STATE OF OHIO
DEPARTMENT OF HIGHWAYS

U-687(6)

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

1 / 34

SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31

# AKRON EXPRESSWAY SYSTEM

## SUM-5-12.31
## SUMMIT COUNTY
## CITY OF AKRON

# PART 1 - MAIN VIADUCT SUBSTRUCTURE

## INDEX OF SHEETS



APPROVED _____
DATE Dec. 27, 1949 DIRECTOR OF PUBLIC SERVICE, CITY OF AKRON

APPROVED F. J. Bishop
DATE 1-7-50 CHIEF ENGINEER, A.C.&Y. RAILROAD

APPROVED I. H. Schram
DATE 2-1-50 CHIEF ENGINEER, ERIE RAILROAD

APPROVED D. L. Sommerville
DATE 1-12-50 CHIEF ENGINEER, PENNSYLVANIA RAILROAD

APPROVED A. C. Clarke
DATE 1-12-50 CHIEF ENGINEER, B. & O. RAILROAD

## LINE DATA

| | |
|---|---|
| BEGIN PART 1 | STA. 24+40 |
| END PART 1 | STA. 41+00 |
| NET LENGTH PART 1 | 1660 FT. OR 0.314 MI. |
| BRIDGE LIMITS STA. 24+85.75 TO STA. 40+68.50 = | 1582.75 FT OR 0.300 MI. |

PREPARED AND RECOMMENDED BY

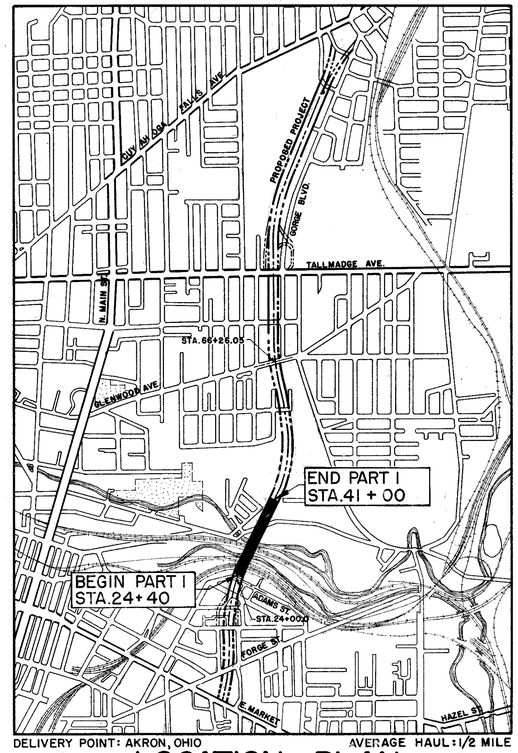
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

K. M. Bergendoff

STATE OF OHIO K. M. BERGENDOFF 14157 REGISTERED PROFESSIONAL ENGINEER

| FILE NO. | SUMMIT COUNTY<br>SEC. SUM-5-12.31, PART 1<br>DATE OF LETTING _____, 195__<br>CONTRACT NO. _____ |
|---|---|

| STANDARD DRAWINGS | | |
|---|---|---|
| L-2 | 10-1-45 | |
| I-1,2,3,4 & 5 | 2-20-45 | |
| | | |




DELIVERY POINT: AKRON, OHIO AVERAGE HAUL: 1/2 MILE

## LOCATION PLAN

0' 1000' 2000' 4000'
0" ¾" 1½" 3"
SCALE IN FEET

PORTION TO BE IMPROVED
STATE HIGHWAYS
OTHER HIGHWAYS

N

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 W. C. Summers
DATE Dec. 29th 1949 DIVISION DEPUTY DIRECTOR

APPROVED _____
DATE _____ CHIEF ENGINEER, BUREAU OF MAINTENANCE

APPROVED Richard Dodge
DATE 12-29-49 CHIEF ENGINEER, BUREAU OF BRIDGES & R.R. CROSSINGS

APPROVED H. C. Petersen
DATE 2-8-50 CHIEF ENGINEER, BUREAU OF LOCATION & DESIGN

APPROVED M. P. Schaub
DATE 2-8-50 FIRST ASSISTANT DIRECTOR & CHIEF ENGINEER

APPROVED M. D. Miller
DATE 2-8-50 DIRECTOR OF HIGHWAYS

CONSTRUCTION BUREAU OCT 27 1955 GROUND PHOTOLAB

NOTE:
THIS SET OF PLANS, THE SUBSTRUCTURE OF THE MAIN VIADUCT, COVERS ONLY PART I OF THIS PROJECT. THE SUPERSTRUCTURE OF THE MAIN VIADUCT AND THE CONTIGUOUS HIGHWAY WORK WILL BE LET IN SUBSEQUENT CONTRACTS.

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

RECOMMENDED FOR APPROVAL

_____ DISTRICT ENGINEER _____ DATE

APPROVED

_____ DIVISION ENGINEER _____ DATE

Rev. 1/18/50

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
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| 2 | OHIO | U-687(6) | POST WAR |

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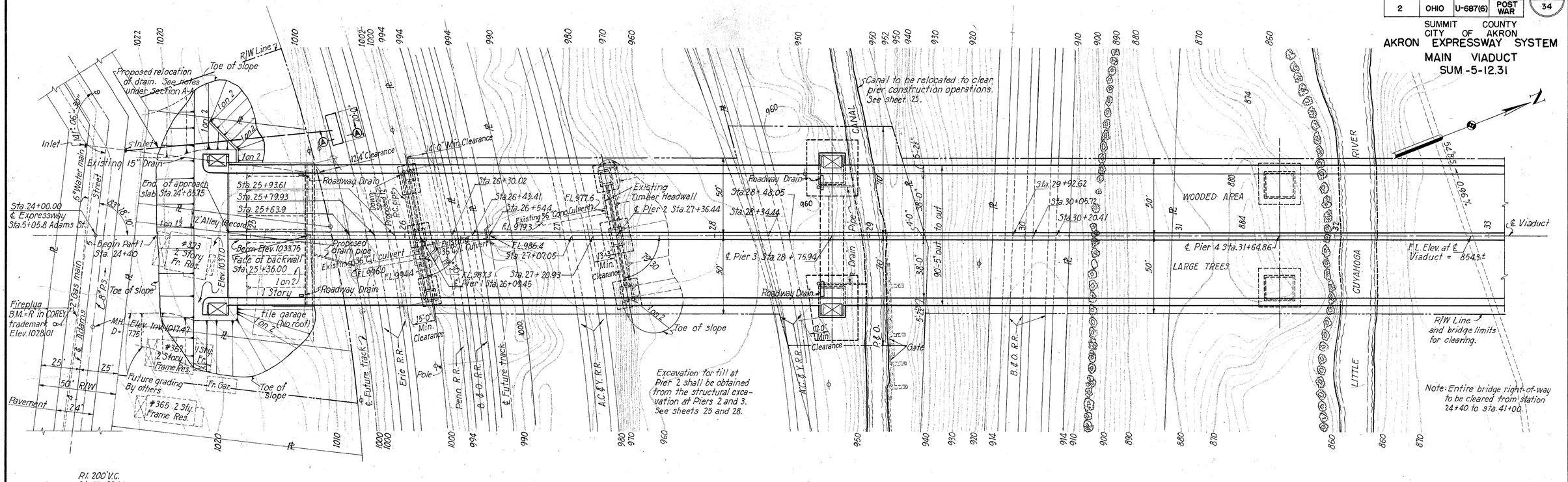
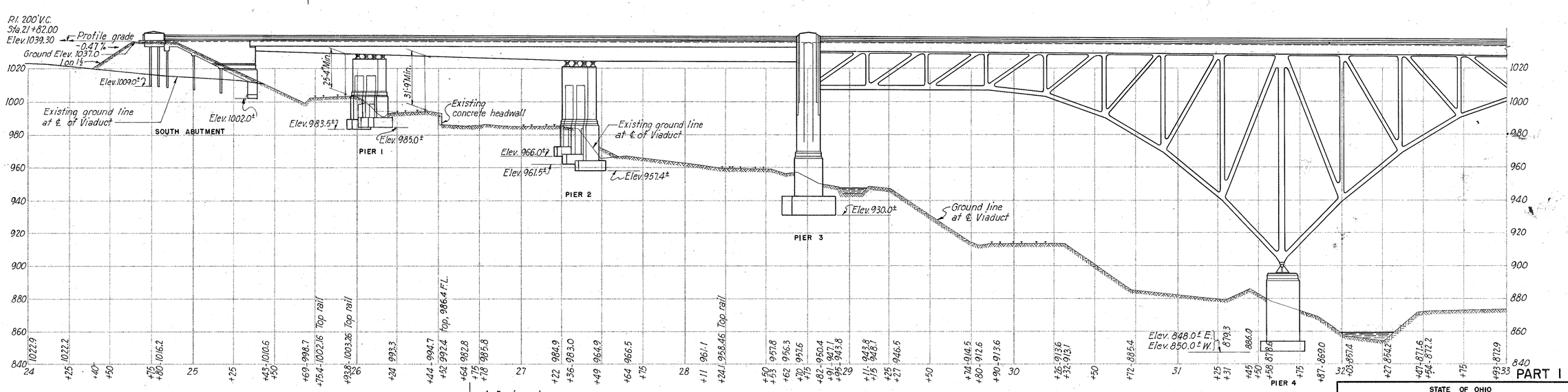
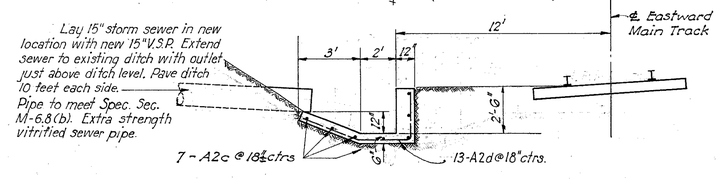
SUMMIT COUNTY
CITY OF AKRON
# AKRON EXPRESSWAY SYSTEM
## MAIN VIADUCT
## SUM-5-12.31




**SECTION A-A**
Scale: ¼" = 1'-0"

## PROPOSED STRUCTURE

Type - Deck trusses on low piers with continuous girder approaches.
Spans - Unit 1 - 3 span continuous deck girder 72'-127'-135' center to center bearings.
Unit 2 - 3 span continuous deck truss 288'-360'-288' center to center bearings.
Unit 3 - 2 span continuous deck girder 110'-110' center to center bearings.
Roadway - 2-38' roadways, 4' median, 2-3' sidewalks.
Loading - Standard specifications of the State of Ohio, Department of Highways - 5-20-46. (Revised)
Skew - 10°30' for Piers 1 and 2.
Surface course - 2½" asphaltic concrete surface course.
Bridge Alignment - Tangent

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

SITE PLAN

AKRON, SUMMIT COUNTY, OHIO

SCALE 1" = 30'
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE G. M. DATE 7-12-49
T'RCD. R.R. DATE 7-18-49
CHKD. E. E. W. DATE 7-20-49

766 SHEET V2

Rev. 1/18/50
Rev. 1/27/50, Rev. 2/2/50

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| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
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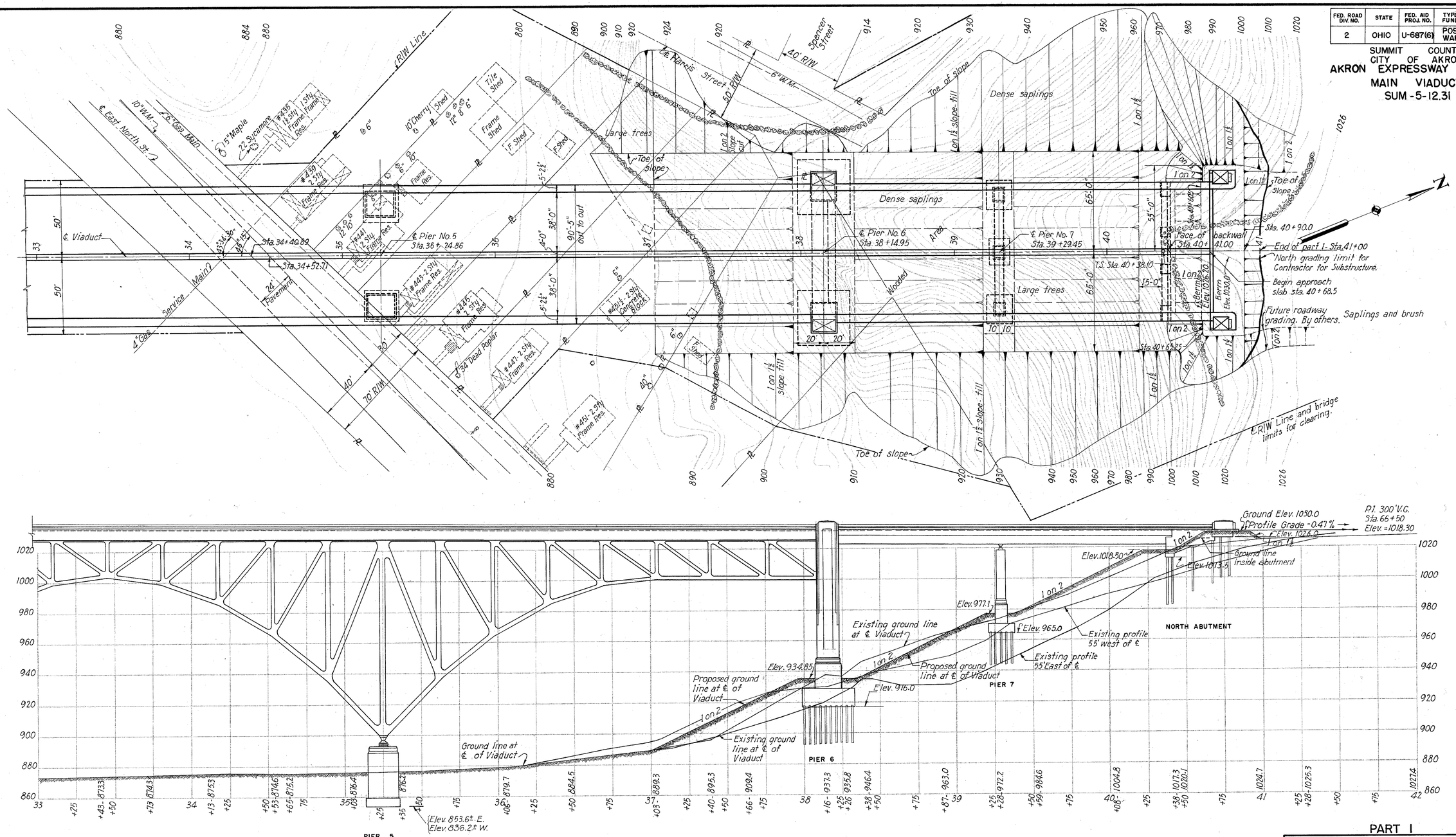
SUMMIT COUNTY
CITY OF AKRON

# AKRON EXPRESSWAY SYSTEM
## MAIN VIADUCT
## SUM-5-12.31







## PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU.-5-124

SITE PLAN

AKRON, SUMMIT COUNTY, OHIO

SCALE 1"=30' ..... HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE R.R.M. DATE 7-11-49
TRCD. G.D.P.R. DATE 7-14-49
CHKD. G.M.. DATE 7-18-49
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

766 SHEET V3

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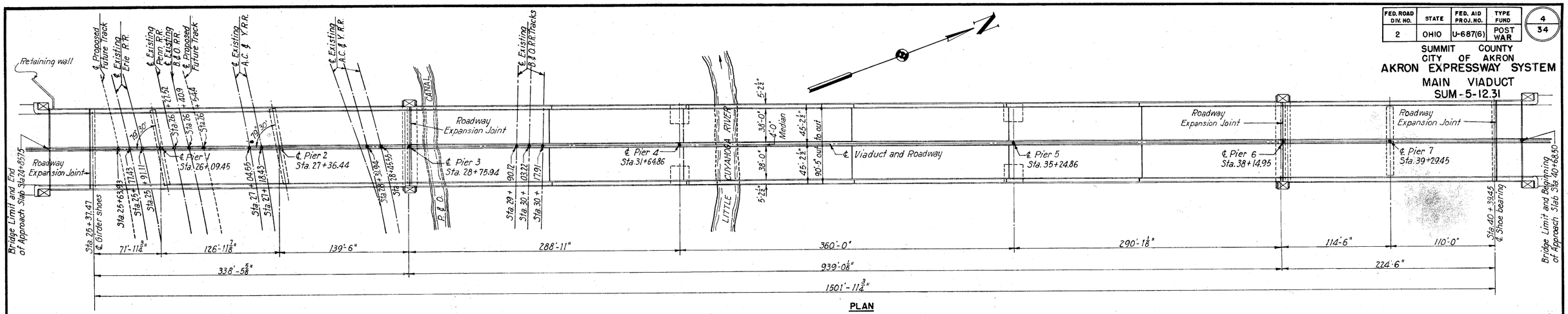
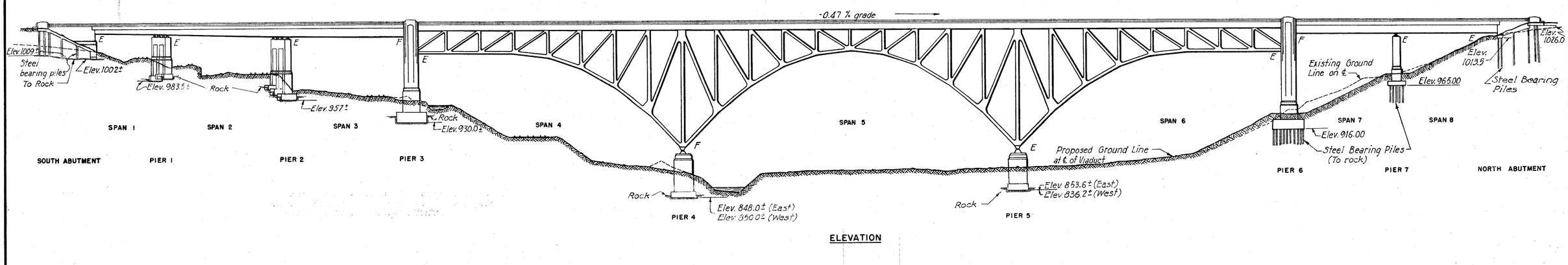
SUMMIT COUNTY
CITY OF AKRON
# AKRON EXPRESSWAY SYSTEM
## MAIN VIADUCT
## SUM-5-12.31




PLAN




ELEVATION

| ESTIMATED QUANTITIES FOR SUBSTRUCTURE | | | | | | | | | | | | | | As Built | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | Description | S. Abt. | Pier 1 | Pier 2 | Pier 3 | Pier 4 | Pier 5 | Pier 6 | Pier 7 | N. Abt. | General | Units | Total | | |
| E-1 | Excavation for Site Grading | | | | 55 | | | | | | 3,400 | Cu. Yd | 3455 | C-5, -1307 | 2148 |
| E-2 | Cofferdams and Pumping | | | | | | | | | | Lump | | Lump Sum | | |
| E-2 | Excavation for Structures - Unclassified | 835 | 432 | 618 | 1,650 | 1,330 | 1,740 | 1,950 | 246 | 245 | | Cu. Yd. | 8,946 | C-1, -1825 C-5, +338 | 6385 |
| E-2 | Excavation for Structures - Rock and Shale | 25 | 73 | 127 | 558 | 125 | 111 | | | | | Cu. Yd. | 1019 | C-1, +2382 C-4, +482 | 3763 |
| E-4 | Borrow for Site Grading | 5,525 | | | | | | | | | 32,125 | Cu. Yd. | 37,650 | C-5, +8387 | 46037 |
| E-9 | Removal of Trees and Stumps | | | | | | | | | | Lump | | Lump Sum | | |
| E-12 | 15" Pipe Removed and Disposed of | | | | | | | | | | 110 | Lin. ft | 110 | | |
| S-1 | Class "E" Concrete - Pier Footings | | 145 | 202 | 1,069 | 300 | 215 | 1,104 | 195 | | | Cu. Yd. | 3,230 | C-1, +31.92 C-4, +34.79 | 3296.71 |
| S-1 | Class "C" Concrete - Pier Caps and Columns and Pier Walls | | 288 | 569 | 2,092 | 916 | 953 | 2,260 | 429 | | | Cu. Yd. | 7,507 | C-1, +2814.17 C-4, -53.46 | 8037.23 |
| S-1 | Class "C" Concrete - Abutments | 1,033⊗ | | | | | | | | 373 | | Cu. Yd. | 1,406 | C-4, +49.53 | 1356.47 |
| S-4 | Reinforcing Steel | 99,270* | 47,090* | 51,170 | 172,820 | 18,260 | 17,980 | 110,230 | 35,590 | 42,690 | 1,100 | lbs. | 596,200 | C-4, -16306 | 579894 |
| S-7 | Structural Metal - Anchor Bolts, Ladders, Manholes | 1,525 | | | 415 | | | 415 | | 1,445 | | lbs. | 3800 | C-4, -240 | 3560 |
| S-16 | First Test Pile | | | | | | | | | | Lump | | Lump Sum | | |
| S-17 | First Test Load | | | | | | | | | | Lump | | Lump Sum | | |
| S-17 | Subsequent Test Load | | | | | | | | | | 1 | Each | 1 | | |
| S-18 | Steel Piles (14 BP @ 73#) | 1,750 | | | | | | 11,890 | 6,130 | 2,280 | | Lin. ft. | 22,050 | C-5, +2500 C-4, -29.07 | 27,525.93 |
| S-21 | Stone Facing | 595 | | | 902 | | | 902 | | 595 | | Cu. ft. | 2,994 | C-4, -22.7 | 2971.3 |
| S-25 | Lighting - Junction Boxes and Conduit | | | | | | | | | | Lump | | Lump Sum | | |
| S-29 | Bridge Drainage - Inlets at South Abutment and Grating at Pier 1 | | | | | | | | | | Lump | | Lump Sum | | |
| S-29 | Bridge Drainage - Downspouts and Attachments | 150 | 60 | 100 | 200 | | | | | | | Lin. Ft. | 510 | | |
| S-29 | Bridge Drainage - 12" Reinforced Concrete Sewer Pipe | | 72 | | | | | | | | | Lin. Ft. | 72 | | |
| I-2 | 15" Pipe for Storm Sewer (VSP) | | | | | | | | | | 130 | Lin. Ft. | 130 | | |
| S-3 | Type "B" Waterproofing | 20 | | | | | | | | | | Sq. Yds | 20 | | |
| E-11 | Water | | | | | | | | | | 170 | M. Gal. | 170 | C-5, -170 | 0 |

*Includes weight of bars for drainage inlets.
⊗Includes concrete for paving ditch at sewer outlet
†Includes weight of bars for ditch paving.
See sheet 34 for summary of Railroad Force Account Work.

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Rev. 1/18/50
Rev. 1/27/50, Rev. 2/2/50
Revised Re-Built CEJ 7/30/52

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124
GENERAL PLAN, ELEVATION AND ESTIMATED QUANTITIES
AKRON, SUMMIT COUNTY, OHIO

SCALE 1" = 50'
MADE M.H.B. DATE 5-5-49
TRCD E.R. DATE 7-20-49
CHKD A.C.A. DATE 6-23-49

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

766 SHEET V 4

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
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SUMMIT COUNTY
CITY OF AKRON

AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31

# NOTES

**SUBSTRUCTURE WORK** TO BE PERFORMED LATER AS PART OF THE CONTRACT FOR THE SUPERSTRUCTURE CONSISTS OF: RAILING, LIGHTING SYSTEM (EXCEPT CONDUITS AND JUNCTION BOXES), TYPE C WATERPROOFING OF ABUTMENT SLABS, ASPHALTIC CONCRETE SURFACE COURSE ON ABUTMENT SLABS, CONCRETE MEDIAN STRIP ON ABUTMENT SLABS, DRAINAGE ANGLES ALONG GUTTERS OVER DRAIN TUBES, STEEL CURBS AND FINGERED EXPANSION JOINTS.

**MINIMUM TEMPORARY CONSTRUCTION CLEARANCES FOR RAILROAD TRACKS:**

| RAILROAD | VERTICAL CLEARANCE ABOVE TOP OF RAIL | HORIZONTAL CLEARANCE FROM CENTERLINE OF TRACK |
|---|---|---|
| A.C. & Y. | 23'-0" | 8'-0" |
| ERIE | 21'-0" | 8'-0" |
| PENNSYLVANIA | 23'-0" | 8'-8" |
| B. & O. | 23'-0" | 8'-8" |

**CLEARING AND GRUBBING**

THE AREAS ADJACENT TO PIERS 2, 6 AND 7 AND AT THE ABUTMENTS WHERE EXCAVATION AND/OR EMBANKMENT IS REQUIRED SHALL BE CLEARED AND GRUBBED AS SPECIFIED IN ITEM E-1. PAYMENT FOR SUCH CLEARING AND GRUBBING, EXCEPT PORTIONS WITHIN THE LIMITS OF ITEM E-2, EXCAVATION FOR STRUCTURES AND PAID FOR THEREWITH, AND THE REMOVAL OF TREES AND STUMPS WHICH IS PAID FOR IN ITEM E-9, IS INCLUDED IN ITEM E-1, EXCAVATION FOR SITE GRADING AND ITEM E-4, BORROW FOR SITE GRADING.

**EXCAVATION AND BORROW FOR SITE GRADING** ADJACENT TO PIERS 2, 6 AND 7 AND AT THE ABUTMENTS WILL BE GOVERNED BY ITEMS E-1 AND E-4. THE BORROW MATERIAL MAY BE OBTAINED FROM AREAS ADJACENT TO STATION 62 ON THE PROPOSED EXPRESSWAY AND SHALL BE AVAILABLE TO THE CONTRACTOR THERE FREE OF CHARGE.

ALL EXCESS STRUCTURAL EXCAVATION NOT REQUIRED FOR BACKFILLING SHALL BE USED IN EMBANKMENTS, AND PAYMENT FOR EMBANKMENTS SO CONSTRUCTED SHALL BE CONSIDERED FULLY COVERED BY PAYMENTS MADE FOR ITEM E-2, EXCAVATION FOR STRUCTURES.

**CULVERT EXTENSION**

CONSTRUCTION OF PIER 1 SHALL INCLUDE MODIFICATION OF DRAINAGE FACILITIES FOR THE ADJACENT RAILROAD TRACKS AND CONSTRUCTION OF UNDERGROUND OUTFALL LINES FROM THE DOWNSPOUTS ON THE PIER COLUMNS. THE EXISTING 36" C.I.P. CULVERT UNDER THE ERIE RR. TRACK SHALL BE SHORTENED AND THAT UNDER THE P. RR. TRACK EXTENDED. PAYMENT THEREFOR SHALL BE CONSIDERED AS INCLUDED IN THE PRICE BID FOR PIER CONCRETE AND NO DEDUCTION WILL BE MADE FROM THE PIER CONCRETE QUANTITY FOR THE VOLUME OF ENCASED PIPE. PAYMENT FOR REMOVAL OF EXISTING HEADWALLS OF RAILROAD CULVERTS TO BE MADE UNDER ITEM E-2, EXCAVATION FOR STRUCTURES, ROCK AND SHALE. DOWNSPOUT OUTFALLS TO BE STANDARD REINFORCED CONCRETE SEWER PIPE, SEC. 66.6 (A), AND PAID FOR UNDER ITEM S-29, 12" REINFORCED CONCRETE SEWER PIPE.

THE CONSTRUCTION OF PIER 2 SHALL INCLUDE THE ALTERATION AND EXTENSION OF THE EXISTING 36" CONCRETE PIPE CULVERT SHOWN ON THE PLANS. THE CONTRACTOR SHALL FURNISH AND INSTALL APPROXIMATELY 6 LIN. FT. OF 36" REINFORCED CONCRETE PIPE, SEC. M-6.6 (C), INCORPORATED IN THE CONSTRUCTION OF THE PIER. PAYMENT THEREFOR SHALL BE CONSIDERED AS INCLUDED IN THE PRICE BID FOR PIER CONCRETE AND NO DEDUCTION WILL BE MADE FROM THE PIER CONCRETE QUANTITY FOR THE VOLUME OF ENCASED PIPE.

**CHANNEL CHANGE**

THE PENNSYLVANIA AND OHIO CANAL ADJACENT TO PIER 3 SHALL BE TEMPORARILY RELOCATED TO THE EXTENT NECESSARY TO PERMIT CONSTRUCTION OF THE WESTERLY FOOTING OF THIS PIER. FOLLOWING COMPLETION OF THE PIER THE CHANNEL SHALL BE RESTORED TO APPROXIMATELY ITS ORIGINAL LOCATION. THE CHANNEL CHANGE SHALL BE MADE WITHOUT INTERRUPTING THE FLOW IN THE CANAL, AND ALL WORK ON THE CANAL SHALL MEET THE APPROVAL OF THE CANAL OWNERS. PAYMENT FOR ALL WORK IN CONNECTION WITH DIVERTING AND RESTORING THE CHANNEL WILL BE INCLUDED IN ITEM E-2, COFFERDAMS AND PUMPING.

**JOINT FILLER**

THE JOINTS BETWEEN ENDS OF RETAINING WALLS AND COLUMNS OF PIERS 1 AND 2 SHALL HAVE 1/2 INCH BITUMINOUS PREMOLDED JOINT FILLER AT THE ENDS OF WALLS AND SHALL HAVE TAR PAPER ON THE SIDES, TOPS AND BOTTOMS OF WALL SURFACES IN CONTACT WITH COLUMNS AND FOOTINGS. THE PREMOLDED JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF SEC. M-10.01 OF THE SPECIFICATIONS. THE TAR PAPER SHALL CONFORM TO THE REQUIREMENTS OF AASHO SPECIFICATIONS FOR SUBGRADE PAPER, DESIGNATION M 74-38. THE JOINT FILLER AND TAR PAPER SHALL BE SECURELY FASTENED TO THE CONCRETE AND SHALL BE PROTECTED FROM DAMAGE DURING PLACING OF CONCRETE. PAYMENT FOR THE JOINT FILLER AND TAR PAPER WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE.

**STRUCTURAL STEEL ITEM S-7** INCLUDES THE FOLLOWING STEEL PARTS:

STEEL ANCHOR BOLTS FOR ATTACHING RAILING POSTS TO EXTERIOR WALLS OF ABUTMENTS. THEY SHALL BE SET WITH METAL TEMPLATES TO INSURE TRUE FIT OF THE RAILING.

STEEL ANCHOR BOLTS FOR ATTACHING ROADWAY EXPANSION JOINTS TO BACK WALLS OF ABUTMENTS. THEY SHALL BE SET WITH METAL TEMPLATES TO INSURE TRUE FIT OF THE EXPANSION JOINTS.

CAST STEEL ACCESS MANHOLE COVERS AND FRAMES IN SIDEWALKS OF ABUTMENTS.

STEEL ACCESS LADDERS AND ATTACHMENT BOLTS ON PIERS 3 AND 6.

**BRIDGE DRAINAGE ITEMS (S-29)** INCLUDE THE FOLLOWING PARTS:

CAST STEEL GRATING INLETS IN THE SOUTH ABUTMENT. GRATING COVER ON INLET AT PIER 1. TO BE PAID FOR AS A LUMP SUM.

WROUGHT IRON DOWNSPOUTS FOR DRAINAGE OF SUPERSTRUCTURE SLAB. TO BE PAID FOR PER LINEAR FOOT INCLUDING THE INCIDENTAL ITEMS OF STEEL ATTACHMENT BOLTS AND WROUGHT IRON SUPPORT STRAPS.

**SHOP PAINT**

ALL STRUCTURAL STEEL (S-7) AND THE STEEL FOR BRIDGE DRAINAGE ITEMS (S-29), EXCEPT THE EMBEDDED PORTIONS OF ANCHOR BOLTS, SHALL BE GIVEN ONE SHOP COAT OF PAINT AS PER ITEM S-7 BUT NEED NOT BE GIVEN THE FIELD COATS CALLED FOR IN ITEM S-7.

**PILES** SHALL BE 14" STEEL H073#. THE PILES FOR THE NORTH ABUTMENT SHALL BE DRIVEN TO A REQUIRED CAPACITY OF 65 TONS AND SHALL HAVE A MINIMUM PENETRATION OF 50 FT. THE PILES FOR PIERS 6 AND 7 SHALL BE DRIVEN TO ROCK AND TO A REQUIRED CAPACITY OF 65 TONS. THE PILES FOR THE SOUTH ABUTMENT SHALL BE DRIVEN TO ROCK AND TO A REQUIRED CAPACITY OF 45 TONS.

**STONE FACING**

A. STONE FACING FOR UPPER PARTS OF PIERS 3 AND 6 AND FOR HANDRAIL TERMINAL POSTS AT ABUTMENTS SHALL BE DURABLE, SOUND, INDIANA LIMESTONE OR EQUAL, OF UNIFORM QUALITY, STRUCTURE AND TEXTURE. ALL STONE SHALL BE OF A QUALITY ACCEPTABLE TO THE ENGINEER.

B. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER TWO SAMPLES ABOUT 4 IN. BY 7 IN., 1 IN. THICK, TYPICAL OF THE EXTREMES OF COLOR AND TEXTURE WHICH SHALL BE FURNISHED. THE LARGE FACES SHALL SHOW ACROSS THE GRAIN OF THE STONE AND SHALL SHOW THE FINISH SPECIFIED; TWO EDGES SHALL BE ROCK FACE. SAMPLES SHALL BE CLEARLY MARKED WITH THE CONTRACTOR'S NAME, GRADE OF STONE AND NAME OF JOB.

C. THE CONTRACTOR SHALL PREPARE ALL WORKING DRAWINGS FOR CUT STONE. THESE SHALL INCLUDE ALL WORKING DRAWINGS NECESSARY SUPPLEMENTARY TO THE DESIGN PLANS TO ENABLE THE CONTRACTOR TO CONSTRUCT THE WORK, INCLUDING ANY FULL-SIZE DRAWINGS NEEDED, WITH COMPLETE CUTTING AND SETTING DIAGRAMS FOR ALL STONEWORK, SHOWING SIZES, SECTIONS, DIMENSIONS OF STONE, ARRANGEMENTS OF JOINTS, BOLTS, ANCHORAGE AND OTHER DETAILS, AND THE NECESSARY MARKING OF STONES FOR IDENTIFICATION.

D. ALL STONE SHALL BE CUT ACCURATELY TO SHAPE AND DIMENSIONS FULL TO THE SQUARE, WITH APPROVED JOINTING. EXPOSED FACES SHALL BE CUT TRUE AND OUT OF WIND. JOINTS SHALL BE UNIFORMLY 3/8 IN. THICK. THERE SHALL BE NO PATCHING OR HIDING OF DEFECTS, AND LEWIS HOLES SHALL NOT BE IN EXPOSED SURFACES. PROVISIONS FOR ANCHORING, DOWELING AND CRAMPING SHALL BE AS INDICATED ON THE PLANS, SUPPLEMENTED BY ADDITIONAL PARTS AS NECESSARY IN KEEPING WITH STANDARD PRACTICE AND SHALL BE FULLY SHOWN ON THE WORKING DRAWINGS. HOLES AND SINKAGES SHALL BE CUT FOR ALL ANCHORS, DOWELS AND CRAMPS.

E. THE FINISH ON EXPOSED SURFACES GENERALLY SHALL BE SMOOTH, MACHINE-DRESSED, SHOWING NO TOOL MARKS. LEWIS HOLES SHALL BE PROVIDED IN ALL STONES WEIGHING MORE THAN 100 LBS. NO HOLES SHALL COME CLOSER THAN 2-1/2 IN. TO THE EXPOSED FACE OF THE STONE. EACH STONE, AS NECESSARY, SHALL HAVE ON THE BACK OR BED A NUMBER MARKED WITH NON-STAINING PAINT, CORRESPONDING TO THE MARKING ON THE WORKING DRAWING.

F. STONE SHALL BE CAREFULLY PACKED FOR TRANSPORTATION. STONE SHIPPED BY RAIL SHALL BE UNLOADED AND DELIVERED AT THE SITE WITH CARE, HANDLED THROUGHOUT BY COMPETENT WORKMEN AND BY SUCH METHODS AS WILL AVOID SOILING, MUTILATION, CHIPPING OR OTHER DAMAGE. STONE SHALL BE STORED AT THE SITE ON PLANKS CLEAR OF THE GROUND, PROTECTED FROM DAMAGE BY DIRT, DUST, MUD, GREASE OR OTHER STAINING OR DISFIGURING ELEMENTS.

G. STONE SHALL BE SET IN CAREFULLY PREPARED CEMENT MORTAR CONFORMING TO THE REQUIREMENTS OF ARTICLE S-21.03 OF THE SPECIFICATIONS. MORTAR SHALL BE MIXED ONLY IN SUCH QUANTITIES AS ARE NEEDED FOR IMMEDIATE USE. NO RE-TEMPERING WILL BE PERMITTED; MORTAR MIXED FOR A PERIOD EXCEEDING THIRTY MINUTES SHALL NOT BE USED BUT MUST BE THROWN OUT. SAND SHALL MEET THE REQUIREMENTS OF SEC. M-2.2 OR SEC. M-2.3 OF THE SPECIFICATIONS, AND, IF CONTAINING COARSE MATERIAL THAT WOULD INTERFERE WITH PROPER JOINTING, SHALL BE SCREENED.

H. STONES SHALL BE SET IN ACCORDANCE WITH THE PLANS. BEFORE SETTING EACH STONE SHALL BE WASHED CLEAN ON ALL SIDES BY SCRUBBING WITH SOAP POWDER AND WATER APPLIED WITH FIBER BRUSH AND RINSED WITH CLEAN WATER. IMMEDIATELY PRIOR TO SETTING, EACH STONE SHALL BE AGAIN SPONGED AND DRENCHED ON ALL SIDES WITH CLEAN WATER. STONES SHALL BE SET ACCURATELY TRUE TO LINE AND LEVEL BY COMPETENT STONE SETTERS, WITH FULL FLUSHED JOINTS, FILLING ALL ANCHOR HOLES. THE FACES SHALL BE SET ON THOROUGHLY SOAKED WOODEN WEDGES WHICH SHALL REMAIN IN PLACE UNTIL THE WORK IS CLEANED AND POINTED. MORTAR SHALL BE RAKED OUT 3/4 IN. TO ALLOW FOR POINTING, AND STONE SPONGED OFF ALONG JOINTS. SPLASHING EXPOSED FACES WITH MORTAR SHALL BE AVOIDED, AND ANY SPLASHING SHALL BE IMMEDIATELY REMOVED WITH SPONGE AND CLEAN WATER. WHERE STONES ARE TO BE BACKED, THE ENTIRE BACKS WHILE WET SHALL BE PLASTERED WITH 1/2 IN. OF MORTAR. ALL DOWELS, CRAMPS AND ANCHORS SHALL BE OF BRASS, OR HOT-DIP GALVANIZED (2 OUNCES PER SQUARE FOOT) WROUGHT IRON OR OF CADMIUM PLATED WROUGHT IRON WITH PLATING .0005 IN. THICK.

I. ALL FACE JOINTS AND ALL JOINTS IN TOP STONES SHALL BE BRUSHED OUT CLEAN 3/4 IN. DEEP AND WEDGES CAREFULLY REMOVED. AFTER THOROUGH WETTING, ALL JOINTS SHALL BE POINTED WITH MORTAR CONSISTING OF ONE PART STAINLESS CEMENT, TWO PARTS CLEAN WHITE SAND AND SUFFICIENT COLD LIME PUTTY TO MAKE AS STIFF A MIXTURE AS CAN BE WORKED. THE FACE OF ALL STONE SHALL BE THOROUGHLY CLEANED UPON COMPLETION WITH SOAP POWDER BOILED IN WATER AND APPLIED VIGOROUSLY WITH STIFF FIBER BRUSHES. IF NECESSARY, CLEAN SHARP WHITE SAND MAY BE ADDED TO THE SOAP MIXTURE, AFTER CLEANING, ALL SURFACES SHALL BE DRENCHED WITH CLEAR WATER. WIRE BRUSHES AND ACIDS SHALL NOT BE USED.

J. PAYMENT FOR STONE FACING SHALL BE MADE AT THE CONTRACT UNIT PRICE PER CUBIC FOOT BID FOR ITEM S-21, STONE FACING FOR PIER PYLONS AND ABUTMENT TERMINAL POSTS.

**DRAINAGE TUBES** SHALL BE PLACED THROUGH THE ABUTMENT SLABS, ALONG THE CURBS, AS DESCRIBED IN SEC. S-29.07, TO PROVIDE SUB-DRAINAGE FOR THE ASPHALTIC CONCRETE SURFACE COURSE THAT WILL BE PLACED LATER. METAL TUBES SHALL ALSO BE INSTALLED IN THE CONCRETE FOR DRAINAGE OF CURB POST RECESSES IN ABUTMENTS AND BEARING RECESSES AT PIERS 4 AND 5. PAYMENT FOR METAL TUBES SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE.

**BEARING RECESSES** ON PIERS 4 AND 5 WILL LATER BE FILLED WITH CONCRETE BY THE CONTRACTOR FOR THE SUPERSTRUCTURE.

**RELOCATION OF PIPE AT SOUTH ABUTMENT**

AN EXISTING 15-IN. DIA. DRAIN PIPE SERVING A CATCH BASIN IN ADAMS STREET INTERFERES WITH CONSTRUCTION OF THE SOUTH ABUTMENT. THIS PIPE SHALL BE TAKEN UP AND REPLACED FROM THE CATCH BASIN IN THE NORTH CURB OF ADAMS STREET IN A NORTHERLY DIRECTION TO DISCHARGE ON THE SLOPE AT APPROXIMATELY THE TOE OF NEW EMBANKMENT, ACCORDING TO LINE AND GRADE ESTABLISHED BY THE ENGINEER. PAYMENT WILL BE MADE UNDER ITEM E-12, 15" PIPE REMOVED AND DISPOSED OF; AND ITEM I-2, 15" PIPE FOR STORM SEWER.

**WELDING** SHALL BE CLASS A.

**CONDUITS AND BOXES FOR LIGHTING**

CONDUITS AND JUNCTION BOXES FOR LIGHTING SHALL CONFORM TO THE REQUIREMENTS OF ITEM S-25.08 OF THE SPECIFICATIONS. PAYMENT THEREFOR SHALL BE MADE UNDER THE PRICE BID FOR ITEM S-25, CONDUITS AND BOXES FOR LIGHTING.

**FOOTING ELEVATIONS**

ELEVATIONS OF BOTTOMS OF FOOTINGS WHICH REST ON ROCK ARE SUBJECT TO CHANGE WHEN EXCAVATIONS ARE MADE AND ACTUAL ELEVATIONS OF TOP OF SOUND ROCK DETERMINED. ALL SUCH FOOTINGS SHALL EXTEND AT LEAST 3 IN. INTO SOUND ROCK.

**COPPER WATER STOPS**

PAYMENT FOR COPPER WATER STOPS AND BITUMINOUS PREMOLDED JOINT FILLER IN JOINTS OF THE SOUTH ABUTMENT SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE.

**EXISTING BUILDINGS** ON THE VIADUCT RIGHT-OF-WAY WILL BE REMOVED BY OTHERS TO THE LEVEL OF EXISTING GROUND, AND BASEMENTS SHALL, IF SO DIRECTED BY THE ENGINEER, BE FILLED BY THE CONTRACTOR WITH COMPACTED EMBANKMENT MATERIAL; PAYMENT FOR WHICH WILL BE MADE UNDER ITEMS E1 AND E4.

**SURFACE FINISH OF CONCRETE**

A RUBBED SURFACE FINISH SHALL BE APPLIED TO THE FACES OF THE CURBS, AND TO THEIR HORIZONTAL SURFACES FOR A DISTANCE OF 11" FROM FACE OF CURB; ALSO TO THE FACES OF THE ABUTMENT WINGWALLS EXPOSED TO VIEW.

ALL OTHER ABUTMENT AND PIER SURFACES EXPOSED TO VIEW, EXCEPT SIDEWALKS AND ROADWAY HEADERS, SHALL BE GROUT CLEANED AS PER ITEM S-1.22, AND SHALL ALSO BE FORMED WITH FORM LINER.

FOUNDATION SOUNDINGS

FOUNDATION DESIGN AND FOUNDATION QUANTITIES ARE BASED ON A STUDY OF ROD SOUNDINGS AND SOIL SAMPLING SOUNDINGS MADE AT THE SITE.

THIS SOUNDING INFORMATION MAY BE INSPECTED IN THE OFFICE OF THE BUREAU OF BRIDGES IN COLUMBUS OR IN AN ABRIDGED FORM IN THE DIVISION OFFICE, BUT THE STATE ASSUMES NO RESPONSIBILITY FOR THE ACCURACY THEREOF.

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

NOTES

AKRON, SUMMIT COUNTY, OHIO

SCALE.....
MADE J.G.W. DATE.....
TRCD L.G. DATE 12-21-49
CHKD..... DATE.....

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

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Rev. 1/18/50
Rev. 1/27/50 Rev. 2/2/50

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| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

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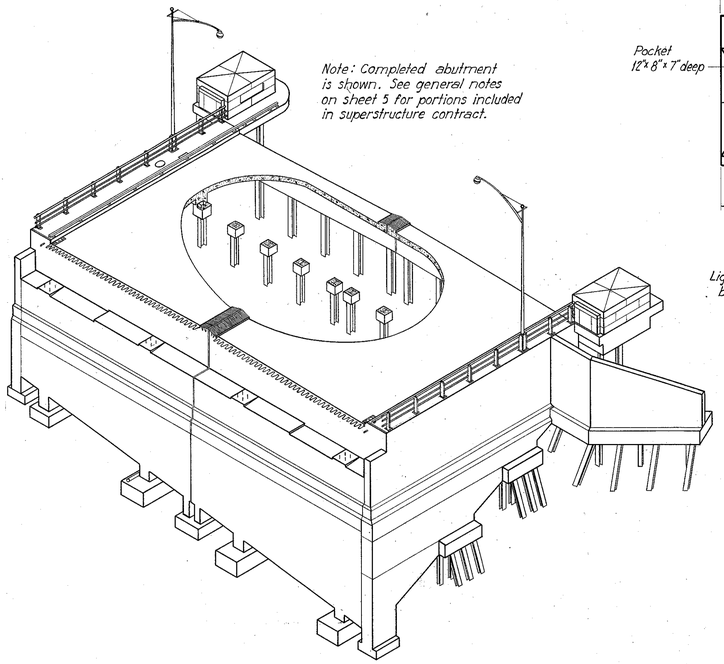
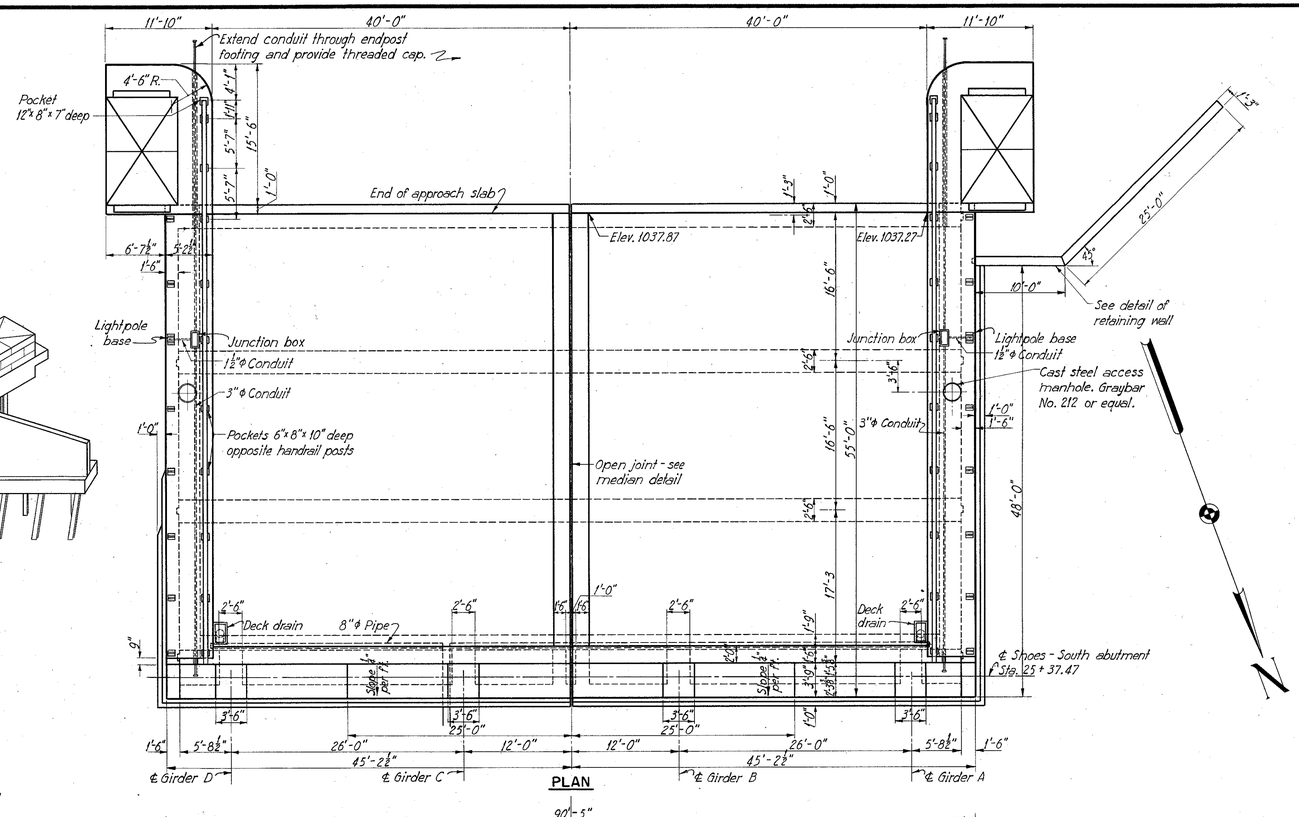
SUMMIT COUNTY
CITY OF AKRON

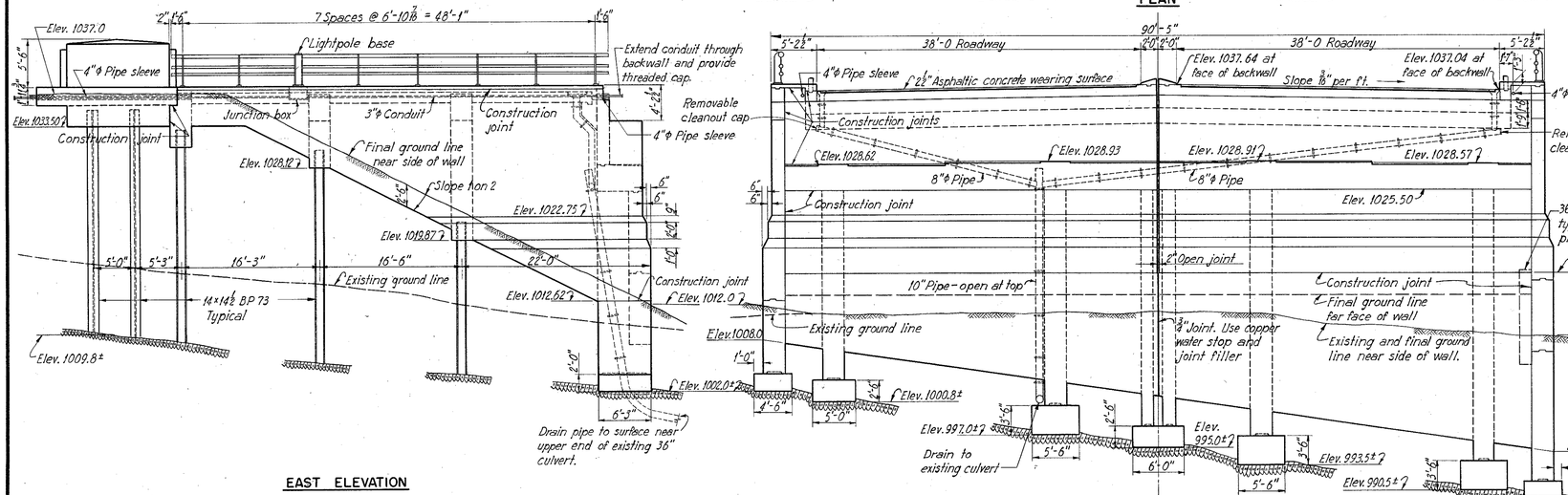
# AKRON EXPRESSWAY SYSTEM
# MAIN VIADUCT
# SUM-5-12.31



Note: Completed abutment is shown. See general notes on sheet 5 for portions included in superstructure contract.

ISOMETRIC VIEW




Notes:

All footings which rest on rock shall extend 3" minimum into rock. See sheet 5.

For anchor bolt plan for expansion castings, see sheet 8.

For details of curb, sidewalk and other details not shown, see north abutment sheets 10 and 11.

For detail of drainage, see sheet 21.

For details of lighting equipment, see sheets 11 and 23.

For grading at south abutment, see sheets 24, 25 and 26.

For endpost details, see sheet 22.

For construction sequence, see sheet 24.

All forms and falsework within the abutment shall be removed. Falsework piles, if used, may be cut off flush with finished ground surface.

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

## AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)

## MAIN VIADUCT
BRIDGE NO. SU-5-124

## SOUTH ABUTMENT

AKRON, SUMMIT COUNTY, OHIO

SCALE 1"=1'-0"
MADE D.J.W. DATE 9-26-49
TRCD. G.D. DATE. 10-4-49
CHKD R.O.D. DATE. 9-27-49

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

766 SHEET V6

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| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
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| 2 | OHIO | U-687(6) | POST WAR |

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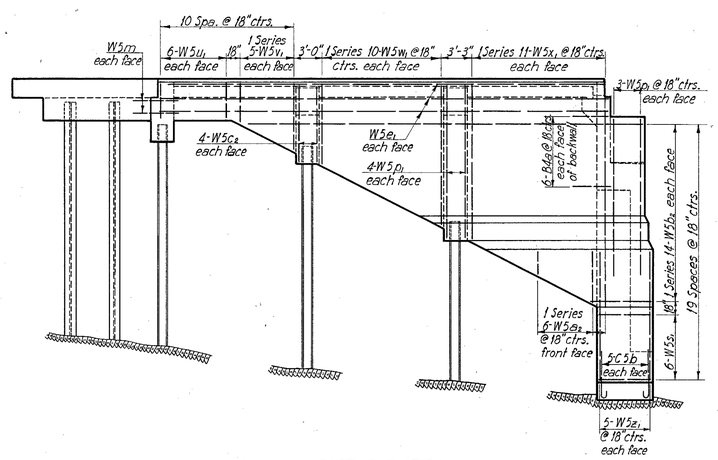
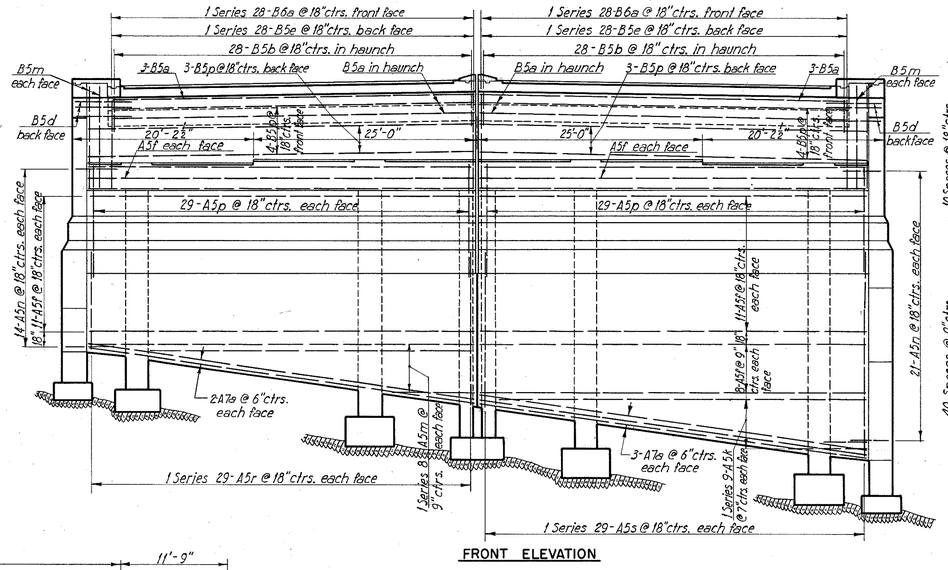
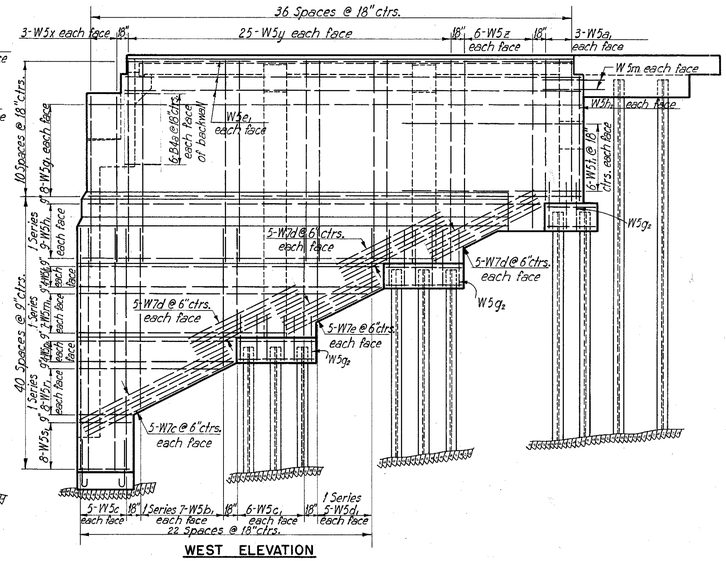
SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31



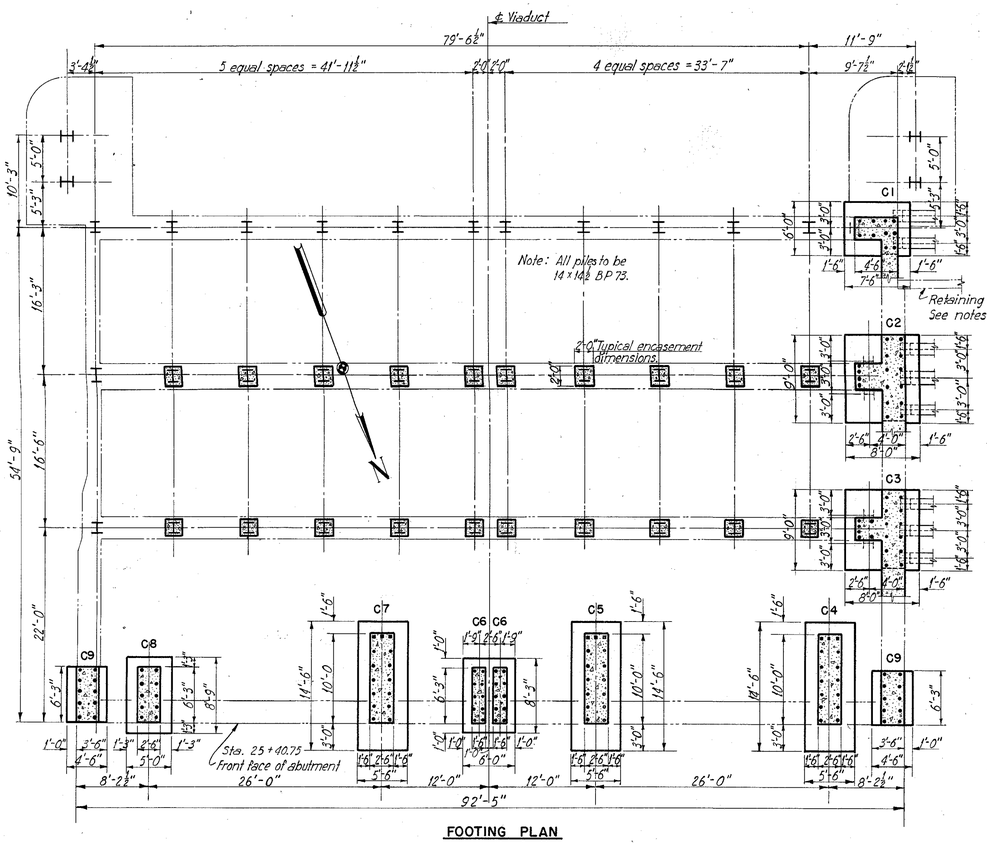

EAST ELEVATION




FRONT ELEVATION




WEST ELEVATION




FOOTING PLAN




SLAB PLAN

Notes:
For details, footing and pile plan of retaining wall see Sheet 8.
For details of end post footing see Sheet 10.
For sections A-A and B-B see Sheet 8.
For sections C-C and D-D see Sheet 9.

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

SOUTH ABUTMENT

AKRON, SUMMIT COUNTY, OHIO

SCALE 1"=1'-0" ....
MADE R.R.M. DATE 9-27-49
TRCD. B.B. ... DATE 10-12-49
CHKD. R.O.D. DATE 10-5-49

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

766 SHEET V7

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| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
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| 2 | OHIO | U-687(6) | POST WAR |

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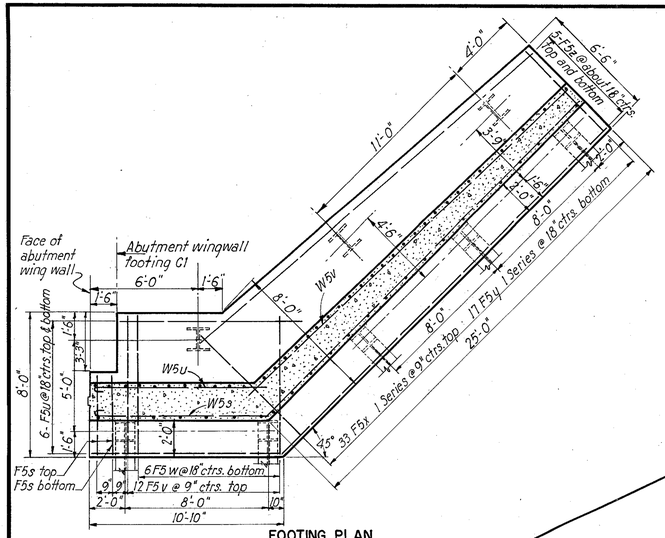
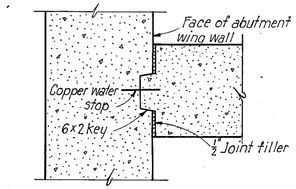
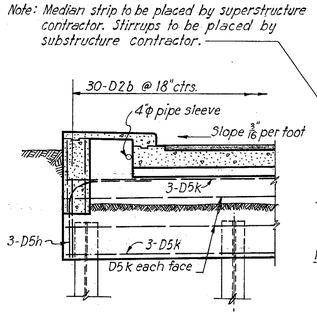
SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31

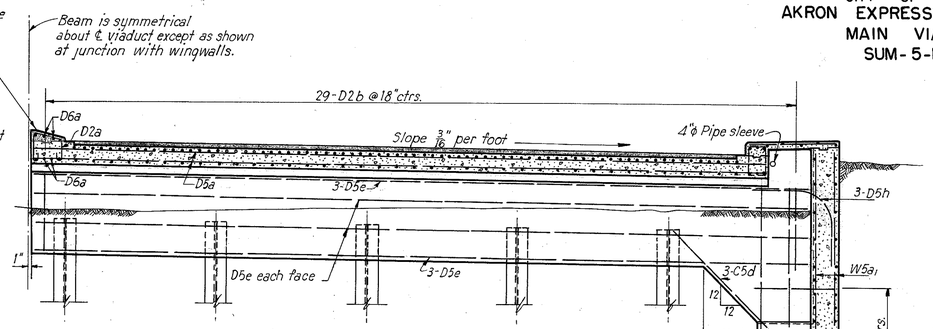



FOOTING PLAN

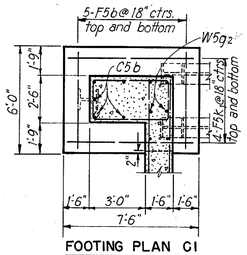



DETAIL AT ABUTMENT END OF WALL
Scale: 1"=1'-0"



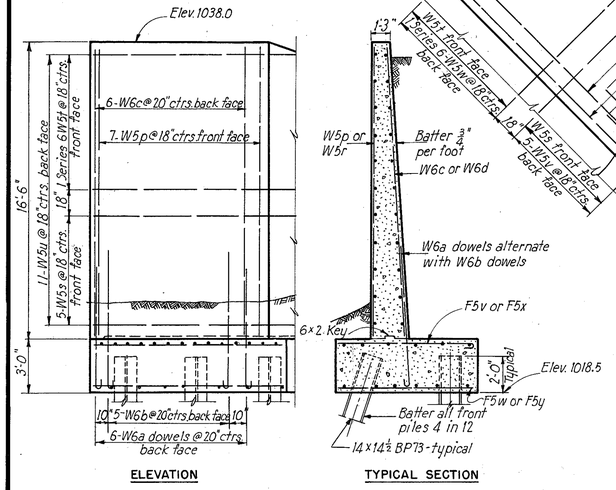




SECTION A-A




FOOTING PLAN C1

COUNTERFORT C1




ELEVATION

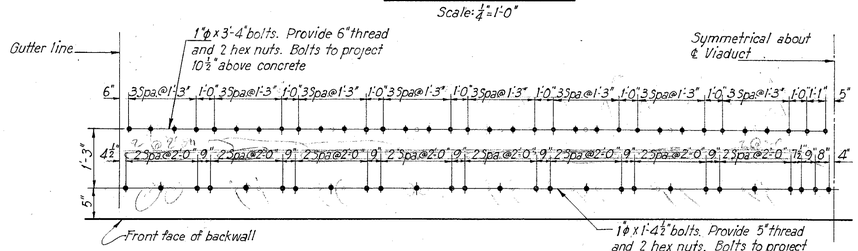



TYPICAL SECTION



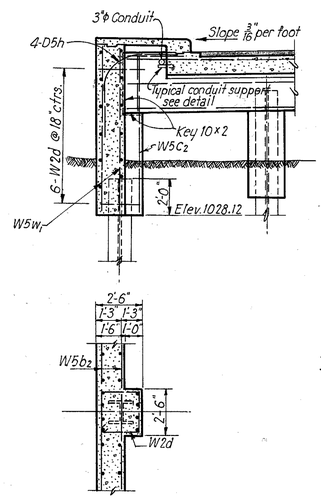

ELEVATION

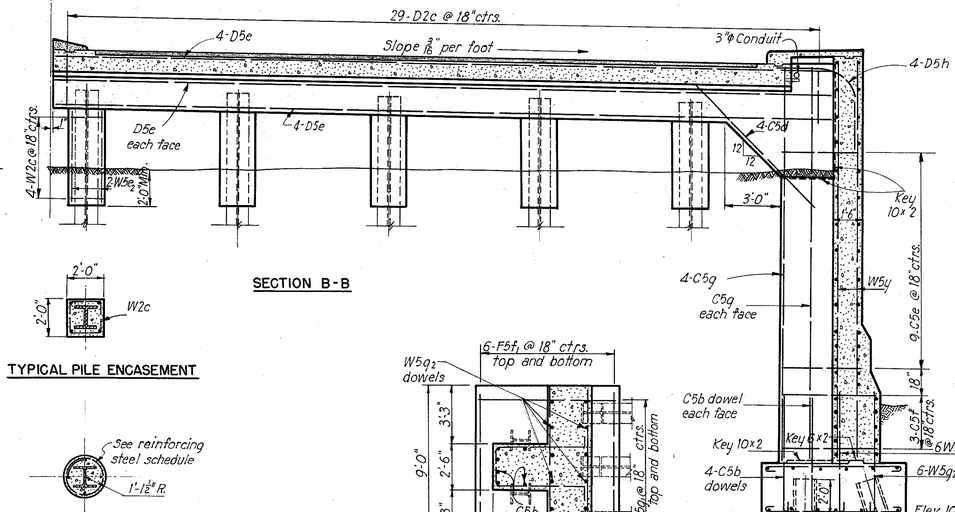
RETAINING WALL DETAILS
Scale: ¼"=1'-0"




ANCHOR BOLT PLAN FOR EXPANSION CASTINGS
No scale
For both abutments.

Note:- Before placing anchor bolts, verify number and spacing by referring to Expansion Casting Details on plans for Part 2 of this project.




SECTION B-B




TYPICAL PILE ENCASEMENT




ALTERNATE PILE ENCASEMENT




FOOTING PLAN C2
Footing plan C3 similar

COUNTERFORT C2

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

SOUTH ABUTMENT

AKRON, SUMMIT COUNTY, OHIO

SCALE 1/4" = 1'-0" HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE J.T. DATE 9-26-49 CONSULTING ENGINEERS
TRCD J.H.G. R.P. DATE 10-12-49 KANSAS CITY NEW YORK
CHKD. R.A.D. DATE 10-5-49

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| 2 | OHIO | U-687 6 | POST WAR |

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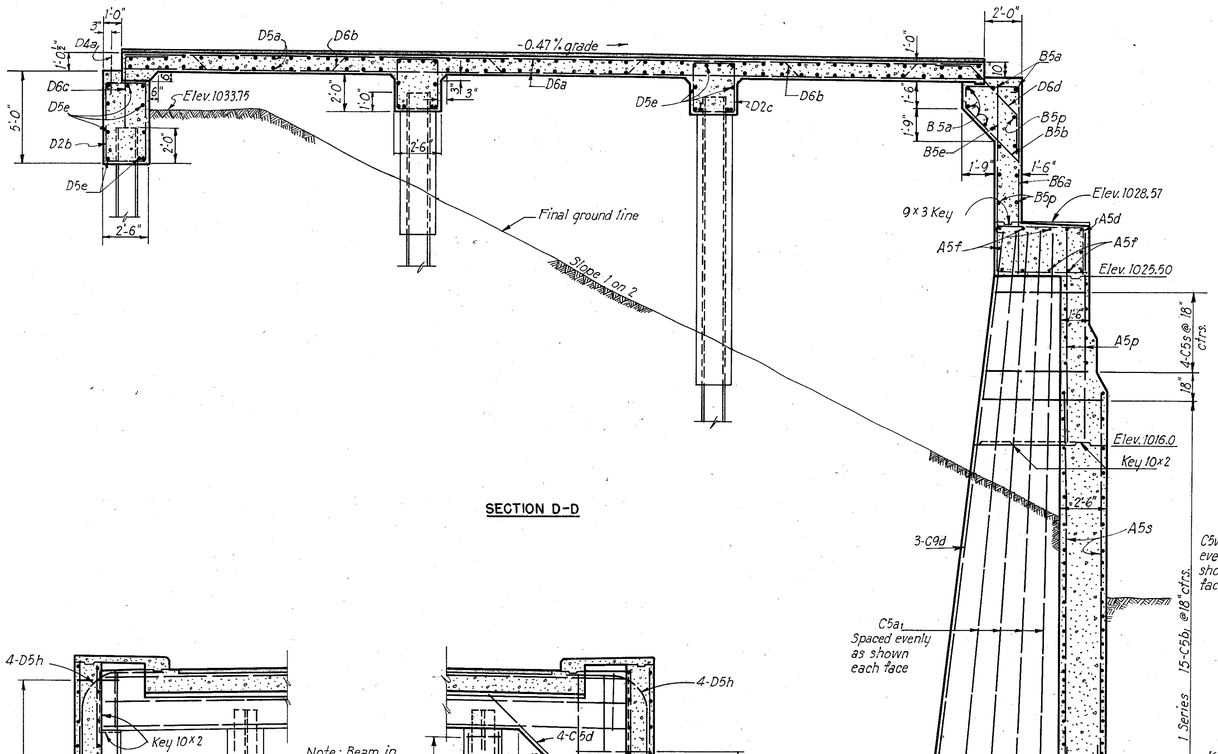
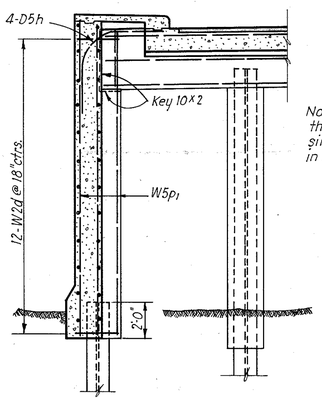
SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31

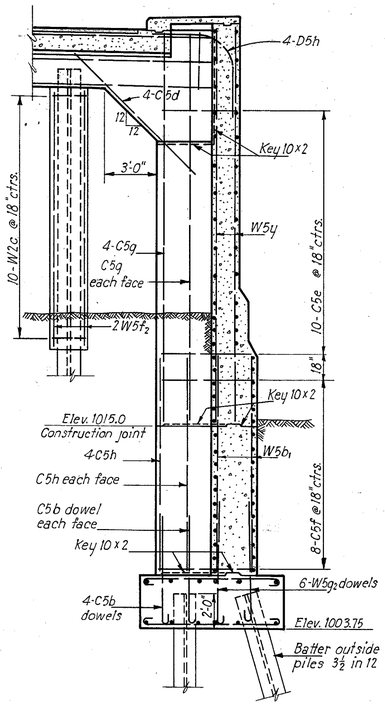



SECTION D-D




Note: Beam in this section is similar to beam in section B-B

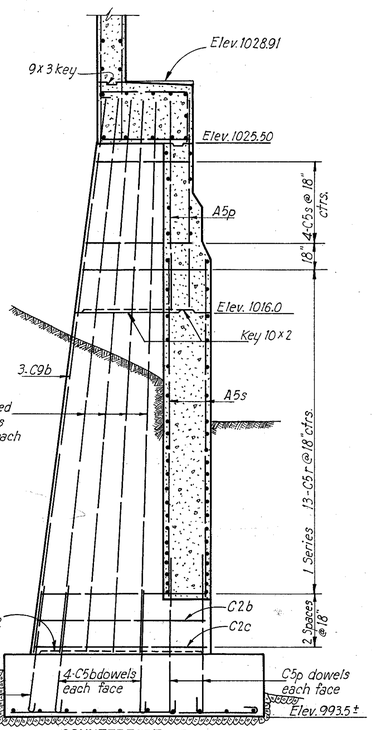
SECTION C-C



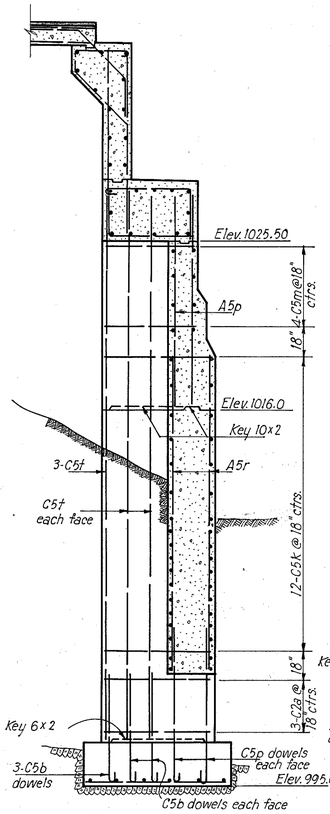

COUNTERFORT C3
Footing plan similar to $C_2$



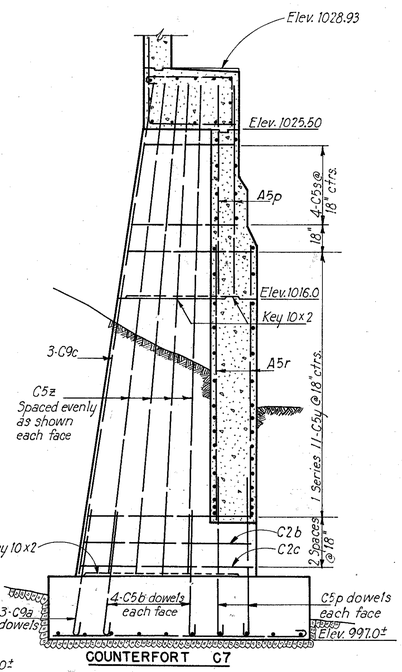

COUNTERFORT C4
Footing plan similar to $C_7$



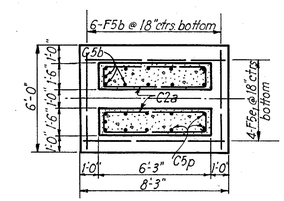

COUNTERFORT C5
Footing plan similar to $C_7$



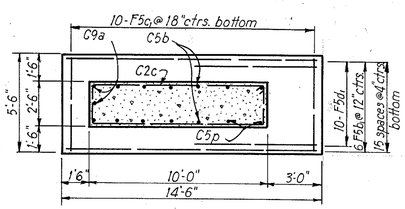

COUNTERFORT C6



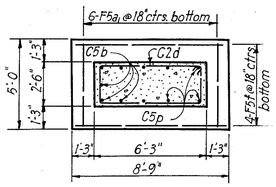

COUNTERFORT C7



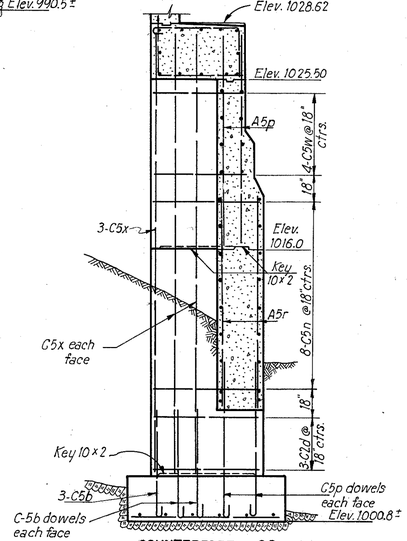

FOOTING PLAN C6



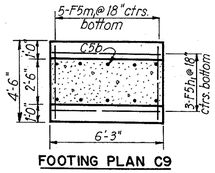

FOOTING PLAN C7
Footing plans $C_4$ and $C_5$ similar




FOOTING PLAN C8




COUNTERFORT C8




FOOTING PLAN C9

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

SOUTH ABUTMENT

AKRON, SUMMIT COUNTY, OHIO

SCALE 4"=1'-0" ... HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE J.T. DATE 9-28-49 CONSULTING ENGINEERS
TRCD JHG, R.R. DATE 10-10-49 KANSAS CITY NEW YORK
CHKD R.O.D. DATE 10-5-49

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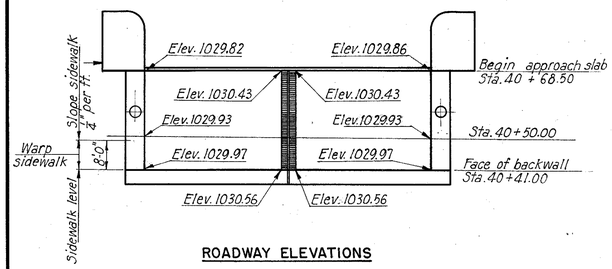
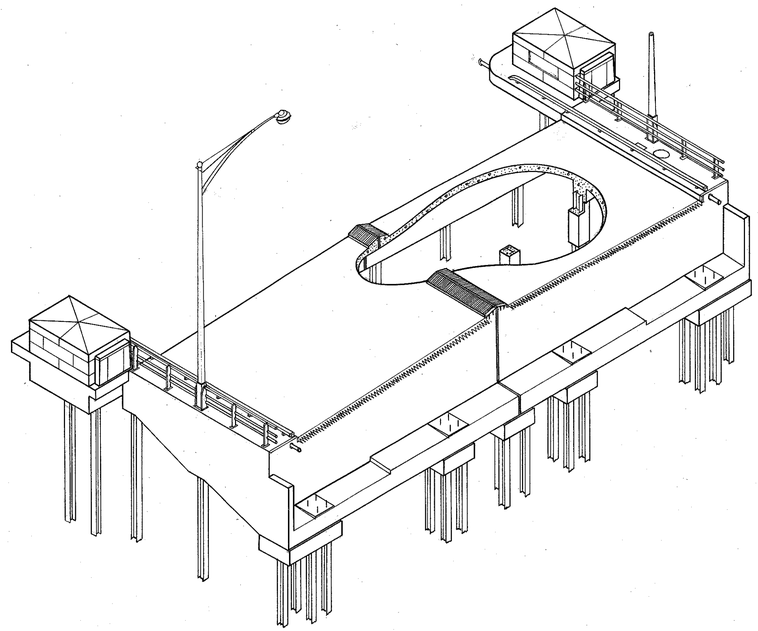
SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31

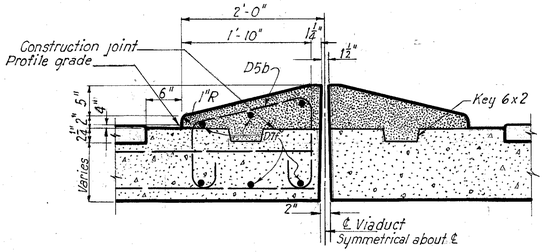



ROADWAY ELEVATIONS

Note: There is a straight line variation between elevations parrallel and transverse to ℄ of roadway.

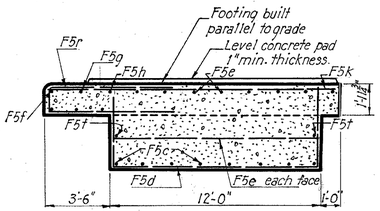


ISOMETRIC VIEW OF ABUTMENT

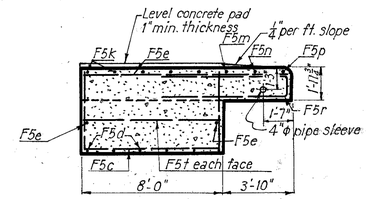



MEDIAN STRIP DETAIL
Scale: 1"=1'-0"

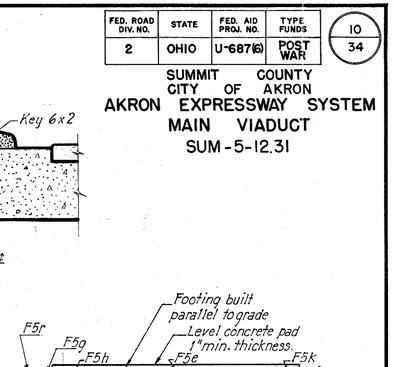
Note: Concrete in median strip above construction joint will be furnished and placed by superstructure contractor. Reinforcing steel shown is for North Abutment only.

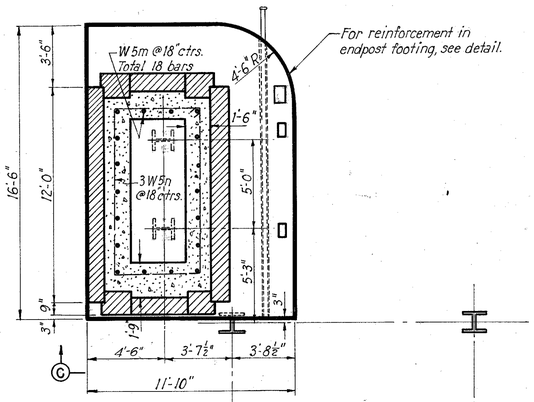


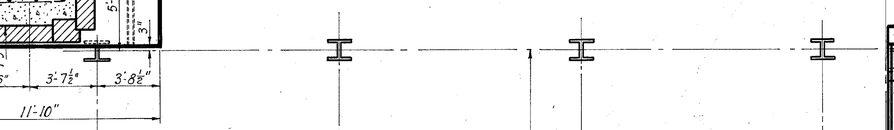

SECTION G-G

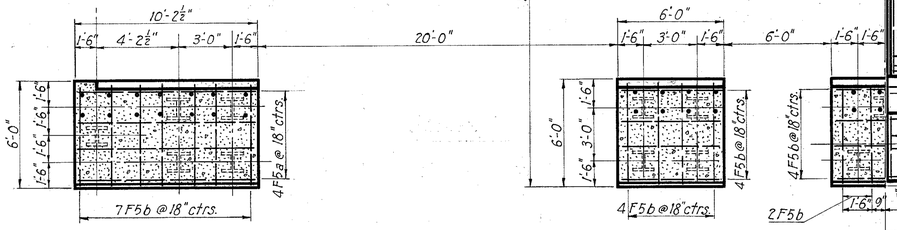



SECTION H-H



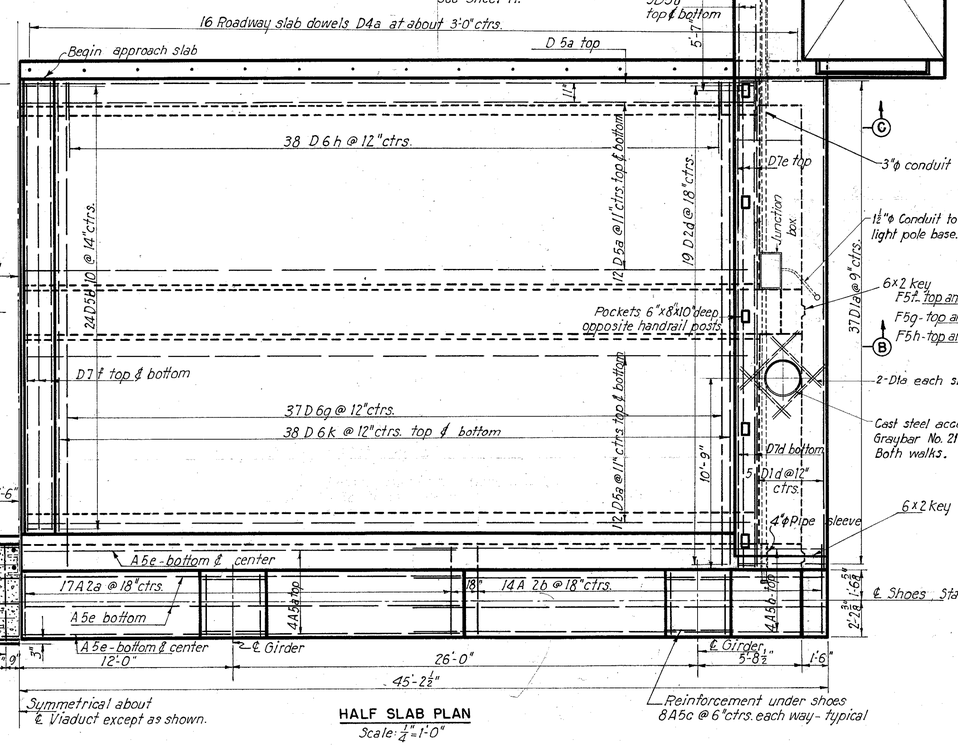




HALF FOOTING PLAN
Scale: ¼"=1'-0"

Extend conduit through endpost footing and provide threaded cap

Notes:
All forms and falsework within the abutment shall be removed. Falsework piles, if used, may be cut off flush with finished ground surface.
For details of stone facing, see sheet 22.
For plan of anchor bolts holding expansion castings, see sheet 8.
For Sections B-B and C-C, see sheet 11.




Summetrical about ℄ Viaduct except as shown.

HALF SLAB PLAN
Scale: ¼"=1'-0"

Reinforcement under shoes 8 A5c @ 6" ctrs. each way - typical

ENDPOST FOOTING DETAIL
Scale: ¼"=1'-0"

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

NORTH ABUTMENT

AKRON, SUMMIT COUNTY, OHIO

SCALE 1"=1'-0" HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE E.G.O. DATE 5-5-49 CONSULTING ENGINEERS
TRCD. E.G.O. DATE 5-20-49 KANSAS CITY NEW YORK
CHKD. C.C. DATE 5-23-49

766 SHEET V10

114

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

11
34

SUMMIT COUNTY
CITY OF AKRON

# AKRON EXPRESSWAY SYSTEM
## MAIN VIADUCT
SUM-5-12.31

See detail of curb, sidewalk and handrail.

See detail of the median strip

Symmetrical about ℄ Viaduct except as shown.

Elev. 1029.07 at face of backwall

2½"Asphaltic wearing surface

Slope 3/16 per ft.

Profile grade Elev. 1030.56 at face of backwall

3 B5n - top

27 B5k @ 18"ctrs.

27 B5b @ 18"ctrs.

4"φ Pipe sleeve

Construction joints

4"φ Pipe sleeve

B5n - each face

B5n - back face

2"Open joint

18" ctrs.

B5c @ 18" ctrs. each face

1 Series 27 B6b @ 18"ctrs. front face

1 Series 27 B5h @ 18"ctrs. back face

4 B6c 18"ctrs. front face

4 B6a @ 18"ctrs. back face

2 B5f each face of backwall

4 B5f each face of backwall

7 B5f each face of backwall

℄ Girder

℄ Girder

Elev. 1019.02

Elev. 1019.33

Elev. 1013.50

F5b

F5a

Note: Wherever necessary, compact earth fill to about 2' above bottom of footings and excavate for footings before driving piles.

Existing ground line at face of bridge seat.

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

Space provided for expansion casting to be furnished and placed by superstructure contractor

6x2 key

B5d each face

B5k

B5b

B5n

℄ Shoes

B6b

B5h

Elev. 1018.50

A2a

B5f

Construction Joint 9x3 key

D6k

D6g

D8a

D5c

D6p

D2g

D2h

Elev. 1026.20

Sta. 40+60.5

2½"Asphalt wearing surface

Construction joint

D6h

D4a

Final ground-line inside abutment

Existing ground line at ℄

14 x 14⅛ BP73

**SECTION A-A**
Scale: 1/4"=1'-0"

30 D 2g @ 18"ctrs.

30 D 2h @ 18"ctrs.

3"φ Conduit

D 5c each face

3-D8a

3-D8a

3-D6m

3-D6p

D 5c each face

D7f

D5b

3"φ Conduit

D7e

D1a

D2d

D1d

D1d

W5c

W5b

W5a

Typical conduit support See detail

W5k2 each face

6x2 key

W7b

W7a

W12b

2C @ 18" ctrs.

Typical reinforcing for pile cap

2W5e1

Final ground line

2" Typical

℄ Viaduct

**HALF SECTION B-B**
Scale: 1/4"=1'-0"

**HALF SECTION C-C**
Scale: 1/4"=1'-0"

Face of backwall

Finish bearing surfaces at shoes truly level at given elevations.

Slope ¼" per ft.

**TYPICAL SECTION THROUGH ABUTMENT BRIDGE SEAT**
Scale: 3/4"=1'-0"

4 Spa. @ 6'-4"= 25'-4"

Light pole base

Construction joint

Extend conduit through backwall and provide threaded caps.

4"φ Pipe sleeve

Junction box

3"φ Conduit

4"φ Pipe sleeve

Extend conduit through end post footing and provide threaded cap.

Sta. 40 + 65.25

W5c each face

W5b each face

W5a each face

W5g each face

W7b front face

W5g front face

Series 7W5k @ 18"ctrs. each face

W5f1 front face

W7a back face

W5k2 each face

1 Series 3W5d @18"ctrs. each face

3W5f @18"ctrs. each face

1 Series 7W5b @18 ctrs. each face

1 Series of 3W5e @18"ctrs. each face

1 W5m each face

Slope ¼" per ft.

Final ground line Elev. 1030.00

Elev. 1026.00

Elev. 1023.50

14 x 14½ BP73

Elev. 1019.70

Elev. 1018.50

Final ground line outside of abutment

Elev. 1013.50

**WINGWALL ELEVATION**
Scale: 1/4"=1'-0"

2'-10"

Bend bar to clear pile

W7a

W12b

**SECTION K-K**
Scale: 1/4"=1'-0"

4-1⅛"φ Holes

**TYPICAL**

4"φ Open hole in pl.

4-1⅛ Holes

**AT LIGHTPOLE BASE**

Face of curb

Top of sidewalk

⅝"φ U-bolt

L 3 x 3 x ⅜ spaced at about 1'-0"ctrs.

Note: Conduit supports and U-bolts shall be galvanized.

**TYPICAL CONDUIT SUPPORT**
Scale: 1"=1'-0"

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

Note: Substructure contractor to install anchor bolts for handrail posts, light pole bases and expansion castings. Handrail, curb, light pole bases and expansion castings to be furnished and placed by superstructure contractor.
For bearing pile details, see sheet 18.
For pile encasements details, see sheet 8.
For detail of median strip, see sheet 10.
For junction box details, see sheet 23.

2-1"φ bolts 1'-0" long

6 x 2 key

3"φ Conduit

1½"Conduit to light pole base

Junction box

Box to clear deck slab

Slope ¼" per ft.

L 1½ x 1½ x ¼ furnished by superstructure contractor.

1½"φ Copper tubing spaced at about 6'-0" ctrs.

5x2 key

Pockets 6"x8"x10"deep. Provide 1½"φ copper tube drain at each pocket.

Note: Conduit and junction box shown for location. They occur at light pole base only. Top of box to be flush with top of sidewalk.

**DETAIL OF CURB, SIDEWALK & HANDRAIL**
Scale: 1"=1'-0"

Rev. 1/18/50

**PART I**

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

NORTH ABUTMENT

AKRON, SUMMIT COUNTY, OHIO

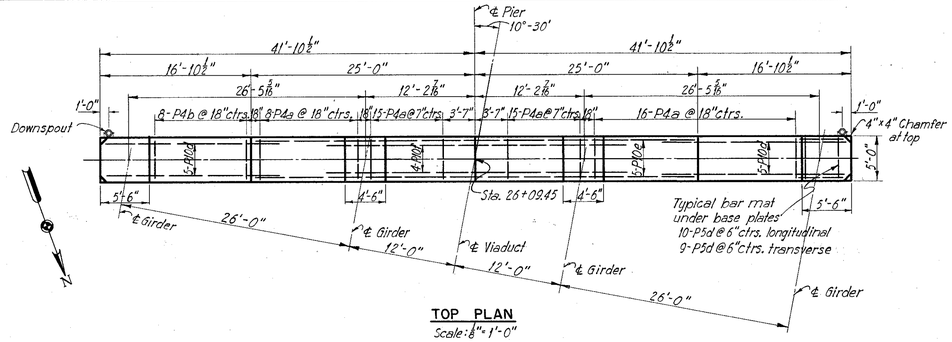
SCALE 1/4"=1'-0" HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE R.R.D. DATE 5-5-49 CONSULTING ENGINEERS
TRCD. G.R. DATE 6-7-49 KANSAS CITY NEW YORK
CHKD. G.R. DATE 6-23-49

766 SHEET VII

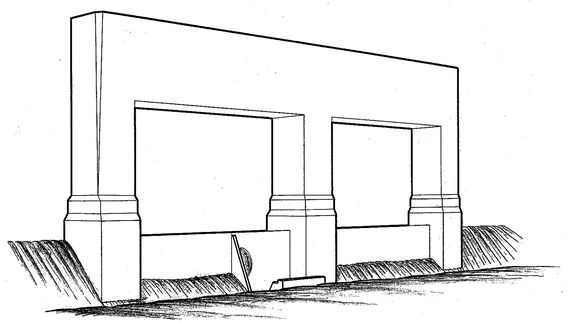
113

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS | 12 |
|---|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR | 34 |

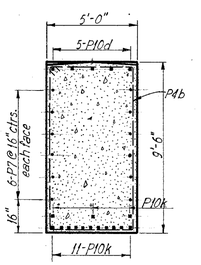
SUMMIT COUNTY
CITY OF AKRON
# AKRON EXPRESSWAY SYSTEM
## MAIN VIADUCT
## SUM-5-12.31



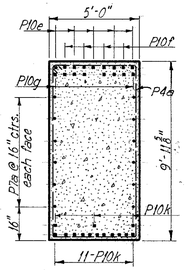

TOP PLAN
Scale: ⅛"=1'-0"



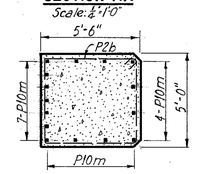
PERSPECTIVE



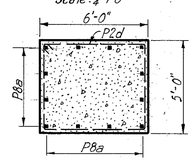

SECTION A-A
Scale: ¼"=1'-0"



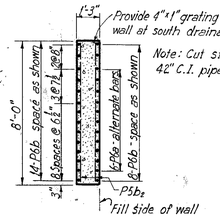

SECTION B-B
Scale: ¼"=1'-0"



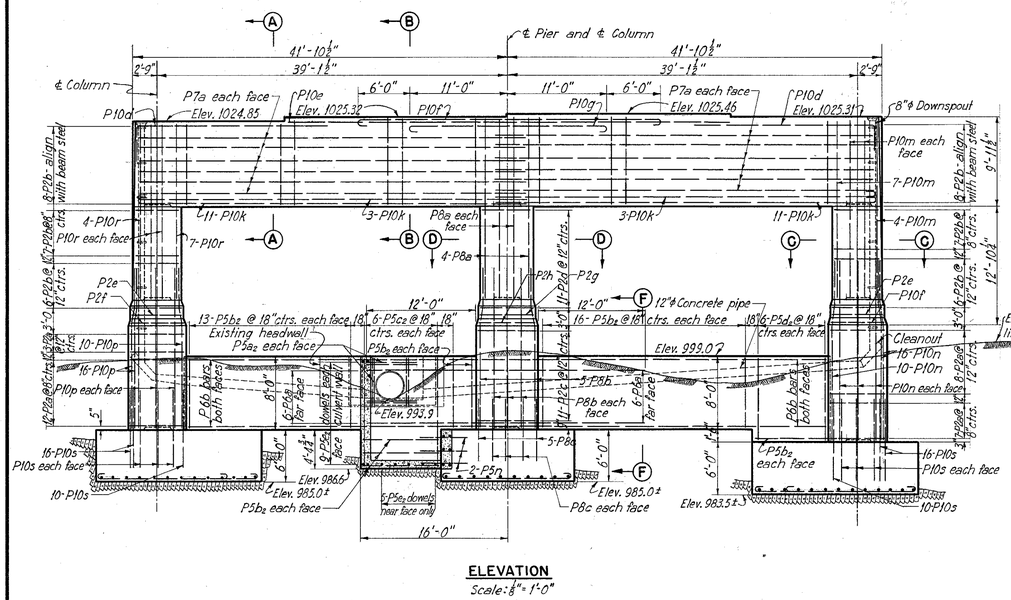

SECTION C-C
Scale: ¼"=1'-0"



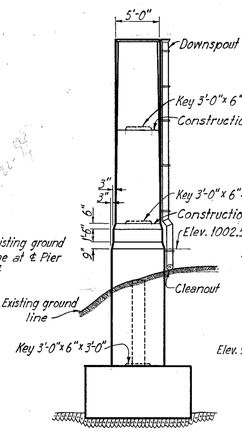

SECTION D-D
Scale: ¼"=1'-0"



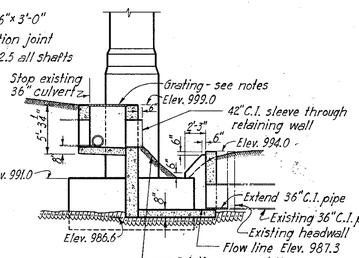

SECTION F-F
Scale: ¼"=1'-0"




ELEVATION
Scale: ⅛"=1'-0"

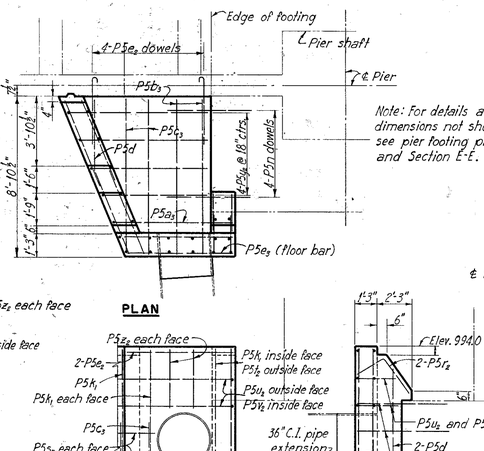



END ELEVATION
Scale: ⅛"=1'-0"



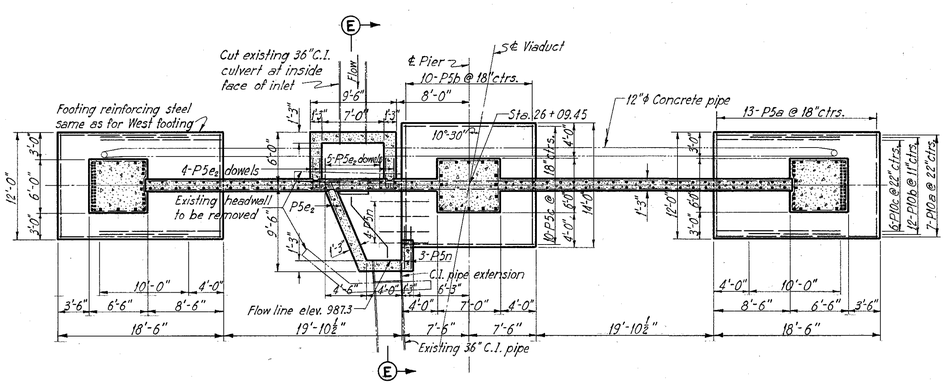

SECTION E-E
Scale: ⅛"=1'-0"



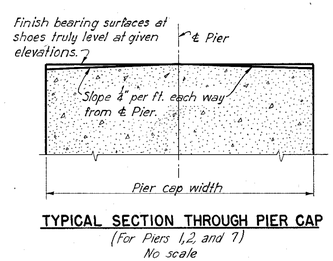




DETAIL OF NORTH DRAINAGE INLET
Scale: ¼"=1'-0"

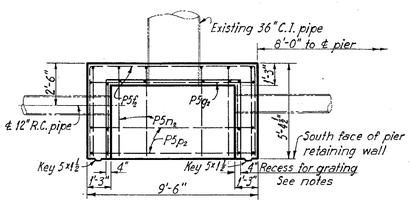
Notes: Grating for south drainage inlet to be Blaw-Knox Type J-36 or approved equal.
Concrete for drainage inlets to be Class "C".
For detail of junction of retaining wall and outside pier columns, see sheet 13.
For drainage details, see sheet 21.



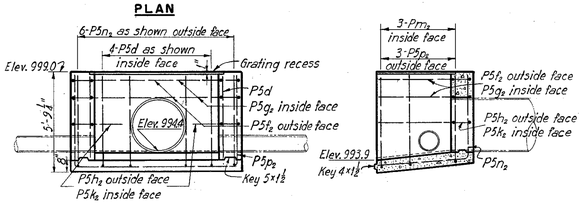

FOOTING PLAN
Scale: ⅛"=1'-0"




TYPICAL SECTION THROUGH PIER CAP
(For Piers 1, 2 and 7)
No scale




PLAN




FRONT ELEVATION
SECTION ON ℄
DETAIL OF SOUTH DRAINAGE INLET
Scale: ¼"=1'-0"

Rev. 1/18/50

# PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

PIER I

AKRON, SUMMIT COUNTY, OHIO

SCALE ¼"&⅛"=1'-0"
MADE D.J.W. DATE 10-20-49
TRCD. G.D. DATE 10-22-49
CHKD. R.F.M. DATE 10-20-49

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

766 SHEET V12

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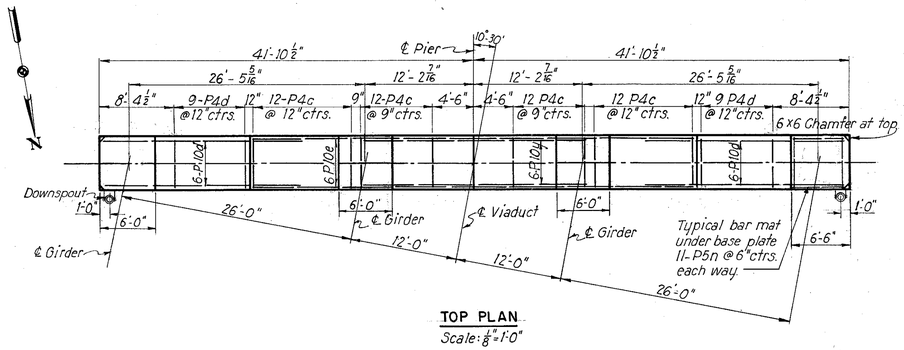
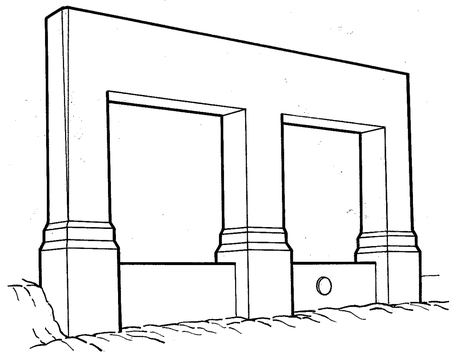
| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

13
34

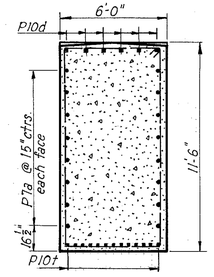
SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31



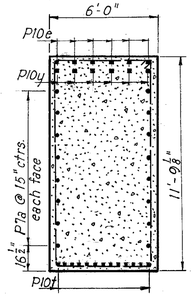

TOP PLAN
Scale: 1/8" = 1'-0"



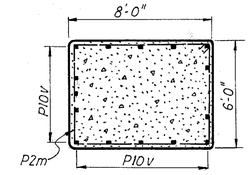
PERSPECTIVE



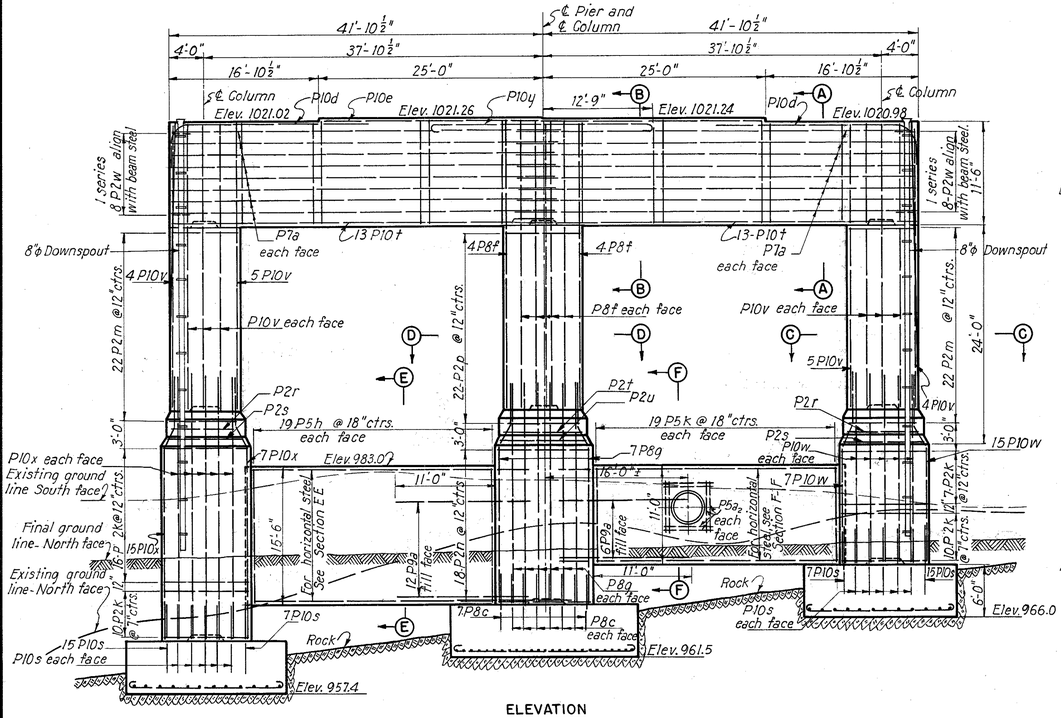

SECTION A-A
Scale: 1/4" = 1'-0"



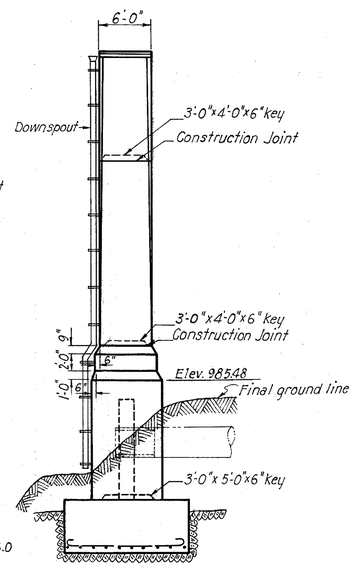

SECTION B-B
Scale: 1/4" = 1'-0"



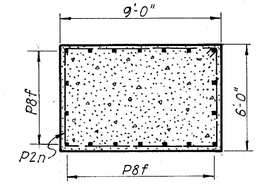

SECTION C-C
Scale: 1/4" = 1'-0"



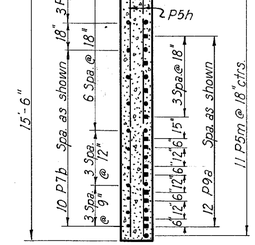

ELEVATION
Scale: 1/8" = 1'-0"



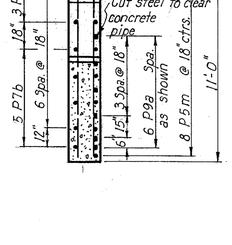

END ELEVATION
Scale: 1/8" = 1'-0"



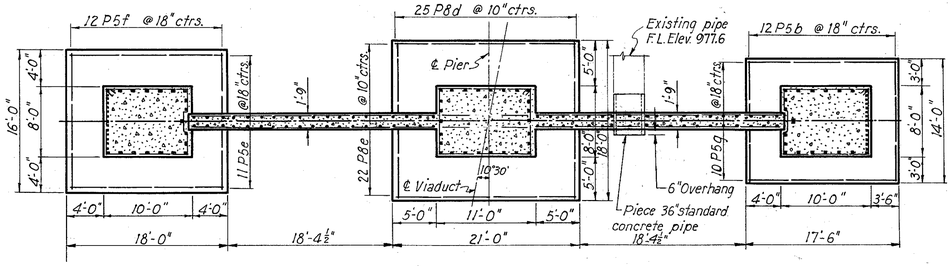

SECTION D-D
Scale: 1/4" = 1'-0"



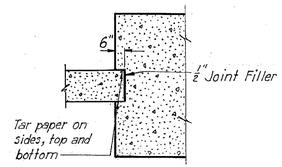

SECTION E-E
Scale: 1/4" = 1'-0"




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




FOOTING PLAN
Scale: 1/8" = 1'-0"




DETAIL AT JUNCTION
OF RETAINING WALL AND COLUMN
Scale: 1/4" = 1'-0"

Note: For drainage details, see sheet 21.
For typical section through pier cap, see sheet 12.
For site grading, see sheet 28.

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

PIER 2

AKRON, SUMMIT COUNTY, OHIO

SCALE 1/8 x 1/4 = 1:0"
MADE B.G. DATE 5-25-49
TRCD R.R. DATE 7-16-49
CHKD C.B. DATE 7-14-49

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

765 SHEET V13

Rev. 1/27/50

CHARLES BRUNING CO., INC.

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

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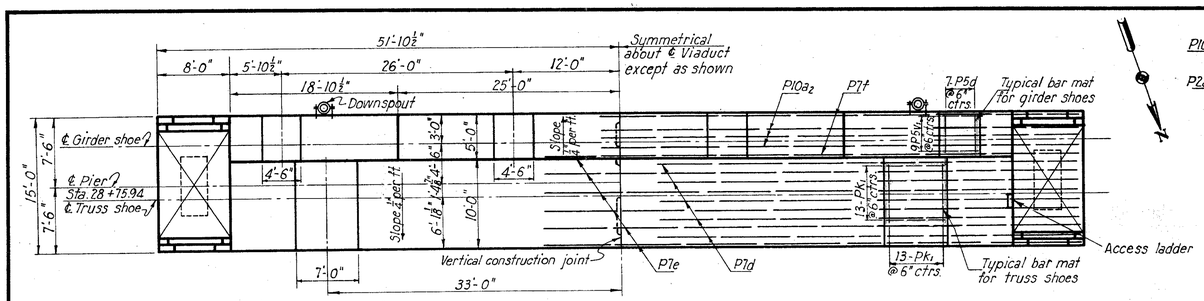
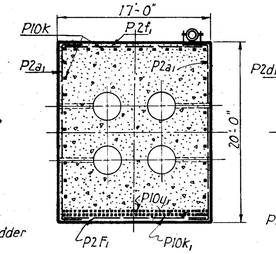
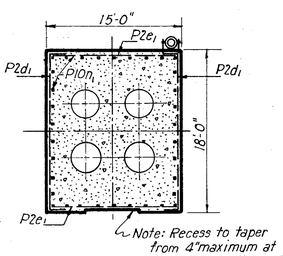
SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31



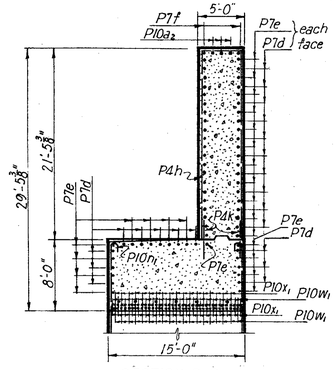

TOP PLAN



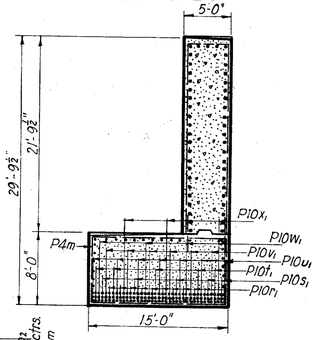

SECTION B-B




SECTION A-A

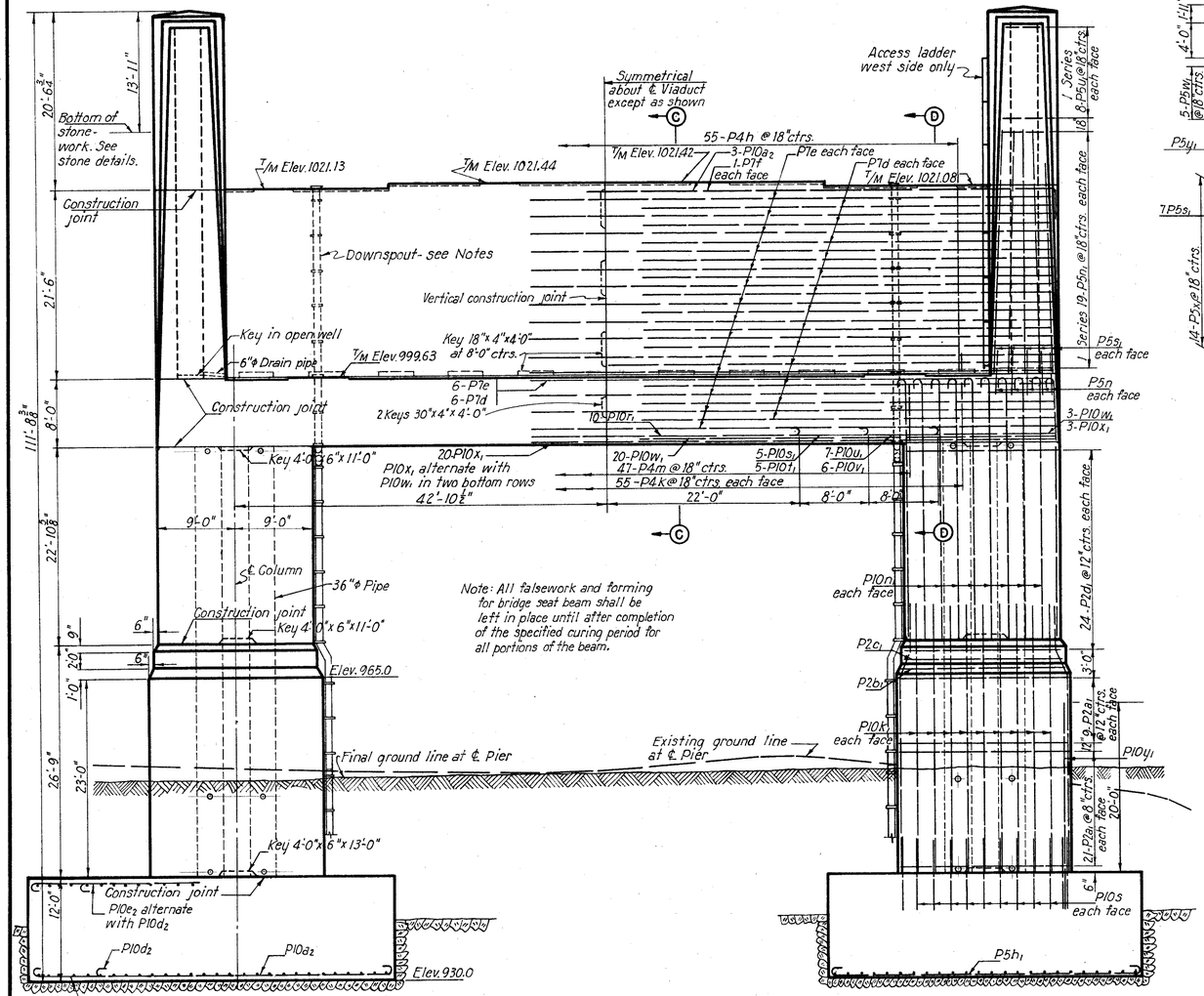



SECTION D-D

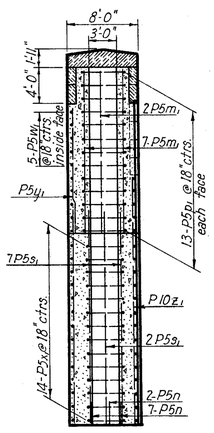



SECTION C-C

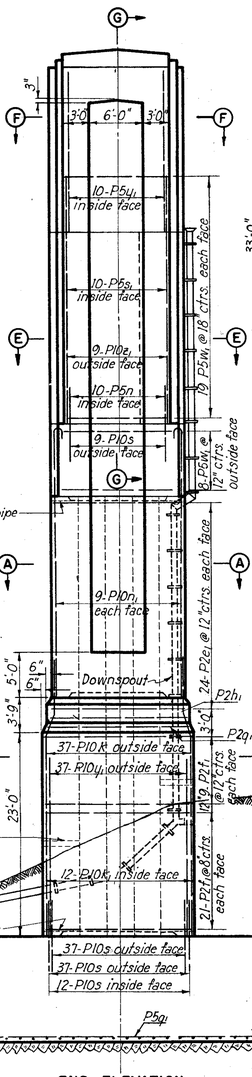
Note:
Reinforcing in Section C-C same as in Section D-D except as noted.



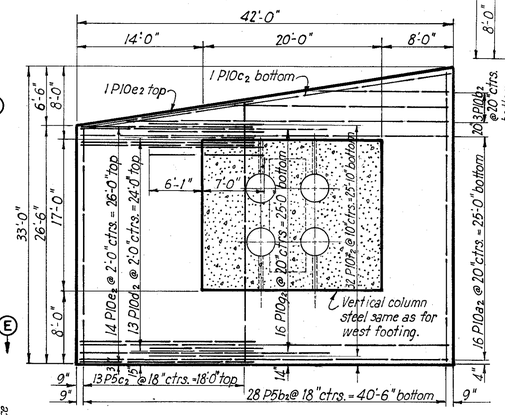

ELEVATION



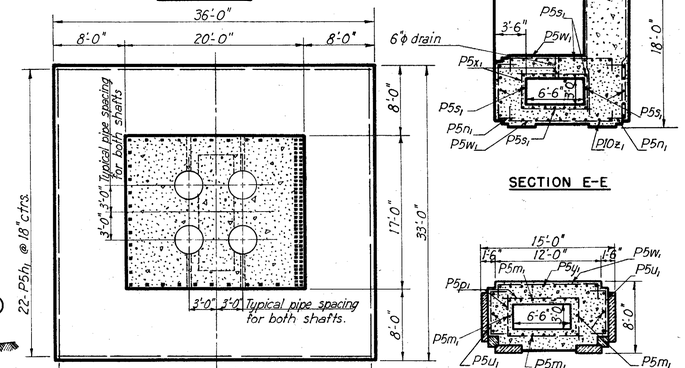

SECTION G-G




END ELEVATION




EAST FOOTING




WEST FOOTING

FOOTING PLANS

Note: For Stone Details see sheet 22.
For details of access ladder and downspouts, see sheet 21.
For notes regarding 36"ϕ cell pipes, see sheet 15.




SECTION E-E




SECTION F-F

PART I
STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

PIER 3

AKRON, SUMMIT COUNTY, OHIO

SCALE 3/8" = 1'-0"
MADE E.R.M. DATE 6-9-49
TRCD. R.A. DATE 7-11-49
CHKD. C.H.S. DATE 7-5-49

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

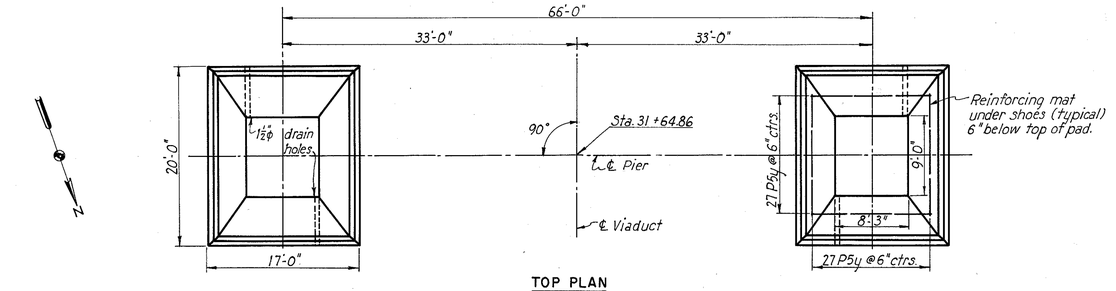
766 SHEET V14

149

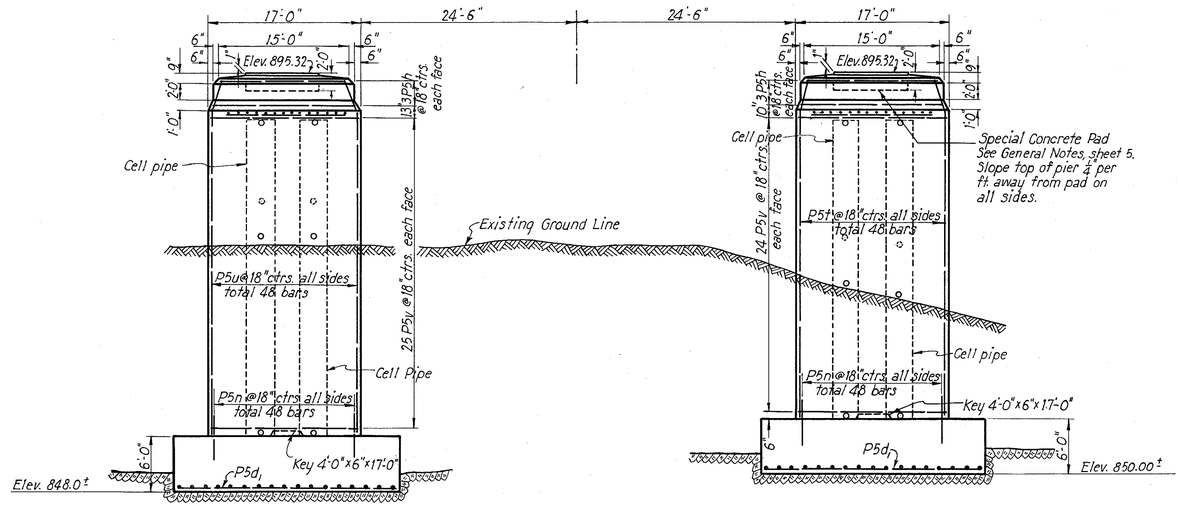
| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687 6 | POST WAR |

15
34

SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31



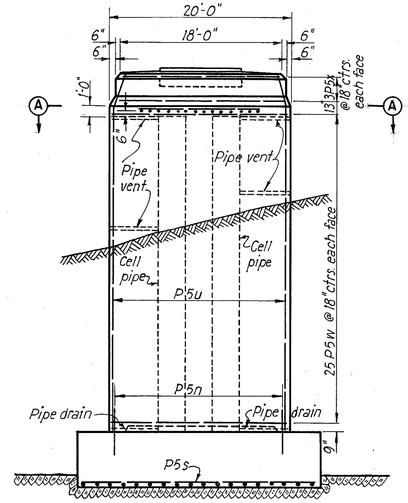

TOP PLAN



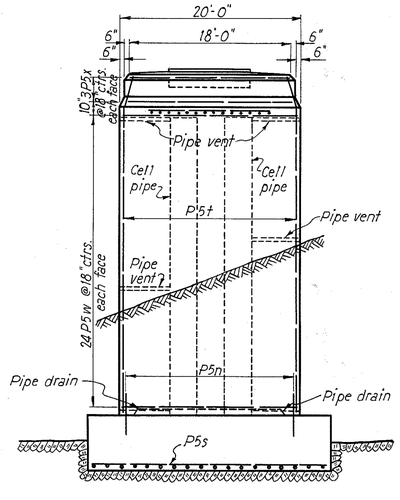

EAST PEDESTAL

WEST PEDESTAL

ELEVATION

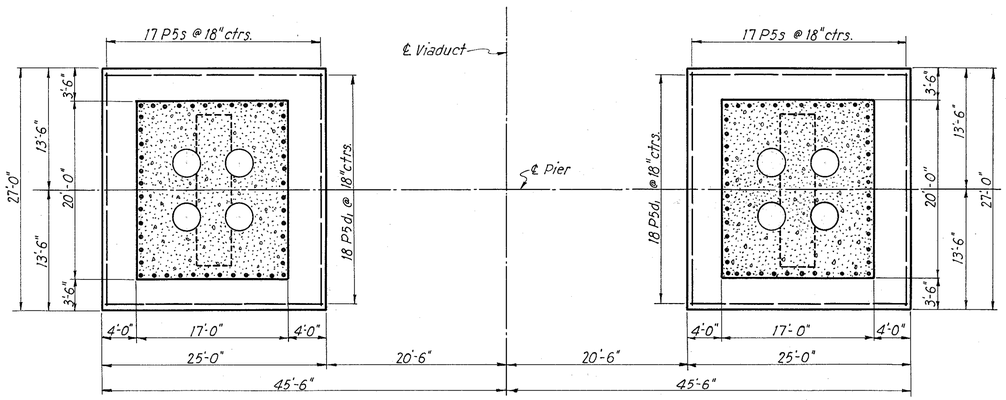



EAST PEDESTAL

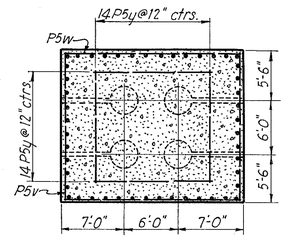



WEST PEDESTAL

END VIEWS




FOOTING PLAN




SECTION A-A

Notes:
Cell pipes shall be 36" diameter metal pipe of adequate strength.
A 6"ϕ vent shall be located just above ground level and at top of each cell.
A 6"ϕ drain shall be located at bottom of each cell.
Vent and drain pipes shall be 6" diameter cement asbestos pipe inserted in openings cut in the cell pipes.
Payment for these cell, vent and drain pipes is included in the price of concrete and deductions will be made from the pier concrete quantities for the volume of encased pipe.

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

PIER 4

AKRON, SUMMIT COUNTY, OHIO

SCALE 1/4" = 1'-0"
MADE B.C. DATE 5-13-49
TRCD. B.R. DATE 6-14-49
CHKD. C.R. DATE 6-14-49

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

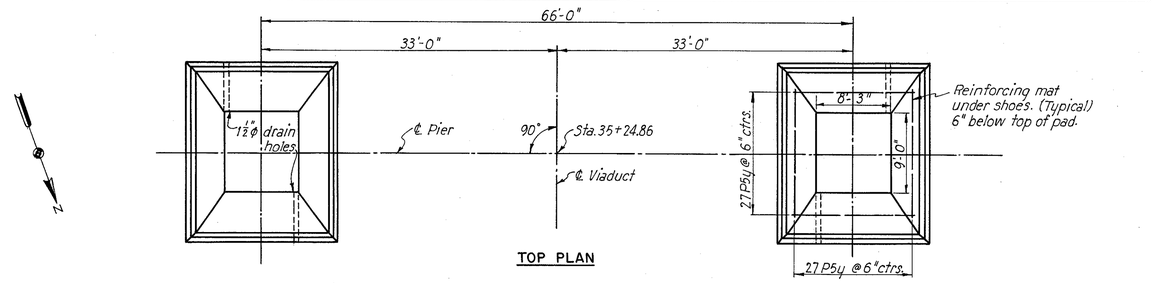
766 SHEET V15

112

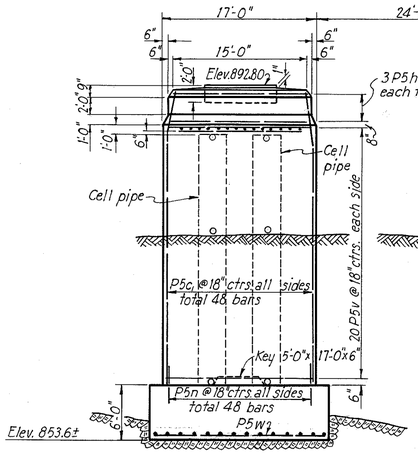
| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

16
34

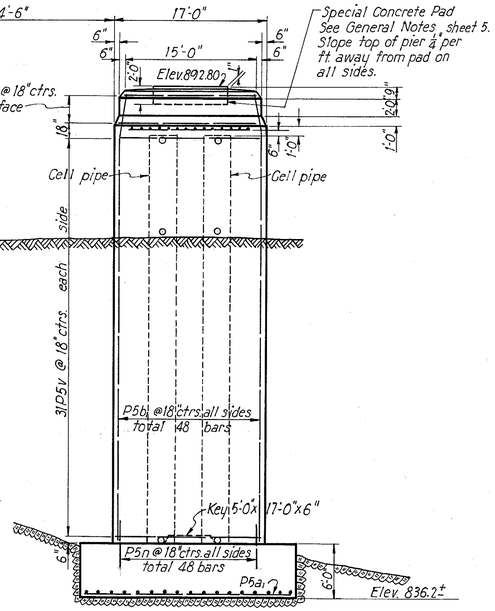
SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31




TOP PLAN

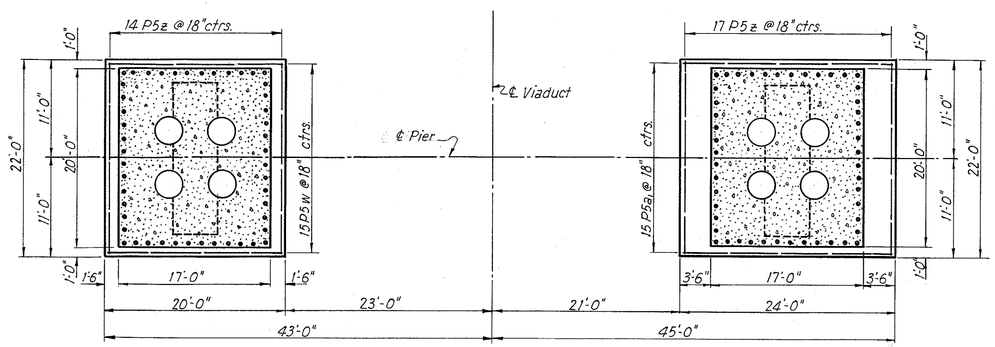



EAST PEDESTAL

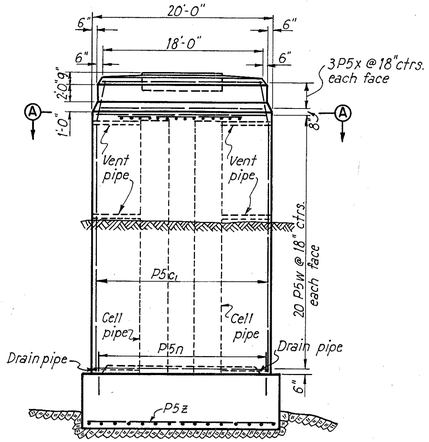



WEST PEDESTAL

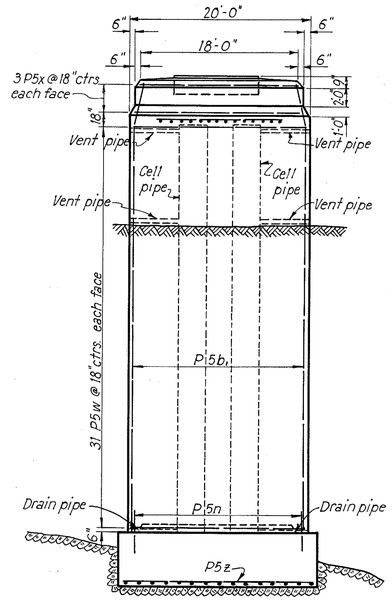
ELEVATION




FOOTING PLAN

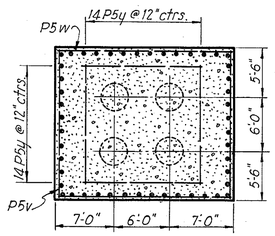



EAST PEDESTAL




WEST PEDESTAL

END VIEWS




SECTION A-A

Note:
For notes regarding 36"φ cell pipes see sheet 15.

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

PIER 5

AKRON, SUMMIT COUNTY, OHIO

SCALE 3/8"=1'-0"
MADE J.P.A. DATE 5-16-49
TRCD. R.R. DATE 6-14-49
CHKD. C.R. DATE 6-9-49

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

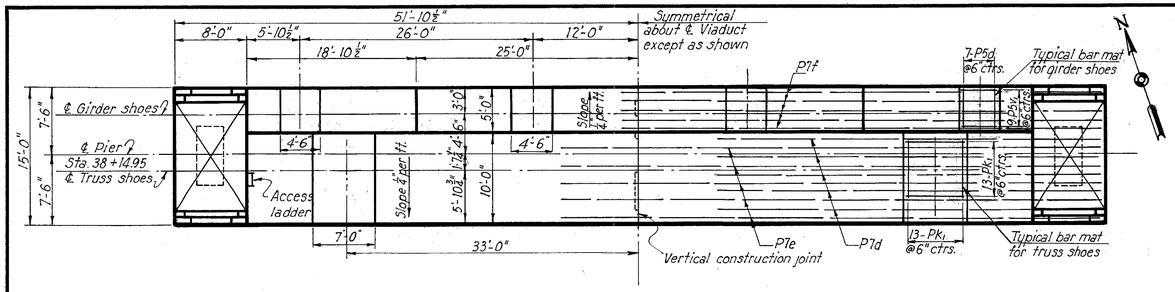
766 SHEET V16

1/15

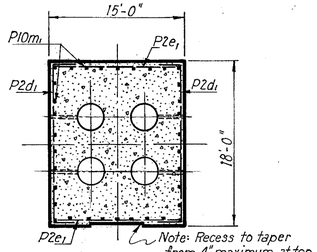
| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

17
34

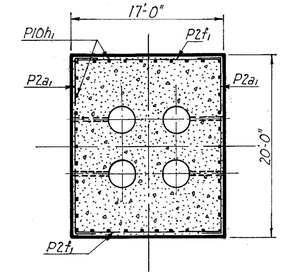
SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31



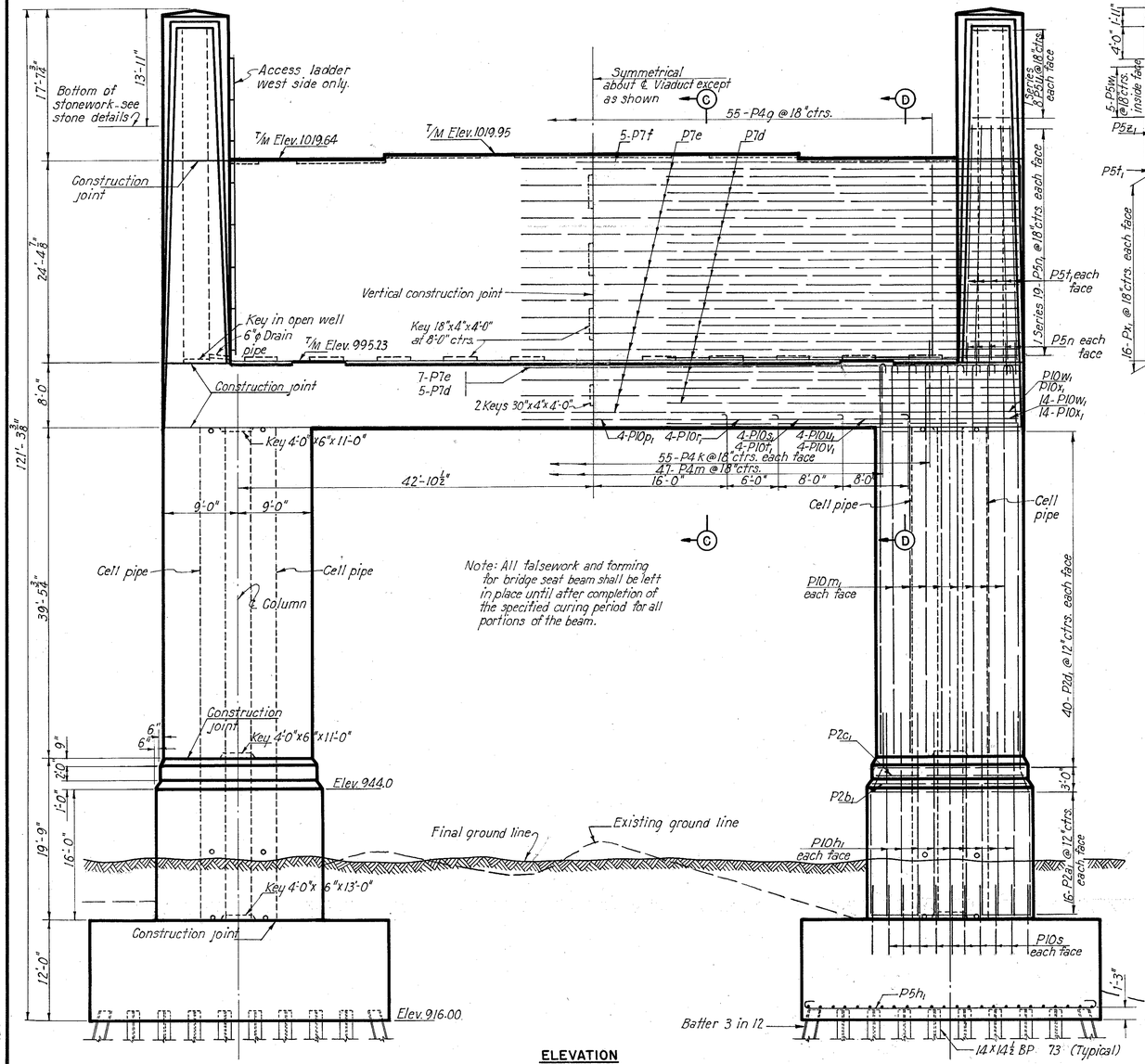

TOP PLAN



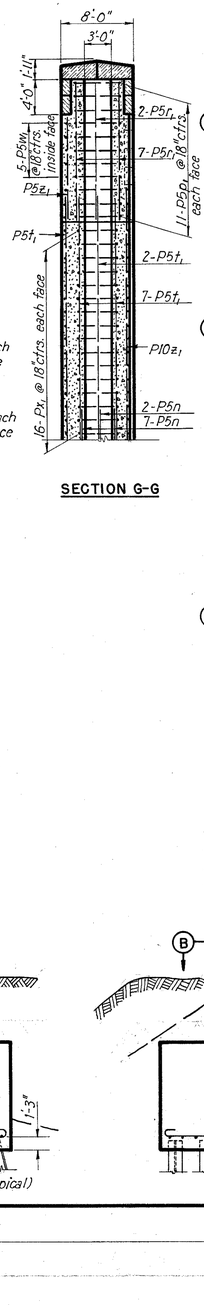

SECTION A-A



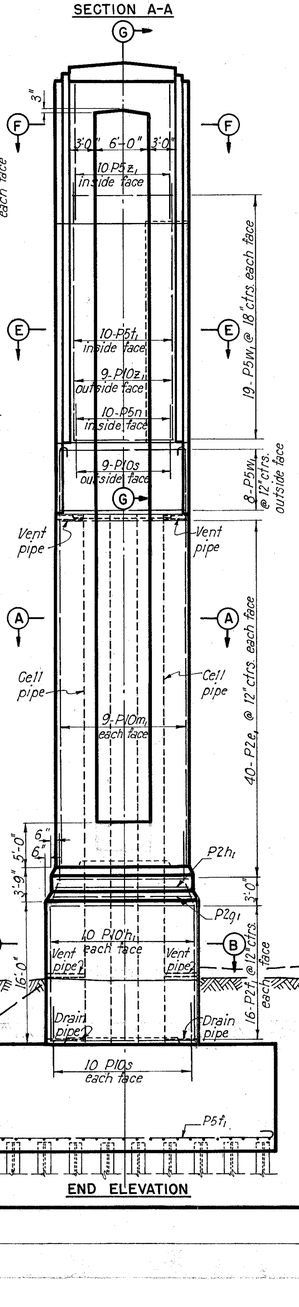

SECTION B-B



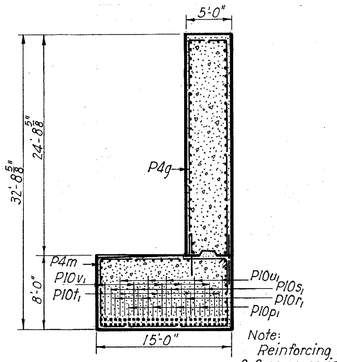

ELEVATION




SECTION G-G

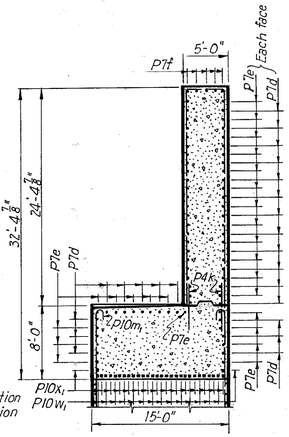



END ELEVATION

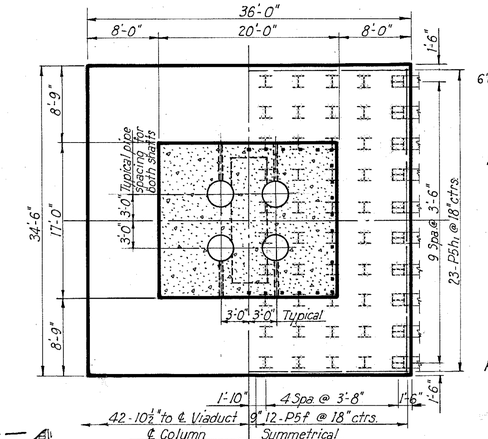



SECTION C-C

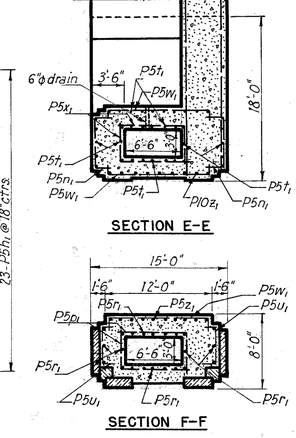
Note: Reinforcing in Section C-C same as in Section D-D except as noted.




SECTION D-D




FOOTING PLAN




SECTION E-E




SECTION F-F

Note:
For Stone Details see sheet 22.
For details of access ladder, see sheet 21.
For pile point details see sheet 18.
For cell, vent, and drain pipe notes see sheet 15.

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

PIER 6

AKRON, SUMMIT COUNTY, OHIO

SCALE 1" = 1'-0"
MADE A.A. DATE 6-9-49
TRCD. W.B. DATE 7-11-49
CHKD. E.H.B. DATE 7-5-49

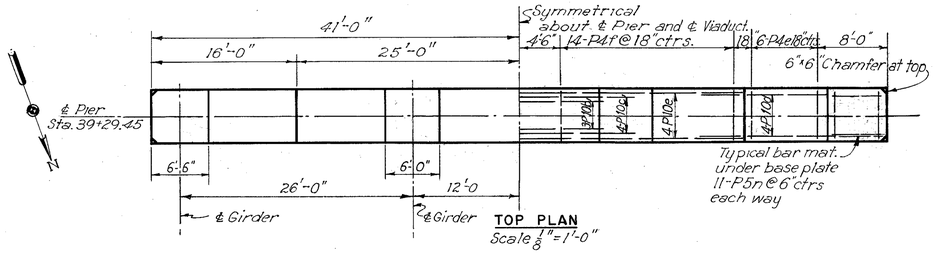
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

766 SHEET V17

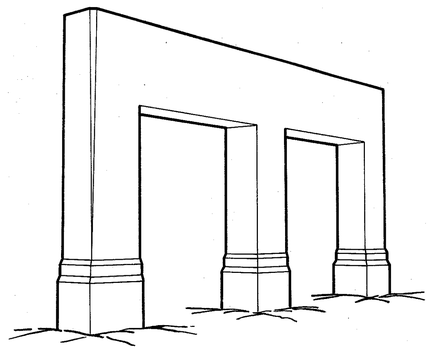
150

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS | 18 |
|---|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR | 34 |

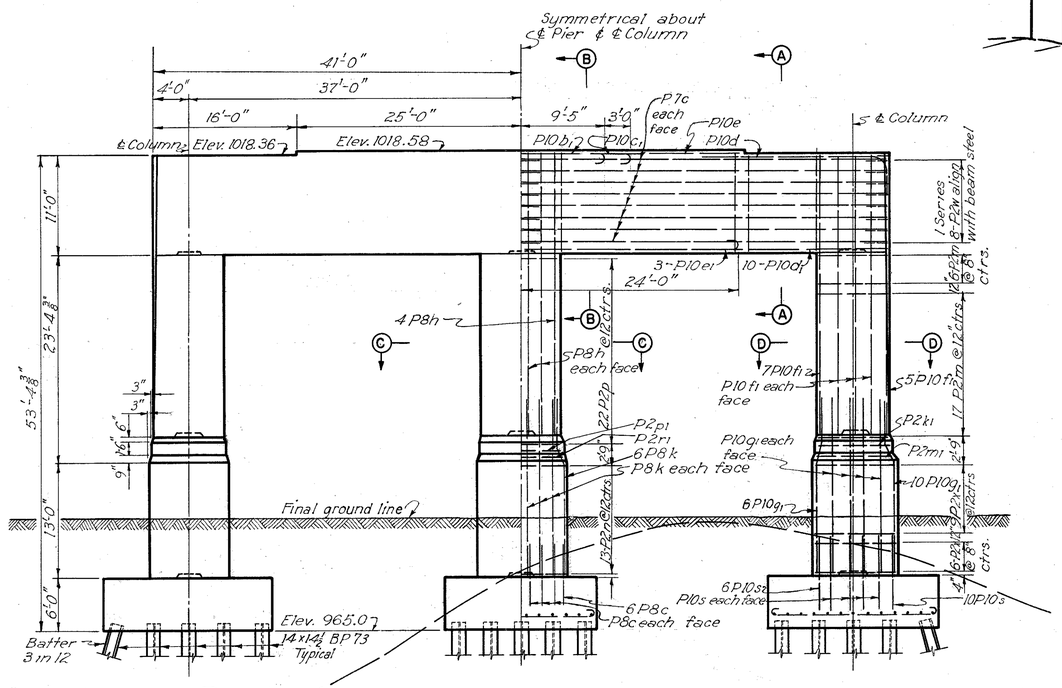
SUMMIT COUNTY
CITY OF AKRON
# AKRON EXPRESSWAY SYSTEM
## MAIN VIADUCT
SUM-5-12.31



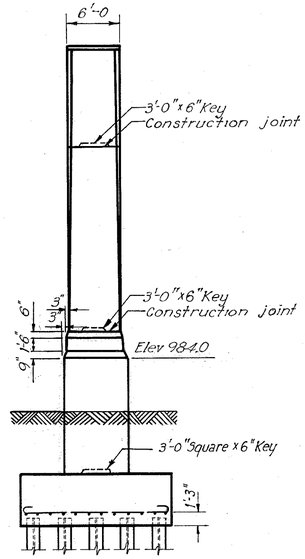

TOP PLAN
Scale 1/8"=1'-0"



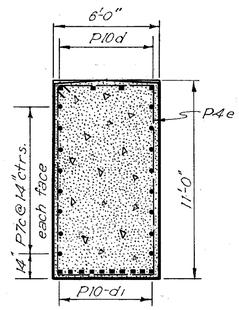
PERSPECTIVE



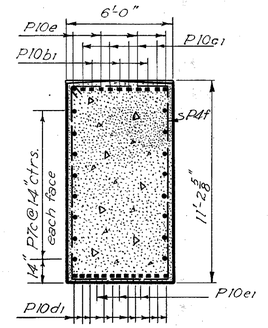

ELEVATION
Scale 1/8"=1'-0"



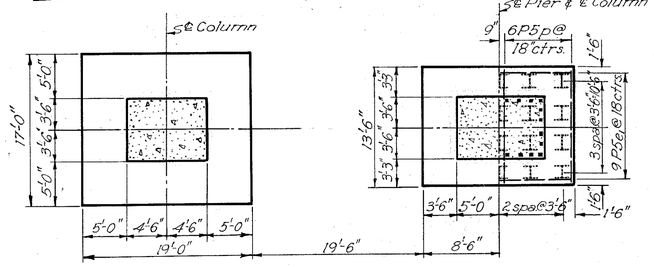

END ELEVATION
Scale 1/8"=1'-0"



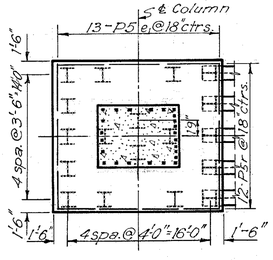

SECTION A-A
Scale 1/4"=1'-0"

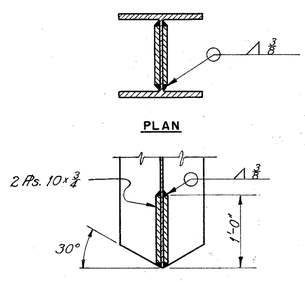



SECTION B-B
Scale 1/4"=1'-0"

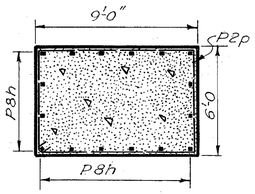



FOOTING PLAN
Scale 1/8"=1'-0"

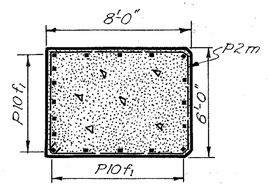



BEARING PILE POINT
Scale: 1"=1'-0"
Omit point details on piles for North Abutment.




SECTION C-C
Scale 1/4"=1'-0"




SECTION D-D
Scale 1/4"=1'-0"

For typical section through pier cap, see sheet 12.

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

PIER 7

AKRON, SUMMIT COUNTY, OHIO

SCALE 1/4", 1/8", 1"=1'-0"
MADE B.C. DATE 5-11-49
TRCD. P.E.L. DATE 6-16-49
CHKD. C.E. DATE 6-15-49

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

766 SHEET V18

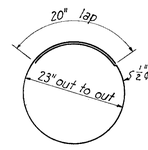
110

| Mark | Size | No. | Length | Type | Dimensions A | Dimensions B | Weight Pounds |
|---|---|---|---|---|---|---|---|
| **SOUTH ABUTMENT** | | | | | | | |
| C9a | 1⅛" □ | 9 | 8'-3" | 101 | 7'-0" | | 320 |
| C9b | 1⅛" □ | 3 | 31'-0" | Str. | | | 400 |
| C9c | 1⅛" □ | 3 | 27'-6" | Str. | | | 350 |
| C9d | 1⅛" □ | 3 | 34'-0" | Str. | | | 440 |
| A7a | 1" ϕ | 10 | 43'-6" | Str. | | | 1160 |
| D7a | 1" ϕ | 6 | 52'-0" | 100 | 49'-10" | | 830 |
| D7b | 1" ϕ | 6 | 49'-9" | Str. | | | 800 |
| W7c | 1" ϕ | 10 | 18'-0" | Str. | | | 480 |
| W7d | 1" ϕ | 30 | 13'-3" | Str. | | | 1060 |
| W7e | 1" ϕ | 10 | 12'-0" | Str. | | | 320 |
| B6a | ⅞" ϕ | 2 sets of 28 | 10'-0" to 10'-6" | Str. | | | 1170 |
| D6a | ⅞" ϕ | 168 | 48'-0" | Str. | | | 16480 |
| D6b | ⅞" ϕ | 74 | 49'-9" | 111 | | | 7520 |
| D6c | ⅞" ϕ | 74 | 7'-6" | 104 | 4'-6" | 3'-0" | 1130 |
| D6d | ⅞" ϕ | 82 | 8'-0" | 106 | 4'-0" | 2'-0" | 1340 |
| W6a | ⅞" ϕ | 21 | 7'-3" | 101 | 6'-5" | | 310 |
| W6b | ⅞" ϕ | 15 | 8'-3" | 101 | 7'-5" | | 250 |
| W6c | ⅞" ϕ | 6 | 16'-3" | Str. | | | 200 |
| W6d | ⅞" ϕ | 1 set of 15 | 7'-3" to 15'-9" | Str. | | | 350 |
| A5d | ¾" ϕ | 75 | 8'-3" | 107 | 2'-9" | 4'-10" | 930 |
| A5f | ¾" ϕ | 84 | 43'-3" | Str. | | | 5450 |
| A5g | ¾" ϕ | 12 | 8'-0" | Str. | | | 140 |
| A5k | ¾" ϕ | 2 sets of 9 | 4'-0" to 43'-3" | Str. | | | 640 |
| A5m | ¾" ϕ | 2 sets of 8 | 4'-0" to 43'-3" | Str. | | | 570 |
| A5n | ¾" ϕ | 70 | 8'-0" | 104 | 5'-0" | 3'-0" | 840 |
| A5p | ¾" ϕ | 116 | 12'-3" | Str. | | | 2130 |
| A5r | ¾" ϕ | 2 sets of 29 | 10'-9" to 17'-0" | Str. | | | 1210 |
| A5s | ¾" ϕ | 2 sets of 29 | 17'-0" to 22'-6" | Str. | | | 1720 |
| B5a | ¾" ϕ | 10 | 40-9" | Str. | | | 610 |
| B5b | ¾" ϕ | 56 | 8'-9" | 102 | | | 740 |
| B5d | ¾" ϕ | 6 | 6'-6" | Str. | | | 60 |
| B5e | ¾" ϕ | 2 sets of 28 | 14'-9" to 15'-3" | 104 | 10'-0" to 10'-6" | 4'-9" | 1260 |
| B5m | ¾" ϕ | 8 | 11'-9" | Str. | | | 140 |
| B5p | ¾" ϕ | 14 | 43'-3" | Str. | | | 910 |
| C5a | ¾" ϕ | 6 | 14'-6" | 109 | 4'-2" | 2'-2" | 130 |
| C5b | ¾" ϕ | 82 | 6'-0" | 101 | 5'-3" | | 740 |
| C5c | ¾" ϕ | 5 | 14'-0" | Str. | | | 110 |
| C5d | ¾" ϕ | 11 | 9'-3" | Str. | | | 150 |
| C5e | ¾" ϕ | 19 | 11'-6" | 103 | 2'-2" | 4'-2" | 330 |
| C5f | ¾" ϕ | 11 | 13'-6" | 103 | 2'-2" | 5'-2" | 220 |
| C5g | ¾" ϕ | 12 | 22'-0" | Str. | | | 400 |
| C5h | ¾" ϕ | 6 | 12'-3" | Str. | | | 110 |
| C5k | ¾" ϕ | 24 | 14'-0" | 103 | 1'-2" | 5'-11" | 500 |
| C5m | ¾" ϕ | 8 | 12'-0" | 103 | 1'-2" | 4'-11" | 140 |
| C5n | ¾" ϕ | 8 | 15'-0" | 103 | 2'-2" | 5'-11" | 180 |
| C5p | ¾" ϕ | 24 | 9'-6" | 101 | 8'-9" | | 340 |
| C5r | ¾" ϕ | 1 set of 19 | 17'-0" to 21'-6" | 103 | 2'-2" | 6'-11" to 9'-2" | 380 |
| C5s | ¾" ϕ | 2 sets of 4 | 13'-3" to 14'-6" | 103 | 2'-2" | 5'-0" to 5'-8" | 250 |
| C5t | ¾" ϕ | 14 | 30'-6" | Str. | | | 640 |
| C5v | ¾" ϕ | 8 | 31'-0" | Str. | | | 370 |
| C5w | ¾" ϕ | 4 | 13'-0" | 103 | 2'-2" | 4'-11" | 80 |
| C5x | ¾" ϕ | 7 | 24'-6" | Str. | | | 260 |
| C5y | ¾" ϕ | 1 set of 11 | 17'-0" to 21'-6" | 103 | 2'-2" | 6'-11" to 9'-2" | 320 |
| C5z | ¾" ϕ | 8 | 27'-6" | Str. | | | 330 |
| C5a$_1$ | ¾" ϕ | 8 | 34'-0" | Str. | | | 410 |
| C5b$_1$ | ¾" ϕ | 1 set of 15 | 17'-0" to 21'-6" | 103 | 2'-2" | 6'-11" to 9'-2" | 430 |
| D5a | ¾" ϕ | 170 | 40'-9" | Str. | | | 10390 |
| D5d | ¾" ϕ | 12 | 6'-0" | Str. | | | 110 |
| D5e | ¾" ϕ | 50 | 43'-3" | Str. | | | 3240 |
| D5h | ¾" ϕ | 22 | 8'-3" | 120 | 4'-6" | 4'-6" | 270 |
| D5k | ¾" ϕ | 10 | 44-9" | Str. | | | 670 |
| F5b | ¾" ϕ | 16 | 5'-6" | Str. | | | 130 |
| F5c | ¾" ϕ | 16 | 15'-9" | 105 | 7'-8" | 4'-0" | 380 |
| F5d | ¾" ϕ | 12 | 19'-9" | 105 | 11'-8" | 4'-0" | 350 |
| F5e | ¾" ϕ | 20 | 11'-6" | Str. | | | 350 |
| F5f | ¾" ϕ | 8 | 8'-3" | Str. | | | 100 |
| F5g | ¾" ϕ | 4 | 10'-6" | Str. | | | 60 |
| F5h | ¾" ϕ | 4 | 11'-3" | Str. | | | 70 |
| F5k | ¾" ϕ | 10 | 16'-0" | Str. | | | 240 |
| F5m | ¾" ϕ | 4 | 15'-9" | Str. | | | 90 |
| F5n | ¾" ϕ | 4 | 15'-0" | Str. | | | 90 |

| Mark | Size | No. | Length | Type | Dimensions A | Dimensions B | Weight Pounds |
|---|---|---|---|---|---|---|---|
| F5p | ¾" ϕ | 4 | 13'-0" | Str. | | | 80 |
| F5r | ¾" ϕ | 32 | 15'-9" | 105 | 1'-7" | 7'-1" | 760 |
| F5s | ¾" ϕ | 3 | 4'-3" | Str. | | | 20 |
| F5t | ¾" ϕ | 4 | 7'-6" | Str. | | | 40 |
| F5u | ¾" ϕ | 12 | 10'-3" | Str. | | | 180 |
| F5v | ¾" ϕ | 12 | 8'-3" | 101 | 7'-6" | | 150 |
| F5w | ¾" ϕ | 6 | 7'-6" | Str. | | | 70 |
| F5x | ¾" ϕ | 1 set of 33 | 6'-9" to 8'-3" | 101 | 6'-0" to 7'-6" | | 310 |
| F5y | ¾" ϕ | 1 set of 17 | 6'-0" to 7'-6" | Str. | | | 170 |
| F5z | ¾" ϕ | 10 | 25'-3" | Str. | | | 380 |
| F5a$_1$ | ¾" ϕ | 6 | 4'-6" | Str. | | | 40 |
| F5b$_1$ | ¾" ϕ | 18 | 14'-9" | 101 | 14'-0" | | 400 |
| F5q$_1$ | ¾" ϕ | 30 | 5'-0" | Str. | | | 230 |
| F5d$_1$ | ¾" ϕ | 30 | 7'-6" | 101 | 6'-9" | | 340 |
| F5e$_1$ | ¾" ϕ | 4 | 7'-9" | Str. | | | 50 |
| F5f$_1$ | ¾" ϕ | 24 | 8'-6" | Str. | | | 310 |
| F5q$_1$ | ¾" ϕ | 24 | 8'-9" | 100 | 7'-6" | | 320 |
| F5h$_1$ | ¾" ϕ | 3 | 5'-9" | Str. | | | 30 |
| F5k$_1$ | ¾" ϕ | 8 | 8'-3" | 100 | 7'-0" | | 100 |
| F5m$_1$ | ¾" ϕ | 5 | 4'-0" | Str. | | | 30 |
| W5c | ¾" ϕ | 10 | 27'-0" | Str. | | | 410 |
| W5p | ¾" ϕ | 7 | 16'-3" | Str. | | | 170 |
| W5r | ¾" ϕ | 1 set of 11 | 7'-3" to 15'-9" | Str. | | | 290 |
| W5s | ¾" ϕ | 5 | 35'-0" | 108 | 24'-9" | | 260 |
| W5t | ¾" ϕ | 1 set of 8 | 11'-9" to 32'-3" | 108 | 1'-6" to 22'-0" | | 200 |
| W5u | ¾" ϕ | 11 | 10'-3" | 101 | 9'-7" | | 170 |
| W5v | ¾" ϕ | 5 | 24'-9" | Str. | | | 190 |
| W5w | ¾" ϕ | 1 set of 6 | 1'-6" to 22'-0" | Str. | | | 110 |
| W5x | ¾" ϕ | 6 | 18'-6" | Str. | | | 170 |
| W5y | ¾" ϕ | 50 | 22'-3" | Str. | | | 1670 |
| W5z | ¾" ϕ | 12 | 18'-0" | Str. | | | 320 |
| W5a$_1$ | ¾" ϕ | 6 | 15'-0" | Str. | | | 140 |
| W5b$_1$ | ¾" ϕ | 2 sets of 11 | 15'-0" to 19'-6" | Str. | | | 360 |
| W5c$_1$ | ¾" ϕ | 12 | 12'-0" | Str. | | | 220 |
| W5d$_1$ | ¾" ϕ | 2 sets of 5 | 7'-0" to 10'-0" | Str. | | | 130 |
| W5e$_1$ | ¾" ϕ | 12 | 49'-9" | Str. | | | 900 |
| W5q$_1$ | ¾" ϕ | 16 | 54'-6" | Str. | | | 1310 |
| W5h$_1$ | ¾" ϕ | 2 sets of 9 | 39'-3" to 50'-9" | Str. | | | 1220 |
| W5k$_1$ | ¾" ϕ | 8 | 33'-6" | Str. | | | 400 |
| W5m$_1$ | ¾" ϕ | 2 sets of 7 | 23'-0" to 32'-0" | Str. | | | 580 |
| W5p$_1$ | ¾" ϕ | 22 | 17'-0" | Str. | | | 560 |
| W5r$_1$ | ¾" ϕ | 2 sets of 8 | 5'-6" to 15'-6" | Str. | | | 250 |
| W5s$_1$ | ¾" ϕ | 14 | 17'-6" | 109 | 5'-9" | 2'-1" | 370 |
| W5u$_1$ | ¾" ϕ | 12 | 3'-9" | Str. | | | 360 |
| W5v$_1$ | ¾" ϕ | 2 sets of 3 | 4'-0" to 7'-0" | Str. | | | 70 |
| W5w$_1$ | ¾" ϕ | 2 sets of 10 | 8'-6" to 15'-3" | Str. | | | 80 |
| W5x$_1$ | ¾" ϕ | 2 sets of 11 | 16'-9" to 24'-3" | Str. | | | 360 |
| W5z$_1$ | ¾" ϕ | 10 | 14'-9" | Str. | | | 680 |
| W5a$_2$ | ¾" ϕ | 1 set of 6 | 2'-0" to 5'-0" | Str. | | | 220 |
| W5b$_2$ | ¾" ϕ | 2 sets of 11 | 6'-3" to 44'-0" | Str. | | | 30 |
| W5c$_2$ | ¾" ϕ | 8 | 9'-0" | Str. | | | 1060 |
| W5e$_2$ | ¾" ϕ | 40 | 5'-0" | Str. | | | 110 |
| W5f$_2$ | ¾" ϕ | 40 | 14'-0" | Str. | | | 300 |
| W5g$_2$ | ¾" ϕ | 30 | 7'-6" | 101 | 6'-9" | | 840 |
| W5h$_2$ | ¾" ϕ | 2 | 13'-3" | Str. | | | 340 |
| W5m | ¾" ϕ | 44 | 6'-3" | Str. | | | 40 |
| W5n | ¾" ϕ | 6 | 28'-9" | 109 | 4'-6" | 9'-0" | 410 |
| B4a | ⅝" ϕ | 24 | 8'-0" | 104 | 5'-0" | 3'-0" | 260 |
| D4a | ⅝" ϕ | 32 | 1'-6" | Str. | | | 200 |
| * A2c | ½" ϕ | 7 | 19'-6" | Str. | | | 50 |
| * A2d | ½" ϕ | 13 | 7'-9" | 113 | 2'-8" | 2'-6" | 90 |
| C2a | ½" ϕ | 6 | 15'-3" | 109 | 5'-11" | 1'-2" | 60 |
| C2b | ½" ϕ | 3 | 24'-0" | 109 | 9'-3" | 2'-2" | 50 |
| C2c | ½" ϕ | 3 | 24'-6" | 109 | 9'-6" | 2'-2" | 50 |
| C2d | ½" ϕ | 3 | 17'-3" | 109 | 5'-11" | 2'-2" | 30 |
| D2a | ½" ϕ | 96 | 5'-3" | 110 | 1'-5" | 1'-0" | 340 |
| D2b | ½" ϕ | 59 | 14'-6" | 109 | 4'-6" | 2'-2" | 570 |
| D2c | ½" ϕ | 116 | 10'-9" | 109 | 2'-8" | 2'-2" | 830 |
| D2f | ½" ϕ | 100 | 6'-3" | 109 | 1'-6" | 1'-0" | 420 |
| W2c | ½" ϕ | 140 | 7'-9" | 109 | 1'-8" | 1'-8" | 720 |
| W2d | ½" ϕ | 18 | 9'-9" | 109 | 2'-2" | 2'-2" | 120 |
| D1a | ⅜" ϕ | 150 | 4'-9" | Str. | | | 270 |
| D1b | ⅜" ϕ | 10 | 49'-9" | Str. | | | 190 |

| Mark | Size | No. | Length | Type | Dimensions A | Dimensions B | Weight Pounds |
|---|---|---|---|---|---|---|---|
| **NORTH ABUTMENT** | | | | | | | |
| D8a | 1" sq. | 12 | 43'-3" | Str. | | | 1760 |
| D7d | 1" ϕ | 6 | 27'-0" | Str. | | | 430 |
| D7e | 1" ϕ | 6 | 29'-3" | 100 | 27'-0" | | 470 |
| D7f | 1" ϕ | 12 | 25'-0" | Str. | | | 800 |
| W7a | 1" ϕ | 6 | 9'-3" | Str. | | | 150 |
| W7b | 1" ϕ | 6 | 14'-6" | 120 | 9'-3" | 6'-1" | 230 |
| B6b | ⅞" ϕ | 2 sets of 27 | 13'-6" to 14'-0" | 101 | 12'-8" to 13'-2" | | 1520 |
| B6c | ⅞" ϕ | 8 | 15'-3" | 101 | 14'-5" | | 250 |
| D6g | ⅞" ϕ | 74 | 25'-9" | 112 | | | 3890 |
| D6h | ⅞" ϕ | 76 | 7'-6" | 104 | 3'-0" | 4'-6" | 1170 |
| D6k | ⅞" ϕ | 152 | 25'-0" | Str. | | | 7770 |
| D6m | ⅞" ϕ | 6 | 45'-0" | 100 | 43'-3" | | 550 |
| D6p | ⅞" ϕ | 6 | 43'-3" | Str. | | | 520 |
| A5a | ¾" ϕ | 8 | 24'-6" | Str. | | | 290 |
| A5b | ¾" ϕ | 8 | 22'-9" | Str. | | | 270 |
| A5c | ¾" ϕ | 64 | 3'-6" | Str. | | | 340 |
| A5e | ¾" ϕ | 12 | 44'-9" | Str. | | | 810 |
| B5b | ¾" ϕ | 54 | 8'-9" | 102 | | | 710 |
| B5c | ¾" ϕ | 20 | 44'-9" | Str. | | | 1340 |
| B5d | ¾" ϕ | 8 | 6'-6" | Str. | | | 80 |
| B5f | ¾" ϕ | 52 | 5'-6" | 101 | 4'-9" | | 430 |
| B5g | ¾" ϕ | 8 | 14'-6" | Str. | | | 170 |
| B5h | ¾" ϕ | 2 sets of 21 | 12'-9" to 13'-3" | Str. | | | 1060 |
| B5k | ¾" ϕ | 54 | 6'-0" | 106 | 4'-0" | 1'-0" | 490 |
| B5n | ¾" ϕ | 12 | 40'-9" | Str. | | | 730 |
| D5a | ¾" ϕ | 98 | 40'-9" | Str. | | | 6010 |
| D5b | ¾" ϕ | 48 | 5'-3" | 110 | 1'-3" | 0'-10" | 380 |
| D5c | ¾" ϕ | 16 | 43'-3" | Str. | | | 1040 |
| D5d | ¾" ϕ | 12 | 6'-0" | Str. | | | 110 |
| F5a | ¾" ϕ | 8 | 9'-9" | Str. | | | 120 |
| F5b | ¾" ϕ | 38 | 5'-6" | Str. | | | 310 |
| F5c | ¾" ϕ | 16 | 15'-9" | 105 | 7'-8" | 4'-0" | 380 |
| F5d | ¾" ϕ | 12 | 19'-9" | 105 | 11'-8" | 4'-0" | 360 |
| F5e | ¾" ϕ | 20 | 11'-6" | Str. | | | 350 |
| F5f | ¾" ϕ | 4 | 8'-3" | Str. | | | 50 |
| F5g | ¾" ϕ | 4 | 10'-6" | Str. | | | 60 |
| F5h | ¾" ϕ | 4 | 11'-3" | Str. | | | 70 |
| F5k | ¾" ϕ | 10 | 16'-0" | Str. | | | 240 |
| F5m | ¾" ϕ | 4 | 15'-9" | Str. | | | 90 |
| F5n | ¾" ϕ | 4 | 15'-0" | Str. | | | 90 |
| F5p | ¾" ϕ | 4 | 13'-0" | Str. | | | 80 |
| F5r | ¾" ϕ | 32 | 15'-9" | 105 | 1'-7" | 7'-1" | 760 |
| F5t | ¾" ϕ | 4 | 7'-6" | Str. | | | 40 |
| W5a | ¾" ϕ | 8 | 31'-9" | Str. | | | 380 |
| W5b | ¾" ϕ | 4 | 28'-0" | Str. | | | 170 |
| W5c | ¾" ϕ | 4 | 27'-0" | Str. | | | 160 |
| W5d | ¾" ϕ | 2 sets of 3 | 21'-6" to 29'-0" | Str. | | | 460 |
| W5e | ¾" ϕ | 2 sets of 3 | 6'-6" to 15'-0" | Str. | | | 190 |
| W5f | ¾" ϕ | 12 | 10'-3" | Str. | | | 180 |
| W5g | ¾" ϕ | 4 | 14'-6" | Str. | | | 90 |
| W5h | ¾" ϕ | 2 sets of 1 | 11'-0" to 14'-0" | Str. | | | 530 |
| W5k | ¾" ϕ | 2 sets of 1 | 6'-9" to 10'-0" | Str. | | | 350 |
| W5m | ¾" ϕ | 44 | 6'-3" | Str. | | | 410 |
| W5n | ¾" ϕ | 6 | 28'-9" | 109 | 4'-6" | 9'-0" | 260 |
| W5e$_1$ | ¾" ϕ | 24 | 8'-0" | Str. | | | 290 |
| W5f$_1$ | ¾" ϕ | 2 | 6'-9" | Str. | | | 20 |
| W5g$_1$ | ¾" ϕ | 2 | 4'-9" | Str. | | | 10 |
| W5k$_2$ | ¾" ϕ | 12 | 6'-0" | 104 | 3'-6" | 2'-6" | 110 |
| D4a | ⅝" ϕ | 32 | 1'-6" | Str. | | | 50 |
| A2a | ½" ϕ | 34 | 17'-0" | 109 | 3'-0" | 4'-11" | 390 |

| Mark | Size | No. | Length | Type | Dimensions A | Dimensions B | Weight Pounds |
|---|---|---|---|---|---|---|---|
| A2b | ½" ϕ | 28 | 16'-3" | 109 | 2'-8" | 4'-11" | 300 |
| D2h | ½" ϕ | 60 | 14'-6" | 109 | 2'-2" | 4'-6" | 580 |
| D2d | ½" ϕ | 38 | 5'-9" | 109 | 1'-0" | 1'-4" | 150 |
| D2g | ½" ϕ | 60 | 11'-6" | 109 | 2'-2" | 3'-0" | 460 |
| W2b | ½" ϕ | 10 | 10'-6" | 109 | 2'-2" | 2'-6" | 70 |
| W2c | ½" ϕ | 24 | 7'-9" | 109 | 1'-8" | 1'-8" | 120 |
| D1a | ⅜" ϕ | 90 | 4'-9" | Str. | | | 170 |
| D1d | ⅜" ϕ | 10 | 27'-9" | 100 | 27'-0" | | 100 |




TIE BAR FOR ALTERNATE PILE ENCASEMENT

| Mark | Size | No. | Length | Type | Dimensions A | Dimensions B | Weight Pounds |
|---|---|---|---|---|---|---|---|
| **REPLACEMENT BARS** | | | | | | | |
| R10 | 1¼" □ | 14 | 10'-0" | Str. | | | 740 |
| R9 | 1⅛" □ | 1 | 9'-0" | Str. | | | 40 |
| R8 | 1" □ | 1 | 8'-0" | Str. | | | 30 |
| R7 | 1" ϕ | 4 | 8'-0" | Str. | | | 90 |
| R6 | ⅞" ϕ | 3 | 8'-0" | Str. | | | 50 |
| R5 | ¾" ϕ | 9 | 8'-0" | Str. | | | 110 |
| R4 | ⅝" ϕ | 1 | 7'-0" | Str. | | | 10 |
| R2 | ½" ϕ | 2 | 7'-0" | Str. | | | 10 |
| R1 | ⅜" ϕ | 1 | 6'-0" | Str. | | | 10 |
| Total | | | | | | | 1100 |

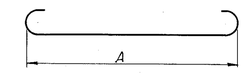
Replacement bars are listed for the entire substructure.

* These bars are to be used for reinforcing ditch paving. See sheet 2.

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

19
34

SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31



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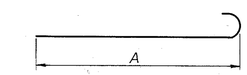
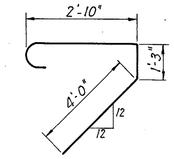


101



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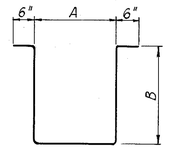
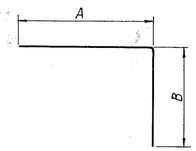
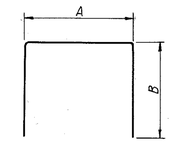


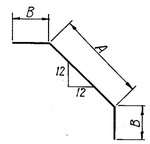
103



104



105



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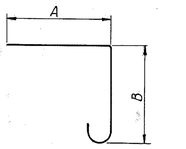
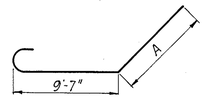
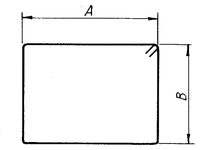


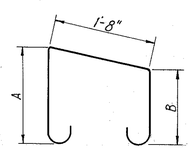
107



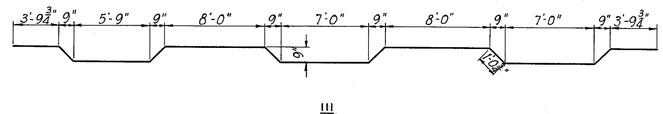
108



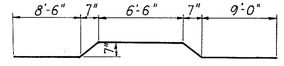
109



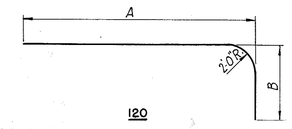
110



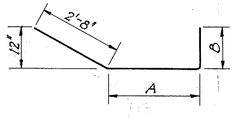
111



112



120



113

BENDING DIAGRAMS

PART I
STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

REINFORCING STEEL - ABUTMENTS

AKRON, SUMMIT COUNTY, OHIO

SCALE ..... HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE R.R.M. DATE 10-3-49
TRCD. R.R... DATE 10-7-49
CHKD. R.Q.P.. DATE 10-5-49
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

766 SHEET V19

Rev. 1/27/50

158

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

20
34

SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31

## PIER 1

| Mark | Size | No. | Length | Type | Dimensions A | Dimensions B | Weight Pounds |
|---|---|---|---|---|---|---|---|
| P10a | 1¼"□ | 14 | 20'-9" | 100 | 18'-0" | | 1540 |
| P10b | 1¼"□ | 24 | 11'-6" | 101 | 10'-0" | | 1470 |
| P10c | 1¼"□ | 12 | 15'-3" | 101 | 13'-9" | | 970 |
| P10d | 1¼"□ | 10 | 26'-6" | 120 | 21'-0" | 6'-4" | 1410 |
| P10e | 1¼"□ | 5 | 49'-6" | Str. | | | 1320 |
| P10f | 1¼"□ | 4 | 36'-9" | 100 | 34'-0" | | 780 |
| P10g | 1¼"□ | 8 | 24'-9" | 100 | 22'-0" | | 1050 |
| P10k | 1¼"□ | 28 | 45'-3" | 101 | 43'-9" | | 6720 |
| P10m | 1¼"□ | 15 | 19'-9" | Str. | | | 1580 |
| P10n | 1¼"□ | 48 | 20'-0" | 119 | 12'-9" | 5'-2" | 5100 |
| P10p | 1¼"□ | 48 | 18'-6" | 119 | 11'-3" | 5'-2" | 4720 |
| P10r | 1¼"□ | 15 | 19'-3" | Str. | | | 1540 |
| P10s | 1¼"□ | 96 | 8'-6" | Str. | | | 4370 |
| P8a | 1"□ | 12 | 19'-9" | Str. | | | 810 |
| P8b | 1"□ | 16 | 17'-9" | 119 | 11'-3" | 4'-5" | 970 |
| P8c | 1"□ | 16 | 6'-9" | Str. | | | 370 |
| P7a | 1"φ | 24 | 43'-6" | Str. | | | 2790 |
| P6a | ⅞"φ | 12 | 15'-0" | Str. | | | 370 |
| P6b | ⅞"φ | 22 | 35'-6" | Str. | | | 1600 |
| P5a | ¾"φ | 26 | 12'-9" | 100 | 11'-6" | | 500 |
| P5b | ¾"φ | 10 | 14'-9" | 100 | 13'-6" | | 220 |
| P5c | ¾"φ | 10 | 15'-9" | 100 | 14'-6" | | 240 |
| P5d | ¾"φ | 76 | 4'-6" | Str. | | | 510 |
| P5n | ¾"φ | 16 | 5'-0" | Str. | | | 120 |
| P5a₂ | ¾"φ | 16 | 6'-0" | Str. | | | 140 |
| P5b₂ | ¾"φ | 70 | 7'-6" | Str. | | | 790 |
| P5c₂ | ¾"φ | 12 | 12'-0" | Str. | | | 220 |
| P5d₂ | ¾"φ | 12 | 9'-0" | Str. | | | 160 |
| P5e₂ | ¾"φ | 44 | 4'-3" | 101 | 3'-6" | | 280 |
| | | | | | | | |
| P4a | ⅝"φ | 54 | 30'-0" | 109 | 9'-7" | 4'-8" | 1690 |
| P4b | ⅝"φ | 8 | 29'-3" | 109 | 9'-2" | 4'-8" | 240 |
| P2a | ½"φ | 30 | 25'-9" | 125 | 5'-8" | 6'-2" | 520 |
| P2b | ½"φ | 42 | 20'-6" | 109 | 5'-0" | 4'-8" | 580 |
| P2c | ½"φ | 11 | 25'-9" | 109 | 6'-8" | 5'-8" | 190 |
| P2d | ½"φ | 11 | 21'-9" | 109 | 5'-8" | 4'-8" | 160 |
| P2e | ½"φ | 2 | 21'-9" | 109 | 5'-5" | 4'-10½" | 30 |
| P2f | ½"φ | 2 | 23'-9" | 109 | 5'-11" | 5'-4½" | 30 |
| P2g | ½"φ | 1 | 22'-6" | 109 | 5'-10½" | 4'-10½" | 20 |
| P2h | ½"φ | 1 | 24'-6" | 109 | 6'-4½" | 5'-4½" | 20 |

## PIER 2

| Mark | Size | No. | Length | Type | Dimensions A | Dimensions B | Weight Pounds |
|---|---|---|---|---|---|---|---|
| P10d | 1¼"□ | 12 | 26'-6" | 120 | 21'-0" | 6'-4" | 1690 |
| P10e | 1¼"□ | 6 | 49'-6" | Str. | | | 1580 |
| P10s | 1¼"□ | 64 | 8'-6" | Str. | | | 2890 |
| P10f | 1¼"□ | 26 | 43'-9" | Str. | | | 6030 |
| P10w | 1¼"□ | 30 | 31'-6" | Str. | | | 5020 |
| P10w | 1¼"□ | 32 | 21'-9" | 118 | 13'-5" | 5'-9" | 3690 |
| P10x | 1¼"□ | 32 | 30'-3" | 118 | 22'-0" | 5'-9" | 5150 |
| P10y | 1¼"□ | 6 | 28'-3" | 100 | 25'-5" | | 910 |
| | | | | | | | |
| P9a | 1⅛"□ | 18 | 14'-9" | Str. | | | 1140 |
| | | | | | | | |
| P8c | 1"□ | 26 | 6'-9" | Str. | | | 600 |
| P8d | 1"□ | 25 | 19'-9" | 100 | 17'-6" | | 1680 |
| P8e | 1"□ | 22 | 22'-9" | 100 | 20'-6" | | 1700 |
| P8f | 1"□ | 18 | 31'-9" | Str. | | | 1940 |
| P8g | 1"□ | 26 | 25'-3" | 118 | 17'-9" | | 2230 |
| | | | | | | | |
| P7a | 1"φ | 32 | 43'-6" | Str. | | | 3700 |
| P7b | 1"φ | 15 | 31'-0" | Str. | | | 1240 |

| Mark | Size | No. | Length | Type | Dimensions A | Dimensions B | Weight Pounds |
|---|---|---|---|---|---|---|---|
| P5b | ¾"φ | 12 | 14'-9" | 100 | 13'-6" | | 270 |
| P5e | ¾"φ | 11 | 18'-9" | 100 | 17'-6" | | 310 |
| P5f | ¾"φ | 12 | 16'-9" | 100 | 15'-6" | | 300 |
| P5g | ¾"φ | 10 | 18'-3" | 100 | 17'-0" | | 270 |
| P5h | ¾"φ | 38 | 15'-0" | Str. | | | 860 |
| P5k | ¾"φ | 38 | 10'-6" | Str. | | | 600 |
| P5m | ¾"φ | 25 | 31'-0" | Str. | | | 1160 |
| P5n | ¾"φ | 88 | 5'-0" | Str. | | | 660 |
| P5a₂ | ¾"φ | 16 | 6'-0" | Str. | | | 140 |
| | | | | | | | |
| P4c | ⅝"φ | 48 | 35'-9" | 109 | 5'-8" | 11'-5" | 1790 |
| P4d | ⅝"φ | 18 | 36'-3" | 109 | 5'-8" | 11'-2" | 660 |
| | | | | | | | |
| P2k | ½"φ | 43 | 36'-9" | 125 | 7'-8" | 9'-8" | 1060 |
| P2m | ½"φ | 44 | 27'-9" | 109 | 7'-8" | 5'-8" | 790 |
| P2n | ½"φ | 18 | 37'-9" | 109 | 7'-8" | 10'-8" | 450 |
| P2p | ½"φ | 22 | 29'-9" | 109 | 5'-8" | 8'-8" | 440 |
| P2r | ½"φ | 2 | 29'-9" | 109 | 8'-2" | 6'-2" | 40 |
| P2s | ½"φ | 2 | 33'-9" | 109 | 9'-2" | 7'-2" | 50 |
| P2t | ½"φ | 1 | 31'-9" | 109 | 9'-2" | 6'-2" | 20 |
| P2u | ½"φ | 1 | 35'-9" | 109 | 10'-2" | 7'-2" | 20 |
| P2w | ½"φ | 2 sets of 8 | 9'-3" | 124 | 5'-5" to 5'-2" | 1" to 4" | 100 |
| | | | | | | | |

## PIER 3

| Mark | Size | No. | Length | Type | Dimensions A | Dimensions B | Weight Pounds |
|---|---|---|---|---|---|---|---|
| P10h | 1¼"□ | 18 | 28'-0" | Str. | | | 2,680 |
| P10s | 1¼"□ | 226 | 8'-6" | Str. | | | 10,200 |
| P10u | 1¼"□ | 6 | 59'-0" | 120 | 53'-8" | 6'-2" | 1,880 |
| P10k₁ | 1¼"□ | 134 | 31'-0" | 118 | 22'-9" | 5'-8" | 22,100 |
| P10n₁ | 1¼"□ | 68 | 32'-0" | 101 | 30'-7" | | 11,560 |
| P10r₁ | 1¼"□ | 10 | 46'-9" | 100 | 43'-11" | | 2,490 |
| P10s₁ | 1¼"□ | 10 | 39'-6" | 101 | 38'-1" | | 2,100 |
| P10t₁ | 1¼"□ | 10 | 27'-6" | 101 | 26'-1" | | 1,460 |
| P10u₁ | 1¼"□ | 13 | 35'-6" | 101 | 34'-1" | | 2,450 |
| P10v₁ | 1¼"□ | 13 | 47'-6" | 101 | 46'-1" | | 3,280 |
| P10w₁ | 1¼"□ | 84 | 47'-6" | Str. | | | 21,200 |
| P10x₁ | 1¼"□ | 84 | 60'-0" | Str. | | | 26,180 |
| P10y₁ | 1¼"□ | 74 | 20'-0" | Str. | | | 7,860 |
| P10a₂ | 1¼"□ | 16 | 44'-3" | 100 | 41'-6" | | 3,760 |
| P10b₂ | 1¼"□ | 3 sets of 3 | 17'-9" to 39'-6" | 100 | 14'-11" to 36'-8" | | 420 |
| P10c₂ | 1¼"□ | 1 | 44'-9" | 100 | 41'-11" | | 240 |
| P10d₂ | 1¼"□ | 13 | 13'-6" | 101 | 12'-1" | | 930 |
| P10e₂ | 1¼"□ | 15 | 21'-3" | 101 | 19'-10" | | 1690 |
| P10f₂ | 1¼"□ | 32 | 14'-6" | 101 | 13'-1" | | 2470 |
| P10g₂ | 1¼"□ | 16 | 29'-6" | 101 | 28'-1" | | 2510 |
| P7d | 1"φ | 66 | 46'-9" | Str. | | | 8,270 |
| P7e | 1"φ | 66 | 60'-0" | Str. | | | 10,570 |
| P7f | 1"φ | 4 | 58'-0" | 120 | 53'-6" | 5'-4" | 620 |
| | | | | | | | |
| P5d | ¾"φ | 28 | 4'-6" | Str. | | | 190 |
| P5n | ¾"φ | 72 | 5'-0" | Str. | | | 540 |
| P5g₁ | ¾"φ | 24 | 33'-9" | 100 | 32'-6" | | 1,220 |
| P5h₁ | ¾"φ | 22 | 36'-9" | 100 | 35'-6" | | 1,230 |
| P5k₁ | ¾"φ | 52 | 6'-6" | Str. | | | 510 |
| P5m₁ | ¾"φ | 32 | 18'-6" | Str. | | | 890 |
| P5n₁ | ¾"φ | 7 sets of 19 | 9'-0" to 10'-6" | 105 | 5'-0" to 6'-6" | 2'-0" | 1,110 |
| P5p₁ | ¾"φ | 52 | 12'-9" | 104 | 8'-2" | 4'-7" | 1,000 |
| P5s₁ | ¾"φ | 72 | 24'-0" | Str. | | | 2,600 |
| P5u₁ | ¾"φ | 2 sets of 28 | 7'-0" to 8'-9" | 105 | 3'-0" to 4'-9" | 2'-0" | 410 |
| P5v₁ | ¾"φ | 36 | 3'-6" | Str. | | | 190 |
| P5w₁ | ¾"φ | 102 | 15'-6" | 105 | 11'-8" | 1'-11" | 2,370 |
| P5x₁ | ¾"φ | 56 | 11'-0" | 104 | 7'-3" | 3'-9" | 920 |
| P5y₁ | ¾"φ | 20 | 14'-6" | Str. | | | 440 |
| P5b₂ | ¾"φ | 2 sets of 28 | 27'-3" to 33'-9" | 100 | 26'-0" to 32'-6" | | 1,280 |
| P5c₂ | ¾"φ | 1 set of 13 | 27'-3" to 30'-3" | 100 | 26'-0" to 29'-0" | | 570 |

## PIER 4

| Mark | Size | No. | Length | Type | Dimensions A | Dimensions B | Weight Pounds |
|---|---|---|---|---|---|---|---|
| P5h | ¾"φ | 12 | 15'-0" | Str. | | | 270 |
| P5n | ¾"φ | 96 | 5'-0" | Str. | | | 720 |
| P5s | ¾"φ | 34 | 26'-6" | Str. | | | 1,350 |
| P5t | ¾"φ | 48 | 39'-0" | 123 | 34'-0" | | 2,810 |
| P5u | ¾"φ | 48 | 41'-0" | 123 | 36'-0" | | 2,960 |
| P5v | ¾"φ | 98 | 16'-6" | Str. | | | 2,430 |
| P5w | ¾"φ | 98 | 19'-6" | Str. | | | 2,870 |
| P5x | ¾"φ | 12 | 18'-0" | Str. | | | 330 |
| P5y | ¾"φ | 164 | 13'-0" | Str. | | | 3,200 |
| P5d₁ | ¾"φ | 36 | 24'-6" | Str. | | | 1,320 |

## PIER 5

| Mark | Size | No. | Length | Type | Dimensions A | Dimensions B | Weight Pounds |
|---|---|---|---|---|---|---|---|
| P5h | ¾"φ | 12 | 15'-0" | Str. | | | 270 |
| P5n | ¾"φ | 96 | 5'-0" | Str. | | | 720 |
| P5v | ¾"φ | 102 | 16'-6" | Str. | | | 2,530 |
| P5w | ¾"φ | 117 | 19'-6" | Str. | | | 3,430 |
| P5x | ¾"φ | 12 | 18'-0" | Str. | | | 320 |
| P5y | ¾"φ | 164 | 13'-0" | Str. | | | 3,200 |
| P5z | ¾"φ | 31 | 21'-6" | Str. | | | 1,000 |
| P5a₁ | ¾"φ | 15 | 23'-6" | Str. | | | 530 |
| P5b₁ | ¾"φ | 48 | 50'-3" | 123 | 45'-3" | | 3,620 |
| P5c₁ | ¾"φ | 48 | 32'-9" | 123 | 27'-9" | | 2,360 |

## PIER 6

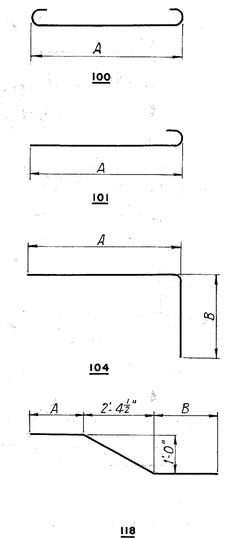
| Mark | Size | No. | Length | Type | Dimensions A | Dimensions B | Weight Pounds |
|---|---|---|---|---|---|---|---|
| P10h | 1¼"□ | 18 | 28'-0" | Str. | | | 2680 |
| P10s | 1¼"□ | 94 | 8'-6" | Str. | | | 4250 |
| P10h₁ | 1¼"□ | 76 | 24'-0" | 118 | 19'-9" | 5'-8" | 9690 |
| P10m₁ | 1¼"□ | 68 | 48'-9" | 101 | 47'-4" | | 17610 |
| P10p₁ | 1¼"□ | 4 | 34'-9" | 100 | 31'-11" | | 740 |
| P10r₁ | 1¼"□ | 4 | 46'-9" | 100 | 43'-11" | | 990 |
| P10s₁ | 1¼"□ | 8 | 39'-6" | 101 | 38'-1" | | 1680 |
| P10t₁ | 1¼"□ | 8 | 27'-6" | 101 | 26'-1" | | 1170 |
| P10u₁ | 1¼"□ | 10 | 35'-6" | 101 | 34'-1" | | 1890 |
| P10v₁ | 1¼"□ | 10 | 47'-6" | 101 | 46'-1" | | 2520 |
| P10w₁ | 1¼"□ | 30 | 47'-6" | Str. | | | 7570 |
| P10x₁ | 1¼"□ | 30 | 60'-0" | Str. | | | 9560 |
| | | | | | | | |
| P7d | 1"φ | 72 | 46'-9" | Str. | | | 8990 |
| P7e | 1"φ | 72 | 60'-0" | Str. | | | 11530 |
| P7f | 1"φ | 10 | 58'-0" | 120 | 53'-6" | 5'-4" | 1550 |
| | | | | | | | |
| P5d | ¾"φ | 28 | 4'-6" | Str. | | | 190 |
| P5n | ¾"φ | 72 | 5'-0" | Str. | | | 540 |
| P5f₁ | ¾"φ | 48 | 35'-6" | 100 | 34'-0" | | 2560 |

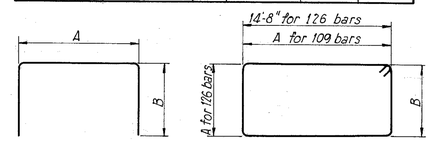
## PIER 7

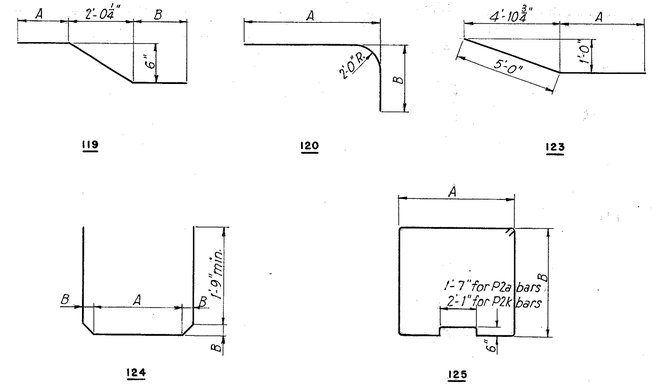
| Mark | Size | No. | Length | Type | Dimensions A | Dimensions B | Weight Pounds |
|---|---|---|---|---|---|---|---|
| P5h₁ | ¾"φ | 46 | 36'-9" | 100 | 35'-6" | | 2540 |
| P5k₁ | ¾"φ | 52 | 6'-6" | Str. | | | 510 |
| P5n₁ | ¾"φ | 3 sets of 19 | 9'-0" to 10'-6" | 105 | 5'-0" to 6'-6" | 2'-0" | 1110 |
| P5p₁ | ¾"φ | 44 | 12'-9" | 104 | 8'-2" | 4'-7" | 840 |
| P5r₁ | ¾"φ | 36 | 15'-6" | Str. | | | 870 |
| P5t₁ | ¾"φ | 72 | 27'-0" | Str | | | 2920 |
| P5u₁ | ¾"φ | 4 sets of 28 | 7'-0" to 8'-9" | 105 | 3'-0" to 4'-9" | 2'-0" | 420 |
| P5v₁ | ¾"φ | 36 | 3'-6" | Str. | | | 190 |
| P5w₁ | ¾"φ | 102 | 15'-6" | 105 | 11'-8" | 1'-11" | 2370 |
| P5x₁ | ¾"φ | 64 | 11'-0" | 104 | 7'-3" | 3'-9" | 1060 |
| P5z₁ | ¾"φ | 32 | 11'-6" | Str. | | | 550 |
| | | | | | | | |
| P4q | ⅝"φ | 55 | 53'-0" | 105 | 4'-8" | 24'-2" | 3040 |
| P4k | ⅝"φ | 110 | 4'-3" | Str. | | | 490 |
| P4m | ⅝"φ | 47 | 46'-0" | 126 | 7'-5" | 7'-8" | 2260 |
| | | | | | | | |
| P2a₁ | ½"φ | 64 | 21'-0" | 105 | 19'-8" | 8" | 900 |
| P2b₁ | ½"φ | 4 | 20'-6" | 105 | 19'-2" | 8" | 60 |
| P2c₁ | ½"φ | 4 | 19'-6" | 105 | 18'-2" | 8" | 50 |
| P2d₁ | ½"φ | 160 | 19'-0" | 105 | 17'-8" | 8" | 2030 |
| P2e₁ | ½"φ | 160 | 14'-6" | Str. | | | 1550 |
| P2f₁ | ½"φ | 64 | 16'-6" | Str. | | | 710 |
| P2q₁ | ½"φ | 4 | 16'-0" | Str. | | | 40 |
| P2h₁ | ½"φ | 4 | 15'-0" | Str. | | | 40 |
| | | | | | | | |
| P2m | ½"φ | 46 | 27'-9" | 109 | 7'-8" | 5'-8" | 860 |
| P2p | ½"φ | 22 | 29'-9" | 109 | 8'-8" | 5'-8" | 440 |
| P2w | ½"φ | 2 sets of 8 | 9'-3" | 124 | 5'-5" to 5'-2" | 1" to 4" | 100 |
| P2x | ½"φ | 30 | 31'-9" | 109 | 8'-8" | 6'-8" | 670 |
| P2k₁ | ½"φ | 2 | 28'-9" | 109 | 7'-11" | 5'-11" | 40 |
| P2m₁ | ½"φ | 2 | 30'-9" | 109 | 8'-5" | 6'-5" | 40 |
| P2n₁ | ½"φ | 13 | 33'-9" | 109 | 9'-8" | 6'-8" | 320 |
| P2p₁ | ½"φ | 1 | 30'-9" | 109 | 8'-11" | 5'-11" | 20 |
| P2r₁ | ½"φ | 1 | 32'-9" | 109 | 9'-5" | 6'-5" | 20 |

## DRAINAGE INLETS AT PIER 1

| Mark | Size | No. | Length | Type | Dimensions A | Dimensions B | Weight Pounds |
|---|---|---|---|---|---|---|---|
| P5d | ¾"φ | 15 | 4'-6" | Str. | | | 100 |
| P5k₁ | ¾"φ | 6 | 6'-6" | Str. | | | 60 |
| P5v₁ | ¾"φ | 4 | 3'-6" | Str. | | | 20 |
| P5f₂ | ¾"φ | 2 | 19'-3" | 105 | 9'-2" | 5'-0" | 60 |
| P5g₂ | ¾"φ | 2 | 15'-9" | 105 | 7'-5½" | 4'-2" | 50 |
| P5h₂ | ¾"φ | 2 | 7'-3" | 104 | 5'-0" | 2'-3" | 20 |
| P5k₂ | ¾"φ | 2 | 5'-9" | 104 | 4'-2" | 1'-7" | 20 |
| P5n₂ | ¾"φ | 6 | 9'-9" | 104 | 5'-0" | 4'-9" | 90 |
| P5p₂ | ¾"φ | 3 | 18'-6" | 105 | 9'-0" | 4'-9" | 80 |
| P5r₂ | ¾"φ | 2 | 4'-0" | 104 | 2'-3" | 1'-9" | 10 |
| P5s₂ | ¾"φ | 4 | 1'-6" | Str. | | | 10 |
| P5t₂ | ¾"φ | 2 | 9'-3" | 104 | 7'-0" | 2'-2" | 30 |
| P5u₂ | ¾"φ | 2 | 8'-0" | 104 | 5'-10" | 2'-2" | 20 |
| P5v₂ | ¾"φ | 2 | 6'-3" | 104 | 5'-0" | 1'-3" | 20 |
| P5x₂ | ¾"φ | 10 | 9'-3" | Str. | | | 140 |
| P5y₂ | ¾"φ | 4 sets of 4 | 8'-6" to 10'-6" | 104 | 5'-9" to 7'-9" | 2'-9" | 60 |
| P5e₂ | ¾"φ | 6 | 3'-0" | Str. | | | 30 |
| P5a₃ | ¾"φ | 1 | 9'-3" | 104 | 6'-6" | 2'-9" | 10 |
| P5b₃ | ¾"φ | 2 | 8'-6" | Str. | | | 30 |
| P5c₃ | ¾"φ | 2 | 11'-3" | 104 | 8'-6" | 2'-9" | 30 |
| P5e₃ | ¾"φ | 7 | 5'-9" | Str. | | | 60 |




BENDING DIAGRAMS

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

STEEL REINFORCING - PIERS

AKRON, SUMMIT COUNTY, OHIO

SCALE.....
MADE R.O.D. DATE 7-15-49
TRCD. R.R. DATE 7-19-49
CHKD. E.H.B. DATE 7-18-49

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

766 SHEET V 20

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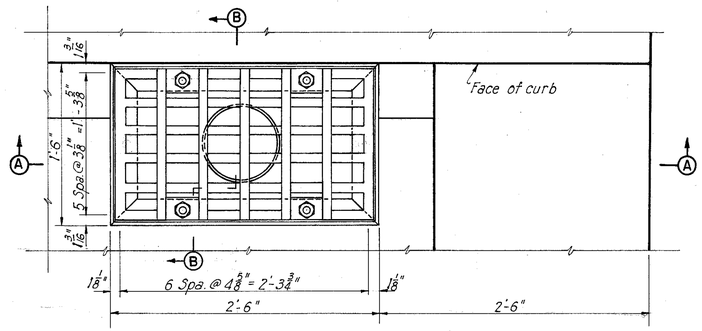
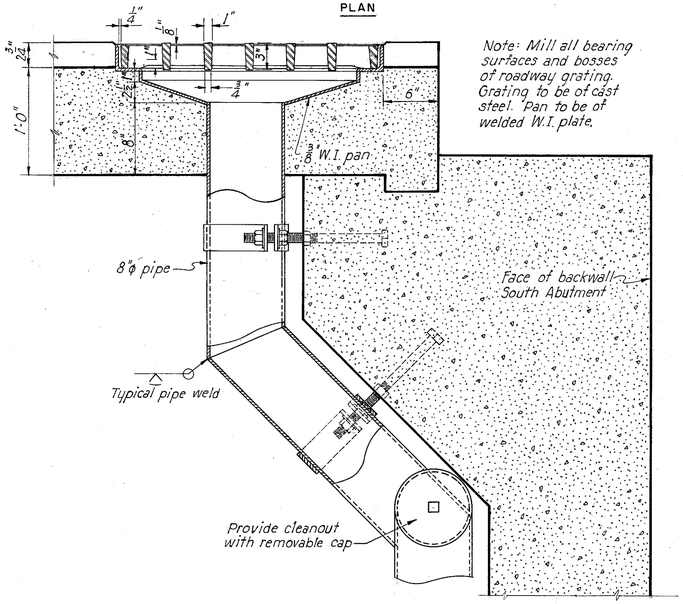
| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

21
34

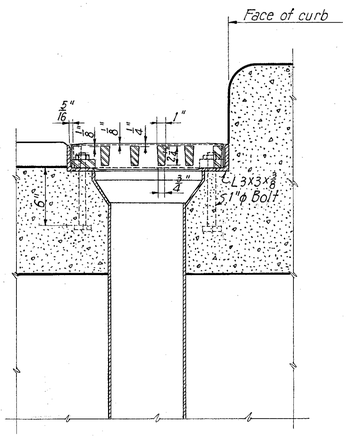
SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31




PLAN

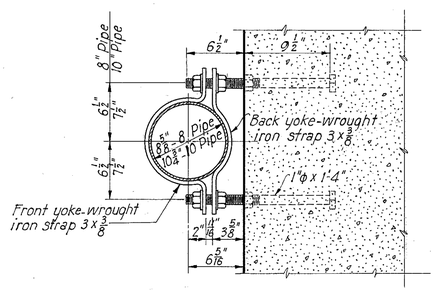



SECTION A-A

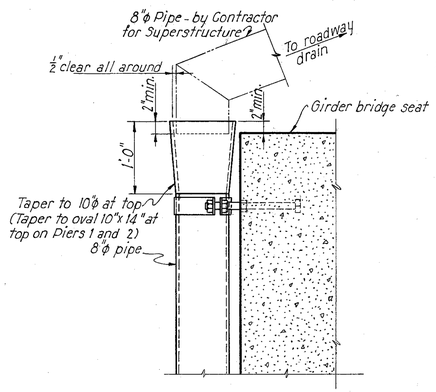



SECTION B-B

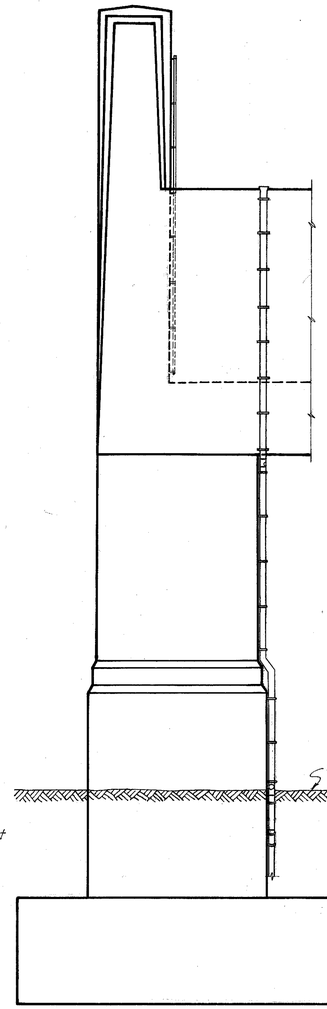
**GRATING DETAILS**
South Abutment only
Scale: 1 1/2" = 1'-0"



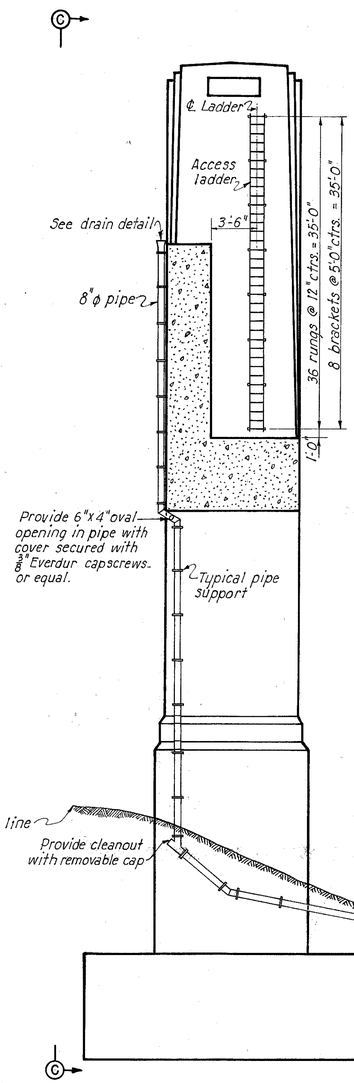

**TYPICAL PIPE SUPPORT**
Scale: 1 1/2" = 1'-0"
Note: Pipe supports shall be placed at about 5'-0" ctrs.




**DRAIN DETAIL AT PIER 3**
Scale: 1"=1'-0"
Note: Drains at Piers 1 and 2 similar except as noted.

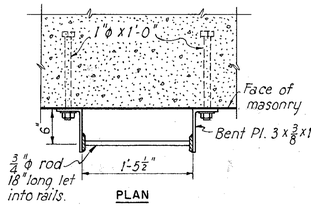



ELEVATION C-C

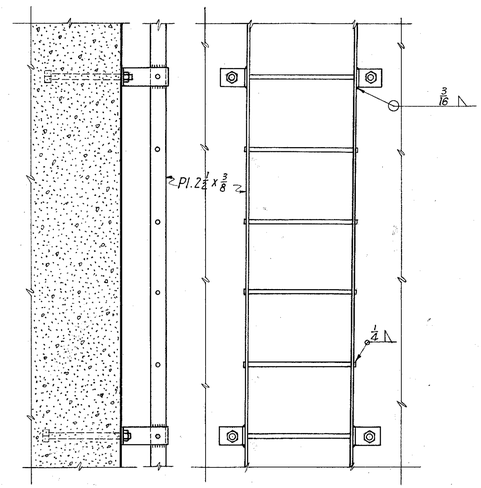



SECTION THROUGH BRIDGE SEAT

**DRAINAGE DETAILS AT PIER 3**
Scale: 1/8"=1'-0"
Note: Pier 6 has a similar access ladder.




PLAN




SIDE ELEVATION FRONT ELEVATION

**ACCESS LADDER DETAILS**
Scale: 1"=1'-0"

Notes:
All 8"ϕ pipe shall be wrought iron pipe at 24.7 pounds per foot.
All 10"ϕ pipe shall be wrought iron pipe at 31.2 pounds per foot.
For location of pipe at South Abutment, see sheet 6.
For location of pipe at Pier 1, see sheet 12.
For location of pipe at Pier 2, see sheet 13.

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

DRAINAGE AND ACCESS LADDER

AKRON, SUMMIT COUNTY, OHIO

SCALE 1"=1'-0" HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE ENGR. DATE 7-15-49 CONSULTING ENGINEERS
TRCD R.F. DATE 7-22-49 KANSAS CITY NEW YORK
CHKD. G.O.D. DATE 7-19-49
766 SHEET V21

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| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

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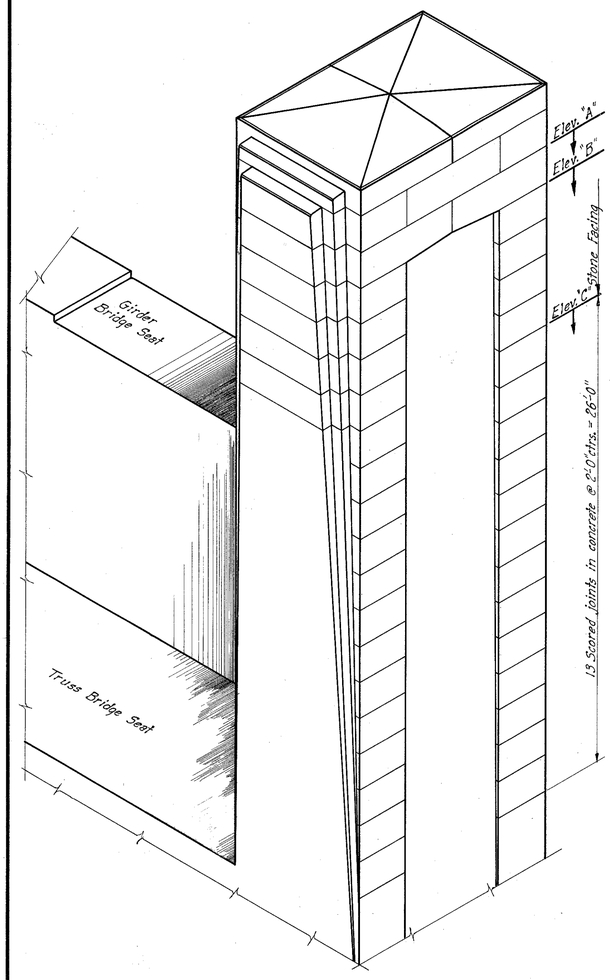
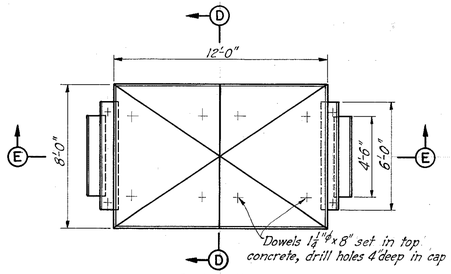
34

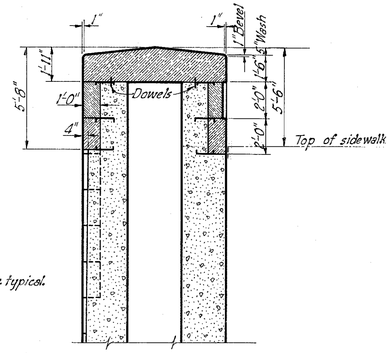
SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31



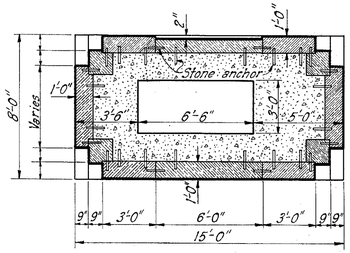

PIER
Scale: 1/4" = 1'-0"



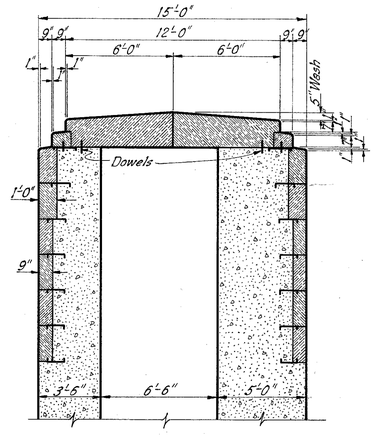

PLAN OF TOP
Scale: 1/4" = 1'-0"



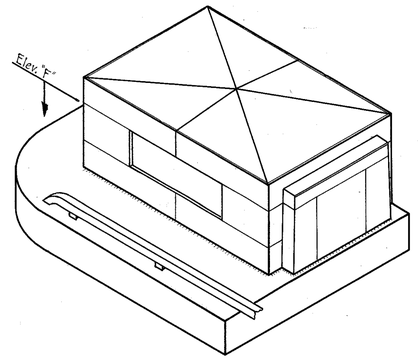

SECTION D-D
Scale: 1/4" = 1'-0"



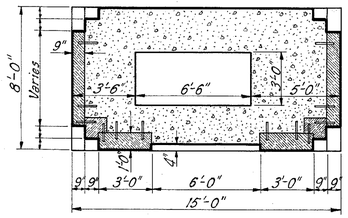

SECTION AT ELEVATION "A"
Scale: 1/4" = 1'-0"



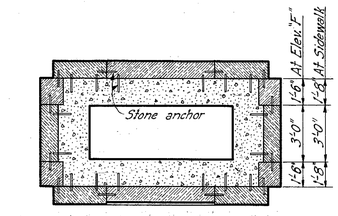

SECTION E-E
Scale 1/4" = 1'-0"



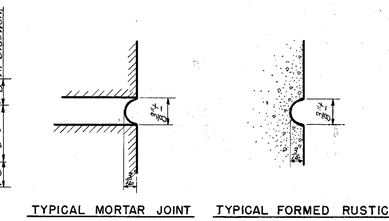

END POST
Scale: 1/4" = 1'-0"




SECTION AT ELEVATION "B"
Scale: 1/4" = 1'-0"




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




LONGITUDINAL SECTION
Scale 1/4" = 1'-0"
Note: Cap stone for end post same as cap stone for Pier.




SECTION AT ELEVATION "F"
Scale: 1/4" = 1'-0"

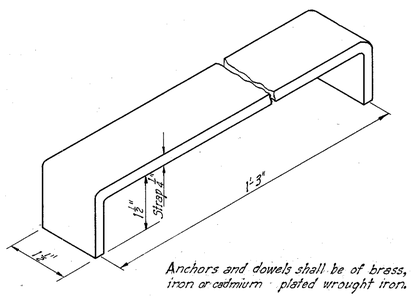


TYPICAL MORTAR JOINT FOR STONEWORK
Full Scale



TYPICAL FORMED RUSTICATION FOR CONCRETE
Full Scale

Note: See sheet 5 for notes on stone work.
All mortar joints shall be true and level.




Anchors and dowels shall be of brass, galvanized wrought iron or cadmium plated wrought iron. See sheet 5

TYPICAL ANCHOR DETAIL
Half Scale

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

STONE FACING DETAILS

AKRON, SUMMIT COUNTY, OHIO

SCALE 1/4" = 1'-0"
MADE C.K.V. DATE 6-28-49
TRCD C.K.V. DATE 7-6-49
CHKD. F.O.D. DATE 8-30-49

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

766 SHEET V22

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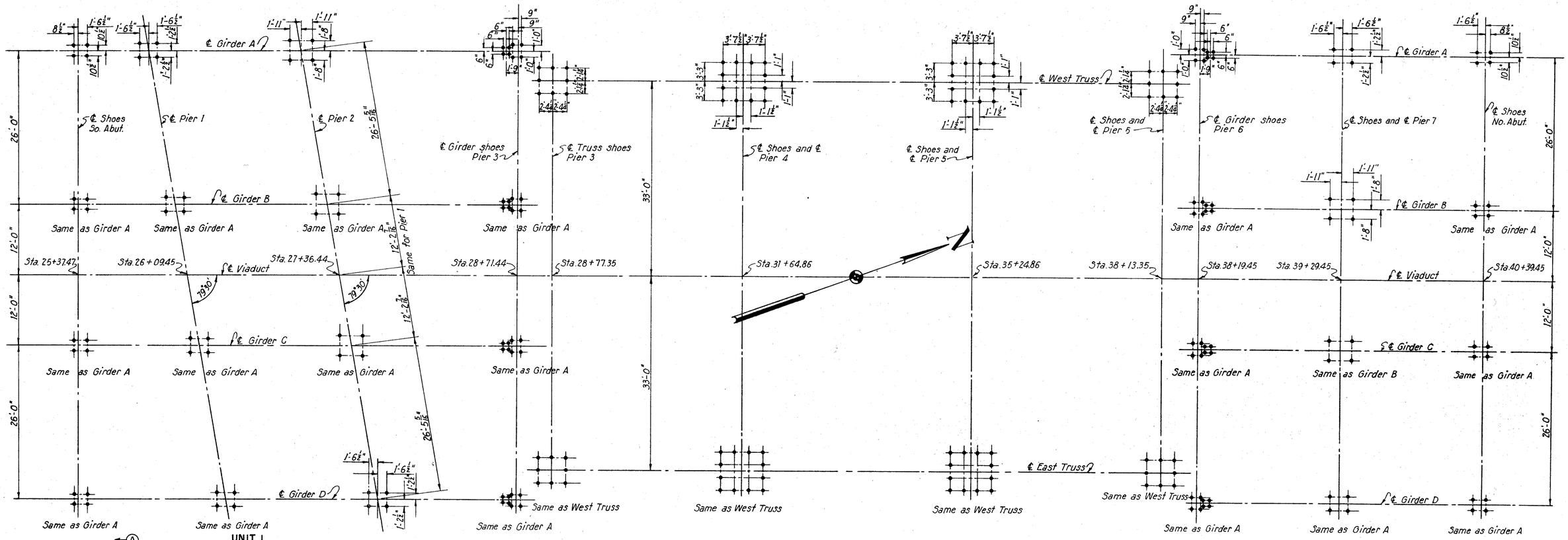
| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

23
34

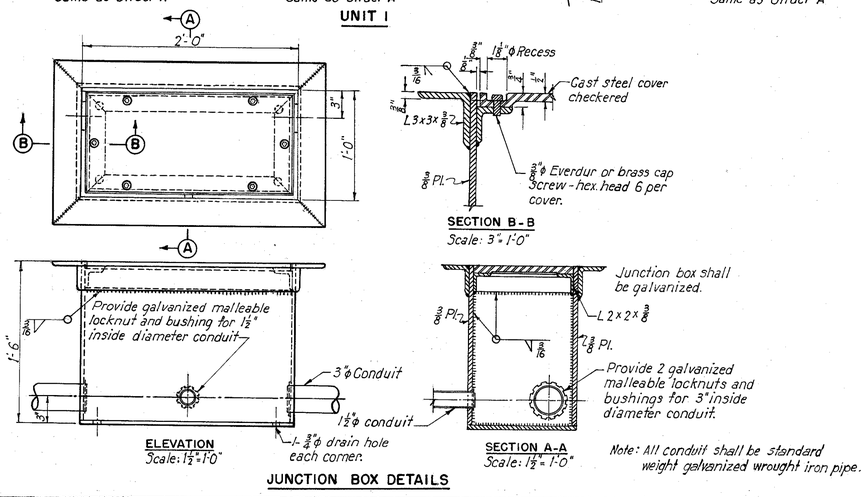
SUMMIT COUNTY
CITY OF AKRON
# AKRON EXPRESSWAY SYSTEM
## MAIN VIADUCT
SUM-5-12.31




UNIT 1

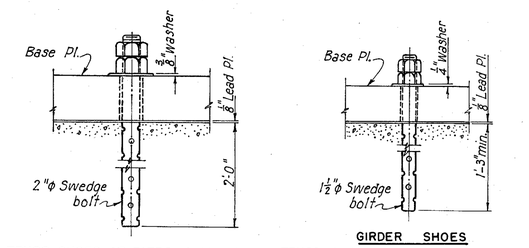
UNIT 2

UNIT 3




Note: All conduit shall be standard weight galvanized wrought iron pipe.

JUNCTION BOX DETAILS




TYPICAL ANCHOR BOLT DETAILS
Scale: 1½"=1'-0"

### TOP MASONRY ELEVATIONS

| PIER OR ABUTMENT | TOP MASONRY UNDER GIRDER A | B | C | D | TOP MASONRY UNDER W. TRUSS | E. TRUSS |
|---|---|---|---|---|---|---|
| So. Abut. | 1028.57 | 1028.91 | 1028.93 | 1028.62 | | |
| 1 | 1025.31 | 1025.46 | 1025.32 | 1024.85 | | |
| 2 | 1020.98 | 1021.24 | 1021.26 | 1021.01 | | |
| 3 | 1021.08 | 1021.42 | 1021.44 | 1021.13 | 999.63 | 999.63 |
| 4 | | | | | 895.32 | 895.32 |
| 5 | | | | | 892.78 | 892.78 |
| 6 | 1019.63 | 1019.95 | 1019.95 | 1019.63 | 995.23 | 995.23 |
| 7 | 1018.36 | 1018.58 | 1018.58 | 1018.36 | | |
| No. Abut. | 1019.02 | 1019.33 | 1019.33 | 1019.02 | | |

Note:
All anchor bolts for shoes and jacking plates are to be furnished and set (and holes drilled) by Contractor for Superstructure. Bolt Plan is furnished with substructure plans for information only so reinforcing steel will be placed to clear holes to be drilled for anchor bolts.

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

ANCHOR BOLT PLAN & LIGHTING

AKRON, SUMMIT COUNTY, OHIO

SCALE 1½"=1'-0" HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE A.E.H. DATE 5-20-49 CONSULTING ENGINEERS
TRCD. A.K. DATE 5-26-49 KANSAS CITY NEW YORK
CHKD. A.C.A. DATE 6-30-49

766 SHEET V23

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| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

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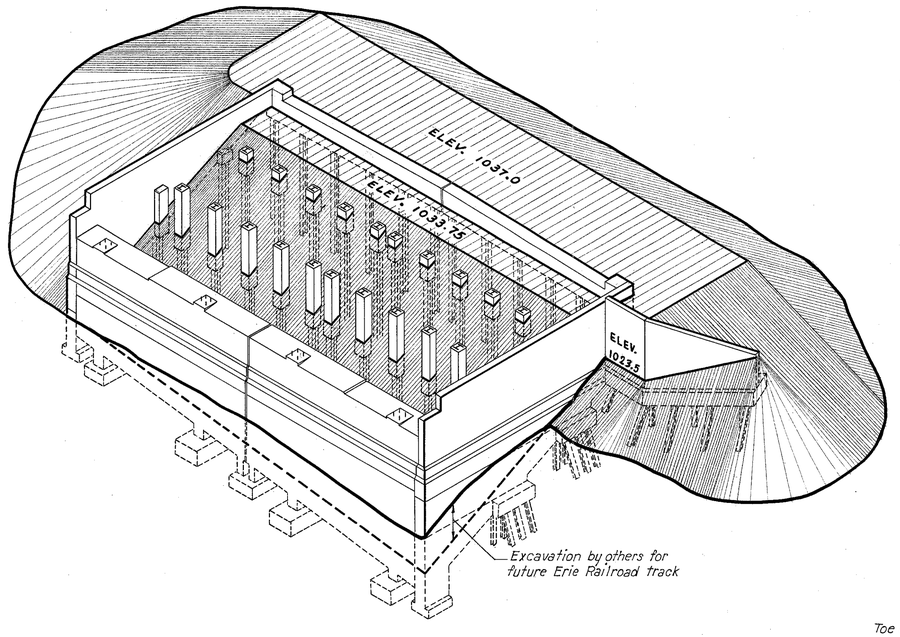
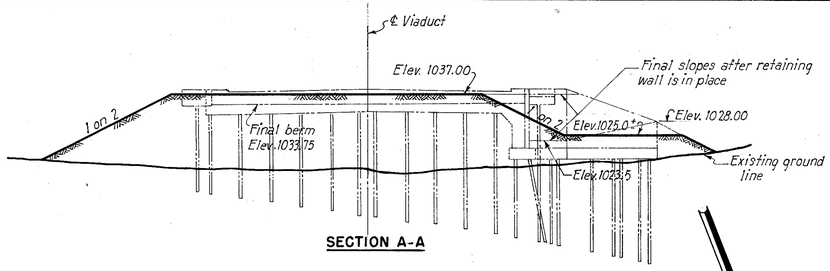
34

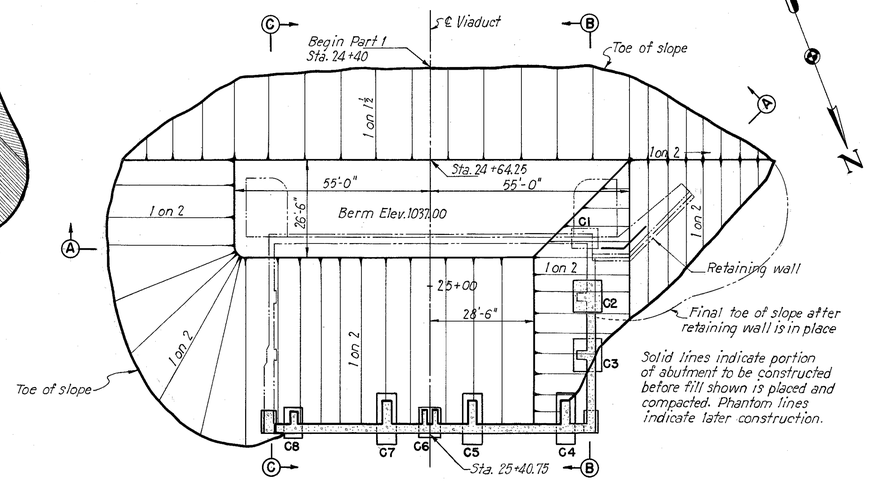
SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31



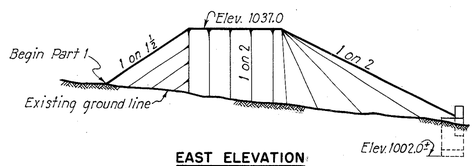

ISOMETRIC VIEW SHOWING FINAL GRADING



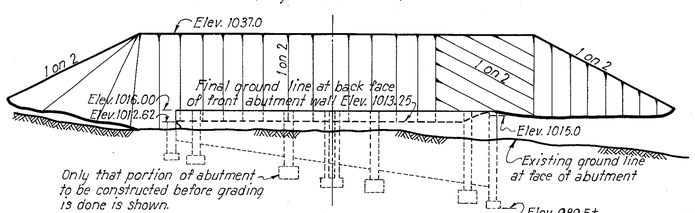

SECTION A-A




PLAN
(Stage 2 Construction)

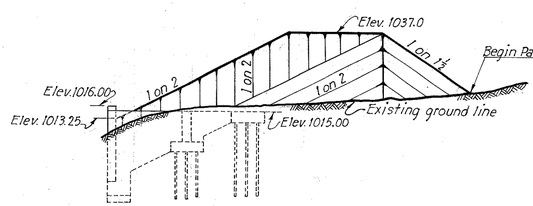



EAST ELEVATION

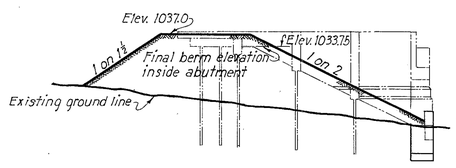



FRONT ELEVATION

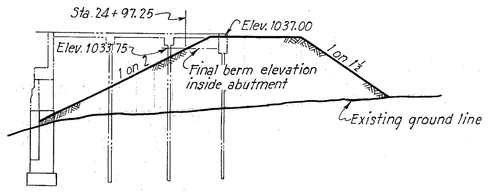
SOUTH ABUTMENT- GRADING LAYOUT



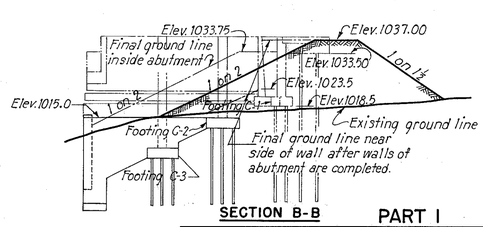

WEST ELEVATION




SECTION C-C




SECTION ON ℄




SECTION B-B

## CONSTRUCTION SEQUENCE FOR SOUTH ABUTMENT

Stage 1
Excavate from existing ground elevations for footings of front wall and footings C2 and C3 of the west wall.
Drive piles for footings C2 and C3.
Construct footings for front wall, C2 and C3.
Construct east wall to elevation 1012.62, front wall to elevation 1016.0 and west wall to elevation 1015.0.
Backfill around footings and walls listed above to existing ground surface. (Method E-2.07)

Stage 2
Place and compact fill in and around abutment (Method E-1.05) conforming to slopes and elevations shown on this sheet.

Stage 3
Make required structural excavation of compacted embankment material for unconstructed footings, walls, pile encasements and beams. Excavate to elevation 1033.75 for berm inside abutment. Drive piles.
Construct abutment footing C1 and retaining wall footing.
Construct abutment walls, retaining wall, pile encasements and rear transverse beam.

Stage 4
Complete backfilling and grading and compact to final elevations and final slopes indicated (Method E-2.07)
Place remaining concrete.

Structural excavation and backfill under Stages 1 and 3 to be paid for as provided in Item E-2, Excavation for Structures.
Embankment filling (exclusive of backfilling and excess structural excavation) under stages 2 and 4 to be paid for as provided in Item E-4, Borrow.

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

SITE GRADING-SOUTH PORTION

AKRON, SUMMIT COUNTY, OHIO

SCALE 1"=20'
MADE D.J.W. DATE 9-29-49
TRCD. R.R. DATE 10-8-49
CHKD. R.R.M. DATE 10-11-49

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

766 SHEET V24

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| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-6876(6) | POST WAR |

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SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31

Contractor to change alignment of P & O canal temporarily as necessary to clear construction operations

℄ Viaduct
Begin Part 1
Sta. 24+40

South limit of grading for Substructure Contractor

Future roadway fill. Grading by others

Sta. 24+97.25
Slope 1 on 2
Elev. 1037.00
Berm Elev. 1033.75
25+00
Sta. 25+63.9
Sta. 25+79.93
Sta. 25+40.75
Sta. 25+93.61
℄ Pier 1
Sta. 26+09.45
Sta. 26+43.41
Sta. 26+30.02
Sta. 27+20.93
℄ Pier 2
Sta. 27+36.44
Sta. 28+34.44
Sta. 28+48.05
℄ Pier 3
Sta. 28+75.94
℄ Viaduct

12" Reinforced concrete sewer pipe Downspout

Existing 36" C.I. culvert
F.L. Elev. 996.0
F.L. Elev. 994.4
Existing 36" C.I. culvert
F.L. Elev. 994.4
F.L. Elev. 987.3
Concrete headwalls To be removed See sheet 12

Existing concrete headwall
F.L. Elev. 979.3
F.L. Elev. 986.4

Existing Timber headwall
F.L. Elev. 977.8
Existing 36" Conc. culvert
Proposed 36" conc. pipe extension

Downspout

℄ Future track
Erie R.R.
Penn R.R.
B. & O. R.R.
℄ Future track
A.C. & Y. R.R.
A.C. & Y. R.R.

Toe of slope
Toe of slope
Existing concrete wall
Gate
P. & O. CANAL

SOUTH ABUTMENT
PIER 1
PIER 2
PIER 3

Existing profile at Sec. A-A
Elev. 1037.0
Elev. 1023.5
Elev. 1008.75
Elev. 999.0
Elev. 983.0
Final ground line outside face of pier
Elev. 982.5
Elev. 975.0

PROFILE AT SECTION A-A

Limit of grading for Substructure Contractor
Existing profile at ℄ Viaduct
Elev. 1037.0
Elev. 1033.75
Elev. 1013.25
Elev. 1011.5 ±
Elev. 994.0
F.L. Elev. 987.3
F.L. Elev. 996.0
F.L. Elev. 994.4
Proposed culvert extension
F.L. Elev. 986.4
Temporary location of channel

Existing profile at Section B
Elev. 1037.0
Elev. 1012.0
Elev. 999.0
Elev. 983.0
Proposed culvert extension
Elev. 975.0
F.L. Elev. 979.3
F.L. Elev. 977.8

PROFILE AT ℄

SOUTH ABUTMENT
PIER 1
PIER 2
PIER 3

Elev. 983.0
Final ground line outside face of pier
Elev. 982.5
Elev. 975.0

PROFILE AT SECTION B-B

24+00 +20 +40 +60 +80 25+00 +20 +40 +60 +80 26+00 +20 +40 +60 +80 27+00 +20 +40 +60 +80 28+00 +20 +40 +60 +80 29+00 +20 +40

160

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-12.4

SITE GRADING - SOUTH PORTION

AKRON SUMMIT COUNTY, OHIO

SCALE 1" = 20'
MADE D.J.W. DATE 8-5-49
TRCD J.H.G. R.P. DATE 8-9-49 & 8-10-49
CHKD. R.P.M. DATE 8-9-49

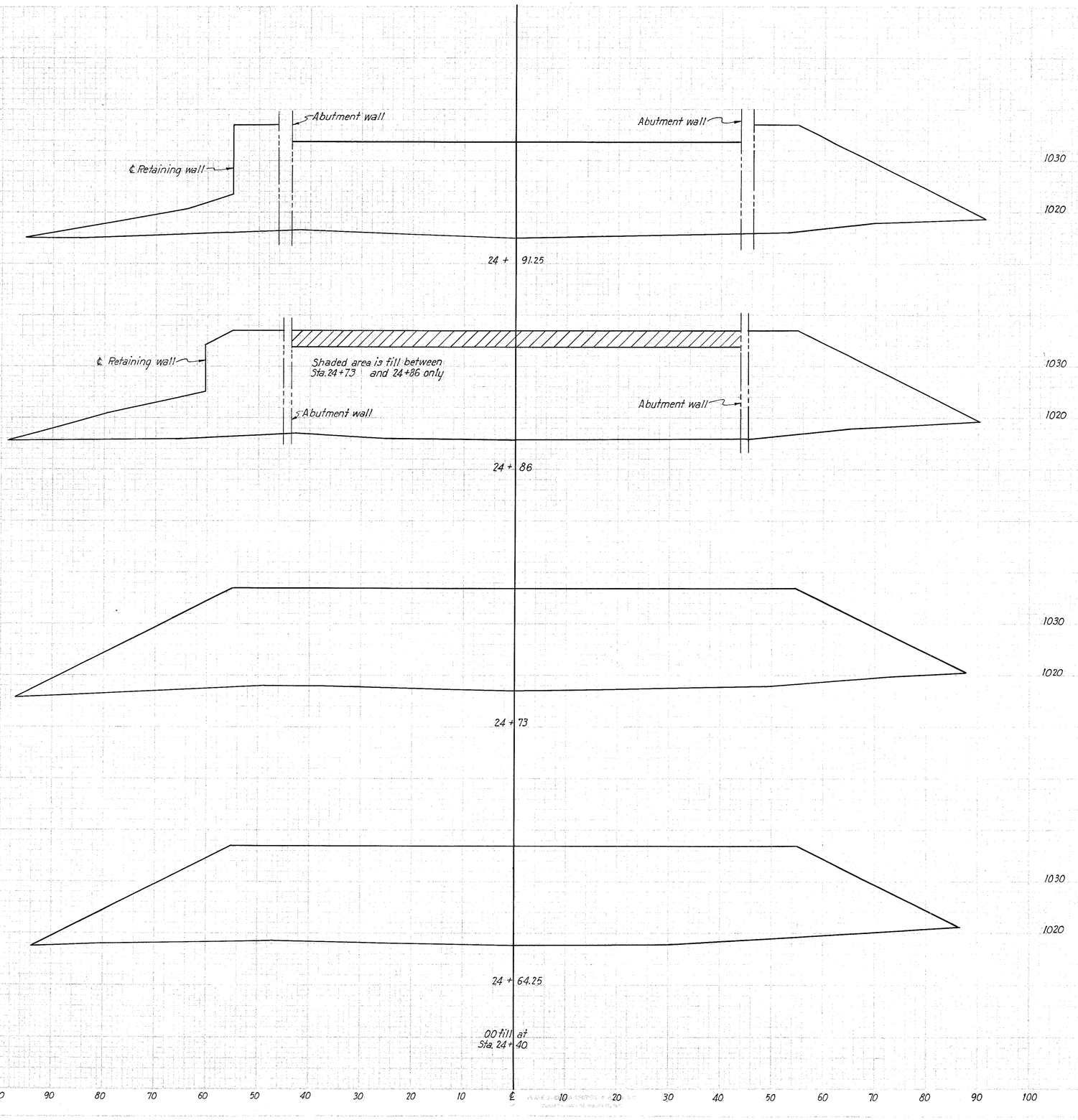
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

766 SHEET V25

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687 6 | POST WAR |

26
34

SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM- 5-12.31




| END AREA Cut | END AREA Fill | VOLUME Cut | VOLUME Fill |
|---|---|---|---|
| 0 | 2410 | | |
| | | | 484 |
| 2575 | | | |
| 2862 | | | |
| | | | 1365 |
| 0 | 2810 | | |
| | | | 886 |
| 0 | 2660 | | |
| | | | 1195 |

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

SITE GRADING - SOUTH PORTION

AKRON, SUMMIT COUNTY, OHIO

SCALE 1"= 10' .....
MADE R.R.M. DATE 10-14-49
TRCD R.R.M. DATE 10-14-49
CHKD D.J.W. DATE 10-14-49

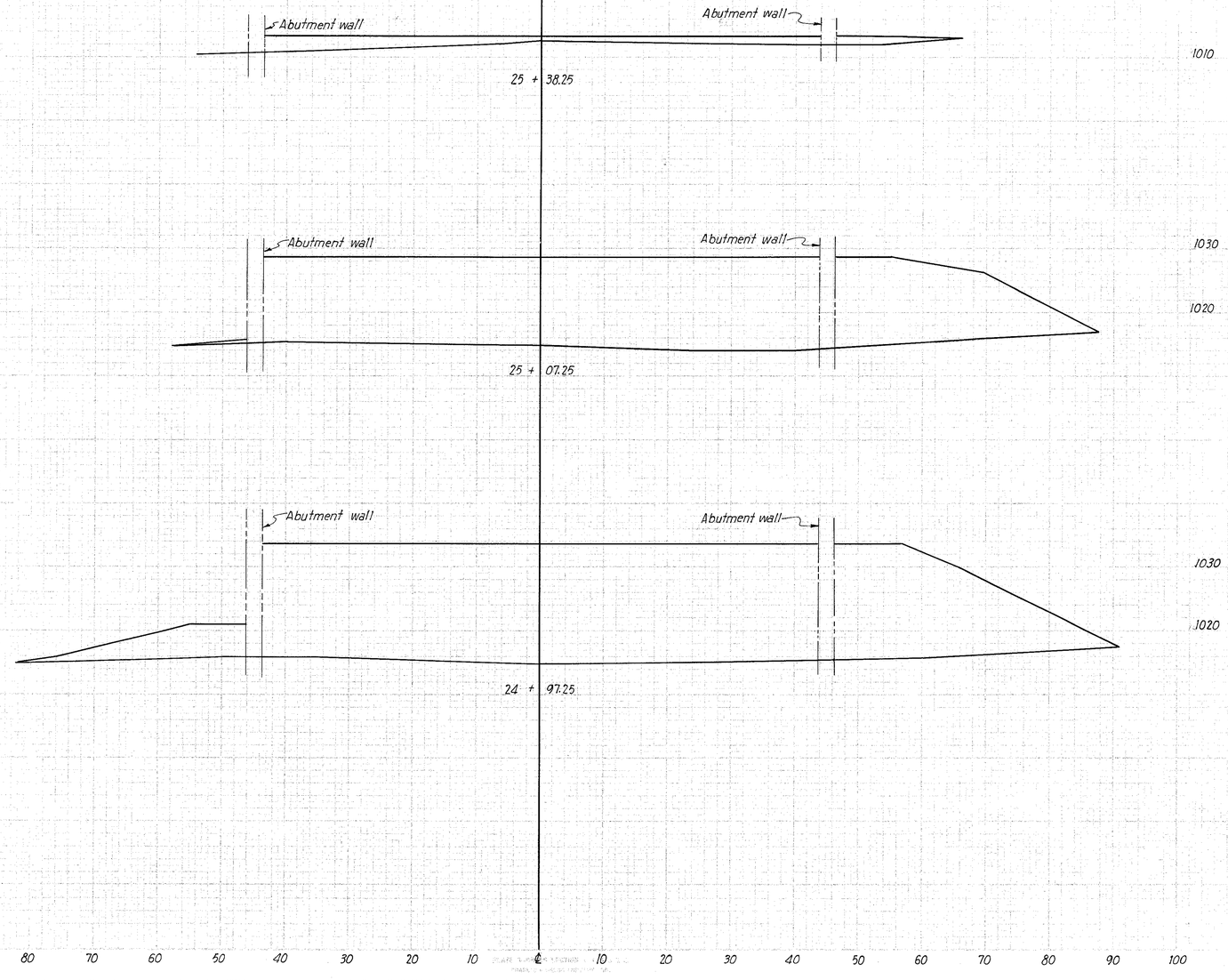
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

766 SHEET V26

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

27
34

SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31




| END AREA | | VOLUME | |
|---|---|---|---|
| Cut | Fill | Cut | Fill |
| | | | |
| 0 | 170 | | |
| | | | 999 |
| 0 | 1570 | | |
| | | | 696 |
| 0 | 2190 | | |
| | | | 511 |

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

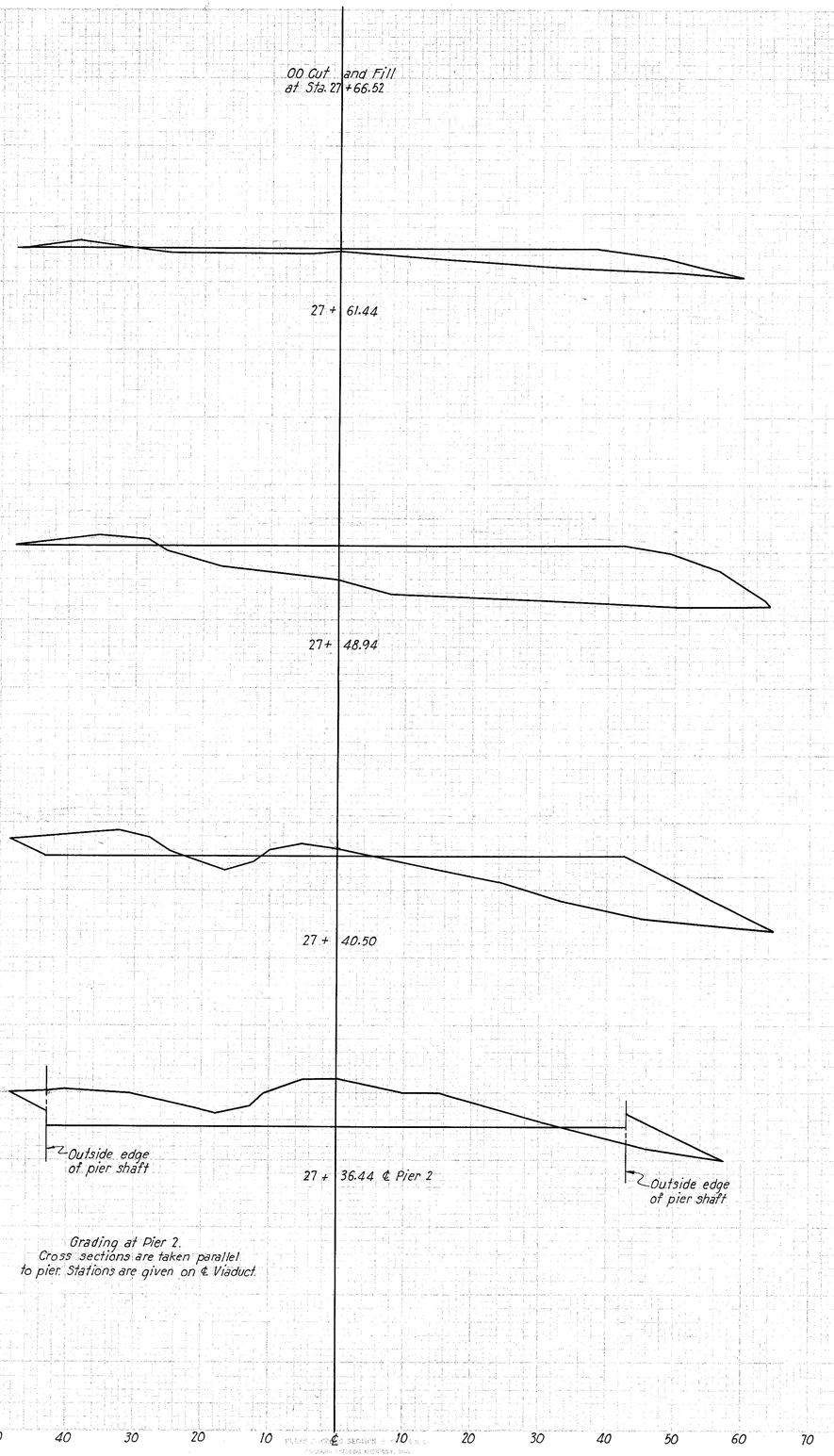
SITE GRADING - SOUTH PORTION

AKRON, SUMMIT COUNTY, OHIO

SCALE 1" = 10'
MADE R.R.M. DATE 10-14-49
TRCD R.R.M. DATE 10-14-49
CHKD O.J.W. DATE 10-14-49

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

766 SHEET V 27




Grading at Pier 2.
Cross sections are taken parallel to pier. Stations are given on ℄ Viaduct.

SUMMARY FOR SOUTH PORTION BORROW

| | |
|---|---|
| Embankment (gross) | 6,460 |
| Less concrete included in embankment | -70 |
| Net embankment | 6,390 |
| Shrinkage 20% | 1,280 |
| Total excavation required | 7,670 |
| Less excess structural excavation | 2,090 |
| Less site grading (cut) | - 55 |
| Item E-4, borrow (gross) - South Portion | 5,525 Cu. Yds. |

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

28
34

SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31

| | | END AREA CUT | END AREA FILL | VOLUME CUT | VOLUME FILL |
|---|---|---|---|---|---|
| | | | | 1.0 | 12.0 |
| 960 | | 10 | 130 | | |
| | | | | 5.7 | 156 |
| 970 | | 15 | 550 | | |
| | | | | 15.0 | 126 |
| 960 | | 83 | 272 | | |
| | | | | 32.8 | 23.5 |
| 970 | | 360 | 45 | | |

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

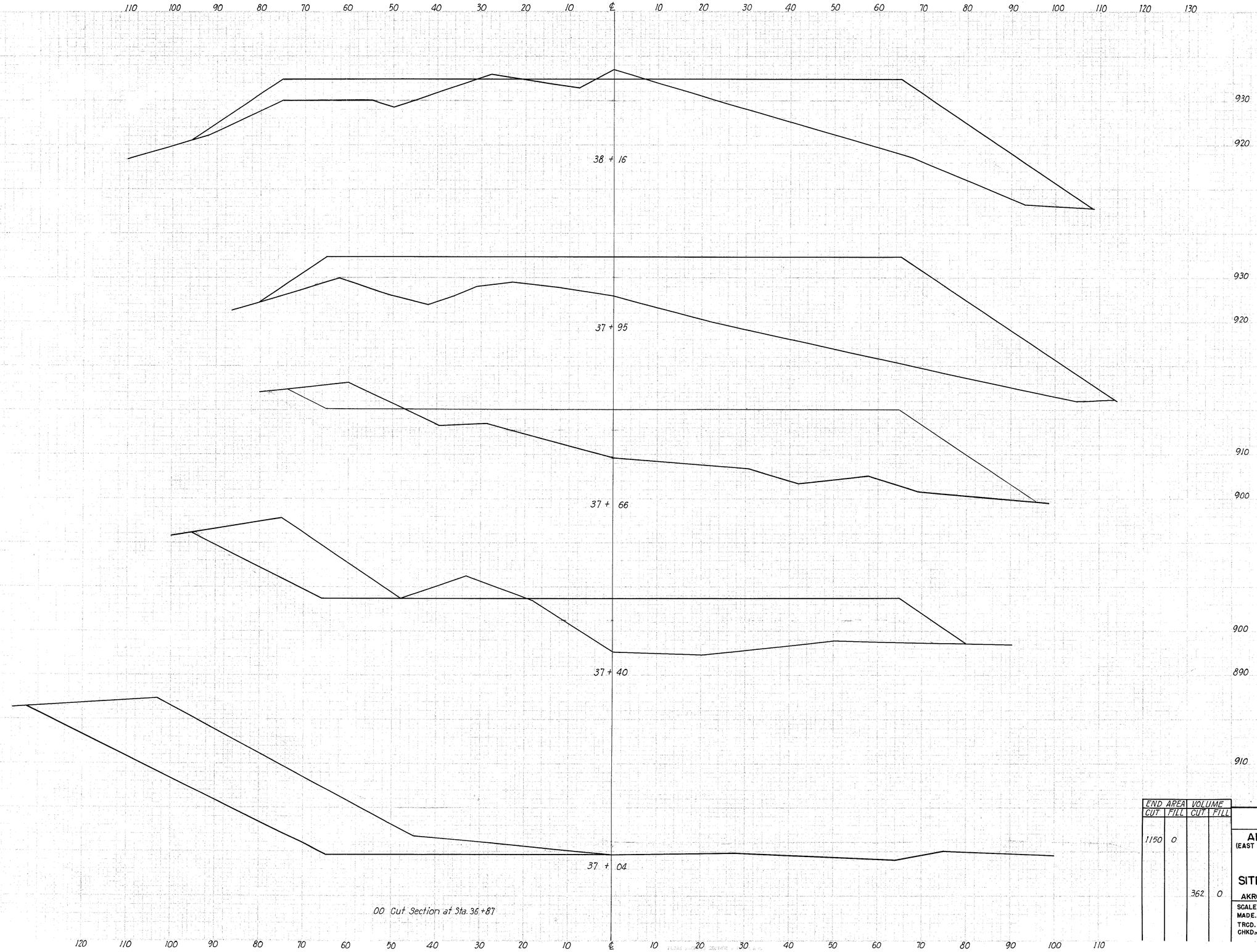
SITE GRADING - SOUTH PORTION

AKRON, SUMMIT COUNTY, OHIO

SCALE 1"=10'.....
MADE R.R.M. DATE 9-29-49
TRCD R.R.M. DATE 10-5-49
CHKD D.J.W. DATE 10-4-49

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

766 SHEET V28




00 Cut Section at Sta. 36 +87

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

29
34

SUMMIT COUNTY
CITY OF AKRON

# AKRON EXPRESSWAY SYSTEM
## MAIN VIADUCT
SUM-5-12.31

| END AREA CUT | END AREA FILL | VOLUME CUT | VOLUME FILL |
|---|---|---|---|
| 0 | 1180 | | |
| | | 0 | 1344 |
| 0 | 2275 | | |
| | | 54 | 1995 |
| 100 | 1440 | | |
| | | 265 | 1141 |
| 450 | 930 | | |
| | | 1067 | 620 |

| END AREA CUT | END AREA FILL | VOLUME CUT | VOLUME FILL |
|---|---|---|---|
| 1150 | 0 | | |
| | | 362 | 0 |

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU.-5-124

SITE GRADING - NORTH PORTION

AKRON, SUMMIT COUNTY, OHIO

SCALE...1"=10'.
MADE. R.R.M. DATE. 7-11-49
TRCD. R.R. DATE. 8-4-49
CHKD. J.R.M. DATE. 8-5-49

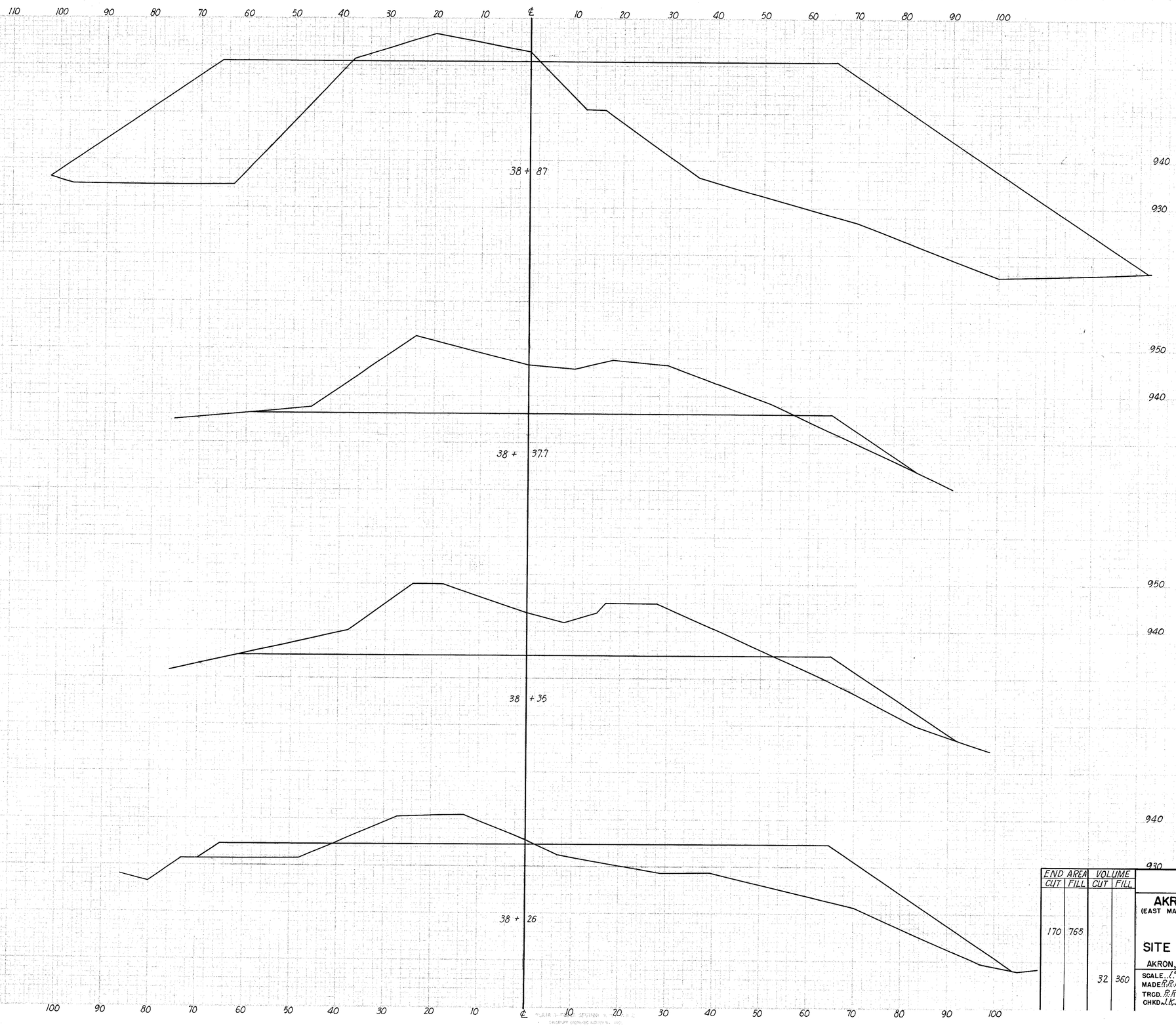
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

766 SHEET V29

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

30
34

SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31




| END AREA CUT | END AREA FILL | VOLUME CUT | VOLUME FILL |
|---|---|---|---|
| 140 | 3435 | | |
| | | 1058 | 3182 |
| 1020 | 50 | | |
| | | 96 | 9 |
| 910 | 125 | | |
| | | 180 | 148 |

| END AREA CUT | END AREA FILL | VOLUME CUT | VOLUME FILL |
|---|---|---|---|
| 170 | 765 | | |
| | | 32 | 360 |

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

# AKRON EXPRESSWAY SYSTEM

(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)

## MAIN VIADUCT

BRIDGE NO. SU-5-124

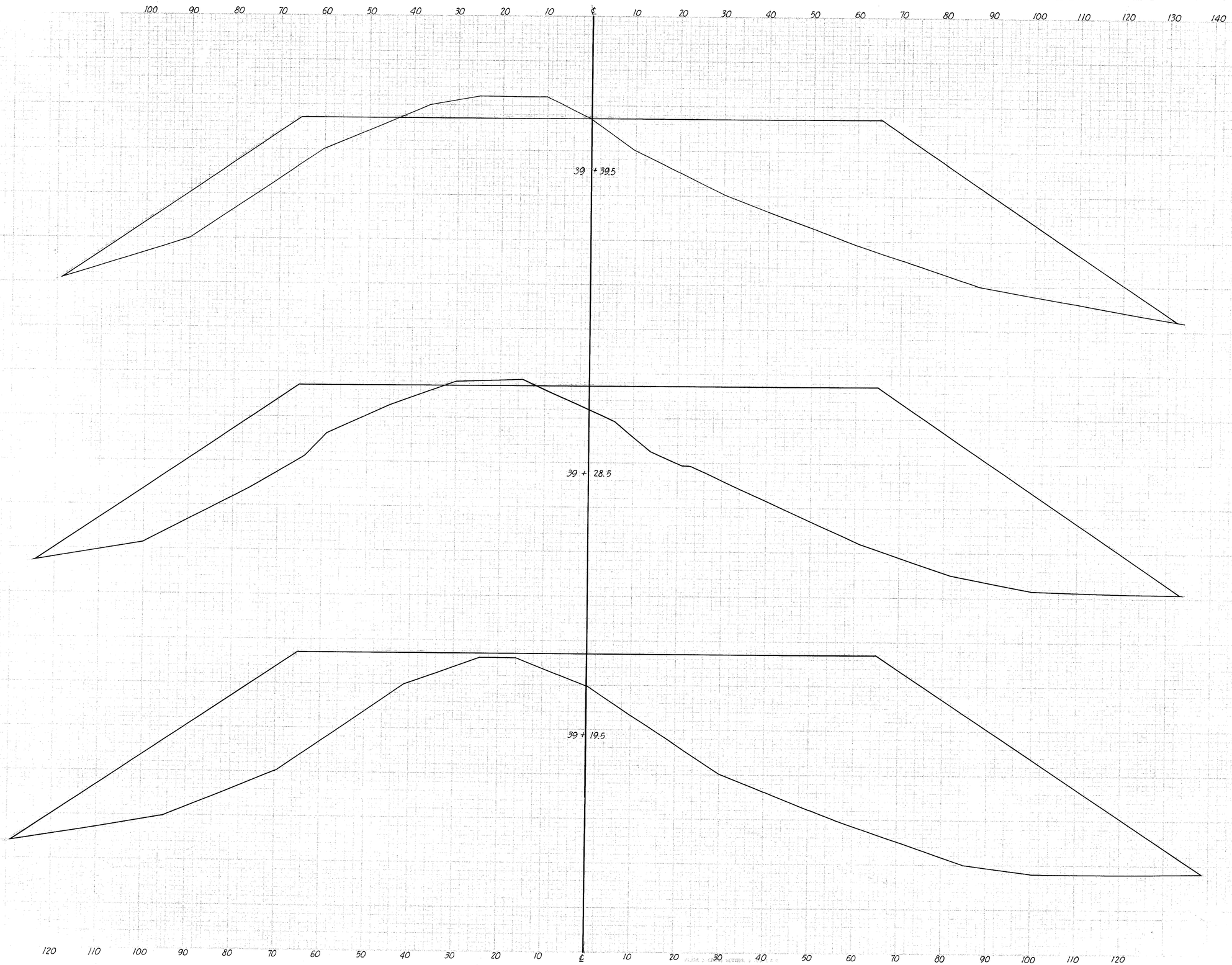
## SITE GRADING NORTH PORTION

AKRON, SUMMIT COUNTY, OHIO

SCALE 1"=10'
MADE F.R.M. DATE 7-11-49
TRCD. F.R. DATE 8-4-49
CHKD. J.K.M. DATE 8-5-49

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

766 SHEET V30




| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

31
34

SUMMIT COUNTY
CITY OF AKRON

# AKRON EXPRESSWAY SYSTEM
## MAIN VIADUCT
SUM-5-12.31

| | END AREA | | VOLUME | |
|---|---|---|---|---|
| | CUT | FILL | CUT | FILL |
| 970 | | | | |
| | 140 | 2675 | | |
| 960 | | | | |
| | | | 33 | 1298 |
| 970 | | | | |
| 960 | | | | |
| | 20 | 3695 | | |
| | | | 3 | 1417 |
| 970 | | | | |
| | 0 | 4810 | | |
| 960 | | | | |
| | | | 84 | 4962 |

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

# AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)

## MAIN VIADUCT
BRIDGE NO. SU-5-124

## SITE GRADING – NORTH PORTION

AKRON, SUMMIT COUNTY, OHIO

SCALE 1"=10'
MADE R.R.M. DATE 7-11-49
TRCD. P.R. DATE 8-4-49
CHKD. J.K.M. DATE 8-5-49

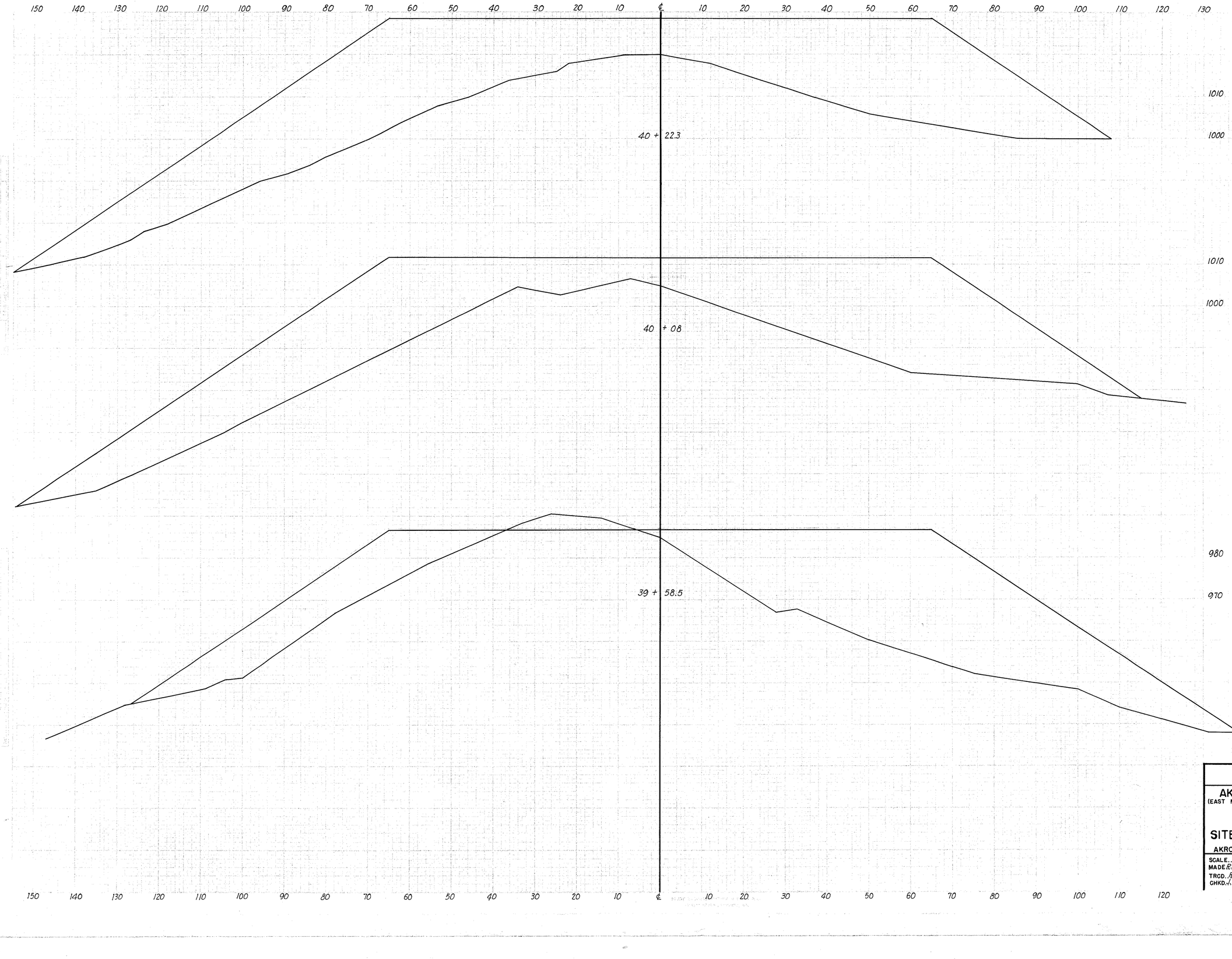
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

766 SHEET V31

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR |

32
34

SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31




| END AREA CUT | END AREA FILL | VOLUME CUT | VOLUME FILL |
|---|---|---|---|
| 0 | 4000 | | |
| | | 0 | 2031 |
| 0 | 3670 | | |
| | | 64 | 6233 |
| 70 | 3130 | | |
| | | 74 | 2042 |

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

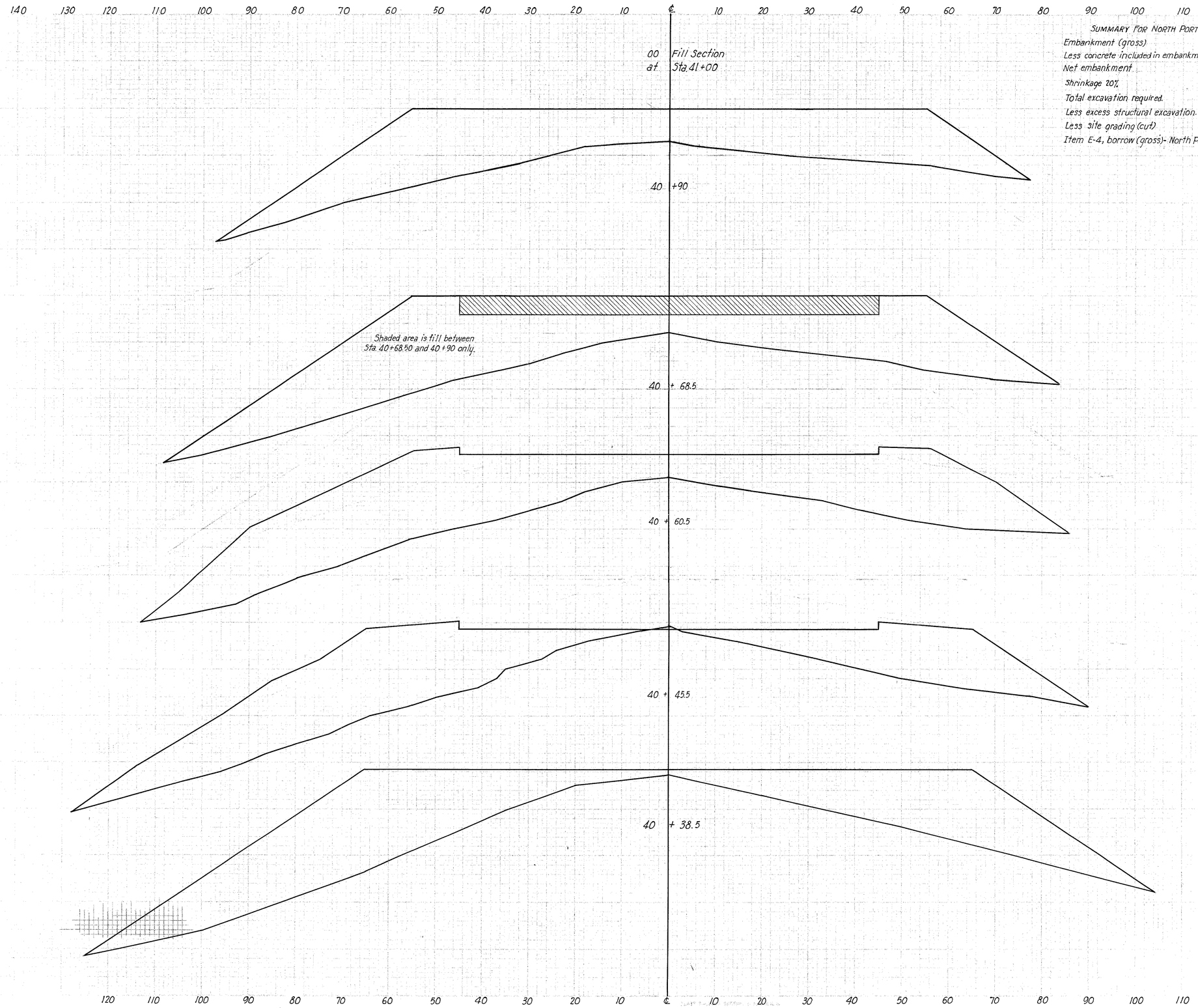
SITE GRADING NORTH PORTION

AKRON, SUMMIT COUNTY, OHIO

SCALE..1"=10'....
MADE F.R.M. DATE. 7-11-49
TRCD. F.R. DATE. 8-4-49
CHKD. J.K.M. DATE. 8-5-49

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

766 SHEET V32




SUMMARY FOR NORTH PORTION BORROW

| | |
|---|---|
| Embankment (gross) | 32,400 |
| Less concrete included in embankment. | -475 |
| Net embankment | 31,925 |
| Shrinkage 20% | 6,385 |
| Total excavation required. | 38,310 |
| Less excess structural excavation. | -2,790 |
| Less site grading (cut) | -3,400 |
| Item E-4, borrow (gross)- North Portion | 32,120 Cu. Yds. |

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS | 33 34 |
|---|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR | |

SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31

| | END AREA CUT | END AREA FILL | VOLUME CUT | VOLUME FILL |
|---|---|---|---|---|
| 1020 | 0 | 0 | | |
| | | | 0 | 189 |
| | 0 | 1020 | | |
| | | | 0 | 1296 |
| 1030 | | | | |
| | 0 | 2235 | | |
| | 0 | 1875 | | |
| | | | 0 | 612 |
| 1020 | 0 | 2260 | | |
| 1010 | | | | |
| | | | 0 | 1145 |
| | 0 | 1860 | | |
| 1010 | | | | |
| | | | 0 | 520 |
| 1010 | 0 | 2155 | | |
| | | | 0 | 1846 |

PART I
STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU.-5-124

SITE GRADING NORTH PORTION

AKRON, SUMMIT COUNTY, OHIO

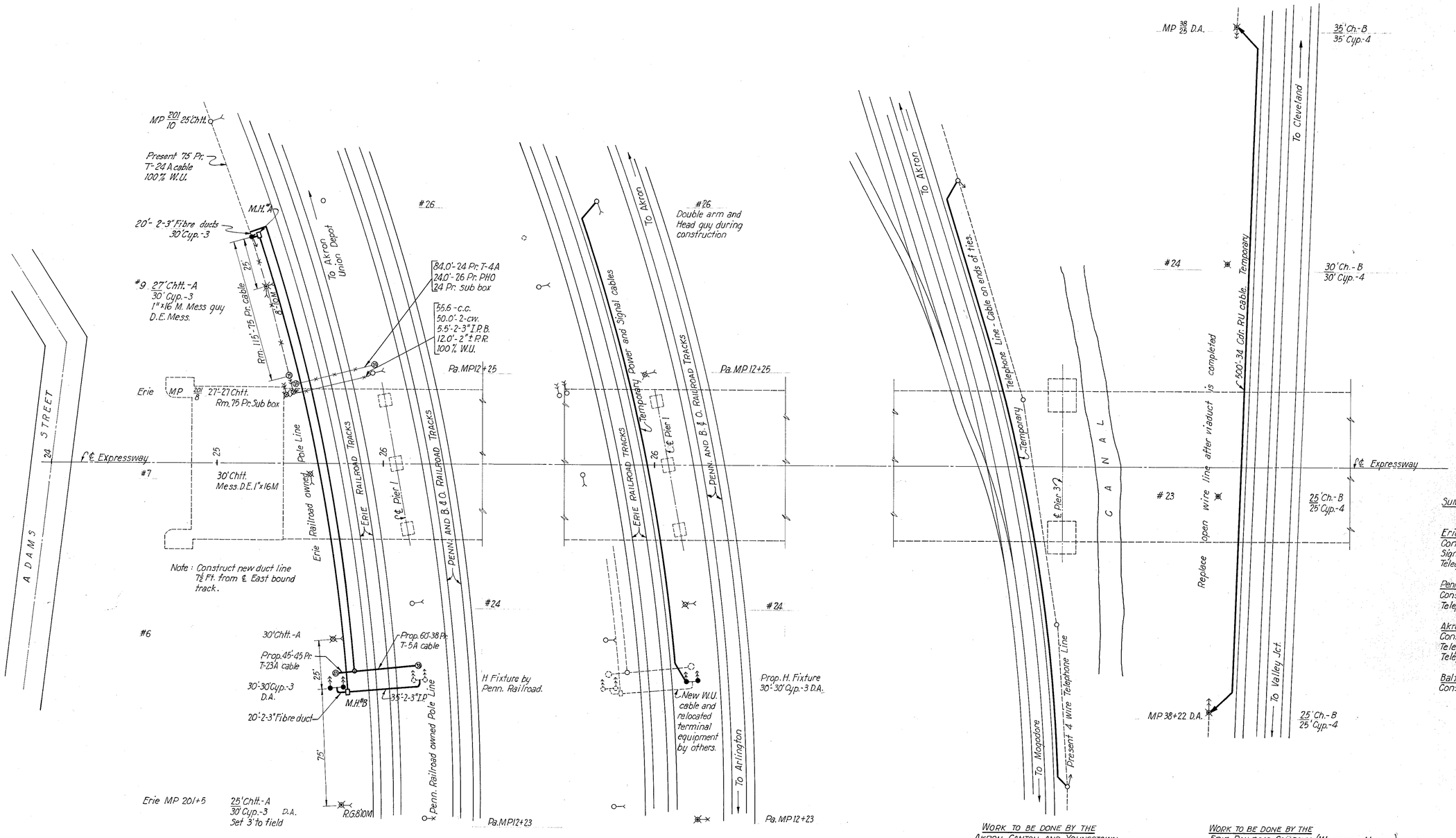
SCALE 1"=10'
MADE R.R.M. DATE 7-11-49
TRCD. R.R. DATE 8-4-49
CHKD. J.K.M. DATE 8-5-49

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

766 SHEET V33

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS | 34 |
|---|---|---|---|---|
| 2 | OHIO | U-687(6) | POST WAR | 34 |

SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT
SUM-5-12.31




WORK TO BE DONE BY THE ERIE RAILROAD COMPANY ON ITS RIGHT-OF-WAY.

Replace aerial cable and open wire line with U.G. conduit and cable.

WORK TO BE DONE BY THE PENNSYLVANIA RAILROAD COMPANY ON ITS RIGHT-OF-WAY.

WORK TO BE DONE BY THE AKRON, CANTON AND YOUNGSTOWN RAILROAD COMPANY ON ITS RIGHT-OF-WAY.

WORK TO BE DONE BY THE ERIE RAILROAD COMPANY (WESTERN UNION) ON THE B. & O. RAILROAD-RIGHT-OF-WAY

SUMMARY OF RAILROAD FORCE ACCOUNT WORK
(Federal participation)

Erie Railroad Company
Construction Engineering and Inspection.
Signals and Interlocking.
Telegraph and Telephone Lines.

Pennsylvania Railroad Company
Construction Engineering and Inspection.
Telephone, Telegraph and Signal Line changes

Akron, Canton, and Youngstown Railroad Company
Construction Engineering and Inspection
Telephone Lines - Temporary Work.
Telephone Lines - Permanent Work.

Baltimore and Ohio Railroad Company
Construction Engineering and Inspection

Rev. 11/18/50

PART I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)
MAIN VIADUCT
BRIDGE NO. SU-5-124

RAILROAD FORCE ACCOUNT WORK

AKRON, SUMMIT COUNTY, OHIO

SCALE 1"=30'
MADE J.T. DATE 12-16-49
TRCD C.V., R.P. DATE 12-22-49
CHKD. R.H.L. DATE 12-21-49

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

766 SHEET V34

166

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR |
|---|---|---|---|
| 2 | OHIO | | 1951 |

1 / 3

SUMMIT COUNTY
CITY OF AKRON
AKRON EXPRESSWAY SYSTEM
MAIN VIADUCT DRAINAGE
SUM-5-12.31

397

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

# AKRON EXPRESSWAY SYSTEM

## SUM-5-12.31
## SUMMIT COUNTY
## CITY OF AKRON

# MAIN VIADUCT DRAINAGE

## INDEX OF SHEETS



APPROVED
DATE 12/27/51 DIRECTOR OF PUBLIC SERVICE, CITY OF AKRON

PRINT APPROVED F.J. Bishop
DATE 1-15-52 CHIEF ENGINEER, A.C.&Y. RAILROAD

PRINT APPROVED I.H. Schram
DATE 1-7-52 CHIEF ENGINEER, ERIE RAILROAD

PRINT APPROVED A.C. Clarke
DATE 1-21-52 CHIEF ENGINEER, B. & O. RAILROAD

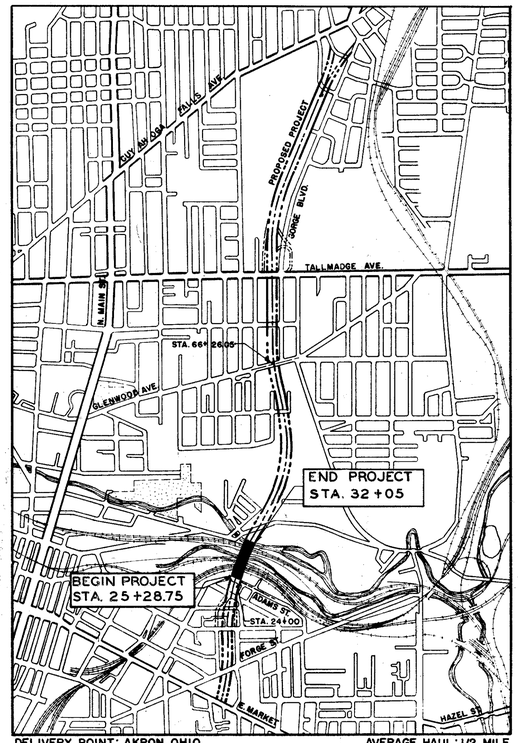
PRINT APPROVED A.C. Clarke
DATE 1-21-52 REAL ESTATE & IMPROVEMENT CO. OF BALTIMORE CITY

## LINE DATA

| | |
|---|---|
| BEGIN PROJECT | STA. 25+28.75 |
| END PROJECT | STA. 32+05 |
| DEDUCTIONS | STA. 25+70 TO STA. 27+40 |

NET LENGTH OF PROJECT AND WORK 506.25 L.F. OR 0.095 MI.*

* SEE PLAN




DELIVERY POINT: AKRON, OHIO AVERAGE HAUL: 1/2 MILE

## LOCATION PLAN

0' 1000' 2000' 4000'
0" 3/4" 1 1/2" 3"
SCALE IN FEET

PORTION TO BE IMPROVED
STATE HIGHWAYS
OTHER HIGHWAYS

N

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 W. L. Finsmer
DATE 1/26/1952 DIVISION DEPUTY DIRECTOR

APPROVED Norman M. Gibbs
DATE 2-18-52 CHIEF ENGINEER, BUREAU OF PLANNING & PROGRAMMING

APPROVED Richard Dietz
DATE 1-28-52 CHIEF ENGINEER, BUREAU OF BRIDGES & R.R. CROSSINGS

APPROVED K. Petersen
DATE 2-15-52 CHIEF ENGINEER, BUREAU OF LOCATION & DESIGN

APPROVED J.T. Chandler
DATE 2-18-52 FIRST ASSISTANT DIRECTOR & CHIEF ENGINEER

APPROVED J.J. Wilson
DATE 2-18-52 DIRECTOR OF HIGHWAYS



DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

RECOMMENDED FOR APPROVAL

DISTRICT ENGINEER — DATE

APPROVED

DIVISION ENGINEER — DATE

× Revised 12/13/51

## SUPPLEMENTAL SPECIFICATIONS

| NUMBER | DATE | |
|---|---|---|
| T-171.19 Rev. | 7-31-50 | |
| | | |

## STANDARD DRAWINGS

| NUMBER | DATE | |
|---|---|---|
| I-1,2,3,4&5 | 2-20-45 | |
| I-8 M.H. No1 | 5-1-51 | |
| I-8 M.H. No2 | 1-2-51 | |
| I-8 C.B. 2-3&2-4 | 1-2-51 | |

397

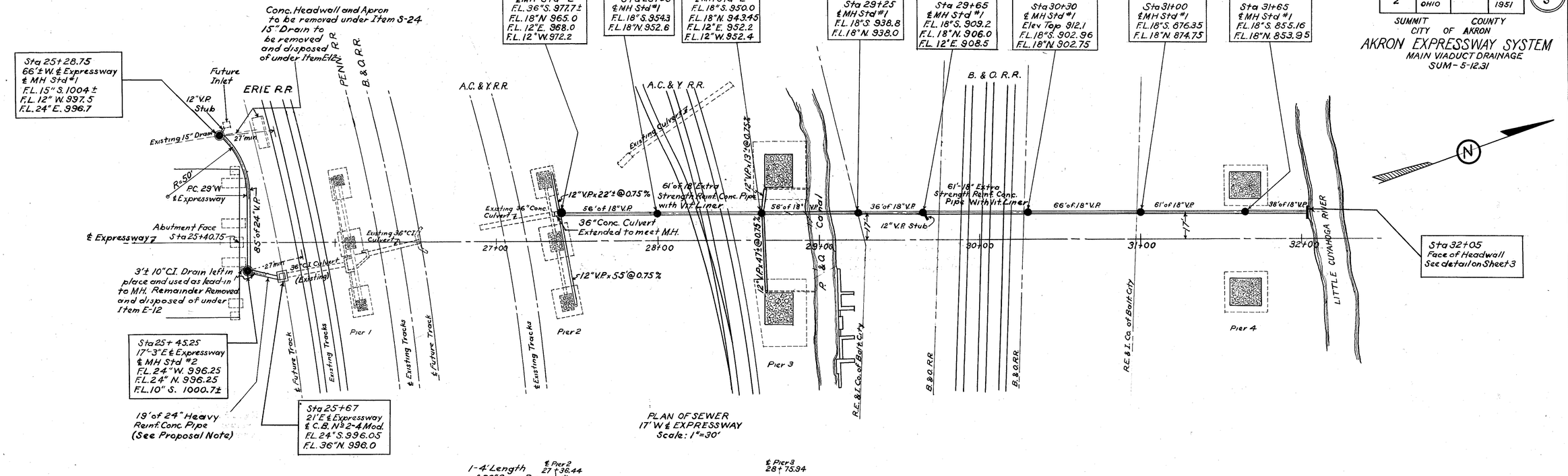
| FILE NO. | SUMMIT COUNTY |
|---|---|
| | SEC. SUM-5-12.31 |
| | DATE OF LETTING _____, 195__ |
| | CONTRACT NO. _____ |

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR. | 2 / 3 |
|---|---|---|---|---|
| 2 | OHIO | | 1951 | |

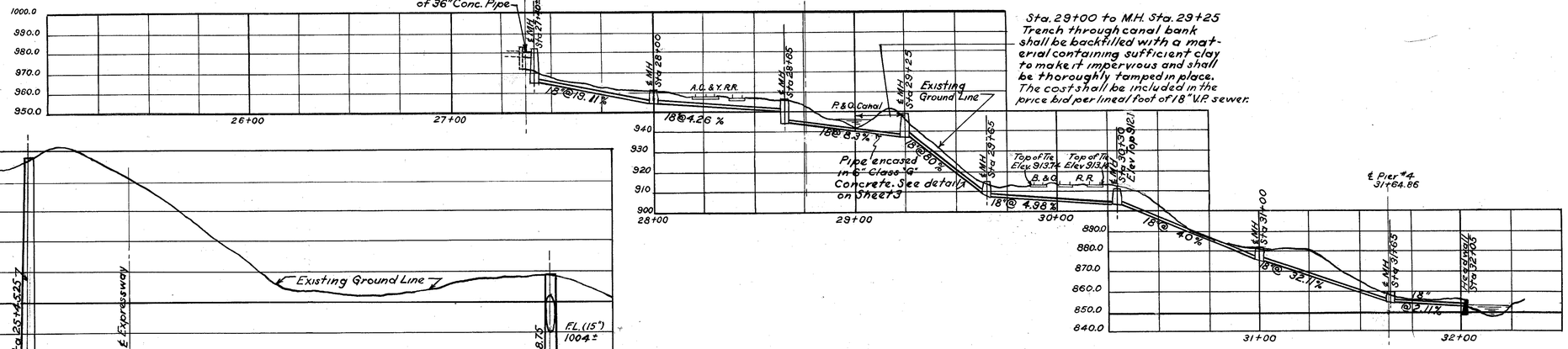
SUMMIT COUNTY
CITY OF AKRON

# AKRON EXPRESSWAY SYSTEM

MAIN VIADUCT DRAINAGE
SUM-5-12.31

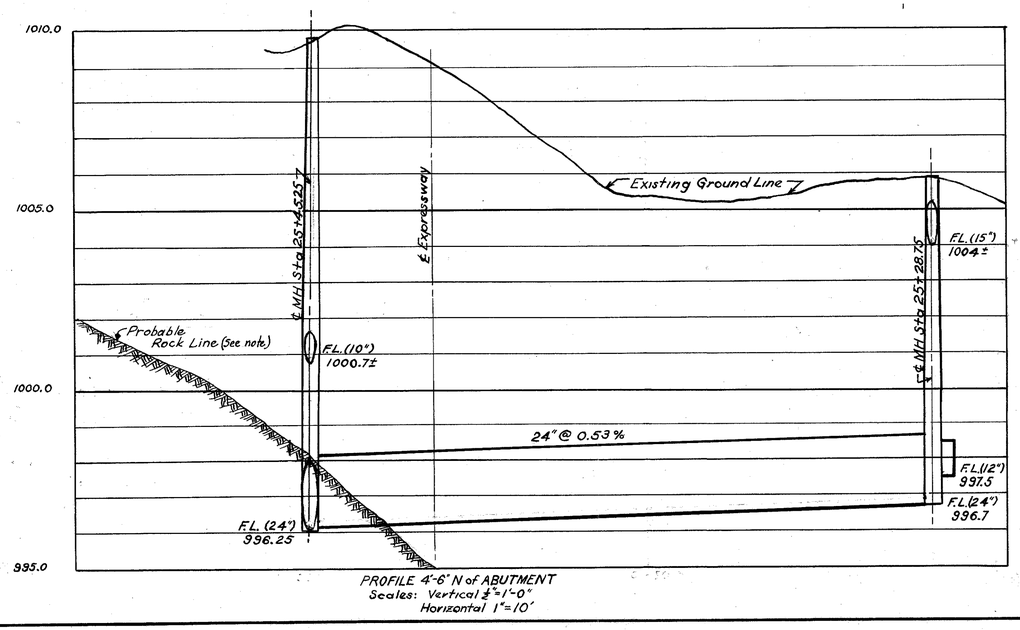



PLAN OF SEWER
17' W ℄ EXPRESSWAY
Scale: 1"=30'




PROFILE OF GROUND AND SEWER
17' WEST OF ℄ OF EXPRESSWAY
Scale: 1"=30'

Note: Stations of ℄ of Piers are along ℄ of Expressway.




PROFILE 4'-6" N of ABUTMENT
Scales: Vertical 1"=1'-0"
Horizontal 1"=10'

NOTE :~
Information regarding location of rock shown on these plans has been taken from the best information available but the State of Ohio does not guarantee the correctness thereof.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

## AKRON EXPRESSWAY SYSTEM

(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)

## MAIN VIADUCT DRAINAGE

PLAN AND PROFILE

AKRON, SUMMIT COUNTY, OHIO

SCALE: AS SHOWN
MADE DATE
TRCD DATE
CHKD DATE

CITY OF AKRON
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF HIGHWAYS

| FED.ROAD DIV.NO | STATE | FED.AID PROJ.NO. | FISCAL YEAR | |
|---|---|---|---|---|
| 2 | OHIO | | 1951 | 3 / 3 |

SUMMIT COUNTY
CITY OF AKRON

# AKRON EXPRESSWAY SYSTEM
## MAIN VIADUCT DRAINAGE
SUM 5-12.31

## GENERAL NOTES

### INLETS, MANHOLES, AND PIPES

*The proposed elevation and location of catch basins, manholes, and pipes and the estimated lengths of pipes may be adjusted by the engineer during construction.*

### PLASTERING MANHOLES

*The plastering of the inside of manholes under Item I-8 shall be omitted. Inside mortar joints shall be neatly struck.*

### LENGTH OF PIPE SPECIALS

*The number of lineal feet of pipe to be paid for shall be the length of the pipe line less the assumed lengths (3 feet) of specials, regardless of the actual length of the pipe special used.*

*If actual length of pipe special is less than three (3) feet, the contractor shall furnish enough extra pipe to make up the difference between the assumed and actual lengths. If the actual length of the pipe special used is greater than three (3) feet, the extra length of each pipe special, over and above the assumed length, shall be paid for as lineal feet of pipe.*

### PIPES UNDER RAILROAD TRACKS

*Pipes shall be jacked under railroad tracks unless the presence of rock or shale makes jacking impossible. It is assumed that pipe can be jacked under B. & O. tracks, but that rock will interfere with jacking operations at the A.,C., & Y. tracks. Before jacking of pipes, the contractor shall prepare, and receive State and Railroad approval of plans, method of procedure and timing for installing jacking pits, and jacking the pipe. If pipes cannot be jacked, the contractor shall prepare, and receive State and Railroad approval of plans and methods for installation of the pipe beneath railroad tracks.*

*Any track supporting of B.&O.R.R. tracks made necessary by the contractor's method of placing pipe will be installed, maintained and removed by railroad forces. The contractor shall pay the B.&O. Railroad for these services in accordance with requirements of Special Provisions for this work.*

*Any track supporting of A., C., & Y. tracks made necessary by the contractor's method of placing the pipe shall be installed, maintained, and removed by the contractor.*

*Jacking pits shall not be closer than 8'-0" from ends of ties and shall be amply sheeted and braced, subject to the approval of the State and Railroad.*

### CLOSING RAILROADS TO TRAFFIC

*The north track of the B & O Railroad will be closed to railroad traffic for three successive calendar days.*

### PROTECTION COSTS

*Protection costs will be charged to the contractor by the railroads. Such costs will include Railroad Retirement and Unemployment Taxes, Vacation Allowances, and other standard and legal costs. Minimum "protection" while working under or adjacent to tracks will consist of a conductor and two flagmen.*

### FLOW OF WATER IN P&O CANAL

*The contractor shall be responsible for maintaining a continuous flow of water through the P&O Canal equal to the flow at the time of construction. This shall be done by means of a flume or other device, approved by the engineer, and shall be included in the price bid for the 18" V.P. sewer.*

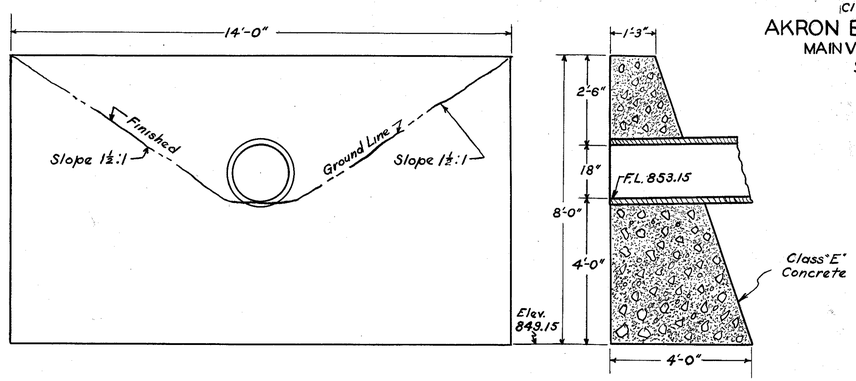
### BEDDING OF PIPE IN CONCRETE

*Wherever rock is encountered in excavation for sewer, outside the limits between Sta. 28+75 and Sta. 29+65, pipe shall be cradled in Class "G" Concrete as shown in detail for "Bedding".*

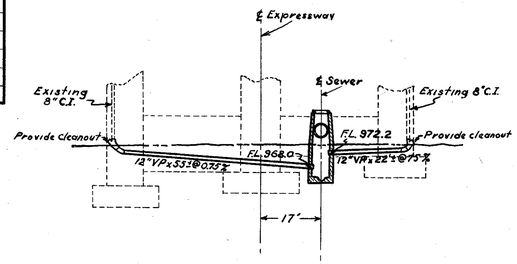
## GENERAL SUMMARY ESTIMATED QUANTITIES

| ITEM | DESCRIPTION | UNIT | QUANTITY |
|---|---|---|---|
| | DRAINAGE | | |
| I-2 | 12" PIPE FOR STORM SEWERS, SEC-M-6.8(a) | LIN. FT. | 145 |
| I-2 | 18" PIPE FOR STORM SEWERS, SEC. M-6.8(a), AS PER PLAN | LIN. FT. | 313 |
| I-2 | 24" PIPE FOR STORM SEWERS, SEC. M-6.8(a) | LIN. FT. | 85 |
| I-2 | 24" HEAVY REINFORCED CONCRETE CULVERT PIPE FOR STORM SEWERS, AS PER PLAN | LIN. FT. | 19 |
| I-2 | 36" PIPE FOR STORM SEWERS, SEC. M-6.6(a) | LIN. FT. | 4 |
| I-5 | 12" PIPE SPECIALS FOR STORM SEWERS | EACH | 8 |
| I-8 | STANDARD No. 1 MANHOLE | EACH | 7 |
| I-8 | STANDARD No. 2 MANHOLE | EACH | 3 |
| I-8 | CATCH BASIN STANDARD Nº 2-4 MODIFIED | EACH | 1 |
| I-2 | 18" EXTRA-STRENGTH REINFORCED CONCRETE CULVERT PIPE, SEC. M-6.6(c) WITH VITRIFIED LINER FOR STORM SEWERS UNDER RAILROAD AS PER PLAN | LIN. FT. | 122 |
| S-1 | CLASS "G" CONCRETE FOR STRUCTURES | CU. YDS. | 30 |
| S-1 | CLASS "E" CONCRETE FOR STRUCTURES | CU. YDS. | 11 |
| S-24 | REMOVAL OF EXISTING STRUCTURES | LUMP | LUMP SUM |
| E-2 | EXCAVATION FOR STRUCTURES, UNCLASSIFIED | CU. YDS. | 22 |
| E-2 | EXCAVATION FOR STRUCTURES, ROCK OR SHALE | CU. YDS. | 5 |
| E-12 | PIPE REMOVED AND DISPOSED OF, (15" AND UNDER) | LIN. FT. | 40 |

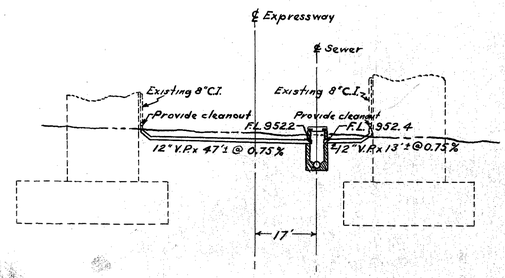
RAILROAD FORCE ACCOUNT BY:
B & O R.R - Engineering
ERIE . R.R - Engineering
AC&Y R.R - Engineering




HEADWALL AT STATION 32+05
Scale: 1"=2'-0"

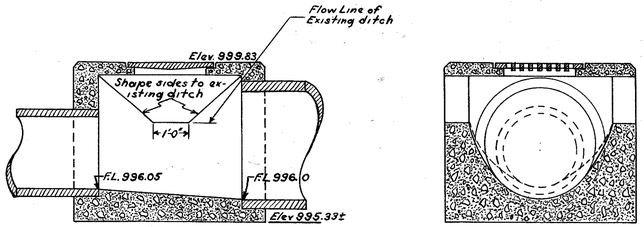



PIER 2

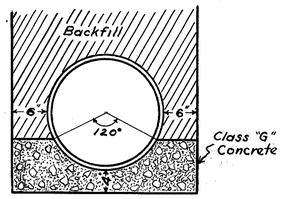



PIER 3

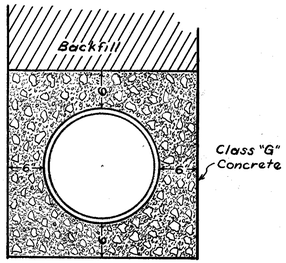
PROFILE OF DOWNSPOUT DRAINS AT PIERS
Scale: 1"=20'




STANDARD Nº 2-4 CATCH BASIN MODIFIED
Scale: 1"=2'-0"
Note: For details see State Standard Construction Drawing I-8 C.B.2-4




Section Through Rock 24" and 18" Pipe




Section Between Sta. 28+75 and Sta. 29+63

BEDDING AND ENCASING DETAILS
Scale: 1"=1'-0"

NOTE: Quantities for Class "G" Concrete shall be paid for on the basis shown in the detail. If the contractor elects to use concrete the full width of the trench he may do so at his own expense beyond the limits shown on the detail.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

# AKRON EXPRESSWAY SYSTEM
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE))
## MAIN VIADUCT DRAINAGE
MISCELLANEOUS DETAILS, GENERAL NOTES, & QUANTITIES

AKRON, SUMMIT COUNTY, OHIO

SCALE: AS SHOWN
MADE DATE
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