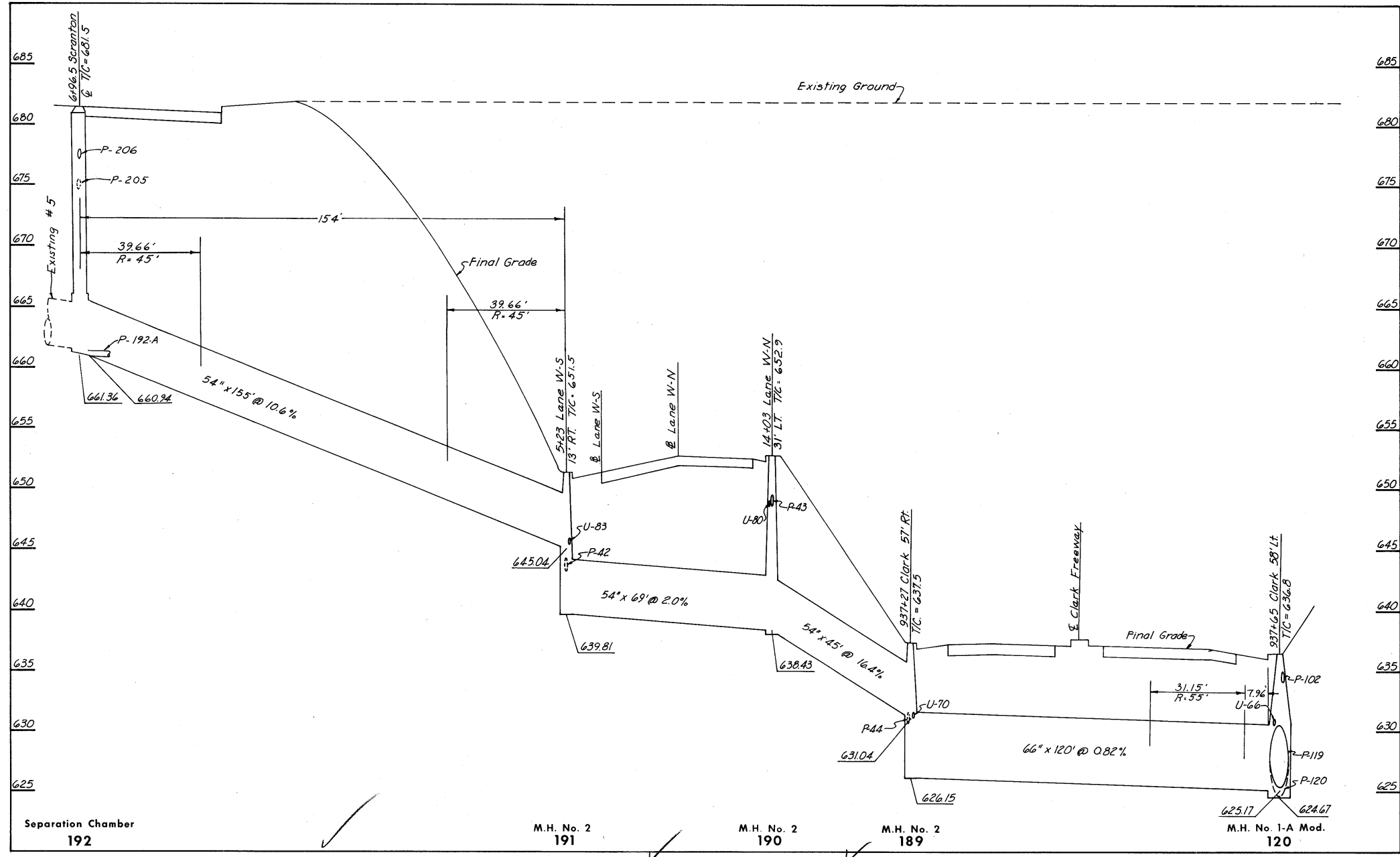
CODE	ROADWAY	INLET CODE		I-1 PIPE		
		FROM	TO	CLASS B-1	CLASS B-1 Sec. M-6.6(c) 66" R-35'	CLASS B-1 Sec. M-6.6(c) 66"
P-197	LANE W-N *	197	196	235'		
P-198	Wade Ave.	198	308			52'
P-200	W 25 th St	200	198		49'	34'
P-308	Wade Ave.	308	197			107'
CUY-71-18.54 TOTALS					49'	193'
CUY-90-13.81 TOTALS					235'*	173'

MASONRY
Item I-2 MASONRY C.Y.
9
9

SCALE V-1"=5, H-1"=20' HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE LEE DATE 10-26-64 CONSULTING ENGINEERS
TRCD LEE DATE 10-27-64
CKD CPB DATE 12-15-64 KANSAS CITY CLEVELAND NEW YORK

P-197, P-198,
P-200, and P-308
SEWER PROFILES

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



P-192 CLASS B-1 Sec. M-6.6(d)
P-191 CLASS B-1 Sec. M-6.6(b)
P-190 CLASS B-1 Sec. M-6.6(b)
P-189 CLASS B-1
P-207 CLASS B-1
P-208 CLASS B-1

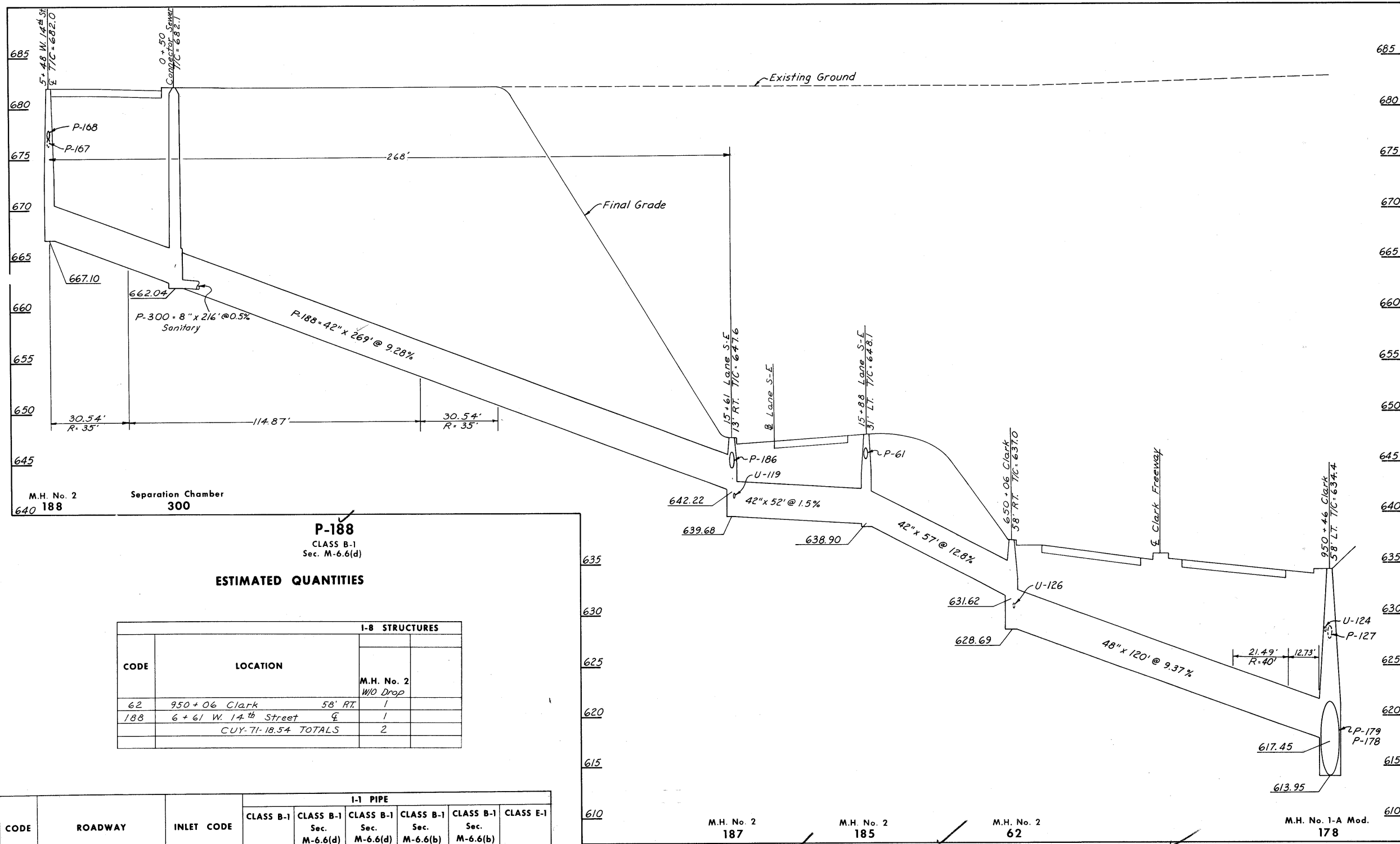
ESTIMATED QUANTITIES

I-8 STRUCTURES					
CODE	LOCATION	Shoulder Inlet 2-A-6			M.H. No. 2
		Shoulder Inlet 2-A-6	Shoulder Inlet 2-A-6 with trap	M.H. No. 2	
207	O+75 Vega Avenue 15' LT.	1			
208	O+50 Vega Avenue 15' RT.		1		
209	11+57 Scranton Road			1	
CUY-71-18.54 TOTALS		1	1	1	

CODE	ROADWAY	INLET CODE		I-1 PIPE						
		FROM	TO	CLASS B-1 12"	CLASS B-1 15"	CLASS B-1 CLASS B-1 Sec. M-6.6(b) 54"	CLASS B-1 CLASS B-1 Sec. M-6.6(d) 54"	CLASS B-1 66"	Class B-1 Sec. M-6.6(d) 54" R-45'	Class B-1 66" R-55'
		P-189	Clark Freeway	189	120					90'
P-190	Clark Freeway*	190	189			45'*				
P-191	LANE W-S*	191	190			69'*				
P-192	Scranton Road	192	191				75'			80'
P-207	Vega Ave.	207	208	41'						
P-208	Vega Ave.	208	209		45'					
CUY-71-18.54 TOTALS				41'	45'		75'	90'	80'	30'
CUY-90-13.81 TOTALS						114'*				

P-189 thru P-192,
P-207, and P-208
SEWER PROFILES

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



P-188
CLASS B-1
Sec. M-6.6(d)
ESTIMATED QUANTITIES

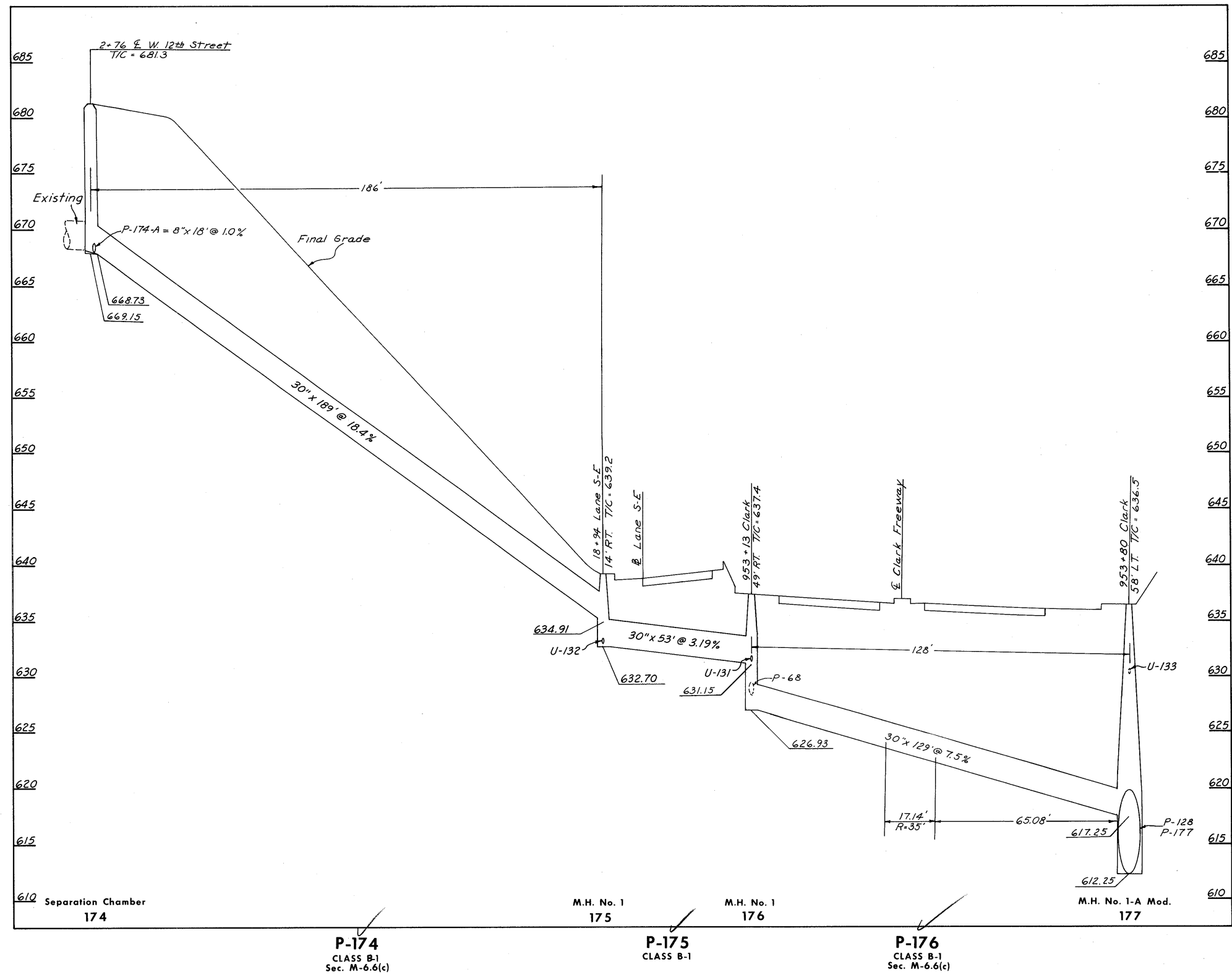
I-B STRUCTURES			
CODE	LOCATION	M.H. No. 2	
62	950+06 Clark	58' RT.	1
188	6+61 W. 14 th Street	☐	1
CUY-71-18.54 TOTALS		2	

I-1 PIPE								
CODE	ROADWAY	INLET CODE		CLASS B-1	CLASS B-1	CLASS B-1	CLASS B-1	CLASS E-1
		FROM	TO	42"	42" Sec. M-6.6(d)	42" R35 Sec. M-6.6(d)	48" Sec. M-6.6(b)	48" R40 Sec. M-6.6(b)
P-62	Clark Freeway	62	178				100	20
P-185	LANE S-E	185	62					57
P-187	LANE S-E	187	185	52	205	64		
P-188	W 14 th Street	188	187		205	64	100	20
CUY-71-18.54 TOTALS				52	205	64	100	20

SCALE: V-1/2", H-1/20"
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE IN OHIO, DATE 10-23-64
TRCD: RHP, DATE 10-24-64
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
CLD: CPP, DATE 12-15-64

P-62, P-185,
P-187, and P-188
SEWER PROFILES

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



ESTIMATED QUANTITIES

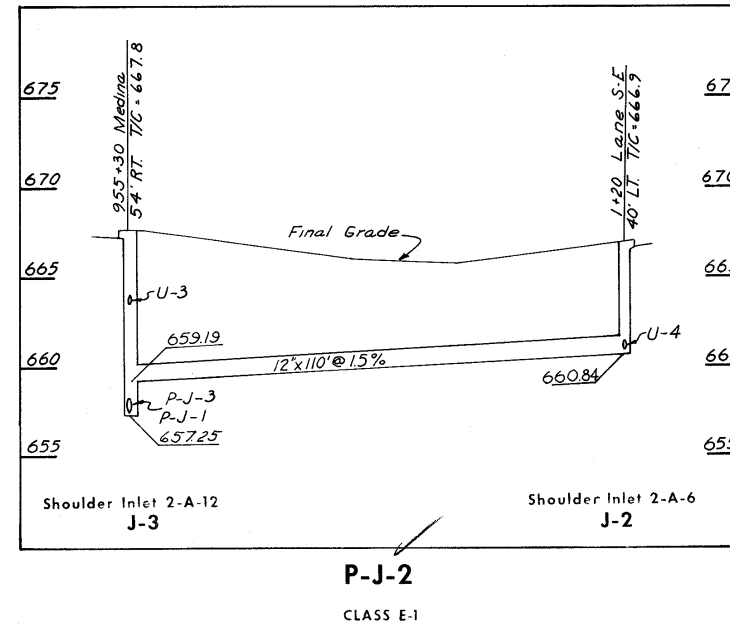
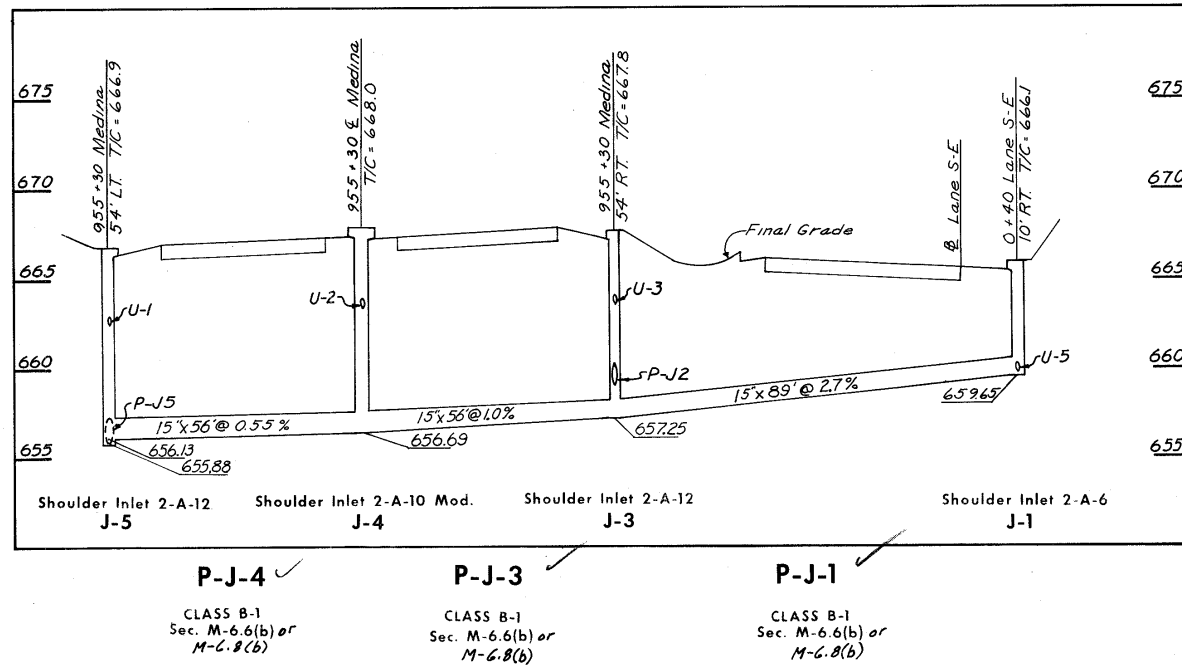
I-B STRUCTURES				
CODE	LOCATION	M.H. No. 1		
175	18+94 Lane S-E	14' RT.	1	
176	953+13 Clark Freeway	4.9' RT.	1	
CUY-71-18.54 TOTALS			2	

CODE	ROADWAY	INLET CODE		I-1 PIPE		
		FROM	TO	CLASS B-1	CLASS B-1	CLASS B-1
				30"	30"	30" R=35'
P-174	W. 12th St.	174	175	189'		
P-175	LANE S-E	175	176	53' ✓		
P-176	Clark Freeway	176	177	111' ✓	18'	
CUY-71-18.54 TOTALS				53' ✓	300' ✓	18' ✓

SCALE V-125, H-1:20' HOWARD, NEEDLES, TAMMEN & BERGENOFF
MADE LEE DATE 10-26-64 CONSULTING ENGINEERS
TRCD RHP DATE 10-27-64
CID: CPB DATE 12-15-64 KANSAS CITY CLEVELAND NEW YORK

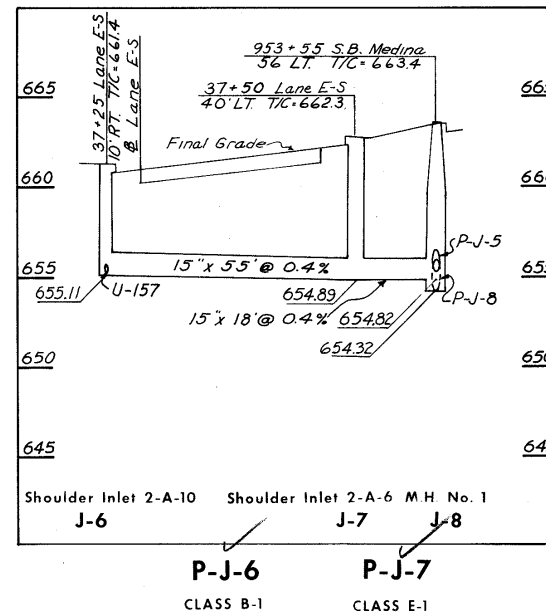
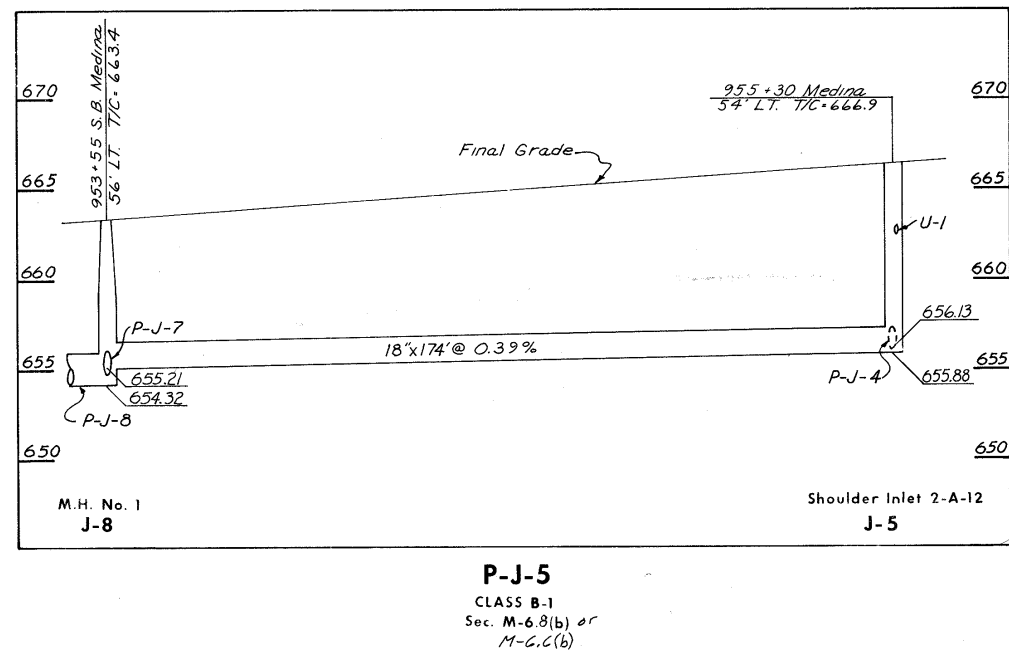
P-174 thru P-176
SEWER PROFILES

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



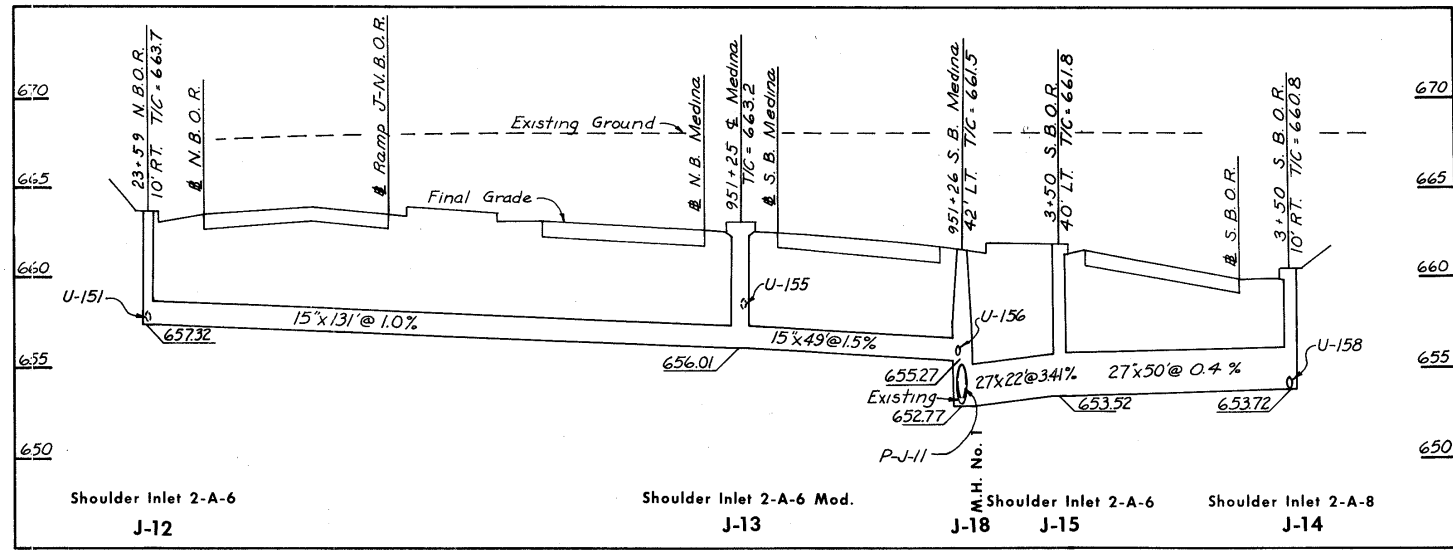
ESTIMATED QUANTITIES

I-8 STRUCTURES					
CODE	LOCATION	Shoulder	Shoulder	Shoulder	M.H. No. 1
		Inlet 2-A-6	Inlet 2-A-10	Inlet 2-A-10 Mod.	
J 1	0+40 Lane SE 10' Rt	1			
J 2	1+20 Lane SE 40' Lt	1			
J 3	955+30 Medina 54' Rt			1	
J 4	955+30 Medina E			1	
J 5	955+30 Medina 54' Lt				1
J 6	37+25 Lane E-S 10' Rt		1		
J 7	37+50 Lane E-S 40' Lt	1			
J 8	959+55 Medina 56' Lt				1
CUY-71-18.54 TOTALS		3	1	1	2

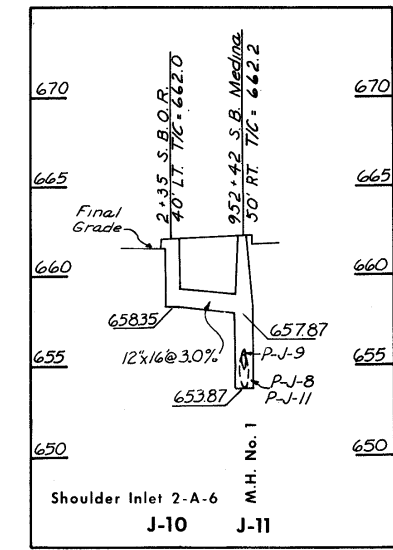


CODE	ROADWAY	INLET CODE		I-1 PIPE				
		FROM	TO	CLASS B-1	CLASS B-1	CLASS E-1	CLASS E-1	CLASS B-1
				15"	15"	12"	15"	18"
P-J-1	LANE S-E	1	3		89			
P-J-2	LANE S-E	2	3			110		
P-J-3	Medina Freeway	3	4		56			
P-J-4	Medina Freeway	4	5		56			
P-J-5	Southbound Medina	5	8					174
P-J-6	LANE E-S	6	7	55				18
P-J-7	LANE E-S	7	8					18
CUY-71-18.54 TOTALS				55	201	110	18	174

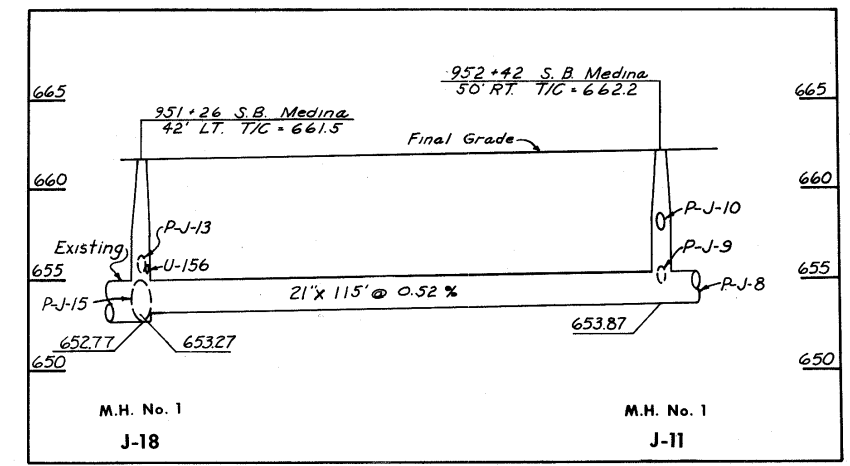
**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81**



P-J-12 CLASS B-1
P-J-13 CLASS B-1
P-J-15 CLASS E-1
P-J-14 CLASS B-1



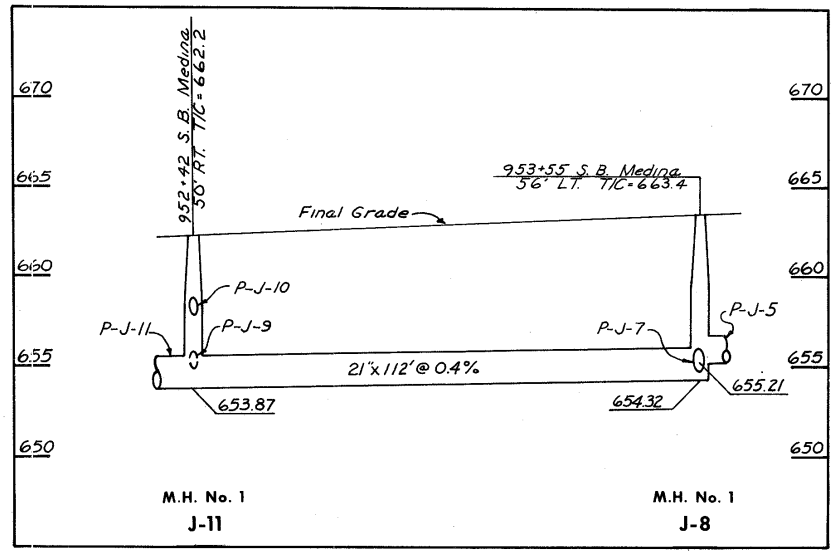
P-J-10 CLASS E-1
P-J-11 CLASS B-1



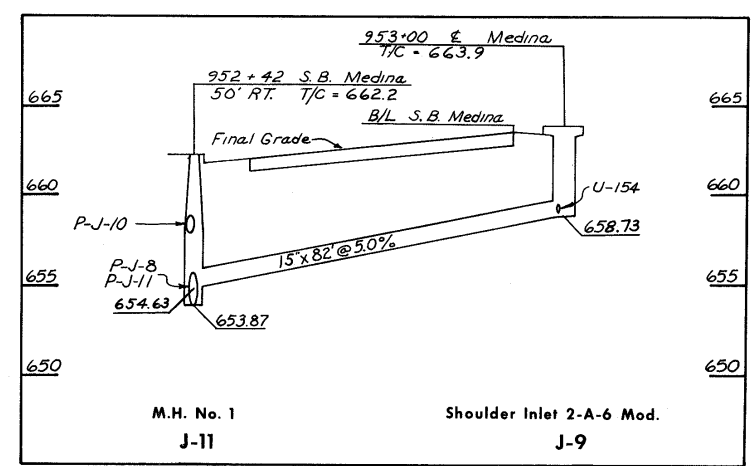
P-J-11 CLASS B-1

ESTIMATED QUANTITIES

		I-8 STRUCTURES			
CODE	LOCATION	Shoulder Inlet 2-A-6	Shoulder Inlet 2-A-6 Mod.	Shoulder Inlet 2-A-8	M.H. No. 1
J-9	953+00 Medina	1			
J-10	2+35 Lane S.B.O.R. 40' LT.	1			
J-11	952+42 S.B. Medina 50' RT.				1
J-12	23+59 N.B.O.R. 10' RT.	1			
J-13	951+25 Medina		1		
J-14	3+50 Lane S.B.O.R. 10' RT.			1	
J-15	3+50 Lane S.B.O.R. 40' LT.	1			
J-18	951+26 S.B. Medina 42' LT.				1
		CUY-71-18.54 TOTALS			
		3	2	1	2



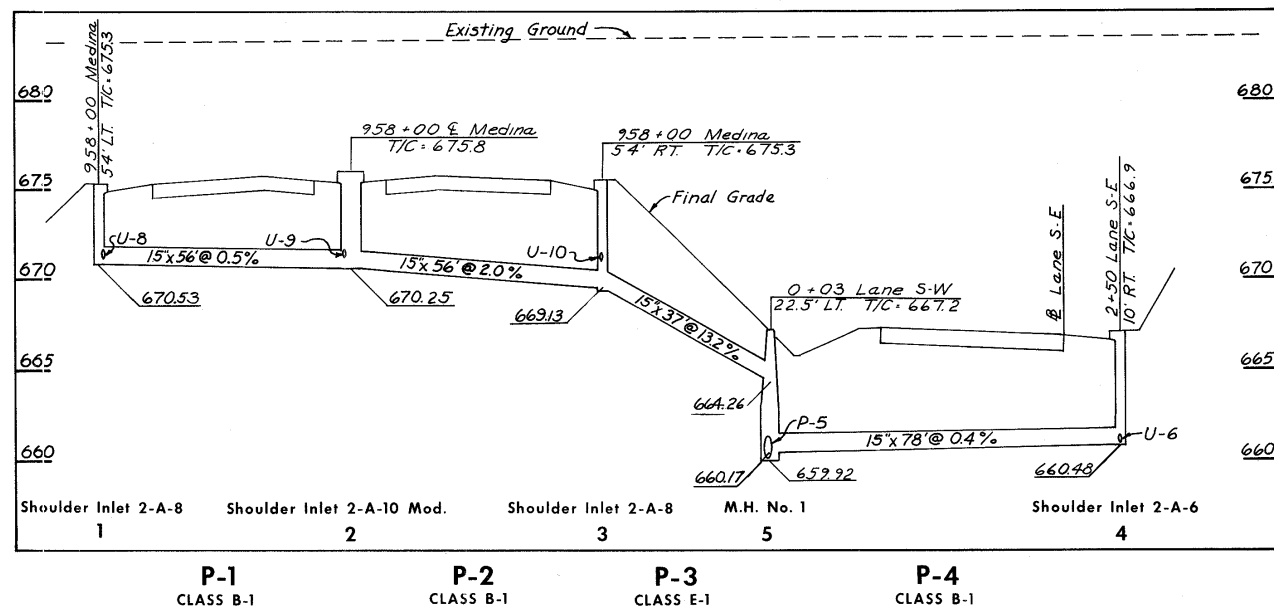
P-J-8 CLASS E-1



P-J-9 CLASS B-1

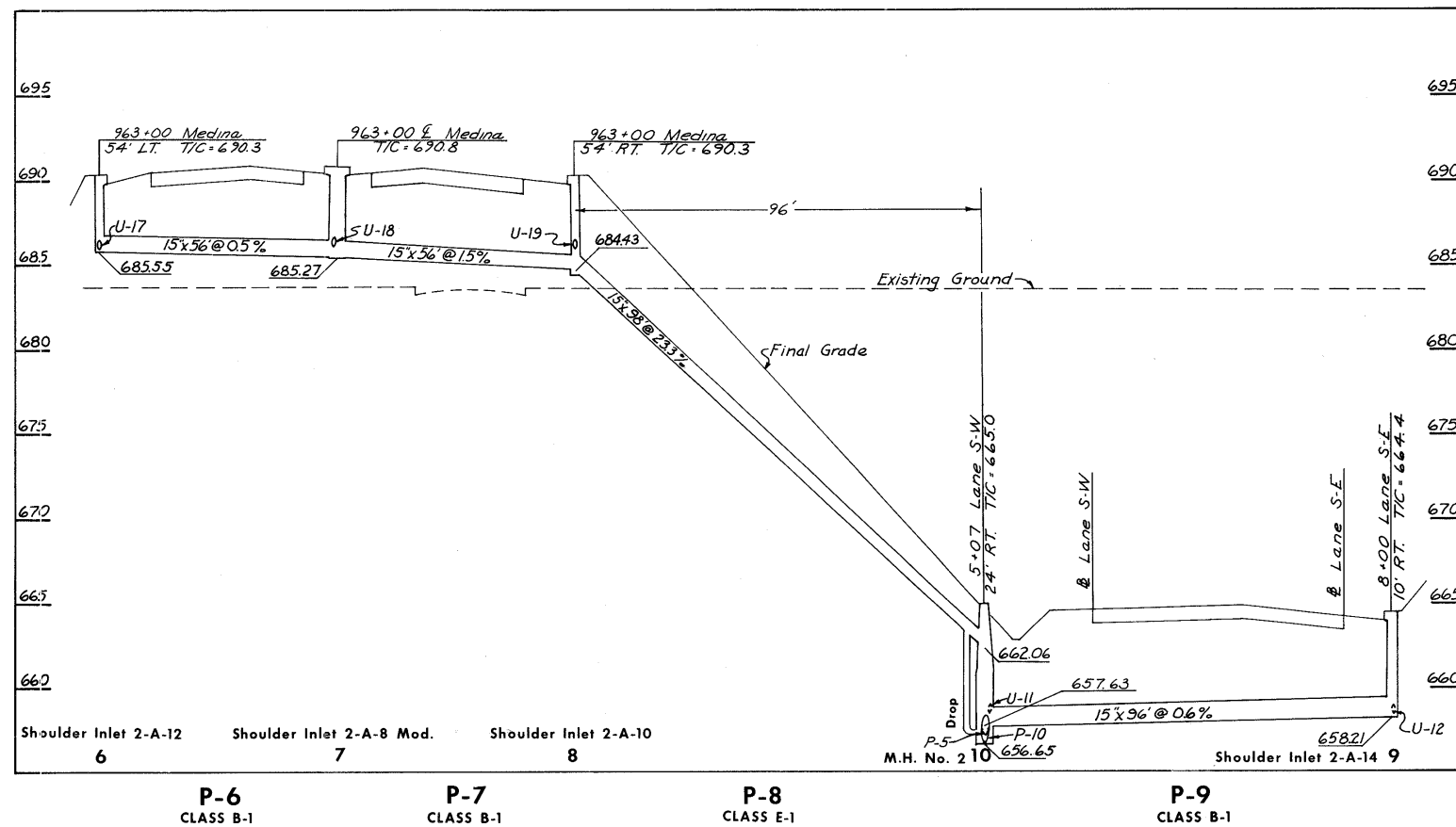
		INLET CODE		I-1 PIPE					
CODE	ROADWAY	FROM	TO	CLASS B-1	CLASS B-1	CLASS B-1	CLASS E-1	CLASS E-1	CLASS E-1
				15"	21"	27"	12"	21"	27"
P-J-8	Southbound Medina	8	11					112'	
P-J-9	Southbound Medina	9	11	82'					
P-J-10	S.B.O.R.	10	11				16'		
P-J-11	Southbound Medina	11	18		115'				
P-J-12	N.B.O.R.	12	13	131'					
P-J-13	Northbound Medina	13	18	49'			50'		
P-J-14	S.B.O.R.	14	15						22'
P-J-15	S.B.O.R.	15	18						22'
		CUY-71-18.54 TOTALS		262'	115'	50'	16'	112'	22'

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

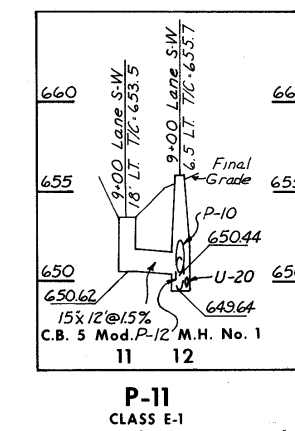
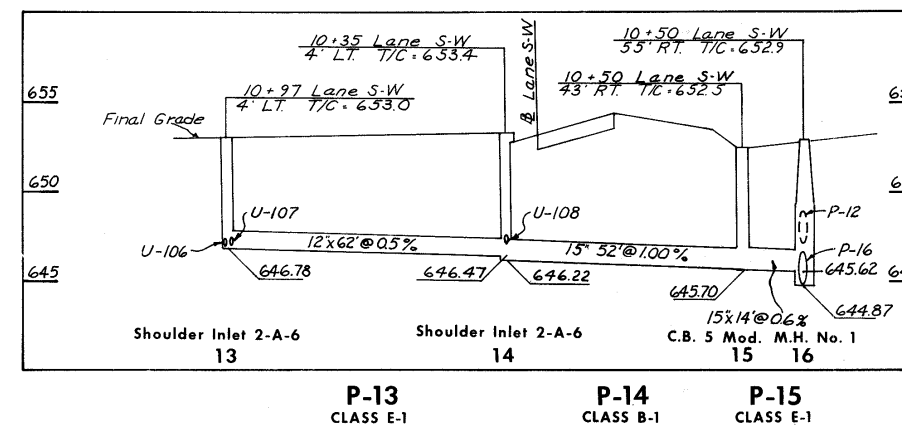


ESTIMATED QUANTITIES

CODE	LOCATION	I-B STRUCTURES								C.B. 5 Mod.	M.H. No. 1	M.H. No. 2 with Drop
		Shoulder Inlet 2-A-6	Shoulder Inlet 2-A-8	Shoulder Inlet 2-A-8 Mod.	Shoulder Inlet 2-A-10	Shoulder Inlet 2-A-10 Mod.	Shoulder Inlet 2-A-12	Shoulder Inlet 2-A-14	Shoulder Inlet 2-A-14			
1	958+00 Medina Freeway 54' LT.		1									
2	958+00 Medina Freeway 4'					1						
3	958+00 Medina Freeway 54' RT.		1									
4	2+50 Lane S-E 10' RT.	1										
5	0+03 Lane S-W 22.5' LT.										1	
6	963+00 Medina Freeway 54' LT.							1				
7	963+00 Medina Freeway 4'			1								
8	963+00 Medina Freeway 54' RT.				1							
9	8+00 Lane S-E 10' RT.									1		
10	5+07 Lane S-W 24' LT.											1
11	9+00 Lane S-W 18' LT.										1	
12	9+00 Lane S-W 6.5' LT.										1	
13	10+97 Lane S-W 4' LT.	1										
14	10+35 Lane S-W 4' LT.	1										
15	10+50 Lane S-W 43' RT.											1
16	10+50 Lane S-W 55' RT.											1
CUY-71-18.54 TOTALS		3	2	1	1	1	1	1	1	2	3	1



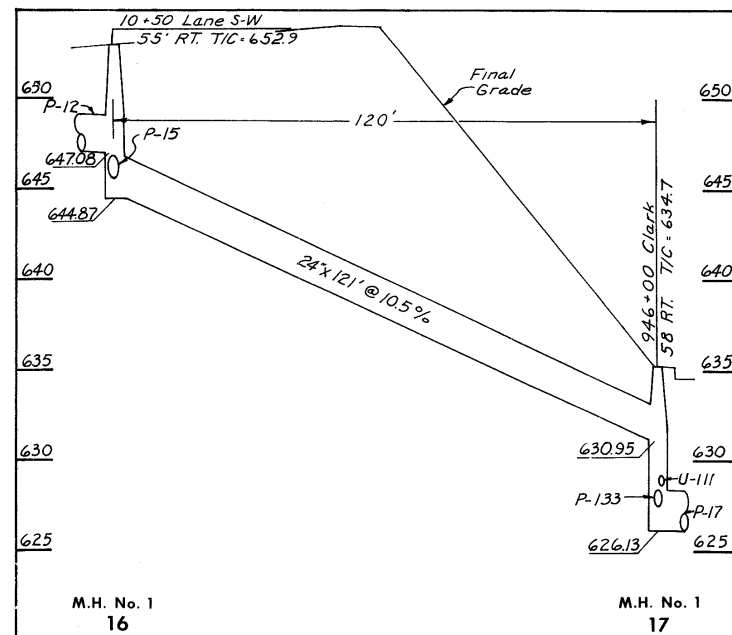
CODE	ROADWAY	INLET CODE		I-1 PIPE		
		FROM	TO	CLASS B-1	CLASS E-1	CLASS E-1
P-1	Medina Freeway	1	2	56'		
P-2	Medina Freeway	2	3	56'		
P-3	Medina Freeway	3	5			37'
P-4	LANE S-E	4	5	78'		
P-6	Medina Freeway	6	7	56'		
P-7	Medina Freeway	7	8	56'		
P-8	Medina Freeway	8	10			98'
P-9	LANE S-E	9	10	96'		
P-11	LANE S-W	11	12			12'
P-13	LANE S-W	13	14		62'	
P-14	LANE S-W	14	15	52'		
P-15	LANE S-W	15	16			14'
CUY-71-18.54 TOTALS				450	62'	161'



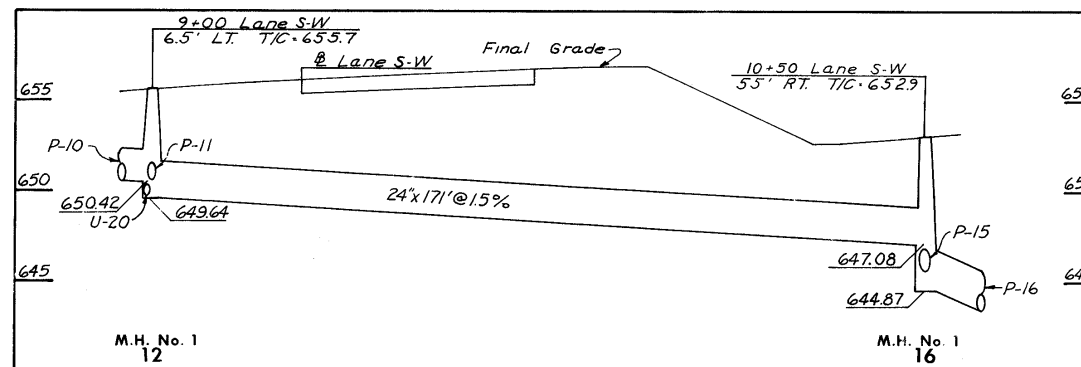
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

ESTIMATED QUANTITIES

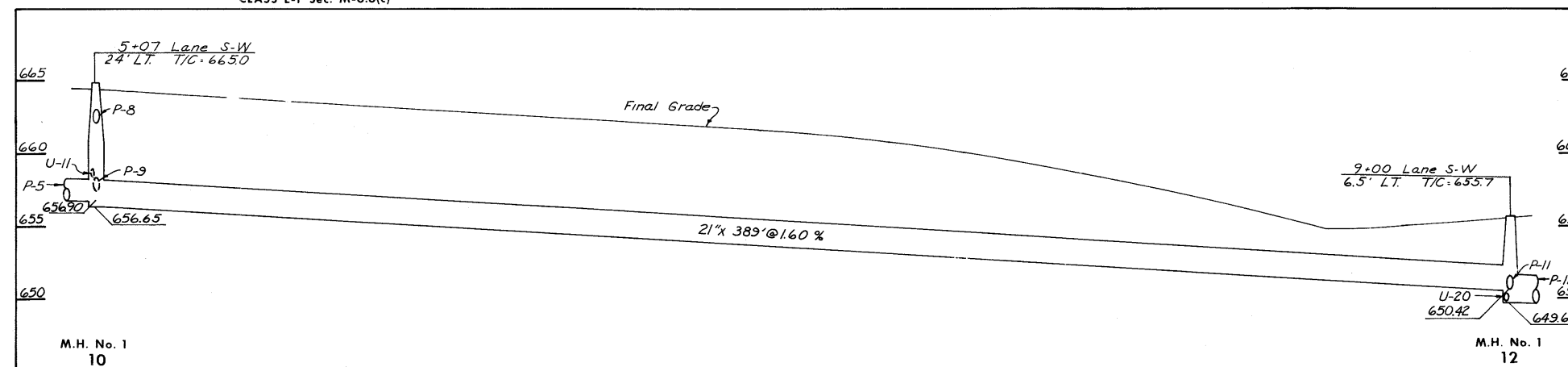
CODE	ROADWAY	INLET CODE		I-1 PIPE				
				CLASS B-1	CLASS E-1	CLASS E-1	CLASS E-1	
		FROM	TO	24"	18"	21"	CLASS E-1 Sec. M-6.6(c) 24"	
P-5	LANE S-W	5	10		503			
P-10	LANE S-W	10	12			389		
P-12	LANE S-W	12	16	171				
P-16	Clark Freeway	16	17				121	
CUY-71-18.54 TOTALS					171	503	389	121



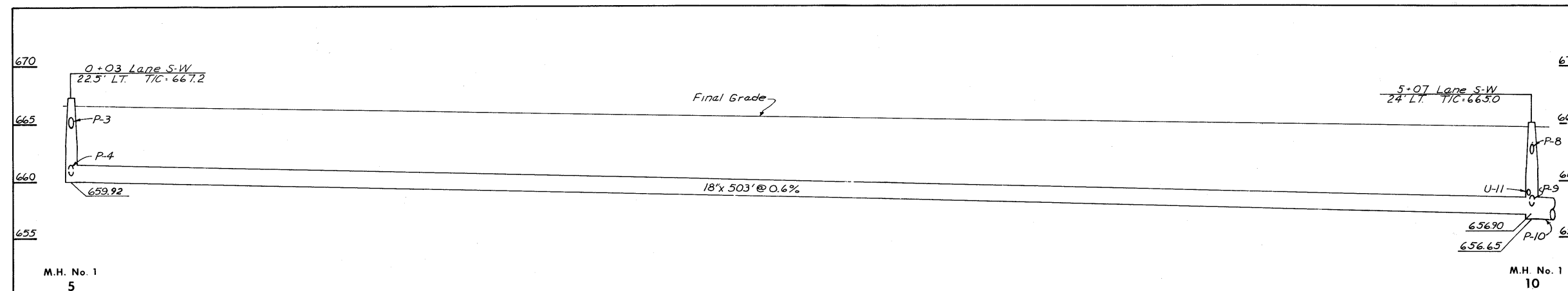
P-16
CLASS E-1 Sec. M-6.6(c)



P-12
CLASS B-1

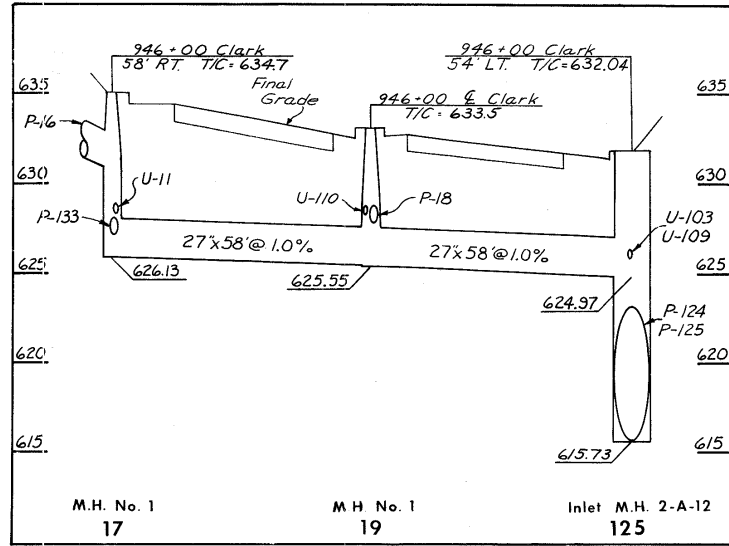


P-10
CLASS E-1



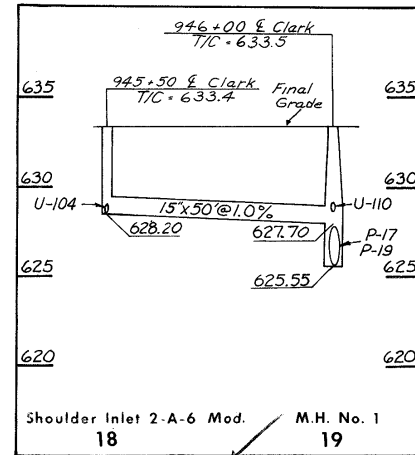
P-5
CLASS E-1

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

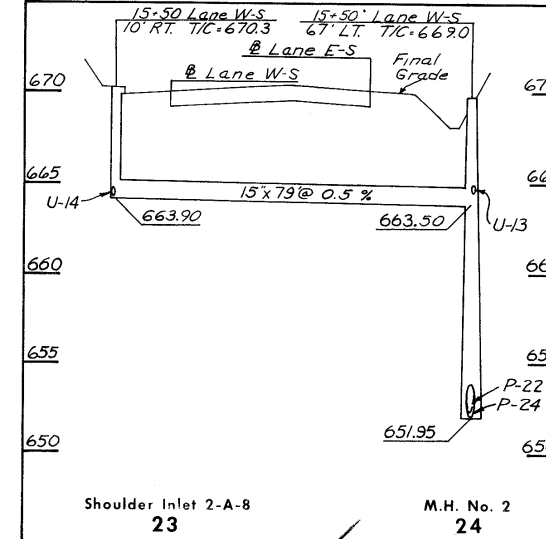


P-17
CLASS B-1

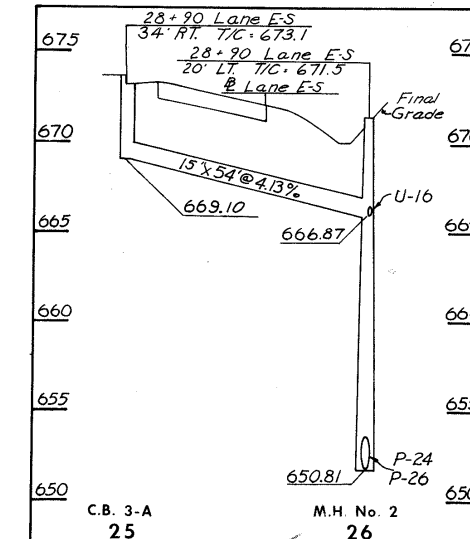
P-19
CLASS B-1



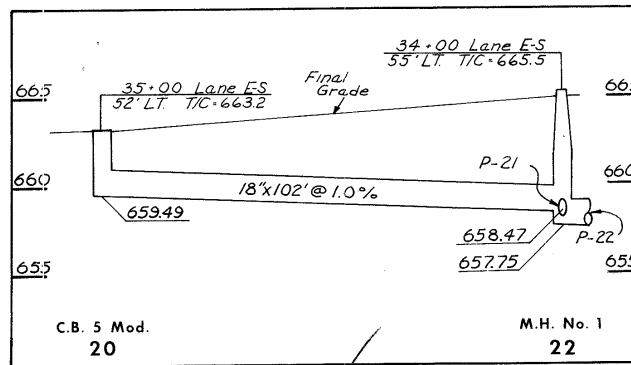
P-18
CLASS E-1



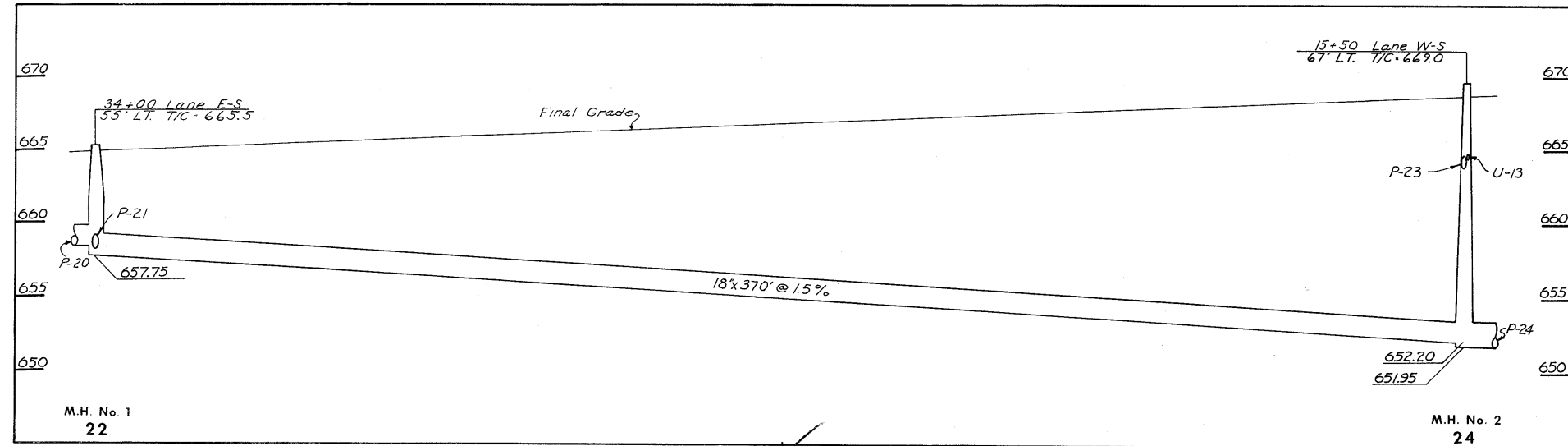
P-23
CLASS B-1



P-25
CLASS B-1

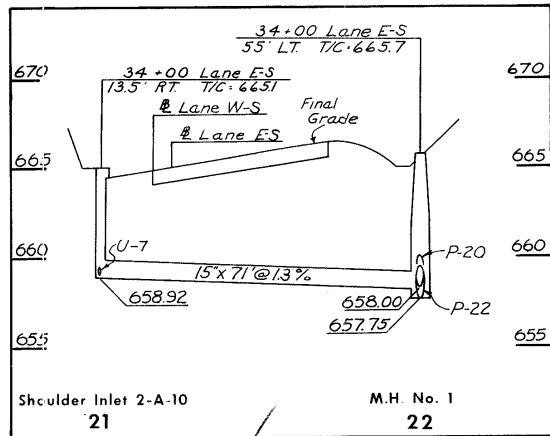


P-20
CLASS E-1



P-22
CLASS E-1
Sec. M-6.6(c)

ESTIMATED QUANTITIES

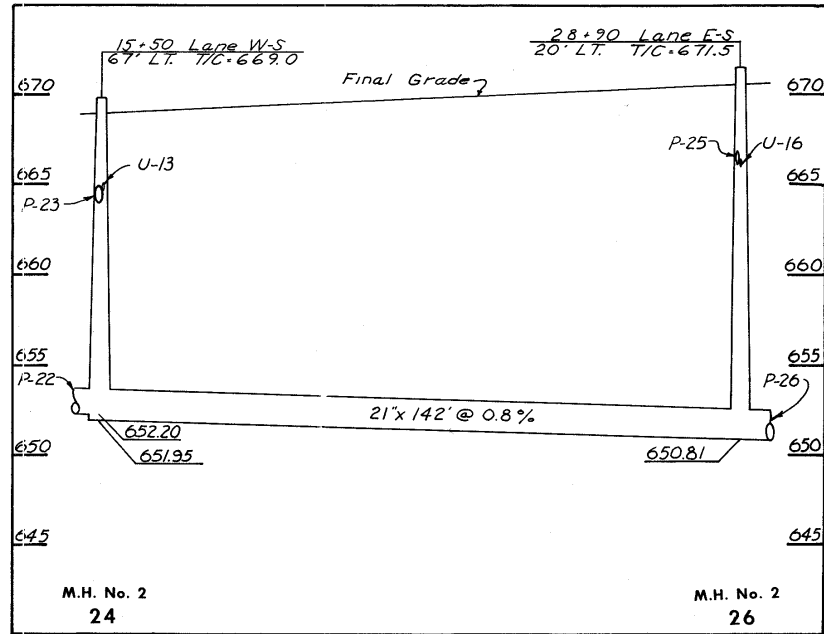


P-21
CLASS B-1

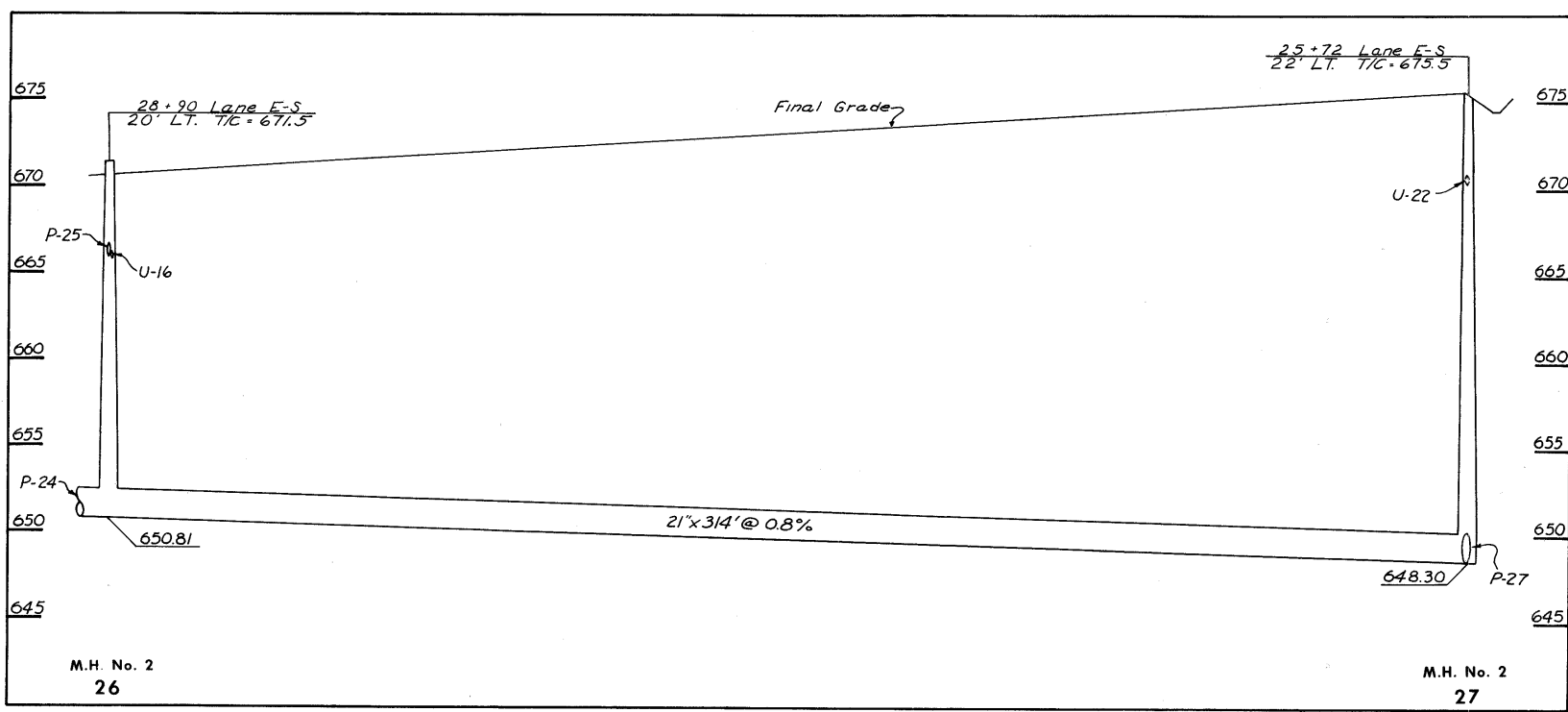
CODE	LOCATION	I-8 STRUCTURES							
		Shoulder Inlet 2-A-6 Mod.	Shoulder Inlet 2-A-8	Shoulder Inlet 2-A-10	C.B. 3-A	C.B.5 Mod.	M.H. No. 1	M.H. No. 2	
17	946+00 Clark Freeway 58' Rt.						1		
18	945+50 Clark Freeway E	1							
19	946+00 Clark Freeway E					1			
20	35+00 Lane E-5 52' Lt.					1			
21	34+00 Lane E-5 13.5' Rt.			1					
22	34+00 Lane E-5 55' Lt.					1			
23	15+50 Lane W-5 10' Rt.		1						
24	15+50 Lane W-5 67' Lt.							1	
25	28+90 Lane E-5 34' Rt.				1				
26	28+90 Lane E-5 20' Lt.							1	
	CUY-71-18.54 TOTALS	1	1	1	1	1	3	2	

CODE	ROADWAY	INLET CODE		I-1 PIPE				
		FROM	TO	CLASS B-1	CLASS B-1	CLASS E-1	CLASS E-1 Sec. M-6.6(c)	CLASS E-1
				15"	27"	18"	18"	15"
P-17	Clark Freeway	17	19		58' ✓			
P-18	Clark Freeway	18	19					50' ✓
P-19	Clark Freeway	19	125		58' ✓			
P-20	LANE E-5	20	22			102' ✓		
P-21	LANE E-5	21	22	71' ✓				
P-22	LANE E-5	22	24				370' ✓	
P-23	LANE W-5	23	24	79' ✓				
P-25	LANE E-5	25	26	54' ✓				
	CUY-71-18.54 TOTALS			204' ✓	116' ✓	102' ✓	370' ✓	50' ✓

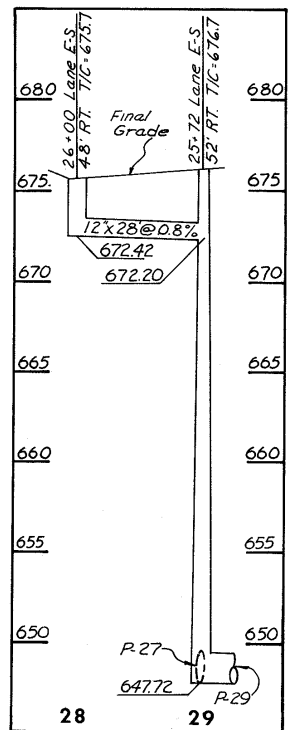
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



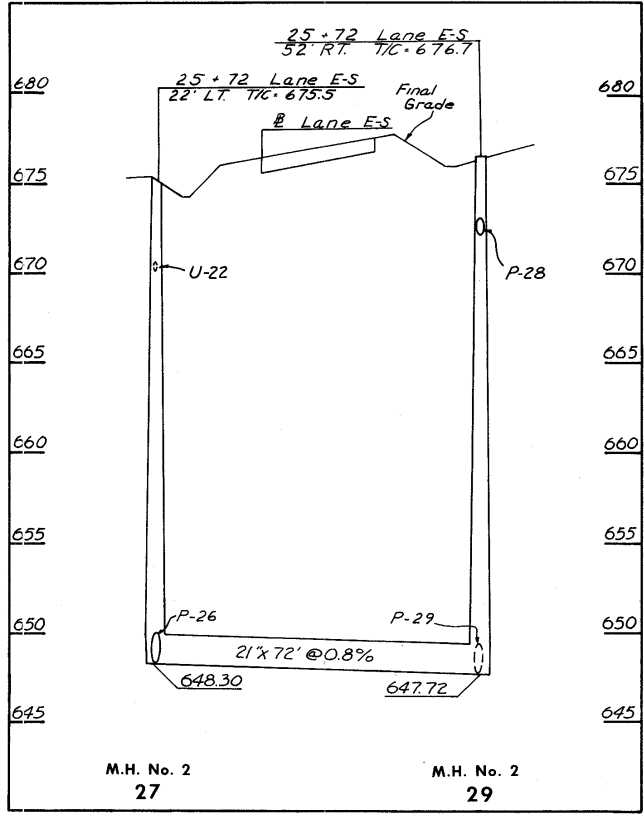
P-24
CLASS B-1
Sec. M-6.6(c)



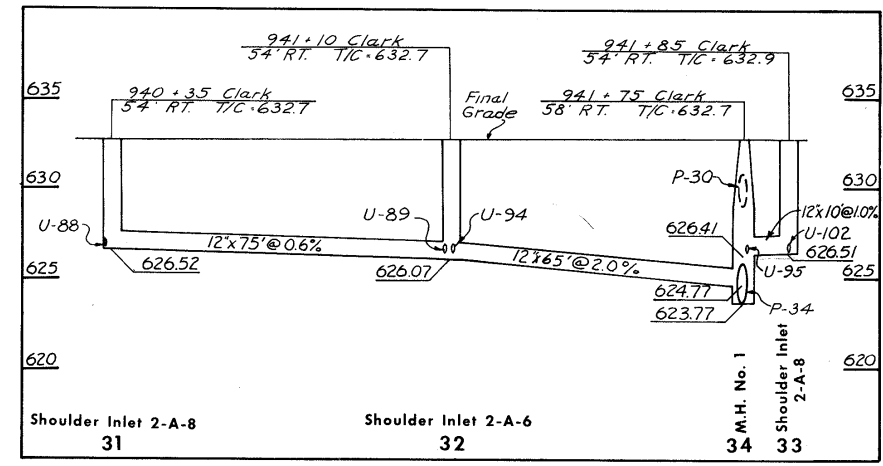
P-26
CLASS B-1
Sec. M-6.6(d)



C.B. No. 5 Mod. M.H. No. 2
P-28
CLASS E-1



P-27
CLASS B-1
Sec. M-6.6(d)



P-31 CLASS E-1
P-32 CLASS E-1
P-33 CLASS E-1

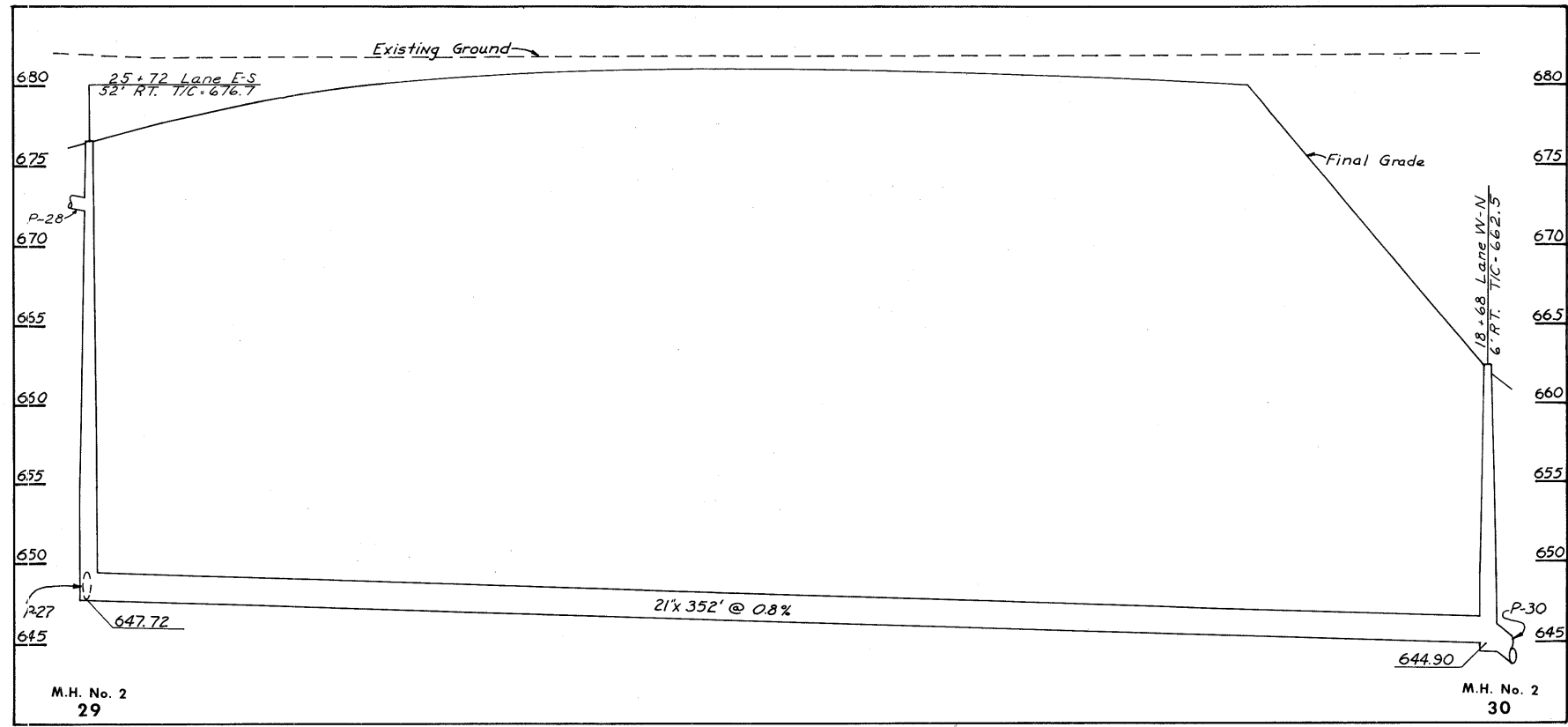
ESTIMATED QUANTITIES

I-8 STRUCTURES						
CODE	LOCATION	Shoulder Inlet 2-A-6	Shoulder Inlet 2-A-8	C.B.5 Mod.	M.H. No. 1 with Drop Pipe	M.H. No. 2
27	25+72 Lane E-S 22' Lt					1
28	26+00 Lane E-S 48' Rt			1		
29	25+72 Lane E-S 52' Rt					1
31	940+35 Clark 54' Rt		1			
32	941+10 Clark 54' Rt	1				
33	941+85 Clark 54' Rt		1			
34	941+75 Clark 58' Rt				1	
CUY-71-18.54 TOTALS		1	2	1	1	2

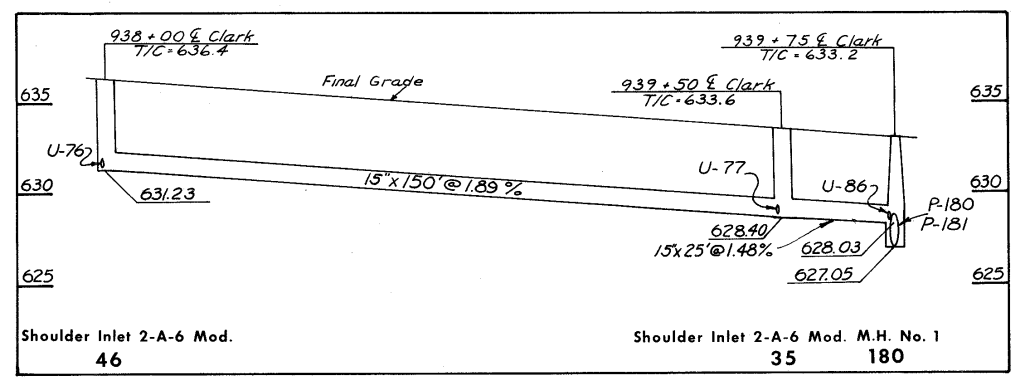
CODE	ROADWAY	INLET CODE		I-1 PIPE		
		FROM	TO	CLASS B-1 Sec. M-6.6(d)	CLASS E-1	CLASS B-1 Sec. M-6.6(c)
P-24	LANE W-S	24	26	21"	12"	142'
P-26	LANE E-S	26	27	314'		
P-27	LANE E-S	27	29	72'		
P-28	LANE E-S	28	29		28'	
P-31	Clark Freeway	31	32		75'	
P-32	Clark Freeway	32	34		65'	
P-33	Clark Freeway	33	34		10'	
CUY-71-18.54 TOTALS				386'	178'	142'

P-24,
P-26 thru P-28,
P-31 thru P-33
SEWER PROFILES

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

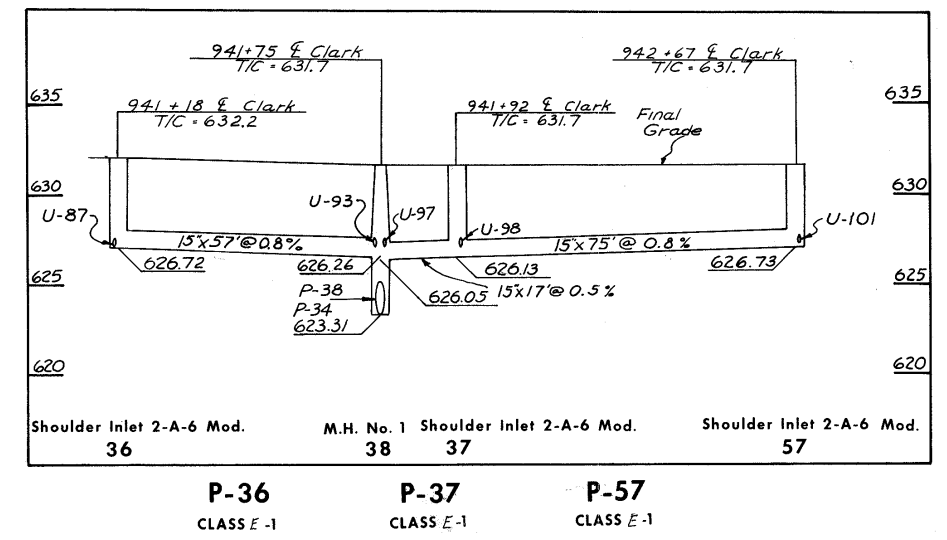


P-29
CLASS E-1
Sec. M-6.6(d)



P-46
CLASS E-1

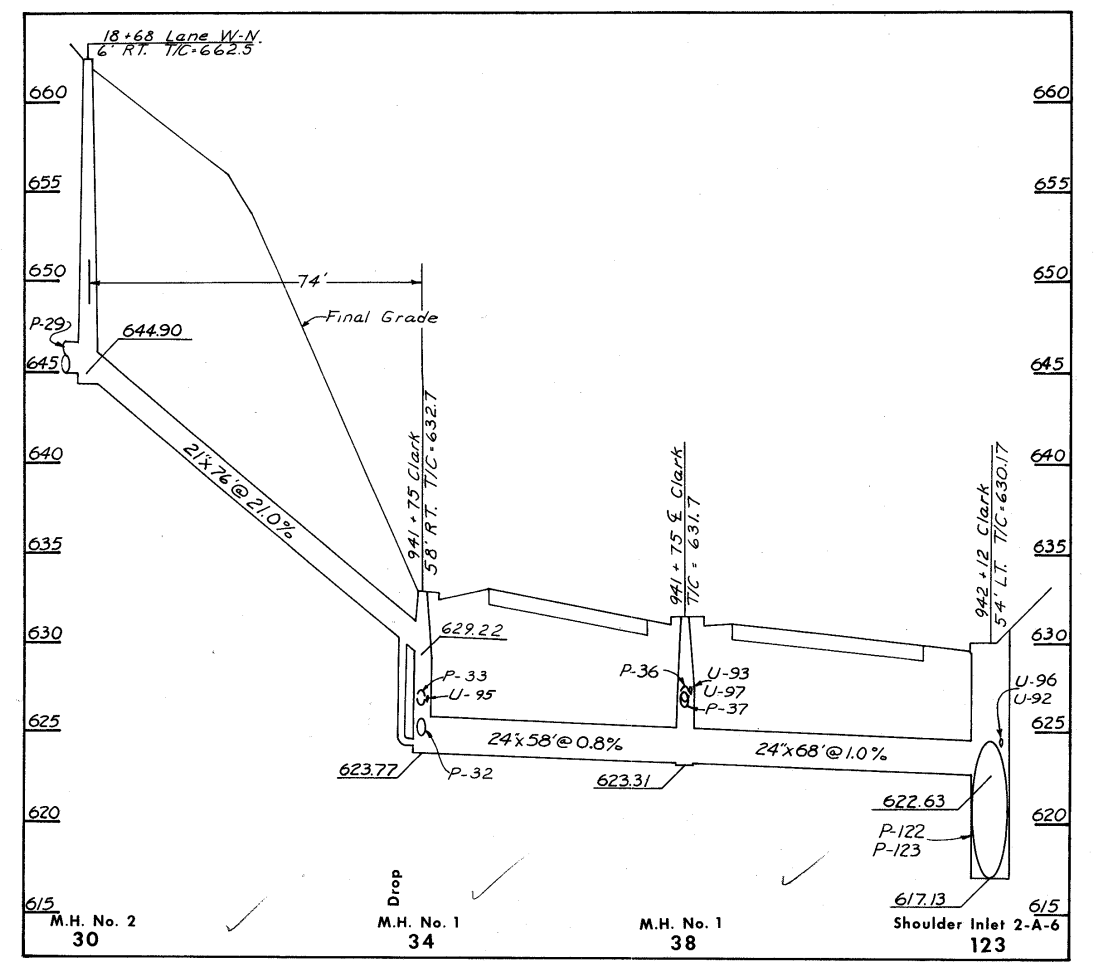
P-35
CLASS E-1



P-36
CLASS E-1

P-37
CLASS E-1

P-57
CLASS E-1



P-30
CLASS B-1
Sec. M-6.6(c)

P-34
CLASS B-1

P-38
CLASS B-1

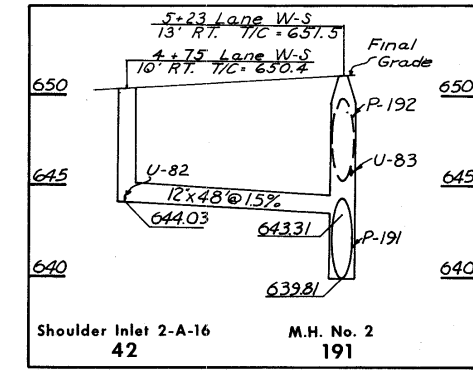
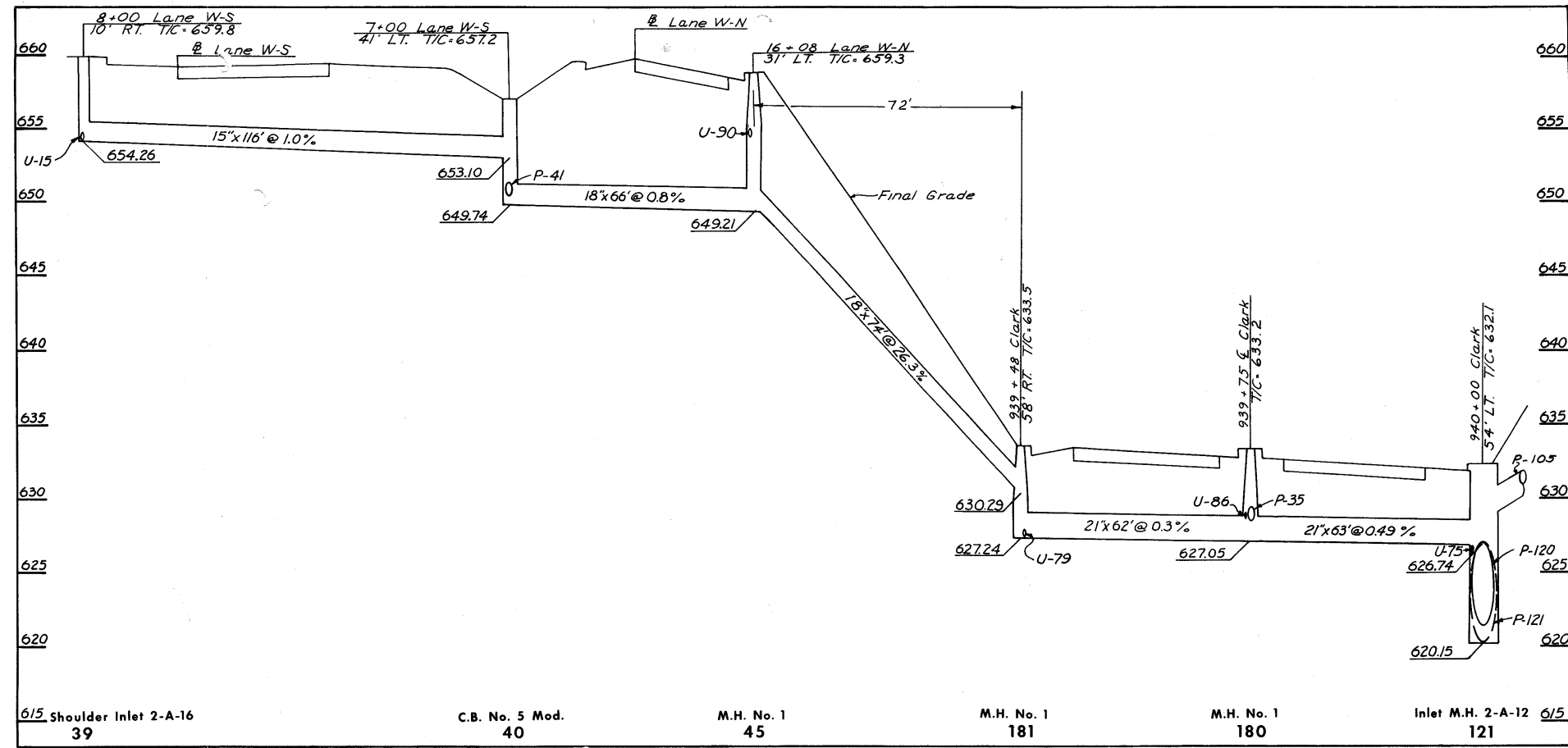
SEWER PROFILES
P-29, P-30, P-34 thru P-38, P-46, and P-57

I-B STRUCTURES					
CODE	LOCATION	Shoulder Inlet 2-A-6 Mod.	M.H. No. 1	M.H. No. 2	
30	18+68 Lane W-N 6' Rt *				1 *
35	939+50 Clark E	1			
36	941+18 Clark E	1			
37	941+92 Clark E	1			
38	941+75 Clark E		1		
46	938+00 Clark E	1			
57	942+67 Clark E	1			
180	939+75 Clark E		1		
CUY-71-18.54 TOTALS		5	2		
CUY-90-13.81 TOTALS					1 *

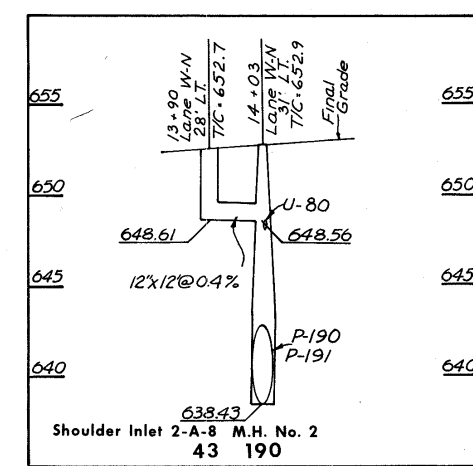
ESTIMATED QUANTITIES

CODE	ROADWAY	INLET CODE		I-1 PIPE		
		FROM	TO	CLASS E-1	CLASS B-1	CLASS E-1
				15"	24"	CLASS E-1 Sec. M-6.6(d)
P-29	LANE E-S	29	30			352'
P-30	LANE W-N *	30	34			76' *
P-34	Clark Freeway	34	38		58' ✓	
P-35	Clark Freeway	35	180	25' ✓		
P-36	Clark Freeway	36	38	57' ✓		
P-37	Clark Freeway	37	38	17' ✓		
P-38	Clark Freeway	38	123		68' ✓	
P-46	Clark Freeway	46	35	150' ✓		
P-57	Clark Freeway	57	37	75' ✓		
CUY-71-18.54 TOTALS				324' ✓	126' ✓	352' ✓
CUY-90-13.81 TOTALS					76' *	

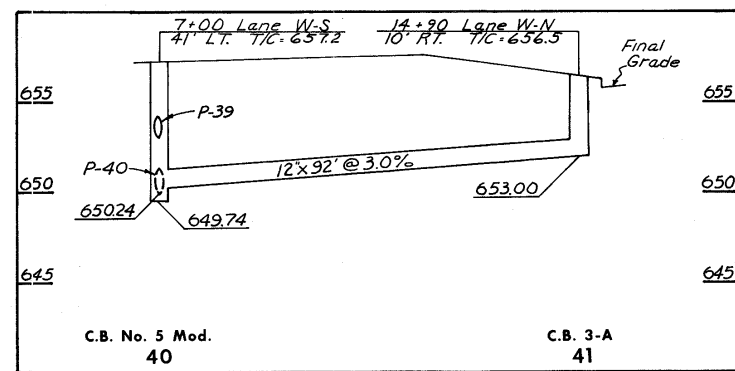
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



P-42
CLASS E-1



P-43
CLASS E-1



P-41
CLASS E-1

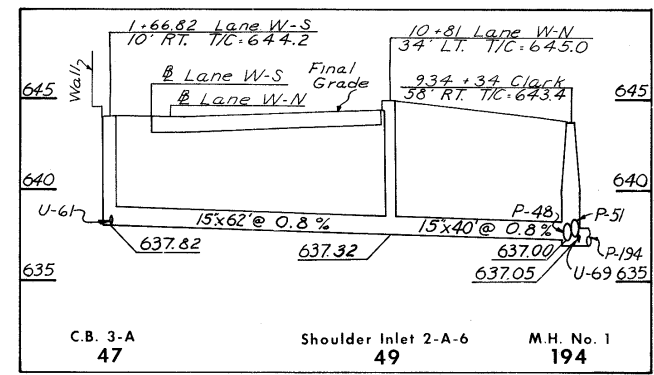
ESTIMATED QUANTITIES

I-B STRUCTURES							
CODE	LOCATION	Shoulder Inlet 2-A-8	Shoulder Inlet 2-A-16	C.B. 3-A	C.B. 5 Mod.	M.H. No. 1	M.H. No. 2
40	7+00 Lane W-S 41' LT.*				1*		
41	14+90 Lane W-N 10' RT.*			1*			
42	4+75 Lane W-S 10' RT.*		1*				
43	13+90 Lane W-N 28' LT.*	1*					
45	16+08 Lane W-N 31' LT.*					1*	
181	939+48 Clark Freeway 58' RT.					1	
190	14+03 Lane W-N 31' LT.*						1*
191	5+23 Lane W-S 13' RT.*						1*
CUY-71-18.54 TOTALS			1			1	1*
CUY-90-13.81 TOTALS		1*	1*	1*	1*	1*	2*

CODE	ROADWAY	INLET CODE		I-1 PIPE				
		FROM	TO	CLASS B-1 15"	CLASS B-1 18" or Sec. M-6.6(b) or Sec. M-6.8(b)	CLASS B-1 21"	CLASS E-1 12"	CLASS F-4 18"
P-39	Lane W-S	39	40	116'				
P-40	Lane W-S *	40	45		66'*			
P-41	Lane W-N *	41	40				92'*	
P-42	Lane W-S *	42	191				48'*	
P-43	Lane W-N *	43	190				12'*	
P-45	Lane W-N *	45	181					74'*
P-180	Clark Freeway	180	121			63'✓		
P-181	Clark Freeway	181	180			62'✓		
CUY-71-18.54 TOTALS				116'✓		125'✓		
CUY-90-13.81 TOTALS					66'*	152'*	74'*	

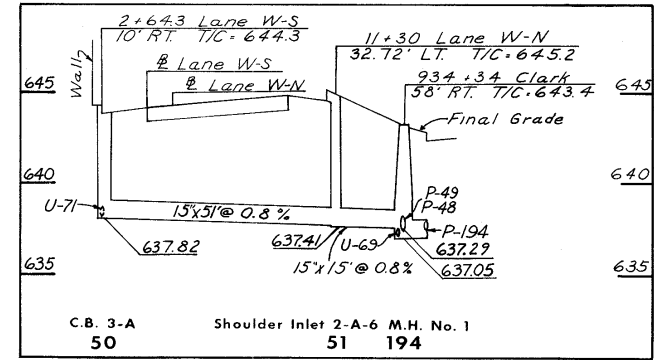
P-39 thru P-43,
P-45,
P-180 and P-181
SEWER PROFILES

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



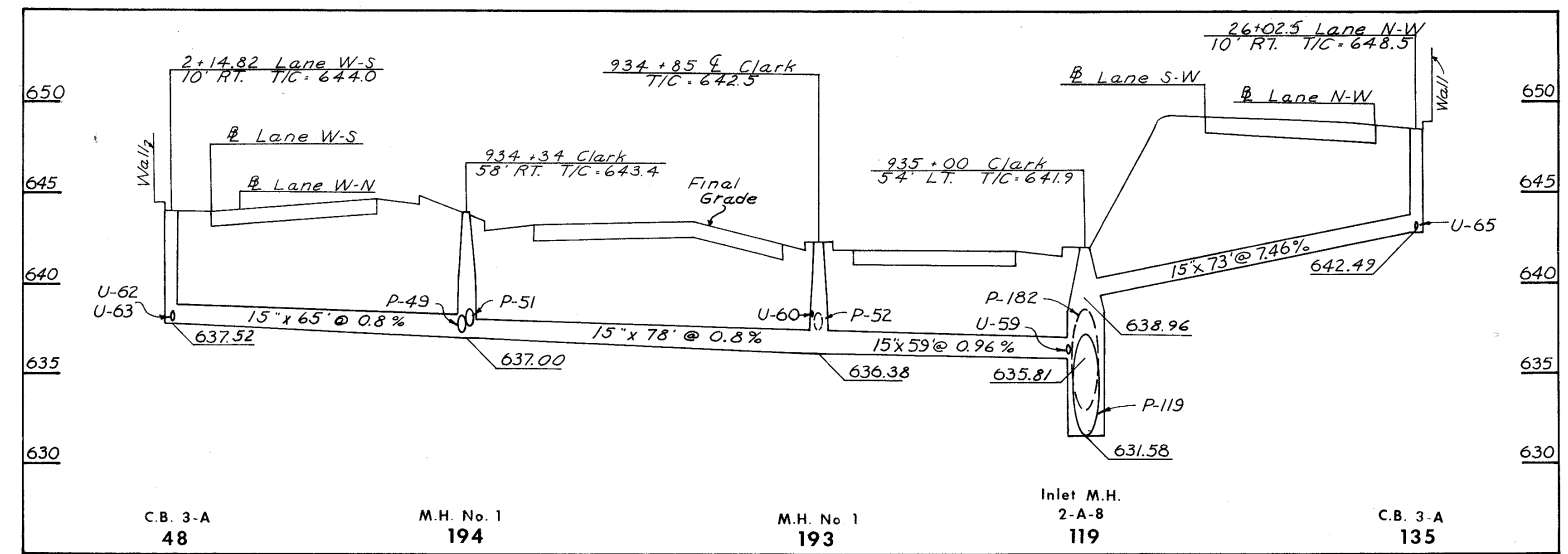
P-47
CLASS B-1

P-49
CLASS E-1



P-50
CLASS B-1

P-51
CLASS E-1

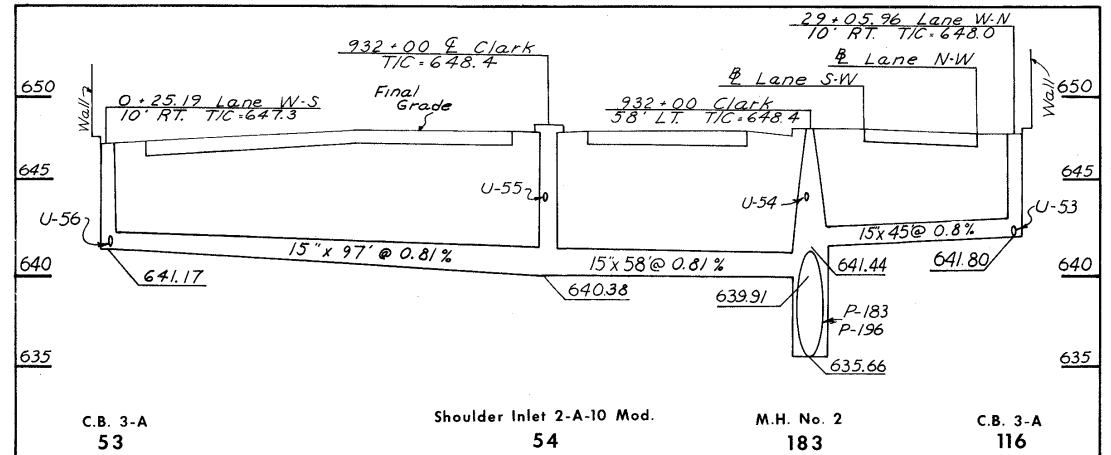


P-48 CLASS B-1

P-194 CLASS B-1

P-193 CLASS B-1

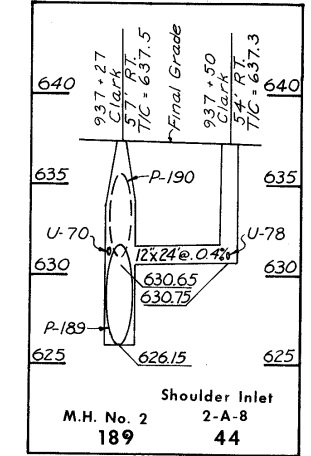
P-135 CLASS B-1



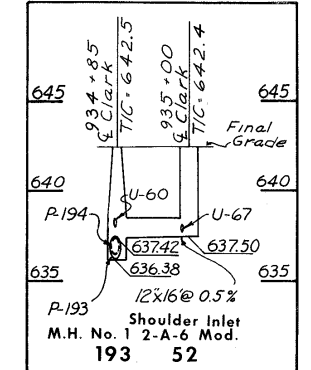
P-53 CLASS B-1

P-54 CLASS B-1

P-116 CLASS B-1



P-44
CLASS E-1



P-52
CLASS B-1

ESTIMATED QUANTITIES

CODE	LOCATION	I-B STRUCTURES						
		Shoulder Inlet 2-A-6	Shoulder Inlet 2-A-6 Mod.	Shoulder Inlet 2-A-8	Shoulder Inlet 2-A-10 Mod.	C.B. 3-A	M.H. No. 1	M.H. No. 2
44	937+50 Clark 54' Rt.			1				
47	1+66.82 Lane W-S 10' Rt. *					1 *		
48	2+14.82 Lane W-S 10' Rt. *					1 *		
49	10+81 Lane W-N 34' Lt. *	1 *						
50	2+64.31 Lane W-S 10' Rt. *					1 *		
51	11+30 Lane W-N 32.72 Lt. *	1 *						
52	935+00 Clark E		1					
53	0+25.19 Lane W-S 10' Rt. *					1 *		
54	932+00 Clark E				1			
116	29+05.96 Lane N-W 10' Rt. *					1 *		
135	26+02.5 Lane N-W 10' Rt. *					1 *		
189	937+27 Clark 57' Rt.							1
193	934+85 Clark E						1	
194	934+34 Clark 58' Rt.						1	
	CUY-71-18.54 TOTALS		1	1	1		2	1
	CUY-90-13.81 TOTALS	2 *				6 *		

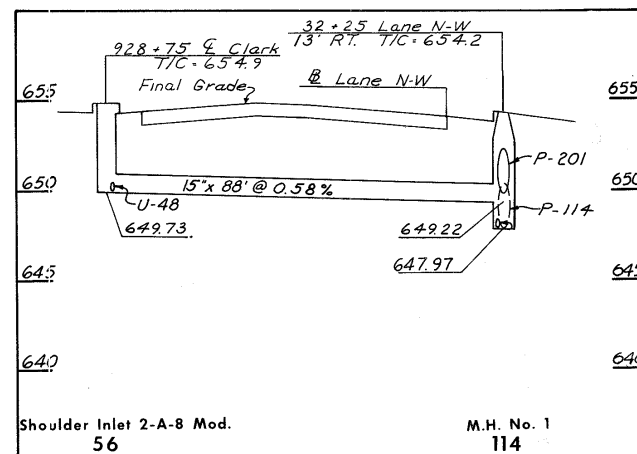
CODE	ROADWAY	INLET CODE		I-1 PIPE			
				CLASS B-1	CLASS B-1	CLASS E-1	CLASS E-1
		FROM	TO	12"	15"	12"	15"
P-44	Clark Freeway	44	189			24'	
P-47	LANE W-S *	47	49		62' *		
P-48	LANE W-S *	48	194		65' *		
P-49	LANE W-N *	49	194				40' *
P-50	LANE W-S *	50	51		51' *		
P-51	LANE W-N *	51	194				15' *
P-52	Clark Freeway	52	193	16' ✓			
P-53	LANE W-S *	53	54		97' *		
P-54	Clark Freeway	54	183		58'		
P-116	LANE N-W *	116	183		45' *		
P-135	LANE N-W *	135	119		73' *		
P-193	Clark Freeway	193	119		39'		
P-194	Clark Freeway	194	193		78'		
	CUY-71-18.54 TOTALS			16' ✓	195' ✓	24' ✓	
	CUY-90-13.81 TOTALS				393' *		55' *

P-44,
P-47 thru P-54,
P-116, P-135,
P-193, and P-194
SEWER PROFILES

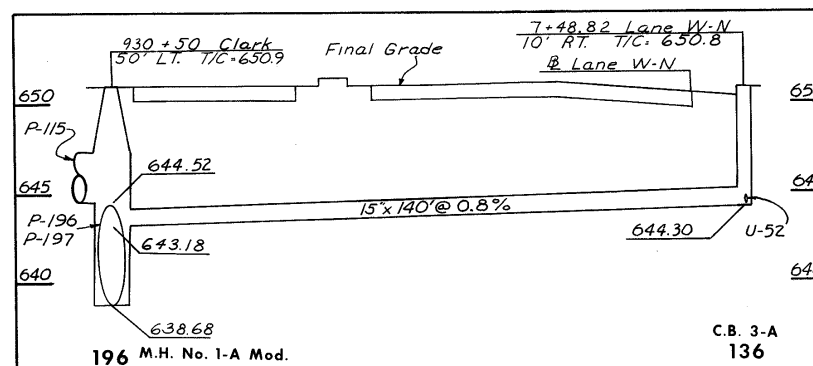
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

100
478

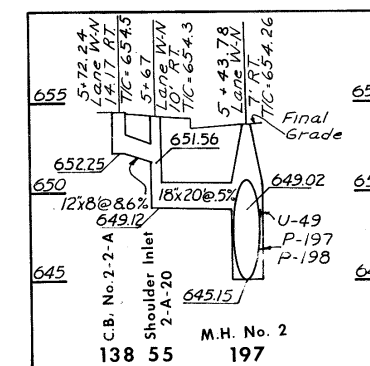
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



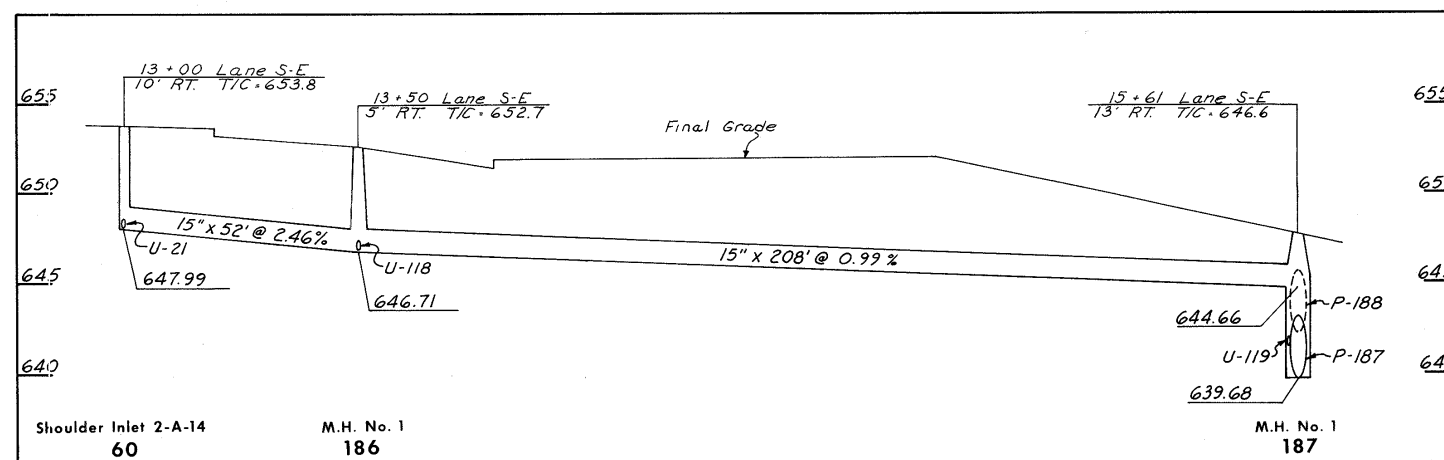
P-56
CLASS B-1



P-136
CLASS B-1

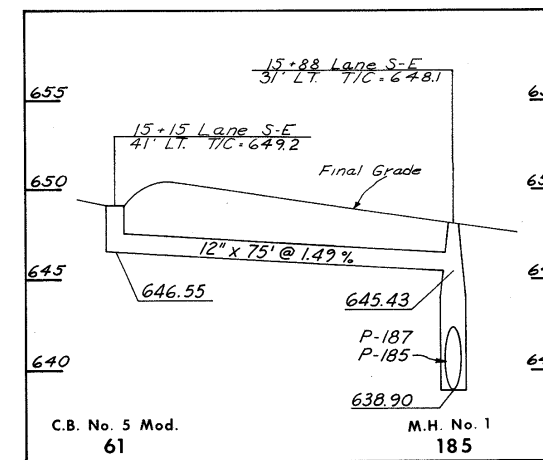


P-138 P-55
CLASS E-1 CLASS B-1

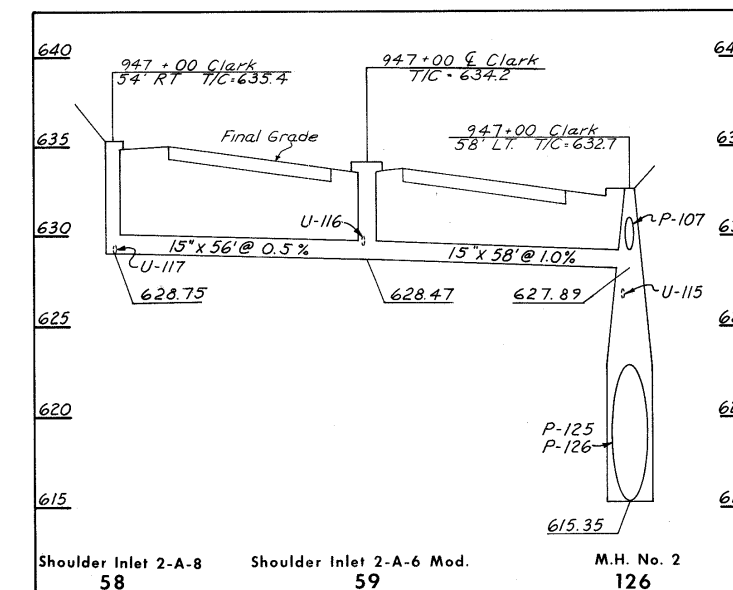


P-60
CLASS B-1

P-186
CLASS B-1



P-61
CLASS E-1



P-58
CLASS B-1

P-59
CLASS B-1

ESTIMATED QUANTITIES

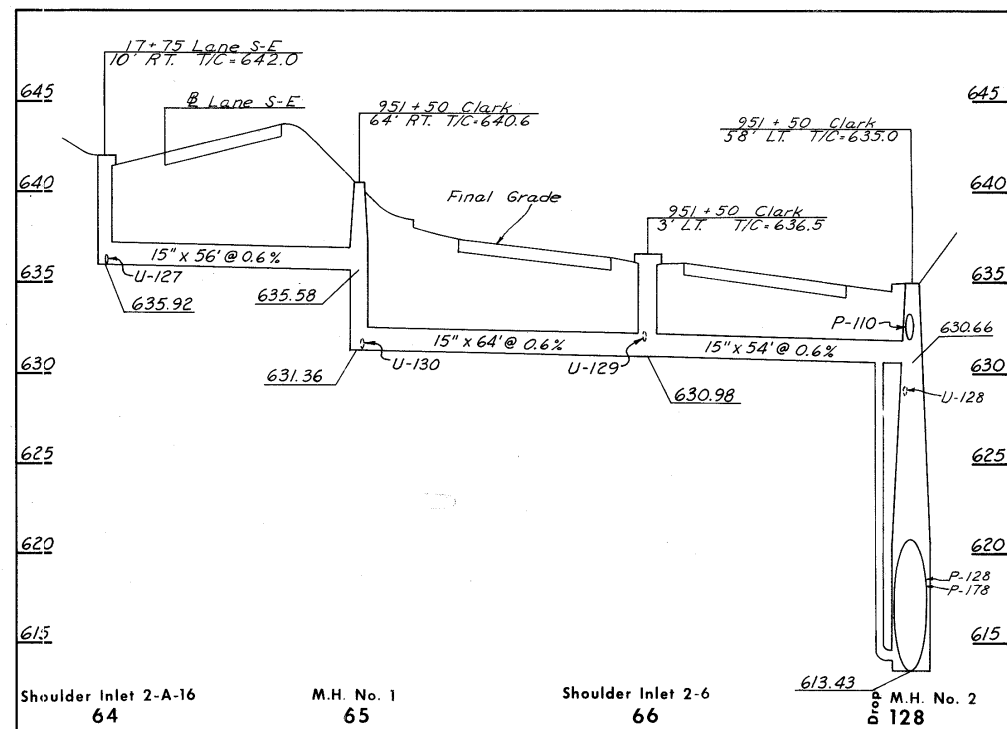
CODE	LOCATION	I-B STRUCTURES									
		Shoulder Inlet 2-A-6 Mod.	Shoulder Inlet 2-A-8 Mod.	Shoulder Inlet 2-A-8 Mod.	Shoulder Inlet 2-A-14	Shoulder Inlet 2-A-20	C. B. No. 2-2-A	C. B. 3-A	C. B. 5 Mod.	M. H. No. 1	M. H. No. 2
55	5+67 Lane W-N 10' Rt. *					1 *					
56	928+75 Clark E		1								
58	947+00 Clark 54' Rt.		1								
59	947+00 Clark E	1									
60	13+00 Lane S-E 10' Rt.				1						
61	15+15 Lane S-E 41' Lt.							1			
136	7+48.82 Lane W-N 10' Rt. *						1 *				
138	5+72.24 Lane W-N 14.17' Rt. *						1 *				
185	15+88 Lane S-E 31' Lt.								1		
186	13+50 Lane S-E 5' Rt.								1		
187	15+61 Lane S-E 13' Rt.								1		
197	5+43.78 Lane W-N 7' Rt. *									1 *	
	CUY-71-18.54 TOTALS	1	1	1	1			1	3	1 *	
	CUY-90-13.81 TOTALS					1 *	1 *	1 *		1 *	

CODE	ROADWAY	INLET CODE		I-1 PIPE		
		FROM	TO	CLASS B-1 15"	CLASS B-1 18"	CLASS E-1 12"
P-55	LANE W-N *	55	197		20' *	
P-56	Clark Freeway	56	114	88'		
P-58	Clark Freeway	58	59	56'		
P-59	Clark Freeway	59	126	58'		
P-60	LANE S-E	60	186	52'		
P-61	LANE S-E	61	185			75'
P-136	LANE W-N *	136	196	140' *		
P-138	LANE W-N *	138	55			8' *
P-186	LANE S-E	186	187	208'		
	CUY-71-18.54 TOTALS			462'	20'	75'
	CUY-90-13.81 TOTALS			140' *		8' *

P-55, P-56,
P-58 thru P-61,
P-136,
P-138, and P-186
SEWER PROFILES

SCALE: V-1"=5', H-1"=20'
MADE BY: LEE DATE: 10-21-64
TRCD: RHP DATE: 10-22-64
CKD: CBB DATE: 12-15-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

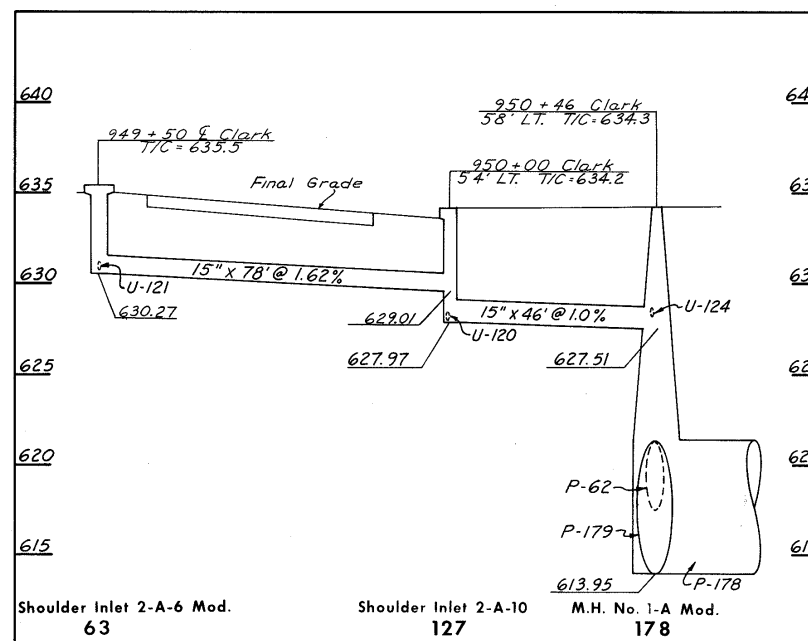
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



P-64
CLASS B-1

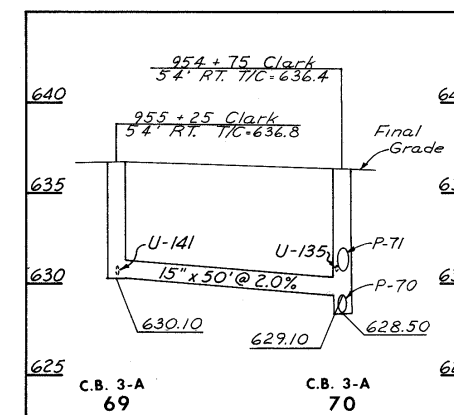
P-65
CLASS B-1

P-66
CLASS B-1



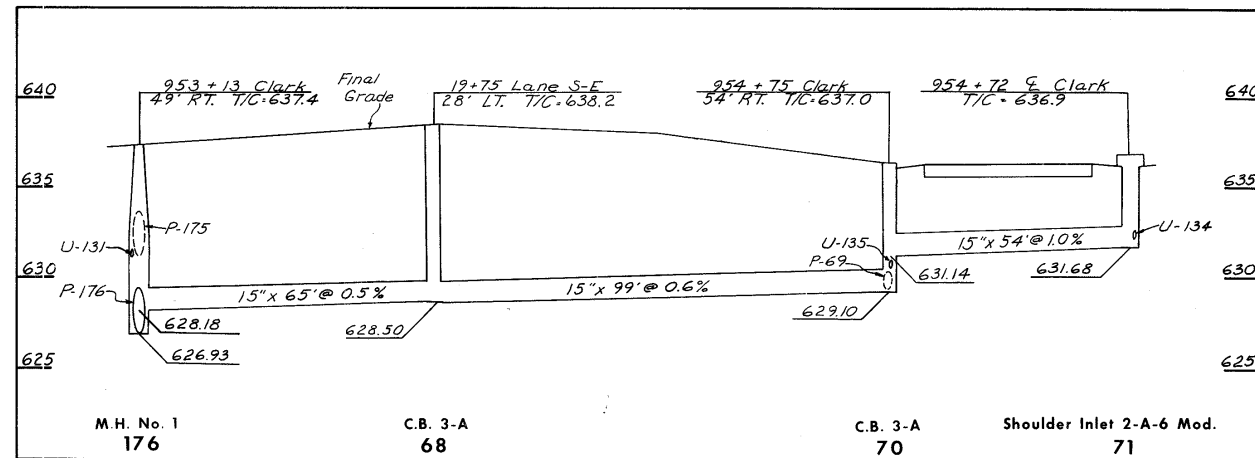
P-63
CLASS B-1

P-127
CLASS E-1



P-69
CLASS B-1

ESTIMATED QUANTITIES



P-68
CLASS B-1

P-70
CLASS B-1

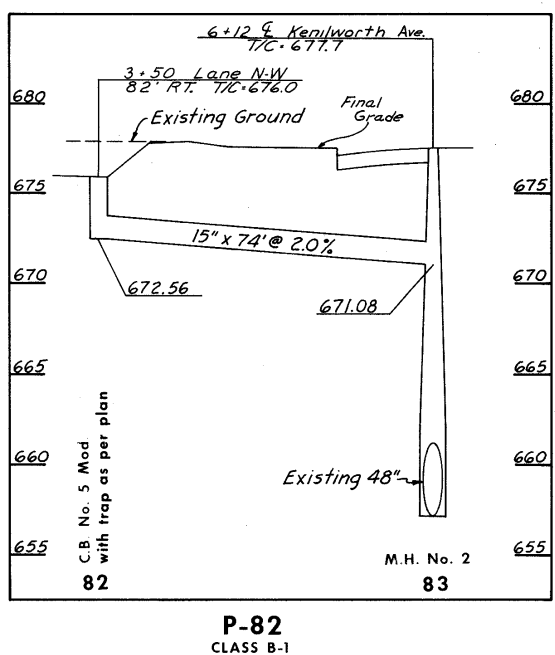
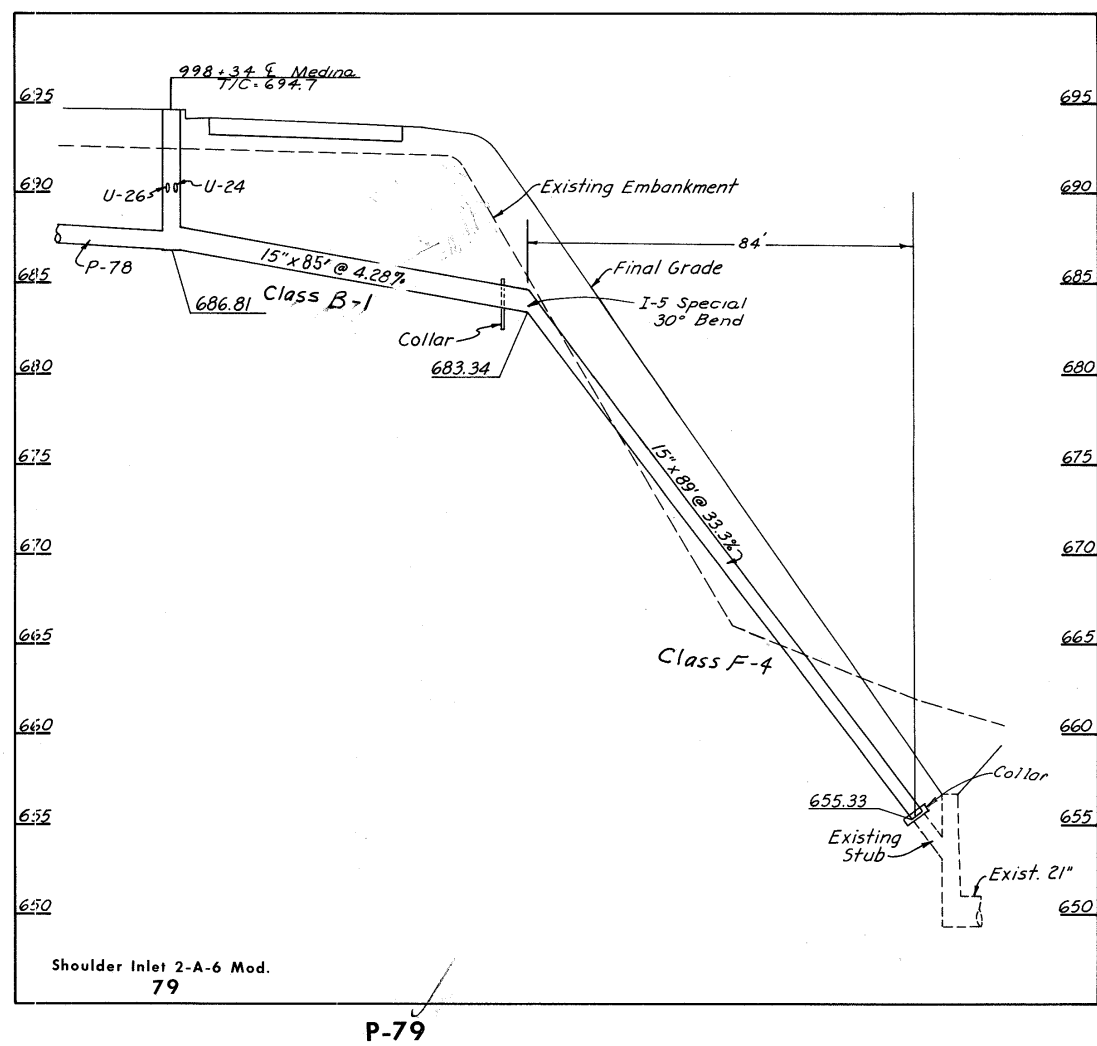
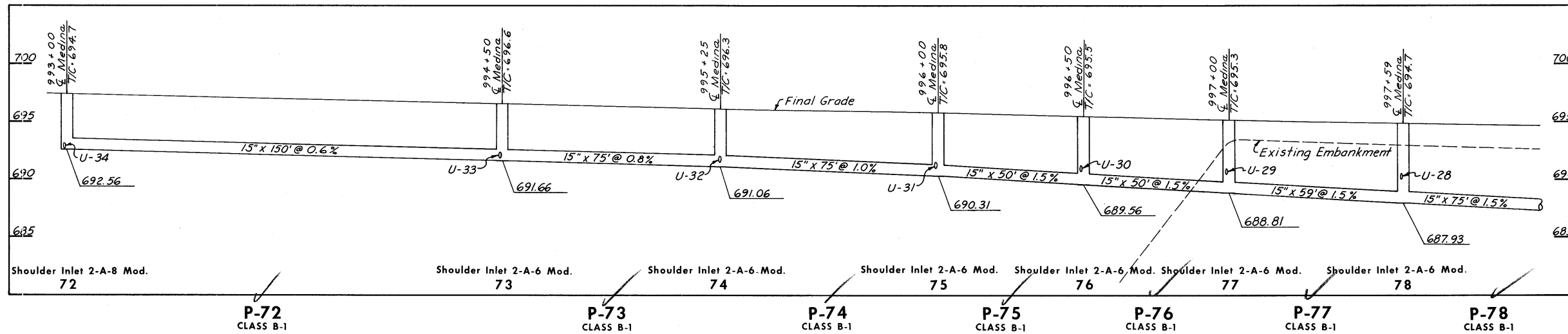
P-71
CLASS B-1

I-8 STRUCTURES						
CODE	LOCATION	Shoulder	Shoulder	Shoulder	Shoulder	M.H. No. 1
		Inlet 2-6	Inlet 2-A-6 Mod.	Inlet 2-A-10	Inlet 2-A-16	
63	949+50 Clark E		1			
64	17+75 Lane S-E 10' Rt				1	
65	951+50 Clark 64' Rt					1
66	951+50 Clark 3' Lt	1				
68	19+75 Lane S-E 28' Lt				1	
69	955+25 Clark 54' Rt				1	
70	954+75 Clark 54' Rt				1	
71	954+72 Clark E		1			
127	950+00 Clark 54' Lt			1		
CUY-71-18.54 TOTALS		1	2	1	1	3

CODE	ROADWAY	INLET CODE		I-1 PIPE	
		FROM	TO	CLASS B-1	CLASS E-1
				15"	15"
P-63	Clark Freeway	63	127	78'	
P-64	LANE S-E	64	65	56'	
P-65	Clark Freeway	65	66	64'	
P-66	Clark Freeway	66	128	54'	
P-68	LANE S-E	68	176	65'	
P-69	Clark Freeway	69	70	50'	
P-70	Clark Freeway	70	68	99'	
P-71	Clark Freeway	71	70	54'	
P-127	Clark Freeway	127	178		46'
CUY-71-18.54 TOTALS				520'	46'

P-63 thru P-66,
P-68 thru P-71,
P-127
SEWER PROFILES

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

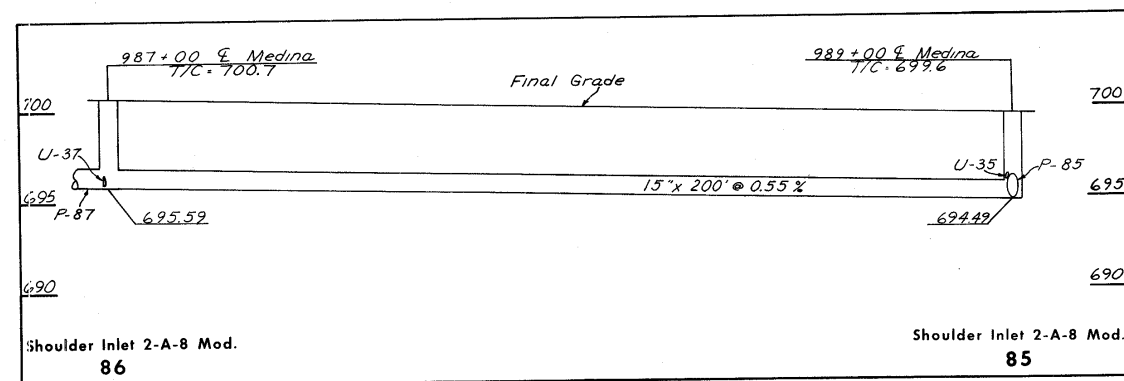
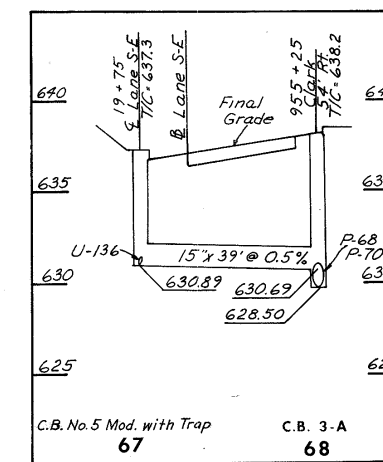
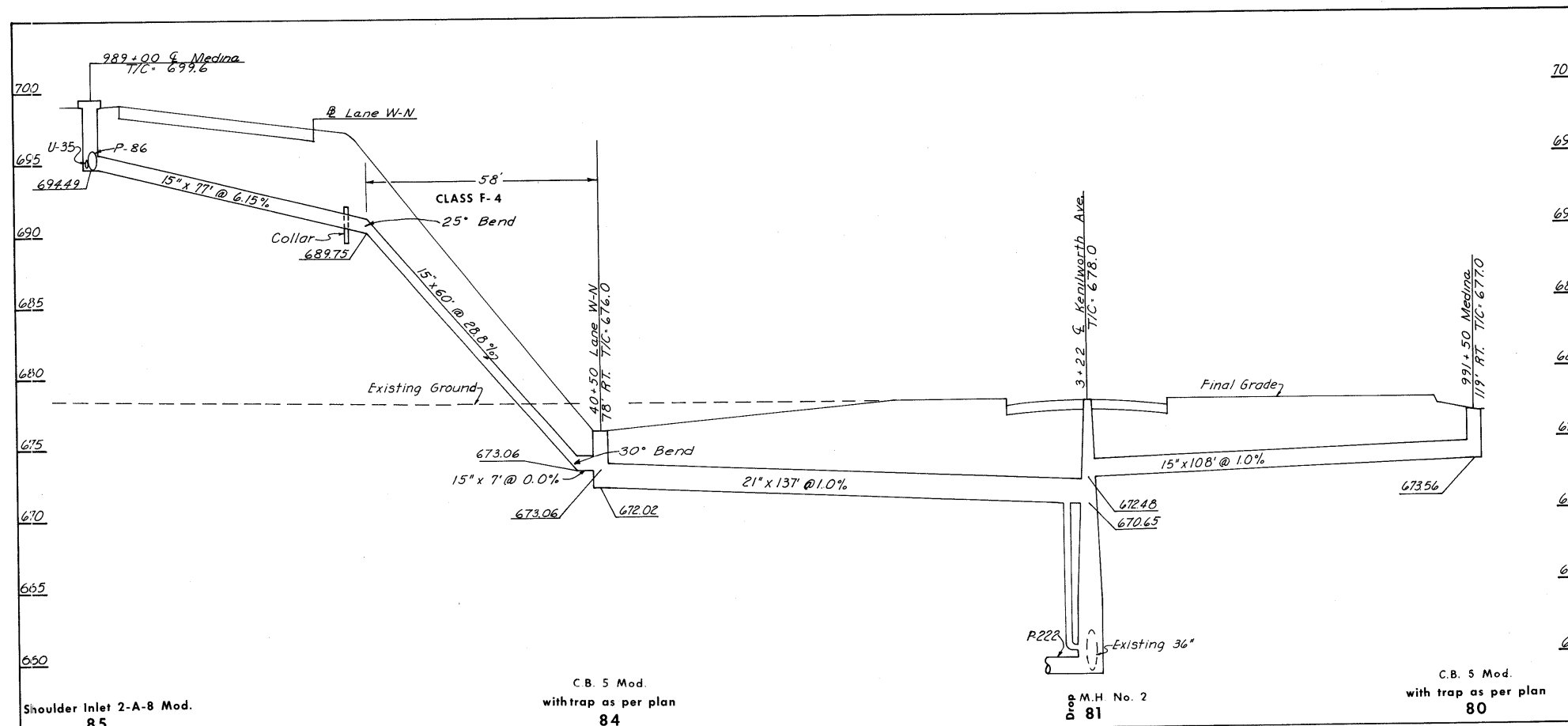


ESTIMATED QUANTITIES

I-B STRUCTURES					
CODE	LOCATION	Shoulder Inlet 2-A-6 Mod.	Shoulder Inlet 2-A-8 Mod.	C.B. 5 Mod. with trap	M.H. No. 2
72	993+00 Medina Freeway	1 *			
73	994+50 Medina Freeway	1 *			
74	995+25 Medina Freeway	1 *			
75	996+00 Medina Freeway	1 *			
76	996+50 Medina Freeway	1 *			
77	997+00 Medina Freeway	1 *			
78	997+59 Medina Freeway	1 *			
79	998+34 Medina Freeway	1 *			
82	3+50 Lane N-W 82' RT.			1 *	
83	6+12 Kenilworth Avenue				1 *
CUY-90-13.81 TOTALS		7 *	1 *	1 *	1 *

CODE	ROADWAY	INLET CODE		I-1 Pipe CLASS B-1	I-5 Pipe CLASS F-4	I-1 Pipe CLASS F-4
		FROM	TO	15"	15" x 30"	M-6.4(c) 15"
P-72	Medina Freeway *	72	73	150' *		
P-73	Medina Freeway *	73	74	75' *		
P-74	Medina Freeway *	74	75	75' *		
P-75	Medina Freeway *	75	76	50' *		
P-76	Medina Freeway *	76	77	50' *		
P-77	Medina Freeway *	77	78	59' *		
P-78	Medina Freeway *	78	79	75' *		
P-79	Medina Freeway *	79	Ditch	85' *	1 *	89' *
P-82	Lane N-W *	82	83	74' *		
CUY-90-13.81 Totals				693' *	1 *	89' *

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



P-85
CLASS B-1

P-84
CLASS B-1

P-80
CLASS B-1

P-67
CLASS B-1

P-86
CLASS E-1

ESTIMATED QUANTITIES

CODE	LOCATION	I-B STRUCTURES			
		Shoulder Inlet 2-A-8 Mod.	Shoulder Inlet 2-A-10	C.B. 5 Mod. with trap	M.H. No. 2 with drop
67	19+75 Lane S-E			1	
80	991+50 Medina Freeway			1*	
81	3+22 Kenilworth Avenue			1*	1*
84	40+50 Lane W-N			1*	
85	989+00 Medina Freeway	1*			
86	987+00 Medina Freeway		1*		
CUY-71-18.54 TOTALS				1	
CUY-90-13.81 TOTALS		1*	1*	2*	1*

CODE	ROADWAY	INLET CODE	I-1 Pipe			I-5 Pipe Specials	
			FROM	TO	CLASS B-1	CLASS F-4	CLASS F-4
P-67	Lane S-E	67 68	39'	15"			
P-80	Medina Freeway *	80 81	108'*				
P-84	Lane W-N *	84 81			137'*		
P-85	Medina Freeway *	85 84	77'*	67'*		1	1
CUY-71-18.54 TOTALS			39'				
CUY-90-13.81 TOTALS			185'*	67'*	137'*	1*	1*

CODE	ROADWAY	INLET CODE	I-1 Pipe
			CLASS E-1
P-86	Medina Freeway *	86 85	200'*
CUY-90-13.81 TOTALS			200'*

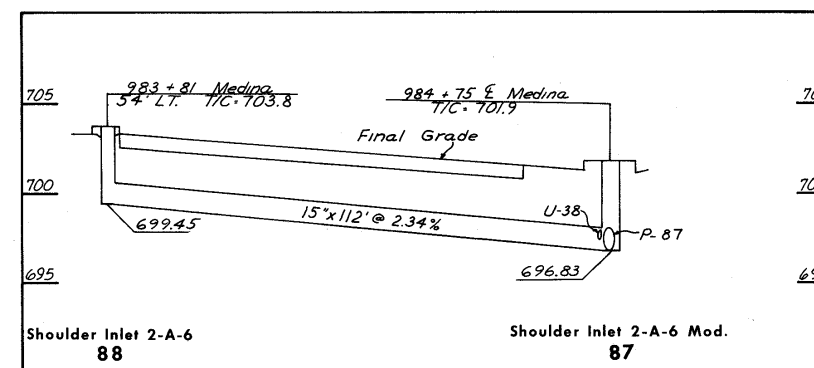
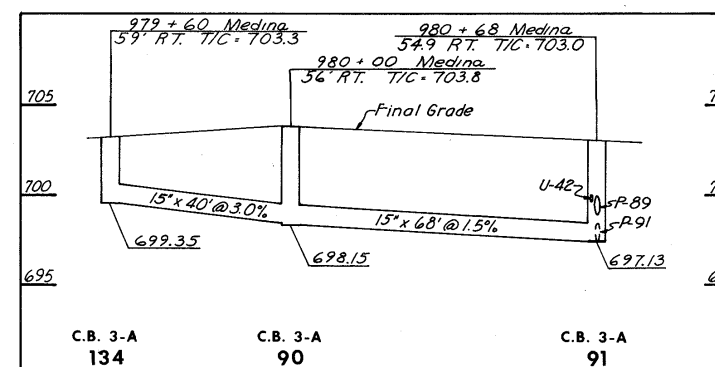
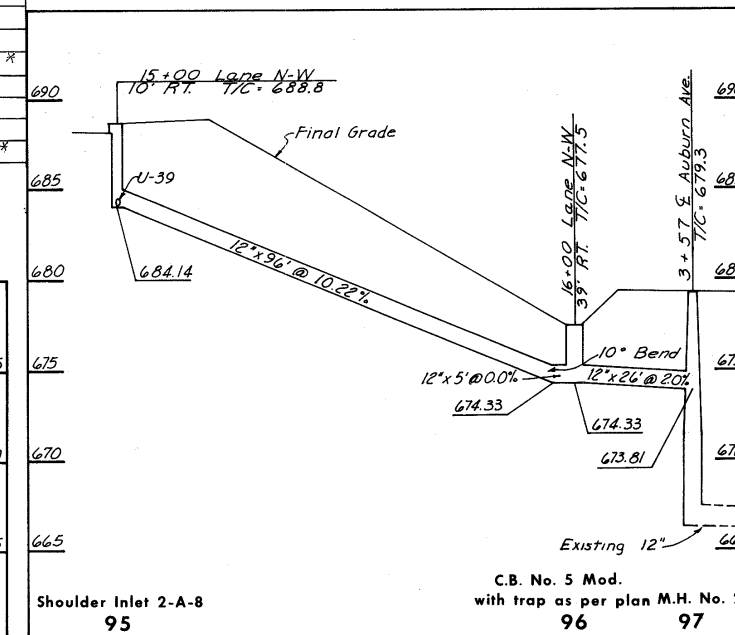
P-67, P-80,
P-84 thru P-86
SEWER PROFILES

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

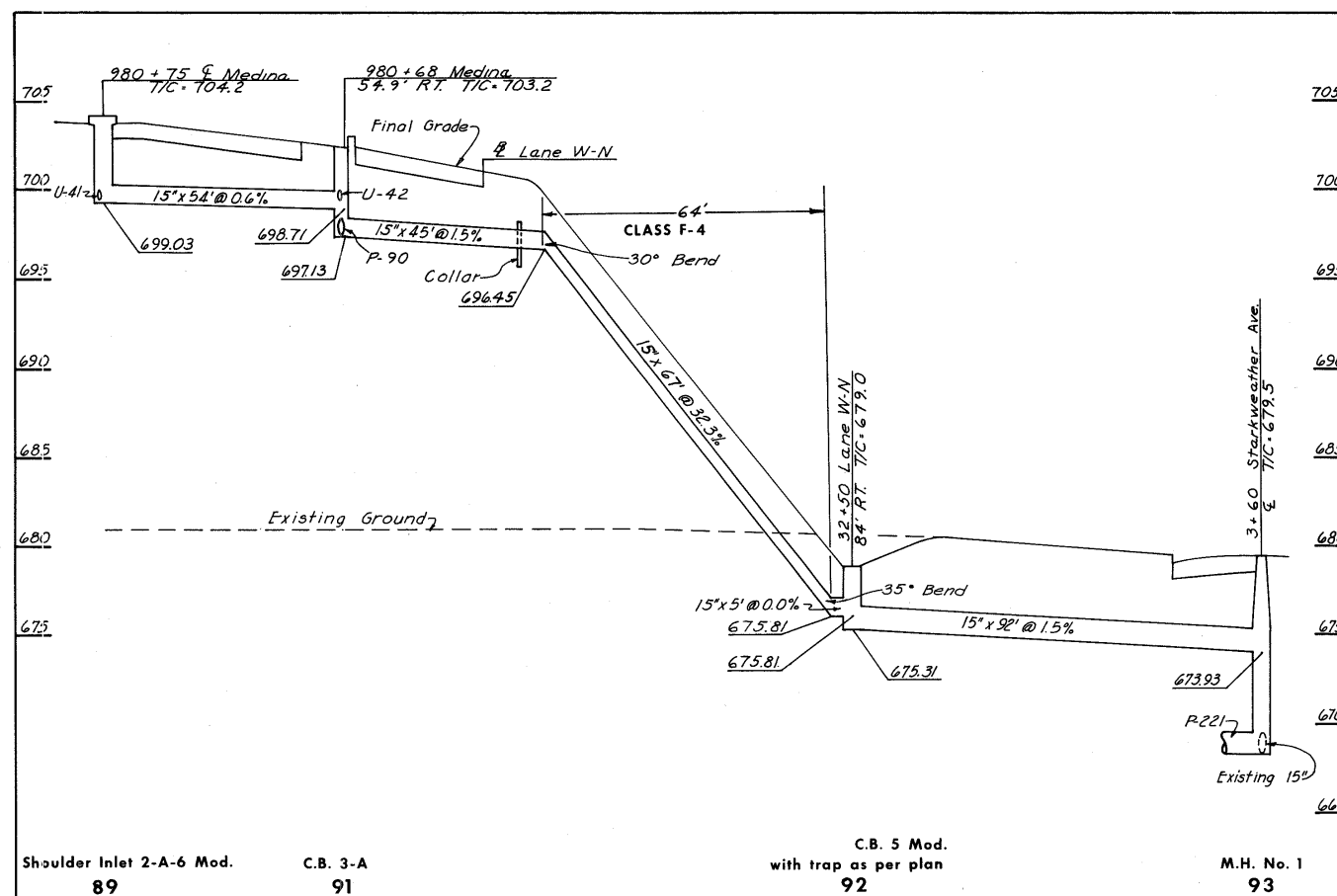
ESTIMATED QUANTITIES

I-B STRUCTURES								
CODE	LOCATION	Shoulder Inlet 2-A-6	Shoulder Inlet 2-A-6 Mod.	Shoulder Inlet 2-A-8	C.B. 3-A	C.B. 5 Mod.	M.H. No. 1	M.H. No. 2
89	980+75 Medina Freeway ☐		1					
90	980+00 Medina Freeway 56' RT.				1			
91	980+68 Medina Freeway 54.9' RT.				1			
92	32+50 Lane W-N 84' RT.*					1*		
93	3+60 Starkweather Ave. ☐*						1*	
95	15+00 Lane N-W 10' RT.*			1*				
96	16+00 Lane N-W 39' RT.*					1*		
97	3+57 Auburn Avenue ☐*							1*
134	979+60 Medina Freeway 59' RT.*				1*			
	CUY-71-18.54 TOTALS		1		2			
	CUY-90-13.81 TOTALS	1*		1*	1*	2*	1*	1*

CODE	ROADWAY	INLET CODE		I-1 PIPE				I-5 Pipe Specials		
		FROM	TO	CLASS B-1	CLASS E-1	CLASS E-1	CLASS F-4	Class F-4	Class F-4	Cl. E-1
		15"	12"	15"	15"	15"x30°	15"x35°	12"x10°		
P-88	Medina Freeway *	88	87	112'*						
P-89	Medina Freeway	89	91	54'						
P-90	Medina Freeway	90	91			68'				
P-91	Medina Freeway	91	92	45'			72'	1	1	
P-92	Lane W-N *	92	93	92'*						
P-95	Lane N-W *	95	96		101'*					1*
P-96	Lane N-W *	96	97		26'*					
P-134	Lane W-N *	134	90			40'*				
	CUY-71-18.54 TOTALS			99'	✓	68'	72'✓	2		
	CUY-90-13.81 TOTALS			204'*	✓	127'*	40'*			1*



P-88 CLASS B-1

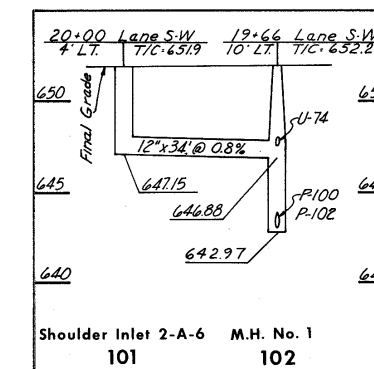


P-89 CLASS B-1

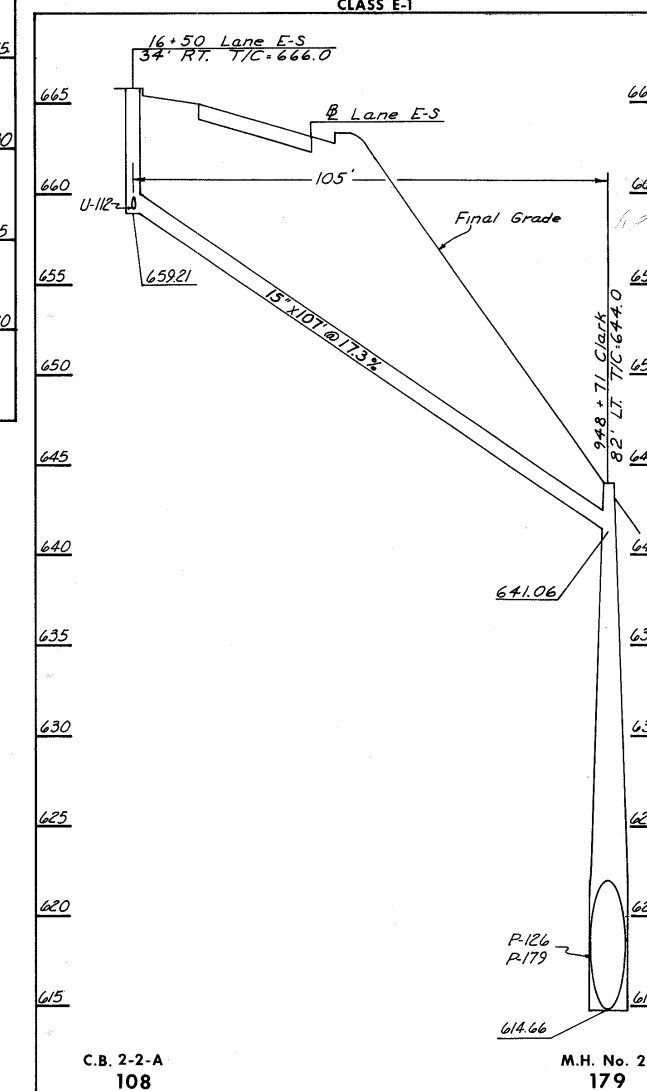
P-91 CLASS B-1

P-92 CLASS B-1

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

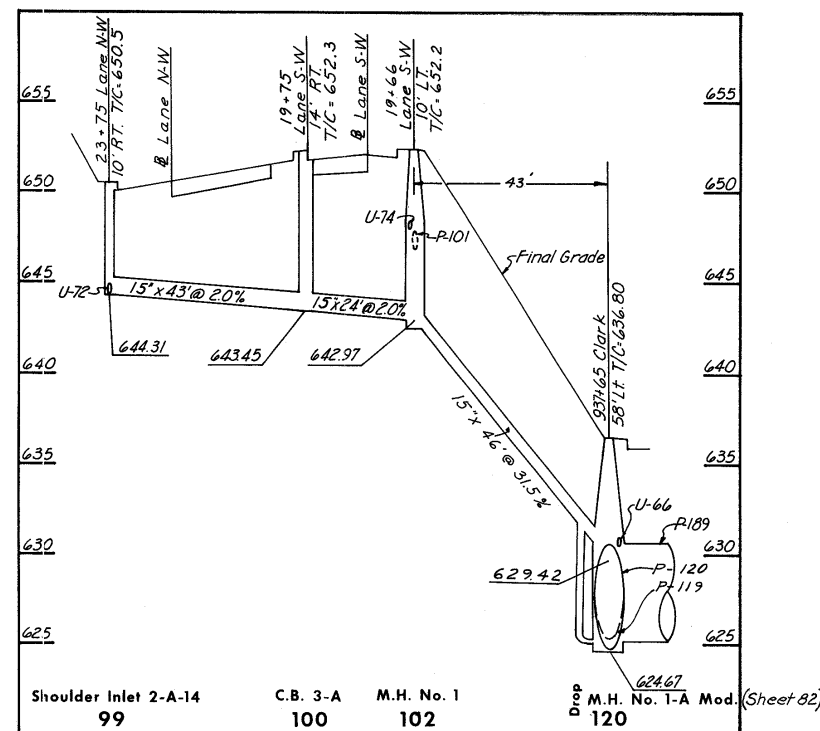


P-101
CLASS E-1



P-108
CLASS B-1
Sec. M-6.6(b) or
M-6.8(b)

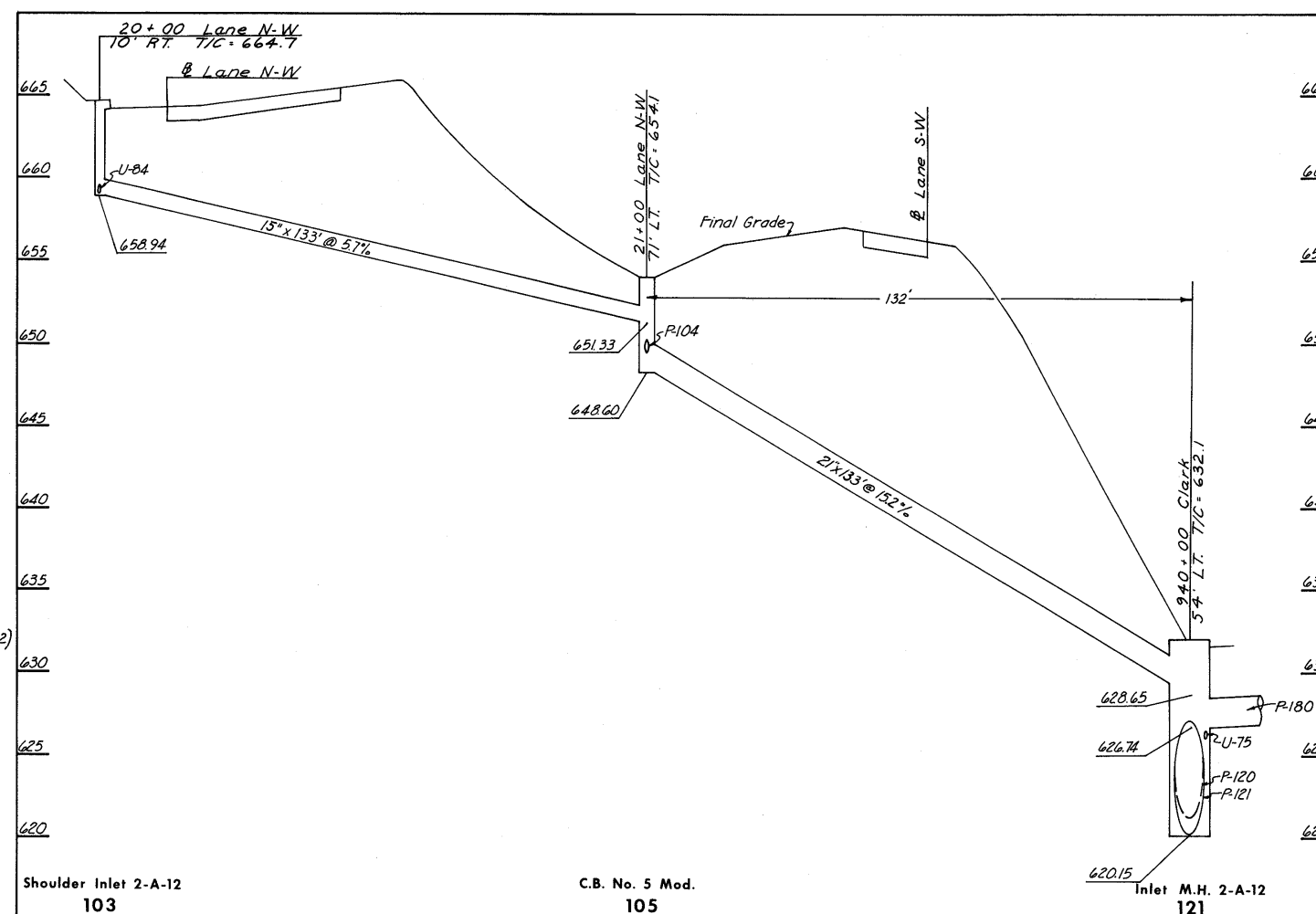
P-99 thru P-103,
P-105, and P-108
SEWER PROFILES



P-99
CLASS B-1

P-100
CLASS B-1
Sec. M-6.6(b) or
M-6.8(b)

P-102
CLASS F-4



P-103
CLASS B-1
Sec. M-6.6(b) or
M-6.8(b)

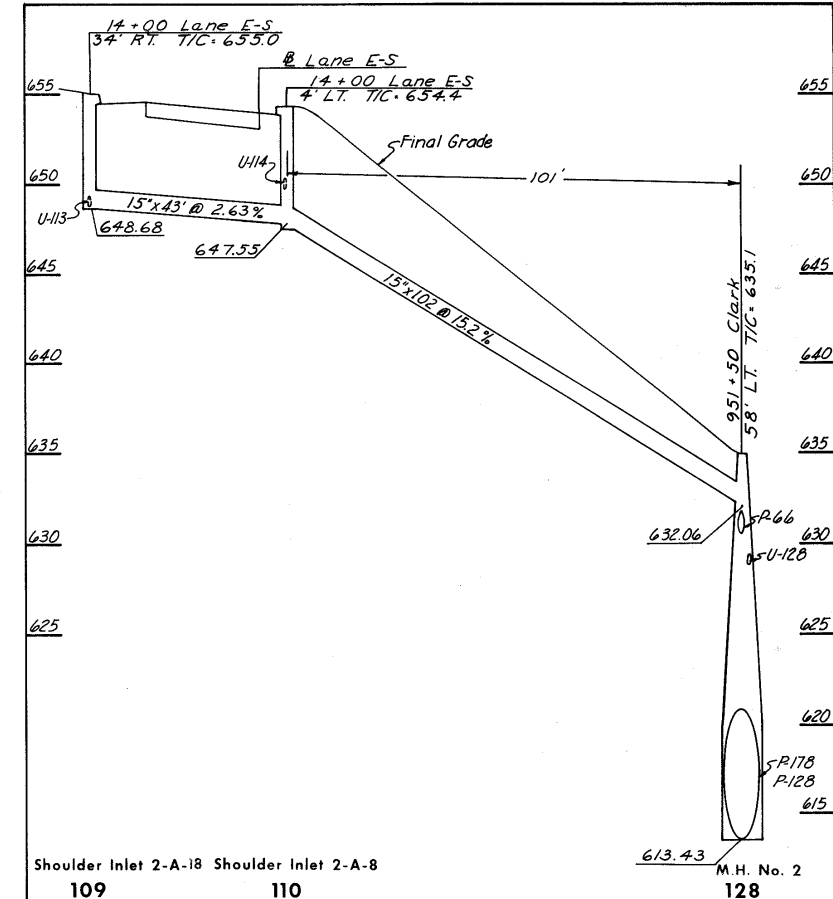
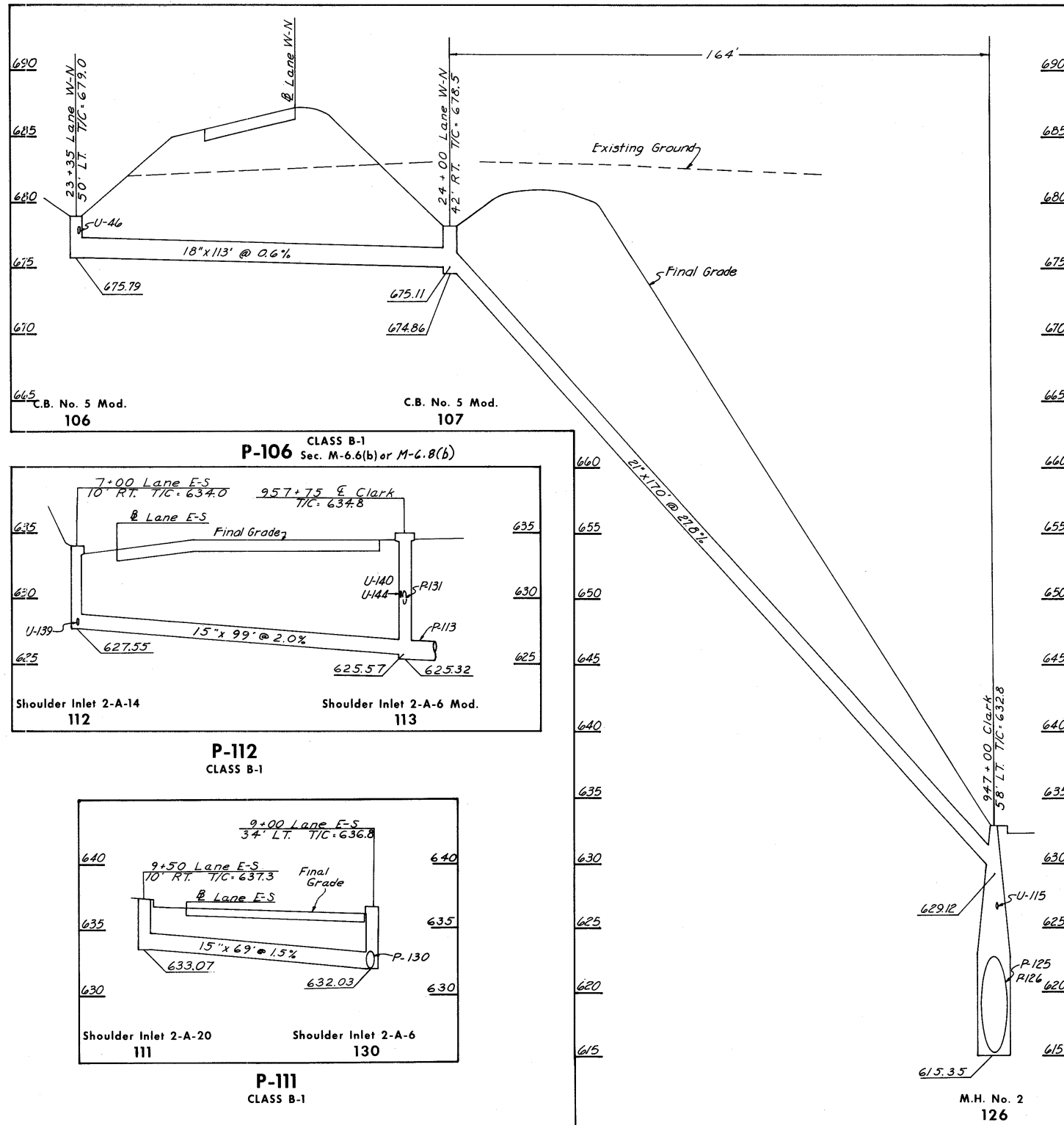
P-105
CLASS B-1
Sec. M-6.6(c)

ESTIMATED QUANTITIES

CODE	LOCATION	I-8 STRUCTURES						
		Shoulder Inlet 2-A-6	Shoulder Inlet 2-A-12	Shoulder Inlet 2-A-14	C.B. No. 2-2-A	C.B. 3-A	C.B. 5 Mod.	M.H. No. 1
99	23+75 Lane N-W 10' RT. *			1 *				
100	19+75 Lane S-W 14' RT. *					1 *		
101	20+00 Lane S-W 4' LT. *	1 *						
102	19+66 Lane S-W 10' LT.						1	
103	20+00 Lane N-W 10' RT. *		1 *					
105	21+00 Lane N-W 71' LT. *						1 *	
108	16+50 Lane E-S 34' RT.				1			
CUY-71-18.54 TOTALS					1			1
CUY-90-13.81 TOTALS		1 *	1 *	1 *		1 *	1 *	

CODE	ROADWAY	INLET CODE		I-1 PIPE				
		FROM	TO	CLASS B-1 15'	CLASS B-1 M-6.6(b) 15"	CLASS B-1 Sec. M-6.6(c) 21"	CLASS E-1 12"	CLASS F-4 Sec. M-6.4(c) 15"
P-99	Lane N-W *	99	100	43' *				
P-100	Lane S-W *	100	102		24' *			
P-101	Lane S-W *	101	102				34' *	
P-102	Lane S-W	102	120					46'
P-103	Lane N-W *	103	105		133' *			
P-105	Lane N-W *	105	121			133' *		
P-108	Lane E-S	108	179		107'			
CUY-71-18.54 TOTALS				107'				46'
CUY-90-13.81 TOTALS				43' *	157' *	133' *	34' *	

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



P-109 CLASS B-1
P-110 CLASS E-1
ESTIMATED QUANTITIES

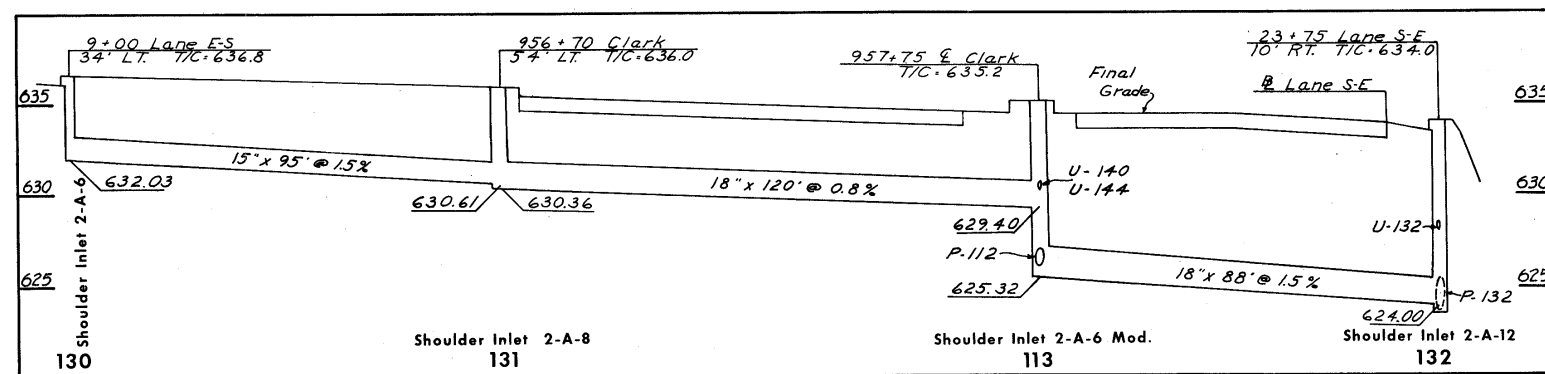
I-B STRUCTURES									
CODE	LOCATION		Shoulder Inlet 2-A-6	Shoulder Inlet 2-A-6 Mod.	Shoulder Inlet 2-A-8	Shoulder Inlet 2-A-14	Shoulder Inlet 2-A-18	Shoulder Inlet 2-A-20	C.B. 5 Mod.
106	23+35 Lane W-N	50' LT *							1 *
107	24+00 Lane W-N	42' RT *							1 *
109	14+00 Lane E-S	34' RT.							
110	14+00 Lane E-S	4' LT.							
111	9+50 Lane E-S	10' RT.							
112	7+00 Lane E-S	10' RT.							
113	957+75 Clark Freeway	☐		1					
130	9+00 Lane E-S	34' LT.	1						
CUY-71-18.54 TOTALS			1	1	1	1	1	1	
CUY-90-13.81 TOTALS									2 *

CODE	ROADWAY	INLET CODE		I-1 PIPE #				
		FROM	TO	CLASS B-1	CLASS B-1 Sec. M-6.8(b) V.C.P.	CLASS B-1 Sec. M-6.8(b) Encased	CLASS E-1	CLASS B-1 Sec. M-6.8(b) V.C.P.
P-202	Wade Avenue	202	203	12" ✓	12" ✓	V.C.P.-12" ✓	12" ✓	15" ✓
P-203	Wade Avenue	203	204	25" ✓			12" ✓	
P-204	Wade Avenue	204	205				56" ✓	
P-205	Scranton Road	205	192	36" ✓				
P-206	Scranton Road	206	192	36" ✓				
P-217	Lane W-S	217	218	15" ✓				
P-218	Lane W-S	218	219					428" ✓
P-219	Lane W-S	219	210					65" ✓
P-222	Lane W-N *	222	81		223" ✓	191" ✓		
CUY-71-18.54 TOTALS				112" ✓			68" ✓	493" ✓
CUY-90-13.81 TOTALS					223" ✓	191" ✓		

* This Table shall be used with Pipe Items on sheet No. 109

P-106, P-107,
P-109 thru P-112
SEWER PROFILES

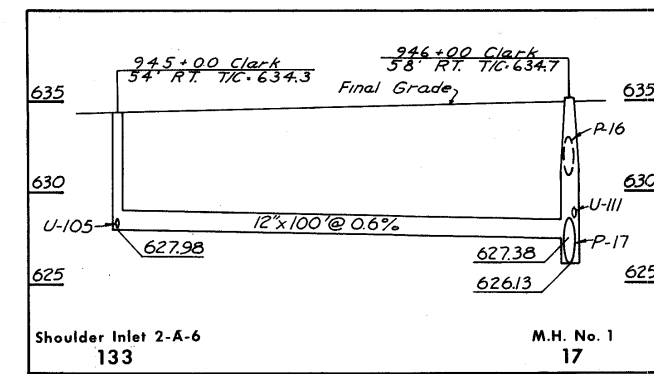
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



P-130
CLASS B-1

P-131
CLASS B-1

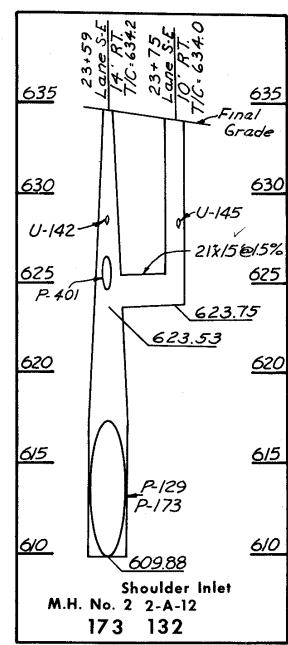
P-113
CLASS B-1



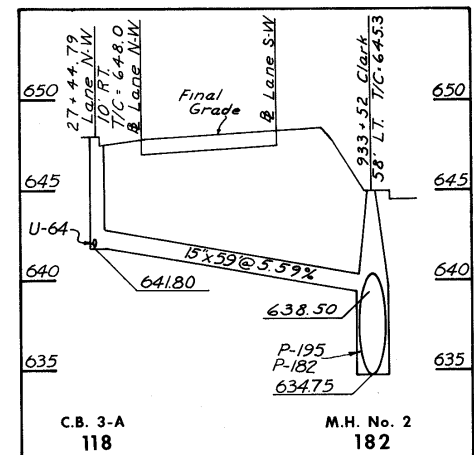
P-133
CLASS E-1

ESTIMATED QUANTITIES

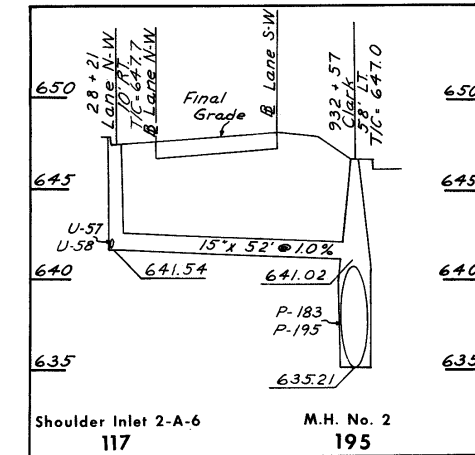
CODE	LOCATION	I-B STRUCTURES			
		Shoulder Inlet 2-A-6	Shoulder Inlet 2-A-8	Shoulder Inlet 2-A-12	C.B. 3-A
117	28+21 Lane N-W 10' RT.*	1 *			
118	27+44.79 Lane N-W 10' RT.*		1		1 *
131	956+70 Clark Freeway 54' LT.			1	
132	23+75 Lane S-E 10' RT.				
133	945+00 Clark Freeway 54' RT.	1			
CUY-71-18.54 TOTALS		1	1	1	
CUY-90-13.81 TOTALS		1 *			1 *



P-132
CLASS E-1



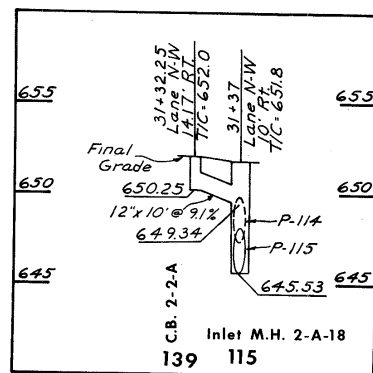
P-118
CLASS B-1



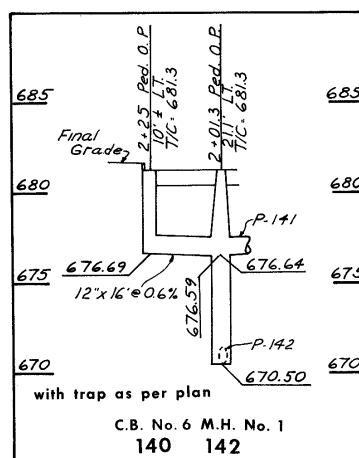
P-117
CLASS B-1

CODE	ROADWAY	INLET CODE		I-1 PIPE			
		FROM	TO	CLASS B-1	CLASS B-1	CLASS E-1	CLASS E-1
		15"	18"	12"	21"		
P-113	Clark Freeway	113	132		88' ✓		
P-117	Lane N-W *	117	195	52' *			
P-118	Lane N-W *	118	182	59' *			
P-130	Lane E-S	130	131	95' ✓			
P-131	Clark Freeway	131	113		120' ✓		
P-132	Lane S-E	132	173				15' ✓
P-133	Clark Freeway	133	17			100' ✓	
CUY-71-18.54 TOTALS				95' ✓	208' ✓	100' ✓	15' ✓
CUY-90-13.81 TOTALS				111' *			

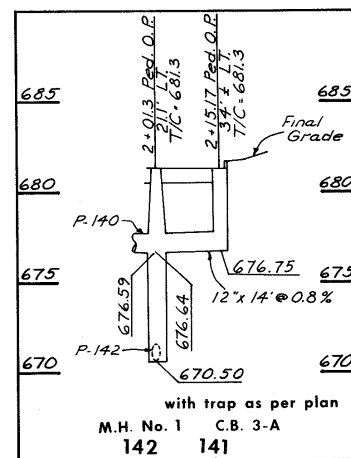
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



P-139
CLASS E-1



P-140
CLASS B-1

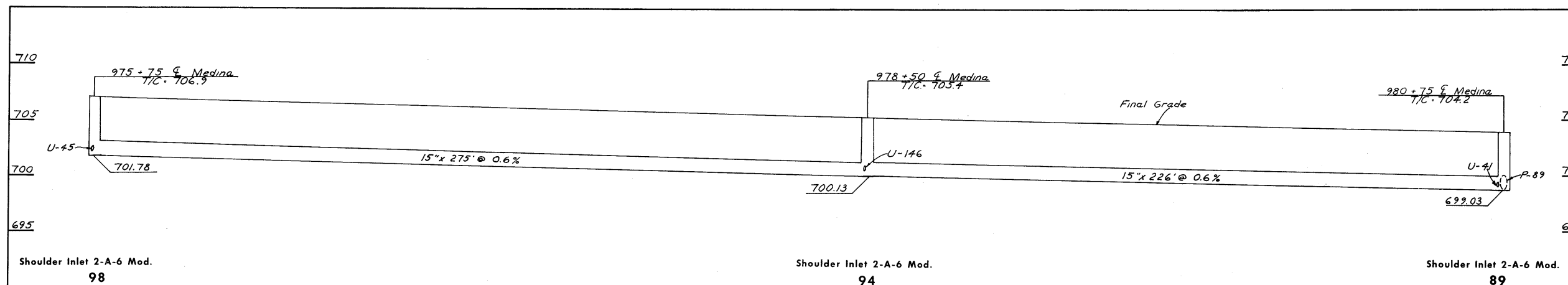


P-141
CLASS B-1

ESTIMATED QUANTITIES

I-8 STRUCTURES						
CODE	LOCATION	Shoulder Inlet 2-A-6 Mod.	C.B. No. 2-2-A	C.B. 3-A	M.H. No. 1	C.B. 6
98	978+50 Medina Freeway	1				
139	31+32.25 Lane N-W		1*			
140	2+25 Pedestrian O.P.					1
141	2+15.17 Pedestrian O.P.			1		
142	2+01.30 Pedestrian O.P.				1	
CUY-71-18.54 TOTALS		2		1	1	1
CUY-90-13.81 TOTALS			1*			

CODE	ROADWAY	INLET CODE		I-1 PIPE		
				CLASS B-1	CLASS B-1	CLASS E-1
		FROM	TO	12"	15"	12"
P-94	Medina Freeway	94	89		226'	
P-98	Medina Freeway	98	94		275'	
P-139	Lane N-W	139	115			10'*
P-140	P.O. Bridge	140	142	16'		
P-141	P.O. Bridge	141	142	14'		
CUY-71-18.54 TOTALS				30'	501'	
CUY-90-13.81 TOTALS						10'*



P-98
CLASS B-1

P-94
CLASS B-1

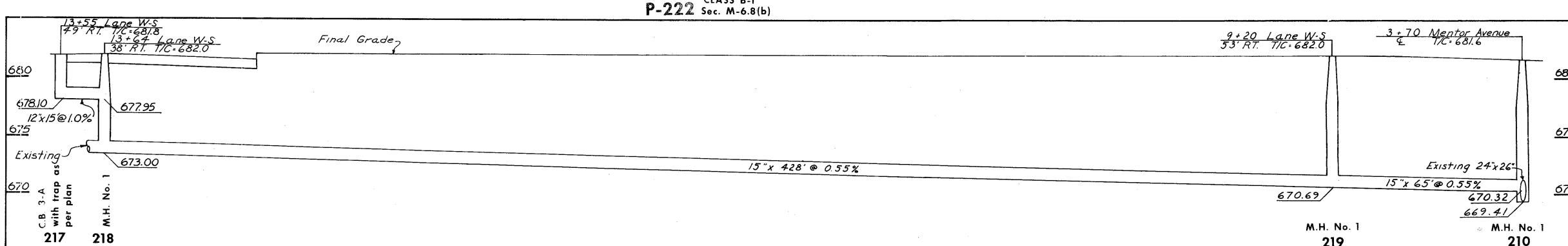
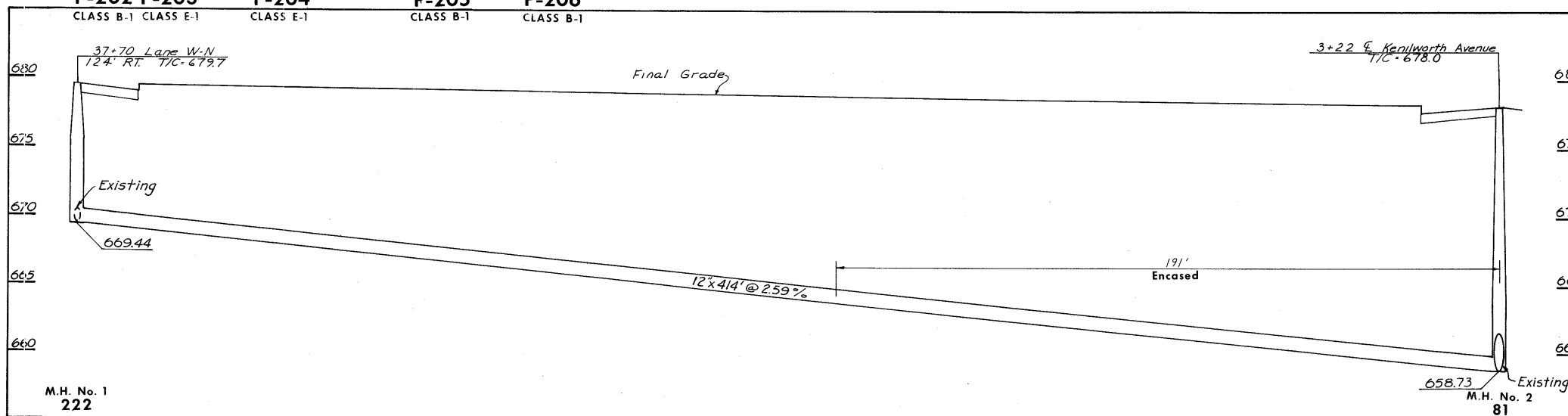
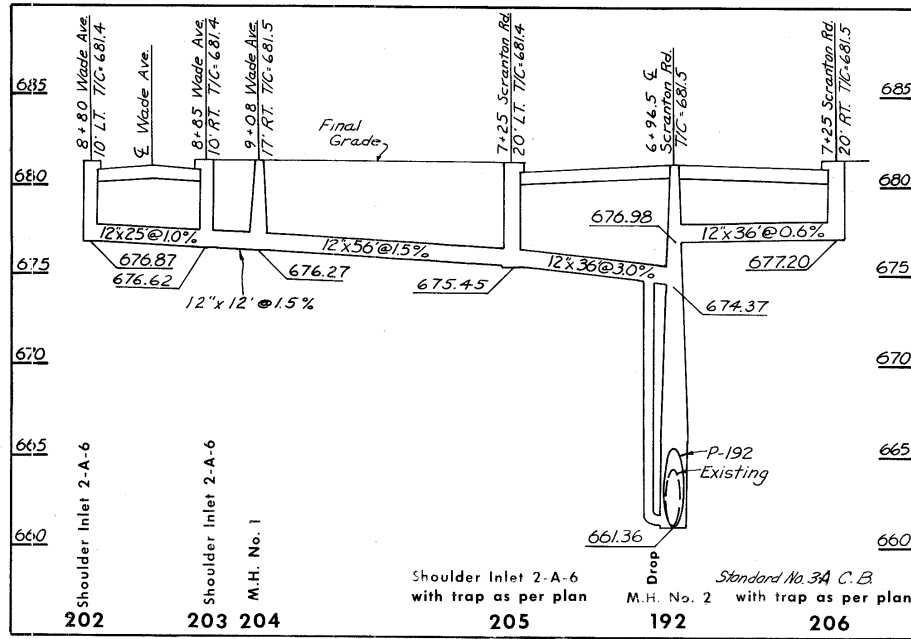
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

ESTIMATED QUANTITIES

CODE	LOCATION	I-B STRUCTURES			
		Shoulder Inlet 2-A-6	Shoulder Inlet 2-A-6 with trap	C.B. 3-A with trap	M.H. No. 1
202	8+80 Wade Avenue 10' LT.	1			
203	8+85 Wade Avenue 10' RT.	1			
204	8+97 Wade Avenue 14' RT.				1
205	7+25 Scranton Road 20' LT.		1		
206	7+25 Scranton Road 20' RT.			1	
210	3+70 Mentor Avenue				1
217	13+55 Lane W-S 49' RT.			1	
218	13+64 Lane W-S 38' RT.				1
219	9+20 Lane W-S 53' RT.				1
222	37+70 Lane W-N 124' RT. *				1 *
CUY-71-18.54 TOTALS		2	1	2	4
CUY-90-13.81 TOTALS					1 *

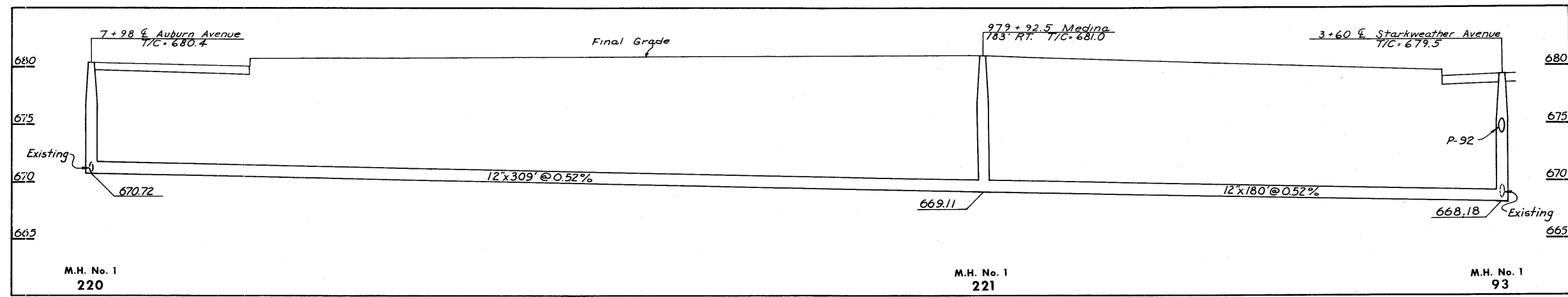
CODE	ROADWAY	INLET CODE		I-1 PIPE #			
		FROM	TO	CLASS B-1 15"	CLASS B-1 Sec. M-6.6(b) or Sec. M-6.8(b) 18"	CLASS E-1 15"	CLASS F-4 Sec. M-6.4(c) 21"
P-106	Lane W-N *	106	107		113' *		
P-107	Clark Freeway	107	126				170'
P-109	Lane E-S	109	110	43' ✓			
P-110	Lane E-S	110	128			102'	
P-111	Lane E-S	111	137	69' ✓			
P-112	Lane E-S	112	113	99' ✓			
CUY-71-18.54 TOTALS					211' ✓	102' ✓	170' ✓
CUY-90-13.81 TOTALS					113' *		

* This Table shall be used with Pipe Items on sheet No. 106



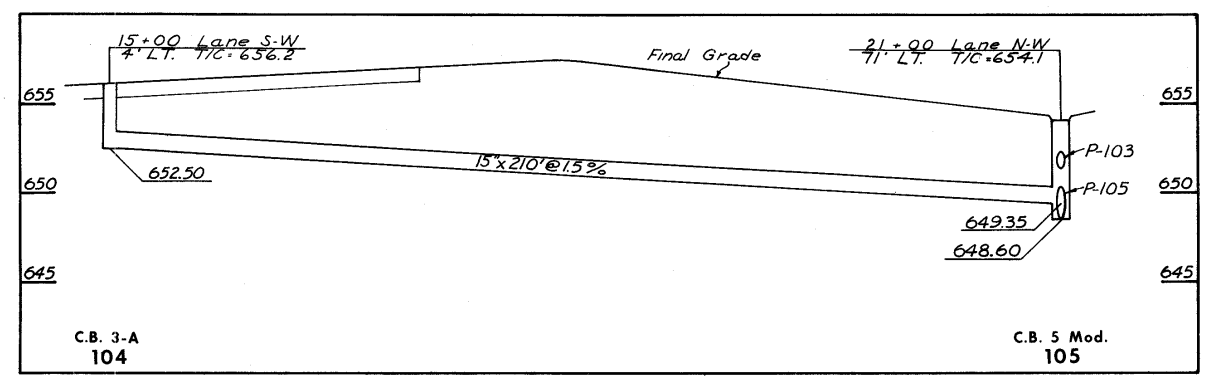
P-202 thru P-206,
P-217 thru P-219,
and P-222
SEWER PROFILES

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

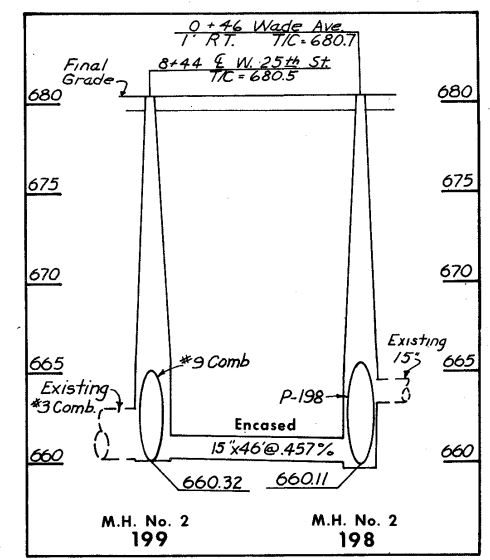


P-220
CLASS B-1
Sec. M-6.8 (b)

P-221
CLASS B-1
Sec. M-6.8 (b)



P-104
CLASS B-1



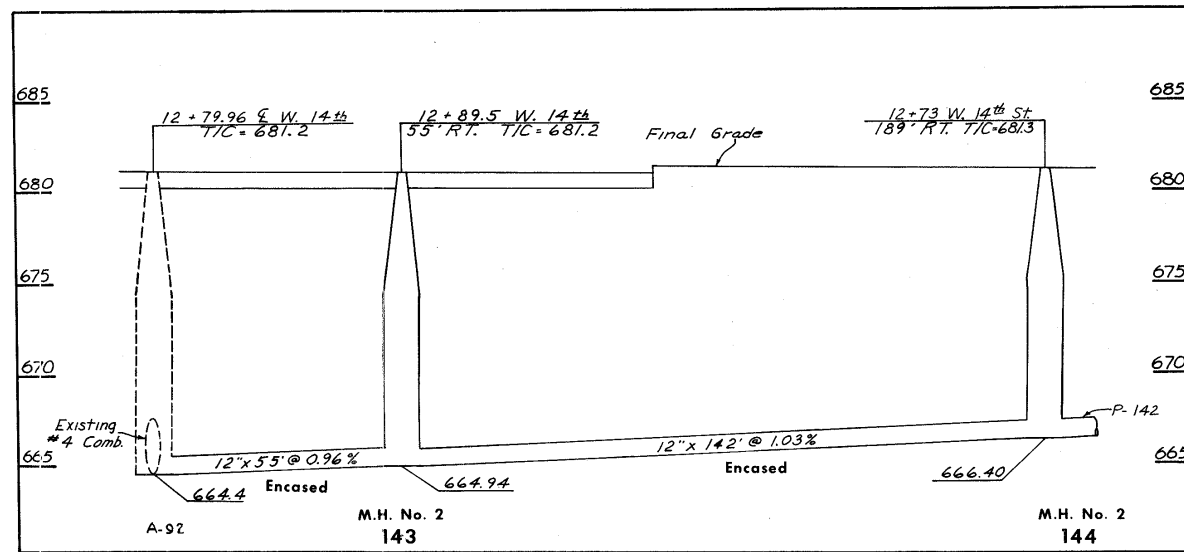
P-199
CLASS B-1
Sec. M-6.8 (b)

ESTIMATED QUANTITIES

I-8 STRUCTURES				
CODE	LOCATION	I-8 STRUCTURES		
		C.B. 3-A	M.H. No. 1	M.H. No. 2
104	15+00 Lane S-W 4' LT.	1		
199	8+41 W. 25th Street			1
220	7+98 Auburn Avenue		1	
221	959+92.5 Medina Freeway 183' RT.		1	
CUY-71-18.54 TOTALS		1	2	1

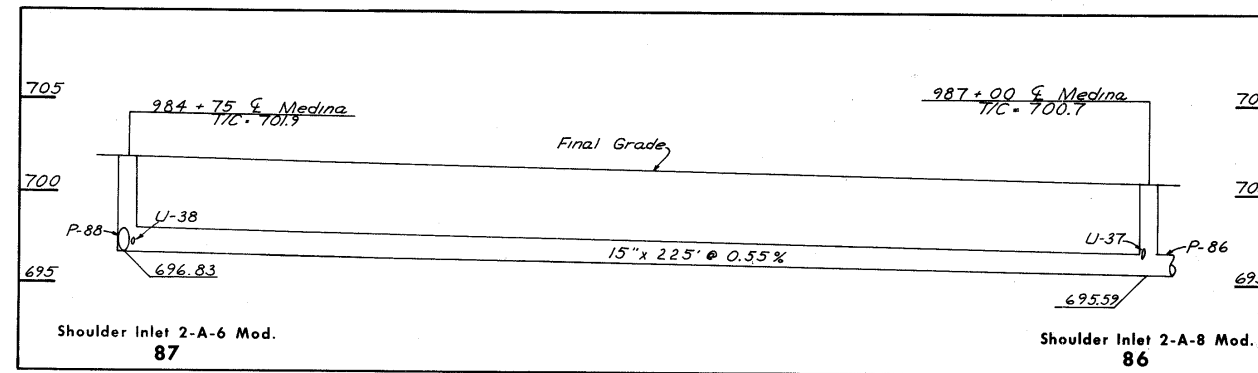
CODE	ROADWAY	INLET CODE		I-1 PIPE		
		FROM	TO	CLASS B-1	CLASS B-1	CLASS B-1
				Sec. M-6.8 (b) V.C.P. 12"	Sec. M-6.8 (b) Encased V.C.P. 15"	Sec. M-6.8 (b) Encased V.C.P. 15"
P-104	Lane S-W	104	105		210'	
P-199	W. 25th Street	199	198			46'
P-220	Auburn Avenue	220	221	309'		
P-221	Medina Freeway	221	93	180'		
CUY-71-18.54 TOTALS				489'	210'	46'

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

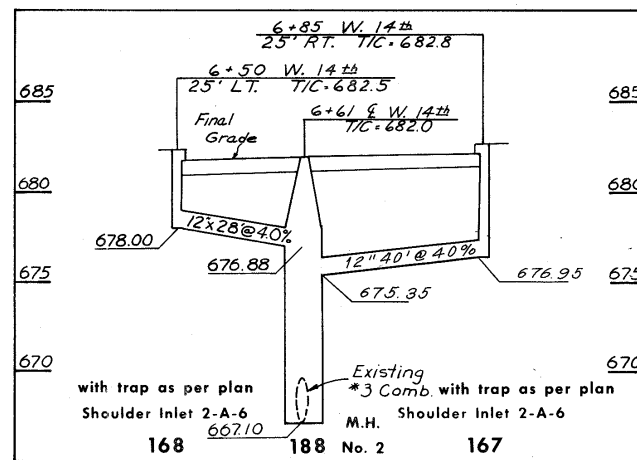


P-143
CLASS B-1
Sec. M-6.8 (b)

P-144
CLASS B-1
Sec. M-6.8 (b)

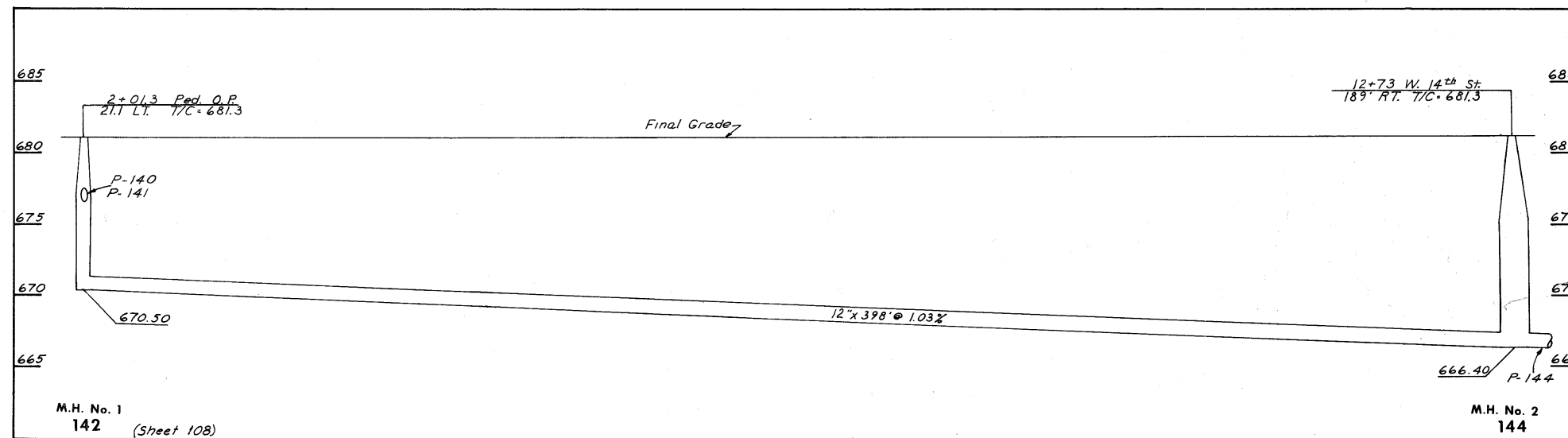


P-87
CLASS E-1



P-168
CLASS B-1

P-167
CLASS B-1



P-142
CLASS B-1
Sec. M-6.8 (b)

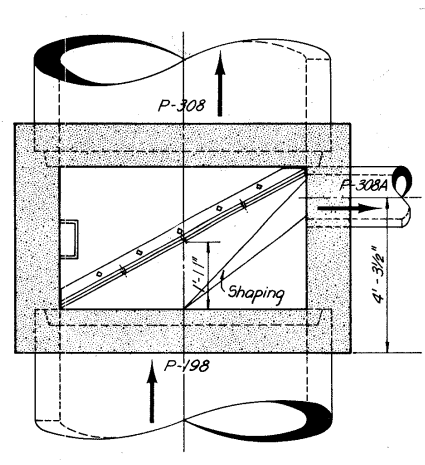
ESTIMATED QUANTITIES

CODE	LOCATION	I-8 STRUCTURES		
		Shoulder Inlet 2-A-6	Shoulder Inlet 2-A-6 Mod.	W/O Drop Pipe M.H. No. 2
87	984+75 Medina Freeway ☐ *		1 *	
143	12+89.5 W. 14th Street 55' RT.			1
144	12+73 W. 14th Street 189' RT.			1
167	6+85 W. 14th Street 25' RT.	1		
168	6+50 W. 14th Street 25' LT.	1		
CUY-71-18.54 TOTALS		2		2
CUY-90-13.81 TOTALS			1 *	

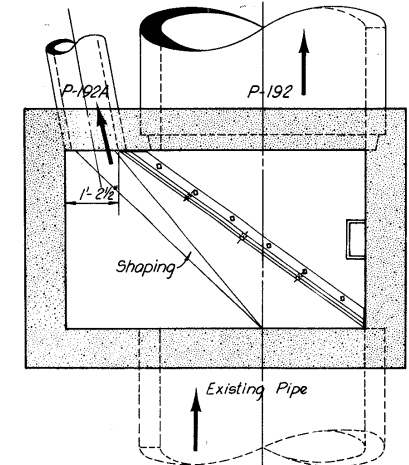
CODE	ROADWAY	INLET CODE		I-1 PIPE		
		FROM	TO	CLASS B-1 12"	CLASS B-1 Sec. M-6.8(b) V.C.P. 12"	CLASS E-1 15"
P-87	Medina Freeway *	87	86			225' *
P-142	W. 11th Street	142	144		398' ✓	
P-143	W. 14th Street	143	213			55' ✓
P-144	W. 14th Street	144	143			142' ✓
P-167	W. 14th Street	167	188	40' ✓		
P-168	W. 14th Street	168	188	28' ✓		
CUY-71-18.54 TOTALS				68' ✓	398' ✓	197' ✓
CUY-90-13.81 TOTALS						225' *

P-87,
P-142 thru P-144,
P-167 and P-168
SEWER PROFILES

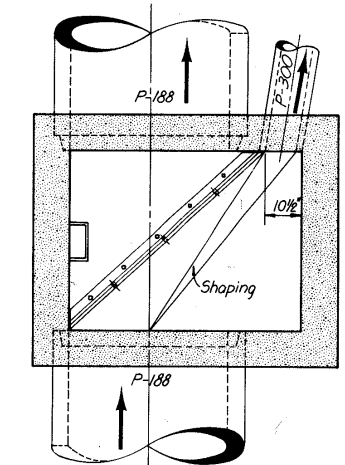
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



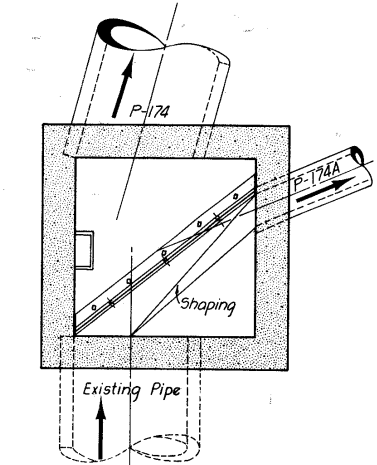
SEPARATION CHAMBER NO. 308
WEST 25th STREET



SEPARATION CHAMBER NO. 192
SCRANTON ROAD



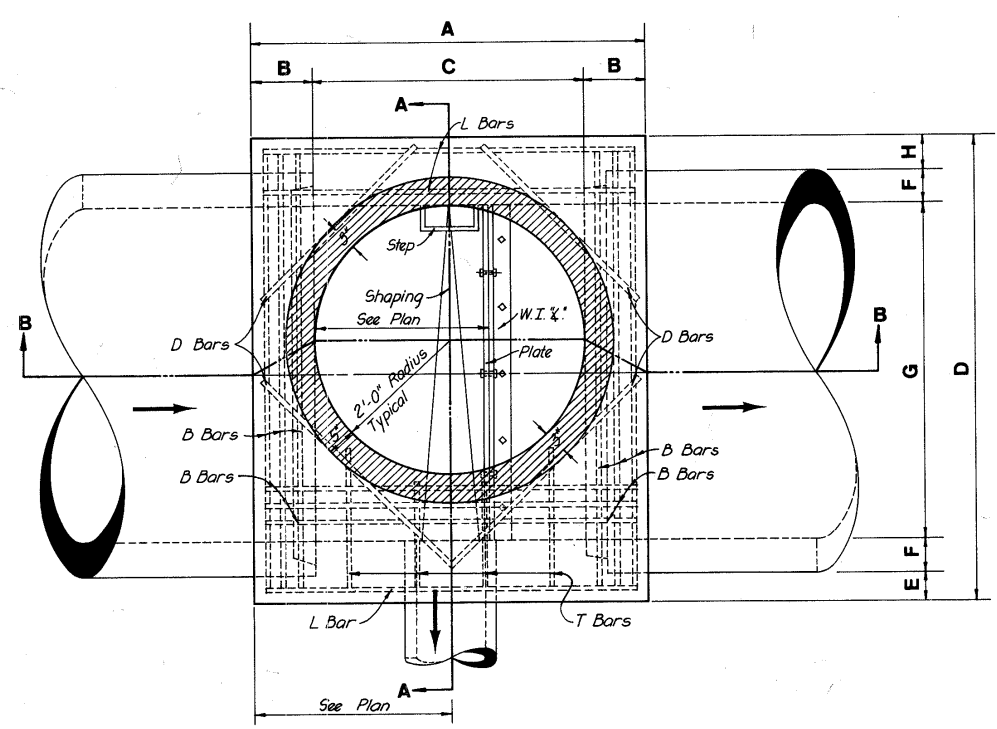
SEPARATION CHAMBER NO. 300
WEST 14th STREET



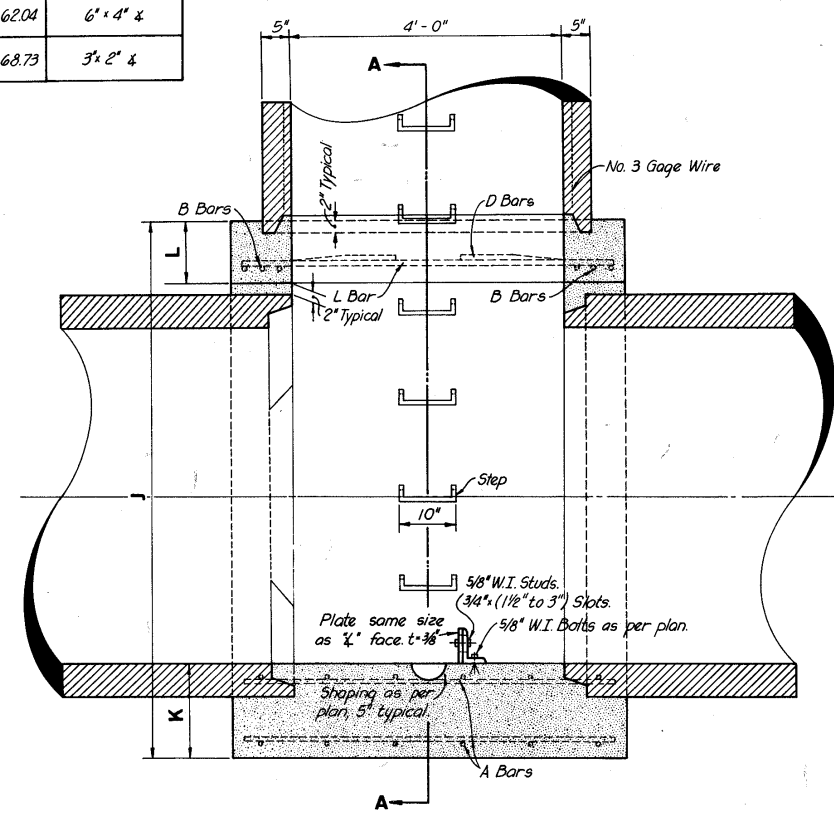
SEPARATION CHAMBER NO. 174
WEST 12th STREET

Note: Reinforcing bars and other details not shown hereon will be as per Standard No. 1-A Manhole.
Payment for Steel IEs and Angles shall be included in price bid for Item I-B Separation Chamber, as per plan.

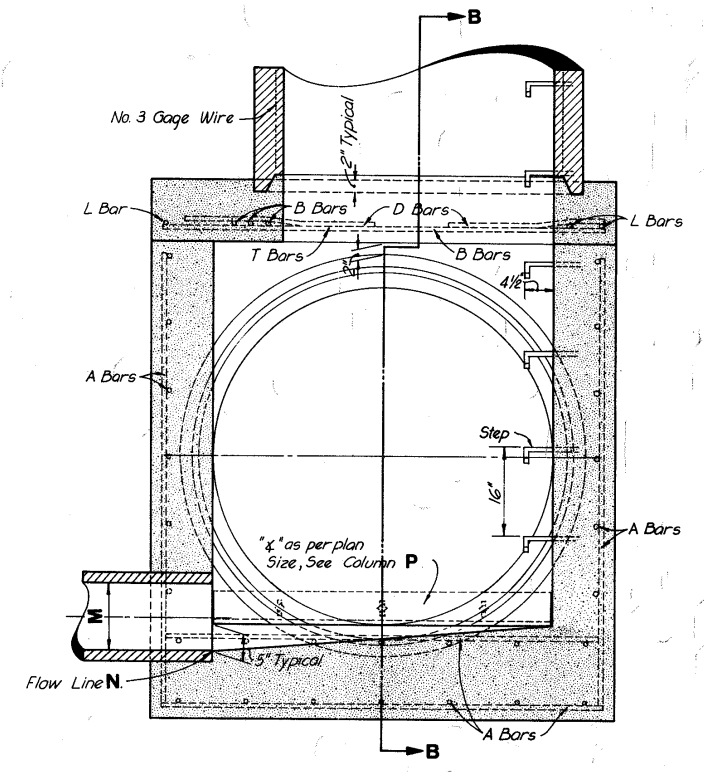
STRUCTURE	A	B	C	D	E	F	G	H	J	K	L	M	N	P
SEPARATION CHAMBER NO. 308	5'-11"	0'-11 1/2"	4'-0"	7'-5"	0'-5"	0'-6 1/2"	5'-6"	0'-5"	8'-7 1/2"	1'-5 1/2"	0'-11 1/2"	1'-0"	659.17	6" x 4" x Adjust to 7.
SEPARATION CHAMBER NO. 192	5'-9"	0'-10 1/2"	4'-0"	8'-4"	2'-6"	0'-5 1/2"	4'-6"	0'-5"	7'-4 1/2"	1'-4 1/2"	0'-10 1/2"	1'-0"	660.94	6" x 4" x Adjust to 12.
SEPARATION CHAMBER NO. 300	5'-7"	0'-9 1/2"	4'-0"	6'-9"	2'-1"	0'-4 1/2"	3'-6"	0'-5"	6'-1 1/2"	1'-3 1/2"	0'-9 1/2"	0'-8"	662.04	6" x 4" x
SEPARATION CHAMBER NO. 174	5'-5"	0'-8 1/2"	4'-0"	5'-5"	—	0'-3 1/2"	2'-6"	—	5'-4"	1'-2 1/2"	0'-8 1/2"	0'-8"	668.73	3" x 2" x



TYPICAL PLAN



SECTION B-B

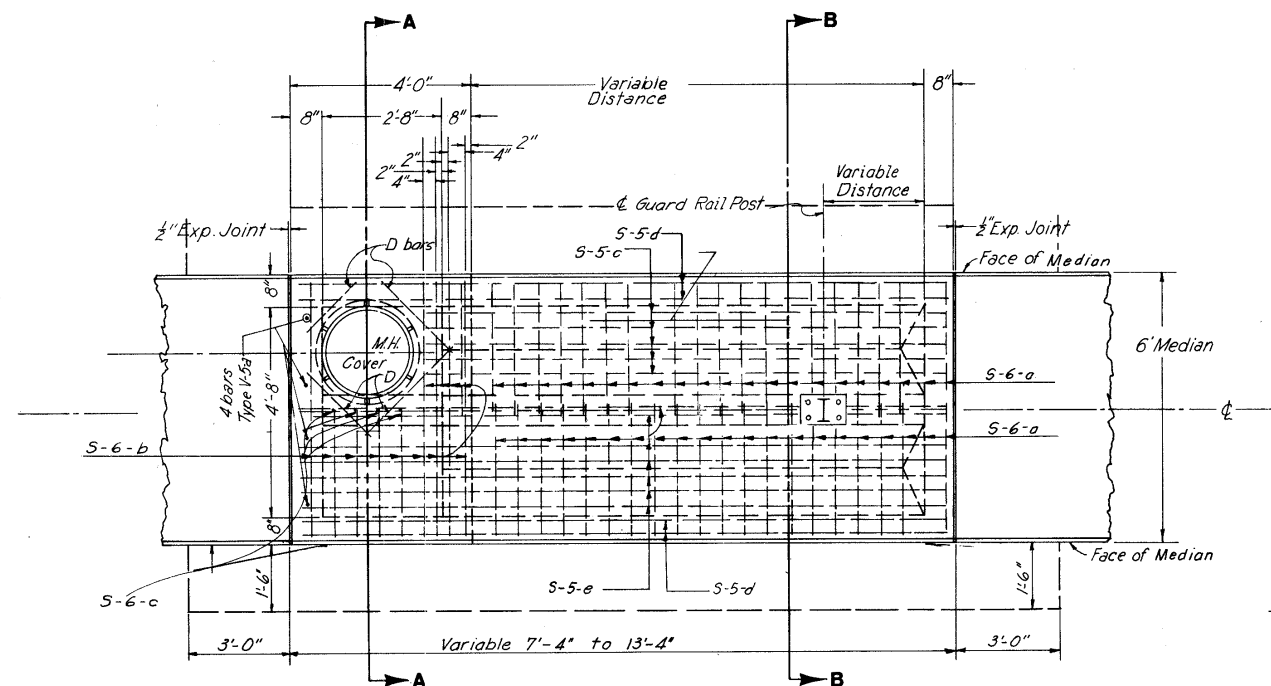


SECTION A-A

SCALE: No Scale
MADE: CPB DATE 12-10-64
TRCD: CPB DATE 12-10-64
CHKD: Gc DATE 12-12-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

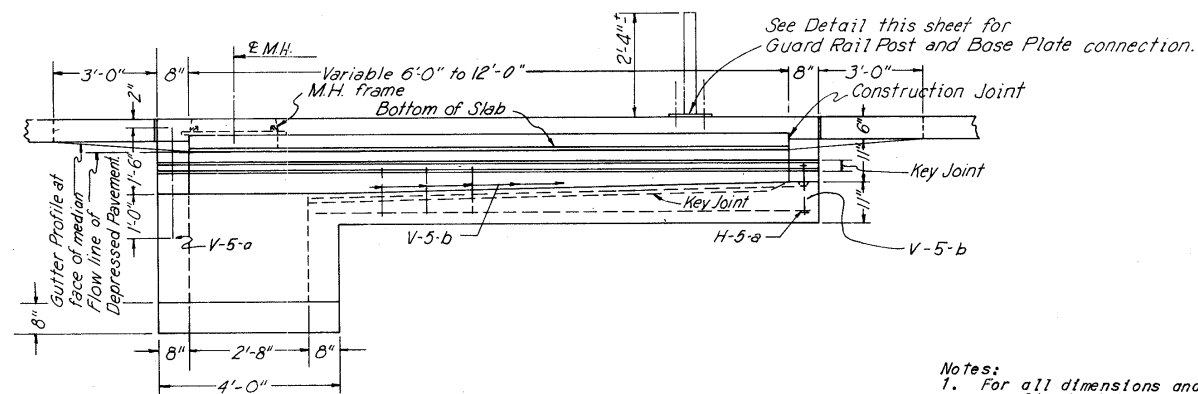
SEPARATION CHAMBERS

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

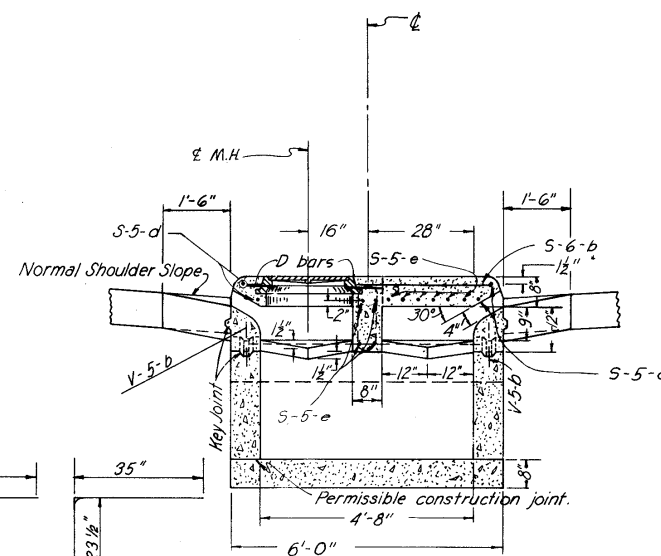


PLAN

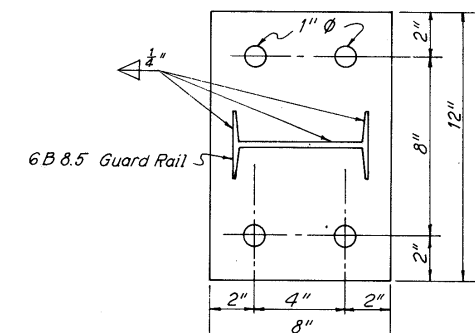
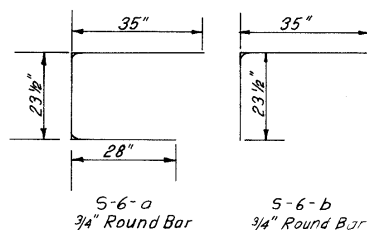
2-A MODIFIED PAVED SHOULDER INLET



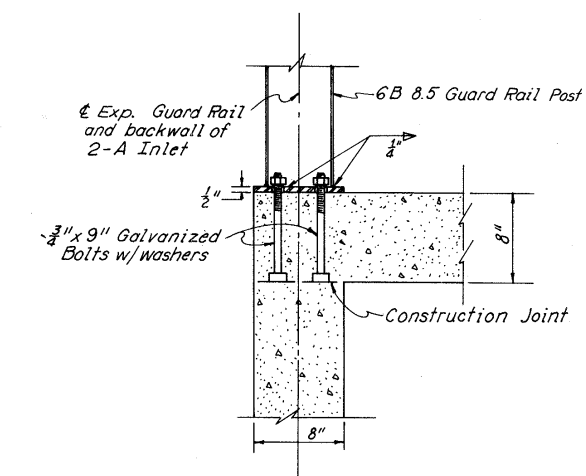
LONGITUDINAL SECTION



SECTION A-A

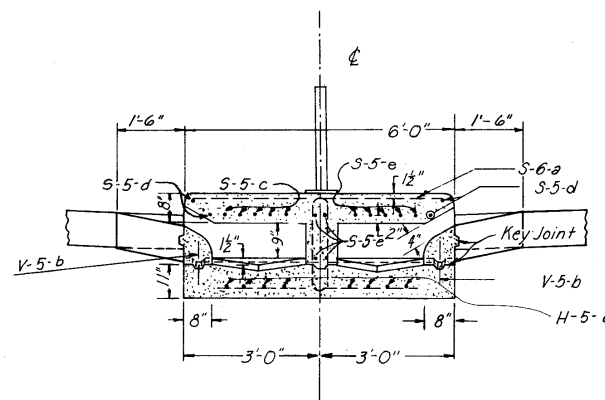


STEEL GUARDRAIL BASEPLATE
Scale 1/4"=1'-0"



SECTION THROUGH CORNER OF 2-A
PAVED SHOULDER INLET

Scale 1/8"=1'-0"



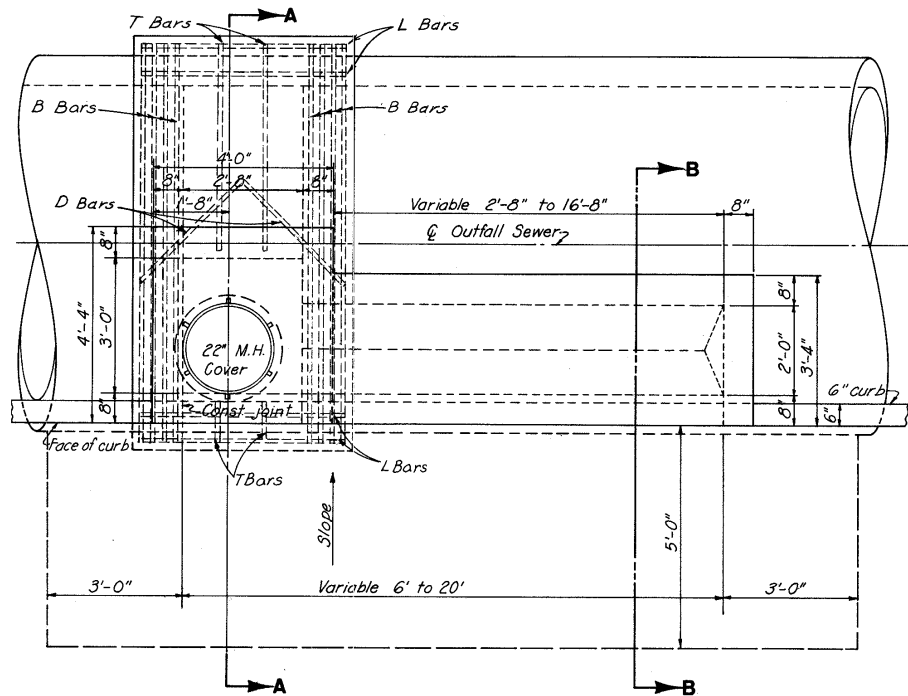
SECTION B-B

- Notes:
- For all dimensions and other details not shown see Standard Construction Drawing I-8 I No. 2-A Paved Shoulder Inlets.
 - For location of Guard Rail Posts see Pavement Plans.
 - The cost of all labor and materials necessary to place the steel guardrail base plates on those inlets as noted in the plans shall be included in the unit price bid for Item I-8 2-A Paved Shoulder Inlets, as per plan.

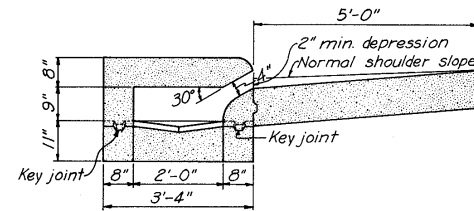
Length Ft.	Concrete Cu. Yds.	CONCRETE AND REINFORCING STEEL QUANTITIES																	
		S-6-a		S-6-b		S-6-c		S-5-c		S-5-d		S-5-e		H-5-a		V-5-a		V-5-b	
No.	Lin. Ft.	No.	Lin. Ft.	No.	Lin. Ft.	No.	Lin. Ft.	No.	Lin. Ft.	No.	Lin. Ft.	No.	Lin. Ft.	No.	Lin. Ft.	No.	Lin. Ft.	No.	Lin. Ft.
6	3.8	10	71'-2 1/2"	14	4'-10 1/2"	4	1'-0"	5	4'-4"	4	71'-0"	9	71'-0"	8	31'-8"	4	21'-6"	17	1'-0"
8	4.6	18	71'-2 1/2"	14	4'-10 1/2"	4	1'-0"	5	6'-4"	4	91'-0"	9	91'-0"	8	51'-8"	4	21'-6"	21	1'-0"
10	5.3	26	71'-2 1/2"	14	4'-10 1/2"	4	1'-0"	5	8'-4"	4	111'-0"	9	111'-0"	8	71'-8"	4	21'-6"	25	1'-0"
12	6.1	34	71'-2 1/2"	14	4'-10 1/2"	4	1'-0"	5	10'-4"	4	131'-0"	9	131'-0"	8	91'-8"	4	21'-6"	29	1'-0"

SHOULDER INLET NO.2-A MODIFIED

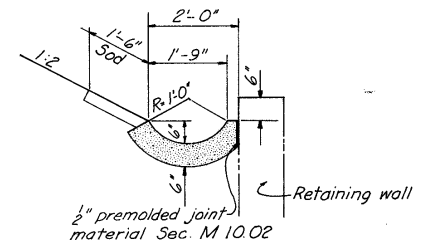
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



PLAN



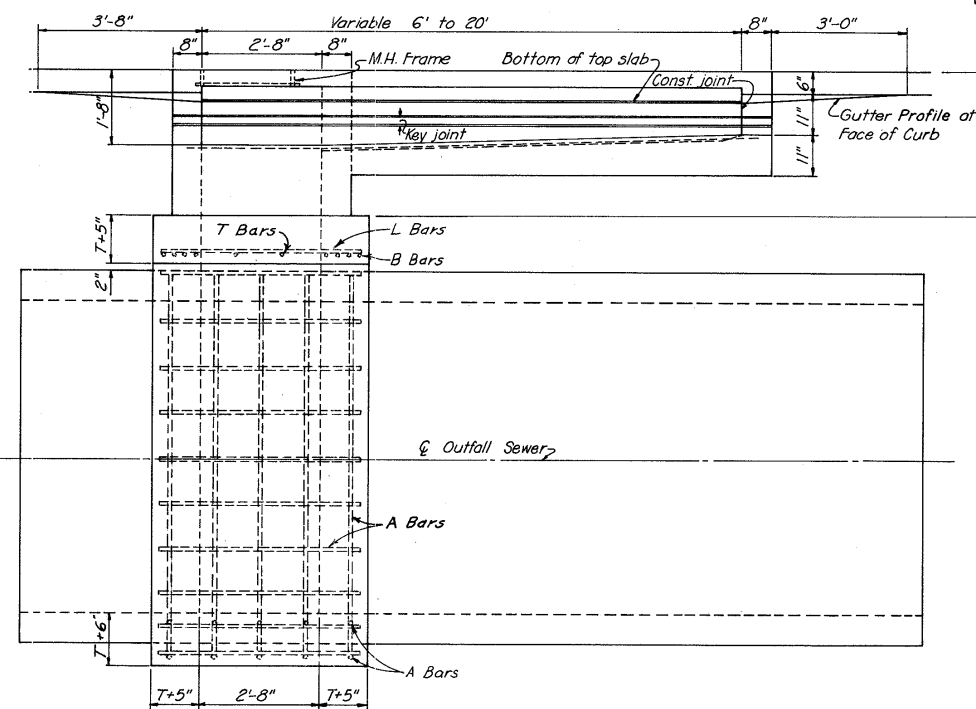
SECTION B-B



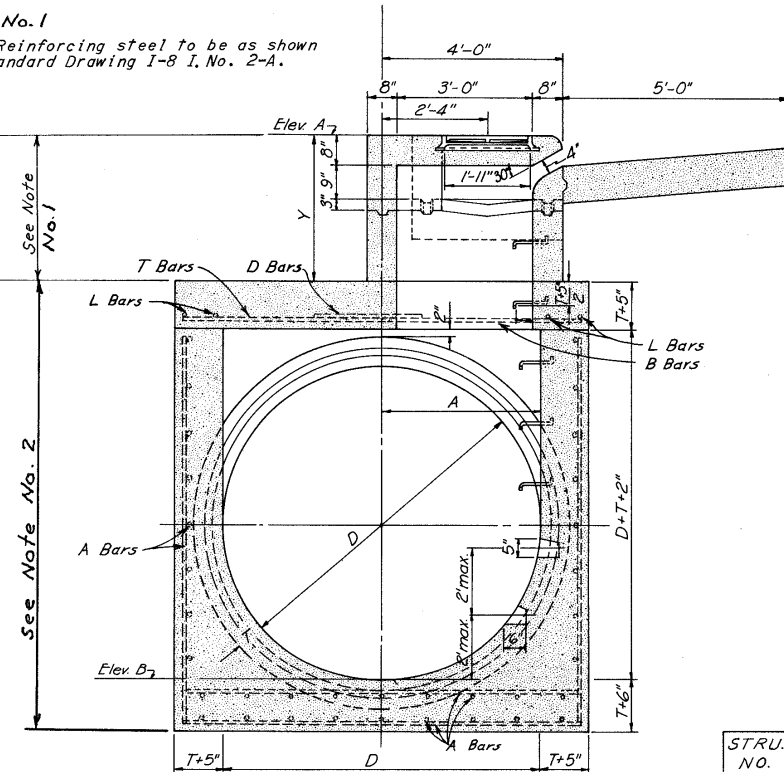
ITEM I-14
TYPE 2 GUTTER, MODIFIED, AS PER PLAN

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

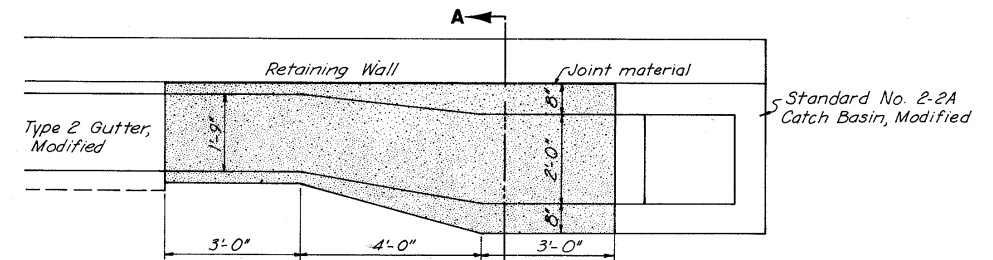
Note: No. 1
Reinforcing steel to be as shown on Standard Drawing I-8 I. No. 2-A.



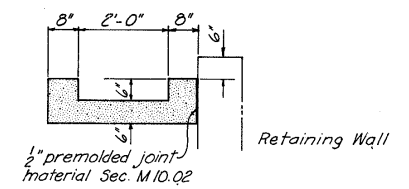
FRONT ELEVATION



SECTION A-A



PLAN



SECTION A-A
ITEM I-14 TYPE I PAVED GUTTER, MODIFIED, AS PER PLAN
GUTTER TRANSITION

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

DIMENSION TABLE

STRU. NO.	PIPE SIZE 'D'	A	T	T+5	T+6	D+T+2	ELEV. A	ELEV. B	Y
115	33"	16 1/2"	3 3/4"	8 3/4"	9 3/4"	38 3/4"	652.01	645.53	2.52
119	66"	33"	6 1/2"	11 1/2"	12 1/2"	74 1/2"	641.90	631.58	3.15
121	84"	42"	8"	13"	14"	94"	632.13	620.15	3.06
122	84"	42"	8"	13"	14"	94"	630.52	619.32	2.28
123	90"	45"	8 1/2"	13 1/2"	14 1/2"	100 1/2"	630.17	617.13	3.54
124	90"	45"	8 1/2"	13 1/2"	14 1/2"	100 1/2"	630.41	616.87	4.04
125	90"	45"	8 1/2"	13 1/2"	14 1/2"	100 1/2"	632.04	615.73	6.81

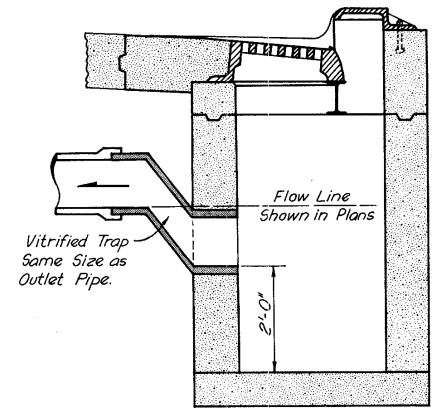
Note: No. 2
Reinforcing bars and other details not shown hereon will be as per Standard No. 1-A Manhole.

SCALE: As Shown
HOWARD, NEEDLES, TAMMEN & BERGENOFF
MADE NAK DATE 10-20-64 CONSULTING ENGINEERS
TRCD NAK DATE 10-20-64
CRD CTS DATE 10-26-64 KANSAS CITY CLEVELAND NEW YORK

INLET MANHOLE NO. 2-A

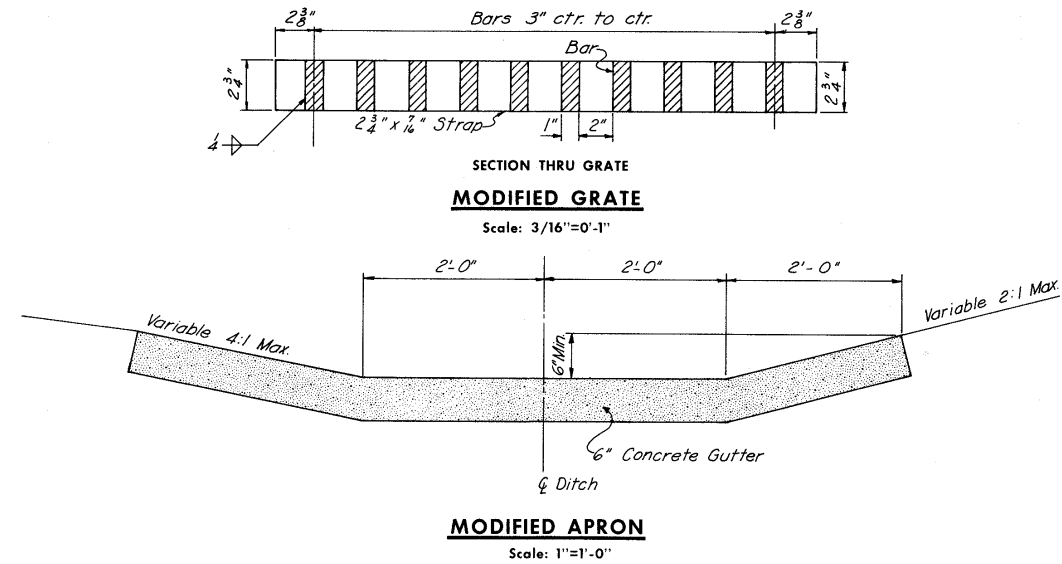
Scale: 1/2"=1'-0"

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

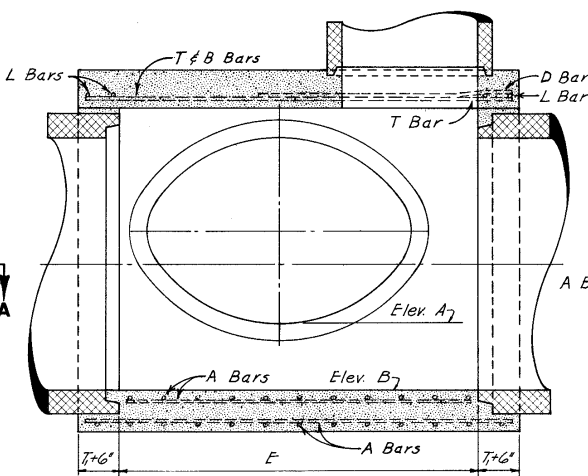
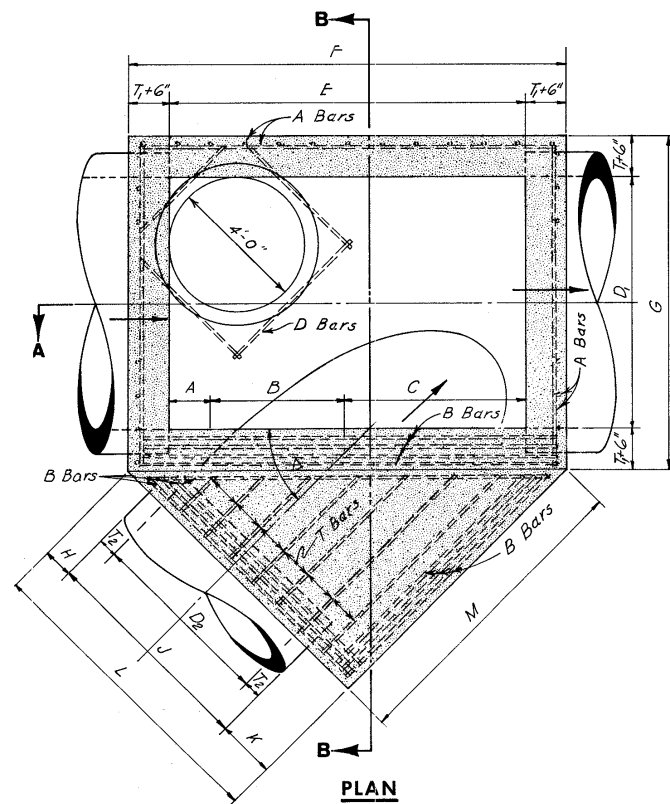


CATCH BASIN OR INLET WITH TRAP

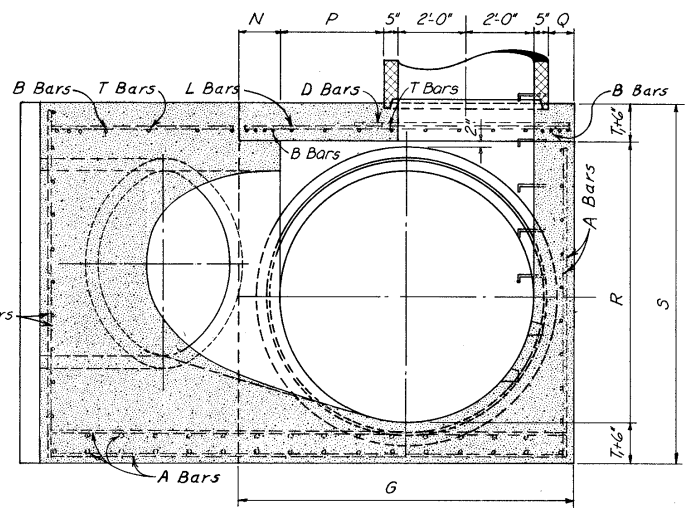
Notes:
The trap and sump details shown on this drawing are applicable to all catch basins or inlets noted in these plans as being "with trap".
All catch basin or inlet details not shown shall conform to the details shown on the appropriate Standard Drawing.
The unit price paid per each for all catch basins or inlets noted as being "with trap, as per plan" shall constitute full compensation for labor, materials, tools and incidentals necessary to complete the work as set forth in Sec. 1-8.10 of the Standard Specifications.



STANDARD NO. 5 CATCH BASIN MODIFICATIONS



SECTION A-A



SECTION B-B

STANDARD NO. 1-A MANHOLE, MODIFIED

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

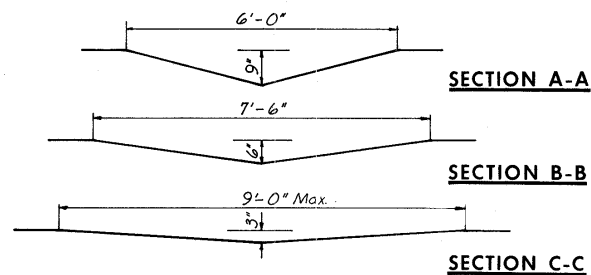
DIMENSION TABLE

D	66"	72"	90"	90"
D ₂	66"	66"	48"	30"
T ₁	0'-6 1/2"	0'-7"	0'-8 1/2"	0'-8 1/2"
T ₂	0'-6 1/2"	0'-6 1/2"	0'-5"	0'-3 1/2"
A	1'-0 1/2"	1'-1"	1'-2 1/2"	1'-2 1/2"
B	3'-7 3/8"	3'-6 3/8"	2'-2 1/2"	0'-11 1/8"
C	5'-9 1/8"	5'-9 3/8"	4'-8 1/2"	2'-2 1/2"
E	14'-8 1/8"	10'-5 1/2"	8'-1 1/2"	5'-6 15/16"
F	16'-9 1/8"	12'-7 1/2"	10'-6 1/2"	7'-11 15/16"
G	7'-7"	8'-2"	9'-11"	9'-11"
H	0'-6 3/8"	0'-9 3/8"	0'-10 1/2"	0'-10 1/2"
J	6'-7"	6'-7"	4'-10"	3'-1"
K	1'-6 3/8"	1'-6 15/16"	1'-9 3/8"	1'-8 3/8"
L	8'-6 1/2"	8'-11 1/8"	7'-5 1/2"	5'-7 13/16"
M	14'-5 3/4"	8'-11 1/8"	7'-5 7/8"	5'-7 13/16"
N	1'-0 1/2"	1'-1"	1'-2 1/2"	1'-2 1/2"
P	1'-1"	1'-7"	3'-1"	3'-1"
Q	0'-7 1/2"	0'-8"	0'-9 1/2"	0'-9 1/2"
R	6'-2 1/2"	6'-9"	8'-4 1/2"	8'-4 1/2"
S	8'-3 1/2"	8'-11"	10'-8 1/2"	10'-8 1/2"
Elev. A	638.68	625.17	617.45	617.25
Elev. B	638.68	624.67	613.95	612.25
Δ	30°31'48"	45°00'	45°00'	45°00'

Note:
Reinforcing bars and other details not shown hereon will be as per Standard No. 1-A Manhole.

SCALE: As Shown
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE NAK DATE: 10-20-64 CONSULTING ENGINEERS
TRCD: NAK DATE: 10-20-64
CKD: CTS DATE: 10-26-64 KANSAS CITY CLEVELAND NEW YORK

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
 CUY- 71-18.54
 CUY- 90-13.81



NOTE:
 PRIOR TO REPLACEMENT OF SOD IN THE BERM AND SLOPE, GALVANIZED POULTRY FENCE SHALL BE PLACED ON THE FINISHED GRADE IN STRANDS WHICH SHALL BE AT RIGHT ANGLES TO THE DIRECTIONS OF FLOW. EACH STRAND SHALL BE STAKED SECURELY ON TOP AND BOTTOM WITH STAKES PLACED AT FOUR FOOT INTERVALS AND ALTERNATED IN ROWS FOUR FEET APART.

STAKES SHALL BE 1"x1"x8" WOOD STAKED AND SHALL BE PERPENDICULAR TO THE GROUND AND FLUSH WITH THE FINISHED GRADE.

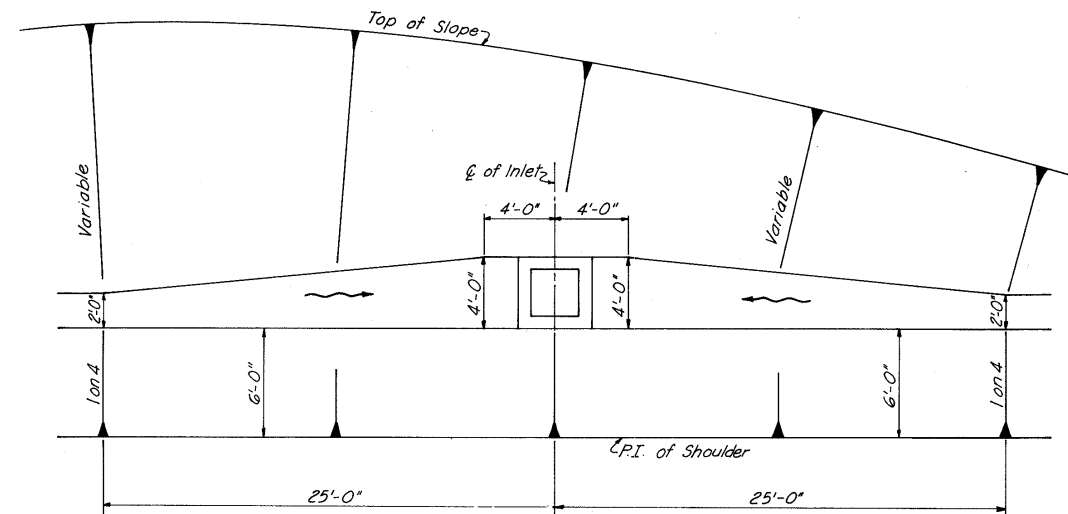
THE FENCE SHALL BE STRAIGHT LINE POULTRY FENCE OR EQUIVALENT WITH STRAND WIDTH OF FOUR FEET HAVING A TWO INCH MESH AND ALL WIRES NO. 20 GAUGE.

THE STRANDS OF FENCING SHALL BE FASTENED TOGETHER AT TWELVE INCH INTERVALS BY MEANS OF HOG RINGS.

THE FENCE SHALL BE SECURED TO THE WOOD STAKES BY METAL STAPLES.

SOD SHALL BE LAID IN ACCORDANCE WITH THE CONSTRUCTION AND MATERIALS SPECIFICATIONS SECTION L-1007.

PAYMENT FOR ALL THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR "ITEM L-10 SODDING FOR SPECIAL BERM AND SLOPE PROTECTION".

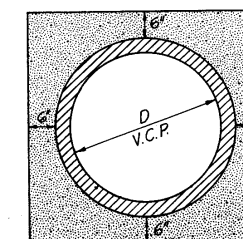


TRANSITION TO DITCH INLET

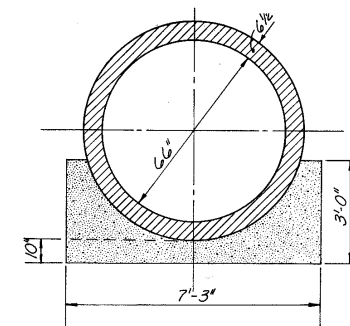
No Scale

PIPE SIZE	QUANTITIES
8"	0.099 cu. yds. conc./ft.
12"	0.132 cu. yds. conc./ft.
15"	0.159 cu. yds. conc./ft.

CLASS "E" CONCRETE



PIPE ENCASEMENT DETAIL

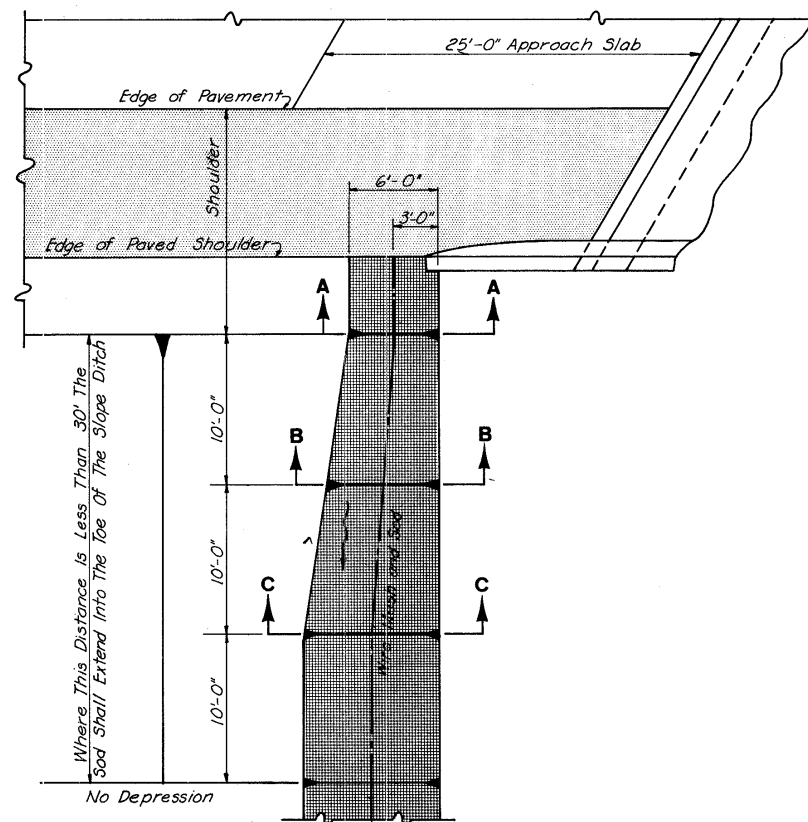


PIPE CRADLE DETAIL

No Scale

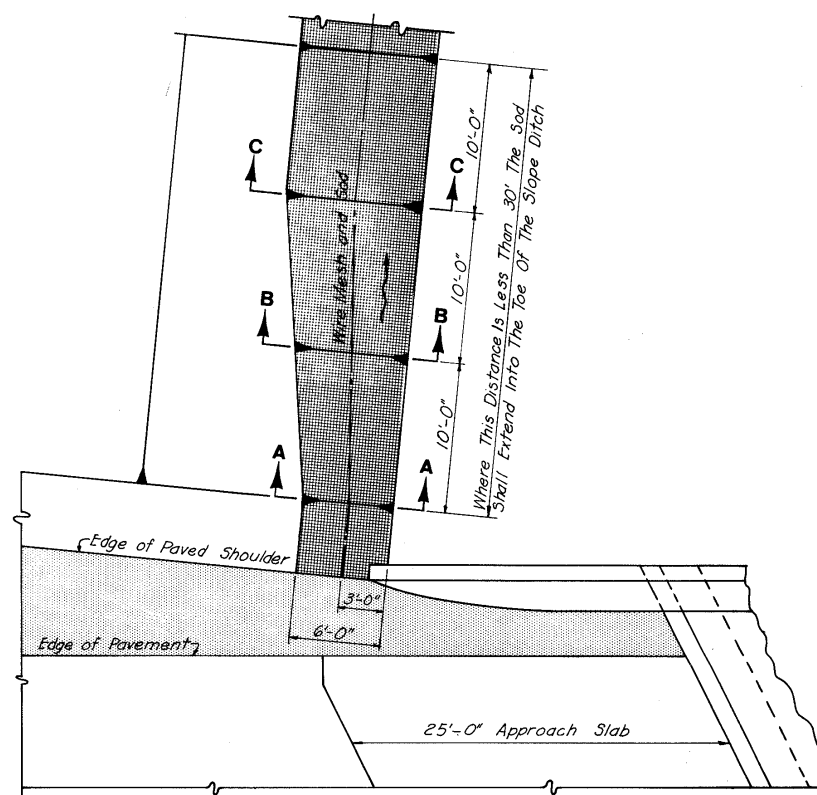
QUANTITY I-2 MASONRY
20' x 0.449 yds./ft. = 8.98 yds. ³ /con

CLASS "C" CONCRETE

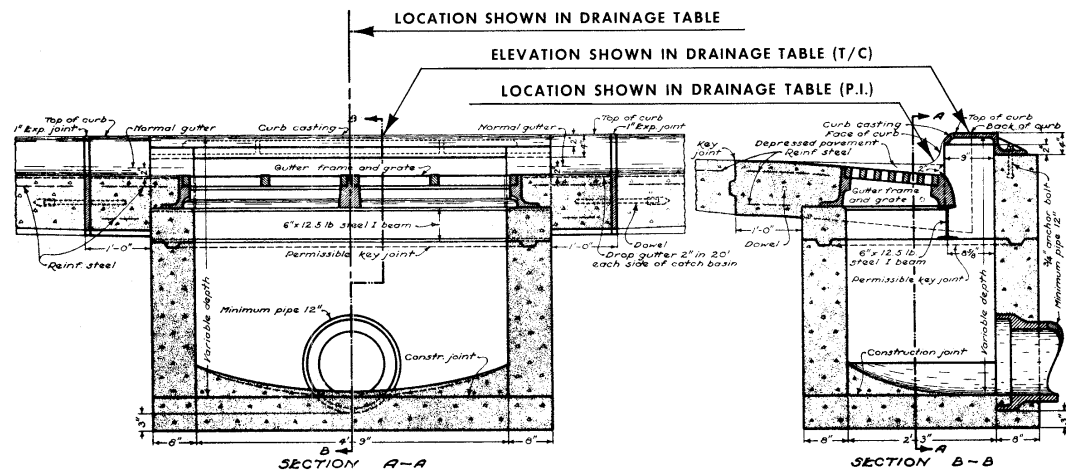


SOD GUTTER

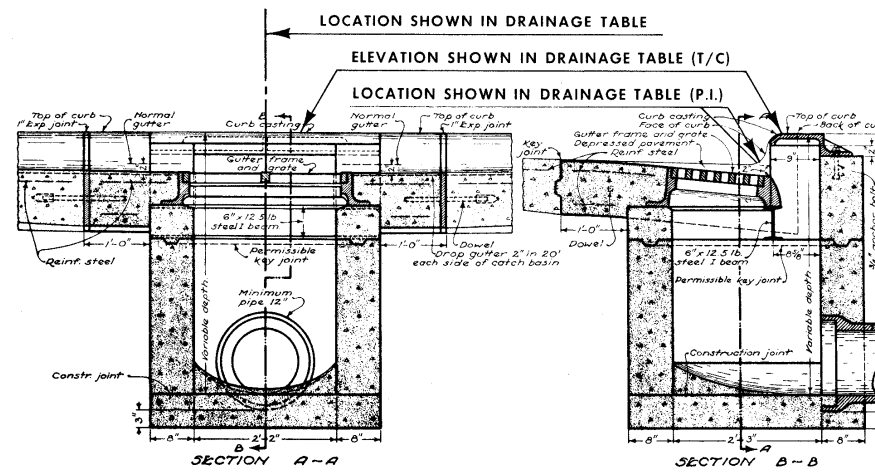
No Scale



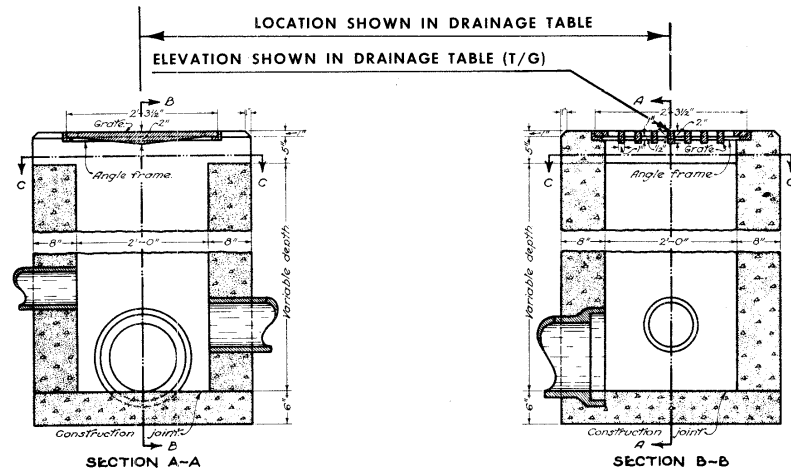
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



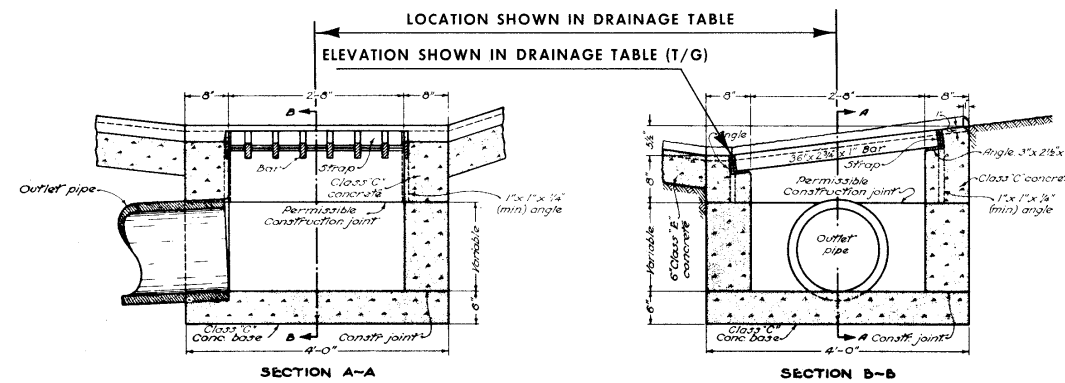
STANDARD NO. 3 CATCH BASIN



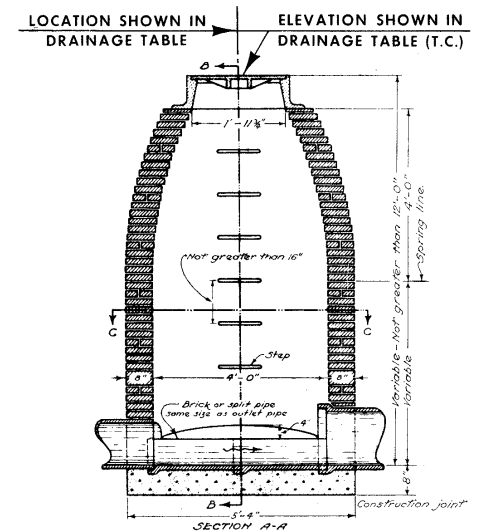
STANDARD NO. 3-A CATCH BASIN



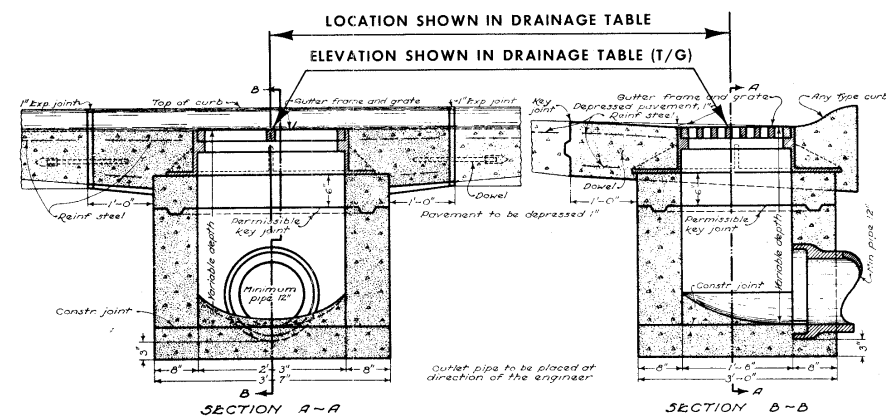
STANDARD NO. 2-2-A CATCH BASIN



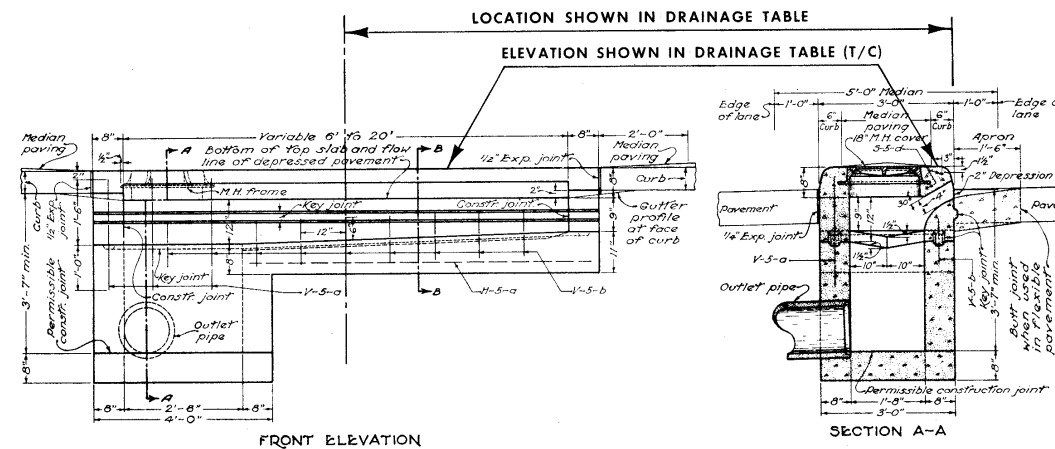
STANDARD NO. 5 CATCH BASIN



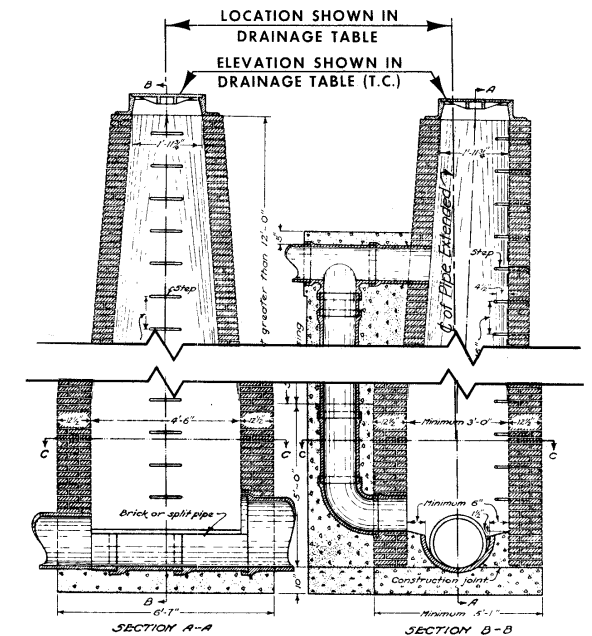
STANDARD NO. 1 MANHOLE



STANDARD NO. 6 CATCH BASIN



STANDARD NO. 2 MEDIAN INLET



STANDARD NO. 2 MANHOLE

DRAINAGE STRUCTURE LOCATION DETAILS

The purpose of the drawings on this sheet is to show the location of the reference points noted on the Sewer Profiles. These drawings should not be used for construction details. See the Standard Drawings and Special details for details of construction.

SCALE: No Scale
MADE: CPB DATE: 12-11-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

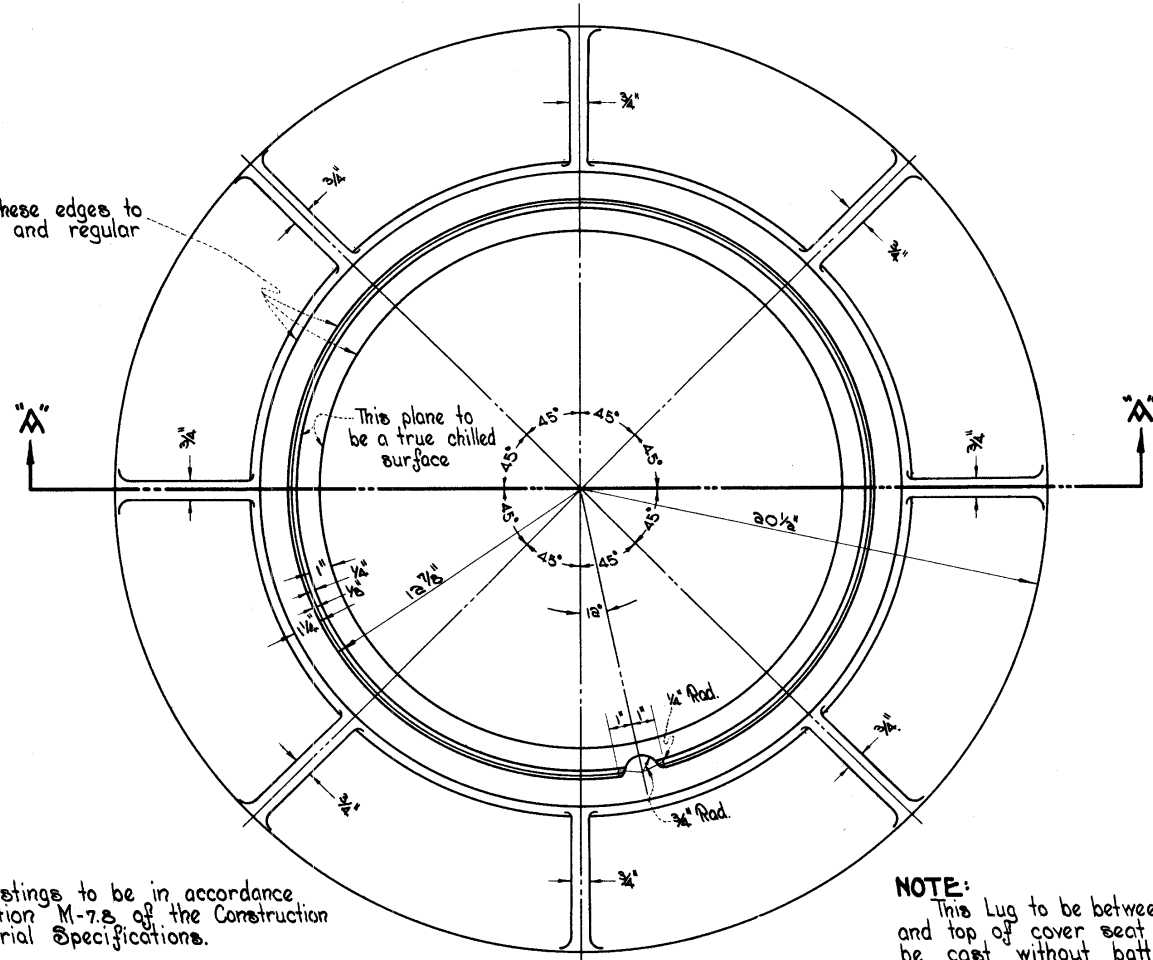
DRAINAGE DETAILS

SPECIAL MANHOLE FRAME

STANDARD CITY TYPE

Scale 3" = 1'-0"

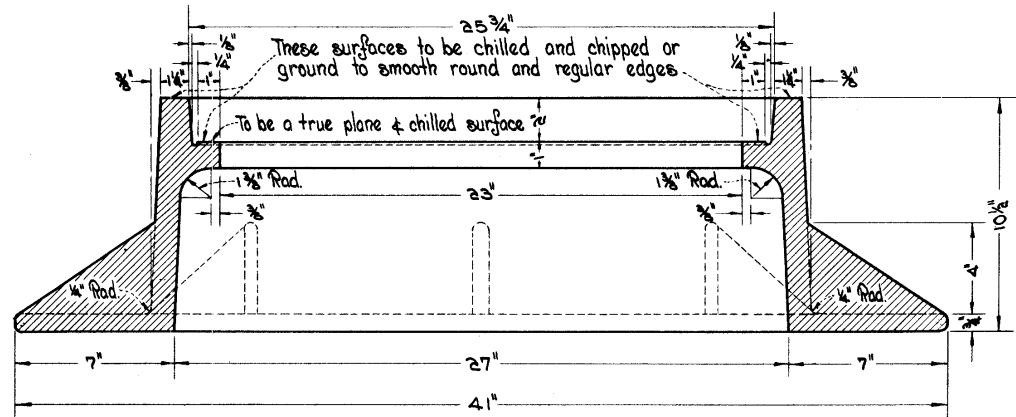
Grind or Chip these edges to smooth round and regular condition



PLAN

NOTE:- All castings to be in accordance with Section M-7.5 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.



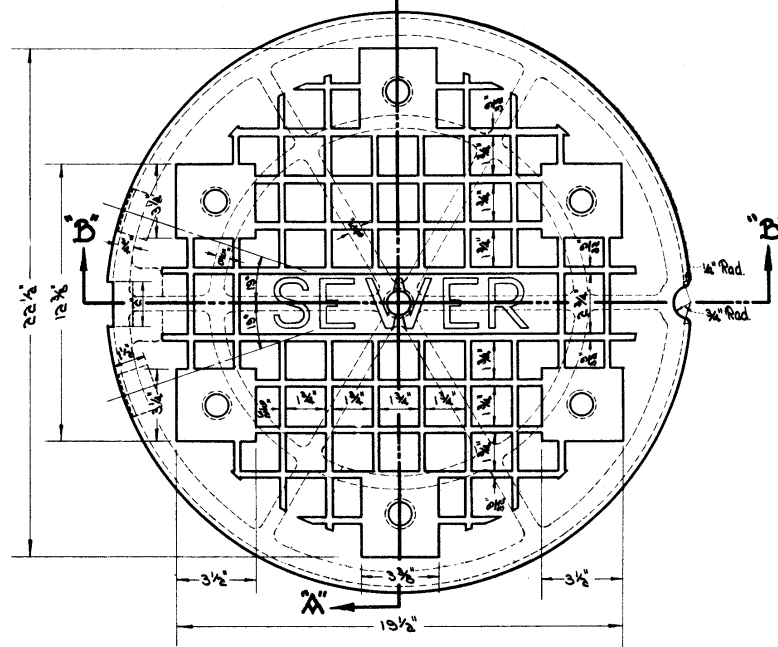
SECTION "A-A"

Weight of Frame 400 lbs. Min.

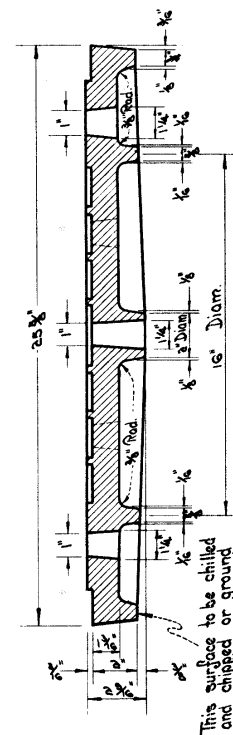
SPECIAL COVER

STANDARD CITY TYPE

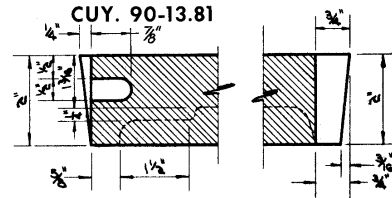
Scale 3" = 1'-0"



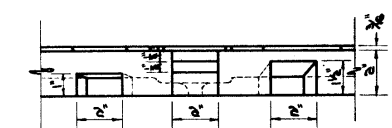
PLAN



SECTION "A-A"



PART SECTION "B-B"
Scale 1/2" = 1"



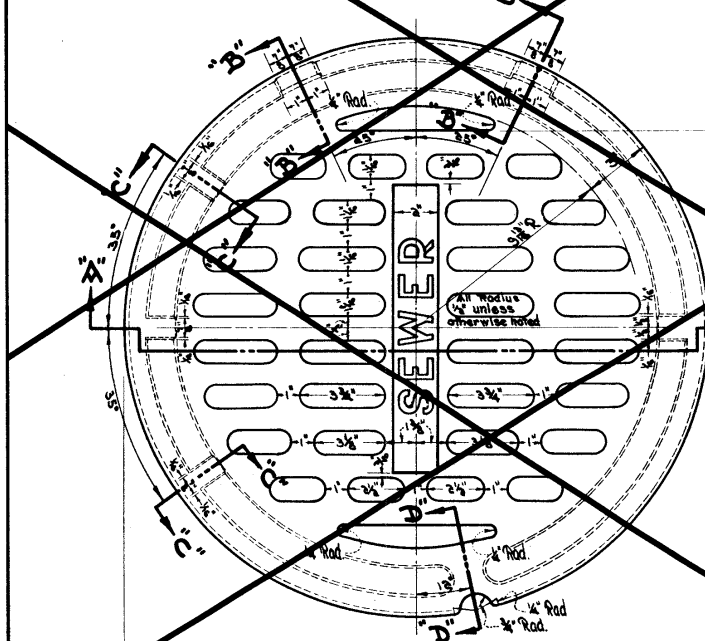
SIDE ELEVATION OF NOTCHES

Weight of Cover 155 lbs.

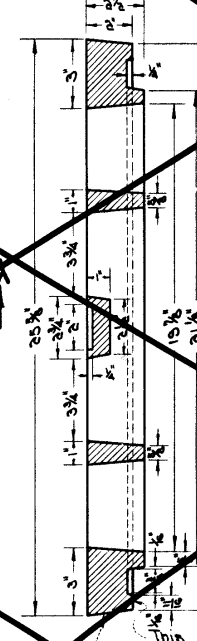
SPECIAL GRATED COVER

STANDARD CITY TYPE

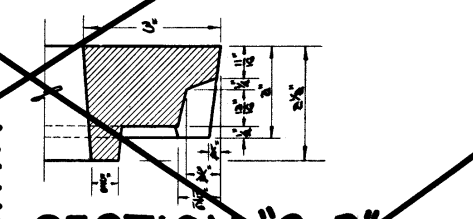
Scale 3" = 1'-0"



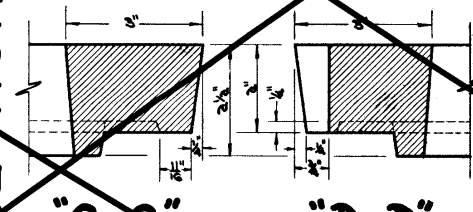
PLAN



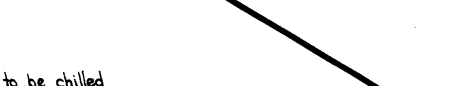
SECTION "A-A"



SECTION "B-B"
Scale 1/2" = 1"



SECTION "C-C"
Scale 1/2" = 1"



SECTION "D-D"
Scale 1/2" = 1"

This surface shall be straight and smooth.

MISCELLANEOUS DETAILS

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

CODE NO.	LOCATION	I-8 MANHOLES				I-16 ABANDONED		REMARKS
		TOP OF COVER ELEVATION		QUANTITY		M.H. EACH	C.B. EACH	
		EXIST.	PROP.	ADJUST	RECON.			
A-1	West 15th Street, 374' South of Clark Avenue					1		
A-2	West 15th Street, 39' South of Clark Avenue					1		
A-3	Clark Avenue, 43' West of West 15th Street					1		
A-4	North Side Clark Avenue, 35' East of West 16th St.							Undisturbed
A-5	East Side West 16th Street, 40' North of Clark Ave.							Undisturbed
A-6	West 15th Street, 195' North of Clark Ave.					1		
A-7	East Side West 15th Street, 265' North of Clark Ave.						1	
A-8	West Side West 15th Street, 278' North of Clark Ave.						1	
A-9	West 15th Street, 42' South of Castle Avenue					1		
A-10	SE Corner West 15th Street and Castle Avenue						1	
A-11	SW Corner West 15th Street and Castle Avenue						1	
A-12	NW Corner West 15th Street and Castle Avenue						1	
A-13	NE Corner West 15th Street and Castle Avenue						1	
A-14	Castle Avenue, 210' East of West 15th Street					1		
A-15	Castle Avenue, 27' East of West 16th Street					1		
A-16	West 16th Street, 130' North of Castle Avenue							Undisturbed
A-17	West Side of West 16th Street, 305' North of Castle Ave.						1	
A-18	East Side of West 16th Street, 305' North of Castle Ave.						1	
A-19	West 16th Street, 345' North of Castle Ave.					1		
A-20	West Side of West 16th Street, 35' South of Mentor Ave.						1	
A-21	East Side of West 16th Street, 30' South of Mentor Ave.						1	
A-22	West 15th Street, 395' South of Mentor Avenue					1		
A-23	West Side of West 15th Street, 293' South of Mentor Ave.					1		
A-24	East Side of West 15th Street, 290' South of Mentor Ave.						1	
A-25	East Side of West 15th Street, 40' South of Mentor Ave.						1	
A-26	Auburn Avenue, 385' West of West 14th Street					*1		
A-27	South Side Auburn Ave., 585' West of West 14th Street						1	
A-28	North Side Auburn Ave., 582' West of West 14th Street						1	
A-29	Auburn Avenue, 595' West of West 14th Street					1		
A-30	Allman Court, 305' East of Allman					*1		
A-31	Allman Court at Allman							Plug 12" San. to the East
A-32	South Side Starkweather Ave., 180' West of West 15th St.							Undisturbed
A-33	North Side Starkweather Ave., 180' West of West 15th St.							Undisturbed
A-34	Starkweather Ave., 85' East of Allman							Undisturbed
A-35	South Side Starkweather, 20' East of Allman							Undisturbed
A-36	South Side of Howard Ave., 305' West of West 15th St.						*1	
A-37	North Side of Howard Ave., 305' West of West 15th St.						*1	
A-38	Howard Ave., 320' West of West 15th Street					*1		
A-39	South Side of Kenilworth Ave., 125' West of West 15th St.	677.95				*1		
A-40	North Side of Kenilworth Ave., 140' West of West 15th St.							Undisturbed
A-41	South Side of Kenilworth Ave., 140' West of West 15th St.							Undisturbed
A-42	Kenilworth Ave., 150' West of West 15th St.							Undisturbed
A-43	West 15th Place, 530' South of Fairfield Avenue					*1		
A-44	West 25th Street, 10' North of Wade Avenue					1		Replace with M.H. 199
A-45	Wade Avenue, 45' East of West 25th Street					1		Replace with M.H. 198
A-46	North Side of Wade Ave., 45' East of West 25th St.							Undisturbed
A-47	South Side of Vega Ave., 40' East of West 25th St.							Undisturbed
A-48	North Side of Vega Ave., 42' East of West 25th St.							Undisturbed
A-49	Vega Avenue, 50' East of West 25th Street	679.72				1		
A-50	Vega Avenue, 395' East of West 25th Street	681.02				1		
A-51	Wade Avenue, 130' East of West 25th Street	680.99				1		
A-52	Wade Avenue, 430' East of West 25th Street	681.79				1		
A-53	South Side of Wade Ave., 200' West of Scranton Rd.	680.98				1		
A-54	Vega Avenue, 235' West of Scranton Road	680.03				1		
A-55	South Side of Wade Ave., 289' West of Scranton Rd.					1		
A-56	West Side of Scranton Rd., 35' South of Wade Ave.						1	
A-57	East Side of Scranton Rd., 85' North of Wade Ave.						*1	
A-58	East Side of Scranton Rd., at Sadle Avenue							
A-59	South Side of Sadle Ave., 35' East of Scranton Rd.						*1	
A-60	NE Corner Scranton Road at Sadle Avenue						1	
A-61	West Side of Scranton Road, 50' South of Vega Ave.						*1	

* 95% State & 5% City

CODE NO.	LOCATION	I-8 MANHOLES				I-16 ABANDONED		REMARKS
		TOP OF COVER ELEVATION		QUANTITY		M.H. EACH	C.B. EACH	
		EXIST.	PROP.	ADJUST	RECON.			
A-61	West 17th Street, 40' South of Branch Ave.	679.26				*1		Plug 12" San. From the South
A-62	West 17th Street, 253' South of Branch Ave.						1	
A-63	Sadle Avenue, 130' East of Scranton Road						*1	
A-64	Sadle Avenue, 210' East of Scranton Road						1	
A-65	Sadle Avenue, 265' East of Scranton Road						1	
A-66	Sadle Avenue, 130' West of West 16th St.						1	
A-67	North Side of Sadle Ave., 35' West of West 16th St.							1
A-68	West Side of West 16th St., 25' South of Sadle Ave.							*1
A-69	East Side of West 16th St., 25' South of Sadle Ave.							*1
A-70	West 16th Street, 137' South of Sadle Avenue						1	
A-71	Mentor Avenue, 35' West of West 16th Street						1	
A-72	West 16th Street, 37' South of Mentor Ave.						1	
A-73	West Side of West 15th St., 35' South of Branch Ave.							1
A-74	West 16th Street, 280' South of Branch Avenue						1	
A-75	West Side of West 16th Street, 40' South of Branch Ave.							1
A-76	West 16th Street, 35' South of Branch Avenue						1	
A-77	West Side West 15th St. 35' South of Mentor Ave.							1
A-78	West 15th Street, 40' South of Mentor Avenue						1	
A-79	South Side of Mentor Ave., 30' West of West 15th St.							1
A-80	South Side of Mentor Ave., 60' East of West 15th St.							1
A-81	North Side of Mentor Ave., 32' East of West 15th St.							1
A-82	North Side of Mentor Ave., 30' West of West 15th St.							1
A-83	West 15th Street, 40' South of Branch Avenue						1	
A-84	SE Corner Branch Avenue and West 15th St.							*1
A-85	North Side of Branch Ave., 47' East of West 15th St.							*1
A-86	Branch Avenue, 147' East of West 15th St.							*1
A-87	West Side of West 14th St., 35' South of Branch Ave.							1
A-88	East Side of West 14th St., 40' South of Branch Ave.							1
A-89	South Side of Branch Ave., 60' East of West 14th St.							1
A-90	Branch Avenue, 50' East of West 14th Street						1	
A-91	North Side of Branch Ave., 55' East of West 14th St.							Undisturbed
A-92	West 14th Street at Branch Avenue	681.10				1		
A-93	West 14th St., 290' South of Branch Ave.						1	
A-94	West Side of West 14th St., 342' South of Branch Ave.							1
A-95	East Side of West 14th St., 320' South of Branch Ave.							1
A-96	West 15th Street, 180' North of Mentor Ave.						1	
A-97	West Side of West 15th St., 355' North of Mentor Ave.							1
A-98	East Side of West 15th St., 350' North of Mentor Ave.							1
A-99	West 15th Street, 235' South of Branch Ave.							*1
A-100	West 12th Street, 385' South of Branch Avenue						1	
A-101	SW Corner of West 12th Street and Branch Ave.							1
A-102	Branch Avenue at West 12th Street						1	
A-103	West 12th Street, 25' South of Branch Ave.						1	
A-104	East Side of West 12th St., 40' South of Branch Ave.							1
A-105	East Side of West 11th St., 270' South of Branch Ave.						1	
A-106	West 11th Street, 150' South of Branch Ave.						1	
A-107	West 11th Street, 110' South of Branch Ave.						1	
A-108	East Side of West 11th St., 10' South of Branch Ave.							1
A-109	West 11th Street at Branch Avenue						1	
A-110	Branch Avenue, 35' West of West 11th St.						1	
A-111	NW Corner of Branch Avenue and West 11th St.							1
A-112	West 11th Street, 135' North of Branch Ave.						1	Replace with M.H. 142
TOTAL CUY 71 - 1854						7	36	35
TOTAL CUY 90 - 13.81*						2	8	9
GRAND TOTAL						9	44	44

SCALE: None
HOWARD, NEEDLES, TAMMEN & BERGENOFF
MADE IN DATE 10-12-64 CONSULTING ENGINEERS
TUCO DATE 10-23-64 KANSAS CITY CLEVELAND NEW YORK
CDB DATE 10-23-64

Rev. 10-27-65 C.E.H.
EXISTING DRAINAGE STRUCTURES

UNDERDRAIN SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		120 478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

CODE	LOCATION		SIDE	INVERT ELEV.		CLASS I-3		CLASS F-4		CLASS B-1		I-5 SPECIALS											
						6" PIPE		OUTLET PIPE		6" TEE		6" WYE		6"-60°		6"-90°		6"-TEE		6"-WYE			
	FROM	TO		UPPER	LOWER	SHALLOW	DEEP	6"	8"	6"	8"	CL-I	CL-F	CL-I	CL-F	CL-I	CL-F	30°	60°	CL-I	CL-F	CL-I	
U-1	957+97 Medina	Inlet No. J-5	Lt.	670.8	662.5	262		10															
U-2	957+95 Medina	Inlet No. J-4	Q	670.9	663.4	255		6															
U-3	957+97 Medina	Inlet No. J-3	Rt.	670.8	663.6	262		10															
U-4	2+72 Lane S-E	Inlet No. J-2	Lt.	661.7	660.9		147	10															
U-5	2+52 Lane S-E	Inlet No. J-1	Rt.	660.8	659.7		212	10															
U-6	3+75 Lane S-E	Inlet No. 4	Rt.	661.1	660.8	113		10															
U-7	15+53 Lane W-S	Inlet No. 21	Rt.	664.2	659.1	362		10															
U-8	962+97 Medina	Inlet No. 1	Lt.	685.8	670.9	495		10															
U-9	962+95 Medina	Inlet No. 2	Q	685.9	671.1	487		6															
U-10	962+97 Medina	Inlet No. 3	Rt.	685.8	670.9	495		10															
U-11	0-02 Lane S-W	M.H. No. 10	Lt.	661.7	658.6		523	10															
U-12	3+75 Lane S-E	Inlet No. 9	Rt.	661.1	658.3	415		10															
U-13	28+93 Lane E-S	M.H. No. 24	Lt.	665.9	664.5	144		10															
U-14	13+20 Lane W-S	Inlet No. 23	Rt.	666.7	664.2	223		10															
U-15	13+20 Lane W-S	Inlet No. 39	Rt.	666.7	654.4	527		10															
U-16	25+76 Lane E-S	M.H. 26	Lt.	670.2	666.0		318	10															
U-17	967+17 Medina	Inlet No. 6	Lt.	697.1	685.9	422		10															
U-18	967+50 Medina	Inlet No. 7	E	698.0	686.1	447		6															
U-19	967+84 Medina	Inlet No. 8	Rt.	698.4	685.9	486		10															
U-20	5+13 Lane S-W	M.H. No. 12	Lt.	658.5	649.7	402		6															
U-21	8+01 Lane S-E	Inlet No. 60	Rt.	658.3	648.1	488		6															
U-22	22+41 Lane E-S	M.H. No. 27	Lt.	673.2	670.2	335		6															
U-23*	995+50 Medina	998+34 Medina	Lt.	692.0	689.3	322			10														
U-24*	998+73 Medina	Inlet No. 79	E	690.5	690.0	29		6															
U-25*	998+90 Medina	998+34 Medina	Rt.	689.7	689.2	45																	
U-26*	997+64 Medina	Inlet No. 79	E	690.1	690.0	64		6															
U-27*	991+35 Medina	998+34 Medina	Rt.	691.9	689.2	715		10	10														
U-28*	997+05 Medina	Inlet No. 78	E	690.4	689.8	47		6															
U-29*	996+55 Medina	Inlet No. 77	E	690.7	690.4	36		6															
U-30*	996+05 Medina	Inlet No. 76	E	691.0	690.7	37		6															
U-31*	995+30 Medina	Inlet No. 75	E	691.4	691.0	60		6															
U-32*	994+55 Medina	Inlet No. 74	E	691.8	691.4	63		6															
U-33*	993+05 Medina	Inlet No. 73	E	692.6	691.8	135		6															
U-34*	991+20 Medina	Inlet No. 72	E	693.6	692.6	168		6															
U-35*	987+05 Medina	Inlet No. 85	E	695.9	694.8	186		6															
U-36*	34+56 Lane W-N	40+47 Lane W-N	Rt.	695.8	693.0	623			10														
U-37*	984+80 Medina	Inlet No. 86	E	697.2	696.0	211		6															
U-38*	982+89 Medina	Inlet No. 87	E	698.2	697.2	180		6															
U-39*	12+01 Lane N-W	Inlet No. 95	Rt.	695.0	684.2	300		6															
U-40	972+43 Medina	980+60 Medina	Lt.	703.0	700.6	844			10														
U-41	978+55 Medina	Inlet No. 89	Q	700.6	699.4	212		6															
U-42	973+08 Medina	Inlet No. 91	E	703.3	699.4	768		7															
U-43*	29+03 Lane W-N	32+32 Lane W-N	Rt.	697.8	697.0	176			10														
U-44	30+65 Lane W-N	29+03 Lane W-N	Rt.	697.8	696.9	170			10														
U-45	972+74 Medina	Inlet No. 98	E	703.2	702.1	299		6															
U-46*	29+03 Lane W-N	Inlet No. 106	Lt.	696.9	677.9	562		6															
U-47*	32+51 Lane N-W	M.H. No. 114	Rt.	648.7	648.1	29		6															
U-48	928+50 Clark	Inlet No. 56	E	650.7	650.2	17		6															
U-49*	5+37 Lane W-N	M.H. No. 197	Rt.	648.7	648.6	4		6															
U-50*	32+22 Lane N-W	Inlet No. 115	Rt.	648.0	645.7	97		10															
U-51	928+80 Clark	929+62 Clark	Q	650.1	648.4	93																	
U-52*	5+58 Lane W-N	Inlet No. 136	Rt.	648.3	644.4	190		7															
U-53*	31+12 Lane N-W	Inlet No. 116	Rt.	645.4	641.9	210		7															
U-54	930+56 Clark	M.H. No. 183	Lt.	646.7	643.8	148		6															
U-55	929+85 Clark	Inlet No. 54	Lt.	648.0	643.7	197		16															

* Denotes Payment Under CUY-90-13.81

CODE	LOCATION		SIDE	INVERT ELEV.		CLASS I-3		CLASS F-4		CLASS B-1		I-5 SPECIALS												
						6" PIPE		OUTLET PIPE		6" TEE		6" WYE		6"-60°		6"-90°		6"-TEE		6"-WYE				
	FROM	TO		UPPER	LOWER	SHALLOW	DEEP	6"	8"	6"	8"	CL-I	CL-F	CL-I	CL-F	CL-I	CL-F	30°	60°	90°	CL-I	CL-F	30°	60°
U-56*	7+52 Lane W-N	Inlet No. 53	Rt.	644.3	641.3	146	7																	
U-57*	28+93 Lane N-W	Inlet No. 117	Rt.	641.9	642.0	70	7																	
U-58*	27+48 Lane N-W	Inlet No. 117	Rt.	641.9	642.0	70	7																	
U-59	932+03 Clark	Inlet No. 119	Lt.	642.1	635.8	293	10																	
U-60	932+05 Clark	M.H. No. 193	E	643.6	638.0	273	6																	
U-61*	0+28 Lane W-S	Inlet No. 47	Rt.	641.2	638.2	139	7																	
U-62*	1+74 Lane W-S	Inlet No. 48	Rt.	638.1	637.9	39	7																	
U-63*	2+57 Lane W-S	Inlet No. 48	Rt.	638.1	637.9	39	7																	
U-64*	26+03 Lane N-W	Inlet No. 118	Rt.	642.8	641.9	142	7																	
U-65*	23+76 Lane N-W	Inlet No. 135	Rt.	644.4	642.8	217	7																	
U-66	935+00 Clark	M.H. No. 120	Lt.	635.8	630.5	270	6																	
U-67	934+88 Clark	Inlet No. 52	E	637.9	637.7	1	6																	
U-68	936+80 Clark	937+33 Clark	E	634.2	634.0	61																		
U-69	934+15 Clark	M.H. No. 194	Rt.	637.5	637.1	30	6																	
U-70	934+46 Clark	M.H. No. 189	Rt.	636.9	631.3	283	6																	
U-71*	4+76 Lane W-S	Inlet No. 50	Rt.	644.1	638.2	211	7																	
U-72*	20+17 Lane N-W	Inlet No. 99	Rt.	658.2	644.4	352	10																	
U-73	19+73 Lane S-W	Inlet No. 101	Lt.	647.7	647.2	17	10																	
U-74	16+38 Lane S-W	M.H. No. 102	Lt.	652.0	647.8	334	7																	
U-75	937+59 Clark	Inlet No. 121	Lt.	630.6	626.0	232	10																	
U-76	937+43 Clark	Inlet No. 46	E	632.8	631.7	44	6																	
U-77	938+05 Clark	Inlet No. 35	E	631.6	628.8	136	6																	
U-78	937+33 Clark	Inlet No. 44	Rt.	631.2	630.8	12																		

UNDERDRAIN SUMMARY

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**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY - 71-18.54
CUY - 90-13.81**

CODE	LOCATION		SIDE	INVERT ELEV.		CLASS I-3		CLASS F-4				CLASS B-1				I-5 SPECIALS					
						6" PIPE		OUTLET PIPE 6.6(b) or 6.8(b)		6"		8"		6"		8"		BENDS		6" TEE	
	SHALLOW	DEEP		6"	8"	6"	8"	6"	8"	6"	8"	30°	60°	90°	CL-F	CL-I	CL-F	CL-I	30°	60°	
	LIN. FT.	LIN. FT.		LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	CL-F	CL-I	CL-F	CL-I	CL-F	CL-I	CL-F	CL-I	CL-F	CL-I
U-101	943+60 Clark	Inlet No. 57	£	627.6	627.2	81															
U-102	945+00 Clark	Inlet No. 33	Rt.	628.1	626.6		316	6													
U-103	945+62 Clark	Inlet No. 125	Lt.	626.5	626.0			32	10												
U-104	945+95 Clark	Inlet No. 18	£	628.9	628.6	36		4	6												
U-105	945+97 Clark	Inlet No. 133	Rt.	628.6	628.3		94	6													
U-106	11+15 Lane S-W	Inlet No. 13	Lt.	646.9	646.8		6	10													
U-107	10+35 Lane S-W	Inlet No. 13	Lt.	647.2	646.9		52	10													
U-108	9+32 Lane S-W	Inlet No. 14	Lt.	649.0	647.2			92	10												
U-109	946+97 Clark	Inlet No. 125	Lt.	626.5	626.0			93	10												
U-110	946+95 Clark	M.H. No. 19	£	629.4	628.6	89		6													
U-111	946+97 Clark	M.H. No. 17	Rt.	629.1	628.6			97	10												
U-112	17+39 Lane E-S	Inlet No. 108	Rt.	662.8	659.3			97	10												
U-113	16+42 Lane E-S	Inlet No. 109	Rt.	658.9	648.8			243	10												
U-114	16+58 Lane E-S	Inlet No. 110	Lt.	661.3	649.8	252			10												
U-115	949+92 Clark	M.H. No. 126	Lt.	628.0	626.4		283	10													
U-116	948+75 Clark	Inlet No. 59	£	630.3	629.4	165		6													
U-117	950+05 Clark	Inlet No. 58	Rt.	630.7	629.1		305	10													
U-118	13+00 Lane S-E	M.H. No. 186	Rt.	648.1	646.8			51	6												
U-119	13+54 Lane S-E	M.H. No. 187	Rt.	646.7	641.4			219	6												
U-120	950+33 Clark	Inlet No. 127	Lt.	628.2	628.0			35	10												
U-121	950+17 Clark	Inlet No. 63	£	631.1	630.7	59		6													
U-122	13+97 Lane E-S	Inlet No. 111	Rt.	648.6	630.5		470	6													
U-123	13+97 Lane E-S	12+75 Lane E-S	Lt.	649.6	645.0	120															
U-124	951+47 Clark	M.H. No. 178	Lt.	628.8	628.3			113	6												
U-125	951+45 Clark	950+40 Clark	£	632.7	631.2	120															
U-126	951+47 Clark	M.H. No. 62	Rt.	631.4	630.7		144	6													
U-127	15+70 Lane S-E	Inlet No. 64	Rt.	641.2	636.0			197	10												
U-128	953+42 Clark	M.H. No. 128	Lt.	630.1	628.8			197	10												
U-129	953+26 Clark	Inlet No. 66	£	632.3	631.8	165		6													
U-130	951+92 Clark	M.H. No. 65	Rt.	631.6	631.4		42	6													
U-131	951+92 Clark	M.H. No. 176	Rt.	631.6	631.3		114	6													
U-132	17+75 Lane S-E	M.H. No. 175	Rt.	636.0	633.0		123	6													
U-133	954+20 Clark	M.H. No. 177	Lt.	630.3	630.2		94	6													
U-134	953+32 Clark	Inlet No. 71	£	632.3	632.1	129		6													
U-135	953+16 Clark	Inlet No. 70	Rt.	631.3	631.0		156	7													
U-136	18+99 Lane S-E	Inlet No. 67	Rt.	632.8	631.2		73	10													
U-137	Deleted																				
U-138	954+35 Clark	M.H. No. 130	Lt.	631.2	630.2		39	6													
U-139	9+27 Lane E-S	Inlet No. 112	Rt.	630.5	627.9		222	10													
U-140	955+00 Clark	Inlet No. 113	£	632.0	630.1	245		19													
U-141	954+78 Clark	Inlet No. 69	Rt.	630.6	630.4		46	7													
U-142	19+78 Lane S-E	Inlet No. 173	Rt.	631.2	628.2		385	20													
U-143	6+76 Lane E-S	Inlet No. 112	Rt.	628.4	627.9			21	10												
U-144	958+00 Clark	Inlet No. 113	£	630.6	630.1	16		6													
U-145	24+03 Lane S-E	Inlet No. 132	Rt.	628.6	628.1		21	10													
U-146	975+80 Medina	Inlet No. 94	£	702.1	700.6	260		6													
U-147	929+62 Clark	31+36 Lane N-W	£	648.4	646.9			76													
U-148	937+33 Clark	937+33 Clark	£	634.0	631.2			44													
U-149	950+40 Clark	950+40 Clark	£	631.2	628.2			46													
U-150	12+75 Lane E-S Lt.	12+75 Lane E-S Rt.	£	645.0	644.9			29													
U-151	0+35 Lane S-E	Inlet No. J-12	Rt.	659.7 +	657.4 +		424	10													
U-152	1+20 Lane S-E	17+35 Ramp J-NBOR	Lt.	660.9 +	657.5 +		495	12													
U-153	17+35 Ramp J-NBOR	23+65 NBOR	£	657.5	657.4			47													
U-154	954+63 Medina	Inlet No. J-9	£	662.9	659.2	206		16													
U-155	952+95 S.B. Medina	Inlet No. J-13	£	659.1	658.2	160		6													

*Adjust grade of underdrain to clear underside of 30" Water Main by 3" min. 0.2% permissible slope.

CODE	LOCATION		SIDE	INVERT ELEV.		CLASS I-3		CLASS F-4				I-5 SPECIALS										
						6" PIPE		OUTLET PIPE 6.6(b) or 6.8(b)		6"		8"		BENDS		6" TEE		6" WYE				
	SHALLOW	DEEP		6"	8"	6"	8"	30°	60°	90°	CL-F	CL-I	CL-F	CL-I	30°	60°						
	LIN. FT.	LIN. FT.		LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	CL-F	CL-I	CL-F	CL-I	CL-F	CL-I	CL-F	CL-I	CL-F	CL-I					
U-156	955+27 Medina	M.H. J-18	Lt.	661.7	655.6		385	16														
U-157	19+19 Lane W-S	Inlet No. J-6	Rt.	659.0	653.8		560	10														
U-158	955+27 Medina	951+15 SB Medina	Rt.	662.2	655.5		405	10														
U-159	951+23 SB Medina	951+15 SB Medina	Lt.	655.6	655.5			8														
U-160	17+25 Ramp J-NBOR	17+17 Ramp J-NBOR	Lt.	657.5	657.4			8														
U-161	944+70 Clark	944+70 Clark	Lt.	627.2	625.2										45							
U-162	2+53 SBOR	2+61 SBOR	Rt.	653.9	653.8			8														
U-163	951+23 SB Medina	951+15 SB Medina	£	658.1	658.0		6															
U-164	23+57 NBOR	23+48 NBOR	Rt.	657.4	657.3			8														
U-165	935+05 Clark	936+13 Clark	£	637.6	635.3	115																
U-166	936+13 Clark	936+13 Clark	Lt.	635.3	633.4										44							
SHEET TOTAL CUY-71-18.54							2224	6777	439		331	4	3	1	5		7		1	27		
TOTAL CUY-71-18.54							9648	13295	875	10	331	5	6	4	5		10		5	57		
TOTAL CUY-90-13.81							4108	3063	239	60				3	2	2		4		1	16	

- ① Adjust grade of underdrain to clear underside of pipe P-J6 and 30" Water Main by 3" min. 0.2% min. permissible slope.
- ② Adjust grade of underdrain to clear top of 30" Water Main by 3" min. 0.2% min. permissible slope. Provide 10' of 6" F-4 pipe at crossing.

SCALE: None
 MADE: C.P.B. DATE: 10-1-64
 TRCD: DATE: 10-1-64
 CRD: C.A. DATE: 10-15-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

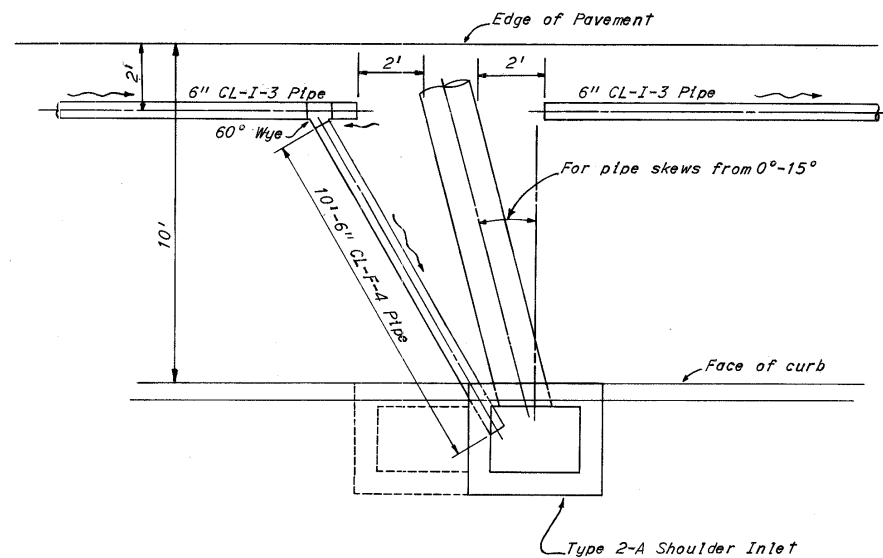
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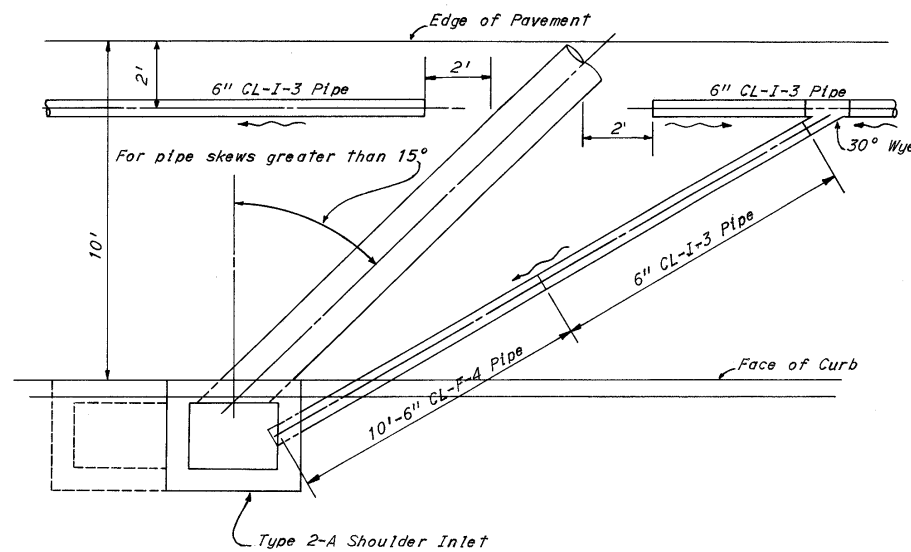
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
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UNDERDRAIN DETAIL NOTES

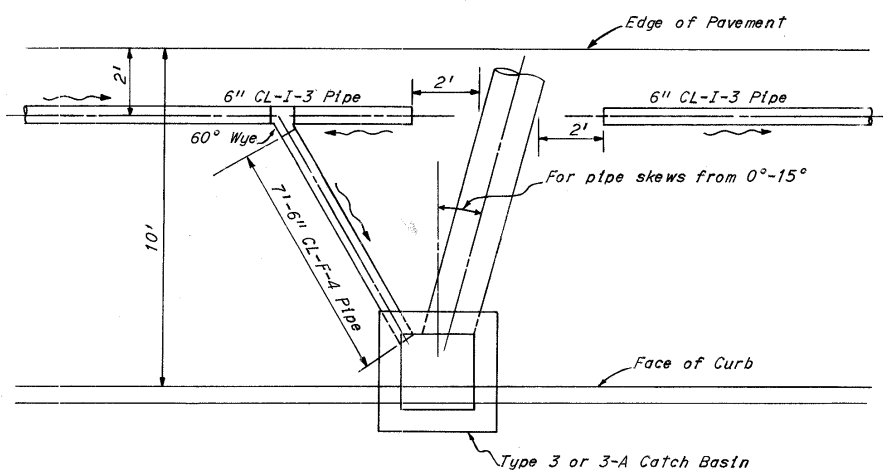
1. The distance of underdrain lines from the edge of pavement shall be taken from the typical section.
2. Where 8" Cl. F 4 pipe (Sec. M-6.4(c)) is shown, the end section shall be furnished with one rolled end.
3. When it is desirable to continue the underdrains across a transverse line such as in detail "A", a 10' minimum length of 6" Class F-4 pipe should be used to span the trench unless such crossing clears the top of the granular backfill of the transverse line by 2' or more.



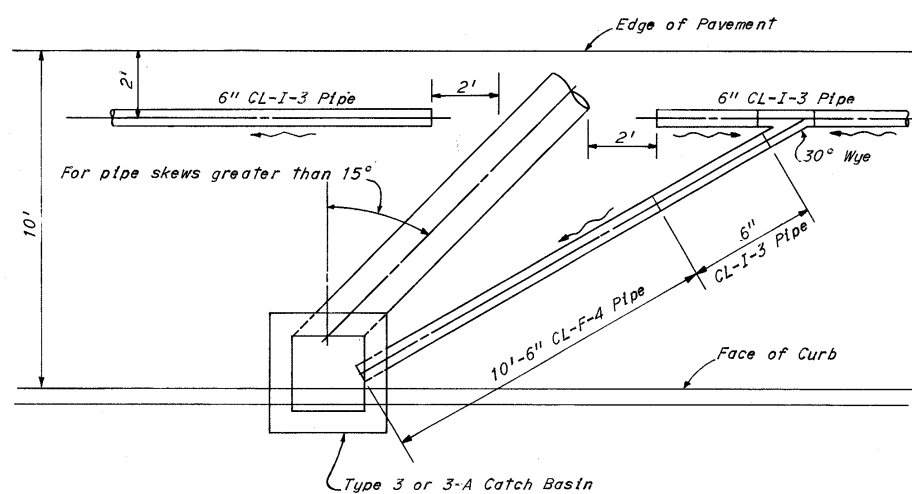
DETAIL A



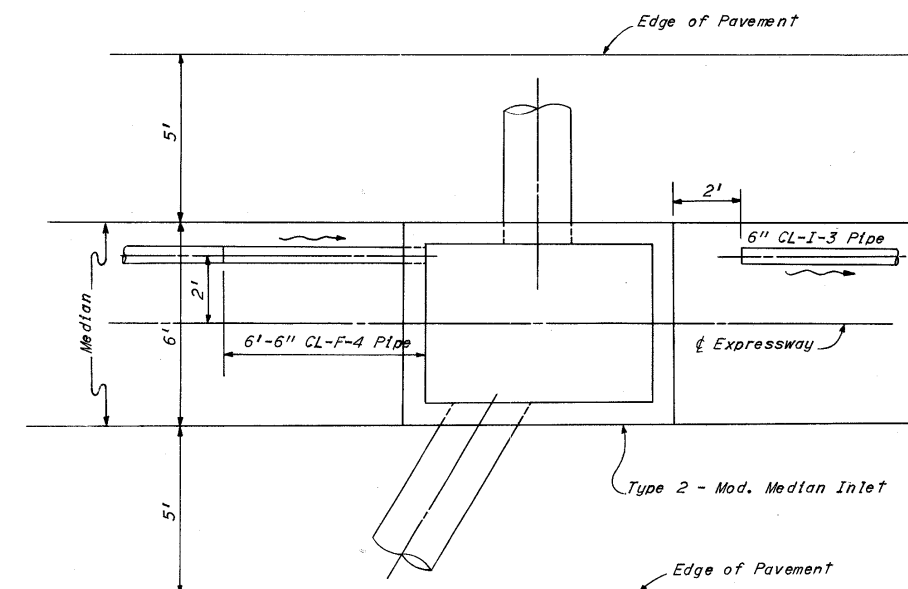
DETAIL B



DETAIL C



DETAIL D



DETAIL E

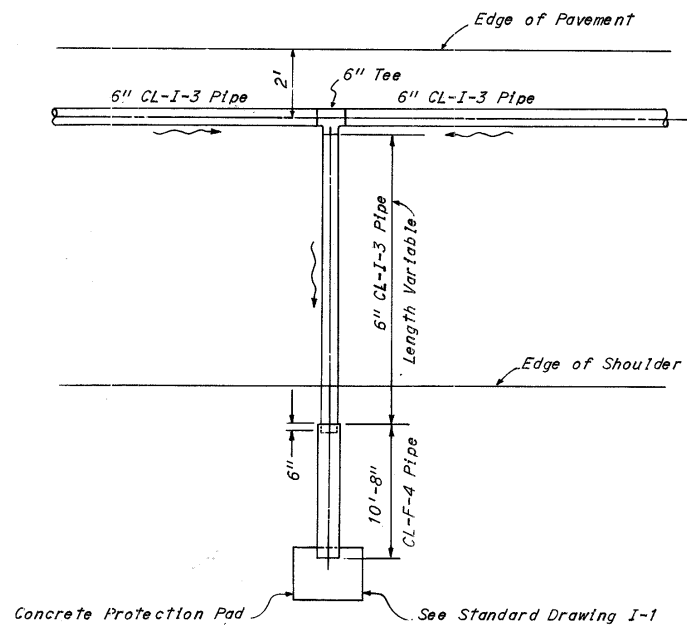
SCALE None
MADE CPB DATE 7-1-64
TRCD. JFC DATE 7-14-64
CKD. CTS DATE 7-19-64

HOWARD, NEEDLES, TAMMEN & BERGENOFF
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KANSAS CITY CLEVELAND NEW YORK

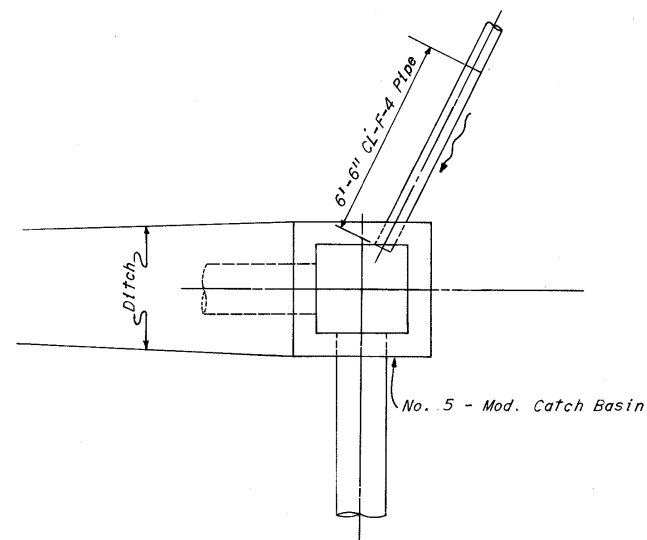
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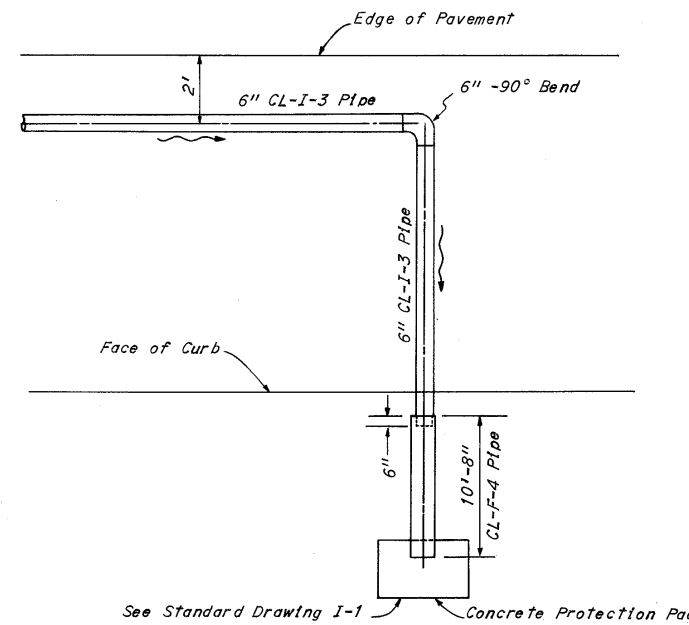
CUYAHOGA COUNTY
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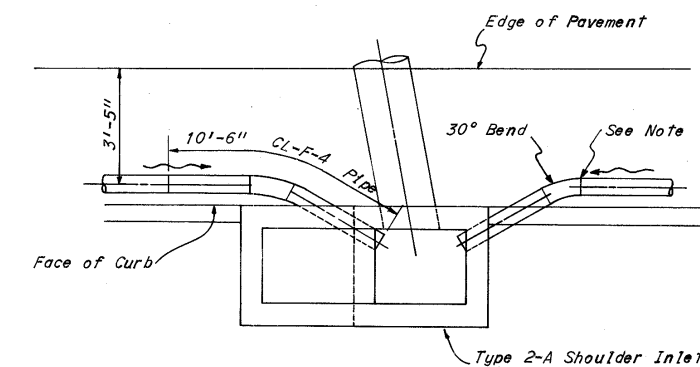
DETAIL F



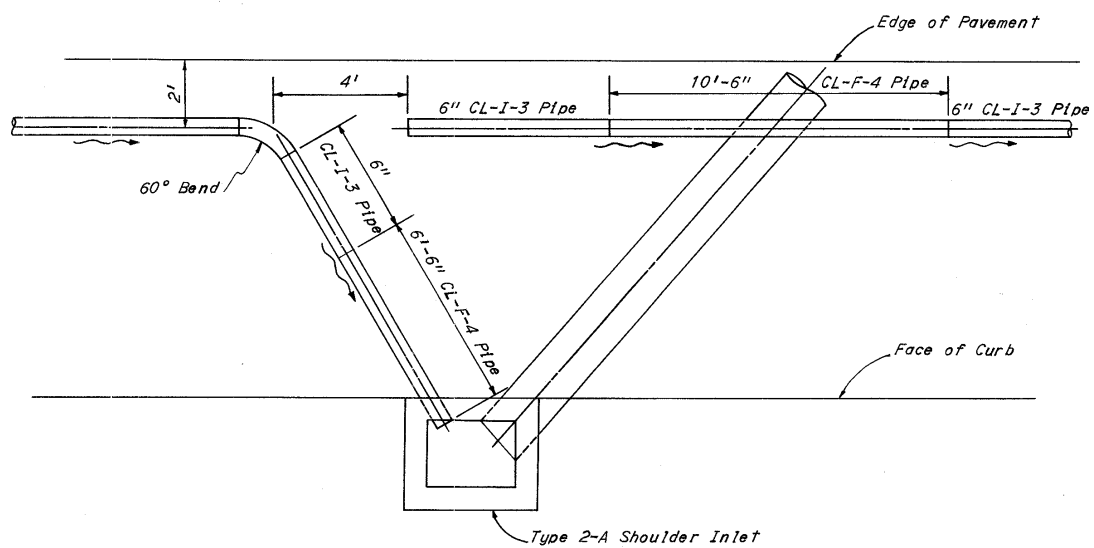
DETAIL G



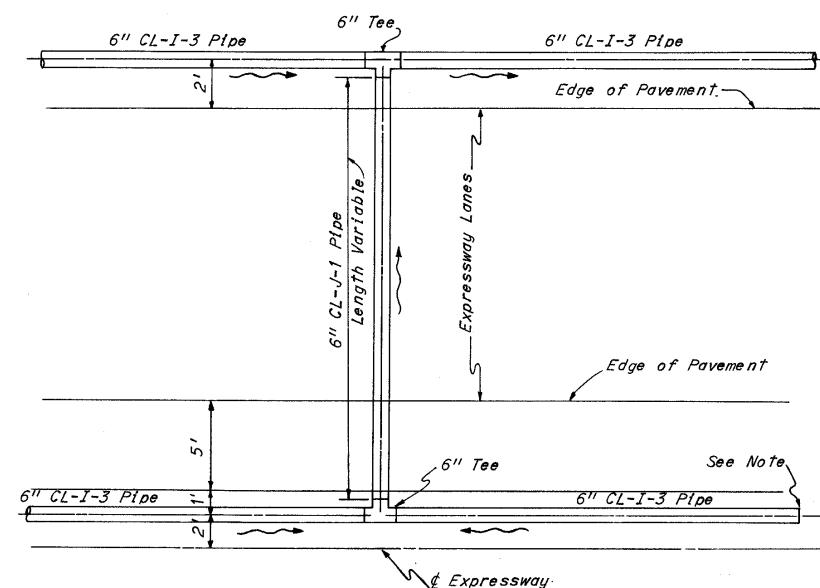
DETAIL H



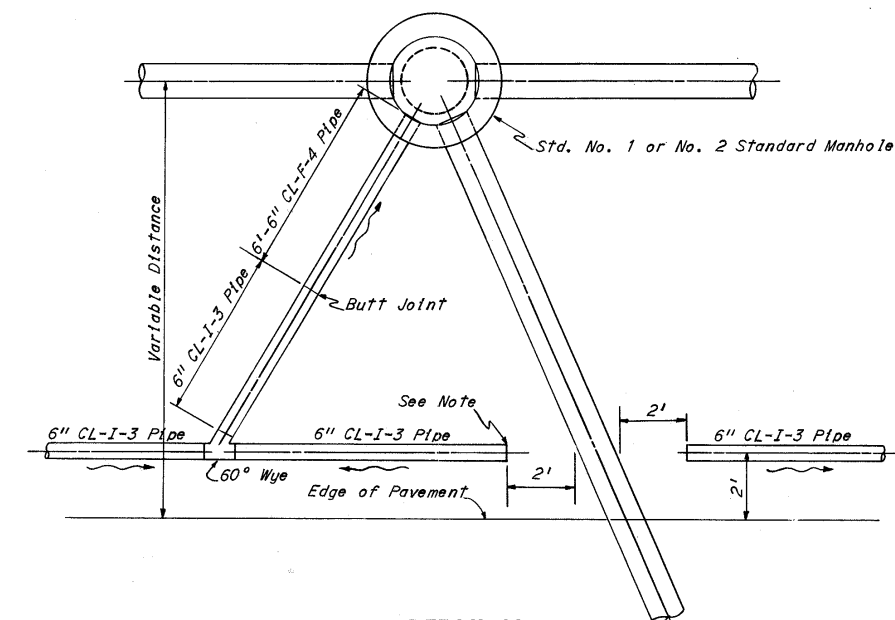
DETAIL J



DETAIL K



DETAIL L



DETAIL M

SCALE None
MADE CPB DATE 7-2-64
TRCD. JFC DATE 7-17-64
CKD. CTS DATE 7-19-64
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UNDERDRAIN DETAILS

M-18

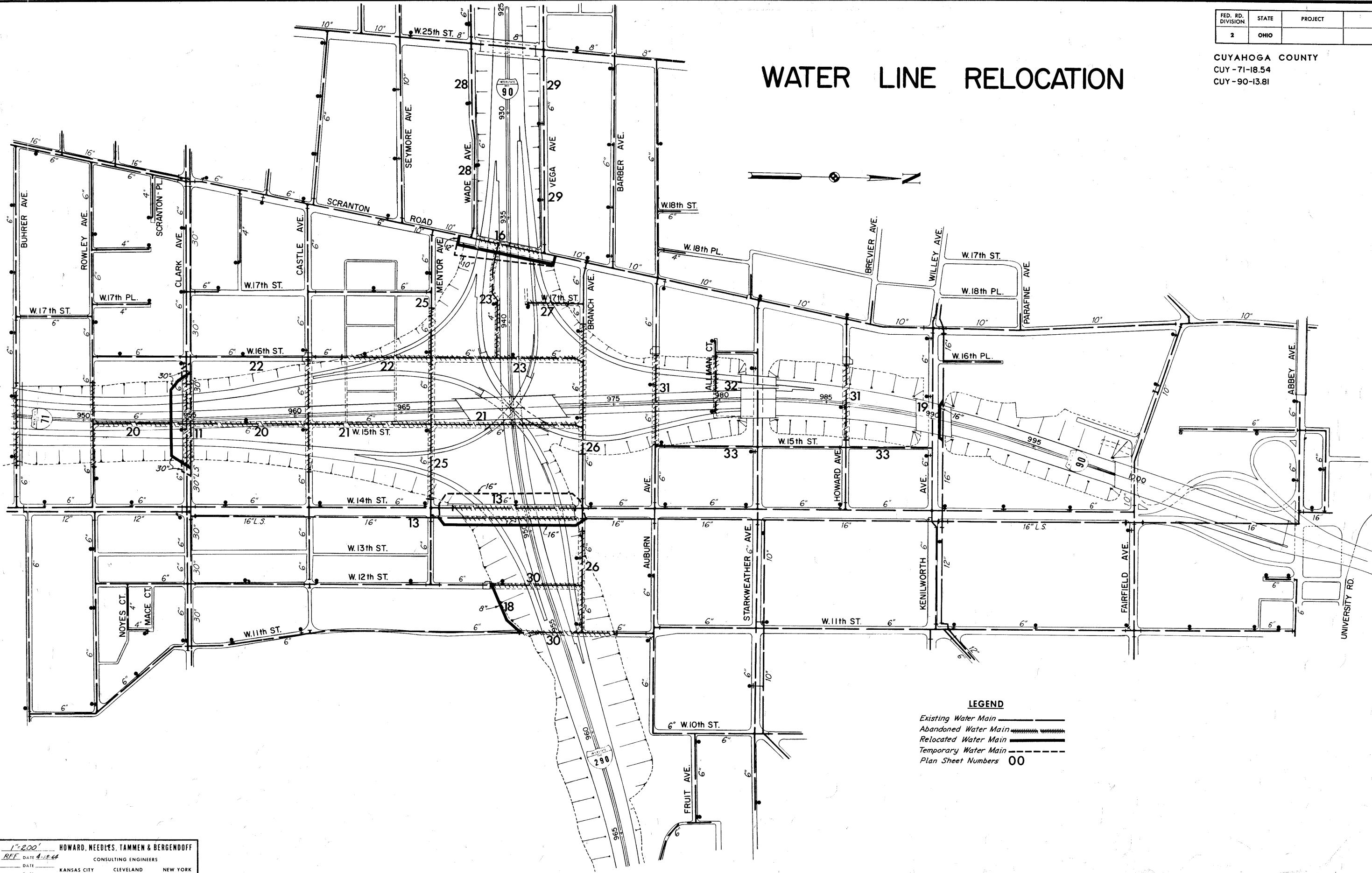
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WATER LINE RELOCATION



SCALE 1"=200'
 MADE RFF DATE 4-13-64
 TRCD DATE
 CKD DATE
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 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

SCOPE OF WORK

The work contemplated under this contract comprises the furnishing and installing complete with valves, fire hydrants and other appurtenances, the following water main relocations and performing other incidental work necessary to abandon existing water facilities.

- 1. 30" Prestressed Concrete Cylinder Pipe - Permanent relocation around Clark Avenue Overpass at Interstate Route 71.
2. 10" Cast Iron Pipe - Temporary by-pass connection and 12" Cast Iron Pipe - Permanent relocation around Scranton Road Overpass at Interstate Route 90.
3. 16" Cast Iron Pipe - Temporary by-pass connection and 16" Cast Iron Pipe - Permanent relocation around West 14th Street Overpass at Interstate 290.
4. 8" Cast Iron Pipe - Connection between West 12th Street and West 11th Street.
5. 16" Cast Iron Pipe - Permanent relocation around bridge pier in Kenilworth Avenue at Interstate 90.

The Contractor shall do all the work and furnish all the labor and material necessary for the final completion of this contract in the manner and under the conditions herein specified and provided and in accordance with the contract drawings.

DEFINITIONS

Whenever in these specifications or in any documents or instructions in construction where these specifications govern, the following terms are used, (or pronouns in place of them). The intent and meaning shall be interpreted as follows:

THE STATE

The State is the State of Ohio acting through its authorized representative.

ENGINEER

The Engineer is Division Deputy Director or Division Engineer, the Division Construction Engineer or the Division Maintenance Engineer, or the Project Engineer assigned to administer the contract.

THE CITY, OR THE CITY OF CLEVELAND

The City, or the City of Cleveland, is the Director, Department of Public Utilities, of the City of Cleveland.

STATUS OF CITY INSPECTOR

Inspectors as designated by the Director of Public Utilities shall be authorized to inspect all work done and materials furnished. Such inspection may extend to all or any part of the waterworks, and to the preparation or manufacture of the materials to be used in the waterworks. The city inspector as designated by the Director of Public Utilities shall make work instructions through the Project Engineer.

ACCESS TO WORK AND PLACE OF MANUFACTURE

The Contractor shall notify the Engineer and Director of Public Utilities, at least seven (7) days previous to the commencement of the manufacture of any materials, of the time and place where the manufacture is to commence, in order that a representative of the Engineer and Director may be present to inspect the manufacture. The Contractor shall provide, without charge or expense to the State and City, all necessary assistance to the Engineer and Director when required for inspection or verification of work done.

DIMENSIONS, DETAILED DRAWINGS AND ELEVATIONS

Figured dimensions on drawings shall take precedence over measurements by scale, and detailed drawings are to take precedence over general drawings and shall be considered as explanatory of them and not as indicating extra work. If, however, any of the detailed drawings show more elaborate or expensive work than is specified and indicated by the contract drawings, notice thereof must be given to the Engineer by the Contractor within ten (10) days after the receipt of such detailed drawings in order that the drawings may be amended or the additional expense on account of such work may be adjusted and authorized. If the Engineer does not receive such notice from the Contractor within ten (10) days after detailed drawings have been received by him, it is hereby agreed that the Contractor accepts the drawings and will execute them without claim for extra compensation.

FLOODS AND FREEZING WEATHER

Proper facilities shall be provided for protecting the work from damage by flood, rain or frost, and work done in freezing weather shall be done in such manner as the Engineer may approve. Valves shall be protected from freezing until backfilled in the completed work.

ADDITIONAL WORK

(A) - Attention is called to the fact that the work of this contract includes certain performances as incidental to the itemized requirements hereof, though not exclusive as follows: To perform all excavation, backfilling, sheeting, shoring, temporary and final repaving and to test the installation. Sand backfill shall be placed under existing and proposed pavement. For the performances herein described and for other incidental performances of like nature, the State will make no specific or separate payment or allowance, but the cost thereof shall be included in the prices stipulated to be paid for the various items of the work to be done under this contract.

GENERAL

WATERWORK NOTES

(B) - Preliminary flushing: Before being placed in service all dirt and foreign matter shall be removed from the new water main or extensions to existing mains by a thorough flushing through the hydrants or by other approved means. Each valved section of newly laid pipe shall be flushed independently. This shall be done after the pressure test and may be done before or after the trench shall have been backfilled.

(C) - Chlorination: Following the preliminary flushing, the newly laid water pipe shall be chlorinated. The process of chlorinating, the method of procedure, the chlorinating agent, and the rate of application shall be determined by the Engineer. The City of Cleveland will furnish the necessary labor and material required for such chlorination and install the necessary taps at the ends of the water main sections to be chlorinated. The Contractor shall pay for chlorination or sampling of the water at the rate of ten cents (10¢) per linear foot for the first thousand feet, and five cents (5¢) per foot thereafter of the water main proper, with a minimum charge of one hundred dollars (\$100.00). The Contractor shall furnish the necessary labor for excavating and backfilling which will be required for the installation of taps for injecting the chlorine solution, operating pumps and flushing mains. In cases where the water main installation does not exceed 350 feet in length, the Contractor shall pay a minimum charge of thirty-five dollars (\$35.00) for flushing and sampling water.

(D) - Final flushing and test: Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipe at its extremities until the replacement water throughout its length shall, upon test, both chemically and bacteriologically, be proven equal to the water quality served the public from the existing water supply system.

(E) - For the performances described in paragraphs B, C and D, the State will make no specific or separate payment or allowances, but the cost thereof shall be included in the prices stipulated to be paid for each linear foot of pipe furnished and installed. See PROPOSAL NOTE "WATER" For Method of Payment.

MAINTENANCE OF SERVICE AND CONNECTING RELOCATED MAINS

The Contractor shall follow strictly the sequence of construction shown on the plans. All existing fire hydrant leads and house services shall be hand tunneled using special care to avoid any damage which might require shutting down the existing main until the new main is ready to be placed in service.

When the new mains have been tested and chlorinated and are ready to be connected to the old main, the Contractor shall make such connections at a time designated by the City. Prior to shutting down the existing mains, the Contractor shall take suitable precautions to assure a minimum interruption to service, including the following:

- 1. Perform all necessary excavation, including bell holes exposing the existing main sufficiently for the operation of the pipe saw by the City.
2. Remove the cap or plug from the end of the new main.
3. Swab the inside of all pipes, bends and sleeves to be used in connection thoroughly with a chlorine solution of at least 100 p.p.m.
4. Make-up as much of the connection as possible outside the ditch to eliminate the need for caulking most of the necessary joints during the shutdown. By careful measurement all pipe cuts can be made by the Contractor prior to shutting down.
5. Have sufficient manpower and equipment on the site to perform the operation in a minimum of time.

PAINTING

(A) - It is the intention of these specifications to provide that all metal work subject to corrosion shall be satisfactorily protected by a durable coating of paint or other approved material and that all metal surfaces not buried in earth, or in concrete, shall be left clean and well painted at the completion of the contract. Unless otherwise specified, the protection shall be at least that given by three (3) coats of approved paint. The first coat is to be applied at the shop before the metal has rusted and after all grease, dirt and scale has been removed. Bolts and nuts shall not be shop coated, but shall receive three (3) coats of approved paint after installation.

(B) - All metal work which has not been coated before the arrival on the job shall be given a temporary protective coating of such a nature as to permit the ready adherence of future coatings. The temporary coating shall be a good grade asphaltic paint or other approved material. This temporary protection shall apply particularly to the valve boxes and covers, manhole rings and covers, ladders and ladder rungs and elsewhere when in the opinion of the Engineer, such protection is necessary.

(C) - All surfaces of metal which will be in contact after assembling shall be painted, at least one coat, before assembling. The final coat of paint on all exposed work shall be given shortly before the completion of the contract.

(D) - Where painting clauses appear hereinafter, they shall take precedence over this section, except that temporary protection herein described may be required.

(E) - All of this work shall be included in the price bid for the particular item requiring the painting.

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TESTS, INSPECTION AND REPORTS

Notwithstanding the requirements of any other provisions of these specifications, the Contractor shall arrange for and pay all costs involved for shop inspection of all materials furnished, manufacture of all pipe, valves, fittings, etc., field and shop welds and welding, and furnish to the State and the City of Cleveland copies of all shop, fabrication, manufacture and other related inspection reports of materials furnished. This inspection shall be done by a recognized inspection laboratory approved by the City of Cleveland.

HANDLING PIPE AND ACCESSORIES

(A) - Unloading: Cast iron pipe, fittings, valves, hydrants, and other accessories shall, unless otherwise directed, be unloaded at the point of delivery, hauled to and distributed at the site of the project by the Contractor; they shall at all times be handled with care to avoid damage. In loading and unloading they shall be lifted by hoists or slid, or rolled on skidways in such manner as to avoid shock. Under no circumstances shall they be dropped. Pipe handled on skidways must not be skidded or rolled against pipe already on the ground.

(B) - At site of work: In distributing the material at the site of the work, each piece shall be unloaded opposite or near the place where it is to be laid in the trench.

(C) - Protection of pipe coating: Pipe shall be handled in such manner that a minimum amount of damage to the coating will result. Any cast iron pipe or fitting, the coat of which has been damaged in shipping or handling, shall have the damaged portion well cleaned and covered with an asphalt paint, approved by the Engineer, before being placed in the work. The Contractor shall thoroughly coat all exposed parts of bolts and nuts with an approved asphalt paint, after all pipe has been laid and before backfilling has been placed. All field coating shall be furnished by the Contractor.

(D) - Pipe kept clean: The interior of the pipe, fittings, and other accessories shall be kept free from dirt and foreign matter at all times.

(E) - Frost protection: Valves and hydrants before installation shall be drained and stored in a manner that will protect them from damage by freezing.

CHANGES IN WATER PIPES

(A) - Wherever it becomes necessary in the opinion of the Engineer to change the location of house connections, such changes will be made as work to be done by the City. The Contractor shall notify the City in ample time to permit the City to make such changes and avoid unnecessary delay in the completion of the work. The Contractor shall also cooperate with the City in making these changes and shall do all excavating, backfilling and repaving as may be required. The City will furnish the piping material for and make all changes required, including tapping, in the location of existing house service connections and meters. The City will charge the Contractor for materials and labor furnished in making these service connections and alterations and costs thereof shall be included in the unit price bid for "Service Connection Relocations" or "Water Meters Relocated".

(B) - Wherever it becomes necessary, in the opinion of the Engineer, to change the location or elevation of water mains and hydrants, and where connections are to be made between existing distribution mains and water mains under this contract, the Contractor shall remove and dispose of all existing water line materials required to make the connection, and shall furnish and install complete, all the cast iron or ductile iron pipe, fittings and valves to make the connections indicated, except tapping sleeves and valves which will be installed by the City. The Contractor shall also furnish all necessary labor, materials, tools and equipment and make the excavation, backfill and repaving for such connections. Payment for this will be included in price bid under appropriate item for size of water main or connection to be installed. All pipes, valves, hydrants and appurtenances removed shall become the property of the Contractor.

WORK TO BE DONE BY THE CITY

(A) The City will furnish the piping material for and make all changes required, including tapping, in the location of existing house service connections and meters, but the Contractor shall do all the necessary excavation, backfilling and repaving required therefore. The City will charge the Contractor for materials and labor furnished in making these service connections and costs thereof shall be included in the unit price bid for "service connections" or "water meters relocated".

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DATE

DIRECTOR OF PUBLIC UTILITIES
COMMISSIONER OF WATER AND HEAT
COMMISSIONER DIVISION OF UTILITIES ENGINEERING
ENGINEER OF CONSTRUCTION AND SURVEYS
ENGINEER OF DESIGN

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATER WORK NOTES FOR MEDINA-CLARK INTERCHANGE IN CLEVELAND, OHIO

MADE E.C.E. DATE 11-6-64 TRACED DATE
CHECKED DATE SCALE

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

WATERWORK NOTES

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TESTING MAINS

- (A) - All pipes, valves, fittings, etc., shall be laid in such a manner as to leave all joints watertight. After the pipe is laid, and before backfilling is placed around the joints, such lengths of the water main as the Engineer may determine, shall be tested under a hydrostatic pressure of seventy-five (75) pounds per square inch above the static pressure, but nowhere less than 100 pounds per square inch.
- (B) - The test shall be under the direction of the Engineer and Director of Public Utilities or his designate. The Contractor may obtain water for testing by observing the rules and regulations enforced in the municipalities or townships in which the work is being done. The City will furnish a pressure gage for measuring the pressure on the water main, but the Contractor shall furnish a suitable pump, pipes, test heads and all appliances, labor, fuel and other appurtenances necessary to make these tests.
- (C) - The test pressure shall be maintained for a sufficient length of time to allow for a thorough examination of joints and elimination of leakage where necessary. The pipe lines shall be made absolutely tight under the test pressure.
- (D) - After a section of the water main has been tested, the Contractor shall drain same. In case the drains are connected to valve or drain vaults, then the Contractor shall within reasonable time after the test has been completed pump all water out of the vaults.
- (E) - In cold weather immediately after testing a section of the water main, the Contractor is to open all valves, air cocks, by-passes and drains and properly drain bonnets of all valves in the section of the water main, and take all other precautions necessary to prevent injury to water main and appurtenances due to freezing.
- (F) - As an alternate for testing concrete and steel mains other than by the preceding method, the Contractor may choose the following procedure.
The water main shall be tested under the same hydrostatic pressure as previously noted. The test pressure shall be maintained for a period of two (2) hours by pumping additional water into the main, if necessary. The quantity of water thus pumped into the main multiplied by twelve (12) shall be taken as the leakage per twenty-four (24) hours.
- (G) - The permitted leakage shall not exceed a rate of seventy-five (75) gallons per twenty-four (24) hours per mile of pipe per inch of nominal diameter.
- (H) - In calculating leakage, the Engineer will make allowance for any leakage at the valves, the removable bulkheads, etc.
- (I) - In using this method of testing, the Contractor may backfill the pipe except at lead joints, flanged joints, victaulic couplings, and drain connections immediately following the laying and before the actual test has been made. In case the leakage exceeds the permissible amount mentioned above, the Contractor shall find the leak and make the joints tight. The Contractor shall furnish suitable means for determining the quantity of water lost by leakage during the test.
- (J) - In order to be able to make proper allowances for leakage at valves, etc., previously noted, only such sections of water main may be selected for test as will have such valves, removable bulk-heads, etc., accessible.
- (K) - The evaluation of actual leakage to standard pressure (150 lbs.) leakage is calculated by the application of the ratio determined from the square root of respective pressures, other factors being equal.

CLOSING VALVES

The closing of all gate valves on water mains for making connections, tests, or for any other cause, shall be done by the City of Cleveland and sufficient notice shall be given to the City, by the Contractor, so that the work may be done with a minimum of inconvenience to the public and delay to the Contractor. See charges listed herein.

PLUGGING DEAD ENDS

Standard plugs with clamps shall be inserted into the bells of all dead ends of pipes, tees, or crosses, and spigot ends capped and clamped by the Contractors, on all mains constructed by him and existing water mains where indicated in the contract drawing. Concrete piers shall be placed when called for on the contract drawings, or ordered by the Engineer. The cost of furnishing the plugs shall be included in the per linear foot price bid for the various sizes of new water mains and for size plug installed where shown on existing water main. (See pay item)

BACKFILLING

- (A) - This work includes all backfilling, together with ramming, puddling, and rolling, as required; The regrading of grounds; The replacing of surface and subsurface structures; The placing and maintaining of temporary sidewalks, and driveways; The furnishing of suitable material for backfill, reseeding lawns and replacing trees and shrubbery damaged by the Contractor; and all appurtenant work incidental thereto. Pavements, curbs, sidewalk and driveways within the limits of the work shall be temporarily surfaced, maintained and finally replaced or repaved as set forth under roads, surfaces, sidewalks driveways and curbing.
- (B) - Backfill, unless otherwise specified, may be made with material excavated from the trenches, providing same is satisfactory to the Engineer. If, in the opinion of the Engineer, the material excavated is unsatisfactory, then the Contractor shall furnish at his own expense other material suitable for backfill. All backfill shall be free from slag, cinders, rubbish and other objectionable material.
- (C) - Before laying the pipe, the bottom of the trench shall be brought to the grade of the bottom of the pipe, except of field joints. Wherever the bottom of the trench has been excavated below the bottom of the pipe, the Contractor shall place sand, or other material satisfactory to the Engineer to bring the bottom of the trench to the grade of the bottom of the pipe. This bed shall be thoroughly tamped before the pipe is laid.
- (D) - Unless otherwise specified, the backfill under, around and to a depth of one (1) foot above the top of all pipe, shall be made with material satisfactory to the Engineer, which material shall be free from stone and other objectionable material noted above. The Contractor must use special care in placing this portion of the backfill, so as to avoid injuring, distorting or moving the pipe when compacting same. Above this level the backfill shall be made with material satisfactory to the Engineer. However, where specified, sand shall be used for the entire portion of the backfill. See below.
- (E) - Backfilling as noted in paragraph (D) shall be tamped in thin layers, simultaneously on each side of the pipe, and thoroughly compacted so as to provide a solid backing against the external surface of the pipe.
- (F) - Only after the backfill previously mentioned has been satisfactorily compacted, may work proceed in placing the remaining backfill which must be carefully placed and compacted by tamping, puddling, or rolling. All precautions must be taken to eliminate future settlement. The number of men tamping shall be not less than the number backfilling, and additional men shall be kept in the trench to spread the material.
- (G) - Backfilling shall not be done in freezing weather, except by permission of the Engineer, and it shall not be made with frozen material, nor shall any fill be made where the material already in the ditch is frozen.
- (H) - The entire backfill shall be made with sand where permanent pavements, curbs, driveways, or sidewalks, have been opened for or undercut by the excavation.
- (I) - All sand to be used for backfill shall be a natural bank sand, graded from fine to coarse, not lumpy or frozen, and free from slag, cinders, ashes, rubbish, or other deleterious or objectionable material. It shall not contain a total of more than 10 per cent by weight of loam and clay, and all material must be capable of being passed through a 1/4 inch sieve. Not more than 5 per cent shall remain on a No. 4 sieve.

J - Special treatment of the trench will be required where cinder excavation exceeding one foot measured from the top surface is encountered. Before laying the pipe the bottom of the trench shall be dug below grade and then brought to the grade of the pipe in the following manner, a four 4 inch layer of crushed limestone shall be placed on the entire width of the bottom of the trench followed by a filler of hydrated lime and a layer of three 3 inches of sand. The crushed limestone shall be well graded from fine to coarse and free from slag, cinders, ashes, rubbish or other objectionable material. All limestone must be capable of being passed through a 1/2 inch sieve. On top of this layer of crushed stone, hydrated lime shall be supplied in the amount of 1/2 of a pound per square foot of trench. This bed of crushed limestone shall be thoroughly tamped before the 3" layer of sand is placed. The backfill around and to the depth of 3" above the top of the pipe shall be made with sand. The Contractor must use special care in placing this portion of the backfill so as to avoid injuring or moving the pipe when compacting same. On top of the sand the Contractor shall place another layer of crushed limestone five 5 inches thick on the entire width of the trench. On top of the compacted layer of limestone hydrated lime shall be then applied in the amount of 1/2 of a pound per square foot of trench. The remaining backfill shall be made with sand, carefully placed and compacted by tamping, puddling, or rolling. All precautions shall be taken to eliminate future settlement. The treatment of the trench bottom, previously described, may be omitted where the cinder depth, measured from the top surface does not exceed 2'-6".

ROAD SURFACES, SIDEWALKS, DRIVEWAYS, AND CURBING

- (A) - The Contractor shall remove all pavements and road surfaces within the lines of excavation. After the pipe has been laid, all appurtenant work constructed and backfill completed, he shall furnish, place and maintain, wherever the pavement of road surface has been removed or damaged by him. A temporary pavement in the paved portion of streets, or a temporary road surface in the unpaved portion of streets so as to provide a safe and passable roadway until such time as the final pavement or road surface is completed.
- (B) - When only a portion of the street is paved and the lines of excavation are in the unpaved portion of same the Contractor shall use the utmost care in preventing injury to the pavement. If, in making the excavation or for any other cause the pavement is removed or injured by the Contractor, he shall furnish, place and maintain a temporary pavement wherever the pavement has been removed or damaged, so as to provide a safe and passable roadway until such time as the final pavement is completed.
- (C) - All final paving of road surfaces, if so noted on the contract drawings, shall be done by the Contractor to the satisfaction of the Engineer and in conformity to the City of Cleveland "Standard Specifications for Construction of Pavements, Sidewalks and Sewers," dated January, 1950. The Contractor shall bear the entire cost of the work. The base of pavement of Class 6 Concrete shall be installed on a carefully prepared bed level with the bottom of the abutting base over disturbed areas and shall be of the thickness specified, but in no case less than 7" thick. Where pavement or base of pavement has been damaged by cave-in, or by trench cut leaving a portion or portions of pavement 18" or less in width between such cut or damage to curb or other substructure, that remaining portion of pavement shall be removed and restored monolithic with the type and kind of pavement specified for the adjacent trench area. The wearing course over trench or other disturbed areas shall be restored to match existing pavement unless otherwise specified. Asphaltic concrete wearing course over such areas shall be neatly and squarely cut, not less than 3 feet wide, before the installation of a carefully toothed-in-to adjacent pavement, unless otherwise specified. Expansion joints shall be installed between brick wearing course (if ground) and curb or other substructure, where such restoration is required by these specifications.
- (D) - All damaged or displaced curb shall be renewed or reset to the satisfaction of the Engineer. No faulty curb or curb less than 30" long will be permitted for reuse.
- (E) - At locations not specifically mentioned, the Contractor shall restore the same type of pavement as encountered.

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

APPROVED
DATE _____

DIRECTOR OF PUBLIC UTILITIES

COMMISSIONER OF WATER AND HEAT

COMMISSIONER DIVISION OF UTILITIES ENGINEERING

ENGINEER OF CONSTRUCTION AND SURVEYS

ENGINEER OF DESIGN

LOW SERVICE DISTRICT	
DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER AND HEAT CLEVELAND, OHIO	
SUBJECT	WATER WORK NOTES FOR MEDINA-CLARK INTERCHANGE IN CLEVELAND, OHIO

WATERWORK NOTES

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(B) The City will install all tapping sleeves and valves, but the Contractor shall supply the tapping sleeves and valves, lead, and do all the necessary excavation, backfilling and repaving required therefor.

To cover labor and installation costs, the City will charge the following flat rates for the installation of tapping sleeves and valves. In addition to the above requirements, the Contractor shall furnish all air compressors required for the work. See PROPOSAL NOTE - "WATER" For Method of Payment.

SIZE OF MAIN	LABOR AND INSTALLATION BY CITY
6"	\$130.00
10"	150.00
12"	160.00
16"	260.00
24"	410.00
30"	500.00

(C) In locations shown on the plans the Contractor will be required to sleeve-in to the existing mains. To speed up this operation, it is called to the Contractor's attention that the water department has on hand at Harvard Yards Motor operated pipe cutters which are available for cutting pipe by city forces at the following rates. The prices include cost of labor, use of pipe cutting machine, and truck. The Contractor shall do all necessary excavation, backfilling and repaving and all air compressor equipment shall be furnished by the Contractor.

SIZE OF PIPE	COST PER CUT
6"	\$30.00
10"	30.00
12"	30.00
16"	35.00
24"	60.00
30"	80.00

See PROPOSAL NOTE - "WATER"
For Method of Payment.

(D) Whenever it becomes necessary to operate valves and drain existing water main, the Contractor shall be charged by the Division of Water and Heat of the City of Cleveland and each time the water main valves must be operated and the water main drained, a separate charge shall be made. There will also be a charge for each valve operated when filling the water mains. The charges shall be as follows:

Opening and Closing Valves and Draining and Filling Mains	
Clark Avenue 30" Main	\$250.00 each time (2 times required)
Scranton Road 10" Main	100.00 each time (2 times required)
West 14th Street 16" Main	150.00 each time (2 times required)
Kenilworth Avenue 16" Main	150.00 each time (1 time required)
11th Street to 12th Street 8" Main	100.00 each time (1 time required)
Opening and Closing Valves	
Clark Avenue 30"	\$30.00 each operation with 25 Max. = \$750.00
Scranton Road 10"	10.00 each operation with 10 Max. = 100.00
West 14th Street 16"	15.00 each operation with 6 Max. = 90.00
Kenilworth Avenue 16"	15.00 each operation with 5 Max. = 75.00
11th Street to 12th Street	10.00 each operation with 6 Max. = 60.00

See PROPOSAL NOTE - "WATER" For Method of Payment.

EXCAVATION

(A) - The Contractor shall remove all existing structures, roadways, driveways and other similar materials and make to the lines and grades given, all excavation necessary for the proper construction of the water main, pipe connections and appurtenant structures, including tunnel and shaft excavation. The excavation shall include the removal, handling, rehandling and disposal of materials encountered in the work and shall include all pumping, bailing, draining, sheeting and bracing. Moreover, the Contractor must assume all responsibility for any added expense or other liability which may arise by means of quicksand, obstacles or conditions foreseen or unforeseen and encountered in the work of this contract.

(B) - Trenches shall in every case be of sufficient width to permit solid packing of refill under and around pipes, and satisfactory construction of all appurtenances and for such sheeting and shoring, pumping and draining as may be necessary.

(C) - The trench shall be dug to the alignment and depth required and only so far in advance of pipe laying as the Engineer shall permit. The trench shall be so braced and drained that workmen may work therein safely and efficiently. It is essential that the discharge from pumps be led to natural drainage channels, to drains, or to sewers.

(D) - The trench width may vary with and depend upon the depth of trench and the nature of the excavated material encountered; but in any case shall be of ample width to permit the pipe to be laid and jointed properly and of the backfill to be placed and compacted properly. The minimum width of unsheeted trench shall be eighteen (18) inches and for pipe ten (10) inches or larger, at least twelve (12) inches larger than the outside diameter of the pipe for concrete pipe and eighteen (18) inches larger than the outside diameter of the pipe for cast iron and steel pipe, except by consent of the Engineer. The maximum clear width of trench shall be not more than two (2) feet greater than the outside pipe diameter. When sheeting and bracing is used, the trench width shall be increased accordingly.

(E) - The trench, unless otherwise specified, shall have a flat bottom conforming to the grade to which the pipe is to be laid. The pipe shall be laid upon sound soil cut true and even, so that the barrel of the pipe will have a bearing for its full length.

(F) - Any part of the trench excavated below grade shall be corrected with approved material, thoroughly compacted.

(G) - When the uncovered trench bottom at subgrade is soft and in the opinion of the Engineer cannot support the pipe, a further depth and/or width shall be excavated and refilled to pipe foundation grade as required under (F), or other approved means shall be adopted to assure a firm foundation for the pipe.

(H) - Ledge rock, boulders, large stones, and shale shall be removed to provide a clearance of at least six (6) inches below all parts of the pipe, valves, or fittings, and to a clear width of six (6) inches on each side of all concrete pipe and nine (9) inches on each side of all cast iron and steel pipe shall be provided.

(I) - Excavation below subgrade in rock, shale or in boulders shall be refilled to subgrade with approved material, thoroughly compacted.

(J) - Bell holes of ample dimensions shall be dug in earth trenches at each joint to permit the jointing to be made properly. Adequate clearance for properly jointing pipe laid in rock shall be provided at bell holes.

(K) - The use of excavating machinery will be permitted except in places where operation of same will cause damage to trees, buildings, or existing structures above or below ground, in which case hand methods shall be employed.

(L) - Trees, fences, poles and all other property shall be protected unless their removal is authorized. Any property damaged shall be satisfactorily restored by the Contractor.

(M) - Hydrants under pressure, valve pit covers, valve boxes, curb stop boxes, fire or police call boxes, or other utility controls shall be left unobstructed and accessible during the construction period.

(N) - The Contractor shall maintain all excavations in good order during the construction, so as not to hinder or injure the pipe laying, masonry or other work. He shall take all reasonable precautions to prevent movement of the sides of such excavation, and shall remove at his own expense any material sliding into the excavation.

SHEETING AND BRACING

(A) - The Contractor shall furnish and put in place such sheeting and bracing as may be required to support the sides of trenches or other excavation and shall remove such sheetings and bracings, as the trench or excavation is filled up, unless the Engineer shall order it left in place, in which case the Contractor shall cut the plank off at a height as ordered by the Engineer, or as called for on the contract drawings. That portion of the timber ordered to be left in place will be paid for at the rate of eighty dollars (\$80.00) per thousand feet board measure. No payment will be made for wasted ends.

(B) - Whenever the excavations for the work herein to be done are immediately adjacent to other subsurface structures, the Contractor shall furnish and place sheeting and bracing where noted on contract drawings and as may be necessary so as to reduce to a minimum the possibility of injuring or damaging the same.

(C) - If the Engineer is of the opinion that at any point sufficient or proper supports, sheeting, or bracings have not been provided, he may order additional supports, sheeting or bracing, at the expense of the Contractor, and the compliance with such orders by the Contractor shall not relieve or release him from his responsibility for sufficiency of such supports.

REMOVAL OF EXCAVATED MATERIAL

(A) - All surplus material and such other material as the Engineer may deem unfit for use as backfill shall be disposed of by the contractor so as to give a minimum of inconvenience to the public. In case of settlement after backfill, the Contractor shall supply sufficient material satisfactory to the Engineer to make up for the deficiency.

(B) - In the storing of excavated material, which is to be used as a backfill, the Contractor shall exercise care so as to avoid inconveniencing the public. If, in the opinion of the Engineer, it is necessary to remove this excavated material from the streets or lots, the Contractor shall be required to do so.

(C) - Any material which may spill or drip from vehicles by hauling in the streets, shall be removed and the streets cleaned by the Contractor, to the satisfaction of the Director of Public Service of the City of Cleveland or the proper officials of the municipality or township in which the work is being done.

(D) - When so directed by the Engineer, the Contractor shall immediately remove all excavated materials from the site and dispose of the same.

LAYING PIPE

(A) - Proper implements, tools, and facilities, satisfactory to the Engineer shall be provided and used by the Contractor for the safe and convenient prosecution of the work. All pipe, fittings, and valves shall be carefully lowered into the trench piece by piece by means of derrick, proper slings, and other suitable tools or equipment, in such manner as to prevent damage to pipe or coating, under no circumstances shall pipe or accessories be dropped or dumped into the trench. If any defective piece be discovered while pipe is suspended or after being laid, a new piece shall be furnished and installed by the Contractor at the site of the work.

(B) - All foreign matter or dirt shall be removed from the inside of the pipe before it is lowered into its position in the trench, and it shall be kept clean by approved means during and after laying.

(C) - At times when pipe laying is not in progress, the open ends of pipe shall be closed by approved means, and no trench water shall be permitted to enter the pipe. No pipe shall be laid in water, or when the trench conditions or the weather is unsuitable for such work, except by permission of the Engineer.

(D) - Wherever necessary to deflect pipe from a straight line, either in the vertical or horizontal plane to avoid obstructions, to plumb stems, or for other reasons, the degree of deflection shall be approved by the Engineer.

(E) - Before laying cast iron or ductile iron pipe, all lumps, blisters and excess coal tar coating shall be removed from the bell and spigot ends of each pipe, the pipe ends shall then be kept clean until joints are made.

(F) - Before laying concrete pipe, the pipe ends shall be made smooth with emery cloth, file or other approved means, wire brushed and wiped until clean and dry. Pipe ends shall be kept clean until joints are made. After cleaning and drying, all contact surfaces of the gaskets and steel joint rings shall be coated with an approved flax before entering the spigot and into the socket. Immediately after the joint is pulled together the pipe shall be blocked with wood blocking. A surcingle shall be installed around the joint and the pipe shall be secured there with earth or sand as required, carefully tamped under and on each side of it up to the spring line of the pipe, including the bell holes. All blocking shall be removed when backfill has reached the spring line of the pipe.

(G) - Preparation of pipe ends for steel pipe shall be in accordance with the A.W.W.A. specifications C 201-50 and C 202-49 for, electric fusion welded steel water pipe.

FLOATING

The Contractor shall take every precaution against the floating of the pipe due to water coming into the trench, or through caving in, flushing or puddling. In case of such floating the Contractor shall replace the pipe at his own expense, and make wholly good any injury or damage which may have resulted.

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DIRECTOR OF PUBLIC UTILITIES _____

COMMISSIONER OF WATER AND HEAT _____

COMMISSIONER DIVISION OF UTILITIES ENGINEERING _____

ENGINEER OF CONSTRUCTION AND SURVEYS _____

ENGINEER OF DESIGN _____

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATER WORK NOTES FOR MEDINA-
CLARK INTERCHANGE IN CLEVELAND, OHIO

MADE ECE DATE 11-4-64 TRACED _____ DATE _____
CHECKED _____ DATE _____ SCALE _____

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

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(F) - If prior to the expiration of this contract, any of the pavements or road surfaces within the lines of excavation or adjacent thereto, shall have been damaged or injured, due to undermining, or for any other cause which may be attributed to the work which is being done by the Contractor, then the Contractor shall remove such damaged or injured pavements or road surfaces, foundations of same and all loose final pavement or road surface, he shall then backfill with sand properly rammed and replace the final pavement or road surface.

(G) - If any sidewalks, driveways or curbs, are removed or injured by the Contractor in the course of making excavation or handling materials, or for any other reason which may be attributed to work which has been done by the Contractor, then he shall relay same after all work, including backfilling has been completed. If any stone sidewalks, driveways, or curbs which have been removed or injured, are unfit to be relaid, then the Contractor shall furnish new material and relay same. All concrete or cement sidewalks, driveways or curbs, which are removed or injured by the Contractor shall be broken up by him and he shall furnish all labor and materials and construct new sidewalks, driveways or curbs, to replace those removed or injured. At intersecting walks, drives, etc., additional concrete slabs beyond the excavation limits shall be removed and replaced with new material, in order to avoid having more joints than in the original work. All slabs replaced shall be of full width. The Contractor shall furnish, place and maintain, wherever the sidewalk has been removed or damaged by him, a temporary sidewalk so as to provide a safe and passable sidewalk until such time as the final sidewalk is completed.

(H) - All pavements, road surfaces, sidewalks, driveways, or curbs, which the Contractor is required to replace or to have replaced, shall, at the expiration of this contract, be in at least as good condition as at the time of awarding the contract.

(I) - All work which the Contractor may do in connection with the opening up or replacing or pavements, road surfaces, sidewalks, driveways, or curbs, as well as the final repaving, shall be done at his expense, in accordance with the rules and requirements of the Street or Sidewalk Departments of the City of Cleveland, and in accordance with the additional requirements of these specifications. And the Contractor shall furnish evidence to the Engineer that the work has been completed to their satisfaction.

(J) - Tunneling will not be permitted without permission of the Engineer. In backfilling tunnels, sand shall be used as far as possible and balance of backfilling made with Class E concrete, rammed in place.

(K) - The Contractor shall make all pavement cuts by channeling machine, hand-operated pneumatic tools or by such other methods as will furnish a clean cut in the pavement and pavement base without undue shattering. The use of ball or weight to break the pavement will not be permitted.

(L) - No specific or separate payment will be made for all of this work, but the cost thereof shall be included in the prices bid for the various items of the work to be done under this contract. Restoration as noted above will only be required in areas where the plans do not otherwise propose new construction of pavement sidewalks and curbs, except that temporary restoration in such areas may be required by the Engineer in order to maintain traffic or local access per Sec. G-405 and G-7.07.

LIST AND INVOICES

(A) - The Contractor shall furnish the Engineer with the list in duplicate of pieces in each shipment of pipe and specials, giving the serial number and designation of each pipe and special sent at that time.

(B) - The material shall be shipped in such sections as the Engineer may order.

CAST IRON AND DUCTILE IRON PIPE AND FITTINGS

WORK INCLUDED

The Contractor shall furnish, all the materials for and shall properly construct and connect in place, at the locations shown on the drawings or as directed, all cast iron or ductile iron pipe and fittings, including all excavation work, the cutting into and removal of existing pipe, backfilling, sand backfill, and repaving, all as required for the proper completion of the work included under this contract.

CAST IRON PIPE AND FITTINGS

(A) - All pit cast pipe shall be manufactured in all respects in accordance with, and shall meet the requirements of the latest "Standard Specifications for Cast Iron Pipe and Special Fittings" as adopted by the American Water Works Association which specifications except as herein modified are made a part of these specifications.

(B) - All pit cast pipe and fittings shall be cement lined and of the size and classes noted on the respective contract drawings.

(C) - In lieu of pit cast pipe above the Contractor will be permitted to furnish either centrifugal or high strength cement lined pipe. The metal shall have a modulus of rupture of not less than 40,000 pounds and a tensile strength of not less than 18,000 pounds and shall be for class noted on the contract drawings. Pipe may be furnished in 12, 15, or 18 foot lengths. The centrifugally cast pipe shall conform to the American Standard Specification A21.6-1952 and all subsequent amendments thereto.

When noted on the contract drawings ductile iron pipe shall be supplied. All ductile iron pipe shall be manufactured in accordance with A.S.A. A21.6 or federal specification WWP-421B. All ductile iron fittings shall be manufactured in accordance with A.S.A. A21.10 or ANWA C 100-06. Ductile iron shall have a minimum of 60,000 psi. Ultimate tensile strength, 40,000 psi yield point and 10% elongation. The chemical analysis shall be as follows: Carbon 3% minimum, Phosphorus .08% maximum and Silicon 2.75% maximum.

(1) - The thickness of the centrifugally cast iron pipe shall conform to the following table:

STANDARD THICKNESS OF CENTRIFUGALLY CAST IRON PIPE AND DUCTILE IRON PIPE

SIZE	WORKING PRESSURE	STANDARD THICKNESS	CLASS
4"	250	.44	25
6"	250	.48	25
8"	250	.52	25
10"	250	.56	25
12"	250	.60	25
16"	200	.68	25

(2) - All fittings, such as bends, tees, crosses, offsets, hydrant branches, etc., shall have bell and bell or bell and spigot ends with cast lead joints, pipe between offsets or bends and on hydrant branches, shall also be of bell and spigot type with lead joints.

(D) - All pipe shall have bell and spigot ends for cast lead joints or a slip-on type joint with compressed rubber ring inserts. All pipe and fittings shall be cement lined.

(E) - Gaskets shall be of rubber or other equally effective protection against uneven distortion of the gasket.

(F) - Where fittings are shown which are not covered by the above specifications, they in such particulars as are lacking thereon, shall conform to the dimensions and otherwise meet the specifications for the respective type which are carried in the latest revisions to the current edition of the "Handbook of Cast Iron Pipe" by the Cast Iron Pipe Research Association or which are otherwise shown on the contract drawings.

(G) - Wherever changes in line and grades of the main as shown on the drawings are not standard fitting deflections, the Contractor will be permitted to submit details using combinations of standard fittings and small deflections (not to exceed a maximum of one half (1/2) inch joint opening) in the adjoining lengths of pipe. Pipe to be installed with air cocks or drains shall be cast with bosses thereon, and drilled and tapped for two (2) inch connections, and plugged in the shop with cast iron threaded plugs, before shipment.

(H) - Plugs for bell and spigot pipe and caps for lugged pipe shall be furnished with two (2) plugged two (2) inch taps for drain and air cock connections.

(I) - Closure pieces shall be accurately measured and cut in the field and installed using solid type pattern sleeves as shown or as required.

(J) - Tests, inspection, reports and analyses of tests of samples for all materials shall be furnished as set forth elsewhere in these notes.

(K) - Bitumastic coating shall be applied on the exterior of all cast iron pipe and fittings in accordance with ANWA specifications.

CEMENT LINING

All cast iron or ductile iron pipe and fittings shall be given a cement mortar lining at the point of manufacture. The lining shall conform to the American Standard Specification A 21.4-1952 and all subsequent amendments thereto.

MARKING

All cast iron or ductile iron pipe and fittings shall be suitably marked to denote the manufacturer, class, date, weight and other elements of identification.

LAYING

(A) - Proper and suitable tools and appliances for the safe and convenient handling and laying of the pipes and fittings shall be used. Great care shall be taken to prevent the pipe coating from being damaged, particularly on the inside of pipes and fittings and any such damage shall be remedied as directed. All pipes and fittings shall be carefully examined by the Contractor for defects just before laying and no pipe or fitting shall be laid which is known to be defective.

(B) - If any defective pipe is discovered after having been laid, it shall be removed and replaced with a sound pipe or fitting in a satisfactory manner, by the Contractor at his own expense. All pipes and fittings shall be thoroughly cleaned before they are laid, shall be kept clean until they are used in the completed work, and, when laid, shall conform to the lines and grades given by the Engineer. Open ends of pipes shall be kept plugged with a bulkhead during construction. In no event shall any portion of the damaged pipe be permitted to remain in the line. Any approval stamps found on the pipe shall be removed or the pipe broken up for scrap.

(C) - Pipe laid in trench shall be laid to a firm and even bearing for its full length. Precautions shall be taken against floating.

(D) - It is the intention of these specifications to secure first class workmanship in the placing of pipe and accessories. In such details as are not specifically mentioned herein or called for on the drawings, the Contractor will be required to conform with the applicable sections of the latest "Standard Specifications for Laying Cast Iron Pipe" as adopted by the American Water Works Association.

CUTTING PIPE

Whenever the pipes require cutting to fit into the lines, the work shall be done in a satisfactory manner so as to leave a smooth end at right angles to the axis of the pipe. In no event shall flame cutting be used. When a piece of pipe is cut to fit into the line, no payment will be made for the portion cut off and not used in the line.

JOINTS

(A) - Lead joints: In jointing all bell and spigot pipe and fittings having lead joints, the spigot of each pipe shall be properly seated in the bell of the next adjacent piece and adjusted so as to give a uniform annular space. The joint shall be made with twisted hard jute and soft pig lead. Before placing the jute, it shall be sterilized either by boiling or by dipping in a concentrated solution of "HTH". The jute shall be twisted and thoroughly driven into the bell, so that the lead, after having been caulked, shall have a depth of 2 1/2 inches.

The furnace and melting pot shall be kept near the joint to be poured and each joint shall be made with one pouring. Dross shall not be allowed to accumulate in the melting pot. The joints shall be thoroughly caulked by competent pipe joiners and in such manner as will secure a tight joint without overstraining the iron of the bell.

PAINTING

After erection, all exposed or damaged coatings and all bolts for lugged joints shall be cleaned and painted with three (3) field coats of Inertal 50 or Bitumastic 50 or equivalent.

DRAWINGS

(A) - The Contractor shall submit to the Engineer for approval duplicate prints of all shop drawings for pit cast iron pipe and fittings and miscellaneous details which are not standard construction, and are not mentioned in the regular catalogue of the company furnishing the pipe. No work shall be done in the shop until after the drawings have been approved.

(B) - The approval of the drawings by the Engineer shall not relieve the Contractor of any of his obligations in connection with this contract.

MEASUREMENT

The number of lineal feet of cast iron pipe and ductile iron pipe line and connections to be paid for shall be the actual number of lineal feet furnished and placed in accordance with these specifications as measured along the axis of the piping including fittings and valves connected up in place. For connections between new and existing mains, measurement shall be the distance from centerline to centerline of mains and the actual length of existing main ordered to be removed to make the connection.

PAYMENT (continued on sheet No. 134)

WORK INCLUDED

The Contractor shall furnish all hydrants, caulking material, labor, tools and equipment for and shall properly connect at the location shown on the Contract Drawings, 6" hydrants, complete, as required for the proper completion of the work included under this contract.

FURNISHING AND SETTING 6" HYDRANTS

HYDRANTS

The 6" hydrants shall be City of Cleveland Standard and shall conform to the City's specifications on file in Room 624 Lincoln Building, Cleveland 14, Ohio and the Hydrant Detail shown on sheet No. 162.

SETTING

(A) - General Location: Hydrant shall be located in a manner to provide complete accessibility, and in such manner that the possibility of damage from vehicles or injury to pedestrians will be minimized. Unless otherwise directed, the setting of any hydrant shall conform to the following:

(B) - Location Regarding Curb Lines: When placed behind curb the hydrant barrel shall be set so that center of barrel will be no less than 3 feet from the gutter face of the curb, or deviate from location indicated on contract drawings, except by consent of the Engineer.

(C) - Location Regarding Sidewalk: When set in the lawn space between the curb and the sidewalk, or between the sidewalk and the property line, no portion of the hydrant or nozzle cap shall be within 6 inches of the sidewalk.

(D) - Position of Nozzles: The hydrant shall stand plumb, with the nozzles pointing toward the road and at an angle of forty-five degrees therefrom. Where hydrant branch piping is parallel with, or not at right-angles to the curb, the Contractor shall release swivel head bolts and adjust the hydrant nozzles to face the road at the proper angle. A hydrant without swivel heads will be adjusted by the City where necessary to correct the angle on nozzles. The elevation shall conform to the established grade with tops of frost casing at least four (4) inches above grade.

(E) - Connection to Main: The hydrant shall be connected to the main pipe with a cast iron branch controlled by the independent gate valve of the same size as hydrant, except as otherwise directed.

APPROVED

DATE _____

DIRECTOR OF PUBLIC UTILITIES

COMMISSIONER OF WATER AND HEAT

COMMISSIONER DIVISION OF UTILITIES ENGINEERING

ENGINEER OF CONSTRUCTION AND SURVEYS

ENGINEER OF DESIGN

LOW SERVICE DISTRICT	
DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER AND HEAT CLEVELAND, OHIO	
SUBJECT	WATER WORK NOTES FOR MEDINA-CLARK INTERCHANGE IN CLEVELAND, OHIO

MADE	DATE	TRACED	DATE
E.C.E.	11-6-64		
CHECKED	DATE	SCALE	

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

WATERWORK NOTES

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(F) - Drainage at Hydrant: Drainage shall be provided at the base of the hydrant by filling around the elbow with coarse gravel or crushed stone to at least six (6) inches above the waste opening. Wherever a hydrant is set in rock, clay or other impervious soil, the trench shall be widened and deepened on each side of the hydrant base, which space shall be filled compactly with coarse gravel or broken stone mixed with coarse sand of sufficient quantity to absorb all water to be drained from the hydrant when the valve is closed.

(G) - Anchorage for Hydrant: The hydrant shall be set on a stone slab or similar foundation and base of hydrant and hydrant tee well braced against unexcavated earth at the end of the trench with concrete backing, or it shall be tied to the pipe with suitable rods or clamps as directed by The Engineer.

(H) - Cleaning: The hydrant shall be thoroughly cleaned of dirt or foreign matter before setting.

PAYMENT (Continued on Sheet No. 134)

FIRE HYDRANTS RELOCATED

WORK INCLUDED

The Contractor shall remove the hydrants and properly set in place and connect at the locations shown on the drawings or as directed by the Engineer. This shall include all excavating, backfilling, seeding and sodding, and repaving required for the proper completion of the work included under this contract.

MATERIALS

All hydrants to be relocated must be in good condition. All other materials and appurtenances necessary for the proper completion of this item shall be of the kind and grade called for in these notes for the particular kind of construction in which the materials are to be used.

CONSTRUCTION METHODS

The construction methods shall conform to the requirements of the Item "Furnishing and Setting 6" Hydrants", as set forth elsewhere in these notes.

PAYMENT (Continued on Sheet No. 134)

FIRE HYDRANTS ABANDONED

Where fire hydrants are indicated to be abandoned (not indicated for removal), no work is required, the hydrant becomes the property of the Contractor and shall be disposed of as he sees fit. The cost of such disposal shall be included in the price for Item E-1 Roadway Excavation.

2-INCH GALVANIZED WROUGHT IRON AND BRASS PIPE FOR FLUSHING CONNECTIONS

WORK INCLUDED

The Contractor shall furnish all the materials for and shall properly connect in place at the locations shown on the drawings or as ordered, all 2-inch extra strong brass pipe and fittings, and all 2-inch extra heavy galvanized wrought iron pipe and fittings respectively, which are necessary for the proper completion of the work included under this contract.

BRASS PIPE AND FITTINGS

All brass pipe and fittings shall be extra strong, 2-inch pipe size and the pipe shall conform to A.S.T.M. Specification B 43-42. Fittings shall be extra strong weight and shall have sound, well fitting threads.

GALVANIZED WROUGHT IRON PIPE AND FITTINGS

All galvanized wrought iron pipe, nipples and fittings shall be extra heavy genuine wrought iron pipe A.S.T.M. Designation A 72-59 T. The fittings shall be beaded, of malleable iron, extra heavy weight. All pipe and fittings shall be hot galvanized inside and outside, and shall have sound, well-fitting threads.

ERECTION

All pipe shall be carefully placed to the proper lines and grades, and shall be connected up, unless otherwise shown, with screw fittings. Screw joints shall be made tight with a graphite paste and screwed home. A liberal number of unions shall be used to permit the ready removal of any section.

PAYMENT (Continued on Sheet No. 134)

VALVES

WORK INCLUDED

The Contractor shall furnish all the materials for and shall properly set in place and connect at the locations shown on the drawings or as directed. All air cocks, drain valves, and gate valves of the various sizes and types specified or ordered all as required for the proper completion of the work included under this contract.

AIR COCKS

All air cocks or air vent valves shall be 2-inch brass angle type globe valves. 2-inch air cocks shall be equal in all respects to the Farnan "Cleveland Standard" Brass Air Bent Valve No. W-4695 as manufactured by the Farnan Brass Works.

GATE VALVES

(A) Type of Valves: The gate valves shall be manufactured in full compliance with the Standard Specifications for Gate Valves for Ordinary Water Works Service of the American Water Works Association AWWA C-500-61 or latest revision thereof and in addition shall comply with the following supplementary requirements. All gate

valves shall be of the non-revolving double disc parallel seat bottom wedge or side wedge type. All gate valves 20 inches and over in size shall include by-pass valves attached thereto. In opening or closing the valve, the gates shall be forced ascend or descend by reason of the thrust exerted upon them by the valve stem nut; this thrust being generated by the rotation of the valve stem. In closing the valve, the discs when opposite the ports, shall be pressed firmly against the body seats by wedges or some other device equally suitable to the Engineer.

(B) Valves with Stationary Stems: All gate valves, unless otherwise ordered, shall be made with single, non-rising stems.

(C) Hub Ends: The dimensions of the bells on valves up to and including 24 in. in diameter shall conform to those for Class D pressure fittings, as required by AWWA C100. On valves 30 in. and larger in size, the bell dimensions shall be for the classes ordered.

(D) Victaulic Ends: Victaulic ends shall conform to the dimensions given on the contract drawings.

(E) Flange Ends: The end flanges of flanged gate valves shall conform in dimensions and drilling to the "American 125 pound Cast Iron Flanges Standard", unless otherwise ordered.

(F) Screw Ends: All 2-inch gate valves and under shall be made with screw ends, unless otherwise specified.

(G) Vertical and Horizontal Valves: All gate valves, 16 inches and under, shall be constructed to work vertically. Valves over 16 inch waterway shall be constructed to work horizontally.

(H) By-Passes: By-passes with gate valves shall be provided on valves 20 inches and larger. The by-passes shall be located on or below the horizontal centerline of the valves. By-pass valves shall be of the same size as the by-pass and shall conform to the requirement of these specifications for the specific valve used. The size requirements of by-passes shall be as follows: 20-inch valves shall be provided with 3-inch by-passes; valves 24 inches to 30 inches, inclusive, shall be provided with 4-inch by-passes; valves 36 inches to 42 inches, inclusive, shall be provided with 6-inch by-passes; 48 inch valves shall be provided with 8-inch by-passes.

(I) Flanges: When flanged valves are required, the flanges shall be faced and drilled. Bolt holes shall be spot faced on the back when necessary to secure an even bearing. All bolt holes shall be of the size shown on the drawings to be submitted and approved, shall be accurately drilled from templates, spaced equal distances apart and shall straddle horizontal and vertical axis, all as shown on the drawings. The dimensions and drilling of all end flanges shall conform to the spacing indicated on the drawings which shall be the American 125 pounds Cast Iron Flange Standard. Flanges shall be plain face with a smooth finish.

(J) Marking: All gate valves 3 inches and over shall have the identity of maker, size and the year when made and also the letters "C.W.D." cast upon its body or dome in raised letters.

(K) Stuffing Boxes: The stuffing box on each gate valve 3 inches or over, must be separate from the dome and fastened to it by bolts. For 2 inch valves and under, the stuffing boxes may be formed in the dome of the valve. When required by the Director, valves 16 inches and smaller, shall be furnished with "O" ring type seal plate. The seal plate shall be fitted with at least two "O" rings, the lower "O" ring serving as the pressure seal and the upper "O" ring as a combined dirt and moisture seal. The "O" rings shall be Precision Rubber Corporation Quality Compound No. 122-70, or approved equal.

(L) Seat and Gate Rings: Dimensions of the bronze seat and gate rings shall be proportioned to fit the test pressure required, and shall meet the approval of the Engineer. The rings shall be firmly secured in place by an approved device, which will prevent them from working loose, particularly when the valve is left partly open. Dimensions of the bronze seat and gate rings for gate valves shall be not less than that specified in the following tables. Body seat rings shall be made of Grade One Bronze. Gate seat rings shall be made of Grade Five Bronze.

BODY AND GATE RINGS

VALVE SIZE	BODY RINGS			GATE RINGS		
	FACE	DEPTH	THICKNESS AT BASE OF THREADS	FACE THICKNESS	FACE THICKNESS	DEPTH
3"	9/16	9/16	3/16	3/16	5/8	1/4
4"	9/16	9/16	3/16	3/16	5/8	5/16
6"	11/16	9/16	3/16	5/32	11/16	5/16
8"	3/4	5/8	3/16	7/32	13/16	5/16
10"	3/4	5/8	3/16	7/32	13/16	11/32
12"	7/8	5/8	7/32	7/32	1	11/32
16"	1-1/8	3/4	1/4	9/32	1-1/4	1/2
20"	1-3/8	1-1/8	5/16	3/8	1-3/8	5/8
24"	1-3/8	1-1/8	5/16	3/8	1-3/8	5/8
30"	1-1/2	1-1/4	3/8	7/16	1-1/2	3/4

		SIDE WEDGE			
3"	13/32	1/2	3/16	3/16	ALL BRONZE DISC
4"	7/16	9/16	3/16	3/16	1/2 5/32 21/64
6"	1/2	11/16	9/32	1/4	5/8 5/32 21/64
8"	17/32	11/16	9/32	1/4	11/16 5/32 21/64
10"	5/8	13/16	3/8	5/16	13/16 5/32 21/64
12"	5/8	13/16	3/8	5/16	13/16 5/32 21/64
16"	3/4	1	15/32	3/8	7/8 3/16 13/32
20"	7/8	1-5/16	17/32	7/16	1 1/4 17/32
24"	1-1/16	1-3/8	21/32	1/2	1-3/16 5/16 19/32
30"	1-5/16	1-1/2	25/32	1/2	1-7/16 5/16 19/32

DIMENSIONS IN INCHES

(M) Valve Stem: All gate valves shall be of the single screw type. The stems shall be of Grade Three Bronze. The threads of stems and stem nuts shall be of Acme, modified Acme or one-half V type. If requested, a manufacturer's certificate of test shall be furnished with all bronze stems. All stem collars shall be cast integral with stems. The diameters of stems at the base of the thread shall be not less than those shown below. The stem opening and thrust-bearing recess shall be Grade One, bronze bushed. The number of threads per inch shall be as given below.

SIZE OF VALVE INCHES	DIAMETER OF STEM AT BASE OF THREAD - INCHES	NO. OF THREADS PER INCH
2	0.469	4
3	0.859	4
4	0.859	3
6	1.000	3
8	1.000	3
10	1.125	3
12	1.188	3
16	1.438	3
20	1.896	3
24	1.980	2
30	2.480	2

(N) Wrench Caps: The wrench caps and retaining nuts on heads of valve stems and pinion shafts shall be of Grade Three Bronze. On valves 24 inches and over, wrench caps shall be 2 inches square and 2 inches deep. On valves 4 inches to 20 inches, inclusive, they shall be 1-3/4 inches square on top, 1-7/8 inches square at base, and 1-3/4 inches deep. On 3 inch valves and under, they shall be 1-1/4 inches square on top, 1-3/8 inches square at base and 1-1/2 inches deep. Machined wrench caps for valves 3 inches to 48 inches inclusive shall be fitted to a machined square stem or pinion shaft and held in place by a retaining nut. Wrench caps shall have a cut-away skirt to permit easy access to gland bolts.

(O) Valves to open clockwise except 2 inches and under. All gate valves 3 inches and over including by-pass valves, shall be made to open by turning in a clockwise direction. All valves to be so made that they can be easily operated.

(P) Facing of Gates: All discs or gates and threads for seat rings in the body shall be machined true and a groove or grooves shall be machined in each disc or gate for the reception of the face ring. The disc and seat rings shall be securely and rigidly attached to the discs or body seats in a manner approved by the Engineer, and the rings are to be finished to a true surface.

(Q) Rollers and Scrapers: In all valves 20 inches in diameter and larger designed to lie horizontally, each gate or disc shall be provided with two bronze rollers travelling on bronze-faced tracks and provided with suitable bronze scrapers or two stainless steel rollers travelling on stainless steel-faced tracks and provided with suitable stainless steel scrapers. The thickness of the facing of the tracks shall be not less than 1/4 inch. The bronze shall be Class 1 and the stainless steel shall be ASTM A 276-55, Type 302.

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DIRECTOR OF PUBLIC UTILITIES _____
COMMISSIONER OF WATER AND HEAT _____
COMMISSIONER DIVISION OF UTILITIES ENGINEERING _____
ENGINEER OF CONSTRUCTION AND SURVEYS _____
ENGINEER OF DESIGN _____

LOW SERVICE DISTRICT	
DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER AND HEAT CLEVELAND, OHIO	
SUBJECT	WATER WORK NOTES FOR MEDINA-CLARK INTERCHANGE IN CLEVELAND, OHIO

MADE E.C.E. DATE 11-6-64 TRACED _____ DATE _____
CHECKED _____ DATE _____ SCALE _____

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

WATERWORK NOTES

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(R) **Valve Guides:** All valves 20 inches in diameter and larger shall be provided with guides or tracks which shall be made straight and true, and all irregularities must be machined off. The guides or tracks of horizontal valves shall be substantially faced with a minimum of 1/4 inches of Grade One Bronze, or stainless steel ASTM A 276-55, Type 302, satisfactory to the Engineer, securely fastened and planned off smooth and true.

(S) **Gearing:** All valves 20 inches in diameter and larger shall be equipped with enclosed cut tooth steel gears. Gears, shafts and bearings shall be such as to provide easy operation without bending or twisting.

(T) **Dowel Pins:** All gear valves shall have two dowel pins set in the flanges connecting the dome and body. Size of the pins to be shown in plans.

(V) **Grease Cases:** All valves 20 inches in diameter and larger shall have water tight grease cases installed. The grease cases shall be of the extended type and shall be made of cast iron conforming to ASTM specifications, serial designation A 126, Class B or any subsequent amendment thereto. Bearing surfaces for valve stem and pinion shaft shall be bronze bushed with Grade One Bronze. The grease cases shall be securely bolted to the valve bonnet through a heavy cast iron yoke. The yoke shall be of sufficient length to provide space for repacking valve and grease case stuffing boxes. All grease cases shall be provided with a removable cover securely bolted in place to allow easy access to the gears. There shall also be provided convenient filling and draining plugs and sufficient oil to fully submerge the pinion gear. The valves shall be delivered with the grease cases filled with the proper oil as recommended by the manufacturer.

(W) **Indicators:** All valves 20 inches in diameter and over, shall be equipped with indicators denoting the positions of the gate. The moving part and bearings to be of bronze or bronze-lined.

(AA) **Bronze Parts:** The stems, stem nuts, operating nuts, retaining nuts, disc and seat rings, shall be of solid bronze. Other parts such as wedges, glands, thrust bearings, gear spindles, rollers, scrapers and tracks, and all other parts coming together in operation, shall be of bronze, or substantially lined with bronze or stainless steel of a thickness not less than 1/4 of an inch and as shown on drawings submitted and approved. All 2 inch valves and under shall be made entirely of bronze, except handwheels which shall be of malleable iron.

(BB) **Cast Iron Parts:** The bodies, covers, discs, frames, etc., of all gate valves 3 inches and over, shall be of cast iron.

(CC) **Waterway Opening:** With the valve open, an unobstructed waterway shall be afforded, the diameter of which is not to be less than the full nominal diameter of the valve.

MATERIAL SPECIFICATIONS

(A) - **Strength of Valves:** The gate valve shall be designed for 150 lb. working pressure and shall withstand an internally applied hydrostatic pressure at all points of at least 300 lbs. per square inch. A factor of safety of not less than 10 shall be used on the design. Should tests develop any weakness, the valves from that design shall be rejected and a new design made.

(B) - **Reinforcement at Flanges:** All valve flanges shall be reinforced by fillets in accordance with the manufacturer's practice proven satisfactory in actual service.

(C) - **Joints:** All joints of the valves shall be faced true in a lathe or planer, and put together with a gasket of some material acceptable to the Engineer.

(D) - **Bolt Holes:** All bolt holes shall be accurately drilled from templates and spaced equal distances apart.

(E) - **Bolts and Nuts:** All bolts and nuts shall be made of silicone bronze (A.S.T.M. B 98-55, Alloy A) or stainless steel (A.S.T.M. A 276-55, Type 302).

(F) - **Parts to be Interchangeable:** All parts of valves of the same size and make must be perfectly interchangeable and all work done in a thorough and workmanlike manner.

(G) - **Castings:** All castings, whether of bronze, iron or steel, shall be sound and smooth without cold shuts, swells, lumps, scabs, blisters, sand holes or other imperfections, and shall be made in accordance with the best modern foundry practice to obtain castings of the best quality and of uniform thickness. No welding, plugging, or filling of holes or other defects will be permitted. For parts whose thickness is less than one (1) inch, casting being thinner than the specified thickness by .06 of an inch or more shall be rejected, and for parts whose thickness is one (1) inch or more, castings being thinner than specified by .08 of an inch or more shall be rejected.

(H) - **Bronze Parts:** (1) Bronze for parts, other than those listed below, shall be Grade One. (2) Valve stems, pinion shafts, stem nuts, wrench caps and retaining nuts shall be made of Grade Three bronze. (3) Disc rings shall be made of Grade Five bronze.

(I) - **Tests of Bronze:** (1) If demanded, a manufacturer's certificate of test shall be furnished with all bronze stems. (2) All stems of 16-inch gate valves and over, shall have a prolongation on one end of each stem, of the same dimensions and cross section as the stem, and of sufficient length to enable the cutting of specimens parallel with the longitudinal axis of the stem. Specimens shall be cut from prolongations one-half way between surface and central axis. Other methods of test will be considered by the Director, but must be submitted in detail with the bid.

(3) For all stems of gate valves smaller than 16 inches, not less than two test pieces shall be cast from the molten metal of each heat, from which valve stems are being made. (4) All stems made from bronze showing less strength, elongation and/or ductility than above required shall be rejected. (5) Tests of valve stems, or the various parts of any valve may be made at any time before or after delivery, and if found to be deficient in strength or unsatisfactory to the Director, the whole lot or shipment may be rejected.

(J) - **Cast Iron:** (1) **Quality:** Cast Iron shall conform to ASTM Specifications A 126, Class B, or latest revision thereof. All iron castings shall be tough and without brittleness, such as may be cut drilled and chipped by hand with due ease. A blow from a hammer shall produce an indentation on the edge of the casting without flaking the metal.

(2) - **Tests:** Bars from the molten metal from which the valves are being made shall be tested at such time and in such manner as the Engineer may require. The requirements of A.S.T.M. Specifications A-126 shall govern testing procedures to determine the physical and chemical characteristics of the iron castings. Should the result obtained from the bar tested fail to show that the cast iron meets the requirements herein specified, the entire melt will be rejected. Test bars, however, whose failure is due to inherent defects shall not be considered. All valves made from iron showing less strength than called for in the A.S.T.M. Specifications shall be rejected.

(K) - **Quality of Wrought Iron:** All wrought iron shall be tough, fibrous, and uniform in character. Specimens cut from bars and broken in a testing machine shall show a tensile strength of not less than 45,000 PSI, with an elongation of 18 per cent in eight diameters.

(L) - **Quality of Materials:** Grade One cast bronze shall conform to the properties of A.S.T.M. B 62.

Grade Two cast bronze shall conform to the properties of A.S.T.M. B 132, Alloy A.

Grade Three cast bronze shall conform to the properties of A.S.T.M. B 132, Alloy B.

Grade Four rolled bronze shall conform to the properties of A.S.T.M. B 21, Alloy A (one-half hard).

Grade Five bronze shall be sufficiently malleable to conform to dovetailed grooves when peened or rolled, and shall have a minimum compressive strength, without deformation, of 4,000 PSI., and shall have the following chemical composition:

Copper, per cent	91.0
Tin, per cent	0.0
Zinc, per cent	5.0
Lead, per cent	4.0

Silicon Bronze - This bronze shall conform to A.S.T.M. Specification B-98, Alloy A.

Stainless Steel - The stainless steel shall conform to A.S.T.M. Specifications A-276, Type 302.

Cast Iron - The cast iron shall conform to A.S.T.M. Specification A 126, Class B.

(M) - **Other Materials:** All other materials used in the manufacture of these valves and not specified in the specifications shall be of the best quality of their respective kinds, and subject to inspection, tests, and approval by the Engineer.

(N) - **Chemical Analysis:** Chemical analysis of the material used shall be furnished by the Contractor whenever required by the Engineer.

(O) - **Cleaning of Castings:** All iron castings shall be thoroughly cleaned on the outside and inside surfaces, and protected from rain or moisture until they are painted.

(P) **Hydrostatic Tests at Shop:** All gate valves shall be tested in the shop by hydrostatic pressure, by closing the valve and applying the required test pressure in the body and dome of the valve as specified below.

3" and under	300 P.S.I. - No time requirement
4" through 12"	400 P.S.I. - No time requirement
14" through 20"	300 P.S.I. for 15 minutes, drop pressure to 150 P.S.I., then elevate again to 300 P.S.I. for 15 minutes - a total of 1/2 hour.
24" through 48"	300 P.S.I. for 1/2 hour, drop pressure to 150 P.S.I., then elevate again to 300 P.S.I. for 30 minutes - a total of 1 hour.

This is a modification of section 29 of the "Standard Specifications ANWA Designation C-500-61". All leaks, flaws or other defects developed in making these tests shall be corrected to the satisfaction of the Engineer or the entire piece shall be rejected. After testing, all valves shall be thoroughly drained. All equipment for testing and all tests shall be made at the Contractor's expense.

(Q) **Performance Tests:** Each valve shall be operated in the position that it will assume in service and for the full length of gate travel in both directions, to demonstrate the free and perfect functioning of all parts in the intended manner. Any defects of workmanship shall be corrected and the test repeated until satisfactory performance is demonstrated.

PLACING AND TESTING

(A) - All valves shall be set accurately and carefully to the lines and grades given. All connections to pipe shall have the necessary flanged lead or screwed ends as required under the following items: Cast iron pipe and fittings, furnishing and setting 6" (six inch) hydrants, and 2-inch galvanized wrought iron pipe and brass pipe and as shown on the valve schedule.

(B) - After the valves are set in place and ready to operate, the Contractor shall test them under working pressure and conditions herein specified under the Specification "Testing Mains", and any valve found to leak shall be made water-tight and, if found to be of faulty design, shall be satisfactorily repaired or replaced by the Contractor.

PAINTING

(A) - Iron body valves shall either be dipped in asphalt paint and all bronze parts cleaned, or all iron castings shall be painted inside before assembling with two (2) coats of an approved paint and, after passing the hydraulic test, shall be given at least two (2) coats of approved paint outside.

(B) - After erection, all exposed metal surfaces of valves except brass or bronze shall be painted with (2) field coats of coal tar pitch paint equal to Inertal 66 or Koppers Bitumastic 50.

INSPECTION

The Engineer or his authorized designate will inspect the material and work done, as the interests of the City or State may require. Such officer shall have unrestricted access to the Contractor's plant, and to all parts of the work, and other places at which the preparation of the material and the construction of the different parts of the work to be done under these specifications are carried on, and he shall receive all facilities and assistance to carry out his work of inspection and testing in a manner satisfactory to the Engineer. Such inspection shall not relieve the Contractor from any obligation to perform said work strictly in accordance with the specifications, or any modifications thereof as herein provided, and work not so constructed shall be removed and made good by the Contractor at his own expense.

DRAWINGS

(A) - Prior to the manufacture of any valves, the Contractor shall submit for the approval of the Engineer and Director of Public Utilities of the City of Cleveland, complete working, detail, and dimension drawings showing thicknesses and kinds of material, and similar information.

(B) - One print of each of the drawings submitted will be returned with the criticisms or approval of the Engineer. In case the drawings are not approved, the Contractor shall again send for approval duplicate revised prints of the drawings to take care of the criticisms noted, and after the drawings have been finally approved, the Contractor shall again furnish to the Engineer fourteen additional prints, six of which shall be furnished to the Director of Public Utilities of the City of Cleveland, of each drawing. No work shall be done in the shop until after the drawings have been finally approved.

PAYMENT

The unit price stipulated for valves shall include the furnishing, placing, testing and painting of the air cock, drain valves, check and gate valves, including by-pass valves, operating nuts and other accessories and appurtenances and the furnishing of all labor, tools, and appliances necessary to complete the work as specified or as shown.

APPROVED
DATE 1-8-65
V. M. DeMello
DIRECTOR OF PUBLIC UTILITIES
COMMISSIONER OF WATER AND HEAT
COMMISSIONER DIVISION OF UTILITIES ENGINEERING
ENGINEER OF CONSTRUCTION AND SURVEYS
ENGINEER OF DESIGN

LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO
SUBJECT WATER WORK NOTES FOR MEDINA-CLARK INTERCHANGE IN CLEVELAND, OHIO

MADE E.C.E. DATE 11-6-64 TRACED DATE
CHECKED DATE SCALE

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

WATERWORK NOTES

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

132
478

CUYAHOGA COUNTY
CUY-71-10.54
CUY-90-13.01

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PRESTRESSED CONCRETE CYLINDER PIPE

WORK INCLUDED

The Contractor shall furnish all the materials, labor, tools and equipment for and shall properly construct and connect in place the water main at locations shown on the drawings, or as directed, using prestressed concrete cylinder pipe and fittings and including all excavation work, backfilling, sand backfill, reaving, concrete cylinder fittings, cast iron pipe and fittings, victaulic and dresser couplings, etc., all as required for the proper completion of the work included under this contract.

DEFINITIONS

Whenever the words "concrete pipe" or "prestressed concrete cylinder pipe" are used, they shall refer to and mean "prestressed steel cylinder reinforced concrete pressure pipe".

PRESTRESSED CONCRETE CYLINDER PIPE

(A) All prestressed concrete pipe to be furnished shall conform to these specifications and shall conform to the latest AWWA C 301-58 "Standard Specifications for Reinforced Concrete Water Pipe-Steel Cylinder Type, Prestressed".

(B) The Prestressed concrete cylinder pipe shall be furnished in uniform length of not less than sixteen feet for the pipe except that shorter lengths may be used to meet special conditions. The nominal thickness of the core and the nominal thickness of the mortar coating shall not be less than that given in the following table:

NOMINAL INSIDE DIAMETER	CORE THICKNESS	MINIMUM MORTAR COATING
24"	1- $\frac{1}{4}$ "	$\frac{3}{4}$ "
30"	1- $\frac{3}{8}$ "	$\frac{3}{4}$ "

The interior diameter of the pipe shall not be less than the nominal diameter by more than one per cent (1%). The thickness of the wall of the pipe shall not be less than the nominal thickness by more than eight (8) per cent. The ends of pipe shall be at right angles to the pipe axis. Pipes may be beveled to form curves. The concrete used to line the steel cylinders shall be made from suitable aggregates composed of hard, durable particles, clean and free from loam or organic material. Cement shall fulfill the requirements of ASTM designation: C 150-52, "Standard Specifications for Portland Cement". It is the intent of this specification to produce a concrete having a 28-day strength of 4500 or a 7-day strength of 3000 pounds per square inch for standard 6" x 12" test cylinders which shall be cured in the same manner as the pipe. Concrete for which 28-day strength tests shall show strengths of less than 4500 pounds per square inch may be used providing that the maximum design compressive stresses in the concrete shall not exceed forty (40) per cent of the strength of the concrete at the time of wrapping.

(C) The concrete lining of the steel cylinder may be placed vertically by the use of interior forms or may be placed by the centrifugal process. When the centrifugal process is used, the cylinder shall be held securely in spinning frames and the frames placed horizontally in a machine which will cause them to rotate rapidly about their longitudinal axis at a rim speed sufficient to insure good compaction of the concrete. The concrete shall be placed in the steel cylinders while they are revolving in such manner that the rotation shall evenly distribute the concrete along the entire length of the pipe. After the concrete has been deposited, the frames shall continue to revolve until the excess water has come to the surface and the concrete has become thoroughly compacted. The interior surface of the pipe may be finished either while it is still in the centrifugal machine or be means of a honing operation after the concrete has set. When the spinning of the concrete is completed, the lined cylinders shall be removed from the machine and placed in a vertical position for curing. After the concrete has taken its final set, the pipes shall be kept in a warm atmosphere for curing.

(D) When the concrete lining is placed by a vertical casting, the steel cylinder shall be placed vertically about an interior mold and the mold and cylinder shall be held in circular and concentric position by top and bottom rings of steel or cast iron. While the concrete is being placed, vibrations shall be employed so as to produce a concrete of maximum density. After completion of the pouring operation and when concrete has taken its final set, the lined cylinders shall be kept in a warm atmosphere until the following day, when the molds may be removed.

(E) After the interior molds have been removed, or in the case of centrifugal casting, after the concrete has hardened sufficiently, the concrete lining shall be kept moist by water or steam until at least 36 hours after the placing of the concrete. The temperature of the atmosphere to which the new concrete is exposed during this curing period shall be maintained above 50° F. but not exceeding 150° F. on the second day after placing the concrete, the pipe may be tipped into horizontal position and placed in storage. Where steam has not been used during this initial curing period, the concrete shall be kept moist for a further period of 5 days by intermittent sprinkling.

(F) In lieu of the moist curing method previously described, the manufacturer may use curing compounds of the emulsified asphalt or synthetic resin type, but such compounds must be applied to the concrete at such time as to assure the retention of adequate moisture for the proper hydration of the cement.

(G) Whatever method is used, however, the curing shall proceed in such manner and for such a period as to assure the concrete lining attaining the required strength.

(H) The cement mortar coating shall be applied to the cores after they have been wrapped under tension with high tensile wire. The mortar used for this coating shall consist of one part of cement to not more than three parts of fine aggregate, measured by volume. The mortar shall be placed on the pipe by a machine in which the mortar, previously mixed, is driven against the exterior surface of the core so as to produce a dense coating around the pipe and covering the steel reinforcing. Upon completion of the coating operation, the pipes shall be placed where they are protected from sun, wind and rain and after the mortar has hardened sufficiently, it shall be kept moist with water or steam until the following day or for a period of not less than twelve hours, at which time the pipes may be placed in the storage yard. If water is used for curing, the pipes shall be kept moist by periodic sprinkling for an additional 3 days after being placed in storage. In lieu of the moist curing method, the manufacturer may use concrete curing compounds of the emulsified asphalt or synthetic resin type, provided that such compounds must be applied to the mortar at such time as to assure the retention of adequate moisture for the proper hydration of the cement.

(I) The pipe shall be reinforced with a continuous welded steel cylinder of hot rolled steel sheets not lighter than 16 U.S. gage and shall conform to the requirements of ASTM designation A 254-52T, Grade B, specifications for "Heavy Gage Structural Quality Flat Hot Rolled Carbon Steel Open Hearth" or any subsequent amendments thereto, and ASTM designation: A242-52T, specifications for "Low-Alloy Structural Steel" or any subsequent amendments thereto, either open hearth or bessemer sheets having physical and chemical qualities equivalent to those mentioned may be used. Where the pipes are designed for special conditions or for high operating pressures, the cylinders may be made from hot-rolled sheets of special alloy steel having higher elastic limit and ultimate strength than those specified. In such case the sheets shall be of good welding quality and shall conform to the steel manufacturer's published specifications for the special grade of steel being supplied. Each completed cylinder with joint rings welded to it shall be subjected to a hydrostatic test by closing the ends at the joint rings, filling with water in contact at all points with welds, and raising the water pressure to stress the cylinder to a fibre stress of 25,000 pounds per square inch. While under pressure test, all welds shall be thoroughly inspected. If any leaks are found, they shall be repaired and the cylinder shall be retested. The finished cylinder with joint rings attached shall be water tight under the required test pressure. Arc welding shall be an approved process and test welds shall be furnished from the work as required.

(J) The high tensile wire used for circumferential reinforcement shall be of high tensile properties either cold drawn or high carbon MB basic, untempered according to the diameter of the pipe and the pressure for which it is designed. The type of wire to be used shall be determined by the manufacturer and shall conform to the appropriate ASTM Specifications as follows:

ASTM DESIGNATION	A 82-34	A 227-47T
Title	Cold-drawn steel wire for concrete reinforcement	Hard-drawn steel spring wire
Min. Ultimate Strength:		
6 GA. U.S.S.	80,000 PSI	192,000 PSI
Min. Elastic Limit:		
6 GA. U.S.S.	64,000 PSI	100,000 PSI

The elastic limit shall be determined by the Johnson Method.

(K) The thickness of sheets for the steel cylinder and the diameter of wire used, as well as the centerline spacing at which it is placed and the tension under which it is wound around the lined cylinder shall be such that the zero compression pressure be at least 50 pounds plus 1- $\frac{1}{4}$ times the static pressure. The maximum centerline spacing of the wire shall not exceed one inch and the wire shall not be lighter than 6 gauge U.S.S. The lined cylinder shall not be wrapped with wire until at least 6 days after placing of the concrete.

(L) Steel of special section of spigot joint rings shall conform to ASTM designation: A 31-52T, Grade A, specifications for "Boiler Rivet Steel and Rivets".

(M) Steel of flat section for bell rings shall conform to ASTM designation: A 245-44T, Grade B, specification for "Light Gage Structural Quality Flat Hot-Rolled Carbon Steel" or A 283-46T, Grade A, specification for "Structural Quality Low and Intermediate Tensile Strength Carbon Steel Plates", or any subsequent amendments thereto.

(N) Fittings or specials shall be furnished and installed as shown on the drawings for concrete cylinder pipe or as required and all include specials with bell end, spigot end, flanged end, and victaulic end outlets, with access manholes, air cocks, pitometer, and drain connections, anchor rings, bends, test heads, closure pieces, bevel and pipe, joint harness, etc. The Contractor shall submit to the Engineer detailed designs and shall receive his approval before the construction of any such specials. The zinc coated joint rings shall meet the requirements of one of the following ASTM Specifications: $\frac{3}{4}$ " bell rings A 303-52T, Grade A; $\frac{1}{2}$ " and $\frac{3}{8}$ " bell rings less than 6" in width: A 31-52T, Grade A; all spigot rings A 31-52T, Grade A.

(O) Special pieces, such as tees, wyes, or branch openings, shall also be of cylinder construction. In all cases, the reinforcement shall adequately compensate for the openings in the pipe wall. If the special piece is prestressed, then the area of the steel in the cylinder and cage, in addition to the compensating reinforcement previously mentioned, shall be not less than that for the adjoining prestressed straight pipe. If the special piece is not prestressed, then the additional area of the steel in such cylinder and cage shall be not less than that for the adjoining straight pipe if such straight pipe were designed as concrete cylinder pipe.

(P) The openings in the special may be formed by steel rings or castings of suitable design securely welded to the cylinder and reinforcing cage. All bends and special pieces shall be provided with joint rings corresponding to those in the straight pipe.

(Q) All vertical bends, where the deflections is 15° or greater, flanged pipe between the vertical bends, and all concrete cylinder pipe reducers shall be constructed of steel cylinders of $\frac{1}{4}$ " thickness plate and shall have the same longitudinal and circumferential steel in the cage as the adjoining straight pipe would have, if such straight pipe were designed as concrete cylinder pipe.

(R) Cast steel saddles and forgings or the equivalent in fabricated steel plates shall be welded to the steel cylinder for manhole and pipe connections and for drain, pitometer, and air cock connections, and shall be drilled and tapped and provided with malleable iron plugs.

(S) Unless otherwise shown or required, the ends of each pipe for typical field joints shall be formed by zinc coated steel joint rings securely welded to the steel cylinders, with the ring forming the bell end covered on the exterior surface with reinforced concrete and the ring forming the spigot end lined on its inner surface with concrete. The spigot ring shall have a substantial groove on its outer surface for the purpose of receiving, holding and protecting the gasket. The joints shall be self-centering and the rings forming the joints shall be of such shape and dimensions that the pipe shall center themselves without the aid of the rubber gasket. The welding of the joint rings to the cylinder pipe shall consist of at least one full continuous weld for pipe sections that are properly tested hydraulically for strength and water tightness. For pipe sections that have to be cut to be fitted up to make bends, such construction shall have double continuous welds. Likewise, any special construction, such as for outlets or for pipes having special ends, shall have double continuous welds.

(T) The gasket sealing the joint shall be of special composition rubber having a texture to secure a permanently watertight seal. The type of gasket shall have been in satisfactory use in comparable installations for not less than five (5) years.

(U) Access construction manholes in addition to those shown on the drawings shall be located as required to provide easy access for field welding and placing of mortar as required for field joints.

(V) Testing bulkheads shall be furnished and installed for testing any completed sections of the prestressed concrete cylinder pipe mains as may be required.


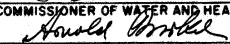

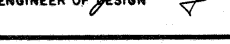
(W) All steel for castings shall conform to the specifications for grade 70-36 steel castings, as given in the "Standard Specifications for Mild-to-Medium Strength Carbon-Steel Castings for General Industrial Use, ASTM designation: A 27-52T".

(X) All steel forgings shall conform to "Standard Specifications for Carbon-Steel Forgings, ASTM designation: A 235-52T".

(Y) All forged or rolled steel pipe flanges shall conform to the "Standard Specifications for Forged or Rolled Steel Pipe Flanges for General Service, ASTM designation: A 181-49, Grade 1".

(Z) All structural steel including angles for anchor rings shall conform to "Tentative Specifications for Steel for Bridges and Buildings, ASTM designation: A 7-52T".

APPROVED

DATE 1-8-65

 DIRECTOR OF PUBLIC UTILITIES

 COMMISSIONER OF WATER AND HEAT

 COMMISSIONER, DIVISION OF UTILITIES ENGINEERING

 ENGINEER OF CONSTRUCTION AND SURVEYS
 ENGINEER OF DESIGN

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATER WORK NOTES FOR MEDINA-
CLARK INTERCHANGE IN CLEVELAND, OHIO

MADE ECE DATE 11-6-64 TRACED _____ DATE _____
 CHECKED _____ DATE _____ SCALE _____

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

WATERWORK NOTES

CUYAHOGA COUNTY
 CUY-71-18.54
 CUY-90-13.81

(AA) All cast iron pipe and fittings shall conform to these specifications.
 (BB) All wrought iron used shall conform to "Standard Specifications for Rolled Wrought Iron Shapes and Bars, ASTM designation: A 207-39," and all subsequent amendments thereto.

(CC) Iron castings must be smooth and free from blowholes and other defects and the material shall conform to "Standard Specifications for Gray Iron Castings, ASTM designation: A 48-48, Class No. 30", and all subsequent amendments thereto.

(DD) Closure pieces with dresser coupling joints with stops removed, shall be provided as are necessary for the proper construction of the water mains. Measurements for length of closure pieces will be made in the field by the Contractor after adjacent pipe sections are in place in the trench.

(EE) Tests, inspection, reports and analyses of tests of samples for all materials shall be furnished in accordance with previous instructions in these notes.

MARKING

Each pipe and special shall have conspicuously painted in black on the inside, a serial number for the purpose of identification. Serial numbers shall agree with lists to be furnished to the Engineer. The top center line of all special fittings and each pipe that has a beveled end shall have a white ring painted in the shop around the mark both on the inside and outside of the pipe.

TYPICAL FIELD JOINTS FOR CONCRETE PIPE

The Contractor shall make all typical field joints and welded tied joints marked "X", "Y", and "Z" as shown on the contract drawings or as required and as specified in the section of these notes titled laying pipe and shall properly make all field welds for the above tied joints. The annular recesses at the joint, both inside and outside of the pipe, shall be filled with cement mortar mixed in a proportion of not less than one part of cement and two parts of sand.

FLANGED JOINTS

(A) Flanged joints shall be installed as shown on the drawings. Flanges shall be either cast steel, forged or rolled steel, or properly welded and machine fabricated steel plates, welded to pipe with two continuous welds. They shall have plain faces and shall be faced true and smooth at right angles to the axis of the pipe and shall be spot faced on the back. Drilling shall conform to "American 1928 Standard". Each blind flange shall be cast iron and have bosses tapped at top and bottom for two (2) inch standard pipe and furnished with plugs. All bolts for flanges and other types of bolting shall conform to the "Tentative Specifications for Steel Machine Bolts and Nuts and Tap Bolts, ASTM Designation A 307-52T."

(B) All bolts used in the finished work for flanges and tied joints for concrete pipe shall be of medium open hearth steel. The ends of all bolts must be finished to standard radius in acceptable manner. All screw threads shall be American Standard Course Thread (N.C.). Stud bolts double end (rod) shall be used to make the flanged joints on pipe. All nuts shall be hexagonal, cold pressed semi-finished, and made of medium open hearth steel. All dimensions to be according to American Standard Heavy. Bolts and nuts shall be delivered to the field free from grease, rust and dirt and shall be properly protected from moisture and dirt in the field. Gaskets for flanged pipe shall be 5X manila rope pattern or other approved type.

(C) In place of flanged joints, on concrete pipe between vertical bends on tied distances, and elsewhere as shown on the drawings, the use of butt welded joints will be permitted, unless specifically prohibited on the drawings. The steel cylinder shall be reinforced having a thickness of not less than that called for in detail Z. The ends of the steel cylinders shall be beveled. The weld material and the welding procedure shall conform to the AWWA C-206-50 "Tentative Standard Specifications for Field Welding of Steel Water Pipe Joints" and any subsequent amendments thereto. The annular recesses at the joint, both inside and outside of the pipe shall be protected against corrosion by an approved method. All exposed steel surfaces, both inside and outside of the pipe, shall be coated in accordance with the coating requirements of these specifications.

SHOP COATING AND PAINTING

(A) The exposed surface of the steel ends of spigot, bell, victaulic or flanged steel outlet connections and the flanged ends of concrete pipe, etc., shall be cleaned, primed, and enameled inside and outside in accordance with the AWWA Specifications C 203-51 and C 204-51. The enamel shall be Type A. The coating may be applied by brush or spray. All coatings shall be applied in the shop before shipment. The outside coating shall stop against the flanges of ends of pipe sections.

(B) Zinc coated pipe ends for rubber gasket joints are not to be coated.

(C) No primer or coating is required for the grooved steel bands at the ends of the concrete cylinder pipe to receive victaulic type couplings.

(D) All finished surfaces shall be coated with white lead and tallow or equal and not primed.

(E) After erection all exposed or damaged coatings on surfaces buried under ground, all bolts on flanges and victaulic couplings shall be cleaned and painted with three field coats of inertol 50 or bitumastic 50 or equivalent.

TRANSPORTATION AND DELIVERY

(A) The Contractor shall transport, deliver and distribute along the line of the work, the pipe, specials and appurtenances.

(B) Pipe shall be loaded for shipment upon suitable cars or trucks which shall be provided with wooden skids. In loading and unloading the pipe, more than ordinary care must be taken to prevent any injury to the concrete cylinder pipe, steel and pipe ends and protuberant steel connections. Such work must be done slowly with the pipe at all times under perfect control, and under no condition shall the pipe be dropped.

(C) In distributing the pipe in the field, each pipe must be placed as nearly as possible to the point where it is to be laid, and facing in the proper direction. Suitable skids or blocks must also be left under each pipe, and the pipe securely wedged in place to prevent its being moved until required. A steel cable sling shall be used for rolling or lifting pipe. No iron chains shall be used. Pipe which has been improperly distributed and which must be moved longitudinally along the trench shall be reloaded on a wagon, or lifted and swung by a derrick or moved by such means as may be satisfactory to the Director.

(D) If, in the process of manufacture, transportation, or handling, any concrete pipe or special receives any indentation or deformation to the concrete, steel ends or connections, the removal of which will in any degree injure it, such pipe or special shall be rejected and replaced at the Contractor's expense.

(E) Pipe which is placed in storage, streets or drives must be so arranged as not to cause undue inconvenience to traffic and must be protected sufficiently to prevent injury to the concrete cylinder pipe, and the coating of the steel ends and connections.

MATERIALS DATA WITH PROPOSAL

Each bidder shall submit with his proposal, and in the form provided, the information called for below:

1. Name of pipe manufacturer and location of plant.
2. Name of coupling manufacturer and location of plant.
3. Pipe coating and lining data.

DRAWINGS

(A) The Contractor shall submit to the Director for approval, duplicate prints of all shop drawings for concrete pipe, fittings, and specials, and miscellaneous details, such as air cock and drain forgings, castings, etc.

(B) The Contractor shall also furnish an assembly plan for the entire length of the pipe line for which concrete pipe is furnished under the appropriate items. This assembly plan shall also show the correct location of all fittings furnished.

(C) One print of each of the drawings submitted will be returned with the criticisms or approval of the Director. In case the drawings are not approved, the Contractor shall again send for approval duplicate revised prints of the drawings to take care of the criticisms noted, and after the drawings have been finally approved, the Contractor shall again furnish to the Director ten additional prints, eight (8) on paper and two (2) on cloth, of each drawing. No work shall be done in the shop until after the drawings have been finally approved.

(D) The approval of the drawings by the Director shall not relieve the Contractor of any of his obligations in connection with this contract.

EXPERIENCE QUALIFICATIONS

All bidders will be required to show to the satisfaction of the Director that the type and size of pipe and fittings he proposes to furnish, will be made by a manufacturer whose pipe has been successfully used for like work outside of the builder's works for a period of not less than five (5) years.

MEASUREMENT

The number of linear feet of water main to be paid for under prestressed concrete cylinder pipe shall be the actual number of linear feet furnished and placed in accordance with these specifications as measured along the axis of the main, including fittings and valves connected up in place.

PAYMENT

(A) The unit price stipulated to be paid for each linear foot of water main shall include the furnishing, laying, painting and inspection and testing of prestressed concrete pipe, concrete cylinder fittings, cast iron pipe and fittings, victaulic and dresser couplings, concrete piers, the plugging with concrete of abandoned ends of existing water mains, the excavation, sheeting and shoring, backfilling, sand backfilling, seeding and sodding, sidewalk replacement, and the temporary and permanent repaving, the cutting into removal and disposal of existing main, service connection changes by the City Water Department, and the furnishing of all labor, materials, tools, appliances, and equipment to complete the work as specified, shown, or ordered.

EXTRA CONCRETE PRESSURE PIPE FITTINGS

WORK INCLUDED

(A) The Contractor shall furnish all the materials for and shall properly install all the concrete pressure pipe fittings of the various sizes specified which are not shown on the contract drawings or on approved shop drawings and which are ordered installed by the Director in order to change line or grade to avoid obstacles previously unknown, or to meet other field conditions, and any outlet connections for drains, air cocks or other use which may be required due to field conditions, and including all extra excavation, sheeting, shoring, backfilling, sand backfill, seeding, sodding and temporary and permanent repaving required therefor for the proper completion of the work under this contract.

(B) In general, the work of this item shall include bevels, half bevels, adapters, elbows, tangential outlet pieces, and pipes with small outlets (with or without tied joints) which were not shown on approved shop drawings and which are ordered installed by the Director.

(C) The provisions of this item shall not relieve the Contractor of his responsibilities to investigate existing facilities as indicated under notes and specifications, nor to use less than normal diligence in excavating or laying pipe to anticipate possible difficulties.

CONCRETE PRESSURE PIPE FITTINGS

All fittings to be furnished and installed under this item shall be manufactured and installed in full conformance with the requirements of item "Prestressed Concrete Cylinder Pipe" of these specifications. Joints, marking, shop coating, painting, testing and chlorinating shall conform to the requirements of item "Prestressed Concrete Cylinder Pipe", and drawings shall be submitted and approved as required therein.

PAYMENT

(A) The unit price stipulated per each for the various sizes of extra concrete pressure pipe fittings shall be in full compensation for the furnishing and installing of such extra fittings as are ordered by the Director and which are not shown on the contract drawings or approved shop drawings, and shall include any extra excavation, sheeting, shoring, backfilling, sand backfill, seeding, sodding, and temporary and permanent repaving required therefor, and the furnishing of all labor, materials, tools, and appliances necessary to complete the work as specified or as shown.

(B) No deduction will be made in the lengths of pipe and fittings to be paid for under item "Prestressed Concrete Cylinder Pipe", where extra fittings are ordered to be installed and, likewise, no payment will be made for extra fittings which are installed for the convenience of the Contractor without specific orders from the Director.

APPROVED

DATE

DIRECTOR OF PUBLIC UTILITIES
 COMMISSIONER OF WATER AND HEAT
 COMMISSIONER DIVISION OF UTILITIES ENGINEERING
 ENGINEER OF CONSTRUCTION AND SURVEYS
 ENGINEER OF DESIGN

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
 DIVISION OF WATER AND HEAT
 CLEVELAND, OHIO

SUBJECT WATER WORK NOTES FOR MEDINA-CLARK INTERCHANGE IN CLEVELAND, OHIO

MADE ECE DATE 11-6-64 TRACED DATE
 CHECKED DATE SCALE

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

WATERWORK NOTES

ITEM SPECIAL - FLUSHING CONNECTIONS (Continued from sheet No. 129)

PAYMENT

The work included in this item shall be paid for at the contract unit price bid for each "Item Special - Flushing Connections", whether temporary or left in place, which price and payment shall constitute full compensation for excavating and for furnishing, hauling and placing plugs, clamps, valves, roadway boxes, pressure backing and appurtenances, and for all labor, equipment, tools and incidentals necessary to complete this item.

ITEM SPECIAL - RETAP AND RECONNECT EXISTING SERVICE CONNECTIONS

WORK INCLUDED

The Contractor shall remove the existing service connection from the existing water main which is to be abandoned. A tap is to be made on the new water main and the existing service connection shall be reconnected to the new water main.

PAYMENT

The actual number of "Item Special - Retap and Reconnect Existing Service Connections", shall be paid at the contract unit price. This price and payment shall constitute full compensation for performing all of the requirements of this item, furnishing all necessary materials, labor, tools, equipment, supplies and incidentals.

The City will furnish the piping material for and make all changes required in the location of existing house connections at the new water mains as shown on the plans, but the Contractor shall do all the necessary excavation, backfilling and repaving required. The City will charge the Contractor for the materials and labor furnished in making these service connections and alterations. Materials to be furnished by the City include piping and corporation cocks.

The City of Cleveland will charge

The Contractor for the following work:

Size of Connection Connection Only

1/2 inch \$50.00
1 inch \$75.00

See PROPOSAL NOTE - "WATER" For Method of Payment

ITEM SPECIAL - SERVICE CONNECTIONS REMOVED AT VALVE

WORK INCLUDED

The Contractor shall excavate to the existing service connection curb cock and remove the pipe leading away from the water main, remove or destroy the valve box and backfill the excavation.

PAYMENT

The unit price stipulated per each service connection removed at valve shall be in full compensation for the performance of the above work.

ITEM SPECIAL - FIRE HYDRANTS RELOCATED (Continued from sheet No. 129)

PAYMENT

The work included in this item shall be paid for at the contract unit price bid for each "Item Special - Fire Hydrants Relocated", which price and payment shall constitute removing and reconnection according to the provisions of these specifications for the particular type of construction called for on the plans, and for all excavation, backfilling, seeding and sodding and repaving, and the furnishing of all material, labor, equipment, tools and appliances necessary to complete the work as specified or as shown.

ITEM SPECIAL - FURNISHING AND SETTING 6" HYDRANTS AS PER PLAN (Continued from Sh. No. 129)

PAYMENT

(A) - The unit price stipulated to be paid for the hydrant setting shall include the furnishing, hydrant branch and valve, in accordance with respective specification set forth elsewhere in these notes, setting, testing, painting, the excavation, sheeting and shoring, backfilling, and the furnishing of all labor, material, tool and appliances necessary to complete the work as specified or as shown.

(B) - The cast iron pipe will be paid for under cast iron pipe and fittings.

(C) - The valves will be paid for under valves.

ITEM SPECIAL - HYDRANTS AND VALVES AND VALVE BOXES REMOVED

WORK INCLUDED:

The Contractor shall perform all operations necessary to the proper removal of the hydrant and valve at the locations shown on the plans. This work shall include excavating, removing, backfilling, installing plugs clamps and blocking, seeding and sodding and repaving required for the proper completion of the work included under this contract.

METHOD OF MEASUREMENT:

The pay quantities for this item shall be determined after all of the requirements of this item shall have been performed. The hydrants and valves and valve boxes removed to be paid for shall be the actual number of each removed in accordance with the requirements of this item.

BASIS OF PAYMENT:

The actual number of hydrants and valves and valve boxes measured as provided above shall be paid for at the contract unit price bid for "Hydrants and Valves Removed". This price and payment shall constitute full compensation for performing all of the requirements of this item, furnishing all necessary materials, labor, tools, equipment, supplies and incidentals. All materials shall become the property of the contractor.

ITEM SPECIAL - CAST IRON AND DUCTILE IRON PIPE AND FITTINGS (Continued from sheet No. 129)

PAYMENT:

The footage measured as provided above shall be paid for at the contract price bid per linear foot for "Item Special - Water Main" classified as to size and type, which price and payment shall constitute full compensation for excavating and for furnishing, hauling, placing, cutting into and connecting the pipe, pipe bends, C.I. plug and clamps at dead ends, concrete piers, sheeting and bracing, sand backfill, water used for compaction, incidental concrete, the removal of all surplus excavation and discarded material, repaving, and for all labor, equipment, tools and incidentals necessary to complete this item, except for the items specifically listed as separate pay items.

ITEM SPECIAL - TAPPING SLEEVES AND VALVES

The Contractor shall furnish all the materials for and shall connect in place at the locations shown on the plans, including all excavation, sand backfilling, tapping existing water main and repaving, all as required for the proper completion of the work included under this contract. The tapping valves shall conform to the specifications for VALVES as shown above in these notes.

The work included in this item shall be paid for at the contract unit price bid for each "Item Special - Tapping Sleeves and Valves" and classified as to size and type, which price and payment shall constitute full compensation for all excavation and backfill and for furnishing, hauling and placing the valves, connections and other material and for all labor equipment, tools and incidentals necessary to complete this item.

ITEM SPECIAL - PLUGGING EXISTING WATER MAINS AND BRANCHES AND PLUGGING SERVICE CONNECTIONS

WORK INCLUDED:

The Contractor shall under this item, furnish all the materials, labor, tools and equipment required for the plugging of existing water mains and branches, and the plugging of service connections at the locations shown on the drawings or as ordered, including cast iron plugs or caps with clamps and concrete piers, all excavation, sand backfill, backfill, temporary repaving and permanent repaving, all as required for the proper completion of the work included under this contract.

(A) Plugging mains and branches

When indicated on the plans or as ordered, the Contractor shall make pipe cuts and shall plug or cap mains, tees or crosses, plug connections at main or branches, shall do all the excavating, backfilling and repaving, all as required.

(B) Plugging service connections:

The Contractor shall do all necessary excavation, sheeting and shoring, sand backfilling, backfilling and repaving required for this item, but the Cleveland Water Department will plug the service connections.

The Contractor shall arrange with the Cleveland Water Department for the necessary work under this item consisting of furnishing the material and labor required in plugging the service connections. The Contractor will not include the material and labor furnished in plugging the service connections by the Cleveland Water Department in the unit price bid for "Plugging Service Connections".

MEASUREMENT:

The existing water mains and branches plugged or service connections plugged to be paid for shall be the actual number of each listed and estimated separately, completed and accepted.

BASIS OF PAYMENT:

The unit price stipulated for (A), plugging ends of existing water mains and branches and (B), plugging of service connections shall include the furnishing of cast iron plugs or caps, with clamps, lead, concrete piers, making pipe cuts, laying, caulking, painting, testing, the excavation, sheeting and shoring, backfilling, sand backfill, temporary repaving and permanent repaving where indicated on the plans and the furnishing of all labor, materials, tools, appliances and equipment to complete the work as specified or as shown.

See Proposal Note "Water".

ITEM SPECIAL - SHEETING AND BRACING LEFT IN PLACE

The number of board feet of sheeting and bracing left in place when ordered by the Engineer, shall be paid for at the unit price of eighty dollars (\$80.00) per thousand board feet of "Item Special - Sheeting and Bracing Left in Place", which price and payment shall include full compensation for all labor, equipment, tools and incidentals necessary to complete this item.

APPROVED

DATE _____

DIRECTOR OF PUBLIC UTILITIES _____

COMMISSIONER OF WATER AND HEAT _____

COMMISSIONER DIVISION OF UTILITIES ENGINEERING _____

ENGINEER OF CONSTRUCTION AND SURVEYS _____

ENGINEER OF DESIGN _____

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT **WATER WORK NOTES FOR MEDINA-CLARK INTERCHANGE IN CLEVELAND, OHIO**

WATERWORK NOTES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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478

CUYAHOGA COUNTY
CUY-71-18.54
CUY-90-13.81

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38

ITEM SPECIAL 10", 16", & 30" TEMPORARY WATER MAIN CONNECTIONS

WORK INCLUDED:

The Contractor shall furnish and install the temporary water main connections using pipe and fittings as specified in the plans. The specifications for laying, backfilling, testing etc. are shown else where in these notes. Only new pipe is to be used in the temporary connections. When the temporary connections are no longer required, the pipe shall be removed and shall remain the property of the Contractor.

PAYMENT:

The work included in this item shall be paid for at the contract unit price bid per linear foot for "Item Special-10", 16" & 30" Temporary Water Main Connections", which price and payment shall constitute full payment for furnishing, installing and removing the pipe and fittings, excavation, backfill, re-laying existing pavement, sidewalk, curb, and the furnishing of all material, labor, equipment, tools, and appliances necessary to complete the work as shown in the plans. **The work shall also include the cutting and removal of existing pipe, furnishing concrete piers, testing and chlorinating.**

ITEM SPECIAL 2" PITOMETER CONNECTION COMPLETE

WORK INCLUDED:

The Contractor shall furnish pipe with a pitometer connection constructed as shown in the "Water Work Details" at the location specified in the plans. The pitometer will be furnished and installed by the City of Cleveland Water Department at no cost to the Contractor.

PAYMENT:

The work included in this item shall be paid for at the contract unit price bid for each "Item Special Pitometer Connection Complete" and does not include payment for the vault which will be paid under another item.

ITEM SPECIAL 2" AIR COCK COMPLETE

WORK INCLUDED:

The Contractor shall furnish pipe with a 2" air cock connection and furnish and install the 2" air cock complete as shown in the "Water Work Details" at the locations shown in the plans.

PAYMENT:

The work included in this item shall be paid for at the contract unit price bid for each "Item Special 2" Air Cock Complete" which price and payment shall constitute full payment for furnishing and installing all materials, labor, equipment, tools, and appliances necessary to complete this item. The valve box will be paid separately under the item "Miscellaneous Metal".

ITEM SPECIAL - ADJUST EXISTING VALVE BOX TO GRADE

WORK INCLUDED:

The Contractor shall raise or lower the existing valve box to fit the revised grade by excavating under or tamping backfill under the valve box to insure that the box has a firm footing.

PAYMENT:

The work included in this item shall be paid for at the contract unit price bid for each "Item Special - Adjust Existing Valve Box to Grade", which price and payment shall constitute full compensation for adjusting the valve box, excavation, tamping earth under valve box, backfill, seeding and for all labor, equipment, tools and incidentals necessary to complete this item.

ITEM SPECIAL - REMOVE ABANDONED EXISTING CURB COCK AND VALVE BOX

WORK INCLUDED:

The Contractor shall either remove or leave in place the abandoned curb cock, the valve box shall either be removed or broken off at least 1' below the ground surface and backfilled. If the valve box is in a paved area, the area shall be restored to match the existing pavement.

PAYMENT:

The work included in this item shall be paid for at the contract unit price bid for each "Item Special - Remove Abandoned Existing Curb Cock and Valve Box", which price and payment shall constitute full compensation for abandoning the valve and removing the valve box, backfilling, seeding, repaving, and for all labor, equipment, tools and incidentals necessary to complete this item.

ITEM SPECIAL - 4" DRAIN COMPLETE

WORK INCLUDED:

The Contractor shall furnish the 30" pipe with a 4" Tangent Outlet at the locations shown on the plans and shall furnish and install the 4" pipe, and valve as shown in the "Water Work Details".

PAYMENT:

The work included in this item shall be paid for at the contract unit price bid for each "Item Special 4" Drain Complete" which price and payment shall constitute full payment for furnishing and installing all materials, labor, equipment, tools, and appliances necessary to complete this item but shall not include payment for the Drain Vault or the Valve Box which shall be paid separately.

ITEM SPECIAL - 2" DRAIN COMPLETE WITH PLUG

WORK INCLUDED:

The Contractor shall furnish the 30" pipe with a steel outlet tapped for 2" Std. pipe as shown in the "Water Work Details". A 2" Malleable Iron plug shall also be furnished and installed.

PAYMENT:

The work included in this item shall be paid for at the contract unit price bid for each "Item Special 2" Drain Complete with Plug".

All materials consisting of pipe and fittings, valves, fire hydrants, valve boxes, and vault covers which are indicated for removal by the Contractor shall become the property of the Contractor and be disposed of by him.

ITEM SPECIAL 30" AND 16" CUTTING IN VALVES

WORK INCLUDED:

The contractor shall furnish all materials and shall connect in place at the locations shown on the plans, including all excavation, sand backfilling, cutting existing water mains and removing pipe and repaving, all as required for the proper completion of the work included under this contract. The Hub Valves, couplings, sleeves, concrete piers and caulking and bolting joints specified shall conform to the specifications for Valves, Fittings, concrete, cutting pipe and leaded joints which are outlined in the plans.

PAYMENT:

The work included in this item shall be paid for at the unit price bid for each "Item Special-Cutting-In Valves Complete" and classified as to size and type which price and payment shall constitute full compensation for all excavation and backfill, cutting existing water mains and removing pipe, concrete piers, hauling and placing the valves and fittings, connections, and other material and for all labor, equipment, tools and incidentals necessary to complete this item, including testing and chlorinating.

ITEM SPECIAL TEMPORARY WATER MAIN CONNECTION COMPLETE

WORK INCLUDED:

The Contractor shall furnish all materials and shall connect in place at the location shown on the plans including all excavation, sand backfilling, tapping sleeves and valves, plugging with clamps and concrete pier, testing, pipe and fittings, repaving required for the proper completion of the work in accordance with the specifications listed in the plans. The City of Cleveland, Division of Water, will install the Tapping Sleeves and Valves.

PAYMENT:

The work included in this item shall be paid for on a Lump Sum basis "Item Special - Temporary Water Main Connection Complete" and classified as to size and type which price and payment shall constitute full compensation for furnishing all material, labor, equipment, tools and incidentals to complete this item of work. The Contractor will not include the cost of installing the Tapping Sleeves and Valves by the City of Cleveland in the Lump Sum Price.

See Proposal Note, "Water".

ITEM SPECIAL 8" Water Main CONNECTION COMPLETE

WORK INCLUDED:

The Contractor shall furnish all materials and shall connect in place at the location shown on the plans, including all excavation, sand backfilling, cutting existing water main and removing pipe, plugging existing water main, concrete pier, pipe and fittings, and repaving required for the proper completion of the work in accordance with the specifications listed in the plans.

PAYMENT:

The work included in this item shall be paid for on a Lump Sum basis "Item Special 8" Water Main Connection Complete" and classified as to size and type which price and payment shall constitute full compensation for furnishing all material, labor, equipment, tools, and incidentals to complete this item of work.

ITEM SPECIAL FIRE HYDRANTS SALVAGED

The work included in this item shall be paid for at the contract unit price bid for each "Item Special-Fire Hydrants Salvaged", which price and payment shall constitute full compensation for excavating, removal of fire hydrant and appurtenances, furnishing, hauling and placing plugs, clamps and blocking, sheeting and bracing, backfill, water used for compaction, incidental concrete, the removal of all surplus excavation and discarded material, repaving, and for all labor, equipment, tools and incidentals necessary to complete this item. Hydrants will remain the property of the City of Cleveland. They shall be stored on the Right of Way and the City of Cleveland Division of Water and Heat (Harvard Yards) shall be advised that they may be removed from the site.

An estimated quantity of two (2) 6" Fire Hydrants Salvaged have been provided in the Waterwork Summary.

APPROVED _____

DATE _____

DIRECTOR OF PUBLIC UTILITIES _____

COMMISSIONER OF WATER AND HEAT _____

COMMISSIONER DIVISION OF UTILITIES ENGINEERING _____

ENGINEER OF CONSTRUCTION AND SURVEYS _____

ENGINEER OF DESIGN _____

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

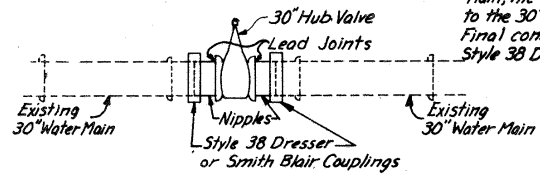
SUBJECT **WATER WORK NOTES FOR MEDINA-CLARK INTERCHANGE IN CLEVELAND, OHIO**

MADE 6-26 DATE 3-20-53 TRACED DATE
CHECKED _____ DATE _____ SCALE _____

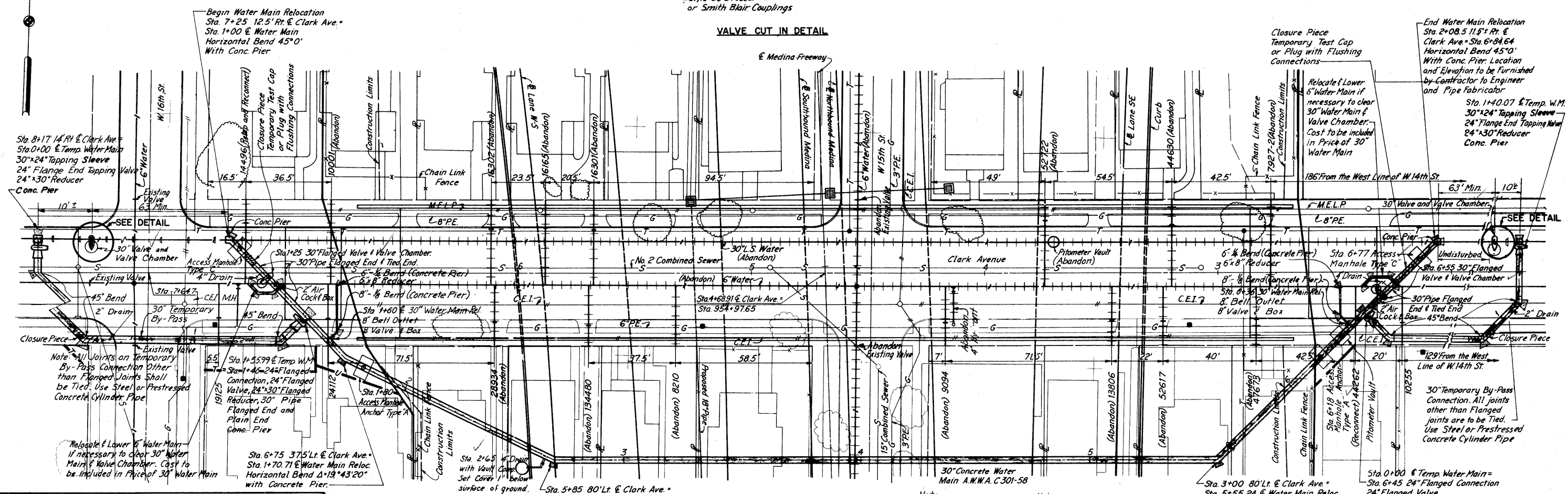
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

CUYAHOGA COUNTY
CUY - 71-18.54
CUY - 90-13.81

Note: Before cutting existing 30" Water Main, the two nipples shall be connected to the 30" Hub Valve, using lead joints. Final connection shall be made with Style 38 Dresser or Smith Blair Couplings.



VALVE CUT IN DETAIL



Item	Description	Quantity
Special	30" Prestressed Concrete Cylinder Pipe and Fittings C301.8	590 L.F.
Special	30" Extra Concrete Pressure Pipe Fittings	2 Ea.
Special	30" Water Main Temporary Connection complete with Pipe and Fittings	296 L.F.
Special	30" Cutting-In Valve Complete	2 Ea.
Special	30" Flanged Valve	2 Ea.
Special	24" x 24" Tapping Sleeve and 24" Tapping Valve	2 Ea.
Special	24" Flanged Valve	2 Ea.
Special	Valve Chamber (Masonry)	4.4 Cu. Yds.
Special	Pitometer Vault (Masonry)	6.0 Cu. Yds.
Special	Miscellaneous Metal Work	11400 lbs.
Special	Drain Vault (Masonry)	32 Cu. Yds.
Special	2" Drain, Complete with Plug	2 Ea.
Special	2" Air Cock, Complete	2 Ea.
Special	4" Drain, Complete	3 Ea.
Special	Access Manhole Type "C" (Masonry)	4.7 Cu. Yds.
Special	Pitometer Connection, Complete	1 Ea.
Special	8" Valve	2 Ea.
Special	8" Water Main A.S.A. Class 25 Cast Iron Pipe (Cement Lined, All Lead Joints) and Fittings	40 L.F.
Special	Access Manhole & Anchorage Type "A" (Masonry)	12.7 Cu. Yds.

CONSTRUCTION PROCEDURE

The Contractor shall notify the City of Cleveland Utilities Engineering Office three days prior to starting waterwork. (Telephone Tower-1-4600, Line 813).

The 30" Relocated Water Main shall be constructed to points near the connection where temporary plugs are to be installed for testing.

Taps for chlorination are to be provided in the waterline. The Division of Water will determine the location of necessary taps.

The 30" valves to be installed on the existing water main are to be installed at a time designated by the City of Cleveland Water Department. Once the water is shut off, the Contractor shall expedite the installation of the valve until such time as the water service is resumed. It is the intent of the Engineer that the 30" valves shall be installed one at a time to minimize the length of time that water service shall be disrupted.

After the temporary connections are tested, chlorinated and put in service, the 30" cut-in valves are to be closed and the permanent connections made. Contractor shall furnish measurements to Engineer and Fabricator and submit shop drawings for approval for closure sections, using closure pieces as required. If the abandoned section of water main, other than that removed in the excavation of the freeway, is to be left in place, it shall be plugged with concrete.

The 24" valves on the temporary connections are to be closed, the temporary connections removed, blind flanges installed on the 24" valves and the valves buried.

All paved areas, curb, sidewalk, etc., that fall outside of the limits shown on the pavement detail sheets and have been removed or damaged due to the water relocation work, shall be restored. The cost of such work shall be included in the price bid for the waterwork items.

If the proposed 30" Relocated Pipe or the Temporary By-Pass Connections interfere with the existing 6" water main or house connections that are to remain in service, the 6" water main and house connections shall be lowered to clear. The cost of such lowering of existing water lines is to be included in the price of the water main relocation items.

Note: For Details of Water Main Appurtenances See Sheets 34 to 38.

Note: For Concrete Pier Details See Sheet 34.

GENERAL NOTES

The location of existing joints nearest the ends of the relocation are approximately shown. It shall be the responsibility of the Contractor to locate exactly the joints and supply the Engineer and Pipe Fabricator with the measurements.

The pipe line stationing is along horizontal centerlines of pipes and along tangents to P.I. points of horizontal bends.

Elevations are based on sea level datum.

The pipe fabricator shall follow as closely as possible the points of changes of grade as given on these contract drawings.

The static head to be used for both design and testing shall be measured from elevation 803.0. The field testing head shall be 75 P.S.I. plus that due to static head, but in no case less than 150 P.S.I. as called for in the waterwork specifications.

Locations of closures are indicated on the alignment drawings, however, the Contractor may furnish additional closures in order to expedite the work and to provide for the satisfactory installation of the water main.

Under sidewalks and driveways, backfill is to be made with compacted sand. Flange and lead joints are required at certain locations. The class of which are referred to on alignment drawings.

Correctness of underground information shown on alignment drawings is not guaranteed and must be used at bidders own risk.

For closing and opening valves, the City of Cleveland Division of Water and Heat shall charge the amounts listed in the specifications.

APPROVED
DATE 1-8-65
V. M. De Motta
DIRECTOR OF PUBLIC UTILITIES
COMMISSIONER OF WATER AND HEAT
S. A. Smith
COMMISSIONER DIVISION OF UTILITIES ENGINEERING
J. R. Conroy
ENGINEER OF CONSTRUCTION AND SURVEYS
William J. Sullivan
ENGINEER OF DESIGN

LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT 30" CONCRETE WATER MAIN RELOCATION IN CLARK AVENUE AT INTERSTATE ROUTE 71

NO. SM-1773

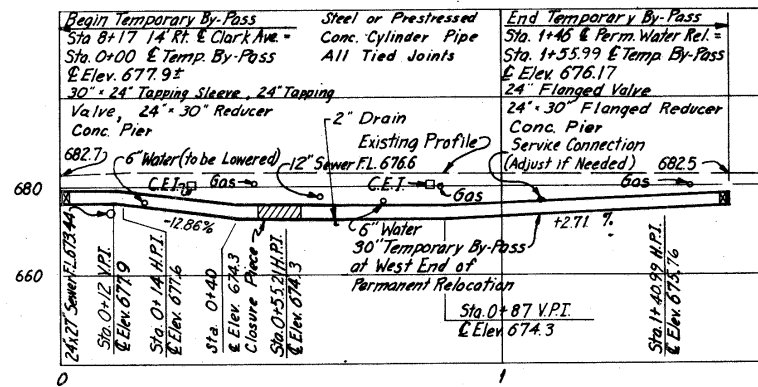
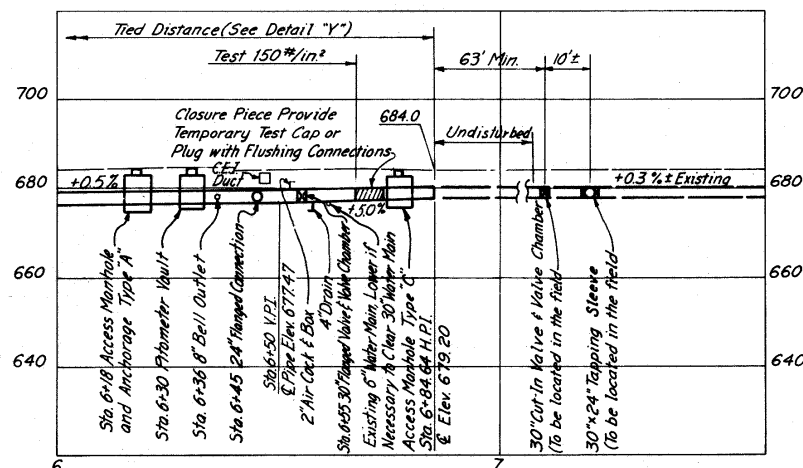
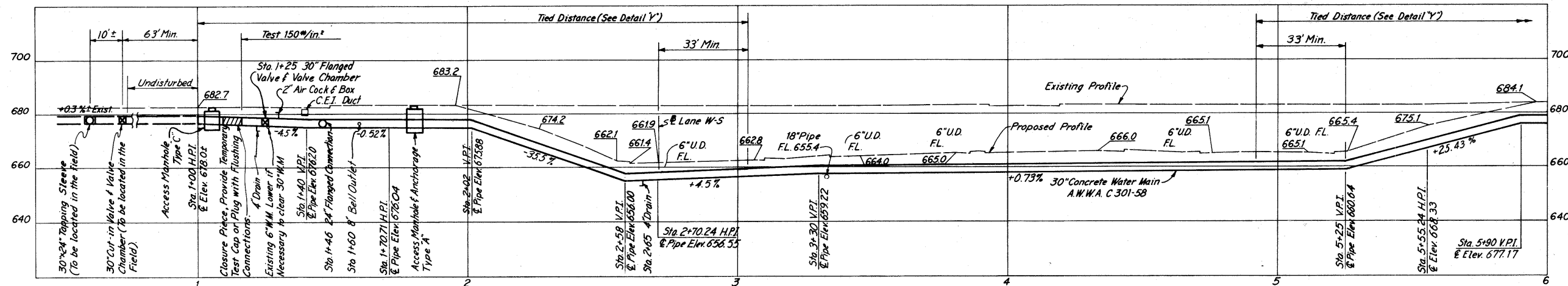
SCALE 1" = 20'
MADE E.C.E. DATE 11-3-64
TRCD R.J.K. DATE 11-3-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FED. RD. DIVISION	STATE	PROJECT
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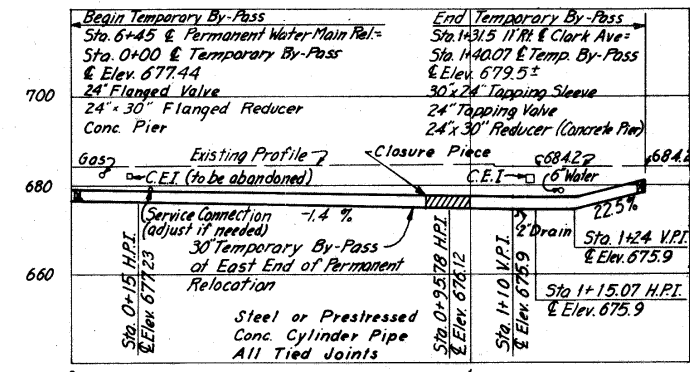
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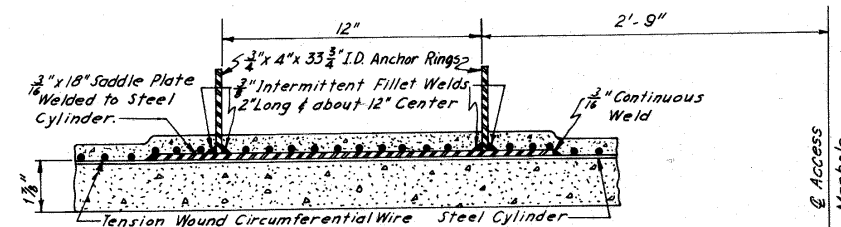
CUYAHOGA COUNTY
CUY. - 71-18.54
CUY-90-13.81



TEMPORARY BY-PASS WEST END



TEMPORARY BY-PASS EAST END



ANCHOR DETAIL FOR 30" PIPE

SCALE 1" = 20'
MADE E.C.C. DATE 11-3-64
TRCD R.J.K. DATE 11-3-64
CKD _____ DATE _____

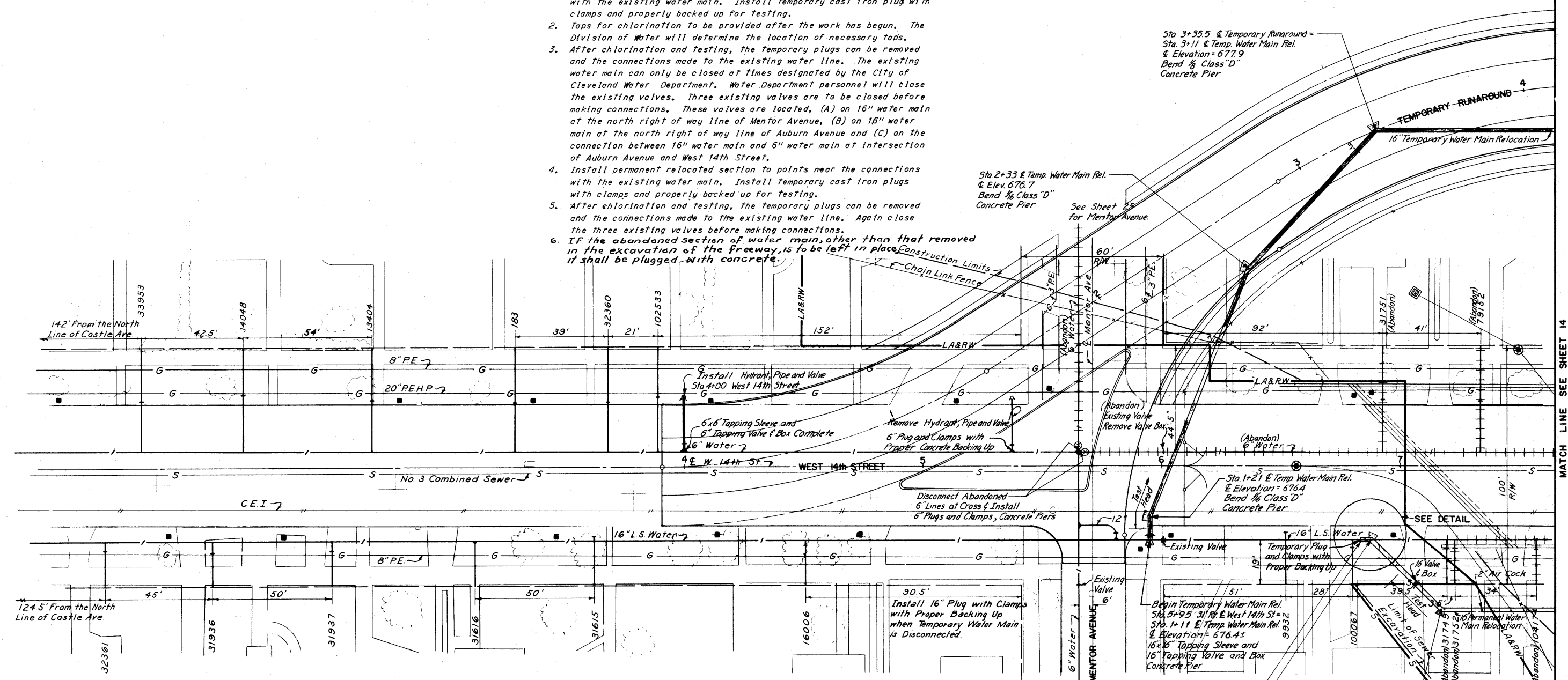
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

APPROVED
DATE 1-8-65
V. M. DeMatta
DIRECTOR OF PUBLIC UTILITIES
COMMISSIONER OF WATER AND HEAT
COMMISSIONER DIVISION OF UTILITIES ENGINEERING
ENGINEER OF CONSTRUCTION AND SURVEYS
ENGINEER OF DESIGN

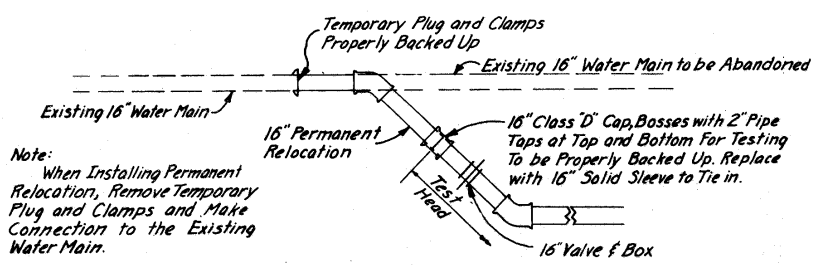
LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO
SUBJECT 30" CONCRETE WATER MAIN RELOCATION
IN CLARK AVENUE AT INTERSTATE ROUTE 71
NO. SM-1774

Note:
The Contractor shall notify the Utilities Engineering Office three working days prior to starting water work. Call TOWER-1-4600, Line 813.
Procedure for construction of the 16" temporary and permanent water main relocations:

1. Install temporary relocated section to points near the connections with the existing water main. Install temporary cast iron plug with clamps and properly backed up for testing.
2. Taps for chlorination to be provided after the work has begun. The Division of Water will determine the location of necessary taps.
3. After chlorination and testing, the temporary plugs can be removed and the connections made to the existing water line. The existing water main can only be closed at times designated by the City of Cleveland Water Department. Water Department personnel will close the existing valves. Three existing valves are to be closed before making connections. These valves are located, (A) on 16" water main at the north right of way line of Mentor Avenue, (B) on 16" water main at the north right of way line of Auburn Avenue and (C) on the connection between 16" water main and 6" water main at intersection of Auburn Avenue and West 14th Street.
4. Install permanent relocated section to points near the connections with the existing water main. Install temporary cast iron plugs with clamps and properly backed up for testing.
5. After chlorination and testing, the temporary plugs can be removed and the connections made to the existing water line. Again close the three existing valves before making connections.
6. If the abandoned section of water main, other than that removed in the excavation of the freeway, is to be left in place, it shall be plugged with concrete.



ESTIMATED QUANTITIES		
Item	Description	Quantity
Special	16" Water Main Temporary Connection Complete with Pipe and Fittings	275 Lin. Ft.
Special	16" Water Main A.S.A. Class 25 Cast Iron Pipe (Cement Lined, All Lead Joints) and Fittings	95 Lin. Ft.
Special	Remove Fire Hydrant	1 Each
Special	Miscellaneous Metal Work	788 Lbs.
Special	6" Cast Iron Plug complete with clamps & piers	1 Each
Special	6x6" Tapping Sleeve and 6" Tapping Valve	1 Each
Special	16x16" Tapping Sleeve and 16" Tapping Valve	1 Each
Special	6" Fire Hydrant	1 Each
Special	16" Valve	1 Each
Special	6" Water Main A.S.A. Class 25 Cast Iron Pipe (Cement Lined)	22 Lin. Ft.
Special	2" Air Cock Complete	1 Each



DETAIL OF CONNECTION

Begin Permanent Water Main Relocation Sta. 6+83 31' Rt. & West 14th Street = Sta. 1+00 @ Per. Water Main Rel. & Elevation = 676.4 Remove Plug and Clamps. Tie in to 16" Water Main & Elevation = 676.4

Sta. 6+88 31' Rt. & West 14th St = Sta. 1+05 @ Per. Water Main Rel. & Elevation = 676.4 Bend 1/2 Class 'D' with Lead Joints Concrete Pier

Sta. 7+18 60' Rt. & West 14th Street = Sta. 1+47 @ Per. Water Main Rel. & Elevation = 677.7 Bend 1/2 Class 'D' with Lead Joints Concrete Pier

APPROVED
DATE 1-8-65
V. M. DeMott
DIRECTOR OF PUBLIC UTILITIES
COMMISSIONER OF WATER AND HEAT
Arnold White
COMMISSIONER DIVISION OF UTILITIES ENGINEERING
J. P. Connor
ENGINEER OF CONSTRUCTION AND SURVEYS
William J. Juveny
ENGINEER OF DESIGN

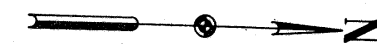
Note: For Profile of Temporary and Permanent Relocations See Sheet 15

NO. B-1919

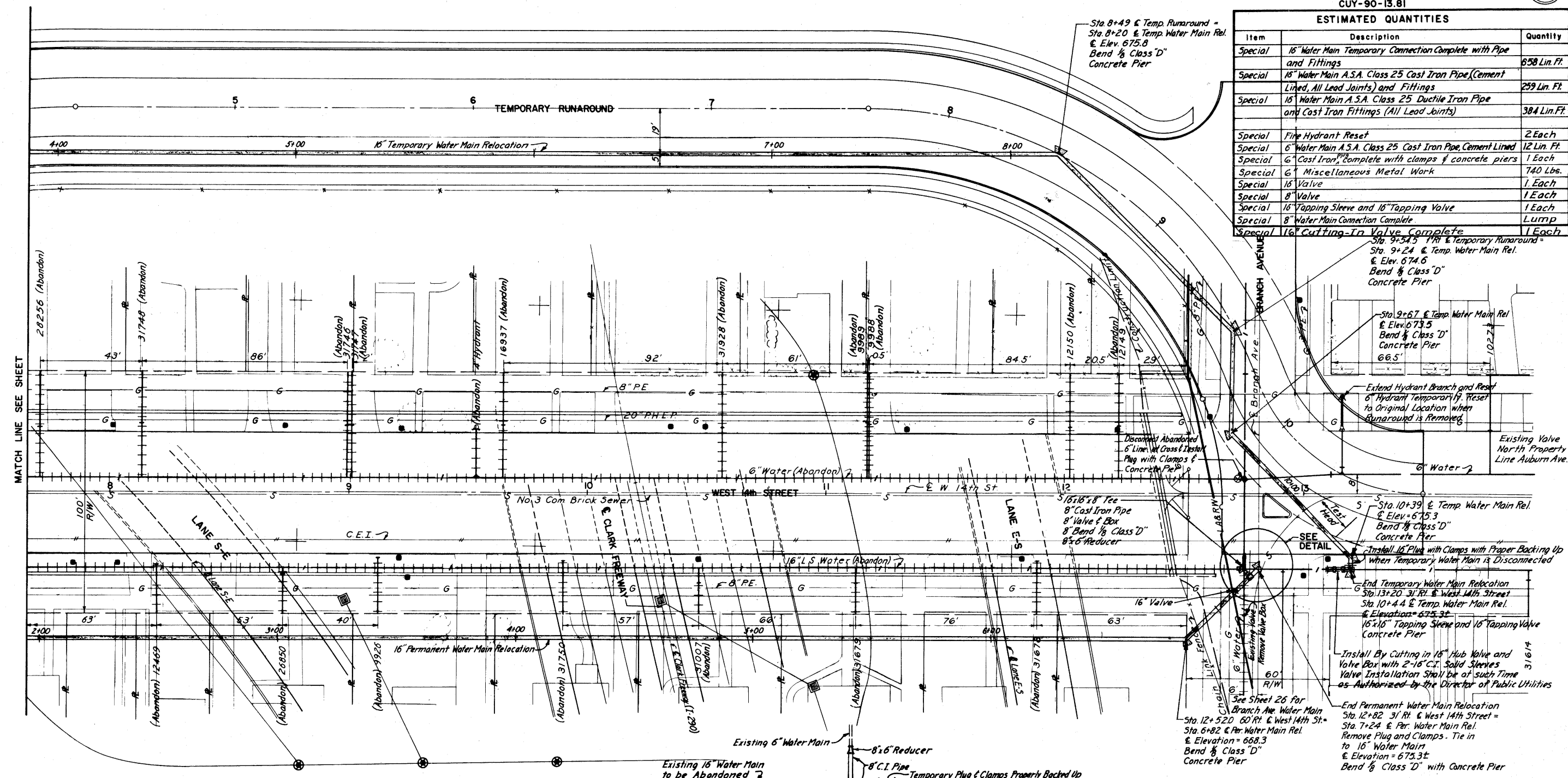
LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT 16" CAST IRON AND DUCTILE IRON WATER MAIN RELOCATION IN WEST 14th ST. AT INTERSTATE ROUTE 290 BETWEEN MENTOR AVENUE AND BRANCH AVENUE

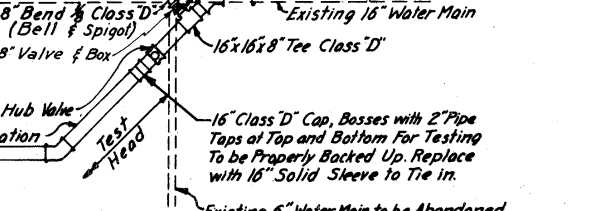
CUYAHOGA COUNTY
CUY.-71-18.54
CUY-90-13.81



Item	Description	Quantity
Special	16" Water Main Temporary Connection Complete with Pipe and Fittings	658 Lin. Ft.
Special	16" Water Main A.S.A. Class 25 Cast Iron Pipe (Cement Lined, All Lead Joints) and Fittings	259 Lin. Ft.
Special	16" Water Main A.S.A. Class 25 Ductile Iron Pipe and Cast Iron Fittings (All Lead Joints)	384 Lin. Ft.
Special	Fire Hydrant Reset	2 Each
Special	6" Water Main A.S.A. Class 25 Cast Iron Pipe, Cement Lined	12 Lin. Ft.
Special	6" Cast Iron, complete with clamps & concrete piers	1 Each
Special	6" Miscellaneous Metal Work	740 Lbs.
Special	16" Valve	1 Each
Special	8" Valve	1 Each
Special	16" Tapping Sleeve and 16" Tapping Valve	1 Each
Special	8" Water Main Connection Complete	Lump
Special	16" Cutting-In Valve Complete	1 Each



Note:
When Installing Permanent Relocation, The Plug and Clamps will be Removed and Installed at the 16" Tapping Sleeve & Valve Outlet with Proper Backing Up.



APPROVED
DATE 1-8-65
V. M. De Mott
DIRECTOR OF PUBLIC UTILITIES
COMMISSIONER OF WATER AND HEAT
COMMISSIONER DIVISION OF UTILITIES ENGINEERING
ENGINEER OF CONSTRUCTION AND SURVEYS
ENGINEER OF DESIGN

NO. B-1920

LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO
SUBJECT 16" CAST IRON AND DUCTILE IRON WATER MAIN RELOCATION IN WEST 14TH ST. AT INTERSTATE ROUTE 290 BETWEEN MENTOR AVENUE AND BRANCH AVENUE

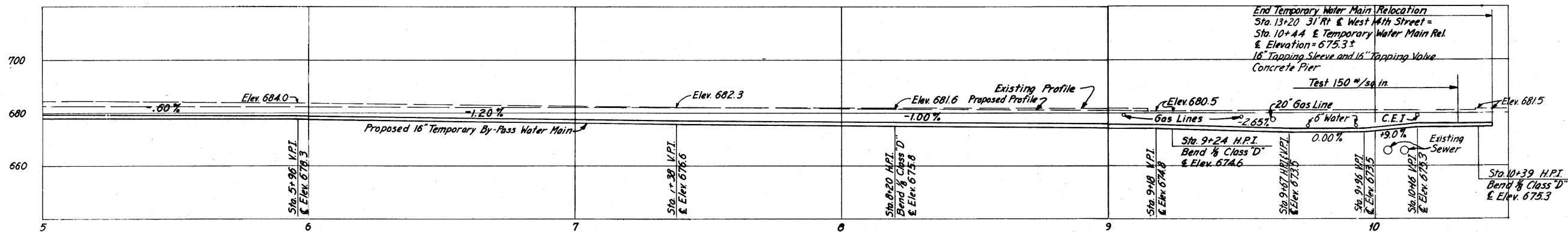
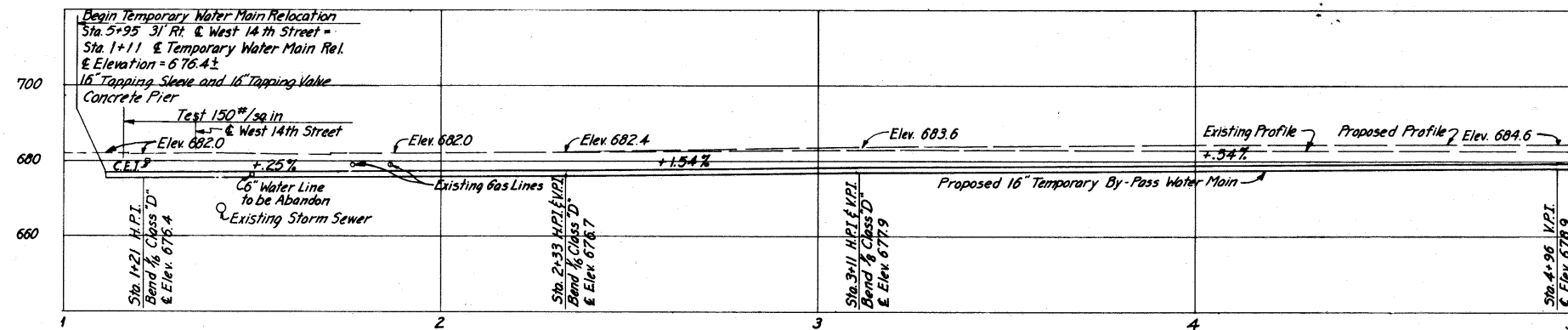
SCALE 1" = 20'
MADE RA DATE 11-2-64
TRCD DATE 12-13-64
CKD ECE DATE 12-13-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

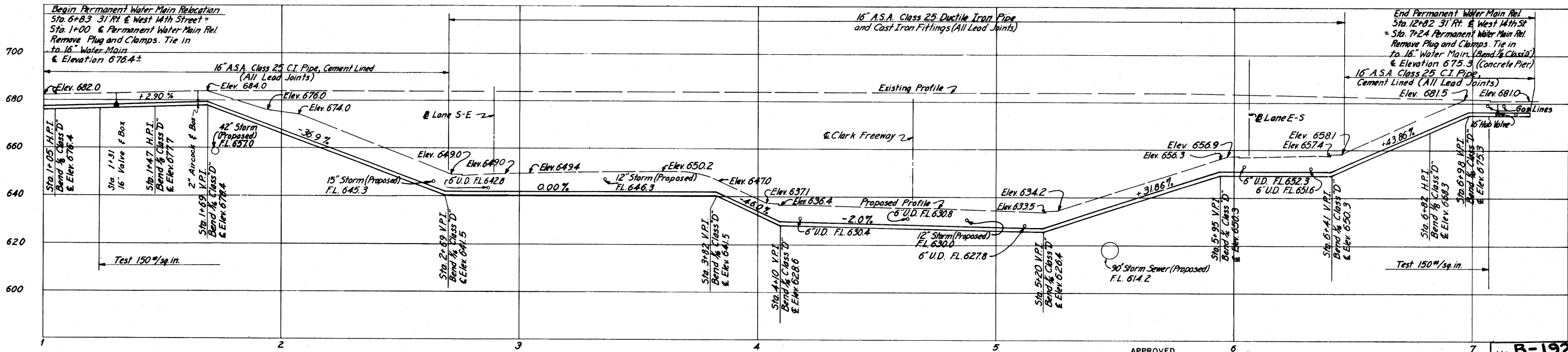
139
478

CUYAHOGA COUNTY
CUY.-71-18.54
CUY-90-13.81

15
38



PROFILE TEMPORARY BY-PASS CONNECTION

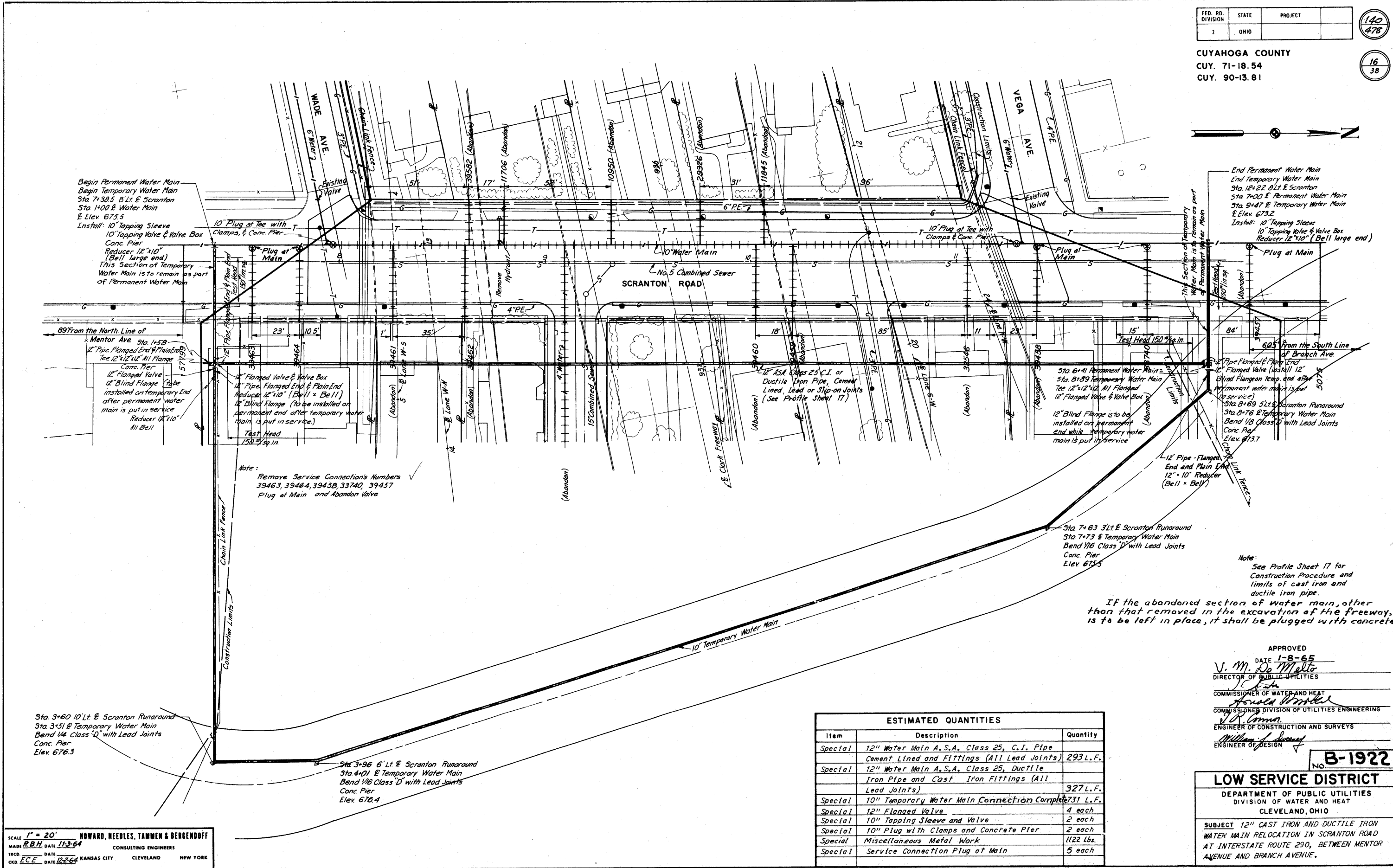


PROFILE PERMANENT RELOCATION

SCALE 1" = 20'
MADE R.A. DATE 11-2-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

APPROVED
DATE 1-8-65
V.M. DeMalle
DIRECTOR OF PUBLIC UTILITIES
COMMISSIONER OF WATER AND HEAT
COMMISSIONER DIVISION OF UTILITIES ENGINEERING
ENGINEER OF CONSTRUCTION AND SURVEYS
ENGINEER OF DESIGN

No. B-1921
LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO
SUBJECT 16" CAST IRON AND DUCTILE IRON
WATER MAIN RELOCATION IN WEST 14th ST.
AT INTERSTATE ROUTE 290 BETWEEN
MENTOR AVENUE AND BRANCH AVENUE



Begin Permanent Water Main
 Begin Temporary Water Main
 Sta 7+38.5 6" Lt. E Scranton
 Sta 1+00 E Water Main
 E Elev. 675.5
 Install: 10" Tapping Sleeve
 10" Tapping Valve & Valve Box
 Conc. Pier
 Reducer 12" x 10"
 (Bell large end)
 This Section of Temporary
 Water Main is to remain as part
 of Permanent Water Main

End Permanent Water Main
 End Temporary Water Main
 Sta. 12+22 8" Lt. E Scranton
 Sta. 7+00 E Permanent Water Main
 Sta. 9+47 E Temporary Water Main
 E Elev. 673.2
 Install: 10" Tapping Sleeve
 10" Tapping Valve & Valve Box
 Reducer 12" x 10" (Bell large end)

89' From the North Line of
 Mentor Ave. Sta. 1+58
 12" Pipe Flanged End & Plain End
 Tee 12" x 12" x 12" All Flange
 Conc. Pier
 12" Flanged Valve
 12" Blind Flange (to be
 installed on temporary end
 after permanent water
 main is put in service)
 Reducer 12" x 10"
 All Bell

Sta. 8+41 Permanent Water Main =
 Sta. 8+89 Temporary Water Main
 Tee 12" x 12" x 12" All Flange
 12" Flanged Valve & Valve Box
 12" Blind Flange is to be
 installed on permanent
 end while temporary water
 main is put in service

Note:
 Remove Service Connection's Numbers
 39463, 39464, 39458, 33740, 39457
 Plug at Main and Abandon Valve

Note:
 See Profile Sheet 17 for
 Construction Procedure and
 limits of cast iron and
 ductile iron pipe.

If the abandoned section of water main, other
 than that removed in the excavation of the freeway,
 is to be left in place, it shall be plugged with concrete.

Sta. 3+60 10" Lt. E Scranton Runaround
 Sta. 3+51 E Temporary Water Main
 Bend 1/8 Class 'D' with Lead Joints
 Conc. Pier
 Elev. 676.3

Sta. 3+96 6" Lt. E Scranton Runaround
 Sta. 4+01 E Temporary Water Main
 Bend 1/8 Class 'D' with Lead Joints
 Conc. Pier
 Elev. 676.4

ESTIMATED QUANTITIES		
Item	Description	Quantity
Special	12" Water Main A.S.A. Class 25, C.I. Pipe Cement Lined and Fittings (All Lead Joints)	293 L.F.
Special	12" Water Main A.S.A. Class 25, Ductile Iron Pipe and Cast Iron Fittings (All Lead Joints)	327 L.F.
Special	10" Temporary Water Main Connection Complete	731 L.F.
Special	12" Flanged Valve	4 each
Special	10" Tapping Sleeve and Valve	2 each
Special	10" Plug with Clamps and Concrete Pier	2 each
Special	Miscellaneous Metal Work	1122 Lbs.
Special	Service Connection Plug at Main	5 each

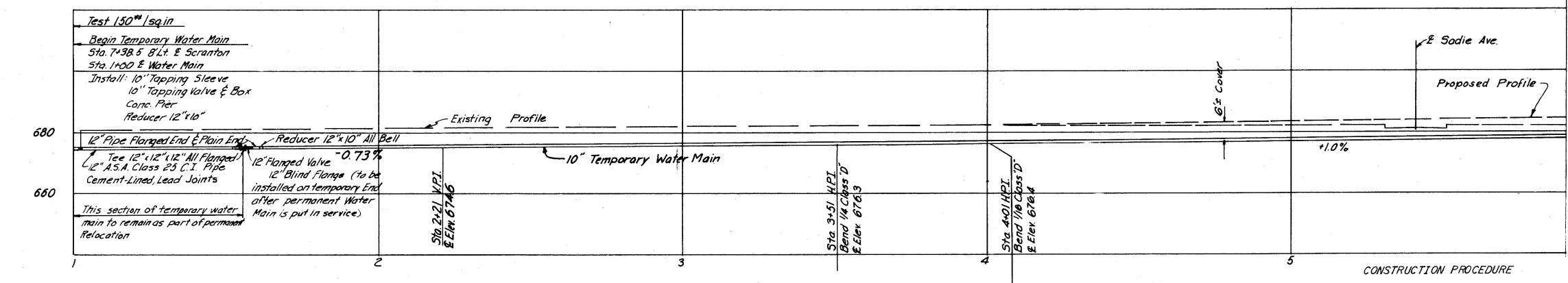
APPROVED
 DATE 1-8-65
 V. M. De Motta
 DIRECTOR OF PUBLIC UTILITIES
 COMMISSIONER OF WATER AND HEAT
 Howard Stroh
 COMMISSIONER DIVISION OF UTILITIES ENGINEERING
 J. A. Connor
 ENGINEER OF CONSTRUCTION AND SURVEYS
 William J. Sweeney
 ENGINEER OF DESIGN

No. **B-1922**

LOW SERVICE DISTRICT
 DEPARTMENT OF PUBLIC UTILITIES
 DIVISION OF WATER AND HEAT
 CLEVELAND, OHIO

SUBJECT 12" CAST IRON AND DUCTILE IRON
 WATER MAIN RELOCATION IN SCRANTON ROAD
 AT INTERSTATE ROUTE 290, BETWEEN MENTOR
 AVENUE AND BRANCH AVENUE.

SCALE 1" = 20'
 HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 MADE P.B.H. DATE 11-3-64 CONSULTING ENGINEERS
 TRCD DATE DATE
 CKD. ECE DATE 12-2-64 KANSAS CITY CLEVELAND NEW YORK



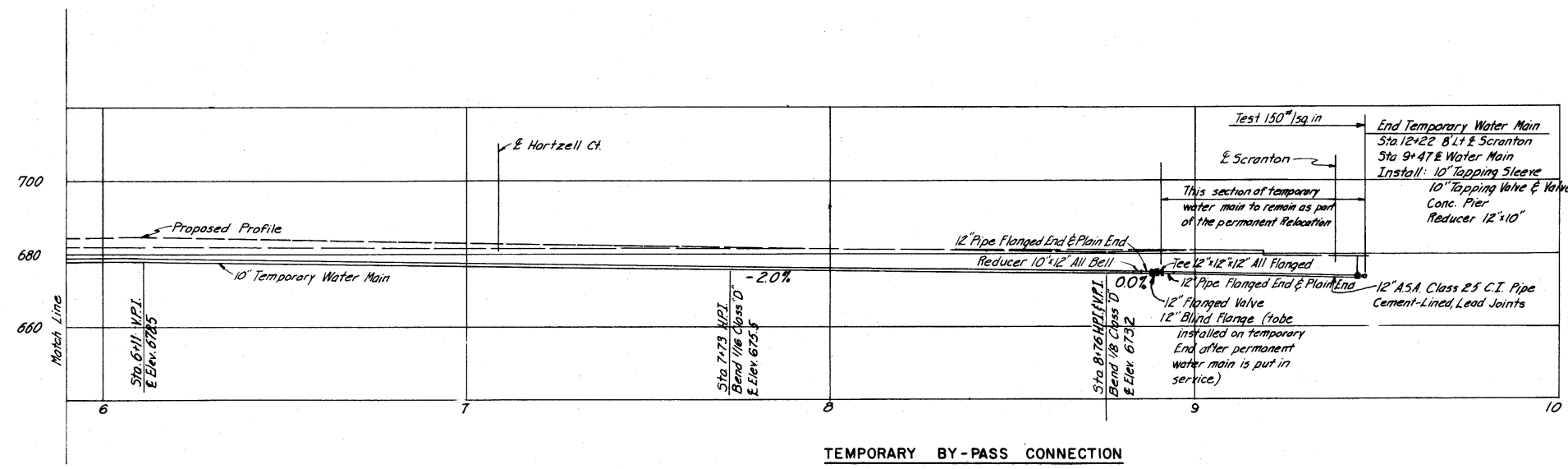
CONSTRUCTION PROCEDURE

The Contractor shall notify the City of Cleveland Utilities Engineering Office three days prior to starting water work. (Telephone TOWER-1-4600, Line 813).

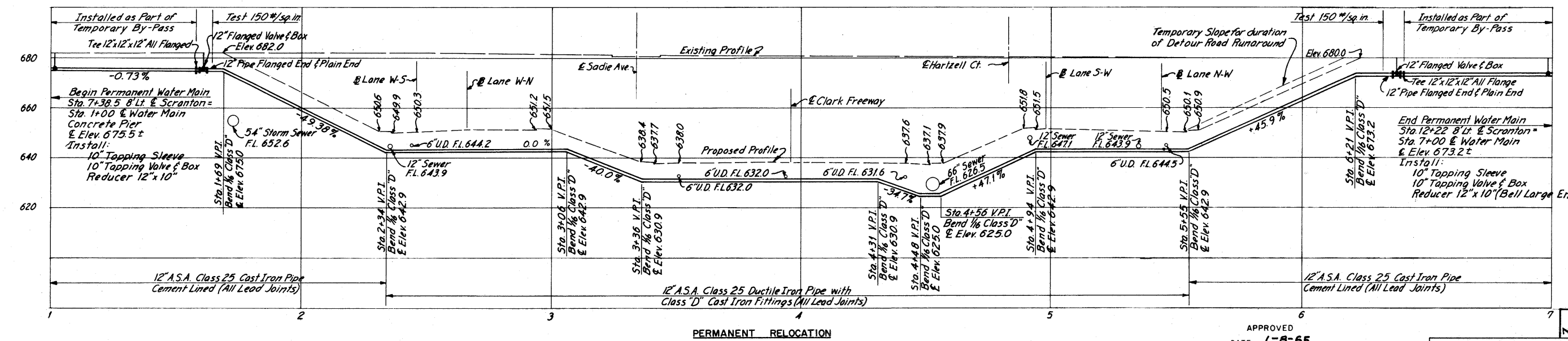
Procedure for construction of the 10" Temporary By-Pass and 12" Permanent Water Main Relocations:

1. Install temporary relocated section to points near the connections with the existing water main. Install temporary cast iron plug with clamps and 12" blind flanges on the two valves which connect to permanent water main and open two valves, which will permit flow through 10" Temporary Water Main and properly back up for testing.
2. Taps for chlorination to be provided after the work has begun. The Division of Water will determine the location of necessary taps.
3. After chlorination and testing, the temporary plugs can be removed and the connections made to the existing water line.
4. Install permanent relocated section to points near the connections with the temporary water main, which will remain as part of the permanent relocation. Install temporary cast iron plugs with clamps and properly backed up for testing.
5. After chlorination and testing, the temporary plugs can be removed and the connections made to the 12" flanged valve which was installed with the temporary water main. Open the two valves on the permanent water main, then close the two 12" flanged valves on the Temporary water main and install 12" blind flanges.

The existing water mains can only be closed at times designated by The City of Cleveland Water Department. Water Department personnel will close the existing valves.



TEMPORARY BY-PASS CONNECTION



PERMANENT RELOCATION

SCALE 1" = 20'
 MADE R.O.H. DATE 11-3-64
 TRCD. DATE 12-26-64
 ECE DATE 12-26-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

APPROVED
 DATE 1-8-65
 V. M. De Mello
 DIRECTOR OF PUBLIC UTILITIES
 COMMISSIONER OF WATER AND HEAT
 Anula Orsler
 COMMISSIONER DIVISION OF UTILITIES ENGINEERING
 J. J. Lerner
 ENGINEER OF CONSTRUCTION AND SURVEYS
 William J. Sweeney
 ENGINEER OF DESIGN

NO. **B-1923**
LOW SERVICE DISTRICT
 DEPARTMENT OF PUBLIC UTILITIES
 DIVISION OF WATER AND HEAT
 CLEVELAND, OHIO
 SUBJECT 12" CAST IRON AND DUCTILE IRON
 WATER MAIN RELOCATION IN SCRANTON ROAD
 AT INTERSTATE ROUTE 290, BETWEEN MENTOR
 AVENUE AND BRANCH AVENUE.

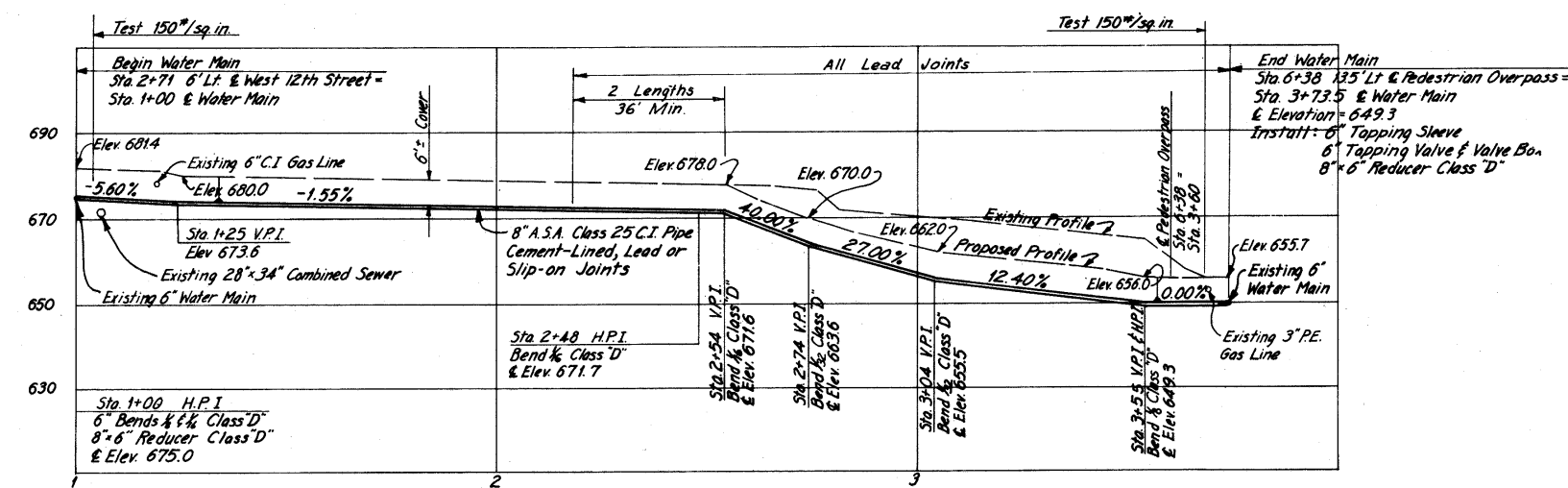
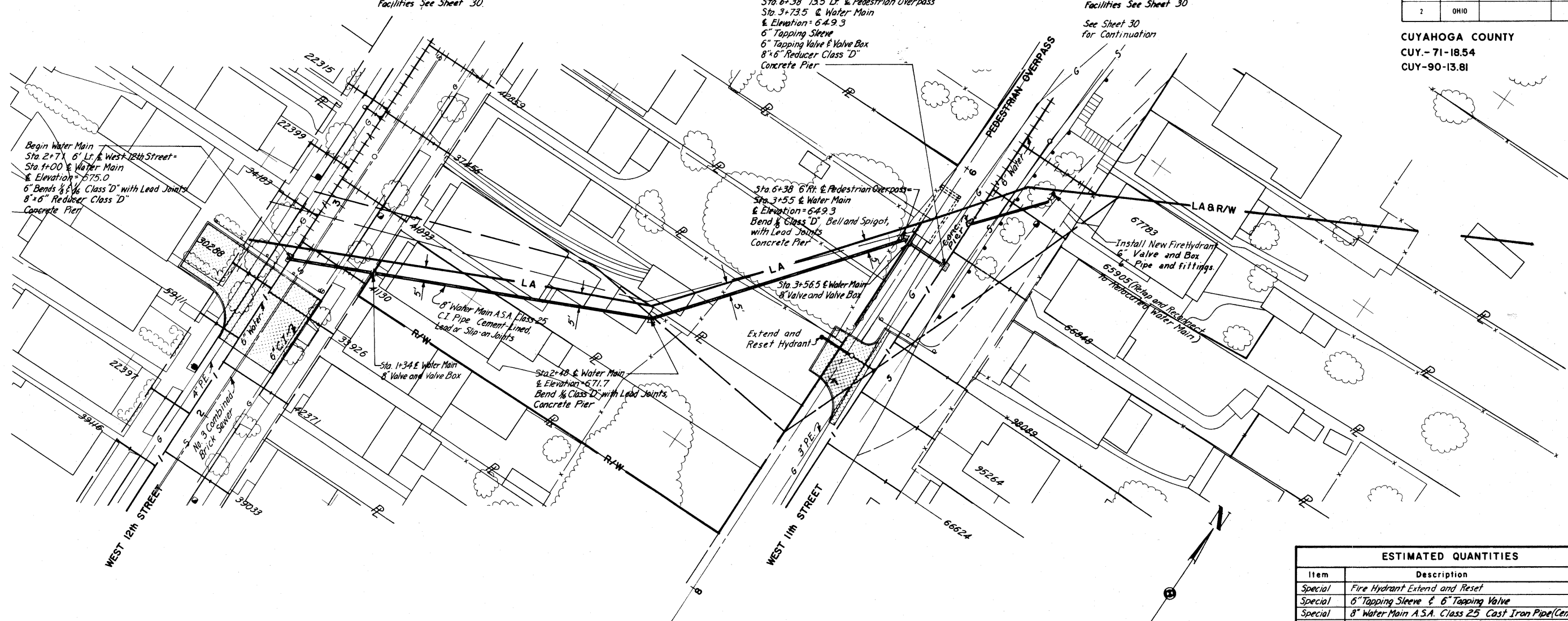
CUYAHOGA COUNTY
 CUY.-71-18.54
 CUY-90-13.81

Note: For Removal of Existing Facilities See Sheet 30.

End Water Main
 Sta 6+38 13.5' Lt. & Pedestrian Overpass
 Sta 3+73.5 & Water Main
 & Elevation = 649.3
 6" Tapping Sleeve
 6" Tapping Valve & Valve Box
 8"x6" Reducer Class 'D'
 Concrete Pier

Note: For Removal of Existing Facilities See Sheet 30
 See Sheet 30
 for Continuation

Begin Water Main
 Sta 2+71 6' Lt. & West 12th Street =
 Sta 1+00 & Water Main
 & Elevation = 675.0
 6" Bends & 1/4" Class 'D' with Lead Joints
 8"x6" Reducer Class 'D'
 Concrete Pier



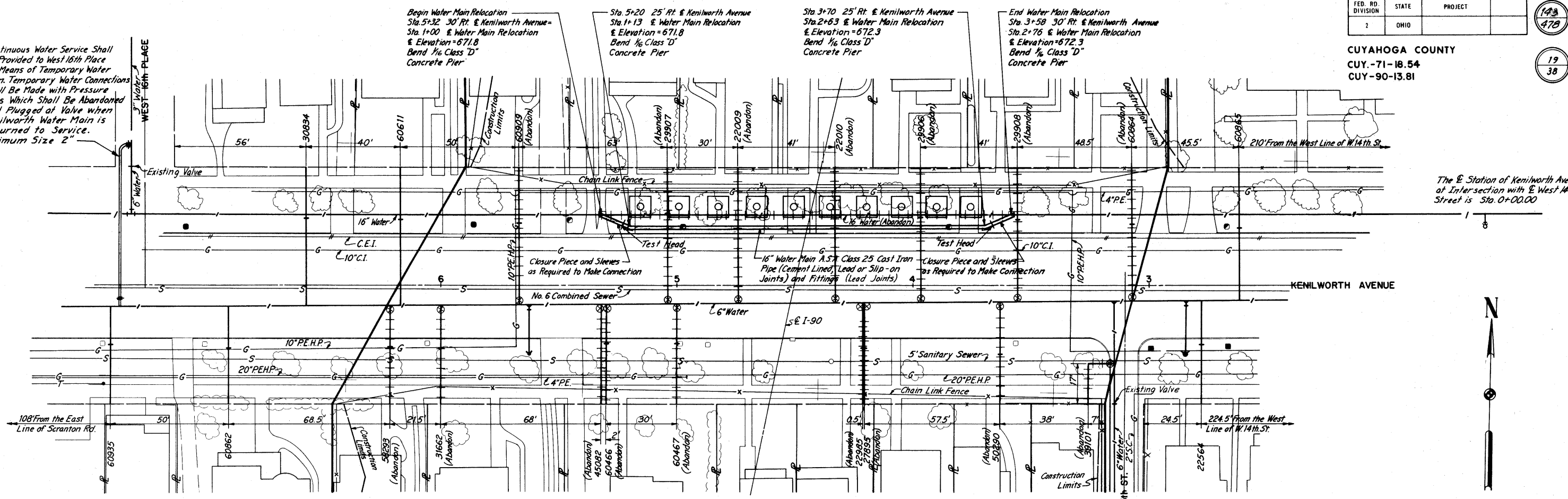
ESTIMATED QUANTITIES		
Item	Description	Quantity
Special	Fire Hydrant Extend and Reset	1 Each
Special	6" Tapping Sleeve & 6" Tapping Valve	1 Each
Special	8" Water Main A.S.A. Class 25 Cast Iron Pipe (Cement Lined, Lead or Slip-on Joints) and Fittings	277 Lin. Ft.
Special	6" Fire Hydrant	1 Each
Special	6" Water Main A.S.A. Class 25 Cast Iron Pipe, Cement Lined	46 Lin. Ft.
Special	Miscellaneous Metal Work	358 Lbs.
Special	8" Valve	1 Each
Special	Retap and Reconnect Connection	1 Each

APPROVED
 DATE 1-8-65
 V. M. DeMotte
 DIRECTOR OF PUBLIC UTILITIES
 COMMISSIONER OF WATER AND HEAT
 Howard B. ...
 COMMISSIONER DIVISION OF UTILITIES ENGINEERING
 J. J. Connor
 ENGINEER OF CONSTRUCTION AND SURVEYS
 William J. ...
 ENGINEER OF DESIGN

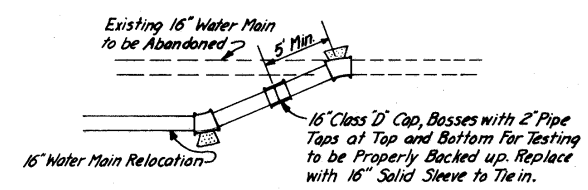
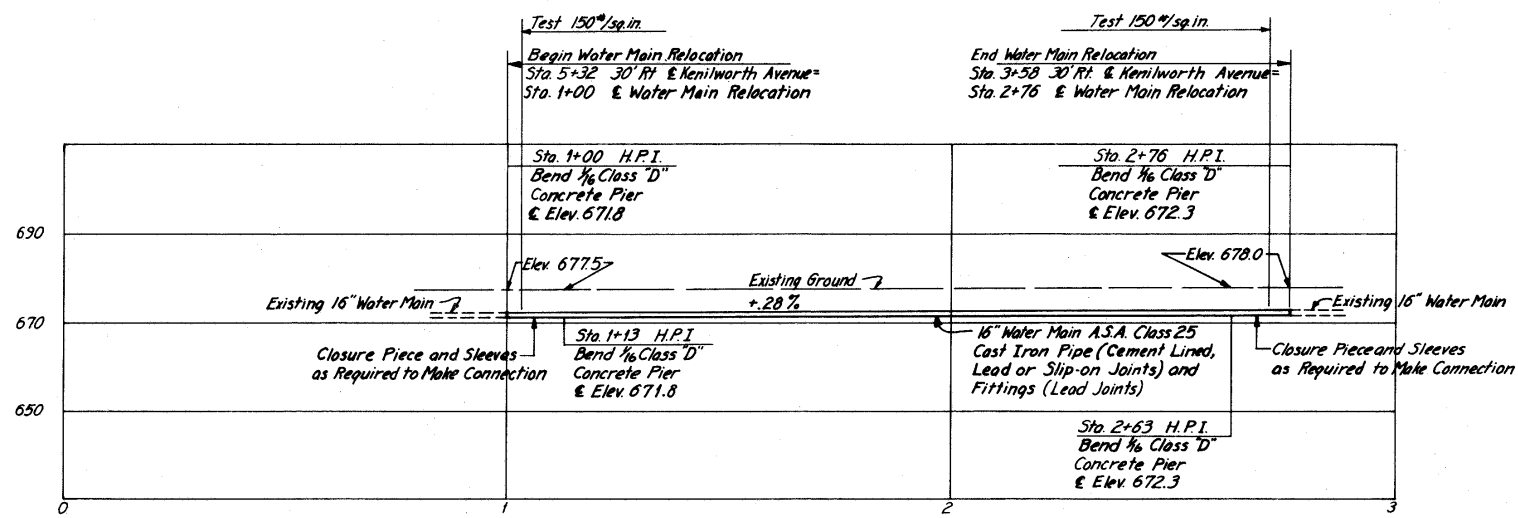
NO. B-1924
LOW SERVICE DISTRICT
 DEPARTMENT OF PUBLIC UTILITIES
 DIVISION OF WATER AND HEAT
 CLEVELAND, OHIO
 SUBJECT 8" CAST IRON WATER MAIN CONNECTION BETWEEN WEST 12th STREET AND WEST 11th STREET, PARALLEL AND SOUTH OF I-90

SCALE 1" = 20'
 MADE R.A. DATE 10-15-64
 TRCD DATE
 CKD ECE DATE 2-1-64
 HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

Continuous Water Service Shall Be Provided to West 16th Place By Means of Temporary Water Main. Temporary Water Connections Shall Be Made with Pressure Taps Which Shall Be Abandoned and Plugged at Valve when Kenilworth Water Main is Returned to Service. Minimum Size 2"



The E Station of Kenilworth Ave. at Intersection with E West 14th Street is Sta. 0+00.00



ESTIMATED QUANTITIES		
Item	Description	Quantity
Special	16" Water Main A.S.A. Class 25 Cast Iron Pipe (Cement Lined, Lead or Slip-on Joints) and Fittings (Lead Joints)	176 Lin. Ft.
Special	Remove Abandon Existing Connection Curb Cock Valve Box	16 Each
Special	Service Connection Plugged at Main	16 Each
Special	Temporary Water Main Connection Complete	Lump Sum

- Note: The Contractor shall notify the Utilities Engineering Office three working days prior to starting water work. Call Tower 1-4600, Line 813. Procedure for construction of 16" water main relocation:
1. Install relocated section at points near the connections with the existing water main. Install temporary C.I. plugs with clamps and properly backed up for testing. The 16" plug shall have 2" Tapped Holes top and bottom and delivered with 2 cast iron screwed plugs.
 2. Taps for chlorination to be provided after the work has begun. The Division of Water will determine the location of necessary taps.
 3. After chlorination and testing, the temporary plug can be removed and the connection made to the new water line. Plug ends of abandoned 16" water main with concrete.
- Where service connections are to be abandoned, the following work shall be performed:
1. Excavate to water main.
 2. Actual plugging shall be done by the Division of Water and Heat of the City of Cleveland as specified.
 3. Backfill excavation.
 4. Replace paved surface.
 5. Remove abandoned existing connection curb cock valve boxes.

APPROVED
DATE 1-8-65
V. M. DeMotte
DIRECTOR OF PUBLIC UTILITIES
COMMISSIONER OF WATER AND HEAT
COMMISSIONER DIVISION OF UTILITIES ENGINEERING
ENGINEER OF CONSTRUCTION AND SURVEYS
William J. Conway
ENGINEER OF DESIGN

NO. B-1925
LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO
SUBJECT 16" CAST IRON WATER MAIN RELOCATION IN KENILWORTH AVE. AT INTERSTATE ROUTE 71 FROM 358' WEST OF E WEST 14th ST. TO 532' WEST OF E WEST 14th ST.

WATER LINE PLAN

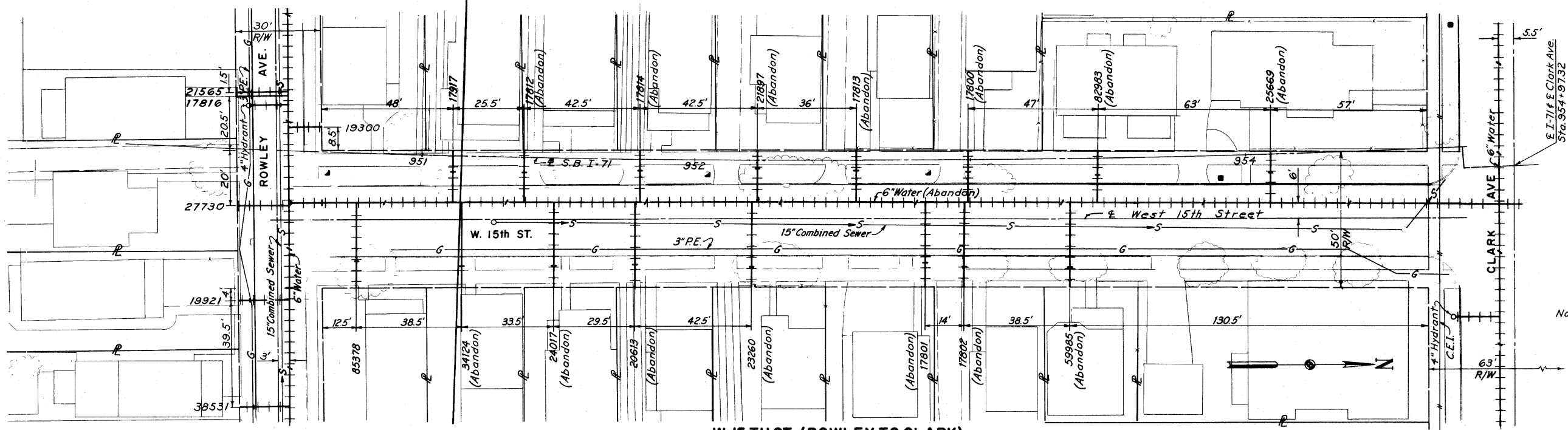
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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CUYAHOGA COUNTY
CUY-71-18.54
CUY-90-13-81

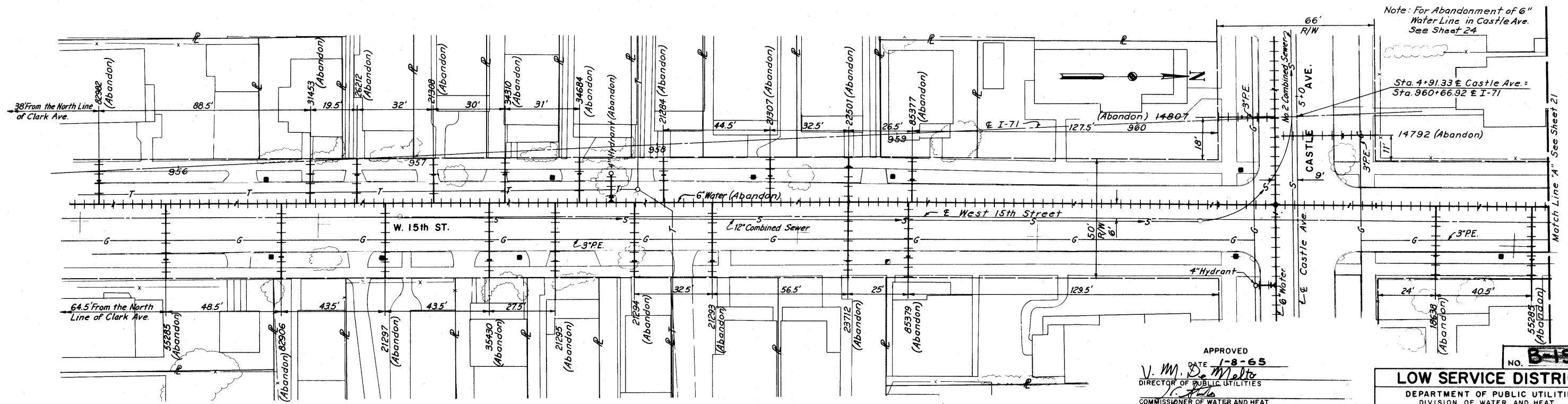
20
38

BEGIN PROJECT
CUY-71-18.54
951+13.98 N.B. MEDINA
951+15.00 S.B. MEDINA



W. 15 TH ST. (ROWLEY TO CLARK)

Note: For Relocation & Abandonment of Existing Facilities in Clark Ave. See Sheet 11.



W. 15 TH ST. (CLARK TO CASTLE)

Note: For Abandonment of 6" Water Line in Castle Ave. See Sheet 24.

Sta. 4+91.33 E Castle Ave. =
Sta. 960+66.92 E I-71

SCALE 1" = 20'
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

APPROVED
DATE 1-8-65
V. M. DeMotte
DIRECTOR OF PUBLIC UTILITIES
COMMISSIONER OF WATER AND HEAT
COMMISSIONER, DIVISION OF UTILITIES ENGINEERING
ENGINEER OF CONSTRUCTION AND SURVEYS
ENGINEER OF DESIGN

NO. B-1926
LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO
SUBJECT Abandon 6" Water Line on West 15th Street from Rowley Avenue to Castle Avenue.

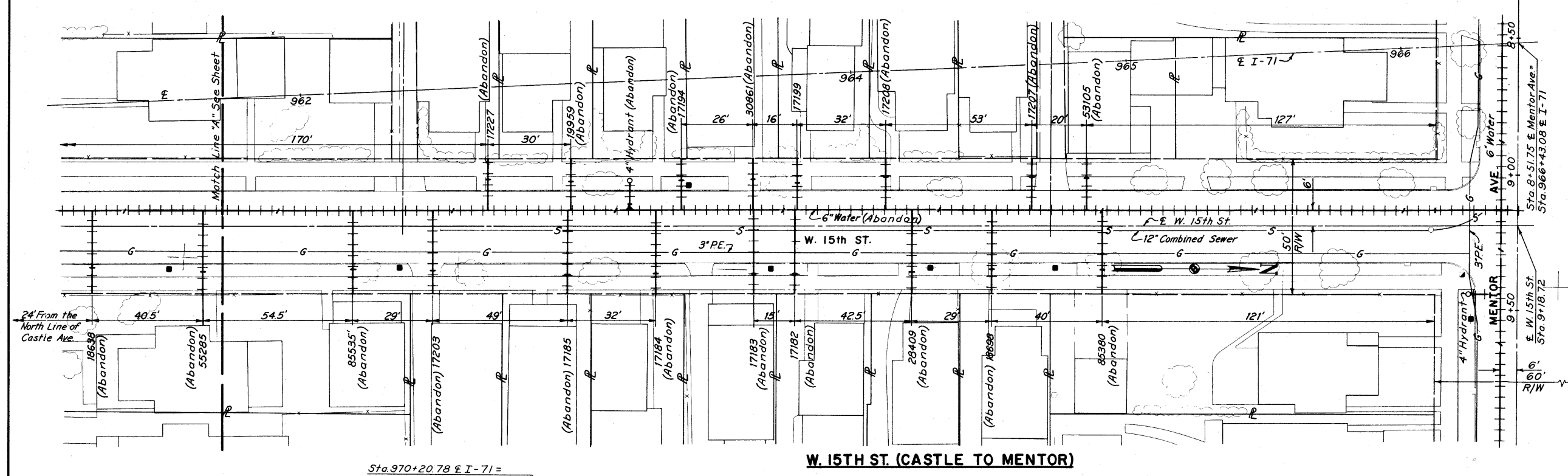
WATER LINE PLAN

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

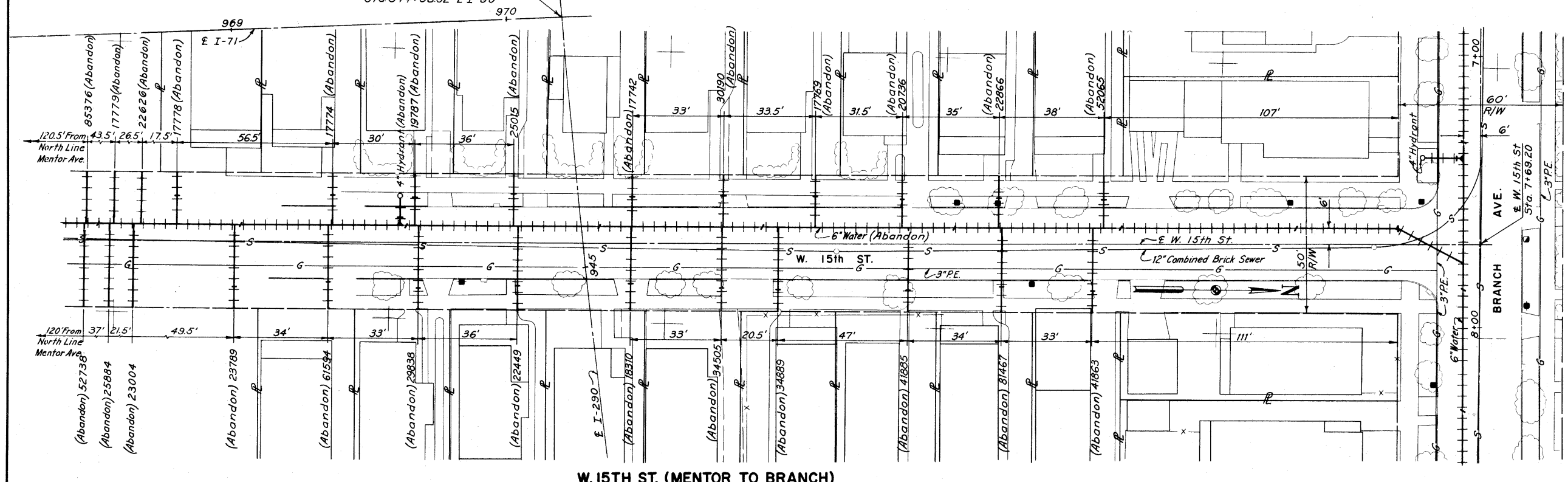
145
478

CUYAHOGA COUNTY
CUY-71-18.54
CUY-90-13.81

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38



Note: For Abandonment of 6" Water Line in Mentor Ave. See Sheet 25



Note: For Abandonment of 6" Water Line in Branch Ave. See Sheet 26

SCALE 1" = 20'
MADE L.J.T. DATE 11-3-64
TRCD R.J.K. DATE 11-3-64
CKD _____ DATE _____
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

APPROVED
DATE 1-8-65
V. M. De Motta
DIRECTOR OF PUBLIC UTILITIES
COMMISSIONER OF WATER AND HEAT
Arnold Winter
COMMISSIONER DIVISION OF UTILITIES ENGINEERING
J. J. Connor
ENGINEER OF CONSTRUCTION AND SURVEYS
William J. Sweeney
ENGINEER OF DESIGN

NO. **B-1927**

LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT Abandon 6" Water Line on West 15th Street from Castle Avenue to Branch Avenue.

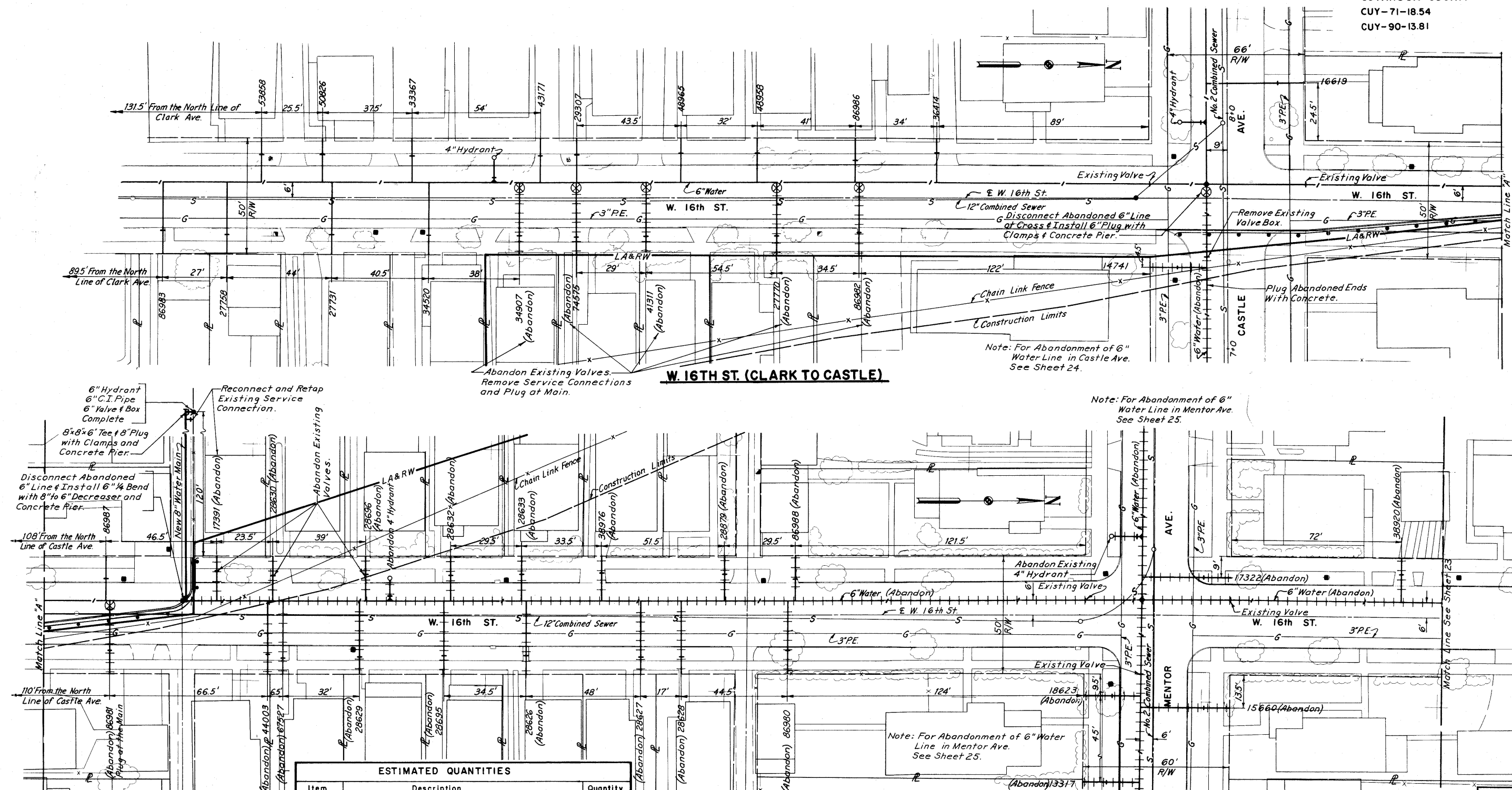
WATER LINE PLAN

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

146
478

22
38

CUYAHOGA COUNTY
CUY-71-18.54
CUY-90-13.81



W. 16TH ST. (CLARK TO CASTLE)

W. 16TH ST. (CASTLE TO MENTOR)

ESTIMATED QUANTITIES		
Item	Description	Quantity
Special	Remove Abandoned Existing Valve Box & Curb Cock	9 each
Special	6" C.I. Plug Complete with Clamps and Concrete Pier	1 each
Special	Miscellaneous Metal Work	179 Lbs.
Special	8" Water Main ASA Class 25, C.I. Pipe	140 Lin. Ft.
Special	Cement Lined and Fittings	5 Lin. Ft.
Special	6" Water Main ASA Class 25, C.I. Pipe	5 Lin. Ft.
Special	6" Valve	1 each
Special	6" Hydrant Complete	1 each
Special	Service Connection Plugged at the Main	6 each

SCALE 1" = 20'
 MADE T.U.T. DATE 11-3-64
 TRCD. R.V.K. DATE 11-3-64
 CKD. DATE

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

APPROVED
 DATE 1-8-65
 V. M. DeMott
 DIRECTOR OF PUBLIC UTILITIES
 COMMISSIONER OF WATER AND HEAT
 COMMISSIONER, DIVISION OF UTILITIES ENGINEERING
 ENGINEER OF CONSTRUCTION AND SURVEYS
 ENGINEER OF DESIGN

NO. **B-1928**

LOW SERVICE DISTRICT
 DEPARTMENT OF PUBLIC UTILITIES
 DIVISION OF WATER AND HEAT
 CLEVELAND, OHIO

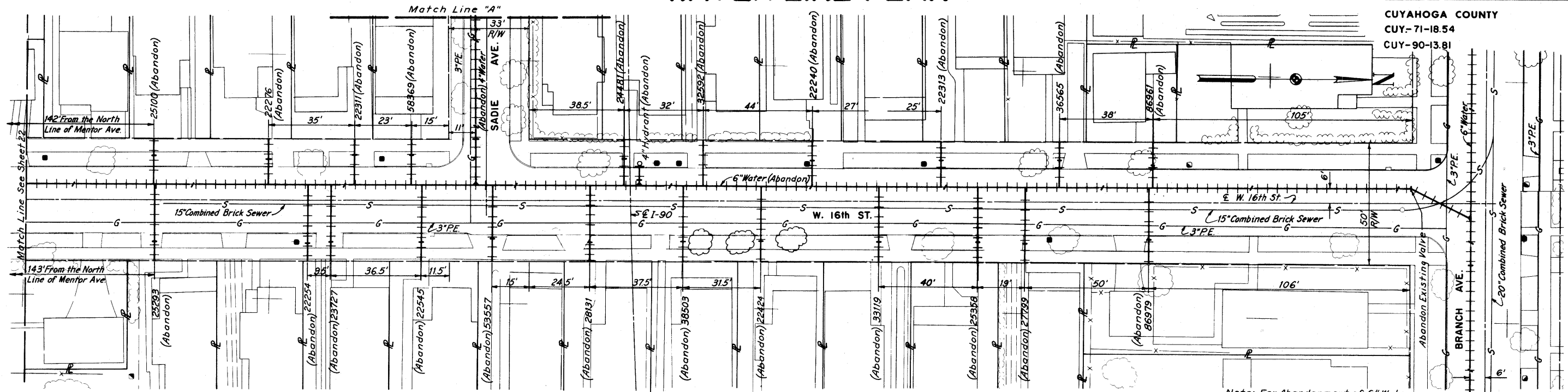
SUBJECT Alterations to 6" Water Line on W. 16th St. from 160' North of Clark Ave. to 122' South of Castle Ave. and Abandonment of 6" Water Line on W. 16th St. from 110' North of Castle Ave. to 125' North of Mentor Ave.

WATER LINE PLAN

FED. RD. DIVISION 2	STATE OHIO	PROJECT
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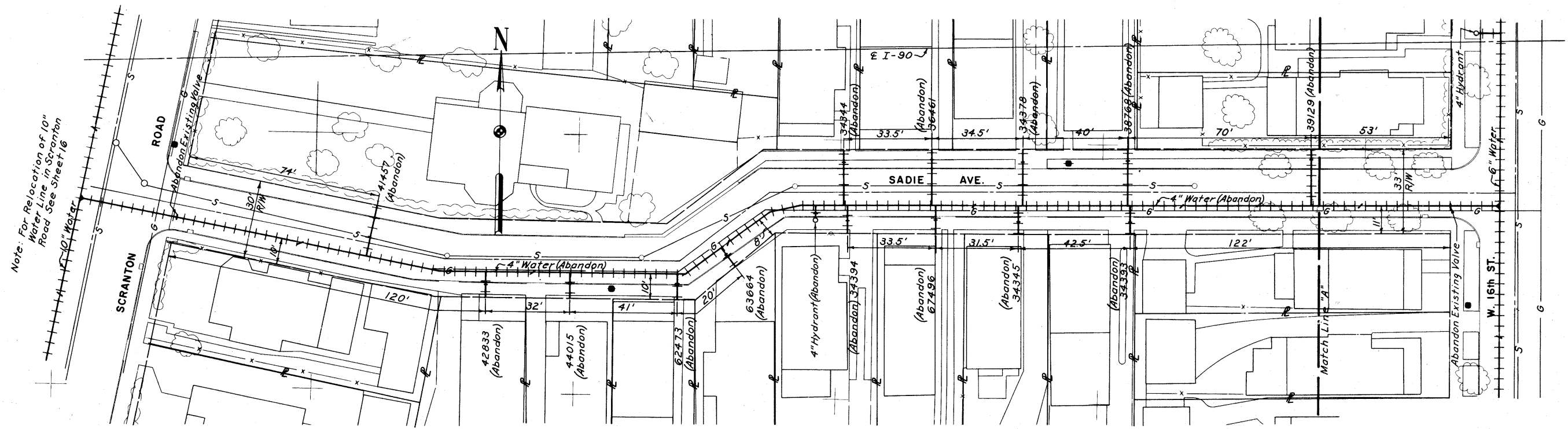
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23
38



W. 16TH ST. (MENTOR TO BRANCH)

Note: For Abandonment of 6" Water Line in Branch Ave. See Sheets 26 & 27



Note: For Relocation of 10" Water Line in Scranton Road See Sheet 16

SCALE 1" = 20'
 MADE 11-17 DATE 11-3-64
 TRCD P.J.K. DATE 11-3-64
 CKD. _____ DATE _____

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

APPROVED
 DATE 1-8-65
V.M. DeMott
 DIRECTOR OF PUBLIC UTILITIES
Fred Brink
 COMMISSIONER OF WATER AND HEAT
J.A. Connor
 COMMISSIONER DIVISION OF UTILITIES ENGINEERING
William J. Sweeney
 ENGINEER OF CONSTRUCTION AND SURVEYS
 ENGINEER OF DESIGN

NO. **B-1929**

LOW SERVICE DISTRICT
 DEPARTMENT OF PUBLIC UTILITIES
 DIVISION OF WATER AND HEAT
 CLEVELAND, OHIO

SUBJECT Abandon 6" Water Line on W. 16th Street from Mentor Avenue to Branch Avenue. Abandon 4" Water Line on Sadie Avenue from W. 15th Street to Scranton Road.

WATER LINE PLAN

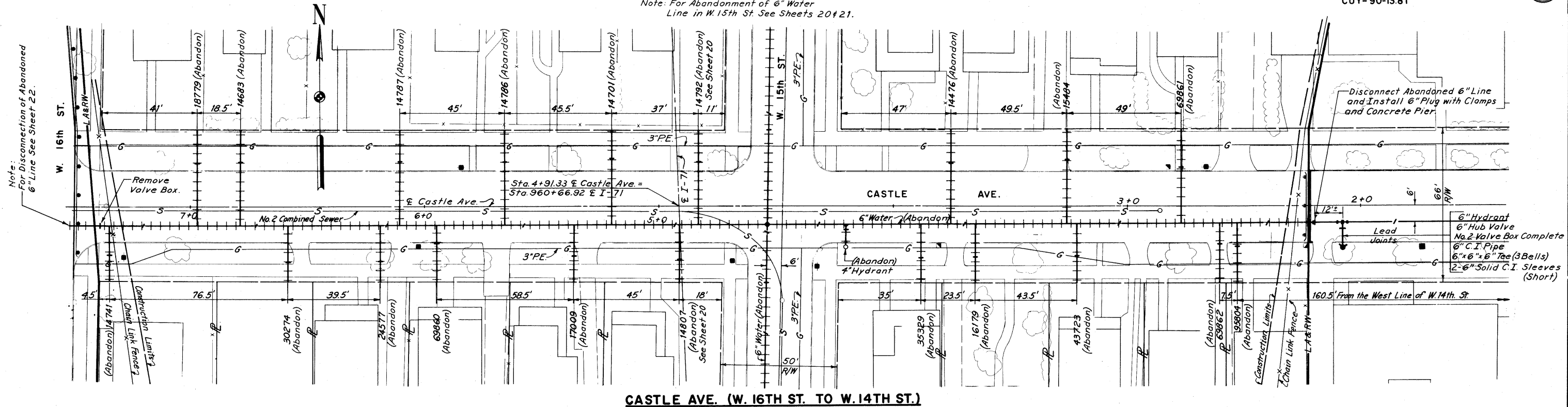
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

148
178

CUYAHOGA COUNTY
CUY-71-18.54
CUY-90-13.81

24
38

Note: For Abandonment of 6" Water Line in W. 15th St. See Sheets 20 & 21.



CASTLE AVE. (W. 16TH ST. TO W. 14TH ST.)

ESTIMATED QUANTITIES		
Item	Description	Quantity
Special	6" C.I. Plug Complete with Clamps and Concrete Pier	1 each
Special	6" Hydrant Complete	1 each
Special	6" Valve	1 each
Special	6" Water Main ASA Class 25, C.I. Pipe, Cement Lined and Fittings	11 Lin. Ft.
Special	Miscellaneous Metal Work	179 Lbs.
Special	Remove Abandoned Existing Valve Box & Curb Cock	1 Each

APPROVED
DATE 1-8-65
V. M. DeMatta
DIRECTOR OF PUBLIC UTILITIES
COMMISSIONER OF WATER AND HEAT
Archie Drake
COMMISSIONER DIVISION OF UTILITIES ENGINEERING
V. F. Connor
ENGINEER OF CONSTRUCTION AND SURVEYS
William J. Sweeney
ENGINEER OF DESIGN

NO. **B-1930**

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT Abandon 6" Water Line on Castle Avenue from West 16th Street to 128' west of West 14th Street.

SCALE 1" = 20'
MADE T.U.T. DATE 11-3-64
TRCD. R.J.K. DATE 11-3-64
CKD. DATE
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

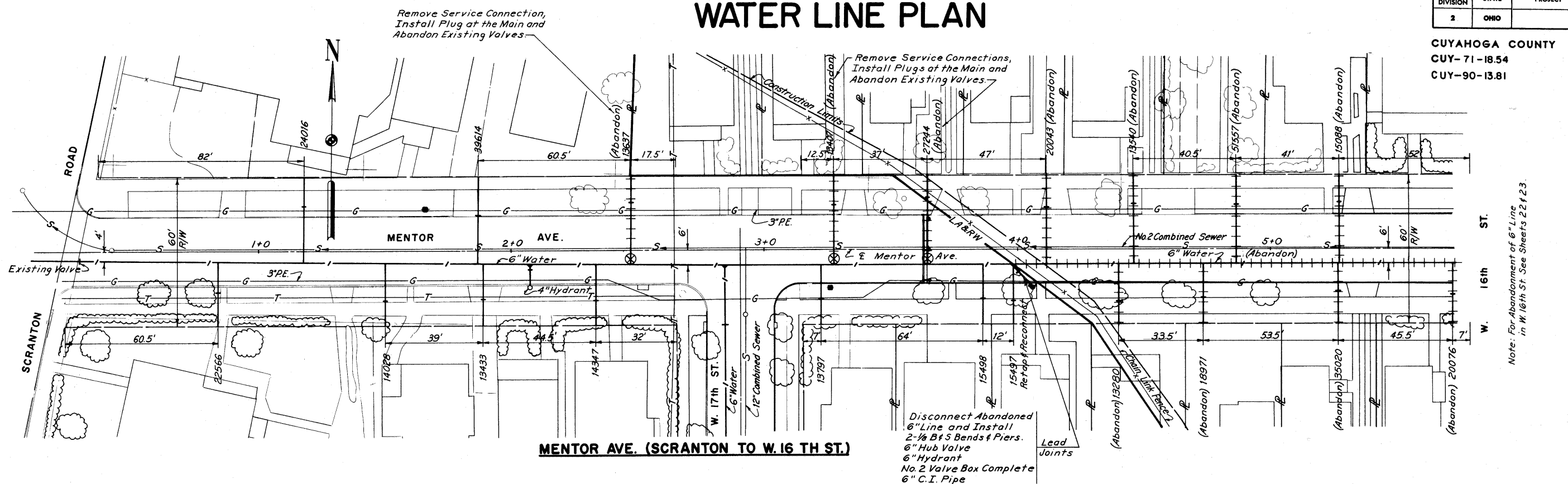
WATER LINE PLAN

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

149
478

CUYAHOGA COUNTY
CUY-71-18.54
CUY-90-13.81

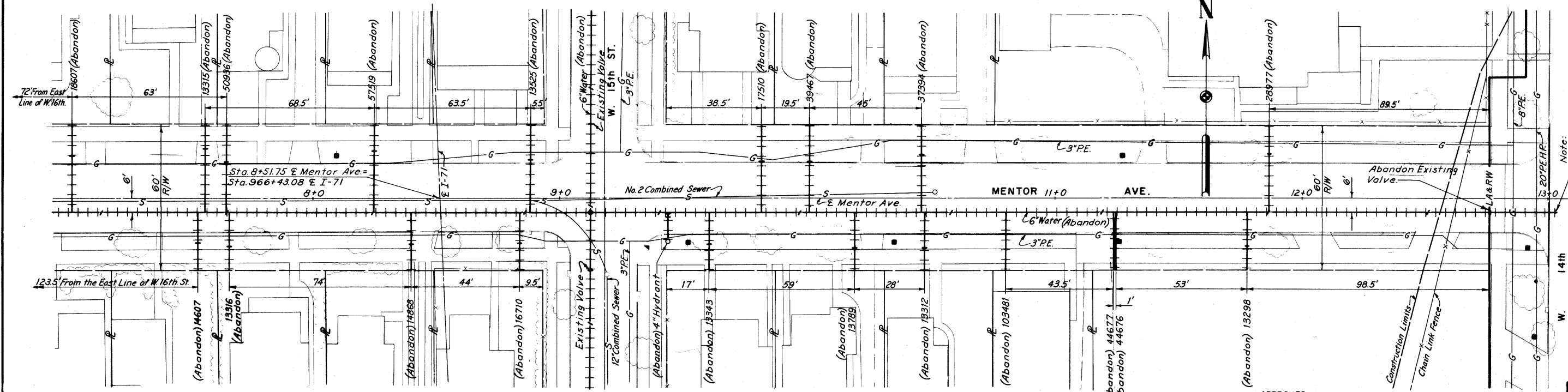
25
38



MENTOR AVE. (SCRANTON TO W. 16 TH ST.)

Disconnect Abandoned 6" Line and Install 2-1/8 Bx 5 Bends & Piers. 6" Hub Valve 6" Hydrant No. 2 Valve Box Complete 6" C.I. Pipe

Note: For Abandonment of 6" Line in W. 16th St. See Sheets 2.21 & 2.3.



MENTOR AVE. (W. 16 TH ST. TO W. 14 TH ST.)

Note: For Abandonment of 6" Line in W. 15th St. See Sheet 21.

Note: For Disconnection of Abandoned 6" Line See Sheet 13.

ESTIMATED QUANTITIES		
Item	Description	Quantity
Special	Service Connection Plugged at Main	3 each
Special	Remove Abandoned Existing Valve Box & Curb Cock	4 each
Special	6" Hydrant Complete	1 each
Special	6" Valve	1 each
Special	6" Water Main ASA Class 25, C.I. Pipe	13 Lin. Ft.
Special	Cement Lined and Fittings	179 Lbs.
Special	Miscellaneous Metal Work	

SCALE 1" = 20'
MADE L.L.T. DATE 11-3-64
TRCD L.L.T. DATE 11-3-64
CKD: _____ DATE _____
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

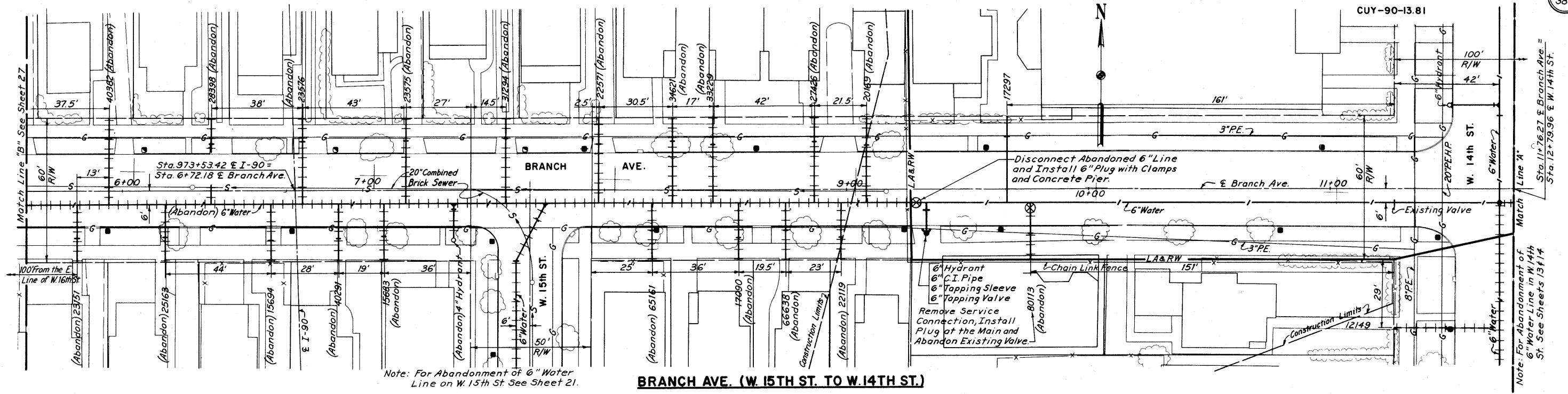
APPROVED DATE 1-8-65
V. M. DeMello
DIRECTOR OF PUBLIC UTILITIES
Arnold D. Smith
COMMISSIONER OF WATER AND HEAT
J. P. Connor
COMMISSIONER DIVISION OF UTILITIES ENGINEERING
ENGINEER OF CONSTRUCTION AND SURVEYS
William J. Swannell
ENGINEER OF DESIGN

NO. **B-1931**

LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

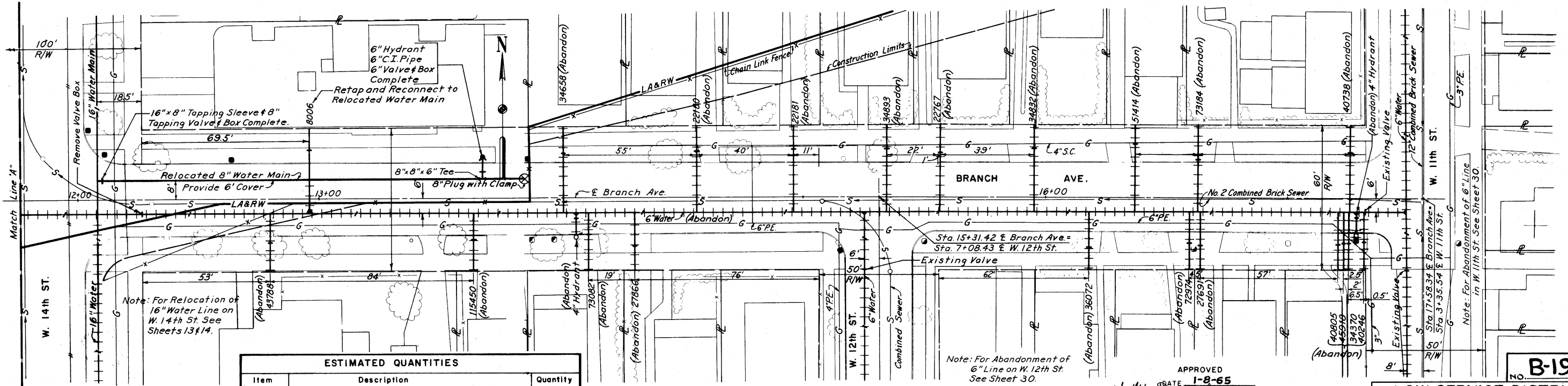
SUBJECT Abandon 6" Water Line from West 14th Street to 85' East of West 17th Street and Alterations to 6" Water Line from 49.5' East of West 17th Street to 78' West of West 17th Street.

WATER LINE PLAN



Note: For Abandonment of 6" Water Line on W. 15th St. See Sheet 21.

BRANCH AVE. (W. 15TH ST. TO W. 14TH ST.)



Note: For Relocation of 16" Water Line on W. 14th St. See Sheets 13 & 14.

Note: For Abandonment of 6" Line on W. 12th St. See Sheet 30.

BRANCH AVE. (W. 14TH ST. TO W. 11TH ST.)

ESTIMATED QUANTITIES		
Item	Description	Quantity
Special	Retap and Reconnect Existing Service Connection	1 each
Special	Service Connection Plugged at Main	1 each
Special	6" Valve	1 each
Special	6" Hydrant Complete	2 each
Special	6" Tapping Sleeve and 6" Tapping Valve	1 each
Special	6" Water Main ASE Class 25, C.I. Pipe Cement Lined	33 Lin.Ft.

Special	8" Water Main ASA Class 25, C.I. Pipe Cement Lined and Fittings	177 Lin.Ft.
Special	8" Plug, Complete with Clamps and Concrete Pier	1 each
Special	6" Plug, Complete with Clamps and Concrete Pier	1 each
Special	Miscellaneous Metal Work	358 Lbs.

SCALE: 1" = 20'
 MADE T.U.T. DATE 11-3-64
 TRCD R.U.K. DATE 11-3-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

APPROVED
 DATE 1-8-65
V. M. DeMatta
 DIRECTOR OF PUBLIC UTILITIES
 COMMISSIONER OF WATER AND HEAT
Howard Tammen
 COMMISSIONER DIVISION OF UTILITIES ENGINEERING
V. P. Connor
 ENGINEER OF CONSTRUCTION AND SURVEYS
William J. ...
 ENGINEER OF DESIGN

B-1932

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT: Abandon 5" Water Line on Branch Avenue from 75.5' East of West 16th Street to 168' West of West 14th Street and from West 14th Street to West 11th Street.

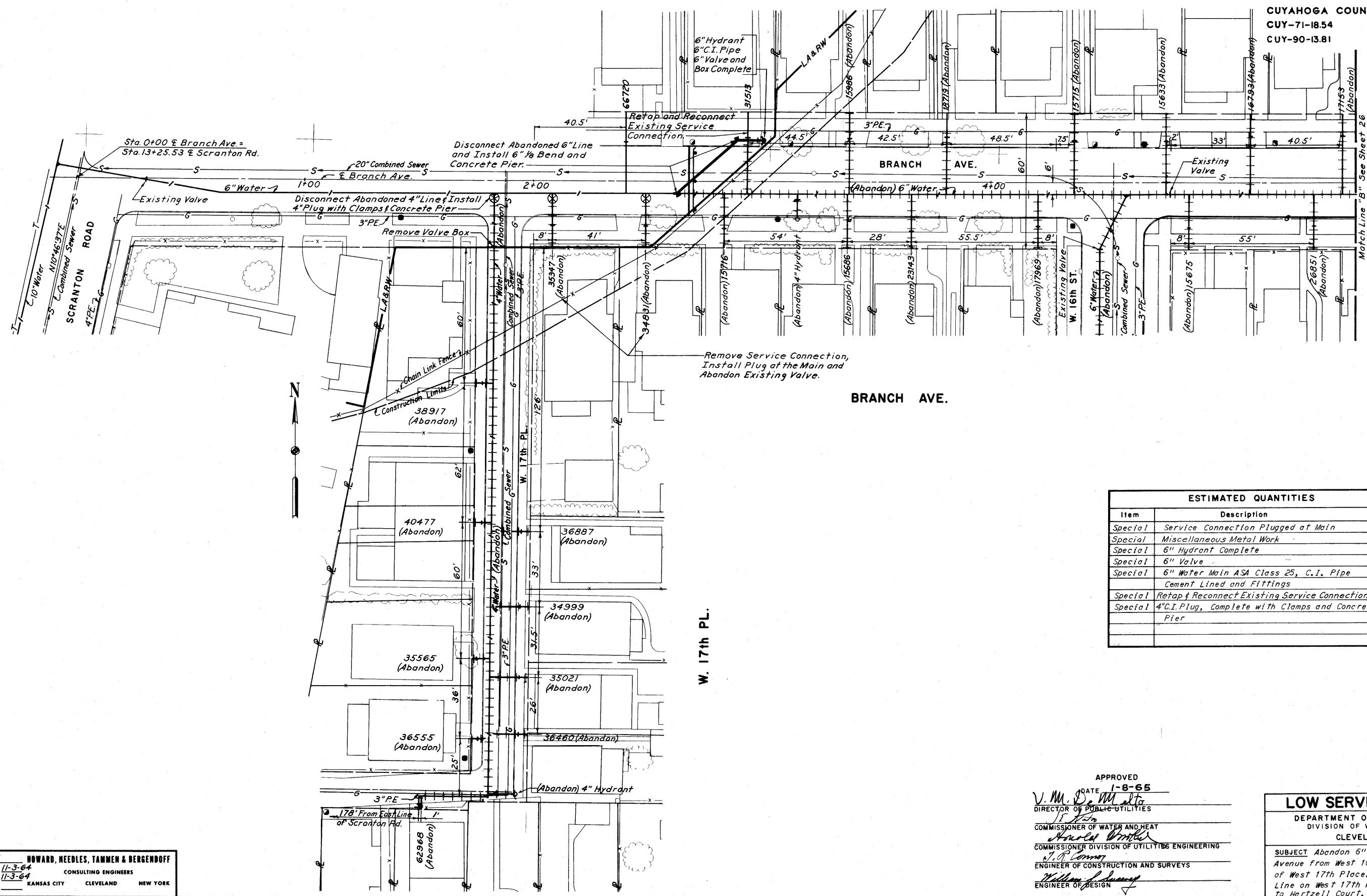
WATER LINE PLAN

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

CUYAHOGA COUNTY
 CUY-71-18.54
 CUY-90-13.81

151
178

27
38



ESTIMATED QUANTITIES		
Item	Description	Quantity
Special	Service Connection Plugged at Main	2 each
Special	Miscellaneous Metal Work	179 Lbs.
Special	6" Hydrant Complete	1 each
Special	6" Valve	1 each
Special	6" Water Main ASA Class 25, C.I. Pipe Cement Lined and Fittings	47 Lin. Ft.
Special	Retap & Reconnect Existing Service Connection	1 each
Special	4" C.I. Plug, Complete with Clamps and Concrete Pier	1 each

SCALE 1" = 20'
 MADE P.L.K. DATE 11-3-64
 TRCD. P.L.K. DATE 11-3-64
 CRD. DATE

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

APPROVED
 DATE 1-8-65
V.M. DeMatta
 DIRECTOR OF PUBLIC UTILITIES

COMMISSIONER OF WATER AND HEAT
Harold White
 COMMISSIONER DIVISION OF UTILITIES ENGINEERING

J.R. Conroy
 ENGINEER OF CONSTRUCTION AND SURVEYS

William J. Sweeney
 ENGINEER OF DESIGN

B-1933

LOW SERVICE DISTRICT
 DEPARTMENT OF PUBLIC UTILITIES
 DIVISION OF WATER AND HEAT
 CLEVELAND, OHIO

SUBJECT Abandon 6" Water Line on Branch Avenue from West 16th Street to 75' East of West 17th Place. Abandon 4" Water Line on West 17th Place from Branch Avenue to Hartzell Court.

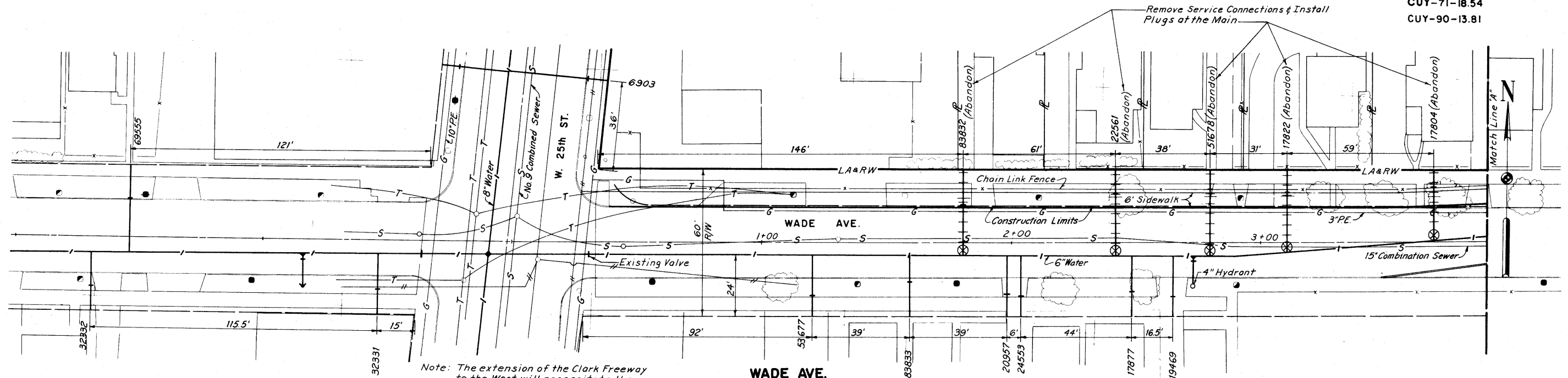
WATER LINE PLAN

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

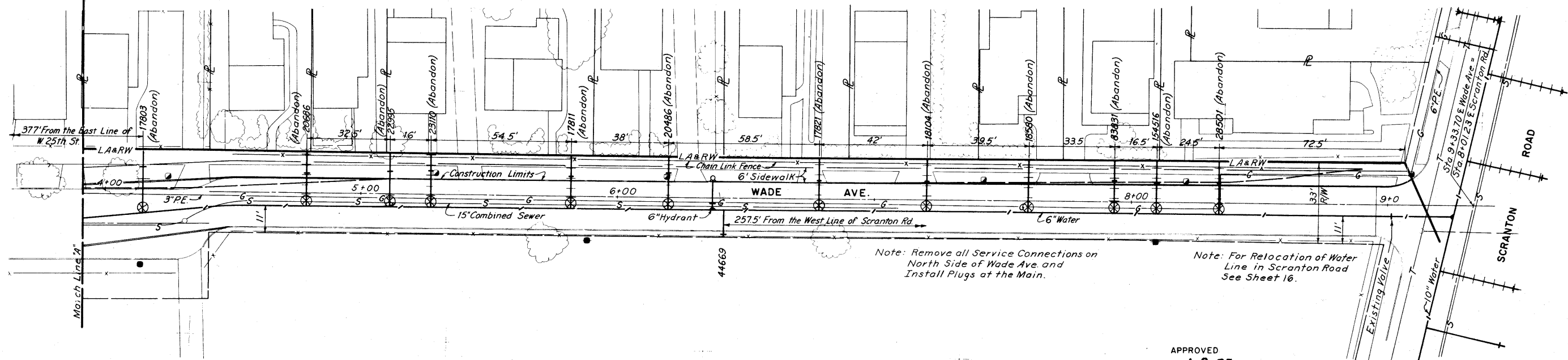
152
478

CUYAHOGA COUNTY
CUY-71-18.54
CUY-90-13.81

20
38



Note: The extension of the Clark Freeway to the West will necessitate the construction of a bridge at W. 25th St. As a temporary measure the Service Connections along the East Side of W. 25th St. will be turned off at the Curb Cocks and left in place. The line beyond the Curb Cocks shall be disconnected from the Valve and abandoned. Connections affected are Connection Nos. 6817, 5883, 6900, 6901, 5880 & 6903.



Note: Remove all Service Connections on North Side of Wade Ave. and Install Plugs at the Main.

Note: For Relocation of Water Line in Scranton Road See Sheet 16.

ESTIMATED QUANTITIES		
Item	Description	Quantity
Special	Service Connections Plugged at Main	17 Each
Special	Service Connections Removed at Valve	6 Each

SCALE 1"=20'
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
MADE T.V.T. DATE 11-3-64
TRCD P.V.H. DATE 11-3-64
KANSAS CITY CLEVELAND NEW YORK

APPROVED
DATE 1-8-65
V. M. DeMatta
DIRECTOR OF PUBLIC UTILITIES
COMMISSIONER OF WATER AND HEAT
J. R. Conroy
COMMISSIONER DIVISION OF UTILITIES ENGINEERING
ENGINEER OF CONSTRUCTION AND SURVEYS
William J. Sweeney
ENGINEER OF DESIGN

NO. **B-1934**

LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT Alterations to 5" Water Line on Wade Avenue from Scranton Road to West 25th Street.

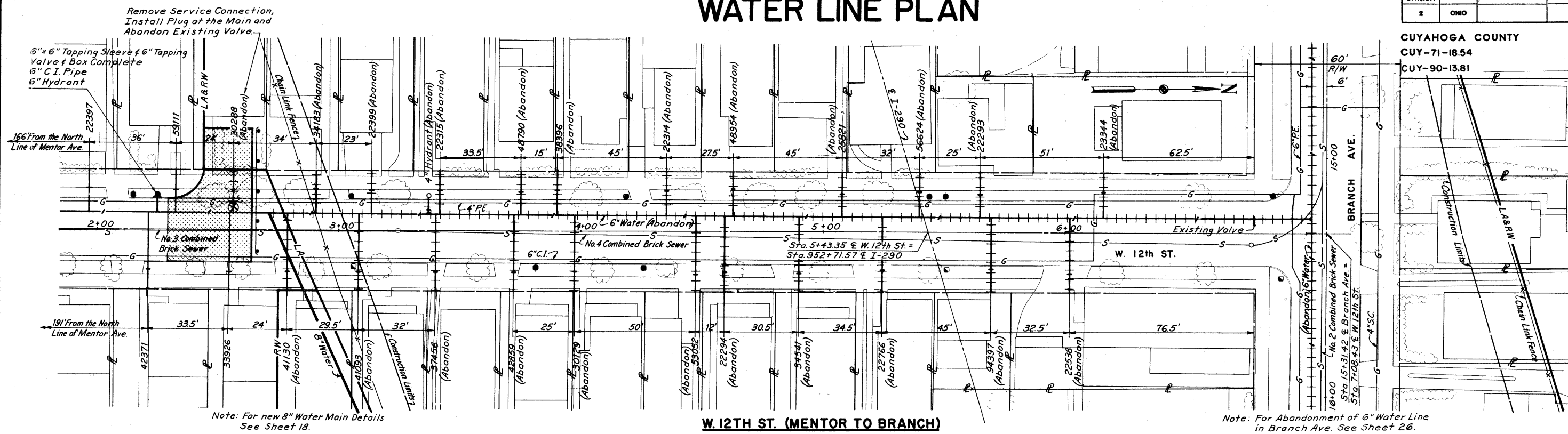
WATER LINE PLAN

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

154
478

30
38

CUYAHOGA COUNTY
 CUY-71-18.54
 CUY-90-13.81

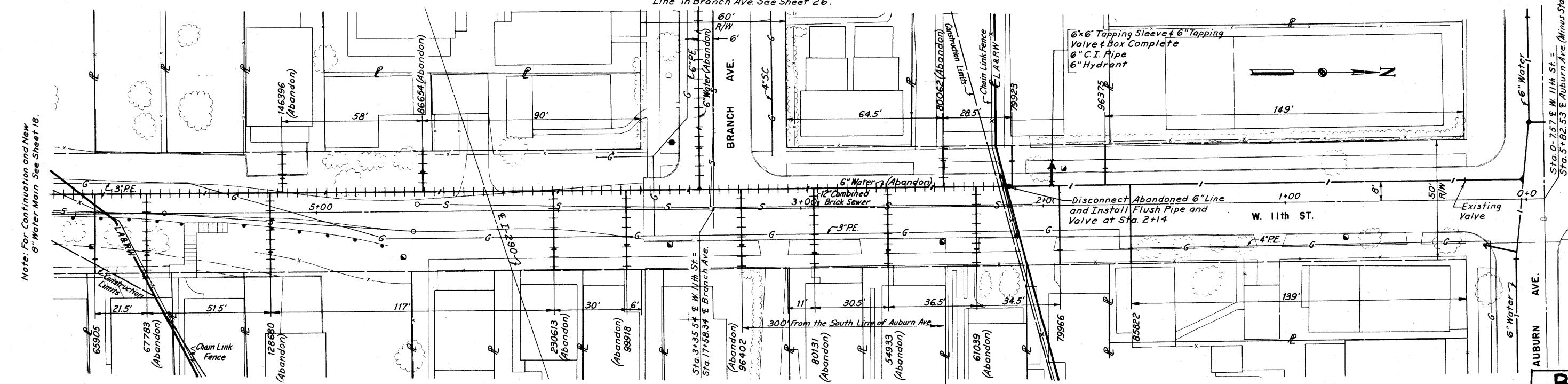


Note: For new 8" Water Main Details See Sheet 18.

W. 12TH ST. (MENTOR TO BRANCH)

Note: For Abandonment of 6" Water Line in Branch Ave. See Sheet 26.

Note: For Abandonment of 6" Water Line in Branch Ave. See Sheet 26.



Note: For Continuation and New 8" Water Main See Sheet 18.

W. 11TH ST. (SOUTH OF AUBURN)

ESTIMATED QUANTITIES		
Item	Description	Quantity
Special	Flush Pipe and Valve Complete with Fittings	1 each
Special	Remove Abandoned Exst. Curb Cock & Valve Box	1 each
Special	Service Connection Plugged at Main	1 each
Special	6" Tapping Sleeve and 6" Tapping Valve	2 each
Special	6" Hydrant Complete	2 each
Special	6" Water Main ASA Class 25, C.I. Pipe	16 Lin. Ft.

SCALE 1" = 20'
HOWARD, NEEDLES, TAMMEN & BERGENOFF
 MADE L.V.T. DATE 11-3-64
 TRCD R.V.K. DATE 11-3-64
 CKD _____ DATE _____ KANSAS CITY CLEVELAND NEW YORK
 CONSULTING ENGINEERS

APPROVED
 DATE 1-8-65
V.M. DeMott
 DIRECTOR OF PUBLIC UTILITIES
 COMMISSIONER OF WATER AND HEAT
Arnold Winkler
 COMMISSIONER DIVISION OF UTILITIES ENGINEERING
J.R. Connor
 ENGINEER OF CONSTRUCTION AND SURVEYS
William J. ...
 ENGINEER OF DESIGN

NO. **B-1936**
LOW SERVICE DISTRICT
 DEPARTMENT OF PUBLIC UTILITIES
 DIVISION OF WATER AND HEAT
 CLEVELAND, OHIO
 SUBJECT Abandonment of 6" Water Line on W. 12th St. From Mentor Ave. to 185' North of Mentor Ave. and Abandonment of 6" Water Line on W. 11th St. from Auburn Ave. to 246' South of Branch Ave.

WATER LINE PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		155 478

31
38

CUYAHOGA COUNTY
CUY-71-18.54
CUY-90-13.81

Note: For Alterations to 6" Water Line in W. 15th Street See Sheet 33

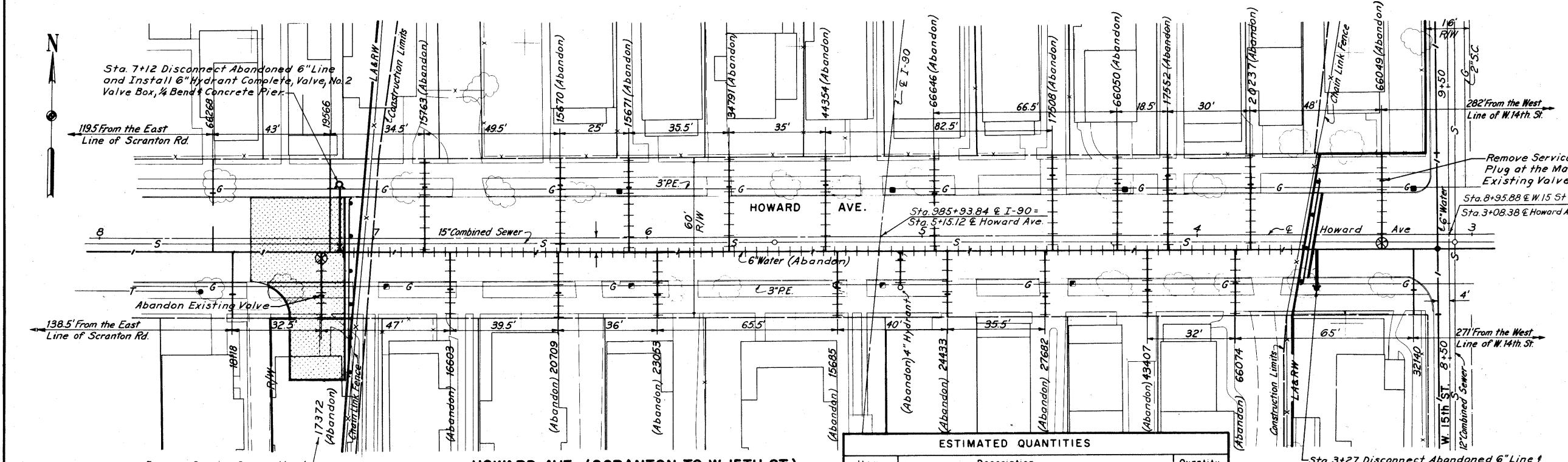
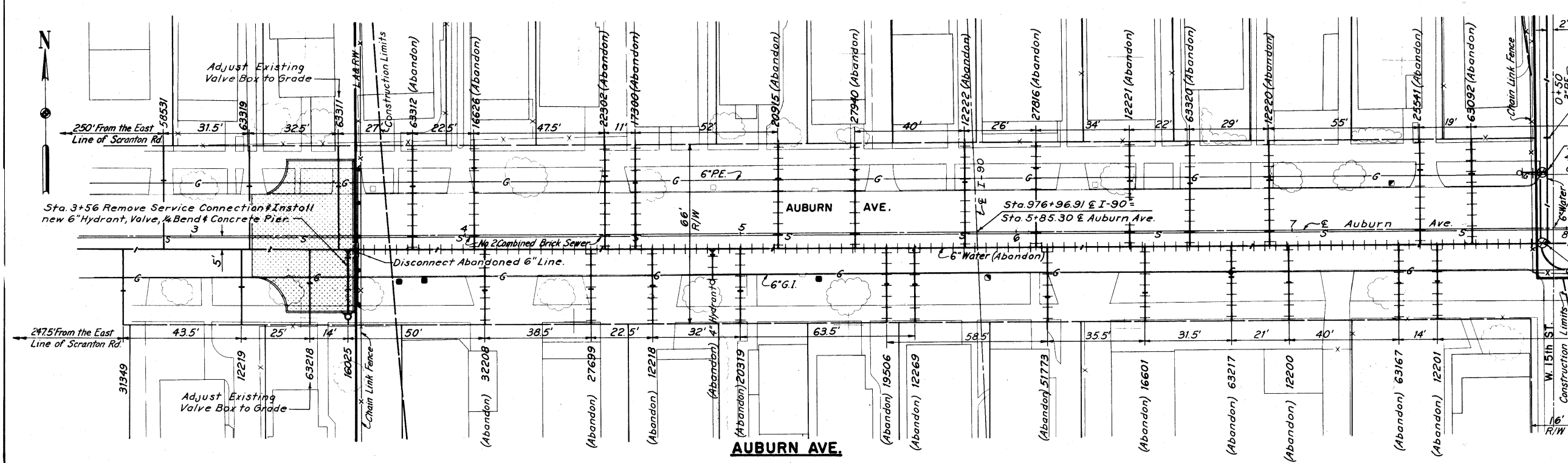
Existing Valve 287' From the West Line of W. 14th St.

Abandon 4" Hydrant & Install 4" Plug with Clamps at the Main and Concrete Pier.

Sta. 0+00 E W. 15 St. =
 Sta. 7+95.79 E Auburn Ave.
 Sta. 8+20 Install new 6" Hydrant and Valve Complete.

Disconnect Abandoned 6" Line at Tee & Install 6" Plug with Clamps & Concrete Pier

300' From the West Line of W. 14th St.



Note: For Alterations to 6" Water Line in W. 15th St. See Sheet 33.

APPROVED
 DATE 1-8-65
V. M. De Mello
 DIRECTOR OF PUBLIC UTILITIES
J. P. Comer
 COMMISSIONER OF WATER AND HEAT
Franklin W. ...
 COMMISSIONER DIVISION OF UTILITIES ENGINEERING
J.P. Comer
 ENGINEER OF CONSTRUCTION AND SURVEYS
William J. ...
 ENGINEER OF DESIGN

ESTIMATED QUANTITIES		
Item	Description	Quantity
Special	6" Water Main A.S.A. Class 25 C.I. Pipe, Cement Lined and Fittings	77 L.F.
Special	6" Fire Hydrant	4 each
Special	6" Valve	4 each
Special	Service Connection Plugged at Main	2 each
Special	6" C.I. Plug Complete with Clamps & Concrete Pier	2 each
Special	Adjust Existing Valve Box to Grade	2 each
Special	Remove Abandoned Existing Valve Box & Curb Cock	2 each
Special	Hydrants, Valves & Valve Boxes Removed	1 each
Special	Miscellaneous Metal Work	716 Lbs.

SCALE 1" = 20'
 MADE T.J.T. DATE 11-3-64
 TRCD R.V.K. DATE 11-3-64
 CKD _____ DATE _____

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

B-1937
 NO. _____

LOW SERVICE DISTRICT
 DEPARTMENT OF PUBLIC UTILITIES
 DIVISION OF WATER AND HEAT
 CLEVELAND, OHIO

SUBJECT Abandon 6" Water Lines on Auburn Avenue from 259' West to 696' West of the West Line of West 14th Street and on Howard Avenue from 277' West to 562' West of the West Line of West 14th Street.

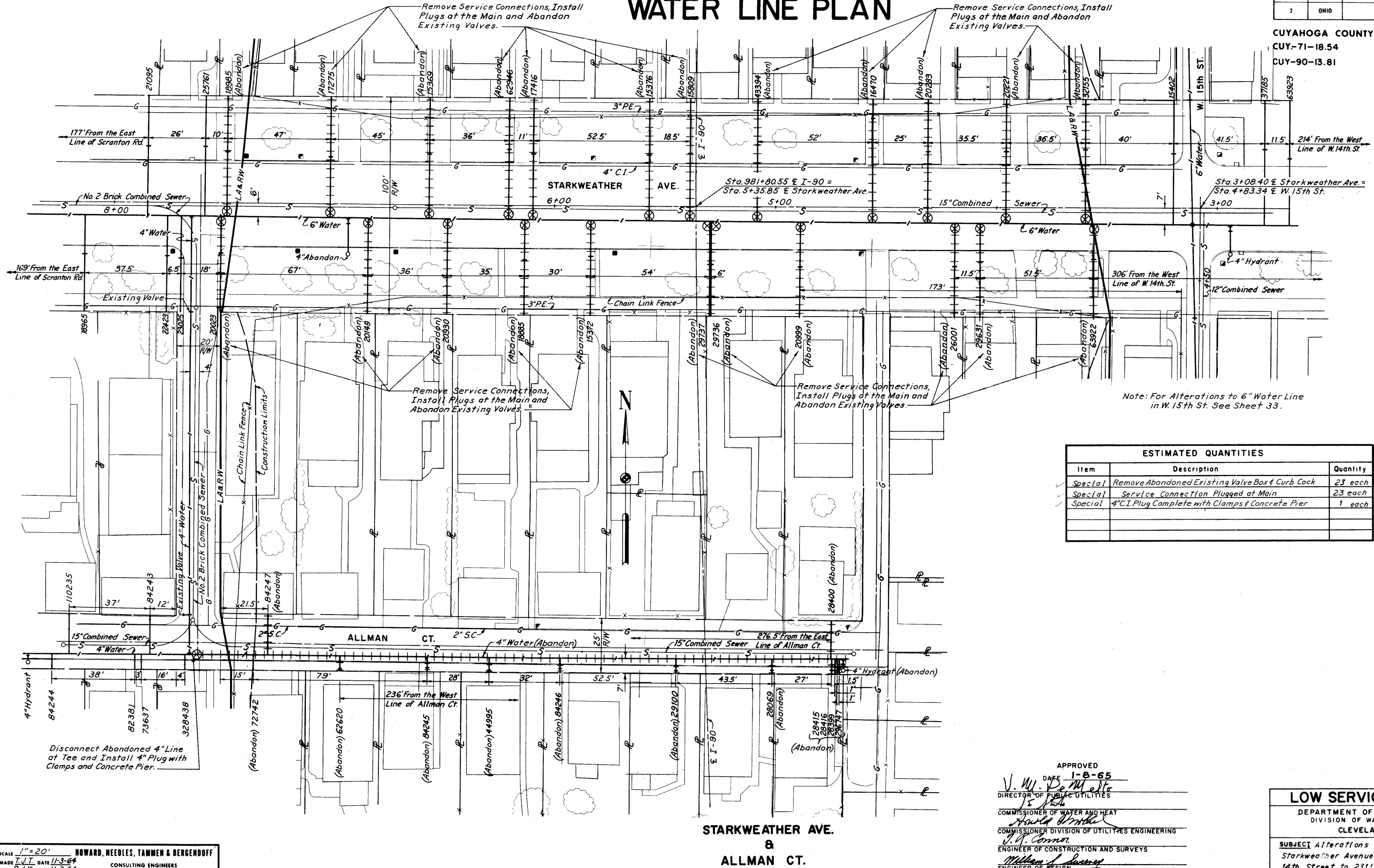
WATER LINE PLAN

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

150
478

CUYAHOGA COUNTY
CUY-71-18.54
CUY-90-13.81

32
38



Note: For Alterations to 6" Water Line in W. 15th St. See Sheet 33.

ESTIMATED QUANTITIES		
Item	Description	Quantity
Special	Remove Abandoned Existing Valve Box & Curb Cock	23 each
Special	Service Connection Plugged at Main	23 each
Special	4" C.I. Plug Complete with Clamps & Concrete Pier	1 each

APPROVED
DATE 1-8-65
V. W. DeMott
DIRECTOR OF PUBLIC UTILITIES
COMMISSIONER OF WATER AND HEAT
Howard W. Smith
COMMISSIONER DIVISION OF UTILITIES ENGINEERING
J. V. Connor
ENGINEER OF CONSTRUCTION AND SURVEYS
William J. Swann
ENGINEER OF DESIGN

NO. **B-1938**

LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT Alterations to 6" Water Line on Starkweather Avenue from 306' west of West 14th Street to 231' East of Scranton Road and Abandon portion of 4" Water Line on Allman Ct.

SCALE 1" = 20'
MADE L.L.T. DATE 11-3-64
TRCD R.L.K. DATE 11-3-64
CKD. DATE
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

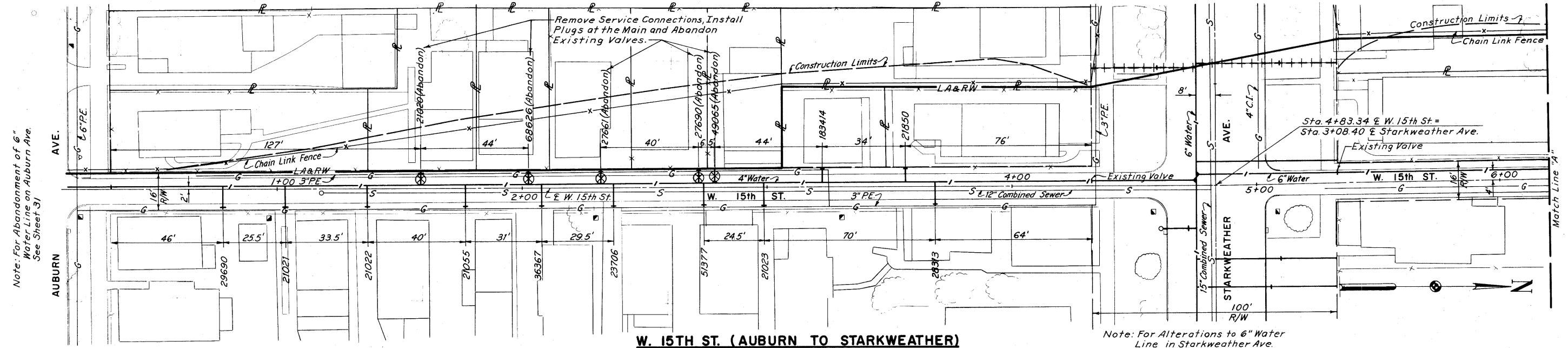
WATER LINE PLAN

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

CUYAHOGA COUNTY
 CUY-71-18.54
 CUY-90-13.81

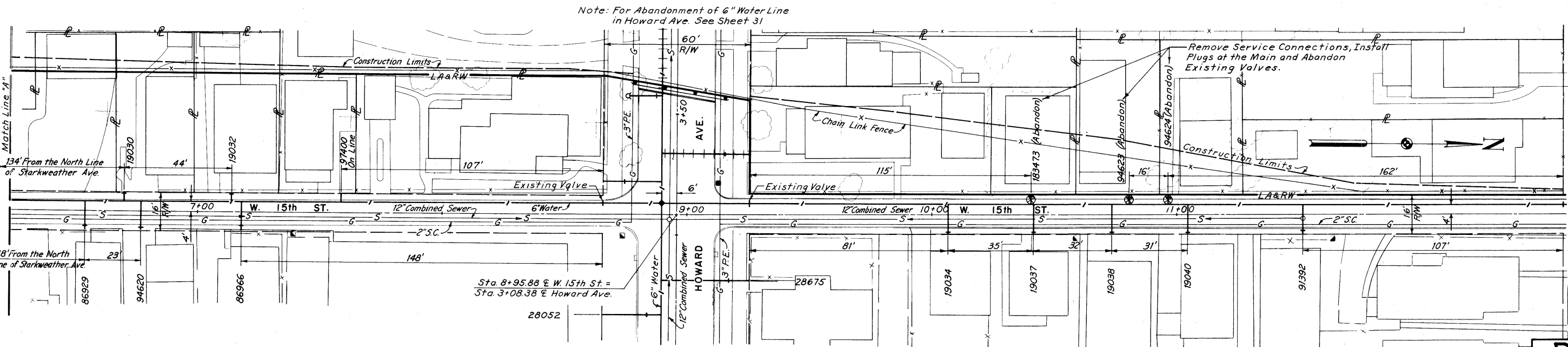
157
478

33
38



W. 15TH ST. (AUBURN TO STARKWEATHER)

Note: For Alterations to 6" Water Line in Starkweather Ave. See Sheet 32



W. 15TH ST. (STARKWEATHER TO KENILWORTH)

Note: For Abandonment of 6" Water Line in Howard Ave. See Sheet 31

Note: For Alterations to facilities in Kenilworth Ave. See Sheet 19

ESTIMATED QUANTITIES		
Item	Description	Quantity
Special	Service Connection Plugged at Main	8 each
Special	Remove Abandoned Existing Valve Box & Curb Cock	8 each

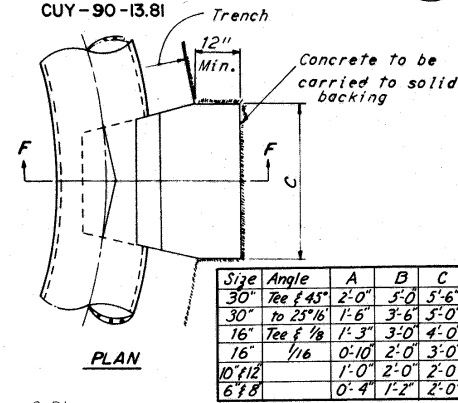
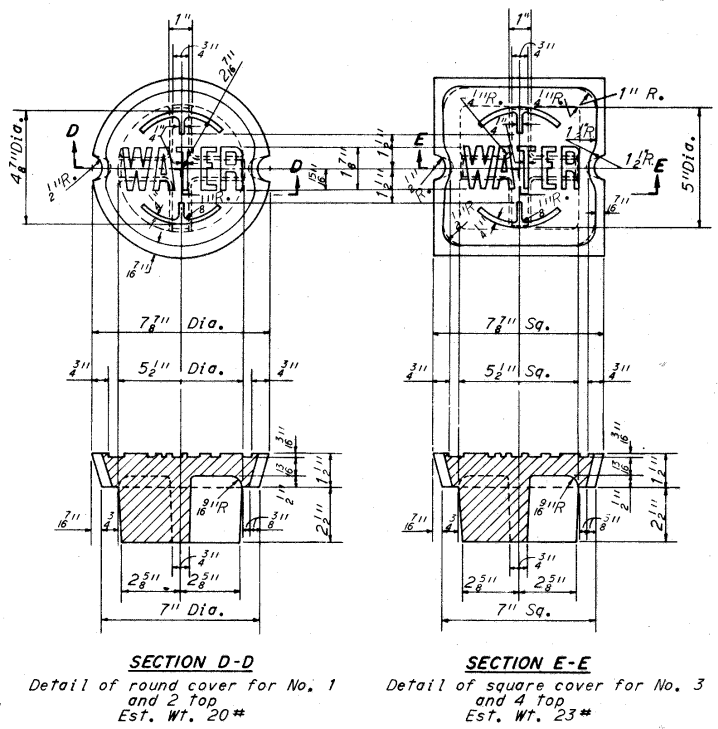
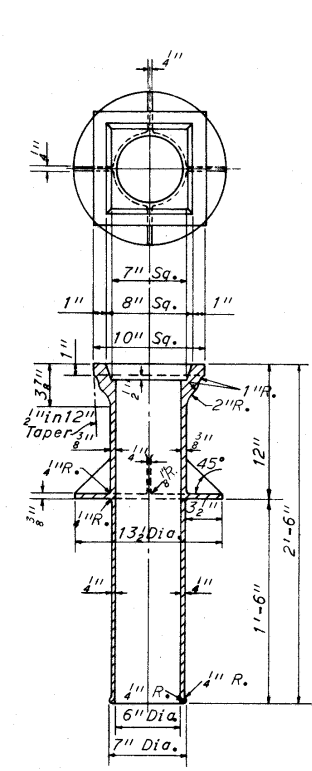
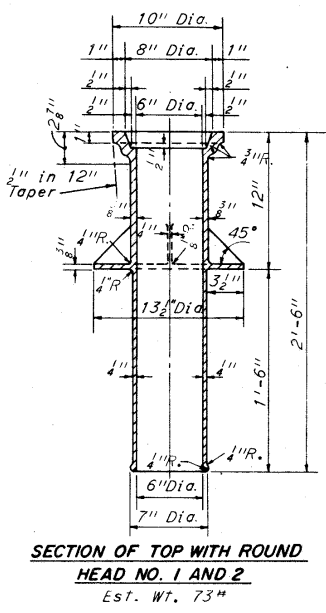
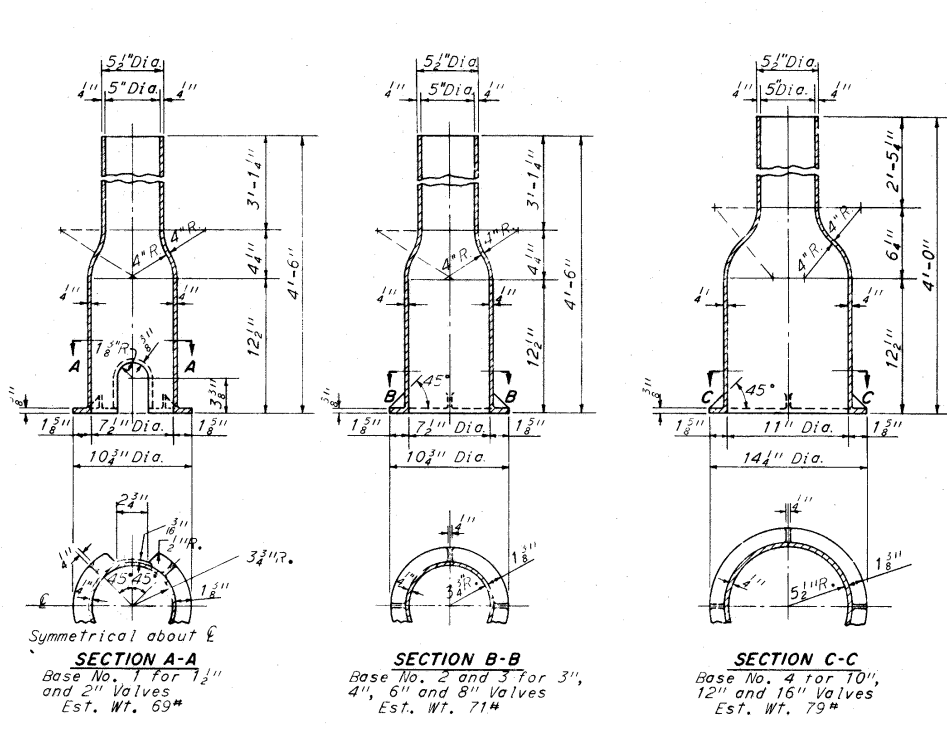
SCALE: 1" = 20'
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 TRCD: R.V.N. DATE: 11-3-64
 CKD: DATE: _____
HOWARD, NEEDLES, TAMMEN & BERGENOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

APPROVED
 DATE: 1-8-65
V. M. DeMello
 DIRECTOR OF PUBLIC UTILITIES
 COMMISSIONER OF WATER AND HEAT
James J. ...
 COMMISSIONER DIVISION OF UTILITIES ENGINEERING
J. R. ...
 ENGINEER OF CONSTRUCTION AND SURVEYS
William J. ...
 ENGINEER OF DESIGN

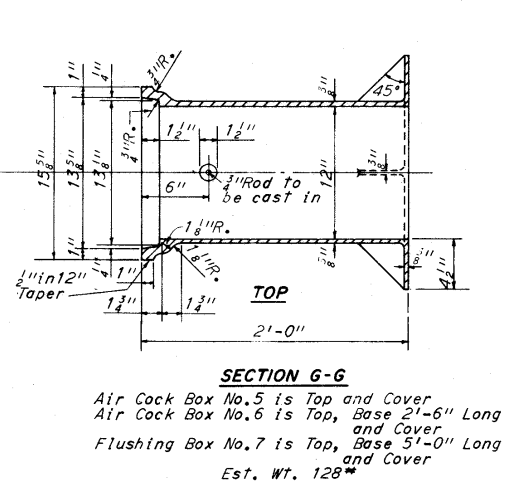
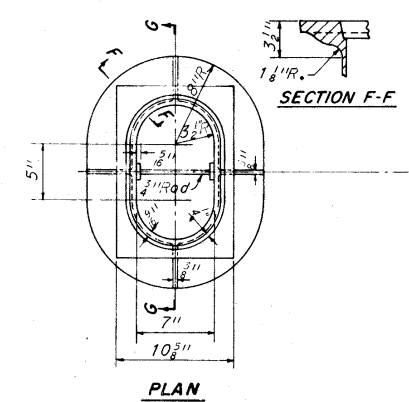
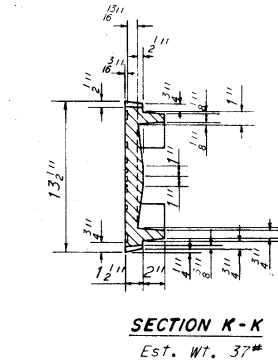
NO. **B-1939**

LOW SERVICE DISTRICT
 DEPARTMENT OF PUBLIC UTILITIES
 DIVISION OF WATER AND HEAT
 CLEVELAND, OHIO

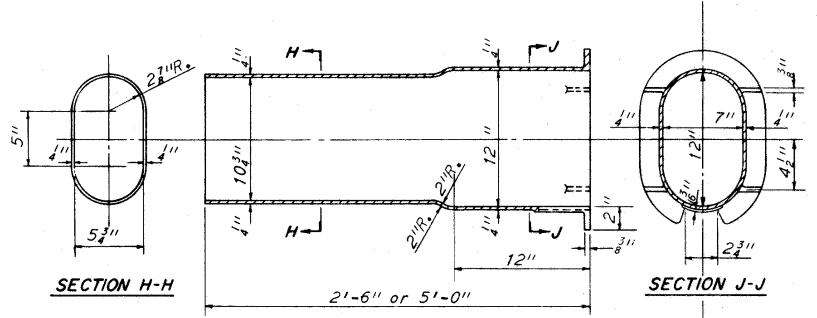
SUBJECT: Alterations to 4" Water Line on W. 15th St. from Auburn Ave. to Starkweather Ave. and Alterations to 6" Water Line on W. 15th St. from Starkweather Ave. to Kenilworth Ave.



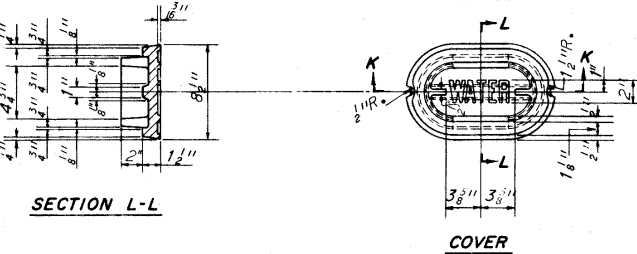
Size	Angle	A	B	C
30"	Te 45°	2'-0"	3'-0"	3'-6"
30"	Te 25°/16"	1'-6"	3'-6"	3'-0"
16"	Te 1/16"	1'-3"	3'-0"	4'-0"
16"	1/16"	0'-10"	2'-0"	3'-0"
10 1/2"		1'-0"	2'-0"	2'-0"
6 1/2"		0'-4"	1'-2"	2'-0"



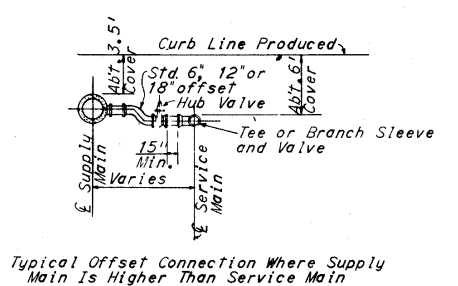
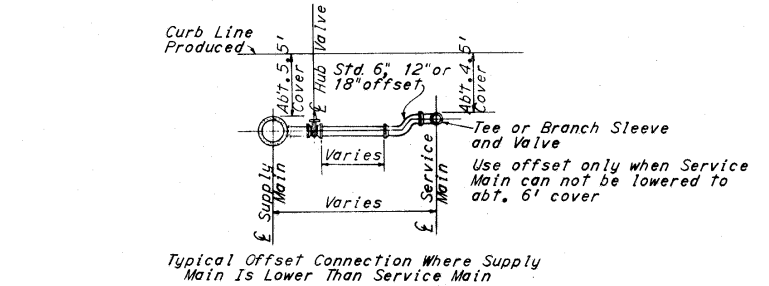
SECTION OF TOP WITH SQUARE HEAD NO. 3 AND 4
 Est. Wt. 85#



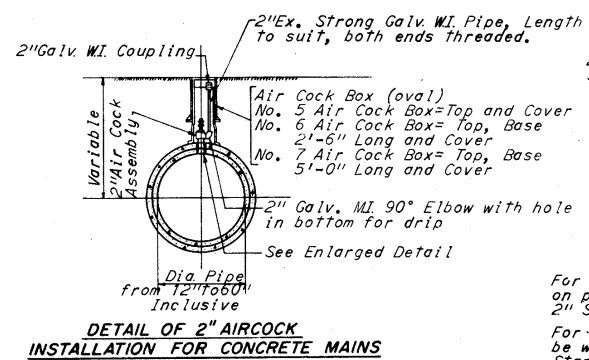
BASE
 Est. Weight 2'-6" Long = 70#
 Est. Weight 5'-0" Long = 126#



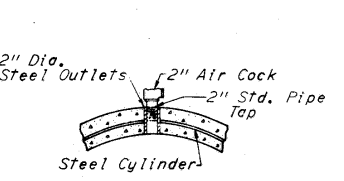
STANDARD DETAILS - VALVE AND AIR COCK BOXES



TYPICAL OFFSET CONNECTIONS

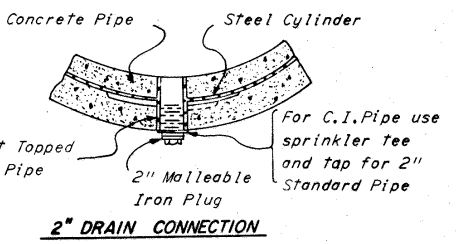


DETAIL OF 2" AIRCOCK INSTALLATION FOR CONCRETE MAINS



ENLARGED DETAIL SHOWING CONNECTION FOR AIRCOCK OR PITOMETER

For C.I. Pipe, boss will be cast on pipe and Tapped at Foundry for 2" Standard pipe.
 For Steel Pipe, Steel Forgings shall be welded to pipe and Tapped for 2" Standard Pipe.



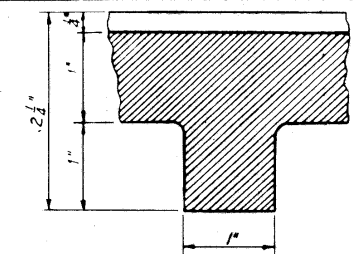
APPROVED
 DATE 1-8-65
 V. M. De Mello
 DIRECTOR OF PUBLIC UTILITIES
 J. S. Hata
 COMMISSIONER OF WATER AND HEAT
 Arnold W. Miller
 COMMISSIONER DIVISION OF UTILITIES ENGINEERING
 J. G. Connor
 ENGINEER OF CONSTRUCTION AND SURVEYS
 William J. Swann
 ENGINEER OF DESIGN

NO. SM-1775
LOW SERVICE DISTRICT
 DEPARTMENT OF PUBLIC UTILITIES
 DIVISION OF WATER AND HEAT
 CLEVELAND, OHIO
 SUBJECT: WATER WORK DETAILS FOR MEDINA CLARK INTERCHANGE IN CLEVELAND, OHIO

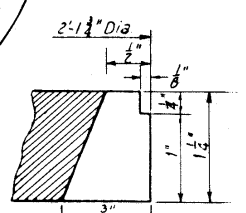
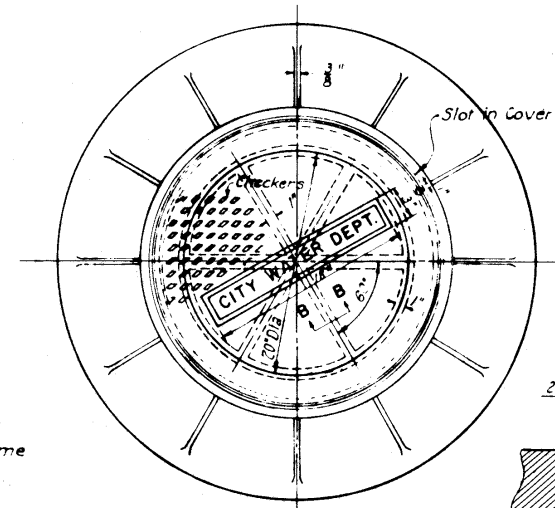
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

159
478
35
38

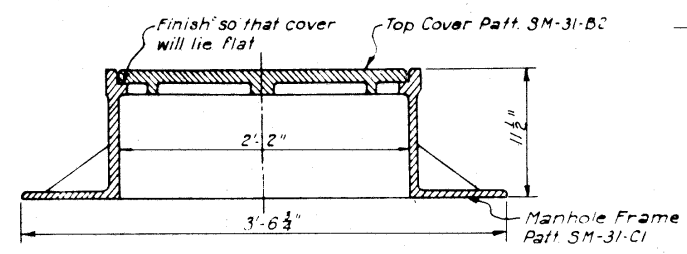
CUYAHOGA COUNTY
CUY-71-18.54
CUY-90-13.81



FULL SIZE SECTION B-B

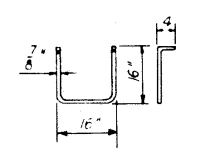


FULL SIZE SECTION AT SLOT



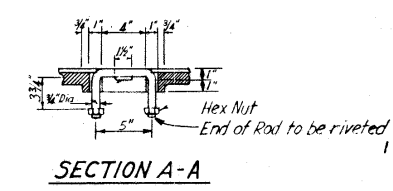
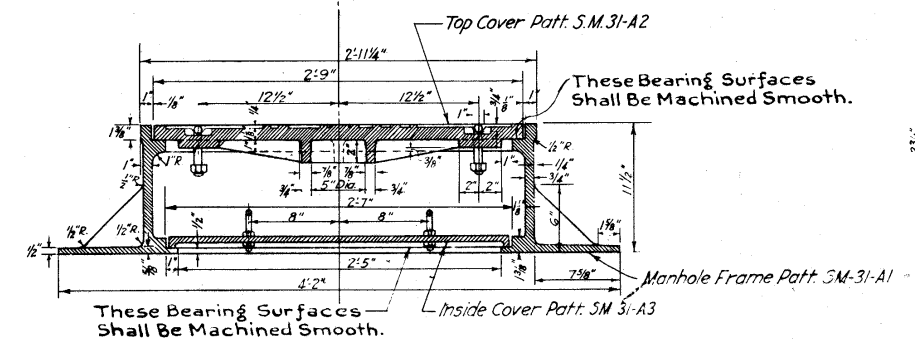
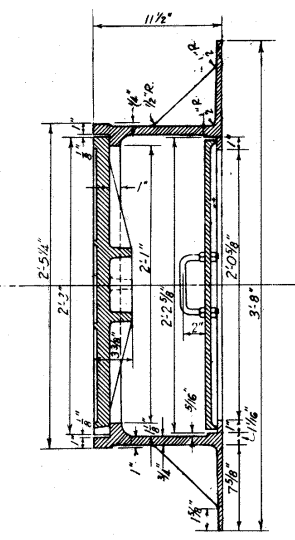
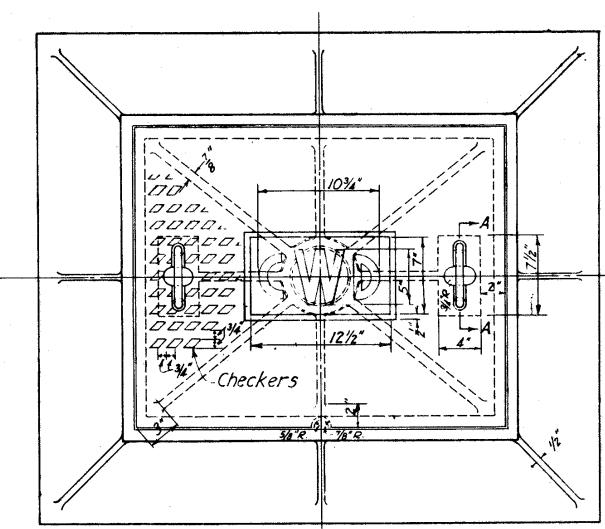
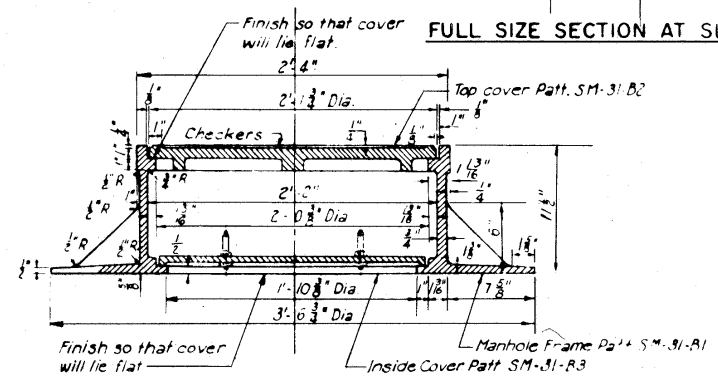
MANHOLE FRAME AND COVER MARK NO. 3

Consisting of C.I. Manhole Frame Patt. SM-31-C1
C.I. Top Cover Patt. SM-31-B2
(Dimensions not given are the same as those shown for Manhole Frame Mark SM-31-B)
Approximate Weight = 602#
Scale: 1 1/2" = 1'-0"

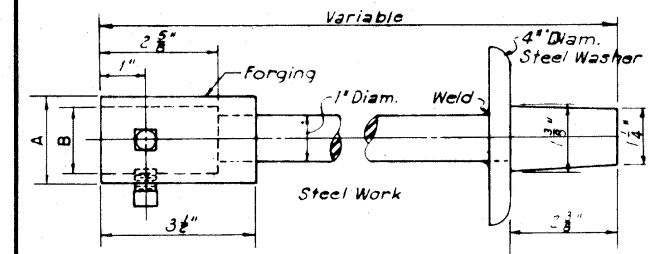


DETAIL OF MANHOLE STEP (W 1)

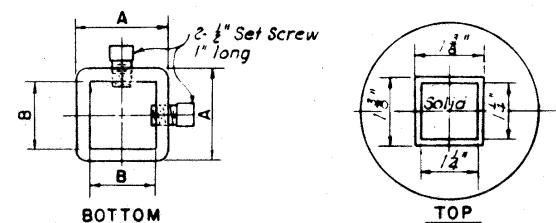
Number required depends on the depth of vault



SECTION A-A



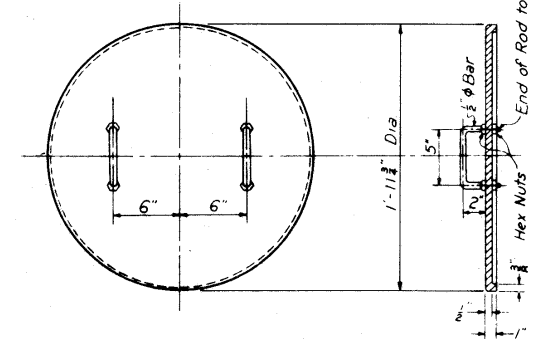
DETAIL OF VALVE EXTENSION STEM



Note: Valve Nuts to be Countersunk 1/8" to receive Set Screws.

Scale: 6" = 1'-0"

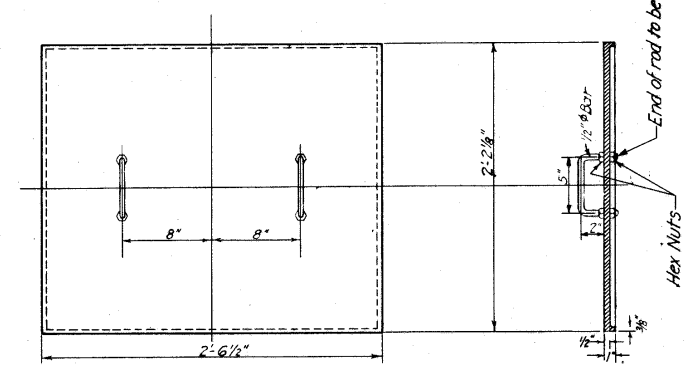
VALVE SIZE	A	B
2" and smaller	2"	1 1/2"
4" to 20"	2 1/2"	2"



INSIDE COVER (C.I.) PATT. SM-31-B3

MANHOLE FRAME AND COVERS MARK SM-31B

Consisting of C.I. Manhole Frame Patt. SM-31-B1
C.I. Top Cover Patt. SM-31-B2
C.I. Inside Cover Patt. SM-31-B3
Approximate Weight = 766#
Scale: 1 1/2" = 1'-0"



INSIDE COVER (C.I.) PATT. SM-31-A3

MANHOLE FRAME AND COVERS MARK SM-31A

Consisting of C.I. Manhole Frame Patt. SM-31-A1
C.I. Top Cover Patt. SM-31-A2
C.I. Inside Cover Patt. SM-31-A3

APPROVED
DATE 1-8-65
V.M. DeMatta
DIRECTOR OF PUBLIC UTILITIES
J.R. Hite
COMMISSIONER OF WATER AND HEAT
Arnold P. ...
COMMISSIONER DIVISION OF UTILITIES ENGINEERING
J.R. ...
ENGINEER OF CONSTRUCTION AND SURVEYS
William J. ...
ENGINEER OF DESIGN

LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT: WATERWORK DETAILS FOR MEDINA CLARK INTERCHANGE IN CLEVELAND, OHIO

SM-1776
No.

MADE JAG DATE 12-28-64 TRACED DATE
CHECKED ECE DATE 12-28-64 SCALE As Noted

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

ESTIMATED QUANTITIES

TYPE CODE Y003

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

ITEM	SYMBOL	BOTANICAL NAME	COMMON NAME	UNIT	SIZE	REMARKS	SHEET NUMBER						I-71 TOTAL	I-90 TOTAL	GRAND TOTAL		
							164	165		166	167	168				169	
							I-71	I-71	I-90	I-90	I-90	I-71				I-90	I-71
Large Trees																	
L-14	A-PL	<i>Acer platanoides</i>	Norway Maple	Each	2-2 1/2"	B B(24")			7	11		2	1	2	4	19	23
L-14	A-R	<i>Acer rubrum</i>	Red Maple	Each	2-2 1/2"	B B(24")				10		6	2		6	20	26
L-14	F-PN	<i>Fraxinus pennsylvanica lanceolata</i>	Green Ash	Each	2-2 1/2"	B B(24")	11	3	7	6		4	5	6	24	18	42
L-14	G-B	<i>Ginkgo biloba</i> (Male Tree)	Ginkgo	Each	1 1/2-2"	B B(22")	1	2	1			5			8	1	9
L-14	G-T	<i>Gleditsia triacanthos</i>	Common Honeylocust	Each	2-2 1/2"	B B(22")	8	1	13	5		7	2		16	20	36
L-14	PL-A	<i>Platanus acerifolia</i>	London Plane Tree	Each	2-2 1/2"	B B(24")	30	2	8	17	6	9	5	8	49	36	85
L-14	P-AL	<i>Populus alba</i>	White Poplar	Each	6-8'	B B(18")	12		5			7		3	22	5	27
L-14	Q-B	<i>Quercus borealis</i>	Northern Red Oak	Each	1 1/2-1 3/4"	B B(22")			5	3		4	2		4	10	14
L-14	Q-P	<i>Quercus palustris</i>	Pin Oak	Each	1 1/2-1 3/4"	B B(22")	4		4	2		6	1	4	14	7	21
L-14	S-A	<i>Salix alba</i>	White Willow	Each	6-8'	B B(18")	16	3	3			5	2	8	32	7	39
L-14	S-E	<i>Salix elegantissima</i>	Thurlo Weeping Willow	Each	6-8'	B B(18")	10					2	4	5	22	8	30
L-14	T-C	<i>Tilia cordata</i>	Littleleaf Linden	Each	2-2 1/2"	B B(24")	3		8	10	3	11	2		14	23	37
L-14	T-E	<i>Tilia euchlora</i>	Crimean Linden	Each	1 1/2-2"	B B(22")			9	20	2	3	3		3	34	37
Medium Trees																	
L-14	PH-A	<i>Phyllodendron amurense</i>	Cork Tree	Each	2-2 1/2"	B B(24")	9	1	7	4		4			14	11	25
Small Trees Large Shrubs																	
L-14	A-G	<i>Acer ginnala</i>	Amur Maple	Each	6-7'	B B(18")	4		10			8	8		12	18	30
L-14	C-MA	<i>Cornus mas</i>	Cornelian Cherry	Each	5-6'	B B(16")	19	3	6	3		16			38	9	47
L-14	CR-C	<i>Crataegus crusgalli</i>	Cockspur Hawthorn	Each	6-7'	B B(18")	7		9	5	4	13	5	5	25	23	48
L-14	CR-L	<i>Crataegus lavellei</i>	Lavelle Hawthorn	Each	6-7'	B B(18")	25		22	1	3	5	12	5	35	38	73
L-14	CR-P	<i>Crataegus phaenopyrum</i>	Washington Hawthorn	Each	6-7'	B B(18")	15		8	7	6	2	3	7	24	24	48
L-14	E-A	<i>Elaeagnus angustifolia</i>	Russian Olive	Each	5-6'	B B(16")	8	2	4	3	1	7	4	1	18	12	30
L-14	M-A	<i>Malus atrosanguinea</i>	Caroline Crab Apple	Each	6-7'	B B(18")	11		3	9					11	12	23
L-14	M-BJ	<i>Malus baccata 'Jackii'</i>	Jack Crab Apple	Each	6-7'	B B(18")	7		5	2	2	5	2	7	19	11	30
L-14	M-D	<i>Malus 'Dorthea'</i>	Dorthea Crab Apple	Each	6-7'	B B(18")	7		7	6	3	8	6		15	22	37
L-14	M-F	<i>Malus floribunda</i>	Japanese Flowering Crab Apple	Each	6-7'	B B(18")	7		4	3	19			10	36	7	43
L-14	M-PG	<i>Malus 'Prince Georges'</i>	Prince Georges Crab Apple	Each	6-7'	B B(18")	9	2	6	5	4	9	5		20	20	40
L-14	M-PA	<i>Malus purpurea aldenhamensis</i>	Aldenham Purple Crab Apple	Each	6-7'	B B(18")	5	2	2			4	3	3	14	5	19
L-14	M-PL	<i>Malus purpurea lemoinei</i>	Lemoine Purple Crab Apple	Each	6-7'	B B(18")	10		12			5	1	5	20	13	33
Shrubs																	
L-13	R-A	<i>Ribes alpinum</i>	Alpine Currant	Each	18-24"	3'0.C.			618	761		132		584	716	1379	2095
L-13	C-R	<i>Cornus racemosa</i>	Gray Dogwood	Each	3-4'	4'0.C.	170					279			449		449
L-13	C-ST	<i>Cornus stolonifera</i>	Red-Osier Dogwood	Each	3-4'	6'0.C.						51	86	83	134	86	220
L-13	R-MU	<i>Rosa multiflora</i>	Japanese Rose	Each	2-3'	4'0.C.	1423								1423	901	2324
Ground Cover																	
L-12	F-AD	<i>Forsythia 'Arnold Dwarf'</i>	Arnold Dwarf Forsythia	Each	18-24"	3'0.C.			1236	916			2678	3102	3102	4830	7932
L-12	PO-A	<i>Polygonum cuberti</i>	Silver Fleece Vine	Each	2yr.No.1	4'0.C.	490					3985	595	200	4675	595	5270
L-12	PO-RE	<i>Polygonum Reynoutria</i>	Dwarf Polygonum	Each	2yr.No.1	2'0.C.	3050		2047		2715	2285	380	593	5928	5142	11070
L-12	LY-C	<i>Lycium halimifolium</i>	Common Matrimony Vine	Each	2-3'Spr	3'0.C.	1305				4639	4065		1861	7231	4639	11870
L-12	L-JH	<i>Lonicera japonicahalliana</i>	Hall's Honeysuckle	Each	2yr.No.1	3'0.C.	3610					6347	3420	747	10704	3420	14124
L-12	S-PN	<i>Salix purpurea nana</i>	Dwarf Purple Osier Willow	Each	15-18"	4'0.C.	402		304	2154				356	758	2458	3216

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
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Mulching Material

Material for mulching shall be a mixture of shredded tree bark and wood chips. The wood chips shall all be retained on a 1/2" screen, the largest pieces not longer than 5" nor wider than 1 1/4" and not exceeding 25% by volume of the whole mixture.

Depth of Mulch

The depth of mulch shall be 4" loose measurement for shredded bark.

Pocket Holes

In areas where ground cover plants are designated the plants shall be pocket planted. Pocket holes shall be spaced as shown on the plans. Pockets shall be 12" in diameter and 12" deep, excepting those for *Polygonum Reynoutria* which shall be 10" in diameter and 10" deep.

Pocket holes for large shrubs and trees shall be located by scale measurement from plan to the nearest foot. The point of measurement shall be the center of the circle representing the plant.

Digging of Plants

Follow the BB schedule shown on the plan for sizes and earth balls.

Form and Shape of Trees

All plants of the Small Trees and Large Shrubs category shall have at least two main branches or canes of approximately equal diameter 6" above the crotch. The lowest branching of the main stems or canes shall not be more than 24" above the ground when measured in the nursery.

Tree Locations

No large tree shall be closer to the pavement edge than 25'. No small tree or large shrub shall be closer to the pavement edge than 20'.

When tree locations are such that they are on top of drainage lines, plants shall be shifted right or left in a line parallel to the center line of the nearest freeway pavement a distance of 5' as approved by the Engineer.

Fertilization

Fertilizer shall be an organic fertilizer of 10-6-4 formula or as approved by the Engineer. Fertilizer shall be applied in a dry condition uniformly broadcast over the top of the pocket after the plants have been planted and always prior to spreading the mulch.

The rate of application shall be -

- Vines - L-12 - 3 ounces per vine pocket.
- Shrubs - L-13 - 6 ounces per shrub pocket.
- Trees - L-14 - 8 ounces per tree pocket.

Planting Beds

All areas to be seeded shall be free of rock or other foreign material 3 inches or greater in any dimension and shall be satisfactorily shaped and finished as required by Sections E-1.05(3) and E-1.10 of the specifications. Areas in front of residence, between curb and sidewalk and other specified areas shall be free of all stones 1 inch or greater in any dimension and shall have smooth surfaces. In such areas hand raking will be required if inaccessible to machines, and may be required if machines do not provide results equivalent to hand raking.

Topsoil removed and stored, under Item E-1, shall be placed and spread to the extent available, over the following areas which are listed in the order of completion, to a depth of 4 inches over soils or 6 inches over rock areas with open voids.

- (a) Interchange interiors with slopes of 1 on 3 flatter.
- (b) Turf medians.
- (c) Shoulders and inslopes 1 on 3 or flatter.
- (d) Backslopes 1 on 3 or flatter.

In areas where the above requirements have not been met and slopes of 1 on 3 or flatter contain visible rocks or foreign material of such quantity that raking is not practicable, the contractor will be required to remove the upper surface to a depth sufficient to receive a soil cover. Suitable soil shall be stored or furnished, delivered and placed at the Contractor's expense to a depth of 4 inches over areas where rock or foreign material is intermixed with soil or fine material, or to a depth of 6 inches where rock or foreign material exists without fines in the voids.

Areas which are to be planted with vines, Item L-12, shall be reasonably free from large rocks in quantity, however occasional rocks can be tolerated by varying spacing of pocket holes. Cost of the above work, shall be included in the price bid per cubic yard of Roadway Excavation, Item E-1, and no separate payment will be made.

Seeding and Sodding

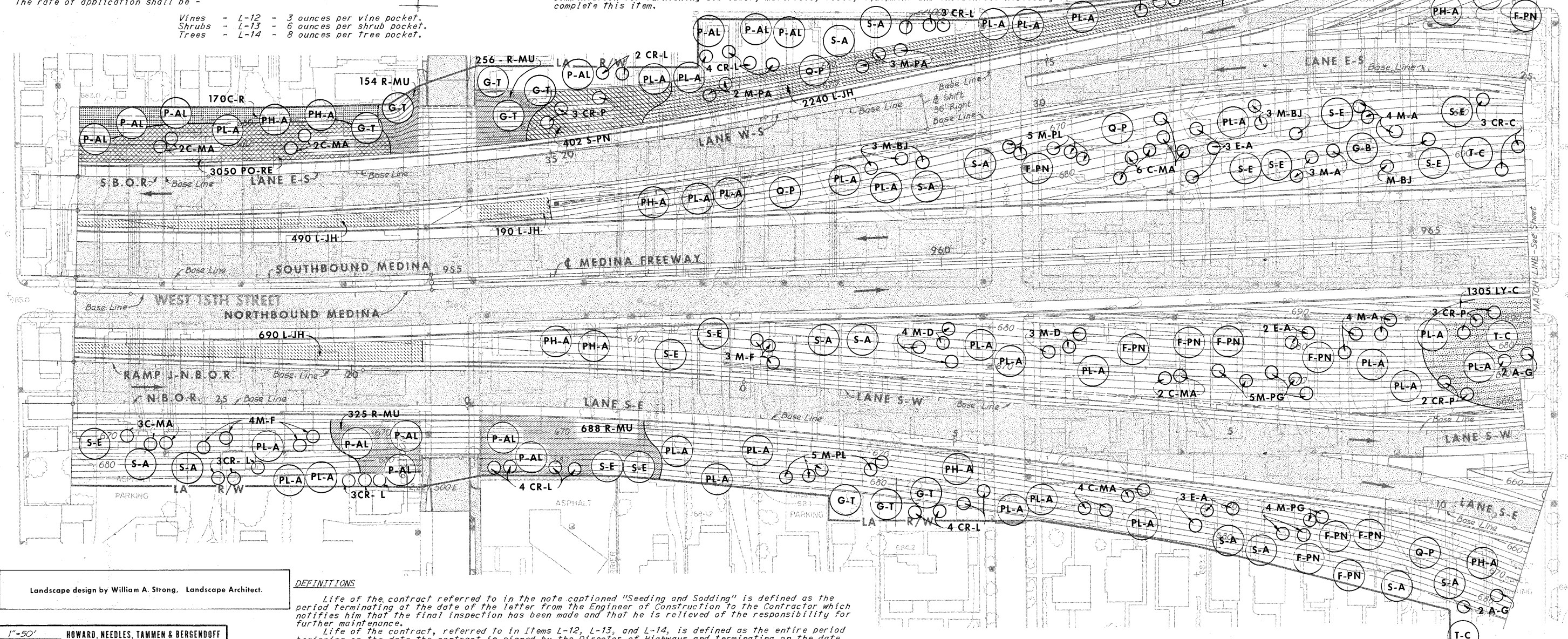
The Contractor shall water all seeded areas as directed by the Engineer to the extent necessary to promote growth of a dense, even stand of grass.

The Contractor shall mow all seeded and sodded areas placed under the project as often as required by the Engineer so that grass height will not exceed six inches at any time during the life of this contract. Mowing shall be performed with suitable tools and equipment so that grass growth will be cut no shorter than 3 inches in height.

The number of acres to be paid for will be for each operation performed by the Contractor for the actual area mowed as directed by the Engineer. The acres measured as provided above shall be paid for at the contract unit price bid per acre for "Item Special-mowing, Seeded and Sodded Areas", which price and payment shall constitute full compensation for furnishing all labor, materials, tools, equipment and incidentals necessary to complete this item.

LEGEND

- R-A
- C-R
- C-ST
- PO-A
- LY-C
- F-AD
- L-JH
- S-PN
- R-MU
- PO-RE



Landscape design by William A. Strong, Landscape Architect.

DEFINITIONS

Life of the contract referred to in the note captioned "Seeding and Sodding" is defined as the period terminating at the date of the letter from the Engineer of Construction to the Contractor which notifies him that the final inspection has been made and that he is relieved of the responsibility for further maintenance.

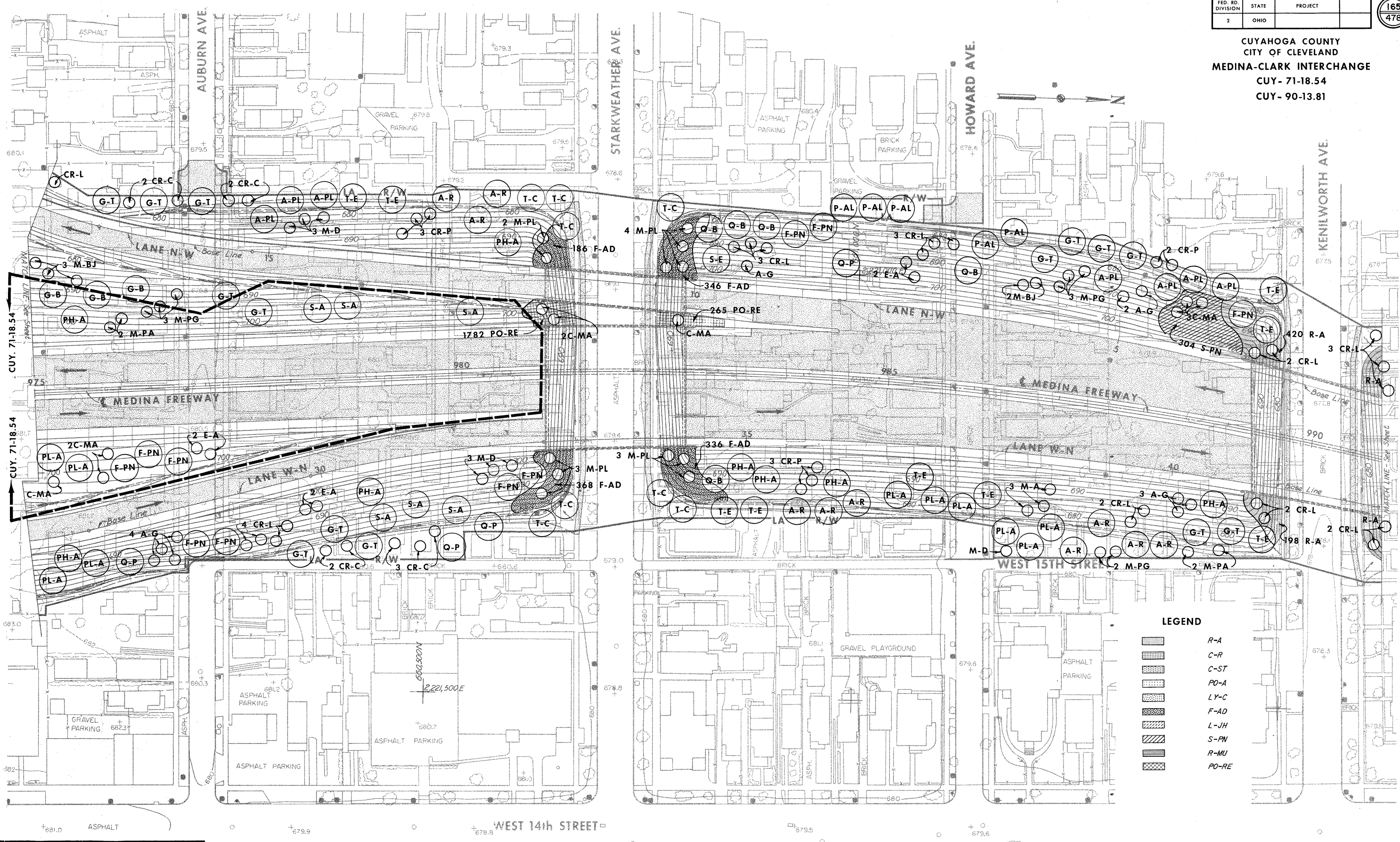
Life of the contract, referred to in Items L-12, L-13, and L-14, is defined as the entire period beginning on the date the contract is signed by the Director of Highways and terminating on the date of the letter from the Engineer of Construction to the Contractor which notifies him that the final inspection has been made and that he is relieved of the responsibility for further maintenance.

Note: All Landscaping is part of CUY 71-1854

SCALE 1"=50'
 MADE DATE
 TRCD. LEE DATE 12-7-64
 CKD. DATE
 HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

LANDSCAPING PLAN

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



LEGEND

- R-A
- C-R
- C-ST
- PO-A
- LY-C
- F-AD
- L-JH
- S-PN
- R-MU
- PO-RE

SCALE 1"=50'
HOWARD, NEEDLES, TAMMEN & BERGENOFF
 MADE DATE CONSULTING ENGINEERS
 TRCD. LEE DATE 12-7-64 KANSAS CITY CLEVELAND NEW YORK
 CKD. DATE

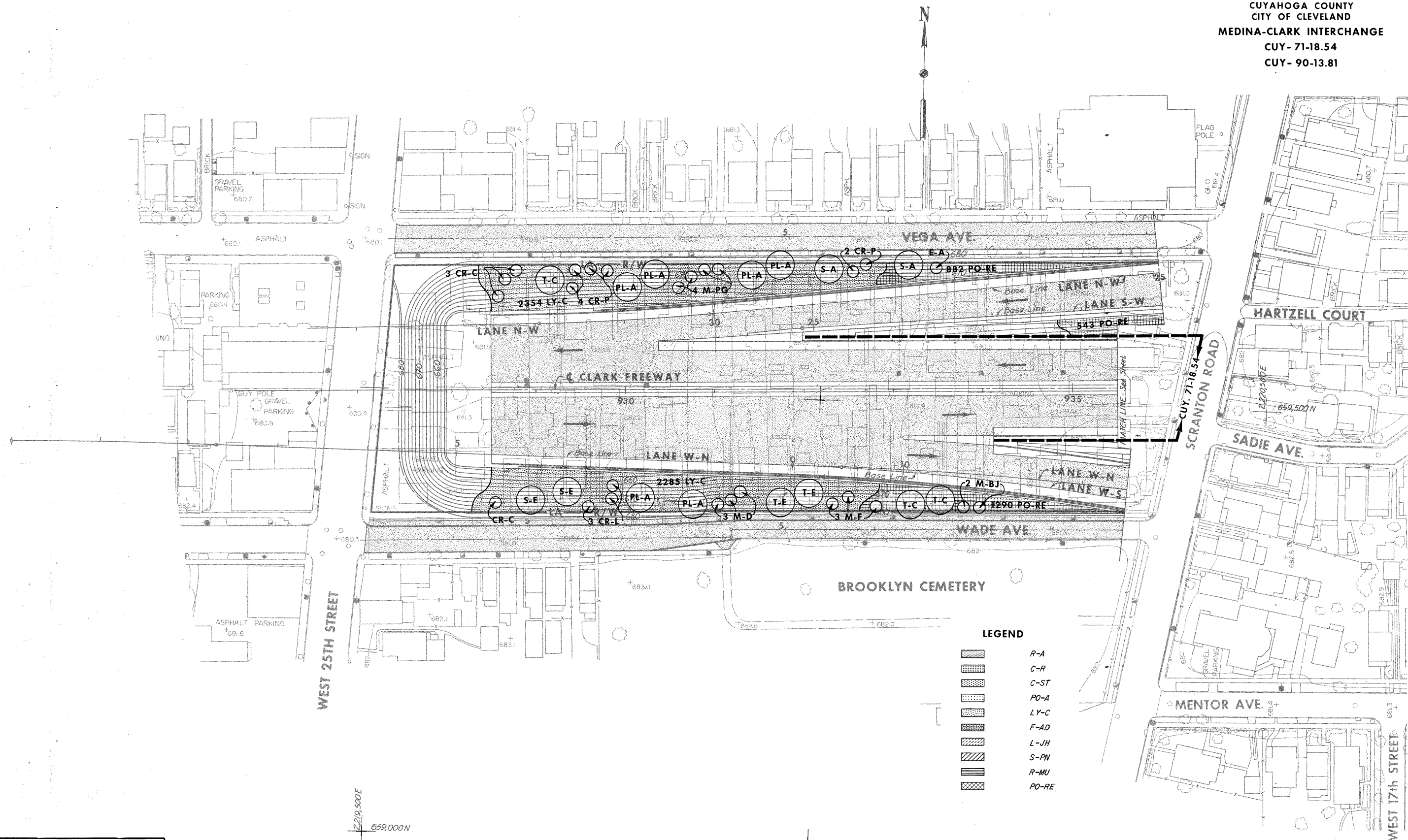
Note: All Landscaping is part of CUY 90-13.81 unless otherwise indicated.

LANDSCAPING PLAN

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

167
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



LEGEND

- R-A
- C-R
- C-ST
- PO-A
- LY-C
- F-AD
- L-JH
- S-PN
- R-MU
- PO-RE

SCALE 1"=50'
 MADE _____ DATE _____ HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 TRCD. LEE DATE 12-7-64 CONSULTING ENGINEERS
 CKD. _____ DATE _____ KANSAS CITY CLEVELAND NEW YORK

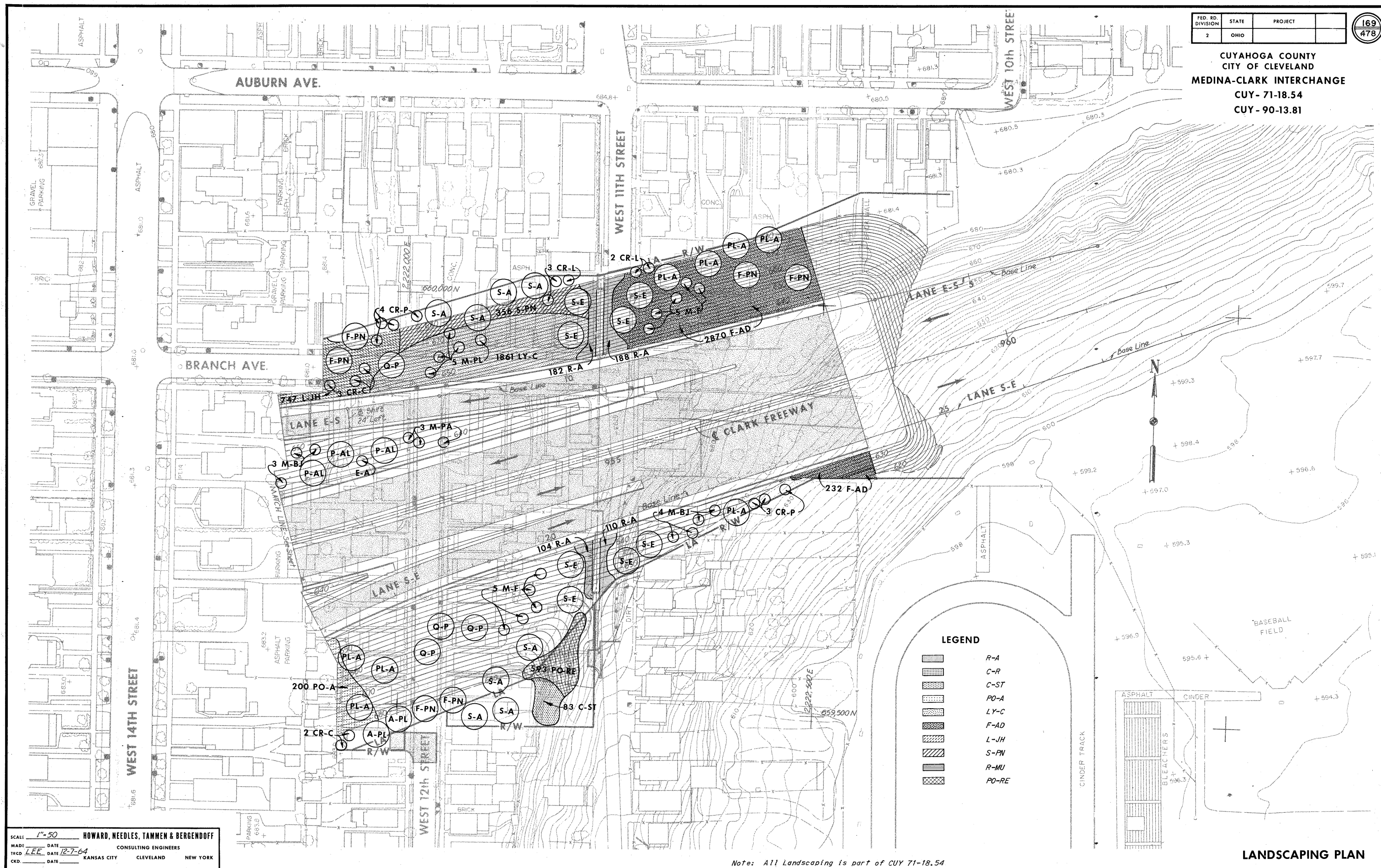
Note: All Landscaping is part of CUY 90-13.81 unless otherwise indicated.

LANDSCAPING PLAN

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

169
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



LEGEND

- R-A
- C-R
- C-ST
- PO-A
- LY-C
- F-AD
- L-JH
- S-PN
- R-MU
- PO-RE

SCALE: 1"=50'
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
MADE BY: LEE DATE: 12-7-64
TRCD BY: DATE: KANSAS CITY CLEVELAND NEW YORK
CKD BY: DATE:

Note: All Landscaping is part of CUY 71-18.54

LANDSCAPING PLAN

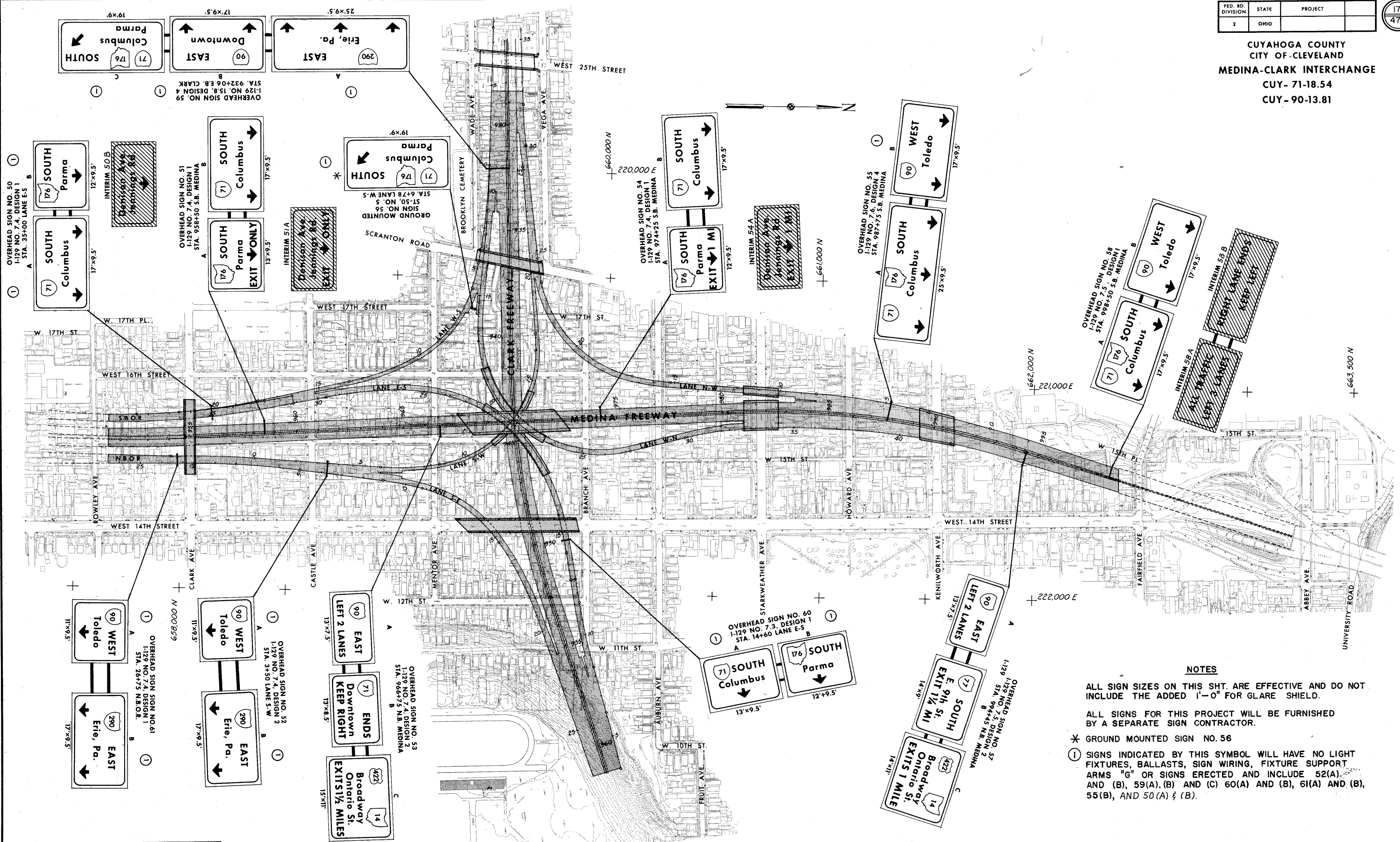
W-18

M-18

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

170
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



NOTES

- ALL SIGN SIZES ON THIS SHT. ARE EFFECTIVE AND DO NOT INCLUDE THE ADDED 1'-0" FOR GLARE SHIELD.
- ALL SIGNS FOR THIS PROJECT WILL BE FURNISHED BY A SEPARATE SIGN CONTRACTOR.
- * GROUND MOUNTED SIGN NO. 56
- ① SIGNS INDICATED BY THIS SYMBOL WILL HAVE NO LIGHT FIXTURES, BALLASTS, SIGN WIRING, FIXTURE SUPPORT ARMS "G" OR SIGNS ERECTED AND INCLUDE 52(A), AND (B), 59(A), (B) AND (C) 60(A) AND (B), 61(A) AND (B), 55(B), AND 50(A) & (B).

SCALE: 1"=200'
 MADE: RHL DATE: 12-28-64
 TRCD: DATE: CONSULTING ENGINEERS
 CRD: NAK DATE: 12/28/64 KANSAS CITY CLEVELAND NEW YORK

SCHEMATIC SIGNING LAYOUT

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

SIGNING NOTES

CERTIFICATION AND APPROVAL OF SIGN SUPPORTS AND LIGHTING ITEMS

The Contractor shall submit through proper channels the drawings, information or samples as required below:

- A. Six (6) copies of the following:
Shop drawing and material list for approval
 - 1. Overhead Sign Supports
 - 2. Sign Lighting Details
 - 3. Catalog Cuts, Descriptions or samples of fabricators standard items as shown in plans or their equal for approval.
- B. Certifications or samples for all materials which have been approved under Item (A) shall be in possession of the Contractor prior to any purchase or installation.

MATERIALS - GENERAL

Materials to be furnished may be specified in the plans by a given manufacturer's catalog No. or type. This is for descriptive purposes only and the Contractor may assume that approved equal materials may be furnished.

I-129 OVERHEAD SIGN SUPPORT MATERIAL

All components of the overhead sign supports, I-129, shall be steel, except for aluminum truss and components for the No. 7 series which shall be aluminum.

For specifications and materials see Sheet No. 181 thru 187.

I-129 TRAFFIC SIGN ERECTION

The Contractor shall erect sign panels furnished by others as noted on the schematic signing layout Sheet No. 170. The panels shall be mounted on the brackets or beam supports provided in the plans.

A schedule for sign erection shall be submitted to the Engineer, Bureau of Traffic, 450 East Town St., Columbus, Ohio, 60 calendar days prior to the start of any scheduled erection work. The schedule shall include proposed dates, time and delivery point.

The price bid per sq. ft. for "Item I-129 Sign Erection by Type, as per plan", shall include all necessary equipment, manpower, and tools to erect the signs noted. All sign material and accessories will be furnished and transported to a designated delivery point, on or near the subject project, by others.

The Contractor shall be responsible for the handling and storage of the sign panels and accessories from the time of arrival at the delivery point.

I-15 GUARDRAIL, STEEL BEAMS STANDARD TYPE (DEEP) AS PER PLAN

Guardrail shown at sign supports shall be type deep with post spacing of 6'-3". Details are shown on Sheet 190.

I-129 SWITCH ENCLOSURE MOUNTING BRACKET

Modifying S.S. I-129, Switch enclosure mounting bracket including installation and mounting bolts and drilled holes shall be included in the payment for I-129 overhead sign support structures at the contract price per support structure type.

I-129 CONCRETE FOR SIGN SUPPORT FOUNDATIONS

The quantity for concrete to be paid for shall be per cubic yard based on the plan dimensions rather than the plan quantity.

S-25 ELECTRICAL-GENERAL

This item shall consist of furnishing all necessary material, labor and facilities required to complete the electrical installation in accordance with the designs, dimensions and details shown in the plans and described in the specifications.

All material, workmanship and construction methods, except as modified herein, shall conform to the general requirements of the STATE OF OHIO, DEPARTMENT OF HIGHWAYS, CONSTRUCTION AND MATERIALS SPECIFICATIONS, JANUARY 1, 1963.

S-25 BALLAST TYPE

This item of work shall consist of furnishing ballast types C and D as detailed and specified on Sheets 172 and 188.

Basis of payment for this item shall be at the Contract unit price per each furnished to the job.

S-25 FIXTURES WITH LAMP TYPE

This item of work shall consist of furnishing all light fixtures and lamp types and sizes as specified on Sheets 172 and 198.

Basis of payment for this item shall be at the contract unit price per each furnished to the job. All signs for this project will be illuminated from below. For mounting details see sheets 187 and 188.

S-25 GROUND ROD AND WIRE CONNECTION

This item of work shall consist of furnishing and installing ground rod and wire as detailed and specified on Sheets 172 and 189.

Basis of payment for this item shall be at contract unit price per each, which shall include all labor, tools, materials and equipment required for the complete item of work.

S-25 DISCONNECT SWITCH WITH TYPE "Z" ENCLOSURE

The basis of payment for this item shall be on a unit bid bases, complete and accepted.

The item shall include furnishing of a 30 Amp. 600 volt combination disconnect switch of type and make as indicated on Sheet 172 and shall be mounted in a NEMA Four (4) stainless steel enclosure type "Z" and attached to each sign support by means of a mounting bracket as described in detail on Sheet 189.

Under this item of work the Contractor shall furnish and install items as described above with the exception of the mounting bracket.

S-25 FIXTURE SUPPORT ARMS G

Modifying S.S. I-129, fixture support arms "G" with mounting holes and hardware are to be included with the cost of furnishing and installation of overhead sign supports and sign brackets.

S-25 TRANSFORMER TYPE

This item of work shall consist of furnishing and installing transformers as detailed and specified on Sheets 172 and 189.

Basis of payment for this item shall be at contract unit price per each, which shall include all labor, tools, material and equipment required for this complete item of work.

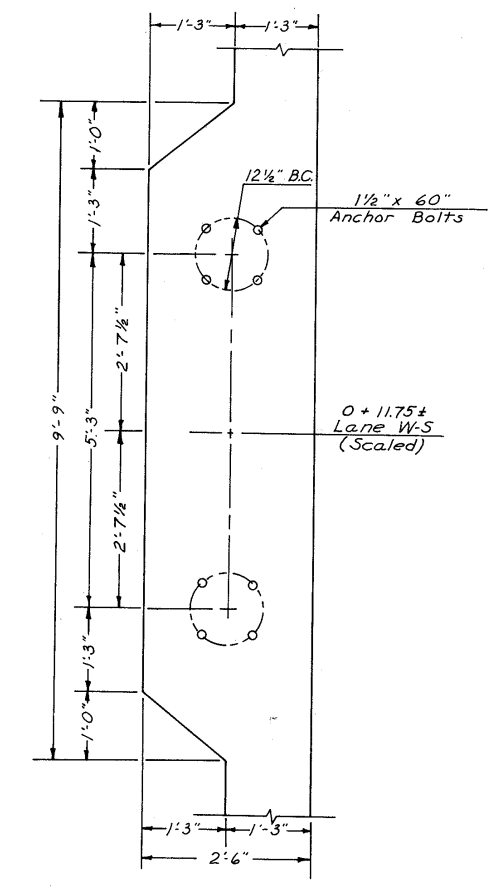
S-25 INSPECTION AND TESTING OF SIGN LIGHTING

The Contractor shall furnish all equipment necessary to demonstrate to the satisfaction of the Engineer that all circuits are free from short circuits and unspecified grounds, and are properly connected and operable before acceptance.

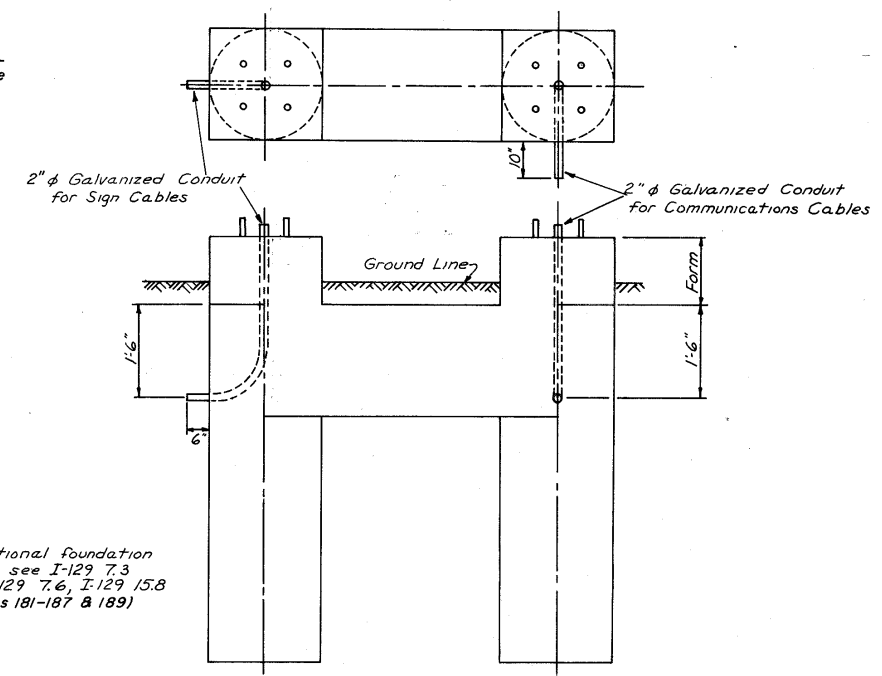
This demonstration shall include a meggering to show that all conductors are clear of grounds and that the resistance of the ground is not more than 25 Ohms. Voltage and amperage tests shall be made at the service pole switch and the sign support switch.

After the sign lighting system is completed, the entire system shall be operated continuously each night until seven (7) consecutive days elapse without failure or defeat. The Contractor shall correct any defects which may develop at no extra cost to the State.

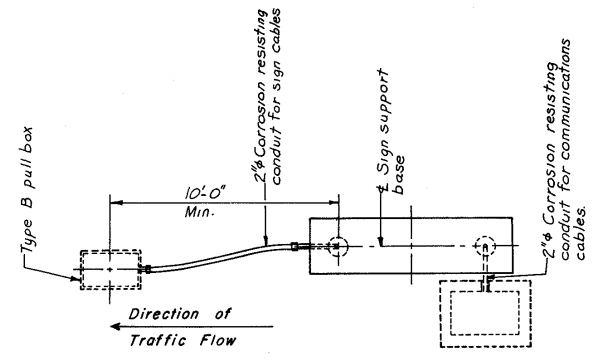
During the test period adjustments to fixture aiming angles shall be made as directed by the Engineer to obtain maximum uniformity in sign illumination. General notes continued on sheet 173.



OVERHEAD SIGN SUPPORT #59 WALL MOUNT.
Scale: 3/4" = 1'-0"



FOUNDATION CONDUIT DETAIL
Scale: 1/2" = 1'



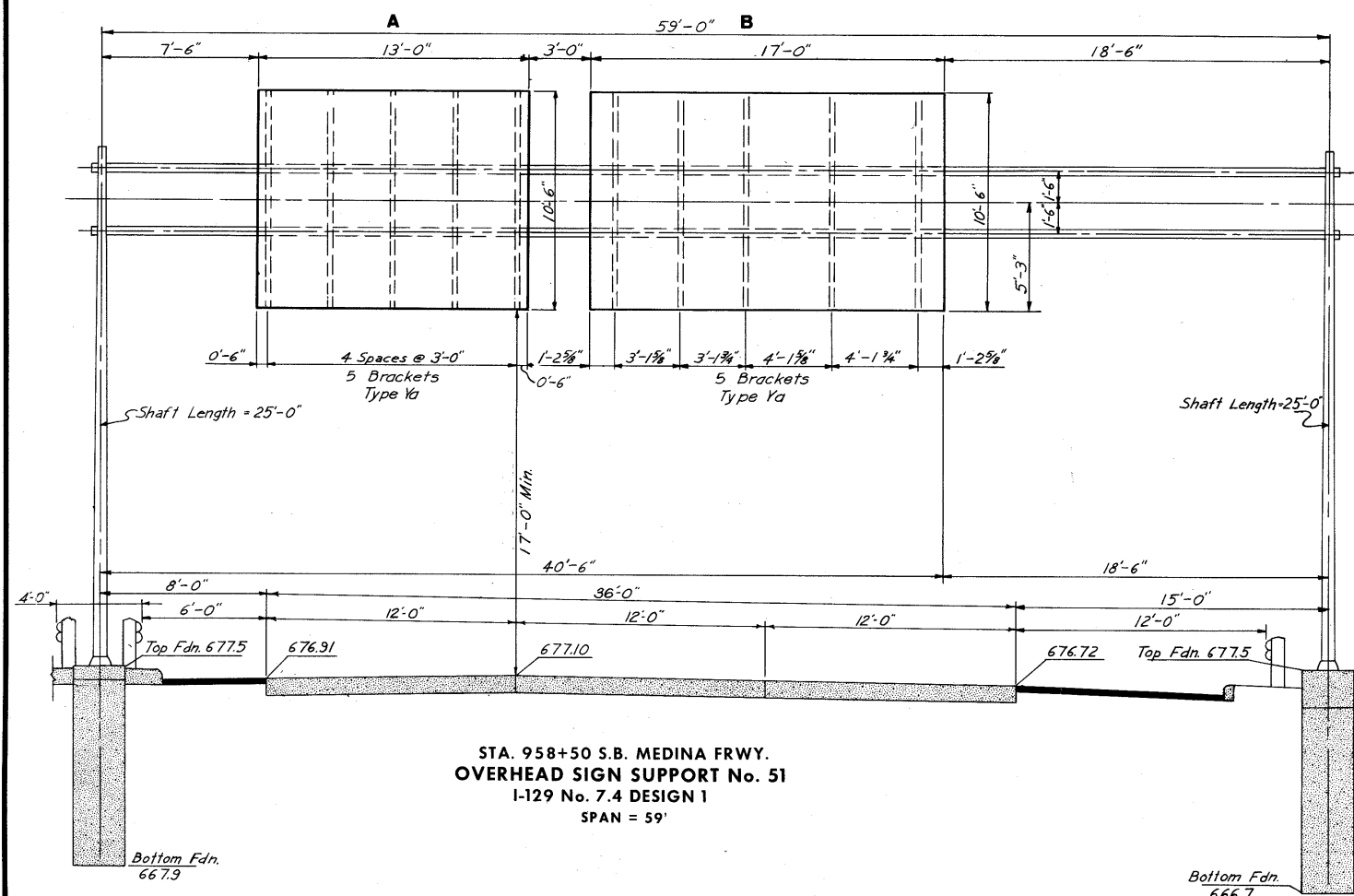
SIGN SERVICE DETAILS
Scale: 1/4" = 1'-0"

For additional foundation details, see I-129 7.3 thru I-129 7.6, I-129 15.8 (See sheets 181-187 & 189)

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

173
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



STA. 958+50 S.B. MEDINA FRWY.
OVERHEAD SIGN SUPPORT No. 51
I-129 No. 7.4 DESIGN 1
SPAN = 59'

SIGNING NOTES (CONT'D)

S-25 SIGNS WIRED, COMPLETE AS PER PLAN

THIS ITEM SHALL CONSIST OF THE FURNISHING AND/OR INSTALLATION OF THE ELECTRICAL SIGN LIGHTING SYSTEM COMPONENTS FOR EACH ILLUMINATED SIGN.

WORK SHALL INCLUDE INSTALLATION OF LIGHT FIXTURES AND BALLASTS, AND FURNISHING AND INSTALLATION OF ALL RIGID AND FLEXIBLE CONDUIT, CONDULETS, JUNCTION BOXES, WIRE, FASTENERS, HARDWARE, AND ALL OTHER ITEMS REQUIRED TO ENERGIZE THE SIGN LIGHTING SYSTEM. SEE DETAILS ON SHEETS (EI-1 & 2, ES-3A).

BASIS OF PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE PER EACH SIGN WIRE WHICH PRICE SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND OTHER INCIDENTALS TO PROVIDE A COMPLETE AND ACCEPTED ITEM OF WORK.

THE COST OF FURNISHING AND INSTALLING WIRE AND NECESSARY FASTENERS FROM THE DISCONNECT SWITCH TO THE SIGNS (OR BETWEEN SIGNS) WITHIN SIGN SUPPORT MEMBERS SHALL BE INCIDENTAL TO THE COST OF VARIOUS ITEMS INCLUDED IN THIS ITEM OF WORK.

ILLUMINATED SIGNS REQUIRING TWO (2) BALLASTS SHALL BE CONSIDERED AS AN EQUIVALENT OF TWO (2) SEPARATE SIGNS FOR DETERMINATION OF PAYMENT QUANTITIES.

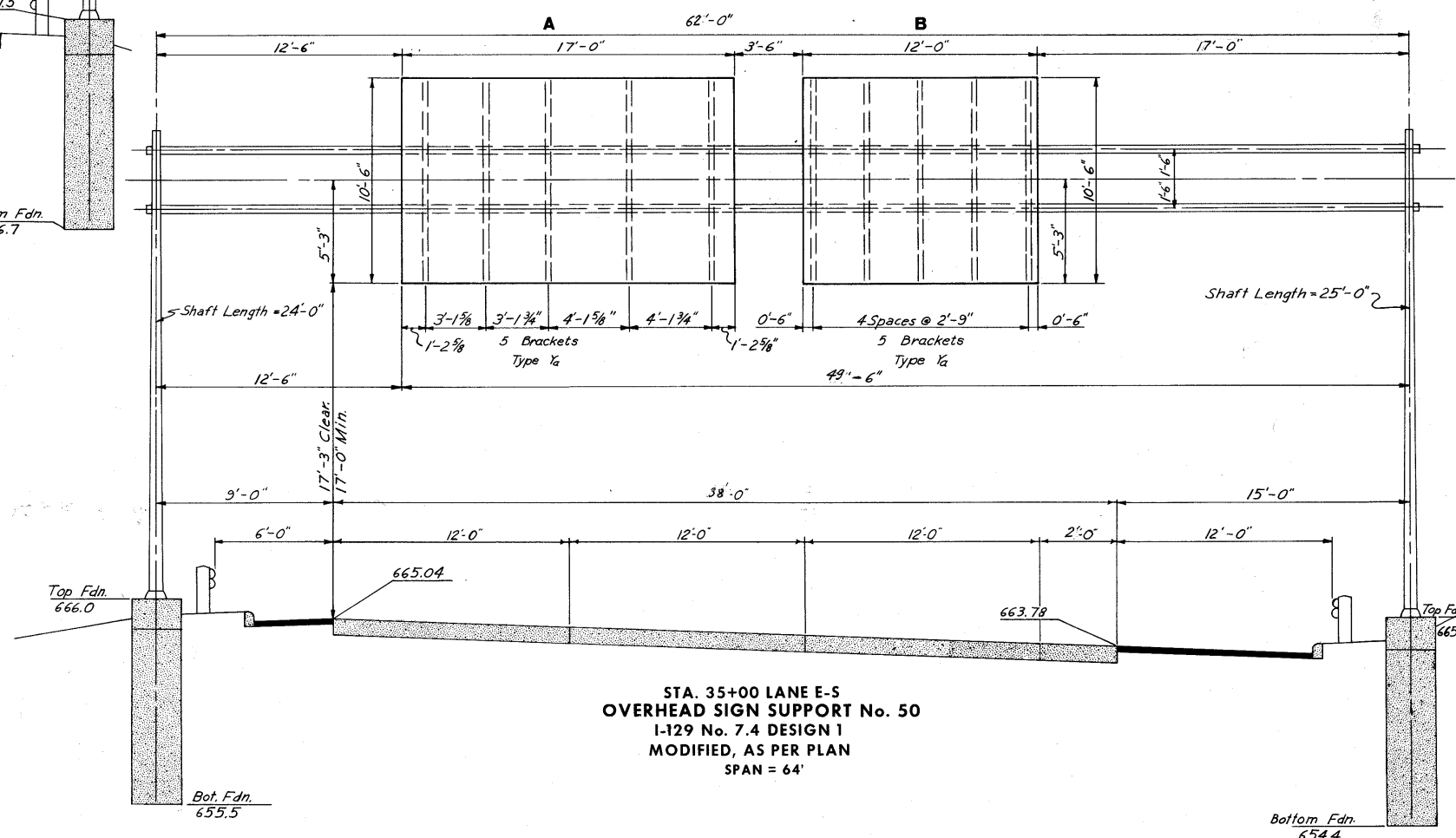
S-25 SIGN SERVICE, AS PER PLAN

THIS ITEM WILL CONSIST OF THE FURNISHING AND THE INSTALLATION OF THE ELECTRICAL SYSTEM AND COMPONENTS CONNECTING FROM THE ESNA CONNECTORS IN THE PULLBOX (INCLUDED WITHIN ROADWAY LIGHTING QUANTITIES) TO THE PRIMARY SIDE OF THE DISCONNECT SWITCH.

THE CONTRACTOR SHALL PROVIDE A 2" RIGID GALVANIZED STEEL CONDUIT, COUPLINGS FOR ATTACHING TO FOUNDATION CONDUIT (INCLUDED IN COST OF I-129 SUPPORTS) AND IC NO. 6 600 VOLT SERVICE WIRE FROM ESNA CONNECTORS TO THE DISCONNECT SWITCH.

THIS ITEM SHALL ALSO INCLUDE THE FURNISHING OF 2" RIGID GALVANIZED STEEL CONDUIT AND COUPLINGS FOR CONNECTIONS FROM SURVEILLANCE SYSTEM PULLBOX (ADJACENT TO SIGN SUPPORT FOUNDATION) TO THE SECOND 2" GALVANIZED CONDUIT IN SIGN SUPPORT. (SEE DETAILS, SHEET 171 AND 203).

BASIS OF PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE PER EACH INSTALLATION WHICH PRICE SHALL INCLUDE ALL MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS TO FURNISH THE COMPLETE ITEM OF WORK.



STA. 35+00 LANE E-S
OVERHEAD SIGN SUPPORT No. 50
I-129 No. 7.4 DESIGN 1
MODIFIED, AS PER PLAN
SPAN = 64'

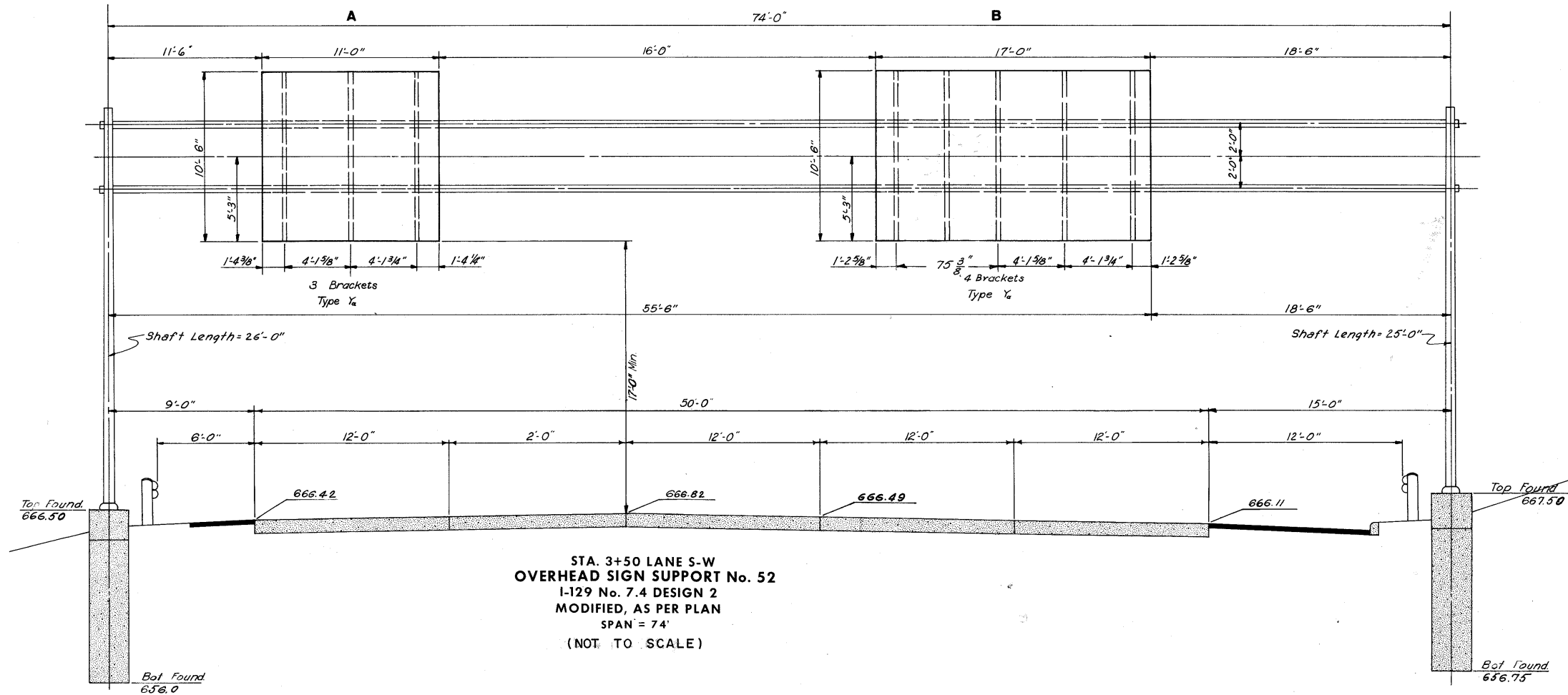
SCALE 1/4" = 1'-0"
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE N.A.H. DATE 12-8-64 CONSULTING ENGINEERS
TRCD. A.D.G. DATE 12-11-64
CKD. R.H.L. DATE 12-28-64 KANSAS CITY CLEVELAND NEW YORK

SIGN SUPPORT NOS. 50 & 51
SIGNING DETAILS

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY - 71-18.54
CUY - 90-13.81



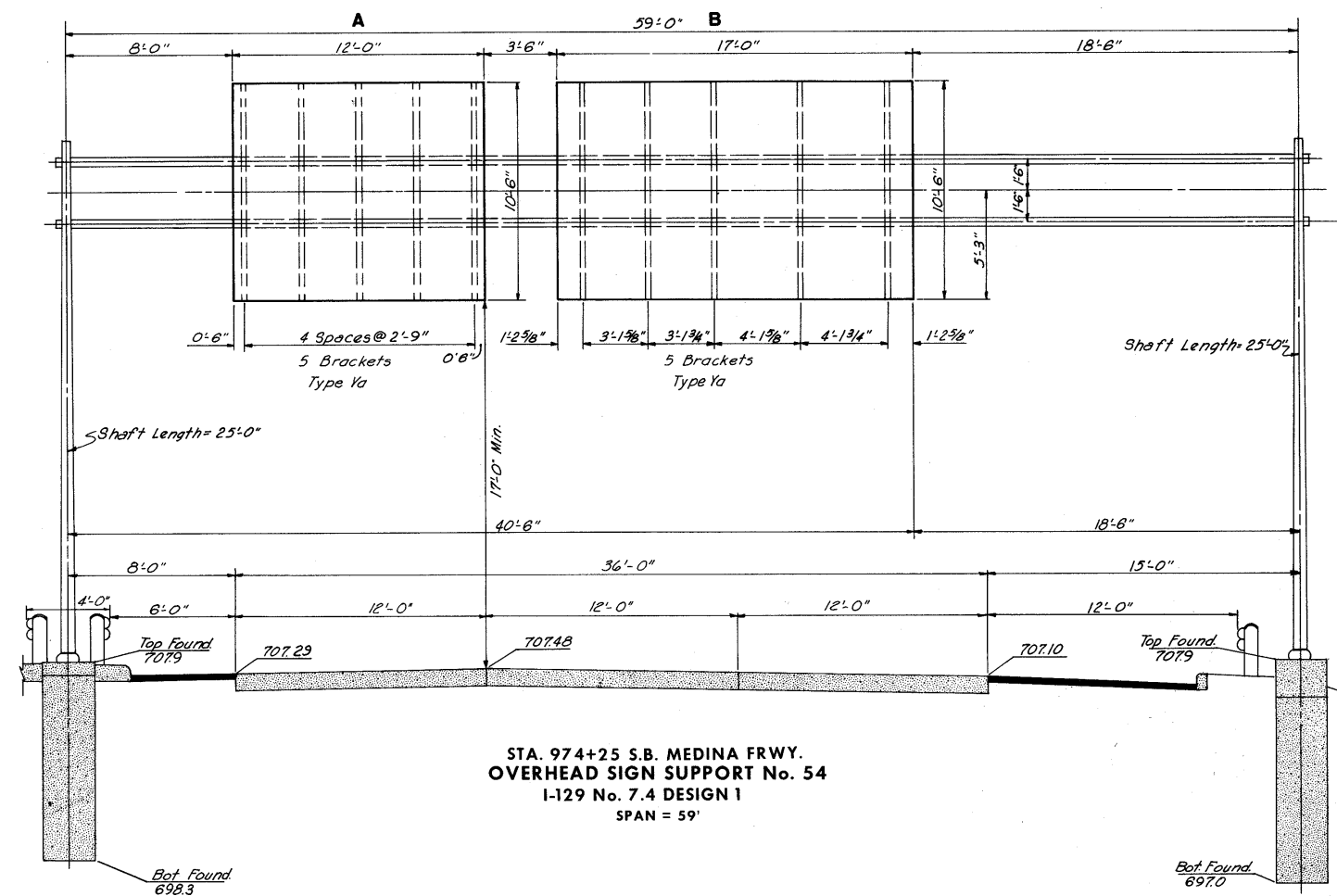
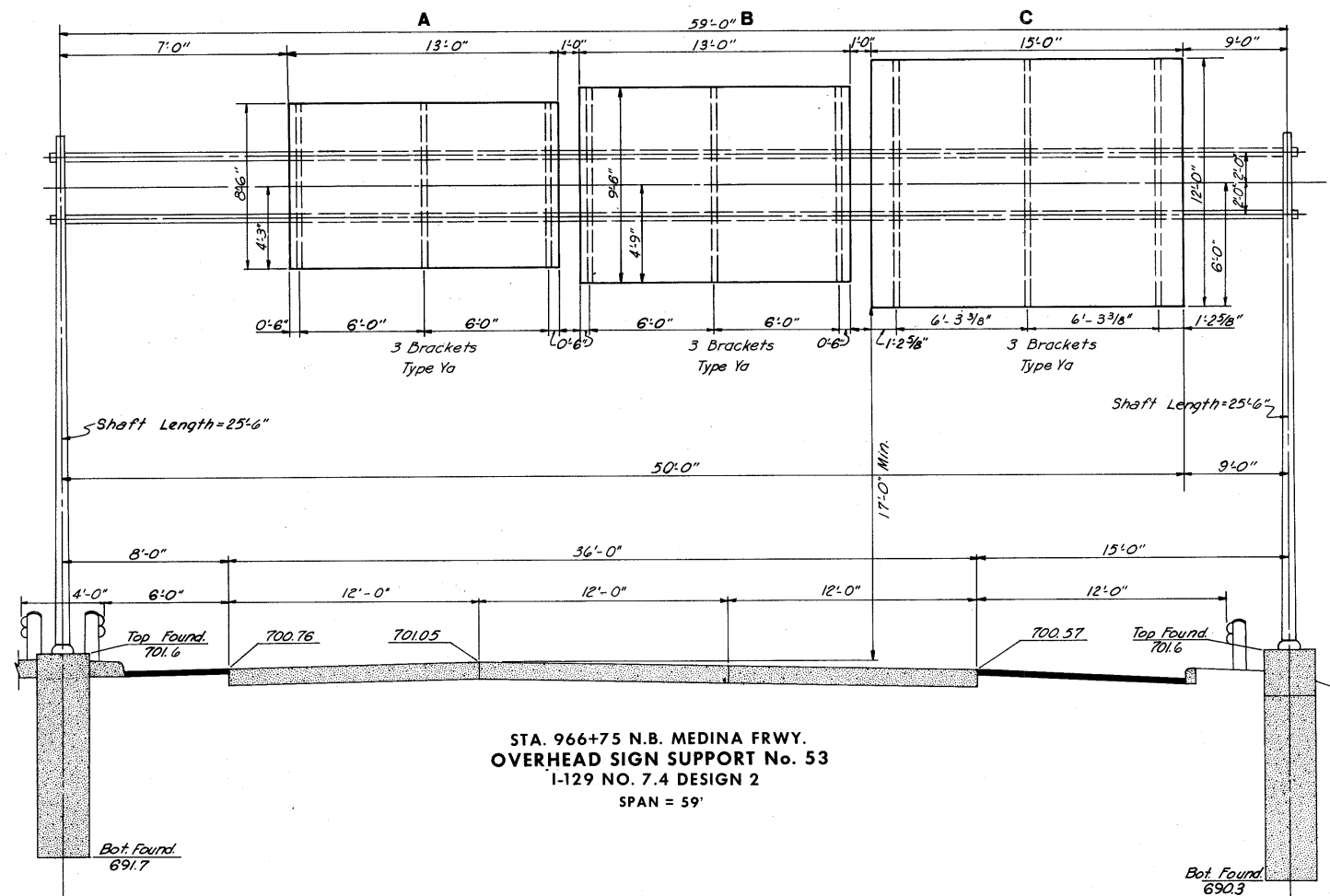
SCALE No Scale
 MADE N.A.K. DATE 12-11-64
 TRCD. P.A.G. DATE 12-12-64
 CKD. P.H.L. DATE 12-23-64
HOWARD, NEEDLES, TAMMEN & BERGENOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

SIGN SUPPORT NO. 52
 SIGNING DETAILS

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

175
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY - 71-18.54
CUY - 90-13.81



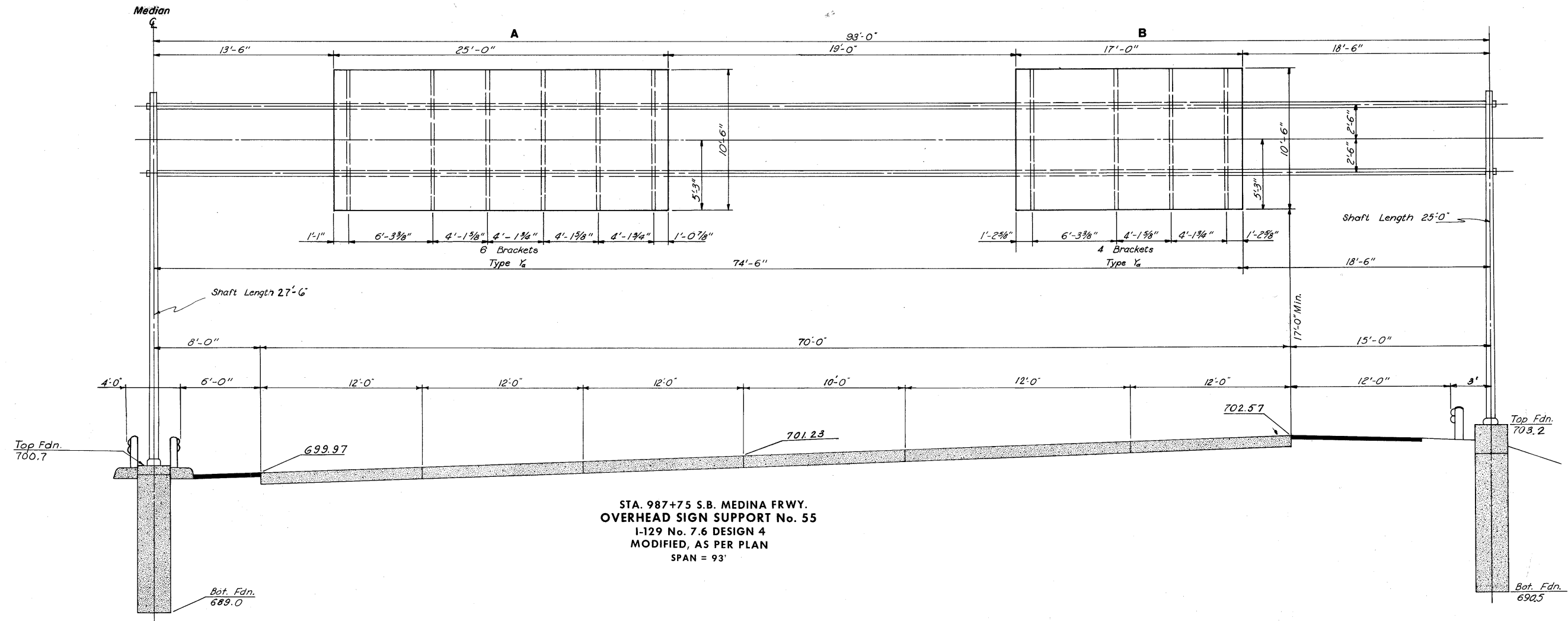
SCALE: No Scale
MADE: NAK DATE: 12-10-64
TRCD: PAG DATE: 12-12-64
CRD: RHL DATE: 12-28-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SIGN SUPPORT NOS. 53 & 54
SIGNING DETAILS

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

176
478

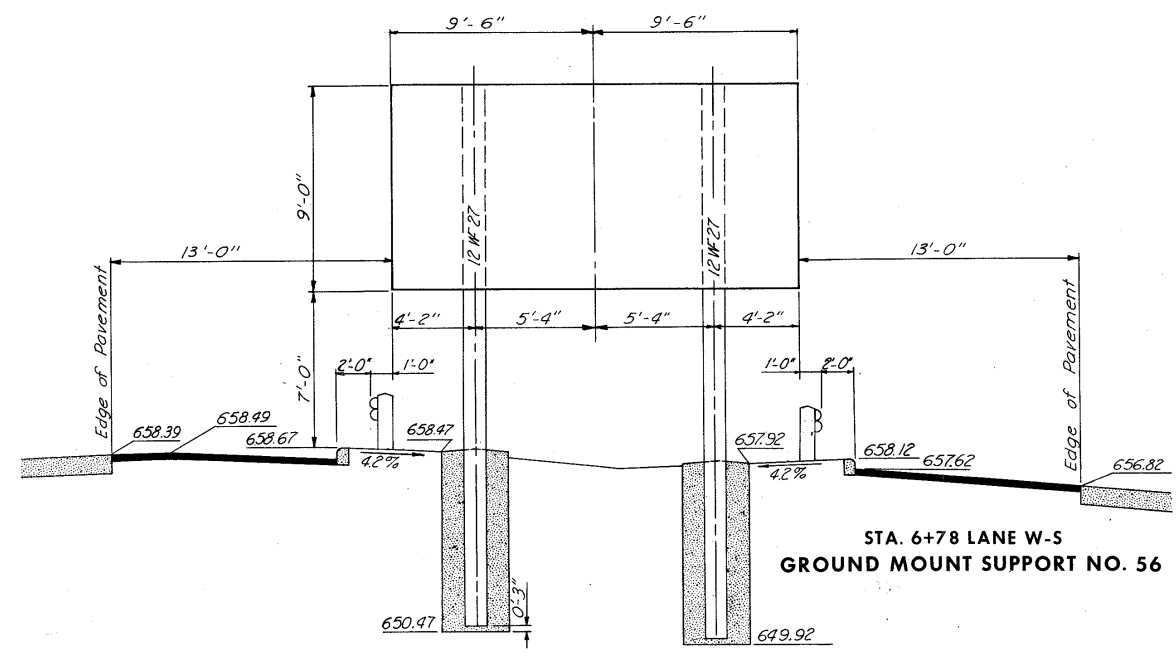
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



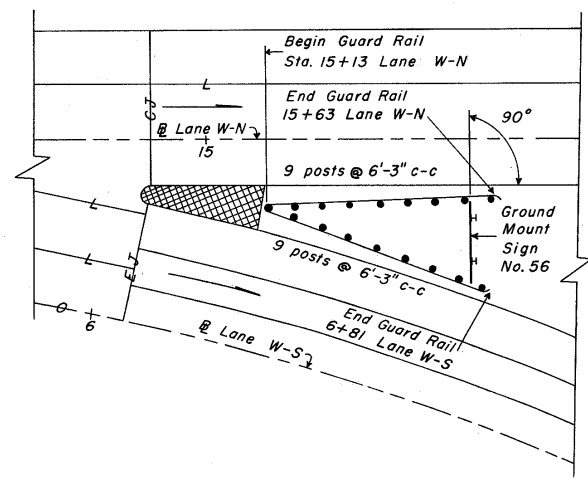
SCALE *No Scale* HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE *N.A.K.* DATE *12-8-64* CONSULTING ENGINEERS
TRCD. *P.A.G.* DATE *12-11-64*
CKD. *R.H.L.* DATE *12-28-64* KANSAS CITY CLEVELAND NEW YORK

SIGN SUPPORT NO. 55
SIGNING DETAILS

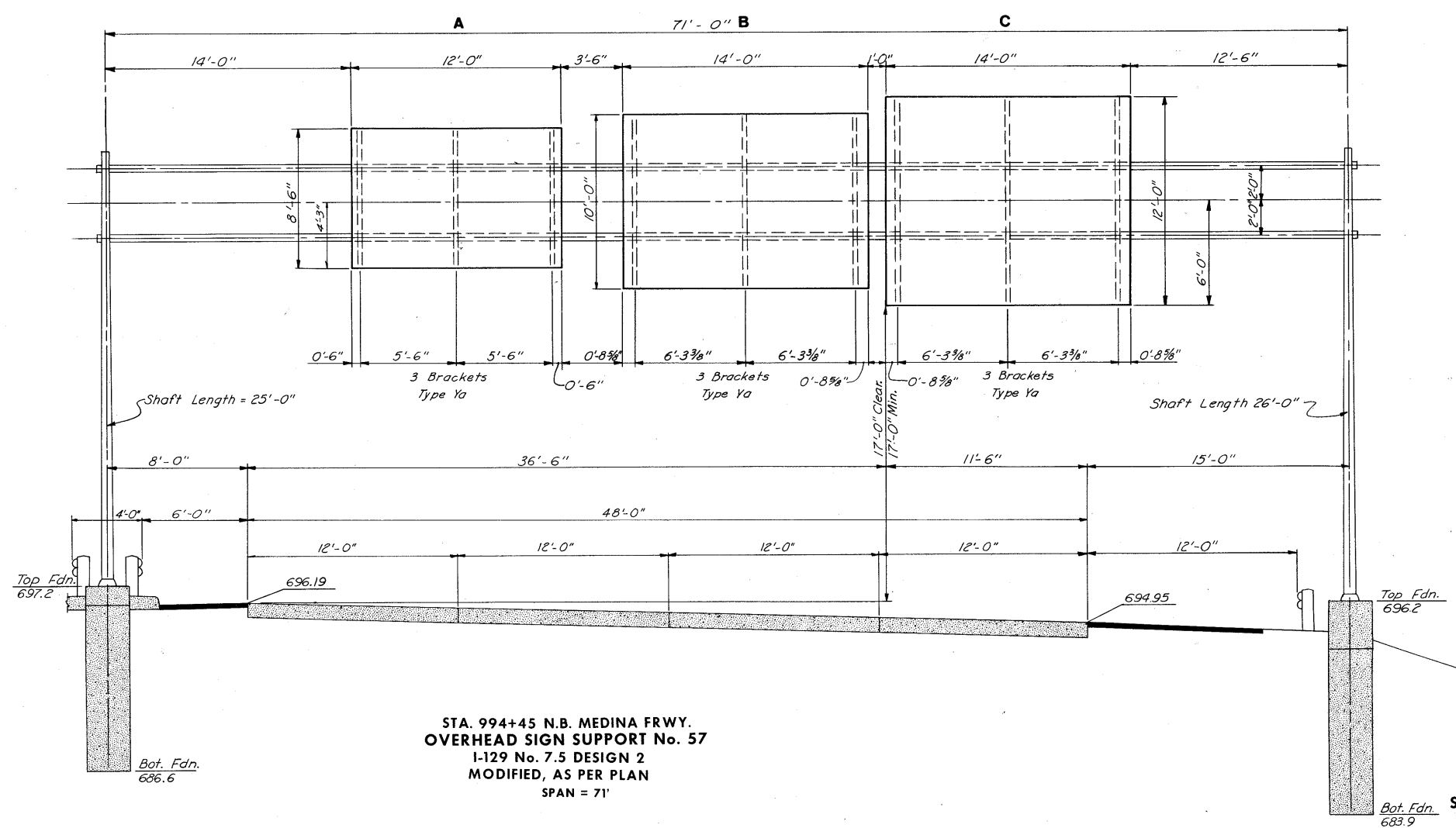
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



NOTES:
1. Erect beams in a manner that Sign will be at 90° to the tangent projected ahead for Lane W-N.
2. All standard structural shapes are to be ASTM A-36 steel, galvanized as per M-7.4b.



GROUND MOUNT SIGN NO. 56
GUARDRAIL
Scale: 1" = 20'



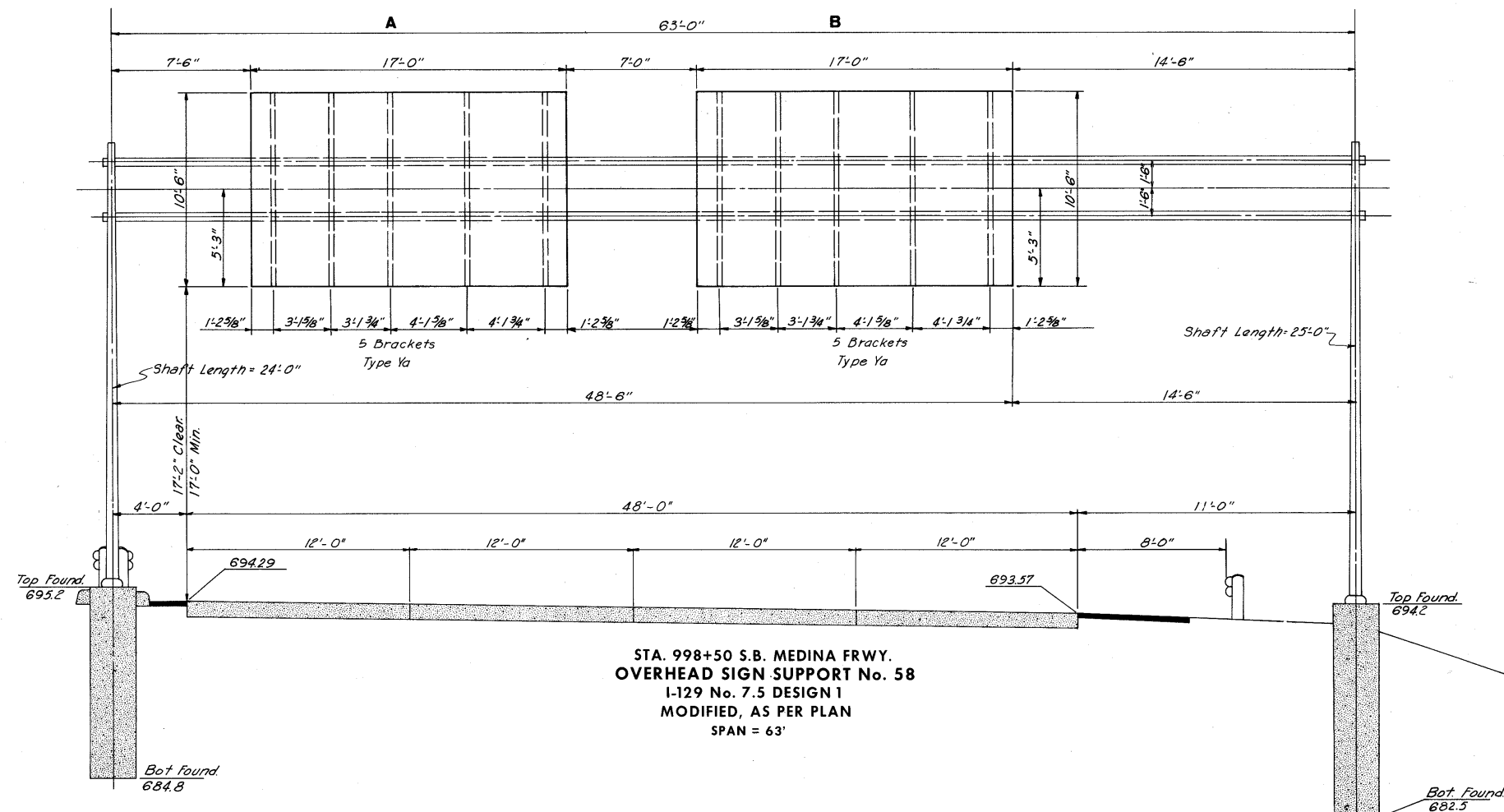
STA. 994+45 N.B. MEDINA FRWY.
OVERHEAD SIGN SUPPORT No. 57
I-129 No. 7.5 DESIGN 2
MODIFIED, AS PER PLAN
SPAN = 71'

SIGN SUPPORT NOS. 56 & 57
SIGNING DETAILS

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



SCALE: No Scale
MADE: N.A.K. DATE: 12-7-64
TRCD: P.A.G. DATE: 12-12-64
CKD: P.H.L. DATE: 12-28-64

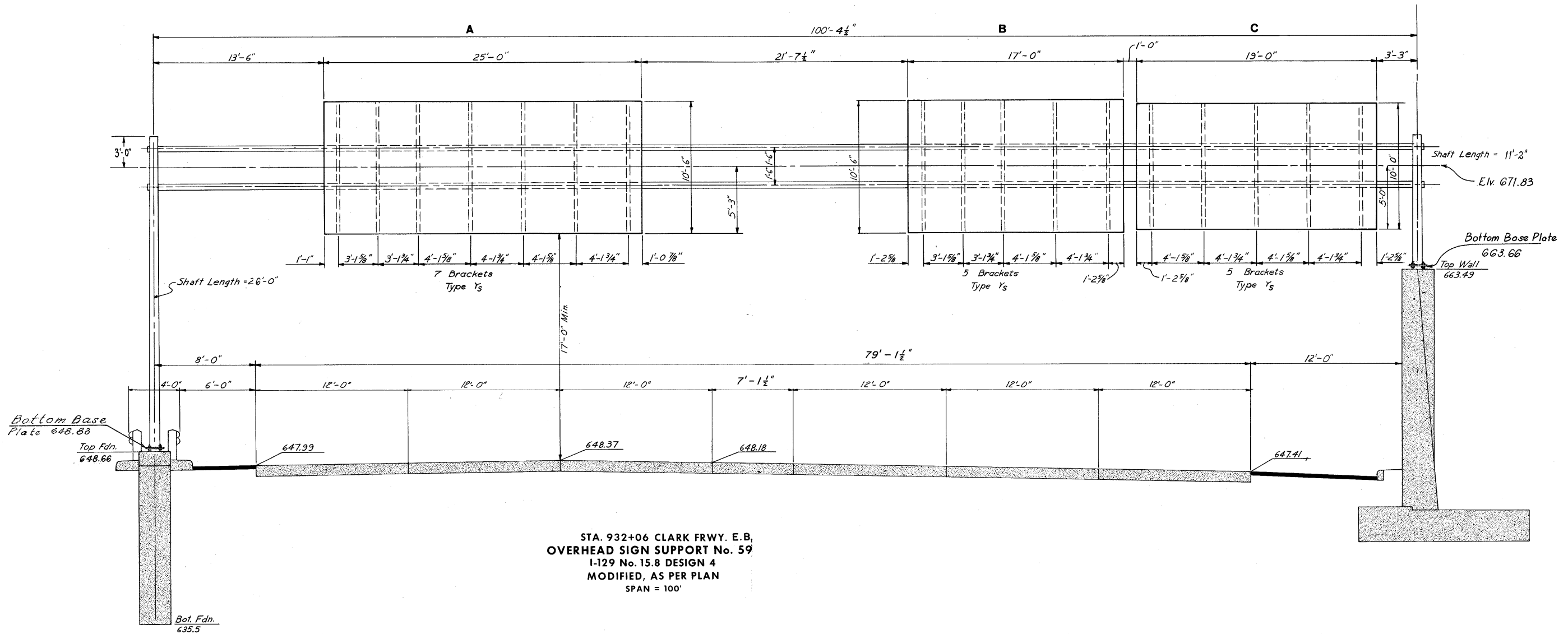
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SIGN SUPPORT NO. 58
SIGNING DETAILS

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81



STA. 932+06 CLARK FRWY. E.B.
OVERHEAD SIGN SUPPORT No. 59
I-129 No. 15.8 DESIGN 4
MODIFIED, AS PER PLAN
SPAN = 100'

SCALE: No Scale
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE: N.A.K. DATE 12-7-64 CONSULTING ENGINEERS
TRCD: A.D.G. DATE 12-11-64
CKD: R.H.L. DATE 12-28-64 KANSAS CITY CLEVELAND NEW YORK

SIGN SUPPORT NO. 59
SIGNING DETAILS

MEDINA-CLARK INTERCHANGE
 CUY. 71-18.54
 CUY. 90-13.81

NOTES

MATERIALS
 THE OVERHEAD SPAN TRUSS SHALL BE ALUMINUM AND THE END FRAMES SHALL BE STEEL.
 SPAN TRUSS AND END FRAMES, INCLUDING HARDWARE, SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION I-129 UNLESS OTHERWISE NOTED.
 STEEL POLE BASES AND GUSSETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A-373.
 AFTER FABRICATION THE TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

FABRICATION
 THE ENTIRE STEEL END FRAME SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SEC. M-7.4(d). MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

ERECTION
 USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD 1/4" OF CAMBER FOR EACH 5' OF INCREASE IN SPAN OVER 50'.

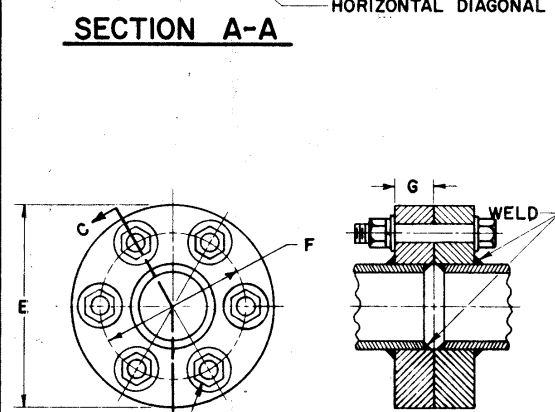
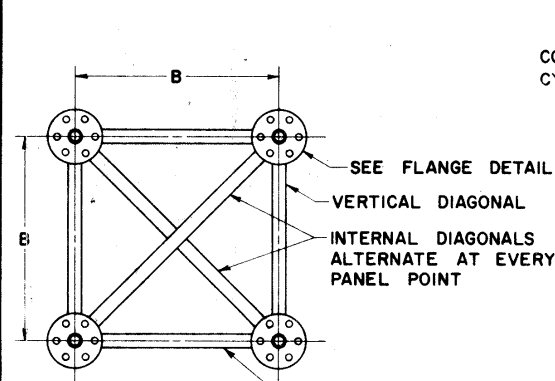
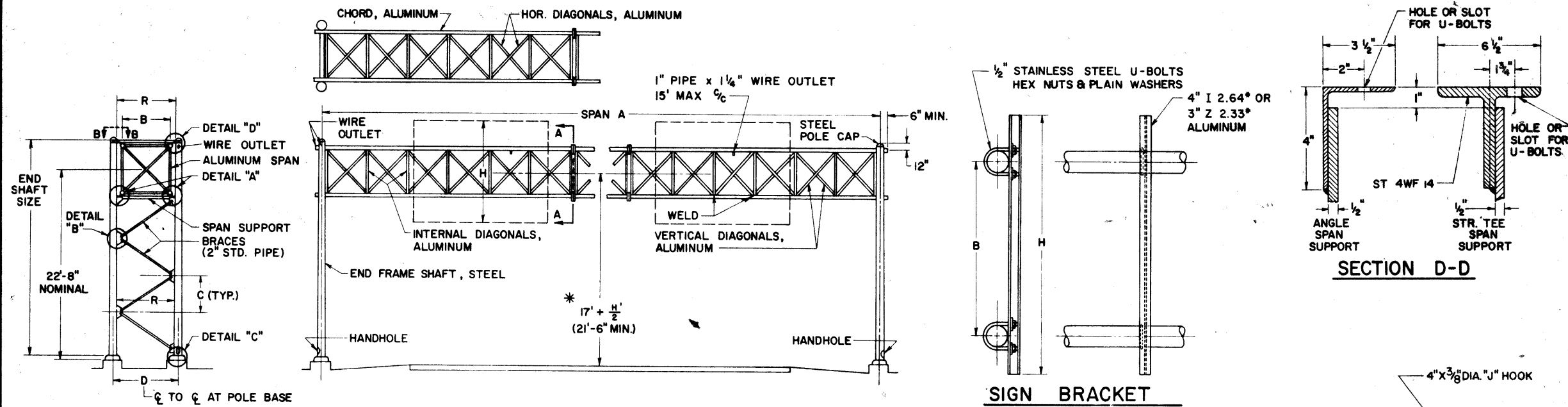
PAYMENT
 PAYMENT FOR THE GALVANIZED CONDUIT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS.

SOILS
 THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY). FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

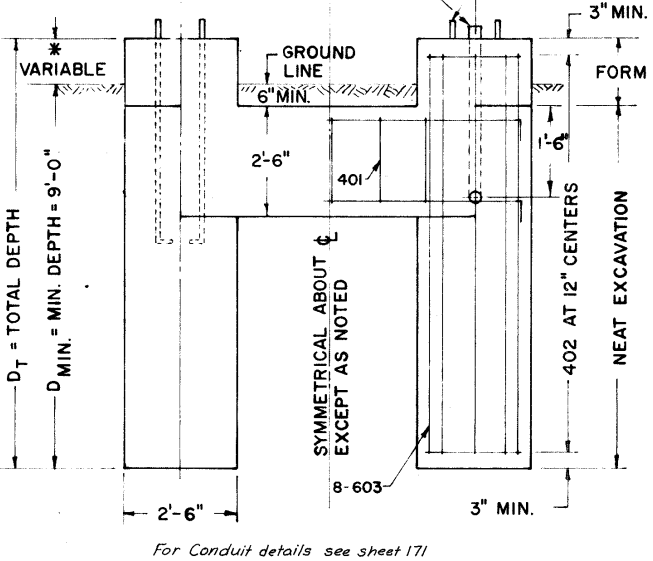
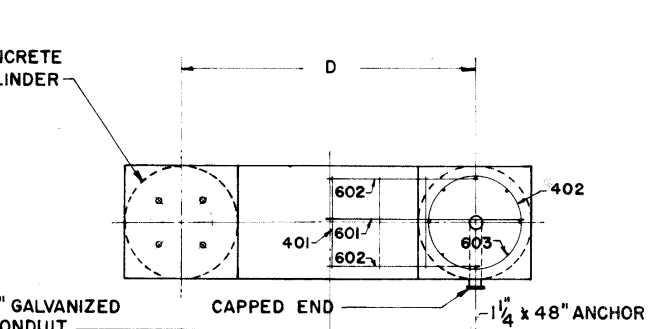
REINFORCING STEEL
 COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM I-129 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.
 BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER.

***FOUNDATION ELEVATION**
 ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17' CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF THE PAVEMENT AND SHOULDERS.
 TWO 2" AND ONE 1/2" CONDUIT ARE REQUIRED PER SIGN SUPPORT. COST IS INCLUDED WITH I-129 SUPPORTS FOR DETAILS SEE SHT.

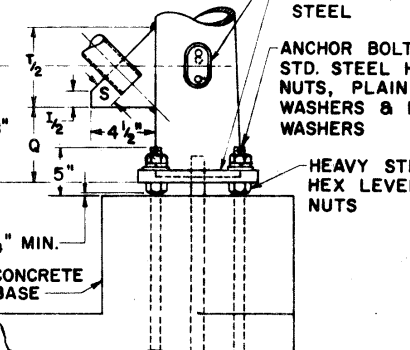
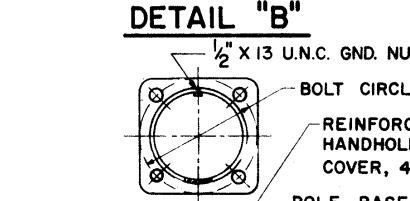
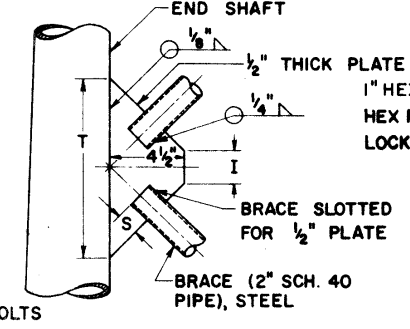
DESIGN
 THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.



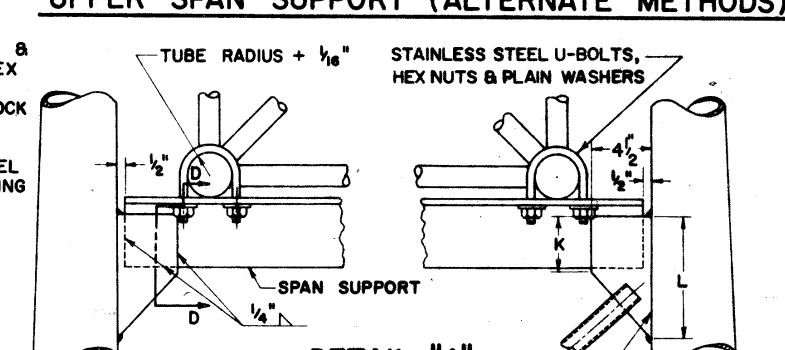
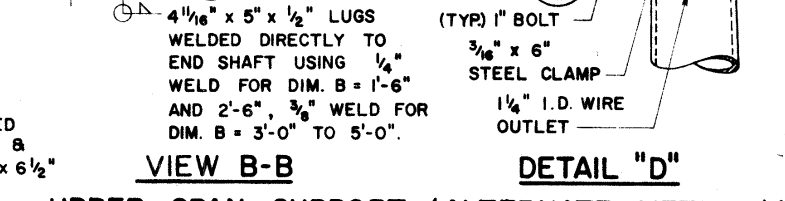
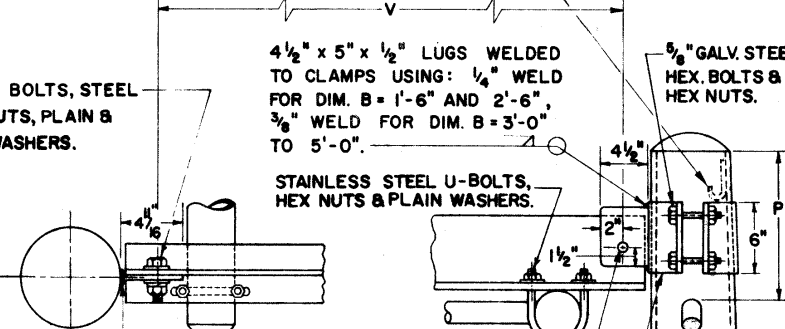
FLANGE DETAIL
 CAST FLANGE, B-26 ALLOY SG 70A-T7 (356-T.7)



FOUNDATION DETAIL
 (RIGHT HAND SHOWN - LEFT HAND OPPOSITE)



POLE BASE DETAIL



LOWER SPAN SUPPORT

SIGN BRACKET

SECTION D-D

DESIGN NO.	SPAN A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U BOLTS	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL
1	50' Thru 55'	3'-0"	4'-11 3/4"	4'-5"	7"	8" x 4.5" x 25'-0", 3GA	5'-10 13/16"	5 1/2"	1 1/4"	3 1/2"	4 3/4"	8"	12"	6 5/8"	3'-9"	1 1/2"	10"	5 5/8"	3'-3 5/8"	11"	SPLIT TEE 3'-8"	3 1/2" x .188"	1.660" x .140"	1.660" x .140"
2	56' Thru 80'	3'-0"	4'-11 3/4"	4'-5"	9 1/4"	8" x 4.5" x 25'-0", 3GA	5'-10 13/16"	7 7/16"	1 3/8"	3 1/2"	4 3/4"	8"	12"	6 5/8"	3'-9"	1 1/2"	10"	5 5/8"	3'-3 5/8"	11"	SPLIT TEE 3'-8"	4 3/4" x .188"	1.900" x .145"	1.660" x .140"
3	81' Thru 90'	4'-0"	4'-10 1/4"	5'-7"	9 1/4"	8" x 6.22" x 25'-6", 3GA	6'-7 1/8"	7 7/16"	1 3/8"	5 5/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-11"	1 1/2"	9 1/2"	5 5/8"	4'-5 5/8"	11"	SPLIT TEE 4'-10"	4 3/4" x .188"	1.900" x .145"	1.900" x .145"
4	91' Thru 105'	4'-0"	4'-10 1/4"	5'-7"	9 1/4"	8" x 6.22" x 25'-6", 3GA	6'-7 1/8"	7 7/16"	1 3/8"	5 5/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-11"	1 1/2"	9 1/2"	5 5/8"	4'-5 5/8"	11"	SPLIT TEE 4'-10"	4 3/4" x .188"	2" x .188"	1.900" x .145"

REINFORCEMENT SCHEDULE			
MARK	NO.	LENGTH	TYPE
401	12" C/C	8'-6"	102
402	12" C/C	7'-6"	103
601	4	D+ 4'-0"	101
602	8	D+ 2'-0"	101
603	32	D+ 6"	STR.

BUREAU OF TRAFFIC
 OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORTS No. 7.3

DATE: 7-25-62
 5-5-64
 3-3-65

APPROVED: *Robert J. Jones*
 ENGINEER OF TRAFFIC

MEDINA-CLARK INTERCHANGE
 CUY. 71-18.54
 CUY. 90-13.81

NOTES

MATERIALS
 THE OVERHEAD SPAN TRUSS SHALL BE ALUMINUM AND THE END FRAMES SHALL BE STEEL.
 SPAN TRUSS AND END FRAMES, INCLUDING HARDWARE, SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION I-129 UNLESS OTHERWISE NOTED.
 STEEL POLE BASES AND GUSSETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A-373.
 AFTER FABRICATION THE TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

FABRICATION
 THE ENTIRE STEEL END FRAME SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SEC. M-7.4(d). MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

ERECTION
 USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD 1/4" OF CAMBER FOR EACH 5' OF INCREASE IN SPAN OVER 50'.

PAYMENT
 PAYMENT FOR THE GALVANIZED CONDUIT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS.

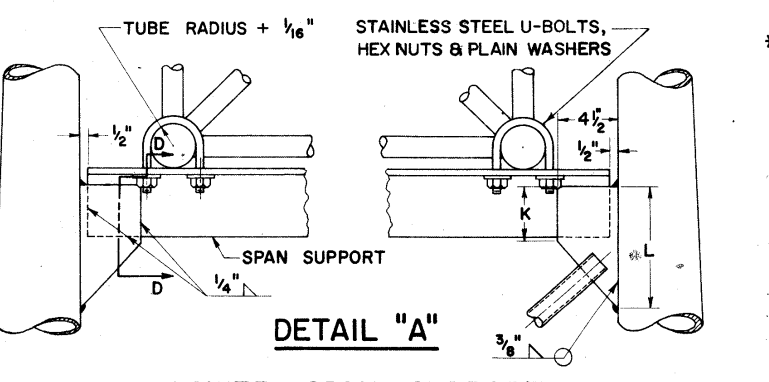
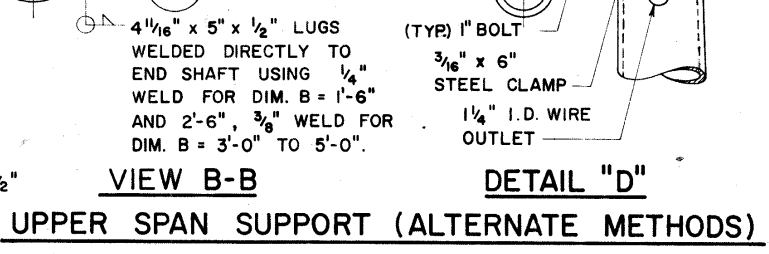
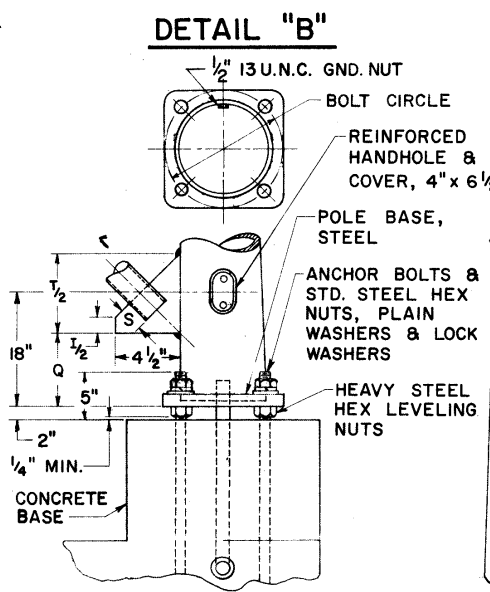
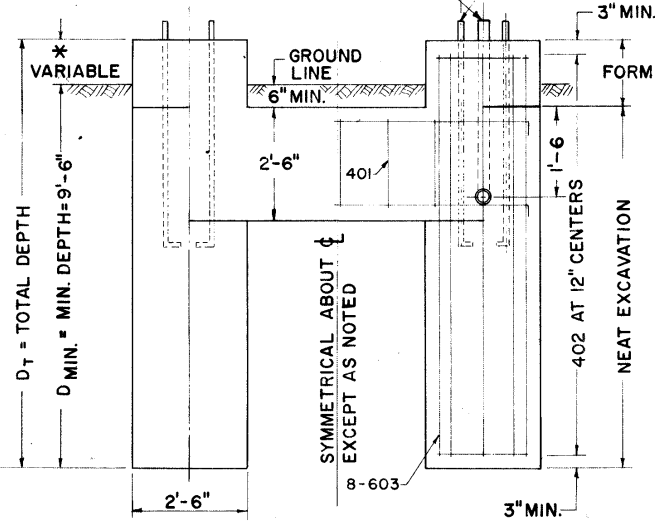
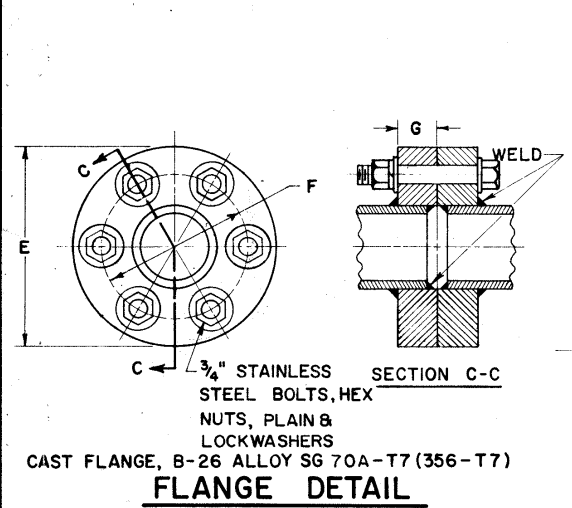
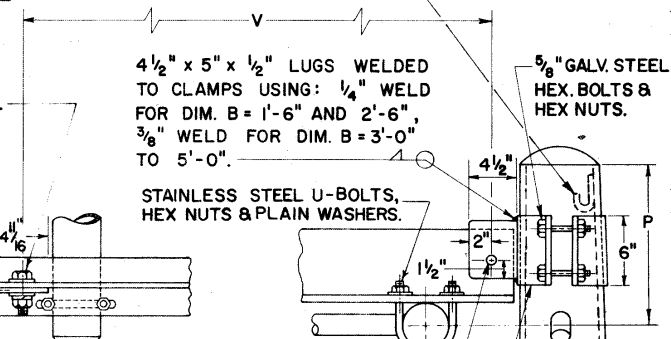
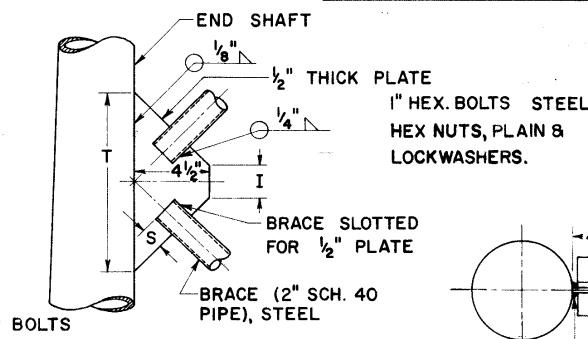
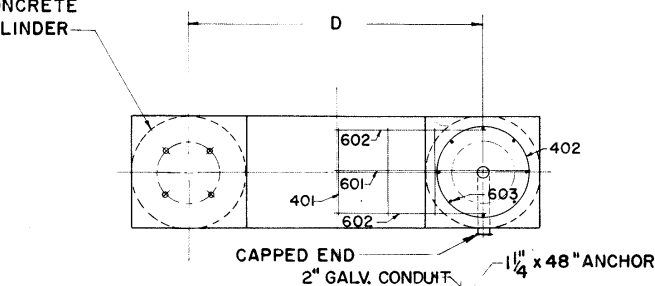
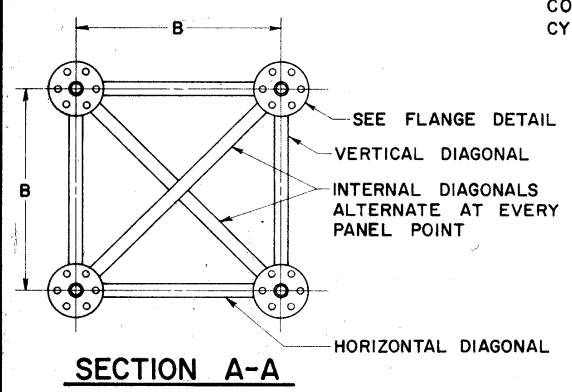
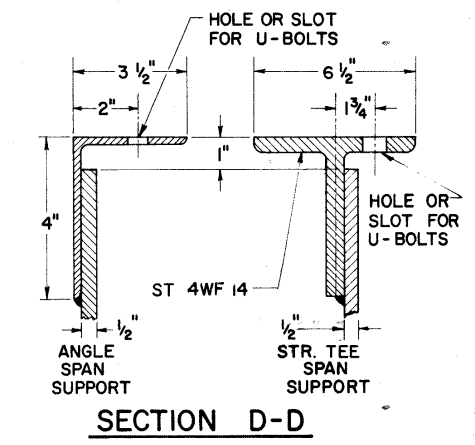
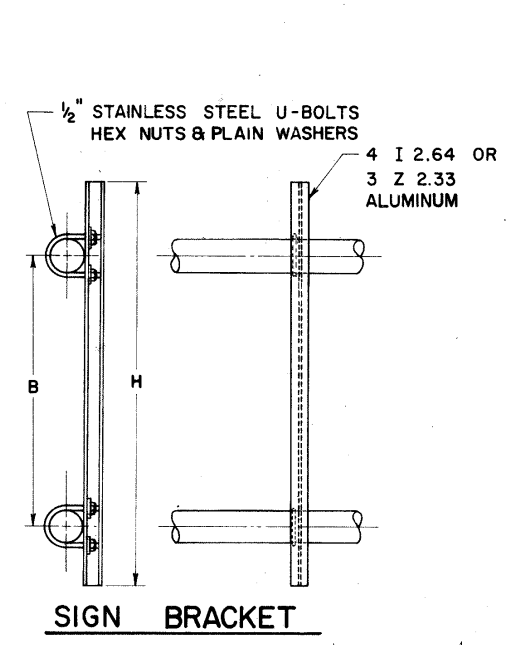
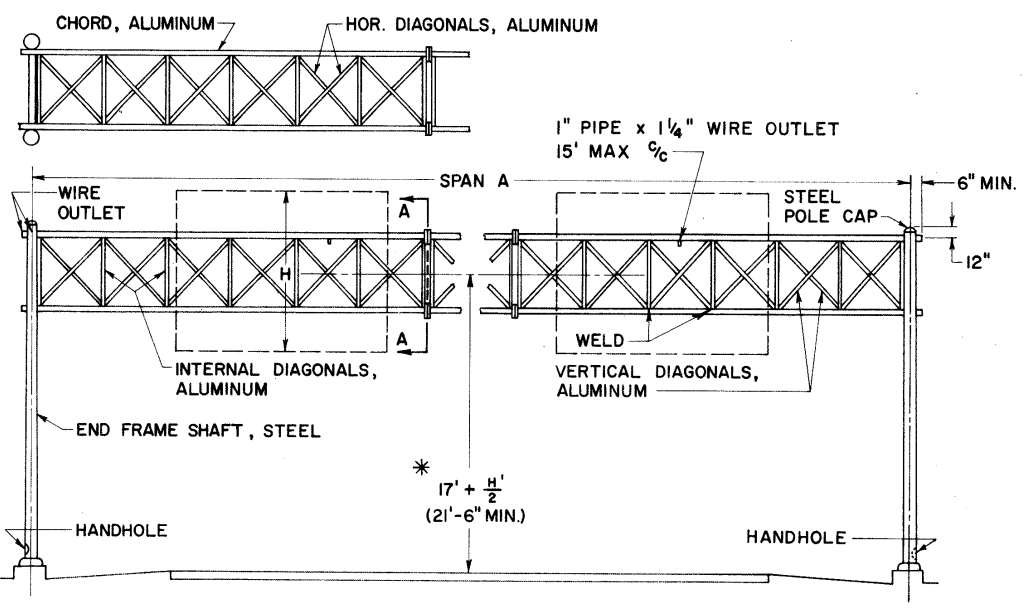
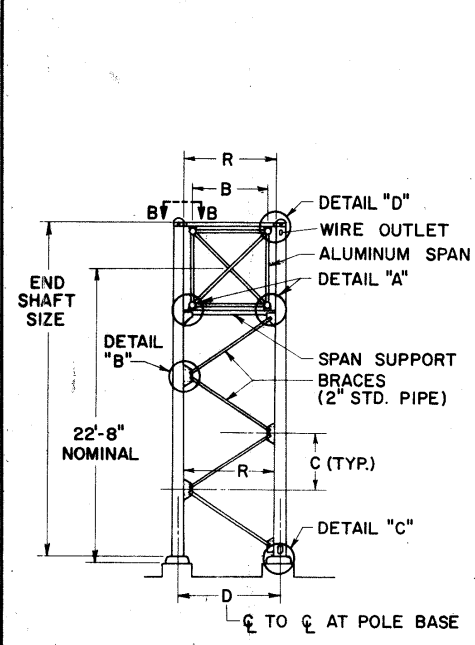
SOILS
 THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY). FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL
 COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM I-129 CONCRETE FOR SIGN SUPPORT FOUNDATIONS. BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER.

***FOUNDATION ELEVATION**
 ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17" CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF THE PAVEMENT AND SHOULDERS.

TWO 2" AND ONE 1/2" CONDUIT ARE REQUIRED PER SIGN SUPPORT, COST IS INCLUDED WITH I-129 SUPPORTS. FOR DETAILS, SEE SHT.

DESIGN
 THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.



For Conduit details see sheet 171

FOUNDATION DETAIL
 (RIGHT HAND SHOWN - LEFT HAND OPPOSITE)

DETAIL "C"
POLE BASE DETAIL

DETAIL "A"
LOWER SPAN SUPPORT

DESIGN NO.	SPAN A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U BOLTS	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL
1	50' thru 75'	3'-0"	4'-11 3/4"	4'-5"	9 1/4"	8" x 4.5" x 25'-0", 3 GA.	5'-10 13/16"	7 7/16"	1 3/8"	3 1/2"	4 3/4"	8"	12"	6 5/8"	3'-9"	1 1/2"	10"	5 5/8"	3'-3 5/8"	11"	SPLIT TEE 3'-8"	4 3/4" x .188"	1.900" x .145"	1.660" x .140"
2	76' thru 85'	4'-0"	4'-10 1/4"	5'-7"	9 1/4"	8" x 6.22" x 25'-6", 3 GA.	6'-7 1/8"	7 7/16"	1 3/8"	5 5/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-10"	1 1/2"	9 1/2"	5 5/8"	4'-4 5/8"	11"	SPLIT TEE 4'-10"	4 3/4" x .188"	2" x .188"	1.900" x .145"
3	86' thru 90'	4'-0"	4'-10 1/4"	5'-7"	11"	8" x 6.22" x 25'-6", 3 GA.	6'-7 1/8"	8 1/2"	1 1/2"	5 5/8"	4 3/8"	7 3/4"	42"	6 1/4"	4'-10"	1 1/2"	9 1/2"	5 5/8"	4'-4 5/8"	11"	SPLIT TEE 4'-10"	5 1/2" x .250"	2" x .188"	1.900" x .145"
4	91' thru 110'	5'-0"	4'-8 1/2"	6'-7"	11"	8" x 6.18" x 26'-0", 3 GA.	7'-3 1/4"	8 1/2"	1 1/2"	-	3 1/2"	7 3/4"	12"	7 1/4"	5'-10"	1 3/4"	11 1/4"	3 3/4"	5'-4 3/8"	11"	SPLIT TEE 5'-10"	5 1/2" x .250"	2 1/2" x .188"	2 1/2" x .188"

REINFORCEMENT SCHEDULE			
MARK	NO.	LENGTH	TYPE
401	12	C/C	8'-6"
402	12	C/C	7'-6"
601	4	D+4'-0"	101
602	8	D+2'-0"	101
603	32	D1-6"	STR.

BUREAU OF TRAFFIC
 OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORTS No.7.4

APPROVED *Robert E. Lower*
 ENGINEER OF TRAFFIC

DATE
 5-2-64
 7-25-64
 5-6-64
 3-3-65

MEDINA-CLARK INTERCHANGE
 CUY. 71-18.54
 CUY. 90-13.81

NOTES

MATERIALS
 THE OVERHEAD SPAN TRUSS SHALL BE ALUMINUM AND THE END FRAMES SHALL BE STEEL. SPAN TRUSS AND END FRAMES, INCLUDING HARDWARE, SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION I-129 UNLESS OTHERWISE NOTED.
 STEEL POLE BASES AND GUSSETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A-373.
 AFTER FABRICATION THE TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

FABRICATION
 THE ENTIRE STEEL END FRAME SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SEC. M-7.4(d). MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

ERECTION
 USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD 1/4" OF CAMBER FOR EACH 5' OF INCREASE IN SPAN OVER 50'.

PAYMENT
 PAYMENT FOR THE GALVANIZED CONDUIT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS.

SOILS
 THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY). FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL
 COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM I-129 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER.

***FOUNDATION ELEVATION**
 ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17' CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF PAVEMENT AND SHOULDERS.

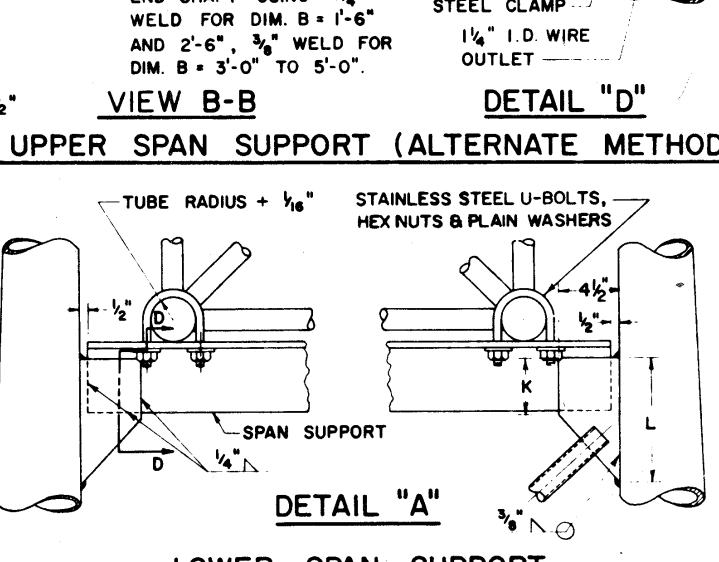
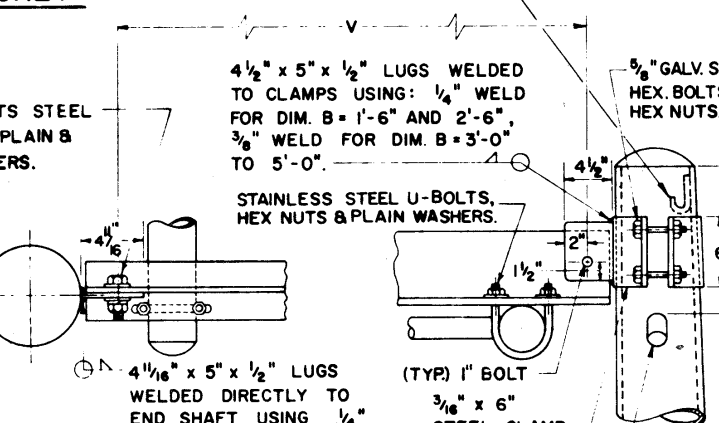
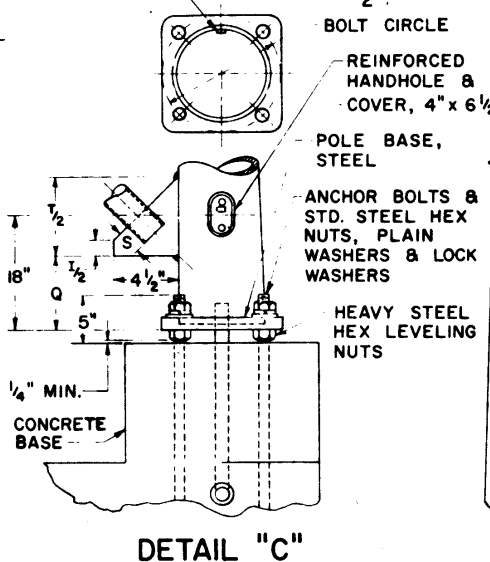
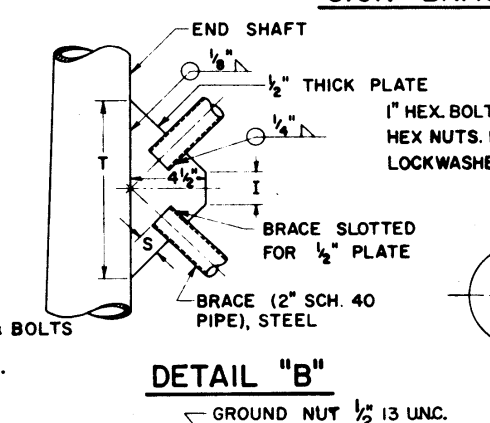
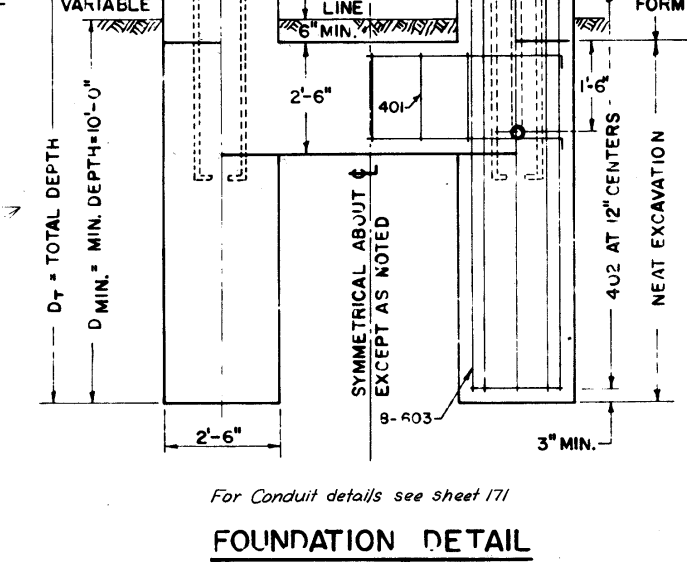
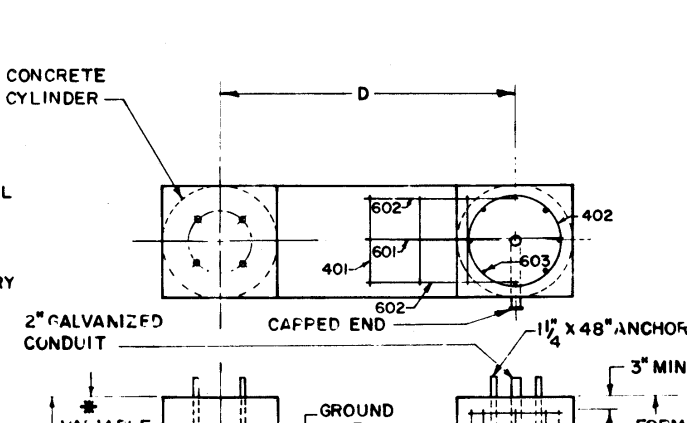
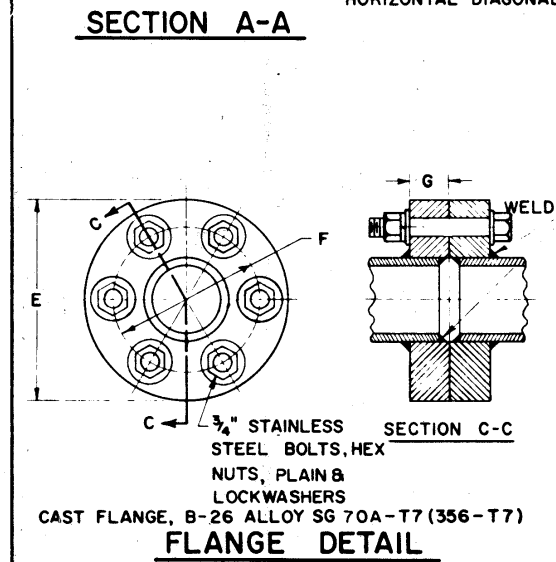
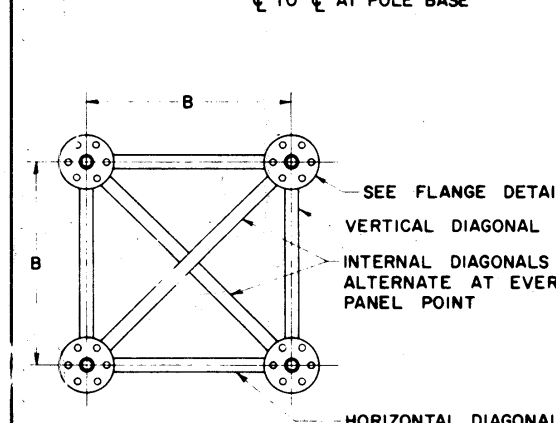
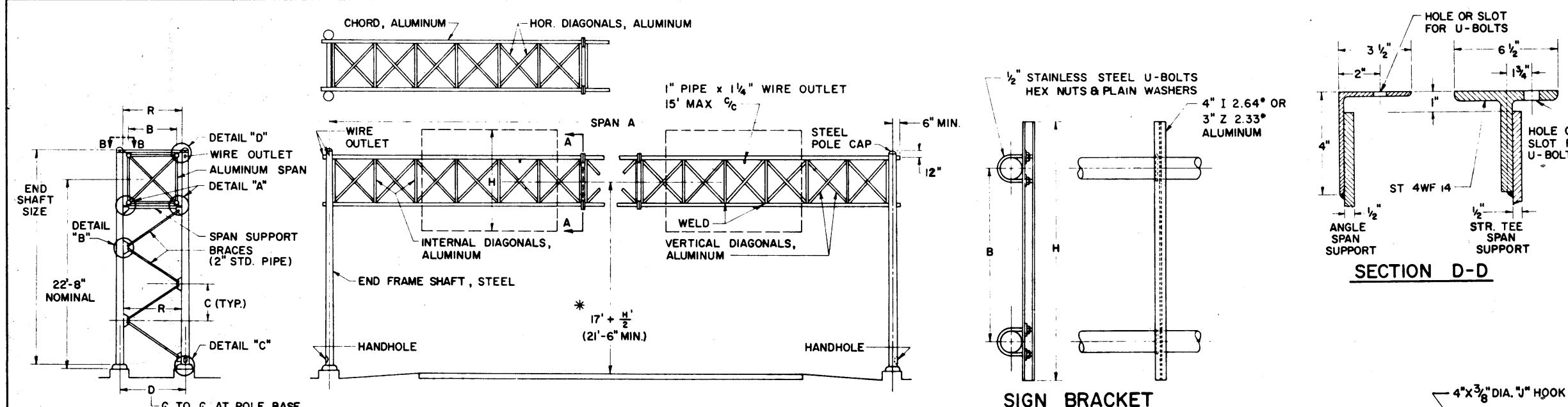
TWO 2" AND ONE 1/2" CONDUIT ARE REQUIRED PER SIGN SUPPORT, COST IS INCLUDED WITH I-129 SUPPORTS. FOR DETAILS SEE SHT.

DESIGN
 THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

BUREAU OF TRAFFIC
 OHIO DEPARTMENT OF HIGHWAYS

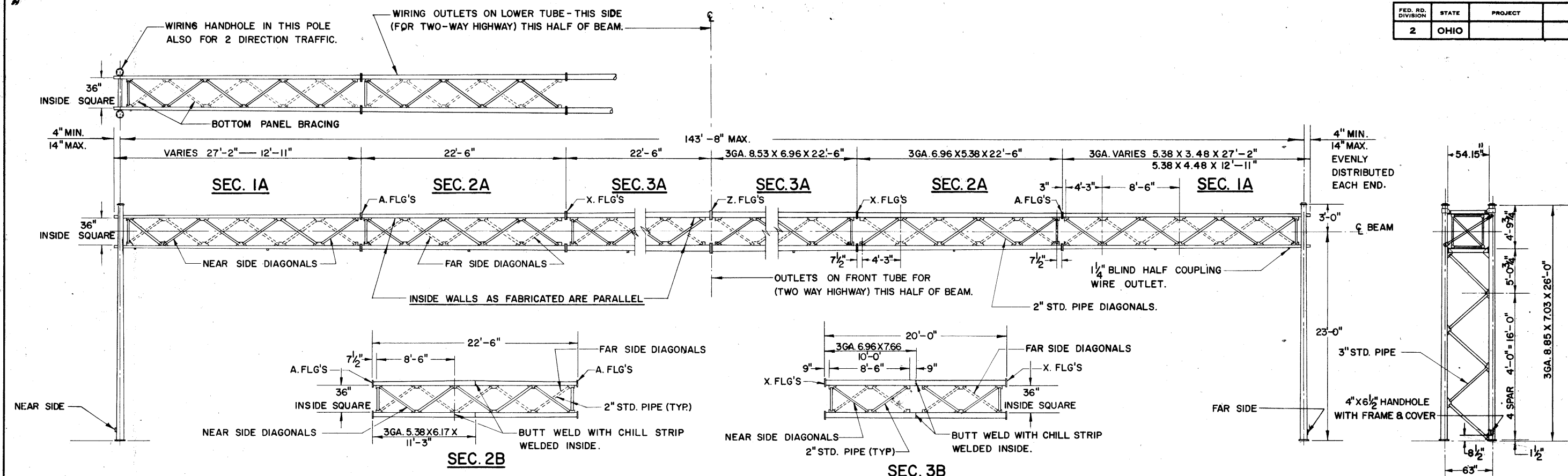
OVERHEAD SIGN SUPPORTS I-129 No.7.5

APPROVED *Ronald E. Comer*
 ENGINEER OF TRAFFIC

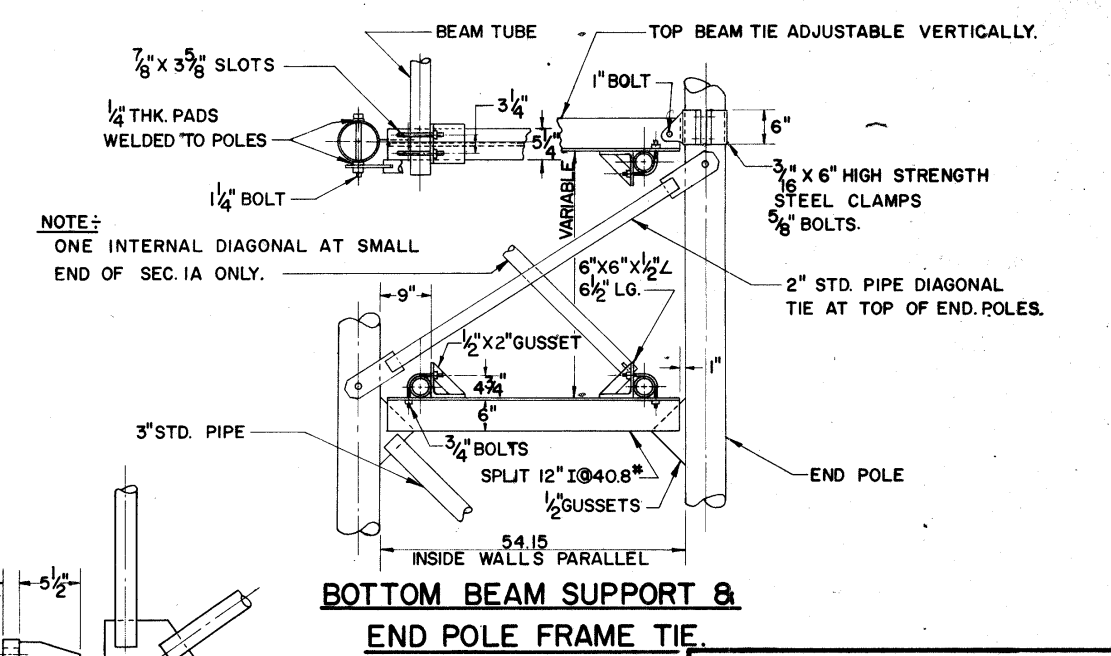
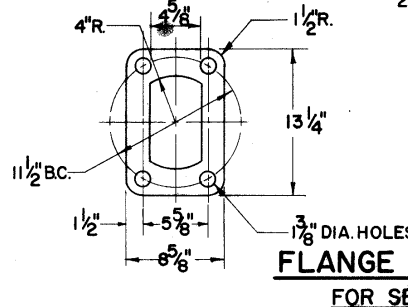
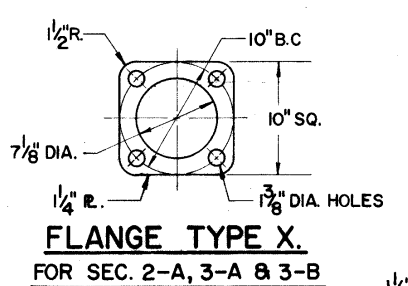
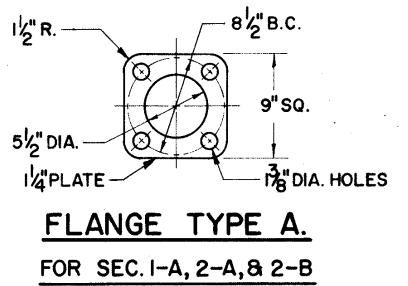
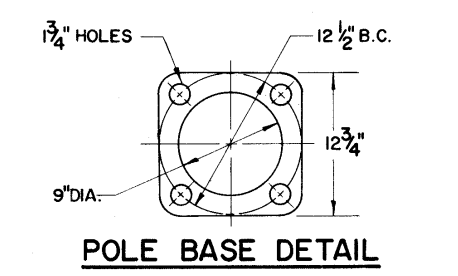
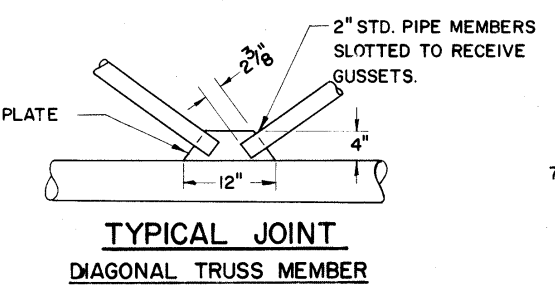
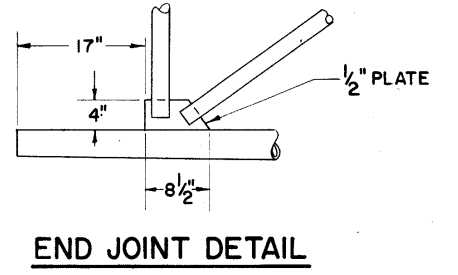
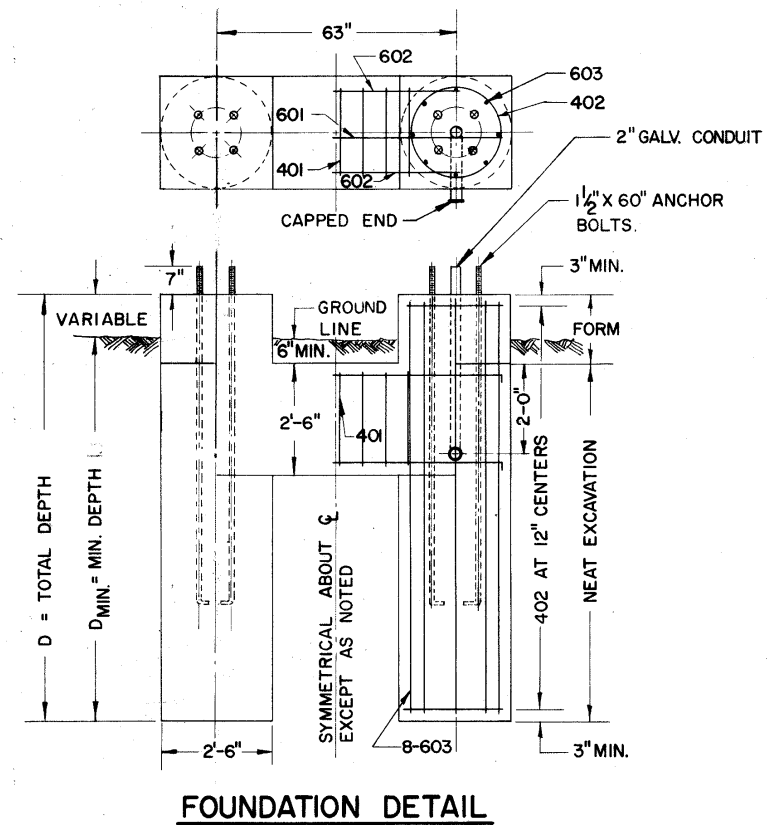


DESIGN NO.	SPAN A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL
1	50' THRU 70'	3'-0"	4'-11 3/4"	4'-5"	9 1/4"	8" x 4.5" x 25'-0", 3GA	5'-10 3/16"	7 7/16"	13 3/8"	3 1/2"	4 3/4"	8"	12"	6 5/8"	3'-9"	1 1/2"	10"	5 1/8"	3'-3 5/8"	11"	SPLIT TEE 3'-8"	4 3/4" x .188"	1.900" x .145"	1.660" x .140"
2	71' THRU 80'	4'-0"	4'-10 1/4"	5'-7"	9 1/4"	8" x 6.22" x 25'-6", 3GA	6'-7 7/8"	7 7/16"	13 3/8"	5 3/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-11"	1 1/2"	9 1/2"	5 1/8"	4'-5 5/8"	11"	SPLIT TEE 4'-10"	4 3/4" x .188"	2" x .188"	1.900" x .145"
3	81' THRU 86'	4'-0"	4'-10 1/4"	5'-7"	11"	8" x 6.22" x 25'-6", 3GA	6'-7 7/8"	8 1/2"	1 1/2"	5 5/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-11"	1 1/2"	9 1/2"	5 1/8"	4'-5 5/8"	11"	SPLIT TEE 4'-10"	5 1/2" x .250"	2" x .188"	1.900" x .145"
4	86' THRU 110'	5'-0"	4'-8 1/2"	6'-7"	11"	8" x 6.18" x 26'-0", 3GA	7'-3 1/4"	8 1/2"	1 1/2"	-	3 1/2"	7 3/4"	12"	7 1/4"	5'-11"	1 3/4"	11 1/4"	3 3/4"	5'-5 5/8"	11"	SPLIT TEE 5'-10"	5 1/2" x .250"	2 1/2" x .188"	2 1/2" x .188"

REINFORCEMENT SCHEDULE			
MARK	NO.	LENGTH	TYPE
401	12"C/C	8'-6"	102
402	12"C/C	7'-6"	103
601	4	D+4'-0"	101
602	8	D+2'-0"	101
603	32	D+7'-6"	STR.



BOTH END FRAMES ALIKE UNLESS OTHERWISE NOTED



BUREAU OF TRAFFIC OHIO DEPARTMENT OF HIGHWAYS		
OVERHEAD SIGN SUPPORT	I-129 15.8	DATE 6-24-64
APPROVED _____ ENGINEER OF TRAFFIC		

MEDINA-CLARK INTERCHANGE

CUY. 71-18.54

CUY. 90-13.81

TABLE I.

"L" SIGN LENGTH	FIXTURES OF NUMBER	"M" EDGE DISTANCE				NO. BALLAST
		A	B	LT.	RT.	
6'-0"	1	7 1/2"	6"	6"	6"	1
8'-0"	1	10 3/8"	10 1/4"	16 3/8"	16 1/4"	1
10'-0"	1	10 3/8"	10 1/4"	16 3/8"	16 1/4"	1
12'-0"	2	6"	6"	6"	6"	1
14'-0"	2	8 5/8"	8 3/4"	14 5/8"	14 3/4"	1
16'-0"	1	8 5/8"	8 3/4"	14 5/8"	14 3/4"	1
18'-0"	2	8 5/8"	8 3/4"	14 5/8"	14 3/4"	1
20'-0"	3	7"	6 7/8"	13"	12 7/8"	2
22'-0"	2	7"	6 7/8"	13"	12 7/8"	2
24'-0"	1	7"	6 7/8"	13"	12 7/8"	2
26'-0"	3	7"	6 7/8"	13"	12 7/8"	2

Sn=Nominal Fixture Length, 72" & 96" respectively.
 So=Actual Fixture Length, for mounting purposes, 75 3/8" and 99 3/8" respectively. (Slight variation for different manufacturers.)
 M=Distance from edge of sign to center of notch, min. 6". When the length of the sign minus 1'-0" is less than the sum of the actual fixture lengths, an offset "K" is used. For additional details see detail A and table III.

TABLE II

MAX. BRACKET SPACING FOR EXTERNALLY ILLUMINATED SIGNS

ACTUAL SIGN HEIGHT "Ha"	SUPPORT TYPES			
	9.12, 11.08, 13.2, 7.2		9.24, 10.48, 12.24, 14.5, 15.8, 7.2 to 7.6	
	SINGLE TUBE		DOUBLE TUBE	
	C/C 36"-42"		C/C 48"-54" C/C 60"-72"	
	MAXIMUM BRACKET SPACING			
to 5'-0"	6'-4" with X 8'-4" with Y	6'-4" with X	6'-4" with X 6'-4" with Y	6'-4" with X 6'-4" with Y
5'-6" to 8'-0"	6'-4" with Y	4'-2" with X 6'-4" with Y	6'-4" with X 6'-4" with Y	6'-4" with X 6'-4" with Y
8'-6" to 10'-0"	3'-2" with X 4'-2" with Y	6'-4" with Y	6'-4" with Y	6'-4" with Y
10'-6" to 12'-0"		4'-2" with Y	6'-4" with Y	6'-4" with Y
12'-6" to 14'-0"		3'-2" with Y	3'-2" with Y	4'-2" with Y

Ha = ACTUAL SIGN HEIGHT
 He = EFFECTIVE SIGN HEIGHT
 BRACKET SIZE: Xs = 3 1/2" x 2 1/2" x 5/16" - L @ 6.1 LB. STEEL } 9.12, 10.48, 11.08,
 Ys = 4" x 3 1/8" x 1/4" - Z @ 8.2 LB. STEEL } 12.24, 14.5 & 15.8
 Xa = 3" x 2 1/16" x 1/4" - Z @ 2.33 LB. ALUM. } 7.2 Thru 7.6
 Ya = 4" x 2 3/32" x 3/16" - I @ 2.64 LB. ALUM. }

WHEN MAX. ALLOWABLE SPACING IS LESS THAN ACTUAL FIXTURE LENGTHS, So, ADDITIONAL STANDARD BRACKETS MUST BE FURNISHED, EQUAL IN HEIGHT TO "Ha".

SUPPORTS 7.2 THROUGH 7.6 SHALL HAVE AN ALUMINUM FIXTURE ARM, 4" x 3" x 1/4" ANGLE. SEE DETAIL B. BOLTS AND ACCESSORIES SHALL BE STAINLESS STEEL.

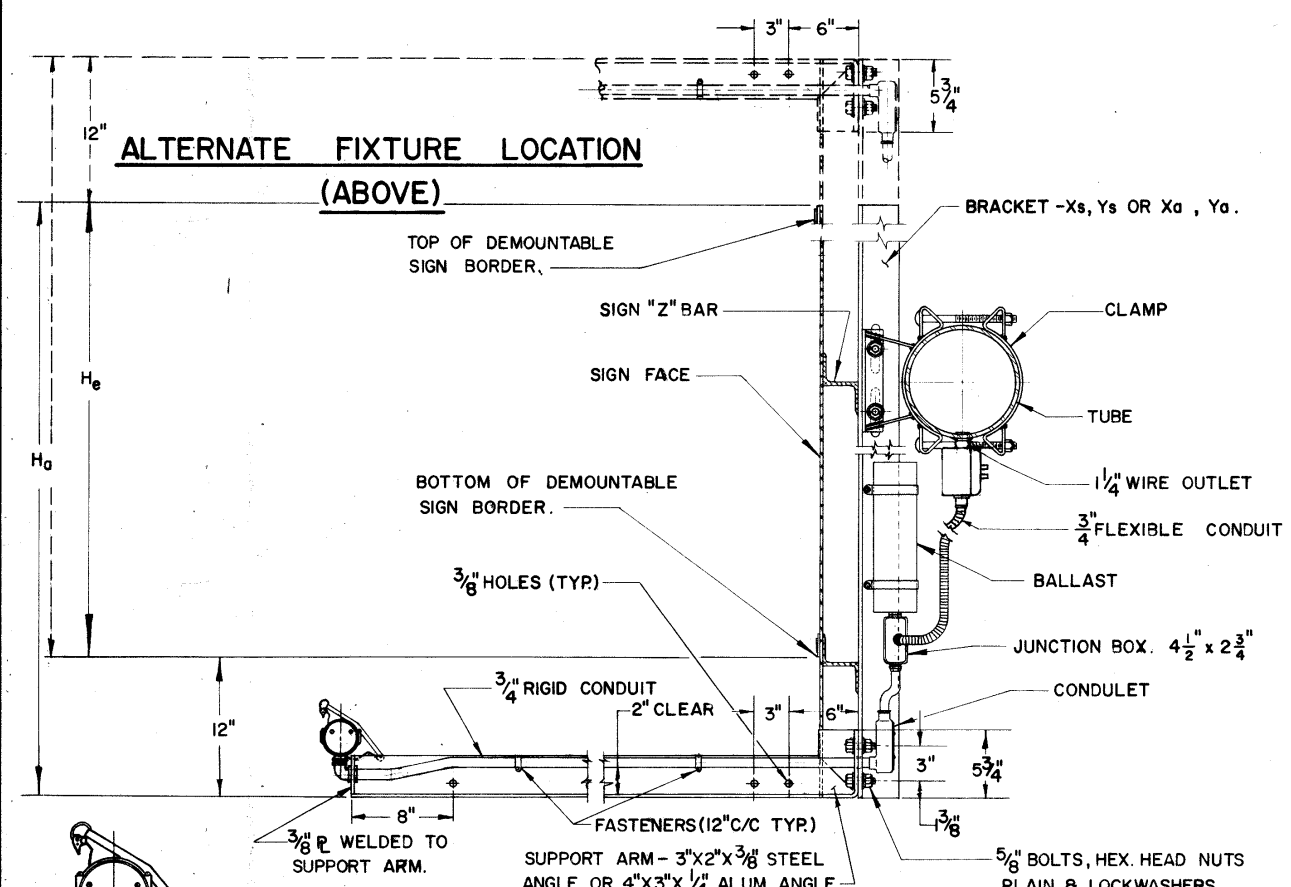
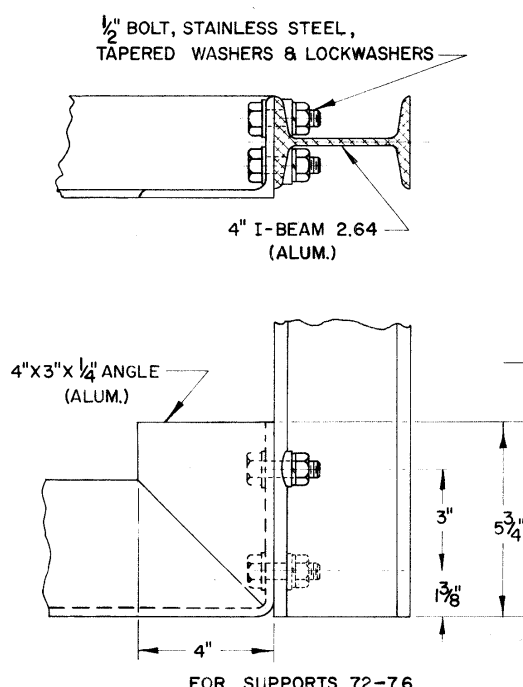


TABLE III

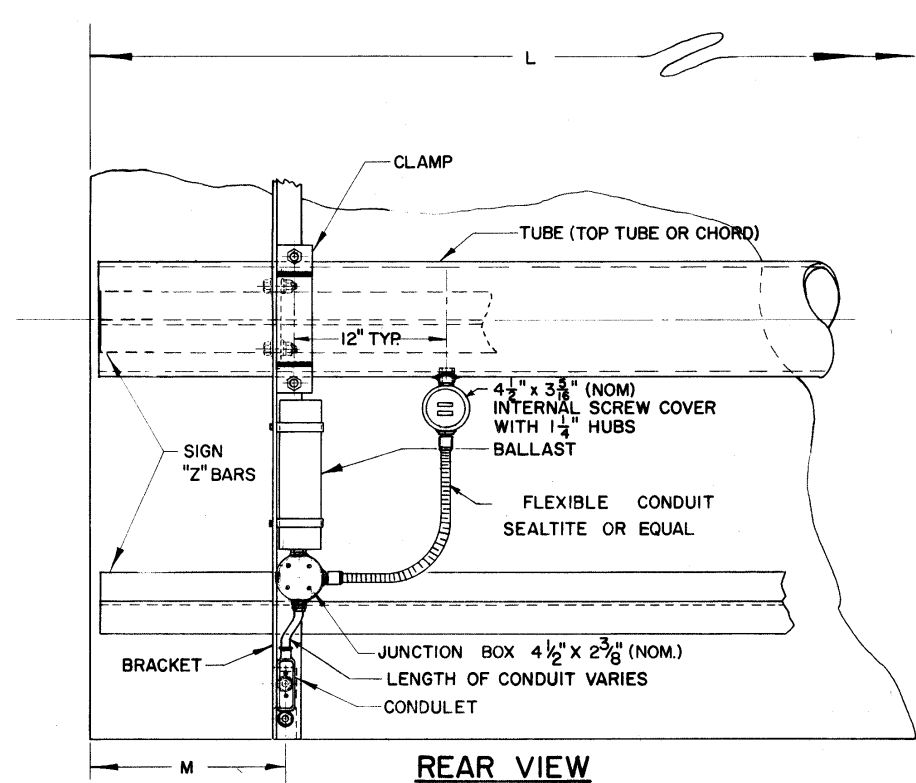
L	K
6'-0"	7 1/8"
7'-0"	1 1/16"
12'-0"	9 3/8"
13'-0"	3 3/8"

ALTERNATE FIXTURE CONNECTIONS FOR SIGN 6', 7', 12' & 13' IN LENGTH.

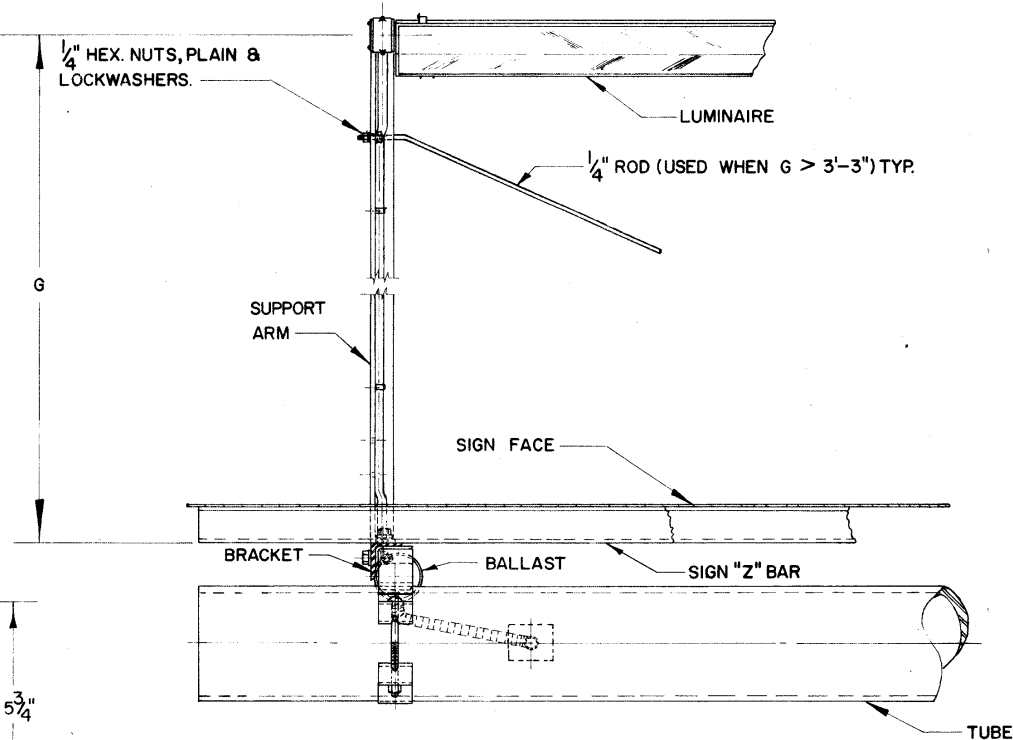
DETAIL A.



DETAIL B.



REAR VIEW



TOP VIEW

FABRICATION - ALL STRUCTURAL COMPONENTS SHOWN ON THIS SHEET SHALL CONFORM TO SUPPLEMENT SPECIFICATIONS I-129.
MATERIALS - THE MATERIALS USED IN THE COMPONENTS SHOWN ON THIS SHEET SHALL BE IN CONFORMANCE WITH THE MATERIALS USED IN THE SIGN SUPPORT.

BUREAU OF TRAFFIC
 OHIO DEPARTMENT OF HIGHWAYS

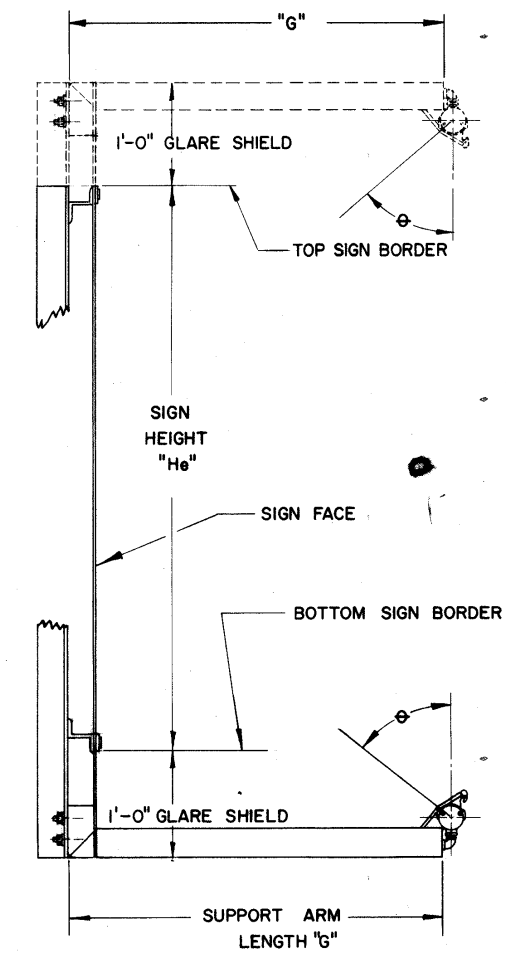
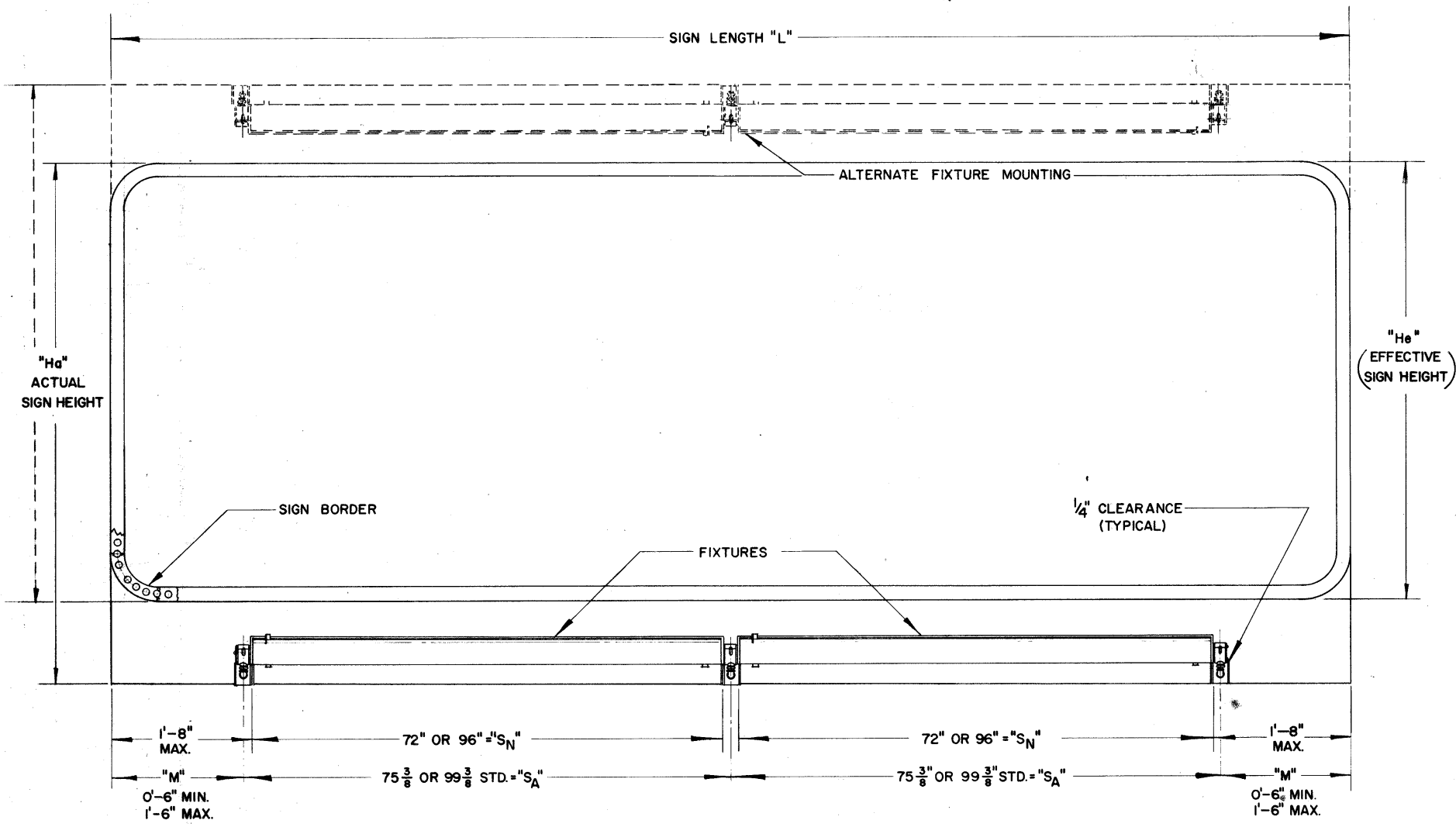
STRUCTURAL DETAILS FOR EXTERNALLY ILLUMINATED SIGNS

APPROVED *Jack C. Fisher*
 ENGINEER OF TRAFFIC

DATE 10-5-55
 5-5-55
 10-25-55

CUY. 71-18.54
CUY. 90-13.81

SIGN LIGHTING NOTES



SIGN ILLUMINATION
SIGN ILLUMINATION SHALL BE BY ATTACHED FLUORESCENT FIXTURES AS SHOWN ON ILLUMINATED SIGN DETAIL SHEETS.

LAMPS
LAMPS SHALL BE TYPE F72 OR F96-T12/CW/HO AS MANUFACTURED BY WESTINGHOUSE, GENERAL ELECTRIC OR APPROVED EQUAL FOR SIGNS TO A MAXIMUM HEIGHT OF 6'-6". LAMP TYPE SHALL BE F72 OR F96-T12/CW/SHO AS MANUFACTURED BY WESTINGHOUSE, F72 OR F96-P817/CW AS MANUFACTURED BY GENERAL ELECTRIC, OR APPROVED EQUAL FOR SIGNS THAT ARE 7'-0" OR GREATER IN HEIGHT.

LAMP FIXTURES
LIGHTING FIXTURES SHALL BE CONSTRUCTED OF CORROSION RESISTANT MATERIALS OR WITH HIGH QUALITY CORROSION RESISTANT FINISH. ALL FIXTURES SHALL BE SPECIFICALLY DESIGNED FOR OUTDOOR SIGN LIGHTING SERVICE. MAJOR COMPONENTS SHALL INCLUDE WEATHERPROOF CAST ALUMINUM MOUNTING HUBS DESIGNED TO SECURELY LOCK THE FIXTURES AT ANY ANGLE THROUGH 360 DEGREES. INDICATORS IN 10 DEGREE INCREMENTS SHALL BE STAMPED OR CAST INTO THE HUB TO FACILITATE PROPER AIMING OF THE FIXTURE. FINAL ADJUSTMENT OF FIXTURE SHALL BE DONE AT NIGHT UNDER THE PROJECT ENGINEER'S DIRECTION.

THE BODY DESIGN OF THE FIXTURE SHALL PROVIDE AN ASYMMETRIC SPECULAR ALZAK REFLECTOR TO GIVE A HIGH LEVEL OF UNIFORM ILLUMINATION AND SHALL PROVIDE A WIREWAY FROM END TO END. WHEN ADJACENT FIXTURES ARE WIRED TOGETHER THROUGH THE WIREWAY, WIRE BETWEEN FIXTURES SHALL BE ENTIRELY ENCLOSED.

EXTERIOR FINISH OF THE FIXTURE BODY SHALL BE INTERSTATE GREEN COLOR, HEAT RESISTANT BAKED ENAMEL SUCH AS UNIVERSAL PAINT AND VARNISH INC. # 8950 OR EQUIVALENT BY MIDWESTERN COLOR WORKS OR APPROVED EQUAL. REFLECTOR, LAMP AND SOCKETS SHALL BE PROTECTED BY A HINGED DOOR OF CLEAR ACRYLIC PLASTIC WITH ALUMINUM OR STAINLESS STEEL FRAME AND NEOPRENE GASKETING.

BALLASTS
BALLASTS FOR FIXTURES SHALL BE WEATHER-PROOF OUTDOOR TYPE FOR A 120 VOLT 60 CYCLE SYSTEM AND SHALL PROVIDE LAMP STARTING AT AN AMBIENT TEMPERATURE OF -20°F. BALLASTS SHALL BE MOUNTED ON SIGN BRACKET ONLY. WIRING SHALL BE ACCOMPLISHED IN SUCH A MANNER THAT THE SIGN MAY BE REMOVED WITHOUT DISTURBING THE ELECTRICAL WIRING.

EFFECTIVE SIGN HEIGHT "H"	SUPPORT ARM LENGTH "G"	APPROX. AIMING ANGLE ϕ
3'-0" to 5'-0"	2'-9"	25°
5'-0" to 6'-6"	3'-3"	25°
7'-0" to 10'-0"	4'-3"	17°
10'-6" to 13'-0"	5'-9"	23°

"L" SIGN LENGTH	NO. OF FIXTURES		He=3'-0" to 6'-6" LAMP= T12/cw/ho			He=7'-0" to 13'-0" LAMP= T12/cw/sho		
	72	96	BALLAST		WATTAGE PER SIGN	BALLAST		WATTAGE PER SIGN
			NO.	TYPE		NO.	TYPE	
6'-0" to 7'-0"	1		1	A	190	1	C	250
8'-0" to 9'-0"	1		1	A	190	1	C	250
10'-0" to 11'-0"		1	1	A	190	1	C	250
12'-0" to 13'-0"	2		1	B	250	1	D	425
14'-0" to 15'-0"	2		1	B	250	1	D	425
16'-0" to 17'-0"	1	1	1	B	250	1	D	425
18'-0" to 19'-0"		2	1	B	250	1	D	425
20'-0" to 21'-0"	3		2	A & B	440	2	C & D	675
22'-0" to 23'-0"	2	1	2	A & B	440	2	C & D	675
24'-0" to 25'-0"	1	2	2	A & B	440	2	C & D	675
26'-0" to 27'-0"		3	2	A & B	440	2	C & D	675

BALLASTS

TYPE	MANUFACTURERS		WATTAGE
	G.E.	JEFFERSON	
A	GG 3583	257-151	190
B	GG 3535	257-171	250
C	GG 3585	257-231	250
D	GG 3588	257-181	425

BALLASTS SHALL BE GENERAL ELECTRIC, JEFFERSON AS SPECIFIED ABOVE OR EQUAL.

BUREAU OF TRAFFIC OHIO DEPARTMENT OF HIGHWAYS		DATE 10-31-63 5-6-64 10-29-64
ELECTRICAL DETAILS FOR EXTERNALLY ILLUMINATED SIGNS	EI-2	
APPROVED <i>Jed C. Taylor</i> ENGINEER OF TRAFFIC		

MEDINA-CLARK INTERCHANGE

CUY. 71-18.54

NOTES

CUY. 90-13.81

GENERAL

DETAILS OF THIS SHEET SHALL APPLY TO EACH OVERHEAD SIGN STRUCTURE TO SUPPORT EXTERNALLY ILLUMINATED SIGNS.

SERVICE

ELECTRIC SERVICE SHALL ENTER THROUGH A 2" GALVANIZED RIGID STEEL CONDUIT INSTALLED IN STRUCTURE FOUNDATION AS PER DETAIL. SIGN SERVICE OR CIRCUITRY SHALL BE CONTROLLED AS REQUIRED BY THE SYSTEM DESIGN AT THE PRIMARY SOURCE.

SERVICE CONDUCTORS SHALL BE THE SIZE AND TYPE AS SPECIFIED.

COMBINATION SWITCH AND TRANSFORMER

(TYPE Y OR Z ENCLOSURE REQUIRED AS PER SCHEDULE ON THIS SHEET)

THIS COMBINATION SHALL BE A 30 OR 60 AMPERE 600 VOLT SWITCH WITH A .25 TO 3.0 KVA TRANSFORMER. THE COMBINATION AND ENCLOSURE SHALL BE AS SQUARE D CLASS 9421, COLUMBUS ELECTRIC WORKS CLASS 101, PANALS INCORPORATED-CLASS 9400, OR APPROVED EQUAL.

TRANSFORMER

THE TRANSFORMER SHALL BE DRY TYPE SINGLE FACE 240/480 VOLT PRIMARY 120/240 VOLT SECONDARY, THE TYPE AND CAPACITY AS SPECIFIED IN DETAILED SCHEDULE ON THIS SHEET.

ENCLOSURE

THE ENCLOSURE SHALL BE NEMA #4 WATER TIGHT .063 GAGE STAINLESS STEEL ASTA 302-303. A DISCONNECT HANDLE SHALL BE FLANGE MOUNTED AND CAPABLE OF BEING LOCKED IN EITHER POSITION. THE ENCLOSURE SHALL BE EQUIPPED WITH A DOOR LOCKING MECHANISM WITH A DEFEATER THAT NECESSITATES TWO HANDS TO OPERATE MECHANISM WITH THE SWITCH IN OFF POSITION. SPACE FOR A 2" INSULATED CHASE NIPPLE SHALL BE PROVIDED APPROXIMATELY 2 1/4" ABOVE THE CENTER LINE OF THE LOWER MOUNTING SLOT. THIS ENCLOSURE AND STRUCTURE SHALL BE FIELD DRILLED AND TAPPED FOR THE REQUIRED NIPPLE AS SHOWN ON THE DETAIL ON THIS SHEET.

THIS ENCLOSURE SHALL BE FLANGE MOUNTED ON BRACKETS WITH 5/8"-18x3/4" HEX HEAD CADMIUM PLATED MACHINE BOLTS. ENCLOSURES SHALL BE TYPE Y OR Z AS SPECIFIED AND DIMENSIONED ON THIS SHEET.

ENCLOSURE MOUNTING BRACKET

THE ENCLOSURE MOUNTING BRACKET SHALL BE FABRICATED THEN GALVANIZED BEFORE ASSEMBLY. THE BRACKET SHALL BE FIELD MOUNTED WITH 5/8" HEX HEAD SELF TAPPING CADMIUM PLATED SCREWS. THE SIGN SUPPORT SHALL BE FIELD DRILLED, AS PER DETAIL.

WIRE AND CABLE

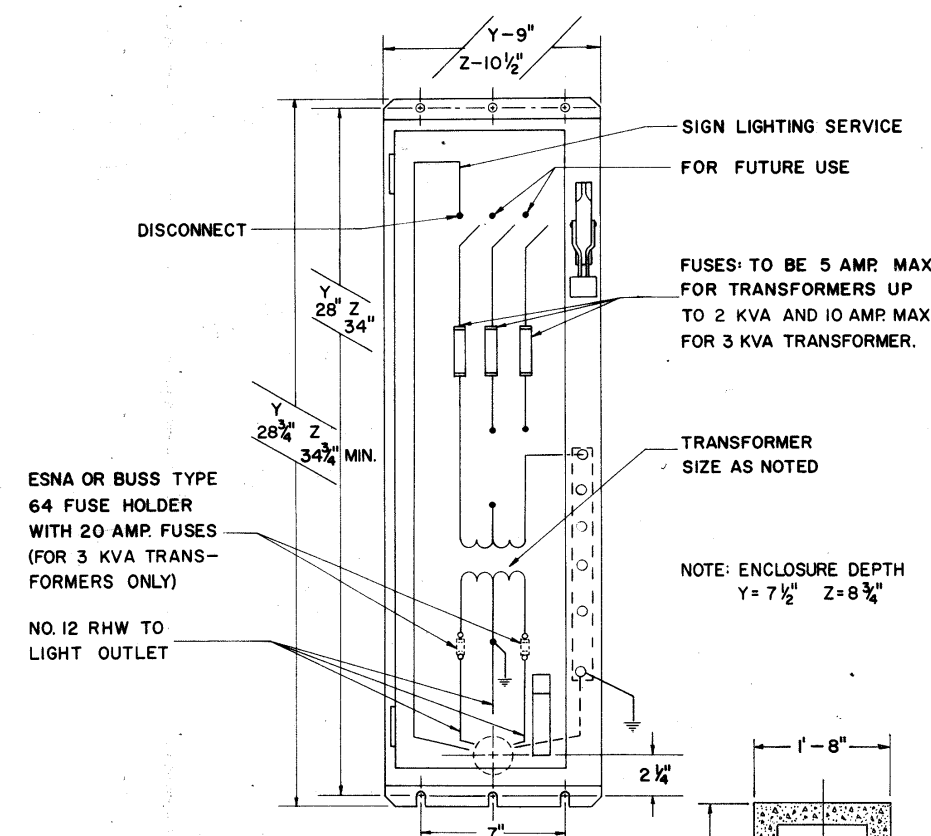
ALL WIRE AND CABLE UP TO AND INCLUDING #4 SHALL COMPLY WITH FAA TYPE A SPECIFICATIONS. #2 OR LARGER WIRE OR CABLE SHALL BE G.E. 58006 OR ANACONDA AP-10711, OR EQUAL. ALL WIRE AND CABLE SHALL BE 600 VOLT.

GROUNDING

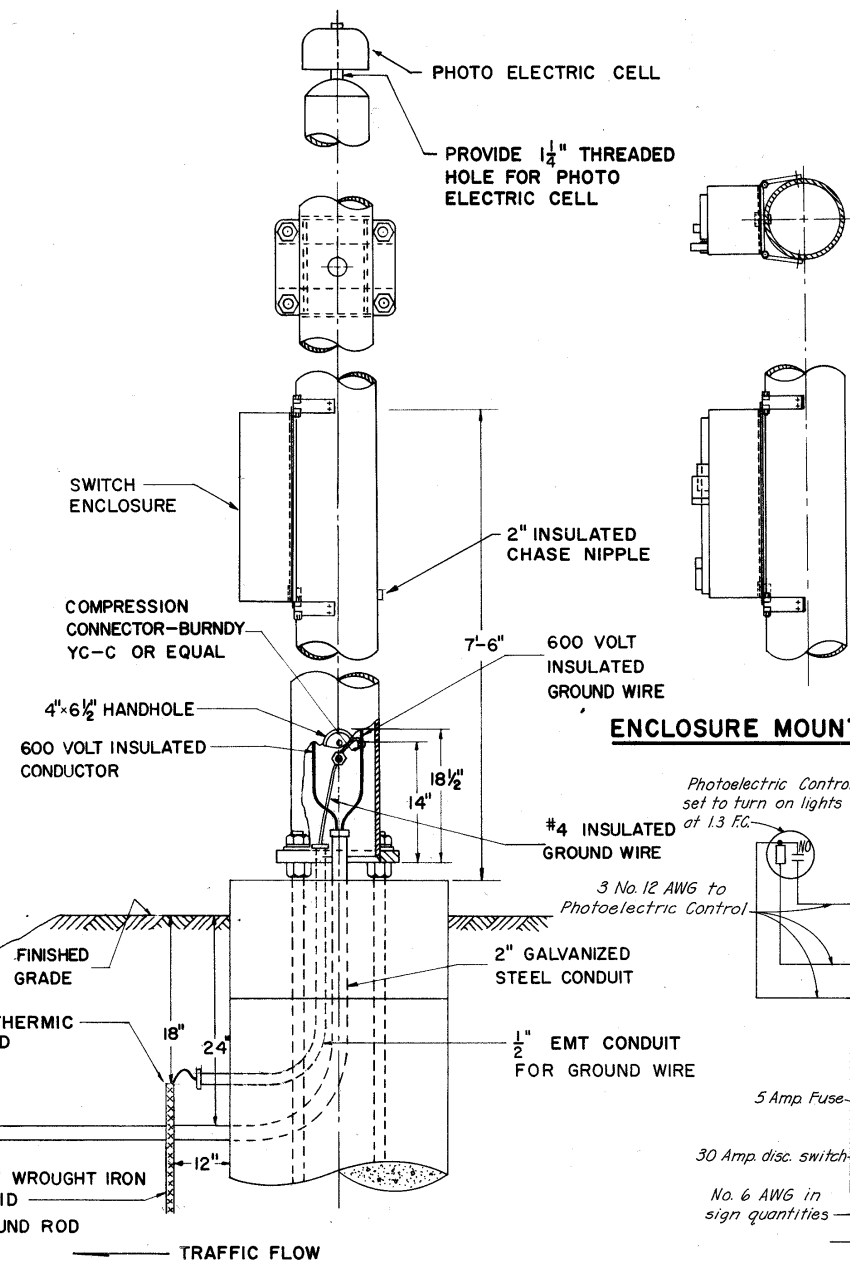
EACH SIGN SUPPORT OR STRUCTURE SHALL BE GROUNDED WITH A #4 RUBBER INSULATION AND NEOPRENE JACKETED CONDUCTOR. THE GROUNDING CONDUCTOR SHALL BE CONNECTED TO THE SWITCH THEN TO THE COMPRESSION CONNECTOR IN THE SIGN SUPPORT THEN TO A 1"x10" GALVANIZED WROUGHT IRON GROUND ROD. GROUND CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO GROUND ROD AND THEN TAPED WITH PLASTIC ELECTRICAL TAPE AT EACH EXPOSED PORTION OF CONDUCTOR. THE WELDED CONNECTION AND TAPED PORTION SHALL BE PAINTED 2 COATS OF GYPTAL INSULATING ENAMEL.

PHOTOELECTRIC CELL

The Photoelectric Controller shall be tubeless type with cadmium sulfide photocell, and shall include pole-top mounting adaptor, sponge rubber gasket, weatherproof acrylic housing, time delay, fail safe, lightning arrester, and shall be equal to Fisher-Pierce Series 6600 A, or equivalent by G.E., Ripley or Tork. The Contractor may mount photocells on finials provided with sign support poles by adapting with base housing assemblies in 1 1/2" diameter holes.

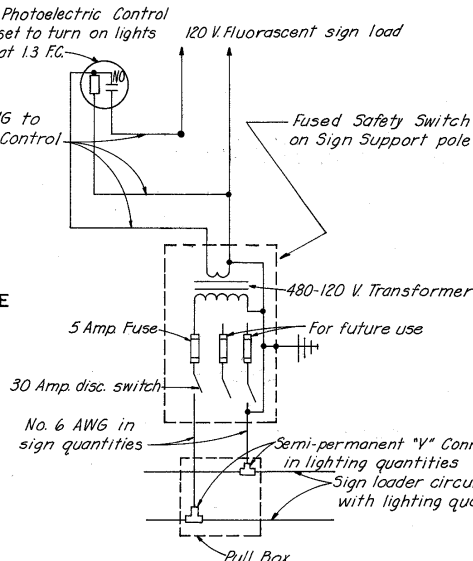
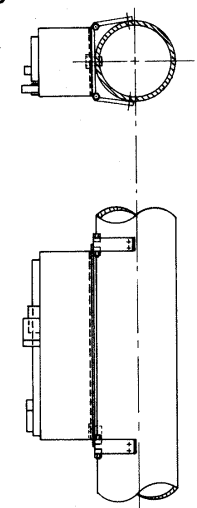


TYPICAL ENCLOSURE DETAIL
480 VOLT SIGN LIGHTING SERVICE

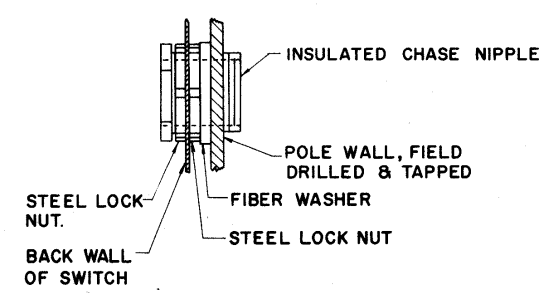


SIGN SUPPORT DETAIL FOR ILLUMINATED SIGNS

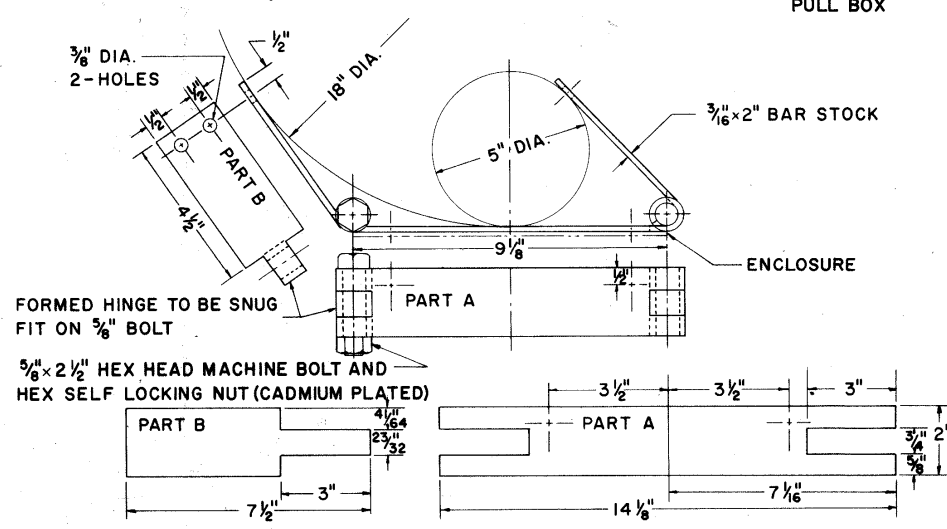
ENCLOSURE MOUNTING DETAIL



SERVICE ARRANGEMENT AT SIGNS



CHASE NIPPLE ASSEMBLY DETAIL



ENCLOSURE MOUNTING BRACKET

TRANSFORMERS

TYPE	MANUFACTURERS	OUTPUT K.V.A.	SWITCH TRANSFORMER ENCLOSURE	
I	G.E. 9T51Y7	244-241	.25	Y
II	JEFFERSON 244-251	.50	Y	
III	244-261	.75	Y	
IV	244-401	1.00	Z	
V	244-411	1.50	Z	
VI	244-421	2.00	Z	
VII	244-431	3.00	Z	

Rev. By H.N.T. & B 12-29-64

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

ELECTRICAL SIGN SERVICE DETAILS

ES-3A

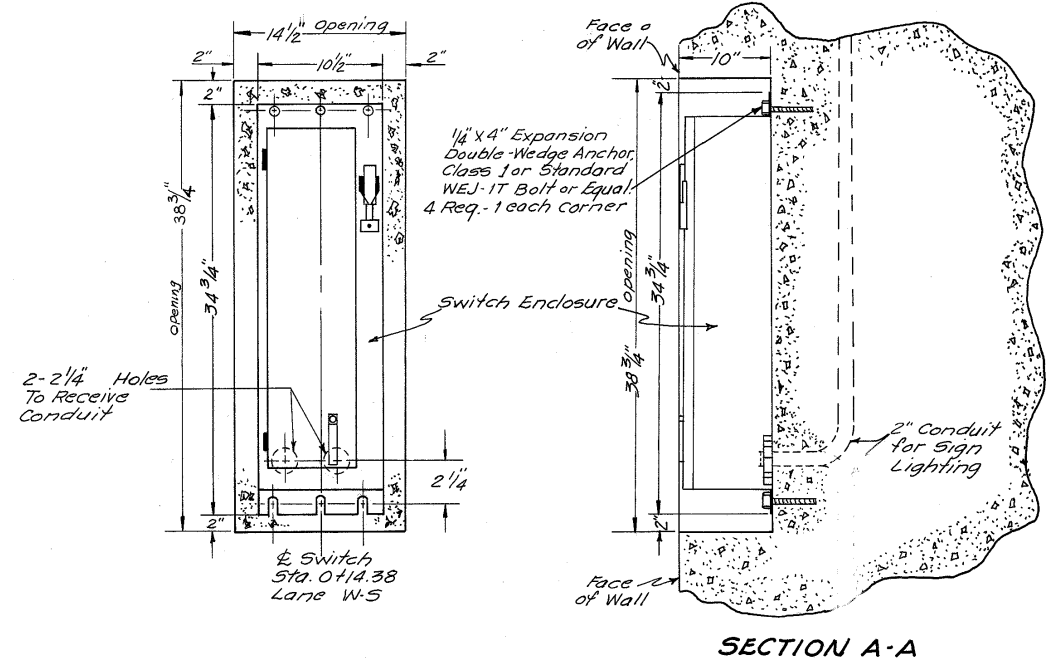
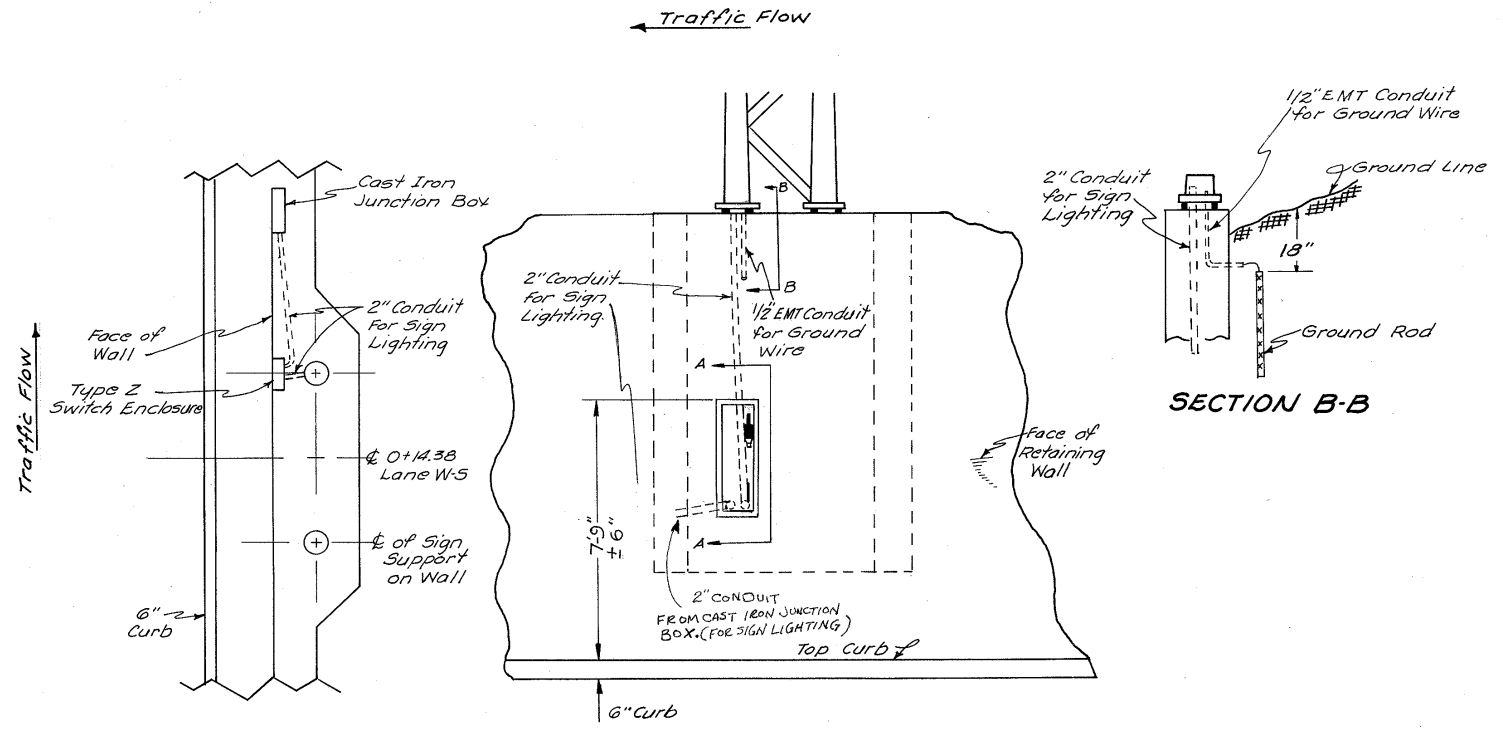
DATE 6-18-64

APPROVED _____
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

189A
478

CUY-71-18.54
CUY-90-13.81



DETAILS FOR MOUNTING TYPE Z ENCLOSURE IN RETAINING WALL

MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

NOTES

GENERAL

PROTECTIVE GUARD RAIL FOR OVERHEAD SIGN STRUCTURES SHALL CONFORM TO SEC. I-15, FOR STEEL BEAM TYPE (DEEP).

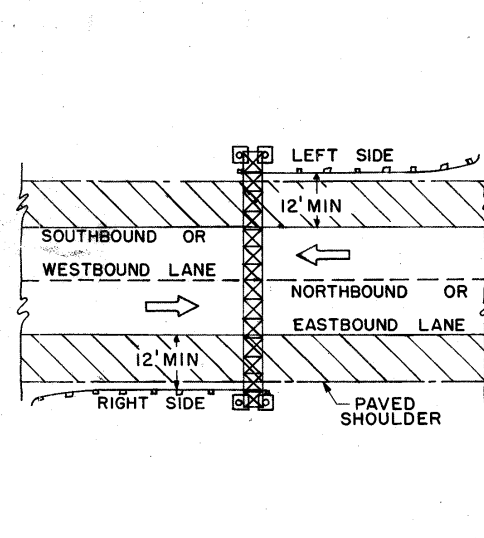
AT LOCATIONS WHERE GUARD RAIL IS IN PLACE, THE SIGN SUPPORT FOUNDATIONS SHALL BE ERECTED BEHIND EXISTING GUARD RAIL.

A MINIMUM OF SIX GUARD RAIL POSTS IS REQUIRED IN ADVANCE OF THE SIGN SUPPORT.

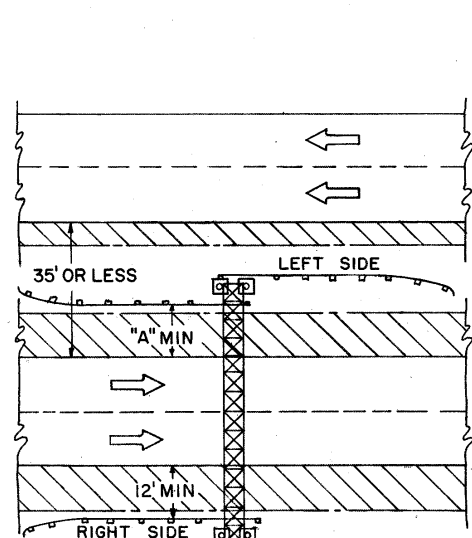
THE LENGTH OF GUARD RAIL DEPENDS ON THE POST SPACING. (EXAMPLE: FOR A SINGLE LINE OF GUARD RAIL IN ADVANCE OF A SIGN SUPPORT, THE MINIMUM LENGTH IS 50 FT. FOR A POST SPACING OF 6'-3", 75 FT. FOR A POST SPACING OF 12'-6".)

WHERE PROPOSED GUARD RAIL FLARES ARE CONSTRUCTED OF RAIL ELEMENTS WHICH HAVE NOT BEEN FABRICATED EXACTLY TO FIT THE CURVATURE SHOWN ON THE PLANS, THE TWO END POSTS OF EACH FLARED SECTION SHALL BE ENCASED IN A MINIMUM 4" THICKNESS OF CLASS "E" CONCRETE FOR THE FULL DEPTH OF THE POST BELOW THE GROUND LINE. PAYMENT FOR ENCASEMENT, IF REQUIRED, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE GUARD RAIL.

NOTE: SEE DETAILS SHEET 177 FOR GUARD RAIL PROTECTION OF SIGN NO. 56.

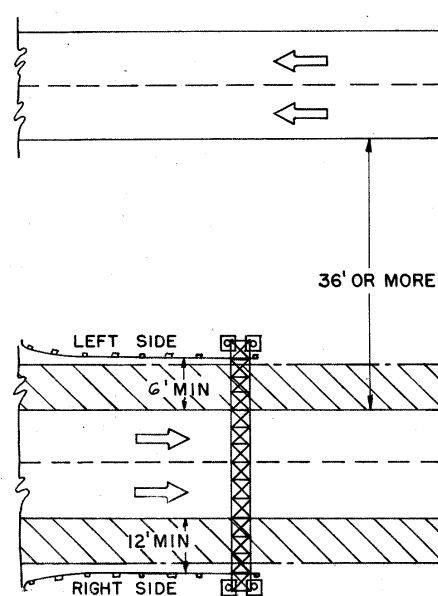


MULTIPLE LANE UNDIVIDED



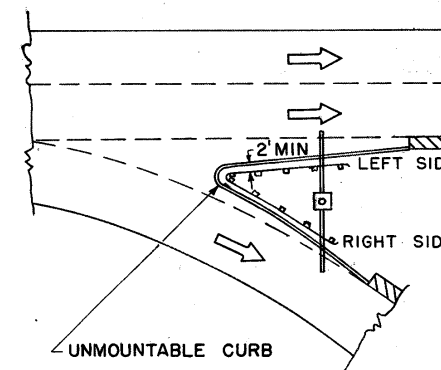
DIM. "A" TO GUARD RAIL SHALL BE EITHER 10' MIN. FROM EDGE OF PAVEMENT OR 2' MIN. FROM THE FACE OF CURB UNLESS OTHERWISE SPECIFIED.

FOUR LANE DIVIDED

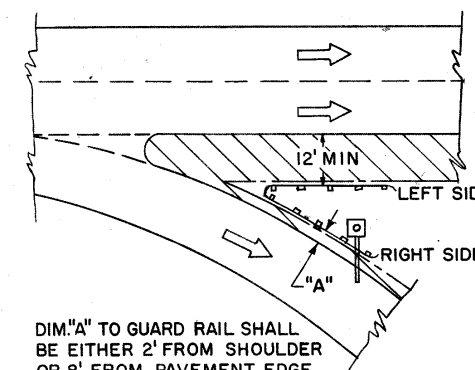


BIFURCATION

(NOT APPLICABLE)



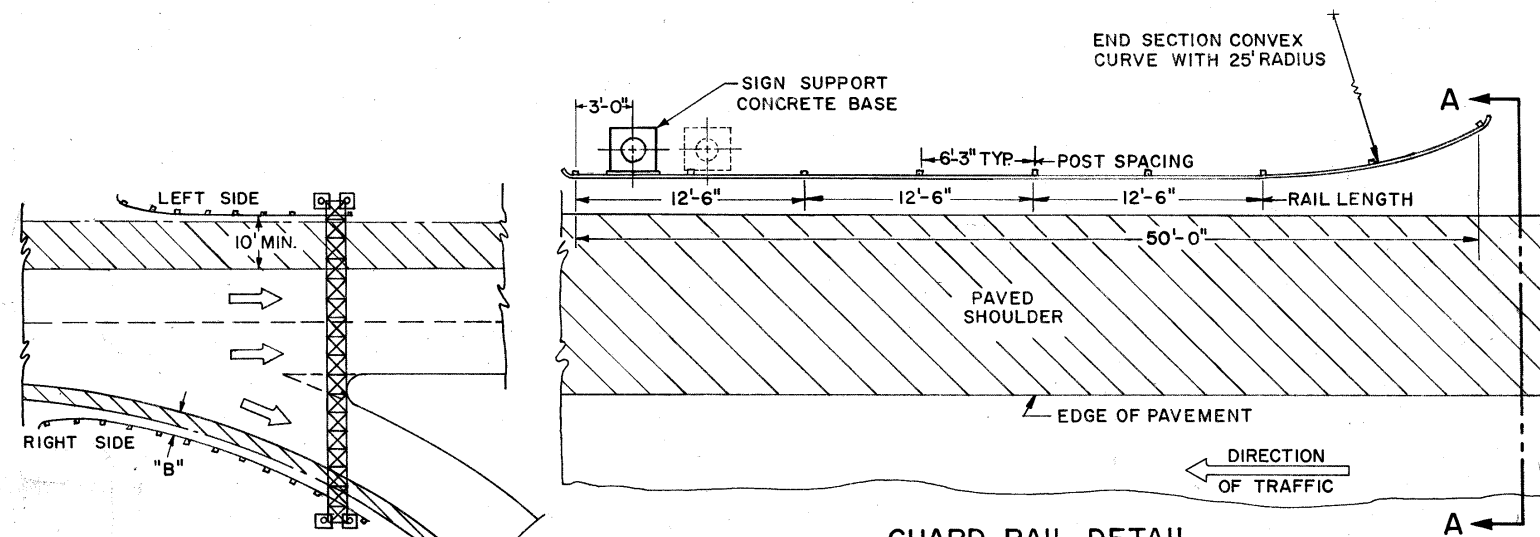
(CURB SECTION)



(SHOULDER SECTION)

DIM. "A" TO GUARD RAIL SHALL BE EITHER 2' FROM SHOULDER OR 8' FROM PAVEMENT EDGE, WHICHEVER DISTANCE IS GREATER.

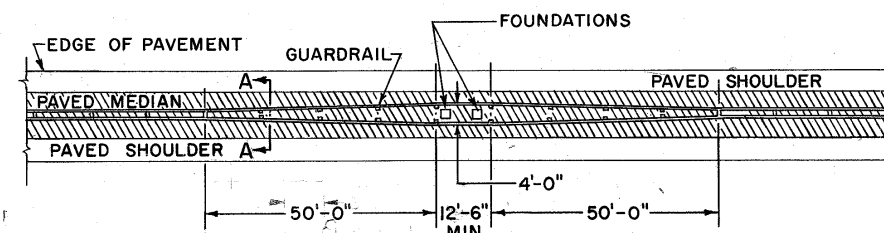
MEDIAN FLARED GUARDRAIL



GUARD RAIL DETAIL

DIM. "B" TO GUARD RAIL SHALL BE EITHER 2' FROM SHOULDER OR 8' FROM PAVEMENT EDGE, WHICHEVER DISTANCE IS GREATER.

(ROADWAY SPAN)

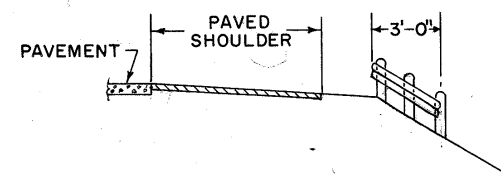


NOTE: TYPICAL TREATMENT OF FIRST POST IN FLARED SECTION.

SECTION A-A

DESIGN

THE DESIGN OF GUARD RAIL PROTECTION FOR OVERHEAD SIGN SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.



SECTION A-A

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

GUARD RAIL

I-129
I-15

DATE
4-8-60
6-20-60
1-2-62
4-18-62
3-3-65

APPROVED *Robert E. Comer*
ENGINEER OF TRAFFIC

GUARD RAIL FOR OVERHEAD SIGN SUPPORTS

LIGHTING NOTES

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

GENERAL

All references herein to the "Director" apply to the Director of Highways, Ohio Department of Highways, Section G-1.03.

These notes supplement the State of Ohio's Construction and Material Specifications dated January 1, 1963, for materials used and for the installation of roadway, bridge and underpass lighting, feeders to overhead signs, and underground provisions for police call and surveillance systems for the interchange portion of the Cuyahoga County, City of Cleveland Median Freeway, I-71 with the Northwest Freeway I-90 and The Clark Freeway I-290. The cable installations and provisions for cables shall be underdeck wired in galvanized or corrosion resisting rigid metal conduits as required, under pavement wired in corrosion resisting rigid metal conduits, and underground wired either in plastic ducts or corrosion resisting rigid metal conduits as indicated and required. Mercury street-lighting luminaires with 400-watt clear lamps on lanes, freeway and street bridges, and 250-watt clear lamps in underpasses shall be provided. These notes shall include the complete installation of all underground feeder circuits to illuminated signs, lighting units both on and off structures, all mercury underpass lighting units, and underground provisions for police call boxes and traffic surveillance systems on roadways where indicated. The work to be performed consists of furnishing all labor, supplies, equipment, materials, services, plant and transportation, and performing all operations necessary for the installation of all lighting and communications work in strict accordance with these notes, the Standard Specifications, proposal, supplemental specifications, instructions, notices, and drawings, subject to the terms and conditions of the contract, and including such instructions as may be furnished by the Director during prosecution of the work in interpretation of said drawings and specifications. These notes, schedules and the accompanying drawings are intended to provide for all material and labor required to furnish and install the complete roadway lighting, signing circuits, and provisions for the police call and traffic surveillance systems.

The Contractor shall furnish and install all lighting equipment, including all lamps, ballasts, luminaires, standards, call box foundation bases, base castings, wiring, luminaire brackets, anchor bolts, foundation bases, pull boxes, junction boxes, mounts, conduit, ducts, cable, grounds, tests, connectors, fused disconnects, lighting transformer and panel stations, sign service panels, and all incidentals necessary for the complete systems, installed, adjusted, regulated, inspected, tested, connected for operation, energized, operating and accepted. Materials not specifically covered shall be of the first quality and bear the Underwriters Laboratories' seal of approval. All materials, equipment and devices shall be carefully installed, adjusted and balanced by the Contractor to the complete satisfaction of the Director, the Cleveland Division of Light and Power, and the Cleveland Fire Department.

Insofar as practicable, all major items of electrical equipment, such as luminaires, cables, standards, ducts, conduits, transformers, panels, etc., installed under the contract, shall be the same type and consist of products of the same manufacturer in order to secure uniformity, single responsibility, and most satisfactory service. Unless specifically noted otherwise, all lighting equipment shall be equal to the latest and best grade of that type of equipment as manufactured by the General Electric Company, Line Material, Westinghouse Electric Corporation, or other approved manufacturers. Throughout the plans, the use of trade names for electrical and lighting equipment is meant to be descriptive only. Comparable products of other electrical firms are acceptable if accessories and main members are comparable with one another and serve the intended purpose. Subject to the approval of the Director, equivalent materials and equipment will be allowed.

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. The responsibility for the correct and satisfactory installation and operation of all materials and equipment required herein shall rest with the Contractor. Before any equipment is ordered or installation of the lighting system is begun, a complete schedule of materials and equipment proposed for installation shall be submitted for the approval of the Director and the Cleveland Division of Light and Power. The schedule shall initially include eight (8) for City) sets of catalog cuts, diagrams, drawings, brochures, or other such descriptive data as may be required by the Director. In the event any items of material or equipment contained in the schedule fail to comply with the specification requirements, such items will be rejected. A layout diagram showing in general the arrangement and location of the cables, conduits, and equipment is shown. This shall be considered only as illustrative, and subject to the approval of the Director, the Contractor shall modify it as necessary for complete and proper construction and operation. The locations of the branches, conduits, grounds, call box bases, pull boxes, junction boxes, cables, ducts, and roadway lighting units shown on the plans are diagrammatic only, and may be subject to slight shifting as the Director may require to conform to local conditions, subject to the maintenance of the lighting intensity indicated on the plans. The contractor will not be required to submit "As-Built" drawings of the lighting layout portion of the work. The design layout drawings will serve as working "As-Built" drawings. However, the Contractor shall submit to the Director and to the City of Cleveland Division of Light and Power complete sets of corrected prints marked up in colored pencil to show all deviations from the plans. The Director's approval shall not relieve the Contractor responsibility of furnishing and installing all items necessary for the proper functioning, as required by Section S-25.05.

All electrical materials, construction, and installation shall be in accordance with the National Electrical Code. The lighting installations, when completed, shall comply with the current applicable provisions of the I.E.E.E. Standards and Practices, American Standards, and National Electric Manufacturer's Association Standards, and shall conform to all local and special laws, codes, or ordinances of the Federal, State and Municipal Departments, commissions, etc., 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 Director, and the Contractor shall make the necessary corrections in the installation as he may be directed.

In order to prevent deterioration due to corrosion, 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. Cap screws, set screws, and tap bolts shall be of stainless steel, brass or bronze. Hot dip galvanizing per A.S.T.M. Specification A-133 will be considered such approved treatment for all ferrous hardware.

STANDARDS

The Contractor shall provide a luminaire standard support for each roadway, deck, and underdeck lighting unit. Each standard shall be installed complete with a tapered, steel pole with cast steel anchor base, welds, steel truss-type bracket arm where indicated, pole and bracket cable, grounding lug, handhole, handhole cover, J-hook, and a final as required. The Contractor shall provide all poles and bracket arms for mounting luminaires at 35'-0" or 17'-0" above roadway. Each roadway and deck lighting unit shall comprise a 32-foot or 29-foot-6-inch steel pole respectively, with a 10-foot, 15-foot or 18-foot steel bracket adequate for 400-watt integral ballast mercury type luminaire. Poles of custom lengths shall be provided as indicated for wall-mounted units. Light standards shall conform as nearly as possible to the Specifications and drawings of the City of Cleveland and to the notes, herein, and shall be similar to the designs referenced as to general design and finish, height, base, mast arm, cross-section dimensions, and to general appearance. Standards shall be fabricated in a continuous round, true taper of approximately 0.14 inch per foot and shall be of the dimension indicated. Standards shall be made of steel. Metal poles shall be formed from one length of sheet steel and welded with only one longitudinal, automatically electrically welded joint and shall have no intermediate transverse joints or welds. The shaft material shall be hot-rolled basic open hearth steel not less than No. 11 or 7 manufacturer's standard gauge as indicated. After forming and welding, the tapered shaft shall be cold-rolled or worked under sufficient pressure to flatten out the weld (eliminating need for finish grinding) to increase the elastic limit of the metal in the completed shaft (providing a minimum yield strength of 48,000 psi), and to produce a true tapered tube without flat spots and a true round cross section throughout the length of the shaft. The poles, brackets and bases shall be galvanized inside and outside after fabrication in conformance with Section M-7.4(d). After erection minor scratches shall be given two coats of zinc rich base paint. Apply second coat after first coat has completely dried. Standards with major damage to galvanizing will be rejected. The poles shall contain all modifications as required and called for on the plans. All hardware shall be bronze, galvanized or stainless steel.

Light poles manufactured by means other than that specified above shall be made of not less than No. 11 or No. 7 manufacturer's standard gauge steel including the weld area with a minimum yield strength of 48,000 psi, meet the permanent set and deflection values tabulated herein and otherwise meet the requirements of these specifications. All such poles shall be shot blasted to remove scale and weld slag preparatory to galvanizing.

Light poles shall be capable of withstanding loading (applied 18" from the top) as indicated in the following, without exceeding the permanent set and deflection (measured 18" from top of pole).

Pole Size	Arm	B.C.	Bolt Proj'n	Elastic Defl. Rate In. per 100 lbs.	At 2/3 Yield Load		At Yield Load			
					Total Perm. Defl.	Set	Total Perm. Defl.	Set		
9.5x5.02 32'-7 Ga.	18'	13"	3 1/2"	1.61	1007	16.70	0.5	1512	27.30	2.74
9.0x4.52x 32'-11 Ga.	10'	12.5"	3"	2.52	605	18.17	0.5	908	29.66	3.15
9.0x4.87x 29.5'-11 Ga.	15'	12.5"	3"	2.16	659	14.73	0.5	989	24.00	2.64
8.0x3.87x 29.5'-11 Ga.	10'	11"	2 1/2"	3.32	517	17.66	0.5	776	28.47	3.08
6.5x3.94x 18.25'-11 Ga.	*None	9.5"	2 1/2"	1.16	564	7.04	0.5	845	11.28	1.48

* Actual pole required is 6.5"x4.2" x 16.5" with 6" top tenon extension to accommodate 3.5" to 4.0" underpass luminaire slip fitter.

Truss-type bracket arms shall be provided for standards where indicated. Brackets shall be braced, with ends for luminaires formed to accommodate 2-inch slip fitters. The inner end of each bracket arm shall be continuously welded to a fabricated steel shoe, and shall be designed that it will fit over and double bolt to a forged steel plate with wire guide lip, continuously welded to the pole. Bracket arms shall be interchangeable with those now in use on adjacent expressways. Standards shall be complete with 4" by 6" or 4" by 8" reinforced handholes. Handhole covers shall be fastened to poles by No. 35 bronze or stainless steel captive chains. The openings for lighting units off structures shall be on the field side; openings for units on structures shall be on the roadway side.

Bracket arms and their related pole attachment devices shall sustain a vertical load of 250 pounds applied within 3 inches of the luminaire end of the support without collapse or rupture or any portion of the pole assembly. The bracket arms and their related pole attachment devices shall sustain a vertical load of 100 pounds applied within 3 inches of the luminaire end of the support and with the support attached to a rigid structure. The vertical deflection shall not exceed 5/8 per cent of the support length. This includes a maximum allowance of 1/4 or 1 per cent of the support length for testing methods and permanent set. The bracket arms and their related pole attachment devices shall sustain a transverse, horizontal load of 50 pounds applied within 3 inches of the luminaire end of the support, with the support attached to a rigid structure. The horizontal deflection shall not exceed 5 per cent of the support arm length, and the pole attachment devices shall not develop any looseness within the specified loading range. This test shall be conducted with a vertical load of 30 pounds on the support. Deflection shall be defined as the total transverse displacement of longitudinal centerline of the shaft or luminaire support at the point of test load application between its initially unloaded and fully loaded position.

Roadway lighting standards shall have welded on cast steel bases. Each base shall be provided with four holes to receive the anchor bolts, and four holes for ventilation located in the body of the base directly behind the anchor bolt holes. Cast steel bases shall be one piece, and shall comply with the requirements of Section M-7.2. The base shall telescope the shaft and one continuous electric arc weld shall be on the inside of the base at the end of the shaft. The other similar weld on the outside of the top of the base. Welds shall be a minimum of 1/4 inches apart. The standards shall be of such design as to make a complete wiring raceway after the standards have been assembled and erected. The bracket arms shall be normal to the edges of the roadway, and shall not be less than 2" inside diameter standard steel pipe, ASTM-120, Schedule 40. The standards shall be equipped with a "J" hook placed inside and above the bracket mounting height, to attach a cable grip in such a manner to prevent the pole and bracket cables from hanging in the pole and bracket bushing at the point of bracket attachment to pole. The light standards shall be applied with a corrosion resistant grounding nut inside the base, plus an accompanying corrosion resistant screw (4"-13 UNC) and flat washer. Welders and welding operators shall be prequalified for Class A welding in the state of Ohio.

Payment for ground-mounted standards with 18-foot, 10-foot, or without brackets, mounted on concrete bases will be made at the Contractor's unit price for Item S-25, "Round Pole (9.5"x5.02"x32'-0")-18' Br.", "Round Pole (9.0"x4.52"x32'-0")-10' Br." or "Round Pole (6.5"x4.2"x16'-6")-15' Br." assembled in place, completed and accepted, including steel pole for 35'-0" or 17'-0" mounting, 7 ga. pole for 18-foot brackets, 18-foot, 10-foot, or without bracket as required, anchor base, pole tenon where required, grounding, handhole, handhole cover, captive chain, leaf covers, final, galvanizing, J-hook, cable grips, adjustments, ground lug, connections, modifications, and all incidentals required. Alternate bids are required for poles of other-than-round cross-sections. Payment for steel standards on structures with 15-foot or 10-foot steel bracket will be made at the Contractor unit price each for Item S-25, "Round Pole (9.0"x4.87"x29'-5")-15' Br.", "Round Pole (8.0"x3.87"x29'-6")-10' Br.", "Round Pole (9.0"x4.87"x29'-5")-15' Br." assembled in place, completed and accepted, including 29 ft.-6" or special length steel pole, 35'-0" mounting, handhole, cover, captive chain, leaf covers, final, galvanizing, J-hook, cable grips, grounding, bracket, anchor base, adjustments, ground lug, connections, modifications, and all incidentals required. Alternate bids are required for poles of other-than-round cross-sections.

LUMINAIRES

Luminaires shall be provided for all roadway, deck, and underpass lighting units. Roadway and deck luminaires shall meet the distribution pattern of Type II-M-C or III-M-C with medium length classification and cut off brightness control as defined by ASA and IES, and be located as shown on the plans. The luminaires shall be complete lighting devices, and the roadway and deck units shall be supported with light centers of 35 ft. above the pavement as indicated. Each luminaire shall consist of a cast aluminum housing, main reflector, slip fitter, seals, reflector, holding ring, automatic latch, socket, lamp, 240/480-volt integral ballast, terminal board, and wiring - all wired and assembled. Luminaires shall have a natural aluminum finish. The reflector for each luminaire shall be clear, high quality, diffusing, pressed clear glass of the Borosilicate type as Endural or Pyrex, well annealed and homogeneous, and free from imperfections and striation. It shall contain prisms pressed on the inside surface and, where necessary, on the outside surface, that are optically designed to redirect by refracting the light from the lamp and upper reflector to produce the ASA-IES type distribution curve required. The inside surface of the top section of the reflector in the driver angles of view shall contain prisms with substantially flat surfaces to be used optically in cooperation with the reflector and lamp for producing the main beam. The reflector shall be clearly embossed with designations "Street Side" and "House Side". For diffusing of the light and good appearance, a continuous pattern of adjoining diffusing flutes or configurations shall be pressed on the outside surface. The reflectors shall be so contoured and of sufficient thickness for high mechanical strength to resist malicious breakage and carefully tempered to withstand sudden changes in temperature. Lamp sockets shall be heavy-duty, and shall incorporate all the latest design features available, such as center spring loaded contacts, plated parts and locking devices. The socket positions shall be adjustable vertically and horizontally, but factory set for true Type II-M-C or III-M-C distributions from H33-1CD lamps. Enclosed luminaires shall be 400-watt size, and shall be Westinghouse OV-25, Line Material Unitstyle 400, General Electric Form M-400, or approved equal.

The Contractor shall provide ballasts for all roadway and deck lighting units. Ballasts shall be of the type suitable for mounting in the luminaires. Ballasts shall be high power factor, constant wattage or regulated output type for 400-watt lamps as indicated on the plans, shall be radio interference free, and shall be designed for parallel operation from a nominal 240/480-volt circuit, with constant performance characteristics when 480-volt circuit varies between 420 and 540 volts. Power factor shall be not less than 95 per cent. The ballast secondary regulation to the lamps shall be within 2 1/2 per cent.

All roadway and deck luminaires shall be carefully adjusted after pole erection and plumbing operations are complete. On roadway sections without grades, luminaires shall be perfectly horizontal according to the manufacturer's instructions and the design of the luminaires. All luminaires shall be horizontal to the roadway, and in addition, luminaires where on grades shall be rotated on bracket pipes so as to be normal to the surface of the roadway in the longitudinal plane. The leveling of the luminaires for uniform brightness is considered an essential feature of the installation of the roadway lighting, and no perceptible variations will be accepted.

Luminaires will be paid for at the contract unit prices paid for, "Luminaire, Type II-M-C" and "Luminaire, Type III-M-C", per each, in place, and shall include integral ballast, housing, reflector, reflector, lamp receptacle, wiring corrosion resistant fittings, latches, gaskets, terminal board, seals, leveling slip fitter, glass sleeves, and all incidentals.

UNDERPASS LIGHTS

Underpass lighting shall be provided on 16.5-foot poles off structures, on the face of pier caps, and under the bridge superstructures where indicated. The out-door weatherproof, 250-watt mercury vapor fixtures shall be installed under the decks as indicated, and connected to the lighting branch circuit cables either through light pole foundations or through conduits to the junction boxes in the bridge curbs as indicated. Units shall be complete, consisting of an optical train which includes a single piece prismatic refractor mounted in an aluminum door assembly, Type SF-2 fixture wire, an asymmetric polished aluminum reflector, an anodized aluminum visor, an integral cast guard, an integral regulated output ballast, and a cast aluminum housing. Built-in regulated output ballasts shall be designed for 240/480-volt circuit, and operate at 95 per cent or better power factor. Lamp regulation shall not exceed 1% with 13% voltage variation. The refractors shall be made of molded, thermal shock-resisting borosilicate glass. Each door assembly shall be equipped with stainless steel pressure latches, stainless steel hinges, and a safety chain. The housings shall be dust, bug, and moisture resisting with captive neoprene and double felt gasketing, and shall have rear access holes in gasketed aluminum coverplates and three gapped 1/2-inch or 1 1/4-inch conduit entries, one on each side and one on the top with conduit plugs.

SCALE: No. Scale HOWARD, NEEDLES, TAUBEN & BERGENHOFF
DATE: 12-28-64 CONSULTING ENGINEERS
CITY: CLEVELAND STATE: OHIO
PROJECT: MEDINA-CLARK INTERCHANGE

LIGHTING NOTES

LIGHTING NOTES

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81

The fixtures shall be not less than about 15 inches over-all width, with maximum height and depth about 11 inches and 8 inches respectively. Refractor inner and outer surfaces shall be covered with an array of reflecting and refracting prisms and diffusing flutes which shall be designed to provide an asymmetric light distribution. Units shall have adjustable socket positions for 60 degree or 70 degree beam positions, and shall be installed with sockets in the 60 degree low beam or the 70 degree high beam positions as indicated. The vertical maximum candlepower output shall occur at 64 degrees through 0 degree lateral. The lateral distribution in the 64 degree cone with a 250-watt clear mercury vapor lamp shall be as follows:

0°	not less than 6750 candlepower
15°	not less than 6300 candlepower
25°	not less than 5340 candlepower
35°	not less than 4350 candlepower
45°	not less than 3080 candlepower
55°	not less than 2450 candlepower
65°	not less than 1855 candlepower
75°	not less than 2020 candlepower
85°	not less than 1935 candlepower
90°	not less than 1470 candlepower
105°	not less than 410 candlepower

The installation work for each unit on bridge superstructure shall include the 6-inch by 3-inch junction box at unit and 1/2 inch liquid-tight flexible conduit to junction box where indicated, mounting lugs, Type SF-2 fixture wire to junction box, and 3 amp. fuse. Install a 600-volt, high interrupting capacity fused disconnect junction box in the ungrounded lead to all fixtures on structures.

Item S-25, "Underpass Luminaire On Bridge", "Underpass Luminaire On Pier", or "Underpass Luminaire In Box" will be paid for at the contract unit price each, in place, completed and accepted, including integral ballast, housing, reflector, refractor, corrosion resistant fittings, hinges, guard, gaskets, latches, safety chains, bracket plate and junction box for units on bridge superstructure steel, mounting and flush junction box for units on piers, mounting for units on poles, fixture wires to junction box, junction box, all connections and splices, 1/2 inch liquid-tight flexible conduit to junction box for bridge-mounted units, mounting lugs, fastenings, and all incidentals.

LAMPS

Good lamps shall be burning in all luminaires for acceptance. Lamps shall be of the mercury vapor, weather resistant type, with quartz arc tubes, having a high mean output and long economic life equal to Westinghouse "Life Guard" or General Electric "Bonus" design. The 19,500 initial lumen horizontal mercury vapor lamps for roadway and deck luminaires shall be 400-watt clear, ASA-ICD Type, and shall be installed in roadway luminaires where indicated on the plans. The mercury lamps shall be suitable for operating on a 480-volt circuit through constant-voltage or regulator type ballasts. The 10,500 initial lumen horizontal lamps in underpass units shall be 250-watt clear, ASA H3T-5KB type, and shall be installed in all underpass and underdeck fixtures. Lamps shall be rated for an average life in excess of 10,000 hours. The lamps shall be guaranteed by replacement until acceptance; and after acceptance, the unexpired manufacturers guarantee against premature lamp failure shall be transferable to the City of Cleveland. The Contractor shall mark the bases of all lamps with month and year of installation, and advise the City of Cleveland of the name of his lamp supplier in order to obtain lamp life credit.

Item S-25, "400-W. Lamp", or "250-W. Lamp", will be paid for at the unit price each, in place, completed and accepted, including testing, adjustments, guarantee, and all incidentals.

LIGHT POLE FOUNDATION:

The Contractor shall provide cast-in-place concrete foundation bases for the ground-mount lighting units and the police call boxes where indicated on the plans. The bases shall be completed with anchor bolts, anchor nuts, reinforcing, ground rods, ground leads, and entrance conduits. The bases shall be level and finished to the details shown. Concrete for cast-in-place pole bases shall be Class C conforming with Section S-1.07. The four steel anchor bolts for each 7-foot deep Type "A" pole base shall be on 13-inch bolt circle with 3/4-inch bolt projection, and be 1 1/2" x 4'-0" threaded 5 inches on straight end and hot-dip galvanized no more than 1 to 4 inches beyond threads, with a 6-inch "L" bend at bottom end; for Type "B", base shall be 6-feet deep and otherwise similar to Type "A" except with 12.5" bolt circle, 3-inch bolt projection and four 1 1/2" x 3'-4" with 4" "L" bend; base for Type "C" shall be same size as Type "B", except with 24-inch bolt projection and 9.5" bolt circles; foundations for police call boxes shall be 20"x14"x3'-0", with 0.5 inch anchor bolts and 6 inch bolt projection. The Contractor shall provide the shims for leveling and the galvanized hexagonal anchoring nuts as required. The anchor bolts shall be set in the bases, and the bases poured with concrete to the finished grade with the top surfaces level. The steel for bolts shall conform to AISI Designation C-1015 hot-rolled special quality, or ASTM A-107, Grade 1035 Special Quality. The tensile strength of bolts shall be not less than 67,000 per square inch, with a minimum yield strength of 46,000 per square inch. Bolt stock shall conform with ASTM Spec. A-29 and nominal bar size shall equal nominal bolt size. The anchor bolts shall be capable of resisting at yield strength stress the bending moment of the shaft of its yield strength stress. Bolts, hexagonal nuts and shims shall be hot-dip galvanized after fabrication in conformance with the requirements of ASTM Specification Designation A-153. The Contractor shall obtain a factory certified anchor bolt setting template and shall submit same for approval before setting any bolts. The tops of the bases shall be level, anchor bolts shall be vertical, and the placement of the bolts and the projections shall be as required. A 1-inch by 10-foot, solid, painted, wrought iron ground rod shall be placed vertically in the trench outside each light pole foundation. The ground rods for police call box foundations shall be through bases as indicated. The grounding shall be not over 25 ohms resistance to absolute. Additional rods shall be driven ten feet apart until 25 ohms or less is secured. The No. 4 A.W.G., 7-strand, insulated ground leads to FAA Specification L-824 Type A shall be attached to the rods by Exothermic welding, and run through foundation conduit and connected to a ground nut in the standard, using a bronze bolt and washer. Use five (5) rods maximum when additional rods are required.

Payment for concrete foundation bases for ground-mount lighting units will be made at the Contract unit price each for "Light Pole Foundation, Type A", "Light Pole Foundation, Type B", "Light Pole Foundation, Type C", or "Call Box Foundation".

completely and accepted, including excavations, forms, reinforcing, concrete, curing, anchor nuts, anchor bolts, setting anchor bolts, conduits in bases for wiring, grounding pole, backfilling, tamping, removing waste, 90-degree bends, bushings, grounding electrode(s), grounding tests, ground leads, clamps, welds, finishing, cleaning, grading, dowel hook bars for anchoring call box foundations to walls and footings where required, and all incidentals.

SIDE-MOUNTED POLE HANGERS

This item shall consist of furnishing and installing custom, galvanized hangers for mounting two special short poles on the sides of walls 91 and 91A. The installations shall include lower support hangers of steel plates, upper bracket hangers of steel plates and clamps, 1/2-inch and 3/4-inch stainless steel anchor U-bolts, galvanized nuts, base corrosion resistant conduit sections to junction boxes, stainless steel hanger and anchor bolts and nuts, No. 1/0 ground wire to base of foundation, 1 in. by 10 ft. solid wrought iron ground rod, or weld to pile casing, and all incidentals.

Payment for the hangers for side-mounted poles on walls will be made at the contract unit price each item S-25, "Side-Mounted Pole Hanger", installed in place, completed and accepted, including hangers, anchor bolts, nuts, conduit, grounding, bushing, painting, exposed conduit aluminum, grounding tests, welds, leveling, and all incidentals.

ANCHOR U-BOLTS ON STRUCTURES

The Contractor shall provide anchor U-bolts and conduits in the concrete blisters outside the handrails and in walls for mounting lighting units, where indicated on the plans. The concrete bases shall be complete with anchor U-bolts, anchor nuts, entrance conduits, and grounding. The anchor U-bolts shall be furnished with threads, with two galvanized anchor nuts for each bolt, and anchor U-bolts galvanized one to four inches beyond threaded ends. The steel for bolts shall be as specified for bolts in light pole foundations. Extend a No. 1/0, 7-strand bare copper grounding wire from one anchor bolt of each pole on bridge to girder or beam flange, and on wall to ground rod or pile casing in foundation, and connect each end by Exothermic weld. The Contractor may at his option provide individual anchor bolts to same depth with 4-inch "L" bends of bottom ends.

Payment for light pole anchor U-bolts for standards on bridge and wall structures will be made at the Contract unit price per set of two for one light pole for item S-25, "Light Pole Anchor Bolts for Structures", in place, completed and accepted, and shall include anchor U-bolts, required bolt circles, required projections, hex nuts, galvanizing, setting anchor U-bolts, leveling base, No. 1/0 ground lead to outside beam or girder of structure or to ground rod on wall, welds to anchor U-bolt and beam flange, welds to ground rod or pile casing for unit on walls, and all incidentals.

BOXES IN BRIDGE CURBS

Cast iron curb junction boxes shall be provided flush in the bridge walks and in walls for branches to signs, police call boxes, underpass lighting units, and for conduit crossovers. Boxes shall be complete with bosses, wiring, grounding, conduit connections, and bushings, and shall be as shown. The 12" by 8" by 8", and the 12" by 6" by 6" boxes shall be not less than 1/2 inch thick. The 24" by 12" by 8" and the 24" by 6" by 6" boxes shall be not less than 1 inch thick. Boxes shall be galvanized cast iron and shall be complete with cross-ribbed checkered sidewalk cover, reinforcing ribs, pry bar slots, mounting flanges, bosses with drilled and tapped holes, Neoprene gasket, flush stainless steel cover screws, and 1-inch screwed copper drain to below or out of concrete. Boxes shall be O.Z. Type "YTH", Hope, Spring City, or approved equal.

Items S-25, "Junction Box On Structure - 12"x8"x8\"", "Junction Box On Structure - 12"x6"x6\"", "Junction Box On Structure - 24"x12"x8\"", and "Junction Box On Structure - 24"x6"x6\"", completed and accepted, will be paid for at the contract unit price each, which price shall be full compensation for furnishing and installing box and all appurtenances, conduit connections, checkered ribbed covers, gaskets, screws, drain, grounding, splices, and all incidentals.

PULL BOXES

Concrete pull boxes shall be provided for lighting, signing, call boxes and traffic surveillance where shown on the layouts. The construction of boxes, for reinforcing mesh, slots, handles, covers and openings shall be as shown in the details. Boxes may be precast or cast-in-place. The walls shall be composed of monolithic concrete as shown. All entering conduits sleeves shall be cast or grouted in place. Reinforcing steel of No. 4 (or 1/2") rods at 6" centers each way shall conform to requirements of the Standard Specifications. Boxes shall be Class C concrete conforming with Section S-1.07 of the Standard Specifications, and shall be modified as required. Covers shall be sealed with less than 0.5 in. total clearance each way. A 1" by 10" wrought iron ground rod shall be placed in the bottom of each Type A pull box, extending 6 inches into box.

The work under Item S-25, "Pull Box" - Type A or "Pull Box" - Type B, each, furnished in place, measured as provided in the foregoing, will be paid for at the contract price per box, which price shall be full compensation for furnishing all required materials, including excavation, forms, concrete, reinforcing steel, ground rod in Type A, cover, impressed "light" on Type B pull box or "police" in cover of Type A pull boxes, handle, grouting conduits, removing waste, and all incidentals.

CALL BOX TRANSFORMER AND CABLE

Indicator lights on tops of police call boxes shall be energized from the sign feeder circuits as indicated. To energize the 120-volt lamps from the 480 volt sign feeders, the contractor shall provide 200 volt-amp. 480-120-volt, 60-cycle, dry-type transformers, the contractor shall provide 200 volt-amp. 480-120-volt, 60-cycle, dry-type transformers in adjacent curb junction boxes or pull boxes as required. Primary ungrounded connections shall be made to sign feeders through fused ESNA Style 82 "Y" connectors; grounded connections shall be made through ESNA Style 83 "Y" connectors. Each molded transformer shall include two minimum size No. 10 AWG secondary leads to tops of call boxes, and leads shall be attached to transformers through watertight caps and plugs. Caps and plugs shall be sealed with No. 22 electrical tape 1/2-inch wide. Transformers shall be similar to ESNA No. 5150-A1, except 480-120 volt transformers, or approved equal.

The work under Item S-25, "Call Box Transformer and Cable", per each, furnished in place, will be paid for at the contract price per transformer, which price shall include transformer, polychloroprene jacket, watertight lead connections, watertight plugs and caps, No. 10 AWG insulated leads to indicator light, connections to "Y" connectors in feeders, fuse for transformer primary, grounding one secondary lead, and all incidentals. The "Y" Connectors will be paid for under other S-25 items.

CABLES AND CABLE-DUCT

The lighting and signing feeder systems shall be conductors in rigid conduits or cable-duct on or off structures, as indicated, wired and installed as completed multiple 460-volt systems as indicated, with ballasts for each roadway and underpass unit. Cables shall be provided where indicated on the drawings, and shall be No. 4 AWG, 6 AWG, 10 AWG, or 12 AWG as indicated. Multiple cables, including grounding neutrals shall be rated for 600 volts as indicated. All cable shall have been manufactured less than two years prior to installation. The underground and underdeck insulated cables shall conform to F.A.A. Specification L-824, Type A (dated November 4, 1963) and shall be single conductor, 600-volt size as indicated. In junction boxes, pull boxes, pole bases, and common locations where there is more than one circuit present, identify each conductor by distribution station and circuit number on plastic tags or permanent type wire markers. Identify grounded conductors by "W" following distribution station and circuit number. The pole and bracket cable for circuits between handholes and ballasts in luminaires, and where indicated, shall be single conductor type for 600-volt rating, No. 12 AWG, 7-strand copper, and shall conform to Specification L-824, Type A. The No. 10 AWG conductors for underpass lighting shall be of similar construction.

The cable-duct shall consist of factory preassembled cables in polyethylene duct. The materials to be furnished and used for duct shall conform to ASTM D-2104, Schedule 40, type II grade 3 or, type III grades 1, 2 and 3.

The minimum bending radius for 1/2 inch conduit shall be 18 inches. The conduit shall withstand impact and bending stresses incidental to transportation, handling and installation at temperature as low as -50° F. It shall not fracture, split or be damaged in any way by normal handling at this temperature. A 10-foot length of test conduit shall be bent into an upright U shape and filled with water. It shall be maintained at -20° C. for 24 hours. Conduit shall not crack or burst during this test. The assembly of cable-duct may be performed by extruding the duct around the specified conductors or by pulling the conductors through the preformed duct of the factory. When assembled by the extrusion method, the Contractor shall demonstrate the freedom of the conductors by pulling one foot of the conductor from the installed cable-duct. The duct shall be manufactured in continuous lengths so that it can be installed without splices between pull boxes and lighting poles. The duct shall be laid parallel to the trench prior to installation. This shall be accomplished by unreeing the duct from the bed of a slowly moving truck or by similar means. The duct needed for a particular run shall be of a length to allow for extension into pull boxes for splicing, and for extension of the conductors through the handhole in the standards for lighting. In no case shall the nominal diameter be less than 1 1/4" I.D. The number of conductors used in the duct and the "DUCT FILL" shall conform to the requirements of the National Electrical Code. Cable-duct and cables shall be installed in continuous lengths without splices from handhole to handhole. Splicing will be permitted only in pull boxes, junction boxes or handholes of light standards. At the terminals, cables shall be spliced to the leads in conformity with the instructions contained herein. Care shall be taken to insure watertight joints. At all terminals seal between cable and ducts with sealer not injurious to either. All splices shall be made with approved cable connector assemblies.

Item S-25, "Cable-Duct - 2-1/2" No. 4", or "Cable-Duct 2-1/2" No. 6", will be paid for at the Contract unit price per lineal foot, in place, completed and accepted, including all cable-duct, 600-volt cables in conduits or direct burial, caulking underground in conduits, shims, terminals, connections, testing, and all incidentals necessary. Measurement will be made per foot of cable-duct in place, each foot for payment for multiple cable-duct includes two insulated conductors. Where two cable-ducts are in same trench or conduit, payment will be twice the amount for one circuit, etc. Item S-25, "Circuit Cable, 1/2" No. 4", or "Circuit Cable, 1/2" No. 6", shall include all 600-volt cables in place on structures and cables in 2-inch long terminal conduits between structure and nearest sign or light base, or to pull boxes off structure, and will be paid for at the Contract unit price per lineal foot, in place, completed and accepted, including all cables of the respective sizes and voltages in rigid steel conduits, caulking in conduit bushings, splicing, terminals, connections, testing, and all incidentals necessary. Measurement will be made per foot of single cable in place. Payment for No. 12, single-conductor pole and bracket cable will be made at the Contract unit price per lineal foot for Item S-25, "Pole and Bracket Cable, 1/2" No. 12", in place, completed and accepted including all cables in poles, brackets, conduit where indicated, wiring, splices, terminals, and all incidentals. Each foot for payment includes one conductor. Payment for No. 10, single-conductor underpass cable in conduits on structure will be made at the Contract unit

SCALE: No Scale HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE: NKS DATE: 12-28-64 CONSULTING ENGINEERS
TRCD: DATE: CLEVELAND NEW YORK
CRD: G.J.C. DATE: 12-28-64 KANSAS CITY

LIGHTING NOTES

LIGHTING NOTES

FED. DIVISION	STATE	PROJECT
2	OHIO	

193
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

price per lineal foot for Item S-25, "Circuit Cable, 1/2 No. 10", in place, completed and accepted, including wiring, splicing, terminals, testing, and all incidentals necessary. Each foot for payment includes one conductor.

CABLE CONNECTORS

"Y" - cable connector assemblies shall be provided for all 3-way cable connections in pole base handholes for branch taps to luminaires, in pull boxes and curb junction boxes for branch taps to call box transformers and underpass lighting, and for sign and lighting feeder taps from pole bases, junction boxes, and pull boxes. In-line connectors shall be provided for all feeder in-line thru splices in junction and pull boxes, and for disconnecting ungrounded leads of underpass ballasts on structures. Connectors shall be approved, field applied, waterproof type. Disconnect type connectors shall be capable of repeated quick disengagements without damage; semi-permanent type shall have ring-tongue terminals. Conducting parts shall be copper. Bodies and housings shall be of water-resistant synthetic rubber suitable for direct burial or installation in sunlight. Metal and rubber parts shall be lubricated with silicone compound "0" for easy assembly. The loadside housing of fused connectors shall be constructed to retain the fuse when disconnected, and shall be permanently marked "loadside". The "Y" insert body shall retain the second fuse contact. Fused "Y" connectors in ungrounded cables in pole bases and curb junction boxes for all branch taps shall be similar to ESNA Style 82; unfused "Y" connectors for grounded neutral taps shall be similar to ESNA Style 83. Semi-permanent "Y" connectors in pole bases, junction boxes and pull boxes for feeder taps shall be unfused type similar to ESNA Style 84. Insert plastic plugs in unused openings of the dead-end poles. The in-line fused disconnects in ungrounded leads to underpass fixture ballasts of units on structures shall be similar to ESNA Style 64. The semi-permanent type in-line connectors for splices in feeder cables shall be similar to ESNA Style 51. The quantity for Style 51 connectors is indeterminate, and the number installed shall be as required by field conditions. Variation from estimated quantity shall not be cause for change in bid price. Fuses shall be 4-ampere, 13/32" x 1 1/2" midge type, 600-volt, high interrupting capacity type. Fuses shall carry 110% continuously and open at 135% in one hour or less. Disconnect type "Y" connectors for branch circuits will be paid for at the contract unit price each, in place, completed and accepted, including plastic plug and fuse where required by Item S-25, "Fused 'Y' Connector, Style 82" or "Unfused 'Y' Connector, Style 83". The semi-permanent type "Y" connectors for feeder taps will be paid for at the contract unit price paid for Item S-25, "Semi-Permanent 'Y' Connector, Style 84", furnished in place, and shall include one 3-way semi-permanent feeder connection, crimp-on ring-tongue terminals, lugs, bolts, elastic stop nut, housing, insert body, water seals, silicone, instructions, and all incidentals. In-line connector assemblies used for feeder splices will be paid for at the contract unit price paid for Item S-25, "Semi-Permanent In-line Connector, Style 51"; in-line fused disconnects for the ungrounded leads to underpass fixtures will be paid for at the contract unit price paid for Item S-25, "In-line Fused Disconnect, Style 64", furnished in place, and shall include all applicable features required for "Y" connectors.

CONDUITS

The Contractor shall provide rigid metal conduits where indicated for the sign, roadway and underpass lighting circuits, and for police call and traffic surveillance systems both on and off structures, for all sign and roadway lighting circuits under pavement, and for communications circuits for call boxes where indicated. Longitudinal conduits in the walls, parapets and abutments for present and future wiring shall be complete as indicated on the plans, and shall include drains, expansion couplings, deflection fittings and extensions to pole bases. Conduits on structures shall be placed as shown on the plans, and expansion joints shall be of such size as to provide for up to eight inches of movement at all expansion joints. Expansion couplings on structures shall be standard factory steel type to provide for movement and vibrations. Expansion fittings on bridges shall be similar to O.Z. Type EX, Hope, Spring City, or approved equal. Deflection fittings at wall joints shall be similar to O.Z. Type DX, or equivalent by Hope or Spring City.

The materials furnished and used in this work shall meet the requirements as specified herein. Underground conduits, underpavement conduits, and exposed conduits on structures shall be rigid alloy steel or wrought iron, enameled or plastic coated on the inside to provide a smooth wire raceway and shall further meet the requirements of State Supplemental Spec. M-106.11 or the Fed. Gen. Services Spec. WW-P-441c for wrought iron. Flexible conduit for connections between piers and superstructures shall be JIC approved, polyvinyl-chloride jacketed, liquid-tight type. Flexible conduit embedded in concrete in structures shall conform to the requirements of ASA Specifications for Galvanized Rigid Steel Conduit, Designation C80.1, and further shall be hot-dipped galvanized inside and out after threading and provided with an approved enamel or plastic coating on the inside to provide a smooth wire raceway. Metallic conduits in structures shall be run concealed in direct lines, with long sweep bends and offsets to facilitate installation of cables without excessive pulling tensions. Conduit ends shall be cut square and accurately threaded. Threaded ends of all metallic conduits shall be swabbed with Conduit Joint Sealing Compound before the couplings are made up to make them watertight. No reinforcing bars shall be cut, bent, displaced or otherwise altered from the design plans, except with permission of the Engineer. All conduit runs in bridge curbs shall be installed with moisture traps in lowest areas, and shall be pitched to drain. Traps shall be tee-type with caps and plugs, or reducers, and shall include a 1" copper drain to the bottom side of the parapet. Ground each metallic run by size 1/0, 7-strand, bare copper wire Exothermic welded to conduit and to top flange of adjacent beam.

This work shall consist of furnishing and installing empty 3-inch, Type II plastic conduits direct burial for the police call and traffic surveillance systems. The conduit to be furnished shall be composed of modified high impact styrene, and shall conform to industry standards and Federal Specification No. L-C-00740 (GSA-FSS). The material used in the conduit shall have a minimum deflection temperature of 65° C., minimum impact strength of 0.80 foot pound per inch of notch, minimum tensile strength at rupture of 3000 PSI and 15 per cent, respectively, minimum crush strength of 1000 pounds per linear foot, and minimum wall thickness of .110 for the three inch size conduit used. The conduits shall be installed in 30-foot lengths, and coupled with watertight, solvent weld joints. The conduits shall generally be installed with long-radius sweeps without using fittings for bends. A length of 30 or 40 per cent conductivity, No. 104 telephone line, high strength, copper-clad

drag wire of not less than .104 inch diameter and 1283 pounds breaking strength shall be left in each run. Conduit and fittings shall be provided by a manufacturer with a minimum of five years experience extruding the foregoing type conduit. The minimum separation to be maintained between power and communication conduits is 12 inches for earth, 6 inches for solid concrete, or one in corrosion resistant steel sleeve.

Payment for flexible conduit, for flexible connections from underdeck to pier top for underpass lighting will be made at the Contract unit price per lineal foot for Item S-25, "Conduit - 1 1/4" Flexible", in place, completed and accepted and shall include all fittings, attachments, fastenings, and all incidentals. Payment for rigid conduit embedded in bridges, walls, piers, structures and wingwalls, will be made at the Contract unit price per lineal foot for Item S-25, "Conduit - Rigid Galv. Steel", "Conduit - 1 1/4" Rigid Galv. Steel", "Conduit - 2 1/4" Rigid Galv. Steel", or "Conduit - 3 1/4" Rigid Galv. Steel", in place, completed and accepted, and shall include all expansion couplings, deflection fittings, bonding jumpers, bushings, bends, reaming, threading, fittings, attachments, clamps, tees, plugs, joint sealer compound, adapters to flexible conduit where required, wire chairs, tamping, encasing, drains, supports, locknuts, fastenings, and all incidentals. Payment for exposed conduits on structures, conduits under pavement, and longitudinal, direct burial, underground conduits off structures will be made at the Contract unit price per lineal foot for Item S-25, "Conduit - 3 1/4 Corrosion Resistant", in place, completed and accepted, including all alloy or wrought iron conduits for wiring from ends of bridge wingwalls to adjacent ground-mount lighting units, police call boxes or pull boxes where indicated, all conduits off structures for communications, couplings, sealer compound, threading, fittings, fastenings, attachments, locknuts, bushings, conduit connections, grounding, galvanizing inside and out after threading, and all incidentals.

Underground styrene conduits, installed in accordance with requirements, will be measured by length in direct horizontal runs between centers of terminations, and will be paid for at the contract price per linear foot for Item S-25, "Conduit - 3 1/4 Plastic", installed. This price shall be full compensation for conduits, drag wire couplings, bends, conditioning conduits, plugging conduits, and sealing around conduits with concrete where they enter pull boxes.

TRANSFORMER AND PANEL STATIONS

The Contractor shall provide three new complete transformer and panel stations for the 480-volt lighting branch circuits where indicated on the plans. The design of the stations shall follow the most modern practice. The pole-mounted distribution transformers shall be furnished with all standard accessories in accordance with this specification and to the applicable NEMA and ASA Standards. The transformers shall be 25 Kva or 75 Kva, 55 C, 50 cycles single phase, all immersed, self-protected. The primary voltage windings shall be dual rated 2400-7200 volts complete with two bushings, four rated Kv Taps (2 approx. 2-1/2% above and 2 approx. 2-1/2% below rated voltage), and manual tap-changer. Taps shall be accessible from the top through a removable cover. The secondary voltage windings shall be rated 480 volts with terminals for single-phase, 2-wire operation. Mounts shall be EEI-NEMA Type C. In addition to primary protection indicated, the transformers shall be furnished with internal low voltage circuit breakers, high voltage fuses, and valve-type arresters. All protective and control equipment shall be of the outdoor, weather-proof type. The primary cutouts to protect the transformers shall be open-type load-break, single-pole, 100-ampere, 7.5 Kv, castlet with fuse holders and 25 or 25 amp. fuses. The lightning arresters for the protection of the primary high voltage circuits of the transformers shall be 3000 volts. The cutouts and arresters shall be equal to General Electric, Westinghouse, Line Material, or approved equal.

The lighting circuits shall be switched in the secondary mains by enclosed magnetic contactors, operated by a photoelectric relay. The contactors shall include selector switches for manual on, off, and automatic positions, and 250-volt-amp., 480-120 volt control dry-type transformers. The photoelectric relays shall be socket-mounted, of tubeless circuitry, 115-volt, 3000 W. SPSTDA contacts, normally closed, closed at night, with factory set turn-on of 5 foot candles, built-in fuses, and built-in lightning arresters. The relays shall be fail safe, and have built-in time delay to avoid erroneous operation due to transient lights. The internal pilot relays contacts shall be rhodium-plated silver. The relays shall be General Electric, Hughey and Phillips, Ripley, Tark, Fisher Pierce Model 63303-DA, or approved equal. The photoelectric controllers shall be attached on the poles about 20 feet above ground level, and oriented to the north as indicated. The sockets and mounting brackets shall be galvanized. The on-off-automatic selector switches shall be enclosed in general purpose cases within the general enclosures, and may be similar to General Electric Type CR 2940-NA 101 D oil-tight type. The contactors shall be electrically held and enclosed with service switch in a code-gauge, waterproof, NEMA Type 3, weather resistant, galvanized, steel general enclosure similar to one required for the distribution panelboard. Contactors shall be rated on the basis of hours enclosed and shall be 90 or 135 amp., 600-volt, NEMA Size 3 or 4, respectively, as indicated.

The lighting branch distribution panelboards shall be 200-amp., as indicated, and consist of automatic short-circuit and overcurrent protective devices of the circuit-breaker type, assembled into a single interior NEMA Type I general purpose enclosure which in turn shall be mounted inside a separate code gauge, waterproof, galvanized sheet steel NEMA Type 3 weather resistant enclosure, consisting of a box, gasket, copper screened drain, and lockable front designed to be mounted on two short crossarms on a pole. Hinges shall be flush. The cylinder tumbler lock shall be combination catch and lock. The panelboard shall be of the dead-front type and shall be in accordance with Underwriters Laboratories, Inc., standards for panelboards and enclosing cabinets, and so labeled. The panelboard shall be designed for connecting to a two-wire single-phase, 480-volt A-C, one side grounded source. The mains of the panelboards shall be provided with solderless lugs only. The service connections to the panelboard shall be through service entrance switches.

The service entrance switches shall be 480-volt, 200 amp., combination devices, consisting of switch mechanisms and high interrupting capacity current limiting fuses. The combination devices shall be capable of closing against, remaining closed and safely limit interrupting short-circuit currents up to 200,000 amperes rms symmetrical with no derating. The switch mechanisms shall have load-interrupting capacity of twelve times the continuous-current rating of the combination devices. The switch mechanisms shall be quick-make, quick-break type with the speed of operation in both closing and opening independent of the operator. The allowable temperature rise, for carrying rated load current of the switch and fuse shall be 55° C rise over 40° C ambient at the connecting terminal. The switch door shall be interlocked. There shall be provisions for locking service switches open. The branch overcurrent protective devices shall be molded-case circuit breakers. The panel shall contain eight single-pole Type F molded-case, 600-volt, 50-ampere, 15,000 RMS ampere interrupting rating breakers. The branch breakers shall have quick-make and quick-break toggle mechanisms, inverse-time trip characteristics, and shall be trip-free on overload short circuit. Automatic release is to be secured by a bimetallic thermal element releasing the mechanism latch. In addition, a magnetic armature shall be provided to trip the breaker instantly for short-circuit currents above the overload range. Automatic tripping shall be indicated by a handle position between the manual OFF and ON positions.

The individual breakers shall be calibrated and sealed to eliminate tampering or unauthorized changes in calibration. Breakers shall be of the interchangeable type and capable of being operated in any position. The directories shall be typewritten and plasticized, and shall indicate clearly the identification and location of each branch circuit.

Time switches with 10-hour synchronous, mechanical carryover shall be included to prevent daily between 7:45 a.m. and 4:45 p.m. energization of the automatic lighting control circuits. Switches shall be single-pole, single-throw, 35-amp., mounted in contactor enclosures, and connected as indicated. Switches shall be Sangamo Type W, or equivalent by Tark, Paragon or General Electric.

At bases of wood poles, the vertical 1/2 in. rigid metal conduits on poles shall be adapted underground at the horizontal to the 1 1/2 in. polyethylene ducts of cable-ducts by liquid-tight type female hub connectors similar to T & B Type 5275. Cables of cable-ducts shall be extended without splices in metal conduits up poles to panelboards.

Wiring at the stations shall be installed in corrosion resistant rigid alloy steel or wrought iron conduit. Conduit fittings shall be installed as required for the watertight entrance of wiring into the conduits. Conduits shall be securely held in place on pole structures by pipe straps located at intervals not exceeding 6 feet. The neutral conductors and non-current-carrying metallic parts of all equipment at ground rods for not over 25 ohms resistance. The ground conductors shall be protected by a half-round wood mauling from below the ground line to a point at least 8 feet above the ground line. The distance between ground rods and poles shall be not less than 3 feet. If additional rods are installed, the distance between ground rods and pole shall not be less than 6 feet. Pole line hardware at the transformer stations shall be hot-dip galvanized and shall be in accordance with the standards of the Cleveland Division of Light and Power. Suitable washers shall be installed under bolt heads and nuts on wood surfaces. Eye bolts, strain plates and clevises shall be used wherever required to adequately support and protect the pole, crossarms, guy wires and insulators. Ogee washers shall be provided wherever the bolt heads bear directly on timber.

The wood poles at the transformer stations shall be 40-foot, Class 2, either Southern Pine, full-treated from bottom to top with creosote, pentachlorophenol, with a minimum retention of 6 pounds per cubic foot, or butt-treated Douglas Fir or Western Red Cedar, and shall conform to the American Standards Q5.1 as to shape, condition and fiber stress. Poles shall be machine-shaved, roof-sawed, round sound, well-proportioned from butt to top without short kinks or crooks. Butt-treated poles shall be treated by an approved process from the bottom to a point not less than one normal firm ground. When setting poles, the holes shall be of ample size to allow the easy entrance of the butts, and the size of the holes at the bottom shall be large enough to permit the proper use of tampers. When backfilling holes, minimum of 3 tampers shall be used for each shovel. In order to insure that the earth is tightly packed. In no case shall be earth be thrown into a greater depth than 4 inches without being tamped hard before the next layer is deposited. The surplus earth shall be placed around the poles in a conical shape and packed tightly in order that water will drain away from the poles. The poles shall be carefully aligned and graded with arms at right angles to the direction of the primary line. The vertical and longitudinal strength of crossarms, the requirements for climbing space and pin spacing shall conform to the requirements of the Cleveland Division of Light and Power. The Contractor shall retreat the poles and arms with preservative after any cutting or boring.

All construction practices and materials shall be in accordance with the usual practices of the Cleveland Division of Light and Power. The Contractor shall prepare shop drawings of the transformer stations he proposes to install, and shall submit same for review by the Director and the Cleveland Division of Light and Power. Approval of the shop drawing(s) shall be obtained before any materials are procured or the fabrication is begun. Drawing(s) shall include crossarms and other timber work, framing, connections, bracing, anchorage, make and type of equipment, and spacing of the equipment to be installed. The Contractor shall make all necessary arrangements for power. The initial services to be supplied to the transformer stations for the roadway lighting will be 2400-volt primary. The primary services will be extended overhead approximately as shown on the plans. The Power Company will provide at costs to the Contractor, other than these mentioned immediately above, in connection with the introduction of this service shall be included in the unit cost for the transformer and panel stations in the proposal. The Contractor shall consult and cooperate with the Company in locating its distribution lines so that lines will be as short and direct as possible, but he will not be required to furnish, install, or make any provisions for metering.

Payment for Item S-25, "Transformer and Panel Station, 25 Kva," or "Transformer and Panel Station, 75 Kva," will be made at the lump sum price each, in place, completed and accepted, including distribution transformer, primary service and connections, primary cutout, primary fuse, insulators, primary arrester, secondary disconnect, magnetic switch, conduit on pole for feeders, conduits to underground for branches, fittings, excavation, backfilling, tamping, ground wires, grounding, crossarms, distribution panel, directory, branch breakers, photoelectric relay, time clock (switch) with 10-hour mechanical carryover, controller, on-off-automatic selector switch, control

SCALE: No Scale HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE J.R.K. DATE 12-28-64 CONSULTING ENGINEERS
REC'D DATE 12-28-64 KANSAS CITY CLEVELAND NEW YORK

LIGHTING NOTES

LIGHTING NOTES

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
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transformer, treated pole, painting, locks, secondary feeder wiring, warning sign, adjustments, joint compound, couplings, saddles, fittings, fastenings, attachments, anchor bolts, ground lugs, welds, ground rods, ground wire moulding on poles, clamps, grounding bushings, and all necessary incidentals. All costs incurred obtaining each service shall be included in each item.

SIGN COMMERCIAL ELECTRIC SERVICES

The Contractor shall provide services for signs at the transformer and panel stations as indicated. Poles, switch enclosure mountings, conduits, etc. shall be as shown for transformer and panel stations, except Class 6 poles. The fused service switches shall be type approved for service entrance, 480 volts, 60-amps., 3-pole, in NEMA a watertight, ATSA 302 or 303 stainless steel enclosures, and with lockable flange-mounted switch handles. Conduit connections to boxes shall be through water-tight hubs. The class and type of switch and enclosure shall be as manufactured by Square D, General Electric, Columbus Electric Panels, Inc., or approved equal. Wiring shall be as indicated. Payment for Item S-25, "Sign Commercial Electric Service", will be made of the lump sum price each, in place, completed and accepted, including both secondary racks, No. 4 mains wiring, insulators, pole-mounted secondary arrester, fuses, service entrance switch, enclosure, conduit entrance head, conduits on pole, conduits to underground, adapters to sign underground circuit cable-ducts, bushings, excavation, backfilling, tamping, ground, rod, moulding, crossarms, treated pole, painting, lock, warning sign, identification sign, fittings, fastenings, attachments, and all incidentals.

INSPECTION AND TESTING

The Contractor shall furnish all equipment and appliances necessary to test the completed cable systems, and burning and performance tests will be required for the roadway and sign light circuits. It shall be the Contractor's responsibility to demonstrate to the satisfaction of the Director of Highways and The Cleveland Division of Light and Power 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 for each insulated conductor is not less than ten megohms. The Contractor shall furnish a complete report of megohm readings on all circuits installed to The Cleveland Division of Light and Power and to the Highway Department's Lighting Engineer. Record resistance, location, circuit number, and date test was made. Submit six certified copies, three to the Engineer and three to the Highway Lighting Engineer in Columbus, Ohio. Costs of all inspections, energy and tests shall be considered incidental to, and included in the unit prices bid for the various items, S-25, on this project. The installation of all street lighting equipment will also be inspected by a representative of the Cleveland Division of Light and Power while being installed. Before the inspections and tests are to be made, the Contractor shall notify the Cleveland Division of Light and Power and the Highway Department's Lighting Engineer by written order when he is ready. The completed lighting system including automatic controls shall be operated from sunset to sunrise each night for a period of one week without interruption or failure after all faults are corrected and prior to acceptance by the State. During this trial operation, the Contractor shall correct any defects which may develop, and make a record of nature of failure and method and date of correction, at no extra cost to the State.

TRENCHING

The Contractor shall perform all excavations for installing underground cable-ducts, conduits, grounds, pull boxes and foundation bases in whatever substances encountered to the depths indicated on the drawings or as otherwise specified. The bottom of the trenches shall be accurately graded to provide uniform depth below ground surface. Backfill remaining at trench in accordance with Sec. I-1.07, Type 4 except that the material in the first 4" above cable-duct shall contain no pieces larger than 1".

Item S-25, "Trenching", will be paid at the Contract unit price per lineal foot for required width and depth, which price shall be full compensation for excavation for conduits and cable-ducts for lighting, signing and communication circuits in whatever materials encountered; backfilling, removing waste, compacting, grading and leveling of trench bottom, and all incidentals.

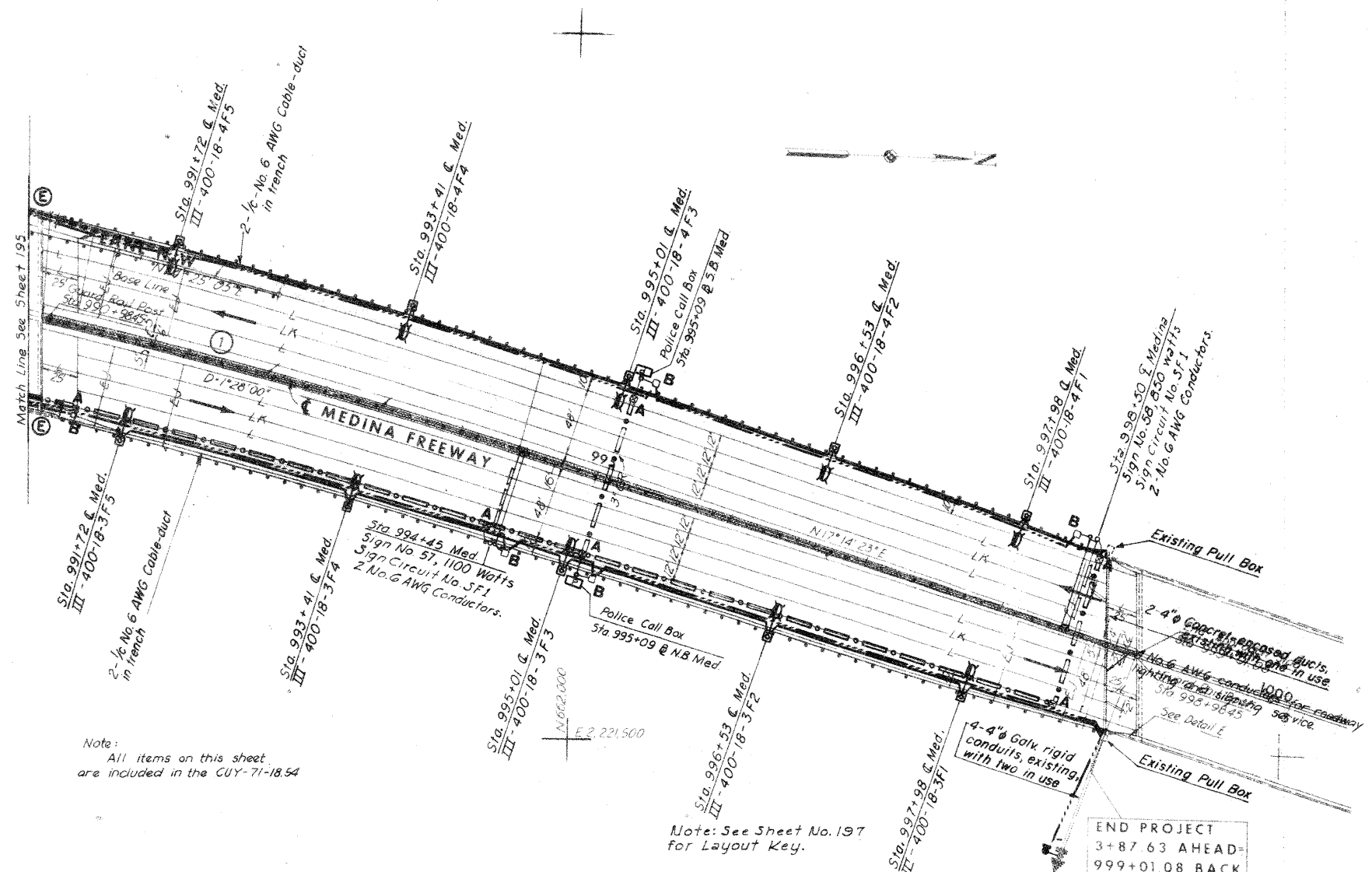
STRUCTURE GROUNDING

This item shall consist of furnishing and installing for each structure a complete grounding system of one outside end of each fixed pier where indicated. Grounds shall be complete, and each ground for bridge with spread footings shall consist of bare copper coil under the footing concrete, lead to above top of pier, and welded connection to superstructure steelwork. The coil under the concrete footing shall consist of one 25-foot closed loop of No. 0 bare copper. To ground steelwork of bridges to pile footings, a No. 0 bare, soft annealed copper wire shall be connected at the lower end by the Exothermic weld process to a steel pile casing. The No. 0 grounding conductors between welds to piles or loops, to above pier tops shall be as straight and direct as practicable. The connections between piles or grounding loops and superstructure steelwork shall be with continuous No. 0 bare copper. The 25-foot loop of bare wire shall be placed on the base in the bottom of the footing and covered with tar paper before pouring the footings. One end of each loop shall be brought up as directly as feasible, and connected by Exothermic weld to a superstructure girder or beam flange. Grounding shall be accomplished as soon as the steelwork to which the grounding wires are to be attached is in place. Across expansion joints between framing units, the Contractor shall provide one No. 6 solid or stranded copper wire suitably looped to provide for expansion across the joints. Exothermic welded to one pair of the outside, adjacent, abutting girders. All disturbed painting shall be restored.

Ground system components for superstructure grounding will not be measured separately as items, but will be lumped into ground system units. The loops between abutting outside girders across roller expansion joints, in the bridges shall be installed by the Contractor, but will not be measured or paid for directly, but shall be considered as subsidiary work to and included in the unit price for each of the individual ground systems, Item S-25, "Bridge Structure Ground", in place, completed and accepted, including loops, groundings, leads, welds, cables, loops between girders, tests, and all incidentals, for additional grounding requirements for Bridge No. CUY-290-0051 see sheet No. 469.

QUANTITIES ON STRUCTURE

Quantities for all lighting items on structures, including luminaires, poles, cables, anchor bolts, conduits, junction boxes, and bridge electrical grounds are included in and are to be paid for with quantities for the respective structures.



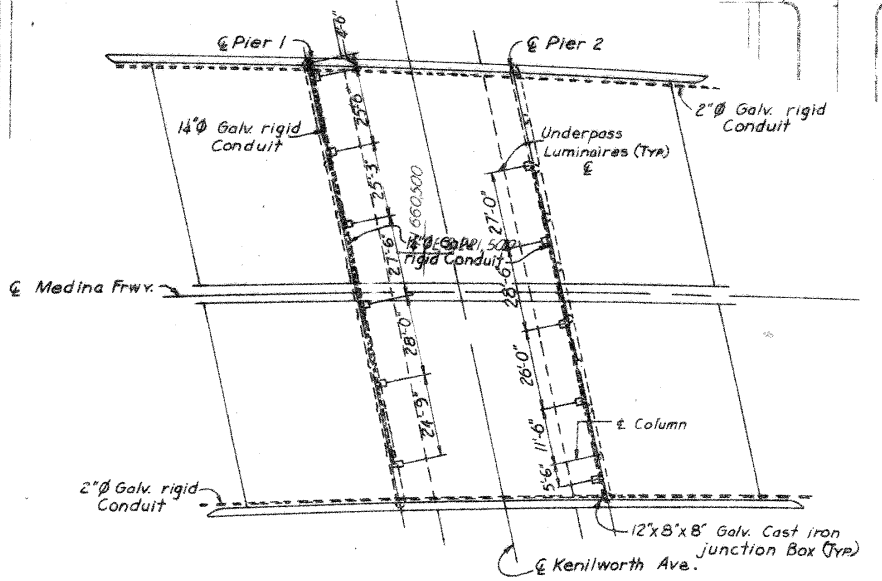
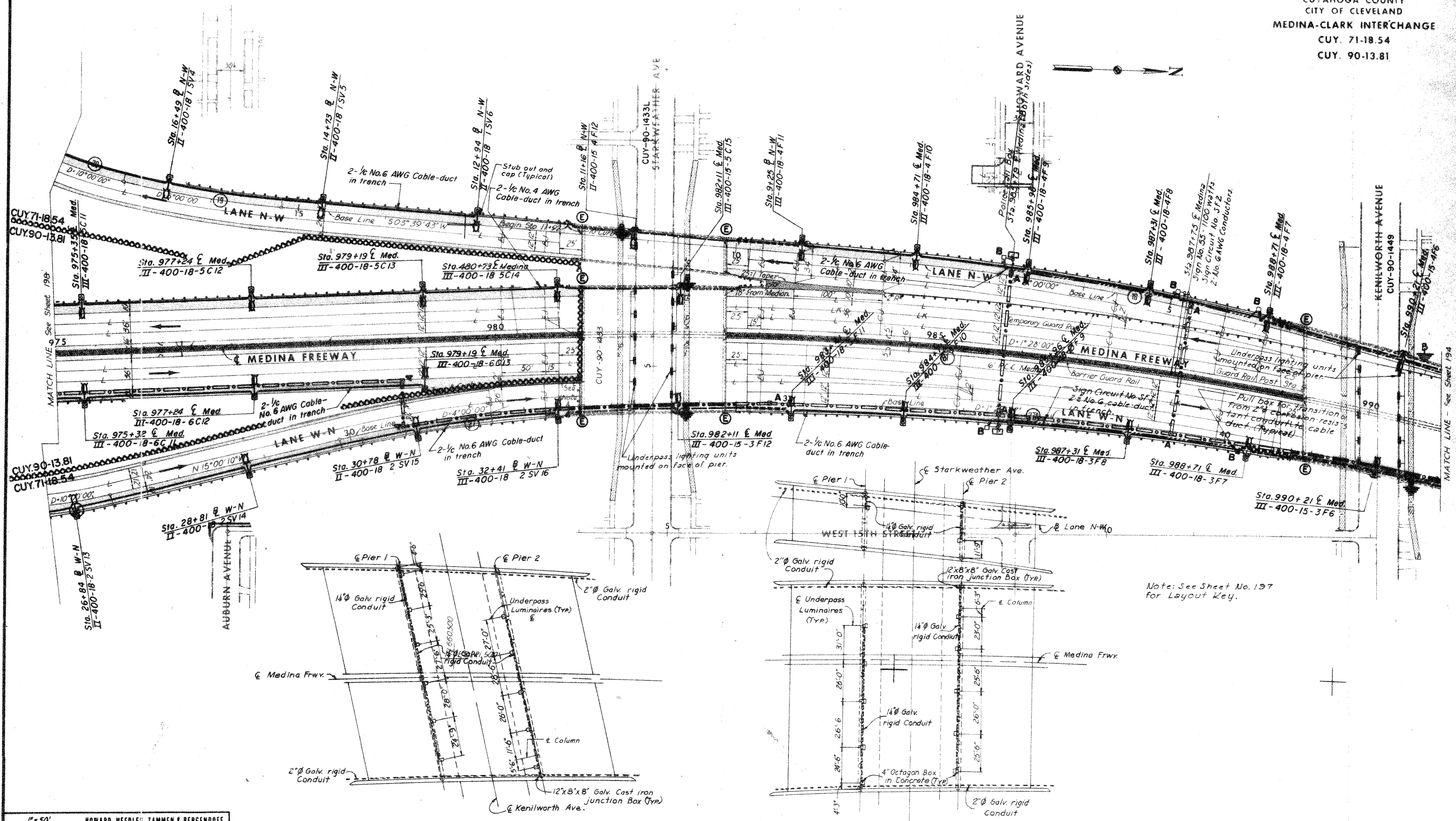
Note:
All items on this sheet
are included in the CUY-71-18.54

Note: See Sheet No. 197
for Layout Key.

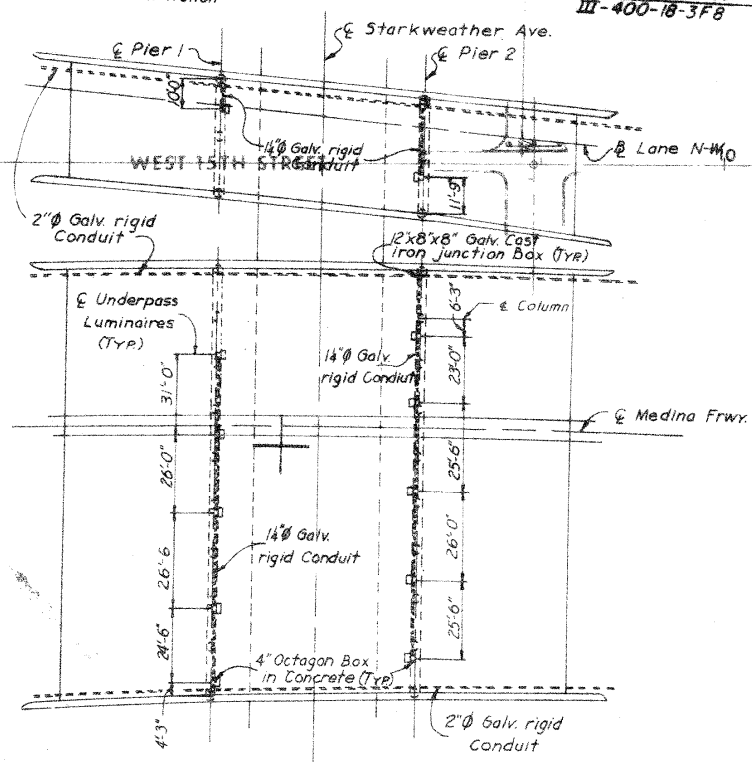
Note:
Before energizing circuits extended and
connector to the existing Transformer Station
'F' at Fairfield Avenue, the contractor shall
advise the Cleveland Division of Light and Power
when it is necessary to increase the existing 25
Kva transformer to 37.5 Kva capacity to accommodate
this additional lighting

SCALE 1"=50'
MADE JRK DATE 12-28-64
TRCD DATE
CKD JLG DATE 12-28-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
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MEDINA FRWY. OVER KENILWORTH AVE.
Scale: 1"=30'



MEDINA FRWY. & LANE N-W OVER STARKWEATHER AVE.
Scale: 1"=30'

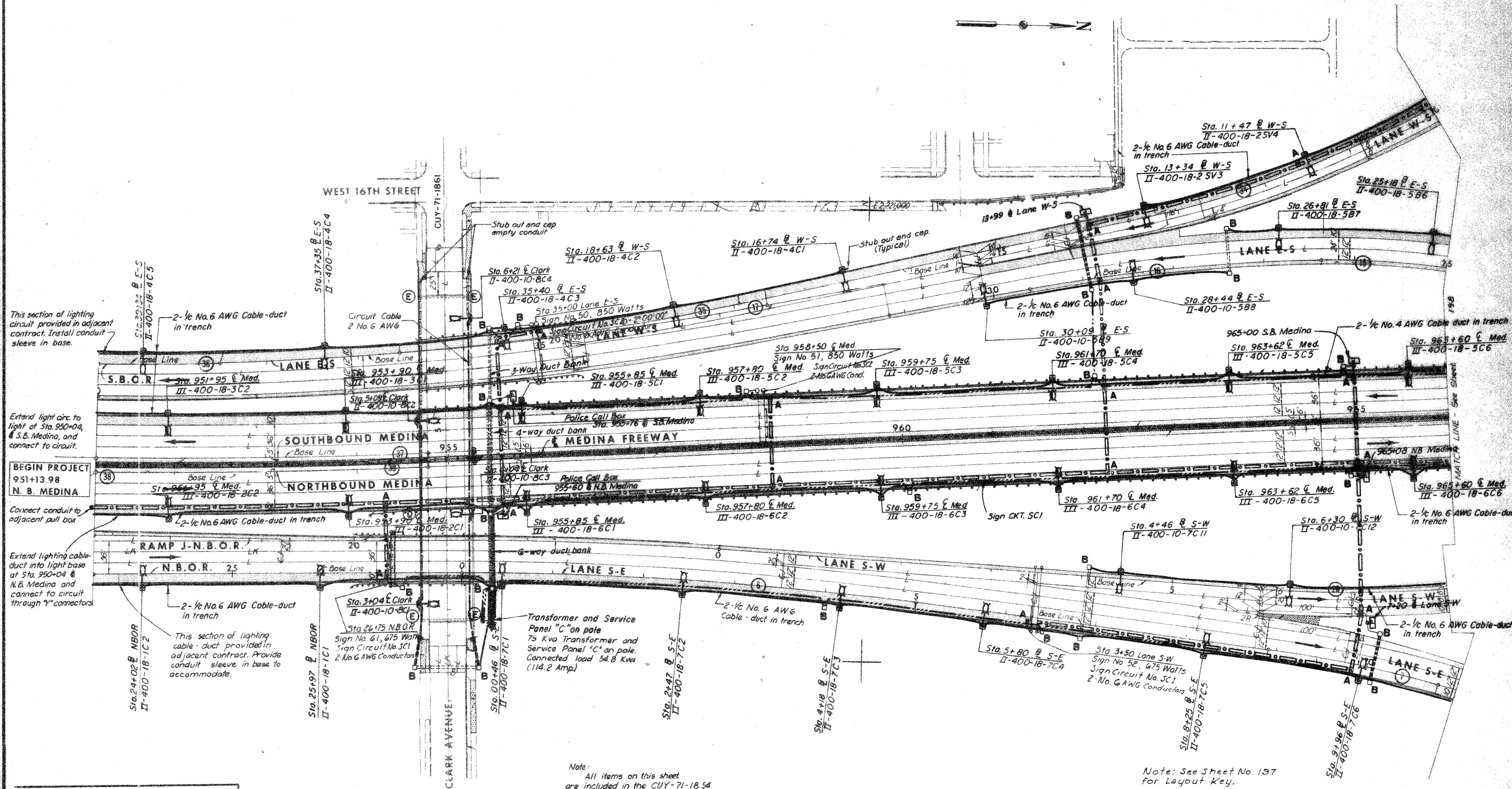
Note: See Sheet No. 197 for Layout Key.

SCALE: 1"=50'
HOWARD, NEEDLES, TAMMEN & BERGENOFF
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FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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This section of lighting circuit provided in adjacent contract. Install conduit sleeves in base.

Extend light circ. to light at Sta. 950+04, S.B. Medina, and connect to circuit.

BEGIN PROJECT 951+13.98 N. B. MEDINA

Connect conduit to adjacent pull box

Extend lighting cable duct into light base at Sta. 950+04 & N.B. Medina and connect to circuit through "Y" connectors

This section of lighting cable-duct provided in adjacent contract. Provide conduit sleeves in base to accommodate.

Transformer and Service Panel "C" on pole 75 Kva Transformer and Service Panel "C" on pole. Connected load 54.8 Kva (114.2 Amp)

Note: All items on this sheet are included in the CUY-71-18.54

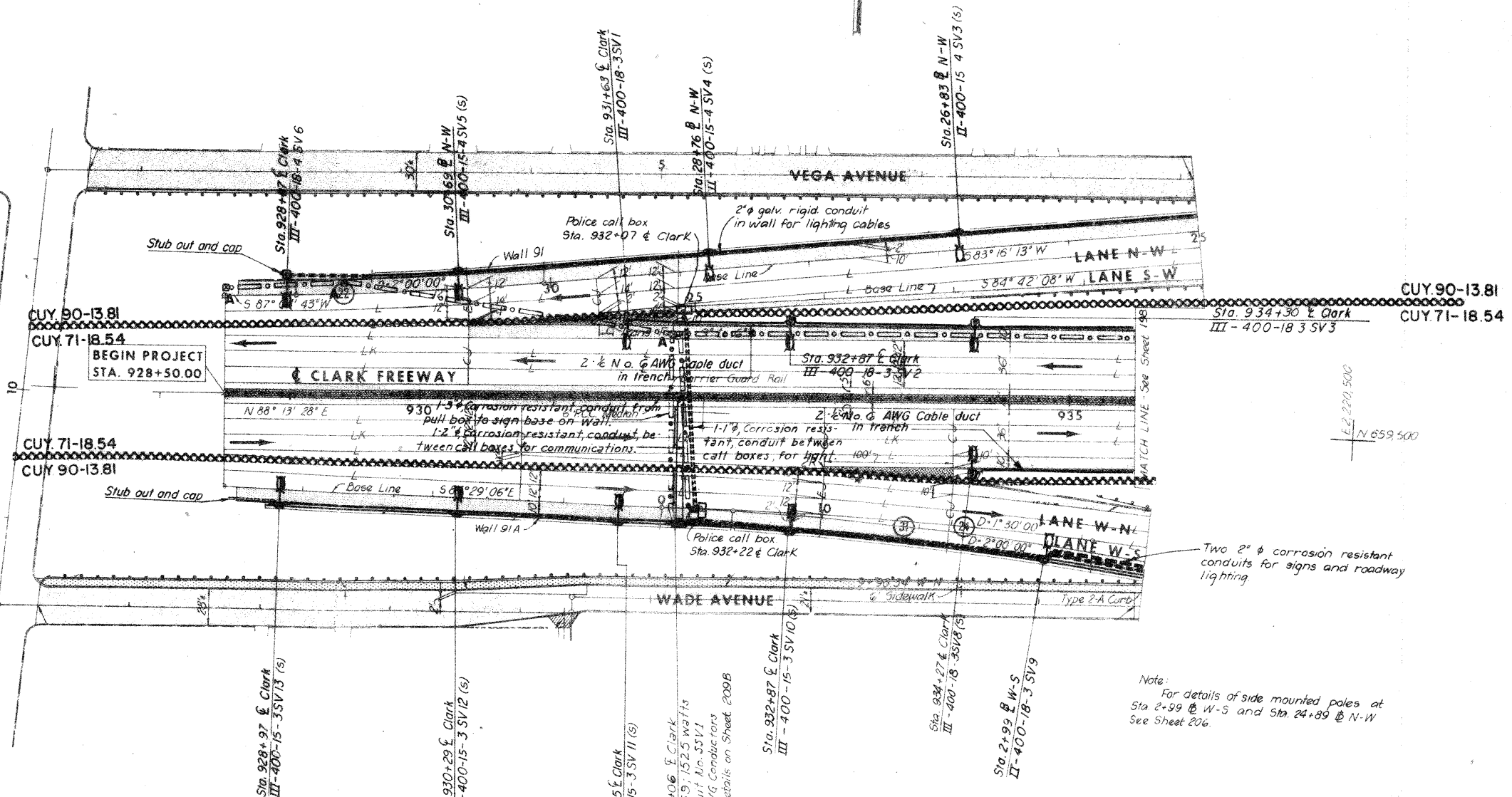
Note: See Sheet No. 137 for Layout Key.

SCALE 1" = 50'
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
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LIGHTING LAYOUT

LAYOUT KEY

- Typical Ground Mounted Lighting Unit: Clear Mercury Vapor Lamp; 400 watt size; ASA-IES Type II, on standard.
- Typical Ground Mounted Lighting Unit: Clear Mercury Vapor Lamp; 400 watt size; ASA-IES Type III, on standard.
- Typical Structure Mounted Lighting Unit: ASA-IES Type II, Same as above.
- Typical Structure Mounted Lighting Unit: ASA-IES Type III, Same as above.
- Typical Ground Mounted Underpass Lighting Unit: 250 watt, clear, M.V. Lamp; on standard.
- 2" Diam corrosion resistant conduit for sign lighting.
- Concrete Pull Box, Type "B" for lighting and signing box.
- Junction Box, galv. cast-iron, in structures, of sizes as noted.
- Transformer Station and Service Panel for Roadway Lighting.
- Service Panel and Pole, for Sign.
- Cable Duct, directly buried, for Roadway Lighting.
- Multiple Circuits, in 2" Diam. galv., rigid, conduit in structures, for Roadway Lighting.
- Multiple Circuits in 2" Diam., corrosion resistant, conduit, from end of structures to nearest pull box or lighting unit, directly buried, for Roadway Lighting.
- Multiple Circuits in 3" Diam., corrosion resistant, conduit under paved areas, for Roadway Lighting.
- Empty 2" Diam., galv., rigid, conduit in structures or buried underground.
- Multiple Circuits in Cable Duct, directly buried, for Sign Lighting.
- Multiple Circuits in 2" Diam., galv., rigid, conduit in structures, for Sign Lighting.
- Multiple Circuits in 3" Diam., corrosion resistant, conduit under paved areas, for Sign Lighting, or as called out on Layout Sheet.
- 2" Diam., corrosion resistant conduit, for power circuits to call boxes.
- 2-3" Diam., Plastic conduits for communications circuits, directly buried.
- 2-3" Diam., galv., rigid, conduits in structures, for communications circuits.
- 2-3" Diam., corrosion resistant, conduits for communications circuits.
- Concrete Pull Box for communication circuits, Type A.
- Junction box in structures, galv. cast-iron, for communication circuits.
- Call Box, with a 2" Diam. corrosion resistant, conduit to the nearest concrete Pull Box or junction box, as shown.
- Bridge ground at fixed Piers, on outside beams, as shown.
- Expansion joint in conduit (s) in structures, as shown or required.
- Drain fitting in conduit (s) in low point in conduit runs, in structures, as shown.
- Typical Luminaire Designation: II is ASA-IES Type, 400 is lamp wattage, 18 is the bracket length, 1C3 is the circuit designation where 1 is the circuit number, C is for the service panel location, and 3 is for the Pole Number in the circuit, (s) Special poles with 15 ft Brackets, (s) Walls.
- Typical Mercury Vapor Underpass Lighting Unit: 250 watt clear M.V. Lamp, Mounted on face of Pier or to Bridge superstructure as shown and detailed.



9 IN. SPECIAL POLES WITH 15 FT. BRACKETS.

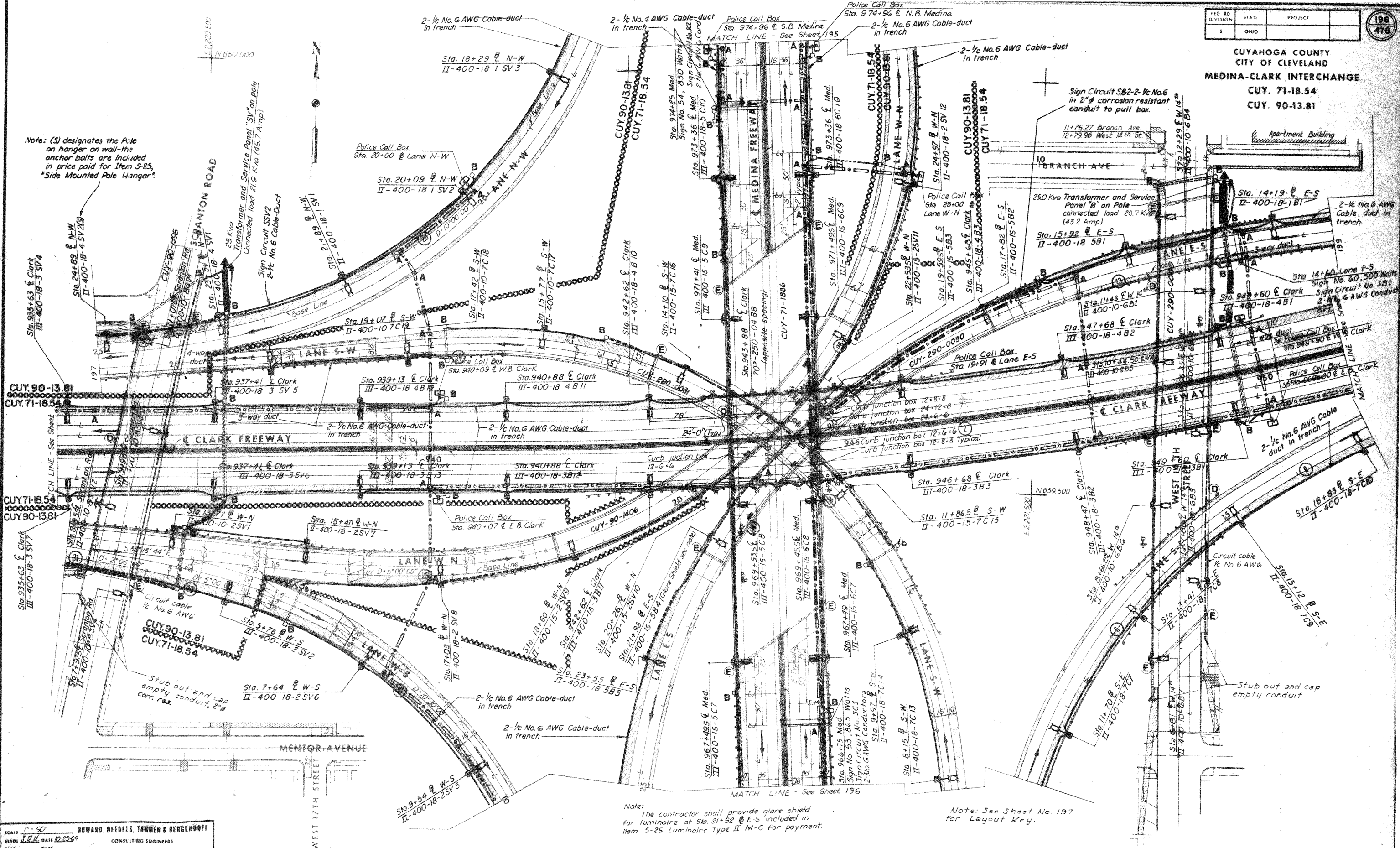
POLE DESIGNATION	STATION	WALL NO.	POLE DIMENSIONS
II-400-15-3SV13	928+97 @ Clark	91A	9.0" x 4.69" x 30'-9"
III-400-15-3SV12	930+29 @ Clark	91A	9.0" x 5.47" x 25'-0"
III-400-15-3SV11	931+55 @ Clark	91A	9.0" x 6.40" x 18'-6"
III-400-15-3SV10	932+87 @ Clark	91A	9.0" x 7.50" x 10'-8"
II-400-15-3SV9	2+99 @ Lane W-S	91A	9.0" x 8.23" x 5'-6"
III-400-15-4SV5	30+65 @ Lane N-W	91	9.0" x 5.18" x 27'-3"
II-400-15-4SV4	28+76 @ Lane N-W	91	9.0" x 6.51" x 17'-0"
II-400-15-4SV3	26+83 @ Lane N-W	91	9.0" x 7.65" x 9'-7"
II-400-15-4SV2	24+89 @ Lane N-W	91	9.0" x 7.90" x 7'-10"

Note: (s) After Luminaire Designation is for special pole see table on this sheet for pole dimensions.

Where embedded conduits cross wall joints provide expansion and deflection fittings to accommodate 3/4" movements in all directions. Fittings shall be corrosion resistant with bonding jumpers.

Note: For details of side mounted poles at Sta 2+99 @ W-S and Sta 24+89 @ N-W See Sheet 206.

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



Note: (S) designates the Pole on hanger on wall-the anchor bolts are included in price paid for Item S-25, "Side Mounted Pole Hanger".

Sign Circuit SB2-2-1/2 No. 6 in 2" corrosion resistant conduit to pull bar.

250 Kva Transformer and Service Panel "B" on Pole connected load 20.7 Kva (43.2 Amp).

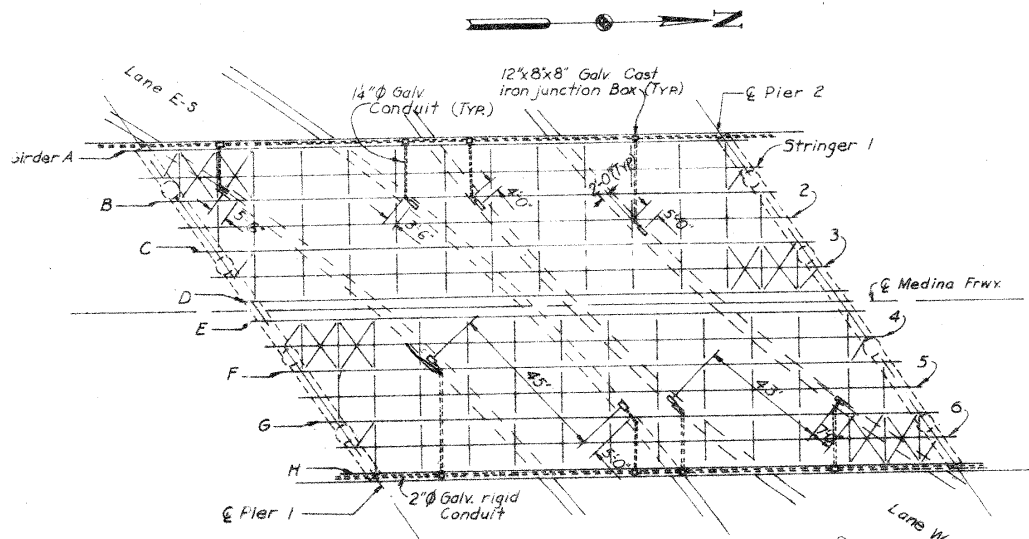
SCALE: 1" = 50'
MADE: J.P.H. DATE: 10-23-64
TECD: G.V.S. DATE: 11-1-64
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

Note: The contractor shall provide glare shield for luminaire at Sta. 21+92 @ E-S included in Item S-25 Luminaire Type II M-C for payment.

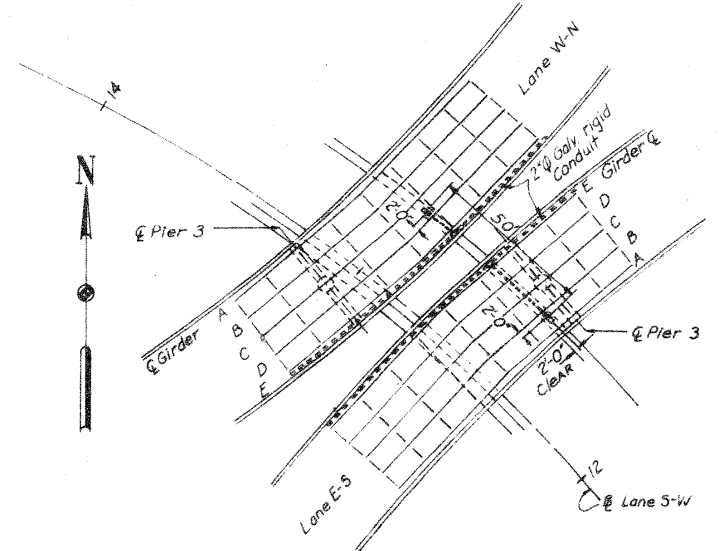
Note: See Sheet No. 197 for Layout Key.

LIGHTING LAYOUT

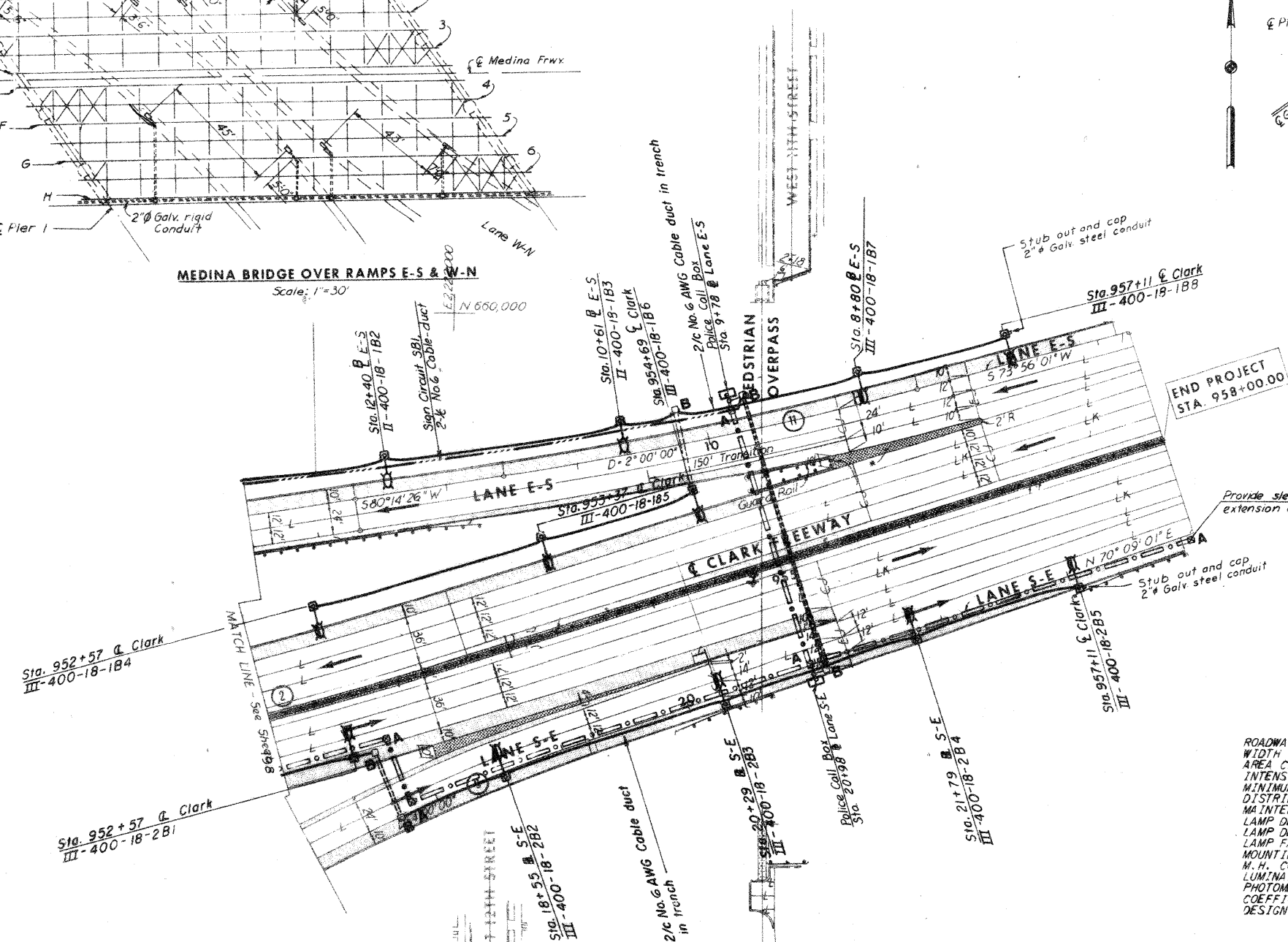
CUYAHOGA COUNTY
CITY OF CLEVELAND
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CUY. 71-18.54
CUY. 90-13.81



MEDINA BRIDGE OVER RAMPS E-S & W-N
Scale: 1"=30'



RAMPS E-S & W-N OVER RAMP S-W
Scale: 1"=30'



END PROJECT
STA. 958+00.00

Note: See Sheet No. 197
for Layout Key.
All items on this sheet are
included in CUY-71-18.54
quantities.

LIGHTING DESIGN DATA

ROADWAY CLASSIFICATION	Freeway	Freeway	Freeway Lane
WIDTH	36 ft.-16 ft.-36 ft.	82 ft.-16 ft.-64 ft.	24 ft.
AREA CLASS	Intermediate	Intermediate	Intermediate
INTENSITY	1.2 F.C. Av. Initial	1.2 F.C. Av. Initial	1.2 F.C. Av. Initial
MINIMUM INTENSITY	0.3 F.C. Initial	0.3 F.C. Initial	0.3 F.C. Initial
DISTRIBUTION TYPE	III-M-C	III-M-C	II-M-C
MAINTENANCE FACTOR	100%	100%	100%
LAMP DESIGNATION	ASA H33-1CD	ASA H33-1CD	ASA H33-1CD
LAMP DESIGN OUTPUT	19,500 lum.init.hor.	19,500 lum.init.hor.	19,500 lum.init.hor.
LAMP FACTOR	0.95	0.95	0.95
MOUNTING HEIGHT	35.0 ft.	35.0 ft.	35.0 ft.
M.H. CORRECTION FACTOR	0.74	0.74	0.74
LUMINAIRE OVERHANG	4 ft. 8 in. (18' br.)	4 ft. 8 in. (18' br.)	4 ft. 8 in. (18' br.)
PHOTOMETRIC DATA	L.M. Test No. E-359-84	L.M. Test No. E-359-84	L.M. Test No. E-359-85
COEFFICIENT OF UTILIZATION	48%	57%	33%
DESIGN SPACING	195 ft. opp. spa.	126 ft. opp.	200 ft. one side

ROADWAY CLASSIFICATION	Freeway Underpass (Clark)
WIDTH	36 ft.-16 ft.-36 ft.
AREA CLASS	Intermediate
INTENSITY	1.8 F.C. Av. Initial
MINIMUM INTENSITY	0.45 F.C. Initial
DISTRIBUTION TYPE	70° prismatic wide spread
MAINTENANCE FACTOR	77% luminaire and lamp
LAMP DESIGNATION	ASA H37-5KB
LAMP DESIGN OUTPUT	10,500 L. init. hor.
LAMP FACTOR	.875
MOUNTING HEIGHT	17 ft.
M.H. CORRECTION FACTOR	0.78
LUMINAIRE OVERHANG	-12 ft. back from edge
PHOTOMETRIC DATA	Holophane Test No. 20171
COEFFICIENT OF UTILIZATION	24%
DESIGN SPACING	24.4 ft. opposite

SCALE: 1"=50'
HOWARD, NEEDLES, TAMMEN & BERGENOFF
CONSULTING ENGINEERS
MADE: J.R.K. DATE: 10-30-64
TRCD: DATE: ANSAS CITY CLEVELAND NEW YORK
CKD: G.J.C. DATE: 11-1-64

LIGHTING

ESTIMATED QUANTITIES

FED. DIVISION	STATE	PROJECT
2	OHIO	

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

100% City Participation

ROADWAYS										STRUCTURES										ROADWAYS										UNIT	ITEM NO.	DESCRIPTION	CUY-71			GRAND TOTAL	CUY-90		
Sheet 197	Sheet 198	Sheet 195	Sheet 198	Sheet 198	Sheet 198	Sheet 198	Sheet 198	Sheet 198	Sheet 198	Sheet 194	Sheet 195	Sheet 195	Sheet 196	Sheet 197	Sheet 197	Sheet 198	Sheet 198	Sheet 199	TOTAL	TOTAL	Normal	95% State 5% City	100% City	Normal	95% State 5% City	100% City													
										10	17	7	33	4	1	29	8	12	105	16	Each	S-25	Round Pole (9.5"x5.02"x32'-0") - 18' Br.	95	10		121	13	3										
																					Each	S-25	Round Pole (9.0"x4.52"x32'-0") - 10' Br.	7			8		1										
																					Each	S-25	Round Pole (6.5"x4.2"x16'-6")	14			14												
																					Each	S-25	Round Pole (9.0"x4.87"x29'-6") - 15' Br.																
																					Each	S-25	Round Pole (8.0"x3.87"x29'-6") - 10' Br.																
																					Each	S-25	Round Pole (9" Special) - 15' Br.				9												
																					Each	S-25	Pole (9.5"x5.02"x32'-0") - 18' Br.®				121												
																					Each	S-25	Pole (9.0"x4.52"x32'-0") - 10' Br.®				8												
																					Each	S-25	Pole (6.5"x4.2"x16'-6")®				14												
																					Each	S-25	Pole (9.0"x4.87"x29'-6") - 15' Br.®																
																					Each	S-25	Pole (8.0"x3.87"x29'-6") - 10' Br.®																
																					Each	S-25	Pole (9" Special) - 15' Br.®				9												
																					Each	S-25	Luminaire, Type III-M-C	61	8		83	12	2										
																					Each	S-25	Luminaire, Type II-M-C	41	2		55	11	1										
																					Each	S-25	Underpass Luminaire on Bridge																
																					Each	S-25	Underpass Luminaire on Pier																
																					Each	S-25	Underpass Luminaire on Pole	14			14												
																					Each	S-25	400-W. Lamp	102	10		138	23	3										
																					Each	S-25	250-W. Lamp	14			14												
																					Each	S-25	Light Pole Foundation, Type A	95	10		121	13	3										
																					Each	S-25	Light Pole Foundation, Type B	7			8		1										
																					Each	S-25	Light Pole Foundation, Type C	14			14												
																					Each	S-25	Call Box Foundation	19			21	2											
																					Each	S-25	Side-Mounted Pole Hanger				2												
																					Set/2	S-25	Light Pole Anchor Bolts for Structure				7												
																					Each	S-25	Junction Box on Structure - 12"x8"x8"				7		7										
																					Each	S-25	Junction Box on Structure - 12"x6"x6"																
																					Each	S-25	Junction Box on Structure - 24"x12"x8"																
																					Each	S-25	Junction Box on Structure - 24"x6"x6"				1		1										
																					Each	S-25	Pull Box - Type A	56			63	7											
																					Each	S-25	Pull Box - Type B	62			70	8											
																					Each	S-25	Call Box Transformer and Cable			19	22												
																					Lin. Ft.	S-25	Cable-Duct - 2-1/2" No. 4	1460	600		2060	600	3										
																					Lin. Ft.	S-25	Cable-Duct - 2-1/2" No. 6	25,910	2336		28,246	2,336											
																					Lin. Ft.	S-25	Circuit Cable - 1/2" No. 4	860	60		920	60											
																					Lin. Ft.	S-25	Circuit Cable - 1/2" No. 6	4,870			10,030	5,160											
																					Lin. Ft.	S-25	Pole and Bracket Cable - 1/2" No. 12	11,680	1,100		15,330	2,220	330										
																					Lin. Ft.	S-25	Circuit Cable - 1/2" No. 10																
																					Each	S-25	Fused "M" Connector, Style 82	121	10		161	27	3										
																					Each	S-25	Unfused "M" Connector, Style 83	121	10		161	27	3										
																					Each	S-25	Semi-Permanent "M" Connector, Style 84	32			37	5											
																					Each	S-25	Semi-Permanent In-Line Connector, Style 51	30			44	14											
																					Each	S-25	In-Line Fused Disconnect, Style 64																
																					Lin. Ft.	S-25	Conduit - 1 1/2" Flexible																
																					Lin. Ft.	S-25	Conduit - 1" Rigid Galv. Steel																
																					Lin. Ft.	S-25	Conduit - 1 1/2" Rigid Galv. Steel																
																					Lin. Ft.	S-25	Conduit - 2" Rigid Galv. Steel	100			1790	1,690											
																					Lin. Ft.	S-25	Conduit - 3" Rigid Galv. Steel	60			60												
																					Lin. Ft.	S-25	Conduit - 2" Corrosion Resistant	2,255			3190	935											
																					Lin. Ft.	S-25	Conduit - 3" Corrosion Resistant	7,910			9060	1,150											
																					Lin. Ft.	S-25	Conduit - 3" Plastic	7,080			15,620	730	730										
																					L.S.	S-25	Transformer and Panel Station, 25 KVA			7,080	L.S.	L.S.											
																					L.S.	S-25	Transformer and Panel Station, 75 KVA				L.S.	L.S.											
																					L.S.	S-25	Sign Commercial Electric Service				L.S.	L.S.											
																					Lin. Ft.	S-25	Tranching	23,130			L.S.	L.S.											
																					Each	S-25	Bridge Structure Ground				26,730	3,600											

Pole quantities repeated for alternate bid for poles other than round.

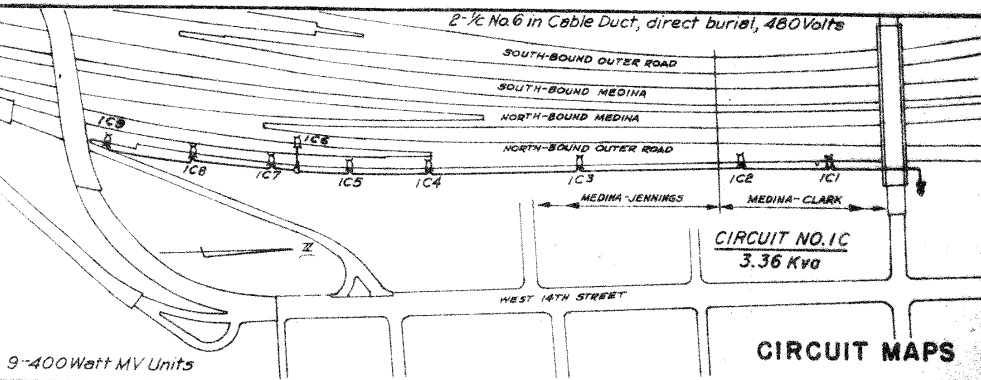
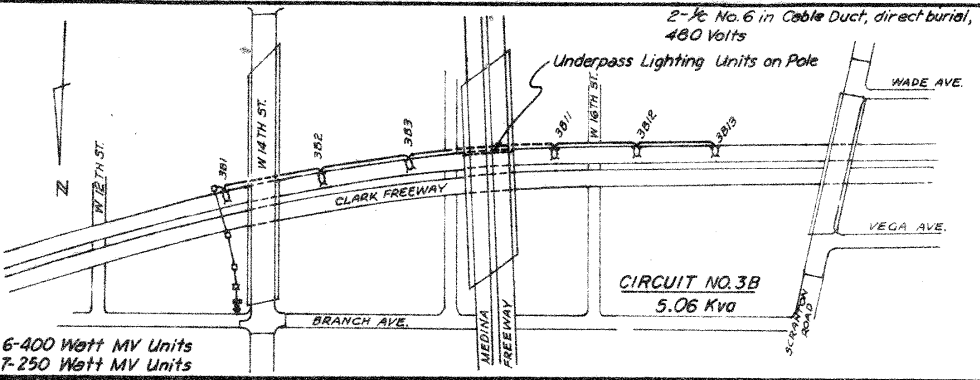
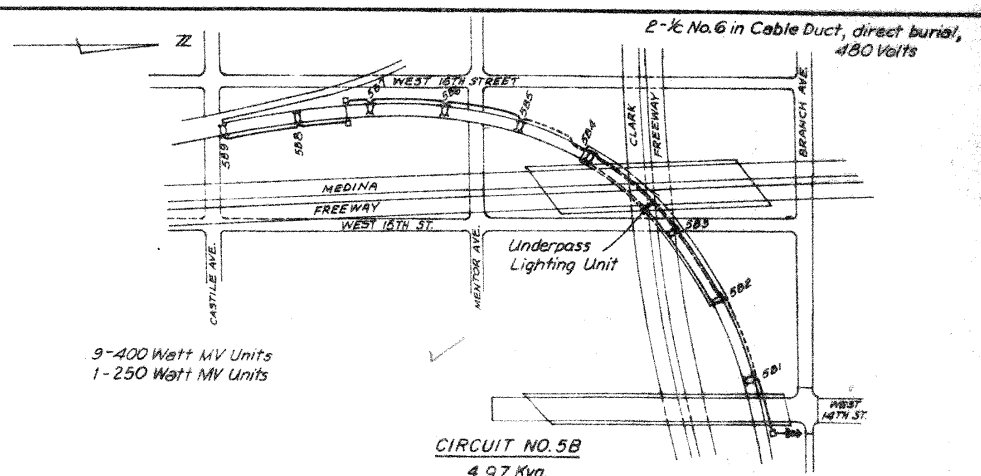
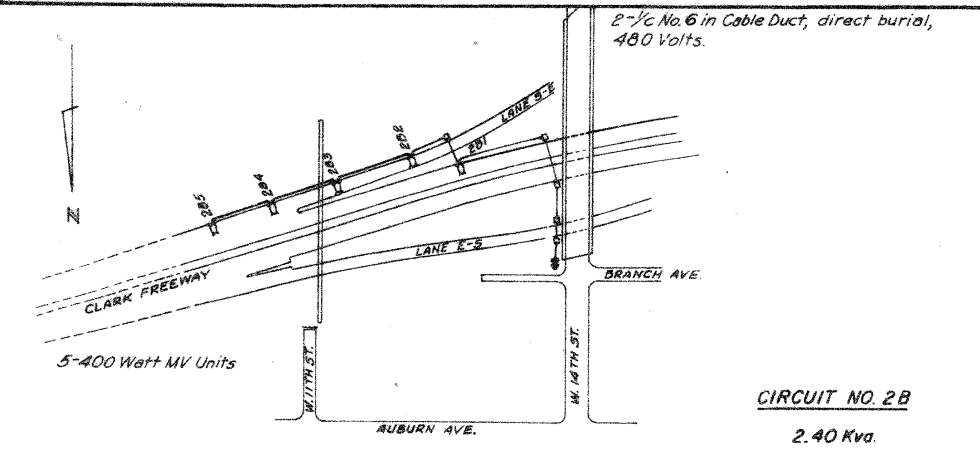
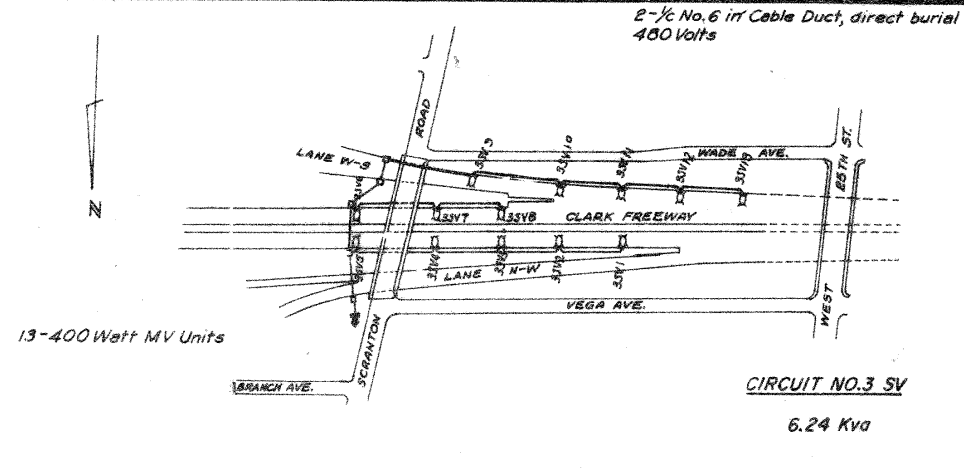
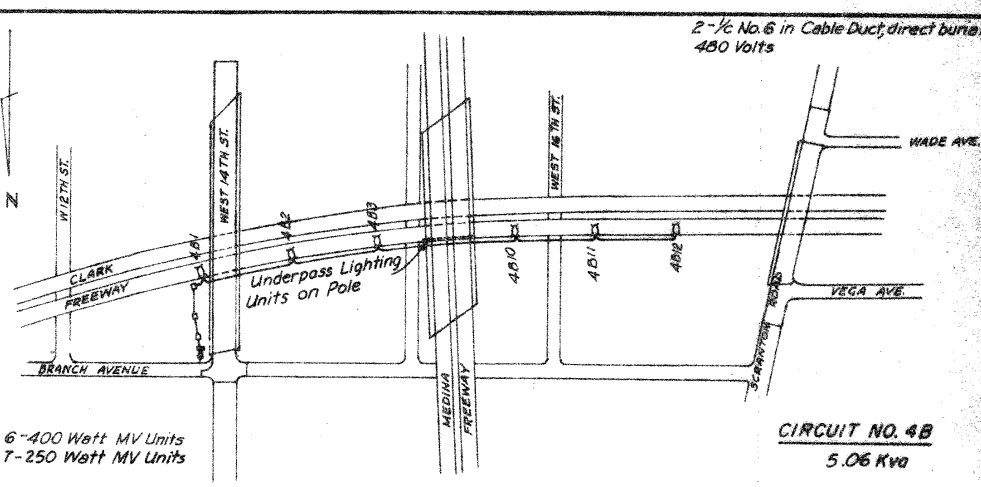
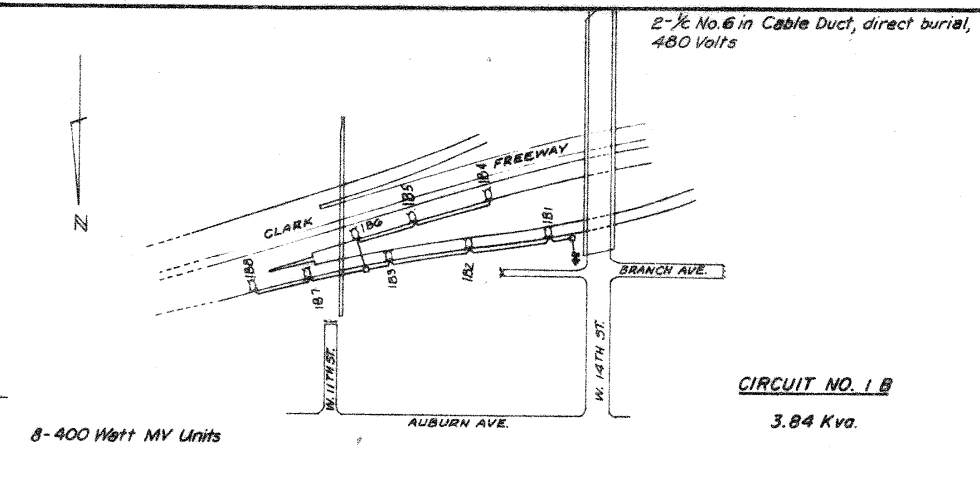
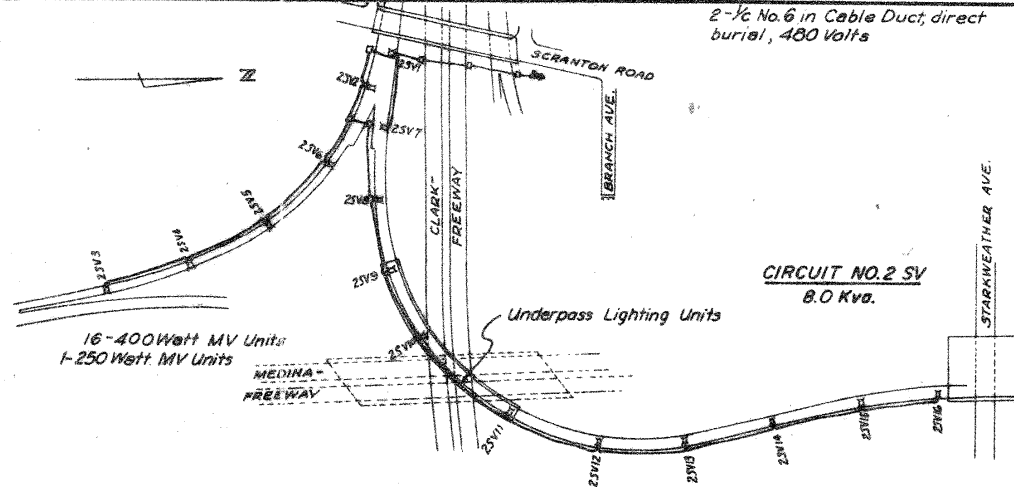
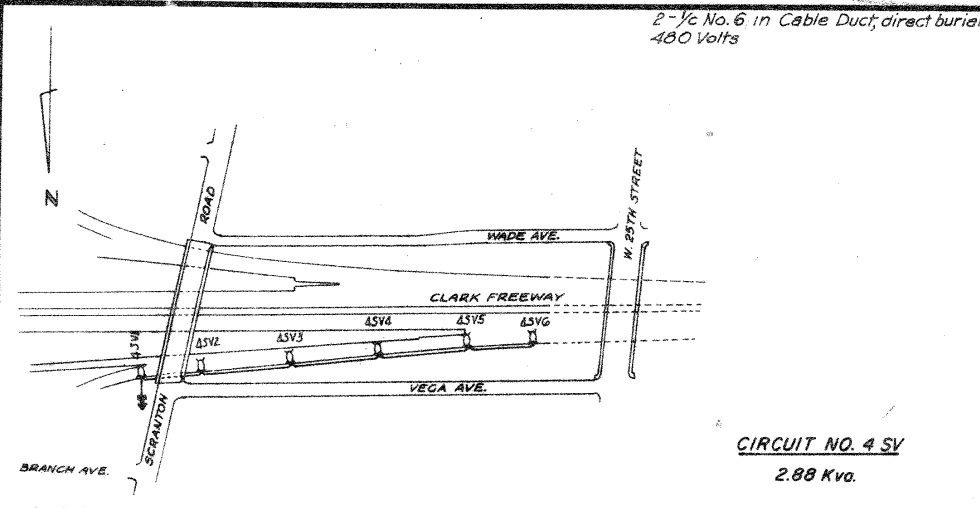
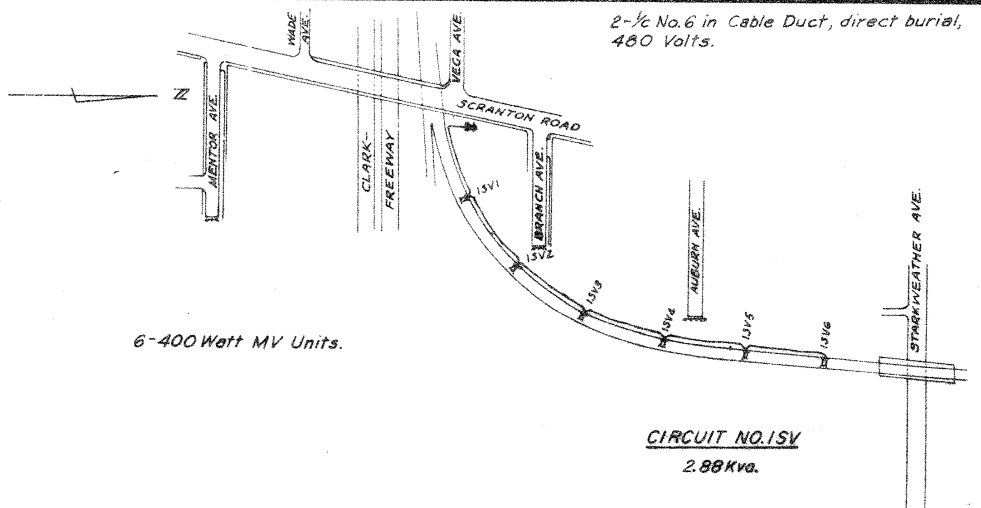
Quantity indeterminate, number installed shall be as required by field conditions without effecting the unit price bid.
 Alternate Pole bid items, for Poles other than round
 Rev. 12-9-65 C.E.H.
LIGHTING QUANTITIES

SCALE: C. GULLA, JR. HOWARD, NEED, ES, TAMMEN & BERGENDOFF
 DRAWN: L.W.L. DATE: 1-5-65
 DESIGNED: DATE: 1-5-65 KANSAS CITY CLEVELAND NEW YORK
 CONSULTING ENGINEERS

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

CIRCUIT CROSS-REFERENCE NUMBERS	
PLAN CIRCUIT NO.	M.E.L.P. CIRCUIT NO.*
1SV	A1
2SV	A2
3SV	A3
4SV	A4
1B	A5
2B	A6
3B	A7
4B	A8
5B	A9
1C	A10

* M.E.L.P. Number on Pole Identification Decal.



Scale: No Scale
 DATE: 12-16-64
 DATE: 12-23-64
 HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

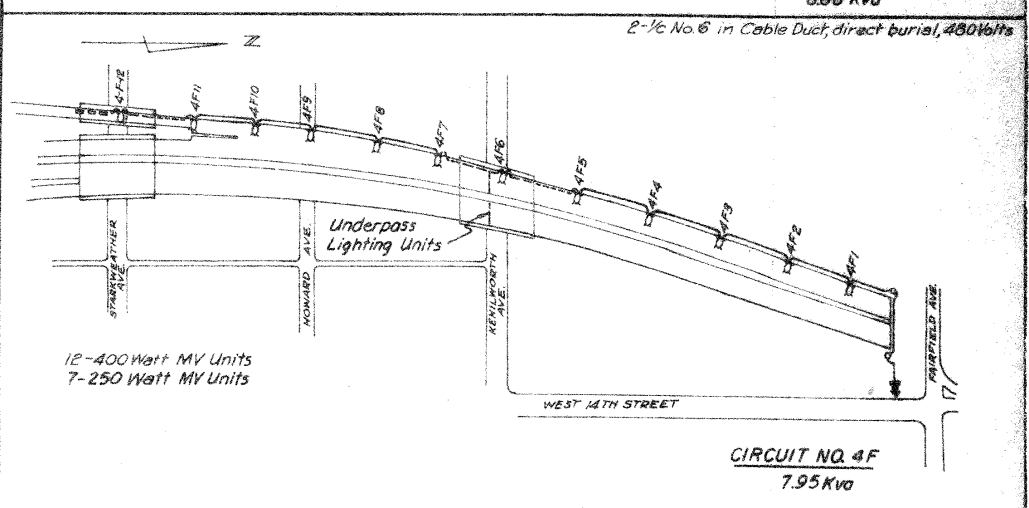
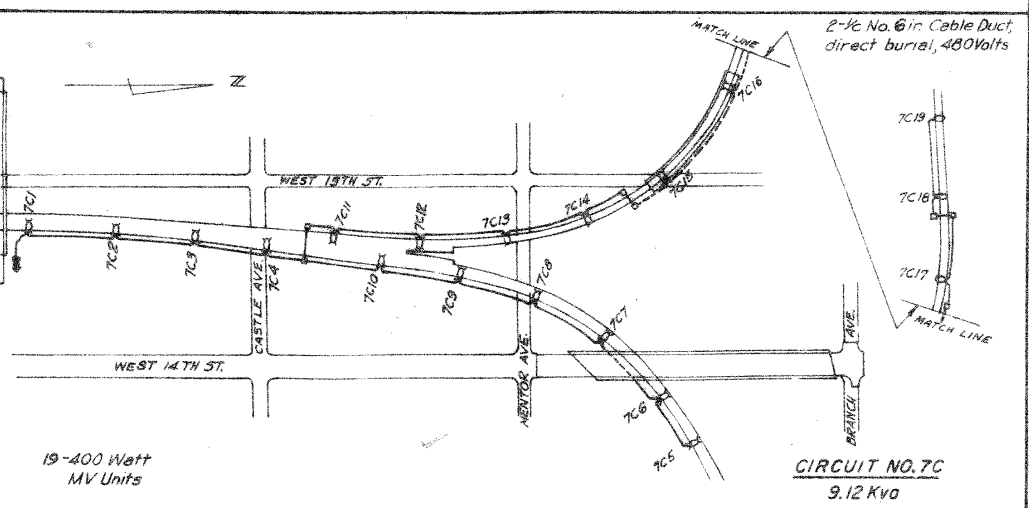
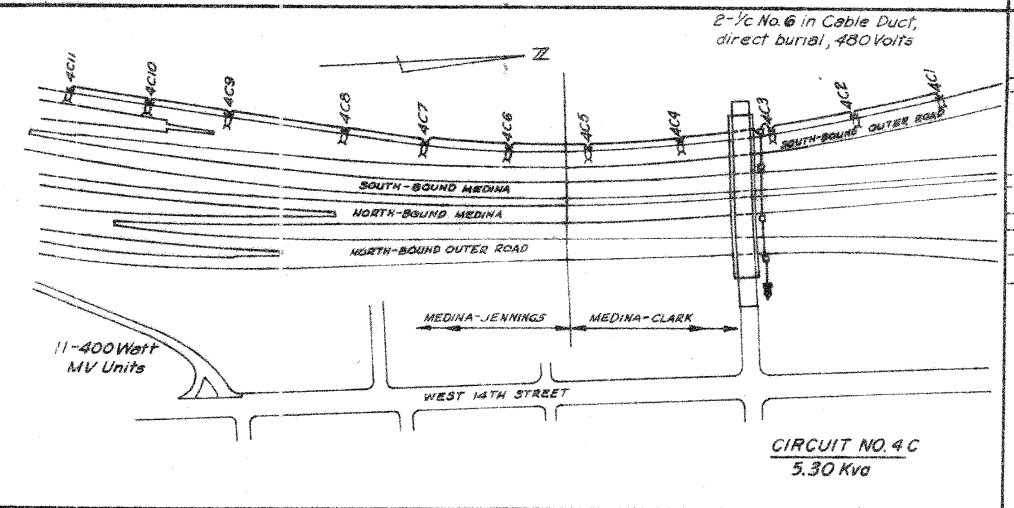
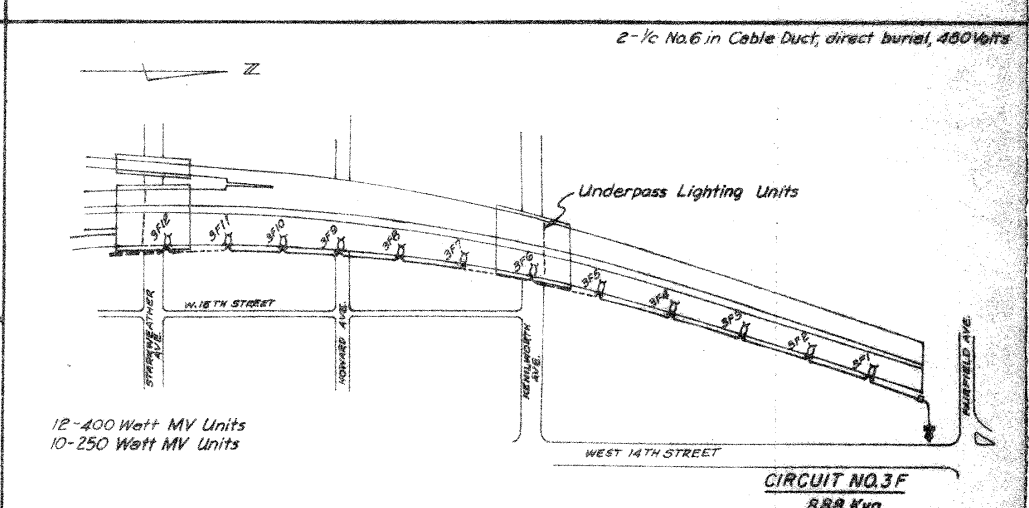
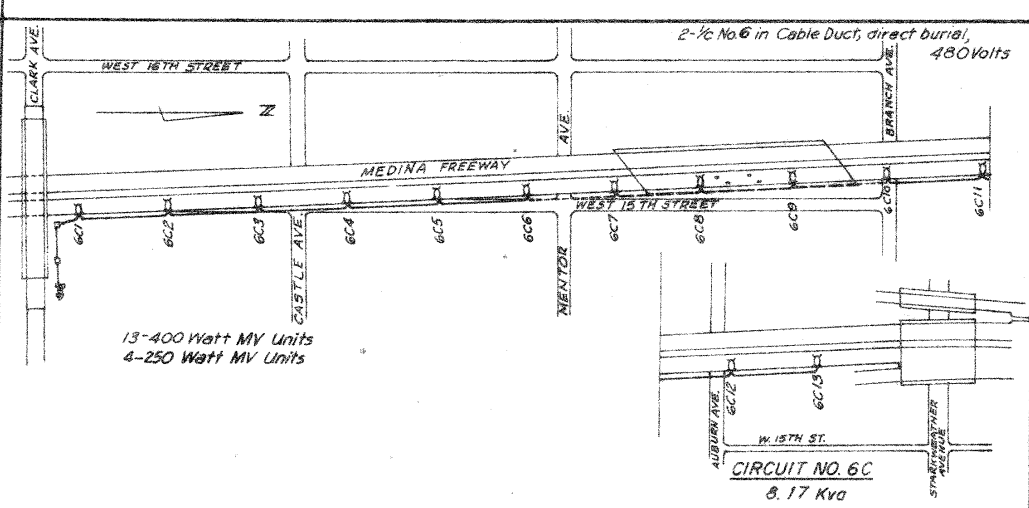
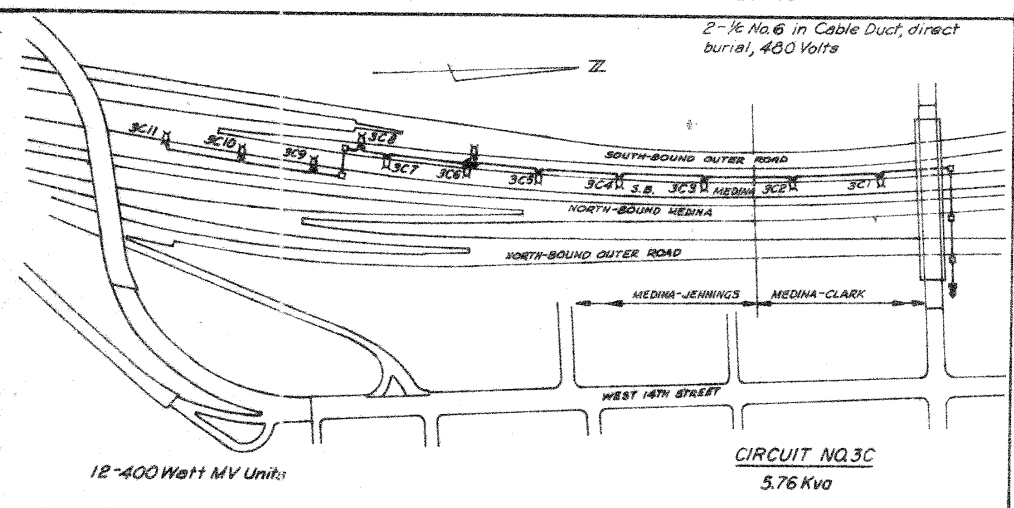
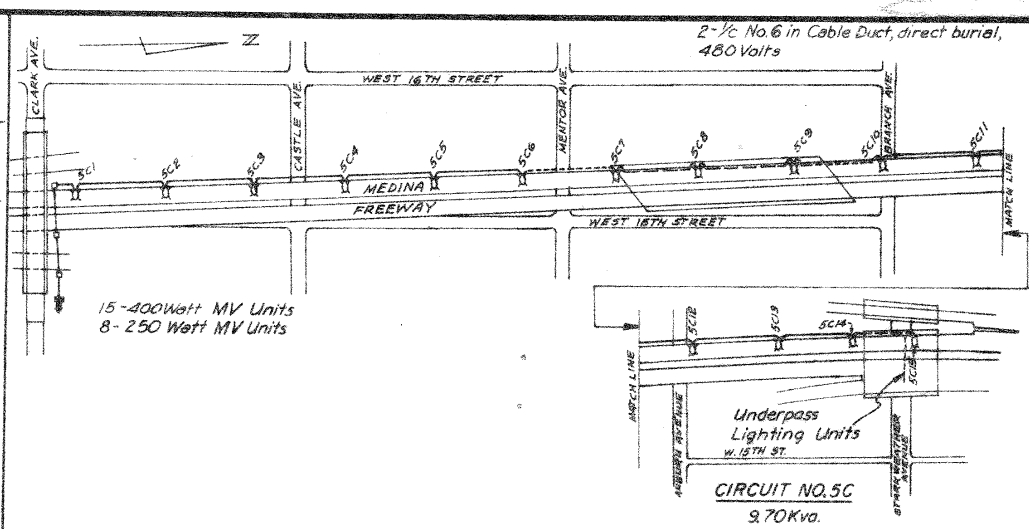
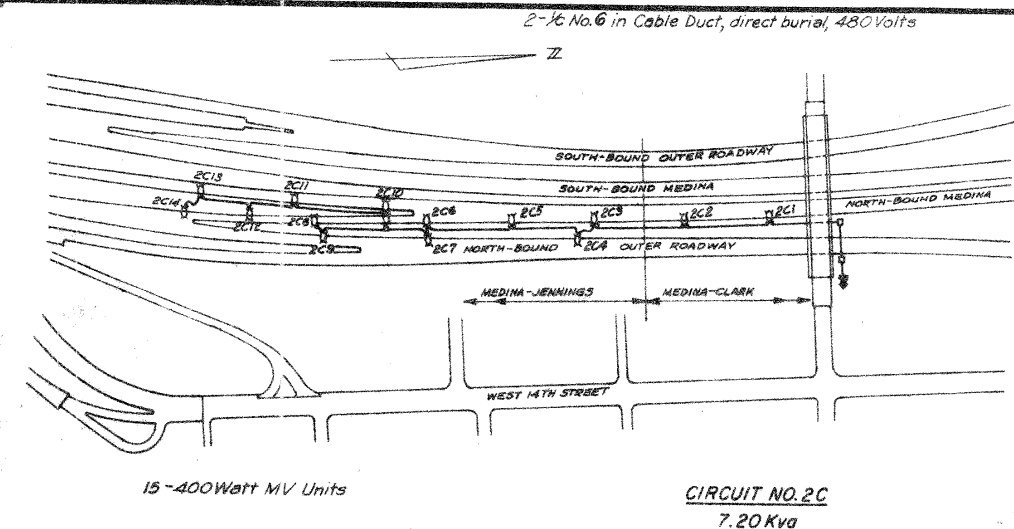
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

CIRCUIT CROSS-REFERENCE NUMBERS

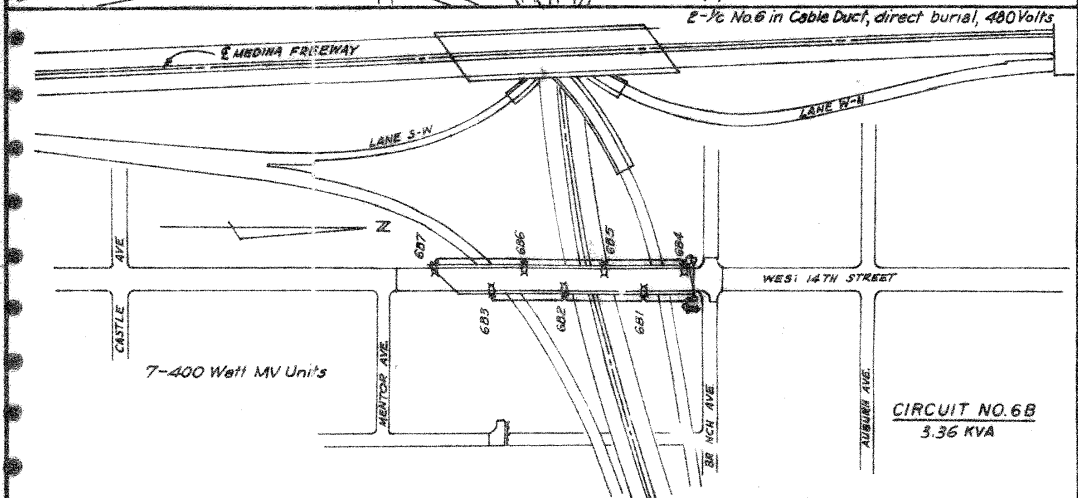
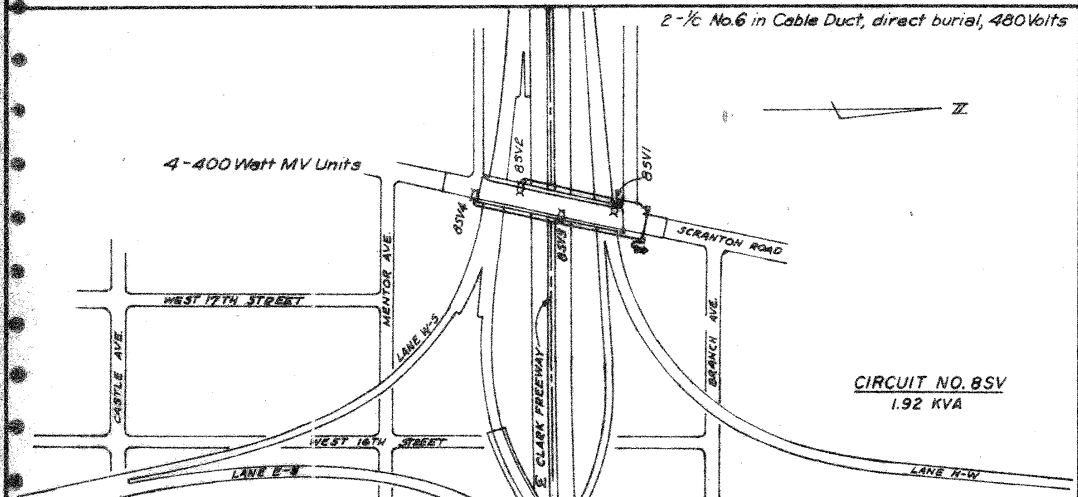
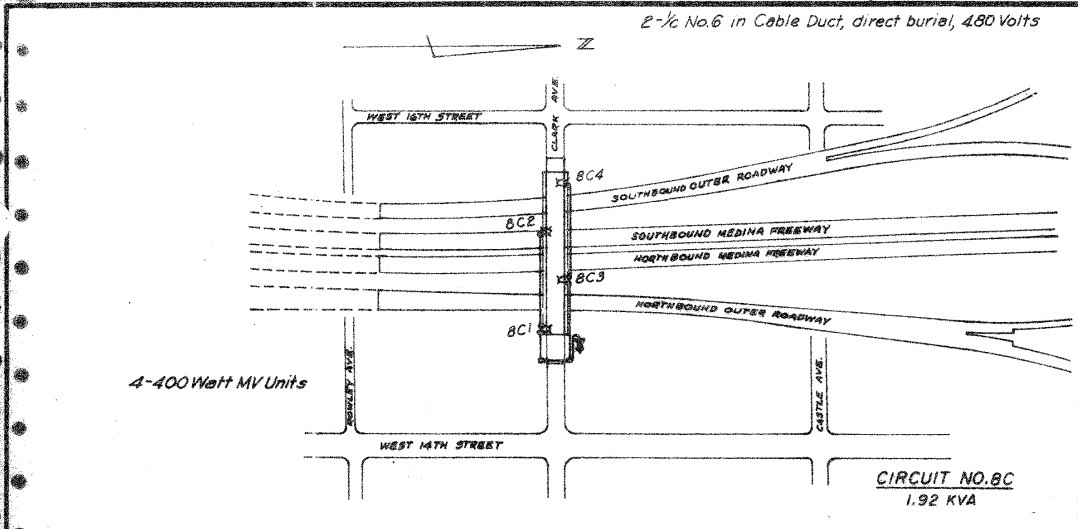
PLAN CIRCUIT NO.	M.E.L.P. CIRCUIT NO.
2C	A11
3C	A12
4C	A13
5C	A14
6C	A15
3F	A16
4F	A17

*M.E.L.P. Number on Pole Identification Decal.



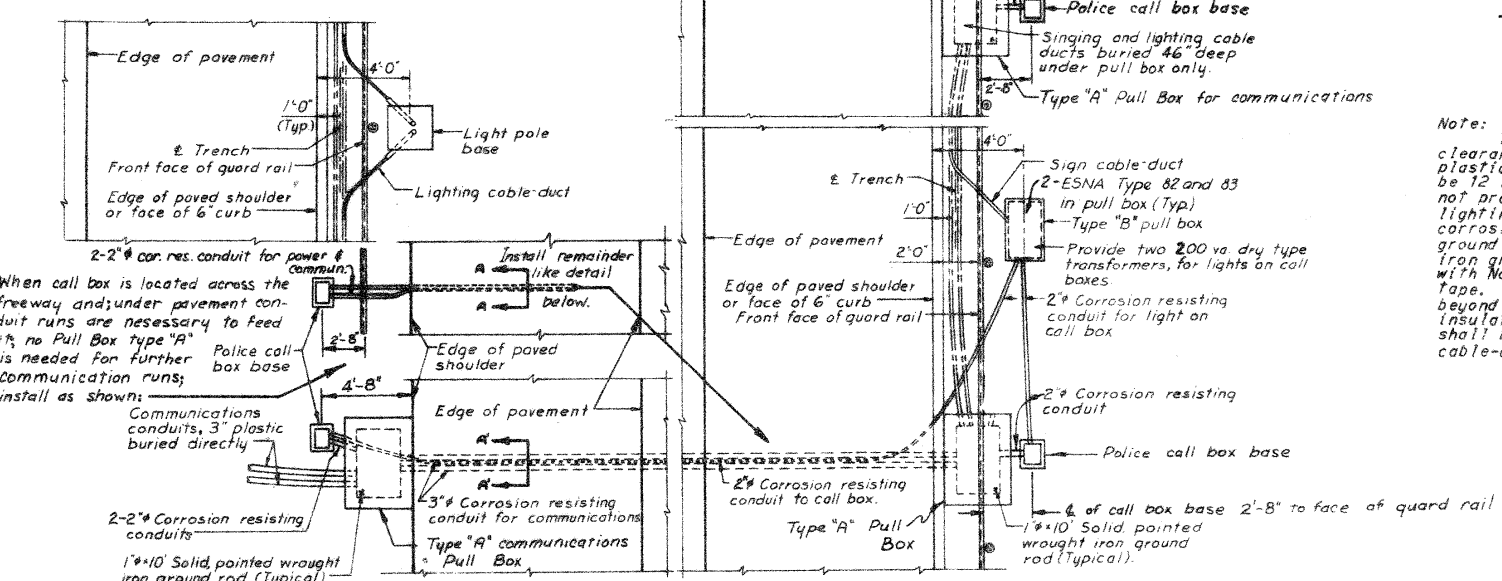
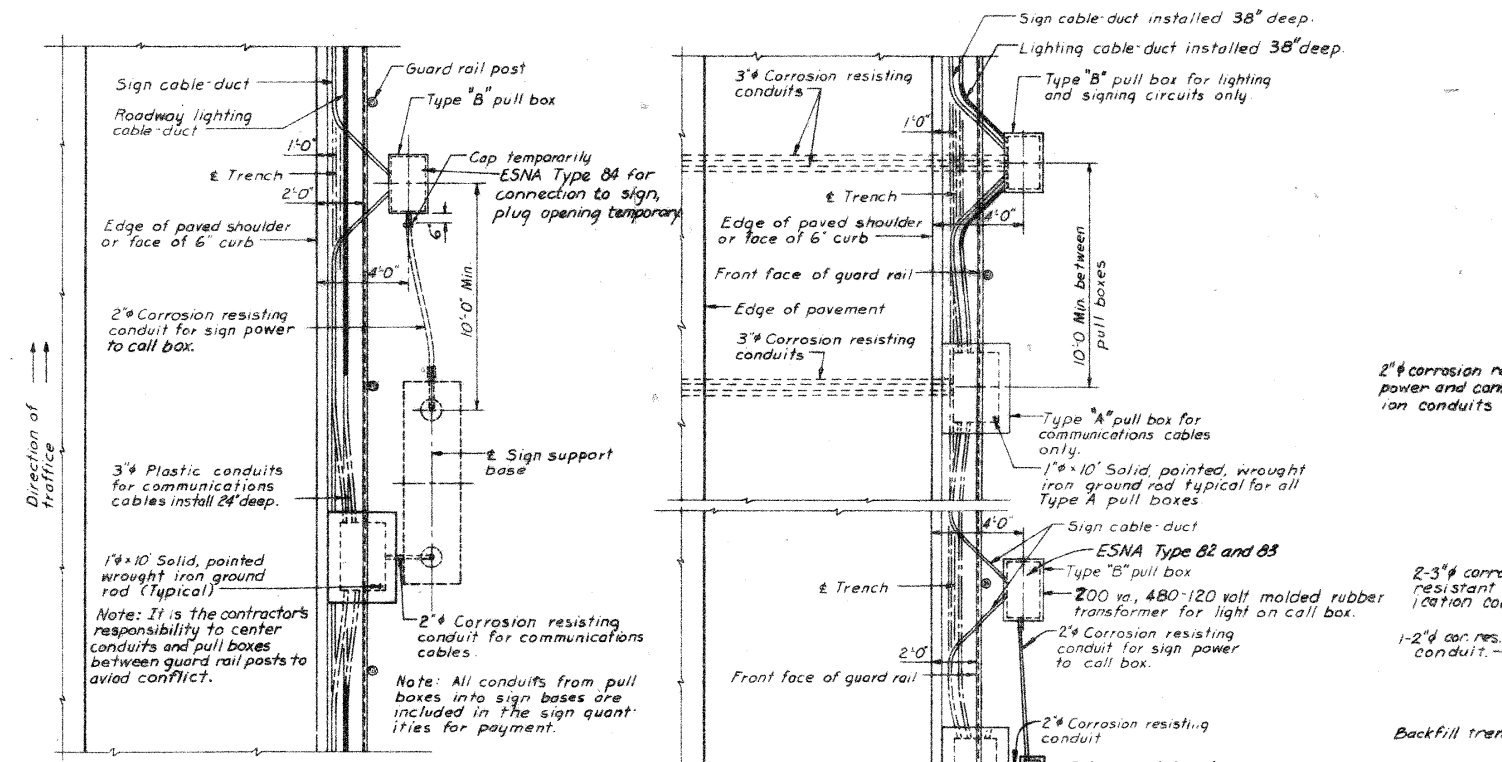
Scale No Scale
 HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 DATE 12-16-64
 DATE 12-23-64
 KANSAS CITY CLEVELAND NEW YORK

**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81**

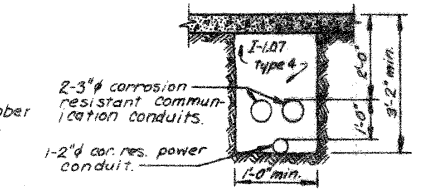
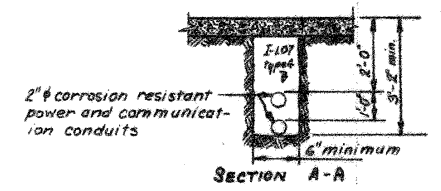
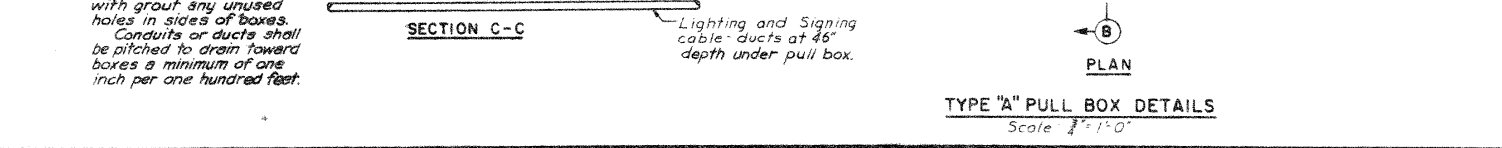
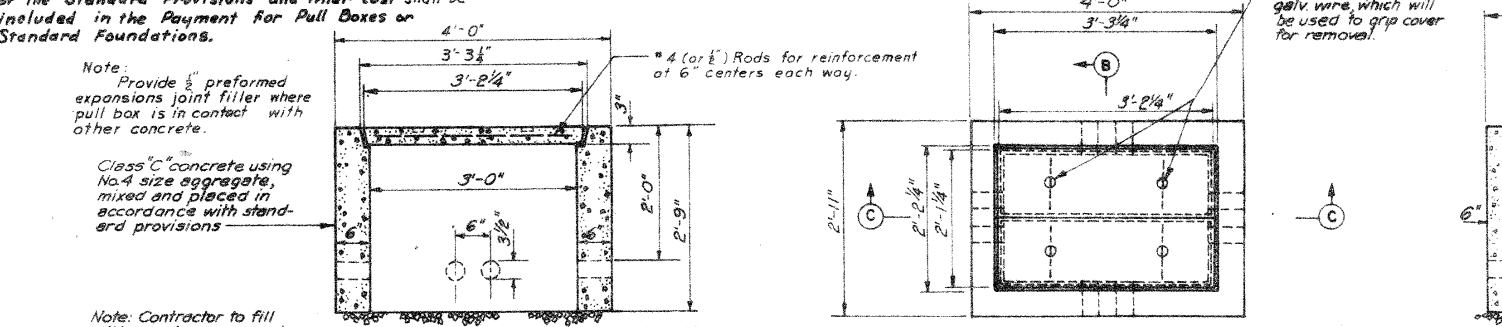


CIRCUIT CROSS-REFERENCE NUMBERS	
PLAN CIRCUIT NO.	M.E.L.P. CIRCUIT NO.
BC	A17
BSV	A18
6B	A19

*M.E.L.P. Number on Pole Identification Decal.



GROUND LOCATION PLAN FOR CONDUITS
Scale: 1/4" = 1'-0"



Backfill trenches in accordance with Section I-107 Type 4.

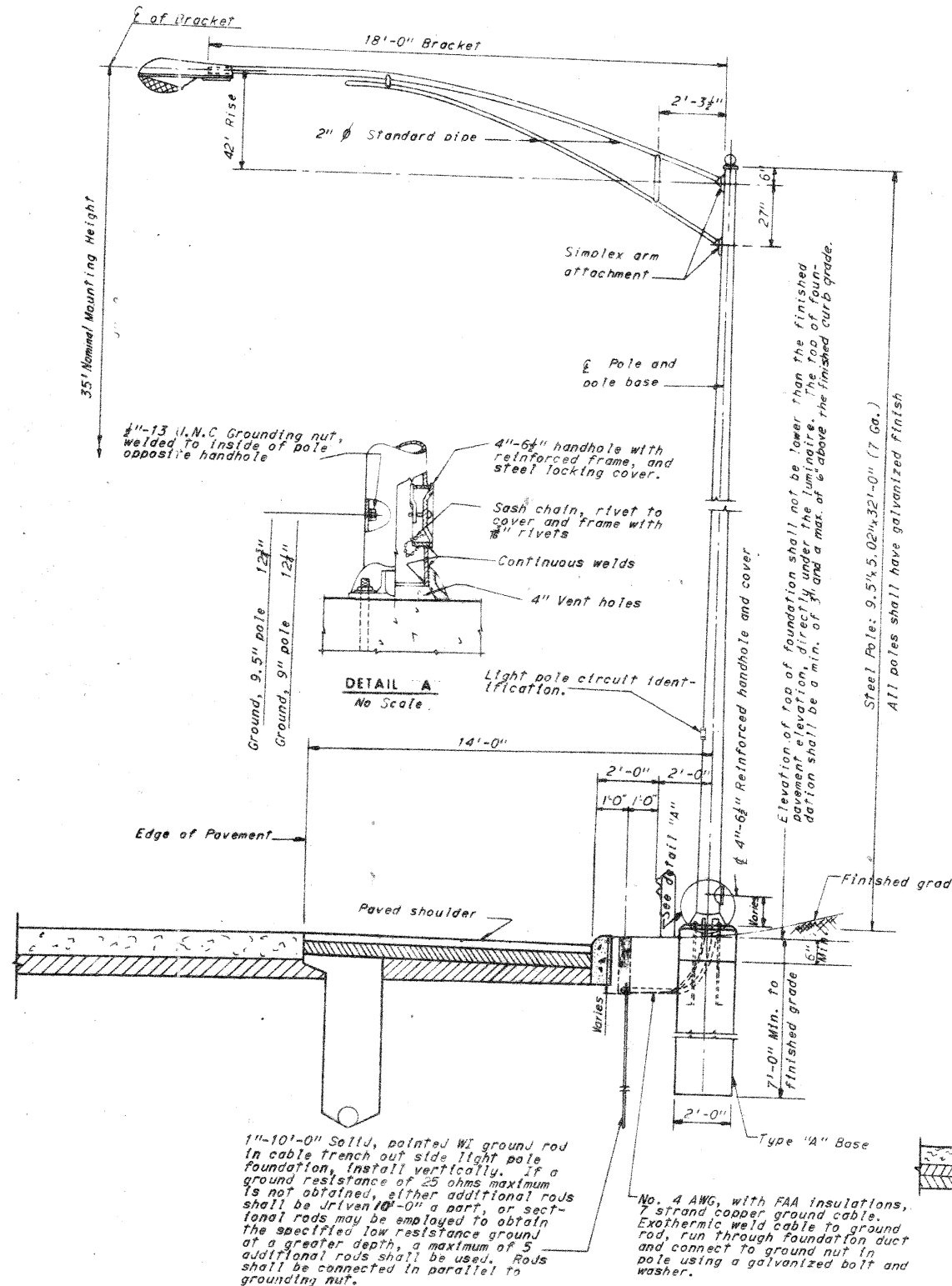
TRENCH SECTIONS FOR CONDUIT RUNS UNDER PAVEMENT.
No Scale

Note: The Contractor shall maintain a minimum clearance between power and communications plastic ducts. The clearance in earth shall be 12 inches, with 6 inches in concrete. If not practical to maintain clearance, install lighting and sign power cable-ducts in 2" corrosion resistant rigid conduit sleeves, and ground sleeves by individual 1" x 10" wrought iron ground rods Exothermically interconnected with No. 4 ground wire. Wrap welds with vinyl tape. Extend conduits a minimum of two feet beyond conflict areas, and terminate with insulating bushings. Payment for sleeves shall be included in unit prices paid for cable-ducts.

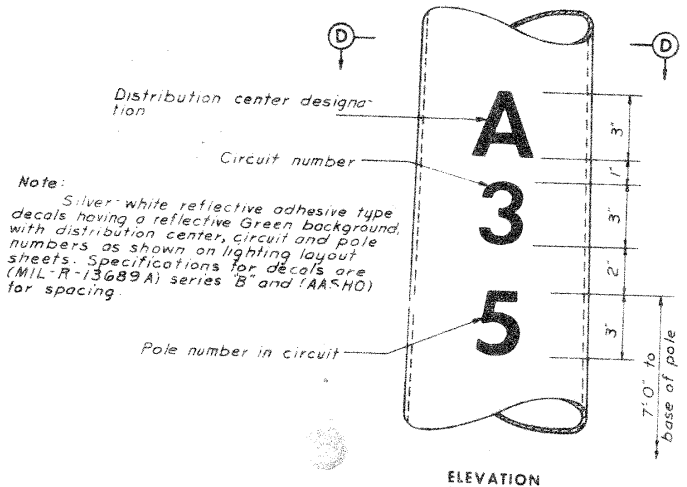
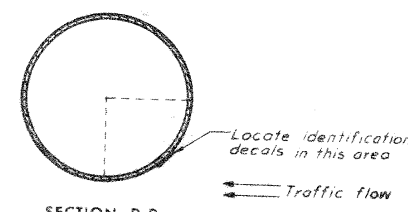
FED. RD. DIVISION	STATE	PROJECT
1	OHIO	

204
476

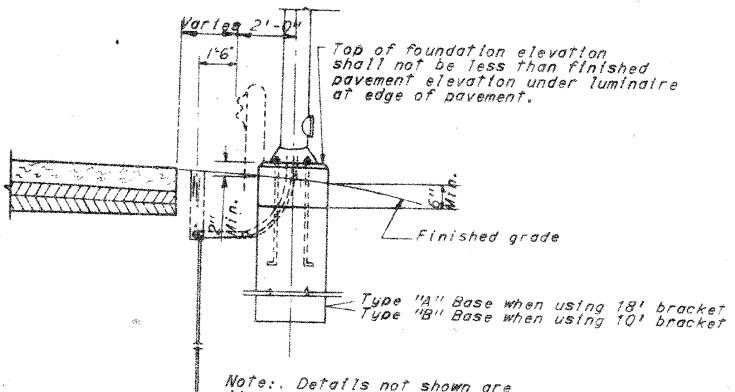
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



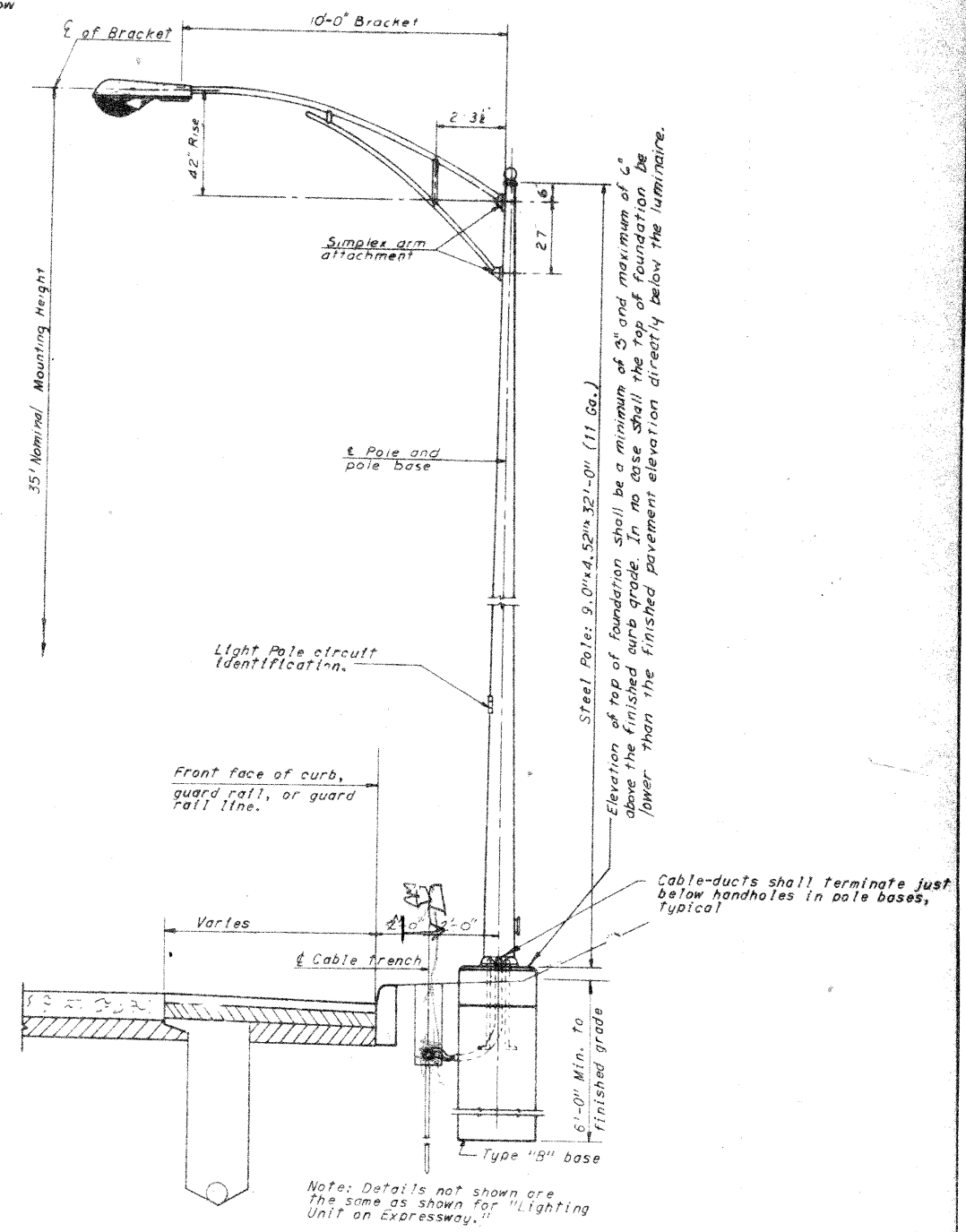
LIGHTING UNIT ON EXPRESSWAYS
Scale: 3/8" = 1'-0"



LIGHT POLE CIRCUIT IDENTIFICATION
Full Scale



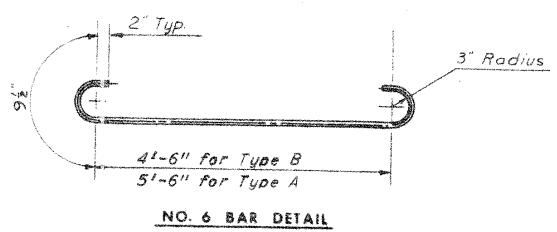
LIGHTING UNIT ON EXPRESSWAYS AND LANES WITHOUT CURB
Scale: 3/8" = 1'-0"



LIGHTING UNIT ON LANES
Scale: 3/8" = 1'-0"

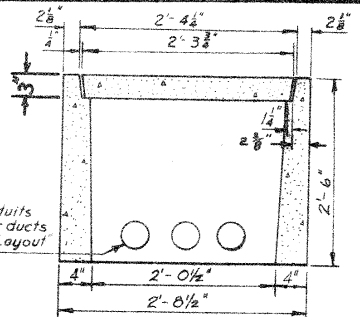
SCALE As Shown
MADE LWL DATE 12-18-64
HOWARD, NEEDLES TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



NO. 6 BAR DETAIL

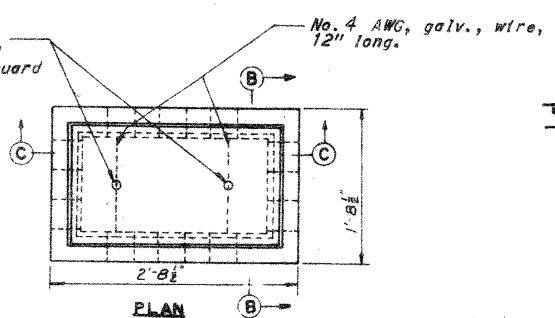
Class "C" concrete, using No. 4 size aggregate, mixed and placed in accordance with standard provisions



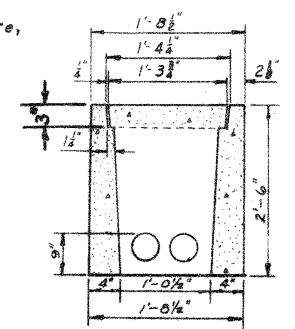
SECTION C-C

Holes, 1 1/2" x 3/4" deep. 1/2" of box to be located 3'-0" behind face of guard rail.

Note: Reinforcement in cover to have an area of 0.12 Sq. In. per Ft. of width. Spacing not to exceed 4" each way.



PLAN

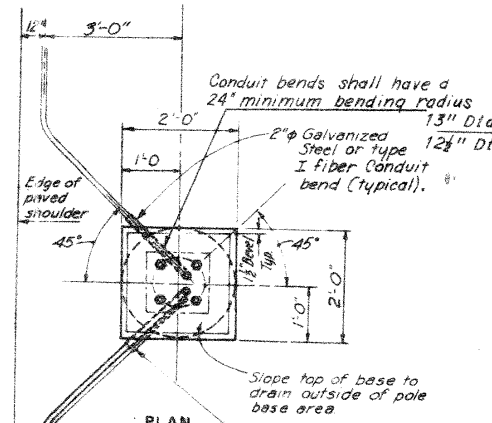


Conduit or Cable-duct may enter type "B" pull boxes from bottom.

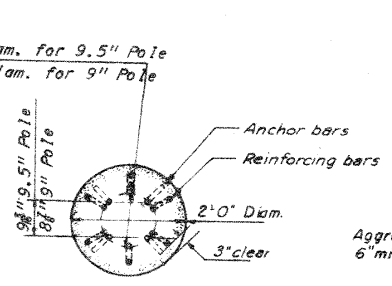
Note: Contractor to fill with grout any unused holes in sides of boxes. Conduits or ducts shall be pitched to drain, toward boxes, a minimum of one inch per one hundred feet.

TYPE "B" PULL BOX DETAILS
No Scale

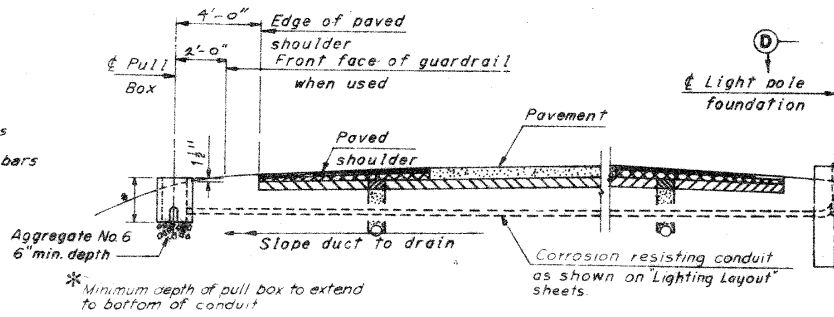
SECTION B-B



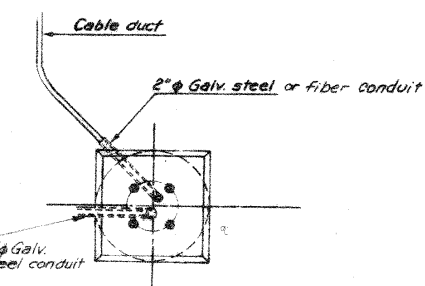
PLAN



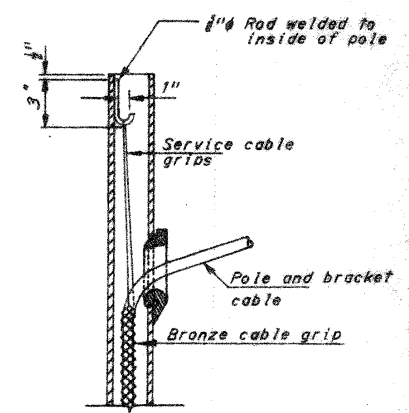
SECTION A-A



DUCT CROSSOVER SECTION
Scale: 1/8" = 1'-0"



SECTION D-D
Scale: 1/2" = 1'



"J-HOOK" DETAIL
Scale: 1/8" = 1'-0"

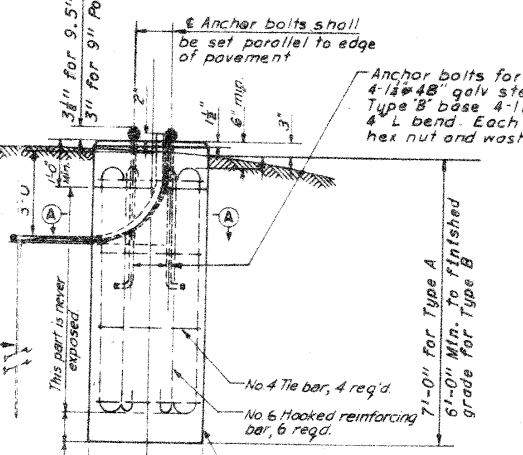
Note: For placement of conduit in pole base see lighting layout sheets

Minimum bending radius for Cable-duct or conduit for the horizontal bends shall be 18".

Note: Foundation conduit bends shall be type I fiber duct or standard weight galvanized steel conduit. Conduit shall project a minimum of 2" above the top of the foundation and full length beyond the face of the foundation. Both ends of the conduit shall be capped or plugged until light standard and electrical conductors are installed. Steel conduit ends shall be equipped with bushings.

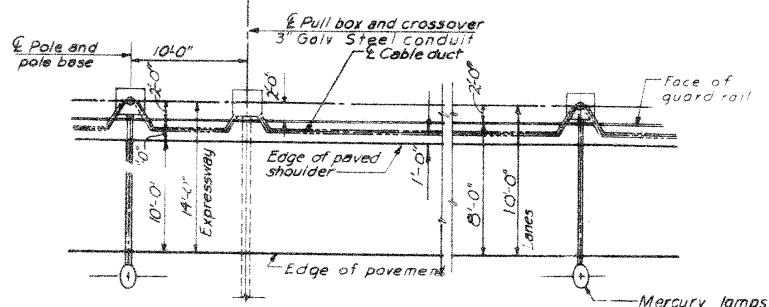
Note: Foundation for light standards shall be cast-in-place concrete. The lower portion may be poured in a 2'-0" diameter or a 2'-0" square hole with forms, unless, at the discretion of the Engineer soil stability precludes the need for forms. The top portion shall be formed 2'-0" square for at least 1'-0" deep or a minimum of six (6) inches below the lowest point of finished grade, additional depth required depending on soil conditions.

Note: All ground rods shall be driven on the right side of pole bases, facing from roadway.

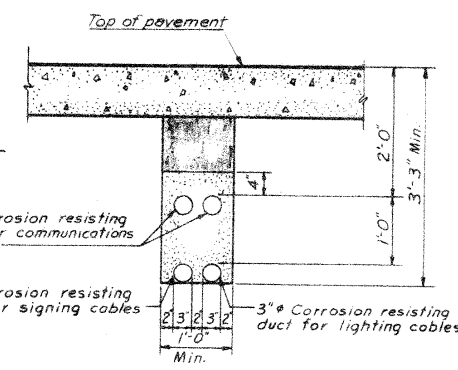


ELEVATION

POLE BASE DETAILS
Scale: 1/2" = 1'-0"

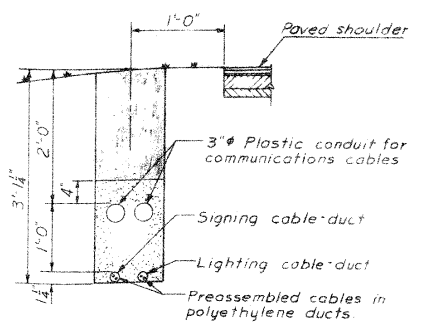


CABLE AND PULL BOX LOCATION
Scale: 1/2" = 1'-0"

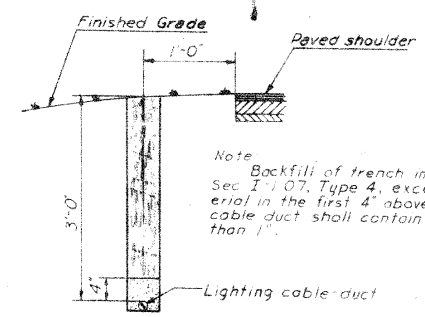


DUCT UNDER ROADWAY DETAILS
No Scale

Note: Trench shall miss guard rail posts



CABLE DUCT TRENCH DETAILS
No Scale



Note: Backfill of trench in accordance with Sec 1-107, Type 4, except that the material in the first 4" above the cable duct shall contain no pieces larger than 1/2".

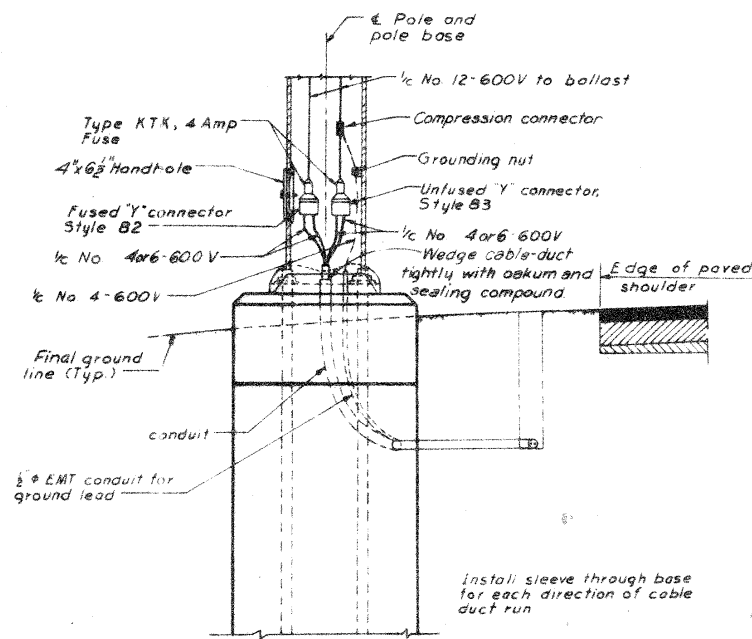
Locate Cable-duct near side of trench away from guard rail when guard rail exists. This note pertains to Cable-duct only.

GENERAL LIGHTING DETAILS

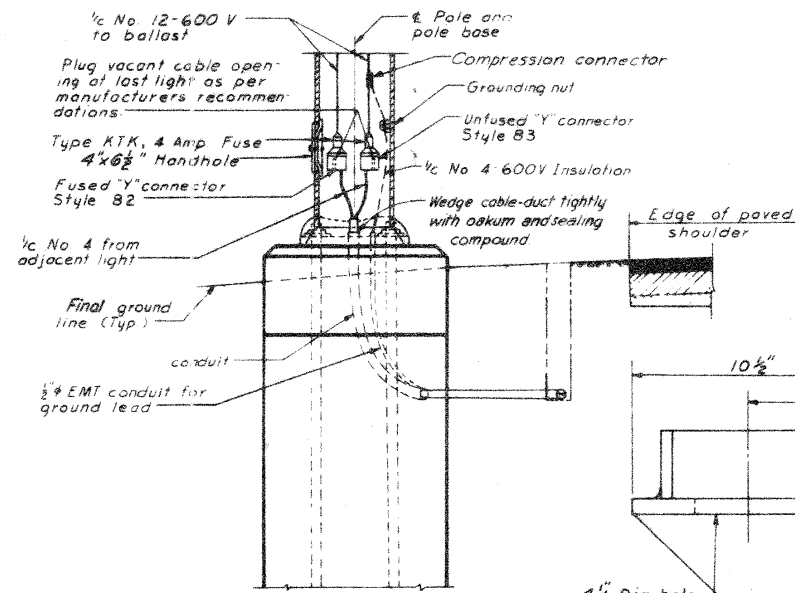
FED. DIVISION	STATE	PROJECT
2	OHIO	

206
476

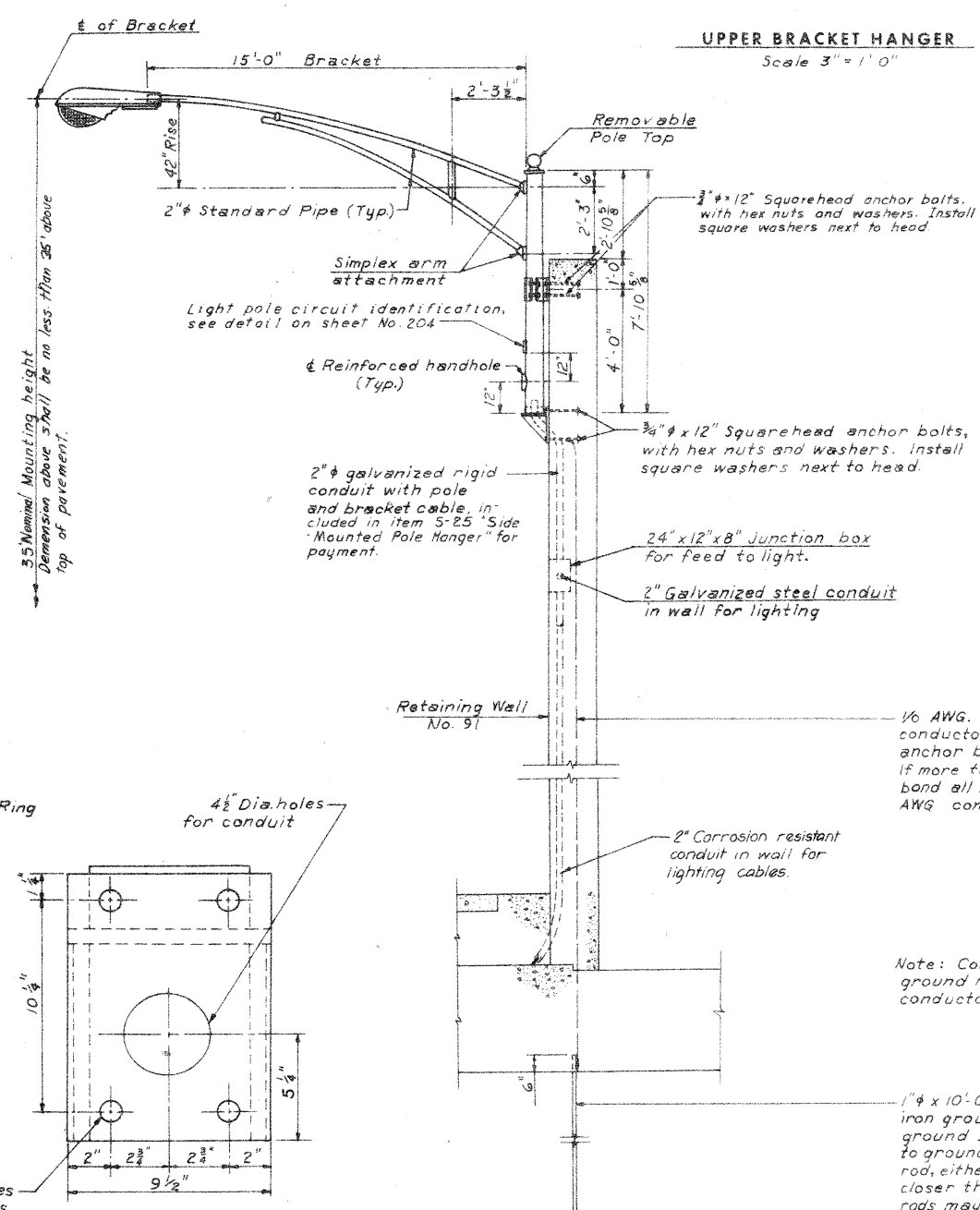
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



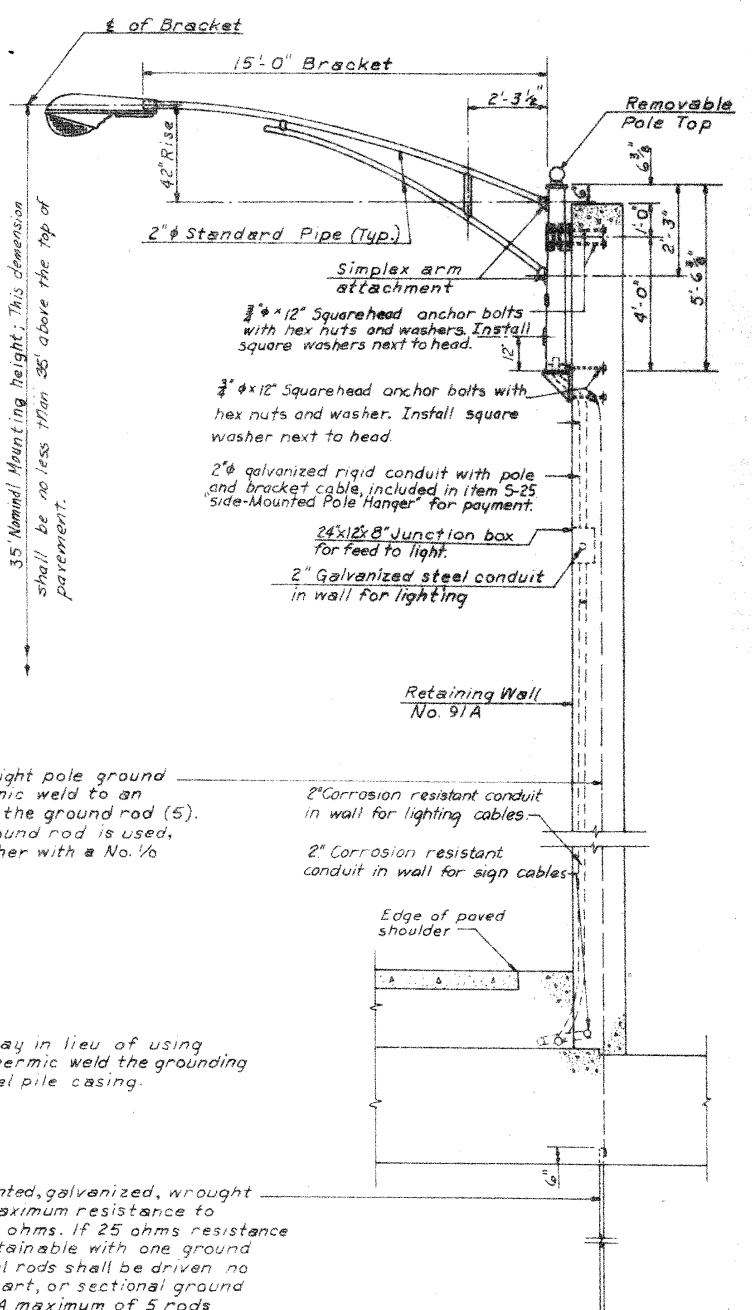
CIRCUIT CABLE CONNECTION AT LIGHT POLE
No Scale



CIRCUIT CABLE CONNECTION AT LAST LIGHT POLE
No Scale



SIDE MOUNTED POLE ON WALL
Station 24+89 @ Lane N-W
Scale: 3/8" = 1'-0"



SIDE MOUNTED POLE ON WALL 91A
Station 2+99 @ Lane W-S
Scale: 3/8" = 1'-0"

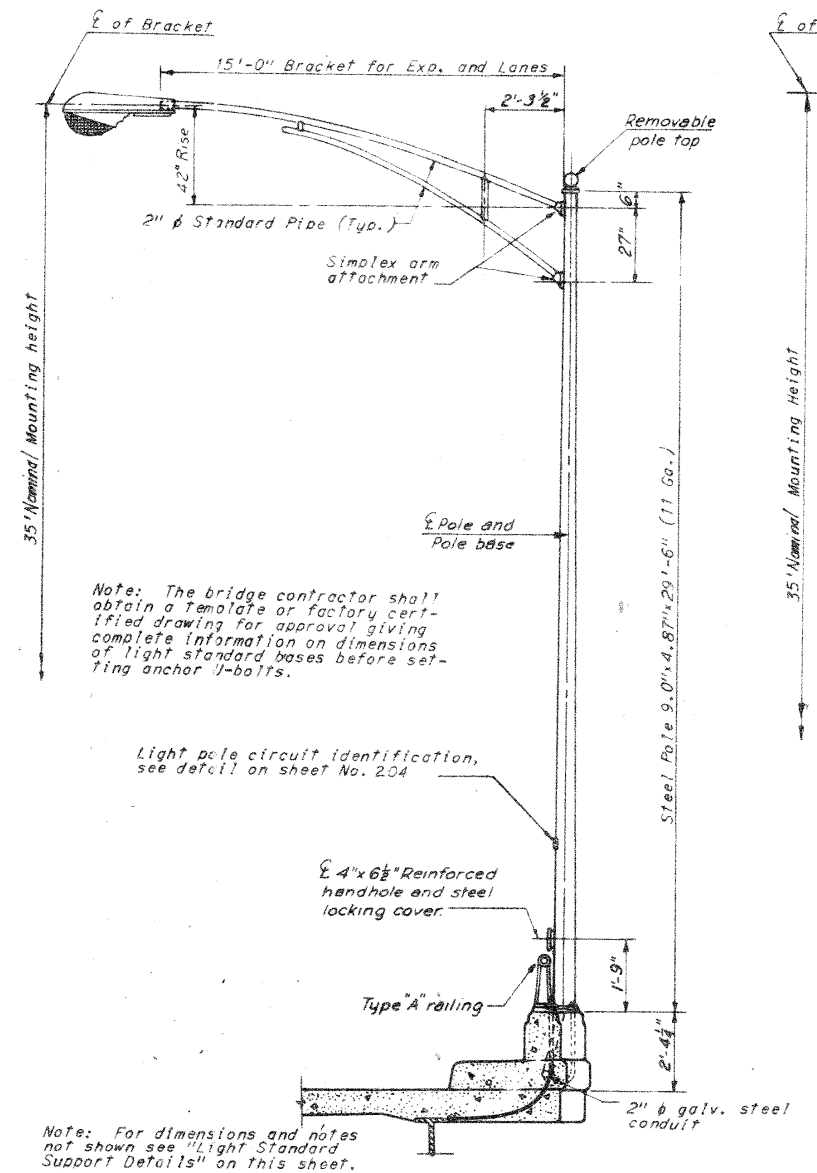
SCALE As Shown HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE I.L.R. DATE 12-29-64 CONSULTING ENGINEERS
REC'D DATE 12-31-64 KANSAS CITY CLEVELAND NEW YORK
DND L.W.C. DATE 12-31-64

LOWER SUPPORT HANGER
Scale 3" = 1'-0"

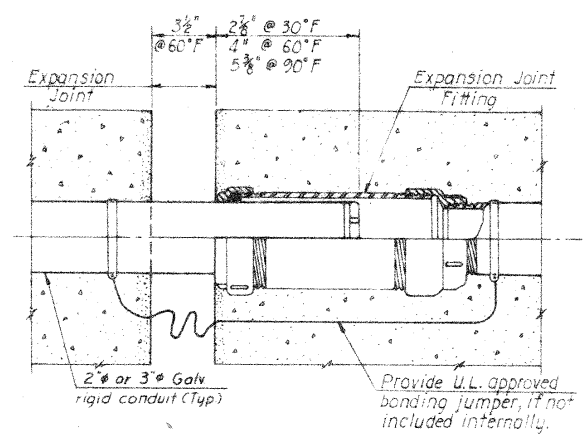
Note: Contractor may in lieu of using ground rods, exothermic weld the grounding conductor to a steel pile casing.

GENERAL LIGHTING DETAILS

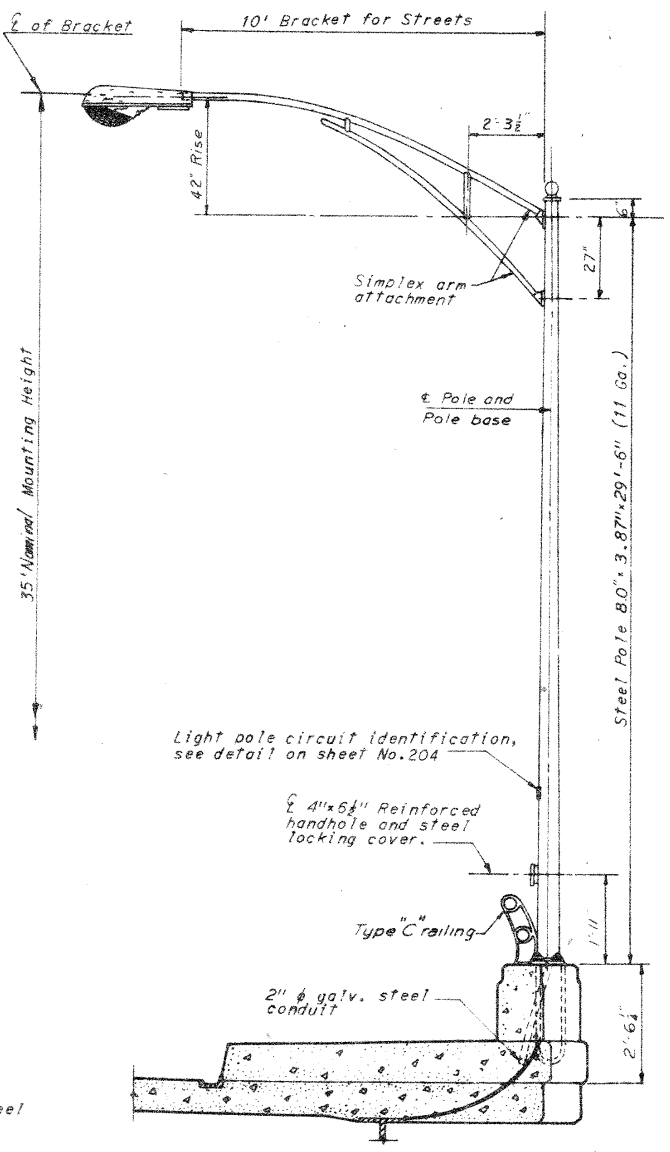
**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81**



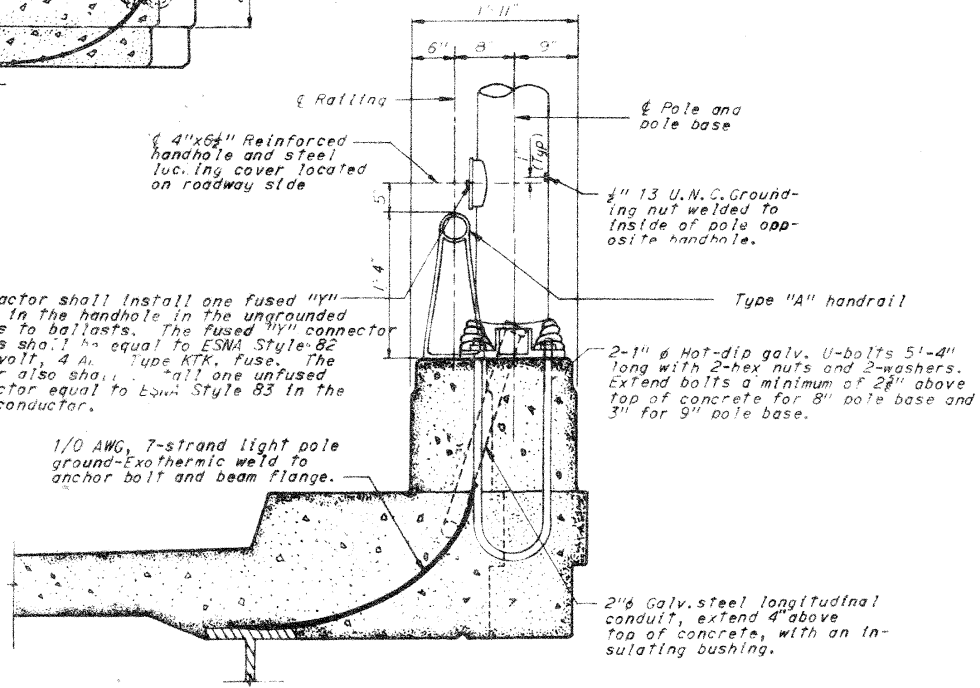
LIGHTING UNIT ON STRUCTURES
Scale: 3/8" = 1'-0"



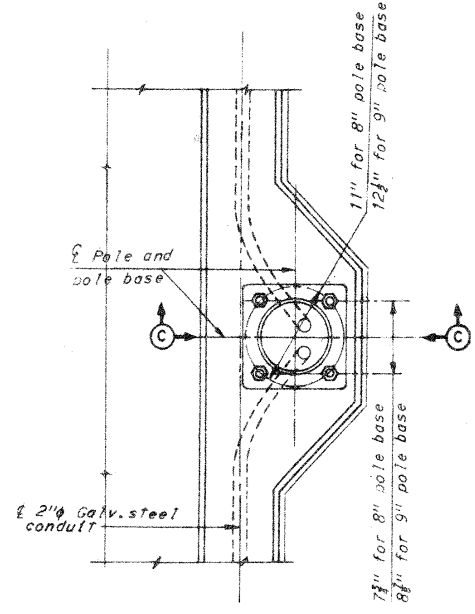
EXPANSION FITTING
No Scale



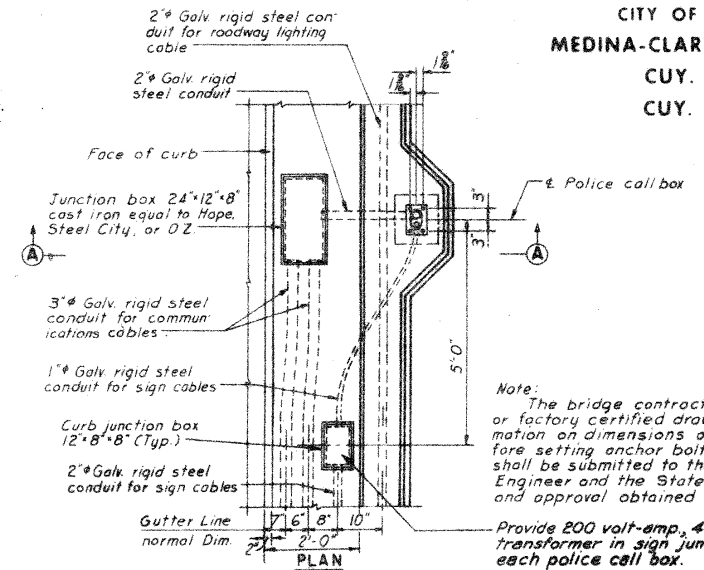
LIGHT STANDARD SUPPORT DETAILS
No Scale



SECTION C-C
No Scale
LIGHT STANDARD SUPPORT DETAILS
No Scale

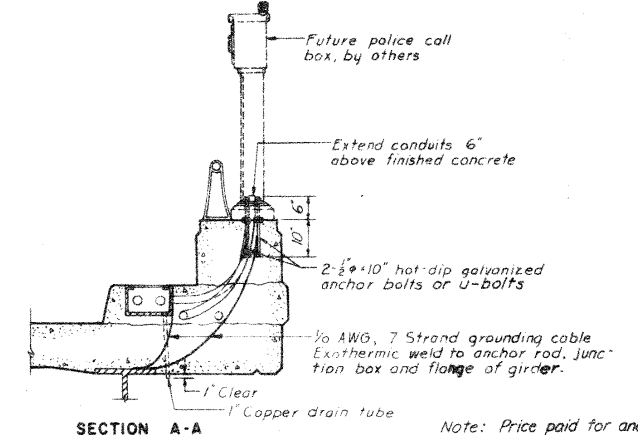


PLAN
No Scale



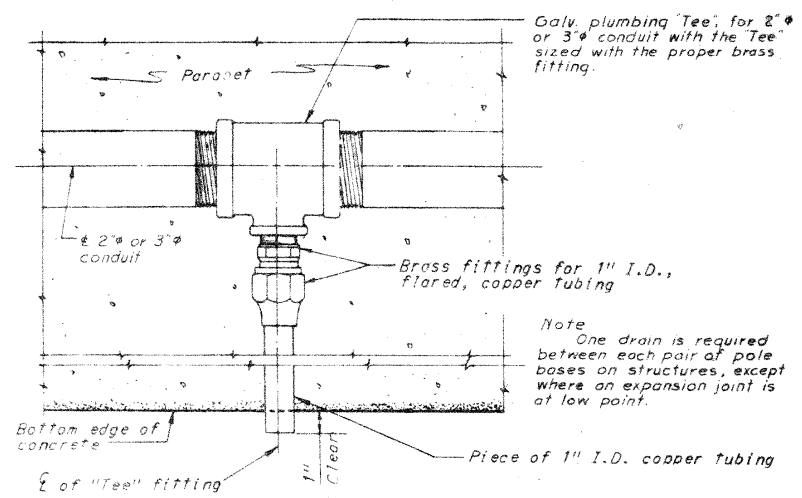
Note: The bridge contractor shall obtain a template or factory certified drawing giving complete information on dimensions of police call box base before setting anchor bolts. Copies of such template shall be submitted to the State Highway Division Engineer and the State Highway Lighting Engineer, and approval obtained before using same.

Provide 200 volt-amp, 480-120 volt, dry-type transformer in sign junction box adjacent to each police call box.



SECTION A-A
POLICE CALL BOX DETAILS
AT STA. 20+00 & LANE E-S
Scale: 3/8" = 1'-0"

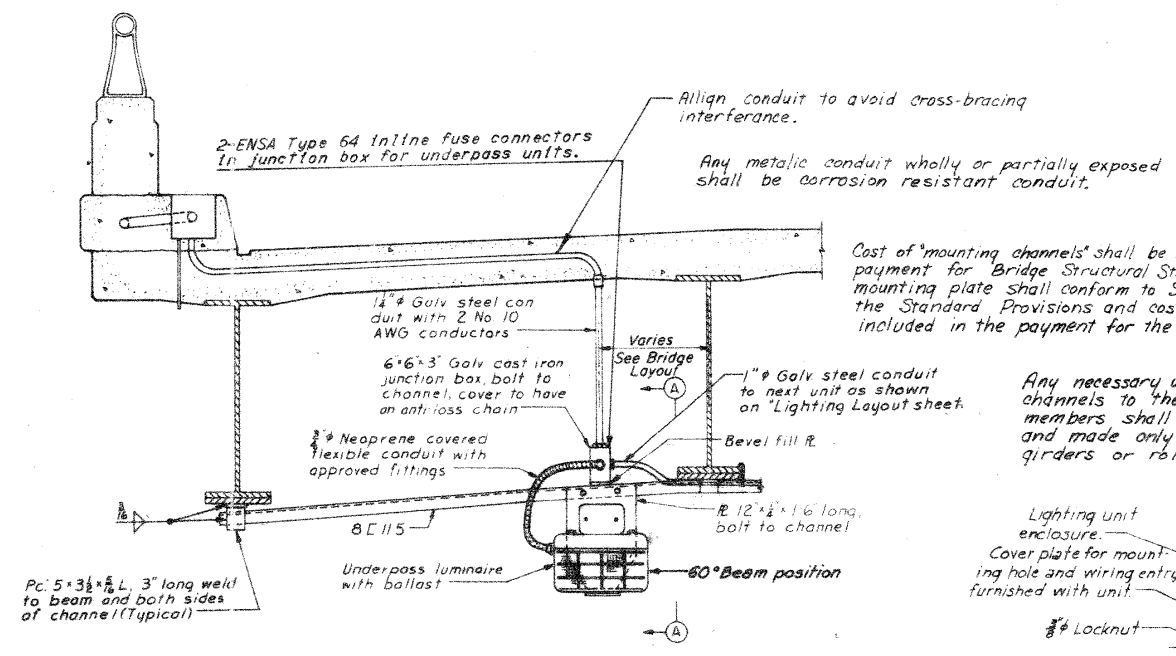
Note: Price paid for anchor bolts on structure for police call boxes will be price paid for set of two or four Item S-25; "Light Pole Anchor Bolts on Structure", of 1/2" bolts required for one anchor base.



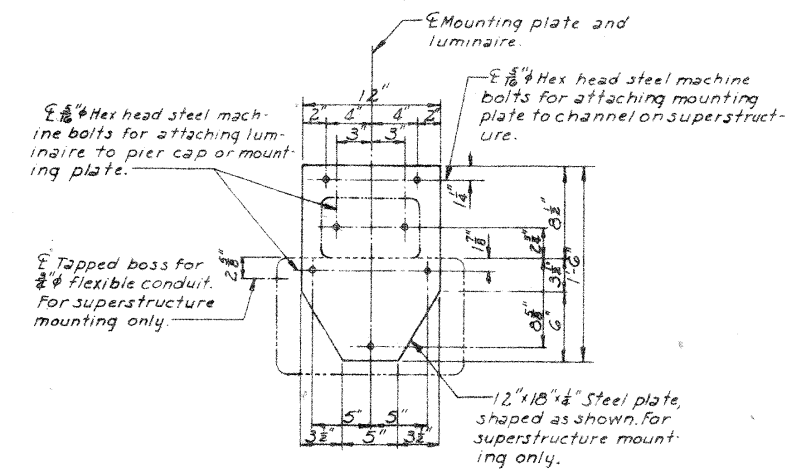
CONDUIT DRAIN FITTING
No Scale

BRIDGE LIGHTING DETAILS

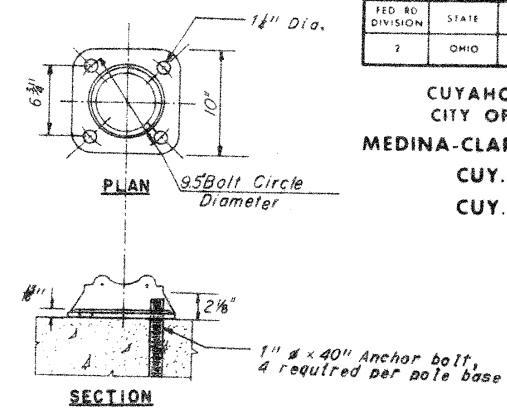
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



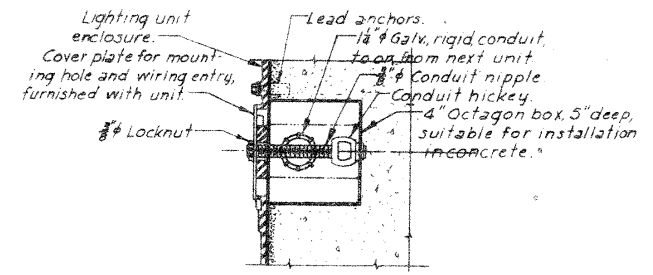
UNDERPASS LIGHTING UNIT ON SUPERSTRUCTURE
No Scale



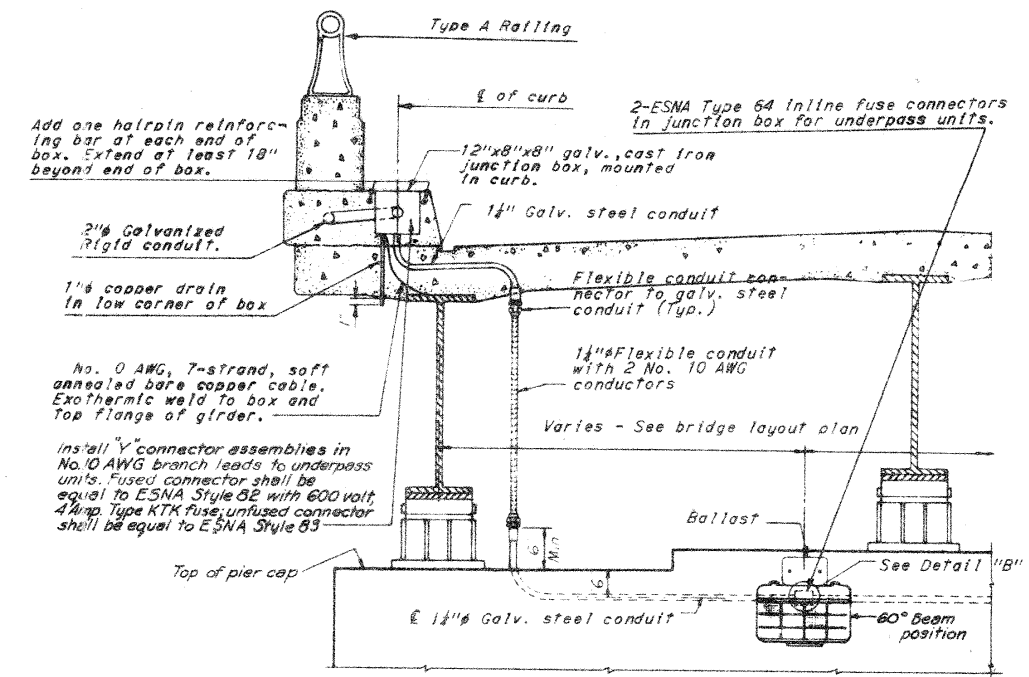
MOUNTING BRACKET UNDERPASS LIGHTING UNIT
No Scale



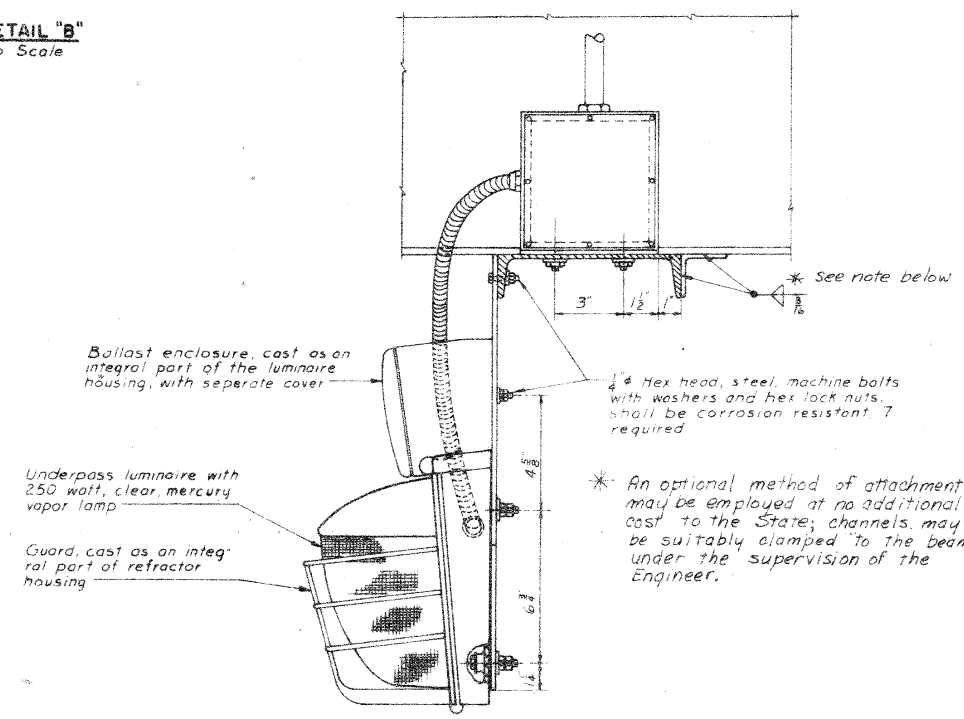
DETAIL "C"
No Scale



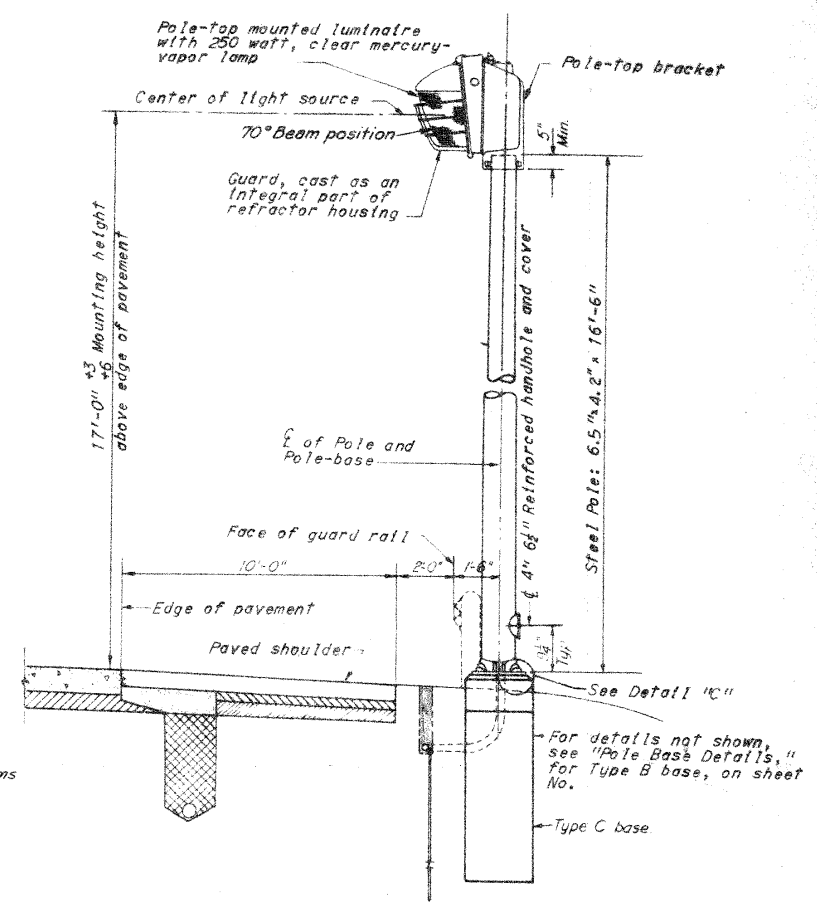
DETAIL "B"
No Scale



UNDERPASS LIGHTING UNIT ON PIER CAP
Scale: 3/4" = 1'-0"

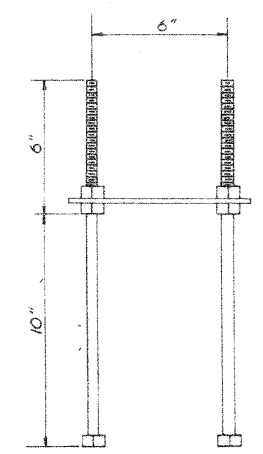
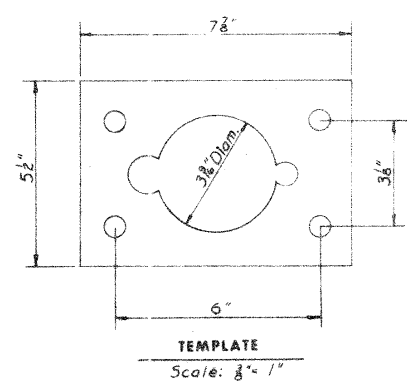


SECTION A-A
No Scale



TYPICAL LIGHTING UNIT FOR CLARK UNDERPASS
No Scale

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



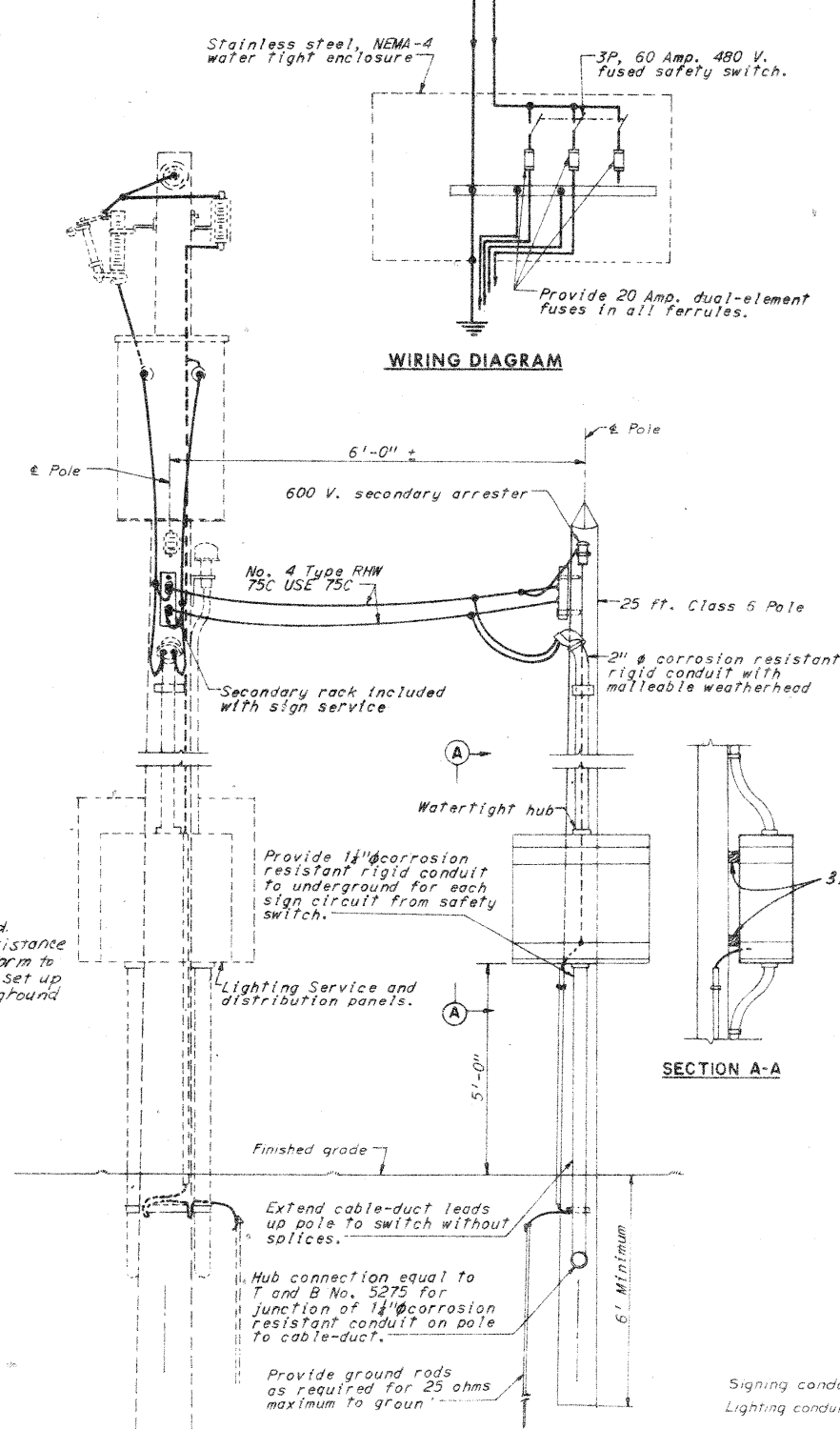
Anchor bolt steel shall have minimum yield of 50,000 psi 70,000 psi ultimate strength.

Stainless steel, NEMA-4 water tight enclosure

3P, 60 Amp, 480 V. fused safety switch.

Provide 20 Amp. dual-element fuses in all ferrules.

WIRING DIAGRAM



SECTION A-A

2" Galv rigid conduit for lighting cables

4' 5' 5' 4' Gutter Line

Curb junction box 12'6" x 6" for pulling sign cables

Curb junction box 24'6" x 6" for pulling communications cable

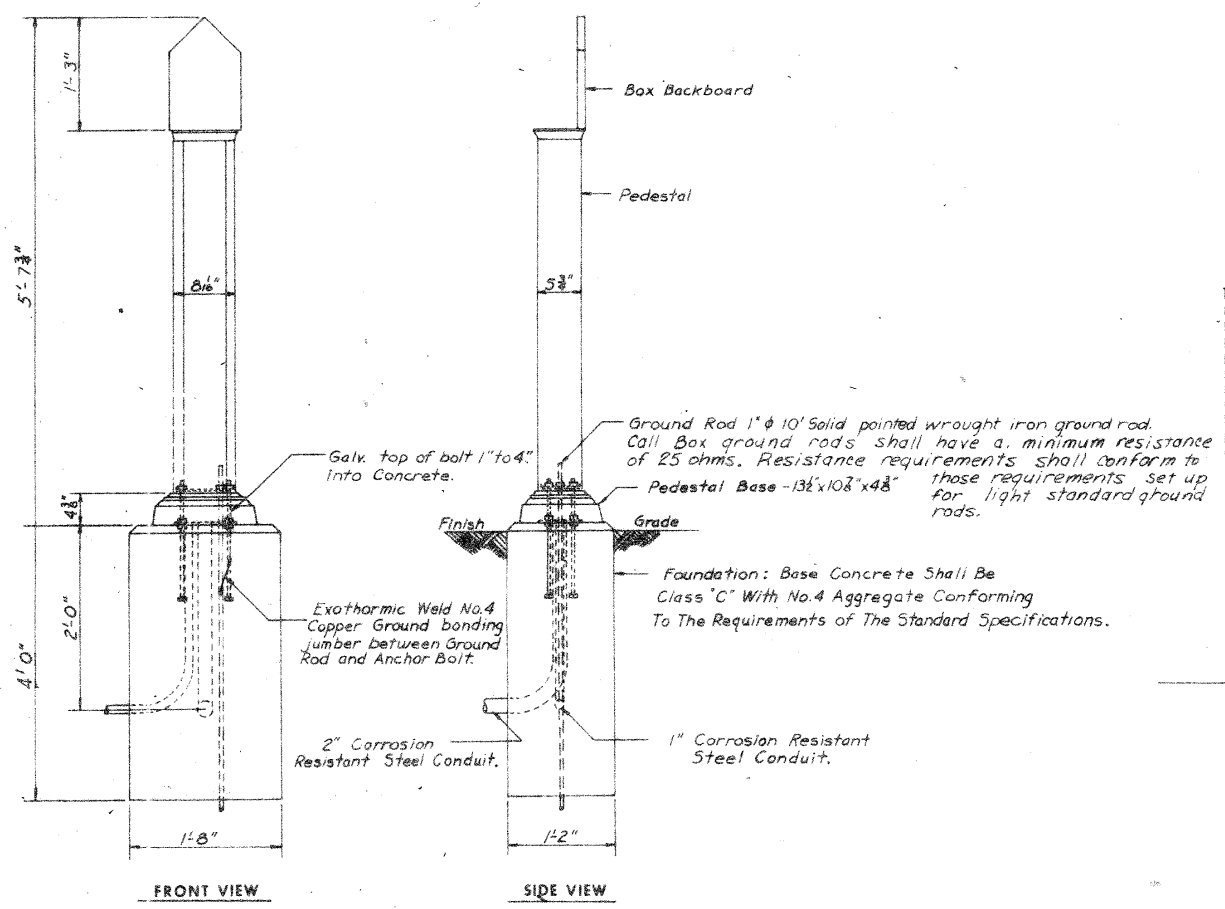
Curb junction box 24'6" x 6" for pulling communications cable

3" Galv rigid conduit for communications cables

PLAN

PULL BOXES ON STRUCTURE DETAILS
Scale: 3/4" = 1'-0"

Note: This detail is for Bridge CUY. 71-1886 East curb.



POLICE CALL BOX FOUNDATION BASE

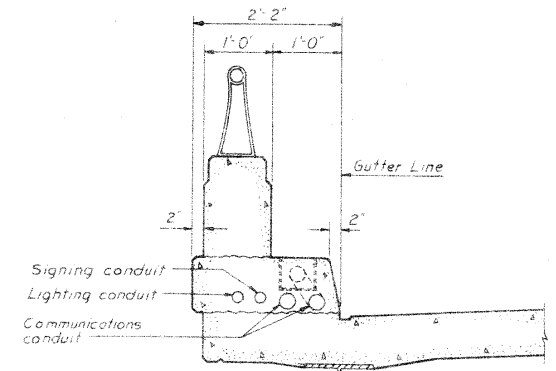
Scale: 1" = 1'-0"

TRANSFORMER AND PANEL STATION

No Scale

SIGN COMMERCIAL ELECTRIC SERVICE

No Scale

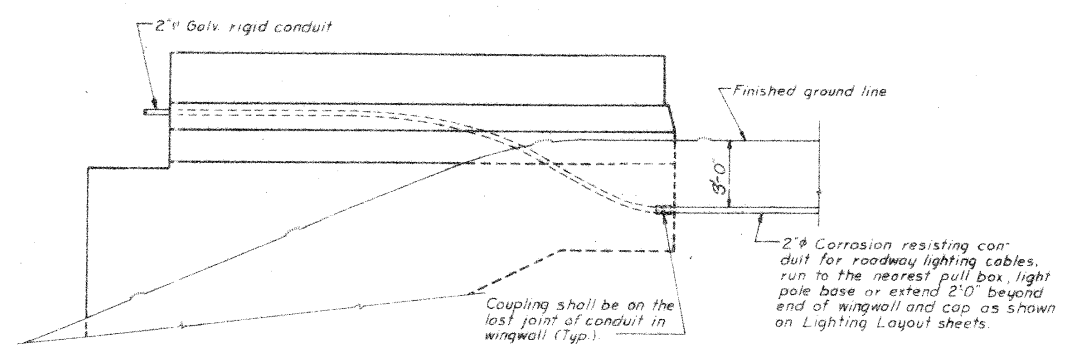
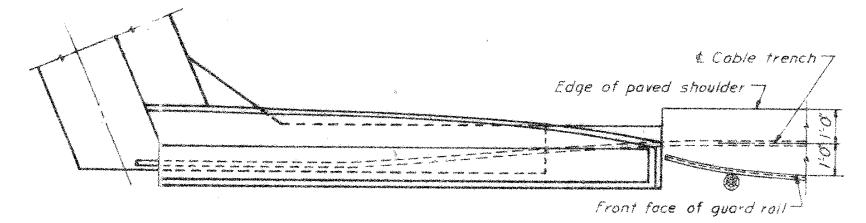
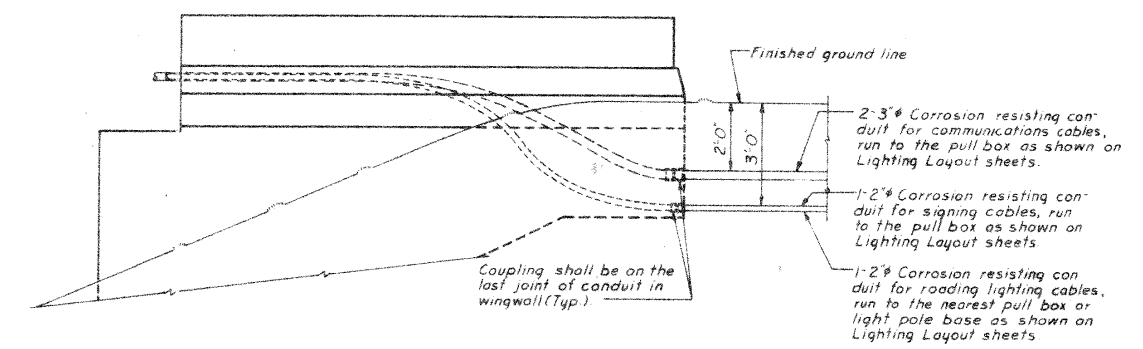
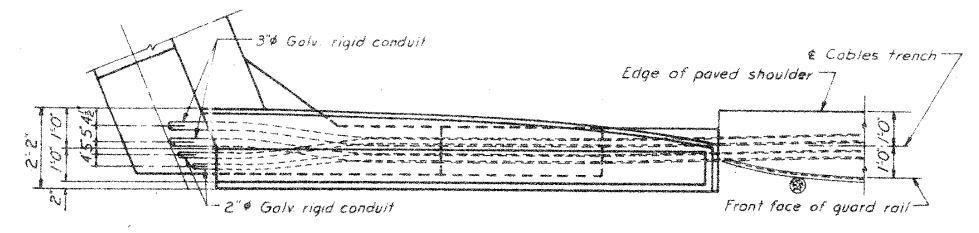


SECTION B-B

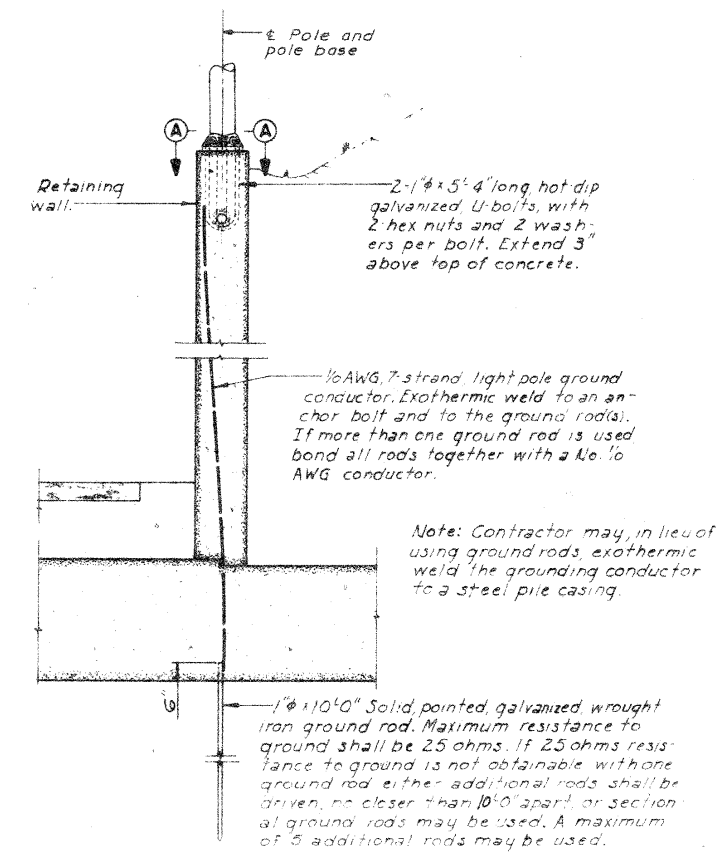
SIGN SERVICE AND CALL BOX DETAILS

FED. RD. DIVISION	STATE	PROJECT	209B 478
3	OHIO		

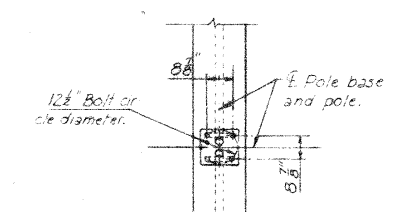
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



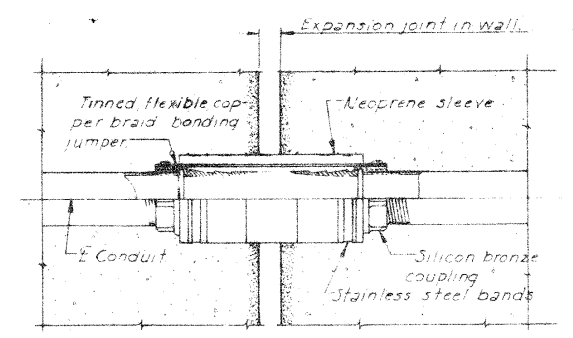
CONDUIT IN WINGWALL DETAILS
No Scale



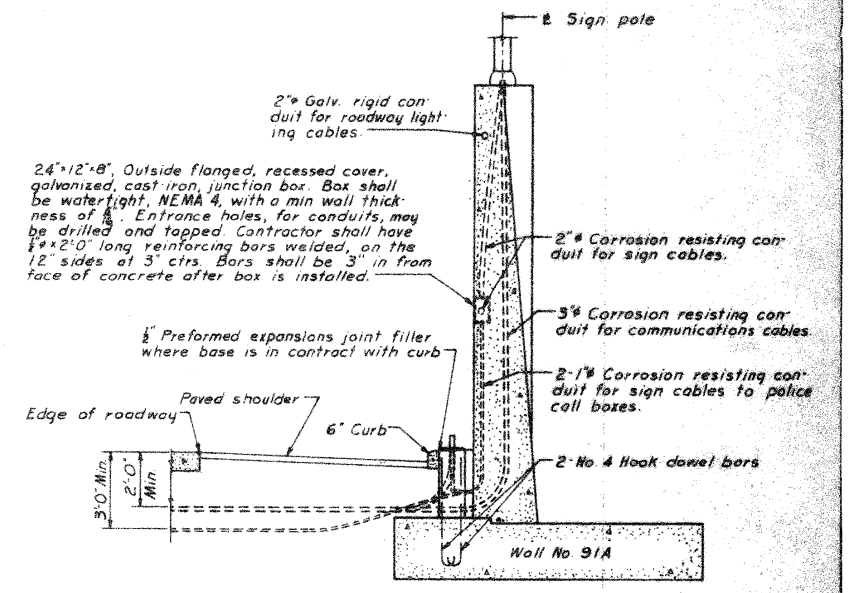
TYPICAL WALL MOUNTED POLE
Scale: 3/4" = 1'-0"



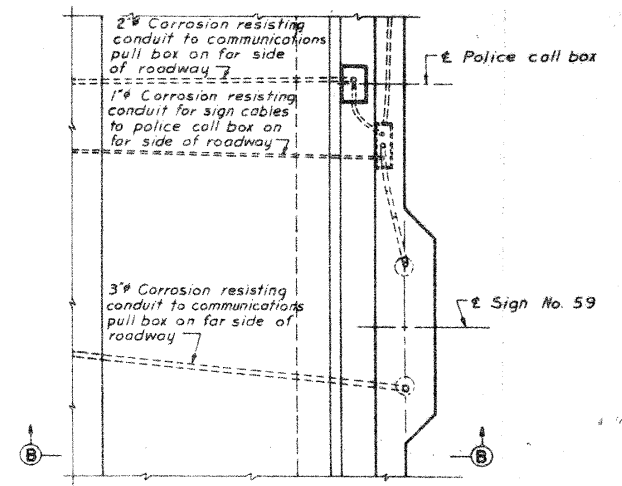
SECTION A-A
Scale: 3/4" = 1'-0"



EXPANSION AND DEFLECTION JOINT FITTING IN WALLS
No Scale



SECTION B-B



PLAN
SIGN AT STA. 932+00 & CLARK DETAILS 91A
Scale: 1/4" = 1'-0"

For Additional Details See SHE 189A.

WALL DETAILS

SCALE: As Shown
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE: LWL DATE: 12-28-64 CONSULTING ENGINEERS
TRCD DATE: 12-29-64 KANSAS CITY CLEVELAND NEW YORK
CRD: JRK DATE: 12-29-64

This improvement has been declared a limited access highway from Station 951+15.00 to Station 999+01.08 by the action of the Director of Highways and recorded in Volume Number 45, Page 1190 and Volume Number 45, Page 129 of the Director's Journal pursuant to law.

CENTER LINE SURVEY PLAT

I.R. 90, 71 & 290

CUYAHOGA COUNTY, OHIO

BROOKLYN TWP. T.7, R.13, Q.L. 68, 71, 72, 86 & 87

834308

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

210
478

CUYAHOGA COUNTY
CUY-71-1854
CUY-90-1381

RECEIVED FOR RECORD

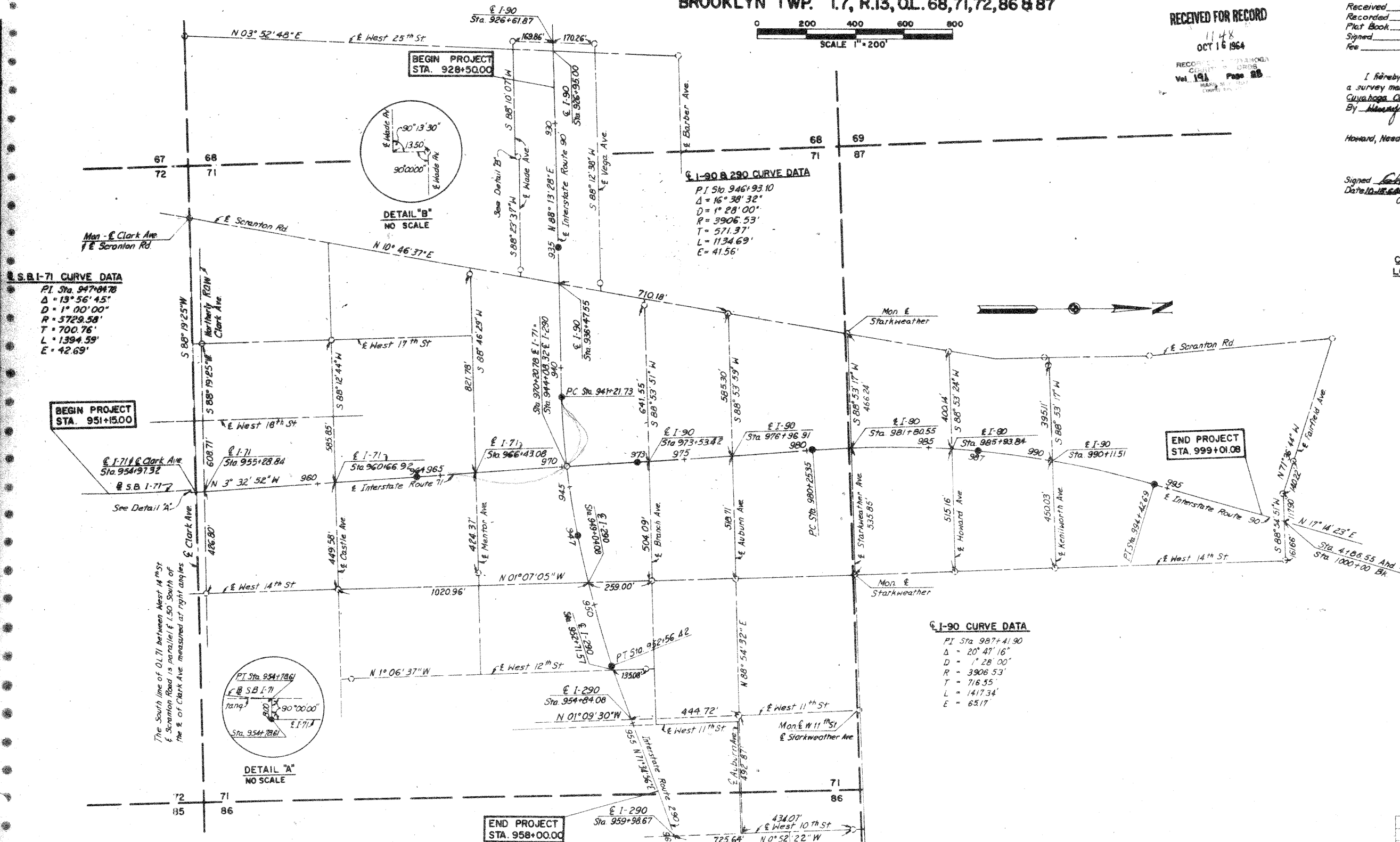
1148
OCT 16 1964

RECORDED IN CUYAHOGA COUNTY RECORDS Vol. 191 Page 88

Received _____ at _____
Recorded _____
Plat Book _____ Page _____
Signed _____ Recorder, Cuyahoga County, Ohio
Fee _____

I hereby certify that this plat is a true delineation of a survey made for the Ohio Department of Highways in Cuyahoga County
By Howard, Needles, Tammen & Bergendoff
Registered Surveyor No. 4671
Date 9-21-64
Howard, Needles, Tammen & Bergendoff
Consulting Engineers

Signed Charles M. Surral
Date 10-16-64 Division Deputy Director
Ohio Department of Highways



S.B. I-71 CURVE DATA
PI Sta. 947+84.78
Δ = 13° 56' 45"
D = 1° 00' 00"
R = 5729.58'
T = 700.76'
L = 1394.59'
E = 42.69'

I-90 & 290 CURVE DATA
PI Sta. 946+93.10
Δ = 16° 38' 32"
D = 1° 28' 00"
R = 3906.53'
T = 571.37'
L = 1134.69'
E = 41.56'

I-90 CURVE DATA
PI Sta. 987+41.90
Δ = 20° 41' 16"
D = 1° 28' 00"
R = 3906.53'
T = 716.55'
L = 1417.34'
E = 65.17'

CENTERLINE MONUMENT ASSEMBLY LOCATION ON CENTERLINE AT STATIONS

954+78.61	POT	I-71
964+00.00		I-71
973+00.00		I-71
980+25.35	PC	I-71
987+00.00		I-90
994+42.69	PT	I-90
935+00.00		I-90
941+21.73	PC	I-90
947+00.00		I-71
952+56.42	PT	I-71

Note: For Monument Assembly Detail See Standard Construction Drawing R1-1

LEGEND
● Monument Assembly to be provided (See station call outs)
○ Existing Monument

NAME	REVISION	DATE

COMPLETION DATE _____

WJM DATE 2-17-64 TRACED
RPR DATE 3-24-64 SCALE 1" = 200'

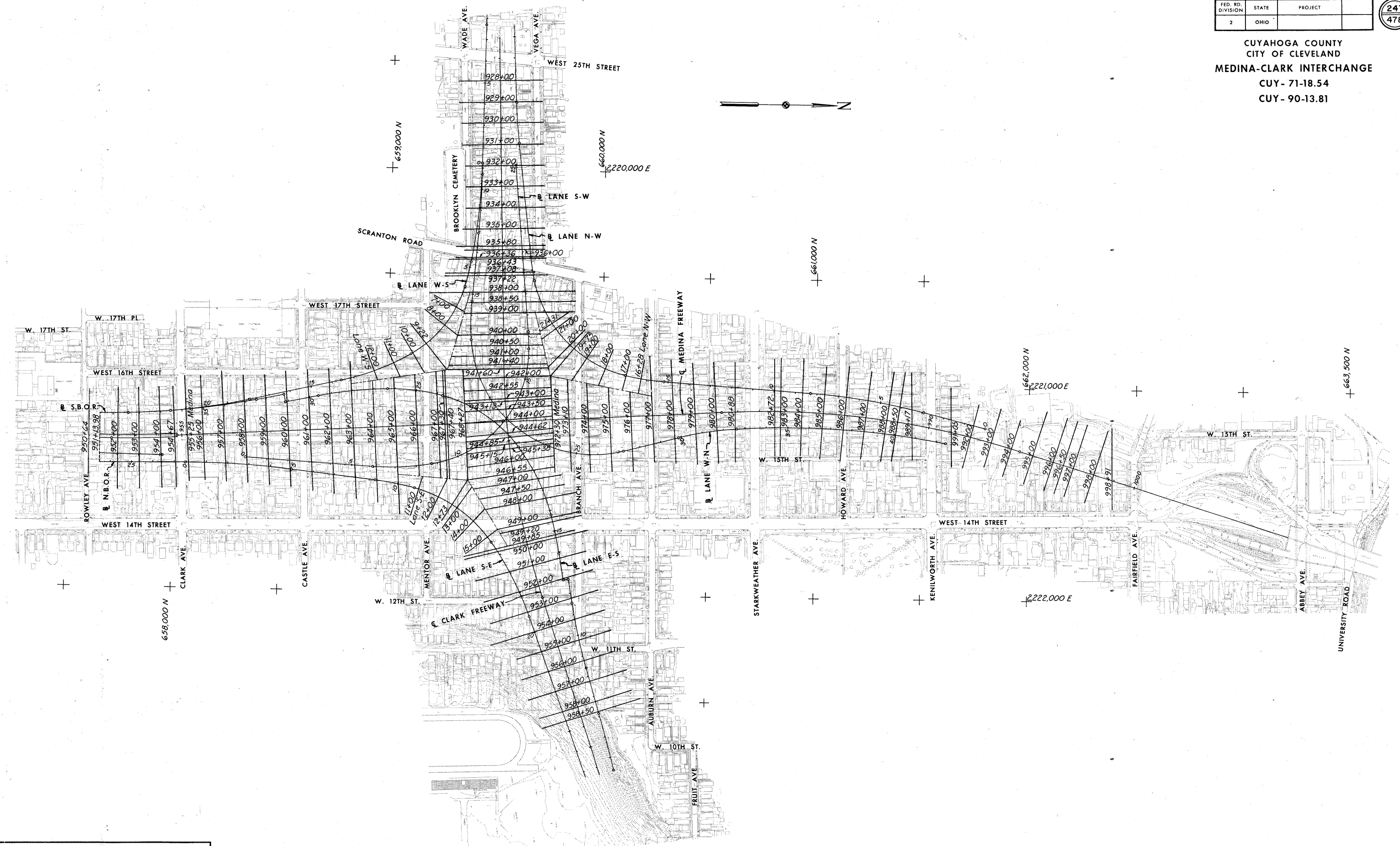
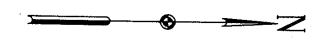
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

M-19

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

247
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY- 71-18.54
CUY- 90-13.81



SCALE 1" = 200'
MADE R.H.P. DATE 4-15-64
TRCD. DATE
CKD L.E.E. DATE 4-16-64

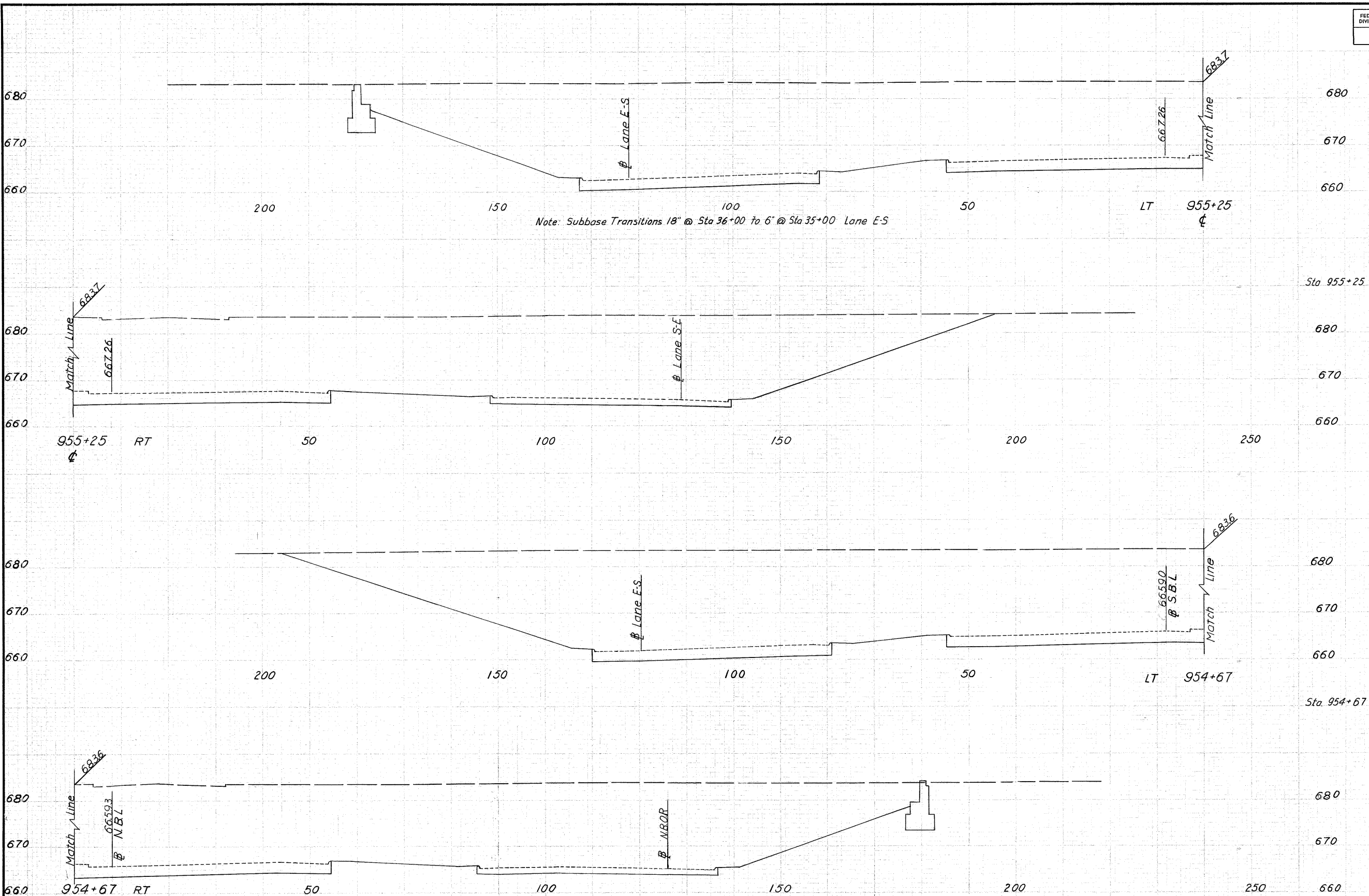
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

CROSS SECTION LAYOUT

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	NO.
SURVEYED	
PLOTTED	
DATE	
BY	
AREAS CHECKED	

ORIGINAL SURVEY	NO.
SURVEYED	
PLOTTED	
DATE	
BY	
AREAS CHECKED	



EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
6413	0		
		14048	0
6666	0		
		17125	0

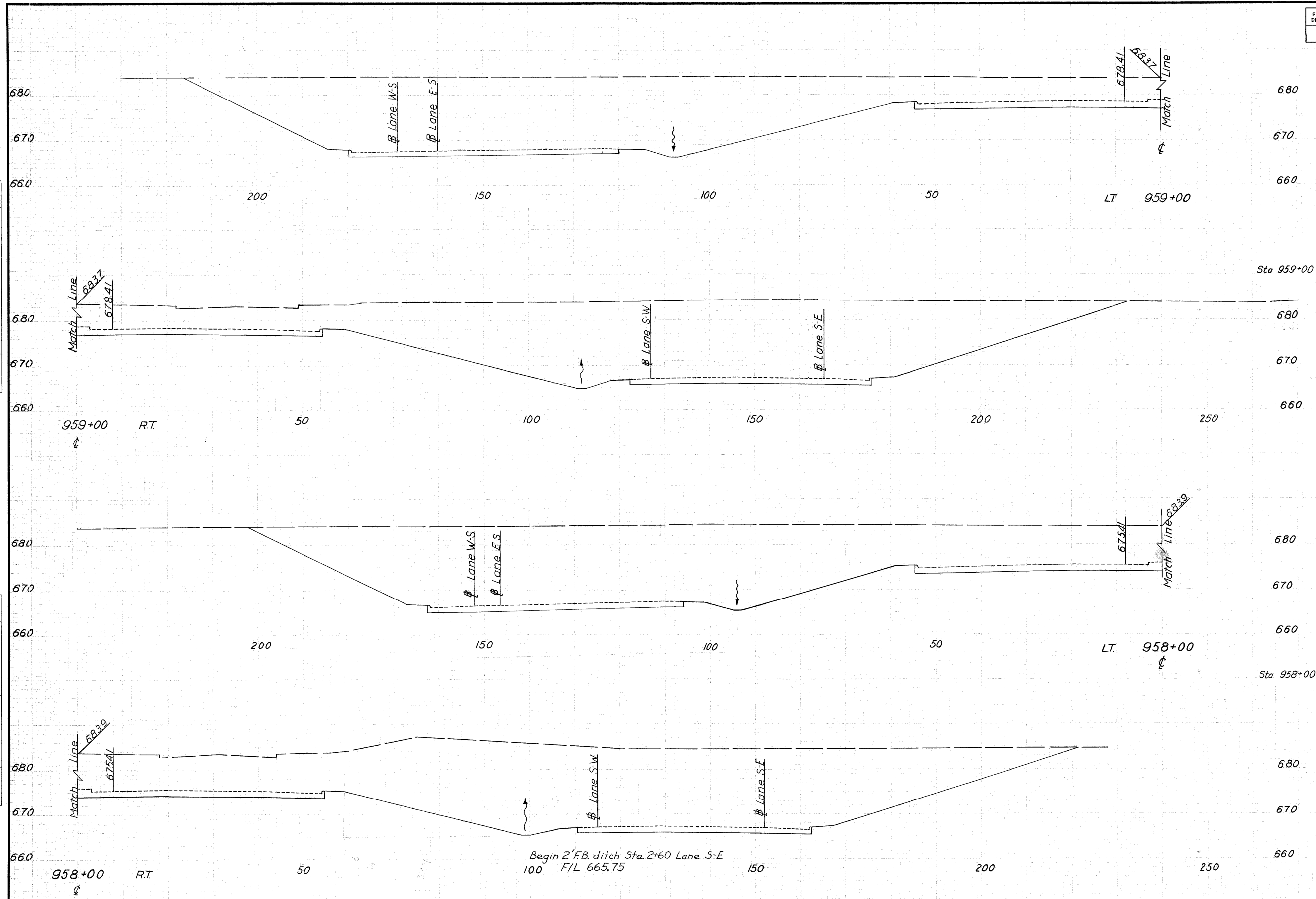
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

CROSS SECTIONS
MEDINA FREEWAY

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	DATE
NOTE BOOK NO.	BY
AREAS CHECKED	

ORIGINAL SURVEY	DATE
NOTE BOOK NO.	BY
AREAS CHECKED	



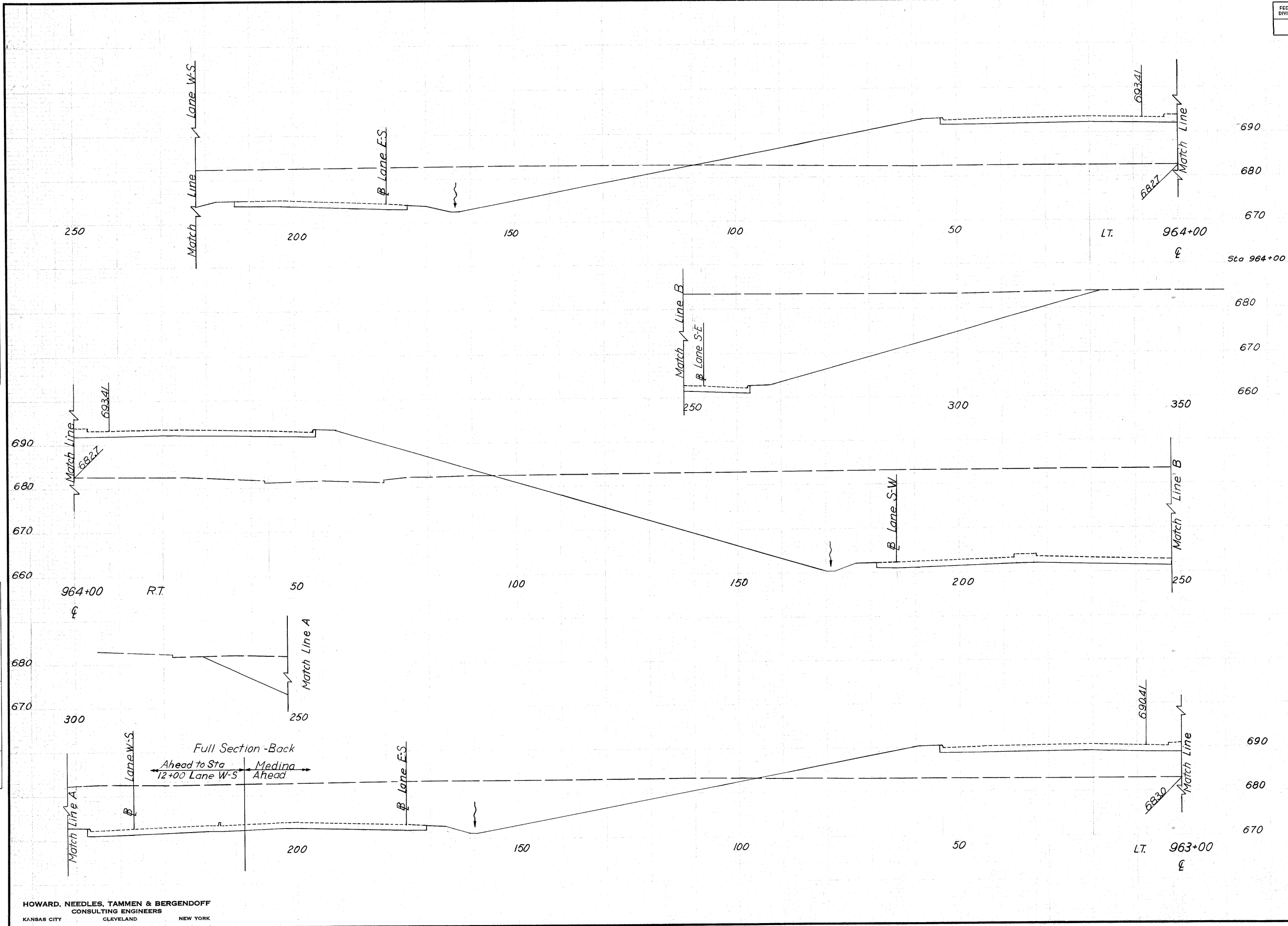
STATION	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
Sta 959+00	5297	0		
Sta 958+00	5675	0	20,318	0
Sta 958+00			21,278	0

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

CROSS SECTIONS
MEDINA FREEWAY

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-1854
CUY-90-13.81

EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
4532	1618		
		15,861	4835



DATE	BY
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	BY
ORIGINAL SURVEY	
NOTE BOOK	
NO.	

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

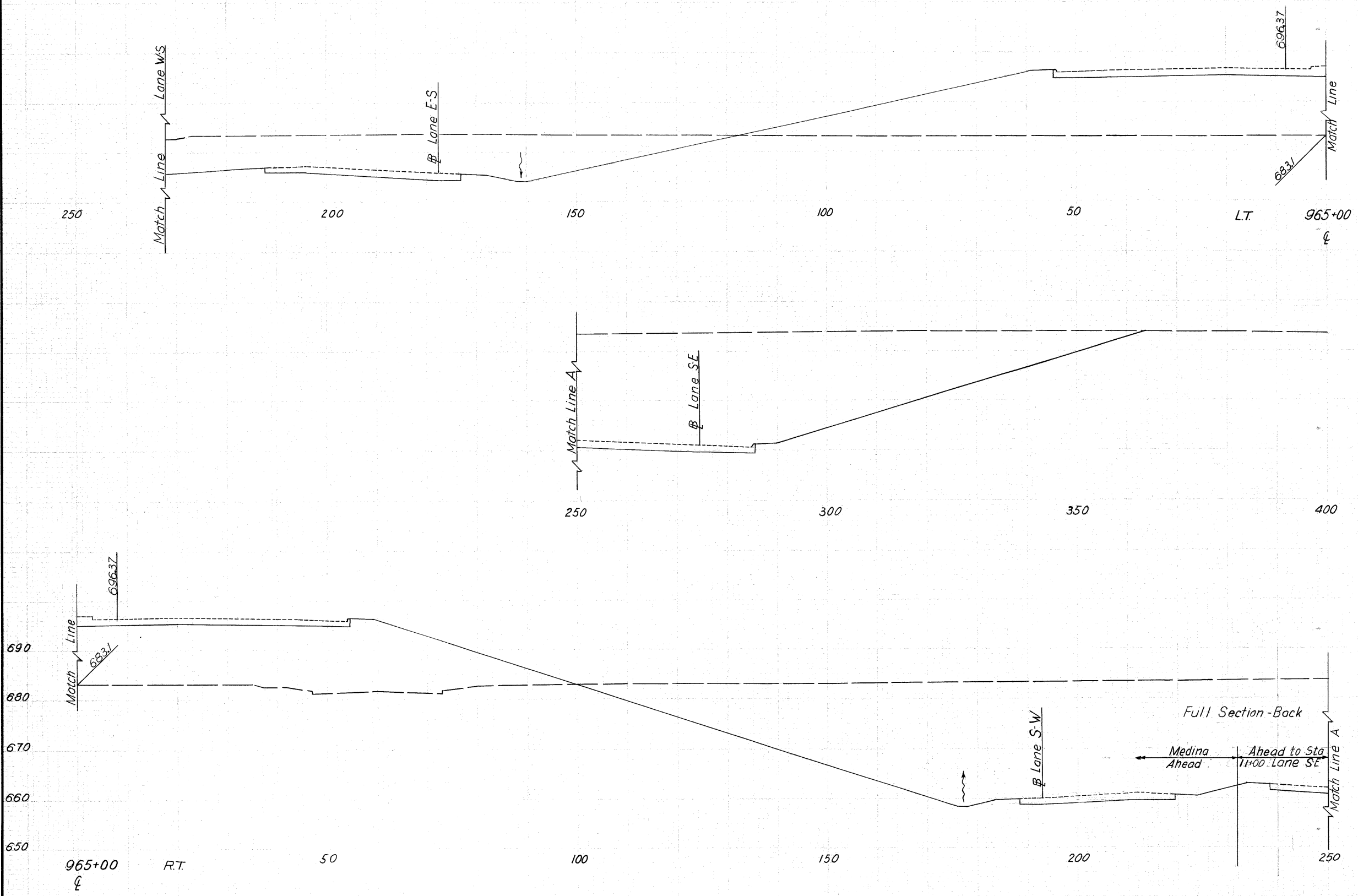
CROSS SECTIONS
MEDINA FREEWAY

STA. 963+00 TO STA. 964+00

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	DATE
SURVEYED	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	
NO.	

ORIGINAL SURVEY	DATE
SURVEYED	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	
NO.	



690
680
670
660
650

250 200 150 100 50 L.T. 965+00

250 300 350 400

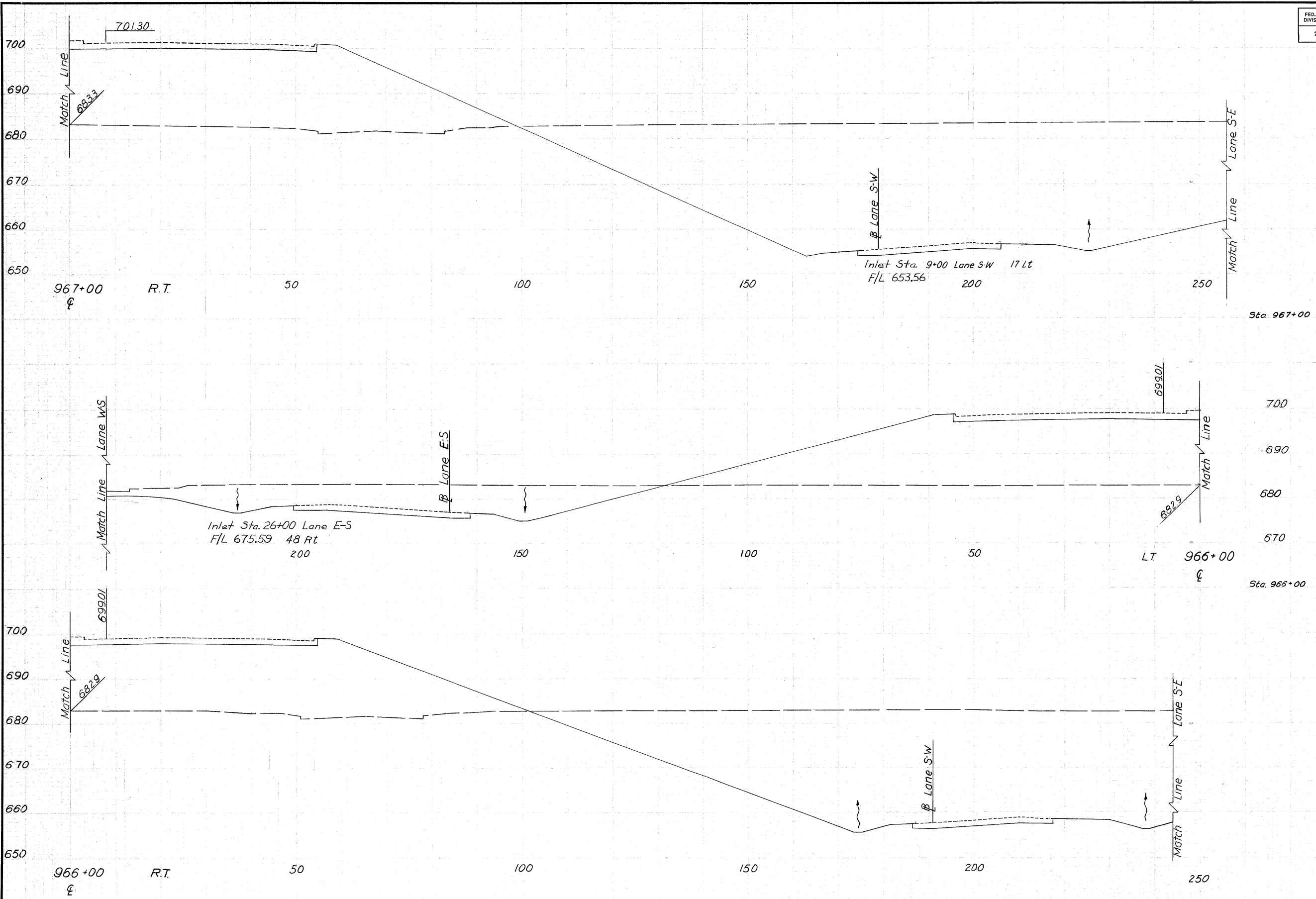
965+00 R.T. 50 100 150 200 250

EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
Sta 965+00 Ah	3162	2149	
Sta 965+00 Bk	5335	2149	
		18,272	6976

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	DATE
SURVEYED	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	
NO.	

ORIGINAL SURVEY	DATE
SURVEYED	2-5-64
PLOTTED	3-20-64
NOTE BOOK	9-27-64
AREAS CHECKED	9-27-64
NO.	9-28-64



EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
3997	2827		
		13,706	10,081
3404	2617		
		12,159	8,826

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

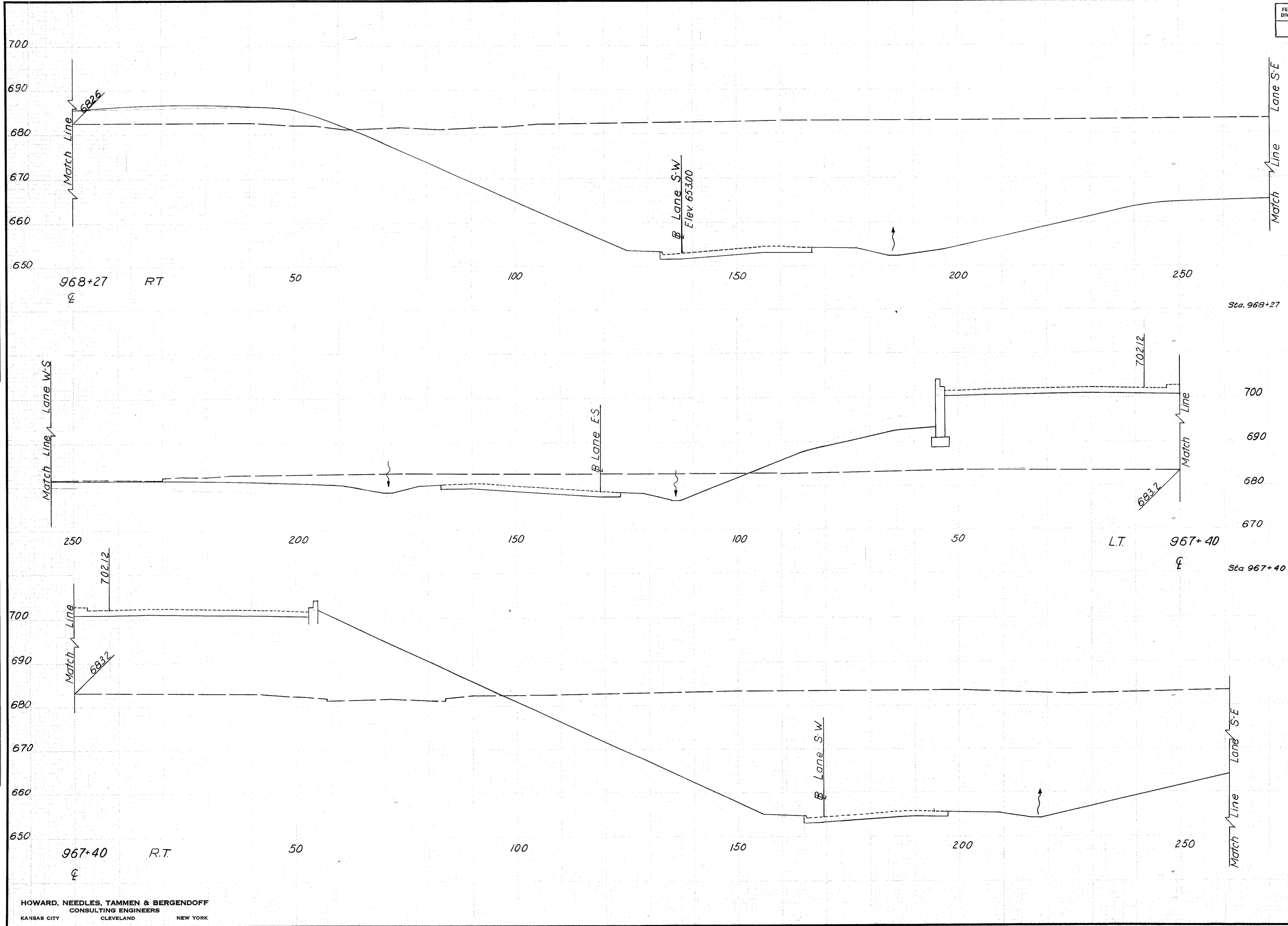
CROSS SECTIONS
MEDINA FREEWAY

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

259
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
5119	279		
		14,869	4685
4110	2629		
		1,519	1004



FINAL SURVEY	DATE
SURVEY	BY
NOTE BOOK	
NO.	

ORIGINAL SURVEY	DATE
SURVEY	BY
NOTE BOOK	
NO.	

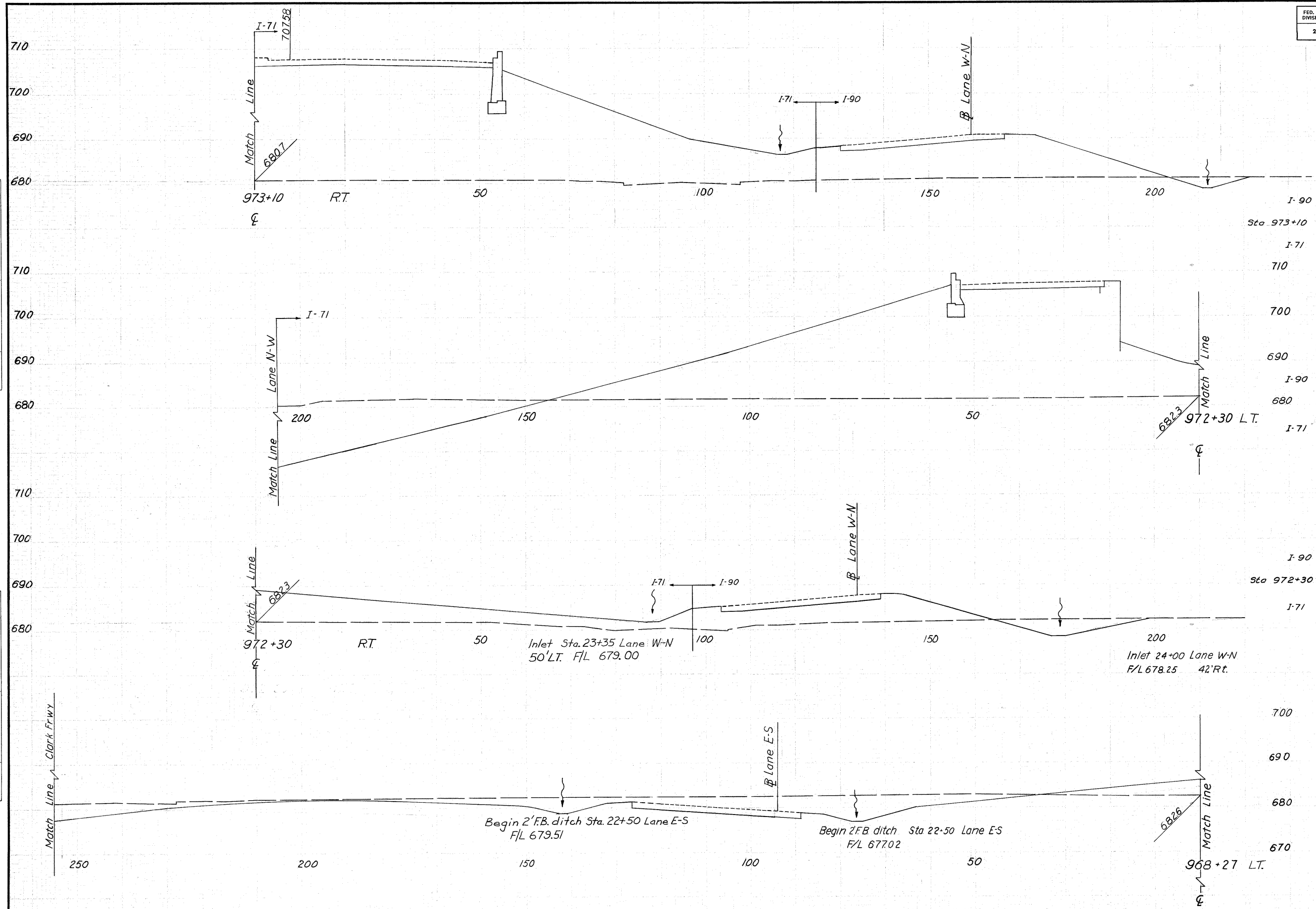
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

CROSS SECTIONS
MEDINA FREEWAY

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

DATE	BY
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	BY
ORIGINAL SURVEY	
NOTE BOOK	
NO.	



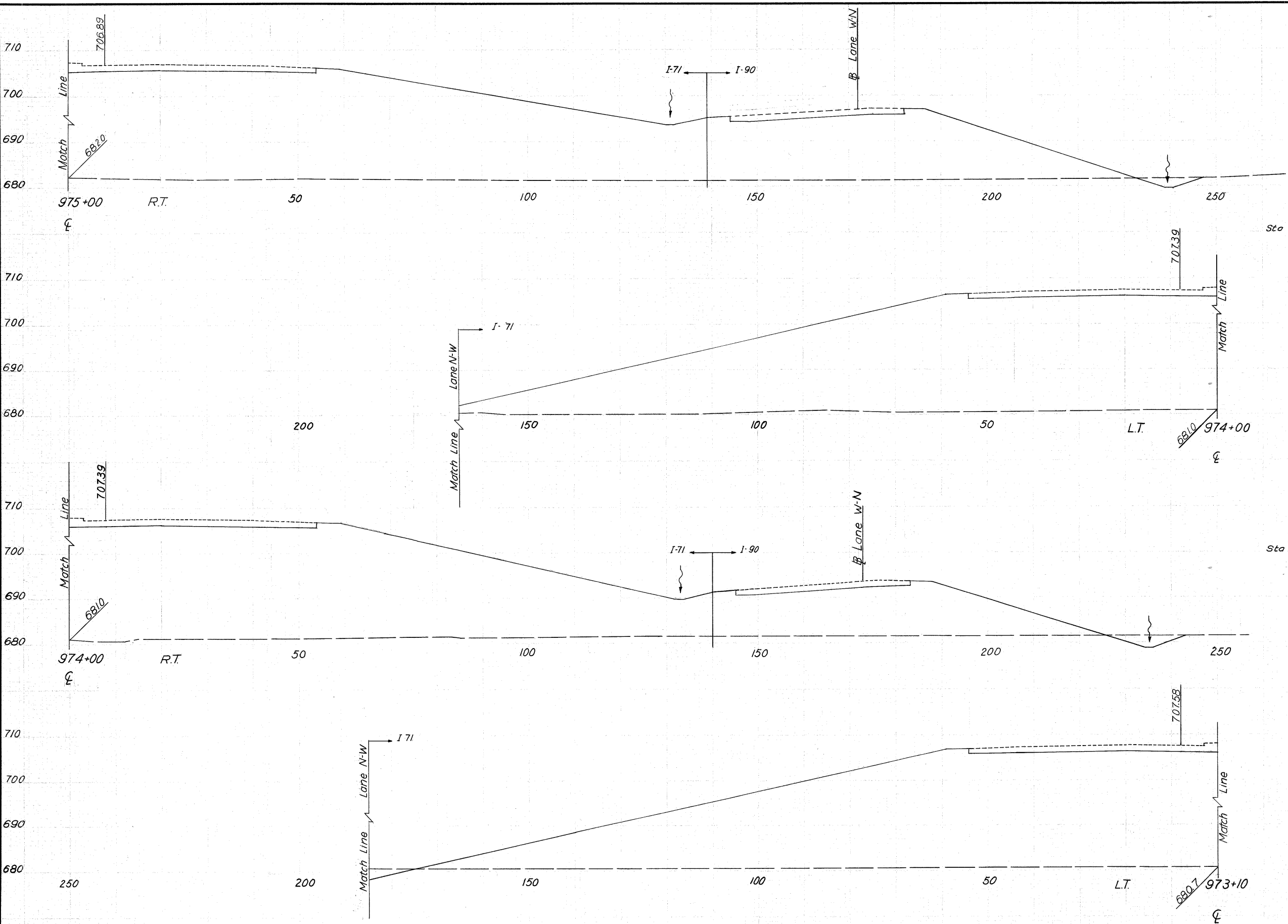
EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
24	527		
12	5372		
		142	1190
		683	11717
72	276		
449	2537		

CROSS SECTIONS
MEDINA FREEWAY

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

DATE	
BY	
SURVEYED	
TEMPLATE	
AREAS CHECKED	
FINAL SURVEY NOTEBOOK NO.	

DATE	
BY	
SURVEYED	
TEMPLATE	
AREAS CHECKED	
ORIGINAL SURVEY NOTEBOOK NO.	



EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
17	1035		
0	5445		
		78	3261
		0	20763
25	726		
0	5767		
		82	2088
		20	18565

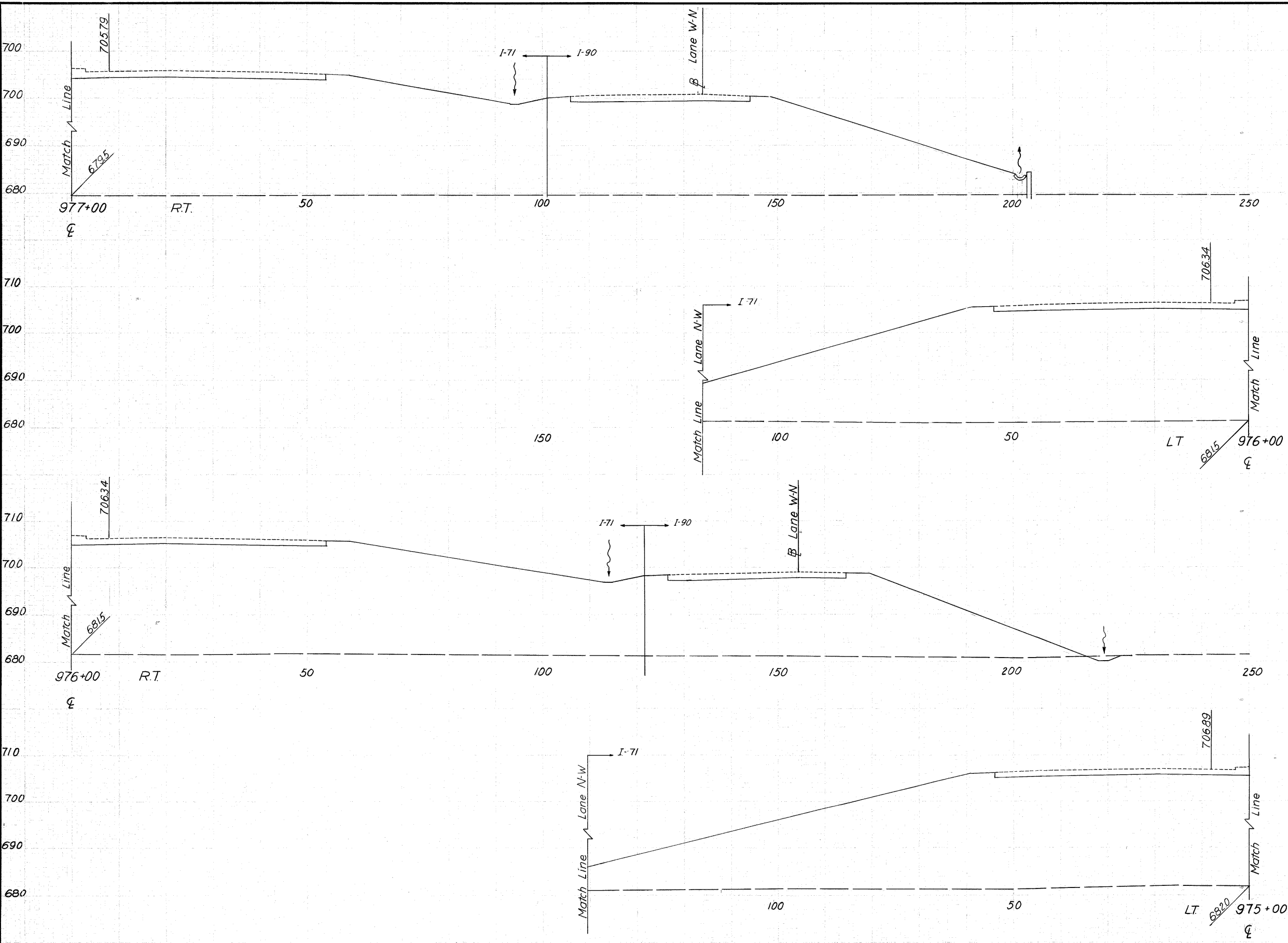
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

CROSS SECTIONS
MEDINA FREEWAY

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

DATE	
BY	
SURVEYED	
TEMPERATURE	
NOTE BOOK	
AREAS CHECKED	
NO.	

DATE	
BY	
SURVEYED	
TEMPERATURE	
NOTE BOOK	
AREAS CHECKED	
NO.	



	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
I-90	14	2265		
Sta 977+00 Aa				
I-71	0	4573		
I-90	0	1611		
Sta 977+00 Bb				
I-71	0	4573		
I-90			9	5226
I-71			0	17696
I-90	5	1211		
Sta 976+00				
I-71	0	4983		
I-90			41	4159
I-71			0	19311

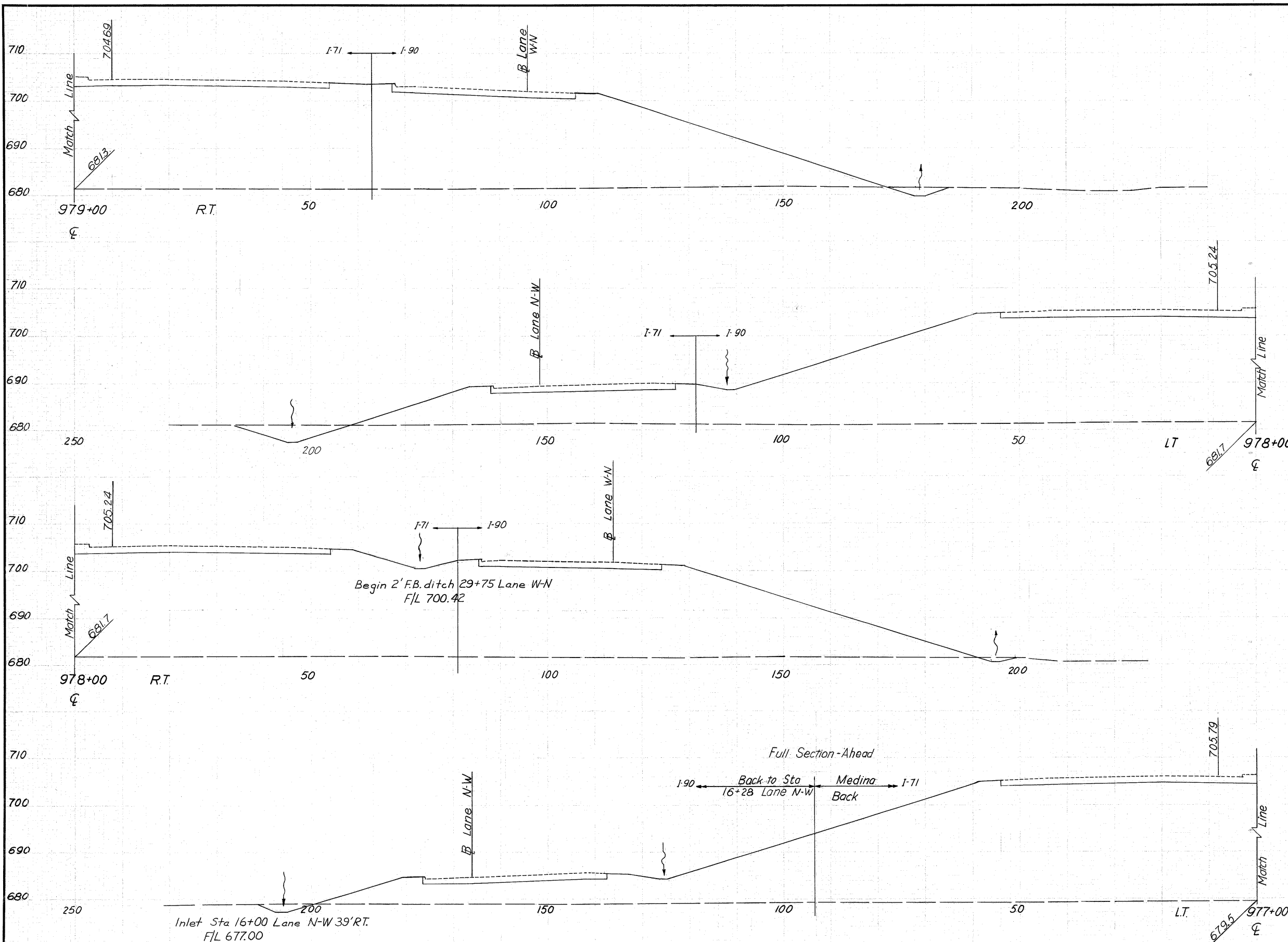
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

CROSS SECTIONS
MEDINA FREEWAY

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

DATE	BY
FINAL SURVEY	SURVEYED
NOTEBOOK	TEMPLATE
NO.	AREAS CHECKED

DATE	BY
ORIGINAL SURVEY	SURVEYED
NOTEBOOK	TEMPLATE
NO.	AREAS CHECKED



EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
		I 90	46 2362
		I-71	0 3440
		I 90	185 8054
		I-71	0 13646
		I-90	54 1987
		I-71	0 3929
		I-90	126 7874
		I-71	0 15744

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

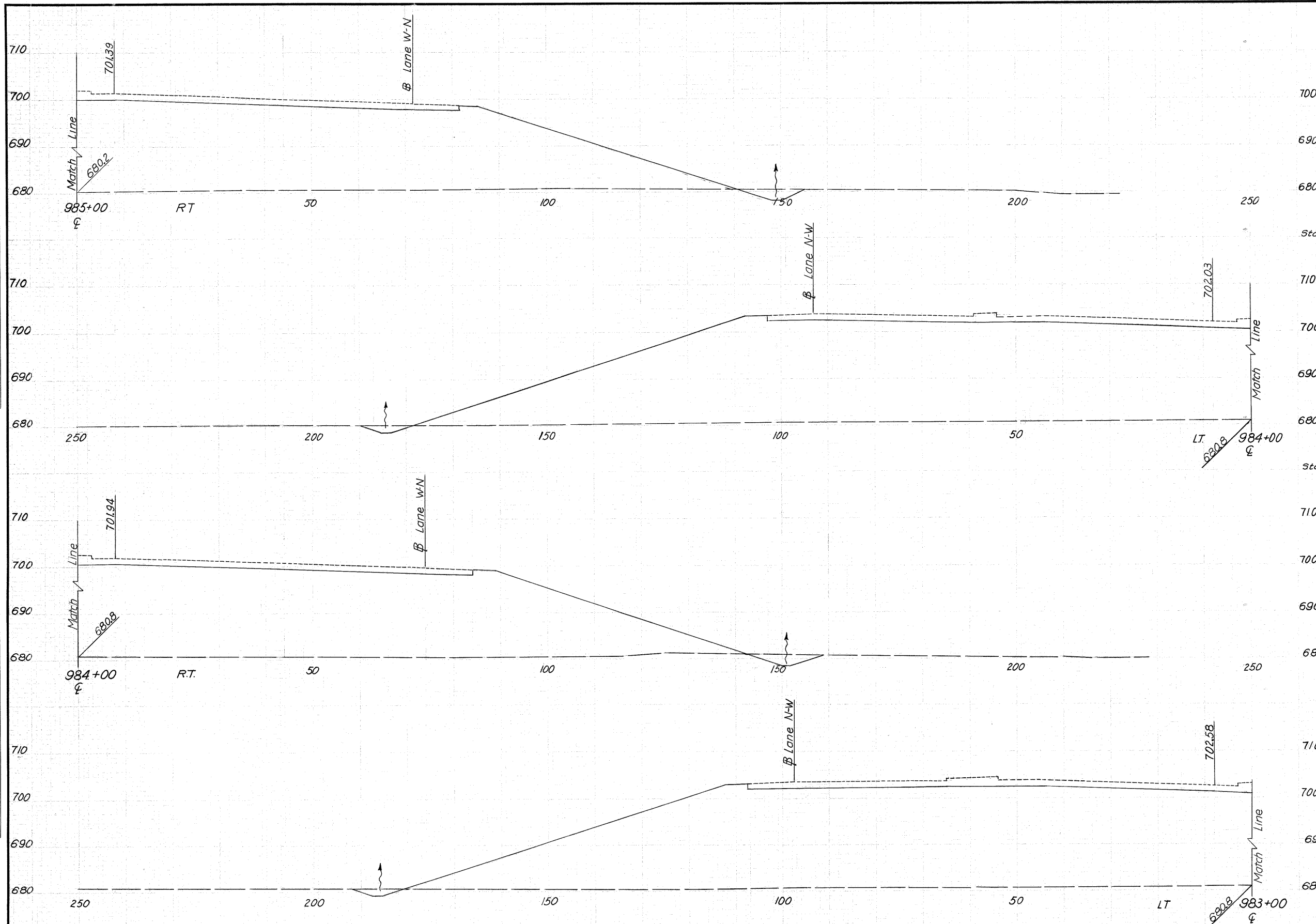
CROSS SECTIONS
MEDINA FREEWAY

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

266
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
43	5210		
		144	19,411
35	5272		
		111	19,868



DATE	BY
FINAL SURVEY	
NOTEBOOK	
NO.	

DATE	BY
ORIGINAL SURVEY	
NOTEBOOK	
NO.	

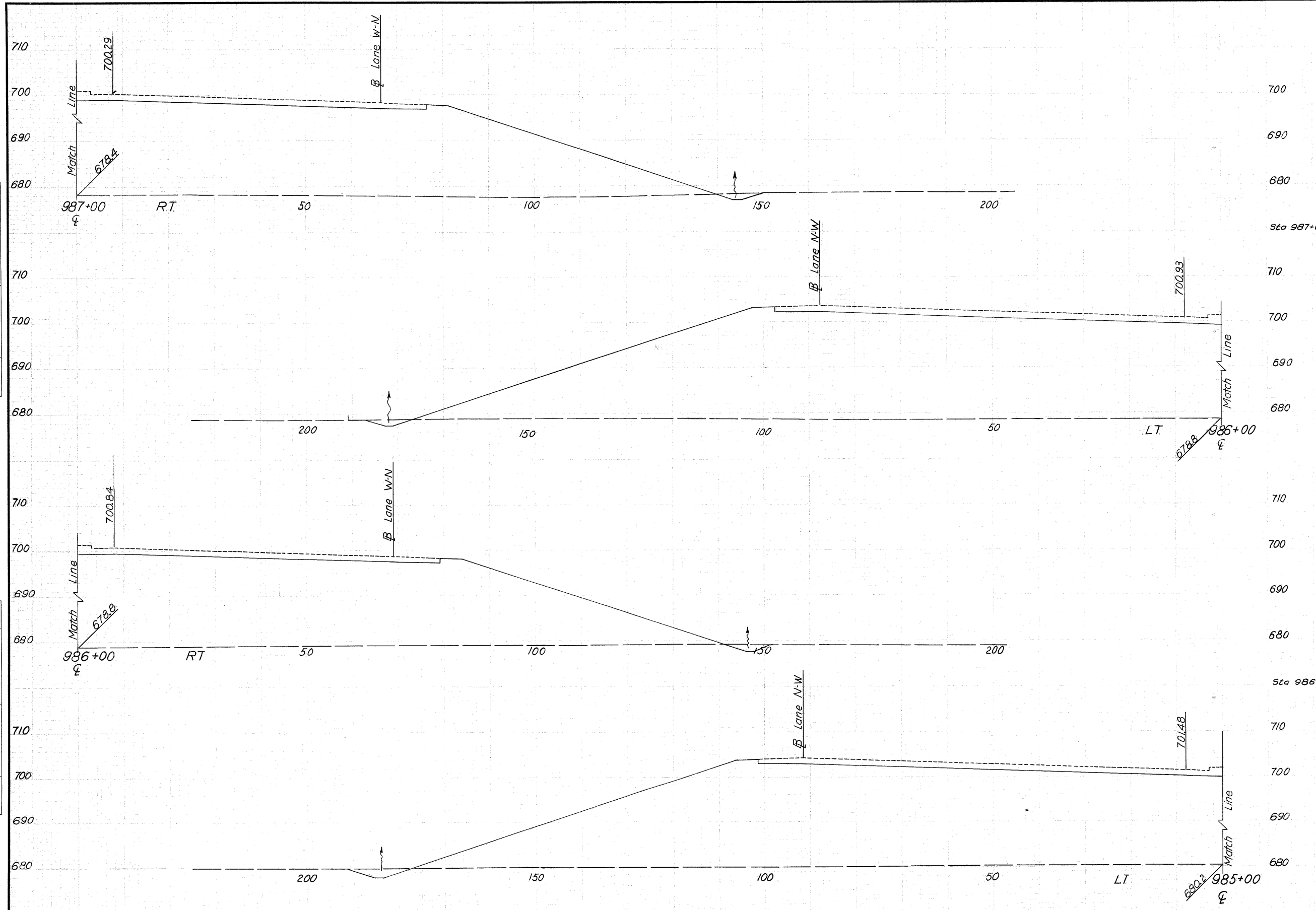
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

CROSS SECTIONS
MEDINA FREEWAY

STA. 983+00 TO STA. 985+00

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
31	5149		
		89	19515
17	5389		
		111	19628



DATE	BY
FINAL SURVEY	SURVEYED
NOTEBOOK	TEMPLATE
NO.	AREAS CHECKED

DATE	BY
ORIGINAL SURVEY	SURVEYED
NOTEBOOK	TEMPLATE
NO.	AREAS CHECKED

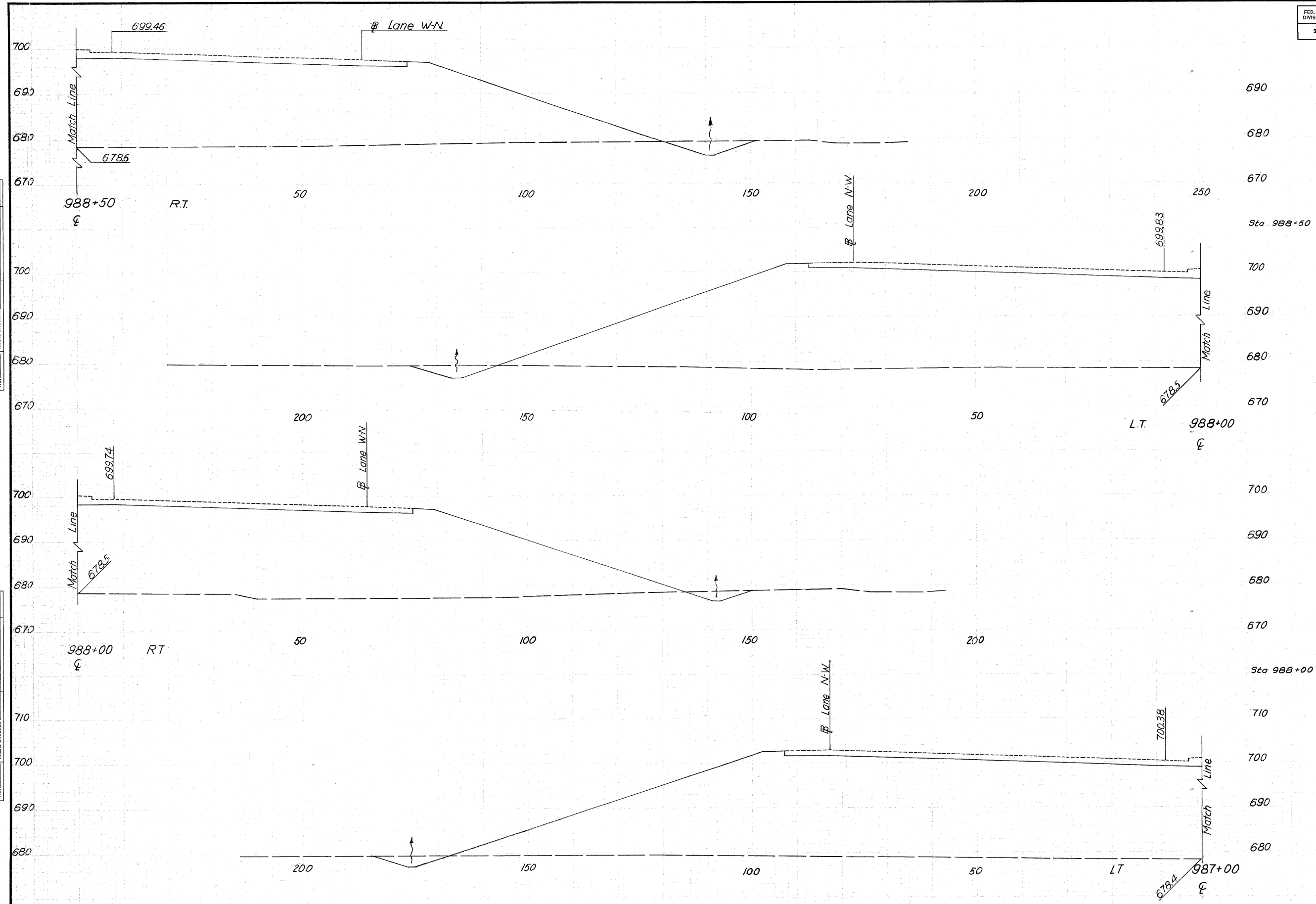
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

268
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
73	4402		
		113	8541
49	4822		
		148	18465



FINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREAS	
	CHECKED	

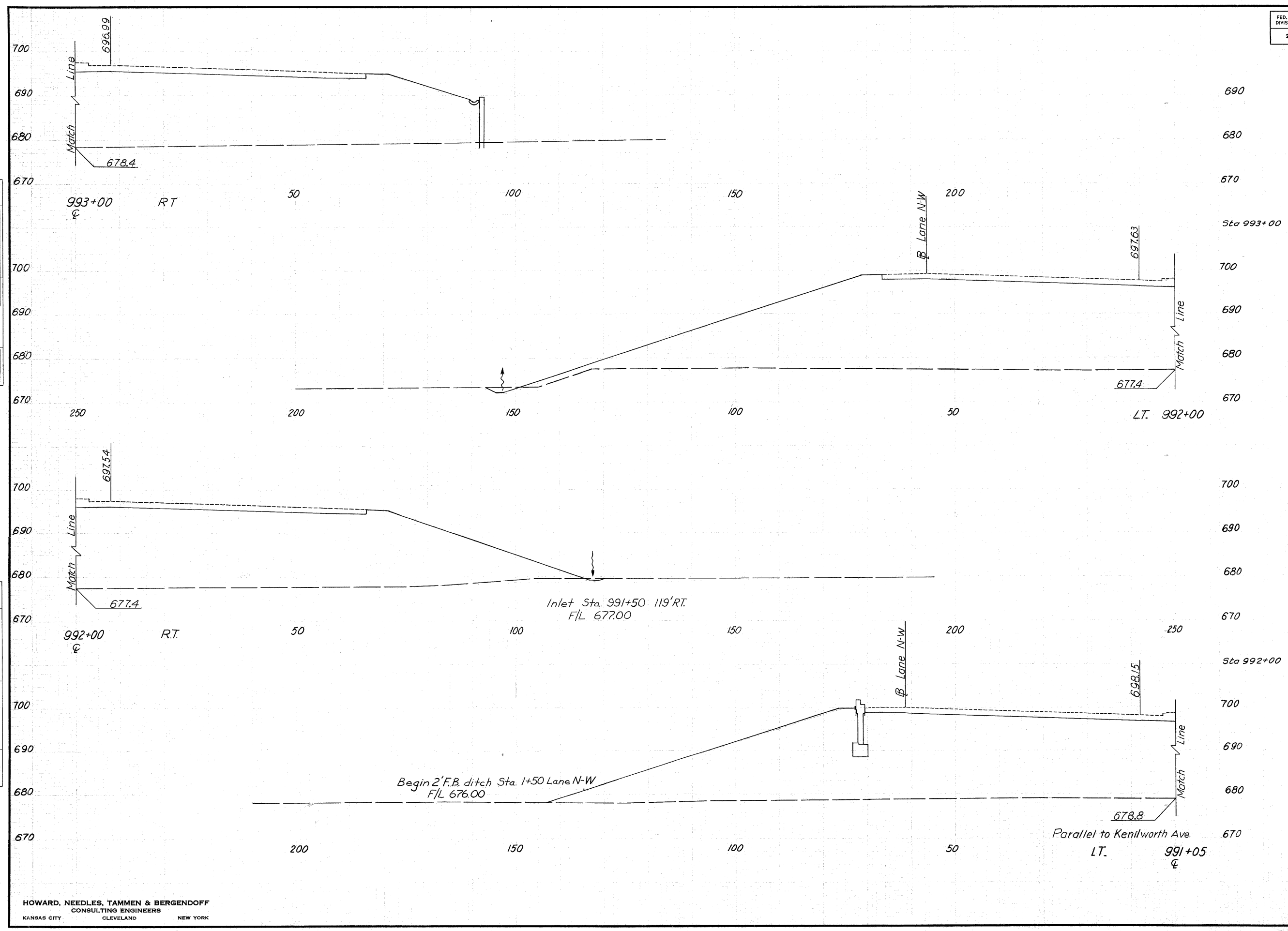
ORIGINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREAS	
	CHECKED	

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

CROSS SECTIONS
MEDINA FREEWAY

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
Sta 993+00	41	3483	
Sta 992+00	8	3777	
		91	13444
		30	13460



BY	DATE
SURVEYED	
PLOTTED	
AREAS	
AREAS CHECKED	
NO.	

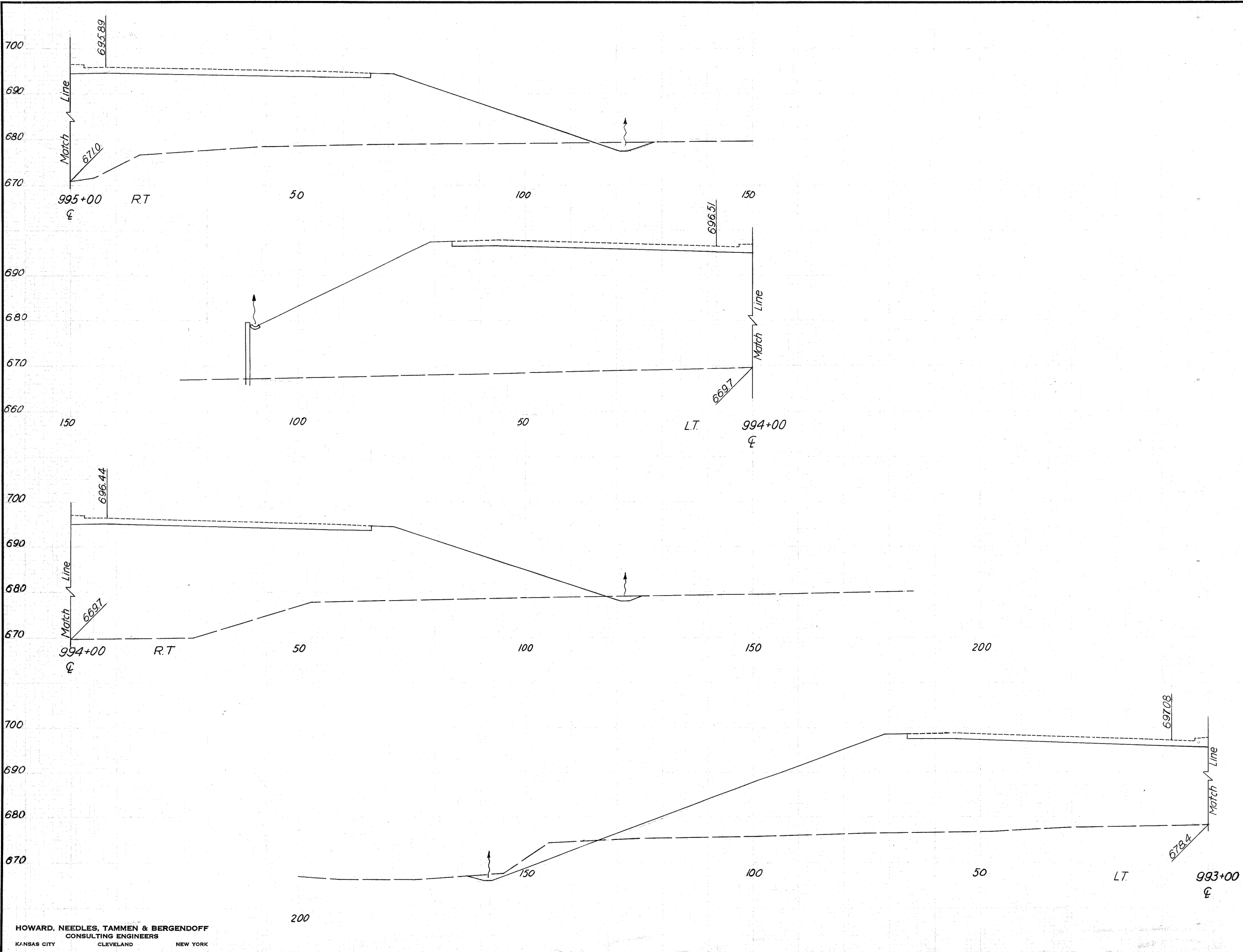
BY	DATE
SURVEYED	
PLOTTED	
AREAS	
AREAS CHECKED	
NO.	

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

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREAS CHECKED	

ORIGINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREAS CHECKED	



690
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Sta	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
Sta 995+00	106	4042		
Sta 994+00	5	4622	206	16044
Sta 993+00			85	15009

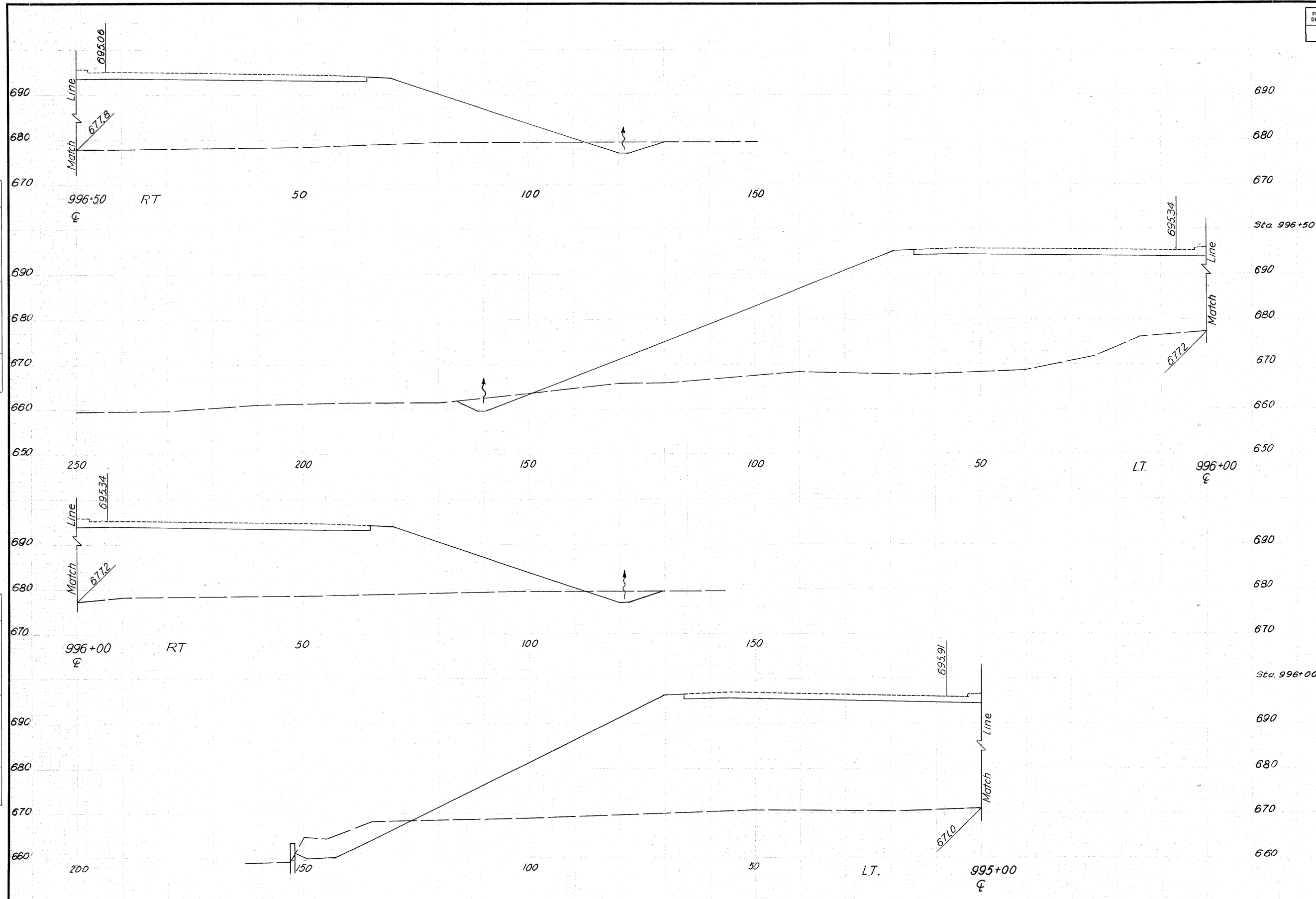
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

CROSS SECTIONS
MEDINA FREEWAY

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

DATE	
BY	
SURVEYED	
PLANNED	
DESIGNED	
CONTRACT	
NO.	

DATE	
BY	
SURVEYED	
PLANNED	
DESIGNED	
CONTRACT	
NO.	



EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
Sta. 996+50	59	4079	
Sta. 996+00	49	3994	
		287	14,881

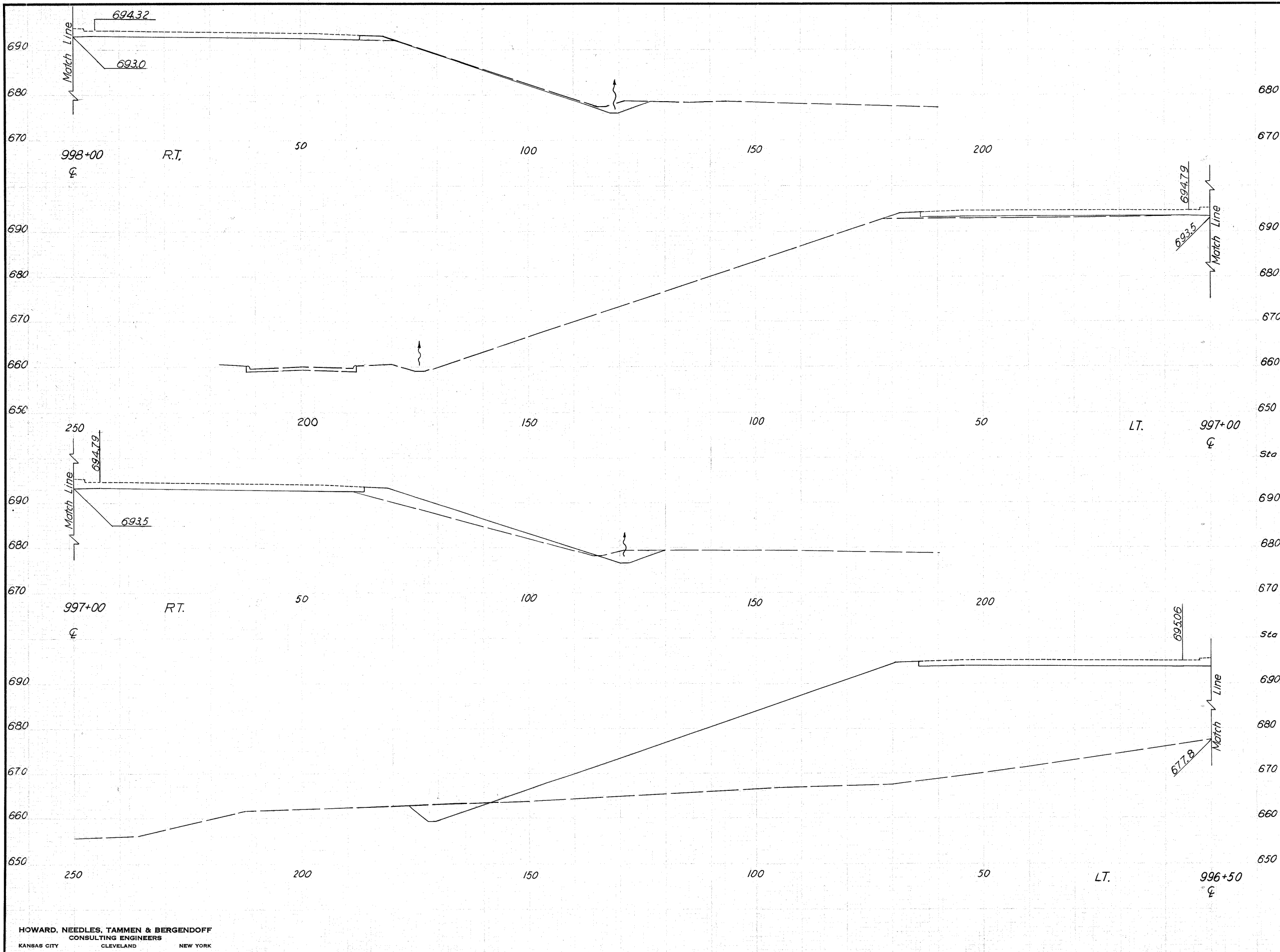
CROSS SECTIONS
MEDINA FREEWAY

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

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

DATE	
BY	
SURVEYED	
PLANNED	
REVISIONS	
AREAS CHECKED	
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	
BY	
SURVEYED	
PLANNED	
REVISIONS	
AREAS CHECKED	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	



680
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	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
Sta 998+00	18	15		
Sta 997+00	19	113	69	237
			72	3881

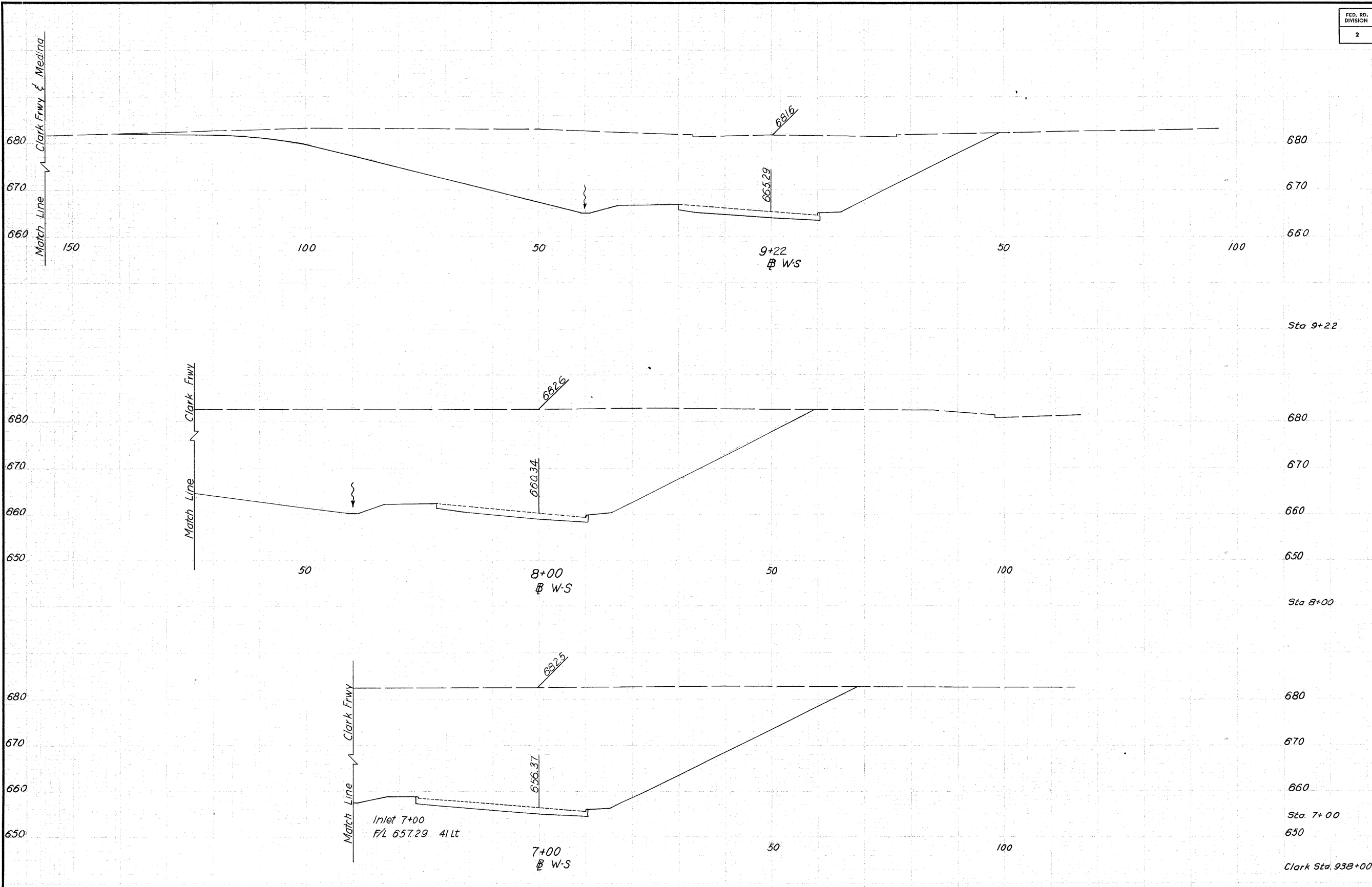
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

CROSS SECTIONS
MEDINA FREEWAY

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREA	
	CHECKED	

ORIGINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREA	
	CHECKED	



EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
		4995	0
Sta 9+22	1885	0	
		9726	0
Sta 8+00	2420	0	
		8481	0
Sta 7+00	2160	0	
Clark Sta. 938+00	2269	0	

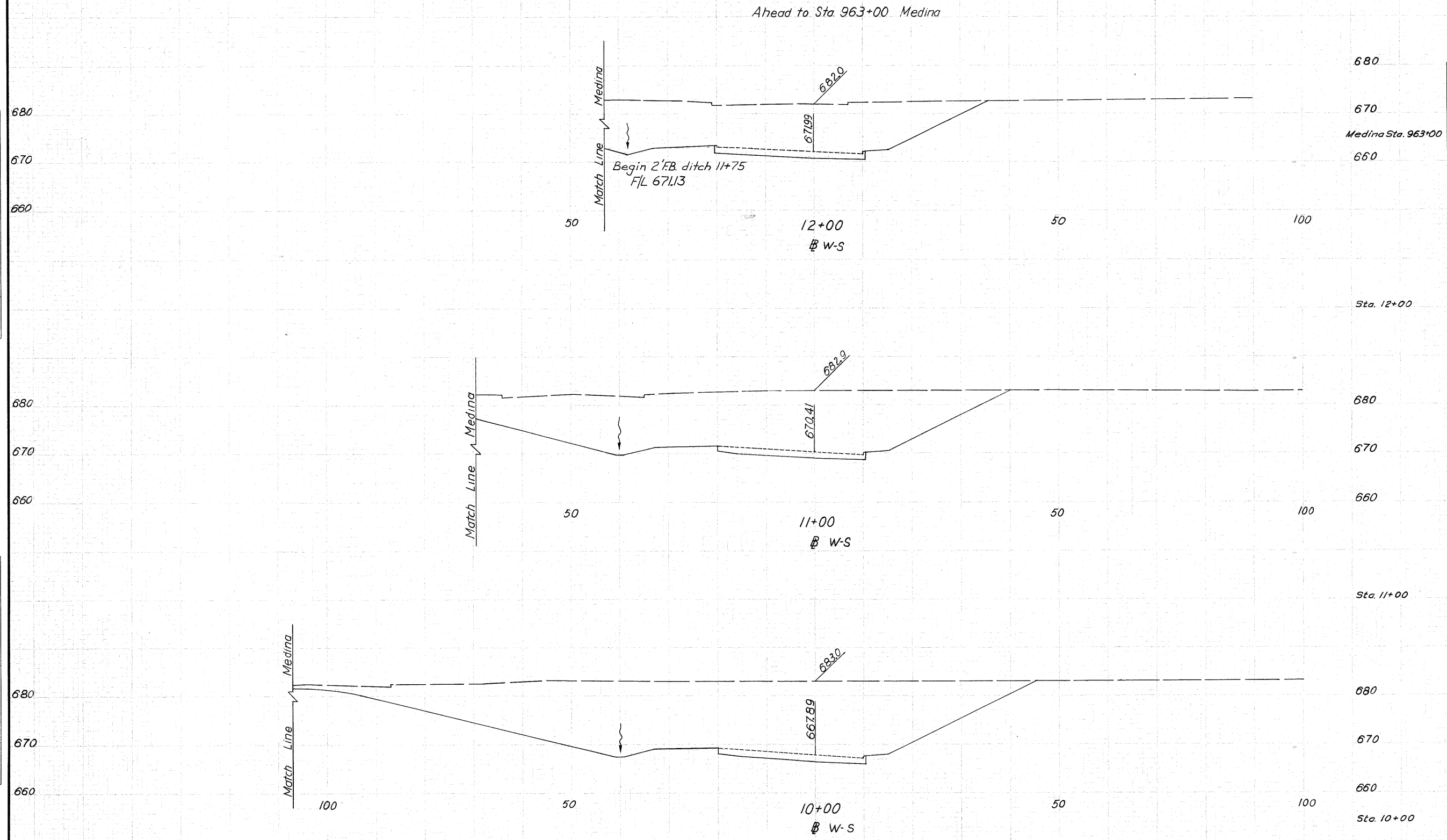
Back to Sta 938+00 Clark Frwy

All Lane W-S Sections 1-71

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

DATE	
BY	
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	



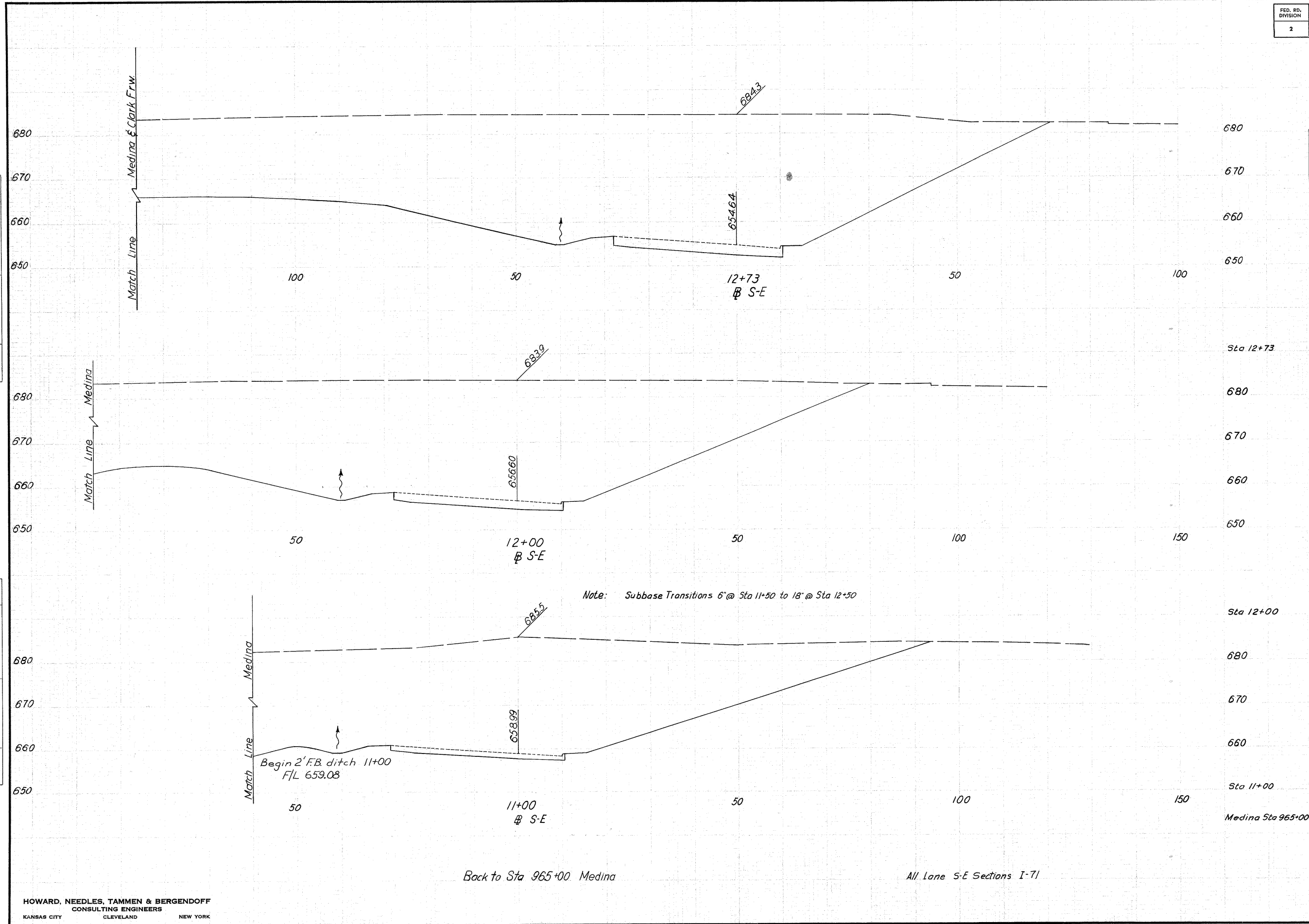
	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
Medina Sta. 963+00	514	0	2574	0
Sta. 12+00	716	0	3387	0
Sta. 11+00	1113	0	4974	0
Sta. 10+00	1573	0		

CROSS SECTIONS
LANE W-S

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	DATE
NOTE BOOK	BY
NO.	
SURVEYED	
PLOTTED	
AREAS CHECKED	

ORIGINAL SURVEY	DATE
NOTE BOOK	BY
NO.	
SURVEYED	
PLOTTED	
AREAS CHECKED	



EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
		4468	0
Sta 12+73	4564	0	
		1108	0
Sta 12+00	3653	0	
		12028	0
Sta 11+00	2842	0	
Medina Sta 965+00	2173	0	9101

Back to Sta 965+00 Medina

All Lane S-E Sections I-7I

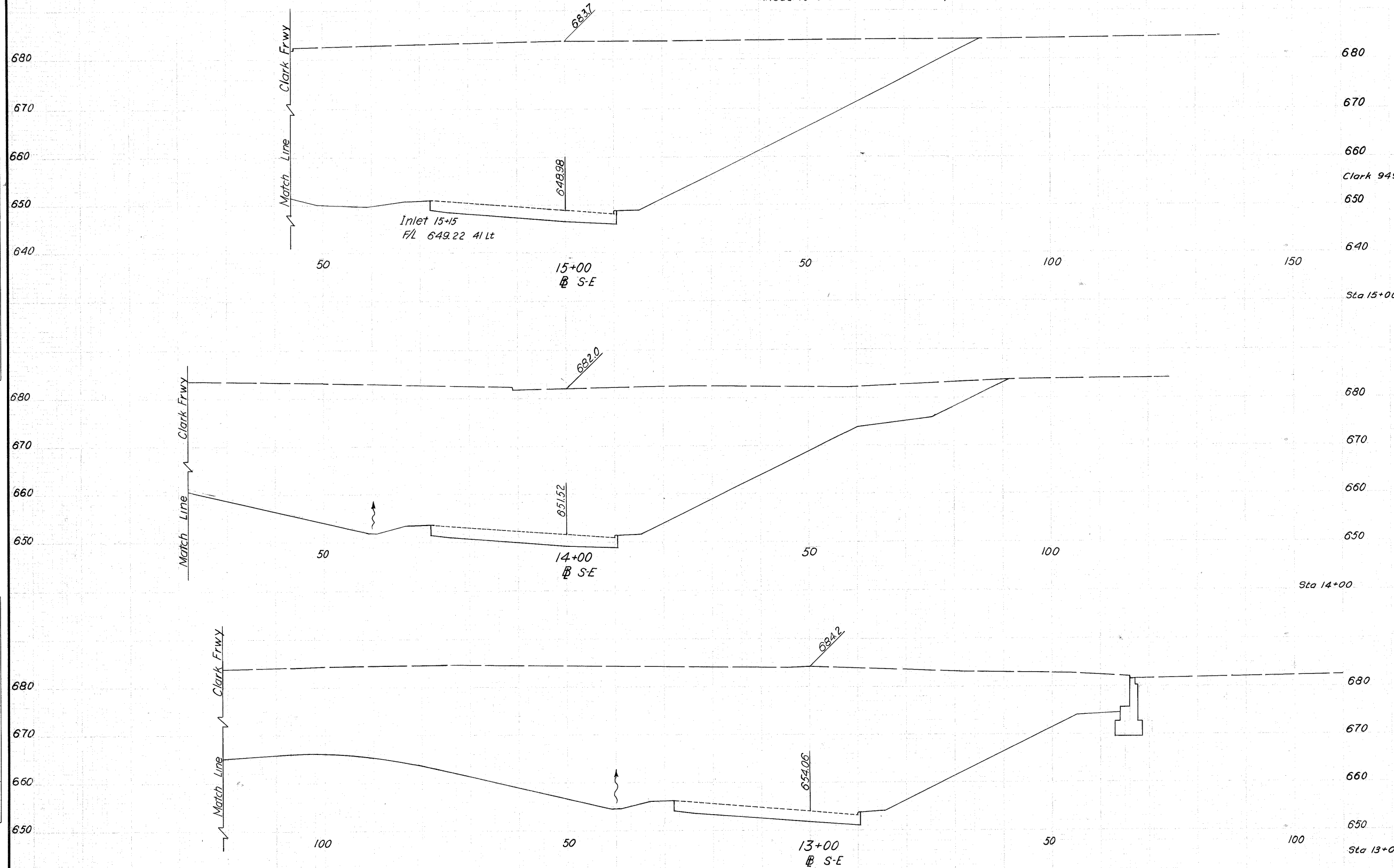
CROSS SECTIONS
LANE S-E

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

Ahead to Sta 949+85 Clark Frwy

DATE	
BY	
SURVEYED	
TEMPLATE	
AREAS CHECKED	
FINAL SURVEY	
NOTEBOOK	
NO.	

DATE	
BY	
SURVEYED	
TEMPLATE	
AREAS CHECKED	
ORIGINAL SURVEY	
NOTEBOOK	
NO.	



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500

	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
Clark 949+85	3937	0		
Sta 15+00	3730	0	9797	0
Sta 14+00	3841	0	14,020	0
Sta 13+00	4372	0	15,209	0

CROSS SECTIONS
LANE S-E

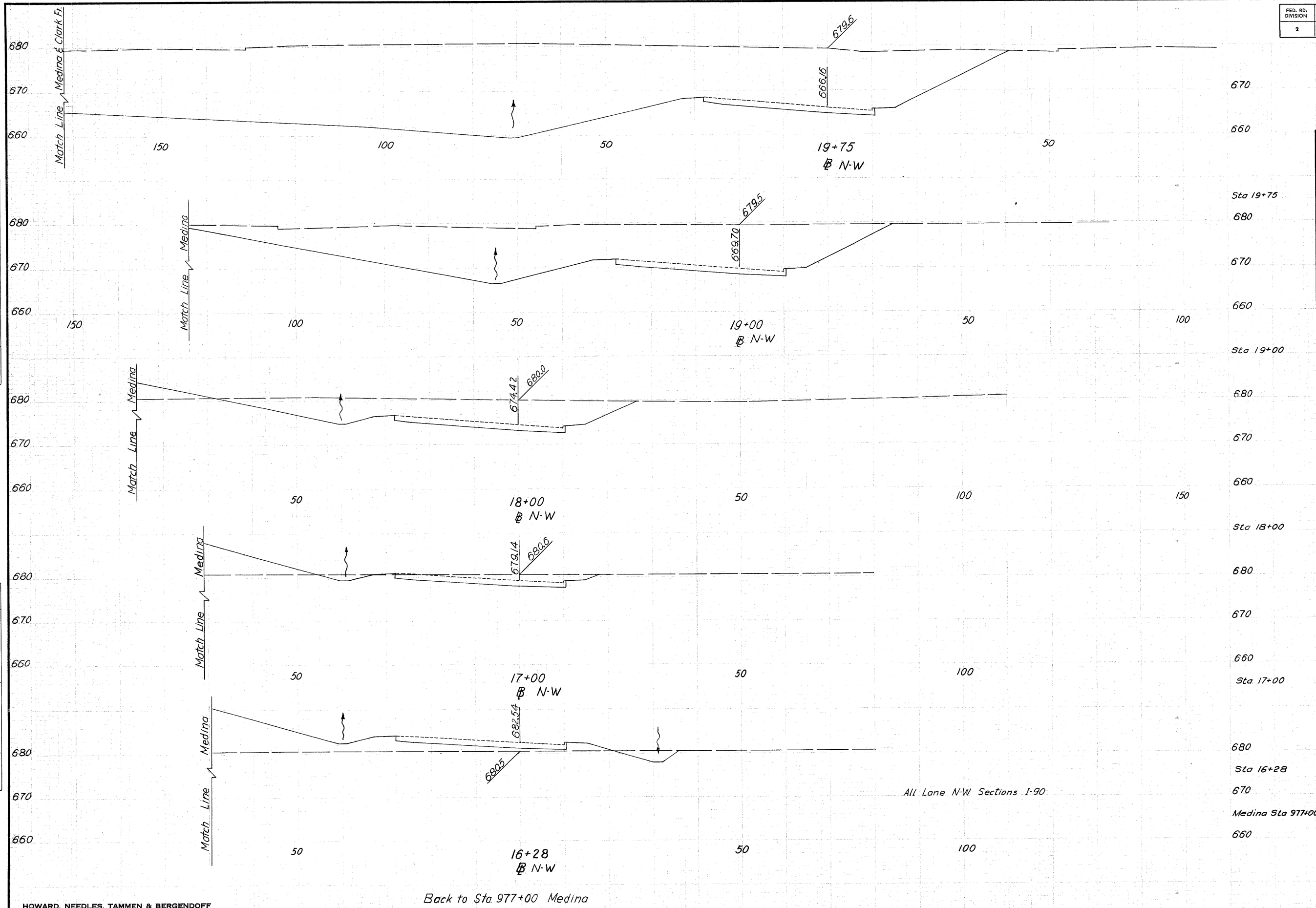
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

279
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	DATE
SURVEYED	
NOTE BOOK	
NO.	

ORIGINAL SURVEY	DATE
SURVEYED	
NOTE BOOK	
NO.	



	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
Sta 19+75	3194	0		
680				
670			6185	0
660				
Sta 19+00	1259	0		
680				
670			3146	67
660				
Sta 18+00	440	36		
680				
670			998	233
660				
Sta 17+00	99	90		
680				
670			161	475
660				
Sta 16+28	22	266		
680				
670			31	784
660				
Medina Sta 977+00	14	654		

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

Back to Sta 977+00 Medina

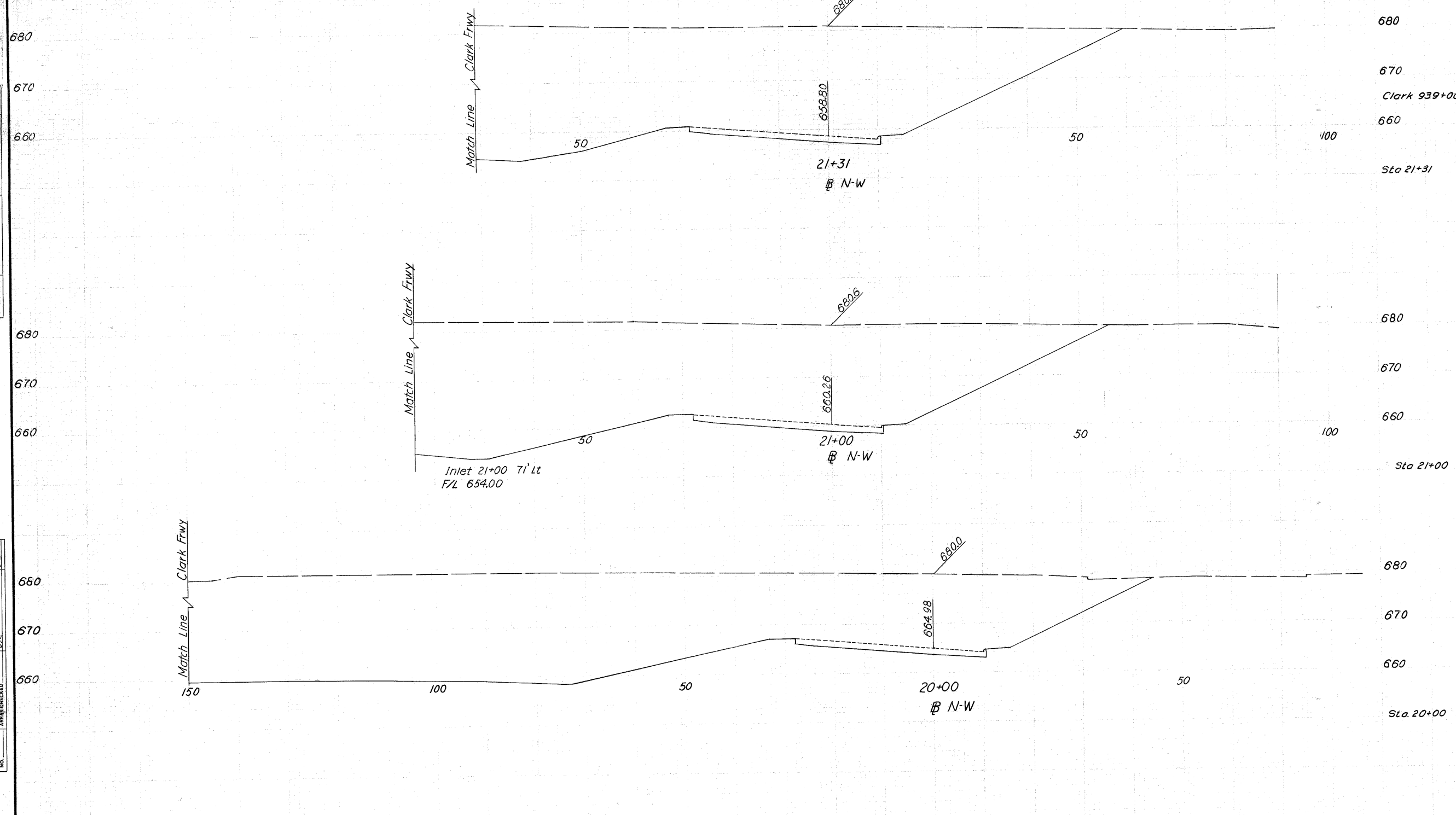
CROSS SECTIONS
LANE N-W

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

280
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

Ahead to Sta 939+00 Clark Frwy



680
670
660
100

680
670
660
100

680
670
660
100

Clark 939+00
Sta 21+31
Sta 21+00
Sta 20+00

EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
2261	0		
		5116	0
2502	0		
		2970	0
2672	0		
		1167	0
3358	0		
		3033	0

FINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREAS CHECKED	

ORIGINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREAS CHECKED	

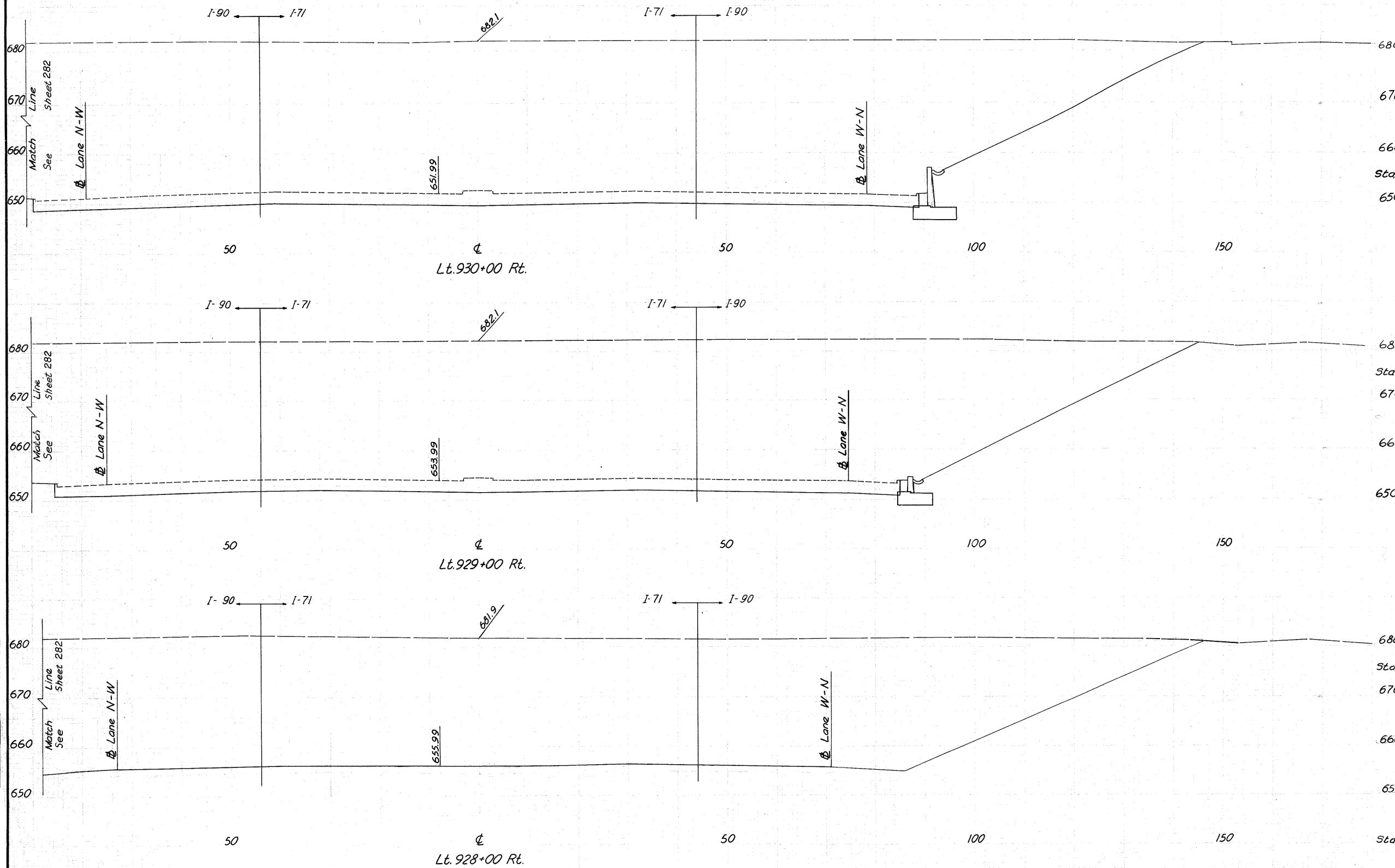
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

STA. 20+00 TO STA. 21+31

CROSS SECTIONS
LANE N-W

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

		EARTHWORK			
		END AREA		VOLUME	
		EXC.	EMB.	EXC.	EMB.
680	I-90	4,791	0		
670	I-71				
660	I-90			17,176	0
650	I-71			10,231	0
Sta. 930+00					
680	I-90	4,484	0		
670	I-71	2,677	0		
660	I-90			15,535	0
650	I-71			9,159	0
Sta. 929+00					
680	I-90	3,905	0		
670	I-71	2,269	0		
660	I-90			3,688	0
650	I-71			2,143	0
Sta. 928+00					
680	I-90				
670	I-71				
660	I-90				
650	I-71				
Sta. 927+49					
0		0	0		



Section Sta. 927+49

CROSS SECTIONS
CLARK FREEWAY

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

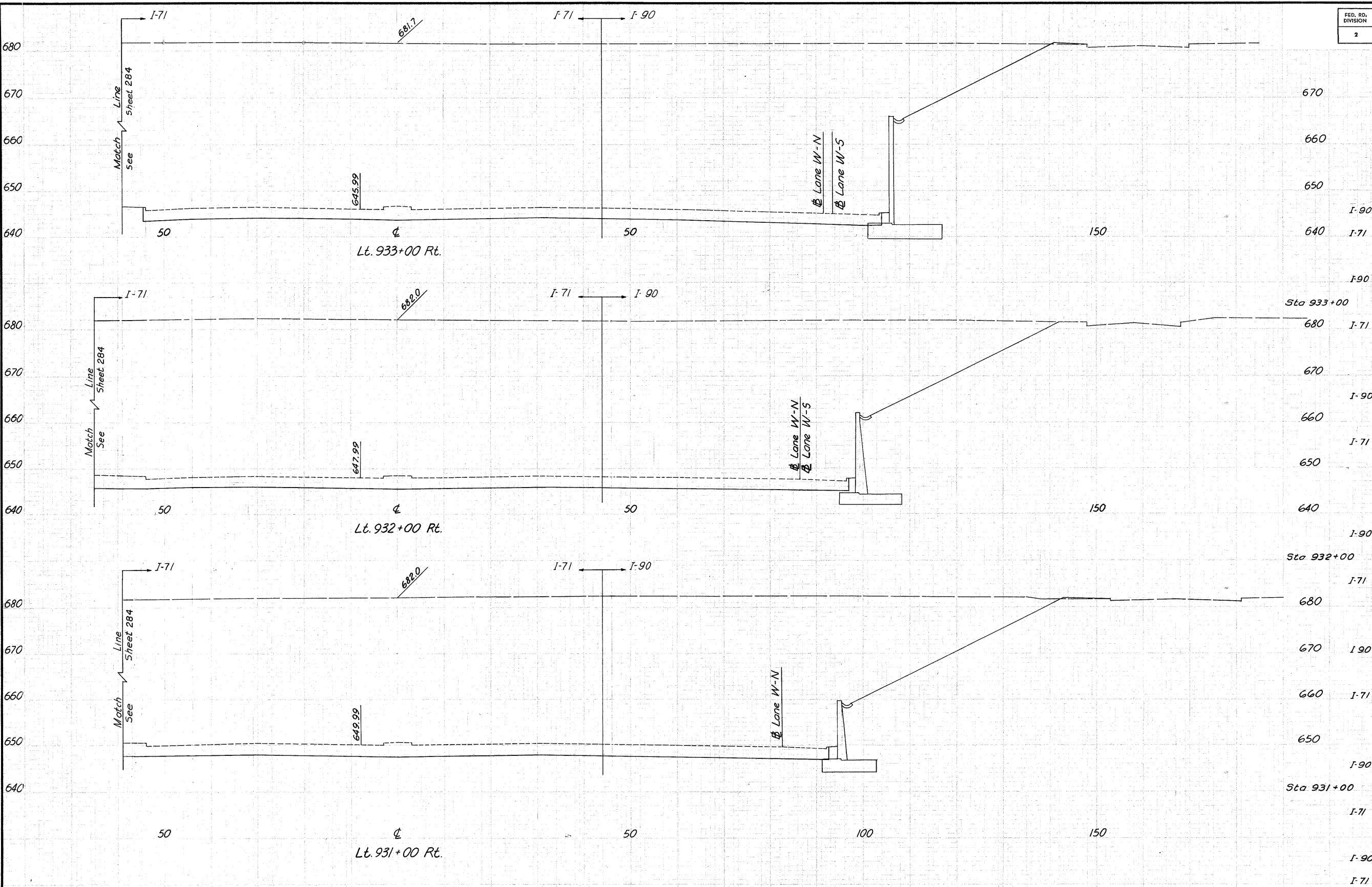
FINAL SURVEY PLOTTED, REVISIONS MADE, AREAS CHECKED, BY DATE

ORIGINAL SURVEY PLOTTED, REVISIONS MADE, AREAS CHECKED, BY DATE

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	DATE
SURVEYED	
PLOTTED	
NOTED	
AREAS CHECKED	
NO.	

ORIGINAL SURVEY	DATE
SURVEYED	2/4/54
PLOTTED	3/17/54
NOTED	9/27/54
AREAS CHECKED	9/22/54
NO.	



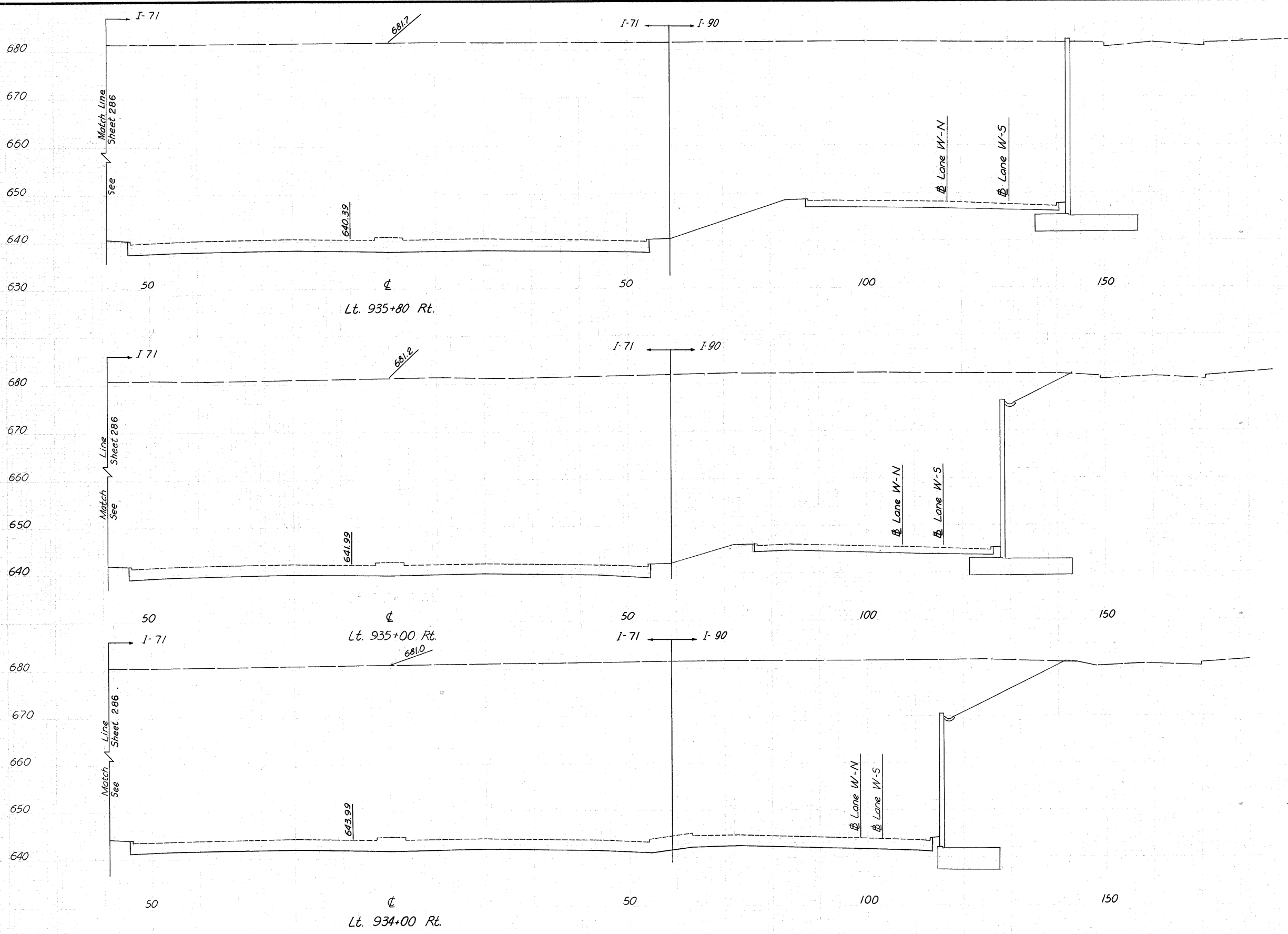
EARTHWORK				
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
I-90			18,135	11
I-71			15,809	0
I-90	4,980	6		
I-71	3,893	0		
I-90			17,546	11
I-71			14,544	0
I-90	4,495	0		
I-71	3,961	0		
I-90			16,587	4
I-71			13,880	0
I-90	4,462	2		
I-71	3,534	0		
I-90			17,135	4
I-71			11,818	0

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

285
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

		EARTHWORK			
		END AREA		VOLUME	
		EXC.	EMB.	EXC.	EMB.
	670				
	660				
	650				
	640				
	630				
I-90	5,770	0			
Sta. 935+80					
I-71	5,556	0			
	680				
	670			17,861	0
I-90					
	660			14,884	0
I-71					
	650				
	640				
I-90	8,286	0			
Sta. 935+00					
I-71	4,891	0			
	680				
	670				
	660			20,554	0
I-90					
	650			17,657	0
I-71					
	640				
I-90	4,813	0			
Sta. 934+00					
I-71	4,644	0			



FINAL SURVEY	DATE
NO. _____	_____
BY _____	
SURVEYED _____	
TEMPLATE _____	
AREAS CHECKED _____	

ORIGINAL SURVEY	DATE
NO. _____	_____
BY _____	
SURVEYED _____	
TEMPLATE _____	
AREAS CHECKED _____	

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

CROSS SECTIONS
CLARK FREEWAY

STA. 934+00 TO STA. 935+80

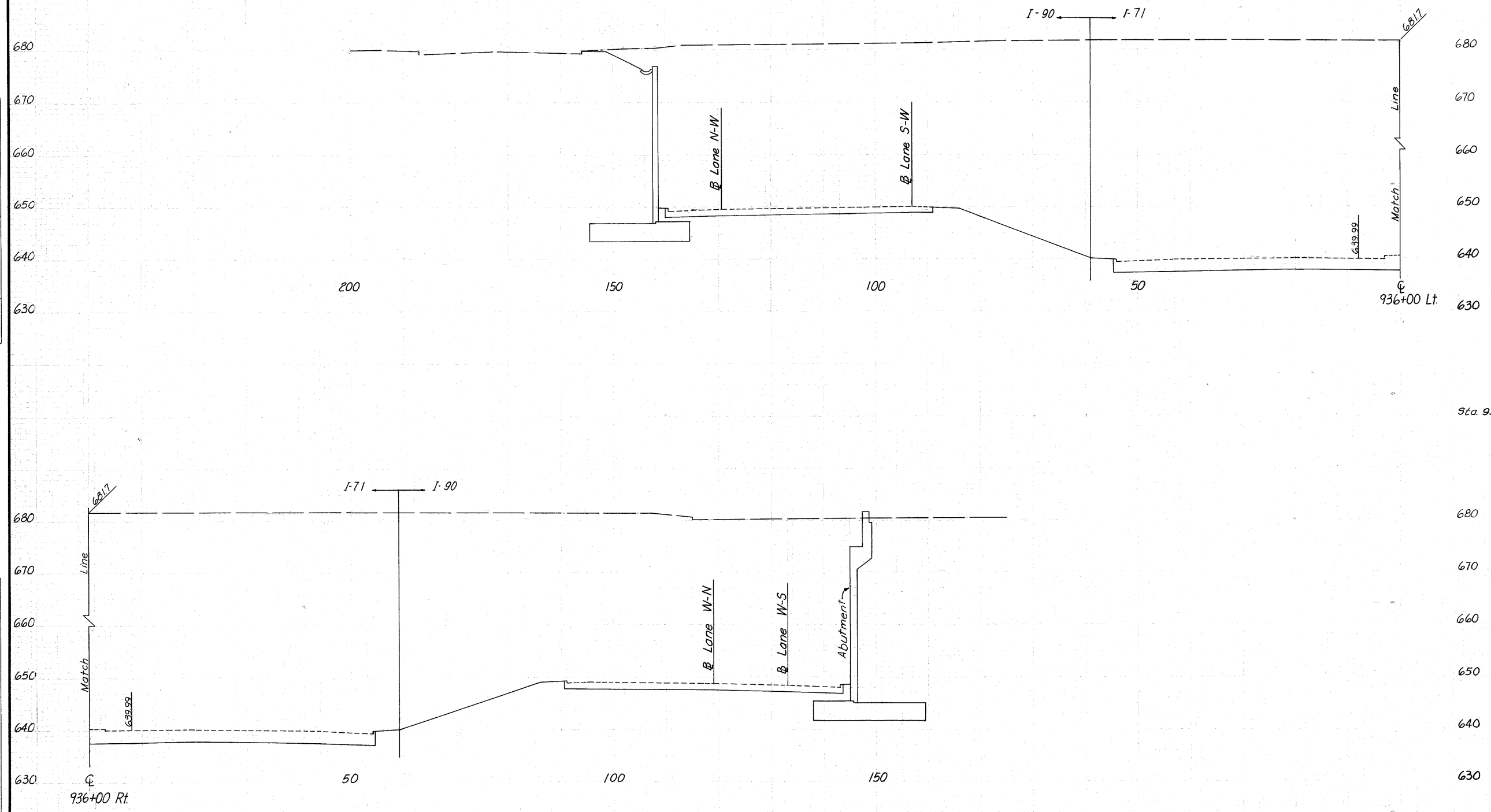
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY

BY	DATE
SURVEYED	
NOTEBOOK	
AREAS CHECKED	
NO.	

ORIGINAL SURVEY

BY	DATE
SURVEYED	
NOTEBOOK	
AREAS CHECKED	
NO.	

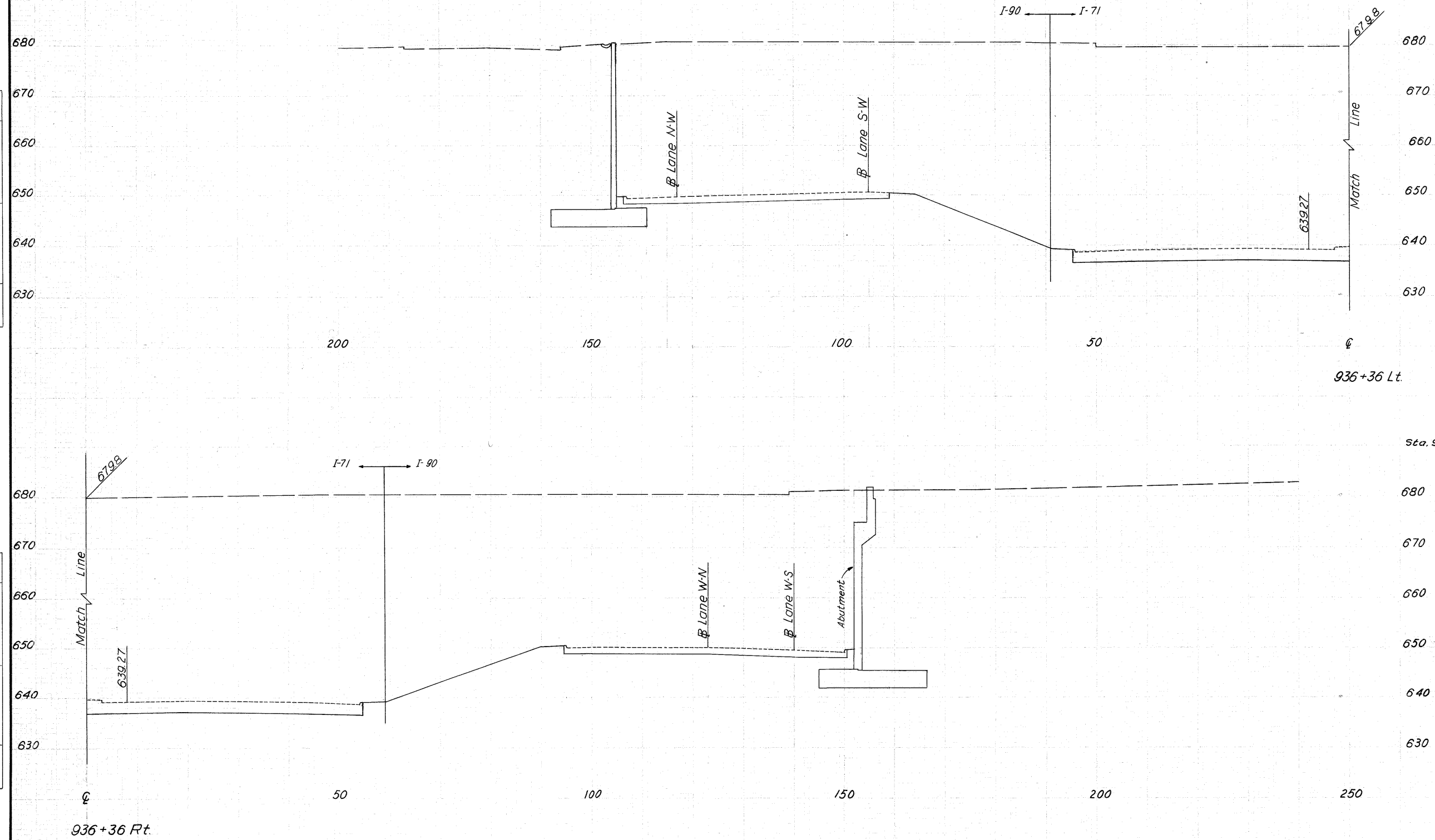


	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
I-90	5,737	0		
Sta. 936+00				
I-71	5,194	0		
I-90			4,262	0
I-71			3,833	0

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	NO.
SURVEYED	DATE
PLOTTED	BY
AREAS CHECKED	

ORIGINAL SURVEY	NO.
SURVEYED	DATE
PLOTTED	BY
AREAS CHECKED	



	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
I-90	5,982	0		
Sta. 936+36				
I-71	5,068	0		
I-90			7,813	0
I-71			6,841	0

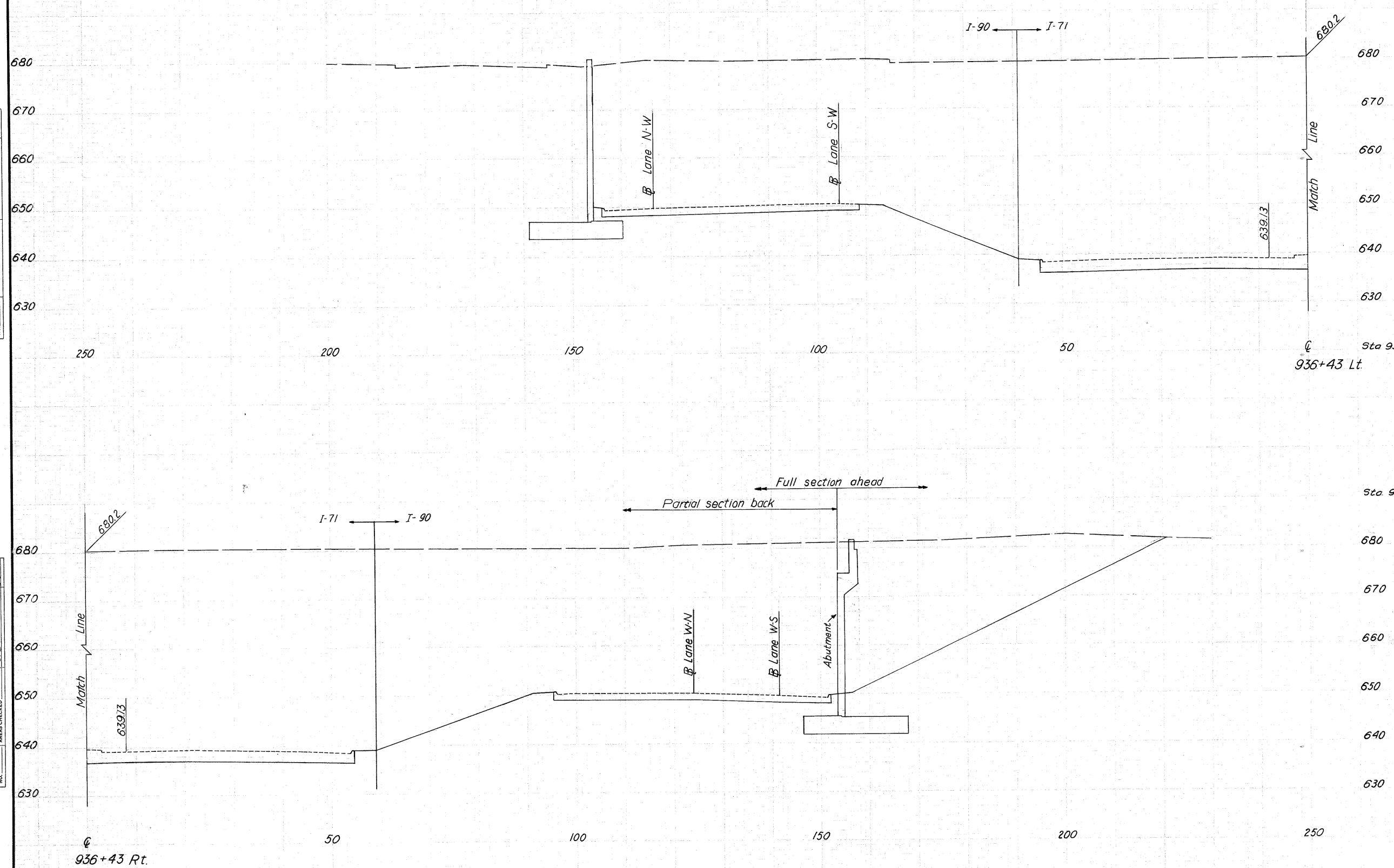
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

289
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	DATE
SURVEYED	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	
NO.	

ORIGINAL SURVEY	DATE
SURVEYED	2/2/54
PLOTTED	3/19/54
NOTE BOOK	13/27/54
AREAS CHECKED	13/27/54
NO.	13/27/54



	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
I-90	7119	0		
Sta 936+43 Lt.				
I-71	5128	0		
I-90	5993	0		
Sta 936+43 Bk.				
I-71	5128	0		
I-90			1,552	0
I-71			1,322	0

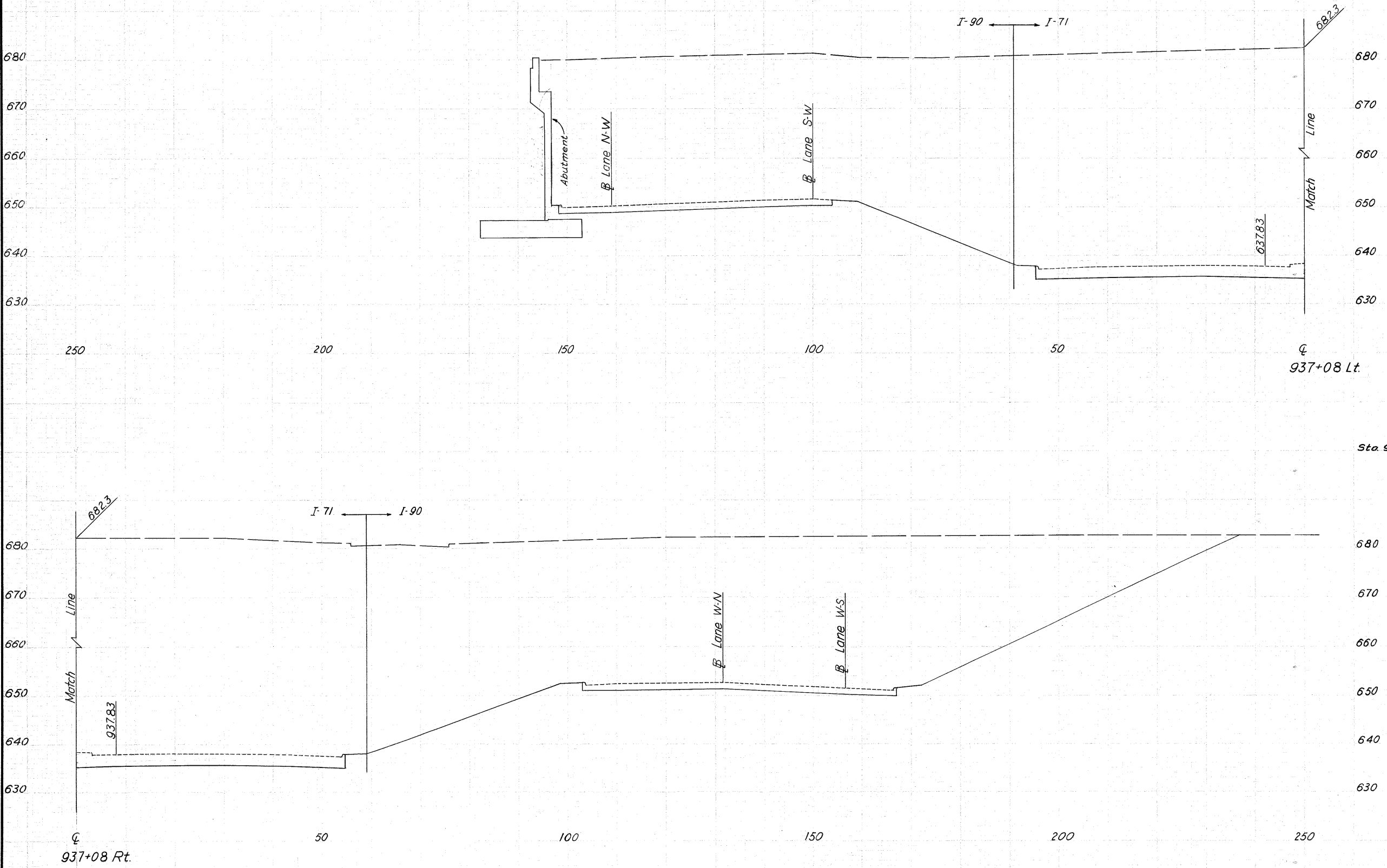
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

CROSS SECTIONS
CLARK FREEWAY

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	DATE
SURVEYED	
PLOTTED	
AREAS CHECKED	
NO.	

ORIGINAL SURVEY	DATE
SURVEYED	2-7-64
PLOTTED	3-2-64
AREAS CHECKED	3-2-64
NO.	3-21-64

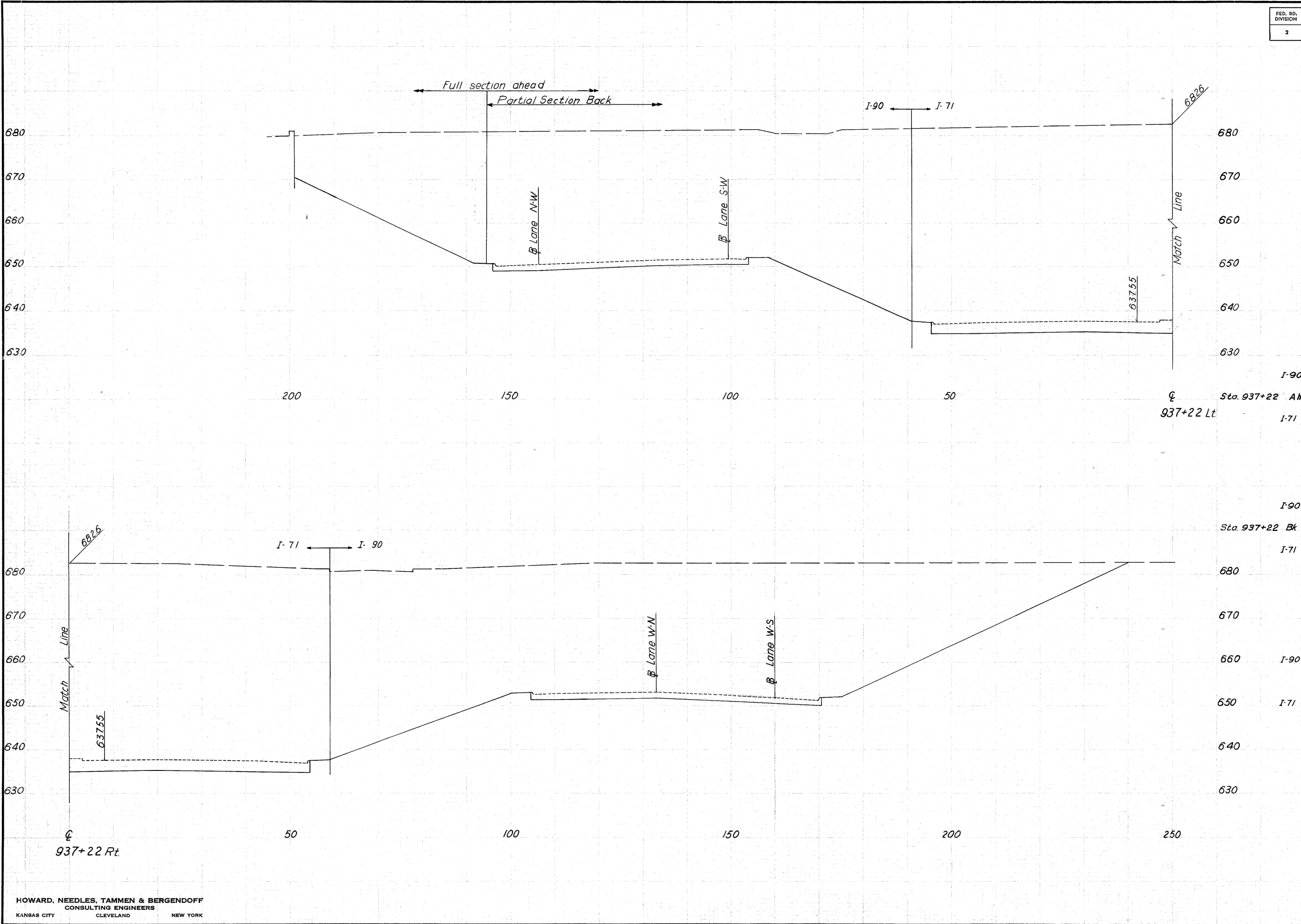


	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
I-90	7,785	0		
Sta 937+08				
I-71	5,455	0		
I-90			17,940	0
I-71			12,739	0

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREAS	
	CHECKED	

ORIGINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREAS	
	CHECKED	



EARTHWORK				
END AREA		VOLUME		
EXC.	EMB.	EXC.	EMB.	
		I-90	8913	0
		I-71	5539	0
		I-90	8013	0
		I-71	5539	0
		I-90		4096
		I-71		2850

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

DATE	BY
SURVEYED	PLOTTED
NOTE BOOK	AREAS CHECKED
NO.	

DATE	BY
2-7-54	REB
5-20-54	JFC
5-21-54	JFC
5-23-54	JFC
SURVEYED	PLOTTED
NOTE BOOK	AREAS CHECKED
NO.	



	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
I-90	5485	0		
Sta 938+00				
I-71	8022	0		
I-90	5485	0		
Sta 938+00 Bk				
I-71	10,291	0		
I-90			20,797	0
I-71			22,866	0

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

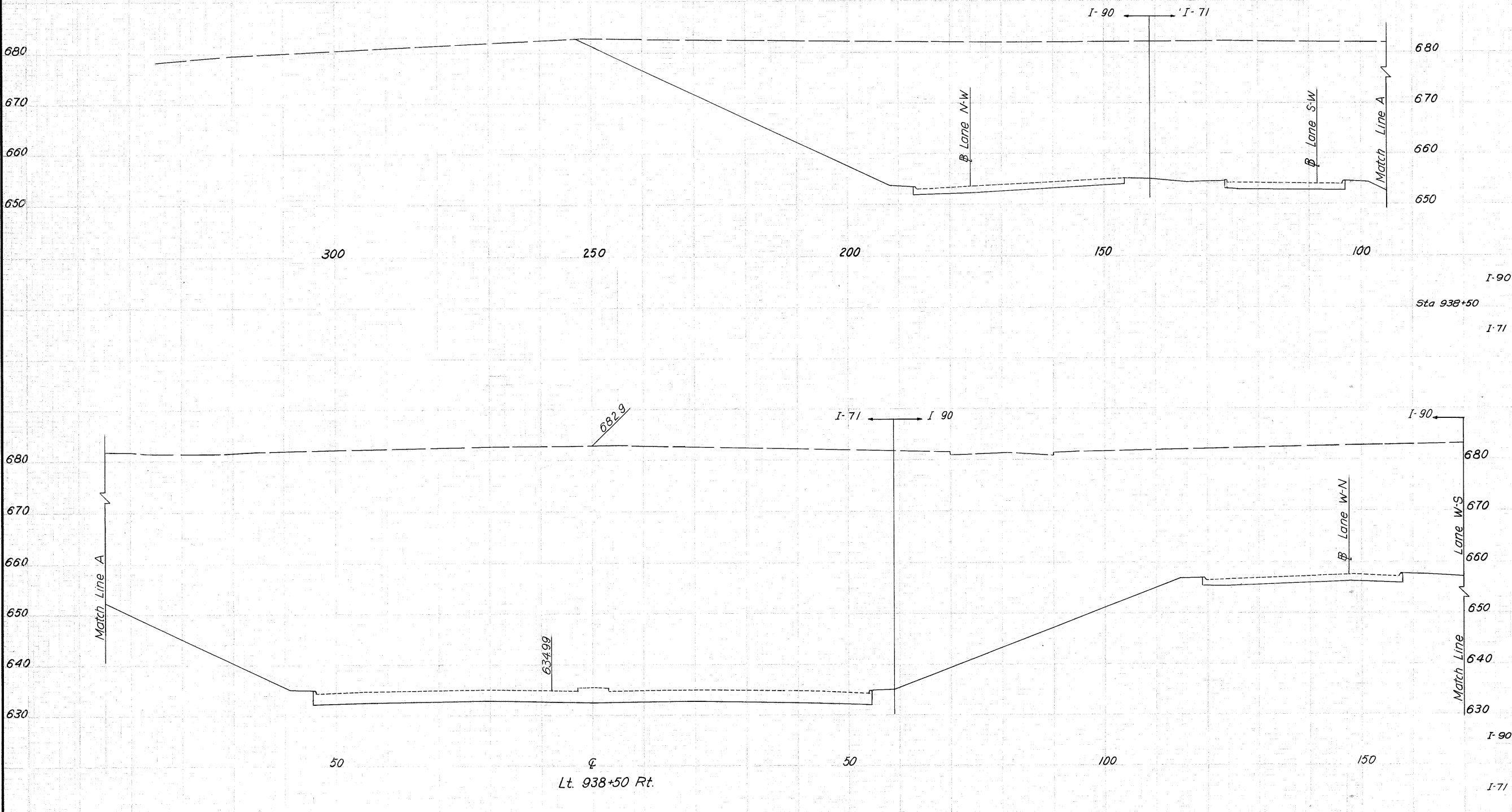
Lt. 938+00 Rt.

CROSS SECTIONS
CLARK FREEWAY

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	BY
AREAS	AREAS	
CHECKED	CHECKED	

ORIGINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	BY
AREAS	AREAS	
CHECKED	CHECKED	

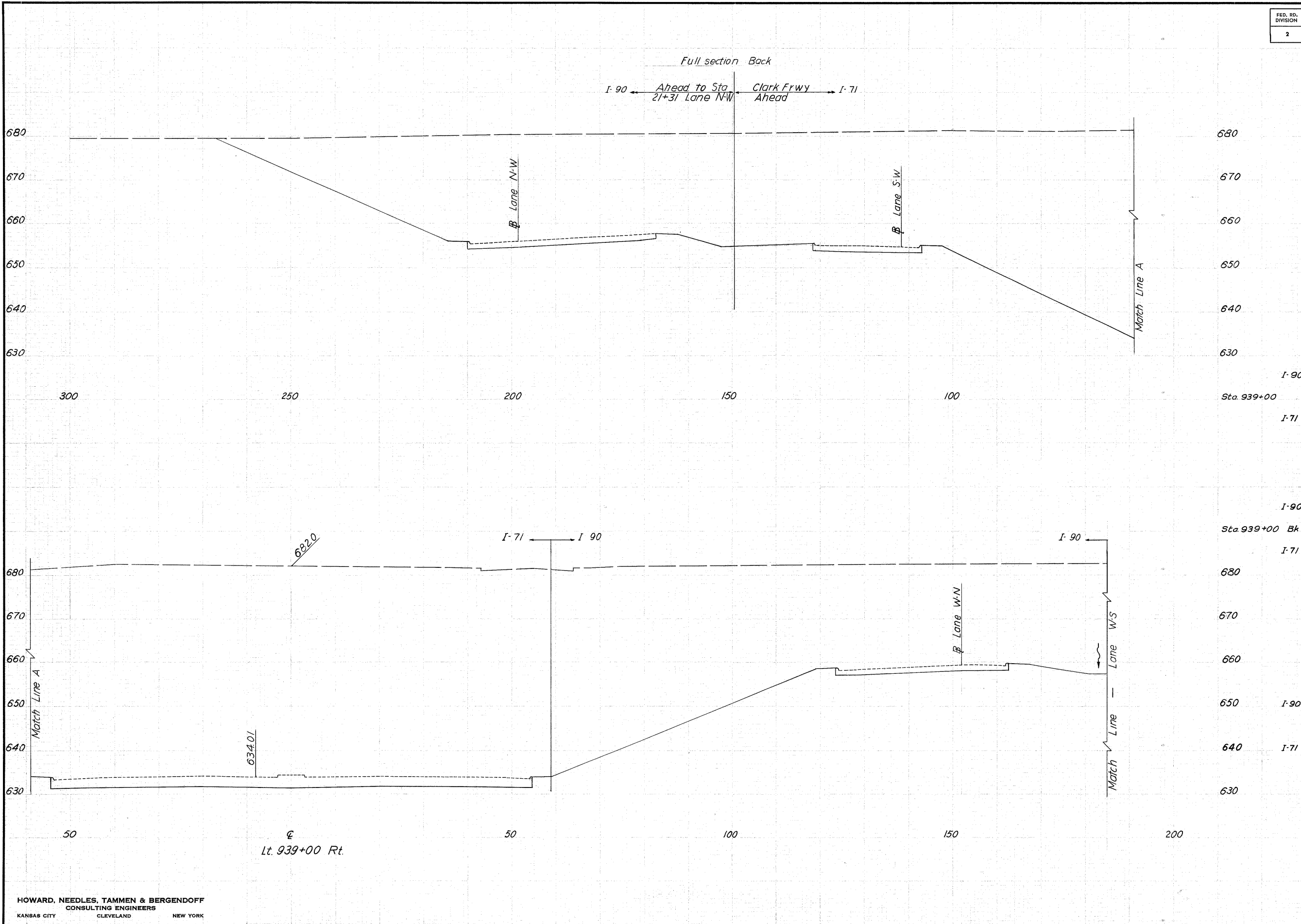


	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
I-90	5,790	0		
I-71	8,570	0		
I-90			10,440	0
I-71			15,363	0

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	TEMPLATE	
	AREAS CHECKED	

ORIGINAL SURVEY	BY	DATE
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NO.	JJC	3/2/64
	JJC	3/2/64
	JJC	3/2/64
	JJC	3/2/64

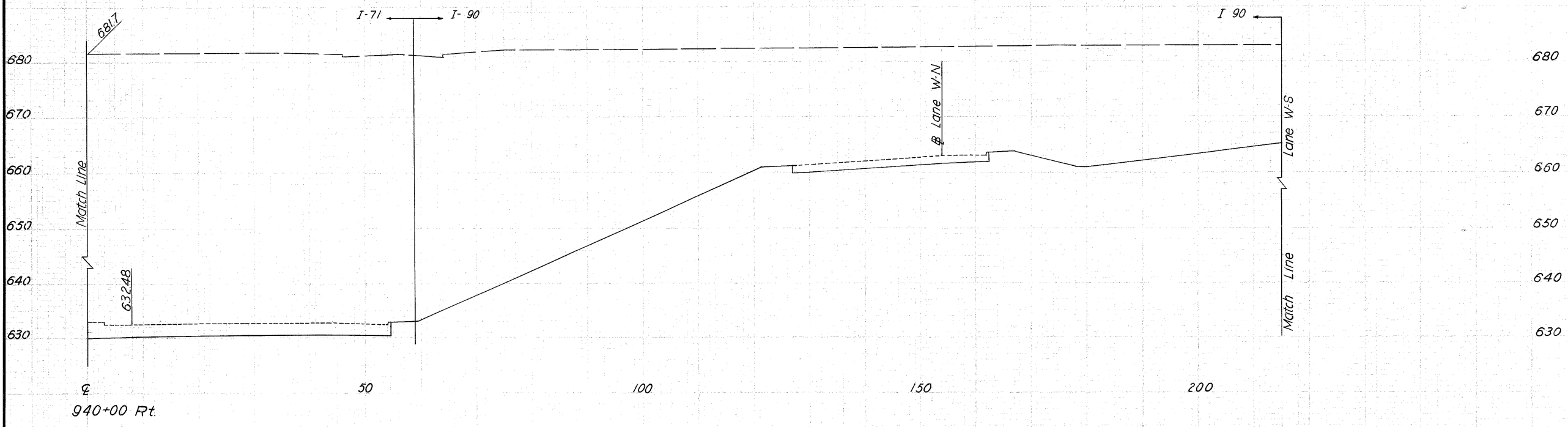
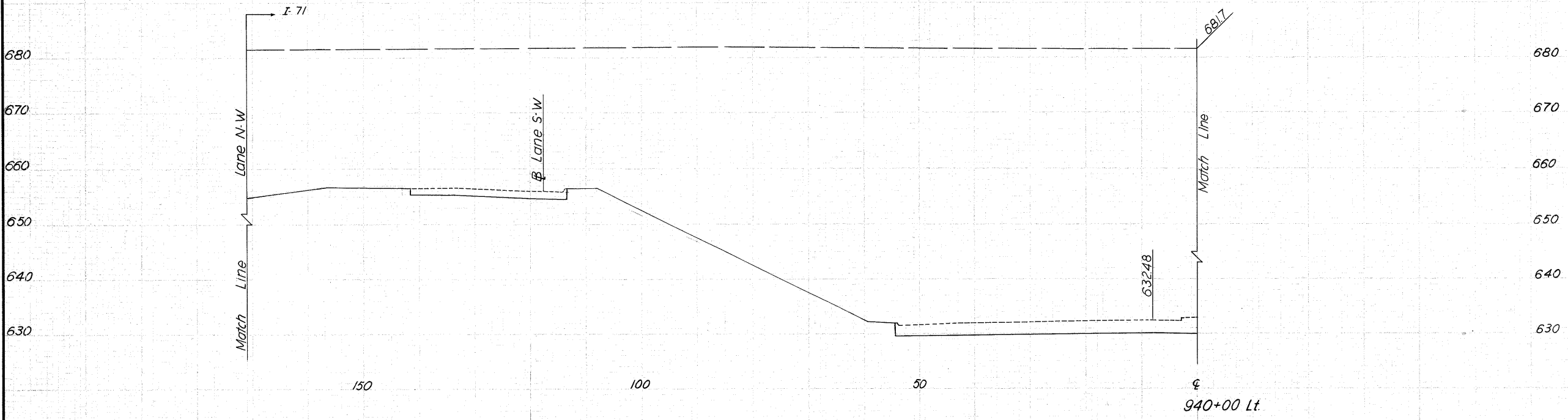


EARTHWORK				
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
I-90	3790	0		
Sta. 939+00				
I-71	8,792	0		
I-90	6051	0		
Sta. 939+00 Bk				
I-71	8,792	0		
I-90			10,964	0
I-71			16,076	0

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREAS	
	CHECKED	

ORIGINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREAS	
	CHECKED	



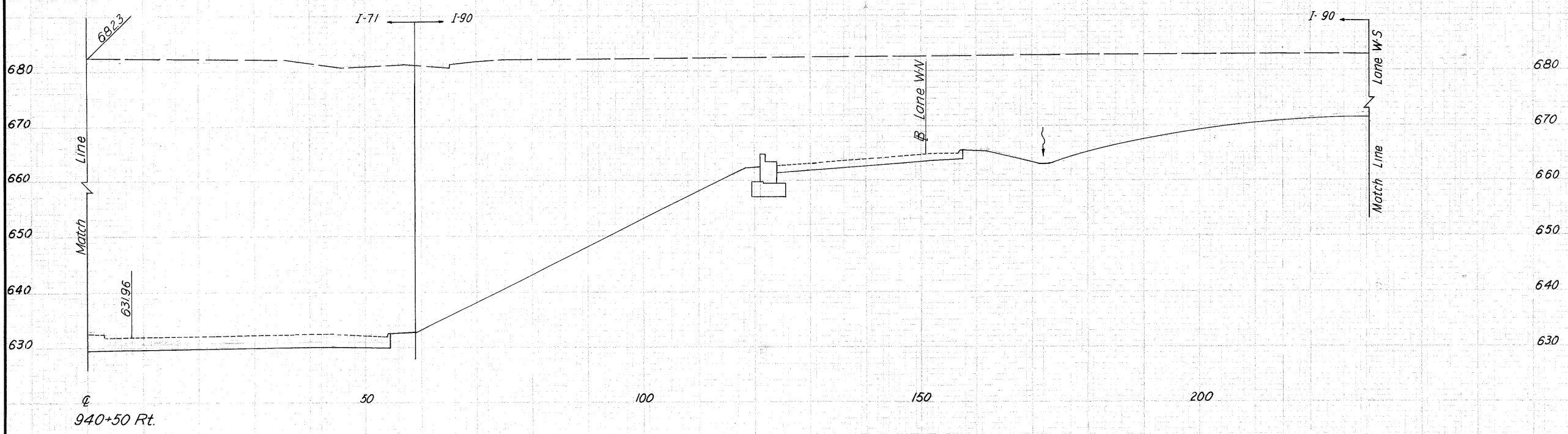
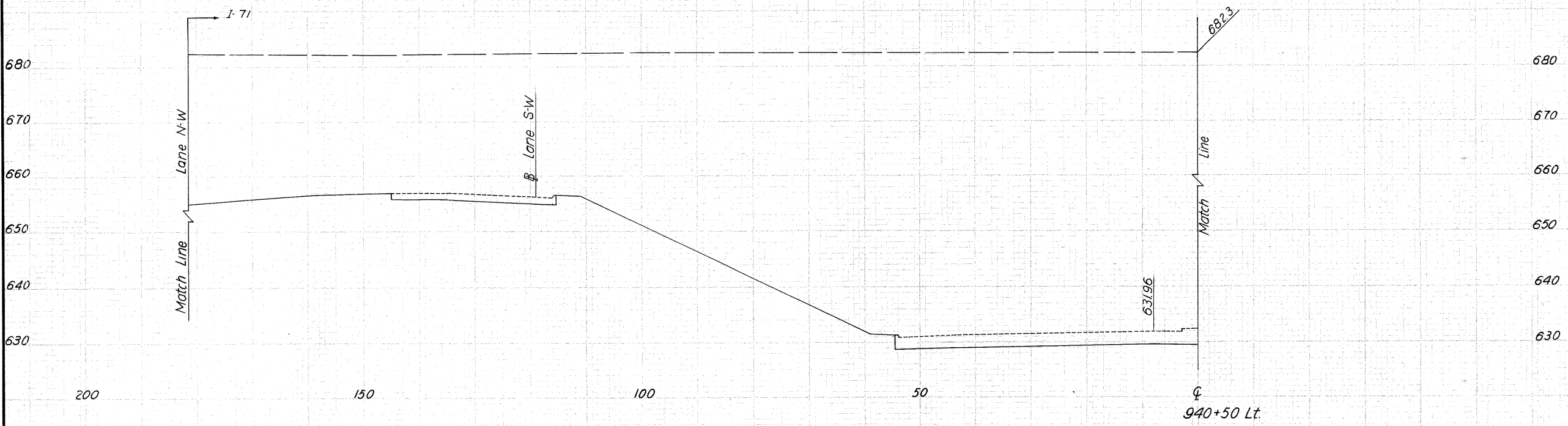
680
670
660
650
640
630

	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
I-90	4,148	0		
Sta. 940+00				
I-71	9556	0		
I-90			14,700	0
I-71			33,978	0

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY NO.	DATE
SURVEYED	
PLOTTED	
TEMP. DATE	
AREA CHECKED	

ORIGINAL SURVEY NO.	DATE
SURVEYED	2/28/64
PLOTTED	3/24/64
TEMP. DATE	3/24/64
AREA CHECKED	3/24/64

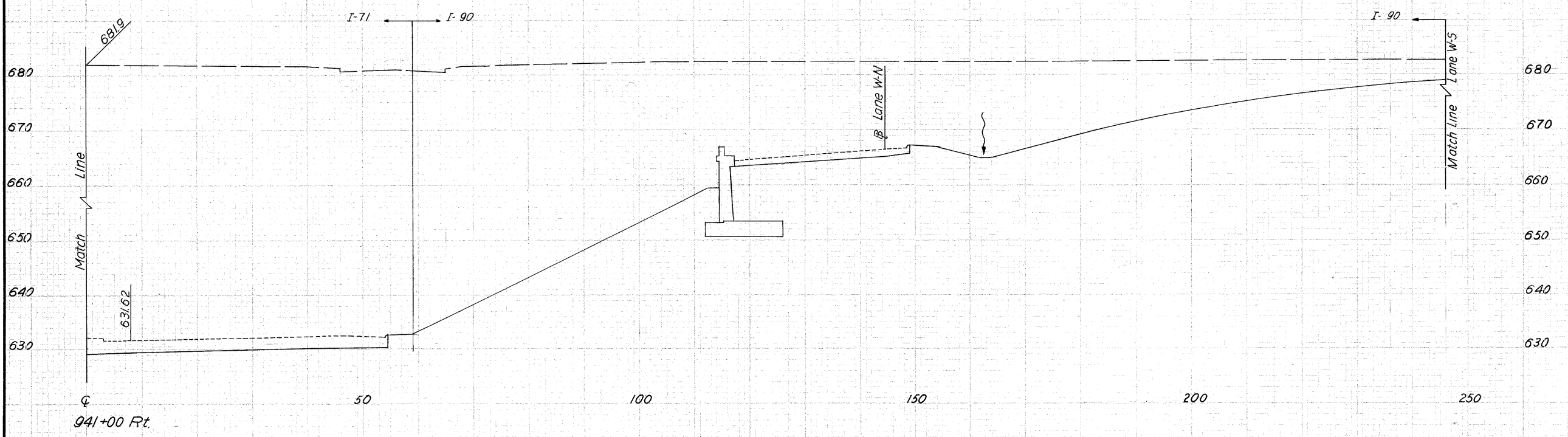
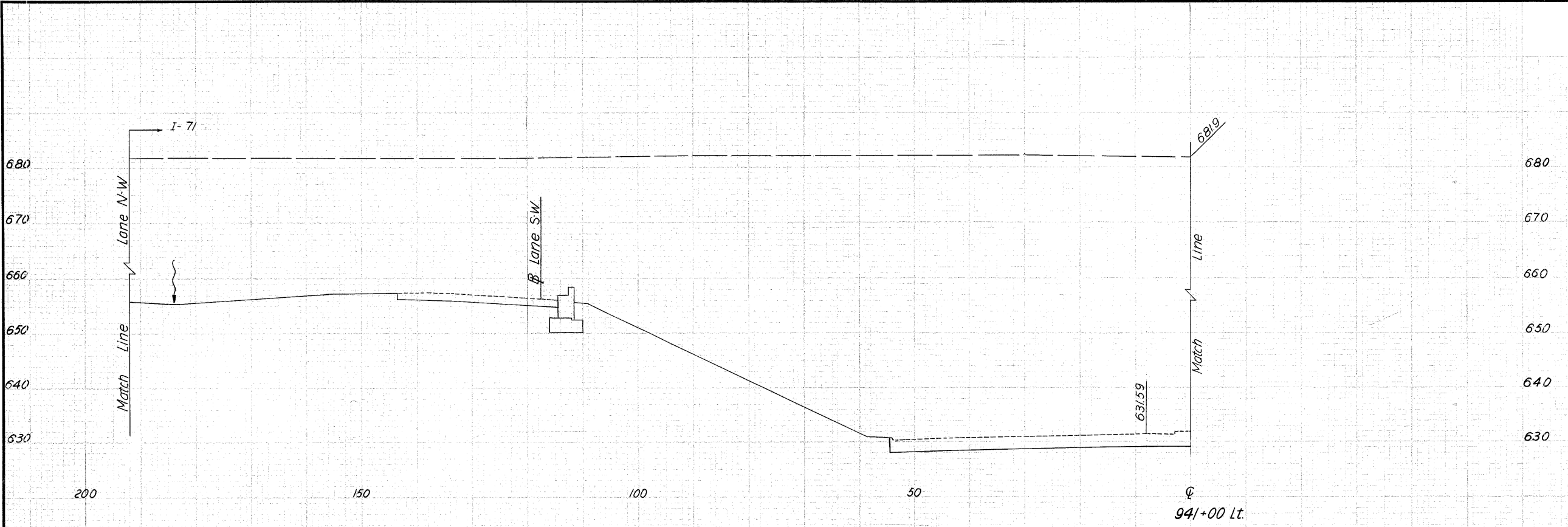


	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
I-90	3940	0		
Sta 940+50				
I-71	10,090	0		
I-90			7489	0
I-71			18,191	0

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREAS	
	CHECKED	

ORIGINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREAS	
	CHECKED	

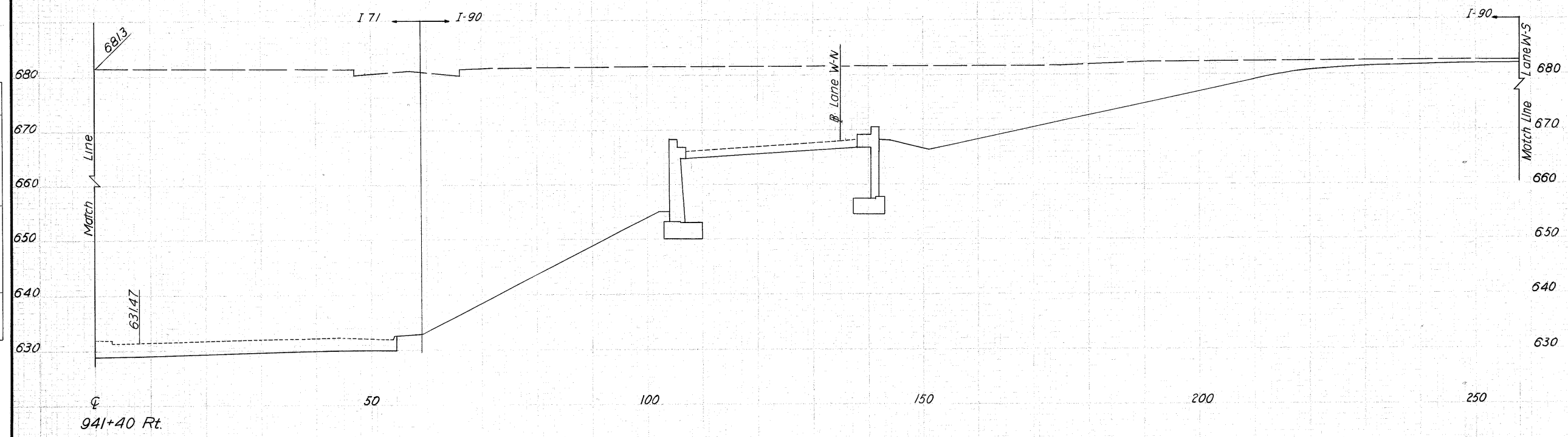
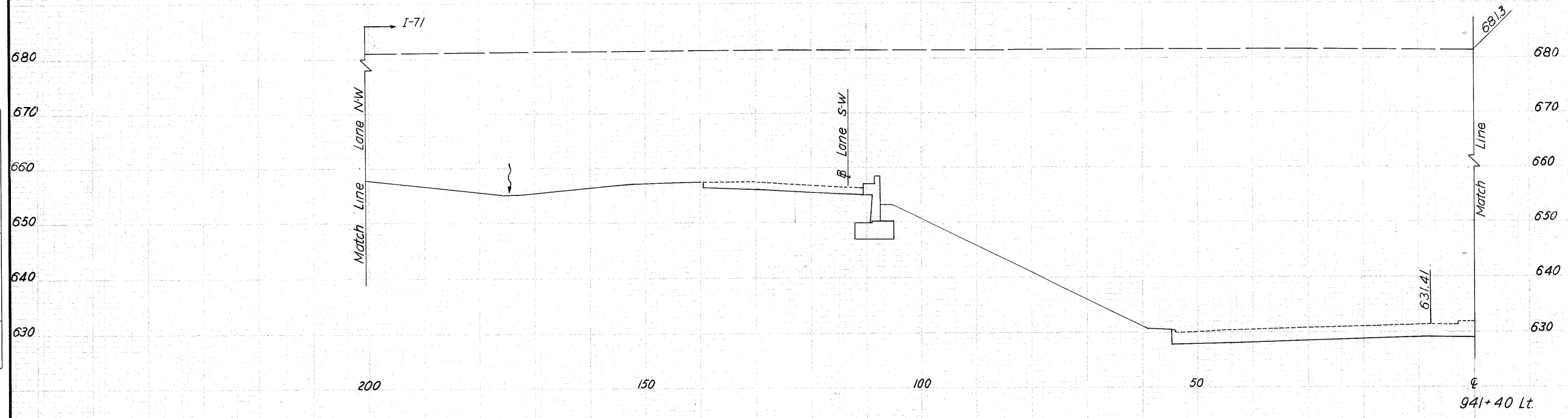


	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
I-90	3596	0		
Sta 941+00				
I-71	10279	0		
I-90			6978	0
I-71			18860	0

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	DATE
NOTEBOOK	BY
NO.	
SURVEYED	
PLOTTED	
AREAS CHECKED	

ORIGINAL SURVEY	DATE
NOTEBOOK	BY
NO.	
SURVEYED	
PLOTTED	
AREAS CHECKED	

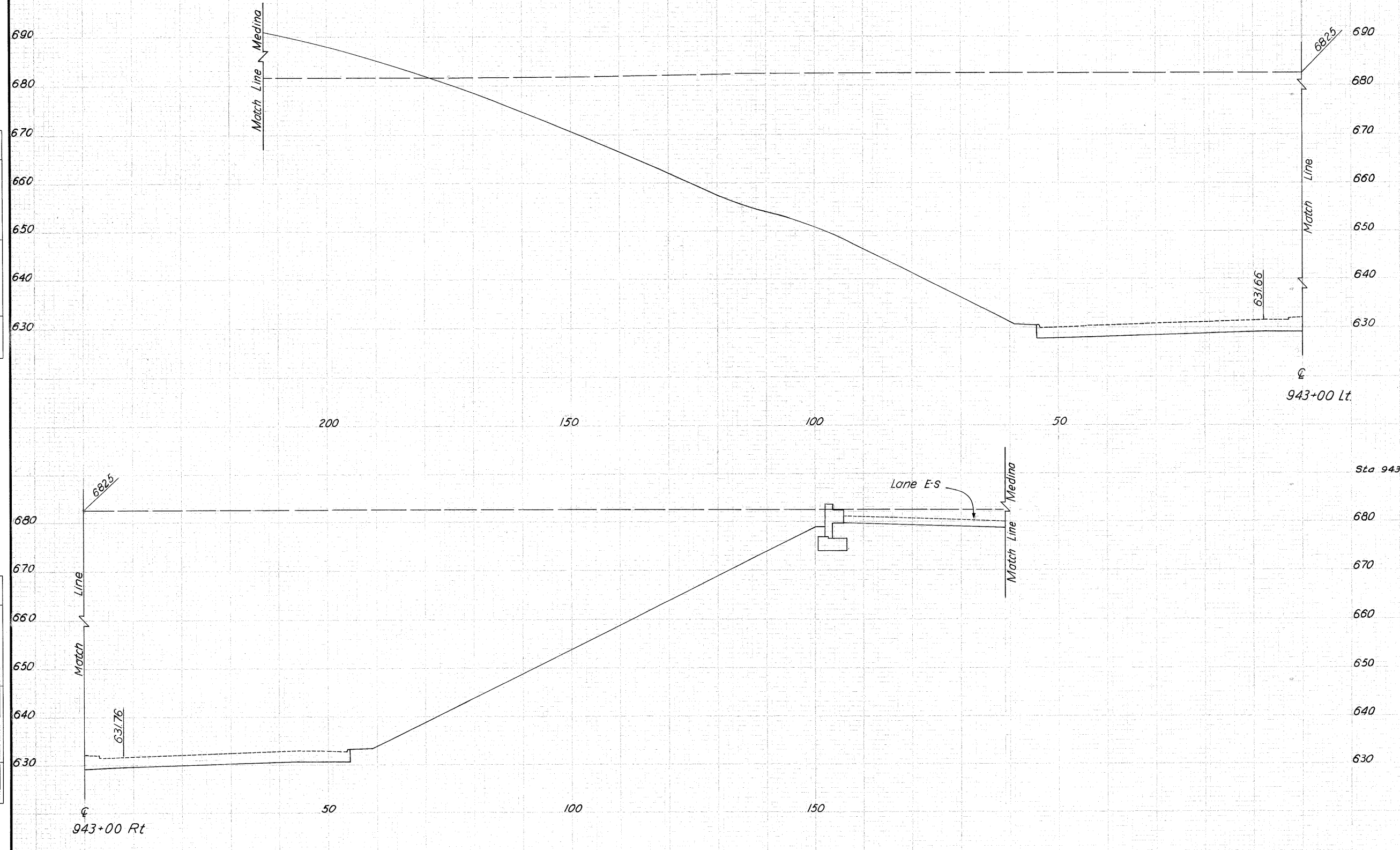


	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
I-90	3045	0		
Sta. 941+40				
I-71	10,411	0		
I-90			4,919	0
I-71			15,326	0

CUYAHOGA COUNTY
 CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
 CUY-71-18.54
 CUY-90-13.81

FINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREAS	
	CHECKED	

ORIGINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREAS	
	CHECKED	

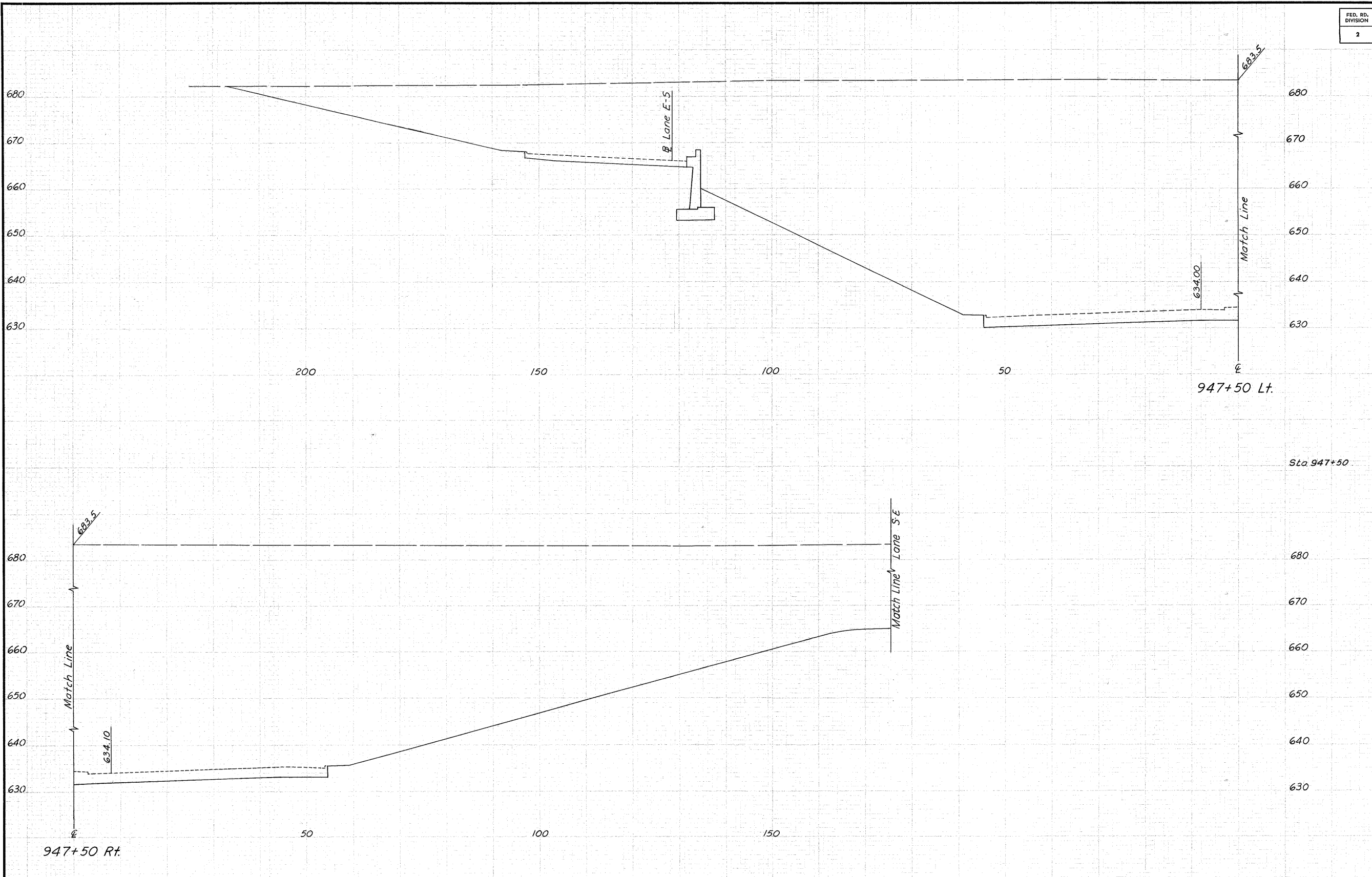


	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
Sta 943+00	11766	172		
			19,935	143

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY NO.	
SURVEYED	
PLOTTED	
DATE	
BY	
NOTE BOOK	
AREAS CHECKED	

ORIGINAL SURVEY NO.	
SURVEYED	
PLOTTED	
DATE	
BY	
NOTE BOOK	
AREAS CHECKED	

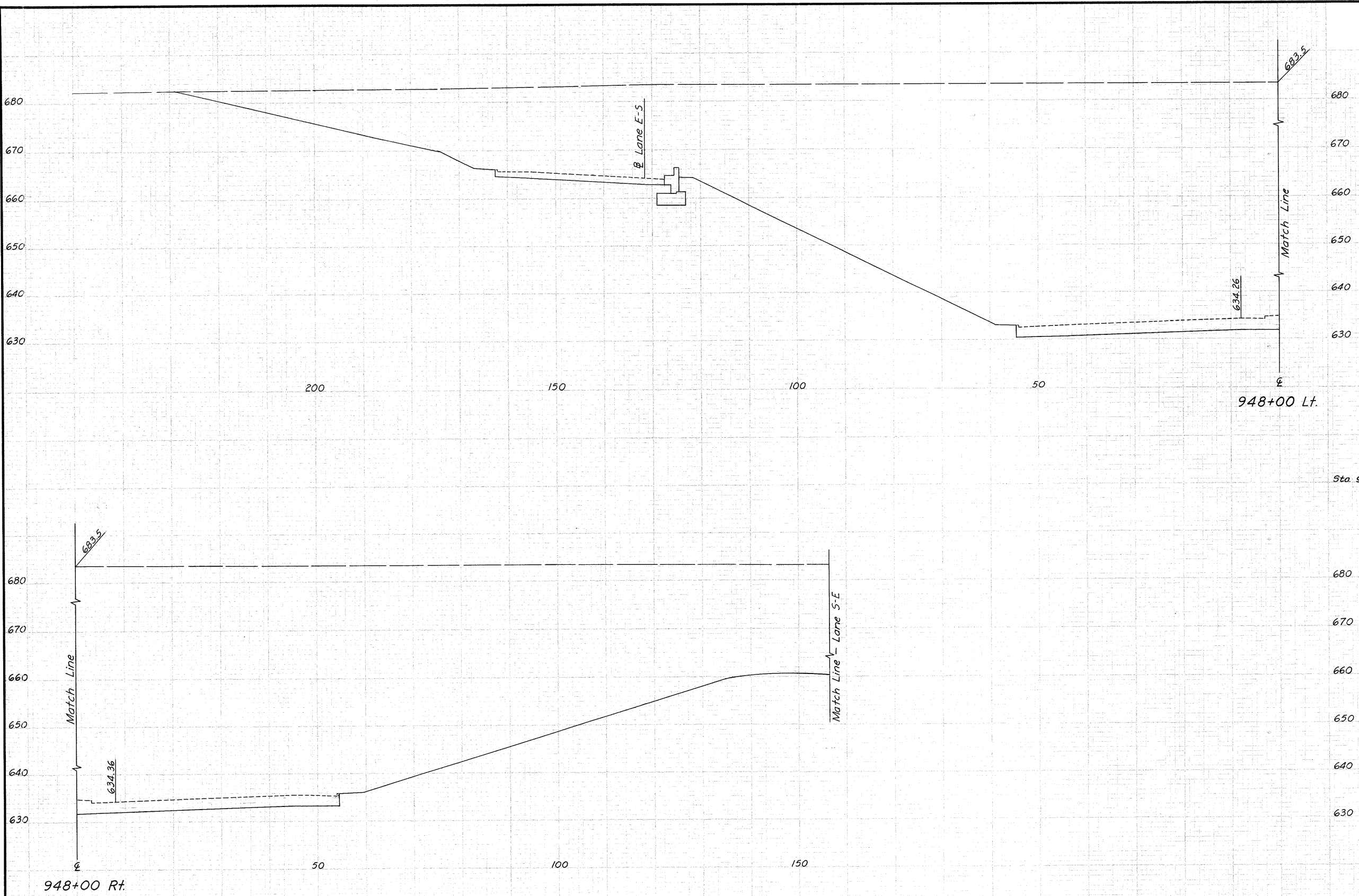


Sta.	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
Sta. 947+50	13,034	0		
			24,118	0

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREAS	
	CHECKED	

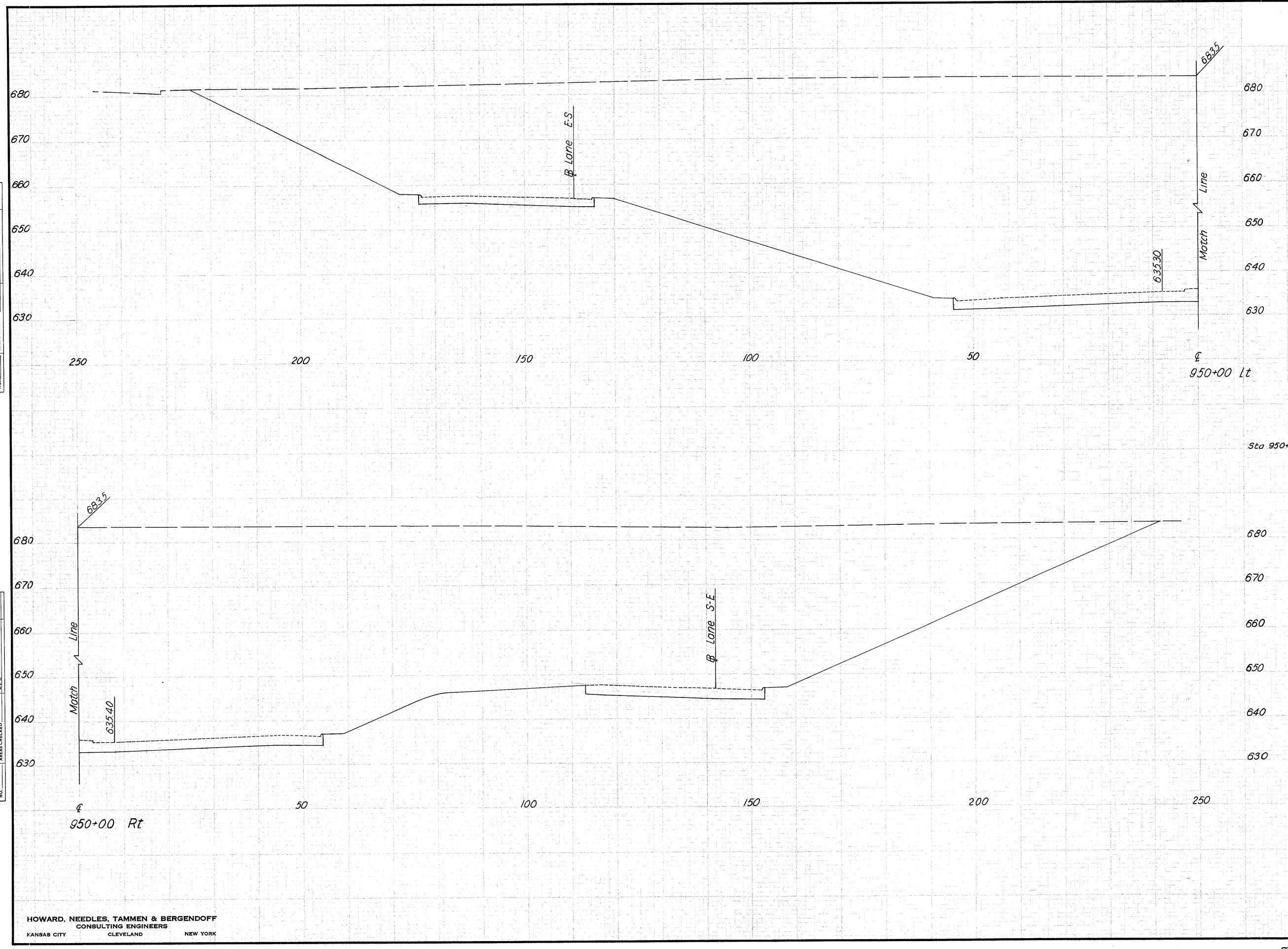
ORIGINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	AREAS	
	CHECKED	



	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
Sta. 948+00	12801	0	23921	0

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
Sta 950+00	15,763	0		
			8709	0



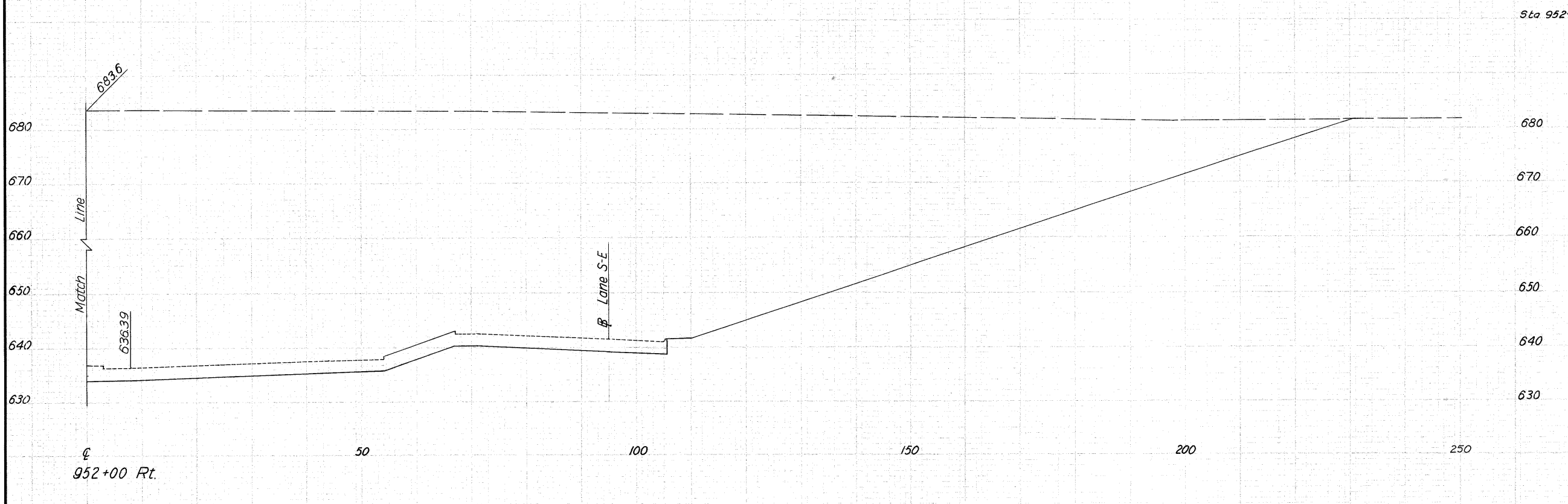
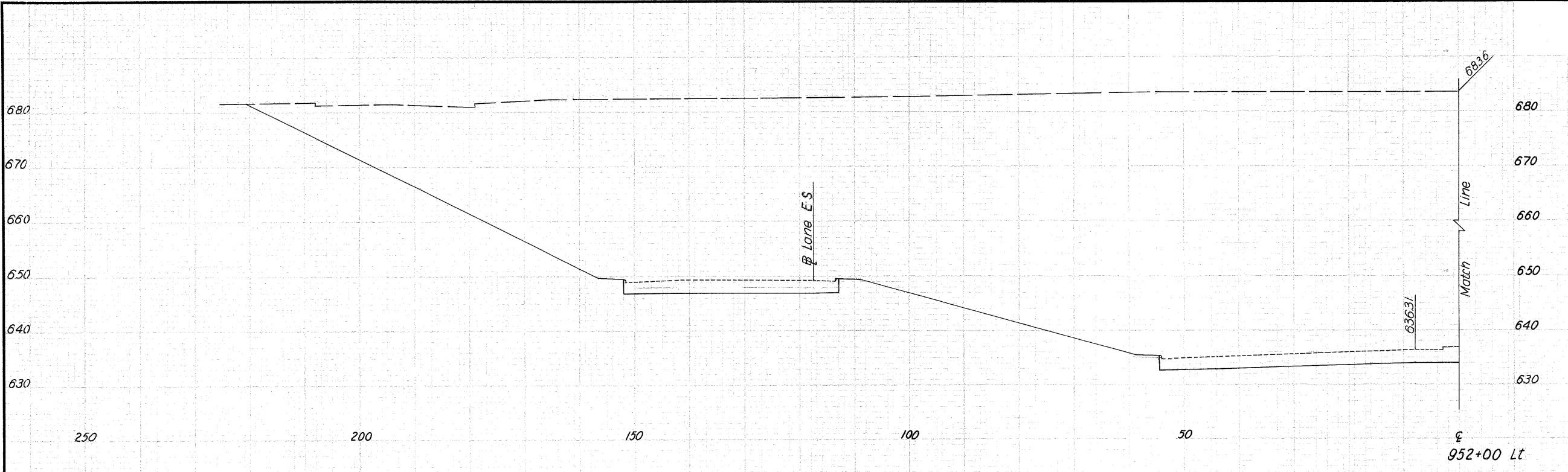
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NOTE BOOK	PLOTTED	
NO.	AREAS	
	CHECKED	

ORIGINAL SURVEY	BY	DATE
NOTE BOOK	LLH	2-15-52
NO.	JEC	4-1-54
	JEC	8-17-54
	JEC	9-25-54

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUI-71-18.54
CUI-90-13.81

FINAL SURVEY NO.	SURVEYED	DATE
	PLOTTED	
	AREA CHECKED	

ORIGINAL SURVEY NO.	SURVEYED	DATE
	PLOTTED	
	AREA CHECKED	



EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
Sta 952+00	15,248	0	
		57,448	0

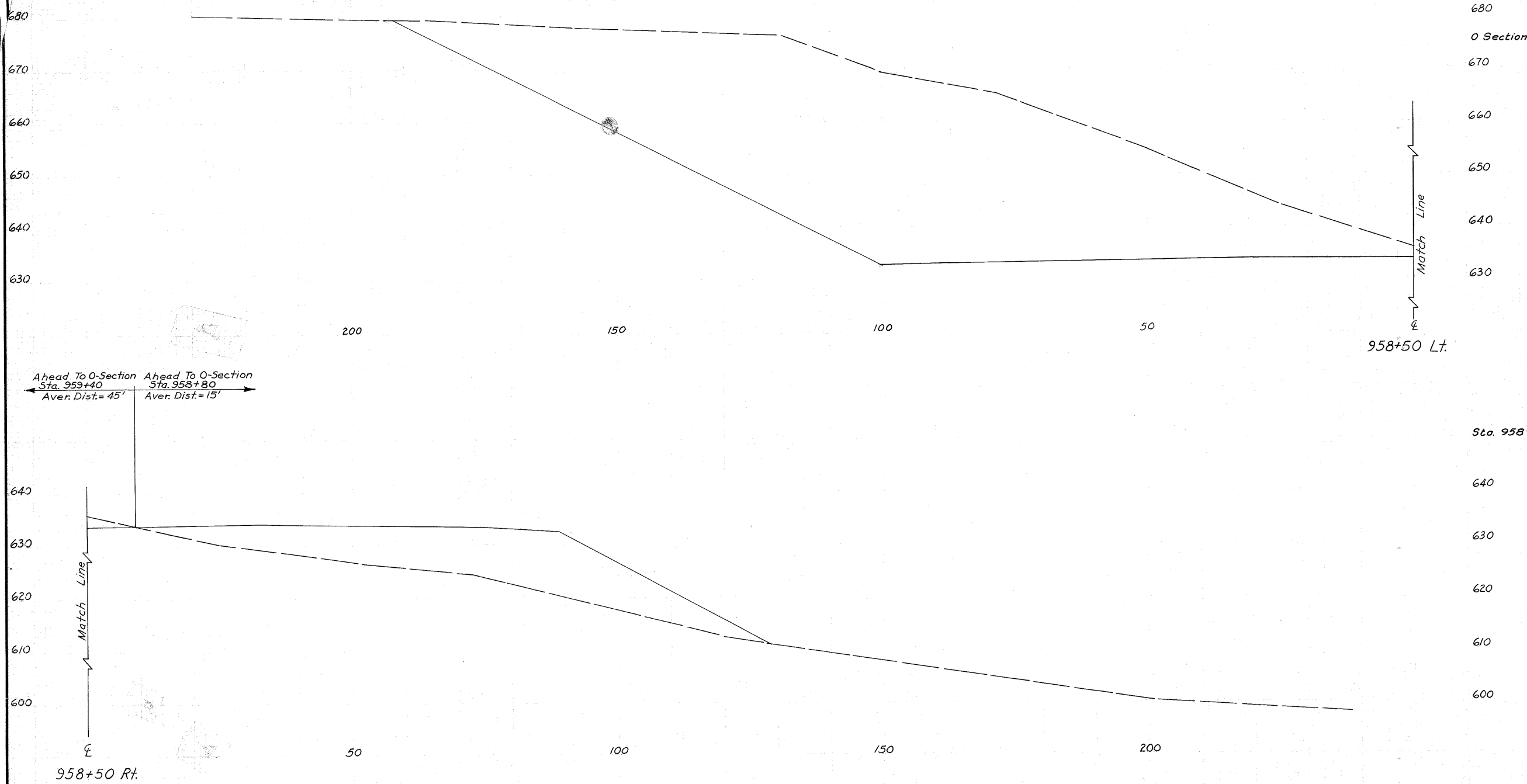
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

326
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY-71-18.54
CUY-90-13.81

FINAL SURVEY NOTEBOOK NO.	DATE
SURVEYED	BY
PLOTTED	
TEMPLATE	
AREAS CHECKED	

ORIGINAL SURVEY NOTEBOOK NO.	DATE
SURVEYED	BY
PLOTTED	
TEMPLATE	
AREAS CHECKED	



EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
0	0		
		3315	215
3978	773		
		8452	923

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

CROSS SECTIONS
CLARK FREEWAY

MICROFILMED
OCT 26 1982

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

327
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

GENERAL NOTES FOR STRUCTURES

REINFORCING STEEL

a. All bars are designated on the plans by bar numbers. The bar size is designated by the first digit of three-digit numbers and by the first two digits of four-digit numbers.

All bar dimensions are given out to out. All bars of a series shall vary in length by a constant increment.

b. The clear distance between reinforcing steel and face of concrete shall be 3" at bottom of footings, 2 1/2" at bar mats under shoes and 2" elsewhere unless otherwise shown on the plans.

The clear distance shall be measured from the inner face of surfaces with rustications.

WATERPROOFING

All contraction and expansion joints in back face of sub-structure against which earth is to be placed shall be water-proofed with a pre-moulded sealing strip as shown on the plans.

WELDING

Welds shown as Field Welds may, at the option of the Contractor, be made in the shop. All welds shall be Class "A" except, as otherwise shown. Class B welds are shown thus: B

PILING

Piles for abutments shall be driven to a minimum bearing capacity of 35 tons per pile. Piles for piers shall be driven to a minimum capacity of 40 tons per pile.

FIRST PILE TEST LOAD/SUBSEQUENT PILE TEST LOADS

Pile Test Loads shall be applied only if called for by the Engineer.

POROUS BACKFILL

Porous backfill, full length of abutment and portions of wing-walls where shown on plans and of thickness shown on the plans, shall extend upward to the underside of approach slab or to the ground surface.

DESIGN SPECIFICATIONS

Design Specifications for Highway Structures of the State of Ohio Department of Highways, dated 9-1-57, together with current revisions thereof.

HIGH STRENGTH STEEL BOLTS

Under Item S-7, 10 High Strength Steel Bolts, Nuts and Washers, paragraph two (2), shall be completely revised and the last sentence of paragraph four (4), revised to read as follows:

"In the final assembly of the parts to be bolted, drift pins shall be placed in a sufficient number of holes, but not less than 25 per cent for field erection, to provide and maintain accurate alignment of holes and parts, and sufficient bolts shall be installed and brought to a snug tight condition to bring the parts into complete contact. Bolts shall then be installed in any remaining open holes and tightened to a snug tight fit, after which all bolts shall be tightened completely by calibrated wrenches or by the turn-of-nut method. Drift pins shall then be replaced with bolts, tightened in the same manner".

"Bolt lengths determined by use of Table No. 1 shall be adjusted to the next 1/4 inch length increment".

EXCAVATION QUANTITIES

Excavation Quantities includes the removal of fill material required for construction of the abutments and piers.

SUPPLEMENTAL SPECIFICATIONS

Reference shall be made to Supplemental Specifications No. S-101, Water Reducing Set Retarding Admixture dated 7-12-62, No. S-307, Examination of Welds, revised 10-1-64

REFERENCE DRAWINGS

Reference shall be made to Standard Drawing numbers AR-1-57 revised 4-2-62, FSB-1-62 dated 1-15-63, RB-1-55 revised 2-2-59, SD-1-63, dated 11-12-63 (Sheets 1,2,3, and 4 of 4), and AS-1-54 dated 7-5-62.

DIMENSIONS

Dimensions given are measured horizontally and at 60° F. unless otherwise noted.

UTILITIES

Any existing utility facilities encountered at the site of the work which will interfere with portions of the finished roadways or structures will be removed or relocated by others. 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.

MACHINE FINISH

The concrete bridge deck shall be finished by the use of a finishing machine. This applies to Br. No. CUY-71-1861 and Br. No. CUY-90-1395.

CONCRETE DECK PLACING

In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

INTERMEDIATE STIFFENERS

Supplementary to Section S-7.14 of the Construction and Material Specifications, intermediate stiffeners shall have contact bearing with the bottom flanges between piers and adjacent girder splices and with the top flange on remaining girder sections unless otherwise shown on the plans. The stiffener may have a clearance of not more than 1/4 inch from the flanges for which contact bearing is not specified. In shop painting, care shall be taken to make certain that paint is forced through from one side to the other at the 1/4" opening.

DESIGN NOTES:

- Design Loading - CF 400 (57), Br. No. CUY-71-1861
- CF 400 (57), Br. No. CUY-90-1395
- CF 400 (57), Br. No. CUY-290-0040
- CF2000 (57), Br. No. CUY-71-1886
- CF2000 (57), Br. No. CUY-90-1406
- CF2000 (57), Br. No. CUY-90-1433 L R
- CF2000 (57), Br. No. CUY-90-1449
- CF2000 (57), Br. No. CUY-290-0030
- CF2000 (57), Br. No. CUY-290-0031
- Live Load 65 P.S.I. - Br. No. CUY-290-0051

Concrete Class C - basic unit stress 1,333 p.s.i., - all structures.
Concrete Class E - basic unit stress 1,133 p.s.i., - all structures.

Structural Steel - ASTM A36 - basic unit stress 20,000 p.s.i.
ASTM A441 - 60T - basic unit stress 25,000 p.s.i. - plates 1/2" to 1 1/2" inc.
ASTM A444 - 60T - basic unit stress 23,300 p.s.i. - plates over 1 1/2" to 4" inc.

(ASTM A7 and A737 steel not permitted) all structures.
Reinforcing Steel - ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade. Basic unit stress 20,000 p.s.i. except, spiral reinforcements may be plain structural grade with basic unit stress at 18,000 p.s.i. - all structures.

Note: The following items are not included in the bridge plans. See roadway plans for details.
Relocation or removal of existing utilities, approach grading, pavements, slabs, guardrail, etc.

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

GENERAL NOTES

CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN L.J.B.	TRACED	CHECKED J.F.P.	REVIEWED	REVISED
DATE: 1-2-64	DATE	DATE: 1-20-64	DATE	SHEET 327

MICROFILMED

OCT 27 1982

FED. ROADS DIV. NO.	STATE	FED. AID PROJ. NO.	328 478
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



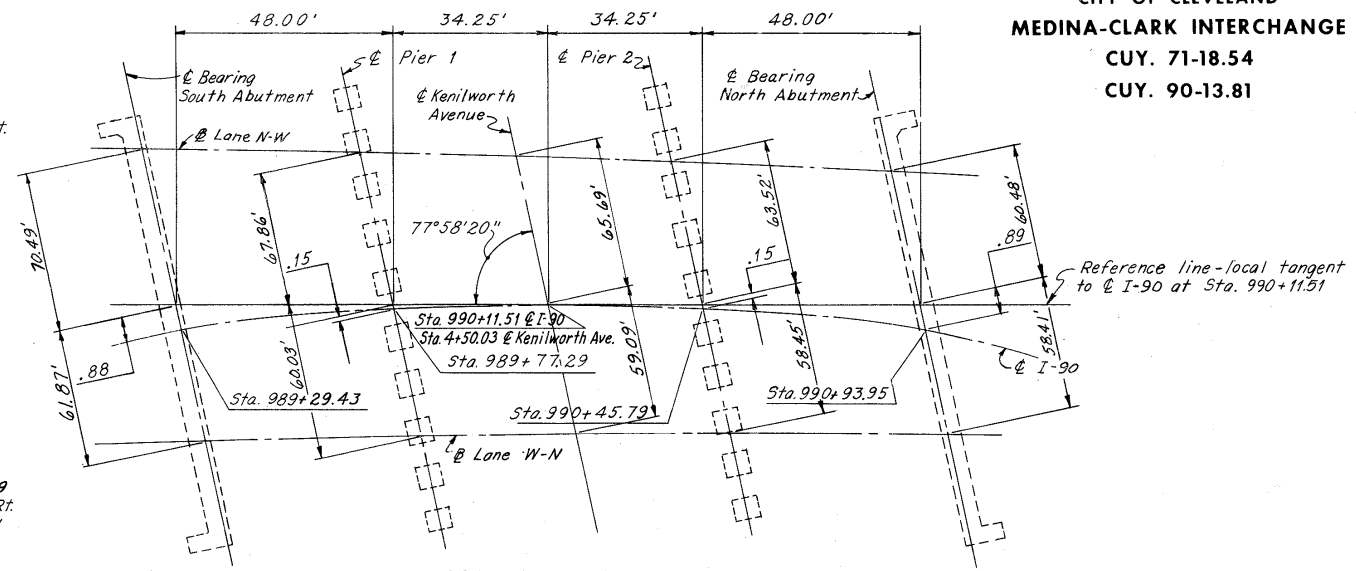
PLAN
Scale: 1" = 30'

CURVE DATA

☉ I-90
P.I. = Sta. 987+41.89
 $\Delta = 20^\circ 47' 15''$ Rt.
D = $1^\circ 28' 00''$
R = 3906.52'
T = 716.55'
L = 1417.34'
E = 85.17'

☉ LANE N-W
P.I. = Sta. 5+61.42'
 $\Delta = 10^\circ 45' 22''$ Lt.
D = $2^\circ 00' 00''$
R = 2864.79'
T = 289.70'
L = 537.81'
E = 12.67'

☉ LANE W-N
P.I. = Sta. 37+56.79
 $\Delta = 14^\circ 35' 16''$ Rt.
D = $1^\circ 29' 07.3''$
R = 3857.39'
T = 493.72'
L = 982.10'
E = 31.47'



BRIDGE LAYOUT DIAGRAM
No Scale

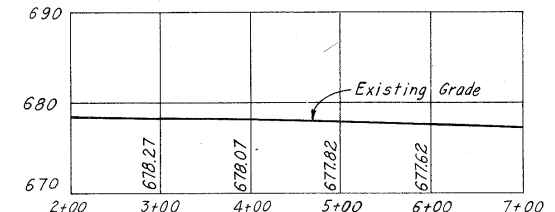
SCUPPER LOCATIONS

(Along gutter line)
☉ Bearing North Abutment to first scupper = 5'-0".
Succeeding scuppers are spaced at 10'-0".

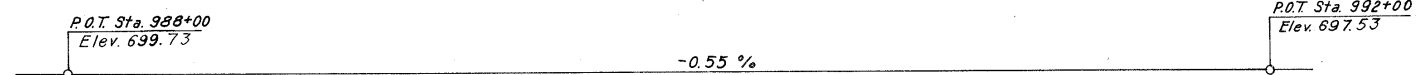
PROPOSED STRUCTURE	
TYPE:	Continuous rolled beams with reinforced concrete deck and substructure.
SPANS:	47'-10 1/4", 68'-5" and 48'-1 1/8"
ROADWAY:	Width Varies.
LOADING:	CF 2000 (57) Adequate for AASHO alternate loading.
SKREW:	Varies-12°01'40" Right Forward Nominal.
WEARING SURFACE:	1" Monolithic concrete.
APPROACH SLABS:	25'-0" (AS-1-54).
ALIGNMENT:	Curve right (1°28'00")

TRAFFIC DATA:
1975 ADT - 41,679 Directional

FOUNDATION DATA
All piles in the abutments and piers shall be 12" ϕ C.I.P. reinforced concrete. The estimated average vertical length is 78 feet for the abutments and 64 feet for the piers.



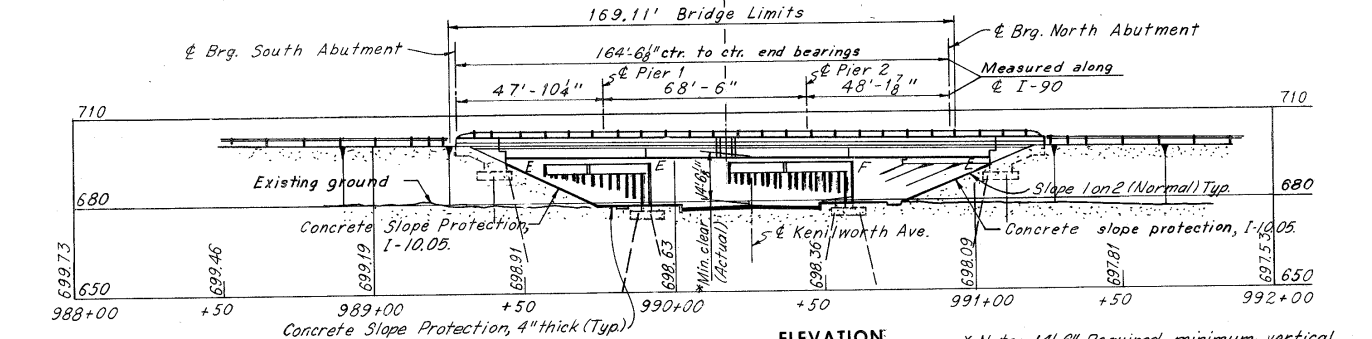
PROFILE GRADE - KENILWORTH AVE.
Scale: Vertical 1" = 10', Horizontal 1" = 100'



PROFILE GRADE - I-90

Note:
Light standard stations shown in the elevation are approximate. The light standard supports are to be located in close proximity to the stations shown, midway between the nearest two handrail posts within whose limits a parapet joint does not occur.

Note:
Type 1 paved gutter and concrete slope protection (4" thick) including 1" preformed expansion joint filler around each pier column are included for payment in Roadway Quantities.



ELEVATION
Scale: 1" = 30'

* Note: 14'-6" Required minimum vertical clear. Actual minimum vertical clear occurs at East edge of East exterior beam and ☉ Kenilworth Avenue.

LEGEND

- Water ----- W -----
- Gas ----- G -----
- Sewers ----- S -----
- Ohio Bell Tel. ----- T -----
- M.E.L.P. (Underground Conduits) ----- # -----
- C.E.I. (Underground Conduits) ----- # -----
- Manhole ----- (Symbol) -----
- Inlet ----- (Symbol) -----
- Power Pole ----- (Symbol) -----
- Light Pole ----- (Symbol) -----
- Power and Telephone Pole ----- (Symbol) -----
- Fire Hydrant ----- (Symbol) -----
- Concrete Slope Protection ----- (Symbol) -----

H.N.T.&B. BRIDGE NO. 11

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

SITE PLAN
I-90 OVER KENILWORTH AVE.
BR. NO. CUY - 90 - 1449 STA. 989+27.15
STA. 990+96.26

CLEVELAND	CUYAHOGA COUNTY	OHIO
DATE 4-1-64	DATE 4-21-64	DATE
328		

MICROFILMED
OCT 27 1982

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

329
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

ITEM	DESCRIPTION	UNIT	ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL	TOTAL	AS BUILT
E-2	Unclassified Excavation	Cu.Yd.	620	403			1,023	
I-10	Concrete Slope Protection (I-10.05)	Sq.Yd.	1,074				1,074	
S-1	Class "C" Concrete (Superstructure)	Cu.Yd.			730		730	
S-1	Class "C" Concrete (Pier Caps and Columns)	Cu.Yd.		191			191	
S-1	Class "E" Concrete (Stub Abutments Above Footings)	Cu.Yd.	263				263	
S-1	Class "E" Concrete, (Pier and Abutment Footings)	Cu.Yd.	202	177			379	
S-3	Waterproofing Premolded Sealing Strip	Lin.Ft.	53				53	
S-4	Reinforcing Steel	Pounds	34,768	60,281	219,343		314,392	
S-7	Structural Steel	Pounds			622,500		622,500	
S-8	Field Painting of Structural Steel as per proposal note	Pounds			622,500		622,500	
S-9	1" Preformed Expansion Joint Filler	Sq.Ft.	47				47	
S-9	1/2" Preformed Expansion Joint Filler	Sq.Ft.	165				165	
S-14	Railing (Type A Aluminum Rail Supports and Concrete Parapet)	Lin.Ft.	52.53		333.67		386.17	
S-14	Barrier Railing (Type I-15.11, Double Faced with Galv. Steel Posts and Bolts)	Lin.Ft.			169		169	
S-16	First Test Pile	Lump Sum				Lump Sum	Lump Sum	
S-17	First Pile Test Load	Lump Sum				Lump Sum	Lump Sum	
S-17	Subsequent Pile Test Load	Each					1	
S-18	12" Cast-in-Place Piles	Lin.Ft.	6,006	7,724			13,430	
S-25	For Lighting Details and Quantities see Sheet 200							
S-29	Porous Backfill	Cu.Yd.	115				115	
S-29	Scuppers Including Supports	Each			8		8	
S-29	6" Perforated Helical C.M.P. M-6.4(h) including specials	Lin.Ft.	281				281	
S-29	6" Helical C.M.P. M-6.4(h) non-perforated	Lin.Ft.	165				165	
S-101	Water Reducing, Set-Retarding Admixture	Each			730		730	

H.N.T.B. BRIDGE NO. 11

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

ESTIMATED QUANTITIES
I-90 OVER KENILWORTH AVE.

BR NO. CUY-90-1449 STA. 989+27.15
STA. 990+96.26
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DATE	DATE	DATE	DATE	DATE

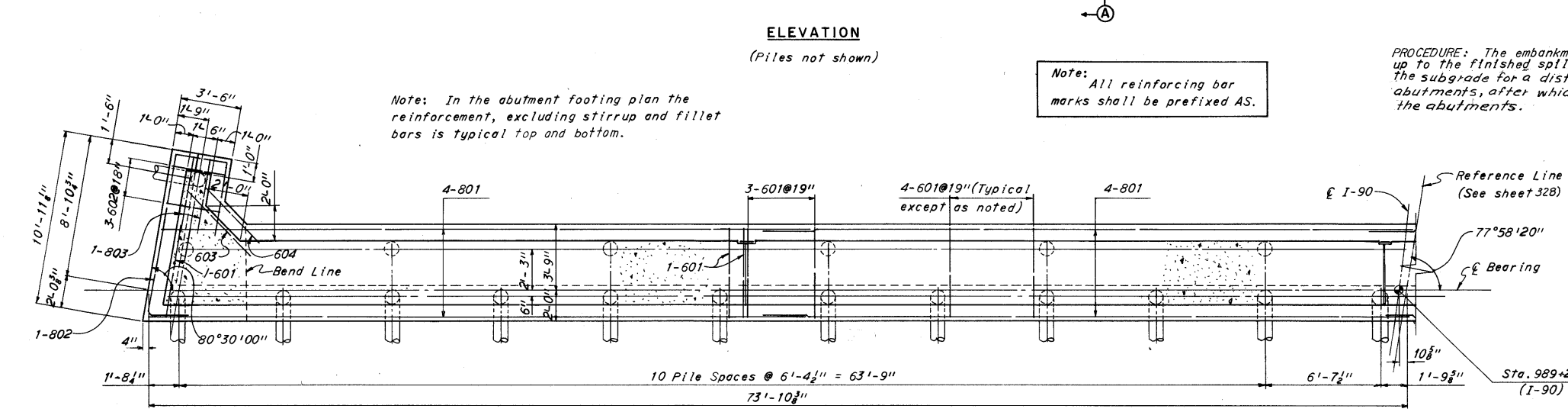
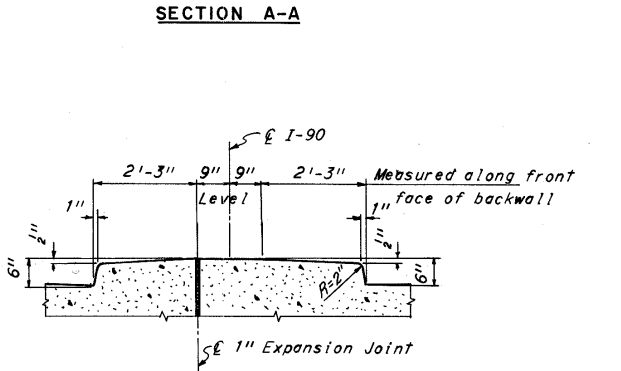
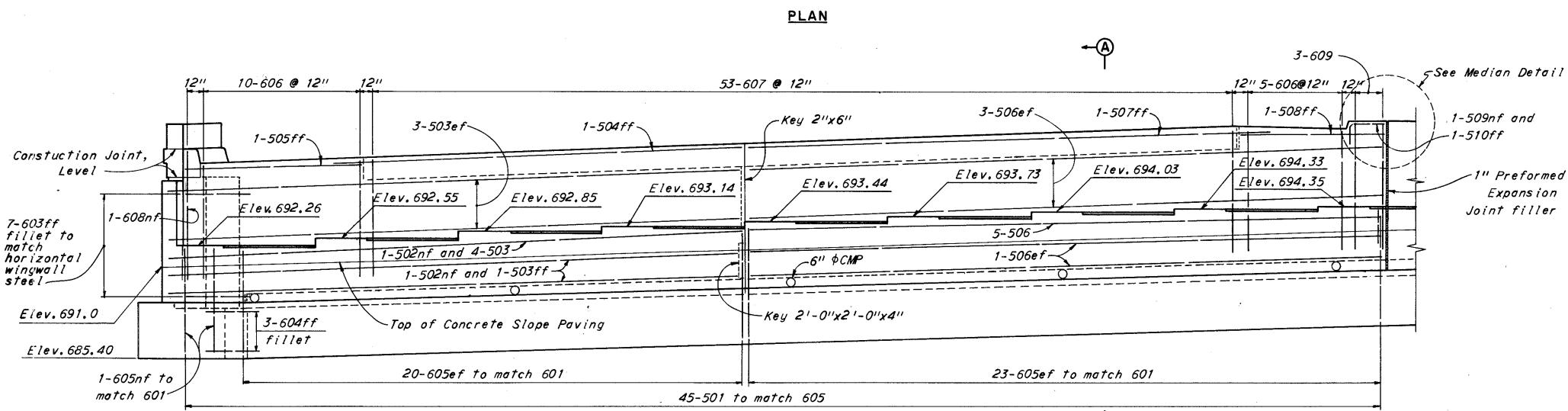
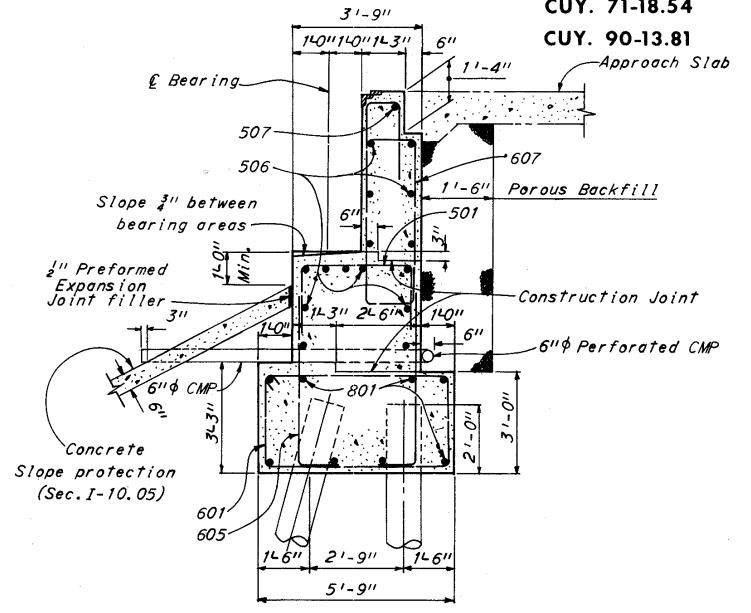
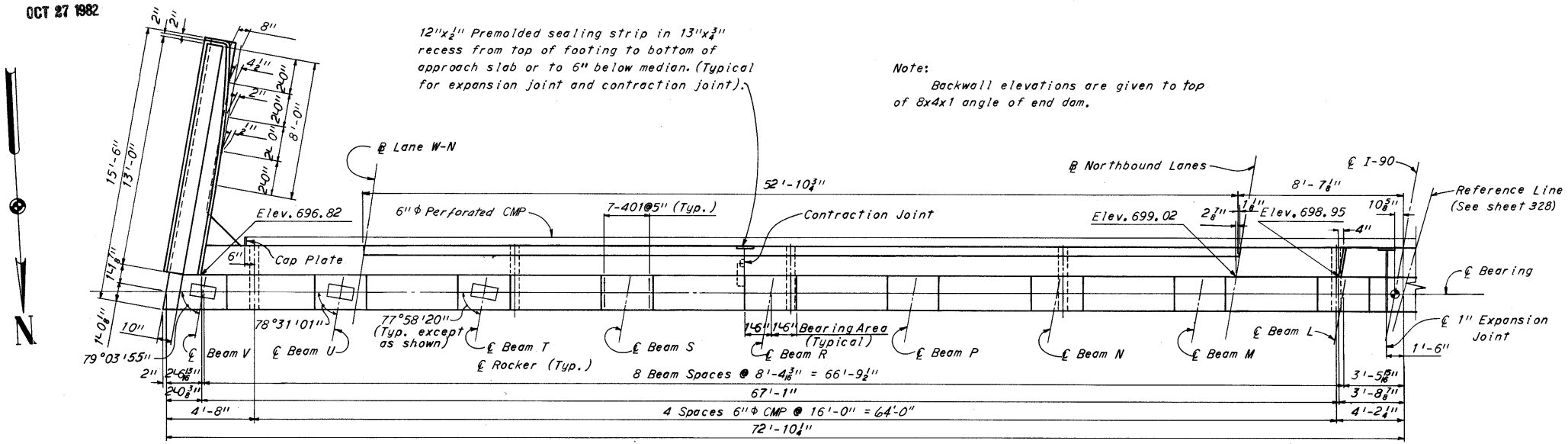
SHEET 329

MICROFILMED
OCT 27 1982

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

331
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutments.

Note: All reinforcing bar marks shall be prefixed AS.

Note: In the abutment footing plan the reinforcement, excluding stirrup and fillet bars is typical top and bottom.

Notes:
For wingwall details see sheet 332.
For reinforcement schedule and bar bending diagrams see sheet 340.
For west portion of abutment see sheet 350.
The following abbreviations are used:
nf = near face ff = far face
ef = each face
For additional notes see sheet 332.

H.N.T.B. BR. NO. 11
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SOUTH ABUTMENT
I-90 OVER KENILWORTH AVE.
BR. NO. CUY- 90-1449 STA. 989+27.15
STA. 990+96.26

CLEVELAND CUYAHOGA COUNTY OHIO

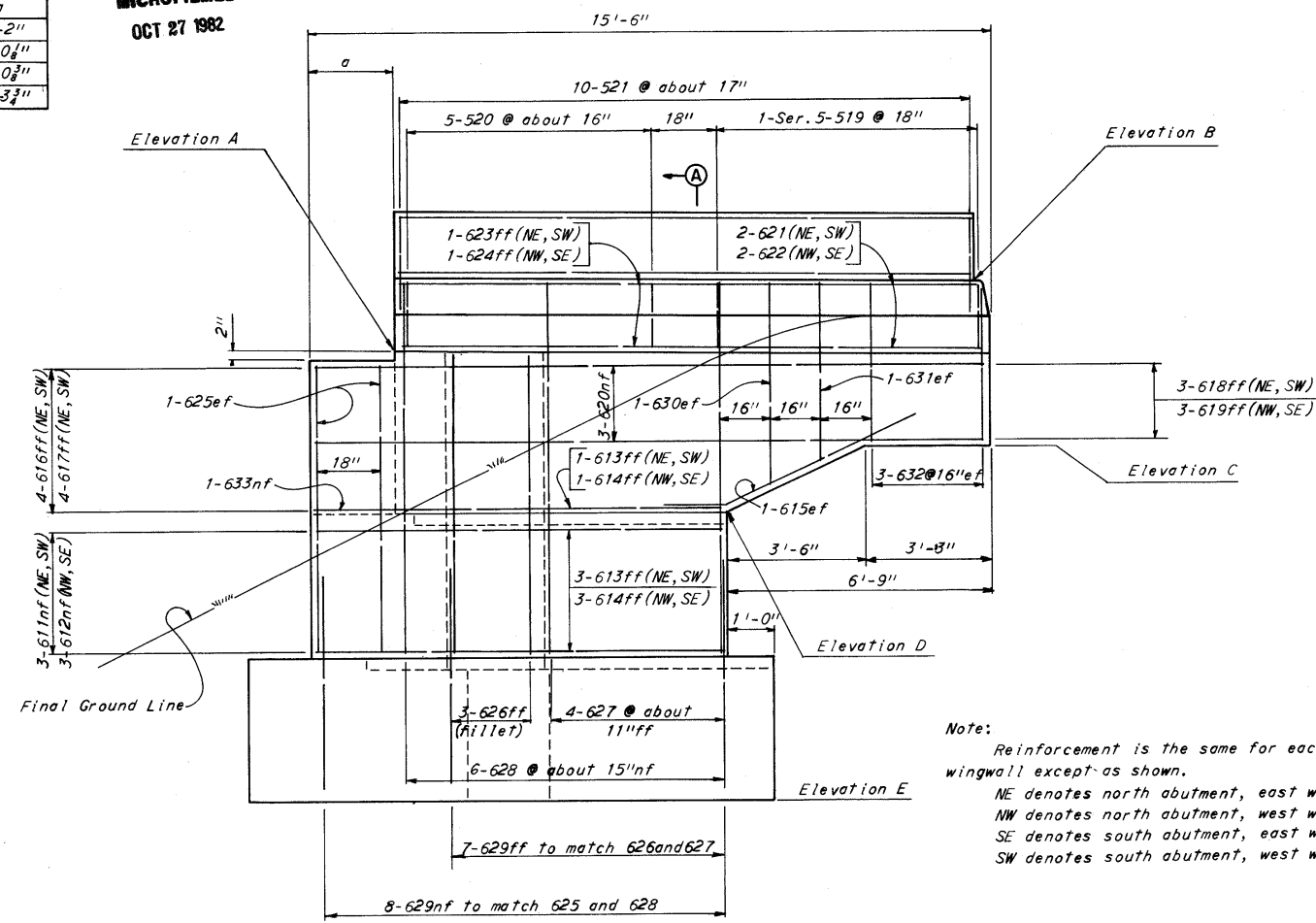
DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DATE 4-21-64	DATE	DATE 8-31-64	DATE	DATE

SHEET 331

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

Wingwall	a
Southeast	2'-2"
Southwest	1'-10 1/2"
Northeast	1'-10 1/2"
Northwest	2'-3 3/4"

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OCT 27 1982



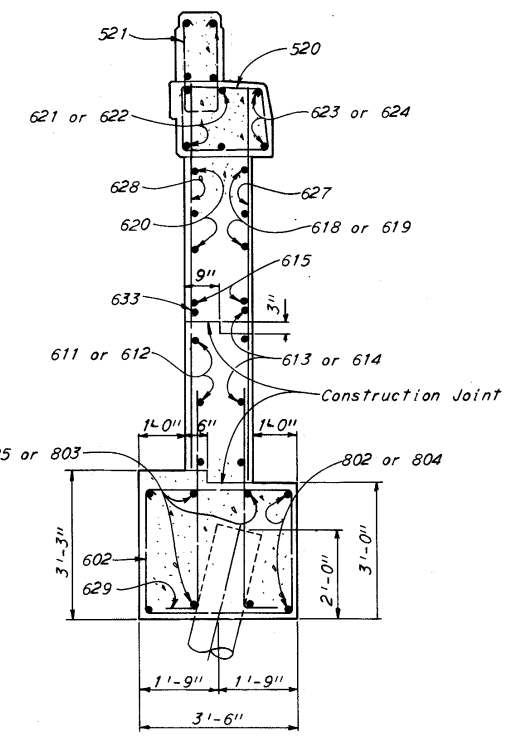
Note: Reinforcement is the same for each wingwall except as shown.
NE denotes north abutment, east wingwall.
NW denotes north abutment, west wingwall.
SE denotes south abutment, east wingwall.
SW denotes south abutment, west wingwall.

Note: All reinforcing bar marks in the south abutment wingwalls shall be prefixed AS and all reinforcing bar marks in the north abutment wingwalls shall be prefixed AN.

WINGWALL ELEVATION
(Piles not shown)

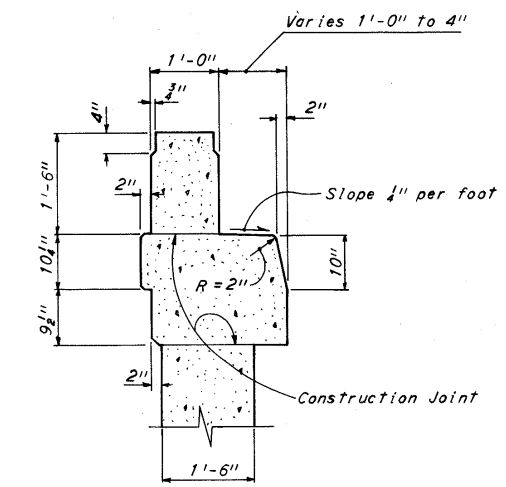
	WINGWALL			
	Southeast	Southwest	Northeast	Northwest
Elevation A	696.03	700.39	695.24	699.12
Elevation B	697.75	702.11	696.81	700.69
Elevation C	693.75	698.11	692.81	696.69
Elevation D	692.26	696.49	691.47	695.35
Elevation E	685.40	689.70	684.60	688.60

TABLE OF WINGWALL ELEVATIONS



SECTION A-A

Notes:
For roadway end dam details see Ohio Standard Drawing SD-1-63, sheet 2 of 4 and 4 of 4.
For railing details see Ohio Standard Drawing AR-1-57.
For railing post spacing and longitudinal reinforcing in the parapets see sheet 339.
For Reinforcement Schedule and Bar Bending Diagrams see sheet 340.
All piles shall be 12" C.I.P. Reinforced Concrete.
All battered piles shall be inclined 3 in 12 in the direction shown.
The following abbreviations are used:
nf = near face ff = far face
ef = each face



CURB DETAIL
(Reinforcement and Type A railing not shown)

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WINGWALLS
I-90 OVER KENILWORTH AVE.
BR. NO. CUY- 90-1449 STA. 989+27.15
STA. 990+96.26

CLEVELAND	CUYAHOGA COUNTY	OHIO
DRAWN WJD	TRACED	CHECKED
DATE 4-30-88	DATE 5-31-88	DATE

SHEET 332

MICROFILMED
OCT 27 1982

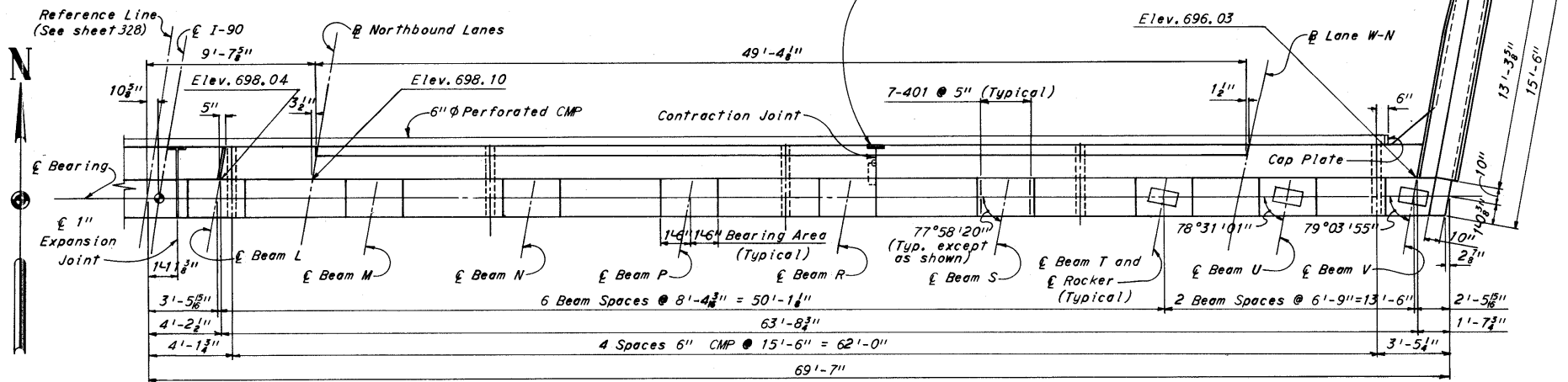
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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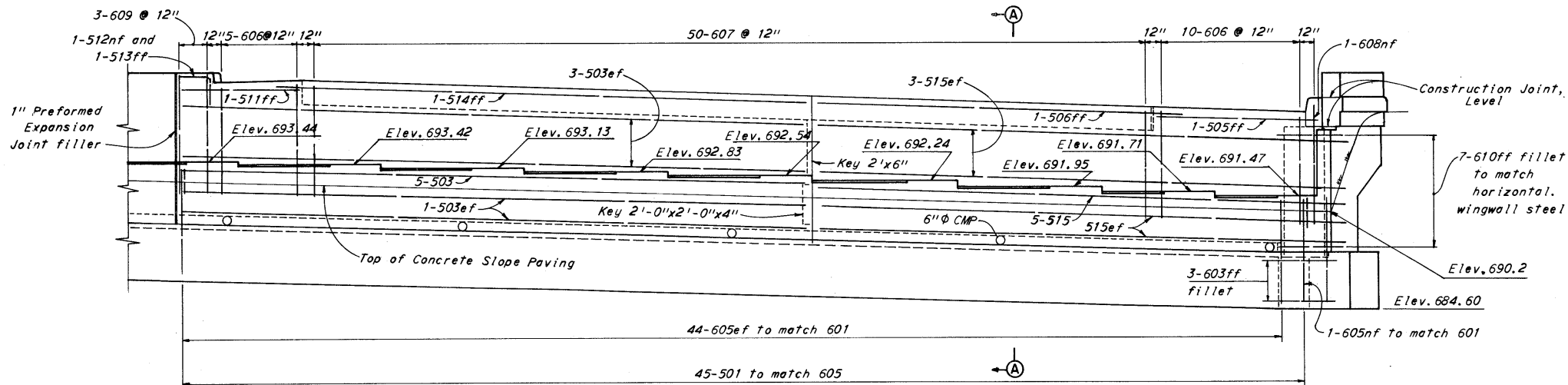
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

12"x $\frac{1}{2}$ " Premolded sealing strip in 13"x $\frac{3}{4}$ " recess from top of footing to bottom of approach slab or to 6" below median (Typical for contraction joint and expansion joint)

Notes:
Backwall elevations are given to top of 8x4x1 angle of end dam.
For curb taper see sheet 331



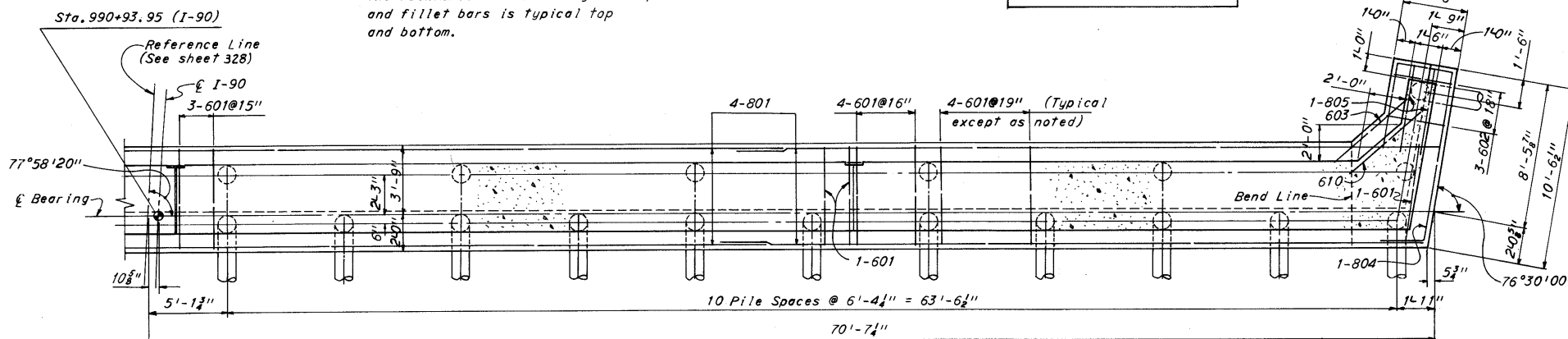
PLAN



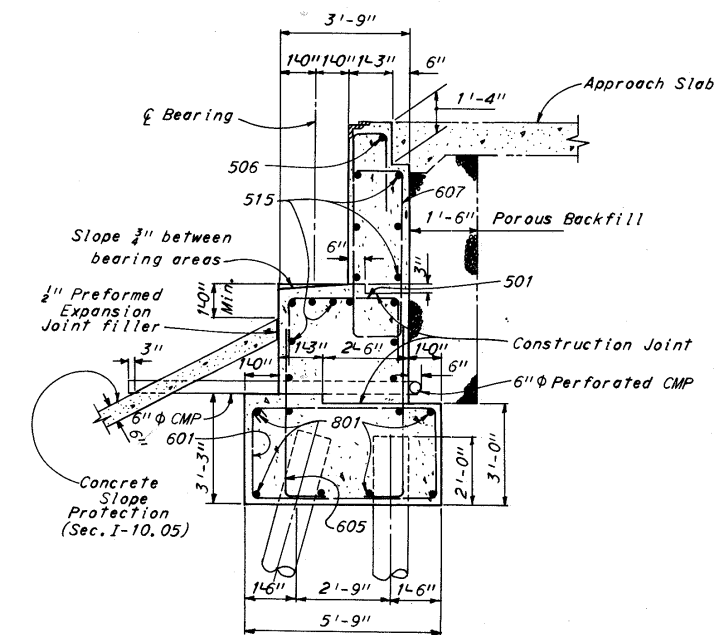
ELEVATION
(Piles not shown)

Note: In the abutment footing plan the reinforcement excluding stirrup and fillet bars is typical top and bottom.

Note: All reinforcing bar marks shall be prefixed AN.



FOOTING PLAN



SECTION A-A

Notes:
For wingwall details see sheet 332.
For reinforcement schedule and bar bending diagrams see sheet 340.
For median detail see sheet 331.
For west portion of abutment see sheet 334.
The following abbreviations are used:
nf = near face ff = far face
ef = each face
For additional notes see sheet 332.
See Procedure note on sheet 331

H.N.T.B. BR. NO. 11			
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK			
NORTH ABUTMENT			
I-90 OVER KENILWORTH AVE.			
BR. NO. CUY- 90-1449		STA. 989+27.15	
		STA. 990+96.26	
CLEVELAND	CUYAHOGA COUNTY	OHIO	
DRAWN 1/22	TRACED	CHECKED 2/28	REVIEWED
DATE 4-30-44	DATE	DATE 4-30-44	DATE
			SHEET 333

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OCT 27 1982

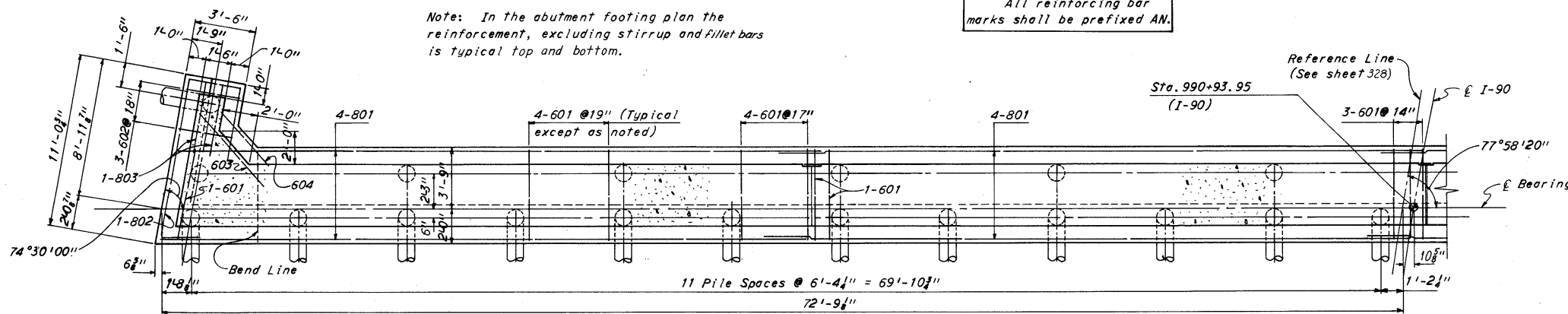
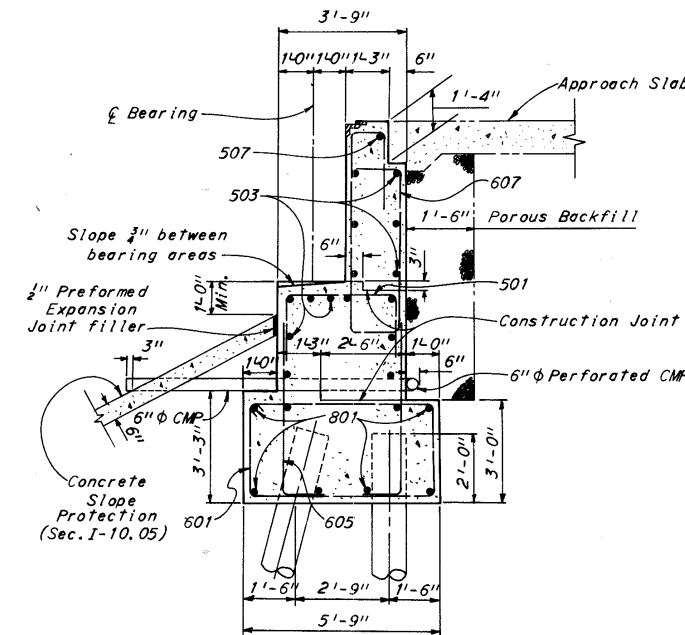
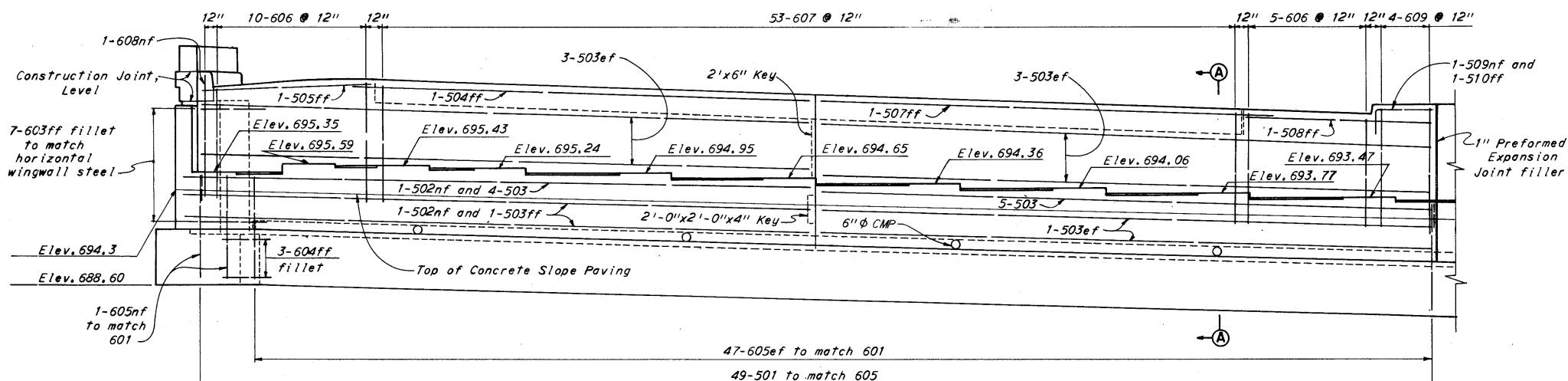
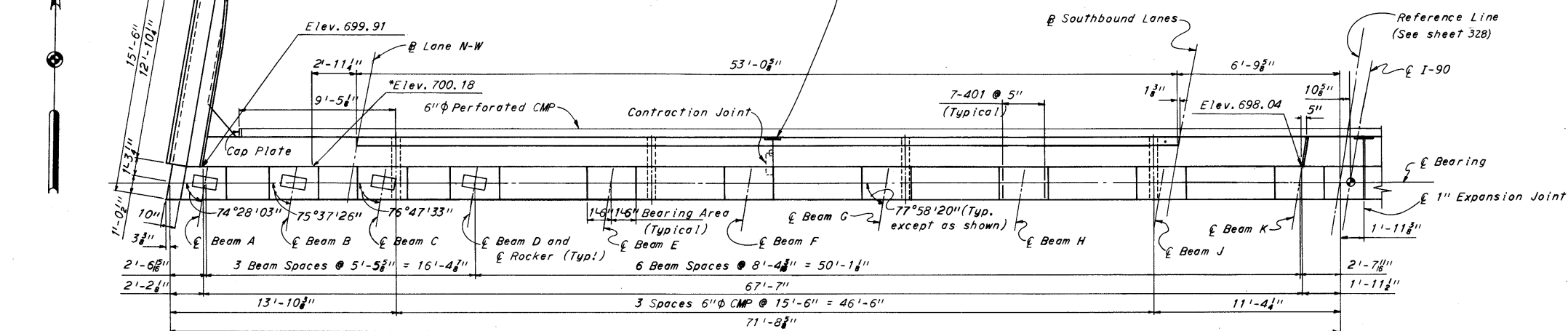
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

12"x $\frac{1}{2}$ " Premolded sealing strip in 13"x $\frac{3}{4}$ " recess from top of footing to bottom of approach slab or to 6" below median. (Typical for expansion joint and contraction joint)

Notes:
Backwall elevations are given to top of 8x4x1 angle of end dam.
For curb taper see sheet 331.
* Elevation given to PVI of 5'-0" rounding.



Notes:
For wingwall details see sheet 332.
For reinforcement schedule and bar bending diagrams see sheet 340.
For east portion of abutment see sheet 333.
For median detail see sheet 331.
The following abbreviations are used:
nf = near face ff = far face
ef = each face
For additional notes see sheet 332.

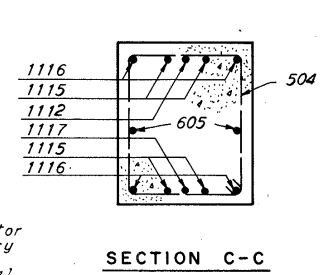
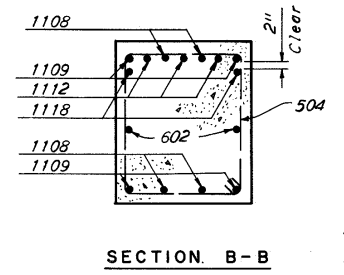
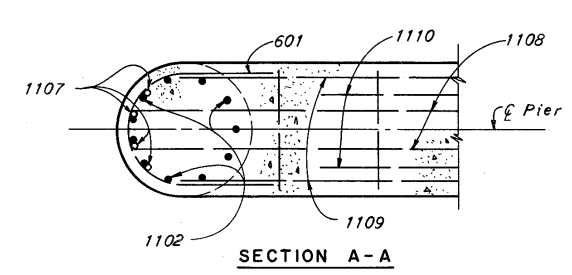
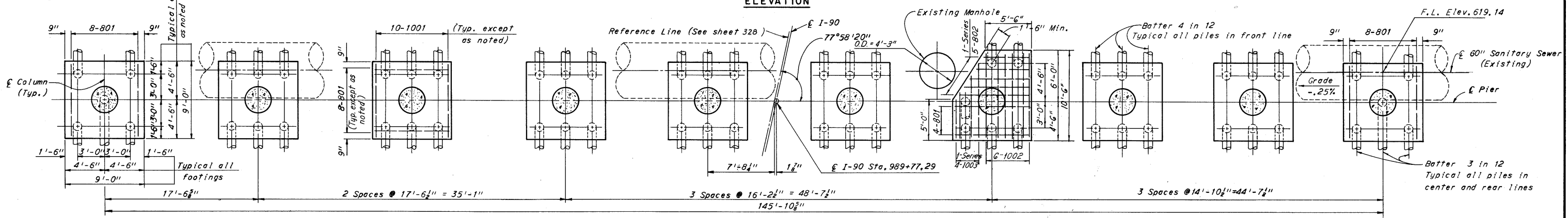
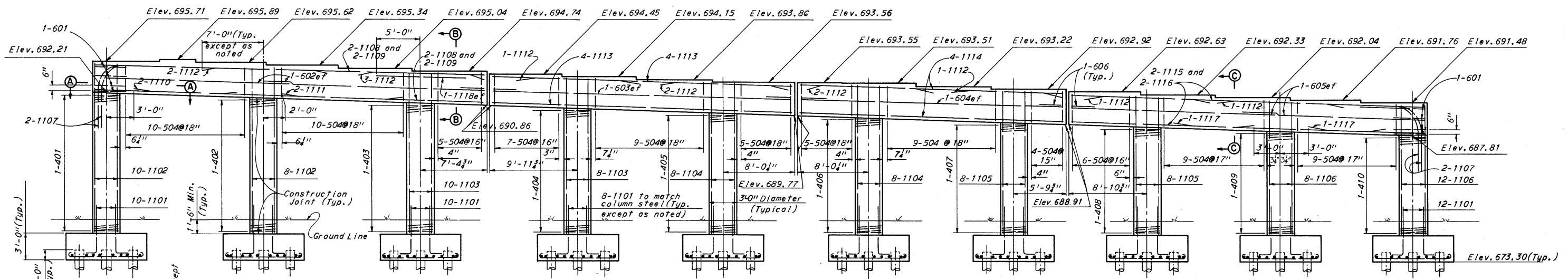
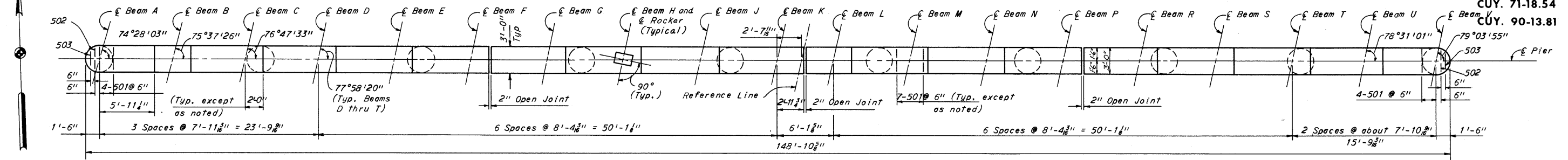
H.N.T.B. BR. NO. 11
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CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

NORTH ABUTMENT
I-90 OVER KENILWORTH AVE.
BR. NO. CUY- 90-1449 STA. 989+27.15
STA. 990+96.26

CLEVELAND CUYAHOGA COUNTY OHIO
DRAWN WJD TRACED DATE 4-21-64 CHECKED JMB REVIEWED DATE 3-31-64 REVISOR DATE SHEET 334

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
 CUY. 71-18.54
 CUY. 90-13.81

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OCT 27 1982



Note: All reinforcing bar marks shall be prefixed PA.

Note: Extreme care shall be exercised by the Contractor while driving piles in the vicinity of the 60" Sanitary Sewer to insure against any damage to the sewer. The sewer shall be inspected during the driving of critical piles and, if damaged in any way, work shall be stopped immediately and remedial action taken.

Notes:
 All piles are 12"φ C.I.P. reinforced concrete piles.
 Pile layout dimensions are measured along the bottom of the footing.
 For Reinforcement Schedule and Bar Bending Diagrams see sheet 340.
 The following abbreviation is used:
 ef = each face

H.N.T.B. BR. NO. 11

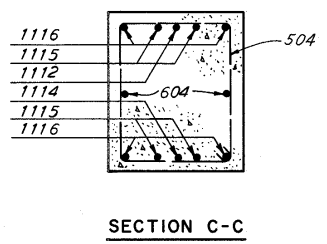
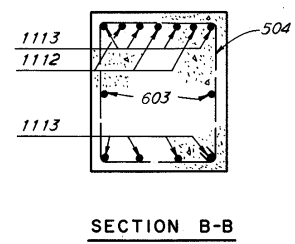
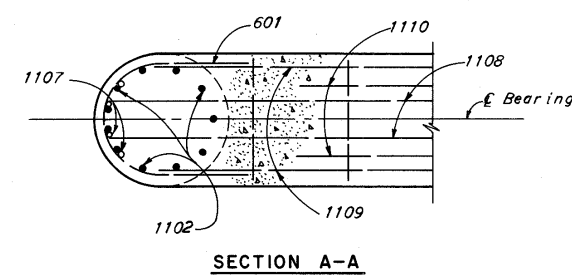
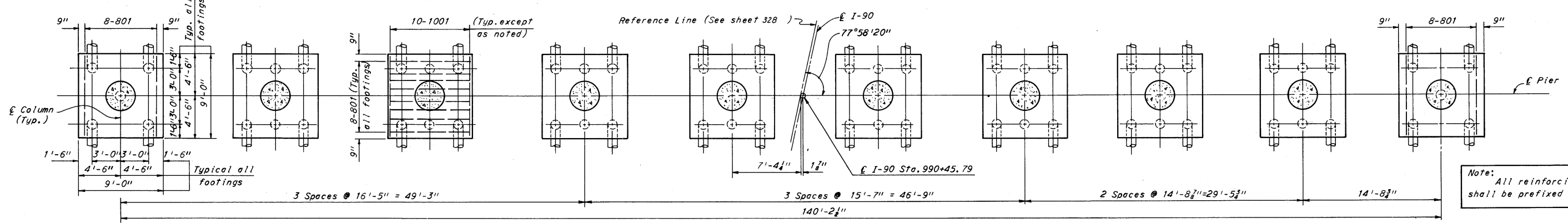
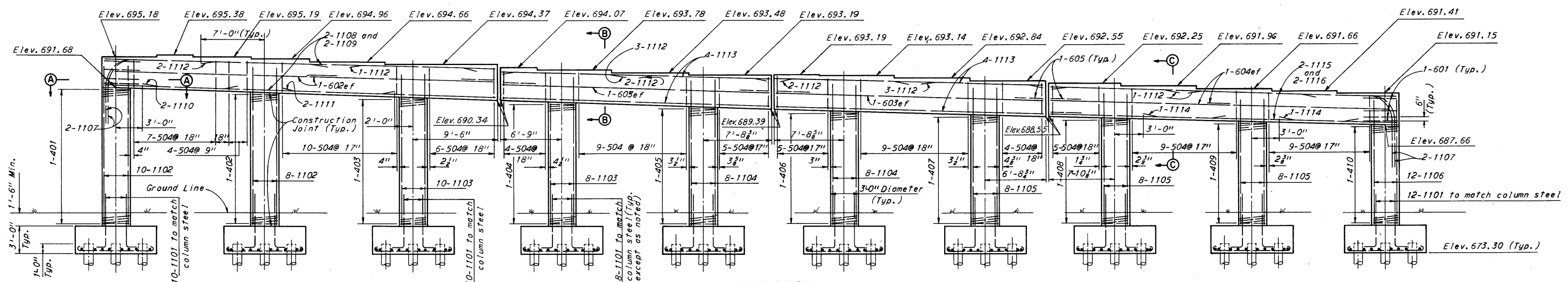
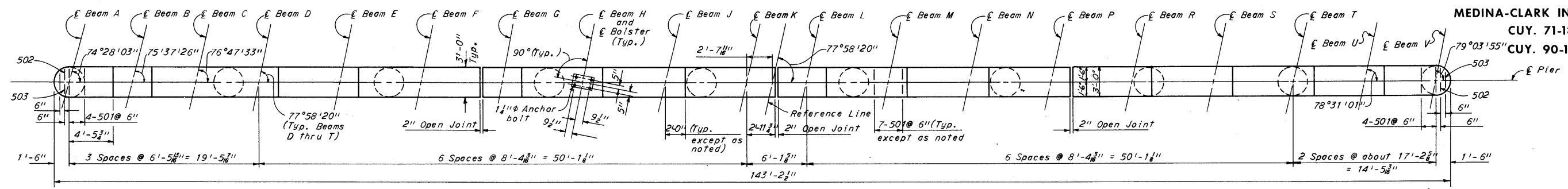
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PIER I
I-90 OVER KENILWORTH AVE.
 BR. NO. CUY- 90-1449 STA. 989+27.15
 STA. 990+96.26

CLEVELAND	CUYAHOGA COUNTY	OHIO
DRAWN	TRACED C.P.	CHECKED
DATE 4-22-61	DATE 4-24-61	DATE 4-30-61
REVIEWED	REVISION	REVISION
		SHEET 335

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

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Notes:
All piles are 12" C.I.P. reinforced concrete piles.
All battered piles shall be inclined 3 in 12 in the direction shown.
Pile layout dimensions are measured along the bottom of the footing.
For Reinforcement Schedule and Bar Bending Diagrams see sheet 340.
For spiral reinforcement note see sheet 340.
For anchor bolt details see Ohio Standard Drawing RB-1-55.
The following abbreviation is used, ef = each face

STRUCTURE GROUNDS in extreme east and west columns. See note on sht. 194.

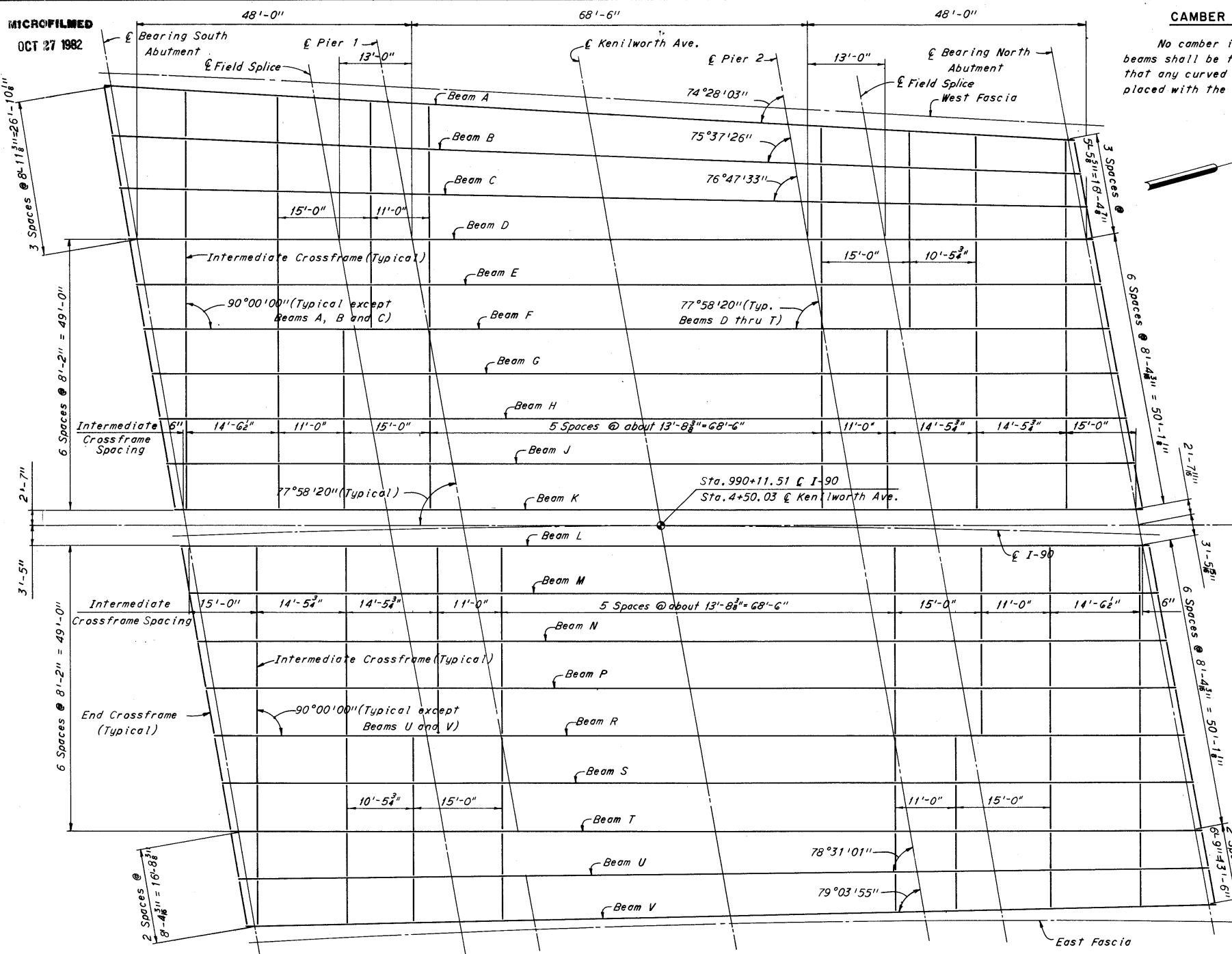
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CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIER 2
I-90 OVER KENILWORTH AVE.
BR. NO. CUY- 90-1449 STA. 989+27.15
STA. 990+96.26

CLEVELAND	CUYAHOGA COUNTY	OHIO
DRAWN	TRACED C.P.	CHECKED
DATE 4/16/64	DATE 4/21/64	DATE 8-30-64
	REVIEWED	REVISED
	DATE	DATE

SHEET 336

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OCT 27 1982



FRAMING PLAN

CAMBER NOTE

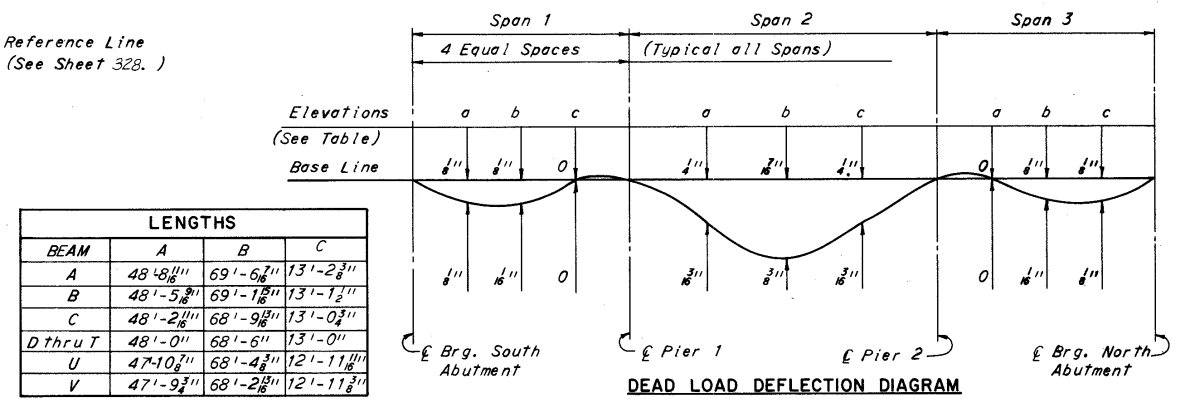
No camber is required but beams shall be fabricated so that any curved beam will be placed with the convex flange up.

BEAM JACKING PROCEDURE

FED. NO.	STATE	PROJECT
2	OHIO	

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

Beam	℄ Brg. S. Abut.	a	b	c	℄ Pier 1	a	b	c	℄ Pier 2	a	b	c	℄ Brg. N. Abut.
A	701.17	701.09	701.01	700.92	700.82	700.68	700.55	700.42	700.29	700.20	700.11	700.03	699.94
B	701.36	701.27	701.18	701.09	701.00	700.87	700.74	700.62	700.49	700.39	700.32	700.24	700.18
C	701.06	700.97	700.89	700.81	700.73	700.62	700.51	700.40	700.30	700.23	700.16	700.09	700.02
D	700.74	700.66	700.59	700.52	700.45	700.35	700.25	700.16	700.07	700.01	699.95	699.89	699.83
E	700.44	700.37	700.30	700.22	700.15	700.05	699.96	699.87	699.77	699.71	699.65	699.59	699.53
F	700.15	700.07	700.00	699.93	699.86	699.76	699.66	699.57	699.48	699.42	699.36	699.30	699.24
G	699.85	699.78	699.70	699.63	699.56	699.46	699.37	699.27	699.18	699.12	699.06	699.00	698.94
H	699.56	699.48	699.41	699.34	699.27	699.17	699.07	698.98	698.89	698.83	698.77	698.71	698.65
J	699.26	699.19	699.11	699.04	698.97	698.87	698.78	698.68	698.59	698.53	698.47	698.41	698.35
K	698.96	698.89	698.82	698.75	698.68	698.58	698.48	698.39	698.30	698.24	698.18	698.12	698.06
L	698.66	698.59	698.52	698.45	698.38	698.28	698.18	698.09	698.00	697.94	697.88	697.82	697.76
M	698.36	698.29	698.22	698.15	698.08	697.98	697.88	697.79	697.70	697.64	697.58	697.52	697.46
N	698.06	697.99	697.92	697.85	697.78	697.68	697.58	697.49	697.40	697.34	697.28	697.22	697.16
P	697.76	697.69	697.62	697.55	697.48	697.38	697.28	697.19	697.10	697.04	696.98	696.92	696.86
R	697.46	697.39	697.32	697.25	697.18	697.08	696.98	696.89	696.80	696.74	696.68	696.62	696.56
S	697.16	697.09	697.02	696.95	696.88	696.78	696.68	696.59	696.50	696.44	696.38	696.32	696.26
T	696.86	696.79	696.72	696.65	696.58	696.48	696.38	696.29	696.20	696.14	696.08	696.02	695.96
U	696.56	696.49	696.42	696.35	696.28	696.18	696.08	695.99	695.90	695.84	695.78	695.72	695.66
V	696.26	696.19	696.12	696.05	695.98	695.88	695.78	695.69	695.60	695.54	695.48	695.42	695.36

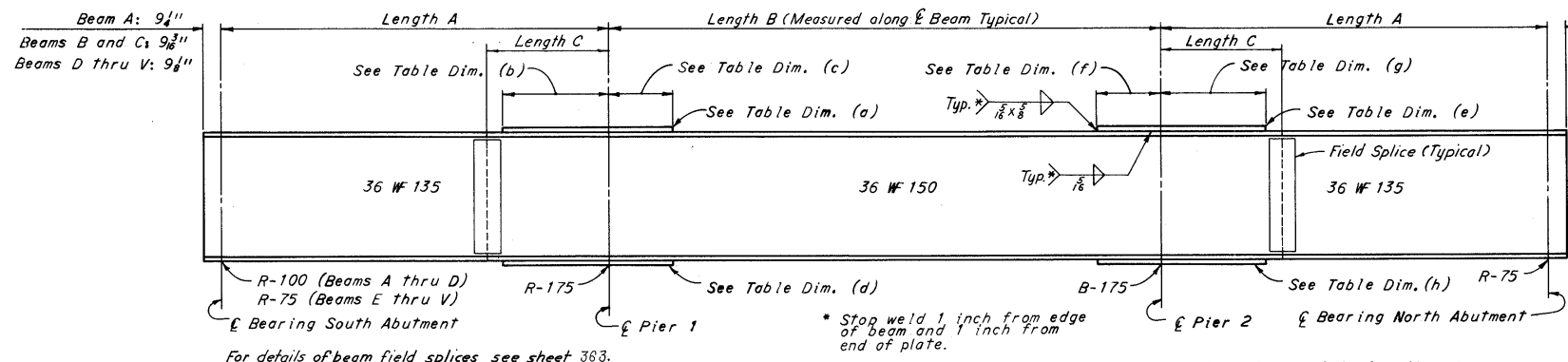


BEAM	A	B	C
A	48'-8 1/2"	69'-6 1/2"	13'-2 3/4"
B	48'-5 1/2"	69'-1 1/2"	13'-1 1/2"
C	48'-2 1/2"	68'-9 1/2"	13'-0 3/4"
D thru T	48'-0"	68'-6"	13'-0"
U	47'-10 1/2"	68'-4 1/2"	12'-11 1/2"
V	47'-9 1/2"	68'-2 1/2"	12'-11 1/2"

Location	℄ Beam A to W. Fascia	℄ Beam K to W. edge of open jt. E. Fascia	℄ Beam V to E. Fascia
℄ Brg. S. Abut.	2'-2 1/2"	4'-2"	2'-8 3/4"
1/4	2'-4 1/2"	3'-11 1/4"	2'-5 1/4"
1/2	2'-6 1/2"	3'-8 3/4"	2'-2 1/4"
3/4	2'-7 1/2"	3'-6 7/8"	1'-11 1/8"
℄ Pier 1	2'-7 1/2"	3'-5 3/8"	1'-10"
1/4	2'-7 1/2"	3'-4"	1'-8"
1/2	2'-7 1/2"	3'-3 1/2"	1'-6 7/8"
3/4	2'-7 1/2"	3'-3 1/8"	1'-6 1/8"
℄ Pier 2	2'-7 1/2"	3'-5 1/4"	1'-7 3/8"
1/4	2'-7 1/2"	3'-6 3/4"	1'-8 3/8"
1/2	2'-7 1/2"	3'-8 1/2"	1'-9 1/2"
3/4	2'-7 1/2"	3'-11"	2'-1"
℄ Brg. N. Abut.	2'-7 1/2"	4'-1 1/2"	2'-7 1/2"

Note: Values shown above base line are total deflections due to steel and concrete. Values shown below base line are deflections due to concrete only. Deflections are measured to nearest 1/8 inch.

Notes:
Fascia offsets are given at ℄ bearing and at 1/4 points between bearing lines and are perpendicular to ℄ of beams. Fascia, as used here, is the edge of slab.
For details of Rockers and Bolsters see Ohio Standard Drawing RB-1-55.
For details of end crossframes and roadway end dam see Ohio Standard Drawing SD-1-63, sheet 2 of 4 and 4 of 4. Curb plate details at median shall be similar to those at curb. The support angle of the end dam shall be increased from 6x4x 3/4 to 8x4x 3/4.
For location of scuppers see sheet 328.
For drainage details see sheet 339.



TYPICAL BEAM ELEVATION

BEAM	Dim. (a)	Dim. (b)	Dim. (c)	Dim. (d)	Dim. (e)	Dim. (f)	Dim. (g)	Dim. (h)
A thru C	13 1/2 x 2 1/2	8'-6"	8'-0"	13 1/2 x 2 1/2	13 1/2 x 2 1/2	7'-0"	8'-6"	13 1/2 x 2 1/2
D	13 1/2 x 2 1/2	9'-6"	8'-0"	13 1/2 x 2 1/2	13 1/2 x 2 1/2	7'-6"	9'-6"	13 1/2 x 2 1/2
E thru K	13 1/2 x 2 1/2	10'-6"	8'-0"	13 1/2 x 2 1/2	13 1/2 x 2 1/2	8'-0"	10'-6"	13 1/2 x 2 1/2
L thru S	13 1/2 x 2 1/2	10'-6"	8'-0"	13 1/2 x 2 1/2	13 1/2 x 2 1/2	8'-0"	10'-6"	13 1/2 x 2 1/2
T	13 1/2 x 2 1/2	9'-6"	8'-0"	13 1/2 x 2 1/2	13 1/2 x 2 1/2	7'-6"	9'-6"	13 1/2 x 2 1/2
U and V	13 1/2 x 2 1/2	8'-6"	7'-6"	13 1/2 x 2 1/2	13 1/2 x 2 1/2	7'-0"	8'-6"	13 1/2 x 2 1/2

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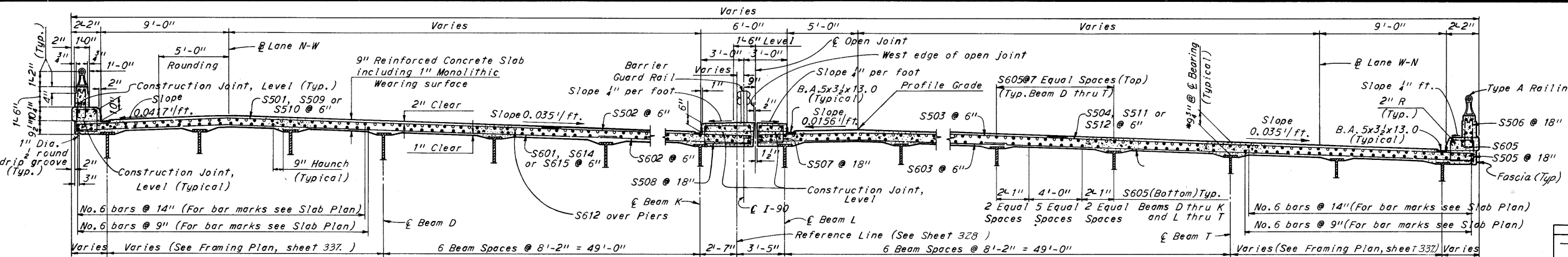
FRAMING PLAN
I-90 OVER KENILWORTH AVE.
BR. NO. CUY - 90-1449 STA. 989+27.15
STA. 990+96.26

CLEVELAND CUYAHOGA COUNTY OHIO
DRAWN J.M.C. TRACED DATE 4-27-64 CHECKED DATE 4-28-64 REVIEWED DATE SHEET 337

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

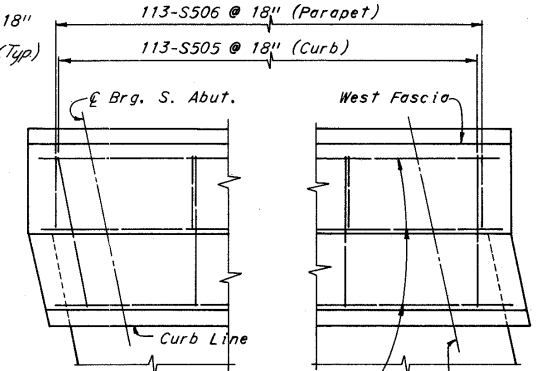
338
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

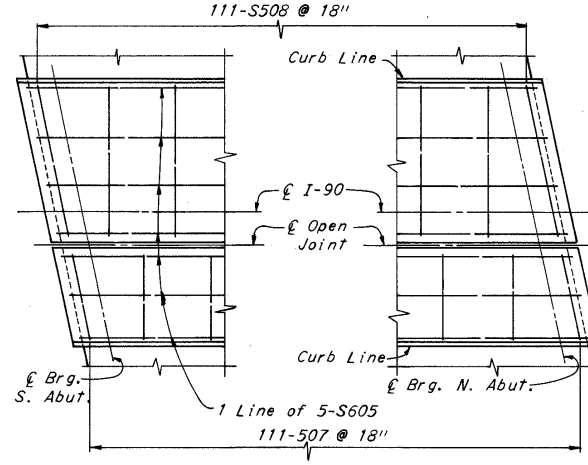


TYPICAL CROSS SECTION

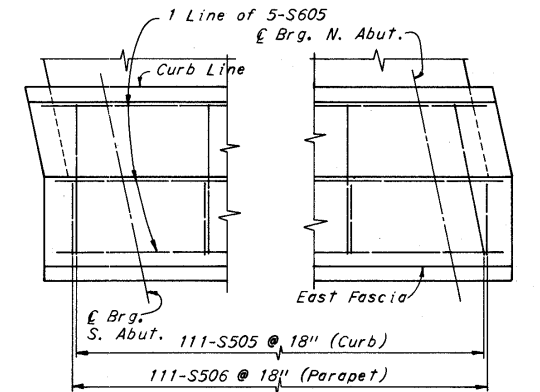
*Note: When curb beams and median beams are beneath the curbs and medians, the 9 3/4" dimension is measured from extended top of pavement to top of beam.



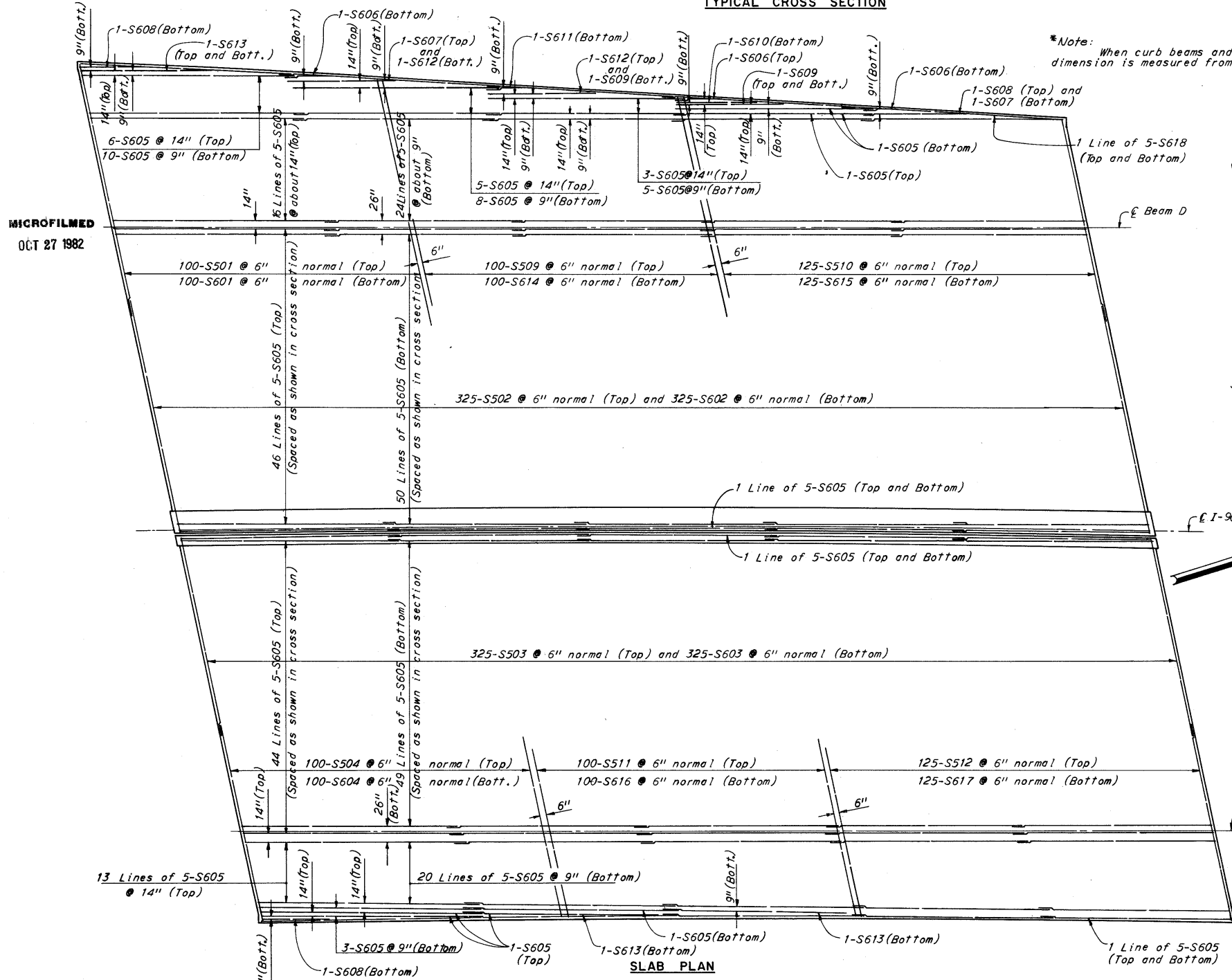
WEST CURB AND PARAPET



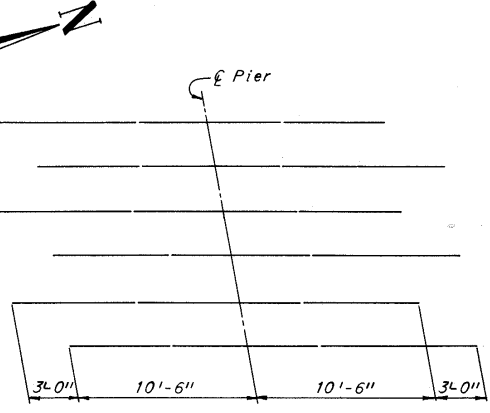
MEDIAN CURB



EAST CURB AND PARAPET



SLAB PLAN



PLACEMENT OF S612 BARS OVER PIERS

Note: All longitudinal bars in slab are parallel to beams D thru T except the following:
S618 bars are concentric with and parallel to the West Fascia.
S605 bars in median curb and along open joint are concentric with I-90.
S605 bars in East curb and along East Fascia are concentric with the East Fascia.
All transverse bars in the slab are parallel to I-90 and Pier bearings.

Notes:
For railing post spacing, parapet joint spacing and longitudinal reinforcement in the parapet see sheet 339.
For additional details of railing see Ohio Standard Drawing AR-1-57.
Longitudinal reinforcement shall be field bent as required. Field bending shall be included in "Item S-4, Reinforcing Steel" for payment.
For Reinforcement Schedule and Bending Diagrams see sheet 340.
Top and Bottom indicates reinforcement location in the slab.

H.N.T.B. BR. NO. 11

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

DECK REINFORCEMENT

I-90 OVER KENILWORTH AVE.
BR. NO. CUY- 90-1449 STA. 989+27.15
STA. 990+96.26

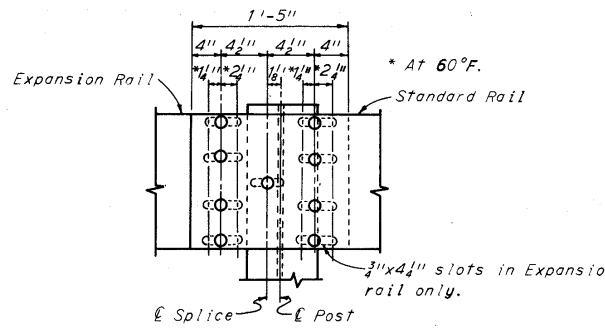
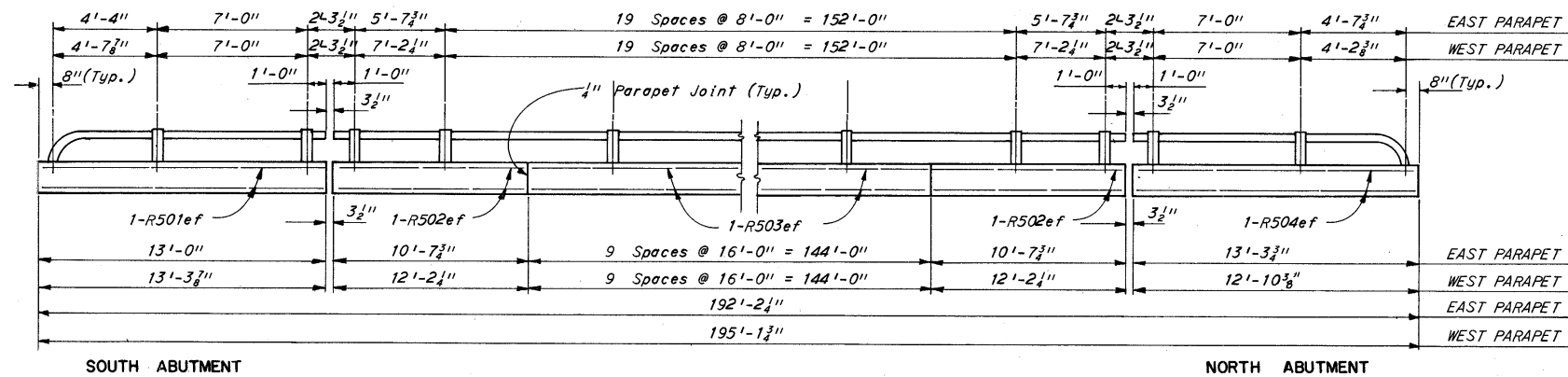
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN JMC	TRACED	CHECKED	REVIEWED	REVISED
DATE 4-22-64	DATE	DATE 4-22-64	DATE	DATE

SHEET 338

MICROFILMED
OCT 27 1982

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



SPECIAL PANEL AT EXPANSION JOINTS

MICROFILMED
OCT 27 1982

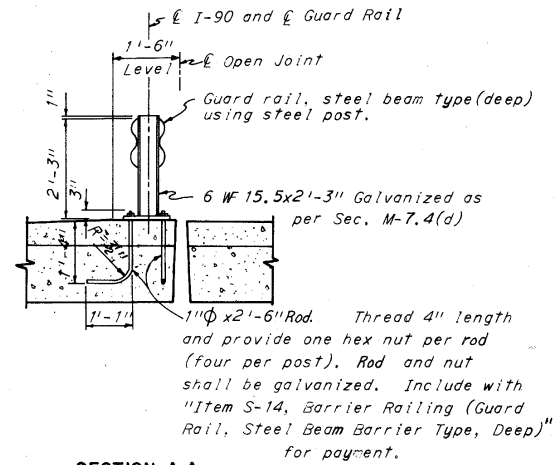
Note:
Longitudinal steel in the parapets shall be prefixed as follows:
West Parapet - RW
East Parapet - RE

MARK	REINFORCEMENT SCHEDULE			
	NO.	LENGTH	NO.	LENGTH
R501	4	12'-6"	4	13'-0"
R502	8	10'-3"	8	11'-9"
R503	36	15'-6"	36	15'-6"
R504	4	13'-0"	4	12'-6"
R601	3	6'-6"	3	6'-6"

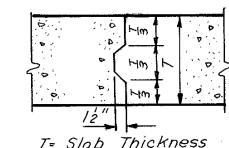
Note: The following abbreviation is used;
ef = each face

RAILING NOTES

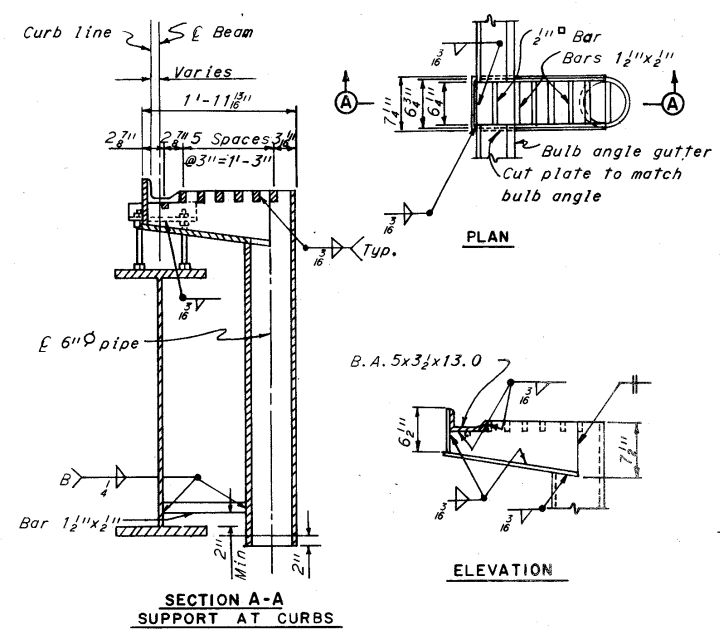
Railing shall be fabricated in lengths not less than three panels each unless otherwise shown, and finished railing shall be free of burrs, sharp corners and rough surfaces.
Railing posts shall be normal to grade.
Payment for railing shall be made at the contract unit price bid for "Item S-14." Pay length shall be the overall length of the parapets and shall include cost of anchor bolts, set screws, nuts, shims, etc., necessary to complete the installation of railing. Concrete expansion joint material, and longitudinal reinforcing steel in the parapets shall be included in "Item S-14" for payment. All other reinforcing steel in the parapet shall be included in "Item S-4" for payment.
For additional details and notes regarding railing see Ohio Standard Drawing AR-1-57.



SECTION A-A

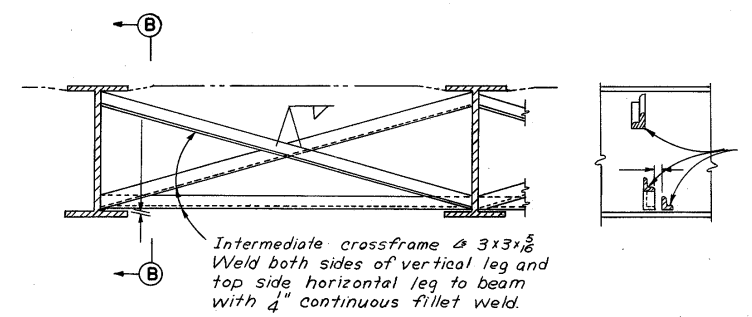


OPTIONAL TRANSVERSE SLAB CONSTRUCTION JOINT



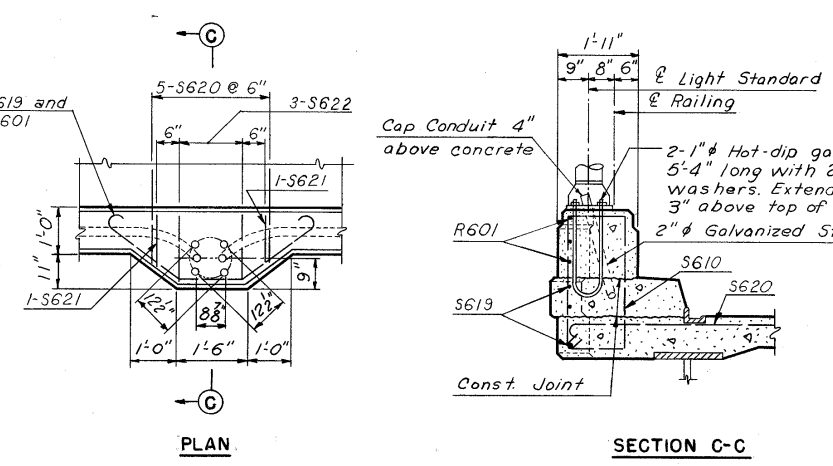
SCUPPER DETAILS

Note: Scuppers are to be made from 3/8" steel plate except as shown.

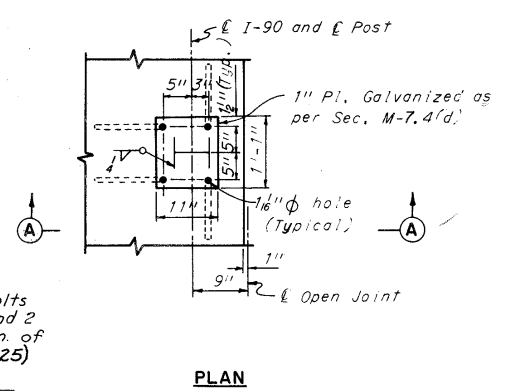


INTERMEDIATE CROSSFRAME

SECTION B-B



LIGHT STANDARD SUPPORT



MEDIAN BARRIER GUARD RAIL DETAILS

Note:
For additional guard rail details, see Ohio Standard Drawing I-15 (No. 2-A)
Guard rail post spacing is measured from ξ Splice to ξ Splice.

Notes:

For Scupper Details not shown and Gutter Support details see Ohio Standard Drawing SD-1-63, sheet 3 of 4.
Bulb angle and supports are included for payment with "Item S-7, Structural Steel."
Joints in bulb angle gutters, preferably at intervals of not less than 25 feet, are to be butt joints with milled ends. The support angles shall be placed 6" to 9" on each side of the joint.
The bulb angle gutters shall be adjusted accurately for alignment and grade, with allowance for dead load deflections, before concrete is placed.

H.N.T.B. BR. NO. 11

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

MISCELLANEOUS DETAILS
I-90 OVER KENILWORTH AVE.
BR. NO. CUY- 90-1449 STA. 989+27.15
STA. 990+96.26

CLEVELAND	CUYAHOGA COUNTY	OHIO
DRAWN	TRACED	CHECKED
DATE 6-27-64	DATE	DATE 7-11-64
REVIEWED	REVISION	
		SHEET 339

**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81**

Note: Spiral reinforcement shall not have deformations, but shall in other respects conform to Item 5-4. Four steel channel, tee, or angle spacers, weighing approximately 0.68 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coils. The spacers shall be paid for as reinforcing steel and their weight has been included in the tabulated weights of the spiral.

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)	MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)	MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)	MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)	MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)				
NORTH ABUTMENT												REPLACEMENT BAR SCHEDULE																					
AN401	133	3'-5"	105		304	AS515	1	19'-6"	Str.		20	PA1108	4	43'-6"	Str.		924	S609	3	28'-0"	Str.		126	No. 4	4	5'-3"	Str.						
AN501	94	7'-8"	105		752	AS516	15	30'-0"	Str.		469	PA1109	4	42'-6"	Str.		903	S610	1	17'-6"	Str.		26	No. 5	1	5'-7"	Str.						
AN502	3	37'-0"	Str.		116	AS517	1	21'-0"	Str.		21	PA1110	2	11'-6"	Str.		122	S611	1	15'-0"	Str.		23	No. 6	10	5'-11"	Str.						
AN503	42	36'-0"	Str.		1,577	AS518	1	10'-9"	Str.		11	PA1111	2	13'-6"	Str.		143	S612	250	24'-0"	Str.		9,012	No. 8	1	6'-6"	Str.						
AN504	1	26'-9"	Str.		28	AS519	2-Ser. 5	5'-0" 6'-4"	109	4"	59	PA1112	13	14'-0"	Str.		967	S613	4	25'-3"	Str.		152	No. 10	1	7'-2"	101						
AN505	2	10'-9"	Str.		22	AS520	10	6'-4"	109		66	PA1113	8	33'-9"	Str.		1,435	S614	100	36'-3"	Str.		5,445	No. 11	2	7'-6"	Str.						
AN506	1	21'-9"	Str.		23	AS521	20	5'-7"	110		116	PA1114	8	29'-6"	Str.		1,254	S615	125	33'-0"	Str.		6,196										
AN507	1	29'-0"	Str.		30	AS522	101	16'-9"	109		2,541	PA1115	4	39'-6"	Str.		839	S616	100	36'-0"	Str.		5,407										
AN508	1	8'-3"	Str.		9	AS523	6	12'-3"	109		110	PA1116	4	38'-6"	Str.		818	S617	125	35'-0"	Str.		6,571										
AN509	1	4'-11"	104		5	AS524	3	5'-0"	Str.		23	PA1117	2	9'-0"	Str.		96	S618	25	35'-3"	Str.		1,324										
AN510	1	4'-6"	104		5	AS525	195	6'-10"	104		2,001	PA1118	2	10'-0"	Str.		106	S619	8	6'-6"	130		78										
AN511	1	7'-3"	Str.		8	AS526	29	16'-5"	109		715							S620	10	5'-10"	101		88										
AN512	1	3'-3"	104		3	AS527	117	17'-3"	112		3,031							S621	4	8'-8"	109		52										
AN513	1	3'-8"	104		4	AS528	2	7'-0"	Str.		21							S622	6	9'-4"	109		84										
AN514	1	30'-0"	Str.		31	AS529	7	17'-1"	109		180																						
AN515	15	30'-6"	Str.		477	AS530	3	10'-3"	108		46																						
AN519	2-Ser. 5	5'-0" 6'-4"	109	4"	59	AS531	3	10'-1"	148		45																						
AN520	10	6'-4"	109		66	AS532	4	4'-9"	109		29																						
AN521	20	5'-7"	110		116	AS533	4	4'-3"	Str.		26																						
AN601	96	16'-9"	109		2,415	AS534	4	7'-4"	108		44																						
AN602	6	12'-3"	109		110	AS535	4	3'-3"	Str.		20																						
AN603	10	5'-9"	Str.		86	AS536	4	3'-9"	Str.		23																						
AN604	3	4'-9"	Str.		21	AS537	3	11'-6"	Str.		52																						
AN605	185	6'-9"	104		1,876	AS538	3	11'-0"	Str.		50																						
AN606	30	16'-5"	109		740	AS539	6	15'-0"	Str.		135																						
AN607	103	17'-3"	112		2,669	AS540	4	13'-3"	Str.		80																						
AN608	2	7'-0"	Str.		21	AS541	4	12'-9"	Str.		77																						
AN609	7	17'-1"	109		180	AS542	2	13'-6"	Str.		41																						
AN610	7	6'-6"	Str.		68	AS543	2	12'-6"	Str.		38																						
AN611	3	10'-3"	108		46	AS544	4	7'-0"	Str.		42																						
AN612	3	10'-1"	148		45	AS545	6	7'-3"	Str.		65																						
AN613	4	4'-9"	Str.		29	AS546	8	8'-9"	Str.		105																						
AN614	4	4'-0"	Str.		24	AS547	12	8'-6"	Str.		153																						
AN615	4	7'-4"	108		44	AS548	30	5'-7"	104		252																						
AN616	4	3'-3"	Str.		20	AS549	4	4'-6"	Str.		27																						
AN617	4	3'-9"	Str.		23	AS550	4	4'-0"	Str.		24																						
AN618	3	11'-6"	Str.		52	AS551	12	3'-6"	Str.		63																						
AN619	3	10'-9"	Str.		48	AS552	2	8'-3"	Str.		25																						
AN620	6	15'-0"	Str.		135	AS553	32	41'-0"	Str.		3,503																						
AN621	4	13'-3"	Str.		80	AS554	2	20'-10"	149		111																						
AN622	4	12'-9"	Str.		77	AS555	4	5'-3"	Str.		56																						
AN623	2	13'-6"	Str.		41	AS556	2	21'-3"	149		113																						
AN624	2	12'-6"	Str.		38	AS557	4	6'-0"	Str.		64																						
AN625	4	7'-0"	Str.		42																												
AN626	6	7'-3"	Str.		65																												
AN627	8	8'-9"	Str.		105																												
AN628	12	8'-6"	Str.		153																												
AN629	30	5'-7"	104		252																												
AN630	4	4'-6"	Str.		27																												
AN631	4	4'-0"	Str.		24																												
AN632	12	3'-6"	Str.		63																												
AN633	2	8'-3"	Str.		25																												
AN801	32	38'-0"	Str.		3,247																												
AN802	2	20'-3"	149		109																												
AN803	4	4'-6"	Str.		48																												
AN804	2	21'-3"	149		113																												
AN805	4	6'-0"	Str.		64																												
																	</																

**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
C.U.Y. 71-18.54
C.U.Y. 90-13.81
LEGEND**

- Water ———— W ————
- Gas ———— G ————
- Sewers ———— S ————
- Ohio Bell Tel. ———— T ————
- M.E.L.P. (Underground Conduits) ————
- C.E.I. (Underground Conduits) ————
- Manhole ————
- Inlet ————
- Power Pole ————
- Light Pole ————
- Power and Telephone Pole ————
- Fire Hydrant ————
- Concrete Slope Protection ————

PROPOSED STRUCTURE-BRIDGE NO. 12
 TYPE: Continuous rolled beams with reinforced concrete deck and substructure.
 SPANS: 47'-0", 67'-0" and 47'-0"
 ROADWAY: Varies, face to face of parapets.
 LOAD FREQUENCY: CF 2000 (57) Adequate for AASHTO alternate loading.
 SKEW: Varies, 0'-9"-35" Right Forward Nominal.
 WEARING SURFACE: 1" Monolithic Concrete.
 APPROACH SLAB: 25'-0" (AS-1-54).
 ALIGNMENT: Curve 1° 28' 00" right.

PROPOSED STRUCTURE-BRIDGE NO. 13
 TYPE: Continuous rolled beams with reinforced concrete deck and substructure.
 SPANS: 47'-2 1/2", 67'-3" and 47'-2 1/2"
 ROADWAY: Varies, face to face of parapets.
 LOAD FREQUENCY: CF 2000 (57) Adequate for AASHTO alternate loading.
 SKEW: 4° 58' 01" Right forward
 WEARING SURFACE: 1" Monolithic Concrete.
 APPROACH SLAB: 25'-0" (AS-1-54).
 ALIGNMENT: Tangent.

TRAFFIC DATA
 Bridge No. 12: 1975 ADT 27,400 directional
 14,279 Lane W-N
 Bridge No. 13: 1975 ADT 14,279

SCUPPER LOCATIONS (Along gutter line)
 Bearing Abutments to first scupper = 5'-0" (Typ).
 Spacing of succeeding scuppers is 7'-0" on Bridge No. 12 and 9'-0" on Bridge No. 13.

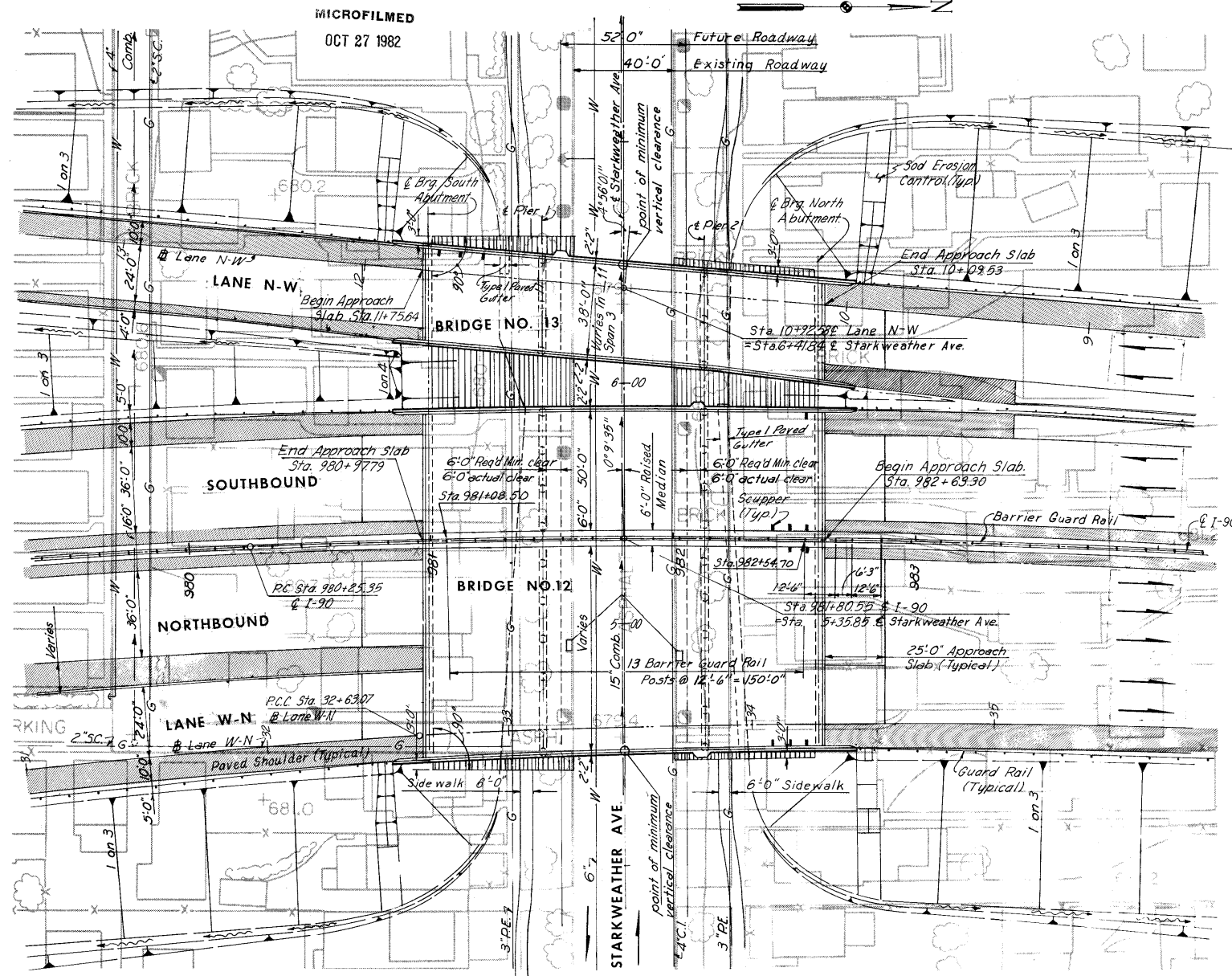
FOUNDATION DATA
 All piles in the abutments and piers shall be 12" φ C.I.P. reinforced concrete. The estimated average vertical length is 45 feet for the abutments and 100 feet for the piers.

H.N.T.B. BRS. NO. 12 & 13
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

SITE PLAN

I-90 & LANE N-W OVER STARKWEATHER AVE.
 BR. NO. CUY- 90-1433 STA. 980+97.79
 BR. NO. CUY- 90-1433L STA. 982+63.30

CLEVELAND	CUYAHOGA COUNTY	OHIO
DRAWN C.H.B. DATE 4/15/64	TRACED DATE	CHECKED DATE 4/22/64
REVIEWED DATE	REVISED	341



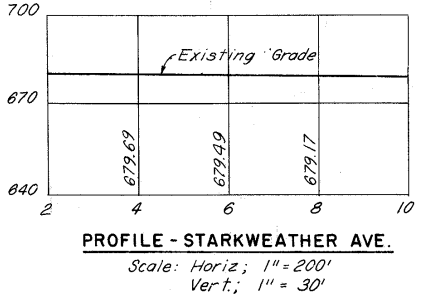
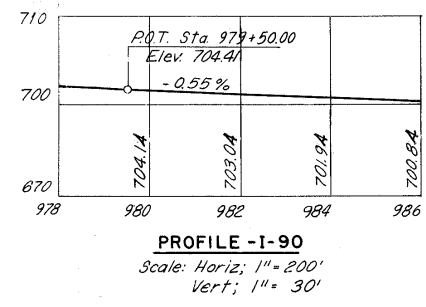
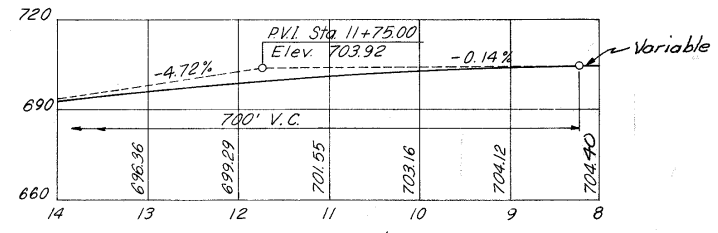
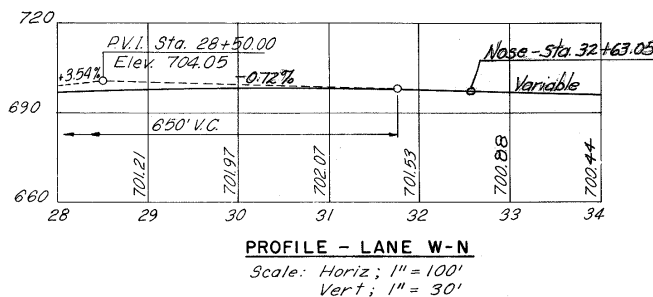
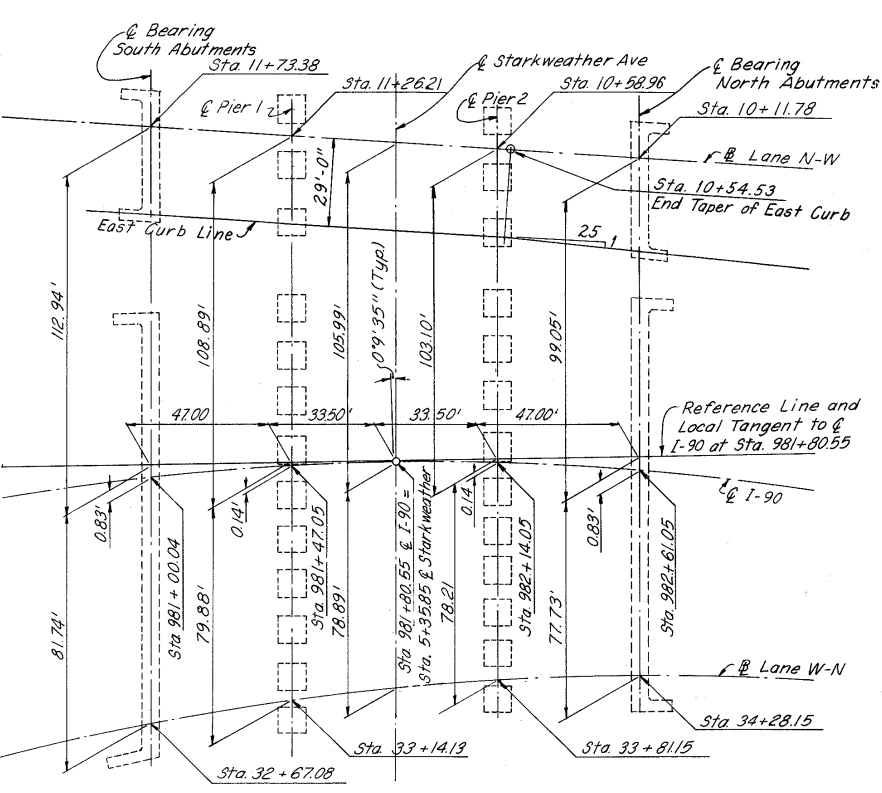
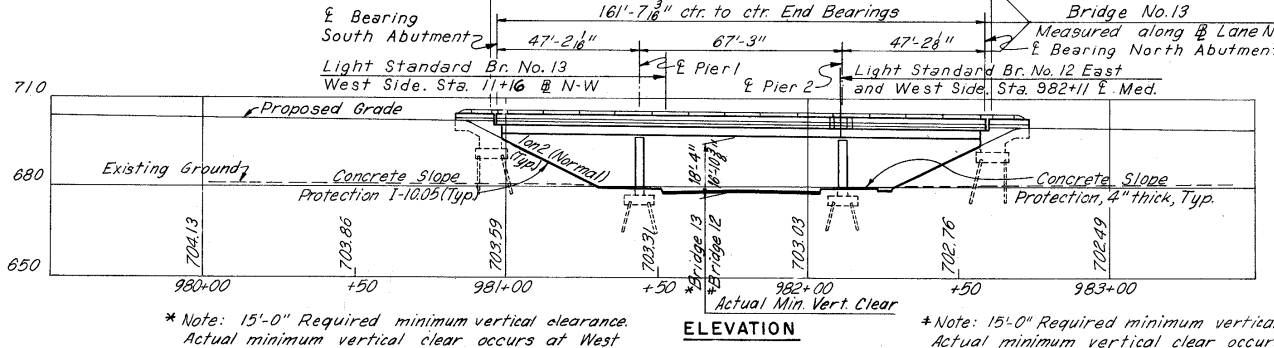
CURVE DATA (@ LANE W-N)

PI = Sta. 31+25.42	P.C.C. = Sta. 32+63.07
Δ = 11° 02' 47" Rt.	PI = Sta. 37+56.79
D = 4° 00' 00"	Δ = 14° 35' 16" Rt.
R = 1432.39'	D = 1° 29' 07.3"
T = 138.51'	R = 3857.39'
L = 276.16'	T = 493.72'
E = 6.68'	L = 952.10'
	E = 31.47'

CURVE DATA (@ I-90)

PI = Sta. 987+41.90
Δ = 20° 47' 15" Rt.
D = 1° 28' 00"
R = 3906.54'
T = 716.55'
L = 1417.34'
E = 65.17'

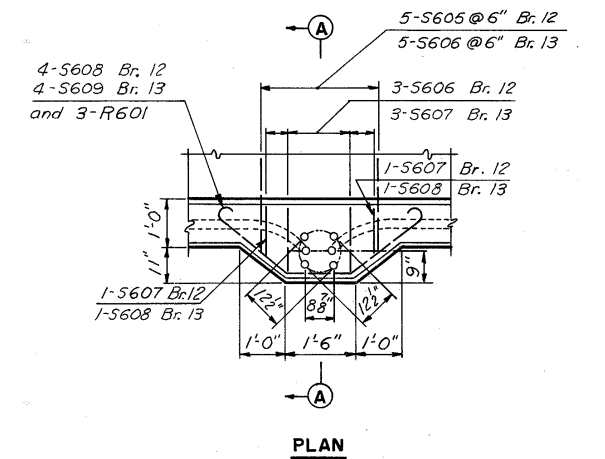
Note: Light Standard Stations shown in the Elevation are approximate. The Light Standard supports are to be located in close proximity to the stations shown, midway between the nearest two handrail posts within whose limits a parapet joint does not occur.



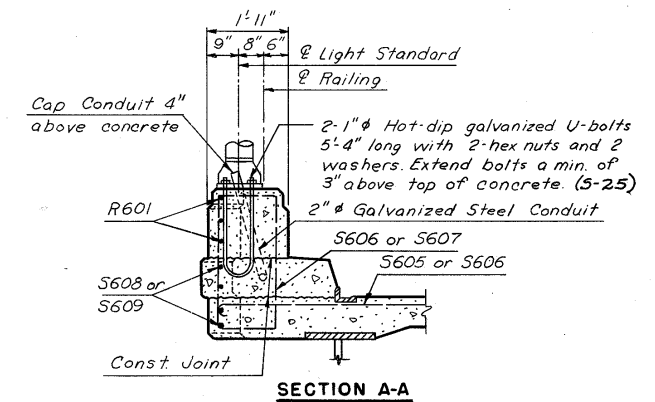
**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81**

MICROFILMED
OCT 27 1982

ESTIMATED QUANTITIES—BRIDGE NO. CUY-90-1433								
ITEM	DESCRIPTION	UNIT	ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL	TOTAL	AS BUILT
E-2	Unclassified Excavation	Cu.Yd.	612	404			1,016	
I-10	Concrete Slope Protection (I-10.05)	Sq.Yd.	1,311				1,311	
S-1	Class "C" Concrete (Superstructure)	Cu.Yd.			723		723	
S-1	Class "C" Concrete (Pier Caps and Columns)	Cu.Yd.		201			201	
S-1	Class "E" Concrete (Stub Abutments Above Footings)	Cu.Yd.	264				264	
S-1	Class "E" Concrete (Pier and Abutment Footings)	Cu.Yd.	198	176			374	
S-3	Waterproofing Premolded Sealing Strip	Lin.Ft.	62				62	
S-4	Reinforcing Steel	Pounds	35,348	59,969	207,113		302,430	
S-7	Structural Steel	Pounds			566,000		566,000	
S-8	Field Painting of Structural Steel, as per proposal note	Pounds			566,000		566,000	
S-9	1" Preformed Expansion Joint Filler	Sq.Ft.	48				48	
S-9	1/2" Preformed Expansion Joint Filler	Sq.Ft.	162				162	
S-14	Railing, (Type A Aluminum Rail Supports and Concrete Parapet)	Lin.Ft.	55.18		324.94		380.12	
S-14	Barrier Railing (Type I-15.11 Double Faced with Galv. Steel Posts and Bolts)	Lin.Ft.			165.5		165.5	
S-17	First Pile Test Load	Lump Sum				Lump Sum	Lump Sum	
S-17	Subsequent pile test load	Each					1	
S-18	12" Cast-in-Place Piles	Lin.Ft.	3,465	11,600			15,065	
S-25	For lighting details and quantities see Sheet 200							
S-29	Porous Backfill	Cu.Yd.	115				115	
S-29	Scuppers, Including Supports	Each			9		9	
S-29	6" Perforated Helical C.M.P. M-6.4(h) including specials	Lin.Ft.	167				167	
S-29	6" Helical C.M.P. M-6.4(h) non-perforated	Lin.Ft.	275				275	
S-101	Water Reducing, Set-Retarding Admixture	Each			723		723	



ESTIMATED QUANTITIES—BRIDGE NO. CUY-90-1433L								
ITEM	DESCRIPTION	UNIT	ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL	TOTAL	AS BUILT
E-2	Unclassified Excavation	Cu.Yd.	234	121			355	
I-10	Concrete Slope Protection (I-10.05)	Sq.Yd.	384				384	
S-1	Class "C" Concrete (Superstructure)	Cu.Yd.			221		221	
S-1	Class "C" Concrete (Pier Caps and Columns)	Cu.Yd.		57			57	
S-1	Class "E" Concrete (Stub Abutments Above Footings)	Cu.Yd.	93				93	
S-1	Class "E" Concrete (Pier and Abutment Footings)	Cu.Yd.	66	54			120	
S-4	Reinforcing Steel	Pounds	13,950	19,118	62,480		95,548	
S-7	Structural Steel	Pounds			180,700		180,700	
S-8	Field Painting of Structural Steel as per proposal note	Pounds			180,700		180,700	
S-9	1/2" Preformed Expansion Joint Filler	Sq.Ft.	48				48	
S-14	Railing (Type A Aluminum Rail Supports and Concrete Parapet)	Lin.Ft.	53.17		326.14		379.31	
S-16	First Test Pile	Lump Sum				Lump Sum	Lump Sum	
S-17	First Pile Test Load	Lump Sum				Lump Sum	Lump Sum	
S-17	Subsequent pile test load	Each					1	
S-18	12" Cast-in-Place Piles	Lin.Ft.	1,440	3,300			4,740	
S-25	For lighting details and quantities see Sheet 200							
S-29	Porous Backfill	Cu.Yd.	31				31	
S-29	Scuppers, Including Supports	Each			3		3	
S-29	6" Perforated Helical C.M.P. M-6.4(h) including Specials	Lin.Ft.	56				56	
S-29	6" Helical C.M.P. M-6.4(h) non-perforated	Lin.Ft.	70				70	
S-101	Water Reducing, Set-Retarding Admixture	Each			221		221	



LIGHT STANDARD SUPPORT

FIRST TEST PILE: Payment will be made for only one first test pile. It may be driven for either the Right or Left bridge.

H.N.T.B. BRIDGE NO. 12 & 13

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

**ESTIMATED QUANTITIES
1-90 & LANE N-W OVER
STARKWEATHER AVE.**

BR NO. CUY-90-1433 STA. 980+97.79
BR NO. CUY-90-1433L STA. 982+63.30
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DATE	DATE	DATE	DATE	DATE

SHEET 342

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

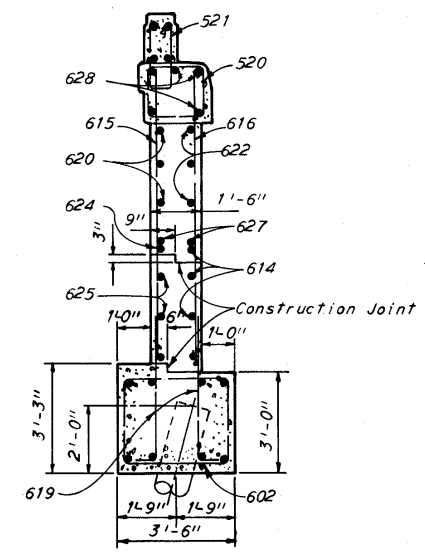
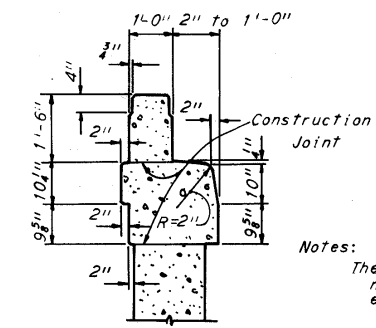
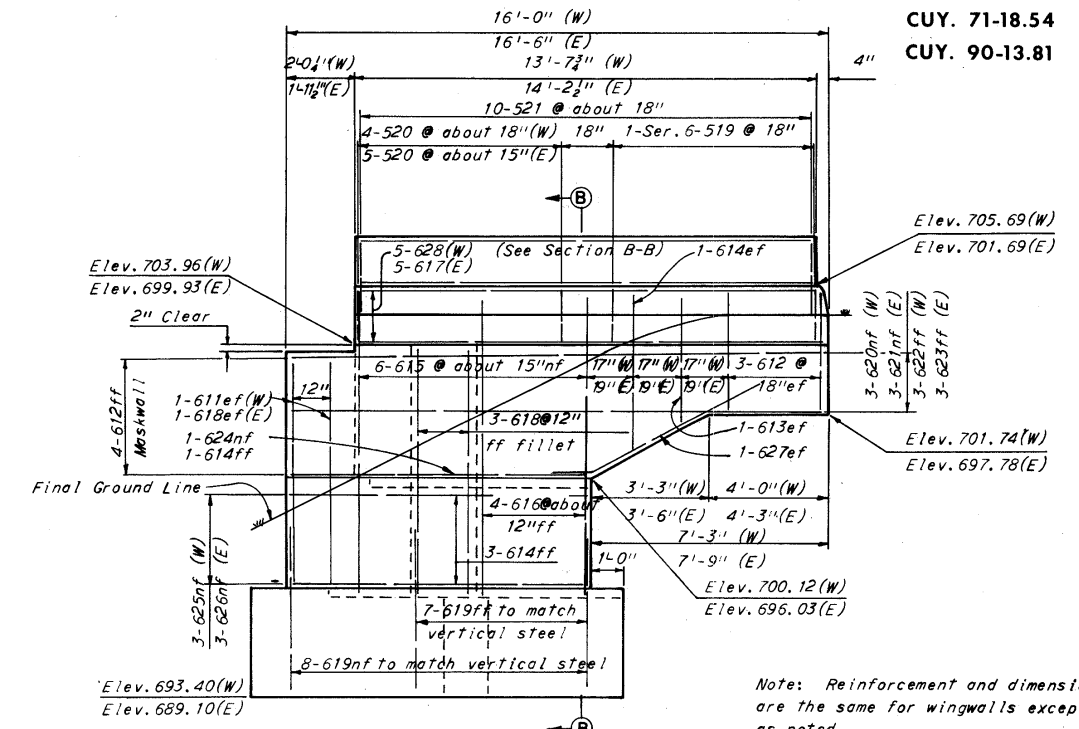
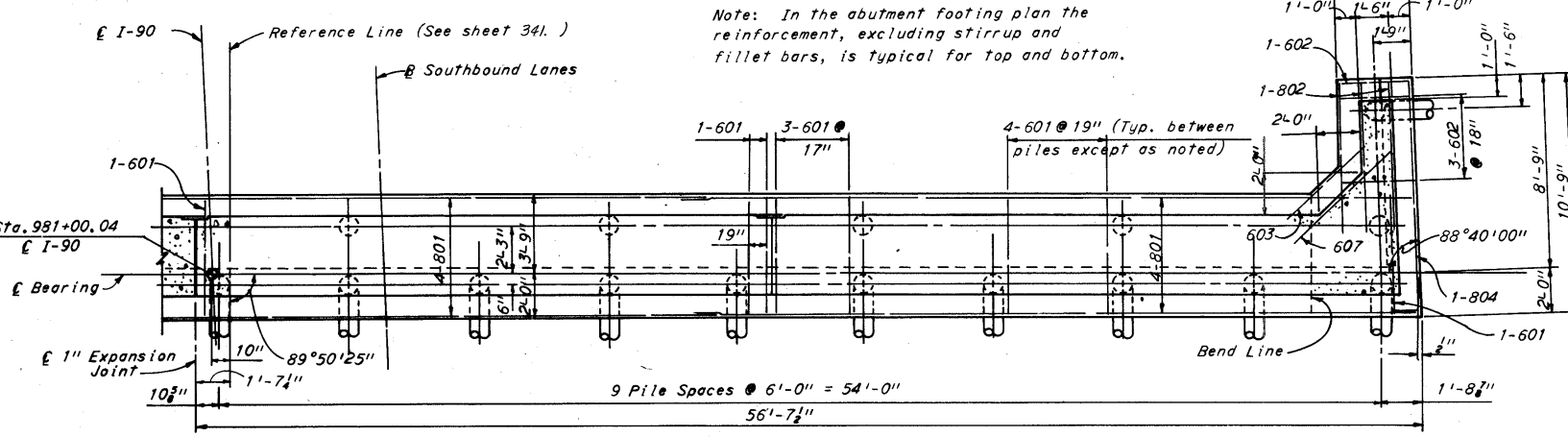
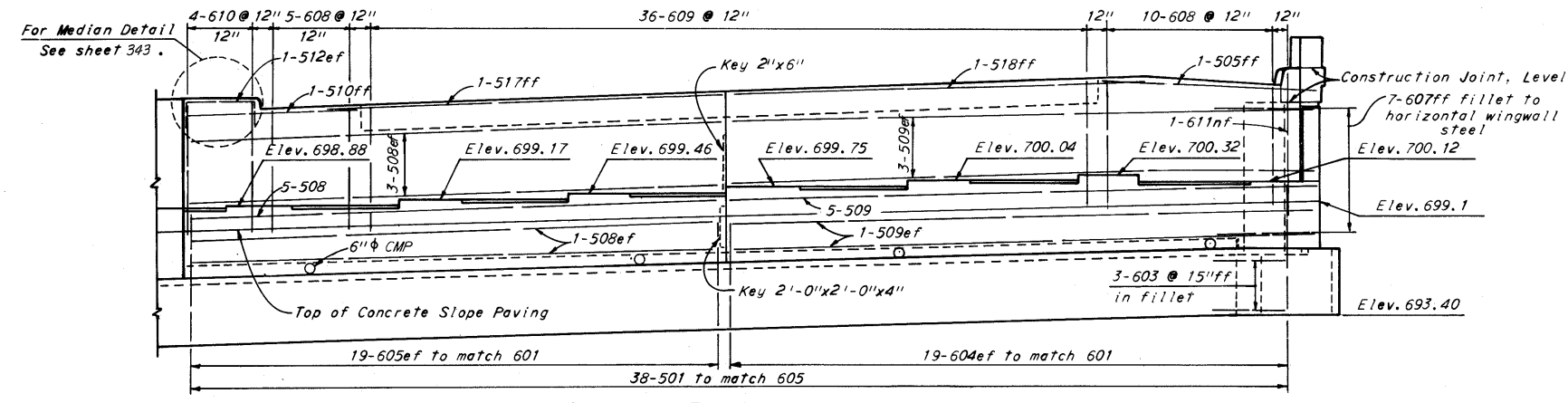
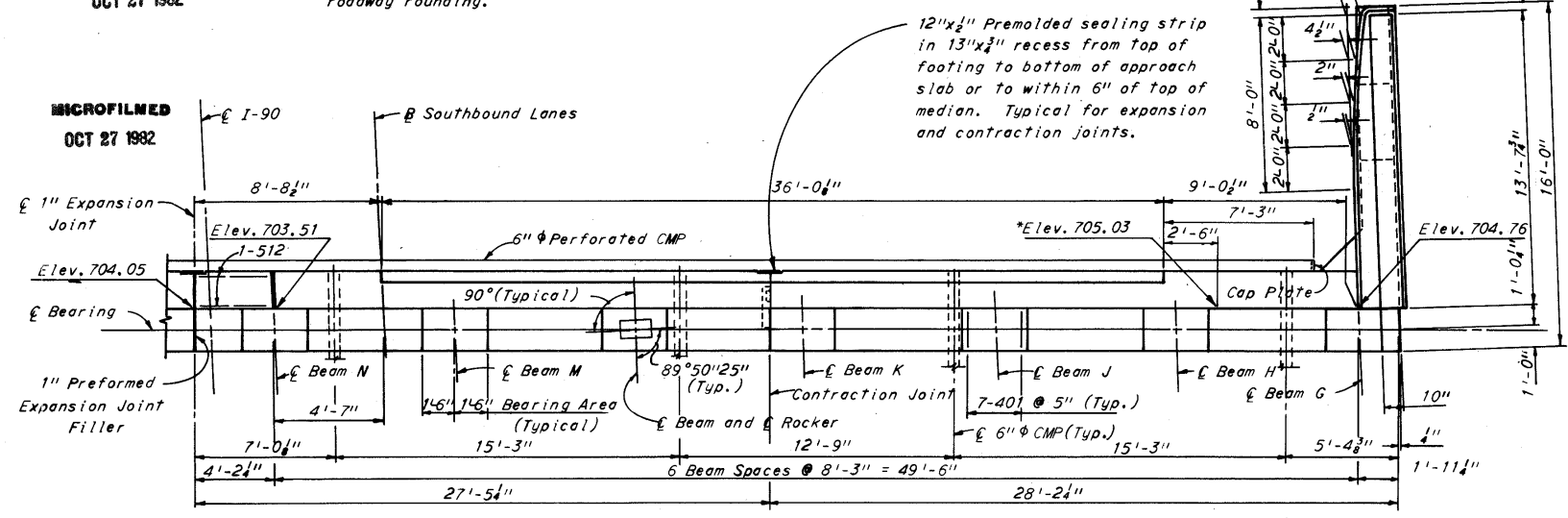
344
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

Note: Elevations along backwall are given to top of 8x4x1 angle of the end dam.
* Elevation is at P.V.I. of 5'-0" roadway rounding.

OCT 27 1982

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OCT 27 1982



Note: Reinforcement and dimensions are the same for wingwalls except as noted.

Notes:
The following abbreviations are used:
nf = near face (W) = West Wingwall
ef = each face (E) = East Wingwall
For railing details see Ohio Standard Drawing AR-1-57.
For railing post spacing and longitudinal reinforcement in the parapets see sheet 353.
For additional notes see sheet 343.

Note:
All reinforcing bar marks shall be prefixed AS.

H.N.T.B. BRS. NO. 12 & 13
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SOUTH ABUTMENT - BR. NO. 12
I-90 & LANE N-W OVER STARKWEATHER AVE.
BR. NO. CUY- 90-1433 STA. 980+97.79
BR. NO. CUY- 90-1433L STA. 982+63.30

CLEVELAND	CUYAHOGA COUNTY	OHIO
DRAWN RJB	TRACED	CHECKED R/S
DATE 6-24-64	DATE	DATE 8-31-64
	REVIEWED	REVISOR
		DATE

SHEET 344

MICROFILMED
OCT 27 1982

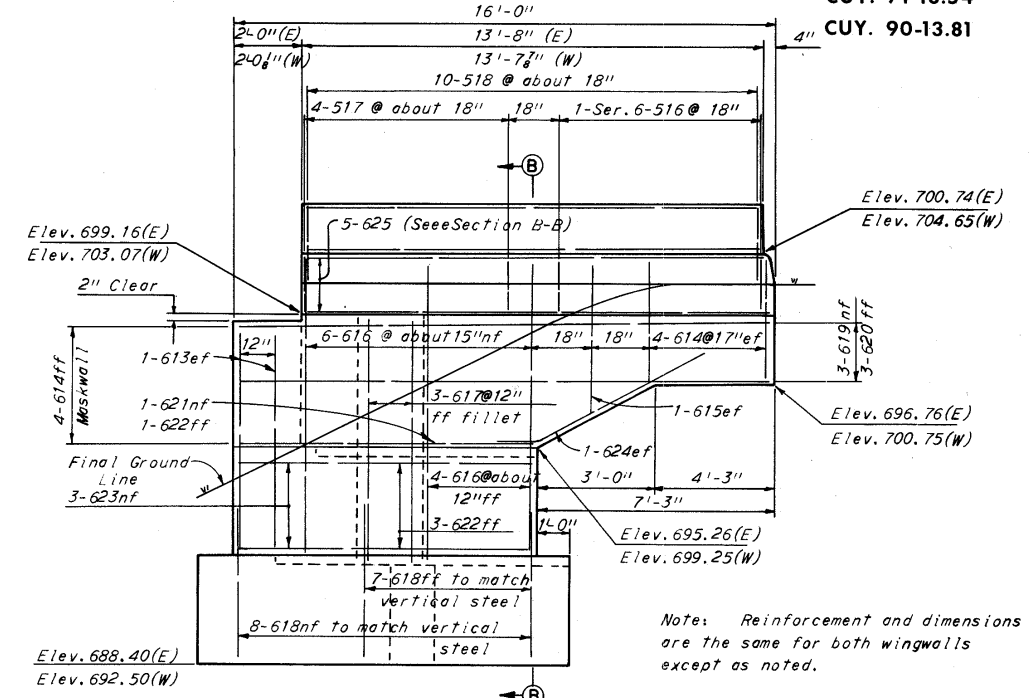
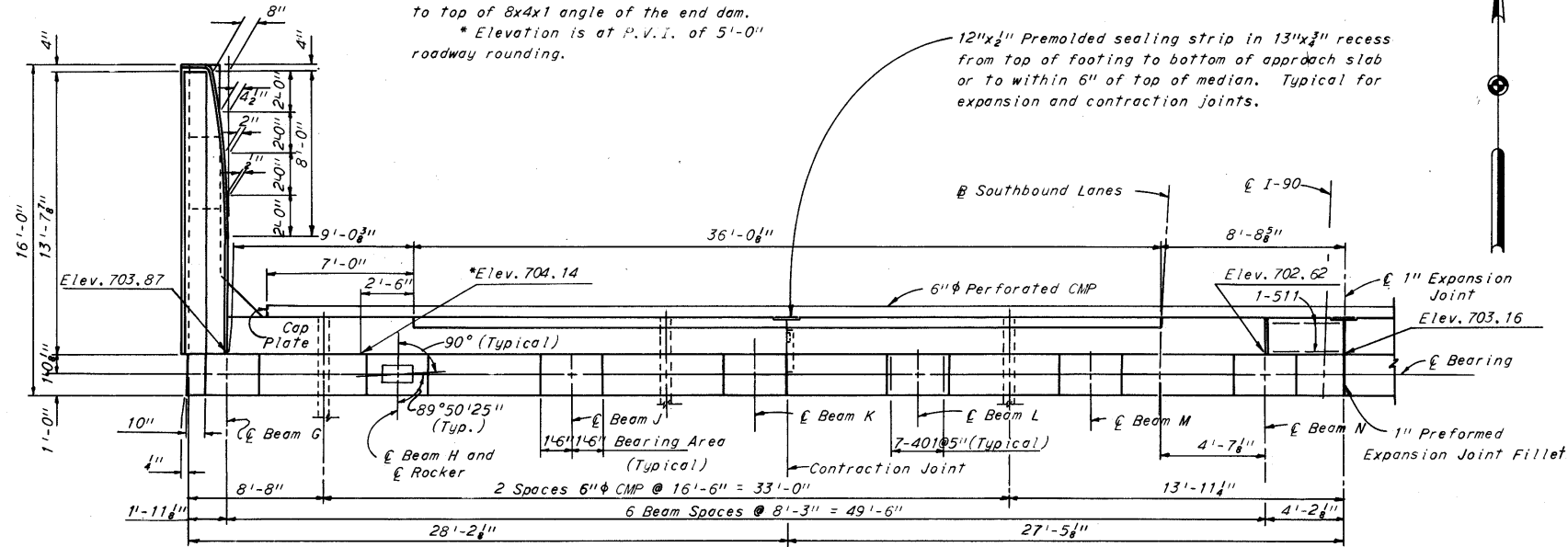
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

345
478

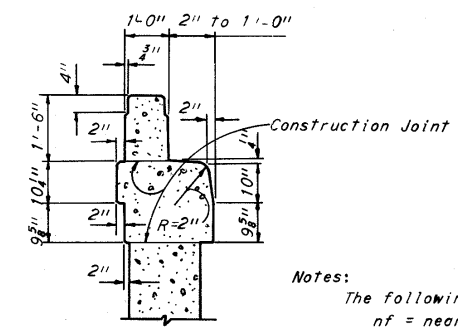
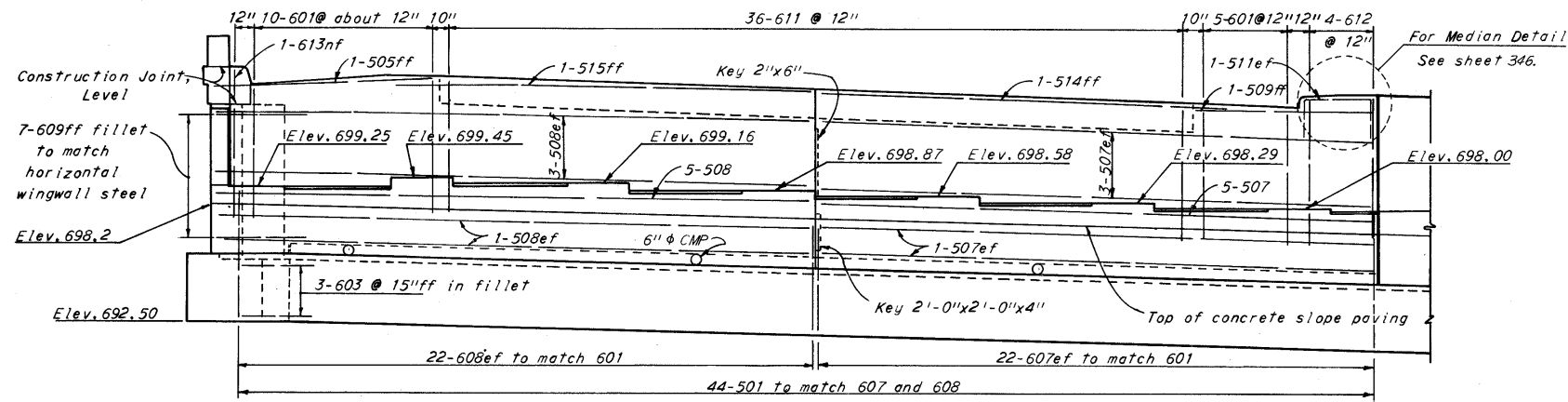
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

Note:
Elevations along backwall are given to top of 8x4x1 angle of the end dam.
* Elevation is at P.V.I. of 5'-0" roadway rounding.

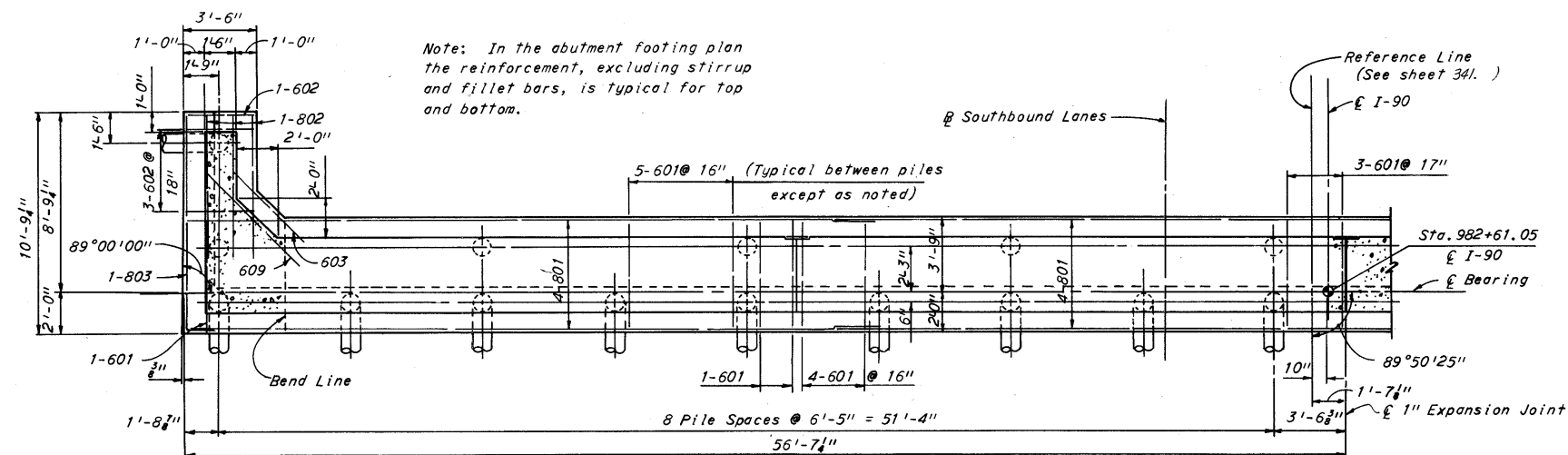
12"x $\frac{1}{2}$ " Premolded sealing strip in 13"x $\frac{3}{4}$ " recess from top of footing to bottom of approach slab or to within 6" of top of median. Typical for expansion and contraction joints.



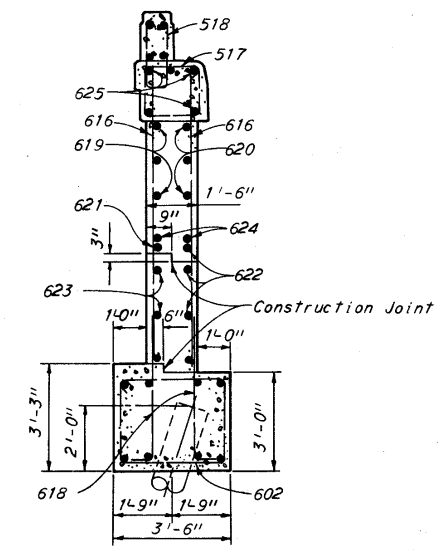
Note: Reinforcement and dimensions are the same for both wingwalls except as noted.



Notes:
The following abbreviations are used:
nf = near face ff = far face
ef = each face (W) = West Wingwall (E) = East Wingwall
For railing details see Ohio Standard Drawing AR-1-57.
For longitudinal reinforcement in the parapets and railing post spacing see sheet 353.
For additional notes see sheet 343.



Note: In the abutment footing plan the reinforcement, excluding stirrup and fillet bars, is typical for top and bottom.



Note:
All reinforcing bar marks shall be prefixed AN.

H.N.T.B. BRS. NO. 12 & 13			
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK			
NORTH ABUTMENT - BR. NO. 12			
I-90 & LANE N-W OVER STARKWEATHER AVE.			
BR. NO. CUY- 90-1433	STA. 980+97.79		
BR. NO. CUY- 90-1433L	STA. 982+63.30		
CLEVELAND	CUYAHOGA COUNTY	OHIO	
DRAWN	TRACED	CHECKED	REVIEWED
DATE 6-24-64	DATE	DATE 8-31-64	DATE
			REVISED
			SHEET 345

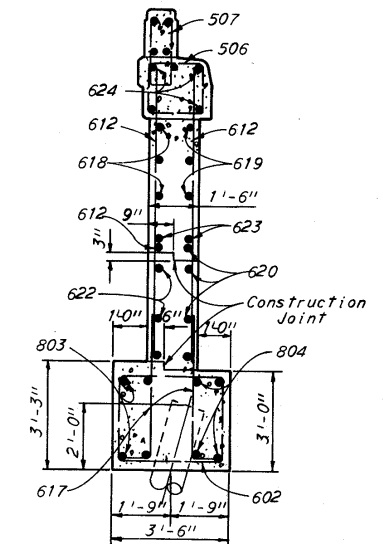
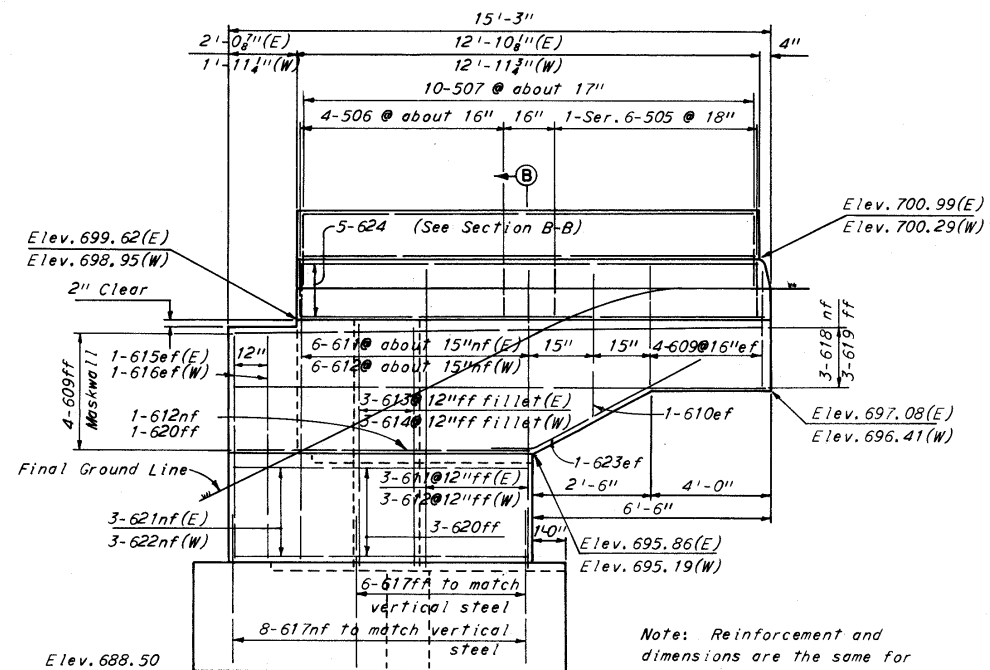
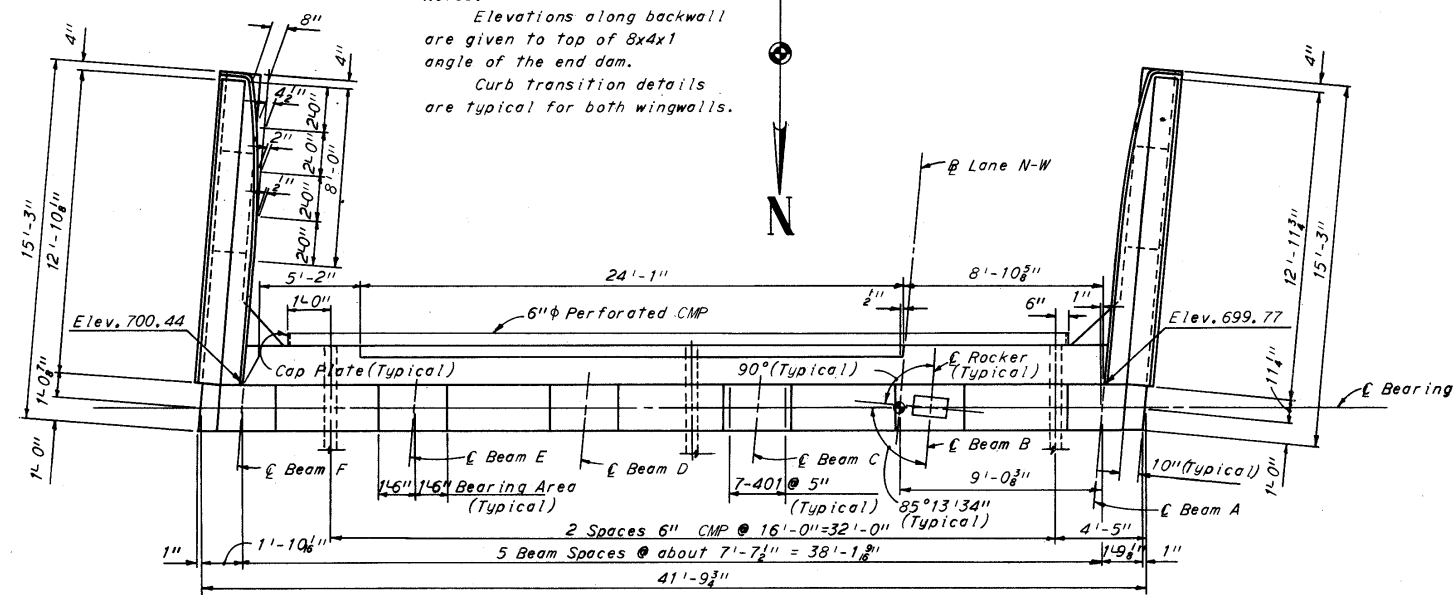
MICROFILMED
OCT 27 1982

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

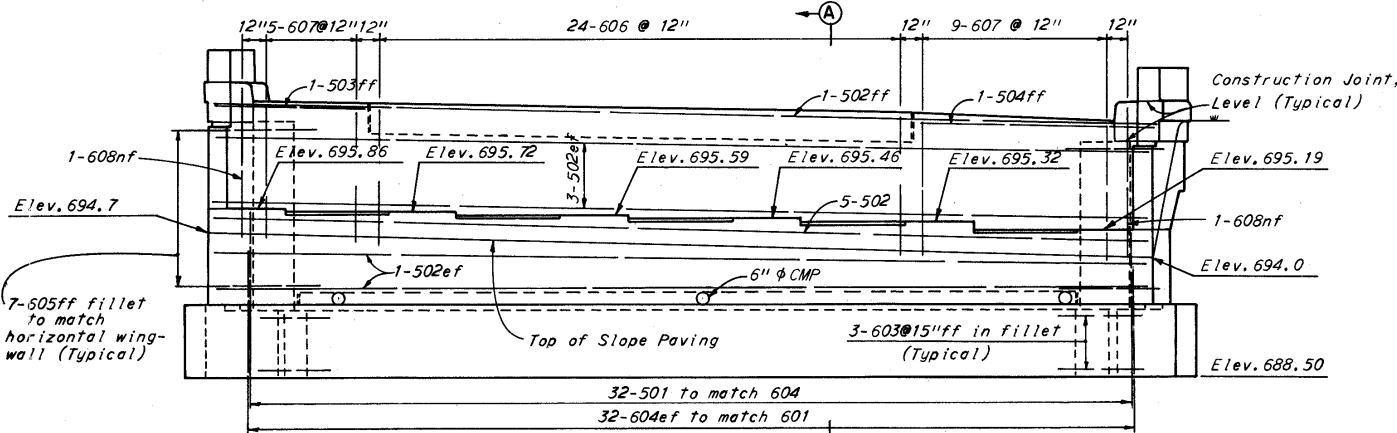
347
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

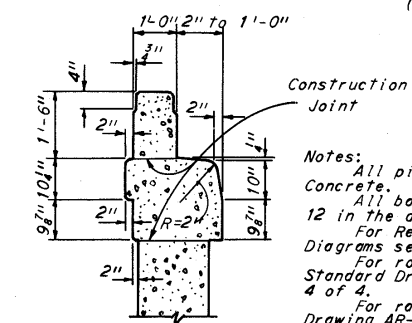
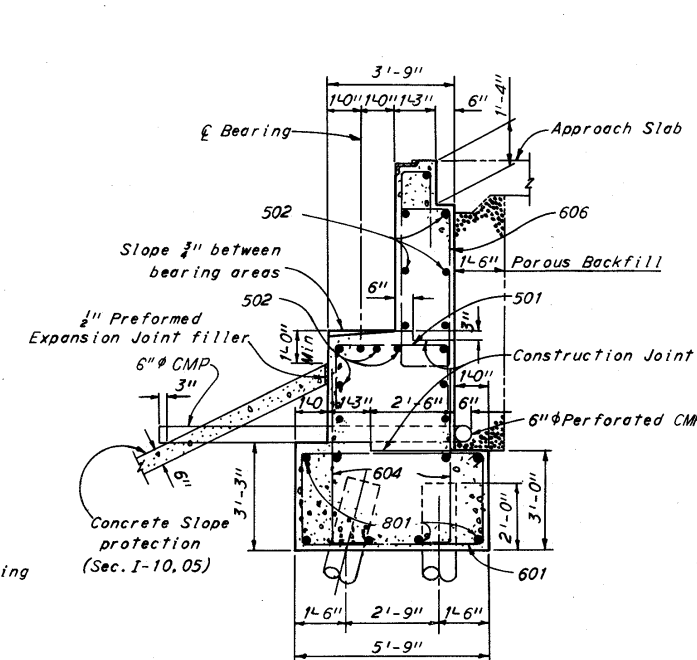
Notes:
Elevations along backwall
are given to top of 8x4x1
angle of the end dam.
Curb transition details
are typical for both wingwalls.



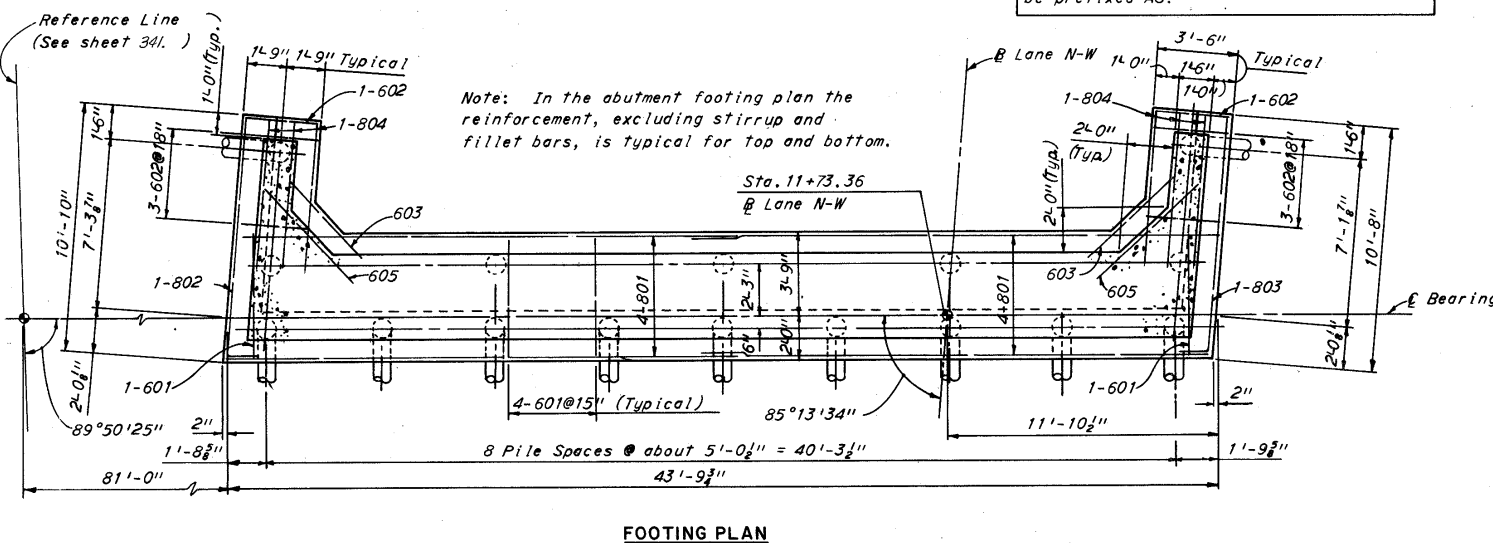
Note: Reinforcement and
dimensions are the same for
both wingwalls except as noted.



Note:
All reinforcing bar marks shall
be prefixed AS.



Notes:
All piles shall be 12" ϕ C.I.P. Reinforced
Concrete.
All battered piles shall be inclined 3 in
12 in the direction shown.
For Reinforcement Schedule and Bending
Diagrams see sheet 355.
For roadway end dam details see Ohio
Standard Drawing SD-1-63, sheet 2 of 4 and
4 of 4.
For railing details see Ohio Standard
Drawing AR-1-57.
For longitudinal reinforcement in the
parapets and railing post spacing see sheet 353.
The following abbreviations are used:
nf = near face ff = far face
ef = each face (W) = West Wingwall
(E) = East Wingwall



Note: In the abutment footing plan the
reinforcement, excluding stirrup and
fillet bars, is typical for top and bottom.

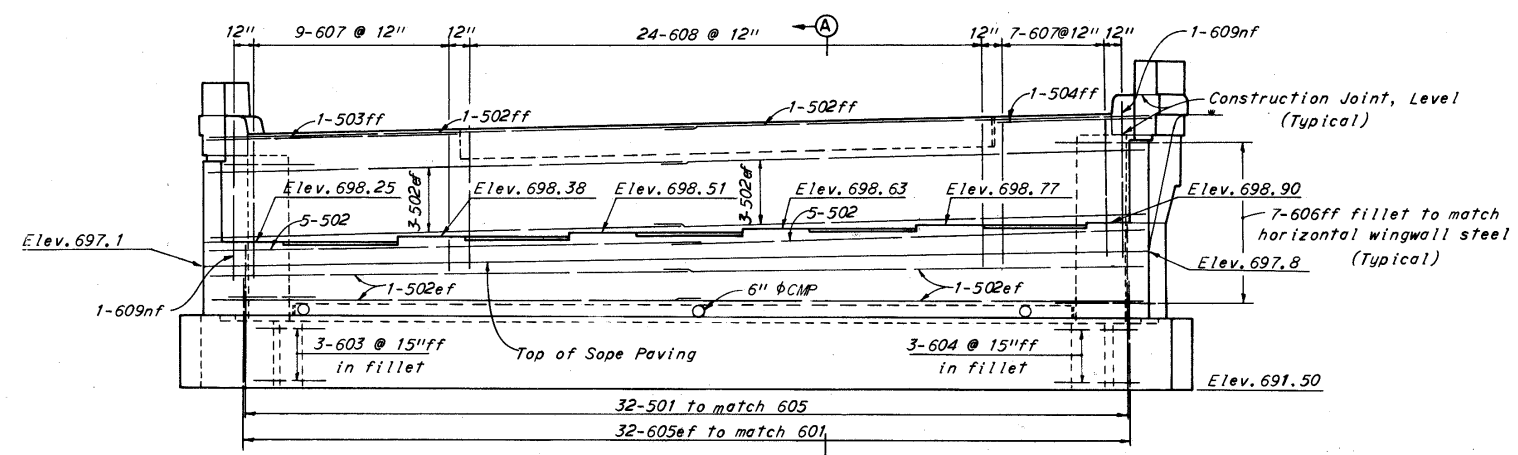
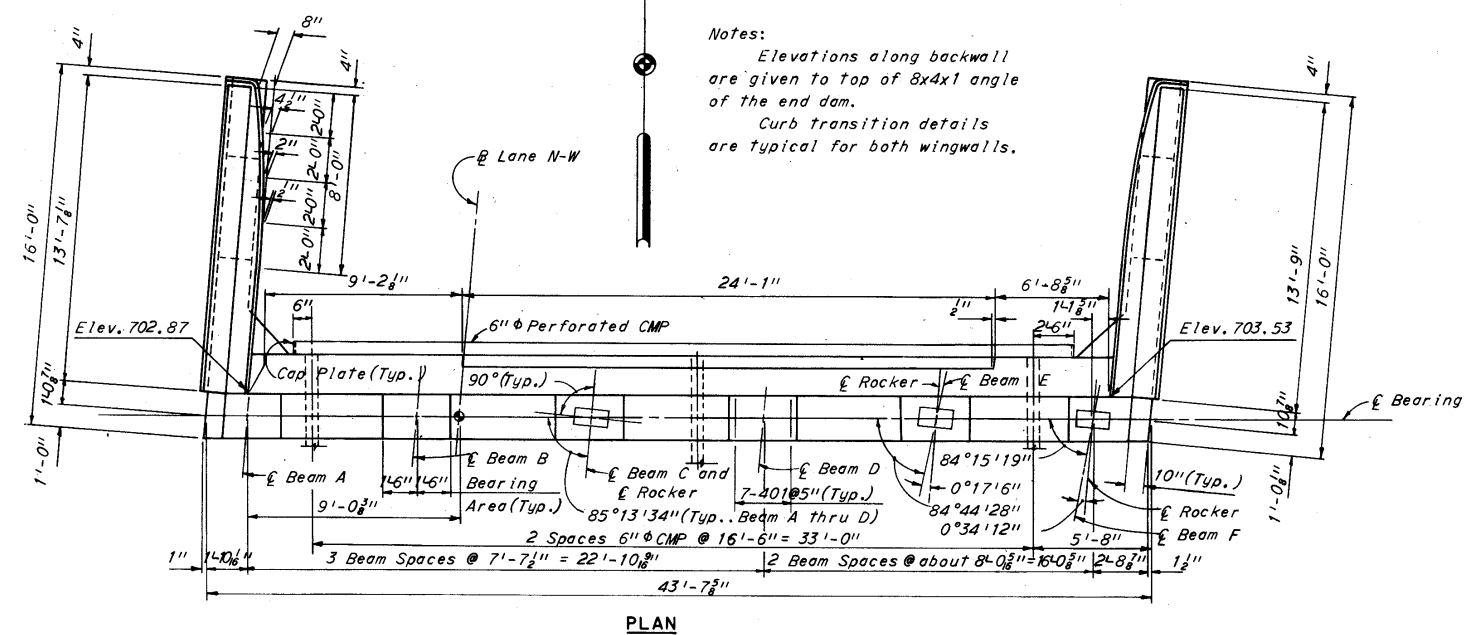
H.N.T.B. BRS. NO. 12 & 13		
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK		
SOUTH ABUTMENT - BR. NO. 13		
I-90 & LANE N-W OVER STARKWEATHER AVE.		
BR. NO. CUY- 90-1433	STA. 980+97.79	
BR. NO. CUY- 90-1433L	STA. 982+63.30	
CLEVELAND	CUYAHOGA COUNTY	OHIO
DATE 6-29-64	DATE 8-31-64	DATE
DRAWN: JAB	TRACED	CHECKED: SD
DATE	DATE	REVIEWED
		DATE
		SHEET 347

MICROFILMED
OCT 27 1982

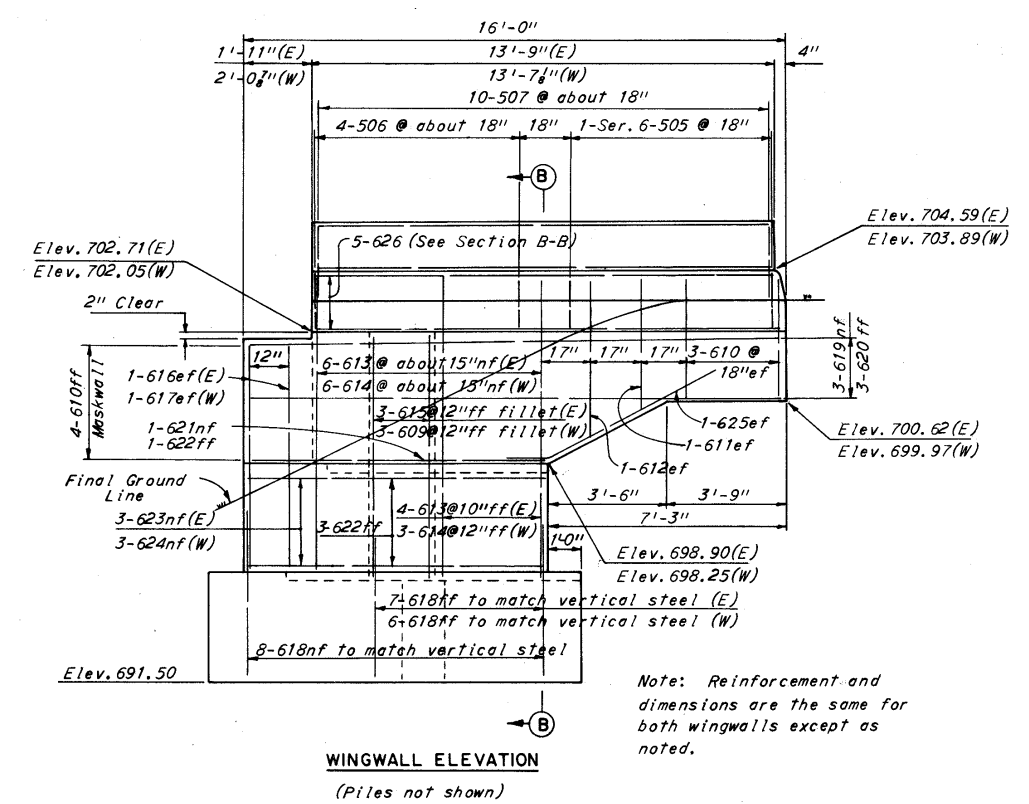
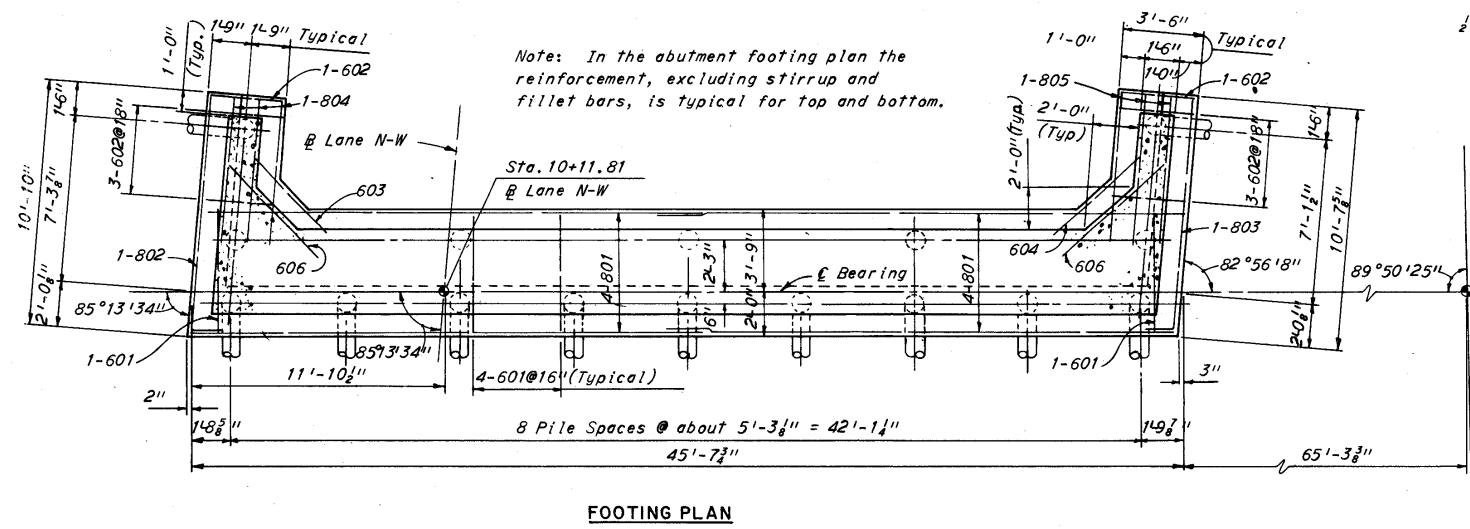
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

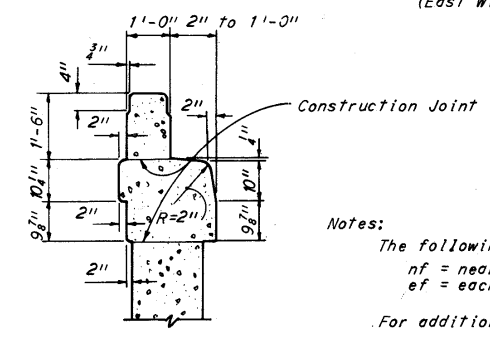
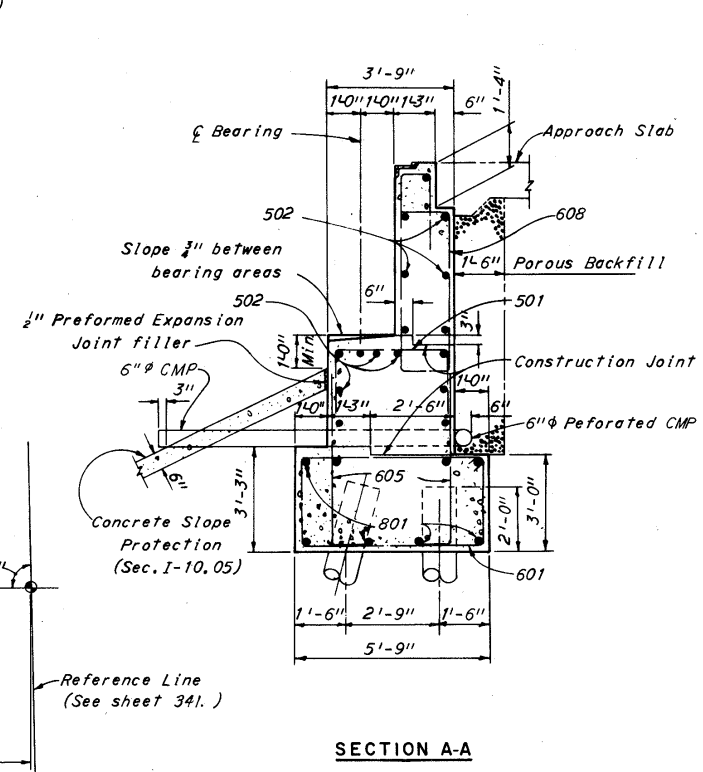
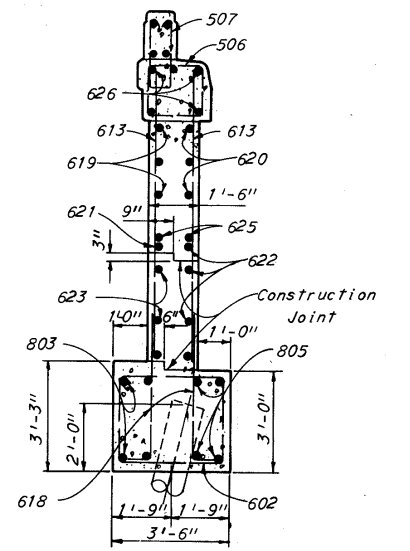
Notes:
Elevations along backwall are given to top of 8x4x1 angle of the end dam.
Curb transition details are typical for both wingwalls.



Note: All reinforcing bar marks shall be prefixed AN.



Note: Reinforcement and dimensions are the same for both wingwalls except as noted.



Notes:
The following abbreviations are used:
nf = near face ff = far face
ef = each face (W) = West Wingwall (E) = East Wingwall.
For additional notes see sheet 348.

H.N.T.B. BRS. NO. 12 & 13

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

NORTH ABUTMENT - BR. NO. 13

I-90 & LANE N-W OVER STARKWEATHER AVE.
BR. NO. CUY- 90-1433 STA. 980+97.79
BR. NO. CUY- 90-1433L STA. 982+63.30

CLEVELAND	CUYAHOGA COUNTY	OHIO
DRAWN 118	TRACED	CHECKED 230
DATE 6-24-66	DATE	DATE 8-31-69
		REVIEWED
		REVISION

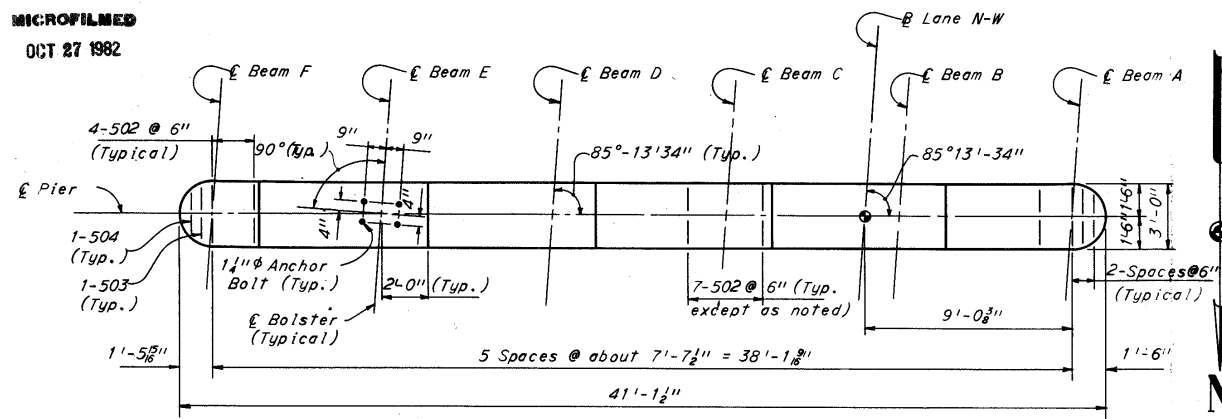
SHEET 348

MICROFILMED
OCT 27 1982

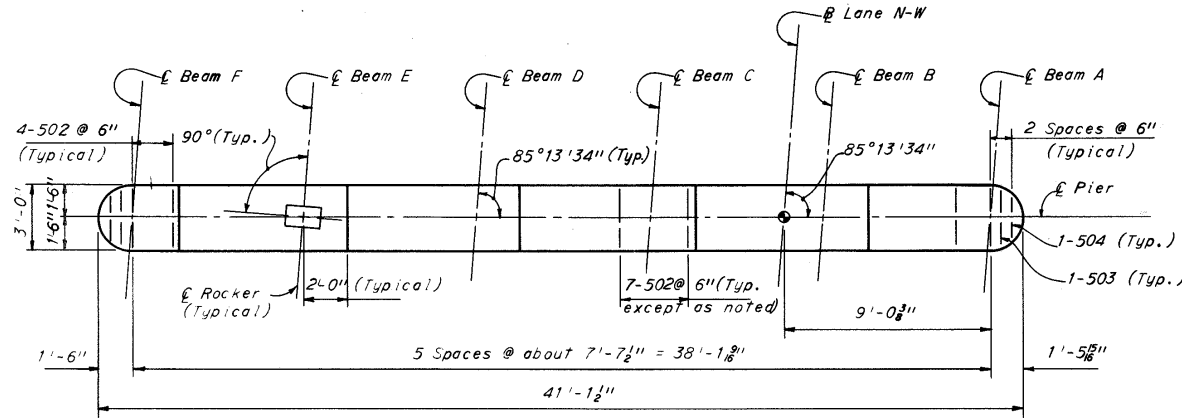
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



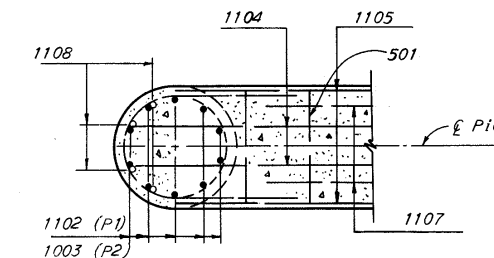
PLAN



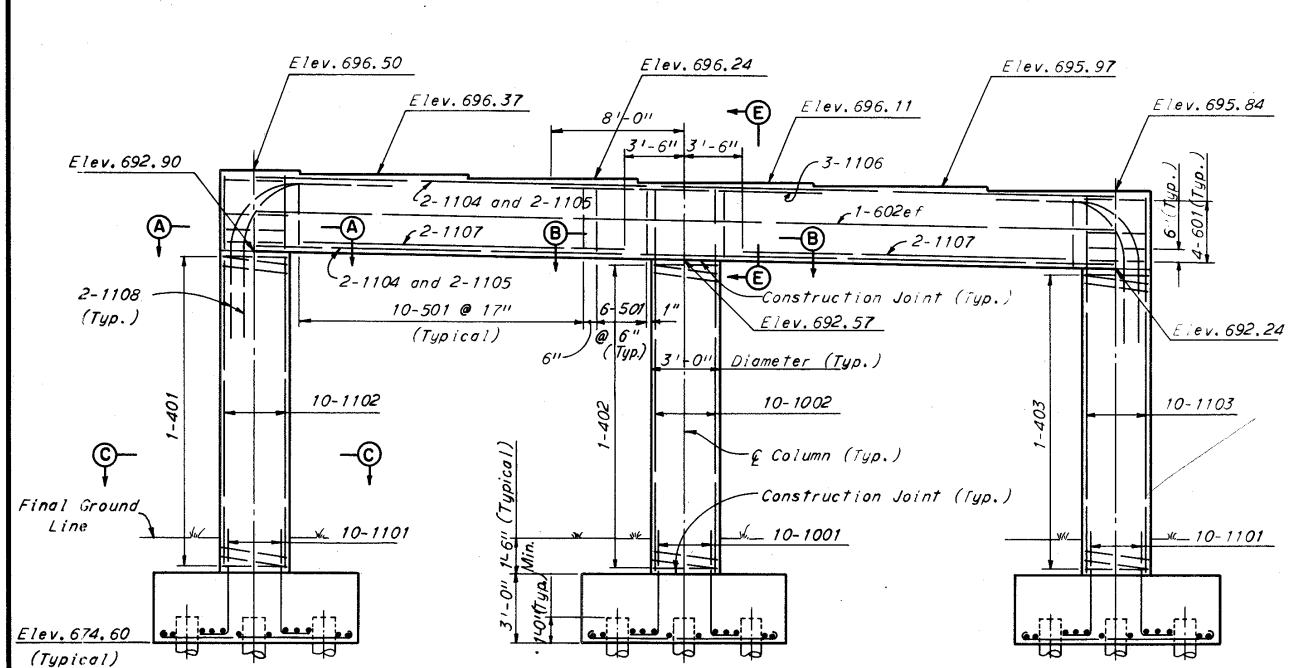
PLAN

Note:
Special care shall be taken when placing reinforcing steel so as not to interfere with anchor bolt setting.

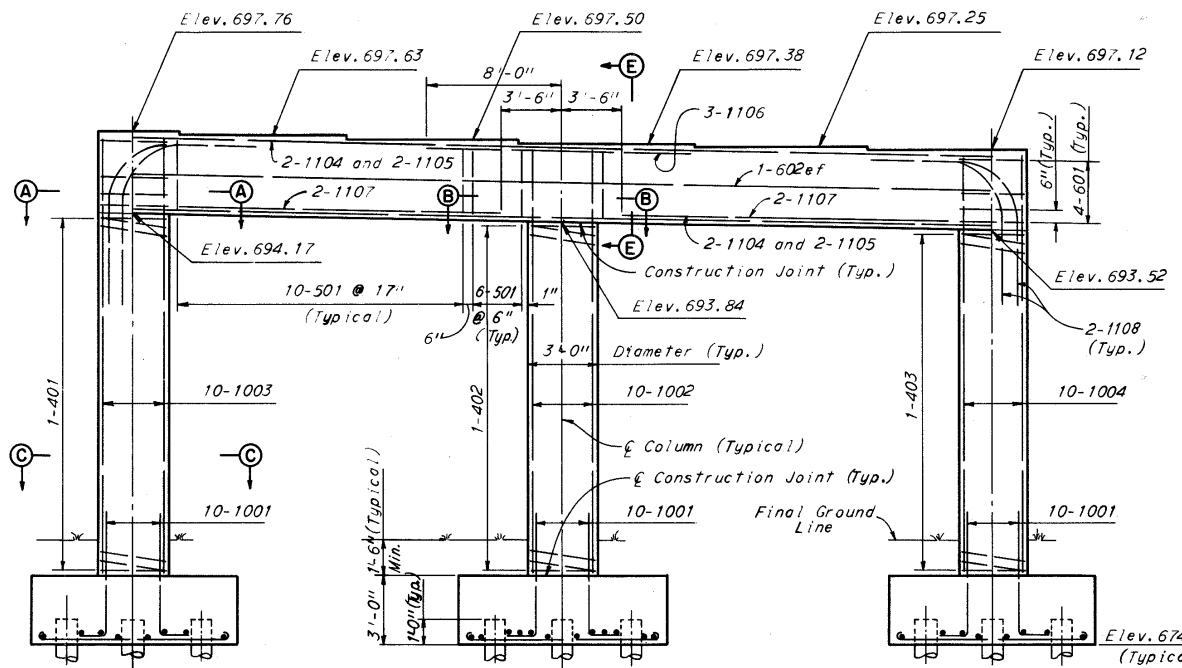
Note:
All reinforcing bar marks shall be prefixed as follows:
Pier 1 = PA Pier 2 = PB



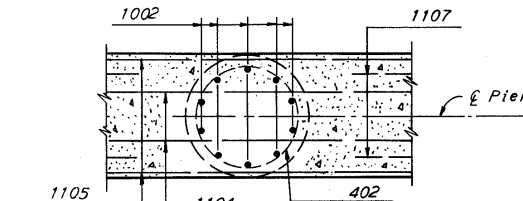
SECTION A-A



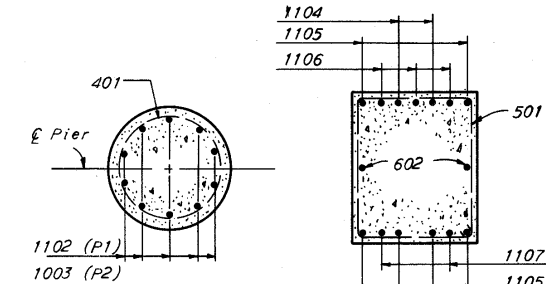
ELEVATION



ELEVATION



SECTION B-B

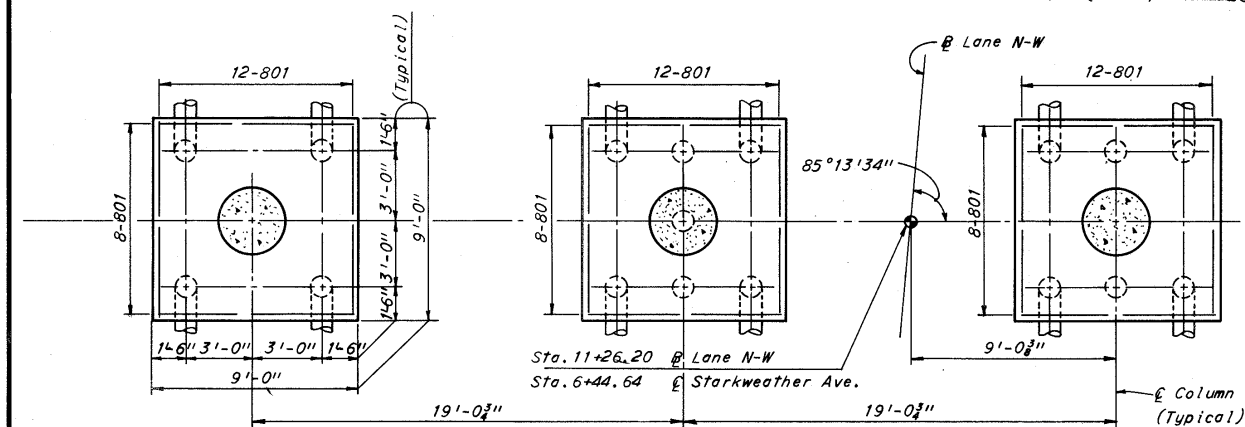


SECTION C-C

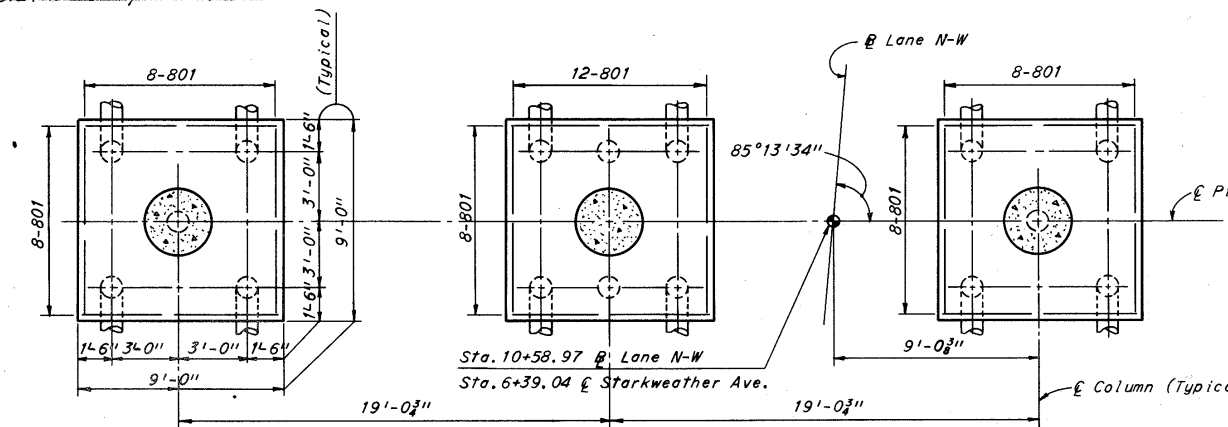
SECTION E-E

STRUCTURE GROUND (per sht. 194)
encased in west column of pier 1.

Notes:
All piles are 12" ϕ C.I.P reinforced concrete.
All battered piles shall be inclined 3 in 12 in direction shown.
Pile layout dimensions are measured along bottom of footing.
For Reinforcement Schedule and Bending Diagrams see sheet 355.
For Anchor bolt details see Ohio Standard Drawing RB-1-55.
The following abbreviations are used:
ef = each face
P1 = Pier 1
P2 = Pier 2



FOOTING PLAN
PIER 1



FOOTING PLAN
PIER 2

H.N.T.B. BRS. NO. 12 & 13			
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK			
PIERS - BR. NO. 13			
I-90 & LANE N-W OVER STARKWEATHER AVE.			
BR. NO. CUY- 90-1433		STA. 980+97.79	
BR. NO. CUY- 90-1433L		STA. 982+63.30	
CLEVELAND	CUYAHOGA COUNTY	OHIO	
DRAWN RSD	TRACED	CHECKED J.M.	REVIEWED
DATE 4-6-64	DATE	DATE	DATE
		SHEET 350	

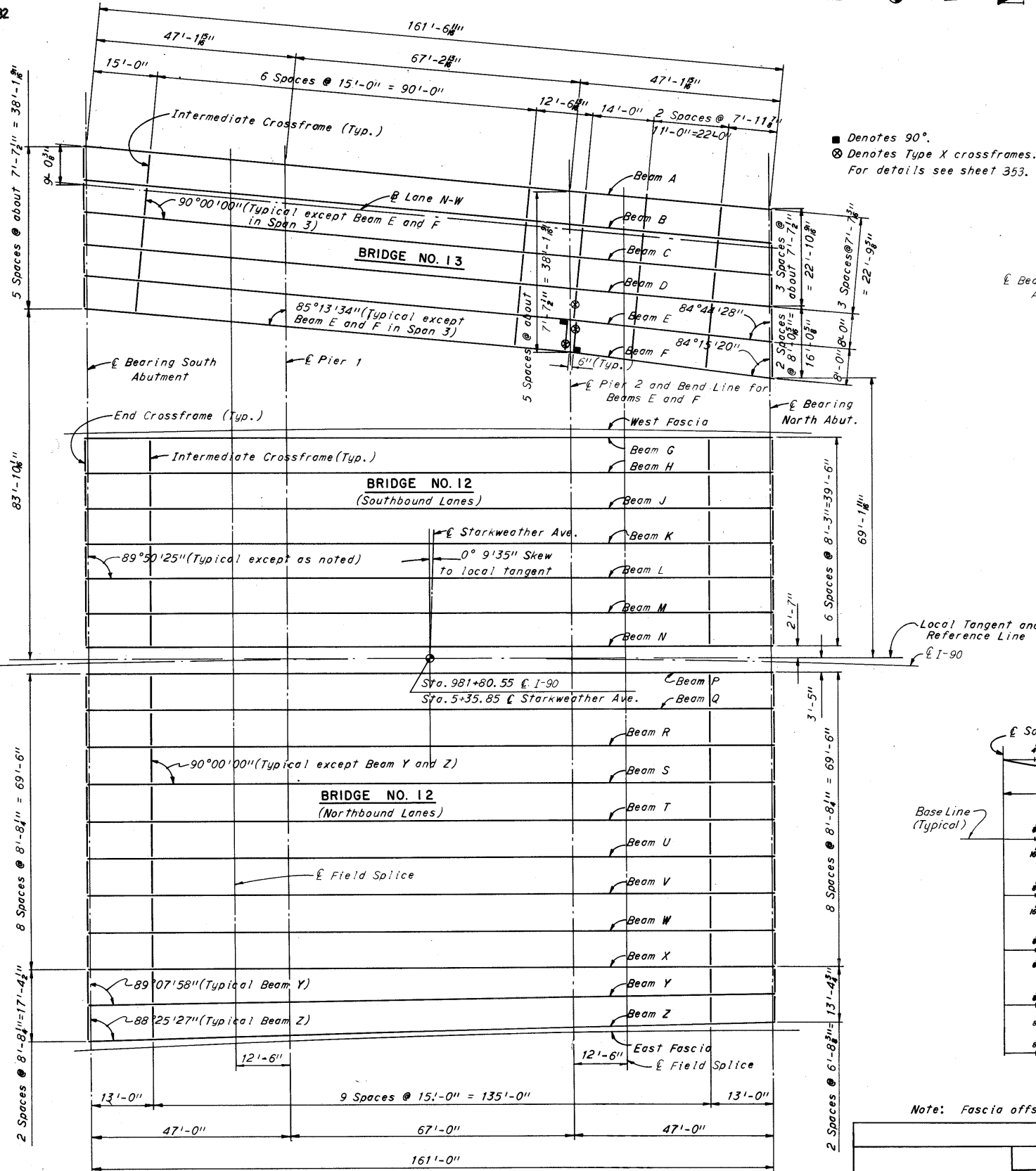
MICROFILMED
OCT 27 1982

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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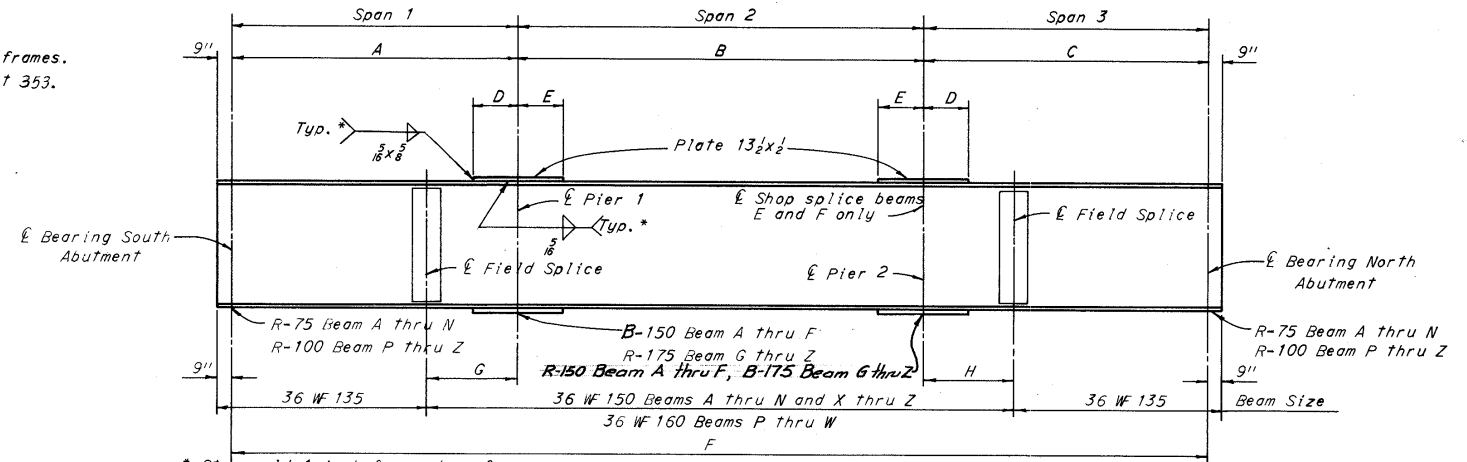
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

Note:
Cover plate lengths and sizes shown are typical top and bottom. Cover plate at bend points of beams E and F shall be fabricated from a single wide plate.



FRAMING PLAN

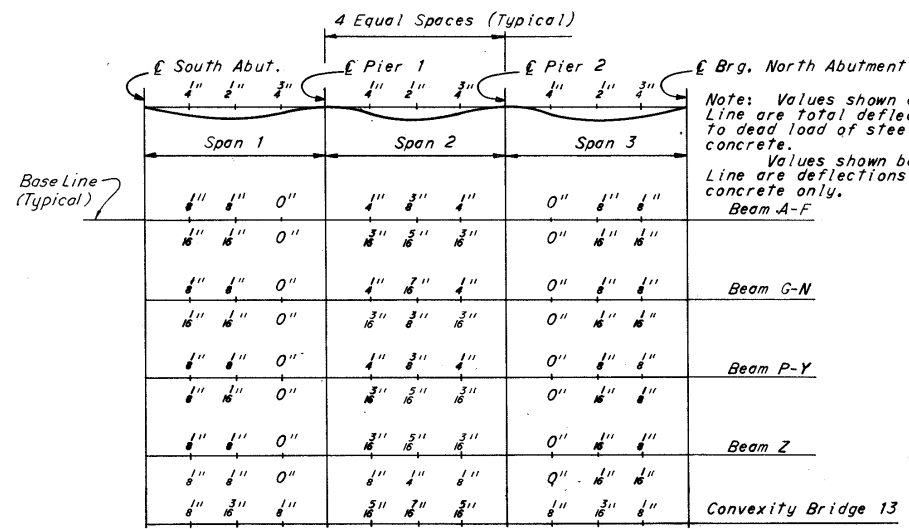
* Top of West Edge of Median Opening (See sheet T-352)



BEAM ELEVATION

* Shop weld 1 inch from edge of beam and 1 inch from end of plate.

Beam	A	B	C	D	E	F	G	H
A thru D	47'-1 1/8"	67'-2 3/8"	47'-1 1/8"	8'-6"	7'-0"	161'-6 1/8"	12'-6 1/2"	12'-6 1/2"
E	47'-1 1/8"	67'-2 3/8"	47'-2 3/8"	8'-6"	7'-0"	161'-7 3/8"	12'-6 1/2"	12'-6 1/2"
F	47'-1 1/8"	67'-2 3/8"	47'-2 3/8"	8'-6"	7'-0"	161'-7 3/8"	12'-6 1/2"	12'-6 1/2"
G thru X	47'-0"	67'-0"	47'-0"	10'-0"	8'-0"	161'-0"	12'-6"	12'-6"
Y	47'-0 1/2"	67'-0 1/2"	47'-0 1/2"	9'-6"	8'-0"	161'-0 3/8"	12'-6"	12'-6"
Z	47'-0 1/2"	67'-0 1/2"	47'-0 1/2"	9'-6"	8'-0"	161'-0 3/8"	12'-6"	12'-6"



DEAD LOAD DEFLECTION AND CONVEXITY DIAGRAM

Note: Fascia offsets are measured perpendicularly from E Beam to the outside face of the deck.

	Span 1			Span 2			Span 3						
	E Brg.	1	2	E P1	1	2	E P2	1	2	E Brg.			
West Fascia to Beam G	2'-1 1/4"	2'-3 3/8"	2'-6 1/4"	2'-8"	2'-9 3/8"	2'-10 3/8"	2'-11"	2'-10 3/8"	2'-9 1/4"	2'-7 3/8"	2'-6 1/4"	2'-3 3/8"	2'-1 1/4"
* to Beam N	4'-1 3/8"	3'-4 10/8"	3'-8 1/2"	3'-6 5/8"	3'-5 1/4"	3'-3 3/8"	3'-3 1/2"	3'-3 3/8"	3'-5 1/4"	3'-6 5/8"	3'-8 1/2"	3'-4 10/8"	4'-1 3/8"
East Fascia to Beam Z	2'-5 5/8"	2'-2 3/8"	2'-0 1/2"	1'-10 3/8"	1'-9 1/4"	1'-7 3/8"	1'-7 1/4"	1'-7 1/2"	1'-8 3/8"	1'-4 10/8"	2'-0"	2'-2 3/8"	2'-5"

CAMBER NOTE

The beams in Span 2 of Bridge 13 shall be cambered an amount equal to the sum of the total dead load deflection and convexity. The beams in Spans 1 and 3 of Bridge 13 and all beams of Bridge 12 do not require camber but shall be fabricated so that any curved beam will be placed with the convex flange up.

Notes:
The shop splice for beams E and F shall be made in accordance with the procedure as outlined in Ohio Standard Drawing SD-1-63, Sheet 1 of 4.
For details of Field Splices see sheet 363. For further notes see sheet 352.

H.N.T.B. BRS. NO. 12 & 13

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

FRAMING PLAN

I-90 & LANE N-W OVER STARKWEATHER AVE.
BR. NO. CUY- 90-1433 STA. 980+97.79
BR. NO. CUY- 90-1433L STA. 982+63.30

CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN T.K.H.	TRACED DATE	CHECKED L.P.P.	REVIEWED DATE	REVISED DATE
3-30-64		4-15-64		

SHEET 351

MICROFILMED
OCT 27 1982

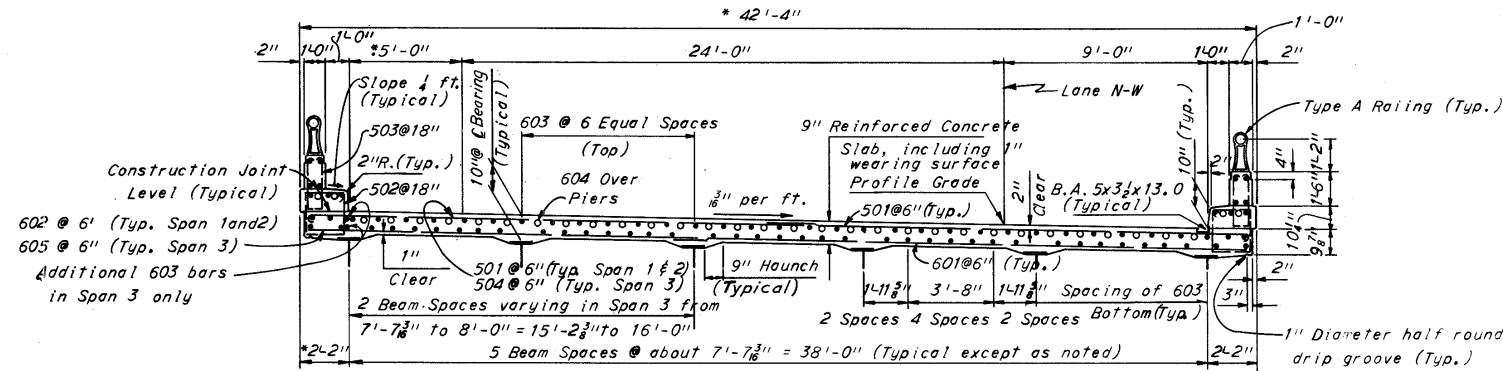
* For Span 3, dimensions vary and spacing of 603 bars top and bottom varies to suit beam space change.

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

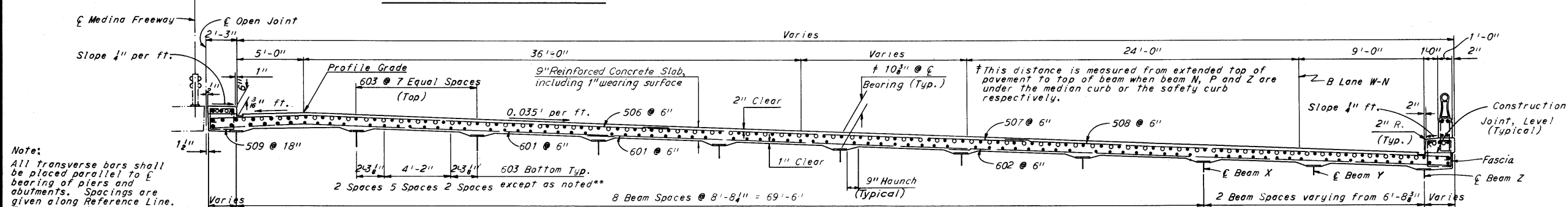
Note: To obtain top of beam elevations at supports, exclusive of cover plates, deduct 0.83' from respective top of pavement elevation. (Typical Bridge 13)



TYPICAL CROSS SECTION BR. 13

Beam	Span 1				Span 2				Span 3				Beam	
	€ Brg. South A.	1/4	1/2	3/4	€ P-1	1/4	1/2	3/4	€ P-2	1/4	1/2	3/4		€ Brg. North A.
A	699.79	700.07	700.35	700.61	700.86	701.21	701.54	701.85	702.14	702.33	702.52	702.69	702.86	A
B	699.93	700.21	700.48	700.74	701.00	701.34	701.67	701.98	702.27	702.46	702.64	702.82	702.98	B
C	700.06	700.34	700.61	700.88	701.13	701.47	701.80	702.11	702.40	702.59	702.77	702.95	703.11	C
D	700.20	700.48	700.75	701.01	701.26	701.60	701.93	702.24	702.53	702.72	702.90	702.07	703.24	D
E	700.33	700.61	700.88	701.14	701.39	701.74	702.06	702.37	702.66	702.85	703.03	703.21	703.37	E
F	700.46	700.74	701.01	701.27	701.52	701.87	702.19	702.50	702.78	702.98	703.16	703.34	703.51	F

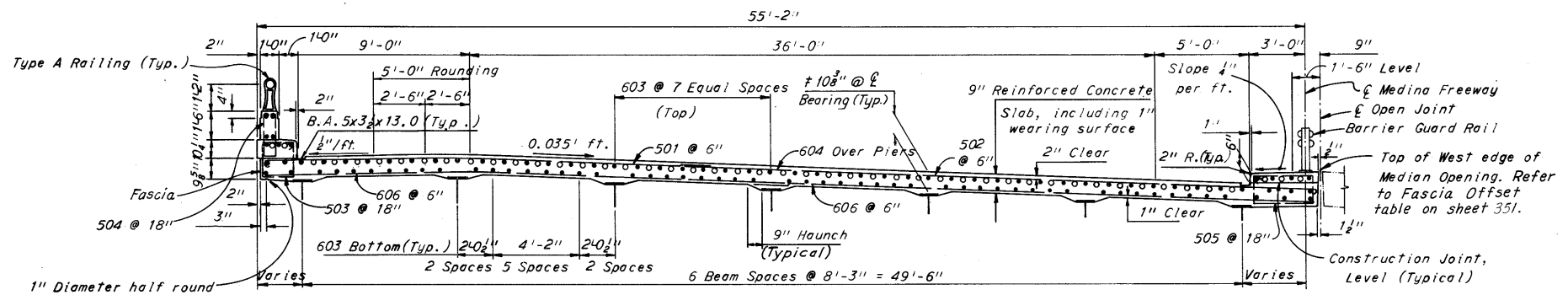
** Note: Spacing of 605 bars top and bottom varies between beams X-Z in accordance with changes of beam spaces.



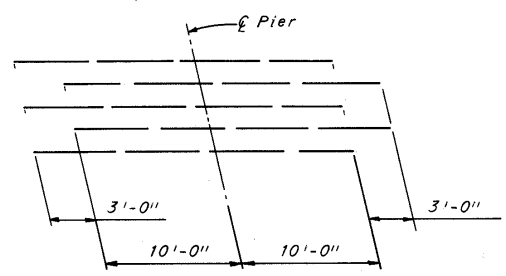
CROSS SECTION BR. 12, NORTHBOUND LANES

Note: All transverse bars shall be placed parallel to € bearing of piers and abutments. Spacings are given along Reference Line. Transverse slab reinforcement shall be field bent as required. (Typical Bridge 12 and 13)

Notes:
For railing post and parapet joint spacing see sheet 353.
For additional details of railing see Ohio Standard Drawing AR-1-57.
For details of Rockers and Bolsters see Ohio Standard Drawing RB-1-55.
For details of intermediate and Type X Crossframes see sheet 353.
For details of end crossframes and roadway end dam see Ohio Standard Drawing SD1-63, Sheet 2 of 4 and 4 of 4. The supporting angle shown in the "Roadway End Dam Data" table shall be increased from 6x4x3/4 to 8x4x3/4.
For details of optional transverse slab construction joint see sheet 353.
For Reinforcement Schedule and Bar Bending Diagrams see sheets 354 and 355.
For scupper locations see sheet 341.
For drainage details see sheet 353.



CROSS SECTION BR. 12, SOUTHBOUND LANES



PLACEMENT OF 604 BARS OVER PIERS

Note: To obtain top of beam elevations @ supports, exclusive of cover plates, deduct 0.86' from respective top of pavement elevation. (Typical Bridge 12)

Beam	Span 1				Span 2				Span 3				Beam	
	€ Brg. South A.	1/4	1/2	3/4	€ P-1	1/4	1/2	3/4	€ P-2	1/4	1/2	3/4		€ Brg. North A.
G	704.76	704.70	704.65	704.59	704.53	704.44	704.35	704.26	704.17	704.10	704.03	703.95	703.88	G
H	704.96	704.89	704.82	704.75	704.68	704.58	704.49	704.40	704.32	704.26	704.20	714.14	704.08	H
J	704.67	704.60	704.53	704.46	704.39	704.30	704.20	704.11	704.03	703.97	703.91	703.85	703.79	J
K	704.38	704.31	704.24	704.17	704.10	704.01	703.92	703.82	703.74	703.68	703.62	703.56	703.50	K
L	704.10	704.02	703.95	703.88	703.81	703.72	703.63	703.54	703.45	703.39	703.33	703.27	703.21	L
M	703.81	703.74	703.67	703.60	703.53	703.43	703.34	703.25	703.16	703.10	703.04	702.98	702.93	M
N	703.52	703.45	703.38	703.31	703.24	703.14	703.05	702.96	702.87	702.81	702.75	702.69	702.64	N
P	703.50	703.44	703.38	703.32	703.25	703.16	703.07	702.98	702.88	702.82	702.75	702.68	702.61	P
Q	703.47	703.40	703.33	703.26	703.19	703.09	703.00	702.91	702.82	702.76	702.70	702.64	702.58	Q

H.N.T.B. BRS. NO. 12 & 13

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

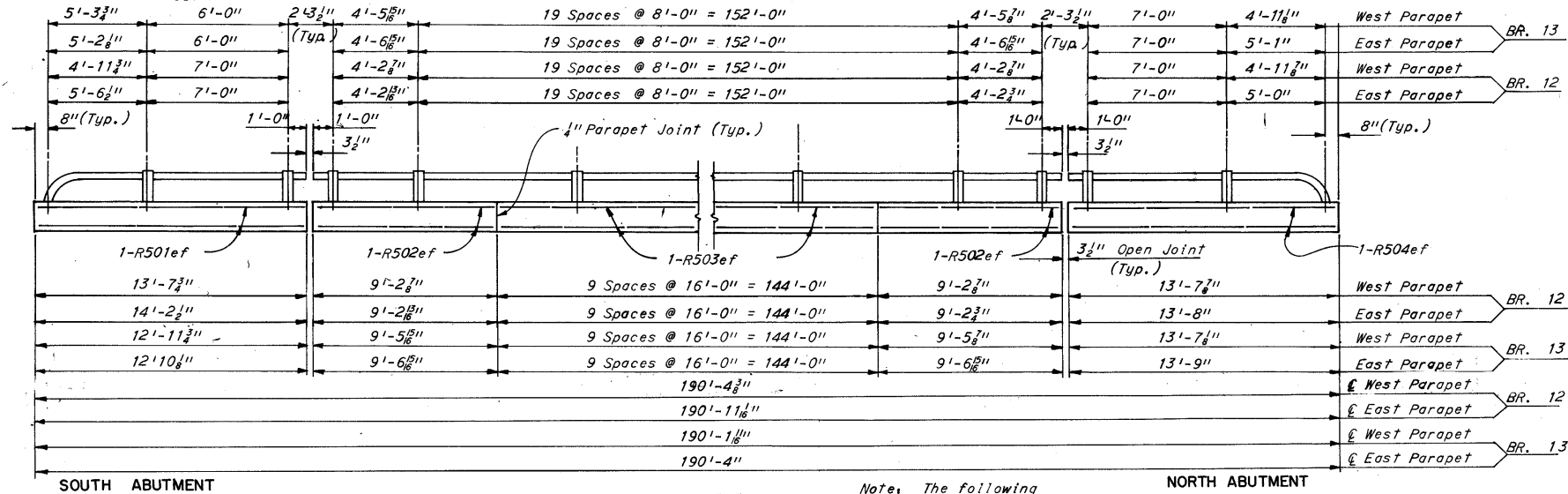
DECK REINFORCEMENT AND ELEVATIONS

I-90 & LANE N-W OVER STARKWEATHER AVE.
BR. NO. CUY- 90-1433 STA. 980+97.79
BR. NO. CUY- 90-1433L STA. 982+63.30

CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN: JKH TRACED: DATE: 3-30-64 CHECKED: ee DATE: 4-20-64 REVIEWED: DATE: SHEET 352

MICROFILMED
OCT 27 1982



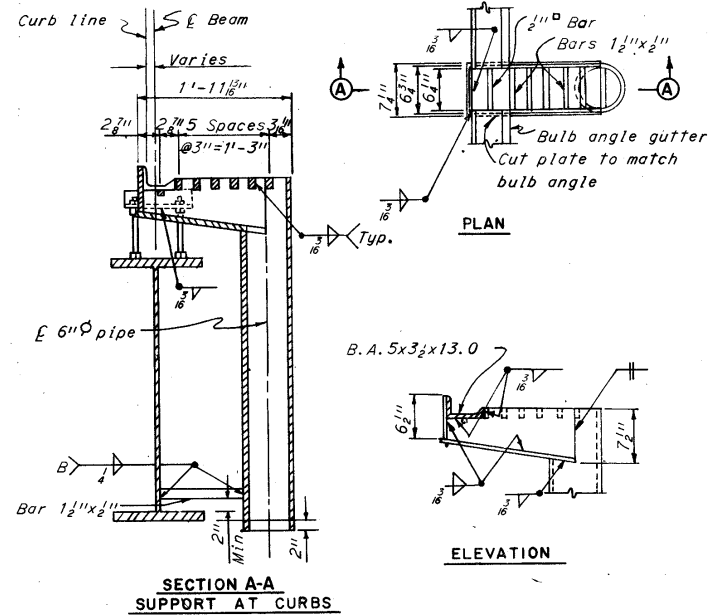
TYPE "A" RAILING

Note: The following abbreviation is used; ef = each face

REINFORCEMENT SCHEDULE		BRIDGE NO. 12		BRIDGE NO. 13		
MARK	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
501	4	13'-9"	4	13'-3"	4	12'-6"
502	8	8'-9"	8	8'-9"	8	9'-0"
503	36	15'-6"	36	15'-6"	36	15'-6"
504	4	13'-3"	4	13'-3"	4	13'-3"
R601	3	6'-6"	3	6'-6"	3	6'-6"

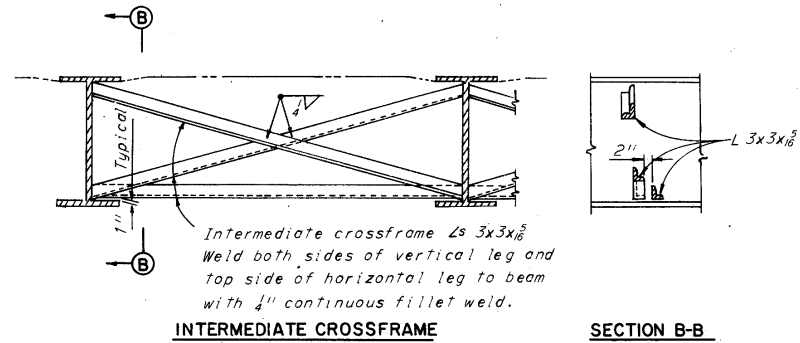
* For bending diagram see Sheet 354 for Br. #12 and Sheet 355 for Br. #13.

Note: Longitudinal steel in the parapets shall be prefixed as follows:
BR. NO. 12
WEST PARAPET - RW
EAST PARAPET - RE
BR. NO. 13
WEST PARAPET - RW
EAST PARAPET - RE

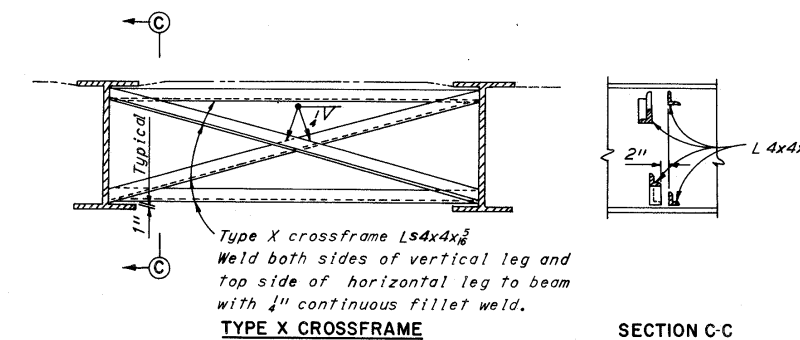


SCUPPER DETAILS

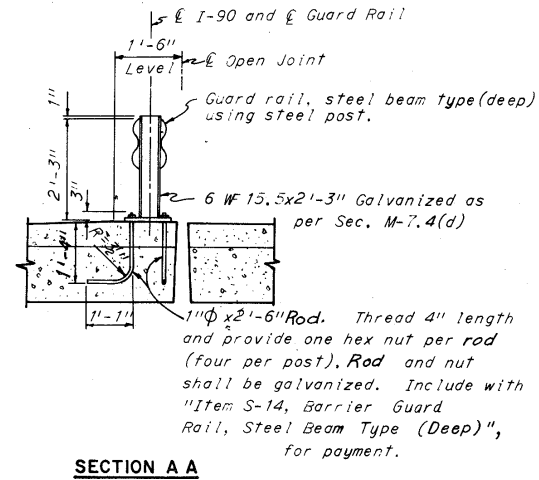
Note: Scuppers are to be made from 3/8" steel plate except as shown.



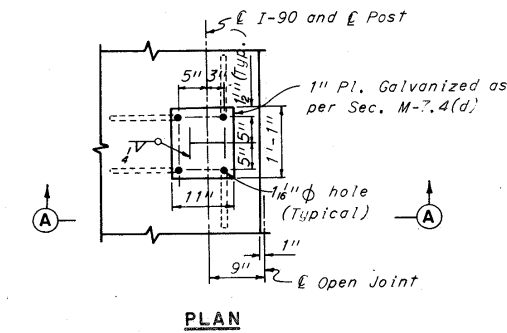
INTERMEDIATE CROSSFRAME



TYPE X CROSSFRAME

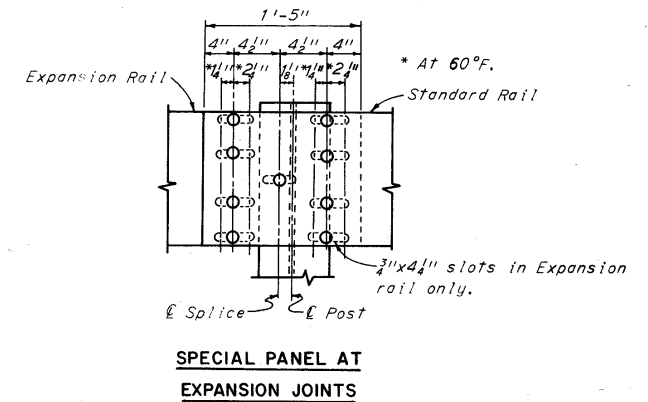


SECTION A A



MEDIAN BARRIER GUARD RAIL DETAILS

Notes:
For additional guard rail details, see Ohio Standard Drawing I-15 (No. 2-A)
Guard rail post spacing is measured from E Splice to E Splice.



SPECIAL PANEL AT EXPANSION JOINTS

Notes:
For Scupper Details not shown and Gutter Support details see Ohio Standard Drawing 5D-1-63, sheet 3 of 4.
Bulb angle and supports are included for payment with "Item S-7, Structural Steel."
Joints in bulb angle gutters, preferably at intervals of not less than 25 feet, are to be butt joints with milled ends. The support angles shall be placed 6" to 9" on each side of the joint.
The bulb angle gutters shall be adjusted accurately for alignment and grade, with allowance for dead load deflections, before concrete is placed.

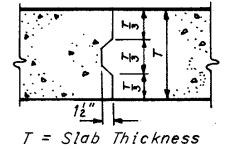
RAILING NOTES:

Railing shall be fabricated in lengths not less than three panels each unless otherwise shown, and finished railing shall be free of burrs, sharp corners and rough surfaces.
Railing posts shall be normal to grade.
Payment for railing shall be made at the contract unit price bid for "Item S-14." Pay length shall be the overall length of the parapets and shall include cost of anchor bolts, set screws, nuts, shims, etc., necessary to complete the installation of railing. Concrete expansion joint material, and longitudinal reinforcing steel in the parapets shall be included in "Item S-14" for payment. All other reinforcing steel in the parapet shall be included in "Item S-4" for payment.
For additional details and notes regarding railing see Ohio Standard Drawing AR-1-57.

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

353
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



OPTIONAL TRANSVERSE SLAB CONSTRUCTION JOINT

H.N.T.B. BRS. NO. 12 & 13

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

MISCELLANEOUS DETAILS

I-90 & LANE N-W OVER STARKWEATHER AVE.
BR. NO. CUY- 90-1433 STA. 980+97.79
BR. NO. CUY- 90-1433L STA. 982+63.30

CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISION
DATE 6-27-64	DATE	DATE	DATE 11-64	

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)	MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)	MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)	MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)
NORTH ABUTMENT												SUPERSTRUCTURE											
AN401	126	3'-5"	105		288	AS605	84	7'-0"	104		883	PA1027	4	39'-9"	Str.		684						
AN501	112	7'-2"	105		837	AS606	40	7'-2"	104		431	PA1028	4	41'-0"	Str.		706						
AN502	15	31'-3"	Str.		489	AS607	14	6'-3"	Str.		131	PA1029	1	15'-0"	Str.		65						
AN503	16	25'-9"	Str.		430	AS608	42	16'-5"	109		1,036	PA1101	10	7'-6"	104		398						
AN504	15	29'-0"	Str.		454	AS609	96	17'-3"	112		2,487	PA1103	10	20'-3"	Str.		1,076						
AN505	2	10'-6"	Str.		22	AS610	7	16'-11"	109		178							TOTAL WEIGHT = 28,978					
AN506	1	6'-9"	Str.		7	AS611	6	7'-0"	Str.		63							PIER 2					
AN507	15	27'-0"	Str.		422	AS612	20	3'-6"	Str.		105							S501					
AN508	15	27'-9"	Str.		434	AS613	4	3'-9"	Str.		23							S502					
AN509	1	8'-3"	Str.		9	AS614	12	4'-6"	Str.		81							S503					
AN510	2	5'-1"	105		11	AS615	12	8'-9"	Str.		158							S504					
AN511	2	6'-7"	105		14	AS616	8	9'-0"	Str.		108							S505					
AN512	1	22'-0"	Str.		23	AS617	5	13'-9"	Str.		103							S506					
AN513	1	23'-6"	Str.		25	AS618	10	7'-3"	Str.		109							S507					
AN514	1	20'-0"	Str.		21	AS619	15	5'-7"	104		126							S508					
AN515	1	18'-6"	Str.		19	AS620	3	15'-6"	Str.		70							S509					
AN516	2 Ser. 6	5'-0" 6'-4"	109	3/8"	71	AS621	3	16'-0"	Str.		72							S601					
AN517	8	6'-4"	109		53	AS622	3	11'-9"	Str.		53							S602					
AN518	20	5'-7"	110		116	AS623	3	12'-3"	Str.		55							S603					
AN601	114	16'-9"	109		2,868	AS624	2	8'-1"	Str.		26							S604					
AN602	8	12'-3"	109		147	AS625	3	9'-10"	148		44							S605					
AN603	6	5'-3"	Str.		47	AS626	3	9'-10"	108		44							S606					
AN604	48	6'-8"	104		481	AS627	4	7'-4"	108		44							S607					
AN605	40	6'-11"	104		416	AS628	5	13'-3"	Str.		100							S608					
AN606	48	7'-1"	104		511	AS801	32	39'-0"	Str.		3,332							S609					
AN607	44	6'-9"	104		446	AS802	12	7'-3"	Str.		232							S610					
AN608	44	7'-0"	104		463	AS803	2	12'-8"	108		68							S611					
AN609	14	6'-0"	Str.		126	AS804	2	12'-9"	148		68							S612					
AN610	29	16'-3"	109		708													S613					
AN611	105	17'-3"	112		2,720													S614					
AN612	7	16'-11"	109		178													S615					
AN613	10	7'-0"	Str.		105													S616					
AN614	24	3'-6"	Str.		126													S617					
AN615	4	4'-3"	Str.		26													S618					
AN616	20	8'-9"	Str.		263													S619					
AN617	6	7'-3"	Str.		65													S620					
AN618	30	5'-7"	104		252													S621					
AN619	6	15'-6"	Str.		140													S622					
AN620	6	11'-9"	Str.		106													S623					
AN621	2	8'-5"	Str.		26													S624					
AN622	8	4'-6"	Str.		54													S625					
AN623	6	9'-10"	104		89													S626					
AN624	4	6'-9"	108		41													S627					
AN625	10	13'-6"	Str.		203													S628					
AN801	32	38'-0"	Str.		3,247													S629					
AN802	12	7'-3"	Str.		232													S630					
AN803	4	12'-9"	104		136													S631					
TOTAL WEIGHT = 17,967												TOTAL WEIGHT = 207,113											
SOUTH ABUTMENT												PIER 1											
AS401	126	3'-5"	105		288	PA401	1	18'-4"	150		337	PB1001	10	11'-6"	100		495						
AS501	98	7'-0"	105		715	PA402	1	17'-10"	150		330	PB1002	80	7'-1"	104		2,438						
AS502	15	26'-6"	Str.		415	PA403	1	17'-4"	150		317	PB1003	10	21'-0"	Str.		904						
AS503	15	34'-6"	Str.		540	PA404	1	16'-11"	150		311	PB1004	10	20'-6"	Str.		882						
AS504	15	29'-0"	Str.		454	PA405	1	16'-8"	150		304	PB1005	10	19'-9"	Str.		850						
AS505	2	10'-3"	Str.		21	PA406	1	16'-2"	150		298	PB1006	10	19'-3"	Str.		828						
AS506	1	12'-6"	Str.		13	PA407	1	15'-8"	150		291	PB1007	10	18'-9"	Str.		807						
AS507	1	7'-0"	Str.		7	PA408	1	15'-1"	150		278	PB1008	10	18'-0"	Str.		775						
AS508	15	27'-0"	Str.		422	PA409	1	14'-7"	150		271	PB1009	10	17'-9"	Str.		764						
AS509	15	27'-9"	Str.		434	PA410	1	14'-1"	150		264	PB1010	10	17'-3"	Str.		742						
AS510	1	8'-3"	Str.		9	PA501	86	12'-2"	109		1,092	PB1011	8	10'-10"	123		373						
AS511	2	4'-9"	105		10	PA502	120	4'-7"	105		574	PB1012	2	29'-9"	Str.		256						
AS512	2	6'-3"	105		13	PA503	2	4'-5"	105		9	PB1013	2	31'-0"	Str.		267						
AS513	1	17'-6"	Str.		18	PA504	2	3'-9"	105		8	PB1014	4	25'-9"	Str.		443						
AS514	1	9'-3"	Str.		10	PA505	2	3'-9"	105		8	PB1015	4	9'-9"	Str.		168						
AS515	1	15'-3"	Str.		16	PA506	2	23'-0"	Str.		69	PB1016	6	11'-9"	Str.		303						
AS516	1	23'-6"	Str.		25	PA507	2	39'-9"	Str.		119	PB1017	2	25'-3"	Str.		217						
AS517	1	20'-0"	Str.		21	PA508	4	6'-2"	105		37	PB1018	2	26'-6"	Str.		228						
AS518	1	18'-6"	Str.		19	PA509	2	23'-0"	Str.		69	PB1019	4	30'-3"	Str.		521						
AS519	2 Ser. 6	5'-0" 6'-4"	109	3/8"	71	PA510	10	17'-6"	Str.		753	PB1020	5	13'-0"	Str.		280						
AS520	9	6'-4"	109		59	PA601	16	10'-10"	100		2,028	PB1021	4	24'-0"	Str.		413						
AS521	21	5'-7"	110		122	PA602	2	39'-9"	Str.		119	PB1022	4	27'-3"	Str.		469						
AS601	100	16'-9"	109		2,516	PA603	4	6'-2"	105		37	PB1023	6	16'-6"	Str.		426						
AS602	8	12'-3"	109		147	PA604	2	39'-9"	Str.		119	PB1024	4	13'-3"	Str.		228						
AS603	6	5'-3"	Str.		47	PA605	4	6'-2"	105		37	PB1025	5	19'-6"	Str.		420						
AS604	72	6'-10"	104		739	PA606	2	23'-0"	Str.		69	PB1026	5	31'-9"	Str.		683						
TOTAL WEIGHT = 30,991												TOTAL WEIGHT = 2,278											

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81**

REPLACEMENT BAR SCHEDULE

MARK	NO.	LENGTH	TYPE
No 4	1	5'-3"	Str.
No 5	4	5'-7"	Str.
No 6	9	5'-11"	Str.
No 7	1	7'-0"	101
No 8	1	6'-6"	Str.
No 9	1	8'-1"	101
No 10	2	7'-2"	Str.
No 11	1	7'-6"	Str.

BENDING DIAGRAMS

NOTES:

For Spiral Reinforcement note see sheet 424.

* Number of turns at 4 1/2" pitch including 1 1/2 turns at each end.

H.N.T.B. BRS. NO. 12 & 13

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

REINFORCEMENT SCHEDULE-BR.NO.12

I-90 & LANE N-W OVER STARKWEATHER AVE.
BR. NO. CUY- 90-1433 STA. 980+97.79
BR. NO. CUY- 90-1433L STA. 982+63.30

CLEVELAND CUYAHOGA COUNTY OHIO

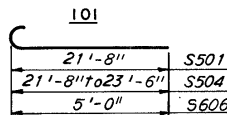
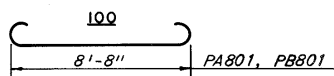
DRAWN C.P.	TRACED	CHECKED J.M.C.	REVIEWED	REVISED
DATE 5-21-64	DATE	DATE 5-26-64	DATE	DATE

SHEET 354

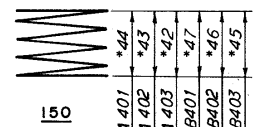
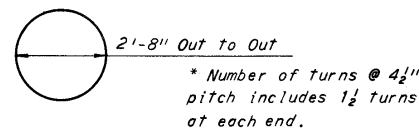
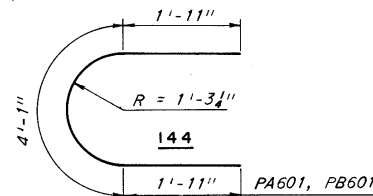
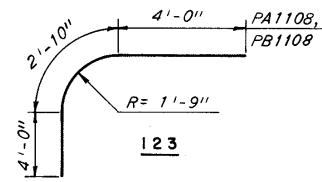
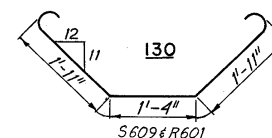
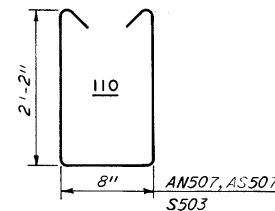
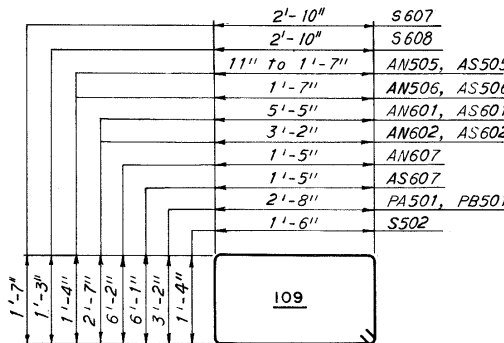
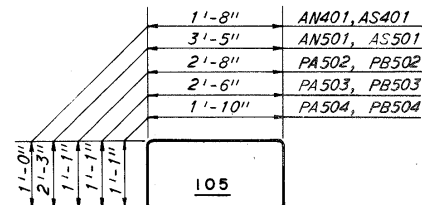
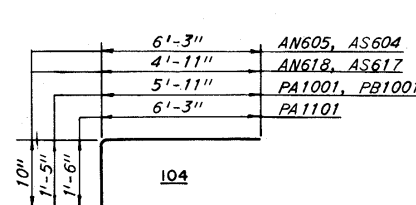
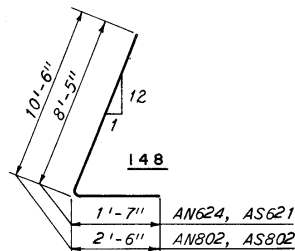
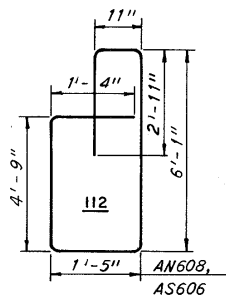
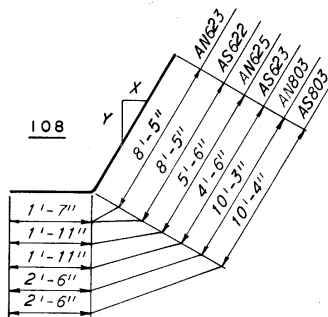
MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)	MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)
NORTH ABUTMENT						AS801	16	23'-0"	Str.		983
						AS802	2	12'-10"	148		69
AN401	42	3'-5"	105		96	AS803	2	12'-8"	108		68
AN501	32	7'-8"	105		256	AS804	12	7'-3"	Str.		232
AN502	32	22'-6"	Str.		751						
AN503	1	10'-6"	Str.		11				TOTAL WEIGHT =		6,852
AN504	1	8'-3"	Str.		9						
AN505	2 Ser. 6	5'-0" 6'-4"	109	3 3/8"	71						
AN506	8	6'-4"	109		53						
AN507	20	5'-7"	110		116						
AN601	34	16'-9"	109		855	PA401	1	15'-3"	150		284
AN602	8	12'-3"	109		147	PA402	1	14'-11"	150		278
AN603	3	5'-0"	Str.		23	PA403	1	14'-7"	150		271
AN604	3	5'-6"	Str.		25	PA501	32	12'-2"	109		406
AN605	64	6'-11"	104		665	PA502	36	4'-7"	105		172
AN606	14	6'-3"	Str.		131	PA503	2	4'-5"	105		9
AN607	16	15'-9"	109		379	PA504	2	3'-9"	105		8
AN608	24	16'-7"	112		598	PA601	8	7'-11"	144		95
AN609	5	7'-3"	Str.		54	PA602	2	38'-0"	Str.		114
AN610	20	3'-6"	Str.		105	PA801	60	10'-10"	100		1,735
AN611	4	4'-0"	Str.		24	PA1001	10	7'-1"	104		305
AN612	4	4'-6"	Str.		27	PA1002	10	18'-3"	Str.		785
AN613	10	9'-6"	Str.		143	PA1101	20	7'-6"	104		797
AN614	9	8'-9"	Str.		118	PA1102	10	18'-6"	Str.		983
AN615	3	8'-0"	Str.		36	PA1103	10	18'-0"	Str.		956
AN616	4	7'-9"	Str.		47	PA1104	4	39'-3"	Str.		834
AN617	4	7'-0"	Str.		42	PA1105	4	38'-0"	Str.		808
AN618	29	5'-7"	104		243	PA1106	3	16'-0"	Str.		255
AN619	6	15'-9"	Str.		142	PA1107	4	13'-6"	Str.		287
AN620	6	12'-0"	Str.		108	PA1108	8	10'-10"	123		460
AN621	2	8'-6"	Str.		26						
AN622	8	4'-9"	Str.		57				TOTAL WEIGHT =		9,842
AN623	3	9'-10"	108		44						
AN624	3	9'-10"	148		44						
AN625	4	7'-4"	108		44						
AN626	10	13'-3"	Str.		199						
AN801	16	24'-0"	Str.		1,025	PB401	1	16'-6"	150		304
AN802	2	12'-10"	148		69	PB402	1	16'-2"	150		298
AN803	2	12'-7"	108		67	PB403	1	15'-10"	150		291
AN804	6	7'-3"	Str.		116	PB501	32	12'-2"	109		406
AN805	6	8'-3"	Str.		132	PB502	36	4'-7"	105		172
						PB503	2	4'-5"	105		9
						PB504	2	3'-9"	105		8
						PB601	8	7'-11"	144		95
						PB602	2	38'-0"	Str.		114
						PB801	52	10'-10"	100		1,504
						P21001	30	7'-1"	104		914
						PB1002	10	19'-6"	Str.		839
						PB1003	10	19'-3"	Str.		850
						PB1004	10	19'-3"	Str.		828
SOUTH ABUTMENT											
AS401	42	3'-5"	105		96						
AS501	32	7'-8"	105		256						
AS502	16	4'-3"	Str.		688						
AS503	1	6'-3"	Str.		11	PB1104	4	39'-3"	Str.		834
AS504	1	10'-3"	Str.		11	PB1105	4	38'-0"	Str.		808
AS505	2 Ser. 6	5'-0" 6'-4"	109	3 3/8"	71	PB1106	3	16'-0"	Str.		255
AS506	8	6'-4"	109		53	PB1107	4	13'-6"	Str.		287
AS507	20	5'-7"	110		116	PB1108	8	10'-10"	123		460
AS601	34	16'-9"	109		855				TOTAL WEIGHT =		9,276
AS602	8	12'-3"	109		147						
AS603	6	5'-6"	Str.		50						
AS604	64	6'-11"	104		665						
AS605	14	6'-3"	Str.		131						
AS606	24	16'-7"	112		598						
AS607	14	15'-9"	109		379	S501	555	22'-3"	101		12,880
AS608	2	7'-0"	Str.		21	S502	218	6'-2"	109		1,402
AS609	24	3'-6"	Str.		126	S503	218	5'-7"	110		1,269
AS610	4	4'-3"	Str.		26	S504	1 Ser. 95	22'-3"	101	1/4"	2,295
AS611	9	9'-0"	Str.		122	S601	325	25'-9"	Str.		12,570
AS612	11	8'-6"	Str.		140	S602	230	18'-0"	Str.		6,218
AS613	3	7'-9"	Str.		35	S603	402	34'-0"	Str.		20,529
AS614	3	7'-0"	Str.		32	S604	68	23'-0"	Str.		2,349
AS615	4	7'-6"	Str.		45	S605	95	19'-9"	Str.		2,818
AS616	4	6'-9"	Str.		41	S606	5	5'-8"	101		43
AS617	28	5'-7"	104		235	S607	3	9'-4"	109		42
AS618	6	15'-0"	Str.		135	S608	2	8'-8"	109		26
AS619	6	11'-0"	Str.		99	S609	4	6'-6"	130		39
AS620	8	4'-6"	Str.		54				TOTAL WEIGHT =		62,480
AS621	3	9'-10"	148		44						
AS622	3	9'-10"	108		44						
AS623	4	6'-4"	108		38						
AS624	10	12'-6"	Str.		188						

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BENDING DIAGRAMS



Bar Mark	X	Y
AN623, AN803	1 1/2	12
AN625, AS623	2	1
AS622, AS803	1	12



Note. For Spiral Reinforcement note see sheet 421.

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

REPLACEMENT BAR SCHEDULE			
MARK	NO.	LENGTH	TYPE
No. 4	1	5'-3"	Str.
No. 5	2	5'-7"	Str.
No. 6	3	5'-11"	Str.
No. 8	1	6'-8"	Str.
No. 10	1	7'-2"	Str.
No. 11	1	7'-6"	Str.

H.N.T.B. BRS. NO. 12 & 13

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

REINFORCEMENT SCHEDULE - BR. NO. 13

I-90 & LANE N-W OVER STARKWEATHER AVE.
BR. NO. CUY- 90-1433 STA. 980+97.79
BR. NO. CUY- 90-1433L STA. 982+63.30

CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISION
C.P.	DATE	J.M.C.	DATE	
DATE 5-25-64		DATE 5-27-64		SHEET 355

MICROFILMED
OCT 27 1982

FED. RD. DIVISION	STATE	PROJECT	356 478
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

CURVE DATA

LANE I-71	LANE S-E	LANE E-S
P.I. = Sta. 953+24.59	P.I. = Sta. 2+50.48	P.I. = Sta. 35+49.51
$\Delta = 3^{\circ}04'21''$ Lt.	$\Delta = 7^{\circ}30'13''$ Rt.	$\Delta = 9^{\circ}03'02''$ Rt.
D = 0°-59'50"	D = 1°30'00"	D = 1°30'00"
R = 5745.58'	R = 3819.72'	R = 3819.72'
T = 154.09'	T = 250.48'	T = 302.31'
L = 308.11'	L = 500.24'	L = 603.37'
E = 2.07'	E = 8.20'	E = 11.94'

PROPOSED STRUCTURE

TYPE: Continuous rolled beams with reinforced concrete deck and substructure.

SPANS: 37'-0", 62'-0", 81'-6", 73'-0", 66'-0" and 40'-0"

ROADWAY: 40'-0" Roadway with 8'-0" sidewalks, 56'-0" face to face parapets.

LOADING: CF 400 (57)

SKEW: 0°

WEARING SURFACE: 1" Monolithic concrete

APPROACH SLABS: 25'-0" (AS-1-54)

ALIGNMENT: Tangent

TRAFFIC DATA:
1975 ADT: 14,000

SCUPPER LOCATIONS
(Along Gutter Line)

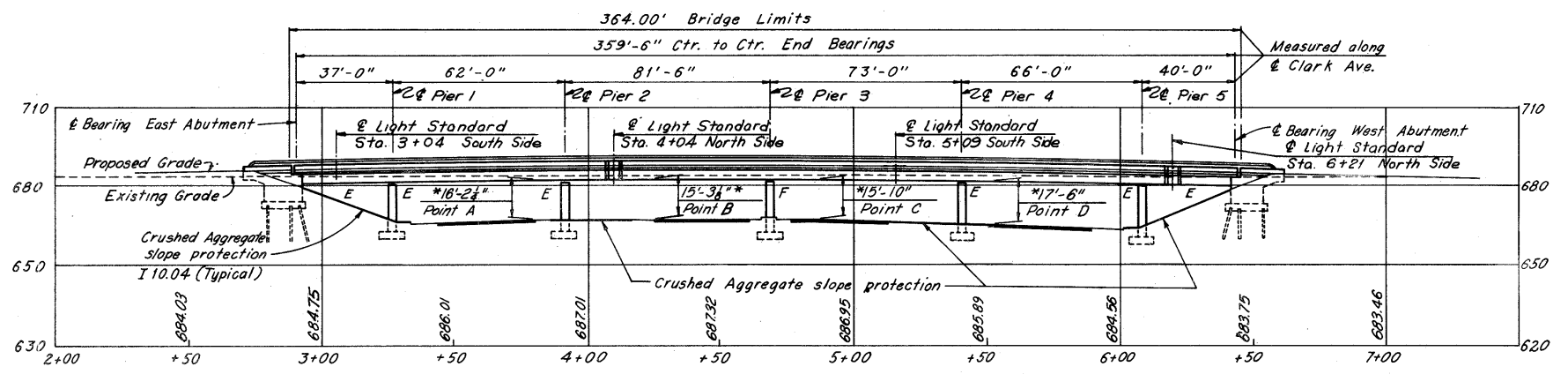
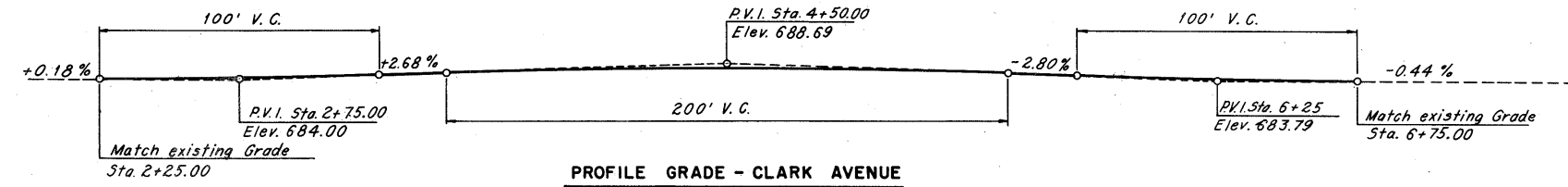
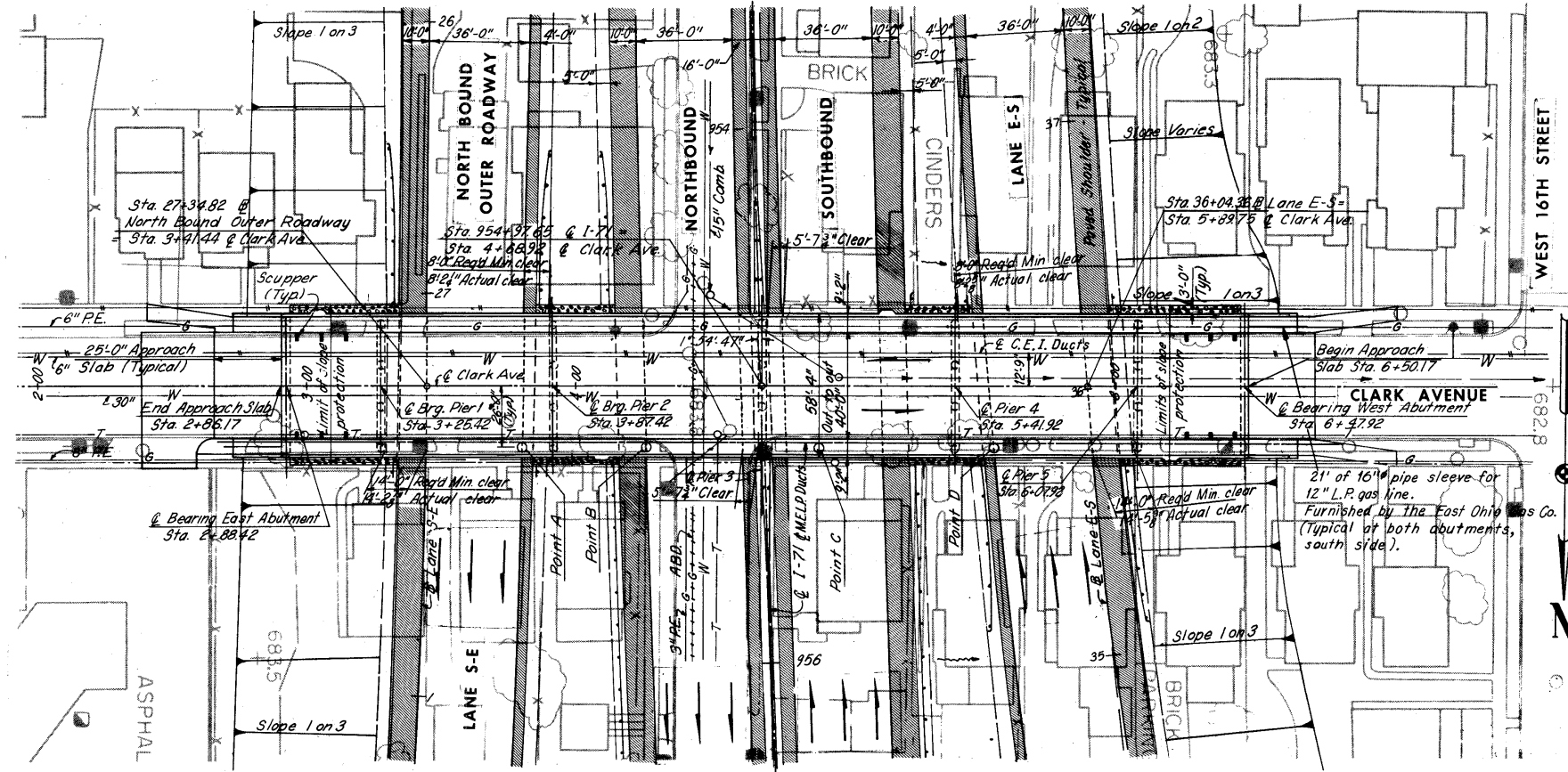
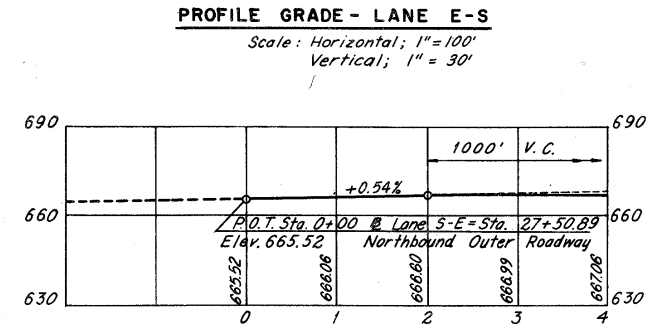
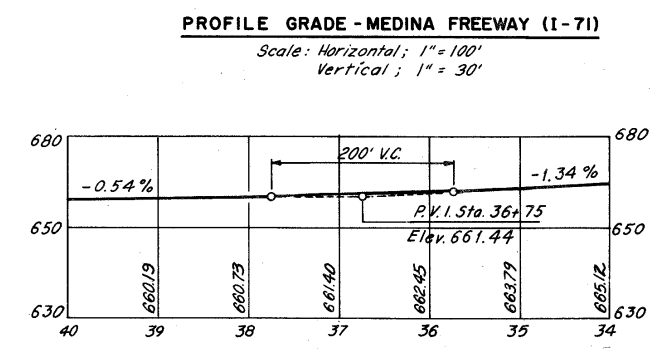
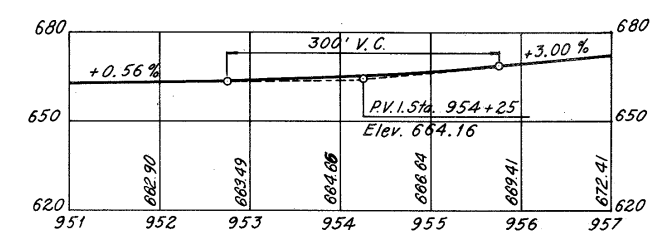
Bearing Abutments to ϕ of first scupper is 5'-0" (Typical). Spacing of succeeding scuppers is 9'-0" (Typical).

FOUNDATION DATA

All piles in the abutments shall be 12" ϕ C.I.P. reinforced concrete with an estimated average vertical length of 25 feet.

LEGEND

- Water ——— W ———
- Gas ——— G ———
- Sewers ——— S ———
- Ohio Bell Tel. ——— T ———
- M.E.L.P. (Underground Conduits) ———
- C.E.I. (Underground Conduits) ———
- Manhole ———
- Inlet ———
- Power Pole ———
- Light Pole ———
- Power and Telephone Pole ———
- Fire Hydrant ———
- Aggregate Slope Protection ———



* Note: 15'-0" Required minimum vertical clear. Actual minimum vertical clear occurs at Point B.

Note: Light Standard Stations shown in the Elevation are approximate. The Light Standard Supports are to be located in close proximity to the stations shown, midway between the nearest two handrail posts within whose limits a parapet joint does not occur.

H.N.T.B. BR. NO. 16

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

SITE PLAN

I-71 UNDER CLARK AVE.
BR. NO. CUY-71-1861 STA. 2+86.17
STA. 6+50.17

CLEVELAND	CUYAHOGA COUNTY	OHIO
DRAWN C.H.B. DATE 6-15-64	TRACED DATE 6-23-64	CHECKED S.A.S. DATE 6-23-64

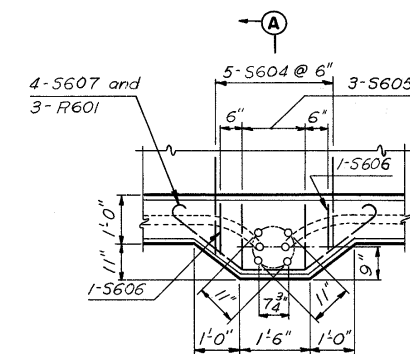
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MICROFILMED
OCT 27 1982

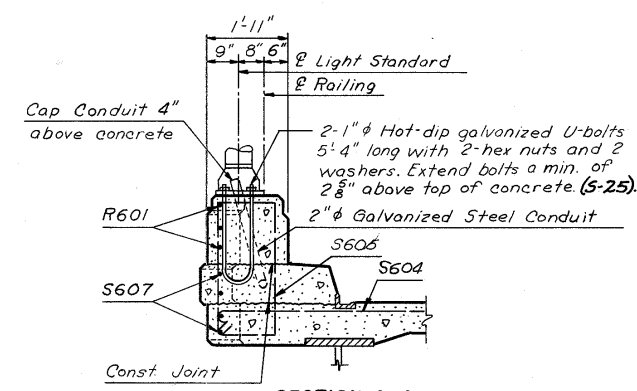
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



PLAN



SECTION A-A

LIGHT STANDARD SUPPORT

ESTIMATED QUANTITIES - BRIDGE NO. CUY-71-1861								
ITEM	DESCRIPTION	UNIT	ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL	TOTAL	AS BUILT
E-2	Unclassified Excavation	Cu.Yd.	313	250 (708)			1063 (1,021)	
I-10	Crushed Aggregate Slope Protection	Sq.Yd.	652				652	
S-1	Class "C" Concrete (Superstructure)	Cu.Yd.			797		797	
S-1	Class "C" Concrete (Pier Caps and Columns)	Cu.Yd.		182 (180)			182 (180)	
S-1	Class "E" Concrete (Stub Abutments Above Footings)	Cu.Yd.	128				128	
S-1	Class "E" Concrete, (Pier and Abutment Footings)	Cu.Yd.	95	335			430	
S-3	Waterproofing Premolded Sealing Strip	Lin.Ft.	14	62,563			14	
S-4	Reinforcing Steel	Pounds	17,500	(62,379)	181,605	261,668	(261,484)	
S-7	Structural Steel	Pounds			*538,350		*538,350	
S-8	Field Painting of Structural Steel, as per proposal note	Pounds			*538,350		*538,350	
S-9	1/2" Preformed Expansion Joint Filler	Sq.Ft.	58				58	
S-14	Railing (Type C Aluminum Railing, (Including Parapet)	Lin.Ft.	74.67		721.83		796.50	
S-16	First Test Pile	Lump Sum				Lump Sum	Lump Sum	
S-17	First Pile Test Load	Lump Sum				Lump Sum	Lump Sum	
S-17	Subsequent Pile Test Load	Each					1	
S-18	12" Cast-in-Place Piles	Lin.Ft.	1,100				1,100	
S-25	For Lighting Details and Quantities see sheet 200							
S-29	Porous Backfill	Cu.Yd.	40				40	
S-29	Scuppers, Including Supports	Each			12		12	
S-29	6" Perforated Helical C.M.P. M-6.4(h) including specials	Lin.Ft.	79				79	
S-29	6" Helical C.M.P. M-6.4(h) non-perforated	Lin.Ft.	102				102	
S-101	Water Reducing, Set-Retarding Admixture	Each			797		797	
Special	Conduit bank (9-4" asbestos cement) supported on bridge, complete as per plan - see sh. 479	Lin. Ft.				361.5	361.5	

* Includes 374 pounds required for installation of E.O.G.C. Gas line, to be paid for by the East Ohio Gas Company.
12,154 pounds required for installation of C.E.I. Ducts, to be paid for by the Cleveland Electric Illuminating Company.

H.N.T.B. BRIDGE NO. 16

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KANSAS CITY CLEVELAND NEW YORK

ESTIMATED QUANTITIES
I-71 UNDER CLARK AVE.

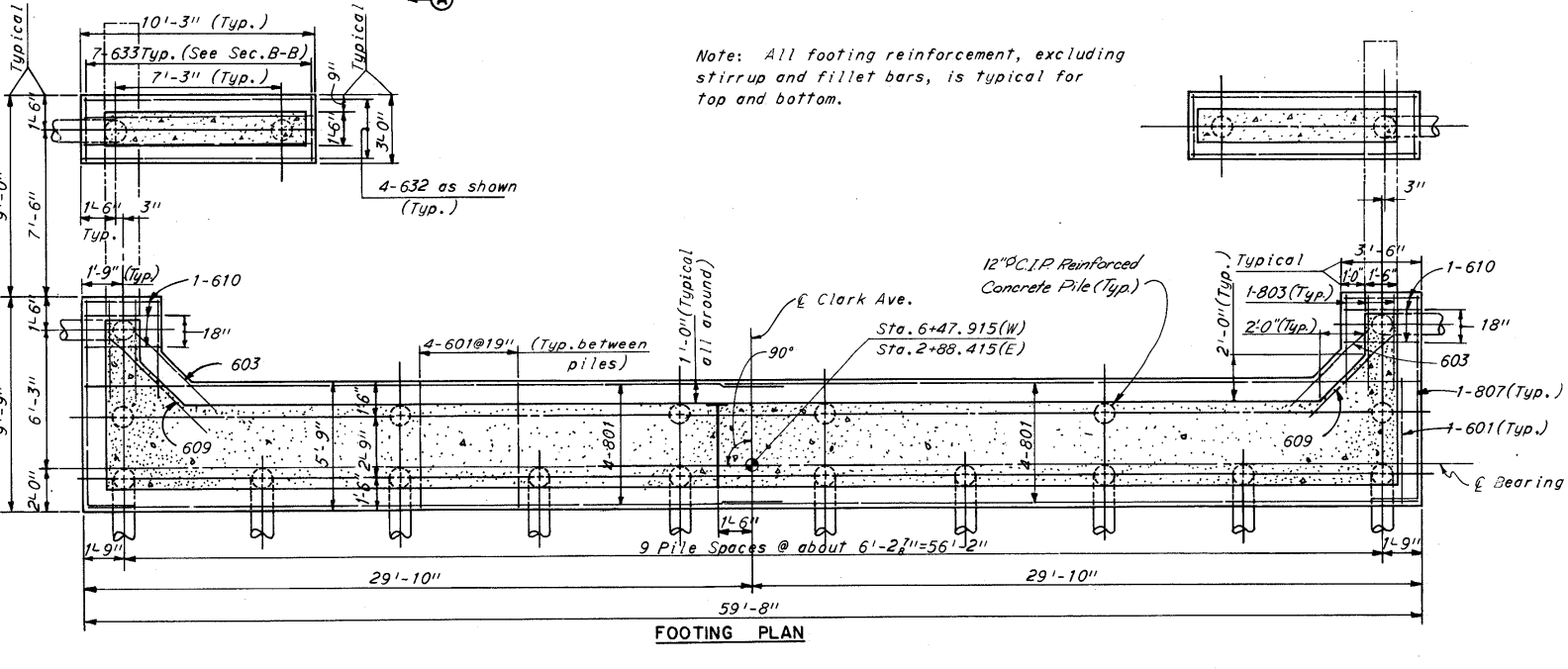
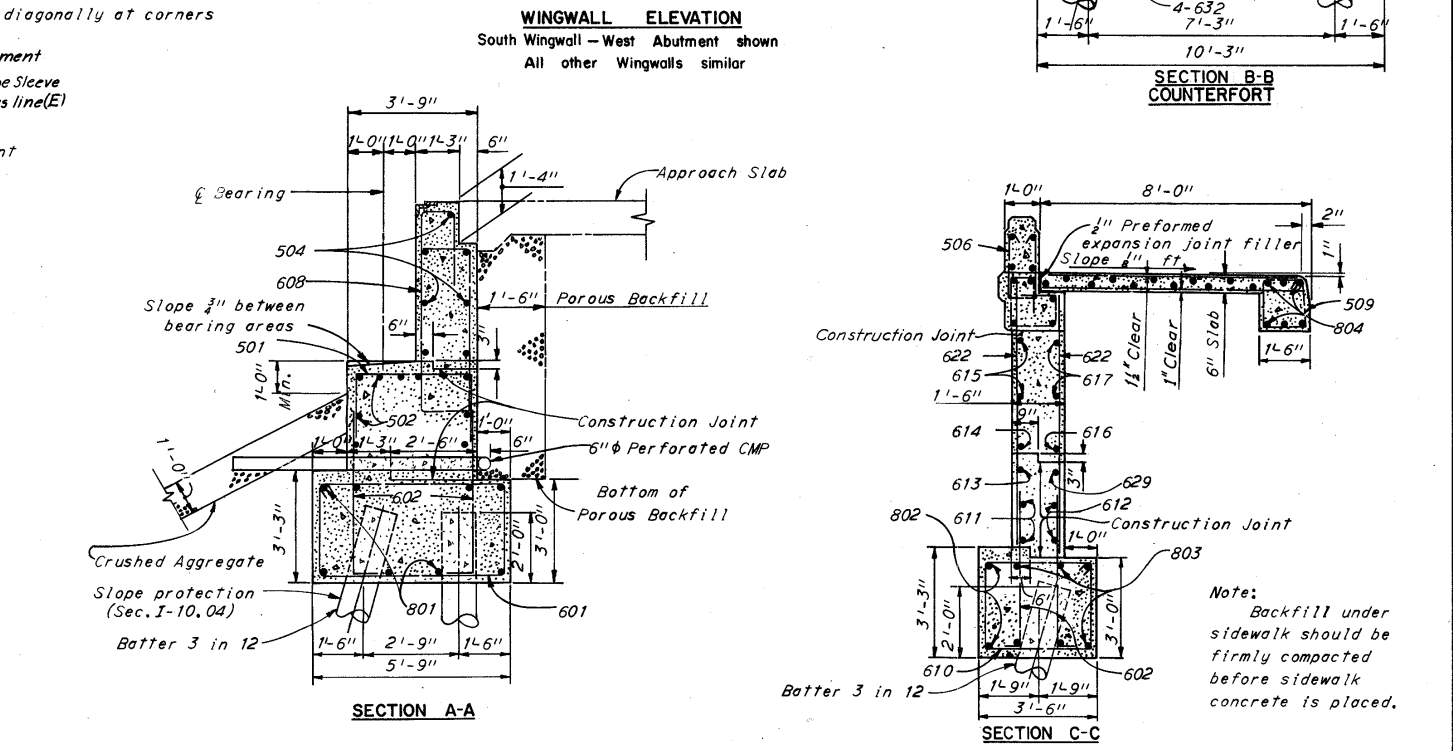
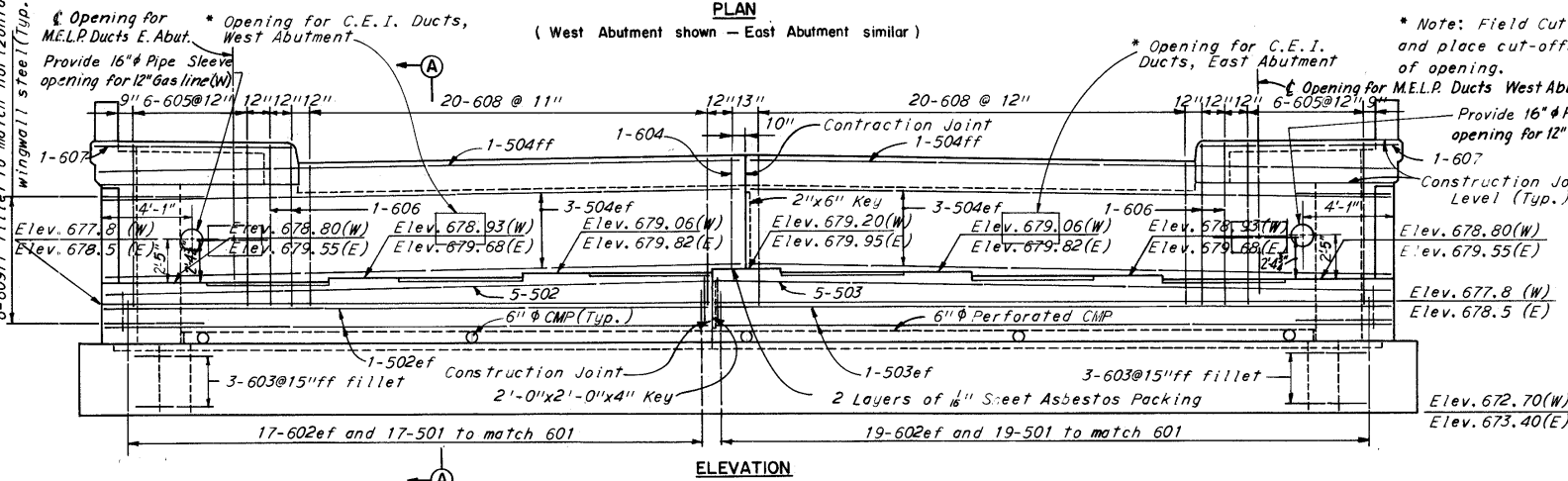
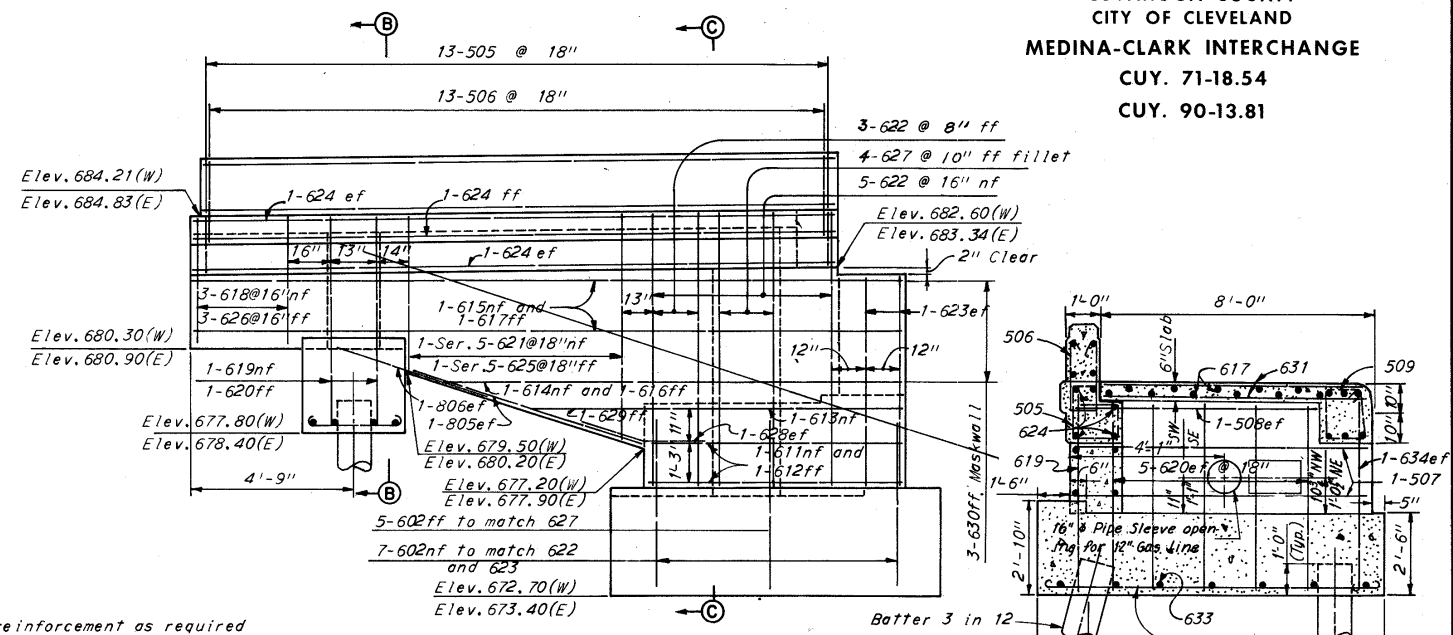
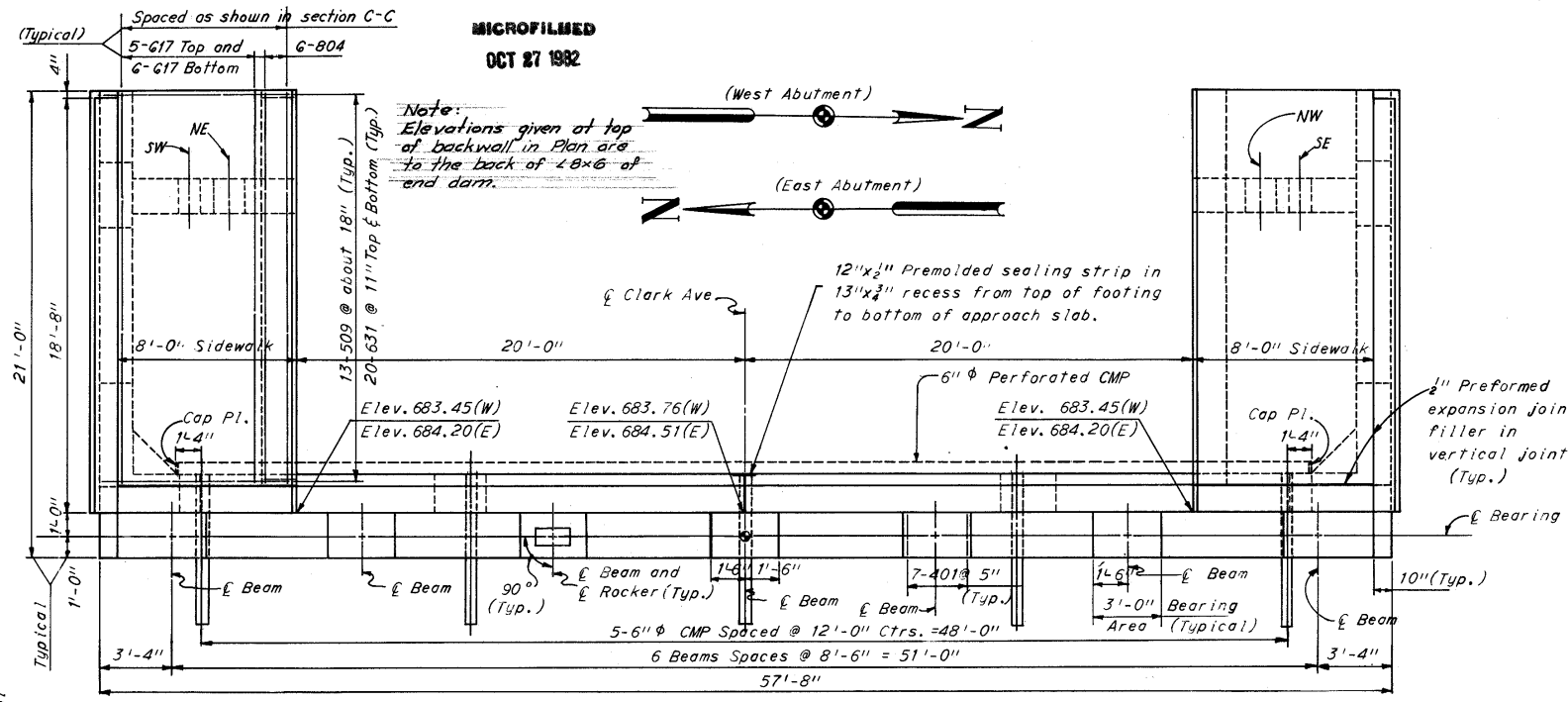
BR NO. CUY-71-1861 STA. 2+86.17
STA. 6+50.17

CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED 6-29-65
DATE	DATE	DATE	DATE	SHEET 357

4-6-65

**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81**



TYPICAL PARAPET AND CURB DETAIL
(Type C railing and reinforcement not shown)

Notes:
Sheet Asbestos packing (Sec. M-10.12) to be included with Item 5-1, Class "E" Concrete, Stub Abutments Above Footings for payment.
For Reinforcement Schedule and Bending Diagrams see sheet 382.
For details of roadway and sidewalk end dam see Ohio Standard Drawing SD-1-63, Sheet 2 of 4 and 4 of 4.
For railing post spacing, and longitudinal parapet reinforcement see sheet 381.
For railing details see Ohio Standard Drawing AR-1-57.
The following abbreviations are used:
nf = near face ff = far face
ef = each face W = West Abutment
E = East Abutment

H.N.T.B. BR. NO. 16
HOWARD, NEEDLES, TAMMEN & BERGENOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

ABUTMENTS
I-71 UNDER CLARK AVE.
BR. NO. CUY-71-1861 STA. 2+86.17
STA. 6+50.17

CLEVELAND CUYAHOGA COUNTY OHIO

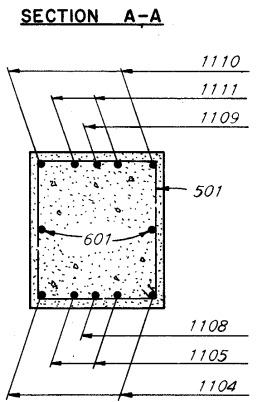
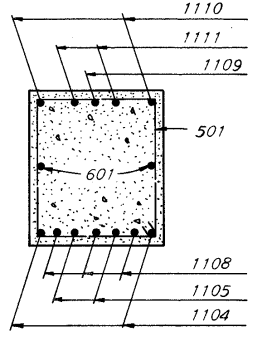
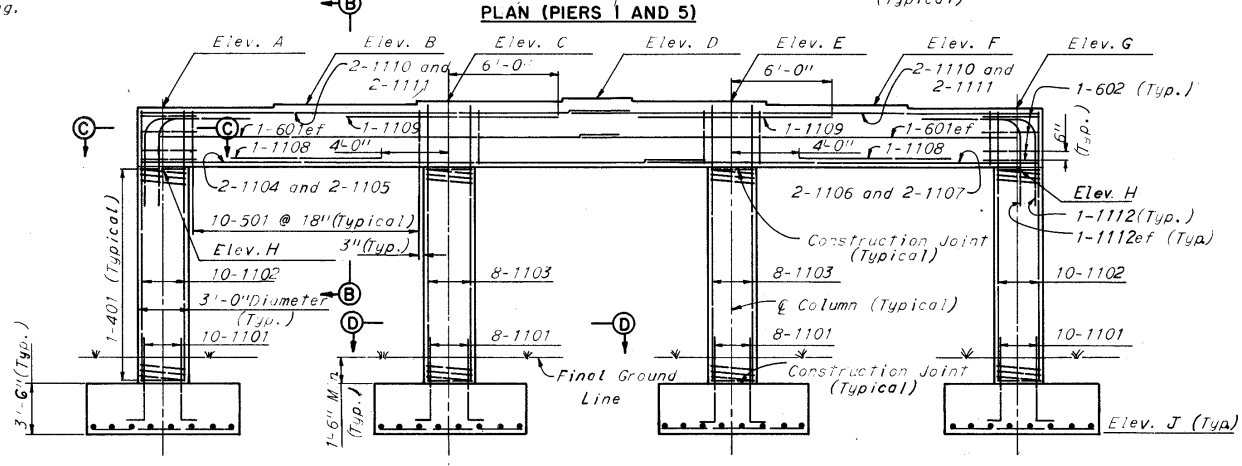
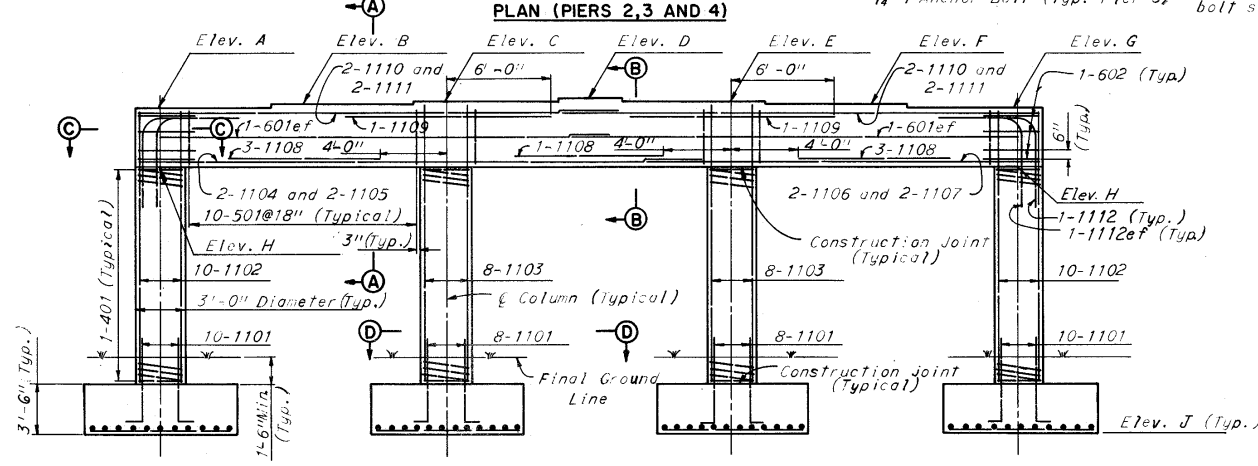
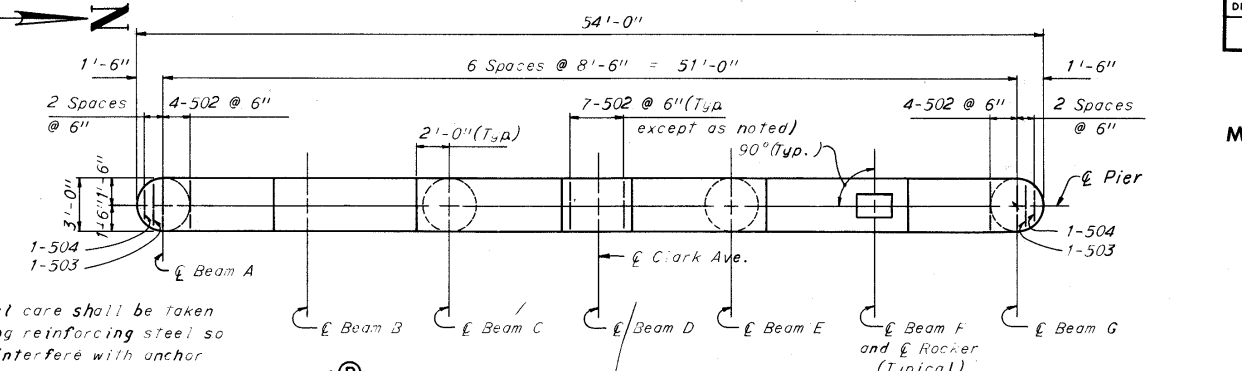
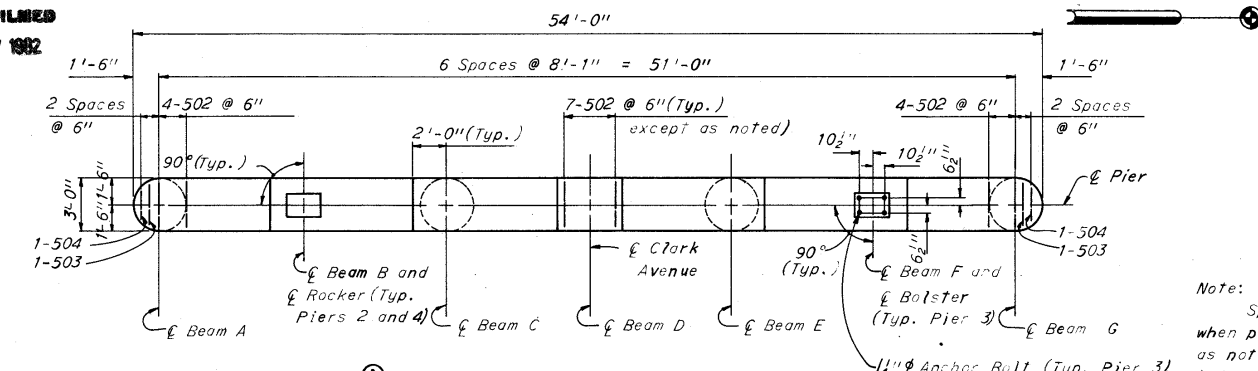
DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DATE 4-1-64	DATE	DATE 4-9-64	DATE	DATE

SHEET 358

MICROFILMED
OCT 27 1982

FED. RD. DIVISION	STATE	PROJECT	359 478
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

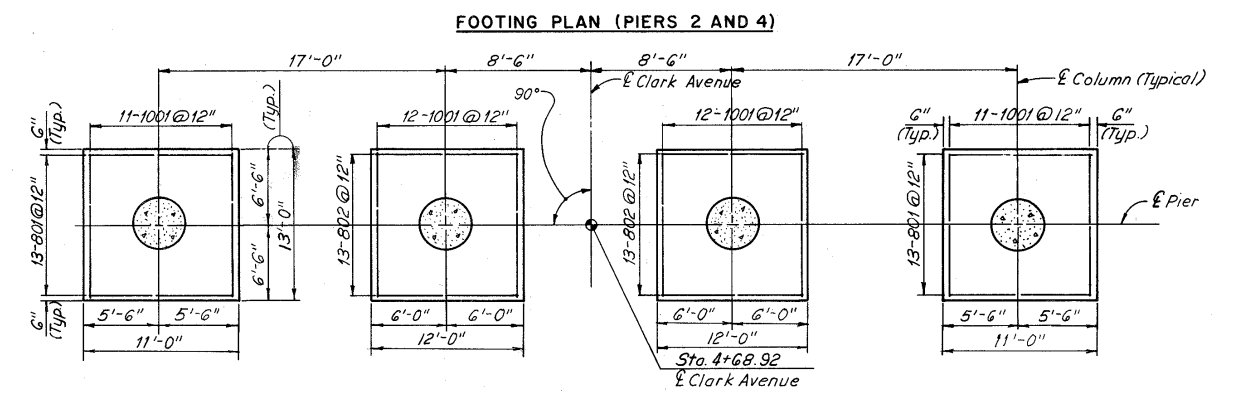
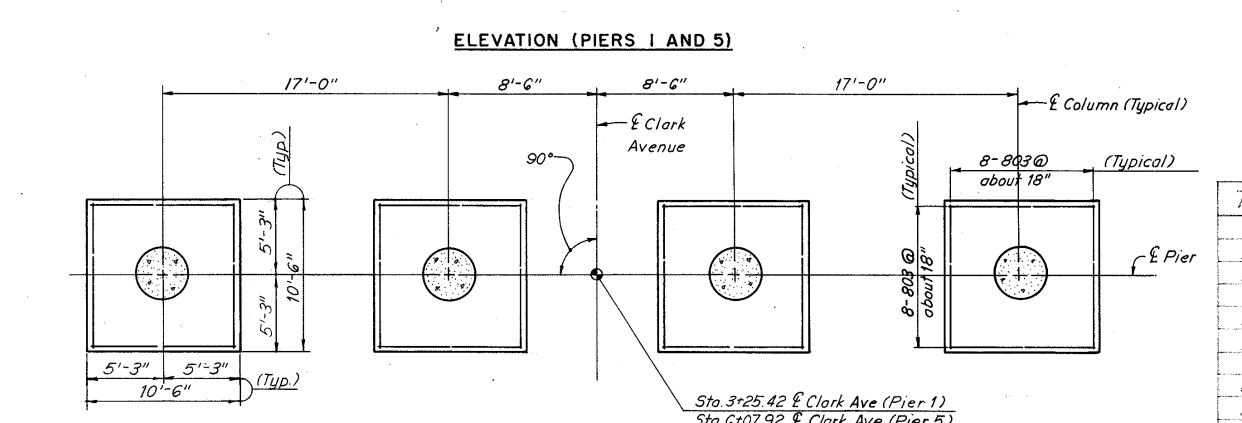
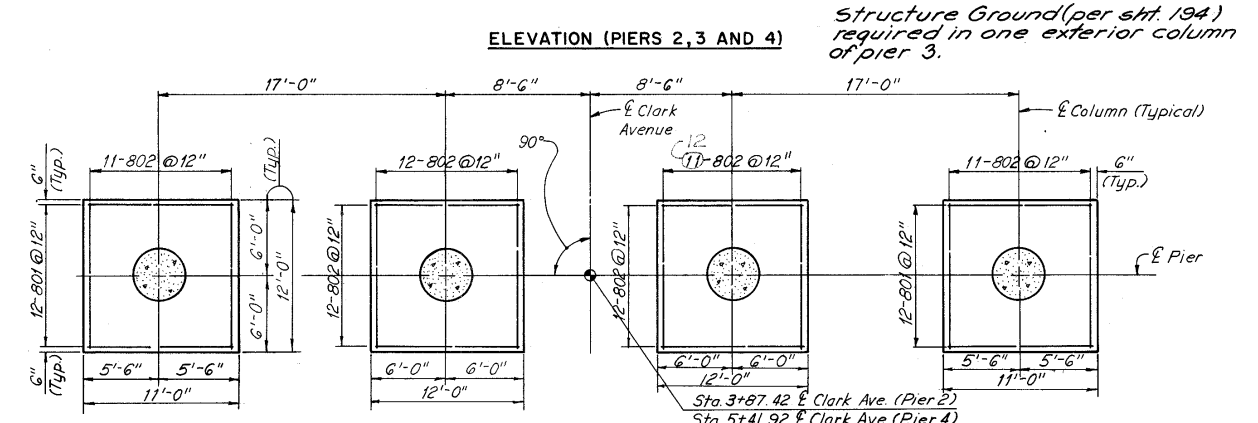


SECTION B-B

TABLE OF ELEVATIONS

	Pier 1	Pier 2	Pier 3	Pier 4	Pier 5
A	680.02	681.16	681.53	680.48	678.90
B	680.16	681.33	681.72	680.60	679.03
C	680.29	681.46	681.86	680.73	679.16
D	680.42	681.56	681.93	680.88	679.30
E	680.29	681.43	681.80	680.74	679.16
F	680.16	681.30	681.66	680.61	679.03
G	680.02	681.16	681.53	680.48	678.90
H	676.52	677.66	678.03	676.98	675.40
J	660.00	660.00	660.00	659.00	658.00

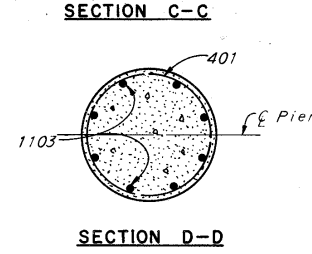
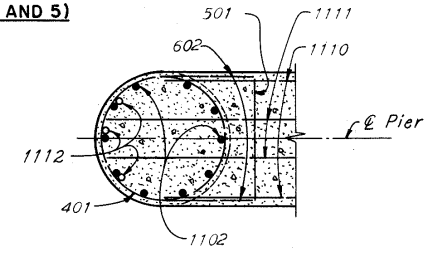
Notes:
The following abbreviations are used:
ef = each face
For anchor bolt details see Ohio Standard Drawing RB-1-53.
For Reinforcement Schedule and Bending Diagrams see sheet 362.
Reinforcing bar marks shall have the following prefixes:
Pier 1 - PA
Pier 2 - PB
Pier 3 - PC
Pier 4 - PD
Pier 5 - PE



Note:
Spread footings for Piers are designed for a maximum bearing pressure of 2 tons per square foot.

TABLE OF ELEVATIONS

	Pier 1	Pier 2	Pier 3	Pier 4	Pier 5
A	679.05	680.43	681.51	681.17	679.83
B	679.18	680.59	681.70	681.29	679.96
C	679.31	680.72	681.83	681.43	680.09
D	679.45	680.83	681.90	681.57	680.23
E	679.31	680.69	681.77	681.44	680.09
F	679.18	680.56	681.64	681.30	679.96
G	679.05	680.43	681.51	681.17	679.83
H	675.55	676.93	678.00	677.67	676.33
J	660.25	660.75	660.50	659.00	657.00



H.N.T.B. BR. NO. 16

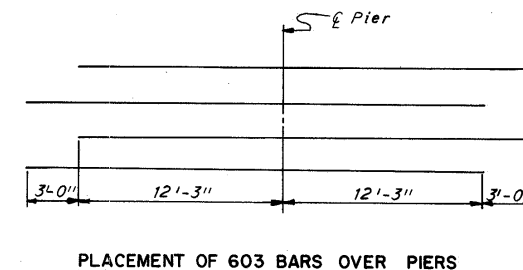
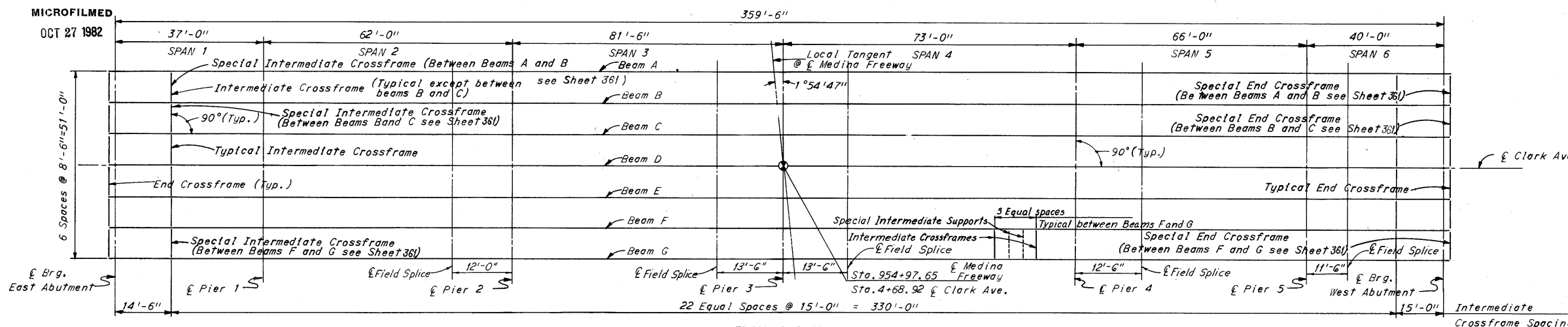
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CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIERS
I-71 UNDER CLARK AVE.
BR. NO. CUY-71-1861 STA. 2+86.17
STA. 6+50.17

CLEVELAND CUYAHOGA COUNTY OHIO
DRAWN: JMC TRACED: DATE: 3-64
CHECKED: AS4 REVIEWED: DATE: 8-31-64 REVISION: SHEET 359

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

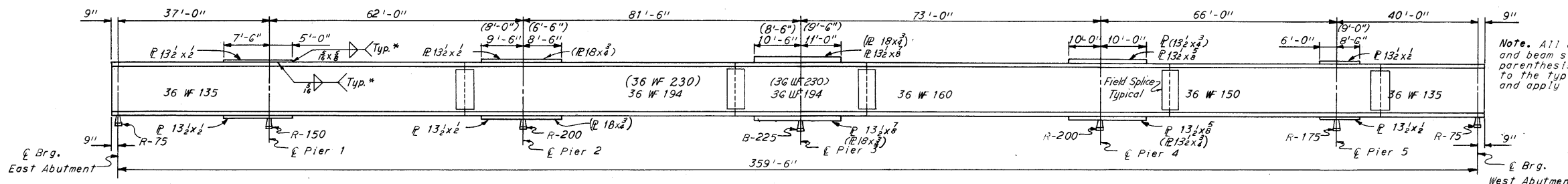
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	CL BRG. E. ABUT.	SPAN 1			SPAN 2			SPAN 3			SPAN 4			SPAN 5			SPAN 6			CL BRG. W. ABUT.						
	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c					
A	684.13	684.30	684.50	684.71	684.95	685.37	685.78	686.13	686.42	686.70	686.87	686.92	686.86	686.71	686.47	686.13	685.71	685.26	684.79	684.36	684.00	683.81	683.64	683.50	683.38	A
B	684.26	684.44	684.63	684.85	685.09	685.50	685.91	686.27	686.56	686.84	687.00	687.05	686.99	686.84	686.60	686.27	685.84	685.39	684.93	684.50	684.13	683.94	683.77	683.63	683.51	B
C	684.39	684.57	684.76	684.98	685.22	685.63	686.04	686.40	686.69	686.97	687.13	687.19	687.13	686.98	686.73	686.40	685.97	685.52	685.06	684.63	684.26	684.07	683.91	683.76	683.64	C
D	684.53	684.70	684.90	685.11	685.35	685.77	686.18	686.53	686.82	687.10	687.27	687.32	687.26	687.11	686.87	686.53	686.11	685.65	685.19	684.76	684.40	684.21	684.04	683.90	683.78	D
E	684.39	684.57	684.76	684.98	685.22	685.63	686.04	686.40	686.69	686.97	687.13	687.19	687.13	686.98	686.73	686.40	685.97	685.52	685.06	684.63	684.26	684.07	683.91	683.76	683.64	E
F	684.26	684.44	684.63	684.85	685.09	685.50	685.91	686.27	686.56	686.84	687.00	687.05	686.99	686.84	686.60	686.27	685.84	685.39	684.93	684.50	684.13	683.94	683.77	683.63	683.51	F
G	684.13	684.30	684.50	684.71	684.95	685.37	685.78	686.13	686.42	686.70	686.87	686.92	686.86	686.71	686.47	686.13	685.71	685.26	684.79	684.36	684.00	683.81	683.64	683.50	683.38	G



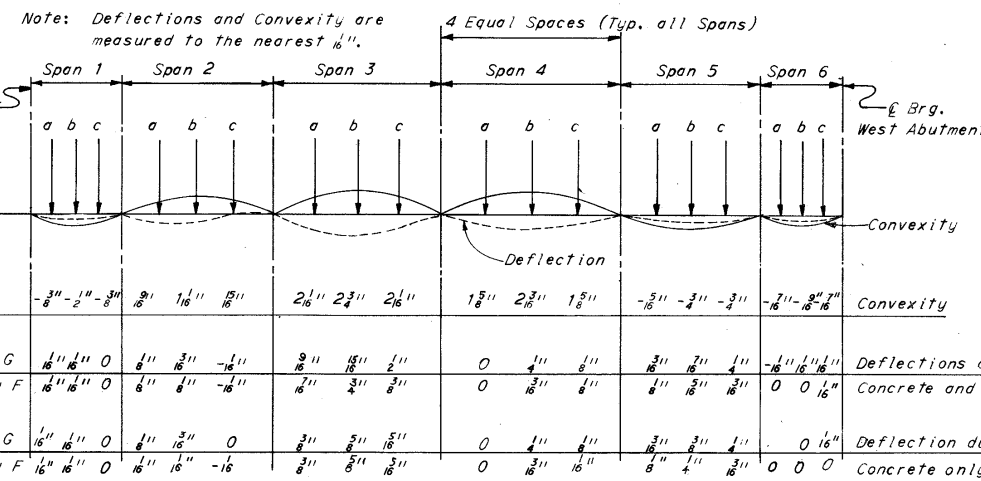
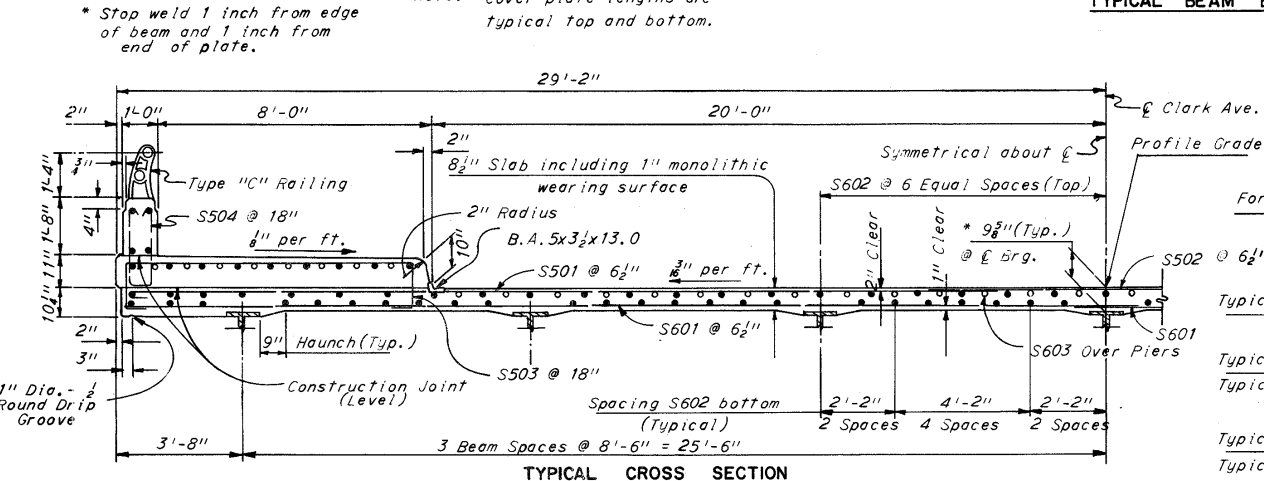
PLACEMENT OF 603 BARS OVER PIERS

Note: To obtain top of beam elevations at supports, exclusive of cover plates, deduct 0.80' from top of pavement elevations. Top of pavement elevations for beams A and G are given to extended top of pavement.

FRAMING PLAN



TYPICAL BEAM ELEVATION



BEAM CAMBER NOTE

In spans 2, 3 and 4 the beams shall be cambered for the combined effects of dead load deflection and convexity.
In spans 1, 5 and 6, no camber is required but the beams shall be fabricated so that any curved beam will be placed with the convex flange up in Span 5 and down in Spans 1 and 6.

Notes:

- For railing post and parapet joint spacing see sheet 361.
- For additional details of railing, see Ohio Standard Drawing AR-1-57.
- For details of Rockers and Bolsters, Ohio Standard Drawing RB-1-55.
- For details of crossframes, see sheet 361.
- For additional details of end crossframes, and roadway and sidewalk end dams, see Ohio Standard Drawing SD-1-63, sheet 2 of 4 and 4 of 4. The supporting angle shown in the "Roadway End Dam Data" table shall be increased from 6x4x3/8 to 7x4x3/8.
- For details of optional transverse slab construction joint see sheet 361.
- For reinforcement schedule and bar bending diagrams, see sheet 362.
- For scupper locations, see sheet 356.
- For drainage details, see sheet 361.
- For details of beam field splices see sheet 363.

H.N.T.B. BR. NO. 16

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

SUPERSTRUCTURE

I-71 UNDER CLARK AVE.
BR. NO. CUY-71-1861 STA. 2+86.17
STA. 6+50.17

CLEVELAND CUYAHOGA COUNTY OHIO

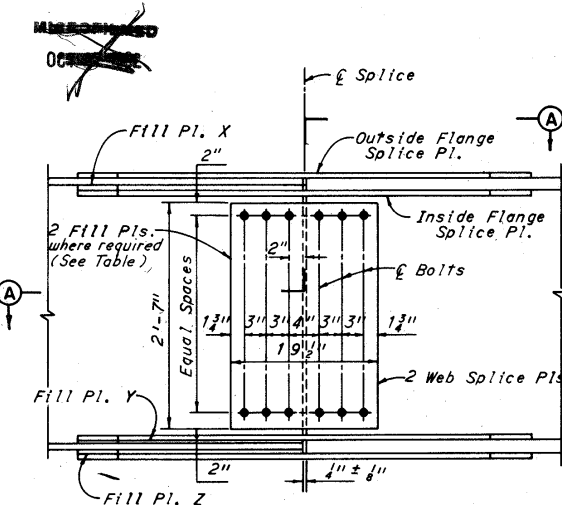
DRAWN L.J.D.	TRACED	CHECKED 3/24/64	REVIEWED	REVISED
DATE 4-3-64	DATE	DATE	DATE	DATE

SHEET 360

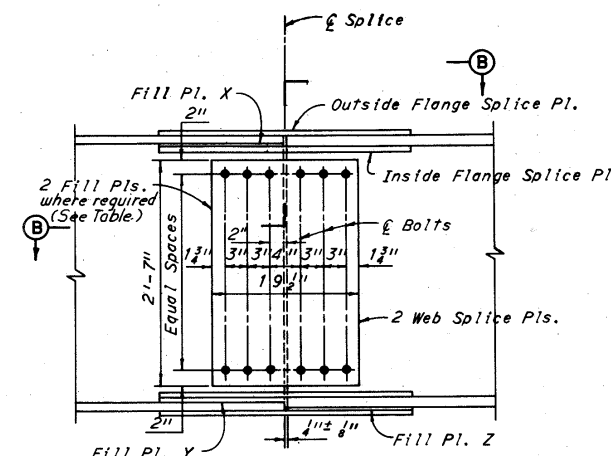
DETAILS OF 36 WF BEAM SPLICES

BEAM 36WF TO BEAM 36WF	WEB SPLICE				FLANGE SPLICE												
	*WEB PLATES 2 Required	WEB BOLTS No. 2	FILL PLS. 2	Type	*FLANGE PLATES		*FILL PLATES			FLANGE BOLTS			Dimensions (inches)				
					Outside 2 Required	Inside 2 Required	Type	Thickness (in.)	X	Y	Z	No.	N	Pitch	A	B	C
135 to 135	B	13 1/2 x 2 1/4	40	-	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	-	-	-	-	32	3	3 1/2	2 1/2	-	6 1/2
135 to 150	B	13 1/2 x 2 1/4	40	-	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
135 to 160	B	13 1/2 x 2 1/4	40	-	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
135 to 170	B	13 1/2 x 2 1/4	40	1/8	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
135 to 182	B	13 1/2 x 2 1/4	40	1/8	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
135 to 194	B	13 1/2 x 2 1/4	40	1/8	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
135 to 230	B	13 1/2 x 2 1/4	40	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	A	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
135 to 245	B	13 1/2 x 2 1/4	40	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	A	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
135 to 260	B	13 1/2 x 2 1/4	40	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	A	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
135 to 280	B	13 1/2 x 2 1/4	40	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
150 to 150	B	13 1/2 x 2 1/4	40	-	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	-	-	-	-	32	3	3 1/2	2 1/2	-	6 1/2
150 to 160	B	13 1/2 x 2 1/4	40	-	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
150 to 170	B	13 1/2 x 2 1/4	40	-	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
150 to 182	B	13 1/2 x 2 1/4	40	1/8	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
150 to 194	B	13 1/2 x 2 1/4	40	1/8	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
150 to 230	B	13 1/2 x 2 1/4	40	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	A	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
150 to 245	B	13 1/2 x 2 1/4	40	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	A	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
150 to 260	B	13 1/2 x 2 1/4	40	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	A	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
150 to 280	B	13 1/2 x 2 1/4	40	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
150 to 300	B	13 1/2 x 2 1/4	40	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
160 to 160	A	19 1/2 x 2 1/4	48	-	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	-	-	-	-	32	3	3 1/2	2 1/2	-	6 1/2
160 to 170	A	19 1/2 x 2 1/4	48	-	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
160 to 182	A	19 1/2 x 2 1/4	48	1/8	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
160 to 194	A	19 1/2 x 2 1/4	48	1/8	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
160 to 230	A	19 1/2 x 2 1/4	48	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	B	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
160 to 245	A	19 1/2 x 2 1/4	48	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	A	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
160 to 260	A	19 1/2 x 2 1/4	48	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	A	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
160 to 280	A	19 1/2 x 2 1/4	48	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	A	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
160 to 300	A	19 1/2 x 2 1/4	48	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	32	3	3 1/2	2 1/2	-	6 1/2
170 to 170	A	19 1/2 x 2 1/4	48	-	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	-	-	-	-	40	4	3 1/2	2 1/2	-	6 1/2
170 to 182	A	19 1/2 x 2 1/4	48	-	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
170 to 194	A	19 1/2 x 2 1/4	48	1/8	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
170 to 230	A	19 1/2 x 2 1/4	48	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	B	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
170 to 245	A	19 1/2 x 2 1/4	48	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	B	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
170 to 260	A	19 1/2 x 2 1/4	48	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	A	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
170 to 280	A	19 1/2 x 2 1/4	48	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	A	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
170 to 300	A	19 1/2 x 2 1/4	48	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	A	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
182 to 182	A	19 1/2 x 2 1/4	48	-	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	-	-	-	-	40	4	3 1/2	2 1/2	-	6 1/2
182 to 194	A	19 1/2 x 2 1/4	48	-	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	C	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
182 to 230	A	19 1/2 x 2 1/4	48	-	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	B	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
182 to 245	A	19 1/2 x 2 1/4	48	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	B	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
182 to 260	A	19 1/2 x 2 1/4	48	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	B	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
182 to 280	A	19 1/2 x 2 1/4	48	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	A	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
182 to 300	A	19 1/2 x 2 1/4	48	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	A	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
194 to 194	A	19 1/2 x 2 1/4	54	-	C	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	-	-	-	-	40	4	3 1/2	2 1/2	-	6 1/2
194 to 230	A	19 1/2 x 2 1/4	54	-	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	B	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
194 to 245	A	19 1/2 x 2 1/4	54	-	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	B	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
194 to 260	A	19 1/2 x 2 1/4	54	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	B	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
194 to 280	A	19 1/2 x 2 1/4	54	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	A	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
194 to 300	A	19 1/2 x 2 1/4	54	1/8	B	11 x 1/2 x 2 1/4	4 1/2 x 2 1/4	A	1/2	1/2	1/2	40	4	3 1/2	2 1/2	-	6 1/2
230 to 230	A	19 1/2 x 2 1/4	54	-	A	16 x 5/8 x 5'-0"	6 1/2 x 5'-0"	-	-	-	-	64	7	3 1/2	1 1/2	3	6 1/2
230 to 245	A	19 1/2 x 2 1/4	54	-	A	16 x 5/8 x 5'-0"	6 1/2 x 5'-0"	C	1/2	1/2	1/2	64	7	3 1/2	1 1/2	3	6 1/2
230 to 260	A	19 1/2 x 2 1/4	54	1/8	A	16 x 5/8 x 5'-0"	6 1/2 x 5'-0"	C	1/2	1/2	1/2	64	7	3 1/2	1 1/2	3	6 1/2
230 to 280	A	19 1/2 x 2 1/4	54	1/8	A	16 x 5/8 x 5'-0"	6 1/2 x 5'-0"	C	1/2	1/2	1/2	64	7	3 1/2	1 1/2	3	6 1/2
230 to 300	A	19 1/2 x 2 1/4	54	1/8	A	16 x 5/8 x 5'-0"	6 1/2 x 5'-0"	C	1/2	1/2	1/2	64	7	3 1/2	1 1/2	3	6 1/2
245 to 245	A	19 1/2 x 2 1/4	54	-	A	16 x 5/8 x 5'-0"	6 1/2 x 5'-0"	-	-	-	-	64	7	3 1/2	1 1/2	3	6 1/2
245 to 260	A	19 1/2 x 2 1/4	54	-	A	16 x 5/8 x 5'-0"	6 1/2 x 5'-0"	C	1/2	1/2	1/2	64	7	3 1/2	1 1/2	3	6 1/2
245 to 280	A	19 1/2 x 2 1/4	54	1/8	A	16 x 5/8 x 5'-0"	6 1/2 x 5'-0"	C	1/2	1/2	1/2	64	7	3 1/2	1 1/2	3	6 1/2
245 to 300	A	19 1/2 x 2 1/4	54	1/8	A	16 x 5/8 x 5'-0"	6 1/2 x 5'-0"	C	1/2	1/2	1/2	64	7	3 1/2	1 1/2	3	6 1/2
260 to 260	A	19 1/2 x 2 1/4	60	-	A	16 x 5/8 x 5'-0"	6 1/2 x 5'-0"	-	-	-	-	64	7	3 1/2	1 1/2	3	6 1/2
260 to 280	A	19 1/2 x 2 1/4	60	-	A	16 x 5/8 x 5'-0"	6 1/2 x 5'-0"	C	1/2	1/2	1/2	64	7	3 1/2	1 1/2	3	6 1/2
280 to 280	A	19 1/2 x 2 1/4	60	-	A	16 x 5/8 x 6'-3"	6 1/2 x 6'-3"	-	-	-	-	80	9	3 1/2	1 1/2	3	6 1/2
280 to 300	A	19 1/2 x 2 1/4	60	-	A	16 x 5/8 x 6'-3"	6 1/2 x 6'-3"	C	1/2	1/2	1/2	80	9	3 1/2	1 1/2	3	6 1/2
300 to 300	A	19 1/2 x 2 1/4	60	-	A	16 x 5/8 x 6'-3"	6 1/2 x 6'-3"	-	-	-	-	80	9	3 1/2	1 1/2	3	6 1/2

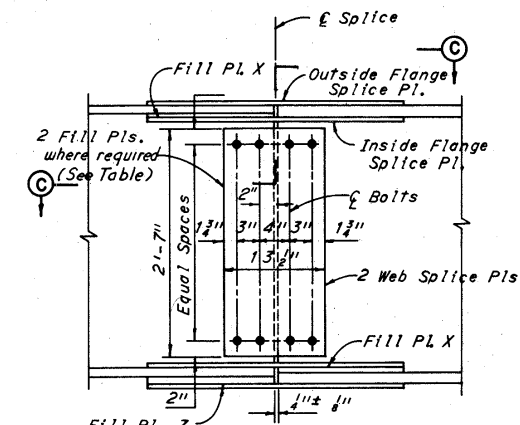
FILLS are based on the nominal member sizes being spliced, however, in the final shop assembly, fills shall be furnished to the nearest 1/8 inch in thickness based on the actual measured sizes of the members being spliced. Drawing together of splice plates over material that varies by 1/8 inches or more in thickness, at the centerline of the splice, will not be permitted.



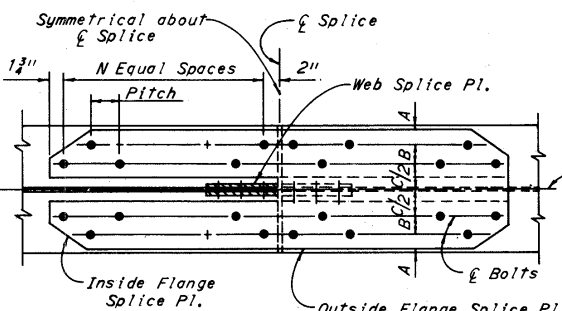
BEAM SPLICE DETAIL 1
FLANGE SPLICE TYPE A
FLANGE FILL PLATES TYPE A
WEB SPLICE TYPE A



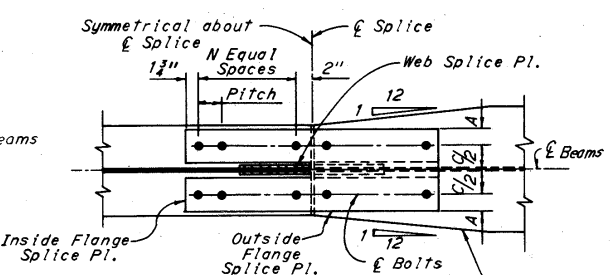
BEAM SPLICE DETAIL 2
FLANGE SPLICE TYPE B
FLANGE FILL PLATE TYPE B
WEB SPLICE TYPE A



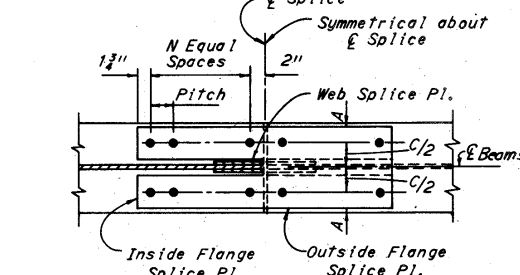
BEAM SPLICE DETAIL 3
FLANGE SPLICE TYPE C
FLANGE FILL PLATES TYPE C
WEB SPLICE TYPE B



SECTION A-A



SECTION B-B



MICROFILMED
OCT 27 1982

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

364
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

PROPOSED STRUCTURE

Type: Continuous welded girders with reinforced concrete slab.
Spans: 67'-7", 86'-6", 86'-6" and 68'-2 1/2".
Roadway: 40'-0" Roadway with 8'-0" sidewalks 56'-0" face to face of parapets.
Loading: CF 400 (37).
Skew: Varies 0° to 19°-48'-20" R.F.
Wearing Surface: 1" Monolithic concrete.
Approach Slabs: 25'-0" (AS-1-54).
Alignment: Tangent.

TRAFFIC DATA:

1975 ADT: 10,500

SCUPPER LOCATIONS:

Along Gutter Lines. See Sheet 376 for locations.

FOUNDATION DATA:

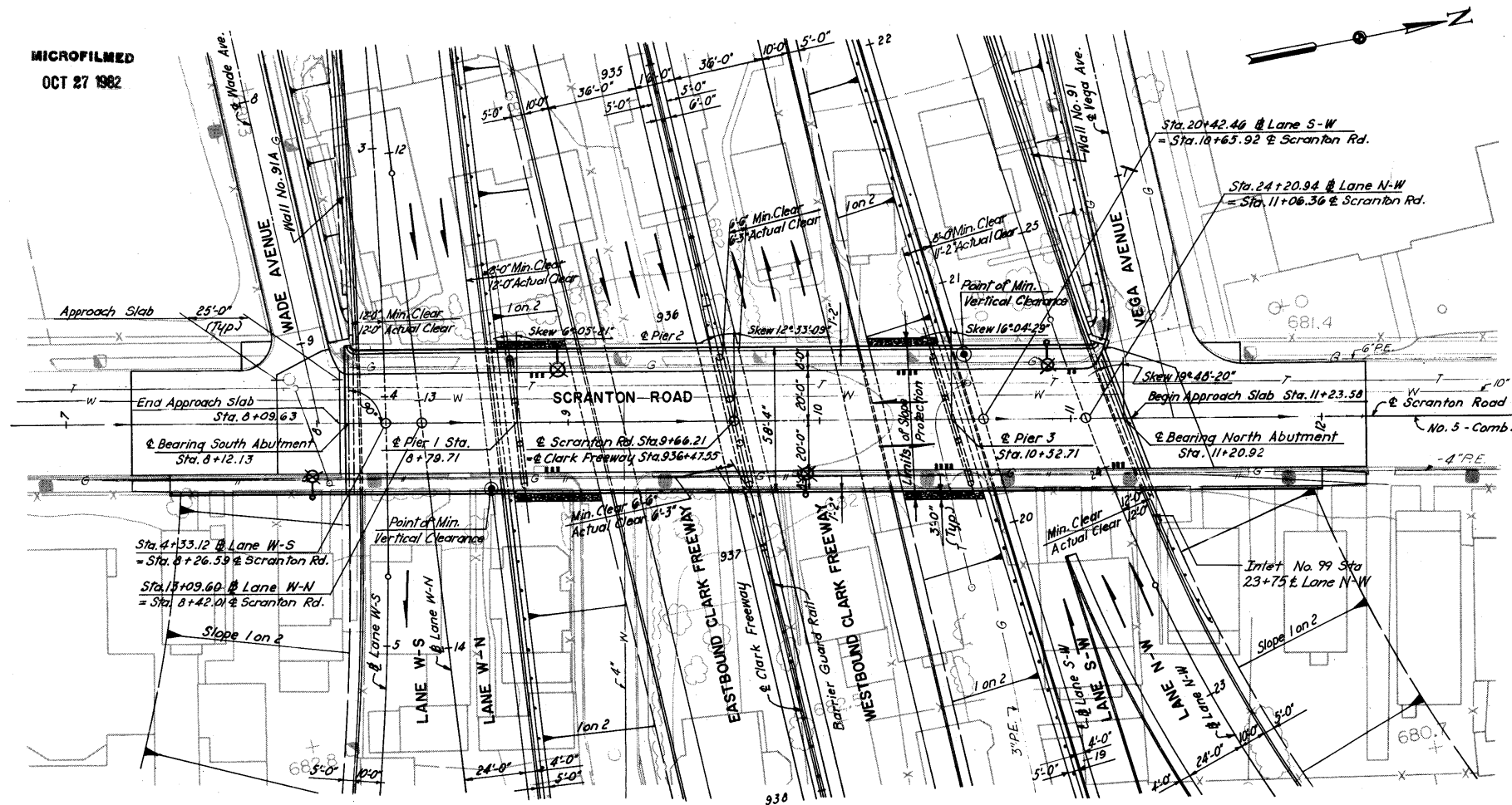
All piles shall be 12" x 4" C.I.P. reinforced concrete with an estimated vertical length of 70 feet for the abutments, wingwalls and Piers 1 and 3, and of 65 feet for Pier 2.

CURVE DATA

NO. 21 - LANE N-W	NO. 31 - LANE W-S
P.I. Sta. = 24+06.46	P.I. Sta. = 21+36.54
Δ = 5°-44'-45"	Δ = 9°-26'-24"
D = 5°-00'-00"	D = 2°-00'-00"
R = 1145.32'	R = 2864.79'
L = 114.92'	L = 472.00'
T = 37.51'	T = 236.54'

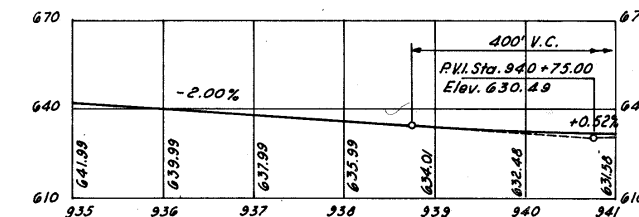
LEGEND

Water	W
Gas	G
Sewers	S
Ohio Bell Tel.	T
M.E.L.P. (Underground Conduits)	U
C.E.I. (Underground Conduits)	V
Manhole	M
Inlet	I
Power Pole	P
Light Pole	L
Power and Telephone Pole	PT
Fire Hydrant	F
Aggregate Slope Protection	ASP
Concrete Slope Protection	CSP



PLAN

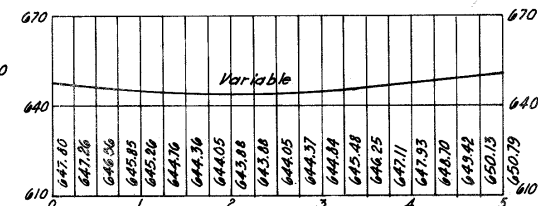
Scale: 1" = 30'



PROFILE GRADE - CLARK FREEWAY

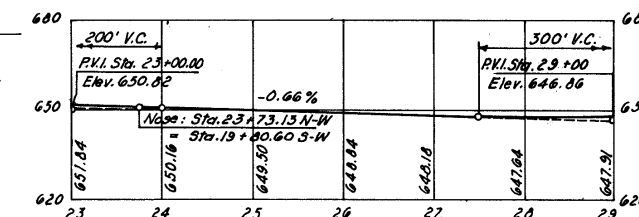
Scale: Horizontal - 1" = 100'
Vertical - 1" = 30'

LIGHT STANDARD SUPPORT LOCATION		
NO.	WEST PARAPET	EAST PARAPET



PROFILE - LANE W-S

Scale: Horizontal - 1" = 100', Vertical - 1" = 30'

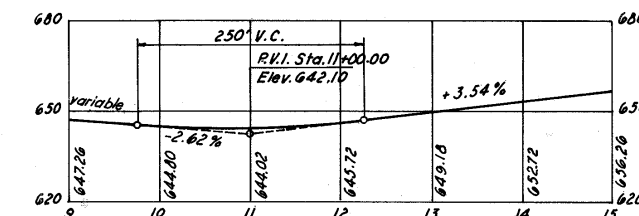


PROFILE GRADE - LANE N-W

Scale: Horizontal - 1" = 100'
Vertical - 1" = 30'

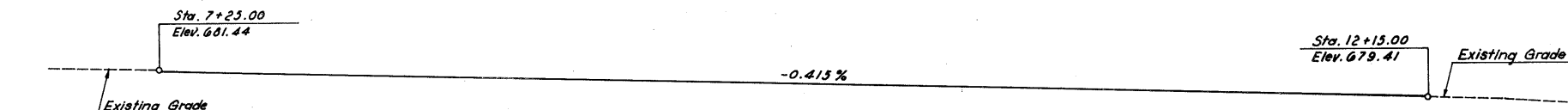
PROFILE - LANE S-W

Scale: Horizontal - 1" = 100', Vertical - 1" = 30'

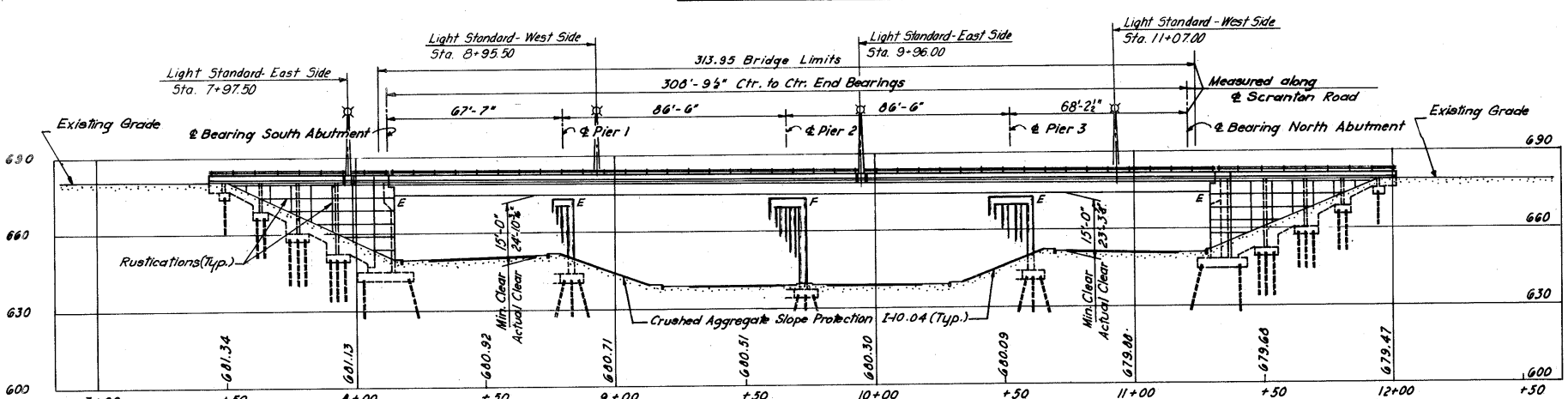


PROFILE GRADE - LANE W-N

Scale: Horizontal - 1" = 100'
Vertical - 1" = 30'



PROFILE GRADE - SCRANTON ROAD



ELEVATION

Scale: 1" = 30'

H.N.T.B. BRIDGE NO. 2
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SITE PLAN

SCRANTON ROAD OVER CLARK FREEWAY

BR. NO. CUY-90-1395 STA 8+09.63
SCALE: As Shown STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN BY	TRACED	CHECKED BY	REVIEWED	REVISED
DATE 8/64	DATE	DATE 11-66	DATE	

ATC 031185P
MICROFILMED
 OCT 27 1982

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

364A
47B

CUYAHOGA COUNTY
 CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
 CUY. 71-18.54
 CUY. 90-13.81

ESTIMATED QUANTITIES BRIDGE NO. CUY-90-1395							
ITEM	DESCRIPTION	UNIT	ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL	AS BUILT
E-2	Unclassified Excavation	Cu.Yd.	4,217	438			4,655
S-1	Class "C" Concrete (Superstructure)	Cu.Yd.			690		690
S-1	Class "C" Concrete (Pier Caps and Columns)	Cu.Yd.		170			170
S-1	Class "C" Concrete (Abutments above Footings)	Cu.Yd.	698				698
S-1	Class "E" Concrete (Abutment, Wingwall and Pier Footings)	Cu.Yd.	484	121			605
S-3	Waterproofing Premolded Sealing Strip	Lin.Ft.	237				237
S-4	Reinforcing Steel	Pounds	171,553	78,438	157,262		407,253
S-7	Structural Steel	Pounds			482,420		482,420
S-8	Field Painting of Structural Steel, as per proposal note.	Pounds			482,420		482,420
S-14	Railing (Type C Aluminum Rail, and Supports, Concrete Parapet)	Lin.Ft.	139.00		620.82		759.82
S-16	First Test Pile	Lump Sum					
S-17	First Pile Test Load	Lump Sum					
S-18	12" Cast-in-Place Reinforced Concrete Piles	Lin.Ft.	17,080	6,970			24,050
S-25	For Lighting Details and Quantities, see Sheet 200						
S-29	Scuppers including supports	Each			19		19
S-29	Porous Backfill	Cu.Yd.	385				385
S-29	8" Bituminous Coated Perforated C.M.P. (Including Specials)	Lin.Ft.	137				137
S-29	8" Bituminous Coated C.M.P. (Including Specials)	Lin.Ft.	18				18
S-29	8" Pipe Trough (Including Specials as per plan)	Lin.Ft.	29				29
S-29	W.I. or Galv. Steel Down Spouts (Including Specials) - 8" dia.	Lin.Ft.	52				52
I-70	Crushed Aggregate Slope Protection	Sq. Yds.				525	525
S-17	Subsequent Pile Test Load	Each					1
S-101	Water Reducing Set-retarding Admixture	Each			690		690
Special	Conduit bank (9-4" asbestos cement) supported on bridge, complete as per plan - See sh. 488	Lin.Ft.				316	316

Note: For estimated quantities of Walls 91 and 91A, See Sheet 381.

*Includes: 1600# required for installation of East Ohio Gas Co. Line.
 1600# required for installation of Ohio Bell Telephone Co. Ducts
 1340# required for installation of Cleveland Electric Illuminating Co. Ducts
 These additional quantities to be paid for by the respective utility companies.

H.N.T.B. BRIDGE NO. 2

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

ESTIMATED QUANTITIES

SCRANTON ROAD OVER CLARK FREEWAY

BR. NO. CUY-90-1395 STA 8+09.63
 SCALE STA 11+23.58
 CLEVELAND CUYAHOGA COUNTY OHIO

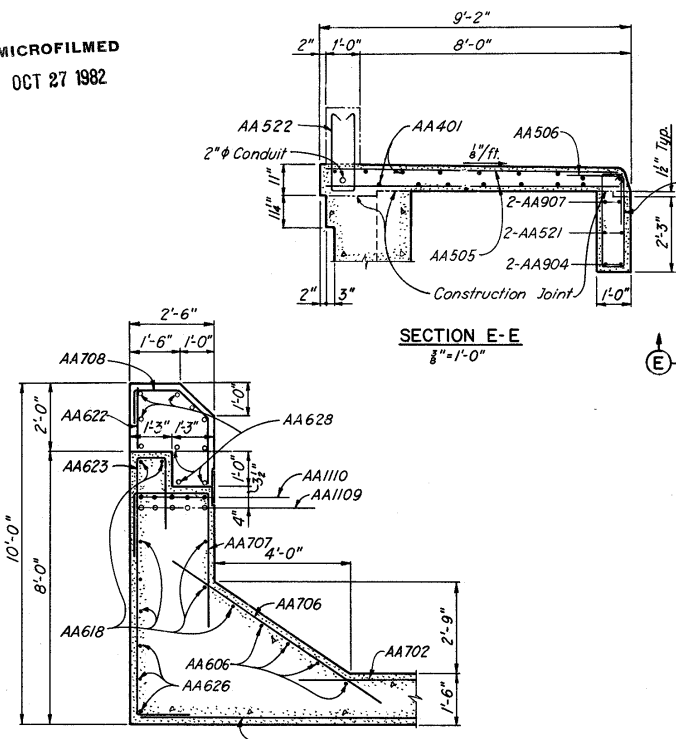
DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DATE	DATE	DATE	DATE	DATE

SHEET 364A

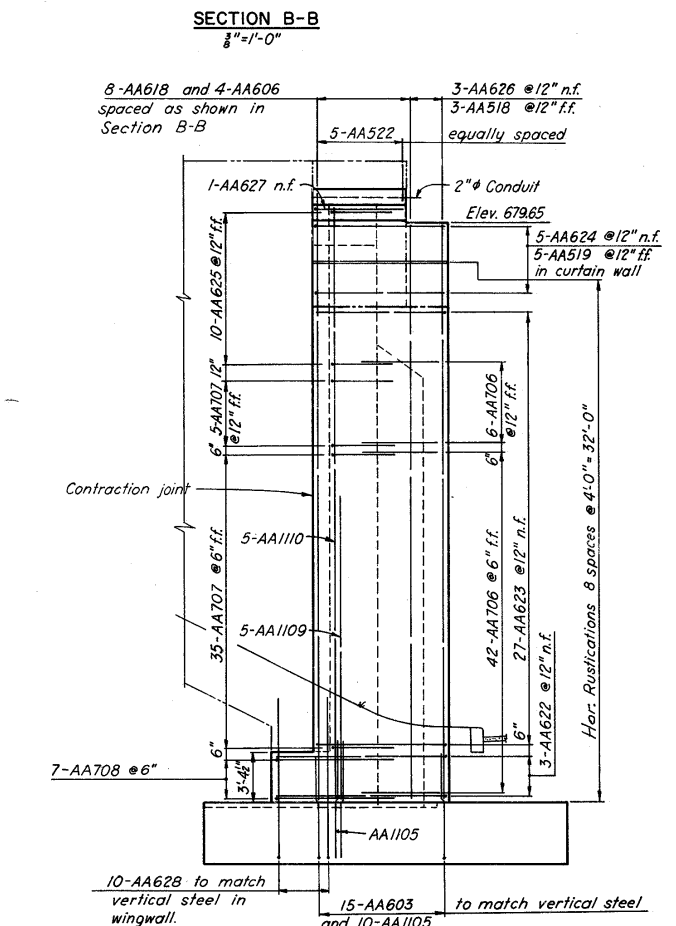
MICROFILMED
OCT 27 1982

FED. RD. DIVISION	STATE	PROJECT	365 478
2	OHIO		

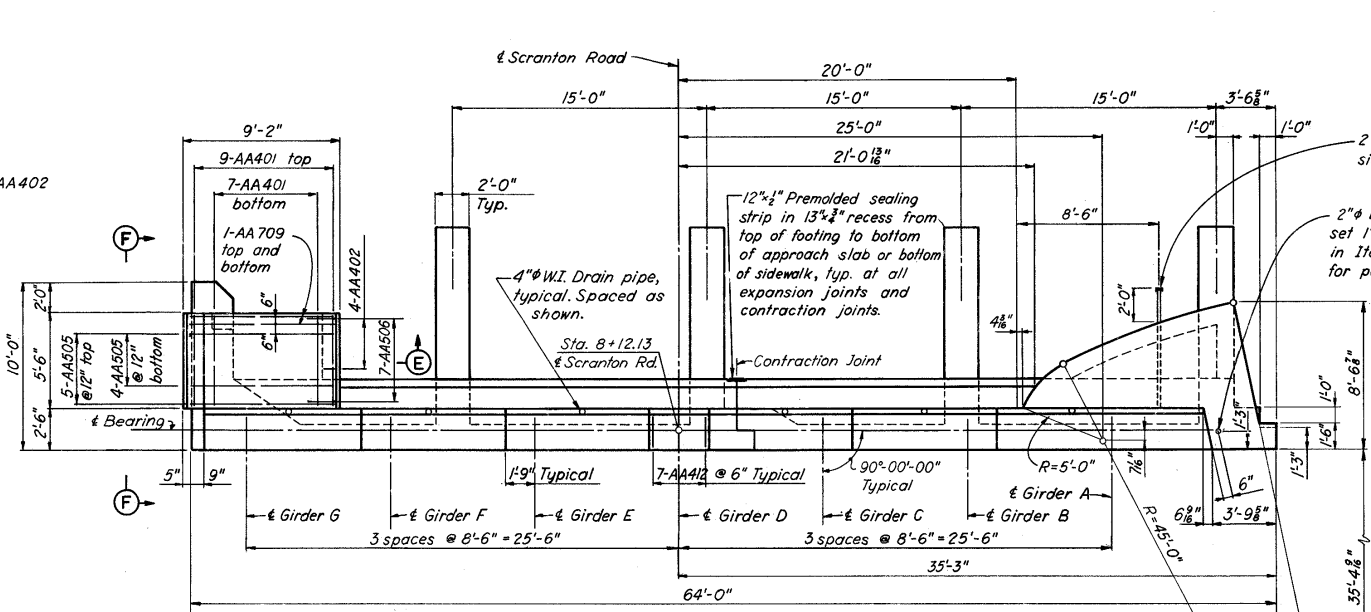
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



SECTION E-E
8" x 1'-0"

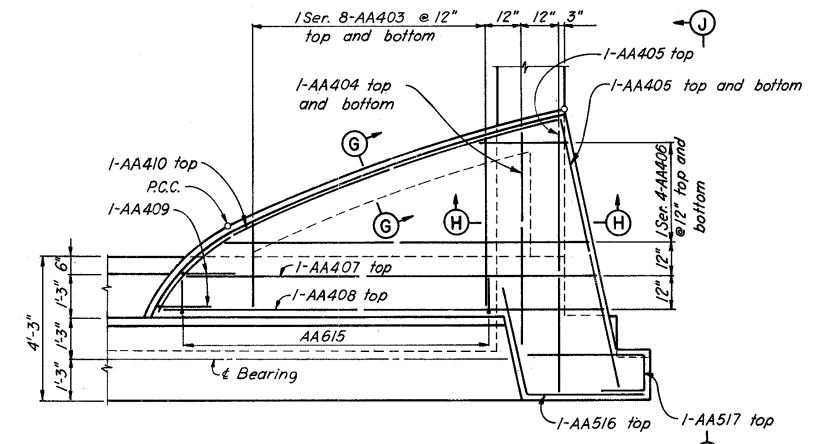


SECTION B-B
8" x 1'-0"

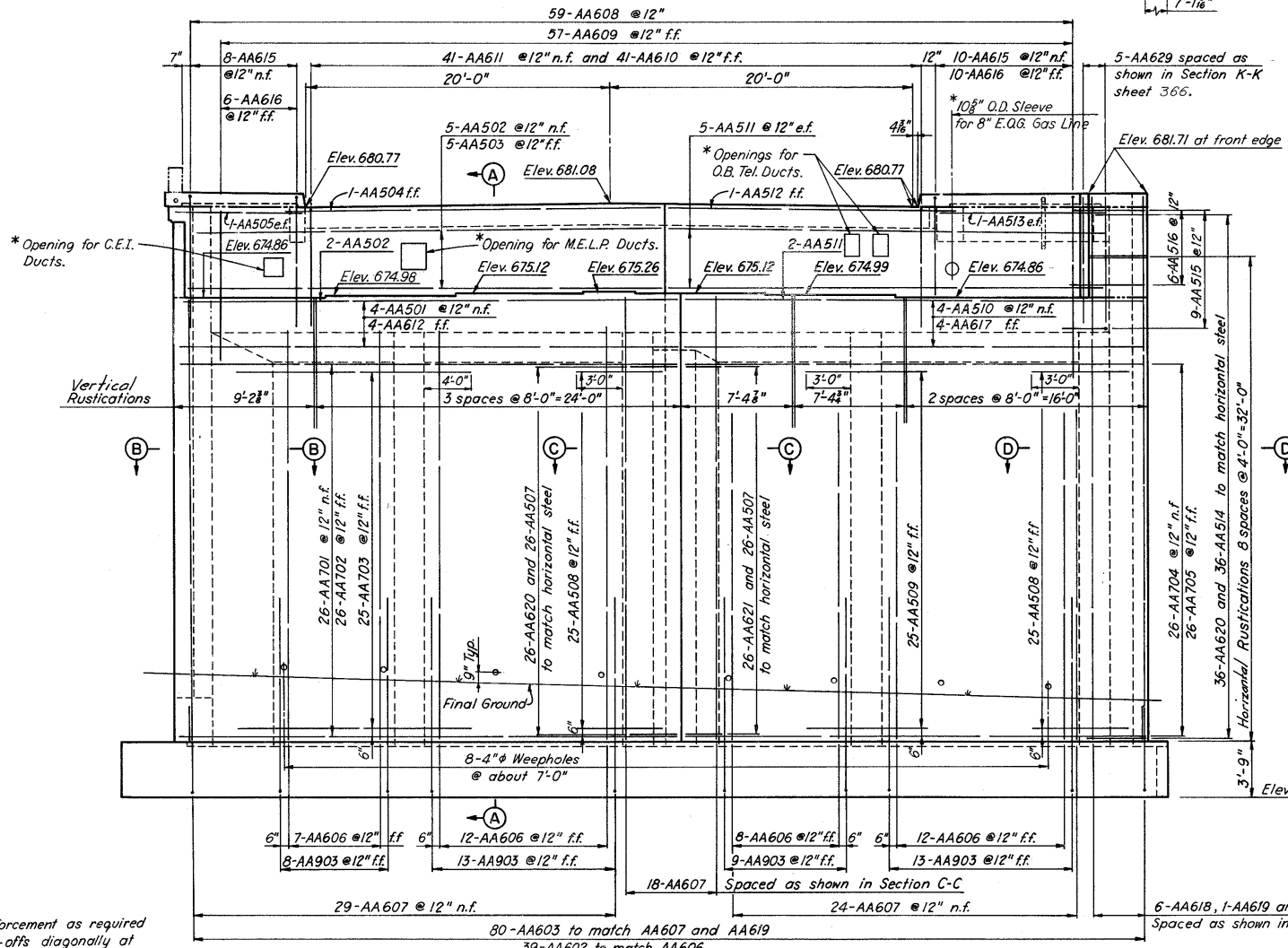


PLAN

Note:
AA412 bars shall be placed
2 1/2" below top of bridge seat.



SOUTHWEST SIDEWALK REINFORCEMENT
8" x 1'-0"



ELEVATION
Piles not shown

* Note:
Field cut reinforcement as required
and place cut-offs diagonally at
corners of opening.

Notes:
For footing plan see sheet 366.
For counterfort details see Section A-A.
For Sections A-A, C-C, D-D and H-H and
Elevation J-J see sheet 366.
For reinforcing schedule see sheet 378.
For Rustication Detail and Abutment Bridge Seat
Drain Detail see sheet 366.
For end dam details see sheet 374 and Ohio
Standard Drawing SD-1-63 sheets 2 and 4 of 4.
n.f. denotes near face.
f.f. denotes far face.
e.f. denotes each face.
Class C concrete shall be used for abutment
above footing. Footing shall be Class E concrete.
For concrete parapet details see sheet 375.
For longitudinal reinforcement in parapet see sheet 377.
Provide expansion and deflection coupling for
2" Conduit at front face of backwall and at
contraction joint.

H.N.T.B. BRIDGE NO. 2

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

SOUTH ABUTMENT

SCRANTON ROAD OVER CLARK FREEWAY

BR. NO. CUY.90-1395 STA 8+09.63
SCALE: 3/16" = 1'-0" STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN R.P.	TRACED	CHECKED L.D.	REVIEWED	REVISED
DATE 9-64	DATE	DATE 11-64	DATE	

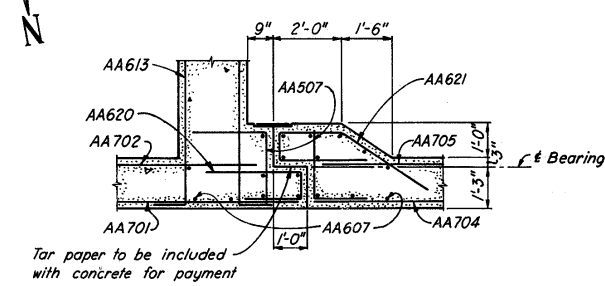
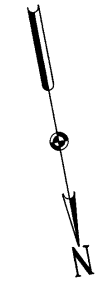
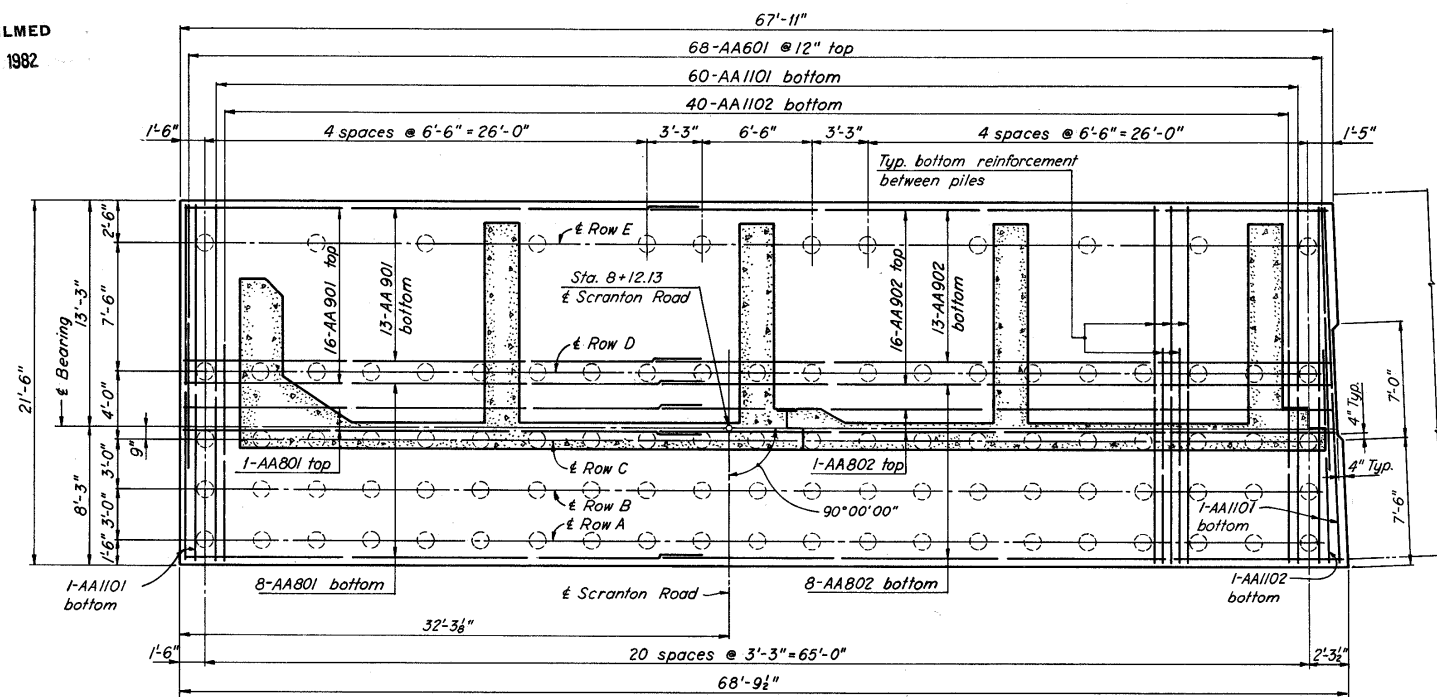
SHEET 365

MICROFILMED
OCT 27 1982

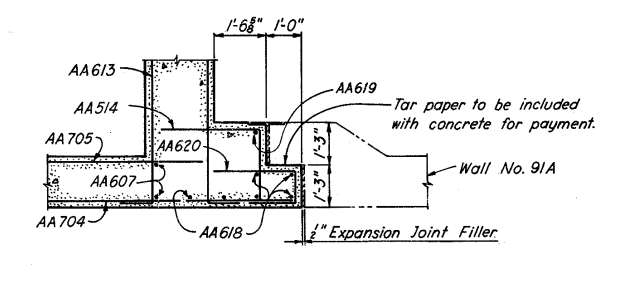
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

366
478

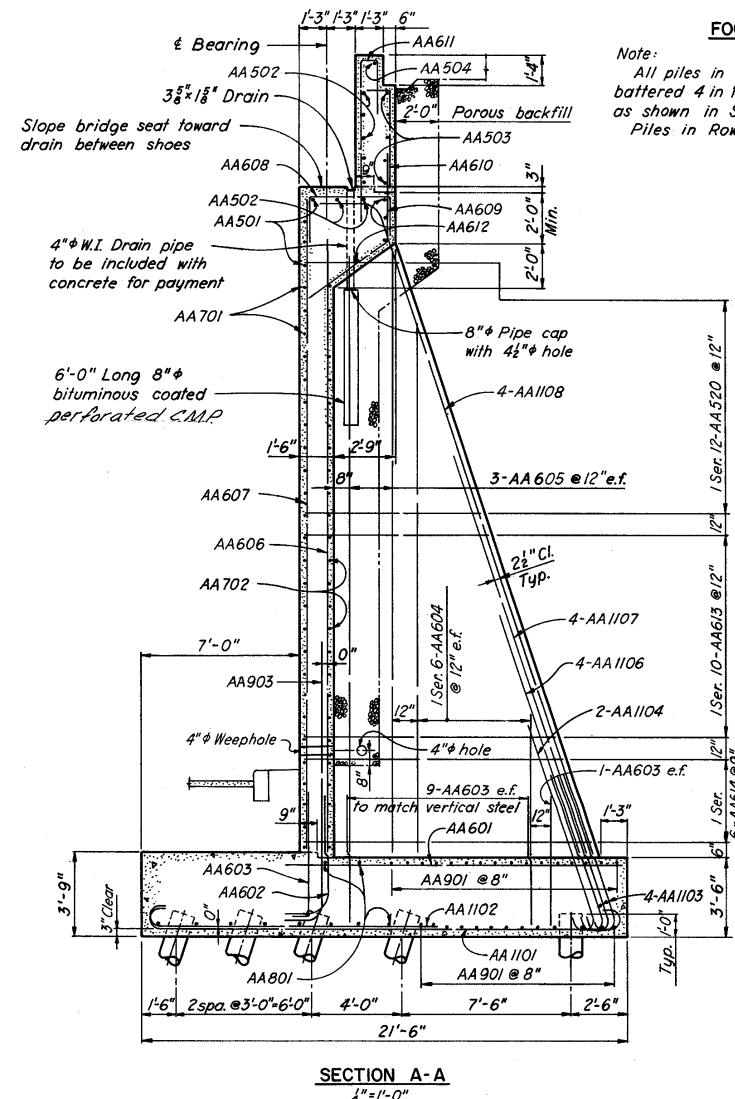
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



SECTION C-C
8" = 1'-0"

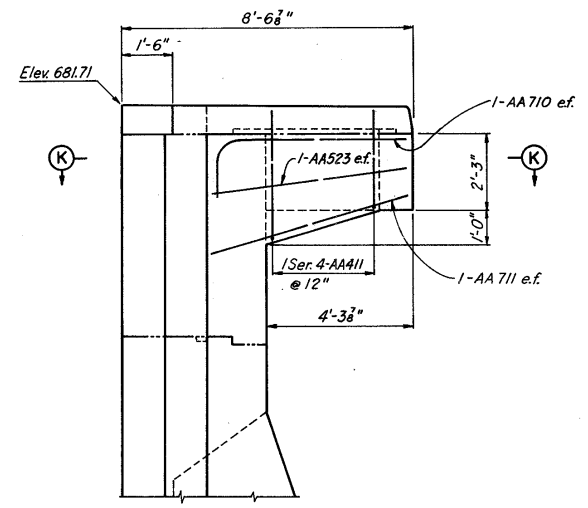


SECTION D-D
8" = 1'-0"

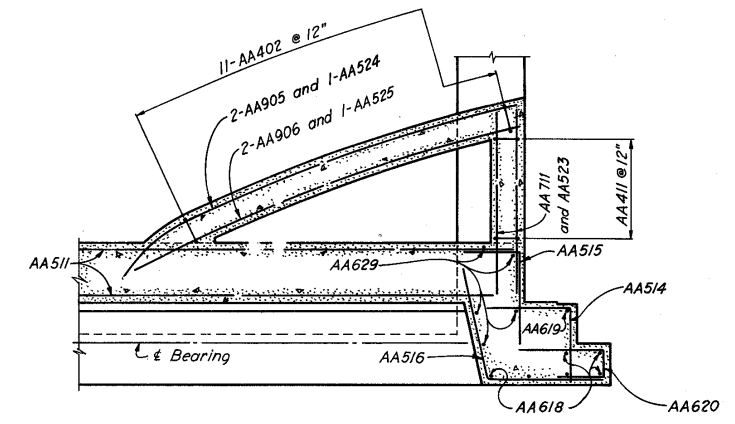


SECTION A-A
4" = 1'-0"

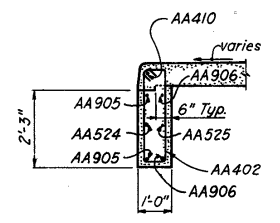
FOOTING PLAN
8" = 1'-0"
Note:
All piles in Rows A, B, C and D shall be battered 4 in 12 toward the toe of footing as shown in Section A-A.
Piles in Row E shall be vertical.



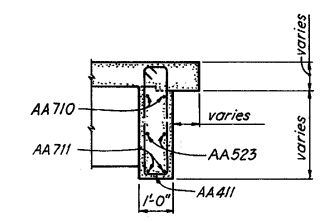
ELEVATION J-J
8" = 1'-0"



SECTION K-K
8" = 1'-0"

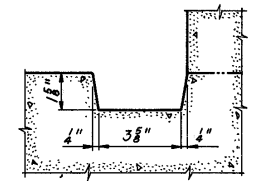


SECTION G-G
8" = 1'-0"

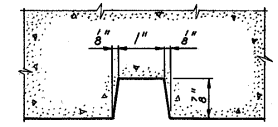


SECTION H-H
8" = 1'-0"

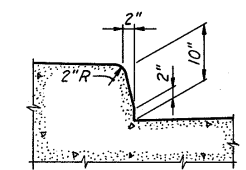
Notes:
For location of Sections A-A, C-C, D-D, G-G, H-H and Elevation J-J see sheet 365.
All piles are 12" cast-in-place concrete.
All pile dimensions are measured at bottom of footing.
For additional notes see sheet 365.



ABUTMENT BRIDGE SEAT
DRAIN DETAIL
3" = 1'-0"



RUSTICATION DETAIL
Half size



CURB DETAIL
3/8" = 1'-0"

H.N.T.B. BRIDGE NO. 2

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

SOUTH ABUTMENT

SCRANTON ROAD OVER CLARK FREEWAY

BR. NO. CUY-90-1395 STA 8+09.63
SCALE: As noted STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

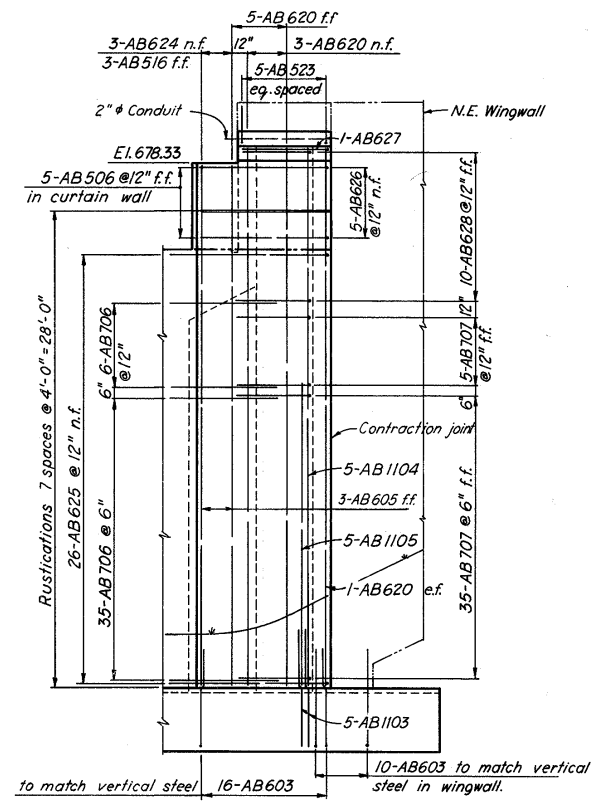
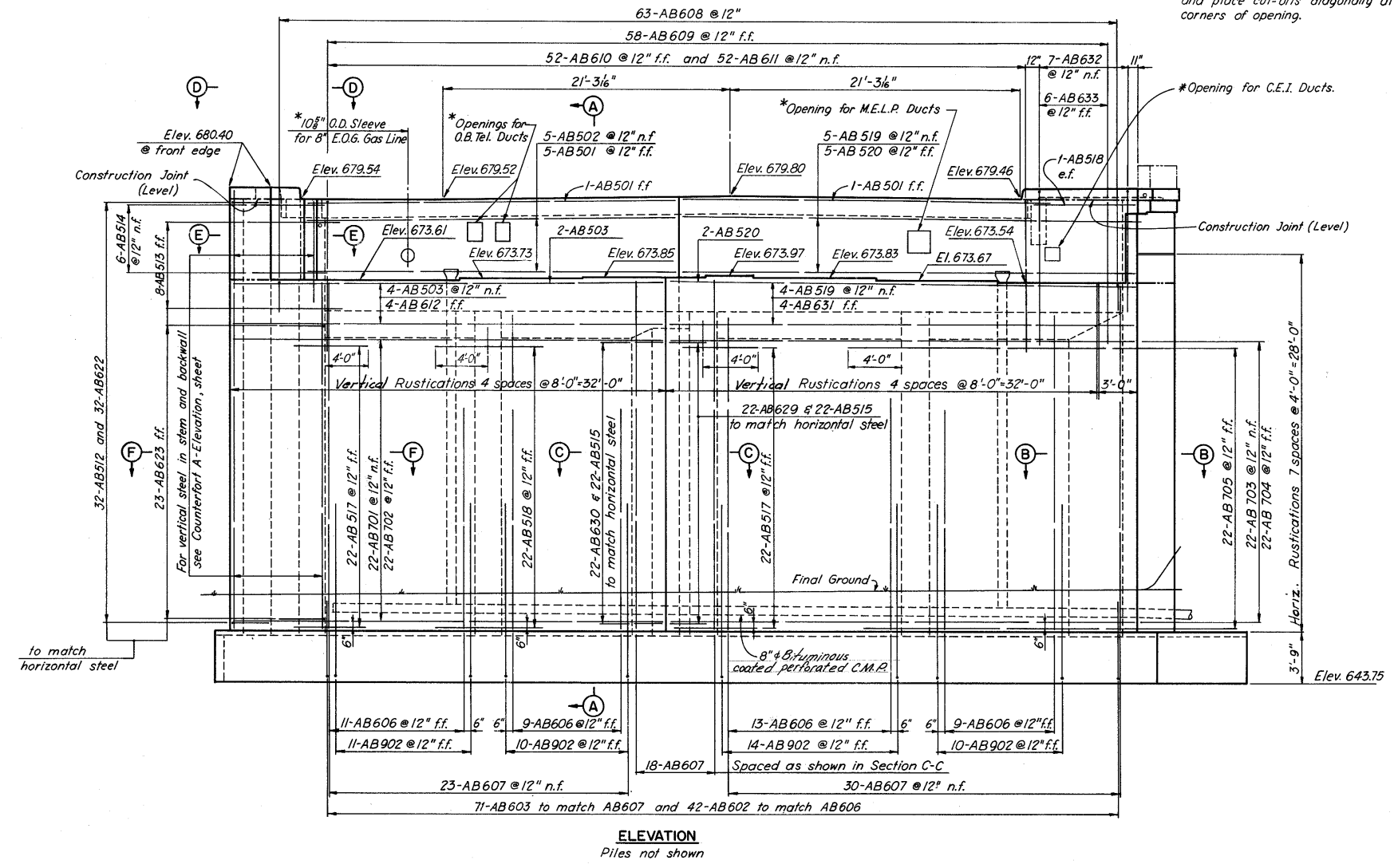
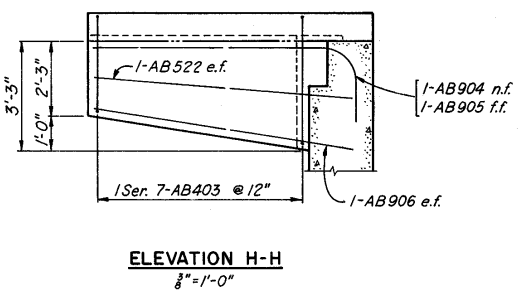
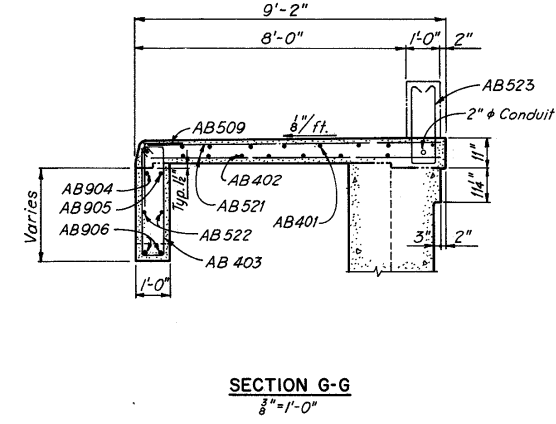
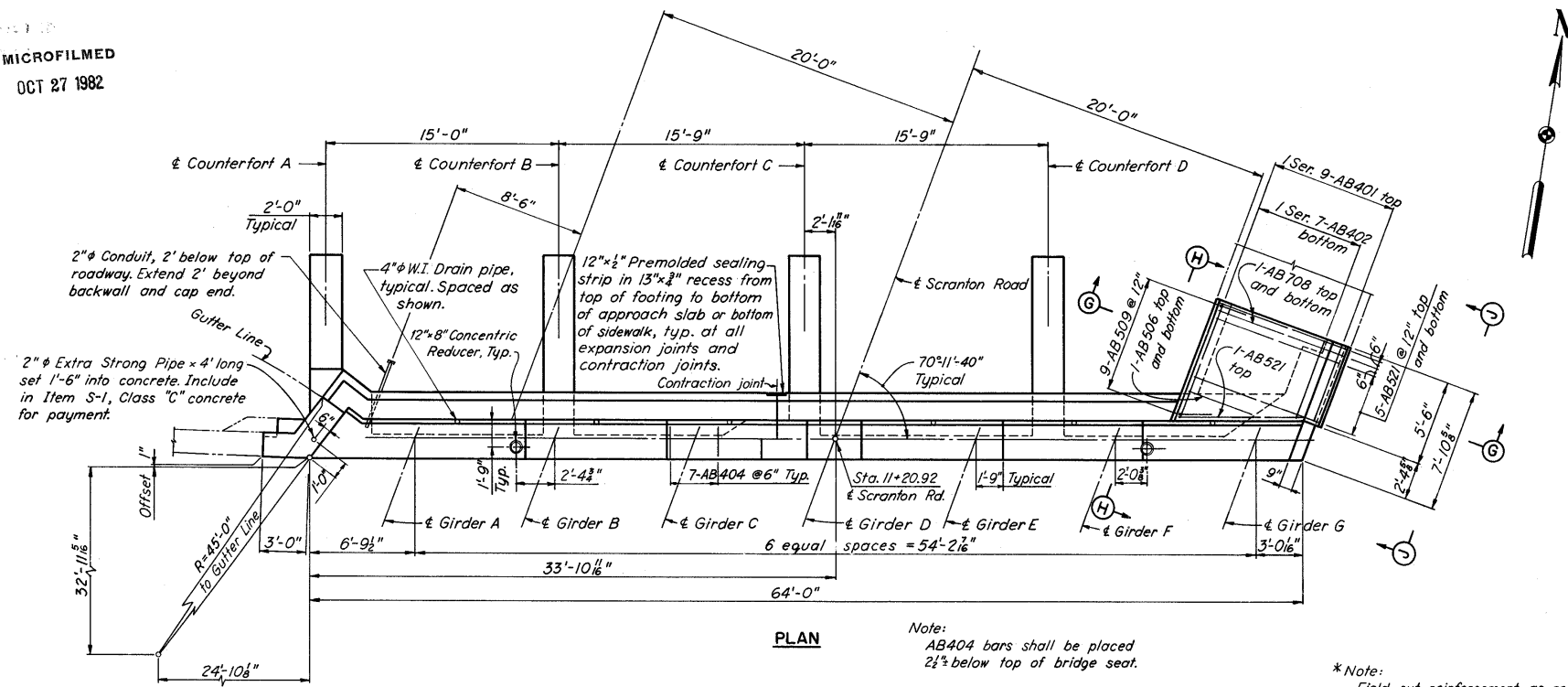
DRAWN RP	TRACED	CHECKED LD	REVIEWED	REVISED
DATE 9-69	DATE	DATE 11-64	DATE	

SHEET 366

MICROFILMED
OCT 27 1982

FED. RD. DIVISION	STATE	PROJECT	367 478
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



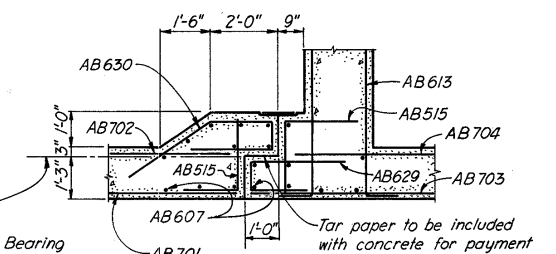
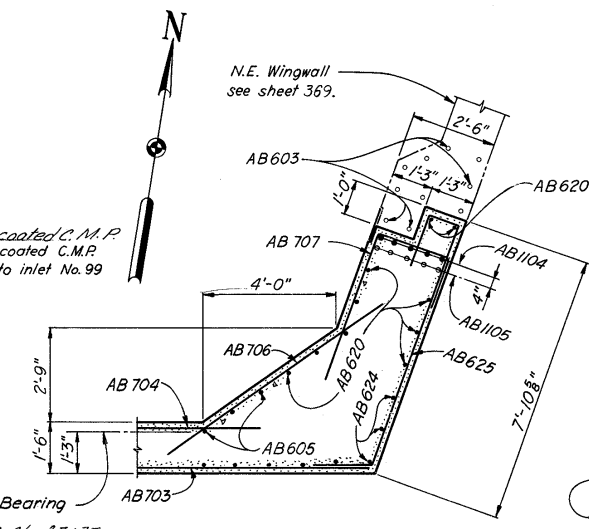
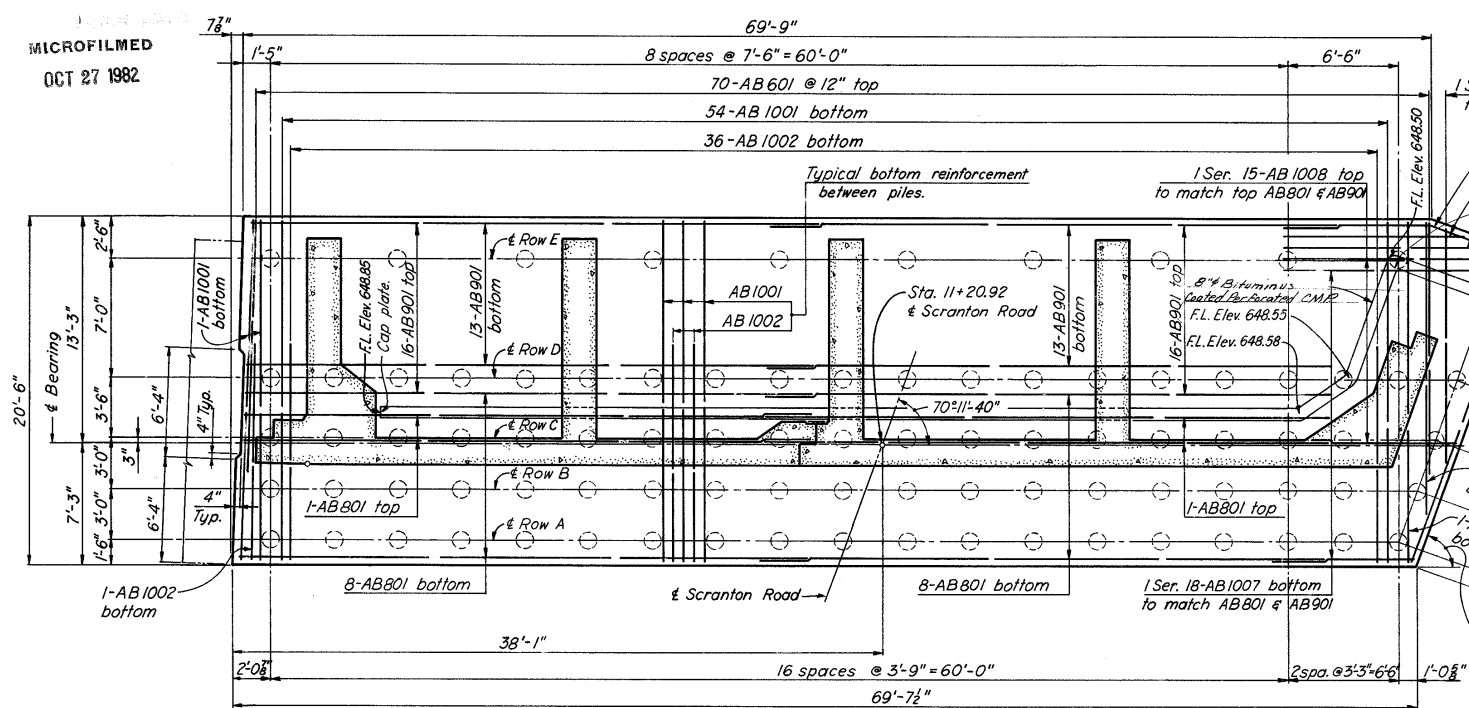
Notes:
For footing plan see sheet 368.
For details of counterforts B, C and D see Section A-A
For Sections A-A, B-B, C-C, E-E, F-F, View D-D, Elevation J-J and counterfort A-Elevation see sheet 368.
For reinforcing schedule see sheet 378.
For Rustication Detail, Curb Detail and Abutment Bridge Seat Drain Detail see sheet 366.
For end dam details see sheet 374 and Ohio Standard Drawing SD-1-63 sheets 2 and 4 of 4
For Downspout details see sheet 376.
n.f. denotes near face
f.f. denotes far face
e.f. denotes each face
Class C concrete shall be used for abutment above footing. Footing shall be Class E concrete.
For concrete parapet details see sheet 375.
For longitudinal reinforcement in parapet see sheet 377.
Provide expansion and deflection coupling for 2" Conduit at front face of backwall and at contraction joint.

H.N.T.B. BRIDGE NO. 2				
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK				
NORTH ABUTMENT				
SCRANTON ROAD OVER CLARK FREEWAY				
BR. NO. CUY-90-1395		STA 8+09.63		
SCALE: 3/16" = 1'-0"		STA 11+23.58		
CLEVELAND		CUYAHOGA COUNTY OHIO		
DRAWN R.P.	TRACED	CHECKED L.D.	REVIEWED	REVISED
DATE 4-64	DATE	DATE 11-64	DATE	DATE
				SHEET 367

MICROFILMED
OCT 27 1982

FED. RD. DIVISION	STATE	PROJECT	368 478
2	OHIO		

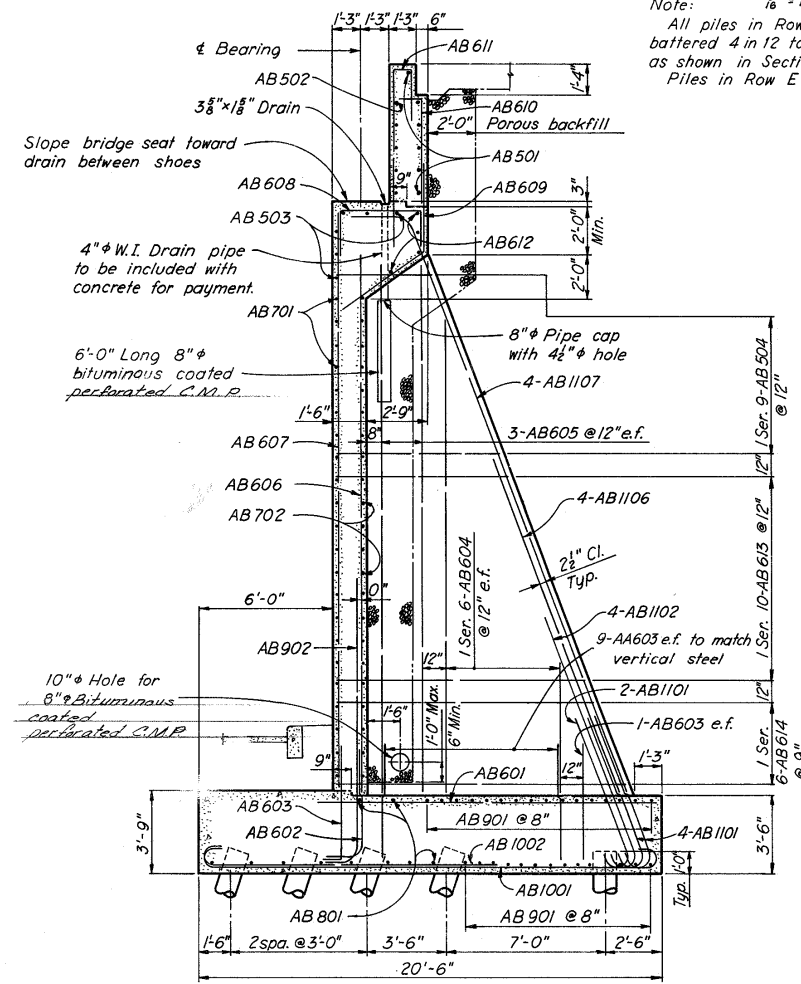
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



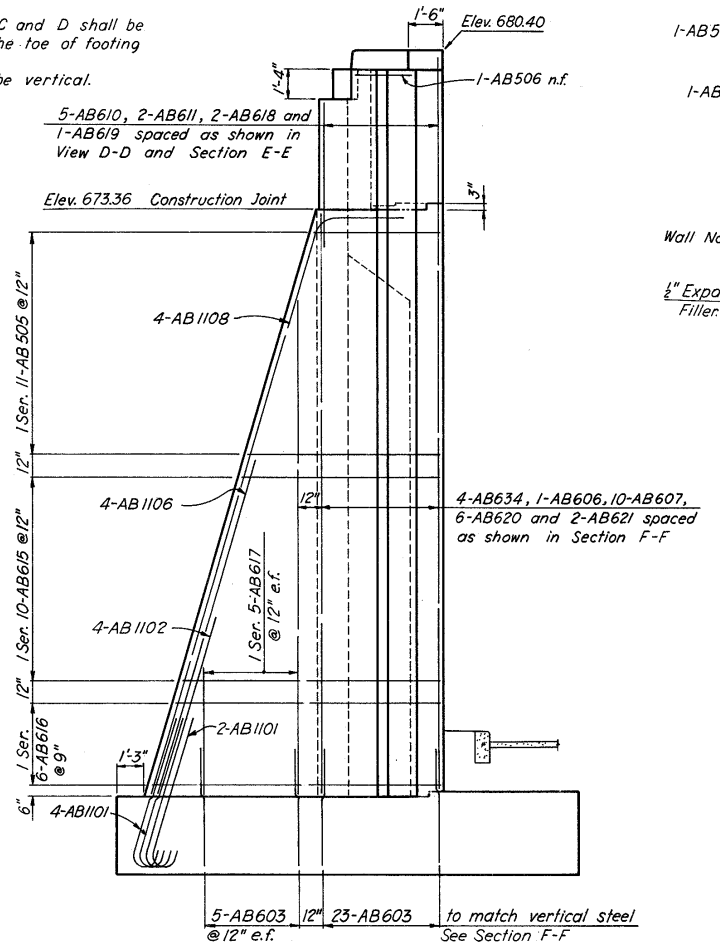
SECTION B-B
3/8" = 1'-0"

SECTION C-C
3/8" = 1'-0"

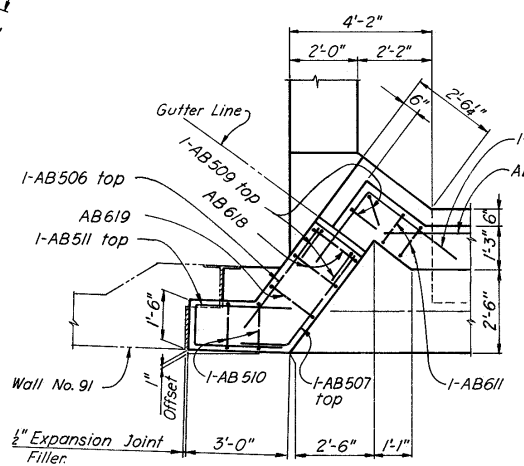
FOOTING PLAN
1/8" = 1'-0"
Note:
All piles in Rows A, B, C and D shall be battered 4 in 12 toward the toe of footing as shown in Section A-A.
Piles in Row E shall be vertical.



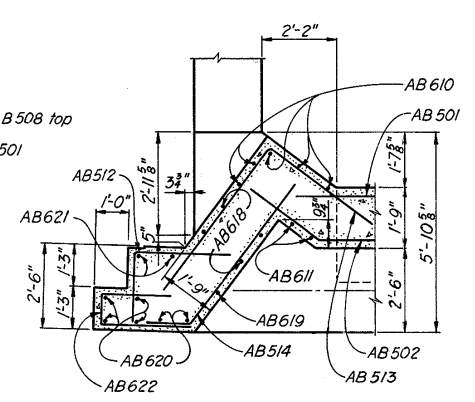
SECTION A-A
1/4" = 1'-0"
Typical Counterforts B, C and D



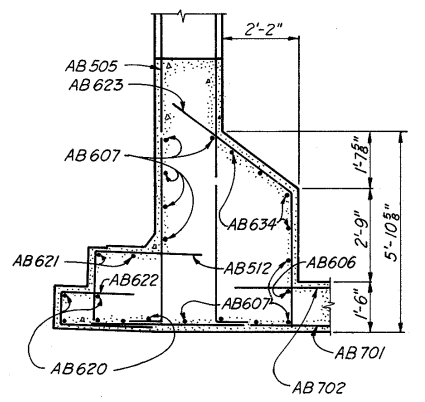
COUNTERFORT A - ELEVATION
1/4" = 1'-0"



VIEW D-D
3/8" = 1'-0"



SECTION E-E
3/8" = 1'-0"



SECTION F-F
3/8" = 1'-0"

Notes:
For location of Sections A-A, B-B, C-C, E-E, F-F and View D-D see sheet 367.
All piles are 12" cast-in-place concrete.
All pile dimensions are measured at bottom of footing.
For additional notes see sheet 367.

H.N.T.B. BRIDGE NO. 2

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

NORTH ABUTMENT

SCRANTON ROAD OVER CLARK FREEWAY

BR. NO. CUY-90-1395 STA 8+09.63
SCALE: As noted STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN R.P.	TRACED	CHECKED L.D.	REVIEWED	REVISED
DATE 9-64	DATE	DATE 11-64	DATE	

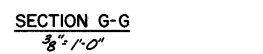
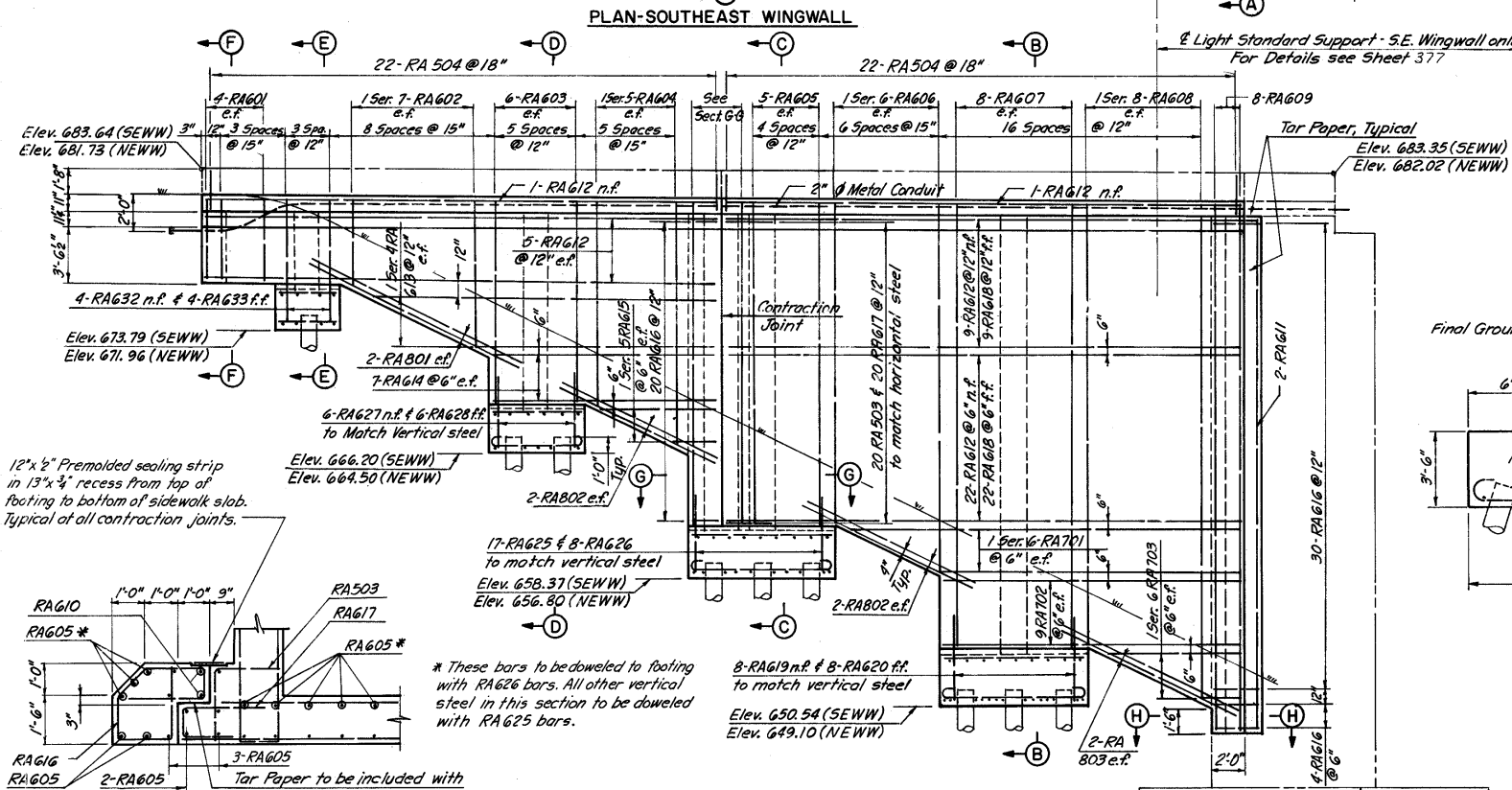
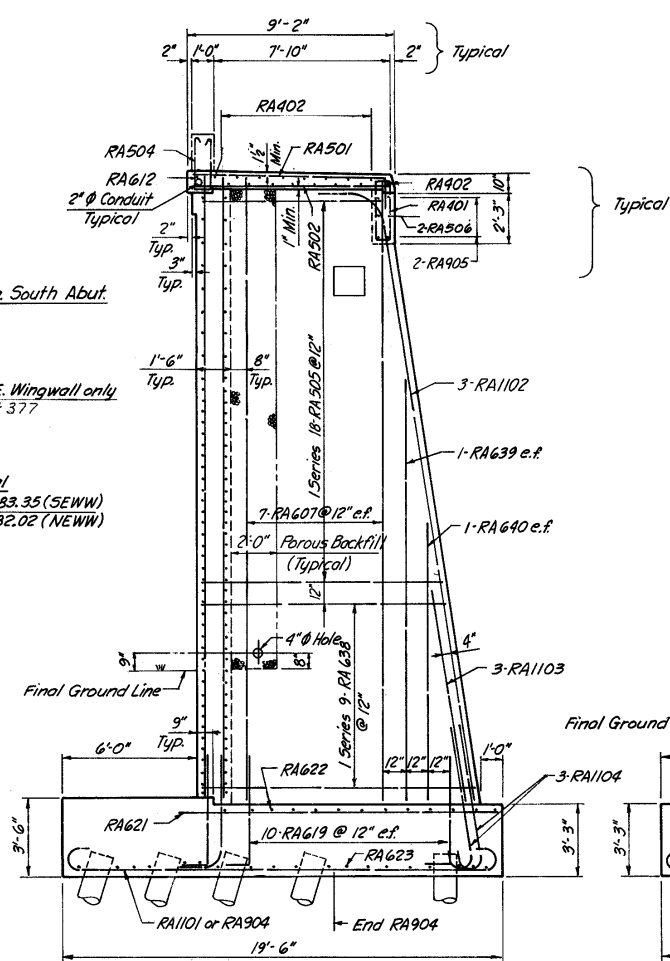
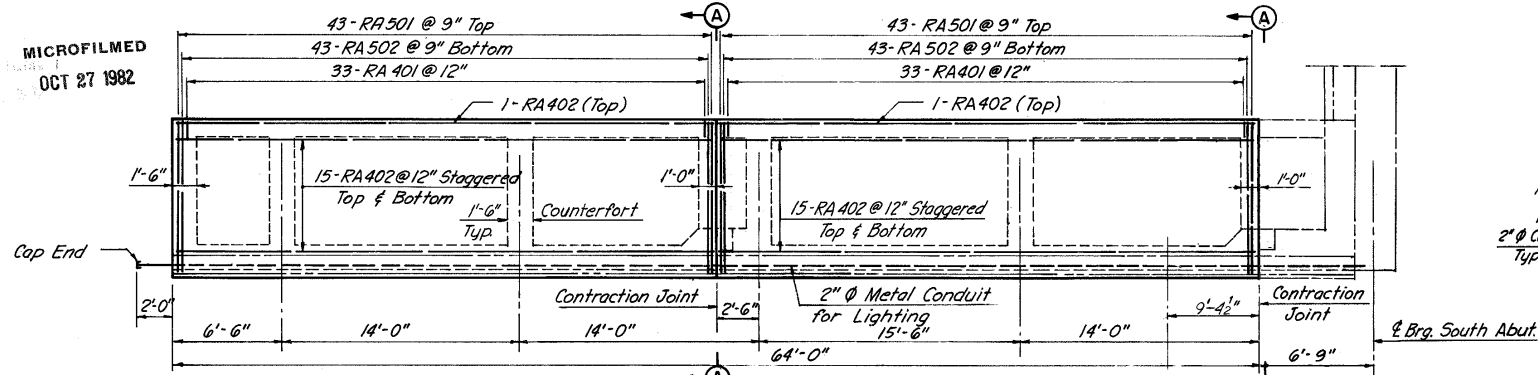
SHEET 368

MICROFILMED
OCT 27 1982

FED. RD. DIVISION 2	STATE OHIO	PROJECT
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369
478

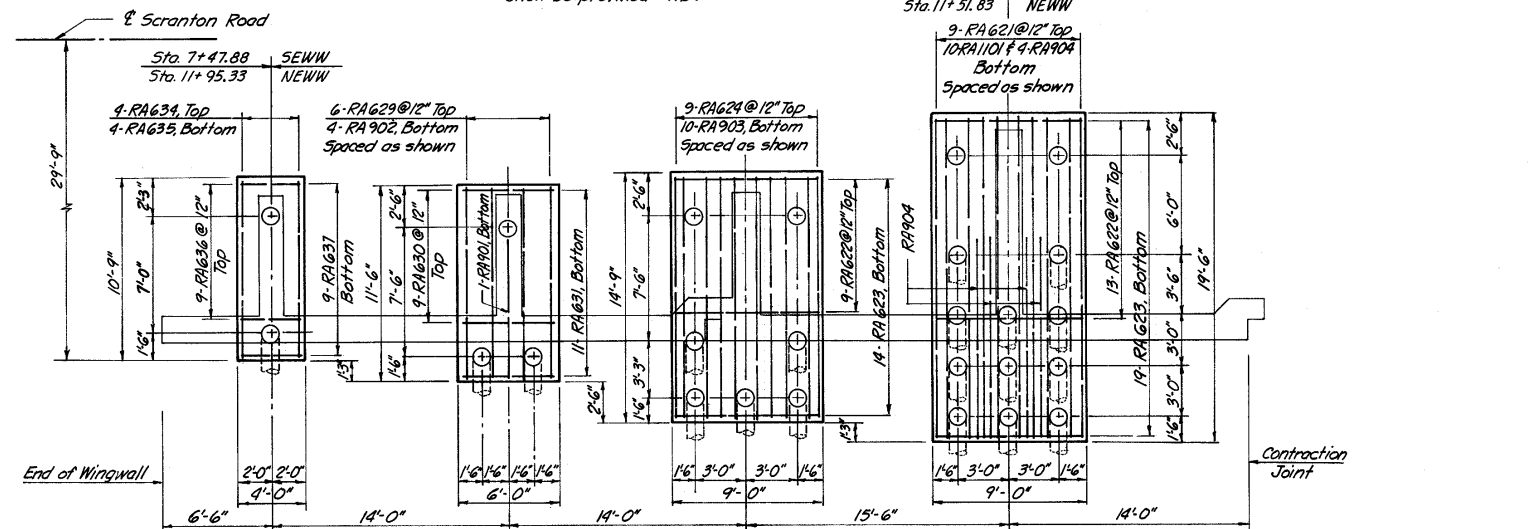
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



ELEVATION-SOUTHEAST WINGWALL

Northwest Wingwall is opposite hand except as noted. Reinforcing for Northwest Wingwall is the same as shown for Southeast Wingwall except barmarks shall be prefixed "RB".

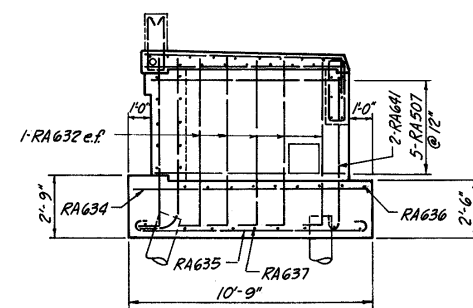
Sta. 7+91.38	SEWW
Sta. 11+51.83	NEWW



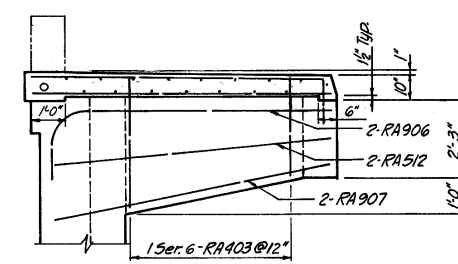
FOOTING PLAN-SOUTHEAST WINGWALL

Northwest Wingwall opposite hand

SECTION B-B
4" x 1'-0"

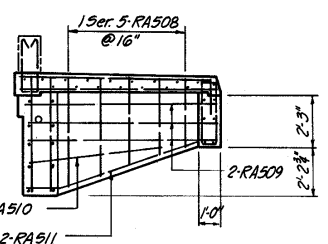


SECTION E-E
4" x 1'-0"

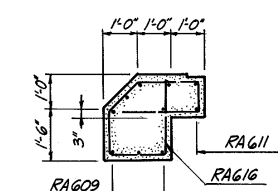


SECTION A-A
3/8" x 1'-0"

SECTION C-C
4" x 1'-0"



SECTION F-F
4" x 1'-0"



SECTION H-H
3/8" x 1'-0"

Notes:
Provide vertical rustications at 8'-0" on centers and horizontal rustications at 4'-0" on centers to match rustications in abutments. For rustication detail see sheet 376.
For light standard support details see sheet 377. For reinforcement schedule see sheets 378 & 379. Class C concrete shall be used above footings. Footings shall be Class E concrete.
Provide expansion and deflection coupling for 2" Conduit at contraction joints.
For concrete parapet details and for longitudinal reinforcement in parapet see sheet 377.
n.f. denotes near face.
f.f. denotes far face.
e.f. denotes each face.
All piles are 12" cast-in-place concrete.
All pile dimensions are measured at bottom of footings.
All battered piles shall be battered 4 in 12.

H.N.T.B. BRIDGE NO. 2

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

WINGWALLS

SCRANTON ROAD OVER CLARK FREEWAY

BR. NO. CUY.90-1395 STA 8+09.63
SCALE: 3/16"=1'-0", Unless noted STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN L.S.L.	TRACED	CHECKED L.D.	REVIEWED	REVISED
DATE 10-64	DATE	DATE 10-64	DATE	DATE

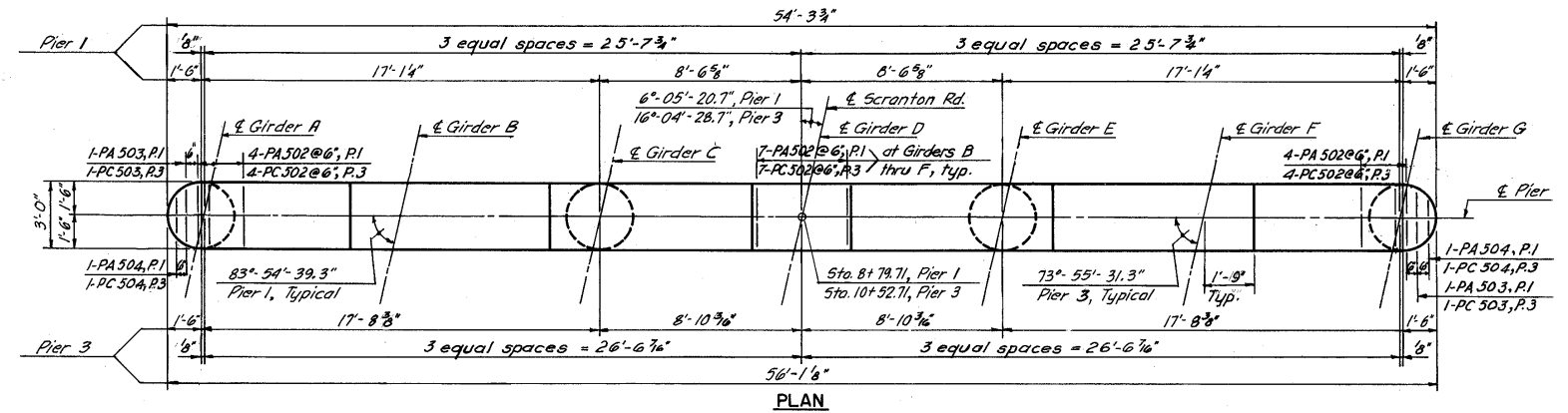
SHEET 369

MICROFILMED
OCT 27 1982

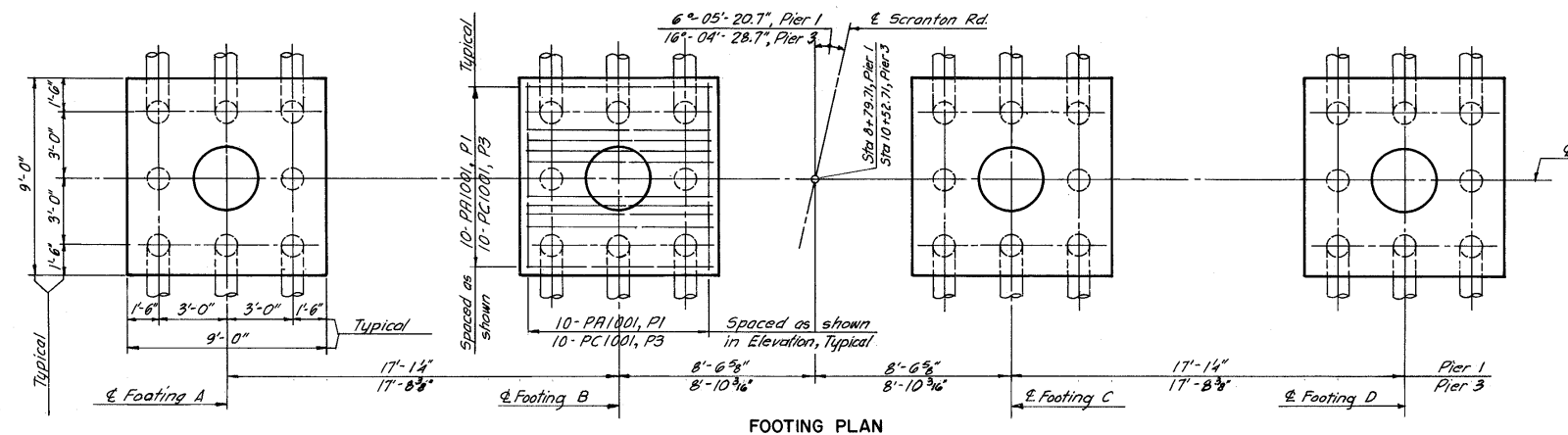
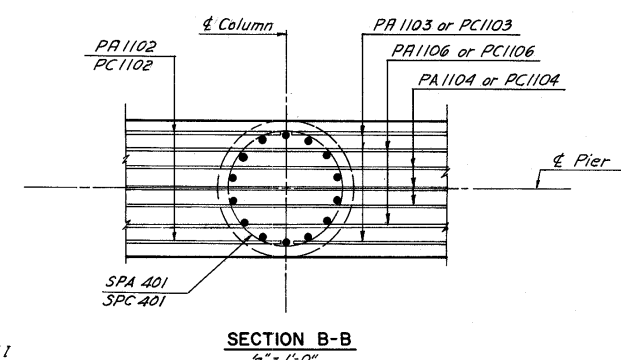
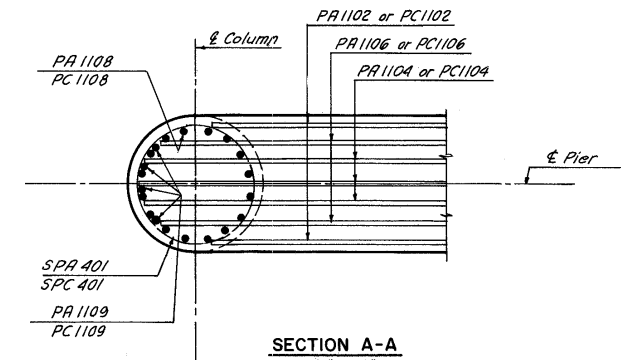
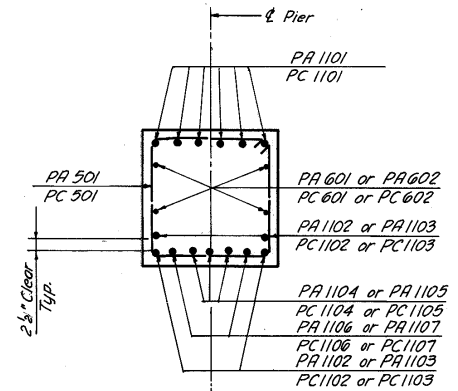
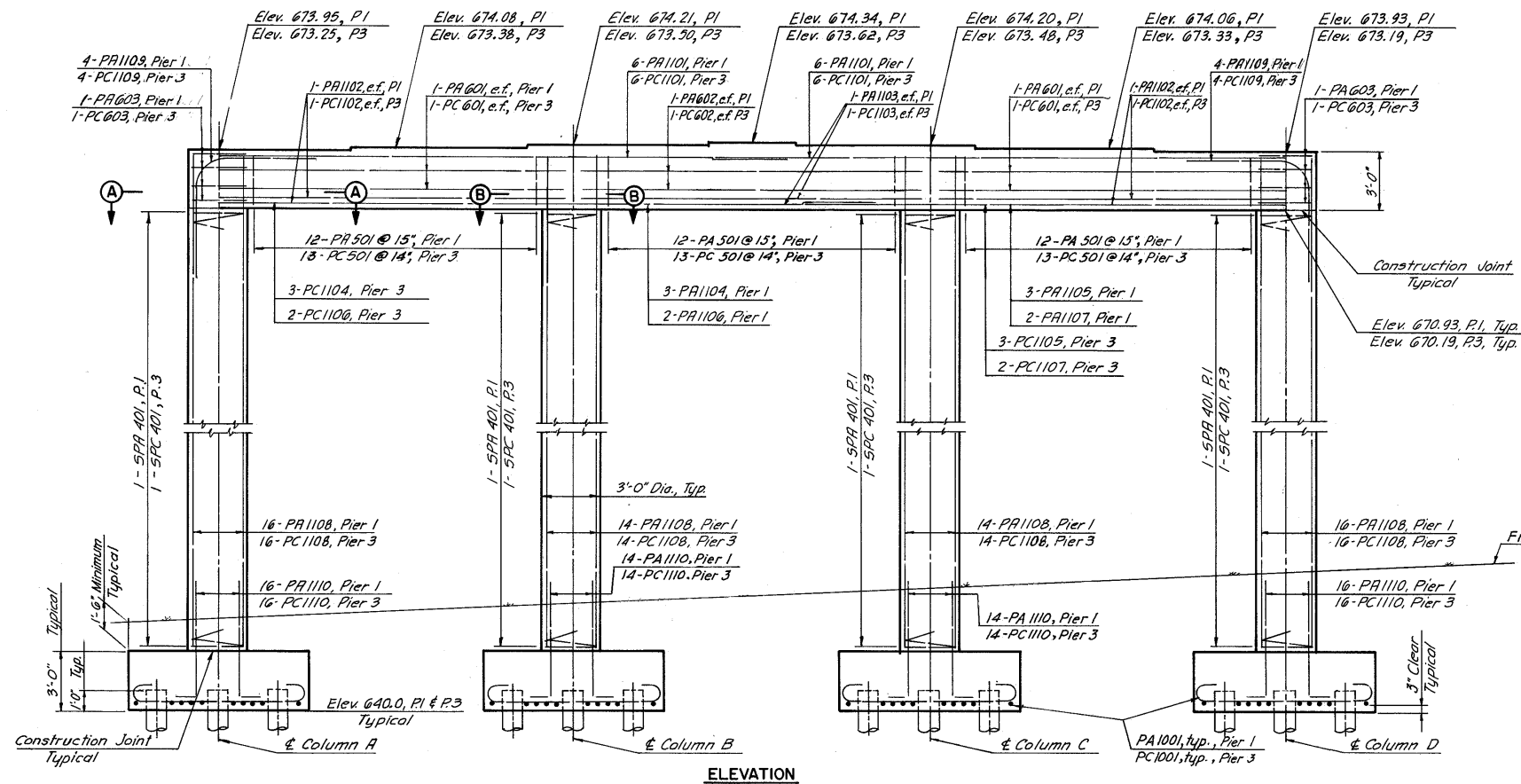
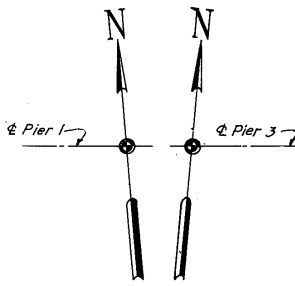
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



Note:
PA502, PC502, PA503, PC503, PA504 and PC504 bars shall be placed 2 1/2" below top of cap beam.



Notes:
Dimensions and reinforcing for all footings are identical.
e.f. denotes each face.
P1 denotes Pier 1, P3 denotes Pier 3.
For reinforcement schedule see Sheet 379 & 380.
All piles are 12" cast-in-place concrete.
All battered piles shall be battered 3 in 12.
All pile dimensions are measured at bottom of footing.

H.N.T.B. BRIDGE NO. 2
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIERS 1 & 3
SCRANTON ROAD OVER CLARK FREEWAY

BR. NO. CUY.90-1395 STA 8+09.63
SCALE: 1/4" = 1'-0" STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN P.M.	TRACED	CHECKED Z.D	REVIEWED	REVISED
DATE 6/64	DATE	DATE 8/64	DATE	

SHEET 370

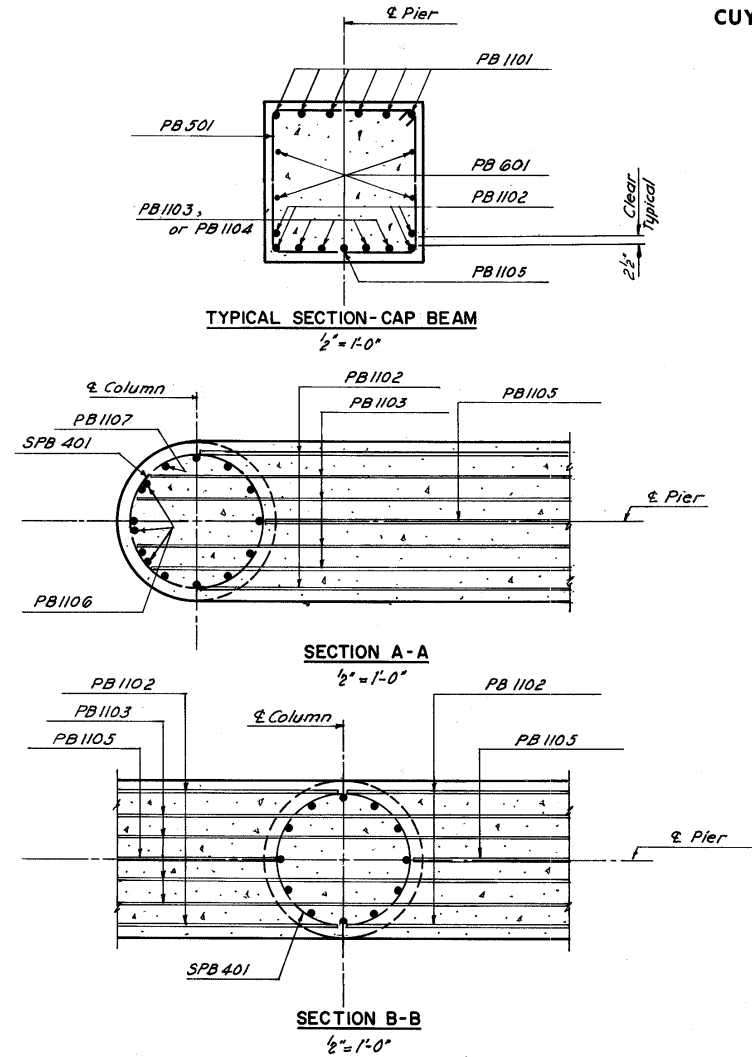
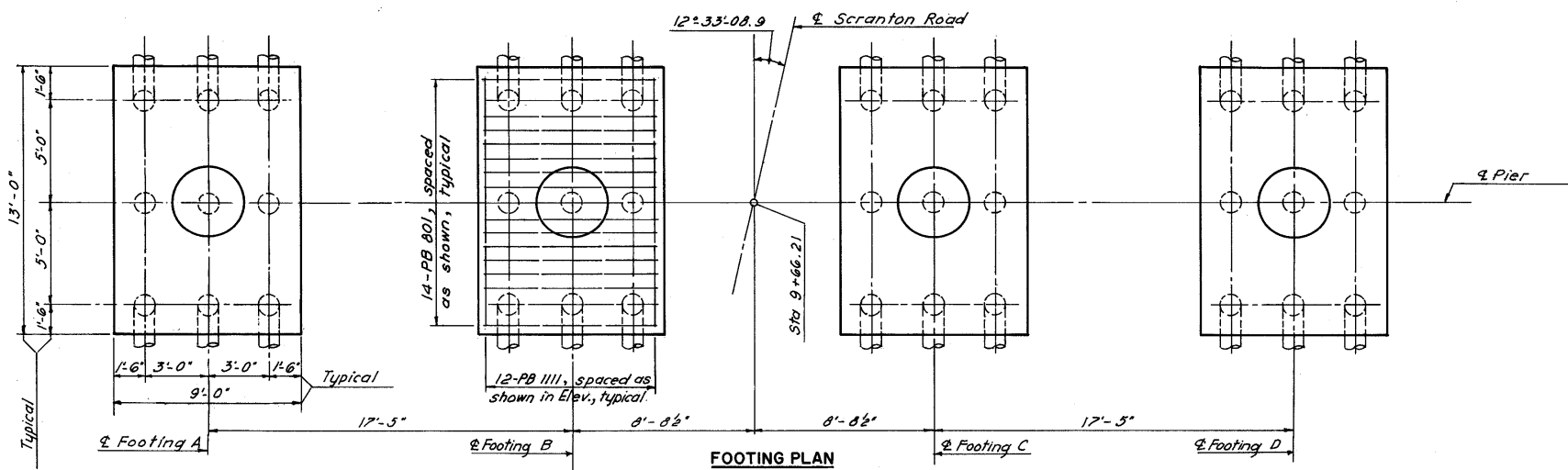
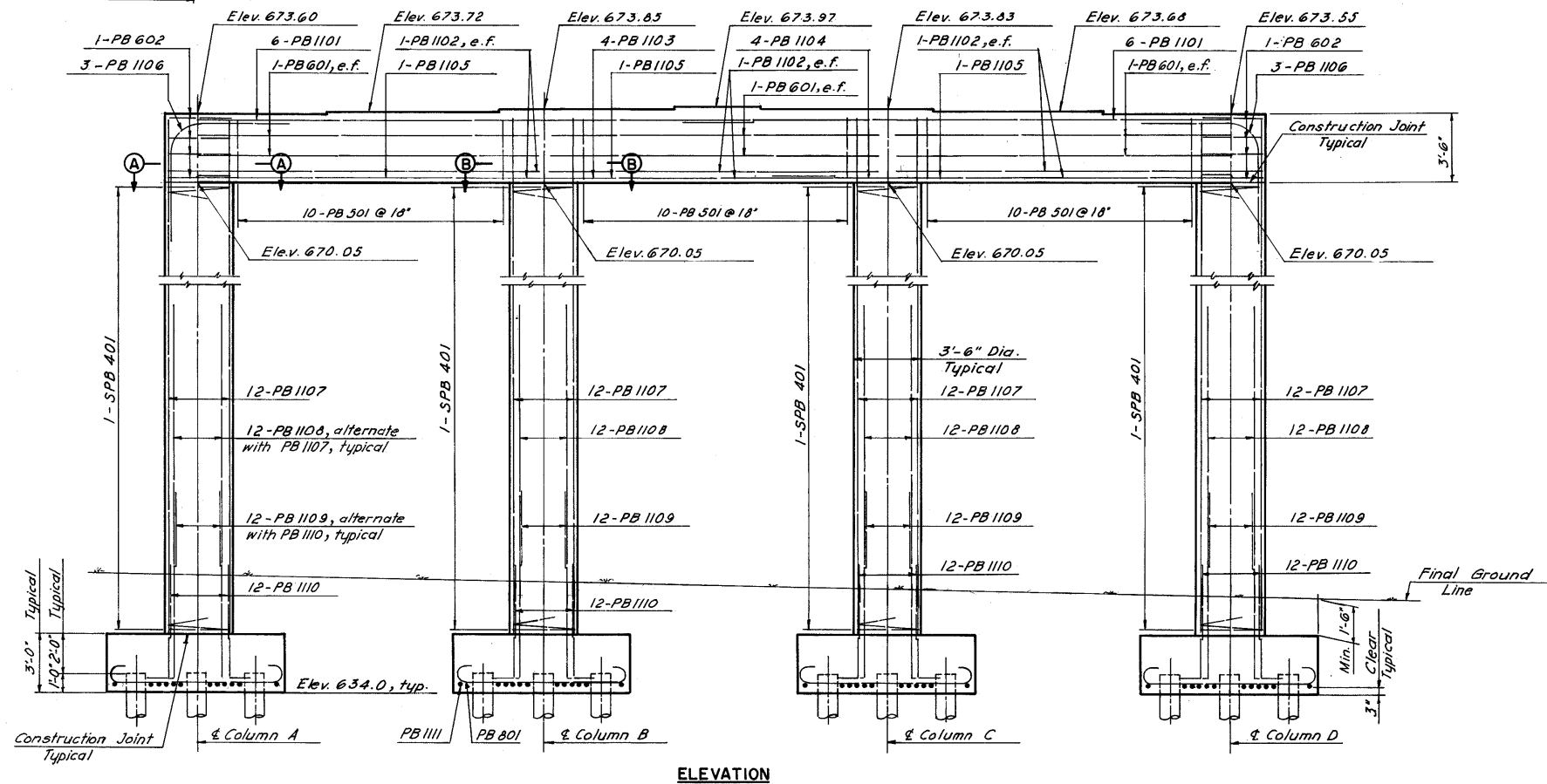
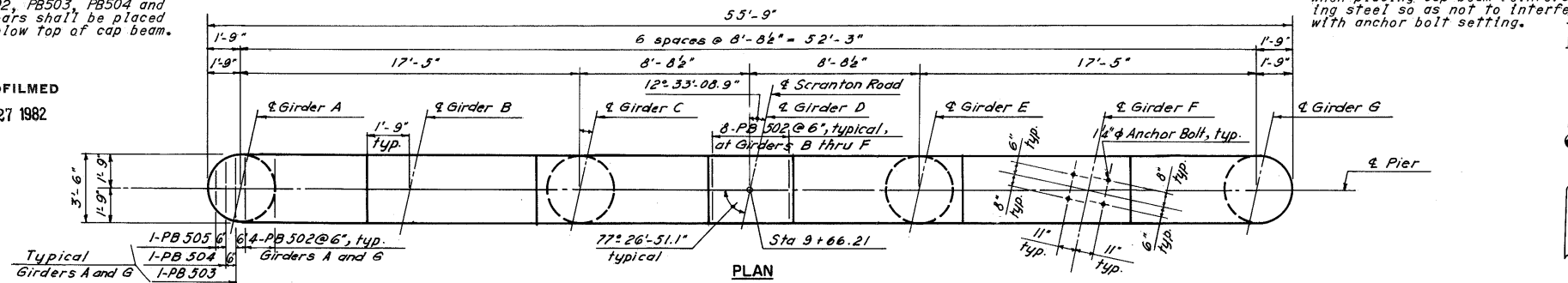
Note: PB502, PB503, PB504 and PB505 bars shall be placed 2 1/2" below top of cap beam.

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Note: Special care shall be taken when placing cap beam reinforcing steel so as not to interfere with anchor bolt setting.

FED. RD. DIVISION	STATE	PROJECT	371 478
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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



Notes:
Dimensions and reinforcing for all footings are identical.
e.f. denotes each face.
For reinforcement schedule see Sheet 380.
All piles are 12" Cast-in-Place piles.
All battered piles shall be battered 3 in 12.
All pile dimensions are measured at bottom of footing.
Structure Ground (per sht. 194) enclosed in one exterior column.

H.N.T.B. BRIDGE NO. 2

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

PIER 2

SCRANTON ROAD OVER CLARK FREEWAY

BR. NO. CUY.90-1395 STA 8+09.63
SCALE: 1/4" = 1'-0" STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN P.H.	TRACED	CHECKED L.D.	REVIEWED	REVISED
DATE 6/64	DATE	DATE 8-64	DATE	DATE

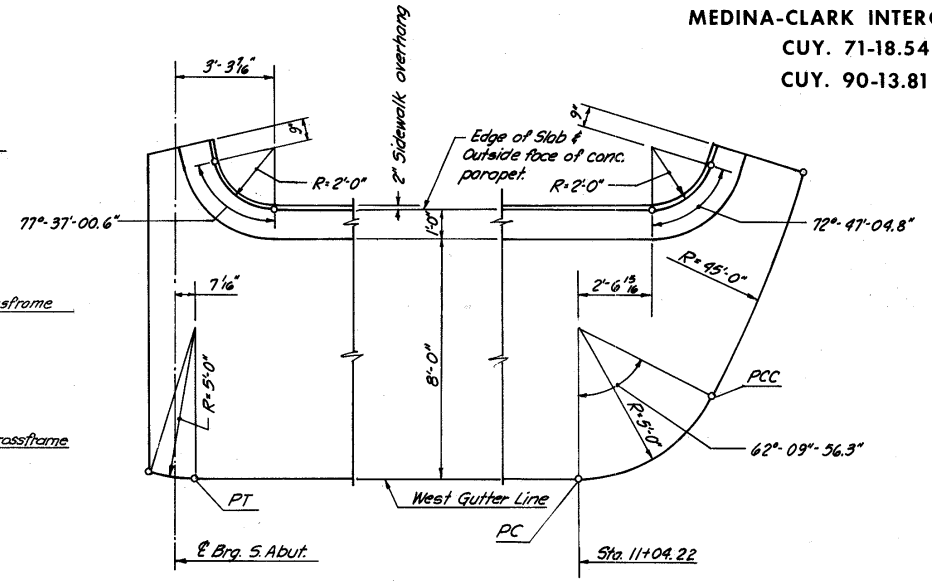
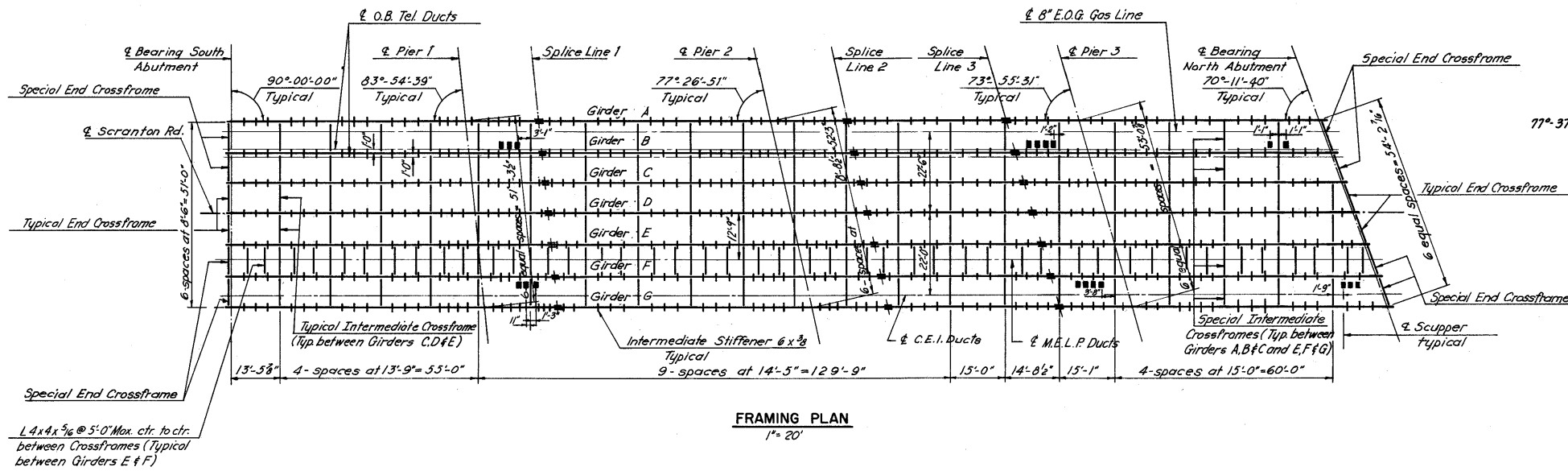
SHEET 371

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FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



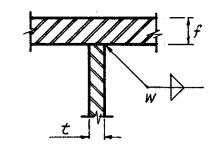
WEST GUTTER AND EDGE OF SLAB GEOMETRY
No Scale

Notes:
For special end crossframe details see sheet 374.
For end crossframe details see Ohio Standard Drawing SD-1-63, sheet 2 of 4.
For end dam details see sheet 374 and Ohio Standard Drawing SD-1-63, sheets 2 and 4 of 4.
For special intermediate crossframe details see sheet 375.
For scupper details see sheet 376 and Ohio Standard Drawing SD-1-63, sheet 3 of 4.
For details of butt welds of flange and of web plates see sheet 373.
Shop splices in web plates shall be located as required by available plate lengths. No deviation from the approved shop plans will be permitted without the written order or consent of the Director.
Top and bottom flanges are identical in size.
For details of bearing shoes see Ohio Standard Drawing RB-1-55, revised 2-2-59, except for modified shoes see sheet 374.
Intermediate stiffeners shall be placed as shown in plan, equally spaced between crossframes, crossframes and field splices or crossframes and bearing stiffeners.
All intermediate stiffener to web welds shall be 3/8 continuous fillets both sides of stiffener. For fit of intermediate stiffeners see the General Notes. The top flange shall be considered the compression flange except for a distance on each side of the piers, equal to the distance from the splice to the center of bearing, where the bottom flange shall be considered the compression flange.
The bearing stiffeners at the abutments and piers shall be fully grooved and butt welded to the lower flange and fitted in close contact with the upper flange.
For top of pavement elevations and girder deflections see sheet 373.

FLANGE PLATES	A		B		C		D		E		F		G		
	14 x 8	52'-4 3/8"	12'-6 1/4 x 1 1/2 13'-0"	14 x 7	56'-6 1/2"	14'-0" 14 x 1 1/2 14'-0"	14 x 7	57'-9 5/8"	13'-0" 14 x 1 1/2 12'-6"	14 x 7	53'-10 1/2"	14 x 7	54'-5 7/8"	14 x 7	54'-5 7/8"
B	14 x 8	53'-3 1/4"	12'-6 1/4 x 1 1/2 13'-0"	14 x 7	57'-6 3/8"	14'-0" 14 x 1 1/2 14'-0"	14 x 7	58'-4 3/8"	13'-0" 14 x 1 1/2 12'-6"	14 x 7	54'-5 7/8"	14 x 7	54'-5 7/8"	14 x 7	54'-5 7/8"
C	14 x 8	54'-2 1/8"	12'-6 1/4 x 1 1/2 13'-0"	14 x 7	58'-6 3/8"	14'-0" 14 x 1 1/2 14'-0"	14 x 7	58'-11 1/8"	13'-0" 14 x 1 1/2 12'-6"	14 x 7	55'-1 3/8"	14 x 7	55'-1 3/8"	14 x 7	55'-1 3/8"
D	14 x 8	55'-1 1/8"	12'-6 1/4 x 1 1/2 13'-0"	14 x 7	59'-6 1/8"	14'-0" 14 x 1 1/2 14'-0"	14 x 7	59'-6 1/8"	13'-0" 14 x 1 1/2 12'-6"	14 x 7	55'-8 3/8"	14 x 7	55'-8 3/8"	14 x 7	55'-8 3/8"
E	14 x 8	55'-11 1/8"	12'-6 1/4 x 1 1/2 13'-0"	14 x 7	60'-5 3/8"	14'-0" 14 x 1 1/2 14'-0"	14 x 7	60'-0 1/8"	13'-0" 14 x 1 1/2 12'-6"	14 x 7	56'-3 3/8"	14 x 7	56'-3 3/8"	14 x 7	56'-3 3/8"
F	14 x 1	57'-10 3/8"	11'-6 1/4 x 1 1/2 12'-0"	14 x 1	63'-5 3/8"	13'-0" 14 x 1 1/2 13'-0"	14 x 1	62'-7 3/8"	12'-0" 14 x 1 1/2 11'-6"	14 x 1	57'-11 1/8"	14 x 1	57'-11 1/8"	14 x 1	57'-11 1/8"
G	14 x 8	57'-9 3/8"	12'-6 1/4 x 1 1/2 13'-0"	14 x 7	62'-5 3/8"	14'-0" 14 x 1 1/2 14'-0"	14 x 7	61'-2 3/8"	13'-0" 14 x 1 1/2 12'-6"	14 x 7	57'-6 3/8"	14 x 7	57'-6 3/8"	14 x 7	57'-6 3/8"

FIELD SPLICES	A		B		C		D		E		F		G	
	64'-10 3/8"	20'-0"	63'-6 1/2"	21'-0"	43'-9 5/8"	20'-0"	66'-4 1/8"	21'-0"	66'-11 1/8"	21'-0"	67'-7 3/8"	21'-0"	68'-2 3/8"	21'-0"
B	65'-9 1/4"	20'-0"	64'-6 3/8"	21'-0"	44'-4 3/8"	20'-0"	66'-11 1/8"	21'-0"	67'-7 3/8"	21'-0"	68'-9 1/8"	21'-0"	69'-5 1/8"	21'-0"
C	66'-8 1/8"	20'-0"	65'-6 3/8"	21'-0"	44'-11 1/8"	20'-0"	67'-7 3/8"	21'-0"	68'-2 3/8"	21'-0"	69'-5 1/8"	21'-0"	70'-0 3/8"	21'-0"
D	67'-7 1/8"	20'-0"	66'-6 1/8"	21'-0"	45'-6 1/8"	20'-0"	68'-2 3/8"	21'-0"	68'-9 1/8"	21'-0"	69'-5 1/8"	21'-0"	70'-0 3/8"	21'-0"
E	68'-5 3/8"	20'-0"	67'-5 3/8"	21'-0"	46'-0 1/8"	20'-0"	68'-9 1/8"	21'-0"	69'-5 1/8"	21'-0"	70'-0 3/8"	21'-0"	70'-0 3/8"	21'-0"
F	69'-4 3/8"	20'-0"	68'-5 3/8"	21'-0"	46'-7 3/8"	20'-0"	69'-5 1/8"	21'-0"	70'-0 3/8"	21'-0"	70'-0 3/8"	21'-0"	70'-0 3/8"	21'-0"
G	70'-3 3/8"	20'-0"	69'-5 3/8"	21'-0"	47'-2 1/8"	20'-0"	70'-0 3/8"	21'-0"	70'-0 3/8"	21'-0"	70'-0 3/8"	21'-0"	70'-0 3/8"	21'-0"

FLANGE TO WEB WELDS		
Web Thickness t	Flange Thickness f	Weld Size W
3/8"	7/8" to 1 1/2"	5/16"
3/8"	1 3/8" to 1 3/4"	3/8"



Note: Dimensions are measured horizontally.

H.N.T.B. BRIDGE NO. 2
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FRAMING PLAN AND GIRDER ELEVATIONS
SCRANTON ROAD OVER CLARK FREEWAY

BR. NO. CUY-90-1395 STA 8+09.63
SCALE: None, unless noted STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN L.S.L.	TRACED	CHECKED Z.O.	REVIEWED	REVISED
DATE 8-61	DATE	DATE 8-61	DATE	

SHEET 372

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OCT 27 1982

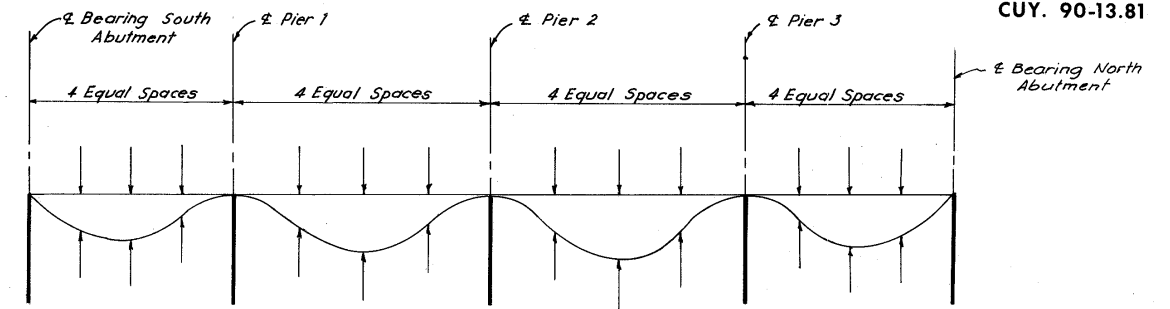
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

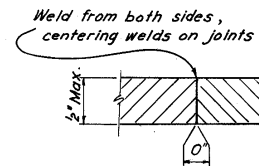
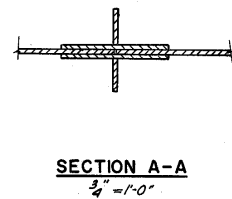
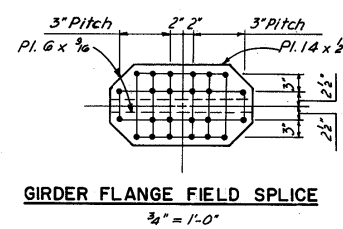
TOP OF PAVEMENT ELEVATIONS																	
Girder	South Abut.	.25	.50	.75	Pier 1	.25	.50	.75	Pier 2	.25	.50	.75	Pier 3	.25	.50	.75	North Abut.
A	680.77	680.70	680.63	680.56	680.50	680.41	680.32	680.24	680.15	680.06	679.97	679.89	679.80	679.73	679.66	679.59	679.52
B	680.81	680.74	680.68	680.61	680.54	680.45	680.36	680.28	680.19	680.10	680.01	679.92	679.83	679.77	679.70	679.63	679.56
C	680.95	680.88	680.81	680.74	680.67	680.58	680.49	680.40	680.31	680.23	680.14	680.05	679.96	679.89	679.82	679.75	679.68
D	681.08	681.01	680.94	680.87	680.80	680.71	680.62	680.53	680.44	680.35	680.26	680.17	680.08	680.01	679.94	679.87	679.80
E	680.95	680.87	680.80	680.73	680.66	680.57	680.48	680.39	680.30	680.21	680.12	680.03	679.94	679.87	679.79	679.72	679.65
F	680.81	680.74	680.67	680.60	680.53	680.43	680.34	680.25	680.16	680.07	679.98	679.89	679.79	679.72	679.65	679.58	679.51
G	680.77	680.69	680.62	680.55	680.47	680.38	680.29	680.20	680.10	680.01	679.92	679.83	679.74	679.66	679.59	679.52	679.45

DEAD LOAD DEFLECTIONS																	
Girder	South Abut.	.25	.50	.75	Pier 1	.25	.50	.75	Pier 2	.25	.50	.75	Pier 3	.25	.50	.75	North Abut.
A	T	0	$\frac{1}{16}$	$\frac{3}{16}$	0	$\frac{1}{4}$	$\frac{2}{16}$	$\frac{1}{4}$	0	$\frac{3}{16}$	$\frac{9}{16}$	$\frac{15}{16}$	0	$\frac{3}{16}$	$\frac{2}{16}$	$\frac{3}{16}$	0
	C	0	$\frac{1}{16}$	$\frac{3}{16}$	0	$\frac{1}{4}$	$\frac{2}{16}$	$\frac{1}{4}$	0	$\frac{3}{16}$	$\frac{9}{16}$	$\frac{15}{16}$	0	$\frac{3}{16}$	$\frac{2}{16}$	$\frac{3}{16}$	0
B	T	0	$\frac{1}{16}$	$\frac{3}{16}$	0	$\frac{1}{4}$	$\frac{2}{16}$	$\frac{1}{4}$	0	$\frac{3}{16}$	$\frac{9}{16}$	$\frac{15}{16}$	0	$\frac{3}{16}$	$\frac{2}{16}$	$\frac{3}{16}$	0
	C	0	$\frac{1}{16}$	$\frac{3}{16}$	0	$\frac{1}{4}$	$\frac{2}{16}$	$\frac{1}{4}$	0	$\frac{3}{16}$	$\frac{9}{16}$	$\frac{15}{16}$	0	$\frac{3}{16}$	$\frac{2}{16}$	$\frac{3}{16}$	0
C	T	0	$\frac{1}{16}$	$\frac{3}{16}$	0	$\frac{1}{4}$	$\frac{2}{16}$	$\frac{1}{4}$	0	$\frac{3}{16}$	$\frac{9}{16}$	$\frac{15}{16}$	0	$\frac{3}{16}$	$\frac{2}{16}$	$\frac{3}{16}$	0
	C	0	$\frac{1}{16}$	$\frac{3}{16}$	0	$\frac{1}{4}$	$\frac{2}{16}$	$\frac{1}{4}$	0	$\frac{3}{16}$	$\frac{9}{16}$	$\frac{15}{16}$	0	$\frac{3}{16}$	$\frac{2}{16}$	$\frac{3}{16}$	0
D	T	0	$\frac{1}{16}$	$\frac{3}{16}$	0	$\frac{1}{4}$	$\frac{2}{16}$	$\frac{1}{4}$	0	$\frac{3}{16}$	$\frac{9}{16}$	$\frac{15}{16}$	0	$\frac{3}{16}$	$\frac{2}{16}$	$\frac{3}{16}$	0
	C	0	$\frac{1}{16}$	$\frac{3}{16}$	0	$\frac{1}{4}$	$\frac{2}{16}$	$\frac{1}{4}$	0	$\frac{3}{16}$	$\frac{9}{16}$	$\frac{15}{16}$	0	$\frac{3}{16}$	$\frac{2}{16}$	$\frac{3}{16}$	0
E	T	0	$\frac{1}{16}$	$\frac{3}{16}$	0	$\frac{1}{4}$	$\frac{2}{16}$	$\frac{1}{4}$	0	$\frac{3}{16}$	$\frac{9}{16}$	$\frac{15}{16}$	0	$\frac{3}{16}$	$\frac{2}{16}$	$\frac{3}{16}$	0
	C	0	$\frac{1}{16}$	$\frac{3}{16}$	0	$\frac{1}{4}$	$\frac{2}{16}$	$\frac{1}{4}$	0	$\frac{3}{16}$	$\frac{9}{16}$	$\frac{15}{16}$	0	$\frac{3}{16}$	$\frac{2}{16}$	$\frac{3}{16}$	0
F	T	0	$\frac{1}{16}$	$\frac{3}{16}$	0	$\frac{1}{4}$	$\frac{2}{16}$	$\frac{1}{4}$	0	$\frac{3}{16}$	$\frac{9}{16}$	$\frac{15}{16}$	0	$\frac{3}{16}$	$\frac{2}{16}$	$\frac{3}{16}$	0
	C	0	$\frac{1}{16}$	$\frac{3}{16}$	0	$\frac{1}{4}$	$\frac{2}{16}$	$\frac{1}{4}$	0	$\frac{3}{16}$	$\frac{9}{16}$	$\frac{15}{16}$	0	$\frac{3}{16}$	$\frac{2}{16}$	$\frac{3}{16}$	0
G	T	0	$\frac{1}{16}$	$\frac{3}{16}$	0	$\frac{1}{4}$	$\frac{2}{16}$	$\frac{1}{4}$	0	$\frac{3}{16}$	$\frac{9}{16}$	$\frac{15}{16}$	0	$\frac{3}{16}$	$\frac{2}{16}$	$\frac{3}{16}$	0
	C	0	$\frac{1}{16}$	$\frac{3}{16}$	0	$\frac{1}{4}$	$\frac{2}{16}$	$\frac{1}{4}$	0	$\frac{3}{16}$	$\frac{9}{16}$	$\frac{15}{16}$	0	$\frac{3}{16}$	$\frac{2}{16}$	$\frac{3}{16}$	0



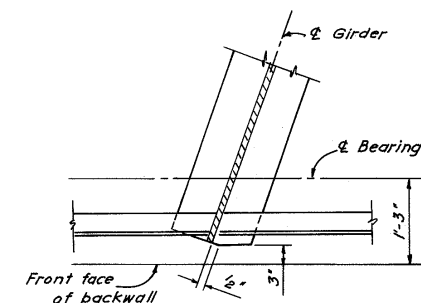
TYPICAL DEFLECTION DIAGRAM
No scale

Deflection Notes:
Deflections are given to the nearest 1/16 inch.
In the table of deflections T denotes the deflection due to total dead load, and C denotes the deflections due to dead load of concrete only.
The girders shall be fabricated to lines parallel to profiles formed by Top of Pavement Elevations directly over the girders, plus the camber required to compensate for dead load deflections.
The allowance to be made in the screed settings to compensate for dead load deflections due to concrete are to be made above the top of pavement elevations as required. Screens may require further adjustments due to irregularities in fabricated steel.
Bull angles, where provided at curbs shall serve as guides for screeds.

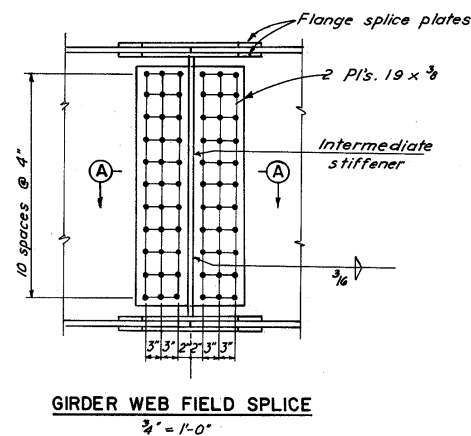


Note:
All the above full penetration welds shall be back gouged and welded after welding far side.
Butt welds on girder flange plates shall be ground flush, the finish grinding being parallel to the direction of stress.

JOINT PREPARATION FOR SHOP BUTT WELDS
No scale



GIRDER END DETAIL AT NORTH ABUTMENT
3/4" = 1'-0"



Note:
Both top and bottom flange splices are identical.
Girder field splices shall be made with 1/4" high strength bolts. The high strength bolts shall be placed with the heads on the outside of the exterior girders, and the bottom of the girder flange.

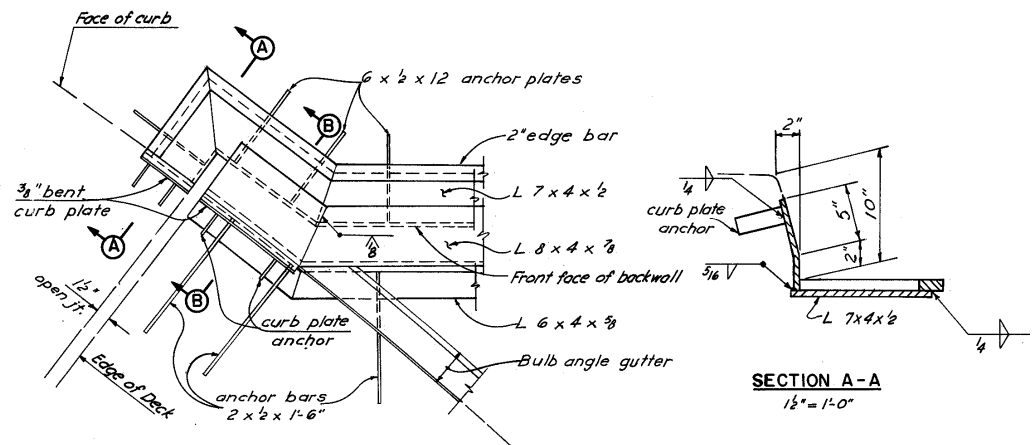
H.N.T.B. BRIDGE NO. 2				
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK				
GIRDER DETAILS & DEFLECTIONS				
SCRANTON ROAD OVER CLARK FREEWAY				
BR. NO. CUY-90-1395		STA 8+09.63		
SCALE: As noted		STA 11+23.58		
CLEVELAND		CUYAHOGA COUNTY OHIO		
DRAWN L.D.	TRACED	CHECKED S.L.	REVIEWED	REVISED
DATE 8-68	DATE	DATE 9-68	DATE	DATE
				SHEET 373

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OCT 27 1982

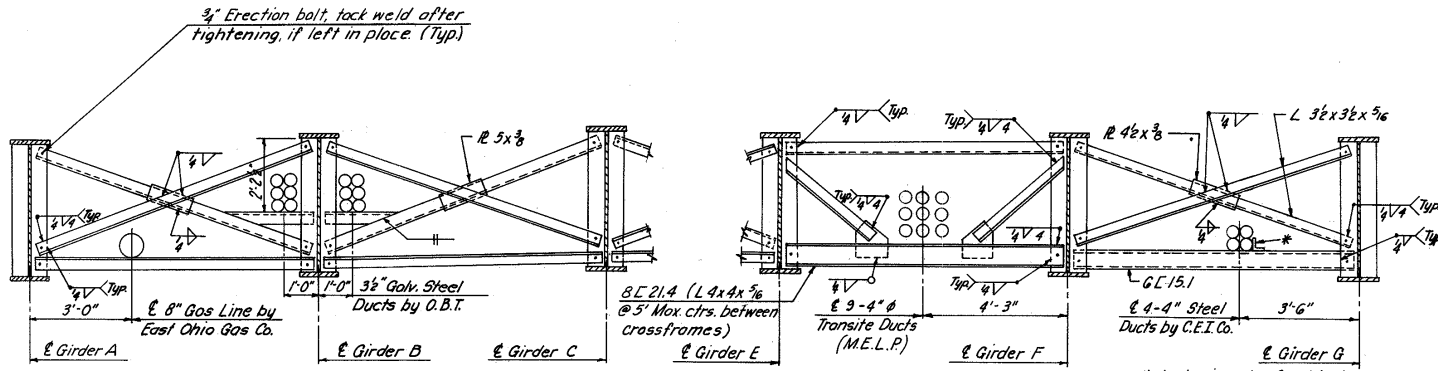
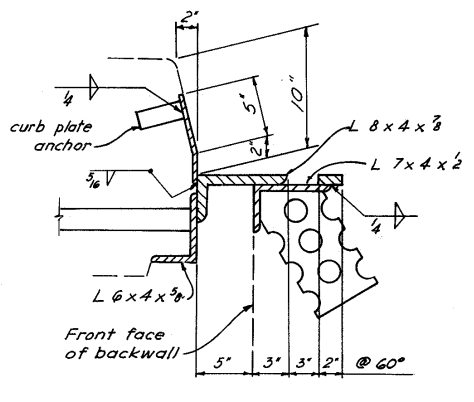
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

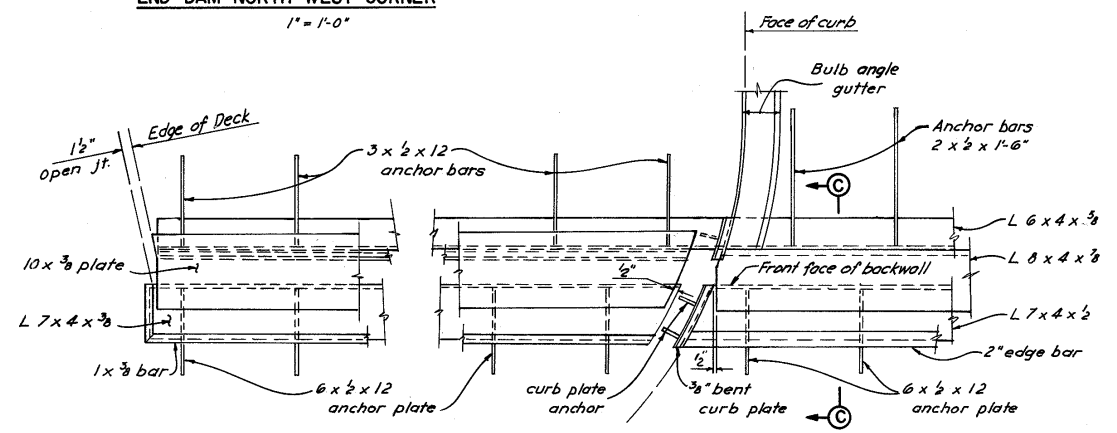


END DAM NORTH-WEST CORNER
1" = 1'-0"

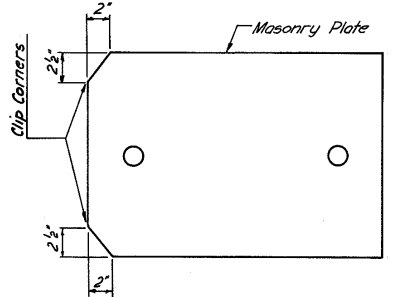


Note:
All angles 4 x 4 x 3/8 unless otherwise noted.

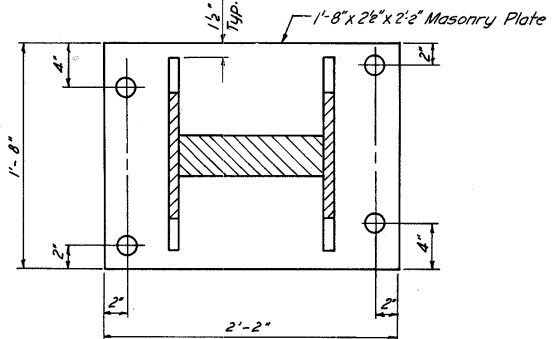
SPECIAL INTERMEDIATE CROSSFRAMES
3/8" = 1'-0"



END DAM SOUTH-WEST CORNER
1" = 1'-0"

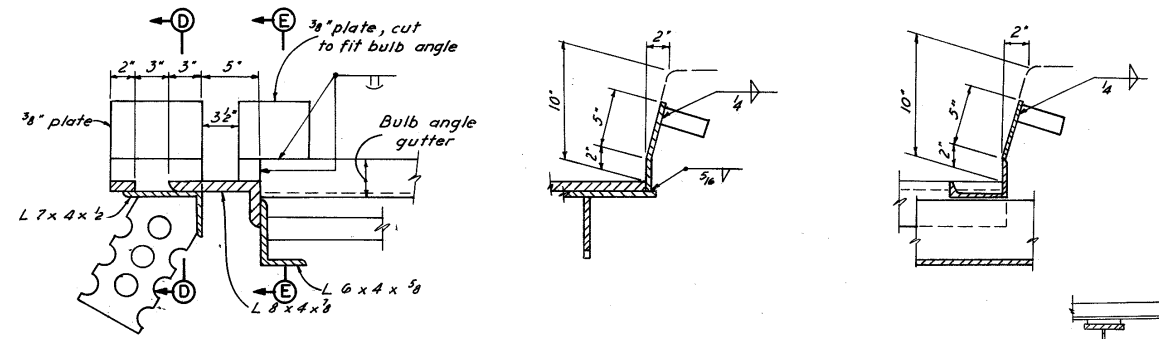


MODIFIED ROCKER R-250
1 1/2" = 1'-0"

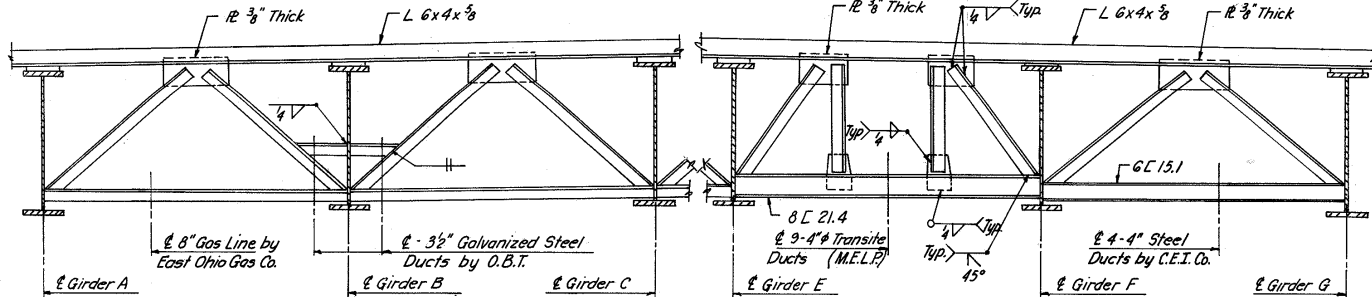


MODIFIED BOLSTER B-250
1 1/2" = 1'-0"

Note:
Modifications are to Masonry Plates only. For details of Rocker R-250 and Bolster B-250, not shown, see Ohio Standard Drawing RB 1-55, revised 2-2-59.



Note:
For details of End Dam, Curb Plate, and Gutter, not shown, see Ohio Standard Drawings SD-1-63, Sheets 2 and 4 of 4.



Note:
All angles 4 x 4 x 3/8 unless noted
For additional details see Ohio Standard Drawing SD-1-63 Sheet 2 of 4.

SPECIAL END CROSSFRAMES
3/8" = 1'-0"

H.N.T.B. BRIDGE NO. 2
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SUPERSTRUCTURE DETAILS
SCRANTON ROAD OVER CLARK FREEWAY

BR. NO. CUY-90-1395 STA 8+09.63
SCALE: As noted STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN L.D.	TRACED	CHECKED L.S.L.	REVIEWED	REVISED
DATE 8-64	DATE	DATE 10-64	DATE	DATE

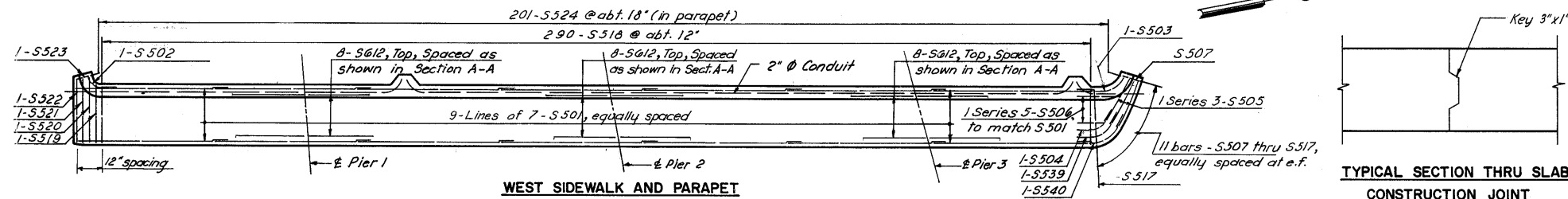
SHEET 374

MICROFILMED
OCT 27 1982

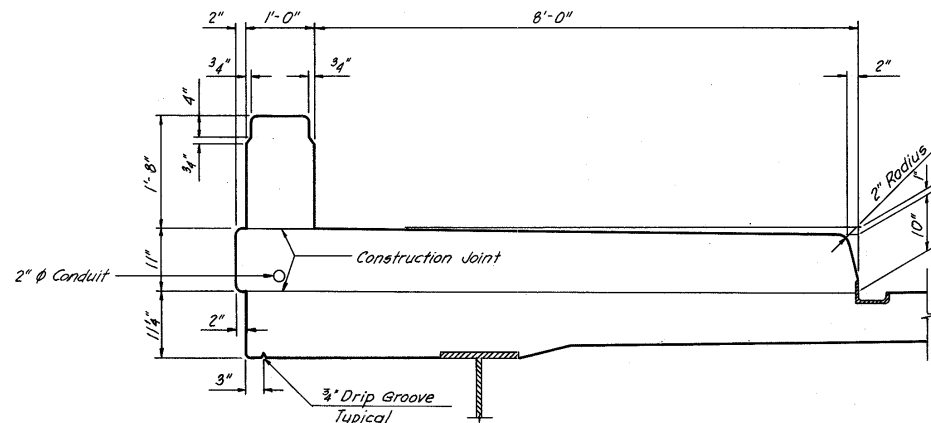
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

375
478

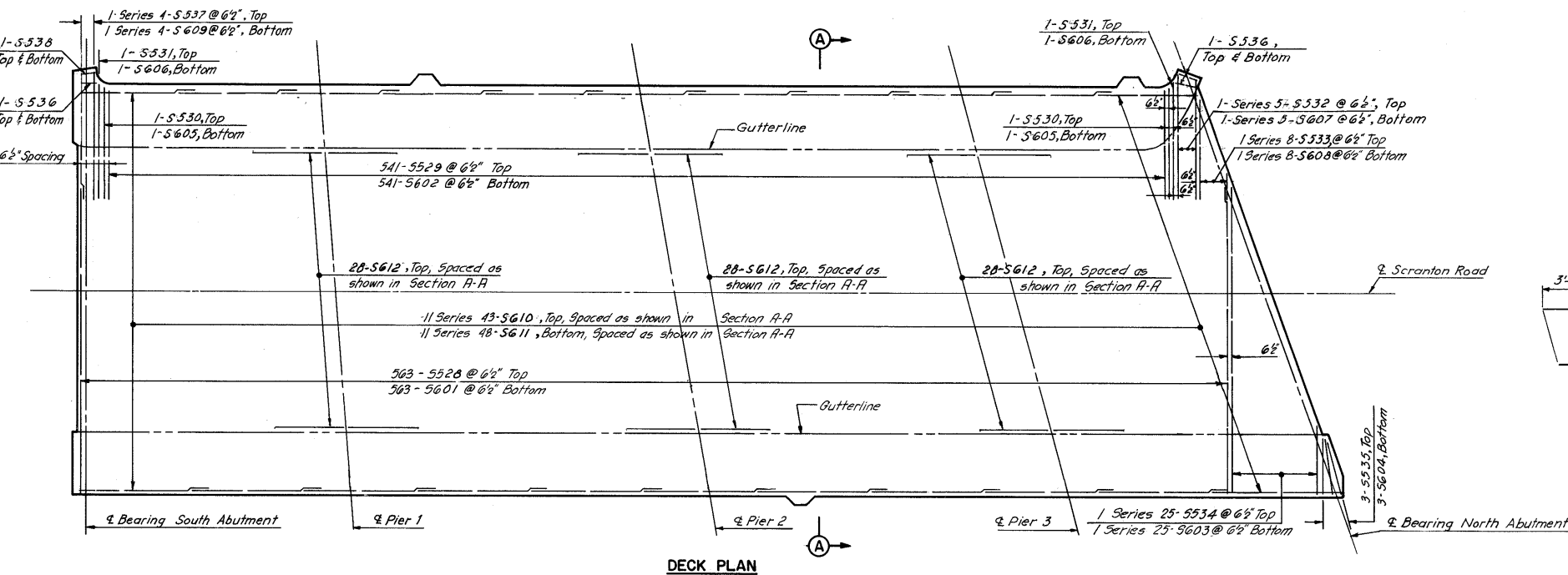
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



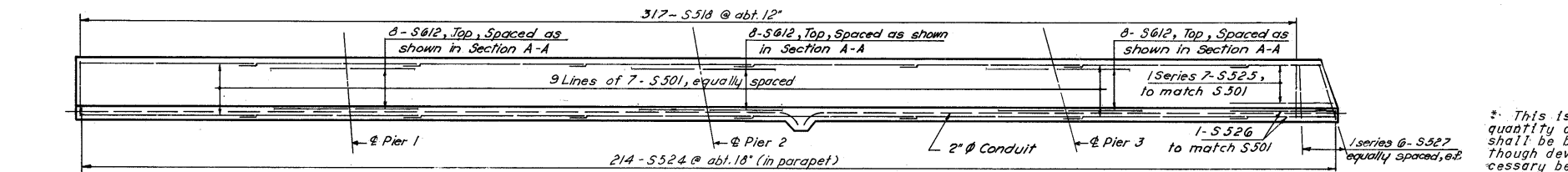
TYPICAL SECTION THRU SLAB
CONSTRUCTION JOINT



TYPICAL CURB AND PARAPET SECTION
3/4" = 1'-0"



DECK PLAN



EAST SIDEWALK AND PARAPET

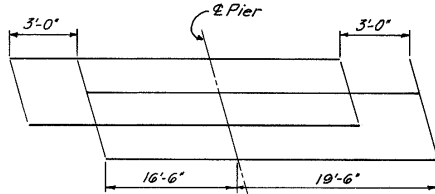
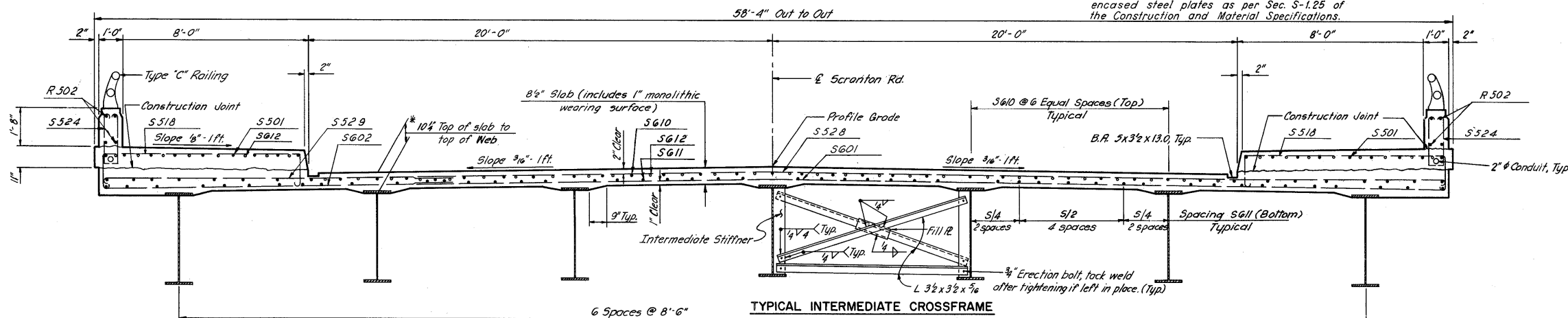


DIAGRAM SHOWING PLACEMENT
OF S612 OVER PIERS

Notes:
The haunch in the deck slab adjacent to the edge of the top flange of girders, which is shown as 9" wide, may vary from this dimension between the limits of 6" and 12" except that the maximum slope shall not exceed 3 inches per foot. Payment for deck slab concrete shall be based on the 9" width.
In order to facilitate water curing of the deck slab, the placing of the concrete shall progress upgrade. The slab may be placed in sections between the transverse construction joints which are to be parallel to transverse reinforcing steel and located near the center of any span.
Reinforcing steel shall be adjusted as required to clear scuppers.
For reinforcement schedule see Sheet 380.
For railing post and parapet joint spacing see Sheet 377.
For location of light standard supports see Sheet 364.
For details of light standard supports see Sheet 377.
For scupper locations see Sheet 376.
For bulb angle support details see Ohio Standard Drawing SD-1-63, Sheet 3 of 4.
e.r. denotes each face.

* This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade.
For Girders A and G this dimension is measured from the extended top of slab.
Deductions shall be made for volume of encased steel plates as per Sec. S-1.25 of the Construction and Material Specifications.



SECTION A-A
3/8" = 1'-0"

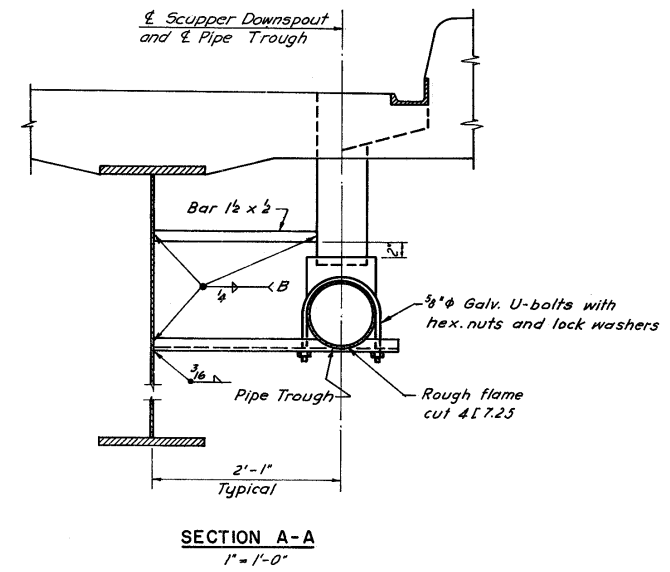
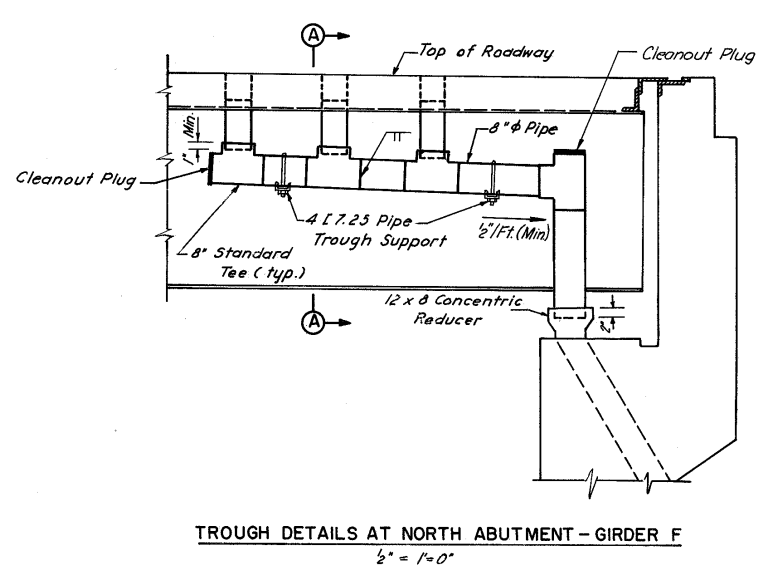
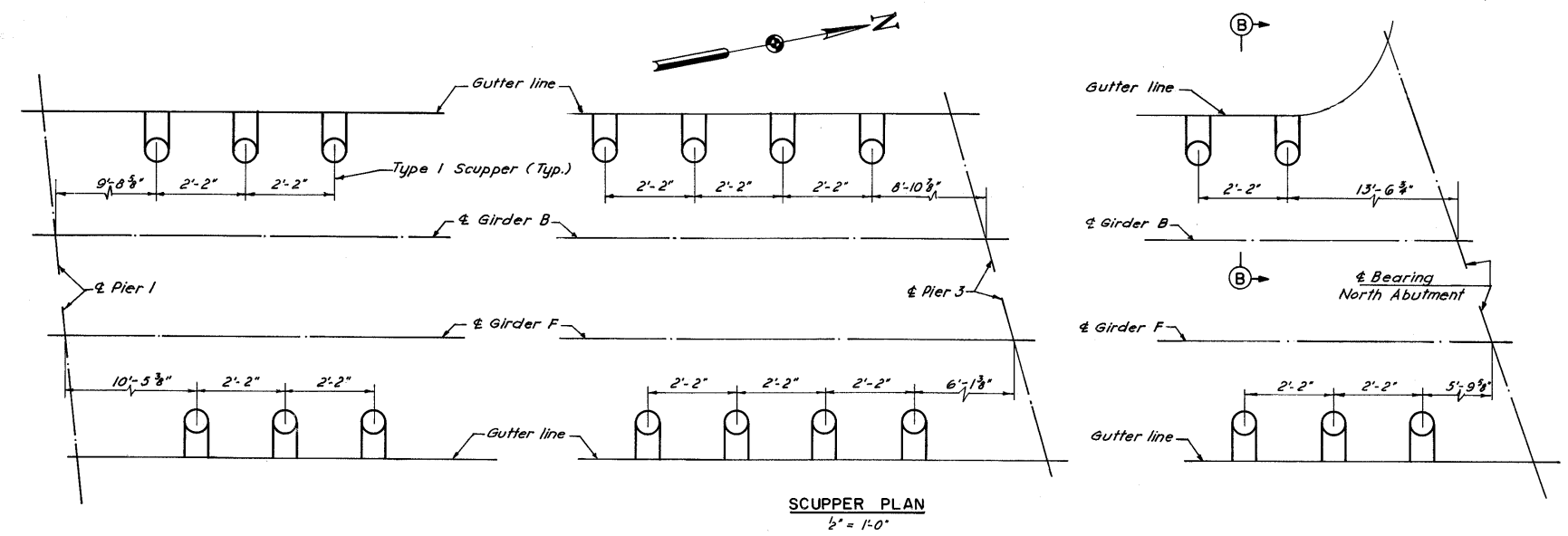
H.N.T.B. BRIDGE NO. 2
HOWARD, NEEDLES, TAMMEN & BERGENOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DECK PLAN
SCRANTON ROAD OVER CLARK FREEWAY
BR. NO. CUY-90-1395 STA 8+09.63
SCALE: None, unless noted STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

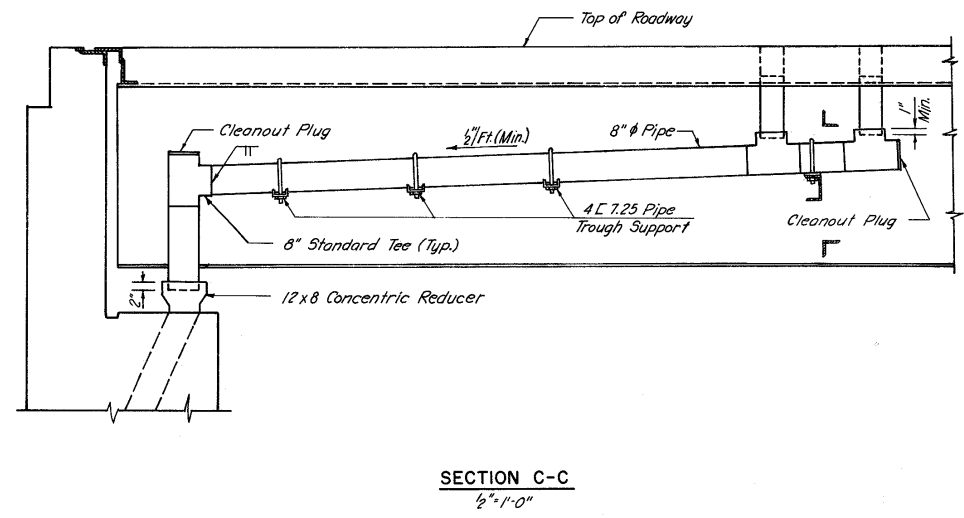
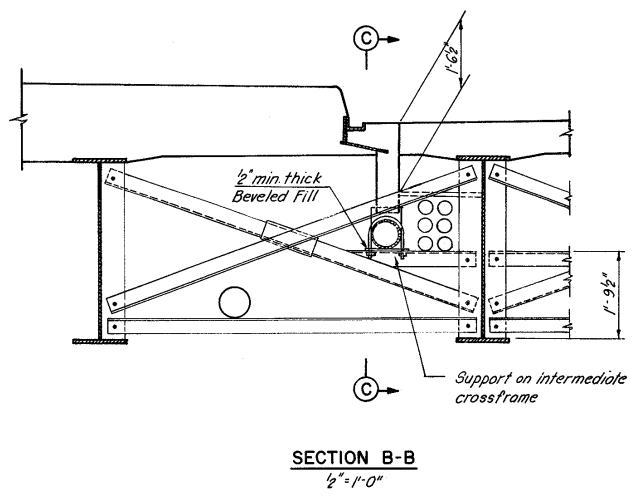
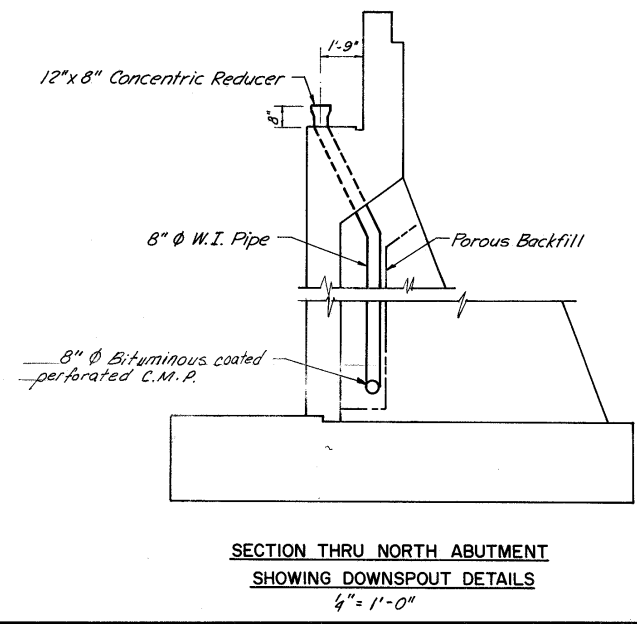
DRAWN A.M.	TRACED	CHECKED L.D.	REVIEWED	REVISED
DATE 6/64	DATE	DATE 9-64	DATE	

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

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Notes:
8" pipe trough, including specials and 8" downspouts including specials and accessories shall be standard weight wrought iron or hot-dipped galvanized steel pipe. Joints shall be made by welding or by the use of a clamp type coupling with a ring gasket. All welding shall be done before galvanizing.
For bolts, galvanizing as called for in Section M-10.30 will be considered adequate.
Trough support 4L7.25 shall be carbon steel and painted according to Item C-8.
Pipe trough tees, cleanout plugs, pipe supports, downspouts to 12x8 concentric reducers shall be included in item "5-2.3 Pipe Trough" for payment.
The first support angle each side at scupper is included with scupper for payment.
Dull angle and supports shall be included in "Item 5-7. Structural Steel" for payment.
For scupper and gutter support details and additional notes see Ohio Standard Drawing SD-1-63, Sheet 3 of 4. Gutter support B shall be used.
12x8 concentric reducers shall be included in "Item 5L9 W.I. or Galv. Steel Down Spouts" for payment.



H.N.T.B. BRIDGE NO. 2
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DRAINAGE DETAILS

SCRANTON ROAD OVER CLARK FREEWAY
BR. NO. CUY-90-1395 STA 8+09.63
SCALE: As noted STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN Z.S.L.	TRACED	CHECKED Z.D.	REVIEWED	REVISED
DATE 8-66	DATE	DATE 8-66	DATE	

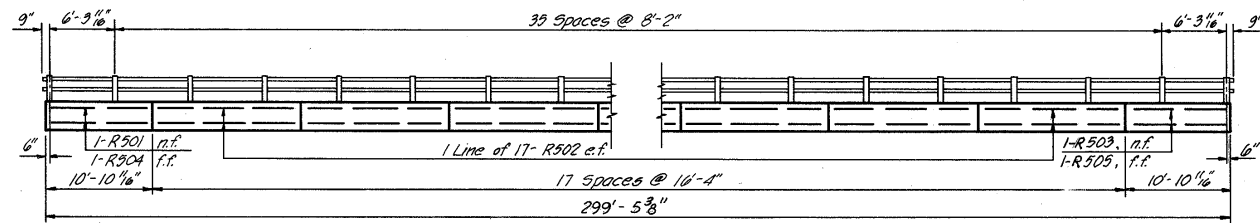
SHEET 376

MICROFILMED
OCT 27 1982

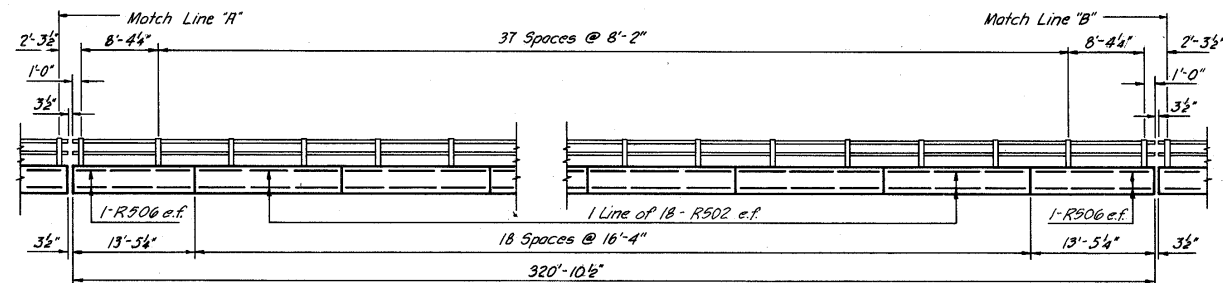
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

377
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

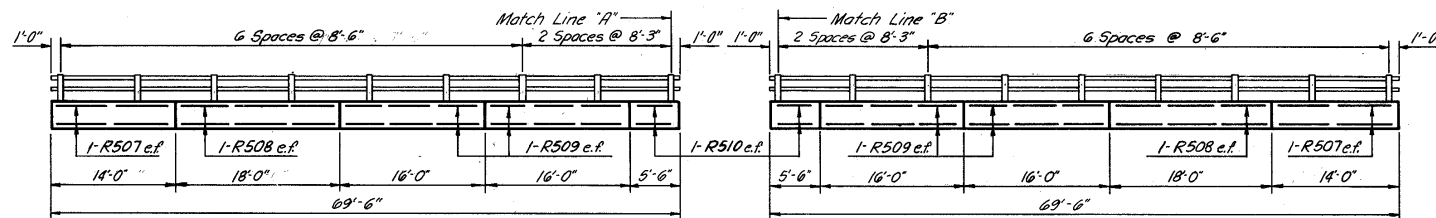


WEST RAILING
(Developed View)



EAST RAILING

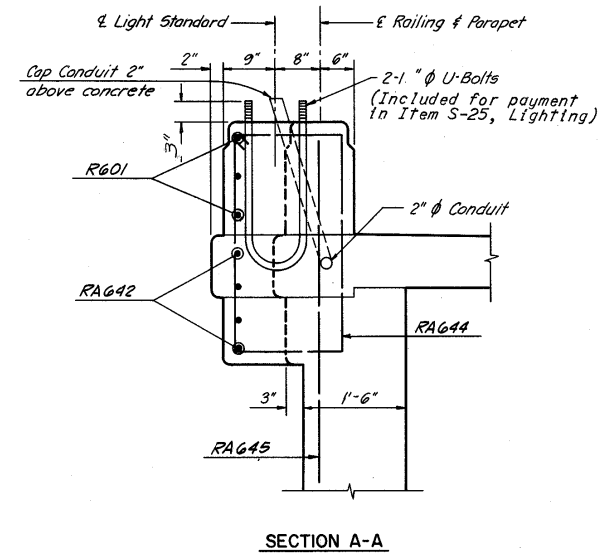
Note:
n.f. - denotes near face
f.f. - denotes far face
e.f. - denotes each face



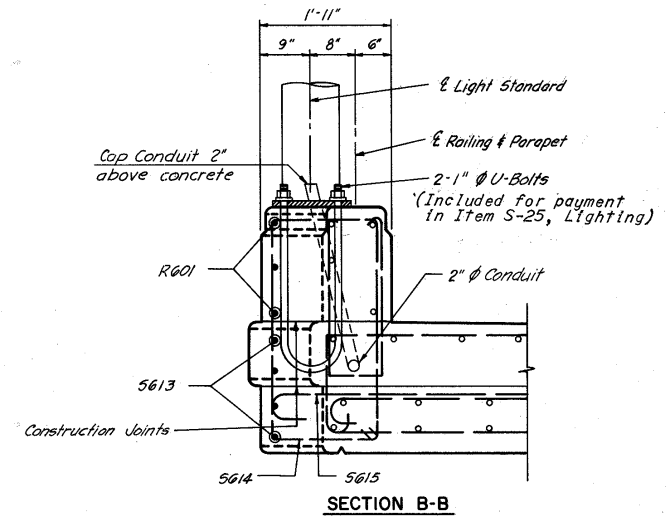
SOUTHEAST RAILING

NORTHEAST RAILING

Notes:
All railing dimensions are given along ϵ parapet.
Railings shall be fabricated in lengths not less than three panels each and finished railing shall be free of burrs, sharp corners and rough surfaces.
Railing posts shall be normal to grade.
Payment for railing shall be made at the contract unit price bid for "Item S-14, Aluminum Railing (including parapet)". Pay length shall be the overall length of the parapets and shall include the cost of the anchor bolts, set screws, nuts, shims, etc. necessary to complete the installation of railing. Concrete and longitudinal reinforcing steel in the parapets shall be included in "Item S-14, Aluminum Railing (including parapet)" for payment. All other reinforcing steel in parapet shall be included in "Item S-4 for payment."
For additional details and notes regarding railing, see Ohio Standard Drawing AR-1-37, revised 4-2-62.

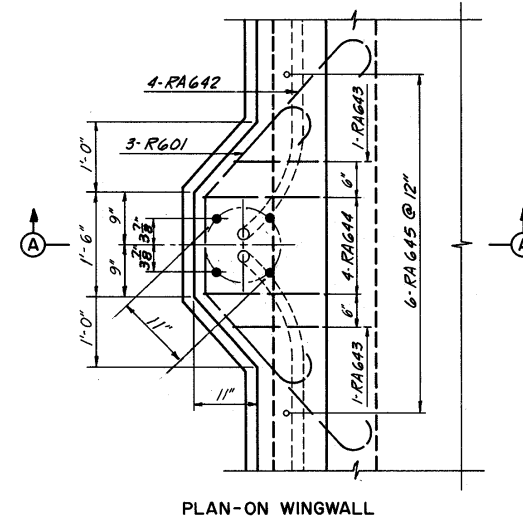


SECTION A-A

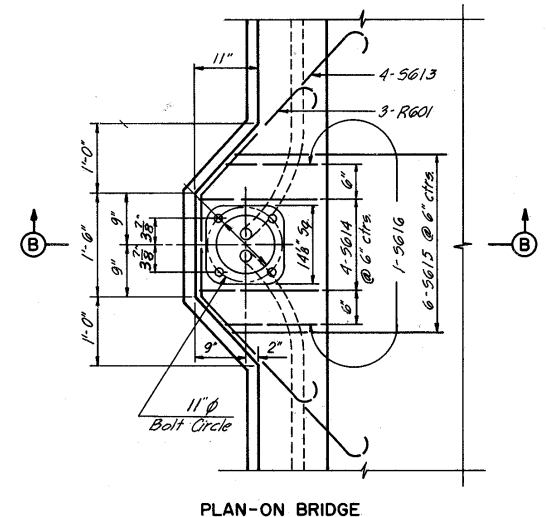


SECTION B-B

Note:
o denotes normal longitudinal reinforcement.
The top surface of the light standard supports shall be truly horizontal.



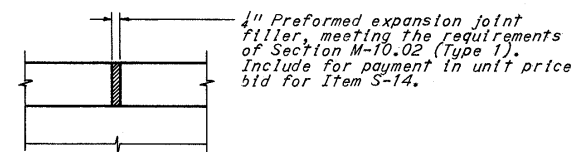
PLAN-ON WINGWALL



PLAN-ON BRIDGE

LIGHT STANDARD SUPPORTS

Scale: 3/4" = 1'-0"
For location see Sheet 364.



PARAPET JOINT DETAIL

H.N.T.B. BRIDGE NO. 2				
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK				
RAILING DETAILS				
SCRANTON ROAD OVER CLARK FREEWAY				
BR. NO. CUY.90-1395		STA 8+09.63		
SCALE: None, unless noted		STA 11+23.58		
CLEVELAND		CUYAHOGA COUNTY OHIO		
DRAWN R.M.	TRACED	CHECKED L.D.	REVIEWED	REVISED
DATE 7-64	DATE	DATE 12-64	DATE	DATE
				SHEET 377

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS
				A	B	C		
SOUTH ABUTMENT								
AA401	16	5'-0"	Str.					53
AA402	15	7'-1"	109	2'-9"	7"			71
AA403	2Ser. 8	2'-8"to5'-0"	Str.				4"	41
AA404	2	6'-6"	Str.					9
AA405	3	8'-0"	Str.					16
AA406	2Ser. 4	3'-0"to10'-9"	Str.				2'-7"	37
AA407	1	12'-0"	Str.					8
AA408	1	13'-0"	Str.					9
AA409	2	3'-6"	104	2'-3"	1'-5"			5
AA410	1	13'-6"	145	3'-3"	4'-9"	10'-3"		9
AA411	1Ser. 4	7'-3"to9'-3"	109	2'-9"to3'-9"	8"		8"	22
AA412	49	3'-11"	105	2'-2"	1'-0"			128
AA501	4	32'-9"	Str.					137
AA502	7	31'-9"	Str.					232
AA503	5	31'-0"	Str.					162
AA504	1	25'-0"	Str.					26
AA505	11	8'-6"	Str.					98
AA506	7	3'-6"	104	2'-3"	1'-5"			26
AA507	52	4'-6"	104	2'-5"	2'-2"			244
AA508	50	5'-6"	Str.					287
AA509	25	8'-0"	Str.					209
AA510	4	30'-3"	Str.					126
AA511	12	28'-9"	Str.					360
AA512	1	19'-0"	Str.					20
AA513	2	11'-0"	Str.					23
AA514	36	4'-10"	104	2'-10"	2'-2"			181
AA515	9	5'-0"	104	3'-2"	2'-0"			47
AA516	7	7'-0"	108	3'-6"	3'-6"	3'-5"		51
AA517	1	6'-0"	106	3'-6"	1'-2"	1'-7"		6
AA518	3	6'-9"	Str.					21
AA519	5	4'-3"	Str.					22
AA520	4 Ser. 12	11'-8"to19'-0"	121	4'-3"to7'-11"	1'-8"		8"	768
AA521	2	5'-0"	Str.					10
AA522	5	6'-1"	110	2'-5"				32
AA523	2	5'-9"	Str.					12
AA524	1	13'-0"	145	3'-0"	4'-9"	10'-0"		14
AA525	1	12'-6"	Str.					13
AA601	68	15'-0"	Str.					1,532
AA602	39	6'-10"	115	4'-3"				400
AA603	175	6'-4"	104	5'-6"	1'-0"			1,665
AA604	8Ser. 6	7'-0"to23'-6"	Str.				3'-3 1/2"	1,099
AA605	24	26'-9"	Str.					964
AA606	43	27'-9"	Str.					1,792
AA607	73	29'-1"	Str.					3,189
AA608	59	7'-5"	106	2'-0"	3'-10"	1'-11"		657
AA609	57	8'-5"	108	4'-6"	3'-11"	3'-3"		721
AA610	41	5'-6"	104	4'-3"	1'-5"			339
AA611	41	10'-6"	106	7'-5"	11"	2'-6"		647
AA612	4	31'-0"	Str.					186
AA613	4Ser. 10	19'-6"to25'-6"	121	8'-3"to11'-3"	1'-8"		8"	1,352
AA614	4Ser. 6	26'-0"to28'-6"	121	11'-6"to12'-9"	1'-8"		6"	982
AA615	18	10'-6"	104	8'-8"	2'-0"			284
AA616	16	5'-6"	Str.					132
AA617	4	28'-9"	Str.					173
AA618	14	35'-9"	Str.					752
AA619	1	35'-0"	Str.					53
AA620	62	4'-1"	106	2'-6"	11"	1'-0"		380
AA621	26	7'-10"	129	1'-9"	3'-0"	1'-9"		306
AA622	3	11'-6"	104	9'-8"	2'-0"			52
AA623	27	12'-7"	102					510
AA624	5	10'-9"	106	7'-8"	11"	2'-6"		81
AA625	10	8'-0"	106	4'-6"	2'-2"	1'-8"		120
AA626	3	34'-0"	Str.					153
AA627	1	8'-3"	106	5'-2"	11"	2'-6"		12
AA628	10	10'-6"	104	9'-8"	1'-0"			158
AA629	5	8'-6"	Str.					64
AA701	26	32'-9"	Str.					1,740
AA702	26	28'-0"	Str.					1,488
AA703	25	16'-3"	Str.					830
AA704	26	30'-3"	Str.					1,608
AA705	26	29'-0"	Str.					1,541

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS
				A	B	C		
AA706	48	8'-0"	Str.					785
AA707	40	8'-3"	106	4'-9"	2'-2"	1'-8"		675
AA708	7	11'-0"	103					157
AA709	4	8'-6"	Str.					70
AA710	2	7'-3"	142	4'-8"	1'-7"	1'-0"		30
AA711	2	6'-0"	Str.					25
AA801	10	30'-6"	Str.					814
AA802	10	40'-3"	Str.					1,075
AA901	29	30'-6"	Str.					3,007
AA902	29	40'-3"	Str.					3,969
AA903	43	14'-9"	142	11'-6"	2'-2 1/2"	1'-5"		2,156
AA904	2	5'-0"	Str.					34
AA905	2	13'-0"	145	3'-0"	4'-9"	10'-0"		88
AA906	2	12'-6"	Str.					85
AA907	2	6'-9"	142	3'-9"	2'-0"	1'-3"		46
AA1101	64	24'-4"	100	21'-2"				8,274
AA1102	41	14'-4"	101	12'-9"				3,122
AA1103	48	8'-4"	101	6'-9"				2,125
AA1104	8	11'-4"	101	9'-9"				482
AA1105	10	7'-0"	Str.					372
AA1106	16	11'-6"	Str.					978
AA1107	16	18'-9"	Str.					1,594
AA1108	16	33'-3"	136	29'-2"	2'-8"	9'-7"		2,826
AA1109	5	18'-0"	Str.					478
AA1110	5	35'-0"	Str.					930
Total								63,694
SOUTHEAST WINGWALL								
RA401	66	7'-1"	109	7"	2'-9"			312
RA402	32	31'-8"	Str.					677
RA403	2Ser. 6	7'-1"to9'-1"	109	2'-8"to3'-8"	8"		4 1/2"	65
RA501	86	10'-2"	104	8'-8"	1'-7"			912
RA502	86	8'-9"	Str.					785
RA503	20	3'-11"	104	2'-1"	1'-11"			82
RA504	44	6'-1"	110	2'-5"				279
RA505	1Ser. 18	19'-2"to24'-0"	109	8'-3"to10'-8"	1'-2"		3 1/2"	405
RA506	4	31'-8"	Str.					132
RA507	37	19'-6"	109	8'-5"	1'-2"			753
RA508	1Ser. 5	8'-6"to12'-2"	109	2'-10"to4'-8"	1'-2"		11"	54
RA509	6	8'-5"	Str.					53
RA510	2	6'-0"	Str.					13
RA511	2	7'-1"	108	1'-4"	6'-7"	2'-3"		17
RA512	4	8'-5"	Str.					35
RA601	8	5'-0"	Str.					60
RA602	2Ser. 7	5'-0"to8'-8"	Str.				7 3/8"	144
RA603	22	12'-5"	Str.					410
RA604	2Ser. 5	12'-7"to14'-9"	Str.				6 1/2"	205
RA605	33	20'-0"	Str.					991
RA606	2Ser. 6	19'-10"to22'-10"	Str.				7 3/8"	385
RA607	30	27'-6"	Str.					1,239
RA608	2Ser. 8	27'-4"to30'-8"	Str.				5 1/2"	697
RA609	8	32'-5"	Str.					390
RA610	2	19'-1"	Str.					57
RA611	2	31'-6"	Str.					95
RA612	43	31'-8"	Str.					2,045
RA613	2Ser. 4	15'-2"to21'-2"	Str.				2'-0"	218
RA614	14	14'-2"	Str.					298
RA615	2Ser. 5	3'-0"to7'-2"	Str.				12 1/2"	76
RA616	54	10'-5"	120					845
RA617	20	5'-5"	106	2'-11"	11"	1'-11"		163
RA618	31	30'-8"	Str.					1,428
RA619	28	6'-0"	104	5'-2"	1'-0"			252
RA620	8	6'-9"	115	4'-2"				81

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS
				A	B	C		
RA621	9	14'-7"	Str.					197
RA622	22	8'-6"	Str.					281
RA623	33	9'-10"	100	8'-6"				487
RA624	9	10'-10"	Str.					146
RA625	27	5'-9"	104	4'-11"	1'-0"			233
RA626	8	6'-6"	115	3'-11"				78
RA627	16	5'-6"	104	4'-8"	1'-0"			132
RA628	6	6'-3"	115	3'-8"				56
RA629	6	10'-5"	Str.					94
RA630	9	5'-8"	Str.					77
RA631	11	7'-10"	100	5'-6"				129
RA632	14	9'-5"	104	8'-7"	1'-0"			198
RA633	4	10'-2"	115	7'-7"				61
RA634	4	10'-5"	Str.					63
RA635	4	11'-9"	100	10'-5"				71
RA636	9	3'-8"	Str.					50
RA637	9	5'-0"	100	3'-8"				68
RA638	1Ser. 9	24'-6"to26'-10"	109	10'-10"to12'-0"	1'-2"		3 1/2"	347
RA639	2	22'-0"	Str.					66
RA640	2	15'-0"	Str.					45
RA641	2	8'-4"	101	7'-8"				25
RA642	4	8'-8"	130	3'-0"				52
RA643	2	8'-7"	109	1'-2 1/2"	2'-11"			26
RA644	4	9'-4"	109	1'-7"	2'-11"			

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES WEIGHT INCR. POUNDS
				A	B	C	
NORTH ABUTMENT (Continued)							
AB512	32	5'-0"	104	3'-0"	2'-2"		167
AB513	8	8'-10"	104	5'-0"	3'-11"		74
AB514	6	7'-2"	108	5'-3"	1'-11"	1'-6"	45
AB515	44	4'-6"	104	2'-5"	2'-2"		207
AB516	3	6'-3"	Str.				20
AB517	44	5'-6"	Str.				252
AB518	24	8'-0"	Str.				200
AB519	9	34'-6"	Str.				324
AB520	7	34'-0"	Str.				248
AB521	11	8'-6"	Str.				98
AB522	2	7'-9"	Str.				16
AB523	5	6'-1"	110	2'-5"			32
AB601	70	15'-0"	Str.				1,577
AB602	42	6'-10"	115	4'-3"			431
AB603	190	6'-4"	104	5'-6"	1'-0"		1,807
AB604	6Ser. 6	7'-0"to21'-2"	Str.			2'-10"	762
AB605	21	23'-3"	Str.				733
AB606	43	24'-0"	Str.				1,550
AB607	81	25'-6"	Str.				3,102
AB608	63	7'-5"	106	2'-0"	3'-10"	1'-11"	702
AB609	58	8'-5"	108	4'-6"	3'-11"	3'-3"	733
AB610	57	5'-6"	104	4'-3"	1'-5"		471
AB611	54	10'-6"	106	7'-5"	11"	2'-6"	852
AB612	4	27'-6"	Str.				165
AB613	3Ser. 10	18'-2"to25'-0"	121	7'-7"to11'-0"	1'-8"		933
AB614	3Ser. 6	25'-8"to28'-6"	121	11'-4"to12'-9"	1'-8"		973
AB615	1Ser. 10	20'-6"to25'-8"	121	8'-9"to11'-4"	1'-8"		347
AB616	1Ser. 6	26'-2"to28'-4"	121	11'-7"to12'-8"	1'-8"		246
AB617	2Ser. 5	6'-0"to22'-0"	Str.			4'-0"	210
AB618	2	19'-1"	106	9'-0"	1'-5"	9'-0"	57
AB619	1	13'-0"	106	9'-0"	1'-5"	2'-11"	20
AB620	16	32'-6"	Str.				781
AB621	2	31'-9"	Str.				95
AB622	32	5'-11"	106	2'-8"	11"	2'-8"	284
AB623	23	8'-3"	108	3'-11"	4'-4"	2'-7"	285
AB624	3	30'-6"	Str.				137
AB625	26	12'-8"	129	7'-7"	2'-0"	1'-10"	495
AB626	5	10'-8"	106	7'-7"	11"	2'-6"	80
AB627	1	8'-3"	106	5'-2"	11"	2'-6"	12
AB628	10	8'-3"	106	4'-9"	2'-2"	1'-8"	124
AB629	22	4'-1"	106	2'-6"	11"	1'-0"	135
AB630	22	7'-10"	129	1'-9"	3'-0"	1'-9"	259
AB631	4	34'-0"	Str.				204
AB632	7	10'-3"	104	8'-6"	1'-11"		108
AB633	6	6'-0"	Str.				54
AB634	4	28'-0"	Str.				168
AB701	22	31'-0"	Str.				1,394
AB702	22	27'-3"	Str.				1,225
AB703	22	34'-6"	Str.				1,551
AB704	22	31'-4"	Str.				1,409
AB705	22	18'-9"	Str.				843
AB706	41	8'-9"	Str.				733
AB707	40	8'-6"	106	5'-0"	2'-2"	1'-8"	695
AB708	4	8'-5"	Str.				70
AB801	20	33'-6"	Str.				1,789
AB901	58	33'-4"	Str.				6,573
AB902	45	14'-9"	142	11'-6"	2'-2 1/2"	1'-5"	2,257
AB903	2	19'-0"	Str.				129
AB904	1	9'-9"	142	6'-9"	2'-0"	1'-3"	33
AB905	1	9'-6"	142	6'-6"	2'-0"	1'-3"	32
AB906	2	7'-9"	Str.				53
AB1001	57	23'-0"	100	20'-2"			5,641
AB1002	37	14'-2"	101	12'-9"			2,256
AB1003	1	19'-0"	101	17'-7"			82
AB1004	2Ser. 4	3'-0"to14'-0"	Str.			3'-8"	293
AB1005	2	10'-9"	Str.				93

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES WEIGHT INCR. POUNDS
				A	B	C	
AB1006	2	12'-6"	Str.				108
AB1007	1Ser. 18	8'-4"to14'-0"	Str.				865
AB1008	1Ser. 15	10'-6"to14'-0"	Str.				791
AB1009	2	14'-6"	108	8'-6"	6'-0"	2'-0"	125
AB1101	40	8'-4"	101	6'-9"			1,771
AB1102	16	13'-4"	101	11'-9"			1,133
AB1103	10	7'-0"	Str.				372
AB1104	5	31'-6"	Str.				837
AB1105	5	18'-0"	Str.				478
AB1106	16	16'-0"	Str.				1,360
AB1107	12	30'-0"	136	25'-11"	2'-8"	8'-9"	1,913
AB1108	4	29'-6"	136	25'-5"	2'-8"	7'-1"	627
							Total 59,402
NORTHEAST WINGWALL							
RB401	66	7'-1"	109	7"	2'-9"		312
RB402	32	31'-8"	Str.				677
RB403	2Ser. 6	7'-1"to9'-1"	109	2'-8"to3'-8"	8"		65
RB501	86	10'-2"	104	8'-8"	1'-7"		912
RB502	86	8'-9"	Str.				785
RB503	20	3'-11"	104	2'-1"	1'-11"		82
RB504	44	6'-1"	110	2'-5"			279
RB505	1Ser. 18	19'-2"to24'-0"	109	8'-3"to10'-8"	1'-2"		405
RB506	4	31'-8"	Str.				132
RB507	37	19'-6"	109	8'-5"	1'-2"		753
RB508	1Ser. 5	8'-6"to12'-2"	109	2'-10"to4'-8"	1'-2"		54
RB509	6	8'-5"	Str.				53
RB510	2	6'-0"	Str.				13
RB511	2	7'-11"	108	1'-4"	6'-7"	2'-3"	17
RB512	4	8'-5"	Str.				35
RB601	8	5'-0"	Str.				60
RB602	2Ser. 7	5'-0"to8'-8"	Str.			7 1/2"	144
RB603	22	12'-5"	Str.				410
RB604	2Ser. 5	12'-7"to14'-9"	Str.			6 1/2"	205
RB605	33	20'-0"	Str.				991
RB606	2Ser. 6	19'-10"to22'-10"	Str.			7 1/2"	385
RB607	30	27'-6"	Str.				1,239
RB608	2Ser. 8	27'-4"to30'-8"	Str.			5 1/2"	697
RB609	8	32'-5"	Str.				390
RB610	2	19'-1"	Str.				57
RB611	2	31'-6"	Str.				95
RB612	43	31'-8"	Str.				2,045
RB613	2Ser. 4	15'-2"to21'-2"	Str.			2'-0"	218
RB614	14	14'-2"	Str.				298
RB615	2Ser. 5	3'-10"to7'-2"	Str.			12 1/2"	76
RB616	54	10'-5"	120				845
RB617	20	5'-5"	106	2'-11"	11"	1'-11"	163
RB618	31	30'-8"	Str.				1,428
RB619	28	6'-0"	104	5'-2"	1'-0"		252
RB620	8	6'-9"	115	4'-2"			81
RB621	9	14'-7"	Str.				197
RB622	22	8'-6"	Str.				281
RB623	33	9'-10"	100	8'-6"			487
RB624	9	10'-10"	Str.				146
RB625	27	5'-9"	104	4'-11"	1'-0"		233
RB626	8	6'-6"	115	3'-11"			78
RB627	16	5'-6"	104	4'-8"	1'-0"		132
RB628	6	6'-3"	115	3'-8"			56
RB629	6	10'-5"	Str.				94
RB630	9	5'-8"	Str.				77
RB631	11	7'-10"	100	5'-6"			129
RB632	14	9'-5"	104	8'-7"	1'-0"		198
RB633	4	10'-2"	115	7'-7"			61
RB634	4	10'-5"	Str.				63
RB635	4	11'-9"	100	10'-5"			71
RB636	9	3'-8"	Str.				50
RB637	9	5'-0"	100	3'-8"			68
RB638	1Ser. 9	24'-6"to26'-10"	109	0'-10"to12'-0"	1'-2"		347
RB639	2	22'-0"	Str.				66
RB640	2	15'-0"	Str.				45

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES WEIGHT INCR. POUNDS
				A	B	C	
RB641	2	8'-4"	101	7'-8"			25
RB701	2Ser. 6	18'-6"to24'-0"	Str.			1'-1 1/2"	521
RB702	18	18'-2"	Str.				668
RB703	2Ser. 6	2'-4"to8'-4"	Str.			1'-2 3/8"	131
RB704	3	12'-5"	Str.				76
RB705	3	5'-7"	101	4'-9"			34
RB801	4	15'-1"	Str.				161
RB802	8	12'-3"	Str.				262
RB803	4	12'-10"	Str.				137
RB901	1	9'-3"	101	8'-0"			32
RB902	4	13'-8"	100	11'-2"			186
RB903	10	16'-11"	100	14'-5"			575
RB904	4	13'-1"	101	11'-10"			178
RB905	8	31'-8"	Str.				861
RB906	4	9'-3"	142	6'-8"	1'-7"	1'-0"	126
RB907	4	8'-7"	Str.				117
RB1101	10	22'-4"	100	19'-2"			1,187
RB1102	3	29'-6"	136	25'-1"	3'-0"		470
RB1103	3	9'-7"	Str.				153
RB1104	9	8'-1"	101	6'-6"			387
RB1105	3	20'-1"	Str.				320
							Total 24,139
			PIER 1				
SPA401	4	643'-9"	123	78	28'-1 1/2"	2'-8"	2,026
PA501	36	11'-2"	109	2'-8"	2'-8"		419
PA502	43	4'-5"	105	2'-8"	1'-0"		198
PA503	2	4'-3"	105	2'-6"	1'-0"		9
PA504	2	3'-11"	105	2'-2"	1'-0"		8
PA601	8	16'-7"	Str.				199
PA602	4	16'-10"	Str.				101
PA603	8	8'-0"	113	1'-11"	4'-2"	2'-8"	96
PA1001							

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
PIER 2								
SPB401	4	903'- 8"	123	92	33'-4 1/2"	3'-2"		2,778
FB501	30	13'- 2"	109	3'- 2"	3'-2"			412
FB502	48	4'-11"	105	3'- 2"	1'-0"			246
FB503	2	4'- 9"	105	3'- 0"	1'-0"			10
FB504	2	4'- 5"	105	2'- 8"	1'-0"			9
FB505	2	3'- 9"	105	2'- 0"	1'-0"			8
FB601	12	17'- 1"	Str.					308
FB602	8	8'-10"	113	1'-11"	5'-0"	3'-2"		106
FB801	56	10'- 8"	100	8'- 6"				1,595
FB1101	12	29'- 5"	Str.					1,876
FB1102	12	17'- 1"	Str.					1,089
FB1103	4	33'- 7"	Str.					714
FB1104	4	24'-10"	Str.					528
FB1105	3	14'- 1"	Str.					225
FB1106	6	11'- 4"	139					361
FB1107	48	36'- 6"	Str.					9,308
FB1108	48	13'- 3"	Str.					3,379
FB1109	48	10'- 4"	104	9'- 7"	1'-0"			2,635
FB1110	48	6'-10"	104	6'- 1"	1'-0"			1,743
FB1111	48	15'- 8"	100	12'- 6"				3,995
							Total	31,325
PIER 3								
SPC401	4	627'- 3"	123	76	27'-4 1/2"	2'-8"		1,974
PC501	39	11'- 2"	109	2'- 8"	2'-8"			454
PC502	43	4'- 5"	105	2'- 8"	1'-0"			198
PC503	2	4'- 3"	105	2'- 6"	1'-0"			9
PC504	2	3'-11"	105	2'- 2"	1'-0"			8
PC601	8	17'- 2"	Str.					206
PC602	4	17'- 5"	Str.					105
PC603	8	8'- 0"	113	1'-11"	4'-2"	2'-8"		96
PC1001	80	11'- 4"	100	8'- 6"				3,901
PC1101	12	29'- 8"	Str.					1,891
PC1102	8	17'- 2"	Str.					730
PC1103	4	17'- 5"	Str.					370
PC1104	3	34'- 6"	Str.					550
PC1105	3	24'- 5"	Str.					389
PC1106	2	33'- 8"	Str.					358
PC1107	2	24'- 1"	Str.					256
PC1108	60	29'- 6"	Str.					9,404
PC1109	8	11'- 4"	139					482
PC1110	60	6'-10"	104	6'-1"	1'-0"			2,178
							Total	23,559

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
DECK								
S501	126	43'- 2"	Str.					5,673
S502	1	5'- 2"	124	3'- 0"	1'-7"	2'-2 3/4"		5
S503	1	7'- 7"	124	2'-10"	4'-2"	2'-2 3/4"		8
S504	1	5'-11"	125	2'- 9"	2'-6 1/2"			6
S505	1Ser. 3	7'-9"to8'-1"	Str.				2"	25
S506	1Ser. 5	3'-7"to6'-0"	Str.				7 1/4"	25
S507	1	6'- 5"	111	2'- 6 1/2"				7
S508	1	6'- 6"	111	2'- 7 1/2"				7
S509	1	6'- 8"	111	2'- 9 1/2"				7
S510	1	7'- 2"	111	3'- 3 1/2"				7
S511	1	7'- 9"	111	3'-11"				8
S512	1	8'- 7"	111	4'- 8 1/2"				9
S513	1	9'- 6"	111	5'- 7 1/2"				10
S514	1	10'- 5"	111	6'- 7"				11
S515	1	11'- 3"	111	7'- 5"				12
S516	1	11'-11"	111	8'- 0 1/2"				12
S517	1	12'- 3"	111	8'- 5"				13
S518	607	12'- 5"	111	8'- 6 1/2"				7,861
S519	1	12'- 9"	111	8'-10 1/2"				13
S520	1	14'- 9"	111	10'-11"				15
S521	1	14'- 7"	111	10'- 8 1/2"				15
S522	1	14'- 2"	111	10'- 3 1/2"				15
S523	1	5'-10"	111	1'-11 1/2"				6
S524	415	6'- 1"	110	2'- 5"				2,633
S525	1Ser. 7	27'-6"to30'-0"	Str.				5"	210
S526	2	30'- 6"	Str.					64
S527	1Ser. 6	12'-5"to12'-11"	111	8'-7"to9'-1"			1 3/8"	79
S528	563	44'- 5"	101	43'-10"				26,082
S529	541	16'- 1"	101	15'- 6"				9,075
S530	2	16'- 4"	101	15'- 9"				34
S531	2	17'- 2"	101	16'- 7"				36
S532	1Ser. 5	17'-5"to18'-1"	101	16'-10"to17'-6"			2"	93
S533	1Ser. 8	4'-7"to14'-9"	Str.				1'-5 1/2"	81
S534	1Ser. 25	9'-3"to45'-4"	101	8'-8"to44'-9"			1'-6 1/2"	713
S535	3	9'- 3"	101	8'- 8"				29
S536	6	2'- 7"	Str.					16
S537	1Ser. 4	18'-0"to18'-5"	101	17'-5"to17'-10"			1 1/2"	76
S538	2	2'- 0"	Str.					4
S539	1	7'- 1"	125	3'-11"	3'-7"			7
S540	1	8'- 2"	125	5'- 0"	4'-7 1/2"			9
S601	563	44'- 0"	Str.					37,208
S602	541	15'- 8"	Str.					12,730
S603	1Ser. 25	8'-8"to44'-9"	Str.				1'-6 1/2"	1,003
S604	3	8'- 0"	Str.					36
S605	2	15'-11"	Str.					48
S606	2	16'- 9"	Str.					50
S607	1Ser. 5	16'-8"to17'-8"	Str.				3"	129
S608	1Ser. 8	4'-2"to14'-4"	Str.				1'-5 1/2"	111
S609	1Ser. 4	17'-7"to18'-0"	Str.				1 1/2"	107
S610	1Ser. 43	29'-0"to30'-1"	Str.				2"	21,284
S611	1Ser. 48	29'-0"to30'-11"	Str.				2"	23,759
S612	132	36'- 0"	Str.					7,138
S613	12	9'- 2"	130	3'- 3"				165
S614	12	10'- 0"	109	1'- 7"	3'-2"			180
S615	18	8'- 3"	101	7'- 7"				223
S616	6	8'-10"	109	1'- 0"	3'-2"			80
							Total	157,262

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
PARAPET								
R501	2	10'-11"	124	3'- 9"	6'-7"	2'-9"		*
R502	140	16'- 1"	Str.					*
R503	2	10'-11"	124	3'- 6"	6'-10"	2'-9"		*
R504	2	10'- 2"	124	3'- 0"	6'-7"	2'-3"		*
R505	2	10'- 3"	124	2'-10"	6'-10"	2'-3"		*
R506	8	13'- 2"	Str.					*
R507	8	13'- 9"	Str.					*
R508	8	17'- 9"	Str.					*
R509	16	15'- 9"	Str.					*
R510	8	5'- 3"	Str.					*
R601	12	6'- 6"	130	1'-11"				*
REPLACEMENT BAR SCHEDULE								
NO. 4	1	5'- 3"	Str.					
NO. 5	4	5'- 7"	Str.					
NO. 6	9	5'-11"	Str.					
NO. 7	1	6'- 2"	Str.					
NO. 8	1	6'- 6"	Str.					
NO. 9	2	6'-10"	Str.					
NO. 10	1	7'- 2"	Str.					
NO. 11	5	7'- 6"	Str.					

MICROFILMED
OCT 27 1982

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

380
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

Note:
For bending diagrams and notes see sheets 378 and 379.
* To be included for payment in unit price bid for Item S-14.

Notes:
Spiral reinforcement shall not have deformations but shall in other respects conform to Item S-4. Four steel channel, tee, or angle spacers, weighing approximately 0.68 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.68 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
**To be included for payment in unit price bid for Item S-14.

H.N.T.B. BRIDGE NO. 2
HOWARD, NEEDLES, TAMMEN & BERGENOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

SCRANTON ROAD OVER CLARK FREEWAY

BR. NO. CUY-90-1395 STA 8+09.63
SCALE STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DATE	DATE	DATE	DATE	DATE

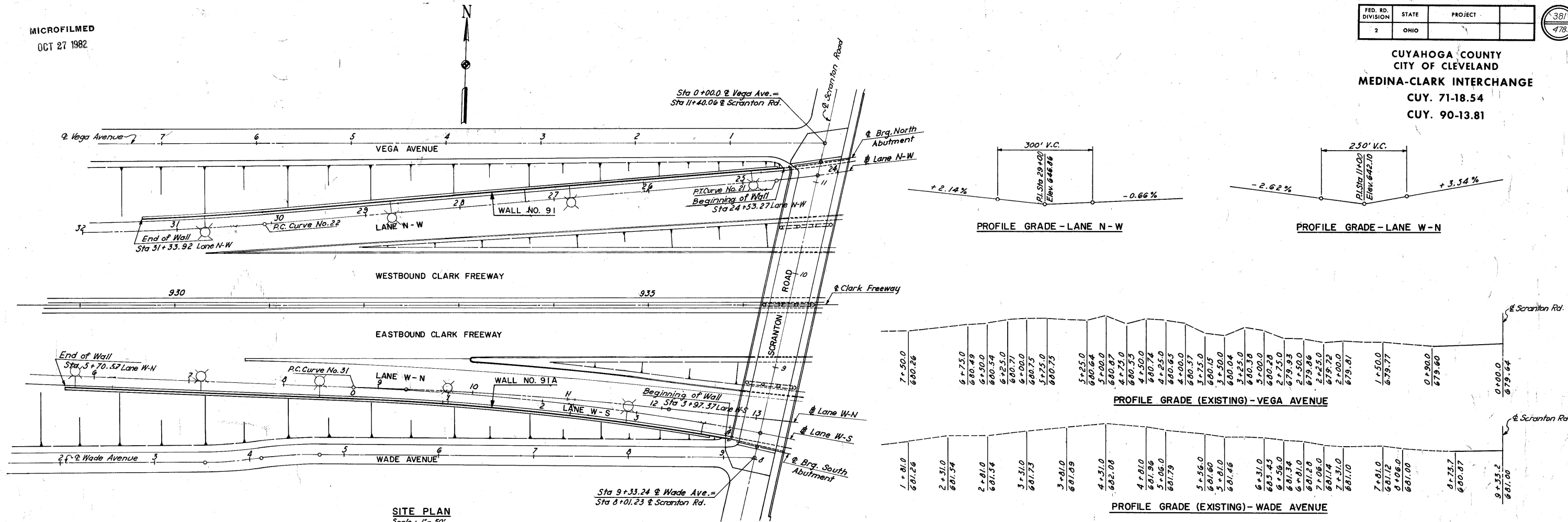
SHEET 380

MICROFILMED
OCT 27 1982

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

381
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



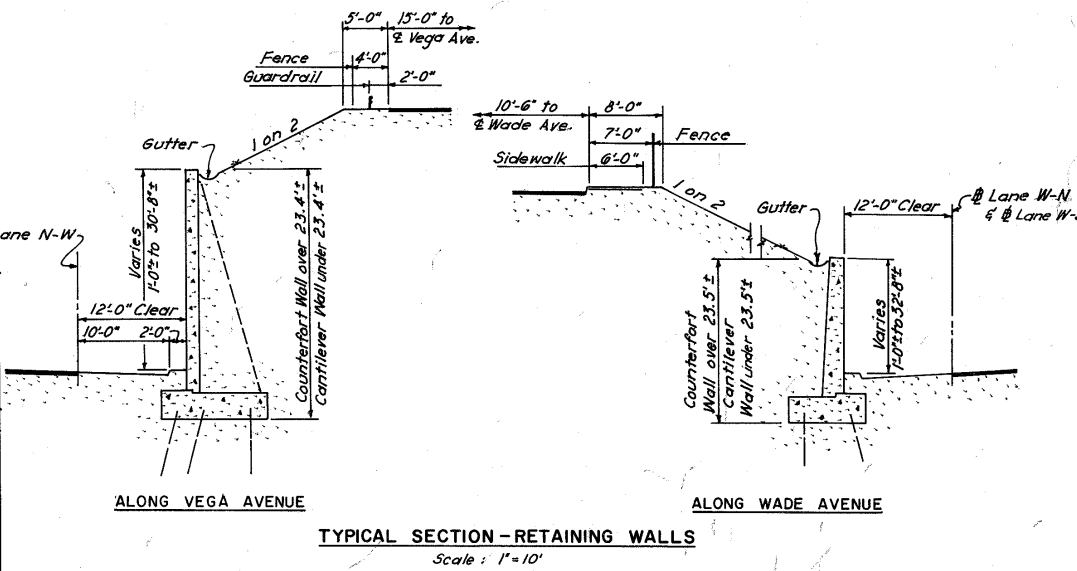
SITE PLAN
Scale: 1" = 50'

NO.	LOCATION	STATION	P.I.		Δ	D	R	L	T
			COORDINATES						
			NORTH	EAST					
21	Lane N-W	24+00.46	659,664.137	220,469.25	5°-44'-45"	5'-00'-00"	1145.92	114.92	57.51
22	Lane N-W	31+01.49	659,582.91	219,778.92	3°-48'-30"	2'-00'-00"	2864.79	190.42	95.24
31	Lane W-S	2+36.54	659,023.05	220,207.73	9°-28'-24"	2'-00'-00"	2864.79	472.00	230.54

ITEM	DESCRIPTION	UNIT	WALL NO.		TOTAL	TOTAL	TOTAL
			91	91A			
E-2	Unclassified Excavation	Cu. Yd.	7,920	8,902	16,816	18,438	18,878
S-1	Class "C" concrete (Walls above Footings)	Cu. Yd.	1,054	1,152	2,206	440	2,206
S-1	Class "E" concrete (Wall Footings)	Cu. Yd.	1,109	1,175	362	2,646	112
S-3	Waterproofing Premolded Sealing strip	Lin. Ft.	393	419	104	916	30
S-4	Reinforcing Steel	Pounds	265,949	300,349	27,017	593,315	10,275
S-9	1" Preformed Expansion Joint Filler	Sq. Ft.	368	402	19	789	789
S-18	12" Cast-in-place Reinforced Concrete Piles	Lin. Ft.	31,900	34,100		66,000	66,000
S-25	For Lighting Details and Quantities, see Sheet 200						
S-29	Porous Backfill	Cu. Yd.	628	688	118	1,434	37
S-101	Water Reducing Set-retarding Admixture	Each	1,054	1,152	238	2,444	81
S-16	FIRST Test Pile	Lump Sum				Lump*	Lump*
S-17	First pile test load	Lump Sum				Lump*	Lump*
S-17	Subsequent pile test load	Each				1*	1*
S-1	Class "E" Concrete (Walls above Footings)	Cu. Yd.			238	238	81

NO.	STATION	
	WALL NO. 91	WALL NO. 91A
1	24+89.00 @ Lane N-W	2+95.00 @ W-S
2	28+83.00 " " "	932+27.00 @ Clark
3	28+76.00 " " "	931+55.00 @ Clark
4	30+69.00 " " "	930+29.00 @ Clark
5		928+97.00 @ Clark

* Test loads shall be applied only if called for by the Engineer - Walls 91 & 91-A



TYPICAL SECTION - RETAINING WALLS
Scale: 1" = 10'

FOUNDATION DATA:
All piles shall be 12" C.I.P. reinforced concrete with an estimated vertical length of 65 feet.

H.N.T.B. BRIDGE NO. 2

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

SITE PLAN-WALLS 91 & 91A

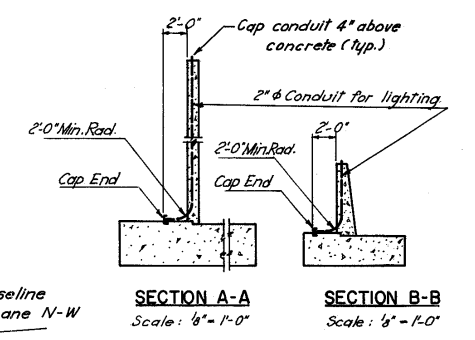
SCRANTON ROAD OVER CLARK FREEWAY

BR. NO. CUY-90-1395 STA 8+09.63
SCALE: As noted STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN A.H. TRACED	CHECKED R.B. REVIEWED	REVISED
DATE 9/64 DATE	DATE 11/64 DATE	DATE

SHEET 381
4-6-65

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



Notes:
Provide expansion and deflection coupling for conduit at each vertical joint in wall.
For stations of light standard supports, see Sheet 381.
For details of light standard supports, see Sheet 388.
For location and details of switch enclosure in face of wall 91A see sheet 189 A (Station 0+14.3811/5)

Notes:
All longitudinal horizontal dimensions shown in Footing Plans and Elevations are measured along outside face of walls.

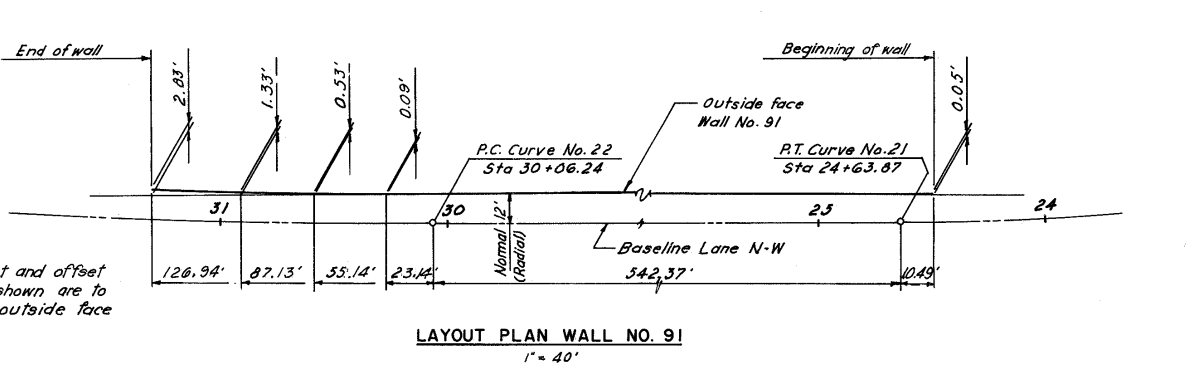
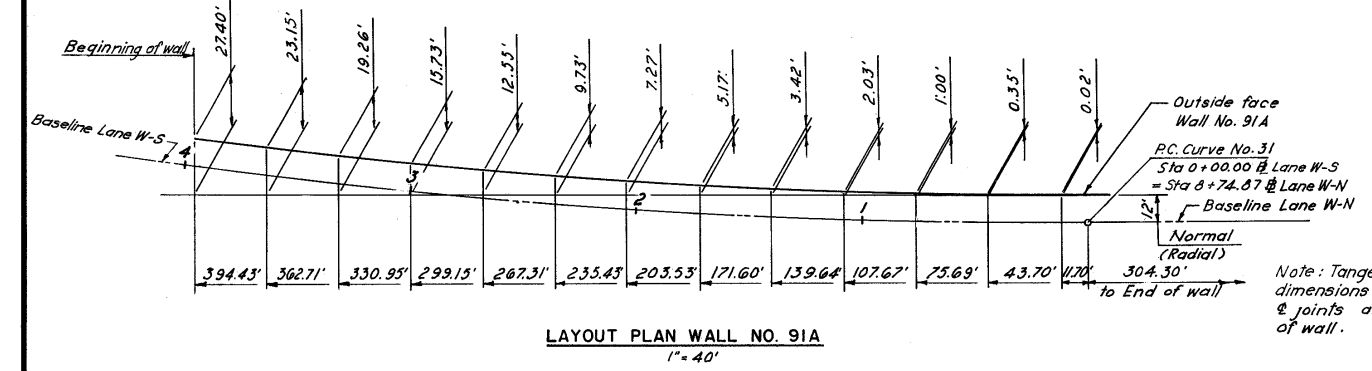
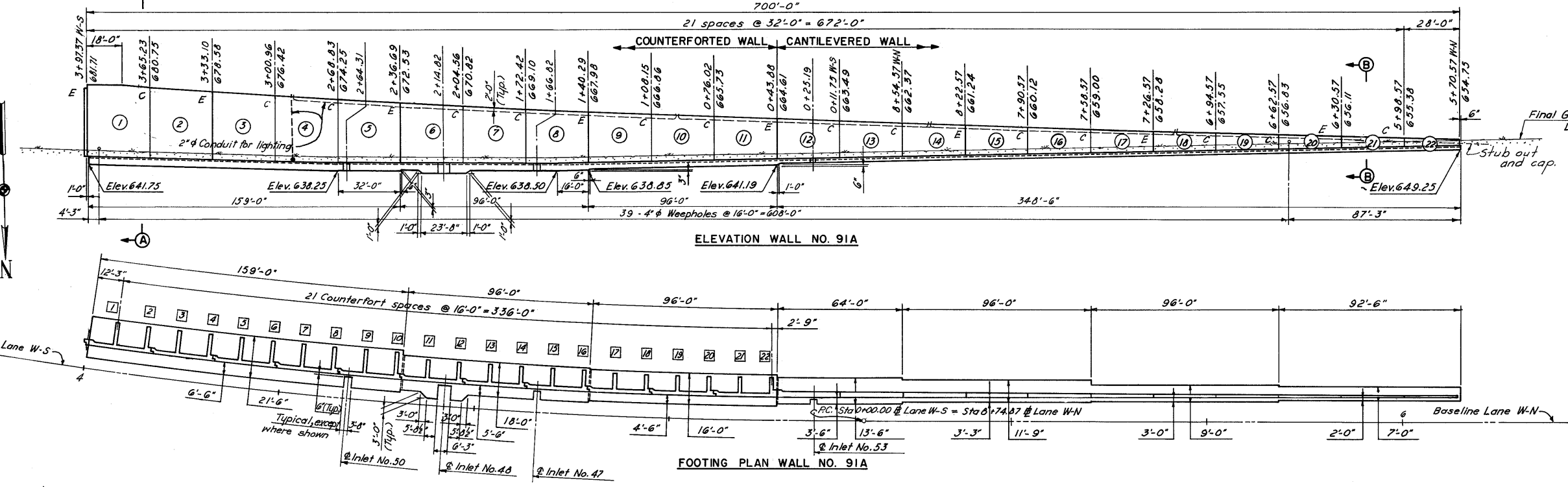
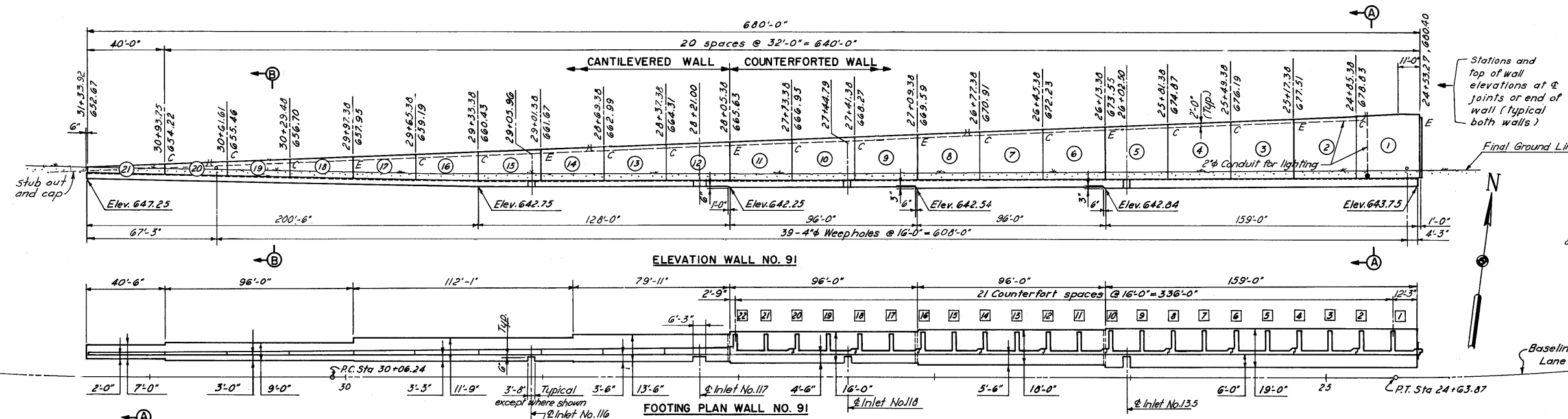
Counterforted portions of walls No. 91 and 91A are similar except where shown otherwise.

① indicates wall panel numbered 1,
⑦ indicates counterfort numbered 1, etc.

Provide vertical rustications in face of walls at 8'-0" ctr. to ctr. Provide horizontal rustications at 4'-0" ctr. to ctr. matching rustications in the North and South Abutments of Structure 2.

For rustication detail, see Sheet 388.

C indicates contraction joint, and E indicates expansion joint.



Note: Tangent and offset dimensions shown are to joints at outside face of wall.

H.N.T.B. BRIDGE NO. 2

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

FOOTING PLAN AND ELEVATION

SCRANTON ROAD OVER CLARK FREEWAY

BR. NO. CUY-90-1395 STA 8+09.63
SCALE: 1" = 30'-0" STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

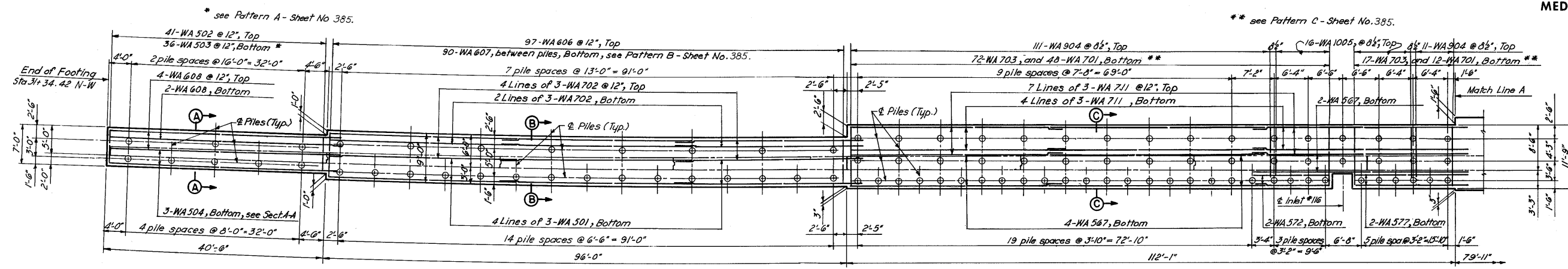
DRAWN P.H. TRACED	CHECKED L.S.L.	REVIEWED	REVISED
DATE 8/64	DATE	DATE 11-64	DATE

MICROFILMED
OCT 27 1982

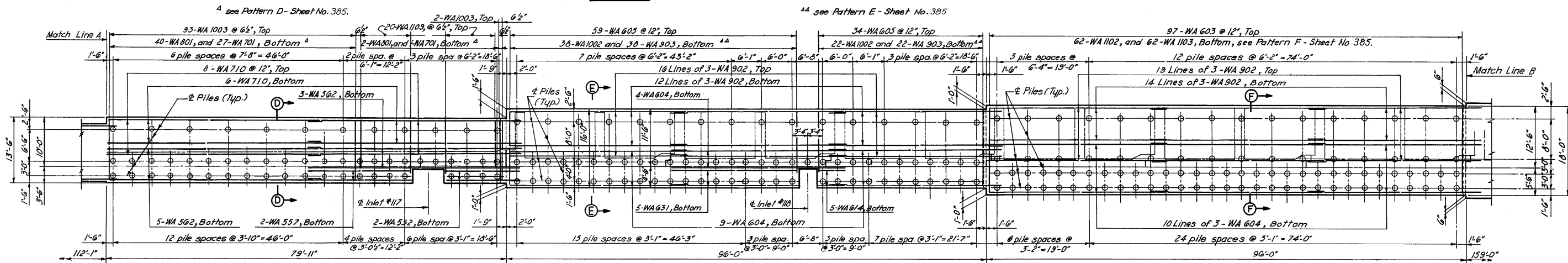
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

383
478

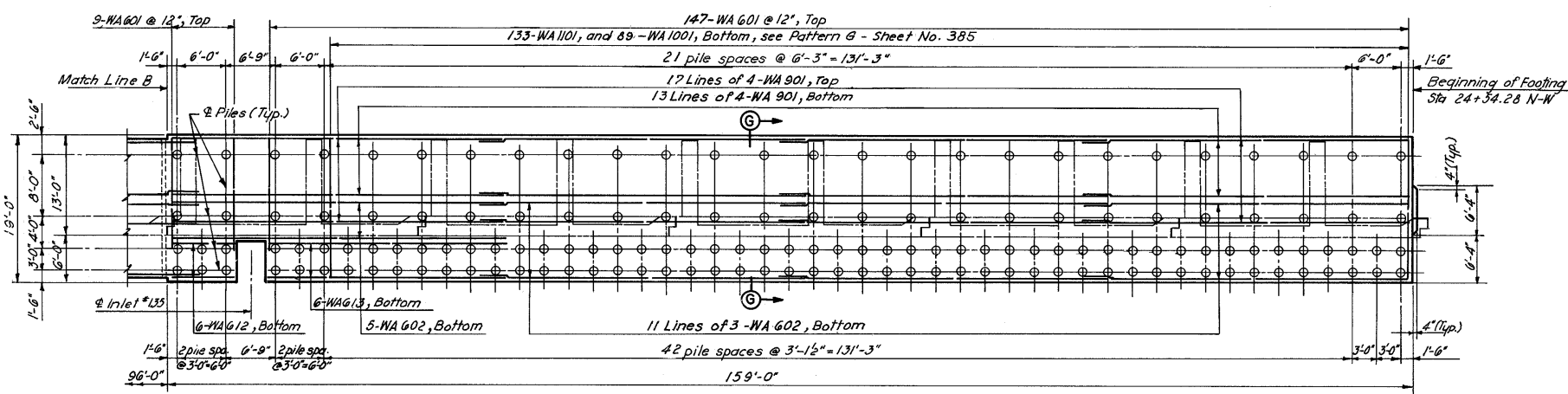
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



PART PLAN



PART PLAN



PART PLAN

- Notes:
- For additional reinforcing at inlets, see Sheet 386.
 - For reinforcement schedule, see Sheet 390.
 - All longitudinal dimensions shown on Plan are measured along outside face of wall.
 - All piles are 12" cast-in-place concrete.
 - All piles, except the rear row, shall be battered 4 on 12 toward the toe of footing. The rear row shall be vertical.
 - All pile dimensions are measured at the bottom of footing.
 - For Footing Plan, Layout Plan and Elevation, see Sheet 382.

H.N.T.B. BRIDGE NO. 2

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

PILE PLAN - WALL 91

SCRANTON ROAD OVER CLARK FREEWAY

BR. NO. CUY.90-1395 STA 8+09.63
SCALE: 1"=10'-0" STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN P.H. TRACED	CHECKED L.S.L.	REVIEWED	REVISED
DATE 8/64	DATE 11-64	DATE	DATE

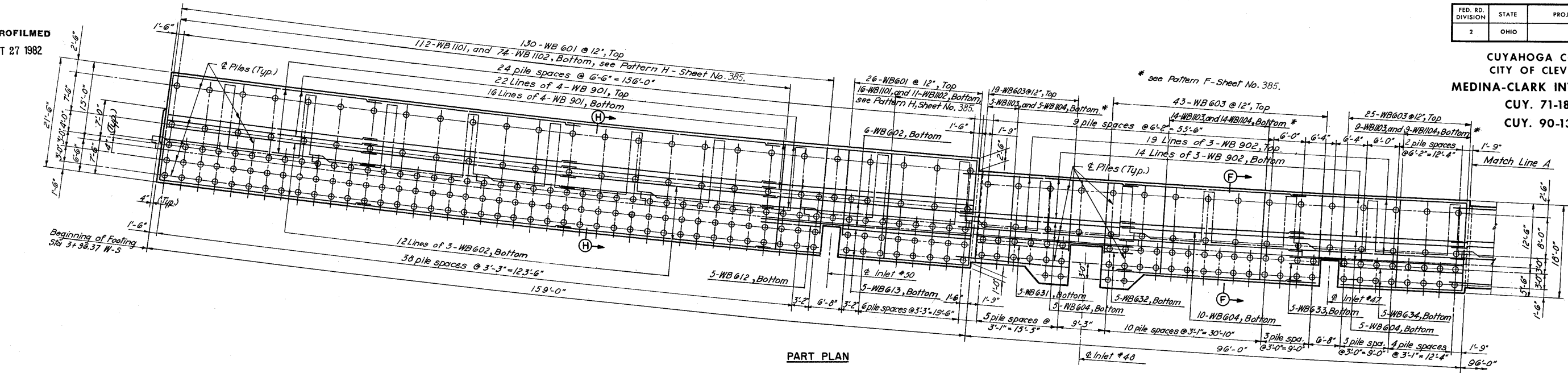
SHEET 383

MICROFILMED
OCT 27 1982

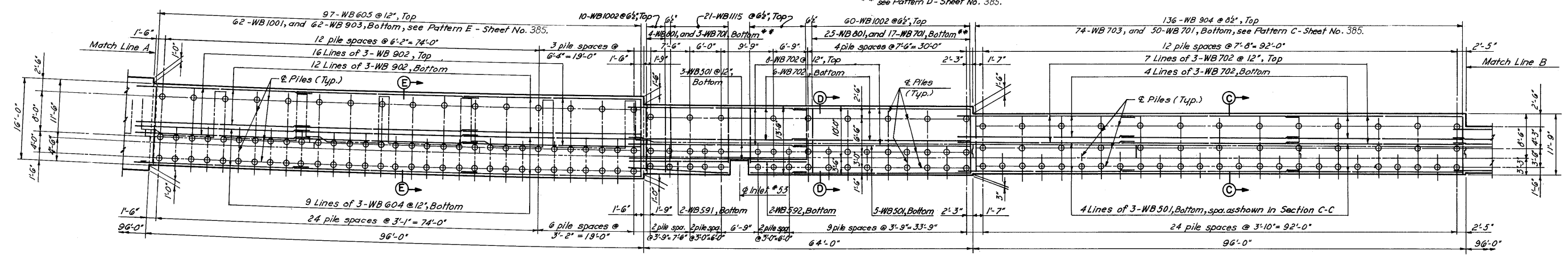
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

384
478

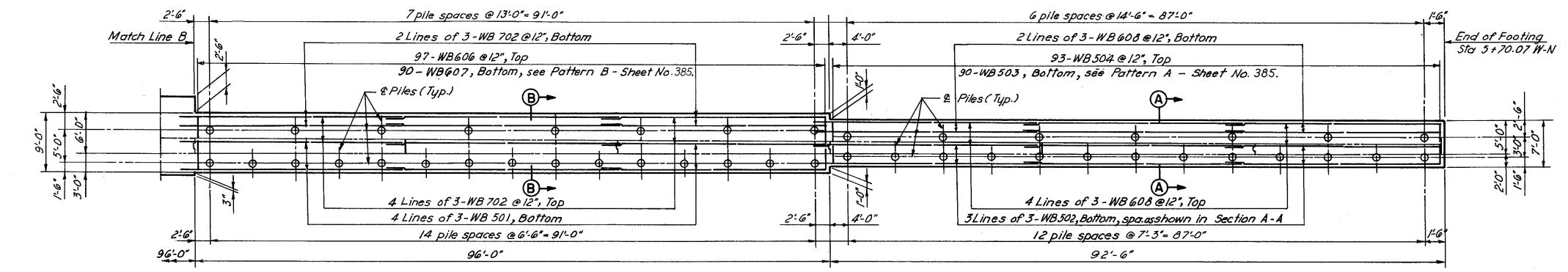
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



PART PLAN



PART PLAN



PART PLAN

Note: For 'Notes', see Sheet 383

H.N.T.B. BRIDGE NO. 2

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

PILE PLAN - WALL 91A

SCRANTON ROAD OVER CLARK FREEWAY

BR. NO. CUY-90-1395 STA 8+09.63
SCALE: 1"=10'-0" STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN BY: TRACED	CHECKED: L.S.	REVIEWED:	REVISED:
DATE: 8/64	DATE: 11-64	DATE:	DATE:

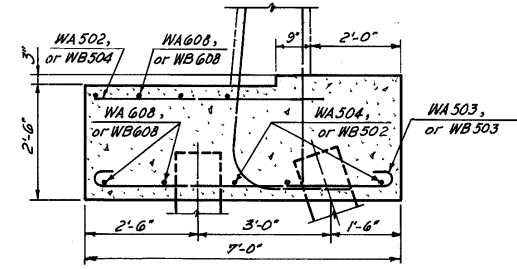
SHEET 384

MICROFILMED
OCT 27 1982

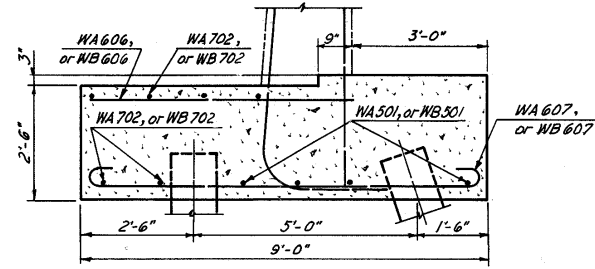
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

385
478

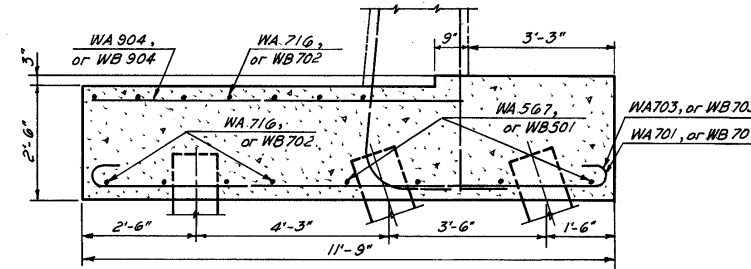
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



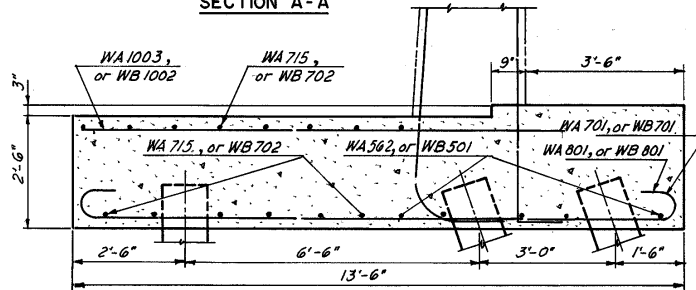
SECTION A-A



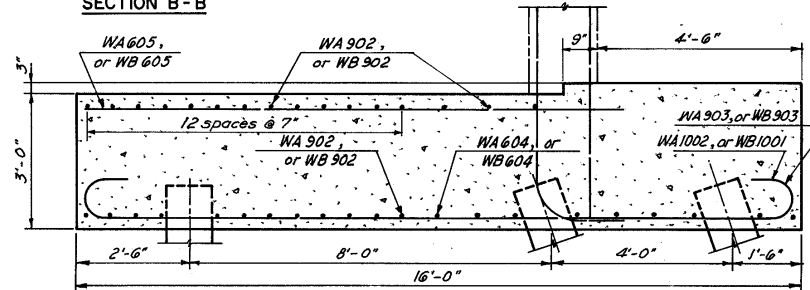
SECTION B-B



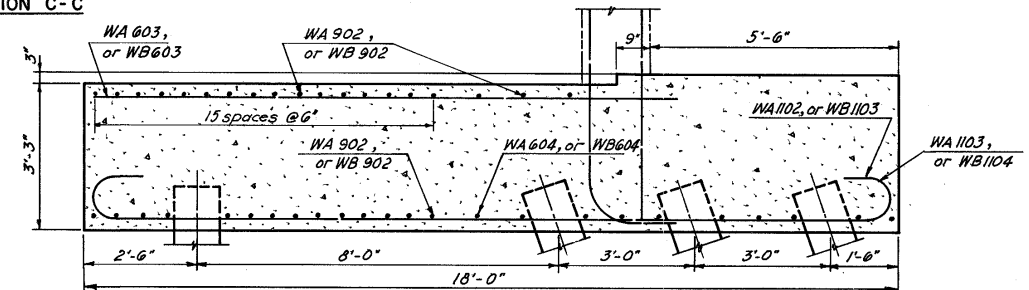
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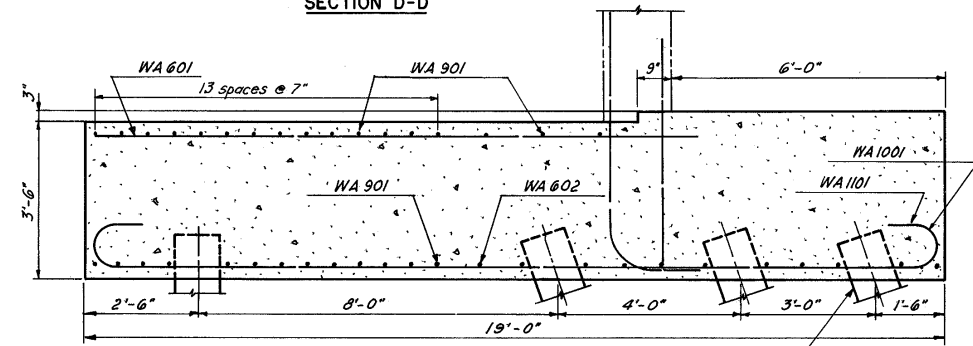
SECTION D-D



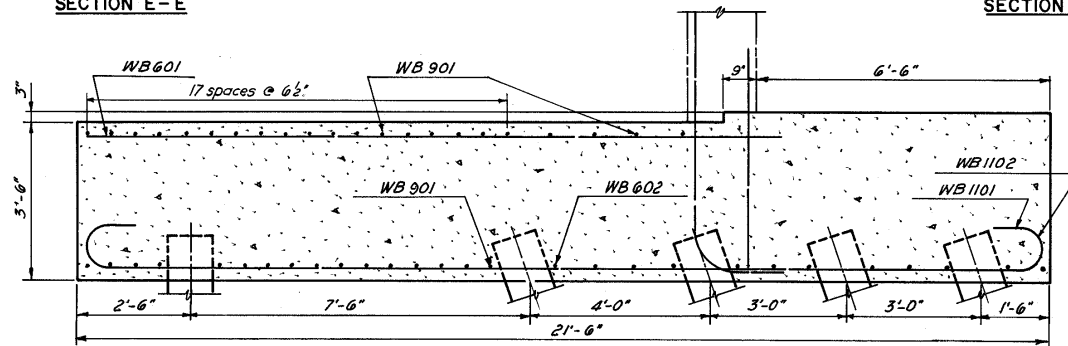
SECTION E-E



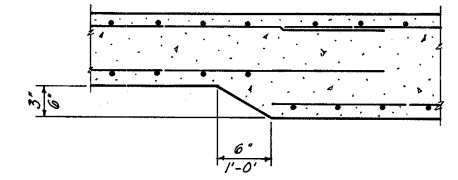
SECTION F-F



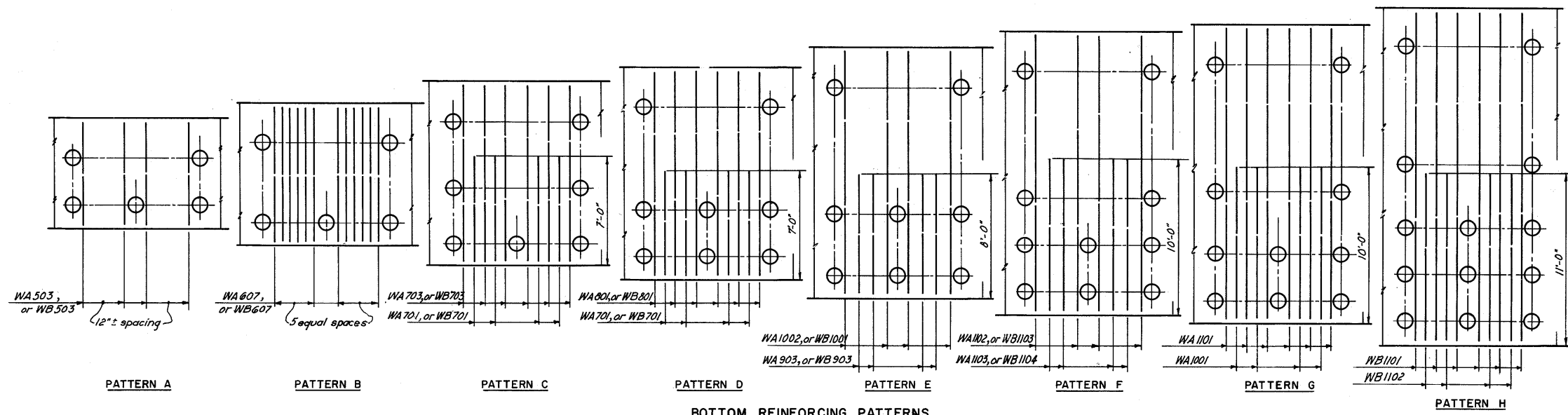
SECTION G-G



SECTION H-H



TYPICAL SECTION
THRU FOOTING THICKNESS TRANSITION
No scale



BOTTOM REINFORCING PATTERNS
No scale

Note: For pile plans and notes, see Sheets 383 & 384; for locations of Sections see Sheets 383 & 384.

H.N.T.B. BRIDGE NO. 2

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

FOOTING DETAILS

SCRANTON ROAD OVER CLARK FREEWAY

BR. NO. CUY.90-1395 STA 8+09.63
SCALE: 1/2" = 1'-0" STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN R.H.	TRACED	CHECKED Z.E.L.	REVIEWED	REVISED
DATE 8/64	DATE	DATE 11/69	DATE	DATE

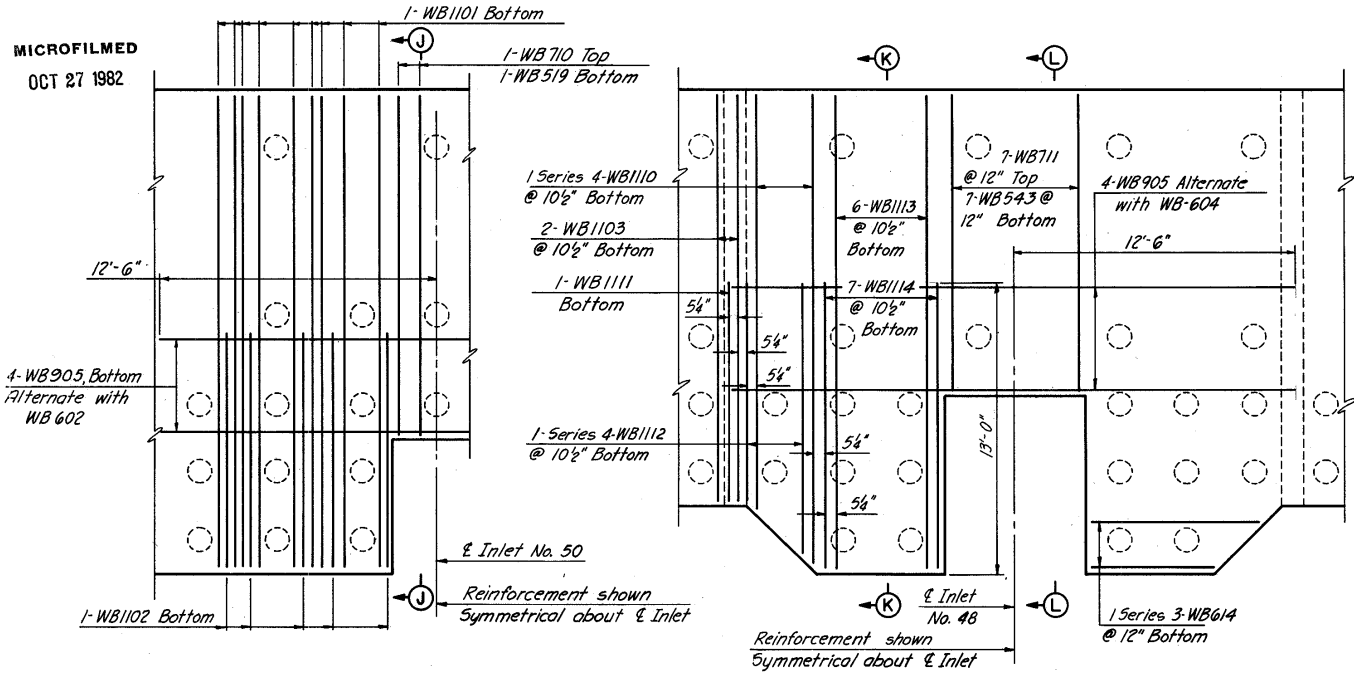
SHEET 385

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

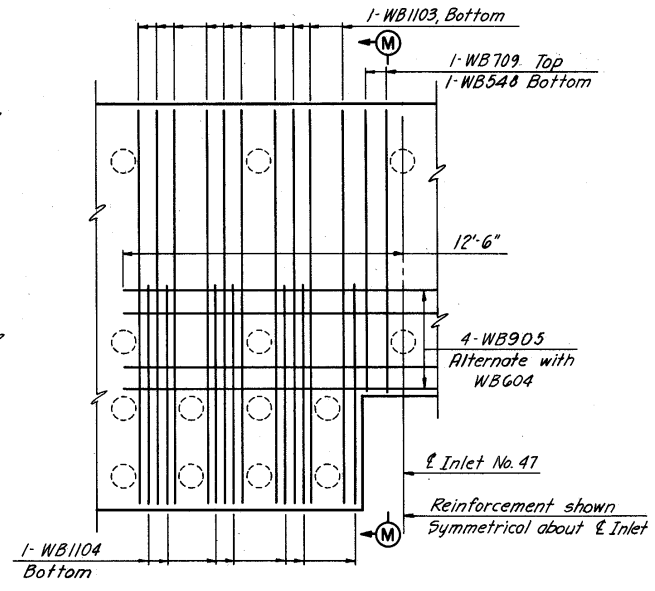
386
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

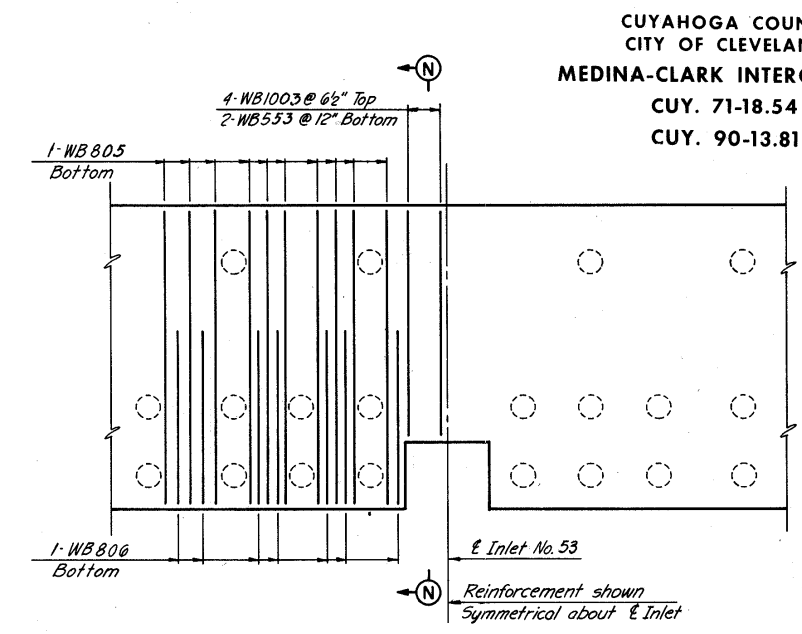
MICROFILMED
OCT 27 1982



PLAN-STA.2+64.31 LANE W-S

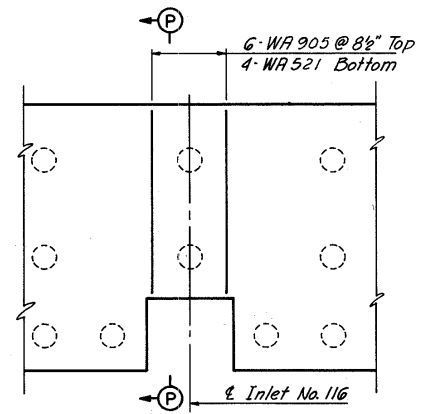


PLAN-STA.1+66.82 LANE W-S

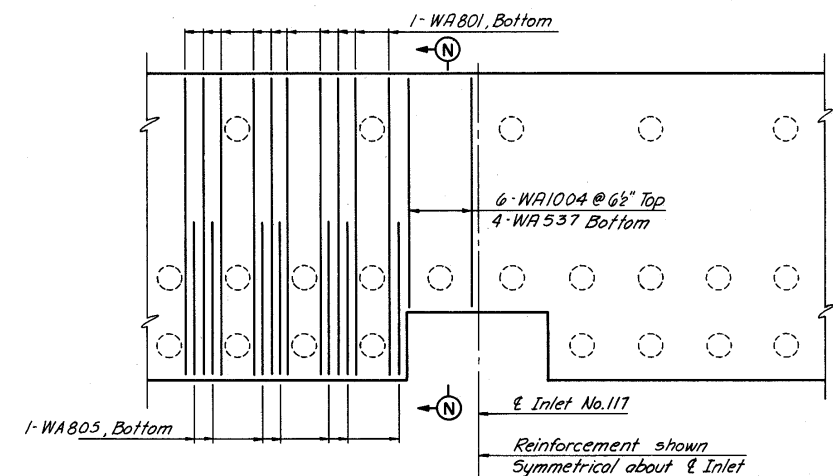


PLAN-STA.0+25.19 LANE W-S

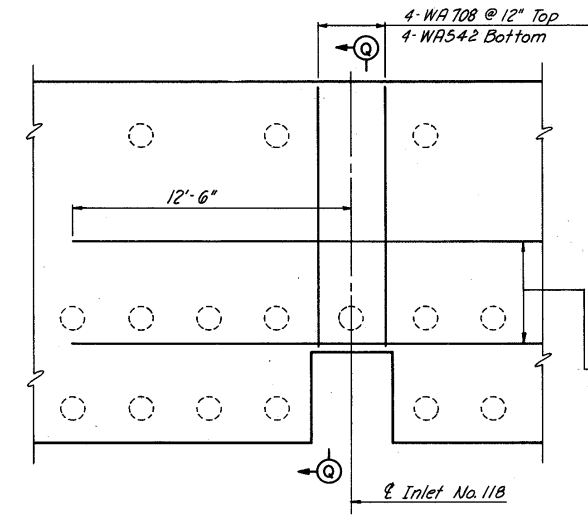
WALL 91-A



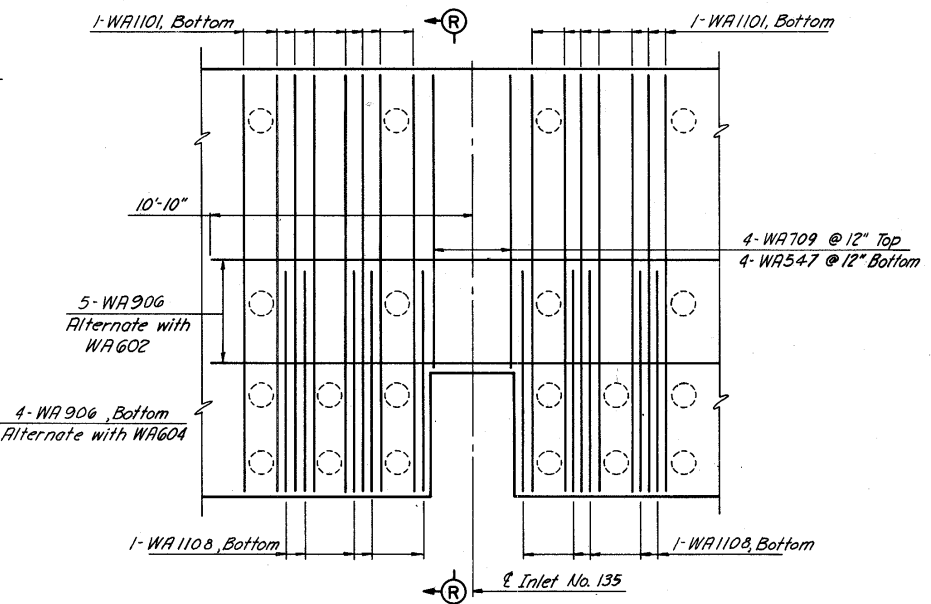
PLAN-STA.29+05.96 LANE N-W



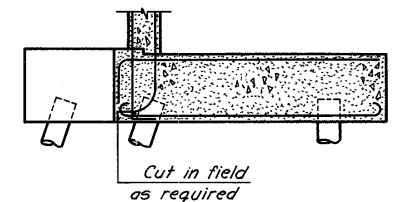
PLAN-STA.28+21.00 LANE N-W



PLAN-STA.27+44.79 LANE N-W

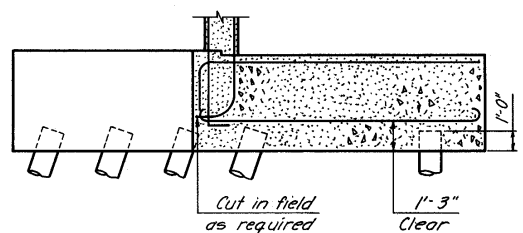


PLAN-STA.26+02.50 LANE N-W

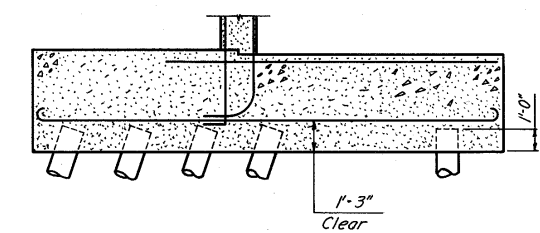


SECTION Q-Q
Sections J-J, M-M, N-N, P-P & R-R similar

Notes:
For location of inlets see sheet 383 & 384.
For reinforcement schedule see sheet 390 thru 392.



SECTION L-L



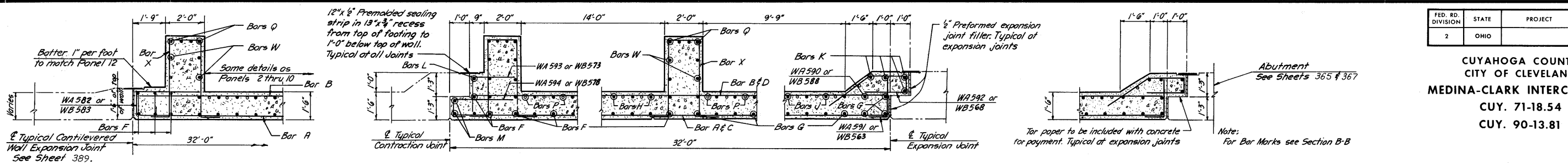
SECTION K-K

H.N.T.B. BRIDGE NO. 2
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

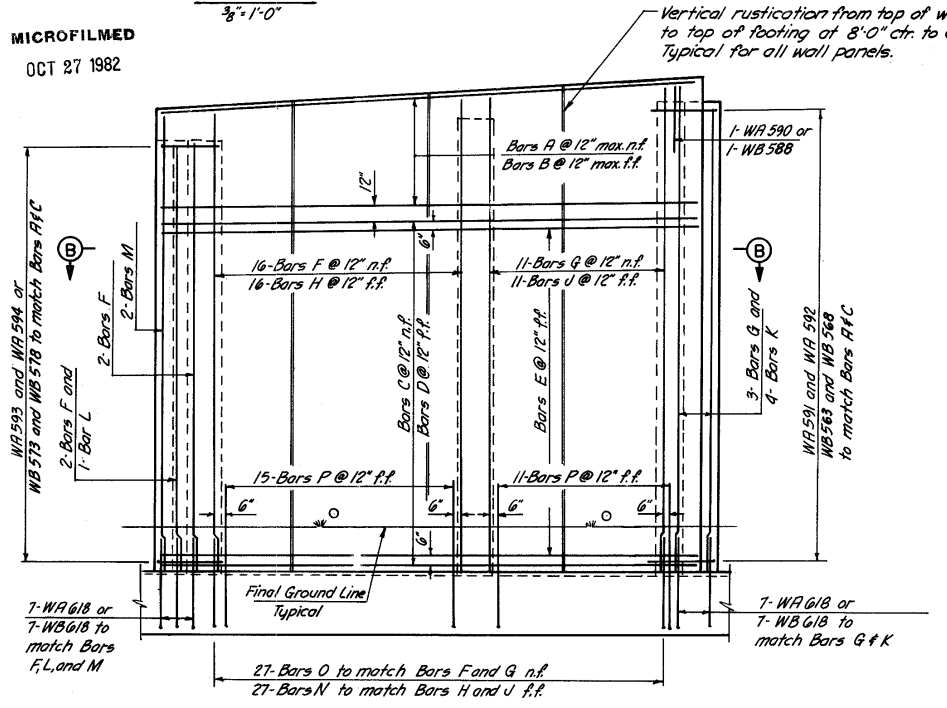
FOOTING DETAILS AT INLETS
SCRANTON ROAD OVER CLARK FREEWAY
BR. NO. CUY-90-1395 STA 8+09.63
SCALE: 1/4"=1'-0" STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DATE 10-69	DATE	DATE 11-69	DATE	DATE

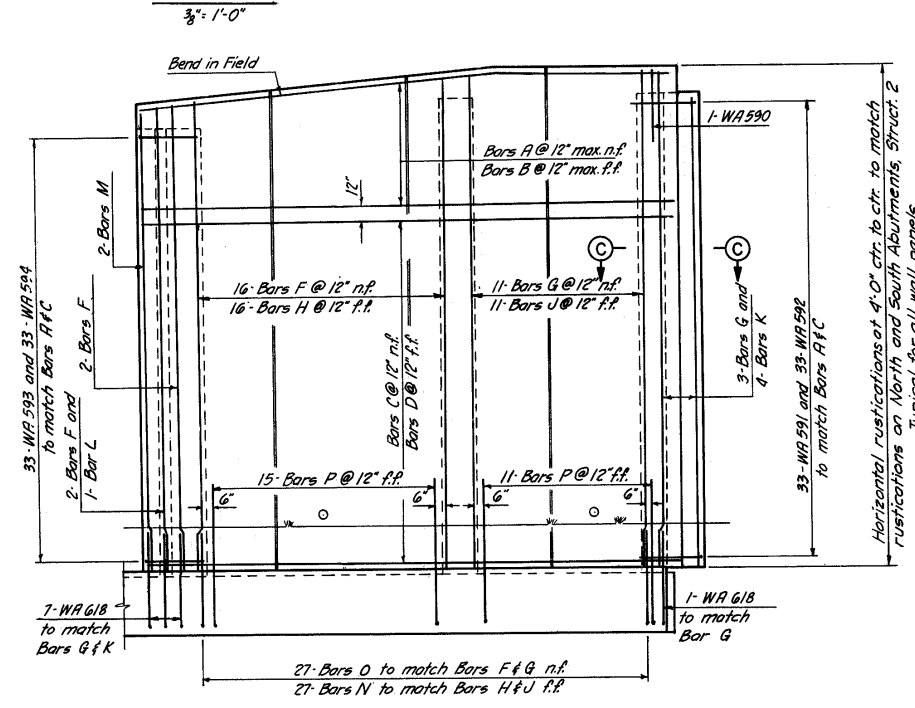
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



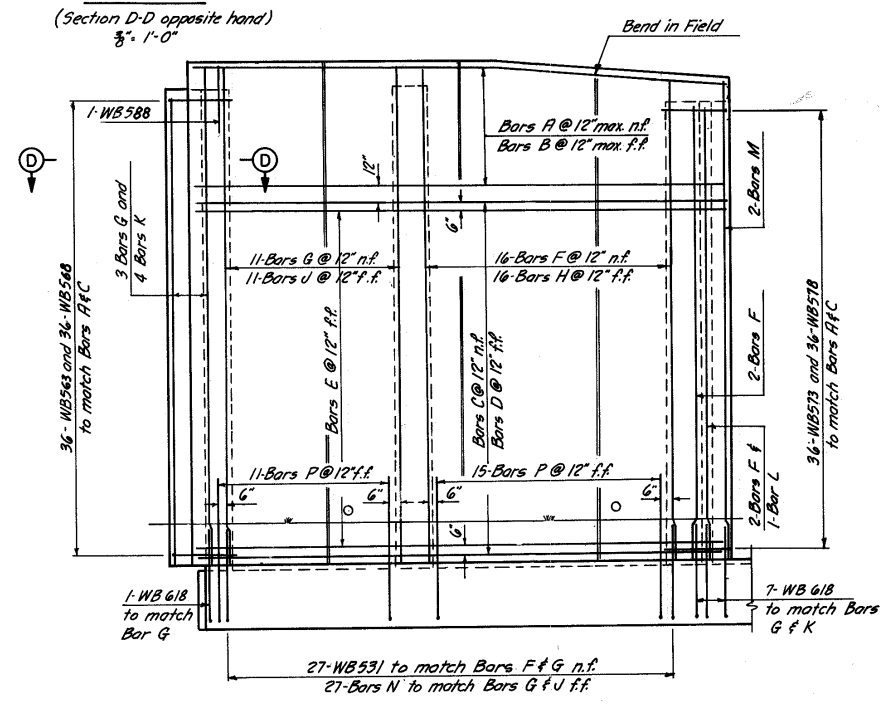
MICROFILMED
OCT 27 1982



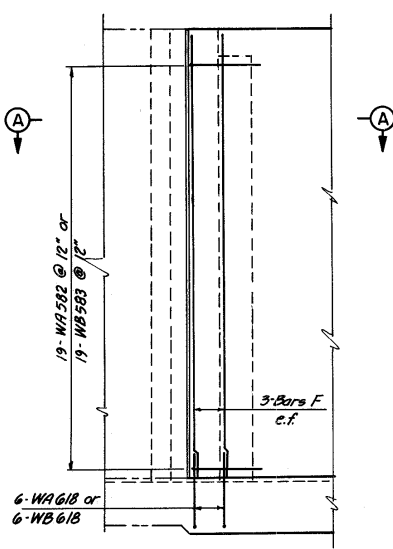
ELEVATION-PANELS 2 THRU 10
3/8" = 1'-0"
Elevation: Panels 2 thru 11 shown for wall 91, wall 91A opposite hand.



ELEVATION-PANEL 1- WALL NO. 91
3/8" = 1'-0"



ELEVATION-PANEL 1- WALL NO. 91A
3/8" = 1'-0"



ELEVATION PANEL II
3/8" = 1'-0"

Note:
For details not shown see Panels 2 thru 10.

Panel No.	Bars A	Bars B	Bars C	Bars D	Bars E	Bars F	Bars G	Bars H	Bars J	Bars K	Bars L	Bars M	Bars N	Bars O	Bars P
1	WA535 8	WA619 11	WA619 26	WA707 23	0	WA536 20	WA536 14	WA538 16	WA538 11	WA539 4	WA540 1	WA620 2	WA529 27	WA530 27	WA615 26
2	WA535 8	WA619 11	WA619 24	WA707 21	0	WA541 20	WA541 14	WA543 16	WA544 11	WA540 4	WA545 1	WA621 2	WA529 27	WA532 27	WA615 26
3	WA535 8	WA619 11	WA619 23	WA707 20	0	WA546 20	WA546 14	WA548 16	WA549 11	WA545 4	WA550 1	WA622 2	WA529 27	WA532 27	WA615 26
4	WA535 8	WA619 11	WA619 22	WA707 19	0	WA551 20	WA551 14	WA553 16	WA554 11	WA550 4	WA555 1	WA623 2	WA529 27	WA532 27	WA615 26
5	WA535 8	WA619 11	WA619 21	WA707 18	0	WA556 20	WA556 14	WA558 16	WA559 11	WA555 4	WA560 1	WA624 2	WA529 27	WA532 27	WA615 26
6	WA535 8	WA619 11	WA619 19	WA707 16	0	WA561 20	WA561 14	WA563 16	WA564 11	WA560 4	WA565 1	WA625 2	WA531 27	WA587 27	WA616 26
7	WA535 8	WA619 11	WA619 18	WA707 15	0	WA566 20	WA566 14	WA568 16	WA569 11	WA565 4	WA570 1	WA626 2	WA531 27	WA587 27	WA616 26
8	WA535 8	WA619 11	WA619 17	WA707 14	0	WA571 20	WA571 14	WA573 16	WA574 11	WA570 4	WA575 1	WA627 2	WA531 27	WA587 27	WA616 26
9	WA535 24	WA619 11	0	WA707 13	0	WA576 20	WA576 14	WA578 16	WA579 11	WA575 4	WA580 1	WA628 2	WA533 27	WA534 27	WA617 26
10	WA535 23	WA619 11	0	WA707 12	0	WA581 20	WA581 14	WA583 16	WA584 11	WA580 4	WA585 1	WA629 2	WA533 27	WA534 27	WA617 26
11	WA535 22	WA619 11	0	WA707 11	0	WA586 22	WA586 14	WA588 16	WA589 11	WA585 4	0	0	WA533 27	WA534 27	WA617 26

Panel No.	Bars A	Bars B	Bars C	Bars D	Bars E	Bars F	Bars G	Bars H	Bars J	Bars K	Bars L	Bars M	Bars N	Bars O	Bars P
1	WB619 8	WB708 12	WB708 29	WB708 25	WB708 24	WB537 20	WB537 14	WB539 16	WB539 11	WB540 4	WB541 1	WB620 2	WB615 27	0	WB707 26
2	WB619 8	WB708 12	WB708 29	WB708 25	WB708 24	WB542 20	WB542 14	WB544 16	WB545 11	WB541 4	WB546 1	WB621 2	WB615 27	WB533 27	WB707 26
3	WB619 8	WB708 12	WB708 27	WB708 23	WB708 22	WB547 20	WB547 14	WB549 16	WB550 11	WB546 4	WB551 1	WB622 2	WB615 27	WB533 27	WB707 26
4	WB619 8	WB708 12	WB708 26	WB708 22	WB708 21	WB552 20	WB552 14	WB554 16	WB555 11	WB551 4	WB556 1	WB623 2	WB615 27	WB533 27	WB707 26
5	WB619 8	WB708 12	WB708 25	WB708 21	WB708 20	WB557 20	WB557 14	WB559 16	WB560 11	WB556 4	WB561 1	WB624 2	WB615 27	WB535 27	WB707 26
6	WB536 8	WB619 11	WB619 23	WB708 20	0	WB562 20	WB562 14	WB564 16	WB565 11	WB561 4	WB566 1	WB625 2	WB532 27	WB558 27	WB616 26
7	WB536 8	WB619 11	WB619 21	WB708 18	0	WB567 20	WB567 14	WB569 16	WB570 11	WB566 4	WB571 1	WB626 2	WB532 27	WB558 27	WB616 26
8	WB536 8	WB619 11	WB619 19	WB708 16	0	WB572 20	WB572 14	WB574 16	WB575 11	WB571 4	WB576 1	WB627 2	WB532 27	WB558 27	WB616 26
9	WB536 26	WB619 11	0	WB708 15	0	WB577 20	WB577 14	WB579 16	WB580 11	WB576 4	WB581 1	WB628 2	WB534 27	WB538 27	WB617 26
10	WB536 24	WB619 11	0	WB708 13	0	WB582 20	WB582 14	WB584 16	WB585 11	WB581 4	WB586 1	WB629 2	WB534 27	WB538 27	WB617 26
11	WB536 21	WB619 11	0	WB708 10	0	WB587 22	WB587 14	WB589 16	WB590 11	WB586 4	0	0	WB534 27	WB538 27	WB617 26

Notes:
n.f. denotes near (exposed) face.
f.f. denotes far (fill) face.
e.f. denotes each face.
For rustication detail see sheet 388.
For reinforcement schedule see sheets 390 thru 392.
For details of light standard supports see sheet 388.
For location of light standard supports see sheet 381.
The number of bars each of WA591, WA592, WA593 and WA594 or WB563, WB568, WB573 and WB578 in each panel for Panels 2 thru 11 shall be one less than the number of bars A plus bars C.

H.N.T.B. BRIDGE NO. 2

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

COUNTERFORT WALL DETAILS
SCRANTON ROAD OVER CLARK FREEWAY

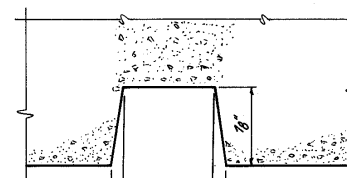
BR. NO. CUY-90-1395 STA 8+09.63
SCALE: As shown STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DATE 8-64 DATE 8-64 DATE 1/64 DATE

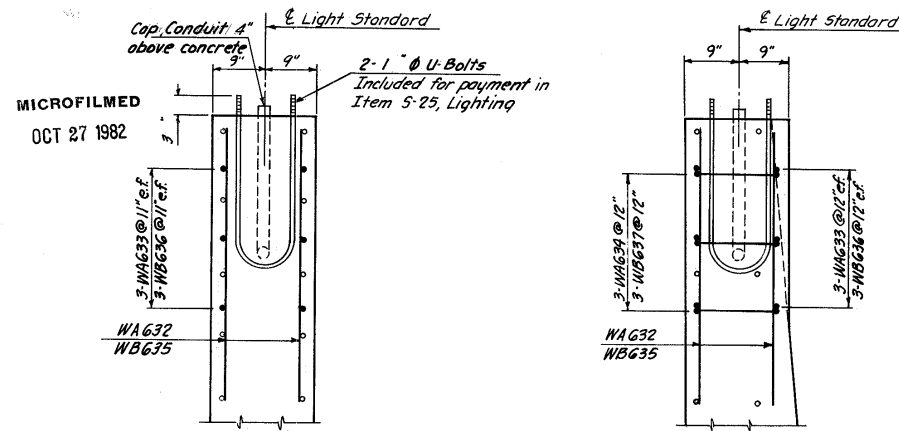
REVISIONS

SHEET 387

**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81**

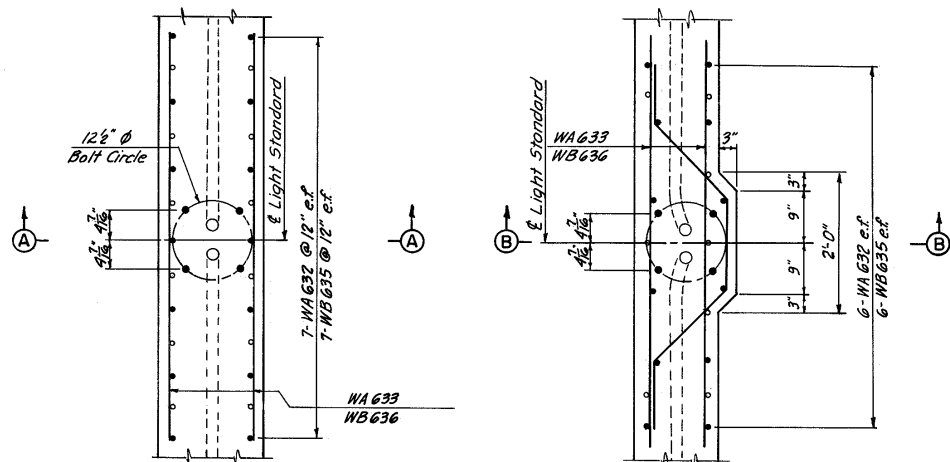


RUSTICATION DETAIL
1" x 1"



SECTION A-A

SECTION B-B

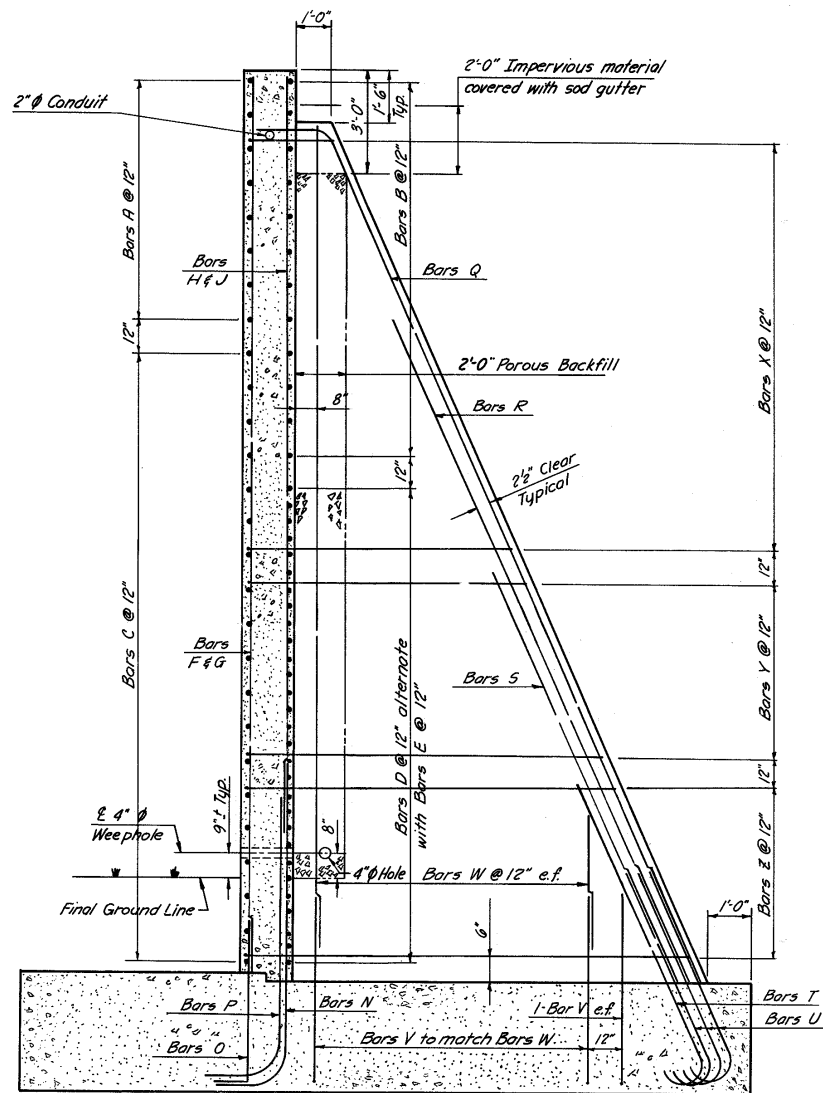


COUNTERFORT WALL

CANTILEVER WALL

LIGHT STANDARD SUPPORTS

3/4" x 1'-0"
For location of light standard supports see sheet 381
o denotes normal reinforcement
The top surface of light standard supports shall be truly horizontal



TYPICAL COUNTERFORT DETAIL AND WALL SECTION

3/8" x 1'-0"

WALL NO. 91-COUNTERFORT REINFORCING																				
Cfft. No.	Bars Q		Bars R		Bars S		Bars T		Bars U		Bars V		Bars W		Bars X		Bars Y		Bars Z	
	Mark	No. Req'd	Mark	No. Req'd	Mark	No. Req'd	Mark	No. Req'd	Mark	No. Req'd	Mark	No. Req'd	Mark	No. Req'd	Mark	No. Req'd	Mark	No. Req'd	Mark	No. Req'd
1	WC1101	4	WC1123	4	WC1126	4		0	WA1104	12	WA630	18	WC501	8	WC523	18	WC601	8	WC701	5
2	WC1102	4	WC1123	4	WC1126	4		0	WA1104	12	WA630	18	WC502	8	WC524	18	WC602	8	WC702	4
3	WC1103	4	WC1123	4	WC1126	4		0	WA1104	12	WA630	18	WC503	8	WC525	18	WC603	8	WC703	3
4	WC1104	4	WC1123	4	WC1126	4		0	WA1104	12	WA630	18	WC504	8	WC526	18	WC604	8	WC703	3
5	WC1105	4	WC1123	4	WC1126	4		0	WA1104	12	WA630	18	WC505	8	WC527	18	WC605	8	WC704	2
6	WC1106	4	WC1123	4	WC1126	4		0	WA1104	12	WA630	18	WC506	8	WC528	18	WC606	8	WC704	2
7	WC1107	4	WC1123	4	WC1126	4		0	WA1104	12	WA630	18	WC507	8	WC529	18	WC607	8	WC705	1 bar
8	WC1108	4	WC1123	4	WC1126	4		0	WA1104	12	WA630	18	WC508	8	WC530	18	WC608	8	WC705	1 bar
9	WC1109	4	WC1123	4	WC1126	4		0	WA1104	12	WA630	18	WC509	8	WC531	18	WC609	8		0
10	WC1110	4	WC1123	4	WC1126	4		0	WA1104	12	WA630	18	WC510	8	WC532	18	WC610	7		0
11	WC1111	4	WC1124	4		0	WA1107	2	WA1105	8	WA610	18	WC511	8	WC533	20	WC611	5		0
12	WC1112	4	WC1124	4		0	WA1107	2	WA1105	8	WA610	18	WC512	8	WC534	20	WC612	4		0
13	WC1113	4	WC1124	4		0	WA1107	2	WA1105	8	WA610	18	WC513	8	WC535	20	WC612	4		0
14	WC1114	4	WC1124	4		0	WA1107	2	WA1105	8	WA610	18	WC514	8	WC536	20	WC613	3		0
15	WC1115	4	WC1124	4		0	WA1107	2	WA1105	8	WA610	18	WC515	8	WC537	20	WC613	3		0
16	WC1116	4	WC1124	4		0	WA1107	2	WA1105	8	WA610	18	WC516	8	WC538	20	WC614	2		0
17	WC1117	4	WC1125	4		0		0	WA1106	8	WA611	16	WC517	7	WC539	20	WC615	1 bar		0
18	WC1118	4	WC1125	4		0		0	WA1106	8	WA611	16	WC518	7	WC540	20	WC615	1 bar		0
19	WC1119	4	WC1125	4		0		0	WA1106	8	WA611	16	WC519	7	WC541	20		0		0
20	WC1120	4	WC1125	4		0		0	WA1106	8	WA611	16	WC520	7	WC542	20		0		0
21	WC1121	4	WC1125	4		0		0	WA1106	8	WA611	16	WC521	7	WC543	19		0		0
22	WC1122	4	WC1125	4		0		0	WA1106	8	WA611	16	WC522	7	WC544	19		0		0

WALL NO. 91A-COUNTERFORT REINFORCING																				
Cfft. No.	Bars Q		Bars R		Bars S		Bars T		Bars U		Bars V		Bars W		Bars X		Bars Y		Bars Z	
	Mark	No. Req'd	Mark	No. Req'd	Mark	No. Req'd	Mark	No. Req'd	Mark	No. Req'd	Mark	No. Req'd	Mark	No. Req'd	Mark	No. Req'd	Mark	No. Req'd	Mark	No. Req'd
1	WD1101	4	WD1123	4	WD1127	4	WB1105	2	WB1107	12	WB630	20	WD501	9	WD523	18	WD601	8	WD701	9
2	WD1102	4	WD1123	4	WD1127	4	WB1105	2	WB1107	12	WB630	20	WD502	9	WD524	18	WD601	8	WD701	9
3	WD1103	4	WD1123	4	WD1127	4	WB1105	2	WB1107	12	WB630	20	WD503	9	WD525	18	WD602	8	WD702	8
4	WD1104	4	WD1123	4	WD1127	4	WB1105	2	WB1107	12	WB630	20	WD504	9	WD526	18	WD603	8	WD703	7
5	WD1105	4	WD1123	4	WD1127	4	WB1105	2	WB1107	12	WB630	20	WD505	9	WD527	18	WD603	8	WD703	7
6	WD1106	4	WD1123	4	WD1127	4	WB1105	2	WB1107	12	WB630	20	WD506	9	WD528	18	WD605	8	WD704	6
7	WD1107	4	WD1123	4	WD1127	4	WB1105	2	WB1107	12	WB630	20	WD507	9	WD529	18	WD606	8	WD705	5
8	WD1108	4	WD1123	4	WD1127	4	WB1105	2	WB1107	12	WB630	20	WD508	9	WD530	18	WD607	8	WD706	5
9	WD1109	4	WD1124	4	WD1128	4		0	WB1107	12	WB630	20	WD509	9	WD531	18	WD608	8	WD707	4
10	WD1110	4	WD1124	4	WD1128	4		0	WB1107	12	WB630	20	WD510	9	WD532	18	WD609	8	WD708	3
11	WD1111	4	WD1125	4		0	WB1106	2	WB1108	8	WB610	18	WD511	8	WD533	20	WD610	8		0
12	WD1112	4	WD1125	4		0	WB1106	2	WB1108	8	WB610	18	WD512	8	WD534	20	WD611	7		0
13	WD1113	4	WD1125	4		0	WB1106	2	WB1108	8	WB610	18	WD513	8	WD535	20	WD612	6		0
14	WD1114	4	WD1125	4		0	WB1106	2	WB1108	8	WB610	18	WD514	8	WD536	20	WD613	6		0
15	WD1115	4	WD1125	4		0	WB1106	2	WB1108	8	WB610	18	WD515	8	WD537	20	WD614	5		0
16	WD1116	4	WD1125	4		0	WB1106	2	WB1108	8	WB610	18	WD516	8	WD538	20	WD615	4		0
17	WD1117	4	WD1126	4		0		0	WB1109	8	WB611	16	WD517	7	WD539	20	WD616	3		0
18	WD1118	4	WD1126	4		0		0	WB1109	8	WB611	16	WD518	7	WD539	20	WD617	2		0
19	WD1119	4	WD1126	4		0		0	WB1109	8	WB611	16	WD519	7	WD540	20	WD618	1 bar		0
20	WD1120	4	WD1126	4		0		0	WB1109	8	WB611	16	WD520	7	WD541	20	WD618	1 bar		0
21	WD1121	4	WD1126	4		0		0	WB1109	8	WB611	16	WD521	7	WD542	20		0		0
22	WD1122	4	WD1126	4		0		0	WB1109	8	WB611	16	WD522	7	WD543	19		0		0

Notes:
n.f. denotes near (exposed) face.
f.f. denotes far (fill) face.
e.f. denotes each face.
For reinforcement schedule see sheets 390 thru 392.

H.N.T.B. BRIDGE NO. 2
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

COUNTERFORT WALL DETAILS
SCRANTON ROAD OVER CLARK FREEWAY
BR. NO. CUY.90-1395 STA 8+09.63
SCALE: As shown STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN L.D.	TRACED	CHECKED A.W.	REVIEWED	REVISED
DATE 8-64	DATE	DATE 11-64	DATE	DATE

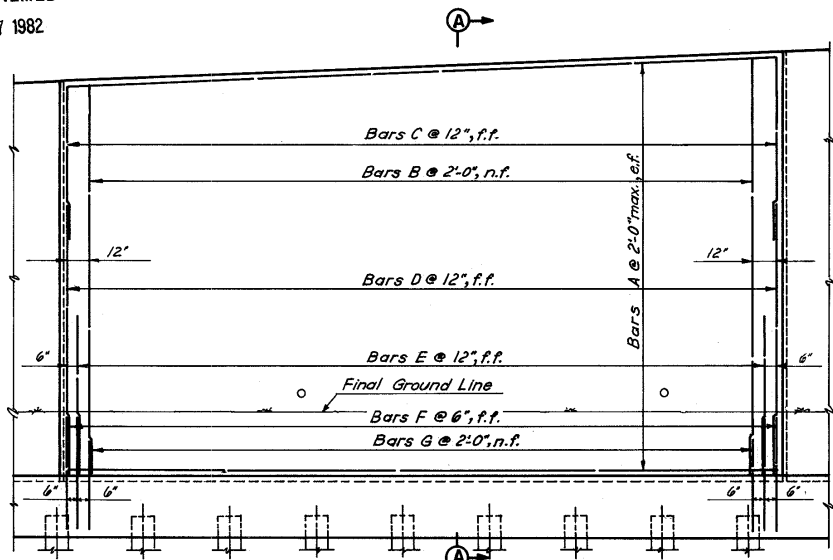
SHEET 388

MICROFILMED
OCT 27 1982

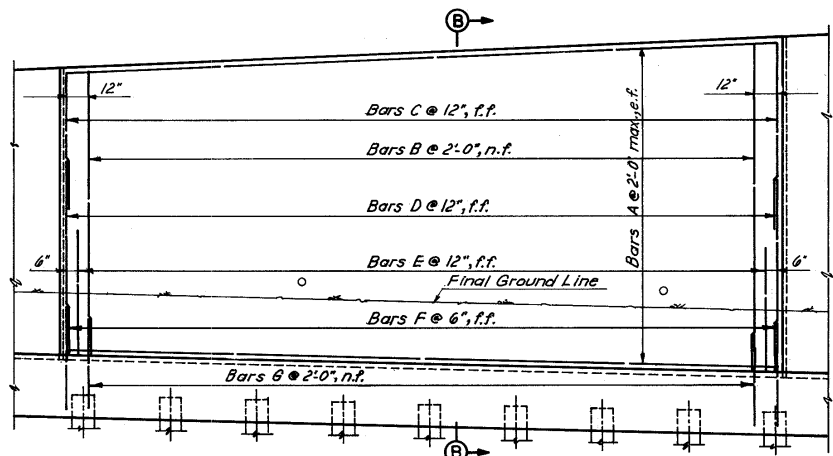
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

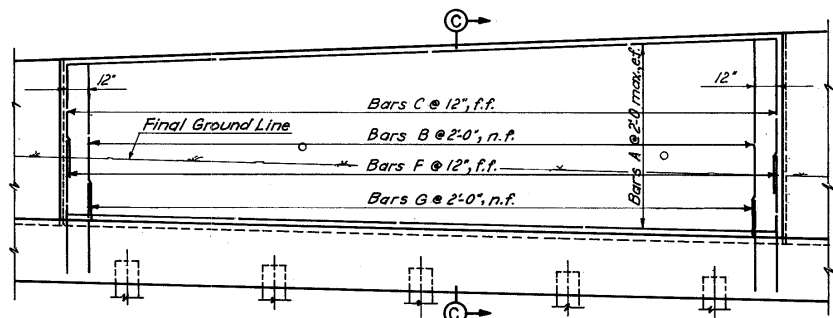
Note:
For details not shown, see Section A-A



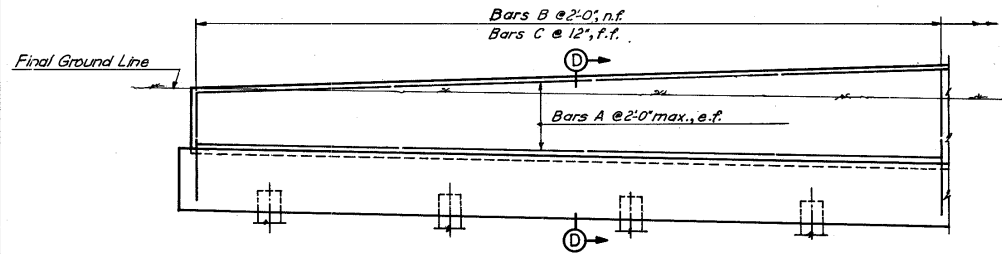
ELEVATION PANELS 12 THRU 14 - WALL NO. 91, AND PANEL 13 - WALL 91A



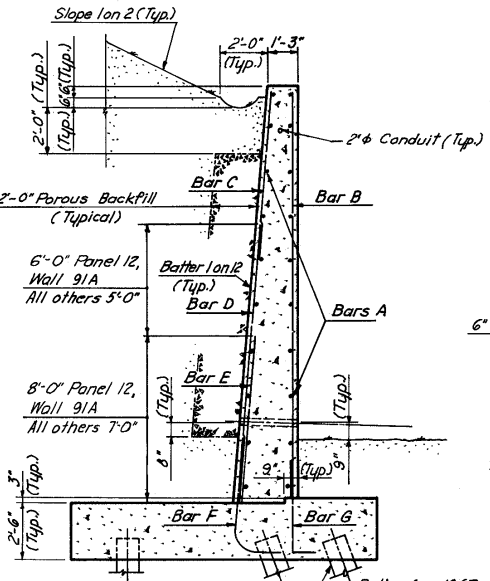
ELEVATION PANELS 15 THRU 17 - WALL NO. 91, AND PANELS 14 THRU 16 - WALL NO. 91A



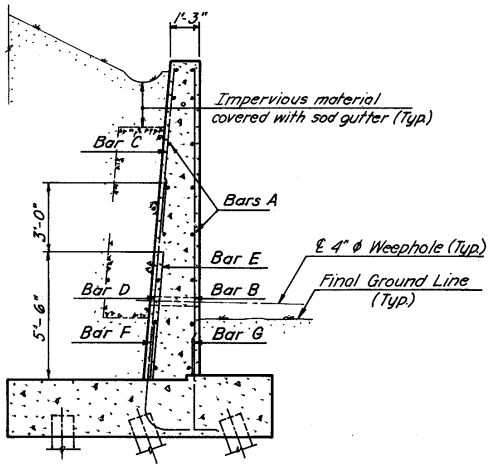
ELEVATION PANELS 18 THRU 20 - WALL NO. 91, AND PANELS 17 THRU 19 - WALL NO. 91A



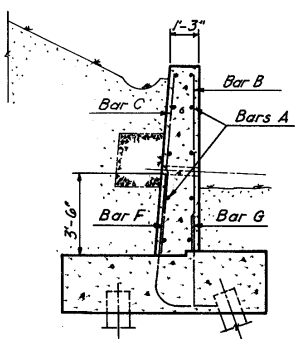
ELEVATION PANEL 21 - WALL NO. 91, AND PANELS 20 THRU 22 - WALL NO. 91A



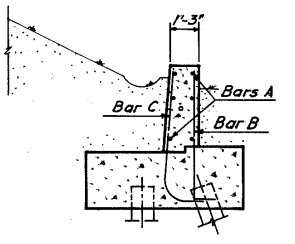
SECTION A-A



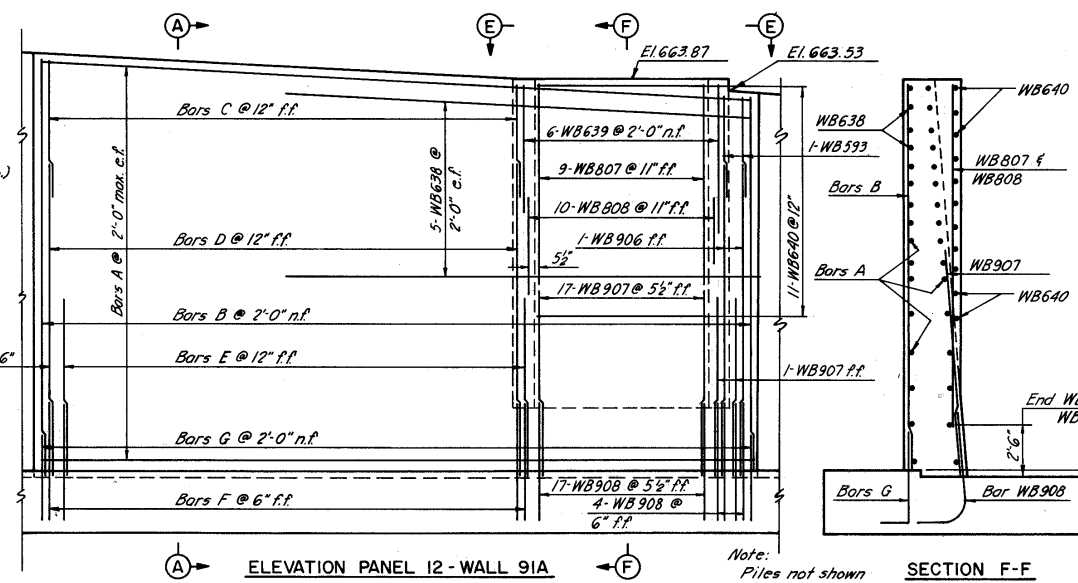
SECTION B-B



SECTION C-C

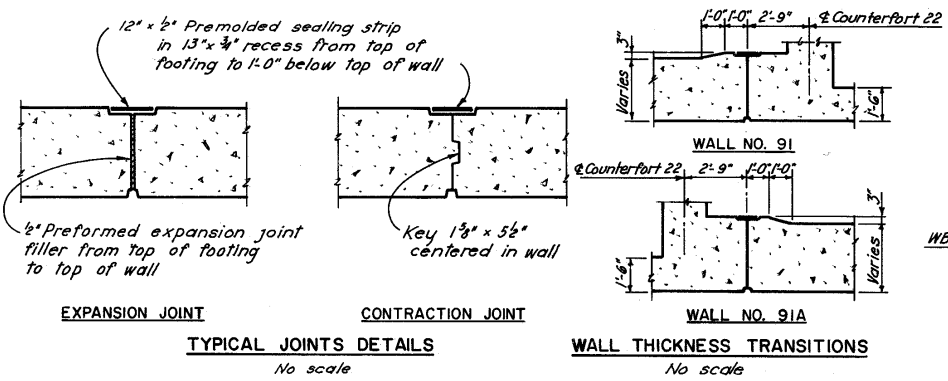


SECTION D-D



ELEVATION PANEL 12 - WALL 91A

SECTION F-F

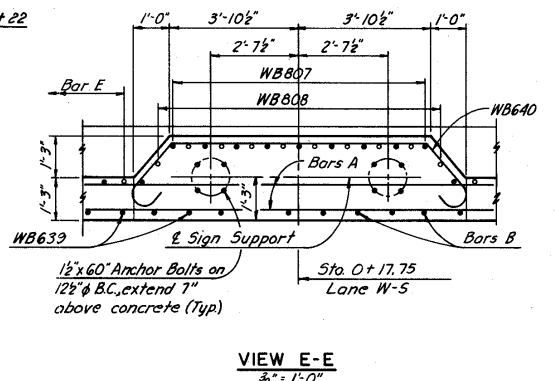


EXPANSION JOINT

CONTRACTION JOINT

TYPICAL JOINTS DETAILS

WALL THICKNESS TRANSITIONS



VIEW E-E

Panel No.	Bars A		Bars B		Bars C		Bars D		Bars E		Bars F		Bars G	
	Mark	No.	Mark	I Ser.	Mark	I Ser.	Mark	No.	Mark	No.	Mark	No.	Mark	No.
12	WA505	22	WA506	16	WA508	33	WA802	33	WA803	32	WA804	65	WA507	16
13	WA505	20	WA509	16	WA510	33	WA802	33	WA803	32	WA804	65	WA507	16
14	WA505	18	WA511	16	WA512	33	WA802	33	WA803	32	WA804	65	WA507	16
15	WA505	18	WA513	16	WA514	33	WA704	33	WA705	32	WA706	65	WA507	16
16	WA505	16	WA515	16	WA516	33	WA704	33	WA705	32	WA706	65	WA507	16
17	WA505	14	WA517	16	WA518	33	WA704	33	WA705	32	WA706	65	WA507	16
18	WA505	12	WA519	16	WA520	33					WA609	33	WA507	16
19	WA505	10	WA522	16	WA523	33					WA609	33	WA507	16
20	WA505	8	WA524	16	WA525	33					WA609	33	WA507	16
21	WA526	6	WA527	21	WA528	41								

Panel No.	Bars A		Bars B		Bars C		Bars D		Bars E		Bars F		Bars G	
	Mark	No.	Mark	I Ser.	Mark	I Ser.	Mark	No.	Mark	No.	Mark	No.	Mark	No.
12	WB505	22	WB506	17	WB508	22	WB906	22	WB907	22	WB908	44	WB507	17
13	WB505	20	WB509	16	WB510	33	WB802	33	WB803	32	WB804	65	WB507	16
14	WB505	18	WB511	16	WB512	33	WB704	33	WB705	32	WB706	65	WB507	16
15	WB505	16	WB513	16	WB514	33	WB704	33	WB705	32	WB706	65	WB507	16
16	WB505	14	WB515	16	WB516	33	WB704	33	WB705	32	WB706	65	WB507	16
17	WB505	12	WB517	16	WB518	33					WB609	33	WB507	16
18	WB505	10	WB520	16	WB521	33					WB609	33	WB507	16
19	WB505	10	WB522	16	WB523	33					WB609	33	WB507	16
20	WB505	8	WB524	16	WB525	33								
21	WB505	6	WB526	16	WB527	33								
22	WB528	6	WB529	15	WB530	29								

Notes:
For plan of footing reinforcement and pile plan, see Sheets 383 and 384.
For footing details, see Sheet 385 and 386.
For reinforcement schedule, see Sheets 390 thru 392.
For location of light standard supports, see Sheet 381.
For details of light standard supports, see Sheet 388.
Elevations are shown for Wall No. 91. Wall No. 91A opposite hand.
n.f. denotes near (exposed) face, f.f. denotes far (fill) face, e.f. denotes each face.
For top of wall and footing elevations, panel dimensions and 4" weephole locations, see Sheet 382.

H.N.T.B. BRIDGE NO. 2

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

CANTILEVER WALL DETAILS
SCRANTON ROAD OVER CLARK FREEWAY

BR. NO. CUY-90-1395 STA 8+09.63
SCALE: 1/4" = 1'-0" STA 11+23.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN P.H. TRACED	CHECKED S.Z.	REVIEWED	REVISED
DATE 8/64	DATE 8/64	DATE	SHEET 389

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
WALL NO. 91								
WA501	12	33'-7"	Str.				420	
WA502	41	5'-2"	Str.				221	
WA503	36	7'-10"	100	6'-8"			294	
WA504	3	42'-1"	Str.				132	
WA505	138	31'-8"	Str.				4,558	
WA506	1Ser.16	18'-8"to19'-11"	Str.			1"	322	
WA507	144	5'-0"	104	4'-1"	1'-0"		751	
WA508	1Ser.33	8'-6"to9'-10"	Str.			1/2"	316	
WA509	1Ser.16	17'-4"to18'-7"	Str.			1"	300	
WA510	1Ser.33	7'-2"to8'-6"	Str.			1/2"	270	
WA511	1Ser.16	16'-0"to17'-3"	Str.			1"	277	
WA512	1Ser.33	5'-10"to7'-2"	Str.			1/2"	224	
WA513	1Ser.16	14'-10"to15'-11"	Str.			3/8"	257	
WA514	1Ser.33	8'-2"to9'-4"	Str.			1/8"	301	
WA515	1Ser.16	12'-10"to14'-8"	Str.			1/8"	230	
WA516	1Ser.33	6'-2"to8'-1"	Str.			3/8"	246	
WA517	1Ser.16	10'-11"to12'-9"	Str.			1/8"	197	
WA518	1Ser.33	4'-3"to6'-2"	Str.			3/8"	179	
WA519	1Ser.16	8'-10"to10'-9"	Str.			1/8"	163	
WA520	1Ser.33	9'-1"to11'-1"	Str.			3/8"	347	
WA521	4	9'-10"	100	8'-8"			41	
WA522	1Ser.16	6'-11"to8'-10"	Str.			1/8"	131	
WA523	1Ser.33	7'-2"to9'-1"	Str.			3/8"	280	
WA524	1Ser.16	5'-0"to6'-4"	Str.			1/8"	98	
WA525	1Ser.33	5'-3"to7'-2"	Str.			3/8"	214	
WA526	6	39'-8"	Str.				248	
WA527	1Ser.21	5'-11"to8'-4"	104	5'-0"to7'-5"	1'-0"	1/8"	156	
WA528	1Ser.41	6'-8"to9'-1"	114	4'-0"to6'-5"		3/8"	337	
WA529	135	9'-10"	115	7'-3"			1,385	
WA530	1Ser.27	5'-11"to7'-4"	104	5'-0"to7'-0"	1'-0"	1/8"	195	
WA531	81	9'-7"	115	7'-0"			810	
WA532	4Ser.27	5'-11"to7'-1"	104	5'-0"to6'-2"	1'-0"	3/8"	732	
WA533	81	8'-10"	115	6'-3"			746	
WA534	3Ser.27	5'-5"to6'-7"	104	4'-6"to5'-8"	1'-0"	3/8"	507	
WA535	133	31'-8"	Str.				4,393	
WA536	34	31'-4"	Str.				1,111	
WA537	8	11'-4"	100	10'-2"			95	
WA538	27	29'-5"	Str.				828	
WA539	4	31'-6"	Str.				131	
WA540	5	30'-0"	Str.				157	
WA541	34	30'-2"	Str.				1,070	
WA542	4	12'-10"	100	11'-8"			53	
WA543	16	27'-9"	Str.				463	
WA544	11	28'-2"	Str.				323	
WA545	5	28'-10"	Str.				150	
WA546	34	30'-1"	Str.				1,067	
WA547	4	14'-4"	100	13'-2"			60	
WA548	16	26'-7"	Str.				444	
WA549	11	27'-0"	Str.				310	
WA550	5	27'-9"	Str.				145	
WA551	34	27'-11"	Str.				990	
WA552	2	15'-1"	Str.				32	
WA553	16	25'-5"	Str.				424	
WA554	11	25'-11"	Str.				297	
WA555	5	26'-8"	Str.				139	
WA556	34	26'-9"	Str.				949	
WA557	2	20'-5"	Str.				43	
WA558	16	24'-3"	Str.				405	
WA559	11	24'-9"	Str.				284	
WA560	5	25'-6"	Str.				133	
WA561	34	25'-7"	Str.				907	
WA562	8	42'-1"	Str.				351	
WA563	16	23'-2"	Str.				387	
WA564	11	23'-8"	Str.				272	
WA565	5	24'-4"	Str.				127	
WA566	34	24'-6"	Str.				869	
WA567	10	38'-11"	Str.				406	
WA568	16	22'-0"	Str.				367	
WA569	11	22'-6"	Str.				258	
WA570	5	23'-2"	Str.				121	
WA571	34	23'-4"	Str.				827	
WA572	2	14'-7"	Str.				30	
WA573	16	20'-11"	Str.				349	
WA574	11	21'-4"	Str.				245	
WA575	5	22'-1"	Str.				115	
WA576	34	22'-3"	Str.				789	
WA577	2	20'-5"	Str.				43	
WA578	16	20'-3"	Str.				338	
WA579	11	20'-9"	Str.				238	
WA580	5	21'-0"	Str.				109	
WA581	34	21'-1"	Str.				748	

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
WA582	1Ser.19	3'-5"to4'-11"	104	1'-2"to2'-8"	2'-4"	1"	83	
WA583	16	19'-1"	Str.				319	
WA584	11	19'-7"	Str.				225	
WA585	5	19'-10"	Str.				103	
WA586	36	19'-11"	Str.				748	
WA587	3Ser.27	5'-8"to6'-10"	104	4'-9"to5'-11"	1'-0"	3/8"	528	
WA588	16	18'-0"	Str.				300	
WA589	11	18'-5"	Str.				211	
WA590	11	4'-0"	Str.				46	
WA591	294	3'-0"	104	2'-1"	1'-0"		920	
WA592	294	7'-9"	129	1'-10"	2'-10"	1'-7"	2,377	
WA593	273	4'-4"	104	2'-4"	2'-1"		1,234	
WA594	273	5'-0"	106	3'-4"	1'-1"	1'-0"	1,424	
WA601	156	13'-5"	Str.				3,144	
WA602	38	41'-2"	Str.				2,350	
WA603	97	12'-11"	Str.				1,882	
WA604	52	34'-1"	Str.				2,662	
WA605	93	11'-11"	Str.				1,665	
WA606	97	5'-11"	Str.				862	
WA607	90	10'-0"	100	8'-8"			1,352	
WA608	6	42'-5"	Str.				382	
WA609	99	7'-5"	114	4'-9"			1,103	
WA610	108	6'-4"	104	5'-6"	1'-0"		1,027	
WA611	96	6'-1"	104	5'-3"	1'-0"		877	
WA612	6	8'-8"	Str.				78	
WA613	6	28'-6"	Str.				257	
WA614	5	3'-10"	Str.				29	
WA615	130	9'-10"	115	7'-3"			1,920	
WA616	78	9'-7"	115	7'-0"			1,123	
WA617	78	8'-10"	115	6'-3"			1,035	
WA618	147	7'-10"	104	7'-0"	1'-0"		1,730	
WA619	291	31'-8"	Str.				13,841	
WA620	2	31'-3"	Str.				94	
WA621	2	30'-2"	Str.				91	
WA622	2	29'-1"	Str.				87	
WA623	2	27'-11"	Str.				84	
WA624	2	26'-9"	Str.				80	
WA625	2	25'-8"	Str.				77	
WA626	2	24'-6"	Str.				74	
WA627	2	23'-4"	Str.				70	
WA628	2	22'-2"	Str.				67	
WA629	2	21'-1"	Str.				63	
WA630	180	6'-7"	104	5'-9"	1'-0"		1,780	
WA631	5	26'-3"	Str.				197	
WA632	66	4'-0"	Str.				397	
WA633	30	6'-0"	Str.				270	
WA634	6	6'-6"	107				59	
WA701	88	7'-8"	101	6'-10"			1,379	
WA702	18	34'-3"	Str.				1,260	
WA703	89	13'-1"	100	11'-5"			2,380	
WA704	99	8'-6"	Str.				1,720	
WA705	96	5'-6"	Str.				1,079	
WA706	195	6'-2"	114	3'-6"			2,458	
WA707	182	31'-8"	Str.				11,780	
WA708	4	13'-6"	104	11'-8"	2'-0"		110	
WA709	4	15'-0"	104	13'-2"	2'-0"		123	
WA710	28	42'-8"	Str.				2,442	
WA711	33	39'-7"	Str.				2,670	
WA801	62	15'-4"	100	13'-2"			2,538	
WA802	99	12'-0"	Str.				3,172	
WA803	96	7'-0"	Str.				1,794	
WA804	195	6'-5"	114	3'-9"			3,341	
WA805	14	7'-11"	101	6'-10"			296	
WA901	120	41'-10"	Str.				17,068	
WA902	183	35'-0"	Str.				21,777	
WA903	60	9'-1"	101	7'-10"			1,853	
WA904	122	9'-2"	Str.				3,802	
WA905	6	10'-5"	104	8'-8"	2'-0"		212	
WA906	9	25'-0"	Str.				765	

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
WA1001	89	11'-3"	101	9'-10"			4,308	
WA1002	60	18'-6"	100	15'-8"			4,776	
WA1003	95	10'-9"	Str.				4,394	
WA1004	12	11'-11"	104	10'-2"	2'-0"		615	
WA1005	32	9'-7"	Str.				1,320	
WA1101	148	21'-10"	100	18'-8"			17,168	
WA1102	62	20'-10"	100	17'-8"			6,863	
WA1103	62	11'-5"	101	9'-10"			3,761	
WA1104	120	8'-7"	101	7'-0"			5,472	
WA1105	48	8'-4"	101	6'-9"			2,125	
WA1106	48	8'-1"	101	6'-6"			2,061	
WA1107	12	10'-3"	101	8'-8"			653	
WA1108	10	11'-5"	101	9'-10"			607	
WA1109	40	11'-1"	Str.				2,355	
WC501	2 Ser. 8	5'-4"to30'-4"	Str.			3'-6"	298	
WC502	2 Ser. 8	5'-7"to29'-6"	Str.			3'-5"	293	
WC503	2 Ser. 8	5'-2"to28'-9"	Str.			3'-4"	283	
WC504	2 Ser. 8							

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
WALL NO. 91 (Continued)								
WC701	1Ser. 5	23'-8" to 26'-0"	121	10'-4" to 11'-6"	1'-8"		7"	254
WC702	1Ser. 4	24'-2" to 26'-0"	121	10'-7" to 11'-6"	1'-8"		7 1/2"	205
WC703	2Ser. 3	24'-8" to 26'-0"	121	10'-10" to 11'-6"	1'-8"		8"	311
WC704	2Ser. 2	25'-4" to 26'-0"	121	11'-2" to 11'-6"	1'-8"		8"	210
WC705	2	26'-0"	121	11'-6"	1'-8"			106
WC1101	4	34'-8"	116	32'-0"	9'-4 1/2"			737
WC1102	4	33'-7"	116	30'-11"	9'-0 1/2"			714
WC1103	4	33'-0"	116	30'-4"	8'-10 1/2"			701
WC1104	4	32'-5"	116	29'-9"	8'-8 1/2"			689
WC1105	4	31'-11"	116	29'-3"	8'-6 1/2"			678
WC1106	4	31'-4"	116	28'-8"	8'-4 1/2"			666
WC1107	4	30'-10"	116	28'-2"	8'-3"			655
WC1108	4	30'-3"	116	27'-7"	8'-1"			643
WC1109	4	29'-9"	116	27'-1"	7'-11"			632
WC1110	4	29'-2"	116	26'-6"	7'-9"			620
WC1111	4	28'-6"	116	25'-10"	7'-6 1/2"			606
WC1112	4	28'-0"	116	25'-4"	7'-5"			595
WC1113	4	27'-5"	116	24'-9"	7'-3"			583
WC1114	4	26'-11"	116	24'-3"	7'-1"			572
WC1115	4	26'-4"	116	23'-8"	6'-11"			560
WC1116	4	25'-10"	116	23'-2"	6'-9 1/2"			549
WC1117	4	24'-11"	116	22'-3"	6'-6"			530
WC1118	4	24'-5"	116	21'-9"	6'-4 1/2"			519
WC1119	4	23'-11"	116	21'-3"	6'-2 1/2"			508
WC1120	4	23'-4"	116	20'-8"	6'-0 1/2"			496
WC1121	4	22'-10"	116	20'-2"	5'-11"			485
WC1122	4	22'-4"	116	19'-8"	5'-9"			475
WC1123	40	17'-1"	Str.					3,631
WC1124	24	14'-0"	Str.					1,785
WC1125	24	9'-9"	Str.					1,243
WC1126	40	9'-1"	Str.					1,930
							Total	265,949
WALL NO. 91A								
WB501	32	34'-1"	Str.					1,138
WB502	9	32'-5"	Str.					304
WB503	90	7'-10"	100	6'-8"				735
WB504	93	5'-2"	Str.					501
WB505	136	3'-8"	Str.					4,492
WB506	1Ser. 17	18'-3" to 19'-11"	Str.				1 1/4"	338
WB507	129	5'-0"	104	4'-1"	1'-0"			673
WB508	1Ser. 22	6'-7" to 7'-10"	Str.				1/8"	165
WB509	1Ser. 16	16'-5" to 18'-1"	Str.				1 5/8"	288
WB510	1Ser. 33	6'-2" to 8'-0"	Str.				1/8"	244
WB511	1Ser. 16	14'-8" to 16'-3"	Str.				1 1/4"	258
WB512	1Ser. 33	7'-10" to 9'-9"	Str.				3/8"	303
WB513	1Ser. 16	12'-10" to 14'-5"	Str.				1 1/4"	227
WB514	1Ser. 33	6'-1" to 7'-10"	Str.				3/8"	240
WB515	1Ser. 16	11'-0" to 12'-8"	Str.				1 5/8"	198
WB516	1Ser. 33	4'-3" to 6'-1"	Str.				1/8"	178
WB517	1Ser. 16	9'-7" to 10'-10"	Str.				1"	170
WB518	1Ser. 33	9'-10" to 11'-1"	Str.				1/2"	360
WB519	4	16'-4"	100	15'-2"				68
WB520	1Ser. 16	8'-2" to 9'-5"	Str.				1"	147
WB521	1Ser. 33	8'-5" to 9'-8"	Str.				1/2"	311
WB522	1Ser. 16	6'-9" to 8'-0"	Str.				1"	123
WB523	1Ser. 33	6'-11" to 8'-4"	Str.				1/2"	262
WB524	1Ser. 16	8'-8" to 10'-1"	104	7'-9" to 9'-2"	1'-0"		1 1/8"	157
WB525	1Ser. 33	9'-5" to 10'-10"	114	6'-9" to 8'-2"	1'-0"		1/2"	348
WB526	1Ser. 16	7'-3" to 8'-8"	104	6'-4" to 7'-9"	1'-0"		1 1/8"	133
WB527	1Ser. 33	8'-0" to 9'-5"	114	5'-4" to 6'-9"	1'-0"		1/2"	300
WB528	6	27'-8"	Str.					173
WB529	1Ser. 15	6'-0" to 7'-3"	104	5'-1" to 6'-4"	1'-0"		1 1/4"	104
WB530	1Ser. 29	6'-9" to 8'-0"	114	4'-1" to 5'-4"	1'-0"		9/16"	223
WB531	27	6'-1"	104	5'-2"	1'-0"			171
WB532	81	9'-7"	115	7'-0"	1'-0"			810
WB533	3Ser. 27	5'-11" to 7'-2"	104	5'-0" to 6'-3"	1'-0"		9/16"	553
WB534	81	8'-10"	115	6'-3"	1'-0"			746
WB535	1Ser. 27	5'-11" to 7'-8"	104	5'-0" to 6'-9"	1'-0"		1/8"	191
WB536	95	31'-8"	Str.					3,138
WB537	34	36'-0"	Str.					1,277
WB538	3Ser. 27	5'-5" to 7'-3"	104	4'-6" to 6'-4"	1'-0"		7/8"	535

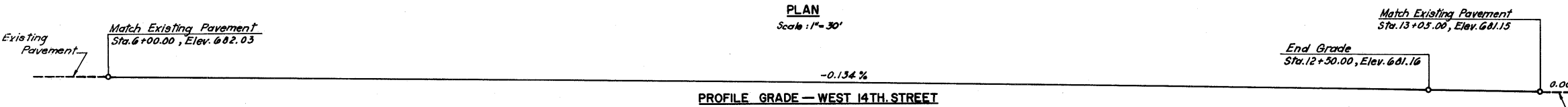
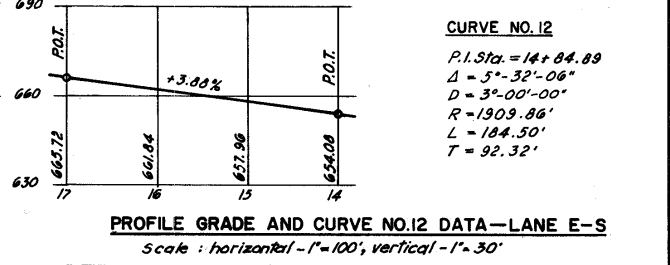
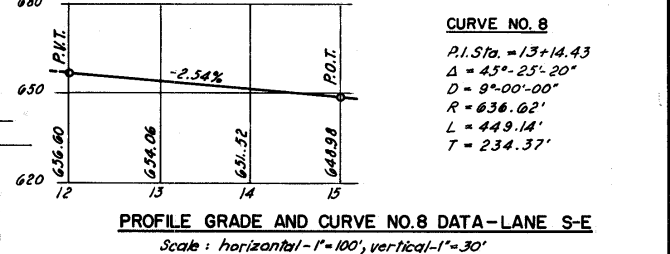
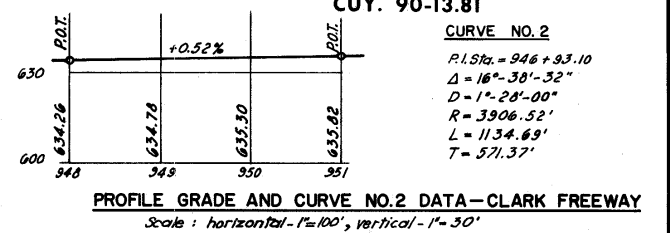
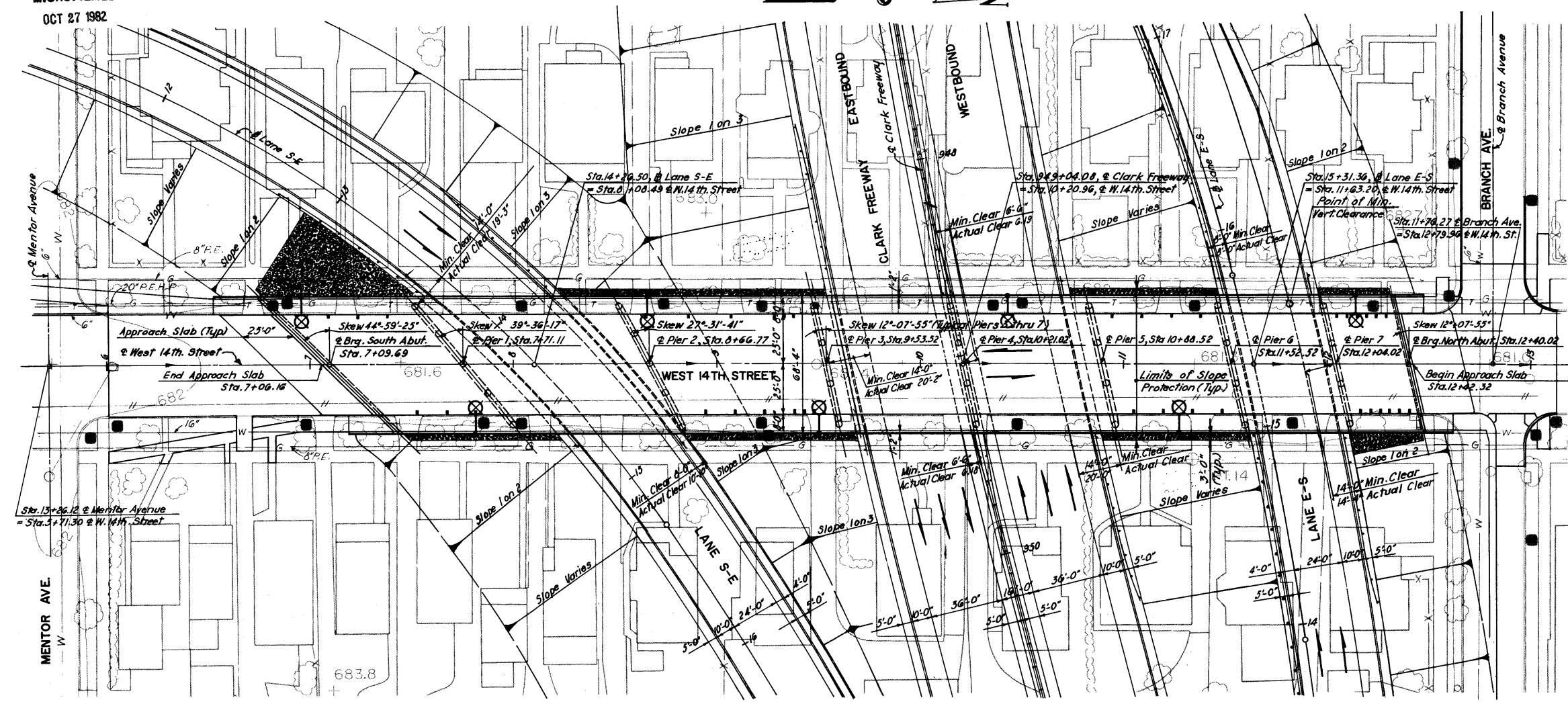
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
WB539	27	31'-6"	Str.					887
WB540	4	34'-9"	Str.					145
WB541	5	34'-6"	Str.					180
WB542	34	34'-8"	Str.					1,229
WB543	7	13'-10"	100	12'-8"				101
WB544	16	30'-9"	Str.					513
WB545	11	31'-3"	Str.					359
WB546	5	33'-5"	Str.					174
WB547	34	33'-4"	Str.					1,182
WB548	4	13'-10"	100	12'-8"				58
WB549	16	29'-5"	Str.					491
WB550	11	30'-0"	Str.					344
WB551	5	32'-5"	Str.					168
WB552	34	32'-1"	Str.					1,138
WB553	4	11'-4"	100	10'-2"				47
WB554	16	28'-2"	Str.					470
WB555	11	28'-8"	Str.					329
WB556	5	30'-10"	Str.					161
WB557	34	30'-4"	Str.					1,076
WB558	3Ser. 27	5'-8" to 7'-5"	104	4'-9" to 6'-6"	1'-0"		1 1/8"	553
WB559	16	26'-8"	Str.					445
WB560	11	27'-5"	Str.					315
WB561	5	29'-1"	Str.					152
WB562	34	28'-8"	Str.					1,017
WB563	323	3'-0"	104	2'-1"	1'-0"			1,011
WB564	16	26'-5"	Str.					441
WB565	11	27'-2"	Str.					312
WB566	5	27'-5"	Str.					143
WB567	34	26'-11"	Str.					954
WB568	323	7'-9"	129	1'-10"	2'-10"	1'-7"		2,611
WB569	16	24'-9"	Str.					413
WB570	11	25'-6"	Str.					293
WB571	5	25'-8"	Str.					134
WB572	34	25'-5"	Str.					901
WB573	303	4'-4"	104	2'-4"	2'-1"			1,370
WB574	16	23'-2"	Str.					387
WB575	11	23'-9"	Str.					272
WB576	5	24'-2"	Str.					126
WB577	34	23'-7"	Str.					836
WB578	303	5'-0"	106	3'-4"	11"	1'-0"		1,580
WB579	16	21'-10"	Str.					364
WB580	11	22'-9"	Str.					261
WB581	5	22'-5"	Str.					117
WB582	34	21'-10"	Str.					774
WB583	1Ser. 19	3'-5" to 4'-11"	104	1'-2" to 2'-8"	2'-4"		1"	83
WB584	16	20'-3"	Str.					338
WB585	11	21'-0"	Str.					241
WB586	5	20'-7"	Str.					107
WB587	36	20'-0"	Str.					709
WB588	11	4'-0"	Str.					46
WB589	16	18'-5"	Str.					307
WB590	11	19'-2"	Str.					220
WB591	2	19'-4"	Str.					40
WB592	2	10'-9"	Str.					22
WB593	2	6'-0"	Str.					13
WB601	156	15'-5"	Str.					3,612
WB602	42	41'-1"	Str.					2,592
WB603	87	12'-11"	Str.					1,688
WB604	47	34'-3"	Str.					2,418
WB605	97	11'-11"	Str.					1,736
WB606	97	6'-3"	Str.					911
WB607	90	10'-0"	100	8'-8"				1,352
WB608	78	32'-9"	Str.					885
WB609	99	7'-5"	114	4'-9"				1,103
WB610	108	6'-4"	104	5'-6"	1'-0"			1,027
WB611	96	6'-1"	104	5'-3"	1'-0"			877
WB612	5	11'-9"	Str.					88
WB613	5	25'-4"	Str.					190
WB614	2Ser. 3	5'-6" to 7'-6"	Str.				1'-0"	59
WB615	135	11'-4"	115	8'-9"				2,298
WB616	78	9'-7"	115	7'-0"				1,123
WB617	78	8'-10"	115	6'-3"				1,035
WB618	147	7'-10"	104	7'-0"	1'-0"			1,730
WB619	169	31'-8"	Str.					8,038
WB620	2	35'-11"	Str.					108
WB621	2	34'-8"	Str.					104
WB622	2	33'-4"	Str.					100
WB623	2	32'-1"	Str.					96
WB624	2	30'-4"	Str.					91

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
WB625	2	28'-8"	Str.					86
WB626</								

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OCT 27 1982

FED. NO. DIVISION	STATE	PROJECT	393 478
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



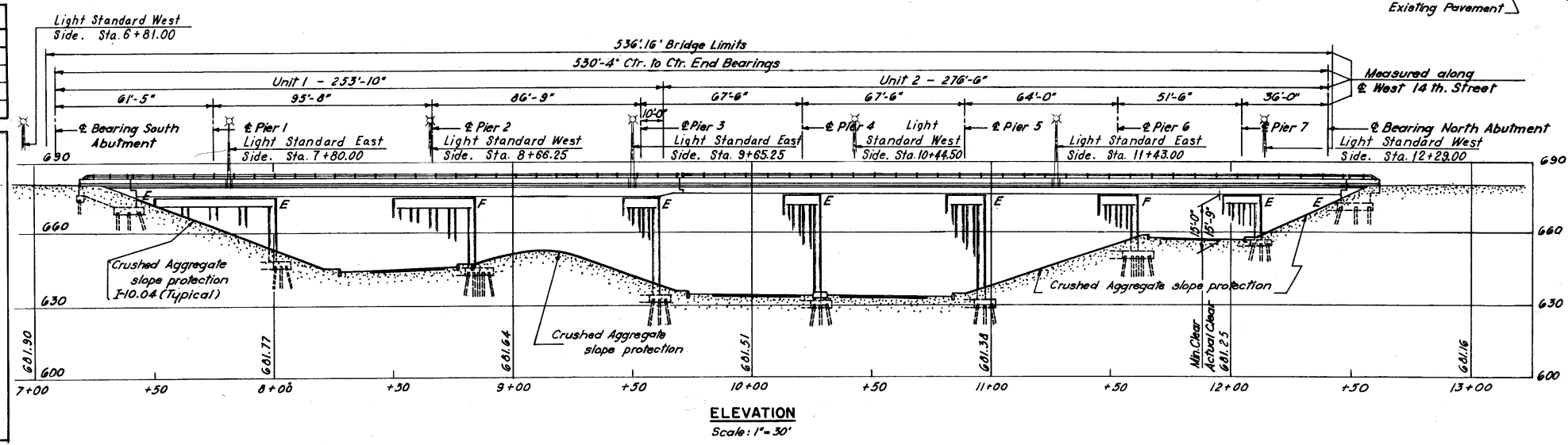
PROPOSED STRUCTURE
Type: Unit 1 - continuous welded girders with reinforced concrete slab.
Unit 2 - continuous rolled beams with reinforced concrete slab.
Spans: Unit 1 - 61'-5", 35'-8", 46'-9", 10'-0" = 253'-10". Unit 2 - 57'-6", 67'-6", 64'-0", 51'-6", 36'-0" = 276'-6". Total length 530'-4" c/cr. to c/cr. end bearings.
Roadway: 50'-0" Roadway with 8'-0" sidewalks, 66'-0" face to face of parapets.
Loading: C.F. 400 (57).
Skew: Varies - 12°-07'-55" to 44°-59'-25" R.F.
Wearing Surface: 1" Monolithic Concrete.
Approach Slabs: 25'-0" (AS-1-54).
Alignment: Tangent.

LIGHT STANDARD LOCATIONS

WEST PARAPET		EAST PARAPET	
Sta.	Sta.	Sta.	Sta.
Sta.	Sta.	Sta.	Sta.
Sta.	Sta.	Sta.	Sta.

LEGEND

- Water - W
- Gas - G
- Sewers - S
- Ohio Bell Tel. - T
- M.E.L.P. (Underground Conduits) - U
- C.E.I. (Underground Conduits) - H
- Manhole - M
- Inlet - I
- Power Pole - P
- Light Pole - L
- Power and Telephone Pole - PT
- Fire hydrant - FH
- Aggregate Slope Protection - A
- Concrete Slope Protection - C



TRAFFIC DATA:
1975 ADT: 21,000

SCUPPER LOCATIONS:
Along Gutter Lines. See Sheet 402 for locations.

FOUNDATION DATA:
All piles shall be 12" C.I.R. reinforced concrete with the following estimated lengths:
Abutments - 85 feet
Piers 1, 6 & 7 - 75 feet
Pier 2 - 70 feet
Piers 3, 4 & 5 - 60 feet

H.N.T.B. BRIDGE NO. 6
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SITE PLAN
WEST 14TH STREET OVER CLARK FREEWAY
BR. NO. CUY-290-0040 STA 7+06.16
SCALE: As shown STA 12+42.32
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN P.M. TRACED	CHECKED R.P.	REVIEWED	REVISED
DATE 10/64	DATE 11-68	DATE	DATE

SHEET 393

MICROFILMED
OCT 27 1982

FED. RD. DIVISION	STATE	PROJECT
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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

ESTIMATED QUANTITIES - BRIDGE NO. CUY-290-0040								
ITEM	DESCRIPTION	UNIT	ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL	TOTAL	AS BUILT
E-2	Unclassified Excavation	Cu.Yd.	635	1,531			2,166	
I-10	Crushed Aggregate Slope Protection (I-10.04)	Sq.Yd.	1,249	1,568			2,817	
S-1	Class "C" Concrete (Superstructure)	Cu.Yd.			Δ 1,319		Δ 1,319	
S-1	Class "C" Concrete (Pier Caps and Columns)	Cu.Yd.		526			526	
S-1	Class "E" Concrete (Pier and Abutment Footings)	Cu.Yd.	155	419			574	
S-1	Class "E" Concrete (Stub Abutments above Footings)	Cu.Yd.	222				222	
S-3	Waterproofing Premolded Sealing Strip	Lin.Ft.	16				16	
S-4	Reinforcing Steel	Pounds	27,674	188,657	9325,875		9542,206	
S-7	Structural Steel	Pounds			*972,460		*972,460	
S-8	Field Painting of Structural Steels as per proposed note.	Pounds			*972,460		*972,460	
S-14	Railing (Type C Aluminum Rail, and Supports, Concrete Parapet)	Lin.Ft.	71.69		1066.23		1137.92	
S-16	First Test Pile	Lump Sum						
S-17	First Pile Test Load	Lump Sum						
S-18	12" Cast-In-Place Reinforced Concrete Piles	Lin.Ft.	5,380	20,150			25,530	
S-25	For Lighting Details and Quantities, see Sheet 200							
S-29	Scuppers, Including Supports	Each			38		38	
S-29	Porous Backfill	Cu.Yd.	64				64	
S-29	6" Perforated Helical C.M.P. M-6.4(h) including specials	Lin.Ft.	149				149	
S-29	6" Helical C.M.P. M-6.4(h) non-perforated	Lin.Ft.	126				126	
S-101	Water Reducing Set-retarding Admixture	Each			1,319		1,319	
S-17	Subsequent Pile Test Load	Each					1	
Special	Conduit bank (6-4" asbestos cement) supported on bridge, complete as per plan - see sht. 494	Lin.Ft.				526	526	

*Includes: 8120' required for installation of East Ohio Gas Co. Lines.

7540' required for installation of Cleveland Electric Illuminating Co. Ducts.

Δ Includes: 2 cu. yd. required for installation of Cleveland Electric Illuminating Co. Ducts.

○ Includes: 495' required for installation of Cleveland Electric Illuminating Co. Ducts.

These additional quantities to be paid for by the respective utility companies.

H.N.T.B. BRIDGE NO. 6				
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK				
ESTIMATED QUANTITIES				
WEST 14TH STREET OVER CLARK FREEWAY				
BR. NO. CUY-290-0040			STA 7+06.16	
SCALE			STA 12+42.32	
CLEVELAND CUYAHOGA COUNTY			OHIO	
DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DATE	DATE	DATE	DATE	DATE
				SHEET 394

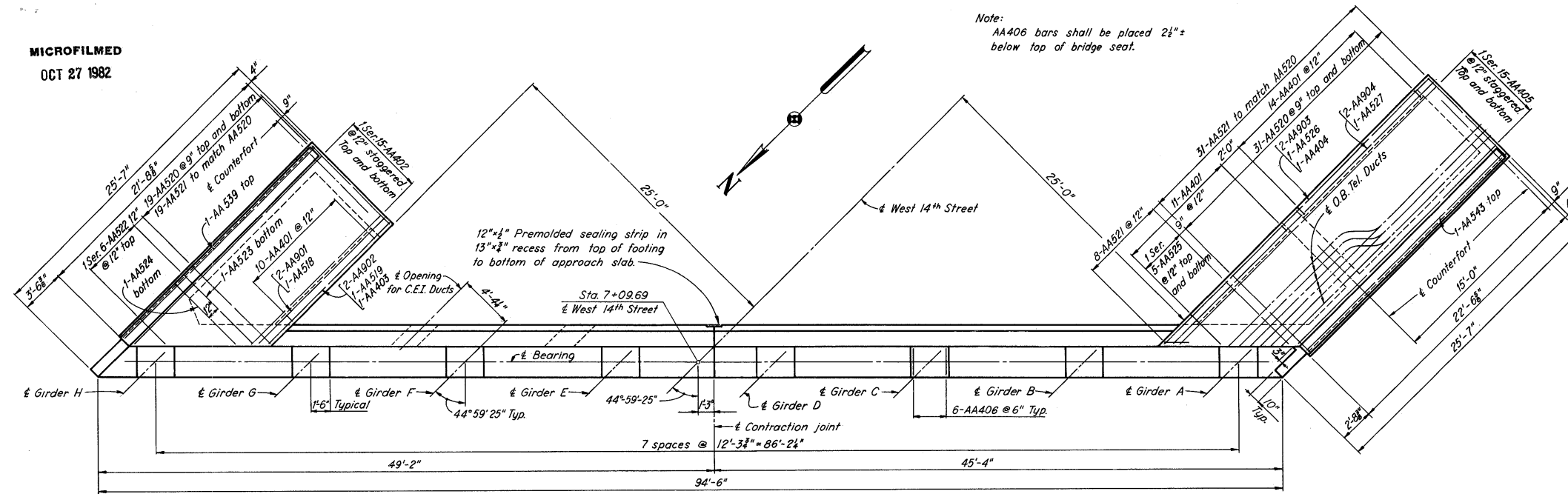
MICROFILMED
OCT 27 1982

Note:
AA406 bars shall be placed 2 1/2" ±
below top of bridge seat.

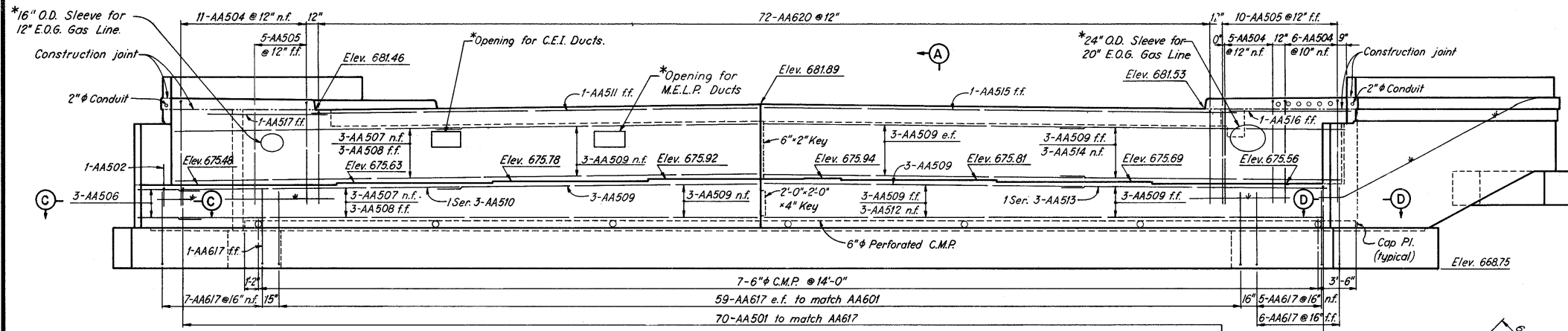
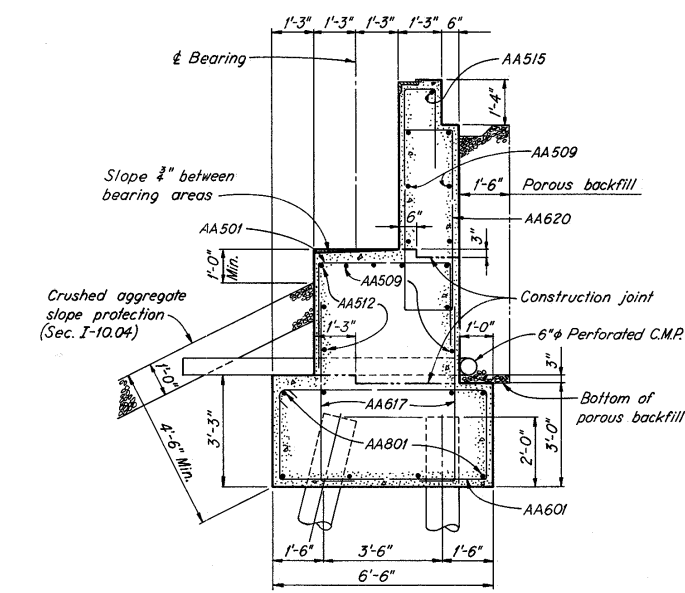
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

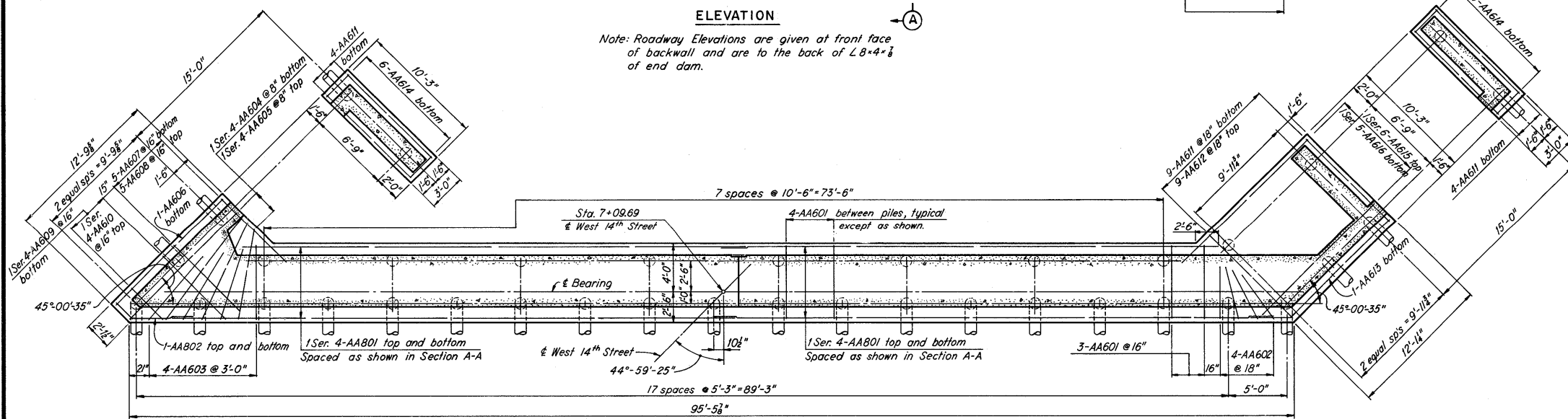


*Field cut reinforcement as required
and place cut-offs diagonally at
corners of opening.



Note: Roadway Elevations are given at front face
of backwall and are to the back of L8*4*3
of end dam.

Notes:
For reinforcement schedule see sheet 409.
All piles are 12" cast-in-place concrete.
All battered piles shall be battered 3 in 12.
All pile dimensions are measured at
bottom of footing.
For wingwalls details see sheet 396.
For end dam details see Ohio Standard
Drawing SD-1-63 sheets 2 and 4 of 4.
Class E concrete shall be used for
abutment walls and footing.
Provide expansion and deflection coupling for
2" Conduit at front face of backwall.
n.f. denotes near face.
f.f. denotes far face.
e.f. denotes each face.
For Sections C-C and D-D see sheet 396
For longitudinal reinforcement in parapet
and railing post spacing see sheet 408.



H.N.T.B. BRIDGE NO. 6

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

SOUTH ABUTMENT

WEST 14TH STREET OVER CLARK FREEWAY

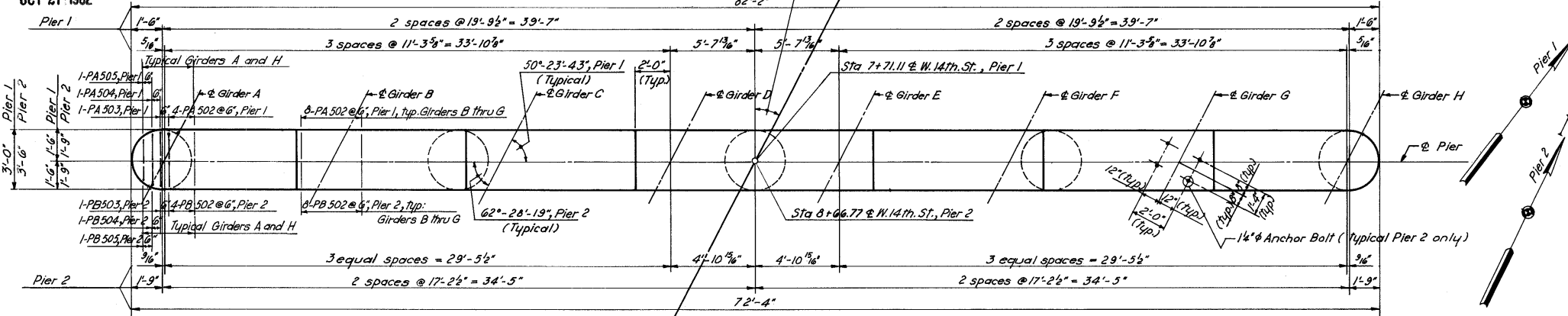
BR. NO. CUY-290-0040 STA 7+06.16
SCALE: 3/16" = 1'-0" STA 12+42.32
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN P.P.	TRACED	CHECKED L.D.	REVIEWED	REVISED
DATE 11-66	DATE	DATE 11-66	DATE	SHEET 395

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OCT 27 1982

Skew 39°-36'-17", Pier 1
Skew 27°-31'-41", Pier 2



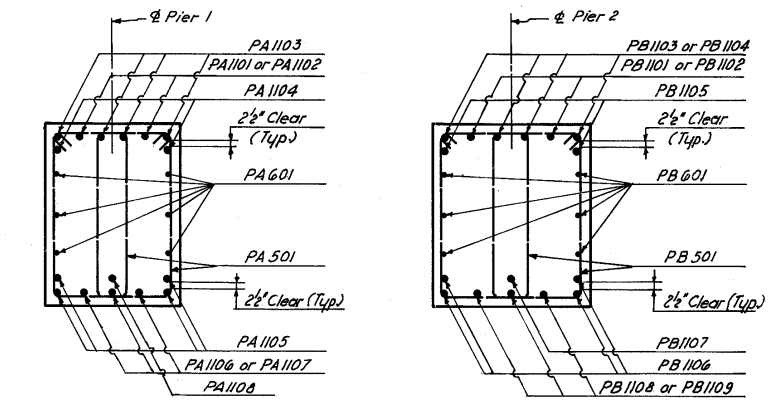
PLAN

Notes:
 Bars PA 502 thru PA 505, and PB 502 thru PB 505 shall be placed 2 1/2" below top of cap beam.
 Special care shall be taken when placing cap beam reinforcing steel so as not to interfere with Anchor bolts setting.

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

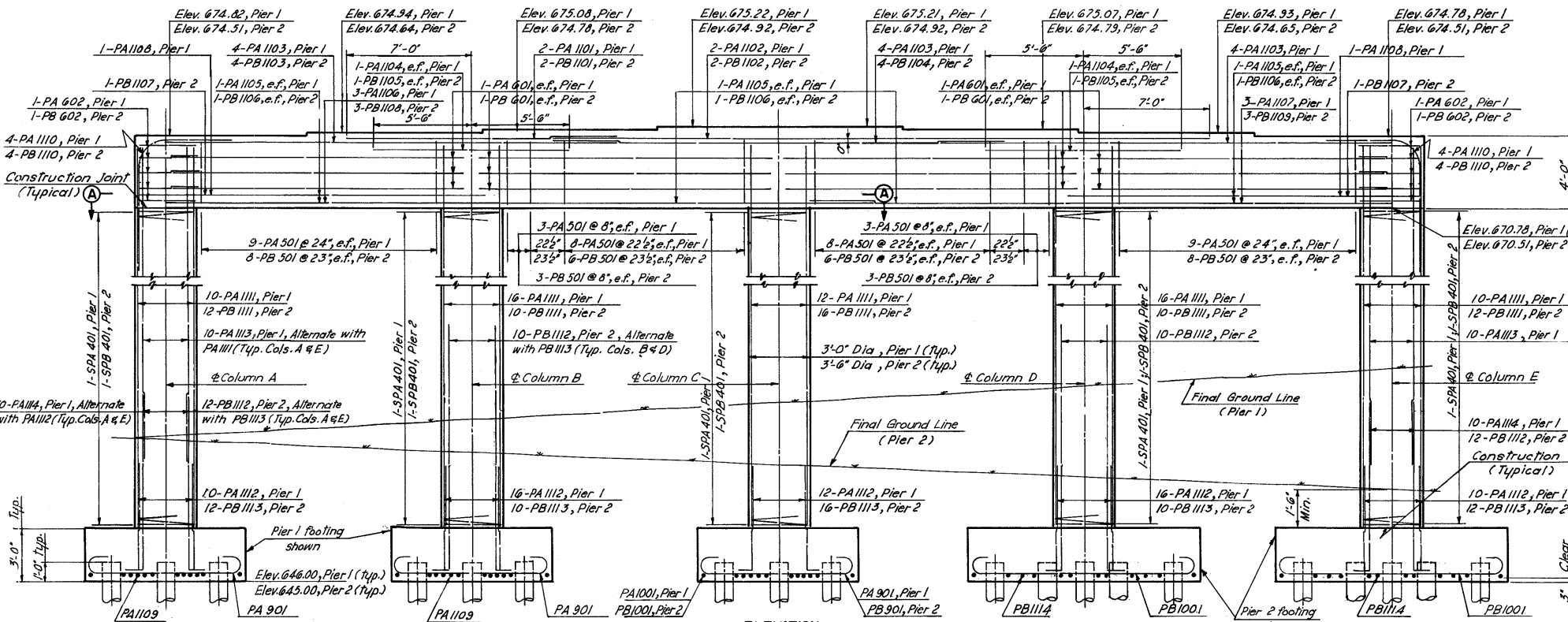
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CUYAHOGA COUNTY
 CITY OF CLEVELAND
 MEDINA-CLARK INTERCHANGE
 CUY. 71-18.54
 CUY. 90-13.81

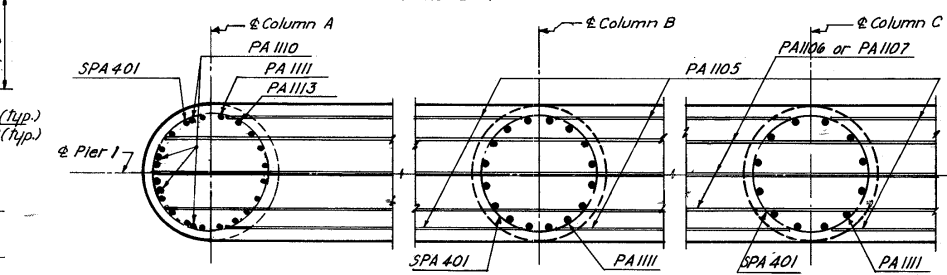


TYPICAL SECTION-CAP BEAM

Scale 1/2" = 1'-0"

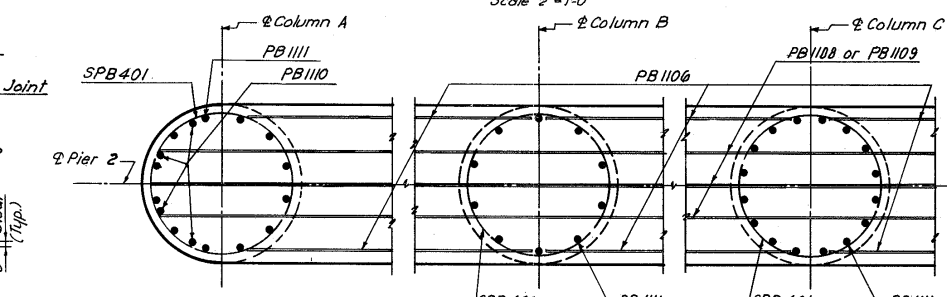


ELEVATION



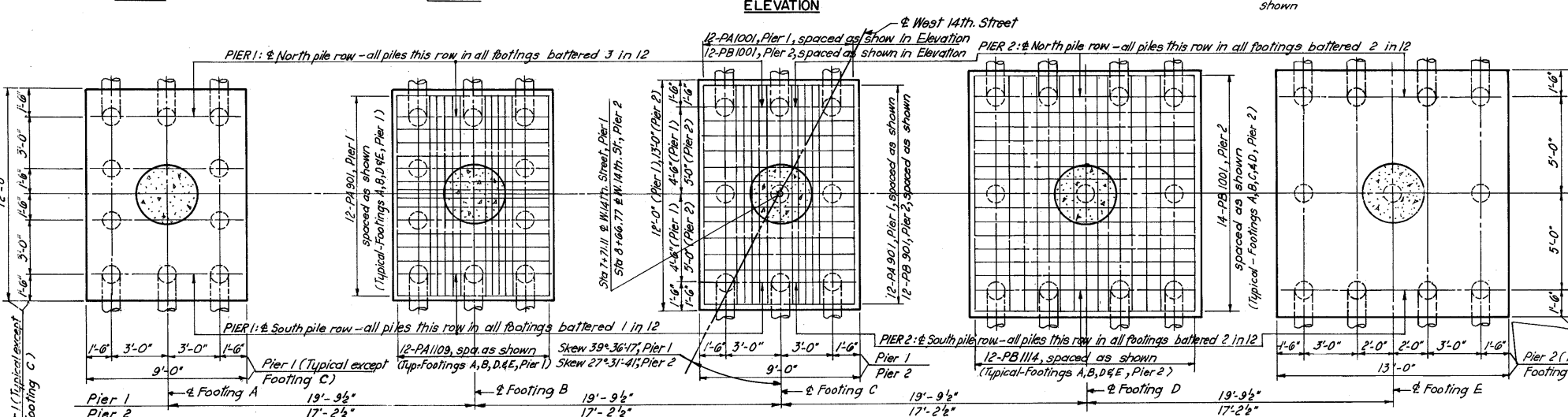
SECTION A-A - PIER 1

Scale 1/2" = 1'-0"



SECTION A-A - PIER 2

Scale 1/2" = 1'-0"



HALF FOOTING PLAN - PIER 1

HALF FOOTING PLAN - PIER 2

Notes:
 Pile plans and footing reinforcing are symmetrical about West 14th Street.
 All pile dimensions are measured at bottom of footing.
 All piles are 12" cast-in-place piles:
 Pier 1: North Pile Row - all piles in this row for all footings shall be battered 3 in 12.
 Pier 2: North Pile Row - all piles in this row for all footings shall be battered 2 in 12.
 Pier 1: South Pile Row - all piles in this row for all footings shall be battered 1 in 12.
 Pier 2: South Pile Row - all piles in this row for all footings shall be battered 2 in 12.

Structure ground (per sht. 194) encased in one exterior column of pier 2.

H.N.T.B. BRIDGE NO. 6
 HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY CLEVELAND NEW YORK

PIERS 1 & 2
 WEST 14TH STREET OVER CLARK FREEWAY
 BR. NO. CUY-290-0040 STA 7+06.16
 SCALE: 1/4" = 1'-0" STA 12+42.32
 CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN R.H.	TRACED	CHECKED R.P.	REVIEWED	REVISED
DATE 10/64	DATE	DATE 11-64	DATE	DATE

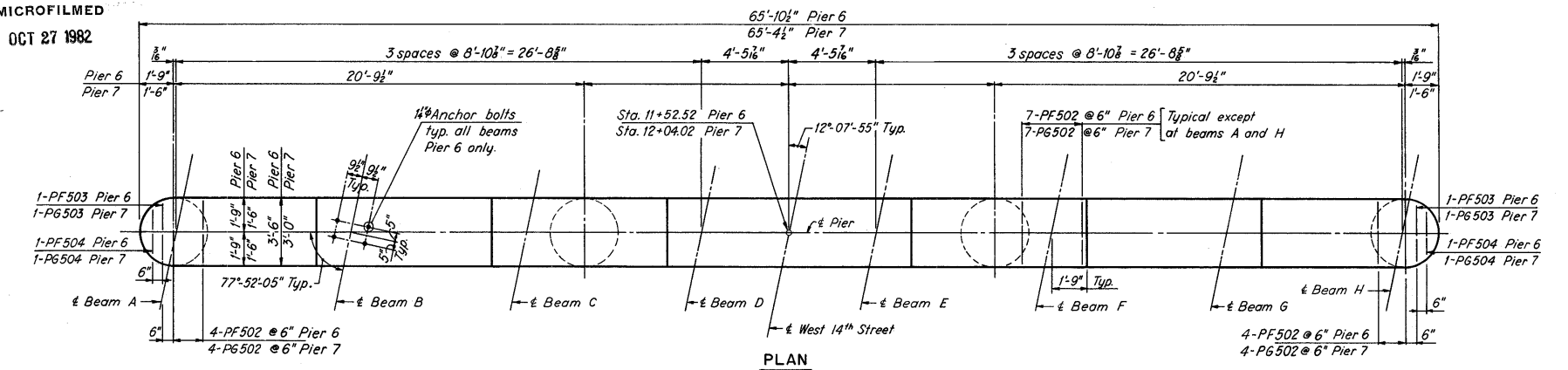
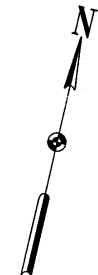
SHEET 398

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OCT 27 1982

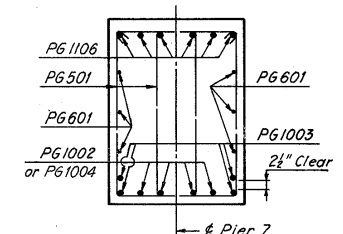
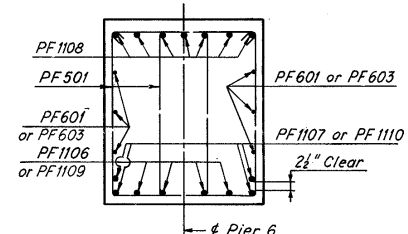
FED. RD. DIVISION	STATE	PROJECT	401 278
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

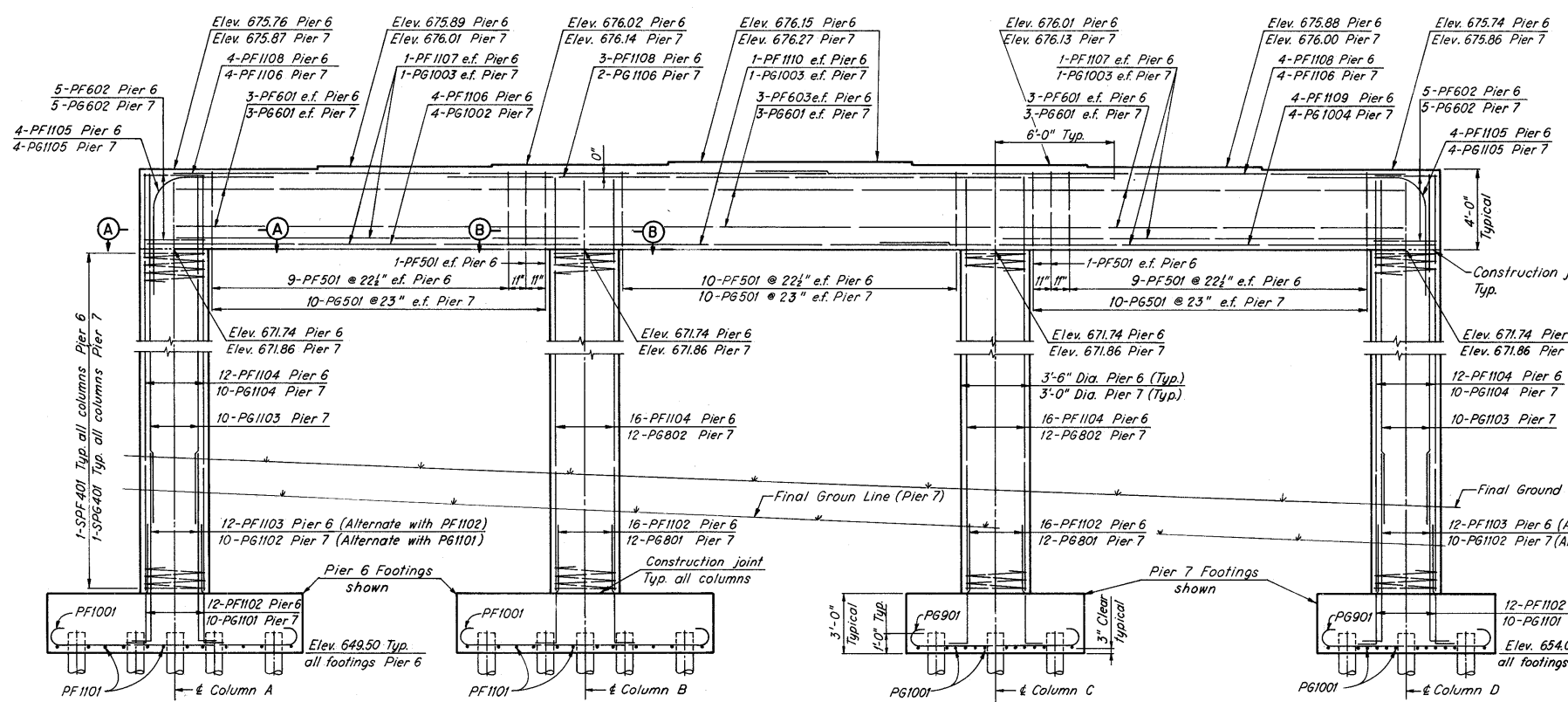
Note:
PF502, PF503, PF504 or PG502, PG503 and PG504 bars shall be placed 2 1/2" below top of cap beam. Special care shall be taken when placing cap beam reinforcing steel so as not to interfere with anchor bolts setting.



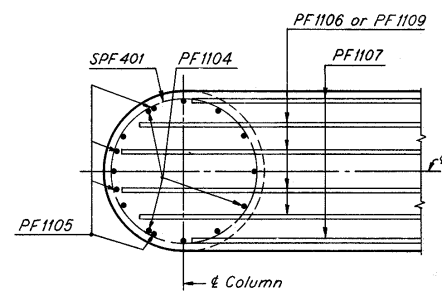
PLAN



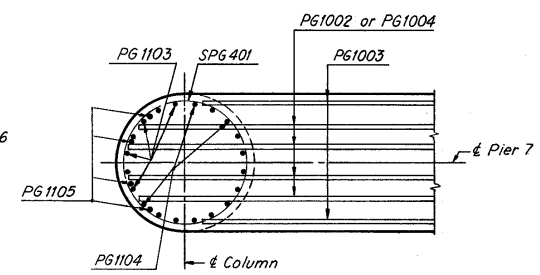
TYPICAL SECTION -- CAP BEAM
1/2" = 1'-0"



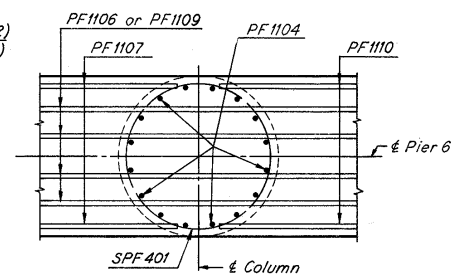
ELEVATION



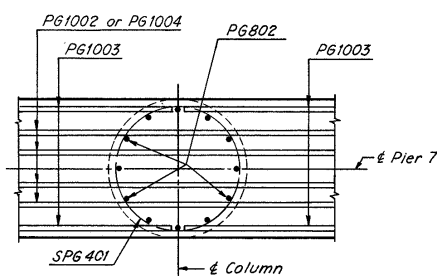
SECTION A-A, PIER 6
1/2" = 1'-0"



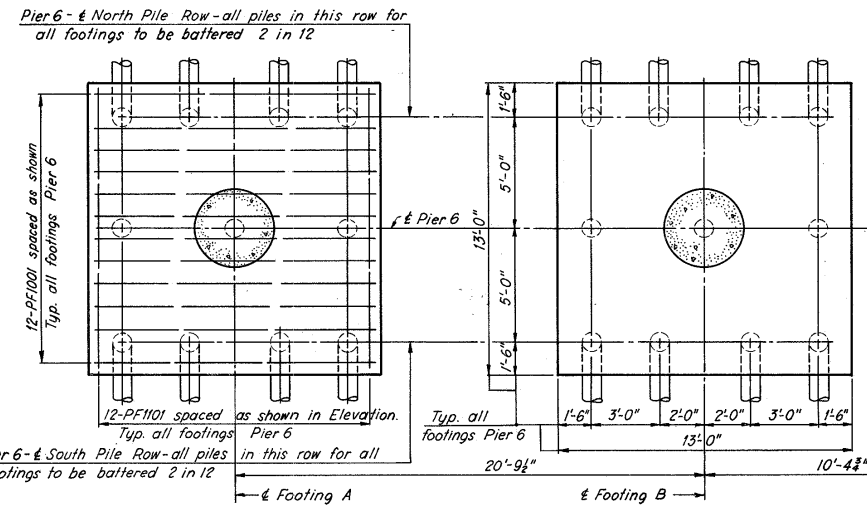
SECTION A-A, PIER 7
1/2" = 1'-0"



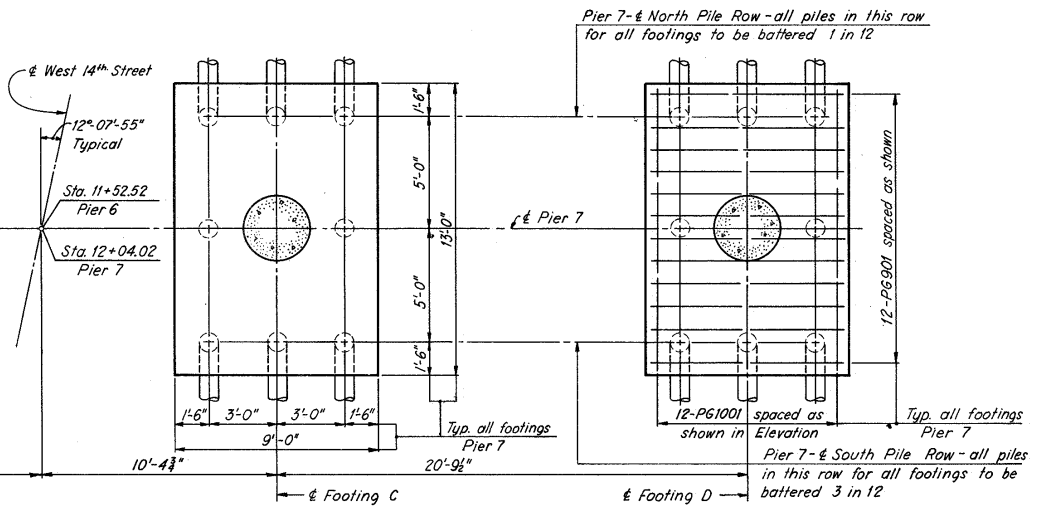
SECTION B-B, PIER 6
1/2" = 1'-0"



SECTION B-B, PIER 7
1/2" = 1'-0"



HALF FOOTING PLAN - PIER 6



HALF FOOTING PLAN - PIER 7

Notes:
Pier plans and footing reinforcing are symmetrical about West 14th Street.
All pile dimensions are measured at bottom of footings.
All piles are 12" dia cast in place piles.
For reinforcement schedule see sheet 410.
e.f. denotes each face.
Pier 6: North Pile Row - all piles in this row for all footings shall be battered 2 in 12.
South Pile Row - all piles in this row for all footings shall be battered 2 in 12.
Pier 7: North Pile Row - all piles in this row for all footings shall be battered 1 in 12.
South Pile Row - all piles in this row for all footings shall be battered 3 in 12.

Structure Ground (per sht. 194) encased in one exterior column of pier 6.

H.N.T.B. BRIDGE NO. 6

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KANSAS CITY CLEVELAND NEW YORK

PIERS 6 & 7

WEST 14TH STREET OVER CLARK FREEWAY

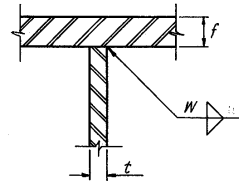
BR. NO. CUY-290-0040 STA 7+06.16
SCALE: 1/4" = 1'-0" STA 12+42.32
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN R.P.	TRACED	CHECKED P.M.	REVIEWED	REVISED
DATE 10-64	DATE	DATE 11/64	DATE	DATE

SHEET 401

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OCT 27 1982

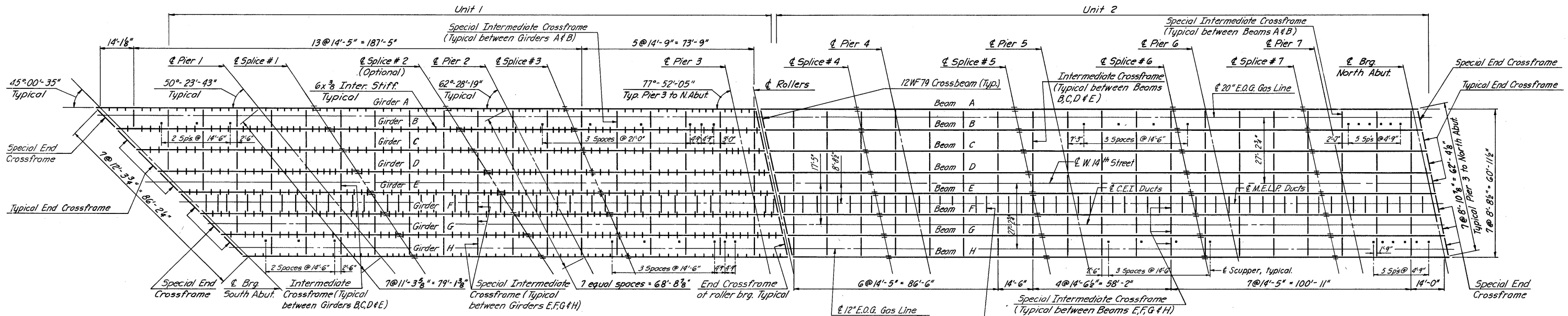
FLANGE TO WEB WELDS		
Web Thickness t	Flange Thickness f	Weld Size W
3/8	7/8 to 1 1/8	5/16
3/8	1 1/8 to 2 1/4	3/8
3/4	3/4	3/8



FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

402
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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
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FRAMING PLAN
1" = 20'-0"

L 4x4x 3/8 @ 5'-0" Max ctr. to ctr. between Crossframes (Typical between Girders E&F and Beams E&F, except in area of M.E.L.P. Manhole, see sheet 408B).

Notes:
For typical end crossframe details see Ohio Standard Drawing 5D-1-63, sheet 2 of 4. For other crossframe details see sheets 405 and 406.
For end dam details see sheet 404 and Ohio Standard Drawing 5D-1-63, sheets 2 and 4 of 4. The supporting L 6x4x 3/8 in the Roadway End Dam table shall be increased to L 6x4x 1/2.
For scupper details see sheet 408 and Ohio Standard Drawing 5D-1-63, sheet 3 of 4.
For details of field splices and of butt welds of flanges and web plates see sheet 403.
Shop splices in web plates shall be located as required by available plate lengths. No deviation from the approved shop plans will be permitted without the written order or consent of the Director.
Top and bottom flanges are identical in size.
For details of bearing shoes see Ohio Standard Drawing RB-1-55, revised 2-2-59, except for modified shoes see sheet 408.
For details of rollers see sheet 404.
Intermediate stiffeners shall be placed as shown in plan, equally spaced between crossframes or crossframes and bearing stiffeners.
All intermediate stiffener to web welds shall be 3/16" continuous fillets both sides of stiffener. For fit of intermediate stiffeners see the General Notes except single intermediate stiffeners on the inside of the webs of Girders A&H are to be welded to the compression flange. The top flange shall be considered the compression flange except for a distance on each side of Pier 1 equal to the distance from the splice to the center of bearing, the distance between splices of Pier 2, and for a distance of 10' on each side of Pier 3 where the bottom flange shall be considered the compression flange.
The bearing stiffeners at the abutments and piers shall be fully grooved and butt welded to the lower flange and fitted in close contact with the upper flange.
For top of pavement elevations, girder deflections and Unit 2 beam elevations see sheet 403.

FLANGE PLATES	A		B		C		D		E		F		G		H	
	16x 7/8	51'-8"	15'-0"	16x 1 1/2	12'-0"	16x 1 1/2	75'-6"	17'-6"	16x 2 1/4	15'-6"	16x 1 1/4	68'-7"	12'-0"	16x 7/8	10'-0"	
B	16x 7/8	50'-2"	15'-0"	16x 1 1/2	12'-0"	16x 1 1/2	72'-10"	17'-6"	16x 2 1/4	15'-6"	16x 1 1/4	65'-11"	12'-0"	16x 7/8	10'-0"	
C	16x 7/8	50'-8"	13'-0"	16x 1 1/2	11'-0"	16x 1	72'-8"	16'-0"	16x 2 1/2	14'-0"	16x 1 1/2	64'-9"	12'-0"	16x 7/8	10'-0"	
D	16x 7/8	49'-8"	12'-6"	16x 1 1/2	10'-6"	16x 1	71'-6"	15'-0"	16x 2	13'-6"	16x 1 1/2	62'-7"	12'-0"	16x 7/8	10'-0"	
E	16x 7/8	49'-2"	11'-6"	16x 1 1/2	10'-0"	16x 1	70'-4"	14'-0"	16x 1 1/2	13'-6"	16x 1	59'-11"	12'-0"	16x 7/8	10'-0"	
F	16x 7/8	48'-2"	11'-0"	16x 1 1/2	10'-0"	16x 7/8	67'-8"	14'-0"	16x 1 1/2	13'-0"	16x 1	57'-9"	12'-0"	16x 7/8	10'-0"	
G	16x 7/8	47'-8"	10'-0"	16x 1 1/2	9'-0"	16x 7/8	67'-6"	12'-6"	16x 1 1/2	12'-6"	16x 7/8	77'-7"	12'-0"	16x 7/8	10'-0"	
H	16x 7/8	46'-2"	10'-0"	16x 1 1/2	9'-0"	16x 7/8	64'-10"	12'-6"	16x 1 1/2	12'-6"	16x 7/8	74'-11"	12'-0"	16x 7/8	10'-0"	

FIELD SPLICES	A		B		C		D		E		F		G		H	
	23'-10"	54'-7"	26'-7"	24'-11"	71'-2"	10'-0"										
B	22'-5"	54'-7"	25'-4"	24'-0"	69'-5"	10'-0"										
C	21'-0"	54'-7"	24'-1"	23'-1"	67'-8"	10'-0"										
D	19'-7"	54'-7"	22'-10"	22'-2"	65'-11"	10'-0"										
E	18'-2"	54'-7"	21'-7"	21'-3"	64'-2"	10'-0"										
F	16'-9"	54'-7"	20'-4"	20'-4"	62'-5"	10'-0"										
G	15'-4"	54'-7"	19'-1"	19'-5"	60'-8"	10'-0"										
H	13'-11"	54'-7"	17'-10"	18'-6"	58'-11"	10'-0"										

SPAN LENGTHS	A		B		C		D		E		F		G		H	
	66'-8"	105'-0"	96'-1"	10'-0"												
B	65'-2"	102'-4"	93'-5"	10'-0"												
C	63'-8"	99'-8"	90'-9"	10'-0"												
D	62'-2"	97'-0"	88'-1"	10'-0"												
E	60'-8"	94'-4"	85'-5"	10'-0"												
F	59'-2"	91'-8"	82'-9"	10'-0"												
G	57'-8"	89'-0"	80'-1"	10'-0"												
H	56'-2"	86'-4"	77'-5"	10'-0"												

Note: Dimensions are measured horizontally.

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KANSAS CITY CLEVELAND NEW YORK

FRAMING PLAN AND GIRDER ELEVATIONS
WEST 14TH STREET OVER CLARK FREEWAY

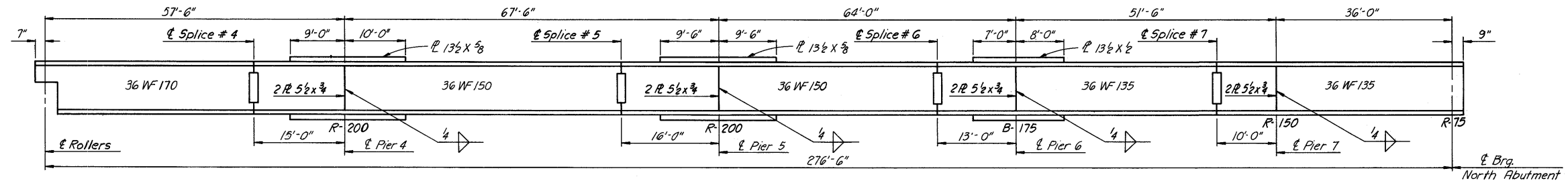
BR. NO. CUY-290-0040 STA 7+06.16
SCALE: None, unless noted STA 12+42.32
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DATE	DATE	DATE	DATE	DATE

SHEET 402

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

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4 Equal Spoces (Typical)

Girder	T	C	Pier 1				Pier 2				Pier 3				Rollers		
			0	1/8	1/4	1/2	0	1/8	1/4	1/2	0	1/8	1/4	1/2			
Girder A	4"	3/8"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	-3/16"
Girder B	3 1/2"	3/8"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	-3/16"
Girder C	3"	3/8"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	-3/16"
Girder D	3 1/2"	3/8"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	-3/16"
Girder E	3"	3/8"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	-3/16"
Girder F	3 1/2"	3/8"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	-3/16"
Girder G	3"	3/8"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	-3/16"
Girder H	3 1/2"	3/8"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	-3/16"

DEAD LOAD DEFLECTION DIAGRAM-UNIT 1

Deflection Notes:
Deflections are given to the nearest 1/16 inch.
In the table of deflections T denotes deflection due to total dead load, and C denotes deflection due to dead load of concrete only.
The girders shall be fabricated to lines parallel to profiles formed by Top of Pavement Elevations directly over the girders, plus the camber required to compensate for dead load deflections.
The allowance to be made in the screed settings to compensate for dead load deflections due to concrete are to be made above the top of pavement elevations as required. Screeds may require further adjustments due to irregularities in fabricated steel.
Bulb angles, where provided at curbs shall serve as guides for screeds.

Field Splice Notes:
Both top and bottom flange splices are identical except for fills for rolled beam splices.
Field splices shall be made with 3/8" high strength bolts. The high strength bolts shall be placed with the heads on the outside of the exterior stringers and the bottom of the flanges.
Splices of 36WF150 to 36WF150 shall be the same as 36WF170 to 36WF150.
Splices of 36WF135 to 36WF135 shall be the same as 36WF150 to 36WF135.

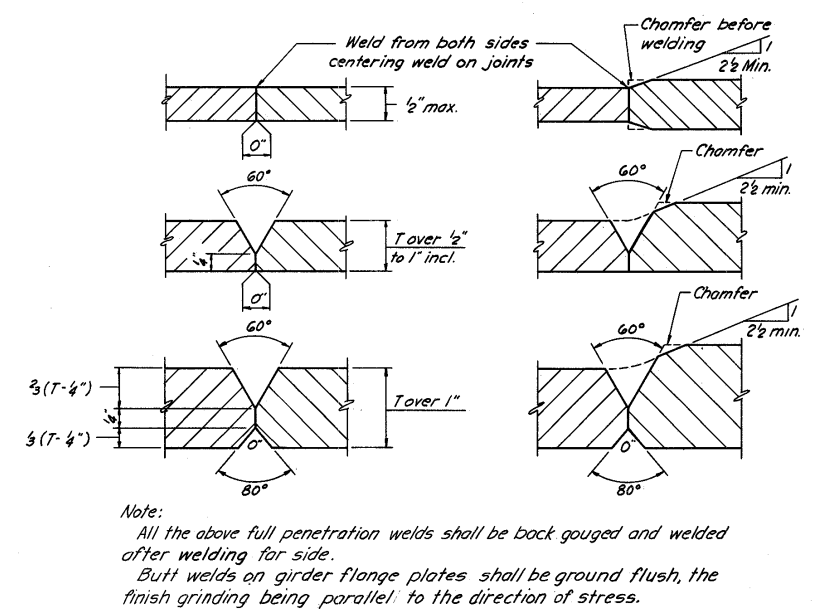
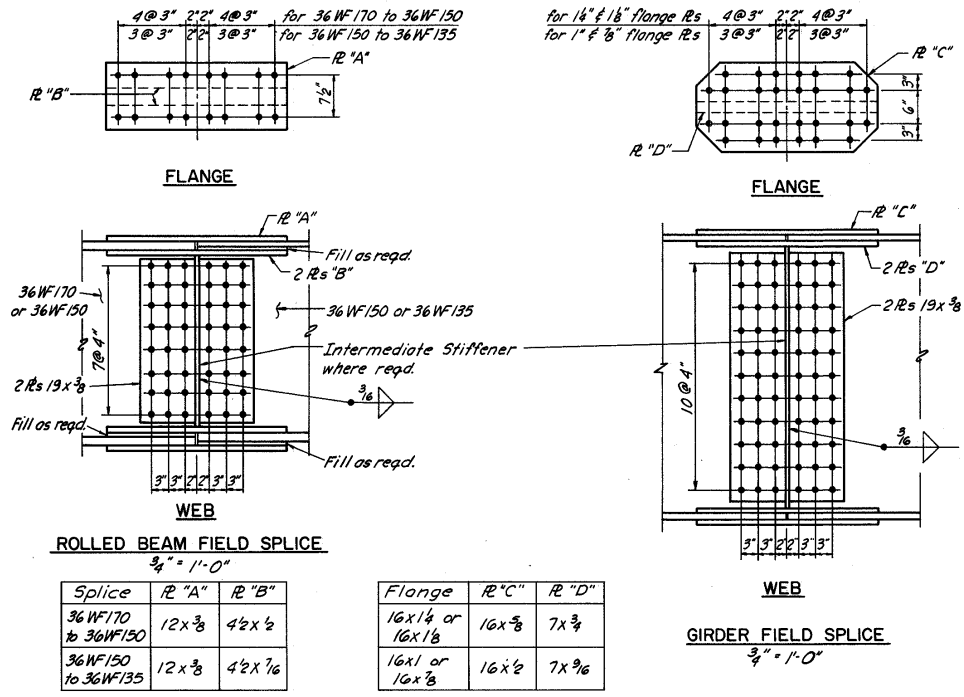
TYPICAL BEAM ELEVATION-UNIT 2
For notes see sheet 402

4 Equal Spoces (Typ)

Girder	T	C	Pier 4				Pier 5				Pier 6				North Abut.		
			0	1/8	1/4	1/2	0	1/8	1/4	1/2	0	1/8	1/4	1/2			
Typical, Beams A & H	7/16"	3/8"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	Deflections due to Concrete and Steel
Typical, Beams B thru G	3/8"	3/8"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	1/2"	5/8"	1"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	Deflection due to Concrete only

DEAD LOAD DEFLECTION DIAGRAM-UNIT 2

No camber is required in any span of Unit 2 but all beams shall be fabricated so that any curved beam will be placed with the convex flange up.



Note:
All the above full penetration welds shall be back gouged and welded after welding for side.
Butt welds on girder flange plates shall be ground flush, the finish grinding being parallel to the direction of stress.

TOP OF PAVEMENT ELEVATIONS

Girder or Beam	South Abut.	.25	.50	.75	Center Pier 1	.25	.50	.75	Center Pier 2	.25	.50	.75	Center Pier 3	Rollers	.25	.50	.75	Center Pier 4	.25	.50	.75	Center Pier 5	.25	.50	.75	Center Pier 6	.25	.50	.75	Center Pier 7	.25	.50	.75	Center Pier 8	North Abut.
A	681.53	681.51	681.49	681.47	681.44	681.41	681.37	681.34	681.30	681.27	681.24	681.21	681.17	681.16	681.14	681.12	681.10	681.08	681.06	681.04	681.02	680.99	680.97	680.95	680.93	680.91	680.89	680.87	680.86	680.84	680.83	680.81	680.80	680.79	
B	681.57	681.55	681.53	681.51	681.48	681.45	681.42	681.38	681.35	681.32	681.28	681.25	681.22	681.22	681.19	681.17	681.15	681.13	681.11	681.09	681.06	681.04	681.02	681.00	680.98	680.96	680.94	680.92	680.90	680.89	680.87	680.86	680.85	680.84	
C	681.70	681.67	681.65	681.63	681.61	681.58	681.54	681.51	681.48	681.45	681.42	681.39	681.36	681.35	681.32	681.30	681.28	681.27	681.24	681.22	681.20	681.18	681.15	681.13	681.11	681.09	681.07	681.05	681.04	681.02	681.01	681.00	680.98	680.97	
D	681.82	681.80	681.78	681.76	681.74	681.70	681.67	681.64	681.61	681.58	681.55	681.52	681.49	681.49	681.46	681.44	681.42	681.40	681.38	681.35	681.33	681.31	681.29	681.27	681.24	681.22	681.21	681.19	681.17	681.15	681.14	681.13	681.12	681.11	
E	681.81	681.79	681.77	681.75	681.73	681.70	681.66	681.63	681.60	681.57	681.54	681.52	681.49	681.48	681.45	681.44	681.42	681.40	681.37	681.35	681.33	681.31	681.28	681.26	681.24	681.22	681.20	681.19	681.17	681.15	681.14	681.13	681.12	681.10	
F	681.66	681.64	681.62	681.60	681.58	681.55	681.52	681.49	681.46	681.43	681.40	681.38	681.35	681.34	681.32	681.30	681.28	681.26	681.24	681.21	681.19	681.17	681.15	681.12	681.10	681.08	681.06	681.05	681.03	681.01	681.00	680.99	680.98	680.96	
G	681.51	681.49	681.47	681.46	681.44	681.41	681.38	681.35	681.32	681.29	681.26	681.24	681.21	681.21	681.18	681.16	681.14	681.12	681.10	681.07	681.05	681.03	681.01	680.99	680.96	680.94	680.93	680.91	680.89	680.87	680.86	680.85	680.84	680.83	
H	681.45	681.43	681.41	681.39	681.38	681.35	681.32	681.29	681.26	681.24	681.21	681.18	681.16	681.14	681.12	681.10	681.09	681.07	681.04	681.02	681.00	680.98	680.95	680.93	680.91	680.89	680.87	680.86	680.84	680.82	680.81	680.80	680.79	680.77	

H.N.T.B. BRIDGE NO. 6

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

SUPERSTRUCTURE DETAILS

WEST 14TH STREET OVER CLARK FREEWAY

BR. NO. CUY-290-0040 STA 7+06.16
SCALE: None, unless noted STA 12+42.32
CLEVELAND CUYAHOGA COUNTY OHIO

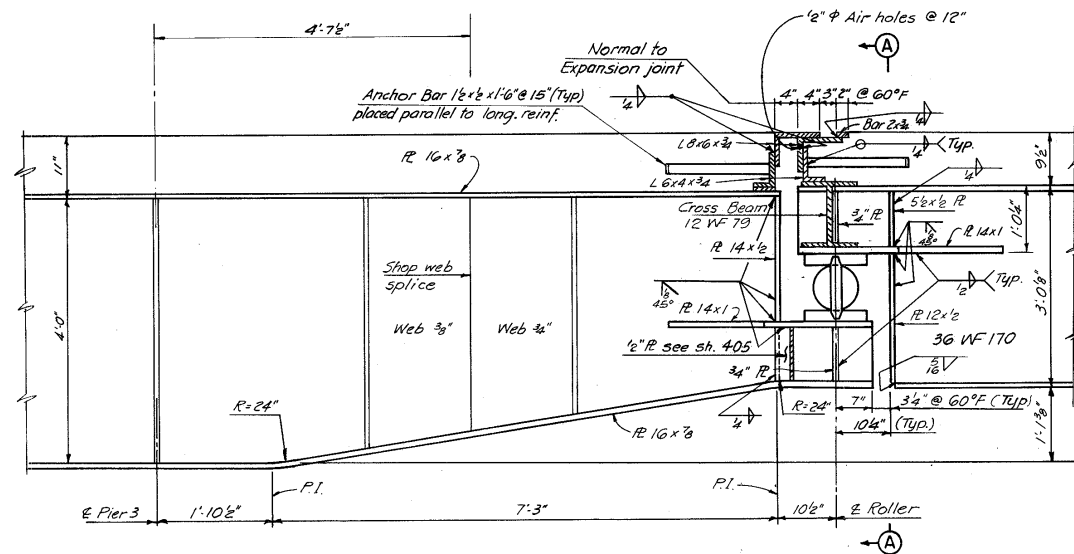
DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DATE 11/64	DATE	DATE 11/64	DATE	SHEET 403

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FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

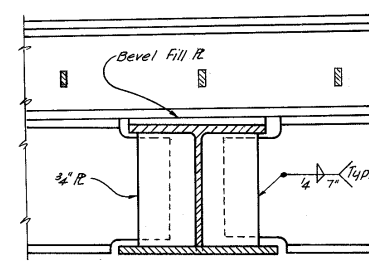
404
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
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CUY. 71-18.54
CUY. 90-13.81

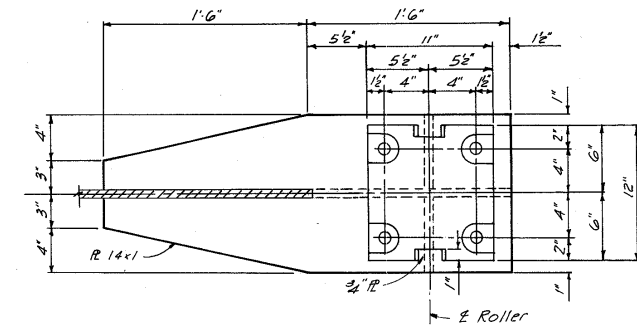


EXPANSION DETAIL

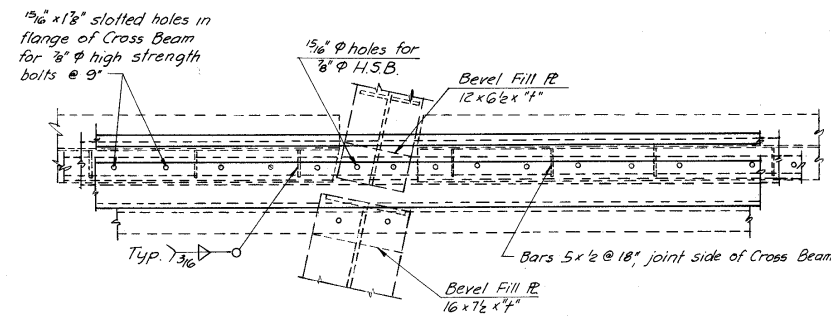
3/4" = 1'-0"
(See SECTION AT ROLLER
D.A.W. on sheet 405)



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

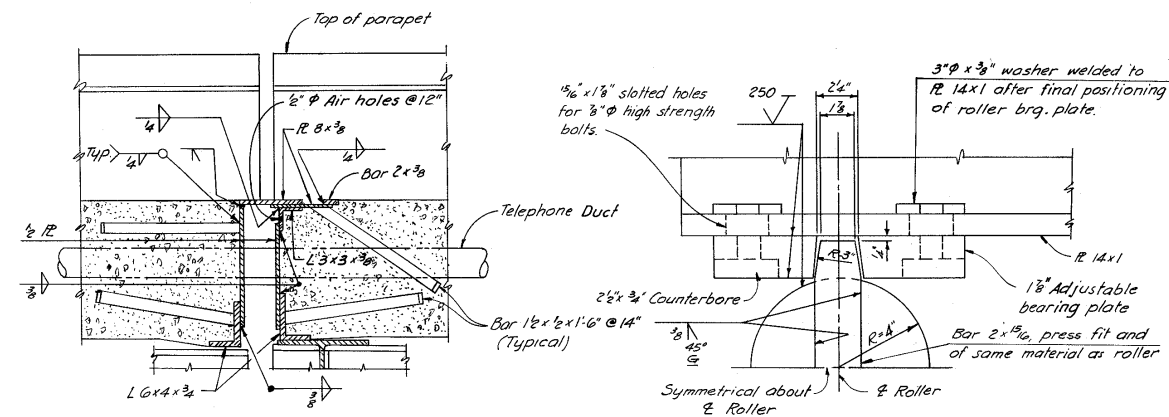


BEARING PLATE PLAN
1/2" = 1'-0"



PART PLAN EXPANSION JOINT
3/4" = 1'-0"

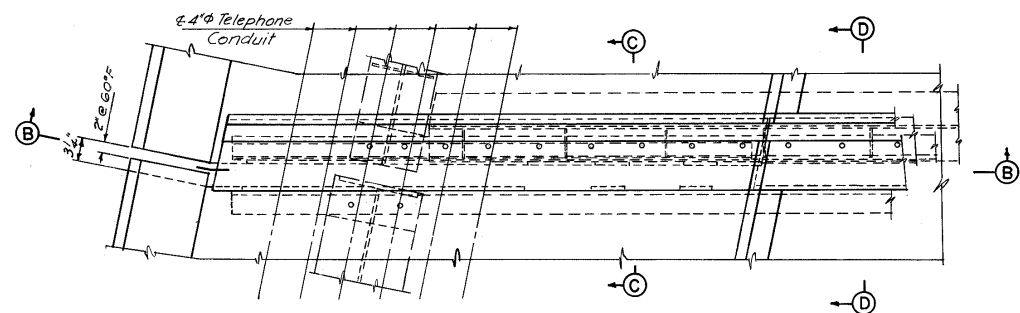
1" @ Girders or Beam	
Unit 1	2 1/2"
Unit 2	1 1/2"



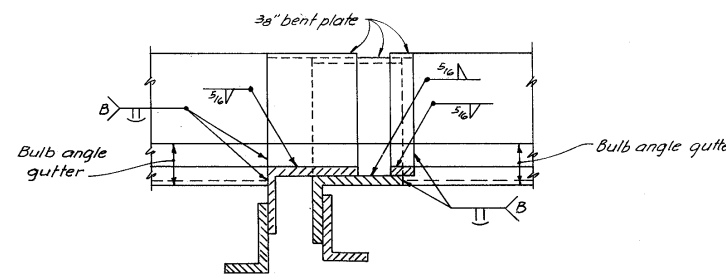
SECTION C-C
1" = 1'-0"

ROLLER DETAIL
3" = 1'-0"

SECTION THRU ROLLER
3" = 1'-0"



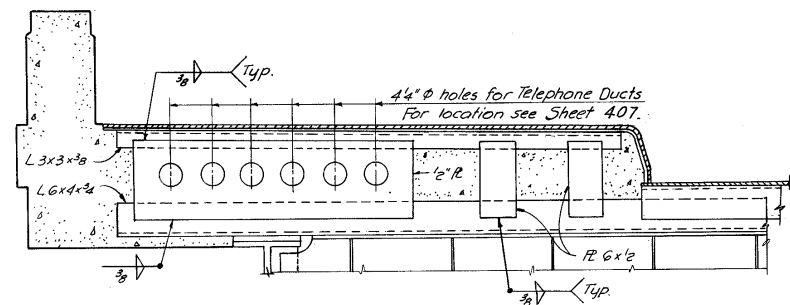
PART PLAN EXPANSION JOINT
3/4" = 1'-0"



SECTION D-D
1/2" = 1'-0"

NOTE:
For details of End Dam not shown
see Ohio Standard Drawings SD-1-63
Sheets 2 and 4 of 4.

Notes:
The expansion roller shall be set so that the centerline is normal to grade at 60°F.
Rollers and adjustable bearing plates shall be steel forgings conforming to ASTM-A237 Class B with a minimum Y.P. of 55,000 psi.
Expansion joint material in contact with steel or concrete shall not be painted.
For end dam details at North and South Abutments see Ohio Standard Drawings SD-1-63 sheets 2 and 4 of 4.
The supporting L 6 x 4 x 3/4 in the Roadway End Dam Table shall be increased to L 6 x 4 x 3/4.
Provide 4 1/2 inch diameter holes for Telephone Ducts in the West sidewalk as shown in Section B-B this sheet.



SECTION B-B
3/4" = 1'-0"

West Sidewalk shown. East Sidewalk
similar but omit holes for Telephone Ducts.

H.N.T.B. BRIDGE NO. 6

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

SUPERSTRUCTURE DETAILS
WEST 14TH STREET OVER CLARK FREEWAY

BR. NO. CUY-290-0040 STA 7+06.16
SCALE: As noted STA 12+42.32
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN L.D.	TRACED	CHECKED R.R.	REVIEWED	REVISED 5-9-55
DATE 10-68	DATE	DATE 11-68	DATE	SHEET 404

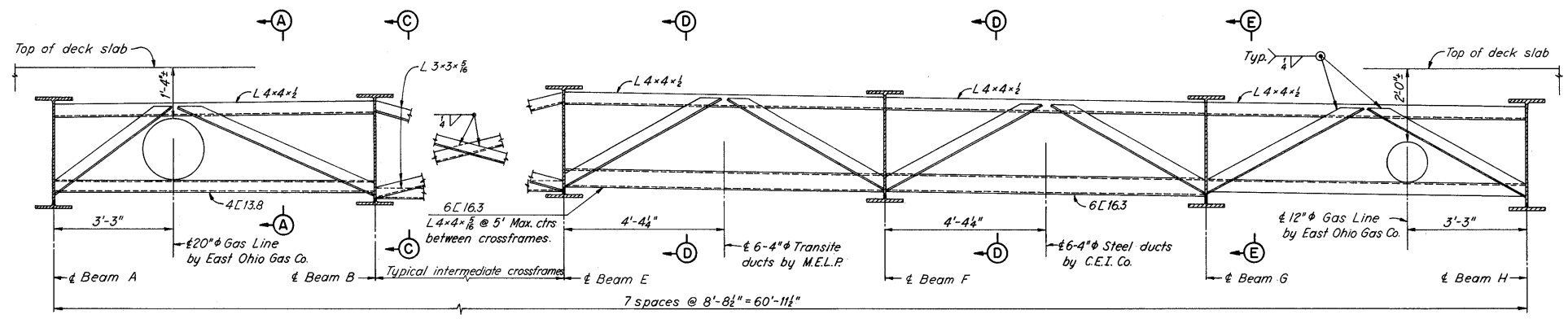
MICROFILMED
OCT 27 1982

Note:
Weld both sides of vertical legs and top side of horizontal legs of angles or channels to web of beam with $\frac{1}{4}$ " continuous fillet weld.

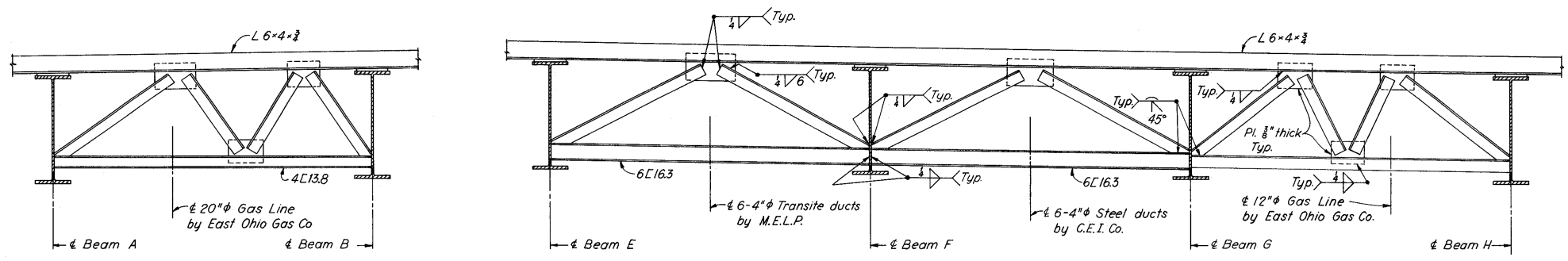
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

406
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

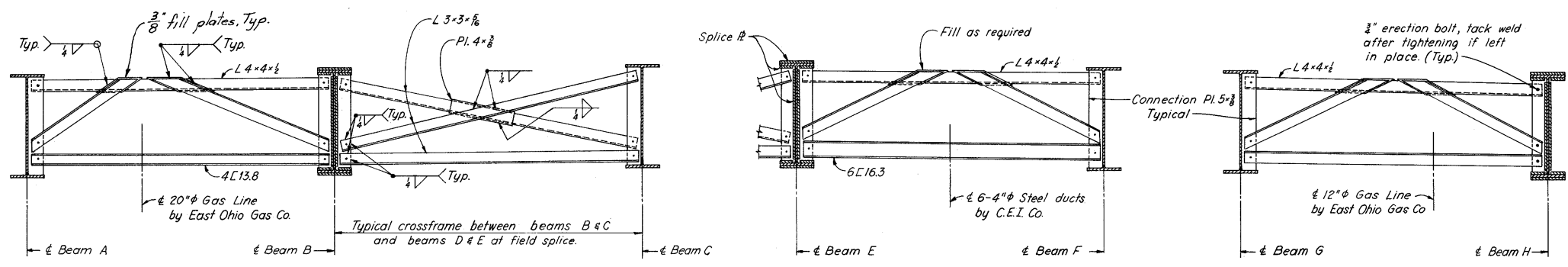


INTERMEDIATE CROSSFRAMES — UNIT 2
All angles 4x4x $\frac{1}{8}$ unless noted.

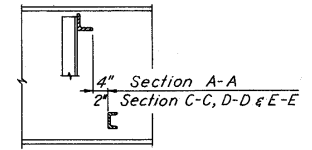


SPECIAL END CROSSFRAMES — UNIT 2
All angles 4x4x $\frac{1}{8}$ unless noted.

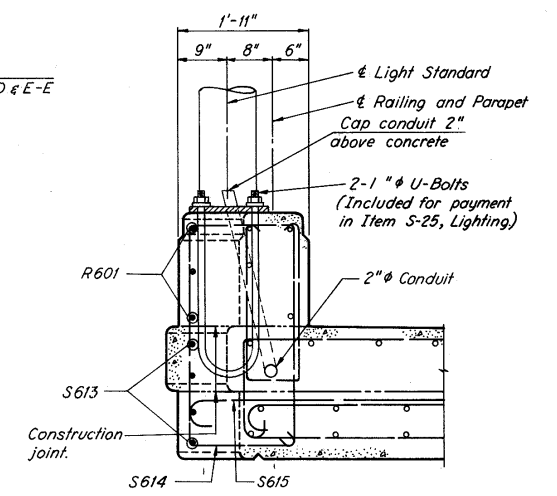
Note:
For typical end crossframes and additional details see Ohio Standard Drawing SD-1-63, Sheet 2 of 4.
The supporting L6x4x $\frac{3}{8}$ in the Roadway End Dam table shall be increased to L6x4x $\frac{3}{4}$.



SPECIAL CROSSFRAMES AT FIELD SPLICES — UNIT 2
All angles 4x4x $\frac{1}{8}$ unless noted.

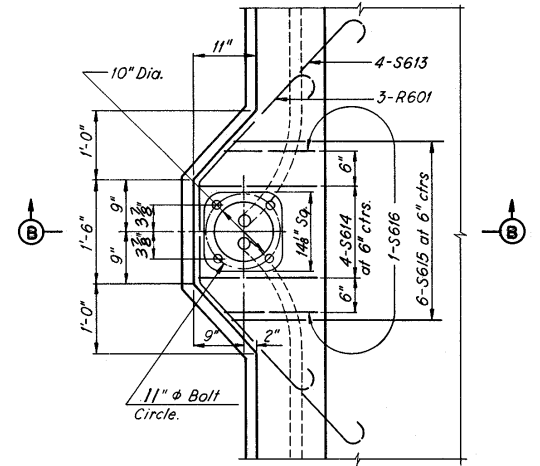


SECTION A - A
Section C-C, D-D & E-E similar except as noted.



SECTION B - B

Note:
o denotes normal longitudinal reinforcement.
The top surface of the light standard support shall be truly horizontal.



PLAN

LIGHT STANDARD SUPPORT
 $\frac{3}{4}$ " = 1'-0"
For location see Sheet 393.

H.N.T.B. BRIDGE NO. 6
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SUPERSTRUCTURE DETAILS
WEST 14TH STREET OVER CLARK FREEWAY
BR. NO. CUY.290-0040 STA 7+06.16
SCALE: 3/8" = 1'-0" STA 12+42.32
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN R.P.	TRACED	CHECKED L.D.	REVIEWED	REVISED
DATE 12-64	DATE	DATE 12-64	DATE	SHEET 406

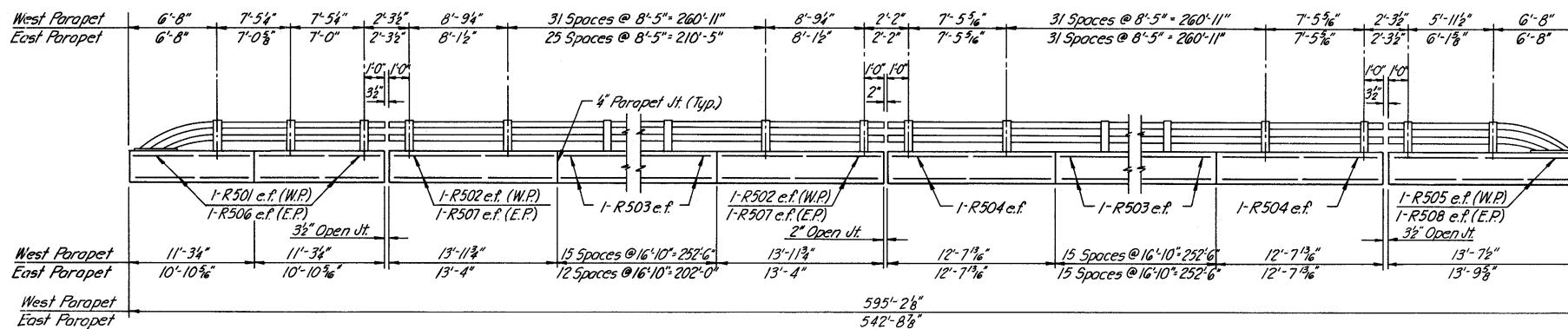
MICROFILMED

OCT 27 1982

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

408
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



SOUTH ABUTMENT

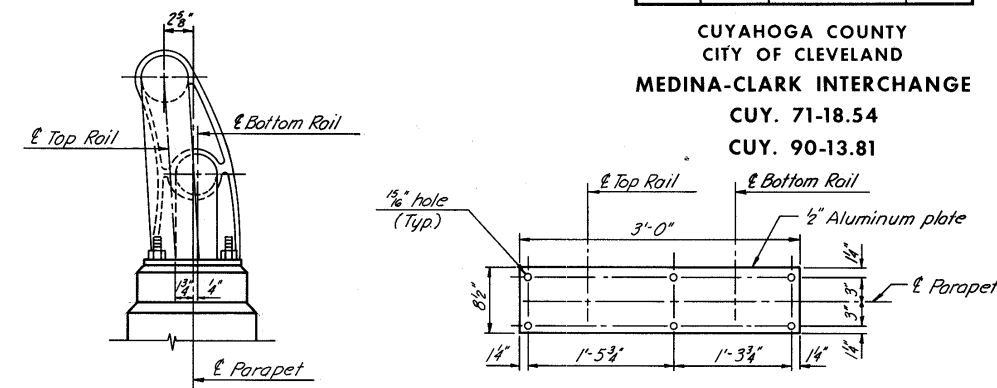
NORTH ABUTMENT

TYPE "C" RAILING

Note:
e.f. = each face
W.P. = West Parapet
E.P. = East Parapet

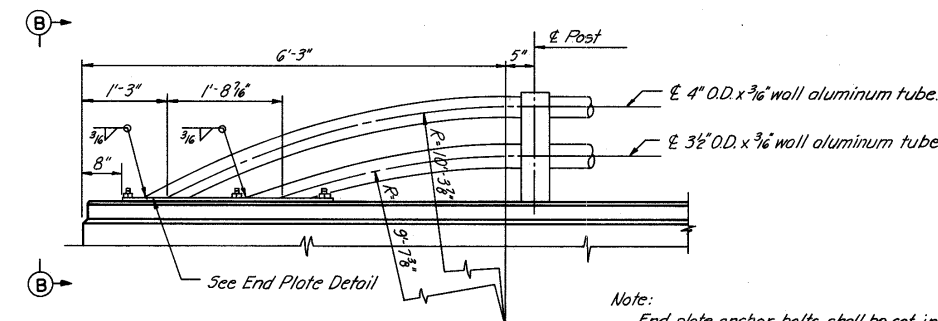
Railing Notes:
Railing shall be fabricated in lengths not less than three panels each, unless otherwise shown, and finished railing shall be free of burrs, sharp corners and rough surfaces.
Railing posts shall be normal to grade.
Payment for railing shall be made of the contract unit price bid for "Item S-14". Pay length shall be overall length of the parapets and shall include cost of anchor bolts, set screws, nuts, shims, etc. necessary to complete the installation of the railing.
Concrete, parapet joint material, and longitudinal reinforcing steel in the parapets shall be included in "Item S-14" for payment. All other reinforcing steel in the parapet shall be included in "Item S-14" for payment.
For additional details and notes regarding railing, see Ohio Standard Drawing AR-1-51, revised 4-22-62.

REINFORCEMENT SCHEDULE				
MARK	WEST PARAPET NO.	WEST PARAPET LENGTH	EAST PARAPET NO.	EAST PARAPET LENGTH
R501	8	10'-11"	—	—
R502	8	13'-8"	—	—
R503	120	16'-6"	108	16'-6"
R504	8	12'-4"	8	12'-4"
R505	4	13'-4"	—	—
R506	—	—	8	10'-6"
R507	—	—	8	13'-0"
R508	—	—	4	13'-6"



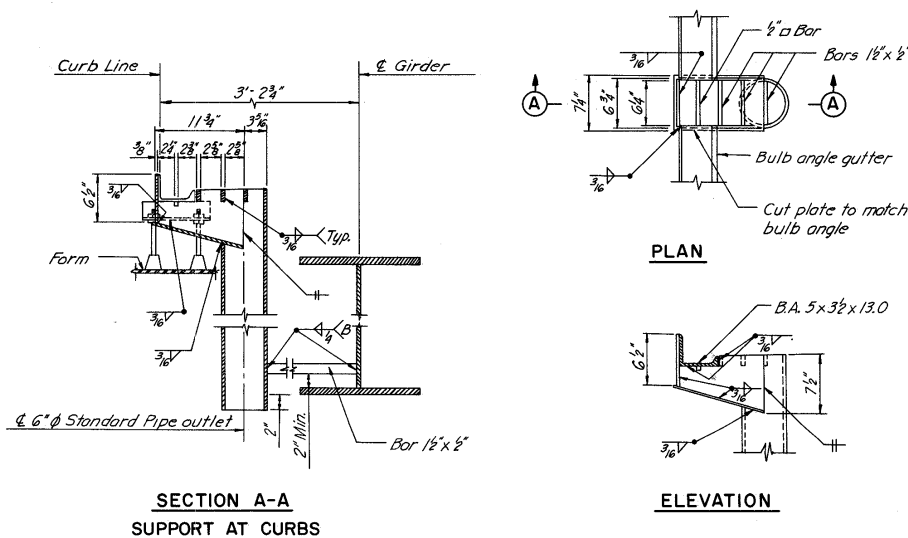
VIEW B-B

END PLATE DETAIL



TYPE "C" RAILING END TREATMENT

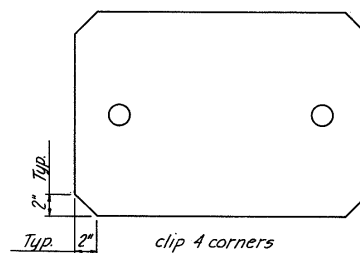
Note:
End plate anchor bolts shall be set in place before pouring parapet concrete.



SECTION A-A
SUPPORT AT CURBS

SCUPPER DETAILS
1" x 1'-0"

Note:
Scupper are to be made from 3/8" steel plate except as shown.



MODIFIED ROCKER R-250
1 1/2 x 1'-0"

Notes:
Modification is to masonry plate only.
For details of Rocker R-250 not shown, see Ohio Standard Drawing RB-1-55 revised 2-2-59.

Notes:
The first support angle each side of scupper is included with scupper for payment.
Bulb angle and supports shall be included in "Item S-7, Structural Steel" for payment.
All scuppers are Type 1. For scupper and gutter support details not shown and additional notes see Ohio Standard Drawing 5D-1-63, sheet 3 of 4. Gutter support B shall be used.

H.N.T.B. BRIDGE NO. 6

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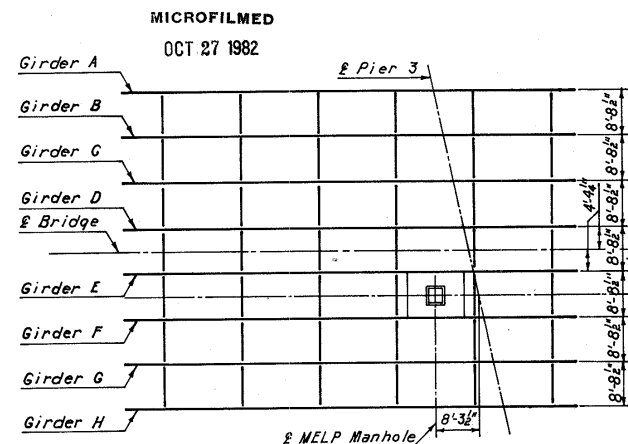
SUPERSTRUCTURE DETAILS

WEST 14TH STREET OVER CLARK FREEWAY

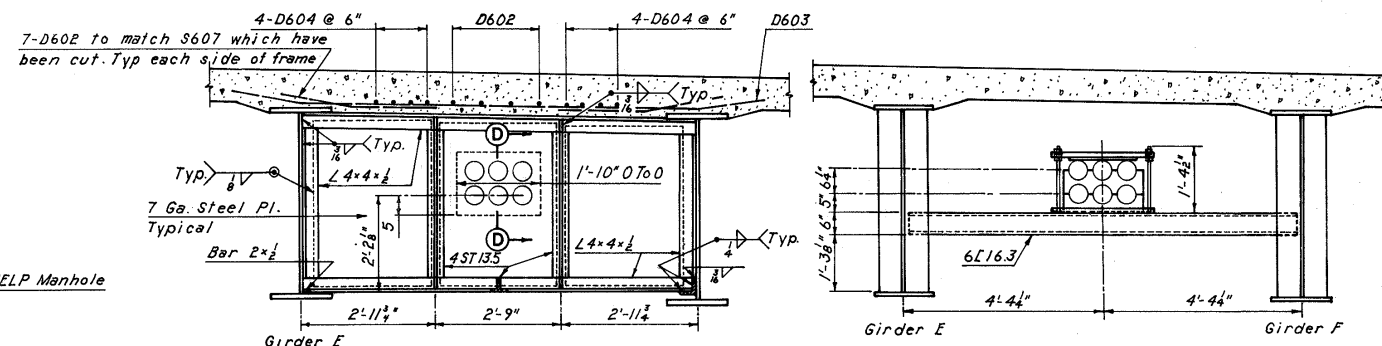
BR. NO. CUY-290-0040 STA 7+06.16
SCALE: None, unless noted STA 12+42.32
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN L.S.Z.	TRACED R.M.	CHECKED P.H.	REVIEWED	REVISED
DATE 9-64	DATE 12-64	DATE 11-64	DATE	SHEET 408

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



MANHOLE LOCATION PLAN

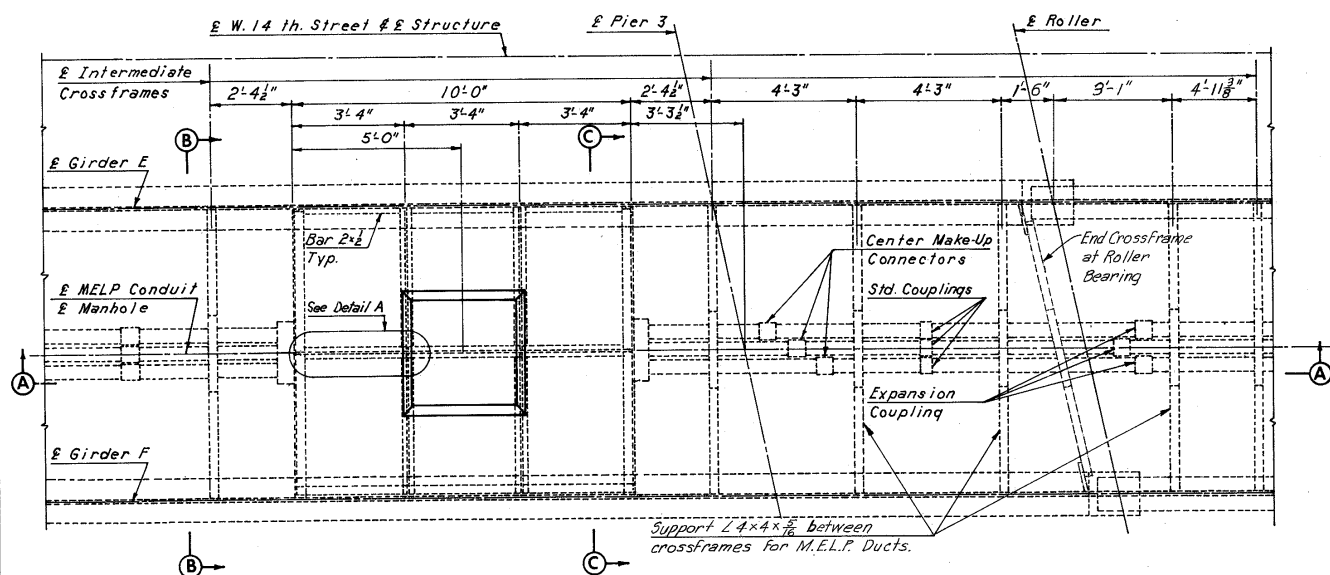


SECTION B-B

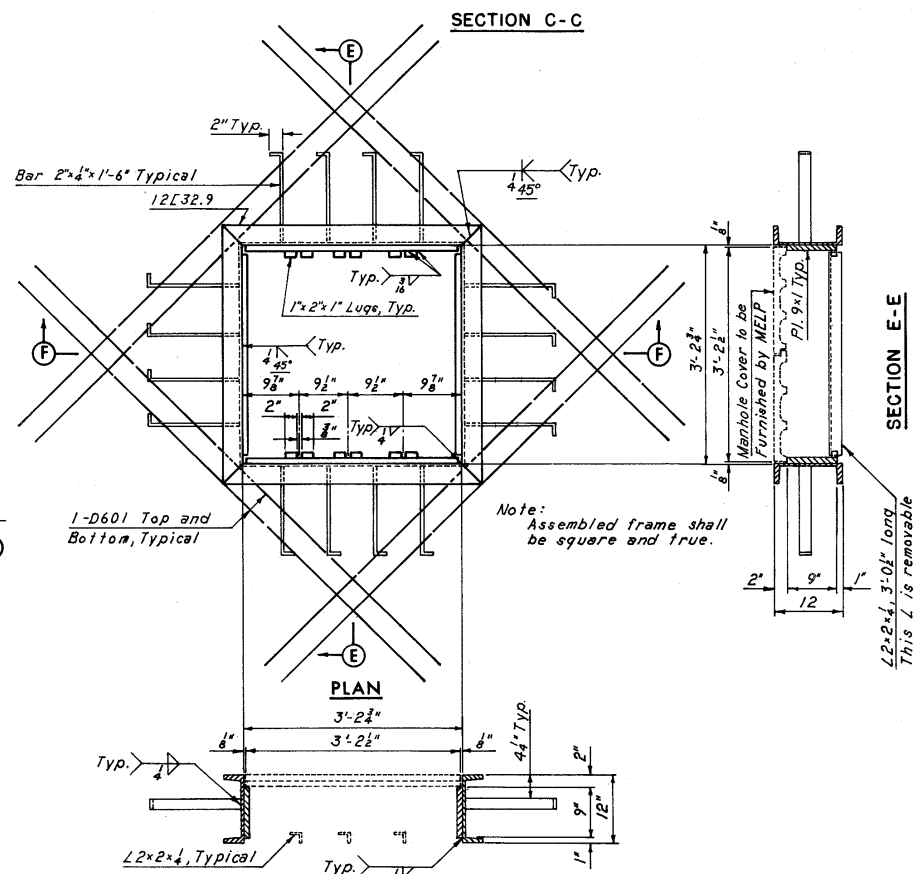
SECTION C-C

SECTION D-D

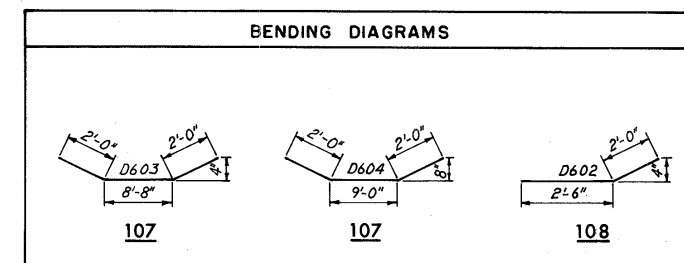
REINFORCEMENT SCHEDULE M.E.L.P. MANHOLE					
MARK	NUMBER	LENGTH	TYPE	WEIGHT POUNDS	
D601	16	8'-0"	Str.	192	
D602	22	4'-6"		148	
D603	14	12'-8"		266	
D604	8	13'-0"		156	
				Total	762



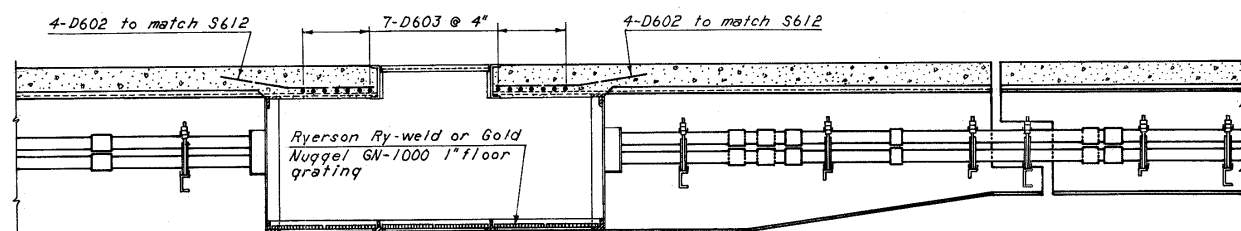
PLAN VIEW M.E.L.P. MANHOLE



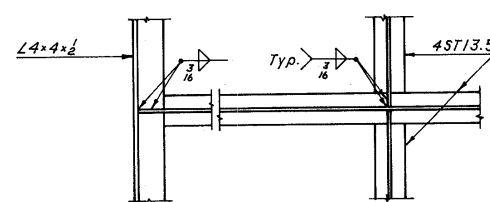
SECTION F-F
MANHOLE FRAME DETAILS



ESTIMATED QUANTITIES M.E.L.P. MANHOLE			
ITEM	DESCRIPTION	UNIT	QUANTITY
S-1	Class "C" Concrete Superstructure	Cu. Yd.	1
S-4	Reinforcing Steel	Pounds	762
S-7	Structural Steel	Pounds	3519
S-8	Field Painting of Structural Steel	Pounds	3519



SECTION A-A



DETAIL A

H.N.T.B. BRIDGE NO. 6
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

M.E.L.P. MANHOLE DETAILS
WEST 14TH STREET OVER CLARK FREEWAY
BR. NO. CUY-290-0040 STA 7+06.16
SCALE STA 12+42.32
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN L.J.R.	TRACED	CHECKED	REVIEWED	REVISED
DATE 1-15-65	DATE	DATE	DATE	SHEET 408B

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
SOUTH ABUTMENT								
AA401	35	7'-1"	109	2'-9"	7"		166	
AA402	1Ser. 15	14'-7"to21'-3"	Str.				5 1/2" 180	
AA403	1	13'-8"	Str.				9	
AA404	1	30'-0"	Str.				20	
AA405	1Ser. 15	22'-7"to29'-0"	Str.				5 1/2" 258	
AA406	48	3'-11"	105	2'-2"	1'-0"		126	
AA501	70	10'-2"	105	3'-11"	3'-3"		742	
AA502	1	6'-9"	104	3'-11"	3'-0"		7	
AA503	15	19'-10"	109	8'-6"	1'-2"		310	
AA504	22	9'-8"	104	8'-2"	1'-7"		222	
AA505	15	7'-6"	Str.				117	
AA506	3	5'-6"	118				17	
AA507	6	23'-6"	Str.				147	
AA508	6	42'-6"	Str.				266	
AA509	27	25'-6"	Str.				718	
AA510	1Ser. 3	23'-6"to25'-0"	Str.				9" 76	
AA511	1	35'-6"	Str.				37	
AA512	3	45'-0"	Str.				141	
AA513	1Ser. 3	21'-6"to23'-0"	Str.				9" 70	
AA514	3	23'-9"	Str.				74	
AA515	1	38'-0"	Str.				40	
AA516	2	11'-9"	Str.				25	
AA517	1	9'-0"	Str.				9	
AA518	1	14'-3"	Str.				15	
AA519	1	13'-8"	Str.				14	
AA520	100	8'-6"	Str.				887	
AA521	58	3'-8"	104	2'-0"	1'-9"		222	
AA522	1Ser. 6	3'-0"to8'-0"	Str.				11'-0" 34	
AA523	1	7'-9"	Str.				8	
AA524	1	6'-9"	Str.				7	
AA525	2Ser. 5	3'-0"to7'-0"	Str.				1'-0" 52	
AA526	1	30'-5"	Str.				32	
AA527	1	29'-9"	Str.				31	
AA528	42	6'-0"	104	5'-2"	1'-0"		263	
AA529	6	8'-0"	Str.				50	
AA530	4	6'-6"	Str.				27	
AA531	34	10'-0"	Str.				355	
AA532	1	7'-0"	Str.				7	
AA533	1Ser. 3	11'-0"to18'-6"	Str.				3'-9" 46	
AA534	13	5'-0"	Str.				68	
AA535	2Ser. 9	5'-4"to10'-0"	Str.				7" 144	
AA536	24	9'-0"	104	8'-2"	1'-0"		225	
AA537	6	25'-3"	Str.				158	
AA538	4	17'-6"	Str.				73	
AA539	2	21'-8"	Str.				45	
AA540	1	11'-0"	Str.				12	
AA541	31	6'-1"	110	2'-5"			197	
AA542	2Ser. 8	5'-6"to9'-6"	Str.				6 3/4" 125	
AA543	6	22'-6"	Str.				141	
AA544	1	16'-0"	Str.				17	
AA545	1Ser. 3	12'-9"to20'-3"	108	11'-0"to18'-6"	1'-9"	1'-4"	3'-9" 52	
AA601	59	18'-2"	109	6'-2"	2'-7"		1,610	
AA602	4	10'-3"	105	2'-7"	4'-0"		62	
AA603	4	14'-5"	105	2'-7"	6'-1"		87	
AA604	1Ser. 4	8'-9"to13'-9"	100	7'-5"to12'-5"			1'-8" 68	
AA605	1Ser. 4	7'-5"to12'-5"	Str.				1'-8" 60	
AA606	1	12'-5"	Str.				19	
AA607	5	8'-0"	101	7'-4"			60	
AA608	5	7'-6"	Str.				56	
AA609	1Ser. 4	4'-9"to8'-9"	100	3'-5"to7'-5"			1'-4" 41	
AA610	1Ser. 4	3'-6"to7'-6"	Str.				1'-4" 33	
AA611	17	11'-3"	100	9'-11"			287	
AA612	9	9'-11"	Str.				134	
AA613	1	15'-9"	108	12'-3"	3'-6"	2'-6"	24	
AA614	12	2'-8"	Str.				48	
AA615	1Ser. 6	13'-4"to15'-0"	Str.				4" 128	
AA616	1Ser. 5	13'-4"to15'-0"	Str.				5" 106	
AA617	137	6'-0"	104	5'-2"	1'-0"		1,235	
AA618	4	8'-6"	101	7'-10"			51	
AA619	3	6'-0"	101	5'-4"			27	
AA620	72	18'-2"	117	7'-2"	5'-10"		1,965	
AA621	3	9'-7"	Str.				43	

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
NORTH ABUTMENT								
AA801	4Ser. 4	41'-9"to46'-0"	Str.				1'-5" 1,874	
AA802	2	9'-0"	108	7'-0"	2'-0"	1'-5"	48	
AA803	8	16'-6"	108	14'-9"	1'-9"	9"	352	
AA901	2	14'-3"	Str.				97	
AA902	2	13'-8"	Str.				93	
AA903	2	30'-5"	Str.				207	
AA904	2	29'-9"	Str.				202	
							Total 16,101	
PIER 1								
AB401	1Ser. 15	12'-0"to13'-7"	Str.				1 3/4" 128	
AB402	25	7'-1"	109	2'-9"	7"		118	
AB403	1Ser. 15	13'-9"to15'-4"	Str.				1 3/4" 146	
AB404	1	15'-4"	Str.				10	
AB405	1	11'-9"	Str.				8	
AB406	48	3'-5"	105	1'-8"	1'-0"		110	
AB501	45	10'-2"	105	3'-5"	3'-6"		477	
AB502	3	6'-10"	104	3'-5"	3'-6"		21	
AB503	6	34'-0"	Str.				213	
AB504	9	33'-10"	Str.				318	
AB505	16	9'-0"	Str.				150	
AB506	61	8'-10"	Str.				562	
AB507	6	13'-9"	Str.				86	
AB508	20	6'-1"	110	2'-5"			127	
AB509	8	11'-8"	Str.				97	
AB510	2	15'-4"	Str.				32	
AB511	36	9'-1"	Str.				341	
AB512	37	3'-8"	104	2'-0"	1'-9"		142	
AB513	8	8'-1"	105	1'-2"	3'-7"		67	
AB514	6	8'-10"	Str.				55	
AB515	6	13'-8"	Str.				86	
AB516	4	7'-0"	Str.				29	
AB517	6	12'-0"	Str.				75	
AB518	8	3'-7"	Str.				30	
AB519	8	8'-0"	Str.				67	
AB520	16	19'-10"	109	1'-2"	8'-6"		331	
AB521	3	32'-0"	Str.				100	
AB522	1	5'-8"	Str.				6	
AB523	1	3'-6"	Str.				4	
AB524	3	34'-2"	Str.				107	
AB525	3	34'-3"	Str.				107	
AB526	3	34'-7"	Str.				108	
AB527	3	33'-11"	Str.				106	
AB528	1	26'-10"	Str.				28	
AB529	1	27'-11"	Str.				29	
AB530	2	8'-8"	Str.				18	
AB531	16	8'-6"	104	7'-0"	1'-7"		142	
AB532	2	11'-9"	Str.				25	
AB533	10	7'-0"	Str.				73	
AB534	14	6'-0"	Str.				88	
AB535	4	5'-0"	Str.				21	
PIER 2								
SPB401	5	619'-0"	123	63	22'-6"	3'-2"	2,374	
PB501	68	12'-1"	109	2'-1 1/2"	3'-8"		857	
PB502	56	4'-11"	105	3'-2"	1'-0"		287	
PB503	2	4'-9"	105	3'-0"	1'-0"		10	
PB504	2	4'-5"	105	2'-8"	1'-0"		9	
PB505	2	3'-7"	105	1'-10"	1'-0"		8	
PB601	24	16'-6"	Str.				595	
PB602	10	9'-8"	113	2'-4"	5'-0"	3'-2"	145	
PB901	12	11'-2"	100	8'-8"			456	

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
PIER 1								
AB701	8	8'-10"	Str.				144	
AB801	16	36'-8"	Str.				1,566	
AB901	4	15'-4"	Str.				209	
AB902	4	11'-9"	Str.				160	
PIER 2								
SPA401	5	503'-6"	123	61	21'-9"	2'-8"	1,978	
PA501	80	11'-4"	109	1'-9"	3'-8"		946	
PA502	56	4'-5"	105	2'-8"	1'-0"		258	
PA503	2	4'-3"	105	2'-6"	1'-0"		9	
PA504	2	3'-11"	105	2'-2"	1'-0"		8	
PA505	2	2'-9"	105	1'-0"	1'-0"		6	
PA601	24	19'-0"	Str.				685	
PA602	10	8'-10"	113	2'-4"	4'-2"	2'-8"	133	
PA901	60	11'-2"	100	8'-8"			2,278	
PA1001	12	14'-6"	100	11'-8"			749	
PA1101	2	16'-0"	Str.				170	
PA1102	2	41'-2"	Str.				437	
PA1103	12	28'-9"	Str.				1,833	
PA1104	4	11'-0"	Str.				234	
PA1105	12	18'-10"	Str.				1,201	
PA1106	3	46'-0"	Str.				733	
PA1107	3	39'-2"	Str.				624	
PA1108	2	23'-0"	Str.				244	
PA1109	48	14'-10"	100	11'-8"			3,783	
PA1110	8	11'-4"	139				482	
PA1111	64	25'-3"	Str.				8,586	
PA1112	64	7'-0"	104	6'-3"	1'-0"		2,380	
PA1113	20	21'-9"	Str.				2,311	
PA1114	20	10'-6"	104	9'-9"	1'-0"		1,116	
							Total 31,184	
PIER 2								
SPB401	5	619'-0"	123	63	22'-6"	3'-2"	2,374	
PB501	68	12'-1"	109	2'-1 1/2"	3'-8"		857	
PB502	56	4'-11"	105	3'-2"	1'-0"		287	
PB503	2	4'-9"	105	3'-0"	1'-0"		10	
PB504	2	4'-5"	105	2'-8"	1'-0"		9	
PB505	2	3'-7"	105	1'-10"	1'-0"		8	
PB601	24	16'-6"	Str.				595	
PB602	10	9'-8"	113	2'-4"	5'-0"	3'-2"	145	
PB901	12	11'-2"	100	8'-8"		</		

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS
				A	B	C		
PIER 2 (Continued)								
PB1001	68	15'- 6"	100	12'- 8"				4,535
PB1101	2	17'- 2"	Str.					182
PB1102	2	34'-10"	Str.					370
PB1103	4	27'- 4"	Str.					581
PB1104	4	45'- 0"	Str.					956
PB1105	4	11'- 0"	Str.					234
PB1106	12	16'- 6"	Str.					1,052
PB1107	2	20'- 0"	Str.					213
PB1108	3	41'- 5"	Str.					660
PB1109	3	34'- 1"	Str.					543
PB1110	8	11'- 4"	Str.					482
PB1111	60	26'- 0"	Str.					8,288
PB1112	44	15'- 6"	104	14'- 9"	1'- 0"			3,624
PB1113	60	7'- 0"	104	6'- 3"	1'- 0"			2,231
PB1114	48	15'-10"	100	12'- 8"				4,038
Total								32,730
PIER 3								
SPC401	4	992'- 4"	123	101	36'-9"	3'-2"		3,051
PC501	64	12'- 1"	109	2'- 1/2"	3'- 8"			807
PC502	50	4'-11"	105	3'- 2 "	1'- 0"			256
PC503	2	4'- 9"	105	3'- 0 "	1'- 0"			10
PC504	2	4'- 3"	105	2'- 6 "	1'- 0"			9
PC505	2	3'- 0"	105	1'- 3 "	1'- 0"			6
PC601	12	20'- 0"	Str.					361
PC602	6	20'- 5"	Str.					184
PC603	10	9'- 8"	113	2'- 4"	5'- 0"	3'- 2"		145
PC901	24	40'- 4"	Str.					3,291
PC902	24	6'- 3"	104	5'- 6"	1'- 0"			510
PC903	48	11'- 2"	100	8'- 8"				1,822
PC1001	24	14'- 6"	100	11'- 8"				1,497
PC1101	8	32'- 6"	Str.					1,381
PC1102	3	32'-10"	Str.					523
PC1103	8	11'- 4"	139					482
PC1104	8	20'- 0"	Str.					850
PC1105	2	20'- 5"	Str.					217
PC1106	4	40'- 9"	Str.					866
PC1107	4	28'- 3"	Str.					600
PC1108	28	40'- 4"	Str.					6,000
PC1109	28	7'- 0"	104	6'- 3"	1'- 0"			1,041
PC1110	24	15'- 0"	100	11'- 8"				1,913
Total								25,822
PIER 4								
SPD401	4	1061'- 0"	123	108	39'-4"	3'-2"		3,263
PD501	64	12'- 1"	109	2'- 1/2"	3'- 8"			807
PD502	50	4'-11"	105	3'- 2 "	1'- 0"			256
PD503	2	4'- 8"	105	2'- 11"	1'- 0"			10
PD504	2	4'- 4"	105	2'- 7"	1'- 0"			9
PD505	2	3'- 4"	105	1'- 7"	1'- 0"			7

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS
				A	B	C		
FD601	12	20'- 0"	Str.					361
FD602	6	20'- 5"	Str.					184
FD603	10	9'- 8"	113	2'- 4"	5'- 0"	3'- 2"		145
PD901	24	42'- 9"	Str.					3,488
PD902	24	6'- 3"	104	5'- 6"	1'- 0"			510
PD903	48	11'- 2"	100	8'- 8"				1,822
PD1001	48	15'- 6"	100	12'- 8"				3,201
PD1101	3	32'-10"	Str.					523
PD1102	8	32'- 6"	Str.					1,381
PD1103	8	20'- 0"	Str.					850
PD1104	2	20'- 5"	Str.					217
PD1105	4	40'- 9"	Str.					866
PD1106	4	28'- 3"	Str.					600
PD1107	8	11'- 4"	139					482
PD1108	28	42'- 9"	Str.					6,360
PD1109	28	7'- 0"	104	6'- 3"	1'- 0"			1,041
Total								26,383
PIER 5								
SPE401	4	1070'-10"	123	109	39'-9"	3'-2"		3,294
PE501	64	12'- 1"	109	2'- 1/2"	3'- 8"			807
PE502	50	4'-11"	105	3'- 2 "	1'- 0"			256
PE503	2	4'- 8"	105	2'- 11 "	1'- 0"			10
PE504	2	4'- 4"	105	2'- 7 "	1'- 0"			9
PE505	2	3'- 4"	105	1'- 7 "	1'- 0"			7
PE601	12	20'- 0"	Str.					361
PE602	6	20'- 5"	Str.					184
PE603	10	9'- 8"	113	2'- 4 "	5'- 0"	3'- 2"		145
PE901	24	43'- 2 "	Str.					3,522
PE902	24	6'- 3 "	104	5'- 6 "	1'- 0"			510
PE903	48	11'- 2 "	100	8'- 8 "				1,822
PE1101	3	32'-10"	Str.					523
PE1102	8	32'- 6"	Str.					1,381
PE1103	8	20'- 0"	Str.					850
PE1104	2	20'- 5"	Str.					217
PE1105	4	40'- 9"	Str.					866
PE1106	4	28'- 3"	Str.					600
PE1107	8	11'- 4"	139					482
PE1108	28	43'- 2"	Str.					6,422
PE1109	28	7'- 0"	104	6'- 3"	1'- 0"			1,041
PE1110	48	15'- 6"	100	12'- 8"				3,953
Total								27,262

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS
				A	B	C		
PIER 6								
SPF401	4	530'- 2"	123	54	19'-1 1/2"	3'-2"		1,625
PF501	64	12'- 1"	109	2'- 1/2"	3'- 8"			807
PF502	50	4'-11"	105	3'- 2 "	1'- 0"			256
PF503	2	4'- 7"	105	2'- 10"	1'- 0"			10
PF504	2	4'- 1"	105	2'- 4"	1'- 0"			9
PF601	12	20'- 2"	Str.					364
PF602	10	9'- 8"	113	2'- 4"	5'- 0"	3'- 2"		145
PF603	6	19'-10"	Str.					179
PF1001	48	15'- 6"	100	12'- 8"				3,201
PF1101	48	15'-10"	100	12'- 8"				4,038
PF1102	56	7'- 0"	104	6'- 3"	1'- 0"			2,083
PF1103	24	14'- 3"	104	13'- 6"	1'- 0"			1,817
PF1104	56	22'- 9"	Str.					6,769
PF1105	8	11'- 4"	139					482
PF1106	4	40'- 9"	Str.					866
PF1107	8	20'- 2"	Str.					857
PF1108	11	33'- 0"	Str.					1,929
PF1109	4	28'- 3"	Str.					600
PF1110	2	19'-10"	Str.					211
Total								26,248
PIER 7								
SPG401	4	354'- 7"	123	43	15'-0"	2'-8"		1,111
PG501	60	11'- 4"	109	1'- 9"	3'- 8"			709
PG502	50	4'- 5"	105	2'- 8"	1'- 0"			230
PG503	2	4'- 2"	105	2'- 5"	1'- 0"			9
PG504	2	3'- 5"	105	1'- 8"	1'- 0"			7
PG601	18	20'- 4"	Str.					550
PG602	10	8'-10"	113	2'- 4"	4'- 2"	2'-8"		133
PG801	24	6'- 0"	104	5'- 2"	1'- 0"			385
PG802	24	18'- 5"	Str.					1,180
PG901	48	11'- 2"	100	8'- 8"				1,822
PG1001	48	15'- 6"	100	12'- 8"				3,201
PG1002	4	40'- 6"	Str.					697
PG1003	10	20'- 4"	Str.					875
PG1004	4	28'- 0"	Str.					482
PG1101	20	7'- 0"	104	6'- 3"	1'- 0"			744
PG1102	20	10'- 6"	104	9'- 9"	1'- 0"			1,116
PG1103	20	14'- 11"	Str.					1,585
PG1104	20	18'- 5"	Str.					1,957
PG1105	8	11'- 4"	139					482
PG1106	10	33'- 0"	Str.					1,753
Total								19,028

FED. RD. DIVISION 2 STATE OHIO PROJECT

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OCT 27 1982

**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81**

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BENDING DIAGRAMS

Note:
Spiral reinforcement shall not have deformations but shall in other respects conform to Item 5-4. Four steel channels, tee, or angle spacers, weighing approximately 0.68 pounds per linear foot, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.68 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

Note:
For additional bending diagrams see sheet 409.
For additional notes see sheet 409.

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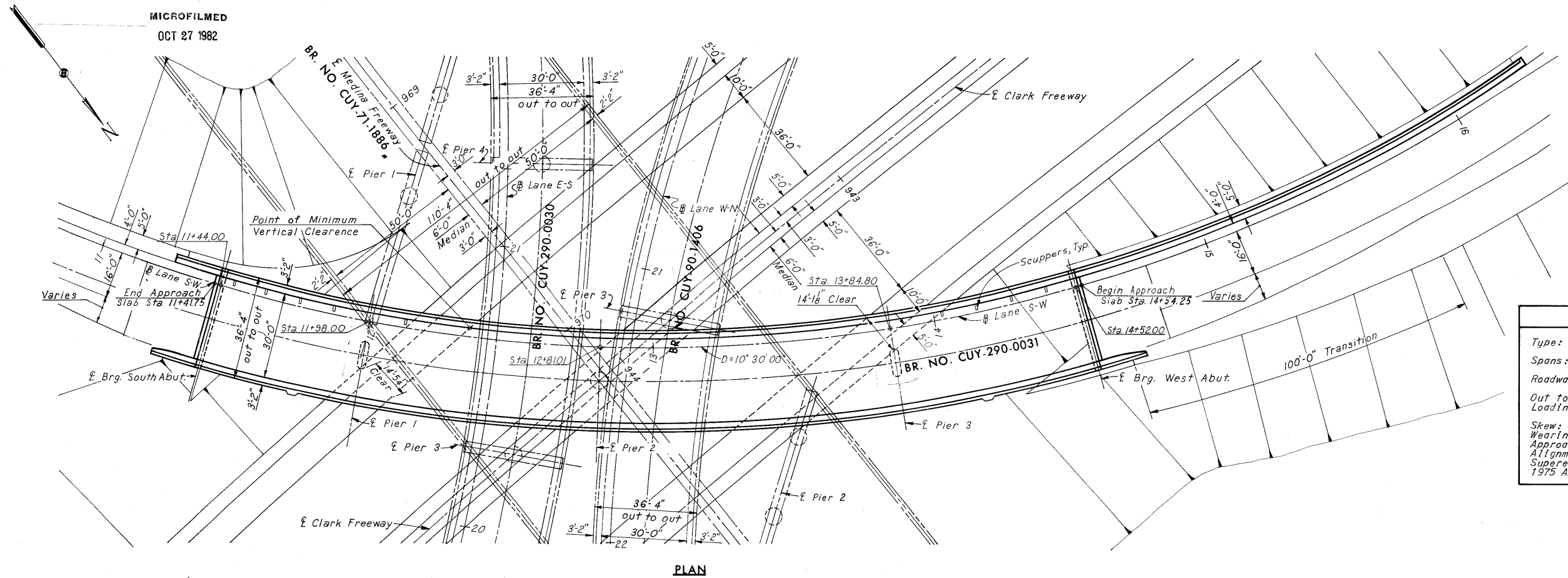
REINFORCEMENT SCHEDULE
WEST 14TH STREET OVER CLARK FREEWAY

BR. NO. CUY-290-0040 STA 7+06.16
SCALE STA 12+42.32
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DATE	DATE	DATE	DATE	DATE

SHEET 410

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CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81**



PROPOSED STRUCTURE

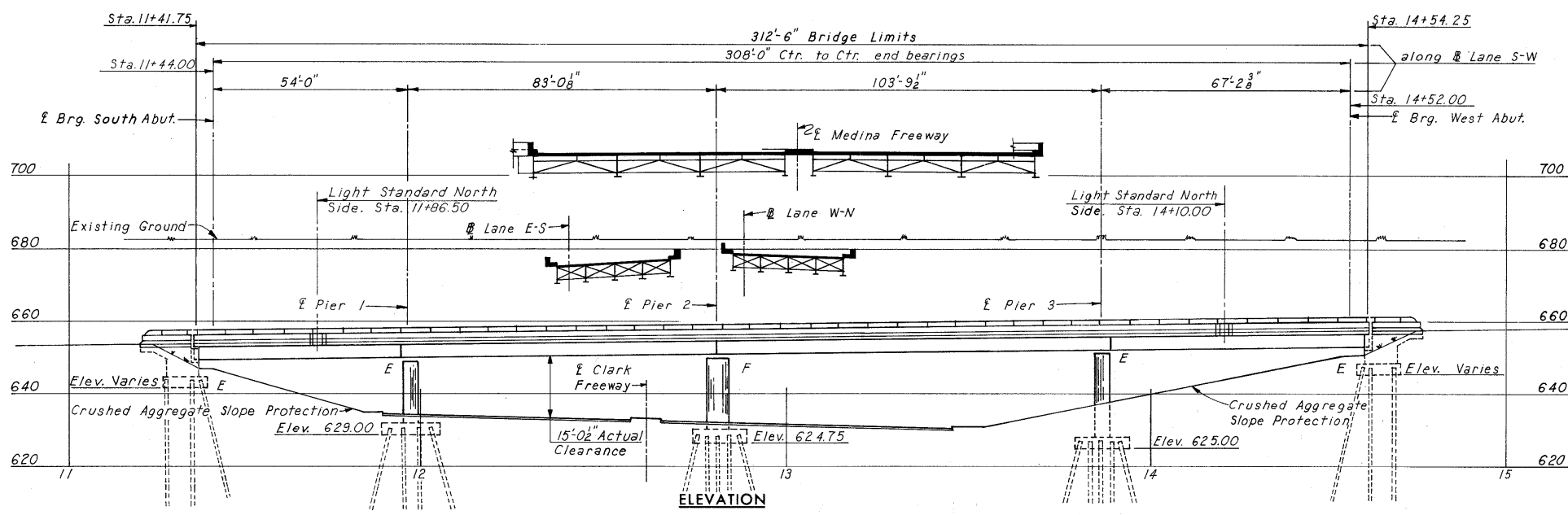
Type: 4 span continuous welded girders with reinforced concrete slab.
 Spans: 54'-0", 83'-0", 103'-9", 67'-2 3/8" = 308'-0" center to center of end bearings.
 Roadway: 30'-0" roadway with 2'-0" safety curbs. 34'-0" face to face of parapets.
 Out to Out of Structure: 36'-4"
 Loading: CF2000(57) adequate for AASHTO alternate loading.
 Skew: 0°00'00"
 Wearing Surface: 1" monolithic concrete
 Approach Slabs: 25'-0" (AS-1-54)
 Alignment: 10°30'00" curve left
 Superelevation: .080 ft. per ft.
 1975 ADT: 10,971, directional

HORIZONTAL CURVE DATA

@ Lane S-W	
P.I. Sta.	13 + 36.78
Δ	80° 43' 42"
D	10° 30' 00"
R	545.67'
L	763.84'
T	463.82'



Note:
 All piles shall be 12" cast-in-place concrete with estimated lengths as follows: South Abutment - 60'; Pier 1 - 60', Pier 2-60', Pier 3-60' and West Abutment 55'. These estimates are based on boring data and are approximate only. The Contractor shall assume full responsibility for length of piling selected for driving.



H.N.T.B. BRIDGE NO. 3

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SITE PLAN
LANE S-W OVER CLARK FREEWAY

BR. NO. CUY-290-0031 STA. 11+41.75
 SCALE: STA. 14+54.25
 CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN PEJ	TRACED	CHECKED WEH	REVIEWED	REVISED
DATE 12-23-64	DATE	DATE 12-23-64	DATE	DATE

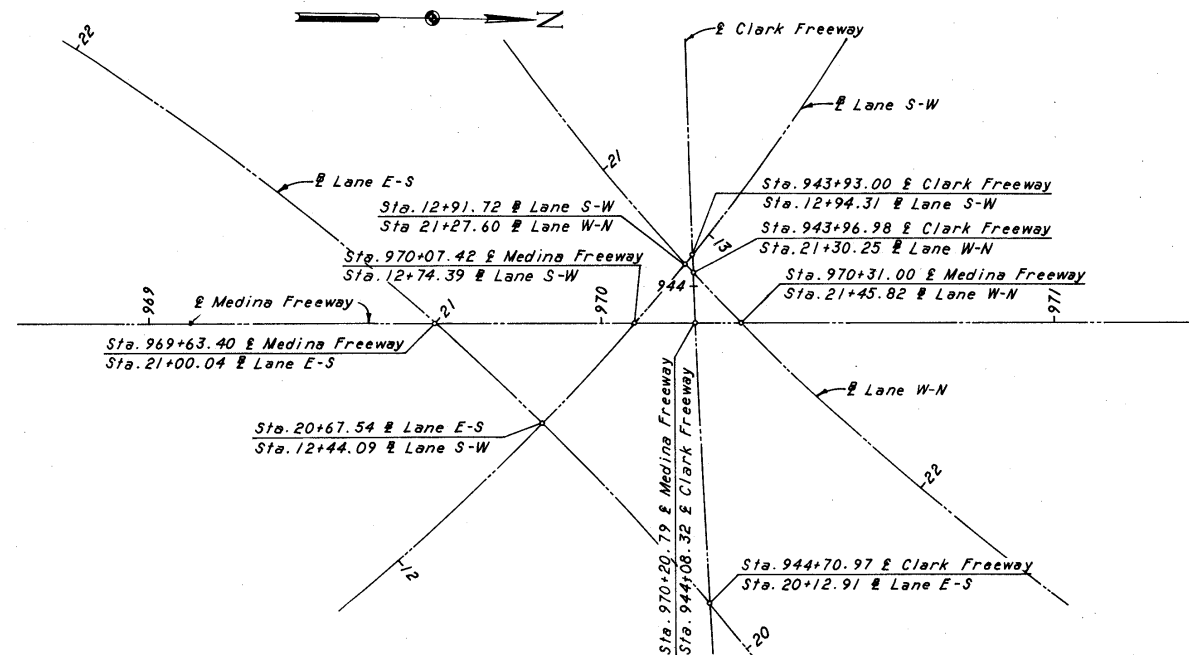
SHEET 412

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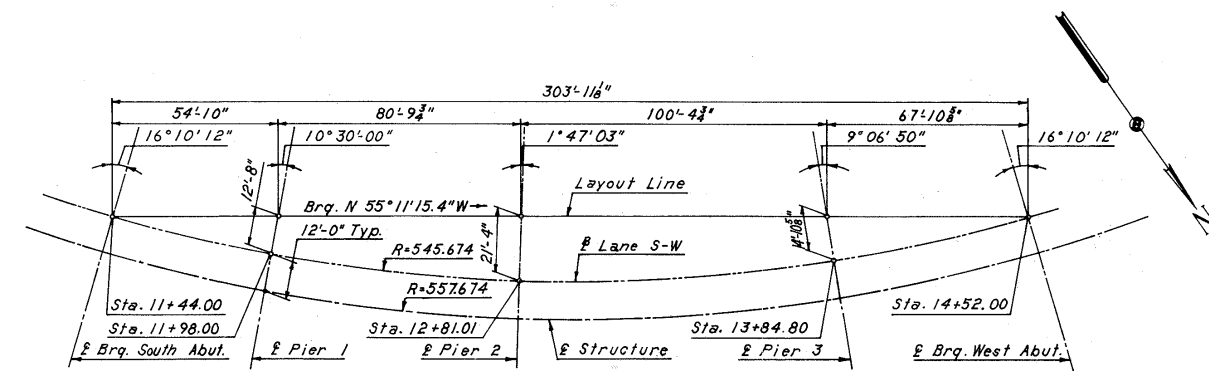
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CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



GEOMETRIC PLAN



LAYOUT SKETCH

ESTIMATED QUANTITIES - BRIDGE NO. CUY-290-0031

ITEM	DESCRIPTION	UNIT	ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL	TOTAL	AS BUILT
E-2	Cofferdams, Cribbs and Sheeting	L.S.					Lump Sum	
E-2	Unclassified Excavation	Cu.Yd.	749	307			1,056	
I-10	Crushed Aggregate Slope Protection	Sq.Yd.				810	810	
S-1	Class "C" Concrete (Superstructure)	Cu.Yd.			409		409	
S-1	Class "C" Concrete (Pier Column)	Cu.Yd.		17			17	
S-1	Class "C" Concrete (Pier Shafts)	Cu.Yd.		40			40	
S-1	Class "E" Concrete (Abutment above Footings)	Cu.Yd.	271				271	
S-1	Class "E" Concrete (Footings, Piers, Abutments, and Wingwalls)	Cu.Yd.	210	99			309	
S-3	Waterproofing Premolded Sealing Strip	Lin.Ft.	19				19	
S-4	Reinforcing Steel	Lbs.	38,310	22,137	107,248		167,695	
S-7	Structural Steel	Lbs.			437,200		437,200	
S-8	Field Painting of Structural Steels as per proposal note	Lbs.			437,200		437,200	
S-9	1/2" Preformed Expansion Joint Filler	Sq.Ft.	58				58	
S-14	Rolling (Type A Aluminum Roll, Supports and Concrete Parapet)	Lin.Ft.	217		632		849	
S-16	First Test Pile	L.S.					Lump Sum	Lump Sum
S-17	First Pile Test Load	L.S.					Lump Sum	Lump Sum
S-17	Subsequent Pile Test Load	Each					1	
S-18	12" Cast-in-Place Piles	Lin.Ft.	4,535	3,840			8,375	
S-25	For Lighting Details and Quantities, see Sheet 200							
S-29	Scuppers, Including Supports	Each			9		9	
S-29	Porous Backfill	Cu.Yd.	138				138	
S-29	6" Perforated Helical C.M.P. M-6.4(h) Including specials	Lin.Ft.	186				186	
S-29	6" Helical C.M.P. M-6.4(h) non-perforated	Lin.Ft.	122				122	
S-101	Water Reducing, Set-retarding Admixture	Each			409		409	

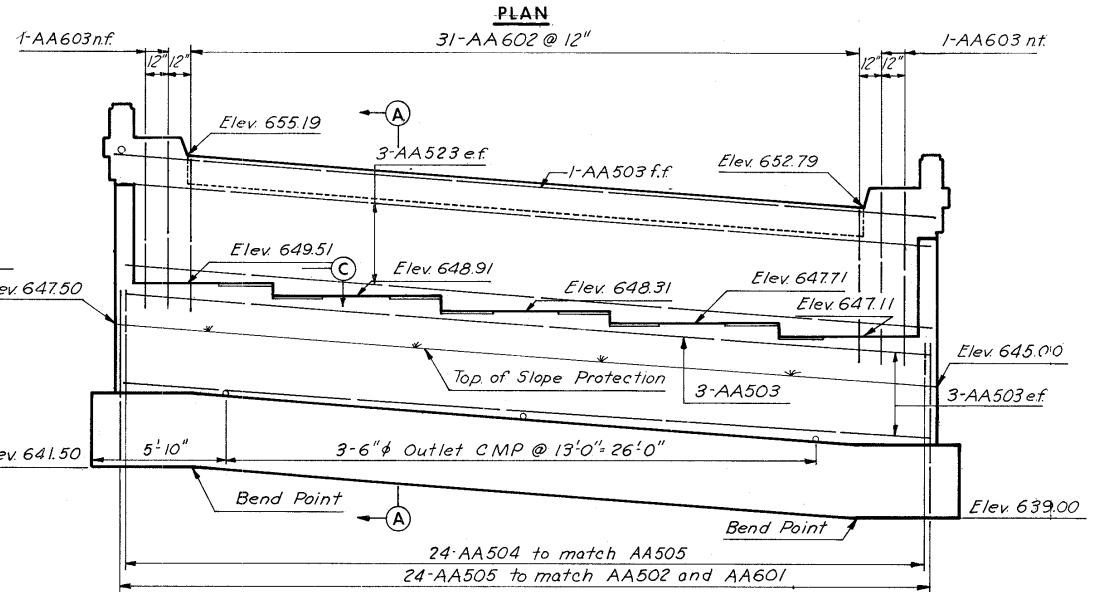
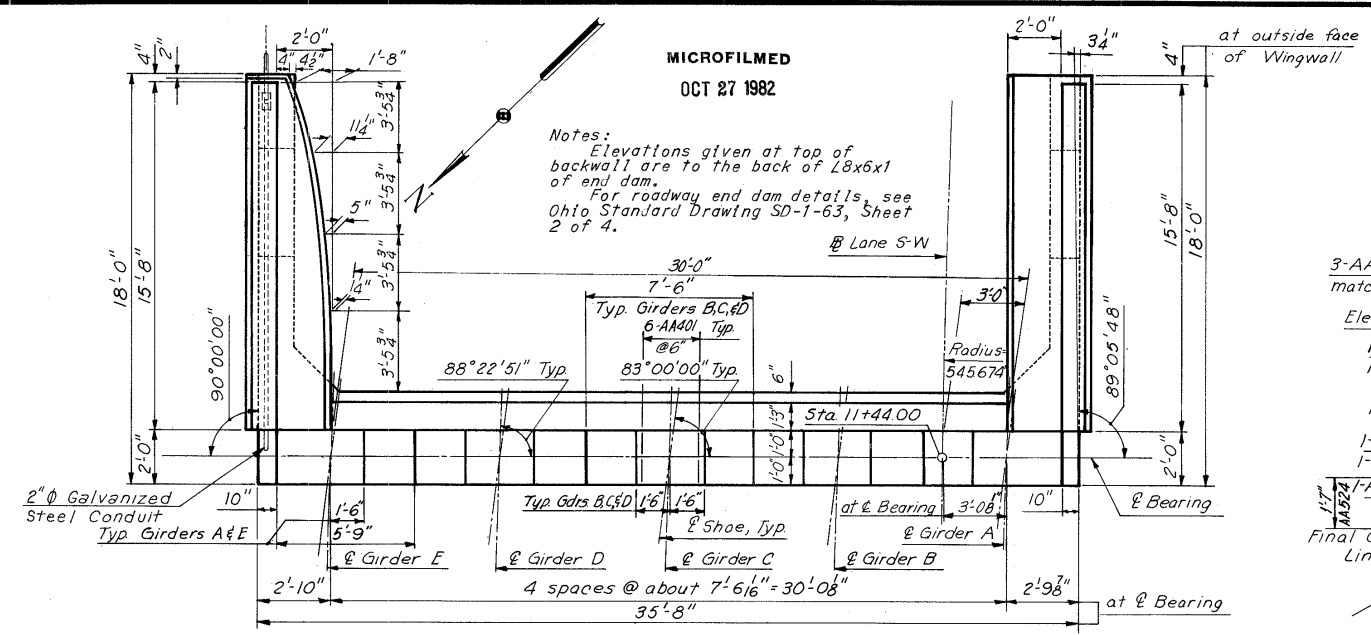
H.N.T.B. BRIDGE NO. 3
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KANSAS CITY CLEVELAND NEW YORK

ESTIMATED QUANTITIES
LANE S-W OVER CLARK FREEWAY

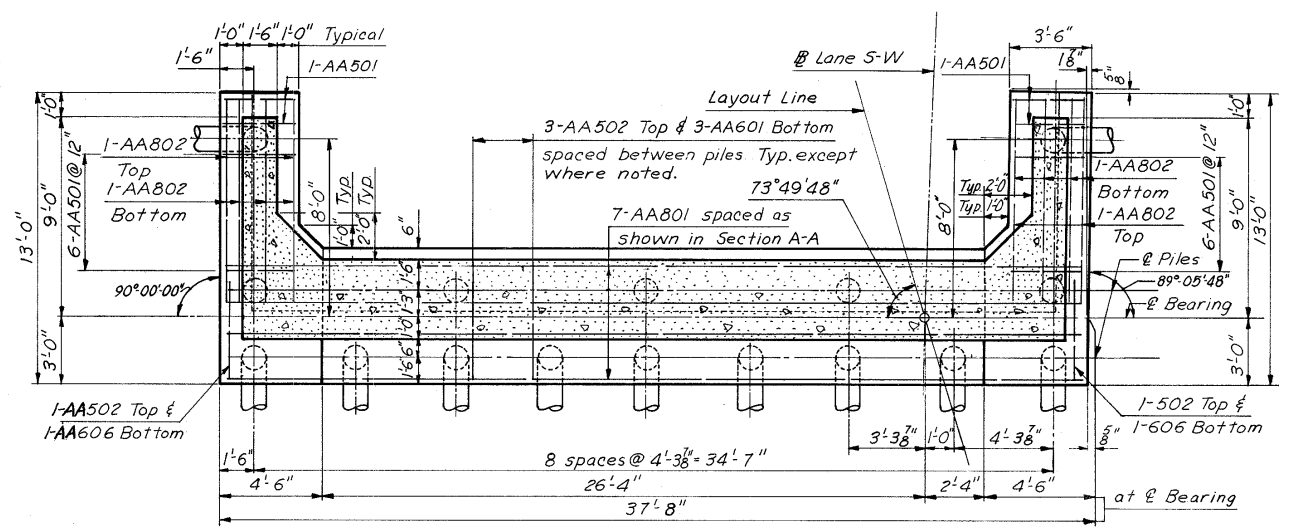
BR. NO. CUY-290-0031 STA. 11+41.75
SCALE: STA. 14+54.25
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN L.J.R.	TRACED	CHECKED J.A.M.	REVIEWED	REVISED
DATE 12-1-64	DATE	DATE 2-28-66	DATE	SHEET 413

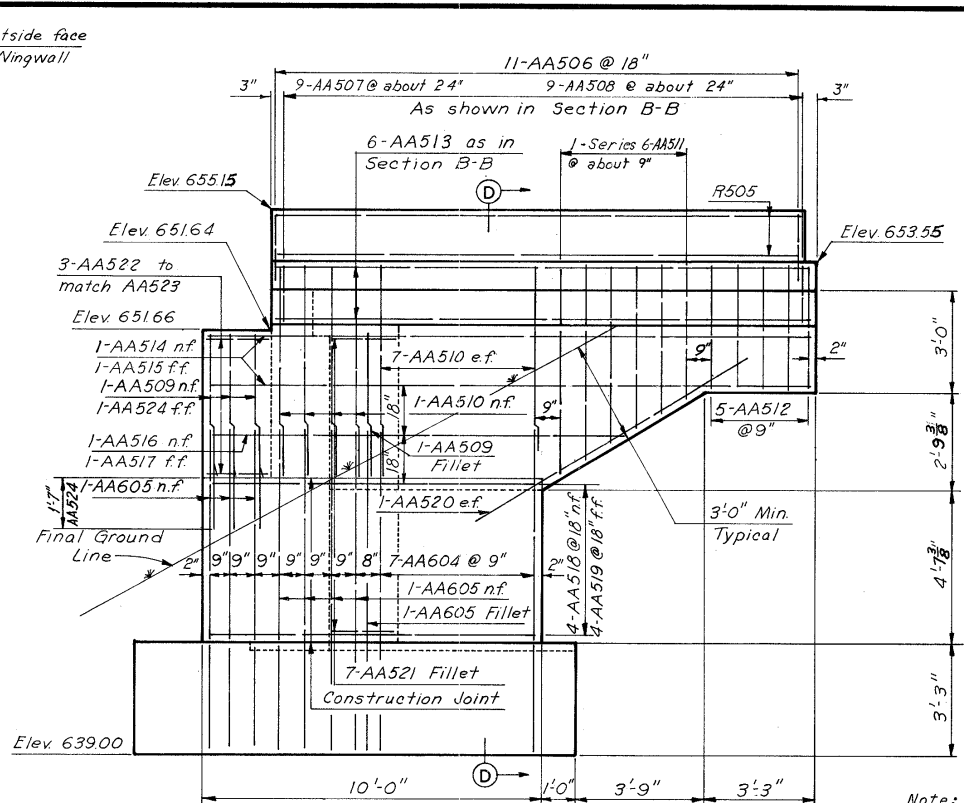
**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81**



ELEVATION

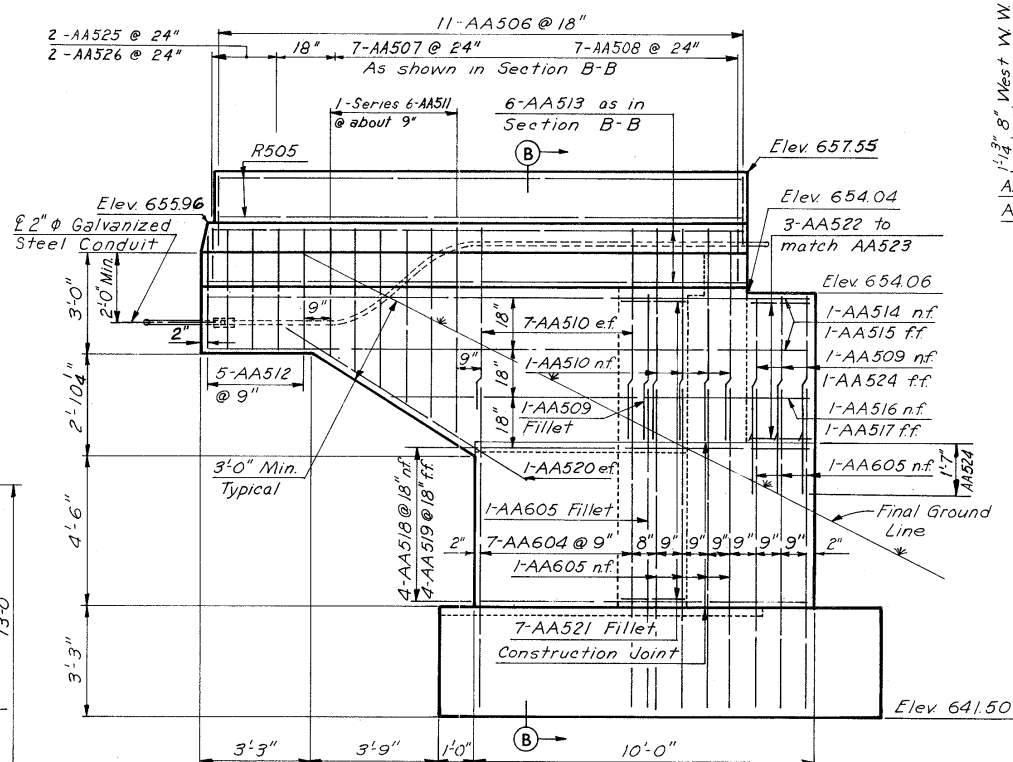


FOOTING PLAN



WEST WINGWALL ELEVATION

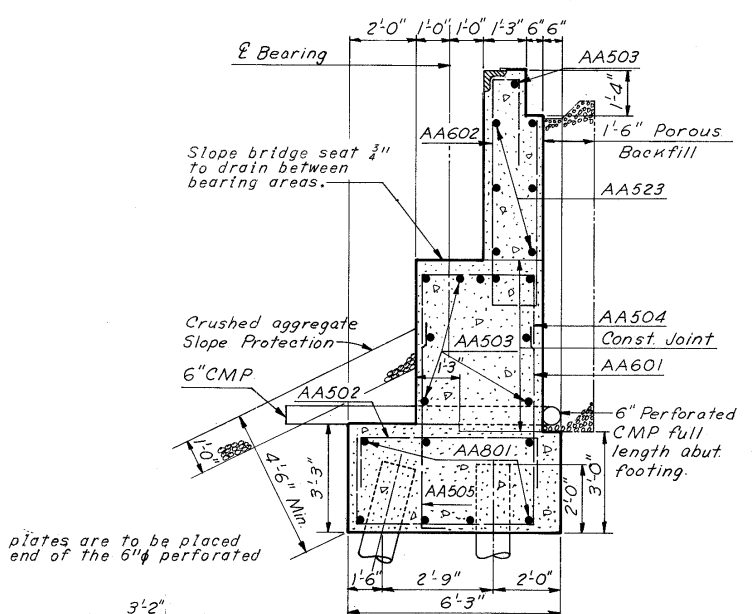
Scale: 3/8" = 1'-0"



EAST WINGWALL ELEVATION

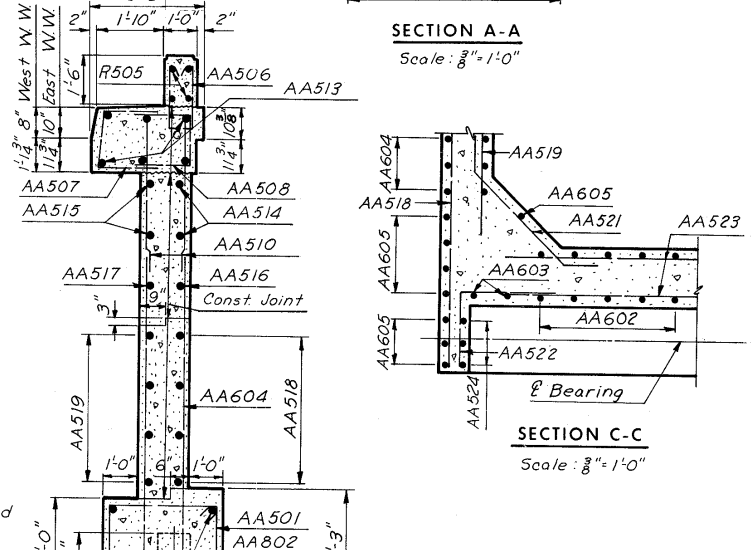
Scale: 3/8" = 1'-0"

Notes:
n.f. denotes near face, f.f. denotes far face, e.f. denotes each face.
For Reinforcement Schedule, see Sheet 423.
For Replacement Bar Schedule, see Sheet 424.
All battered piles shall be battered 3 in 12.
All piles are 12" cast-in-place concrete.
All pile dimensions are measured at bottom of footing.
For longitudinal reinforcement in parapet and handrail post spacing, see Sheet 422.



SECTION A-A

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



SECTION B-B

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

Notes:
For additional details of parapet, see Ohio Standard Drawing AP-3-57.
Section D-D is similar to Section B-B.

H.N.T.B. BRIDGE NO. 3

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KANSAS CITY CLEVELAND NEW YORK

SOUTH ABUTMENT

LANE S-W OVER CLARK FREEWAY

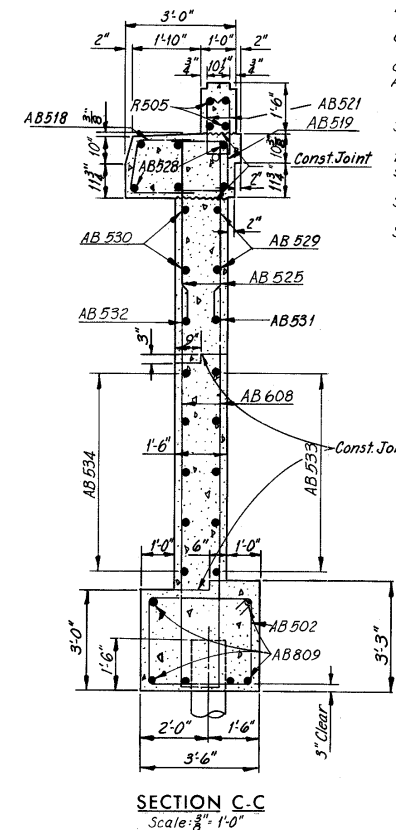
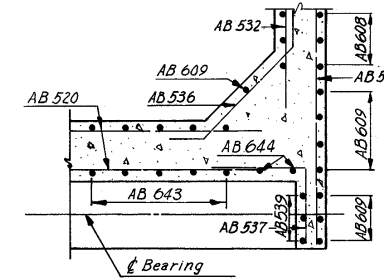
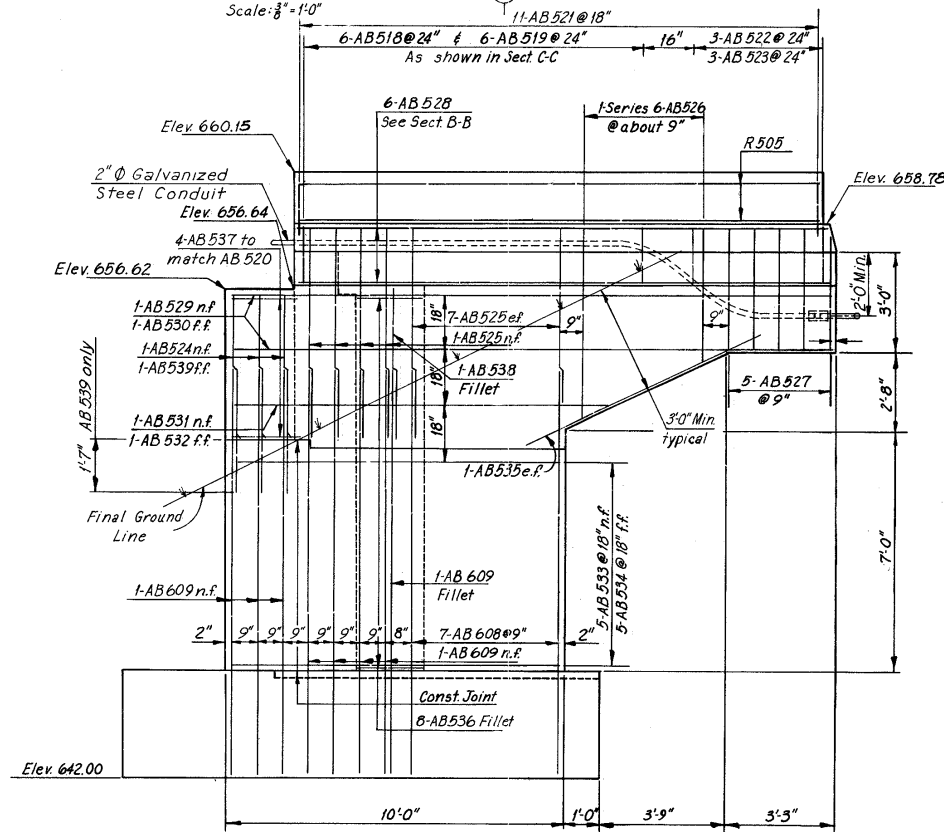
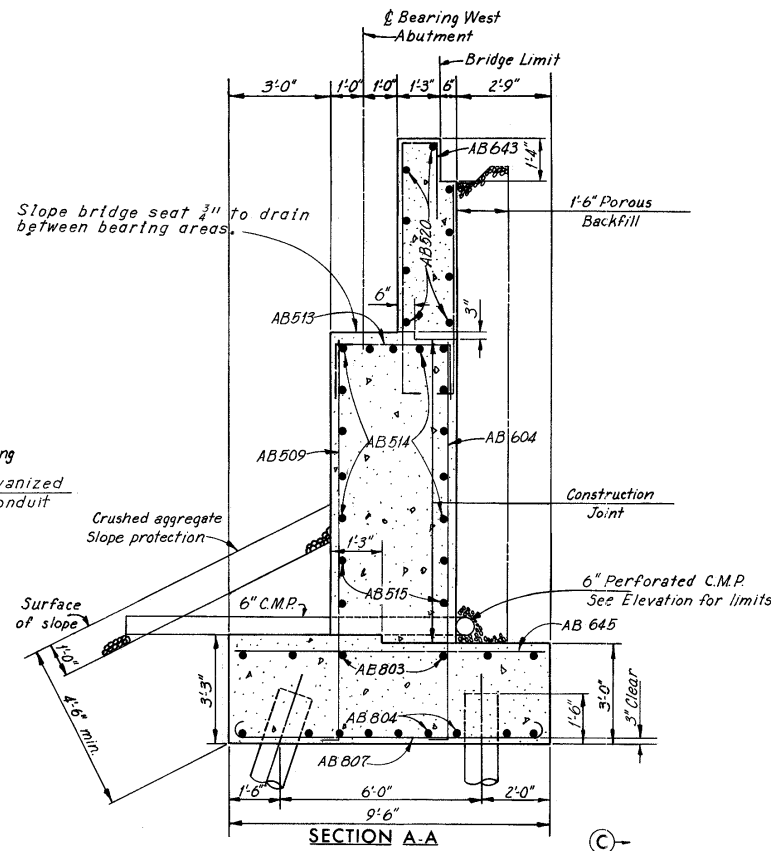
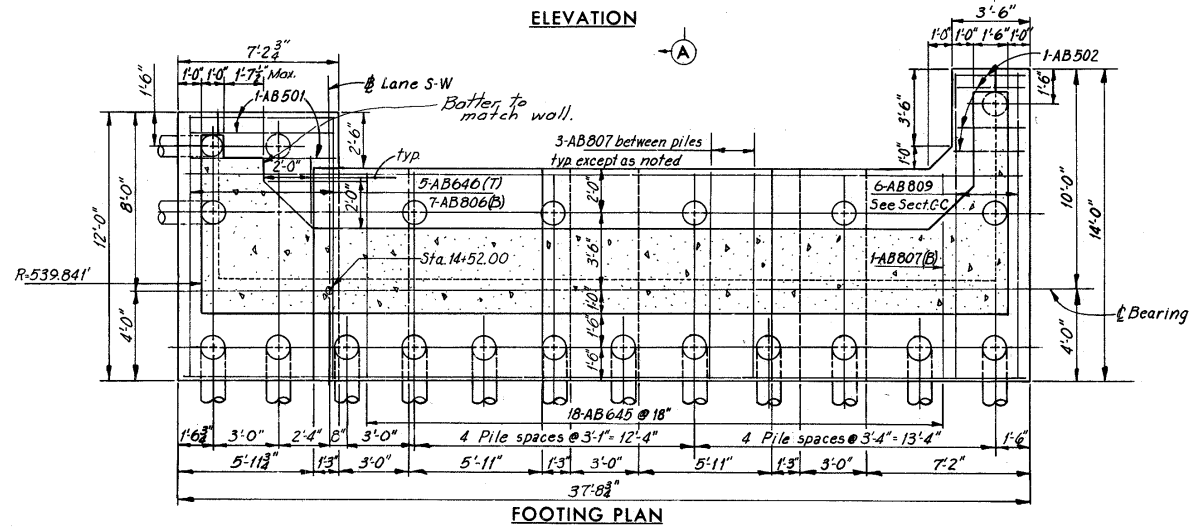
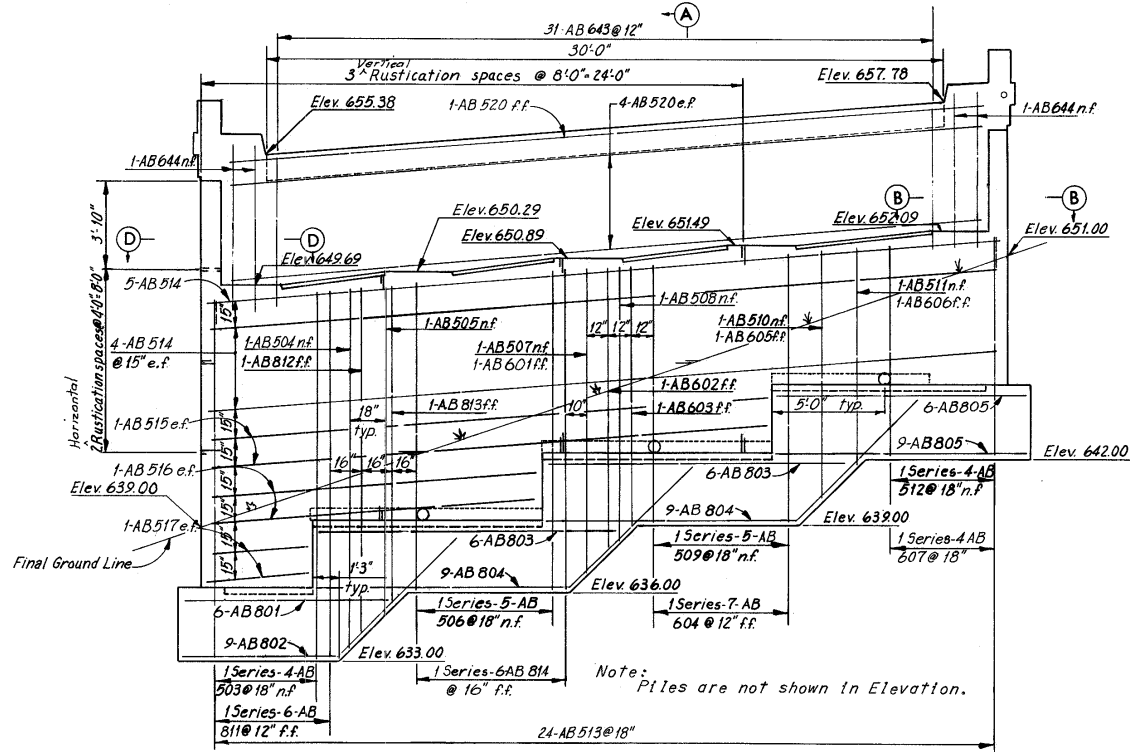
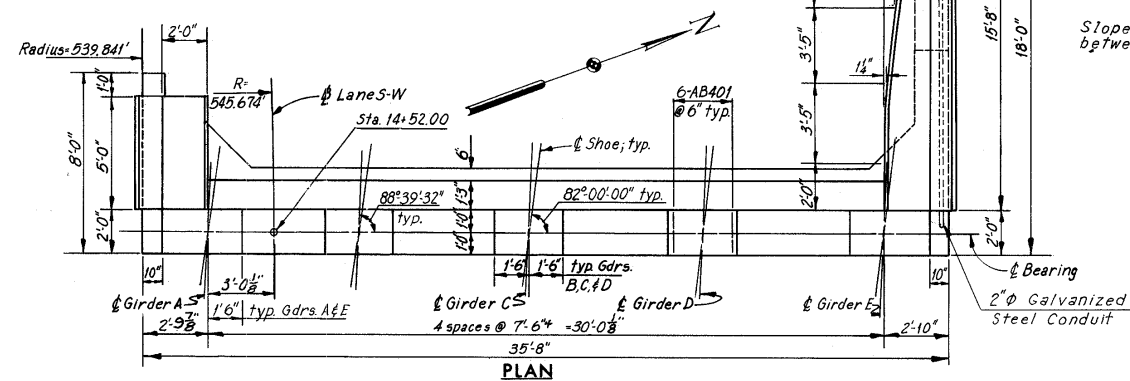
BR. NO. CUY-290-0031 STA. 11+41.75
SCALE: 1/4" = 1'-0" STA. 14+54.25
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DATE 10-8-64	DATE	DATE 11-25-64	DATE	

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Note:
Elevations given at top of backwall are to the back of L8x6x1 of end dam.
For roadway end dam details, see Ohio Standard Drawing CSB-2-56, Sheet 2 of 6.



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MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
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Notes:
n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.
Typ. denotes typical.
All piles are 12" cast-in-place concrete.
Battered piles are battered 3 in 12 except where noted.
All pile dimensions are measured at bottom of footing.
For additional curb and parapet details, see Ohio Standard Drawing AR-1-57.
For Section D-D, see Sheet 417.
For South Wingwall Details, see Sheets 416 and 417.
For longitudinal parapet reinforcement and railing post spacing see Sheet 422.
For rustication detail, see Sheet 417.
For reinforcement schedule see Sheet 423.

H.N.T.B. BRIDGE NO. 3
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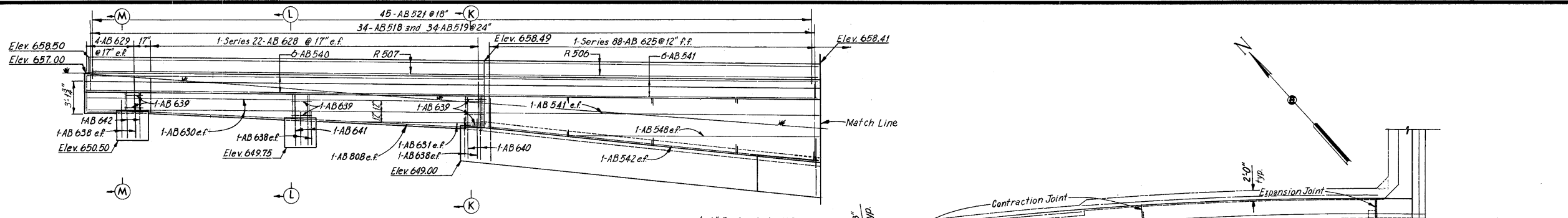
WEST ABUTMENT
LANE S-W OVER CLARK FREEWAY

BR. NO. CUY-290-0031 STA. 11+41.75
SCALE: 1/4" = 1'-0" STA. 14+54.25
CLEVELAND CUYAHOGA COUNTY OHIO

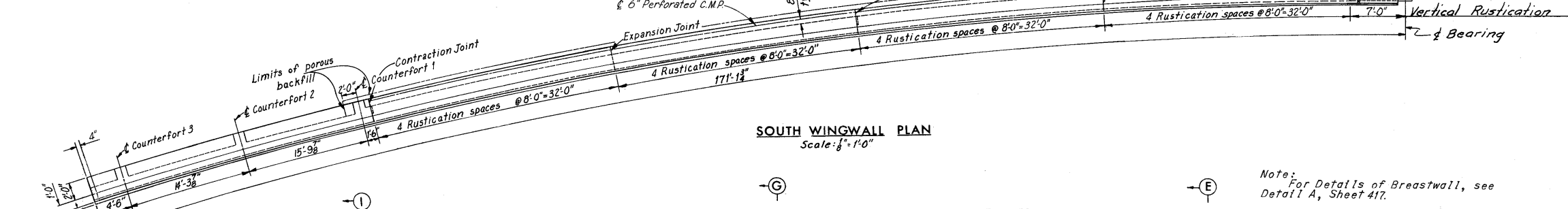
DRAWN	REB	TRACED	CHECKED	PLM	REVIEWED	REVISED
DATE 10-21-64	DATE	DATE 11-17-64	DATE	DATE	DATE	DATE

SHEET 415

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

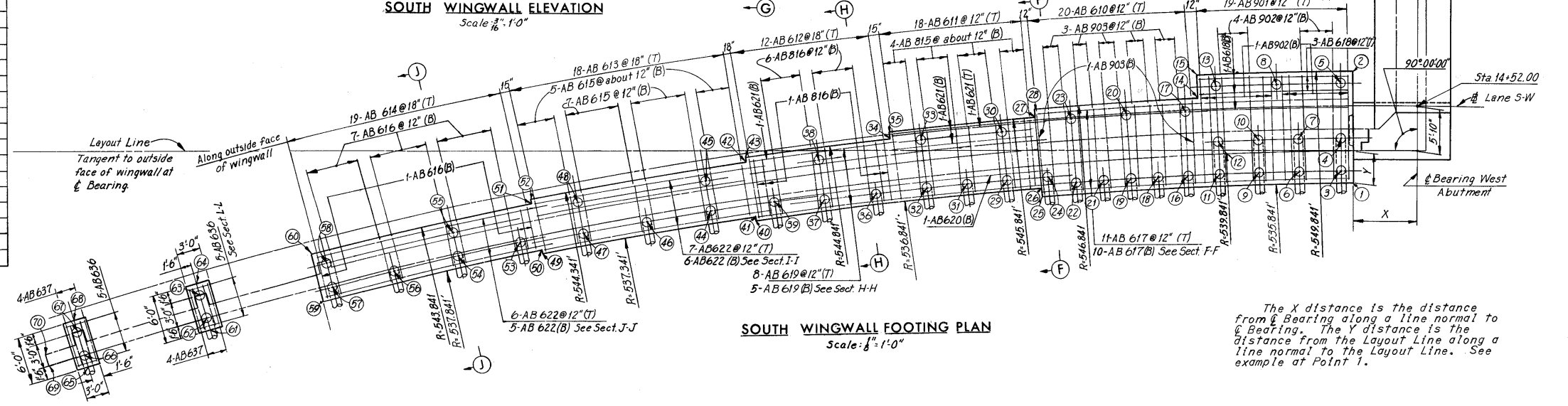
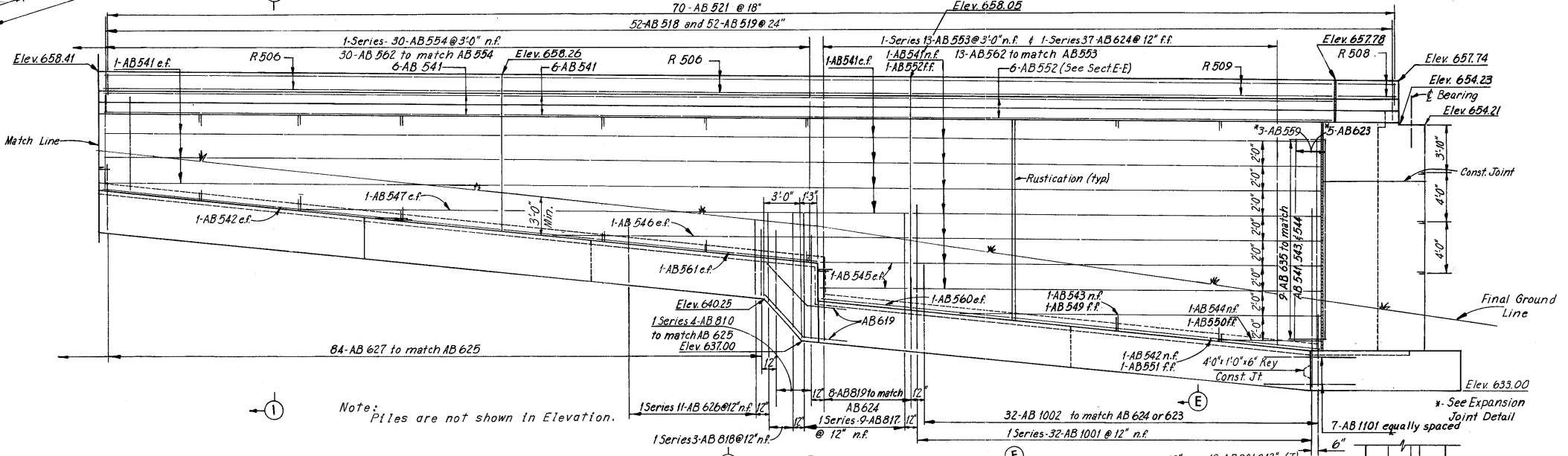


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Pt.	X	Y-Left	Y-Right
1	7'-11 1/2"	4'-0 3/4"	
2	8'-1 1/2"		9'-11 1/4"
3	9'-5 1/2"	2'-7"	
4	9'-6 3/4"		1'-5"
5	9'-7 1/2"		8'-5"
6	14'-5 1/2"	2'-8 3/8"	
7	14'-6 1/2"		1'-3 3/8"
8	17'-3 3/8"		8'-2 3/8"
9	19'-5 1/2"	2'-10 1/4"	
10	19'-7 1/2"		1'-1 1/2"
11	24'-5 1/2"	3'-0 3/8"	
12	24'-7 3/8"		11 1/4"
13	24'-11 1/2"		7'-11 1/4"
14	27'-4 1/2"		6'-3 3/8"
15	27'-5 1/2"		9'-3 3/8"
16	28'-3 3/8"	3'-2 3/8"	
17	28'-8 3/8"		4'-9"
18	31'-9 3/8"	3'-5 1/4"	
19	35'-3 3/8"	3'-7 3/8"	
20	35'-9 1/2"		4'-3 3/8"
21	38'-9 3/8"	3'-10 3/8"	
22	42'-3"	4'-2"	
23	42'-10 3/8"		3'-9 3/8"
24	45'-9 3/8"	3'-5 3/8"	
25	46'-7 3/8"	6'-0 3/8"	
26	46'-8 3/8"	5'-0 3/8"	
27	47'-5 3/8"		3'-11 3/8"
28	47'-6 3/8"		4'-11 3/8"
29	50'-9 3/8"	3'-10 3/8"	
30	51'-4 1/2"		2'-0 3/8"
31	55'-9 3/8"	4'-4 3/8"	
32	60'-9"	4'-11 1/4"	
33	61'-5 1/2"		1'-0 1/4"
34	65'-5 3/8"		1'-0 3/8"
35	65'-6 3/8"		2'-0 3/8"
36	67'-0 3/8"	5'-8 3/8"	
37	73'-3 3/8"	6'-6 3/8"	
38	74'-0"	1'-6 3/8"	
39	79'-7 3/8"	7'-5"	

Pt.	X	Y-Left	Y-Right
40	82'-2 3/8"	9'-4"	
41	82'-3 1/2"	8'-10"	
42	83'-4 3/8"	7'-11"	
43	83'-5 1/2"	1'-5 1/2"	
44	87'-6 3/8"	8'-2"	
45	88'-2 3/8"	4'-2 3/8"	
46	95'-5 3/8"	9'-6 1/4"	
47	103'-3 3/8"	11'-0"	
48	104'-1"	7'-0 3/8"	
49	108'-8 3/8"	13'-7 3/8"	
50	108'-10"	13'-1 1/2"	
51	110'-0 3/8"	7'-3"	
52	110'-1 1/2"	6'-9 3/8"	
53	111'-3 3/8"	12'-1 1/4"	
54	119'-0 3/8"	13'-9 3/8"	
55	119'-8 3/8"	10'-10 3/8"	
56	126'-10 3/8"	15'-7 3/8"	
57	134'-7 1/2"	17'-6 3/8"	
58	135'-4 1/2"	14'-8"	
59	136'-0"	19'-5 3/8"	
60	137'-6 3/8"	13'-8"	
61	149'-10 3/8"	22'-9 1/2"	
62	150'-3 3/8"	21'-4 1/2"	
63	151'-1 1/2"	18'-5 3/8"	
64	151'-6 3/8"	17'-0 1/4"	
65	163'-6 3/8"	26'-11 3/8"	
66	164'-0 1/2"	25'-6 1/4"	
67	164'-11 1/2"	22'-7 3/8"	
68	165'-4 3/8"	21'-2 3/8"	
69	168'-3 3/8"	26'-10 3/8"	
70	168'-9 1/4"	25'-5 3/8"	



Notes:
Battered Piles in Wingwall Footings shall be battered 4 in 12.
For Sections E-E, F-F, G-G, H-H, I-I, J-J, K-K, L-L and M-M, see Sheet 417.
For Expansion Joint Detail, see Sheet 417.
For Contraction Joint Detail, see Ohio Standard Drawing RW-1-63.
For additional notes, see Sheet 415.

H.N.T.B. BRIDGE NO. 3

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

WEST ABUTMENT DETAILS
LANE S-W OVER CLARK FREEWAY

BR. NO. CUY-290-0031 STA. 11+41.75
CLAVAND CUYAHOGA COUNTY OHIO
SCALE: As shown STA. 14+54.25

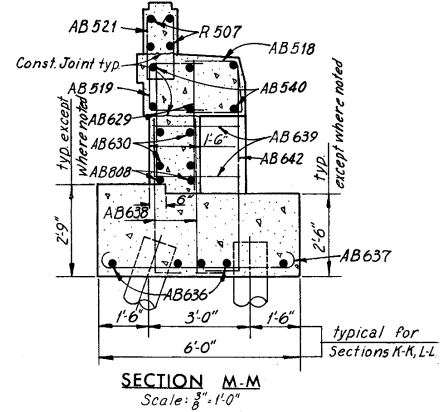
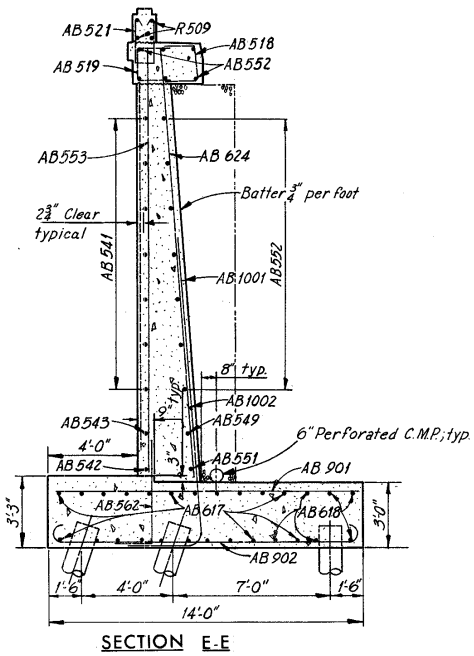
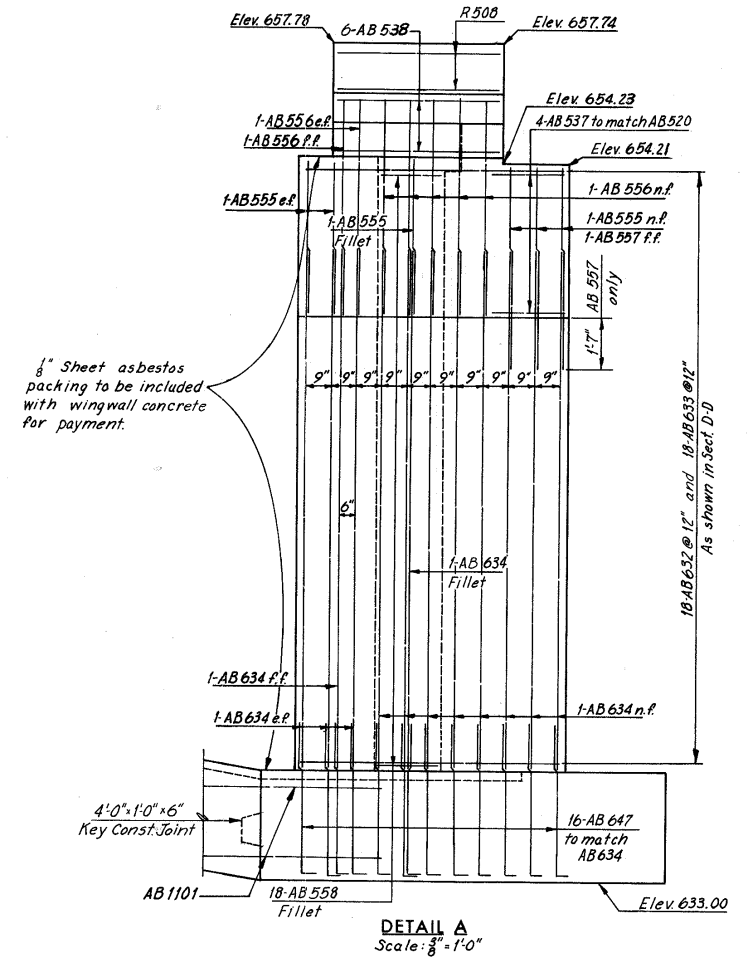
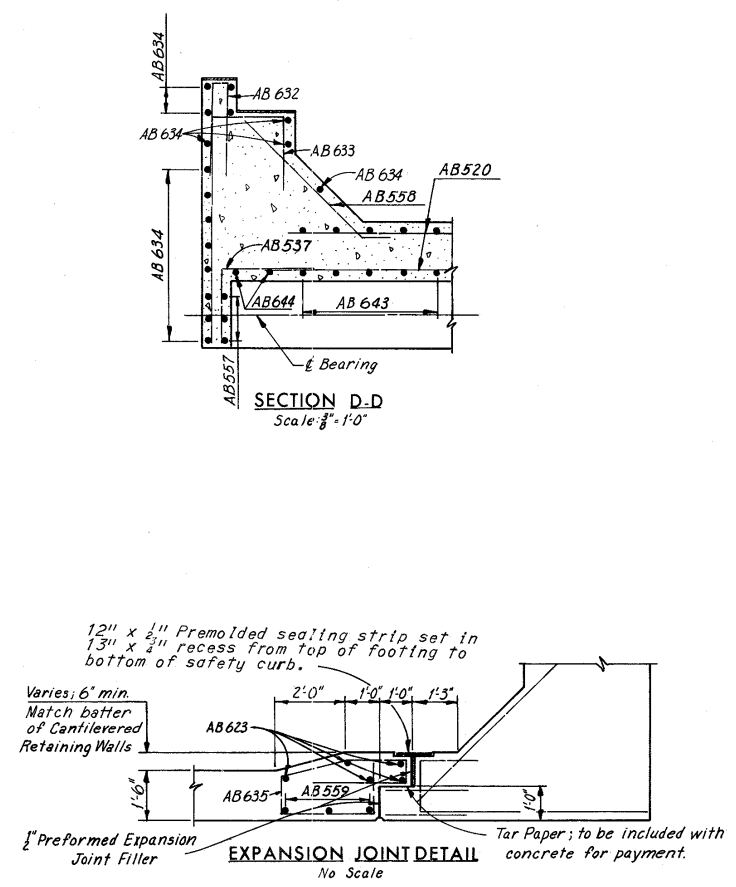
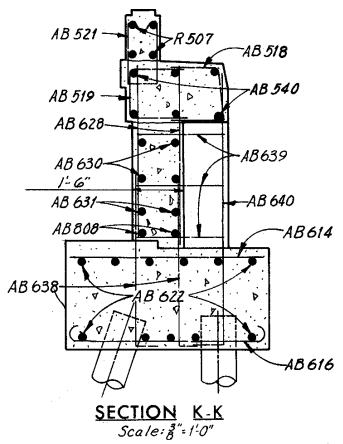
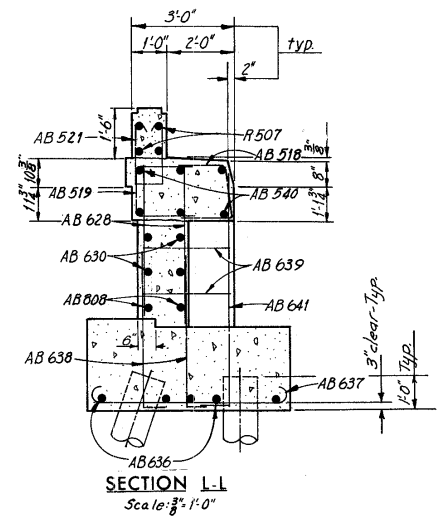
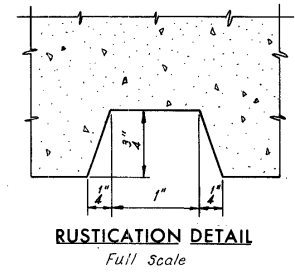
DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DATE 10-29-64	DATE	DATE 11-23-64	DATE	SHEET 416

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OCT 28 1982

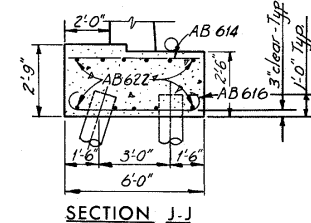
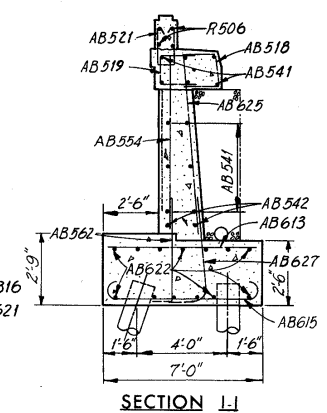
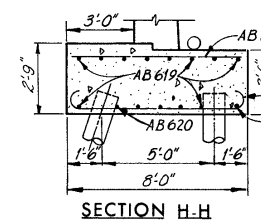
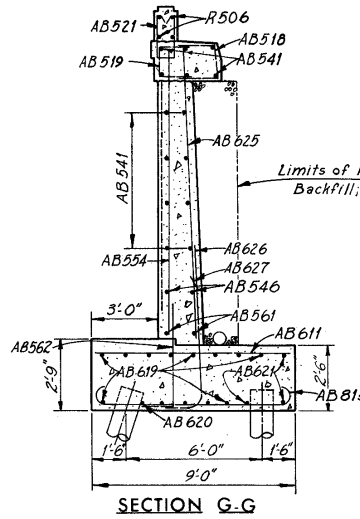
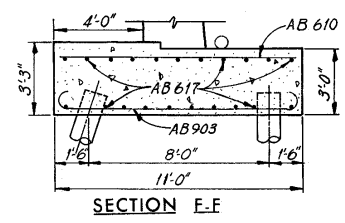
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

417
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



Note:
Curb and parapet dimensions shown in Section L-L are typical for all sections.



Note:
For additional curb and parapet dimensions, see Sheet 415.
For additional notes, see Sheet 415.

H.N.T.B. BRIDGE NO. 3

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

WEST ABUTMENT DETAILS
LANE S-W OVER CLARK FREEWAY

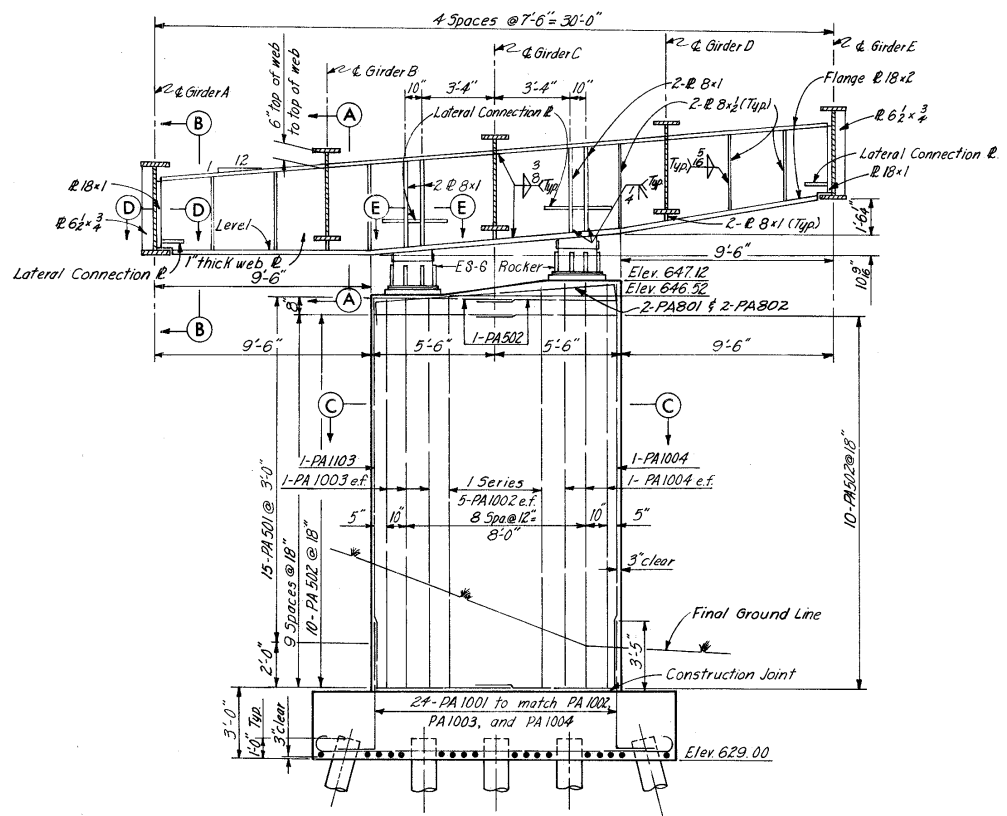
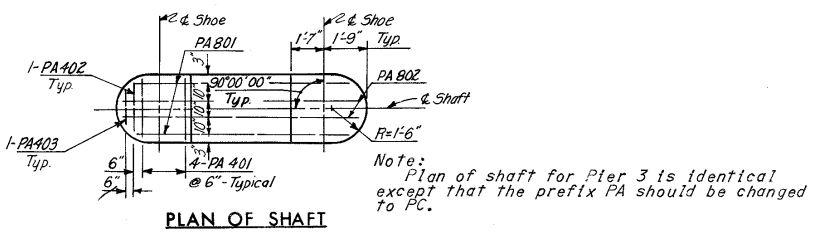
BR. NO. CUY-290-0031 STA. 11+41.75
SCALE: 3/8" = 1'-0" STA. 14+54.25
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN R.E.B.	TRACED	CHECKED D.C.M.	REVIEWED	REVISED
DATE 11-4-64	DATE	DATE 11-24-64	DATE	SHEET 417

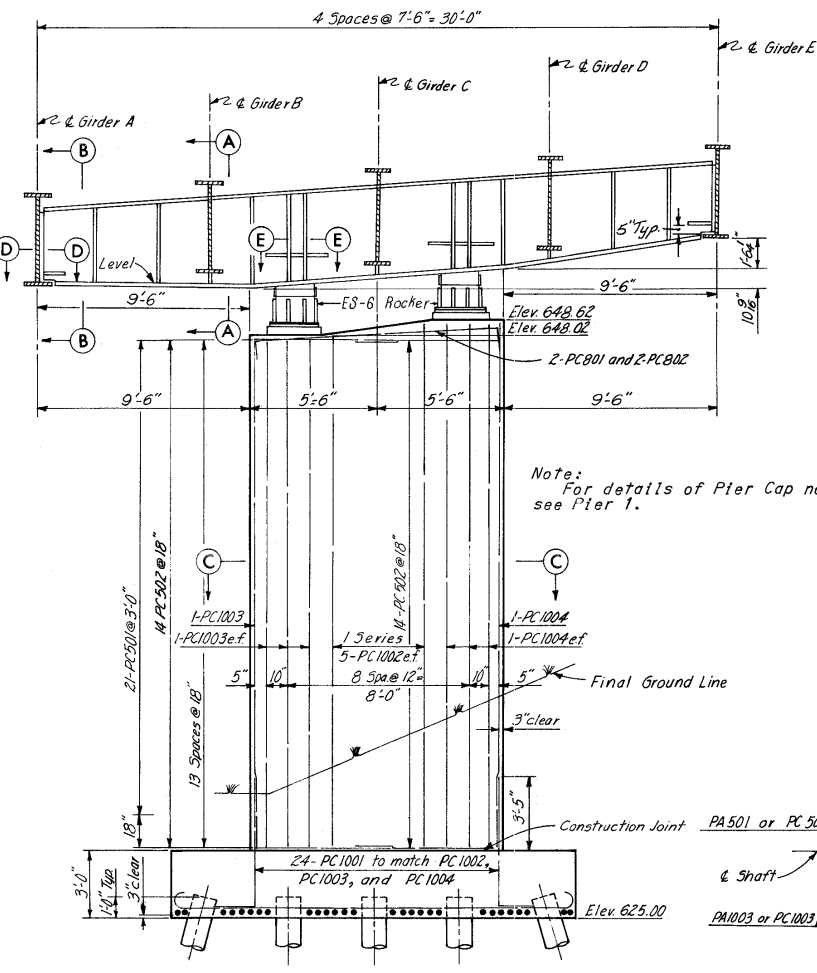
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OCT 28 1982

FED. RD. DIVISION	STATE	PROJECT	418 478
2	OHIO		

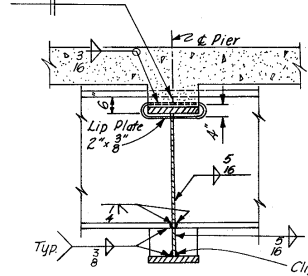
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



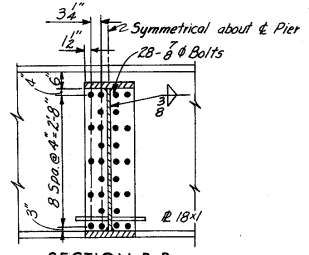
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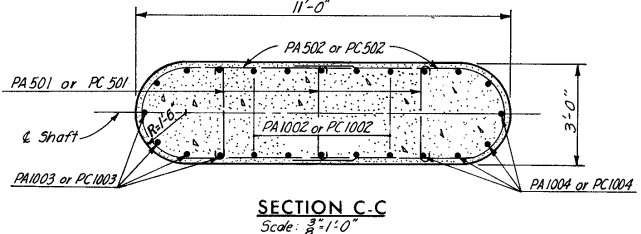
ELEVATION



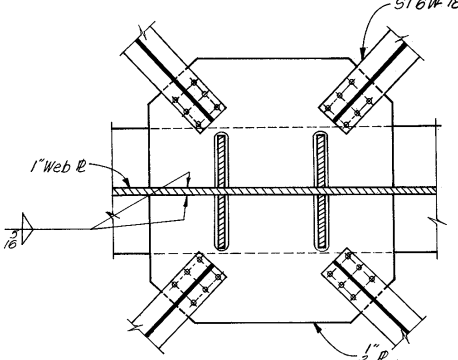
SECTION A-A
Scale: 3/8" = 1'-0"



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

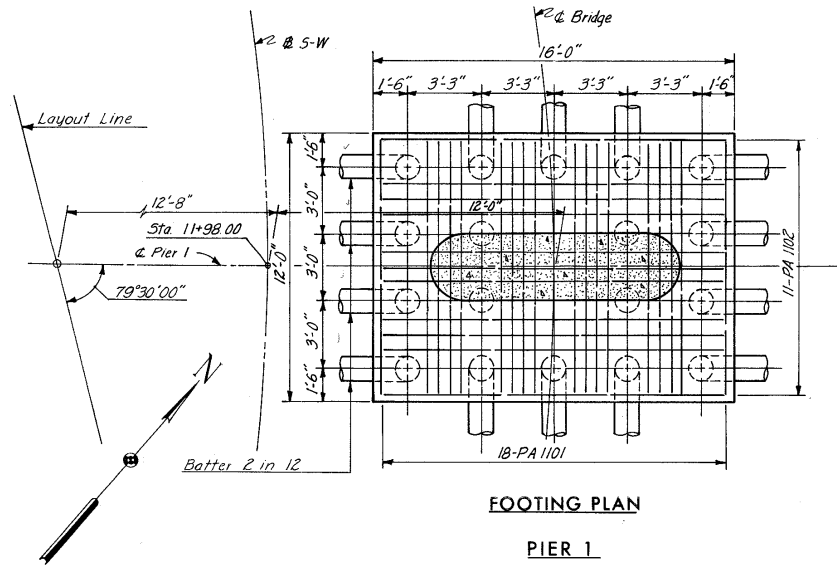


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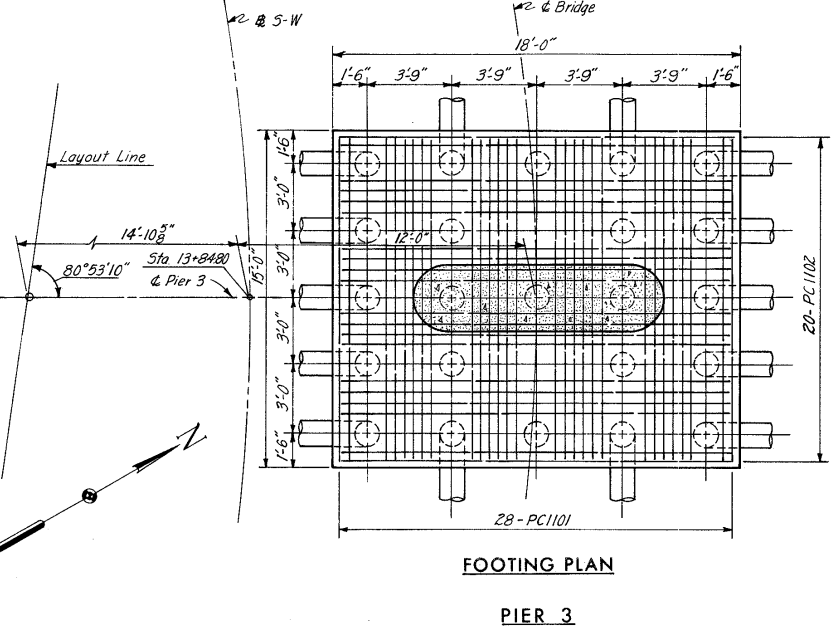


SECTION E-E
No Scale

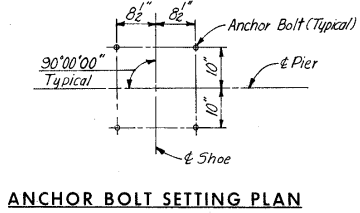
Notes:
Special care shall be taken when placing reinforcing bars in top of shaft so as not to interfere with setting of shoe anchor rods.
Bars PA 401, PA 402, PA 403, PC 401, PC 402, and PC 403 shall be placed 2 1/4" below top of shaft.
All piles are 12" cast-in-place concrete.
Pile location dimensions are measured along bottom of footings.
Typ. denotes typical.
e.f. denotes each face.
For Section D-D, see Sheet 419.
For Rocker Details, see Sheet 422.
Battered Piles are battered 3 in 12, except as noted.



FOOTING PLAN
PIER 1



FOOTING PLAN
PIER 3



ANCHOR BOLT SETTING PLAN

H.N.T.B. BRIDGE NO. 3

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

PIERS 1 AND 3
LANE S-W OVER CLARK FREEWAY

BR. NO. CUY-290-0031 STA. 11+41.75
SCALE: CLEVELAND STA. 14+54.25
CUYAHOGA COUNTY OHIO

DRAWN PLM DATE 10-2-64	TRACED DATE	CHECKED DATE/2-21-64	REVIEWED DATE	REVISED DATE
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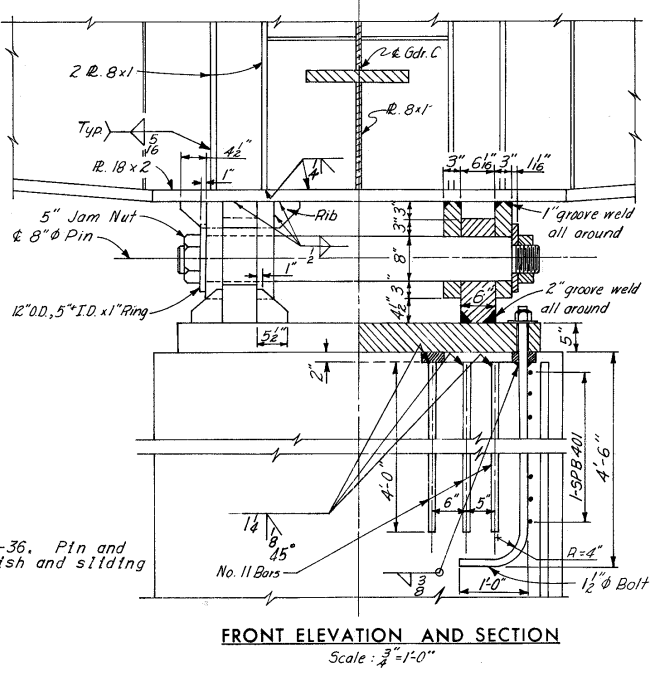
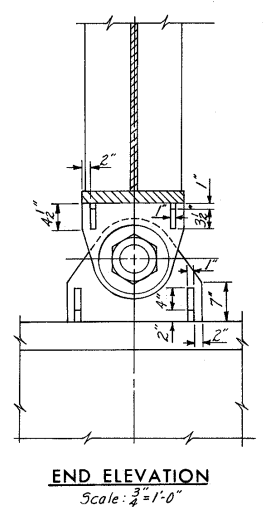
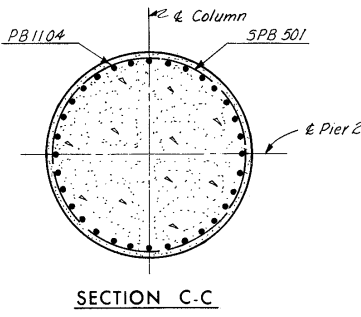
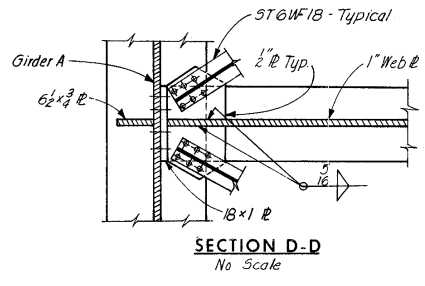
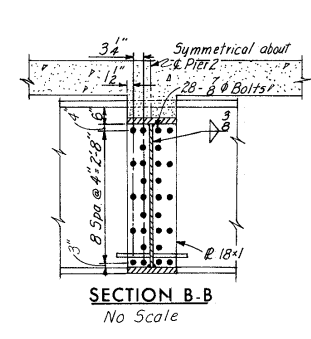
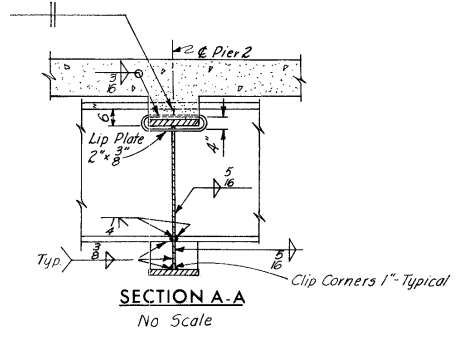
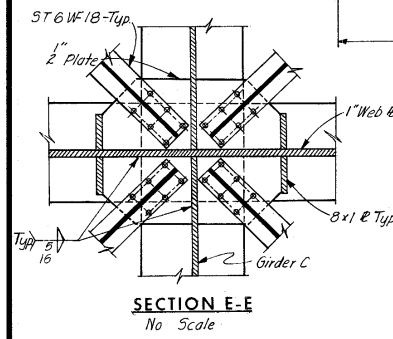
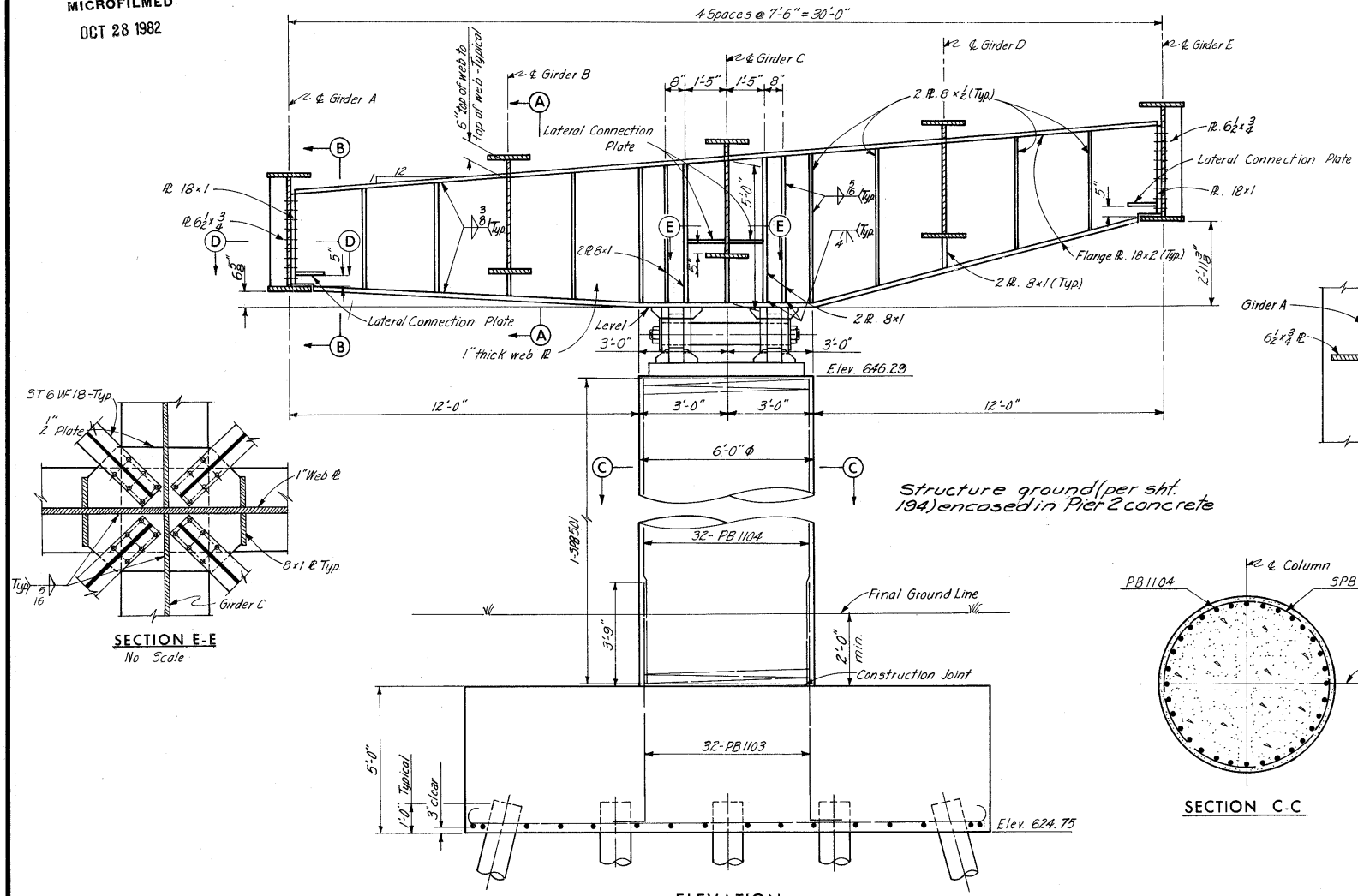
SHEET 418

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OCT 28 1982

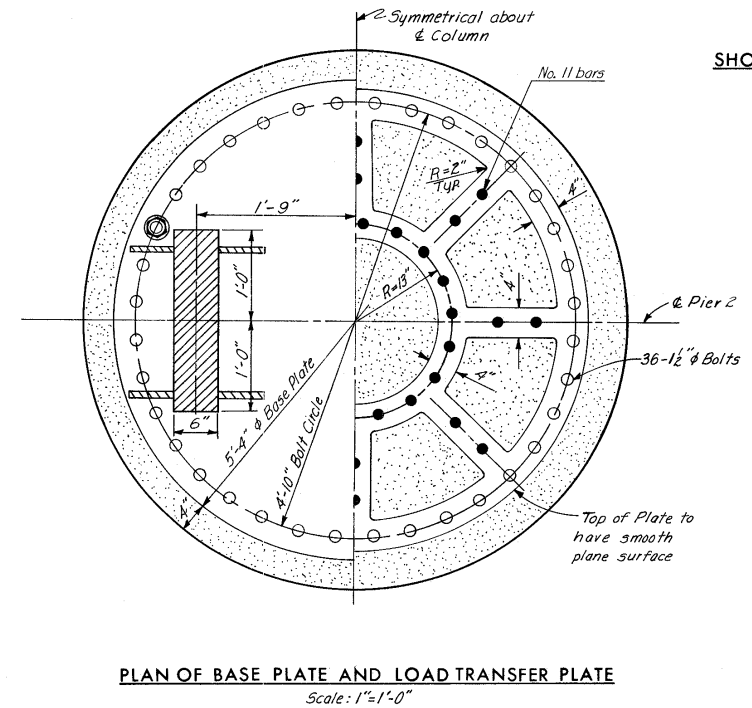
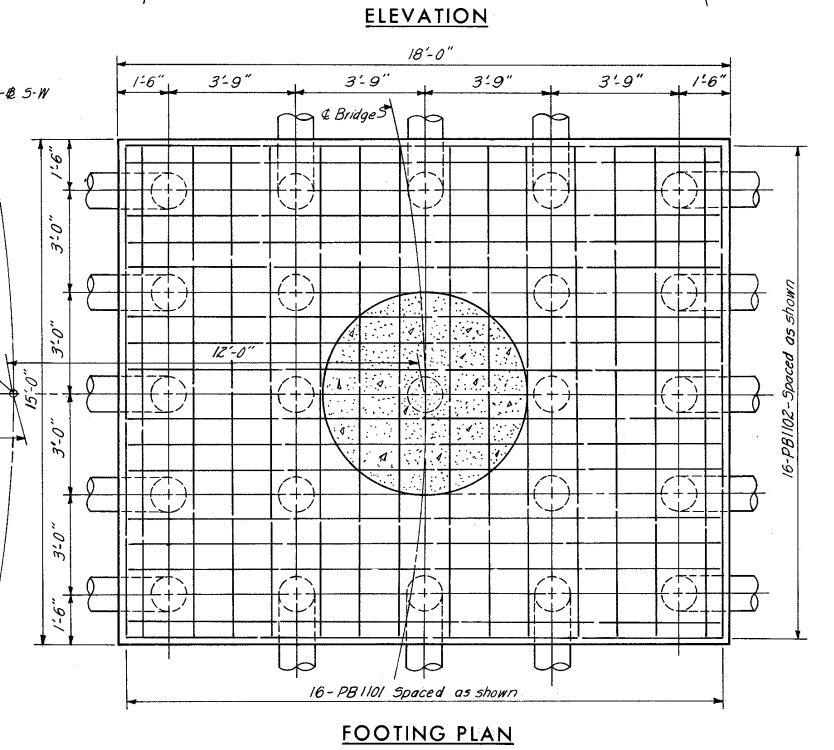
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

419
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



Notes:
All structural steel to be A-36. Pin and contract parts to have smooth finish and sliding fit.



SHOE DETAILS

Notes:
All piles are 12" cast-in-place concrete.
All battered piles are battered 3 in 12 in direction shown.
All pile dimensions are measured along bottom of footing.
For reinforcement schedule see Sheet 423.

H.N.T.B. BRIDGE NO. 3				
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK				
PIER 2				
LANE S-W OVER CLARK FREEWAY				
BR. NO. CUY-290-0031		STA. 11+41.75		
SCALE: 3/8" = 1'-0"		STA. 14+54.25		
CLEVELAND		CUYAHOGA COUNTY OHIO		
DRAWN RLM	TRACED DATE	CHECKED WEH	REVIEWED DATE	REVISED DATE
DATE 8-30-64		DATE 12-21-64		
				SHEET 419

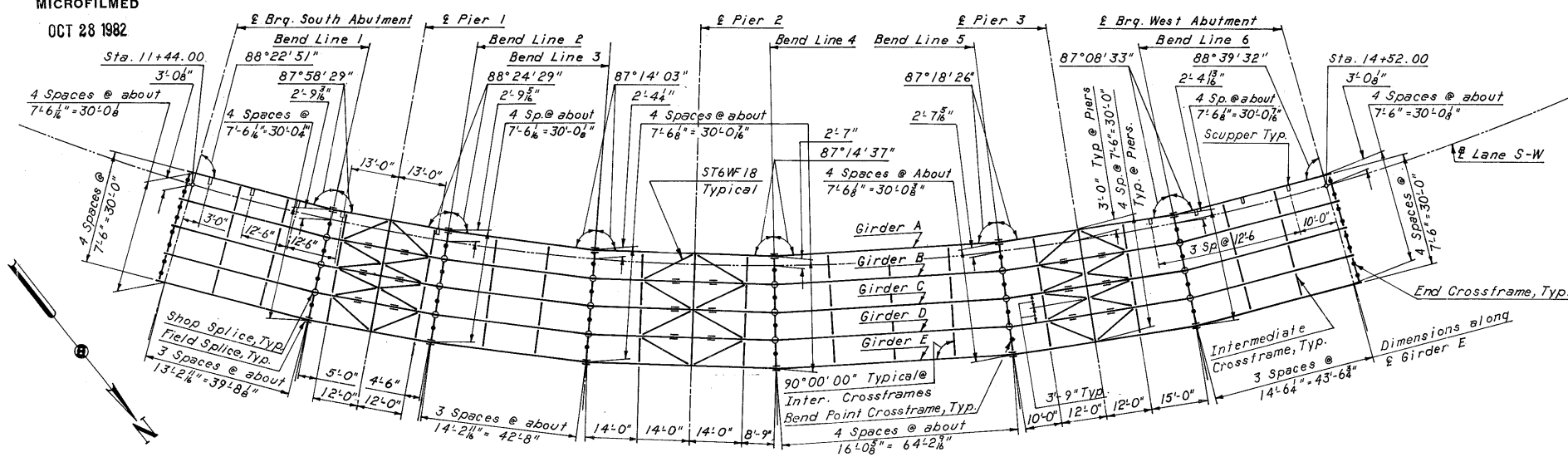
MICROFILMED

OCT 28 1982

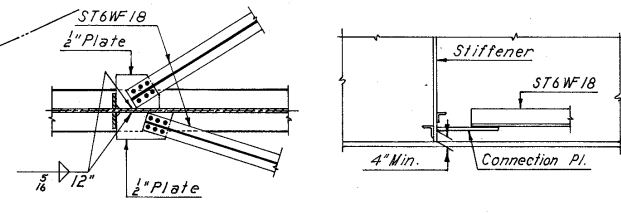
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

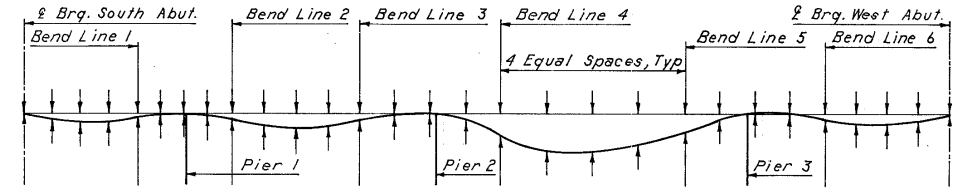


FRAMING PLAN

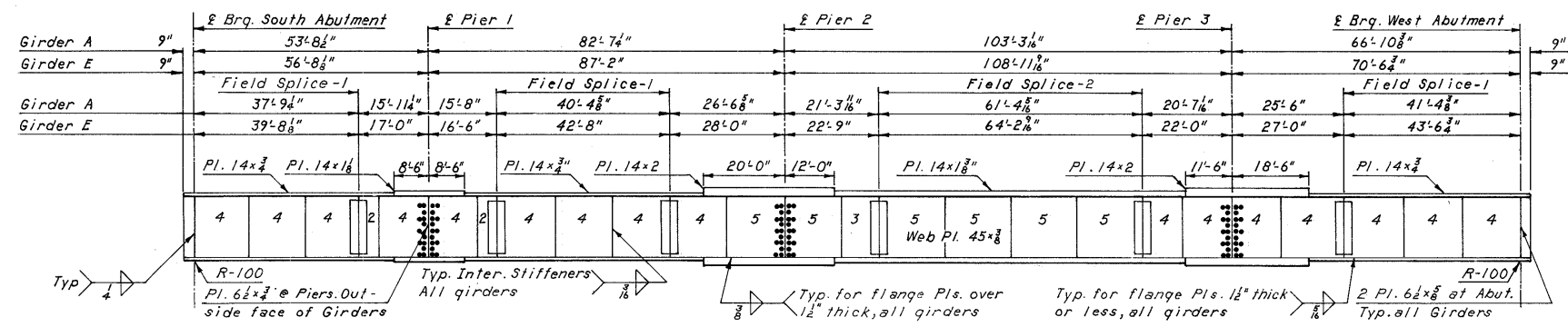


ELEVATION
LATERAL CONNECTION TO GIRDER WEB

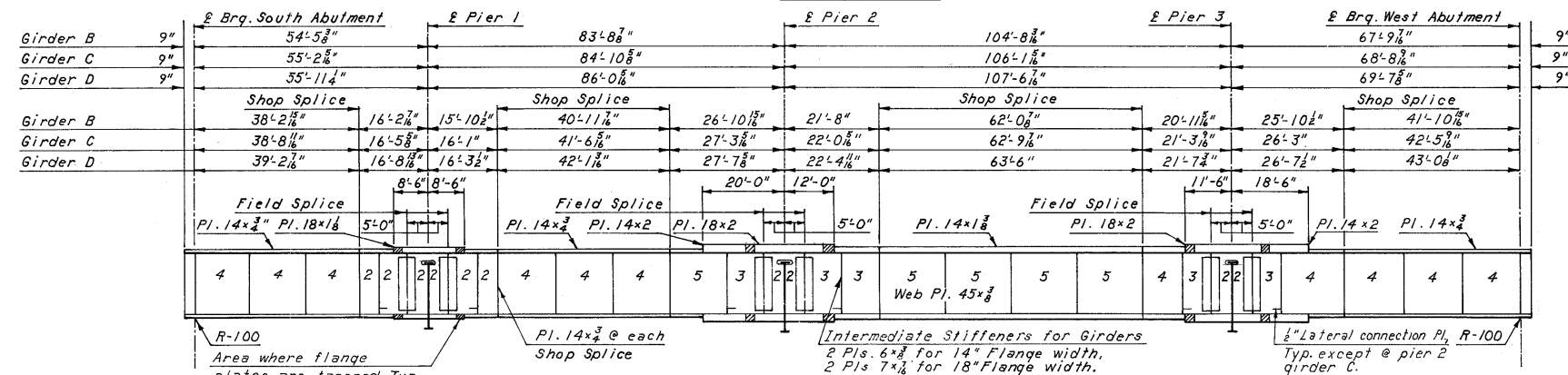
Note: Deflections are given to the nearest 1/8 inch.
In the table of deflection, T indicates the deflection due to total dead load and C indicates the deflection due to dead load of concrete only.



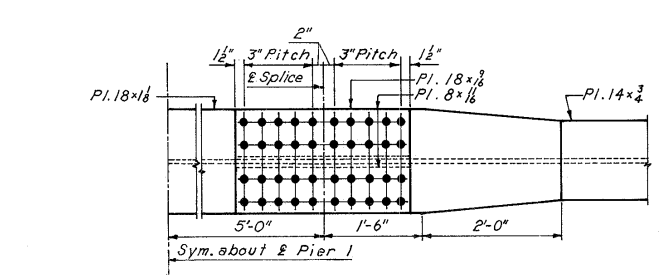
TYPICAL DEFLECTION DIAGRAM



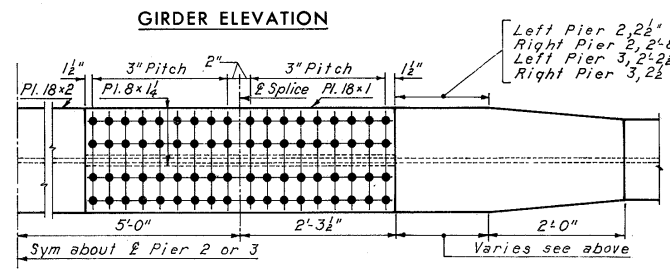
GIRDERS A AND E



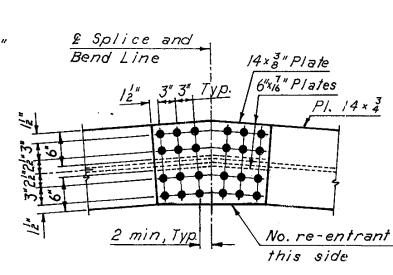
GIRDERS B, C AND D



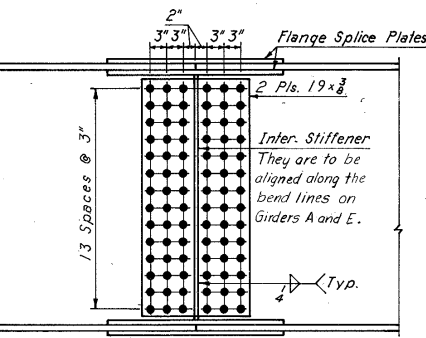
SPICE NEAR PIER 1, GIRDERS B, C AND D



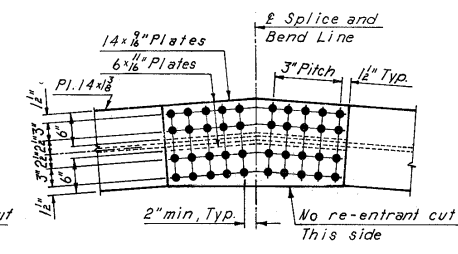
SPICE NEAR PIERS 2 AND 3, GIRDERS B, C AND D



FIELD SPICE 1, GIRDERS A AND E



TYPICAL GIRDER FIELD WEB SPICE



FIELD SPICE 2, GIRDERS A AND E

GIRDER	South Abut.		Bend Line 1			Bend Line 2			Bend Line 3			Bend Line 4			Bend Line 5			Bend Line 6			West Abut.	
	T	C	25	50	75	25	50	75	25	50	75	25	50	75	25	50	75	25	50	75	T	C
A	0	0	1/16	1/16	1/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	1/16	1/16	1/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	1/16	1/16	1/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	1/16	1/16	1/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	1/16	1/16	1/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:
Location of scuppers are dimensions along the south gutter line.
For R-100 Rocker Details, see Ohio Standard Drawing RB-1-55, revised 2-2-59.
For Scupper Details, see Ohio Standard Drawing SD-1-63, Sheet 3 of 4.
Top and bottom flanges are identical.
Numbers shown on girder web indicate the number of intermediate stiffener spaces between crossframes.
Bearing stiffeners shall be fully grooved and butt welded to the lower flange and fitted in close contact with the upper flange.
For details of intermediate crossframe, bend point crossframes and end crossframes, see Sheet 421.
For curb plate details at safety curbs, see Ohio Standard Drawing SD-1-63, Sheet 2 of 4.
For crossframes at piers, see Sheets 418 and 419.
Optional shop splices will be permitted in the webs and flanges of girders but their locations shall be submitted to the Director for approval.
The high strength bolts shall be placed with the heads on the outside face of the exterior girders and the bottom of the flange.
The interior girders between field splices at Piers 1 and 3 are shipped to the cross-girder. Exterior girders are field connected to the cross-girder. For cross-girder details see Sheet 418.
For rockers and bolsters at piers see Sheets 418 and 419.
The girders shall be fabricated to line parallel to the profiles formed by top of pavement elevations directly over the girders, plus the camber required to compensate for dead load deflections.

H.N.T.B. BRIDGE NO. 3
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FRAMING PLAN
LANE S-W OVER CLARK FREEWAY

BR. NO. CUY-290-0031 STA. 11+41.75
SCALE: STA. 14+54.25
CLEVELAND CUYAHOGA COUNTY OHIO

BR. NO. CUY-290-0031 STA. 11+41.75
SCALE: STA. 14+54.25
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN J.R.	TRACED	CHECKED J.P.	REVIEWED	REVISED
DATE 10-12-64	DATE	DATE 2-19-64	DATE	DATE

SHEET 420

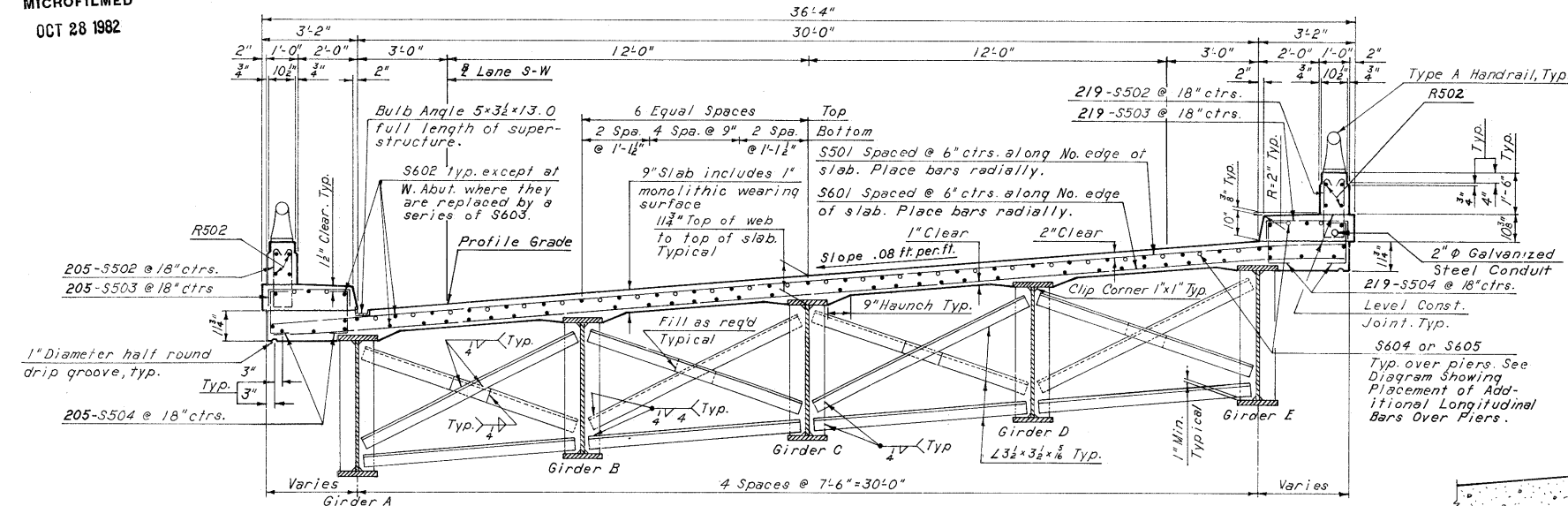
Note: All field splices shall be made with 8/16 high strength bolts.

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FED. RD. DIVISION	STATE	PROJECT
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CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

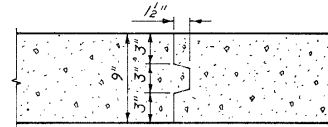


TYPICAL CROSS SECTION

Note: In order to facilitate water curing of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections between transverse construction joints which are normal to the centerline of bridge and located near the center of any span.

Note: The distance shown from top of deck slab to top of girder web is the normal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. S-1.25 of the Construction and Material Specifications.

Note: The haunch in the deck slab adjacent to the top of girders which is shown as 9" wide, may vary from this dimension between the limits of 6" and 12", except that the maximum slope shall not exceed 3 inches per foot for a haunch less than 9" in width. Payment for deck slab concrete shall be based on the 9" width.



OPTIONAL TRANSVERSE CONSTRUCTION JOINT

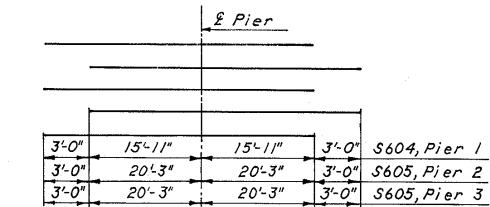
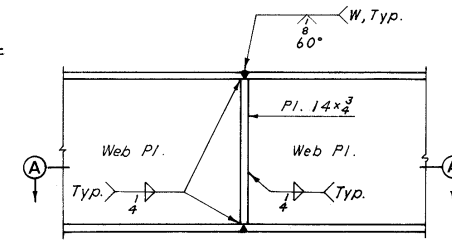
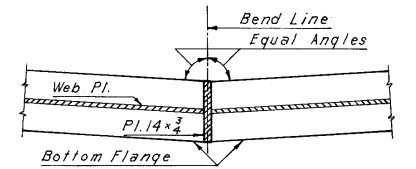


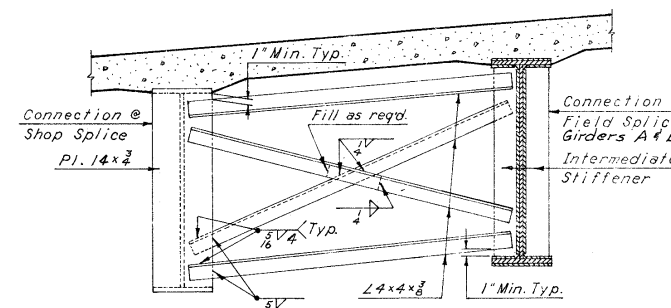
DIAGRAM SHOWING PLACEMENT OF ADDITIONAL LONGITUDINAL BARS OVER PIERS



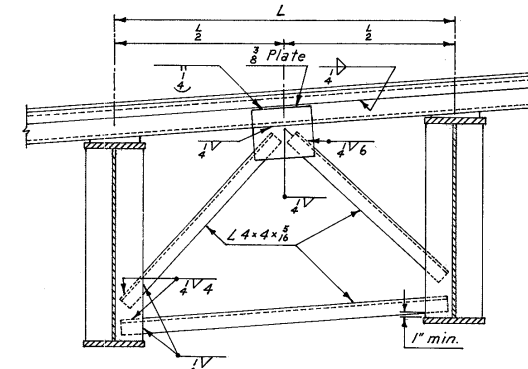
ELEVATION



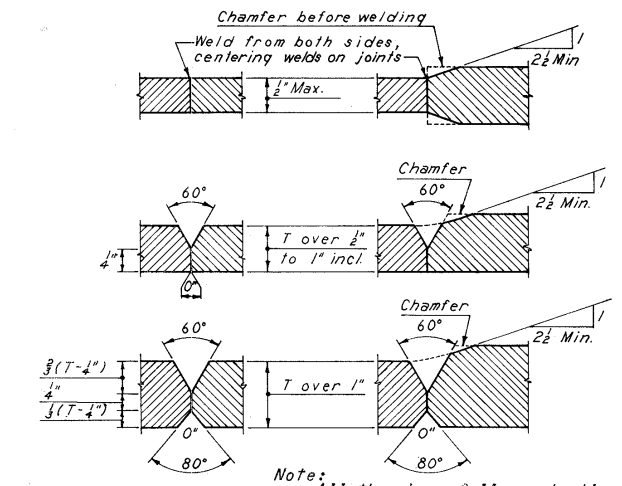
SECTION A-A
GIRDER SHOP SPICE DETAIL



BEND POINT CROSSFRAME



END CROSSFRAME



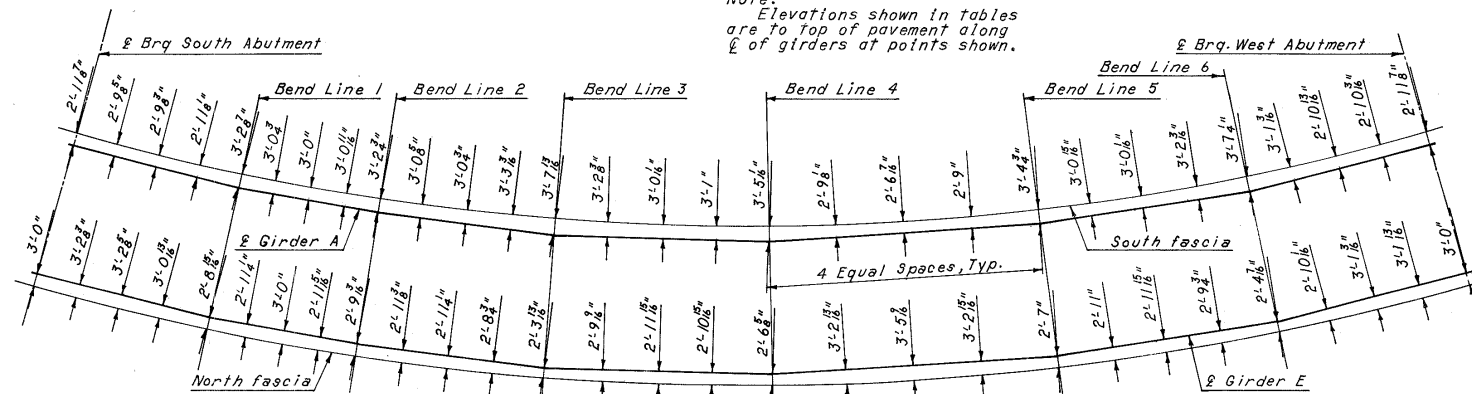
Note: All the above full penetration welds shall be backgouged and welded after welding for side. BUTT welds on girder flange plates shall be ground flush, the finished grinding being parallel to the direction of stress.

JOINT PREPARATION FOR SHOP BUTT WELDS

GIRDER	TOP OF PAVEMENT ELEVATIONS														
	So. Abut.	.25	.50	.75	Bend Line 1	.25	.50	.75	Bend Line 2	.25	.50	.75	Bend Line 3	.25	.50
A	652.79	652.87	652.95	653.03	653.13	653.18	653.24	653.31	653.39	653.46	653.55	653.65	653.77	653.83	653.92
B	653.39	653.45	653.53	653.62	653.73	653.78	653.84	653.91	653.99	654.06	654.15	654.25	654.37	654.43	654.52
C	653.99	654.05	654.13	654.22	654.33	654.38	654.44	654.51	654.59	654.66	654.75	654.85	654.97	655.03	655.12
D	654.59	654.65	654.73	654.82	654.93	654.98	655.04	655.11	655.19	655.26	655.35	655.45	655.57	655.63	655.72
E	655.19	655.25	655.33	655.42	655.51	655.57	655.64	655.71	655.78	655.86	655.95	656.03	656.12	656.22	656.32
GIRDER	.75	Bend Line 4	.25	.50	.75	Bend Line 5	.25	.50	.75	Bend Line 6	.25	.50	.75	W. Abut.	
A	654.03	654.15	654.25	654.38	654.51	654.67	654.74	654.83	654.94	655.08	655.13	655.20	655.29	655.38	
B	654.63	654.75	654.83	654.94	655.09	655.27	655.34	655.43	655.54	655.68	655.73	655.79	655.88	655.98	
C	655.23	655.36	655.43	655.54	655.69	655.87	655.94	656.03	656.14	656.28	656.33	656.39	656.48	656.58	
D	655.83	655.96	656.03	656.14	656.29	656.47	656.54	656.63	656.75	656.88	656.93	656.99	657.08	657.18	
E	656.42	656.52	656.63	656.74	656.89	657.04	657.13	657.23	657.33	657.43	657.52	657.59	657.68	657.78	

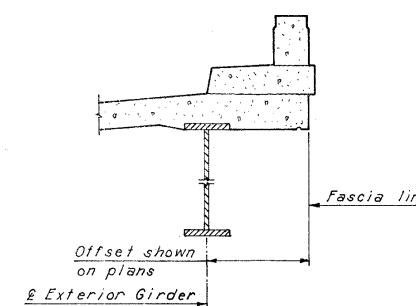
GIRDER	TOP OF PAVEMENT ELEVATIONS AT PIERS		
	Pier 1	Pier 2	Pier 3
A	653.24	653.94	654.81
B	653.84	654.54	655.41
C	654.44	655.14	656.01
D	655.04	655.74	656.61
E	655.64	656.34	657.21

Note: Elevations shown in tables are to top of pavement along ξ of girders at points shown.



OFFSETS TO FASCIAS

Note: Offsets are at right angles to the girders and spacing measured along the ξ of the girders.



LOCATION OF FASCIA LINE

Notes:
Crossframes shown in Typical Cross Section are typical intermediate crossframes.
For End Dam Details, see Ohio Standard Drawing SD-1-63, Sheet 2 of 4 and Sheet 4 of 4.
For Gurb. Plate Details at safety curbs, see Ohio Standard Drawing SD-1-63, Sheet 2 of 4.
For Bulb Angle Supports, see Ohio Standard Drawing SD-1-63, Sheet 3 of 4.
For Reinforcement Schedule, see Sheet 424.
Reinforcement Bars shall be adjusted as required to clear scuppers.
For location of Light Standards, see Sheet 412.
For details of Light Supports, see Sheet 422.
For Handrail Post and Parapet Joint spacing, see Sheet 422.

H.N.T.B. BRIDGE NO. 3
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DECK DETAILS
LANE S-W OVER CLARK FREEWAY

BR. NO. CUY-290-0031 STA. 11+41.75
SCALE: STA. 14+54.25
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN LJR	TRACED	CHECKED JFD	REVIEWED	REVISED
DATE 9-23-64	DATE	DATE 12-17-64	DATE	SHEET 421

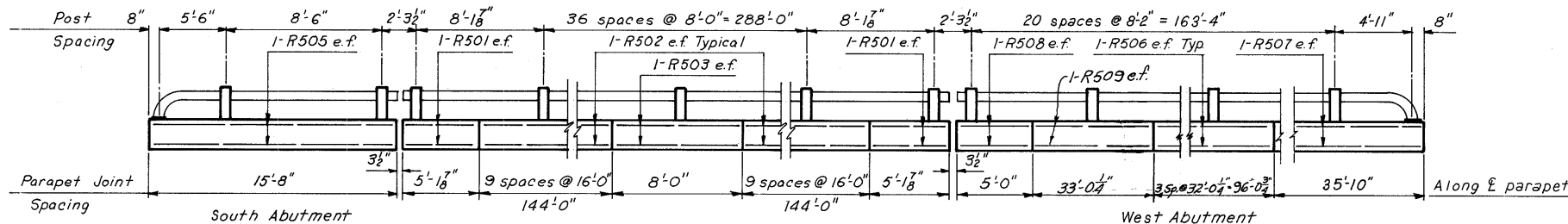
MICROFILMED

OCT 28 1982

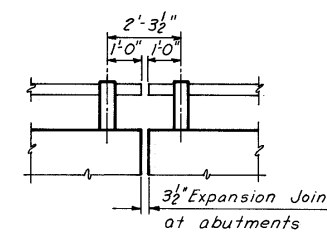
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

422
478

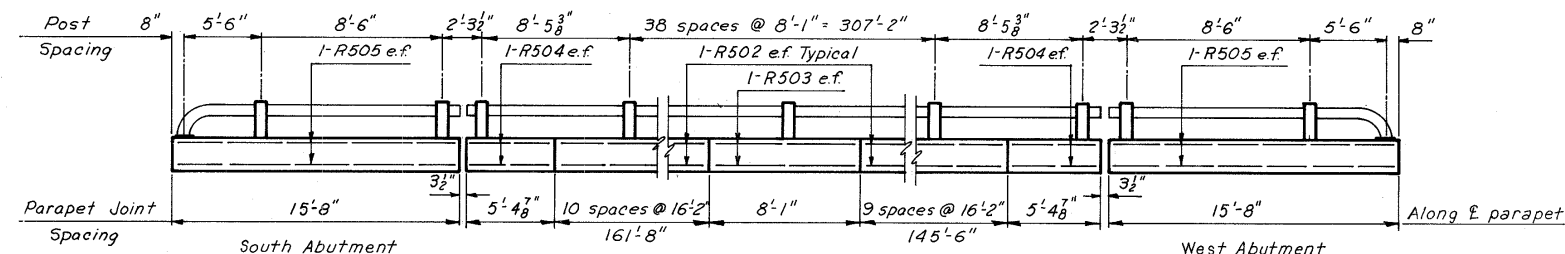
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



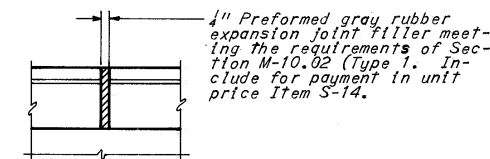
SOUTH RAILING



RAILING JOINT DETAIL

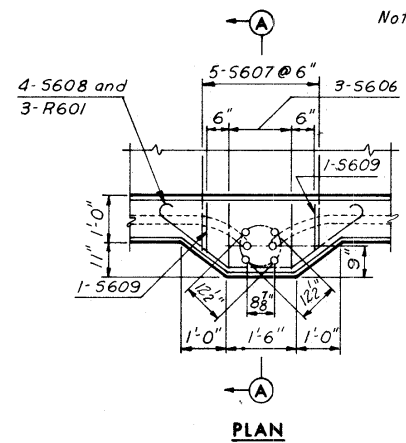


NORTH RAILING

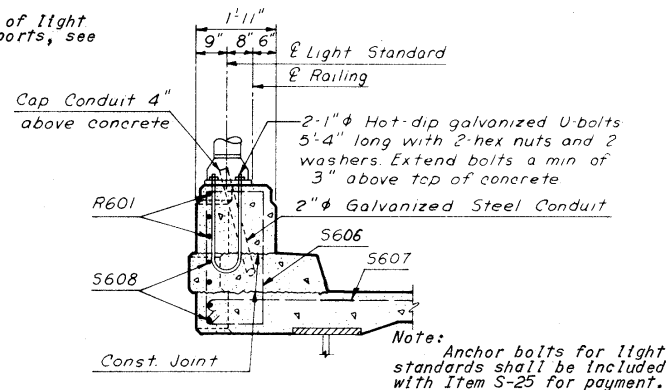


PARAPET JOINT DETAIL

Railing Notes:
All railing dimensions are given along E parapet. e.f. denotes each face.
Railing shall be fabricated in lengths of two panels at abutments and of not less than three panels on superstructure. The finished railing shall be free of burrs, sharp corners and rough surfaces.
Railing posts shall be normal to grade.
Payment for railing shall be made at the contract unit price bid for "Item S-14, Aluminum Railing (including parapet)". Pay length shall be the over-all length of the parapets and shall include cost of shims, nuts, anchor bolts, set screws, etc. necessary to complete the installation of railing.
Concrete and longitudinal reinforcing steel in the parapets shall be included in "Item S-14, Aluminum Railing (including parapet)" for payment. All other reinforcing steel in parapet shall be included in "Item S-4" for payment.
For additional details and notes regarding railing, see Ohio Standard Drawing AR-1-57, revised 4-2-62.

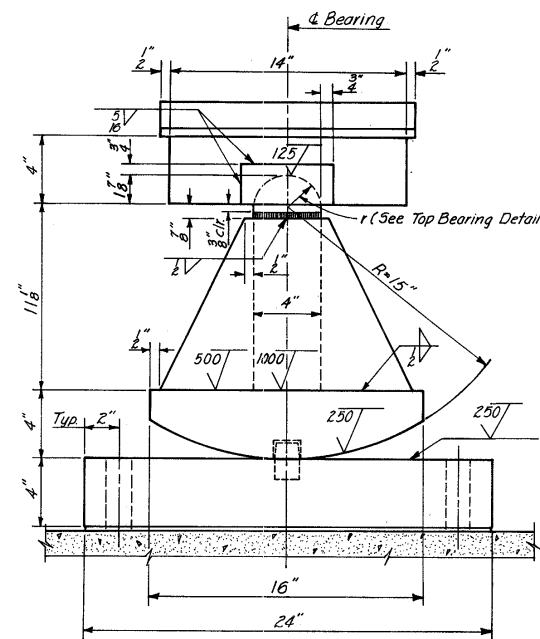


Note:
For location of light standard supports, see Sheet 412.

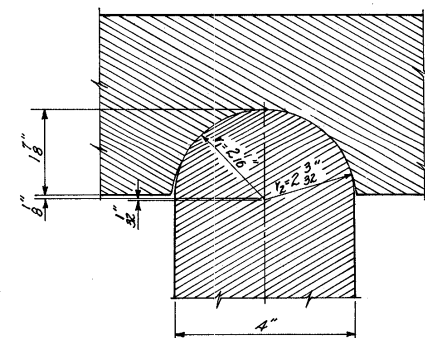
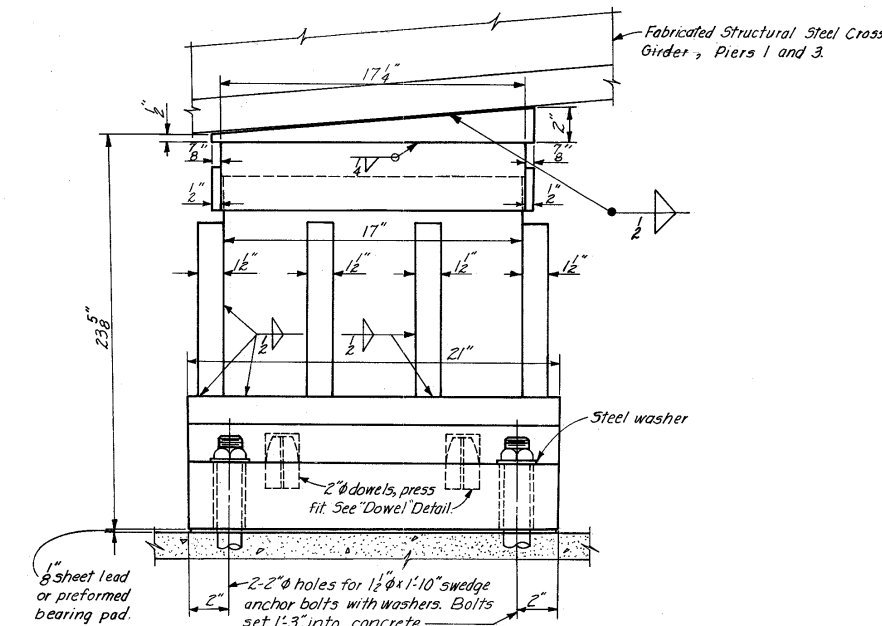


SECTION A-A

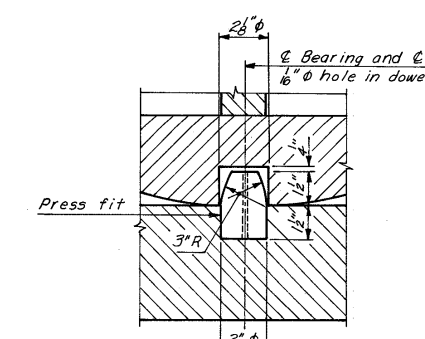
LIGHT STANDARD SUPPORT



ROCKER ES-6



TOP BEARING DETAIL



DOWEL DETAIL

Note:
The rocker plate and the masonry plate are to be fabricated from ASTM-A-486 Class 90 Structural Steel. The remaining parts of the shoe are to be fabricated from ASTM-A36 Structural Steel.

H.N.T.B. BRIDGE NO. 3

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

RAILING DETAILS

LANE S-W OVER CLARK FREEWAY

BR. NO. CUY-290-0031 STA. 11+41.75

SCALE: CLEVELAND CUYAHOGA COUNTY OHIO

DATE 11-2-64 DATE DATE DATE

DRAWING NO. TRACED CHECKED BY REVIEWED REVISION SHEET 422

MICROFILMED
OCT 28 1982

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
SOUTH ABUTMENT								
AA401	30	3'-11"	105	1'-8"	1'-3"	1'-3"		78
AA501	16	12'-1"	109	2'-8"	3'-2"			202
AA502	26	8'-4"	105	5'-5"	1'-7"	1'-7"		226
AA503	10	35'-4"	Str.					369
AA504	24	7'-1"	105	3'-4"	2'-0"	2'-0"		177
AA505	24	8'-6"	104	7'-7"	1'-0"			213
AA506	22	5'-3"	110	2'-0"	8"			120
AA507	16	5'-5"	136	1'-6"	2'-2"	2"		90
AA508	16	4'-3"	105	1'-6"	1'-6"	1'-6"		71
AA509	8	4'-4"	Str.					34
AA510	36	6'-2"	Str.					222
AA511	2Ser. 6	8'-11" to 12'-11"	105	1'-2"	4-0 to 6-0	4-0 to 6-0	9 5/8"	137
AA512	10	8'-1"	105	1'-2"	3'-7"	3'-7"		84
AA513	12	15'-8"	Str.					196
AA514	4	17'-8"	Str.					74
AA515	4	13'-8"	Str.					57
AA516	2	12'-3"	Str.					26
AA517	2	8'-3"	Str.					17
AA518	8	9'-8"	Str.					83
AA519	8	5'-8"	Str.					47
AA520	4	9'-0"	Str.					38
AA521	14	7'-0"	107	3'-10"	1'-8"	1'-2"		102
AA522	6	5'-1"	104	2'-2"	3'-0"			32
AA523	6	31'-8"	Str.					198
AA524	6	6'-4"	Str.					40
AA525	2	3'-1"	136	1'-6"	1'-0"	12"		6
AA526	2	2'-11"	105	1'-6"	10"	10"		6
AA601	24	14'-9"	105	5'-5"	6'-10"	2'-9"		532
AA602	31	18'-6"	117	7'-5"	6'-1"			861
AA603	4	6'-9"	Str.					41
AA604	14	19'-10"	105	1'-2"	9'-6"			417
AA605	16	9'-6"	Str.					228
AA606	2	8'-5"	105	5'-9"	1'-6"			25
AA801	7	37'-4"	Str.					700
AA802	12	9'-0"	Str.					288
							Total	6,037
WEST ABUTMENT								
AB401	30	2'-9"	104	1'-10 1/2"	1'-0"			55
AB501	3	18'-8"	109	2'-6"	6'-8"			58
AB502	4	11'-4"	109	2'-6"	3'-0"			47
AB503	1Ser. 4	17'-0" to 17'-3"	104	16'-2" to 16'-5"	1'-0"		1"	72
AB504	1	16'-4"	104	15'-6"	1'-0"			17
AB505	1	15'-6"	104	14'-8"	1'-0"			16
AB506	1Ser. 5	14'-7" to 15'-1"	104	13'-9" to 14'-3"	1'-0"		1 1/2"	77
AB507	1	14'-2"	104	13'-4"	1'-0"			15
AB508	1	13'-1"	104	12'-3"	1'-0"			14
AB509	1Ser. 5	12'-4" to 12'-10"	104	11'-6" to 12'-0"	1'-0"		1 1/2"	66
AB510	1	11'-10"	104	11'-0"	1'-0"			12
AB511	1	10'-4"	104	9'-6"	1'-0"			11
AB512	1Ser. 4	10'-3" to 10'-6"	104	9'-5" to 9'-8"	1'-0"		1"	43
AB513	24	8'-0"	105	3'-5"	2'-5"	2'-5"		200
AB514	13	35'-6"	Str.					481
AB515	4	25'-0"	Str.					104
AB516	4	14'-6"	Str.					61
AB517	4	4'-6"	Str.					19
AB518	92	3'-11"	136	1'-6"	1'-3"	2"		376
AB519	92	4'-1"	105	1'-6"	1'-5"	1'-5"		392
AB520	9	31'-6"	Str.					296
AB521	126	5'-7"	110					734
AB522	3	3'-3"	105	1'-6"	1'-0"	1'-0"		10
AB523	3	3'-1"	136	1'-6"	10"	2"		10
AB524	3	4'-3"	Str.					13
AB525	18	6'-3"	Str.					117
AB526	1Ser. 6	8'-11" to 12'-3"	105	1'-2"	4-0 to 5-8	4-0 to 5-8	8"	66
AB527	5	7'-11"	105	1'-2"	3'-6"	3'-6"		40
AB528	6	15'-8"	Str.					98
AB529	2	17'-8"	Str.					37
AB530	2	13'-8"	Str.					29
AB531	1	11'-0"	Str.					12

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
AB532	1	7'-0"	Str.					7
AB533	5	9'-8"	Str.					50
AB534	5	5'-7"	Str.					29
AB535	2	8'-10"	Str.					18
AB536	8	6'-9"	107	3'-5"	1'-8"	1'-2"		56
AB537	8	4'-3"	104	1'-9"	2'-8"			36
AB538	7	4'-9"	Str.					33
AB539	3	5'-11"	Str.					19
AB540	6	35'-10"	Str.					225
AB541	41	31'-8"	Str.				1,354	166
AB542	5	31'-10"	Str.					30
AB543	1	28'-6"	Str.					2
AB544	1	8'-3"	Str.					9
AB545	4	6'-9"	Str.					2
AB546	2	11'-6"	Str.					57
AB547	2	5'-10"	104	5'-0"	1'-0"			33
AB548	2	22'-9"	Str.					47
AB549	1	29'-6"	Str.					31
AB550	1	9'-3"	Str.					10
AB551	1	32'-10"	Str.					34
AB552	13	32'-8"	Str.					443
AB553	1Ser. 13	16'-3" to 19'-3"	Str.				3"	241
AB554	1Ser. 30	4'-6" to 13'-0"	Str.				3 1/2"	274
AB555	8	4'-0"	Str.					33
AB556	8	6'-1"	Str.					51
AB557	3	5'-9"	Str.					18
AB558	18	6'-3"	108	4'-7"	1'-8"	1'-2"		118
AB559	3	16'-0"	Str.					50
AB560	2	6'-8"	Str.					14
AB561	2	25'-3"	Str.					53
AB562	43	6'-0"	104	4'-7"	1'-7"			269
AB601	1	14'-2"	104	13'-4"	1'-0"			21
AB602	1	13'-4"	104	12'-6"	1'-0"			20
AB603	1	12'-4"	104	11'-6"	1'-0"			19
AB604	1Ser. 7	12'-4" to 12'-10"	104	11'-6" to 12'-0"	1'-0"		1"	132
AB605	1	11'-10"	104	11'-0"	1'-0"			17
AB606	1	10'-4"	104	9'-6"	1'-0"			16
AB607	1Ser. 4	10'-3" to 10'-6"	104	9'-5" to 9'-8"	1'-0"		1"	62
AB608	7	24'-10"	105	1'-2"	12'-0"	12'-0"		262
AB609	8	12'-0"	Str.					144
AB610	20	10'-6"	Str.					316
AB611	18	8'-6"	Str.					230
AB612	12	7'-6"	Str.					135
AB613	18	6'-6"	Str.					176
AB614	19	5'-6"	Str.					157
AB615	24	7'-10"	100	6'-6"				282
AB616	24	6'-10"	100	5'-6"				246
AB617	21	39'-10"	Str.					1,256
AB618	6	18'-6"	Str.					167
AB619	13	43'-11"	139					857
AB620	1	30'-8"	Str.					46
AB621	4	19'-9"	Str.					119
AB622	24	29'-9"	Str.					1,072
AB623	5	16'-0"	Str.					120
AB624	1Ser. 37	16'-3" to 19'-3"	Str.				1"	987
AB625	1Ser. 88	4'-6" to 13'-0"	Str.				1 3/8"	1,157
AB626	1Ser. 11	8'-2" to 9'-0"	137	5'-2" to 6'-0"	3'-2"		1"	142
AB627	84	7'-11"	137	4'-11"	3'-2"			1,000
AB628	2Ser. 22	3'-6" to 5'-3"	Str.				1"	289
AB629	8	3'-5"	Str.					41
AB630	4	35'-10"	Str.					216
AB631	2	12'-3"	Str.					37
AB632	18	5'-3"	105	7"	2'-6"	2'-6"		142
AB633	18	10'-8"	105	2'-4"	2'-0"	1'-8"		288
AB634	16	18'-4"	Str.					441
AB635	9	11'-3"	133					152
AB636	10	3'-10"	100	2'-6"				58
AB637	8	6'-10"	100	5'-6"				82
AB638	12	6'-3"	104	4'-6"	1'-11"			113
AB639	7	5'-0"	121	2'-6"	1'-2"	1'-0"		53
AB640	2	7'-7"	104	5'-10"	1'-11"			23
AB641	2	6'-5"	104	4'-8"	1'-11"			19
AB642	2	5'-9"	104	4'-0"	1'-11"			17
AB643	31	18'-6"	117	7'-5"	6'-1"			861
AB644	4	7'-8"	Str.					46
AB645	18	9'-0"	Str.					244
AB646	5	11'-6"	Str.					86
AB647	16	5'-10"	104	5'-0"	1'-0"			140

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
AB801	6	9'-4"	Str.					149
AB802	9	14'-6"	108	6'-9"	7'-9"	5'-6"		348
AB803	12	13'-8"	Str.					439
AB804	18	18'-9"	108	11'-0"	7'-9"	5'-6"		901
AB805	15	11'-0"	Str.					441
AB806	7	11'-6"	Str.					215
AB807	25	11'-2"	100	9'-0"				746
AB808	2	39'-5"	108	35'-3"	4'-2"	5"		210
AB809	6	13'-6"	Str.					

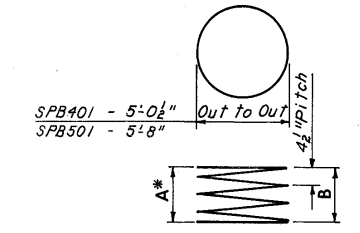
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OCT 28 1982

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS
				A	B	C		
PIER 3								
PC401	8	4'-3"	105	2'-6"	1'-0"	1'-0"	23	
PC402	2	4'-1"	105	2'-4"	1'-0"	1'-0"	5	
PC403	2	3'-3"	105	1'-6"	1'-0"	1'-0"	5	
PC501	21	3'-10"	100	2'-8"			84	
PC502	28	13'-9"	113	4'-10"	4'-1"	2'-8"	402	
PC801	2	11'-4"	105	9'-4"	1'-2"	1'-2"	61	
PC802	2	12'-4"	105	10'-4"	1'-2"	1'-2"	66	
PC1001	24	6'-10"	104	6'-2"	11 1/2"		706	
PC1002	2 Ser. 5	19'-9" to 20'-3"	Str.				1 1/2" 861	
PC1003	7	19'-8"	Str.				592	
PC1004	7	20'-4"	Str.				612	
PC1101	28	17'-10"	100	14'-8"			2,653	
PC1102	20	20'-10"	100	17'-8"			2,214	
							Total 8,284	
SUPERSTRUCTURE								
S501	653	35'-8"	Str.				24,292	
S502	424	5'-7"	110				2,469	
S503	424	3'-6"	105	2'-6"	7 1/2"	7 1/2"	1,548	
S504	848	2'-3"	105	1'-3"	7 1/2"	7 1/2"	1,990	
S601	653	35'-8"	Str.				34,982	
S602	621	37'-5"	Str.				34,900	
S603	1 Ser. 69	5'-6" to 25'-10"	Str.				1,624	
S604	28	34'-10"	Str.				1,465	
S605	56	43'-6"	Str.				3,659	
S606	6	9'-4"	109	2'-10"	1'-7"		84	
S607	10	7'-0"	101	5'-4"			105	
S608	8	6'-6"	130	1'-4"	1'-11"		78	
S609	4	8'-8"	109	2'-10"	1'-3"		52	
							Total 107,248	
PARAPET								
*R501	8	4'-10"	Str.					
*R502	148	15'-8"	Str.					
*R503	8	7'-8"	Str.					
*R504	8	5'-1"	Str.					
*R505	12	15'-4"	Str.					
*R506	12	31'-8"	Str.					
*R507	4	35'-6"	Str.					
*R508	4	4'-8"	Str.					
*R509	4	32'-8"	Str.					
*R601	6	6'-6"	130	1'-4"	1'-11"			
* To be included for payment in unit price bid for Item S-14								
REPLACEMENT BAR SCHEDULE								
No. 4	1	3'-11"	105	1'-8"	1'-3"	1'-3"		
No. 5	3	5'-7"	Str.					
No. 6	5	5'-11"	Str.					
No. 8	1	6'-8"	Str.					
No. 9	1	6'-10"	Str.					
No. 10	1	7'-2"	Str.					
No. 11	1	7'-6"	101	5'-11"				

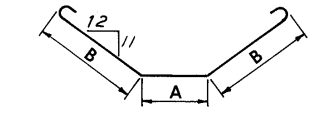
FED. RD. DIVISION	STATE	PROJECT
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**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81**



123



130

BENDING DAIGRAMS

*No. of turns @ 4 1/2" pitch plus 1/2 turns at end.

Spiral reinforcement shall not have deformations, but shall in other respects, conform to Item S-4. Four steel channel, tee, or angle spacers, weighing approximately 0.68 pounds per lined foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The spacers shall be paid for as reinforcing steel and their weight has been included in the tabulated weights of the spiral.

Note:
For bending diagrams not shown, see Sheet 423

H.N.T.B. BRIDGE NO. 3
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE
LANE S-W OVER CLARK FREEWAY

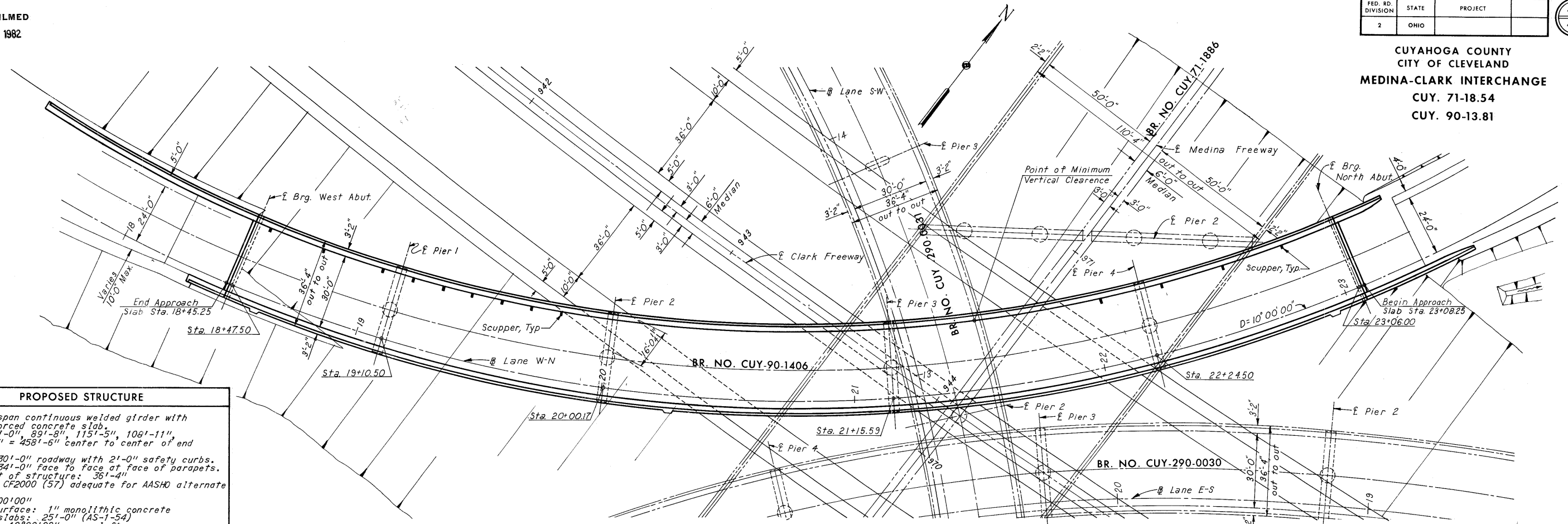
BR. NO. CUY-290-0031 STA. 11+41.75
SCALE: STA. 14+54.25
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN L.R.	TRACED	CHECKED G.M.	REVIEWED	REVISED
DATE 12/16-64	DATE	DATE 12-23-64	DATE	DATE

MICROFILMED
OCT 28 1982

FED. RD. DIVISION	STATE	PROJECT	425 478
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

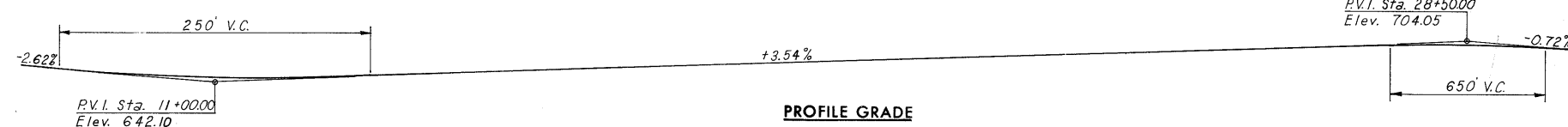


PROPOSED STRUCTURE

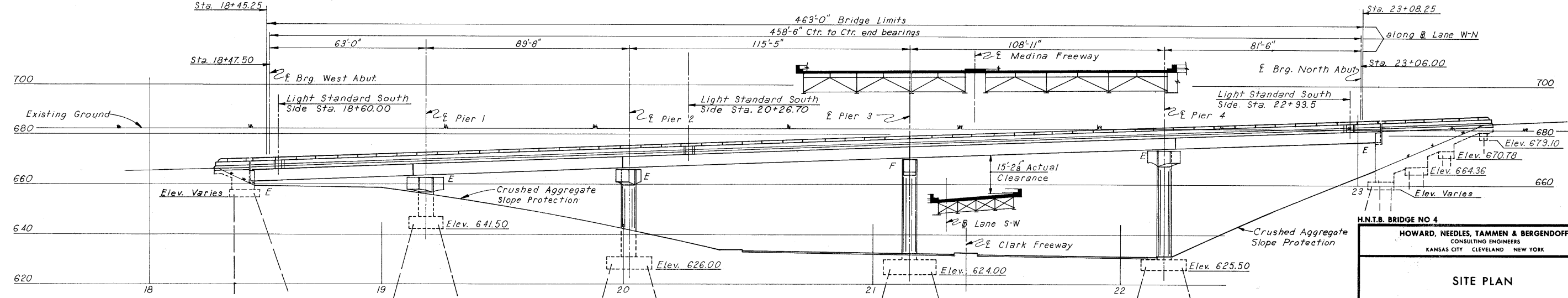
Type: 5 span continuous welded girder with reinforced concrete slab.
Spans: 63'-0", 89'-8", 115'-5", 108'-11", 81'-6" = 458'-6" center to center of end bearings.
Roadway: 30'-0" roadway with 2'-0" safety curbs.
Out to out of structure: 36'-4"
Loading: CF2000 (57) adequate for AASHTO alternate loading.
Skew: 0'100"00"
Wearing surface: 1" monolithic concrete
Approach slabs: 25'-0" (AS-1-54)
Alignment: 10°00'00" curve left.
Superelevation: .080 ft. per ft.
1975 ADT: 14,279, Directional

HORIZONTAL CURVE DATA

Lane W-N	
P.I. Sta.	24 + 04.02
A	100° 38' 15"
R	10° 00' 00"
L	572.98'
T	1006.98'



Note: All piles shall be 12" cast-in-place concrete with estimated lengths as follows: West Abutment - 65', Pier 1 - 70', Pier 2 - 60', Pier 3 - 60', Pier 4 - 60', and North Abutment - 80'. These estimates are based on boring data and are approximate only. The Contractor shall assume full responsibility for length of piling selected for driving.



H.N.T.B. BRIDGE NO. 4
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

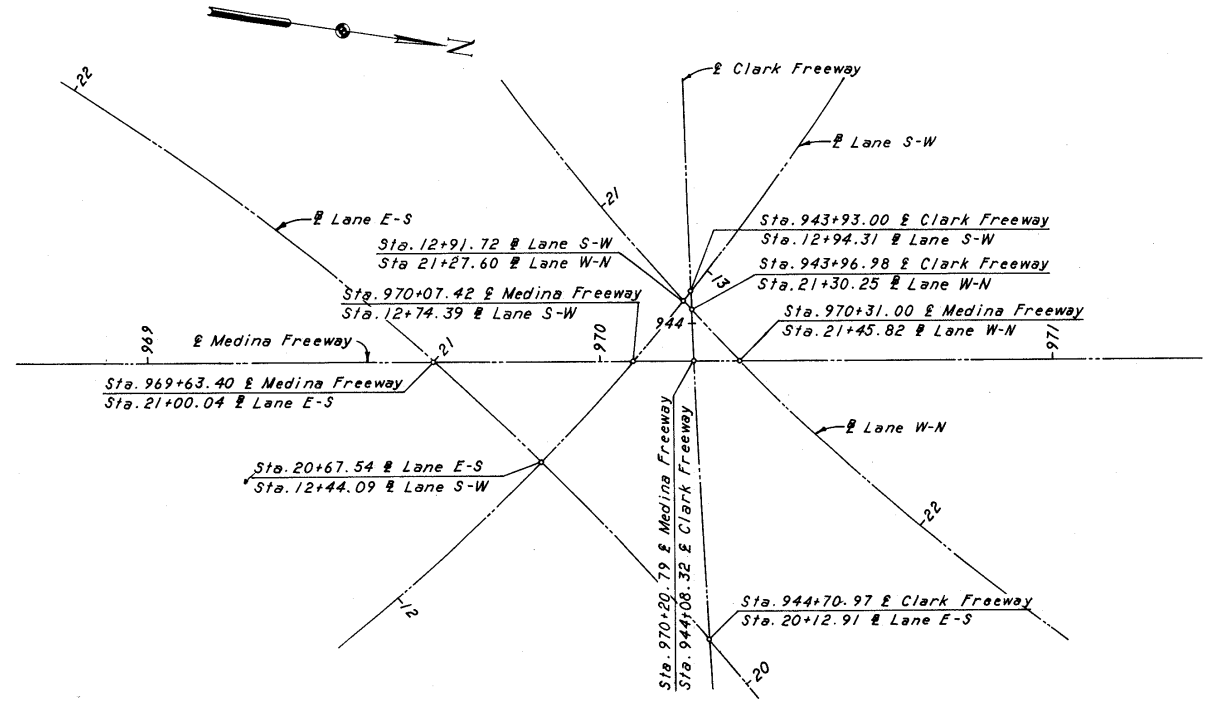
SITE PLAN
LANE W-N OVER CLARK FREEWAY
BR. NO. CUY-90-1406 STA. 18+45.25
SCALE: CLEVELAND STA. 23+08.25
CUYAHOGA COUNTY OHIO

DRAWN/PEH	TRACED	CHECKED/WEH	REVIEWED	REVISED
DATE/2-23-64	DATE	DATE/2-23-64	DATE	SHEET 425

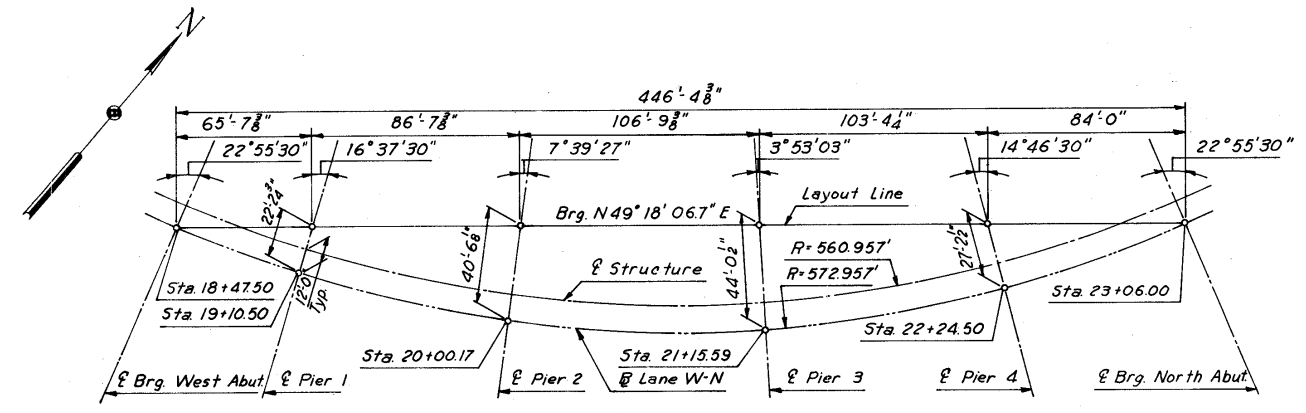
MICROFILMED
OCT 28 1982

FED. RD. DIVISION	STATE	PROJECT	426 478
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



GEOMETRIC PLAN



LAYOUT SKETCH

ESTIMATED QUANTITIES - BRIDGE NO. CUY-90-1406							
ITEM	DESCRIPTION	UNIT	ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL	AS BUILT
E-2	Cofferdams, Cribbs and Sheet Piling	L.S.					Lump Sum
E-2	Unclassified Excavation	Cu.Yd.	531	729			1260
I-10	Crushed Aggregate Slope Protection	Sq.Yd.				1820	1820
S-1	Class "C" Concrete (Superstructure)	Cu.Yd.			579		579
S-1	Class "C" Concrete (Pier Caps and Columns)	Cu.Yd.		228			228
S-1	Class "E" Concrete (Abutment above Footings)	Cu.Yd.	255				255
S-1	Class "E" Concrete (Footings, Piers, Abutments, and Wingwalls)	Cu.Yd.	165	293			458
S-3	Waterproofing Premolded Sealing Strip	Lin.Ft.	31				31
S-4	Reinforcing Steel	Lbs.	32,917	119,980	149,769		302,666
S-7	Structural Steel	Lbs.			538,723		538,723
S-8	Field Painting of Structural Steel, as per proposal note	Lbs.			538,723		538,723
S-9	1/4" Preformed Expansion Joint Filler	Sq.Ft.	81				81
S-14	Railing (Type A Aluminum Rail, Supports and Concrete Parapet)	Lin.Ft.	188		901		1089
S-16	First Test Pile	L.S.				Lump Sum	Lump Sum
S-17	First Pile Test Load	L.S.				Lump Sum	Lump Sum
S-17	Subsequent Pile Test Load	Each					1
S-18	12" Cast-in-Place Piles	Lin.Ft.	5,590	7,740			13,330
S-25	For Lighting Details and Quantities, see Sheet 200						
S-29	Scuppers, including supports	Each			13		13
S-29	Porous Backfill	Cu.Yd.	115				115
S-29	6" Perforated Helical C.M.P. M-6.4(h) including specials	Lin.Ft.	164				164
S-29	6" Helical C.M.P. M-6.4(h) non-perforated	Lin.Ft.	119				119
S-101	Water Reducing, Set-retarding Admixture	Each			579		579

H.N.T.B. BRIDGE NO. 4

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

ESTIMATED QUANTITIES
LANE W-N OVER CLARK FREEWAY

BR. NO. CUY-90-1406 STA. 18+45.25
SCALE: STA. 23+08.25
CLEVELAND CUYAHOGA COUNTY OHIO

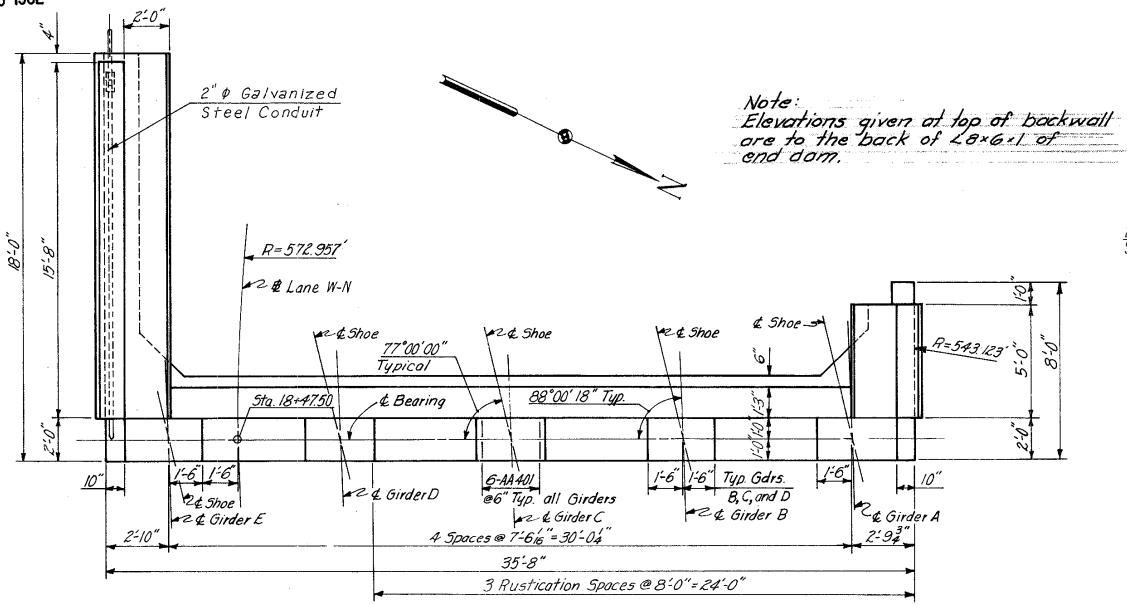
DRAWN Z JH	TRACED	CHECKED P.E.H.	REVIEWED
DATE 12-1-64	DATE	DATE 12-28-64	DATE

SHEET 426

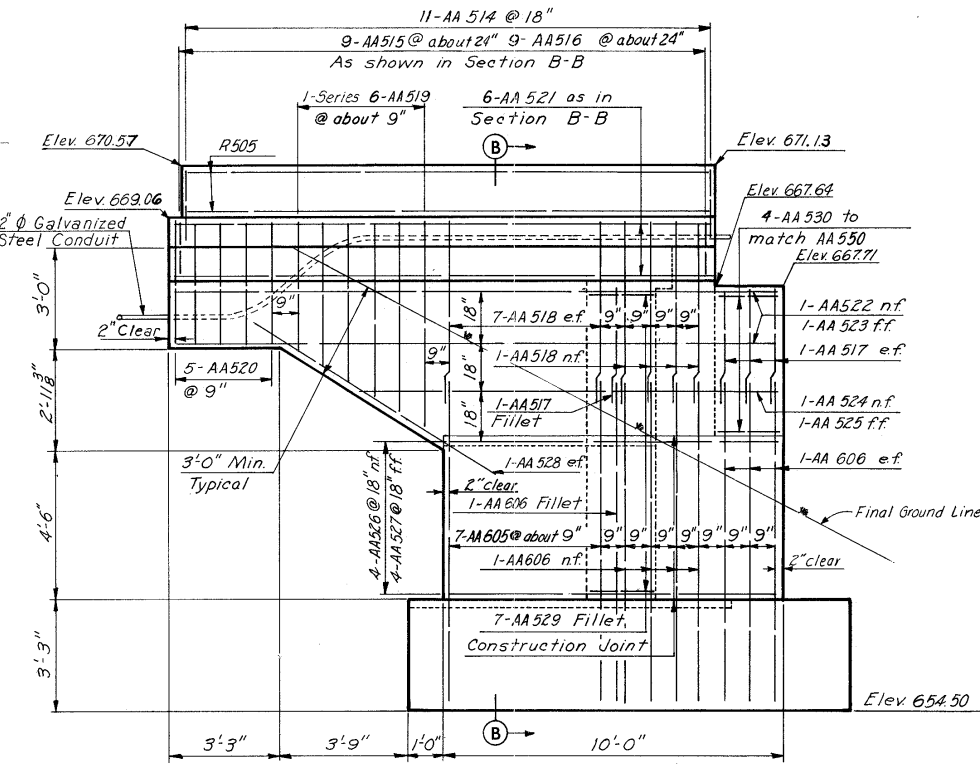
MICROFILMED
OCT 28 1982

FED. RD. DIVISION	STATE	PROJECT	427
2	OHIO		478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

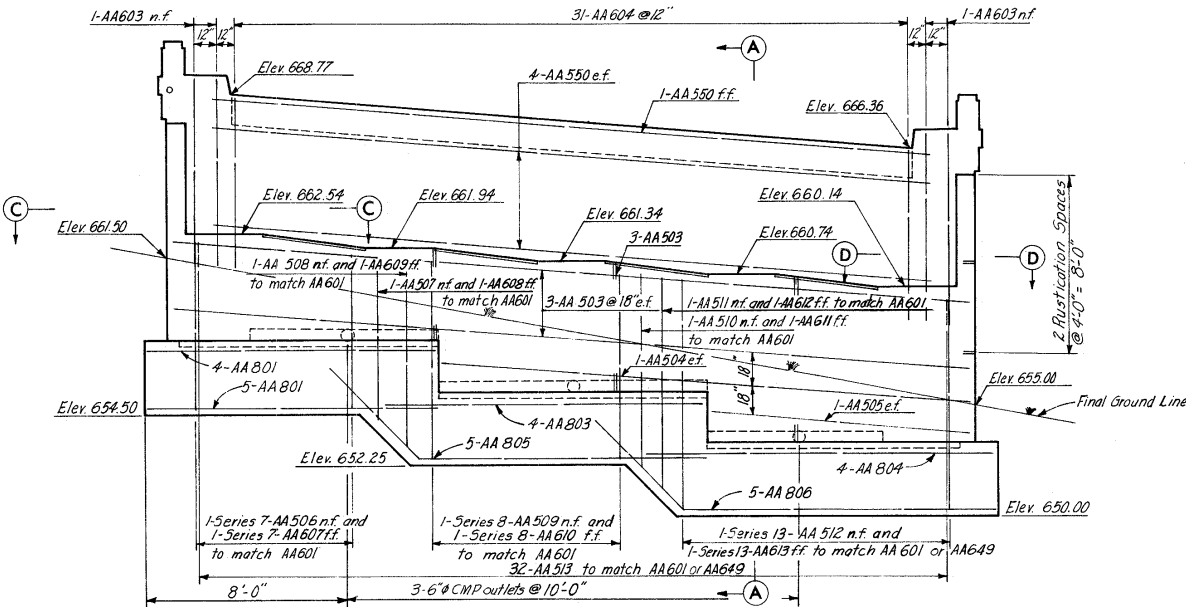


PLAN

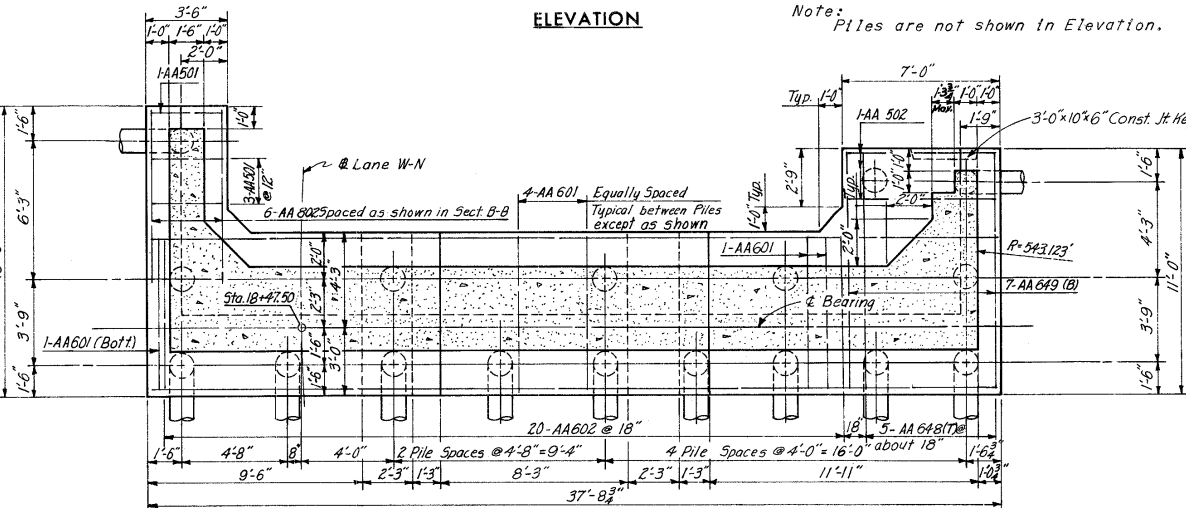


SOUTH WINGWALL ELEVATION

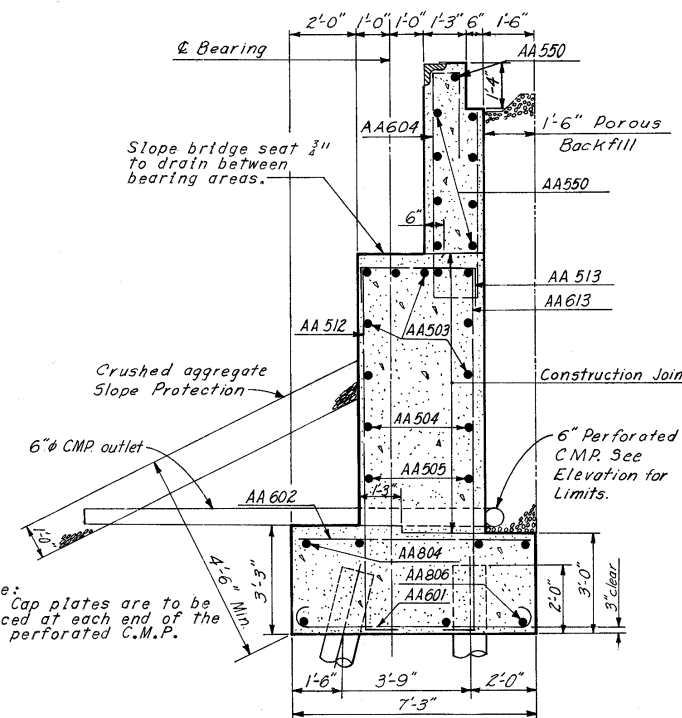
Scale: 3/8" = 1'-0"



ELEVATION

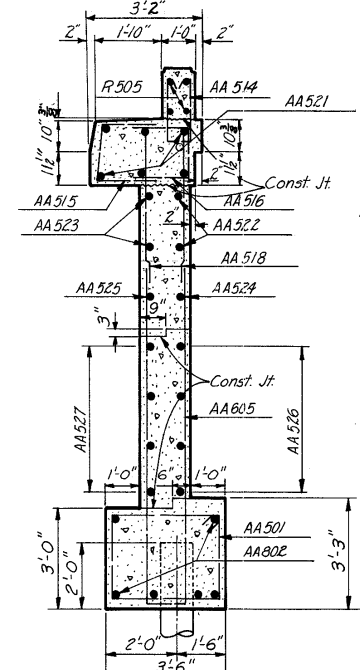


FOOTING PLAN



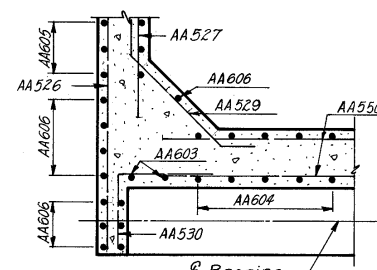
SECTION A-A

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



SECTION B-B

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



SECTION C-C

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

- Notes:
- n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.
 - Typ. denotes Typical.
 - For Reinforcement Schedule, see Sheet 437.
 - All battered piles shall be battered 3 in 12.
 - All piles are 12" cast-in-place concrete.
 - All pile dimensions are measured at bottom of footing.
 - For Details of North Wingwall, see Sheet 428.
 - For Rustication Detail, see Sheet 429.
 - For Section D-D, see Sheet 429.
 - For Longitudinal parapet reinforcement and railing post spacing, see Sheet 438.

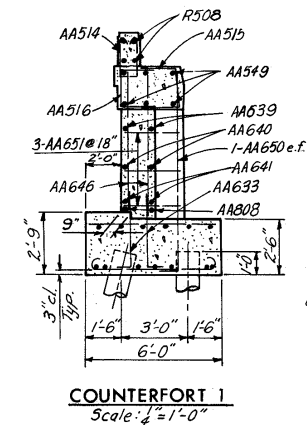
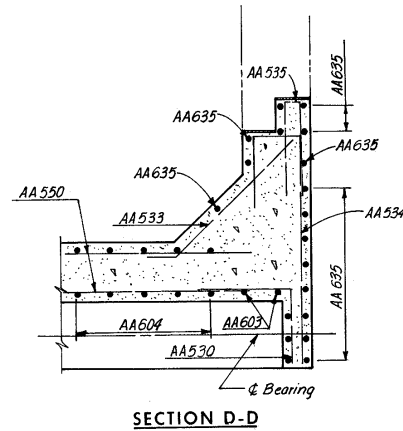
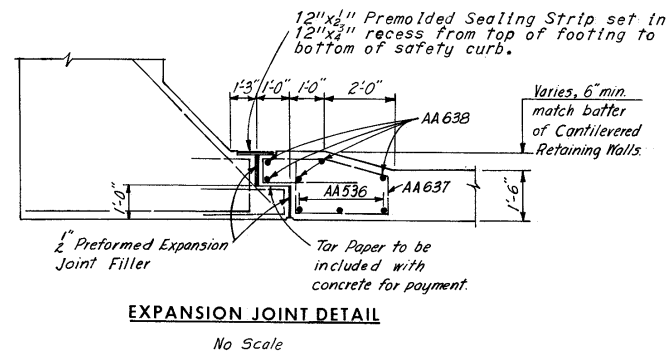
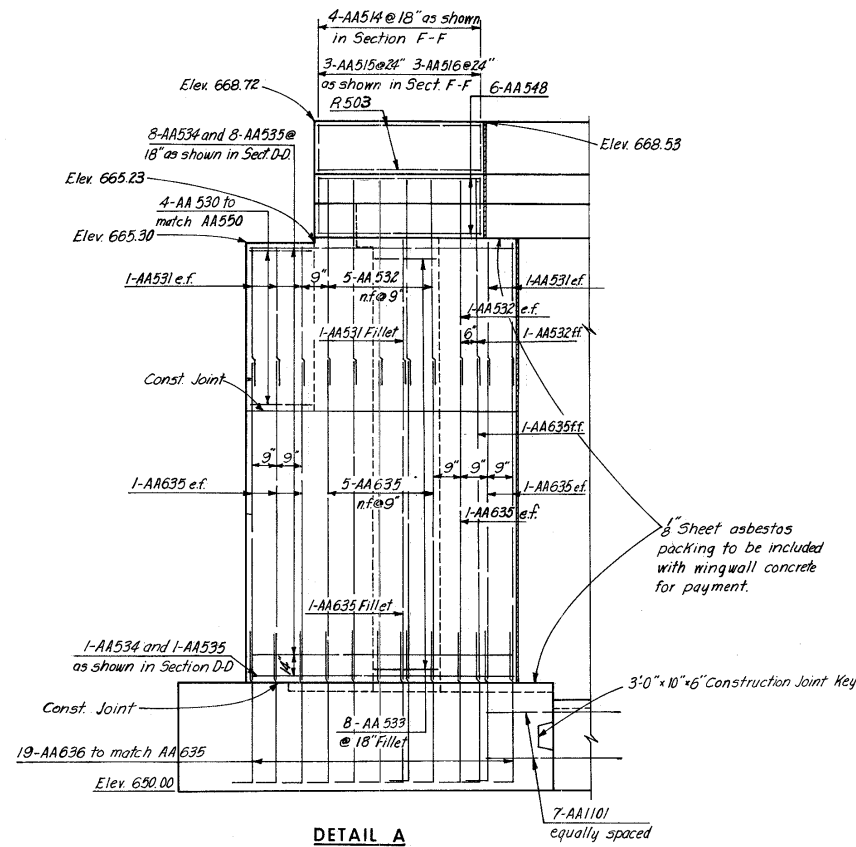
H.N.T.B. BRIDGE NO 4				
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK				
WEST ABUTMENT				
LANE W-N OVER CLARK FREEWAY				
BR. NO. CUY-90-1406	STA. 18+45.25	SCALE: 1/4" = 1'-0"	STA. 23+08.25	
CLEVELAND	CUYAHOGA COUNTY	OHIO		
DRAWN RUN	TRACED	CHECKED	REVIEWED	REVISED
DATE 10-20-64	DATE	DATE 12-10-64	DATE	
				SHEET 427

MICROFILMED
OCT 28 1982

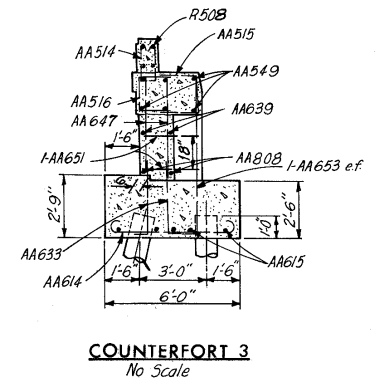
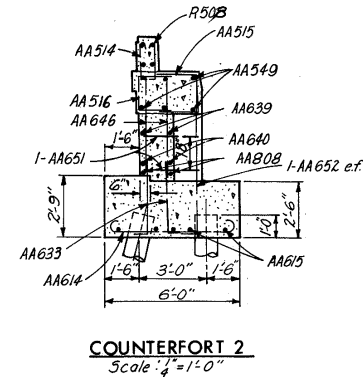
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

429
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

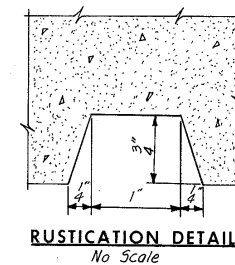
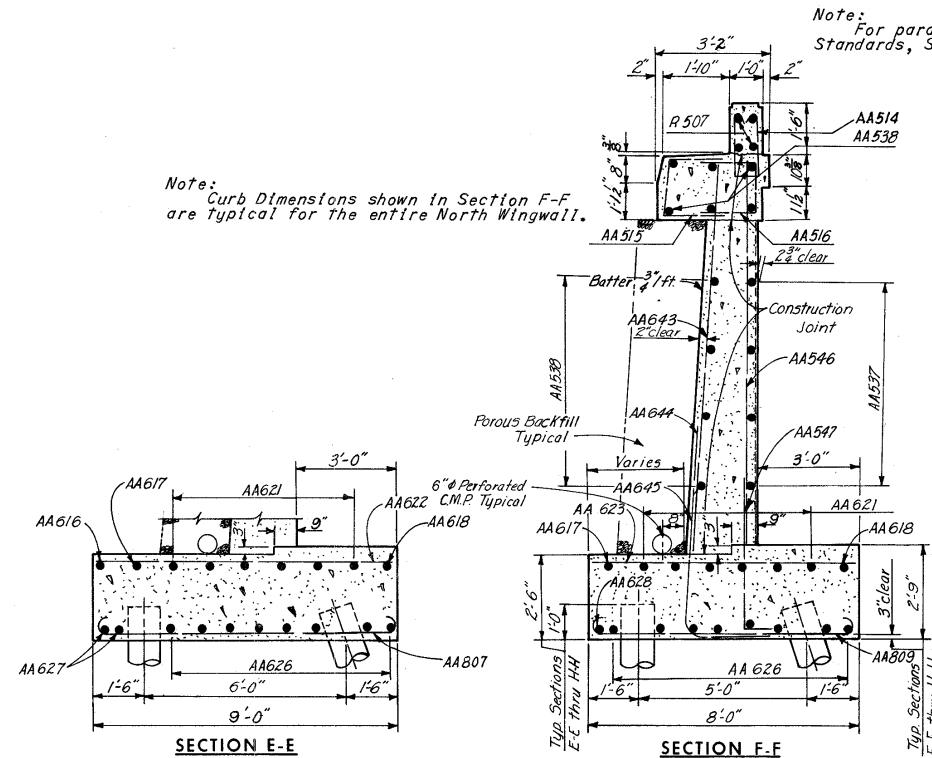


Note:
Footing Steel is the same
as in Section H-H.



Note: For parapet dimensions, see Ohio Standards, Sheet AR-1-57.

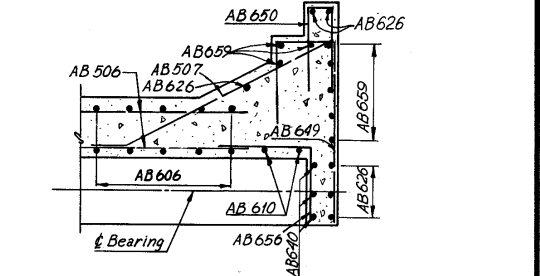
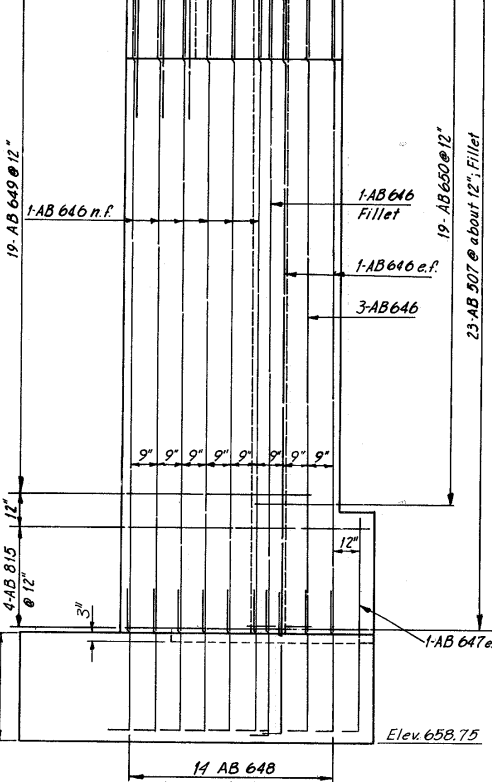
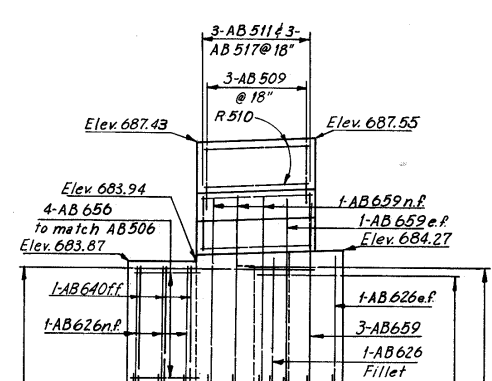
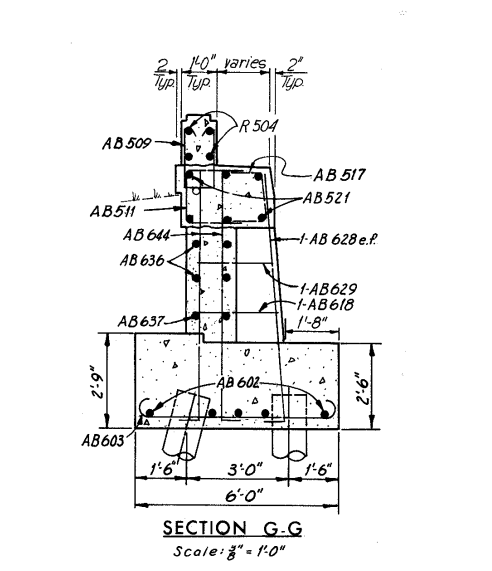
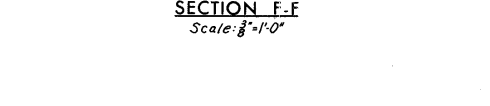
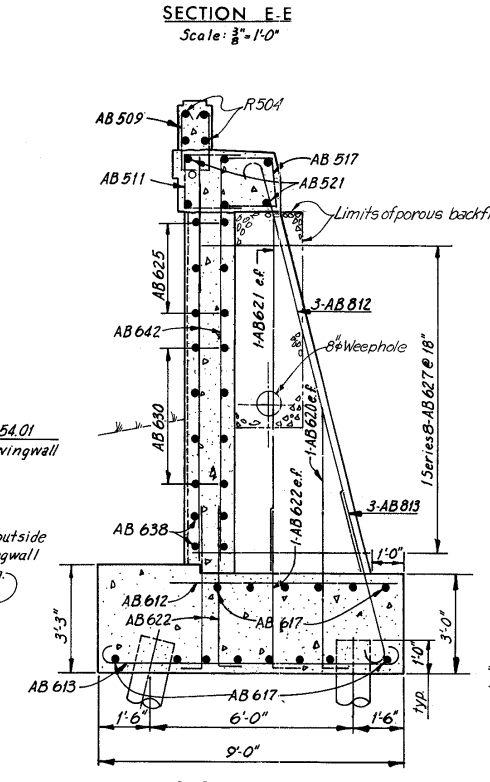
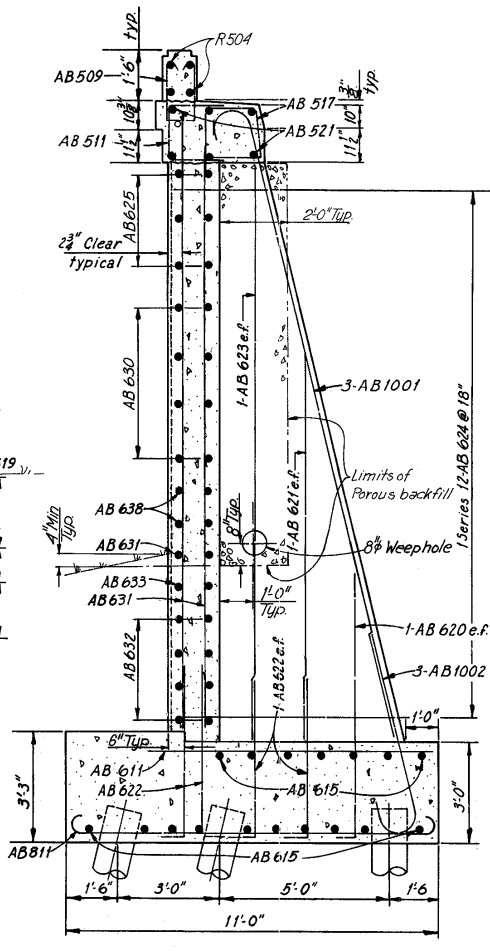
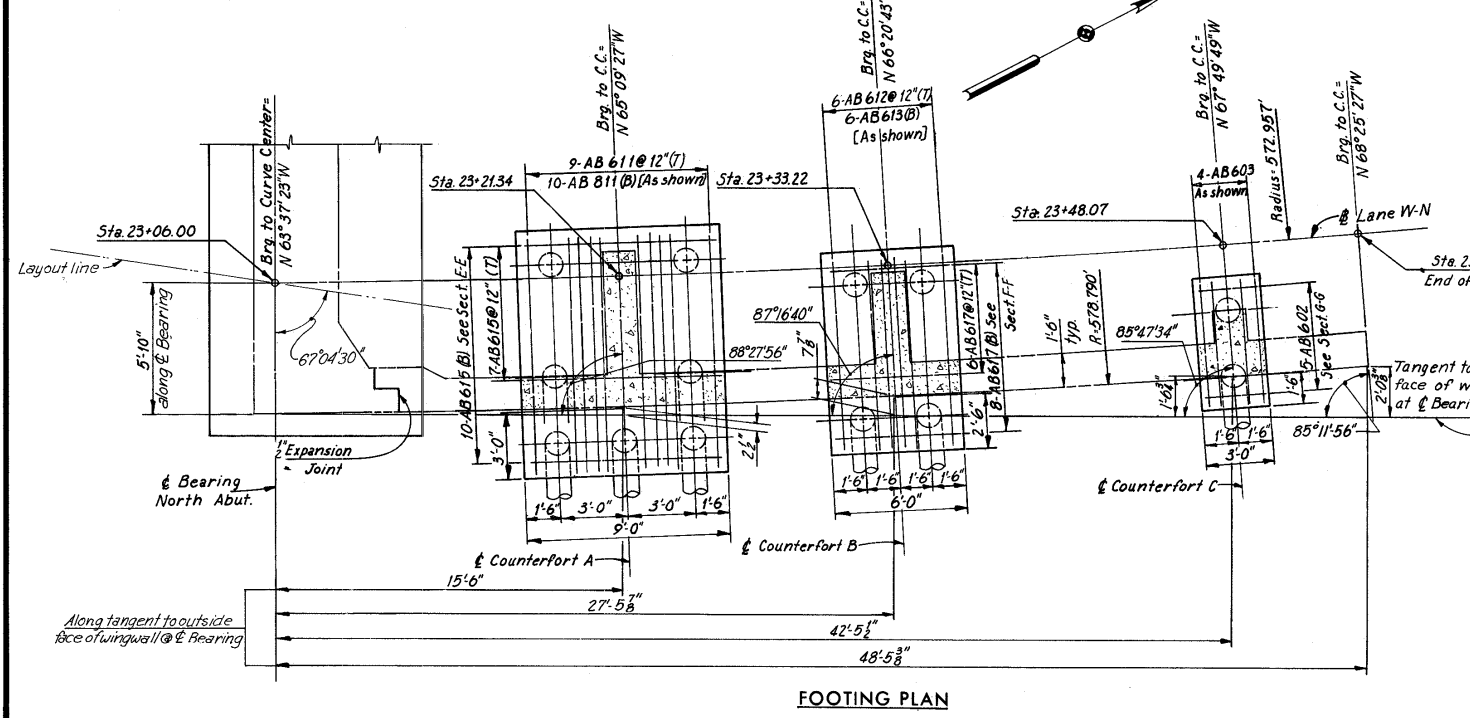
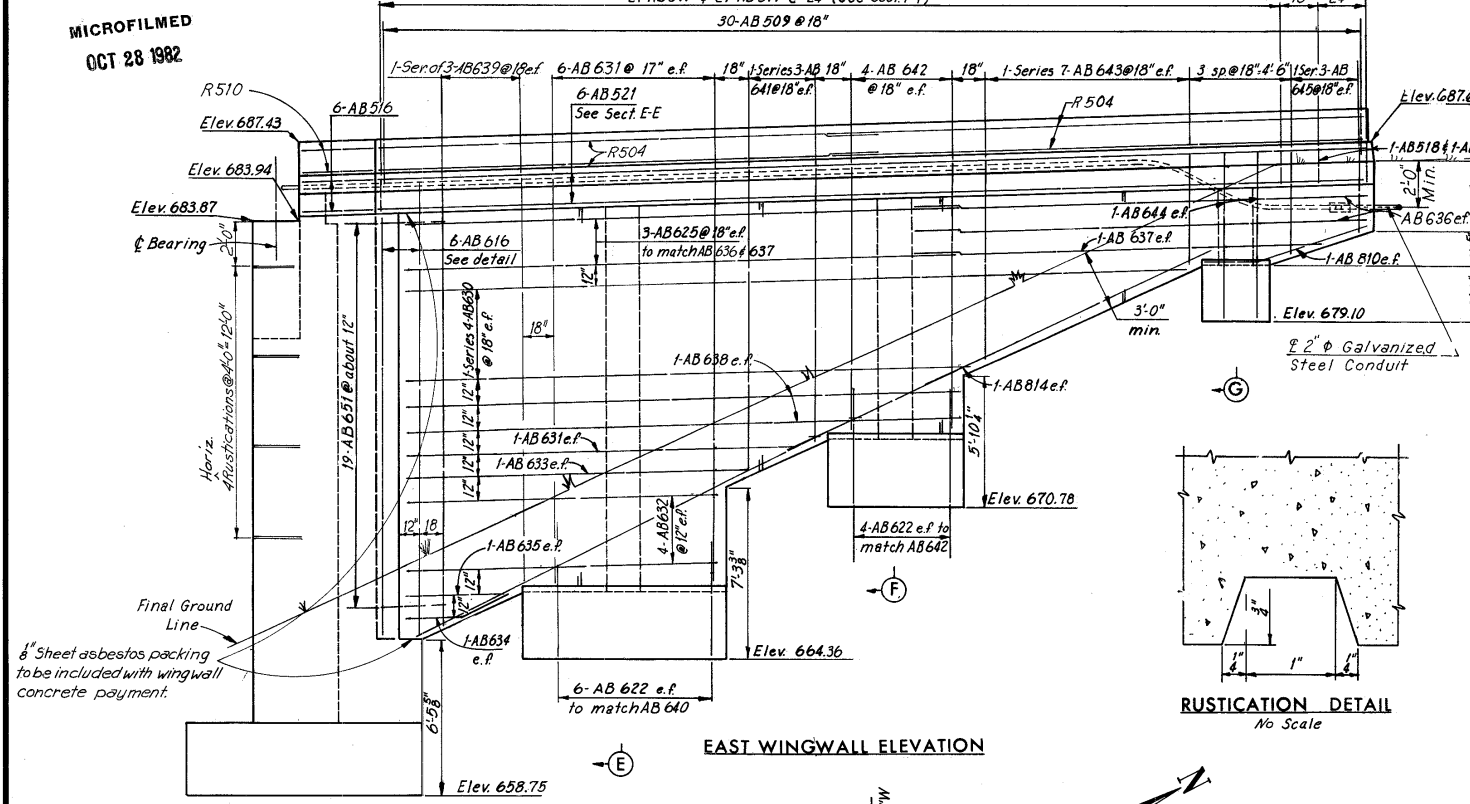
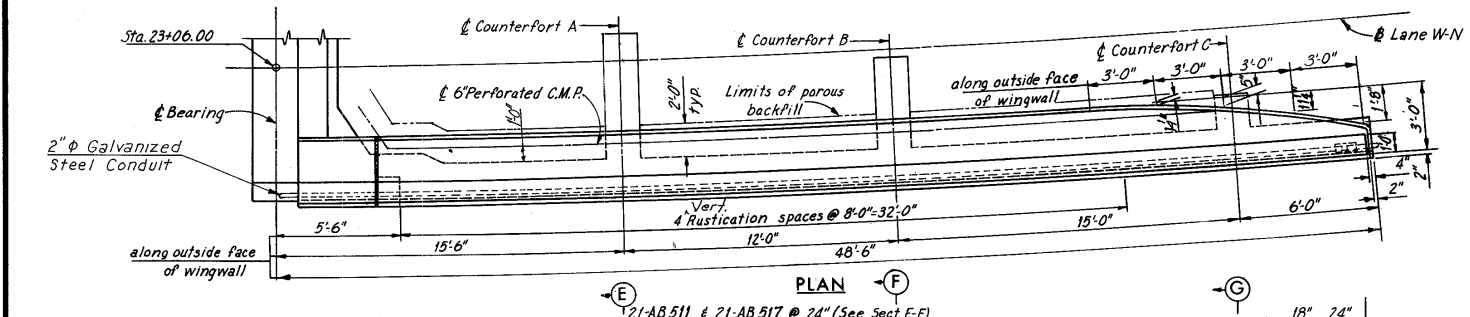
Note: Curb Dimensions shown in Section F-F are typical for the entire North Wingwall.



Notes:
Typ. denotes typical.
e.f. denotes each face.
Battered piles in wingwall footings shall be battered 4 in 12.
All piles are 12" cast-in-place concrete.
For Reinforcement Schedule see Sheet 437.
For longitudinal parapet reinforcement and railing post spacing, see Sheet 438.

H.N.T.B. BRIDGE NO 4				
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK				
WEST ABUTMENT DETAILS				
LANE W-N OVER CLARK FREEWAY				
BR. NO. CUY-90-1406		STA. 18+45.25		
SCALE: 3/8" = 1'-0"		STA. 23+08.25		
CLEVELAND		CUYAHOGA COUNTY OHIO		
DRAWN RLM	TRACED	CHECKED REB	REVIEWED	REVISED
DATE 11-2-64	DATE	DATE 12-10-64	DATE	DATE
				SHEET 429

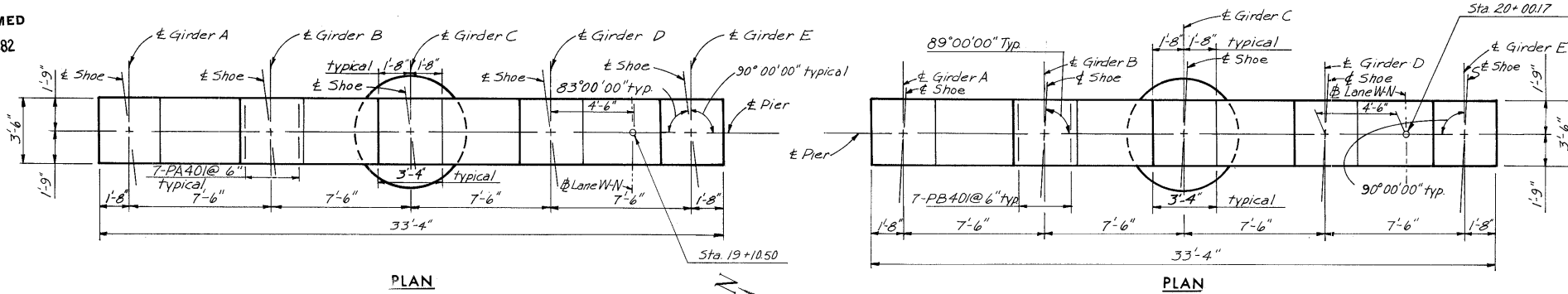
**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81**



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OCT 28 1982

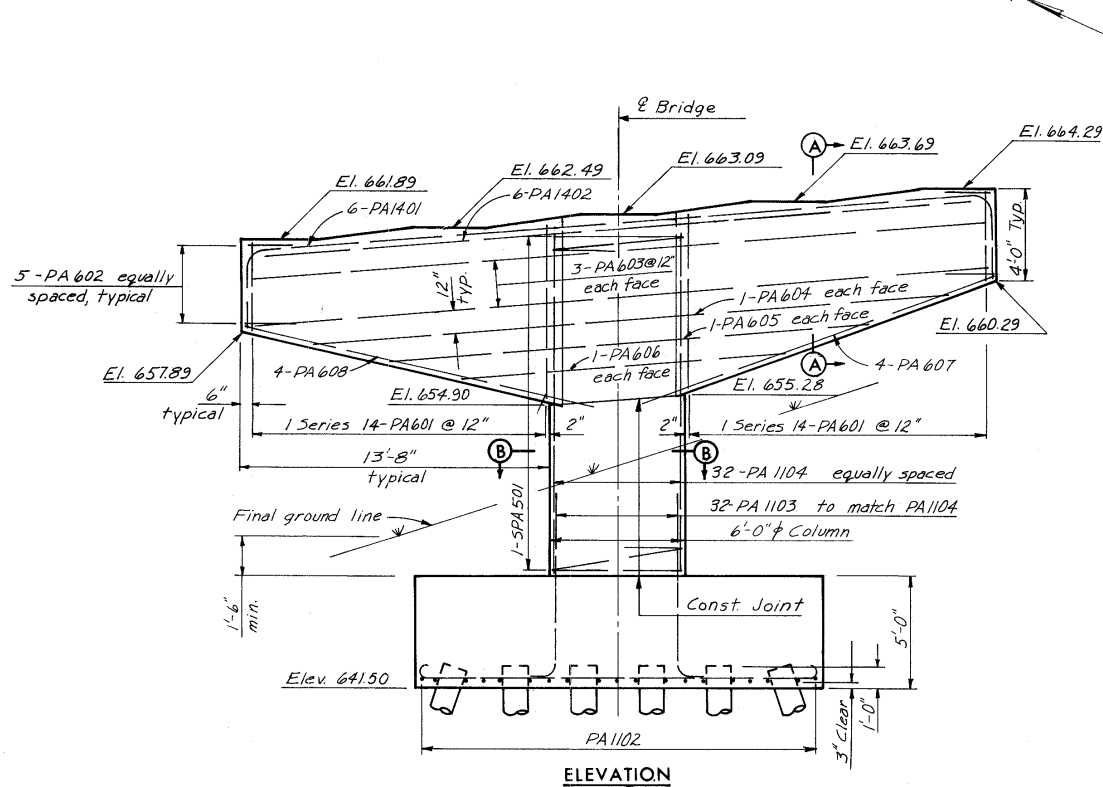
FED. RD. DIVISION	STATE	PROJECT	432
2	OHIO		478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

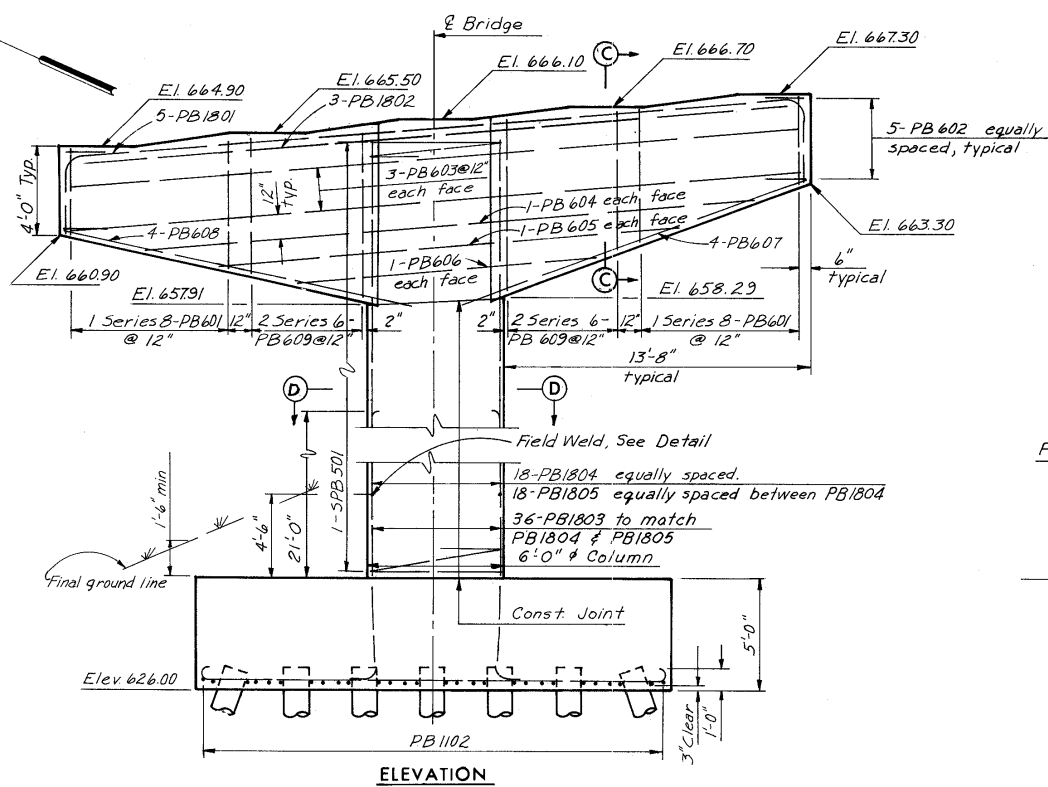


PLAN

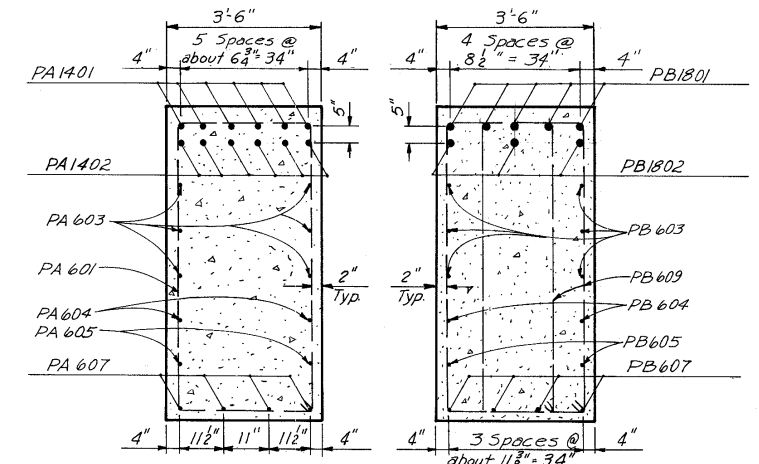
PLAN



ELEVATION

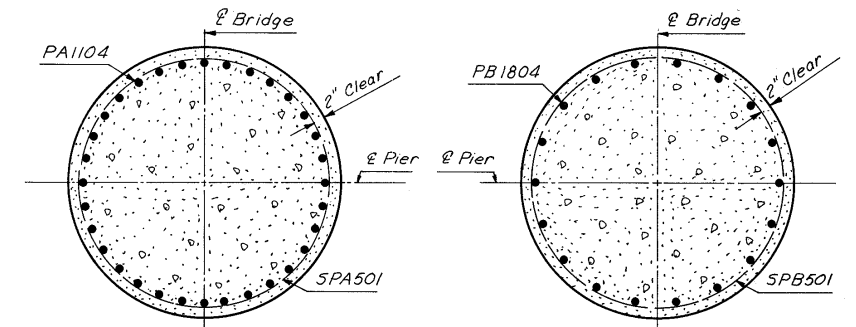


ELEVATION



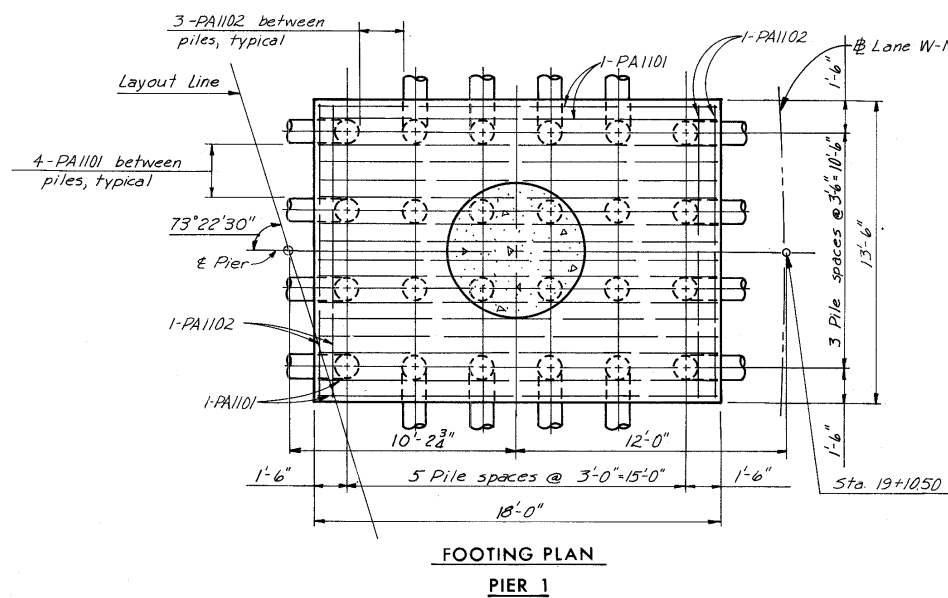
SECTION A-A
Scale: 1/2" = 1'-0"

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

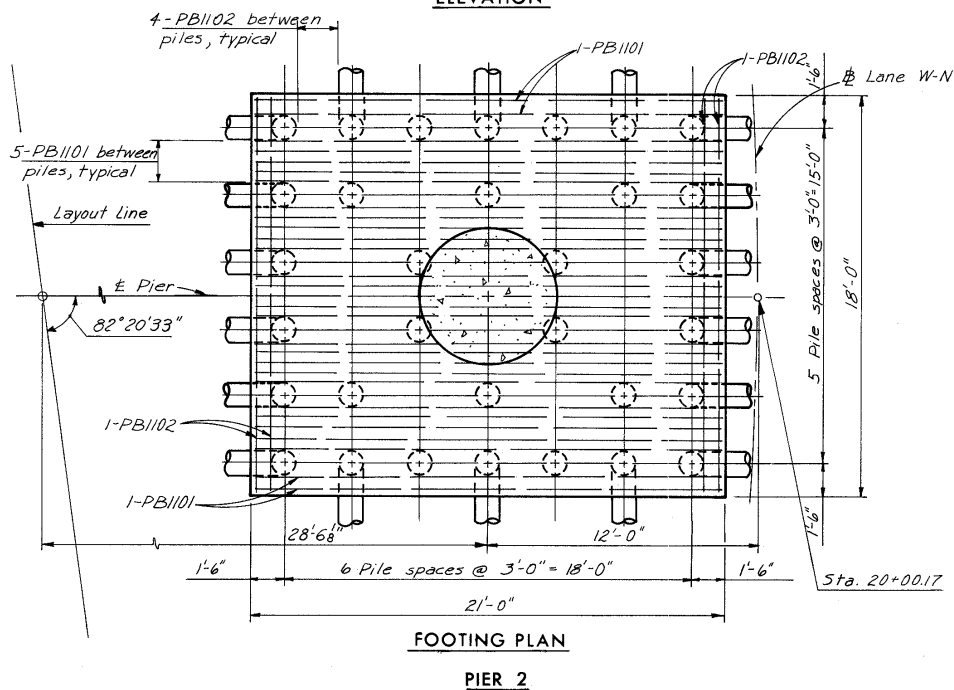


SECTION B-B
Scale: 1/2" = 1'-0"

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

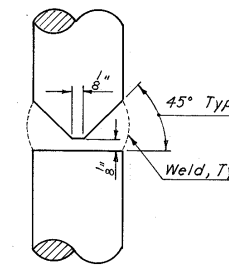


FOOTING PLAN
PIER 1



FOOTING PLAN
PIER 2

DETAIL OF FIELD WELDING
OF NO. 18 REINF. BAR



Note:
Chip or grind root to sound metal before welding second or root side.
Bars which are to be welded shall be of a composition suitable for welding and the Contractor shall obtain information on the chemical composition to aid in development of a satisfactory welding procedure. Welds shall be free of cracks and other visible flaws.
As an alternate, a mechanical splice may be used subject to the approval of the Director.

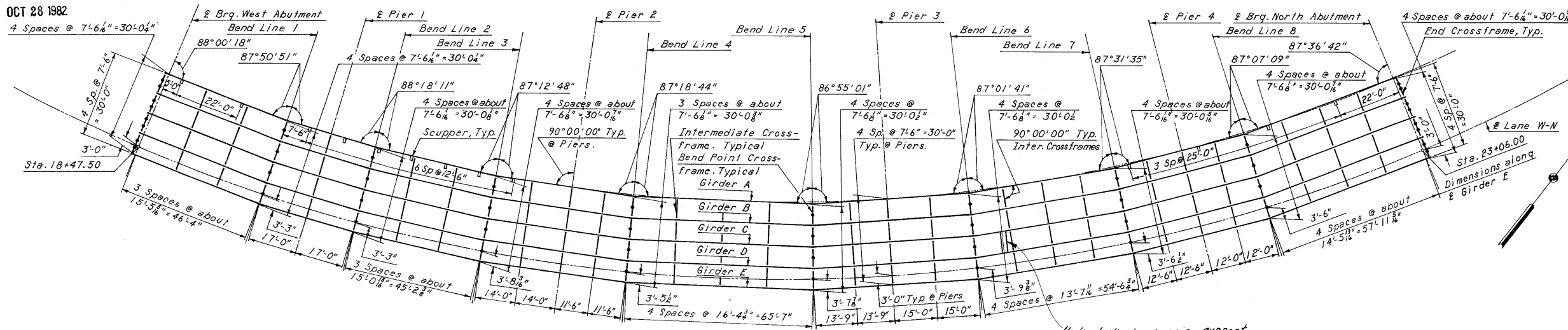
Notes:
All piles are 12" cast-in-place concrete. All battered piles shall be battered 3 in 12. Pile location dimensions are measured along bottom of footings.
For Reinforcement Schedule, see Sheet 438.
Bars pre-fixed "PA" are for Pier 1.
Bars pre-fixed "PB" are for Pier 2.
Bars PA 401 and PB 401 shall be placed 2 1/2" below top of capbeam.

H.N.T.B. BRIDGE NO 4				
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK				
PIERS 1 AND 2				
LANE W-N OVER CLARK FREEWAY				
BR. NO. CUY-90-1406	STA. 18+45.25			
SCALE: 1/4" = 1'-0"	STA. 23+08.25			
CLEVELAND	CUYAHOGA COUNTY	OHIO		
DRAWN JDW	TRACED	CHECKED NO	REVIEWED	REVISED
DATE 10-2-64	DATE	DATE 11-16-64	DATE	DATE
SHEET 432				

MICROFILMED
OCT 28 1982

FED. RD. DIVISION	STATE	PROJECT	434
2	OHIO		478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



FRAMING PLAN

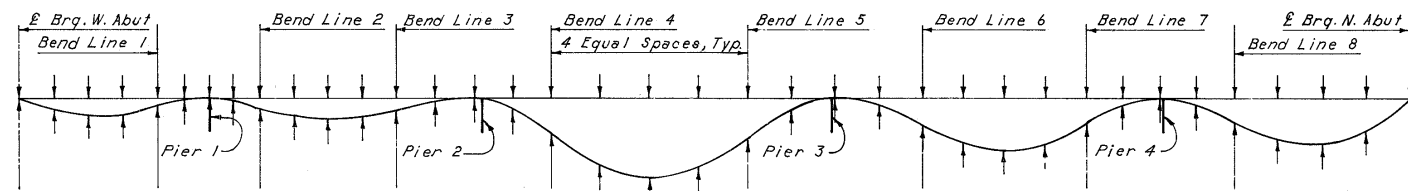
Underdeck luminaire support.
See pages 199 & 208 for details.
Include with Item 5-7 for
Payment.

	Brq. West Abutment	Pier 1	Pier 2	Pier 3	Pier 4	Brq. North Abutment
Girder A	60'-0 1/4"	85'-5 1/2"	110'-0 1/2"	103'-10 3/8"	77'-8 1/2"	9"
Girder B	60'-10 1/8"	86'-8 1/8"	111'-6 1/2"	105'-3 1/8"	78'-8 1/8"	9"
Girder C	61'-8 1/8"	87'-10 1/8"	113'-0 1/8"	106'-8 1/8"	79'-9 1/8"	9"
Girder D	62'-6 1/4"	89'-0 1/4"	114'-6 1/4"	108'-1 1/4"	80'-10 1/4"	9"
Girder E	63'-4"	90'-2 3/8"	116'-1"	109'-6 3/8"	81'-11 1/8"	9"

	Shop Splice	Field Splice	Shop Splice	Field Splice	Field Splice	Shop Splice	Field Splice	Shop Splice	Field Splice
Girder A	44'-1 1/8"	15'-10 1/2"	16'-1 1/8"	42'-10 3/8"	26'-6 7/8"	21'-7 1/8"	62'-6 3/8"	25'-10 3/8"	28'-5 1/8"
Girder B	44'-8 7/8"	16'-1 1/8"	16'-4"	43'-5 1/8"	26'-10 3/8"	21'-11 1/8"	63'-3 3/8"	26'-3 7/8"	28'-10"
Girder C	45'-2 1/8"	16'-5 1/4"	16'-6 1/4"	44'-0 1/4"	27'-3 3/8"	22'-3 3/8"	64'-0 1/8"	26'-8 1/8"	29'-2 3/8"
Girder D	45'-9 1/2"	16'-8 3/8"	16'-9 3/8"	44'-7 3/8"	27'-7 3/8"	22'-7 3/8"	64'-9 3/8"	27'-1 3/8"	29'-7 3/8"
Girder E	46'-4"	17'-0"	17'-0"	45'-2 3/8"	28'-0"	23'-0"	65'-7"	27'-6"	30'-0"

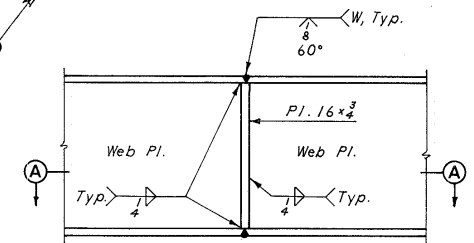
TYPICAL GIRDER ELEVATION

Note:
Deflections are given to the nearest 1/16 inch.
In the table of deflection, T indicates the deflection due to total dead load and C indicates the deflection due to dead load of concrete only.

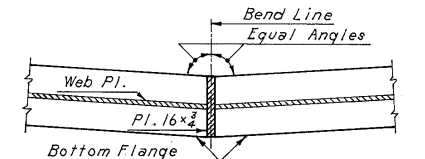


TYPICAL DEFLECTION DIAGRAM

GIRDER	Type	DEFLECTIONS																																					
		West Abut.	25	50	75	Bend Line 1	25	50	75	Bend Line 2	25	50	75	Bend Line 3	25	50	75	Bend Line 4	25	50	75	Bend Line 5	25	50	75	Bend Line 6	25	50	75	Bend Line 7	25	50	75	Bend Line 8	25	50	75	North Abut.	
A	T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
A	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B	T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
E	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

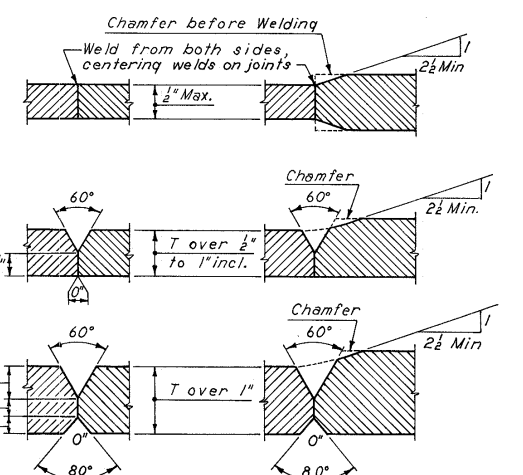


ELEVATION



SECTION A-A

GIRDER SHOP SPICE DETAIL



JOINT PREPARATION FOR SHOP BUTT WELDS

Notes:
Location of scuppers are dimension along the north gutter line.
For field splice details, see Sheet 436.
For Bolster and Rocker details, see Ohio Standard Drawing RB-1-55, revised 2-2-59.
For Scupper Details, see Ohio Standard Drawing SD-1-63, Sheet 3 of 4.
Top and bottom flanges are identical.
Intermediate stiffeners are Pls. 6x8 placed on both sides of all girders.
Numbers shown on girder web indicate the no. of intermediate stiffener spaces between crossframes.
Bearing stiffeners shall be fully grooved and butt-welded to the lower flange and fitted in close contact with the upper flange.
For details of Intermediate Crossframe and Bend Point Crossframe, see Sheet 435.
For detail of End Crossframe, see Sheet 435.
For curb plate details at Safety Curbs, see Ohio Standard Drawing SD-1-63, Sheet 2 of 4.
The girders shall be fabricated to line parallel to the profiles formed by top of pavement elevations directly over the girders, plus the camber required to compensate for dead load deflections.

H.N.T.B. BRIDGE NO 4

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

FRAMING PLAN
LANE W-N OVER CLARK FREEWAY

BR. NO. CUY-90-1406 STA. 18+45.25
SCALE: STA. 23+08.25
CLEVELAND CUYAHOGA COUNTY OHIO

BR. NO. CUY-90-1564 DATE 12-15-64

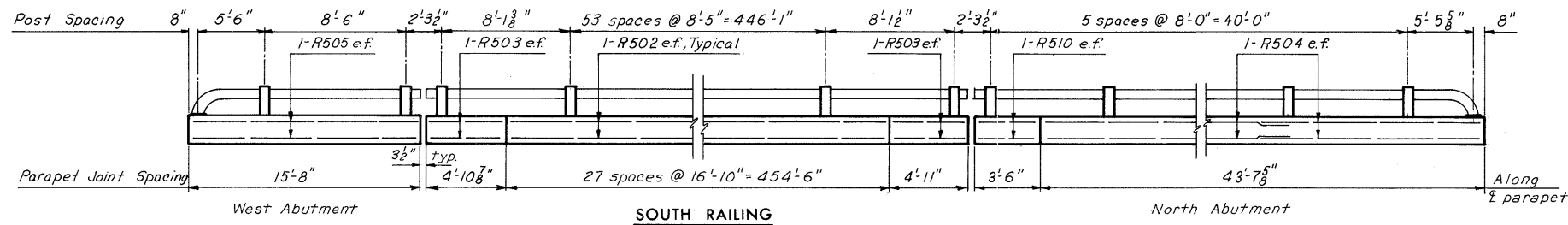
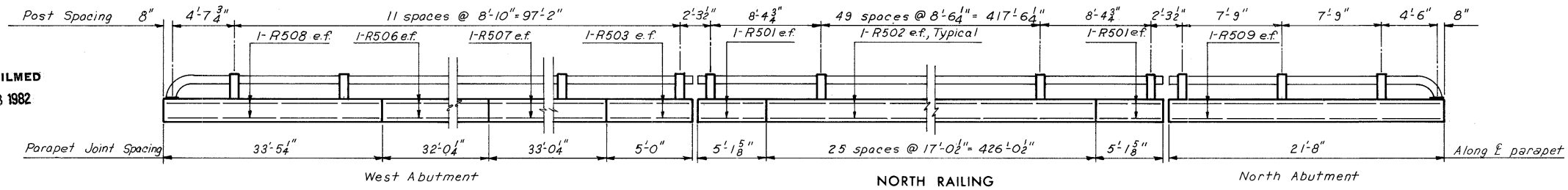
CHECKED JFD REVIEWED DATE 12-15-64

SHEET 434

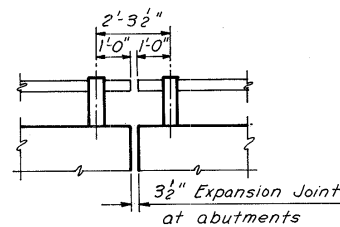
FED. RD. DIVISION	STATE	PROJECT	436 478
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

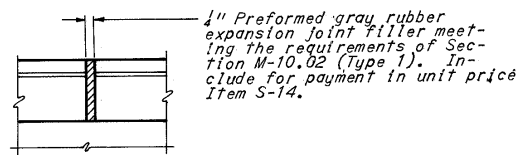
MICROFILMED
OCT 28 1982



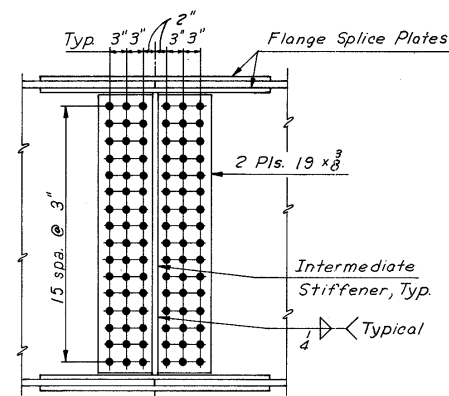
Railing Notes:
All railing dimensions are given along E parapet. e.f. denotes each face.
Railing shall be fabricated in lengths of two panels at abutments and of not less than three panels on superstructure. The finished railing shall be free of burrs, sharp corners and rough surfaces. Railing posts shall be normal to grade.
Payment for railing shall be made at the contract unit price bid for "Item S-14, Aluminum Railing (including parapet)". Pay length shall be the over-all length of the parapets and shall include cost of shims, nuts, anchor bolts, set screws, etc. necessary to complete the installation of railing.
Concrete and longitudinal reinforcing steel in the parapets shall be included in "Item S-14, Aluminum Railing (including parapet)" for payment. All other reinforcing steel in parapet shall be included in "Item S-4" for payment.
For additional details and notes regarding railing, see Ohio Standard Drawing AR-1-57, revised 4-2-62.



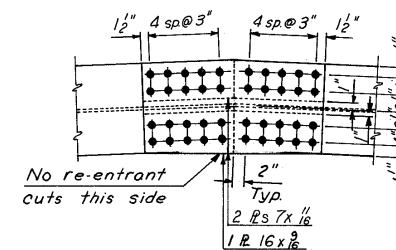
RAILING JOINT DETAIL



PARAPET JOINT DETAIL



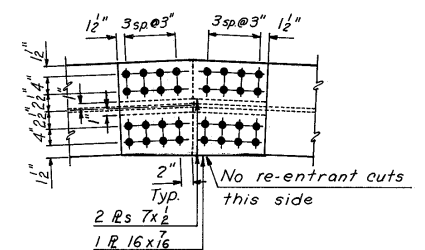
TYPICAL WEB SPlice



FLANGE SPlice NEAR PIER 2

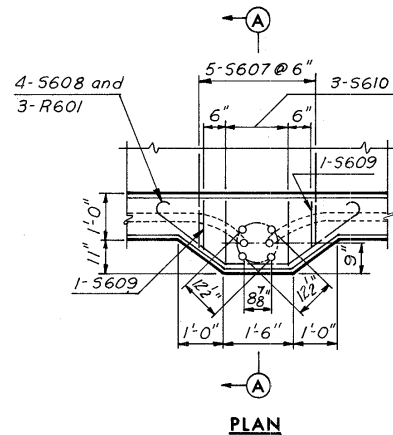
GIREDER FIELD SPlice

Note:
Optional shop splices will be permitted in the webs and flanges of girders but their locations shall be submitted to the director for approval.
The high strength bolts shall be placed with the heads on the outside face of the exterior girders and the bottom of the girder flange.

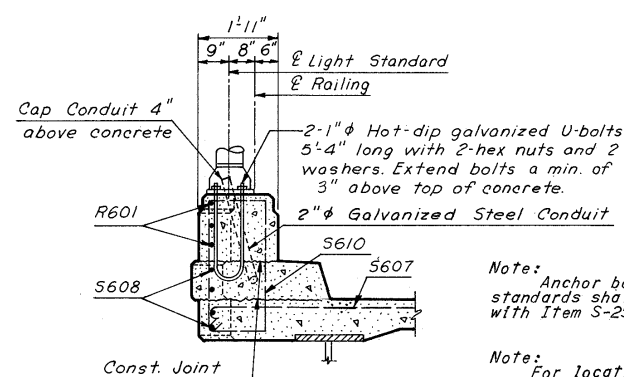


FLANGE SPlice NEAR PIERS 1, 3 AND 4

Note:
All field splices shall be made with 3/4" high strength bolts.



LIGHT STANDARD SUPPORT



Note:
Anchor bolts for light standards shall be included with Item S-25 for payment.

Note:
For location of light standard supports, see Sheet 425.

H.N.T.B. BRIDGE NO 4				
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK				
RAILING DETAILS				
LANE W-N OVER CLARK FREEWAY				
BR. NO. CUY-90-1406	STA. 18+45.25			
SCALE:	STA. 23+08.25			
CLEVELAND	CUYAHOGA COUNTY	OHIO		
DRAWN JLR	TRACED	CHECKED JPD	REVIEWED	REVISED
DATE 1/6-64	DATE	DATE 2/16-64	DATE	SHEET 436

MICROFILMED
OCT 28 1982

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
WEST ABUTMENT.								
AA401	30	2'-9"	104	1'-10 1/2"	1'-0"		55	
AA501	4	11'-6"	109	3'-0"	2'-7"		48	
AA502	2	18'-6"	109	6'-6"	2'-7"		39	
AA503	9	35'-3"	Str.				331	
AA504	2	23'-3"	Str.				49	
AA505	2	11'-5"	Str.				24	
AA506	1Ser. 7	7'-10" to 8'-4"	104	7'-0" to 7'-6"	1'-0"	1"	59	
AA507	1	8'-6"	104	7'-8"	1'-0"		9	
AA508	1	9'-7"	104	8'-9"	1'-0"		10	
AA509	1Ser. 8	9'-4" to 9'-11"	104	8'-6" to 9'-1"	1'-0"	1"	80	
AA510	1	9'-10"	104	9'-0"	1'-0"		10	
AA511	1	10'-7"	104	9'-9"	1'-0"		11	
AA512	1Ser. 13	10'-5" to 11'-2"	104	9'-7" to 10'-4"	1'-0"	3/4"	146	
AA513	32	8'-0"	105	3'-5"	2'-5"	2'-5"	267	
AA514	82	5'-7"	110				477	
AA515	62	5'-5"	136	1'-6"	2'-0"	2"	351	
AA516	62	4'-3"	105	1'-6"	1'-6"	1'-6"	275	
AA517	7	4'-3"	Str.				31	
AA518	18	6'-2"	Str.				115	
AA519	1Ser. 6	8'-9" to 12'-11"	105	1'-2"	3'-11" to 6'-0"	10"	68	
AA520	5	8'-1"	105	1'-2"	3'-7"		42	
AA521	6	15'-8"	Str.				98	
AA522	2	17'-8"	Str.				37	
AA523	2	13'-8"	Str.				29	
AA524	1	12'-0"	Str.				13	
AA525	1	8'-0"	Str.				8	
AA526	4	9'-8"	Str.				40	
AA527	4	5'-8"	Str.				24	
AA528	2	8'-6"	Str.				18	
AA529	7	7'-2"	107	3'-10"	1'-8"	1'-2"	52	
AA530	8	5'-1"	104	3'-0"	2'-2"		42	
AA531	11	4'-6"	Str.				52	
AA532	8	6'-4"	Str.				53	
AA533	8	6'-5"	108	4'-9"	1'-8"	1'-2"	54	
AA534	9	9'-11"	105	1'-6"	6'-8"	2'-0"	93	
AA535	9	6'-3"	105	6"	3'-0"	3'-0"	59	
AA536	3	16'-4"	Str.				51	
AA537	14	31'-9"	Str.				464	
AA538	10	32'-8"	Str.				341	
AA539	1	28'-0"	Str.				29	
AA540	1	29'-0"	Str.				30	
AA541	1	11'-4"	Str.				12	
AA542	1	12'-4"	Str.				13	
AA543	2	28'-3"	Str.				59	
AA544	2	11'-6"	Str.				24	
AA545	1Ser. 3	13'-3" to 13'-6"	Str.			1 1/2"	42	
AA546	1Ser. 18	6'-6" to 13'-3"	Str.			4 1/2"	185	
AA547	21	5'-2"	104	4'-4"	1'-0"		113	
AA548	6	4'-8"	Str.				29	
AA549	6	33'-5"	Str.				209	
AA550	9	31'-6"	Str.				296	
AA601	27	8'-1"	100	6'-9"			328	
AA602	20	6'-9"	Str.				203	
AA603	4	8'-3"	Str.				50	
AA604	31	19'-8"	117	8'-0"	6'-8"		916	
AA605	7	19'-10"	105	1'-2"	9'-6"	9'-6"	209	
AA606	11	9'-6"	Str.				157	
AA607	1Ser. 7	7'-10" to 8'-4"	104	7'-0" to 7'-6"	1'-0"	1"	85	
AA608	1	7'-6"	104	7'-8"	1'-0"		13	
AA609	1	9'-7"	104	8'-9"	1'-0"		14	
AA610	1Ser. 8	9'-4" to 9'-11"	104	8'-6" to 9'-1"	1'-0"	1"	116	
AA611	1	9'-10"	104	9'-0"	1'-0"		15	
AA612	1	10'-7"	104	9'-9"	1'-0"		16	
AA613	1Ser. 13	10'-5" to 11'-2"	104	9'-7" to 10'-4"	1'-0"	3/4"	211	
AA614	21	7'-0"	100	5'-0"			221	
AA615	10	4'-0"	100	2'-8"			60	
AA616	1	21'-6"	Str.				32	
AA617	1	36'-9"	Str.				55	
AA618	1	36'-3"	Str.				54	
AA619	1	15'-1"	Str.				23	
AA620	2	16'-7"	Str.				50	
AA621	11	34'-6"	Str.				570	
AA622	22	8'-6"	Str.				281	
AA623	10	7'-6"	Str.				113	
AA624	10	6'-6"	Str.				98	
AA625	10	5'-6"	Str.				83	

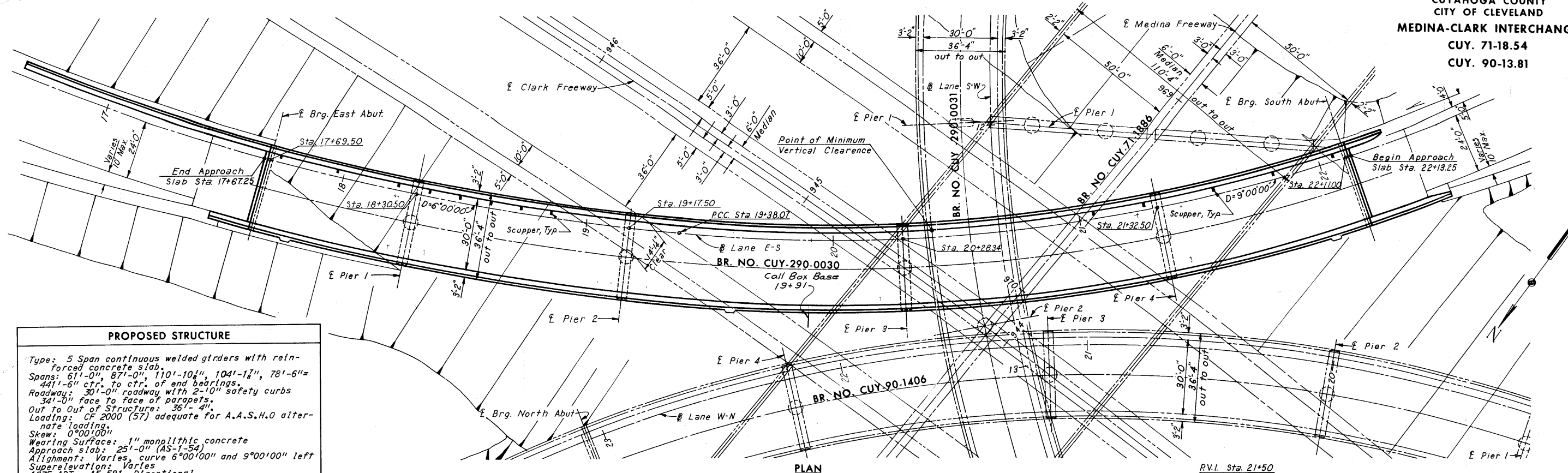
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
AA626	8	36'-6"	Str.				439	
AA627	2	21'-6"	Str.				65	
AA628	1	16'-9"	Str.				25	
AA629	6	16'-3"	Str.				146	
AA630	2	31'-3"	Str.				94	
AA631	5	16'-6"	Str.				124	
AA632	7	9'-0"	137	7'-3"	1'-11"	5 1/2"	95	
AA633	12	5'-4"	104	4'-6"	1'-0"		96	
AA634	13	8'-0"	100	6'-8"			156	
AA635	19	9'-1"	Str.				259	
AA636	19	5'-10"	104	5'-0"	1'-0"		166	
AA637	12	11'-2"	120				202	
AA638	5	16'-4"	Str.				123	
AA639	2	33'-3"	Str.				100	
AA640	2	24'-0"	Str.				72	
AA641	2	10'-2"	Str.				31	
AA642	1Ser. 8	13'-6" to 13'-9"	Str.			1/8"	164	
AA643	1Ser. 53	6'-9" to 13'-6"	Str.			1 1/2"	806	
AA644	1Ser. 19	6'-6" to 8'-9"	137	4'-9" to 7'-0"	1'-11"	3/2 to 5	218	
AA645	61	6'-3"	137	4'-6"	1'-11"	3 1/2"	573	
AA646	2Ser. 18	3'-9" to 6'-6"	Str.				277	
AA647	8	3'-6"	Str.				42	
AA648	5	10'-6"	Str.				79	
AA649	7	12'-0"	100	10'-8"			126	
AA650	2	9'-4"	104	8'-6"	1'-0"		28	
AA651	7	7'-6"	121	2'-6"	1'-2"	1'-0"	79	
AA652	2	7'-5"	104	6'-7"	1'-0"		22	
AA653	2	6'-10"	104	6'-0"	1'-0"		21	
AA801	9	12'-6"	Str.				300	
AA802	6	8'-0"	Str.				128	
AA803	4	14'-3"	Str.				152	
AA804	4	15'-6"	Str.				166	
AA805	5	18'-0"	108	12'-6"	5'-6"	4'-2"	240	
AA806	5	19'-3"	108	13'-9"	5'-6"	4'-2"	257	
AA807	17	10'-10"	100	8'-8"			492	
AA808	2	33'-9"	108	28'-3"	5'-6"	2'-0"	180	
AA809	14	9'-10"	100	7'-8"			367	
AA1101	14	7'-2"	Str.				533	
Total 16,482								
NORTH ABUTMENT								
AB401	30	2'-9"	104	1'-10 1/2"	1'-0"		55	
AB501	1Ser. 7	10'-7" to 11'-2"	104	9'-9" to 10'-4"	1'-0"	1 1/8"	79	
AB502	1Ser. 7	13'-8" to 14'-3"	104	12'-10" to 13'-5"	1'-0"	1 3/8"	102	
AB503	1Ser. 7	12'-9" to 13'-6"	Str.			1 1/2"	96	
AB504	6	16'-4"	Str.				102	
AB505	11	5'-7"	104	4'-9"	1'-0"		64	
AB506	9	31'-9"	Str.				298	
AB507	23	7'-11"	108	6'-5"	1'-7"	10 3/8"	190	
AB508	12	7'-11"	107	4'-10"	1'-7"	1'-1 1/2"	99	
AB509	48	5'-7"	110				279	
AB510	23	6'-8"	105	3'-5"	1'-9"	1'-9"	160	
AB511	34	4'-7"	105	1'-6"	1'-8"	1'-8"	163	
AB512	4	4'-7"	Str.				19	
AB513	4	14'-9"	Str.				62	
AB514	4	24'-11"	Str.				104	
AB515	15	35'-4"	Str.				553	
AB516	6	3'-2"	Str.				20	
AB517	34	4'-4"	136	1'-5"	1'-6"	2"	154	
AB518	4	3'-5"	105	1'-6"	1'-1"	1'-1"	14	
AB519	4	3'-2"	136	1'-5"	1"	2"	13	
AB520	6	21'-6"	Str.				135	
AB521	6	43'-6"	Str.				272	
AB601	38	10'-0"	Str.				571	
AB602	10	4'-0"	100	2'-8"			60	
AB603	8	7'-0"	100	5'-8"			84	
AB604	1Ser. 7	10'-7" to 11'-2"	104	9'-9" to 10'-4"	1'-0"	1 1/8"	114	
AB605	1Ser. 10	13'-8" to 14'-3"	104	12'-10" to 13'-5"	1'-0"	1 3/8"	210	
AB606	31	19'-10"	117	8'-1"	6'-9"		923	
AB607	1	7'-6"	121	2'-6"	1'-2"	1'-0"	11	

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
AB608	1	6'-10"	121	2'-2"	1'-2"	1'-0"	10	
AB609	8	7'-7"	104	6'-9"	1'-0"		91	
AB610	4	8'-0"	Str.				48	
AB611	9	8'-3"	Str.				111	
AB612	6	6'-9"	Str.				61	
AB613	6	10'-0"	100	8'-8"			90	
AB614	1Ser. 3	4'-8" to 11'-0"	Str.			3'-2"	35	
AB615	17	8'-6"	Str.				217	
AB616	6	20'-6"	Str.				185	
AB617	14	5'-6"	Str.				116	
AB618	1	7'-0"	121	2'-3"	1'-2"	1'-0"	11	
AB619	3	9'-3"	105	8"	6'-2"	2'-9"	42	
AB620	4	9'-0"	104	8'-2"	1'-0"		54	
AB621	4	11'-1"	Str.				67	
AB622	26	5'-7"	104	4'-9"	1'-0"		218	
AB623	2	16'-10"	Str.				51	
AB624	1Ser. 12	7'-4" to 15'-6"	121	2'-5" to 6'-6"	1'-2"	1'-0"	206	
AB625	6	26'-3"	Str.				236	
AB626	9	4'-11"	Str.				66	
AB627	1Ser. 8	7'-4" to 12'-6"	121	2'-5" to 5'-0"	1'-2"	1'-0"	119	
AB628	2	8'-2"	104	7				

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OCT 28 1982

FED. RD. DIVISION	STATE	PROJECT	439 478
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

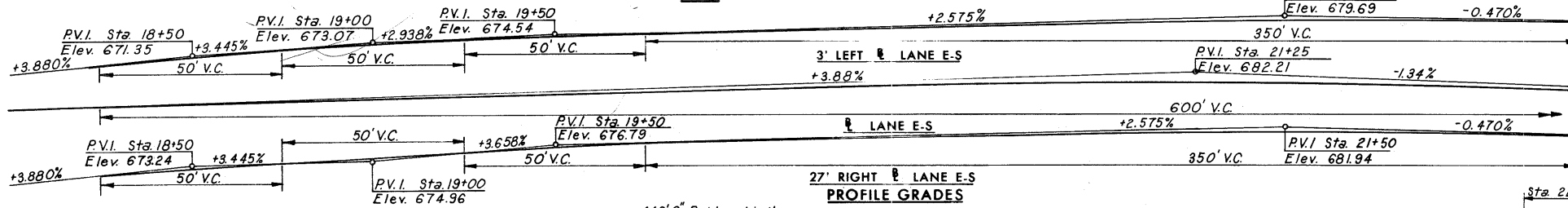


PROPOSED STRUCTURE

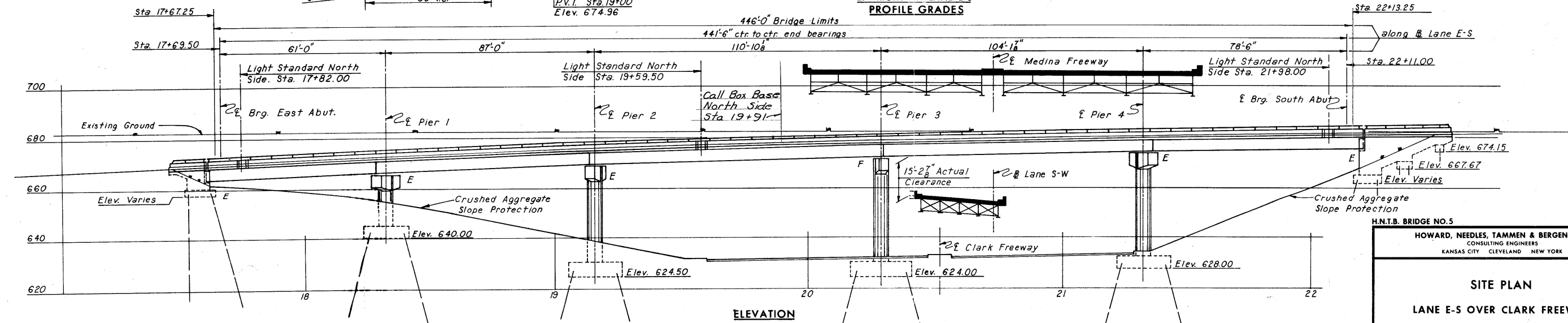
Type: 5 Span continuous welded girders with reinforced concrete slab.
Spans: 61'-0", 87'-0", 110'-10", 104'-1", 78'-6" = 441'-6" ctr. to ctr. of end bearings.
Roadway: 30'-0" roadway with 2'-10" safety curbs 3'-0" face to face of parapets.
Out to Out of Structure: 36'-4".
Loading: CF 2000 (57) adequate for A.A.S.H.O alternate loading.
Skew: 0°00'00"
Wearing Surface: 1" monolithic concrete
Approach slab: 25'-0" (AS-1-54)
Alignment: Varies, curve 6°00'00" and 9°00'00"
Superelevation: Varies
1975 ADT: 15,581, Directional

HORIZONTAL CURVE DATA
Lane E-S

P.I. Sta.	17+56.50	21+65.45
A	21° 39' 36"	39° 18' 34"
D	6° 00' 00"	9° 00' 00"
R	954.93'	636.62'
L	361.00'	436.77'
T	179.43'	227.38'



Note: All piles shall be 12" cast-in-place concrete with estimated lengths as follows: East Abutment-65', Pier 1-60', Pier 2-60', Pier 3-60', Pier 4-60', and South Abutment-70'. These estimates are based on boring data and are approximate only. The Contractor shall assume full responsibility for length of piling selected for driving.



H.N.T.B. BRIDGE NO. 5
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SITE PLAN
LANE E-S OVER CLARK FREEWAY

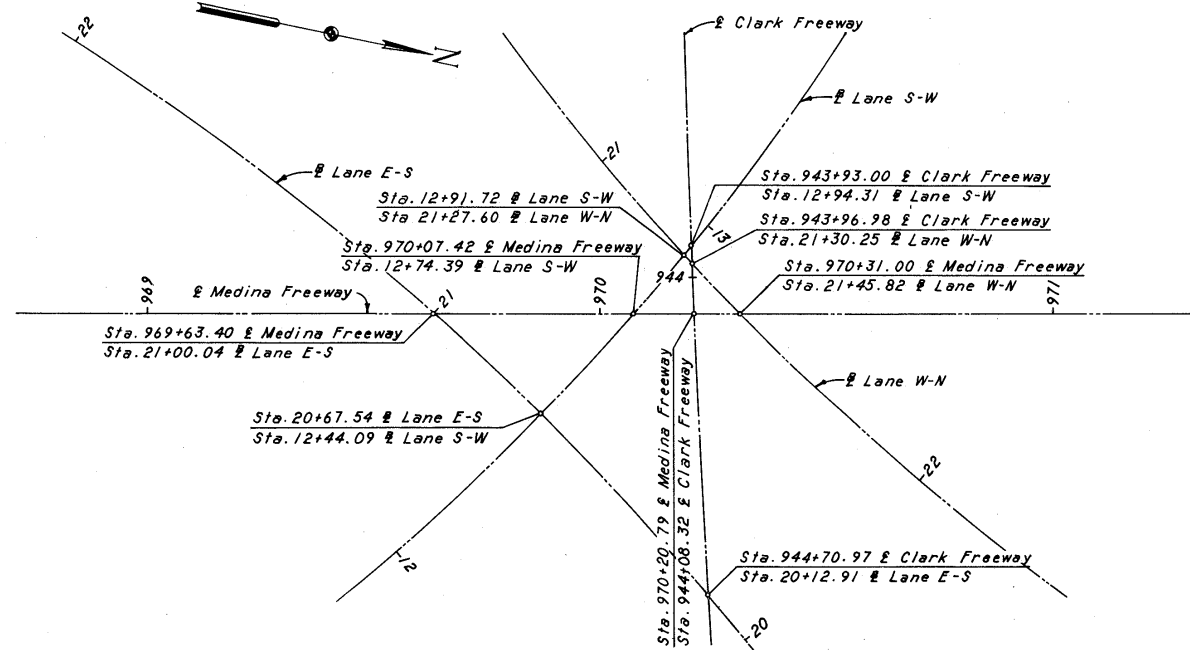
BR. NO. CUY-290-0030 STA. 17+67.25
SCALE: STA. 22+13.25
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DATE 2-23-64	DATE	DATE 12-24-64	DATE	SHEET 439

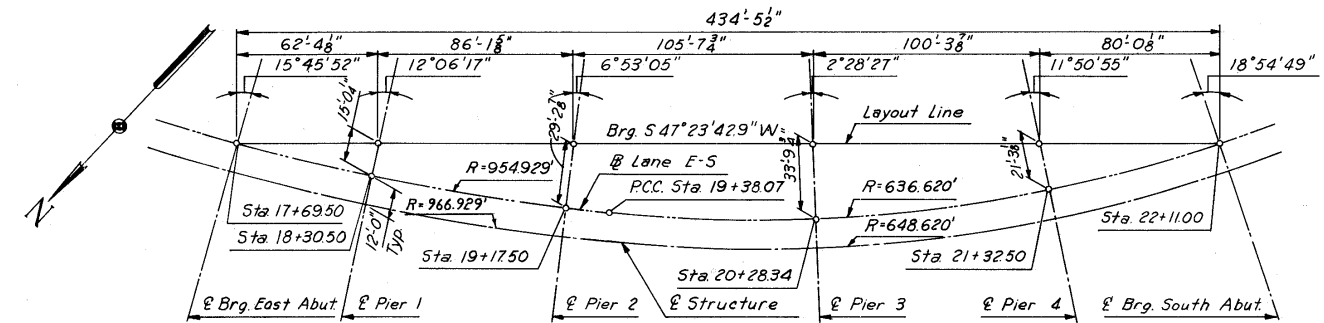
MICROFILMED
OCT 28 1982

FED. RD. DIVISION	STATE	PROJECT	440 478
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



GEOMETRIC PLAN



LAYOUT SKETCH

ESTIMATED QUANTITIES - BRIDGE NO. CUY-290-0030								
ITEM	DESCRIPTION	UNIT	ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL	TOTAL	AS BUILT
E-2	Cofferdams, Cribbs and Sheeting	L.S.					Lump Sum	
E-2	Unclassified Excavation	Cu.Yd.	525	726			1251	
I-10	Crushed Aggregate Slope Protection	Sq.Yd.				2760	2760	
S-1	Class "C" Concrete (Superstructure)	Cu.Yd.			579		579	
S-1	Class "C" Concrete (Pier Caps and Columns)	Cu.Yd.		231			231	
S-1	Class "E" Concrete (Abutment above Footings)	Cu.Yd.	242				242	
S-1	Class "E" Concrete (Footings, Piers, Abutments, and Wingwalls)	Cu.Yd.	162	293			455	
S-3	Waterproofing Premolded Sealing Strip	Lin.Ft.	28				28	
S-4	Reinforcing Steel	Lbs.	29,783	120,578	148,794		299,155	
S-7	Structural Steel	Lbs.			535,400		535,400	
S-8	Field Painting of Structural Steel, as per proposal note	Lbs.			535,400		535,400	
S-9	1/2" Preformed Expansion Joint Filler	Sq.Ft.	77				77	
S-14	Railing (Type A Aluminum Rail, Supports and Concrete Parapet)	Lin.Ft.	170		901		1,071	
S-16	First Test Pile	L.S.					Lump Sum	Lump Sum
S-17	First Pile Test Load	L.S.					Lump Sum	Lump Sum
S-17	Subsequent Pile Test Load	Each					1	
S-18	12" Cast-In-Place Piles	Lin.Ft.	4,605	7,500			12,105	
S-25	For Lighting Details and Quantities, see Sheet 200							
S-29	Scuppers, Including Supports	Each			13		13	
S-29	Porous Backfill	Cu.Yd.	107				107	
S-29	6" Perforated Helical C.M.P. M-6.4(h) including specials	Lin.Ft.	166				166	
S-29	6" Helical C.M.P. M-6.4(h) non-perforated	Lin.Ft.	90				90	
S-101	Water Reducing, Set-retarding Admixture	Each			579		579	

H.N.T.B. BRIDGE NO. 5
HOWARD, NEEDLES, TAMMEN & BERGENOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

ESTIMATED QUANTITIES
LANE E-S OVER CLARK FREEWAY
BR. NO. CUY-290-0030 STA. 17+67.25
SCALE: STA. 22+13.25
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN L.J.R.	TRACED	CHECKED D.A.M.	REVIEWED	DATE
DATE 10-18-69	DATE	DATE 12-28-69	DATE	SHEET 440

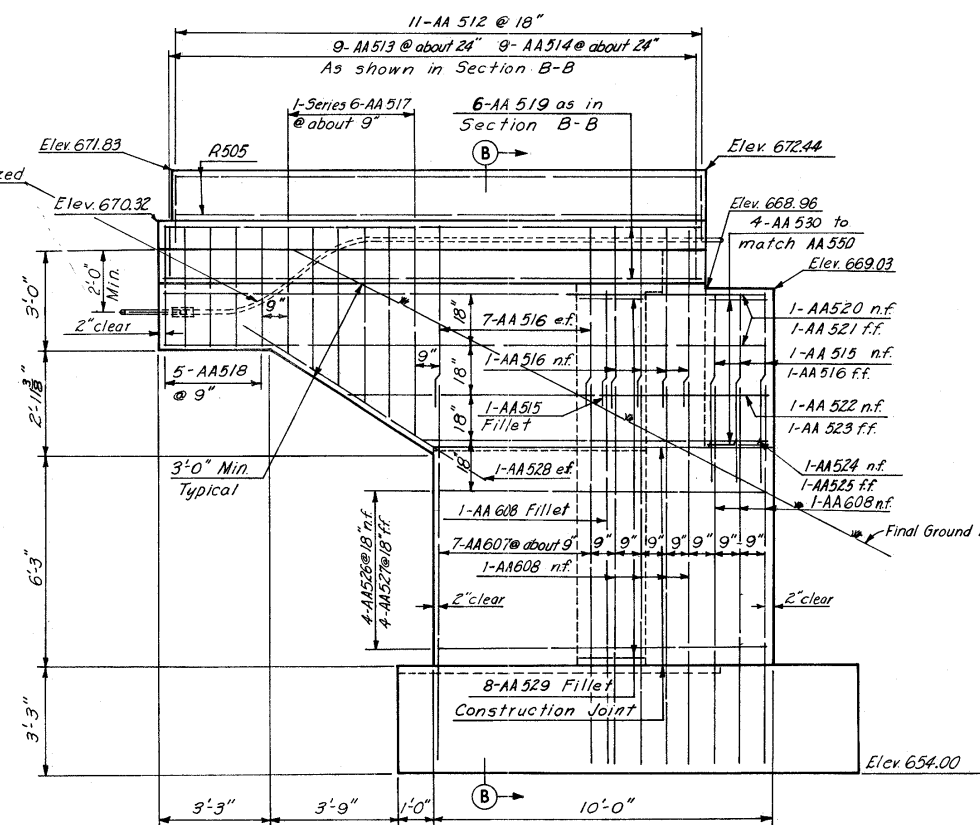
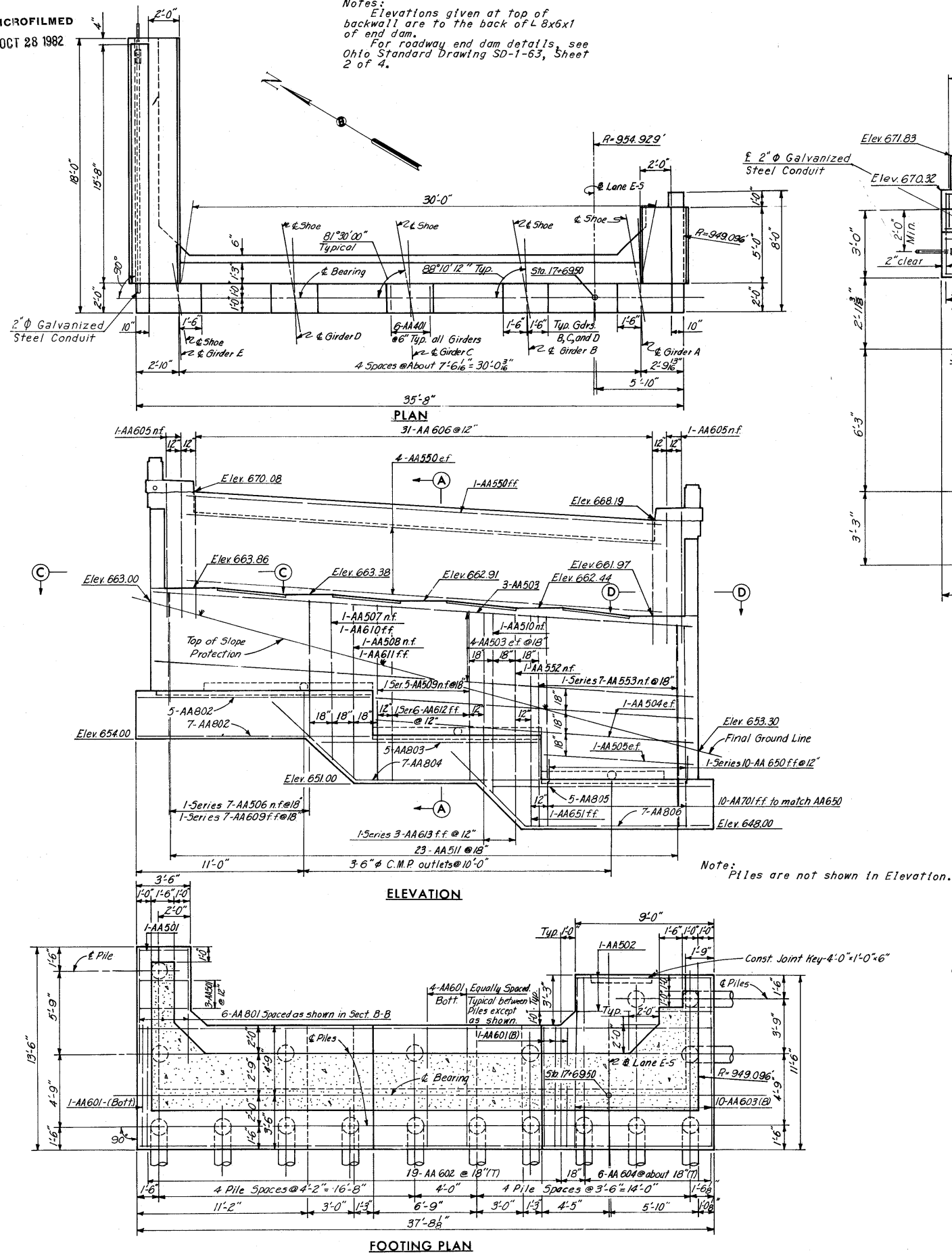
MICROFILMED
OCT 28 1982

Notes:
Elevations given at top of
backwall are to the back of L8x6x1
of end dam.
For roadway end dam details, see
Ohio Standard Drawing SD-1-63, Sheet
2 of 4.

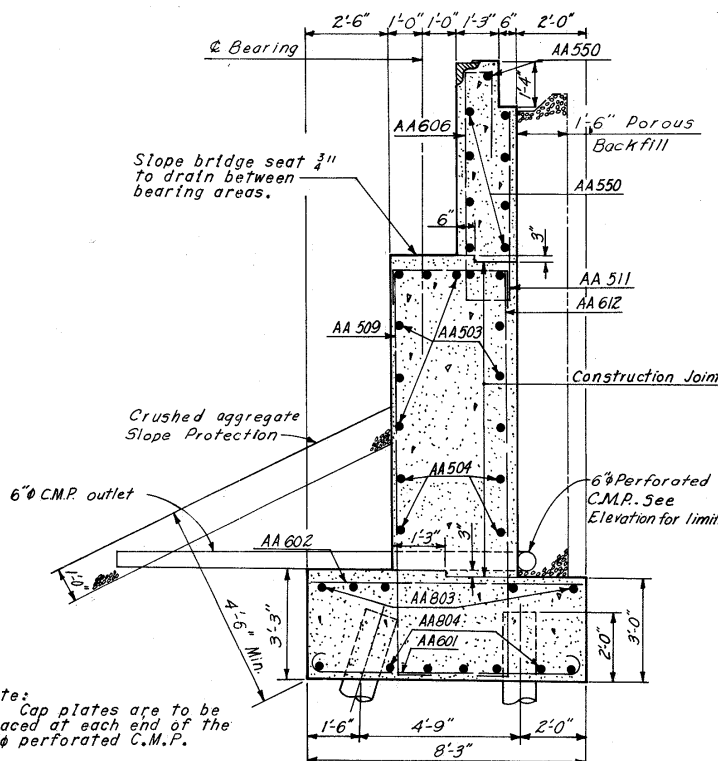
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

441
478

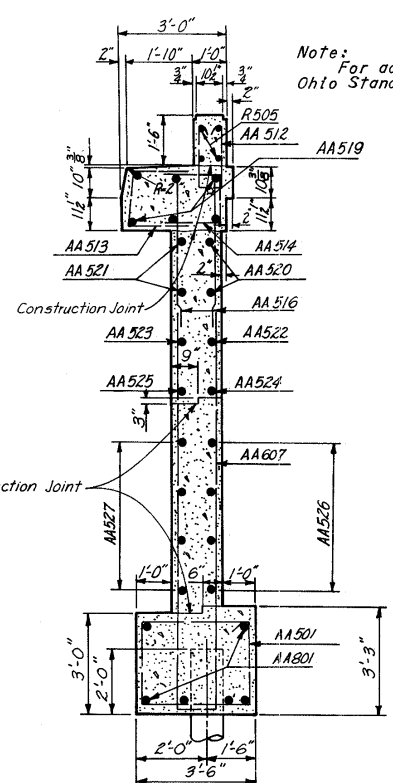
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



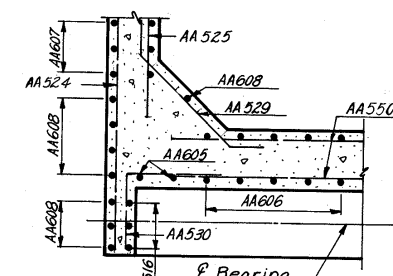
NORTH WINGWALL ELEVATION
Scale: 3/8" = 1'-0"



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



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



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

Notes:
n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.
Typ. denotes Typical.
For Reinforcement Schedule, see Sheet 451.
All battered piles shall be battered 3 in 12.
All piles are 12" cast-in-place concrete.
All pile dimensions are measured at bottom of footing.
For details of South Wingwall, see Sheets 442 and 443.
For Restriction Detail, see Sheet 443.
For Section D-D, see Sheet 443.
For longitudinal parapet reinforcement and railing post spacing, see Sheet 450.

H.N.T.B. BRIDGE NO. 5
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

EAST ABUTMENT
LANE E-5 OVER CLARK FREEWAY

BR. NO. CUY-290-0030 STA. 17+67.25
SCALE: 1/4" = 1'-0" STA. 22+13.25
CLEVELAND CUYAHOGA COUNTY OHIO

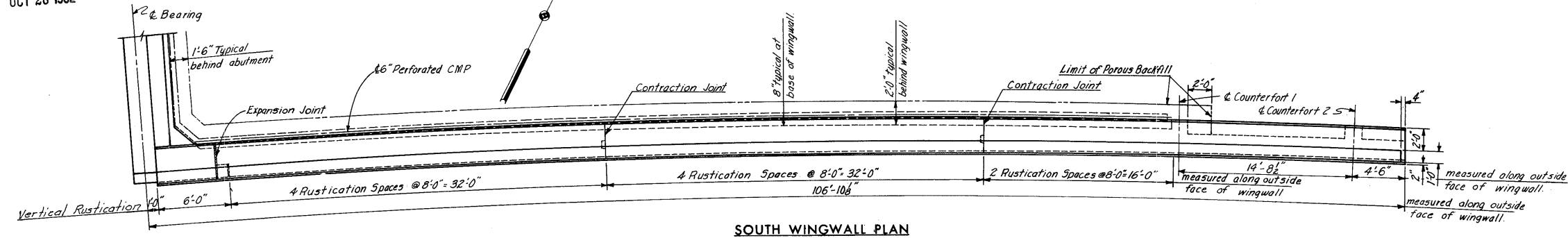
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SHEET 441

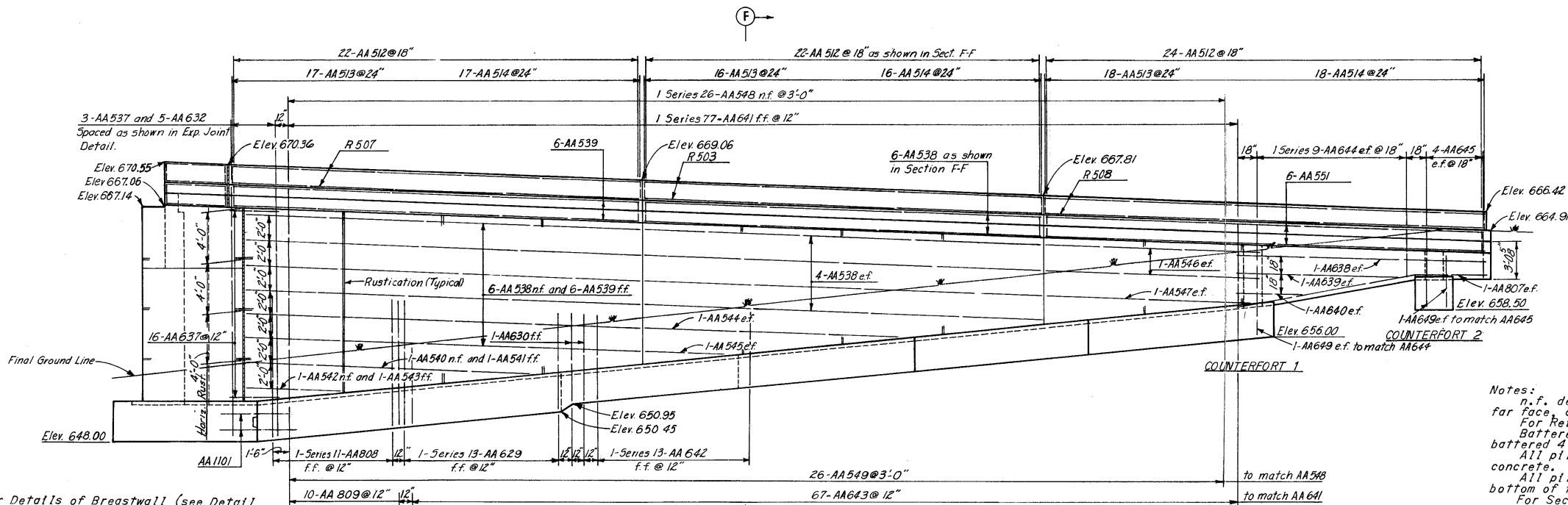
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OCT 28 1982

FED. RD. DIVISION 2	STATE OHIO	PROJECT CUYAHOGA COUNTY CITY OF CLEVELAND MEDINA-CLARK INTERCHANGE CUY. 71-18.54 CUY. 90-13.81	442 478
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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



SOUTH WINGWALL PLAN

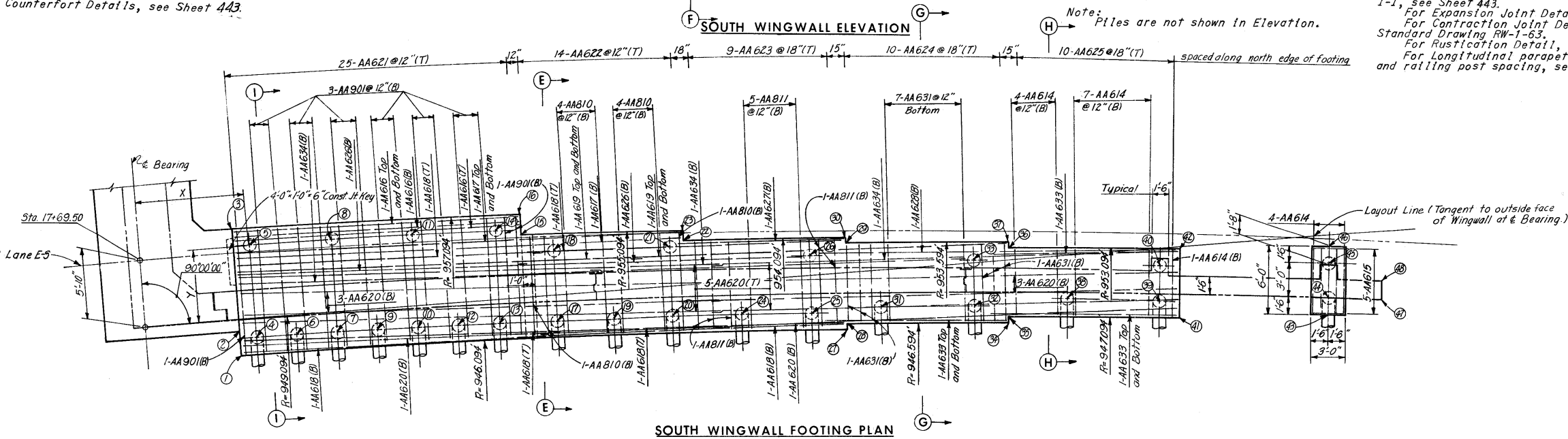


SOUTH WINGWALL ELEVATION

Note:
For Details of Breastwall (see Detail A) and Counterfort Details, see Sheet 443.

Notes:
n.f. denotes near face, f.f. denotes far face and e.f. denotes each face.
For Reinforcement Schedule, see Sheet 451.
Battered Piles in Wingwalls shall be battered 4 in 12.
All piles are 12" cast-in-place concrete.
All pile dimensions are measured at bottom of footing.
For Sections E-E, F-F, G-G, H-H, and I-I, see Sheet 443.
For Expansion Joint Detail, see Sheet 443.
For Contraction Joint Detail, see Ohio Standard Drawing RW-1-63.
For Rustication Detail, see Sheet 443.
For Longitudinal parapet reinforcement and railing post spacing, see Sheet 450.

Note: Piles are not shown in Elevation.



SOUTH WINGWALL FOOTING PLAN

TABLE OF OFFSETS			
Point	X	Y-Right	Y-Left
1	71'-11 1/2"	3'-0 3/8"	
2	81'-0"	1'-0 3/8"	
3	81'-0 1/2"		71'-11 3/8"
4	91'-6"	1'-6 3/8"	
5	91'-6 1/2"		61'-5 3/8"
6	131'-0"	1'-7 1/2"	
7	161'-6"	1'-7 3/8"	
8	161'-7 1/2"		61'-4 1/8"
9	201'-0"	1'-8 1/2"	
10	231'-5 1/2"	1'-9 1/2"	
11	231'-8 1/2"		61'-2 1/2"
12	261'-11 1/2"	1'-10 3/8"	
13	301'-5 1/2"	1'-11 1/8"	
14	301'-9"		61'-0"
15	331'-0"		51'-5 1/2"
16	331'-0 1/2"		71'-5 1/2"
17	351'-5 1/2"	2'-2"	
18	351'-8 1/2"		31'-10"
19	401'-5 1/2"	2'-4 1/2"	
20	451'-5 1/2"	2'-7 1/2"	
21	451'-9 1/2"		31'-4 1/2"
22	461'-11 1/2"	3'-10 1/2"	
23	461'-11 3/8"		41'-10 1/2"
24	511'-5 3/8"	2'-10 3/8"	
25	571'-5 1/2"	3'-2 1/2"	
26	571'-9 1/2"		11'-9"
27	601'-4 1/2"	4'-11 1/2"	
28	601'-5 1/2"	4'-5 1/2"	
29	601'-10 1/2"		21'-6 3/8"
30	601'-11"		31'-0 3/8"
31	631'-5 1/2"	3'-1 1/2"	
32	711'-5 3/8"	3'-8 3/8"	
33	711'-9 1/2"		01'-3 1/2"
34	741'-3 3/8"	5'-5"	
35	741'-4 1/2"	4'-11 1/2"	
36	741'-9 1/2"		11'-0 3/8"
37	741'-10 1/2"		11'-6 3/8"
38	791'-5 3/8"	3'-10"	
39	871'-5 1/2"	4'-6 1/2"	
40	871'-8 1/2"	1'-6 3/8"	
41	881'-11 1/2"	6'-2 3/8"	
42	891'-6 1/2"	0'-2 3/8"	
43	1011'-11 1/2"	7'-0"	
44	1021'-1 1/2"	5'-6 1/2"	
45	1021'-5 1/2"	2'-6 3/8"	
46	1021'-7 1/2"	1'-0 1/2"	
47	1061'-7 3/8"	6'-0 3/8"	
48	1061'-9 1/2"	4'-6 1/2"	

Note:
The X distance is the distance from the E Bearing along a line normal to the E Bearing. The Y distance is the distance from the Layout Line along a line normal to the Layout Line. See Example at Point 5.

H.N.T.B. BRIDGE NO. 5
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

EAST ABUTMENT DETAILS
LANE E-S OVER CLARK FREEWAY

BR. NO. CUY-290-0030 STA. 17+67.25
SCALE: 3/16"=1'-0" STA. 22+13.25
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN P.M. TRACED P.E.R. CHECKED P.E.R. REVIEWED P.E.R. REVISIONS
DATE 11-12-64 DATE 12-4-64 DATE DATE

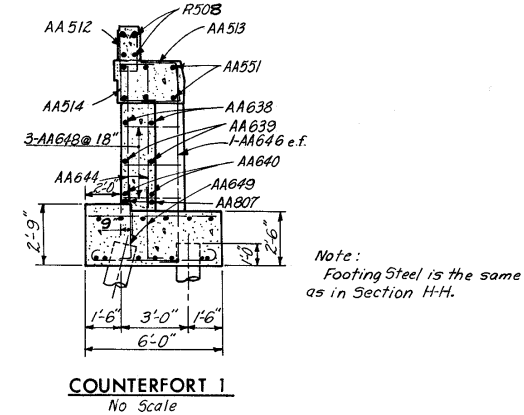
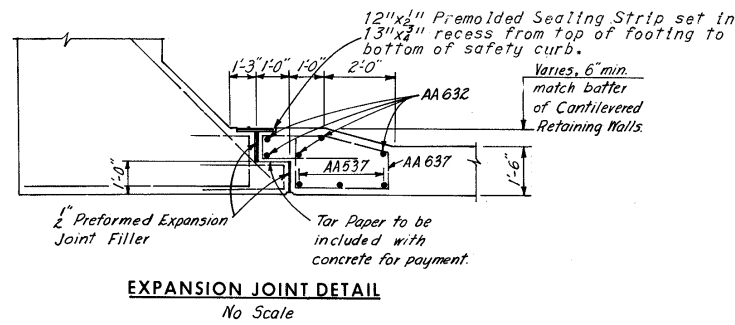
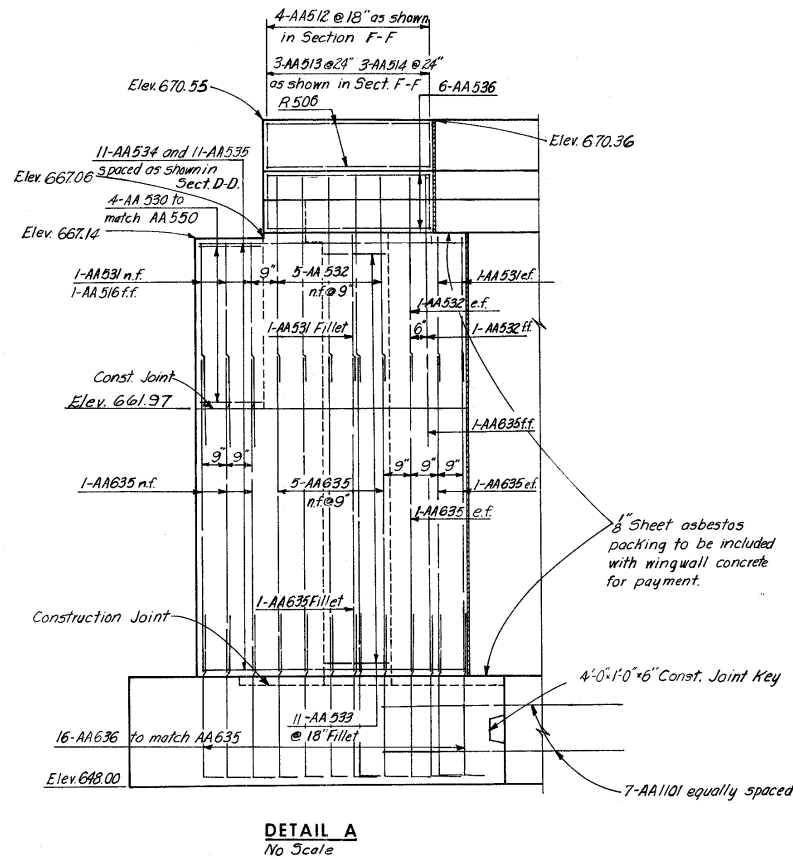
SHEET 442

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OCT 28 1982

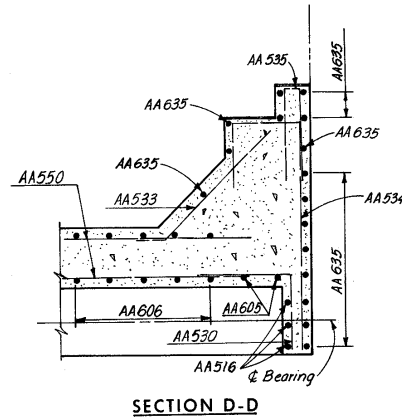
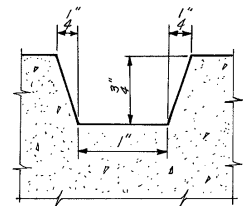
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

443
478

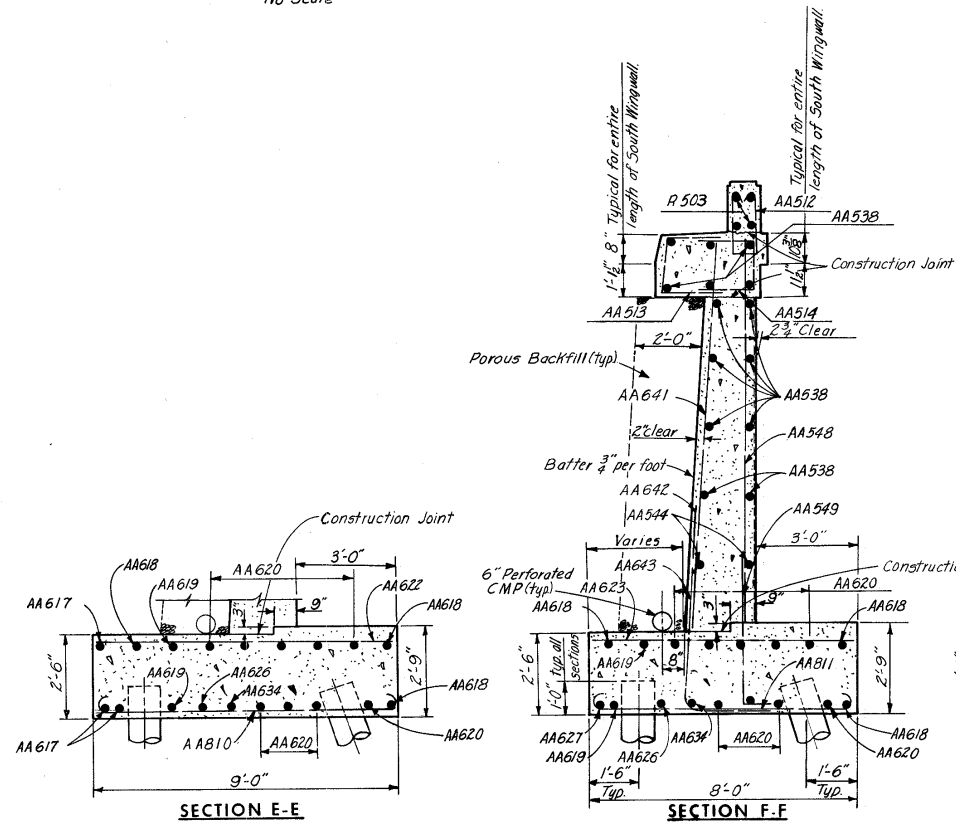
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



Note:
Footing Steel is the same
as in Section H-H.



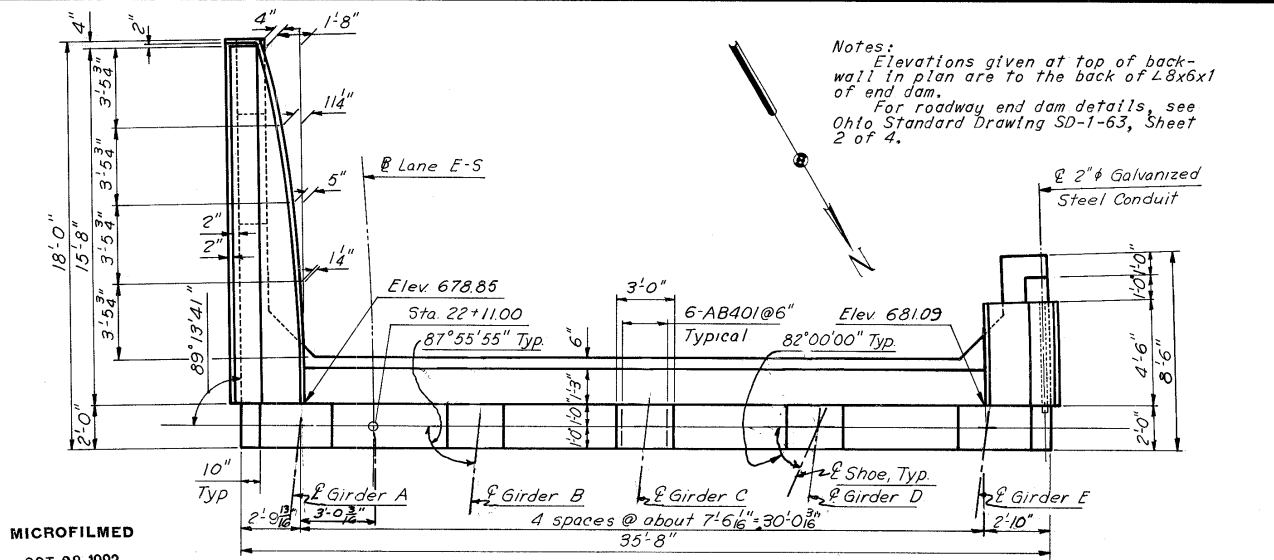
Note:
For curb and parapet dimensions
not shown, see Section B-B, Sheet
441.



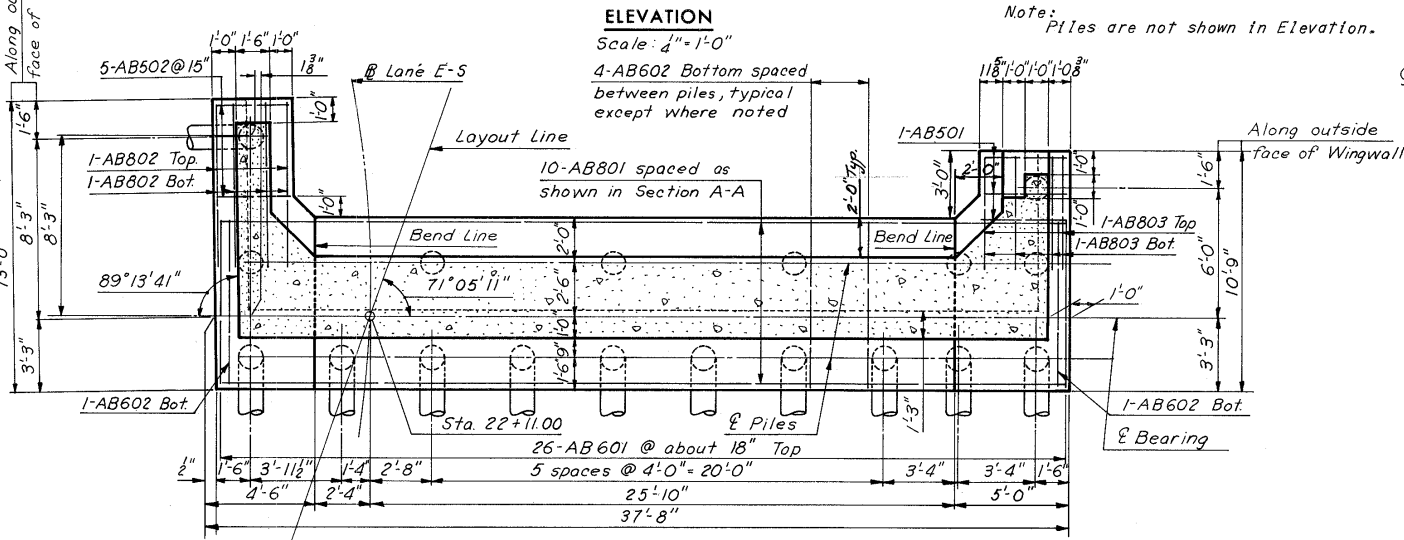
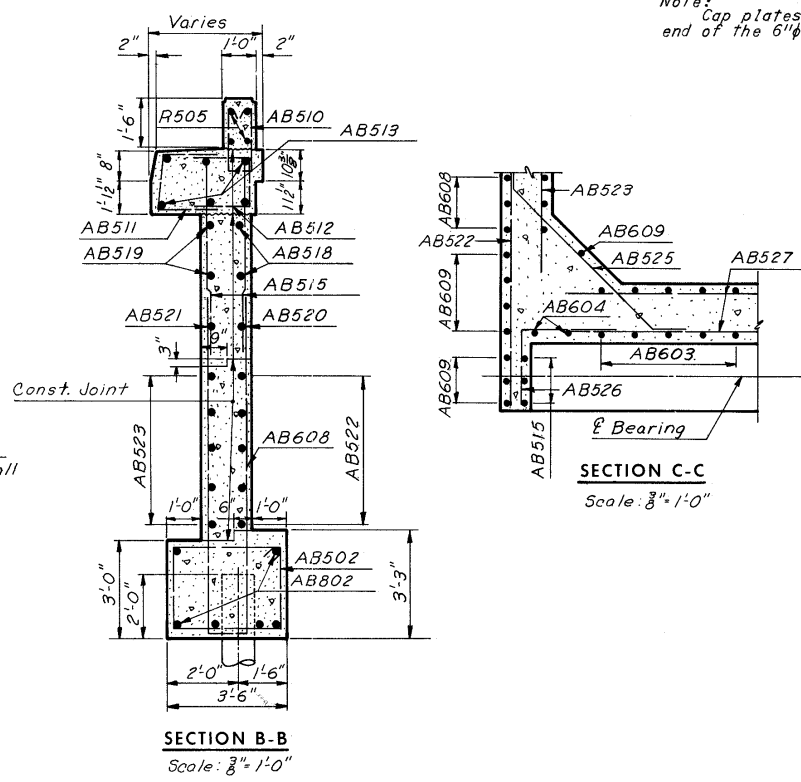
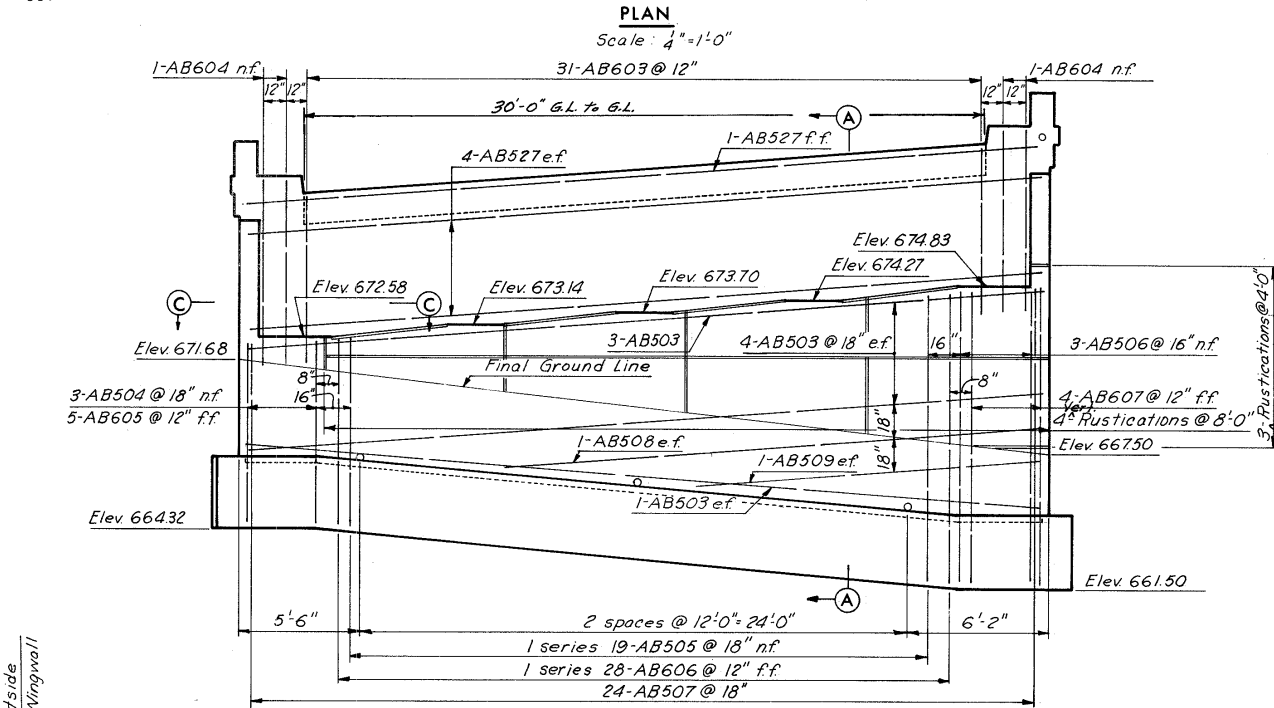
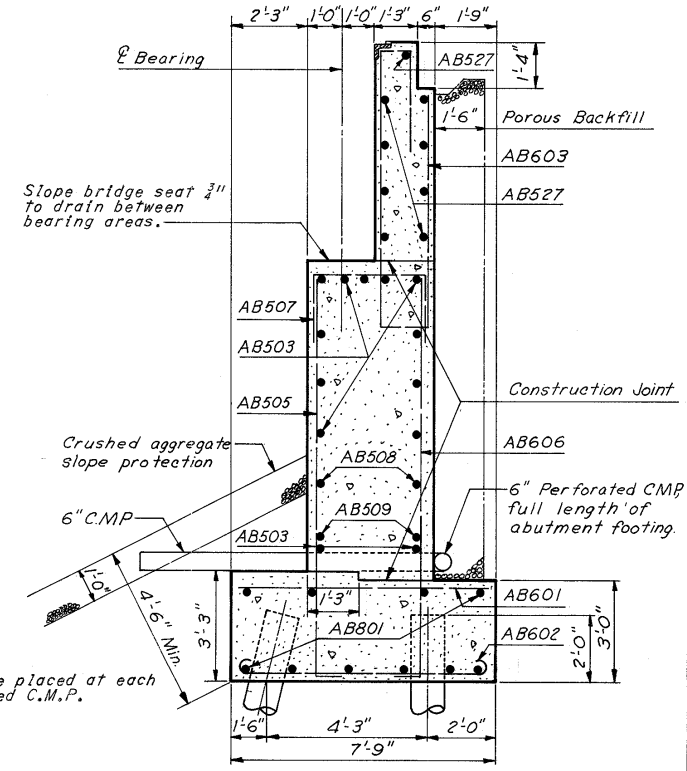
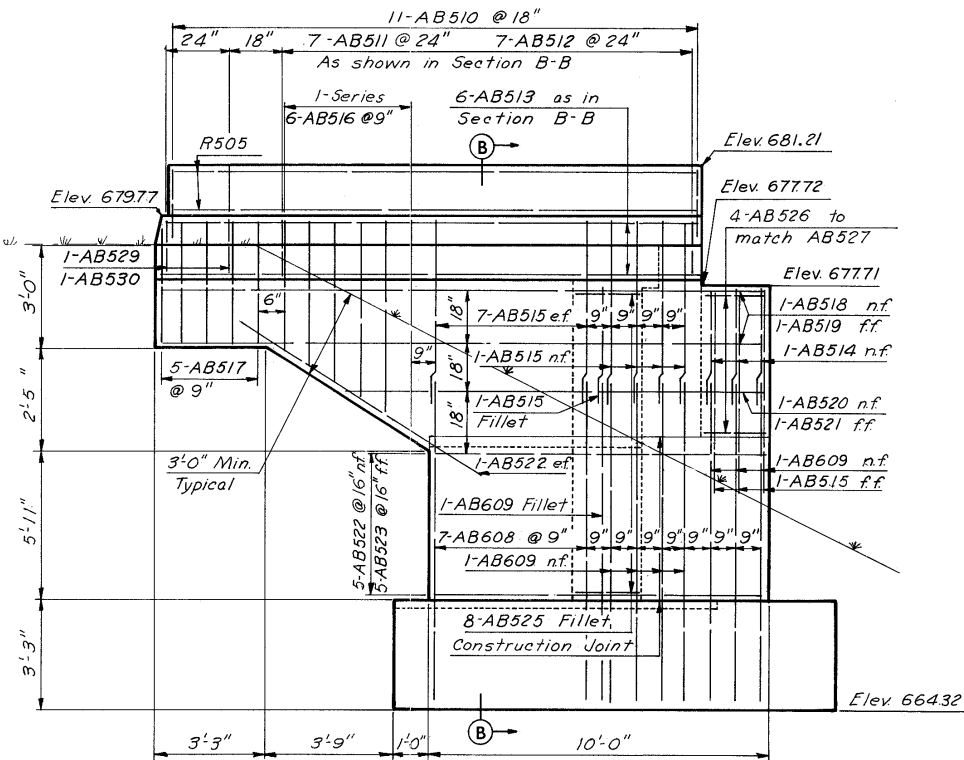
Notes:
Typ. denotes typical.
e.f. denotes each face.
Battered Piles in Wingwalls shall be
battered 4 in 12.
All piles are 12" cast-in-place
concrete.
For Reinforcement Schedule, see Sheet 451.
For Longitudinal Parapet reinforcement
and Railing Post spacing see Sheet 450.

H.N.T.B. BRIDGE NO. 5				
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK				
EAST ABUTMENT DETAILS LANE E-S OVER CLARK FREEWAY				
BR. NO. CUY-290-0030		STA. 17+67.25		
SCALE: 3/8"=1'-0"		STA. 22+13.25		
CLEVELAND		CUYAHOGA COUNTY		OHIO
DRAWN RUM	TRACED	CHECKED REB	REVIEWED	REVISED
DATE 11-12-64	DATE	DATE 12-7-64	DATE	DATE
				SHEET 443

**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81**



MICROFILMED
OCT 28 1982



Notes:
n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.
For Reinforcement Schedule, see Sheet 451.
All battered piles shall be battered 3 in 12.
All piles are 12 1/4 cast-in-place concrete.
All pile dimensions are measured along bottom of footing.
For longitudinal parapet reinforcement and railing post spacing, see Sheet 450.
For West Wingwall Details, see Sheet 445.
For Rustication Details, see Sheet 445.
For Replacement Bar Schedule, see Sheet 452.
For additional curb and parapet details see Ohio Standard Drawing AR-1-57.

H.N.T.B. BRIDGE NO. 5

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

**SOUTH ABUTMENT
LANE E-S OVER CLARK FREEWAY**

BR. NO. CUY-290-0030 STA. 17+67.25
SCALE: As Shown STA. 22+13.25
CLEVELAND CUYAHOGA COUNTY OHIO

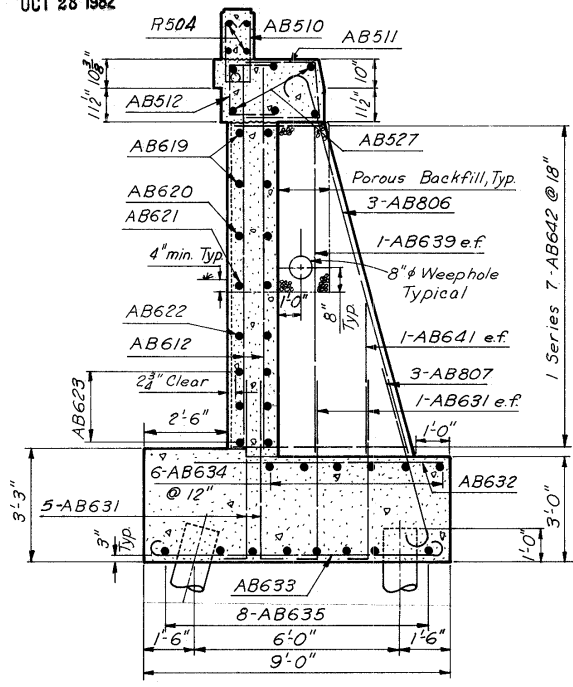
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DATE 10-9-64	DATE	DATE 12-14-64	DATE	

SHEET 444

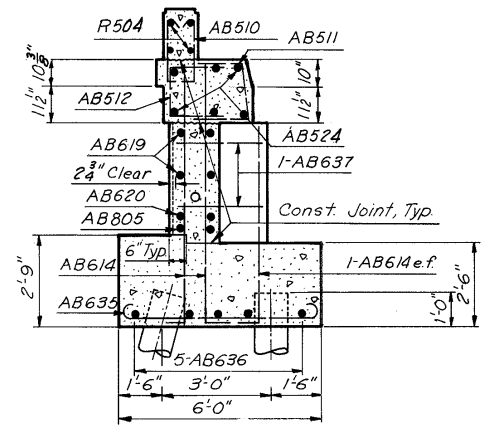
MICROFILMED
OCT 28 1982

FED. RD. DIVISION	STATE	PROJECT	445 478
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

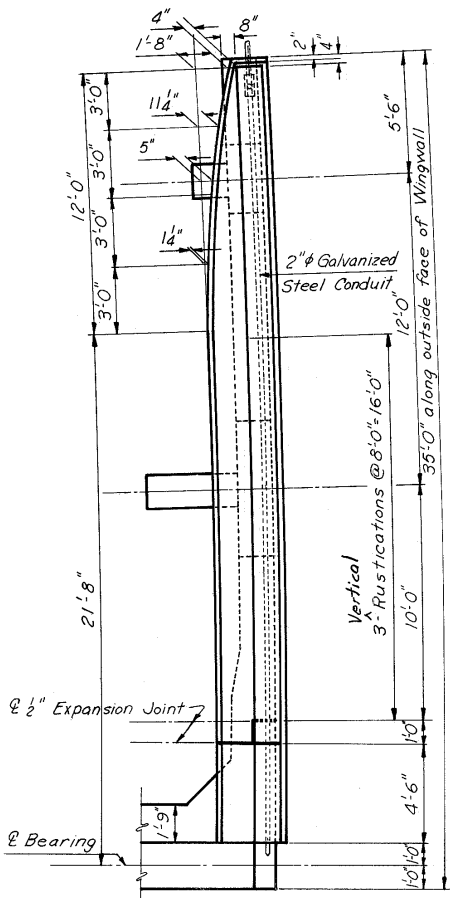


SECTION A-A
Scale: 3/8" = 1'-0"

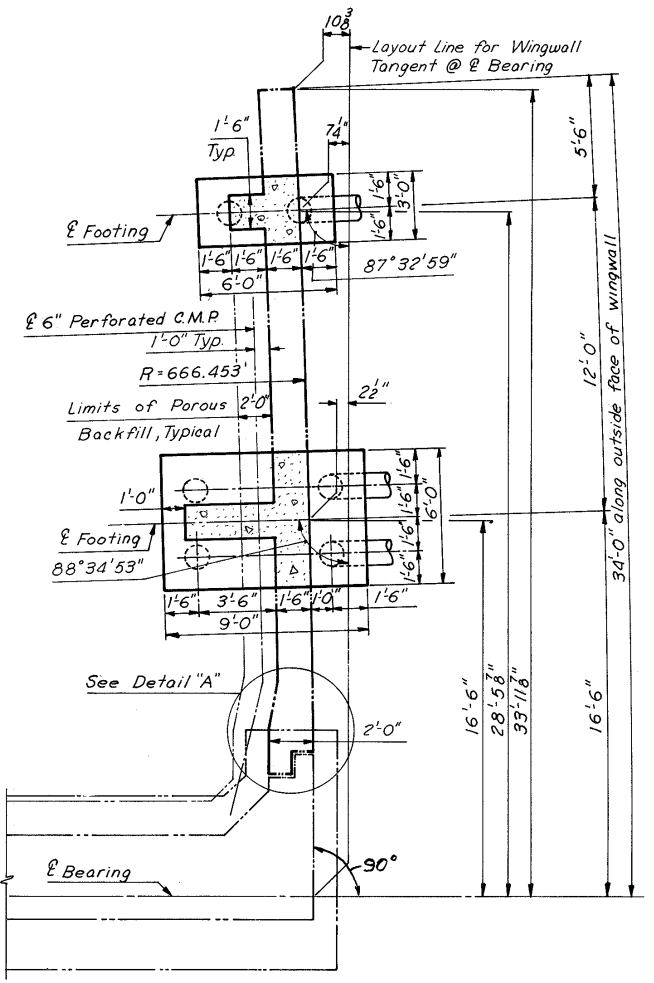


SECTION B-B
Scale: 3/8" = 1'-0"

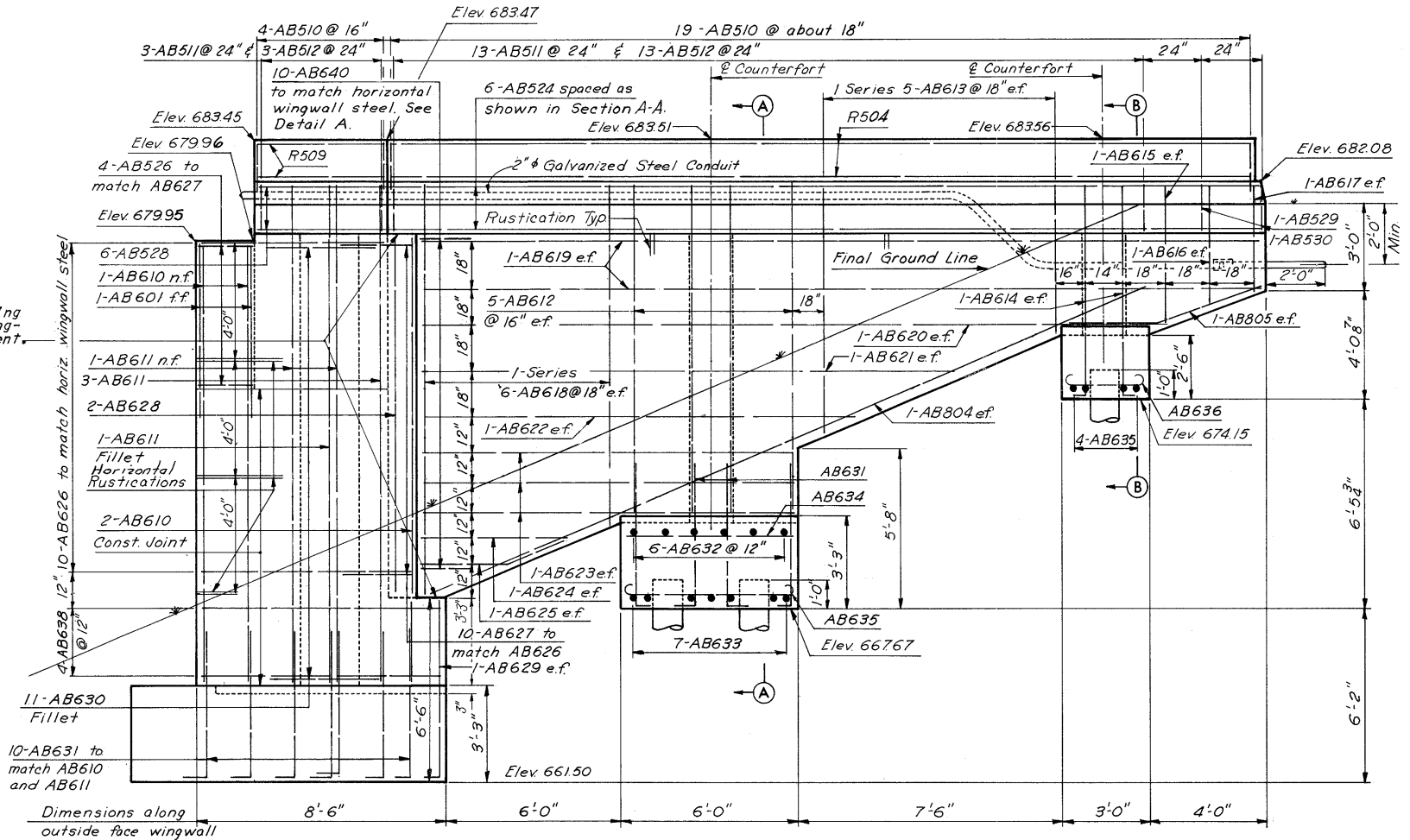
1/4" sheet asbestos packing to be included with wing-wall concrete for payment.



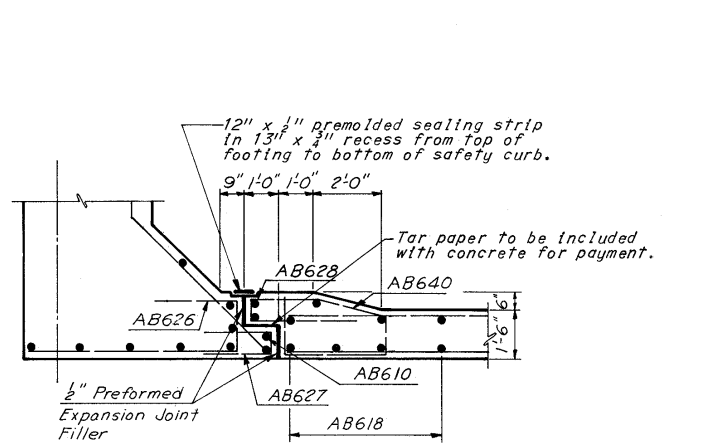
PLAN
Scale: 1/4" = 1'-0"



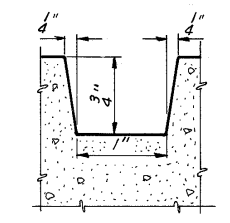
FOOTING PLAN
Scale: 1/4" = 1'-0"



WEST WINGWALL ELEVATION
Scale: 3/8" = 1'-0"



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



RUSTICATION DETAILS
No Scale

Notes:
n.f. denotes near face, f.f. denotes far face, e.f. denotes each face.
For Reinforcement Schedule, see Sheet 451.
For Replacement Bar Schedule, see Sheet 452.
All battered piles shall be battered 3 in 12.
All piles are 12" cast-in-place concrete. All pile dimensions are measured along bottom of footing.
For longitudinal parapet reinforcement and railing post spacing, see Sheet 450.
For additional curb and parapet details, see Ohio Standard Drawing AR-1-57.

H.N.T.B. BRIDGE NO. 5
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SOUTH ABUTMENT DETAILS
LANE E-S OVER CLARK FREEWAY

BR. NO. CUY-290-0030 STA. 17+67.25
SCALE: As Shown STA. 22+13.25
CLEVELAND CUYAHOGA COUNTY OHIO

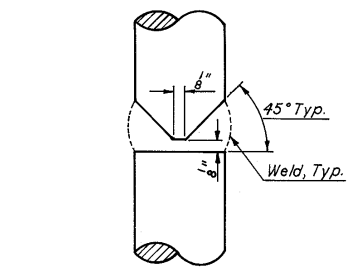
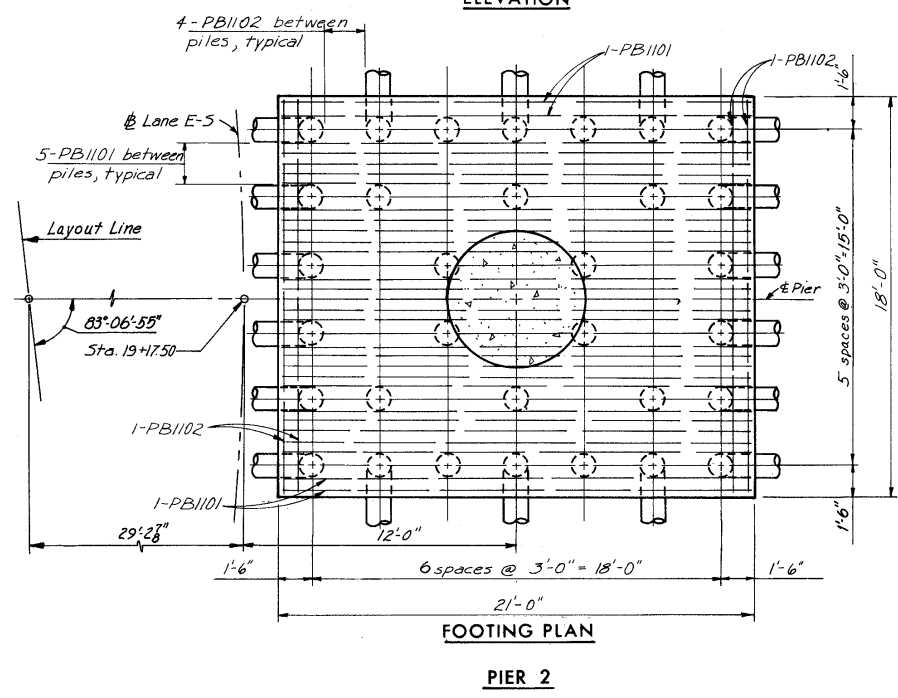
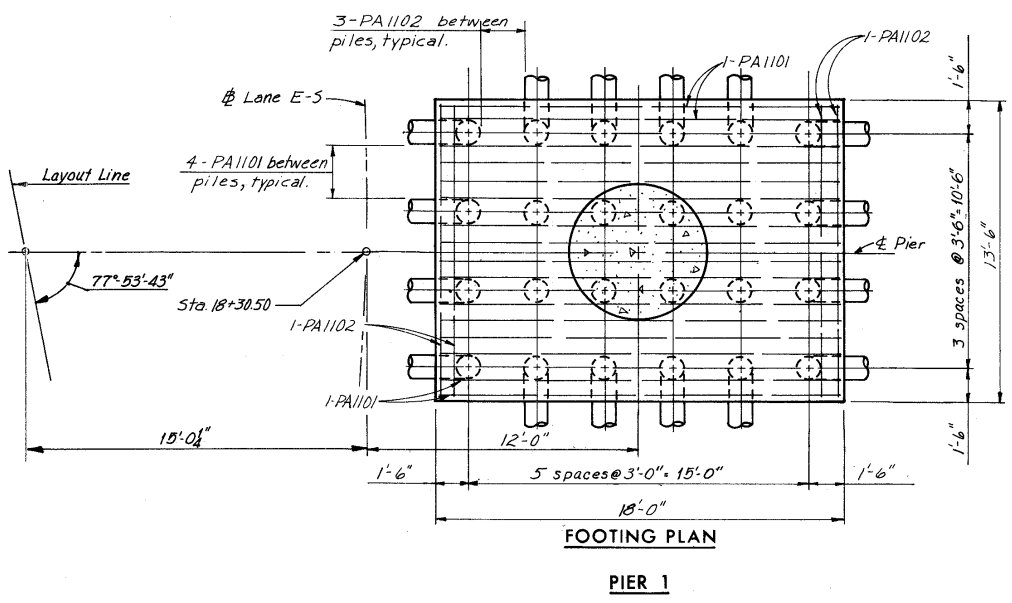
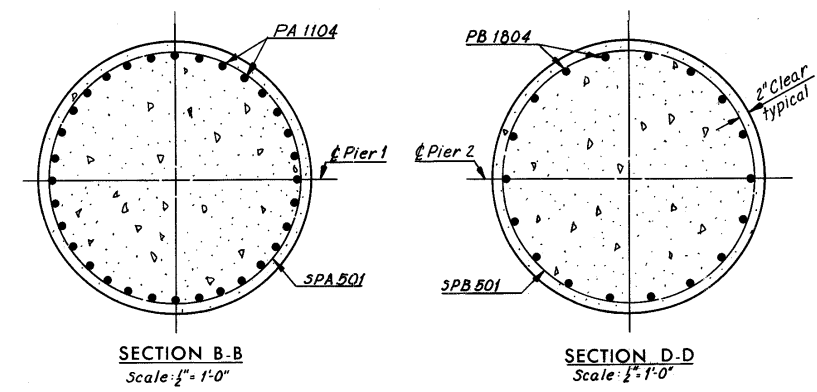
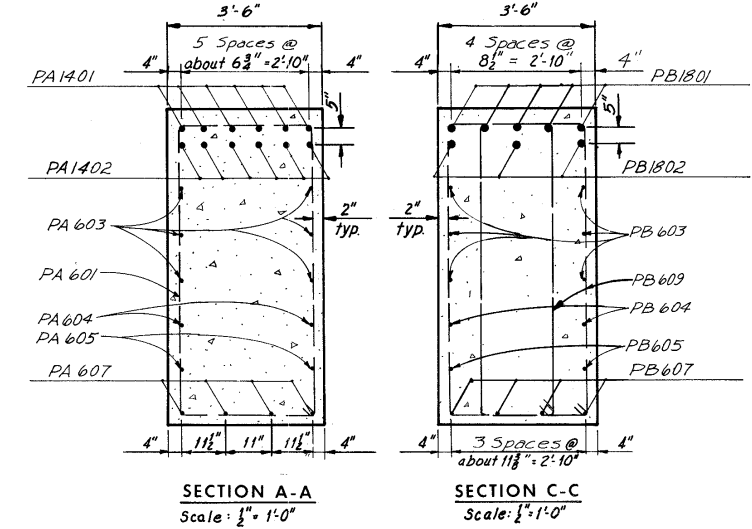
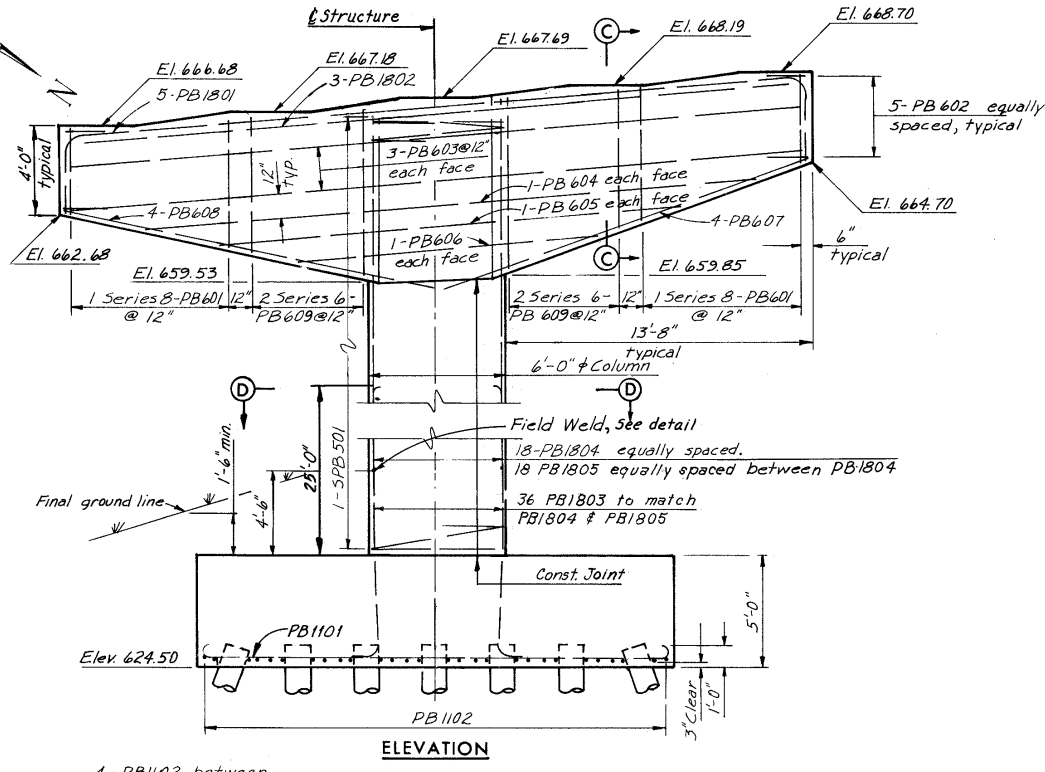
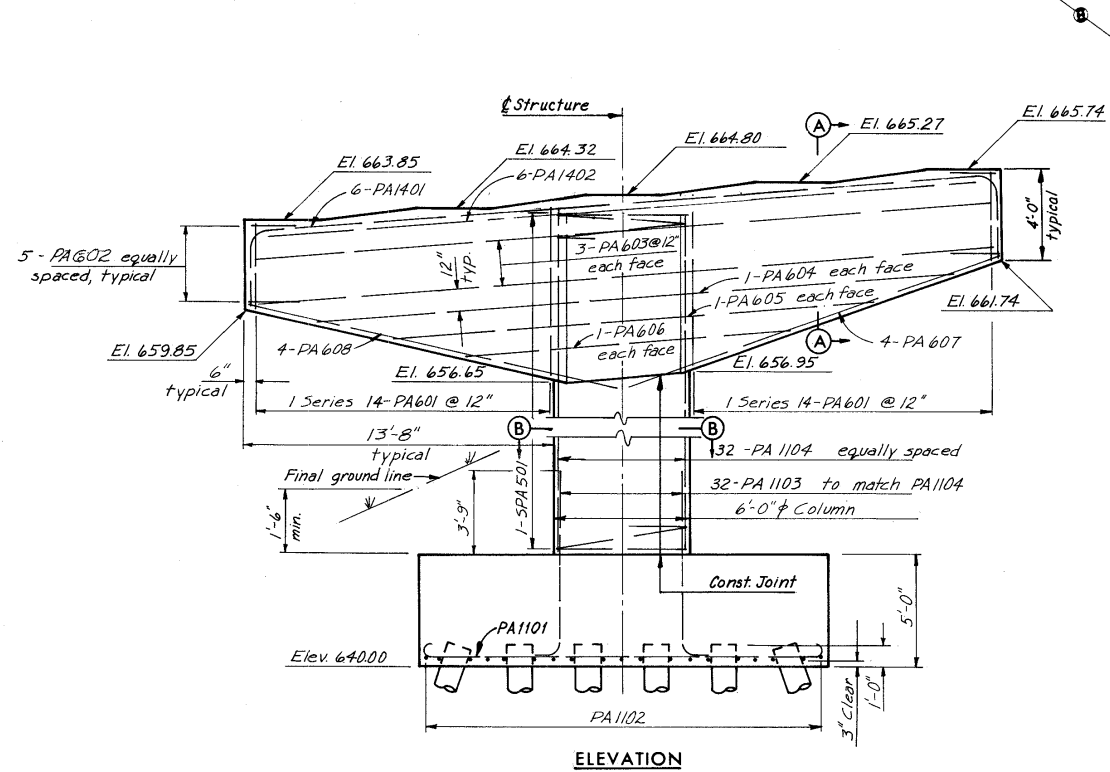
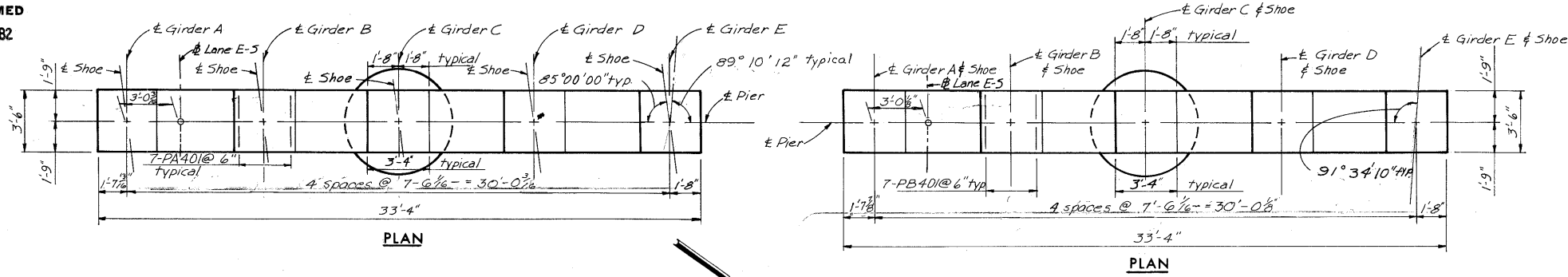
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DATE 10-15-64	DATE	DATE 12-14-64	DATE	DATE

SHEET 445

MICROFILMED
OCT 28 1982

FED. RD. DIVISION	STATE	PROJECT	446
2	OHIO		478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



DETAIL OF FIELD WELDING OF NO. 18 REINF. BAR

Note: Chip or grind root to sound metal before welding second or root side. Bars which are to be welded shall be of a composition suitable for welding and the Contractor shall obtain information on the chemical composition to aid in development of a satisfactory welding procedure. Welds shall be free of cracks and other visible flaws. An alternate, a mechanical splice may be used subject to the approval of the Director.

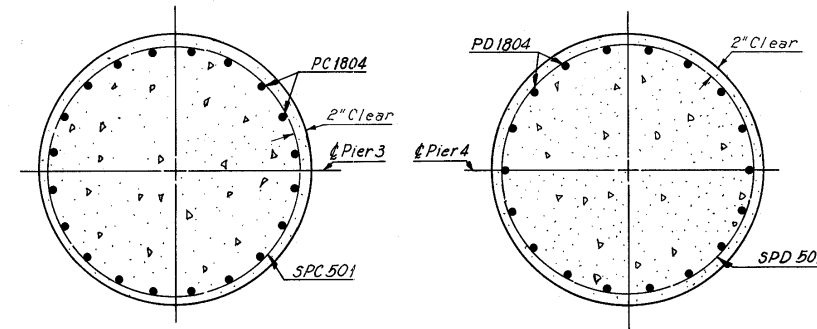
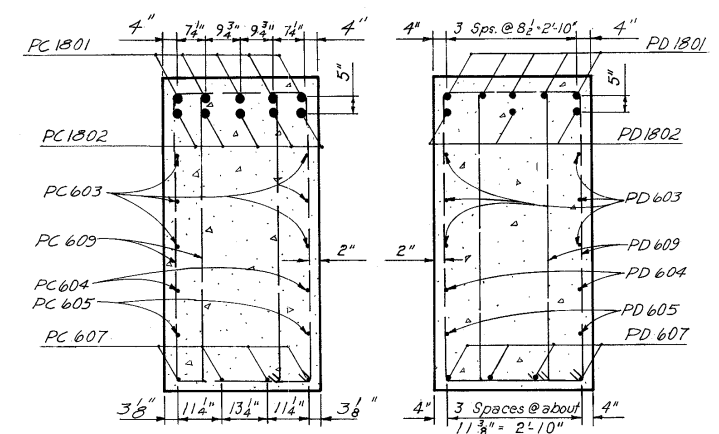
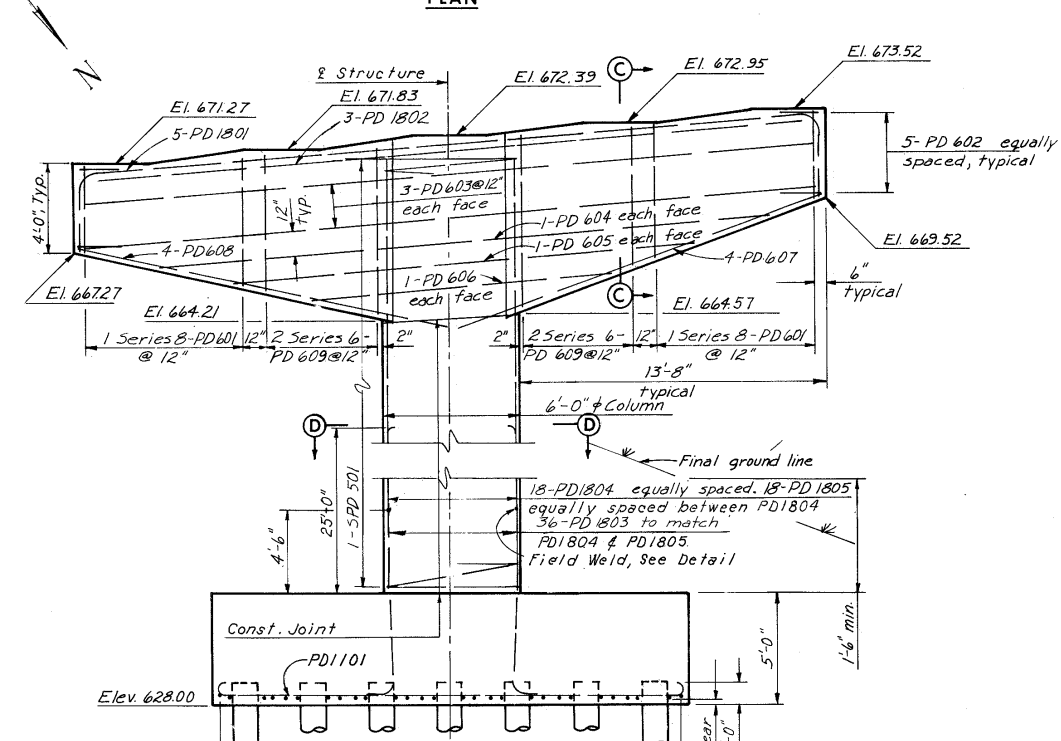
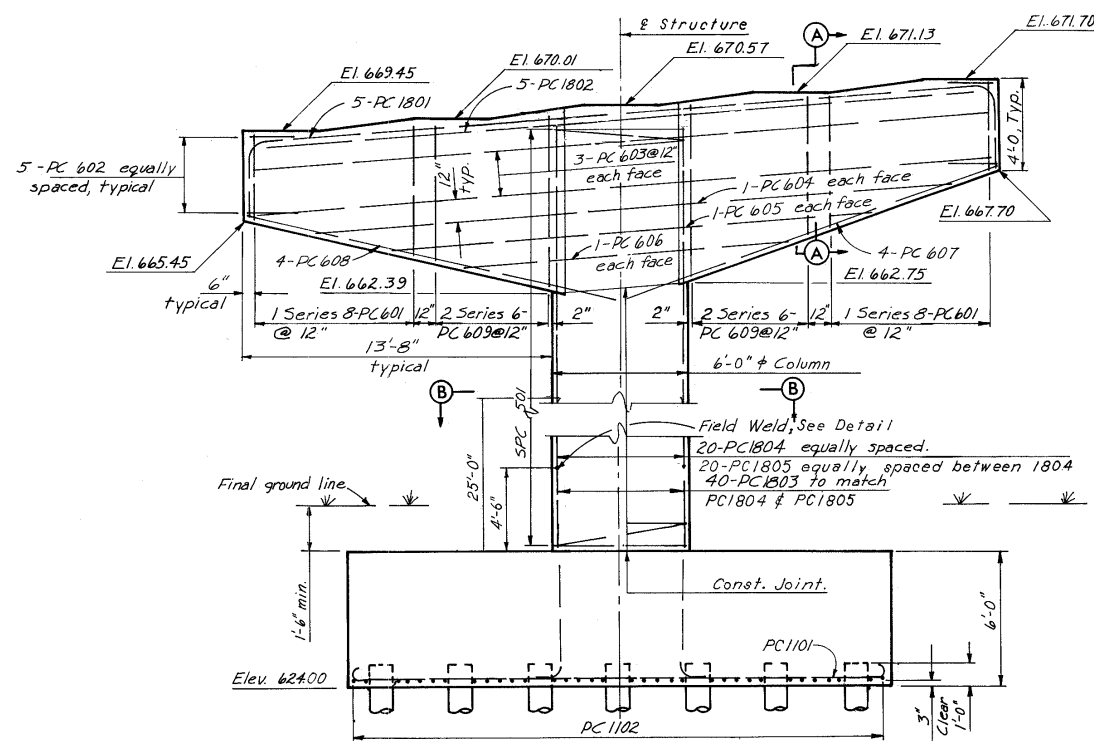
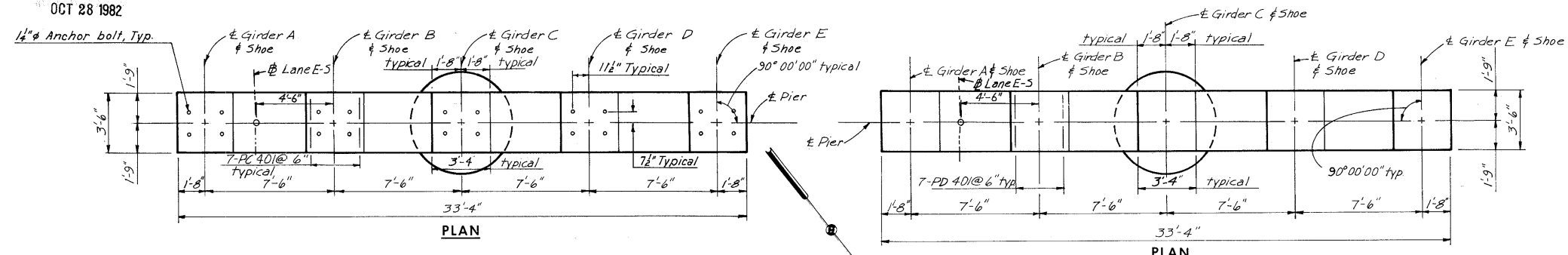
Notes:
All piles are 12" cast-in-place concrete. All battered piles shall be batter 3 in 12. Pile location dimensions are measured along bottom of footings. For Reinforcement Schedule, see Sheet 452. Bars pre-fixed "PA" are for Pier 1. Bars pre-fixed "PB" are for Pier 2. Bars PA 401 and PB 401 shall be placed 2 1/2" below top of capbeam.

H.N.T.B. BRIDGE NO. 5			
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK			
PIERS 1 AND 2			
LANE E-5 OVER CLARK FREEWAY			
BR. NO. CUY-290-0030	STA. 17+67.25		
SCALE: 1/2" = 1'-0"	STA. 22+13.25		
CLEVELAND	CUYAHOGA COUNTY	OHIO	
DRAWN J.D.W. TRACED	CHECKED G.N.D.	REVIEWED	REVISED
DATE 10-20-64	DATE 11-24-64	DATE	DATE
			SHEET 446

MICROFILMED
OCT 28 1982

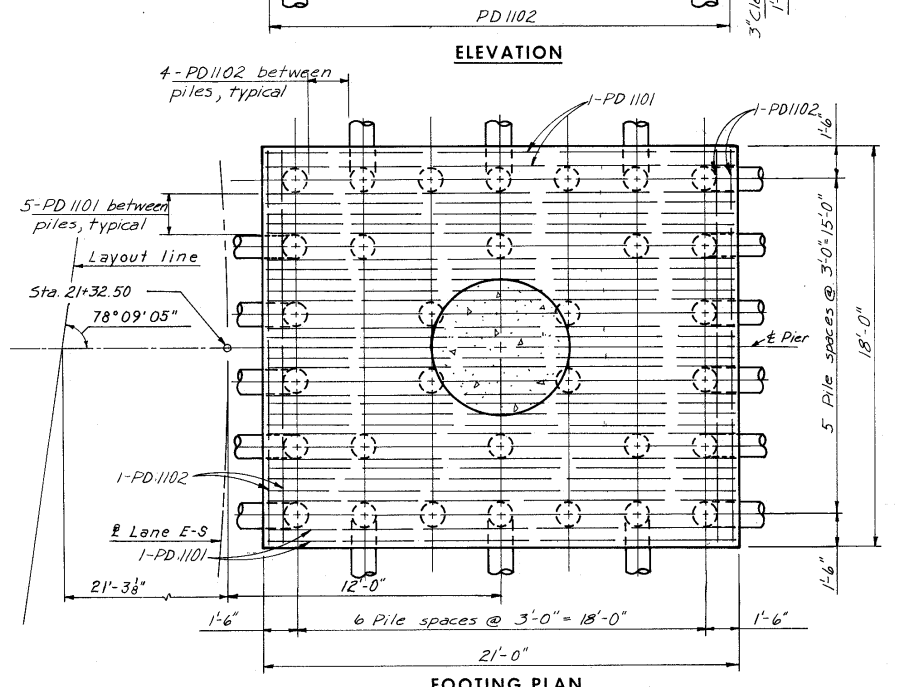
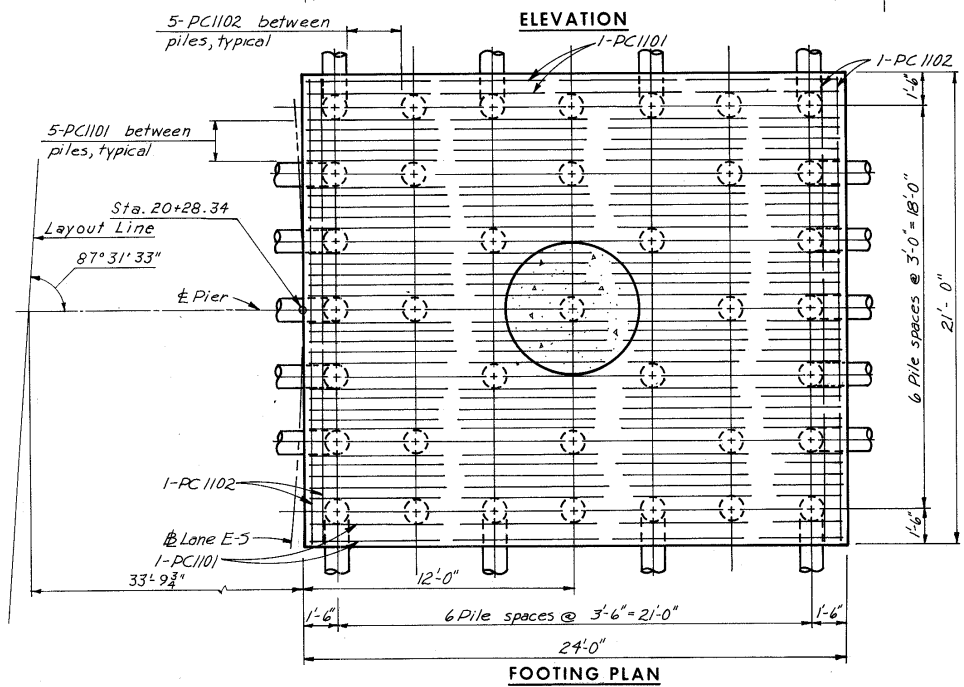
FED. RD. DIVISION	STATE	PROJECT	447
2	OHIO		478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



Notes:
All piles are 12" cast-in-place concrete.
All battered piles shall be battered 3 in 12.
Pile location dimensions are measured along bottom of footing.
For Reinforcement Schedule, see Sheet 452.
Bars pre-fixed "PC" are for Pier 3.
Bars pre-fixed "PD" are for Pier 4.
For Detail of Field Welding of No. 18 Bars, see Sheet 446.
Bars PC 401 and PD 401 shall be placed 2 1/2" below top of cap beam.
Special care shall be taken when placing reinforcement bars in top of cap beam so as not to interfere with setting of shoe anchor rods in Pier 3.

STRUCTURE GROUND (per sht. 194) encased in pier 3.



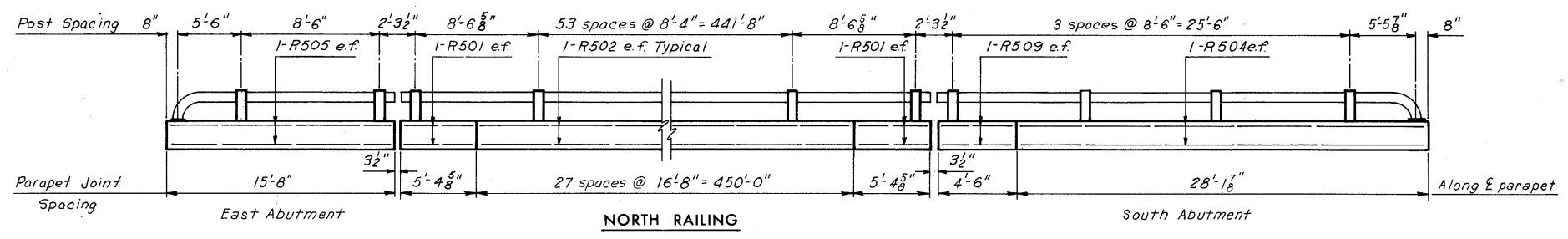
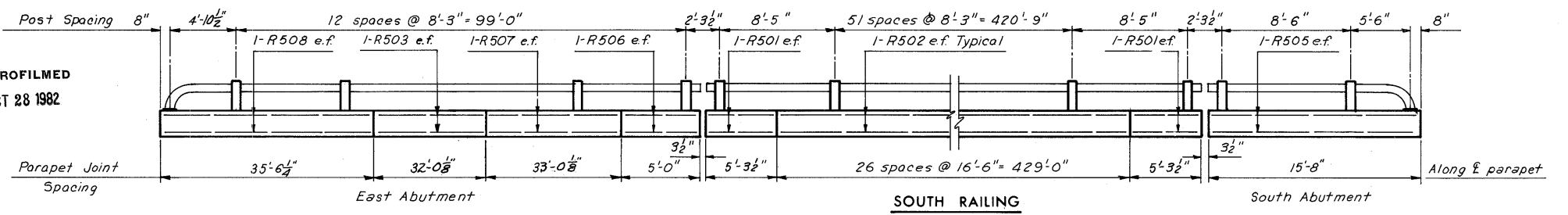
H.N.T.B. BRIDGE NO. 5			
HOWARD, NEEDLES, TAMMEN & BERGENOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK			
PIERS 3 AND 4			
LANE E-S OVER CLARK FREEWAY			
BR. NO. CUY-290-0030	STA. 17+67.25		
SCALE:	STA. 22+13.25		
CLEVELAND	CUYAHOGA COUNTY	OHIO	
DRAWN JDW	TRACED	CHECKED GBD	REVIEWED
DATE 10-15-64	DATE	DATE 11-24-63	DATE
			SHEET 447

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

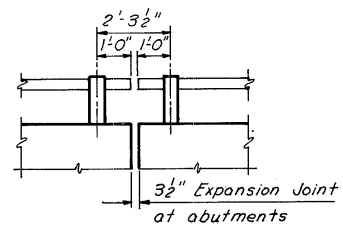
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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

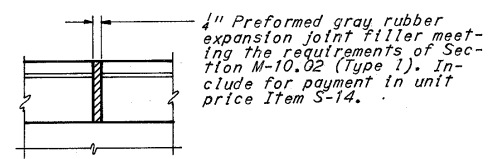
MICROFILMED
OCT 28 1982



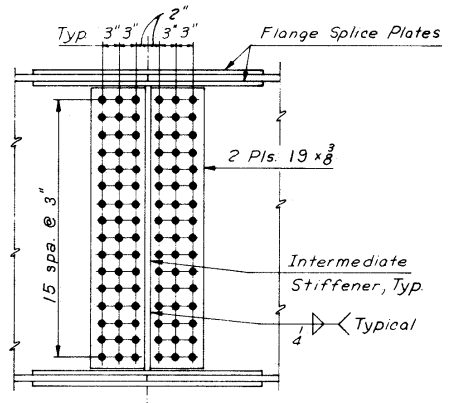
Railing Notes:
All railing dimensions are given along \perp parapet. e.f. denotes each face.
Railing shall be fabricated in lengths of two panels at abutments and of not less than three panels on superstructure. The finished railing shall be free of burrs, sharp corners and rough surfaces. Railing posts shall be normal to grade.
Payment for railing shall be made at the contract unit price bid for "Item S-14, Aluminum Railing (including parapet)". Pay length shall be the over-all length of the parapets and shall include cost of shims, nuts, anchor bolts, set screws, etc. necessary to complete the installation of railing.
Concrete and longitudinal reinforcing steel in the parapets shall be included in "Item S-14, Aluminum Railing (including parapet)" for payment. All other reinforcing steel in parapet shall be included in "Item S-4" for payment.
For additional details and notes regarding railing, see Ohio Standard Drawing AR-1-57, revised 4-2-62.



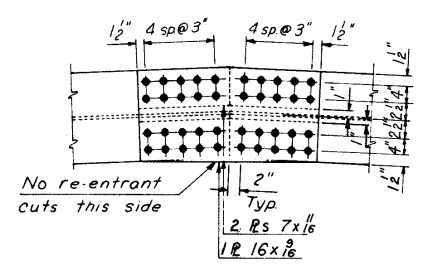
RAILING JOINT DETAIL



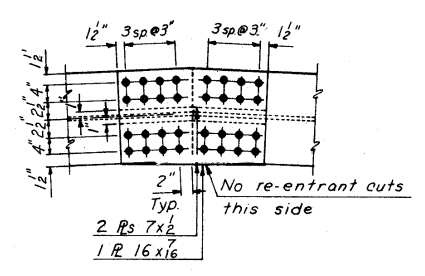
PARAPET JOINT DETAIL



TYPICAL WEB SPLICE



FLANGE SPLICE NEAR PIER 2

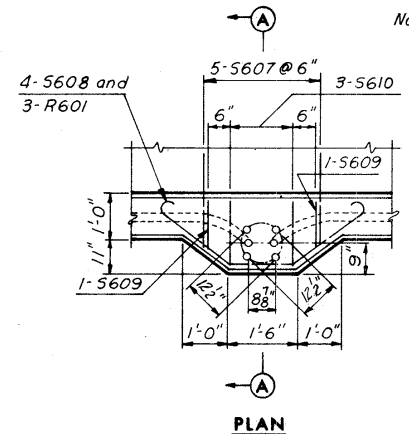


FLANGE SPLICE NEAR PIERS 1, 3 AND 4

GIRDER FIELD SPLICE

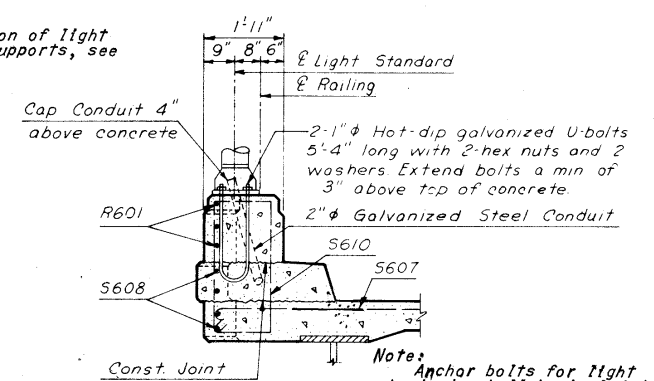
Notes:
Optional shop splices will be permitted in the webs and flanges of girders but their locations shall be submitted to the director for approval.
The high strength bolts shall be placed with the heads on the outside face of the exterior girders and the bottom of the girder flange.

Note:
All field splices shall be made with 5/8 inch high strength bolts.



PLAN

Note:
For location of light standard supports, see Sheet 439.



SECTION A-A

Note:
Anchor bolts for light standards shall be included with Item S-25 for payment.

LIGHT STANDARD SUPPORT

H.N.T.B. BRIDGE NO. 5				
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK				
RAILING DETAILS				
LANE E-5 OVER CLARK FREEWAY				
BR. NO. CUY-290-0030	STA. 17+67.25	SCALE:	STA. 22+13.25	
CLEVELAND	CUYAHOGA COUNTY	OHIO		
DRAWN J.R.	TRACED	CHECKED J.P.	REVIEWED	REVISED
DATE 11-6-64	DATE	DATE 12/7/64	DATE	DATE
				SHEET 450

**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81**

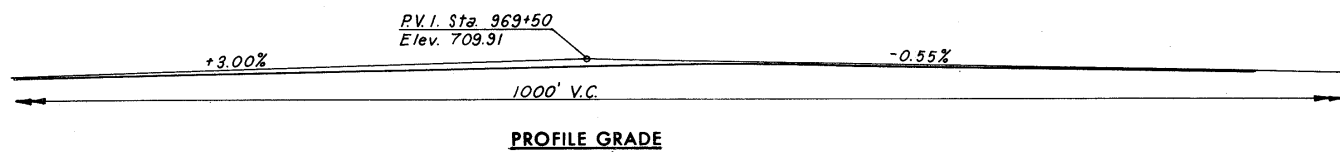
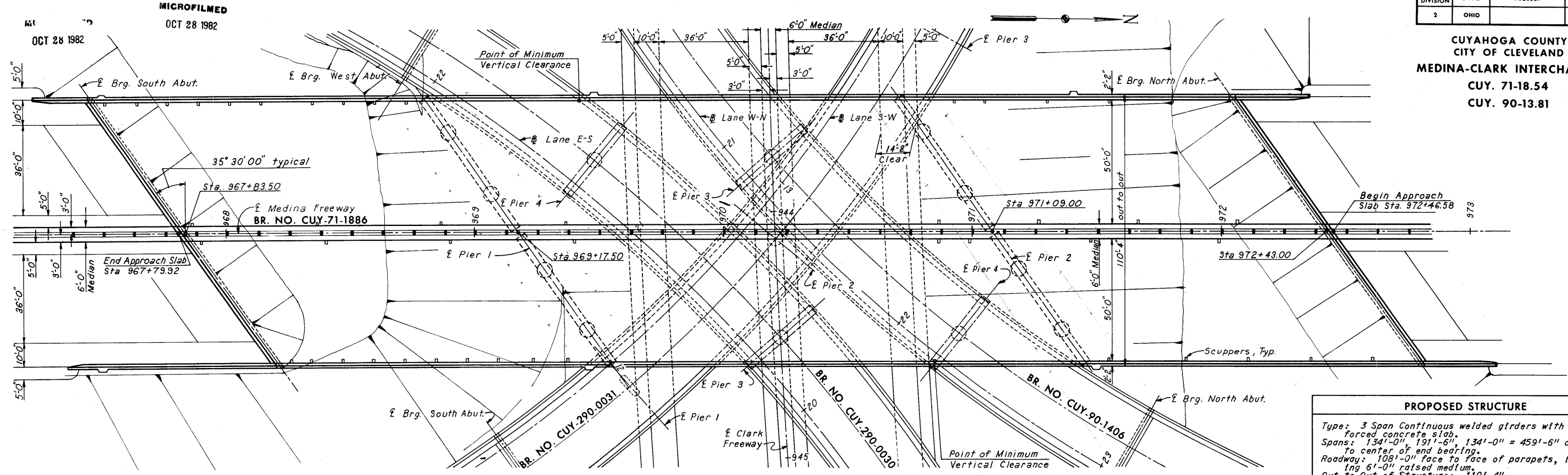
MICROFILMED
OCT 28 1982

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
EAST ABUTMENT								
AA401	30	2'-9"	104	1'-10 1/2"	1'-0"			55
AA501	4	11'-6"	109	3'-0"	2'-6"			48
AA502	2	22'-6"	109	8'-6"	2'-6"			47
AA503	11	35'-3"	Str.					405
AA504	4	20'-9"	Str.					87
AA505	2	9'-9"	Str.					20
AA506	1 Ser. 7	9'-7" to 10'-1"	104	8'-9" to 9'-3"	1'-0"		1"	72
AA507	1	11'-2"	104	10'-4"	1'-0"			12
AA508	1	12'-3"	104	11'-5"	1'-0"			13
AA509	1 Ser. 5	11'-10" to 12'-2"	104	11'-0" to 11'-4"	1'-0"		1"	63
AA510	1	12'-7"	104	11'-9"	1'-0"			13
AA511	23	7'-2"	105	3'-5"	2'-0"	2'-0"		172
AA512	83	5'-7"	110					483
AA513	63	5'-5"	136	1'-6"	2'-0"	2"		356
AA514	63	4'-3"	105	1'-6"	1'-6"	1'-6"		279
AA515	4	4'-7"	Str.					19
AA516	21	6'-6"	Str.					143
AA517	1 Ser. 6	8'-9" to 13'-3"	105	1'-2"	3'-11 1/2"	3'-11 1/2"	10 1/2"	69
AA518	5	7'-11"	105	1'-2"	3'-6"	3'-6"		41
AA519	6	15'-8"	Str.					98
AA520	2	17'-8"	Str.					37
AA521	2	13'-8"	Str.					29
AA522	1	12'-5"	Str.					13
AA523	1	8'-3"	Str.					9
AA524	1	10'-0"	Str.					10
AA525	1	6'-0"	Str.					6
AA526	4	9'-8"	Str.					40
AA527	4	5'-8"	Str.					24
AA528	2	8'-9"	Str.					18
AA529	8	7'-2"	107	3'-10"	1'-8"	1'-2"		60
AA530	8	5'-1"	104	3'-0"	2'-2"			43
AA531	8	4'-6"	Str.					38
AA532	8	6'-4"	Str.					53
AA533	11	5'-9"	108	4'-9"	1'-0"	8"		66
AA534	11	10'-5"	105	2'-0"	6'-8"	2'-0"		120
AA535	11	6'-3"	105	6"	3'-0"	3'-0"		72
AA536	6	4'-8"	Str.					29
AA537	3	19'-8"	Str.					62
AA538	20	31'-8"	Str.					661
AA539	12	32'-8"	Str.					410
AA540	1	22'-8"	Str.					24
AA541	1	23'-8"	Str.					25
AA542	1	7'-6"	Str.					8
AA543	1	8'-6"	Str.					9
AA544	2	20'-3"	Str.					42
AA545	2	6'-3"	Str.					13
AA546	4	17'-2"	Str.					72
AA547	2	16'-4"	Str.					34
AA548	1 Ser. 26	6'-3" to 16'-4"	Str.				4 1/2"	306
AA549	26	5'-6"	104	4'-8"	1'-0"			149
AA550	9	31'-6"	Str.					296
AA551	6	35'-5"	Str.					222
AA552	1	14'-0"	104	13'-2"	1'-0"			15
AA553	1 Ser. 7	14'-4" to 14'-10"	104	13'-6" to 14'-0"	1'-0"		1"	107
AA601	28	9'-1"	100	7'-9"				382
AA602	19	7'-9"	Str.					221
AA603	10	12'-4"	100	11'-0"				186
AA604	6	11'-0"	Str.					99
AA605	4	8'-0"	Str.					48
AA606	31	18'-10"	117	8'-0"	6'-8"			877
AA607	7	23'-10"	105	1'-2"	11'-6"	11'-6"		250
AA608	8	11'-6"	Str.					138
AA609	1 Ser. 7	9'-7" to 10'-1"	104	8'-9" to 9'-4"	1'-0"		1"	103
AA610	1	11'-2"	104	10'-4"	1'-0"			17
AA611	1	12'-3"	104	11'-5"	1'-0"			18
AA612	1 Ser. 6	11'-10" to 12'-1"	104	10'-11" to 11'-3"	1'-0"		1/2"	108
AA613	1 Ser. 3	12'-2" to 14'-0"	104	11'-4" to 13'-2"	1'-0"		1 1/2"	59
AA614	16	6'-10"	100	5'-6"				164
AA615	5	3'-10"	100	2'-6"				29
AA616	4	24'-6"	Str.					147
AA617	3	38'-6"	Str.					173
AA618	6	27'-3"	Str.					246
AA619	4	34'-4"	Str.					206
AA620	18	41'-8"	Str.					1,126
AA621	25	10'-6"	Str.					394

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
SOUTH ABUTMENT								
AA622	14	8'-6"	Str.					179
AA623	9	7'-6"	Str.					101
AA624	10	6'-6"	Str.					98
AA625	10	5'-6"	Str.					83
AA626	2	25'-3"	Str.					76
AA627	1	14'-6"	Str.					22
AA628	1	31'-3"	Str.					47
AA629	1 Ser. 13	8'-9" to 10'-9"	137	7'-0" to 9'-0"	1'-11"	5" to 7"	2"	190
AA630	2	8'-3"	137	6'-6"	1'-11"	5"		25
AA631	13	7'-10"	100	6'-6"				153
AA632	5	19'-8"	Str.					148
AA633	5	16'-9"	Str.					126
AA634	3	32'-3"	Str.					145
AA635	16	12'-5"	Str.					299
AA636	16	5'-10"	104	5'-0"	1'-0"			140
AA637	16	13'-0"	120	2'-9"	2'-0"	1'-0"		312
AA638	2	20'-0"	Str.					60
AA639	2	13'-2"	Str.					40
AA640	2	5'-3"	Str.					16
AA641	1 Ser. 77	6'-2" to 16'-4"	Str.				1 1/2"	1,301
AA642	1 Ser. 13	6'-6" to 8'-0"	137	4'-9" to 6'-3"	1'-11"	3" to 5"	1 1/2"	141
AA643	67	6'-9"	137	5'-0"	1'-11"	4"		679
AA644	2 Ser. 9	3'-9" to 6'-3"	Str.					135
AA645	8	3'-6"	Str.				3 1/2"	42
AA646	2	9'-10"	104	9'-0"	1'-0"			30
AA647	2	7'-0"	104	6'-2"	1'-0"			21
AA648	5	7'-6"	121	2'-6"	1'-2"	1'-0"		56
AA649	6	5'-4"	104	4'-6"	1'-0"			48
AA650	1 Ser. 10	10'-2" to 10'-7"	Str.				1/2"	156
AA651	1	14'-10"	104	14'-0"	1'-0"			22
AA701	10	6'-1"	104	5'-3"	1'-0"			124
AA801	6	7'-6"	Str.					120
AA802	12	14'-11"	Str.					478
AA803	5	14'-6"	Str.					194
AA804	7	18'-6"	108	11'-9"	6'-9"	4'-9"		346
AA805	5	14'-9"	Str.					197
AA806	7	18'-9"	108	12'-0"	6'-9"	4'-9"		350
AA807	2	34'-3"	108	28'-3"	6'-0"	2'-6"		183
AA808	1 Ser. 11	12'-1" to 13'-4"	137	9'-9" to 11'-0"	2'-6"	7" to 8"	1 1/2"	374
AA809	10	7'-11"	137	5'-7"	2'-6"	4"		212
AA810	11	10'-8"	100	8'-6"				313
AA811	10	9'-8"	100	7'-6"				258
AA901	21	13'-0"	100	10'-6"				928
AA1101	14	6'-0"	Str.					446
Total								20,022
AB401	30	2'-9"	104	1'-10 1/2"	1'-0"			55
AB501	3	12'-5"	109	3'-6"	2'-6"			39
AB502	5	11'-5"	109	3'-0"	2'-6"			60
AB503	13	35'-4"	Str.					479
AB504	3	8'-8"	104	7'-9"	1'-0 1/2"			27
AB505	1 Ser. 19	8'-10" to 13'-8"	104	8'-0" to 12'-9"	1'-0 1/2"		1 1/2"	223
AB506	3	13'-9"	104	12'-10"	1'-0 1/2"			43
AB507	24	7'-2"	105	3'-5"	2'-0"	2'-0"		179
AB508	2	24'-0"	Str.					50
AB509	2	15'-2"	Str.					32
AB510	34	5'-7"	110					198
AB511	23	4'-4"	136	1'-5"	1'-6"	2"		104
AB512	23	4'-6"	105	1'-5"	1'-8"	1'-8"		108
AB513	6	15'-6"	Str.					97
AB514	3	4'-11"	Str.					15
AB515	22	6'-9"	Str.					155
AB516	1 Ser. 6	8'-5" to 12'-3"	105	1'-2"	3'-9 1/2"	3'-9 1/2"	9 1/2"	65
AB517	5	7'-11"	105	1'-2"				41
AB518	2	17'-8"	Str.					37
AB519	2	14'-0"	Str.					29
AB520	1	11'-9"	Str.					12
AB521	1	8'-1"	Str.					8

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
AB522	7	9'-8"	Str.					71
AB523	5	6'-2"	Str.					32
AB524	6	28'-0"	Str.					175
AB525	8	9'-0"	107	6'-0"	1'-7"	1'-1 1/2"		75
AB526	8	4'-11"	104	-3'-0"	2'-0 1/2"			41
AB527	9	31'-6"	Str.					296
AB528	6	4'-2"	Str.					26
AB529	4	3'-4"	105	1'-5"	1'-11"	1'-11"		14
AB530	4	3'-2"	136	1'-5"	11"	2"		13

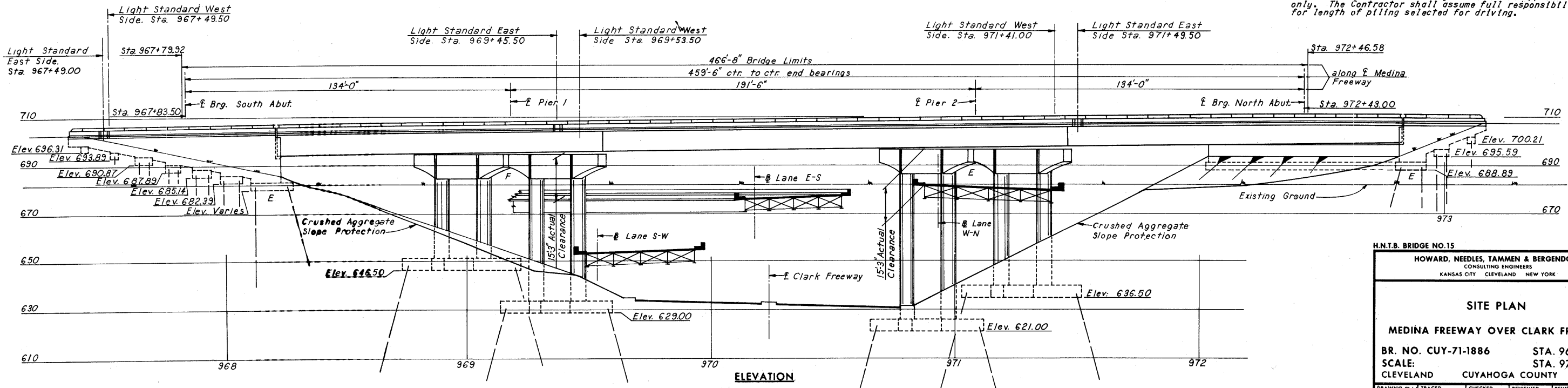
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CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



PROPOSED STRUCTURE

Type: 3 Span Continuous welded girders with reinforced concrete slab.
 Spans: 134'-0", 191'-6", 134'-0" = 459'-6" center to center of end bearing.
 Roadway: 109'-0" face to face of parapets, including 6'-0" raised median.
 Out to Out of Structure: 110'-4"
 Loading: C.F. 2000 (S7) adequate for A.A.S.H.O alternate loading.
 Skew: 35°30'00".
 Wearing Surface: 1" monolithic concrete.
 Approach Slabs: 25'-0" (AS-1-54)
 Alignment: Tangent.
 1975 ADT: 27,400 directional.

Note: All piles shall be 12" cast-in-place concrete with estimated lengths as follows: South Abutment - 60'; Pier 1-60', Pier 2 - 65', and North Abutment 70'. These estimates are based on boring data and are approximate only. The Contractor shall assume full responsibility for length of piling selected for driving.



H.N.T.B. BRIDGE NO. 15

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

SITE PLAN

MEDINA FREEWAY OVER CLARK FREEWAY

BR. NO. CUY-71-1886 STA. 967+79.92
 SCALE: STA. 972+46.58
 CLEVELAND CUYAHOGA COUNTY OHIO

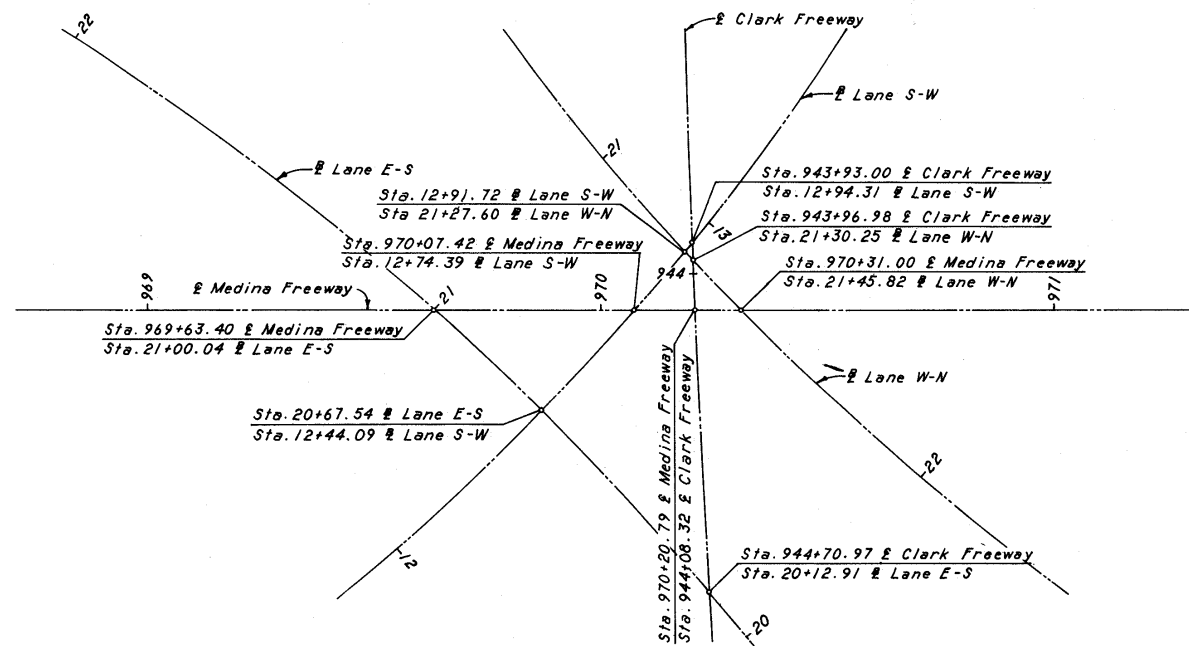
DRAWN E.H.	TRACED	CHECKED W.H.	REVIEWED	REVISED
DATE 12-24-64	DATE	DATE 12-24-64	DATE	SHEET 453

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OCT 26 1982

FED. RD. DIVISION	STATE	PROJECT
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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



GEOMETRIC PLAN

ESTIMATED QUANTITIES - BRIDGE NO. CUY-71-1886

ITEM	DESCRIPTION	UNIT	ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL	TOTAL	AS BUILT
E-2	Cofferdams, Cribbs and Sheeting	L.S.					Lump Sum	
E-2	Unclassified Excavation	Cu.Yd.	939	6,019			6,958	
I-10	Crushed Aggregate Slope Protection	Sq.Yd.				4,850	4,850	
S-1	Class "C" Concrete (Superstructure)	Cu.Yd.			1,611		1,611	
S-1	Class "C" Concrete (Pier Caps and Columns)	Cu.Yd.		769			769	
S-1	Class "E" Concrete (Abutment above Footings)	Cu.Yd.	605				605	
S-1	Class "E" Concrete (Footings, Piers, Abutments, and Wingwalls)	Cu.Yd.	345	753			1,098	
S-3	Waterproofing Premolded Sealing Strip	Ltn.Ft.	162				162	
S-4	Reinforcing Steel	Lbs.	72,845	315,029	442,172		830,046	
S-7	Structural Steel	Lbs.			2,880,800		2,880,800	
S-8	Field Painting of Structural Steel, as per proposal note	Lbs.			2,880,800		2,880,800	
S-9	3/4" Preformed Expansion Joint Filler	Sq.Ft.	277				277	
S-14	Railing (Type A Aluminum Rail, Supports and Concrete Parapet)	Ltn.Ft.	167		923		1,090	
S-14	Barrier Railing (Type I-15.11, Double Faced with Galv. Steel Posts and Bolts)	Ltn.Ft.			450		450	
S-16	First Test Pile	L.S.				Lump Sum	Lump Sum	
S-17	First Pile Test Load	L.S.				Lump Sum	Lump Sum	
S-17	Subsequent Pile Test Load	Each					1	
S-18	12" Cast-In-Place Piles	Ltn.Ft.	9,620	24,270			33,890	
S-25	For Lighting Details and Quantities, see Sheet 200							
S-29	Scuffers, including Supports	Each			46		46	
S-29	Porous Backfill	Cu.Yd.	262				262	
S-29	6" Perforated Helical C.M.P. M-6.4(h) Including Specials	Ltn.Ft.	375				375	
S-29	6" Helical C.M.P. M-6.4(h) non-perforated	Ltn.Ft.	475				475	
S-101	Water Reducing, Set-retarding Admixture	Each			1,611		1,611	

H.N.T.B. BRIDGE NO. 15

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

ESTIMATED QUANTITIES

MEDINA FREEWAY OVER CLARK FREEWAY

BR. NO. CUY-71-1886 STA. 967+79.92
SCALE: STA. 972+46.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN L.J.R.	TRACED	CHECKED G.A.M.	REVIEWED	REVISED
DATE 12-1-64	DATE	DATE 12-28-64	DATE	SHEET 454

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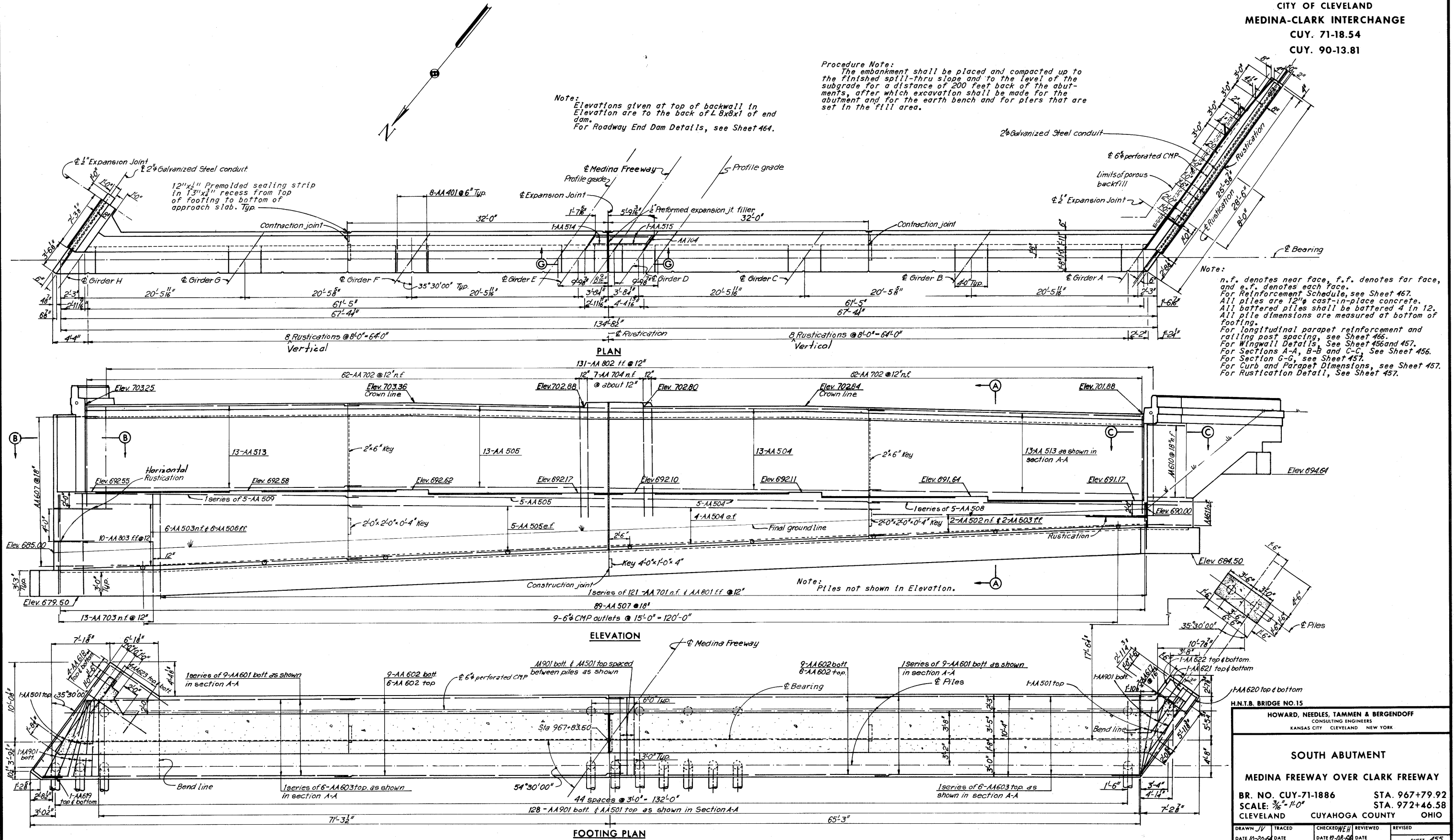
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2	OHIO	

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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

Procedure Note:
The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutment and for the earth bench and for piers that are set in the fill area.

Note:
Elevations given at top of backwall in Elevation are to the back of L 8x8x1 of end dam.
For Roadway End Dam Details, see Sheet 464.



Note:
n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.
For Reinforcement Schedule, see Sheet 467.
All piles are 12" cast-in-place concrete. All battered piles shall be battered 4 in 12. All pile dimensions are measured at bottom of footing.
For longitudinal parapet reinforcement and railing post spacing, see Sheet 466.
For Wingwall Details, see Sheet 456 and 457.
For Sections A-A, B-B and C-C, see Sheet 456.
For Section G-G, see Sheet 457.
For Curb and Parapet Dimensions, see Sheet 457.
For Rustication Detail, see Sheet 457.

H.N.T.B. BRIDGE NO. 15
HOWARD, NEEDLES, TAMMEN & BERGENOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SOUTH ABUTMENT
MEDINA FREEWAY OVER CLARK FREEWAY

BR. NO. CUY-71-1886 STA. 967+79.92
SCALE: 3/8" = 1'-0" STA. 972+46.58
CLEVELAND CUYAHOGA COUNTY OHIO

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DATE 10-20-64	DATE	DATE 12-08-64	DATE	DATE

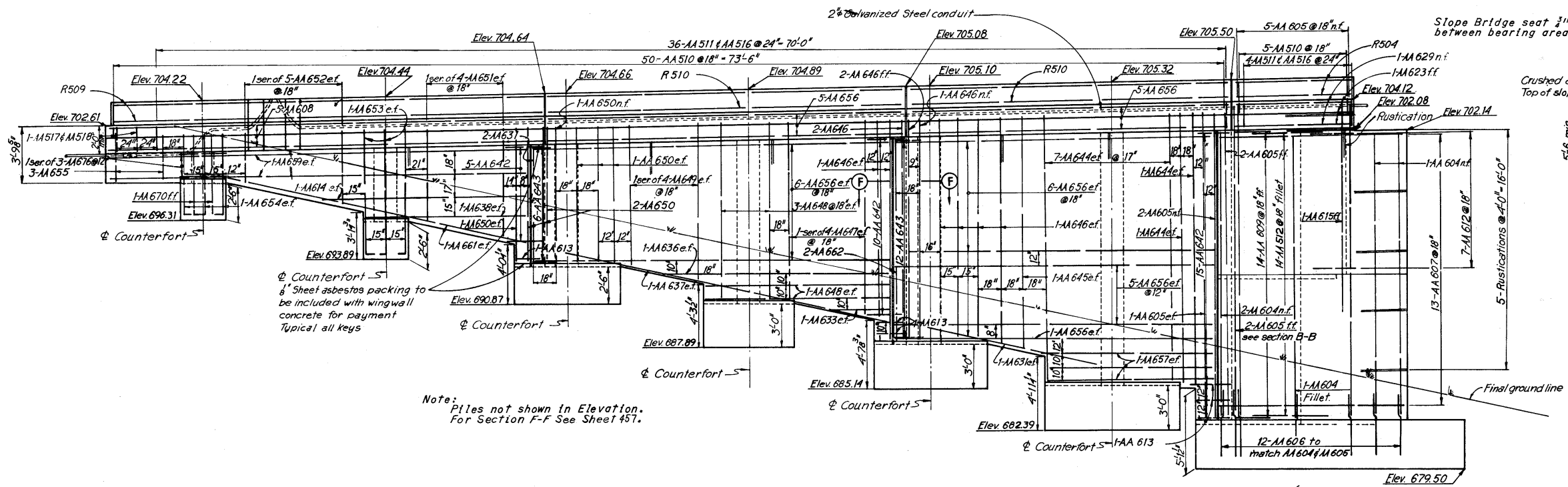
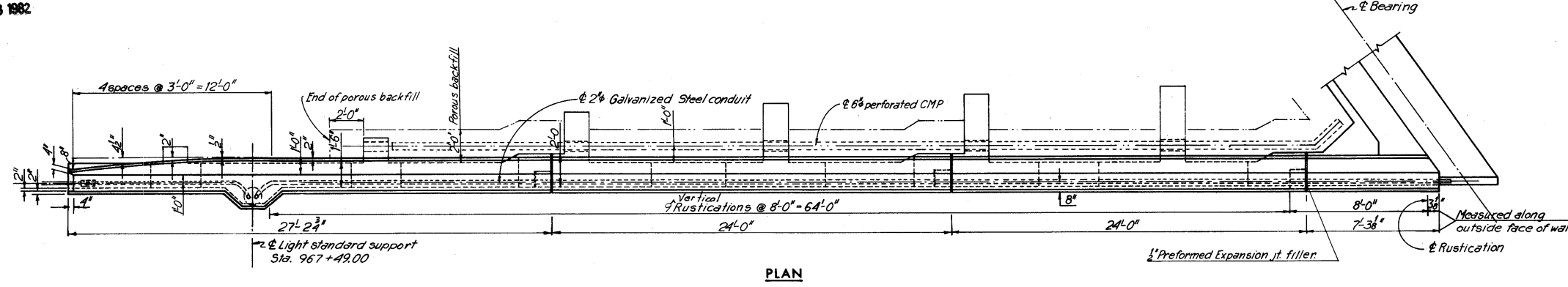
SHEET 455

MICROFILMED
OCT 28 1982

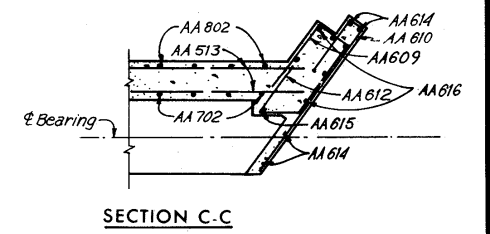
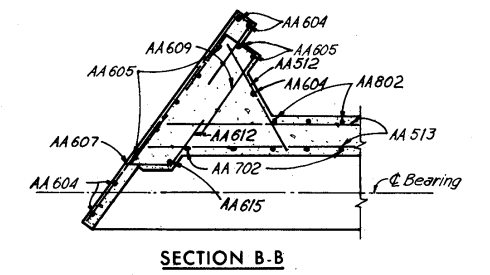
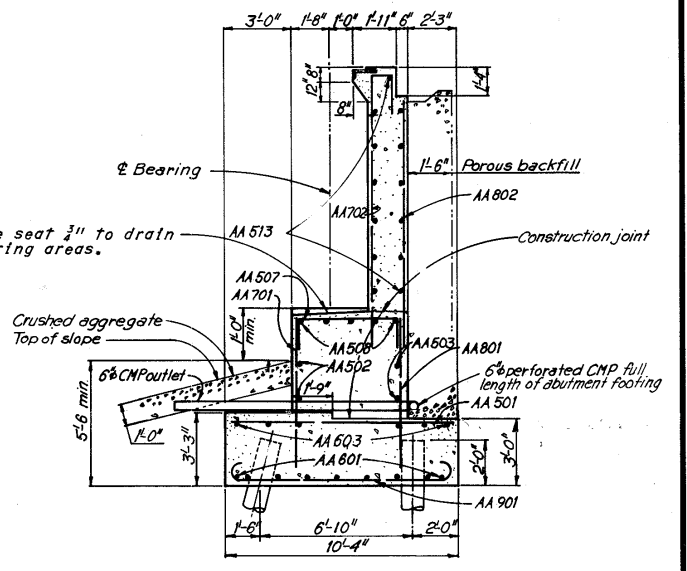
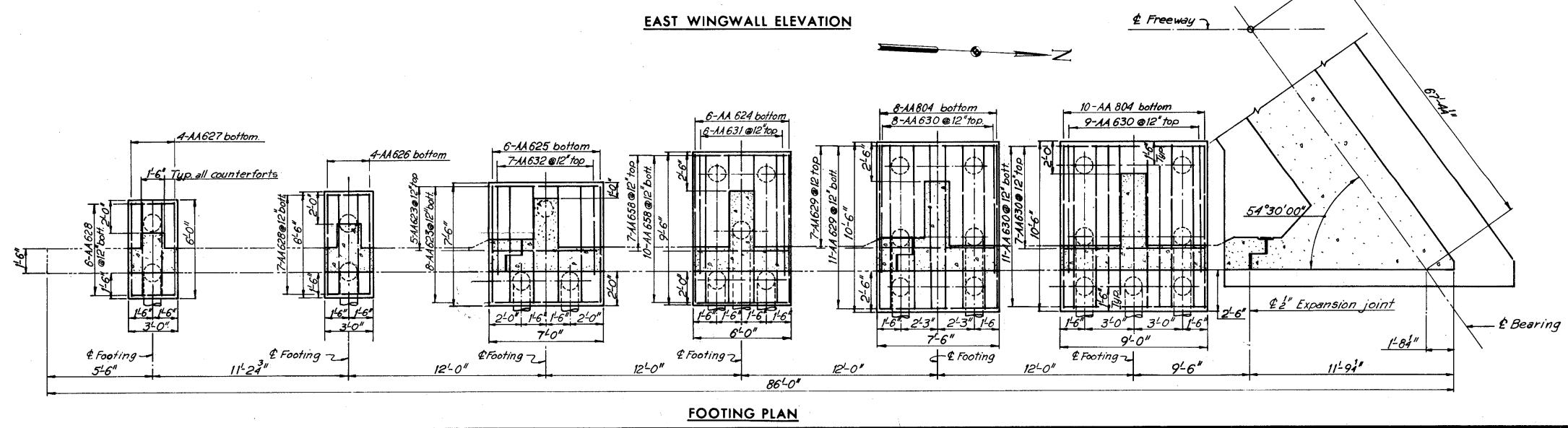
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

456
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



COUNTERFORT F COUNTERFORT E COUNTERFORT D COUNTERFORT C COUNTERFORT B COUNTERFORT A



Note: Piles not shown in Elevation. For Section F-F See Sheet 457.

H.N.T.B. BRIDGE NO. 15
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SOUTH ABUTMENT DETAILS
MEDINA FREEWAY OVER CLARK FREEWAY

BR. NO. CUY-71-1886 STA. 967+79.92
SCALE: 1/4"=1'-0" STA. 972+46.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN J/V	TRACED	CHECKED MEH	REVIEWED	REVISED
DATE 11-2-64	DATE	DATE 2-28-64	DATE	DATE

SHEET 456

MICROFILMED
OCT 28 1982

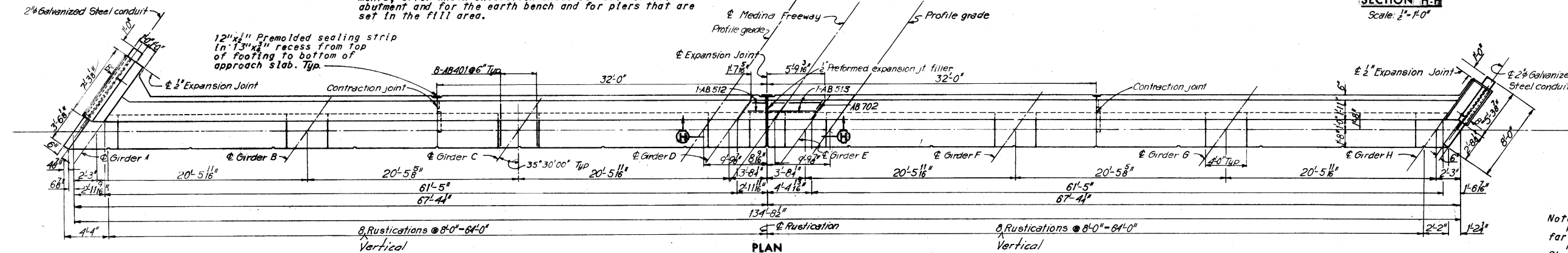
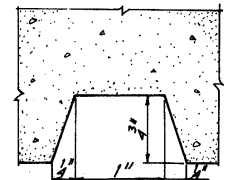
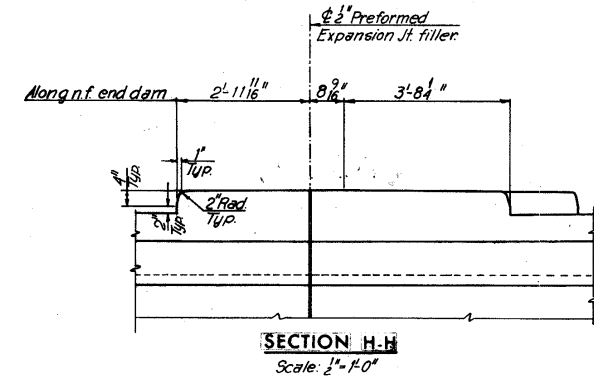
FED RD DIVISION	STATE	PROJECT
3	OHIO	

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478

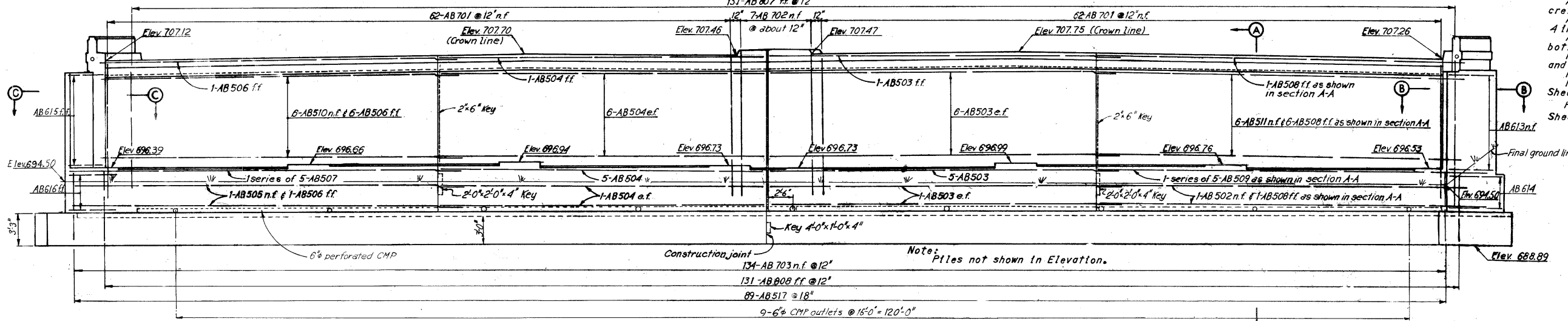
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

Procedure Note:
The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutment and for the earth bench and for piers that are set in the fill area.

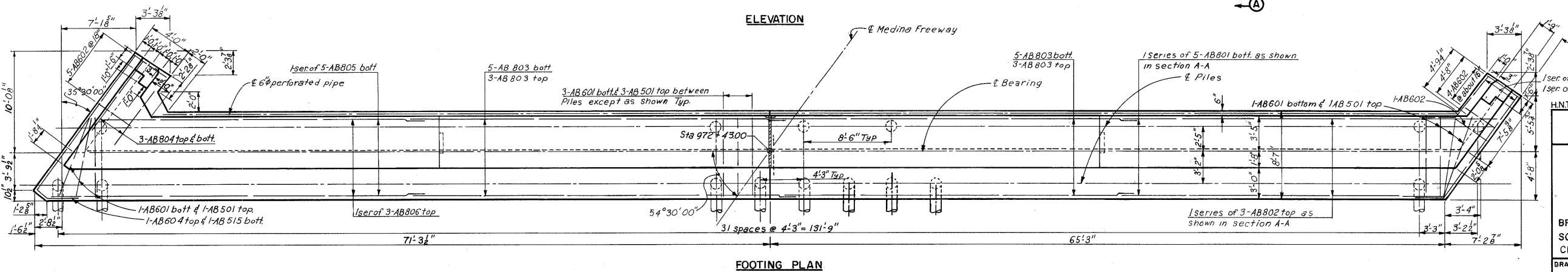
Note:
Elevations given at top of backwall in Elevation are to the back of 8x8x1 of end dam. For roadway end dam details, see Sheet 464.



Note:
n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.
For reinforcement schedule see Sheet 467.
All piles are 12" cast-in-place concrete.
All battered piles shall be battered 4 in 12.
All pile dimensions are measured at bottom of footing.
For longitudinal parapet reinforcement and railing post spacing, see Sheet 456.
For wingwall details, see Sheet 459.
For curb and parapet dimensions, see Sheet 457.
For Sections A-A, B-B and C-C see Sheet 459.



Note: Piles not shown in Elevation.



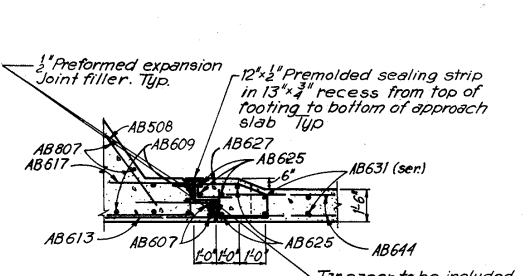
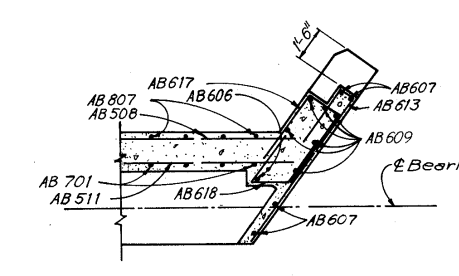
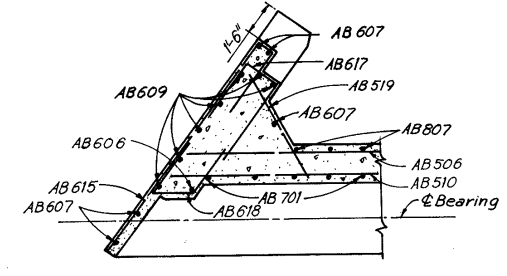
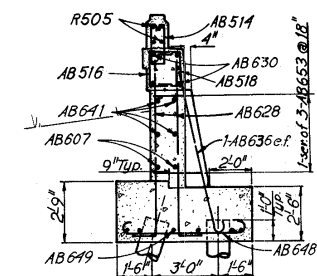
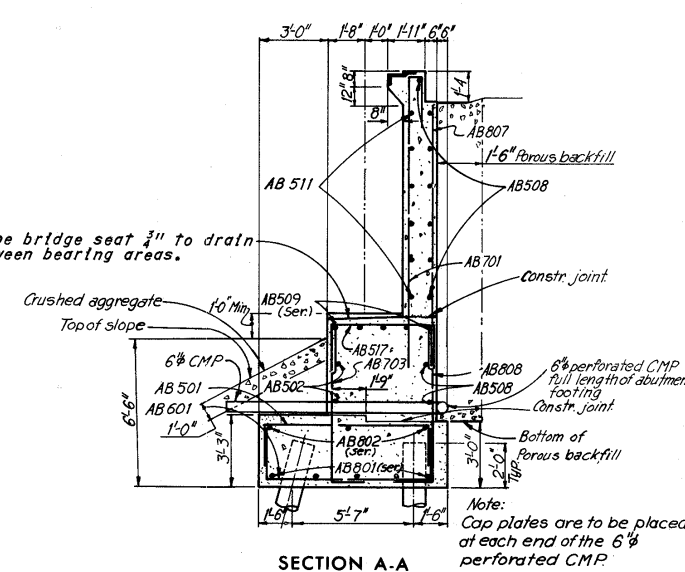
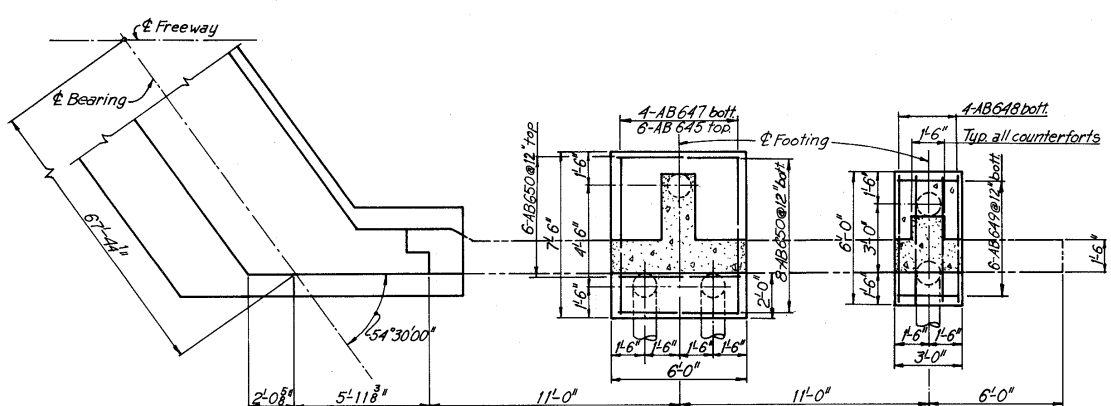
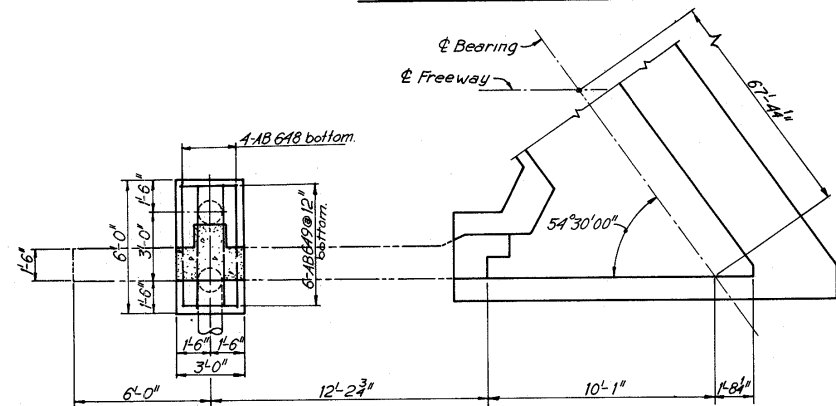
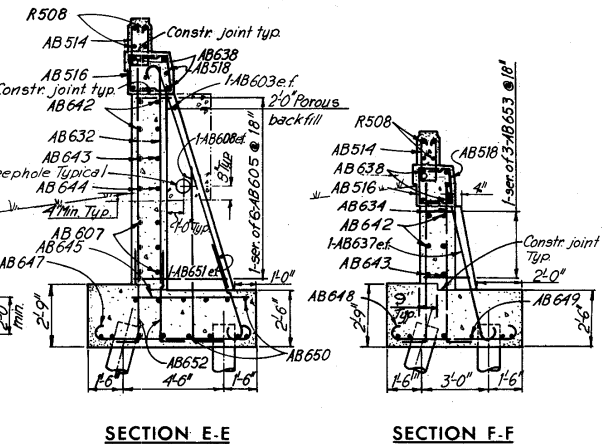
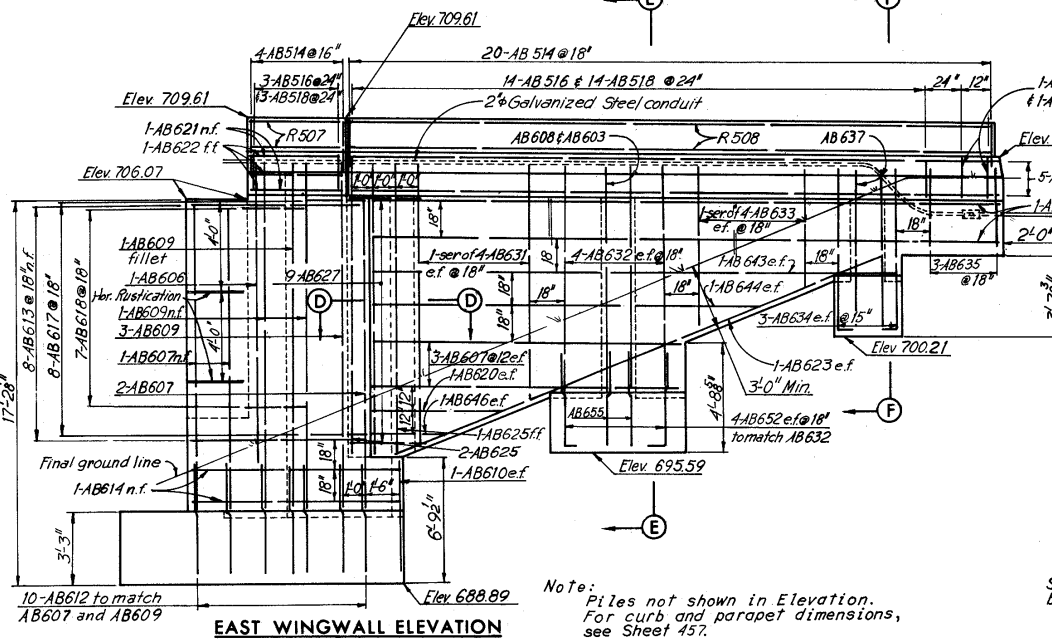
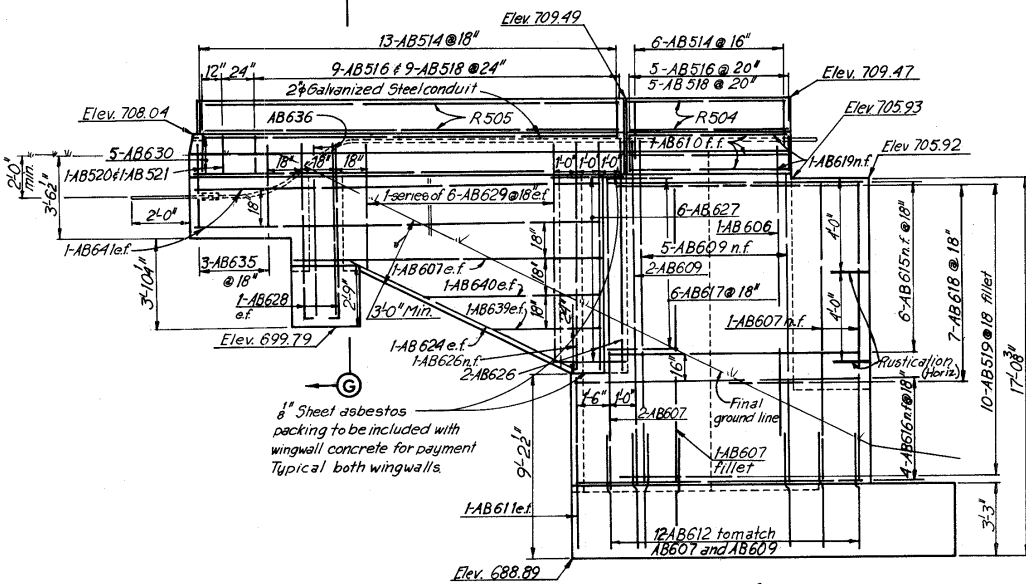
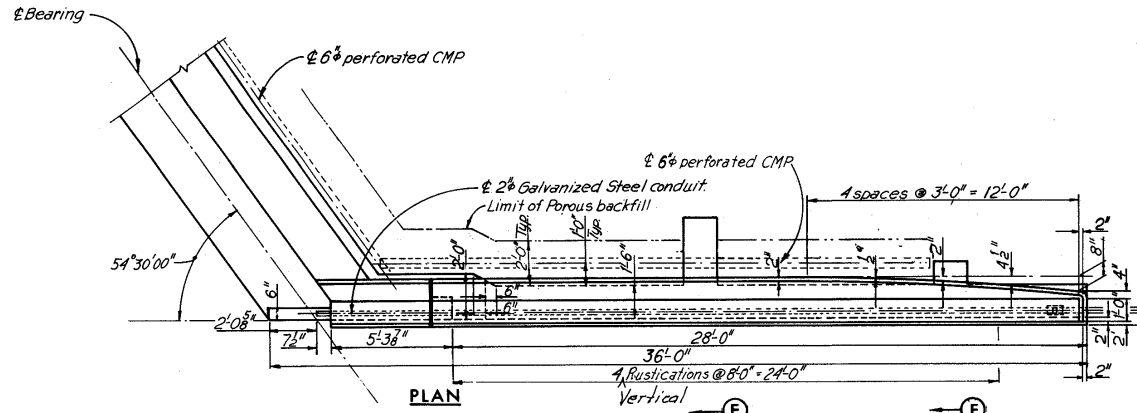
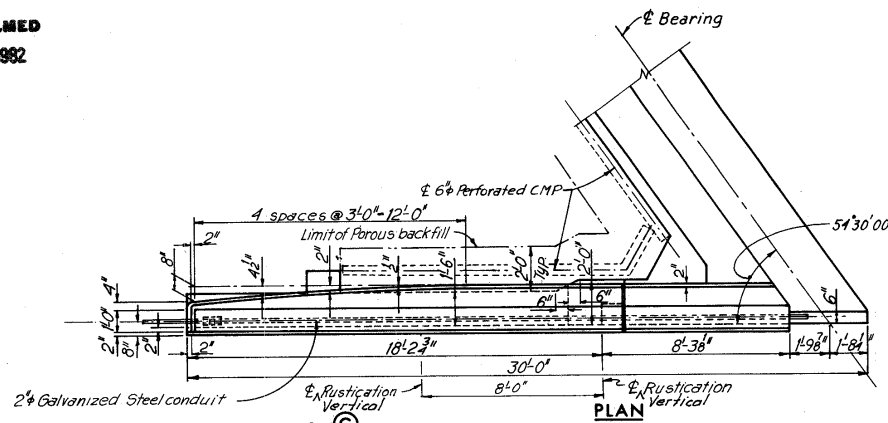
HNTB. BRIDGE NO. 15				
HOWARD NEEDLES TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY, CLEVELAND, NEW YORK				
NORTH ABUTMENT				
MEDINA FREEWAY OVER CLARK FREEWAY				
BR. NO. CUY 71-1886	STA. 967+79.92			
SCALE:	STA. 972+46.58			
CLEVELAND	CUYAHOGA COUNTY	OHIO		
DRAWN J.V.	TRACED	CHECKED W.E.H.	REVIEWED	REVISED
DATE 11-5-64	DATE	DATE 2-26-64	DATE	SHEET 458

MICROFILMED
OCT 28 1982

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

459
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



Note:
Piles not shown in Elevation.
For curb and parapet dimensions,
see Sheet 457.

Slope bridge seat 3/4" to drain
between bearing areas.

Note:
Cap plates are to be placed
at each end of the 6" #
perforated CMP.

Note:
All battered piles shall be battered 4 in 12.
For other notes, see Sheet 458.

H.N.T.B. BRIDGE NO. 15
HOWARD, NEEDLES, TAMMEN & BERGENOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

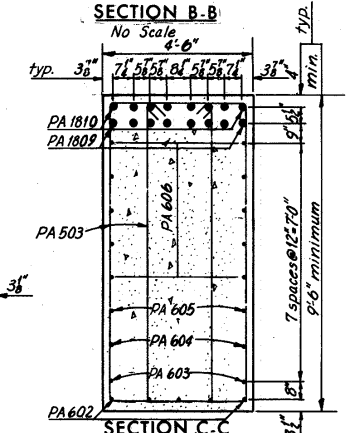
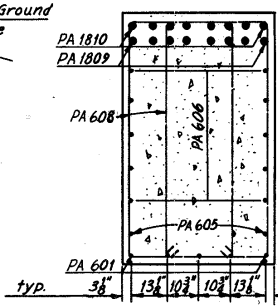
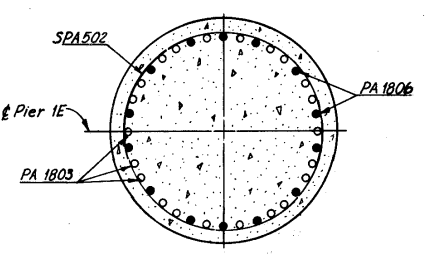
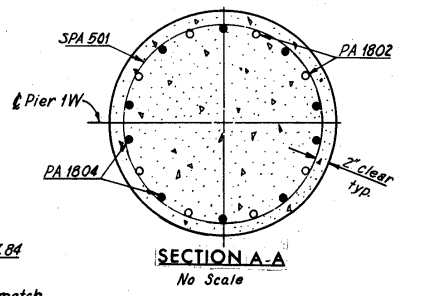
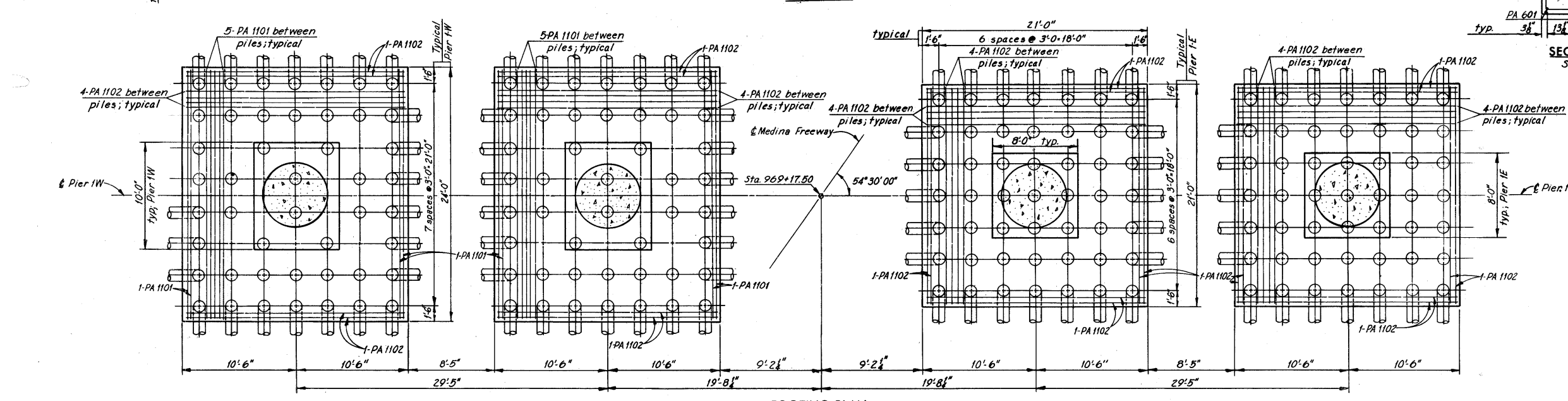
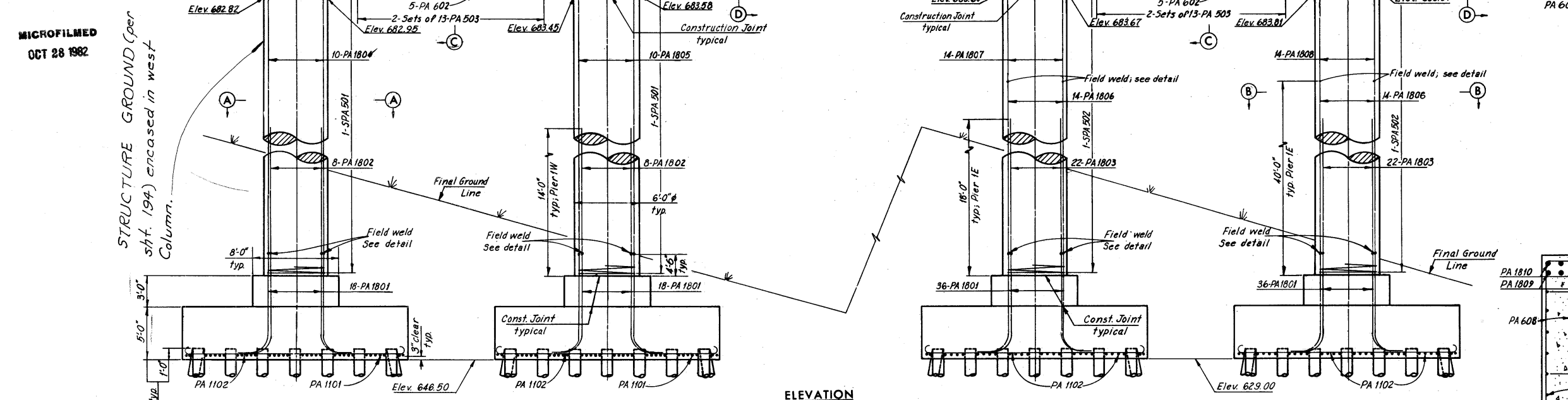
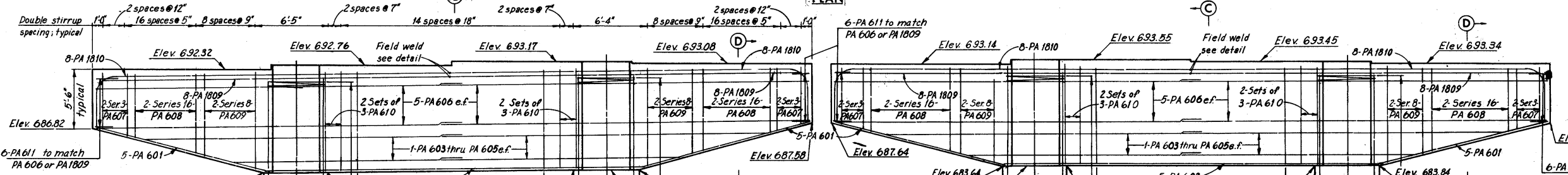
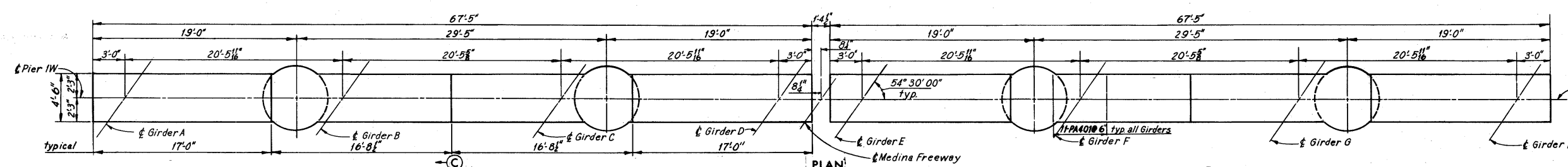
NORTH ABUTMENT DETAILS
MEDINA FREEWAY OVER CLARK FREEWAY
BR. NO. CUY-71-1886 STA. 967+79.92
SCALE: 1/4" = 1'-0" STA. 972+46.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN J.V.	TRACED	CHECKED W.E.H.	REVIEWED	REVISED
DATE 11-10-81	DATE	DATE 12-24-81	DATE	DATE

SHEET 459

FED. RD. DIVISION	STATE	PROJECT	460 478
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



Notes:
All piles are 12" cast-in-place concrete.
All battered piles shall be battered 3 in 12.
Pile location dimensions are measured along bottom of footing.
For Reinforcement Schedule, see Sheet 168.
For Details of Field Welding No. 18 bars, see Sheet 164.
For Anchor Bolt Setting Plan, see Sheet 165.
Special care shall be taken when placing reinforcement bars in top of cap beam so as not to interfere with setting of shoe anchor rods.

H.N.T.B. BRIDGE NO. 15
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIER 1
MEDINA FREEWAY OVER CLARK FREEWAY
BR. NO. CUY-71-1886 STA. 967+79.92
SCALE: 3/8"=1'-0" STA. 972+46.58
CLEVELAND CUYAHOGA COUNTY OHIO

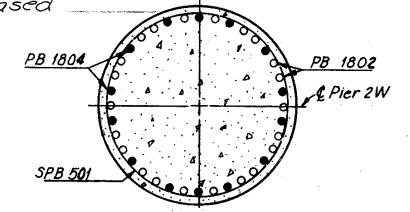
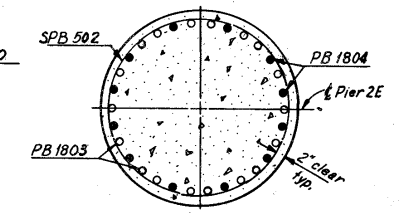
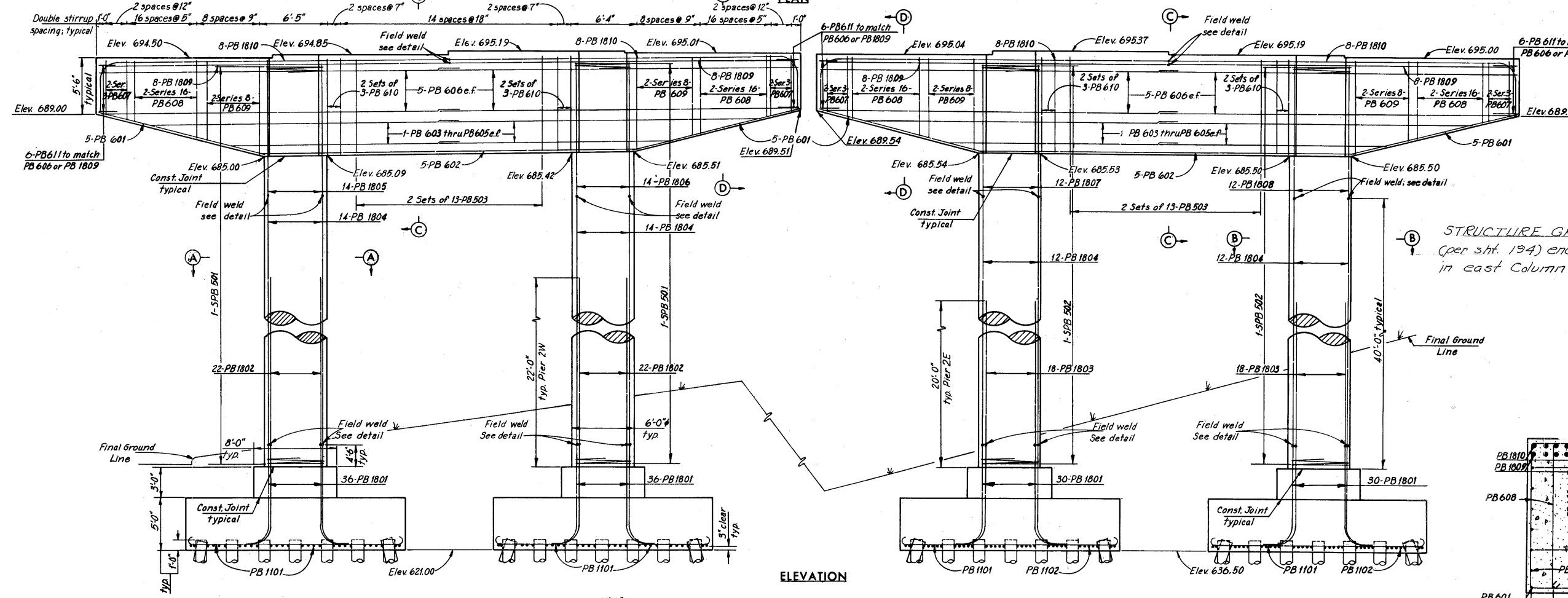
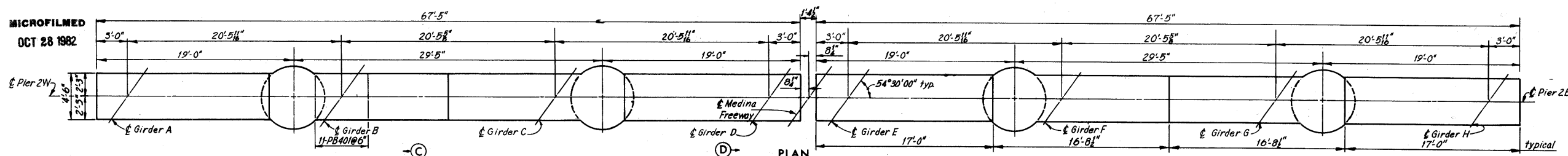
DRAWN R.E.B.	TRACED	CHECKED W.H.	REVIEWED	REVISED
DATE 10-6-64	DATE	DATE 12-10-64	DATE	SHEET 460

MICROFILMED
OCT 28 1982

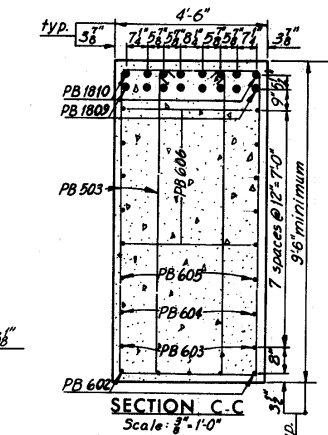
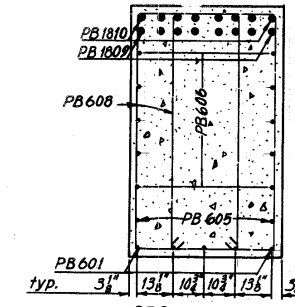
MICROFILMED
OCT 28 1982

FED. RD. DIVISION	STATE	PROJECT	461 478
2	OHIO		

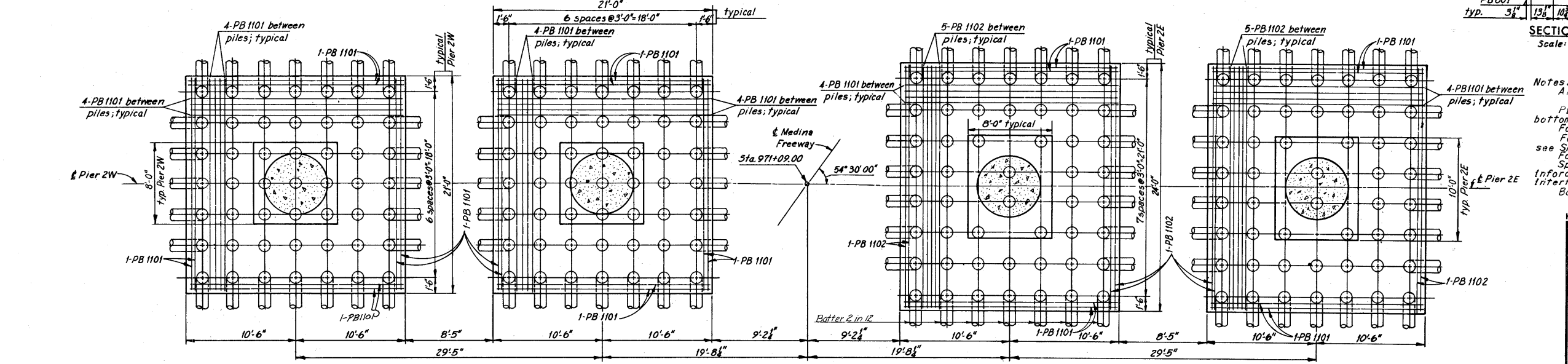
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



STRUCTURE GROUND
(per sht. 194) encased
in east Column.



Notes:
All piles are 12" cast-in-place concrete.
Pile location dimensions are measured along bottom of footing.
For Reinforcement Schedule, see Sheet 468.
For Details of Field Welding No. 18 bars, see Sheet 464.
For Anchor Bolt Setting Plan, see Sheet 465.
Special care shall be taken when placing reinforcement bars in top of cap beam so as not to interfere with setting of shoe anchor rods.
Battered piles are battered 3 in 12 except as noted.



H.N.T.B. BRIDGE NO. 15

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KANSAS CITY CLEVELAND NEW YORK

PIER 2
MEDINA FREEWAY OVER CLARK FREEWAY

BR. NO. CUY-71-1886 STA. 967+79.92
SCALE: 3/8" = 1'-0" STA. 972+46.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DATE 10-14-64	DATE	DATE 10-10-64	DATE	DATE

SHEET 461

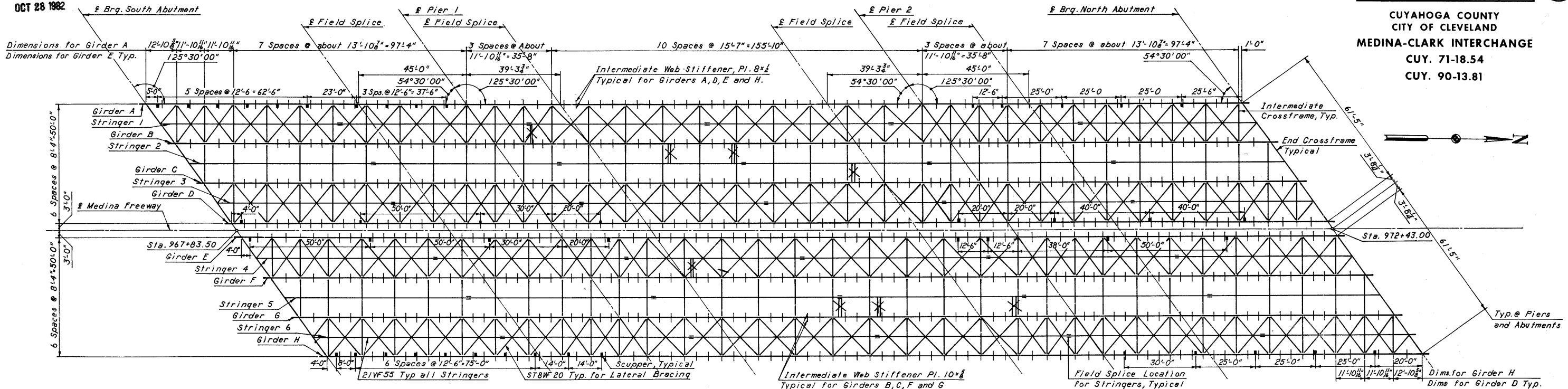
MICROFILMED

OCT 28 1982

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

462
478

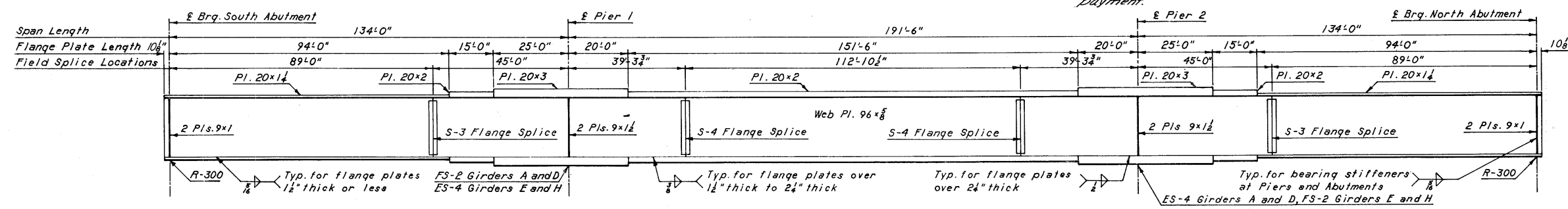
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



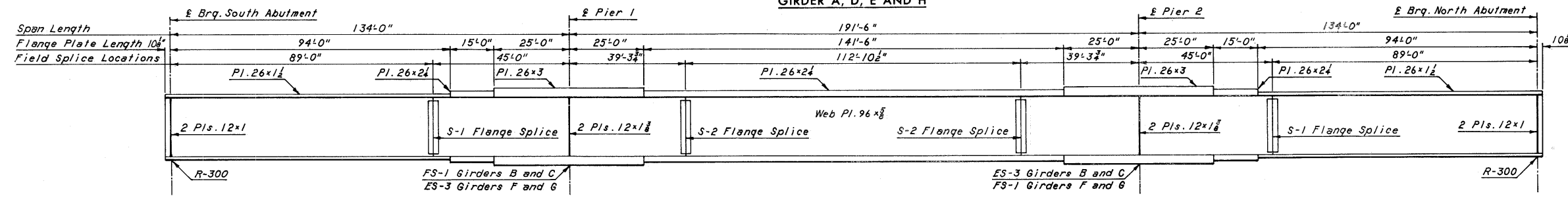
FRAMING PLAN

Underdeck luminarie support.
See pages 199 & 208 for detail.
Include with Item 3.7 for
Payment.

Notes:
Scupper locations are dimensioned along the gutter lines.
For Scupper Details, see Ohio Standard Drawing SD-1-63, Sheet 3 of 4.
For R-300 Rocker Details, see Ohio Standard Drawing RB-1-55, revised 2-2-59.
For Details of Special Rockers and Bolsters, see Sheet 465.
For additional information as to Rocker and Bolster location, see Sheet 465.
Top and bottom flanges are identical.
Bearing stiffeners shall be fully grooved and butt welded to the lower flange and fitted in close contact with the upper flange.
The intermediate stiffeners shall not be welded to the girder flanges but shall be fitted to the flanges in close enough contact that the shop paint will fill and close the openings.
For detail of Intermediate Crossframe, see Sheet 463.
For detail of End Crossframes, see Sheet 464.
For details of Shop Welding of flanges, see Joint Preparation for Shop Butt Welds Sheet
For Curb Plate Details at Safety Curbs, see Ohio Standard Drawing SD-1-63, Sheet 2 of 4. Use the same plate arrangement at the median.
The girders shall be fabricated to line parallel to profiles formed by top of pavement elevations directly over the girders, plus the camber required to compensate for dead load deflections.
For details of Lateral Connections, see Sheet 463.
Field splices for stringers are to be located at .2 points between intermediate crossframes.
For Details of Beam and Girder Field Splices, see Sheet 464.



GIRDER A, D, E AND H



GIRDER B, C, F AND G

GIRDER ELEVATION

Note:
Optional shop splices will be permitted in the webs and flanges of girders but their locations shall be submitted to the director for approval.

H.N.T.B. BRIDGE NO. 15

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KANSAS CITY CLEVELAND NEW YORK

FRAMING PLAN

MEDINA FREEWAY OVER CLARK FREEWAY

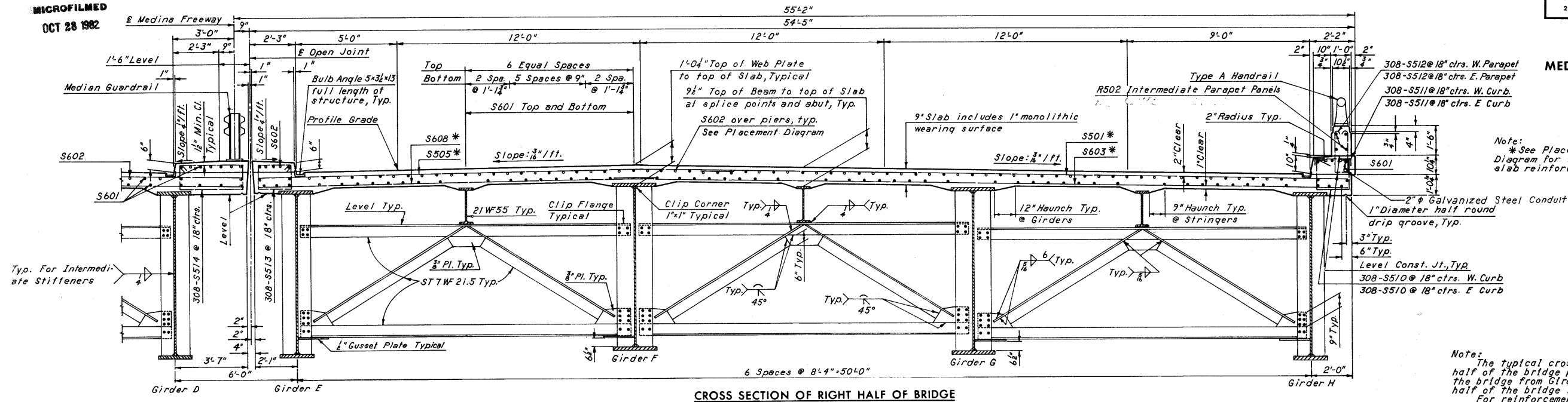
BR. NO. CUY-71-1886 STA. 967+79.92
SCALE: STA. 972+46.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN L.J.R.	TRACED	CHECKED J.P.P.	REVIEWED	REVISED
DATE 7-9-64	DATE	DATE 2/26/64	DATE	SHEET 462

MICROFILMED
OCT 28 1982

FED. RD. DIVISION	STATE	PROJECT	463 478
2	OHIO		

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



Note:
The typical cross section shown is for the right half of the bridge plus the median. The left half of the bridge from Girder D left is similar to the right half of the bridge from Girder H right.
For reinforcement schedule, see Sheet 468.
For replacement bar schedule, see Sheet 468.
For handrail post spacing and parapet joint spacing, see Sheet 466.
For median guardrail post spacing and details, see Sheet 466.
Reinforcement bars shall be adjusted as required to clear scuppers.
For bulb angle support details, see Ohio Standard Drawing SD-1-63, Sheet 3 of 4.
Crossframes shown in typical section are intermediate crossframes.
For end crossframes, see Sheet 464.

TOP OF PAVEMENT ELEVATIONS

GIRDER	So. Abut.	.1	.2	.3	.4	.5	.6	.7	.8	.9	Pier 1	.1	.2	.3	.4	.5	.6	.7	.8	.9	Pier 2	.1	.2	.3	.4	.5	.6	.7	.8	.9	N. Abut.
A	701.90	702.16	702.41	702.66	702.90	703.13	703.35	703.57	703.79	704.00	704.20	704.47	704.73	704.98	705.22	705.44	705.66	705.85	706.04	706.21	706.37	706.47	706.57	706.66	706.74	706.82	706.89	706.96	707.02	707.07	707.11
B	702.39	702.64	702.89	703.13	703.36	703.59	703.81	704.02	704.23	704.43	704.63	704.90	705.15	705.39	705.62	705.84	706.04	706.23	706.41	706.57	706.72	706.82	706.91	706.99	707.07	707.14	707.21	707.27	707.32	707.37	707.41
C	702.86	703.11	703.35	703.59	703.81	704.03	704.25	704.46	704.66	704.86	705.05	705.31	705.55	705.79	706.01	706.21	706.41	706.59	706.76	706.91	707.06	707.15	707.23	707.31	707.39	707.45	707.51	707.57	707.61	707.66	707.69
D	702.82	703.06	703.30	703.53	703.75	703.97	704.18	704.38	704.57	704.77	704.95	705.20	705.44	705.66	705.88	706.08	706.26	706.44	706.60	706.74	706.88	706.97	707.05	707.12	707.19	707.25	707.30	707.35	707.39	707.43	707.46
E	702.90	703.14	703.37	703.60	703.82	704.03	704.24	704.44	704.64	704.82	705.01	705.25	705.49	705.71	705.92	706.12	706.30	706.47	706.63	706.78	706.91	706.99	707.07	707.14	707.21	707.27	707.32	707.36	707.40	707.44	707.46
F	703.37	703.61	703.83	704.06	704.27	704.48	704.68	704.87	705.06	705.25	705.42	705.66	705.89	706.10	706.31	706.49	706.67	706.83	706.98	707.12	707.24	707.32	707.39	707.46	707.52	707.57	707.62	707.66	707.69	707.72	707.74
G	703.33	703.56	703.78	704.00	704.21	704.41	704.60	704.79	704.98	705.15	705.32	705.56	705.78	705.98	706.18	706.36	706.52	706.68	706.82	706.95	707.06	707.14	707.20	707.26	707.32	707.36	707.41	707.44	707.47	707.49	707.51
H	703.27	703.50	703.71	703.92	704.12	704.32	704.51	704.70	704.87	705.04	705.21	705.43	705.65	705.84	706.03	706.20	706.36	706.51	706.64	706.76	706.87	706.94	707.00	707.05	707.10	707.14	707.18	707.21	707.23	707.24	707.25

Note:
Elevations shown in table are to top of pavement along C of girders at points shown.

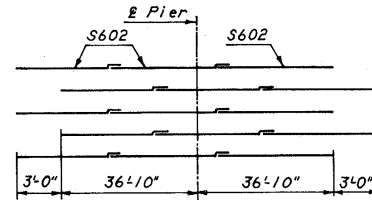
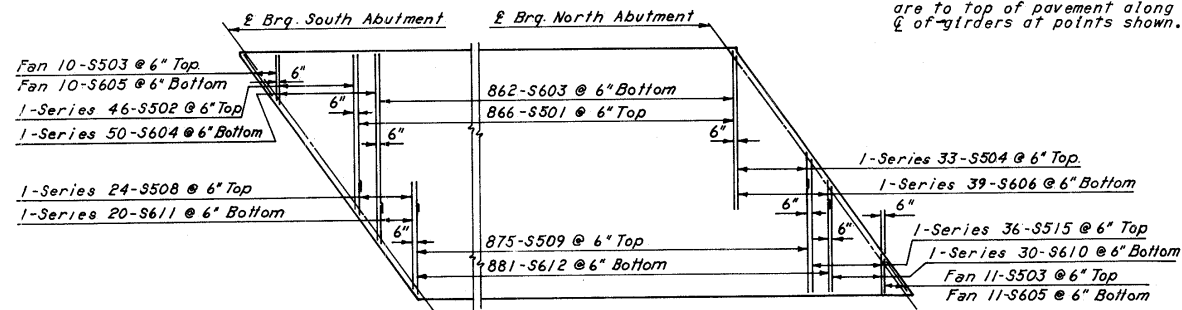
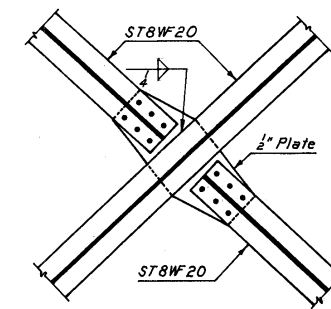
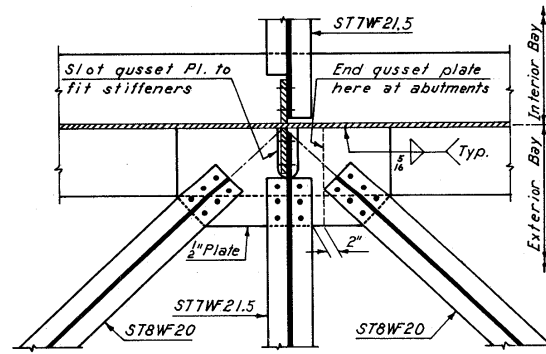


DIAGRAM SHOWING PLACEMENT OF ADDITIONAL LONGITUDINAL BARS OVER PIERS



Note:
The distance shown from top of deck slab to top of girder web is the normal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. S-1.25 of the Construction and Material Specifications.

Note:
In order to facilitate water curing of the deck slab, the placing of the concrete shall progress up grade. The slab may be placed in sections between transverse construction joints which are normal to the centerline of each half of bridge and located near the center of any span.



LATERAL CONNECTION AT MID PANEL

OPTIONAL TRANSVERSE CONSTRUCTION JOINT

Note:
All field connections shall be made with 5/8" high strength bolts.

PLACEMENT OF TRANSVERSE REINFORCEMENT DIAGRAM

H.N.T.B. BRIDGE NO. 15
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DECK DETAILS
MEDINA FREEWAY OVER CLARK FREEWAY

BR. NO. CUY-71-1886 STA. 967+79.92
SCALE: STA. 972+46.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN LJR	TRACED	CHECKED JFD	REVIEWED	REVISED
DATE 9-17-64	DATE	DATE 2-21-64	DATE	DATE

SHEET 463

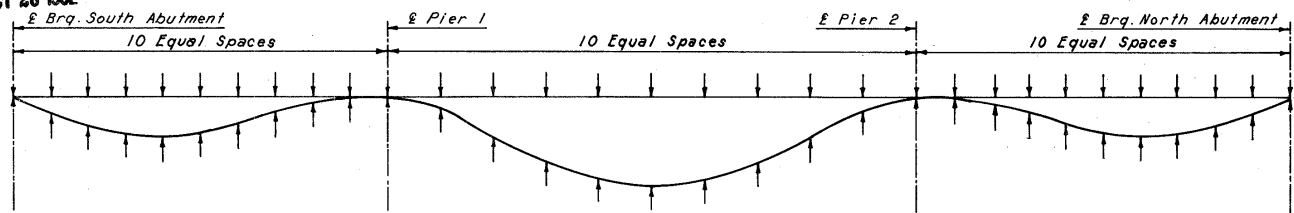
MICROFILMED

OCT 28 1982

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

464
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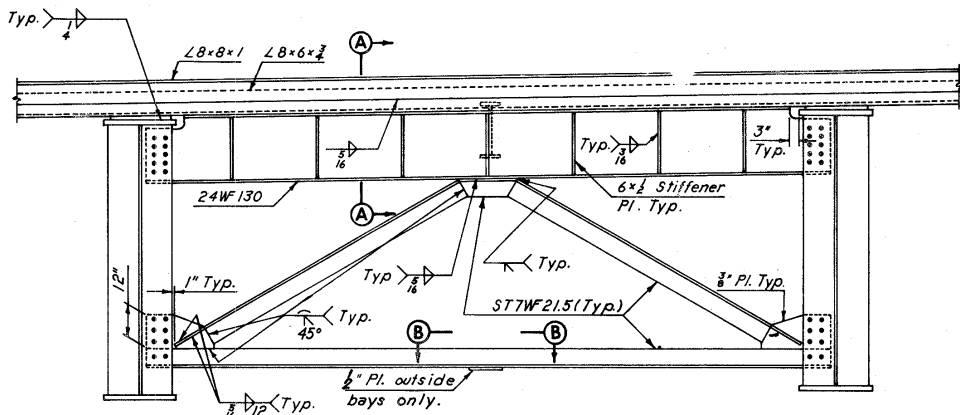
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



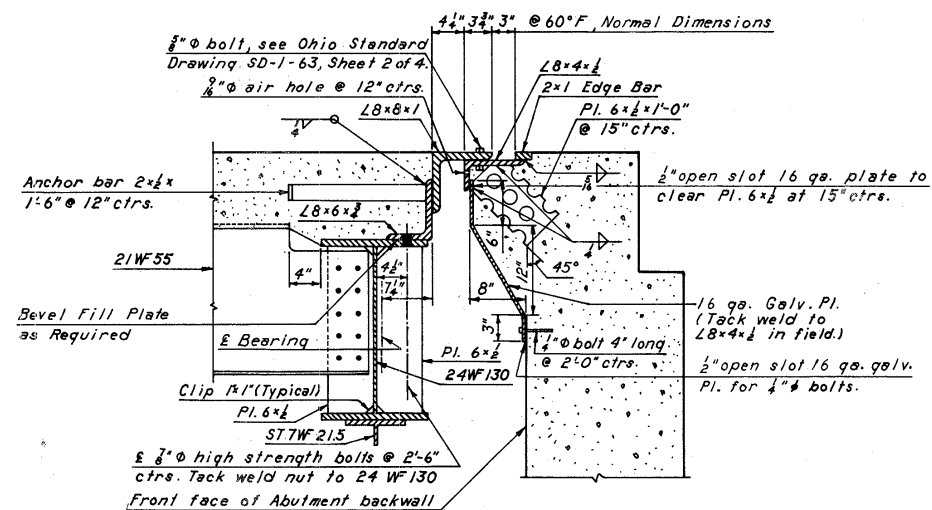
TYPICAL DEFLECTION DIAGRAM

GIRDER		DEFLECTIONS																														
		South Abut.	.1	.2	.3	.4	.5	.6	.7	.8	.9	Pier 1	.1	.2	.3	.4	.5	.6	.7	.8	.9	Pier 2	.1	.2	.3	.4	.5	.6	.7	.8	.9	North Abut.
D	T	0	1/8	1/16	1/8	1/8	1/8	1/8	1/8	1/8	0	0	1/8	1/16	1/8	1/8	1/8	1/8	1/8	1/8	1/8	0	0	1/8	1/16	1/8	1/8	1/8	1/8	1/8	1/8	0
	C	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0
B,C	T	0	1/8	1/16	1/8	1/8	1/8	1/8	1/8	1/8	0	0	1/8	1/16	1/8	1/8	1/8	1/8	1/8	1/8	1/8	0	0	1/8	1/16	1/8	1/8	1/8	1/8	1/8	1/8	0
	C	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0
F,6	T	0	1/8	1/16	1/8	1/8	1/8	1/8	1/8	1/8	0	0	1/8	1/16	1/8	1/8	1/8	1/8	1/8	1/8	1/8	0	0	1/8	1/16	1/8	1/8	1/8	1/8	1/8	1/8	0
	C	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0
A	T	0	1/8	1/16	1/8	1/8	1/8	1/8	1/8	1/8	0	0	1/8	1/16	1/8	1/8	1/8	1/8	1/8	1/8	1/8	0	0	1/8	1/16	1/8	1/8	1/8	1/8	1/8	1/8	0
	C	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0
E,H	T	0	1/8	1/16	1/8	1/8	1/8	1/8	1/8	1/8	0	0	1/8	1/16	1/8	1/8	1/8	1/8	1/8	1/8	1/8	0	0	1/8	1/16	1/8	1/8	1/8	1/8	1/8	1/8	0
	C	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0

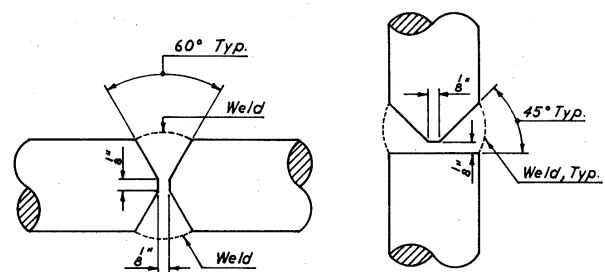
Note: Deflections are given to the nearest 1/16 inch.
In the table of deflection, T indicates the deflection due to total dead load and C indicates the deflection due to dead load of concrete only.



END CROSSFRAME

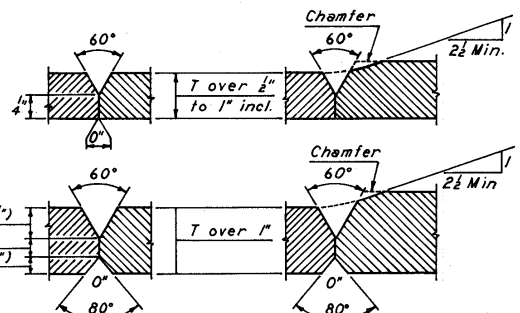
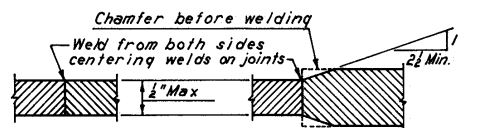


SECTION A-A



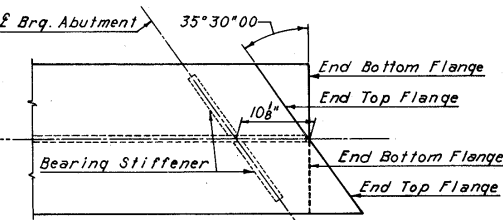
HORIZONTAL BAR VERTICAL BAR

DETAIL OF FIELD WELDING OF NO. 14 AND NO.18 REINF. BARS.

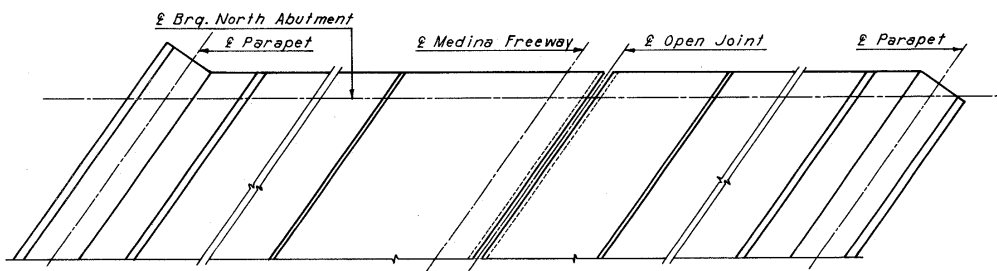


JOINT PREPARATION FOR SHOP BUTT WELDS

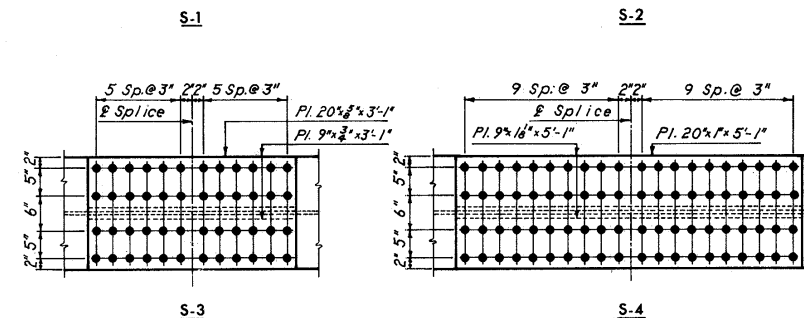
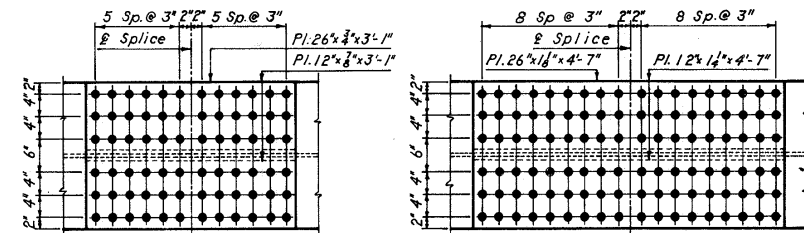
Note: All the above full penetration welds shall be backgauged and welded after welding far side.
Butt welds on girder flange plates shall be ground flush, the finished grinding being parallel to the direction of stress.



GIRDER END DETAIL

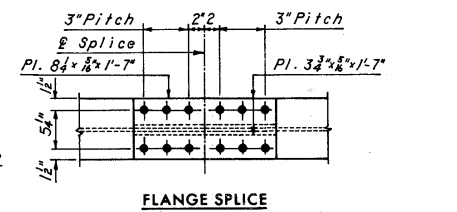


END OF SLAB DETAIL

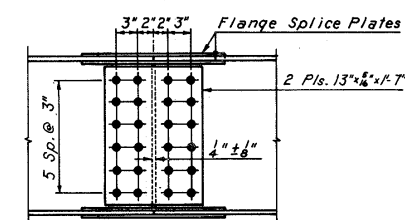


GIRDER FLANGE SPLICE

Note: All field splices shall be made with 5/8 inch high strength bolts.

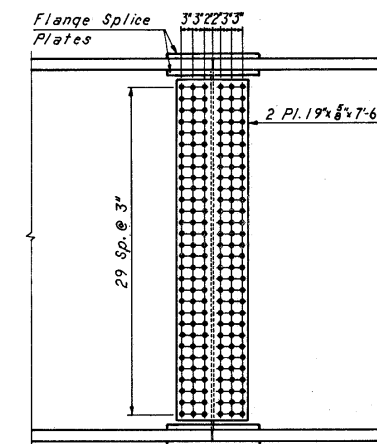


FLANGE SPLICE



WEB SPLICE

FIELD SPLICE FOR 21WF55



TYPICAL GIRDER WEB SPLICE

Note: The high strength bolts shall be placed with the heads on the outside face of the exterior girders and the bottom of the girder flange.

H.N.T.B. BRIDGE NO. 15
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SUPERSTRUCTURE DETAILS
MEDINA FREEWAY OVER CLARK FREEWAY

BR. NO. CUY-71-1886 STA. 967+79.92
SCALE: STA. 972+46.58
CLEVELAND CUYAHOGA COUNTY OHIO

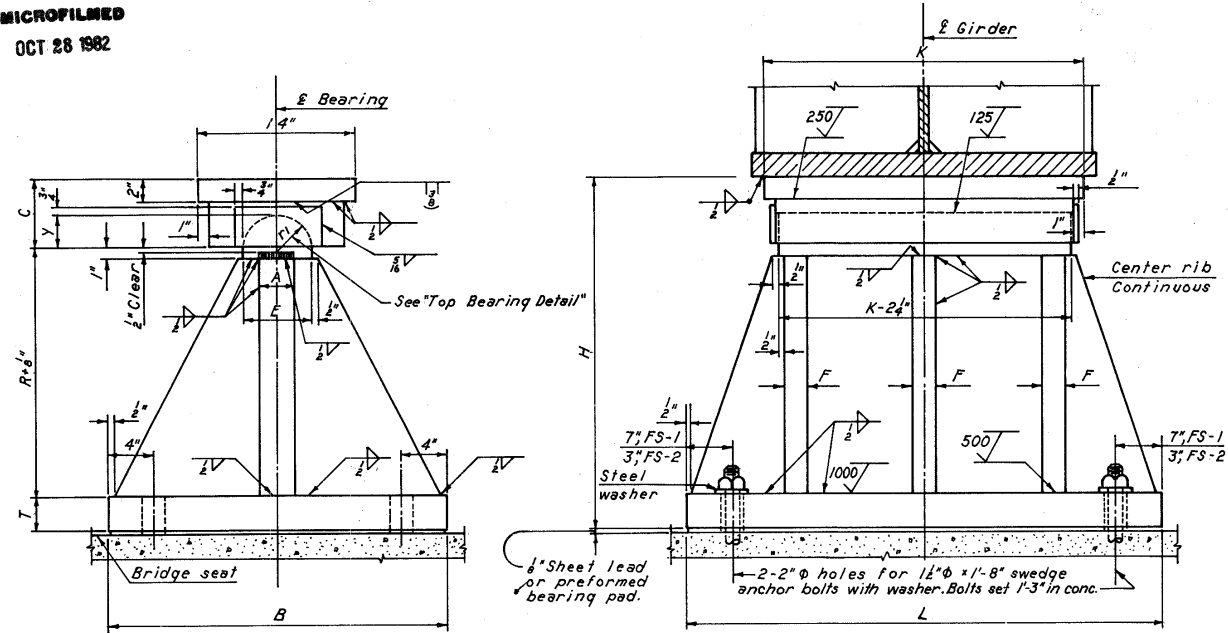
DRAWN J.R.	TRACED	CHECKED J.F.P.	REVIEWED	REVISED
DATE 11-27-64	DATE	DATE 12-22-64	DATE	SHEET 464

MICROFILMED
OCT 28 1982

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

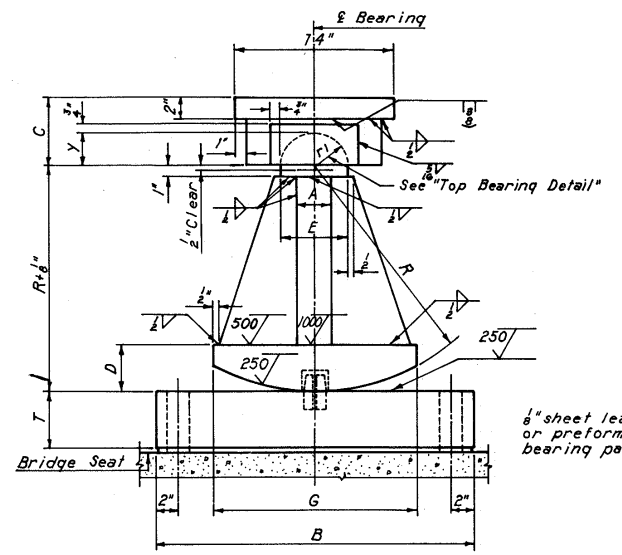
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CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



BOLSTERS FS-1 AND FS-2

Note: See table for additional dimensions.

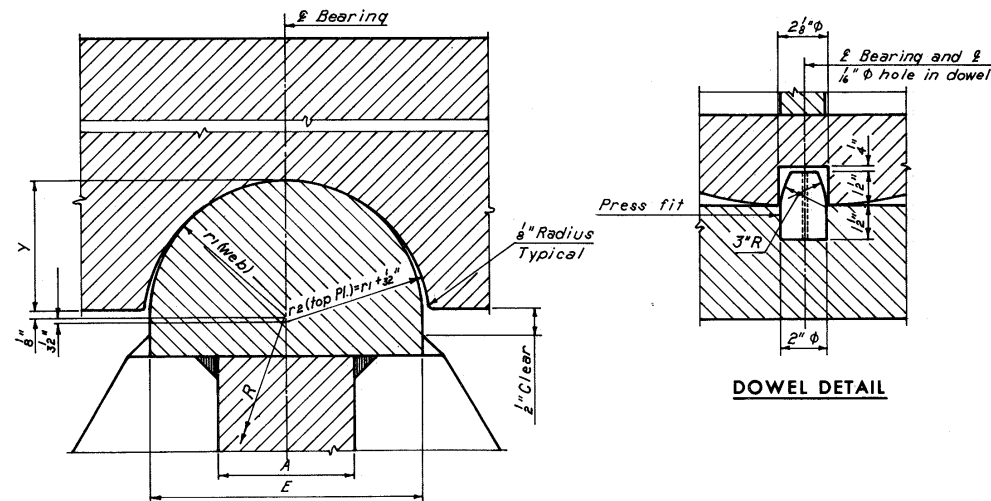


ROCKERS ES-3 AND ES-4

Note: See table for additional dimensions.

SHOE NO	DIMENSIONS												WEIGHT			
	A	B	C	D	E	F	G	H	K	L	M	R		T	Y	
FS-1	3	32	6	—	6	2	—	3 1/4	24	42	—	22	3	3	2 1/2	2960
FS-2	3	32	6	—	6	1 1/2	—	3 1/4	18	34	—	22	3	3	2 1/2	2315
ES-3	3	28	6	4	6	2	18	3 1/4	24	48	40	20	3	5	2 1/2	3865
ES-4	3	28	6	4	6	1 1/2	18	3 1/4	18	40	32	20	3	5	2 1/2	3115

Note: Weights given are for one shoe complete (including sheet lead, anchor bolts and washers, welds, to girders, and lead or babbitt filling. Dimensions shown in table are in inches.

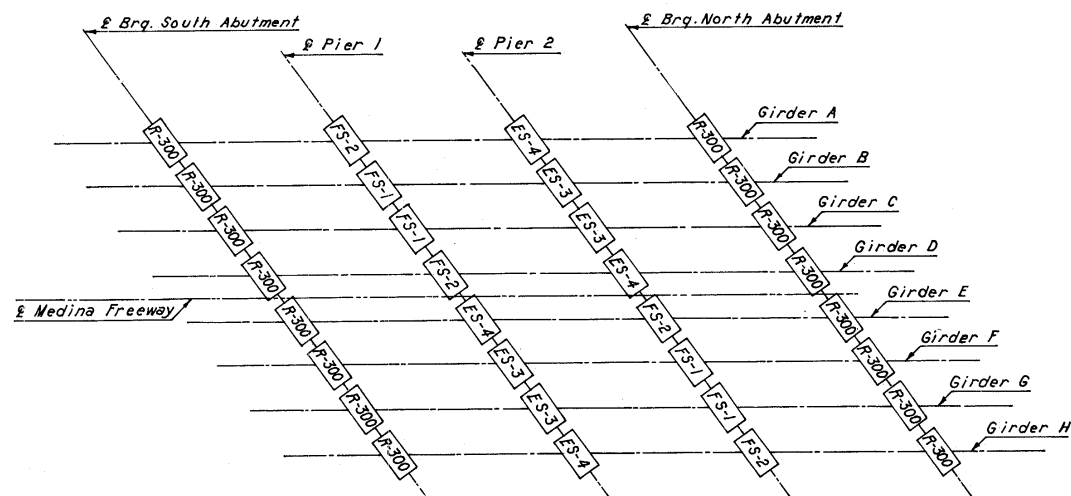


TOP BEARING DETAIL

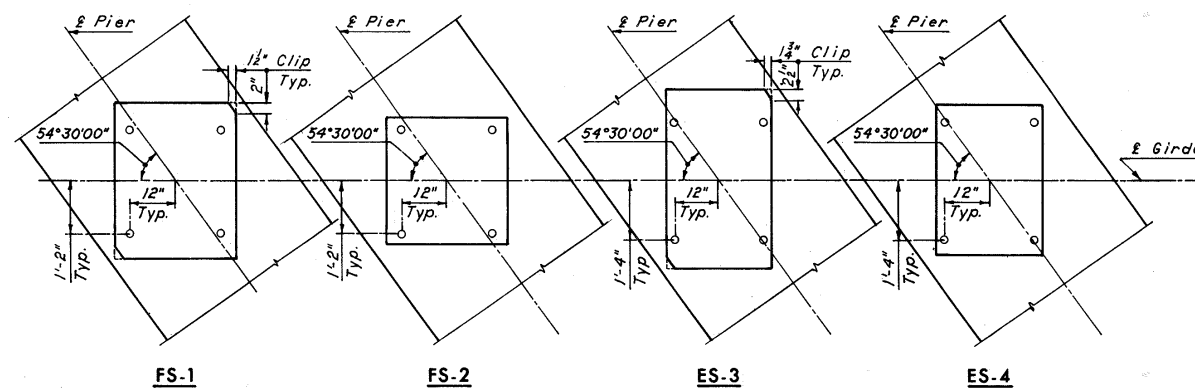
DOWEL DETAIL

Notes:
Machined surfaces of rockers and masonry plates shall be painted with a mixture of white lead paste, talow and linseed oil in accordance with Section S-8.04.
The annular spaces between anchor bolts and masonry plate shall be filled with lead or babbitt before setting nuts.
Lower portions of shoes shall be centered in both directions under top portion for a temperature of 60°F.
All masonry plates, rockers and sole plates shall be scribed with centerlines in both directions.

Material:
All material for shoes FS-1, FS-2, ES-3 and ES-4 with a thickness of 4" and less shall conform to A.S.T.M. Designation A441-60T. Masonry plates with thickness greater than 4" shall have a minimum yield point of 42,000 psi.
Materials for all shoes are included with "Item S-7, Structural Steel," for payment.



GIRDER SHOE SCHEDULE



ANCHOR BOLT SETTING PLAN

H.N.T.B. BRIDGE NO. 15
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

ROCKERS AND BOLSTERS

MEDINA FREEWAY OVER CLARK FREEWAY

BR. NO. CUY-71-1886 STA. 967+79.92
SCALE: STA. 972+46.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN L.J.R.	TRACED	CHECKED J.F.P.	REVIEWED	REVISED
DATE 10-16-64	DATE	DATE 12-23-64	DATE	DATE

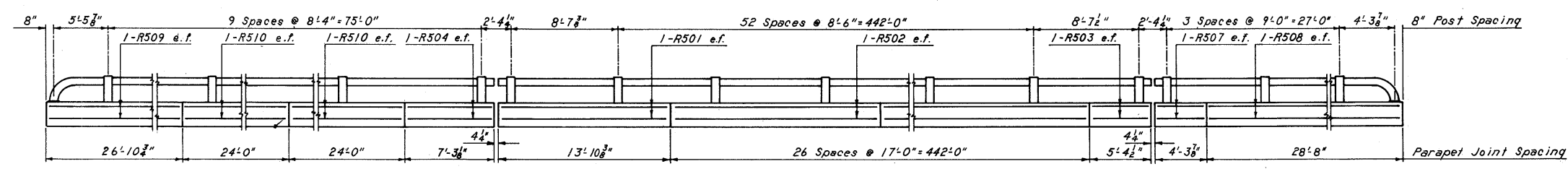
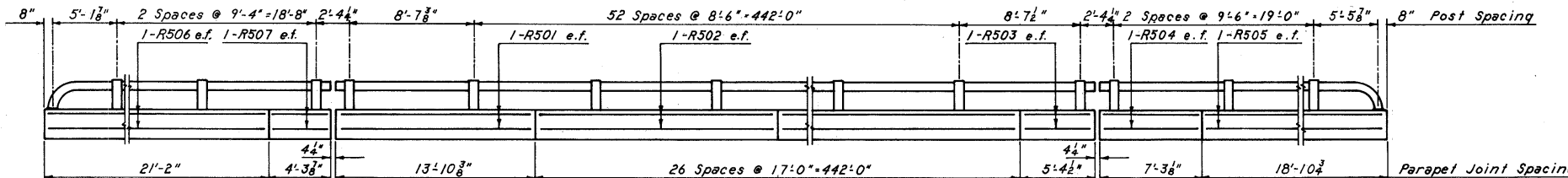
SHEET 465

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OCT 28 1982

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

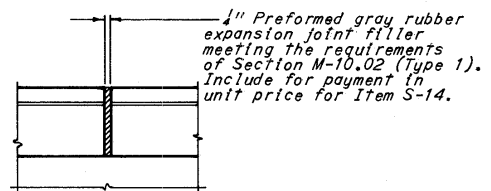
466
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

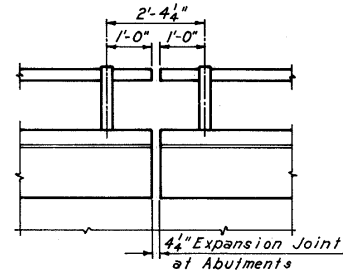


Railing Notes:
All railing dimensions are given along & parapet. e.f. denotes each face.

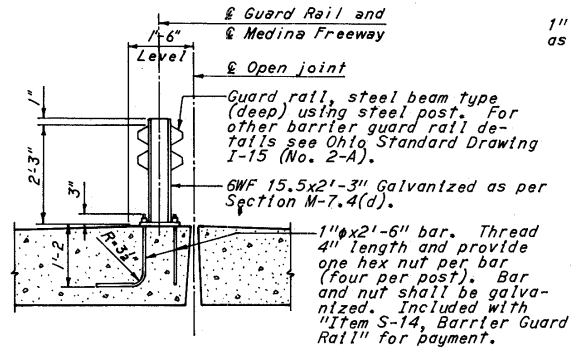
Railing shall be fabricated in lengths of two panels at abutments and of not less than three panels on superstructure. The finished railing shall be free of burrs, sharp corners and rough surfaces. Railing posts shall be normal to grade. Payment for railing shall be made at the contract unit price bid for "Item S-14, Aluminum Railing (including parapet)". Pay length shall be the over-all length of the parapets and shall include cost of shims, nuts, anchor bolts, set screws, etc. necessary to complete the installation of railing. Concrete and longitudinal reinforcing steel in the parapets shall be included in "Item S-14, Aluminum Railing (including parapet)" for payment. All other reinforcing steel in parapet shall be included on "Item S-4" for payment. For additional details and notes regarding railing, see Ohio Standard Drawing AR-1-57, revised 4-2-62.



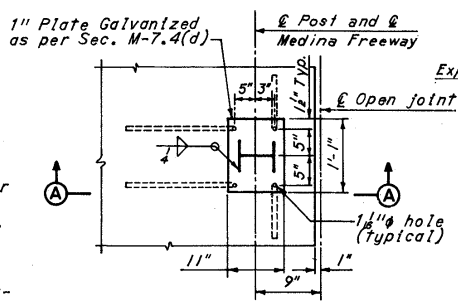
PARAPET JOINT DETAIL



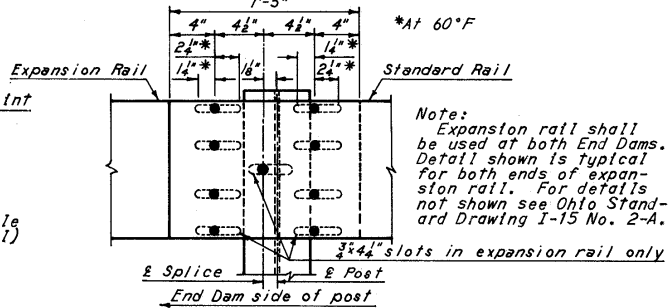
RAILING JOINT DETAIL



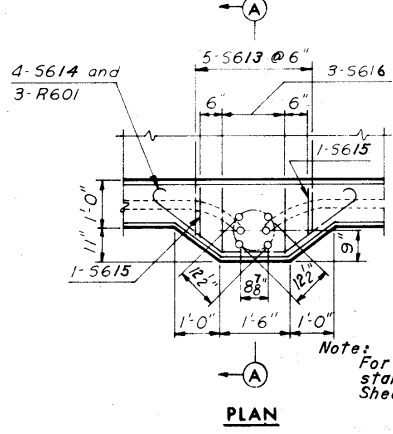
SECTION A-A



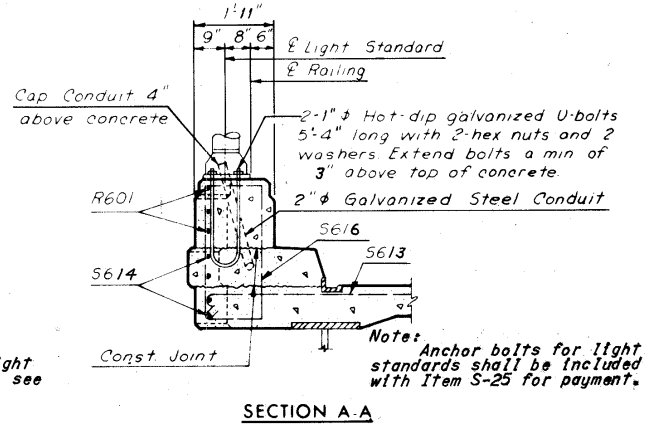
MEDIAN BARRIER GUARD RAIL DETAIL



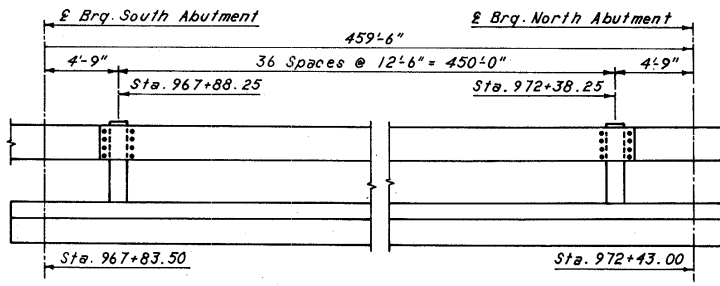
EXPANSION DETAIL OF MEDIAN BARRIER



LIGHT STANDARD SUPPORT



SECTION A-A



MEDIAN BARRIER

Note: Median Barrier Guard Rail between Sta. 967+88.25 and Sta. 972+38.25 is included in "Item S-14 Barrier Guard Rail" of bridge Quantities. The remainder of the Guard Rail will be paid for by others.

H.N.T.B. BRIDGE NO. 15

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

RAILING DETAILS

MEDINA FREEWAY OVER CLARK FREEWAY

BR. NO. CUY-71-1886 STA. 967+79.92
SCALE: STA. 972+46.58
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN J.J.R.	TRACED	CHECKED W.E.H.	REVIEWED	REVISED
DATE 11-11-64	DATE	DATE 12-11-64	DATE	SHEET 466

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
SOUTH ABUTMENT								
AA401	64	5'-4"	104	4'-5 1/2"	1'-0"		228	
AA501	137	9'-10"	Str.				1405	
AA502	2	34'-0"	Str.				71	
AA503	8	37'-6"	Str.				313	
AA504	26	33'-9"	Str.				915	
AA505	28	31'-10"	Str.				930	
AA506	6	34'-9"	Str.				217	
AA507	89	7'-8"	105	4'-9"	1'-7"	1'-7"	712	
AA508	1Ser. 5	34'-0" to 37'-6"	Str.				10 1/2" 186	
AA509	1Ser. 5	34'-9" to 38'-0"	Str.				9 1/2" 190	
AA510	73	5'-7"	110				425	
AA511	53	3'-5"	105	1'-6"	1'-1"	1'-1"	189	
AA512	14	4'-6"	Str.				66	
AA513	26	36'-1"	Str.				979	
AA514	2	4'-3"	105	1'-6"	1'-7"	1'-7"	9	
AA515	2	7'-6"	105	4'-7"	1'-7"	1'-7"	16	
AA516	53	3'-3"	136	1'-6"	11"	2"	180	
AA517	4	3'-1"	105	1'-6"	11"	11"	13	
AA518	4	2'-11"	136	1'-6"	9"	2"	12	
AA601	2 Ser. 9	28'-0" to 35'-0"	Str.				10 1/2" 852	
AA602	30	40'-0"	Str.				1802	
AA603	2 Ser. 6	28'-0" to 35'-0"	Str.				11-4 3/4" 567	
AA604	5	19'-1"	Str.				143	
AA605	18	21'-0"	Str.				568	
AA606	61	6'-1"	104	5'-3"	1'-0"		557	
AA607	13	14'-9"	105	8"	11'-5"	3'-0"	288	
AA608	5	26'-11"	Str.				202	
AA609	21	7'-7"	105	1'-8"	4'-3"	2'-0"	239	
AA610	7	10'-10"	105	8	7'-8"	2'-10"	114	
AA611	3	16'-6"	105	1'-5"	9'-2"	6'-3"	74	
AA612	14	7'-6"	122	3'-0"	1'-10"	1'-9"	158	
AA613	6	6'-10"	134	1'-8"	8"		62	
AA614	6	12'-7"	Str.				113	
AA615	2	13'-3"	Str.				40	
AA616	6	14'-10"	Str.				134	
AA617	3	13'-6"	109	4'-0"	2'-6"		61	
AA618	10	9'-6"	Str.				143	
AA619	2	19'-3"	118	16'-6"	1'-1"	2'-0"	58	
AA620	2	14'-2"	108	12'-0"	2'-3"	1'-10"	43	
AA621	2	9'-8"	108	7'-6"	2'-3"	1'-10"	29	
AA622	2	5'-5"	108	3'-3"	2'-3"	1'-10"	16	
AA623	26	6'-6"	Str.				254	
AA624	6	10'-4"	100	9'-0"			93	
AA625	6	8'-4"	100	7'-0"			75	
AA626	4	7'-4"	100	6'-0"			44	
AA627	8	6'-10"	100	5'-6"			83	
AA628	19	3'-10"	100	2'-6"			109	
AA629	20	7'-0"	Str.				210	
AA630	35	8'-6"	Str.				447	
AA631	10	7'-6"	Str.				113	
AA632	7	6'-0"	Str.				63	
AA633	4	3'-4"	108	1'-4"	2'-0"	11"	20	
AA634	2Ser. 3	3'-4" to 7'-4"	Str.				21-0" 48	
AA635	2	11'-8"	Str.				35	
AA636	6	15'-6"	Str.				140	
AA637	6	20'-2"	Str.				182	
AA638	10	10'-8"	Str.				160	
AA639	2Ser. 7	5'-0" to 10'-1"	Str.				10 1/2" 159	
AA640	6	7'-8"	104	6'-10"	1'-0"		69	
AA641	3	4'-8"	Str.				21	
AA642	38	8'-6"	120				485	
AA643	18	9'-4"	134	2'-11"	1'-11"		252	
AA644	18	17'-10"	Str.				482	
AA645	2	16'-0"	Str.				48	
AA646	17	15'-0"	Str.				383	
AA647	2Ser. 4	11'-10" to 13'-0"	Str.				4 3/4" 149	
AA648	10	11'-10"	Str.				178	
AA649	2Ser. 4	9'-5" to 10'-9"	Str.				5" 122	
AA650	15	9'-6"	Str.				214	
AA651	2Ser. 4	6'-3" to 7'-8"	Str.				5 3/4" 84	
AA652	2Ser. 5	4'-2" to 5'-3"	Str.				3 1/4" 71	
AA653	6	9'-7"	104	8'-9"	1'-0"		86	
AA654	6	6'-6"	104	5'-8"	1'-0"		59	
AA655	3	7'-8"	105	1'-2"	3'-5"	3'-5"	35	
AA656	46	23'-8"	Str.				1635	
AA657	6	13'-8"	Str.				123	
AA658	17	5'-6"	Str.				140	

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
NORTH ABUTMENT								
AA659	4	25'-11"	Str.				156	
AA660	3	6'-10"	105	1'-2"	3'-0"	3'-0"	31	
AA661	2	21'-6"	Str.				65	
AA662	2	13'-2"	Str.				40	
AA663	2	8'-10"	104	8'-0"	1'-0"		27	
AA664	2	8'-1"	104	7'-3"	1'-0"		24	
AA665	2	7'-1"	104	6'-3"	1'-0"		21	
AA666	2	7'-0"	Str.				21	
AA667	2	10'-2"	101	9'-6"			31	
AA668	2	6'-10"	104	6'-0"	1'-0"		21	
AA669	2	10'-0"	100	8'-8"			30	
AA670	4	6'-6"	101	5'-10"			39	
AA671	1Ser. 11	5'-6" to 13'-10"	121	1'-6" to 5'-8"	1'-2"	1'-0"	10" 160	
AA672	1Ser. 9	5'-2" to 12'-8"	121	1'-4" to 5'-1"	1'-2"	1'-0"	11 1/4" 121	
AA673	1Ser. 7	5'-2" to 11'-8"	121	1'-4" to 4'-7"	1'-2"	1'-0"	89	
AA674	1Ser. 6	5'-6" to 10'-10"	121	1'-6" to 4'-2"	1'-2"	1'-0"	11-0 3/4" 74	
AA675	1Ser. 3	5'-4" to 7'-8"	121	1'-5" to 2'-7"	1'-2"	1'-0"	11-2" 29	
AA676	2Ser. 3	4'-10" to 6'-8"	121	1'-2" to 2'-1"	1'-2"	1'-0"	11" 56	
AA677	11	5'-4"	104	4'-6"	1'-0"		88	
AA678	2	5'-2"	101	4'-6"			15	
AA679	2	4'-0"	Str.				12	
AA680	4	9'-10"	130	1'-4"	3'-7"		59	
AA681	3	9'-4"	109	2'-10"	1'-7"		42	
AA682	2	8'-8"	109	2'-10"	1'-3"		26	
AA701	1Ser. 121	5'-7" to 12'-0"	Str.				8" 2173	
AA702	124	17'-7"	105	11"	13'-6"	3'-6"	4457	
AA703	13	12'-0"	Str.				319	
AA704	7	18'-3"	105	1'-1"	13'-6"	4'-0"	261	
AA801	1Ser. 121	5'-11" to 12'-4"	Str.				5" 2948	
AA802	131	12'-6"	Str.				4372	
AA803	10	12'-4"	Str.				329	
AA804	18	12'-2"	100	10'-0"			585	
AA805	2	16'-8"	101	15'-7"			89	
AA806	2	10'-1"	101	9'-0"			54	
AA807	2	13'-8"	101	12'-7"			73	
AA808	2	9'-1"	101	8'-0"			49	
AA809	4	6'-4"	101	5'-3"			68	
AA901	137	12'-4"	100	9'-10"			5745	
AA1101	2	20'-5"	101	18'-10"			217	
AA1102	2	12'-11"	101	11'-4"			137	
AA1103	2	8'-0"	101	6'-5"			85	
Total 43,424								

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCR.	WEIGHT POUNDS
				A	B	C		
AB606	2	11'-6"	Str.				35	
AB607	17	13'-4"	Str.				341	
AB608	2	7'-0"	104	6'-2"	1'-0"		21	
AB609	13	15'-5"	Str.				300	
AB610	5	6'-5"	Str.				49	
AB611	2	8'-10"	Str.				27	
AB612	22	5'-0"	Str.				165	
AB613	8	10'-10"	105	8"	7'-8"	2'-10"	130	
AB614	2	16'-9"	105	1'-5"	9'-2"	6'-6"	50	
AB615	6	14'-7"	105	8"	11'-5"	2'-10"	131	
AB616	4	19'-3"	105	1'-5"	12'-5"	5'-3"	116	
AB617	14	6'-4"	105	3'-0"	1'-8"	2'-0"	133	
AB618	14	7'-6"	122	3'-0"	1'-10"	1'-9"	158	
AB619	2	7'-0"	Str.				21	
AB620	2	7'-2"	Str.				22	
AB621	2	4'-0"	Str.				12	
AB622	3	4'-7"	Str.				21	
AB623	2	22'-5"	Str.				67	
AB624	2	12'-4"	Str.				37	
AB625	5	11'-9"	Str.				88	
AB626	5	9'-4"	Str.				70	
AB627	15	8'-6"	120				192	
AB628	4	8'-6"	104	7'-8"	1'-0"		52	
AB629	2Ser. 6	5'-10" to 9'-3"	Str.				8 1/4" 136	
AB630	5	18'-9"	Str.				141	
AB631	2Ser. 4	9'-10" to 11'-6"	Str.				6 3/8" 128	
AB632	8	9'-6"	Str.				114	
AB633	2Ser. 4	5'-4" to 7'-0"	Str.				6 5/8" 74	
AB634	6	8'-3"	104	7'-5"	1'-0"		74	
AB635	6	8'-4"	105	1'-2"	3'-9"	3'-9"	75	
AB636	2	8'-5"	101	7'-9"			25	
AB637	2	7'-11"	101	7'-3"			24	
AB638	5	28'-8"	Str.				215	
AB639	2	8'-7"	Str.				17	
AB640	2	8'-11"	Str.				27	
AB641	4	17'-11"	Str.				108	
AB642	4	27'-8"	Str.				166	
AB643	2	23'-2"	Str.				70	
AB644	2	17'-0"	Str.				51	
AB645	6	5'-8"	Str.				51	
AB646	2	3'-3"	Str.				10	
AB647	4	8'-4"	100	7'-0"			50	
AB648	8	6'-10"	100	5'-6"			82	
AB649	12	3'-10"	100	2'-6"			69	
AB650	14	5'-6"	Str.				114	
AB651	2	4'-11"	101	4'-3"			15	
AB652	8							

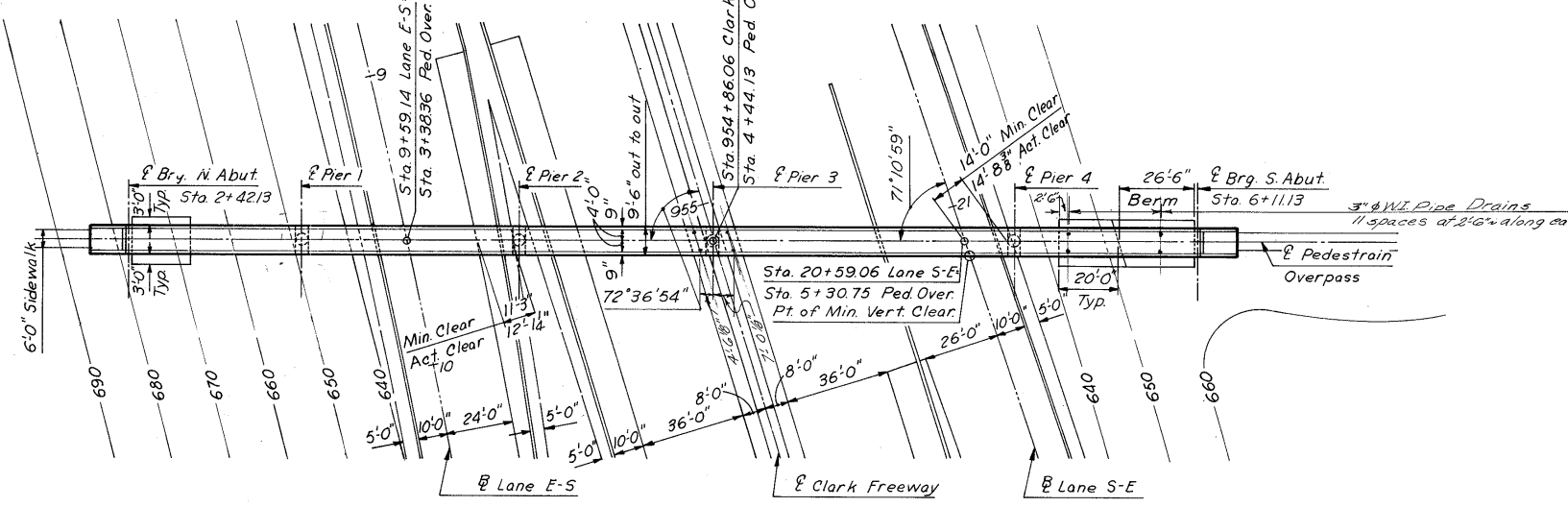
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OCT 28 1982

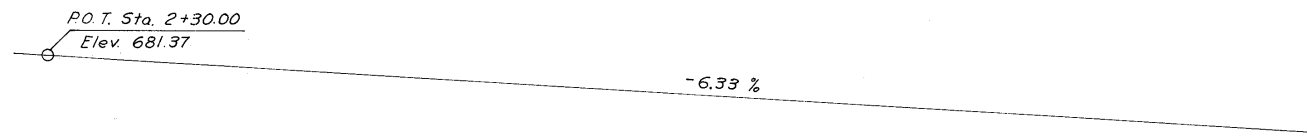
PROPOSED STRUCTURE

Type: Continuous rolled beams with reinforced concrete slab.
Spans: 60'-0", 75'-0", 67'-0", 104'-0" and 63'-0"
= 369'-0" Ctr. to Ctr. of end bearings.
Walkway: 8'-0"
Skew: 0°00'100"
Wearing Surface: 1/2" Monolithic concrete
Alignment: Tangent
Loading: 85 lbs. per sq. ft.

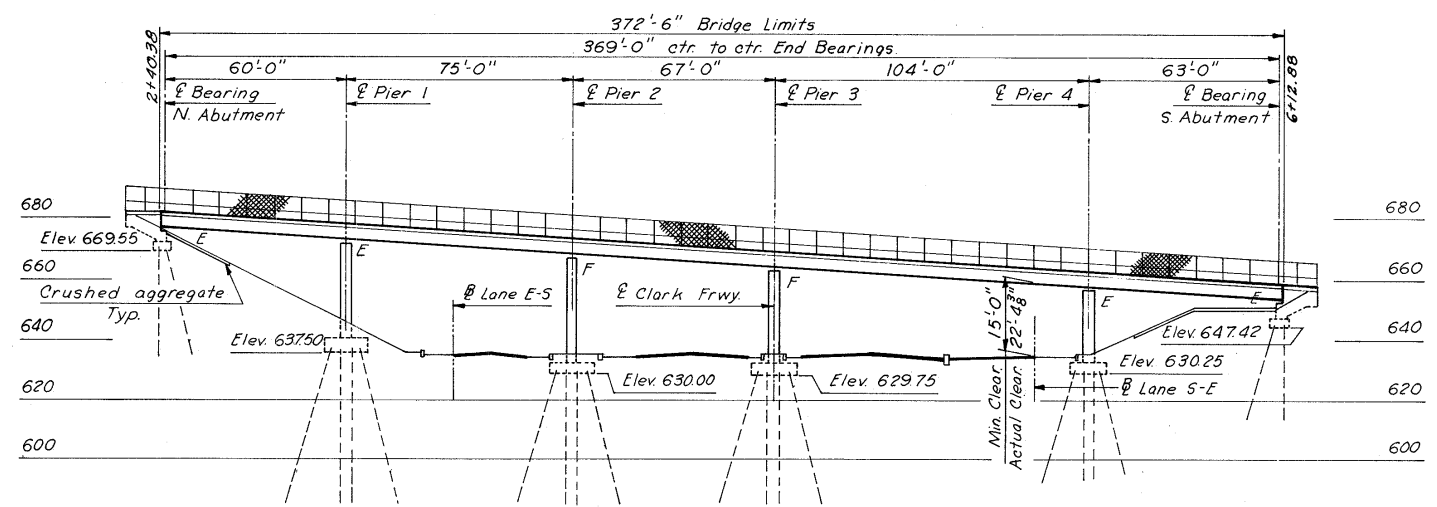
Note:
All piles shall be 12" cast-in-place concrete with estimated lengths as follows: North Abutment- 30', Pier 1- 60', Pier 2-60', Pier 3-60', Pier 4-70' and South Abutment- 75'. These estimates are based on boring data and are approximate only. The Contractor shall assume full responsibility for length of piling selected for driving.



PLAN



PROFILE GRADE



ELEVATION

ESTIMATED QUANTITIES								
ITEM	DESCRIPTION	UNIT	ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL	TOTAL	AS BUILT
E-2	Cofferdams, Cribs, and Sheeting	L.S.					Lump Sum	
E-2	Unclassified Excavation	Cu.Yd.	79	336			415	
I-10	Crushed Aggregate Slope Protection	Sq.Yd.	123				123	
I-26	Chain Link Fence (M-10.39 or M-10.40)	Lin.Ft.	48		738		786	
S-1	Class "C" Concrete (Superstructure)	Cu.Yds.			83		83	
S-1	Class "C" Concrete (Pier Caps and Columns)	Cu.Yds.		50			50	
S-1	Class "E" Concrete (Abutments above Footings)	Cu.Yds.	29				29	
S-1	Class "E" Concrete (Footings; Piers and Abutments)	Cu.Yds.	21	130			151	
S-4	Reinforcing Steel	Lb.	4,481	27,821	10,480		42,782	
S-7	Structural Steel	Lb.			109,700		109,700	
S-8	Field Painting of Structural Steel, as per proposal note	Lb.			109,700		109,700	
S-16	First Test Pile	Lump Sum					Lump Sum	Lump Sum
S-17	First Pile Test Load	Lump Sum					Lump Sum	Lump Sum
S-17	Subsequent Pile Test Load	Each				1	1	
S-18	12" Cast-in-Place Piles	Lin.Ft.	525	2680			3205	
S-25	Bridge Grounding System	Lump Sum					Lump Sum	Lump Sum
S-29	Porous Backfill	Cu.Yd.	6				6	
S-29	6" Perforated Helical C.M.P. M-6.4(h) including specials	Lin.Ft.	22				22	
S-29	6" Helical C.M.P. M-6.4(h) non-perforated	Lin.Ft.	38				38	
S-101	Water Reducing, Set-retarding Admixture	Each			83		83	

Item S-25, BRIDGE GROUNDING SYSTEM, in addition to the structure ground described on sheet 194, this item shall include the following provisions for grounding the chain link fence:
Along each side of the structure, encase a continuous No. 4 bare, soft annealed copper wire in the walkway curb after fastening, by exothermic welds, to one anchor bolt of every third fence post. Both ends of each No. 4 wire shall be exothermically welded to a 3G W135 beam.

H.N.T.B. BRIDGE NO. 25

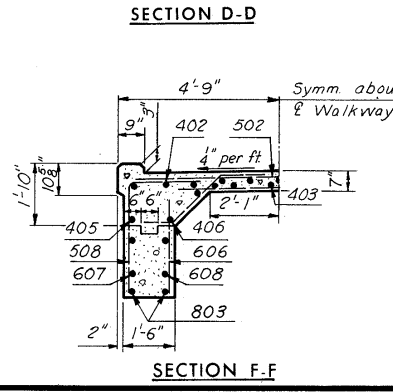
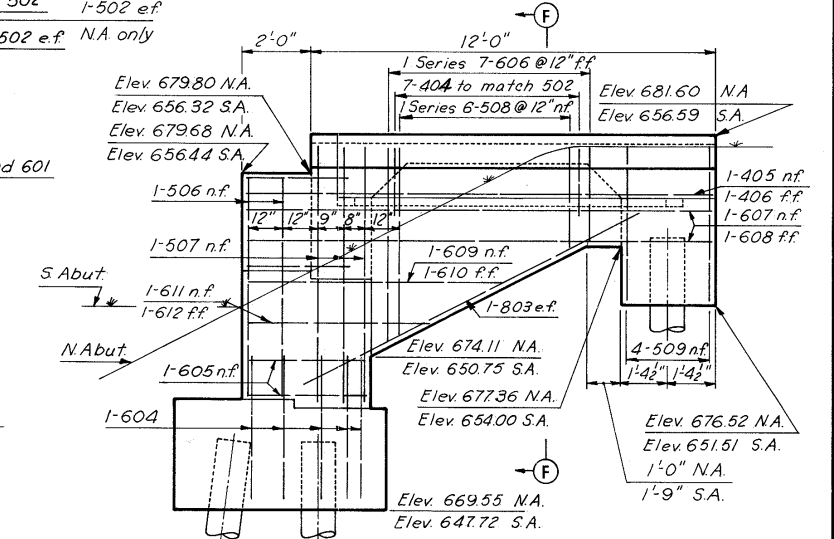
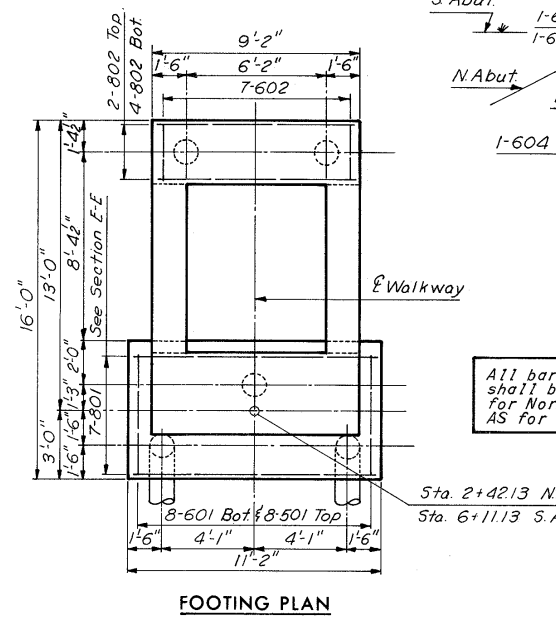
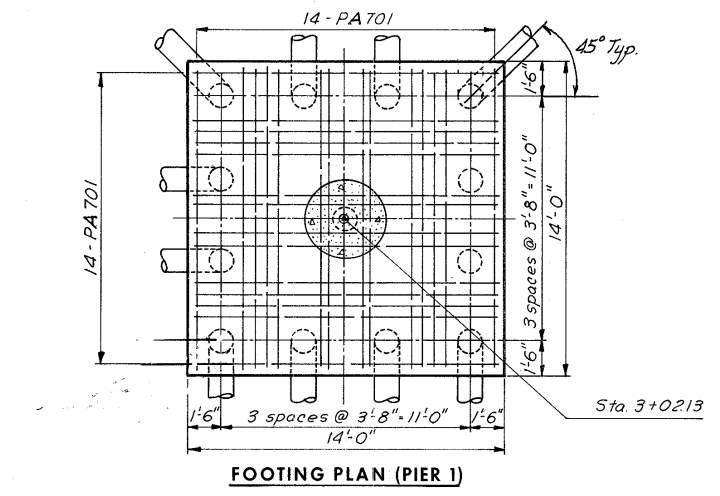
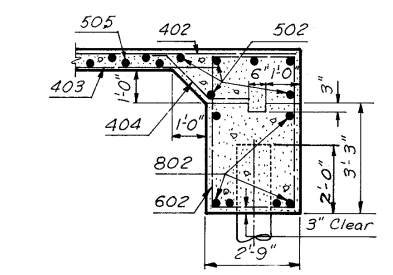
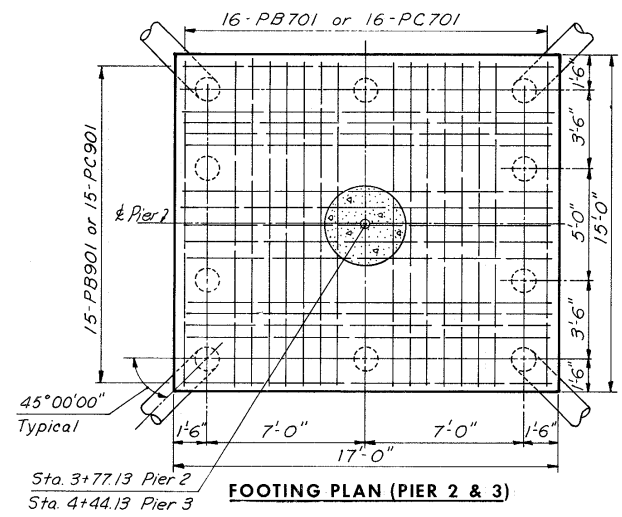
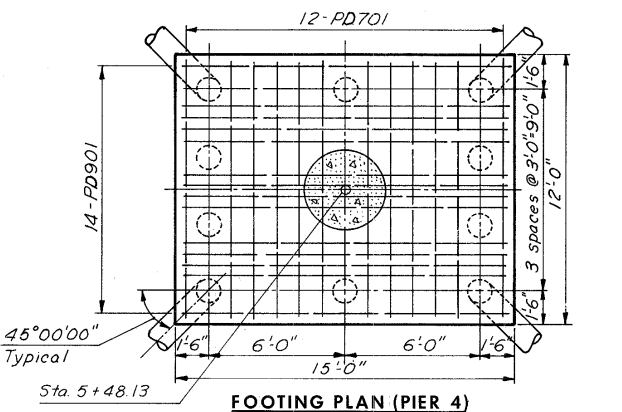
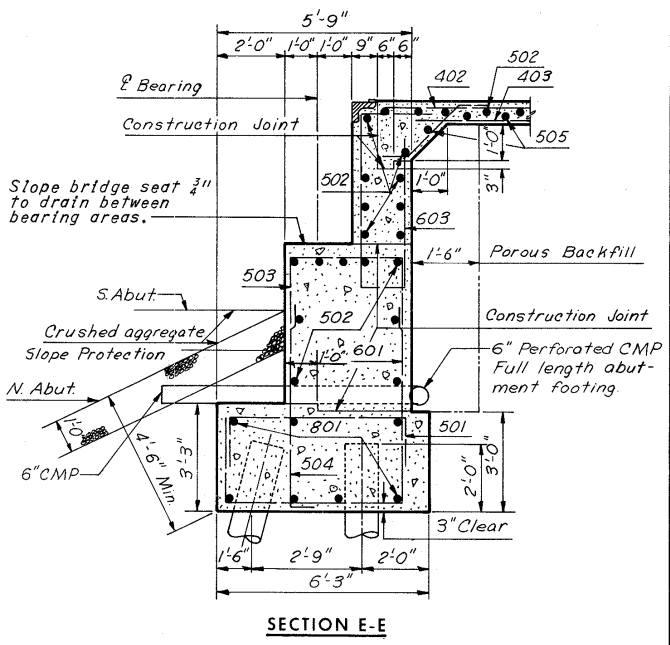
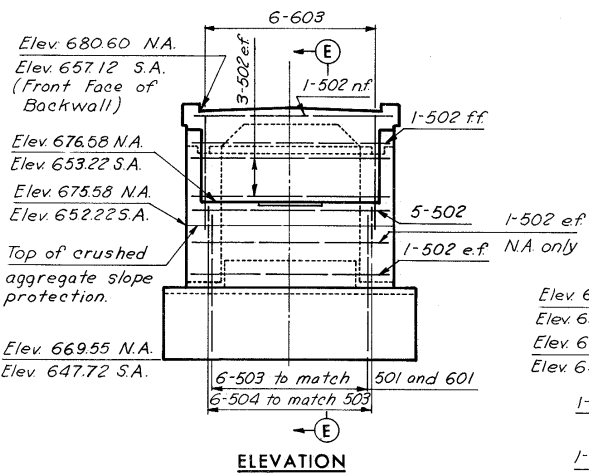
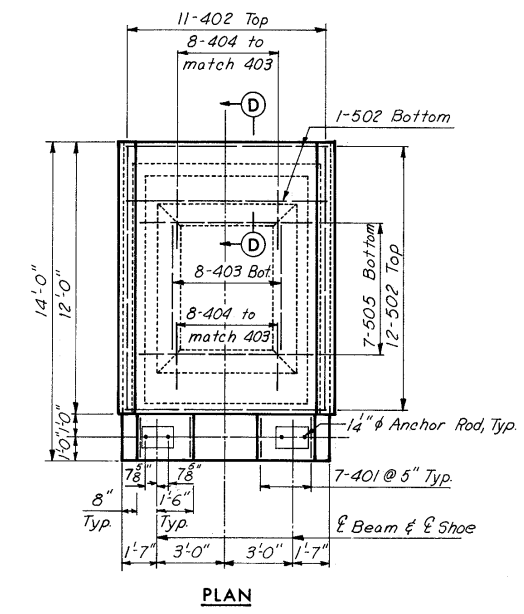
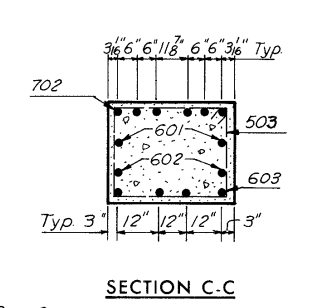
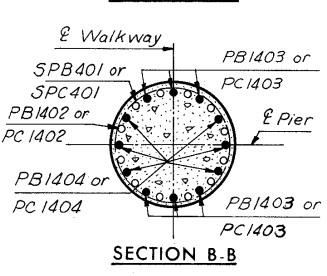
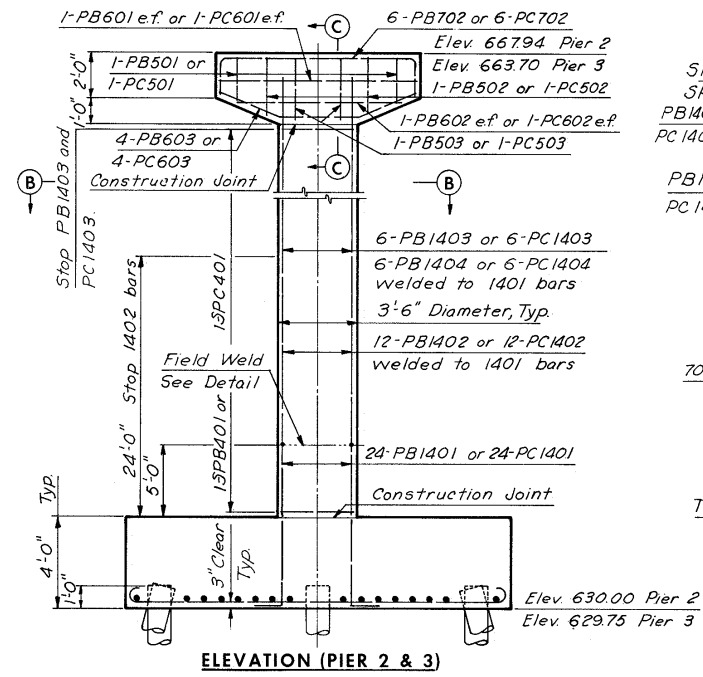
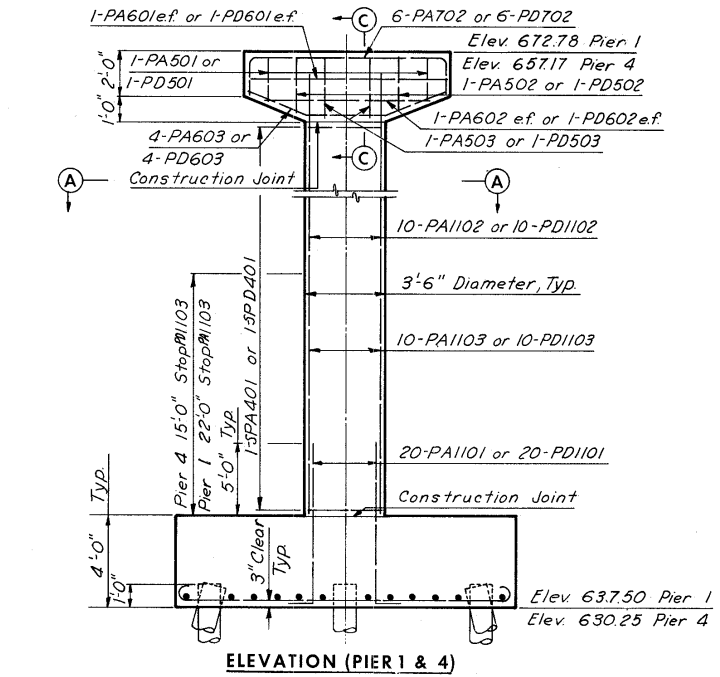
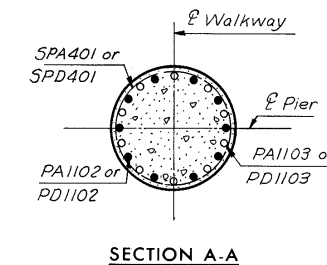
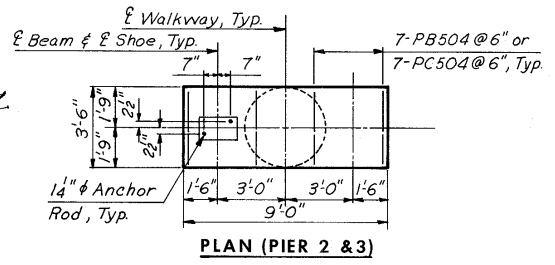
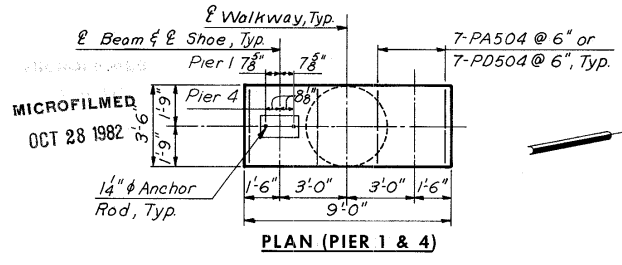
HOWARD, NEEDLES, TAMMEN & BERGENOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SITE PLAN
PEDESTRIAN BRIDGE AT WEST 11TH. ST.
OVER CLARK FREEWAY

BR. NO. CUY-290-0051
SCALE
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWING NO.	TRACED	CHECKED	REVIEWED	REVISED
DATE 11-3-64	DATE	DATE 12-16-64	DATE	DATE

SHEET 469



NOTES:
All piles are 12" cast-in-place reinforced concrete.
All battered piles shall be battered 3 in 12 in direction shown.
All pile dimensions are measured along bottom of footing.
For Reinforcement Schedule, see Sheet 473.
For Details of Aluminum Chain Link Fence, see Sheet 472.
For Detail of Field Welding of Reinforcing Bars, see Sheet 472.
e.f. denotes each face, n.f. denotes near face, f.f. denotes far face.
Bar marks are prefixed PA for Pier 1, PB for Pier 2, PC for Pier 3, PD for Pier 4.
N.A. denotes North Abutment, S.A. denotes South Abutment.
At Pier No. 3 install a No. 0 ground wire in accordance with the note on sheet 194.

All bars in abutments shall be prefixed AN for North Abutment and AS for South Abutment.

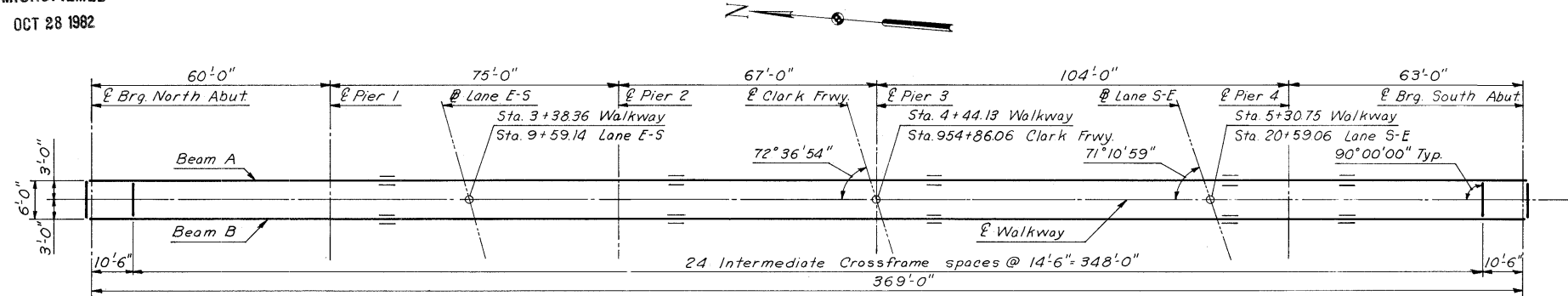
H.N.T.B. BRIDGE NO. 25
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

**PIERS AND ABUTMENTS
PEDESTRIAN BRIDGE AT WEST 11TH ST.
OVER CLARK FREEWAY**
BR. NO. CUY.290-0051
SCALE
CLEVELAND CUYAHOGA COUNTY OHIO
DRAWN GND. TRACED CHECKED JPS. REVIEWED REVISIONS
DATE 10-28-64 DATE 2/16-64 DATE DATE SHEET 470

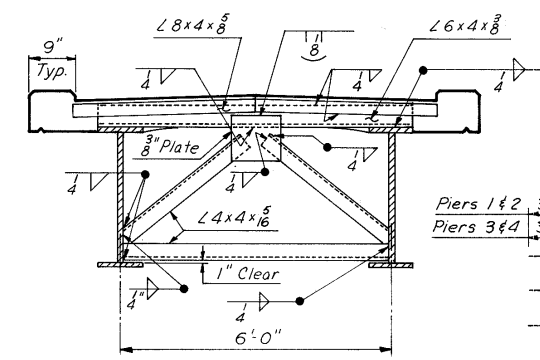
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FED. RD. DIVISION	STATE	PROJECT	471 478
2	OHIO		

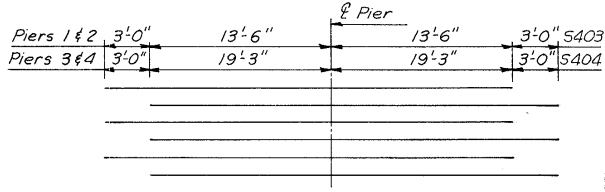
CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



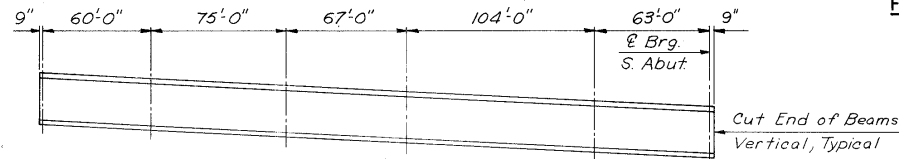
FRAMING PLAN
No Scale



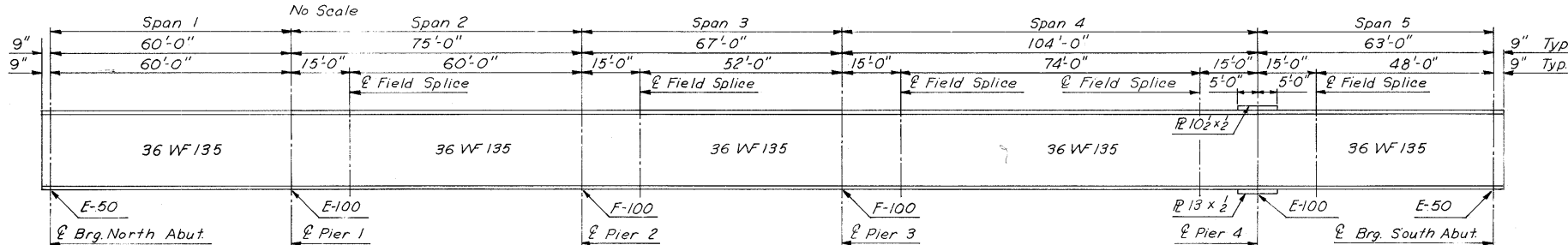
END CROSS FRAME
Scale: 1/2" = 1'-0"



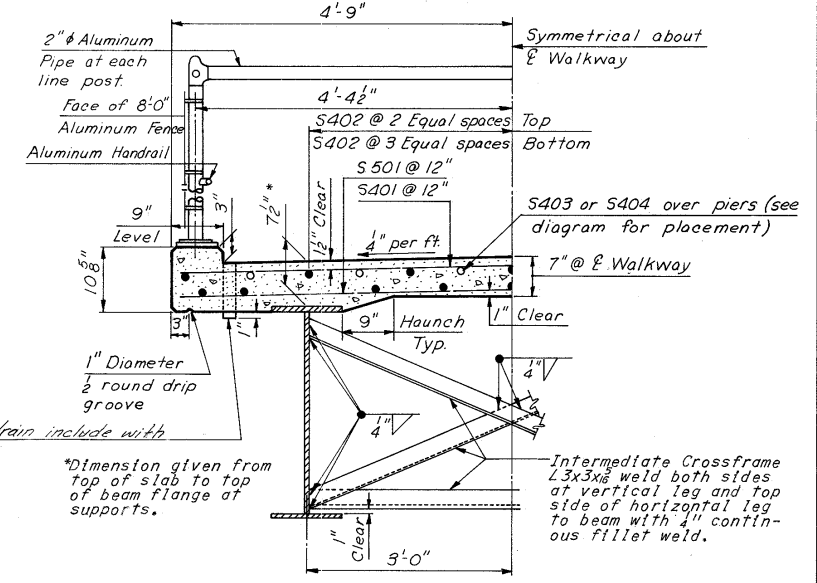
PLACEMENT OF BARS OVER PIERS
No Scale



END BEAM DETAIL
No Scale



TYPICAL BEAM ELEVATION
No Scale



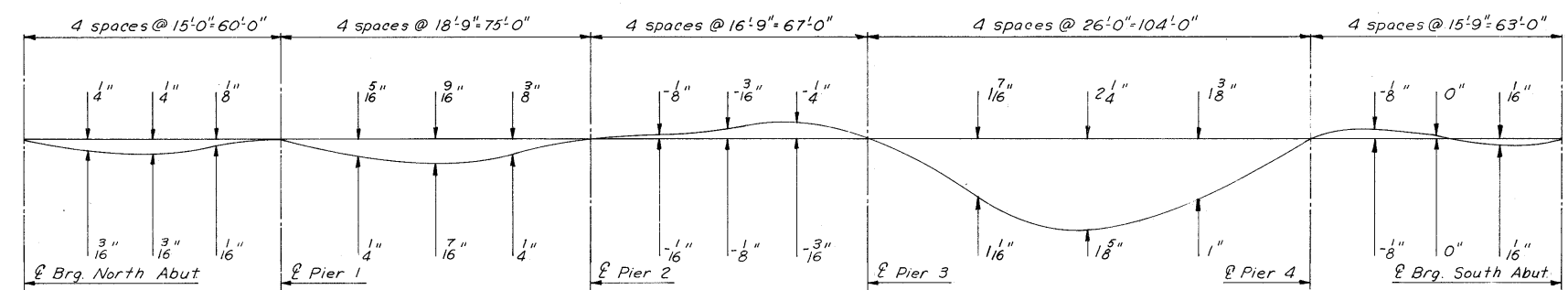
TYPICAL SECTION
Scale: 3/4" = 1'-0"

Note: In order to facilitate water curing of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections between transverse construction joints which are normal to the centerline of bridge and located near the center of any span.

3# wrought iron pipe drain include with 5-7 for payment

*Dimension given from top of slab to top of beam flange at supports.

Intermediate Crossframe L3x3x3/8 weld both sides at vertical leg and top side of horizontal leg to beam with 1" continuous fillet weld.

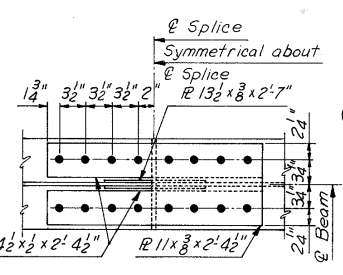


DEAD LOAD DEFLECTION DIAGRAM
No Scale

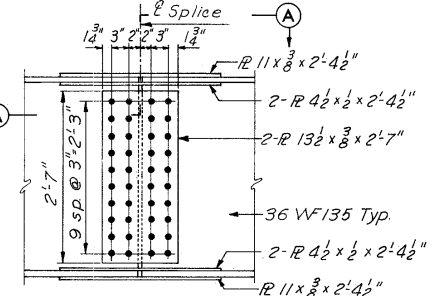
Deflections due to Concrete and Steel

Deflections due to Concrete only

Note: All field splices shall be made with 3/4" high strength bolts.



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



FIELD SPLICE DETAIL
Scale: 3/4" = 1'-0"

Notes: For additional details of walkway end dam see Ohio Standard Drawing 5D-1-63 Sheet 4.

Curb Plate Details at End Dams shall be similar to those shown on Ohio Standard Drawing 5D-1-63 Sheet 4 except that the height of curb plate shall be 21" and straight and shall have only one 1/2"x4" bar on each end. For details of fixed and sliding bearings, see Ohio Standard Drawing FSB-1-62. For Reinforcement Schedule, see Sheet 473. For Replacement Bar Schedule, see Sheet 473.

Beam	TOP OF PAVEMENT ELEVATIONS																Beam					
	SPAN 1				SPAN 2				SPAN 3				SPAN 4					SPAN 5				
A and B	680.54	679.59	678.64	677.69	676.74	675.56	674.37	673.18	672.00	670.94	669.88	668.82	667.76	665.11	664.46	662.82	661.17	660.17	659.18	658.18	657.18	A and B

H.N.T.B. BRIDGE NO. 25
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FRAMING PLAN
PEDESTRIAN BRIDGE AT WEST 11TH. ST.
OVER CLARK FREEWAY
BR. NO. CUY-290-0051
SCALE
CLEVELAND CUYAHOGA COUNTY OHIO

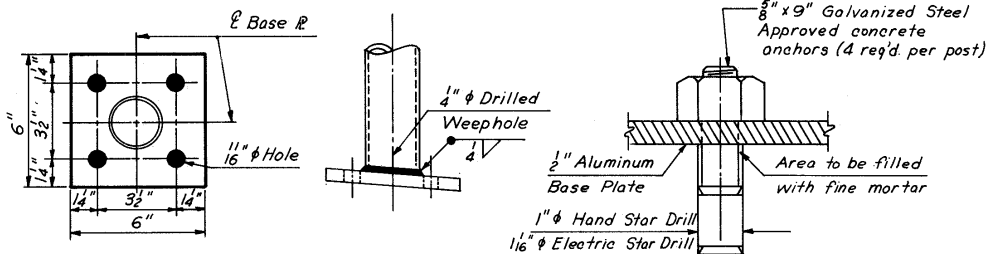
DRAWN GND	TRACED	CHECKED JPS	REVIEWED	REVISED
DATE 10-31-64	DATE	DATE 2-16-64	DATE	SHEET 471

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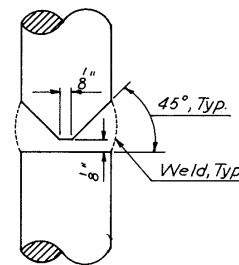
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
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CUY. 90-13.81

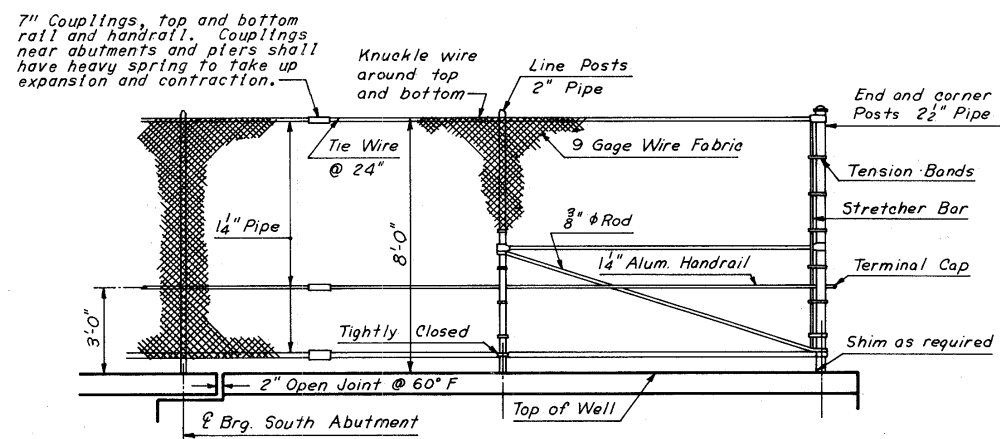


ANCHOR PLATE DETAIL

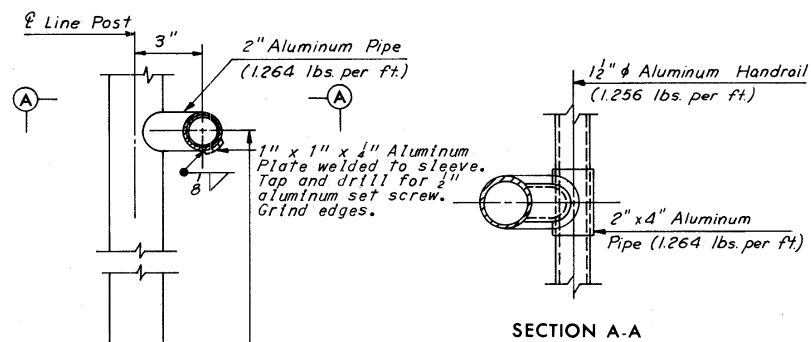


DETAIL OF FIELD WELDING
OF NO. 14 REINF. BAR

Note:
Chip or grind root to sound metal before welding second or root side.
Bars which are to be welded shall be of a composition suitable for welding and the Contractor shall obtain information on the chemical composition to aid in development of a satisfactory welding procedure. Welds shall be free of cracks and other visible flaws.
As an alternate, a mechanical splice may be used subject to the approval of the Director.

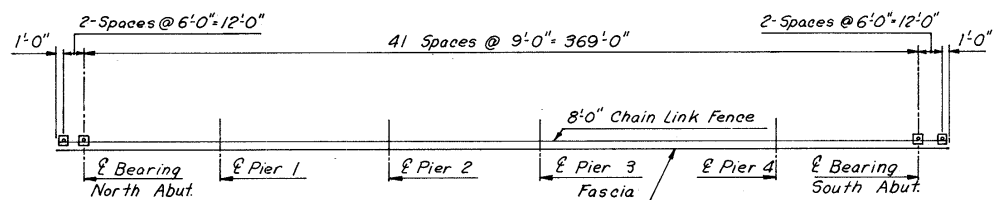


CHAIN LINK FENCE DETAIL



Note:
Provide full butt welds at all handrail support connections.

DETAIL OF HANDRAIL SUPPORTS



POST SPACING

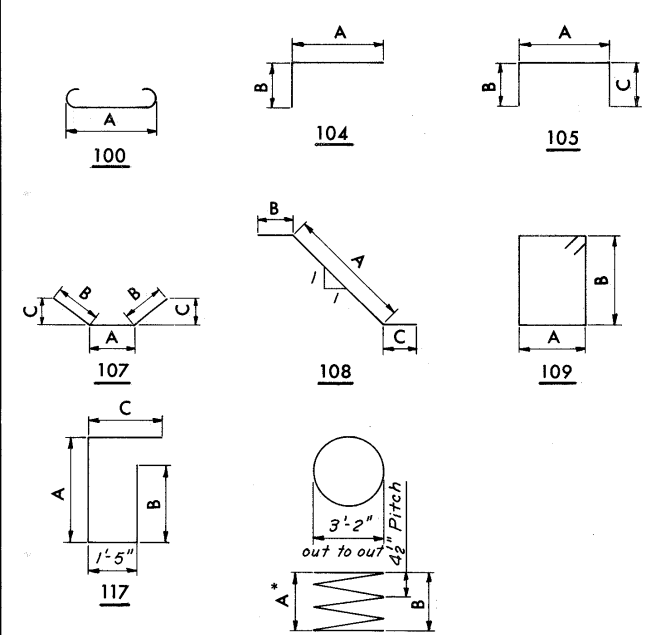
H.N.T.B. BRIDGE NO. 25				
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS KANSAS CITY CLEVELAND NEW YORK				
FENCING PEDESTRIAN BRIDGE AT WEST 11TH. ST. OVER CLARK FREEWAY				
BR. NO. CUY-290-0051				
SCALE CLEVELAND CUYAHOGA COUNTY OHIO				
DRAWING AND DATE	TRACED DATE	CHECKED JLR DATE	REVIEWED DATE	REVISED DATE
DATE 11-5-64		DATE 12-1-67		
				SHEET 472

**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81**

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS
				A	B	C		
NORTH ABUTMENT								
AN401	14	3'-5"	105	1'-8"	1'-0"	1'-0"	32	
AN402	11	11'-8"	Str.				86	
AN403	8	5'-6"	Str.				29	
AN404	30	4'-9"	108	2'-3"	1'-3"	1'-3"	94	
AN405	2	13'-8"	Str.				18	
AN406	2	11'-10"	Str.				16	
AN501	8	8'-2"	105	5'-5"	1'-6"	1'-6"	68	
AN502	31	8'-10"	Str.				286	
AN503	6	7'-2"	105	3'-5"	2'-0"	2'-0"	45	
AN504	6	7'-1"	104	6'-7"	0'-8"		45	
AN505	7	6'-2"	Str.				45	
AN506	4	6'-8"	Str.				28	
AN507	6	7'-9"	Str.				49	
AN508	2Ser. 6	4'-10" to 7'-4"	104	3'-0" to 5'-6"	2'-0"		76	
AN509	8	4'-5"	Str.				37	
AN601	8	14'-5"	105	5'-5"	6'-7"	2'-9"	173	
AN602	7	14'-2"	109	2'-5"	4'-5"		149	
AN603	6	12'-4"	117	5'-0"	4'-5"	2'-0"	111	
AN604	10	5'-0"	Str.				75	
AN605	4	3'-5"	Str.				21	
AN606	2Ser. 7	2'-10" to 5'-4"				6"	86	
AN607	4	13'-8"	Str.				82	
AN608	4	11'-8"	Str.				70	
AN609	2	7'-6"	Str.				22	
AN610	2	5'-6"	Str.				16	
AN611	2	5'-3"	Str.				15	
AN612	2	3'-3"	Str.				10	
AN801	7	10'-10"	Str.				202	
AN802	6	8'-10"	Str.				141	
AN803	4	12'-8"	Str.				135	
						Total	2,262	
SOUTH ABUTMENT								
AS401	14	3'-5"	105	1'-8"	1'-0"	1'-0"	32	
AS402	11	11'-8"	Str.				86	
AS403	8	5'-6"	Str.				29	
AS404	30	4'-9"	108	2'-3"	1'-3"	1'-3"	94	
AS405	2	13'-8"	Str.				18	
AS406	2	11'-10"	Str.				16	
AS501	8	8'-2"	105	5'-5"	1'-6"	1'-6"	68	
AS502	29	8'-10"	Str.				267	
AS503	6	7'-2"	105	3'-5"	2'-0"	2'-0"	45	
AS504	6	5'-9"	104	5'-3"	0'-8"		36	
AS505	7	6'-2"	Str.				45	
AS506	4	5'-3"	Str.				22	
AS507	6	6'-4"	Str.				40	
AS508	2Ser. 6	4'-10" to 7'-4"	104	3'-0" to 5'-6"	2'-0"		76	
AS509	8	4'-5"	Str.				37	
AS601	8	14'-5"	105	5'-5"	6'-7"	2'-9"	173	
AS602	7	14'-2"	109	2'-5"	4'-5"		149	
AS603	6	12'-4"	117	5'-0"	4'-5"	2'-0"	111	
AS604	10	5'-0"	Str.				75	
AS605	4	3'-5"	Str.				21	
AS606	2Ser. 7	2'-10" to 5'-4"				6"	86	
AS607	4	13'-8"	Str.				82	
AS608	4	11'-8"	Str.				70	
AS609	2	7'-6"	Str.				22	
AS610	2	5'-6"	Str.				16	
AS611	2	5'-3"	Str.				15	
AS612	2	3'-3"	Str.				10	
AS801	7	10'-10"	Str.				202	
AS802	6	8'-10"	Str.				141	
AS803	4	12'-8"	Str.				135	
						Total	2,219	
PIER 1								
SPA401	1	766'-4"	123	78	27'-11"		588	
PA501	2	10'-10"	109	3'-2"	2'-0"		23	
PA502	2	11'-8"	109	3'-2"	2'-5"		24	
PA503	2	12'-2"	109	3'-2"	2'-8"		25	
PA504	14	4'-11"	105	3'-2"	1'-0"	1'-0"	72	

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS
				A	B	C		
PIER 2								
SPB401	1	835'-1"	123	85	30'-7 1/2"		641	
PB501	2	10'-10"	109	3'-2"	2'-0"		23	
PB502	2	11'-8"	109	3'-2"	2'-5"		24	
PB503	2	12'-2"	109	3'-2"	2'-8"		25	
PB504	14	4'-11"	105	3'-2"	1'-0"	1'-0"	72	
PB601	2	8'-8"	Str.				26	
PB602	2	7'-3"	Str.				22	
PB603	4	8'-10"	107	3'-4"	2'-9"	1'-0"	53	
PB701	16	16'-4"	100	14'-8"			535	
PB702	6	12'-2"	105	8'-8"	1'-9"	1'-9"	149	
PB901	15	19'-2"	100	16'-8"			976	
PB1401	24	10'-10"	104	8'-9"	2'-6 1/2"		1,989	
PB1402	12	19'-0"	Str.				1,745	
PB1403	6	25'-7"	Str.				1,175	
PB1404	6	28'-7"	Str.				1,315	
						Total	8,770	
PIER 3								
SPC401	1	727'-0"	123	74	26'-7 1/2"		558	
PC501	2	10'-10"	109	3'-2"	2'-0"		23	
PC502	2	11'-8"	109	3'-2"	2'-5"		24	
PC503	2	12'-2"	109	3'-2"	2'-8"		25	
PC504	14	4'-11"	105	3'-2"	1'-0"	1'-0"	72	
PC601	2	8'-8"	Str.				26	
PC602	2	7'-3"	Str.				22	
PC603	4	8'-10"	107	3'-4"	2'-9"	1'-0"	53	
PC701	16	16'-4"	100	14'-8"			535	
PC702	6	12'-2"	105	8'-8"	1'-9"	1'-9"	149	
PC901	15	19'-2"	100	16'-8"			976	
PC1401	24	10'-10"	104	8'-9"	2'-6 1/2"		1,989	
PC1402	12	19'-0"	Str.				1,745	
PC1403	6	21'-9"	Str.				1,000	
PC1404	6	24'-7"	Str.				1,128	
						Total	8,325	
PIER 4								
SPD401	1	540'-4"	123	55	19'-7 1/2"		414	
PD501	2	10'-10"	109	3'-2"	2'-0"		23	
PD502	2	11'-8"	109	3'-2"	2'-5"		24	
PD503	2	12'-2"	109	3'-2"	2'-8"		25	
PD504	14	4'-11"	105	3'-2"	1'-0"	1'-0"	72	
PD601	2	8'-8"	Str.				26	
PD602	2	7'-3"	Str.				22	
PD603	4	8'-10"	107	3'-4"	2'-9"	1'-0"	53	
PD701	12	13'-4"	100	11'-8"			327	
PD702	6	12'-2"	105	8'-8"	1'-9"	1'-9"	149	
PD901	14	17'-2"	100	14'-8"			816	

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS
				A	B	C		
SUPERSTRUCTURE								
PD1101	20	9'-11"	104	8'-9"	1'-5 1/2"		1,052	
PD1102	10	22'-7"	Str.				1,200	
PD1103	10	15'-0"	Str.				796	
						Total	4,999	
REPLACEMENT BAR SCHEDULE								
No. 4	1	5'-3"	Str.					
No. 5	1	5'-7"	Str.					
No. 6	1	5'-11"						
No. 7	1	6'-2"	101	5'-4"				
No. 8	1	6'-6"	Str.					
No. 9	1	6'-10"	101	5'-7"				
No. 11	1	7'-6"	Str.					
No. 14	1	4'-0"	Str.					



**123
BENDING DIAGRAMS**

No. of turns @ 4 1/2" pitch plus 1/2 turns at end.
Spiral reinforcement shall not have deformations, but shall in other respects, conform to Item S-4. Four steel channel, Tee, or angle spacers, weighing approximately 0.68 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The spacers shall be paid for as reinforcing steel and their weight has been included in the tabulated weights of the spiral.

H.N.T.B. BRIDGE NO. 25

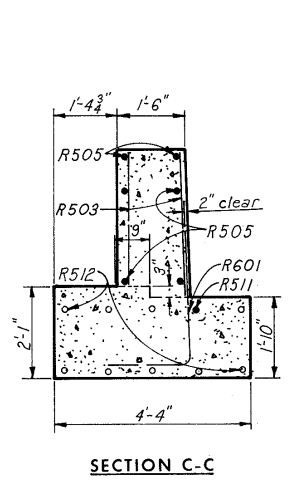
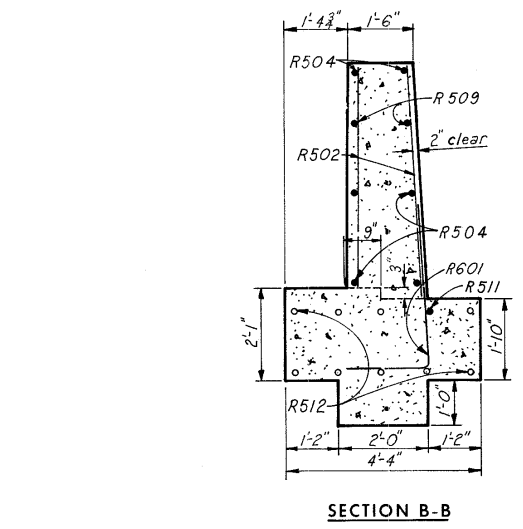
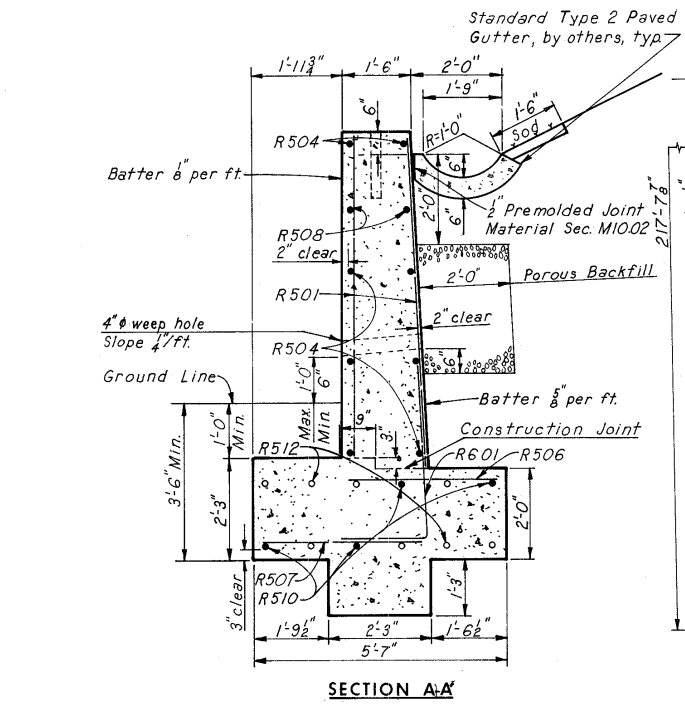
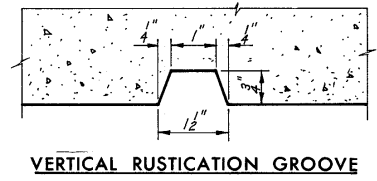
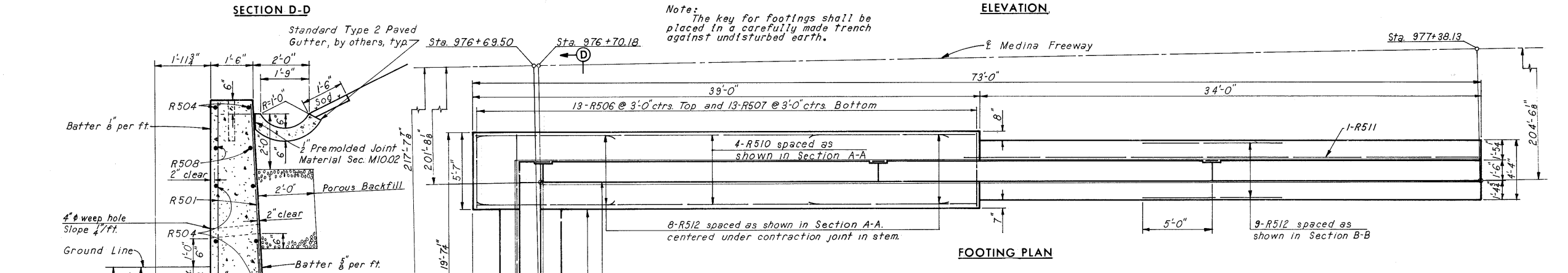
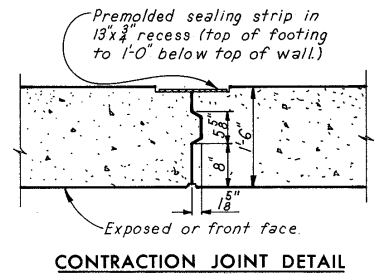
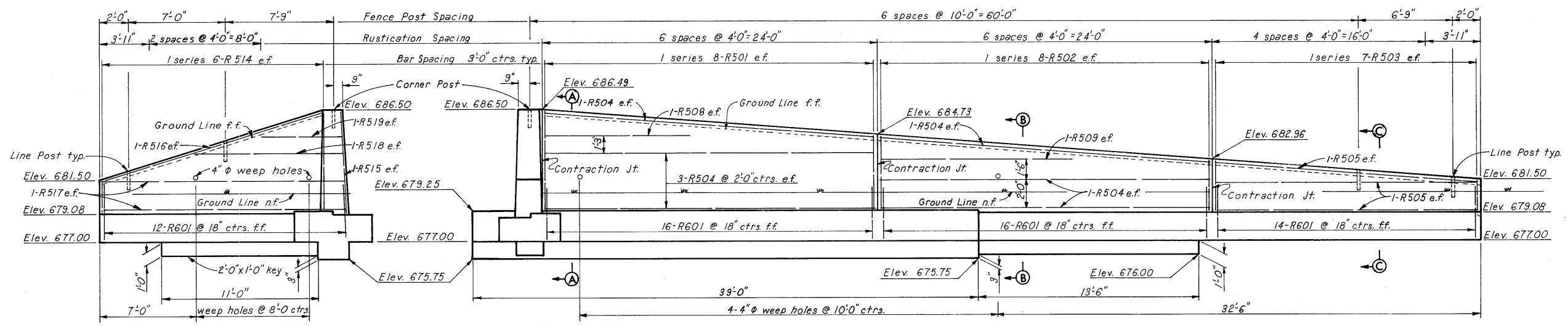
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE
PEDESTRIAN BRIDGE AT WEST 11TH. ST.
OVER CLARK FREEWAY
BR. NO. CUY-290-0051
SCALE
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN L.M.R. TRACED	CHECKED G.A.M. REVIEWED	REVISED
DATE 12-21-64 DATE	DATE 2/23-65 DATE	

SHEET 473

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

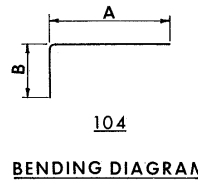


Note: The key for footings shall be placed in a carefully made trench against undisturbed earth.

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS	
				A	B	C			
R501	2 Series 8	5'-5" to 6'-11"	Str.				2 1/2"	103	
R502	2 Series 8	3'-8" to 5'-2"	Str.				2 1/2"	74	
R503	2 Series 7	2'-2" to 3'-6"	Str.				2 1/2"	41	
R504	14	23'-8"	Str.					346	
R505	6	19'-7"	Str.					123	
R506	13	3'-3"	Str.					44	
R507	13	3'-7"	Str.					49	
R508	2	12'-6"	Str.					26	
R509	2	14'-9"	Str.					31	
R510	4	38'-6"	Str.					161	
R511	1	35'-6"	Str.					37	
R512	25	10'-0"	Str.					261	
R513	1	19'-1"	Str.					20	
R514	2 Series 6	2'-1" to 7'-1"	Str.				1'-0"	57	
R515	2	7'-3"	Str.					15	
R516	2	16'-7"	Str.					35	
R517	4	17'-3"	Str.					72	
R518	2	10'-9"	Str.					22	
R519	2	7'-9"	Str.					16	
R601	58	5'-8"	104	1'-11"	3'-11"			494	
								TOTAL	2,027

Notes:
Provide 2 1/2" x 1'-6" standard pipe sleeves in top of wall for anchorage of line posts and 3 1/2" x 1'-6" standard pipe sleeves for anchorage of corner posts. Include sleeves with Item S-1, Class E Concrete, for payment. Remainder of fence items shall be included for payment with roadway quantities.
Offsets and stationing given with reference to top of wall; n.f. denotes near face, f.f. denotes far face and e.f. denotes each face.
For details not shown in Section B-B and Section C-C, see Section A-A.
For Estimated Quantities, see Sheet 478.
Standard Type 2 Paved Gutter, 2" premolded joint material between gutter and wall and 1'-6" strip of sod are included in Roadway Quantities.
Dimensions for key shown in Section D-D, similar to those shown in Section B-B.

Note: The design maximum bearing capacity for this wall is 1.5 tons per sq.ft.



H.N.T.B. WALL NO. 92

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

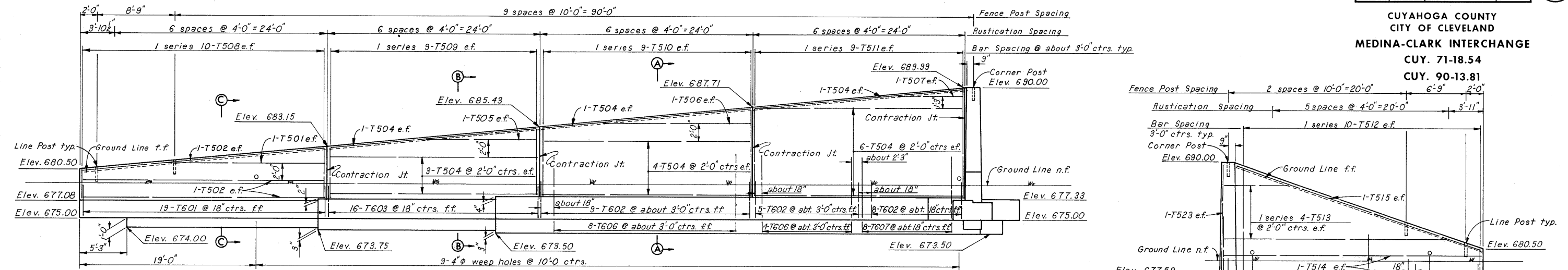
**WALL RIGHT OF MEDINA FREEWAY
#92**

STA. 976+69.50
STA. 977+38.13

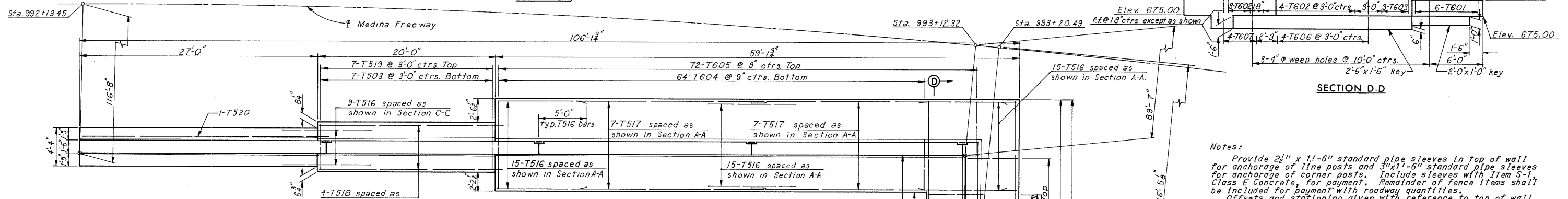
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN PEH	TRACED	CHECKED GJM	REVIEWED	REVISED
DATE 12-1-64	DATE	DATE 12-2-64	DATE	SHEET 474

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

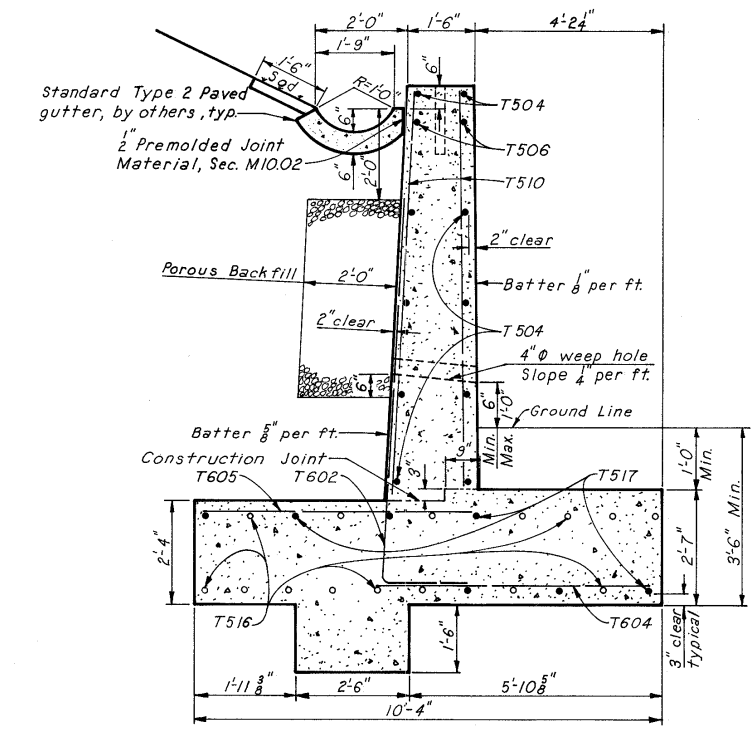


ELEVATION

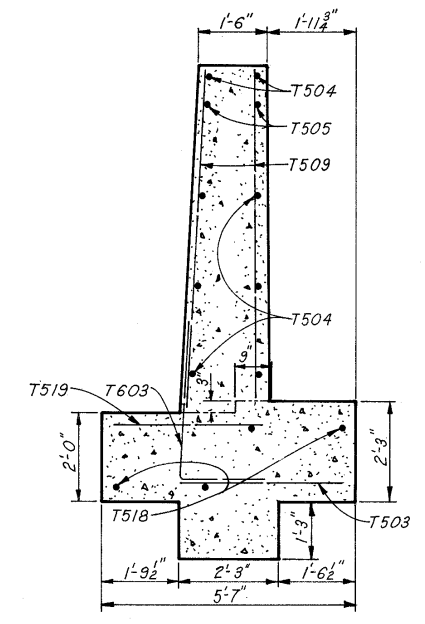


FOOTING PLAN

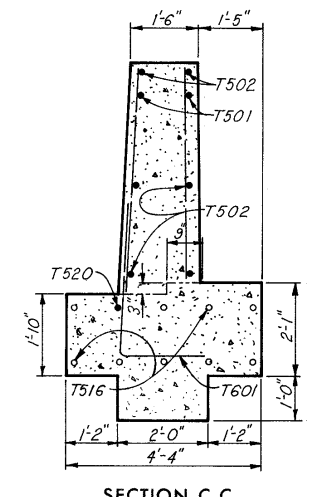
Notes:
Provide 2 1/2" x 11-6" standard pipe sleeves in top of wall for anchorage of line posts and 3"x11-6" standard pipe sleeves for anchorage of corner posts. Include sleeves with Item S-1, Class E Concrete, for payment. Remainder of fence items shall be included for payment with roadway quantities.
Offsets and stationing given with reference to top of wall.
n.f. denotes near face, f.f. denotes far face and e.f. denotes each face.
For details not shown in Section B-B and Section C-C, see Section A-A.
For Estimated Quantities, see Sheet 478.
For Reinforcement Schedule, see Sheet 478.
Standard Type 2 Paved Gutter, 1" premolded joint material between gutter and wall and 1'-6" strip of sodare included in Roadway Quantities.
Dimensions for keys shown in Section D-D similar to those shown in Section A-A and Section C-C.



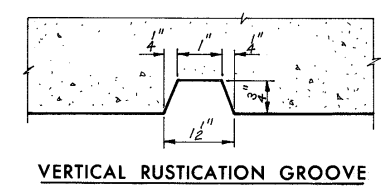
SECTION A-A



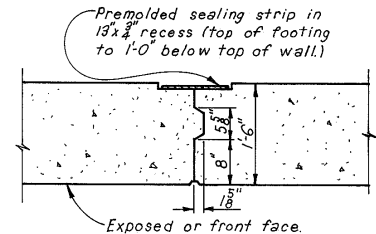
SECTION B-B



SECTION C-C



VERTICAL RUSTICATION GROOVE



CONTRACTION JOINT DETAIL

Note:
The design maximum bearing capacity for this wall is 1.5 tons per sq.ft.

H.N.T.B. WALL NO.93
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

WALL RIGHT OF MEDINA FREEWAY
#93

STA. 992+13.45
STA. 993+20.49

CLEVELAND CUYAHOGA COUNTY OHIO

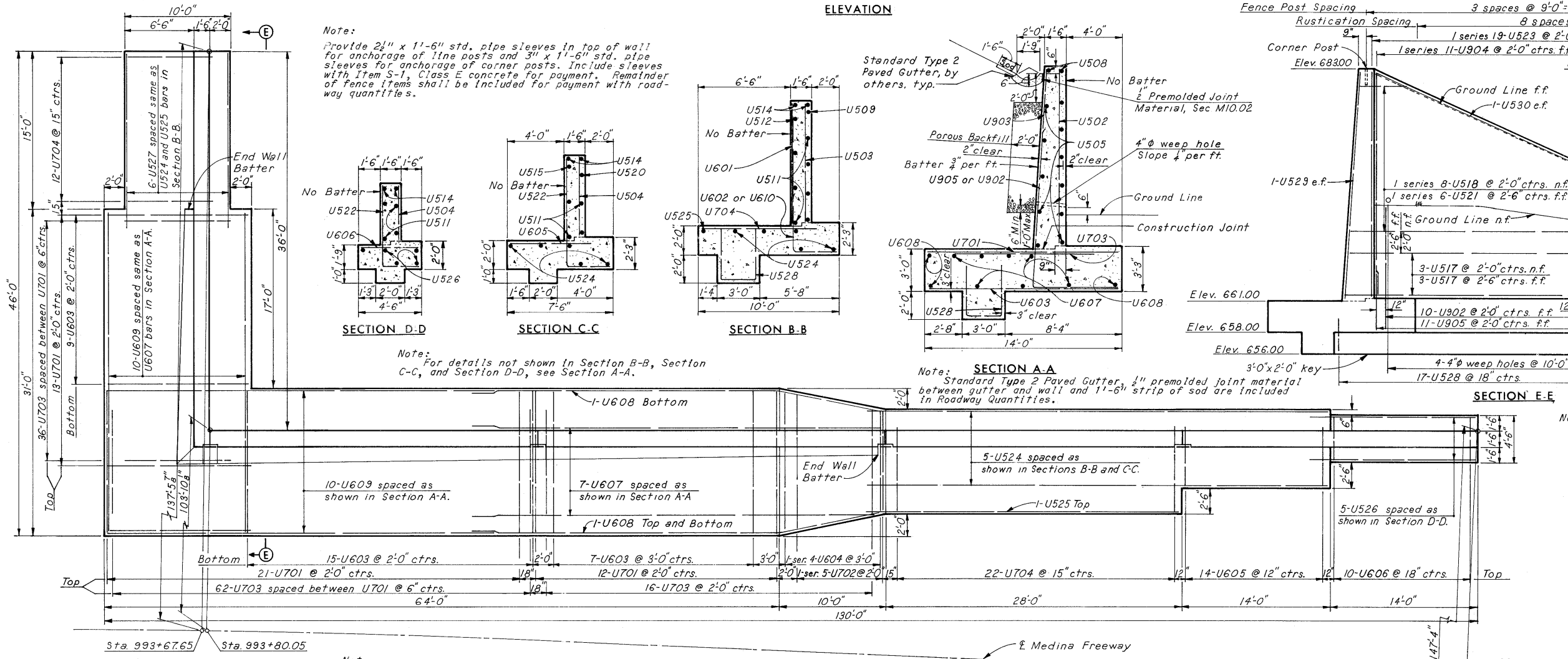
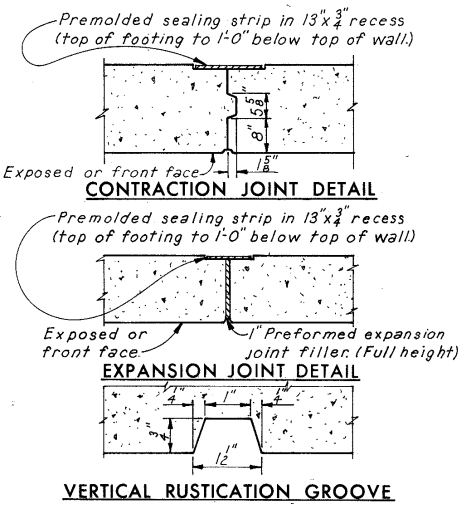
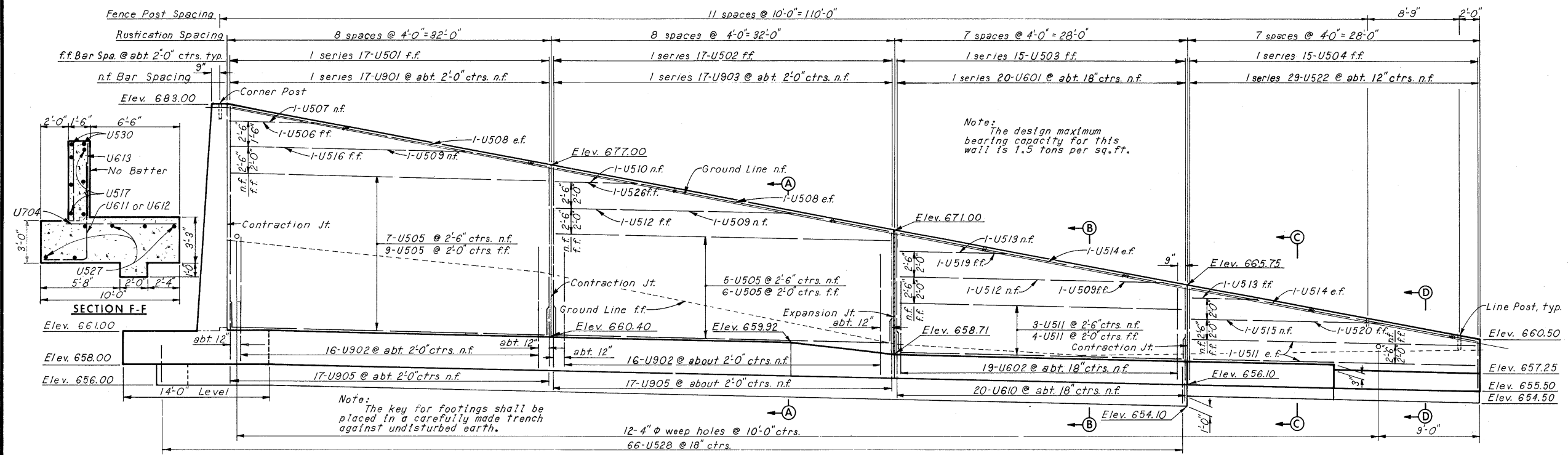
DRAWN PEH	TRACED	CHECKED SAM	REVIEWED	REVISED
DATE 2-3-64	DATE	DATE 12-5-64	DATE	DATE

SHEET 475

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

476
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81



Note: Provide 2 1/2" x 1'-6" std. pipe sleeves in top of wall for anchorage of line posts and 3" x 1'-6" std. pipe sleeves for anchorage of corner posts. Include sleeves with Item S-1, Class E concrete for payment. Remainder of fence items shall be included for payment with roadway quantities.

Note: For details not shown in Section B-B, Section C-C, and Section D-D, see Section A-A.

Note: SECTION A-A Standard Type 2 Paved Gutter, 1/2" preformed joint material between gutter and wall and 1'-6" strip of sod are included in Roadway Quantities.

Notes: n.f. denotes near face, f.f. denotes far face and e.f. denotes each face. Dimensions for 3'-0" x 2'-0" key shown in Section E-E are the same as those shown in Section A-A. For Estimated Quantities, see Sheet 478. For Reinforcement Schedule, see Sheet 478.

H.N.T.B. WALL NO. 94

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

WALL LEFT OF MEDINA FREEWAY #94

STA. 993+67.65
STA. 994+90.04

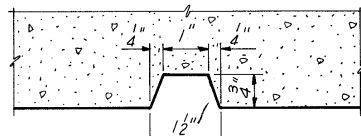
CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DATE: 12-3-64	DATE	DATE: 12-6-64	DATE	

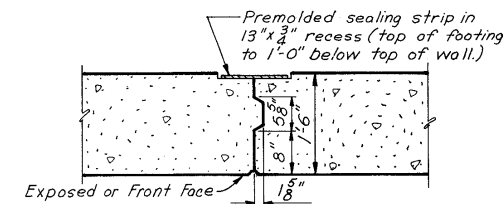
SHEET 478

**CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81**

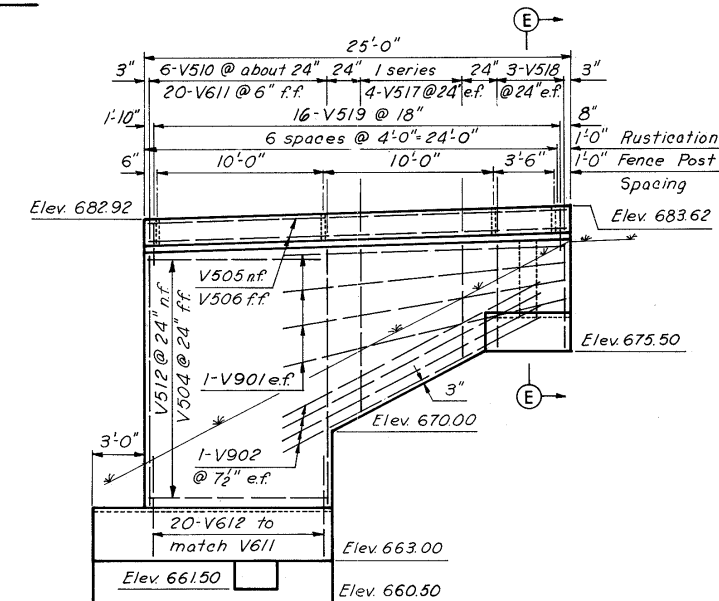
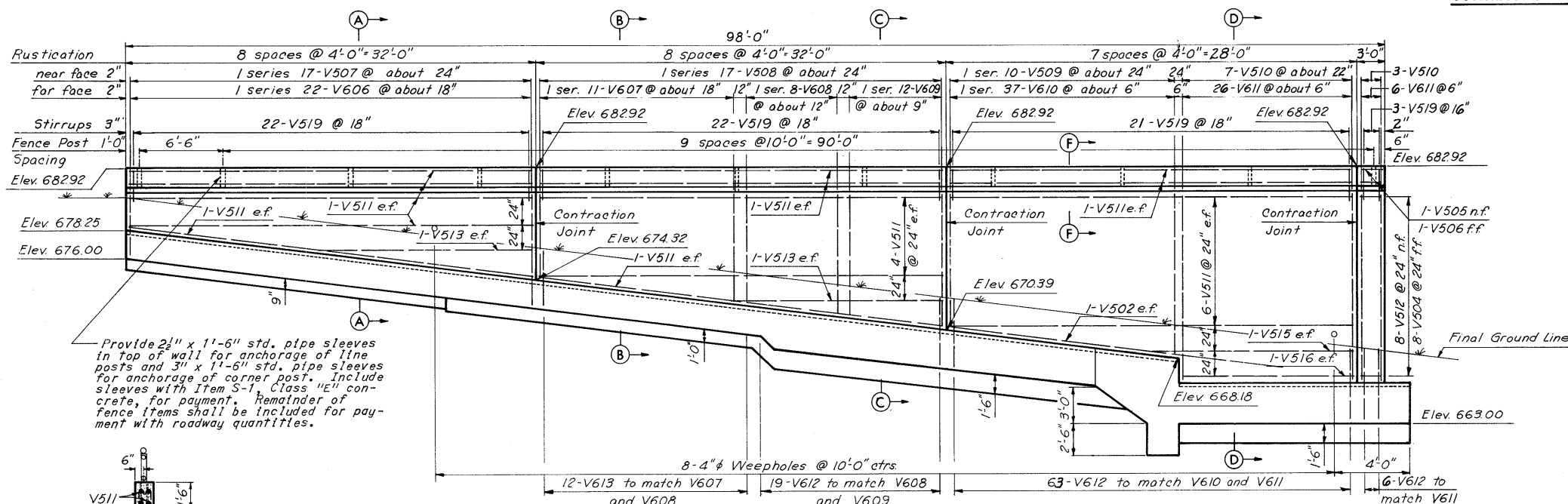
Note: The design maximum bearing capacity for this wall is 1.5 tons per sq.ft.



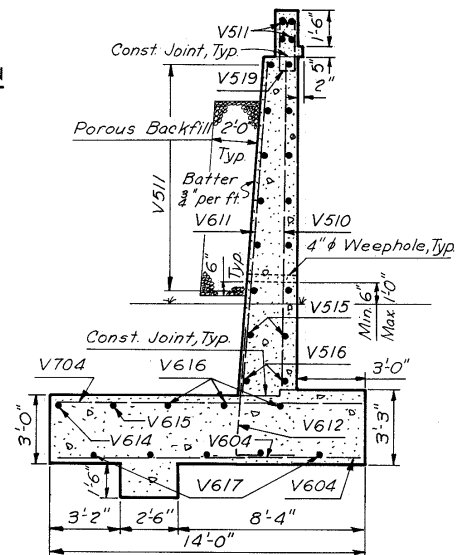
VERTICAL RUSTICATION GROOVE



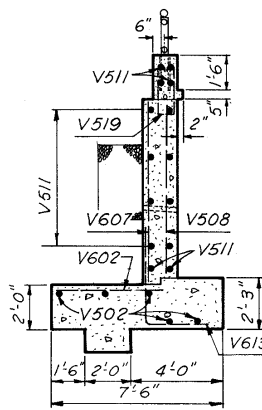
CONTRACTION JOINT DETAIL



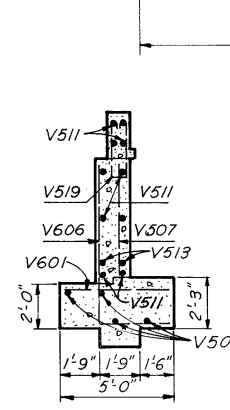
ELEVATION



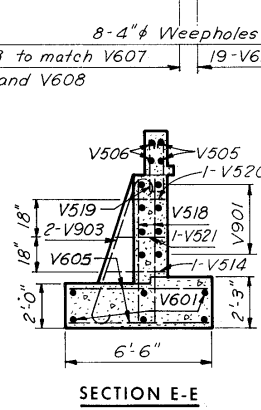
SECTION D-D



SECTION B-B

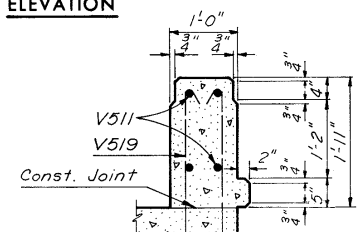


SECTION A-A



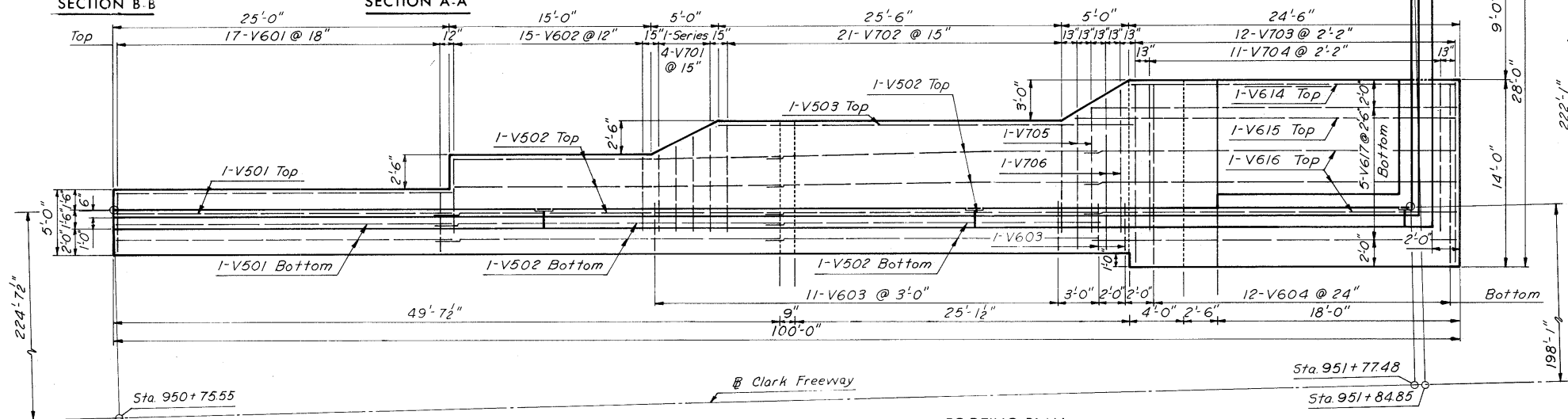
SECTION E-E

ELEVATION

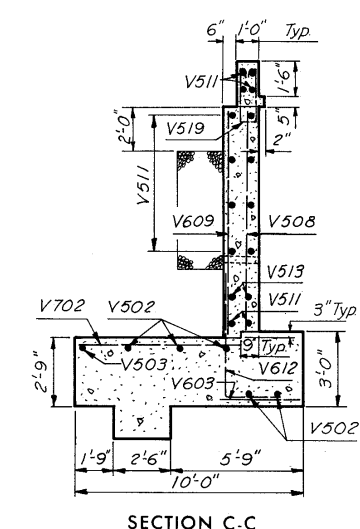


SECTION F-F

Notes: Offsets and stationing given with reference to top of wall. n.f. denotes near face, f.f. denotes far face and e.f. denotes each face. For Estimated Quantities, see Sheet 478. For Reinforcement Schedule, see Sheet 478.



FOOTING PLAN



SECTION C-C

Note: The key for footings shall be placed in a carefully made trench against undisturbed earth.

H.N.T.B. WALL NO.95

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

**WALL LEFT OF CLARK FREEWAY
#95**

STA 950+75.55
STA 951+84.85

CLEVELAND	CUYAHOGA COUNTY	OHIO
DRAWING	TRACED	CHECKED
DATE 11-25-64	DATE	DATE

SHEET 477

H.N.T.B. WALL NO. 93

H.N.T.B. WALL NO. 94

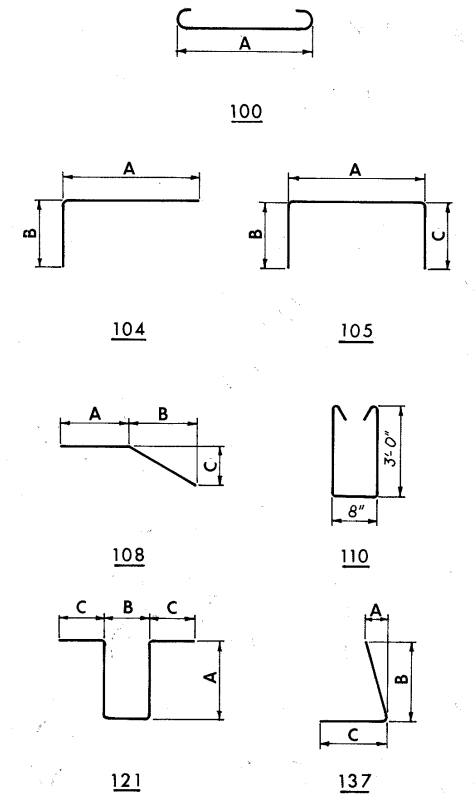
H.N.T.B. WALL NO. 95

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

478
478

CUYAHOGA COUNTY
CITY OF CLEVELAND
MEDINA-CLARK INTERCHANGE
CUY. 71-18.54
CUY. 90-13.81

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS	MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS	MARK	NUMBER	LENGTH	TYPE	DIMENSIONS			SERIES INCRE.	WEIGHT POUNDS
				A	B	C							A	B	C							A	B	C		
T501	2	17'-6"	Str.					37	U501	1Ser. 17	21'-6"to16'-2"	Str.				4"	334	V501	4	26'-4"	Str.					110
T502	6	27'-6"	Str.					172	U502	1Ser. 17	16'-2"to11'-6"	Str.				3 1/2"	245	V502	12	25'-11"	Str.					324
T503	7	3'-7"	Str.					26	U503	1Ser. 15	11'-9"to 7'-2"	Str.				3 7/8"	148	V503	7	30'-8"	Str.					224
T504	32	23'-8"	Str.					790	U504	1Ser. 15	7'-2"to 2'-9"	Str.				3 3/4"	78	V504	8	10'-10"	104	9'-6"	1'-6"			90
T505	2	16'-0"	Str.					33	U505	27	31'-8"	Str.					892	V505	2	26'-2"	104	24'-8"	1'-8"			55
T506	2	20'-6"	Str.					43	U506	1	8'-3"	Str.					9	V506	2	23'-10"	104	23'-6"	6"			50
T507	2	10'-6"	Str.					22	U507	1	11'-8"	Str.					12	V507	1Ser. 17	2'-5"to6'-4"	Str.				2 7/8"	78
T508	2 ser. 10	3'-3" to 5'-8"	Str.					93	U508	4	32'-2"	Str.					134	V508	1Ser. 17	6'-6"to10'-4"	Str.				2 7/8"	149
T509	2 ser. 9	5'-11"to 7'-7"	Str.					127	U509	3	24'-4"	Str.					76	V509	1Ser. 10	10'-4"to12'-4"	Str.				2 5/8"	118
T510	2 ser. 9	7'-10"to9'-10"	Str.					166	U510	1	10'-4"	Str.					11	V510	16	14'-6"	Str.					251
T511	2 ser. 9	10'-1"to12'-4"	Str.					210	U511	11	27'-8"	Str.					317	V511	34	31'-8"	Str.					1120
T512	2 ser. 10	3'-3" to12'-0"	Str.					159	U512	2	26'-4"	Str.					55	V512	8	13'-2"	104	10'-8"	2'-8"			111
T513	2 ser. 4	7'-6" to25'-8"	Str.					138	U513	2	13'-0"	Str.					27	V513	4	16'-0"	Str.					67
T514	4	29'-0"	Str.					121	U514	4	28'-0"	Str.					117	V514	1	7'-4"	121	2'-7"	8"	1'-0"		8
T515	2	29'-3"	Str.					61	U515	1	15'-3"	Str.					16	V515	2	14'-0"	Str.					29
T516	54	10'-0"	Str.					563	U516	1	22'-9"	Str.					24	V516	2	12'-8"	Str.					26
T517	14	30'-0"	Str.					438	U517	6	38'-3"	Str.					239	V517	2Ser. 4	6'-6"to9'-6"	Str.				11'-0"	67
T518	4	21'-6"	Str.					90	U518	1Ser. 8	36'-3"to 4'-9"	Str.				4'-6"	171	V518	6	5'-9"	Str.					36
T519	7	3'-3"	Str.					24	U519	1	13'-4"	Str.					14	V519	85	7'-3"	110					643
T520	1	28'-6"	Str.					30	U520	1	23'-3"	Str.					24	V520	1	5'-4"	121	1'-7"	8"	1'-0"		6
T521	7	25'-6"	Str.					186	U521	1Ser. 6	32'-9"to 4'-9"	Str.				5'-7"	117	V521	1	6'-4"	121	2'-1"	8"	1'-0"		7
T522	1	9'-6"	Str.					10	U522	1Ser. 29	11'-7"to 6'-10"	104	9'-3"to4'-6"	2'-6"		2	279	V601	23	4'-6"	Str.					155
T523	2	12'-3"	Str.					26	U523	1Ser. 19	21'-6"to 5'-0"	Str.				11	263	V602	15	5'-3"	Str.					118
T601	25	5'-6"	137	2 1/2"	3'-9"	1'-11"		207	U524	5	43'-6"	Str.					31	V603	13	4'-0"	Str.					78
T602	29	6'-0"	137	2 1/2"	4'-3"	1'-11"		261	U525	1	29'-6"	Str.					97	V604	12	13'-6"	Str.					243
T603	19	5'-9"	137	2 1/2"	4'-0"	1'-11"		164	U526	6	15'-6"	Str.					103	V605	8	6'-0"	Str.					72
T604	85	6'-1"	Str.					777	U527	6	16'-6"	Str.					801	V606	1Ser. 22	7'-4"to11'-4"	104	4'-6"to8'-6"	3'-0"			308
T605	98	5'-10"	Str.					859	U528	83	9'-3"	105	2'-6"	3'-6"	3'-6"		45	V607	1Ser. 11	6'-6"to 8'-6"	Str.					124
T606	16	8'-6"	137	4 1/2"	6'-9"	1'-11"		205	U529	2	21'-9"	Str.					82	V608	1Ser. 8	8'-7"to 9'-3"	Str.					107
T607	12	10'-6"	137	5 1/2"	8'-9"	1'-11"		189	U530	2	39'-3"	Str.						V609	1Ser. 12	9'-5"to10'-4"	Str.					178
								Total 6,227	U601	1Ser. 20	11'-9"to 7'-3"	Str.				2 7/8"	285	V610	1Ser. 37	10'-6"to12'-6"	Str.				5"	639
									U602	19	10'-6"	104	8'-9"	1'-11"		300	V611	52	14'-8"	Str.					1146	
									U603	31	13'-6"	Str.				628	V612	108	6'-9"	104	5'-0"	1'-11"			1095	
									U604	1Ser. 4	13'-3"to 9'-9"	Str.				1'-2"	69	V613	12	6'-0"	104	4'-3"	1'-11"			108
									U605	14	5'-0"	Str.				105	V614	1	24'-3"	Str.					36	
									U606	10	4'-0"	Str.				60	V615	1	28'-3"	Str.					42	
									U607	7	45'-0"	108	35'-0"	10'-0"	1'-0"	473	V616	3	26'-3"	Str.					118	
									U608	3	45'-0"	108	35'-0"	10'-0"	2'-0"	203	V617	5	26'-6"	Str.					199	
									U609	20	30'-6"	Str.				916	V701	1Ser. 4	5'-9"to7'-9"	Str.				8"	55	
									U610	20	6'-10"	104	4'-0"	3'-0"		205	V702	21	8'-0"	Str.					343	
									U611	11	7'-10"	104	5'-0"	3'-0"		129	V703	12	13'-6"	Str.					331	
									U612	1Ser. 10	11'-6"to 8'-6"	104	9'-9"to 6'-9"	1'-11"	4"	150	V704	11	10'-0"	Str.					225	
									U613	1Ser. 11	11'-10"to 5'-0"	Str.			8 1/2"	139	V705	2	9'-9"	Str.					40	
									U701	46	13'-6"	Str.				1269	V706	2	11'-6"	Str.					47	
									U702	1Ser. 5	12'-9"to9'-7"	Str.			9 1/2"	114	V901	8	17'-0"	Str.					462	
									U703	114	10'-0"	Str.				2330	V902	8	14'-0"	Str.					381	
									U704	34	8'-0"	Str.				556	V903	2	8'-3"	100	5'-9"				56	
									U901	1Ser. 17	21'-7"to16'-3"	Str.				4"	1093								Total 10,275	
									U902	42	14'-4"	137	9"	11'-9"	2'-10"	2047										
									U903	1Ser. 17	16'-3"to10'-11"	Str.				4"	785									
									U904	1Ser. 11	21'-7"to12'-2"	Str.				11 1/2"	631									
									U905	45	8'-5"	137	4"	5'-10"	2'-10"	1288										
									TOTAL							18,763										



ESTIMATED QUANTITIES (carried to Sheet No. 381)

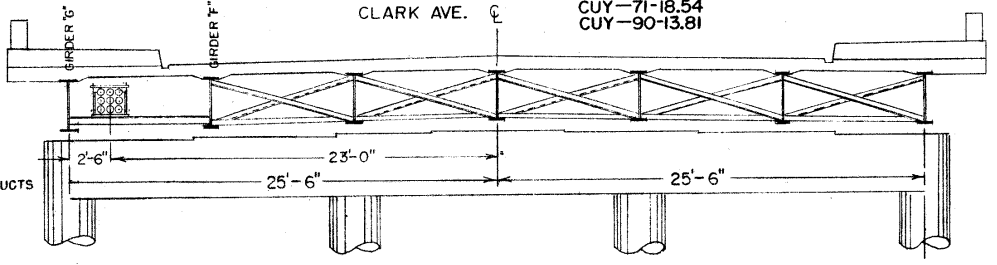
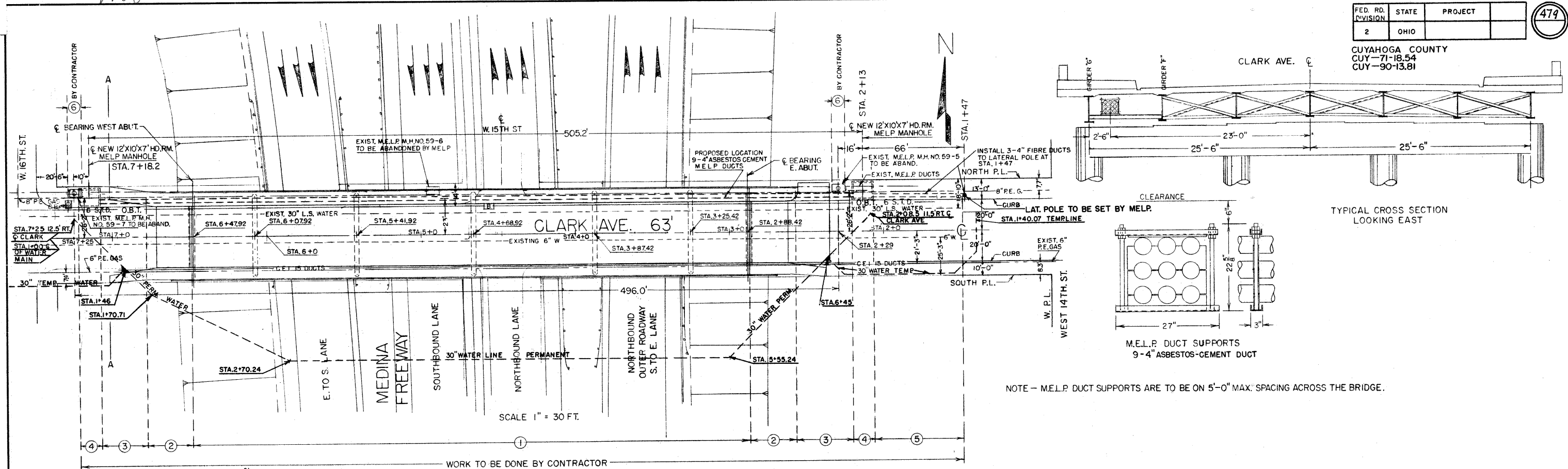
ITEM	DESCRIPTION	UNIT	H.N.T.B. WALL NO. 92 CUY-90-13.81		H.N.T.B. WALL NO. 93 CUY-90-13.81		H.N.T.B. WALL NO. 94 CUY-90-13.81		H.N.T.B. WALL NO. 95 CUY-71-18.54		TOTAL WALLS Nos. 92, 93 & 94 CUY-90-13.81	
			TOTAL	AS BUILT	TOTAL	AS BUILT	TOTAL	AS BUILT	TOTAL	AS BUILT	TOTAL	AS BUILT
S-1	Class "E" (Wall Footings)		34		105		223		112		362	
E-2	Excavation for Structures	Cu.Yds.	115		371		1130		440		1616	
S-1	Class E Concrete (Walls above Footings)	Cu.Yds.	27		69		142		81		238	
S-3	Waterproofing Premolded Seating Strip	Lin.Ft.	15		34		55		30		104	
S-4	Reinforcing Steel	Lbs.	2,027		6,227		18,763		10,275		27,017	
S-9	1" Preformed Expansion Joint Filler	Sq.Ft.					19				19	
S-29	Porous Backfill	Cu.Yds.	8		36		74		37		118	

H.N.T.B. WALLS NO. 92, 93, 94 & 95
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

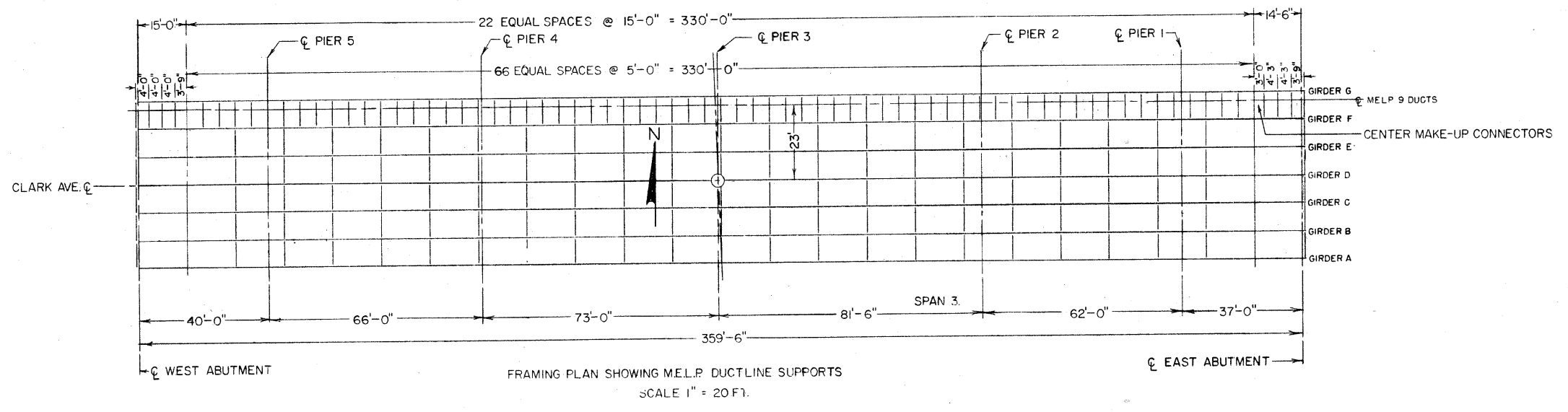
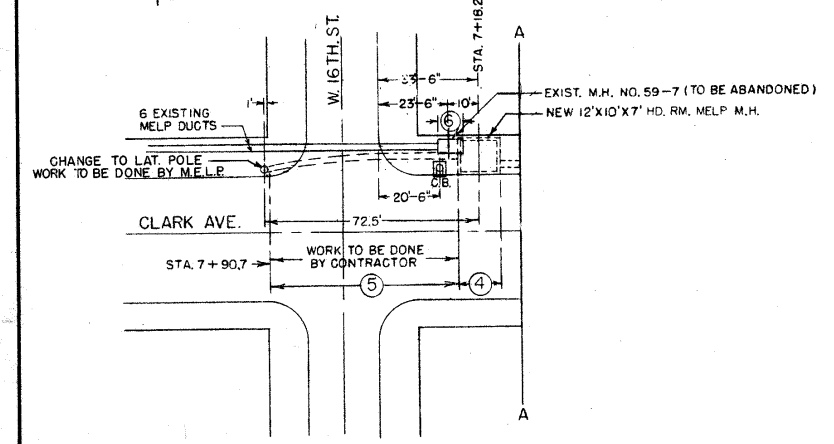
ESTIMATED QUANTITIES
REINFORCEMENT SCHEDULE

CLEVELAND CUYAHOGA COUNTY OHIO

DRAWN J.R. TRACED DATE 12-16-49 CHECKED P.E.H. DATE 12-17-51 REVIEWED DATE SHEET 478



NOTE - M.E.L.P. DUCT SUPPORTS ARE TO BE ON 5'-0" MAX. SPACING ACROSS THE BRIDGE.



M.E.L.P. ELECTRICAL POWER CONDUIT LINE INSTALLATION BY CONTRACTOR				
ESTIMATED QUANTITIES				
NO.	ITEM	DESCRIPTION	UNIT	QUAN.
1	SPECIAL	NON-ENCASED, BRIDGE SUPPORTED, 9-4" ASBESTOS-CEMENT CONDUIT BANK (COMPLETE) AS PER PLAN	LIN. FT.	361.5*
2	SPECIAL	REINFORCED CONCRETE ENCASED, 9-4" ASBESTOS-CEMENT CONDUIT BANK (COMPLETE) AS PER PLAN	LIN. FT.	60'-0"
3	SPECIAL	NON-REINFORCED, CONCRETE ENCASED, 9-4" FIBRE CONDUIT BANK (COMPLETE) AS PER PLAN	LIN. FT.	71.7
4	SPECIAL	REINFORCED CONCRETE MANHOLE (10'X12'X7' HEADROOM) (COMPLETE) AS PER PLAN.	EACH	2
5	SPECIAL	NON-REINFORCED, CONCRETE ENCASED, 3-4" FIBRE CONDUIT BANK (COMPLETE) AS PER PLAN	LIN. FT.	126.5'
6	SPECIAL	EXISTING M.E.L.P. MANHOLES TO BE ABANDONED AS PER PLAN	EACH	2

* Carried to Bridge Summary Sheet 357.

APPROVED BY
Wm. DeWitt 3/10/65
John A. ... 3/10/65
Arnold ... 3/9/65
Edward J. ... 3/9/65
Robert J. ... 3/9/65

DIRECTOR OF PUBLIC UTILITIES
 COMMISSIONER OF LIGHT & POWER
 COMMISSIONER OF UTILITIES ENGR.
 CHIEF ELECTRICAL ENGINEER
 ENGINEER OF DESIGN

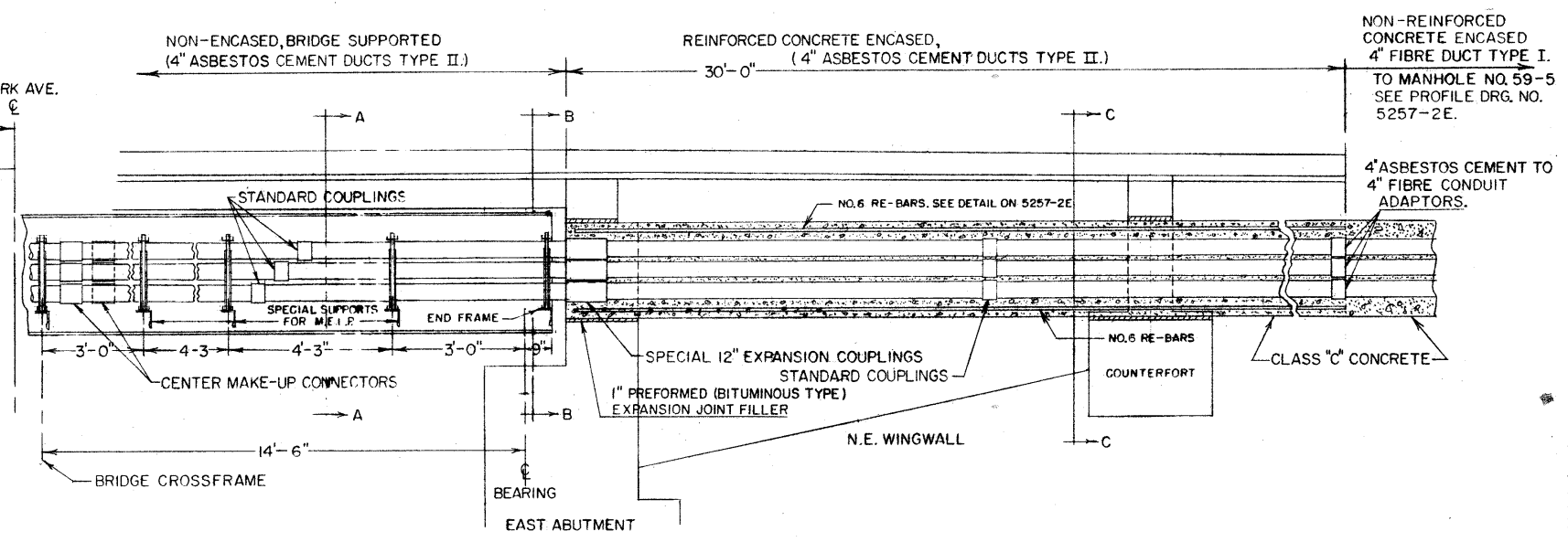
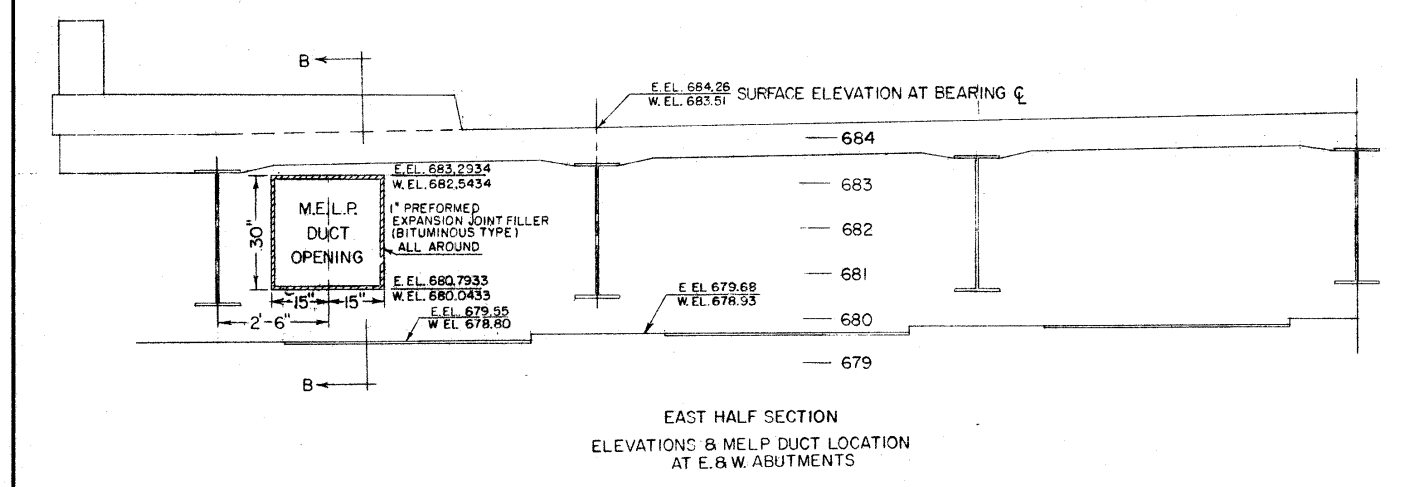
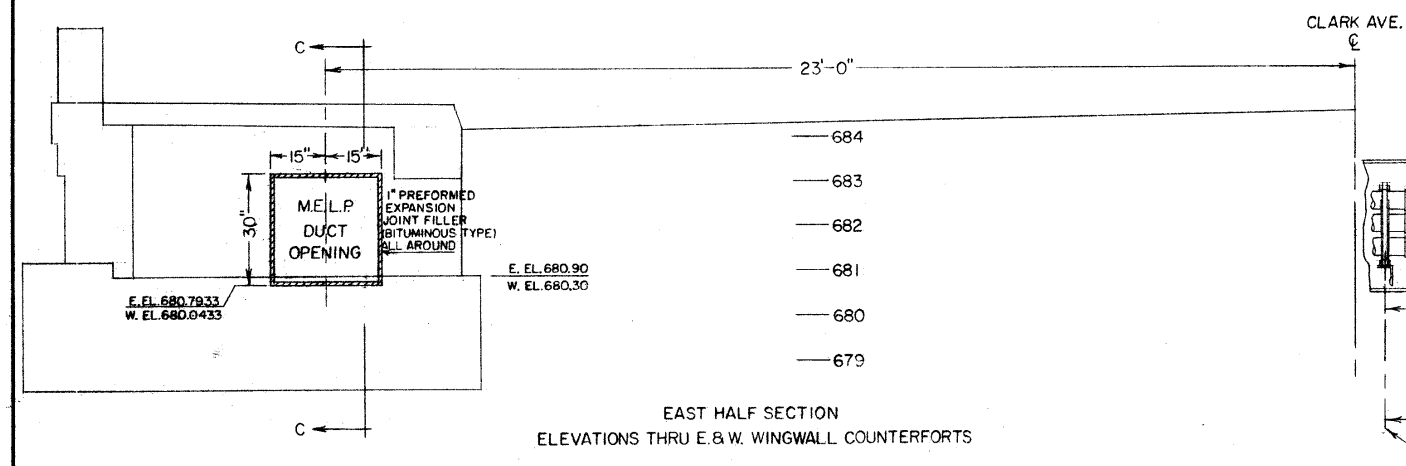
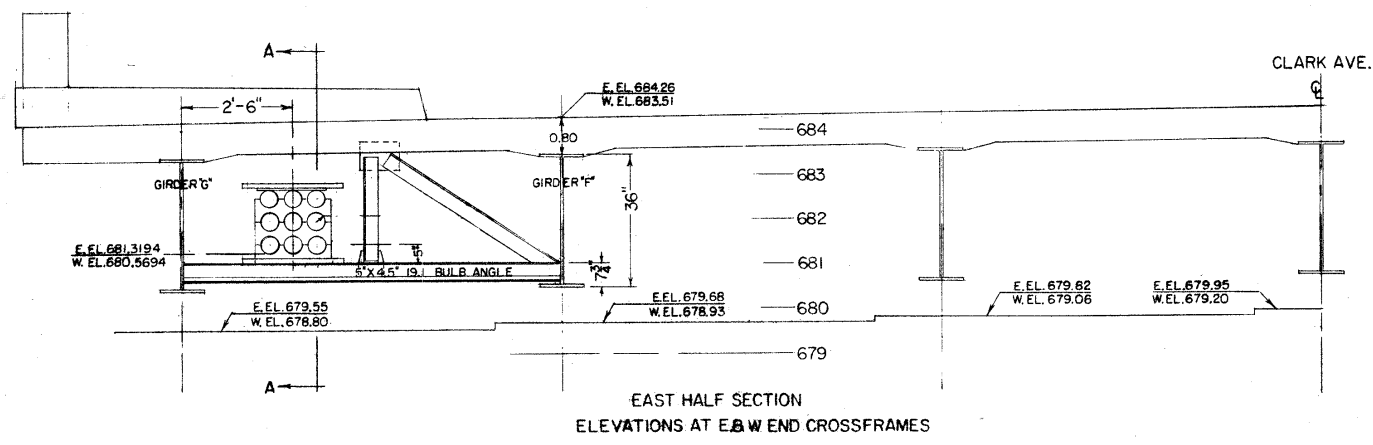
5257-2B BRIDGE & ABUTMENT DUCT DETAILS		
5257-2C MANHOLE & DUCT PROFILES		
5257-2D MANHOLE & DUCT PROFILES		
5257-2E MANHOLE & DUCT PROFILES		
5257-2F MANHOLE & DUCT PROFILES		
5257-2G B 2H MANHOLE DETAILS		
5257-2J DUCT SUPPORT DETAILS		
5257-5A, 5B, 6, 5C ELECTRICAL NOTES		
2346 MANHOLE FRAME & COVER		
REFERENCE DRAWINGS	NO.	DATE

NO. 4	2-27-65	ADDED WORK TO BE DONE BY CONTRACTOR	N.A.E. R.L.B.
NO. 3	1-28-65	ADDED TEMP & PERM. WATER LINES	S.F.G. R.L.B.
NO. 2	2-12-64	REMOVED BRIDGE MANHOLE & REVISED STATION LOCATION	N.A.E. R.L.B.
NO. 1	10-24-64		N.A.E. R.L.B.

DIVISION OF LIGHT & POWER
 CITY OF CLEVELAND
 PROPOSED M.E.L.P. DUCT LOCATION ON THE CLARK AVE. BRIDGE OVER THE MEDINA FREEWAY
 DRAWN BY: N.A.E. AS SHOWN
 DATE: 4-25-64
 CHECK'D BY: R.L.B.
 DRAWING NUMBER: 5257-2A

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		480

CUYAHOGA COUNTY
 CUY-71-18.54
 CUY-90-13.81



NOTES. WEST ABUTMENT SIMILAR EXCEPT FOR CONDUIT SUPPORT DIMENSIONS. SEE FRAMING PLAN ON DRG. NO. 5257-2A.
 DUPLICATE DUCT REINFORCING & TRANSITION TO FIBRE DUCTS, AS SHOWN ABOVE, FROM WEST ABUTMENT TO MANHOLE NO. 59-7

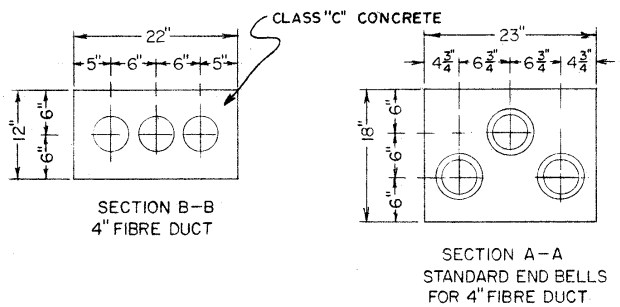
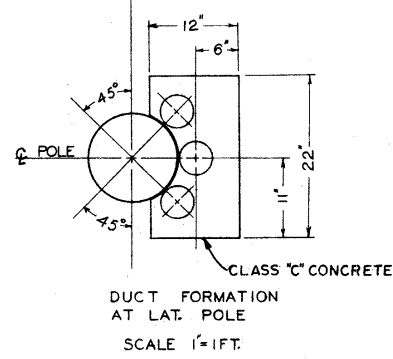
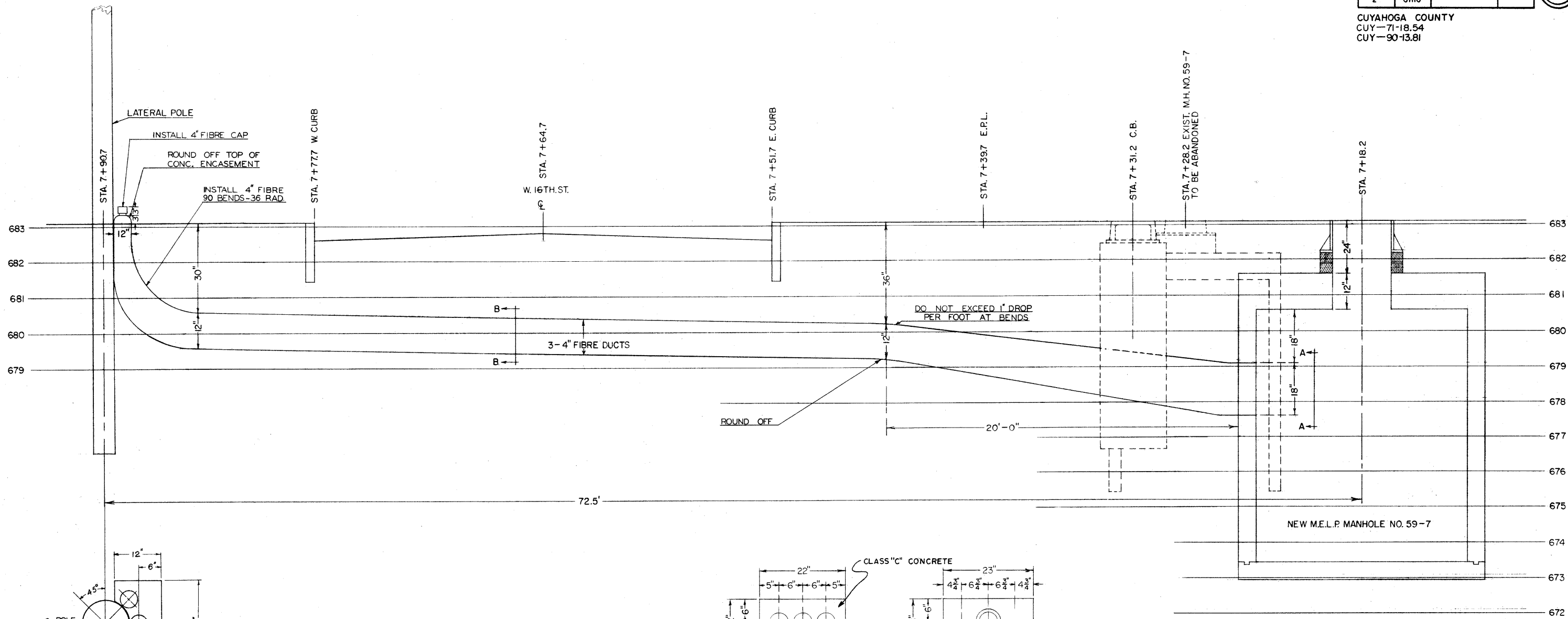
APPROVED BY			
<i>W. J. ...</i>	3/10/65	DIRECTOR OF PUBLIC UTILITIES	
<i>John G. ...</i>	3/10/65	COMMISSIONER OF LIGHT & POWER	
<i>Frank ...</i>	3/9/65	COMMISSIONER OF UTILITIES ENGR.	
<i>Edward V. ...</i>	3/9/65	CHIEF ELECTRICAL ENGINEER	
<i>Robert ...</i>	3/9/65	ENGINEER OF DESIGN	

DIVISION OF LIGHT & POWER CITY OF CLEVELAND			
PROPOSED MELP DUCT LOCATIONS AT THE ABUTMENTS & WINGWALLS ON CLARK AVE. BRIDGE OVER MEDINA FRWY.			
DRAWN BY... N.A.E.	SCALE 1" = 1 FT.	DATE	DRAWING NUMBER
CH'KD BY... R.U.A.	12-18-64		5257-2B

REVISION	DATE	DESCRIPTION	BY	APP'D
NO. 3	2-24-65	DETAILED EXPANSION-TRANSITION SEC. & MELP DUCT SUPPORTS	N.A.E.	R.U.A.
NO. 2	2-19-65	ENLARGED DUCT OPENINGS	N.A.E.	R.U.A.
NO. 1	2-9-65	REVISED DUCT ELEVATION	S.F.G.	R.U.A.

FED. RD. DIVISION	STATE	PROJECT	482
2	OHIO		

CUYAHOGA COUNTY
 CUY-71-18.54
 CUY-90-13.81



SECTION SCALE 1" = 1 FT.

SCALE
 VERTICAL 3/4" = 1 FT.
 HORIZONTAL 3/8" = 1 FT.

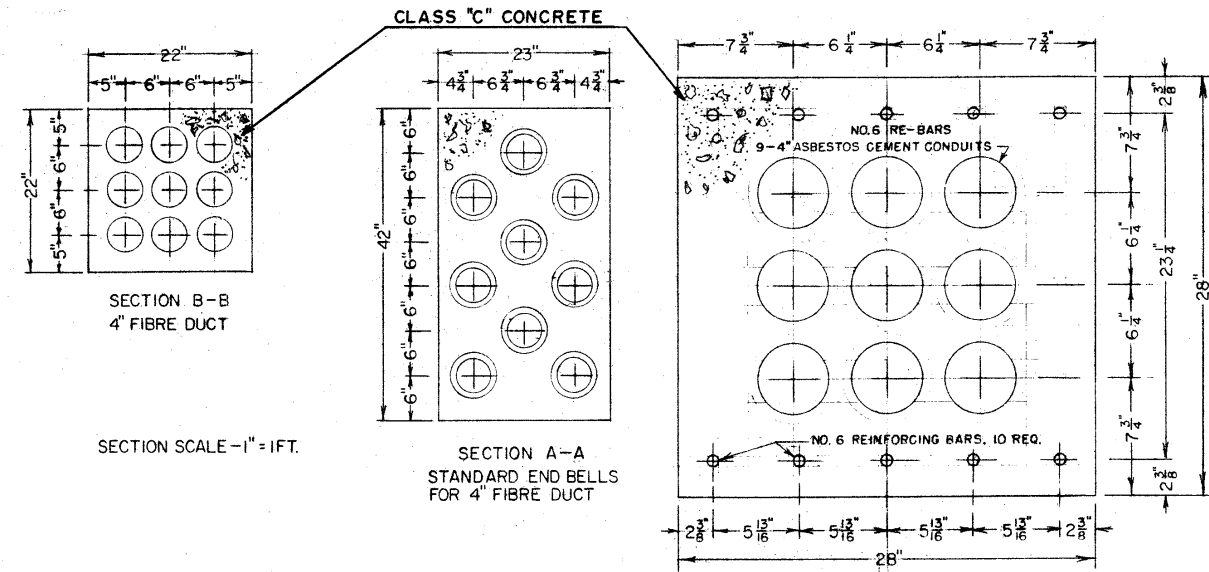
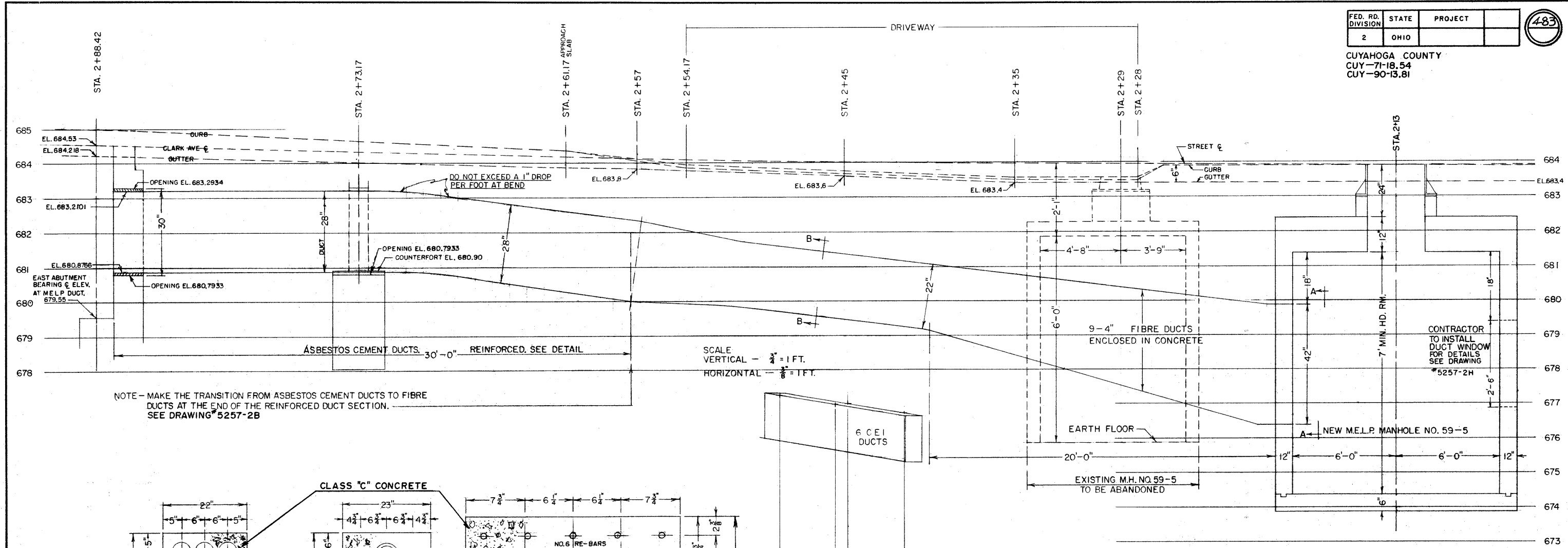
REVISION	DATE	DESCRIPTION	BY	APP'D

APPROVED BY		DIRECTOR OF PUBLIC UTILITIES		
<i>Wm. J. ...</i> 3/10/65		COMMISSIONER OF LIGHT & POWER		
<i>John A. ...</i> 3/10/65		COMMISSIONER OF UTILITIES ENGR.		
<i>Arnold ...</i> 3/10/65		CHIEF ELECTRICAL ENGINEER		
<i>Edward J. ...</i> 3/10/65		ENGINEER OF DESIGN		
<i>Robert J. ...</i> 3/10/65				
REFERENCE DRAWINGS	NO.	DATE	DIST.	

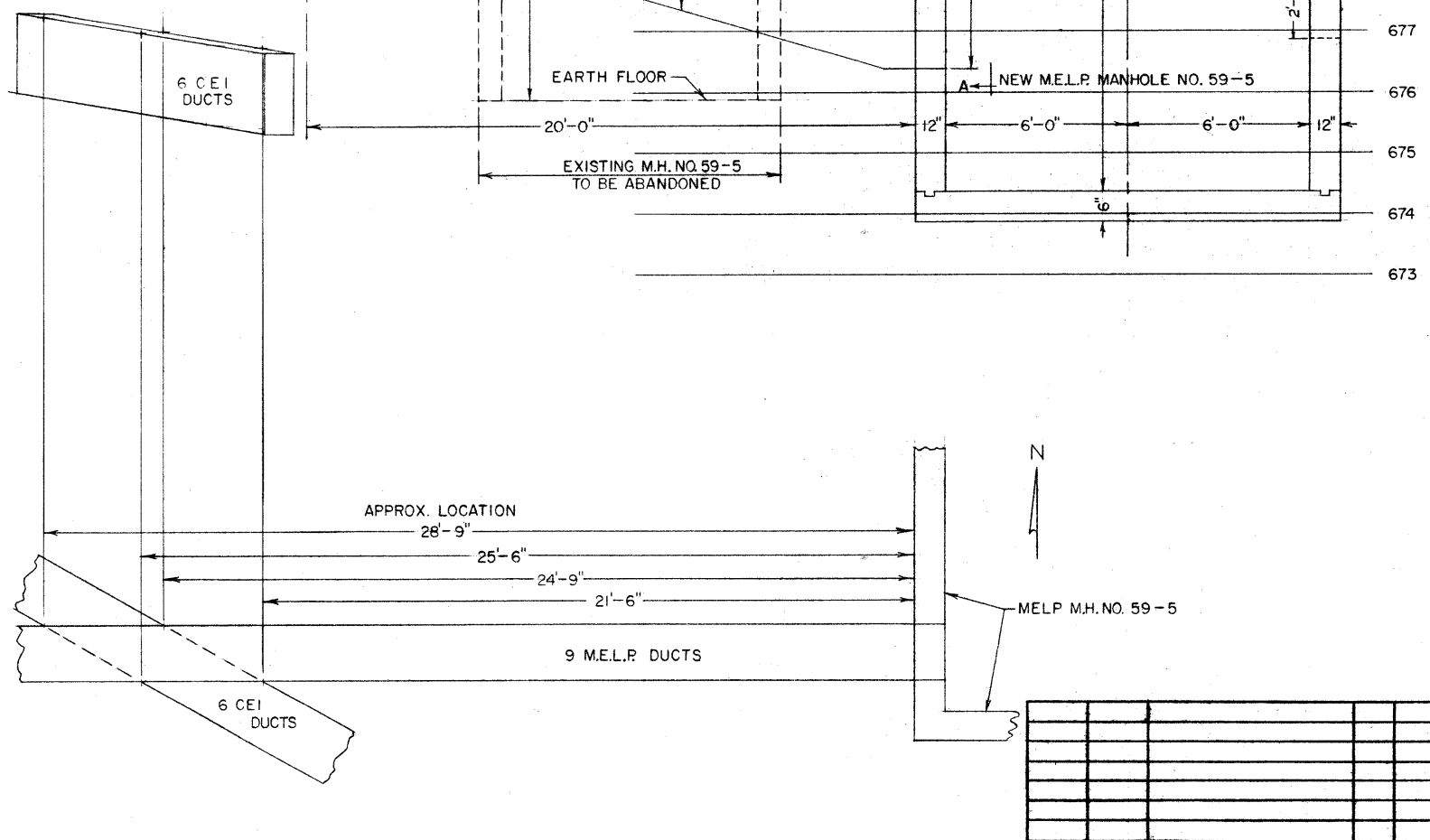
**DIVISION OF LIGHT & POWER
 CITY OF CLEVELAND**

CLARK AVE. DUCT PROFILE FROM
 THE NEW MANHOLE NO. 59-7 TO
 THE LATERAL POLE AT STA. 7+90.7

DRAWN BY: N.A.E. AS SHOWN
 DATE: 2-9-65
 DRAWING NUMBER: 5257-2D



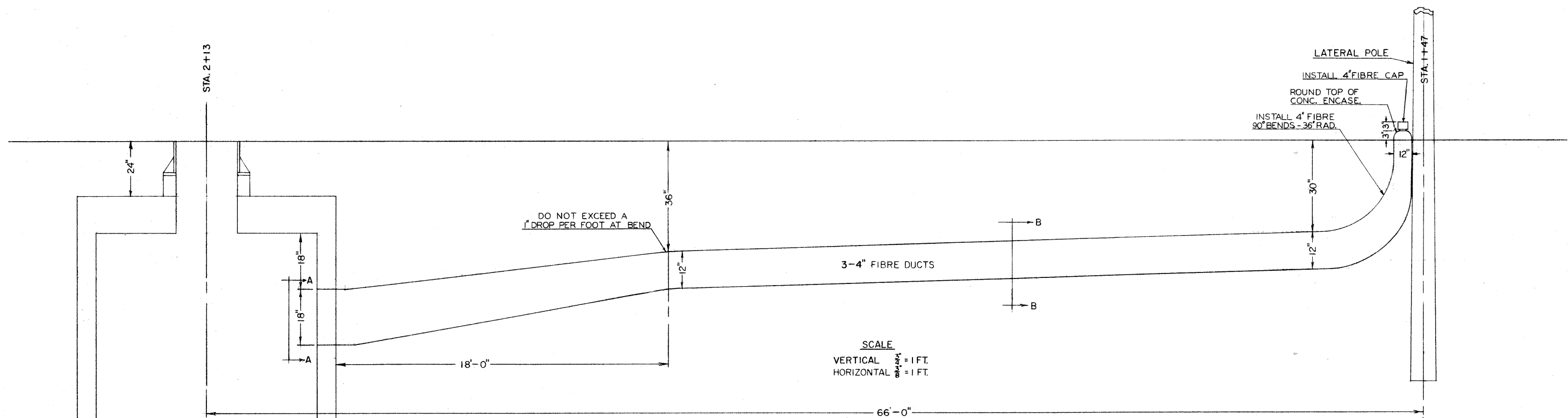
CROSS SECTIONAL DETAIL OF THE 30 FT. SECTIONS OF REINFORCED CONCRETE DUCT AT THE EAST & WEST ABUTMENTS.
 SCALE - 2" = 1 FT.



REVISION	DATE	DESCRIPTION	BY	APP'D

APPROVED BY		DIRECTOR OF PUBLIC UTILITIES
<i>Wm. M. ...</i>	3/10/65	
<i>John A. ...</i>	3/10/65	
<i>Arnold ...</i>	3/9/65	
<i>Edward J. ...</i>	3/9/65	
<i>Robert J. ...</i>	3/9/65	
		COMMISSIONER OF LIGHT & POWER
		COMMISSIONER OF UTILITIES ENG.
		CHIEF ELECTRICAL ENGINEER
		ENGINEER OF DESIGN

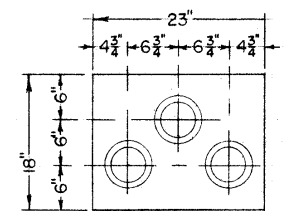
DIVISION OF LIGHT & POWER		DRAWING NUMBER
CITY OF CLEVELAND		5257-2E
CLARK AVE. BRIDGE DUCT PROFILE FROM THE EAST ABUTMENT EAST TO THE NEW MANHOLE NO. 59-5 AT STATION 2+13		
DRAWN BY: N.A.E.	SCALE AS SHOWN	
DATE: 2-10-65		



NEW M.E.L.P. MANHOLE NO. 59-5

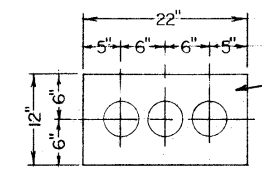
DO NOT EXCEED A 1" DROP PER FOOT AT BEND

SCALE
 VERTICAL 1" = 1 FT.
 HORIZONTAL 1" = 1 FT.



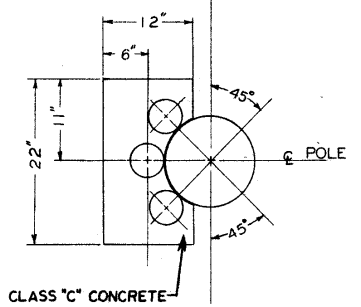
SECTION A-A
 STANDARD END BELLS
 FOR 4" FIBRE DUCT

SECTION SCALE 1" = 1 FT.



SECTION B-B
 4" FIBRE DUCT

CLASS "C" CONCRETE



DUCT FORMATION
 AT LAT. POLE
 SCALE 1" = 1 FT.

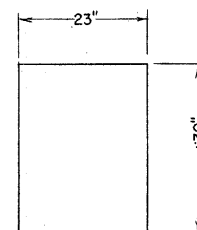
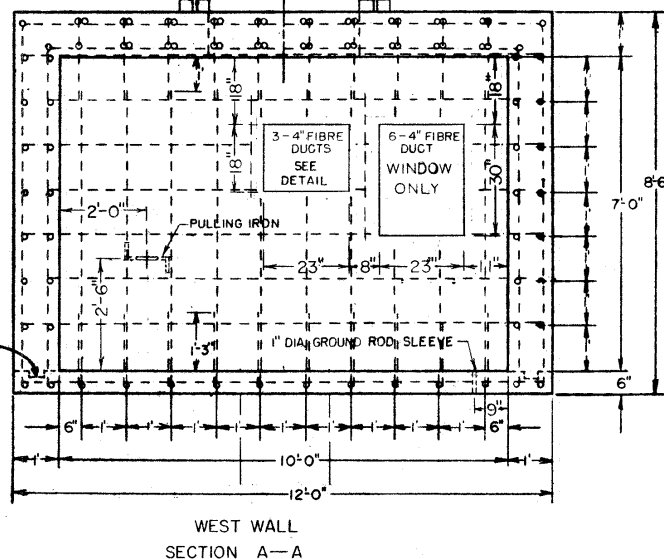
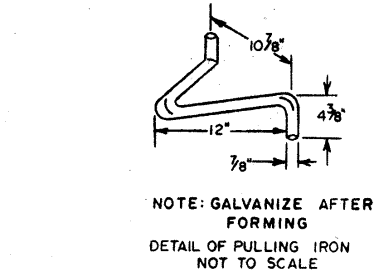
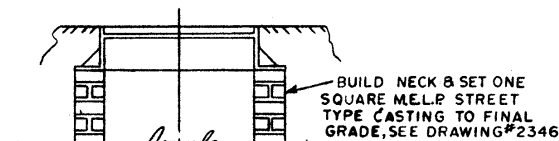
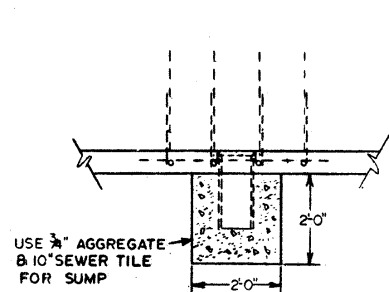
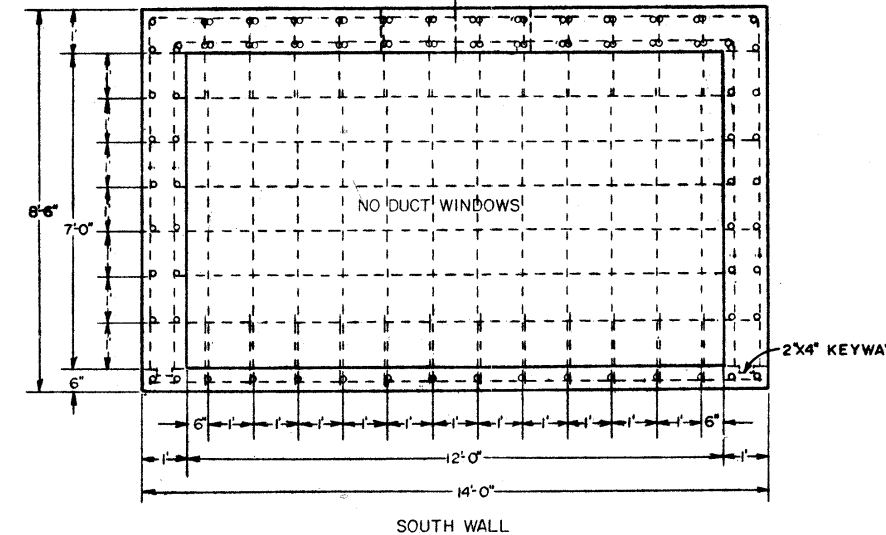
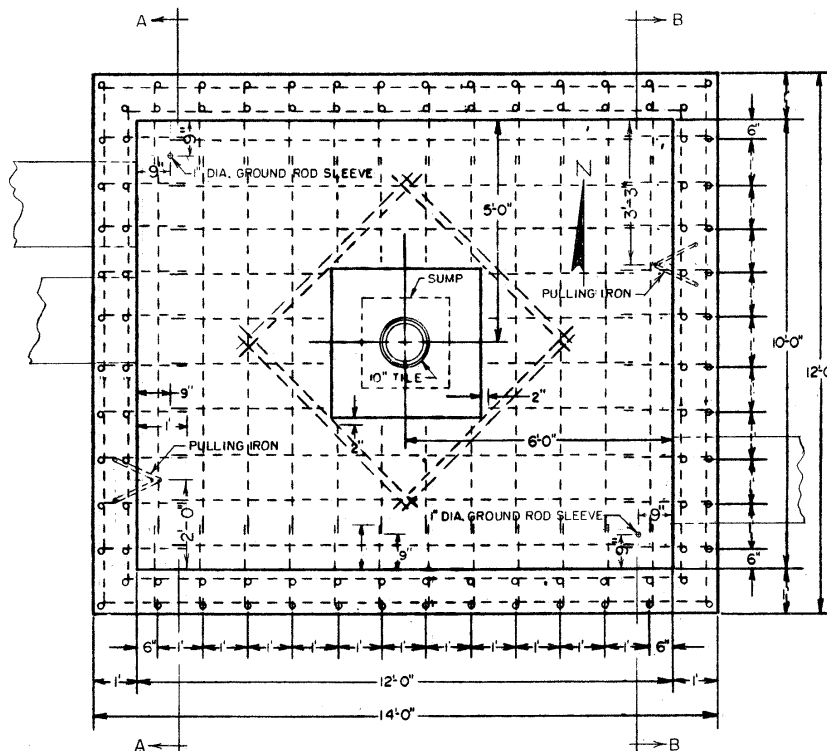
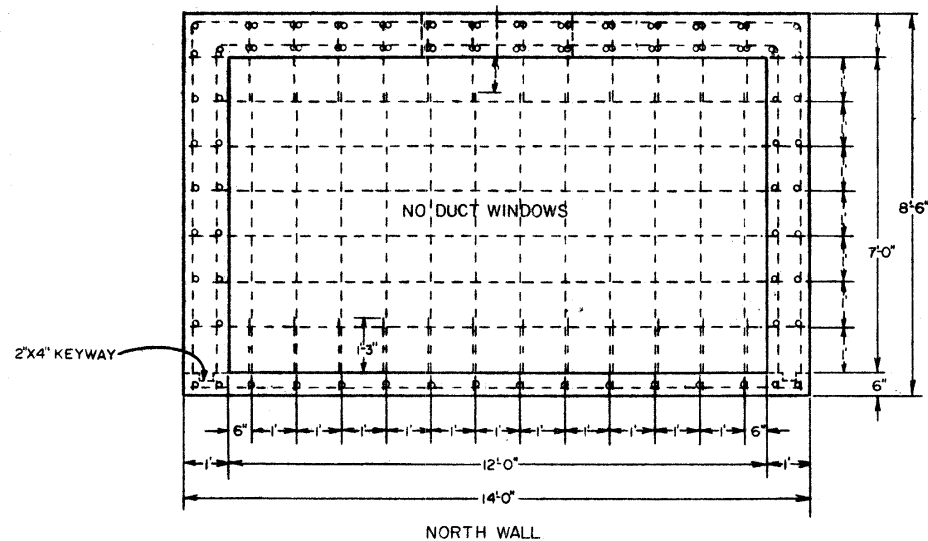
REVISION	DATE	DESCRIPTION	BY	APP'VD

APPROVED BY <i>Wm. J. ...</i> 2/10/65 <i>John A. ...</i> 3/10/65 <i>Arnold ...</i> 3/9/65 <i>Edward G. ...</i> 3/9/65 <i>Robert J. ...</i> 3/9/65		DIRECTOR OF PUBLIC UTILITIES COMMISSIONER OF LIGHT & POWER COMMISSIONER OF UTILITIES ENGR. CHIEF ELECTRICAL ENGINEER ENGINEER OF DESIGN	DIVISION OF LIGHT & POWER CITY OF CLEVELAND CLARK AVE. DUCT PROFILE FROM THE NEW MANHOLE NO. 59-5 TO THE LATERAL POLE AT STATION 1+47	DRAWN BY: N.A.E. CH'K'D BY: R.H.A. SCALE AS SHOWN DATE 2-10-65 DRAWING NUMBER 5257-2F
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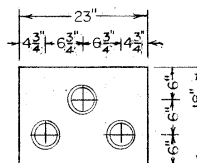
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

485

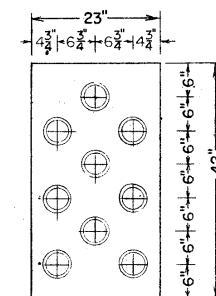
CUYAHOGA COUNTY
 CUY-71-18.54
 CUY-90-13.81



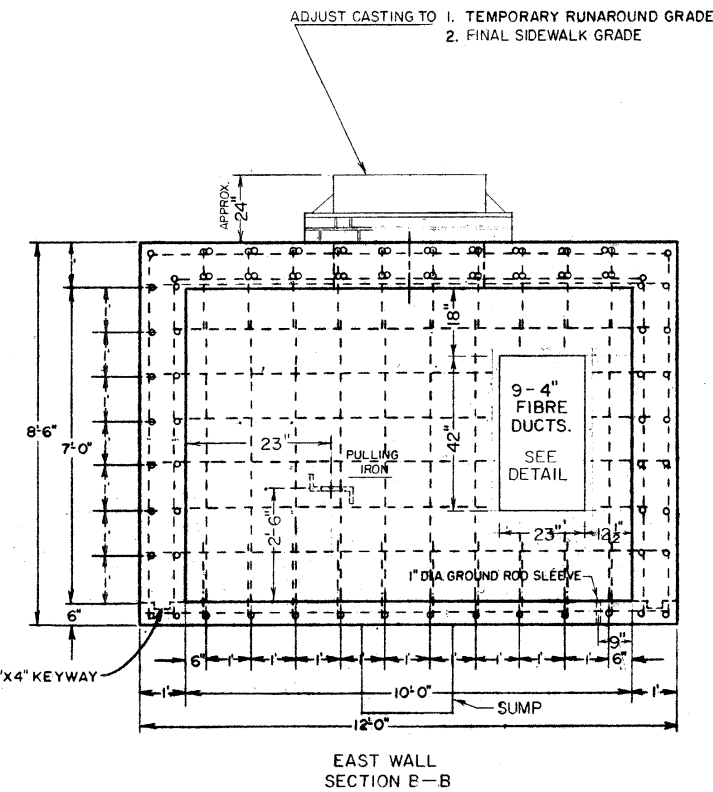
CONTRACTOR TO INSTALL DUCT WINDOW OPENING FOR 6-4" DUCTS TO BE INSTALLED BY M.E.L.P. IN WEST WALL



END BELL CONFORMATION 3-4 FIBRE DUCTS IN WEST WALL



END BELL CONFORMATION 9-4" FIBRE DUCTS IN EAST WALL



ADJUST CASTING TO 1. TEMPORARY RUNAROUND GRADE
 2. FINAL SIDEWALK GRADE

NOTE

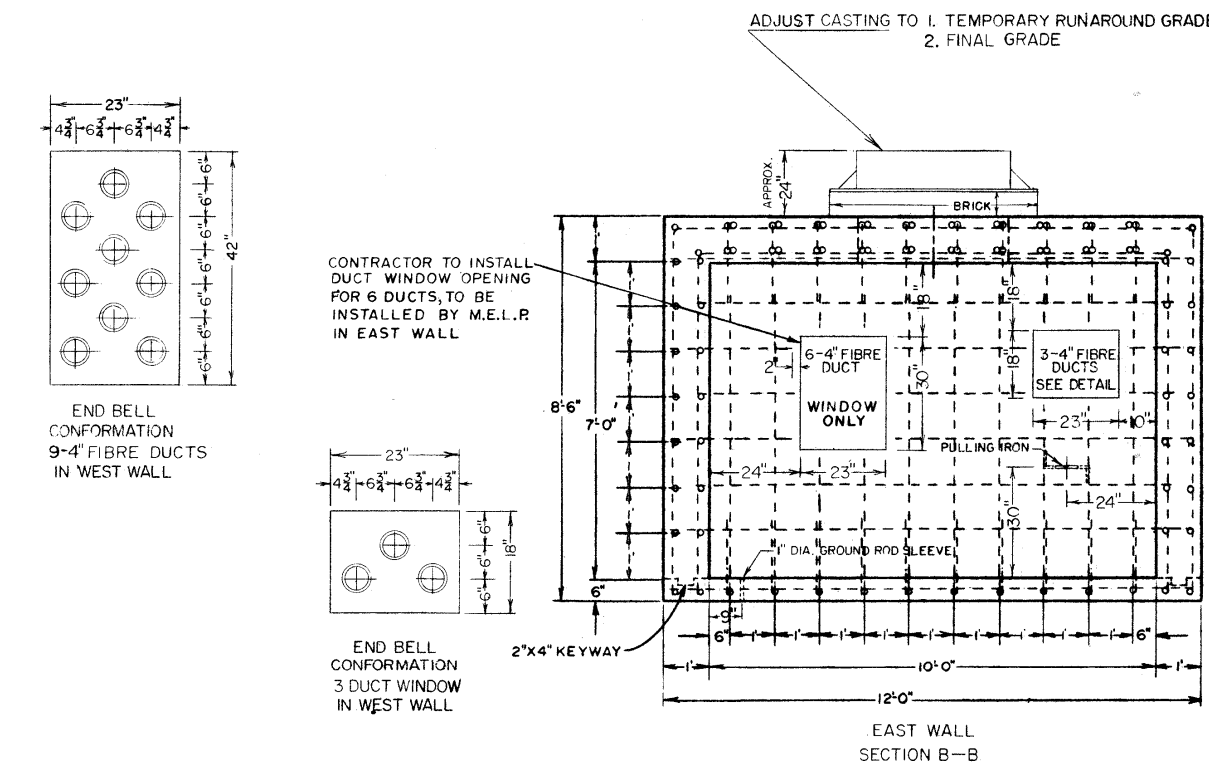
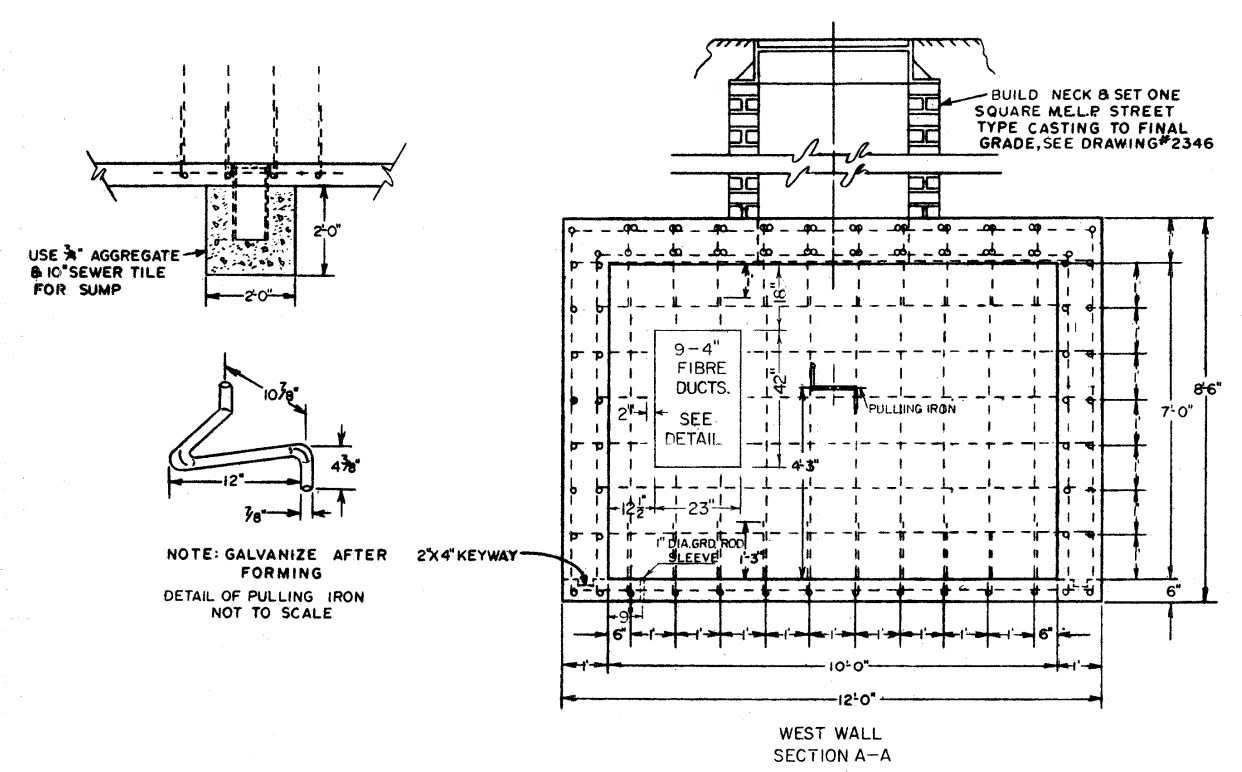
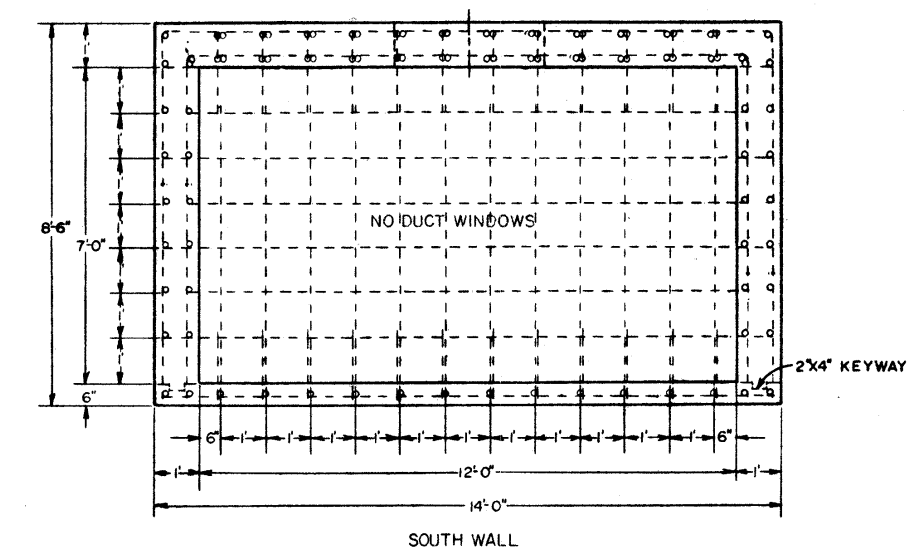
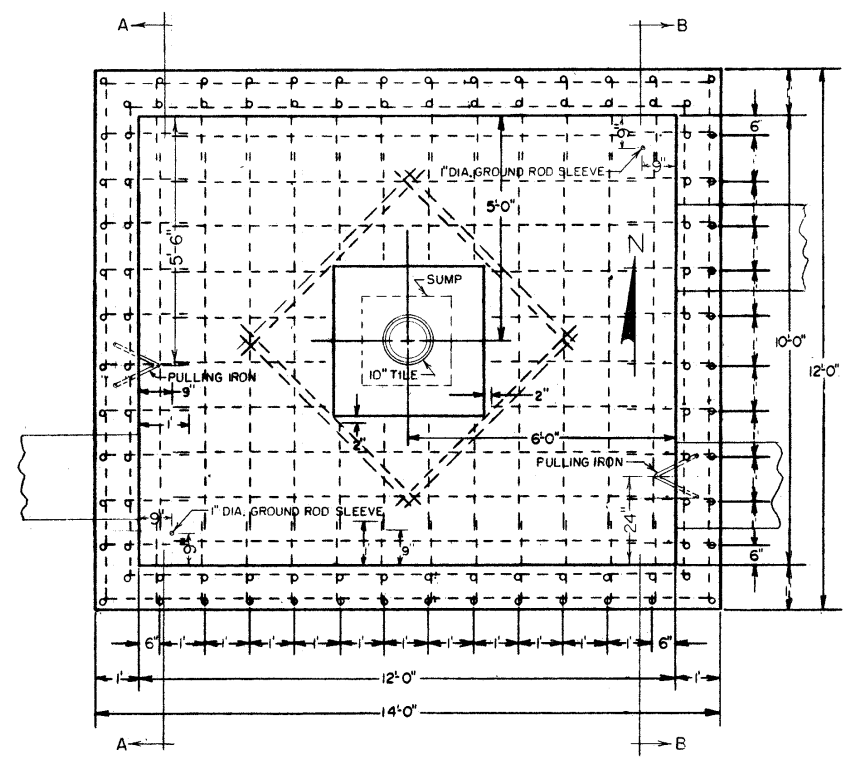
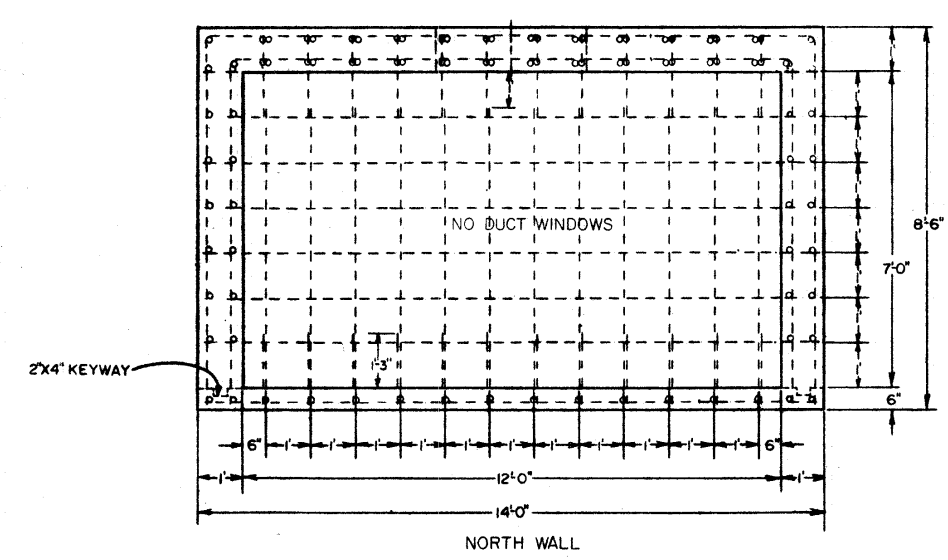
- CLEARANCE OF 2" FROM ROD TO FACE OF WALL, INSIDE & OUTSIDE
- INSTALL PULLING IRONS OPPOSITE DUCTS ENTERING MANHOLE
- DO NOT PLACE RODS BETWEEN DUCTS
- LOCATE (1) 2'x2'x2' SLAG SUMP (10' SEWER TILE) UNDER M.H. ROOF OPENING. SLOPE FLOOR TOWARDS SUMP
- ALL STEEL #6 REINFORCING BARS
- ALL STEEL SHALL CONFORM TO A.S.T.M. SPEC'S & SHALL BE FABRICATED AS SHOWN F₂₀ 20,000 R.S.I.
- CONCRETE CLASS 'C', 4,000 R.S.I.

REVISION	DATE	DESCRIPTION	BY	APP'VD

APPROVED BY	
<i>James G. Smith</i> 3/16/65	DIRECTOR OF PUBLIC UTILITIES
<i>John A. Smith</i> 3/16/65	COMMISSIONER OF LIGHT & POWER
<i>Arnold Smith</i> 3/16/65	COMMISSIONER OF UTILITIES ENGR.
<i>Edward J. Namer</i> 3/19/65	CHIEF ELECTRICAL ENGINEER
<i>Robert J. Albach</i> 3/19/65	ENGINEER OF DESIGN

DIVISION OF LIGHT & POWER CITY OF CLEVELAND	
DETAILS OF PROPOSED MANHOLE NO. 59-7 AT WEST END OF CLARK AVE. BRIDGE OVER MEDINA FREEWAY.	
DRAWN BY: N.A.E.	SCALE: 1/2" = 1'
DATE: 2-15-65	DRAWING NUMBER: 5257-2G

REFERENCE DRAWINGS NO. DATE DIST.



ADJUST CASTING TO 1. TEMPORARY RUNAROUND GRADE
 2. FINAL GRADE

- NOTE**
- CLEARANCE OF 2" FROM ROD TO FACE OF WALL, INSIDE & OUTSIDE
 - INSTALL PULLING IRONS OPPOSITE DUCTS ENTERING MANHOLE
 - DO NOT PLACE RODS BETWEEN DUCTS
 - LOCATE (1) 2'X2'X2' SLAG SUMP (10' SEWER TILE) UNDER M.H. ROOF OPENING. SLOPE FLOOR TOWARDS SUMP
 - ALL STEEL #6 REINFORCING BARS
 - ALL STEEL SHALL CONFORM TO A.S.T.M. SPEC'S & SHALL BE FABRICATED AS SHOWN F₅ 20,000 R.S.I.
 - CONCRETE CLASS 'C', 4,000 R.S.I.

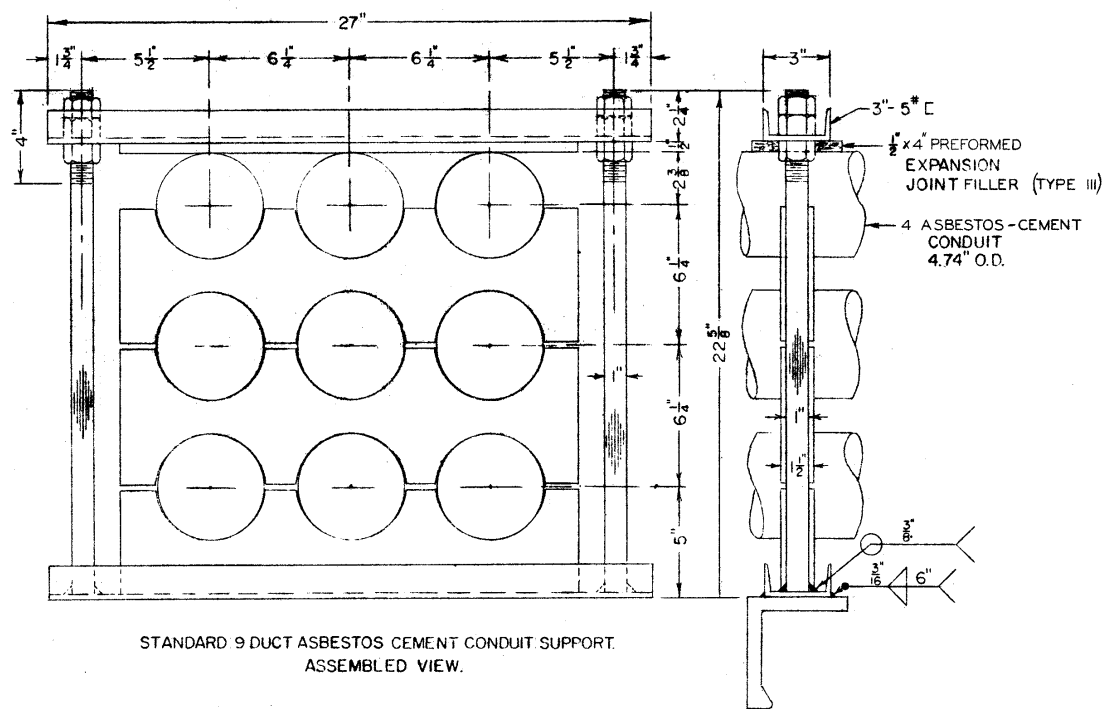
APPROVED BY					
<i>James J. Smith</i>	3/10/65	DIRECTOR OF PUBLIC UTILITIES			
<i>John A. Baker</i>	3/11/65	COMMISSIONER OF LIGHT & POWER			
<i>Arnold J. Mitchell</i>	3/11/65	COMMISSIONER OF UTILITIES ENGR.			
<i>Edward J. Reamer</i>	3/19/65	CHIEF ELECTRICAL ENGINEER			
<i>Robert J. Albrecht</i>	3/19/65	ENGINEER OF DESIGN			

DIVISION OF LIGHT & POWER CITY OF CLEVELAND			
DETAILS OF PROPOSED MANHOLE NO. 59-5 AT EAST END OF CLARK AVE. BRIDGE OVER MEDINA FREEWAY.			
DRAWN BY: N.A.E.	SCALE: 1/2" = 1'	DRAWING NUMBER: 5257-2H	
CH'K'D BY: R.J.A.	DATE: 2-16-65	NO.	DATE DIST.

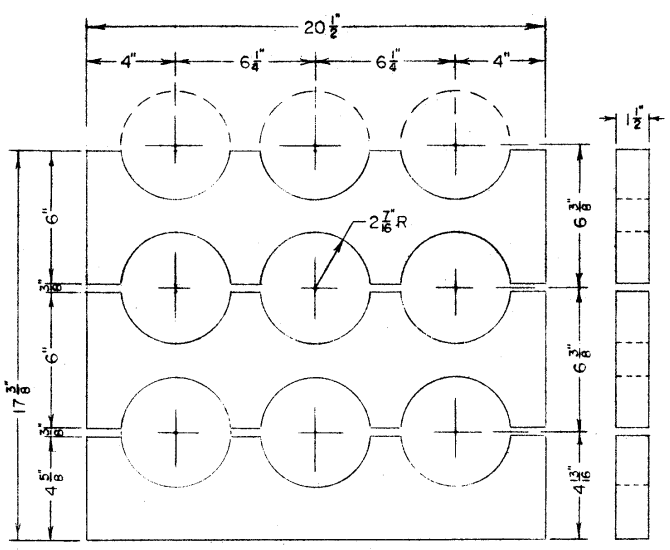
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

487

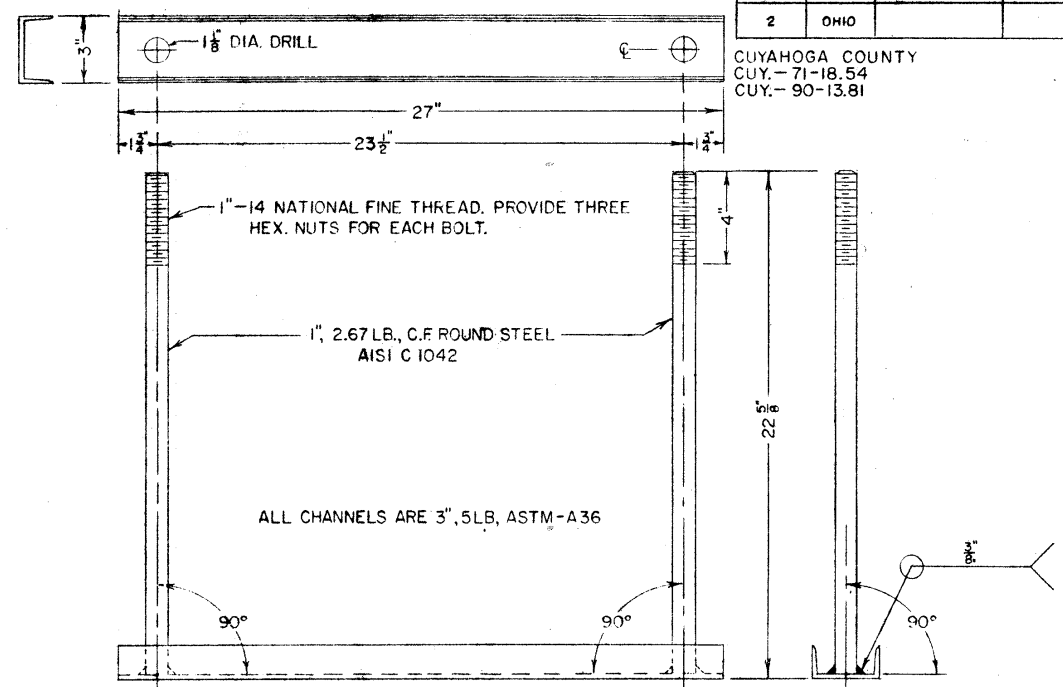
CUYAHOGA COUNTY
 CUY. - 71-18.54
 CUY. - 90-13.81



STANDARD 9 DUCT ASBESTOS CEMENT CONDUIT SUPPORT.
 ASSEMBLED VIEW.



ASBESTOS CEMENT 9 DUCT SUPPORT DRILLING DETAIL.
 ONE SET REQUIRED AS SHOWN FOR EACH SUPPORT.
 DRILL OR BORE ONLY FOR SQUARE SMOOTH DUCT SADDLE.



STEEL DETAIL FOR ASBESTOS CEMENT 9 DUCT SUPPORT.
 PAINT AS PER SPECIFICATIONS.

REVISION	DATE	DESCRIPTION	BY	APP'D.

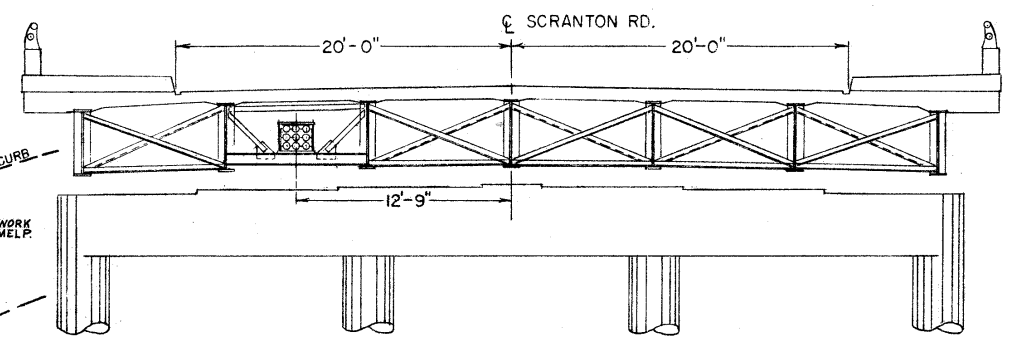
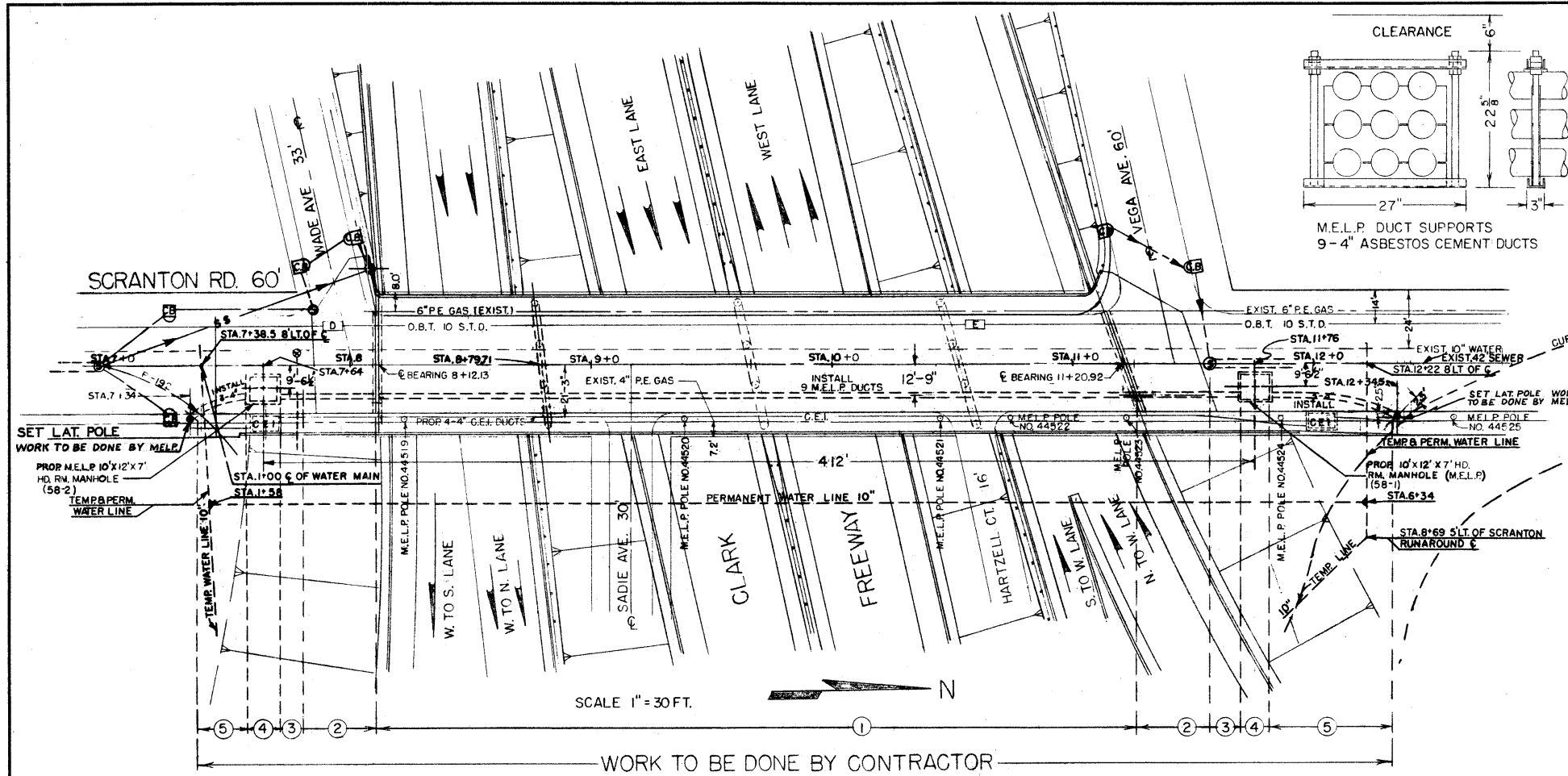
APPROVED BY					
<i>Wm. J. ...</i>	DIRECTOR OF PUBLIC UTILITIES				
<i>...</i>	COMMISSIONER OF LIGHT & POWER				
<i>Arnold ...</i>	COMMISSIONER OF UTILITIES ENGINEERING				
<i>Edward J. ...</i>	CHIEF ELECTRICAL ENGINEER				
<i>Robert J. ...</i>	ENGINEER OF DESIGN.				

**DIVISION OF LIGHT & POWER
 CITY OF CLEVELAND**

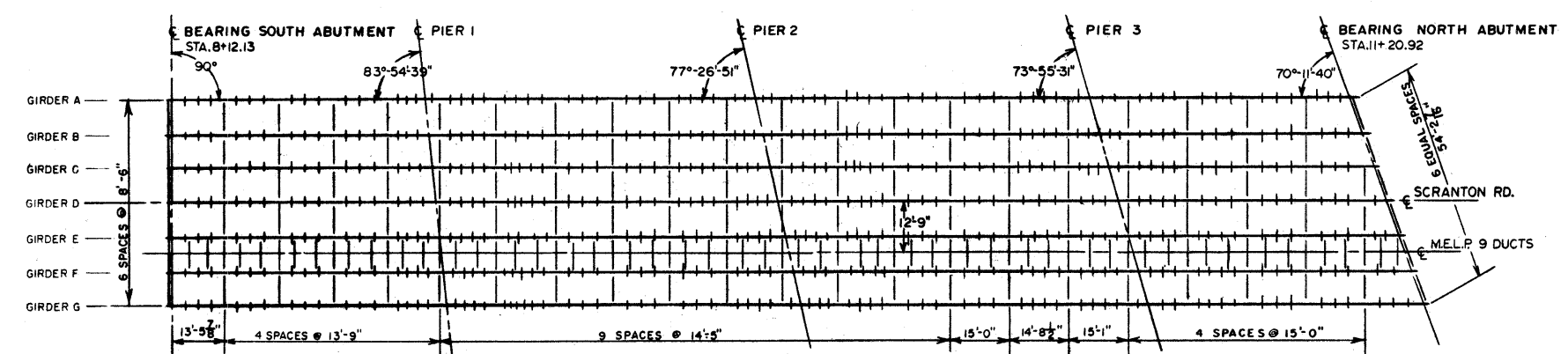
DETAIL OF M&P DUCT SUPPORTS ON
 CLARK AVE BRIDGE OVER MEDINA FREEWAY.

DRAWN BY... N.A.E.	SCALE... 3" = 1 FT.	DRAWING NUMBER
CH'K'D BY... R.J.A.	DATE... 2-18-65	5257-2J

REFERENCE DRAWINGS NO. DATE DIST.



NOTES: M.E.L.P. DUCT SUPPORTS ARE TO BE ON 5'0" MAX. SPACING ACROSS THE BRIDGE.



FRAMING PLAN SHOWING M.E.L.P. DUCTLINE SUPPORTS
SCALE 1" = 20'

M.E.L.P. ELECTRICAL POWER CONDUIT LINE INSTALLATION BY CONTRACTOR

ESTIMATED QUANTITIES				
NO.	ITEM	DESCRIPTION	UNIT	QUAN.
1	SPECIAL	NON-ENCASED, BRIDGE SUPPORTED, 9-4" ASBESTOS CEMENT CONDUIT BANK (COMPLETE) AS PER PLAN	LIN. FT.	316
2	SPECIAL	REINFORCED, CONCRETE ENCASED, 9-4" ASBESTOS CEMENT CONDUIT BANK (COMPLETE) AS PER PLAN	LIN. FT.	60'
3	SPECIAL	NON-REINFORCED, CONCRETE ENCASED, 9-4" FIBRE CONDUIT BANK (COMPLETE) AS PER PLAN	LIN. FT.	24'
4	SPECIAL	REINFORCED CONCRETE MANHOLE (10'X12'X7' HEADROOM) (COMPLETE) AS PER PLAN	EACH	2
5	SPECIAL	NON-REINFORCED, CONCRETE ENCASED, 3-4" FIBRE CONDUIT BANK (COMPLETE) AS PER PLAN	LIN. FT.	76'

* Carried to Bridge Summary Sheet 364A.

APPROVED BY		5257-3B BRIDGE & ABUTMENT DUCT DETAILS
<i>Grandmuth</i> 3/16/65	DIRECTOR OF PUBLIC UTILITIES	5257-3C MANHOLE & DUCTLINE PROFILES
<i>John A. Jankov</i> 3/16/65	COMMISSIONER OF LIGHT & POWER	5257-3D MANHOLE DETAILS
<i>Arnold V. Kimmel</i> 3/9/65	COMMISSIONER UTILITIES ENGR.	5257-3E MANHOLE DETAILS
<i>Edward J. Kramer</i> 3/12/65	CHIEF ELECTRICAL ENGINEER	5257-3F DUCT SUPPORT DETAILS
<i>Robert J. Albach</i> 3/2/65	ENGINEER OF DESIGN	5257-5A, 5B, 5C ELECTRICAL NOTES
		2346 MANHOLE FRAME & COVER
		REFERENCE DRAWINGS

DRAWN BY: N.A.E.	SCALE: 1" = 30 FT.	DRAWING NUMBER: 5257-3A
CH'K'D BY: R.J.A.	DATE: 4-28-64	

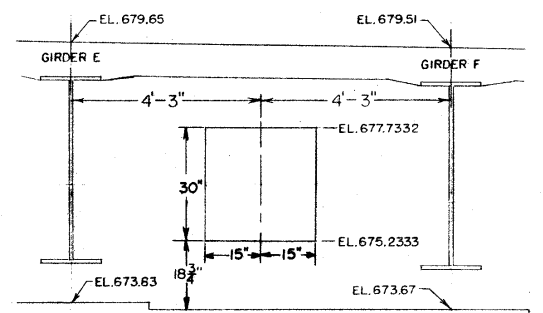
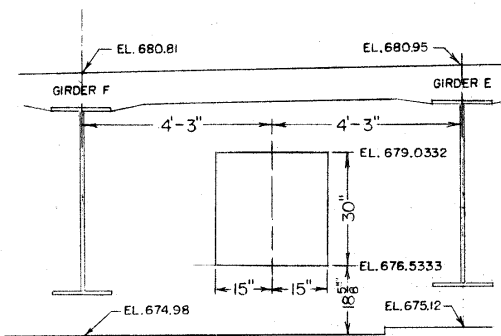
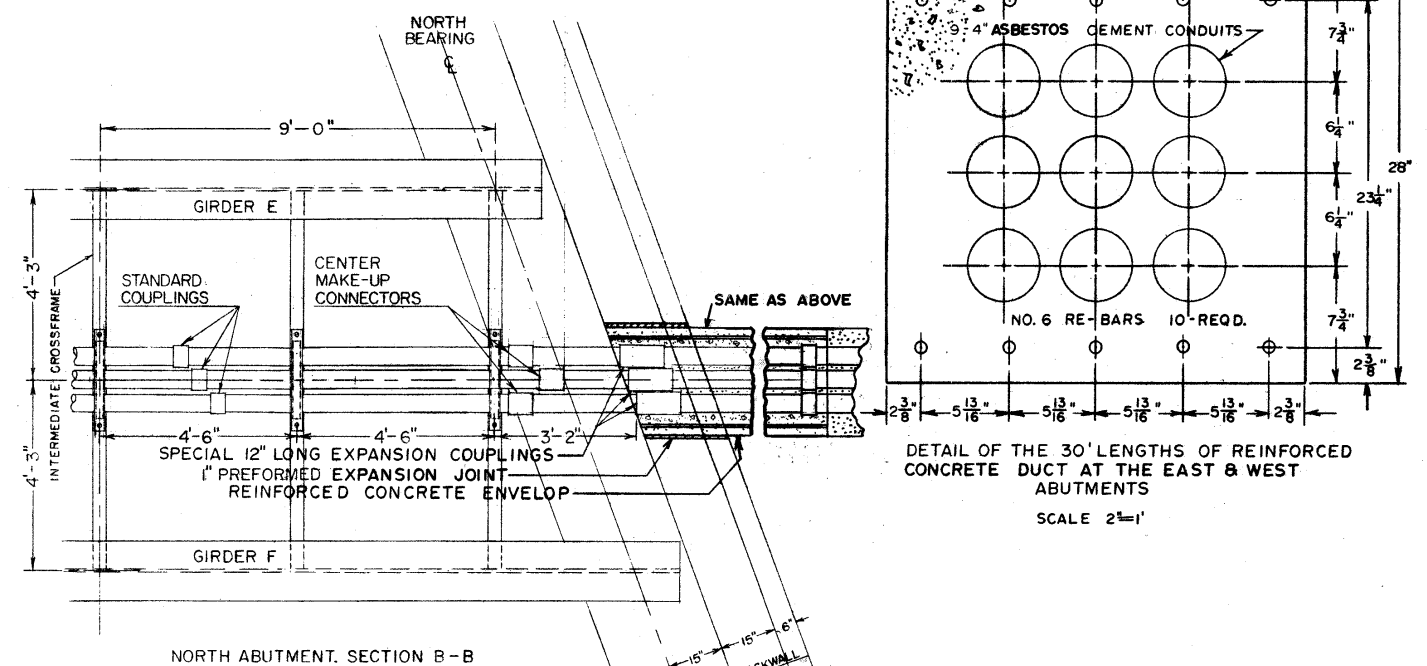
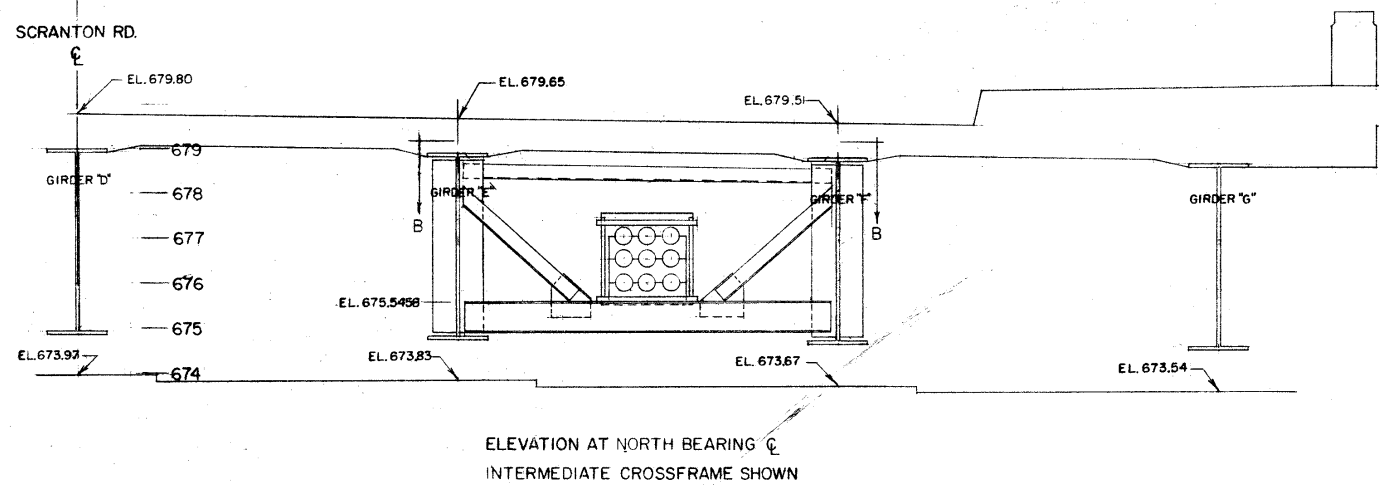
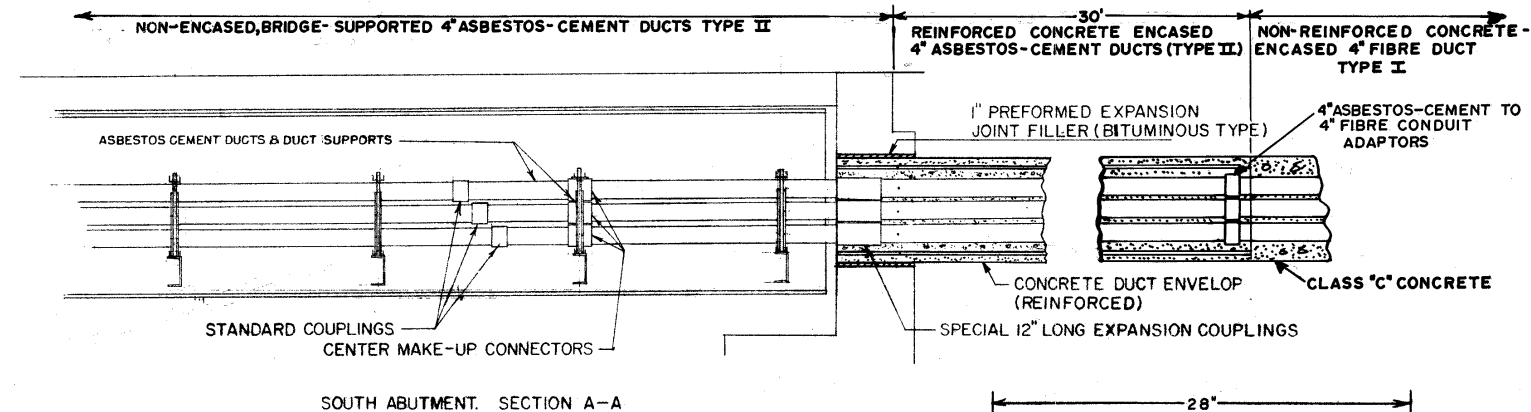
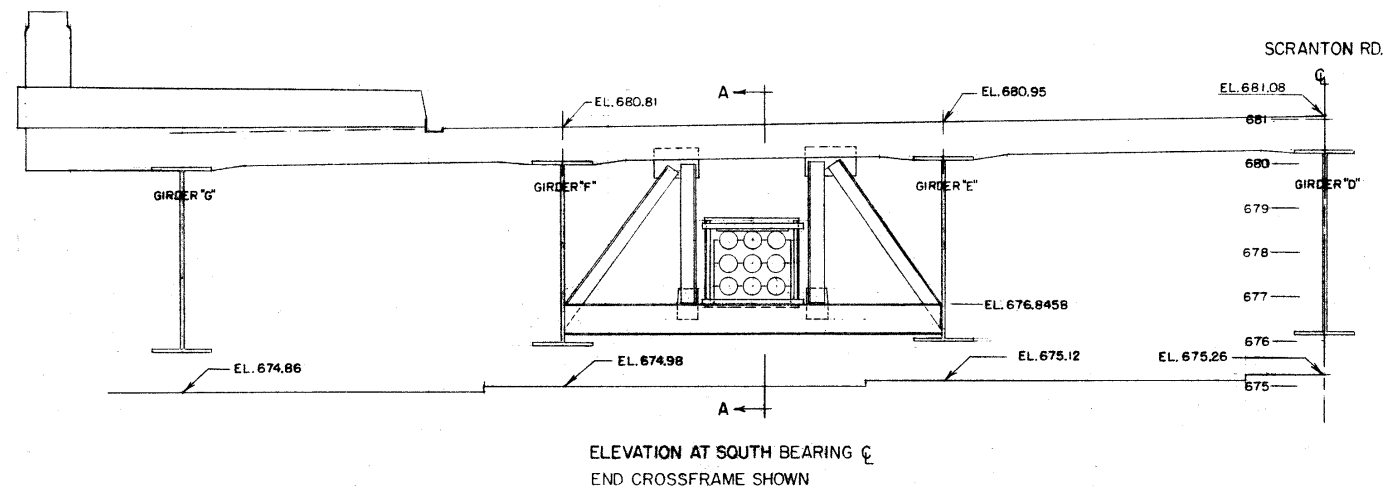
NO.	DATE	DESCRIPTION	BY	APP'D
NO. 3	3-3-65	RELOC. M.H. # 58-2	G.H.	R.J.A.
NO. 2	1-27-65	ADDED TEMP & PERM WATER LINES	S.F.G.	R.J.A.
NO. 1	12-18-64	REVISED STATION MARKS	N.E.	R.J.A.

DIVISION OF LIGHT & POWER
CITY OF CLEVELAND

PROPOSED M.E.L.P. DUCT LOCATION
ON THE SCRANTON RD. BRIDGE
OVER THE CLARK FREEWAY

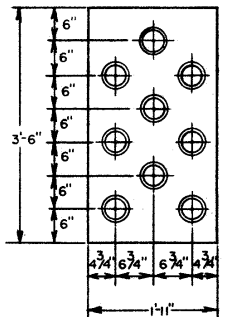
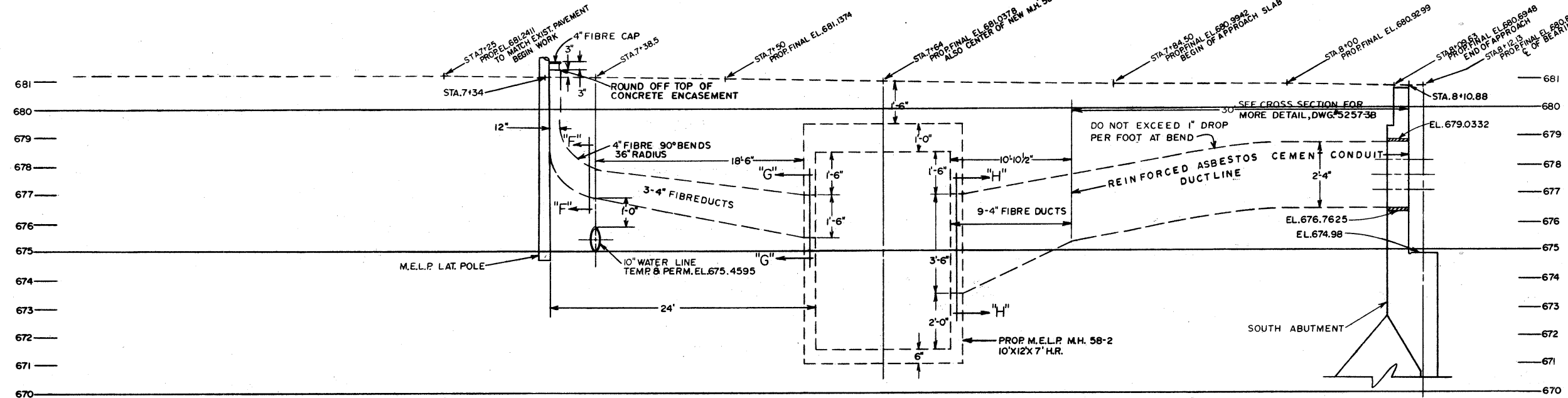
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		489

CUYAHOGA COUNTY
 CUY-7-18.54
 CUY-90-13.81



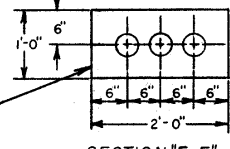
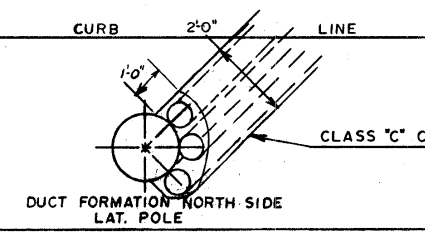
APPROVED BY					
<i>[Signature]</i>	3/10/65	DIRECTOR OF PUBLIC UTILITIES			
<i>[Signature]</i>	3/10/65	COMMISSIONER OF LIGHT & POWER			
<i>[Signature]</i>	3/9/65	COMMISSIONER OF UTILITIES ENGR.			
<i>[Signature]</i>	3/9/65	CHIEF ELECTRICAL ENGINEER			
<i>[Signature]</i>	3/9/65	ENGINEER OF DESIGN			
DIVISION OF LIGHT & POWER CITY OF CLEVELAND		PROPOSED MELP DUCT LOCATIONS AT THE NORTH & SOUTH ABUTMENTS ON THE SCRANTON RD. BRIDGE OVER THE CLARK FRWY.			
NO. 1	3-9-65	ADDED REINFORCED SEC.	S.F.G.	R.L.A.	
REVISION	DATE	DESCRIPTION	BY	APP'D	
DRAWN BY	NAE	SCALE	1" = 1 FT.	DRAWING NUMBER	5257-3B
CHK'D BY	R.L.A.	DATE	12-23-64		

CUYAHOGA COUNTY
 CUY-71-18.54
 CUY-90-13.81

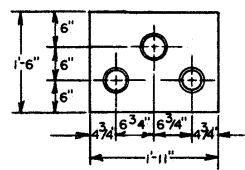


SECTION "H-H"
 SCALE 3/4"=1"

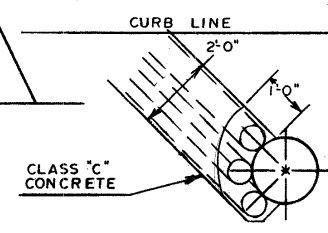
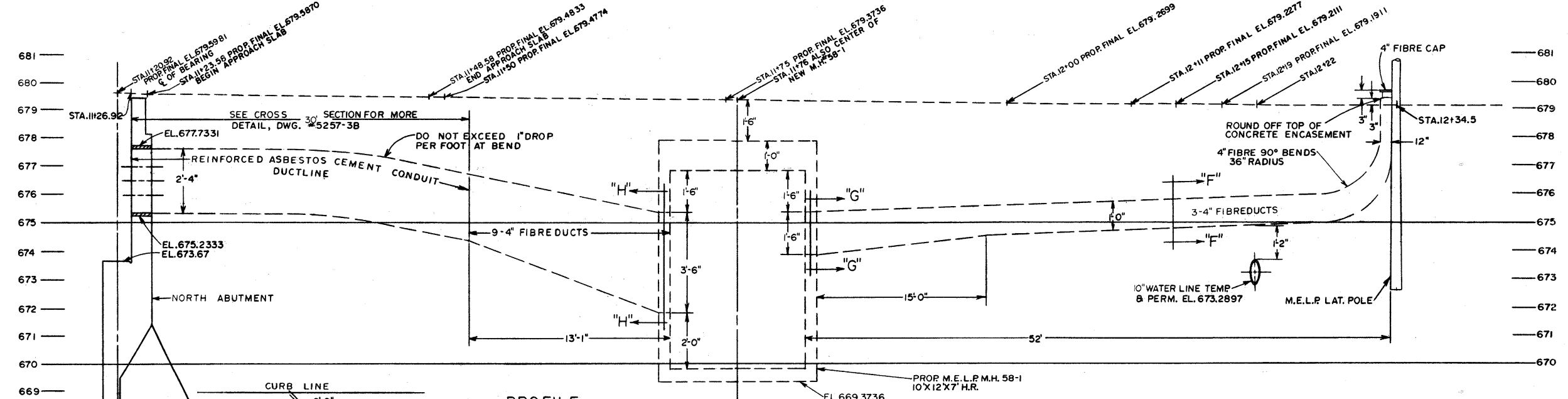
PROFILE
 LOOKING WEST
 SCALE
 VERTICAL 1/2"=1'
 HORIZONTAL 1"=5'



SCALE 3/4"=1'



SCALE 3/4"=1'



DUCT FORMATION SOUTH SIDE
 LAT. POLE

PROFILE
 LOOKING WEST
 SCALE
 1/2"=1' VERTICAL
 1"=5' HORIZONTAL

NO. 2	3-4-65	REDRAWN	S.F.G. RJA
NO. 1	2-20-65	REINFORCED DUCTLINE	S.F.G. RJA
REVISION	DATE	DESCRIPTION	BY

APPROVED BY			
<i>James M. Kelly</i>	3/10/65	DIRECTOR OF PUBLIC UTILITIES	
<i>John J. Johnson</i>	3/10/65	COMMISSIONER OF LIGHT & POWER	
<i>Arnold J. Meele</i>	3/9/65	COMMISSIONER OF UTILITIES ENGR.	
<i>Edward J. Keamer</i>	3/9/65	CHIEF ELECTRICAL ENGINEER	
<i>Robert J. Albert</i>	3/9/65	ENGINEER OF DESIGN	

**DIVISION OF LIGHT & POWER
 CITY OF CLEVELAND**

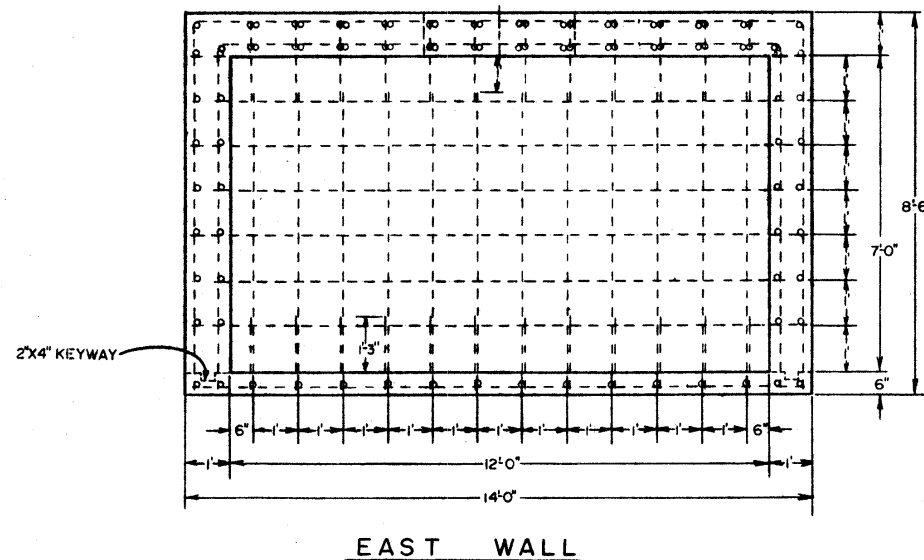
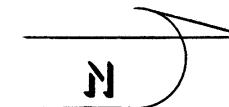
PROFILE OF PROPOSED M.E.L.P. DUCTLINE AT
 NORTH & SOUTH ABUTMENTS ON THE SCRANTON
 RD. BRIDGE OVER CLARK FREEWAY

DRAWN BY: <i>George J. ...</i>	SCALE: AS SHOWN	DRAWING NUMBER: 5257-3C
DATE: 2-2-65		

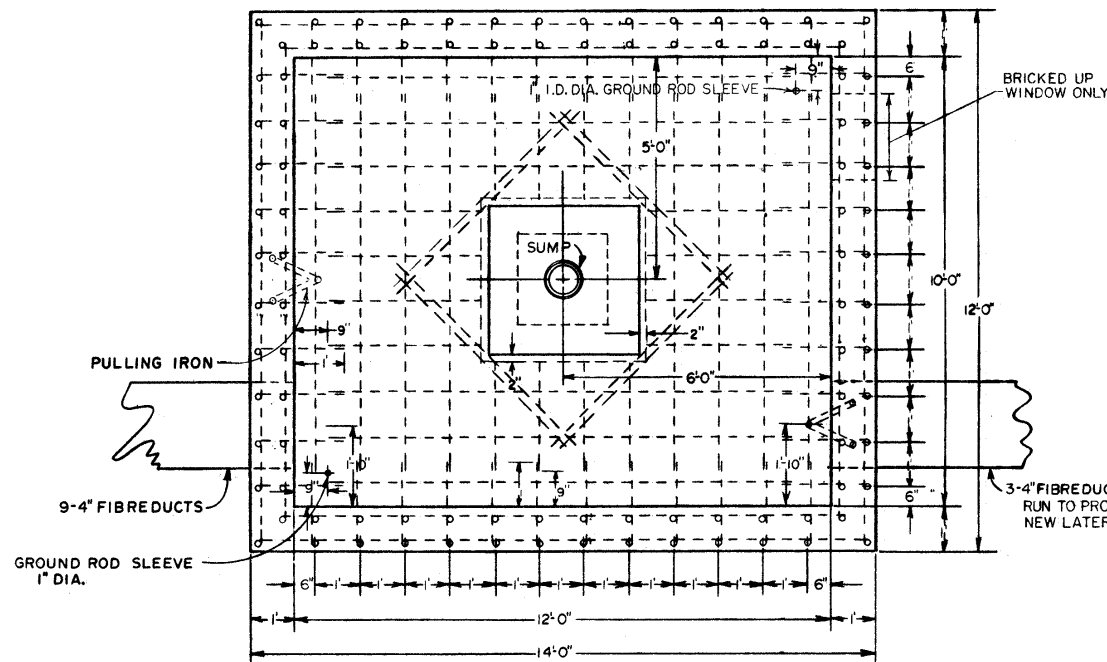
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

49

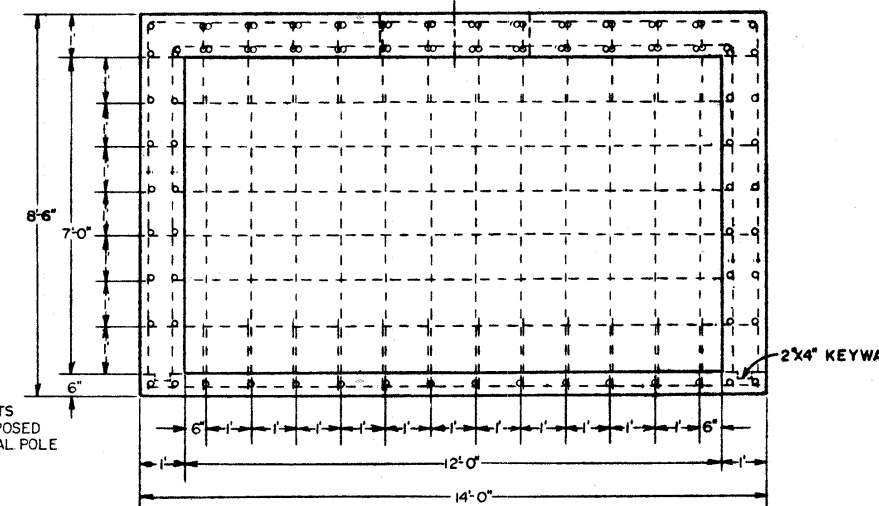
CUYAHOGA COUNTY
CUY-71-18.54
CUY-90-13.81



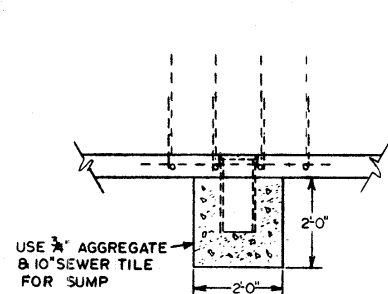
EAST WALL



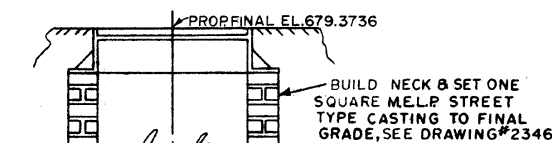
TOP VIEW OF M.H.#58-1



WEST WALL

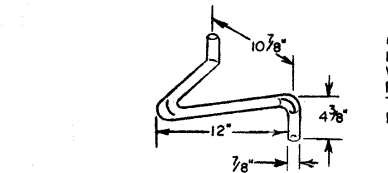


USE 3/4" AGGREGATE & 10" SEWER TILE FOR SUMP



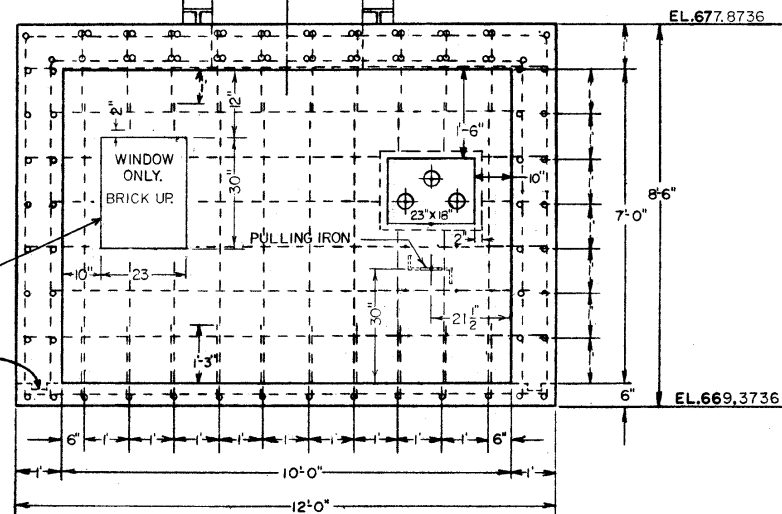
PROFFINAL EL. 679.3736
BUILD NECK & SET ONE SQUARE M.E.L.P. STREET TYPE CASTING TO FINAL GRADE, SEE DRAWING #2346

- NOTE
1. CLEARANCE OF 2" FROM ROD TO FACE OF WALL, INSIDE & OUTSIDE
 2. INSTALL PULLING IRONS OPPOSITE DUCTS ENTERING MANHOLE
 3. DO NOT PLACE RODS BETWEEN DUCTS
 4. LOCATE (1) 2'X2'X2' SLAG SUMP (10" SEWER TILE) UNDER M.H. ROOF OPENING, SLOPE FLOOR TOWARDS SUMP
 5. ALL STEEL #6 REINFORCING BARS
 6. ALL STEEL SHALL CONFORM TO A.S.T.M. SPEC'S & SHALL BE FABRICATED AS SHOWN F_y 20,000 P.S.I.
 7. CONCRETE CLASS "C", 4000 P.S.I.

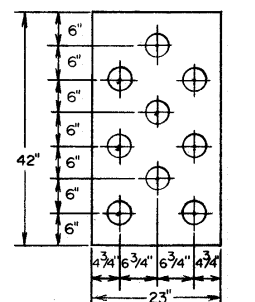


NOTE: GALVANIZE AFTER FORMING
DETAIL OF PULLING IRON NOT TO SCALE

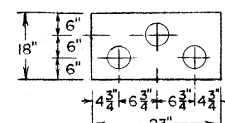
CONTRACTOR TO INSTALL DUCT WINDOW OPENING FOR 6-4" DUCTS TO BE INSTALLED BY MELP.



NORTH WALL

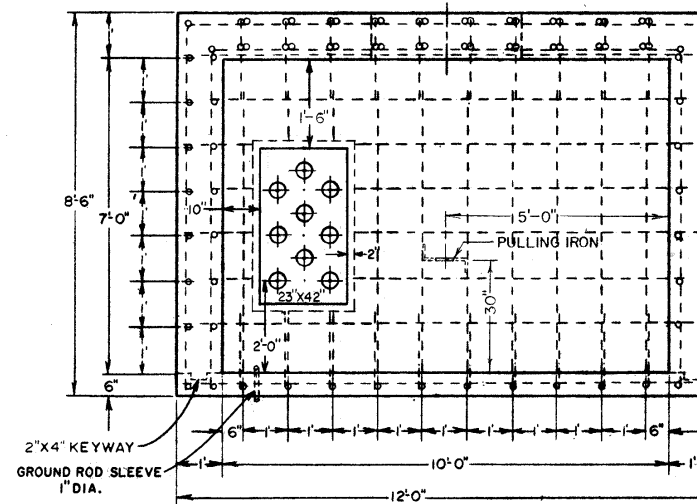


END BELL CONFORMATION 9-4" FIBRE DUCTS IN THE SOUTH WALL



END BELL CONFORMATION 3-4" FIBRE DUCTS IN THE NORTH WALL

SCALE 3/8" = 1 FT.



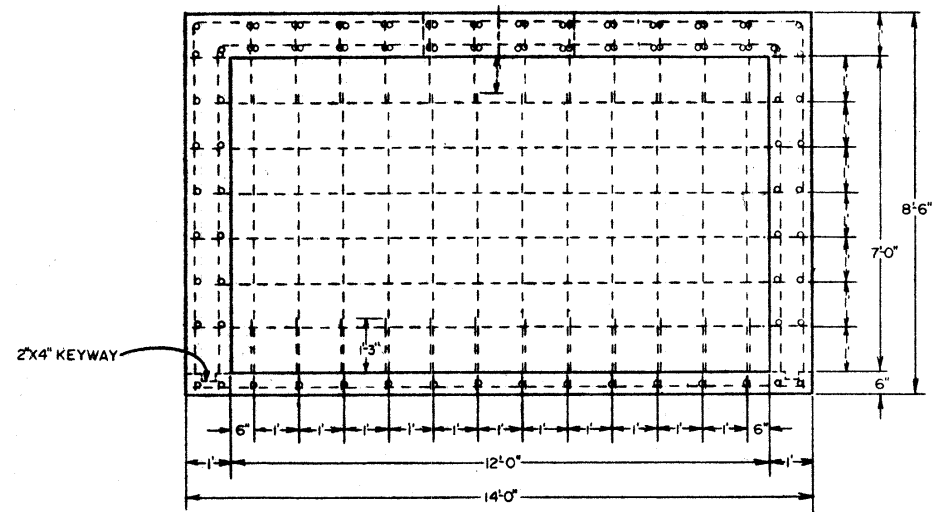
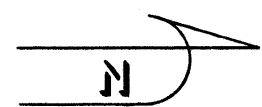
SOUTH WALL

APPROVED BY					
<i>Arnold J. Kramer</i> 3/10/65	DIRECTOR OF PUBLIC UTILITIES				
<i>Robert J. Alford</i> 3/10/65	COMMISSIONER OF LIGHT & POWER				
<i>Arnold J. Kramer</i> 3/9/65	COMMISSIONER OF UTILITIES ENGR.				
<i>Edward J. Kramer</i> 3/9/65	CHIEF ELECTRICAL ENGINEER				
<i>Robert J. Alford</i> 3/9/65	ENGINEER OF DESIGN				
DIVISION OF LIGHT & POWER CITY OF CLEVELAND		PROPOSED DETAIL OF M.E.L.P. M.H.#58-1 NORTH OF ABUTMENT OF SCRANTON RD. BRIDGE OVER CLARK FREEWAY			
DRAWN BY <i>R.A.P.</i>	SCALE 1/2" = 1'	DRAWING NUMBER	5257-3D		
CH'K'D BY <i>R.A.P.</i>	DATE 2-19-65	REFERENCE DRAWINGS	NO.	DATE	DIST.

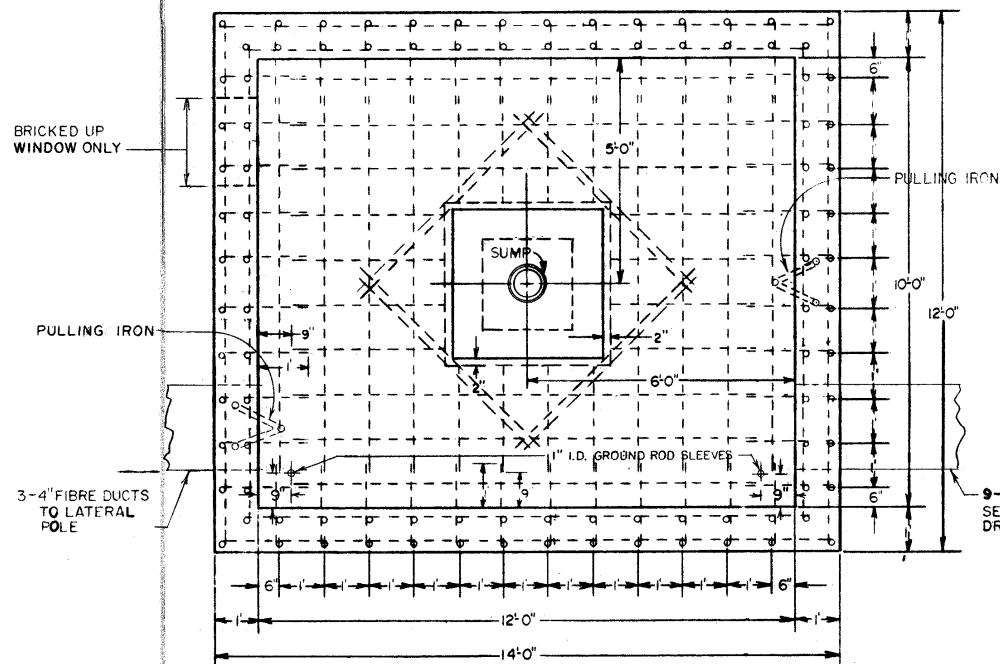
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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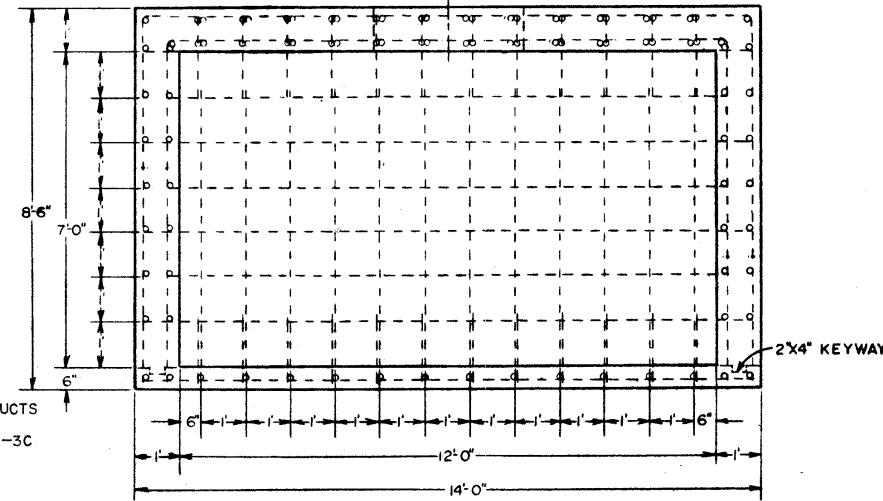
CUYAHOGA COUNTY
CUY-71-18.54
CUY-90-13.81



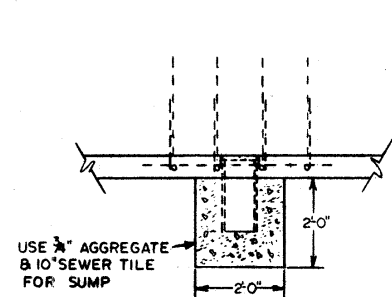
EAST WALL



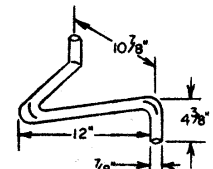
TOP VIEW OF M.H. #58-2



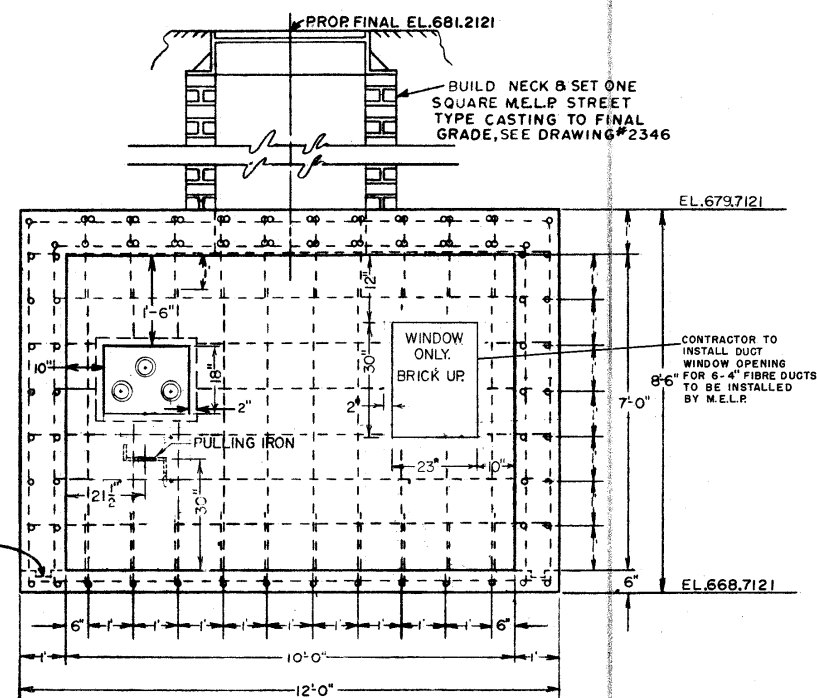
WEST WALL



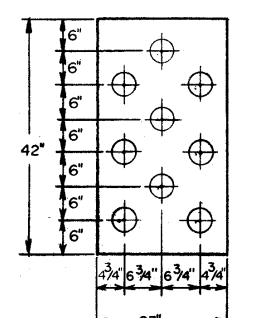
USE 3/4" AGGREGATE & 10" SEWER TILE FOR SUMP



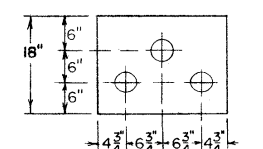
NOTE: GALVANIZE AFTER FORMING
DETAIL OF PULLING IRON NOT TO SCALE



SOUTH WALL

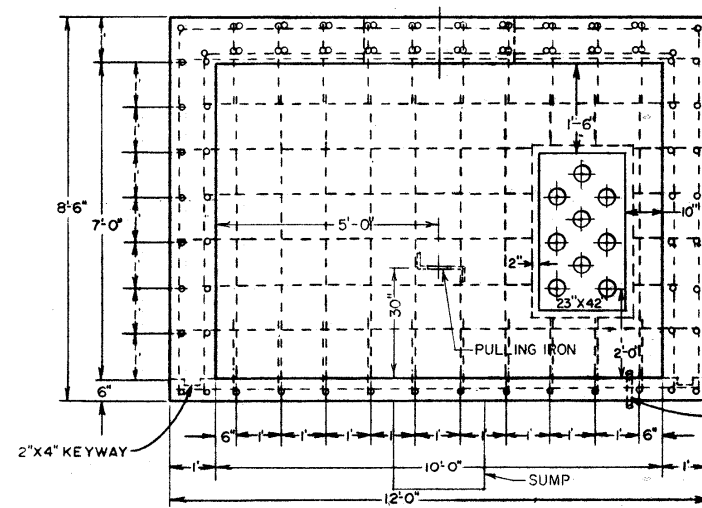


END BELL CONFORMATION 9-4" FIBRE DUCTS IN NORTH WALL



END BELL CONFORMATION 3-4" FIBRE DUCTS IN SOUTH WALL

SCALE 3/4" = 1 FT.



NORTH WALL

NOTE

- CLEARANCE OF 2" FROM ROD TO FACE OF WALL, INSIDE & OUTSIDE
- INSTALL PULLING IRONS OPPOSITE DUCTS ENTERING MANHOLE
- DO NOT PLACE RODS BETWEEN DUCTS
- LOCATE (1) 2'X2'X2' SLAG SUMP (10" SEWER TILE) UNDER M.H. ROOF OPENING, SLOPE FLOOR TOWARDS SUMP
- ALL STEEL #6 REINFORCING BARS
- ALL STEEL SHALL CONFORM TO A.S.T.M. SPEC'S & SHALL BE FABRICATED AS SHOWN F_{20,000} R.S.L.
- CONCRETE CLASS "C" 4,000 R.S.I.

REVISION	DATE	DESCRIPTION	BY	APP'D

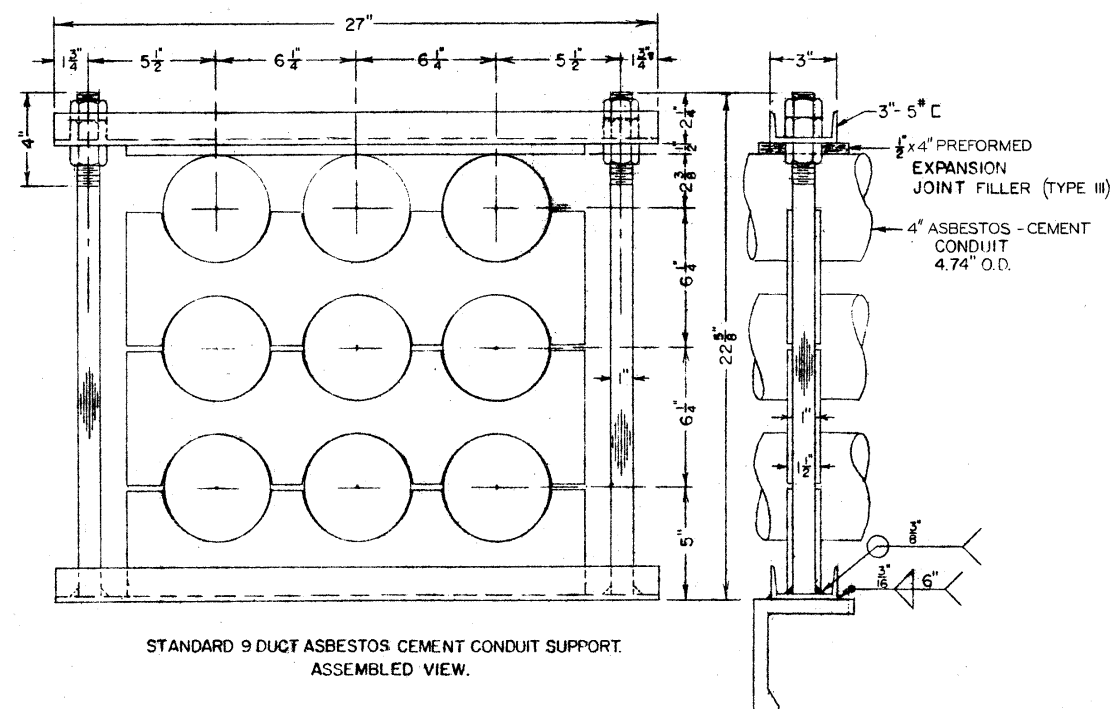
APPROVED BY	
<i>Wm. D. DeWalt</i> 3/10/65	DIRECTOR OF PUBLIC UTILITIES
<i>John D. DeWalt</i> 3/10/65	COMMISSIONER OF LIGHT & POWER
<i>Arnold J. Kramer</i> 3/19/65	COMMISSIONER OF UTILITIES ENGR.
<i>Edward J. Kramer</i> 3/19/65	CHIEF ELECTRICAL ENGINEER
<i>Robert J. Albrecht</i> 3/19/65	ENGINEER OF DESIGN

DIVISION OF LIGHT & POWER
CITY OF CLEVELAND
PROPOSED DETAIL OF M.E.L.P. M.H. #58-2 SOUTH OF ABUTMENT OF SCRANTON RD. BRIDGE OVER CLARK FREEWAY
DRAWN BY *G. G. G. G.* SCALE 1/2" = 1' DRAWING NUMBER 5257-3E
DATE 2-16-65

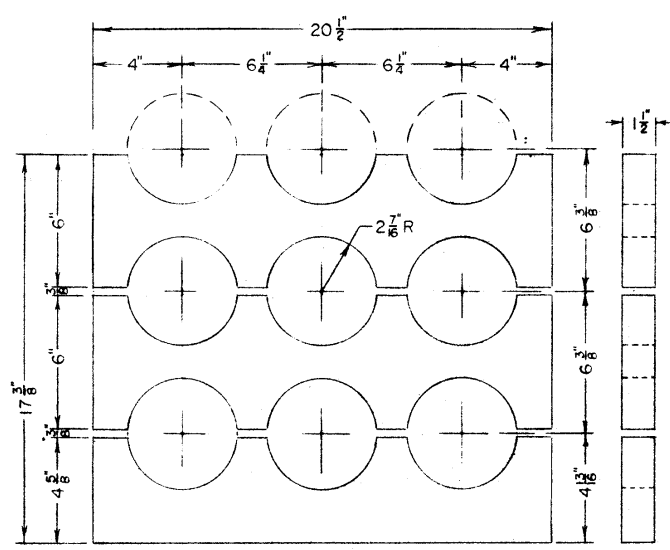
FED. RD. DIVISION	STATE	PROJECT.
2	OHIO	

493

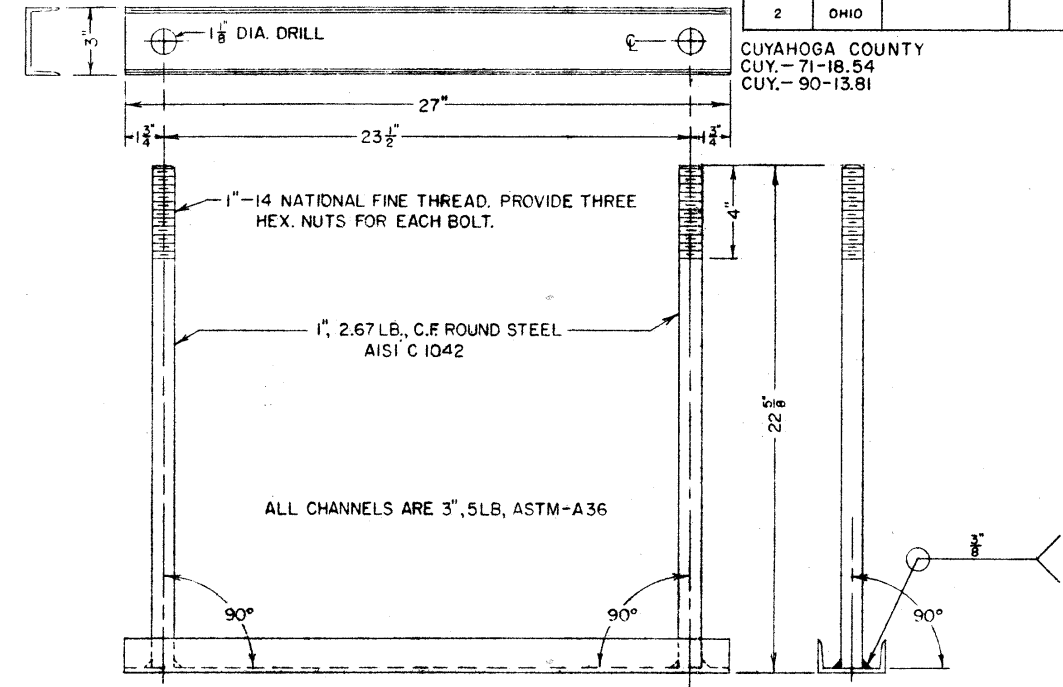
CUYAHOGA COUNTY
 CUY. - 71-18.54
 CUY. - 90-13.81



STANDARD 9 DUCT ASBESTOS CEMENT CONDUIT SUPPORT.
 ASSEMBLED VIEW.



ASBESTOS CEMENT 9 DUCT SUPPORT DRILLING DETAIL.
 ONE SET REQUIRED AS SHOWN FOR EACH SUPPORT.
 DRILL OR BORE ONLY FOR SQUARE SMOOTH DUCT SADDLE.



STEEL DETAIL FOR ASBESTOS CEMENT 9 DUCT SUPPORT.
 PAINT AS PER SPECIFICATIONS.

REVISION	DATE	DESCRIPTION	BY	APP'VE.

APPROVED BY				
<i>James DeWalt</i> 2/10/65	DIRECTOR OF PUBLIC UTILITIES			
<i>John A. Spuff</i> 3/10/65	COMMISSIONER OF LIGHT & POWER			
<i>Arnold Kottel</i> 3/9/65	COMMISSIONER OF UTILITIES ENGINEERING			
<i>Edward J. Kramer</i> 3/9/65	CHIEF ELECTRICAL ENGINEER			
<i>Robert J. Albock</i> 3/9/65	ENGINEER OF DESIGN.			

**DIVISION OF LIGHT & POWER
 CITY OF CLEVELAND**

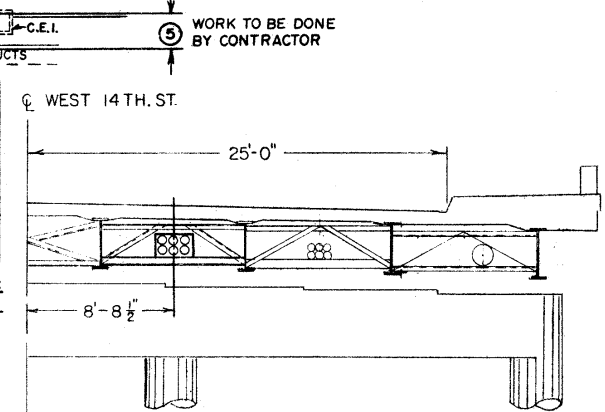
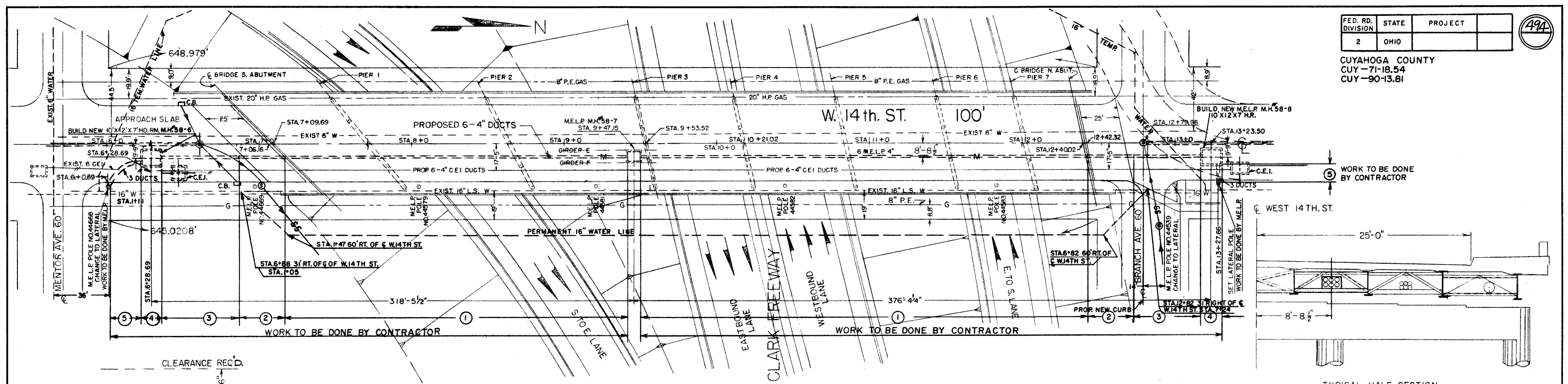
DETAIL OF M.E.L.P. DUCT SUPPORTS ON
 SCRANTON RD. BRIDGE OVER CLARK FRWY.

DRAWN BY: N.A.E.	SCALE: 3/4" = 1'-0"	DRAWING NUMBER: 5257-3F
CHECK'D BY: <i>[Signature]</i>	DATE: 2-18-65	

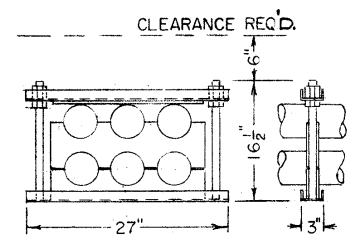
REFERENCE DRAWINGS	NO.	DATE	DIST.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		494

CUYAHOGA COUNTY
 CUY-71-18.54
 CUY-90-13.81

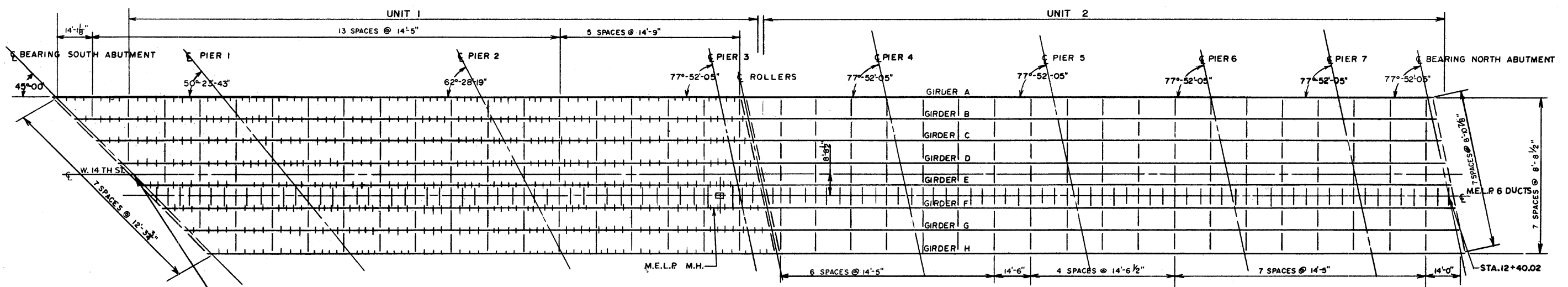


TYPICAL HALF SECTION
 LOOKING NORTH
 SCALE 3/16" = 1'



M.E.L.P. DUCT SUPPORTS
 6-4" ASBESTOS-CEMENT DUCTS

NOTES - M.E.L.P. DUCT SUPPORTS ARE TO BE ON 5'-0" MAX. SPACING ACROSS THE BRIDGE.



FRAMING PLAN SHOWING M.E.L.P. DUCTLINE SUPPORTS
 SCALE 1" = 20'

M.E.L.P. ELECTRICAL POWER CONDUIT LINE INSTALLATION BY CONTRACTOR

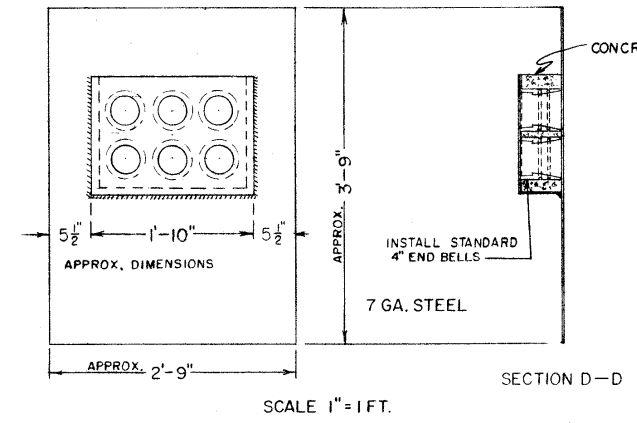
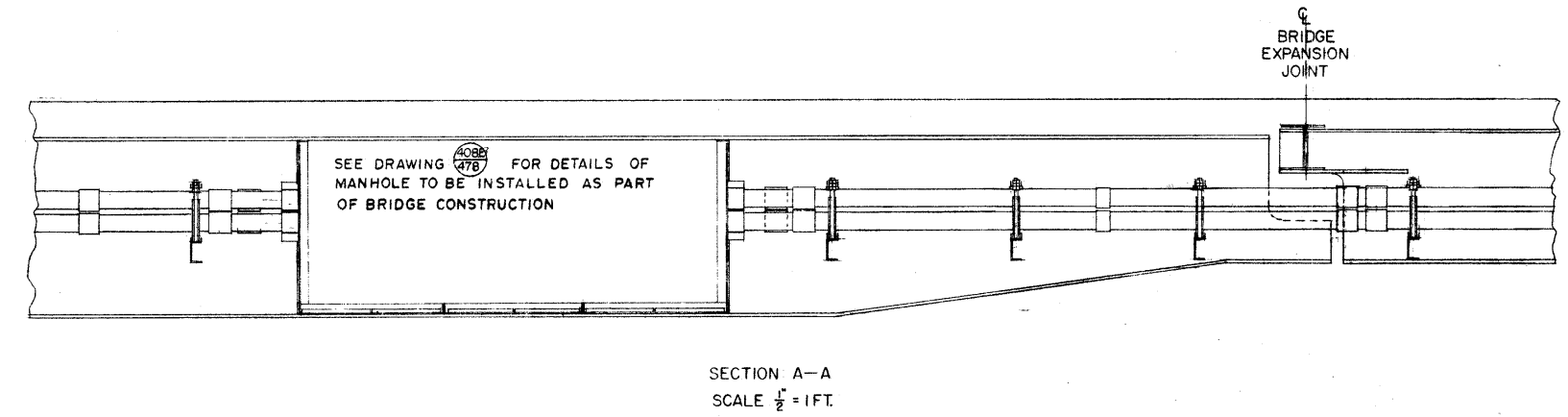
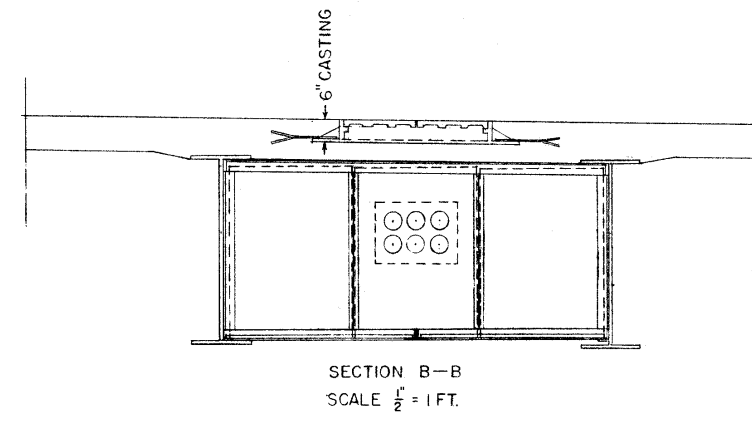
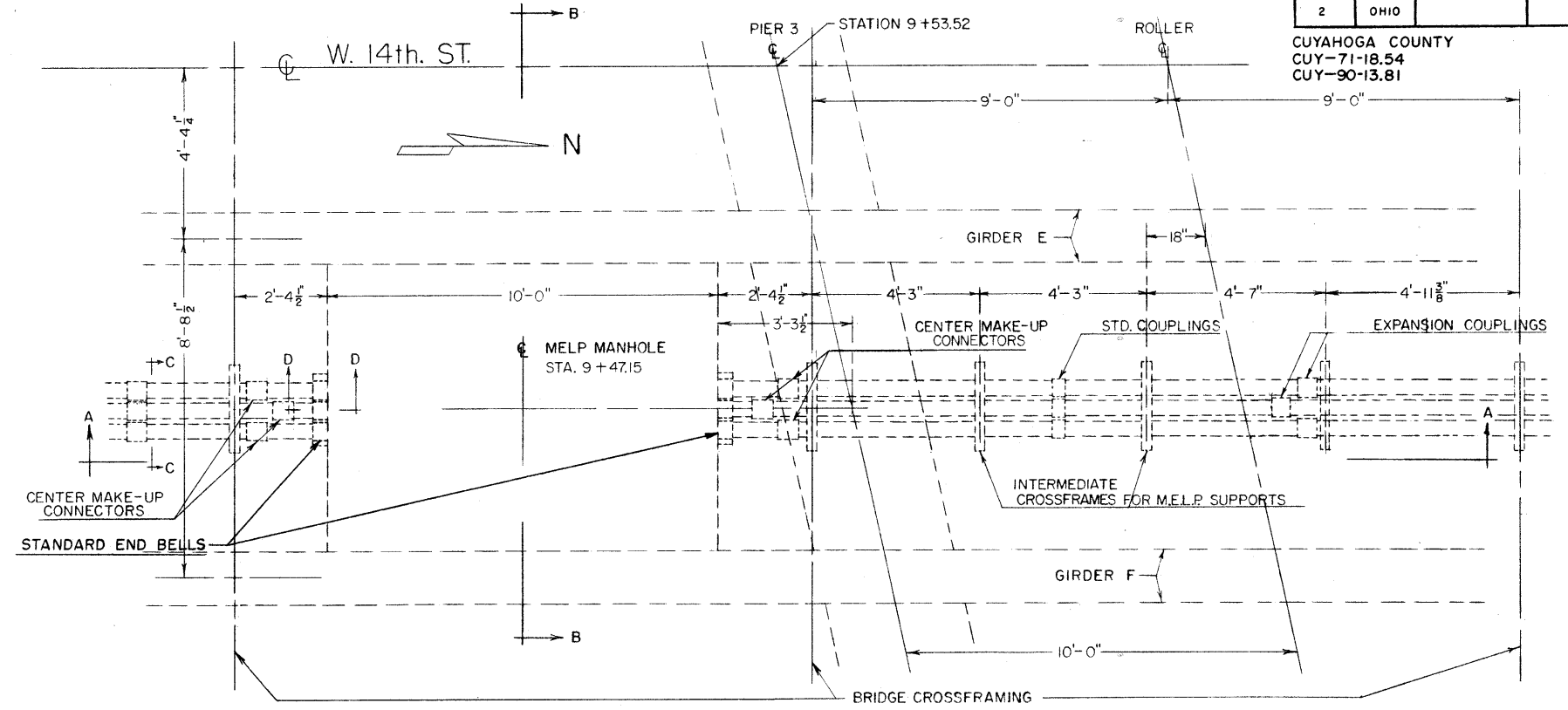
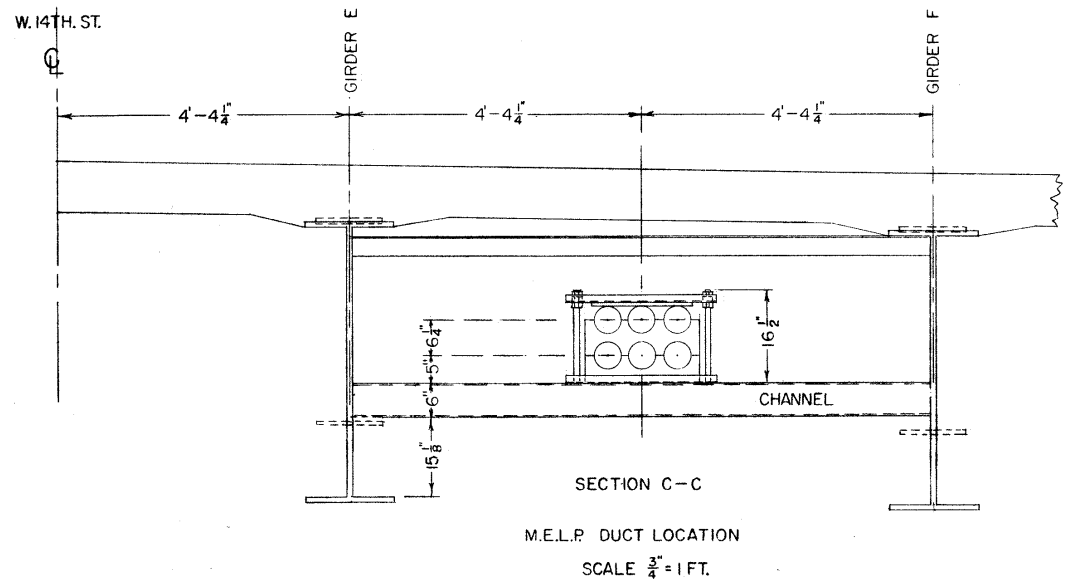
ESTIMATED QUANTITIES			
NO. ITEM	DESCRIPTION	UNIT	QUANTITY
① SPECIAL	NON-ENCASED, BRIDGE SUPPORTED, 6-4" ASBESTOS-CEMENT CONDUIT BANK (COMPLETE) AS PER PLAN	LIN. FT.	526' *
② SPECIAL	REINFORCED, CONCRETE-ENCASED, 6-4" ASBESTOS-CEMENT CONDUIT BANK (COMPLETE) AS PER PLAN	LIN. FT.	60'
③ SPECIAL	NON-REINFORCED, CONCRETE-ENCASED, 6-4" FIBRE CONDUIT BANK (COMPLETE) AS PER PLAN	LIN. FT.	97'
④ SPECIAL	REINFORCED CONCRETE MANHOLE (10'X12'X7' HEAD ROOM) (COMPLETE) AS PER PLAN	EACH	2
⑤ SPECIAL	NON-REINFORCED, CONCRETE-ENCASED, 3-4" FIBRE CONDUIT BANK (COMPLETE) AS PER PLAN	LIN. FT.	36'

* Carried to Bridge Summary Sheet 394.

APPROVED BY		5257-4B-BRIDGE DUCTLINE DETAILS
<i>[Signature]</i>	DIRECTOR OF PUBLIC UTILITIES	5257-4C-ABUTMENT DUCTLINE DET.
<i>[Signature]</i>	COMMISSIONER OF LIGHT & POWER	5257-4D-M.H. B DUCTLINE PROFILES
<i>[Signature]</i>	COMMISSIONER OF UTILITIES ENGR.	5257-4E-4F-MANHOLE DETAILS
<i>[Signature]</i>	CHIEF ELECTRICAL ENGINEER	5257-4G-DUCT SUPPORT DETAILS
<i>[Signature]</i>	ENGINEER OF DESIGN	2346-MANHOLE FRAME & COVER
		5257-5A, 5B & 5C ELECTRICAL NOTES

NO. 4	2-8-65	RELOCATED M.H.#58-6 & 8	S.F.G. R.I.A.
NO. 3	1-29-64	ADDED WATER & FIBRE	S.F.G. R.I.A.
NO. 2	12-11-64	REV. DUCT LOCATION	N.A.E. R.I.A.
NO. 1	10-23-64		N.A.E. R.I.A.

DIVISION OF LIGHT & POWER CITY OF CLEVELAND			
PROPOSED M.E.L.P. DUCT LOCATION ON THE WEST 14TH ST. BRIDGE OVER THE CLARK FREEWAY			
DRAWN BY: N.A.E.	SCALE: 1" = 30 FT.	DATE: 5-1-64	DRAWING NUMBER: 5257-4A
CH'KD BY: R.I.A.	NO.	DATE	DIST.



APPROVED BY

John P. Baker 3/10/65
 DIRECTOR OF PUBLIC UTILITIES
 COMMISSIONER OF LIGHT & POWER

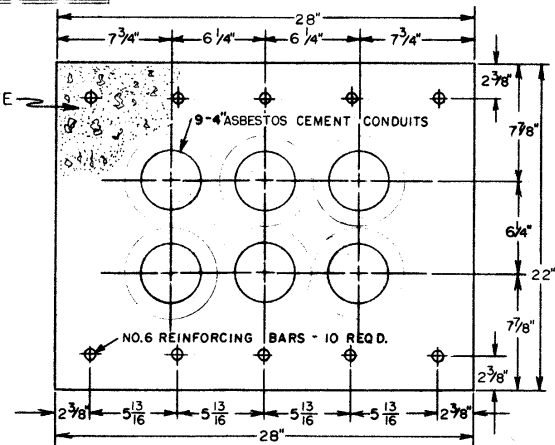
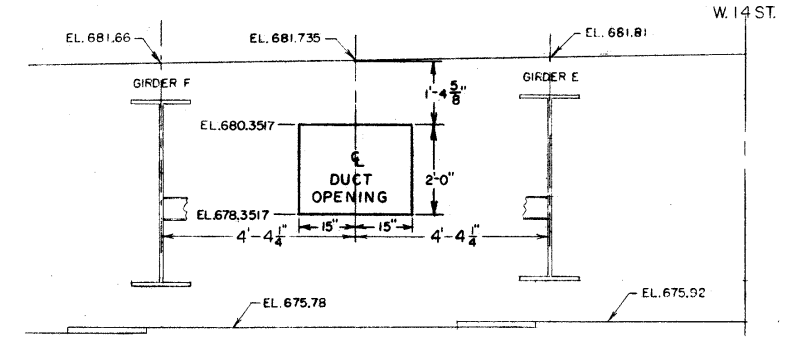
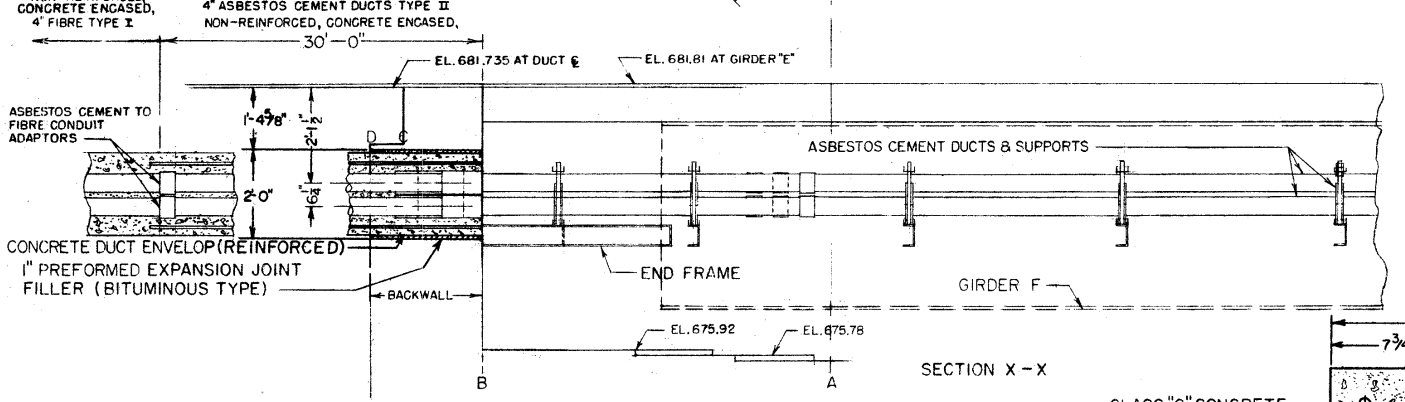
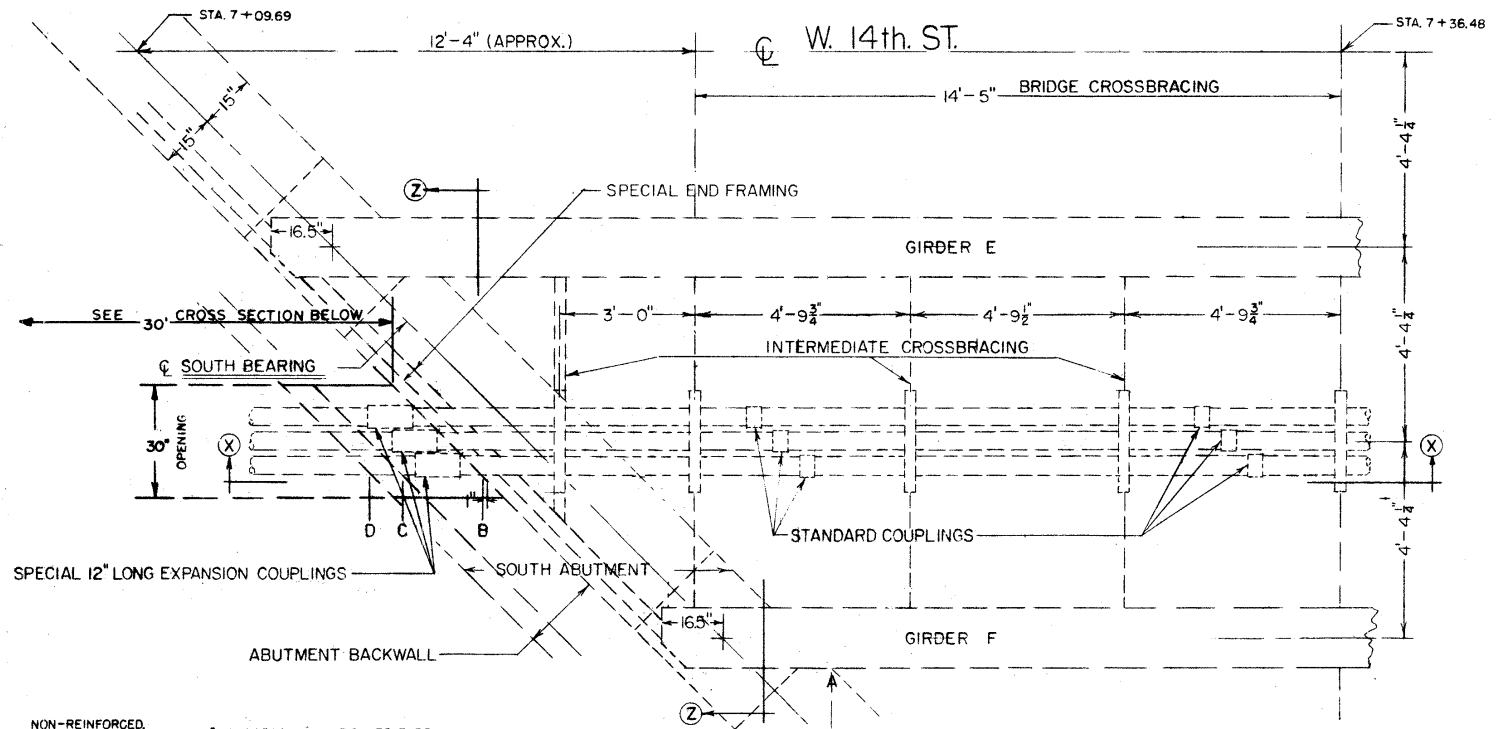
Edward J. Kramer 3/9/65
 COMMISSIONER OF UTILITIES ENGR.
 CHIEF ELECTRICAL ENGINEER

Robert G. Albark 3/9/65
 ENGINEER OF DESIGN

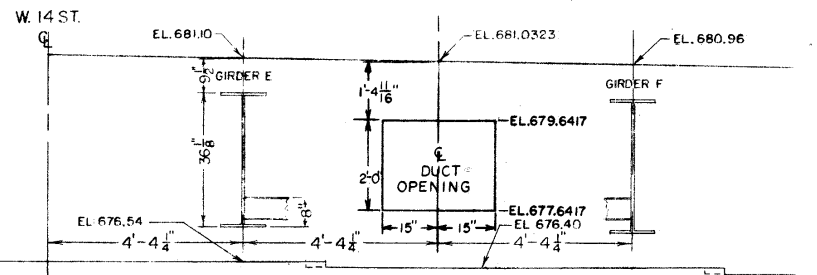
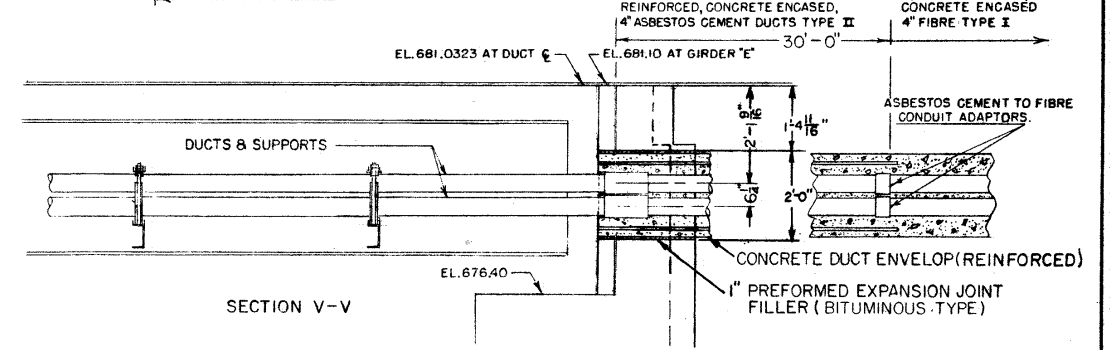
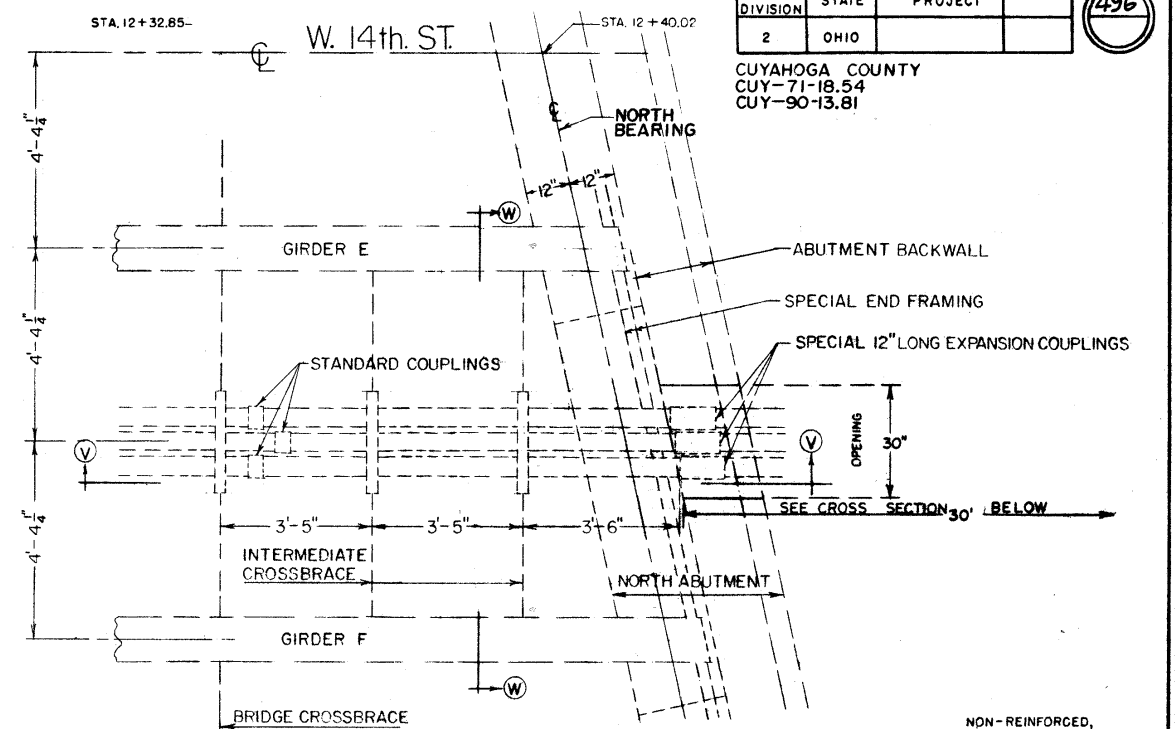
5257-4A, 4C, 4D, 4E, 4F, 4G	NO.	DATE	DIST.
REFERENCE DRAWINGS			

NO. 1	2-24-65	REVISED	S.F.G. R.L.B.
REVISION	DATE	DESCRIPTION	BY APP'VD
DIVISION OF LIGHT & POWER CITY OF CLEVELAND			
PROPOSED LOCATION OF M.E.L.P. MANHOLE AND DUCT RUN ON THE W. 14TH. ST. BRIDGE OVER THE CLARK FREEWAY.			
DRAWN BY: N.A.E.	SCALE AS SHOWN	DRAWING NUMBER	
CH'KD BY: R.L.B.	DATE 12-7-64	5257-4B	

CUYAHOGA COUNTY
 CUY-71-18.54
 CUY-90-13.81



CROSS SECTIONAL DETAIL OF THE 30' SECTIONS OF REINFORCED CONCRETE DUCT AT THE EAST & WEST ABUTMENTS.
 SCALE 2"=1'

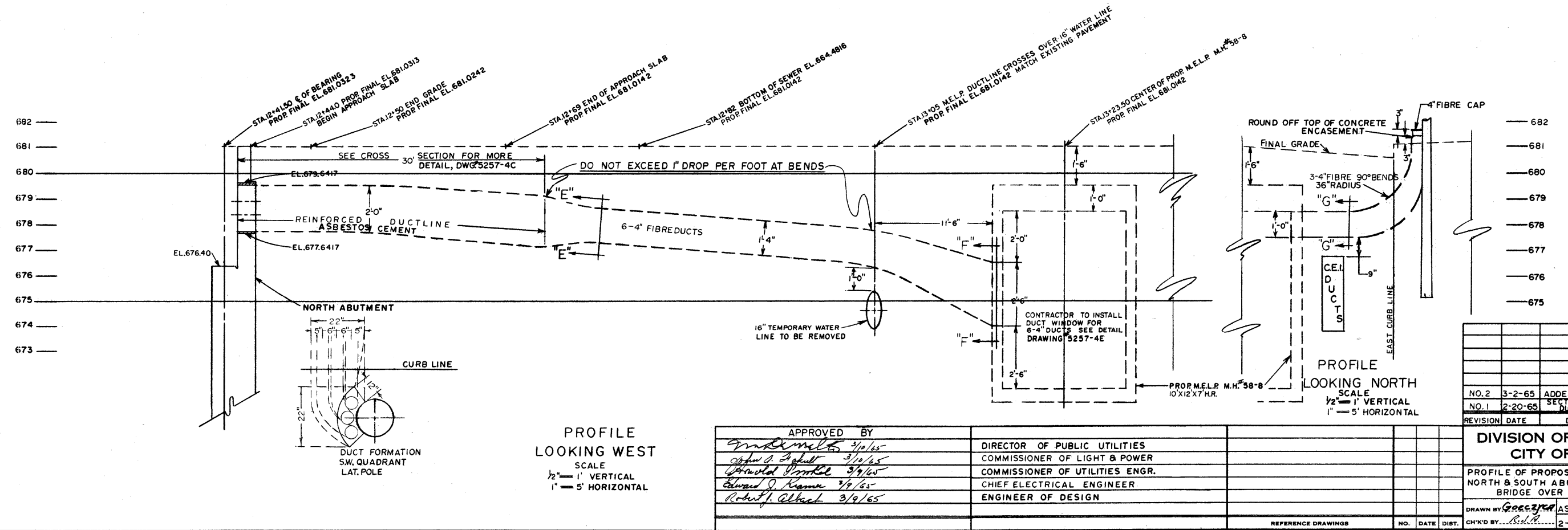
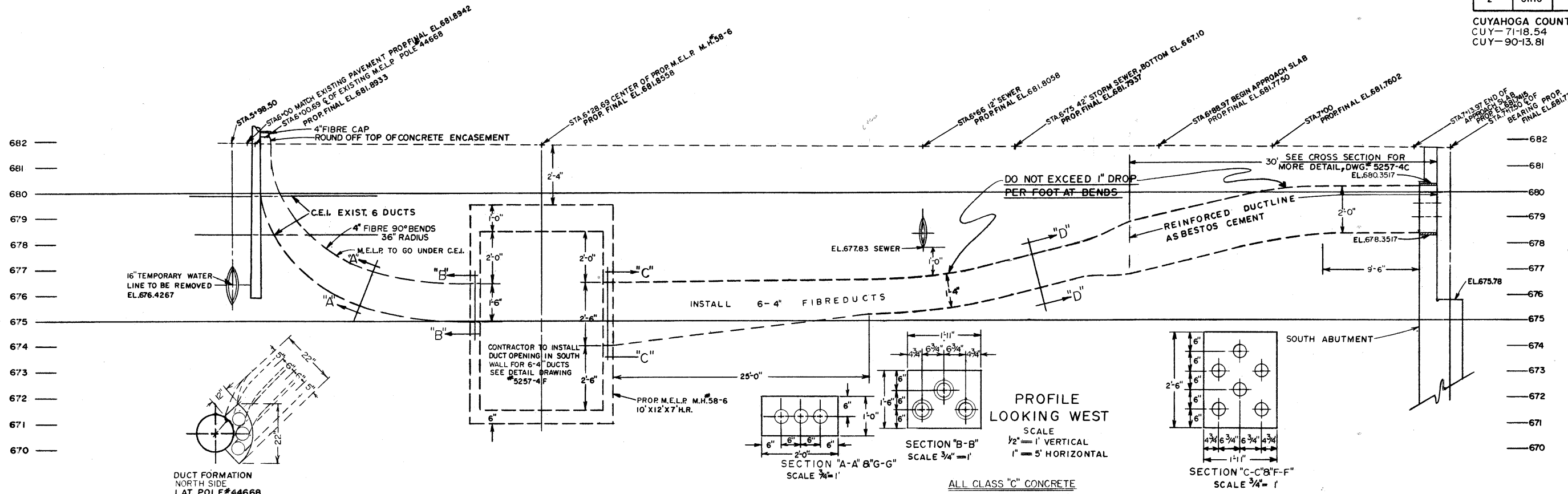


SECTION W-W

APPROVED BY
W. J. ... 3/10/65
... 3/10/65
... 3/9/65
... 3/9/65
 DIRECTOR OF PUBLIC UTILITIES
 COMMISSIONER OF LIGHT & POWER
 COMMISSIONER OF UTILITIES ENGR.
 CHIEF ELECTRICAL ENGINEER
 ENGINEER OF DESIGN

REVISION	DATE	DESCRIPTION	BY	APPROV
NO. 3	2-26-65	ADJUSTED MELP CROSSFRAMES	N.A.E.	R.L.A.
NO. 2	2-20-65	DETAIL OF REINFORCED CONCRETE	S.F.G.	R.L.A.
NO. 1	12-28-64	ADDED SPECIALTY EXPANSION JOINT REVISED DIMENSION	N.A.E.	R.L.A.

DIVISION OF LIGHT & POWER
CITY OF CLEVELAND
 PROPOSED LOCATION OF MELP DUCTS IN THE ABUTMENTS OF THE W. 14TH. ST. BRIDGE OVER THE CLARK FREEWAY
 DRAWN BY: N.A.E. DATE: 12-11-64
 CHECKED BY: R.L.A. DATE: 12-11-64
 DRAWING NUMBER: 5257-4C



APPROVED BY
Robert J. Albrecht 3/10/65
Robert J. Albrecht 3/10/65
Robert J. Albrecht 3/10/65
Robert J. Albrecht 3/10/65
Robert J. Albrecht 3/10/65

DIRECTOR OF PUBLIC UTILITIES
 COMMISSIONER OF LIGHT & POWER
 COMMISSIONER OF UTILITIES ENGR.
 CHIEF ELECTRICAL ENGINEER
 ENGINEER OF DESIGN

NO.	DATE	DESCRIPTION	BY	APP'D
NO. 2	3-2-65	ADDED CORRECTIONS	S.F.G.	R.L.A.
NO. 1	2-20-65	SECTION OF REINFORCED DUCTLINE	S.F.G.	R.L.A.

DIVISION OF LIGHT & POWER
 CITY OF CLEVELAND

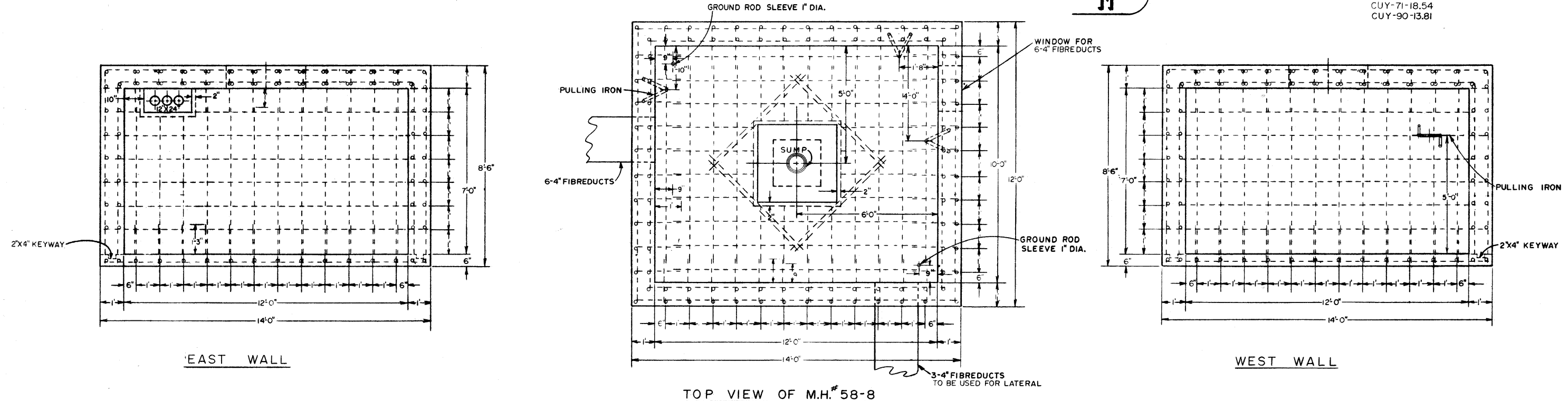
PROFILE OF PROPOSED M.E.L.P. DUCTLINE AT NORTH & SOUTH ABUTMENTS ON THE W. 14TH ST. BRIDGE OVER CLARK FREEWAY

DRAWN BY: *George J. ...* AS SHOWN DATE: 2-8-65 DRAWING NUMBER: 5257-4D

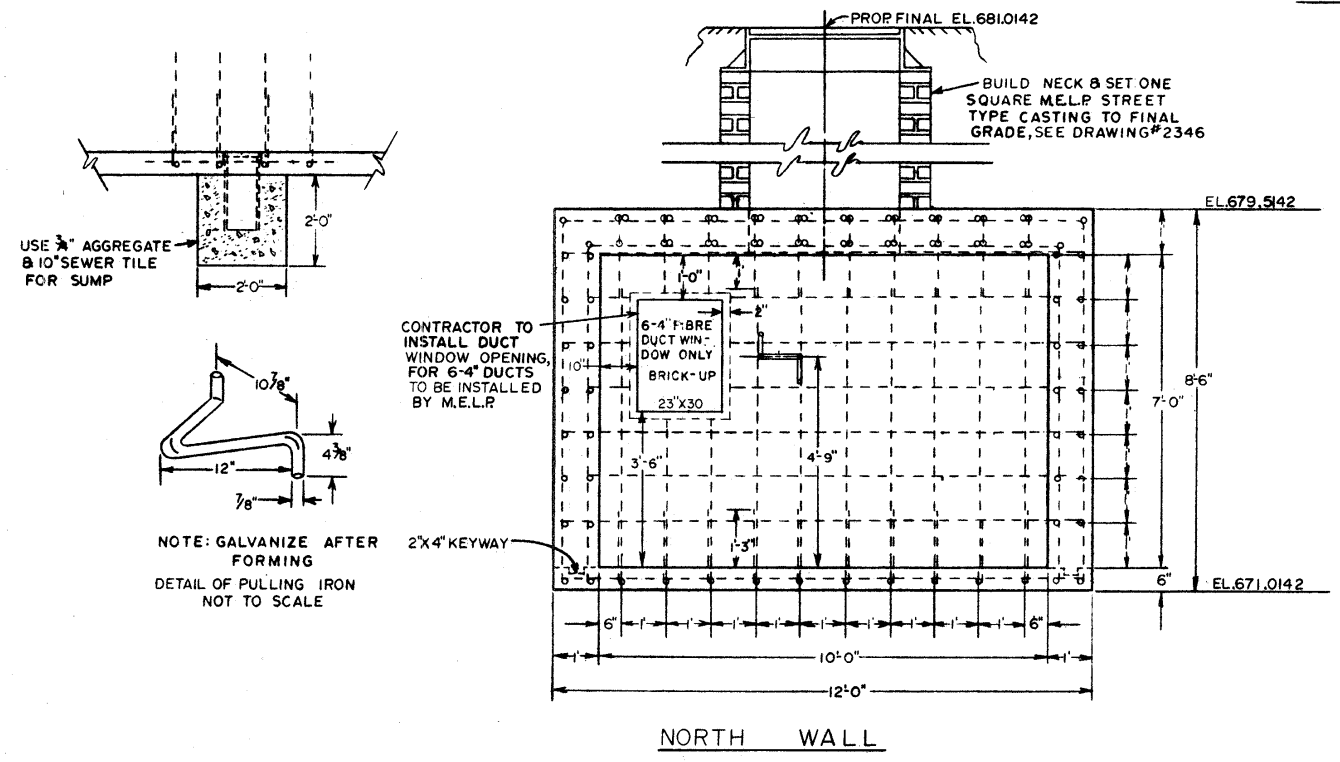
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

498

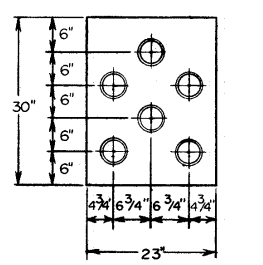
CUYAHOGA COUNTY
 CUY-71-18.54
 CUY-90-13.81



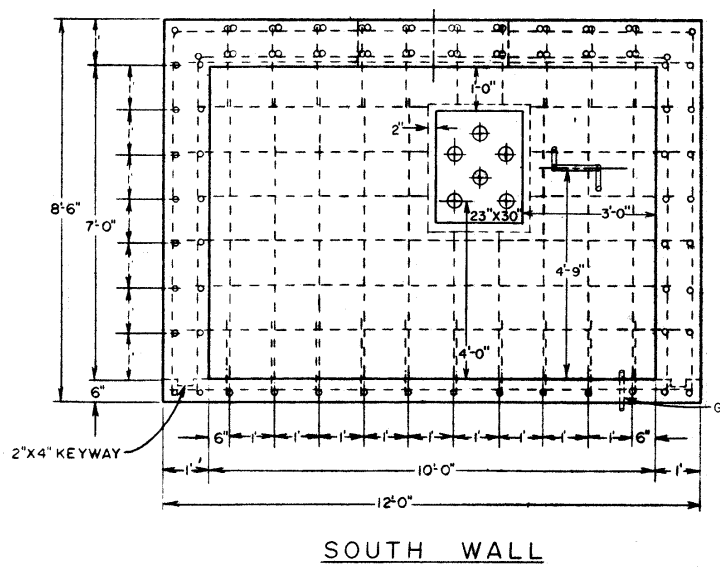
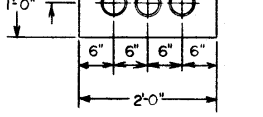
TOP VIEW OF M.H.# 58-8



END BELL CONFIRMATION
 6-4 FIBRE DUCTS
 SOUTH WALL



SCALE 3/4\"/>
 END BELL CONFIRMATION
 3-4 FIBREDUCTS
 EAST WALL



SOUTH WALL

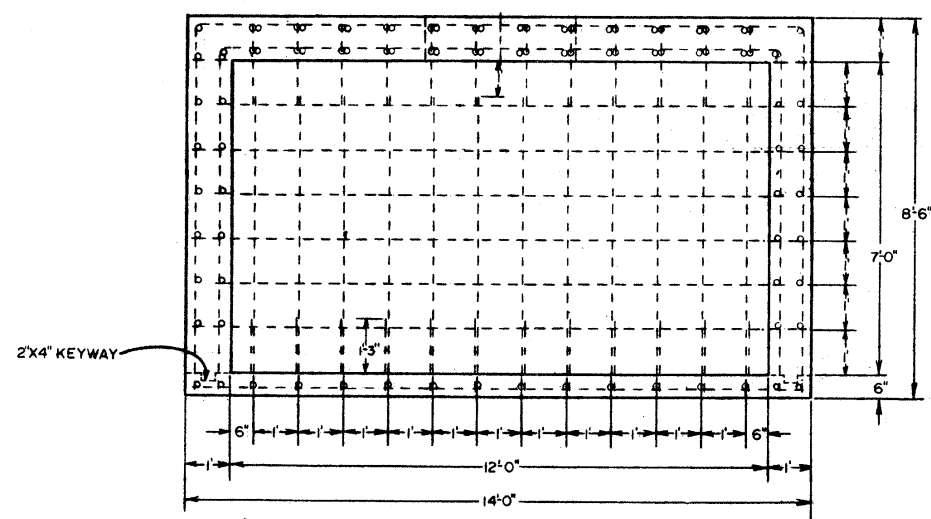
- NOTE
1. CLEARANCE OF 2" FROM ROD TO FACE OF WALL, INSIDE & OUTSIDE
 2. INSTALL PULLING IRONS OPPOSITE DUCTS ENTERING MANHOLE
 3. DO NOT PLACE RODS BETWEEN DUCTS
 4. LOCATE (1) 2'X2'X2' SLAG SUMP (10" SEWER TILE) UNDER M.H. ROOF OPENING, SLOPE FLOOR TOWARDS SUMP
 5. ALL STEEL #6 REINFORCING BARS
 6. ALL STEEL SHALL CONFORM TO A.S.T.M. SPEC'S & SHALL BE FABRICATED AS SHOWN F_s 20,000 P.S.I.
 7. CONCRETE CLASS C*4,000 P.S.I.

NO.	DATE	DESCRIPTION	BY	APP'D
NO. 1	3-2-65	CORRECTIONS ADDED	S.F.G.	R.J.A.

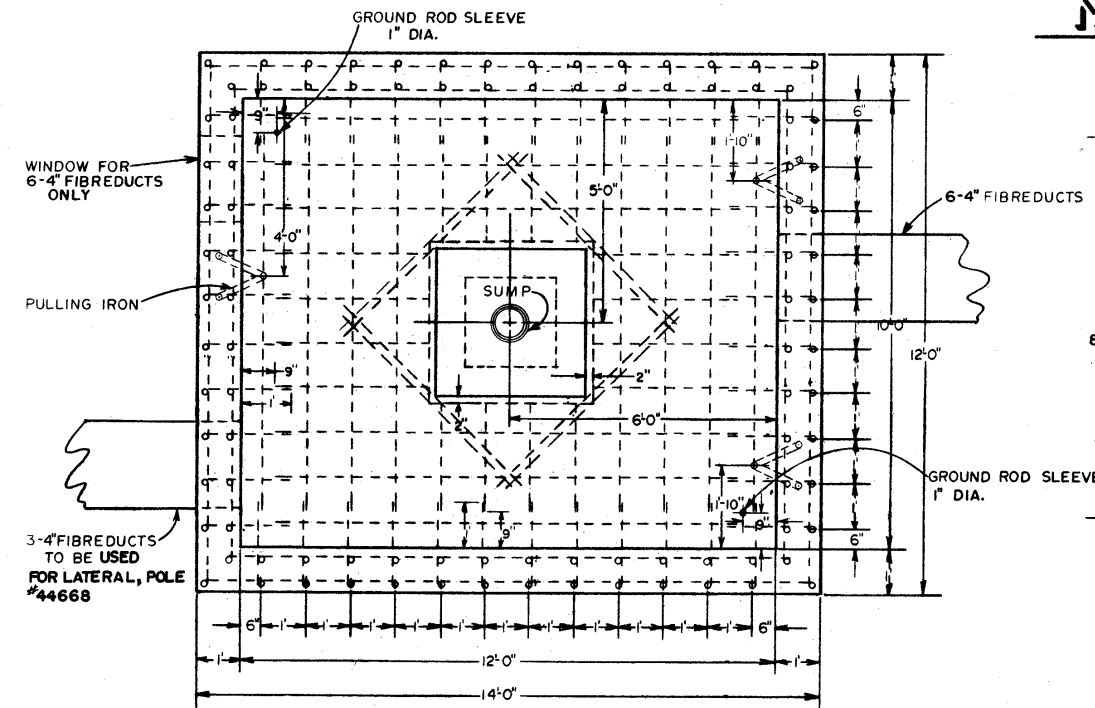
APPROVED BY				
<i>James J. ...</i>	3/10/65	DIRECTOR OF PUBLIC UTILITIES		
<i>John A. ...</i>	3/10/65	COMMISSIONER OF LIGHT & POWER		
<i>Arnold ...</i>	3/9/65	COMMISSIONER OF UTILITIES ENGR.		
<i>Edward J. Kramer</i>	3/9/65	CHIEF ELECTRICAL ENGINEER		
<i>Robert J. Alback</i>	3/9/65	ENGINEER OF DESIGN		
DRAWN BY: <i>Gorez...</i>		SCALE: 1/2" = 1'	DRAWING NUMBER	
DATE: 2-13-65		CH'K'D BY: <i>R.S.P.</i>	2-13-65	5257-4E

DIVISION OF LIGHT & POWER
 CITY OF CLEVELAND
 PROPOSED DETAIL OF M.E.L.P. M.H.# 58-8 NORTH OF ABUTMENT OF W.14TH ST. BRIDGE OVER CLARK FREEWAY

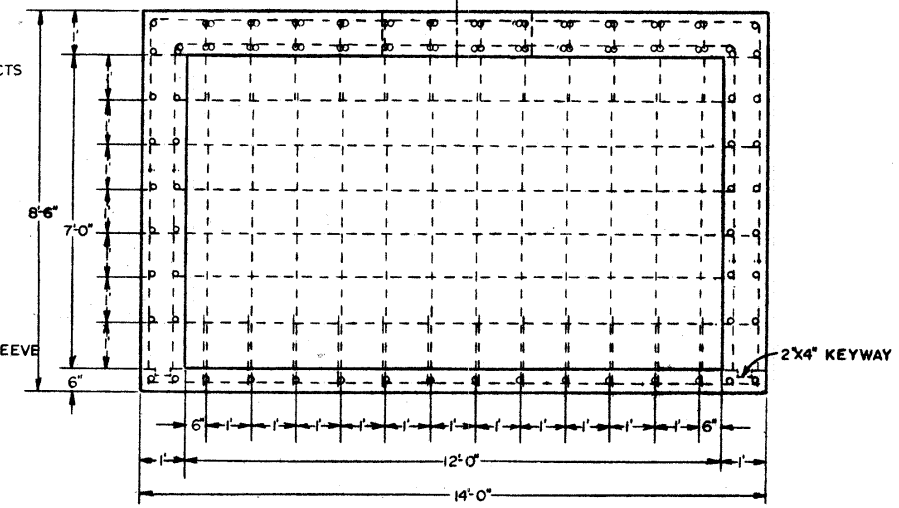
CUYAHOGA COUNTY
 CUY-71-18.54
 CUY-90-13.81



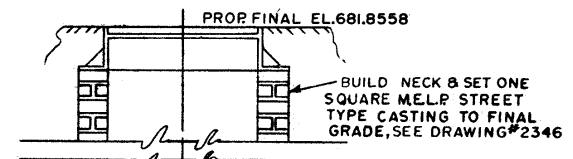
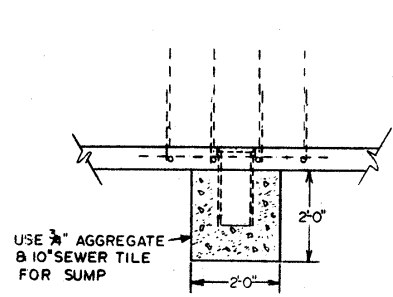
EAST WALL



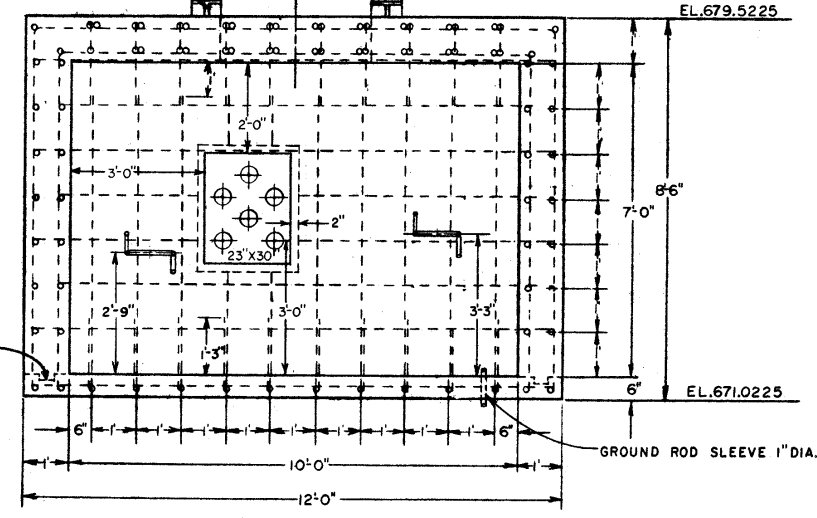
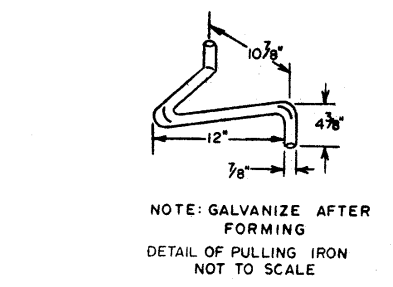
TOP VIEW OF M.H.#58-6



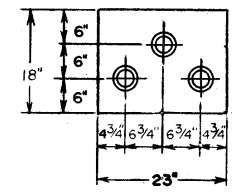
WEST WALL



- NOTE**
- CLEARANCE OF 2" FROM ROD TO FACE OF WALL, INSIDE & OUTSIDE
 - INSTALL PULLING IRONS OPPOSITE DUCTS ENTERING MANHOLE
 - DO NOT PLACE RODS BETWEEN DUCTS
 - LOCATE (1) 2'X2' X2' SLAG SUMP (10" SEWER TILE) UNDER M.H. ROOF OPENING, SLOPE FLOOR TOWARDS SUMP.
 - ALL STEEL #6 REINFORCING BARS
 - ALL STEEL SHALL CONFORM TO A.S.T.M. SPEC'S & SHALL BE FABRICATED AS SHOWN F₃ 20,000 R.S.I.
 - CONCRETE CLASS 'C', 4000 R.S.I.



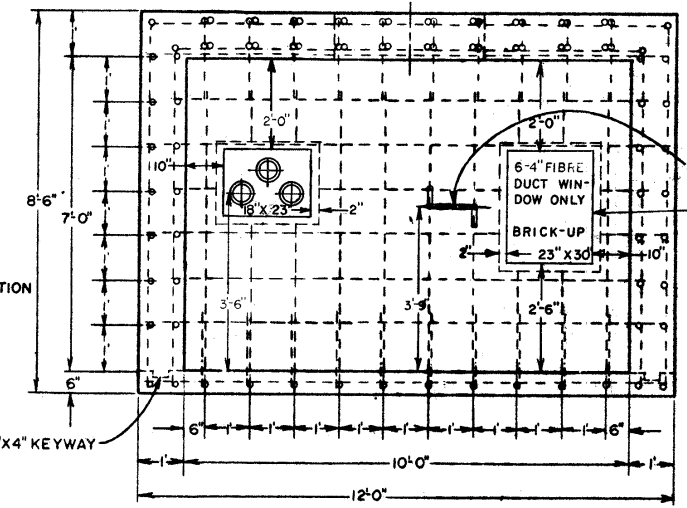
NORTH WALL



END BELL CONFORMATION 6-4" FIBRODUCTS IN SOUTH WALL



END BELL CONFORMATION 6-4" FIBRODUCTS IN NORTH WALL



SOUTH WALL

SCALE 3/4"=1'

APPROVED BY	
<i>Wm. J. ...</i>	3/10/65
<i>John J. ...</i>	3/10/65
<i>Arnold ...</i>	3/9/65
<i>Edward J. ...</i>	3/9/65
<i>Robert J. ...</i>	3/9/65

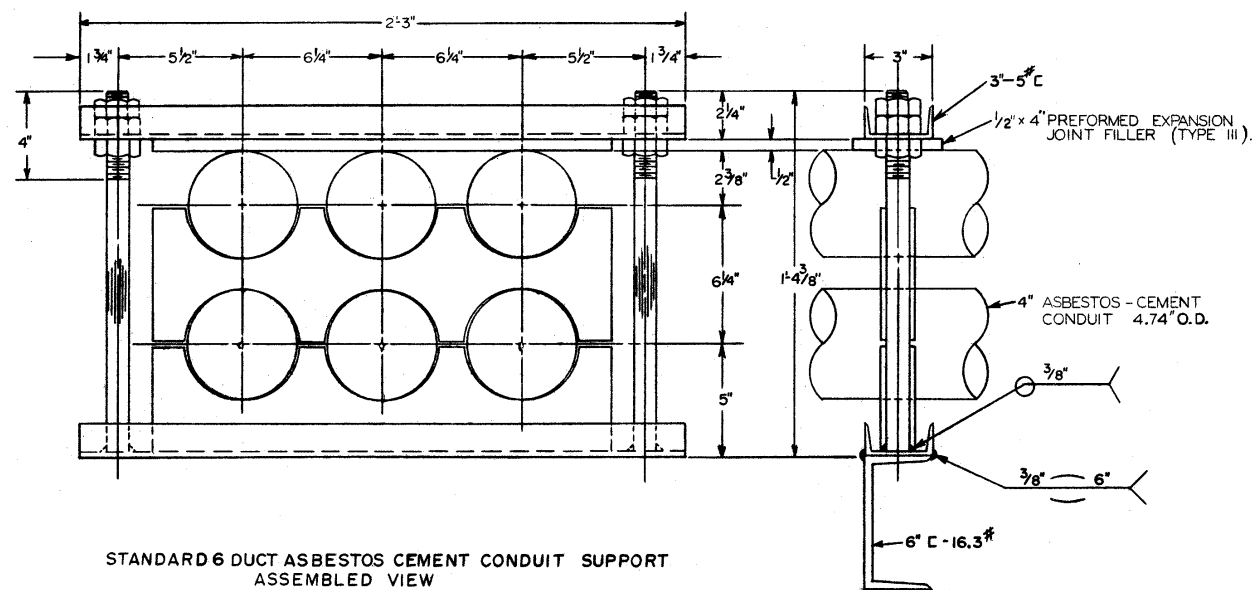
DIRECTOR OF PUBLIC UTILITIES	
COMMISSIONER OF LIGHT & POWER	
COMMISSIONER OF UTILITIES ENGR.	
CHIEF ELECTRICAL ENGINEER	
ENGINEER OF DESIGN	

NO.	DATE	DESCRIPTION	BY	APP'D
NO.1	3-2-65	CORRECTIONS ADDED	S.F.G.	E.I.A.

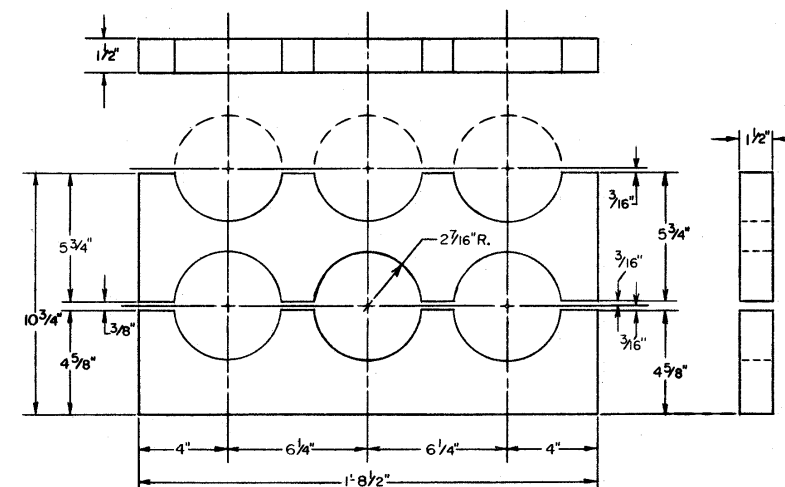
DIVISION OF LIGHT & POWER
CITY OF CLEVELAND
 PROPOSED DETAIL OF M.E.L.P. M.H.#58-6 SOUTH OF ABUTMENT OF W.14TH ST. BRIDGE OVER CLARK FREEWAY
 DRAWN BY: *Garrett* 1/2" SCALE
 DATE: 2-13-65
 CHECK'D BY: *R.L.P.*
 DRAWING NUMBER: 5257-4F

FED. RD. DIVISION	STATE	PROJECT	500
2	OHIO		

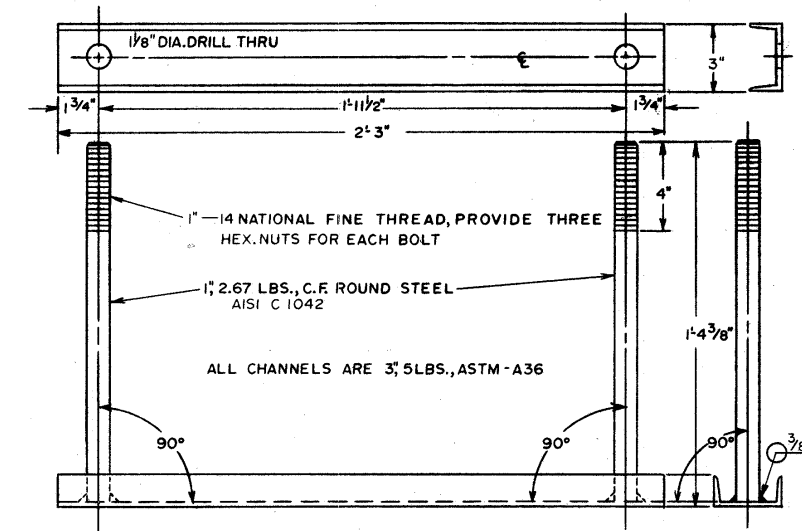
CUYAHOGA COUNTY
 CUY-71-18.54
 CUY-90-13.81



STANDARD 6 DUCT ASBESTOS CEMENT CONDUIT SUPPORT
 ASSEMBLED VIEW



ASBESTOS CEMENT 6 DUCT SUPPORT DRILLING DETAIL.
 ONE SET REQUIRED AS SHOWN FOR EACH SUPPORT.
 DRILL OR BORE ONLY FOR SQUARE SMOOTH SADDLE.



STEEL DETAIL FOR ASBESTOS CEMENT 6 DUCT SUPPORT.
 PAINT AS PER SPECIFICATION

APPROVED BY					
<i>Wm. DeWalt</i>	3/10/65	DIRECTOR OF PUBLIC UTILITIES			
<i>John A. DeWalt</i>	3/10/65	COMMISSIONER OF LIGHT & POWER			
<i>Arnold Binkley</i>	3/9/65	COMMISSIONER OF UTILITIES ENGR.			
<i>Edward J. Keenan</i>	3/9/65	CHIEF ELECTRICAL ENGINEER			
<i>Robert J. Albach</i>	3/9/65	ENGINEER OF DESIGN			

REVISION	DATE	DESCRIPTION	BY	APP'D

**DIVISION OF LIGHT & POWER
 CITY OF CLEVELAND**

DETAIL OF MELP DUCT SUPPORTS
 ON WEST 14TH ST. BRIDGE OVER
 CLARK FREEWAY

DRAWN BY: *GORGZYER* SCALE: 3"=1' DRAWING NUMBER: 5257-4G
 DATE: 2-19-65
 CH'K'D BY: *W.L.B.*

ELECTRICAL POWER CONDUIT WORK

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	



CUYAHOGA COUNTY
 CUY 71-18.54
 CUY 90-13.81

SCOPE OF WORK

THE WORK CONTEMPLATED UNDER THIS CONTRACT COMPRISES THE FURNISHING AND INSTALLING THE FOLLOWING ELECTRICAL POWER CONDUIT BANKS AND MANHOLES AND PERFORMING OTHER INCIDENTAL WORK NECESSARY TO ABANDON EXISTING ELECTRICAL FACILITIES.

- NON-ENCASED, BRIDGE-SUPPORTED, ASBESTOS-CEMENT, TYPE II., CONDUIT BANKS COMPLETE WITH SUPPORT BRACKETS.
- REINFORCED, CONCRETE-ENCASED, ASBESTOS-CEMENT, TYPE II., CONDUIT BANKS (COMPLETE).
- NON-REINFORCED, CONCRETE-ENCASED, FIBRE TYPE I., CONDUIT BANKS (COMPLETE).
- REINFORCED CONCRETE MANHOLES.
- ABANDONING EXISTING MANHOLES

THE CONTRACTOR SHALL DO ALL THE WORK AND FURNISH ALL THE LABOR AND MATERIAL NECESSARY FOR THE FINAL COMPLETION OF THIS CONTRACT IN THE MANNER AND UNDER THE CONDITIONS HEREIN SPECIFIED AND PROVIDED AND IN ACCORDANCE WITH THE CONTRACT DRAWINGS. IN THE CASE OF ANY ITEM NOT SPECIFICALLY MENTIONED IN THE ELECTRICAL POWER CONDUIT WORK NOTES, THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS "CONSTRUCTION AND MATERIAL SPECIFICATIONS - JAN. 1, 1963" SHALL GOVERN.
 WORK IS REQUIRED AT THREE LOCATIONS, CLARK AVENUE, WEST 14th ST., & SCRANTON ROAD.

DEFINITIONS

WHenever in these specifications or in any documents or instructions in construction where these specifications govern, the following terms are used, (OR PRONOUNS IN PLACE OF THEM). THE INTENT AND MEANING SHALL BE INTERPRETED AS FOLLOWS:

THE STATE ENGINEER
 THE STATE IS THE STATE OF OHIO ACTING THROUGH ITS AUTHORIZED REPRESENTATIVE. THE ENGINEER IS DIVISION DEPUTY DIRECTOR OR DIVISION ENGINEER, THE DIVISION CONSTRUCTION ENGINEER OR THE DIVISION MAINTENANCE ENGINEER, THE PROJECT ENGINEER ASSIGNED TO ADMINISTER THE CONTRACT.

THE CITY, OR THE CITY OF CLEVELAND
 THE CITY, OR THE CITY OF CLEVELAND, IS THE DIRECTOR, DEPARTMENT OF PUBLIC UTILITIES, OF THE CITY OF CLEVELAND.

STATUS OF CITY INSPECTOR

INSPECTORS AS DESIGNATED BY THE DIRECTOR OF PUBLIC UTILITIES SHALL BE AUTHORIZED TO INSPECT ALL WORK DONE AND MATERIALS FURNISHED. SUCH INSPECTING MAY EXTEND TO ALL OR ANY PART OF THE ELECTRICAL POWER CONDUIT WORK, AND TO THE PREPARATION OR MANUFACTURE OF THE MATERIALS TO BE USED IN THE ELECTRICAL POWER CONDUIT WORK. THE CITY INSPECTOR AS DESIGNATED BY THE DIRECTOR OF PUBLIC UTILITIES SHALL MAKE WORK INSTRUCTIONS THROUGH THE PROJECT ENGINEER.

DIMENSIONS, DETAILED DRAWINGS AND ELEVATIONS

FIGURED DIMENSIONS ON DRAWINGS SHALL TAKE PRECEDENCE OVER MEASUREMENTS BY SCALE, AND DETAILED DRAWINGS ARE TO TAKE PRECEDENCE OVER GENERAL DRAWINGS AND SHALL BE CONSIDERED AS EXPLANATORY OF THEM AND NOT AS INDICATING EXTRA WORK. IF, HOWEVER, ANY OF THE DETAILED DRAWINGS SHOW MORE ELABORATE OR EXPENSIVE WORK THAN IS SPECIFIED AND INDICATED BY THE CONTRACT DRAWINGS, NOTICE THEREOF MUST BE GIVEN TO THE ENGINEER BY THE CONTRACTOR WITHIN TEN (10) DAYS AFTER THE RECEIPT OF SUCH DETAILED DRAWINGS IN ORDER THAT THE DRAWINGS MAY BE AMENDED OR THE ADDITIONAL EXPENSE ON ACCOUNT OF SUCH WORK MAY BE ADJUSTED AND AUTHORIZED. IF THE ENGINEER DOES NOT RECEIVE SUCH NOTICE FROM THE CONTRACTOR WITHIN TEN (10) DAYS AFTER DETAILED DRAWINGS HAVE BEEN RECEIVED BY HIM IT IS HEREBY AGREED THAT THE CONTRACTOR ACCEPTS THE DRAWING AND WILL EXECUTE THEM WITHOUT CLAIM FOR EXTRA COMPENSATION.

FLOODS AND FREEZING WEATHER

PROPER FACILITIES SHALL BE PROVIDED FOR PROTECTING THE WORK FROM DAMAGE BY FLOOD, RAIN OR FROST, AND WORK DONE IN FREEZING WEATHER SHALL BE DONE IN SUCH MANNER AS THE ENGINEER MAY APPROVE.

ADDITIONAL WORK

(A) - ATTENTION IS CALLED TO THE FACT THAT THE WORK OF THIS CONTRACT INCLUDES CERTAIN PERFORMANCES AS INCIDENTAL TO THE ITEMIZED REQUIREMENTS HEREOF, THOUGH NOT EXCLUSIVE AS FOLLOWS: TO PERFORM ALL EXCAVATION, BACK-FILLING, SHEETING, SHORING, TEMPORARY AND FINAL REPAIRING, SAND BACKFILL SHALL BE PLACED UNDER EXISTING AND PROPOSED PAVEMENT AND SIDEWALK. FOR THE PERFORMANCES HEREIN DESCRIBED AND FOR OTHER INCIDENTAL PERFORMANCES OF LIKE NATURE, THE STATE WILL MAKE NO SPECIFIC OR SEPARATE PAYMENT OR ALLOWANCE, BUT THE COST THEREOF SHALL BE INCLUDED IN THE PRICES STIPULATED TO BE PAID FOR THE VARIOUS ITEMS OF THE WORK TO BE DONE UNDER THIS CONTRACT.

(B) - AFTER CONDUITS HAVE BEEN INSTALLED THE CONTRACTOR SHALL CLEAN ALL THE DUCTS BY PULLING THROUGH A MANDREL TO REMOVE SOLID OBSTRUCTIONS, FOLLOWED BY A CIRCULAR WIRE BRUSH TO REMOVE ANY DIRT, SAND OR CONCRETE WHICH MAY HAVE BEEN INTRODUCED DURING CONSTRUCTION, LEAVING A CLEAN CONDUIT FREE FROM OBSTRUCTIONS OF FOREIGN MATTER.

PAINTING

(A) - IT IS THE INTENTION OF THESE SPECIFICATIONS TO PROVIDE THAT ALL METAL WORK SUBJECT TO CORROSION SHALL BE SATISFACTORILY PROTECTED BY A DURABLE COATING OF PAINT OR OTHER APPROVED MATERIAL AND THAT ALL METAL SURFACES NOT BURIED IN EARTH, OR IN CONCRETE SHALL BE LEFT CLEAN AND WELL PAINTED AT THE COMPLETION OF THE CONTRACT. UNLESS OTHERWISE SPECIFIED, THE PROTECTION SHALL BE AT LEAST THAT GIVEN BY THREE (3) COATS OF APPROVED PAINT. THE FIRST COAT IS TO BE APPLIED AT THE SHOP BEFORE THE METAL HAS RUSTED AND AFTER ALL GREASE, DIRT AND SCALE HAS BEEN REMOVED. BOLTS AND NUTS SHALL NOT BE SHOP COATED, BUT SHALL RECEIVE THREE (3) COATS OF APPROVED PAINT AFTER INSTALLATION.

(B) - ALL METAL WORK WHICH HAS NOT BEEN COATED BEFORE THE ARRIVAL ON THE JOB SHALL BE GIVEN A TEMPORARY PROTECTIVE COATING OF SUCH A NATURE AS TO PERMIT THE READY ADHERENCE OF FUTURE COATINGS. THE TEMPORARY COATING SHALL BE A GOOD GRADE ASPHALTIC PAINT OR OTHER APPROVED MATERIAL. THIS TEMPORARY PROTECTION SHALL APPLY PARTICULARLY TO THE FOLLOWING MATERIAL, AND ELSEWHERE WHEN IN THE OPINION OF THE ENGINEER, SUCH PROTECTION IS NECESSARY.

MANHOLE FRAMES AND COVERS

(C) - ALL SURFACES OF METAL WHICH WILL BE IN CONTACT AFTER ASSEMBLING SHALL BE PAINTED, AT LEAST ONE COAT, BEFORE ASSEMBLING. THE FINAL COAT OF PAINT ON ALL EXPOSED WORK SHALL BE GIVEN SHORTLY BEFORE THE COMPLETION OF THE CONTRACT.

(D) - WHERE PAINTING CLAUSES APPEAR HEREINAFTER, THEY SHALL TAKE PRECEDENCE OVER THIS SECTION, EXCEPT THAT TEMPORARY PROTECTION HEREIN DESCRIBED MAY BE REQUIRED.

(E) - ALL OF THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE PARTICULAR ITEM REQUIRING THE PAINTING.

EXCAVATION

(A) - THE CONTRACTOR SHALL REMOVE ALL EXISTING STRUCTURES, ROADWAYS, DRIVEWAYS AND OTHER SIMILAR MATERIALS AND MAKE TO THE LINES AND GRADES GIVEN, ALL EXCAVATION NECESSARY FOR THE PROPER CONSTRUCTION OF THE CONCRETE ENCASED CONDUIT LINE AND MANHOLE. THE EXCAVATION SHALL INCLUDE THE REMOVAL, HANDLING, REHANDLING AND DISPOSAL OF MATERIALS ENCOUNTERED IN THE WORK AND SHALL INCLUDE ALL PUMPING, BAILING, DRAINING, SHEETING AND BRACING. MOREOVER, THE CONTRACTOR MUST ASSUME ALL RESPONSIBILITY FOR ANY ADDED EXPENSE OR OTHER LIABILITY WHICH MAY ARISE BY MEANS OF QUICKSAND, OBSTACLES OR CONDITIONS FORESEEN OR UNFORESEEN AND ENCOUNTERED IN THE WORK OF THIS CONTRACT.

(B) - TRENCHES SHALL IN EVERY CASE BE OF SUFFICIENT WIDTH TO PERMIT SOLID PACKING OF REFILL UNDER AND AROUND AND SATISFACTORY CONSTRUCTION OF ALL APPURTENANCES AND FOR SUCH SHEETING AND SHORING, PUMPING AND DRAINING AS MAY BE NECESSARY.

(C) - THE TRENCH SHALL BE DUG TO THE ALIGNMENT AND DEPTH REQUIRED AND ONLY SO FAR IN ADVANCE OF LAYING OF THE CONCRETE ENCASED CONDUIT LINE AS THE ENGINEER SHALL PERMIT. THE TRENCH SHALL BE SO BRACED AND DRAINED THAT WORKMEN MAY WORK THEREIN SAFELY AND EFFICIENTLY. IT IS ESSENTIAL THAT THE DISCHARGE FROM PUMPS BE LED TO NATURAL DRAINAGE CHANNELS, TO DRAINS, OR TO SEWERS.

(D) - THE TRENCH WIDTH MAY VARY WITH AND DEPEND UPON THE DEPTH OF TRENCH AND THE NATURE OF THE EXCAVATED MATERIAL ENCOUNTERED; BUT IN ANY CASE SHALL BE OF AMPLE WIDTH TO PERMIT THE CONCRETE ENCASED CONDUIT LINE TO BE LAID AND JOINTED PROPERLY AND OF THE BACKFILL TO BE PLACED AND COMPACTED PROPERLY. THE MAXIMUM CLEAR WIDTH OF TRENCH SHALL BE NOT MORE THAN TWO (2) FEET GREATER THAN THE OUTSIDE ENVELOPE OF THE CONCRETE ENCASED CONDUIT LINE. WHEN SHEETING AND BRACING IS USED, THE TRENCH WIDTH SHALL BE INCREASED ACCORDINGLY.

(E) - THE TRENCH, UNLESS OTHERWISE SPECIFIED, SHALL HAVE A FLAT BOTTOM CONFORMING TO THE GRADE TO WHICH THE CONCRETE ENCASED CONDUIT LINE IS TO BE LAID. THE CONCRETE ENCASED CONDUIT LINE SHALL BE LAID UPON SOUND SOIL CUT TRUE AND EVEN, SO THAT IT WILL HAVE A BEARING FOR ITS FULL LENGTH.

(F) - ANY PART OF THE TRENCH EXCAVATED BELOW GRADE SHALL BE CORRECTED WITH APPROVED MATERIAL, THOROUGHLY COMPACTED.

(G) - WHEN THE UNCOVERED TRENCH BOTTOM AT SUBGRADE IS SOFT AND IN THE OPINION OF THE ENGINEER CANNOT SUPPORT THE CONCRETE ENCASED CONDUIT LINE, A FURTHER DEPTH AND/OR WIDTH SHALL BE EXCAVATED AND REFILLED TO CONCRETE ENCASED CONDUIT LINE FOUNDATION GRADE AS REQUIRED UNDER (F), OR OTHER APPROVED MEANS SHALL BE ADOPTED TO ASSURE A FIRM FOUNDATION FOR THE CONCRETE ENCASED CONDUIT LINE.

(H) - LEDGE ROCK, BOULDERS, LARGE STONES, AND SHALE SHALL BE REMOVED TO PROVIDE A CLEARANCE OF AT LEAST SIX (6) INCHES BELOW ALL PARTS OF THE CONCRETE ENCASED CONDUIT LINE.

(I) - EXCAVATION BELOW SUBGRADE IN ROCK, SHALE OR IN BOULDERS SHALL BE REFILLED TO SUBGRADE WITH APPROVED MATERIAL, THOROUGHLY COMPACTED.

(J) - THE USE OF EXCAVATING MACHINERY WILL BE PERMITTED EXCEPT IN PLACES WHERE OPERATION OF SAME WILL CAUSE DAMAGE TO TREES, BUILDINGS, OR EXISTING STRUCTURES ABOVE OR BELOW GROUND; IN WHICH CASE HAND METHODS SHALL BE EMPLOYED.

(K) - TREES, FENCES, POLES AND ALL OTHER PROPERTY SHALL BE PROTECTED UNLESS THEIR REMOVAL IS AUTHORIZED: ANY PROPERTY DAMAGE SHALL BE SATISFACTORILY RESTORED BY THE CONTRACTOR.

(L) - HYDRANTS UNDER PRESSURE, VALVE PIT COVERS, VALVE BOXES, CURB STOP BOXES, FIRE OR POLICE CALL BOXES, OR OTHER UTILITY CONTROLS SHALL BE LEFT UNOBSTRUCTED AND ACCESSIBLE DURING THE CONSTRUCTION PERIOD.

(M) - THE CONTRACTOR SHALL MAINTAIN ALL EXCAVATIONS IN GOOD ORDER DURING THE CONSTRUCTION, SO AS NOT TO HINDER OR INJURE THE LAYING OF THE CONCRETE ENCASED CONDUIT LINE AND CONSTRUCTION OF THE MANHOLE; HE SHALL TAKE ALL REASONABLE PRECAUTIONS TO PREVENT MOVEMENT OF THE SIDES OF SUCH EXCAVATION, AND SHALL REMOVE AT HIS OWN EXPENSE ANY MATERIAL SLIDING INTO THE EXCAVATION.

SHEETING AND BRACING

(A) - THE CONTRACTOR SHALL FURNISH AND PUT IN PLACE SUCH SHEETING AND BRACING AS MAY BE REQUIRED TO SUPPORT THE SIDES OF TRENCHES OR OTHER EXCAVATION AND SHALL REMOVE SUCH SHEETING AND BRACINGS, AS THE TRENCH OR EXCAVATION IS FILLED UP, UNLESS THE ENGINEER SHALL ORDER IT LEFT IN PLACE, IN WHICH CASE THE CONTRACTOR SHALL CUT THE PLANK OFF AT A HEIGHT AS ORDERED BY THE ENGINEER, OR AS CALLED FOR ON THE CONTRACT DRAWINGS. THAT PORTION OF THE TIMBER ORDERED TO BE LEFT IN PLACE WILL BE PAID FOR AT THE RATE OF EIGHTY DOLLARS (\$80.00) PER THOUSAND FEET BOARD MEASURE. NO PAYMENT WILL BE MADE FOR WASTED ENDS.

(B) - WHENEVER THE EXCAVATIONS FOR THE WORK HEREIN TO BE DONE ARE IMMEDIATELY ADJACENT TO OTHER SUBSURFACE STRUCTURES, THE CONTRACTOR SHALL FURNISH AND PLACE SHEETING AND BRACING WHERE NOTED ON CONTRACT DRAWINGS AND AS MAY BE NECESSARY, SO AS TO REDUCE TO A MINIMUM THE POSSIBILITY OF INJURING OR DAMAGING THE SAME.

(C) - IF THE ENGINEER IS OF THE OPINION THAT AT ANY POINT SUFFICIENT OR PROPER SUPPORTS, SHEETING OR BRACINGS HAVE NOT BEEN PROVIDED, HE MAY ORDER ADDITIONAL SUPPORTS, SHEETING OR BRACING, AT THE EXPENSE OF THE CONTRACTOR, AND THE COMPLIANCE WITH SUCH ORDERS BY THE CONTRACTOR SHALL NOT RELIEVE OR RELEASE HIM FROM HIS RESPONSIBILITY FOR SUFFICIENCY OF SUCH SUPPORTS.

REMOVAL OF EXCAVATED MATERIAL

THIS ITEM SHALL BE AS SPECIFIED IN SECTION E-1.06 OF THE STATE HIGHWAY SPECIFICATIONS.

BACKFILLING

(A) - THIS WORK INCLUDES ALL BACKFILLING, TOGETHER WITH RAMMING, PUDDLING AND ROLLING, AS REQUIRED; THE REGRADING OF GROUNDS; THE REPLACING OF SURFACE AND SUB-SURFACE STRUCTURES; THE PLACING AND MAINTAINING OF TEMPORARY SIDEWALKS AND DRIVEWAYS; THE FURNISHING OF SUITABLE MATERIAL FOR BACKFILL, RESEEDING LAWNS AND REPLACING TREES AND SHRUBBERY DAMAGED BY THE CONTRACTOR; AND ALL APPURTENANT WORK INCIDENTAL THERETO. PAVEMENTS, CURBS, SIDEWALKS AND DRIVEWAYS WITHIN THE LIMITS OF THE WORK SHALL BE TEMPORARILY SURFACED, MAINTAINED AND FINALLY REPLACED OR REPAVED AS SET FORTH UNDER ROADS, SURFACES, SIDEWALKS, DRIVEWAYS AND CURBING.

(B) - BACKFILL, UNLESS OTHERWISE SPECIFIED, MAY BE MADE WITH MATERIAL EXCAVATED FROM THE TRENCHES, PROVIDING SAME IS SATISFACTORY TO THE ENGINEER. IF, IN THE OPINION OF THE ENGINEER, THE MATERIAL EXCAVATED IS UNSATISFACTORY, THEN THE CONTRACTOR SHALL FURNISH AT HIS OWN EXPENSE OTHER MATERIAL SUITABLE FOR BACKFILL. ALL BACKFILL SHALL BE FREE FROM SLAG, CINDERS, RUBBISH AND OTHER OBJECTIONABLE MATERIAL.

(C) - BEFORE LAYING THE CONCRETE ENCASED CONDUIT LINE, THE BOTTOM OF THE TRENCH SHALL BE BROUGHT TO THE GRADE OF THE BOTTOM OF THE CONCRETE ENCASEMENT. WHEREVER THE BOTTOM OF THE TRENCH HAS BEEN EXCAVATED BELOW THE BOTTOM OF THE CONCRETE ENCASEMENT, THE CONTRACTOR SHALL PLACE SAND, OR OTHER MATERIAL SATISFACTORY TO THE ENGINEER TO BRING THE BOTTOM OF THE TRENCH TO THE GRADE OF THE BOTTOM OF THE CONCRETE ENCASEMENT. THIS BED SHALL BE THOROUGHLY TAMPED BEFORE THE CONCRETE ENCASED CONDUIT LINE IS LAID.

(D) - UNLESS OTHERWISE SPECIFIED, THE BACKFILL UNDER, AROUND AND TO A DEPTH OF ONE (1) FOOT ABOVE THE TOP OF THE CONCRETE ENCASEMENT, SHALL BE MADE WITH MATERIAL SATISFACTORY TO THE ENGINEER, WHICH MATERIAL SHALL BE FREE FROM STONE AND OTHER OBJECTIONABLE MATERIAL NOTED ABOVE. THE CONTRACTOR MUST USE SPECIAL CARE IN PLACING THIS PORTION OF THE BACKFILL, SO AS TO AVOID INJURING, DISTORTING OR MOVING THE CONCRETE ENCASED CONDUIT LINE WHEN COMPACTING SAME. ABOVE THIS LEVEL THE BACKFILL SHALL BE MADE WITH MATERIAL SATISFACTORY TO THE ENGINEER. HOWEVER, WHERE SPECIFIED, SAND SHALL BE USED FOR THE ENTIRE PORTION OF THE BACKFILL. SEE BELOW.

(E) - BACKFILLING AS NOTED IN PARAGRAPH (D) SHALL BE TAMPED IN THIN LAYERS, SIMULTANEOUSLY ON EACH SIDE OF THE CONCRETE ENCASEMENT, AND THOROUGHLY COMPACTED SO AS TO PROVIDE A SOLID BACKING AGAINST THE EXTERNAL SURFACE OF THE CONCRETE ENCASED CONDUIT LINE.

(F) - ONLY AFTER THE BACKFILL PREVIOUSLY MENTIONED HAS BEEN SATISFACTORYLY COMPACTED, MAY WORK PROCEED IN PLACING THE REMAINING BACKFILL WHICH MUST BE CAREFULLY PLACED AND COMPACTED BY TAMPING, PUDDLING, OR ROLLING. ALL PRECAUTIONS MUST BE TAKEN TO ELIMINATE FUTURE SETTLEMENT. THE NUMBER OF MEN TAMPING SHALL BE NOT LESS THAN THE NUMBER BACKFILLING, AND ADDITIONAL MEN SHALL BE KEPT IN THE TRENCH TO SPREAD THE MATERIAL.

(G) - BACKFILLING SHALL NOT BE DONE IN FREEZING WEATHER, EXCEPT BY PERMISSION OF THE ENGINEER AND IT SHALL NOT BE MADE WITH FROZEN MATERIAL, NOR SHALL ANY FILL BE MADE WHERE THE MATERIAL ALREADY IN THE DITCH IS FROZEN.

(H) - THE ENTIRE BACKFILL SHALL BE MADE WITH SAND WHERE PERMANENT PAVEMENTS, CURBS, DRIVEWAY, OR SIDEWALKS HAVE BEEN OPENED FOR OR UNDERCUT BY THE EXCAVATION.

(I) - ALL SAND TO BE USED FOR BACKFILL SHALL BE A NATURAL BANK SAND, GRADED FROM FINE TO COARSE, NOT LUMPY OR FROZEN, AND FREE FROM SLAG, CINDERS, ASHES, RUBBISH, OR OTHER DELETERIOUS OR OBJECTIONABLE MATERIAL. IT SHALL NOT CONTAIN A TOTAL OF MORE THAN 10 PER CENT BY WEIGHT OF LOAM AND CLAY, AND ALL MATERIAL MUST BE CAPABLE OF BEING PASSED THROUGH A 3/4 INCH SIEVE. NOT MORE THAN 5 PER CENT SHALL REMAIN ON A NO. 4 SIEVE.

ROAD SURFACES, SIDEWALKS, DRIVEWAYS, AND CURBING

(A) - THE CONTRACTOR SHALL REMOVE ALL PAVEMENTS AND ROAD SURFACES WITHIN THE LINES OF EXCAVATION. AFTER THE CONCRETE ENCASED CONDUIT LINE HAS BEEN LAID, AND THE NEW MANHOLE COMPLETED, ALL APPURTENANT WORK CONSTRUCTED AND BACKFILL COMPLETED, HE SHALL FURNISH, PLACE, AND MAINTAIN WHEREVER THE PAVEMENT OR ROAD SURFACE HAS BEEN REMOVED OR DAMAGED BY HIM, A TEMPORARY PAVEMENT IN THE PAVED PORTION OF STREETS, OR A TEMPORARY ROAD SURFACE IN THE UNPAVED PORTION OF STREETS, SO AS TO PROVIDE A SAFE AND PASSABLE ROADWAY UNTIL SUCH TIME AS THE FINAL PAVEMENT OR ROAD SURFACE IS COMPLETED.

(B) - ALL PAVEMENTS, ROAD SURFACES, SIDEWALKS, DRIVEWAYS, OR CURBS WHICH THE CONTRACTOR IS REQUIRED TO REPLACE OR TO HAVE REPLACED, SHALL, AT THE EXPIRATION OF THIS CONTRACT, BE IN AT LEAST AS GOOD CONDITION AS AT THE TIME OF AWARDED THE CONTRACT.

(C) - TUNNELING WILL NOT BE PERMITTED WITHOUT PERMISSION OF THE ENGINEER. IN BACKFILLING TUNNELS, SAND SHALL BE USED AS FAR AS POSSIBLE AND BALANCE OF BACKFILLING MADE WITH CLASS E CONCRETE, RAMMED IN PLACE.

(D) - NO SPECIFIC OR SEPARATE PAYMENT WILL BE MADE FOR ALL OF THIS WORK, BUT THE COST THEREOF SHALL BE INCLUDED IN THE PRICES BID FOR THE VARIOUS ITEMS OF THE WORK TO BE DONE UNDER THIS CONTRACT. RESTORATION AS NOTED ABOVE WILL ONLY BE REQUIRED IN AREAS WHERE THE PLANS DO NOT OTHERWISE PROPOSE NEW CONSTRUCTION OF PAVEMENT, SIDEWALKS, AND CURBS, EXCEPT THAT TEMPORARY RESTORATION IN SUCH AREAS MAY BE REQUIRED BY THE ENGINEER IN ORDER TO MAINTAIN TRAFFIC OR LOCAL ACCESS

LAYING CONDUIT

(A) PROPER IMPLEMENTS, TOOLS, AND FACILITIES, SATISFACTORY TO THE ENGINEER SHALL BE PROVIDED AND USED BY THE CONTRACTOR FOR THE SAFE AND CONVENIENT PROSECUTION OF THE WORK. ALL CONDUITS AND FITTINGS SHALL BE CAREFULLY LOWERED INTO THE TRENCH PIECE BY PIECE, IN SUCH MANNER AS TO PREVENT DAMAGE TO CONDUIT, AND UNDER NO CIRCUMSTANCES SHALL CONDUIT OR ACCESSORIES BE DROPPED OR DUMPED INTO THE TRENCH. IF ANY DEFECTIVE CONDUIT OR MATERIAL BE DISCOVERED WHILE CONDUIT IS BEING LAID, A NEW PIECE SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AT THE SITE OF THE WORK.

(B) - ALL FOREIGN MATTER OR DIRT SHALL BE REMOVED FROM THE INSIDE OF THE CONDUIT BEFORE IT IS LOWERED INTO ITS POSITION IN THE TRENCH, AND IT SHALL BE KEPT CLEAN BY APPROVED MEANS DURING AND AFTER LAYING.

(C) - WHEREVER NECESSARY TO DEFLECT CONDUIT FROM A STRAIGHT LINE, EITHER IN THE VERTICAL OR HORIZONTAL PLANE TO AVOID OBSTRUCTIONS, OR FOR OTHER REASONS, THE DEGREE OF DEFLECTION SHALL BE APPROVED BY THE ENGINEER.

(D) NO CONDUIT SHALL BE LAID IN WATER, OR WHEN THE TRENCH CONDITIONS OR THE WEATHER IS UNSUITABLE FOR SUCH WORK, EXCEPT BY PERMISSION OF THE ENGINEER

FLOATING

THE CONTRACTOR SHALL TAKE EVERY PRECAUTION AGAINST THE FLOATING OF THE CONCRETE ENCASED CONDUIT LINE DUE TO WATER COMING INTO THE TRENCH, OR THROUGH CAVEING IN, FLUSHING OR PUDDLING. IN CASE OF SUCH FLOATING THE CONTRACTOR SHALL REPLACE THE CONCRETE ENCASED CONDUIT LINE AT HIS OWN EXPENSE, AND MAKE WHOLLY GOOD ANY INJURY OR DAMAGE WHICH MAY HAVE RESULTED.

REVISION	DATE	DESCRIPTION	BY	APP'VD

DIVISION OF LIGHT & POWER CITY OF CLEVELAND			
ELECTRICAL POWER CONDUIT NOTES FOR MEDINA-CLARK INTERCHANGE IN CLEVELAND, OHIO			
DRAWN BY: G. HAHN	SCALE: N.T.S.	DRAWING NUMBER:	
DATE: 3-4-65	CH'K'D BY: R.L.A.	5257-5A	

APPROVED BY	DIRECTOR OF PUBLIC UTILITIES	COMMISSIONER OF LIGHT & POWER	COMMISSIONER OF UTILITIES ENGR.	CHIEF ELECTRICAL ENGINEER	ENGINEER OF DESIGN
<i>[Signature]</i> 3/10/65					
<i>[Signature]</i> 3/10/65					
<i>[Signature]</i> 3/9/65					
<i>[Signature]</i> 3/9/65					
<i>[Signature]</i> 3/9/65					

REFERENCE DRAWINGS NO. DATE DIST.

ELECTRICAL POWER CONDUIT WORK CONT'D.

FED. RD. DIVISION	STATE	PROJECT			
2	OHIO				502

CUYAHOGA COUNTY
CUY 71-18.54
CUY 90-13.81

BRICK, PLAIN & REINFORCED CONCRETE MASONRY

UNDER THESE ITEMS THE CONTRACTOR SHALL FURNISH ALL NECESSARY LABOR, MATERIALS, TOOLS AND EQUIPMENT FOR THE CONSTRUCTION, COMPLETE, OF ALL MISCELLANEOUS MASONRY STRUCTURES, AND INCLUDING CONCRETE ENCASED CONDUIT LINE AND MANHOLE AND OTHER APPURTENANT WORK TOGETHER WITH THE HAULING, MIXING, PLACING, FORMS, SCAFFOLDING, SHEETING AND BRACING, GROUTING, PLASTERING, CURING, ETC. ALL AS SPECIFIED, REQUIRED OR SHOWN ON THE CONTRACT DRAWINGS.

BRICK AND MASONRY MATERIAL

(A) THE MATERIAL FURNISHED BY THE CONTRACTOR FOR THE VARIOUS KINDS OF MASONRY CONSTRUCTION TO BE CONSTRUCTED SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:

(B) ALL BRICK FURNISHED AND USED SHALL BE NO. 2 SHALE BRICK AND SHALL COMPLY WITH THE REQUIREMENTS FOR "GRADE SA" ASTM DESIGNATION: C32-42.

(C) SECTION M-1.3 PORTLAND CEMENT (ASTM C-150, TYPE I). PORTLAND CEMENT SHALL CONFORM TO THE REQUIREMENTS FOR "TYPE I" OF THE SPECIFICATIONS FOR PORTLAND CEMENT, ASTM DESIGNATION C-150.

THE COMPRESSIVE STRENGTH REQUIREMENTS SHALL GOVERN.

(PACKAGING AND MARKING)

WHEN THE CEMENT IS DELIVERED IN PACKAGES, THE NAME AND BRAND OF THE MANUFACTURER SHALL BE PLAINLY INDICATED THEREON. SIMILAR INFORMATION SHALL BE PROVIDED IN THE SHIPPING ADVICES ACCOMPANYING THE SHIPMENT OF PACKAGED OR BULK CEMENT. A BAG SHALL CONTAIN 94 POUNDS NET. A BARREL SHALL CONSIST OF 376 POUNDS NET. ALL PACKAGES SHALL BE IN GOOD CONDITION AT THE TIME OF INSPECTION.

(D) SECTION M-2.1-SAND

1. GENERAL. THE SAND SHALL BE NATURAL COMPOSED OF CLEAN, HARD, DURABLE, UNCOATED PARTICLES OF STONE, WELL GRADED FROM COARSE TO FINE, WITH THE COARSE PARTICLES PREDOMINATING, FREE FROM LUMPS OF CLAY AND ALL ORGANIC MATTER.

2. GRADING. (U.S. STANDARD SIEVE SERIES). THE SAND SHALL BE WELL GRADED FROM COARSE TO FINE AND WHEN TESTED BY MEANS OF LABORATORY SIEVES SHALL CONFORM TO THE FOLLOWING GRADING:

SIEVE NO.	TOTAL PER CENT PASSING
3/8"	100
NO. 4	95-100
NO. 8	70-95
NO. 16	45-80
NO. 30	25-60
NO. 50	10-30
NO. 100	1-10

(E) SECTION M-3.5 - CRUSHED ROCK AND SLAG

1. GENERAL. THE CRUSHED ROCK AND SLAG SHALL BE CLEAN, SOUND AND DURABLE, OR UNIFORM QUALITY, AND FREE FROM THIN, ELONGATED, OR BRITTLE PIECES. IF PRODUCED BY CRUSHING GRAVEL, ONLY THAT PORTION WHICH HAS BEEN RETAINED ON A SCREEN WITH 2-INCH OR LARGER SQUARE OPENINGS SHALL BE USED AND THE LARGEST SIZE LIMITED TO NO. 4 FOR CONCRETE MANHOLE CONSTRUCTION AND NO. 46 FOR DUCTLINE CONSTRUCTION.

THE AGGREGATE MAY INCLUDE CRUSHED LIMESTONE, CRUSHED BOULDERS COMPOSED OF LIMESTONE, GRANITE TRAP ROCK OR ROCK OF SIMILAR NATURE, OR CRUSHED SLAG. AGGREGATE FURNISHED UNDER THIS SECTION IS SUBJECT TO THE MAXIMUM PERCENTAGE LIMITATIONS OF DELETERIOUS SUBSTANCES SPECIFIED UNDER SECTION M-3.1 IN CASE OF LIMESTONE; UNDER SECTION M-3.6 IN CASE OF SLAG; AND SECTION M-3.91 IN CASE OF GRAVEL.

(F) SECTION M-3.6 - SLAG

1. GENERAL. THE BROKEN SLAG SHALL BE COMPOSED OF AIR-COOLED BLAST FURNACE SLAG AND SHALL BE CLEAN, SOUND, DURABLE, REASONABLY UNIFORM IN DENSITY AND FREE FROM AN EXCESS OF THIN, OR ELONGATED PIECES.

(G) ALL WATER SHALL BE CLEAN AND ACCURATELY MEASURED FOR EACH BATCH OF CONCRETE.

(H) ALL PLAIN CONCRETE SHALL BE CLASS "C".

(I) ALL CEMENT MORTAR SHALL BE MIXED IN THE PROPORTION OF ONE (1) PART OF CEMENT - TWO (2) PARTS OF SAND.

INSPECTION

THE ENGINEER OR HIS AUTHORIZED ASSISTANT SHALL HAVE THE RIGHT TO INSPECT THE MATERIAL AND WORK DONE, AS THE INTERESTS OF THE CITY OR STATE MAY REQUIRE. THE ENGINEER SHALL HAVE UNRESTRICTED ACCESS TO THE CONTRACTOR'S PLANT, AND TO ALL PARTS OF WORK, AND OTHER PLACES AT WHICH THE PREPARATION OF THE MATERIAL AND THE CONSTRUCTION OF THE DIFFERENT PARTS OF THE WORK TO BE DONE UNDER THESE SPECIFICATIONS ARE CARRIED ON, AND HE SHALL RECEIVE ALL FACILITIES AND ASSISTANCE TO CARRY OUT HIS WORK OF INSPECTION AND TESTING IN A MANNER SATISFACTORY TO THE ENGINEER. SUCH INSPECTION SHALL NOT RELIEVE THE CONTRACTOR FROM ANY OBLIGATION TO PERFORM SAID WORK STRICTLY IN ACCORDANCE WITH THE SPECIFICATIONS, OR ANY MODIFICATIONS THEREOF AS HEREIN PROVIDED, AND WORK NOT SO CONSTRUCTED SHALL BE REMOVED AND MADE GOOD BY THE CONTRACTOR AT HIS OWN EXPENSE. ALL MATERIAL MUST BE SOUND AND SHALL CONFORM TO THESE SPECIFICATIONS AND ANY DEFECTIVE MATERIAL WHICH MAY HAVE PASSED THE INSPECTOR AT THE WORKS, OR ELSEWHERE, SHALL BE AT ALL TIMES LIABLE TO REJECTION WHEN DISCOVERED, UNTIL THE DATE OF FINAL PAYMENT UNDER THIS CONTRACT.

REINFORCED CONCRETE MANHOLES

(A) WORK INCLUDED

THE CONTRACTOR SHALL FURNISH ALL MATERIALS FOR AND SHALL PROPERLY CONSTRUCT AT THE LOCATIONS, TO THE LINE AND GRADE, AND TO THE DIMENSIONS AND DETAILS AS SHOWN ON THE PLANS AND ACCORDANCE TO THESE SPECIFICATIONS, ALL MANHOLES COMPLETE WITH BRICK NECKS, FRAMES AND COVERS, CABLE PULLING IRONS, GROUNDING ROD SLEEVES AND SUMPS.

(B) CONCRETE

CONCRETE SHALL BE CLASS "C". ALL STONE OR SLAG USED FOR COARSE AGGREGATE SHALL BE CLEAN, HARD AND WELL GRADED FROM FINE TO COARSE, FREE FROM FOREIGN SUBSTANCES AND SHALL PASS A NO. 4 SIEVE.

(C) REINFORCING STEEL

CONCRETE REINFORCING STEEL SHALL CONFORM TO ASTM-A15 SPECIFICATION. THE STEEL SHALL BE OF THE SIZES AND SPACING SHOWN ON THE DRAWINGS AND SHALL BE PROPERLY TIED AND SUPPORTED IN ORDER TO MAINTAIN ITS POSITION WHEN CONCRETE IS POURED.

(D) MANHOLE FRAMES AND COVERS

ALL CAST IRON MANHOLE FRAMES AND COVERS AS SHOWN ON THE DRAWINGS SHALL BE FURNISHED AND INSTALLED AS DIRECTED. THE MANHOLE FRAMES AND COVERS TO BE FURNISHED AND INSTALLED ARE SHOWN IN DETAIL ON DIVISION OF LIGHT AND POWER DRAWING #2346. FRAMES SHALL BE SET IN PLACE IN A FULL BED OF MORTAR, AT SUCH ELEVATION AS TO MAKE THE TOP OF THE FRAME CONFORM TO THE FINISHED SURFACES OR FINAL ESTABLISHED GRADE. BRICK MASONRY MAY BE USED ABOVE THE TOP OF THE MANHOLE FOR SETTING THE FRAME TO GRADE.

(E) MATERIALS

ALL CASTINGS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 0-7.81 OF THE "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF PAVEMENTS, SIDEWALKS, AND SEWERS" OF THE CITY OF CLEVELAND DATED JANUARY, 1950, EXCEPT THAT CAST IRON SHALL BE CLASS NO. 30.

(F) CLEANING AND TESTING

ALL CASTINGS SHALL BE THOROUGHLY CLEANED AND SUBJECTED TO A CAREFUL HAMMER TEST. NO CASTINGS SHALL BE COATED UNLESS CLEAN AND FREE FROM RUST, AND APPROVED IN THESE RESPECTS BY THE ENGINEER OR HIS AUTHORIZED INSPECTOR IMMEDIATELY BEFORE BEING DIPPED.

(G) COATING

EACH CASTING SHALL BE SPRAYED OR BRUSHED INSIDE AND OUT WITH THREE (3) FIELD COATS OF COAL TAR PITCH EQUAL TO INERTOL 50 OR BITUMASTIC 50.

(H) CABLE PULLING IRONS

CABLE PULLING IRONS SHALL BE MADE FROM 7/8 INCH ROUND STEEL ROD SHAPED AS SHOWN ON THE DRAWING AND TIED INTO THE REINFORCING STEEL BEFORE CONCRETE IS POURED. PULLING IRONS SHALL BE HOT-DIP GALVANIZED AFTER FORMING.

MEASUREMENT

THE MANHOLES TO BE PAID FOR WILL BE THE ACTUAL NUMBER OF EACH, LISTED AND ESTIMATED, COMPLETED AND ACCEPTED.

PAYMENT

THE WORK INCLUDED IN THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR EACH MANHOLE BID FOR "ITEM SPECIAL-REINFORCED CONCRETE MANHOLES" IN PLACE COMPLETED AND ACCEPTED, WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR ALL EXCAVATION AND BACKFILL, AND FOR FURNISHING, HAULING AND PLACING ALL CASTINGS, REINFORCING STEEL, CONCRETE, BRICK AND CONCRETE MASONRY, END BELLS, PULLING IRONS, GROUND SLEEVES AND OTHER MATERIAL, ETC., AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

NON-REINFORCED, CONCRETE-ENCASED, FIBRE CONDUIT BANKS

(A) WORK INCLUDED

THE CONTRACTOR SHALL FURNISH ALL MATERIALS FOR AND SHALL PROPERLY CONSTRUCT AND CONNECT TO MANHOLES AND TO TRANSITION ADAPTORS AS SHOWN ON DRAWINGS OR AS DIRECTED, ALL NON-REINFORCED CONCRETE-ENCASED FIBRE CONDUIT BANKS AS REQUIRED FOR THE PROPER COMPLETION OF THE WORK INCLUDED UNDER THIS CONTRACT.

(B) FIBRE CONDUIT AND FITTINGS

FIBRE CONDUIT FOR ELECTRICAL PURPOSES SHALL CONFORM TO FEDERAL SPECIFICATION WC 581 AND SHALL BE FOUR (4) INCHES INSIDE DIAMETER TYPE I FOR CONCRETE ENCASEMENT. COUPLINGS SHALL BE TAPERED HARRINGTON TYPE. END BELLS AT MANHOLE ENTRANCES, 5° COUPLINGS, STANDARD COUPLINGS, 90° BENDS, AND PLUGS OR CAPS TO CLOSE UNUSED DUCTS SHALL BE MADE OF THE SAME FIBRE MATERIAL AS THE CONDUIT. SPACERS MAY BE MADE OF EITHER FIBRE OR PLASTIC.

(C) CONCRETE

CONCRETE USED FOR ENCASEMENT OF CONDUITS SHALL BE CLASS "C". THE AGGREGATE SHALL PASS A NO. 46 SIEVE IN ORDER TO FLOW BETWEEN DUCTS AND MAY BE CRUSHED SLAG OR STONE.

(D) INSTALLATION

CONDUIT SHALL BE INSTALLED BY THE BUILT UP METHOD AS FOLLOWS: NECESSARY SPACERS SHALL BE PLACED AT NOT GREATER THAN (5) FOOT INTERVALS TO HOLD DUCTS IN THE CONFIGURATION DESIRED, WITH THE DUCT BANK BRACED SECURELY TO KEEP FROM SHIFTING AND FLOATING WHILE CONCRETE IS POURED. EACH SECTION OF DUCT WITH ITS COUPLING SHALL BE TAPPED SECURELY INTO PLACE IN THE PREVIOUS COUPLING TO SET UP THE TAPERED JOINTS TIGHT AND LEAK PROOF.

CONCRETE SHALL BE WORKED INTO THE SPACES BETWEEN DUCTS SO THAT THE CONDUIT BANK IS EFFECTIVELY ENCASED IN CONCRETE WITHOUT VOIDS OR EMPTY SPACES.

CONDUIT WHICH IS CUT TO FIT SHORT SECTIONS SHALL BE TAPERED WITH A MACHINE DESIGNED TO PRODUCE THE SAME JOINTING CONDITIONS AS PROVIDED BY FACTORY MADE CONDUIT SECTIONS.

(E) CLEANING

AFTER CONDUITS HAVE BEEN INSTALLED THE CONTRACTOR SHALL CLEAN ALL THE DUCTS BY PULLING THROUGH A MANDREL TO REMOVE SOLID OBSTRUCTIONS, FOLLOWED BY A CIRCULAR WIRE BRUSH TO REMOVE ANY DIRT, SAND OR CONCRETE WHICH MAY HAVE BEEN INTRODUCED DURING CONSTRUCTION, LEAVING A CLEAN CONDUIT FREE FROM OBSTRUCTIONS OR FOREIGN MATTER.

MEASUREMENT

THE NUMBER OF LINEAL FEET OF CONDUIT BANK TO BE PAID FOR SHALL BE THE ACTUAL NUMBER OF LINEAL FEET FURNISHED AND PLACED IN ACCORDANCE WITH THESE SPECIFICATIONS AS MEASURED ALONG THE AXIS OF THE CONDUIT LINE INCLUDING FITTINGS.

PAYMENT

THE FOOTAGE MEASURED AS PROVIDED ABOVE SHALL BE PAID FOR AT THE CONTRACT PRICE BID PER LINEAL FOOT FOR "ITEM SPECIAL-CONDUIT BANK", CLASSIFIED AS TO SIZE AND TYPE, WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR EXCAVATING AND FOR FURNISHING, HAULING AND PLACING THE CONDUIT, FITTINGS, SPACERS, CONCRETE, SHEETING AND BRACING, BACKFILL, WATER USED FOR COMPACTION, INCIDENTAL CONCRETE, THE REMOVAL OF ALL SURPLUS EXCAVATION AND DISCARDED MATERIAL, REPAVING, AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

MANHOLES (ABANDONED)

(A) WORK INCLUDED

THE CONTRACTOR SHALL FURNISH ALL MATERIALS FOR AND SHALL PROPERLY ABANDON AS SHOWN ON DRAWINGS OR AS DIRECTED, ALL MANHOLES AS REQUIRED FOR THE PROPER COMPLETION OF THE WORK INCLUDED UNDER THIS CONTRACT.

(B) CONSTRUCTION METHODS

CASTINGS ON MANHOLES TO BE ABANDONED SHALL BE CAREFULLY REMOVED IN A MANNER TO PREVENT DAMAGE TO THE CASTINGS AND PLACED OUTSIDE THE PAVEMENT AREA FOR DISPOSAL BY THE DIVISION OF LIGHT AND POWER. MANHOLE ROOFS SHALL BE BROKEN OUT AND MANHOLE WALLS SHALL BE TORN DOWN AS PER STATE OF OHIO, DEPARTMENT OF HIGHWAY'S CONSTRUCTION AND MATERIAL SPECIFICATIONS ITEM 1-16.03. THE MANHOLES SHALL BE BACKFILLED WITH SUITABLE SOIL OR GRANULAR MATERIAL.

MEASUREMENT

THE MANHOLES TO BE PAID FOR WILL BE THE ACTUAL NUMBER ESTIMATED, COMPLETED, AND ACCEPTED.

PAYMENT

THE WORK INCLUDED IN THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR EACH, "ITEM SPECIAL-MANHOLES TO BE ABANDONED", WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR REMOVING AND STORING CASTINGS, EXCAVATION, REMOVAL OF ROOF AND PORTION OF WALLS, BACKFILLING, DISPOSAL OF REMOVED MASONRY AND FOR FURNISHING AND PLACING ALL THE NECESSARY MATERIALS, AND FOR ALL LABOR, EQUIPMENT, TOOLS, AND OTHER INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

REVISION	DATE	DESCRIPTION	BY	APP'VD.	

**DIVISION OF LIGHT & POWER
CITY OF CLEVELAND**

ELECTRICAL POWER CONDUIT NOTES FOR
MEDINA-CLARK INTERCHANGE
IN CLEVELAND, OHIO

DRAWN BY: G. HAHN	SCALE: N.T.S.	DRAWING NUMBER: 5257-5B
CHK'D BY: R. A. B.	DATE: 3-4-65	

APPROVED BY	TITLE	DATE	NO.	DATE	DIST.
<i>Wm. A. DeWalt</i>	DIRECTOR OF PUBLIC UTILITIES	3/10/65			
<i>John A. DeWalt</i>	COMMISSIONER OF LIGHT & POWER	3/10/65			
<i>Arnold P. Smith</i>	COMMISSIONER OF UTILITIES ENGR.	3/9/65			
<i>Edward J. Kramer</i>	CHIEF ELECTRICAL ENGINEER	3/9/65			
<i>Robert J. Albach</i>	ENGINEER OF DESIGN	3/9/65			

ELECTRICAL POWER CONDUIT WORK CONT'D.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

503

CUYAHOGA COUNTY
CUY. 71-18.54
CUY. 90-13.81

NON-ENCASED, BRIDGE-SUPPORTED, ASBESTOS-CEMENT CONDUIT BANKS

(A) WORK INCLUDED

THE CONTRACTOR SHALL FURNISH ALL MATERIALS FOR AND SHALL PROPERLY INSTALL AND CONNECT TO EXPANSION COUPLINGS AT ABUTMENTS AND TO BRIDGE MANHOLES (INCLUDING THE END BELLS) AS SHOWN ON THE DRAWINGS OR AS DIRECTED, ALL NON-ENCASED, BRIDGE-SUPPORTED, ASBESTOS-CEMENT CONDUIT BANKS AS REQUIRED FOR THE PROPER COMPLETION OF THE WORK INCLUDED UNDER THIS CONTRACT.

(B) ASBESTOS-CEMENT CONDUIT AND FITTINGS

ASBESTOS-CEMENT CONDUIT FOR ELECTRICAL PURPOSES SHALL CONFORM TO FEDERAL SPECIFICATION WC 571b AND SHALL BE FOUR (4) INCHES INSIDE DIAMETER TYPE II - INTENDED FOR USE WITHOUT ENCASUREMENT IN CONCRETE. COUPLINGS SHALL BE TAPERED HARRINGTON TYPE, STANDARD COUPLINGS, CENTER MAKE-UP CONNECTORS, END BELLS, AND EXPANSION COUPLINGS SHALL BE MADE OF THE SAME MATERIAL AS THE CONDUIT. SPACERS SHALL BE MADE FROM 1/2" THICK ASBESTOS-CEMENT BOARD (OF THE SAME MATERIAL AS THE CONDUIT) TO DIMENSIONS AS SHOWN ON THE DRAWINGS AND DRILLED OR BORED TO THE PROPER RADIUS TO GIVE A SMOOTH SADDLE WITHOUT BURRS OR ROUGH EDGES.

(C) STRUCTURAL STEEL FOR DUCTLINE SUPPORTS

CHANNELS, HEADLESS BOLTS & NUTS SHALL CONFORM TO STATE OF OHIO, DEPARTMENT OF HIGHWAY'S CONSTRUCTION AND MATERIAL SPECIFICATIONS ITEMS S-7 STRUCTURAL STEEL AND SEC. M-7.4 (a) STRUCTURAL STEEL. CHANNELS SHALL BE 3"-5 LB., ASTM A36 CUT TO LENGTH AS SHOWN ON DRAWINGS. HEADLESS BOLTS SHALL BE 1"-2.67 LB., C.F. ROUND STEEL, AISI C1042 CUT TO LENGTH & THREADED AS SHOWN ON DRAWINGS.

(D) CONCRETE

CONCRETE USED FOR ENCASUREMENT OF END BELLS AT BRIDGE MANHOLE SHALL BE CLASS "C". THE AGGREGATE SHALL PASS A NO. 9 SIEVE IN ORDER TO FLOW BETWEEN END BELLS.

(E) PREFORMED EXPANSION JOINT FILLERS

EXPANSION JOINT FILLERS SHALL CONFORM TO STATE OF OHIO DEPARTMENT OF HIGHWAY CONSTRUCTION AND MATERIAL SPECIFICATIONS SEC. M-10.02, AASHO DESIGNATION: M 153, TYPE III - STANDARD-MODERATELY RESILIENT.

(F) INSTALLATION

- CONDUIT SHALL BE INSTALLED AS FOLLOWS:
1. DUCT SUPPORT CLAMPS (BASE CHANNEL WITH ATTACHED BOLTS) SHALL BE PROPERLY ALIGNED AND WELDED TO ALL CROSS MEMBERS AT NOT GREATER THAN FIVE (5) FOOT INTERVALS AS SHOWN ON DRAWINGS.
 2. NECESSARY SPACERS, PREFORMED EXPANSION JOINT FILLERS, TOP CHANNELS, AND NUTS SHALL BE USED TO HOLD DUCTS IN THE CONFIGURATION DESIRED.
 3. CONDUIT SHALL BE INSTALLED SO THAT COUPLINGS ARE STAGGERED AND THAT NO COUPLING COMES WITHIN A SUPPORT CLAMP. COUPLINGS SHALL NOT BE CLAMPED DOWN.
 - 4a. EACH LENGTH OF CONDUIT SHALL BE LINED UP TO FORM A STRAIGHT LINE. ANY PIECE THAT DOES NOT FIT PROPERLY OR DOES NOT MAKE A STRAIGHT LINE SHALL BE REJECTED. ONLY STRAIGHT PIECES SHALL BE USED.
 - 4b. EXTREME CAUTION SHOULD BE EXERCISED TO NEST CONDUIT IN SPACER SADDLE WITHOUT BINDING BY ROTATING EACH LENGTH OF CONDUIT AND BY FILING OR RASPING SECTION OF CONDUIT WHICH COMES IN CONTACT WITH SPACER.
 5. EACH SECTION OF CONDUIT WITH ITS COUPLING SHALL BE TAPPED SECURELY INTO PLACE IN THE PREVIOUS COUPLING TO SET UP THE TAPERED JOINTS TIGHT AND LEAK PROOF.
 6. THE DUCT SUPPORT CLAMPS SHALL BE TIGHTENED BY POSITIONING THE LOWER NUTS TO KEEP THE CONDUIT FROM BEING CRUSHED WHEN THE TOP NUTS ARE TIGHTENED TO ALLOW THE DUCT LINE TO BE BRACED SECURELY. IF ANY CONDUIT AND OR FITTING IS DAMAGED IN THE CONDUCT OF CLAMPING OR SETTING OF THE DUCTS, THE CONTRACTOR SHALL REPLACE THE CONDUIT AND OR FITTING AT HIS OWN EXPENSE, AND MAKE WHOLLY GOOD ANY INJURY OR DAMAGE WHICH MAY HAVE RESULTED.
 7. STANDARD OR SPECIAL EXPANSION COUPLINGS SHALL BE INSTALLED WHERE SHOWN ON THE DRAWINGS.
 8. SPECIAL CARE MUST BE EXERCISED IN ADJUSTING THE EXPANSION JOINTS FOR THE TEMPERATURE AT THE TIME OF INSTALLATION TO INSURE THAT THE EXPANSION REQUIRED BY THE BRIDGE STRUCTURE CAN BE FULLY OBTAINED BY THE CONDUIT BANK.
 9. END BELLS SHALL BE INSTALLED AT THE BRIDGE MANHOLE AS SHOWN ON THE DRAWINGS.
 10. NOMINAL LENGTH OF CONDUIT SHALL BE TEN (10) FEET LONG. CONDUIT MAY BE CUT AS REQUIRED TO CLEAR SUPPORT CLAMPS AND FOR ADJUSTMENT OF THE CENTER-MAKEUP CONNECTIONS. ADDITIONAL CUTS MAY BE ORDERED BY THE ENGINEER TO AVOID USE OF SMALL PIECES AT THE CENTER MAKE-UP SECTIONS. THE CONTRACTOR MAY MAKE ADDITIONAL CUTS WITH PERMISSION FROM THE ENGINEER. CONDUIT WHICH IS CUT TO FIT SHORT SECTIONS SHALL BE TAPERED WITH A MACHINE DESIGNED TO PRODUCE THE SAME JOINTING CONDITIONS AS PROVIDED BY FACTORY MADE CONDUIT SECTIONS.

(G) CLEANING

AFTER CONDUITS HAVE BEEN INSTALLED, THE CONTRACTOR SHALL CLEAN ALL THE DUCTS BY PULLING THROUGH A MANDREL TO REMOVE SOLID OBSTRUCTIONS, FOLLOWED BY A CIRCULAR WIRE BRUSH TO REMOVE ANY FOREIGN MATTER, LEAVING A CLEAN DUCT FREE FROM OBSTRUCTIONS.

(H) PAINTING

PAINTING OF STEEL DUCT SUPPORTS ON BRIDGE SHALL CONFORM TO THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS "CONSTRUCTION AND MATERIAL SPECIFICATIONS."

MEASUREMENT

THE NUMBER OF LINEAL FEET OF CONDUIT BANK TO BE PAID FOR SHALL BE THE ACTUAL NUMBER OF LINEAL FEET FURNISHED AND PLACED IN ACCORDANCE WITH THESE SPECIFICATIONS AS MEASURED ALONG THE AXIS OF THE CONDUIT LINE INCLUDING FITTINGS.

PAYMENT

THE FOOTAGE MEASURED AS PROVIDED ABOVE SHALL BE PAID FOR AT THE CONTRACT PRICE BID PER LINEAL FOOT FOR "ITEM SPECIAL-CONDUIT BANK," CLASSIFIED AS TO SIZE AND TYPE, WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING, HAULING AND PLACING THE CONDUIT, FITTINGS, SPACERS, SUPPORT BRACKETS, CONCRETE, SCAFFOLDING, AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

REINFORCED, CONCRETE-ENCASED, ASBESTOS-CEMENT CONDUIT BANKS

(A) WORK INCLUDED

THE CONTRACTOR SHALL FURNISH ALL MATERIALS FOR AND SHALL PROPERLY INSTALL AND CONNECT TO ALL NON-ENCASED, BRIDGE-SUPPORTED CONDUITS AND TO ALL CONCRETE ENCASED CONDUITS AS SHOWN ON DRAWINGS, ALL REINFORCED CONCRETE-ENCASED, ASBESTOS-CEMENT CONDUIT BANKS AS REQUIRED FOR THE PROPER COMPLETION OF THE WORK INCLUDED UNDER THIS CONTRACT.

(B) ASBESTOS-CEMENT CONDUIT AND FITTINGS

ASBESTOS-CEMENT CONDUIT FOR ELECTRICAL PURPOSES SHALL CONFORM TO FEDERAL SPECIFICATION WC 571b AND SHALL BE FOUR (4) INCHES INSIDE DIAMETER TYPE II. EXTRA LENGTH EXPANSION COUPLINGS AND ADAPTORS FOR JOINING TYPE II. ASBESTOS-CEMENT CONDUIT TO TYPE I FIBRE CONDUIT SHALL BE MADE OF THE SAME MATERIAL AS THE ASBESTOS-CEMENT CONDUIT. SPACERS MAY BE MADE OF EITHER CONCRETE, FIBRE OR PLASTIC.

(C) PREFORMED EXPANSION JOINT FILLERS

EXPANSION JOINT FILLERS (BITUMINOUS TYPE) SHALL CONFORM TO STATE OF OHIO DEPARTMENT OF HIGHWAY CONSTRUCTION AND MATERIAL SPECIFICATIONS SEC. 10.01, AASHO DESIGNATION: M33.

(D) CONCRETE

CONCRETE USED FOR ENCASUREMENT OF CONDUITS SHALL BE CLASS "C". THE AGGREGATE SHALL PASS A NO. 46 SIEVE IN ORDER TO FLOW BETWEEN DUCTS AND MAY BE CRUSHED SLAG OR STONE.

(E) REINFORCING STEEL

CONCRETE REINFORCING STEEL SHALL CONFORM TO ASTM-A15 SPECIFICATION. THE STEEL SHALL BE OF THE SIZES AND SPACING SHOWN ON THE DRAWINGS AND SHALL BE PROPERLY TIED AND SUPPORTED IN ORDER TO MAINTAIN ITS POSITION WHEN CONCRETE IS POURED.

(F) INSTALLATION

- THE REINFORCED, CONCRETE-ENCASED, ASBESTOS-CEMENT CONDUIT BANK SHALL BE INSTALLED AS FOLLOWS:
1. CONDUIT SHALL BE INSTALLED BY THE BUILT UP METHOD USING SPACERS AT NOT GREATER THAN FIVE (5) FOOT INTERVALS.
 2. SPECIAL EXTRA-LENGTH EXPANSION COUPLINGS SHALL BE INSTALLED AT THE BRIDGE END OF THE ABUTMENT BACK WALL AND TRANSITION ADAPTOR COUPLINGS SHALL BE INSTALLED AT THE OPPOSITE END OF THE REINFORCED DUCT BANK SECTION AS SHOWN ON DRAWINGS.
 3. REINFORCING RODS SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS.
 4. CONCRETE SHALL BE WORKED INTO THE SPACES BETWEEN DUCTS SO THAT THE CONDUIT BANK IS EFFECTIVELY ENCASED IN CONCRETE WITHOUT VOIDS OR EMPTY SPACES.
 5. PREFORMED EXPANSION JOINT FILLERS SHALL BE USED AROUND THE ENCASED DUCT BANKS THROUGH ABUTMENT BACK WALLS AND COUNTERFORT WALLS.

(G) CLEANING

AFTER CONDUITS HAVE BEEN INSTALLED THE CONTRACTOR SHALL CLEAN ALL THE DUCTS BY PULLING THROUGH A MANDREL TO REMOVE SOLID OBSTRUCTIONS, FOLLOWED BY A CIRCULAR WIRE BRUSH TO REMOVE ANY DIRT, SAND OR CONCRETE WHICH MAY HAVE BEEN INTRODUCED DURING CONSTRUCTION, LEAVING A CLEAN CONDUIT FREE FROM OBSTRUCTIONS AND FOREIGN MATTER.

MEASUREMENT

THE NUMBER OF LINEAL FEET OF CONDUIT BANK TO BE PAID FOR SHALL BE THE ACTUAL NUMBER OF LINEAL FEET FURNISHED AND PLACED IN ACCORDANCE WITH THESE SPECIFICATIONS AS MEASURED ALONG THE AXIS OF THE CONDUIT LINE INCLUDING FITTINGS.

PAYMENT

THE FOOTAGE MEASURED AS PROVIDED ABOVE SHALL BE PAID FOR AT THE CONTRACT PRICE BID PER LINEAL FOOT FOR "ITEM SPECIAL-CONDUIT BANK," CLASSIFIED AS TO SIZE AND TYPE, WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR EXCAVATING AND FOR FURNISHING, HAULING AND PLACING THE CONDUIT, FITTINGS, SPACERS, CONCRETE, REINFORCING STEEL, SHEETING, AND BRACING, BACKFILL, WATER USED FOR COMPACTION, INCIDENTAL CONCRETE, THE REMOVAL OF ALL SURPLUS EXCAVATION AND DISCARDED MATERIAL, REPAVING AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

REVISION	DATE	DESCRIPTION	BY	APPV

**DIVISION OF LIGHT & POWER
CITY OF CLEVELAND**

ELECTRICAL POWER CONDUIT NOTES FOR
MEDINA-CLARK INTERCHANGE
IN CLEVELAND, OHIO

DRAWN BY: G. HAHN	SCALE: N.T.S.	DRAWING NUMBER: 5257-5C
CHK'D BY: R.L.P.	DATE: 3-4-65	

APPROVED BY	TITLE	DATE	NO.	DATE	DIST.
<i>William J. ...</i>	DIRECTOR OF PUBLIC UTILITIES	3/10/65			
<i>James J. ...</i>	COMMISSIONER OF LIGHT & POWER	3/11/65			
<i>Arnold ...</i>	COMMISSIONER OF UTILITIES ENGR.	3/9/65			
<i>Edward J. Kramer</i>	CHIEF ELECTRICAL ENGINEER	3/9/65			
<i>Robert J. Albush</i>	ENGINEER OF DESIGN	3/9/65			

REFERENCE DRAWINGS

