

# AKRON EXPRESSWAY SYSTEM

SUM-5-12.31  
SUMMIT COUNTY  
CITY OF AKRON

Additions made to this  
Sheet 6-7-50 C.A.S.

Part-2-

## PART 2 - MAIN VIADUCT SUPERSTRUCTURE

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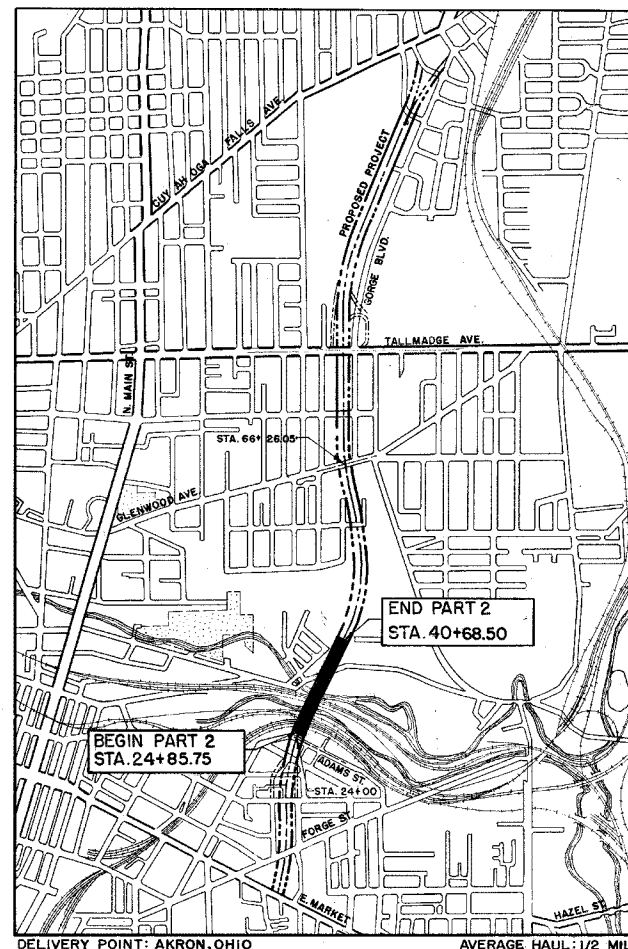
APPROVED [Signature]  
DATE 5/19/50 DIRECTOR OF PUBLIC SERVICE, CITY OF AKRON

APPROVED [Signature]  
DATE 5/19/50 CHIEF ENGINEER, A.C. & Y. RAILROAD

APPROVED [Signature]  
DATE 5/22/50 CHIEF ENGINEER, ERIE RAILROAD

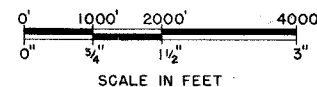
APPROVED [Signature]  
DATE 5/19/50 CHIEF ENGINEER, PENNSYLVANIA RAILROAD

APPROVED [Signature]  
DATE 5/19/50 CHIEF ENGINEER, B. & O. RAILROAD



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

### LOCATION PLAN



PORTION TO BE IMPROVED  
STATE HIGHWAYS  
OTHER HIGHWAYS

| STANDARD DRAWINGS |         |
|-------------------|---------|
| NUMBER            | DATE    |
| 1-1,2,3,4&5       | 2-20-45 |

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 [Signature]  
DATE 5/9/50 DIVISION DEPUTY DIRECTOR

APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_ CHIEF ENGINEER, BUREAU OF MAINTENANCE

APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_ CHIEF ENGINEER, BUREAU OF BRIDGES & R. R. CROSSINGS

APPROVED [Signature]  
DATE 5-10-50 CHIEF ENGINEER, BUREAU OF LOCATION & DESIGN

APPROVED [Signature]  
DATE 5-10-50 FIRST ASSISTANT DIRECTOR & CHIEF ENGINEER

APPROVED [Signature]  
DATE 5-11-50 DIRECTOR OF HIGHWAYS

### LINE DATA

BEGIN PART 2 STA. 24+85.75  
END PART 2 STA. 40+68.50  
NET LENGTH PART 2 1582.75 FT OR 0.300 MI.

NOTE:  
THIS SET OF PLANS, THE SUPERSTRUCTURE OF THE MAIN VIADUCT, COVERS ONLY PART 2 OF THIS PROJECT. PART 1, THE SUBSTRUCTURE OF THE MAIN VIADUCT, IS IN AN EARLIER CONTRACT, AND THE CONTIGUOUS HIGHWAY WORK WILL BE LET LATER.

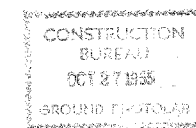
PREPARED AND RECOMMENDED BY  
HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS  
KANSAS CITY NEW YORK

[Signature]



| SUPPLEMENTAL SPECIFICATIONS |              |
|-----------------------------|--------------|
| NUMBER                      | DATE         |
| 19                          | REV. 3-20-50 |
| M-206.14                    | 7-15-49      |

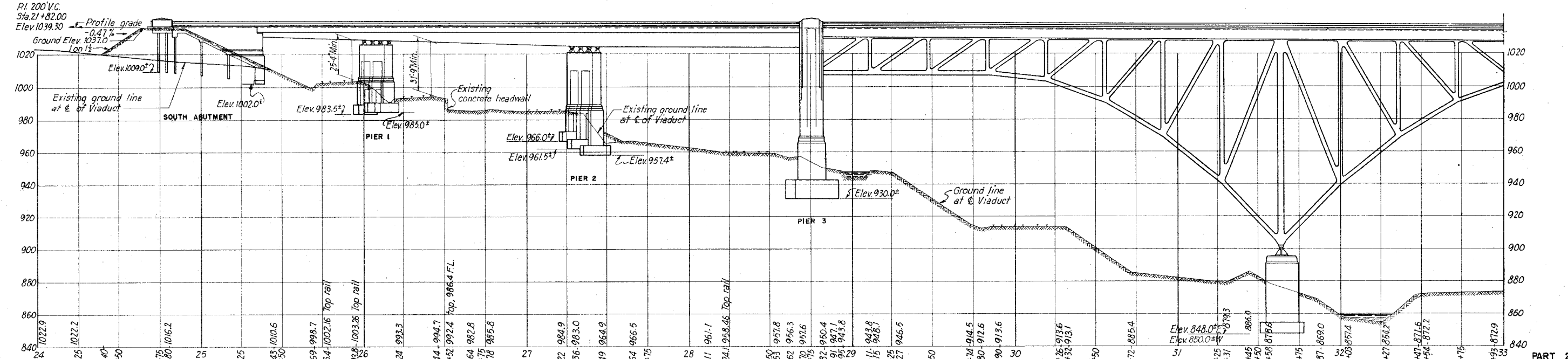
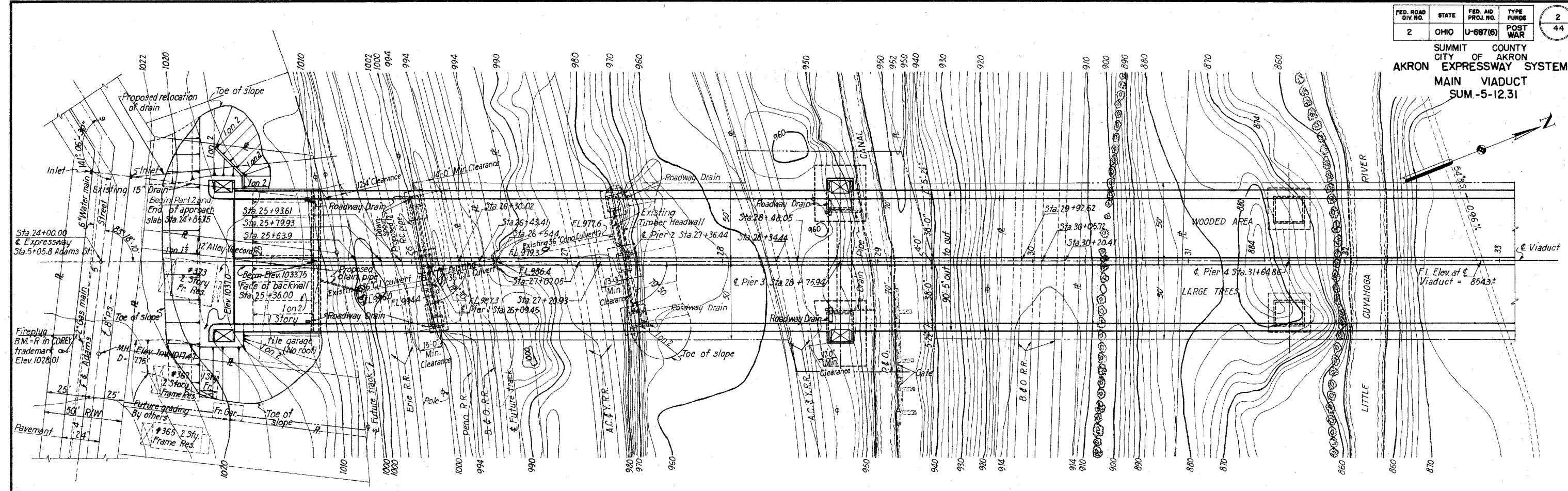
|          |                             |
|----------|-----------------------------|
| FILE NO. | SUMMIT COUNTY               |
|          | SEC. SUM-5-12.31, PART 2    |
|          | DATE OF LETTING _____, 195_ |
|          | CONTRACT NO. _____          |



|  |      |
|--|------|
| DEPARTMENT OF COMMERCE<br>BUREAU OF PUBLIC ROADS |      |
| RECOMMENDED FOR APPROVAL                         |      |
| DISTRICT ENGINEER                                | DATE |
| APPROVED   |      |
| DIVISION ENGINEER                                | DATE |

|                    |       |                    |            |    |
|--------------------|-------|--------------------|------------|----|
| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS | 2  |
| 2                  | OHIO  | U-687(6)           | POST WAR   | 44 |

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



**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 - 2" asphaltic concrete surface course.  
 Bridge Alignment - Tangent

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'  
 MADE G.M. DATE 7-12-49  
 TRCD. R.R. DATE 7-18-49  
 CHKD. R.E.M. DATE 7-20-49

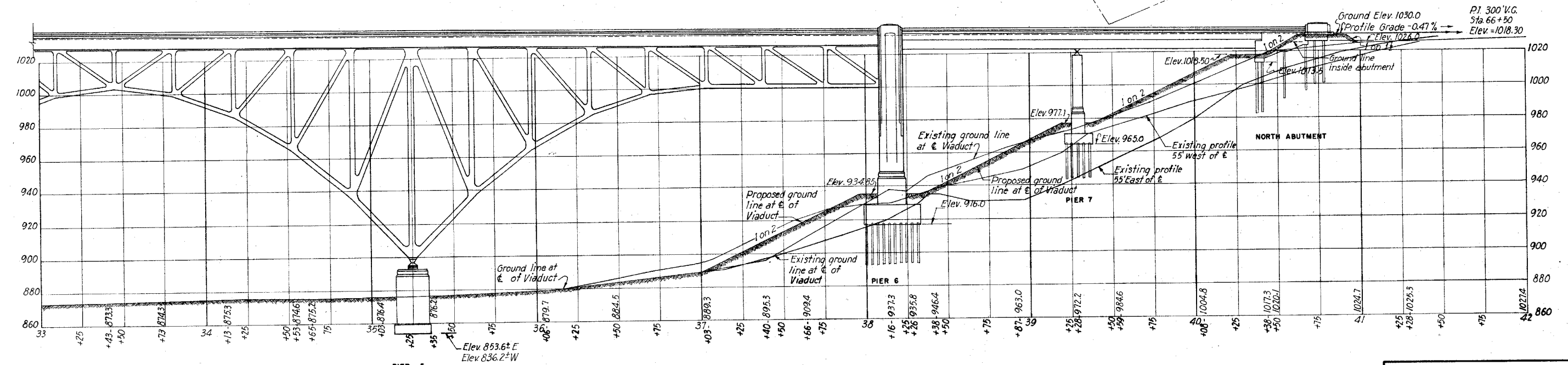
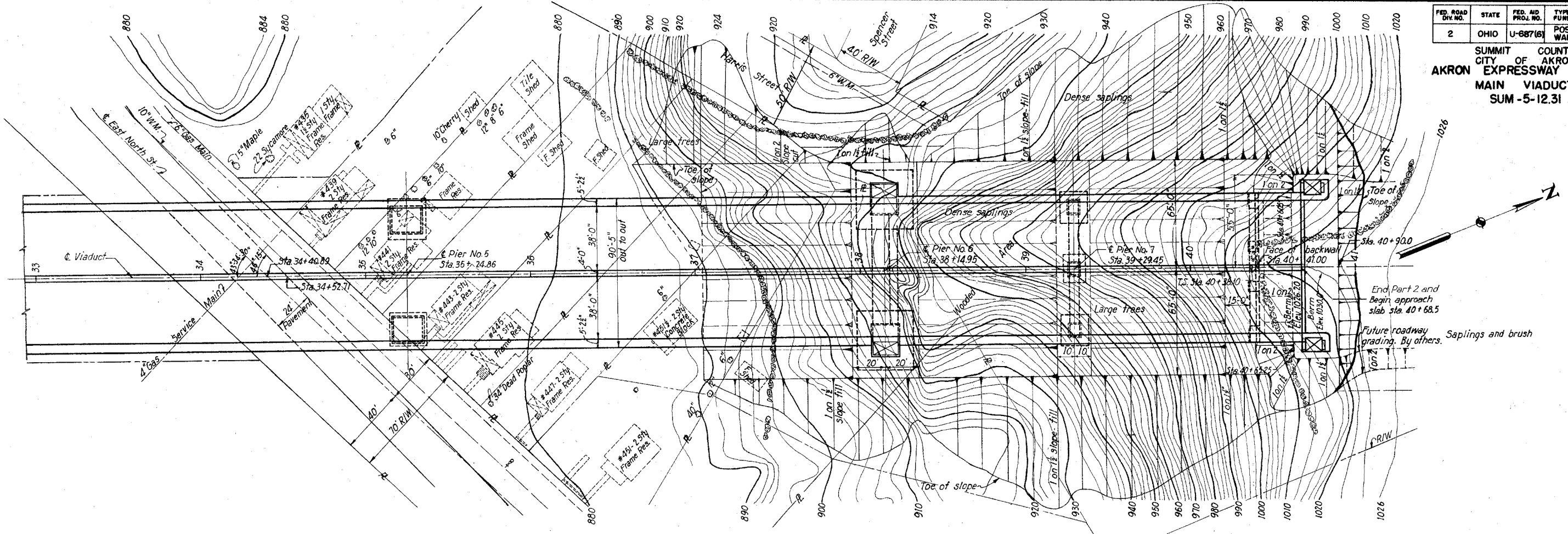
HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
 CONSULTING ENGINEERS  
 KANSAS CITY NEW YORK

766 SHEET V36

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

|   |    |
|---|----|
| 3 | 44 |
|---|----|

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



PART 2

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS

**AKRON EXPRESSWAY SYSTEM**  
(EAST MARKET STREET TO EAST GUYAHOGA FALLS AVENUE)

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

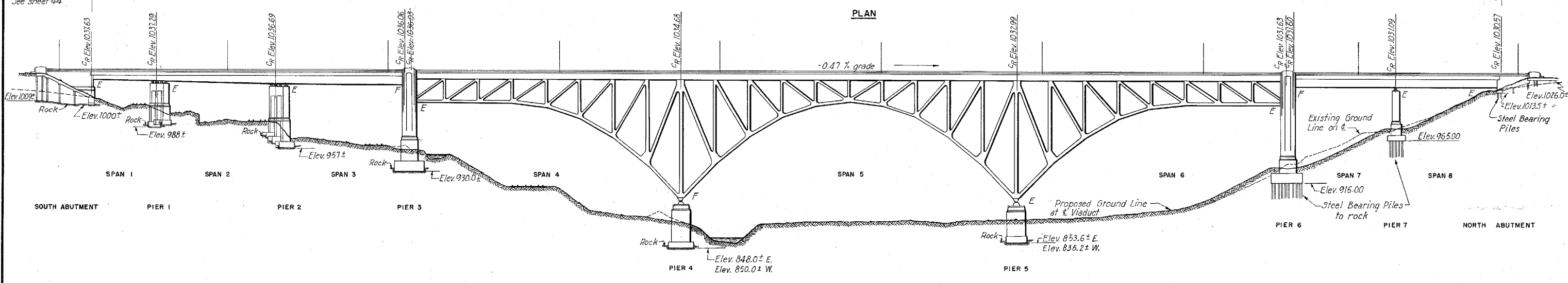
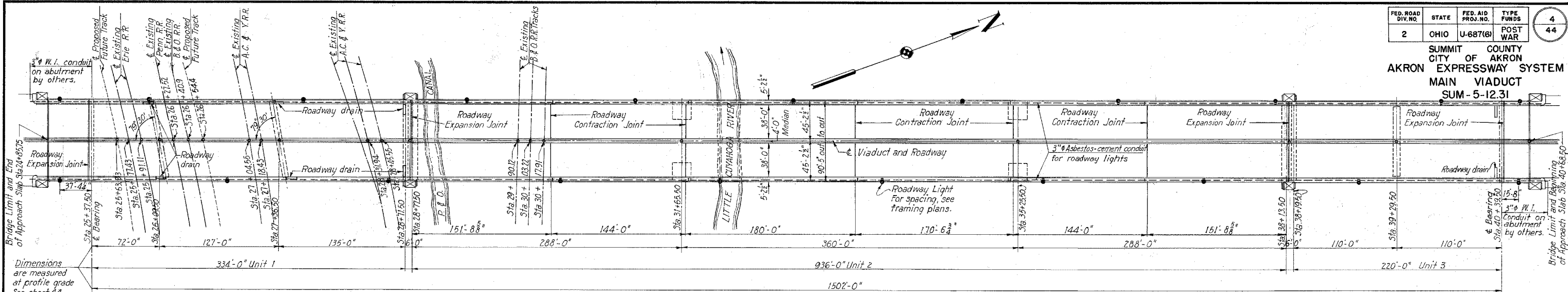
**SITE PLAN**

AKRON, SUMMIT COUNTY, OHIO

SCALE: 1" = 30'..... HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
MADE R.R.M. DATE 7.11.49 CONSULTING ENGINEERS  
TRCD G.O.P.E. DATE 7.12.49 KANSAS CITY NEW YORK  
CHKD. G.M. DATE 7.18.49 766 SHEET V37

|                    |       |                    |            |    |
|--------------------|-------|--------------------|------------|----|
| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS | 4  |
| 2                  | OHIO  | U-687(G)           | POST WAR   | 44 |

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



| ESTIMATED QUANTITIES FOR SUPERSTRUCTURE |  |          |           |           |           |          |                 |
|---|--|----------|-----------|-----------|-----------|----------|-----------------|
| Item                                    | Description  | So. Abut | Unit 1    | Unit 2    | Unit 3    | No. Abut | Total           |
| S-1                                     | Class "C" Concrete   | 5        | 678       | 1822      | 432       | 5        | Cu. Yds. 2,942  |
| S-3                                     | Type "C" Waterproofing   | 418      | 2,814     | 7,857     | 1,860     | 227      | Sq. Yds. 13,176 |
| S-4                                     | Reinforcing Steel  |          | 194,780   | 549,780   | 127,430   | 460*     | Lbs. 872,450    |
| S-7                                     | Structural Steel +   | 15,200   | 1,650,000 | 7,575,400 | 1,032,500 | 14,500   | Lbs. 10,287,600 |
| S-8                                     | Field Painting of Structural Steel +   |          |           |           |           |          | Lbs. 10,287,600 |
| S-14                                    | Handrail, Steel  | 102      | 668       | 1,852     | 440       | 58       | Lin. Ft. 3,120  |
| S-25                                    | Roadway Lighting Equipment   |          |           |           |           |          | Lump Lump Sum   |
| S-26                                    | Name Plates, Bronze  |          |           |           |           |          | Lump Lump Sum   |
| S-29                                    | Roadway Drains *   |          |           |           |           |          | Lump Lump Sum   |
| S-29                                    | Sub-drainage for Wearing Surface Course on Abutments                           | 98.5     |           |           |           | 51       | Lin. Ft. 149.5  |
| T50                                     | 2 1/2" Hot-mixed, Hot-laid Asphaltic Concrete Surface Course, Type "B" (60-70) | 412      | 2,785     | 7,753     | 1,841     | 224      | Sq. Yds. 13,015 |
| SS-19                                   | White Concrete Reflecting Median Strip   | 100      | 672       | 1,880     | 444       | 54       | Lin. Ft. 3,150  |
| S-25                                    | Electrical Grounds for Superstructure Metalwork                                |          |           |           |           |          | Lump Lump Sum   |

+ Includes all metals listed under Superstructure Metalwork on sheet 5 of this set of plans.  
\* Includes roadway inlets, gratings, downspouts, fastenings and accessories shown on these plans.  
⊕ Replacement bars.

Note: Cr Elev. are crown of roadway elevations along profile grade. See sheet 10.

PART 2

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 AND ELEVATION  
AND ESTIMATED QUANTITIES**

AKRON, SUMMIT COUNTY, OHIO

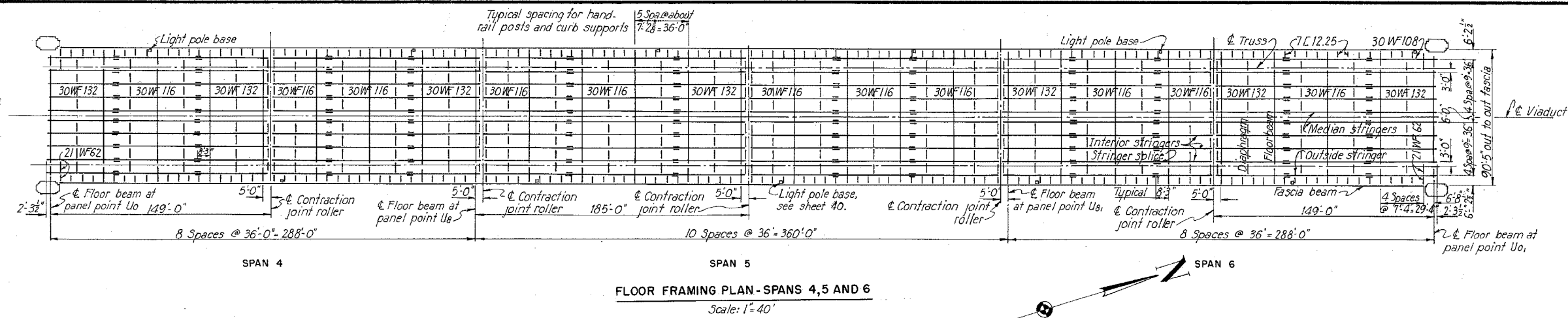
SCALE 1" = 20'..... HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
MADE AND DATE 5-5-49. CONSULTING ENGINEERS  
TRCD. B.B. DATE 10-23-49. KANSAS CITY NEW YORK  
CHKD. A.C.A. DATE 6-23-49. 766 SHEET V38



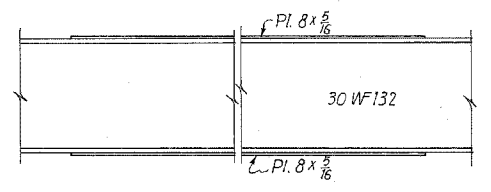
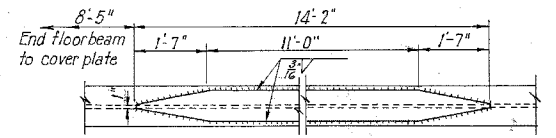
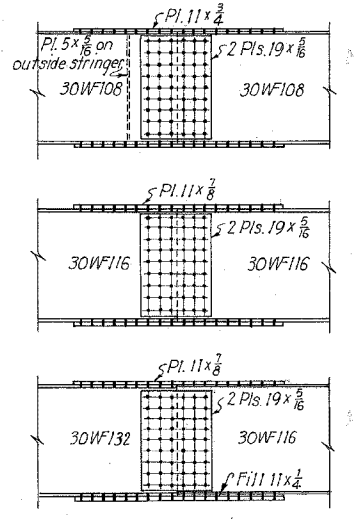
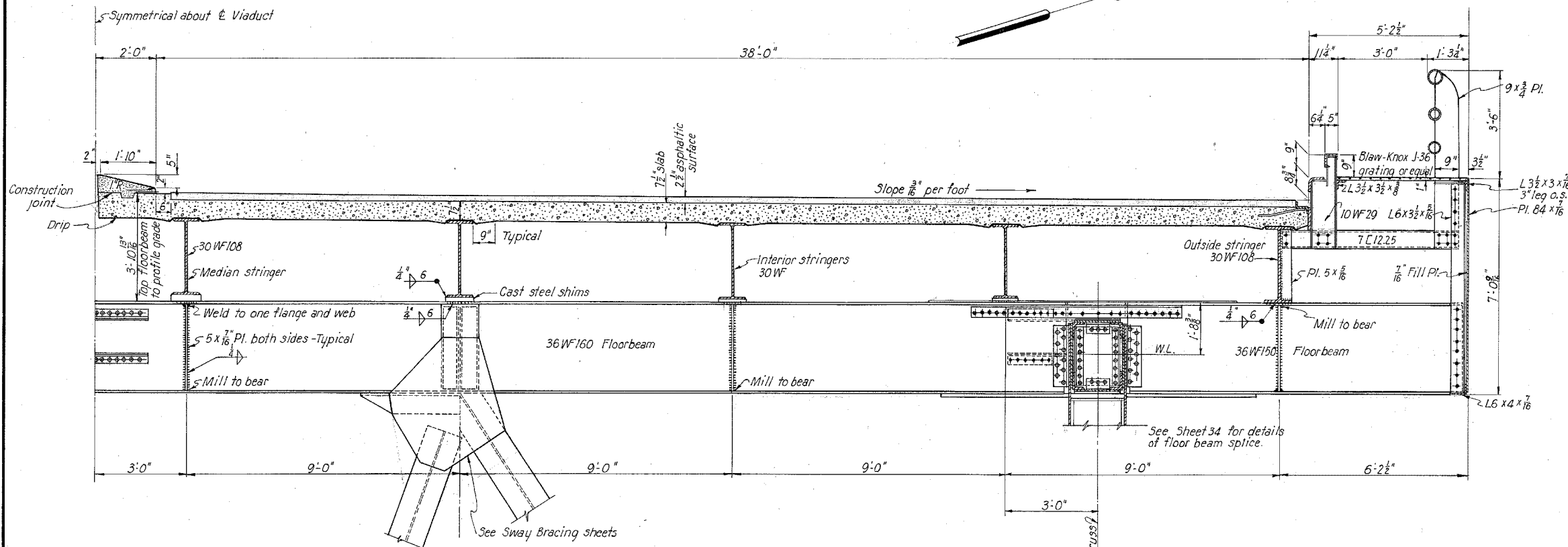


|                    |       |                    |            |    |
|--------------------|-------|--------------------|------------|----|
| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS | 28 |
| 2                  | OHIO  | U-6876             | POST WAR   | 44 |

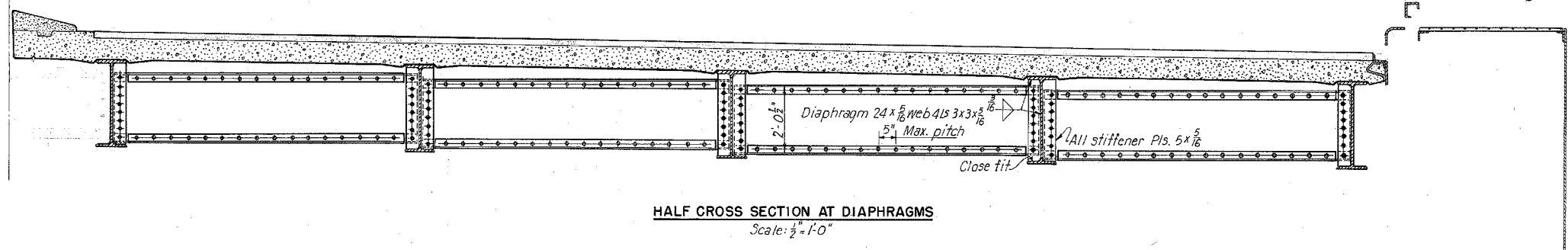
SUMMIT COUNTY  
CITY OF AKRON  
AKRON EXPRESSWAY SYSTEM  
MAIN VIADUCT  
SUM-5-12.31



All interior stringers are similar. Outside and median stringers are 30WF108. Contraction joints to be in slab, stringers, curb, handrail and walk. Fascia beam to be continuous through joints. Splice fascia at each floor beam. For splice details, see sheet 40. All interior floor beams are 36WF160. Two end floor beams 36WF150. Cantilever portions of all floor beams are 36WF150. See sheet 29 for details of framing at Piers 3 and 6. See sheet 15 for details of median strip.



Note: Interior stringers to have cover plates in end panels only.



PART 2

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS

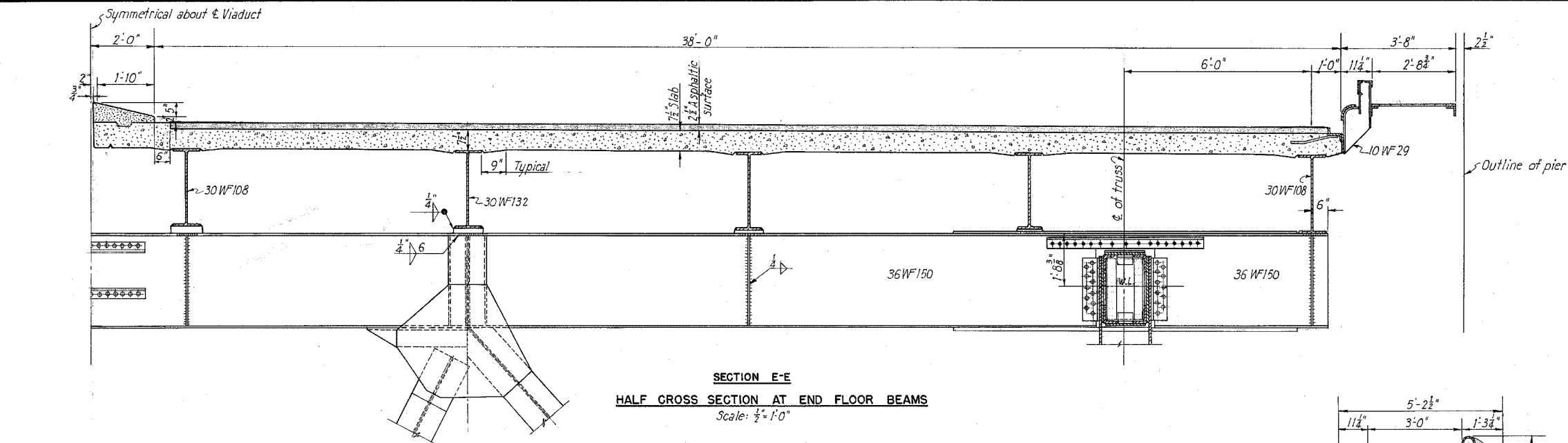
**AKRON EXPRESSWAY SYSTEM**  
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)  
**MAIN VIADUCT**  
BRIDGE NO SU-5-12.4  
**ROADWAY CROSS SECTIONS AND FRAMING PLAN-UNIT 2**

AKRON, SUMMIT COUNTY, OHIO

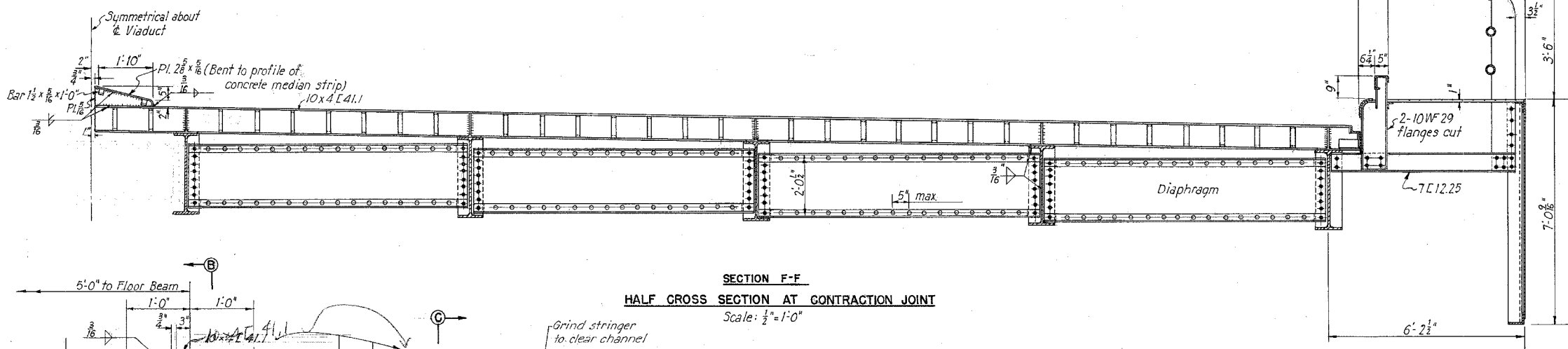
SCALE: 1/4" = 1'-0" HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
MADE M.B. DATE 6-22-49 CONSULTING ENGINEERS  
TRCD. R.R. DATE 8-1-49 KANSAS CITY NEW YORK  
CHKD. A.C.A. DATE 7-27-49 766 SHEET V62

| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS | POST WAR | 29 |
|--------------------|-------|--------------------|------------|----------|----|
| 2                  | OHIO  | U-687(6)           |            |          | 44 |

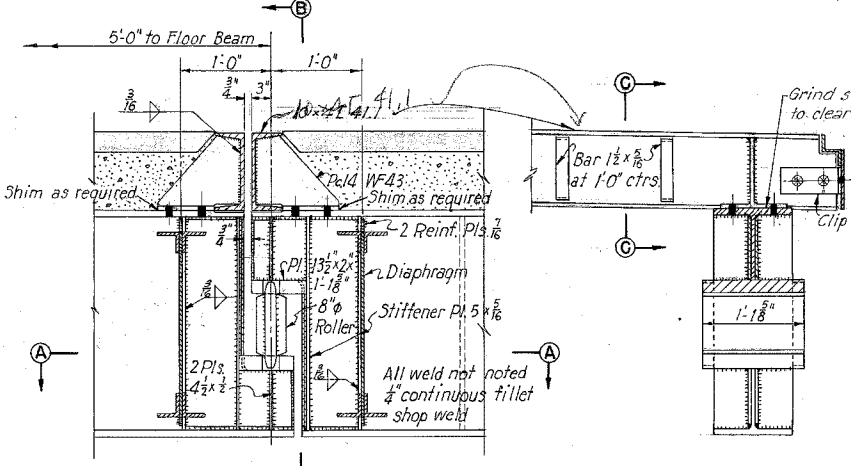
SUMMIT COUNTY  
CITY OF AKRON  
AKRON EXPRESSWAY SYSTEM  
MAIN VIADUCT  
SUM-5-12.31



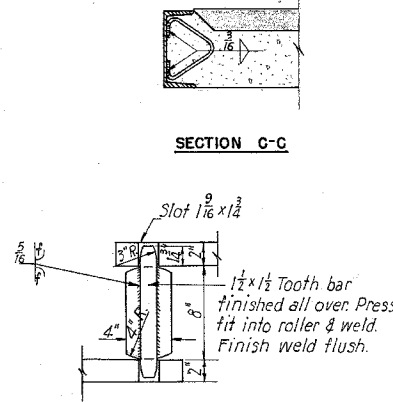
**SECTION E-E**  
**HALF CROSS SECTION AT END FLOOR BEAMS**  
Scale: 1/2"=1'-0"



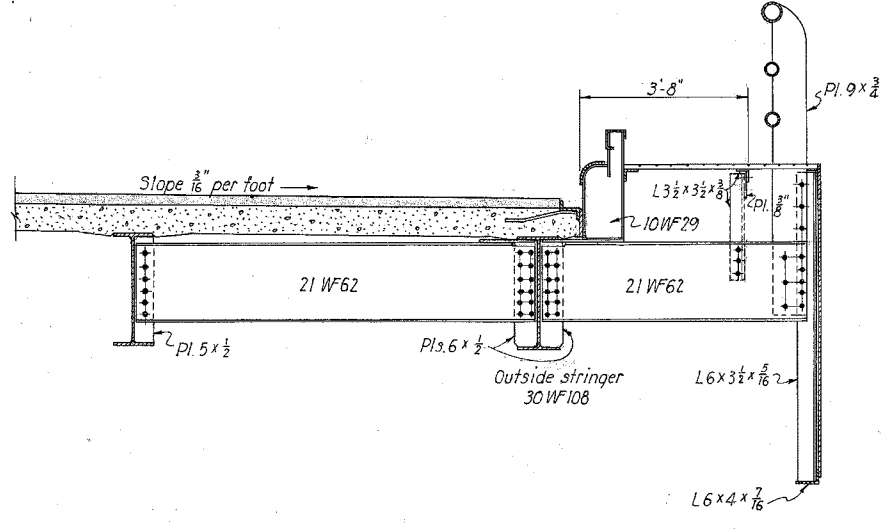
**SECTION F-F**  
**HALF CROSS SECTION AT CONTRACTION JOINT**  
Scale: 1/2"=1'-0"



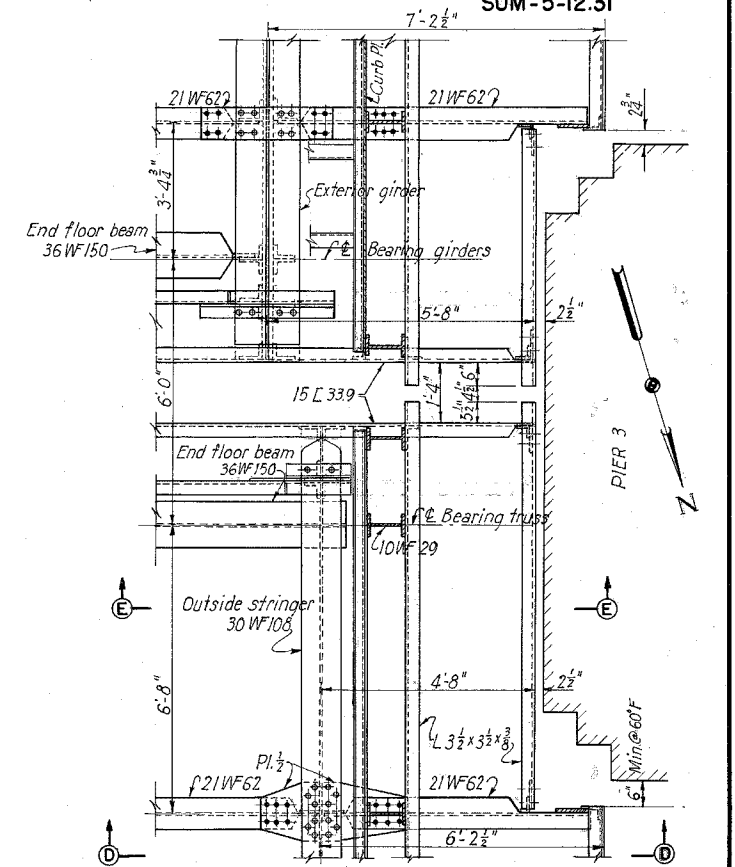
**SECTION B-B**



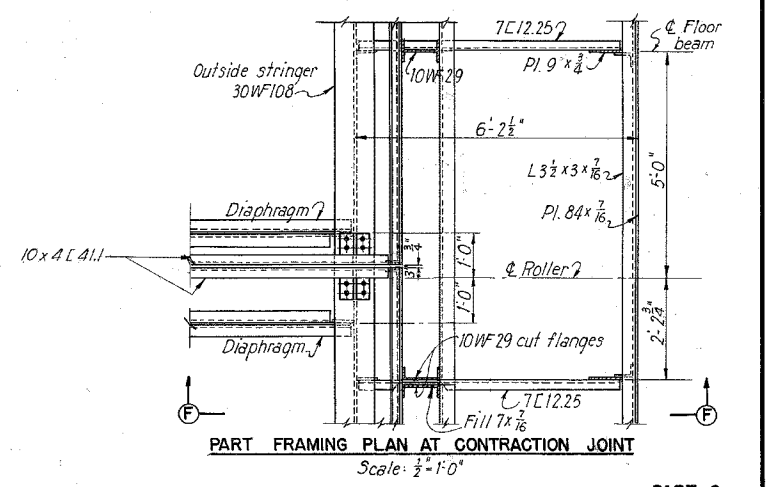
**SIDE BAR**  
Scale: 1 1/2"=1'-0"



**SECTION D-D**  
**PART CROSS SECTION AT END SIDEWALK SUPPORT**  
Scale: 1/2"=1'-0"



**PART FRAMING PLAN AT PIER 3**  
Scale: 1/2"=1'-0"  
Framing at pier 6 similar



**PART FRAMING PLAN AT CONTRACTION JOINT**  
Scale: 1/2"=1'-0"

Note: Outside stringer shown. Joint in other stringers to be similar. Material in rollers shall be alloy steel forgings, A.S.T.M. designation A-238 class C. Material in 2" bearing plates and side bars shall be structural nickel steel, A.S.T.M. designation A8.

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS

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

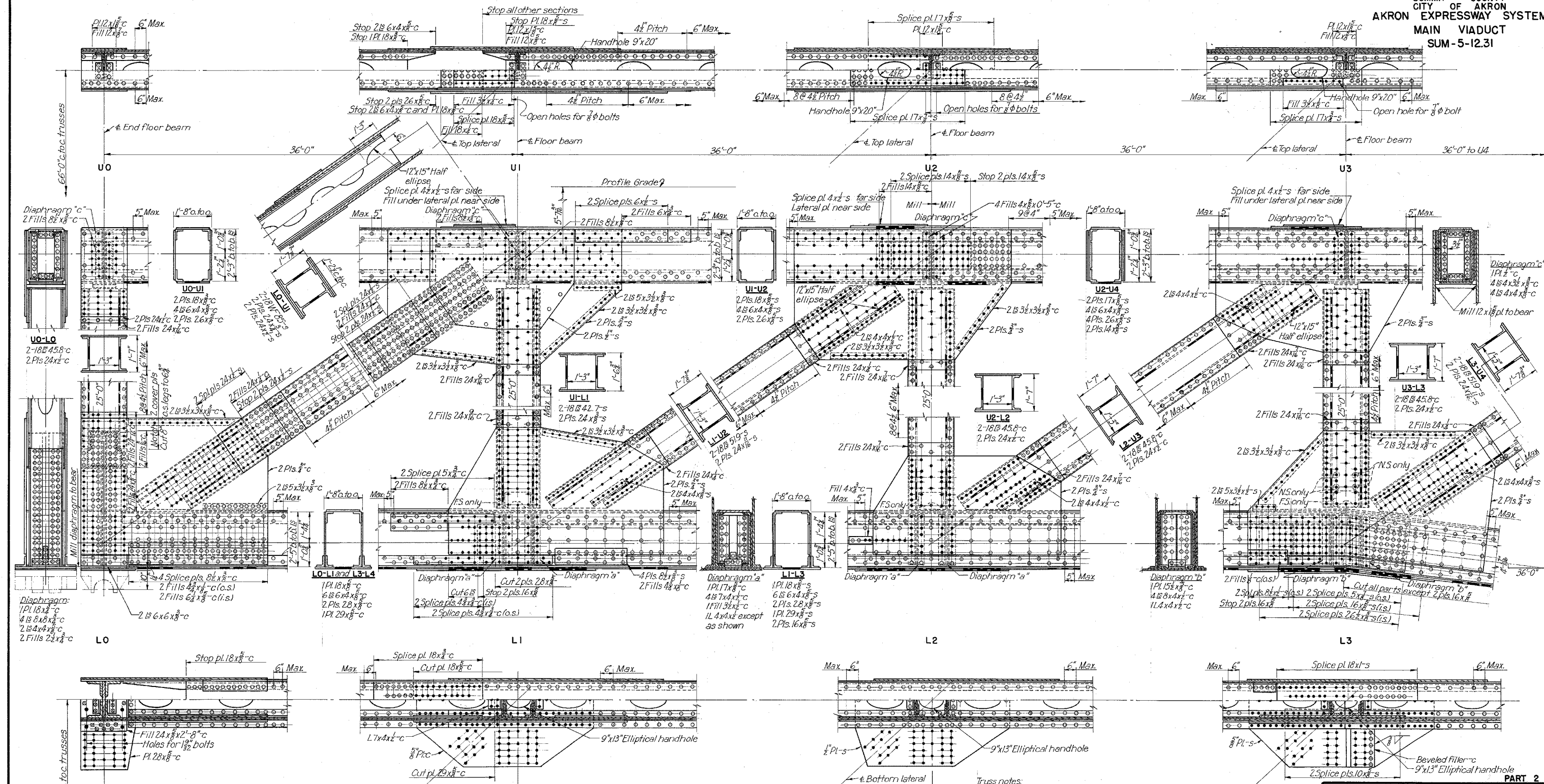
**ROADWAY CROSS SECTIONS-UNIT 2**

AKRON, SUMMIT COUNTY, OHIO

SCALE: 1/2"=1'-0" HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
MADE 1.6.49 DATE 7-4-49 CONSULTING ENGINEERS  
TRGD:R.S. DATE 8-15-49 KANSAS CITY NEW YORK  
CHKD: A.C.A. DATE 7-27-49 766 SHEET V63

|                    |       |                    |            |    |
|--------------------|-------|--------------------|------------|----|
| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS | 30 |
| 2                  | OHIO  | U-687(6)           | POST WAR   | 44 |

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



Truss notes:  
Material marked "s" shall be silicon steel and that marked "c" shall be copper-bearing carbon steel.  
For truss bracing, floor system, and other related details see sheets 34 to 36.  
Handholes in bottom cover plates of chords shall be elliptical 9"x20", except where shown otherwise in bottom chord, and shall be spaced about 3'-6" on centers.  
Handholes in webs of verticals and diagonals shall be elliptical 6"x15", spaced about 3'-0" on centers, and shall be staggered in adjoining webs except at the ends of members as shown.  
For details of shoes at L0 see sheet 32.

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS

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

**TRUSS DETAILS PANELS L TO 3**

AKRON, OHIO  
SUMMIT COUNTY, OHIO

SCALE: 3/8" = 1'-0"  
DATE: 12-16-49  
HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS  
KANSAS CITY, MO.  
NEW YORK, N.Y.

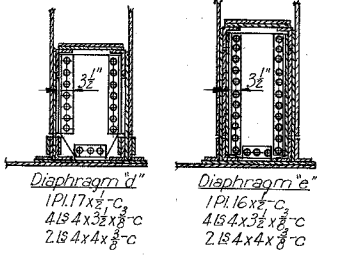
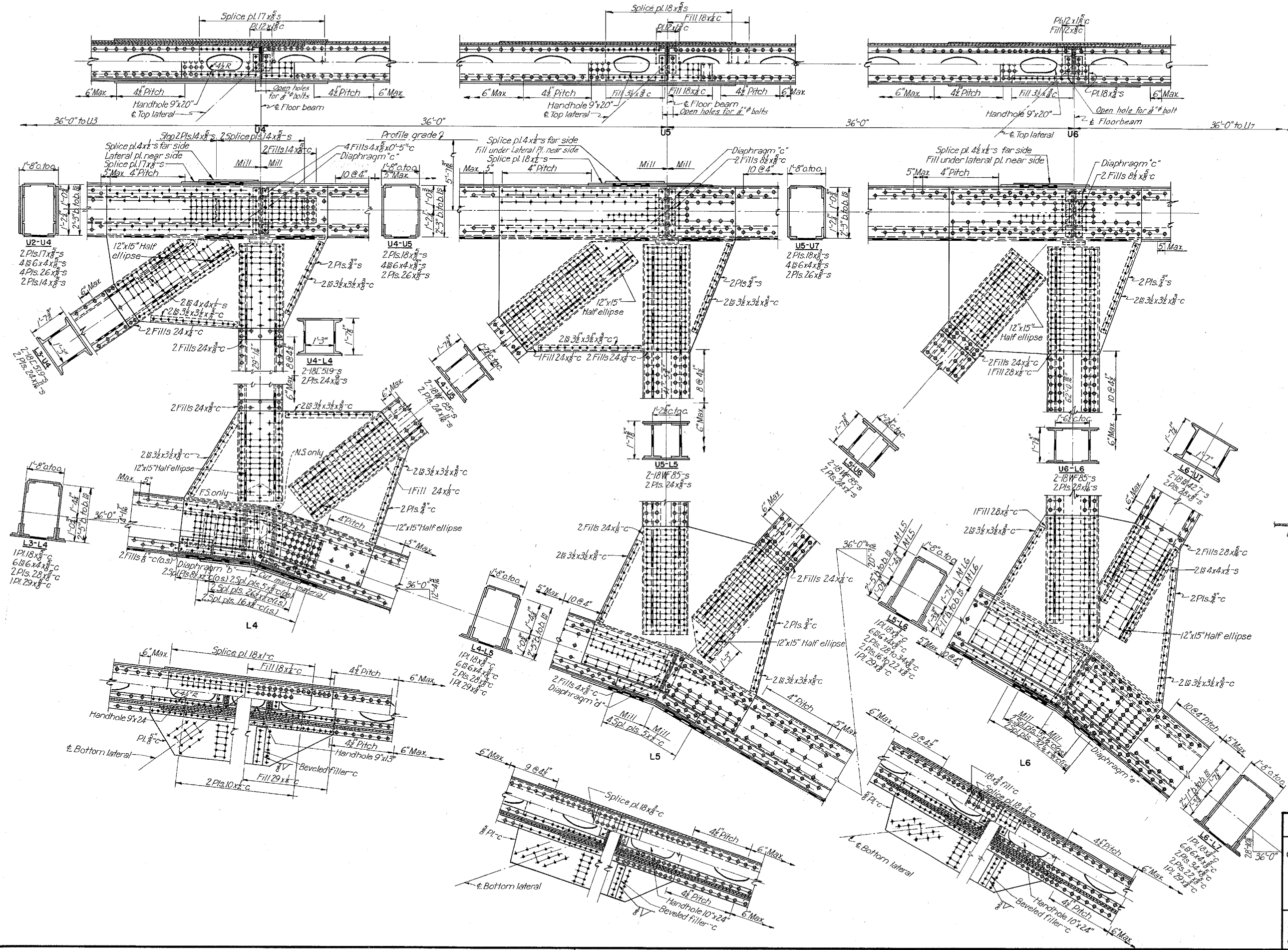
766 SHEET V64

PART 2



|                    |       |                    |            |    |
|--------------------|-------|--------------------|------------|----|
| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS | 31 |
| 2                  | OHIO  | U-687(6)           | POST WAR   | 44 |

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



For truss notes see sheet 30.  
For diaphragm 'a', 'b', and 'c' see sheet 30.

PART 2

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS

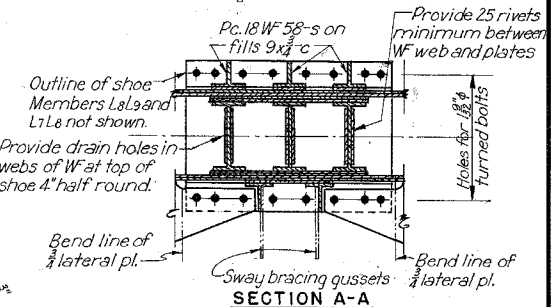
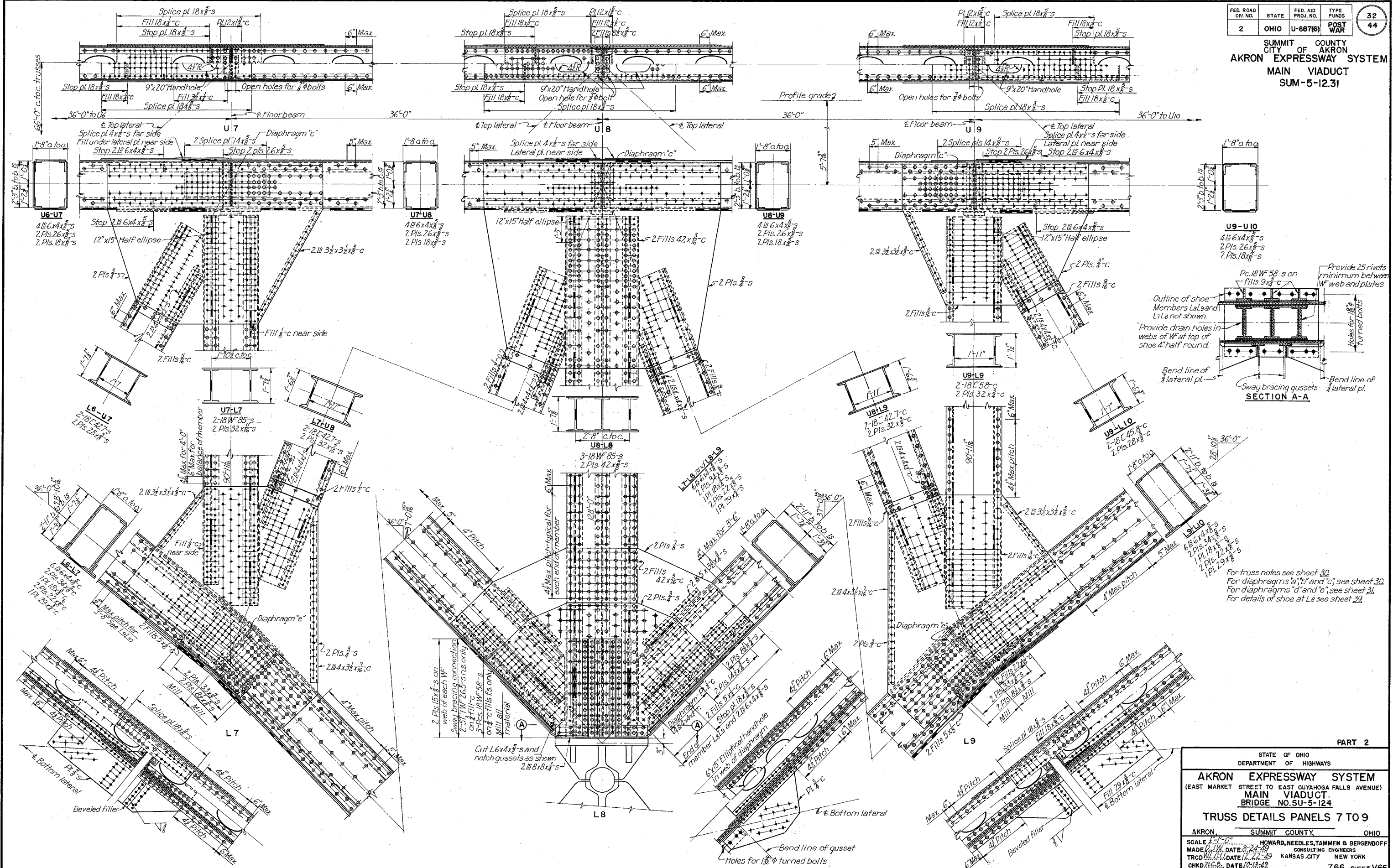
**AKRON EXPRESSWAY SYSTEM**  
(EAST MARKET STREET TO EAST CUYAHOGA FALLS AVENUE)  
**MAIN VIADUCT**  
BRIDGE NO. SU-5-12.4

**TRUSS DETAILS PANELS 4 TO 6**

AKRON, SUMMIT COUNTY, OHIO

SCALE: 3/4" = 1'-0" HOWARD, NEEDLES, TAMMEN & BERGENOFF  
MADE D.M.D. DATE 8-30-49 CONSULTING ENGINEERS  
TRCD W.L.C. DATE 12-14-49 KANSAS CITY NEW YORK  
CHKD R.C.A. DATE 10-24-49 766 SHEET V65

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



For truss notes see sheet 30  
For diaphragms 'a', 'b' and 'c', see sheet 30  
For diaphragms 'd' and 'e', see sheet 31  
For details of shoe at L8 see sheet 32

PART 2

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS

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

**TRUSS DETAILS PANELS 7 TO 9**

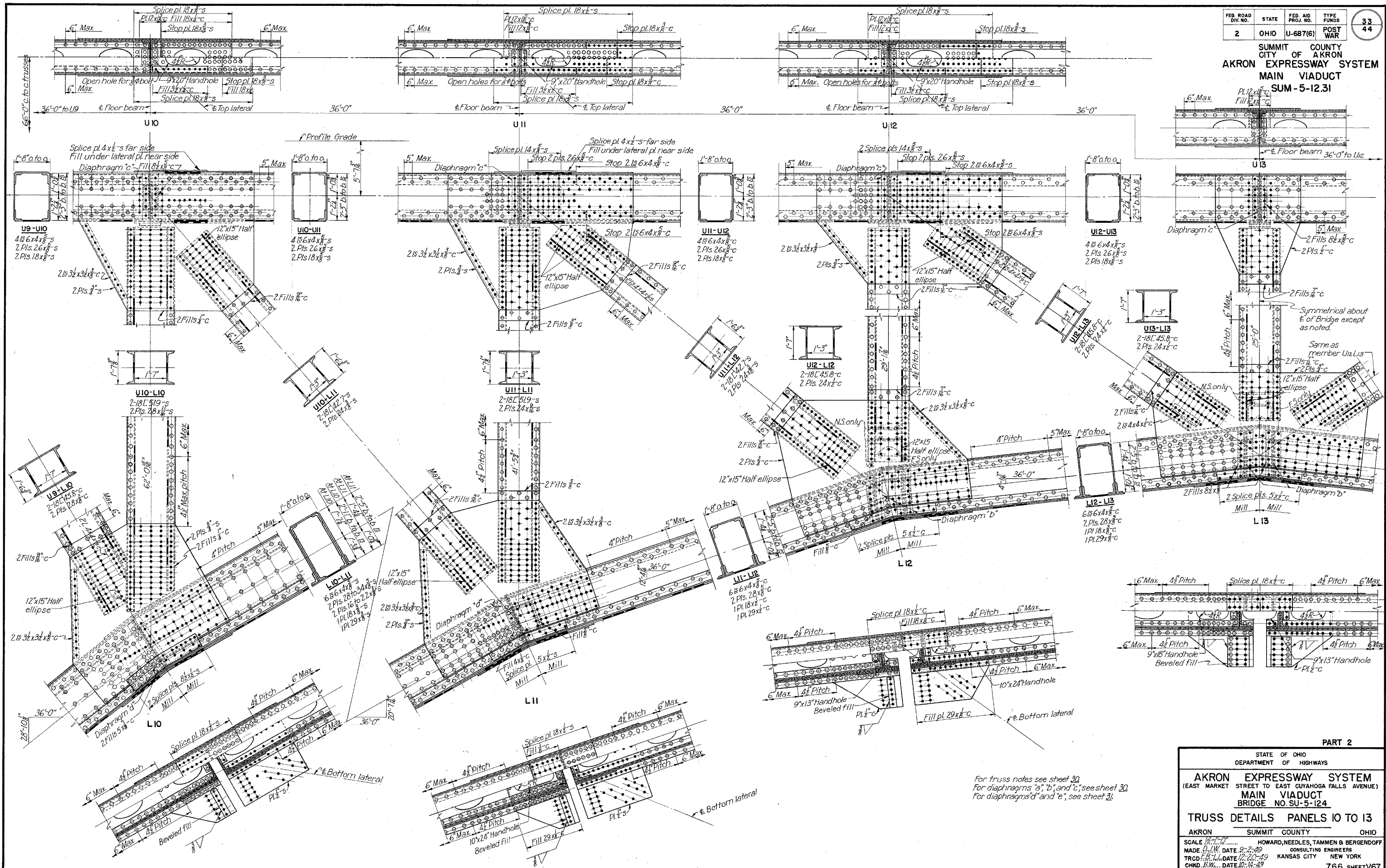
AKRON SUMMIT COUNTY OHIO

SCALE 1/4" = 1'-0"  
MADE IN DATE 8-24-49  
TRCD IN DATE 10-27-49  
CHKD. IN DATE 10-13-49

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

766 SHEET V66

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



For truss notes see sheet 30  
 For diaphragms 'a', 'b', and 'c', see sheet 30  
 For diaphragms 'd' and 'e', see sheet 31

**PART 2**

STATE OF OHIO  
 DEPARTMENT OF HIGHWAYS

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

**TRUSS DETAILS PANELS 10 TO 13**

AKRON SUMMIT COUNTY OHIO

SCALE: 1/2" = 1'-0"  
 MADE D.W. DATE 2-2-49  
 TRCD E.B.L. DATE 12-20-49  
 CHKD H.W. DATE 11-14-49

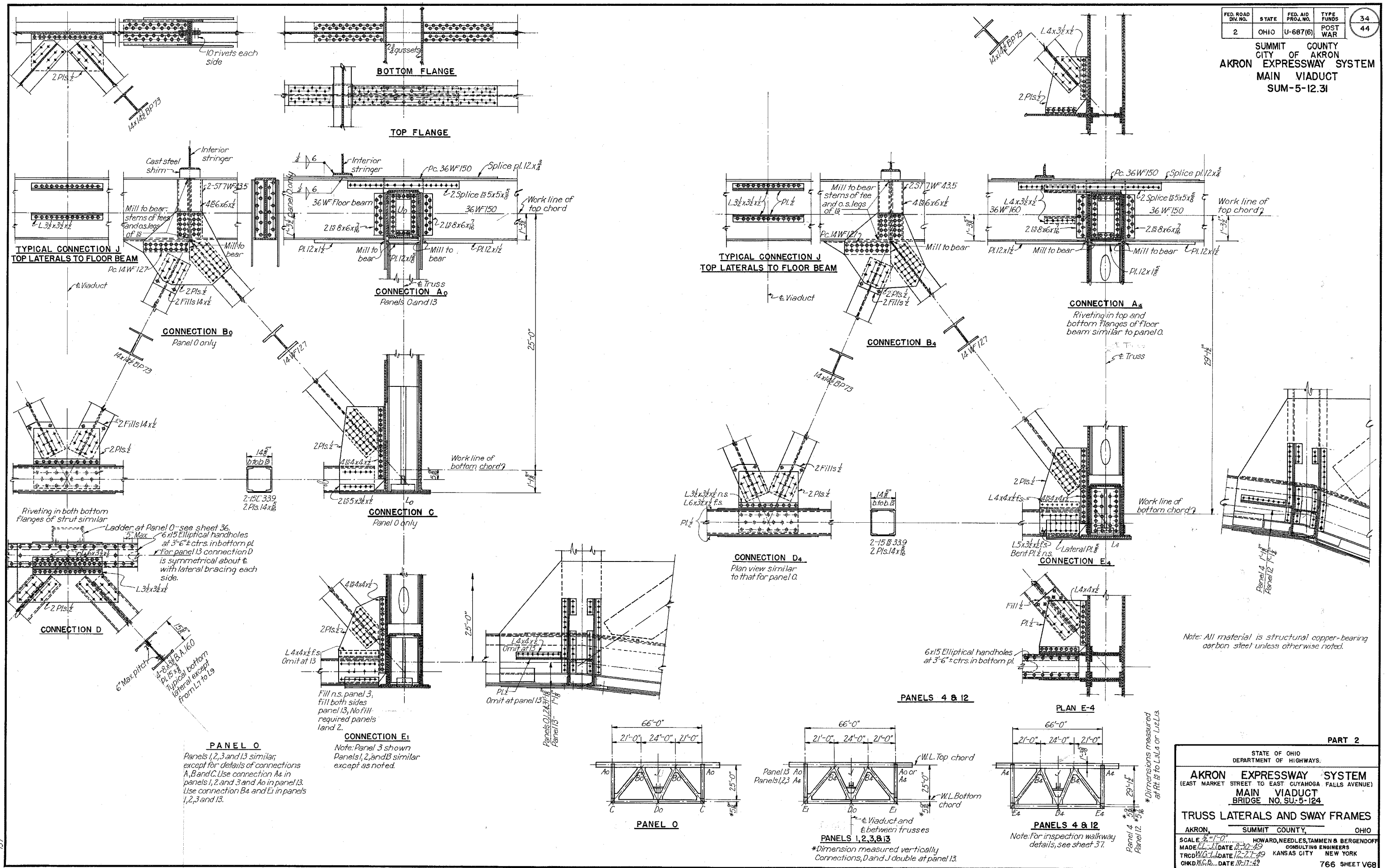
HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
 CONSULTING ENGINEERS  
 KANSAS CITY NEW YORK

766 SHEET V67



|                    |       |                    |            |    |
|--------------------|-------|--------------------|------------|----|
| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS | 34 |
| 2                  | OHIO  | U-687(6)           | POST WAR   | 44 |

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



**PART 2**

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS

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

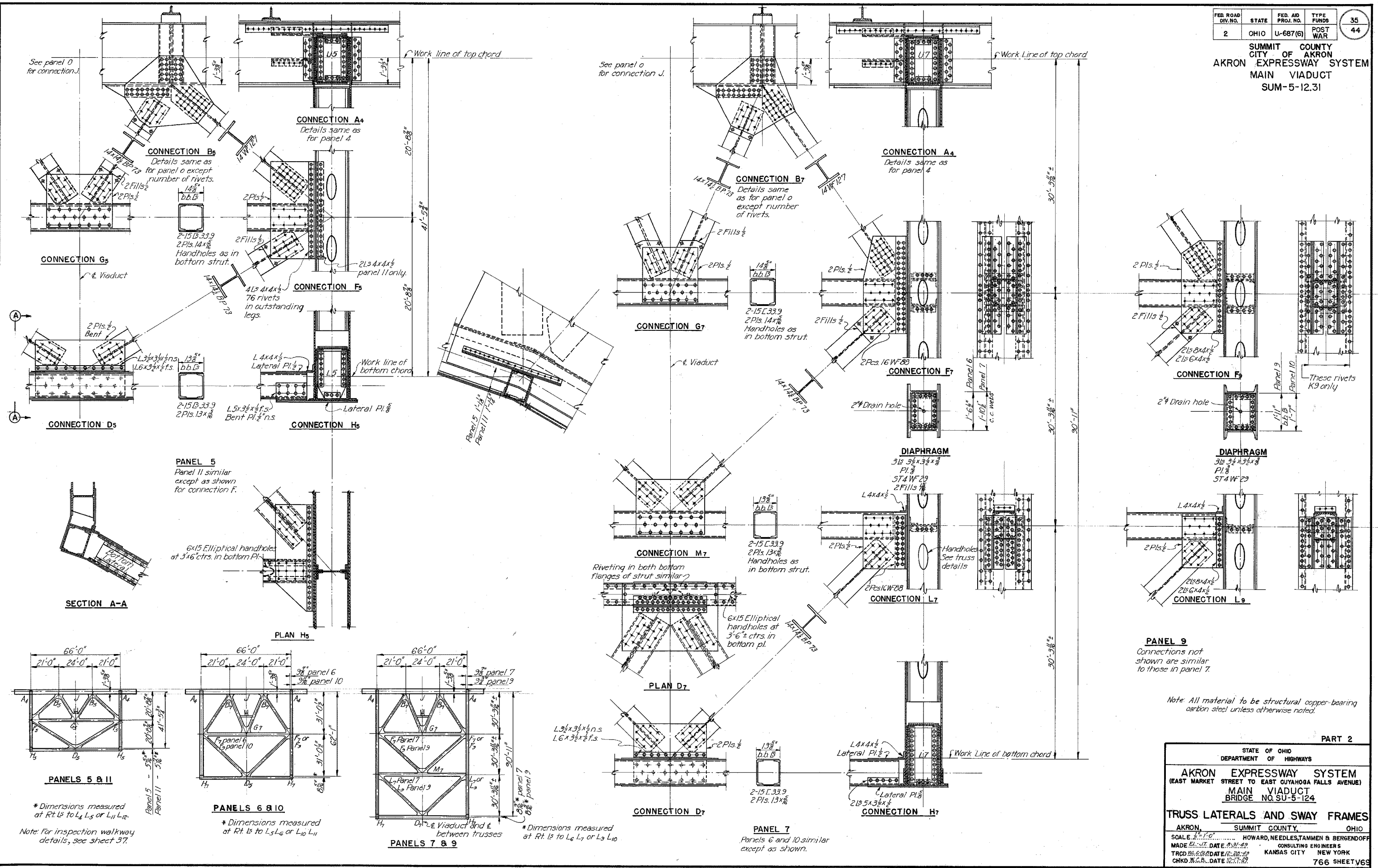
**TRUSS LATERALS AND SWAY FRAMES**

AKRON, SUMMIT COUNTY, OHIO

SCALE: 3/8" = 1'-0" HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
MADE IN U.S.A. DATE 8-20-49 CONSULTING ENGINEERS  
TRCD W.C. DATE 12-27-49 KANSAS CITY NEW YORK  
CHKD. W.C. DATE 10-17-49 766 SHEET V68



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



\* Dimensions measured at Rt. L<sub>5</sub> to L<sub>4</sub>, L<sub>5</sub> or L<sub>11</sub>, L<sub>12</sub>.

\* Dimensions measured at Rt. L<sub>5</sub> to L<sub>5</sub>, L<sub>6</sub> or L<sub>10</sub>, L<sub>11</sub>

\* Dimensions measured at Rt. L<sub>5</sub> to L<sub>6</sub>, L<sub>7</sub> or L<sub>3</sub>, L<sub>10</sub>

PART 2

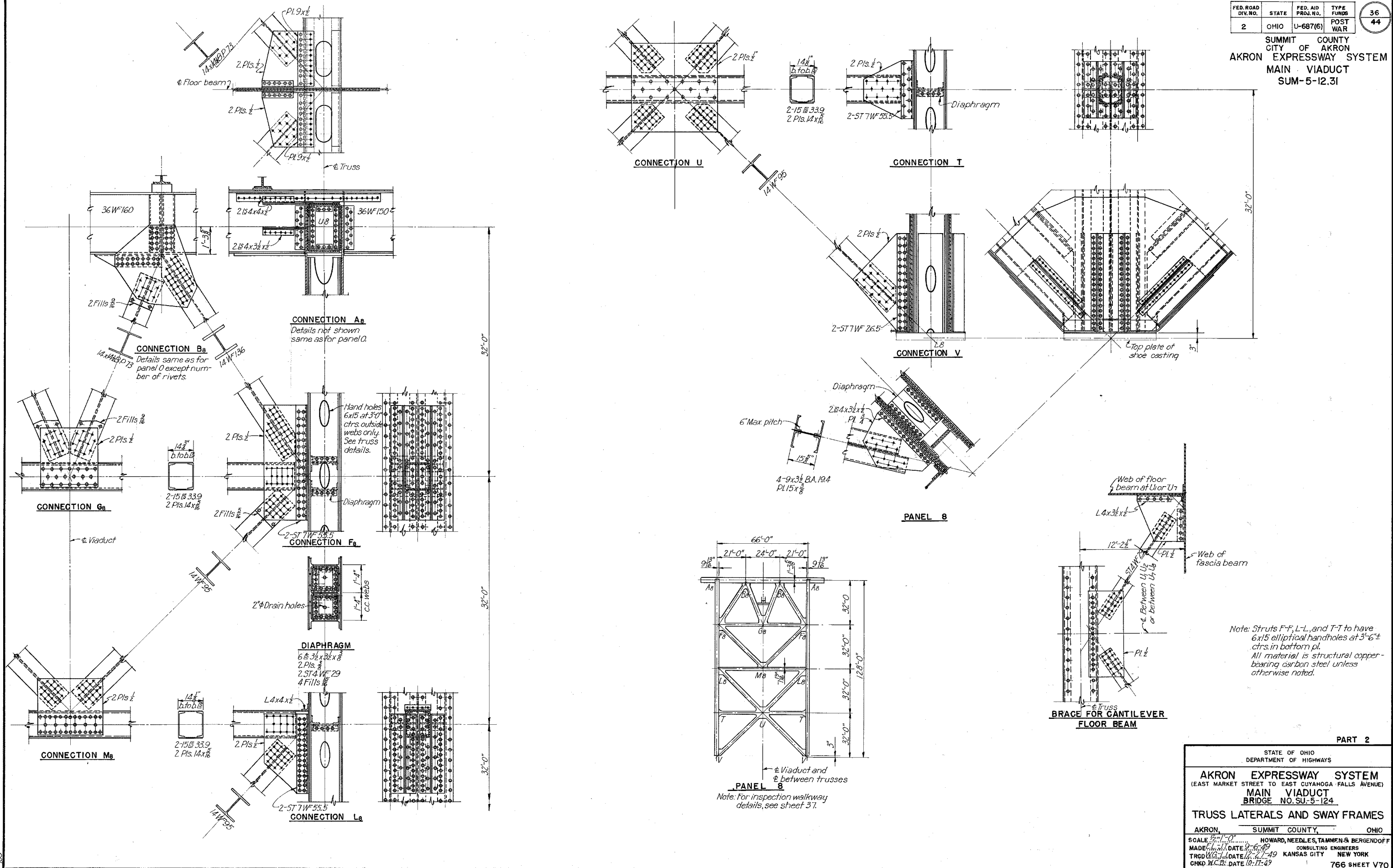
STATE OF OHIO  
DEPARTMENT OF HIGHWAYS

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

**TRUSS LATERALS AND SWAY FRAMES**

AKRON, SUMMIT COUNTY, OHIO

SCALE: 1/4" = 1'-0"      HOWARD, NEEDLES, TAMMEN & BERGENOFF  
 MADE BY: DATE: 8-21-49      CONSULTING ENGINEERS  
 TRCD: DATE: 10-20-49      KANSAS CITY      NEW YORK  
 CHKD. DATE: 10-27-49      766 SHEET V6S



Note: Struts F-F, L-L, and T-T to have 6x15 elliptical handholes at 3'-6"± ctrs. in bottom pl.  
All material is structural copper-bearing carbon steel unless otherwise noted.

PART 2

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS

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

**TRUSS LATERALS AND SWAY FRAMES**

AKRON, SUMMIT COUNTY, OHIO

SCALE: 1/2" = 1'-0"  
MADE BY: DATE: 12-6-49  
TRGD BY: DATE: 12-7-49  
CHKD BY: DATE: 10-17-49

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

766 SHEET V70

UNIT 2 - TRUSS STRESS IN KIPS. Table with columns for Member, Gravity Loads (D.L., L.L., Imp.), 100% Overload, Reversal, Total, 50% T.W., Total Col. 2+10, 50% L.W., Total Col. 2+12, Tractive, 30% T.W., 50% L.W., Total Col. 6+14+16, 30% T.W., 50% L.W., Total Col. 6+14+17, Design for Col. Stress, Area Ag, An, Unit stress in lbs./sq.in. fc, ft, fb, Total, Allow Unit Stress #/g., and 30. Shape.

UNIT 1 - GIRDERS. Table with columns for Girder and Load, Reactions and shears in kips (So. Abut, Pier 1, Pier 2, Pier 3, Span 1, Pier 1, Span 2, Pier 2, Span 3), Moments in foot kips (+M, -M), and Reactions and shears in kips (Pier 6, Pier 7, Moment in ft. kips).

DEAD LOAD PANEL CONCENTRATIONS PER TRUSS IN KIPS. Table with columns for Panel Point, W/Lin.Ft., and values for Roadway Concrete, Handrail/Curbs and Sidewalk, Stringers and Fascia Beam, Floorbeam, Bottom Laterals, Top Laterals, Sway Frames, Truss, Wearing Surface, and Miscellaneous.

\* Where live load and dead load stresses are of opposite sign, only 70% of the dead load stress is considered as effective in counteracting the live load stress.

TRUSS REACTIONS IN KIPS (FOR ONE TRUSS). Table with columns for Shoe Location, Vertical Loads (D.L., L.L., Imp., S.W., Total), Longitudinal Loads (30% T.W., 50% T.W., Max. Raf. 1.75 Nor., Max. Raf. 1.75 Nor.), and Transverse Loads (30% T.W., 50% T.W., Temp., 30% T.W.+50% T.W.+Temp.).

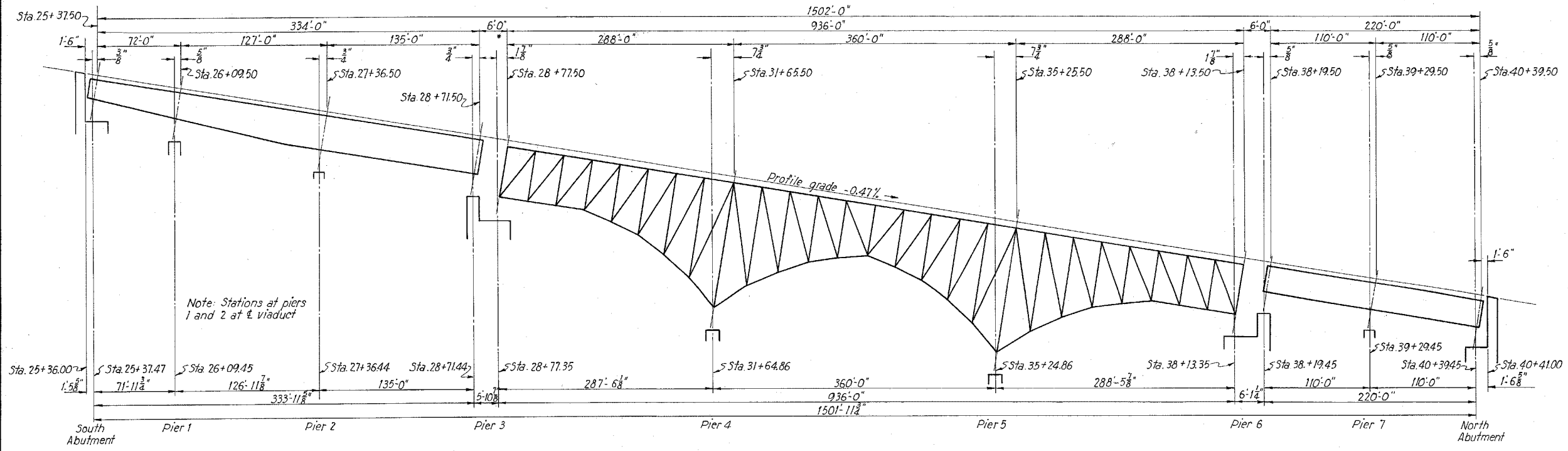
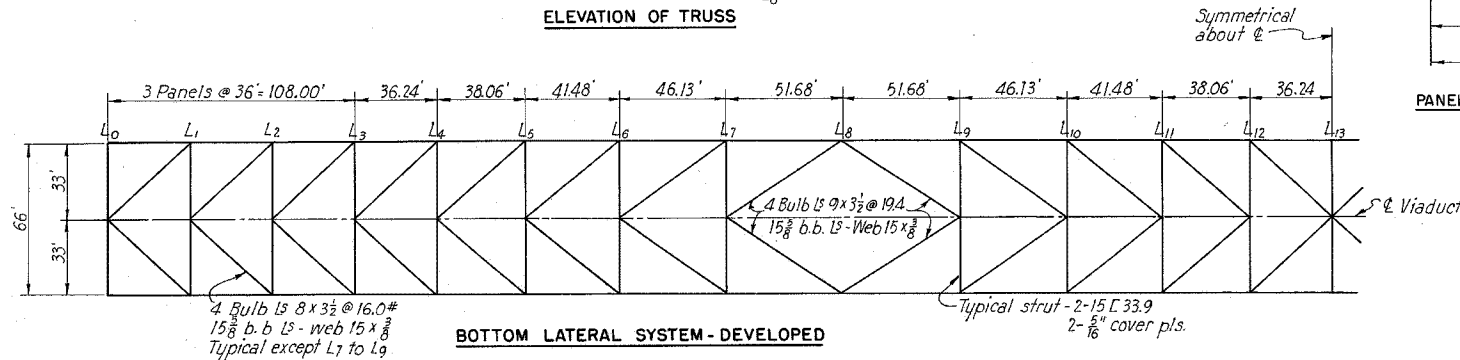
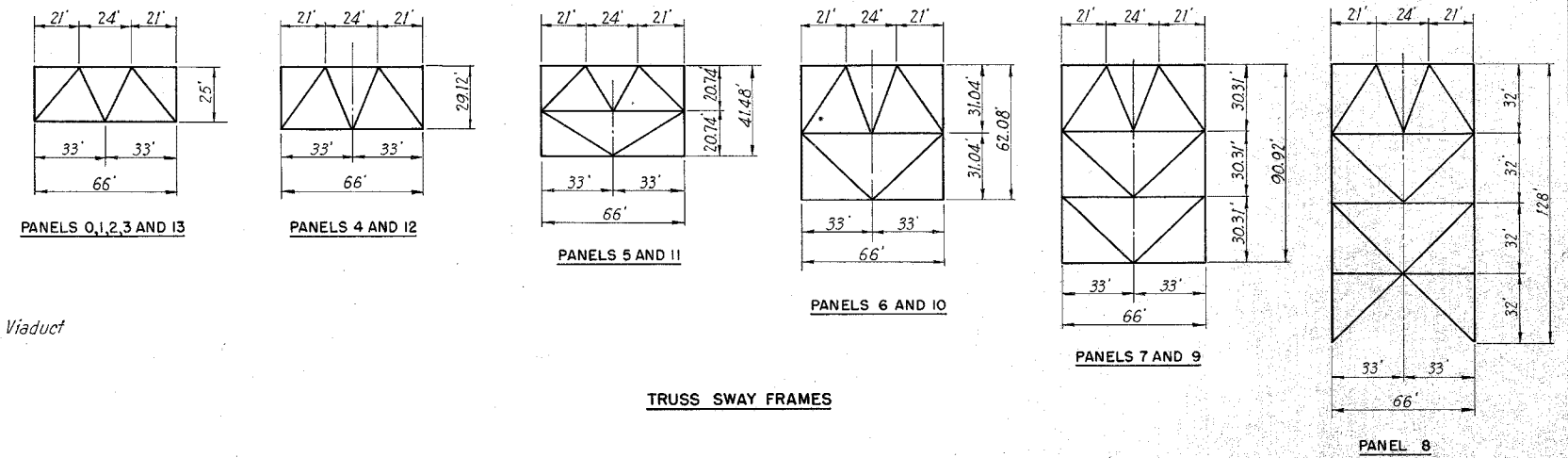
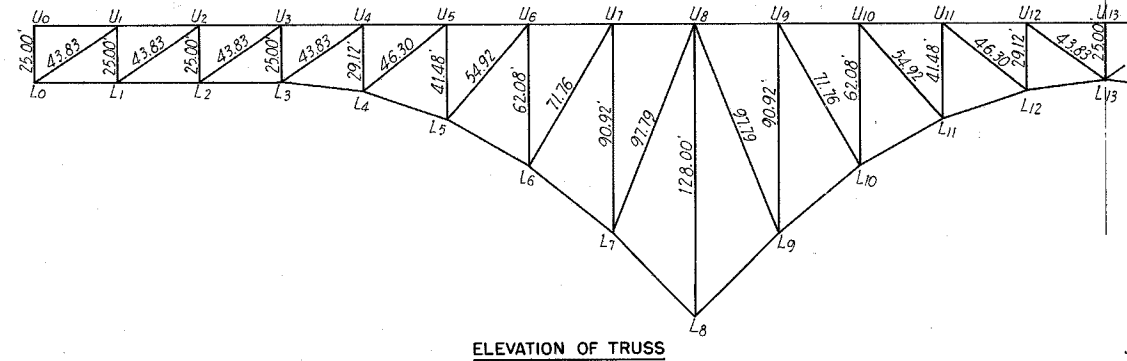
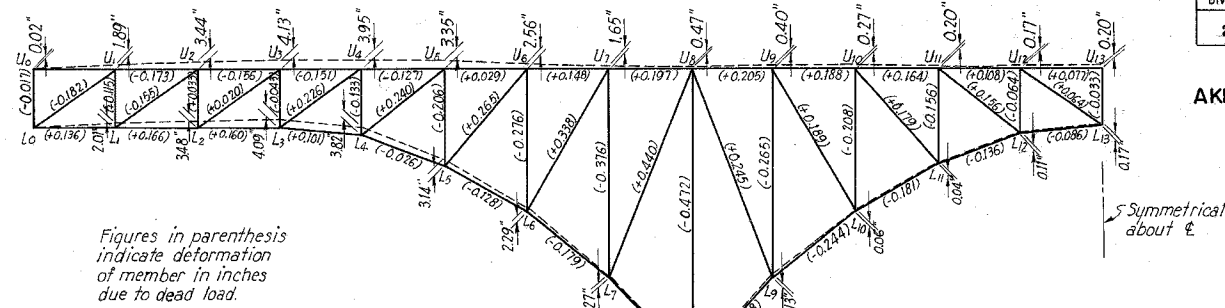
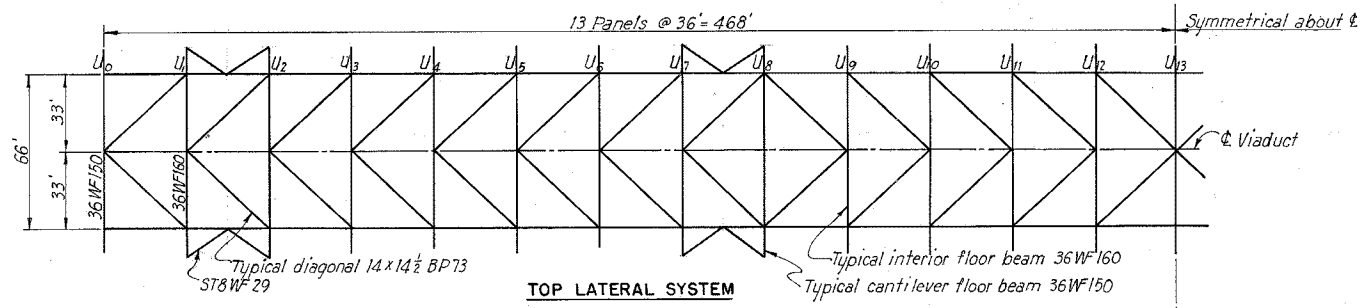
- D.L. Dead load, L.L. Live load, U.L.L. Uniform live load, C.L.L. Concentrated live load, Imp. Impact, O.L. Overload, Col. Column, T.W. Transverse wind, L.W. Longitudinal wind, Ag. Gross area, An. Net effective area or gross effective area, fc. Unit compressive stress, ft. Unit tensile stress, fb. Unit bending stress, S. Silicon steel, C. Carbon steel (Copper-bearing), R. Reaction, Vs. Shear to south of support, Vn. Shear to north of support, +M. Maximum positive moment, -M. Maximum negative moment, S.W. Sidewalk, Temp. Temperature.

① Longitudinal loads are applied 4'-0" above top of masonry at pier 4. ② Transverse loads are applied 3'-9" above top of masonry at piers 3 and 6, 4'-0" above top of masonry at pier 4 and 4'-9" above top of masonry at pier 5.

PART 2. STATE OF OHIO DEPARTMENT OF HIGHWAYS. AKRON EXPRESSWAY SYSTEM (EAST MARKET STREET TO EAST GUYAHOGA FALLS AVENUE) MAIN VIADUCT BRIDGE NO. SU-5-12.4. STRESS SHEET. AKRON, SUMMIT COUNTY, OHIO. SCALE No. Scale. HOWARD, NEEDLES, TAMMEN & BERGENOFF MADE IN C.B. DATE 8-29-49 CONSULTING ENGINEERS TRGD. R.R. DATE 9-19-49 KANSAS CITY NEW YORK CHKD. A.D.S. DATE 10-12-49 766 SHEET V77

|                    |       |                    |            |          |
|--------------------|-------|--------------------|------------|----------|
| FED. ROAD DIV. NO. | STATE | FED. AID PROJ. NO. | TYPE FUNDS | 44<br>44 |
| 2                  | OHIO  | U-687(6)           | POST WAR   |          |

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



PART 2

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS

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

**STRESS SHEET**

AKRON, SUMMIT COUNTY, OHIO

SCALE No. Scale... HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
MADE R.O.D. DATE 8-24-49 CONSULTING ENGINEERS  
TRCD. R.P. DATE 10-17-49 KANSAS CITY NEW YORK  
CHKD. W.C.B. DATE 10-18-49 766 SHEET V78