FHWA REGION	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
5	OHIO	I-77-4(44)107 U-663(15)		1 / 389

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

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
STA-30-14.12
STA-77-9.22
STARK COUNTY
CITY OF CANTON
HARRISON AVE. TO CLEVELAND AVE.
GRADE SEPARATIONS WITH THE NORFOLK & WESTERN RAILWAY CO.
GRADE SEPARATIONS WITH THE PENN CENTRAL TRANSPORTATION CO.

Sheet 360 revised 5·19·76 E.B.L.
Sheet 348 revised 6·14·76 E.B.L.
Sheets 235, 236, 239, 240, 243, 248, 276, 293, 360 revised 7-12-76 E.B.L.
Sheets 291, 292, 293, 294, 295, 296, 297, 298, 299, 250, 300, 301, 304, 362, 365, 369 B, 369 H rev. 7-30-76 C.P.D.

I-77-4(44)107
U-663(15)

SHEET 364, 278, 273 REV. 8-27-76 C.P.D.
SHEETS 235, 236, 237 & 341, 343 Revised 9·21·76 EBL
Sheets 12, 233, 291 revised 10·29·76 EBL
Sheet 356 revised 11·26·76 EBL
Sheet 341 revised 12-3·76 EBL

STARK COUNTY
STA-30-14.12
STA-77-9.22

FEDERAL ROAD DIVISION 2 APPEARING THROUGHOUT THESE PLANS SHALL BE CONSIDERED TO READ FHWA REGION 5. FEDERAL AID PROJECT NUMBER SHALL BE CONSIDERED TO READ AS I-77-4(44)107 /U-663(15) THROUGHOUT THESE PLANS.

LIMITED ACCESS

This improvement is especially designed for through traffic and has been declared a limited access highway or freeway by action of the Director of Transportation in accordance with the provisions of Section 5511.02 of the Revised Code of Ohio.

CONVENTIONAL SIGNS

Existing Guard Rail
Proposed Guard Rail
Telephone Poles
Light Poles
Power Poles
Power Telephone Poles
Fire or Police Call Box
Fire Hydrant
Catch Basin or Drop Inlet
Sewer Manhole
Fence —x—x—
Telephone Booth
Existing R/W —R/W—
R/W —R/W—
Limited Access —L/A—

See Sheet 26 for Additional Signs

SCALES

PLAN PROFILES, UTILITY PLANS, PAVEMENT PLANS, R/W PLANS, DRAINAGE PLANS
Hor. 1"=50' 0 25 50
Vert. 1"=10' 0 5 10
CROSS SECTIONS
Hor. & Vert. 1"=10' 0 5 10
SCHEMATIC PLAN, GEOMETRIC LAYOUT
Hor. 1"=100' 0 50 100

Sheets 340, 341, 343, 348, 352 & 353 revised 1-24-77 EBL
SHEETS 369C, 369D, 369F & 369H REV. 2-11-77 EBL

INDEX

SHEET No. 25, 179, 192 & 370 Deleted

LINE DATA

STA-77-9.22
I-77-4(44)107

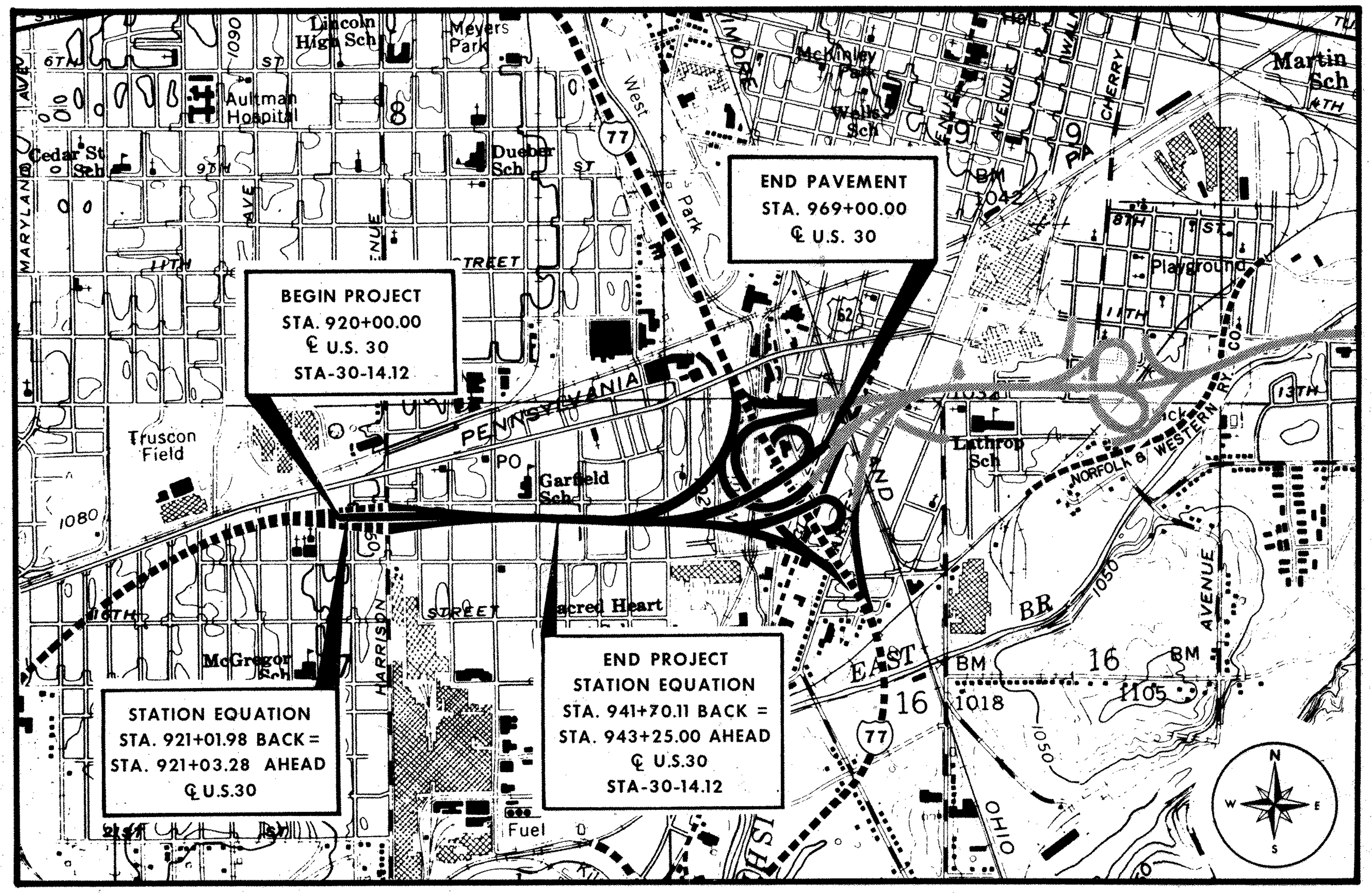
PROJECT LENGTH = 0 LIN. FT. OR 0.00 MI.
WORK LENGTH = (See Sh. 2) 9212.32 LIN. FT. OR 1.745 MI.

STA-30-14.12
U-663(15)

BEGIN PROJECT STA 920+00.00 TO STA. 921+01.98 BK.= STA. 921+03.28 AH.
END PROJECT STA. 921+03.28 AH. TO STA. 941+70.11
ADD WORK STA. 904+00 TO STA. 920+00

PROJECT LENGTH = 2168.81 LIN. FT. OR 0.410 MI.
WORK LENGTH = 3768.81 LIN. FT. OR 0.714 MI.

TOTAL PROJECT LENGTH = 2168.81 LIN. FT. OR 0.410 MI.
TOTAL WORK LENGTH = 12981.13 LIN. FT. OR 2.458 MI.



SHEETS 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 226, 227, 229, 230, 231, 232, 233, 234, 236, 237, 238, 239, 240, 241, 242, 243, 245, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256 257, 258, 259, 260, 262, 263, 264, 265, 266, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 293, 301, 302, 304, 305, 306, 307, 308, 310, 311, 312, 313, 316, 317, 318, 319, 320, 321, 322, 323, 324, 328, 329, 330, 331, 332, 334, 336, 337, 338, 339, 361, 362, 104 B, 369A, 369C, 369D, 369E, 369F, 369G, 369I, 369J, 369K revised 4-28-77 C.P.D.

LOCATION MAP

0 1000 2000 3000 4000
SCALE IN FEET

CONVENTIONAL SIGNS

PORTION TO BE IMPROVED
PREVIOUS CONSTRUCTION
FUTURE CONSTRUCTION
CORPORATION LINE
OTHER ROADS
RAILROAD
INTERSTATE HIGHWAY
STATE ROUTE
U.S. ROUTES

1975 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH IN THE PLANS AND ESTIMATE.

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

APPROVED DATE 12-10-75	CITY ENGINEER
APPROVED DATE 1-9-76	William M. Goldman DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION
APPROVED DATE 12-16-75	Robert B. Pfeifer ENGINEER, BUREAU OF BRIDGES
APPROVED DATE 1-8-76	ENGINEER, BUREAU OF ROADWAY DESIGN
APPROVED DATE 1-8-76	John B. Ellis ASSISTANT DEPUTY DIRECTOR FOR HIGHWAY DESIGN
APPROVED DATE 1/9/76	ASSISTANT DEPUTY DIRECTOR FOR REAL ESTATE
APPROVED DATE 1-9-76	Howard E. ASSISTANT DEPUTY DIRECTOR FOR PROGRAM DEVELOPMENT
APPROVED DATE 1-9-76	R. E. CHIEF ENGINEER OF DESIGN
APPROVED DATE 1-9-76	CHIEF ENGINEER CONSTRUCTION
APPROVED DATE 1-9-76	Thomas Mayor CHIEF ENGINEER OPERATIONS
APPROVED DATE 1-9-76	ASSISTANT DIRECTOR, DEPARTMENT OF TRANSPORTATION
APPROVED DATE 1-9-76	DIRECTOR, DEPARTMENT OF TRANSPORTATION

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

Browning Crow

STATE OF OHIO BROWNING CROW

SUPPLEMENTAL SPECIFICATIONS			
NUMBER	DATE	NUMBER	DATE
803	1-22-76	844	11-8-74
		836	3-12-75
S 625	1-11-74	934	1-1-69
S 713	1-11-74		
814	1-1-69	838	3-18-70
839	11-25-70	1001	9 20-72
808	1-1-71	927	1-1-71

STANDARD DRAWINGS				TC-61.10	12-1-75
NUMBER	DATE	NUMBER	DATE	NUMBER	DATE
BP-1	6-1-65	BP-12	8-11-75	AS-1-72	6-30-72
BP-2	12-1-68	HW-1 & 3	6-1-65	HL-1	9-6-73
BP-3	1-1-71	HW-4	1-1-70	HL-2 & 3	7-27-73
BP-4	1-1-71	CB-2-2-A&B	6-1-65	MC-7	6-13-69
BP-5	9-11-75	CB-3	1-1-76	HL-4,5,6,7&8	9-6-73
BP-6	6-1-65	CB-3A	1-1-76	HL-9 & 10	9-6-73
BP-7	1-1-66	CB- 5	9-1-69	HL-11,12,15&16	4-6-73
MC-3	6-1-73	CB-6	6-1-65	HL-17A&17B	4-6-73
MC-4	6-13-69	I-2A	6-6-69	TC-7.65	10-1-74
MC-5	6-12-75	I-3	1-20-70	TC-12.30	10-1-74
MC-6	6-1-65	MH-1,2,3,4,5	6-12-75	TC-18.24	10-1-74
MC-7	10-1-68	GR-2C	7-3-75	TC-21.10	10-1-74
F-1	6-1-72	RB-1-55	2-2-59	TC-21.30	10-1-74
F-3	3-10-69	GR-2B,3 & 4	11-9-71	TC-22.10	10-1-74
BP-9	1-1-71	GR-5 & GR-2A	1-1-71	TC-51.10	6-2-75
F-5	3-10-69	GR-6	1-1-71	TC-51.11	6-2-75
F-6	6-12-75	L-1	6-1-73	BR-2-67	10-15-71
MC-9	1-1-74	SD-1-69(1-4)	6-12-69	BR-1-67(1,3)	10-15-71

Rev. 3-2-76

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: ____________

DIVISION ADMINISTRATOR ____________ DATE

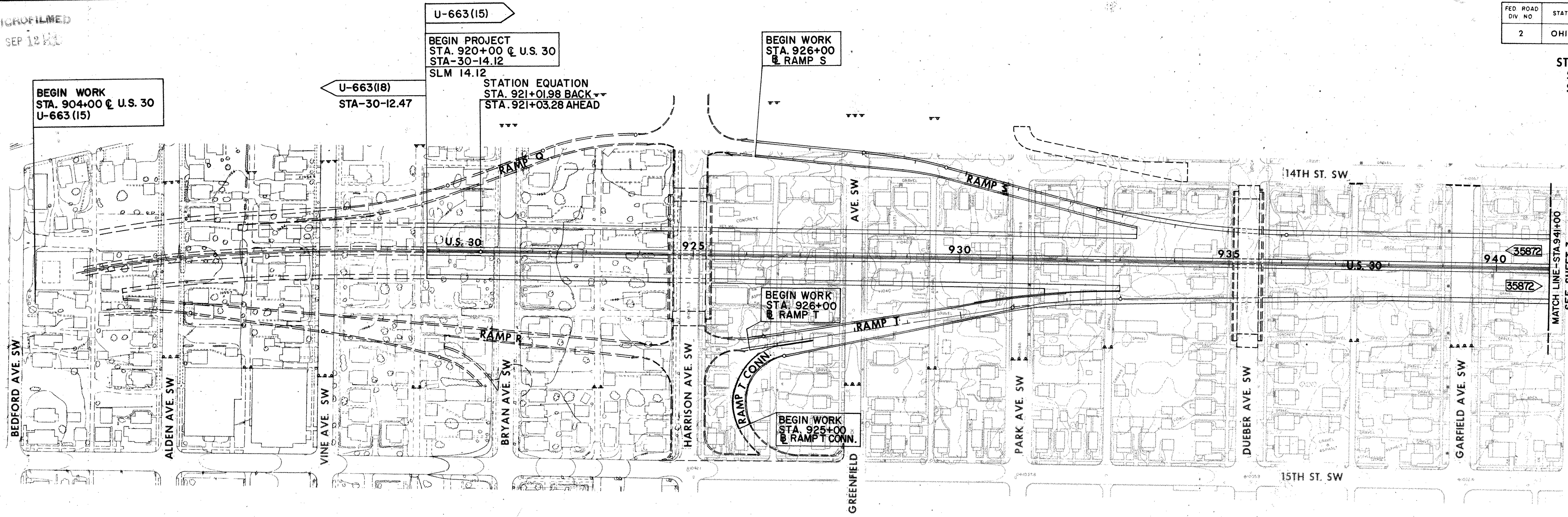
Rev. 1-29-76

FILE NO.	STARK COUNTY
	SEC. STA-30-14.12 STA-77-9.22
	DATE OF LETTING
	CONTRACT NO.

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

2
389

STARK COUNTY
STA-30-14.12
STA-77-9.22



LINE DATA (WORK)

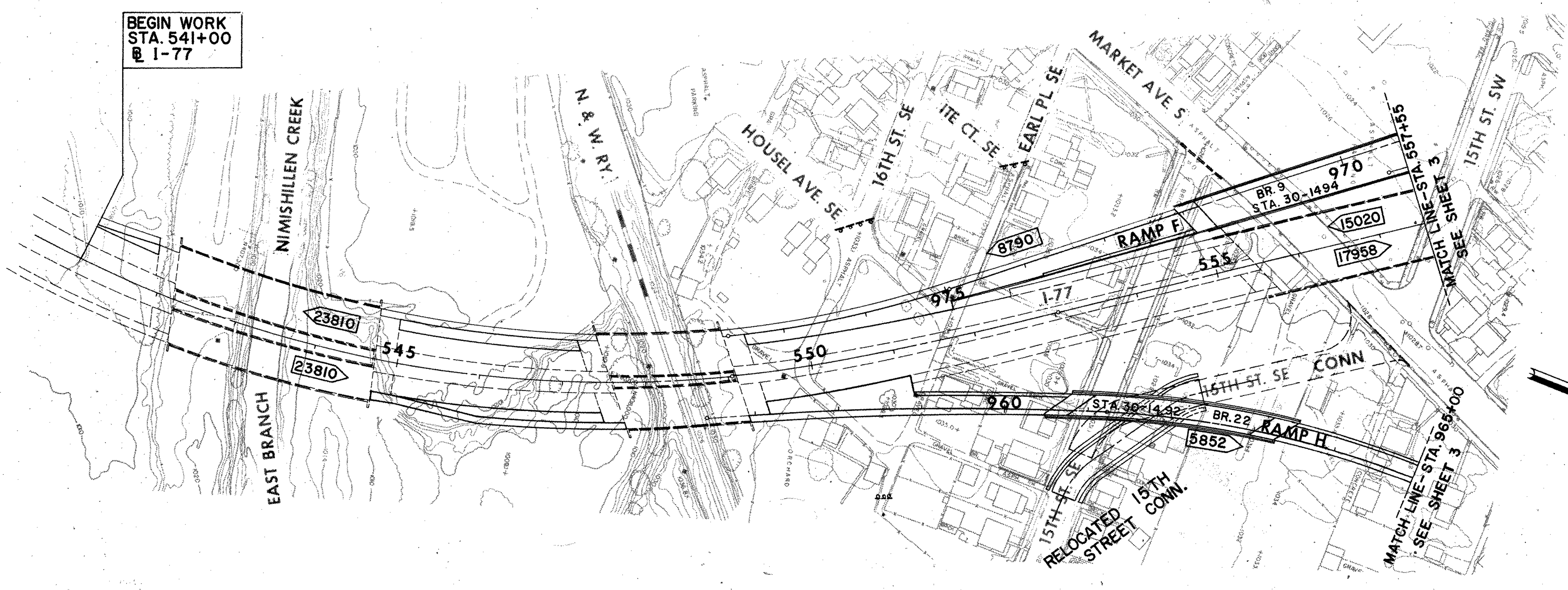
STA-77-9.22

U.S. 30	STA. 943+25.00 TO STA. 979+50.00 = 3625.00 L.F.
CLEVELAND AVE. S.W.	STA. 10+12.00 TO STA. 25+10.00 = 1498.00 L.F.
McKINLEY AVE. CONN.	STA. 23+17.35 TO STA. 28+77.49 = 560.14 L.F.
I.R. 77	STA. 541+00 TO STA. 576+29.18 = 3529.18 L.F.

LENGTH OF WORK 9212.32 L.F.

BR. NO. STA.-30-1492(NO.22)
RAMP H OVER 15th STREET

Type: Continuous Welded Girders with reinforced Concrete Slab.
Spans: 60'-0", 92'-0", 60'-0" = 212'-0" Ctr. to Ctr. End Bearings along Ramp H
Roadway: 30'-0" face to face parapets.
Loading: HS20-44
Skews: 48° 46' 10.5" to Layout Line
Wearing Surface: 2 1/2" Asphalt Concrete
Approach Slab: 30'-0" (AS-1-72) (Modified)
Alignment: 1°30' Curve Right to 5°00' Curve Right



DESIGN DESIGNATION

CURRENT ADT = 0
DESIGN YEAR ADT = (1995) 35872
DHV = 4520
D = 60%
T = 5%
V = 60mph

Rev. M.G.B. 5-29-75
Ckd. J.N.S. 8-18-75

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

Scale: 1"=100' 50 25 0 100

SCHEMATIC PLAN

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

BR. NO. STA 30-1474(NO. 1) U.S. 30 OVER HENRY AVE.

Type: Continuous Rolled Beams with Reinforced Concrete Slab.
Spans: 32'-5 3/4'', 42'-11 5/8'', and 37'-6 5/8'' measured along tangent to Curve 3 on ℄ U.S. 30.
Roadways: 96'-0'' face to face of parapets including 3'-0'' Median Barrier
Loadings: HS20-44
Skew: None
Wearing Surface: 2 1/2" Asphalt Concrete
Approach Slabs: 25'-0'' (AS-1-72)(Modified)
Alignment: Spiral (Lt.)
1995 ADT: 21,891 W.B., 18,853 E.B.

BR. NO. STA 30-1474R(NO.5) RAMP F OVER HENRY AVE.

Type: Continuous Rolled Beams with Reinforced Concrete Slab.
Spans: 32'-6'', 43'-0'' and 32'-6'' measured along BL Ramp F
Roadways: Varies; 40'-0 1/2'' to 43'-7 3/4'' face to face of parapets along ℄ Bearing
Loadings: HS20-44
Skew: 2°15' Rt.
Wearing Surface: 2 1/2" Asphalt Concrete
Approach Slabs: 25'-0'' (AS-1-72)(Modified)
Alignment: Tangent
1995 ADT: 16,919

BR. NO. STA 30-1488(NO.7) RAMP G OVER PENN R.R., RAMPS C & G, I-77

Type: Continuous Welded Curved Girders with Reinforced Concrete Slab.
Spans: 59'-5 7/8'', 77'-3 15/16'', 78'-2 1/8'', 74'-2 5/16'', 79'-8 5/16'', 91'-3 13/16'', 91'-6 15/16'', 112'-1 7/16'', 91'-5 7/8'', 79'-10 13/16'', 107'-1 3/16'', 78'-0''
Roadway: Varies 30'-0'' to 32'-0'' face to face of parapets.
Loading: HS20-44
Skews: Varies
Wearing Surface: 1 1/2" Asphal. Concrete
Approach Slabs: 25'-0'' (AS-1-72)(Modified)
Alignment: 1°30' Curve Lt. to 14°55'15'' Curve Lt. to 200' Tangent Spiral Rt. on BL Ramp G

BR. NO. STA 30-1487(NO. 2) U.S. 30 OVER RAMPS B & C, I-77 & PENN R.R.

Type: Continuous Welded Girder with Reinforced Concrete Slab.
Spans: Eastbound; 55.0'±, 85.0'±, 55.5'±, 101.0'±, 91.0'±, 90.0'±, 107.5'±, 70.5'±= 656.5± Ctr. to Ctr. End Bearings Along ℄ U.S. 30.
Westbound; 55.0'± 85.5'±, 73.0' 110.0'±, 74.0'±, 80.5'±, 107.5'±, 70.5'±,= 656.5± Ctr. to Ctr. End Bearings. Along ℄ U.S. 30.
Roadway: Varies; 102.0'± to 117.0'± face to face of parapets including 3'-0'' Median Barrier.
Loading: HS20-44
Skews: Varies: 7°± Maximum from Local Radial Line
Wearing Surface: 1 1/2" Asphalt Concrete
Approach Slab: 25'-0'' (AS-1-72)(Modified)
Alignment: 450' Spiral to 3°00' Curve to 450' Spiral Lt.

BR. NO. STA 30-1486(NO. 6) RAMP F OVER PENN R.R.

Type: Continuous Welded Girders with Reinforced Concrete Slab.
Spans: 59'-0'', 76'-6'', 76'-6'', 59'-0'' = 271'-0'' Ctr. to Ctr. end bearings measured along BL Ramp F.
Roadway: 30'-0'' face to face of parapets.
Loading: HS20-44
Skews: None
Wearing Surface: 2 1/2" Asphalt Concrete
Approach Slab: 25'-0'' (AS-1-72)(Modified)
Alignment: Tangent

BR. NO. STA 30-1499(NO. 8) RAMP G OVER CLEVELAND AVE.

Type: Continuous Rolled Beams with Reinforced concrete slab and Substructure.
Spans: 44'-11 3/8'', 76'-1 5/8'', 53'-5 1/8''=174'-6 1/8'' ctr. to ctr. end bearings measured along ℄ Ramp G.
Roadway: Varies, 1'-11'' parapet-curbs
Loading: HS20-44
Skew: 68°32'31.3''
Wearing Surface: 1 1/2" Asphalt Concrete
Approach Slab: 25'-0'' (AS-1-72)(Modified)
Alignment: 200' spiral, 4°00' Curve

Notes:

1. Directional ADT given for 1995.... 000
2. Design Speed U.S. 30....60 MPH.
3. All Elevations are based on U.S.C. and G.S. Monuments "City" Elevation 1104.826, and "F-10" Elevation 1042.399.

BR. NO. STA 30-1494(NO.9) RAMPS C & F OVER MARKET AVE. & CLEVELAND AVE.

Type: Continuous Welded Girder with Reinforced Concrete Slab.
Spans: 46'-0'', 107'-0'', 133'-0'', 84'-9 5/8'', 84'-9 5/8'', 64'-10 3/4'', 39'-0'' = 564'-6'' Ctr. to Ctr. End Bearing Along BL Ramp F.
Roadway: Varies; 78.0'± to 39.5'± Face to face of parapets.
Loading: HS20-40
Skews: 64.5°± to Tangent Line at Sta. 968+91.75 BL Ramp F, Rt.
Wearing Surface: 1 1/2" Asphalt Concrete
Approach Slab: 25'-0'' (AS-1-72)(Modified)
Alignment: 8°00' Curve to tangent on BL Ramp F

BR. NO. STA 30-1493(NO. 13) RAMP C OVER I-77 & PENN R.R.

Type: Continuous Welded Curved Girders with Reinforced Concrete Slab.
Spans: 52.0'±, 130.0'±, 130.0'±, 86.0'±, 86.0'±, 86.0'±, 129.0'±, 137.0'±, 110.0'± = 946.0'± Ctr. to Ctr. End Bearings along BL Ramp C.
Roadway: 30'-0'' face to face parapets.
Loading: HS20-44
Skew: Varies; see Plan.
Wearing Surface: 2 1/2" Asphalt Concrete
Approach Slabs: 25'-0'' (AS-1-72)(Modified)
Alignment: Tangent to 13°00' Rt. on BL Ramp C

BR. NO. STA 30-1504(NO.10) RAMP H OVER MARKET AVE.

Type: Simple Span Welded Girders with Reinforced Concrete Slab.
Spans: 157'-0 3/8'' Ctr. to Ctr. End Bearings along Ramp H.
Roadway: 30'-0'' Face to face of parapets.
Loading: HS20-44
Skew: 67°56' Rt.
Wearing Surface: 2 1/2" Asphalt Concrete
Approach Slab: 30'-0'' (AS-1-72)(Modified)
Alignment: Tangent

BR. NO. STA 30-1489(NO.14) RAMP B OVER RAMPS C & G, I-77, & PENN R.R.

Type: Continuous Welded Curved Girders with Reinforced Concrete Slab.
Spans: 74'-0'', 97'-0'', 81'-0'', 61'-6'', 71'-0'', 90'-6'', 90'-0'', 110'-6'', 72'-0'' = 747'-6'' Ctr. to Ctr. End Bearings along BL Ramp B.
Roadway: 30'-0'' face to face of parapets.
Loading: HS20-44
Skews: Varies; see Plan.
Wearing Surface: 1 1/2" Asphalt Concrete
Alignment: 350' Radius Left on BL Ramp B.
Approach Slab: 25'-0'' (AS-1-72)(Modified)

BR. NO. STA. 30 1474L(NO.15) RAMP A OVER HENRY AVE.

Type: Continuous Rolled Beams with Reinforced Concrete Slab.
Spans: 32'-5 13/16'', 42'-11 3/4'' and 29'-6 7/16'' measured along extended tangent from P.C. @ Sta. 951+50
Roadways: 28'-0'' face to face of parapets
Loading: HS20-44
Skew: 11°09' Lt. to tangent at Sta. 953+53.3
Wearing Surface: 2 1/2" Asphalt Concrete
Approach Slabs: 25'-0'' (AS-1-72)(Modified)
Alignment: 6°00' Curve Left
1995 ADT: 13,981

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

Scale: 1''=100' 50 25 0 100

Rev. M.G.B. 5-16-75
Ckd. J.N.S. 5-20-75
Rev. 3-23-76

SCHEMATIC PLAN

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

4
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

STAGES OF CONSTRUCTION

(For Maintenance of Traffic Notes See Sheet 13)

STAGE I

Close temporary Cleveland Ave. Connection to traffic and construct the southbound lanes of Cleveland Ave. SW from 15th St. SW to Station 14+50 and from Station 15+50 to McKinley Connection. Construct McKinley Connection from Cleveland to Station 27+35 and the easterly 14' from Station 27+35 to McKinley Ave. SW. Construct High Ave. Connection.

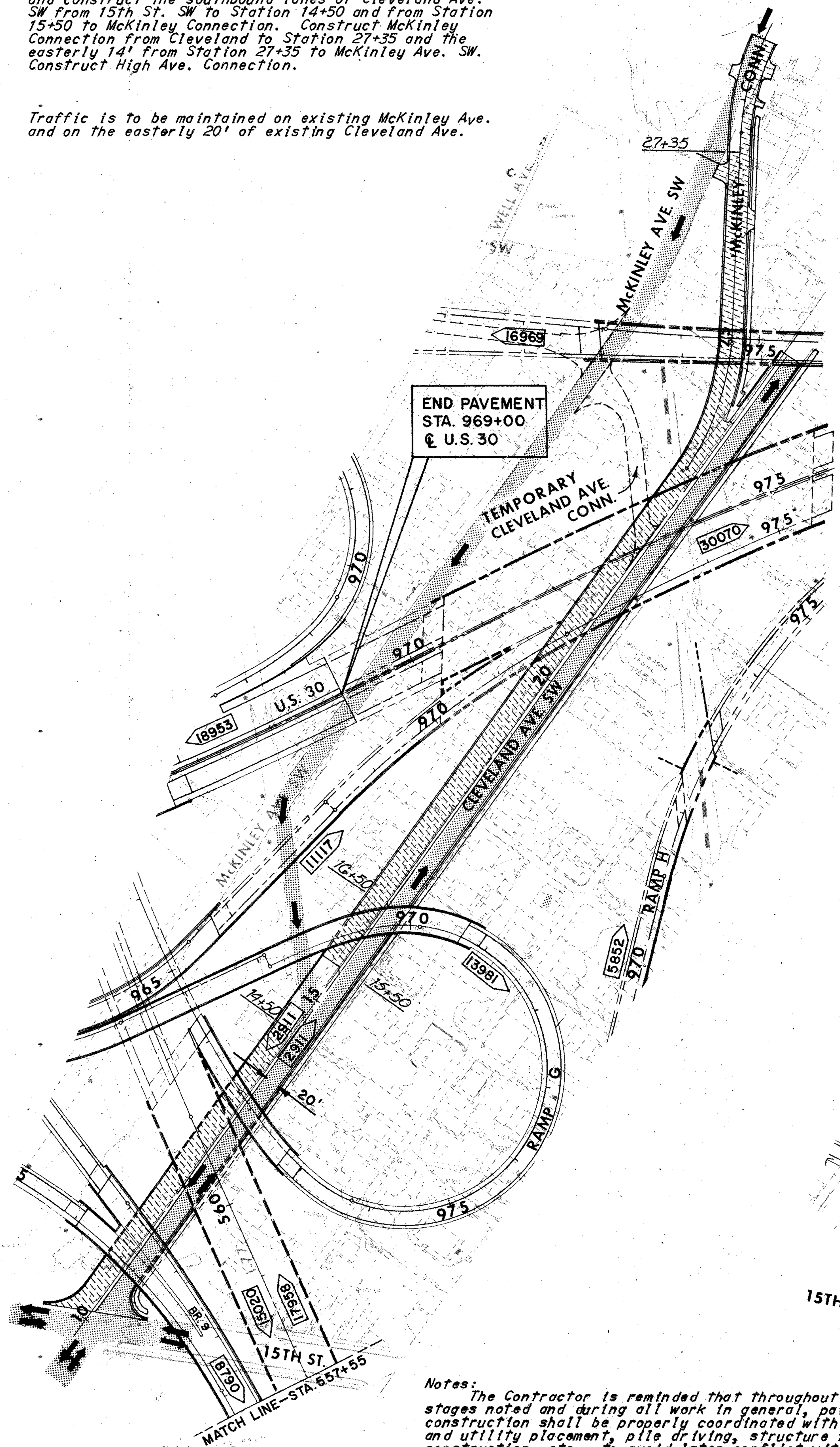
Traffic is to be maintained on existing McKinley Ave. and on the easterly 20' of existing Cleveland Ave.

STAGE II

Upon completion of Stage I and when directed by the Engineer close existing McKinley from Cleveland to the McKinley Connection. Open to traffic McKinley Connection and the southbound lanes of Cleveland from Station 15+50 to the McKinley Connection. Construct the southbound lanes of Cleveland Ave. SW from Station 14+50 to 15+50 and the center northbound lane of Cleveland Ave. SW from Station 22+00 to 25+10 and the westerly portion of McKinley Conn. from Sta. 27+35 to McKinley Ave. SW.

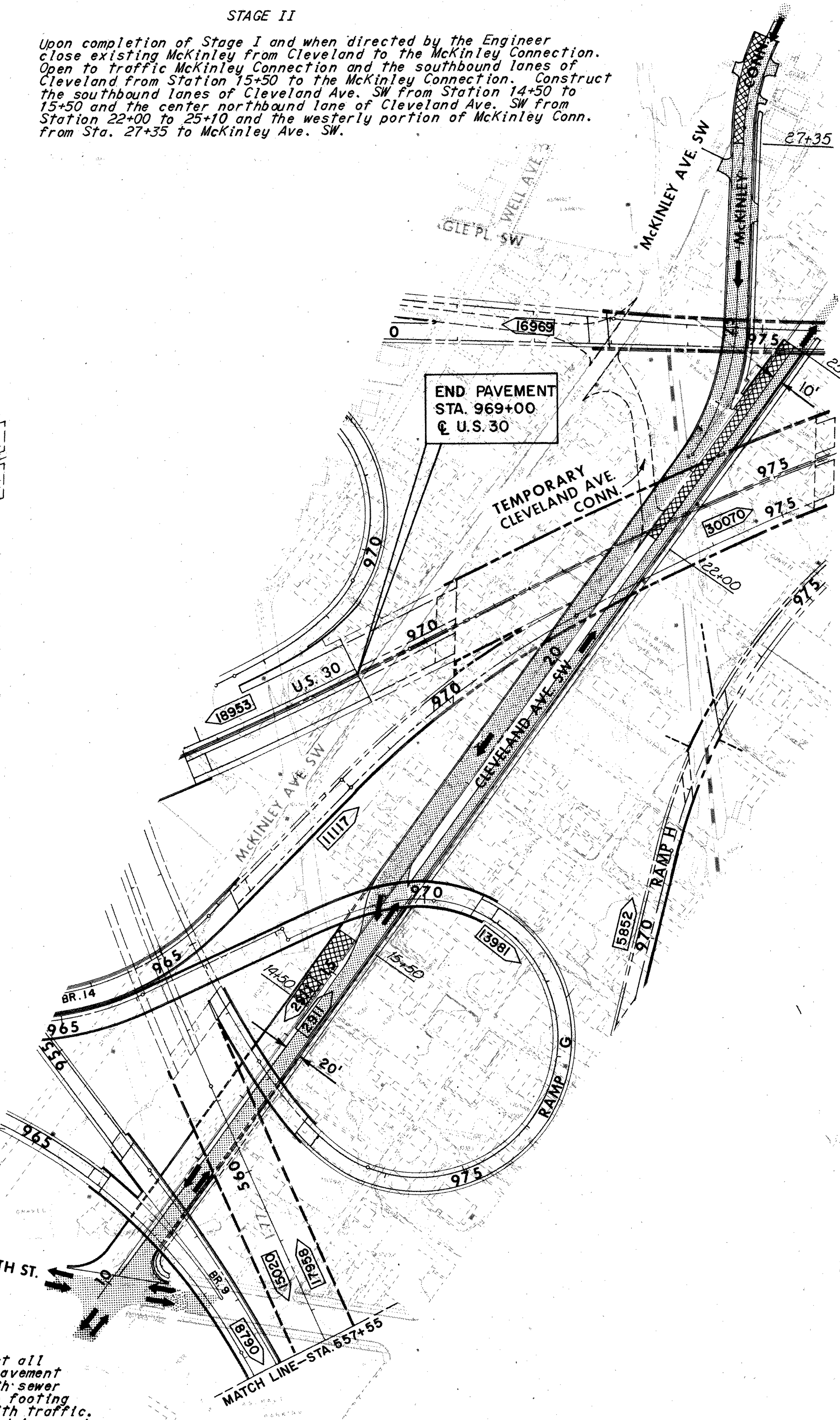
STAGE III

Upon completion of Stage II and when directed by the Engineer close existing Cleveland Ave. from 15th St. to Station 25+10. Open to traffic the remaining portions of McKinley Connection and the southbound lanes of Cleveland. Construct the remaining portions of northbound Cleveland.



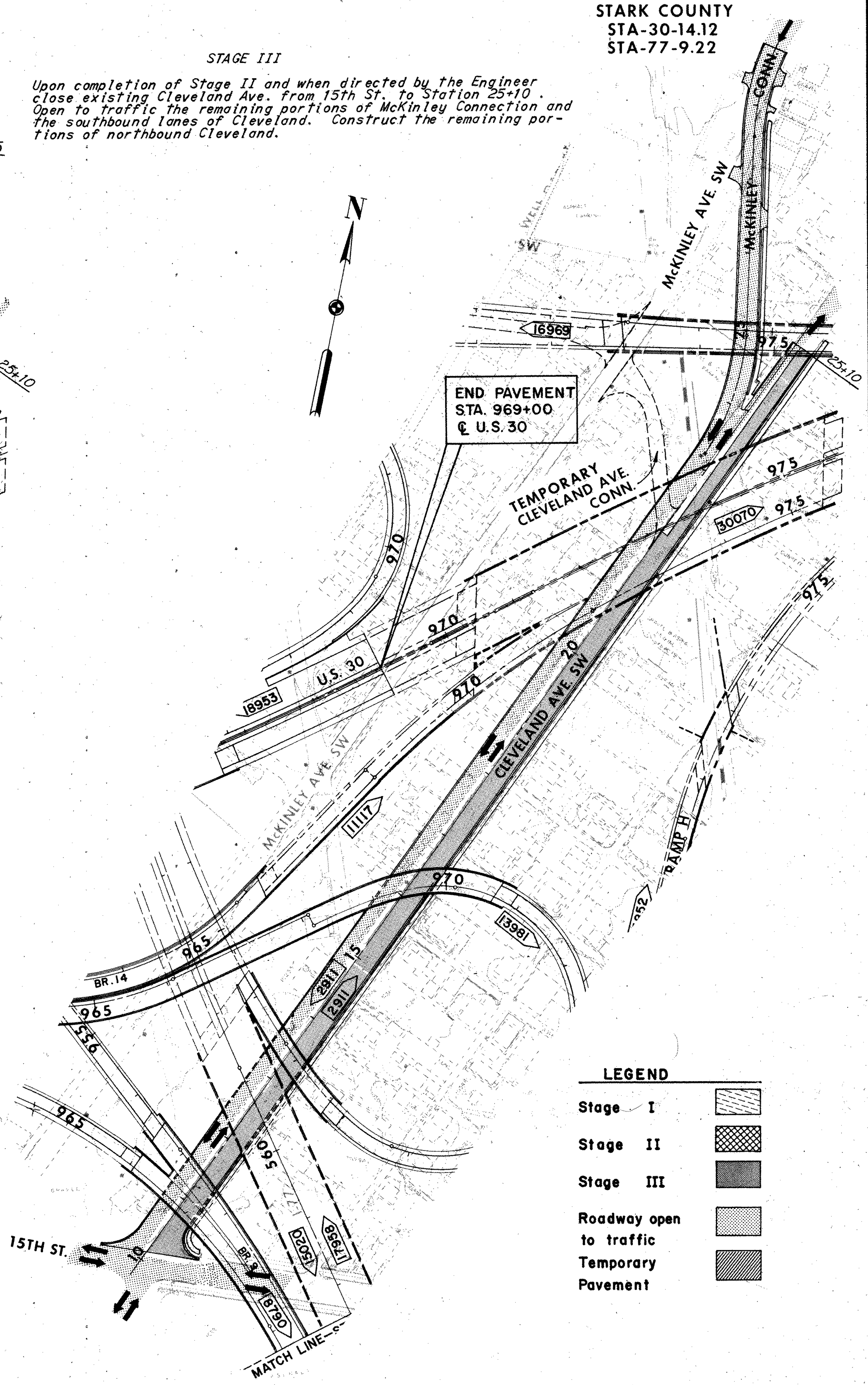
Stage I Construction

Notes:
The Contractor is reminded that throughout all stages noted and during all work in general, pavement construction shall be properly coordinated with sewer and utility placement, pile driving, structure footing construction, etc., to avoid later conflict with traffic. For the sewer placement required with Cleveland Ave. and McKinley Ave. Connection see sheets 36 and 37. Special attention is directed to pipes P-63, P-65 and P-66. These pipes require temporary plugs and are to be completed by future contract. For Water Line placement see sheets 126 to 129.



Stage II Construction

Scale: 1''=100'



Stage III Construction

LEGEND
- Stage I
- Stage II
- Stage III
- Roadway open to traffic
- Temporary Pavement

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

MAINTENANCE OF TRAFFIC

TYPE 404 ON 301

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	5 / 389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22

STA. 933+29.36 to STA. 936+07.72
Ramp S Exit See Sheet 27

STA. 946+30.00 to STA. 951+50.00
Ramp A Entrance See Sheet 93.

STA. 933+00.00 to STA. 938+20.00
Ramp T Entrance See Sheet 98

STA. 943+25.00 to STA. 951+65.25
Ramp F Exit See Sheet 97.

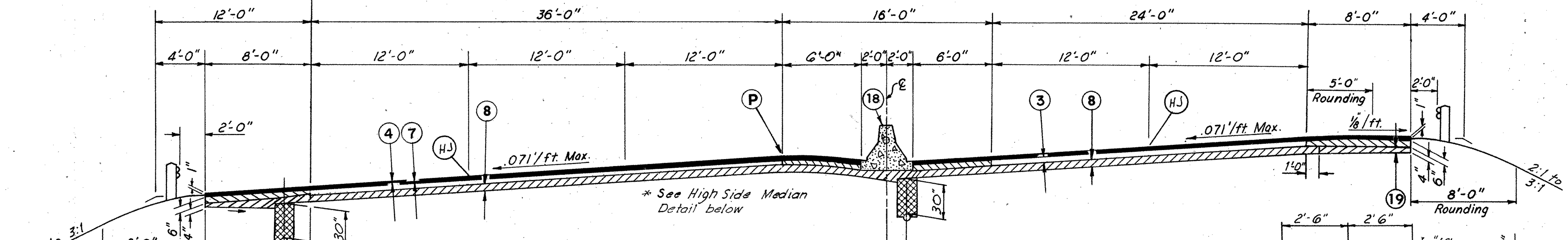
DETAIL "A"

Typical detail of outside edge of main traffic lanes for asphalt pavement.

U.S. 30

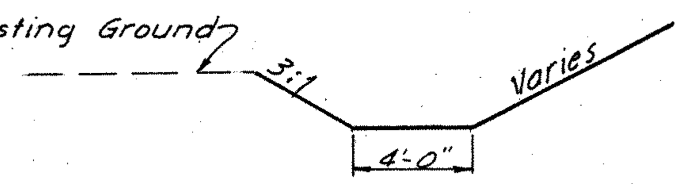
STA. 920+00.00 TO STA. 950+50.00 WB STA. 920+00.00 TO STA. 951+65.25 EB
STA. 920+00.00 TO STA. 922+00.00 Transition

STA. 957+56.07 to STA. 967+56.07
Ramp E Entrance See Sheet 93.

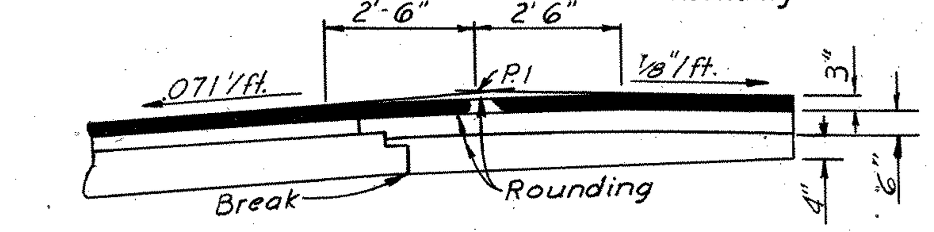


U.S. 30

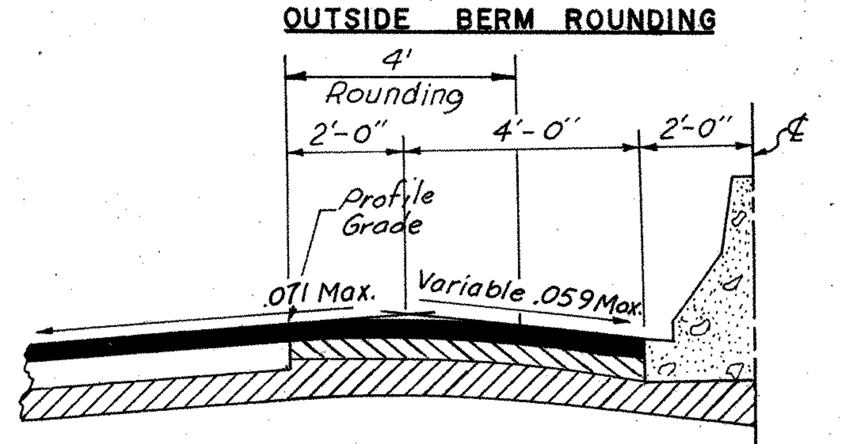
STA. 952+96.77 TO STA. 954+06.43 Henry Ave. Bridge #1
STA. 954+06.43 TO STA. 960+02.25
STA. 960+02.25 TO STA. 966+63.26 I-77 Bridge #2
STA. 966+63.26 TO STA. 969+00.00



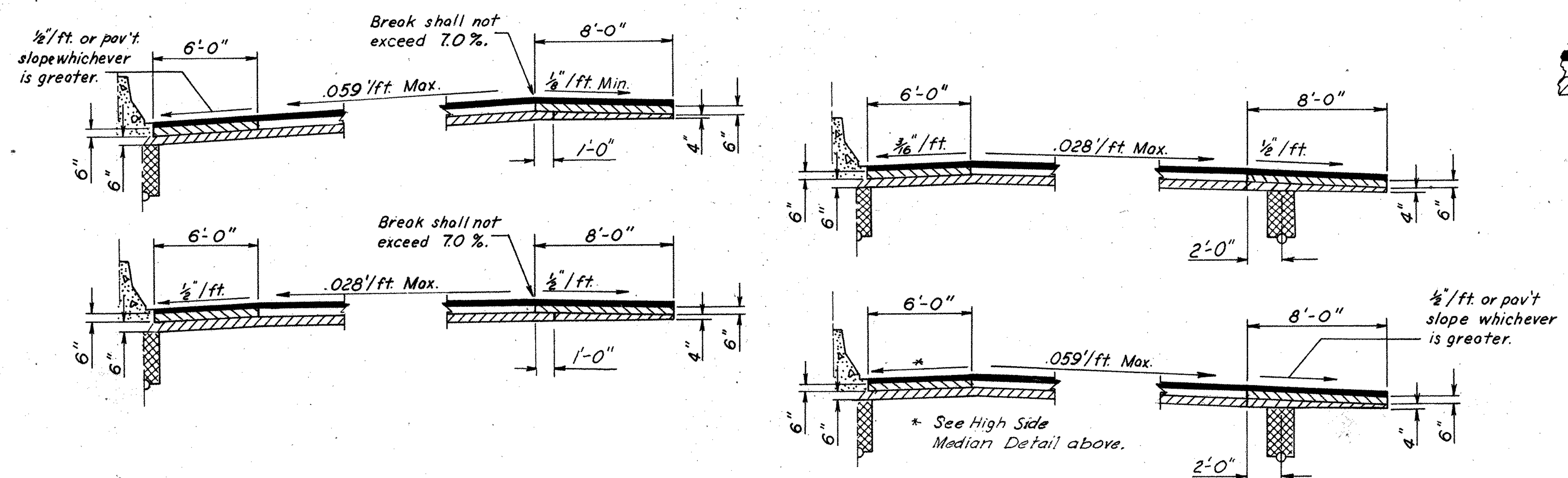
TYPICAL DITCH



OUTSIDE BERM ROUNDING



HIGH SIDE MEDIAN SHOULDER DETAIL



EXPRESSWAY SHOULDER TRANSITION DETAILS

LEGEND

1. 451 9" Reinforced Portland Cement Concrete Pavement
2. 409 Seal Coat using 0.008 Cu. Yd. Cover Aggregate No.8 per Sq. Yd. and 0.30 gal. bituminous seal using 702.09 RT-9 or RT-10; 702.02 MC-800 or MC-3000; 702.04 RS-1, RS-2 or CRS-1, CRS-2; or 702.03CBAE-800 per Sq. Yd.
3. 301 9" Bituminous Aggregate Base (Thickness 9" unless otherwise shown) 702.01, AC-20 or 702.09 RT-11 or RT-12
4. 404 1¼" Asphalt Concrete, AC-20
5. 301 3" Bituminous Aggregate Base 702.01, AC-20 or 702.09 RT-11 or 12

(HJ) Hot Longitudinal Joint (See note in proposal)

6. 304 6" Aggregate Base
7. 402 1¾" Asphalt Concrete, AC-20.
8. 310 Subbase, Grading "A" (Thickness 6" unless otherwise shown)
9. Item Special Drainage Connection, using No.8 Aggregate (See note in Proposal)
10. 605 6" Pipe Underdrain (See note 6)
11. 609 Curb, Standard Type 2A
12. 609 Curb, Standard Type 6
13. 608 4" Concrete Walk
14. 606 Guard rail, Type 5
15. 402 1¼" Asphalt Concrete, AC-20
16. 612 Concrete Median
17. Not Used
18. 622 Concrete Barrier, Type B
19. 310 Subbase, Regular Grading
20. 404 1" Asphalt Concrete, AC-20

(P) Profile Grade
(L) Standard Longitudinal Joint

For spreading equipment requirements see note in proposal.

Notes:

1. Typical Sections are referenced to the direction of travel rather than the direction of stationing.
2. The superelevated sections include the transitions from and to the normal section.
3. For complete joint locations see Pavement Plans.
4. For underdrain locations see Drainage Plans.
5. The earth berm shall be dropped one inch below the edge of the paved shoulder when the paved shoulder slopes away from the pavement.
6. Underdrains are classed as deep (50") and shallow (30")

SEQUENCE OF OPERATIONS

1. Install pipe underdrains.
2. Place subbase on main traffic lanes and shoulder.
3. Construct Asphalt Pavement.
4. Construct Concrete Median.
5. Complete shoulder construction.

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KANSAS CITY CLEVELAND NEW YORK

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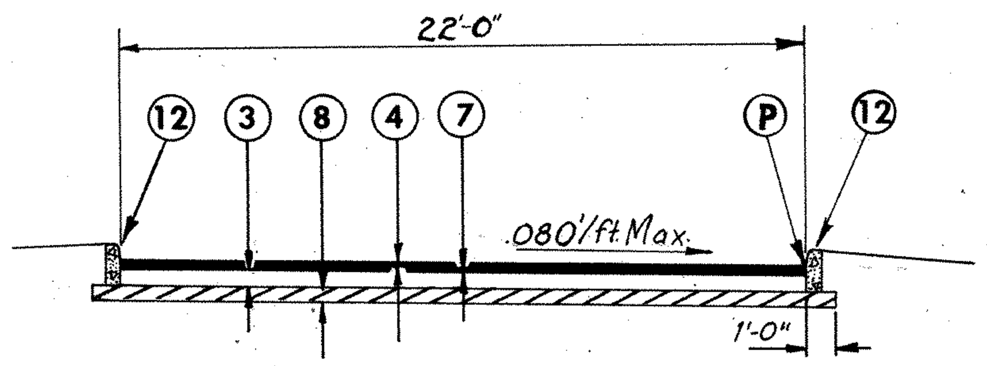
TYPICAL SECTIONS

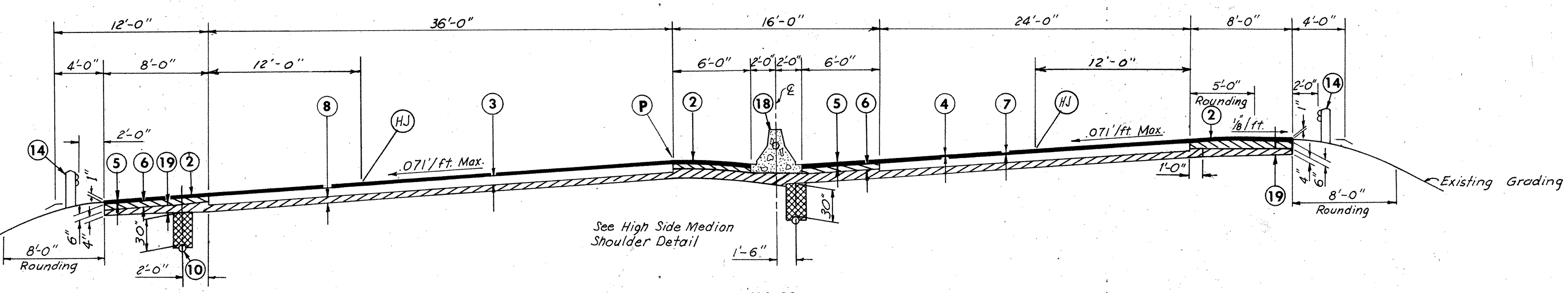
TYPE 404 ON 301

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	6 / 389
2	OHIO			

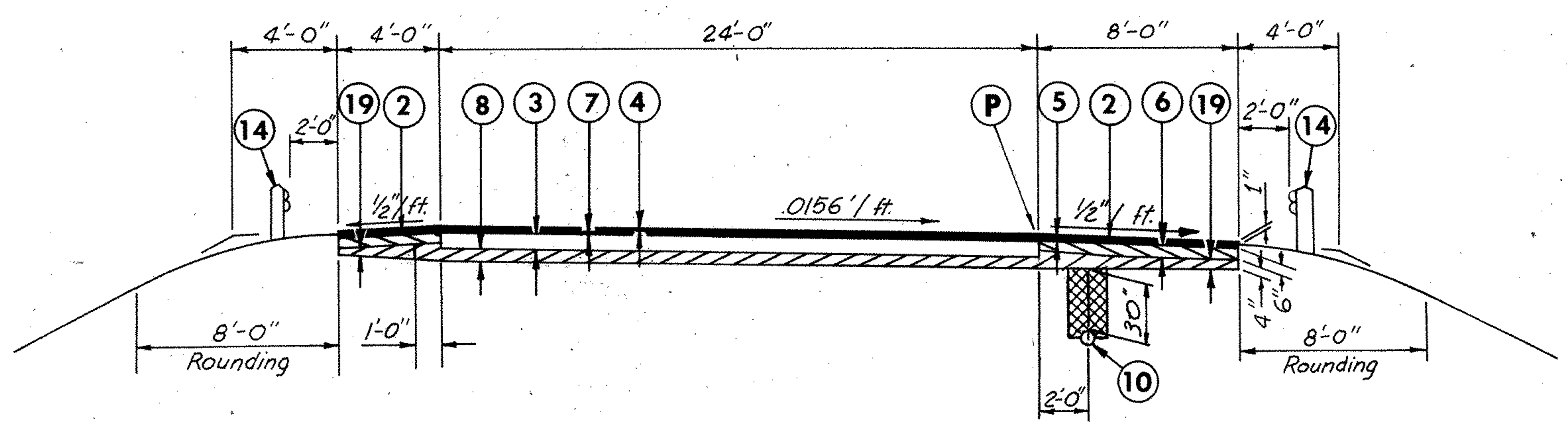
STARK COUNTY
STA-30-14.12
STA-77-9.22



SUPER-RIGHT SPECIAL ONE-LANE RAMP
RAMP T CONN: STA. 925+00.00 TO STA. 926+61.80

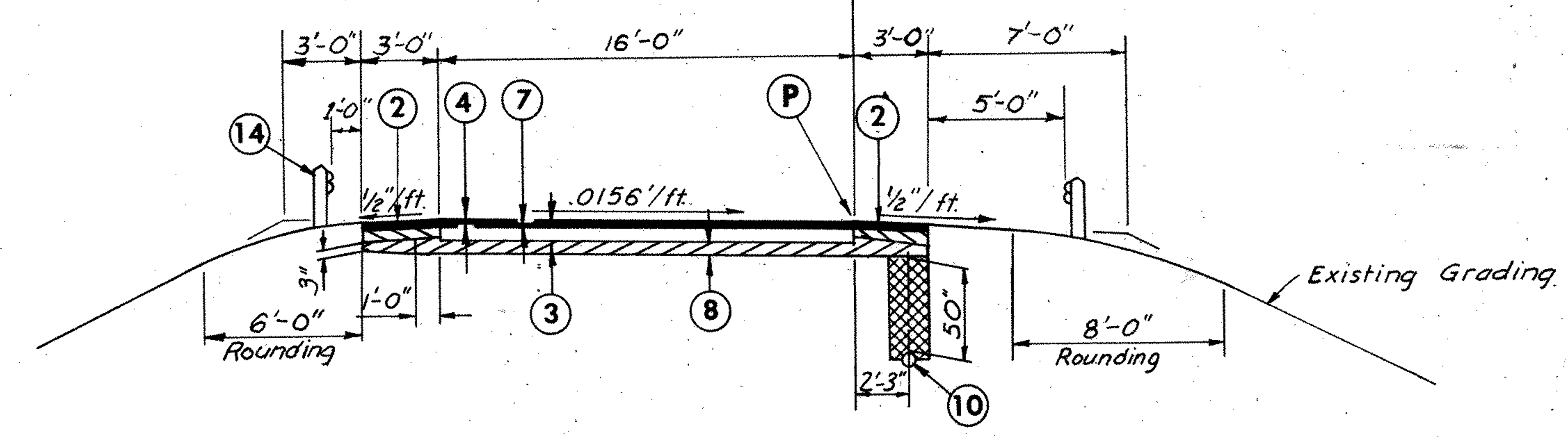


U.S. 30
STA. 950+50.00 TO STA. 952+96.77 WB   STA. 951+65.25 TO STA. 952+96.77 EB

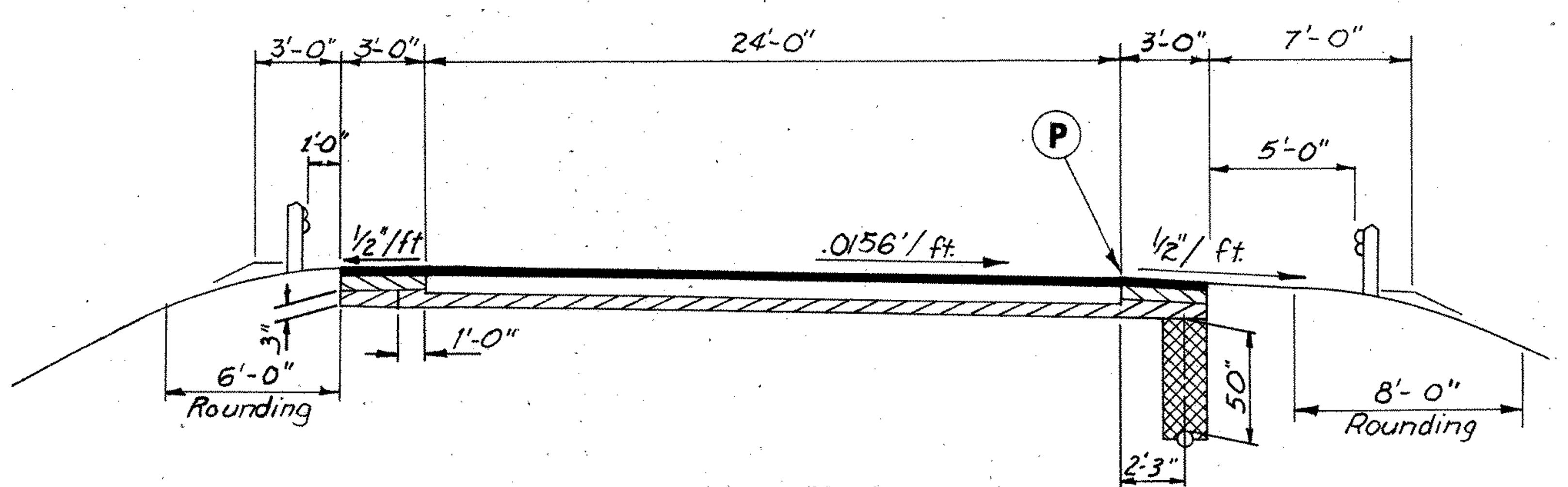


TWO-LANE DIRECTIONAL ROADWAY
RAMP F: STA. 951+64.26 TO STA. 952+98.31

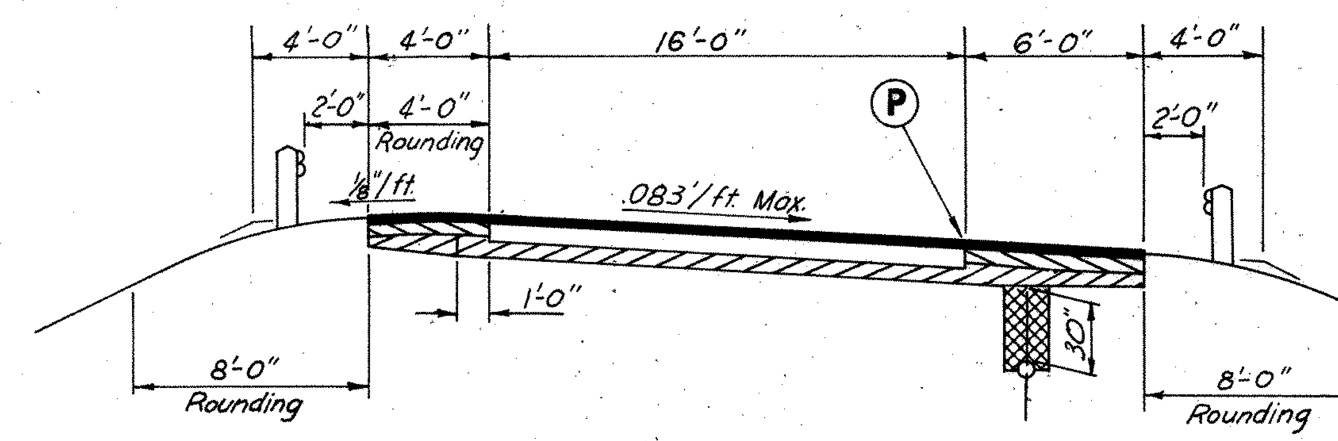
STA 926+61.80 to STA 931+61.80 B T
Ramp T Conn. Entrance See Sheet 98.



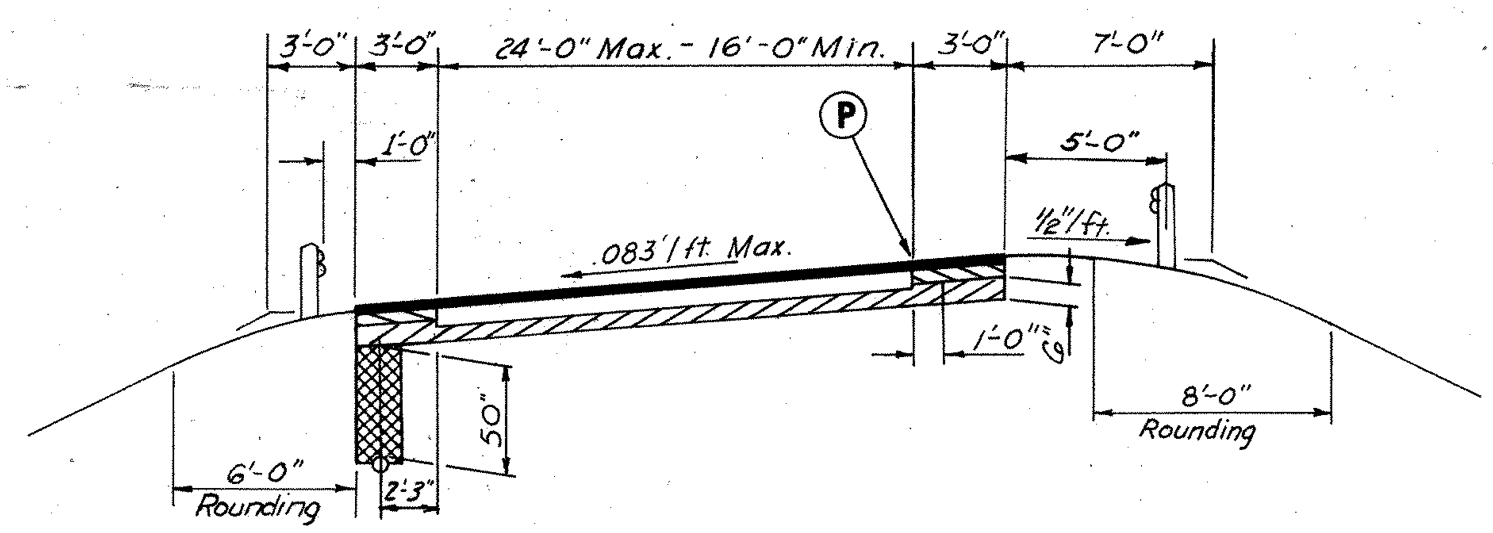
ONE-LANE RAMP
RAMP S: STA. 931+50.00 TO STA. 930+50.00
RAMP T: STA. 926+00.00 TO STA. 930+25.00



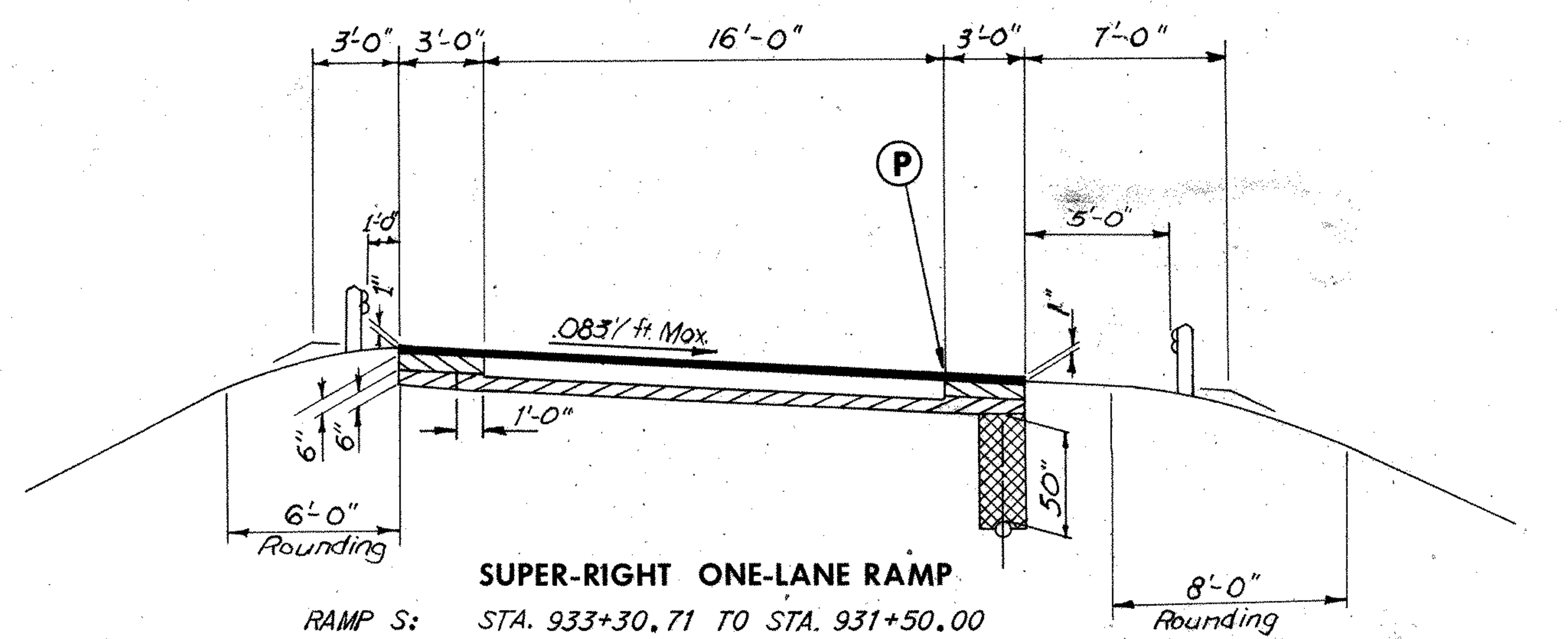
TWO-LANE RAMP
RAMP S: STA. 926+50.00 TO STA. 926+00.00



SUPER-RIGHT ONE-LANE DIRECTIONAL ROADWAY
RAMP A: STA. 952+97.80 TO STA. 951+50.00



SUPER-LEFT RAMP
RAMP S: STA. 930+50.00 TO STA. 926+50.00



SUPER-RIGHT ONE-LANE RAMP
RAMP S: STA. 933+30.71 TO STA. 931+50.00
RAMP T: STA. 930+25.00 TO STA. 933+00.00

Note:
For Legend, See Sheet 5.

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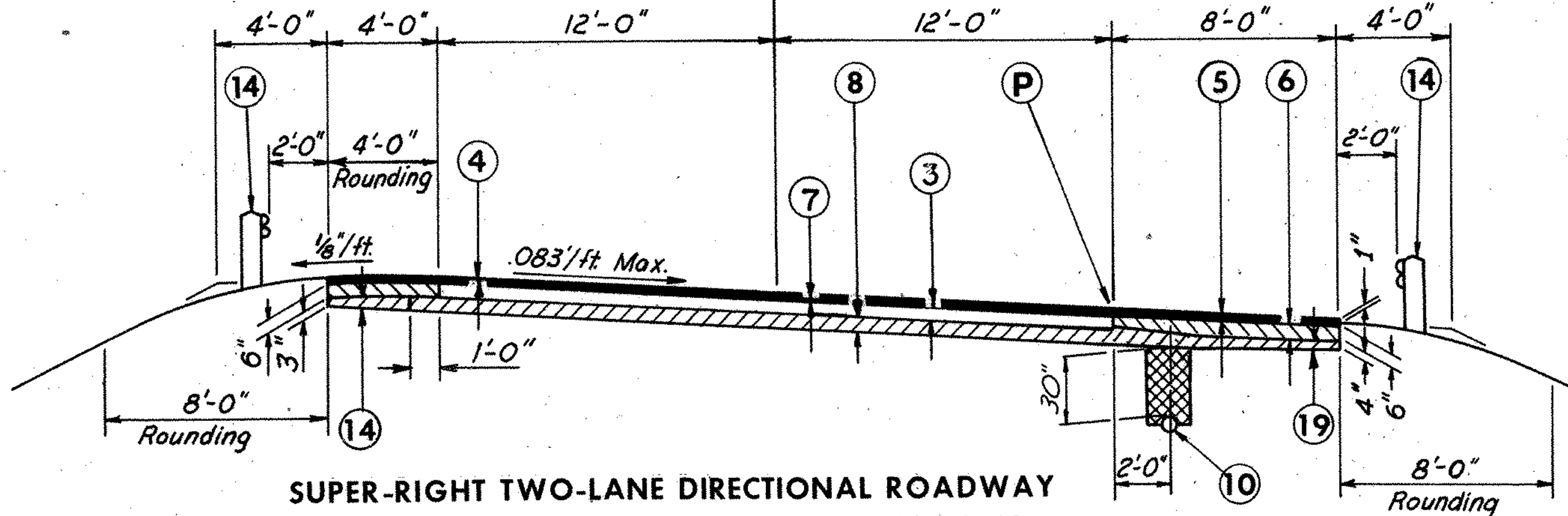
TYPICAL SECTIONS

TYPE 404 ON 301

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			7 / 389

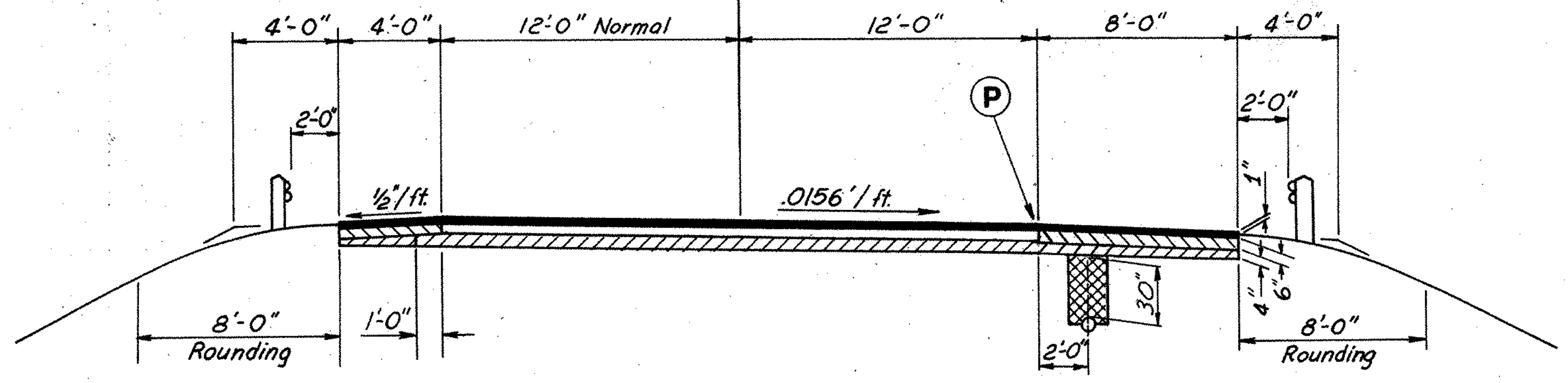
STARK COUNTY
STA-30-14.12
STA-77-9.22

STA. 969+00.61 to STA. 966+00.35 ℄A
Existing I-77 Exit See Sheet 93.
STA. 965+23.45 to STA. 961+29.19 ℄A
Ramp B Exit See Sheet 94.



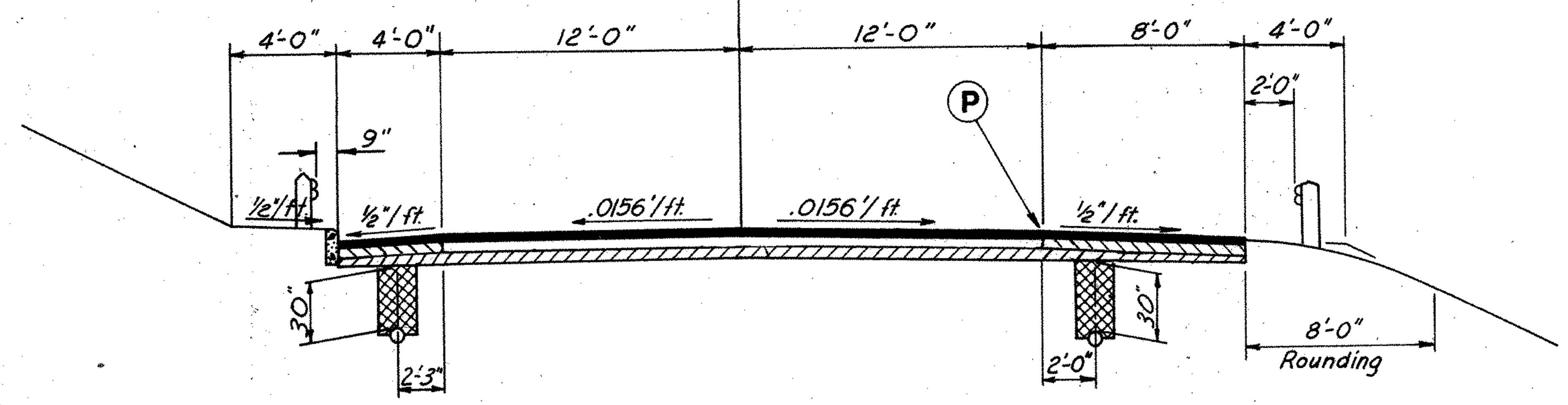
SUPER-RIGHT TWO-LANE DIRECTIONAL ROADWAY
RAMP A: STA. 966+01.53 TO STA. 961+29.19

STA. 968+42.11 to STA. 974+98.25
Ramp C Entrance See Sheet 95.
STA. 974+98.25 to STA. 977+48.00
Existing I-77 Entrance See Sheet 97.

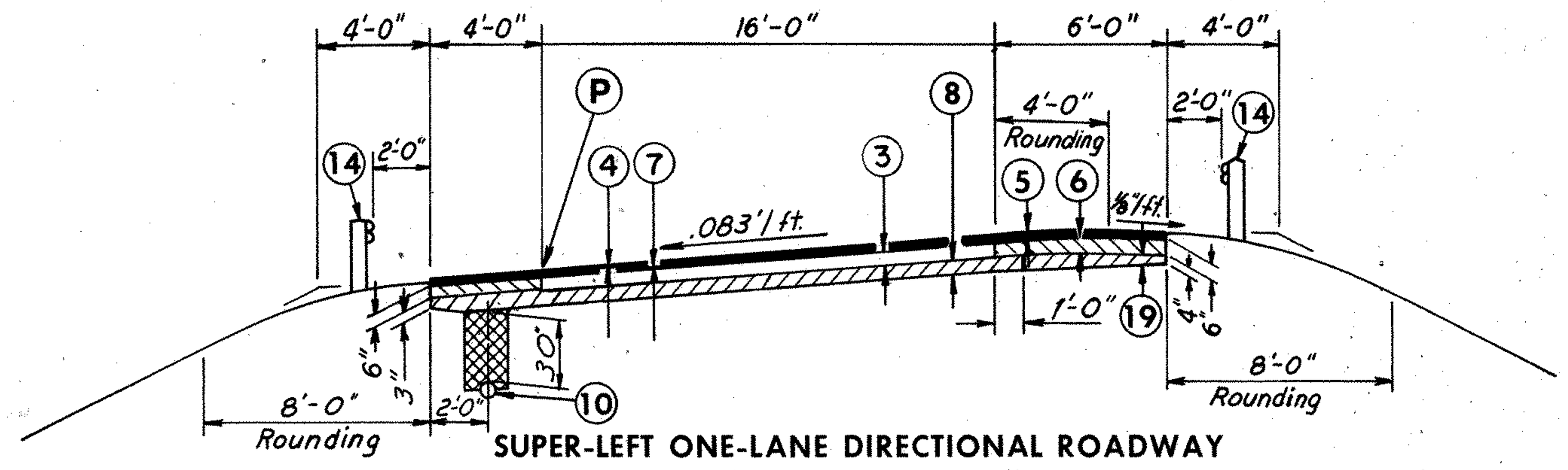


TWO-LANE DIRECTIONAL ROADWAY
RAMP F: STA. 952+97.31 TO STA. 954+07.31 Henry Ave. Bridge #5
*STA. 954+07.31 TO STA. 955+25.00
STA. 970+25.00 TO STA. 971+75.00 Market Ave. Bridge #9
STA. 971+75.00 TO STA. 974+98.25
*Curbed Left Shoulder, See Below

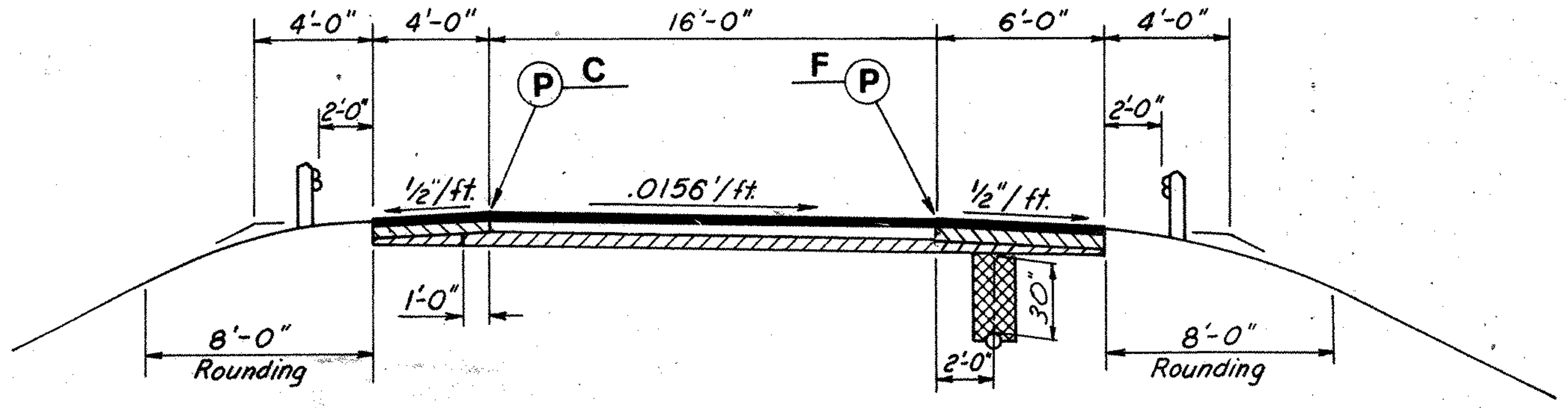
STA. 955+86.26 to STA 960+15.13
Ramp G Exit See Sheet 98.



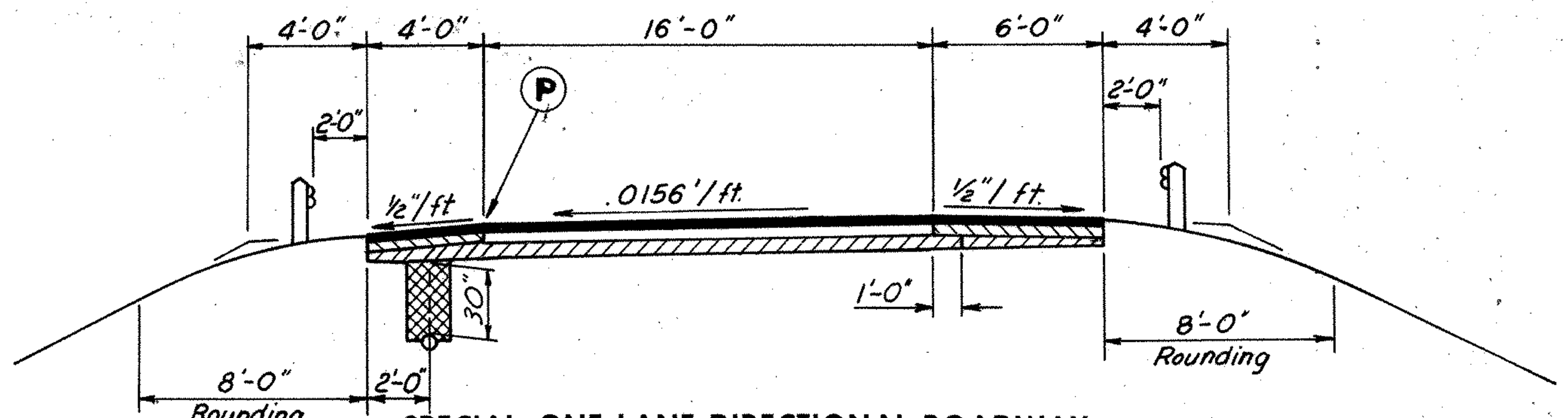
SPECIAL TWO-LANE DIRECTIONAL ROADWAY
RAMP F: STA. 955+25.00 TO STA. 960+33.75



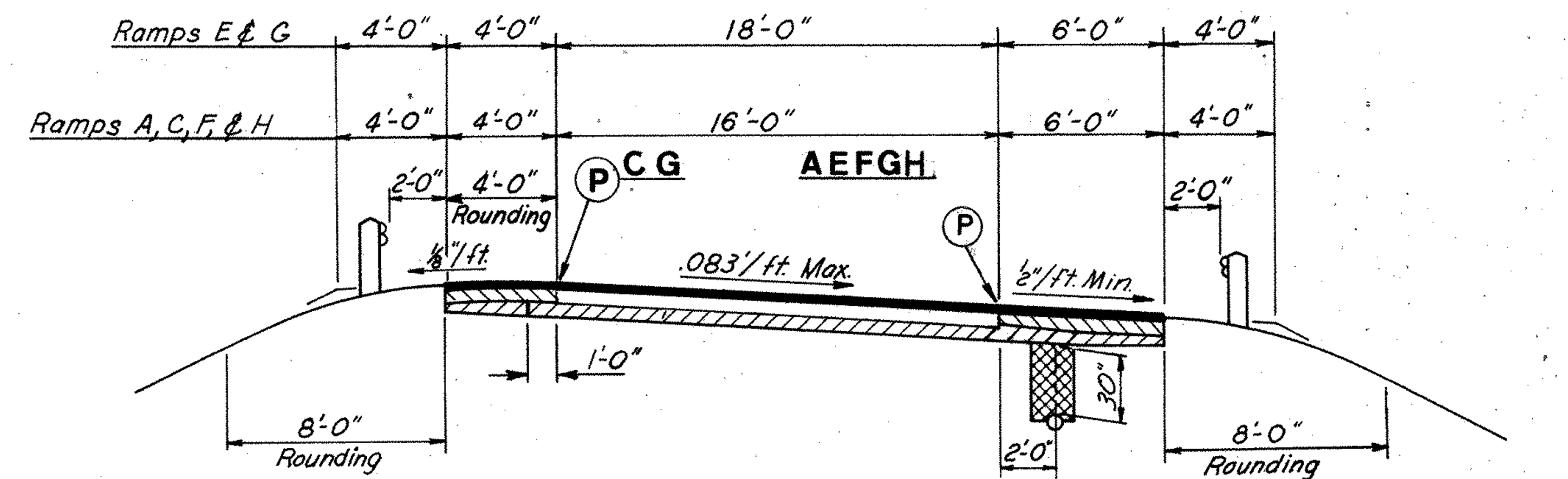
SUPER-LEFT ONE-LANE DIRECTIONAL ROADWAY
RAMP B: STA. 955+38.06 TO STA. 958+78.75
STA. 958+78.75 TO STA. 966+30.88 I-77 Bridge #14
RAMP C: STA. 966+96.48 TO STA. 957+34.25 I-77 Bridge #13
STA. 957+34.25 TO STA. 956+25.00
RAMP G: STA. 963+00.00 TO STA. 968+12.30 I-77 Bridge #7



ONE-LANE DIRECTIONAL ROADWAY
RAMP C: STA. 956+25.00 TO STA. 953+52.71
RAMP F: STA. 960+43.75 TO STA. 962+00.00 Penn. R.R. Bridge #6

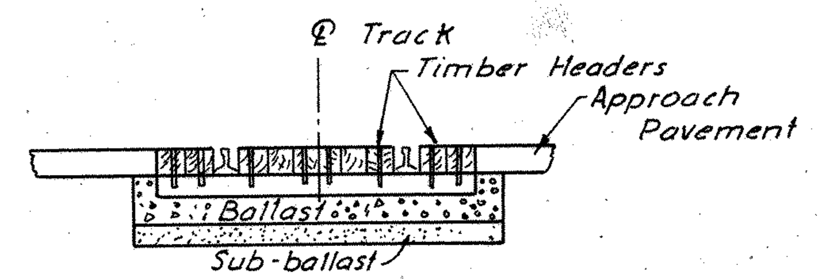


SPECIAL ONE-LANE DIRECTIONAL ROADWAY
RAMP G: STA. 960+44.85 TO STA. 963+00.00 Penn. R.R. Bridge #7

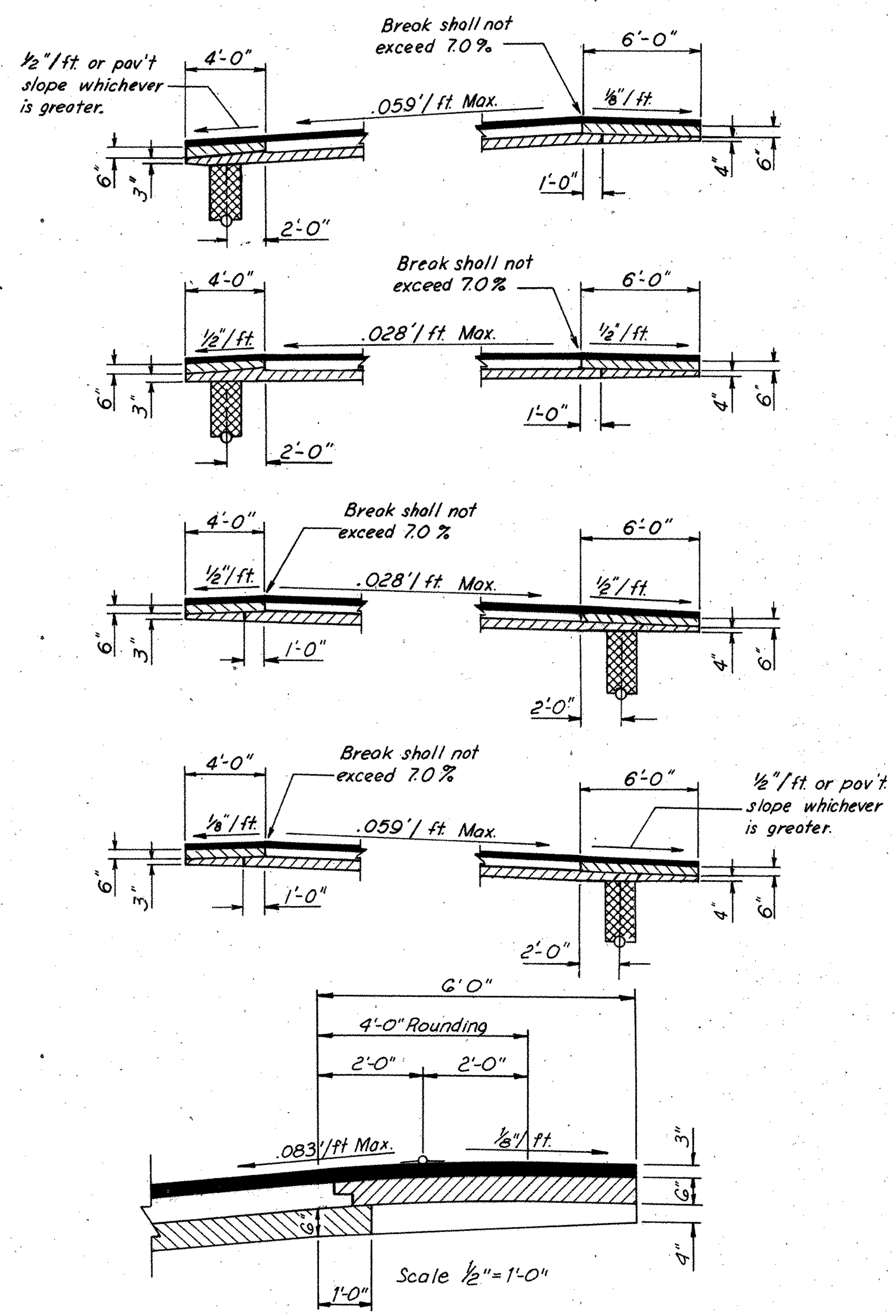


SUPER-RIGHT ONE-LANE DIRECTIONAL ROADWAY
RAMP A: STA. 961+29.19 TO STA. 954+06.43
STA. 954+06.43 TO STA. 952+97.80 Henry Ave. Bridge #15

RAMP C: STA. 953+52.71 TO STA. 950+87.18 Cleveland Ave. Bridge #9
RAMP E: STA. 976+86.91 TO STA. 967+56.07
RAMP F: STA. 962+00.00 TO STA. 963+19.25 Penn. R.R. Bridge #6
STA. 963+19.25 TO STA. 966+03.75
STA. 966+03.75 TO STA. 970+25.00 Cleveland Ave. Bridge #9
RAMP G: STA. 968+12.30 TO STA. 970+69.80 Cleveland Ave. Bridge #7
STA. 970+69.80 TO STA. 977+27.54
STA. 977+27.54 TO STA. 979+06.83 Cleveland Ave. Bridge #8
STA. 979+06.83 TO STA. 979+30.46
RAMP H: STA. 958+90.74 TO STA. 960+67.00 15th St. Connection Bridge #22
STA. 963+42.00 TO STA. 966+86.26 Market Ave. Bridge #10



B & O R.R. - CLEVELAND AVE.
CROSSING (BY OTHERS)



DIRECTIONAL ROADWAY SHOULDER TRANSITION DETAILS

Note:
For Legend See Sheet 5.

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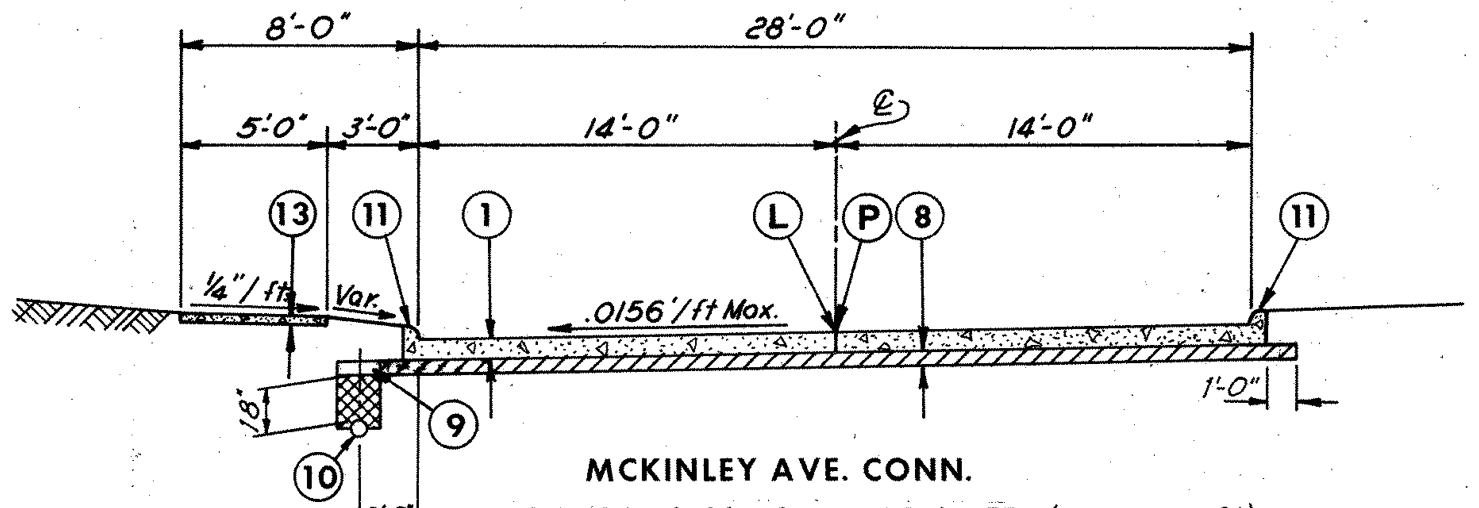
TYPICAL SECTIONS

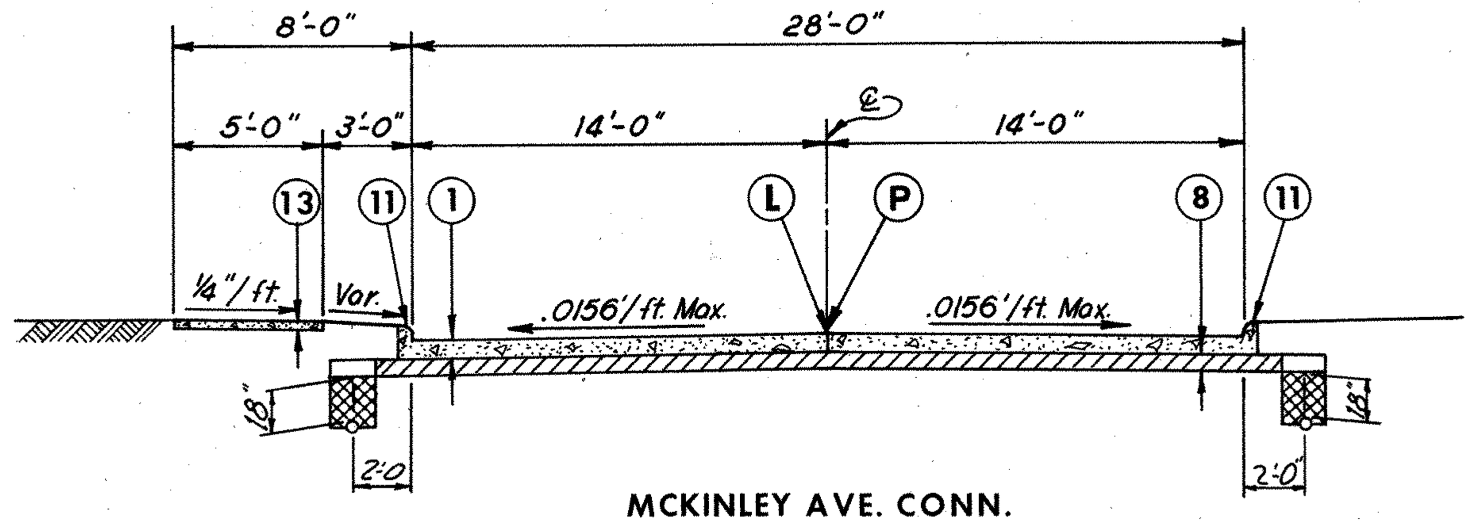
TYPE 451

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	8 / 389
2	OHIO			

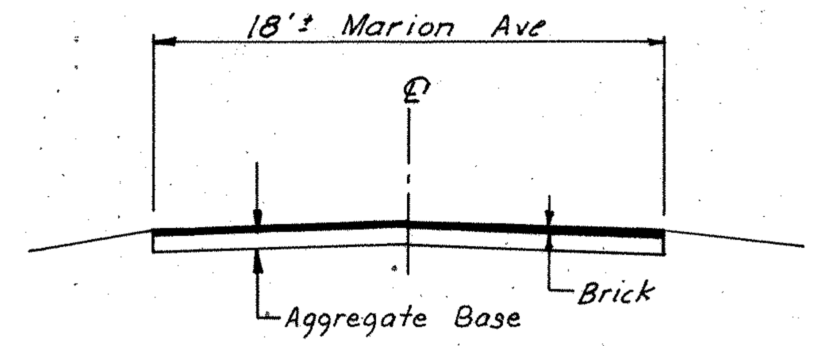
STARK COUNTY
STA-30-14.12
STA-77-9.22

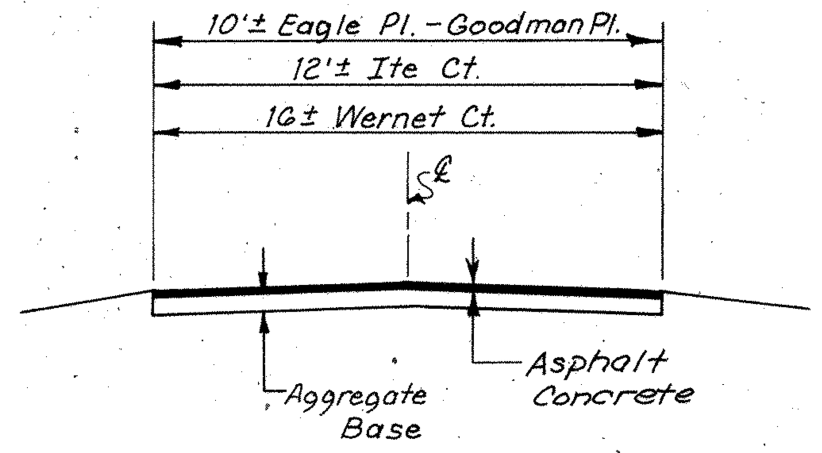


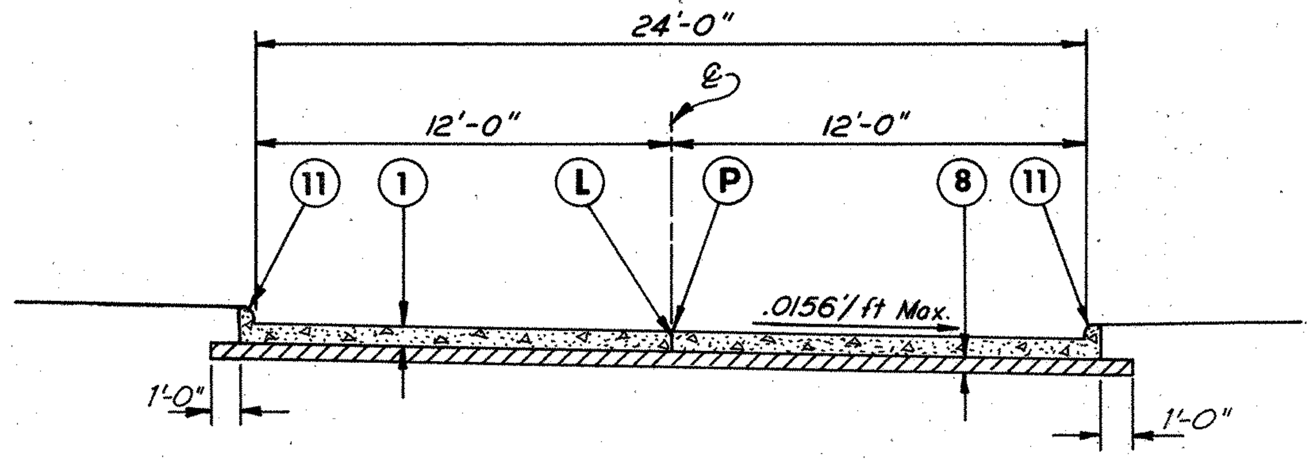
MCKINLEY AVE. CONN.
STA. 24+91.01 TO STA. 23+17.35 (Super Left)
STA. 28+77.49 TO STA. 27+57.16 (Super Right)



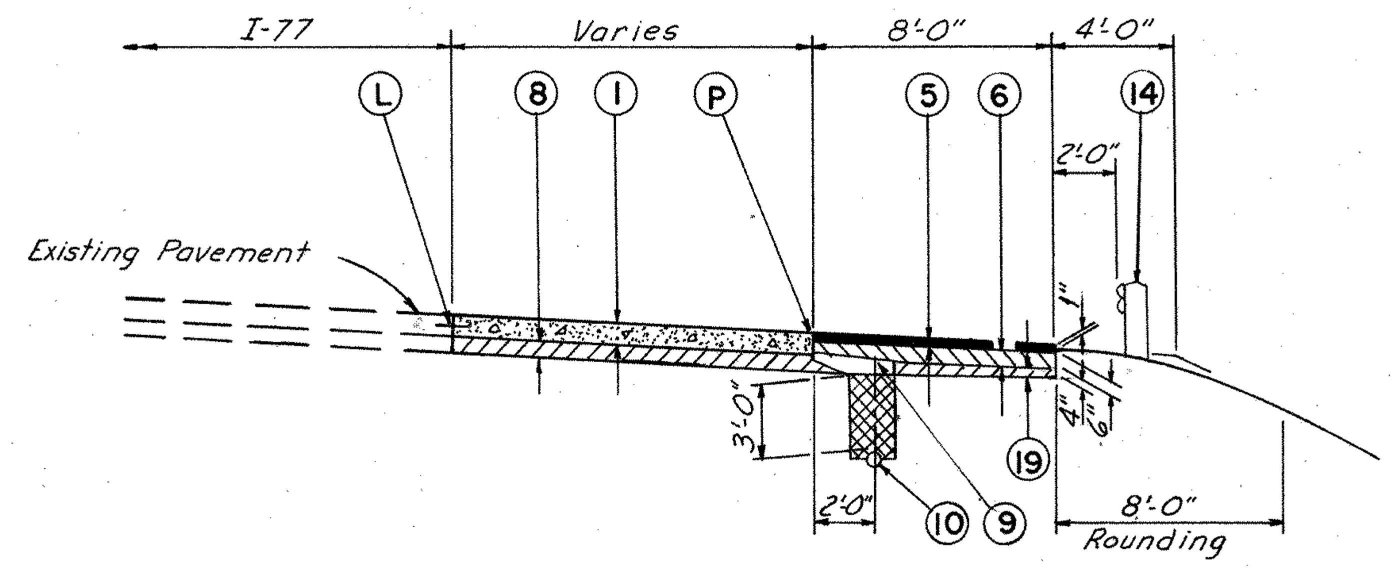
MCKINLEY AVE. CONN.
STA. 27+57.16 TO STA. 24+91.01



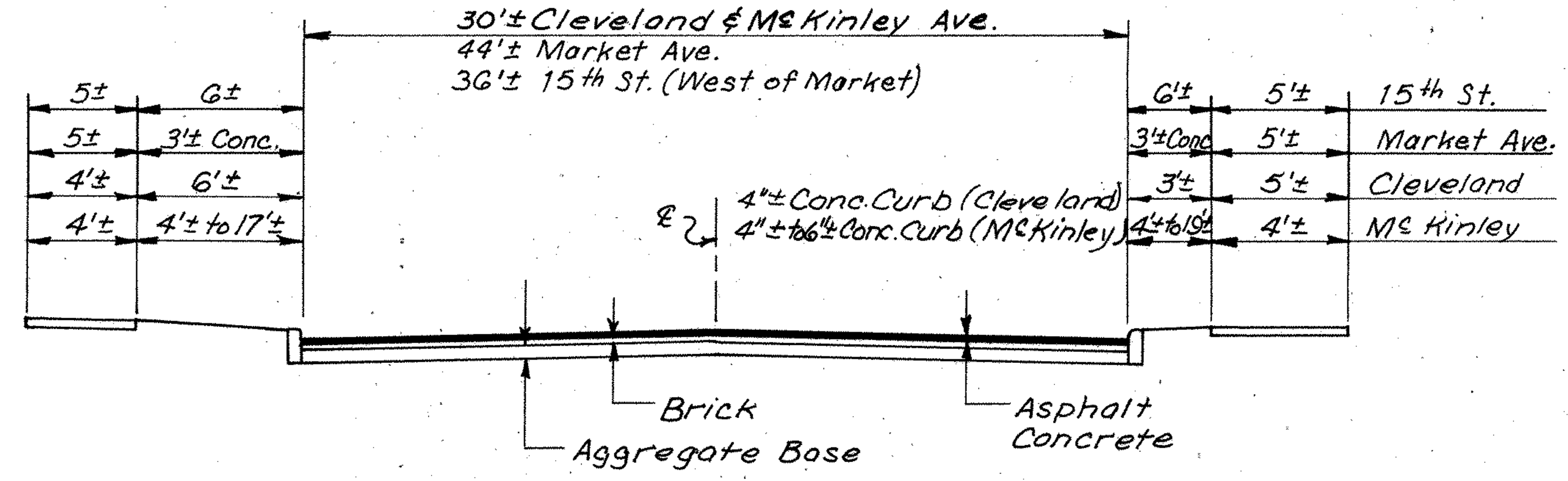


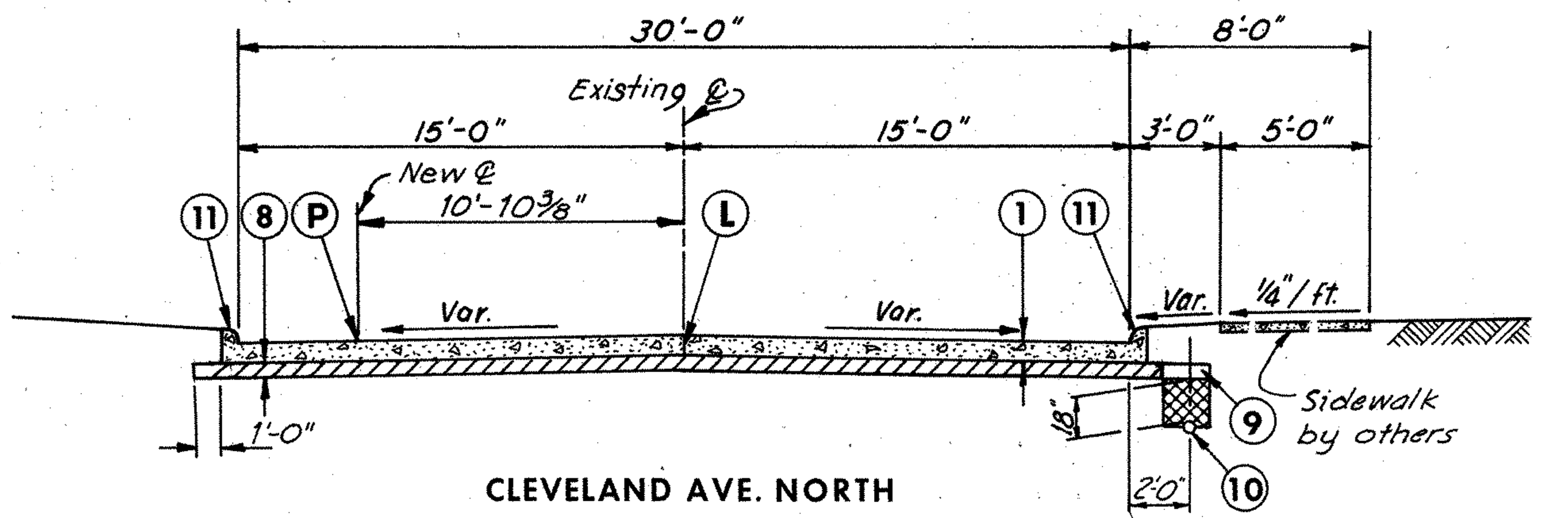


HIGH AVE. CONN.
STA. 11+86 TO STA. 14+15

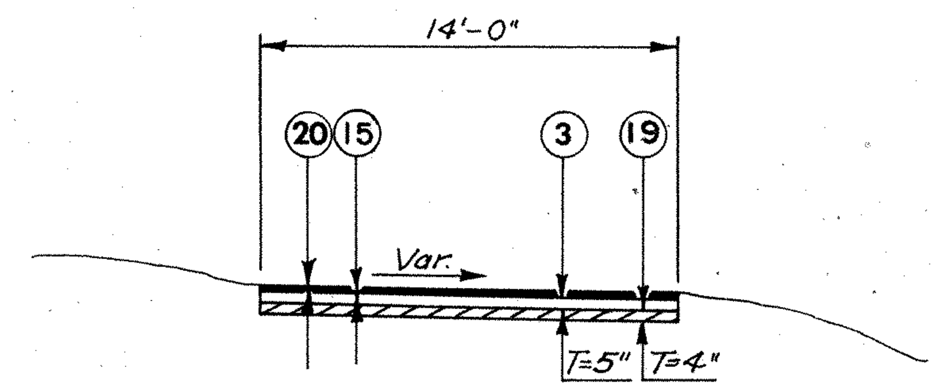


I-77 RAMP TAPERS
Ramp A : STA. 969+00.61 TO STA. 966+01.53
Ramp F : STA. 541+00.00 I-77Lt. TO STA. 551+81.03 I-77Lt.
Ramp H : STA. 545+00.00 I-77Rt. TO STA. 551+13.76 I-77 Rt.

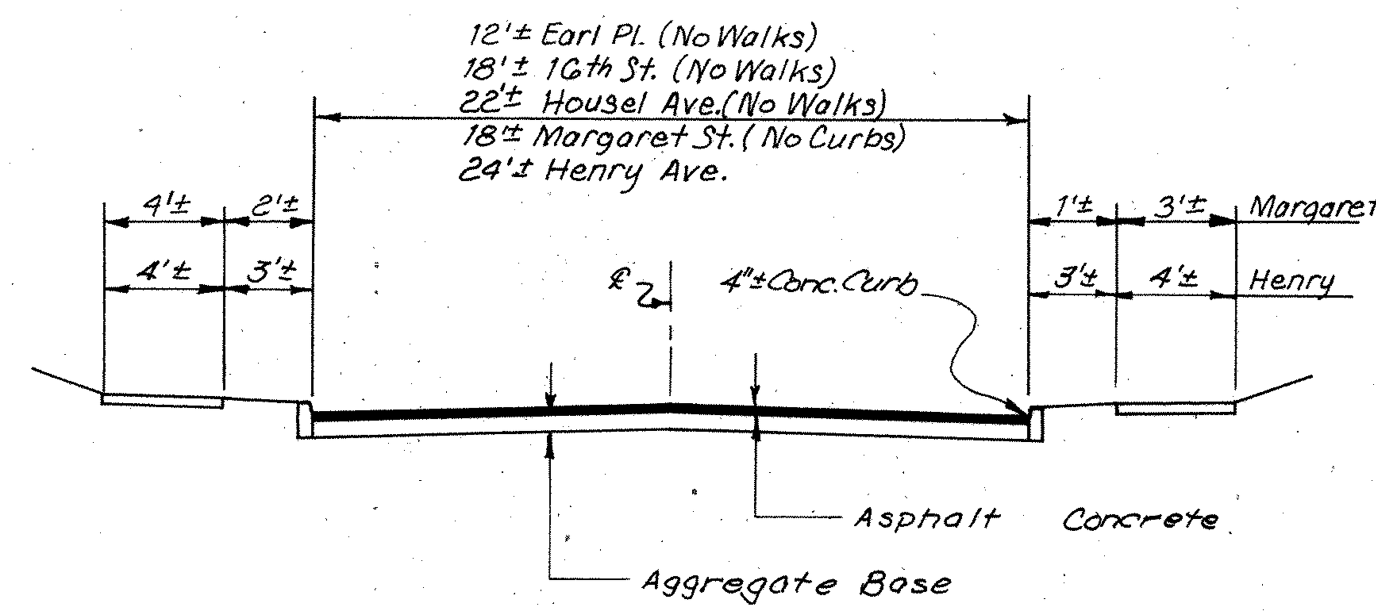


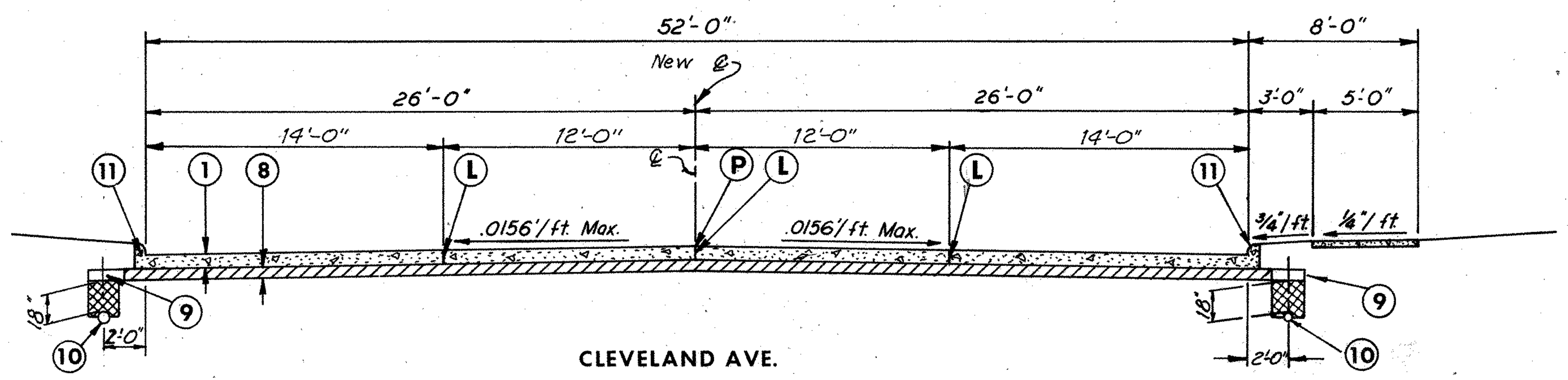


CLEVELAND AVE. NORTH
STA. 23+17.35 TO STA. 25+10.00

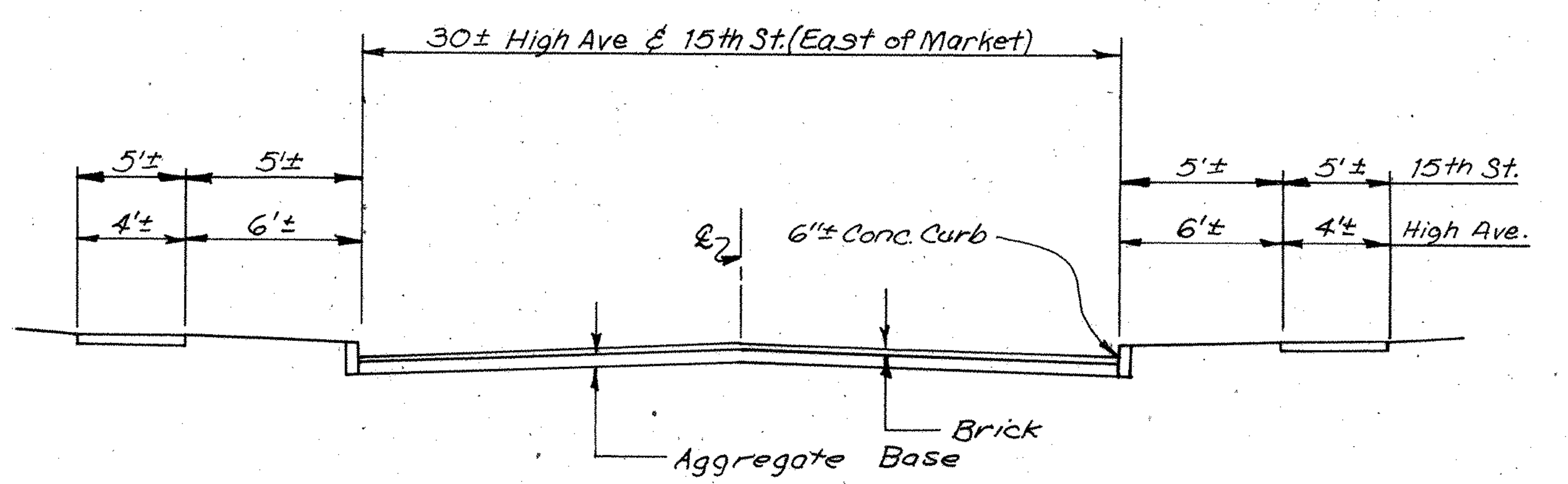


MARGARET ST., WERNET CT. CONNECTIONS AND ALLEY CONNECTIONS
(East of Margaret Ave. S.W. and Adjacent to Ramp A)





CLEVELAND AVE.
STA. 10+14.00 TO STA. 23+17.35



EXISTING ROADWAYS

Note:
For Legend See Sheet 5.

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TYPICAL SECTIONS


FED. ROAD DIV. NO
STATE
FEDERAL AID PROJECT NO
TYPE FUNDS
2
OHIO
9
389
STARK COUNTY
STA-30-14.12
STA-77-9.22
End Ramp A
P.T. Sta. 969+05.37 Ramp A
Sta. 576+08.94 ℄ I-77
Begin Ramp F
Sta. 943+25.00
Ramp F = ℄ U.S. 30
Begin Taper Ramp A
Sta. 946+30 ℄ U.S. 30
14 TH ST. S.W.
S88°14'37.0"E
446.50'
HENRY AVE.
℄ Traverse Line
P.C. Sta. 951+50
Ramp A = ℄ U.S. 30
T-203
T-204
T-205
U.S. 30
RAMP A
P.C.C. Sta. 951+29.59 Ramp B
Sta. 965+23.45 Ramp A
Begin Ramp D
S.C. Sta. 964+86.04 Ramp D
Sta. 573+36.34 Ramp D (Existing)
℄ MARION AVE. S.W.
N 14°06'06.7"E
℄ HIGH AVE. S.W.
Begin Work
End Existing Bridge
Sta. 966+74.00 Ramp D
Sta. 571+48.38 Ramp D (Existing)
End Work High Ave. Conn.
Sta. 14+35.00
HIGH AVE. CONN.
Begin Work High Ave. Conn.
Sta. 11+50.00
RAMP D
℄ EAGLE PL. S.W.
McKINLEY AVE. S.W.
McKINLEY CONN.
℄ Exist. Mckinley
Traverse Line
I-77
RAMP B
RAMP C
PENN. R.R.
Traverse Line
RAMP E
Sta. 953+54.32
Ramp F
Sta. 953+55.36 ℄ Ramp A
Sta. 10+81.24 Traverse Line
Sta. 953+53.73 ℄ U.S. 30
Sta. 11+70.72 Traverse Line
Sta. 953+54.32 ℄ Ramp F
Sta. 12+58.59 Traverse Line
Begin Taper Ramp E
Sta. 957+83.46 Ramp E
Sta. 957+56.07 ℄ U.S. 30
Begin Ramp G
P.C. Sta. 955+86.27
Ramp F = Ramp G
℄ and Traverse Line
N87°59'38.0"E
853.12'
15TH ST. S.W.
TO T-206
MARKET AVE.
N20°10'41.7"E
Note: For Stationing on ℄ Henry
See Plan Profile Sheet 28.
Tangent N59°02'45.5"E
End Ramp E
P.T. Sta. 979+63.22 Ramp E
Sta. 565+39.27 ℄ I-77
End Ramp G
P.C.C. Sta. 981+67.10 Ramp G
Sta. 564+72.08 ℄ I-77
970 U.S. 30
T-209A
P.C. Sta. 975+81.91 Ramp C
P.C. Sta. 975+83.66 Ramp D
Tangent N59°02'45.5"E
CLEVELAND AVE.
N24°32'59.1"E
Traverse Line
End Ramp B
P.T. Sta. 977+10.00
Ramp B = ℄ U.S. 30
RAMP H
TO T-210
Sta. 962+15.09
Ramp F
RAMP F
Sta. 966+81.49
Sta. 968+12.30
End Taper
Sta. 541+00.00 ℄ I-77
Sta. 971+04.49 Ramp F
Sta. 7+43.72 Mkt. Ave.
End Ramp F
Sta. 977+67.27 Ramp F
Sta. 549+03.68 ℄ I-77
S39°41'30.4"E
N35°09'38.3"W
Sta. 556+29.59 ℄ I-77
Sta. 8+49.19 Mkt. Ave.
MATCH LINE-STA. 556+50
TO T-206
N87°58'58.0"E
Sta. 560+71.93 ℄ I-77
Sta. 12+57.68 ℄ Cleveland
T-207A
Tangent S27°09'38.3"E
1015TH ST. CONN.
N35°09'38.3"W
RAMP H
Begin Ramp H
P.C. Sta. 956+41.14 Ramp H
Sta. 548+70.00 ℄ I-77
Sta. 981+88.36 Ramp H
Sta. 9+12.30 15th St. Conn.
Begin Ramp C
P.C. Sta. 949+77.20 Ramp C
Sta. 969+50.40 Ramp F
Sta. 560+60.10 ℄ I-77
Sta. 12+51.72 Cleveland
RAMP G
MARKET AVE.
N24°27'45.2"E
℄ and Traverse Line
T-209
Sta. 968+02.09 Ramp H
Sta. 14+04.28 Market Ave.
B. & O. R.R.
T-207
T-208
MATCH LINE-STA. 556+50
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
Scale: 1"=100'
GEOMETRIC LAYOUT

STARK COUNTY
STA-30-14.12
STA-77-9.22

CURVE NO.	BEGINNING OF CURVE Station	N	E	P.I. CURVE Station	N	E	END OF CURVE Station	N	E	Δ	D	R	T	L	LOCATION
1	528+59.51	406265.920	2309512.801	543+03.45	407257.922	2310562.036	553+03.68	408438.402	2309730.513		See	Spiral	Data.		I - 77
2	561+21.149	409106.716	2309259.756	565+94.900	409494.027	2308986.937	570+64.047	409935.322	2308814.604	13°49'45.0"Rt	1°28'00.0"	3906.530	473.751	942.898	I - 77
3	952+09.867	409187.466	2307768.256	961+22.205	409158.749	2308680.142	969+76.794	409716.719	2309401.966		See	Sprial	Data		U.S. 30
4	971+29.457	409810.085	2309522.750	980+31.563	410361.797	2310236.478	988+78.268	410341.955	2311138.365		See	Spiral	Data		U.S. 30
8	951+50.000	409258.323	2307710.241	952+11.279	409257.925	2307771.518	952+72.483	409262.763	2307832.605	4°53'57.5"Lt	4°00'00.0"	1432.394	61.279	122.483	Ramp A
9	952+72.483	409262.763	2307832.605	956+86.497	409295.445	2308245.328	960+53.795	409619.034	2308503.587	46°52'43.4"Lt	6°00'00.0"	954.930	414.014	781.312	Ramp A
10	960+53.795	409619.034	2308503.587	963+41.154	409843.631	2308682.840	966+00.347	410129.839	2308657.143	43°43'27.2"Lt	8°00'00.0"	716.197	287.359	546.552	Ramp A
11	966+00.347	410129.839	2308657.143	966+89.593	410218.727	2308649.162	968+00.347	410325.270	2308616.323		See	Spiral	Data		Ramp A
12	968+00.347	410325.270	2308616.323	968+52.882	410375.474	2308600.849	969+05.370	410424.410	2308581.738	4°12'03.3"Lt	4°00'00.0"	1432.394	52.535	105.023	Ramp A
13	975+83.655	410231.674	2309855.624	976+87.182	410249.406	2309957.620	977+90.616	410274.514	2310058.055	4°10'27.1"Lt	2°01'00.8"	2840.789	103.527	206.961	Ramp D
14	951+29.588	410052.601	2308683.895	952+89.220	409892.994	2308681.050	954+45.927	409742.991	2308626.449	18°58'49.2"Rt	6°00'00.0"	954.930	159.632	316.339	Ramp B
15	955+13.927	409679.092	2308603.190	955+58.671	409637.047	2308587.885	956+03.299	409593.424	2308577.933	7°08'59.2"Lt	8°00'00.0"	716.197	44.744	89.372	Ramp B
16	956+03.299	409593.424	2308577.933	975+73.567	407672.513	2308139.689	965+79.792	409324.962	2309212.707	159°51'14.5"Lt	16°22'12.8"	350.000	1970.268	976.493	Ramp B
17	968+28.117	409524.516	2309361.365	970+15.078	409681.319	2309463.185	971+99.386	409802.232	2309605.785	16°42'25.6"Rt	4°30'00.0"	1273.240	186.961	371.269	Ramp B
18	971+99.386	409802.232	2309605.785	974+55.410	409967.810	2309801.060	977+10.000	410095.024	2310023.243	10°30'04.0"Rt	2°03'23.6"	2785.993	256.024	510.614	Ramp B
19	949+77.196	408746.630	2309428.969	951+29.236	408866.793	2309335.819	952+80.405	408967.746	2309222.133	10°36'44.3"Lt	3°30'00.0"	1637.022	152.040	303.209	Ramp C
20	957+83.662	409301.905	2308845.828	964+82.632	409766.016	2308323.181	966+72.377	410037.576	2308967.242	115°31'58.3"Rt	13°00'00.0"	440.737	698.970	888.715	Ramp C
21	966+72.377	410037.576	2308967.242	967+39.372	410063.604	2309028.974	968+72.377	410086.503	2309160.693		See	Spiral	Data		Ramp C
22	975+81.907	410208.029	2309859.735	976+86.308	410225.910	2309962.593	977+90.616	410251.231	2310063.876	4°10'27.1"Lt	2°00'00.0"	2864.789	104.401	208.709	Ramp C
23	964+86.035	410222.279	2308788.251	966+31.723	410118.512	2308890.513	967+57.468	410134.130	2309035.362	51°34'20.2"Lt	19°00'00.0"	301.557	145.688	271.433	Ramp D
24	973+03.825	410192.698	2309578.571	974+43.789	410207.701	2309717.728	975+83.655	410231.674	2309855.624	3°42'29.9"Lt	1°19'30.7"	4323.565	139.964	279.830	Ramp D
27	957+83.460	409245.260	2308307.562	962+21.944	409315.952	2308740.312	966+44.629	409572.870	2309095.644	26°35'26.7"Lt	3°05'15.9"	1855.585	438.484	861.169	Ramp E
28	966+44.629	409572.870	2309095.644	966+86.513	409597.411	2309129.585	967+28.398	409622.446	2309163.164	0°50'15.7"Lt	1°00'00.0"	5729.578	41.884	83.769	Ramp E
29	967+28.398	409622.446	2309163.164	967+42.232	409630.715	2309174.255	967+56.067	409639.131	2309185.236	0°45'39.2"Lt	2°45'00.0"	2083.483	13.834	27.669	Ramp E
30	967+56.067	409639.131	2309185.236	968+87.717	409719.212	2309289.724	969+56.067	409790.204	2309312.725		See	Spiral	Data		Ramp E
31	969+56.067	409790.204	2309312.725	1020+43.307	414629.768	2310880.726	975+08.821	409913.127	2308974.602	175°56'49.7"Lt	31°49'51.6"	180.000	5087.240	552.754	Ramp E
32	975+08.821	409913.127	2308974.602	975+88.614	409839.147	2308944.705	977+08.821	409716.108	2308978.424		See	Spiral	Data		Ramp E
33	977+08.821	409716.108	2308978.424	978+36.658	409592.817	2309012.213	979+63.224	409481.354	2309074.809	13°59'31.8"Lt	5°30'00.0"	1041.741	127.837	254.403	Ramp E
34	943+25.000	409159.347	2306882.066	945+47.917	409152.330	2307104.872	947+70.778	409136.654	2307327.237	2°13'44.0"Rt	0°30'00.0"	11459.156	222.917	445.778	Ramp F
35	963+13.306	409028.175	2308865.946	966+19.348	409006.653	2309171.231	968+91.750	408771.156	2309366.687	46°16'32.0"Rt	8°00'00.0"	716.197	306.042	578.444	Ramp F
36	974+95.708	408306.416	2309752.409	976+32.005	408201.536	2309839.456	977+67.269	408080.608	2309902.331	12°13'12.8"Rt	4°30'00.0"	1273.240	136.297	271.561	Ramp F
37	955+86.265	409103.245	2308142.393	960+05.874	409073.736	2308560.964	964+22.132	409135.797	2308975.959	12°32'16.8"Lt	1°30'00.0"	3819.719	419.609	835.867	Ramp G
38	964+22.132	409135.797	2308975.959	965+18.007	409149.976	2309070.773	966+10.029	409207.056	2309147.797	28°02'08.3"Lt	14°55'14.8"	384.000	95.869	187.897	Ramp G
39	968+12.301	409314.633	2309319.836	969+47.856	409412.131	2309225.659	970+12.301	409400.983	2309497.204		See	Sprial	Data		Ramp G
40	970+12.301	409400.983	2309497.204				976+24.509	409044.417	2309480.227	194°52'18.7"Rt	31°49'51.6"	180.000		612.208	Ramp G
41	976+24.509	409044.417	2309480.227	977+01.567	409090.297	2309542.138	978+24.509	409151.300	2309314.269		See	Spiral	Data		Ramp G
42	978+24.509	409151.300	2309314.269	979+96.625	409275.095	2309194.692	981+67.098	409423.693	2309107.846	13°42'12.8"Rt	4°00'00.0"	1432.394	172.116	342.589	Ramp G
43	956+41.143	408092.036	2310003.351	958+87.270	408309.008	2309898.159	961+22.757	408537.485	2309821.086	7°13'27.2"Rt	1°30'00.0"	3819.719	241.127	481.614	Ramp H
44	961+22.757	408537.485	2309821.086	963+35.558	408739.122	2309753.068	965+43.564	408951.736	2309761.978	21°02'25.3"Rt	5°00'00.0"	1145.916	212.801	420.807	Ramp H
45	971+17.923	409525.592	2309786.025	976+26.639	410033.863	2309807.324	980+02.579	410181.135	2310294.256	70°46'21.1"Rt	8°00'00.0"	716.197	508.716	884.656	Ramp H
46	23+17.350	410037.060	2309713.545	24+06.690	410118.473	2309750.336	24+91.012	410206.750	2309736.593	33°10'01.5"Lt	19°05'54.9"	300.000	89.340	173.662	McKinley CONN
47	27+57.159	410469.729	2309695.653	28+18.145	410529.989	2309686.272	28+77.491	410589.129	2309701.163	22°58'54.2"Rt	19°05'54.9"	300.000	60.986	120.332	McKinley CONN
48	7+55.317	408528.821	2309938.949	7+85.658	408528.763	2309908.408	8+14.599	408545.778	2309883.046	33°57'58.7"Rt	57°17'44.8"	100.000	30.541	59.282	15TH ST CONN
49	9+39.976	408615.629	2309778.929	9+58.494	408625.945	2309763.551	9+76.597	408641.084	2309752.887	20°58'56.3"Rt	57°17'44.8"	100.000	18.518	36.821	15TH ST CONN

									Spiral	Data					
Spiral No.	Δ	θs	Ls	Ts	Xc	Yc	Δc	Dc	Rc	Tc	Lc	K	P	Es	
1	81°46'00.0"Lt	8°00'00.0"	400.000	1443.94	399.22	18.59	65°46'00.0"	4°00'00.0"	1432.39	926.07	1644.17	199.87	4.65	468.35	I - 77
3	39°30'28.1"Lt	6°45'00.0"	450.000	912.338	449.376	17.654	26°00'28.1"	3°00'00.0"	1909.859	441.063	866.927	224.896	4.416	124.109	U.S. 30
4	38°57'51.6"Rt	6°45'00.0"	450.000	902.106	449.376	17.654	25°27'51.6"	3°00'00.0"	1909.859	431.532	848.811	224.896	4.416	120.673	U.S. 30
	$\Delta_1 + \Delta_2$	θa	La	T_1	Xc	Yc				T_2		K	Pa		
11	12°00'00.0"Lt	4°00'00.0"	200.000	89.246	198.784	18.555				111.489			1.163		Ramp A
21	13°00'00.0"Rt	13°00'00.0"	200.000	66.995	198.973	15.071				133.695		99.829	3.775		Ramp C
30	34°34'51.6"Lt	29°04'51.6"	200.000	131.646	193.087	42.355				74.625			8.371		Ramp E
32	37°19'51.6"Lt	26°19'51.6"	200.000	79.793	191.023	48.388				127.576			7.582		Ramp E
39	31°49'51.6"Rt	31°49'51.6"	200.000	135.555	193.915	36.228				68.691		98.980	9.158		Ramp G
41	35°49'51.6"Rt	27°49'51.6"	200.000	77.058	192.175	45.109				129.701			8.012		Ramp G

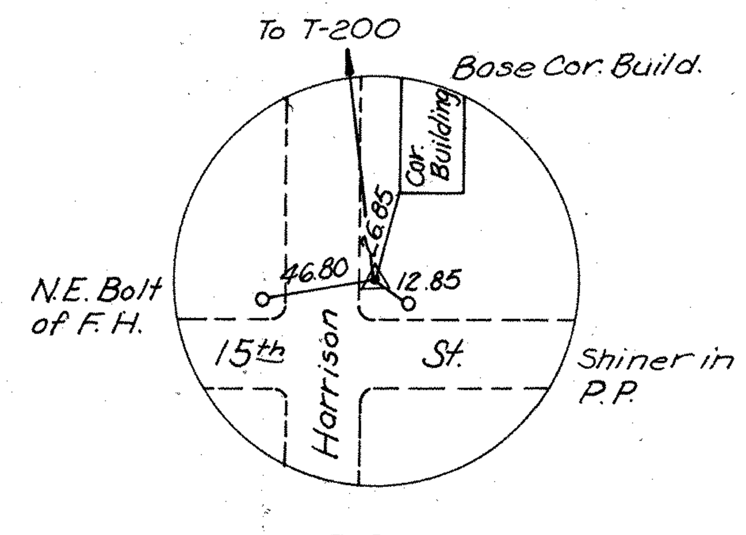
POINT	BEARING	DISTANCE	COORDINATES N	E
T - 1			408892.054	2305221.682
	N 00°54'08.0" W	551.337		
T - 200			409443.323	2305213.000
	S 87°20'06.8" E	306.155		
T - 200A			409429.089	2305518.824
	S 88°15'52.3" E	311.250		
T - 201			409419.663	2305829.931
	S 88°11'19.3" E	1641.960		
T - 203			409367.764	2307471.071
	S 88°14'37.0" E	446.499		
T - 204			409354.079	2307917.360
	S 01°46'47.0" W	572.280		
T - 205			408782.075	2307899.587
	N 87°59'38.0" E	853.121		
T - 206			408811.939	2308752.185
	N 87°58'58.0" E	698.329		
T - 207			408836.520	2309450.081
	N 87°57'19.9" E	155.372		
T - 208			408842.063	2309605.354
	N 24°28'04.7" E	647.305		
T - 209			409431.236	2309873.458
	N 24°27'45.2" E	878.554		
T - 210			410230.924	2310237.266
T - 206			408811.939	2308752.185
	N 04°02'53.5" E	1087.753		
T - 206A			409896.978	2308828.976
	S 21°19'51.5" E	435.500		
Old PI - 77			409495.987	2308985.535
	S 35°09'45.0" E	537.210		
T - 207A			409056.806	2309294.913
	S 35°09'38.3" E	269.449		
T - 207			408836.520	2309450.081
	N 35°09'38.3" W	269.449		
T - 207A			409056.806	2309294.913
	N 24°32'59.1" E	1003.600		
T - 209A			409969.681	2309711.892
	N 23°50'26.9" E	337.093		
T - 209B			410278.011	2309848.143
T - 209			409431.236	2309873.458
	N 16°42'08.8" W	562.163		
T - 209A			409969.681	2309711.892
	N 16°43'57.0" W	314.696		
T - 209C			410271.053	2309621.289
	N 14°07'59.2" E	367.951		
T - 209D			410627.867	2309711.134

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

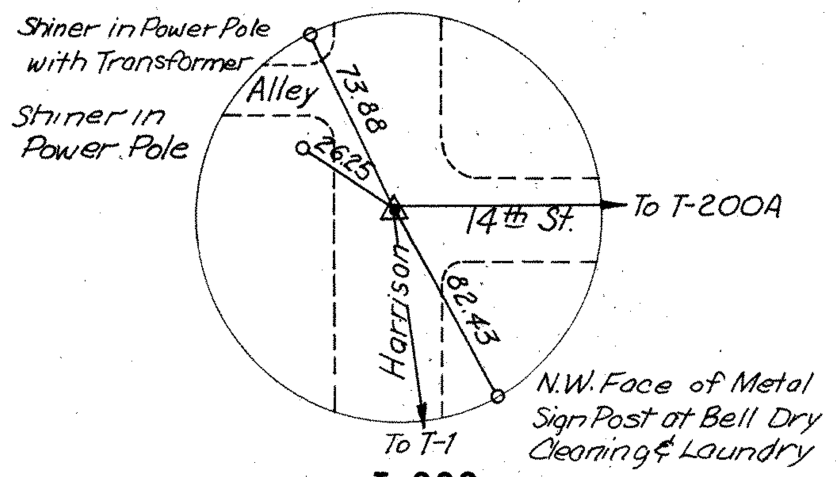
CURVE DATA

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	11 / 389
2	OHIO			

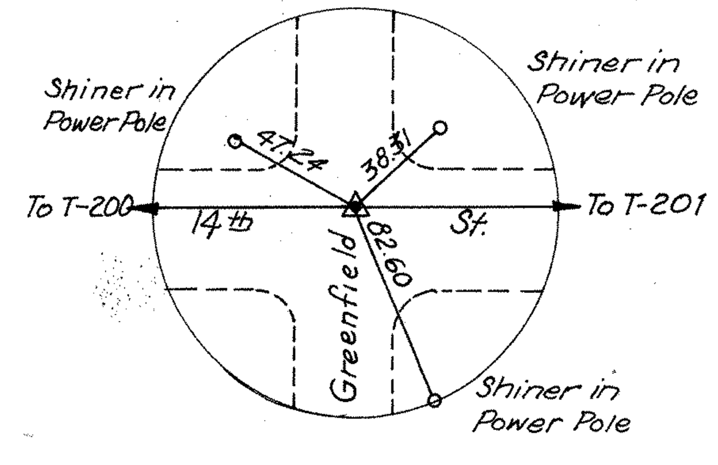
STARK COUNTY
STA-30-14.12
STA-77-9.22



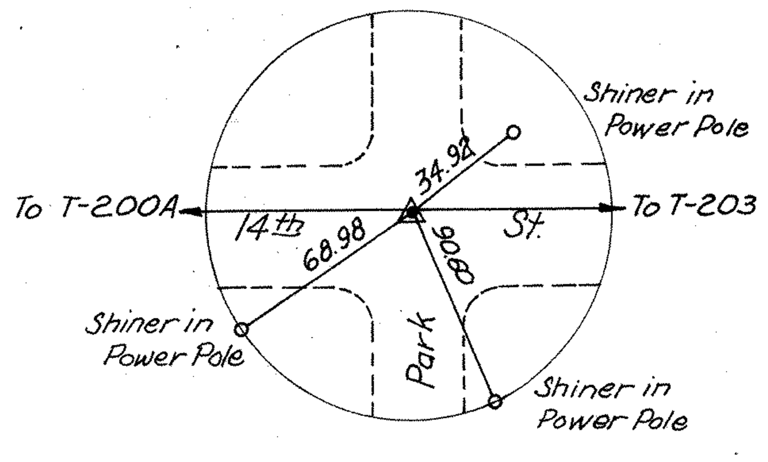
T-1
Leaded Tack: N.E. Corner



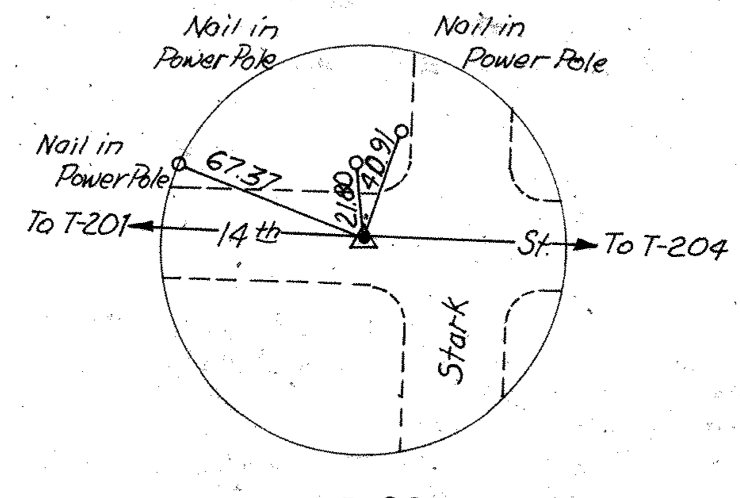
T-200
Mine Spike on Surface



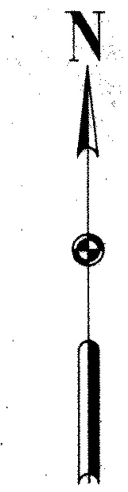
T-200A
Mine Spike on Surface

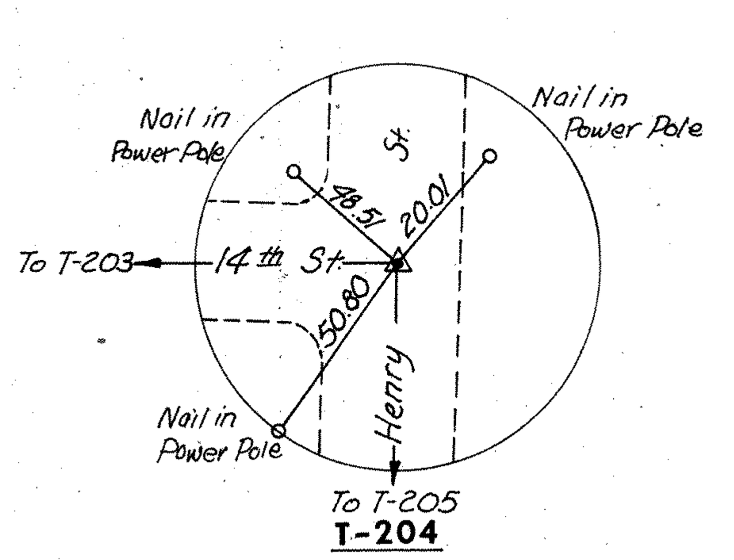


T-201
Mine Spike on Surface

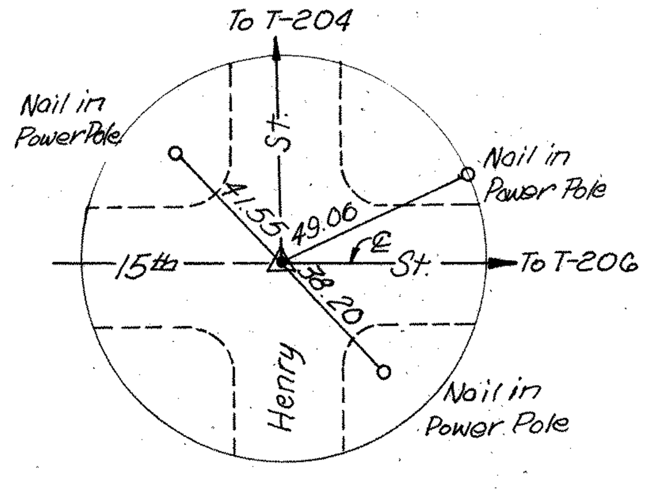


T-203
Mine Spike on Surface

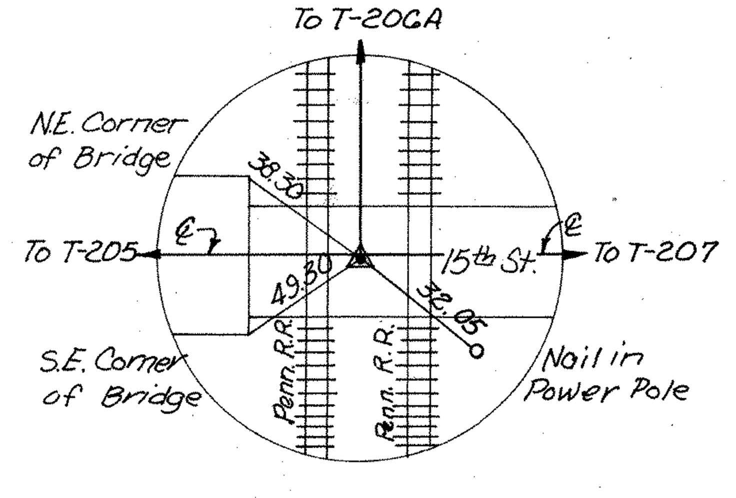




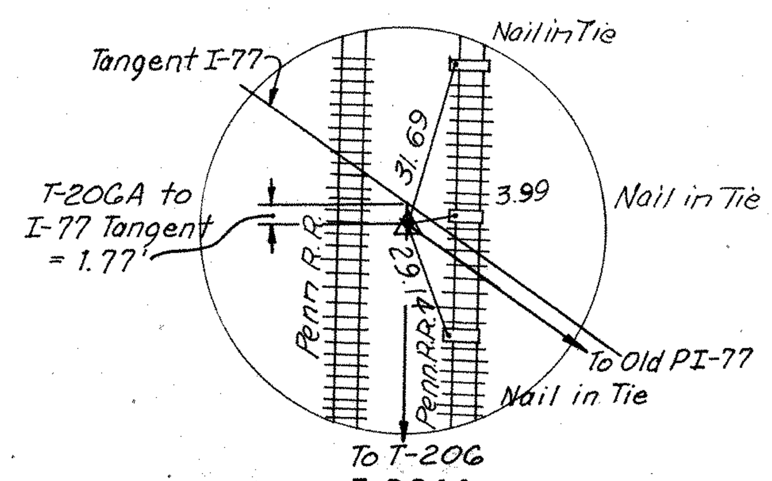
T-204
Mine Spike on Surface



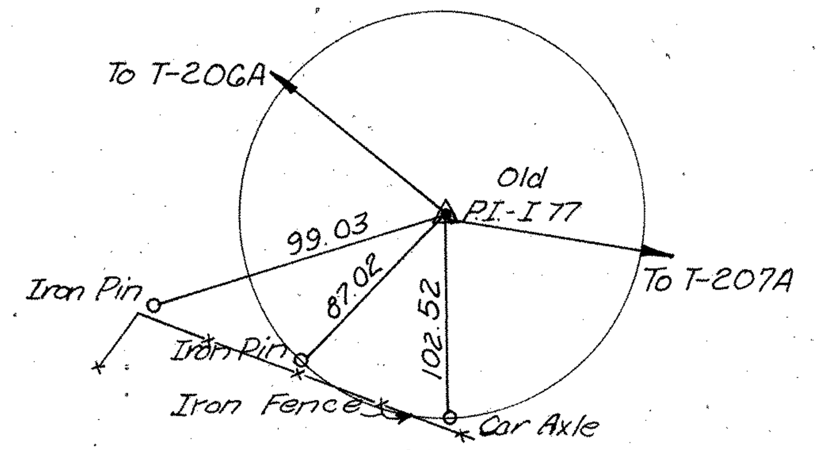
T-205
Mine Spike on Surface



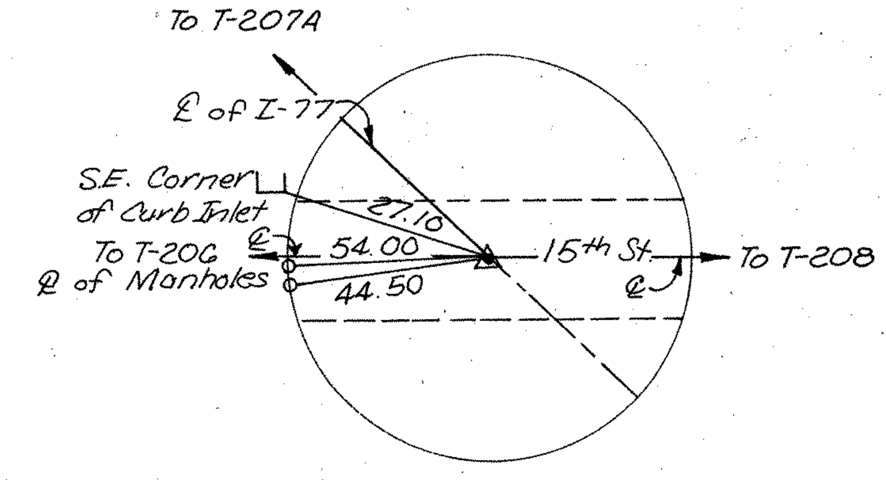
T-206
Mine Spike on Surface



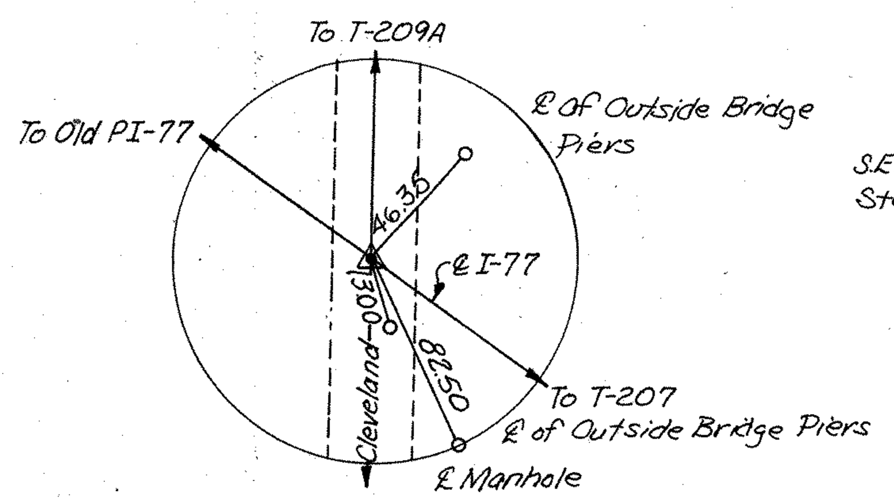
T-206A
Iron Pin Punched With Cap



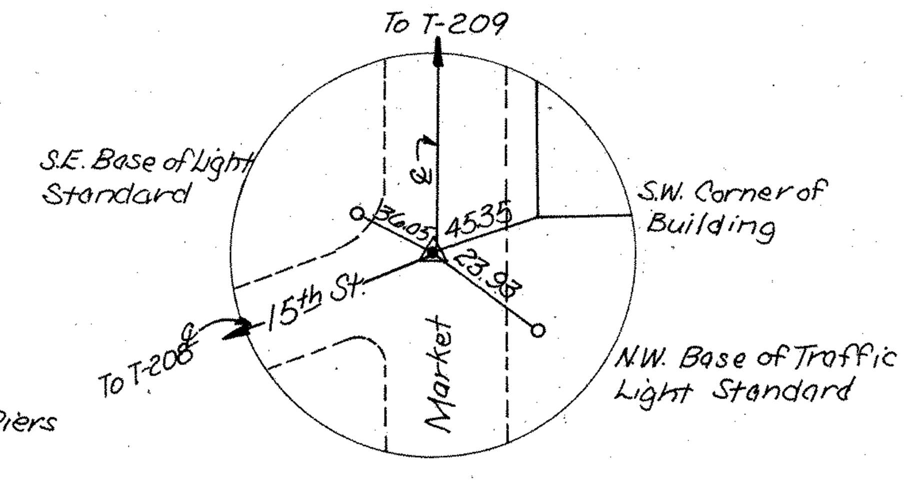
Old PI I-77
Iron Pin on Surface



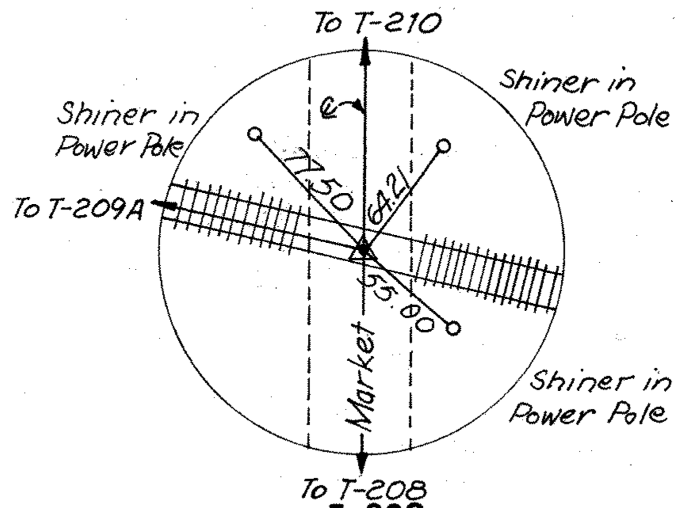
T-207 = 557+90.65
P.K. Nail



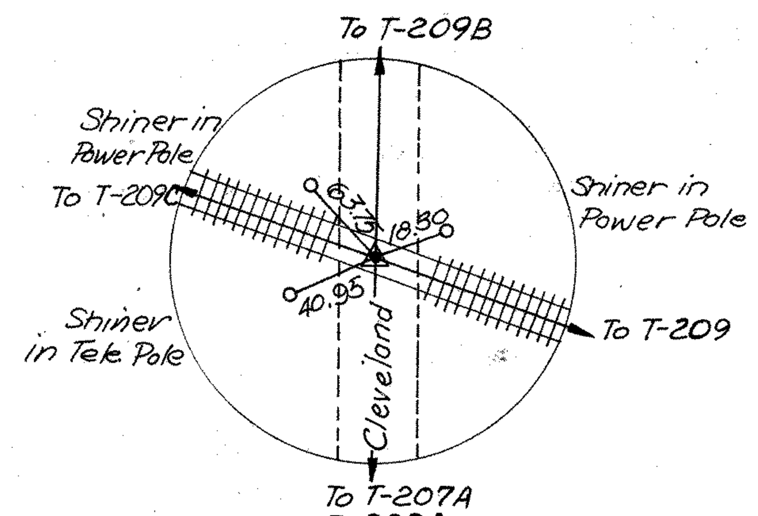
T-207A = 560+60.02
P.K. Nail



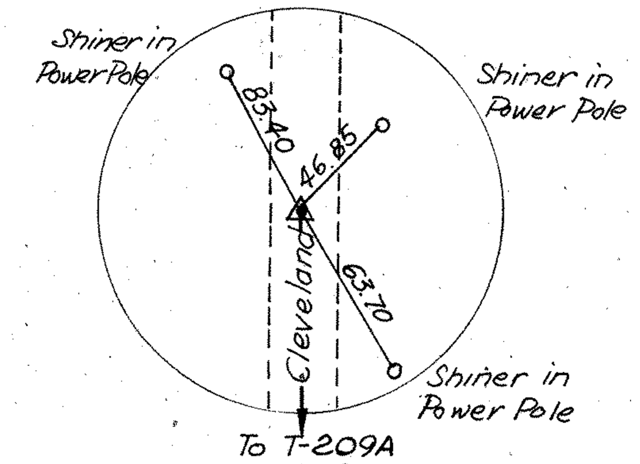
T-208
Mine Spike on Surface



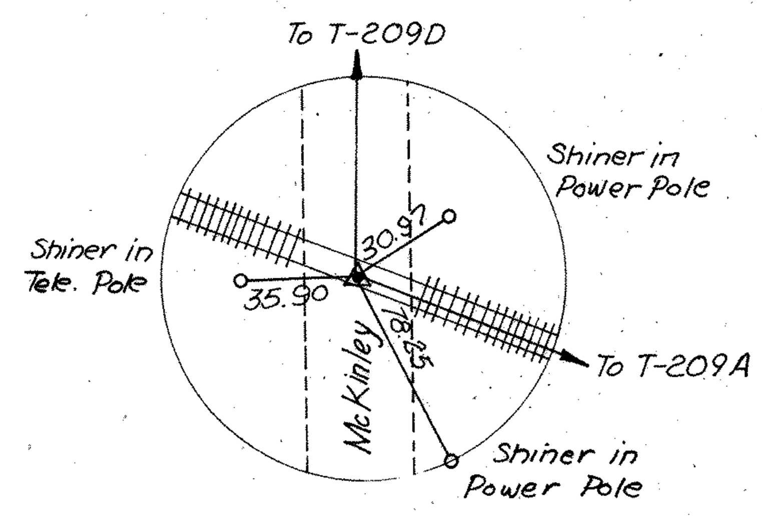
T-209
Mine Spike at R.R. & Market



T-209A
Mine Spike on Surface



T-209B
Mine Spike on Surface

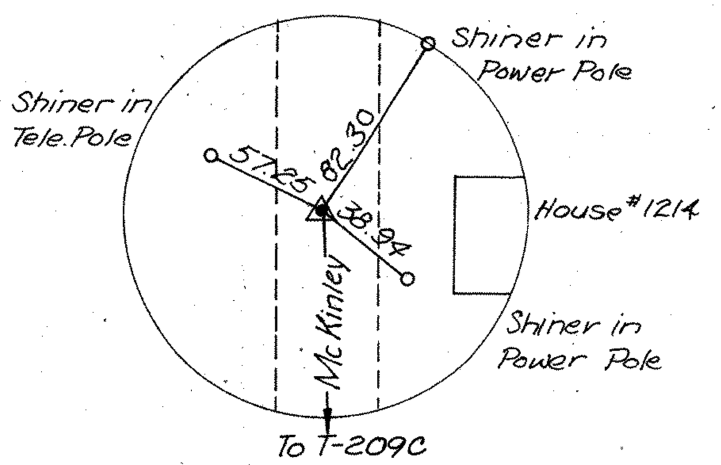


T-209C
Mine Spike

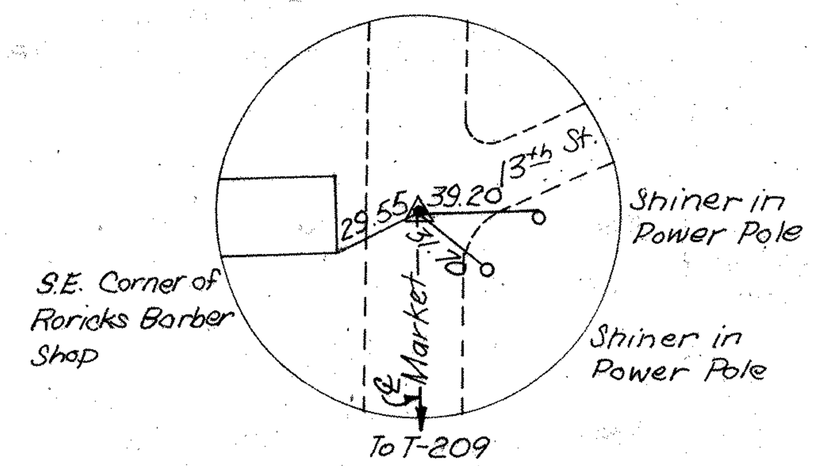
BENCH MARKS

No.	Elevation	Description
BM 37	1038.693	RR spike power pole SE corner 15th and Park.
BM 38	1030.920	RR spike power pole SE corner 15th Cathl.
BM 39	1024.680	Third power pole E 15th and Henry on S side 15th RR spike S base of pole opposite one-way alley pole#819C-2/47
BM H-1	1027.222	"X" NE bolt fire hydrant NE corner 15th and Henry.
BM H-2	1030.243	"X" NE bolt fire hydrant NW corner 15th and Stark.
BM H-3	1037.919	"X" NE bolt fire hydrant NE corner Dueber and 15th.
BM H-4	1041.664	"X" NE bolt top flange fire hydrant approx. 60' N of NE corner 15th and Greenfield E side of street between drive and power pole.
BM H-5	1049.786	"X" NE cap bolt fire hydrant NE corner 15th and Bryan.
BM H-6	1051.294	RR spike NW side power pole approx. 150 ft. S of Bryan Navarre second pole S of intersection E side of street in front of 1384 Bryan SW pole No. 819A4209.
BM H-7	1047.192	Fire hydrant NE corner Harrison and Navarre. "X" in NE bolt of fire hydrant.
BM H-8	1043.980	"X" NE bolt top flange fire hydrant SW corner Navarre and Park.
BM H-9	1041.618	"X" NE bolt fire hydrant NE corner Navarre and Dueber.
BM H-10	1039.890	"X" NE bolt fire hydrant Marion and Navarre. N side Navarre - NW corner intersection.
BM H-11	1038.224	"X" NE bolt top flange fire hydrant NE corner Lee and Navarre.
BM H-12	1027.092	RR spike S side power pole N side Margaret and Navarre.
BM H-13	1021.047	RR spike in power pole S side N side Navarre 1st pole W of I-77 overpass and 1st E of E drive to Walker Lumber Company.
TMB H-13(A)	1024.815	RR spike S side power pole, 1st pole E RR tracks E bridge on Navarre E I-77 on N side Navarre.

No.	Elevation	Description
BM H-14	1030.043	"X" NE bolt fire hydrant SE corner Navarre and Marion.
BM H-14A	1031.769	"X" NE bolt top flange fire hydrant NE corner Navarre and High.
BM H-15	1033.534	Arrowhead top fire hydrant NW corner Navarre and McKinley
BM H-16	1034.465	"X" in S bolt sign base Cains Generator and Amature Co. NE corner Navarre and Cleveland - N&E of fire hydrant.
BM H-17	1036.033	"X" NE cap bolt fire hydrant NE corner Court and Navarre.
BM H-18	1036.026	"X" NE bolt top flange fire hydrant E side Market in front of 1226 Market.
BM H-19	1034.744	"X" NE bolt fire hydrant top flange NE corner 13th and Market.
BM H-20	1030.953	RR spike W side power pole SE corner Market and Steiner in front of 1362 Market and next to fire hydrant.
BM H-21	1031.618	"X" N bolt top flange fire hydrant E side Market where Killian dead ends into Market.
BM H-22	1030.130	"X" NE bolt top flange fire hydrant E side Market approx. 80' N 15th and Market approx. 10' S of power pole.
BM H-23	1020.371	"X" NW bolt top flange fire hydrant SE corner 15th and Cleveland.
BM H-24	1016.950	RR spike power pole N side pole S side 15th Street 1st pole W of bridge W or RR tracks W of Cleveland.
BM H-25	1023.653	"X" NE bolt fire hydrant N side 15th Street in front of 1231 15th Street.
BM H-26	1035.022	"X" NE bolt fire hydrant E side Market opposite Bornique.
BM H-27	1029.606	"X" N bolt top flange fire hydrant S side opposite Luntz Iron and Steel Co. scales.



T-209D
Mine Spike



T-210
Mine Spike

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

TRAVERSE POINT REFERENCES

GENERAL NOTES

GENERAL

FIELD OFFICE

The Contractor shall provide a suitable field office having a minimum of 800 sq. ft. of floor space and in addition to the requirements of Item 619, he shall provide and maintain sanitary provisions as per 107.06. All the above is included in the lump sum price bid for Item 619, Field Office.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

The rounded corners shown on the typical sections, apply to all cross sections, even though outherwise shown on these plans.

UNDERGROUND UTILITIES

The locations of the underground utilities shown on the plans have been obtained by diligent field checks and searches of available records. It is believed that they are essentially correct, but the State of Ohio does not guarantee their accuracy or completeness.

ESTIMATED QUANTITIES

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

WORKING HOURS

The Contractor shall restrict his working day to 5:30AM. to 9:30PM.

VERTICAL TRANSITION AT STRUCTURES

Profile grade is at the top of Portland Cement Concrete on the bridge decks and approach slabs for Bridges STA-30-1487 and STA-30-1494. The Contractor shall, in a length of 75 feet, make a vertical adjustment in the finished surface of the approach roadways in order to provide a 1 ½ inch vertical transition to the higher roadway surface on the structures and approach slabs.

ELEVATION DATUM

All elevations are based on U.S.C.&G.S. monuments "City" elevation 1104.826 and "F-10" elevation 1042.399 in the City of Canton, State of Ohio. For additional bench marks, see sheet No. 11 .

UTILITIES

Following is a list of public and private utility services encountered within the limits of construction.

The East Ohio Gas Company
East Ninth Street at Superior
Cleveland, Ohio 44114

Warner Cable T.V. Company
1815 Cleveland Ave. N.W.
Canton, Ohio, 44709

Ohio Power Company
301-315 Cleveland Avenue, S.W.
Canton 2, Ohio

Ohio Bell Telephone Company
217 Fourth Street, N.E.
Canton, Ohio

City of Canton Sanitary and Storm Sewers
200 Cleveland Avenue, S.W.
Canton 2, Ohio

Canton Water Works
200 Cleveland Avenue, S.W.
Canton 2, Ohio

For location of existing utilities see Sheets 130 to 133.
The Contractor shall notify at least two working days before breaking ground all Public or Private Utilities having wire, poles, pipe, conduits, manholes, or other structures that may be affected by this operation.

HAUL ROADS

The Contractor shall notify the District Engineer and the City of Canton in writing, at least ten days before using any road for the purpose of hauling material or equipment to or from the project, of his intent to use the road or roads. The Contractor shall include in his report the limits of the roads within which he intends to operate. The Contractor may not use a road for hauling purposes without approval of the Director of Transportation and the City of Canton.

REMOVAL OF BUILDINGS AND MISCELLANEOUS ITEMS AND FILLING BASEMENTS OUTSIDE NORMAL CONSTRUCTION LIMITS

The construction of this project will require the removal of buildings and the filling of basement cavities resulting from this removal beyond the normal limits of construction but within the limits of work agreements or easements. Such areas shall be filled and shaped to drain and blend into adjacent areas. Seeding will be as described in these General Notes under 659 Seeding and Mulching, As Per Plan.

Before seeding can be accomplished it will be necessary for the Contractor to remove surfaced areas such as sidewalks, driveways, patios, etc. as well as fences and other similar items. Payment for such necessary removals, filling and light grading of the areas in question will be considered included in the unit price bid for Item 203 Excavation Not Including Embankment Construction.

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KANSAS CITY CLEVELAND NEW YORK

GENERAL CON'T.

RAILROADS WITHIN PROJECT LIMITS

The Contractor shall comply with requirements of the Penn-Central Transportation Co., Norfolk and Western Railway, and the Baltimore and Ohio Railroad with regard to advanced notice prior to construction of the grade separation structures over the respective railroads. The Contractor shall expedite the orderly completion of his work over and within the Railroads right-of-way and shall not store equipment or materials within railroad right-of-way without prior Railroad approval.

WATER METER BOXES

The City Water Works Department will relocate all privately owned water meter boxes and this item will not be included as part of the work to be performed by the State Contractor.

ROADWAY

IMPACT ATTENUATOR ASSEMBLY

This project requires bids for the impact attenuator to be supplied. The types have been limited to the Hi-Dro Cushion System as manufactured by Energy Absorbtion Systems, Inc., Chicago, Illinois

The Attenuation Device shall be constructed within the reserve area shown on the plan and shall be designed in accordance with the following criteria:

Performance Criteria:

Vehicle Weight Range	---2000 to 4500 pounds
Vehicle Speed	---60 mph
Impact Angle	---0 degrees to 25 degrees measured from the direction of the roadways
Average Permissable Vehicle Deceleration	---12 g's while preventing actual impacting of the hazard or backup wall
Maximum occupant Deceleration onset rate	---500 g's per second

Dimensional Criteria:

Side taper rate	---10:1 minimum relative to the adjacent edge of pavement

The Impact Attenuator Assembly shall be constructed in accordance with the manufacturers plans and recommendations. The work to be performed under this item shall include all labor, equipment, materials and incidentals necessary for furnishing and installing the attenuation device including foundations, backup walls, anchor blocks, surface treatment or any other items necessary for a complete and functional installation. Prior to ordering any of the impact attenuators the Contractor shall supply site plans and working drawings together with performance data for each location for approval by the Director.

The materials used in the installation shall be all new, first quality and free from defects. The method of measurement for this item shall be the actual number of impact attenuator assemblies completed and accepted.

The basis of payment shall be at the contract price for:

ITEM SPECIAL - Impact Attenuator Assembly (Hi-Dro Cushion)

Attenuator Locations:
No. 1 - Sta. 952+76 to Sta. 952+98 Ramp F, Sheet 28.
No. 2 - Sta. 960+22 to Sta. 960+44 Ramp F, Sheet 28.

NON-RIGID PAVEMENT REMOVAL

Removal and disposal of existing non-rigid pavement, unless otherwise indicated on these plans, shall be measured and paid for as Item 203, Excavation.

REMOVAL OF TREES AND STUMPS

All trees and stumps specifically marked for removal within the construction limits of this project shall be removed under the lump sum price bid for 201, Clearing and Grubbing, except that those trees for which protection and preservation work is indicated elsewhere in these plans shall not be removed. For location see sheets 376 to 380.

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

I-77-4(44)107

Sizes	No. Trees	No. Stumps
18"	77	0
30"	11	0
48"	1	0
60"	0	0

The above estimate is approximate and the State of Ohio reserves the right to order the removal of additional trees or stumps outside of the limits of construction but within the right-of-way and or easement lines. Payment for the removal of these additional trees or stumps shall be included in the lump sum price bid for Item 201, Clearing and Grubbing.

Rev. M.G.B. 5-19-75
Ckd. J.N.S. 8-19-75

ROADWAY CON'T.

ITEM 203 EMBANKMENT USING GRANULAR MATERIAL, AS PER PLAN

Material furnished for this item shall be as defined in 203.02 (except that at least 5 per cent by weight of the grains or particles shall be retained on a No. 200 sieve). In the areas noted on Sheet 13 "Unsuitable Material," this material may be placed by the method of end dumping if surface water is present at the time of construction. End dumping methods may be used up to an elevation two feet above the water level. Above this elevation, embankment construction shall be in accordance with 203.07 to 203.12 inclusive.

BENCHING OF FOUNDATION SLOPES

Although cross sections on this plan indicate specific widths and depths of proposed benching of the embankment foundation in certain areas, no waiver of the specifications is intended and all other sloped foundation areas shall be benched as set forth in 203.09. No additional payment will be made for benching required by the provisions of 203.09.

MONUMENTS

Monuments shall be constructed in accordance with details shown on Standard Drawing MC-1. These Monuments shall be placed at the following locations:

Sta. 921+01.98 - 53' Lt. ℄ Rt.
Sta. 930+00 - 53' Lt. ℄ Rt.
Sta. 940+00 - 78' Lt. (in ditch) ℄ 65' Rt.
Sta. 952+09.87 - 78' Lt. ℄ 90' Rt.
Sta. 956+59.87 - 53' Lt. ℄ 41' Rt.

659 SEEDING AND MULCHING

Quantities for seeding are calculated for the soil areas between the right-of-way fence lines, between the right-of-way lines in unfenced areas, and within the work limits for areas outside the right-of-way lines covered by work agreement or slope easement.

Areas that are to have slope treatment other than seeding are indicated in the plans.

667 SEEDING AND JUTE MATTING

In reference to the jute matting required for the 150 feet of approach ditch for a Standard No. 5 Catch Basin, no mulching will be permitted in this area.

LOCATIONS OF GUARDRAIL

The locations of guardrail runs as shown in these plans are subject to adjustment to assure that the planned installations will afford maximum protection for traffic. Guardrail lengths stated on plan sheets include 25' for anchor assemblies.

UNSUITABLE MATERIAL

The Contractor's attention is directed to the fact that unsuitable material may be encountered in the excavation for the roadway.

The requirements for the use of approved embankment material of 203.08 will be strictly enforced.

203 PROOF ROLLING

An estimated quantity for this item has been provided in the General Summary for use in proof rolling of subgrade for the mainline and ramp pavements and for paved shoulders.

DUST PROTECTION

The Contractor shall, when so ordered by the Engineer, protect the adjacent properties from dust. He shall keep the dust down by the use of water or calcium chloride, whichever is considered necessary by the Engineer, performed as per Item 616. The following estimated quantities are provided in the General Summary:

Item 616 Calcium Chloride	100 Ton.
Item 616 Water	2000 M.Gal.

AGRICULTURAL LIMING, AS PER PLAN

The location and need for agricultural liming will be determined by laboratory tests, after rough grading operations have been performed. Quantities of agricultural liming, as shown on the plans, are sufficient for the entire project, but will be non-performed for the areas where tests show that the liming is not required.

GUARD RAIL REMOVED FOR STORAGE

Guard rail designated for removal on this project shall be carefully dismantled and the salvageable galvanized rail elements stored for removal by State forces. All posts, blocks, bolts, damaged rail and other material not considered salvageable shall be disposed of as directed by the Engineer. All post holes shall be carefully filled and tamped and the site cleaned and restored. Payment for all of the above shall be at the unit price bid for 202 Temporary Guard rail removed for storage or 202 Guard rail, removed for storage, measured by the linear foot.

Revised 10-29-76

GENERAL NOTES

ROADWAY CON'T.

CHANNEL EMBANKMENTS

Portions of the existing channel outside of the normal fill area shall be filled and sloped to drain as called for on the plans and included for payment in the price bid for Item 203, Embankment. The Contractor shall use either suitable or unsuitable material to the extent available for channel embankments.

Areas where channel embankments are to be placed shall be cleared of weeds and brush but need not be scalped.

The requirements for moisture, density control, benching, and suitable materials shall be waived.

The depth of layers in which the embankments are placed and their compaction shall, in lieu of the requirements of Item 203, conform with acceptable construction practices as determined by the Engineer.

No provision of the specifications shall be waived for embankments which support any portion of the new pavement, berms, or structural members.

An estimated quantity of 463 cubic yards has been provided in the plans for channel embankment.

606 TEMPORARY BEAM RAIL

An estimated quantity of temporary beam rail is carried in the Traffic Control General Summary for use in controlling traffic at the Ramp F exit from U.S. 30, the Ramp E entrance to U.S. 30, and the Ramp B exit from Ramp A. This beam rail shall be used at the locations shown in the Pavement Plans or as directed by the Engineer. Payment shall be included in the contract unit price bid for Item 606, Guardrail, Type 6.

STORAGE OF EQUIPMENT

The Contractor shall not store equipment or materials within the limits of property governed by a work agreement.

UNSUITABLE MATERIAL

Unsuitable material has been found to exist in several Locations. The removal of this unsuitable material and the replacement with suitable embankment material is indicated on the Cross Section Sheets. For Plan Views of the Unsuitable Areas See Sheet Nos. 31 & 33.

In order to have proper consolidation of the foundation materials, priority shall be given to construction of this embankment. These embankments shall be brought up to final subgrade elevation and be in place a minimum of six months prior to pavement construction. If settlement occurs during this period the Contractor shall add sufficient material to the embankment to maintain the required elevation. No special payment will be made for this priority construction and any costs, thereof, shall be included in the price bid for Item 203, Embankment. This 6 month waiting period may be shortened if measurements indicate that the settlement is complete. Settlement readings should begin as soon as the embankments are to subgrade elevation.

REMOVAL OF EXISTING PIPE

The removal of all existing pipe drains which would normally be removed in various excavation items shall be included for payment in the unit prices bid for the respective excavation items, unless otherwise itemized in the plans.

WATER POLLUTION, SOIL EROSION AND SILTATION CONTROL

The following estimated quantities are to be used as directed by the Engineer for erosion and siltation control measures:

		U-663(15)		I-77-4(44)107
207	Temporary Seeding and Mulching	1638	Sq.Yd.	30,904
207	Water	4	M.Gal.	67
207	Temporary Slope Drains	0	Lin.Ft.	472
207	Temporary Benches, Dikes, Dams and Sediment Basins	0	Cu.Yd.	1,247
207	Mowing	18	M.Sq.Ft.	35
659	Commercial Fertilizer(12-12-12)	0.35	Ton	6.61
659	Repair Seeding and Mulching	410	Sq.Yd.	7,726

PAVEMENT

CONTRACTION AND EXPANSION JOINTS

Although specific locations of certain expansion and contraction joints have been detailed in these plans, no waiver of the specifications is intended. Provision of expansion joints at all major structures and the maximum spacing between contraction joints shall in all cases be in accordance with the Standard Construction Drawings and the Specifications. Transverse joints shall align with existing transverse joints.

COATED DOWEL BARS

Dowel bars required on Std. Dwg. BP-4 shall be coated in accordance with Supplemental Specification 948.

310 SUBBASE UNDER BITUMINOUS CONCRETE PAVEMENTS

Where the natural subgrade in cut sections is granular material, as defined in 203.02, and has adequate stability to support construction equipment and the planned bituminous pavement courses, the 310 subbase shall be omitted as directed by the Engineer.

PAVEMENT CON'T.

NOTE LOCATIONS

For Stages of Construction, Notes, see Sheet 4.
For Roadway Notes, see Sheets 12 - 14.
For Water Line Notes, see Sheet 126.
For Lighting Notes, see Sheets 135 - 135A.
For Signing Notes, see Sheets 156 - 158.
For Bridge General Notes, see Sheet 214.

622 - CONCRETE BARRIER, TYPE B, MODIFIED, AS PER PLAN

This item of work involves providing a concrete barrier section across the approach slabs within the limits of the concrete barrier work to be provided on U.S. 30. All work required for this item shall be completed per the detail on Sheet 101.

Payment for the above shall include all labor and materials necessary to complete this item as detailed in the plans and shall be at the unit price bid per linear feet of Item 622 - Concrete Barrier, Type B, Modified, As Per Plan.

EXISTING LONGITUDINAL JOINTS

The Contractor shall provide hook bolts to tie the proposed pavement at the following locations—

Sta. 966+00 to Sta. 969+00 Ramp A: Sta. 975+00 to Sta. 977+50 Ramp F
Sta. 541+00 to Sta. 547+50 Lt. ℄ I-77: Sta. 545+00 to Sta. 551+15 ℄ I-77

The cost of all materials, labor and incidentals required to perform this work shall be incidental to the cost of Item 451 Pavement.

MAINTENANCE OF TRAFFIC

GENERAL REQUIREMENTS:

The following tabulation indicates the minimum number of lanes required to be maintained on the streets within the Project area. If at any time during construction the work can be conducted such that more than the minimum number of lanes specified can be open to traffic, it is expected that the Contractor will so conduct his operation as to provide those additional lanes. It is further intended that the open lanes of traffic specified will not be incumbered in any way whatsoever by the Contractor, including the delivery of materials, the movement of workmen, or the operation of equipment.

REQUIRED NUMBER OF LANES OPEN:

Location	Direction	Lanes Open
Cleveland Ave. SW	NB	1
Cleveland Ave. SW	SB (South of McKinley Connection)	1
McKinley Ave. SW	SB	1
Market Ave. S	NB	1
	SB	1
15th Street	EB	1
	WB	1
Henry Ave. SW	NB	1
	SB	1
I-77	NB&SB	2 each

Where any of the work called for under this contract involves the partial or complete closing of existing streets and-or the re-routing of traffic, the Contractor for this Project shall prosecute to the fullest extent the work involved so as to reduce to a minimum the length of time that the streets concerned will be closed to traffic.

The Contractor shall obtain written approval from the Director of Transportation at least two weeks prior to putting into effect any required or proposed detour route or before closing any street, alley or driveway in the construction area.

The Contractor is reminded that throughout all stages noted and during all work in general, pavement construction shall be properly coordinated with sewer and utility placement, pile driving, structure footing construction, etc., to avoid later conflict with traffic.

The Contractor shall provide and maintain such temporary walkways, handrails, barricades, etc. as may be necessary to accomodate in a reasonable manner, pedestrian traffic in the vicinity of the project and to conform to the ordinances of the City of Canton.

All of the above are included in the lump sum bid for Item 614, "Maintaining Traffic." If sewer cuts are made in advance of permanent pavement construction, the trenches are to be backfilled and the pavement replaced immediately, regardless of time of year. Quantities of Item 402 and 404 are provided in the general summary for the pavement replacement. Such sewer cuts made out of sequence with the stages herein contained must first have the approval of the Engineer and the City of Canton and all costs accrued for maintaining the required number of traffic lanes shall be the sole responsibility of the Contractor, such costs to be included in the price bid for Item 614 "Maintaining Traffic."

Structural Steel may be erected over the traveled lanes I-77 only between the hours of 9 A.M. and 3 P.M. During the erection of steel, traffic on I-77 may be halted while each beam is placed. As soon as each beam has been set and secured the accumulated traffic must be released before the next beam is raised. A similar procedure shall be followed in the erection of overhead sign supports. In either case the period of time that traffic is halted for each beam or sign bridge shall be kept to a minimum.

Travel across the through lanes on I-77 will not be permitted. Access between the east and west sides of I-77 must be accomplished through use of existing streets or the project bridges. Parking of construction equipment or storing of materials shall not be permitted within 30' of the through lanes or paved shoulders of I-77. Personal vehicles shall not use I-77 for access nor park on normal I-77 right-of-way.

MAINTENANCE OF TRAFFIC CON'T.

The lump sum bid for Item 614, "Maintaining Traffic" shall also include the cost of maintaining temporary pavement required for the purpose of maintaining traffic. Quantities for Items 202, 402, and 404 are carried in the General Summary for the initial construction and removal of the temporary pavement. It is understood that unless specifically agreed to by the Engineer all temporary roadways constructed for maintaining traffic shall have an Item 404 surface course.

Two way traffic shall be maintained at all times by use of the existing pavement, the proposed pavement and temporary roadways on the shoulders surfaced with 410 aggregate and stabilized with Item 616 calcium chloride.

It is not intended that temporary roadways be used exclusively for maintaining traffic on this project but that maximum usage be made of existing and proposed pavements.

The limits and duration of use of temporary roadways shall be held to an absolute minimum, and in all cases shall be subject to the approval of the Engineer.

Temporary beam rail or the permanent rail shall be constructed immediately after completing piers for structures over existing streets to provide continuous protection to traffic.

If the Contractor so elects, he may submit alternate methods for the maintenance of traffic provided the intent of the above provisions is followed and no additional inconvenience to the traveling public results therefrom. No alternate plan shall be placed into effect until approval has been granted, in writing, by the Director.

For the Stages of Construction notes see Sheet 4.

The Contractor shall maintain traffic on existing Ramp C-C (Southbound I-77 Exit) and Temporary Ramp D (Entrance to Northbound I-77) until such time as Ramp A and Ramp G (from I-77 to Harrison Ave.) may be placed in service.

An Estimated quantity of 50 C.Y. of Item 410, Traffic Compacted Surface, Type A"B", has been added to the General Summary to be used as directed by the Engineer.

The Contractor shall provide the services of special duty police officer(s) & official police car(s) for the exclusive purpose of controlling through traffic on this project. The police car(s) shall be equipped with two-way radios capable of communicating with other police cars and police headquarters and mars lights (red lights for use in emergencies only).

The Contrator shall make arrangements with the appropriate police agency for the scheduling and payment of this item.

The location and number of officers and cars to be provided at a given time shall be determined solely by the Engineer.

The policeman required for the closure of all lanes shall constantly move with the backup of traffic so that he is always in a position on the shoulder near the end of the line of traffic stopped for the closure.

The following pay items and estimated quantities have been carried to General Summary:

Item Special	1000	Hours	Special Duty Police Officer
Item Special	1000	Hours	Official Police Car

EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION, AS PER PLAN

Between Stations 356+00 and 361+00 approximately 380,000 Cubic Yards of stockpiled suitable material is to be placed by the Contractor constructing the preceeding project (STA-30-12.47). This material shall be removed and reconstructed into the planned embankment for this project at locations approved by the Engineer. 380,000 Cu.Yds. of Excavation has been carried to the General Summary to reflect this work. The full amount of this material may not be available until June 1977.

QUANTITY CALCULATIONS
MADE BY J.N.S DATE 10-3-75
CHECKED BY D.S.P DATE 10-6-75

GENERAL NOTES

DRAINAGE

REVIEW OF PROJECT SEWERS

Before any work is started on the project, representatives of the State, the City and the Contractor shall make a visual inspection of the existing sewers which are to remain in service and which may be affected by the work. A record of the inspection shall be kept in writing by the State. All new sewers, inlets and manholes constructed as a part of the project shall be free of all foreign matter and in a clean condition before the project will be accepted by the State. All existing sewer facilities inspected initially by the above mentioned parties shall be maintained and left in the same condition as determined by the original inspection. Any change in the condition resulting from the Contractor's operations shall be corrected by the Contractor to the satisfaction of the Engineer at no cost to the State. The cost of making inspections and any repairing or correcting of sewer facilities as a result of construction operations shall be included in the unit prices bid for the respective conduit items of the contract.

ANIMAL GUARD FOR PIPE OUTLETS

Animal guards shall be provided at the outlet end of all pipe underdrains and farm drains except when they outlet into a drainage structure. The animal guard shall comply with the detail shown on Sheet No. 121.

Payment for all material, labor and installation shall be included in the unit price bid per each for item 603 Animal Guard for Pipe Outlet.

SEWER CONSTRUCTION

The Contractor's attention is directed to the possible need for trench sheeting during construction of certain sewers in this Contract to prevent encroachment upon adjacent properties. The proposed method of construction in such areas must be approved in writing by the Engineer prior to the start of sewer construction.

Payment for all costs of constructing these sewers, including the furnishing, placing and subsequent removal of sheeting, shall be included in the unit prices bid for the appropriate 603 Conduit Item.

CONTROL DIMENSIONS

The elevations and locations of proposed catch basins, manholes, pipes and the estimated lengths of pipe may be altered or adjusted by the Engineer during construction.

The elevations of castings shown as finished elevations for drainage structures are approximate only. Adjustments to final grade shall be made only after the abuting area has been brought to final grade. The cost of this final adjustment to grade of the drainage structure casting shall be included in the price bid for the structure.

SANITARY FLOW INTO HIGHWAY DRAINAGE SYSTEMS

This plan makes no provision for connecting, nor shall the Engineer or Contractor connect, any existing or new drainage into the highway drainage system when such drains carry flow from any plumbing fixtures including floor drains and sink drains or drains from livestock lots or barns

Existing pipe carrying flow which comes within the category outlined above shall be plugged with Class C concrete at the right-of-way line. Payment for said plugging shall be included in the unit price bid for Item 203 Excavation.

RESILIENT AND FLEXIBLE GASKET JOINTS

Gasketed Joint shall be used for the entire length of all Sanitary Sewers and any precast riser pipe for sanitary manhole and these joints shall equal or exceed the requirements set forth in 706.11 and 706.12. Joint leakage tests will not be required.

CONNECTIONS TO EXISTING SEWERS

At those locations where the plans require the connection of (1) a new sewer to an existing sewer or appurtenance or (2) an existing sewer or existing appurtenance to a new sewer, it shall be the responsibility of the Contractor to locate the existing sewer or appurtenance both as to the line and grade before he starts construction of the proposed sewer, or appurtenance. Payment for this operation shall be included in the unit price bid for the applicable 603 Conduit Item.

In certain instances as noted in the plans where a connection is made to an existing sewer which is to remain in service the following quantities of conduit have been provided for use if necessary to complete the installation.

Pipe Size	Quantity	603 Conduit Classification
8"	25'	Type B, 706.08 with 706.12 joints
10"	25'	Type B, 706.08 with 706.12 joints
12"	12'	Type B
15"	12'	Type B
18"	4'	Type B

None of the above materials shall be ordered by the Contractor until authorized by the Engineer.

EXISTING SERVICE LATERALS

The contractor's attention is directed to the need for locating certain residential sewer Laterals and the connecting of these Laterals to existing or proposed sewers as shown in the plans, or as directed by the Engineer. Joints as per 706.11 or 706.12 shall be used on all Sanitary Sewer Laterals.

Where risers are necessary in order to make the re-connection to the sewer, the riser shall be constructed as shown in the detail on Sheet 122. Payment for risers shall be included in the cost of the Lateral of which they become a part.

The length of 603 Conduit included for payment shall be from the interception point with the existing residential sewer lateral to the top of the riser.

An estimated quantity of 100 linear feet of "Item 603, 6" Type B 706.08 with 706.12 joints and 50 Linear feet of "Item 603, 8" Type B 706.08 with 706.12 joints has been provided in the plans for use in making these connections.

The cost of locating laterals, locating existing connection points, maintenance of service and all other incidentals necessary to complete the work to the satisfaction of the Engineer shall be included in the price bid for the appropriate 603 Item. None of the above materials shall be ordered by the Contractor until authorized by the Engineer.

PRIVATE ROOF OR SURFACE DRAINS

All existing private roof or surface drains which are encountered during construction shall be provided with unobstructed outlets under the direction of the Engineer. (See Sheet No.122 for detail of typical drain through the curb.)

The following estimated quantities have been included in the general summary for the work noted above:

Item 603 4" Conduit, Type E, 711.29 100 Lin. Ft.
Item 603 6" Conduit, Type E, 706.01, 706.02 or 706.08 - 100 Lin. Ft.
Item 603 6" Conduit, Type F 200 Lin. Ft.

None of the above materials shall be ordered by the contractor until authorized by the Engineer.

EROSION CONTROL

Items 601, Rock Channel Protection, 660 Sodding, 667 Seeding and jute matting are provided in these plans for erosion control. Rock or turf of a stable nature will not be removed in order to place any of these items. The Engineer shall check and non-perform quantities or adjust locations and quantities for these items where indicated by field condition during construction.

EXTRA DEPTH CATCH BASINS

Catch basins 4 feet deep and over and having a minimum interior dimension of 2'-8" shall have steps meeting the requirments of Item 604.
Spacing of steps shall be uniform with 12" minimun and 16" maximun.

604 FURNISH COMPLETE CASTINGS FOR EXISTING MANHOLES, AS PER PLAN

All existing structures to be adjusted to grade have been field checked to determine that the existing castings are suitable for salvage and reuse at the particular structure to be adjusted. However, existing castings may prove to be unsuitable, as determined by the Engineer, during construction of the project. To provide for this contingency, an estimated quantity of two (2) each "604, Furnishing Complete Casting for Existing Manholes as per plan" has been included in the General Summary, to be used for both storm sewer manholes and sanitary sewer manholes as determined by the Engineer. It shall be the Contractor's responsibility to provide the casting of the required type, size and strength for the particular structure in question.

The Contractor is cautioned to use extreme care in the removal, storage and placement of all existing castings. Any castings damaged by the Contractor's negligent operations, as determined by the Engineer, shall be replaced with the proper new casting by the Contractor at no expense to the State. Materials necessary for the construction of this item shall not be ordered until authorized by the Engineer.

605 6" PIPE UNDERDRAIN, 707.01 TYPE III OR 707.12, AS PER PLAN

A quantity of 500 linear feet of underdrains has been carried in the General Summary of Estimated Quantities for use in cut slopes or at other locations as may be directed by the Engineer. Payment for this work will be made at the unit price bid per linear foot for 605, 6" pipe underdrain, 707.01 type III or 707.12, as per plan. Material necessary for the construction of this work shall not be ordered until authorized by the Engineer.

605 UNDERDRAINS, AS PER PLAN

Where underdrains are located adjacent to light standards, the underdrains shall be positioned so as not to interfere with the placing of the light standard base. Work involved shall be included for payment in the price bid for the pertinent 605 Item.

SANITARY CONNECTIONS PASSING OVER WATER MAINS

Any Proposed house connection or lateral sewer, excluding inlet connections which must of necessity pass over an existing water main shall be encased a minimum of 6" in class C concrete for a distance of five (5) feet on each side of centerline of the water main. Payment for this work shall be included in the contract unit price bid per linear foot of the pertinent pipe item.

TILE FOR SUBGRADE DRAINAGE

A one foot length of six (6) inch drain tile, 706.07 shall be furnished and placed by the Contractor in manholes, catch basins and inlets for subgrade drainage, where, and as directed by the Engineer. Payment for same shall be included in price bid per each for storm manholes, catch basins and inlets.

COATING FOR CONCRETE SANITARY SEWERS

When using reinforced concrete pipe for sanitary sewers, it shall be bell and spigot type & it shall be coated inside with two coats of coal tar pitch paint at the rate of not more than 180 square feet per gallon per coat. Waterproofing material shall consist of "Intertol Standard Thick", "Koppers Super-Service", "Pit-Chem 103", or an approved equal.
The entire interior of the pipe, the interior and end of the bell and outside and end of the tongue shall be coated.
Payment for work shall be made at the contract unit price bid per lineal foot for Item 603 Conduit 706.02 for Sanitary Sewer
Cost of labor and materials for coating the pipe shall be included in the unit price bid per linear foot for the Item 603 Conduit.

ITEM 202 - PIPE REMOVED AS PER PLAN

Existing sewers which due to their size or condition have been indicated to be removed, shall be removed or, at the Contractor's option, shall be filled hydraulically with sand or sand and gravel similar to strippings from a gravel pit and left in place.

If the sewer is filled rather than removed, the fill material shall, after solidification, occupy at least 90% of the cross sectional area of the sewer for the entire length indicated to be removed. In order to meet this requirement, the Contractor will dig pit holes as approved by the Engineer to implement the filling of the sewer and or to check the cross sectional area of the sewer when filled.

The footage, measured as provided above, shall be paid for at the contract unit price bid per lineal foot of pipe removed, which price and payment shall constitute full compensation for furnishing, hauling, and placing all the necessary materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

An estimated quantity of 1500 linear feet of Item Pipe Removed has been added to the General Summary, for this above described work, to be used as directed by the Engineer.

FED ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			15 / 389

ESTIMATED QUANTITIES
GENERAL SUMMARY

STARK COUNTY
STA-30-14.12
STA-77-9.22

U-663 (15)						I-77-4(44)107																TYPE CODE	U-663 (15)	I-77 4(44)107		GRAND TOTAL	UNIT	ITEM NO.	DESCRIPTION
12	19	20	24		13	105 / 106	12	19	20	21	22	23	24	14		13	88	108	109	114	125								
																													ROADWAY
																						6203	Lump	Lump		Lump	Lump	201	Clearing & Grubbing
								3870															0	3870		3870	Lin.Ft.	202	Guard Rail Removed For Storage
									9481														0	9,481		9,481	Sq.Yd.	202	Pavement Removed
									29488														0	29,488		29,488	Sq.Ft.	202	Sidewalk Removed
									6321														0	6,321		6,321	Lin.Ft.	202	Curb Removed
						1 /																	0	1		1	Each	202	Catch Basin or Inlet Removed
	238							587.5															238	588		826	Lin.Ft.	202	Temporary Guard Rail Removed For Storage
						/ 1																	0	1		1	Each	202	Manhole Removed
						13 / 28																	0	41		41	Each	202	Manhole Abandoned
			18158										717,342										18158	717,342		735,500	Cu.Yd.	203	Excavation not including Embankment Construction, as per plan
														1500									0	1500		1500	Lin.Ft	202	Pipe Removed, As Per Plan — 15" and Over
						29 /																	0	29		29	Each	202	Catch Basin or Inlet Abandoned
													1,031,707										0	1,031,707		1,031,707	Cu.Yd.	203	Embankment
													76,222										0	76,222		76,222	Cu.Yd.	203	Embankment, using granular material, as per plan
	34268							59,310															34268	59,310		93,578	Sq.Yd.	203	Subgrade Compaction
	12							20															12	20		32	Hour	203	Proof Rolling
																50							0	50		50	Cu.Yd.	410	Traffic Compacted Surface, Type A or B
6							4																6	4		10	Each	604	Reference Monuments, as per plan
													262.5										0	262.5		262.5	Lin.Ft.	606	Guard Rail, Type 4
			775										10,593										775	10,593		11368	Lin.Ft.	606	Guard Rail, Type 5
			10										23										10	23		33	Each	606	Anchor Assembly
							2																0	2		2	Each	Special	Impact Attenuator Assembly (Hi-Dro Cushion)
													39										0	39		39	Each	606	Bridge Terminal Assembly, Type A
																					10,555		0	10,555		10,555	Lin.Ft.	607	Fence, Type CL
																					4		0	4		4	Each	607	Gate, Type CL
												4											0	4		4	Each	608	Curb Ramp, Type 2
										20,915													0	20,915		20,915	Sq.Ft.	608	4" Concrete Walk
							2000																0	2000		2000	M.Gal	616	Water
							100															6203	0	100		100	Ton	616	Calcium Chloride
																													EROSION CONTROL
					1638											30,904						Y005	1638	30,904		32,542	Sq.Yds	207	Tempory Seeding and Mulching
					4											67						Y005	4	67		71	M.Gal.	207	Water
																472						Y005	0	472		472	Lin.Ft	207	Temporary Slope Drains
																1247						Y005	0	1,247		1,247	Cu.Yds	207	Temporary Benches, Dikes, Dams and Sediment Basins
					18											35						Y005	18	35		53	MS.Ft.	207	Mowing
			0.74		0.35								15.72			6.61						Y005	1.09	22.33		23.42	Ton	659	Commercial Fertilizer (12-12-12)
			3.69										78.60									Y005	3.69	78.60		82.29	Ton	659	Agricultural Liming, As per plan
		8190							154,521													Y005	8190	154,521		162,711	Sq.Yd.	659	Seeding and Mulching
					410											7726						Y005	410	7726		8136	Sq.Yd	659	Repair Seeding and Mulching
													1520									Y005	0	1520		1520	Sq.Yd.	660	Sodding for Special Berm and Slope Protection, as per plan
													18,819									Y005	0	18,819		18,819	Sq.Yd.	667	Seeding and Jute Matting
																		5	2	4		Y005	0	11		11	Cu.Yd.	601	Rock Channel Protection, Type B, with bedding
											710											Y005	0	710		710	Lin.Ft.	601	Paved Gutter, Std Type 1-4
											90											Y005	0	90		90	Lin.Ft.	601	Paved Gutter, Std Type 2
											415											Y005	0	415		415	Lin.Ft.	601	Paved Gutter, Std Type 4
											4726											Y005	0	4,726		4,726	Sq.Yd.	601	Concrete Slope Protection
											14,230											Y005	0	14,230		14,230	Sq.Yd.	601	Crushed Aggregate Slope Protection
																	5023					Y005	0	5,023		5,023	Cu.Yd.	601	Rock Channel Protection, Type A, without bedding

Rev. U.N.S 8-19-75
Ckd. F.E.F 8-21-75

Made CRJ 12-16-70
Ckd. G.MG 12-18-70

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

Rev. 3-23-76

GENERAL SUMMARY OF QUANTITIES

ESTIMATED QUANTITIES
GENERAL SUMMARY

U-663 (15) 19	U-663 (15) 20	U-663 (15) 21	U-663 (15) 22	U-663 (15) 23	U-663 (15) 24	I-77-4(44) 107 19	I-77-4(44) 107 20	I-77-4(44) 107 21	I-77-4(44) 107 22	I-77-4(44) 107 23	I-77-4(44) 107 24	TYPE CODE	U-663(15)	I-77 4(44) 107	GRAND TOTAL	UNIT	ITEM NO.	DESCRIPTION
																		PAVEMENT
692	6662					1149	2518	61		4686		6203	7354	8414	15,768	Cu.Yd.	301	Bituminous Aggregate Base 702.01 AC-20 or 702.09 RT-11, or RT-12
1291						2060							1291	2060	3351	Cu.Yd.	304	Aggregate Base
						73	265						0	338	338	Sq.Yd.	305	9" Portland Cement Concrete Base
		813				55		1864					813	1919	2732	Cu.Yd.	310	Subbase
			5636						9357				5636	9357	14,993	Cu.Yd.	310	Subbase, Grading A
											119			119	119	Cu.Yd.	Special	Drainage Connection Using No. 8 Aggregate
	1264						487			872			1264	1359	2623	Cu.Yd.	402	Asphalt Concrete AC-20
	902					11	351	26		758			902	1146	2048	Cu.Yd.	404	Asphalt Concrete AC-20
						33	27	50					0	110	110	Gal.	407	Tack Coat: 702.02, RC-250; or 702.04 SS-1, SS-1H, MS-2 or RS-1
						1.15	0.10	1.79					0	3	3	Tons	407	Cover Aggregate
				2490						3605			2490	3605	6095	Gal.	409	Seal Coat Bituminous Materials, 702.09 RT-9 or RT-10; 702.02 MC-800 or MC-3000; 702.04 RS-1, RS-2 or CRS-2; or 702.03 CBAE-800
				66						96			66	96	162	Cu.Yd.	409	Seal Coat Cover Aggregate No. 8
										14,251			0	14,251	14,251	Sq.Yd.	451	9" Reinforced Portland Cement Concrete Pavement
							54						0	54	54	Sq.Yd.	452	8" Plain Portland Cement Concrete Pavement
										4767			0	4767	4767	Lin.Ft.	609	Concrete Curb Standard Type 2-A
				344						2298	598		344	2896	3240	Lin.Ft.	609	Concrete Curb Standard Type 6
											190		0	190	190	Sq.Yd.	611	Reinforced Concrete Approach Slabs (T=17")
											2648		0	2648	2648	Sq.Yd.	611	Reinforced Concrete Approach Slabs (T=15")
					31						115		31	115	146	Sq.Yd.	612	Concrete Median
					1953						1627		1953	1627	3580	Lin.Ft.	622	Concrete Barrier, Type B
											100	6203	0	100	100	Lin.Ft.	622	Concrete Barrier, Type B, Modified As Per Plan

					DESCRIPTION
See	Sheet	126	For	Estimated Quantities	Water Mains
See	Sheet	155	For	Estimated Quantities	Lighting
See	Sheet	159	For	Estimated Quantities	Traffic Controls
					STRUCTURES
See	Sheet	353	For	Estimated Quantities	Retaining Wall E
See	Sheet	369B	For	Estimated Quantities	Bridge No. STA-30-14.92
See	Sheet	216	For	Estimated Quantities	Bridge No. STA-30-14.74
See	Sheet	216	For	Estimated Quantities	Bridge No. STA-30-14.74 R
See	Sheet	216	For	Estimated Quantities	Bridge No. STA-30-14.74L
See	Sheet	233	For	Estimated Quantities	Bridge No. STA-30-14.87
See	Sheet	257	For	Estimated Quantities	Bridge No. STA-30-14.86
See	Sheet	263	For	Estimated Quantities	Bridge No. STA-30-14.88
See	Sheet	284	For	Estimated Quantities	Bridge No. STA-30-14.99
See	Sheet	291	For	Estimated Quantities	Bridge No. STA-30-14.94
See	Sheet	305	For	Estimated Quantities	Bridge No. STA-30-14.93
See	Sheet	324	For	Estimated Quantities	Bridge No. STA-30-14.89
See	Sheet	340	For	Estimated Quantities	Bridge No. STA-30-15.04
See	Sheet	367	For	Estimated Quantities	Retaining Wall A
See	Sheet	369	For	Estimated Quantities	Retaining Wall D

Rev. UNS 8-20-75
Ckd. FEF 8-21-75

Made CRJ 12-16-70
Ckd. GMG 12-18-70

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

ESTIMATED QUANTITIES
GENERAL SUMMARY

U-663(15)		I-77-4(44)107												U-663(15)	I-77-4 (44)107	TYPE CODE	GRAND TOTAL	UNIT	ITEM NO.	DESCRIPTION
105	107	14	105	107	108	109	110	111	112	113	114	115	116	120						
								DRAINAGE												
	1606			12,738											1606	12738	6203	14,344	Lin. Ft.	605	6" Shallow Pipe Underdrain
				200												200		200	Lin. Ft.	605	6" Unclassified Pipe Underdrain
	4946			849											4946	849		5,795	Lin. Ft.	605	6" Deep Pipe Underdrain
	107			164											107	164		271	Lin. Ft.	603	6" Conduit, Type B
		100														100		100	Lin. Ft.	603	4" Conduit, Type E, 711.29
		200		374												574		574	Lin. Ft.	603	6" Conduit, Type F
		100														100		100	Lin. Ft.	603	6" Conduit Type E 706.01 or 706.02 or 706.08
														18		18		18	Lin. Ft.	603	15" Conduit, Type A
		12					38	92		201	66	72				481		481	Lin. Ft.	603	12" Conduit, Type B
								28								28		28	Lin. Ft.	603	12" Conduit, Type C
		12			390	30			27	225	124	103				929		929	Lin. Ft.	603	15" Conduit, Type B
											86		11			97		97	Lin. Ft.	603	15" Conduit, Type C
					119	77					191	8				395		395	Lin. Ft.	603	15" Conduit, Type F
		4				103	152		50	20	120					449		449	Lin. Ft.	603	18" Conduit, Type B
										32						32		32	Lin. Ft.	603	18" Conduit, Type B, 706.02, Class V Under Railroad as per plan
							21		28	132		40				221		221	Lin. Ft.	603	18" Conduit Type C
						69										69		69	Lin. Ft.	603	18" Conduit Type F
									167							167		167	Lin. Ft.	603	18" Conduit Type C, 706.01 Class 3 or 706.02 or 706.08 E.S. or 707.13
							250			203			507			960		960	Lin. Ft.	603	24" Conduit Type B
									18							18		18	Lin. Ft.	603	24" Conduit Type C, 706.01 or 706.02 or 706.08
									50							50		50	Lin. Ft.	603	24" Conduit Type C, 706.01 Class 3 or 706.02 or 706.08 E.S. or 707.13
									62							62		62	Lin. Ft.	603	24" Conduit Type F
													75			75		75	Lin. Ft.	603	24" Conduit Type B 706.02 Class V Under Railroad as per plan
								315								315		315	Lin. Ft.	603	30" Conduit Type B
								370	347							717		717	Lin. Ft.	603	36" Conduit Type B
									74							74		74	Lin. Ft.	603	42" Conduit Type B, 706.02, Class V Under Railroad as per plan
									45							45		45	Lin. Ft.	603	42" Conduit Type C
				14												14		14	Each	603	6" Animal Guard for Pipe Outlets
					0.81	2.47			6.70		0.54		3.3	8.48		22.3		22.3	Cu. Yd.	602	Concrete Masonry
							1	3	1	4	1		4			14		14	Each	604	Standard No.1 Manhole
									1							1		1	Each	604	Standard No.2 Manhole
					1											1		1	Each	604	Standard No. I-3B Median Inlet
4															4	1		5	Each	604	Standard No. I-3B Median Inlet Modified as per plan
					3		3	1	1	2						10		10	Each	604	Standard No.2-A-6 Paved Shoulder Inlet
							2	1								3		3	Each	604	Standard No.2-A-8 Paved Shoulder Inlet
							1									1		1	Each	604	Standard No. 2-A-10 Paved Shoulder Inlet
					1					4	1					6		6	Each	604	Standard No. 3 Catch Basin
								1				3				4		4	Each	604	Standard No. 3A Catch Basin
						1	2	1	4		4	1	1			14		14	Each	604	Standard No. 5 Catch Basin
					1						3					4		4	Each	604	Standard No. 6 Catch Basin
												1				1		1	Each	604	Standard No. 2-2-A Catch Basin
			4													4		4	Each	604	Manhole Reconstructed to Grade
			6													6		6	Each	604	Manhole Adjusted to Grade
		2														2		2	Each	604	Furnish Complete Casting for Existing Manholes, as per plan
														215		215	6203	215	Lin. Ft.	603	Conduit Type A: 36" 706.02 Class V; or 42" 707.05 Type C

Made C.R.J 12-17-70
Ckd. GMG 12-18-70

Rev. A.H.S. 5-30-75
Ckd. M.G.B. 6-4-75
Rev. 3-23-76

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

ESTIMATED QUANTITIES
GENERAL SUMMARY

I-77-4(44)107: 13	I-77-4(44)107: 106	I-77-4(44)107: 14	I-77-4(44)107: 117	I-77-4(44)107: 118	I-77-4(44)107: 119	100% CITY: 118	100% CITY	U-663(15)	I-77-4 (44)107	TYPE CODE	GRAND TOTAL	UNIT	ITEM NO.	DESCRIPTION
														DRAINAGE
														SANITARY SEWERS - TYPE CODE Y060
		100							100	Y060	100	Lin. Ft.	603	6" Conduit Type B, 706.08 with 706.12 Joints
		25	592		118				735	Y060	735	Lin. Ft.	603	8" Conduit Type B, 706.08 with 706.12 Joints
					180				180	Y060	180	Lin. Ft.	603	8" Conduit Type C, 706.08 with 706.12 Joints
					130				130	Y060	130	Lin. Ft.	603	8" Conduit Type C, 706.08 E S with 706.12 Joints
		25							25	Y060	25	Lin. Ft.	603	10" Conduit Type B, 706.08 with 706.12 Joints
			290						290	Y060	290	Lin. Ft.	603	18" Conduit Type C, 706.08 ES with 706.12 Joints
			6						6	Y060	6	Lin. Ft.	603	48" Conduit Type C, 706.02
				192		469	469		192	Y060	661	Lin. Ft.	603	72" Conduit Type C, 706.02 with 706.11 Joints
				97		239	239		97	Y060	336	Lin. Ft.	603	72" Conduit Type C, 706.02 radius pipe with 706.11 Joints
				56		136	136		56	Y060	192	Lin. Ft.	603	72" Conduit Type C, 706.02 Class III with 706.11 Joints
				25		60	60		25	Y060	85	Lin. Ft.	603	72" Conduit Type C, 706.02 Class III with 706.11 Joints
				9		23	23		9	Y060	32	Lin. Ft.	603	72" Conduit Type C, 706.02 Class IV Radius pipe with 706.11 Joints
					105				105	Y060	105	Lin. Ft.	603	24" Conduit Type C, 706.02 Class IV with 706.11 Joints
			5		3				8	Y060	8	Each	604	Standard No. 1 Manhole
				1					1	Y060	1	Each	604	Standard No. 5 Manhole with 706.11 Joints
				2	3				5	Y060	5	Each	604	Standard No. 2 Manhole
	3								3	Y060	3	Each	604	Manhole Reconstructed to Grade
	6								6	Y060	6	Each	604	Manhole Adjusted to Grade
		2							2	Y060	2	Each	604	Furnish Complete Casting for Existing Manholes, as per plan
														BUILDING REMOVAL
									Lump	6203	Lump		202	Parcel - 1032-1-WL, removal of 1-story frame garage, 1-frame shed, 1-story frame office building with scales.
									Lump	6203	Lump		202	Parcel-1071-WL, removal of 1-story concrete block service station
									Lump	6203	Lump		202	Parcel-1071-2-WL, removal of one 2-story frame house, 1-story concrete block garage.
10 00									10 00		10 00	Hours	Special	Special Duty Police Officer
1000									1000		1000	Hours	Special	Official Police Car
								Lump	Lump		Lump		619	Field Office
								Lump	Lump		Lump		623	Construction Layout Stakes
								Lump	Lump		Lump		614	Maintaining Traffic

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

Rev. A.H.S. 6-2-75
Ckd. M.G.B. 6-4-75
Rev. 1-29-76

STARK COUNTY
STA-30-14.12
STA-77-9.22

ITEM 301 — 3" BITUMINOUS AGGREGATE BASE.
ITEM 304 — 6" AGGREGATE BASE

STATION	TO STATION	LENGTH FEET	WIDTH FEET	ITEM 301 VOLUME CU. YDS.	ITEM 304 AVG. THICK.	ITEM 304 VOLUME CU. YDS.	REMARKS
I-77-4(44)107							
U.S. 30							
943+25.00	946+30.00	305.00	6.00	16.9	6.00	33.9	℄ Rt. Median
946+30.00	952+71.77	641.77	12.00	71.3	6.00	142.6	℄
954+36.76	959+77.25	540.49	12.00	60.0	6.00	120.1	℄
966+88.26	969+00.00	211.74	12.00	23.5	6.00	47.0	℄
946+30.00	951+50.00	520.00	8.00	38.5	6.00	77.0	Lt.
951+50.00	952+71.77	121.77	† 13.50	15.2	6.00	30.4	Lt.
951+65.25	952+71.77	106.52	† 27.50	27.1	6.00	54.7	Rt.
954+37.00	954+97.66	* 60.08	8.00	4.4	6.00	8.9	Lt.*(60.66)([illegible])
954+36.00	954+97.66	* 62.10	8.00	4.6	6.00	9.2	Rt.*(61.66)([illegible])
954+97.66	956+59.87	* 158.62	8.00	11.7	5.64	22.1	Lt.*(162.21)([illegible])
954+97.66	956+59.87	* 164.90	8.00	12.2	6.00	24.4	Rt.*(162.21)([illegible])
956+50.87	959+77.25	* 308.82	8.00	22.9	5.64	43.0	Lt.*(317.38)([illegible])
956+59.87	959+77.25	* 323.36	8.00	24.0	6.00	47.9	Rt.*(317.38)([illegible])
966+88.26	966+89.00	* .75	8.00	0.1	6.00	0.1	Rt.*(0.74)([illegible])
966+89.00	969+00.00	* 212.52	8.00	15.7	6.00	31.5	Rt.*(211.00)([illegible])
967+56.07	968+70.00	* 112.76	† 14.00	14.6	6.00	29.2	Lt.*(113.93)([illegible])
968+70.00	969+00.00	* 29.71	8.00	2.2	6.00	4.4	Lt.*(30.00)([illegible])
Ramp A							
951+50.00	952+72.80	122.80	† 7.00	8.0	6.00	15.9	Lt.
954+30.00	960+53.80	* 635.56	4.00	23.5	6.00	47.1	Rt.*(623.80)([illegible])
954+31.43	960+20.19	597.76	6.00	33.2	5.52	61.1	Lt.
960+29.19	961+29.19	100.00	† 7.00	6.5	5.58	12.1	Lt.
960+53.80	961+20.19	* 77.28	4.00	2.9	6.00	5.7	Rt.*(75.39)([illegible])
961+29.19	969+25.61	796.42	8.00	59.0	5.64	110.9	Lt.
965+23.45	966+00.35	* 79.69	4.00	3.0	6.00	5.9	Rt.*(76.90)([illegible])
Ramp B							
951+29.59	958+53.75	724.16	4.00	26.8	5.64	50.4	Lt.
955+38.06	956+03.30	* 66.97	6.00	3.7	6.00	7.4	Rt.*(65.24)([illegible])
956+03.30	958+53.75	* 264.05	6.00	14.7	6.00	29.3	Rt.*(250.45)([illegible])
Ramp C							
953+65.89	957+09.25	343.36	6.00	19.1	5.52	35.1	Lt.
953+70.64	957+09.25	338.61	4.00	12.5	6.00	25.1	Rt.
967+21.48	969+70.86	249.38	5.25	12.1	5.46	22.1	Rt.
967+28.34	968+72.38	* 147.25	7.25	9.9	6.00	19.8	Lt.*(144.04)([illegible])
968+72.38	969+70.86	98.48	7.25	6.6	5.60	12.3	Lt.
969+70.86	970+70.86	100.00	4.00	3.7	6.00	7.4	Rt.
Ramp E							
967+02.00	967+56.07	54.07	8.00	4.0	5.64	7.5	Lt.
967+56.07	969+56.07	200.00	† 7.00	13.0	5.58	24.1	Lt.
968+56.07	969+56.07	* 107.64	3.00	3.0	6.00	6.0	Rt.*(100.00)([illegible])
969+56.07	975+08.82	552.75	6.00	30.7	5.52	56.5	Lt.
969+56.07	975+08.82	* 614.17	4.00	22.7	6.00	45.5	Rt.*(552.72)([illegible])
975+08.82	976+86.91	178.09	† 7.00	11.5	5.64	21.7	Lt.
975+08.82	976+86.91	* 183.63	4.00	6.8	6.00	13.6	Rt.*(178.09)([illegible])
Ramp F							
943+25.00	952+72.31	947.31	8.00	70.2	6.00	140.3	Rt.
954+32.31	960+18.75	586.44	8.00	43.4	5.64	81.7	Rt.
954+31.00	954+44.26	13.26	† 4.64	0.6	6.00	1.1	Lt.
954+44.26	955+86.26	142.00	4.00	5.3	6.00	10.5	Lt.
972+00.00	972+98.25	98.25	6.00	5.5	5.52	10.0	Rt.
972+98.25	974+98.25	200.00	7.00	13.0	5.58	24.1	Rt
974+98.25	977+75.00	276.75	8.00	20.5	5.64	38.5	Rt.
963+43.25	965+78.15	240.39	4.00	8.9	6.00	17.8	Lt.*(234.50)([illegible])
963+44.25	965+78.15	235.50	6.00	13.1	5.52	24.1	Rt.
971+92.55	973+78.24	185.69	3.62	6.2	6.00	12.4	Lt.
Ramp D							
966+99.00	969+73.48	274.48	6.00	15.2	5.52	28.1	Lt.
966+99.00	967+57.47	58.47	4.00	3.2	6.00	4.3	Rt.
967+57.47	969+23.48	166.01	4.00	6.1	6.00	12.3	Rt.
969+23.48	969+73.48	50.00	† 5.00	2.3	6.00	4.6	Rt.
969+73.48	970+72.48	100.00	† 7.00	6.5	5.60	12.1	Lt.
Ramp G							
955+86.26	960+19.85	433.59	4.00	16.1	5.28	28.3	Lt.
970+94.80	977+03.54	607.74	6.00	33.8	5.52	62.1	Rt.
970+97.50	976+24.51	527.01	4.00	19.5	6.00	39.0	Lt.*(536.51)([illegible])
976+24.51	977+98.54	74.03	4.00	2.7	6.00	5.5	Lt.*(86.49)([illegible])
Ramp H							
956+94.00	958+90.74	196.74	8.00	14.6	6.00	29.1	Rt.
958+90.74	959+90.74	100.00	† 7.00	6.5	5.58	12.1	Rt.
958+90.74	960+80.00	* 190.15	4.00	7.0	6.00	14.1	Lt.*(189.26)([illegible])
959+90.74	960+52.00	61.26	6.00	3.4	5.52	6.3	Rt.
963+53.00	965+43.56	* 193.55	4.00	7.2	6.00	14.3	Lt.*(190.56)([illegible])
965+43.56	966+40.00	96.44	4.00	3.6	6.00	7.1	Lt.
963+33.00	967+86.26	453.26	6.00	25.2	5.52	46.3	Rt.
I-77							
545+00.00	546+00.00	* 103.60	† 9.00	8.6	6.00	17.3	Rt.*(100.00)([illegible])
546+00.00	547+75.00	* 181.60	8.00	13.5	6.00	26.9	Rt.*(175.00)([illegible])
541+00.00	542+05.00	104.00	† 9.00	8.7	6.00	17.3	Lt.
544+68.00	547+40.00	* 261.65	8.00	19.4	6.00	38.8	Lt.*(272.00)([illegible])
551+81.03	552+53.00	71.97	† 11.00	7.3	6.00	14.5	Lt.
552+53.00	555+19.00	266.00	† 6.00	14.8	6.00	29.6	Lt.
			SUBTOTAL	1132.7		2198.9	
			LESS ‡			-139.0	18,010.17' (1/3)(0.02315 Sq. Yds)
			ADD *	16.6			
			TOTAL	1149.3		2059.9	
U-663(15)							
U.S. 30							
920+00.00	921+01.98	101.98	12.00	11.3	6.00	22.6	℄
921+03.28	941+70.11	2066.83	12.00	229.6	6.00	459.2	℄
943+25.00	946+30.00	305.00	6.00	16.9	6.00	33.8	℄ Lt. Median
920+00.00	921+01.98	101.98	16.00	15.1	6.00	30.2	Lt. & Rt.
921+03.28	931+47.00	1043.72	16.00	154.6	6.00	309.2	Lt. & Rt.
931+47.00	933+00.00	153.00	† 14.00	19.8	6.00	39.6	Rt.
931+47.00	933+29.36	182.36	8.00	13.5	6.00	27.0	Lt.
933+00.00	941+70.11	870.11	8.00	64.5	6.00	129.0	Rt.
936+07.72	941+70.11	562.39	8.00	41.7	6.00	83.4	Lt.
943+25.00	946+30.00	305.00	8.00	22.6	6.00	45.2	Lt.
Ramp S							
926+00.00	928+01.52	201.52	6.00	11.2	6.00	22.4	Lt. & Rt.
928+01.52	932+30.71	429.19	3.00	11.9	6.00	23.8	Lt.
928+01.52	929+58.20	* 153.15	3.00	4.3	6.00	8.6	Rt.*(156.68)([illegible])
929+58.20	932+52.73	294.53	3.00	8.2	6.00	16.4	Rt.
932+30.71	933+30.71	100.00	† 5.50	5.1	6.00	10.2	Lt.
932+52.73	933+30.71	* 78.93	3.00	2.2	6.00	4.4	Rt.*(77.98)([illegible])
933+30.71	936+02.72	277.01	8.00	20.5	6.00	41.0	Lt.
Ramp T							
926+00.00	931+00.00	500.00	3.00	13.9	6.00	27.8	Lt.
926+61.80	931+00.00	438.20	3.00	12.2	6.00	24.4	Rt.
931+00.00	932+00.00	* 101.13	† 2.50	2.3	6.00	4.6	Lt.*(100.00)([illegible])
931+00.00	933+00.00	200.00	† 5.50	10.2	6.00	20.4	Rt.
			SUBTOTAL	691.6		1383.2	
			‡ LESS			-92.5	11,982.06' (1/3)(.02315 Sq. Yds)
			TOTAL	691.6		1290.7	

† Average Width
‡ Quantity corrections due to revised pavement design
* Quantity corrections due to Approach Slab Revisions

ITEM 202 — REMOVAL & STORAGE OF EXISTING GUARD RAIL

STATION	TO STATION	LOCATION	TEMPORARY	Deep Beam	PLAN SH.NO.
Existing	Ramp C-C				
5+20	12+80	Lt.		720.0	31
5+49	10+60	Rt.		550.0	31
4+37	4+60	Rt.		25.0	31
I-77					
573+97	574+22	Lt.		50.0	31
571+82	573+58	Lt.		175.0	31
Existing	Ramp D				
966+80	971+15	Lt.		437.5	31
966+80	971+15	Rt.		437.5	31
I-77					
549+04	555+06	Lt.		600.0	35
550+61	551+27	Lt.		62.5	35
552+50		Lt.		25.0	35
550+39	551+11	Rt.		75.0	35
549+21	549+96	Rt.		75.0	35
562+25	568+20	Rt.	587.5		31
549+96	554+21	Rt.		425.0	35
563+65		Rt.		37.5	33
568+24	569+99	Rt.		175.0	31
TOTAL	I-77-4(44)107		587.5	3870.0	
U.S. 30					
925+25		Lt.	75.0		26
925+25		Rt.	75.0		26
924+12	924+50	Rt.	50.0		26
916+47		Lt.	37.5		26
TOTAL	U-663(15)		237.5		

ITEM 203 SUBGRADE COMPACTION

SH. NO.	UNDER ITEM	CALCULATION	SQ. YDS.
I-77-4(44)107			
20	404 (Pav't.)	3416×36÷1.25	9838.1
21	404 (Alley's)	12.2×36	439.2
23	451 (Pav't)		14,250.5
19	301 (Shoulders)	1132.7×12	13,592.4
24	611 (App. Slabs)		3049.9
23	404 (Pav't)		17,931.8
22	601 (Gutters)	415×4.5÷9	207.5
		TOTAL	59309.4
U-663(15)			
19	301 (Shoulders)	691.6×12	8299.2
20	404 (Pav't)	901.7×36÷1.25	25969.0
		TOTAL	34268.2

ITEM 203 PROOF ROLLING

I-77-4(44)107

58870.2 ÷ 3000 = 19.6 Hours

U-663(15)

34268.2 ÷ 3000 = 11.4 Hours

NEW CURBS ADJACENT TO EXISTING STREETS
ITEM 404 — 1¼" ASPHALT CONCRETE
ITEM 407 — TACK COAT (0.1 GAL. PER SQ.YD.)
ITEM 305 — 9" PLAIN PORTLAND CEMENT CONCRETE PAVEMENT
ITEM 310 — 6" SUBBASE, REGULAR GRADING

STATION	TO STATION	LOC.	LENGTH	WIDTH	AREA SQ.YDS.	ITEM 404 CU. YDS.	ITEM 407 GAL.	ITEM 305 SQ. YDS.	ITEM 310 CU. YDS.	ITEM 407 TONS
Henry	Ave. S.W.									
10+73	12+70	Rt.	197'	2'	43.8	1.5	4.4	9.7	7.3	0.15
10+50	12+70	Lt.	220'	2'	48.9	1.7	4.9	10.9	8.2	0.17
15th St.	S.W.									
11+93	13+79	Lt.	186'	2'	41.3	1.4	4.1	9.2	6.9	0.14
15+10	16+25	Lt.	115'	2'	25.6	0.9	2.6	5.7	4.3	0.09
Market	St. S									
6+95	7+80	Rt.	85'	2'	18.9	0.7	1.9	4.2	3.2	0.07
7+40	8+05	Lt.	65'	2'	14.4	0.5	1.4	3.2	2.4	0.05
10+91	11+15	Lt.	24'	2'	5.3	0.2	0.5	1.2	0.9	0.02
11+55	13+85	Rt.	230'	2'	51.1	1.8	5.1	11.4	8.5	0.18
11+85	15+15	Lt.	330'	2'	73.3	2.5	7.3	16.3	12.2	0.26
16+06	16+31	Lt.	25'	2'	5.6	0.2	0.6	1.2	0.9	0.02
					TOTAL	11.4	32.8	73.0	54.8	1.15

Rev. UNS 5-27-75 Made: E.D.Y. 12-9-69
Ckd. MGB 5-28-75 Ckd. GMG 12-16-70

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

QUANTITY CALCULATIONS

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			20 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

ITEM 301 – 9" BITUMINOUS AGGREGATE BASE
ITEM 402 – 1 3/4" ASPHALT CONCRETE
ITEM 404 – 1 1/4" ASPHALT CONCRETE

STATION	TO STATION	℄ LENGTH	LENGTH CORRECTION	CORR. LENGTH	WIDTH FEET ‡	ITEM 301 VOLUME CU. YDS.	ITEM 404 VOLUME CU. YDS.	REMARKS	ITEM 402 VOLUME CU. YDS.
I-77-4(44)107									
U.S. 30									
943+25.00	951+65.25	840.25		840.25	Ω 48.00	1143.7	155.6	Rt.	217.8
946+30.00	951+50.00	520.00		520.00	Ω 54.50	801.7	109.3	Lt. *	153.0
951+50.00	952+71.77	121.77		121.77	Ω 36.00	125.2	16.9	Lt.	23.7
951+65.25	952+71.77	106.52		106.52	Ω 24.00	74.0	9.9	Rt.	13.9
Ramp A									
951+50.00	952+71.00	121.00	1449.04 ÷ 1432.39	122.41	16.65	56.6	7.9	Rt.	11.1
Ramp F									
943+25.00	947+70.78	445.78	1461.28 ÷ 1459.16	445.86	Ω 4.25	58.8	7.3	Lt. *	10.2
947+70.78	951+64.26	393.48		393.48	Ω 16.25	183.1	24.7	Lt. *	34.6
951+64.26	952+72.00	107.74		107.74	Ω 24.00	74.8	10.0	Lt.	14.0
					TOTAL	2517.9	341.6		478.3
U-663(15)									
U.S. 30									
920+00.00	921+01.98	101.98		101.98	Ω 72.00	209.6	28.3	Lt. & Rt.	39.6
921+03.28	936+07.72	1504.44		1504.44	Ω 36.00	1546.2	209.0	Lt.	292.6
921+03.28	933+00.00	1196.72		1196.72	Ω 36.00	1230.0	166.2	Rt.	232.7
933+00.00	938+20.00	520.00		520.00	Ω 54.50	801.7	109.3	Rt. *	153.0
936+07.72	941+70.11	562.39		562.39	Ω 48.00	765.5	104.1	Lt.	147.5
938+20.00	941+70.11	350.11		350.11	Ω 48.00	476.5	64.8	Rt.	90.7
943+25.00	946+30.00	305.00		305.00	Ω 48.00	415.1	56.5	Lt.	79.1
Ramp S									
926+00.00	928+01.52	201.52		201.52	Ω 24.00	139.9	18.7	Rt.	26.2
928+01.52	929+58.20	156.68	944.93 ÷ 954.93	155.04	Ω 20.00	90.4	12.0	Rt. *	16.8
929+58.20	932+52.73	294.53		294.53	Ω 16.00	139.1	18.2	Rt.	25.5
932+52.73	933+30.71	77.98	1440.39 ÷ 1432.39	78.42	Ω 16.00	37.0	4.8	Rt.	6.7
933+30.71	936+07.72	277.01	1445.14 ÷ 1432.39	279.48	Ω 25.50	201.8	27.5	Rt. *	38.5
Ramp T	Conn.								
925+00.00	926+55.00	155.00	101.00 ÷ 90.00	173.94	22.00	106.3	14.8	Lt.	20.7
Ramp T									
926+00.00	927+21.80	121.80		121.80	Ω 19.00	66.0	8.9	Lt. & Rt.	12.5
926+52.00	927+21.80	69.80		69.89	Ω 19.75	39.3	5.3	Rt. *	7.4
927+21.80	930+96.88	375.08		375.08	Ω 28.50	307.4	41.2	Lt. & Rt.	57.7
930+96.88	931+50.00	53.12	1440.89 ÷ 1432.39	53.44	Ω 17.00	26.7	3.5	Lt. *	4.9
931+50.00	932+00.00	50.00	1439.64 ÷ 1432.39	50.25	Ω 14.50	21.6	2.8	Lt. *	3.9
932+00.00	933+00.00	100.00	1439.89 ÷ 1432.39	100.52	15.00	41.9	5.8	Lt. *	8.1
					TOTAL	6662.0	901.7		1264.1

* Avg. Width
‡ Avg. Width for Item 304, add one foot per side to width shown.
Ω Add six inches per side to actual width for 301 Revision.

DRIVEWAYS
ITEM 452 8" PLAIN PCC PAVEMENT

I-77-4(44)107			SQ. YDS.
Sta. 27+97 McKinley Conn.	Rt.	9' x 11' ÷ 9 =	11.0
Sta. 28+38 McKinley Conn.	Rt.	9.5' x 19' ÷ 9 =	20.1
Sta. 28+20 McKinley Conn.	Lt.	11' x 15' ÷ 9 =	18.3
Sta. 7+60 15th St. Conn.	Rt.	8.5' x 4.5' ÷ 9 =	4.2
		TOTAL	53.6

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

ITEM 202 – REMOVAL & DISPOSAL OF EXISTING PAVEMENT, SIDEWALK & CURB

ROADWAY	LIMITS	PAVEMENT LENGTH FEET	PAVEMENT WIDTH FEET	PAVEMENT AREA SQ. YDS.	SIDEWALK LOC.	SIDEWALK LENGTH FEET	SIDEWALK WIDTH FEET	SIDEWALK AREA SQ. FT.	CURB LENGTH FEET	PLAN SH. NO.	REMARKS
Henry Ave. S.W.	10+50 to 12+70				Lt.	206	5	1030	209	32	
Henry Ave. S.W.	10+73 to 12+70				Rt.	197	5	985	197	32	
15 Th. St. S.W.	11+93 N.W. Corner McKinley					15	5	75	25	32	
15 Th. St. S.W.	12+52 to 14+20					244	5	1220	120	32	Curb Match to Cleveland
Temp. Ramp C-C	Margaret to I-70 Nose	650	18	1300					800	33	
I-77	573+57 to 576+04			407 *					85	33	
High Ave. Conn.	14+08 to 14+15	7	18	126					8	33	Marion Ave.
High Ave. Conn.	12+00 to 12+40	75	30	250		121	5	605	135	33	High Ave.
15 Th. St. S.W.	14+80 to 16+25				Lt.	142	5	710	148	32	
15 Th. St. Conn. (Exist.)	8+00 to 9+77	177	31	610	Lt. & Rt.	354	5	1770	354	32	
15 Th. St. Conn.	7+55 Proposed to 8+00 Exist.				Lt.	60	5	300	60	32	
15 Th. St. Conn.	7+55 Proposed to 8+00 Exist.				Rt.	60	5	300	60	32	
Cleveland Ave. S.W.	10+20 to 14+60				Lt.	429	5	2145	436	34	
Cleveland Ave. S.W.	14+50 to 14+80				Lt.	33	5	165	30	34	
Cleveland Ave. S.W.	15+18 to 18+05				Lt.	282	5	1410	287	34	
Cleveland Ave. S.W.	10+83 to 15+60				Rt.	517	5	2585	517	34	
Cleveland Ave. S.W.	15+72 to 18+05				Rt.	215	5	1075	215	34	
Cleveland Ave. S.W.	10+12 to 18+05	793	30	2643						34	
Cleveland Ave. S.W.	18+05 to 25+10	705	31	2428	Lt. & Rt.				1410	35	
Cleveland Ave. S.W.	18+05 to 24+20				Lt.	557	5	2785		35	
Cleveland Ave. S.W.	18+05 to 25+20				Rt.	633	5	3165		35	
Market Ave. S.W.	10+25 to 10+95				Lt.	70	8	560	10	34	
Market Ave. S.W.	11+10 to 12+10				Lt.	100	8	800	20	34	
Market Ave. S.W.	12+25 to 13+75				Lt.	150	8	1200	20	34	
Market Ave. S.W.	13+95 to 14+95				Lt.	100	8	800	20	34	
Market Ave. S.W.	15+10 to 16+10				Lt.	100	8	800	20	34	Curb Removal on
Market Ave. S.W.	16+30 to 16+70				Lt.	47	8	376	10	35	alley curb returns
Market Ave. S.W.	6+95 to 7+75				Rt.	80	8	640		34	only
Market Ave. S.W.	7+40 to 8+05				Rt.	30	8	240		34	
Market Ave. S.W.	11+93 to 12+19				Rt.	14	8	112	20	34	
McKinley Ave. S.W.	24+63 to 26+83	220	27 Avg.	660	Rt.	215	5	1075	210	35	
McKinley Ave. S.W.	24+63 to 26+83				Lt.	20	5	100	180	35	
McKinley Ave. S.W.	27+13 to 28+77	164	30	547	Rt.	105	5	525	163	35	
McKinley Ave. S.W.	27+13 to 28+77				Lt.	0			165	35	
McKinley Ave. S.W.	From Anton Pl. 200' North	200	20	444	Lt. & Rt.	387	5	1935	387	35	
	TOTAL			9,415				29,488	6,321		

PAVEMENT REPLACEMENT AREAS
ITEM 202 - EXISTING PAVEMENT REMOVED
ITEM 305 - 9" PORTLAND CEMENT CONCRETE BASE
ITEM 402 - 1" ASPHALT CONCRETE
ITEM 404 - 1" ASPHALT CONCRETE
ITEM 407 - TACK COAT & COVER AGGREGATE

I-77-4(44)107

STATION	TO STATION	SH NO	LENGTH	WIDTH	AREA SQ. YDS	202 SQ. YDS	305 SQ. YDS	402 CU. YDS	404 CU. YDS	407 GAL.	407 TONS
15th St. SW 12+10	12+23	33	20'	12'	26.7	26.7	26.7	0.9	0.9	2.7	0.01
Market St. 13+76	S. 13+84	33	35'	4.67'	18.1	18.1	18.1	0.6	0.6	1.8	0.01
Cleveland	Ave.	36	37'	5.25'	21.6	21.6	21.6	0.8	0.8	2.2	0.01
Wagner	PL. SW	36	180'	4.67'	93.4		93.4	3.2	3.2	9.3	0.03
Eagle Pl.	SW	31	132'	6'	88.0		88.0	3.1	3.1	8.8	0.03
		31	25'	6'	16.7		16.7	0.6	0.6	1.7	0.01
				TOTAL		66.4	264.5	9.2	9.2	26.5	0.10

ITEM 659 SEEDING AND MULCHING

ROADWAY	STATION	TO STATION	SQ. YDS.	SLOPE FACTOR	QUANTITY SQ. YDS.	SH. NO.	SIDE
U-663(15)							
U.S. 30	920+00	930+00	2220		2220	26	
"S"	926+00	929+90	870		870	26	
"T"	925+00	930+00	1170		1170	26	
U.S. 30	930+00	946+30	1640		1640	27	
	930+00	941+70.11	1130		1130	27	
"S"	929+90	933+30.71	720		720	27	
"T"	930+00	933+00	440		440	27	
		TOTAL			8190		
I-77-4(44)107							
U.S. 30	946+30	947+00	80	-	80	27	
	943+25	947+00	420	-	420	27	
	947+00	952+95	1400	-	1400	28	
	945+00	959+75	3560	1.04	3700	28	Lt.
	954+10	959+75	3580	1.05	3760	28	Rt.
"A"	954+10	958+00	4220	1.05	4430	28	Lt.
	954+10	958+00	1530	-	1530	28	Rt.
"F"	954+00	960+50	8950	1.05	9400	28	Rt.
"A"	958+00	967+50	11400	1.05	11970	31	Lt.
	958+00	961+30	2610	-	2610	31	Rt.
"B"	955+40	958+60	1220	-	1220	31	Lt.
	950+50	958+60	4450	1.08	4810	31	Rt.
"C"	966+90	973+60	5000	1.05	5250	31	Rt.
	971+00	973+60	2220	-	2220	31	Rt.
"D"	966+90	973+60	7190	1.12	8050	31	Lt.
"E"	974+55	976+85	1190	1.03	1230	31	Rt.
	969+00	972+70	3390	1.02	3460	31	Rt.
	966+00	978+80	12350	-	12350	31	Lt.
U.S. 30	963+50	964+55	940	-	940	31	Lt.
	969+00	972+30	1250	1.08	1350	31	Lt.
"C-C"	4+55	8+35	5560	-	5560	31	-
U.S. 30	966+80	970+30	1550	1.03	1600	33	Rt.
"B"	966+50	970+00	1050	1.05	1100	33	Lt.
	966+30	971+25	3220	1.12	3610	33	Rt.
"C"	953+10	957+10	3410	1.05	3580	33	Rt.
	953+40	957+15	725	1.05	760	33	Lt.
"G"	967+00	968+80	750	1.08	810	33	Rt.
	970+00	977+00	8600	-	8600	33	Rt.
	970+75	977+00	1580	1.05	1660	33	Lt.
			1550	1.12	1740	33	Lt.
			2780	-	2780	33	Lt.
"H"	965+00	966+60	610	1.12	680	33	Lt.
	968+00	972+65	3330	1.05	3500	33	Lt.
	970+50	973+60	3610	-	3610	33	Lt.
	965+00	967+40	3050	1.05	3200	33	Rt.
	969+00	971+80	970	1.12	1090	33	Rt.
"F"	963+40	965+90	2380	1.05	2500	33	Rt.
	962+20	966+60	2880	-	2880	33	Rt.
	963+40	965+90	1280	1.05	1340	33	Lt.
	968+20	969+25	280	-	280	33	Rt.
"A"	967+50	969+25	2960	1.05	3110	35	Lt.
"F"	969+25	970+70	310	-	310	35	Rt.
	972+00	977+80	5820	1.05	6110	35	Rt.
"H"	957+00	965+00	7210	1.05	7570	35	Rt.
	959+00	965+00	2261	1.04	2351	35	Lt.
McKinley	23+20	28+20	2820	-	2830	36	Lt.
	24+15	25+40	330	-	330	36	Rt.
	26+00	27+70	360	-	360	36	Rt.
Cleveland	10+60	25+20	490	-	490	37	Rt.
		TOTAL			154,521		

Made CRJ 10-2-69
Ckd GMG 6-16-70
Rev UNS 5-30-75
Ckd MGB 5-30-75

QUANTITY CALCULATIONS

STARK COUNTY
STA-30-14.12
STA-77-9.22

ITEM 310 — SUBBASE REGULAR GRADING

STATION	TO STATION	℄ LENGTH	LENGTH CORRECTION	CORR. LENGTH	WIDTH FEET	THICKNESS INCHES	VOLUME CU. YDS.	REMARKS
I-77-4(44)107								
U.S. 30								
946+30.00	951+50.00	520.00		520.00	7.16	6.50	74.7	Lt.
951+50.00	952+96.77	146.77		146.79	* 10.97	9.00	44.7	Lt.
951+65.25	952+96.77	131.52		131.52	* 22.09	9.00	80.7	Rt.
954+37.00	954+97.66	60.66	4039.739÷4988.239	60.07	7.16	6.50	8.6	Lt.
954+36.00	954+97.66	61.66	5024.739÷4988.239	62.11	7.16	6.50	8.9	Rt.
954+97.66	956+59.87	162.21	2120.625÷2170.000	158.52	7.16	6.50	22.8	Lt.
954+97.66	956+59.87	162.21	2206.500÷2170.000	164.94	7.16	6.50	23.7	Rt.
956+59.87	957+56.07	96.20	1860.484÷1909.859	93.71	7.16	6.50	13.5	Lt.
956+59.87	959+77.25	317.38	1946.359÷1909.859	323.44	7.16	6.50	46.5	Rt.
966+88.26	966+89.00	0.74	2206.500÷2170.000	0.75	7.16	6.50	0.1	Rt.
966+89.00	969+00.00	211.00	5024.739÷4988.239	212.54	7.16	6.50	30.5	Rt.
967+56.07	968+70.00	113.93	4936.739÷4988.239	112.75	12.73	9.00	39.9	Lt.
968+70.00	969+00.00	30.00	4939.739÷4988.239	29.71	7.16	6.50	4.3	Lt.
Ramp A								
951+50.00	952+72.80	122.80		122.80	* 6.16	6.50	15.2	Lt.
954+30.00	960+53.80	623.80	973.430÷954.930	635.88	3.16	6.00	37.2	Rt.
954+31.43	960+29.19	597.76		597.76	5.16	6.50	61.9	Lt.
960+29.19	961+29.19	100.00		100.00	* 6.16	6.50	12.4	Lt.
960+53.80	961+29.19	75.39	734.697÷716.197	77.34	3.16	6.00	4.5	Rt.
961+29.19	966+01.53	472.34		472.34	7.16	6.50	67.8	Lt.
965+23.45	966+00.35	76.90	742.697÷716.197	79.74	3.16	6.00	4.7	Rt.
966+01.53	969+25.61	324.08		324.08	5.42	6.50	35.2	Lt.
Ramp B								
951+29.59	955+13.93	384.34		384.34	3.16	6.00	22.5	Lt.
955+13.93	958+53.75	339.82		339.82	3.16	6.00	19.9	Lt.
955+38.06	956+03.30	65.24	735.697÷716.197	67.02	5.16	6.50	6.9	Rt.
956+03.30	958+53.75	250.45	369.500÷350.000	264.40	5.16	6.50	27.4	Rt.
Ramp C								
953+70.64	956+70.00	299.36		299.36	3.16	6.00	17.5	Rt.
953+65.89	956+70.00	304.11		304.11	5.16	6.50	31.5	Lt.
956+70.00	957+09.25	39.25		39.25	5.16	6.50	4.1	Lt.
956+70.00	957+09.25	39.25		39.25	3.16	6.00	2.3	Rt.
Ramp E								
957+83.46	959+99.00	215.54		215.54	7.16	6.50	31.0	Lt.
966+02.00	967+56.07	54.07		54.07	7.16	6.50	7.8	Lt.
967+56.07	969+56.07	200.00		200.00	* 6.16	6.50	24.7	Lt.
968+56.07	969+56.07	100.00	247.180÷229.180	107.85	* 2.15	7.50	5.4	Rt.
969+56.07	975+08.82	552.75		552.75	5.16	6.50	57.2	Lt.
969+56.07	975+08.82	552.75	200.500÷180.000	615.70	3.16	6.00	36.0	Rt.
975+08.82	976+86.91	178.09		178.09	* 6.16	6.50	22.0	Lt.
975+08.82	976+86.91	178.09	630.370÷610.870	183.77	3.16	6.00	10.8	Rt.
Ramp F								
943+25.00	952+72.31	947.31		947.31	7.16	6.50	136.1	Rt.
954+32.31	960+18.75	586.44		586.44	7.16	6.50	84.3	Rt.
954+31.00	954+44.26	13.26		13.26	* 3.36	6.00	0.8	Lt.
954+44.26	955+86.26	142.00		142.00	3.16	6.00	8.3	Lt.
963+43.25	965+78.75	235.50	734.697÷716.197	241.58	3.16	6.00	14.1	Lt.
963+44.25	965+78.75	234.50		234.50	5.16	6.50	24.3	Rt.
Ramp C								
967+21.48	969+70.86	249.38		249.38	4.41	6.50	13.0	Rt.
969+70.86	970+70.86	100.00		100.00	* 3.79	6.25	14.8	Rt.
967+28.34	968+72.38	144.04	901.599÷881.474	147.33	6.41	6.50	18.9	Lt.
968+72.38	969+70.86	98.48		98.48	6.50	* 6.41	12.7	Lt.
Ramp F								
971+92.55	973+78.24	185.69		185.69	* 2.78	6.25	10.0	Lt.
972+00.00	972+98.25	98.25		98.25	6.41	6.50	12.6	Rt.
972+98.25	974+98.25	200.00		200.00	* 6.78	6.50	27.2	Rt.
974+98.25	977+75.00	276.75		276.75	7.16	6.50	39.8	Rt.
Ramp G								
955+86.26	960+19.85	433.59		433.59	3.16	6.00	25.4	Lt.
970+94.80	977+02.54	607.74		607.74	5.16	6.50	63.2	Rt.
970+97.50	976+24.51	527.01	200.500÷180.000	587.03	3.16	6.00	34.6	Lt.
976+24.51	976+98.54	74.03	225.130÷204.630	81.45	3.16	6.00	4.8	Lt.
I-77								
545+00.00	546+00.00	100.00	1484.394÷1432.394	103.63	* 8.00	6.50	16.6	Rt.
546+00.00	547+75.00	175.00	1486.894÷1432.394	181.66	7.00	6.50	25.5	Rt.
541+00.00	542+05.00	104.00		104.00	* 8.00	6.50	16.7	Lt.
544+68.00	547+40.00	272.00	1377.394÷1432.394	261.56	7.00	6.50	36.7	Lt.
551+81.03	552+53.00	72.00		72.00	* 10.00	6.50	14.4	Lt.
552+53.00	555+19.00	266.00		266.00	5.00	6.50	26.7	Lt.
Ramp H								
963+33.00	967+00.00	367.00		367+00	5.16	6.50	38.0	Rt.
956+94.00	958+90.74	196.74		196.74	7.00	6.50	27.6	Rt.
958+90.74	959+90.74	100.00		100.00	* 6.16	6.50	12.4	Rt.
958+90.74	960+80.00	189.26	3838.219÷3819.719	190.18	3.16	6.00	11.1	Lt.
959+90.74	960+52.00	67.26		61.26	5.16	6.50	6.3	Rt.
963+53.00	965+43.56	190.56	1164.416÷1145.916	193.64	3.16	6.00	11.3	Lt.
965+43.56	966+40.00	96.44		96.44	3.00	4.83	4.3	Lt.
Ramp D								
966+99.00	969+73.48	274.48		274.48	5.16	6.50	28.4	Lt.
966+99.00	967+57.47	58.47	320.077÷301.577	62.06	3.16	6.00	3.6	Rt.
967+57.47	969+23.48	166.01		166.01	3.16	6.00	9.7	Rt.
969+23.48	969+73.48	50.00		50.00	* 3.83	6.00	3.5	Rt.
969+73.43	970+73.48	100.00		100.00	* 6.16	6.50	12.4	Lt.
						TOTAL	1814.9	
U-663(15)								
U.S. 30								
920+00.00	921+01.98	101.98		101.98	14.32	6.50	29.3	Lt.&Rt.
921+03.28	932+00.00	1096.72		1096.72	7.16	6.50	157.5	Lt.
921+03.28	930+50.00	946.72		946.72	7.16	6.50	136.0	Rt.
930+50.00	931+47.00	97.00		97.00	7.16	6.50	13.9	Rt.
931+47.00	933+00.00	153.00		153.00	* 13.16	6.50	40.4	Rt.
932+00.00	933+29.36	129.36		129.36	7.16	6.50	18.6	Lt.
933+00.00	938+20.00	520.00		520.00	7.16	6.50	74.7	Rt.
936+07.72	941+70.11	562.39		562.39	7.16	6.50	80.8	Lt.
938+20.00	941+70.11	350.11		350.11	7.16	6.50	50.3	Rt.
943+25.00	946+30.00	305.00		305.00	7.16	6.50	43.8	Lt.
Ramp S								
926+00.00	927+75.00	175.00		175.00	2.16	9.00	10.5	Lt.
927+75.00	930+00.00	225.00		225.00	2.16	7.50	11.2	Lt.
930+00.00	932+30.71	230.71		230.71	2.16	9.00	13.8	Lt.
926+00.00	927+75.00	175.00		175.00	2.16	7.50	8.8	Rt.
927+75.00	930+00.00	225.00		225.00	2.16	9.00	13.5	Rt.
930+00.00	932+52.73	252.73		252.73	2.16	7.50	12.6	Rt.
932+30.71	933+30.71	100.00		100.00	* 4.66	7.75	11.1	Lt.
932+52.73	933+30.71	77.98	1450.390÷1432.390	78.96	2.16	7.50	3.9	Rt.
933+30.71	936+07.72	277.01		277.01	7.16	6.50	12.0	Lt.
Ramp T								
926+00.00	931+00.00	500.00		500.00	2.16	6.00	20.0	Lt.
931+00.00	932+00.00	100.00	1449.140÷1432.390	101.17	* 1.66	7.50	3.9	Lt.
931+00.00	933+00.00	200.00		200.00	* 4.66	7.00	20.1	Rt.
926+61.80	931+00.00	438.20		438.20	2.16	9.00	26.3	Rt.
						TOTAL	813.0	

* Avg. Width

RESURFACING AND ALLEYS
ITEM 404 — 1" ASPHALT CONCRETE
ITEM 407 — TACK COAT (0.1 GAL. PER SQ. YD.)
ITEM 301 — 5" BITUMINOUS AGGREGATE BASE
ITEM 310 — 4" SUBBASE, REGULAR GRADING

STATION	TO STATION	LOC.	AREA CALC.	AREA SQ. YDS.	ITEM 404 CU. YDS.	ITEM 407 GAL.	ITEM 301 CU. YDS.	ITEM 310 CU. YDS.	ITEM 407 TONS
High Ave. Conn.			(Resurfacing)						
11+50	11+84	–	$34 \times \frac{10+14.7}{2} \div 9$	46.7	1.3	4.7	–	–	0.16
12+10		Rt.	$20 \times 29 \div 9$	64.4	1.8	6.4	–	–	0.27
14+15	14+35	–	$20 \times 16 \div 9$	35.6	1.0	3.6	–	–	0.12
13+90	14+08	Lt.	$28 \times 5 \div 9$	15.6	0.4	1.6	–	–	0.05
Margaret St. S.W.			(Resurfacing)						
11+10	11+45	–	$(8 \times 28 + \frac{15 \times 10}{2} + \frac{21 \times 17}{2}$						
			$+ \frac{16 \times 12}{2} + 16 \times 10 \div 9$	81.5	2.3	8.2	–	–	0.29
10+50	11+37	(New)	$(37 \times 8 + \frac{26 \times 20}{2} + \frac{16 \times 44}{2}) \div 9$	100.9	2.8		14.0	11.2	
Wernet Ct. Conn."A"		(New)	$(\frac{83+90}{2} \times 14 + \frac{2 \times 14}{2}$						
			$+ \frac{17 \times 7}{2}) \div 9$	146.6	4.1	–	20.4	16.3	
Wernet Ct. Conn."B"		(New)							
			$123 \times 14 \div 9$	191.3	5.3		26.6	21.3	
McKinley Ave. Conn.			(Resurfacing)						
26+40		Rt.	$10 \times 20 \div 9$	22.2	0.6	2.2	–	–	0.08
27+05		Lt.	$5 \times 20 \div 9$	11.1	0.3	1.1	–	–	0.04
28+77.49	28+97.49	–	$20 \times 30.27 \div 9$	67.3	1.9	6.7	–	–	0.24
Cleveland Ave			(Resurfacing)						
10+06	10+12		$130 \times 5 \div 9$	72.2	2.0	7.2	–	–	0.25
12+10	25+30		$20 \times 30 \div 9$	66.7	1.9	6.7	–	–	0.23
15th Street Conn.			(Resurfacing)						
7+45	7+50		$30 \times 5 \div 9$	16.7	0.5	1.7	–	–	0.06
			TOTAL		26.2	50.1	61.0	48.8	1.79

ITEM 608 — CONCRETE WALK

STATION	TO STATION	℄ LENGTH	LENGTH FEET	WIDTH FEET	AREA SQ. FT.	PLAN SH. NO.	REMARKS
Henry	Ave. S.W.						
10+73	12+70	Rt.	197	7.5	1478	28	
10+50	12+70	Lt.	220	7.5	1650	28	
Margaret	St. S.W.						
10+50	11+75	Rt.	125	4.0	500	31-38	
15th	St. S.W.						
11+93	14+04	Lt.	211	5.0	1055	33	
15+10	16+25	Lt.	115	11.5	1322	33	
Market	Ave. S.						
11+55	13+85	Rt.	230	7.5	1725	33	
6+95	7+80	Rt.	85	7.5	638	35	
McKinley	St. Conn.						
24+13	26+32	Rt.	224	5.0	1120	36-38	
26+57	27+90	Rt.	133	5.0	665	36-38	
24+20	24+34	Rt.			38		
Cleveland	Ave.						
15th to	Cleveland	Rt.	42	9.5	399	33-37	
10+70	13+50	Rt.	280	7.5	2100	33-37	
13+50	16+15	Rt.	265	5.0	1325	33-37	
16+15	16+65	Rt.	50	7.5	375	33-37	
16+65	22+31	Rt.	566	5.0	2830	37	
22+43	25+20	Rt.	277	5.0	1385	37	
High Ave.	Conn.						
11+87	–	Rt.	10	5.0	50	38	
12+33	–	Rt.	10	5.0	50	38	
15th St. 7+55	9+76	Lt. & Rt.	442	5.0	2210	38A	
				TOTAL	20,915		

Made EDY 11-19-69 Rev. MGB 5-21-75
Ckd. GMG 6-30-70 Ckd. UNS 5-30-75

QUANTITY CALCULATIONS

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

ITEM 310-SUBBASE GRADING "A" (T=6 UNLESS OTHERWISE NOTED)

STATION TO STATION		℄ LENGTH	LENGTH CORRECTION	CORR. LENGTH	WIDTH FEET	VOLUME CU. YDS.	REMARKS
I-77-4(44)107							
U.S. 30							
943+25.00	946+30.00	305.00		305.00	58.75	331.8	Rt.
946+30.00	951+50.09	520.00		520.00	70.00	674.1	Lt.
946+30.00	951+65.25	535.25		535.25	55.25	547.6	Rt.
951+50.00	952+96.77	146.77		146.77	45.75	124.3	Lt.
951+65.25	952+96.77	131.52		131.52	32.25	78.5	Rt.
954+06.43	954+97.67	91.24	4964.86÷4988.24	90.81	39.75	66.8	Lt.
954+06.43	954+97.67	91.24	5004.74÷4988.24	91.54	32.25	54.7	Rt.
954+97.67	956+59.87	162.20	2146.62÷2170.00	160.45	39.75	118.1	Lt.
954+97.67	956+59.87	162.20	2186.50÷2170.00	163.43	32.25	97.6	Rt.
956+59.87	960+02.25	342.38	1926.36÷1909.86	345.34	32.25	206.2	Rt.
956+59.87	957+56.07	96.20	1886.48÷1909.86	95.02	39.75	69.9	Lt.
957+56.07	960+02.25	246.18	1887.86÷1909.86	243.34	37.00	166.7	Lt.
966+60.00	969+00.00	240.00	5008.24÷4988.24	240.96	26.00	116.0	Rt.
966+67.00	967+56.07	89.07	4966.24÷4988.24	88.68	37.00	60.8	Lt.
967+56.07	969+00.00	143.93	4965.74÷4988.24	143.28	38.00	100.8	Lt.
954+11.76	969+00.00	827.23	(Less Bridge #2)	827.23	7.75	118.7	Median
Ramp A							
951+50.00	952+72.80	122.80	1439.84÷1432.39	23.44	* 20.40	46.6	Rt.
952+72.80	952+97.80	25.00	1441.16÷1432.39	25.15	23.05	10.7	Rt.
954+05.00	960+53.80	648.80	962.06÷954.93	653.64	19.75	239.1	Rt.
960+53.80	961+29.19	75.39	723.32÷716.20	76.14	19.75	27.8	Rt.
961+29.19	965+23.45	394.26	728.33÷716.20	400.94	* 29.75	220.9	Rt.
965+23.45	966+01.53	78.08	727.32÷716.20	79.21	27.75	40.7	Rt.
966+01.53	968+00.35	198.82	969.06÷954.93	201.76	* 33.75	189.2	Rt., t=9"
968+00.35	969+00.61	100.26	1437.52÷1432.39	100.62	* 15.75	44.0	Rt., t=9"
Ramp B							
951+29.59	954+46.93	316.34	960.43÷954.93	318.16	13.00	76.6	Rt.
954+45.93	955+13.93	68.00		68.00	13.00	16.4	Rt.
955+13.93	955+38.06	24.13	720.82÷716.20	24.28	14.75	6.6	Rt.
955+38.06	956+03.30	65.24	723.32÷716.20	65.89	19.75	24.1	Rt.
956+03.30	958+78.75	275.45	357.12÷350.00	281.05	19.75	102.8	Rt.
Ramp C							
953+43.00	957+34.25	391.25		391.25	19.75	143.1	Lt.
Ramp E							
957+83.46	960+25.00	241.54		241.54	* 6.25	28.0	Rt.
966+75.00	967+28.40	53.40	5739.95÷5729.58	53.50	* 26.25	26.0	Rt.
967+28.40	967+56.07	27.67	2094.36÷2083.48	27.81	* 27.25	14.0	Rt.
967+56.07	968+56.07	100.00	643.24÷636.62	101.04	* 18.75	35.1	Rt.
968+56.07	969+56.07	100.00	236.30÷229.18	103.11	* 19.75	37.7	Rt.
969+56.07	975+08.82	552.75	188.12÷180.00	577.68	21.75	232.7	Rt.
975+08.82	975+86.91	78.09	268.32÷260.44	80.45	* 21.25	31.7	Rt.
975+86.91	976+86.91	100.00	484.84÷477.46	101.54	* 20.25	38.1	Rt.
Ramp F							
943+25.00	947+70.78	445.78		445.78	* 7.00	57.8	Lt.
947+70.78	951+64.26	393.48		393.48	* 19.00	138.4	Lt.
951+64.26	952+97.00	132.74		132.74	27.75	68.2	Lt.
954+07.00	955+86.26	179.26		179.26	27.75	92.1	Lt.
955+86.26	960+43.75	457.49		457.49	28.25	239.3	Lt.
963+19.25	966+03.75	284.50	732.32÷716.20	287.33	19.75	105.1	Lt.
971+71.00	973+78.24	207.24		207.24	* 25.25	96.9	Lt.
973+78.24	974+98.25	120.01		120.01	* 20.75	46.1	Lt.
974+98.25	977+48.00	249.75	1281.36÷1273.24	251.34	* 21.75	151.9	Lt., t=9"
Ramp G							
955+86.26	960+44.00	457.74	3824.44÷3819.72	458.31	* 14.75	125.2	Rt.
970+72.00	976+24.51	452.51	188.12÷180.00	577.43	21.75	232.6	Lt.
976+24.51	977+25.00	100.49	212.76÷204.63	104.48	21.75	42.1	Lt.
979+06.83	979+31.83	25.00	1439.51÷1432.39	25.12	* 19.75	9.2	Lt.
Ramp H							
957+15.00	958+90.74	175.74	3832.969÷3819.719	176.35	* 28.50	139.6	Lt., t=9"
958+90.74	960+67.00	176.26	3826.844÷3819.719	176.59	19.75	64.6	Lt.
963+42.00	965+43.56	201.56	1153.041÷1145.916	202.81	19.75	74.2	Lt.
960+67.00	960+97.00	30.00	3826.719÷3819.719	30.05	28.5	15.9	
963+12.00	963+42.00	30.00	1152.916÷1145.916	30.18	28.5	15.9	

*Average Width

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

Ramp C							
966+99.00	968+72.38	173.38	888.599÷881.474	174.78	19.75	63.9	Lt.
968+72.38	969+70.86	98.48	—	98.48	19.75	36.0	Lt.
969+70.86	970+70.86	100.00	—	100.00	* 24.62	45.6	Lt.
Ramp H							
965+43.56	966+93.00	149.44		149.44	19.75	54.7	Lt.
I-77							
545+00.00	546+00.00	100.00	1473.894÷1432.394	102.90	* 7.17	20.5	Rt., t=9"
546+00.00	547+48.00	148.00	1476.894÷1432.394	152.60	13.00	55.1	Rt., t=9"
541+00.00	541+82.00	82.00	1382.39÷1432.39	79.14	* 7.00	15.4	Lt., t=9"
544+95.00	547+19.00	224.00	1387.39÷1432.39	216.96	13.00	78.4	Lt. t=9"
Cleveland	Avenue						
10+00.00	—			31.04	2.00	1.2	Lt.
10+00.00	—					* 5.2	Lt. Curb Return (50)(31.04 - 50.34/2) ÷ 9
10+30.00	—			40.27	2.00	1.5	Rt.
10+30.00	—					5.8	Rt. Curb Return (25)(40.27 - 55.53/2) ÷ 9
10+14.00	10+30.00	16.00		16.00	55.00	16.3	Lt. & Rt.
10+30.00	23+17.35	1287.35		1287.35	57.50	1358.4	Lt. & Rt. Less 8×83.50÷9
23+17.35	25+10.00	192.65		192.65	26.61	102.1	Rt.
23+96.99	25+10.00	113.01		113.01	5.64	11.8	Lt.
McKinley	Ave. Conn.						
23+17.35	23+93.79	76.44		76.44	* 33.82	47.9	Lt. & Rt.
23+93.79	28+77.49	483.70		483.70	33.50	300.1	Lt. & Rt.
27+00.00	—			18.00	20.00	6.7	Lt.
26+45.00	—			9.00	20.00	3.3	Rt.
27+97.00	—			8.50	12.00	1.9	Rt.
28+38.00	—			10.00	18.00	3.3	Rt.
28+20.00	—			11.00	14.00	2.9	Rt.
High Ave.	Conn.						
—	12+39.00	—		—		* 30.0	Lt. & Rt. Planimetered 1618÷9
12+39.00	13+60.00	121.00		121.00	31.00	69.5	Lt. & Rt.
13+60.00	—	—		—		* 25.8	Lt. & Rt. Planimetered 1395÷9
Ramp D							
966+74.00	967+57.47	83.47	308.682÷301.557	85.44	19.75	31.2	Rt.
967+57.47	969+73.48	216.01	—	216.01	19.75	79.0	Rt.
969+73.48	970+73.48	100.00	—	100.00	25.75	47.7	Rt.
15th Street Conn.							
7+50.00	9+76.60	226.60	-	226.60	33.00	138.5	Lt. & Rt.
Corrections due to Approach Slab Revisions						+159.1	
Corrections due to change in Pavement Type						+258.2	
					Total	9356.6	
U-663(15)							
U.S. 30							
920+00.00	921+01.98	101.98		101.98	47.50	89.7	Lt.
920+00.00	921+01.98	101.98		101.98	46.00	86.9	Rt.
921+03.28	932+00.00	1096.72		1096.72	47.50	964.7	Lt.
921+03.28	930+50.00	946.72		946.72	46.00	806.5	Rt.
930+50.00	933+00.00	250.00		250.00	44.25	204.9	Rt.
932+00.00	933+20.36	129.36		129.36	45.75	109.6	Lt.
933+00.00	938+20.00	520.00		520.00	* 64.50	621.1	Rt.
933+20.36	936+07.72	278.36		278.36	44.75	230.7	Lt.
936+07.72	941+70.11	562.39		562.39	59.50	619.7	Lt.
938+20.00	941+70.11	350.11		350.11	58.00	376.0	Rt.
943+25.00	946+30.00	305.00		305.00	58.75	331.8	Lt.
Ramp S							
926+00.00	928+01.52	201.52		201.52	28.00	104.5	Rt.
928+01.52	929+58.20	156.68	943.93÷954.93	154.88	* 24.00	68.9	Rt.
929+58.20	932+52.73	294.53		294.53	20.00	109.1	Rt.
932+52.73	933+30.71	77.98	1439.52÷1432.39	78.37	19.75	28.7	Rt.
933+30.71	936+07.72	277.01	1443.77÷1432.39	279.21	* 28.75	146.1	Rt.
Ramp "T"	Conn.						
925+00.00	926+61.80	161.80	101.00÷90.00	181.58	24.00	80.7	Lt.
926+61.80	927+21.80	60.00		60.00	* 22.50	25.0	Lt.
Ramp T							
926+00.00	927+21.80	121.80		121.80	20.00	45.1	Lt. & Rt.
927+21.80	930+96.88	375.08		375.08	* 32.50	225.7	Lt. & Rt.
930+96.88	931+50.00	53.12	1438.64÷1432.39	53.35	* 21.50	21.2	Lt.
931+50.00	932+00.00	50.00	1439.89÷1432.39	50.26	* 17.00	15.8	Lt.
932+00.00	933+00.00	100.00	1439.89÷1432.39	100.52	* 17.00	31.6	Lt.
					Subtotal	5344.0	
Correction due to change in Pavement Type						+292.1	
					Total	5636.1	

Rev. MGB 5-27-75
Ckd. JNS 5-29-75

ITEM 601 PAVED GUTTER

STATION TO STATION		STANDARD TYPE	LENGTH LIN. FT.	PLAN SH. NO.
I-77-4(44)107				
Ramp G				
959+75	960+90 Lt.	1-4	115	28-33
Ramp D				
970+88	971+80 Lt.	2	90	31
Ramp C				
965+80	966+60 Rt.	1-4	115	31
966+60	968+95 Rt.	4	225	31
966+17	967+17 Lt.	1-4	115	31
967+17 "C"	969+00 "D"	4	190	31
I-77				
569+90	570+90 Rt.	1-4	100	31
U.S. 30				
970+15	971+37 Lt.	1-4	125	31
965+90	967+12 Rt.	1-4	140	33
(980+90)				
	Total	1-4	710	
	Total	2	90	
	Total	4	415	

ITEM 601 SLOPE PROTECTION

STATION TO STATION			CRUSHED AGG. SQ. YDS.	CONCRETE SQ. YDS.	PLAN SH. NO.
Bridge #1	952+95	953+30		466	28
U.S. 30	953+70	954+08		610	28
Bridge #2	960+02	960+82	1123		33
U.S. 30	962+94	964+88	1200		33
	965+81	966+62	388	915	33
Bridge #5	953+00	953+34		237	28
Ramp F	953+71	954+08		246	28
Bridge #6	960+43	960+93	311		33
Ramp F	962+50	960+22	335		33
Bridge #7	960+43	960+93	214		33
Ramp G	962+56	964+41	1720		33
	964+72	966+02	530		33
	967+05	969+00	950		33
	969+91	970+66	82	370	33
Bridge #8	977+27	977+58	91	183	33
Ramp G	978+44	978+90	265	88	33
Bridge #9	966+08	966+30	300	242	33
Ramp F	967+23	967+67	1080		33
	968+50	970+70	1825		33 & 35
	971+38	971+81		344	35
Bridge #13	957+35	958+10	322		33
Ramp C	966+82	967+00	1210		31
Bridge #14	958+77	959+18	442		33
Ramp B	961+28	962+75	1480		33
	965+50	966+32	105	194	33
Bridge #15	952+95	953+30		161	28
Ramp A	953+52	954+10		206	28
Bridge #22	960+86	961+65	74	256	
Ramp H	962+13	963+05	183	208	
		Total	14230	4726	

Made EDY 11-19-69
Ckd GMG 7-8-70

QUANTITY CALCULATIONS

STARK COUNTY
STA-30-14.12
STA-77-9.22

ITEM 609 – CURB

STATION	TO STATION	LOC.	℄ LENGTH	LENGTH CORRECTION	PLAN SH.NO.	CORR. LENGTH	TYPE 2A	TYPE 6
U-663(15)								
Ramp T	Conn.							
925+00.00	926+30.00	Lt.	130	112 ÷ 90	27	161.8		162
925+00.00	926+61.80	Rt.	161.8		27	161.8		162
Ramp T								
926+00.00	926+20.00	Rt.	20		27	20.0		20
				TOTAL				344
I-77-4(44)107								
Ramp G								
954+07.00	960+30	Lt.	623		28	623.0		623
Henry	Ave. S.W.							
10+73.00	12+70.00	Rt.	197		28	197.0		197
10+50.00	12+70.00	Lt.	220		28	220.0		220
High Ave.	Conn.							
11+84.00	11+94.00	Rt.	–		30	17.0	13	4
12+20.00	14+15.00	Rt.	–		30	177.0	177	
11+88.00	13+90.00	Lt.	–		30	212.0	212	
14+15.00	14+35.00	Rt.	20		30	20.0		20
15th St.	S.W.							
11+93.00	13+79.00	Lt.			33	186.0		186
15+10.00	16+25.00	Lt.			33	115.0		115
Market	St. S.							
6+95.00	7+80.00	Rt.			33	85.0		85
7+40.00	8+05.00	Lt.			33	65.0		65
10+91.00	11+15.00	Lt.			33	24.0		24
16+06.00	16+31.00	Lt.			33	25.0		25
11+55.00	13+85.00	Rt.			33	230.0		230
11+85.00	15+15.00	Lt.			33	330.0		330
Margaret	St. S.W.							
10+50	11+75	Rt.	125		38	125.0		125
10+87	11+10	Lt.			38	49.0		49
McKinley	Ave. Conn.							
23+07	27+00	Lt.			36	395.0	395	
27+14	28+77.49	Lt.			36	178.0	178	
24+13	26+32	Rt.			36	229.0	229	
26+52	28+77.49	Rt.			36	222.0	222	
Cleveland	Ave. S.W.							
9+80	22+98	Lt.			37	1321.00	1321	
24+20	25+10	Lt.			37	90.00	90	
10+44	22+38	Rt.			37	1218.00	1218	
22+51	25+10	Rt.			37	259.00	259	
15th Street Conn.								
7+50.00	9+76.60	Lt. & Rt.	226.6	226.6 x 2	38A	453.20	453	
				TOTAL			4767 √	2298 √

ITEM 451 – REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT

STATION	TO STATION	℄ LENGTH	LENGTH CORRECTION	CORR. LENGTH	WIDTH FEET	AREA SQ. YDS.	
I-77-4(44)107							
I-77							
541+00.00	541+82.00	82.00	1385.89 ÷ 1432.39	79.34	* 6.00	52.9	Lt.
544+95.00	547+19.00	224.00	1387.89 ÷ 1432.39	217.04	12.00	289.4	Lt.
541+00.00	541+14.00	14.00	—	14.00	* 1.00	1.6	Lt. Taper End
545+00.00	545+17.00	17.00	—	17.00	1.00	1.9	Rt. Taper End
545+00.00	546+00.00	100.00	1473.394 ÷ 1432.394	102.86	* 6.00	68.6	Rt.
546+00.00	547+48.00	148.00	1476.394 ÷ 1432.394	152.55	12.00	203.4	Rt.
Ramp A							
966+01.53	968+00.35	198.82	970.43 ÷ 954.93	202.05	* 31.00	696.0	Rt.
968+00.35	969+00.61	100.26	1438.89 ÷ 1432.39	100.71	* 13.00	145.5	Rt.
Ramp F							
974+98.25	977+48.00	249.75	1282.74 ÷ 1273.24	251.61	* 19.00	531.2	Lt.
Ramp H							
957+15.00	958+90.74	175.74	3833.469 ÷ 3819.719	176.37	* 27.50	538.9	
Cleveland	Avenue						Curb Return
10+00.00				31.04	2.00	6.9	Lt. A = 50(31.04 – 62.34 …) ÷ 9
10+00.00				–		* 31.5	Lt.
10+30.00				40.27	2.00	8.9	Rt. Curb Return
10+30.00				–		34.8	Rt. A = 25(80.27 – 53.33/2) ÷ 9
10+12.00	23+17.35	1305.35		1305.25	53.00	7617.2	Lt. & Rt. Less 8x78 ÷ 9 = 69.3
23+17.35	25+10.00	192.65		192.65	26.50	567.2	Rt.
23+96.99	25+10.00	113.01		113.01	* 4.50	56.5	Lt.
McKinley	Ave. Conn.						
23+17.35	23+93.79	76.44	301.25 ÷ 300.00	76.76	* 31.50	268.7	Lt. & Rt.
23+93.79	28+77.49	483.70	—	483.70	29.00	1558.6	Lt. & Rt.
27+00.00	–	–	—	18.00	20.00	46.0	Lt. + (6x8/3) + (3x3/2)
26+45.00	–	–	—	8.00	20.00	22.1	Rt. + (6x5/3) + (3x3/3)
High Avenue Conn.							
–	12+39.00	(39x29 + 13x5 + 6x7 + 6x5 + 13x29 + 7.35x10) ÷ 9				191.0	
12+29.00	13+60.00	121.00		121.00	29.00	389.9	Lt. & Rt.
13+60.00	–	(26x29 + 8x11 + 11x8.5 + 16x2) ÷ 9				141.3	
15th Street Conn. 7+50.00	9+76.60	226.60	–	226.60	31.00	780.5	Lt. & Rt.
			TOTAL			14,250.5	

9" ITEM 301 – BITUMINOUS AGGREGATE BASE
1-1/4" ITEM 404, 1-3/4" ITEM 402 – ASPHALT CONCRETE

STATION	TO STATION	℄ LENGTH	LENGTH CORRECTION	CORR. LENGTH	402 & 404 WIDTH FEET	402 & 404 AREA SQ. YDS.	301 AVG. WIDTH FEET	301 VOLUME CU. YDS.
I-77-4(44)104								
U.S. 30	Lt. & Rt.							
954+36.76	954+97.67	60.91	4980.64 ÷ 4988.24	60.82	60.00	405.5	62.00	104.7
954+97.67	956+59.87	162.20	2162.40 ÷ 2170.00	161.16	60.00	1074.4	62.00	277.6
956+59.87	959+77.25	317.38	1902.26 ÷ 1909.86	311.16	60.00	2074.4	62.00	535.9
966+90.00	969+00.00	210.00	4980.64 ÷ 4988.24	201.97	60.00	1346.5	62.00	347.8
Ramp A	Rt.							
954+29.00	960+53.80	624.80	962.93 ÷ 954.93	630.03	16.00	1120.1	17.00	297.5
960+53.80	961+29.19	75.39	724.20 ÷ 716.20	76.23	16.00	135.5	17.00	36.0
961+29.19	965+23.45	394.26	729.70 ÷ 716.20	401.69	* 27.00	1205.1	27.50	306.8
965+23.45	966+01.53	78.08	728.20 ÷ 716.20	79.39	24.00	211.7	25.00	55.1
Ramp B	Rt.							
951+29.59	954+45.93	316.34	948.93 ÷ 954.93	314.35	12.00	419.1	12.50	109.1
954+45.93	955+13.93	68.00	—	68.00	12.00	90.7	12.50	23.6
955+13.93	955+38.06	24.13	722.20 ÷ 716.20	24.33	12.00	32.4	12.50	8.4
955+38.06	956+03.30	65.24	724.20 ÷ 716.20	65.97	16.00	117.3	17.00	31.2
956+03.30	958+53.75	250.45	358.00 ÷ 350.00	256.17	16.00	455.4	17.00	121.0
Ramp C	Lt.							
953+70.64	957+09.25	338.61	—	338.61	16.00	602.0	17.00	159.9
Ramp E	Rt.							
957+83.46	958+36.46	53.00		53.00	* 1.00	5.9	1.00	1.5
957+83.46	959+99.00	215.54	1857.05 ÷ 1855.55	215.71	* 3.00	71.9	3.00	18.0
967+00.00	967+28.40	28.40	574.63 ÷ 5729.58	28.46	* 23.50	74.3	24.00	19.0
967+28.40	967+56.07	27.67	2095.73 ÷ 2083.48	27.83	* 24.50	75.8	25.00	19.3
967+56.07	968+56.07	100.00	644.12 ÷ 636.62	101.18	* 15.00	168.6	16.00	45.0
968+56.07	969+56.07	100.00	237.18 ÷ 229.18	103.49	* 16.00	184.0	17.00	48.9
969+56.07	975+08.82	552.75	189.00 ÷ 180.00	580.39	18.00	1160.8	19.00	306.3
975+08.82	975+86.91	78.09	269.19 ÷ 260.44	80.71	* 17.50	156.9	18.50	41.5
975+86.91	976+86.91	100.00	485.71 ÷ 477.46	101.73	* 16.50	186.5	17.50	49.5
Continued on this sheet								

ITEM 608 – CURB RAMP

℄ STATION	LOCATION		TYPE 2 (EACH)
10+28 Lt.	Cleveland Ave.		1
10+28 Rt.	Cleveland Ave.		1
24+37 Lt.	Cleveland Ave.		1
24+37 Rt.	Cleveland Ave.		1
TOTAL			4

SH No. 37, 29

ITEMS 402, 404 & 301 CONTINUED

STATION	TO STATION	℄ LENGTH	LENGTH CORRECTION	CORR. LENGTH	WIDTH FEET	AREA SQ. YDS.	AVG. WIDTH FEET	VOLUME CU. YDS.
Ramp F.								
954+32.31	960+18.75	586.44	—	586.44	24.00	1563.8	25.00	407.3
963+44.25	965+78.75	234.50	724.20 ÷ 716.20	237.12	16.00	421.5	17.00	112.0
971+95.00	973+78.24	183.24	—	183.24	* 21.00	427.6	22.00	112.0
973+78.24	974+98.25	120.01	—	120.01	17.00	226.7	18.00	60.0
Ramp G								
955+86.26	960+19.85	433.59	3823.22 ÷ 3819.72	433.99	* 7.00	337.5	7.00	84.4
970+94.80	976+24.51	529.71	189.00 ÷ 180.00	556.18	18.00	1112.4	19.00	293.5
976+24.51	977+02.54	78.03	213.13 ÷ 204.63	81.27	17.00	153.5	18.00	40.6
Ramp H								
958+90.74	960+67.00	176.26	3827.719 ÷ 3819.719	176.63	16.00	314.0	17.00	83.4
963+42.00	965+43.56	201.56	1153.916 ÷ 1145.916	202.97	16.00	360.8	17.00	95.8
965+43.56	966+63.00	119.44		119.44	16.00	212.3	17.00	56.4
Ramp C								
967+24.00	967+43.68	19.68	508.000 ÷ 500.000	19.99	16.00	35.5	17.00	9.4
967+43.68	968+39.38	95.70	1143.516 ÷ 1135.516	96.37	16.00	171.3	17.00	45.5
968+39.38	969+70.86	131.48	—	131.48	16.00	233.7	17.00	62.1
969+70.86	970+70.86	100.00	—	100.00	22.62	251.3	23.62	65.6
Ramp D								
966+99.00	967+57.47	58.47	309.557 ÷ 301.557	60.02	16.00	106.7	17.00	28.3
967+57.47	969+73.48	216.01	—	216.01	16.00	384.0	17.00	102.0
969+73.48	970+73.48	100.00	—	100.00	22.00	244.4	23.00	63.9
Total Area						17,931.8		
Subtotal 1¼" ITEM 404			1.25"(1/36)(17,931.8)		Cu. Yds.	622.6		
Total 1¾" ITEM 402			1.75"(1/36)(17,931.8)		Cu. Yds.	871.7		
Total 9" ITEM 301								4685.9
Add to ITEM 404 for App. Slabs					Cu. Yds.	135.5		
Total ITEM 404					Cu. Yds.	758.1		

ITEM 409 SEAL COAT BITUMINOUS MATERIALS
ITEM 409 SEAL COAT COVER AGGREGATE

I-77-4(44)107

See Item 301 - All Shoulders Adjacent to Asphalt Pavement - Sheet 19 - 12,016.5 Sq. Yd.

12,016.5 Sq. Yd. x 0.30 Gal./Sq. Yd. = 3605.0 Gal.

12,016.5 Sq. Yd. x 0.008 Cu. Yd./Sq. Yd. = 96.1 Cu. Yd.

U-663(15)

See Item 301 Sta. 920+00.00 to Sta. 946+30.00 Sheet 19 - 8299.2 Sq. Yd.

8299.2 Sq. Yd. x 0.30 Gal./Sq. Yd. = 2489.8 Gal.

8299.2 Sq. Yd. x 0.008 Cu. Yd./Sq. Yd. = 66.39 Cu. Yd.

Made C.R.J. 10-22-69 Rev. M.G.B. 5-20-75
Ckd G.M.G. 6-16-70 Ckd. J.N.S. 5-30-75

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

QUANTITY CALCULATIONS

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			24 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

ITEM 203 – EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
ITEM 203 – EMBANKMENT
ITEM 203 – EMBANKMENT, USING GRANULAR MATERIAL, as per plan

SH. NO.	ROADWAY	STATION TO STATION	EXCAVATION – CU. YDS. UNSUITABLE	CHANNEL	NORMAL	EMBANKMENT – CU. YDS. GRANULAR MATERIAL	NORMAL
U-663(15)							
26	U.S. 30	920+00 To 930+00			6587		
26	Ramp S	926+00 To 930+00			616		
26	Ramp T	926+00 To 930+00			871		
26	"T" Conn.	925+00 To 926+55			283		
27	U.S. 30	930+00 To 941+70.11			9237		
27	Ramp S	930+00 To 933+00			303		
27	Ramp T	930+00 To 932+00			261		
		TOTAL			18158		
I-77-4(44)107							
27	U.S. 30	943+25 To 947+00			3269		
28	U.S. 30	947+00 To 961+04			7140		157,956
28	Ramp A	953+72 To 958+00			774		33,234
28	Ramp F	953+72 To 961+05			2077		40,449
28	Ramp G	958+00 To 961+05					9,600
29	U.S. 30	966+70 To 970+20					148,002
31	Ramp A	958+00 To 961+63	4472		671	4472	39,669
31	Ramp A	964+55 To 969+00			10326		10,512
31	Ramp B	952+00 To 959+30	12616		1057	12616	83,623
31	Ramp C	966+80 To 973+55					56,584
31	Ramp D	966+20 To 973+55			791		39,079
31	Ramp E	970+00 To 978+75			118		117,029
31	Ramp C.C	5+00 To 9+30			8235		104
33	Ramp B	966+40 To 969+76					57,215
33	Ramp C	953+66 To 957+70	17707		309	17707	25,021
33	Ramp F	962+63 To 965+85	17648		2320	17648	31,083
33	Ramp G	970+10 To 977+60			1013		62,805
33	Ramp G	978+90 To 983+25					27,954
33	Ramp H	965+00 To 972+80			241		39,694
33	Reloc. Creek	10+30 To 15+78		4426			403
35	I-77	541+00 To 549+43			521		
35	Ramp F	549+10 To 555+35			1592		13,187
35	Ramp H	549+10 To 965+00			3055		22,591
34	McKinley	25+00 To 28+77			874		54
32	Cleveland	10+20 To 25+10			12245		15,859
31	Wagner PL S.W.	—			31		
31	Eagle PL S.W.	—			35		
13	US30 Ramps A,B,E,F	956+00 To 961+00			580,000		
33	U.S. 30	957+93 To 961+11	16910			16910	
33	Ramp F	959+38 To 961+15	6869			6869	
		TOTAL	76,222	4426	636,694	76,222	1,031,707

ITEM SPECIAL DRAINAGE CONNECTION USING NO.8 AGGREGATE

UNDERDN. NO.	SIDE	LENGTH	AVE. DEPTH	VOLUME CU. YDS.
I-77-4(44)107				
U-7	Lt.	299	8.1	19.3 Ω
U-32	Rt.	227	8.1	14.6 Ω
U-34	Lt.	378	6.0	10.5
U-35	Lt.	110	6.0	3.1
U-36	Lt.	110	6.0	3.1
U-37	Lt.	110	6.0	3.1
U-38	Lt.	55	6.0	1.5
U-39	Lt.	365	6.0	10.1
U-40	Rt.	315	6.0	8.8
U-41	Rt.	135	6.0	3.8
U-43	Rt.	285	6.0	7.9
U-44	Rt.	80	6.0	2.2
U-45	Rt.	95	6.0	2.6
U-46	Rt.	85	6.0	2.4
U-47	Lt.	186	6.0	5.2
U-58	Rt.	200	5.5	9.3
U-48	Lt.	104	6.0	2.9
U-49	Rt.	190	6.0	5.3
U-58	Rt.	46	8.1	3.0 Ω
			TOTAL	118.7

Note: For underdrain Summary See Sheet 107
Ω For location see typical section I-77 Ramp Tapers on sheet 8.

ITEM 659 COMMERCIAL FERTILIZER 12-12-12
ITEM 659 AGRICULTURAL LIMING, AS PER PLAN

I-77-4(44)107

Sh. 20 - Seeding & Mulching = 154,521 Sq. Yds.
Sh. 24 - Sodding (Flumes) = 1,330 Sq. Yds.
Sh. 24 - Jute Matting (Ditches) = 5,600 Sq. Yds.
Sh. 26 - Jute Matting (Bridges) = 13,219 Sq. Yds.
174,670 Sq. Yds.

Fertilizer $\frac{174{,}670 \times 9 \times 20}{1000 \times 2000} = 15.72$ Tons

Liming $\frac{174{,}670 \times 9 \times 100}{1000 \times 2000} = 78.60$ Tons

U-663(15)

Sh. 20 - Seeding & Mulching = 8190 Sq. Yds.

Fertilizer $\frac{8190 \times 9 \times 20}{1000 \times 2000} = 0.74$ Tons

Liming $\frac{8190 \times 9 \times 100}{1000 \times 2000} = 3.69$ Tons

ITEM 667 JUTE MATTING (DITCHES)

ROADWAY	STATION	TO STATION	SIDE	NO. STRIPS	LENGTH	QUANTITY SQ. YDS.	SH. NO.
30							
	954+77	955+35	Lt.	2	58	51.6	28
	955+35	959+85	Lt.	3	430	573.3	28
	969+43	970+15	Lt.	1	75	33.3	31
	971+37	972+45	Lt.	3	140	186.7	31
	968+95	Ramp C to					
	970+90		Rt.	2	210	186.7	31
	"C" 970+90	972+30	Lt.	3	160	213.3	33
	966+82	967+47	Rt.	2	70	62.2	33
A	955+00	957+50	Lt.	2	230	204.4	28
	957+50	966+00	Lt.	3	850	1133.3	31
C	955+60	956+67	Rt.	2	105	93.3	33
D	966+70	969+30	Lt.	2	230	204.4	31
	971+80	973+50	Lt.	2	200	177.8	31
E	972+50	976+00		3	350	466.7	31
F	956+00	959+30	Rt.	2	330	293.3	33
	959+30	960+80	Rt.	3	150	200.0	33
	963+04	964+70	Rt.	3	150	200.0	33
	972+30	973+80	Rt.	2	150	133.3	33
	964+00	965+15	Lt.	2	135	120.0	33
G	970+45	970+55	Lt.	1	40	17.8	33
	970+55	971+20	Lt.	3	120	160.0	33
	971+20	972+20	Lt.	2	235	208.9	33
H	964+38	964+82	Lt.	2	55	48.8	35
	959+08	962+28	Rt.	2	210	186.5	35
Cleveland	21+90	22+50	Lt.	2	60	53.3	31
	16+87	18+92	Rt.	2	200	177.8	33
	13+62	16+04	Rt.	2	240	213.3	33
		TOTAL				5,600.0	

ITEM 606 GUARDRAIL

ROAD-WAY	STATION	TO STATION	LOC.	TYPE 4 BARR	TYPE 5	BR. ASSEM. TYPE A	ANCH. ASSEM	SHEET NO.
30								
	923+30	925+55	Rt.		* 175		2	26
	924+30	926+55	Lt.		* 175		2	26
	933+87	935+87	Rt.		* 150		2	27
	934+87	937+12	Lt.		* 175		2	27
	944+62	946+12	Lt.		* 100		2	27
	944+75	946+25	Rt.		100		2	27
	954+12	959+83	Lt.		571	2		28
	954+12	959+84	Rt.		572	2		28
	966+77	969+02	Rt.		225	1		29
A								
	950+98	952+98	Lt.		175	1	1	28
	954+03	955+53	Rt.		125	1	1	25
	954+11	969+11	Lt.		1490	2		28-30
	959+07	960+07	Lt.	87.5				30
B								
	950+98	958+66	Lt.		(1) 743	1	1	30
	957+13	958+63	Rt.		125	1	1	30
C								
	953+67	957+16	Rt.		349	2		32
	955+78.5	957+16	Lt.		137.5	1		32
	968+68.4	970+68.4	Rt.		175		1	30
D	966+74	970+74	Lt.		400	1		30
	971+67	973+17	Lt.	150				31
	966+74	967+30	Rt.		37.5	1	1	30
E								
	966+89	968+39	Lt.		125	1	1	30
	969+45	972+00	Rt.		230		2	30
	974+26	976+26	Rt.		(1) 150		2	30
	972+60	972+35	Rt.		12.5		1	30
F								
	950+09.5	952+97	Rt.		262.5	1	1	28
	954+08	960+29	Rt.		621	2		28
	955+28		Rt.	12.5				28
	958+35		Rt.	25				28
	963+33	965+03	Lt.		150	1	1	32
	963+34	965+87	Rt.		253	2		32
	972+00	977+75	Rt.		576	2		34
	973+63	973+87	Rt.	25				35
	975+60	976+10	Rt.	50				35
G								
	956+91.5	960+29	Lt.		372.5	1	1	28
	975+90	977+15	Rt.		100	1	1	32
	970+89	977+11	Lt.		710	2		32
H	956+95	960+58	Rt.		362	2		34
	959+72	960+97	Lt.		100	1	1	34
	963+15	967+35	Rt.		417	2		32&34
	963+52	966+65	Lt.		317	2		32&34
	966+10		Rt.	12.5				33
I-77								
	562+33	566+38	Rt.		375	1	1	32
	568+87	569+99	Rt.		87.5	1	1	30
	571+82	572+44.5	Lt.		50	1	1	30
	553+00	554+21	Rt.		96		1	34
		* Total			775		10	
		▲ Total		262.5	10,592.5	39	23	

(1) For details of Guardrail Gore See Sheet 101.
* U-663(15)
▲ I-77-4(44)107
Made CRJ 1-26-70
Ckd GMG 10-7-70

Rev. U.N.S 5-20-75
Ckd. M.G.B. 6-3-75
Rev. 3-23-76

ITEM 609 CURB, TYPE 6 (APPROACH SLABS) I-77-4(44)107

BR. NO.	CALC.	LIN. FT.
2	4 x 26	104
6	3 x 26	78
7	3 x 26	78
8	3 x 26	78
10	2 x 26	52
13	2 x 26	52
14	2 x 26	52
22	4 x 26	104
	Total	598

ITEM 611 REINFORCED CONCRETE APPROACH SLABS (I-77-4(44)107)

T	BR. NO.	ROADWAY	STATION TO STATION	LENGTH	AREA SQ. YDS.
15"	1	U.S. 30,	952+71.77 to 952+96.77	25'	262.5
	1	U.S. 30,	954+11.76 to 954+36.76	25'	262.5
	2	U.S. 30,	959+77.25 to 960+02.25	25'	273.1
	2	U.S. 30,	966+63.26 to 966+88.26	25'	322.6
	5	Ramp F	952+72.31 to 952+97.31	25'	118.4
	5	Ramp F	954+07.31 to 954+32.31	25'	105.8
	6	Ramp F	963+19.25 to 963+44.25	25'	79.2
	7	Ramp G	960+19.85 to 960+44.85	25'	173.8
	7	Ramp G	970+69.80 to 970+94.80	25'	79.2
	8	Ramp G	977+02.54 to 977+27.54	25'	79.2
	8	Ramp G	979+06.83 to 979+31.83	25'	79.2
	9	Ramp C	953+52.71 to 953+77.71	25'	79.2
	9	Ramp F	965+78.75 to 966+03.75	25'	75.7
	9	Ramp F	971+75.00 to 972+00.00	25'	103.8
	10	Ramp H	966+86.26 to 967+16.26	30'	95.0
	13	Ramp C	957+09.25 to 957+34.25	25'	79.2
	13	Ramp C	966+96.48 to 967+21.48	25'	79.2
	14	Ramp B	958+53.75 to 958+78.75	25'	79.2
	15	Ramp A	952+72.80 to 952+97.80	25'	73.6
	15	Ramp A	954+06.43 to 954+31.43	25'	73.6
15"		Ramp D	966+74.00 to 966+99.00	25'	73.6
17"	22	Ramp H	960+55.76 to 960+85.76	30'	95.0
17"	22	Ramp H	963+04.60 to 963+34.60	30'	94.7
				TOTAL	2837.3

ITEM 622 – CONCRETE BARRIER TYPE B

U-663(15)			
U.S. 30			
Sta. 920+00.00	Sta. 921+01.98		101.98 Ft.
Sta. 921+03.28	Sta. 941+70.11		2066.83 Ft.
Less for lights, signs and inlets			216.00 Ft.
		TOTAL	1952.81 Ft.
I-77-4(44)107			
U.S. 30			
Sta. 943+25.00	Sta. 952+71.77		946.77 Ft.
Sta. 954+36.76	Sta. 959+77.25		540.49 Ft.
Sta. 966+88.26	Sta. 969+00.00		211.74 Ft.
Less for lights, signs and inlets			72.00 Ft.
		TOTAL	1627.00 Ft.

ITEM 612 – CONCRETE MEDIAN

U-663(15)			
Ramp T			
Sta. 926+20.00	Sta. 926+60.00	$40' \times (\frac{10+4}{2})(\frac{1}{9})$	24.4 Sq Yd
Sta. 926+60.00	Sta. 927+21.80	$61.80 \times 1' \times \frac{1}{9}$	6.9 Sq Yd
		TOTAL	31.3 Sq Yd
I-77-4(44)107			
Ramp F			
Sta. 960+24.03	Sta. 960+43.75		13.2 Sq Yd
Cleveland	Ave		
Sta. 23+97.00	Sta. 24+24.00	$22' \times (\frac{4+10}{2})(\frac{1}{9})$	19.4 Sq Yd
Ramp D			
Sta. 969+62.39	Sta. 970+73.48	$106.09 \times (\frac{4+10}{2})(\frac{1}{9})$	82.5 Sq Yd
		Total	115.1 Sq Yd

ITEM 622 – CONCRETE BARRIER, TYPE B MODIFIED, AS PER PLAN

I-77-4(44)107			
Sta. 952+71.77	Sta. 952+96.77		25 Ft.
Sta. 954+11.76	Sta. 954+36.76		25 Ft.
Sta. 959+77.25	Sta. 960+02.25		25 Ft.
Sta. 966+63.26	Sta. 966+88.26		25 Ft.
		TOTAL	100 Ft.

ITEM 667 JUTE MATTING (BRIDGE ENDS)

ROAD-WAY	STATION	LOCATION	SQ. FT.	SQ. YDS.	SLOPE FACTOR	QUANTITY SQ. YDS.	SH. NO.
US 30	953+10	Lt.-Rt.	2300	256	1.08	276	28
	954+00	Lt.-Rt.	3650	406	1.08	438	28
	959+60	Lt.-Rt.	16570	1841	1.08	1988	33
	967+02	Lt.	2000	222	1.08	240	31
	967+02	Rt.	6716	746	1.08	806	33
I-77	570+00	Rt.	1200	133	1.12	149	31
B	966+00	Lt.-Rt.	5080	564	1.08	609	33
C	953+50	Lt.-Rt.	1150	128	1.08	138	33
	954+89	Lt.-Rt.	7475	831	1.08	897	33
	966+50	Lt.-Rt.	4900	544	1.12	609	31
D	967+00	Lt.-Rt.	4350	483	1.12	541	31
F	960+05	Rt.	7170	797	1.08	860	33
	963+76	Lt.-Rt.	10040	1116	1.08	1205	33
	966+00	Rt.	2700	300	1.08	324	33
	972+00	Rt.	3200	356	1.08	384	35
G	971+11	Lt.-Rt.	14200	1578	1.08	1704	33
	977+25	Lt.-Rt.	4180	464	1.08	501	33
H	960+55	Lt.-Rt.	3475	386	1.08	417	35
H	963+41	Lt.-Rt.	4490	499	1.08	539	35
B	958+29	Rt.	1430	159	1.08	172	33
H	967+14	Rt.	3515	391	1.08	422	33
					Total	13219	

ITEM 660 SODDING FOR SPECIAL BERM & SLOPE PROTECT.

ROAD-WAY	STATION	SIDE	L	SQ. YDS.	SH. NO.
A	952+90	Lt.	45	41.7	28
B	954+10	Lt.	50	46.7	31
	958+29	Lt.	60	56.7	31
C	968+70	Rt.	35	31.7	31
	956+89	Rt.	66	62.7	33
	956+89	Lt.	75	71.7	33
F	953+00	Rt.	50	46.7	28
	960+05	Rt.	95	91.7	33
	963+76	Rt.	100	96.7	33
G	971+11	Lt.	140	136.7	33
H	967+05	Rt.	65	61.7	33
30	959+55	Lt.	85	81.7	28
	959+55	Rt.	85	81.7	28
	967+06	Lt.	100	96.7	31
	967+06	Rt.	70	66.7	33
I-77	570+00	Rt.	30	26.7	31
H	963+41	Rt.	65	61.7	35
H		Lt.		170.0	35
McKly Conn.	25+40	Rt.	190	63.0	38
	27+60	Rt.	120	40.0	38
High Conn.	12+42	Rt.	83	46.0	38
	13+25	Rt.	41	41.0	38
TOTAL				1519.9	

Sta. 959+20 to 961+65 (Ditch)(255 x 6 ÷ 9)

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

QUANTITY CALCULATIONS

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

26
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

CROSS REFERENCES	
ITEM	SH. NO.
Ramp S Profile	94
Ramp T Profile	98
Ramp T Conn. Profile	98
U.S. 30 Elevations	99
Exist. Drainage Structures	105&106
Underdrain Summary	107

LEGEND

- Asphalt Pavement
- Asphalt Shoulders
- Asphalt Resurfacing (Matching)
- Jute Matting
- Sodding
- Existing Bridge Footing
- Channel Protection
- Crushed Aggregate Slope Protection or Aggregate Base

DRAINAGE LEGEND

- Proposed Storm Sewer
- Proposed Sanitary Sewer
- Proposed Underdrain
- Watershed Limits
- Existing Storm Sewer to remain in service
- Existing Sanitary Sewer to remain in service
- Existing Storm Sewer to be abandon
- Existing Sanitary Sewer to be abandon
- Jute Matting
- Special Berm and Slope Protection

ABBREVIATIONS USED IN DRAINAGE PLANS AND PROFILES

T.C. - Top of Cover at ℄ Structure
N.G. - Normal Gutter at ℄ Structure
C.B. - Catch Basin
M.H. - Manhole
A - Existing Storm Structure
B - Existing Sanitary Structure
S - Proposed Sanitary Sewer
P - Proposed Storm Sewer

QUANTITIES

	Exc.	Emb.	Seeding & Mulching
U.S.-30	6,587	-	2,220
Ramp S	303	-	870
Ramp T Conn.	283	-	—
Ramp T	261	-	1,170

Made CRJ 12-11-70
Ckd GMG 12-12-70

Note: Additional Temporary Terminal Transition details are shown on sheet Nos. 164, 165, 166 & 176.

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

Scale: Hor. 1" = 50'
Vert. 1" = 10'

Rev. 1-29-76

P&P - U030 @ HARRISON AVE.

FED. ROAD DIV. NO. 2 | STATE OHIO | FEDERAL AID PROJECT NO. | TYPE FUNDS | 27 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

CURVE DATA RAMP S
P.I. 928+80.03
Δ = 9°24'02"
D = 6°00'
T = 78.51'
L = 156.68'
R = 954.93'

CROSS REFERENCES ITEM	SH. NO.
Ramp S Profile	94
Ramp T Profile	98
U.S. 30 Elevations	99
Existing Drainage Structure	105&106
Underdrain Summary	107
Drainage Legend	26

QUANTITIES

	Exc.	Emb.	Seeding & Mulching
US 30	* 9,237	–	* 2,770
Ramp T	* 261	–	* 440
Ramp S	* 303	–	* 720
U.S.-30	3,269	–	80

* U-663(15)

Made CRJ 12-11-70
Ckd GMG 12-12-70

CURVE DATA RAMP T
P.I. 931+98.61
Δ = 8°07'29" Rt.
D = 4°00'
T = 101.73'
L = 203.12'
R = 1,432.40'

LEGEND
- Asphalt Pavement
- Asphalt Shoulders
- Asphalt Resurfacing (Matching)
- Jute Matting
- Sodding
- Existing Bridge Footing
- Channel Protection
- Crushed Aggregate Slope Protection or Aggregate Base

END PROJECT END WORK STA. 941+70.11 ℄ U.S. 30	BEGIN WORK STA-77-9.22 I-77-4(44)107 STA. 943+25.00 ℄ U.S. 30

(SLM = 14.53 on U.S. 30)

Note: Addition Temporary Terminal Transition details are shown on sheet Nos. 164, 165, 166 & 176.

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

Scale: Hor. 1"=50'
Vert. 1"=10'

Rev. 1-29-76

PLAN-PROFILE

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	28 / 389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22

NOTE: Pavement type revised to Asphalt Concrete. Disregard P.C.C. joints on this sheet.

QUANTITIES			
	Emb.	Exc.	Seeding & Mulching
U.S-30	181,649	7,140	8,860
Ramp A	38,219	774	5,960
Ramp F	46,516	2,077	9,400
Ramp G	11,040	—	—

Made CRJ 12-11-70
Ckd GMG 12-12-70

CROSS REFERENCES	
ITEM	SH. NO.
Ramp A & B Profile & Noses	93 & 94
Ramp G Profile	98
Ramp F Profile	97
Approach Slab Details	102-104C
Nose Details	101
U.S. 30 Elevations	99 & 100
Exist. Drainage Struct.	105 & 106
Underdrain Summary	107
Legends	26 & 33

PIPE NUMBER	PROFILE SHEET. NO.
P-1 thru P-6	108
P-7	109

Note: Additional Temporary Terminal Transition details are shown on sheet Nos. 164, 165, 166, & 176.

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

Scale: Hor. 1"=50'
Vert. 1"=10'

Rev. M.G.B. 5-23-75
Ckd. J.N.S. 8-19-75
Rev. 3-23-76 Rev. 1-29-76

PLAN-PROFILE

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			29 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

NOTE: PAVEMENT TYPE REVISED TO ASPHALT CONCRETE. DISREGARD P.C.C. JOINTS ON THIS SHEET.

CROSS REFERENCES	
ITEM	SH. NO.
Ramp B Profile	94
Ramp C Profile	95
Ramp E Profile	93
Nose Details	93-95
Approach Slab Details	102
Cleveland Ave. Plan-Profile	37
McKinley Ave. Plan-Profile	38
℄ Intersection Equations	30 & 32
U.S. 30 Elevations	100
Drainage Interchange	31 & 33
Drainage Cleveland	37
Grading	31 & 33

QUANTITIES		
	Emb.	Exc.
U.S.-30	170,202	

Made CRJ 12-11-70
Ckd GMG 12-12-70

Abandon Existing 24" Storm (McKinley Ave. S.W.)

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Scale: Hor. 1"=50'
Vert. 1"=10'

Rev. M.G.B. 5-28-75
Ckd. J.N.S. 8-19-75

U.S.-30 STA. 962+50 TO STA. 969+00
PLAN-PROFILE

STARK COUNTY
STA-30-14.12
STA-77-9.22

NOTE: Pavement type revised to Asphalt Concrete. Disregard all p.c.c. joints on this sheet except:
Ramp A STA.966+01.53 to STA. 969+00.61
High Ave. Connection
Cleveland Ave. SW

CROSS REFERENCES	
ITEM	SH. NO.
Ramp A Profile	93
Ramp B Profile	94
Ramp C Profile	95
Ramp D Profile	96
Ramp E Profile	93
Approach Slab Details	102&104
Nose Details	93-96
Cleveland Ave. Plan-Profile	37
McKinley Ave. Plan-Profiles	38
Drainage & Grading	31
High Ave. Conn. Details	38
U.S. 30 Elevations	100
Geometric Layout	9
Curve Data	10

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

Scale: 1"=50'

PAVEMENT DETAILS

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			31 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

CROSS REFERENCES

ITEM	SH. NO.
Exist. Drainage Struct.	105&106
Underdrain Summary	107
Drainage Legend	26
Cleveland Ave	37
McKinley Ave. Conn.	36&38
Wernet Ct. Conn.	38
Margaret St. Conn.	38
High Ave. Conn.	38
Pavement Details	30
Ramp Profiles	93-97

QUANTITIES

	Emb.	Exc.	Seeding & Mulching
US-30			2,290
Ramp A	57,708	15,469	14,580
Ramp B	96,116	13,670	
Ramp C	65,072		7,470
Ramp D	44,941	971	8,050
Ramp E	134,583	118	17,040
RampC-C	120	8,235	5,560

Made CRJ 12-11-70
Ckd GMG 12-12-70

LEGEND

- Asphalt Pavement
- Asphalt Shoulders
- Asphalt Resurfacing (Matching)
- Jute Matting
- Sodding
- Existing Bridge Footing
- Channel Protection
- Crushed Aggregate Slope Protection or Aggregate Base

PIPE NUMBER	PROFILE SHEET NO.
P-7, 8 P-9	109
P-10 thru P-13	110
P-47 & P-49	113
P-50 & P-51	115
P-53 & P-54	115
P-A-45, P-48 P-52, P-55 P-56	116
C-1B, C-1A	120
S-1 thru S-5	117
S-7	118

CURVE DATA
72" SANITARY SEWER
CURVE # 1
PI = 4+70
Δ = 21°
R = 110'
D = 52.037'
T = 20.4'
L = 40.0'

Abandon 42" San. Sewer
See Note Sheet No. 14
Pipe Removed as per Plan

Scale: 1" = 50'

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

I-77-U.S.-30 INTERCHANGE
DRAINAGE PLAN

Rev. 3-23-76

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

CROSS REFERENCES	
ITEM	SH. NO.
Ramp B Profile	94
Ramp C Profile	95
Ramp E Profile	93
Ramp F Profile	97
Ramp G Profile	98
Ramp H Profile	96
Approach Slab Details	103
Nose Details	93-98
Cleveland Ave. Plan-Profile	37
McKinley Ave. Plan-Profile	38
Drainage & Grading	33
U.S. 30 Elevations	100
Geometric Layout	9
Curve Data	10

NOTE: Pavement type revised to Asphalt Concrete
Disregard all p.c.c. joints except on:
Cleveland Ave. SW

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Scale: 1"=50' 25 0 50

Rev. M.G.B. 6-3-75
Ckd. J.N.S. 8-20-75

PAVEMENT DETAILS

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

33
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

QUANTITIES

	Emb.	Exc.	Seeding & Mulching
U.S.-30	-	-	1,600
Ramp B	65,797	-	4,710
Ramp C	28,774	18,016	4,340
Ramp G	104,692	1,013	15,590
Ramp H	45,648	241	12,080
Ramp F	35,745	19,968	7,000

Made CRJ 12-11-70
Ckd GMG 12-12-70

PIPE NUMBER	PROFILE SHEET NO.
P-2, P-4 P-5 & P-6	108
P-7 & P-9	109
P-10 thru P-16 P-18 & 19	110
P-17, P-24 P-26 thru P-29	111
P-20 thru P-23 P-25, P-31 & P-32	112
P-42 & P-43	114
S-6 & S-7	118
S-9 & S10	119

CROSS REFERENCES

ITEM	SH. NO.
Exist. Drainage Struct.	105 & 106
Underdrain Summary	107
Drainage Legend	26
Cleveland Ave.	37
Pavement Details	32
Reloc. Creek Channel	88
Ramp Profiles	95 & 97

CURVE DATA
72" SANITARY SEWER

CURVE	P.I.	Δ	R	D	T	L
2	6+95	37.5°	110'	52.087	37.3'	72.0'
3	8+34	16.7°	110'	52.087	16.2'	32.0'
4	11+16	66.0°	110'	52.087	71.4'	128.0'
5	12+48	51.0°	110'	52.087	52.5'	96.0'

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KANSAS CITY CLEVELAND NEW YORK

Scale: 1"=50'

Rev. JNS 5-20-75
Ckd. MGB 5-20-75 Rev. 3-23-76

I-77-U.S.-30 INTERCHANGE

DRAINAGE PLAN

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			34 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

CROSS REFERENCES	
ITEM	SH. NO.
Ramp F Profile	97
Ramp H Profile	96
Approach Slab Details	102-104C
Nose Details	96 & 97
Drainage & Grading	35
Geometric Layout	9
Curve Data	10

END TAPER DETAILS
The shaded area shown in the END TAPER DETAILS shall be constructed of concrete pavement to an elevation one half inch lower than the adjacent pavement and surfaced with 409 using No. 8 aggregate as the maximum size. The shaded area shall be paid for as full depth 451 and the surface treatment shall be paid for as 409.

NOTE: PAVEMENT TYPE REVISED TO ASPHALT CONCRETE. DISREGARD P.C.C. JOINTS EXCEPT:
I-77 LT. STA. 541+00 TO STA. 551+81.03.
I-77 RT. STA. 545+00 TO STA. 551+13.76
15TH ST. CONNECTION

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
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Scale: 1" = 50'

Rev. M.G.B. 5-22-75
Ckd. J.N.S. 8-19-75

PAVEMENT DETAILS

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

35 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

LEGEND

- Asphalt Pavement
- Asphalt Shoulders
- Asphalt Resurfacing (Matching)
- Jute Matting
- Sodding
- Existing Bridge Footing
- Channel Protection
- Crushed Aggregate Slope Protection or Aggregate Base

CROSS REFERENCES	
ITEM	SH. NO.
Exist. Drainage Struct.	105 & 106
Underdrain Summary	107
Drainage Legend	26
Ramp Profiles	96 & 97
Pavement Details	34

PIPE NUMBER	PROFILE SHEET NO.
P-44, P-46, P-46A, P-58	114
P-A-95	109
S-11 & S-11A	119

QUANTITIES

	Emb.	Exc.	Seeding & Mulching
I-77		521	
Ramp F	15,165	1,592	6,420
Ramp H	45,313	1,842	13,440
Ramp A			3,110

Rev. M.G.B. 5-27-75
Ckd. J.N.S. 8-19-75

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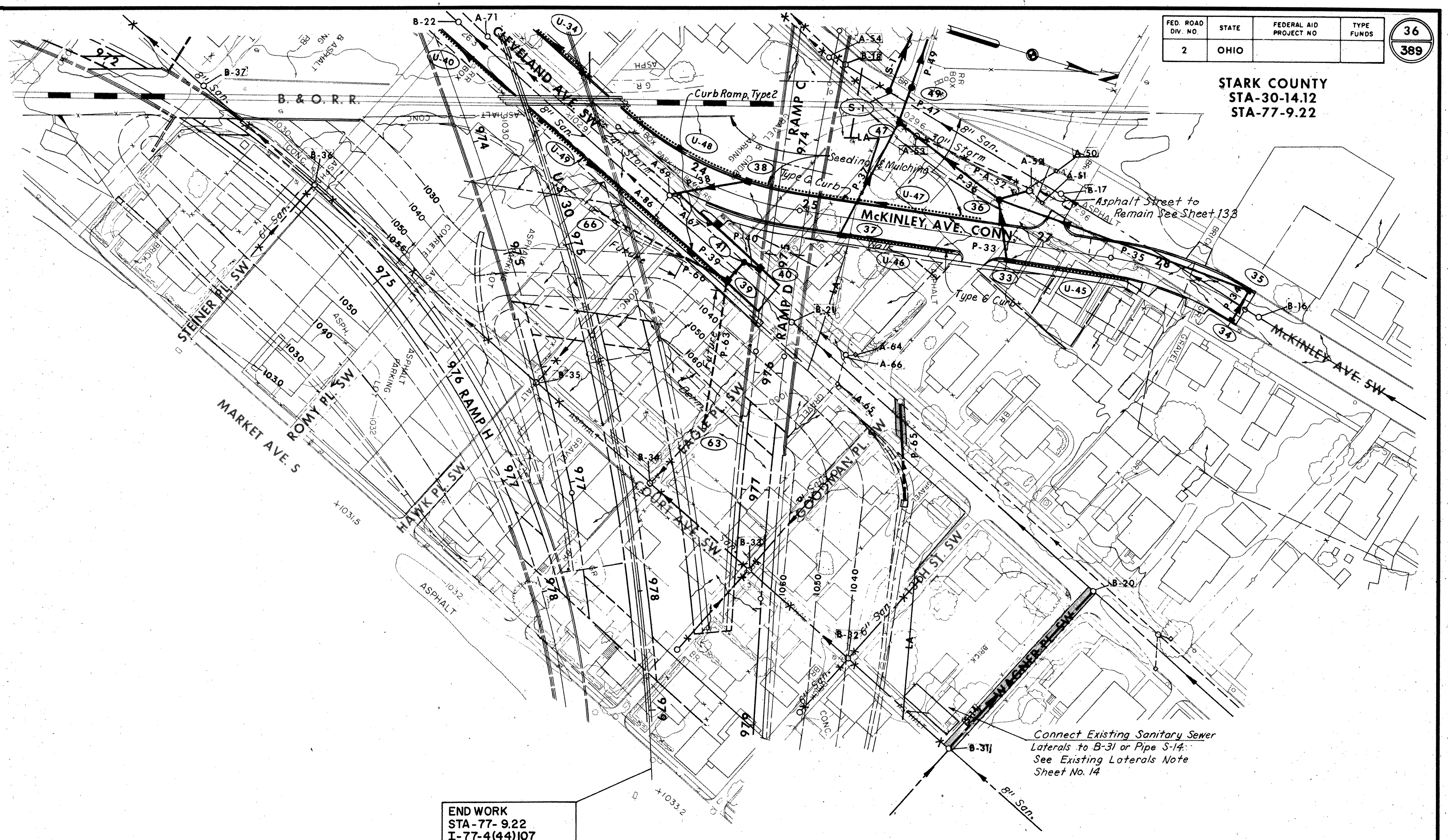
I-77 STA. 545+00 TO STA. 558+00

DRAINAGE PLAN

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	36 / 389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22



CROSS REFERENCES	
ITEM	SH. NO.
Existing Drainage Structure	105 & 106
Underdrain Summary	107
Drainage Legend	26
Cleveland Ave. Plan & Profile	37
Pavement Details	38

PIPE NUMBER	PROFILE SHEET NO.
P-33, P-36, P-39 & P-40, P-47, P-49 & P-A-52	113
P-37 & P-38	114
S-14	119
P-63, P-65 & P-66	115

QUANTITIES

	Emb.	Exc.	Seeding & Mulching
Mckinley	62	874	3,520

Made C.R.J 12-12-70
Ckd GMG 12-13-70

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

Scale: 1"=50' 25 0 50

MC KINLEY AVE. CONN.

DRAINAGE PLAN

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

CROSS REFERENCES		PIPE NUMBER	PROFILE SHEET NO.
ITEM	SH. NO.		
Pavement Details-McKinley	38	P-10 thru P-12 P-14 thru P-21 P-23 thru P-29	110
Underdrain Summary	107		
Existing Drainage Struct.	105&106		
Drainage Legend	26		
Interchange Drainage	31 & 33	P-37 & P-38	114
Mc Kinley Ave. Conn. Drainage	36		
Geometric Layout	9	P-39 & P-40	113

QUANTITIES

	Emb.	Exc.	Seeding & Mulching
Cleveland	18,238	12,245	490

Made CRJ 12-12-70
Ckd GMG 12-13-70

OPPOSITE EDGE	PROFILE GRADE
Match Existing Cleveland & 15th	1018.54
1018.74	1018.55
1018.43	1018.84
1018.72	1019.13
1019.01	1019.42
1019.30	1019.71
1019.59	1020.00
1019.87	1020.28
1020.11	1020.52
1020.34	1020.75
1020.53	1020.94
1020.71	1021.12
1020.89	1021.30
1021.07	1021.48
1021.25	1021.66
1021.43	1021.84
1021.61	1022.02
1021.79	1022.20
1021.97	1022.38
1022.15	1022.56
1022.33	1022.74
1022.51	1022.92
1022.69	1023.10
1022.87	1023.28
1023.05	1023.46
1023.23	1023.64
1023.41	1023.82
1023.59	1024.00
1023.77	1024.18
1023.95	1024.36
1024.13	1024.54
1024.31	1024.72
1024.49	1024.90
1024.67	1025.08
1024.85	1025.26
1025.03	1025.44
1025.21	1025.62
1025.39	1025.80
1025.60	1026.01
1025.86	1026.27
1026.17	1026.58
1026.53	1026.94
1026.92	1027.33
1027.31	1027.72
1027.70	1028.11
1028.09	1028.50
1028.51	1028.89
1029.01	1029.28
1029.58	1029.61
1029.80	1029.80
1029.73	1029.87
1029.53	1029.81
1029.24	1029.63
1028.90	1029.31
1028.52	1028.93
1028.14	1028.55
1027.78	1028.19
1027.61	1027.96
1027.55	1027.82
1027.61 Match Existing Cleve. Ave.	1027.81

Opposite edge: 26' Lt. — 26' Lt. & Rt. — 26' Rt.; 0.0156 ft./ft. — Transition — 0.0156 ft./ft. — Transition

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
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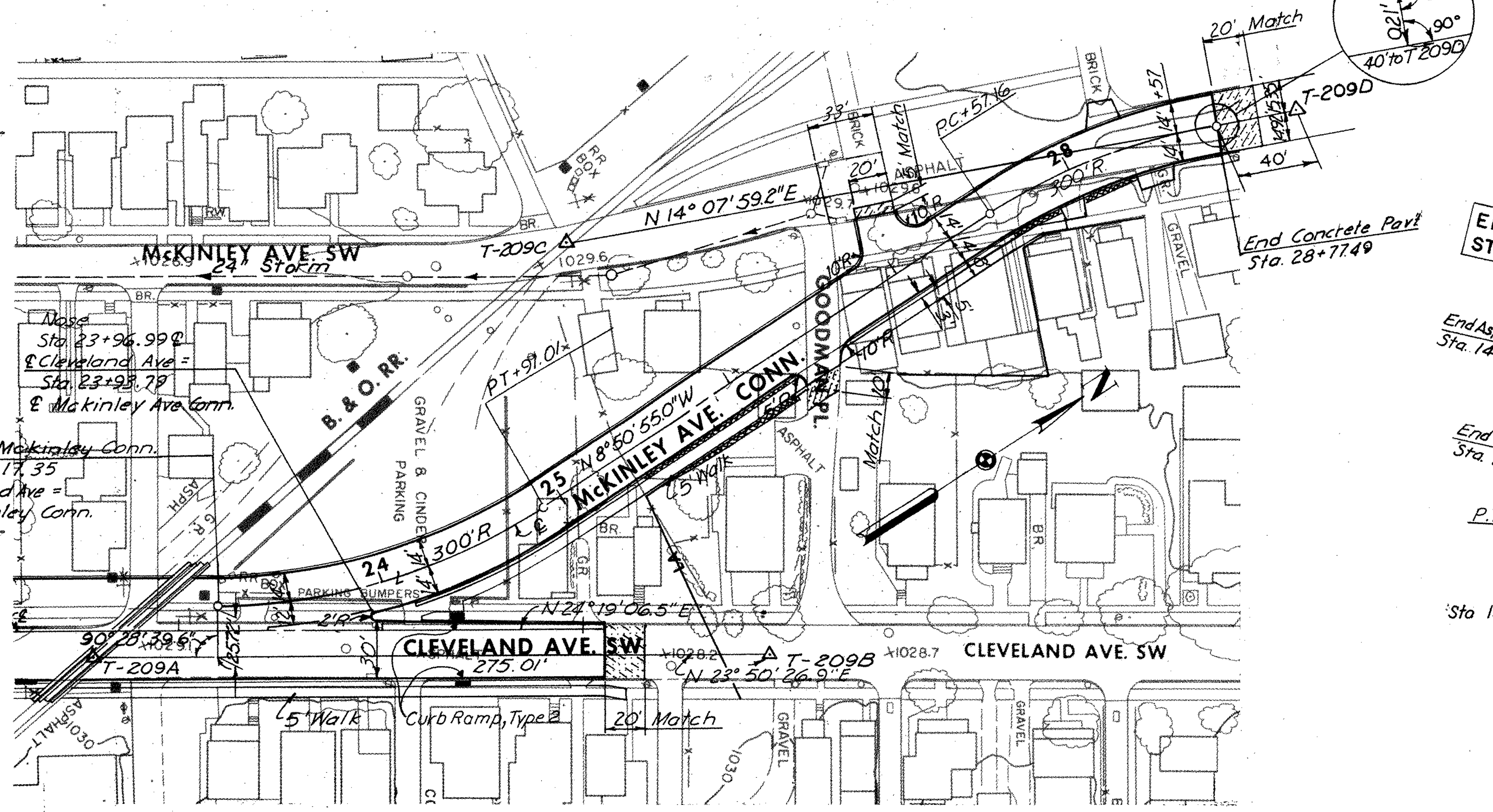
Scale: Hor. 1"=50'
Vert. 1"=10'

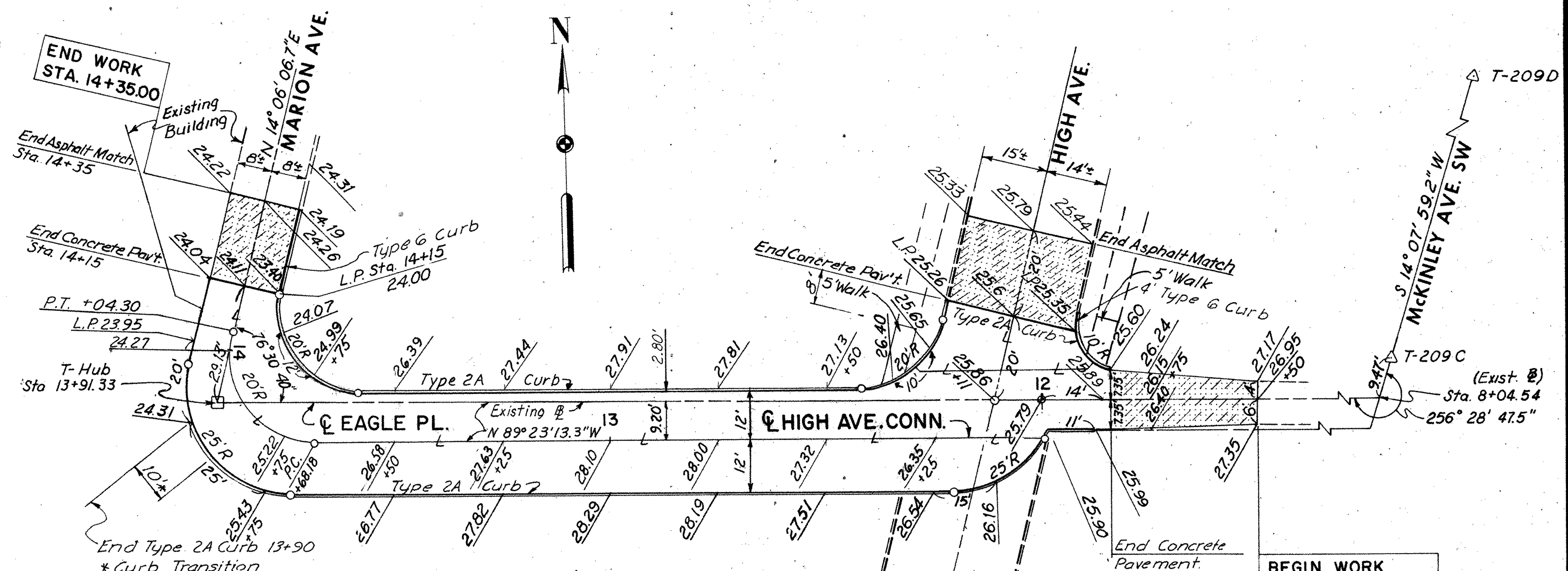
Rev. J.N.S. 5-29-75
Ckd. M.G.B. 5-29-75

CLEVELAND AVE.
PLAN-PROFILE

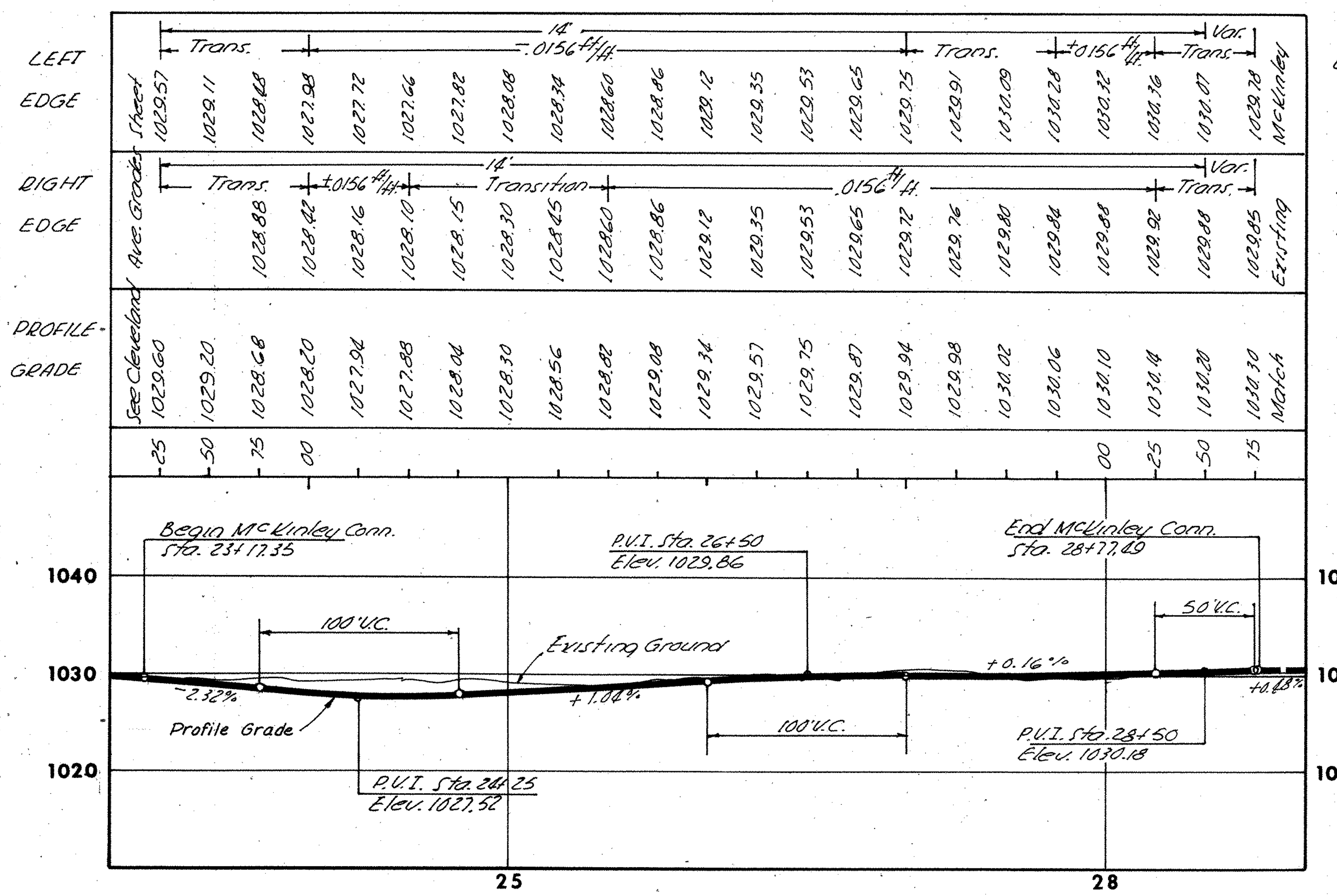
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

STARK COUNTY
STA-30-14.12
STA-77-9.22





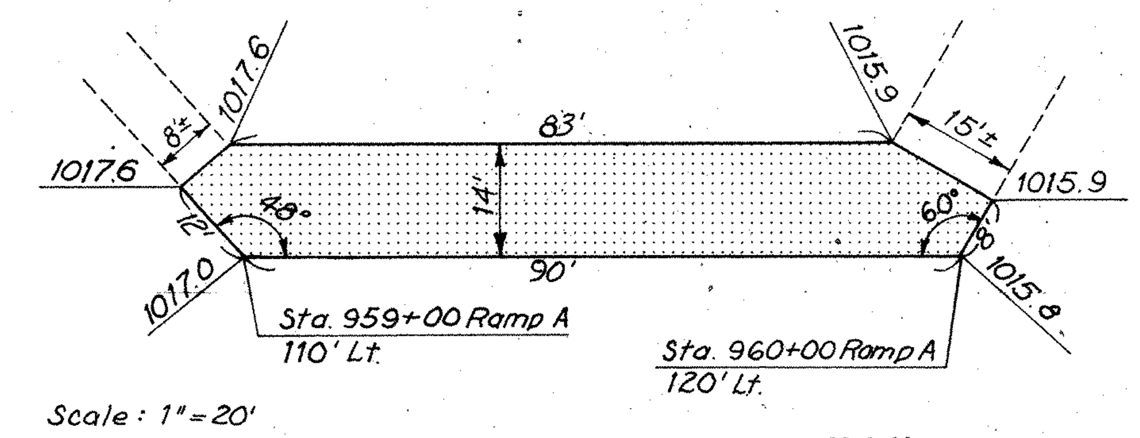
HIGH AVE. CONN.



McKINLEY AVE. CONN.

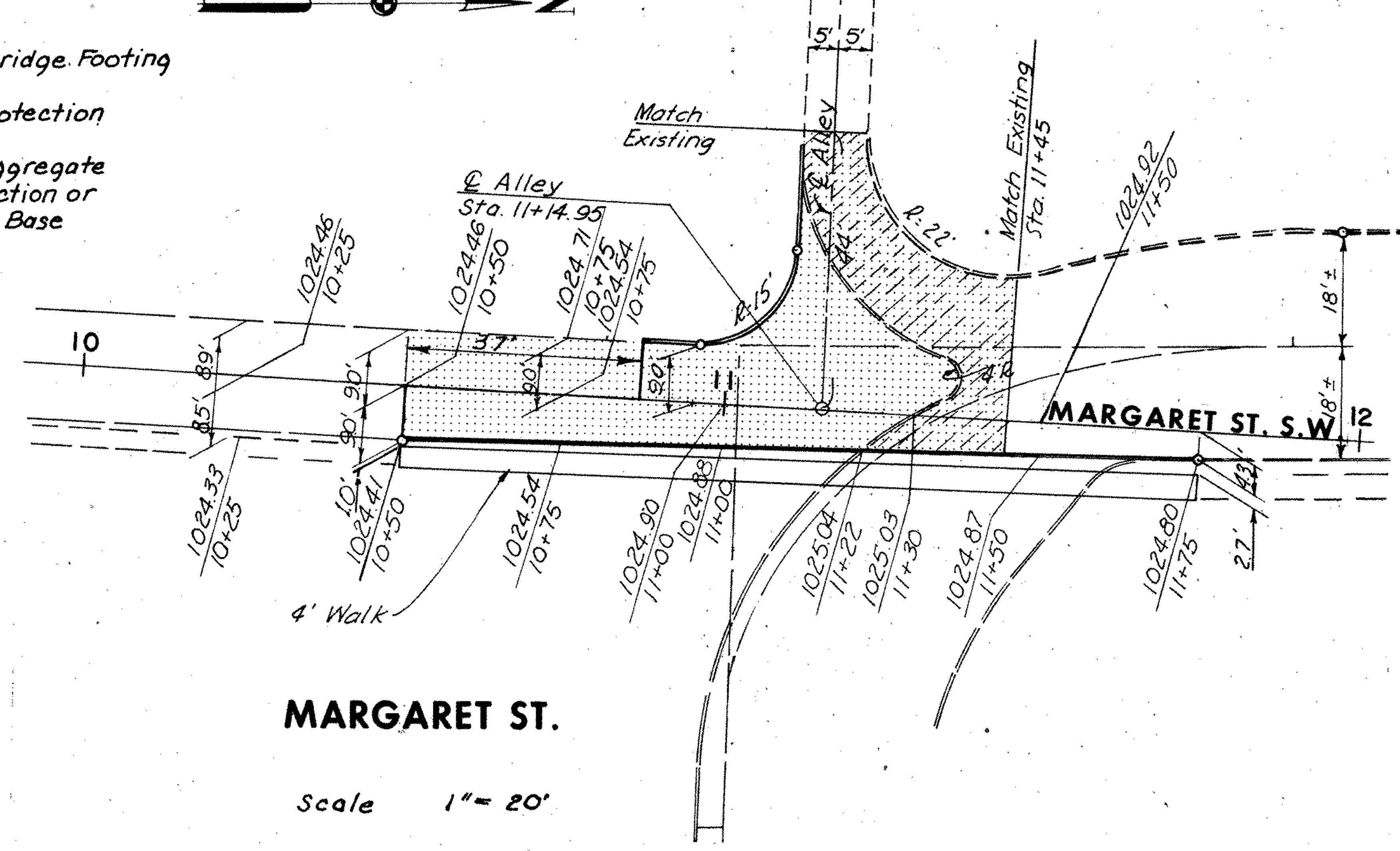
LEGEND

- Asphalt Pavement
- Asphalt Shoulders
- Asphalt Resurfacing (Matching)
- Jute Matting
- Sodding
- Existing Bridge Footing
- Channel Protection
- Crushed Aggregate Slope Protection or Aggregate Base



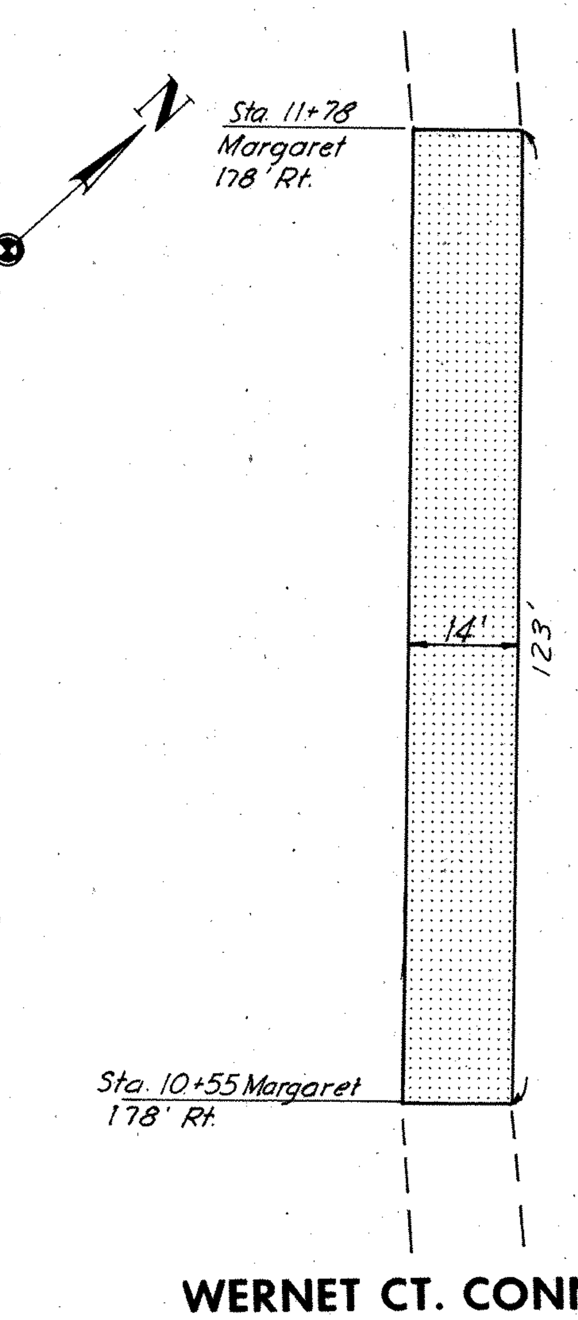
WERNET CT. CONN. "A"

(East of Margaret Ave. S.W. & Adjacent to Ramp A)



MARGARET ST.

Scale 1" = 20'



WERNET CT. CONN. "B"

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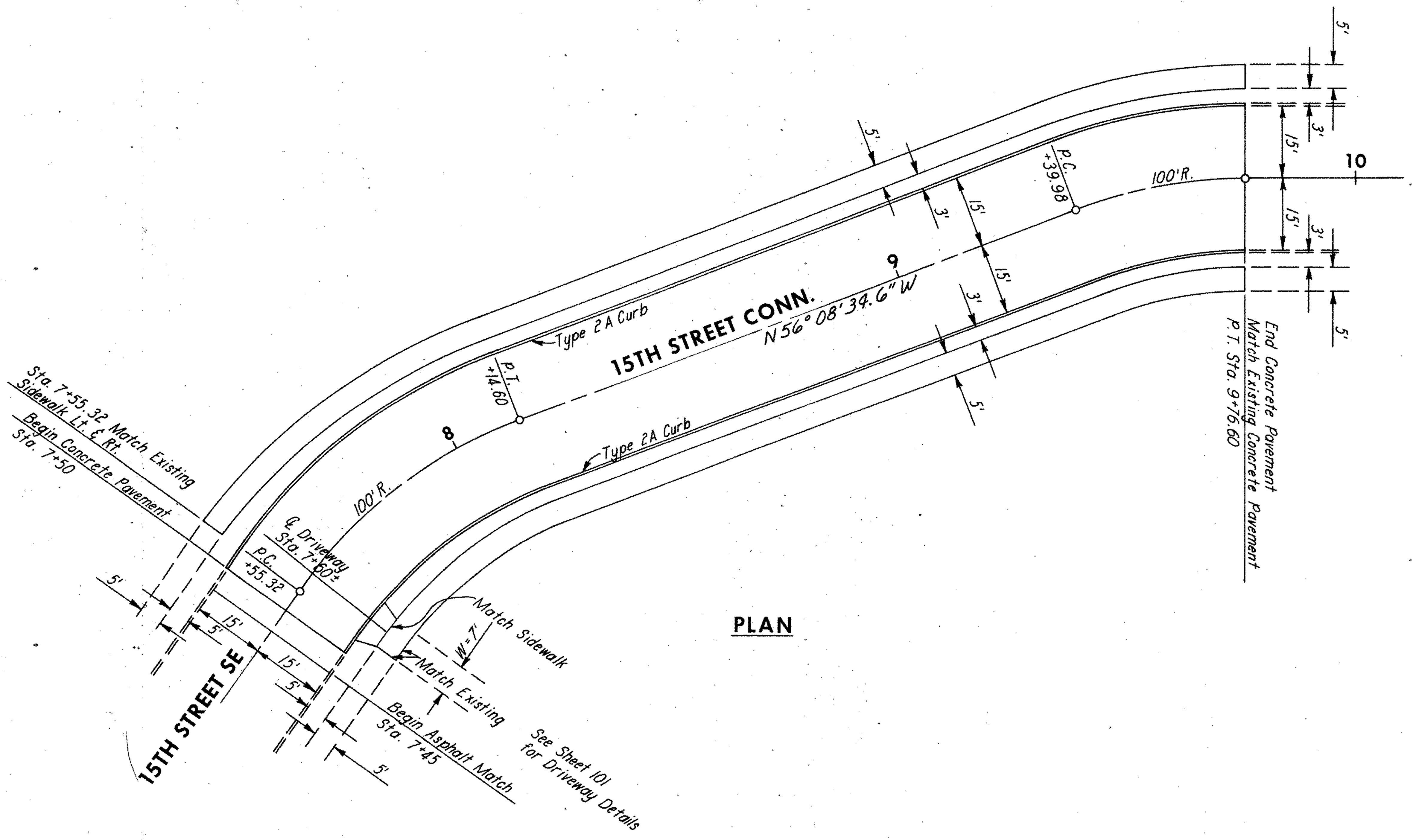
KANSAS CITY CLEVELAND NEW YORK

PAVEMENT DETAILS

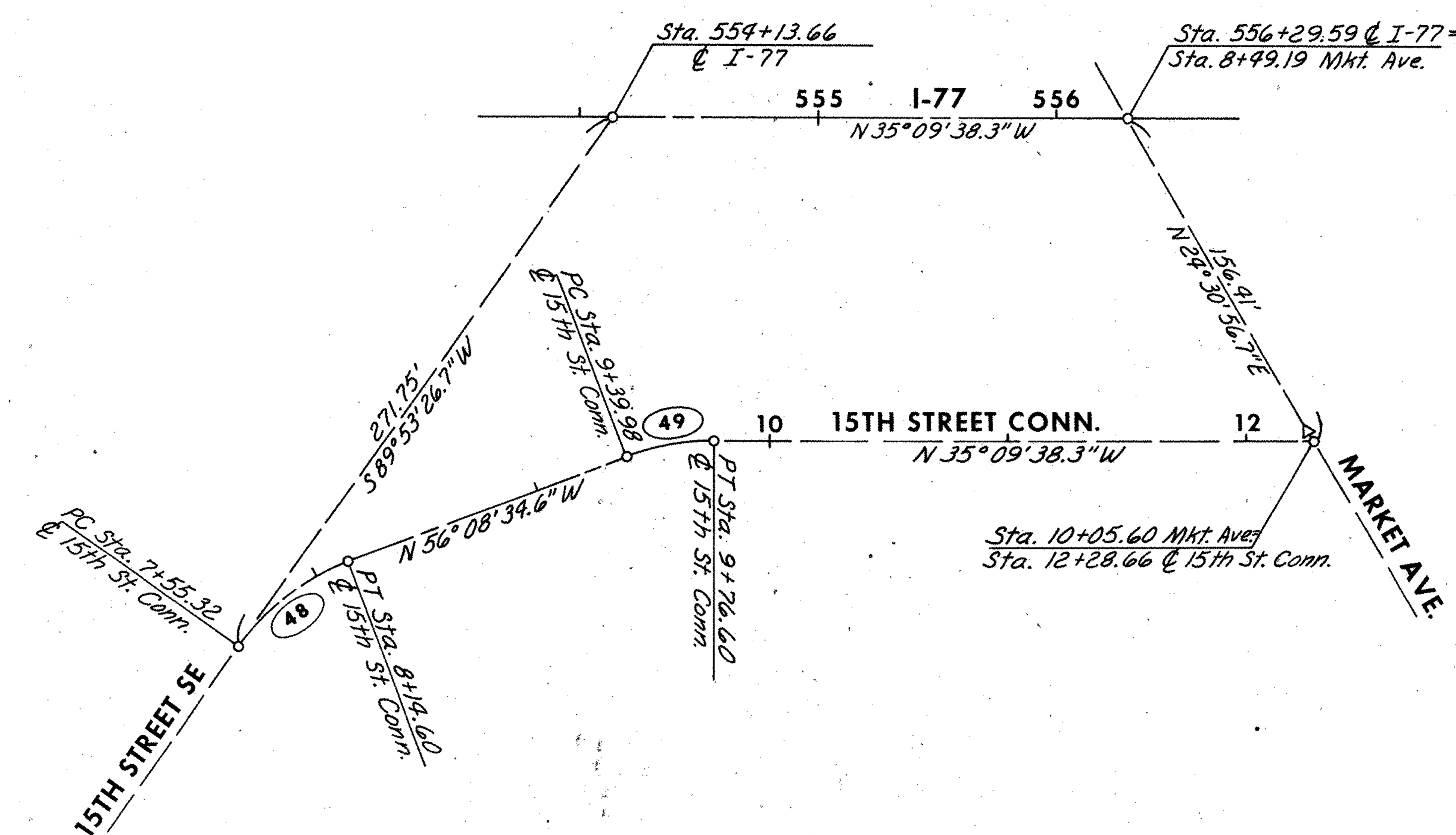
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

38A
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

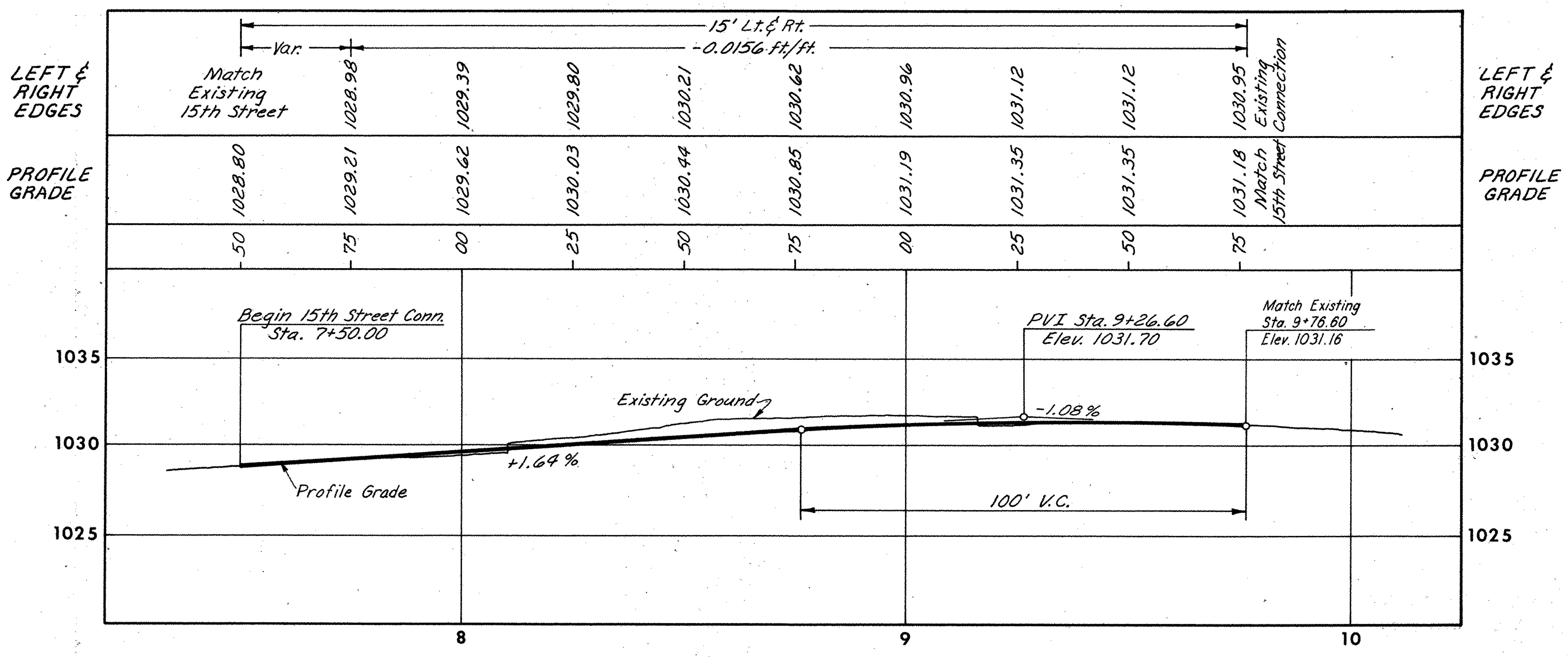


PLAN

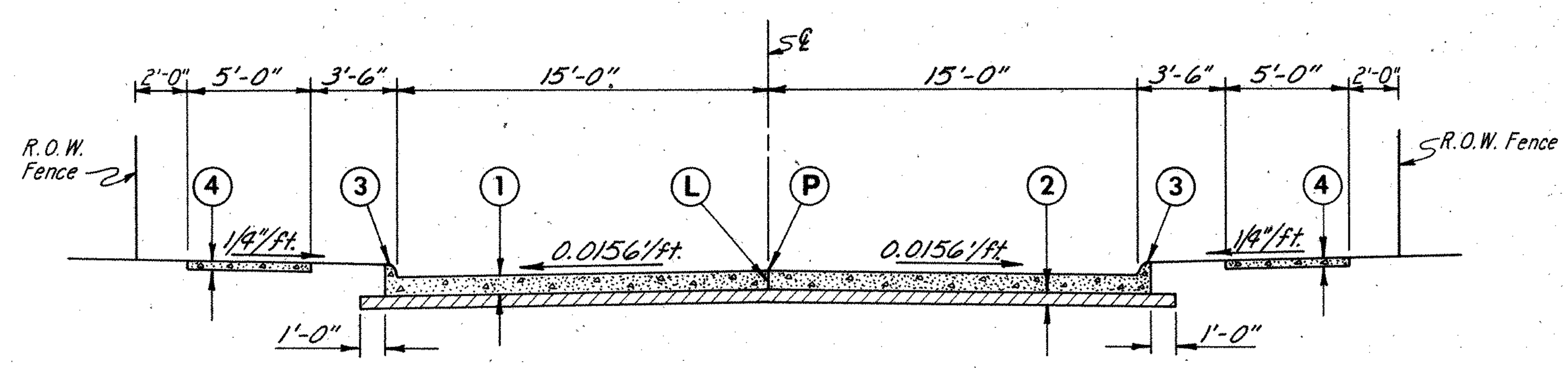


GEOMETRIC LAYOUT

Curve No.	P.I. Station	Δ	D	R	T	L
48	7+85.86	33°57'58.7"Rt.	57°17'44.8"	100.00'	30.54'	59.28'
49	9+58.49	20°58'56.3"Rt.	57°17'44.8"	100.00'	18.52'	36.62'



PROFILE



TYPICAL SECTION

STA. 7+50.00 TO STA. 9+76.60

LEGEND

1. 451 9" Reinforced Portland Cement Concrete Pavement
2. 310 Subbase, Grading "A" (thickness 6")
3. 609 Curb, Standard Type 2A
4. 608 4" Concrete Walk

P Profile Grade

L Standard Longitudinal Joint

Asphalt Resurfacing (Matching)

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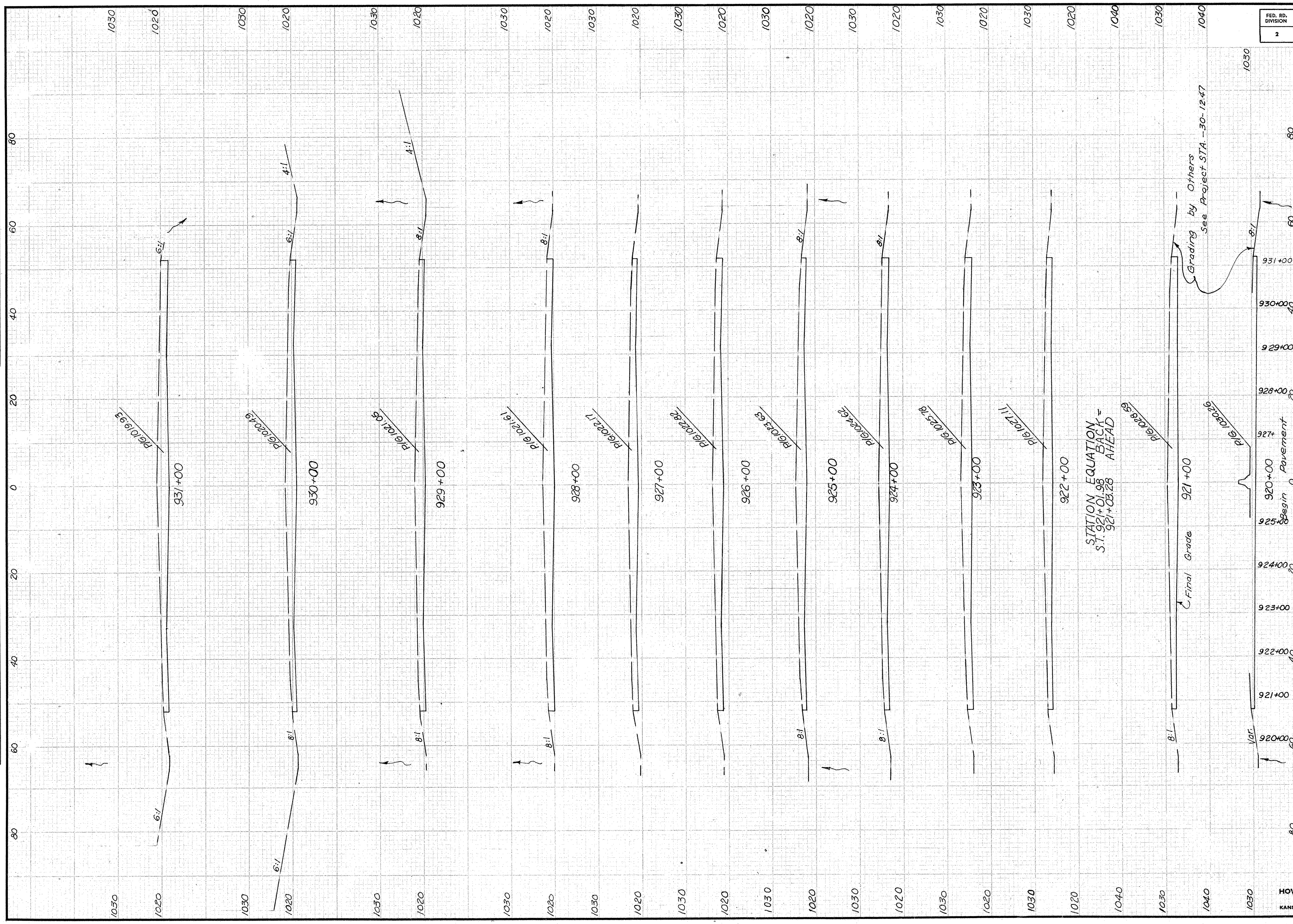
15TH STREET CONN.
PAVEMENT DETAILS

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			40 / 389

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77-9.22



	EARTHWORK			
	END AREA		VOLUME	
Station	EXC.	EMB.	EXC.	EMB.
931+00	200	0		
			698	0
930+00	177	0		
			656	0
929+00	177	0		
			680	0
928+00	190	0		
			670	0
927+	172	0		
			652	0
	180	0		
			656	0
925+00	174	0		
			656	0
924+00	180	0		
			696	0
923+00	196	0		
			678	0
922+00	170	0		
(Dist. 98.7')			667	0
921+00	195	0		
			576	0
920+00	116	0		

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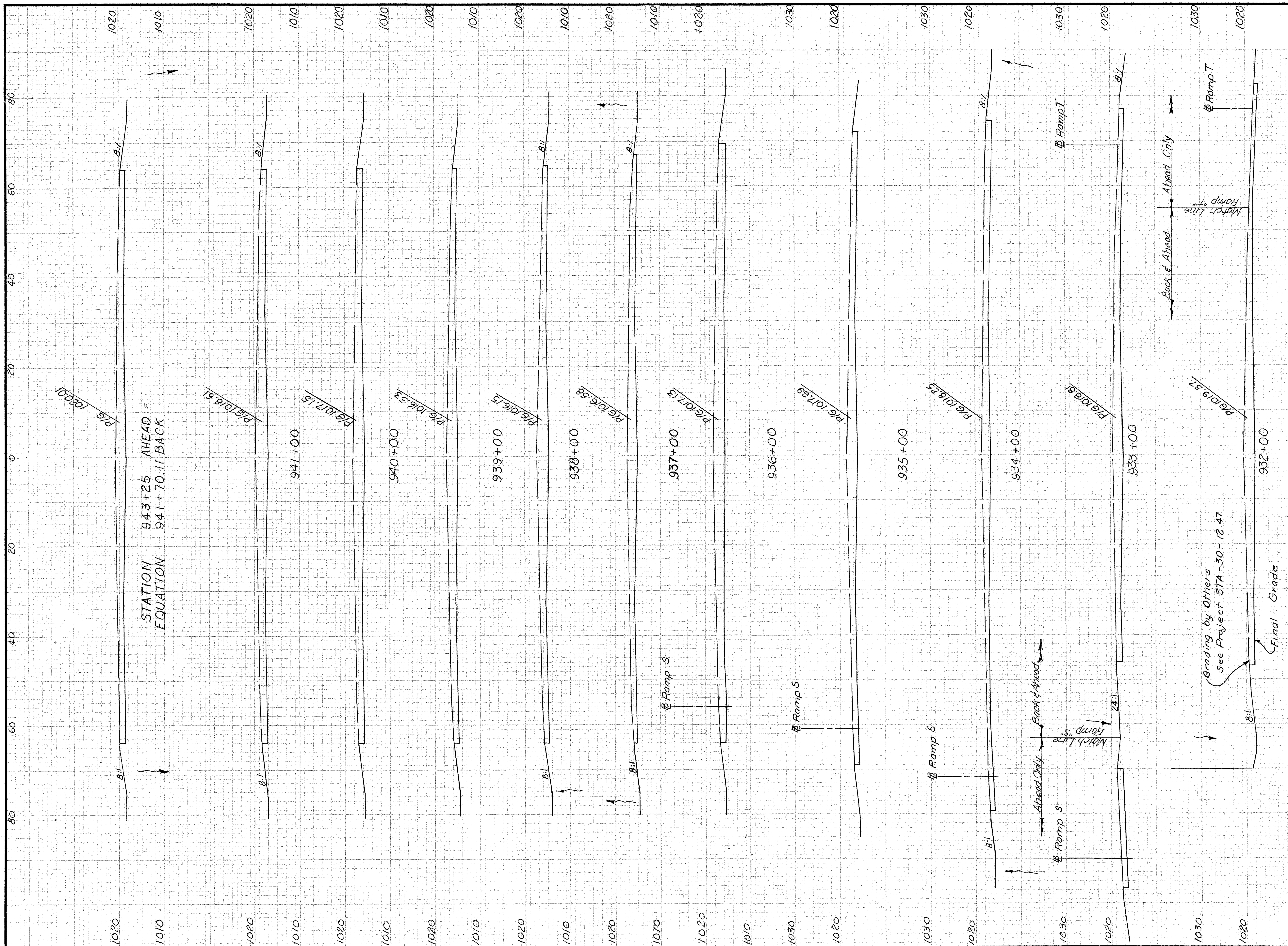
KANSAS CITY CLEVELAND NEW YORK



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

41
389

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77-9.22

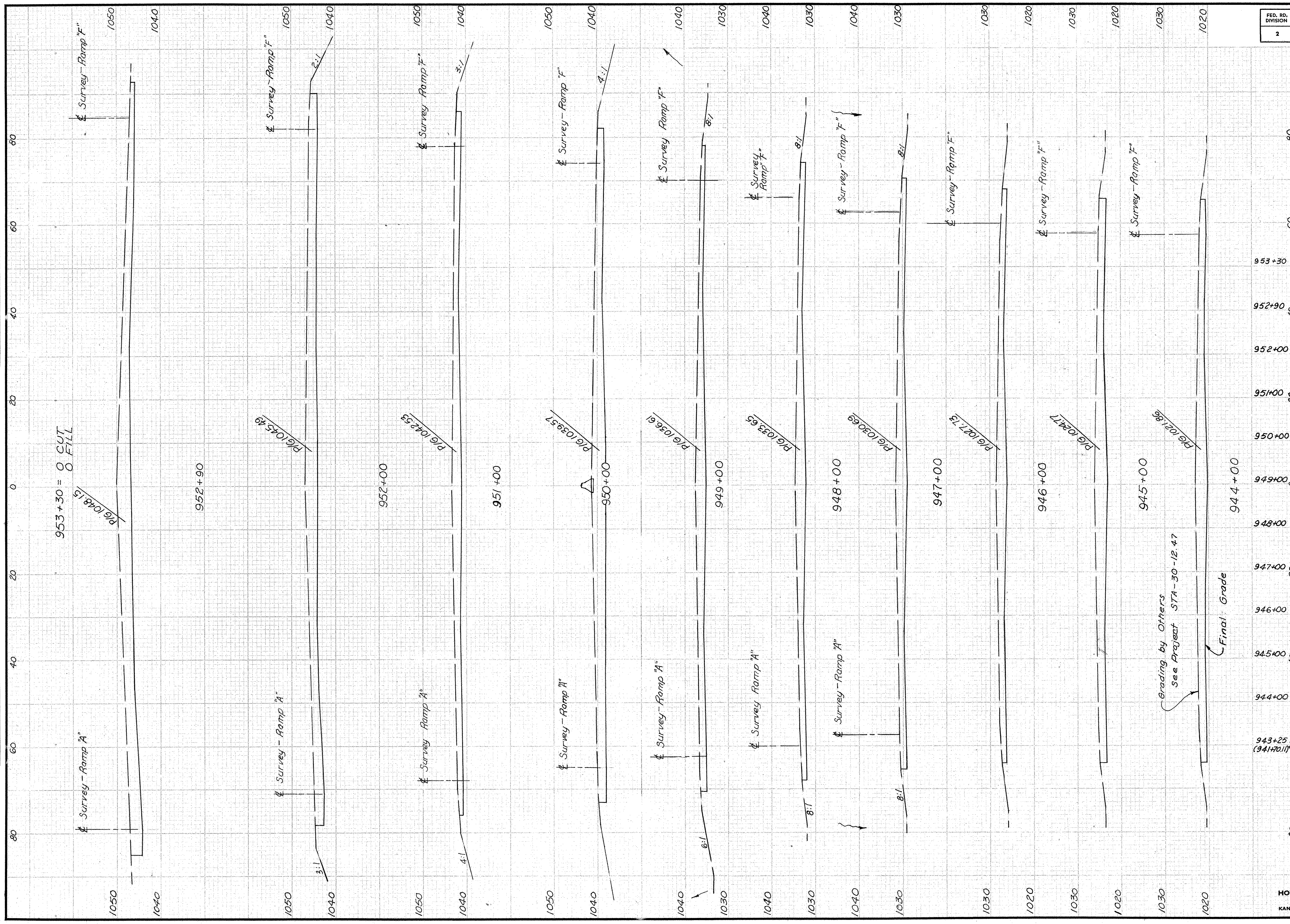
EARTHWORK

Station	END AREA EXC.	END AREA EMB.	VOLUME EXC.	VOLUME EMB.
(943+25) 941+70.11	213	0		
			587	0
941+00	240	0		
			876	0
940+00	233	0		
			826	0
939+00	213	0		
			783	0
938+00	210	0		
			748	0
937+00	194	0		
			859	0
936+00	270	0		
			894	0
935+00	213	0		
			743	0
934+00	188	0		
			763	0
933+00	224	0		
			—	—
933+00	188	0		
			719	0
932+00	200	0		
			741	0
931+00	200	0		

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

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			42 / 389

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



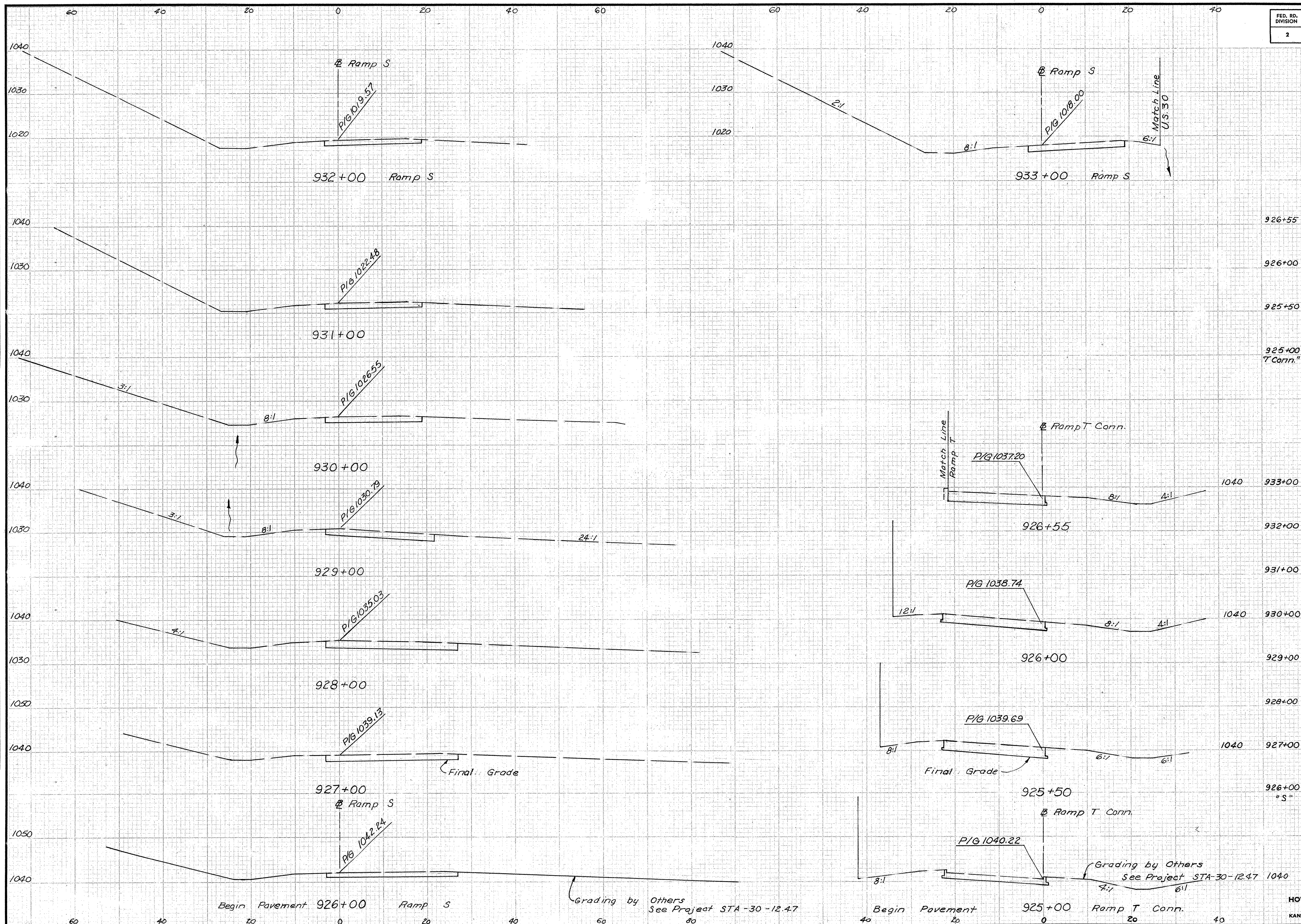
	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
953+30	0	0		
			301	0
952+90	407	0		
			1298	0
952+00	372	0		
			1152	0
951+00	250	0		
			1144	0
950+00	368	0		
			1107	0
949+00	230	0		
			826	0
948+00	216	0		
			830	0
947+00	232	0		
			819	0
946+00	210	0		
			876	0
945+00	263	0		
			939	0
944+00	244	0		
			635	0
943+25 (941+70.11)	213	0		

FINAL SURVEY — NOTE BOOK NO. — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK NO. — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED — BY — DATE

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

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
926+55	50	0		
			102	0
926+00	50	0		
			99	0
925+50	57	0		
			82	0
925+00 "T Conn."	32	0		
933+00	30	0		
			100	0
932+00	24	0		
			96	0
931+00	28	0		
			107	0
930+00	30	0		
			124	0
929+00	37	0		
			165	0
928+00	52	0		
			181	0
927+00	46	0		
			146	0
926+00 "S"	33	0		

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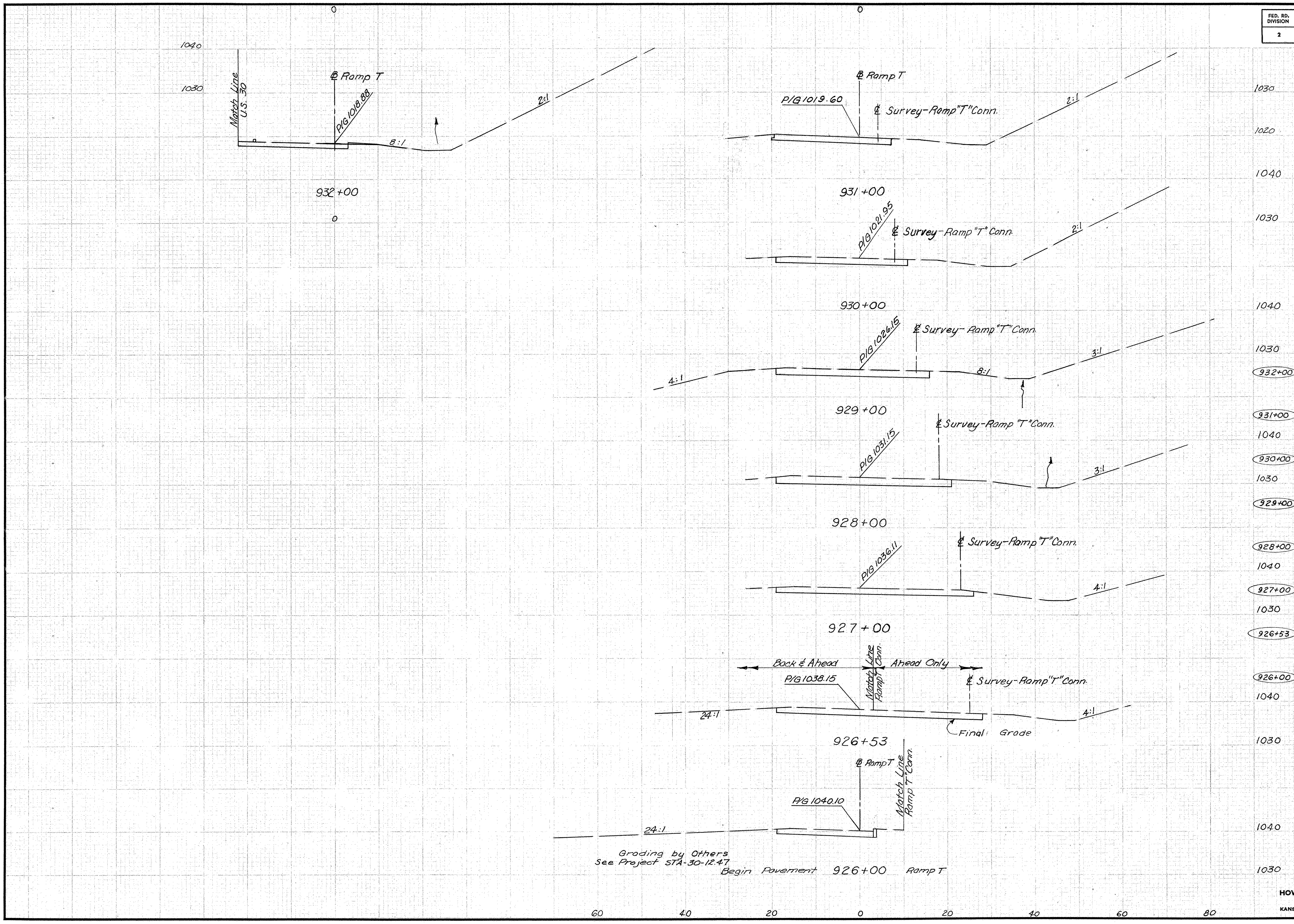
RAMP T CONN. STA. 925+00 TO STA. 926+55
RAMP S STA. 926+00 TO STA. 933+00

FINAL SURVEY: SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO., BY, DATE

ORIGINAL SURVEY: SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO., BY, DATE

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			44 / 389

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



EARTHWORK				
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
932+00	27	0		
			117	0
931+00	36	0		
			144	0
930+00	42	0		
			178	0
929+00	54	0		
			237	0
928+00	74	0		
			254	0
927+00	63	0		
			110	0
926+53	63	0		
			92	0
926+00	31	0		

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
	TEMPLATE		
NO.	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED	JDB	7-14-67
	PLOTTED	Y.C.P. 4-2-68	4-24-68
	TEMPLATE	E.C.B.	10-8-69
NO.	AREAS	G.M.G.	7-16-70
	AREAS CHECKED		

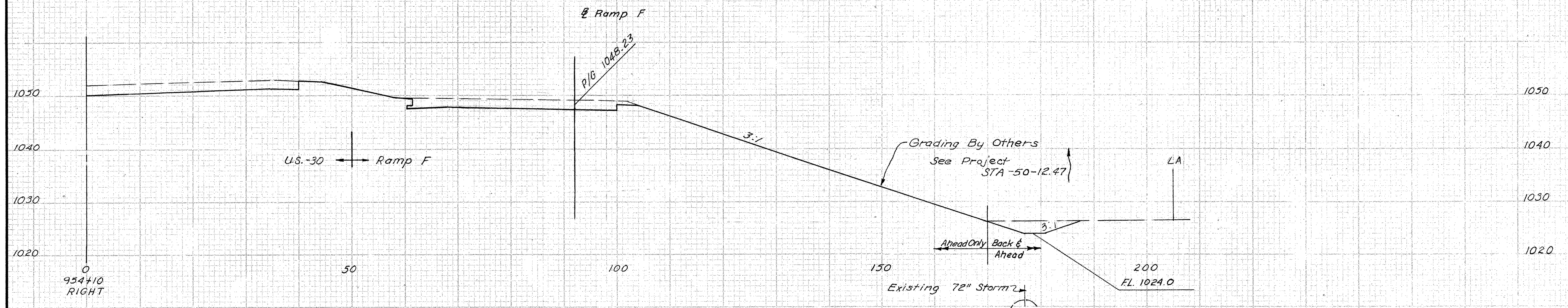
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

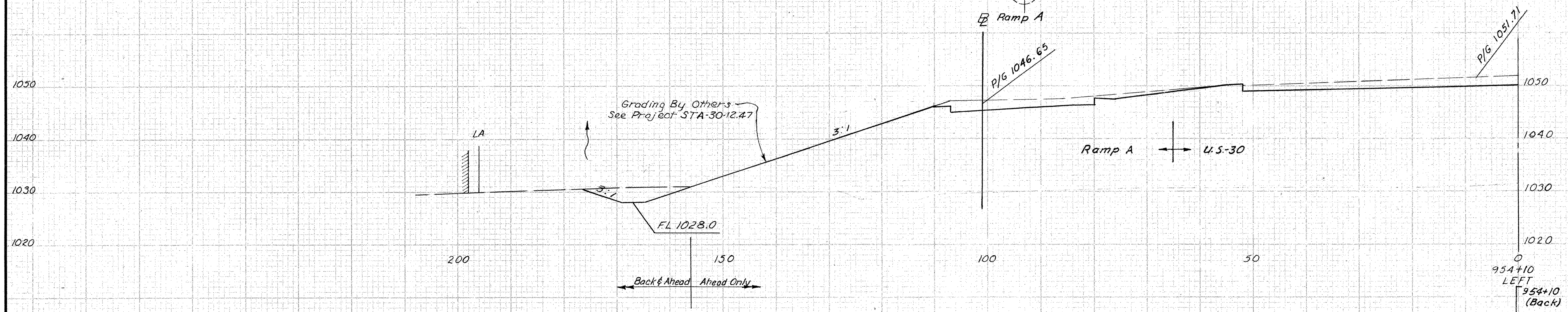
RAMP T STA. 926+00 TO STA. 932+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

45
389

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22





953+72 = 0 CUT
0 FILL

EARTHWORK

Station	End Area Exc.	End Area Emb.	Volume Exc.	Volume Emb.
954+10 (Back)	37	0		
			26	0
953+72 "A"	0	0		
954+10 (BACK)	28	0		
			20	0
953+72 "F"	0			
954+10 (BACK)	0	0		
			0	0
953+72 "U.S. 30"	0	0		

FINAL SURVEY — NOTE BOOK NO. ___ — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK NO. ___

	BY	DATE
SURVEYED		
PLOTTED	J.D.B.	6-12-67
TEMPLATE	Y.C.P.	8-15-68
AREAS	E.C.B.	10-9-69
AREAS CHECKED	G.M.G.	7-16-70

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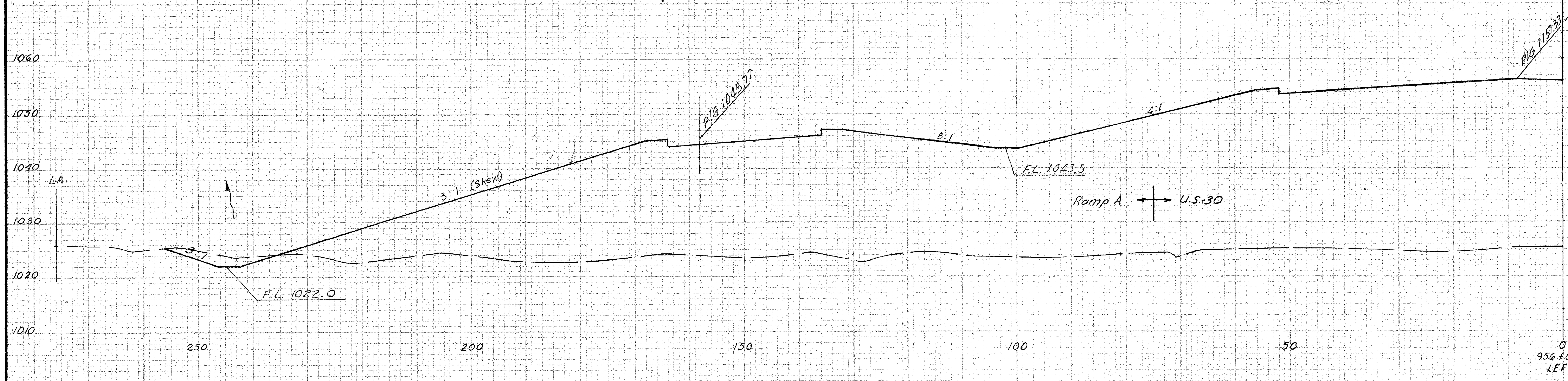
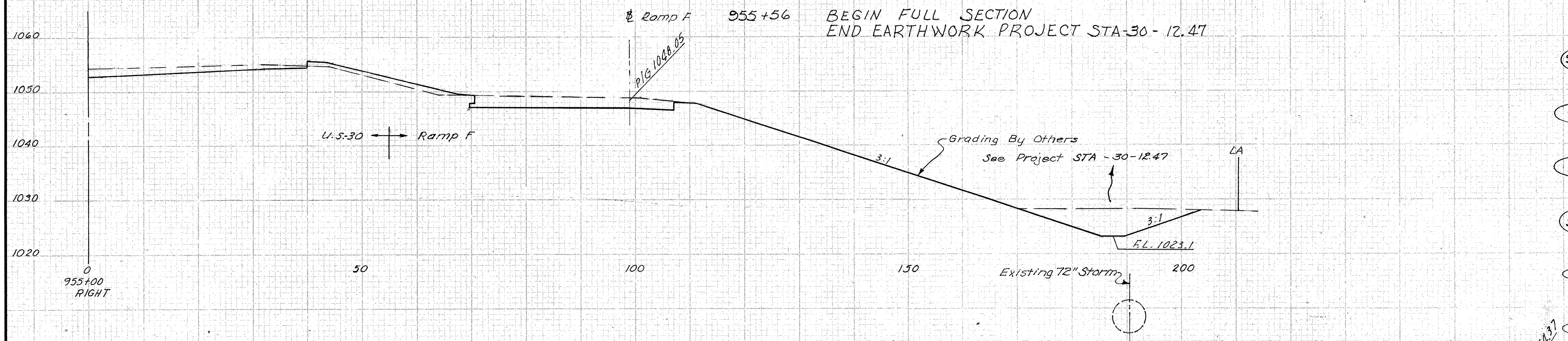
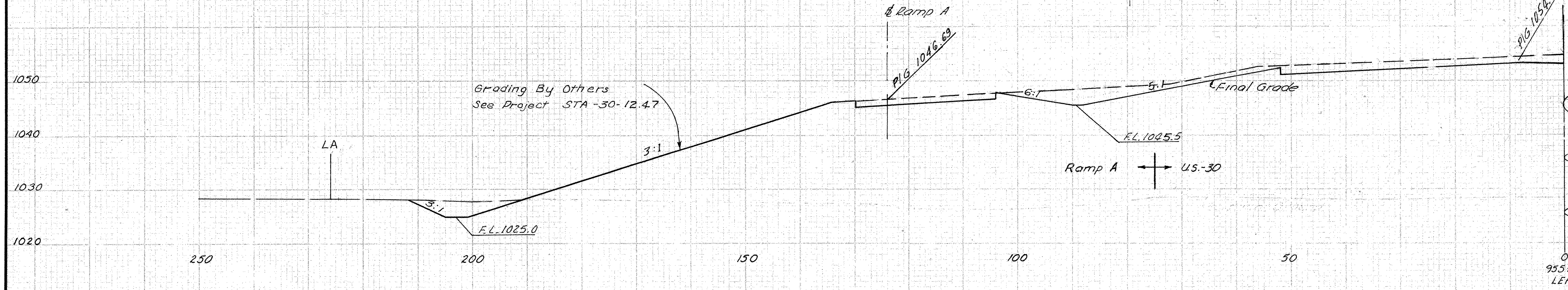
KANSAS CITY CLEVELAND NEW YORK

U.S. 30 STA. TO STA. 954+10

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22







EARTHWORK

Station	END AREA EXC.	END AREA EMB.	VOLUME EXC.	VOLUME EMB.
955+56	70	2185		
			247	2276
955+00	168	10		
			440	17
956+10 "F"	96	0		
955+56	33	2802		
			150	2906
955+00	112	0		
			348	0
954+10 "A"	97	0		
955+56	0	3950		
			0	4241
955+00	0 144	14		
			1885	28
954+10 "U.S. 30"	145	0		

FINAL SURVEY: SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY — DATE; NOTE BOOK; NO.

ORIGINAL SURVEY: SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY: JDB, CBL, ECB, GMG — DATE: 8-7-62, 8-7-62, 9-10-69, 7-6-70; NOTE BOOK; NO.

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

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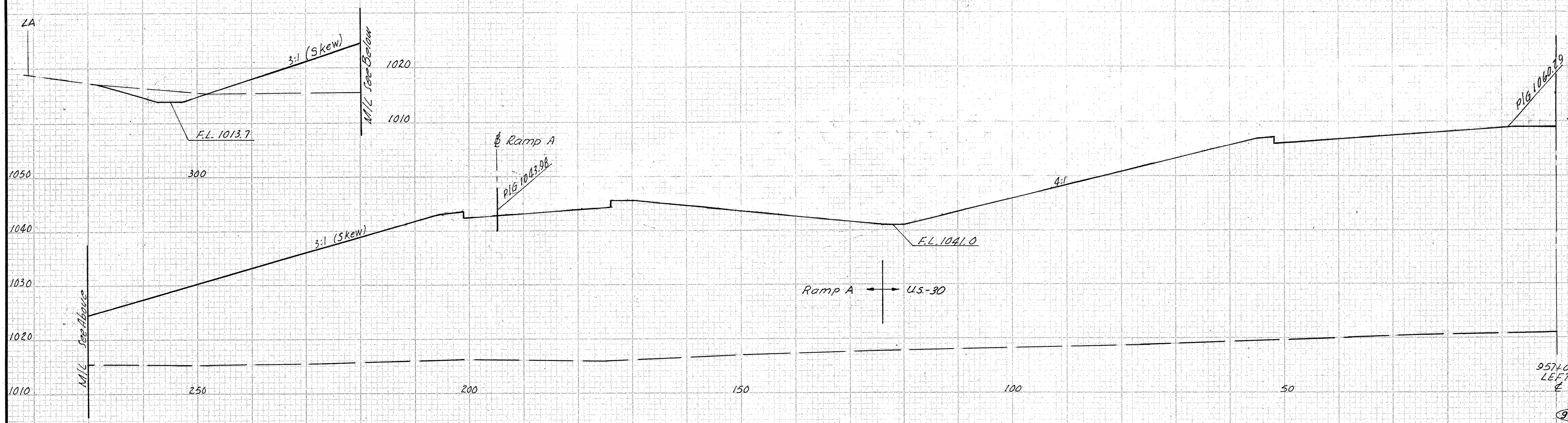
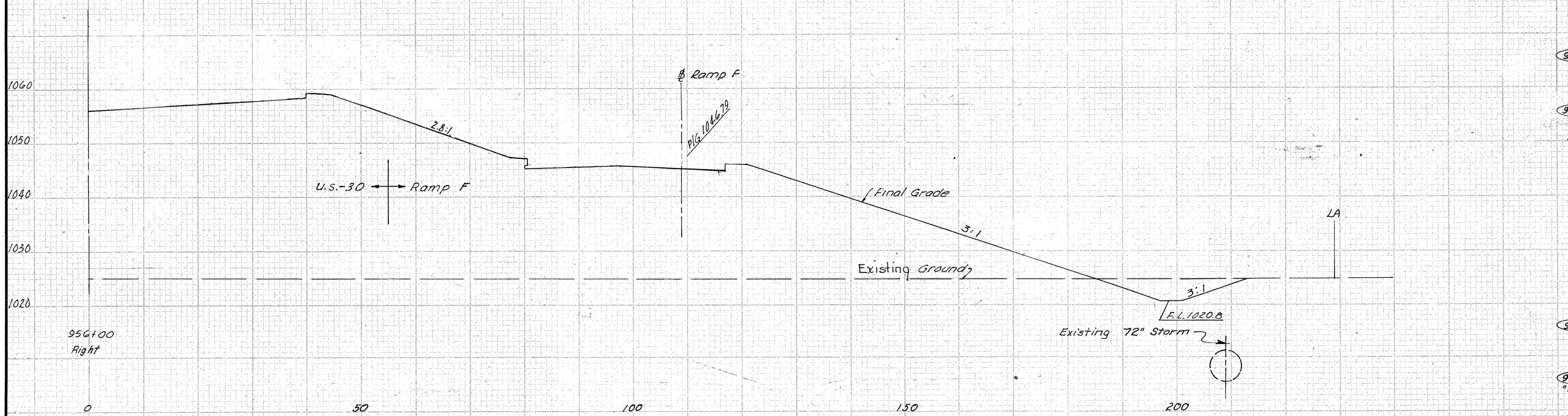
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22





Station	EARTHWORK END AREA EXC.	END AREA EMB.	VOLUME EXC.	VOLUME EMB.
956+00	70	2185		
			114	3561
955+56 "F"	70	2185		
956+00	30	2802		
			51	4566
955+56 "A"	33	2802		
956+00	0	3350		
			0	6437
955+56 "U.S.30"	0	3350		

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED		6-4-62
PLOTTED	J.P.B.	7-2-62
TEMPLATE	C.A.I.	9-30-69
AREAS	E.C.B.	
AREAS CHECKED	G.M.G.	7-17-70
NOTE BOOK NO.		

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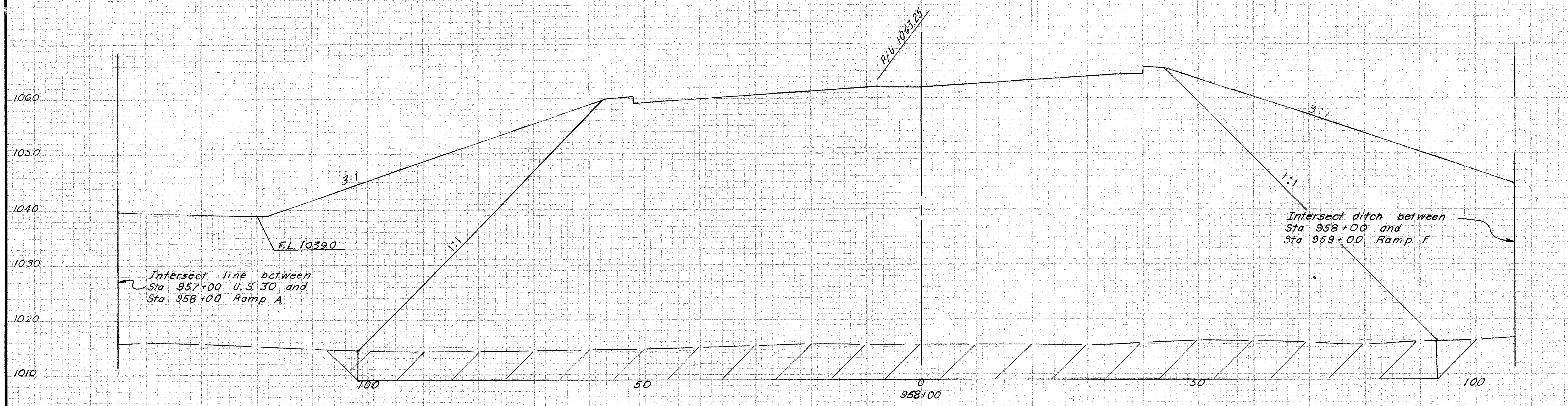
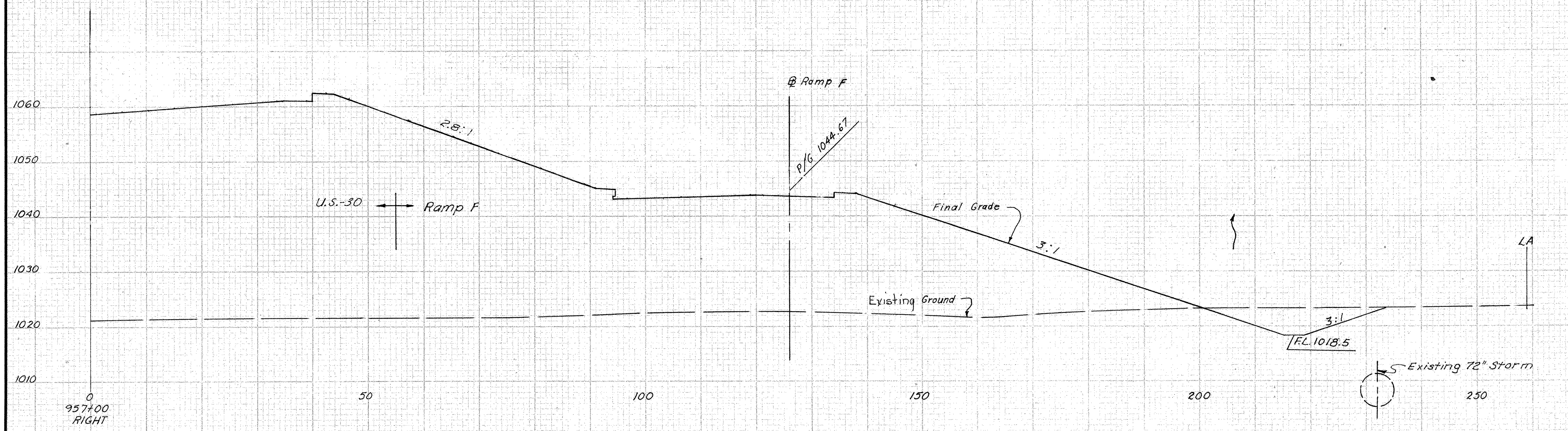
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA- 30-14.12
STA-77- 9.22



STA 957+93 Zero End Area
For Unsuitable Excavation.



	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
957+00	93	2897		
			302	9411
956+00 "F"	70	2185		
957+00	30	3524		
			111	11,715
956+00 "A"	30	2802		
958+00	0	10,006		
			0	30,154
957+00	0	6277		
			0	18,939
956+00 "U.S.30"	0	3950		

FINAL SURVEY — NOTE BOOK / NO. / SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED / BY / DATE

ORIGINAL SURVEY — NOTE BOOK / NO. / SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED / BY / DATE

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KANSAS CITY CLEVELAND NEW YORK

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

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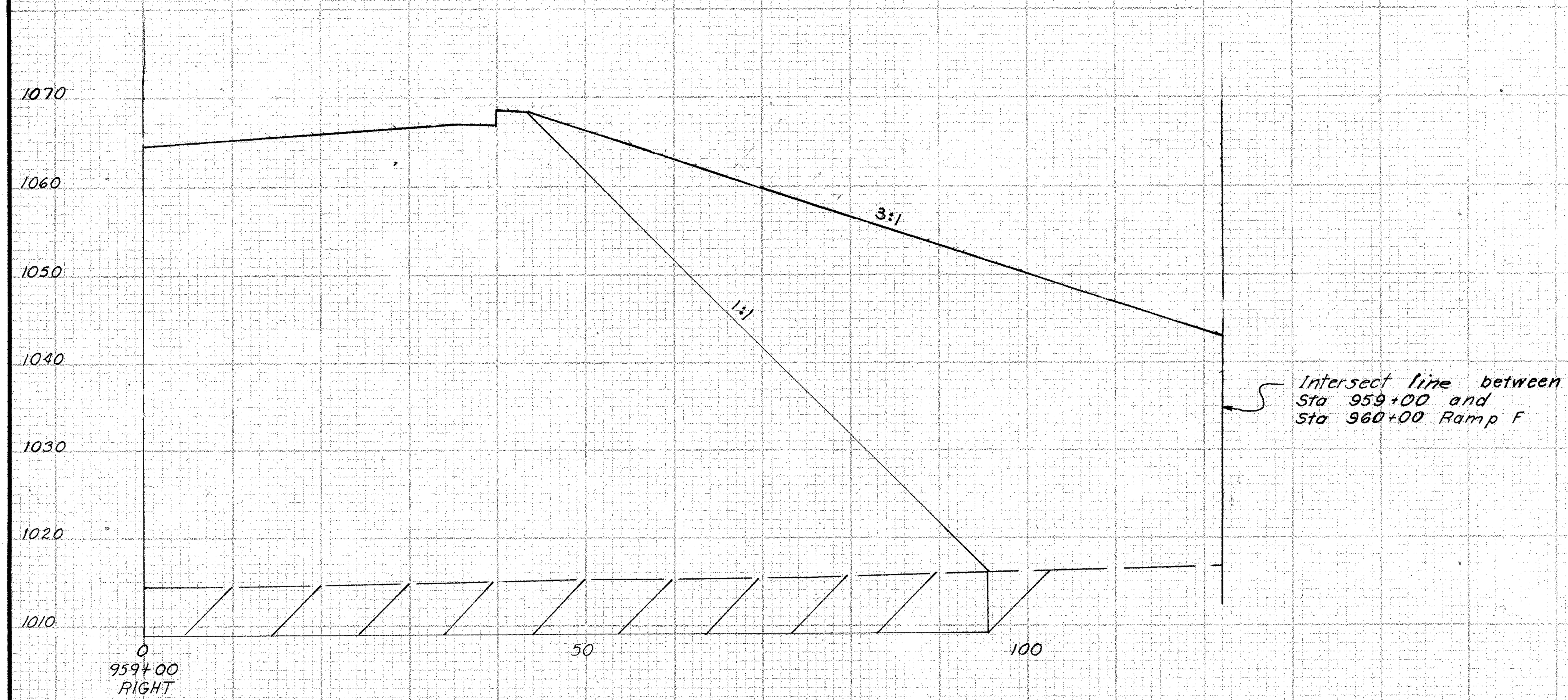
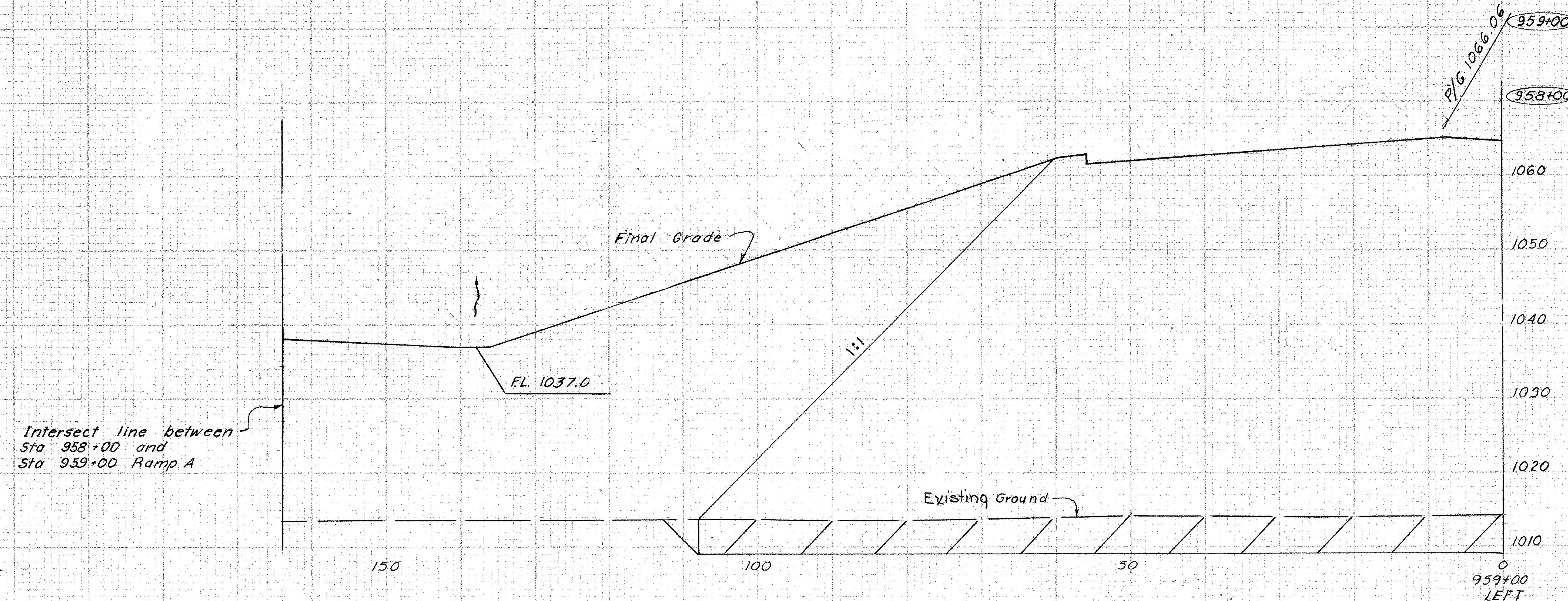
389

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77-9.22

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		



ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED	YCP JDB	6-9-67
	PLOTTED	CRJ	8-21-68
	TEMPLATE	ECB	9-30-69
	AREAS	GMG	7-17-70
NO.	AREAS CHECKED		



EARTHWORK				
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
959+00	0	11786		
			0	40356
958+00	0	10,006		

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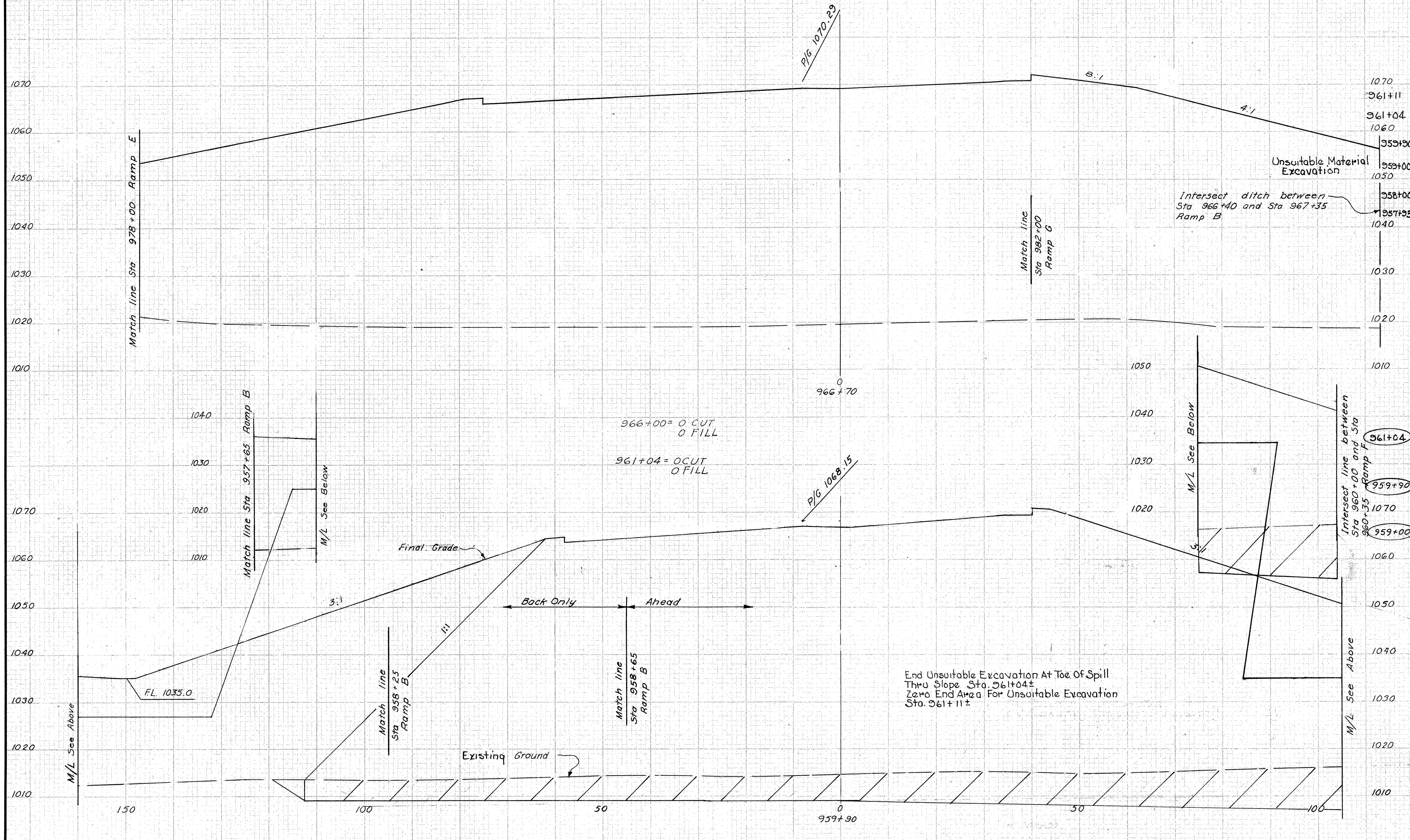
KANSAS CITY CLEVELAND NEW YORK

Rev. 3-23-76

U.S. 30 STA. 959+00 LT TO STA. 959+00 RT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



EARTHWORK

Station	End Area Exc.	End Area Emb.	Volume Exc.	Volume Emb.
961+11	0	0		
			219	0
961+04	1691	0		
			7140	0
959+90	1691	0		
			4797	0
959+00	1187	0		
			4587	0
958+00	1290	0		
			167	0
957+98	0	0		
		TOTAL	16910	
961+04	0	0		
			0	17,548
959+90	0	12369		
			0	40258
959+00	0	11786		

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FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
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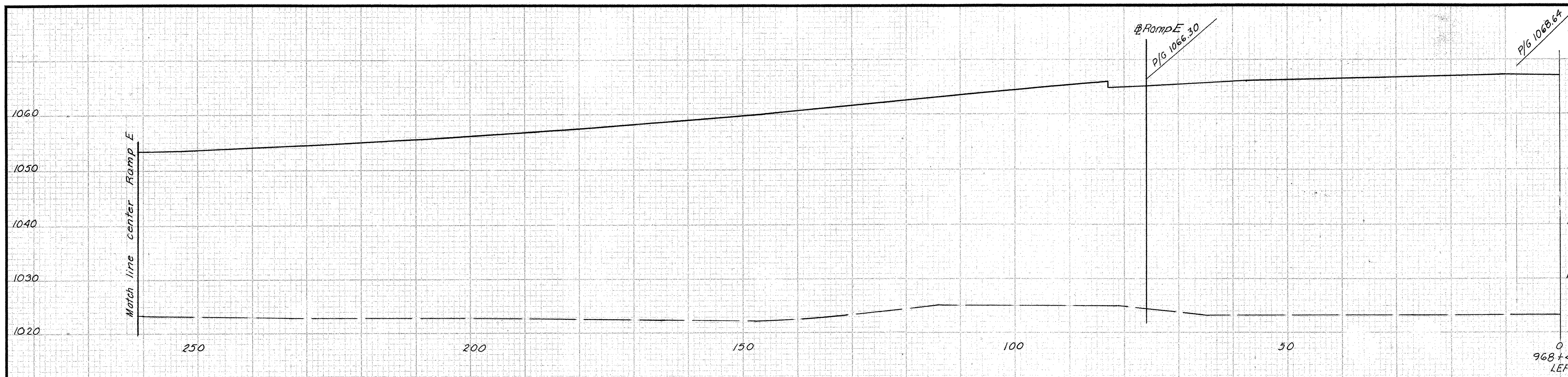
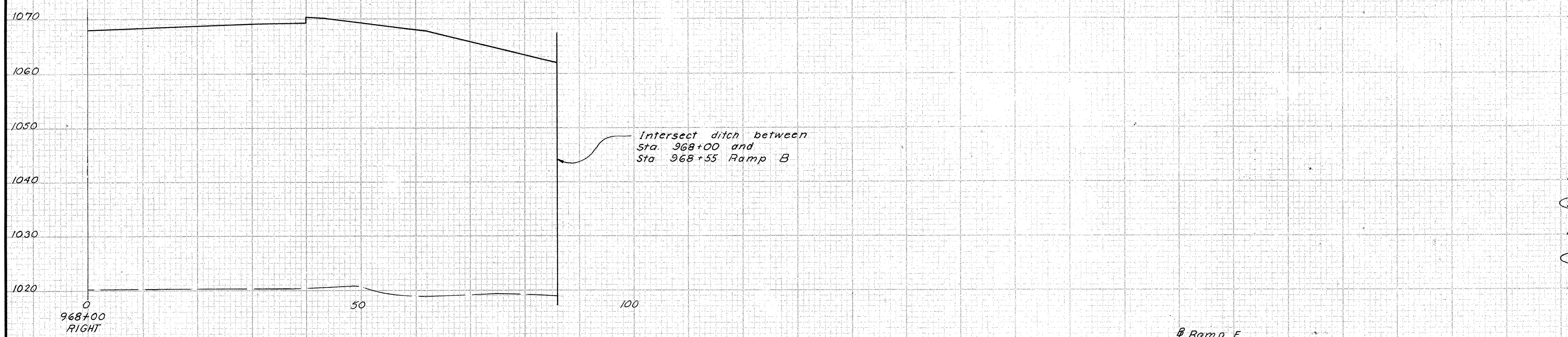
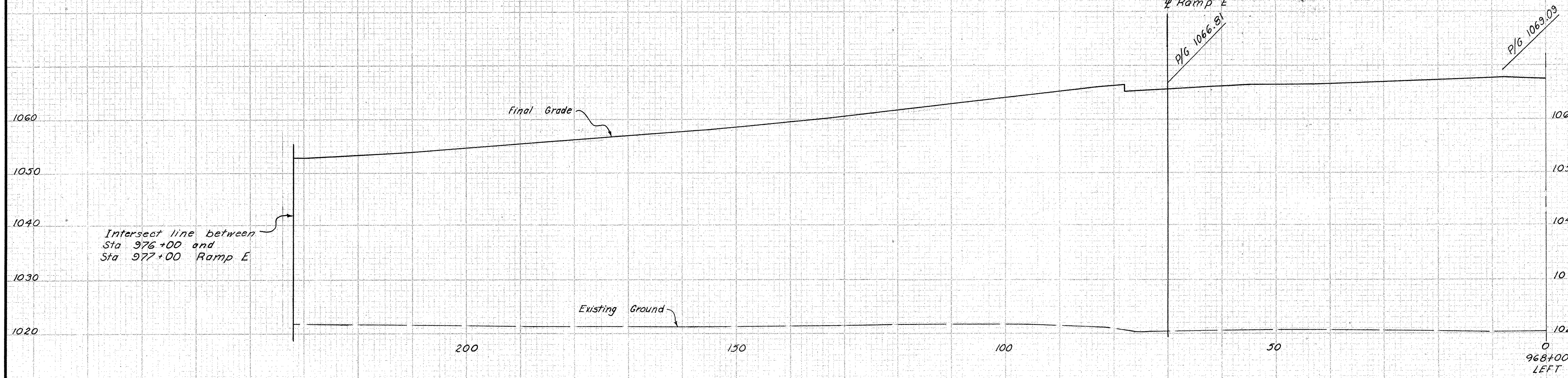
STA - 77- 9.22







	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
968+00	0	13,500		
			0	61,334
966+70	0	11,977		

FINAL SURVEY — NOTE BOOK, NO., SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, BY, DATE

ORIGINAL SURVEY — NOTE BOOK, NO., SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, BY, DATE

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

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

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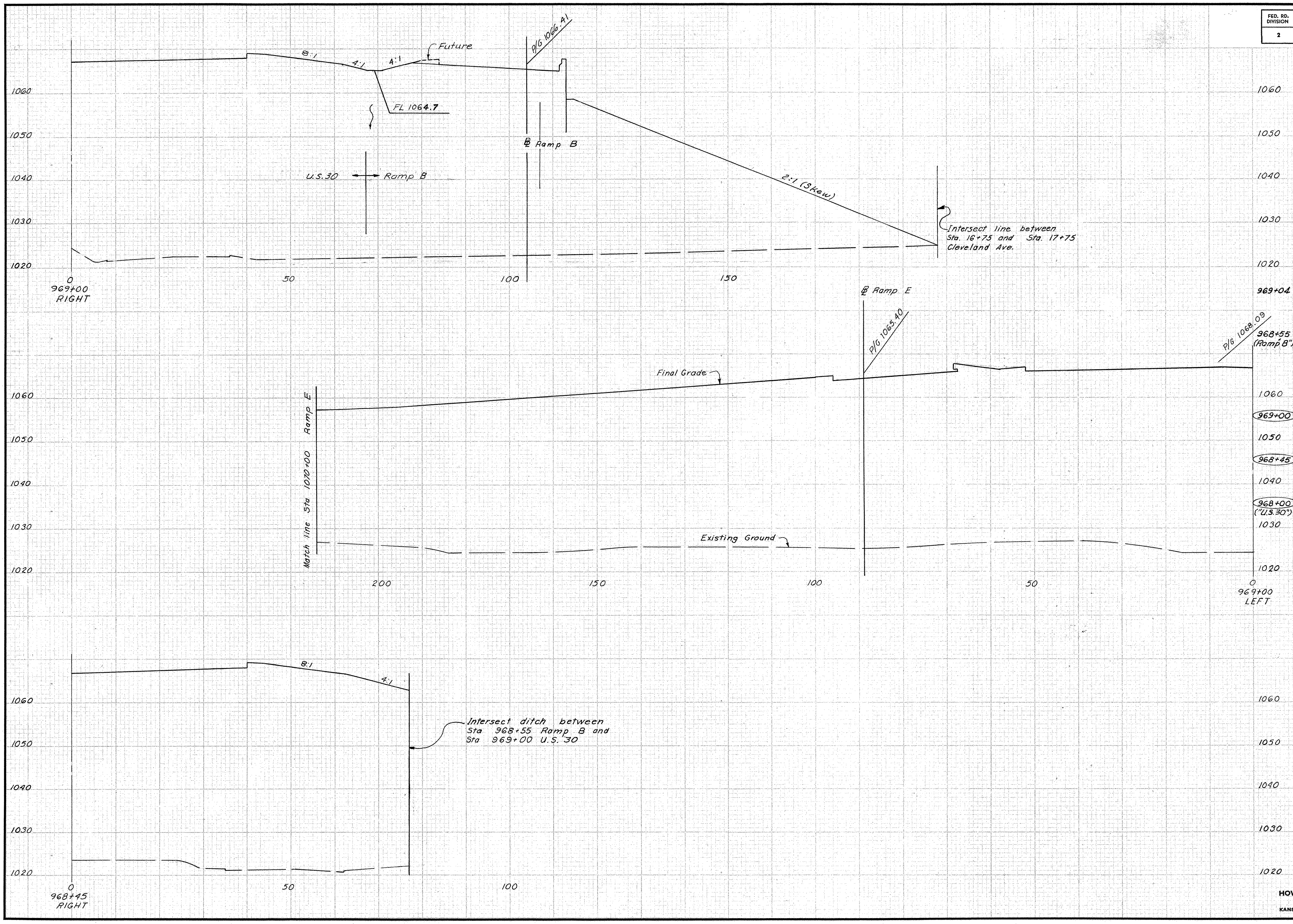
389

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
969+04	0	3,580		
			0	6815
968+55 (Ramp B")	0	3930		
969+00	0	10,858		
			0	24,624
968+45	0	13,318		
			0	22,348
968+00 ("U.S.30")	0	13,500		

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED	JDB	6-8-67
	PLOTTED	YCP CRJ	8-28-68
	TEMPLATE	E.C.B.	10-6-69
	AREAS	G.M.G.	7-17-70
NO.	AREAS CHECKED		

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

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

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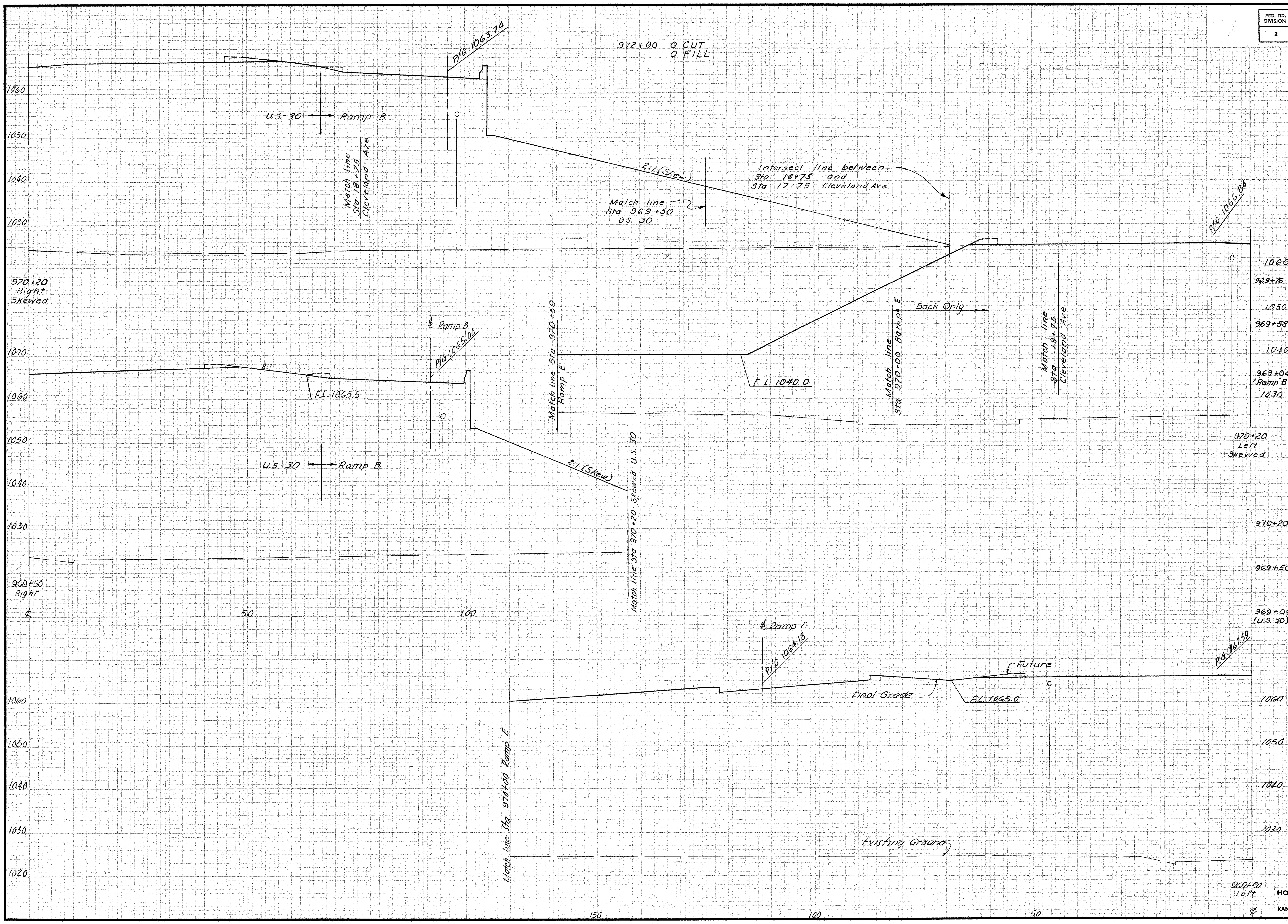
389

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
969+76	0	2594		
			0	1585
969+58	0	2161 2564		
		(Dist. 50')	0	5689
969+04 (Ramp "B")	0	3580		

See Sheet ___ Cleveland Ave. for end Section Volume.

	EXC.	EMB.	EXC.	EMB.
970+20	0	6165		
			0	20,621
969+50	0	9743		
			0	19,075
969+00 (U.S. 30)	0	10,858		

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ORIGINAL SURVEY	BY	DATE
SURVEYED	CH	7-13-67
PLOTTED	JDB	8-28-68
TEMPLATE	CCB	12-4-69
AREAS	GNG	1-7-70
AREAS CHECKED		

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA-30-14.12
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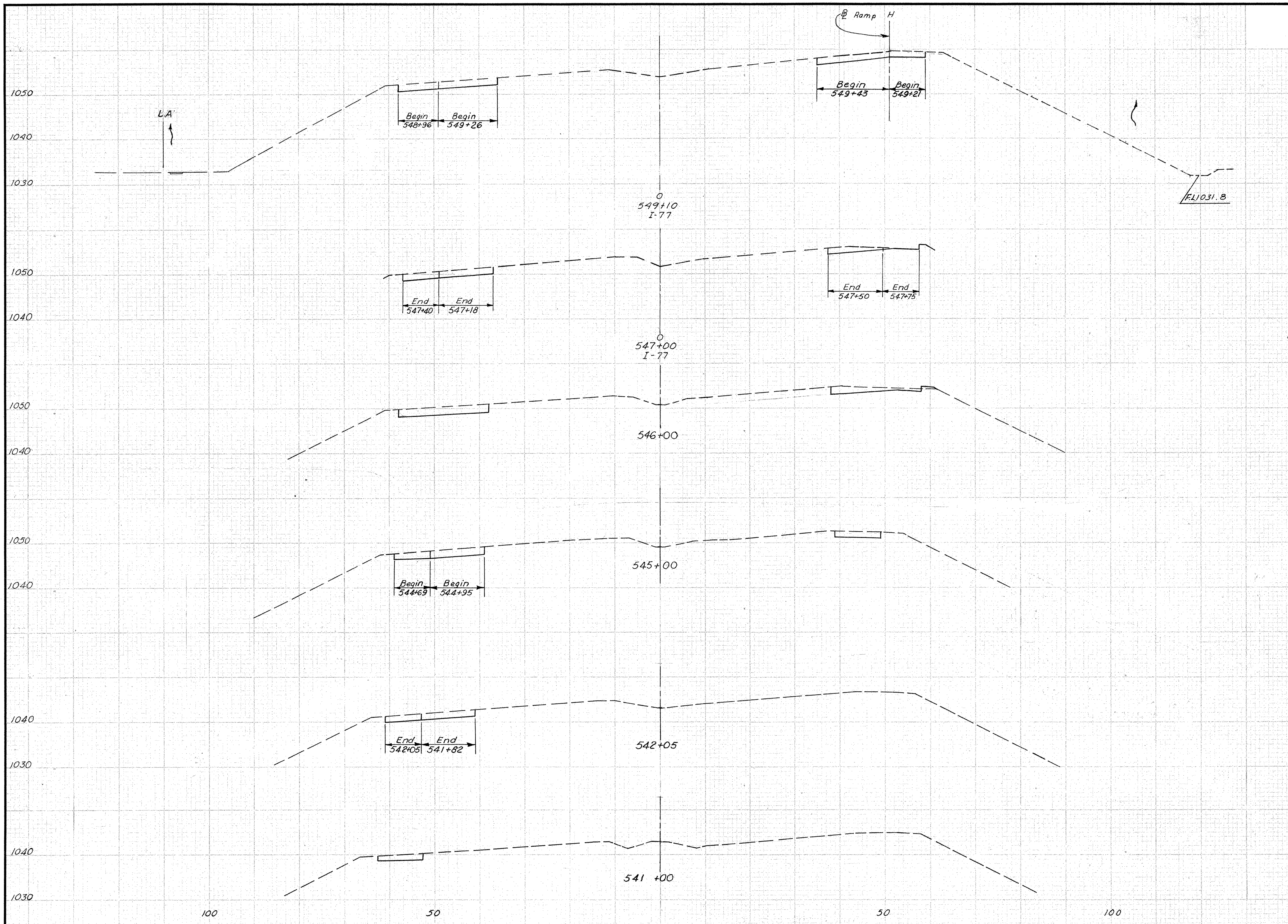
FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED	JDB	6-29-67
	PLOTTED	YCP CRJ	7-19-68
	TEMPLATE	ECB	9-30-69
	AREAS	GMG.	7-20-70
NO.	AREAS CHECKED		



	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
549+43	40	0		
			25	0
549+26	40 20	0		
			4	0
549+21	20 10	0		
			9	0
548+96	10	0		
547+50	12	0		
			4	0
547+40	12 22	0		
			18	0
547+18	22 42	0		
			201	0
546+00	50	0		
			170	0
545+00	42	0		
			7	0
544+95	30 10	0		
			10	0
544+69	10	0		
542+05	10	0		
			9	0
541+82	10 30	0		
			64	0
541+00	12	0		

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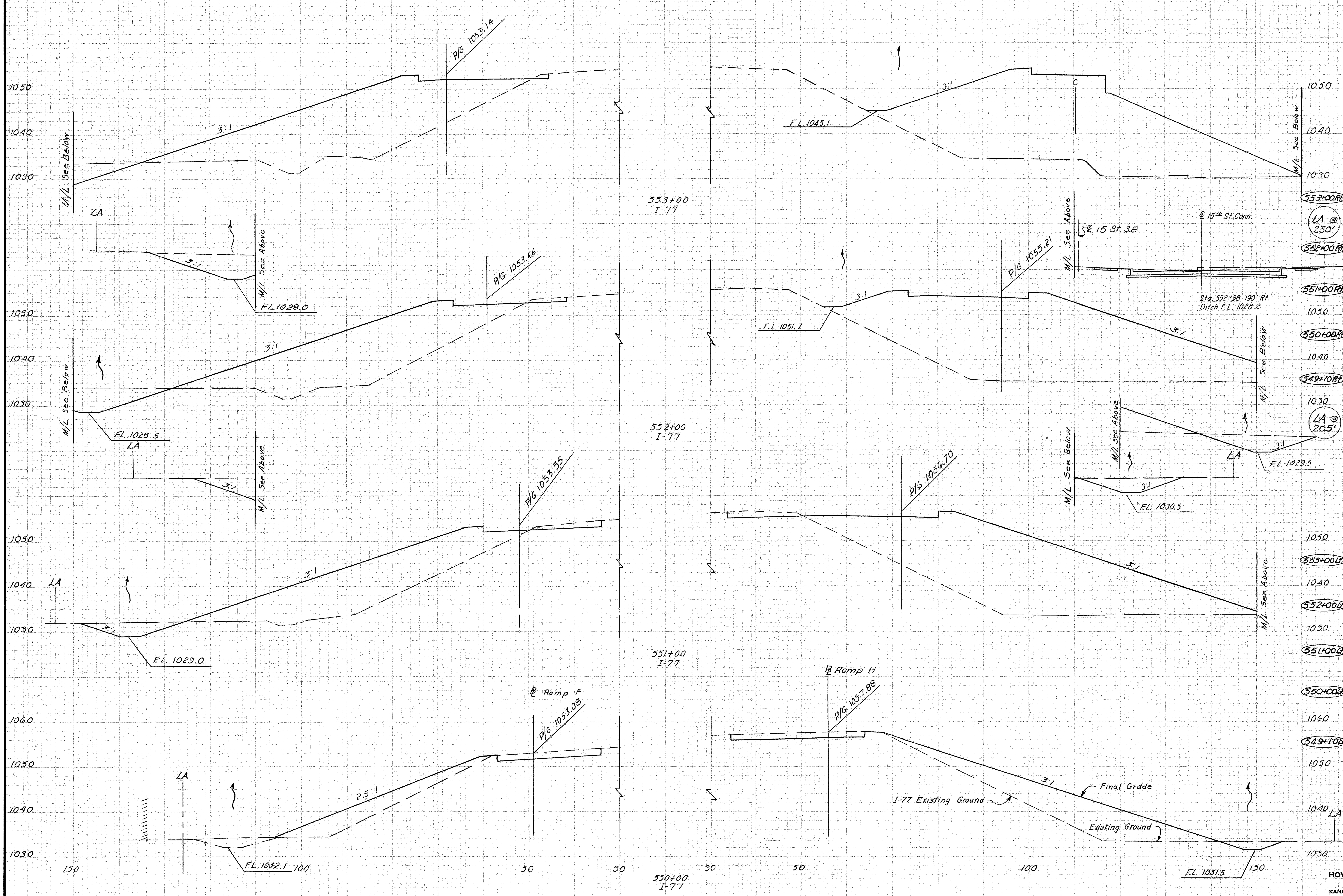
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			55 / 389

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77-9.22



EARTHWORK

Station	End Area EXC.	End Area EMB.	Volume EXC.	Volume EMB.
553+00 Rt.	78	1161		
			256	4408
552+00 Rt.	60	1219		
			230	4190
551+00 Rt.	64	1044		
			222	2500
550+00 Rt.	56	306		
			93	510
549+10 Rt.	0	0		
553+00 Lt.	122	745		
			435	2491
552+00 Lt.	113	600		
			324	2050
551+00 Lt.	62	507		
			178	1176
550+00 Lt.	34	128		
			57	213
549+10 Lt.	0	0		

FINAL SURVEY — NOTE BOOK NO. — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK NO. — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED — BY — DATE

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

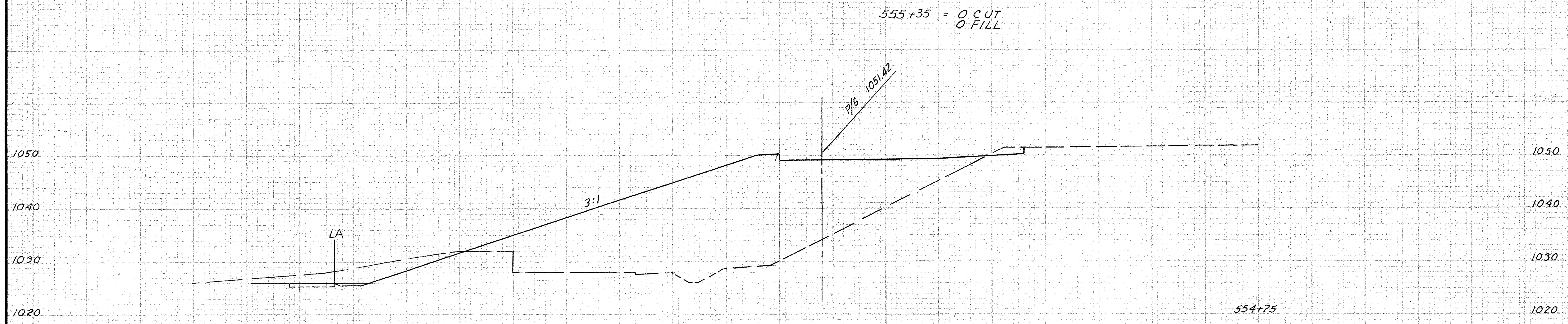
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

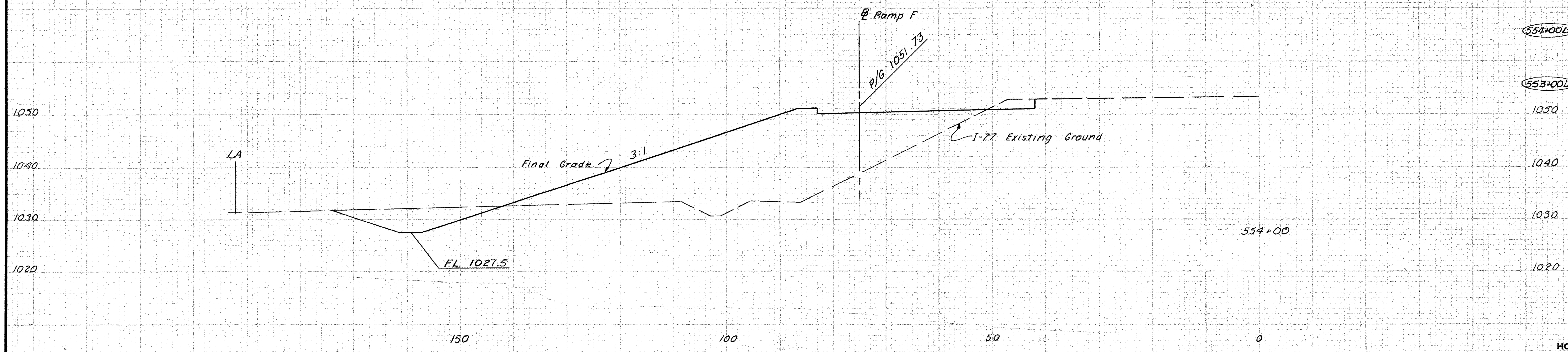
STARK COUNTY
CITY OF CANTON
STA - 30 - 14.12
STA - 77 - 9.22

EARTHWORK				
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
555+35Lt.	0	0		
			14	1437
554+75Lt.	13	1293		
			164	2929
554+00Lt.	105	816		
			420	2891
553+00Lt.	122	745		

FINAL SURVEY — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY — DATE — NOTE BOOK — NO.

ORIGINAL SURVEY — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY — DATE — NOTE BOOK — NO.





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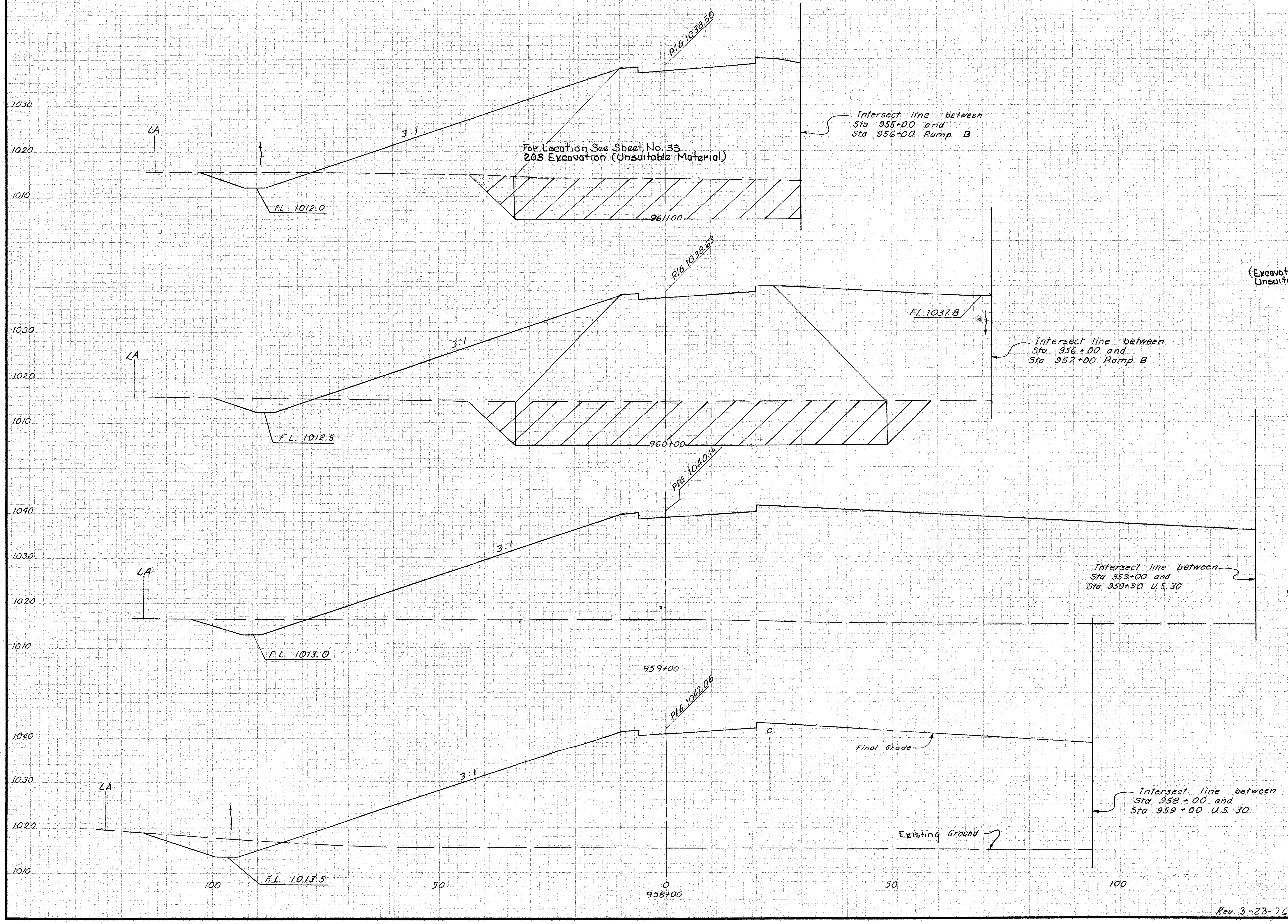
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



EARTHWORK

Station	END AREA EXC.	END AREA EMB.	VOLUME EXC.	VOLUME EMB.
961+63 (955+00 B')	439	—		
			1339	—
961+00 (Excavation Unsuitable Material)	709	—		
			3133	—
960+00	988	—		
961+63 (955+00 "B")	25	1752		
			88	4151
961+00	50	1806		
			170	8463
960+00	42	2764		
			176	12661
959+00	53	4073		
			237	14394
958+00	75	3700		
	(dist 45')	(dist 105')	88	14,047
957+00	30	3524		

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FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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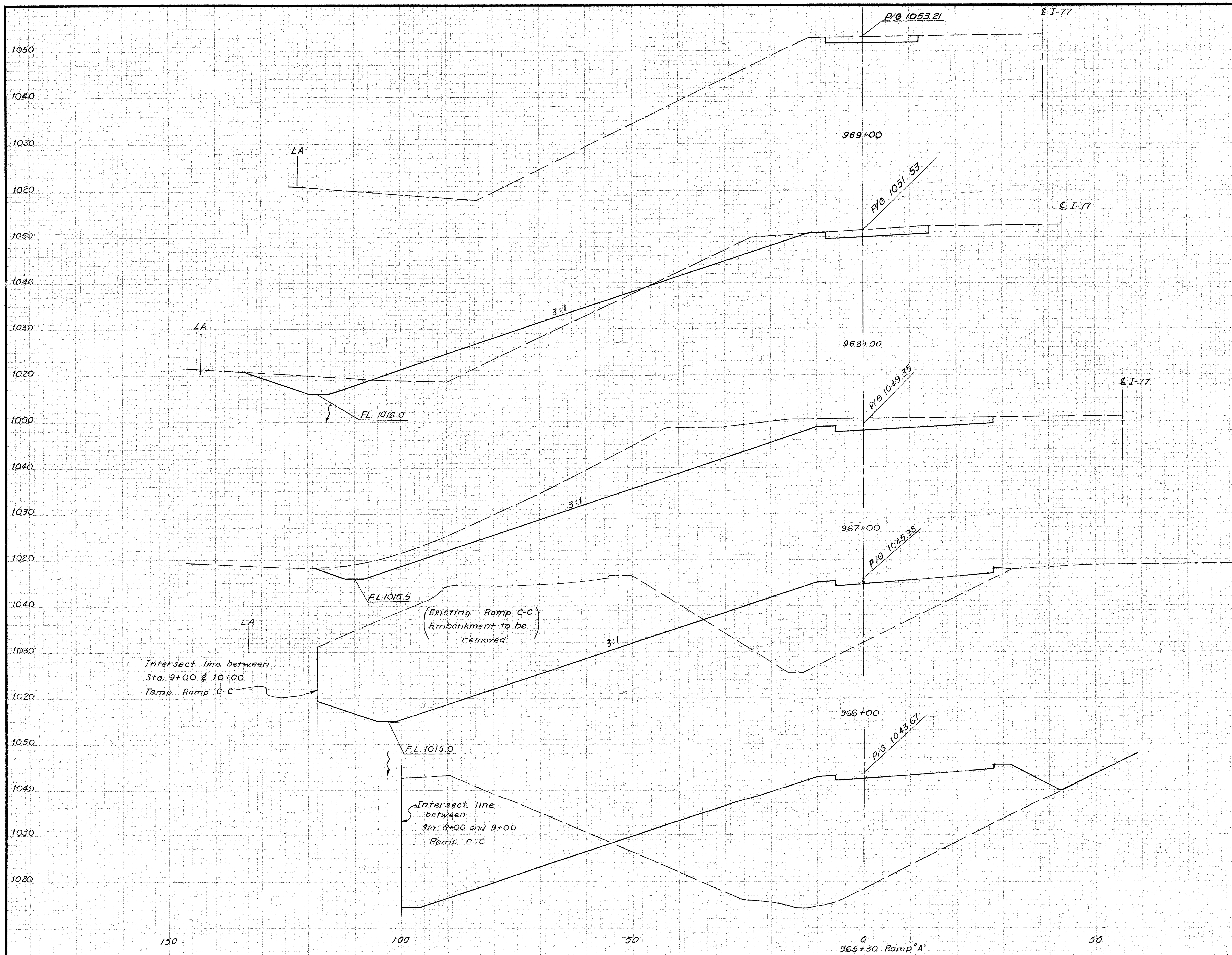
389

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
969+00	30	0		
			328	333
968+00	147	180		
			1494	333
967+00	660	0		
			3959	1180
966+00	1478	637		
			2501	2905
965+30	760	1604		
			1644	3761
964+55 (952+00.8)	424	2544		

FINAL SURVEY	BY	DATE
NOTE BOOK		
NO.		
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

ORIGINAL SURVEY	BY	DATE
NOTE BOOK		
NO.		
SURVEYED	JDB	6-19-62
PLOTTED	CRJ	7-23-68
TEMPLATE	YCP	9-10-70
AREAS	ECB	9-16-70
AREAS CHECKED		

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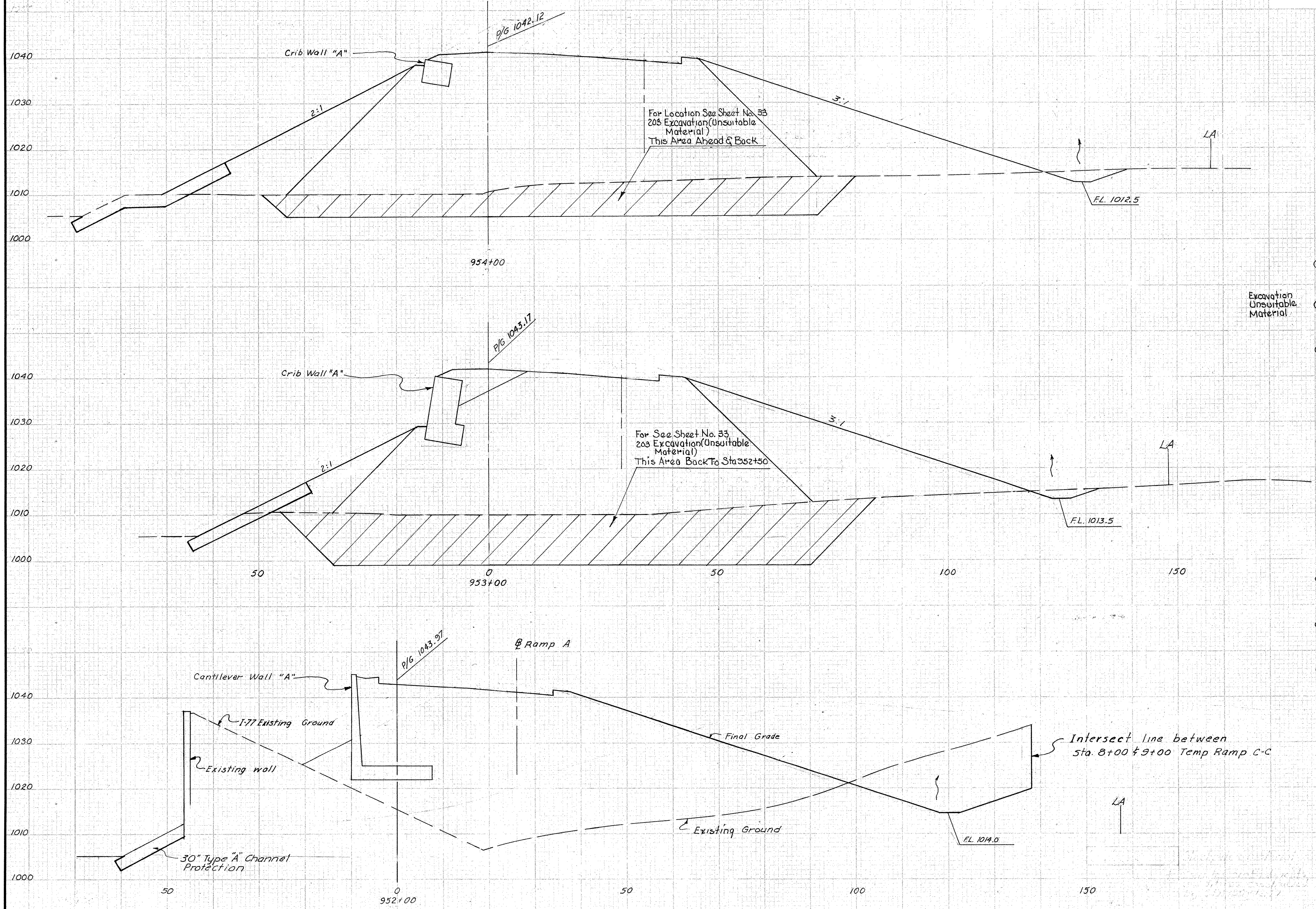
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

RAMP A STA. 966+00 TO STA. 969+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



EARTHWORK

Station	END AREA EXC.	END AREA EMB.	VOLUME EXC.	VOLUME EMB.
954+00	847	–		
			4120	–
953+00	1378	–		
			2552	–
952+50	1378	–		
954+00	32	3486		
			93	12,334
953+00	18	3180		
			819	10,600
952+00	424	2544		

Excavation Unsuitable Material

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED	J.P.A.	6-2-69
	TEMPLATE	Y.C.P. S.B.	7-23-69
	AREAS	E.C.B.	9-30-69
NO.	AREAS CHECKED	G.M.G.	7-27-70

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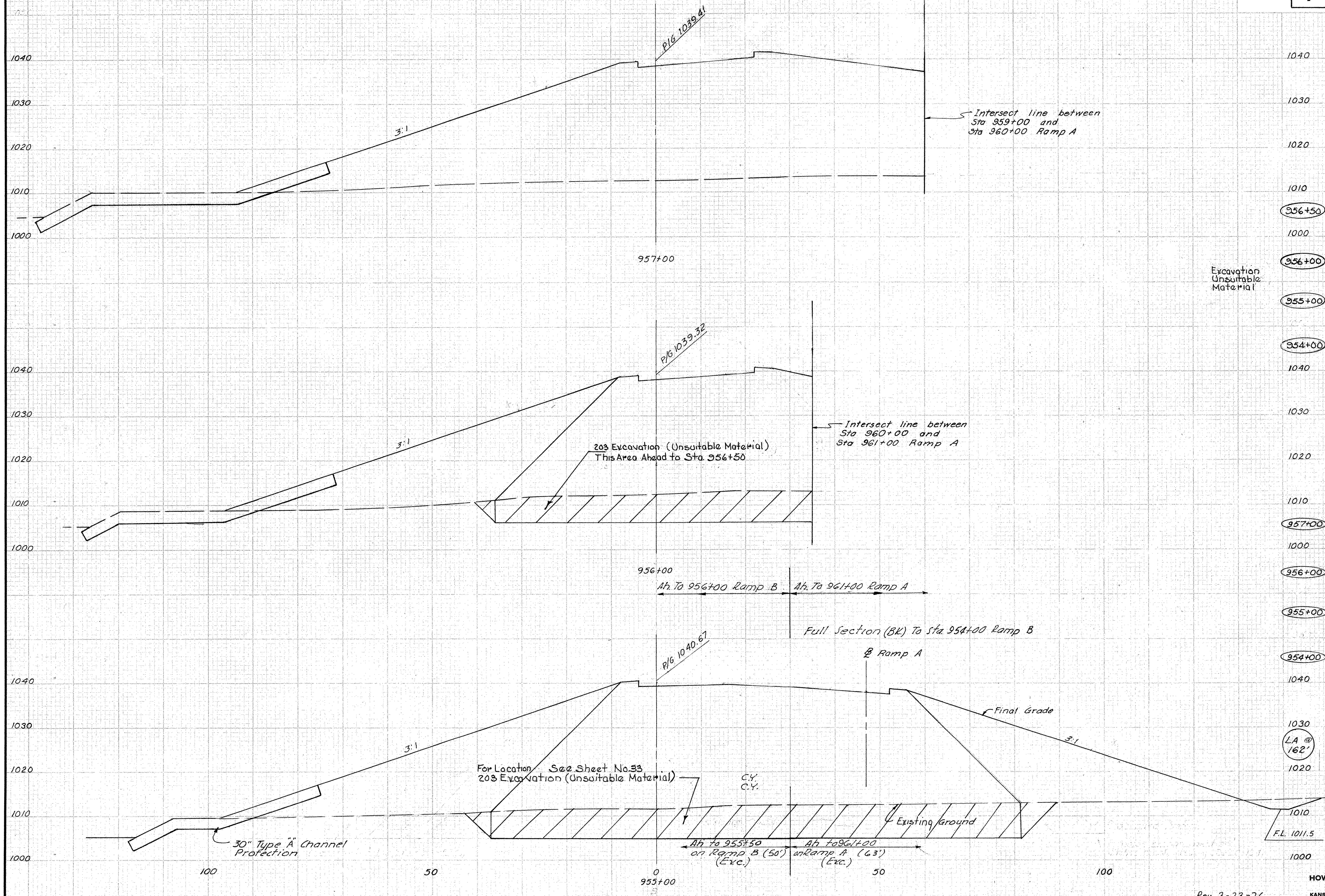
KANSAS CITY CLEVELAND NEW YORK

RAMP B STA. 952+00 RT. TO STA. 954+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

60
389

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



Excavation Unsuitable Material

EARTHWORK				
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
956+50	477	—		
			883	—
956+00	477	—		
			1781	—
955+00	485 924	—		
			3280	—
954+00	847	—		
957+00	0	2922		
			0	9750
956+00	0	2343		
			43	8654
955+00	23	2330 4082		
			102	14015
954+00	32	3486		

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
	TEMPLATE		
NO.	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED	JDB	4-7-67
	PLOTTED	YCP CRJ	7-24-68
	TEMPLATE	E.C.B.	9-30-69
NO.	AREAS	G.M.G.	7-21-70
	AREAS CHECKED		

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RAMP B STA. 955+00 TO STA. 957+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

61
389

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22

EARTHWORK				
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
959+30	0	0		
			0	4965
958+65	0	4125		
			0	6185
958+25	0	4225		
			0	8966
957+65	0	3844		
			0	8144
957+00	—	2922		

FINAL SURVEY — NOTE BOOK / NO. / SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED / BY / DATE

ORIGINAL SURVEY — NOTE BOOK / NO. / SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED / BY / DATE

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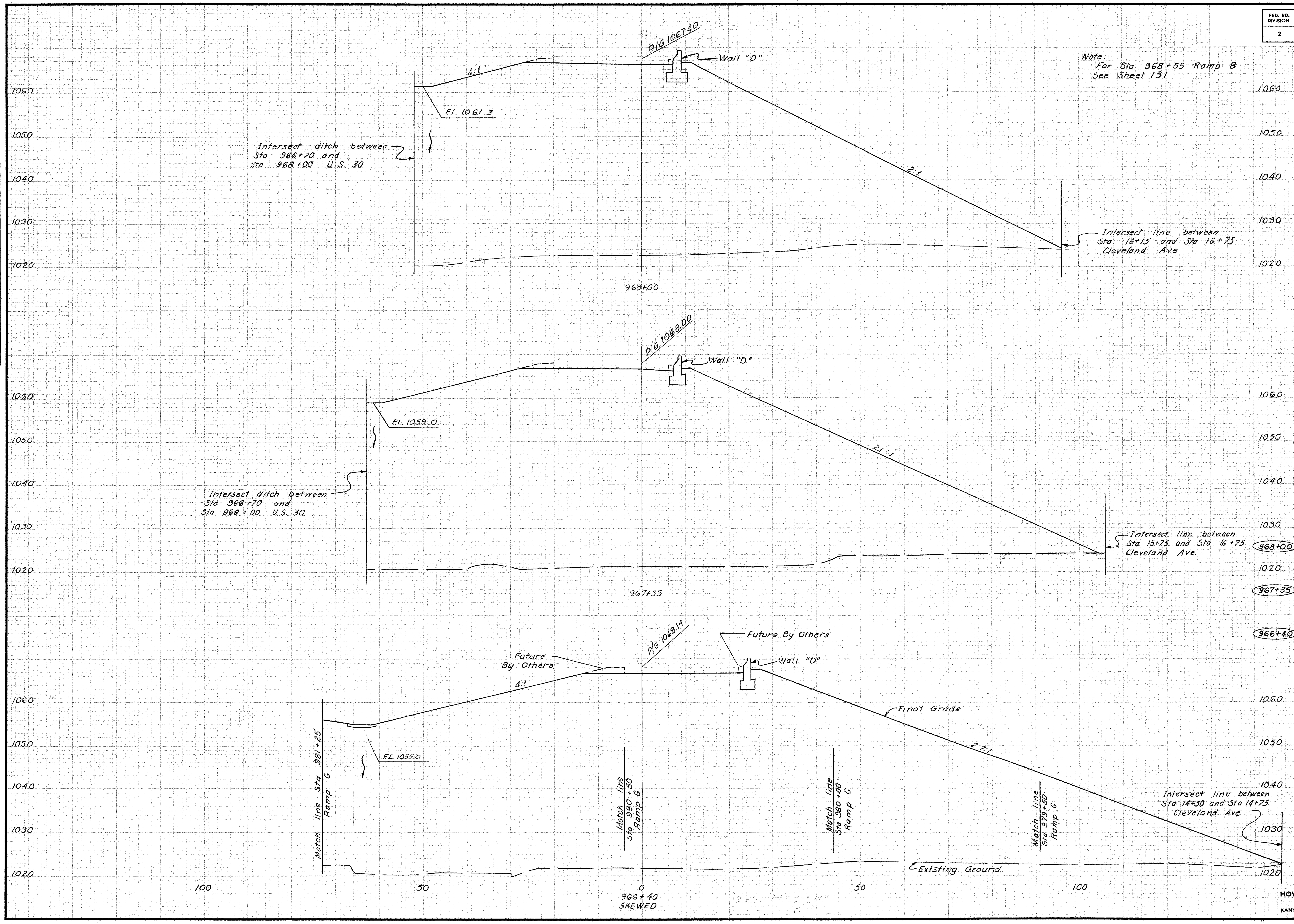
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

RAMP B STA. 957 + 65 TO STA. 958 + 65

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22

EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
0	4537		
		0	11,909
0	5357		
(dist. 100)		0	22,593
0	6843		

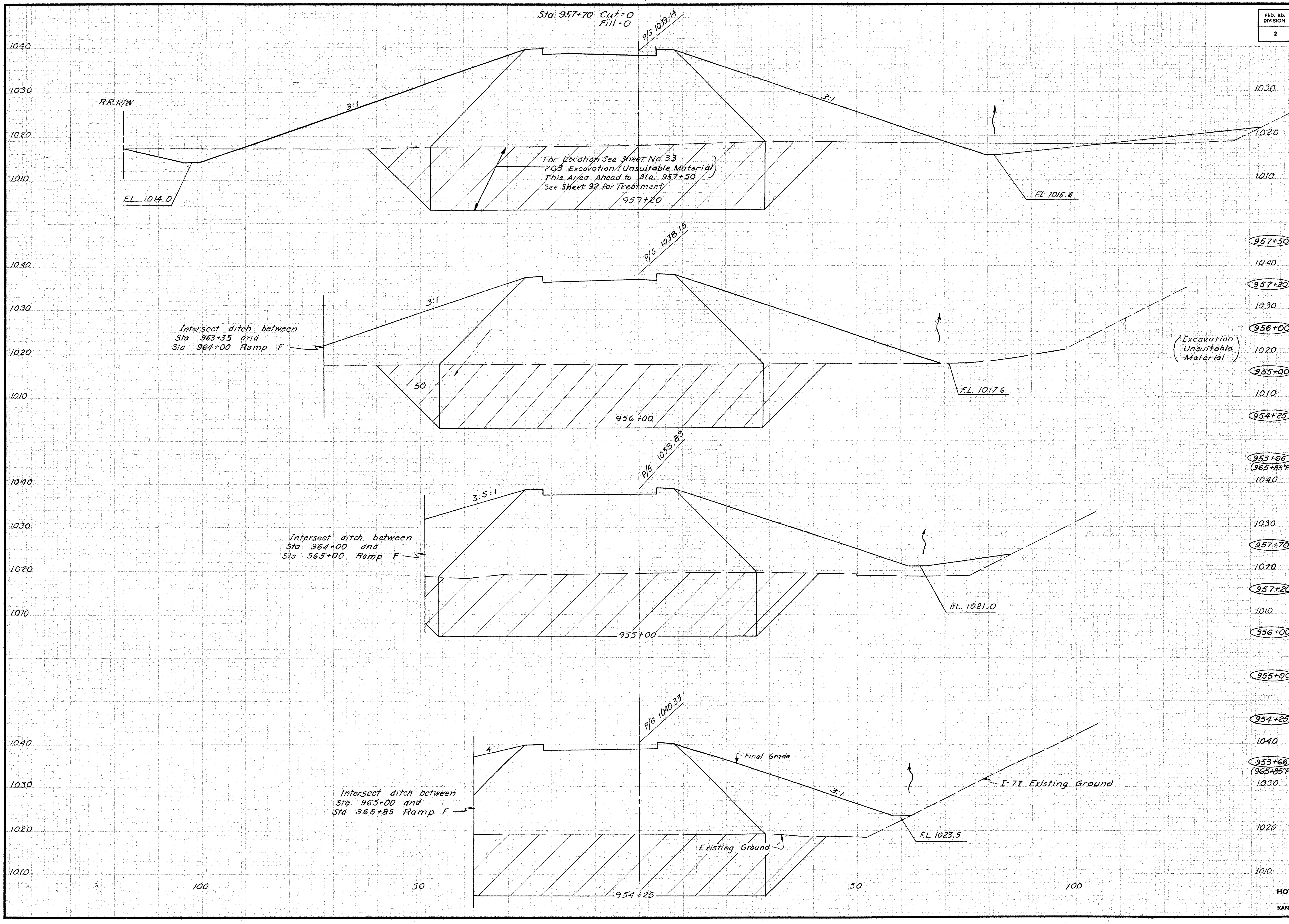


FINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

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

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



EARTHWORK

	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
957+50	1359	0		
			1510	0
957+20	1359	0		
			5898	0
956+00	1295	0		
			4580	0
955+00	1178	0		
			3103	0
954+25	1056	0		
			2616	0
953+66 (965+85"F")	1338	0		
957+70	0	0		
			91	1950
957+20	98	2106		
			218	8800
956+00	0	1854		
			0	6480
955+00	0	1645		
			0	4440
954+25	0	1552		
			0	3351
953+66 (965+85"F")	0	1515		

FINAL SURVEY
NOTE BOOK	NO.	SURVEYED	PLOTTED	TEMPLATE	AREAS	AREAS CHECKED	BY	DATE

ORIGINAL SURVEY
	BY	DATE
SURVEYED	J.D.B.	7-6-62
PLOTTED	C.P.T.	7-26-68
TEMPLATE	E.C.B.	9-30-69
AREAS	G.M.G.	7-2-70
AREAS CHECKED		
NOTE BOOK		
NO.		

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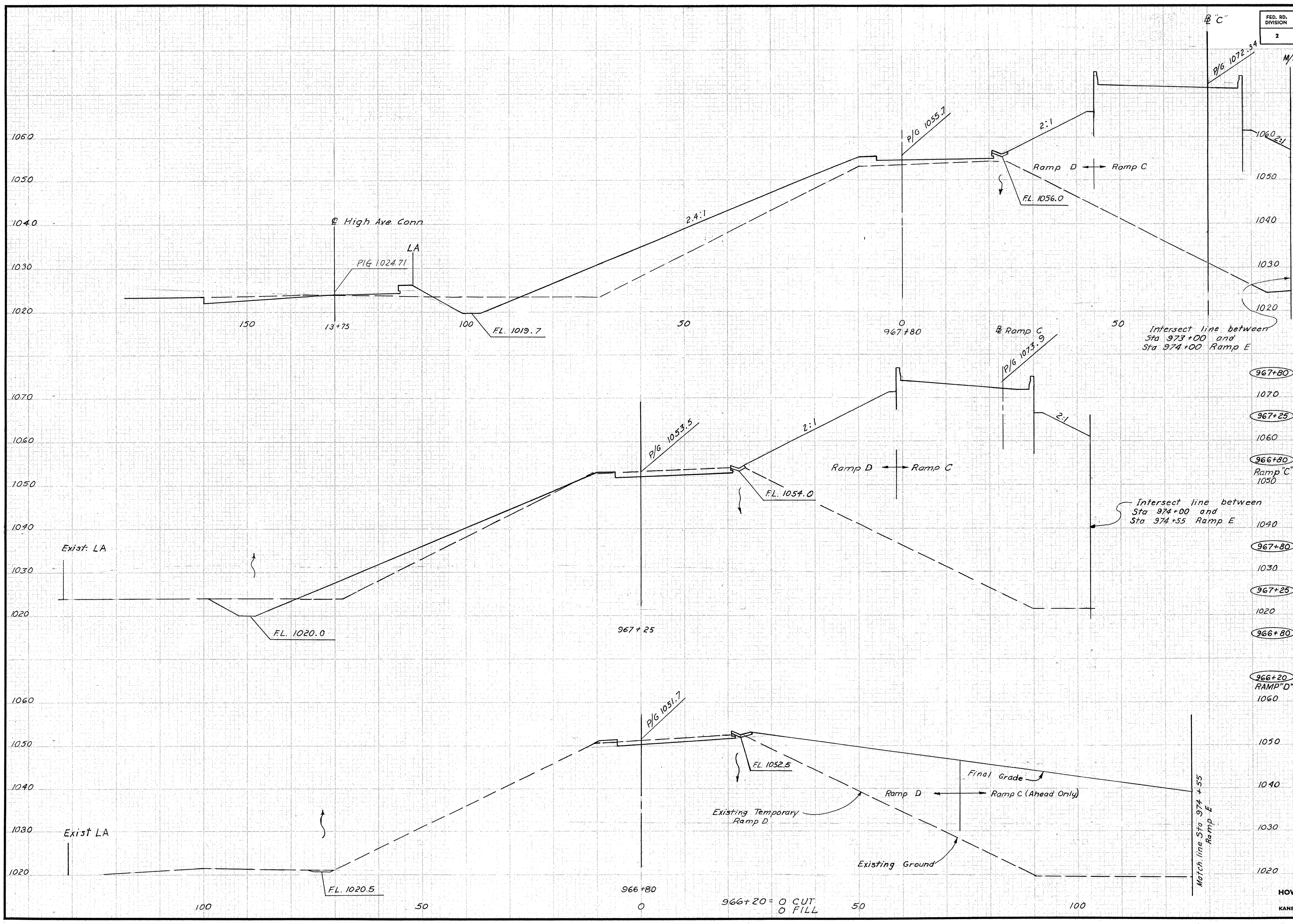
KANSAS CITY CLEVELAND NEW YORK

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77-9.22



EARTHWORK

	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
967+80	0	1626		
			0	3607
967+25	0	1915		
	(Dist. 68')		0	3896
966+80 Ramp "C"	0	1179		
967+80	60	647		
			143	1300
967+25	80	629		
			96	921
966+80	35	476 1655		
			39	1839
966+20 RAMP "D"	0	0		

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE	CRJ	
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

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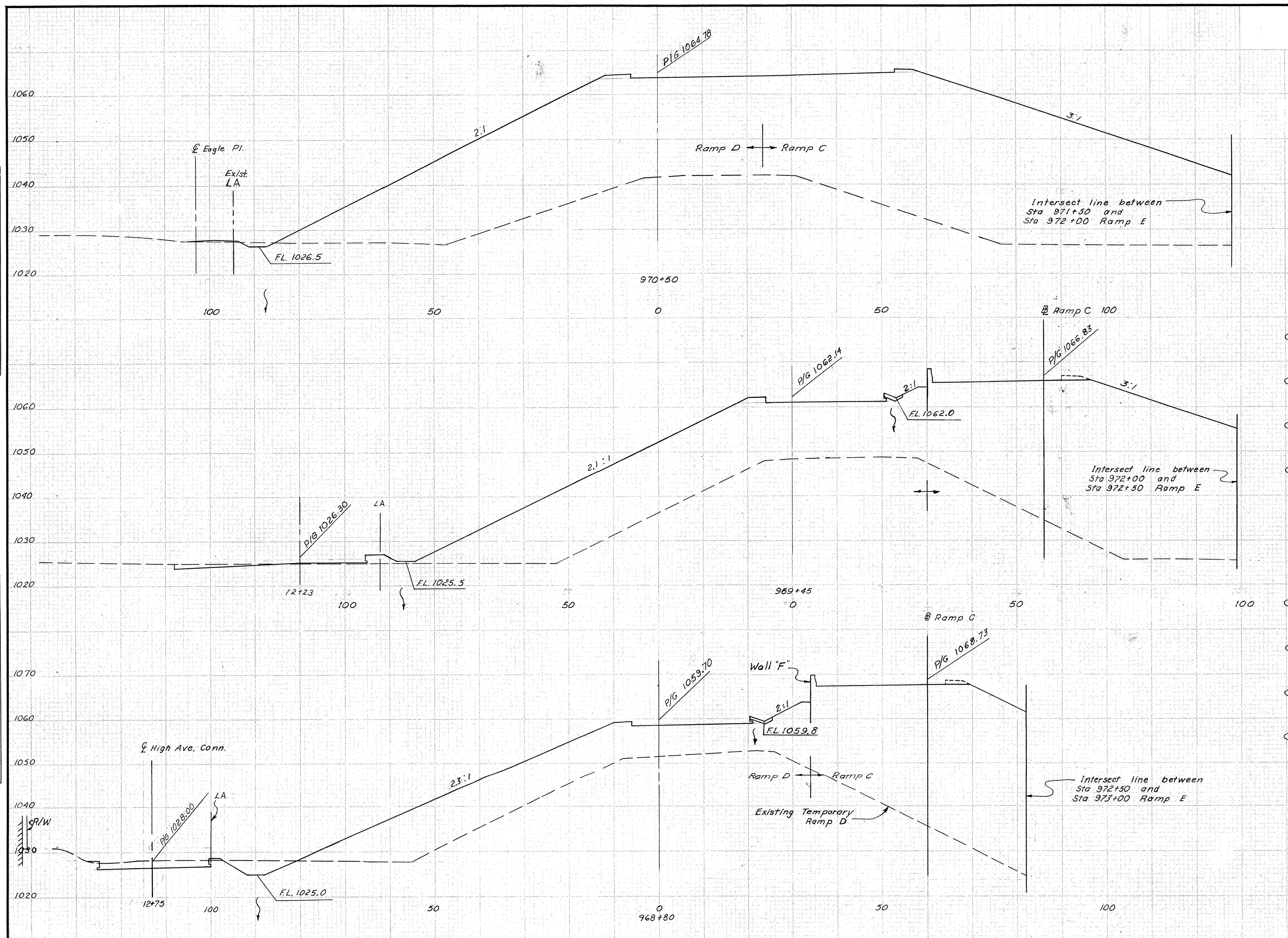
KANSAS CITY CLEVELAND NEW YORK

RAMP D STA. 966+80 TO STA. 967+80

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77-9.22



	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
970+50	0	2767		
			0	9755
969+45	0	2250		
			0	4446
968+80	0	1444		
			0	5685
967+80 RAMP "C"	0	1626		
970+50	6	1986		
			27	6743
969+45	8	1482		
			114	2944
968+80	87	964		
			272	2983
967+80 RAMP "D"	60	647		

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED	JDB	7-18-61
TEMPLATE	YCP CAJ	4-21-62
AREAS	ECB	10-09-62
AREAS CHECKED	GMG	7-22-62
NOTE BOOK NO.		

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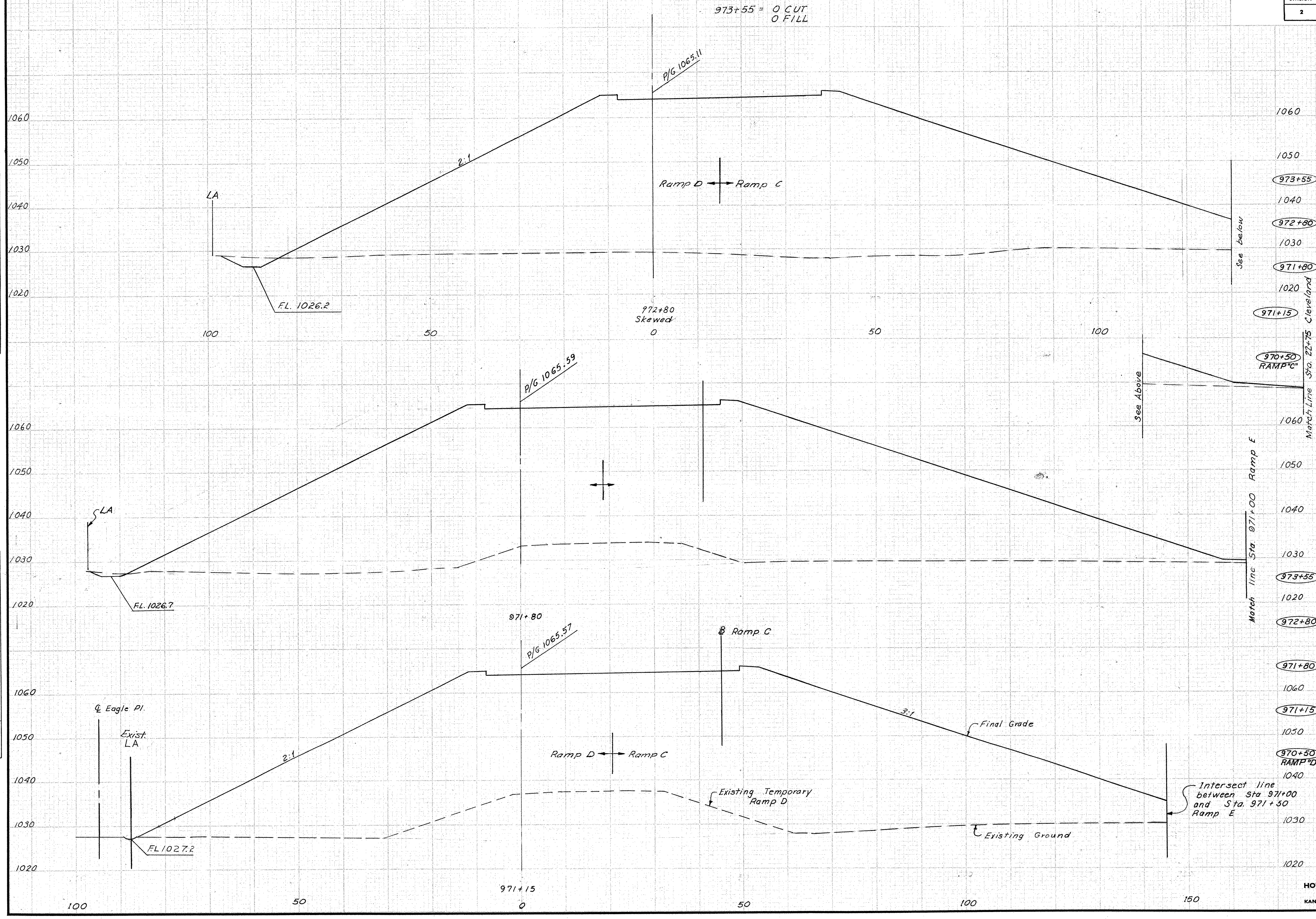
RAMP D STA. 968+80 TO STA. 970+50

FED. RD. DIVISION	STATE	PROJECT		66 / 389
2	OHIO			

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



Station	End Area Exc.	End Area Emb.	Volume Exc.	Volume Emb.
973+55	0	0		
			0	4160
972+80	0	2995		
			0	11,096
971+80	0	2997		
			0	7108
971+15	0	2908		
			0	6831
970+50 RAMP "C"	0	2767		
973+55	0	0		
			32	3093
972+80	23	2227		
			54	8581
971+80	6	2407		
			7	5591
971+15	0	2238		
			7	5084
970+50 RAMP "D"	6	1986		

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KANSAS CITY CLEVELAND NEW YORK

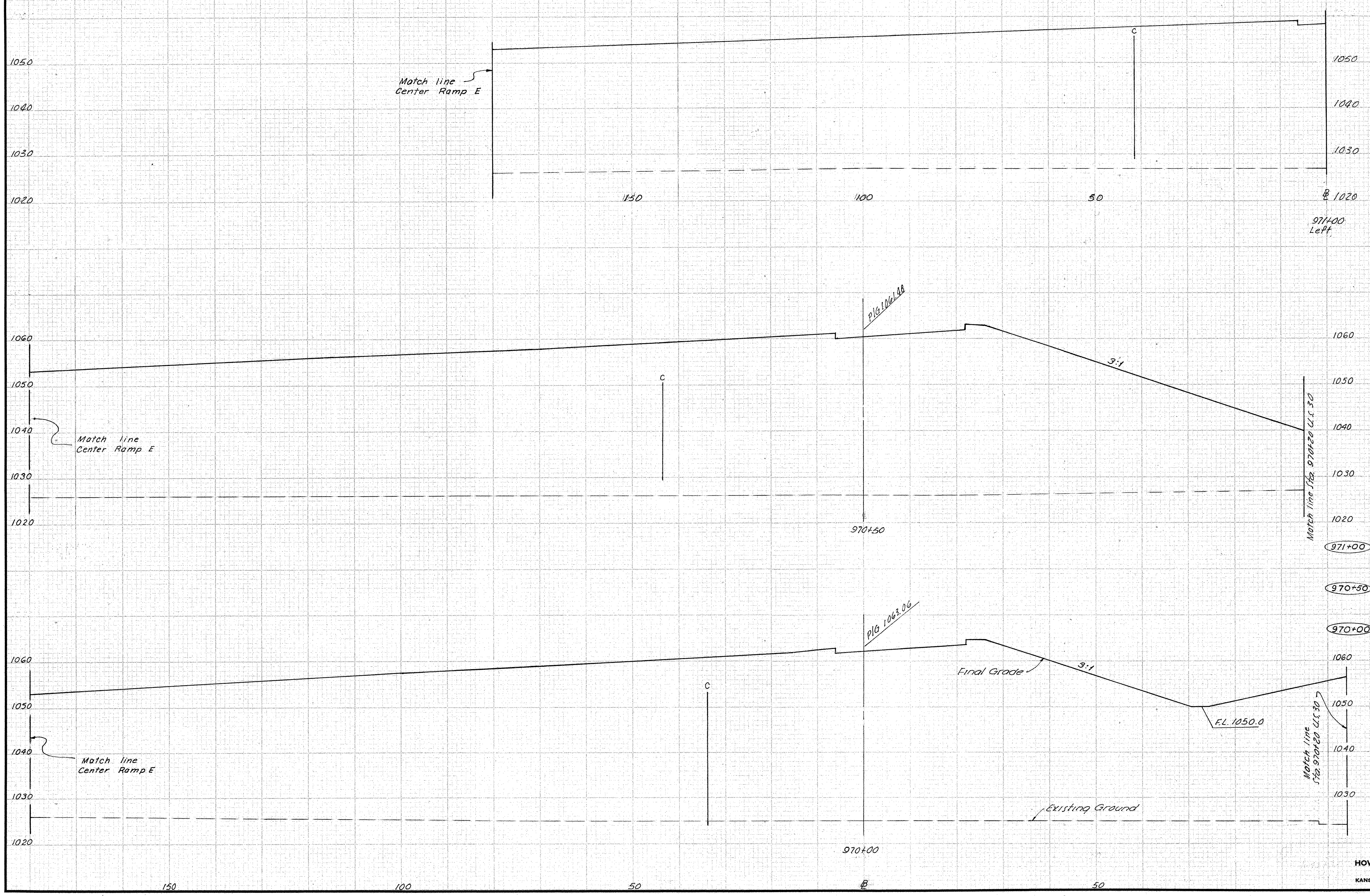
FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED — NOTE BOOK, NO. — BY, DATE

ORIGINAL SURVEY — SURVEYED YCP 7-12-67; PLOTTED JDB 8-20-68; TEMPLATE CRJ; AREAS ECB; AREAS CHECKED GMG — NOTE BOOK, NO.

RAMP D STA. 971+15 TO STA. 972+80

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA - 30 - 14.12
STA - 77 - 9.22



EARTHWORK				
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
971+00	0	7994		
(Dist. 36')			0	10,825
970+50	0	8243		
(Dist. 40')			0	12,984
970+00	0	9285		

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED	JPB	6-19-62
	TEMPLATE	CRJ	7-14-62
	AREAS	E.C.B.	10-4-62
	AREAS CHECKED	G.M.G.	7-22-70

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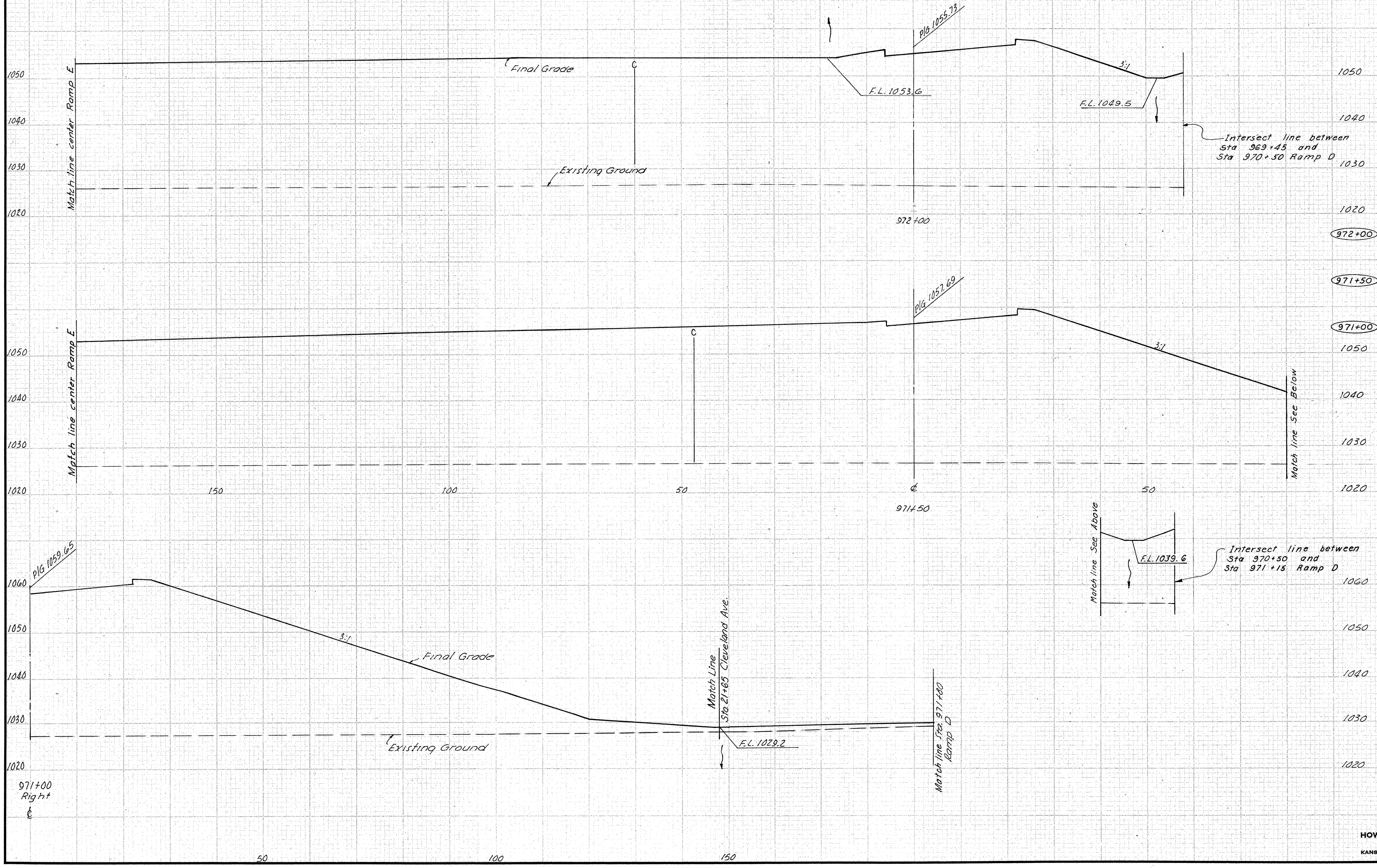
KANSAS CITY CLEVELAND NEW YORK

RAMP E STA. 970 + 00 TO STA. 971 + 00 LT.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA - 30-14.12
STA - 77- 9.22

	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
972+00	0	6620		
(Dist. 37')			0	9708
971+50	0	7548		
(Dist. 38')			0	10,937
971+00	0	7994		



FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO. — BY — DATE

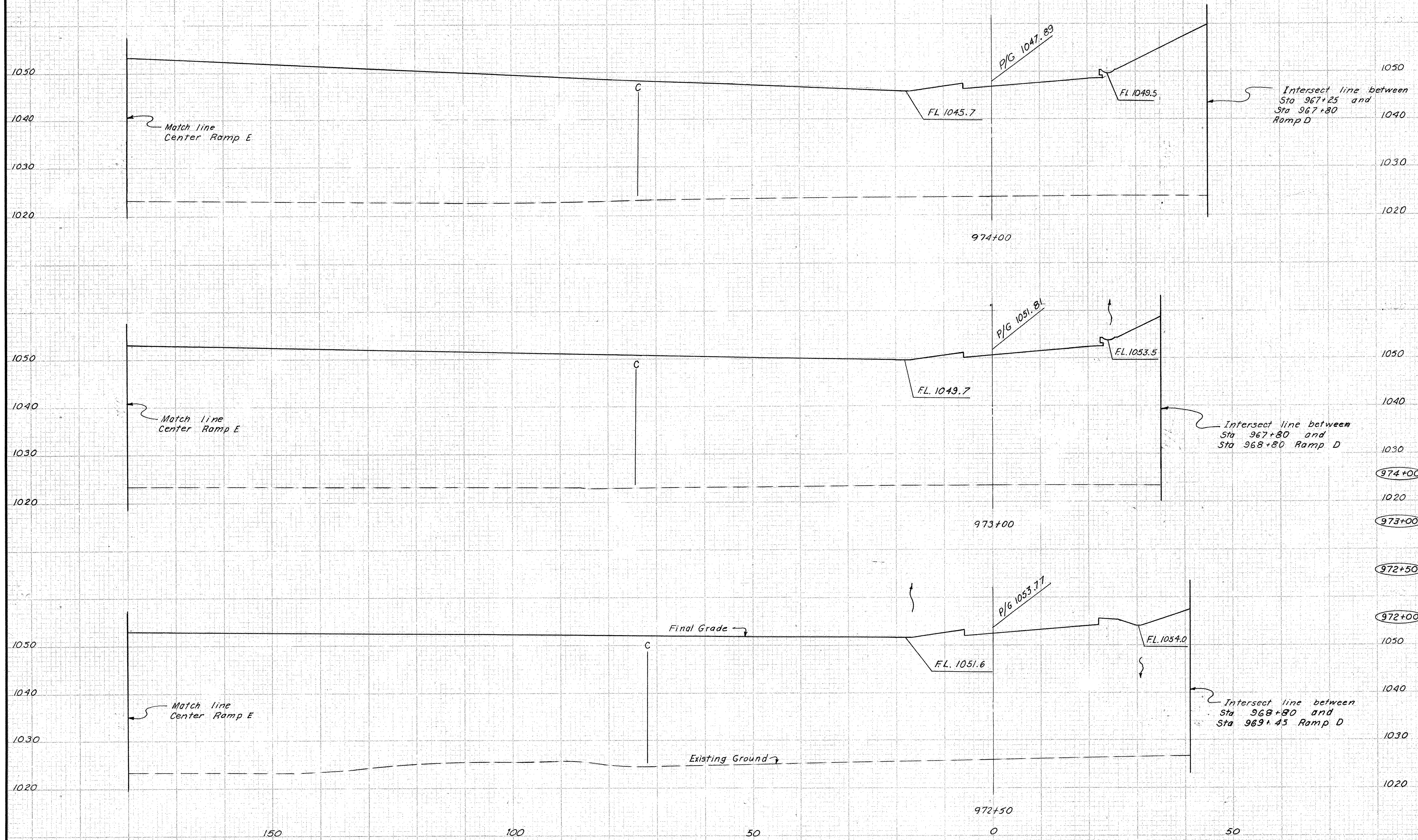
ORIGINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO. — BY — DATE

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

RAMP E STA. 971 + 00 RT. TO STA. 972 + 00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA - 30 - 14.12
STA - 77 - 9.22



EARTHWORK				
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
974+00	0	5930		
(Dist. 58')			0	12,915
973+00	0	6094		
(Dist. 28')			0	6339
972+50	0	6131		
(Dist. 33')			0	7792
972+00	0	6620		

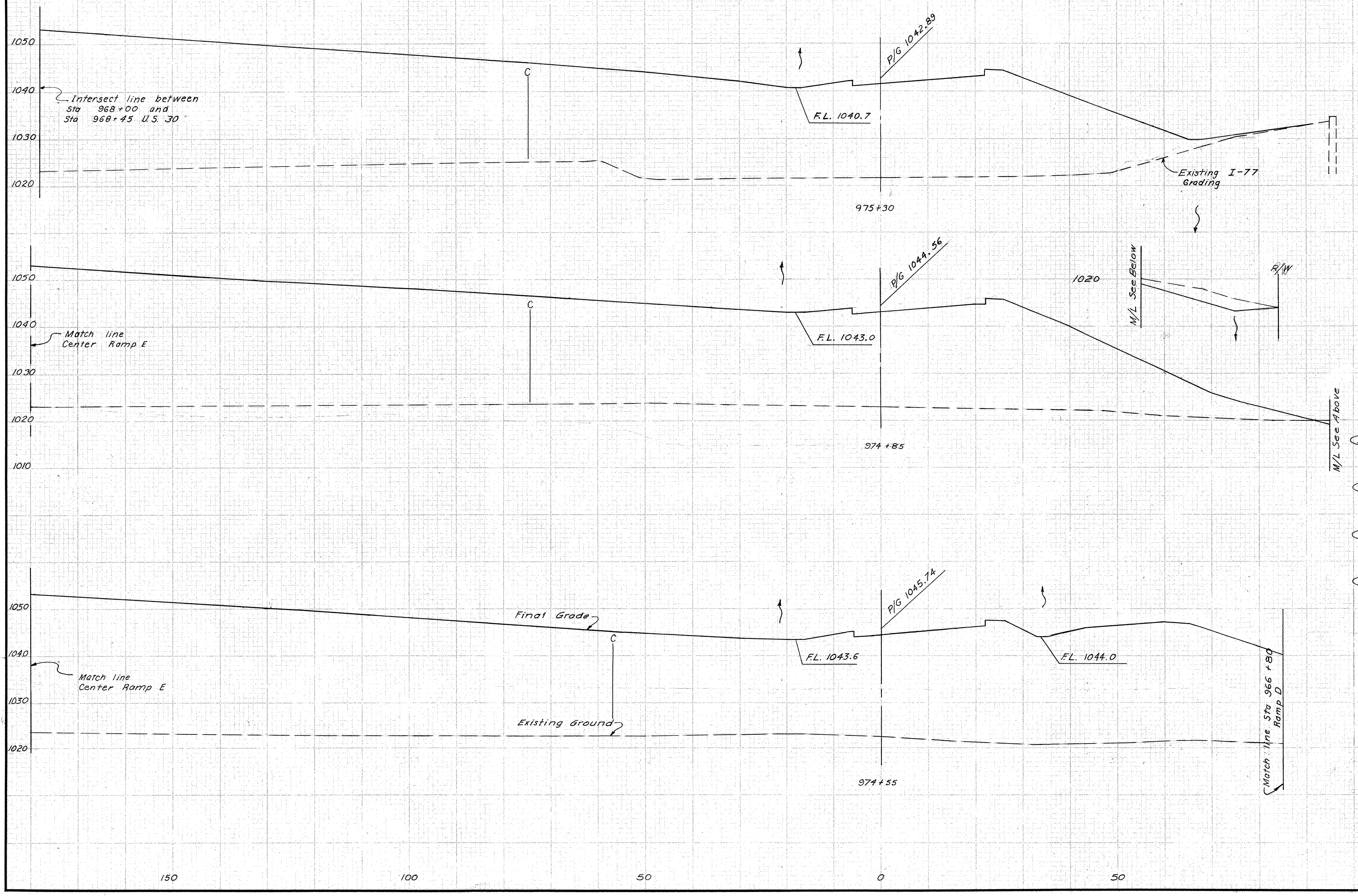
FINAL SURVEY — NOTE BOOK NO. — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK NO. — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED — BY — DATE

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

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA - 30 - 14.12
STA - 77 - 9.22



Station	END AREA EXC.	END AREA EMB.	VOLUME EXC.	VOLUME EMB.
975+30	0	5243		
	(Dist. 65')	(Dist. 30')	70	6025
974+85	58'	5602		
	(Dist. 45')	(Dist. 20')	48	4501
974+55	0	6551		
		(Dist. 35')	0	8090
974+00	0	5930		

FINAL SURVEY — NOTE BOOK / NO. / SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED / BY / DATE

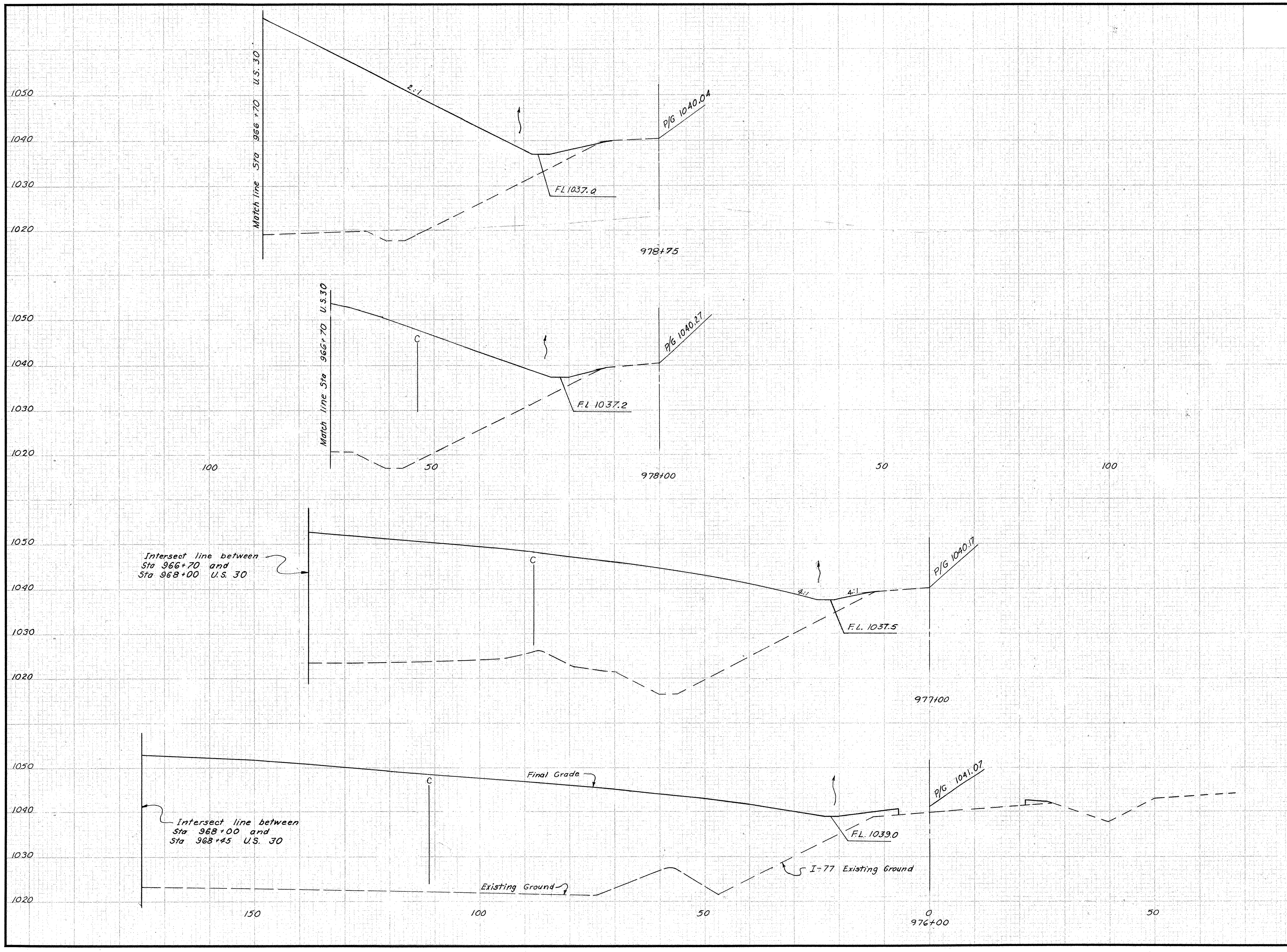
ORIGINAL SURVEY — NOTE BOOK / NO. / SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED / BY / DATE

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

RAMP E STA. 974+55 TO STA. 975+30

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



EARTHWORK				
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
978+75	0	1838		
	(Dist. 72')		0	3940
978+00	0	1117		
	(Dist. 94')		0	6603
977+00	0	2676		
	(Dist. 77')		0	8982
976+00	0	3623		
	(Dist. 45')		0	7388
975+30	0	5243		

FINAL SURVEY

NOTE BOOK / NO.		BY	DATE
	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY

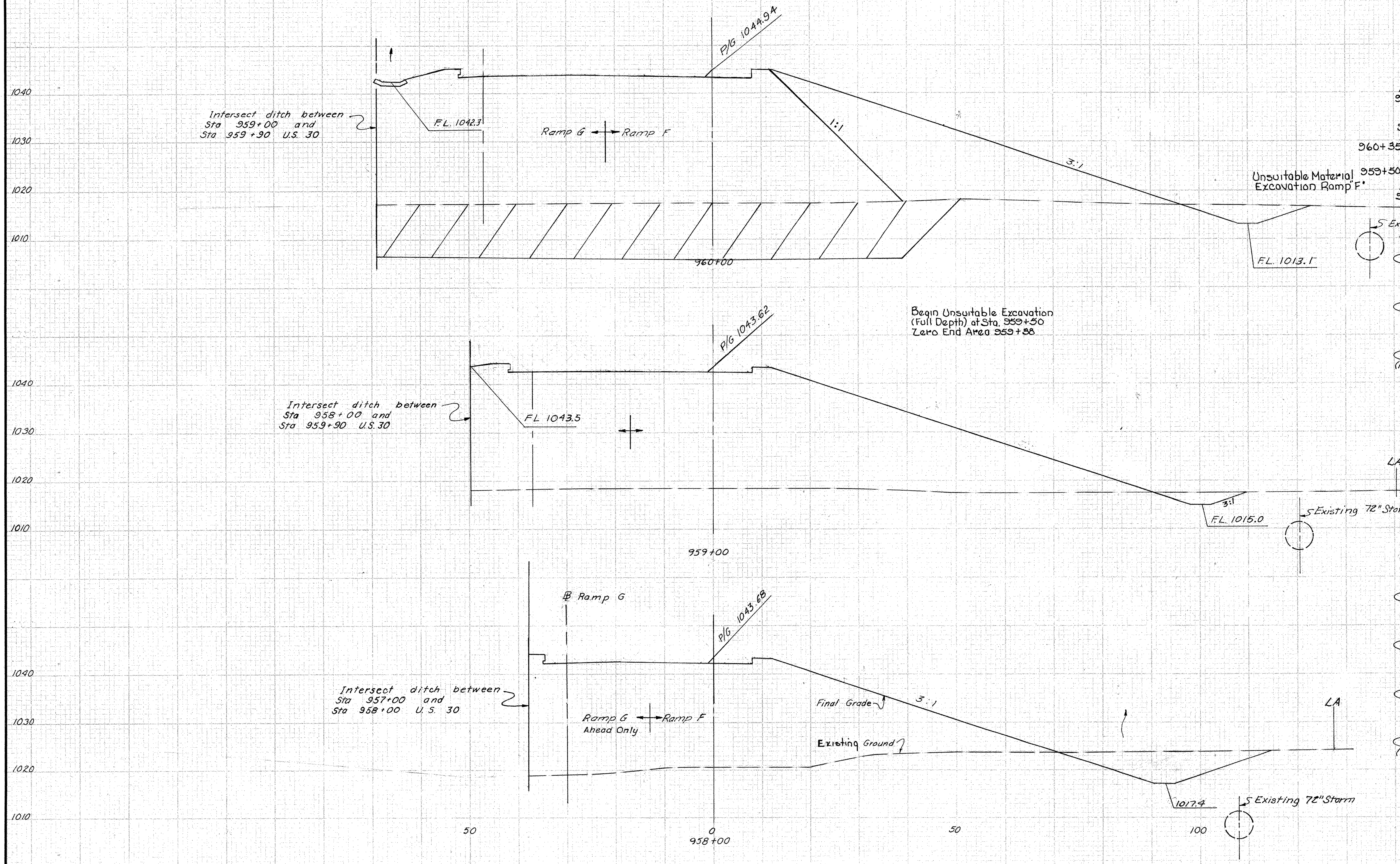
NOTE BOOK / NO.		BY	DATE
	SURVEYED	J.D.B.	6-6-67
	PLOTTED	YCP CRJ	8-20-68
	TEMPLATE	E.C.B.	10-1-69
	AREAS	G.M.G.	7-22-70
	AREAS CHECKED		

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

RAMP E STA. 976+00 TO STA. 978+75

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
961+15	0	0		
			156	0
961+05	1042	0		
			2702	0
960+35	1042	0		
			3718	0
959+50 (LA @ 155')	1320	0		
			293	0
959+38	0	0		
		TOTAL	6869	0
960+00	0	1237		
			0	3781
959+00	0	805		
			0	2578
958+00 (RAMP "G")	0	587		
960+00	60	2020		
			170	6861
959+00	32	1685		
			352	5287
958+00	158	1170 1757		
	(Dist. 64')	(Dist 84')	300	7240
957+00 (RAMP "F")	95	2897		

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED	JDB	6-5-67
PLOTTED	CDT	7-7-69
TEMPLATE	FCB	9-30-69
AREAS	GMG	7-16-70
AREAS CHECKED		
NOTE BOOK		
NO.		

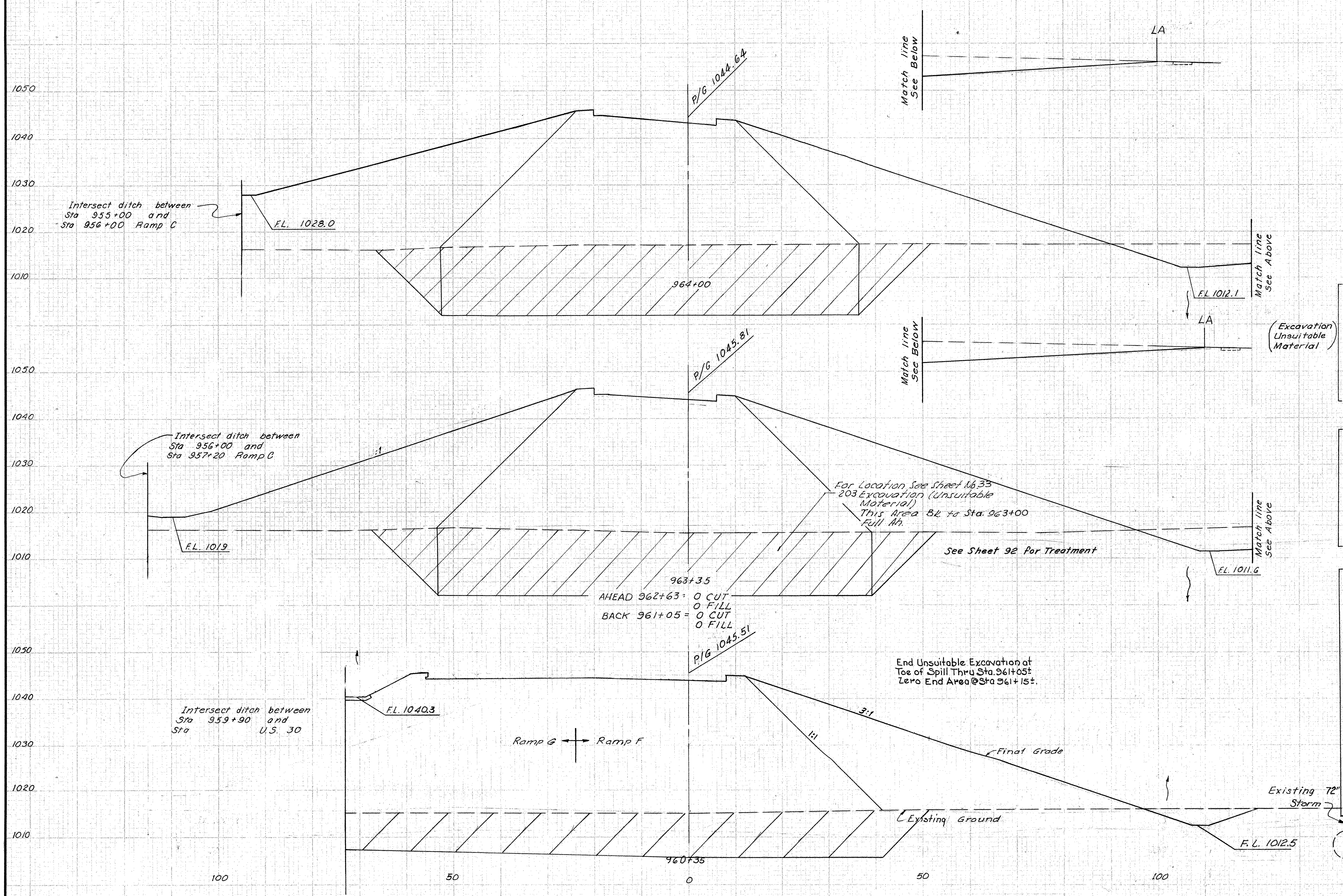
Rev. 3-23-76

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

RAMP F STA. 958+00 TO STA. 960+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



Station	END AREA EXC.	END AREA EMB.	VOLUME EXC.	VOLUME EMB.
(Excavation Unsuitable Material)				
964+00	1555	—		
			3639	—
963+35	1468	—		
			1903	—
963+00	1468	—		
961+05	0	0		
			0	1826
960+35	0	1409		
			0	1715
960+00 (RAMP "G")	0	1237		
964+00	246	3419		
			574	8475
963+35	231	3622		
			308	4829
962+63	0	0		
961+05	0	0		
			62	2991
960+35	48	2307		
			70	2805
LA @ 160'				
960+00 (RAMP "F")	60	2020		

Rev. 3-23-76

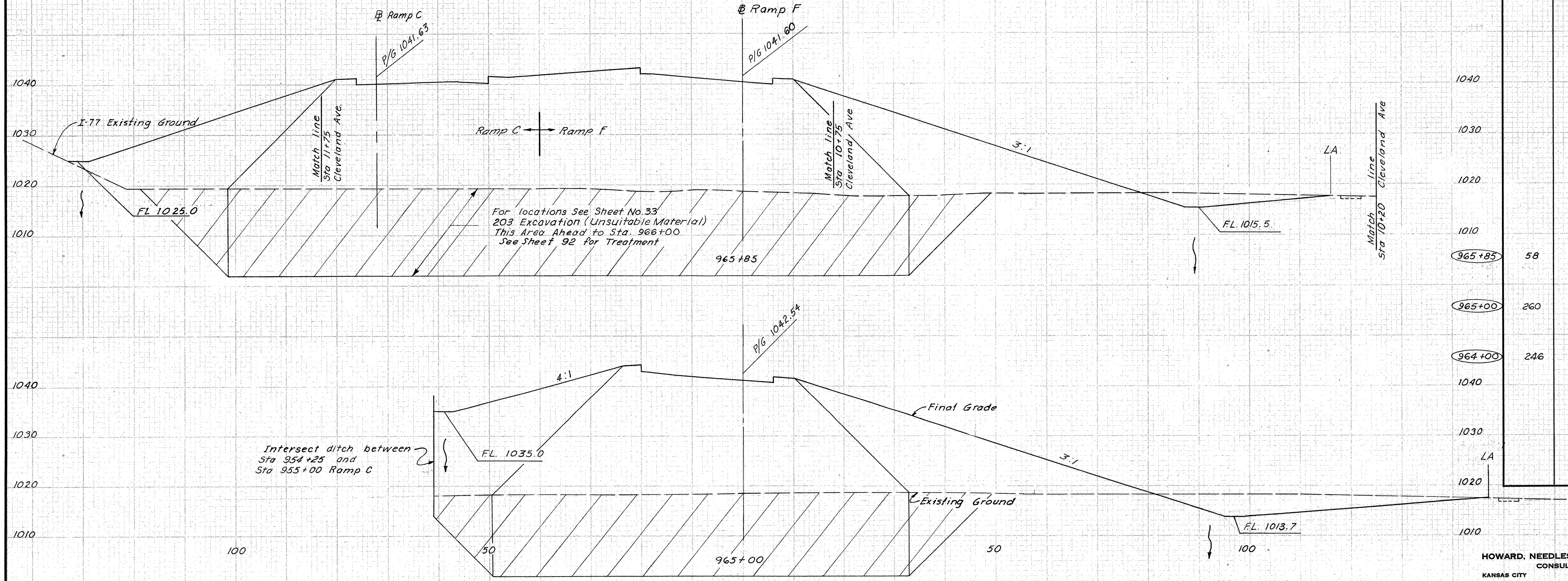
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22

(Excavation Unsuitable Material)

	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
966+00	2893	—		
			1607	—
965+85	2893 1341	—		
			4642	—
965+00	1608	—		
			5857	—
964+00	1555	—		
965+85	58	2034		
			501	6990
965+00	260	2407		
			937	10,789
964+00	246	3419		



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

RAMP F STA. 965+00 TO STA. 965+85

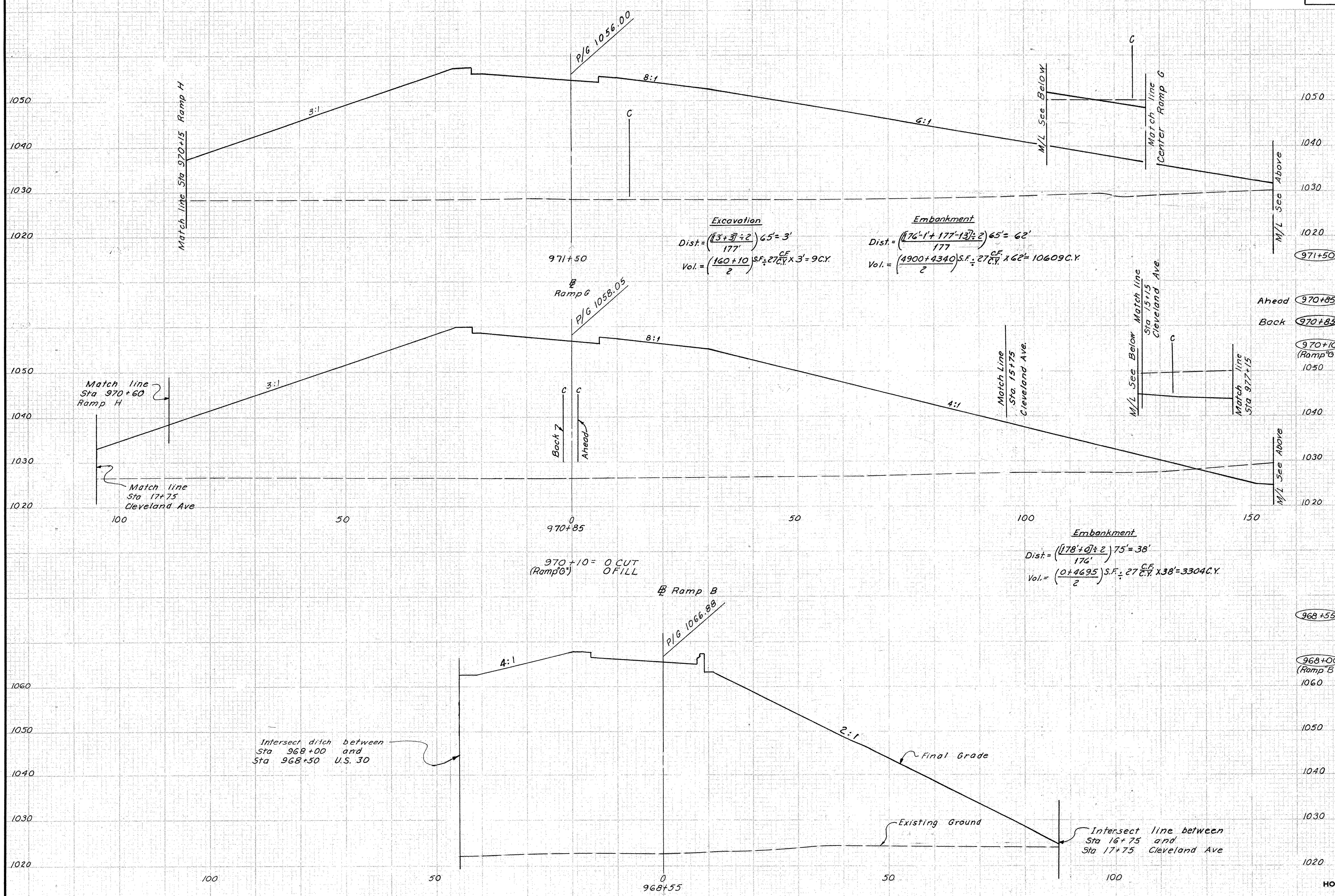
FINAL SURVEY — NOTE BOOK NO. ___ SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK NO. ___ SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY — DATE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

75 / 389

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
971+50	10	4340		
			9	10609
Ahead 970+85	160	4900		
Back 970+85	—	4695	—	3304
970+10 (Ramp "G")	—	0		
968+55	0	3930		
			0	8624
968+00 (Ramp "B")	0	4537		

Rev. M.G.B. 5-19-75
Ckd. J.N.S. 5-19-75

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

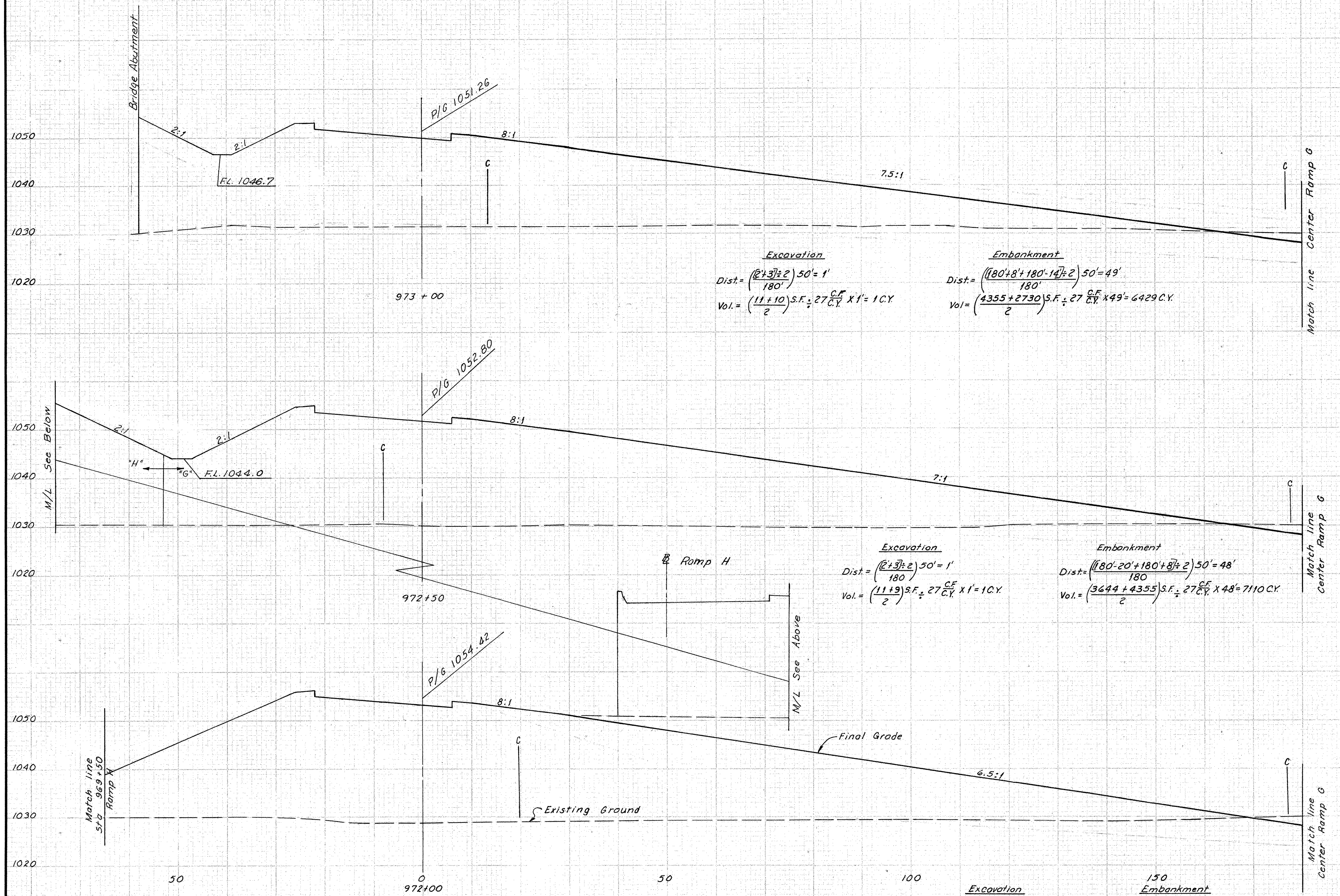
FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED	J.D.B.	7-7-62
PLOTTED	J.D.B.	7-27-62
TEMPLATE	C.C.B.	10-7-62
AREAS	G.M.G.	7-27-62
AREAS CHECKED		
NOTE BOOK NO.		

RAMP G STA. 970+85 TO STA. 971+50
RAMP B STA. 968+55

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



973+00

Excavation

$$Dist. = \left(\frac{(2+3)\div 2}{180'}\right)50' = 1'$$

$$Vol. = \left(\frac{11+10}{2}\right)S.F. \div 27\frac{C.F.}{C.Y.} \times 1' = 1\,C.Y.$$

Embankment

$$Dist. = \left(\frac{(180'+8'+180'-14')\div 2}{180'}\right)50' = 49'$$

$$Vol. = \left(\frac{4355+2730}{2}\right)S.F. \div 27\frac{C.F.}{C.Y.} \times 49' = 6429\,C.Y.$$

972+50

Excavation

$$Dist. = \left(\frac{(2+3)\div 2}{180}\right)50' = 1'$$

$$Vol. = \left(\frac{11+9}{2}\right)S.F. \div 27\frac{C.F.}{C.Y.} \times 1' = 1\,C.Y.$$

Embankment

$$Dist. = \left(\frac{(180'-20'+180'+8')\div 2}{180}\right)50' = 48'$$

$$Vol. = \left(\frac{3644+4355}{2}\right)S.F. \div 27\frac{C.F.}{C.Y.} \times 48' = 7110\,C.Y.$$

972+00

Excavation

$$Dist. = \left(\frac{(3'+3')\div 2}{(180'+177')\div 2}\right)50' = 1'$$

$$Vol. = \left(\frac{10+9}{2}\right)S.F. \div 27\frac{C.F.}{C.Y.} \times 1' = 1\,C.Y.$$

Embankment

$$Dist. = \left(\frac{(177'+13'+180'-20')\div 2}{(177'+180')\div 2}\right)50' = 45'$$

$$Vol. = \left(\frac{4340+3644}{2}\right)S.F. \div 27\frac{C.F.}{C.Y.} \times 45' = 6653\,C.Y.$$

EARTHWORK

Station	End Area EXC.	End Area EMB.	Volume EXC.	Volume EMB.
973+00	10	2730		
			1	6429
972+50	11	4355		
			1	7110
972+00	9	3644		
			1	6653
971+50	10	4340		

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED	JDB	7-6-62
PLOTTED	C.F.B.	1-31-62
TEMPLATE	E.C.B.	10-1-69
AREAS	G.M.G.	7-27-70
AREAS CHECKED		
NOTE BOOK		
NO.		

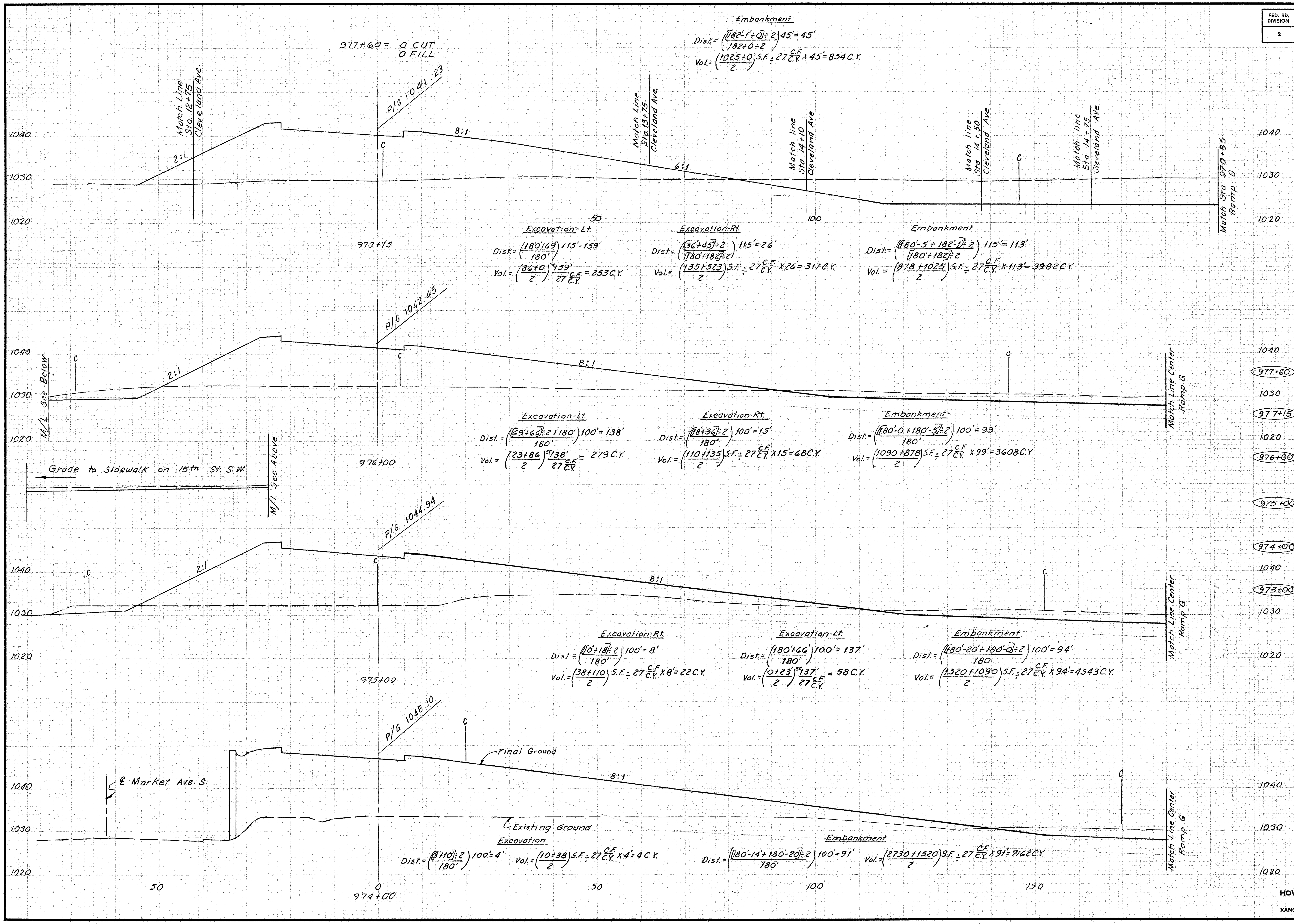
Rev. U.N.S. 5-20-75
Ckd M.G.B. 5-20-75

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

RAMP G STA. 972+00 TO STA. 973+00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

STARK COUNTY
CITY OF CANTON
STA-30- 14.12
STA-77- 9.22



EARTHWORK					
	END AREA			VOLUME	
	EXC.		EMB.	EXC.	EMB.
	Lt.	Rt.			
977+60	—		0		
				—	854
977+15	0	523	1025		
				570	3982
976+00	86	135	878		
				347	3608
975+00	23	110	1090		
				80	4543
974+00	0	38	1520		
				4	7162
973+00	10		2730		

FINAL SURVEY	BY	DATE
NOTE BOOK NO.		
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

ORIGINAL SURVEY	BY	DATE
NOTE BOOK NO.		
SURVEYED		
PLOTTED	J.O.B.	7-6-62
TEMPLATE	C.T.F.	7-6-62
AREAS	E.C.B.	10-1-69
AREAS CHECKED	G.M.G.	7-27-70

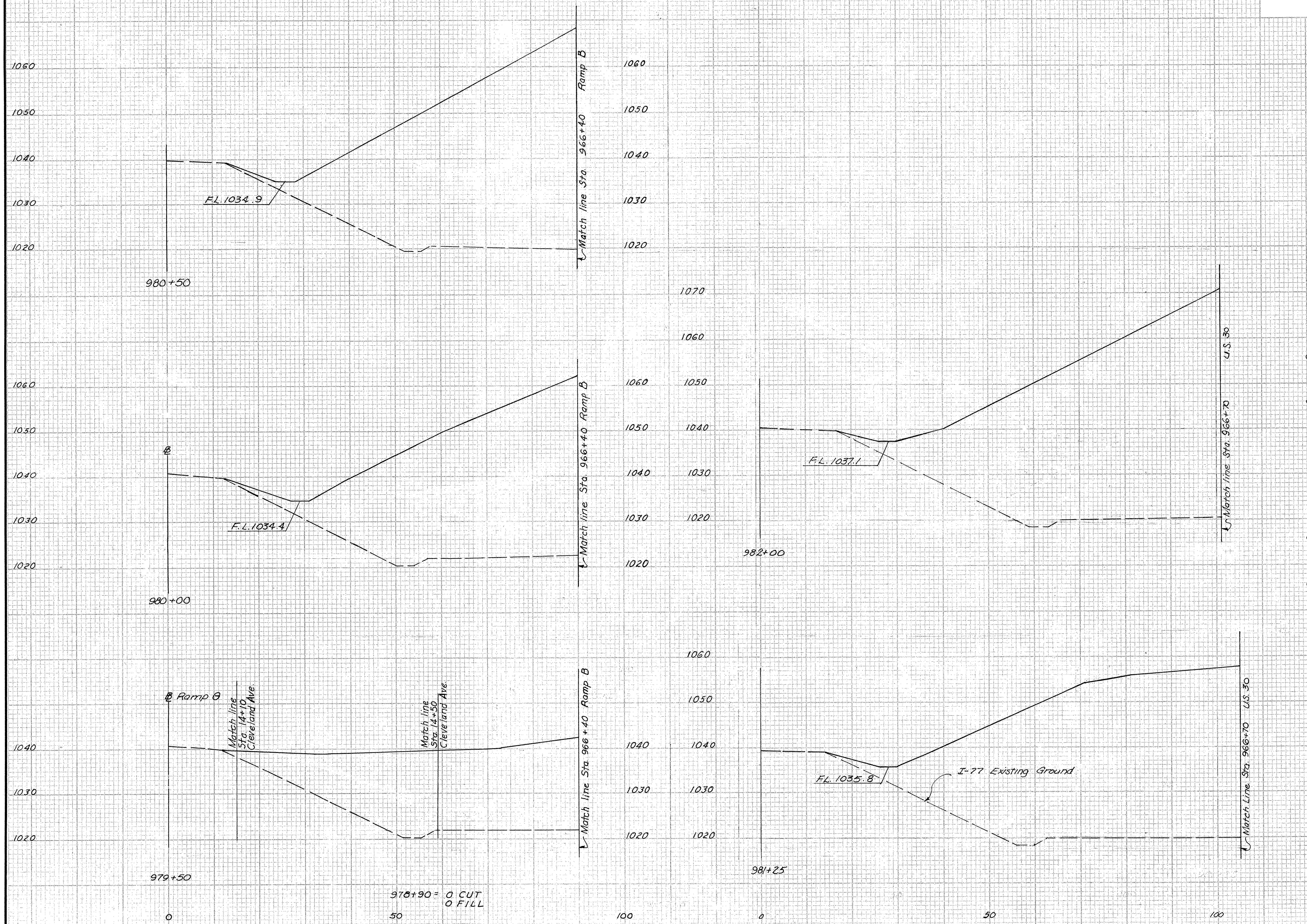
Rev. J.N.S. 5-20-75
Chkd M.G.B. 5-20-75

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

RAMP G STA. 974+00 TO STA. 977+15

FED. RD. DIVISION	STATE	PROJECT		78 / 389
2	OHIO			

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



EARTHWORK				
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
978+75"F"		1838		
(Dist. 123)				9230
982+00		2214		
				6101
981+25		2179		
				5594
980+50		1849		
				3267
980+00		1679		
				2552
979+50		1084		
				1204
978+90		0		

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

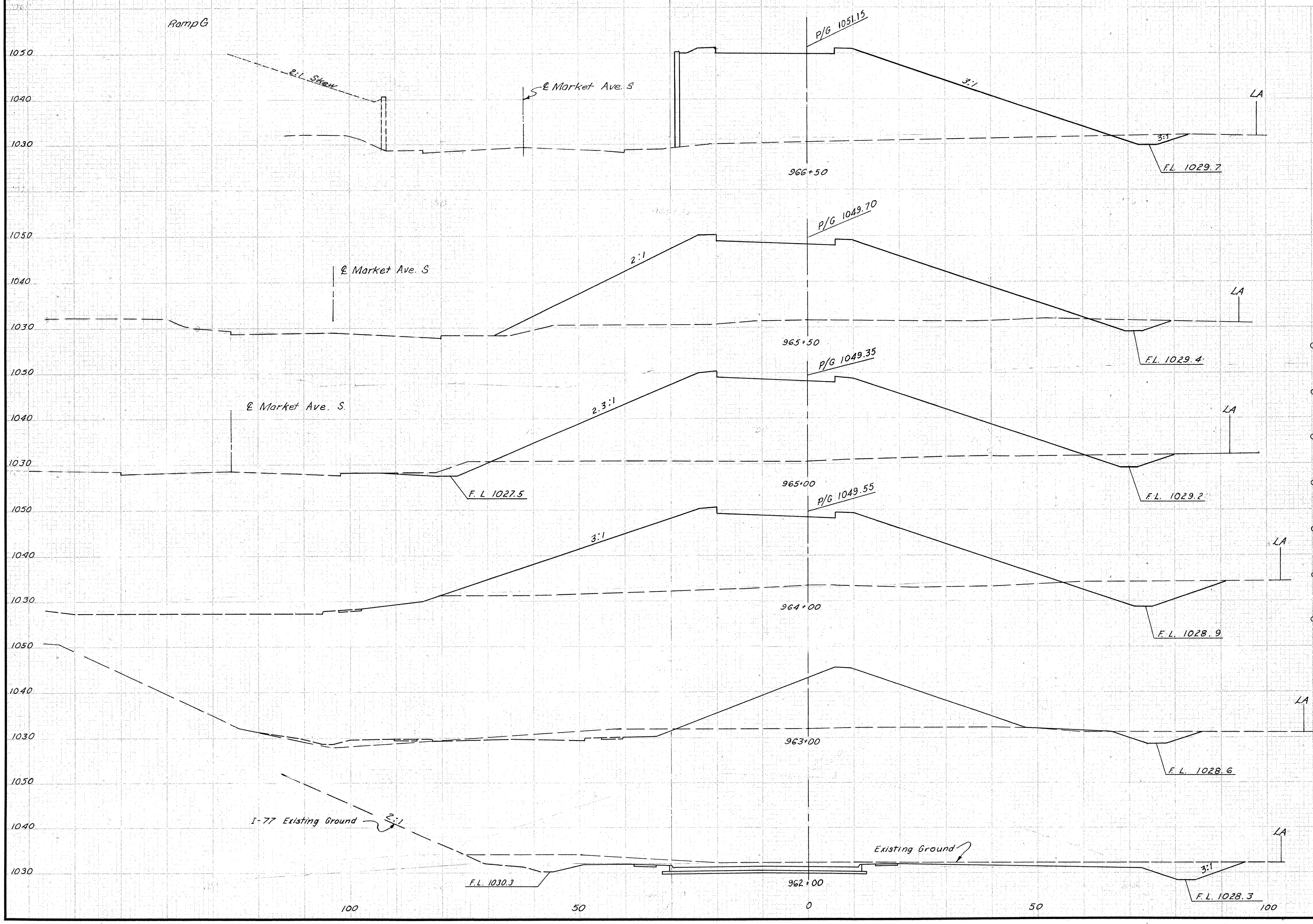
ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED	CRJ	1-27-69
	PLOTTED	CRJ	1-27-69
	TEMPLATE	E.C.B.	10-1-69
	AREAS	G.M.G.	7-27-70
NO.	AREAS CHECKED		

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

RAMP G STA. 979+50 TO STA. 982+00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			79 / 389

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
966+50	25	1330		
			98	5148
965+50	28	1450		
			83	2737
965+00	62	1506		
			313	5459
964+00	107	1442		
			376	3710
963+00	96	562		
			763	312
962+70		0		
962+00	316			
	(Dist. 110)	(Dist. 70)	802	1502
961+60		0		
960+92 (553+00)	78	1161		

FINAL SURVEY	BY	DATE
NOTE BOOK		
NO.		
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

ORIGINAL SURVEY	BY	DATE
NOTE BOOK		
NO.		
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

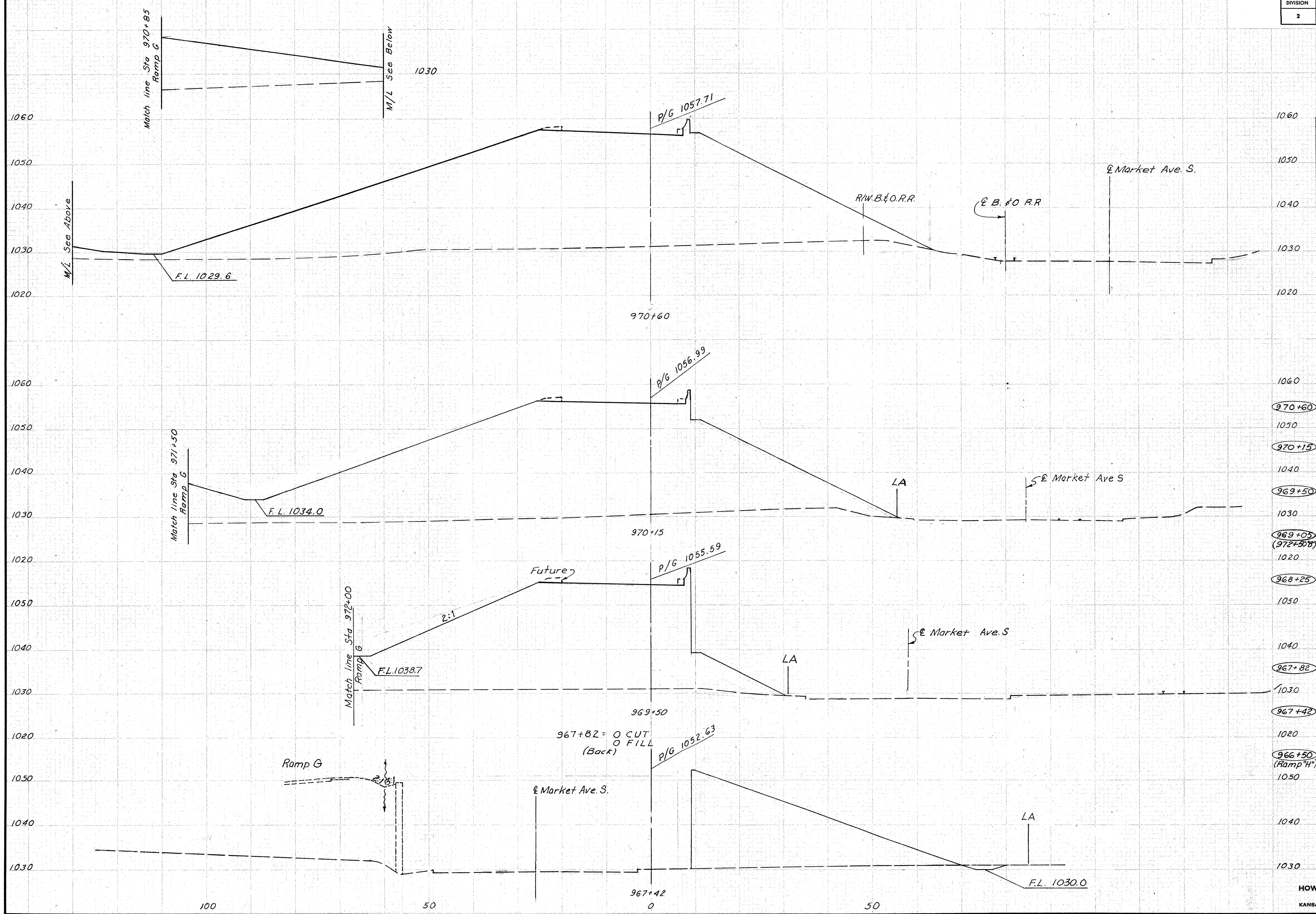
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

RAMP H STA. 962+00 TO STA. 966+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

80
389

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



STATION	END AREA EXC.	END AREA EMB.	VOLUME EXC.	VOLUME EMB.
970+60		3095		
				4683
970+15		2525		
				4893
969+50		1540		
				2343
969+05 (972+50.8)		1272		
				1884
968+25		0		
967+82	0	0		
			5	553
967+42	7	747		
			55	3539
966+50 (Ramp "H")	25	1330		

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED	JPB	6-27-62
PLOTTED	CRJ	7-28-62
TEMPLATE		
AREAS	E.C.B.	10-3-62
AREAS CHECKED	B.M.G.	7-27-62
NOTE BOOK		
NO.		

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

100

RAMP H STA. 967+42 TO STA. 970+60

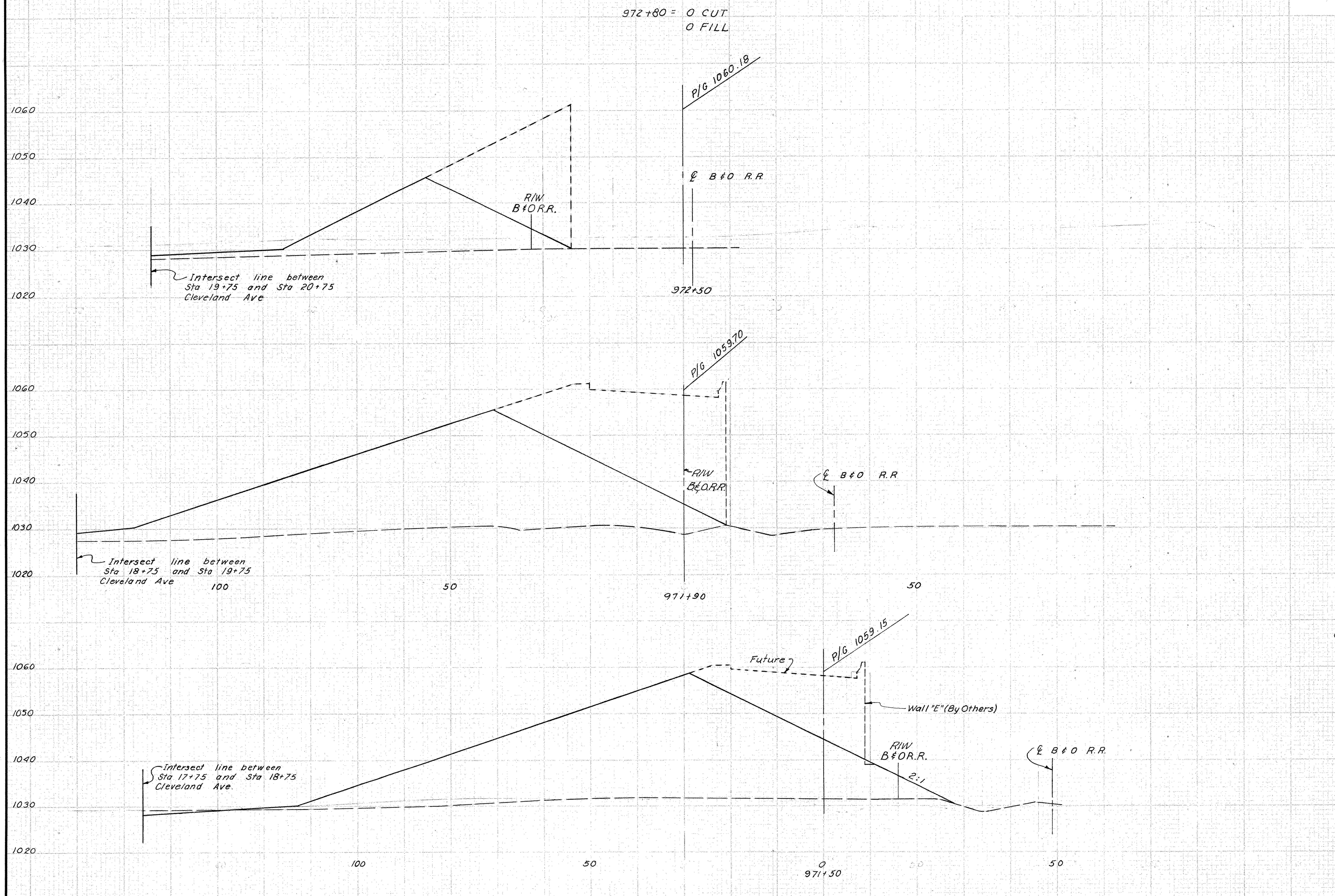
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY

CITY OF CANTON

STA-30-14.12

STA-77-9.22



EARTHWORK

Station	END AREA EXC.	END AREA EMB.	VOLUME EXC.	VOLUME EMB.
972+80		0		
				302
972+50		543		
				2559
971+90		1760		
				2716
971+50		1907		
				8337
970+60		3095		

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED	JDB	7-18-67
	PLOTTED	CRJ	1-30-69
	TEMPLATE	E.C.B.	10-3-69
	AREAS	G.M.G.	7-27-70
NO.	AREAS CHECKED		

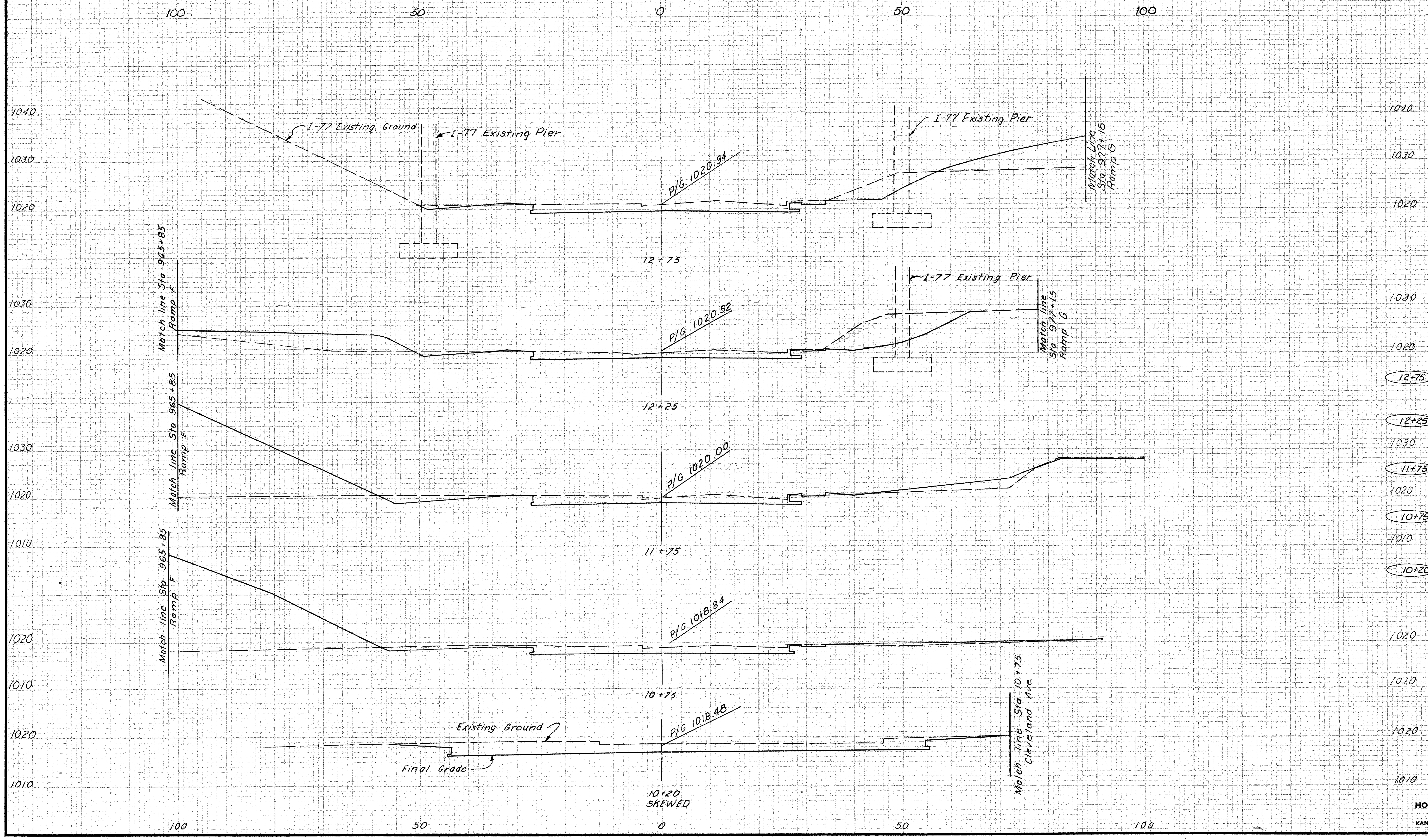
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

RAMP H STA. 971+50 TO STA. 972+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22

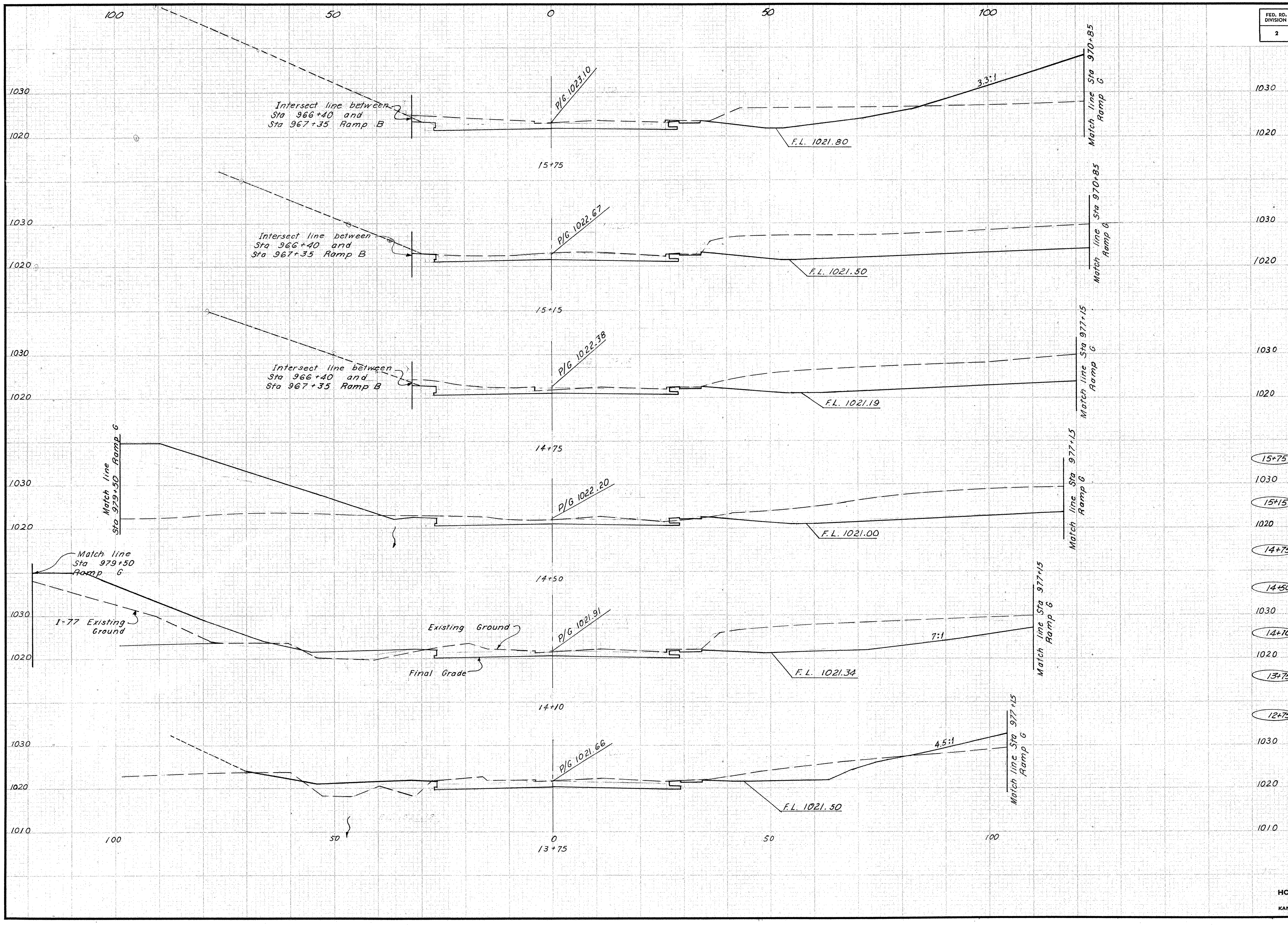
	EARTHWORK			
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
12+75	153	0		
			327	106
12+25	200	114		
			315	510
11+75	140	437		
			487	1704
10+75	123	483		
			329	492
10+20	200	0		



FINAL SURVEY: SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO., BY, DATE

ORIGINAL SURVEY: SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO., BY, DATE — 4-22-68

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



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

83
389

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22

EARTHWORK				
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
15+75	258	210		
			878	233
15+15	532	0		
			774	0
14+75	513	0		
			443	207
14+50	443	448		
			664	502
14+10	453	230		
			462	180
13+75	260	48		
			765	87
12+75	153	0		

Rev. U.N.S. 5-20-75
Ckd M.G.B. 5-20-75

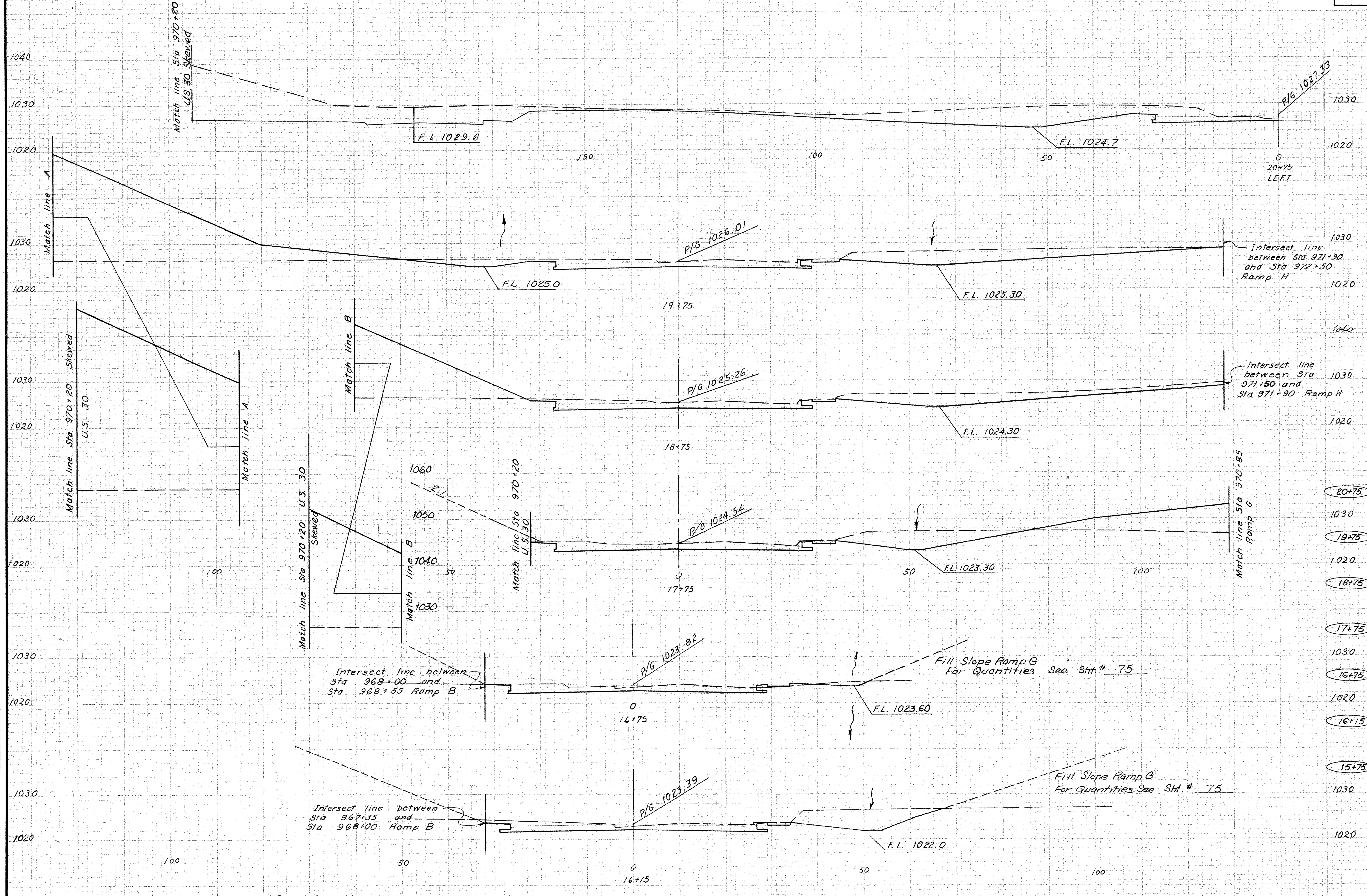
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		4-19-68
NO.	PLOTTED	CRJ	1-29-69
	TEMPLATE	E.C.B.	10-3-69
	AREAS	G.M.G.	7-28-70
	AREAS CHECKED		

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



EARTHWORK

Station	End Area Exc.	End Area Emb.	Volume Exc.	Volume Emb.
20+75	454	344		
			1350	3874
19+75	275	1748		
			917	4565
18+75	220	717		
			754	1619
17+75	187	157		
			500	291
16+75	83	0		
			307	0
16+15	193	0		
			334	22
15+75	258	30		

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

STARK COUNTY
CITY OF CANTON
STA- 30-14.12
STA- 77- 9.22

EARTHWORK				
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
25+10	42	0		
			169	5
23+80	28	2		
			391	313
22+75	173	159		
			886	462
21+65	262	68		
			1193	687
20+75	454	344		

FINAL SURVEY — NOTE BOOK, NO. — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK, NO. — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED — BY — DATE

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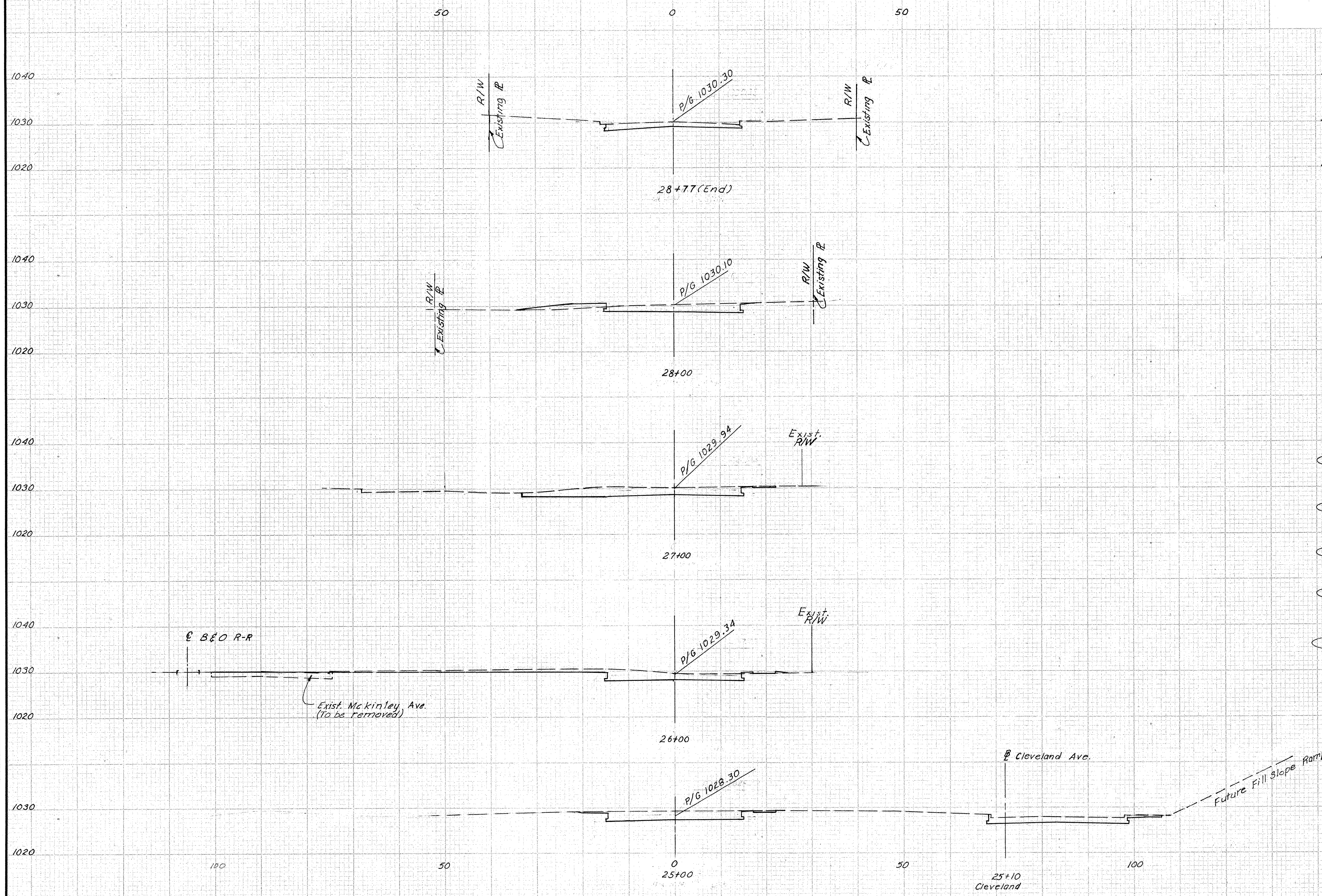
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77-9.22



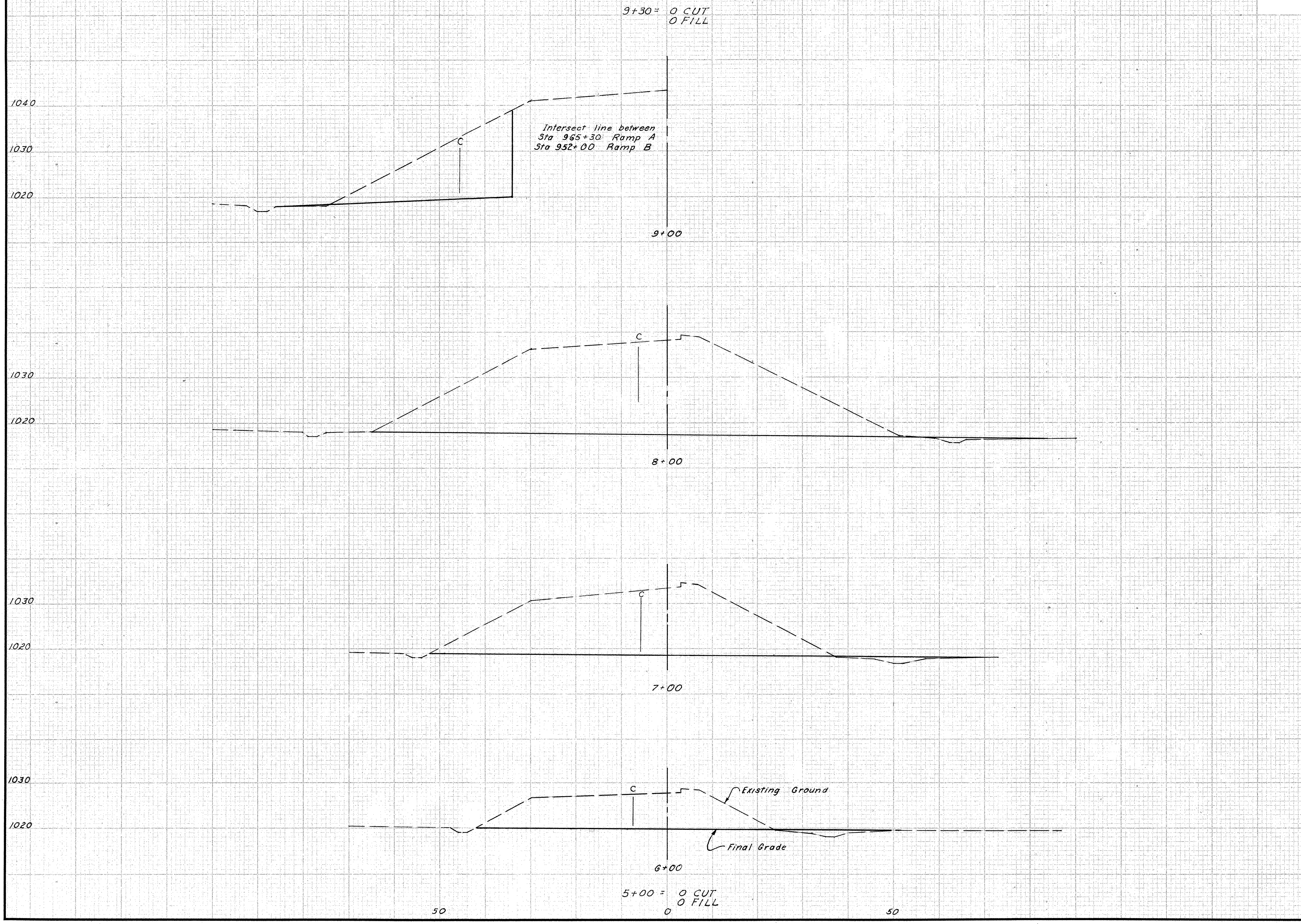
EARTHWORK				
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
28+77	34	0		
			116	20
28+00	47	14		
			237	26
27+00	81	0		
			280	4
26+00	70	2		
			241	4
25+00	60	0		

FINAL SURVEY — NOTE BOOK / NO. — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK / NO. — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY — DATE

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

STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77- 9.22



EARTHWORK				
	END AREA		VOLUME	
	EXC.	EMB.	EXC.	EMB.
9+30	0	0		
			209	0
9+00	376	0		
			359	0
8+00	1560	0		
			4519	22
7+00	880	12		
			2389	52
6+00	410	16		
			759	30
5+00	0	0		

FINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

ORIGINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

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

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
CITY OF CANTON
STA - 30 - 14.12
STA - 77 - 9.22

FINAL SURVEY: NOTE BOOK, NO., SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, BY, DATE

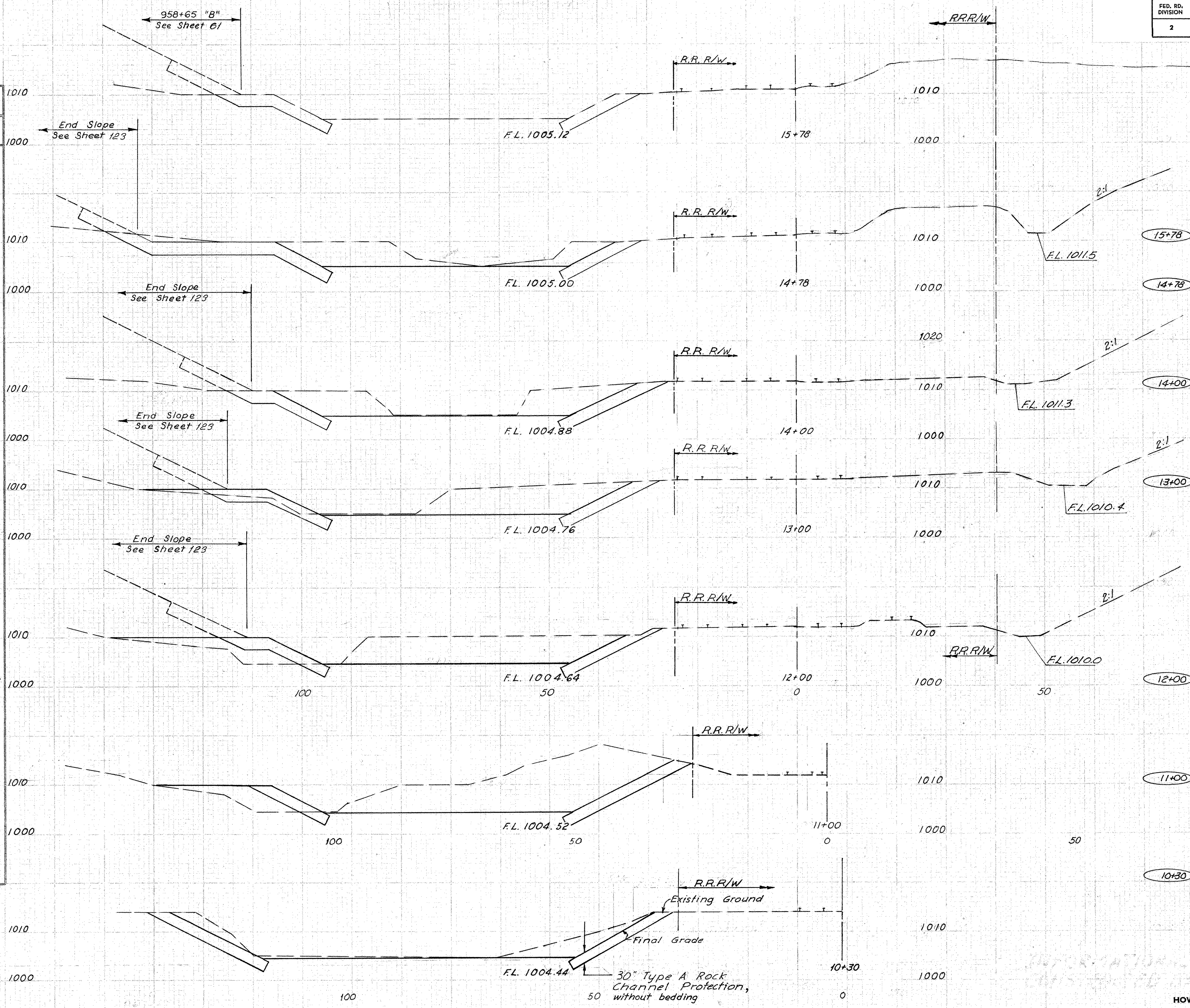
ORIGINAL SURVEY: NOTE BOOK, NO., SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, BY, DATE

Ramp "B" See Sheets 59, 60 & 61

Reloc. West Branch Nimishillen Creek See This Sheet

30" TYPE "A" CHANNEL PROTECTION, WITHOUT BEDDING

STA.	END AREA		VOLUME CU. YDS.	
951+85	0			
			11	
952+00	42			
			224	
953+00	73			
			326	
954+00	90			
			406	
955+00	113			
			431	
956+00	145			
			408	
957+00	170			
			262	
957+65	145			
			258	
15+78	87	37 (BK.)		
			406	137
14+78	132	37		
			309	129
14+00	82	52		
			331	185
13+00	97	48		
			340	181
12+00	87	50		
			229	189
11+00	37	52		
			126	135
10+30 (Ah.)	60	52		



EARTHWORK

STA.	END AREA EXC.	END AREA EMB.	VOLUME EXC.	VOLUME EMB.
15+78	0	0		
			296	0
14+78	160	0		
			469	0
14+00	165	0		
			657	9
13+00	190	5		
			861	120
12+00	275	60		
			1398	207
11+00	480	52		
			745	67
10+30	95	0		

Rev. 3-23-76

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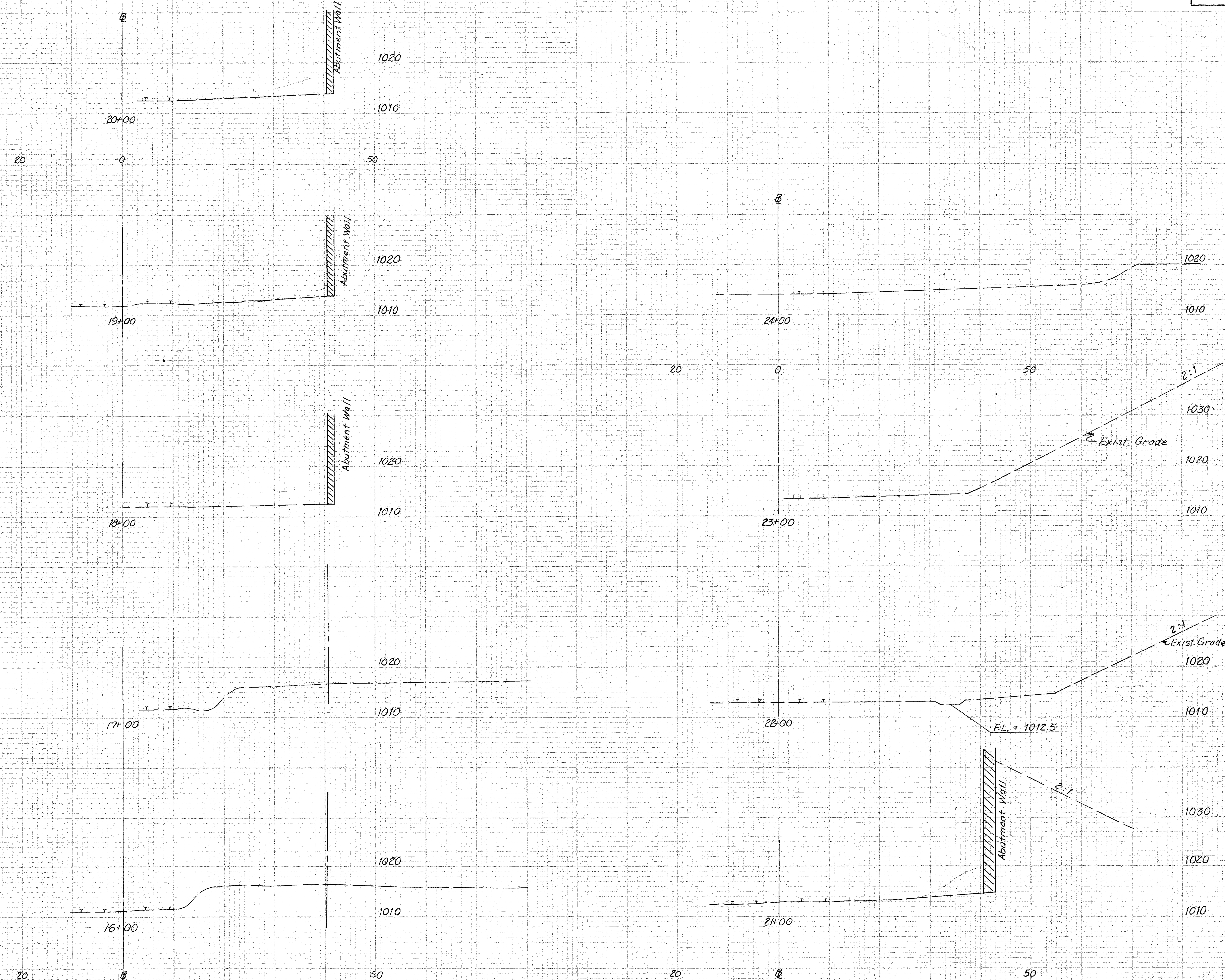
STARK COUNY
STA-30-14.12
STA-77-9.22



EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.

FINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

ORIGINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

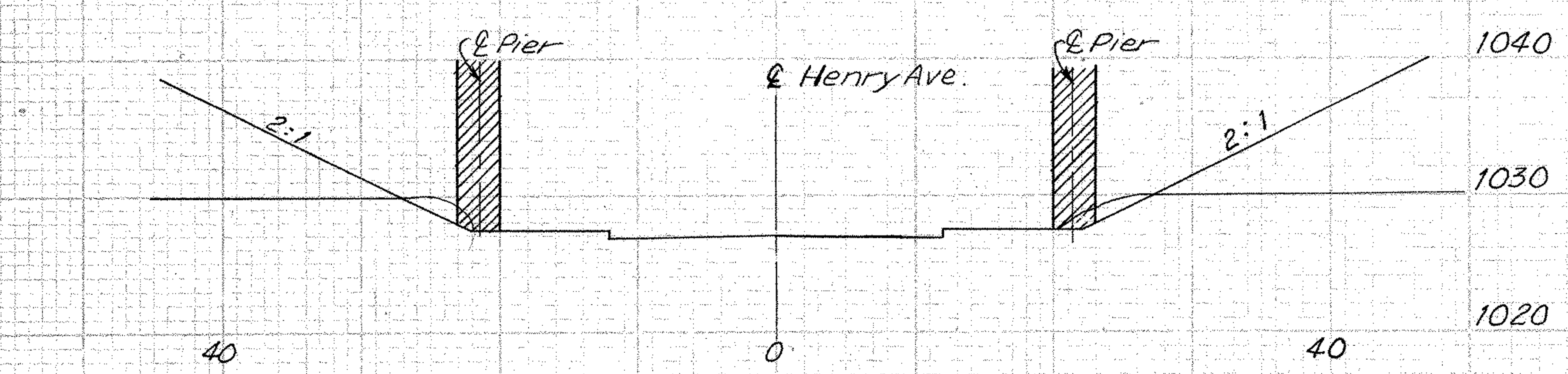
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

CROSS SECTIONS
FOR CONSTRUCTION PURPOSES ONLY
PENN. CENTRAL R.R.

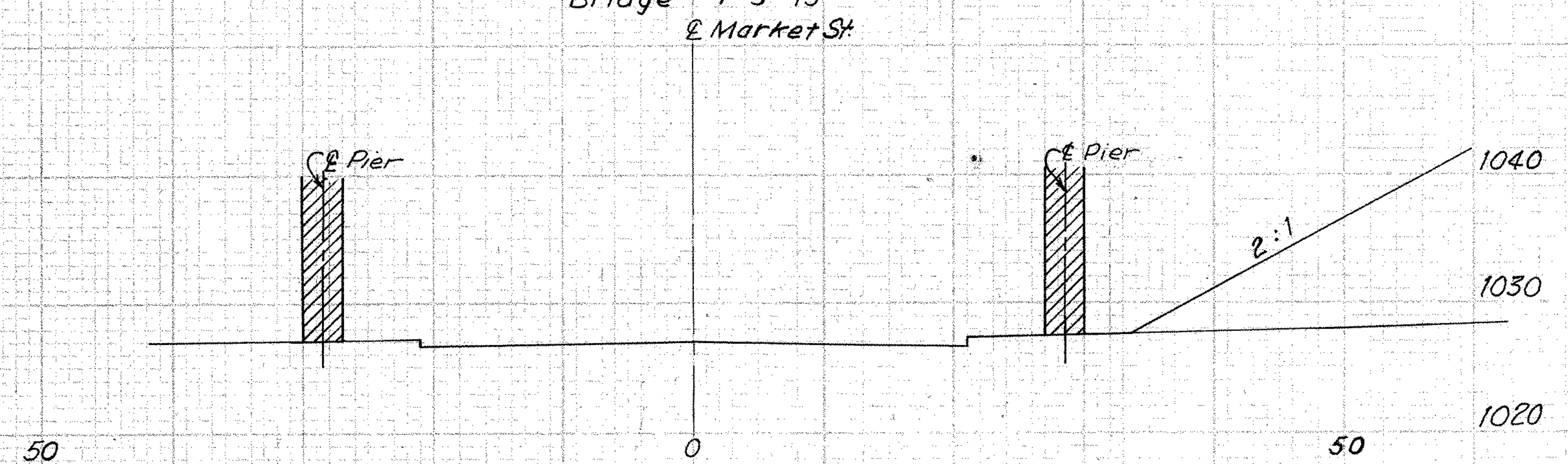
STA. 16+00 TO STA. 24+00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			90 / 389

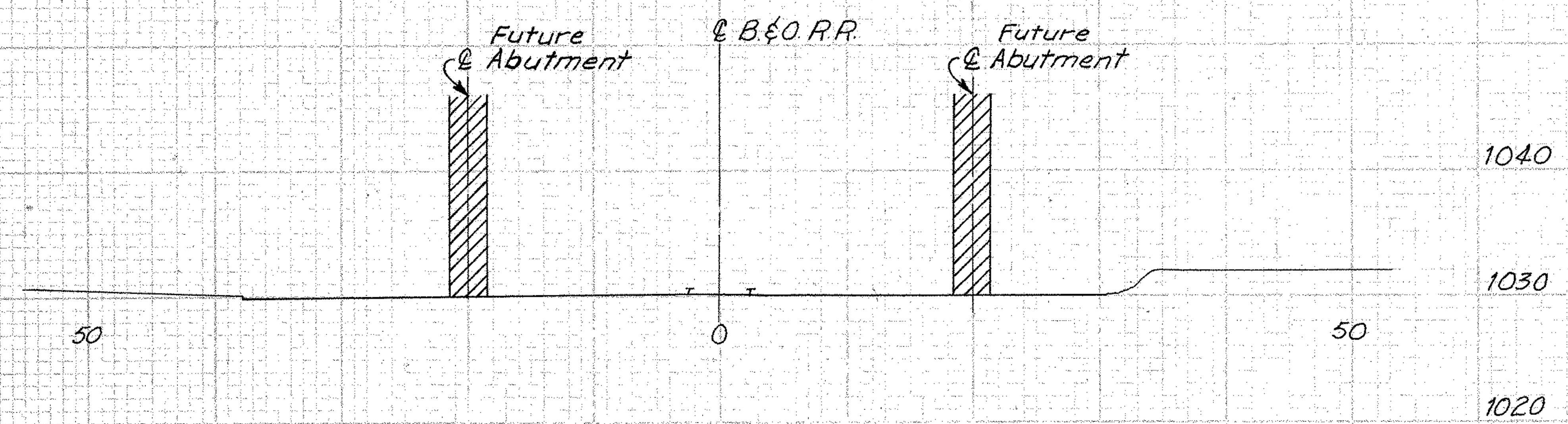
STARK COUNTY
STA-30-14.12
STA-77-9.22



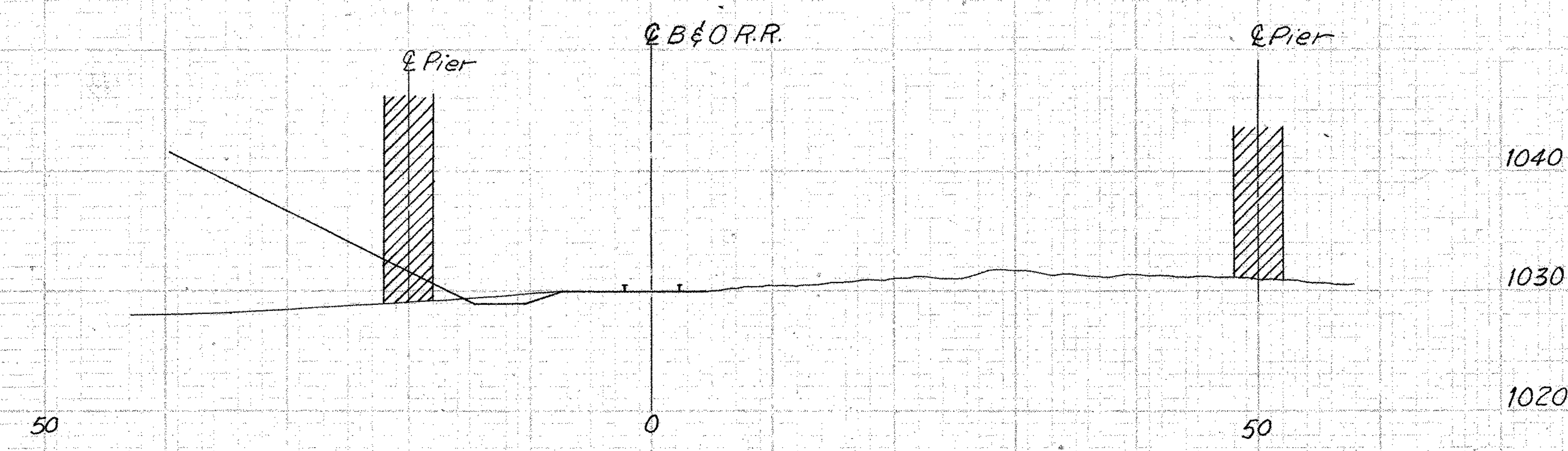
U.S. 30 Ramp A & Ramp F over Henry Ave.
Section Looking North
Bridge 1-5-15



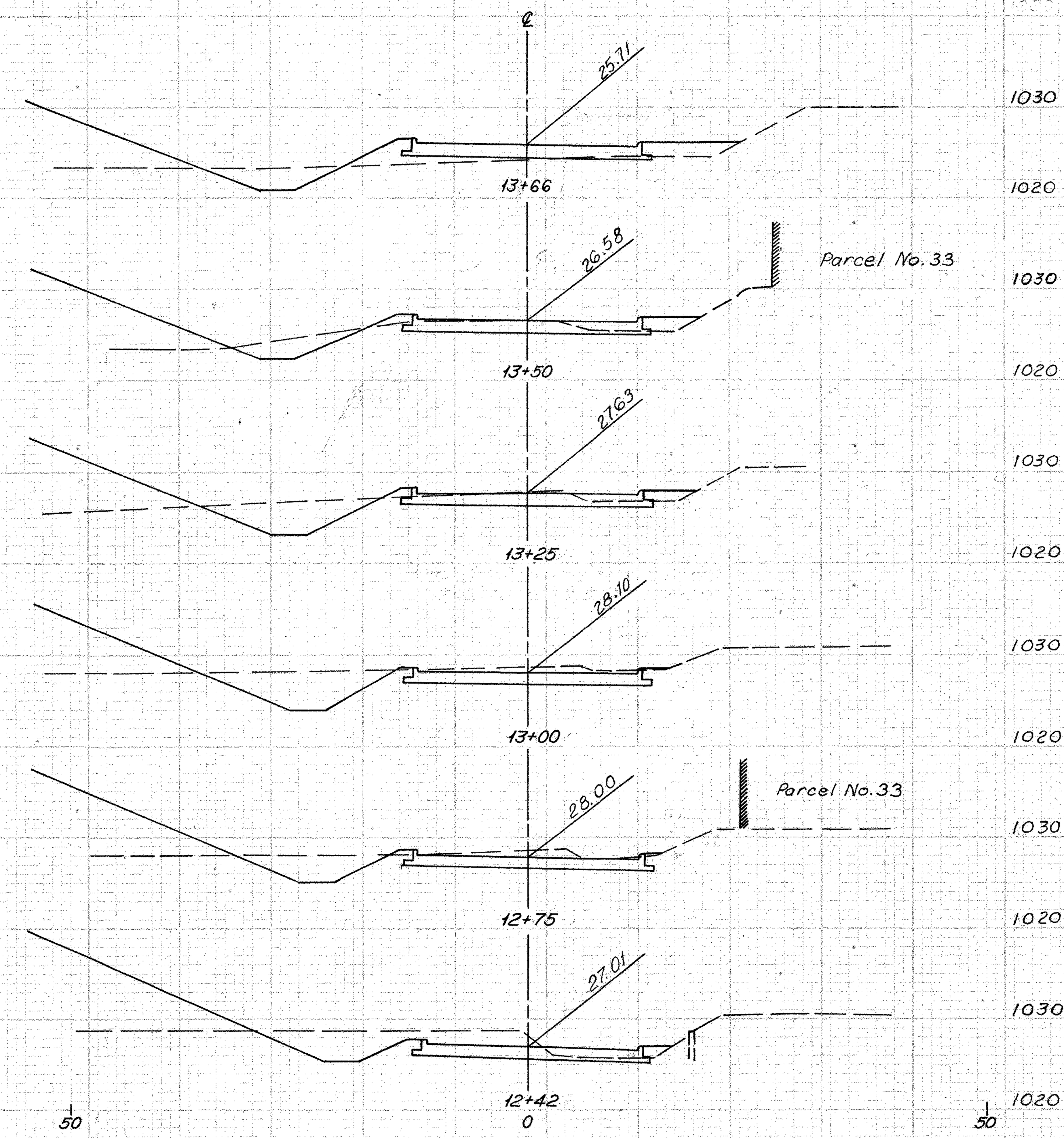
Ramp F over Market St
Section Looking North
Bridge 9



Ramp H over B&O R.R.
Section Looking North
Bridge 11



Ramp C&D over B&O R.R.
Section Looking North
Bridge 12



High Ave. Conn.

EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.

CROSS SECTIONS

FOR CONSTRUCTION PURPOSES ONLY
HENRY AVE., MARKET ST., B. & O. R.R.
HIGH AVE. CONN.

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

FINAL SURVEY
NOTE BOOK ___ NO. ___
SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED | BY | DATE

ORIGINAL SURVEY
NOTE BOOK ___ NO. ___
SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED | BY | DATE
C.R.J. 7-28-49
C.R.J. 7-28-49

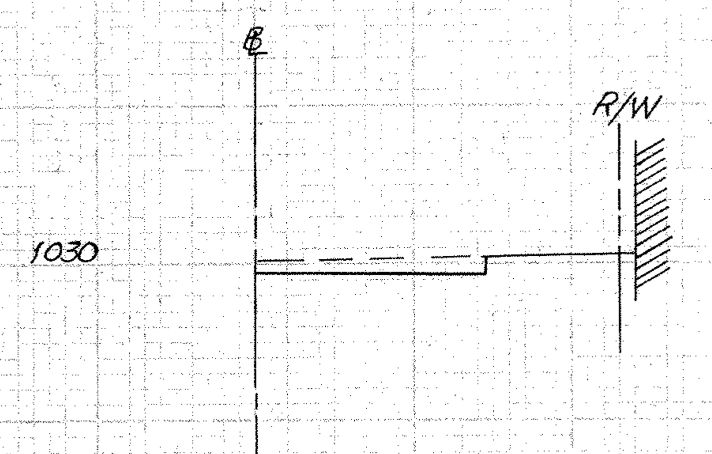
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

91
389

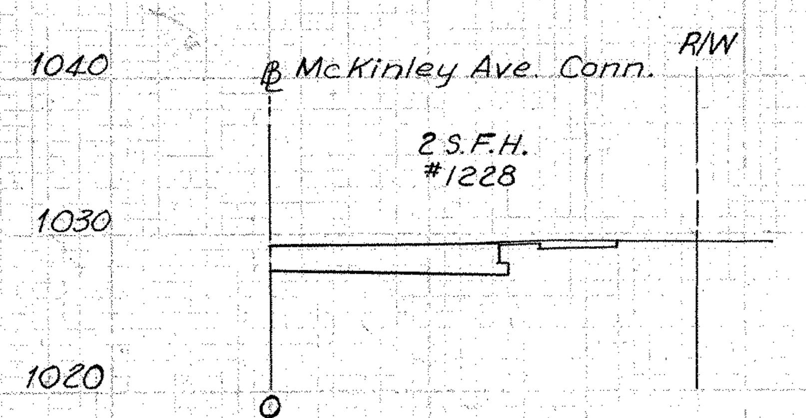
STARK COUNTY
CITY OF CANTON
STA-30-14.12
STA-77-9.22

EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

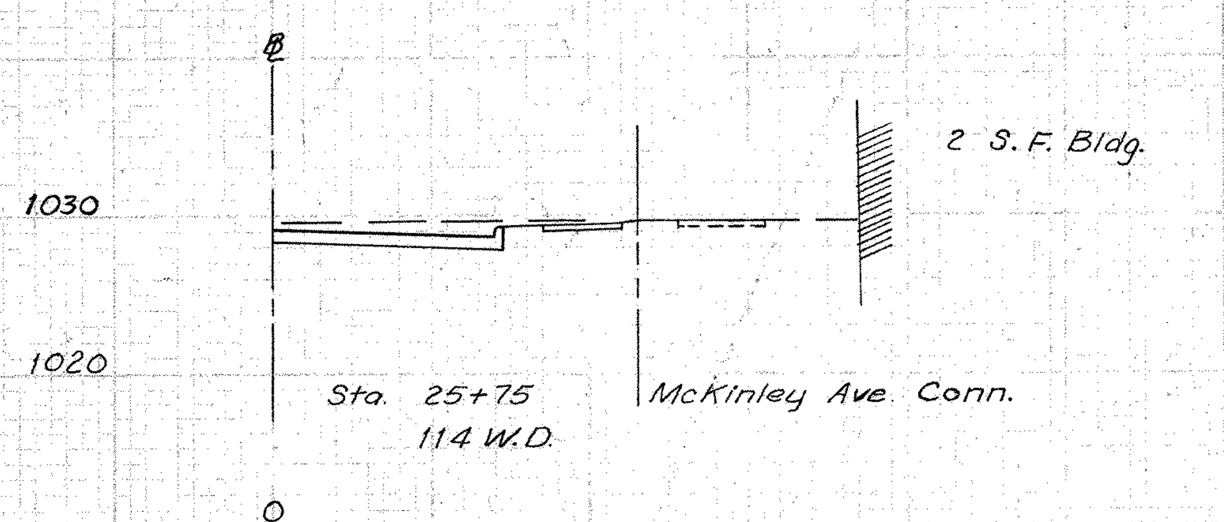


Sta. 27+63 McKinley Ave. Conn.
117 W.D.

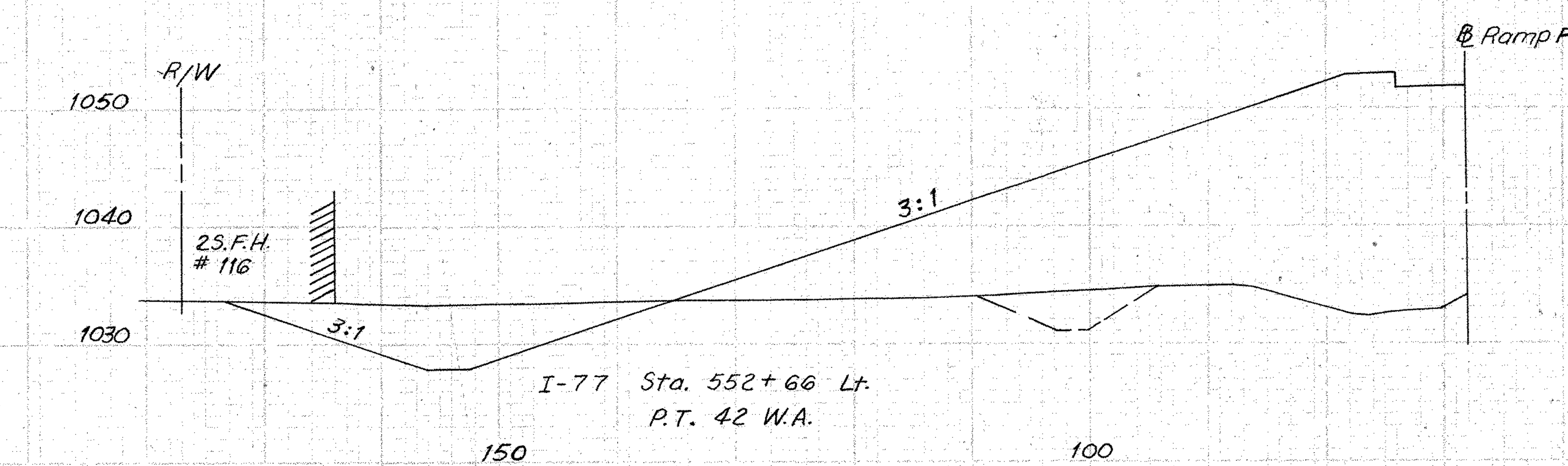


Sta. 27+25 Rt.
P.T. 109 W.A.

FINAL SURVEY	BY	DATE
SURVEYED		1-24-0
PLOTTED	C.T.J.	1-24-0
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		



Sta. 25+75
114 W.D.
McKinley Ave. Conn.



I-77 Sta. 552+66 Lt.
P.T. 42 W.A.

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

CROSS SECTIONS
FOR CONSTRUCTION PURPOSES ONLY
MCKINLEY AVE. CONN., I-77

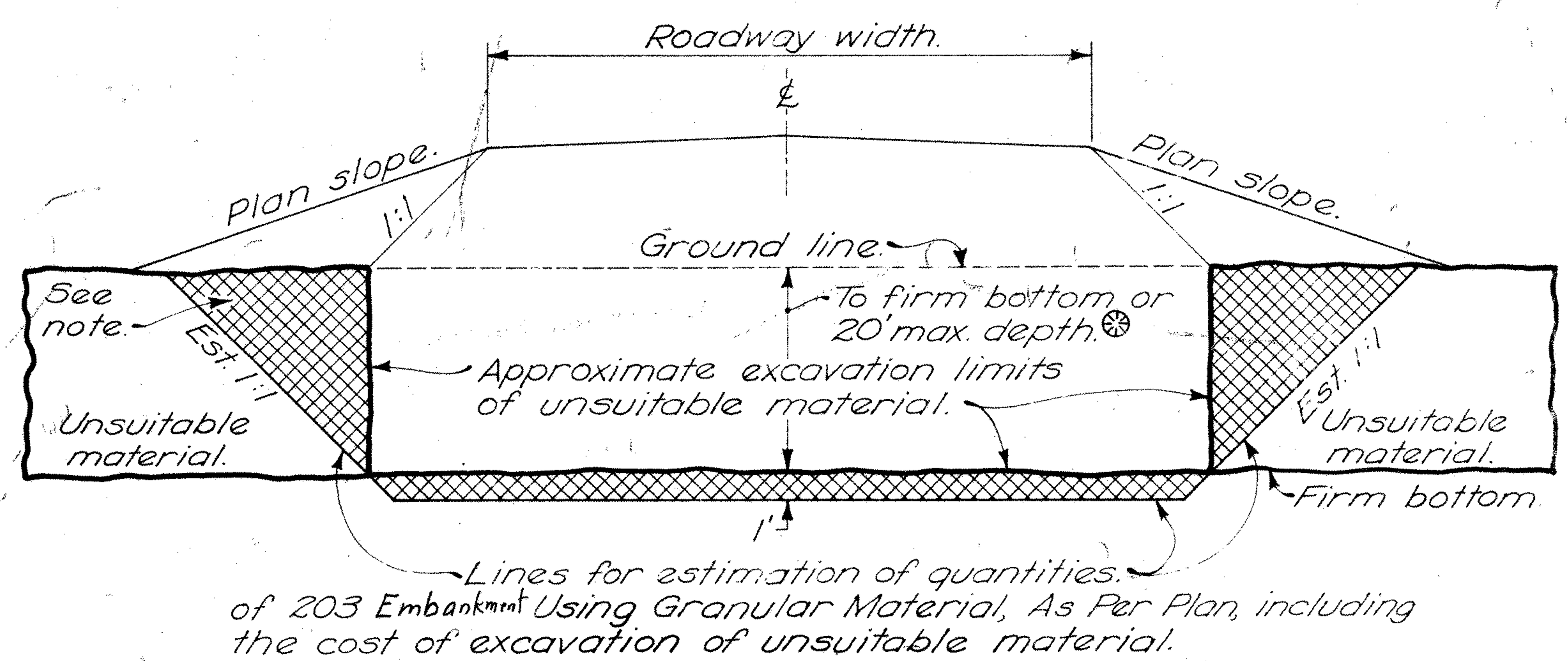
STA. TO STA.

SWAMP TREATMENT

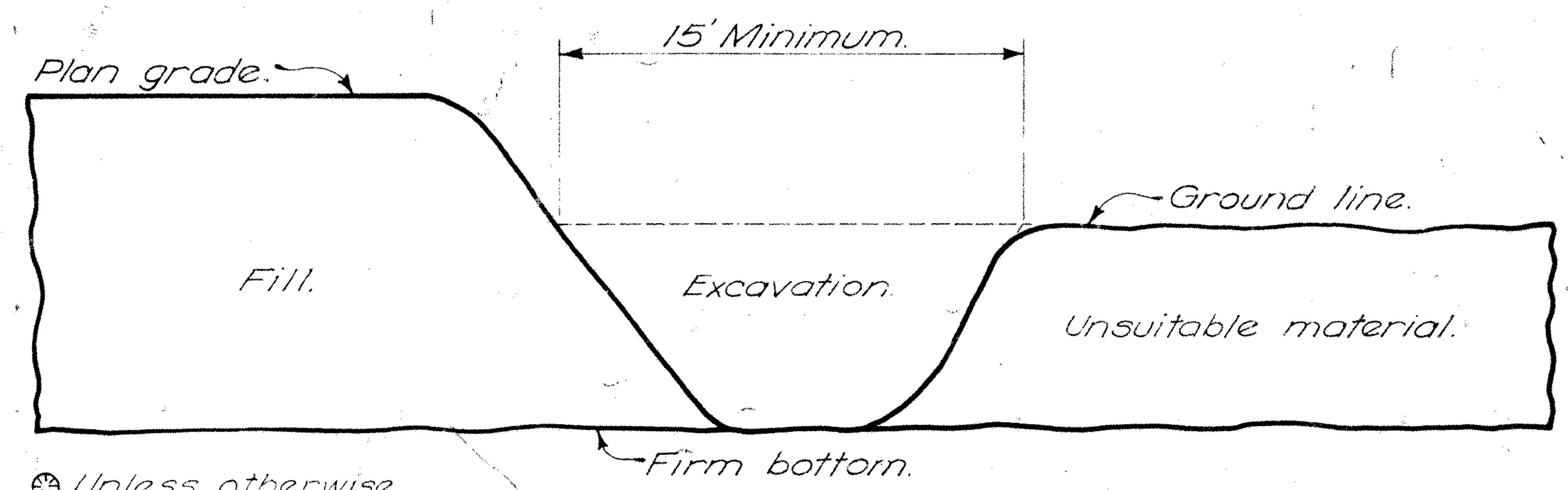
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

92
389

STARK COUNTY
STA-30-14.12
STA-77- 9.22



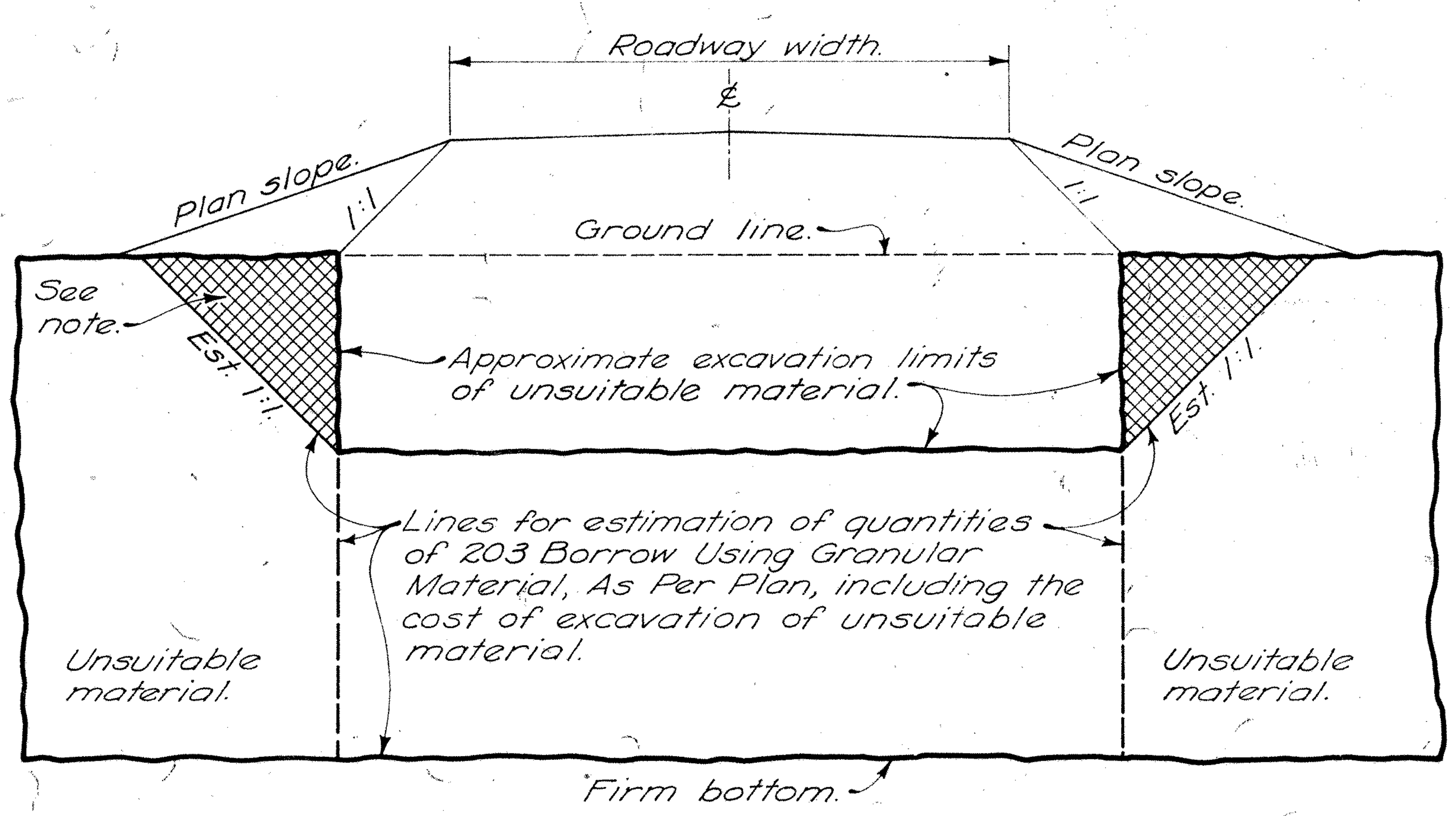
CROSS SECTION



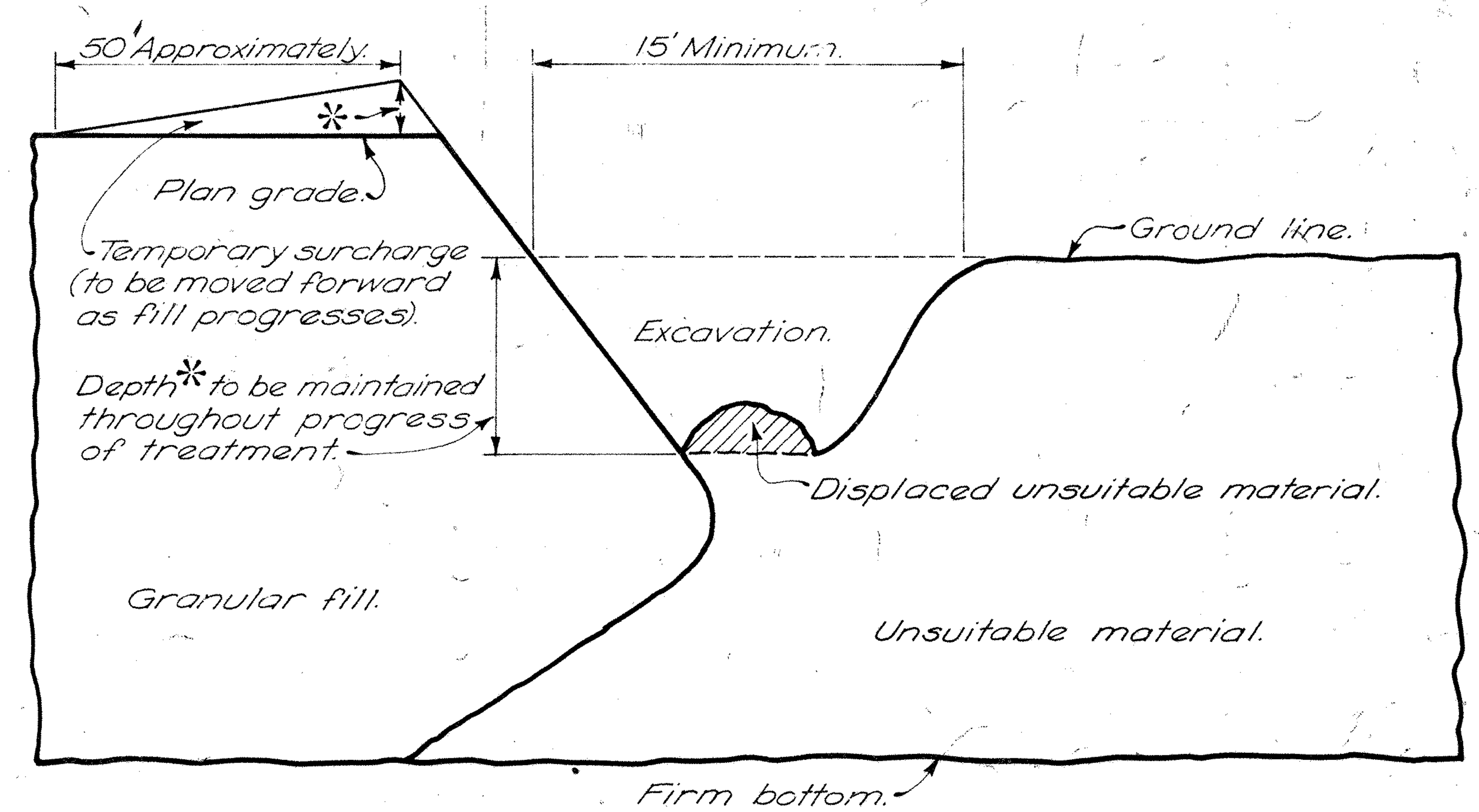
Unless otherwise shown on plans.

LONGITUDINAL SECTION

METHOD 1
TOTAL EXCAVATION



CROSS SECTION



LONGITUDINAL SECTION

METHOD 2
PARTIAL EXCAVATION AND DISPLACEMENT

TRENCHING AND BACKFILLING shall be carried progressively across the swamp and so coordinated as to leave an open trench not to exceed in length, at any time, the working reach of the equipment used for swamp excavation.

FILL shall be constructed by the method of end dumping, using granular material, up to the elevations designated on the plan. Embankment required above this elevation, if any, shall be constructed in accordance with 203.07 of the Construction and Materials Specifications.

EXCAVATION of unsuitable material ahead of the fill and end dumping of granular material across the bog area shall be advanced in a straight line for the full embankment width to avoid entrapment of unsuitable material beneath any portion of the fill.

GRANULAR MATERIAL required for swamp treatment shall be specified as "203 Embankment Using Granular Material, as per plan". The granular material shall meet the requirements of 203.02 of the Construction and Materials Specifications modified to require at least 75%, by weight, of the grains or particles to be retained on the No. 200 sieve.

EXCAVATED UNSUITABLE MATERIAL which is to be used adjacent to fills for slope flattening, or which is piled adjacent to the fill to be disposed of later in accordance with 203.05, shall be shaped to its final position or removed from the area at least two weeks prior to paving operations on the fill.

EQUIPMENT used for excavation of unsuitable materials shall be located ahead of the excavation unless otherwise authorized by the Engineer.

COST OF EXCAVATION OF UNSUITABLE MATERIALS between the limiting stations shall be included in the unit price bid for 203 Borrow Using Granular Material, As Per Plan, including the cost of excavation of unsuitable material. The granular material, used between the limiting stations as embankment above the original ground line, shall be paid for as 203 Borrow Using Granular Material, As Per Plan.

The quantity of granular borrow shall be determined in accordance with 203.15 (e) of the specifications. The quantity of granular borrow, which does not include the cost of excavation, shall be the volume measured in final position by the end area method, plus 5% for compaction, using project cross sections. The quantity of granular borrow, including the cost of excavation of unsuitable material, shall be the total quantity of granular material as measured by 203.15(e) minus the quantity which does not include the cost of excavation, as determined above.

CROSS-HATCHED sections are included in quantities to allow for possible sloughing and undercutting.

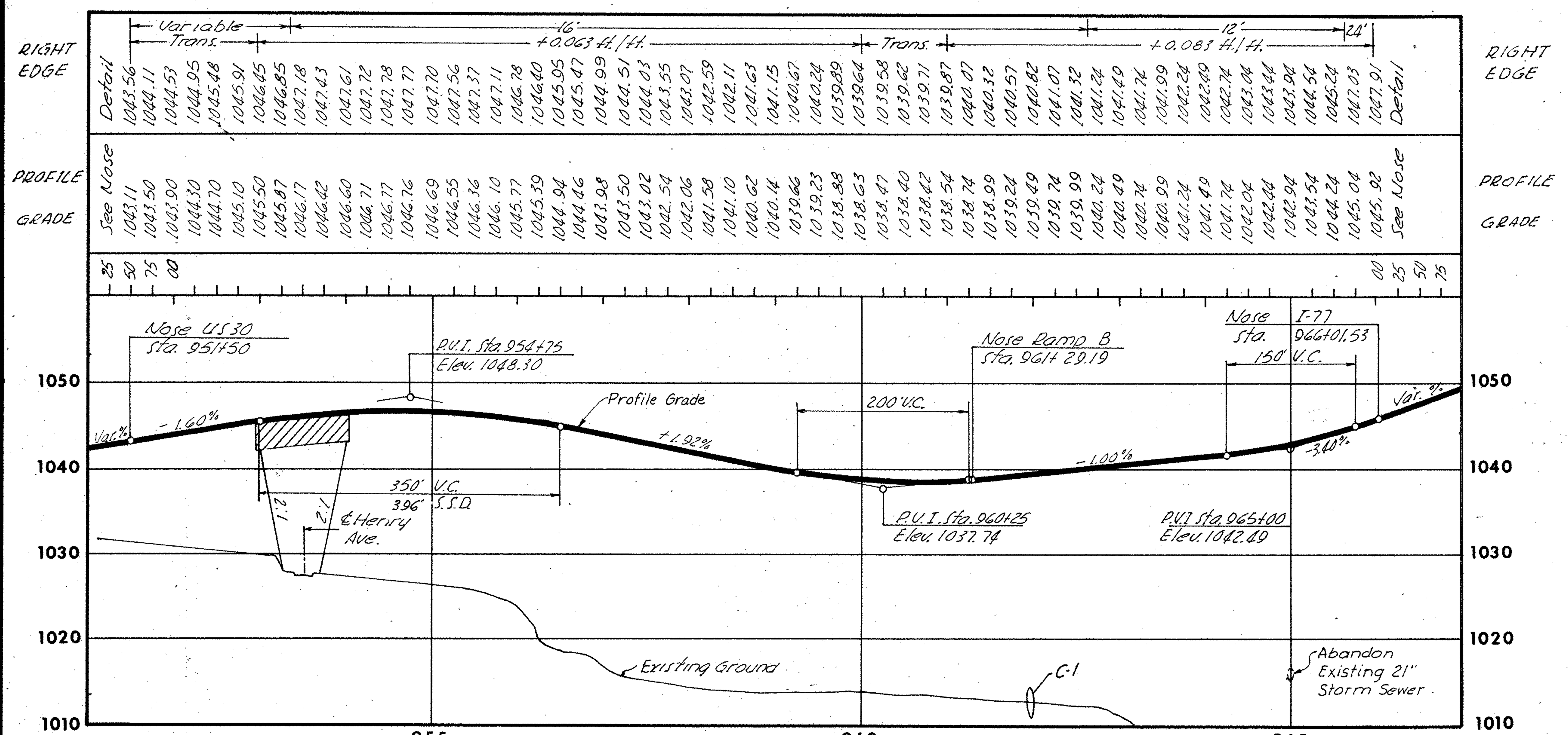
* As shown on the Plans. (Excavation depth will usually be 15'. Height of surcharge, if any, will be indicated on the plans).

4-2-71

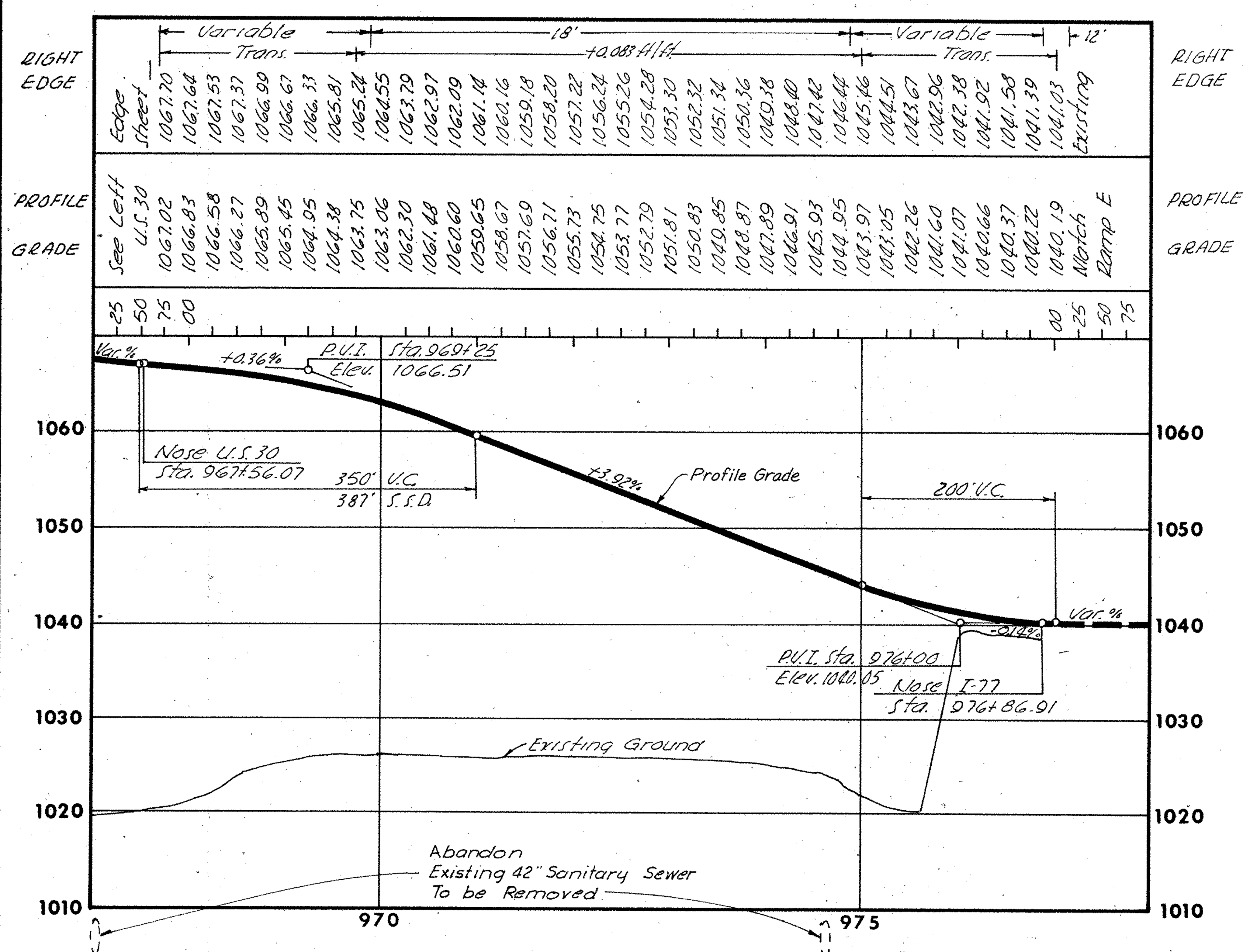
SWAMP TREATMENT

STARK COUNTY
STA-30-14.12
STA-77-9.22

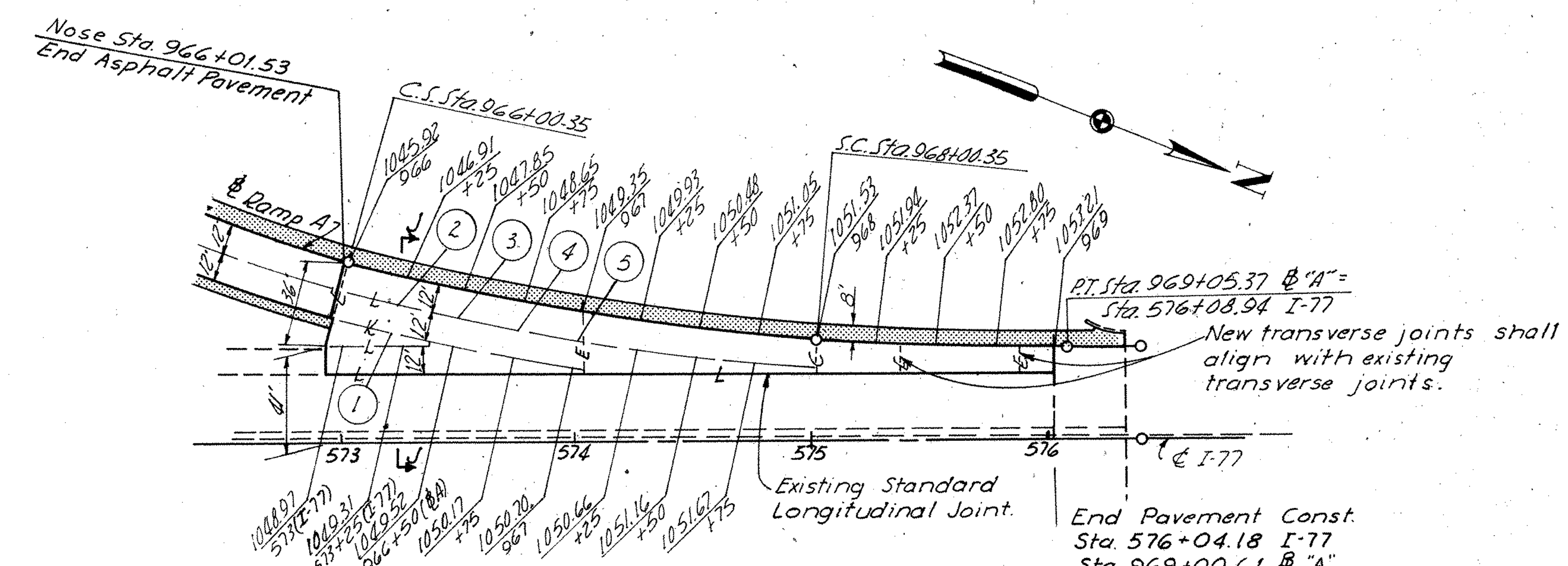
(1)	966+25 ℄"A"	24'Rt.	1048.74
(2)	966+25	12'Rt.	1047.85
(3)	966+50	12'Rt.	1048.74
(4)	966+75	12'Rt.	1049.49
(5)	967+00	12'Rt.	1050.13

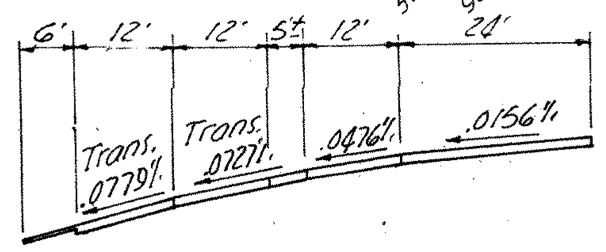


RAMP A



RAMP E

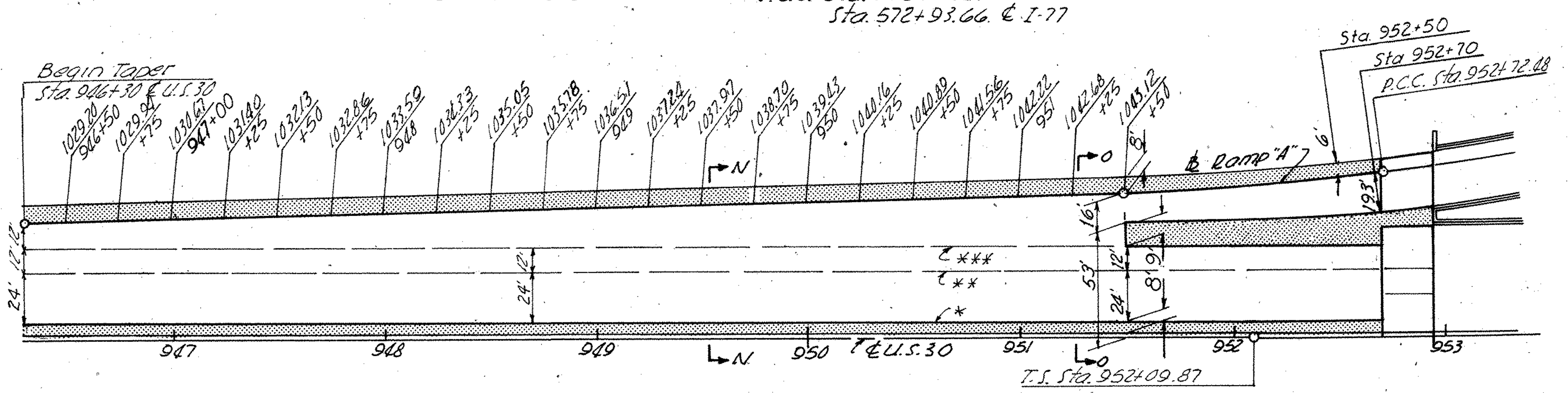




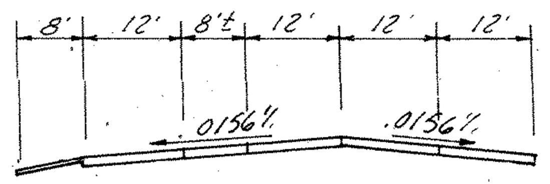
SECTION J-J

RAMP "A" OFF "I-77"

Nose Equation
P.C.C. Sta. 966+01.53 ℄ "A" =
Sta. 572+93.66 ℄ I-77



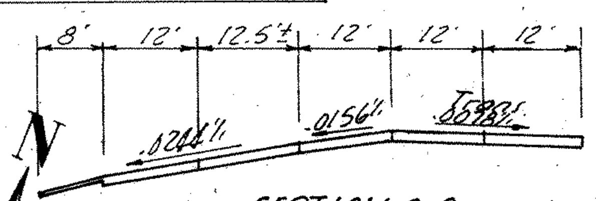
RAMP "A" ON TO "U.S. 30"



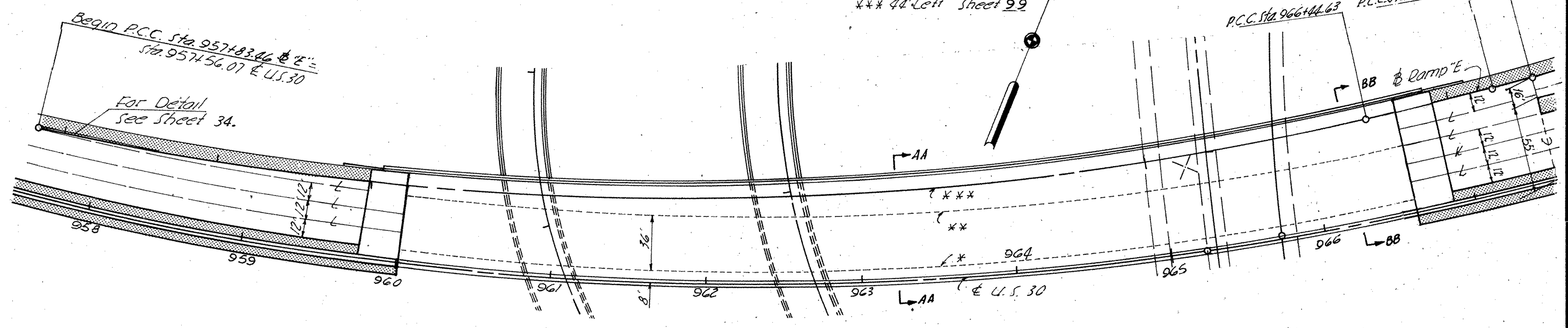
SECTION N-N

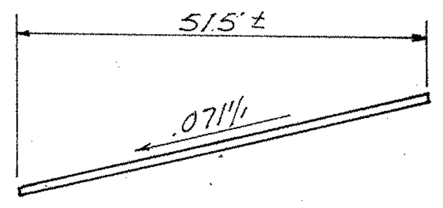
Nose Equation
P.C. Sta. 951+50.00 ℄ "A" =
Sta. 951+50.00 ℄ U.S. 30

For Elevation See:
* 8' Left Sheet 99
** 32' Left Sheet 99
*** 44' Left Sheet 99



SECTION O-O



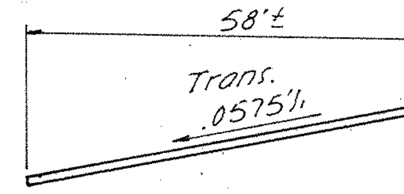


SECTION AA-AA

RAMP "E" ON TO "U.S. 30"

DISREGARD P.C.C. JOINTS

For Elevations See:
* 8' Left Sheet 100
** 44' Left Sheet 100
*** Left Edge Sheet 100



SECTION BB-BB

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CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

Rev. M.G.B. 5-25-75
Ckd. J.N.S. 8-19-75

RAMP A & RAMP E
PROFILES AND NOSE DETAILS

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	94 / 389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22

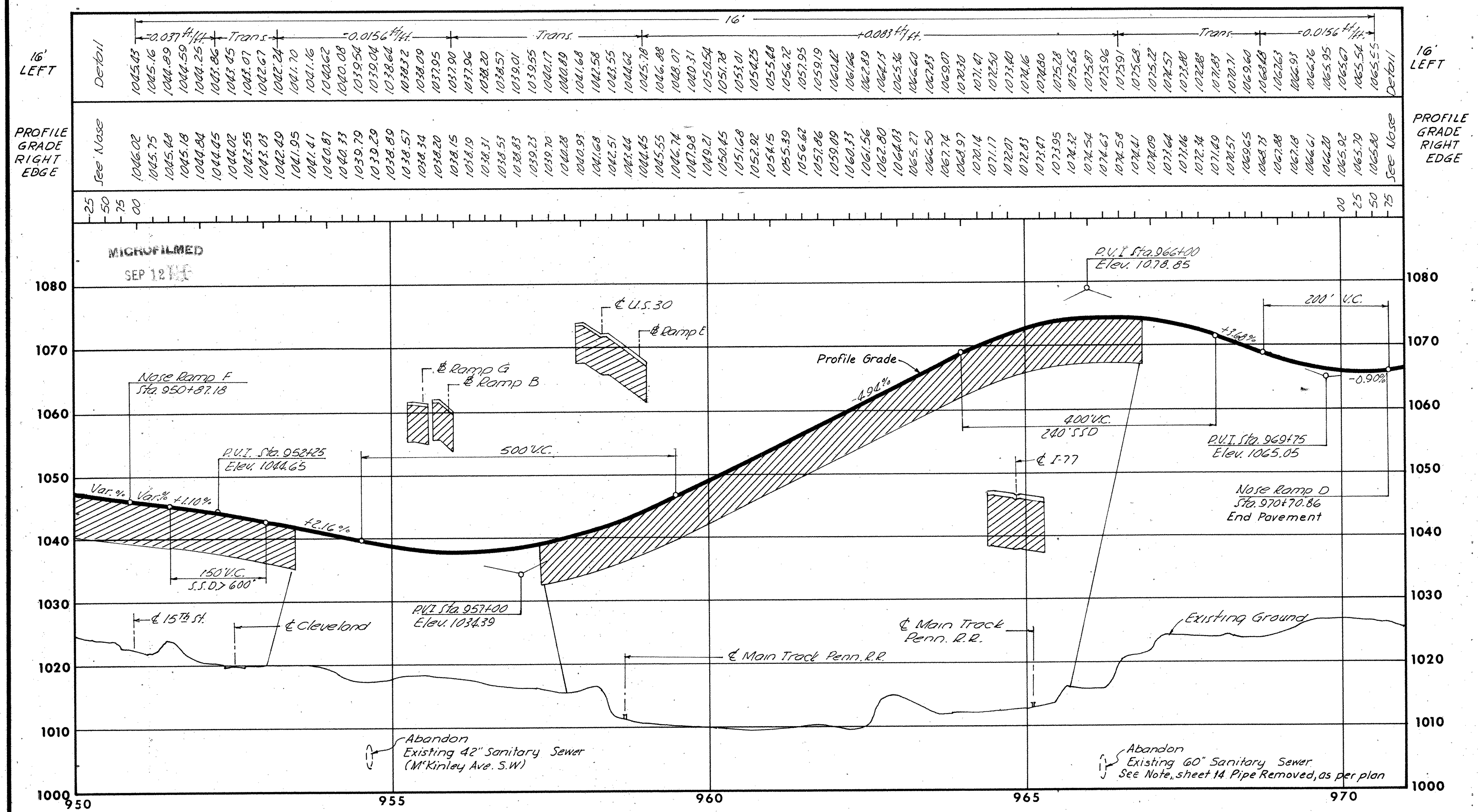
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

Rev. M.G.B. 5-29-75
Chd. J.N.S. 8-19-75

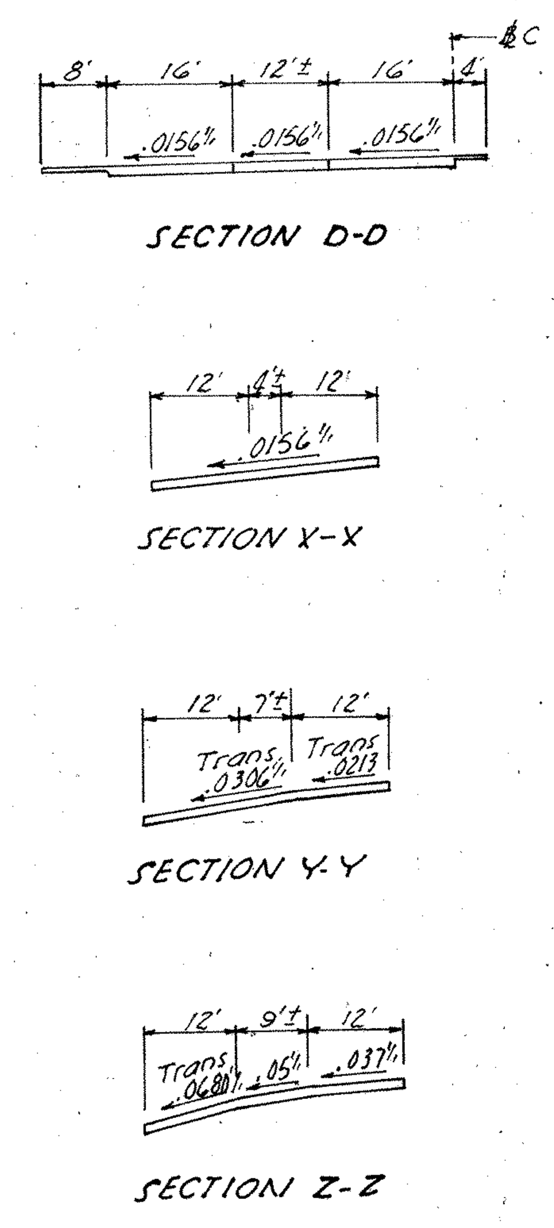
RAMP B & RAMP S
PROFILES AND NOSE DETAILS

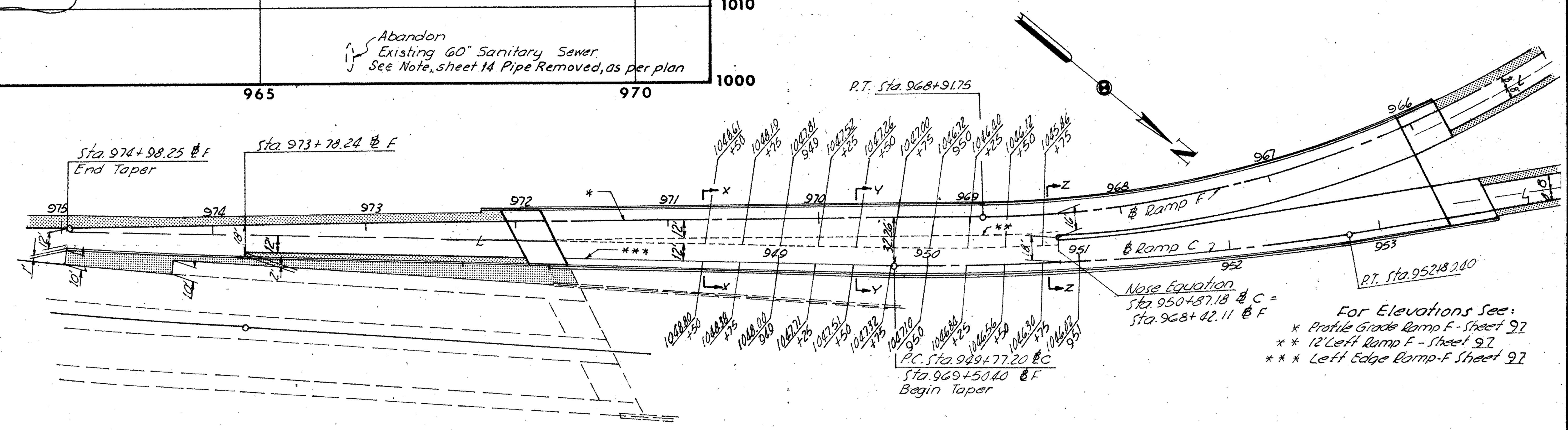
FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	95 / 389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22



RAMP C

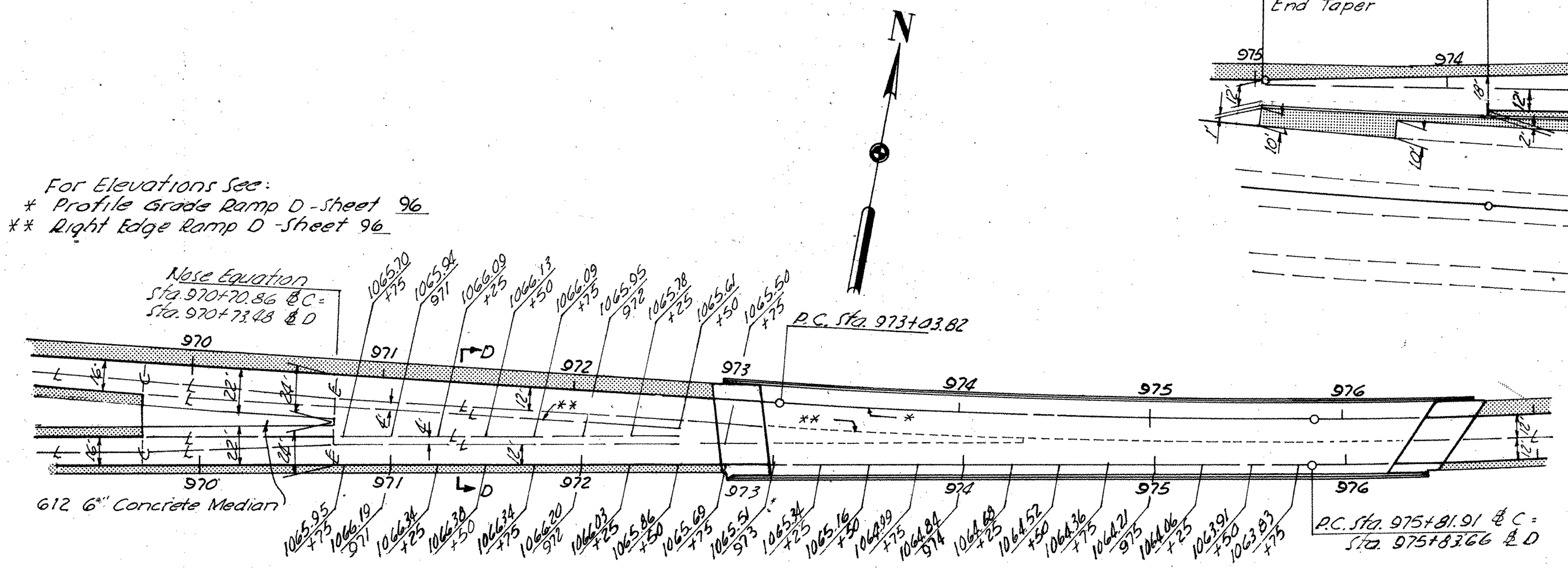




For Elevations See:
* Profile Grade Ramp F - Sheet 97
** 12' Left Ramp F - Sheet 97
*** Left Edge Ramp F - Sheet 97

RAMP "F" ON TO RAMP "C"
DISREGARD P.C.C. JOINTS

For Elevations See:
* Profile Grade Ramp D - Sheet 96
** Right Edge Ramp D - Sheet 96



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

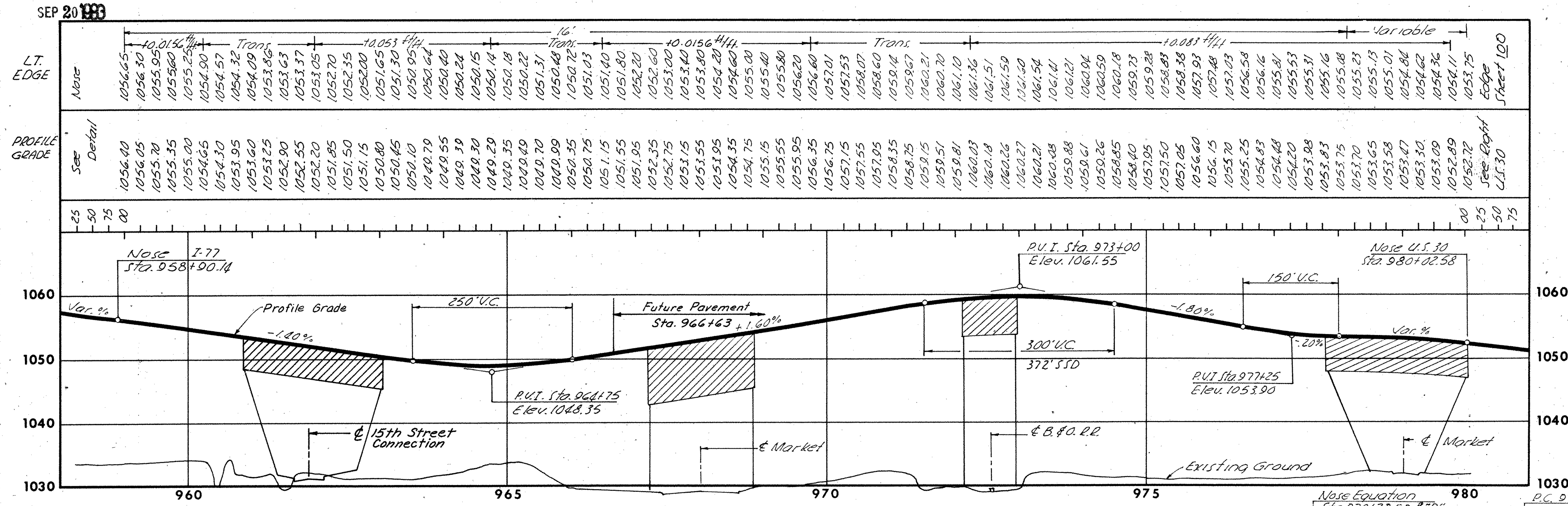
RAMP "C" OFF RAMP "D"
DISREGARD P.C.C. JOINTS

Rev. M.G.B. 5-25-75
Chd U.N.S. 5-25-75

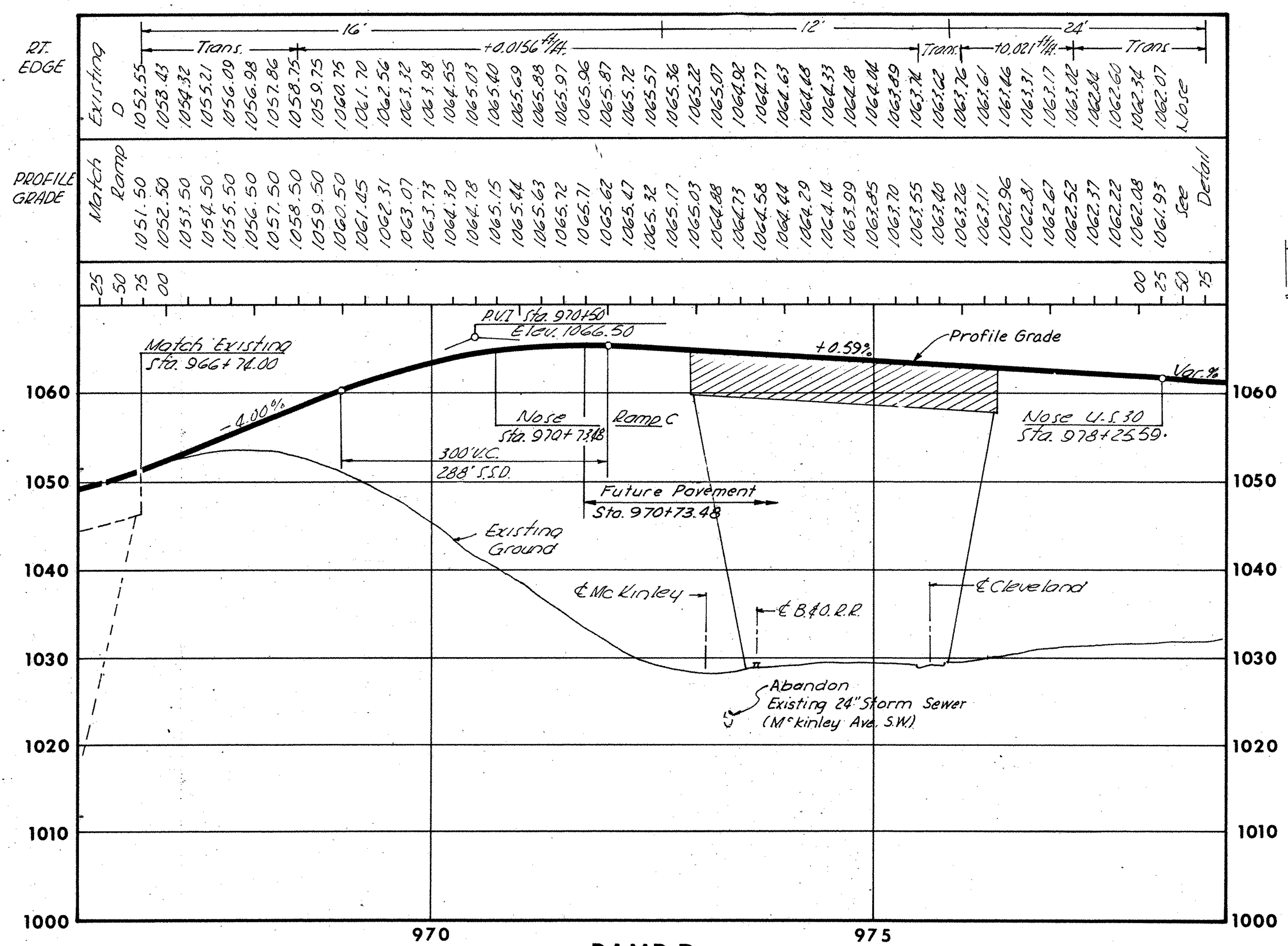
RAMP C
PROFILES AND NOSE DETAILS

FED. ROAD DIV. NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			96 / 389

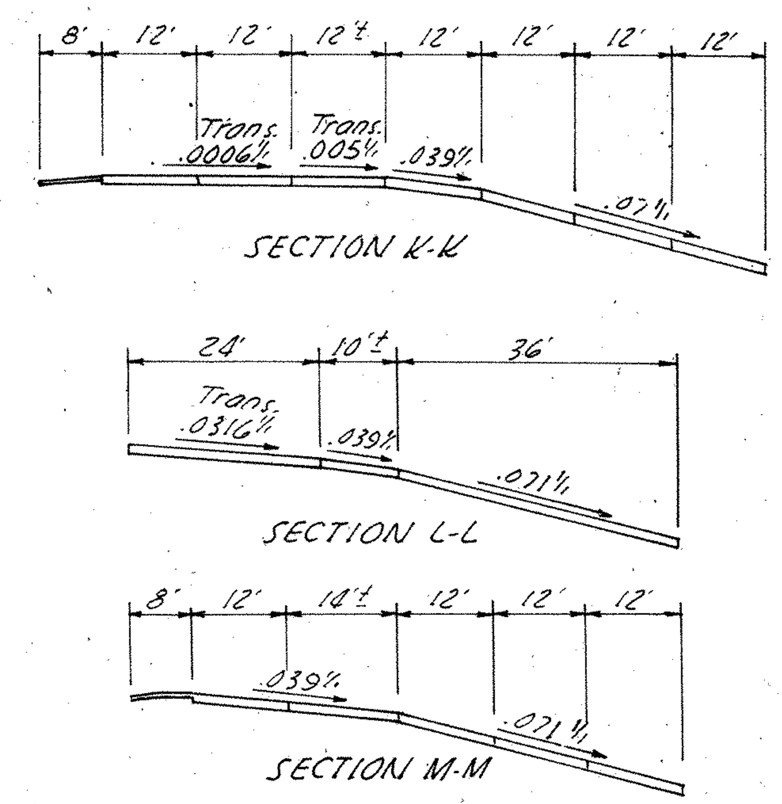
STARK COUNTY
STA-30-14.12
STA-77-9.22

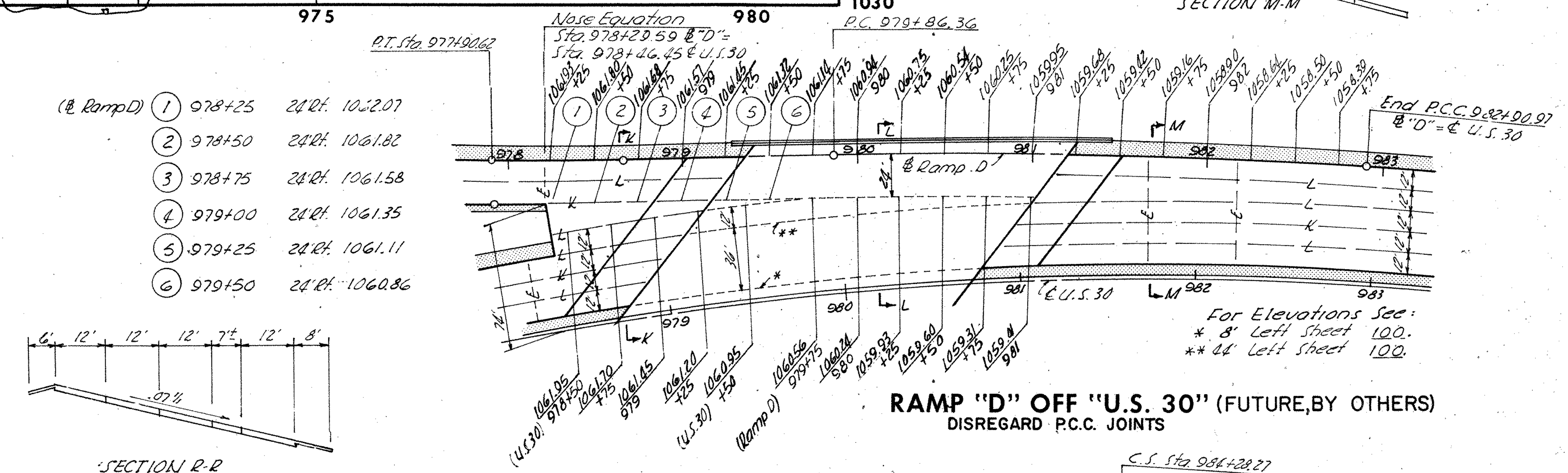


RAMP H

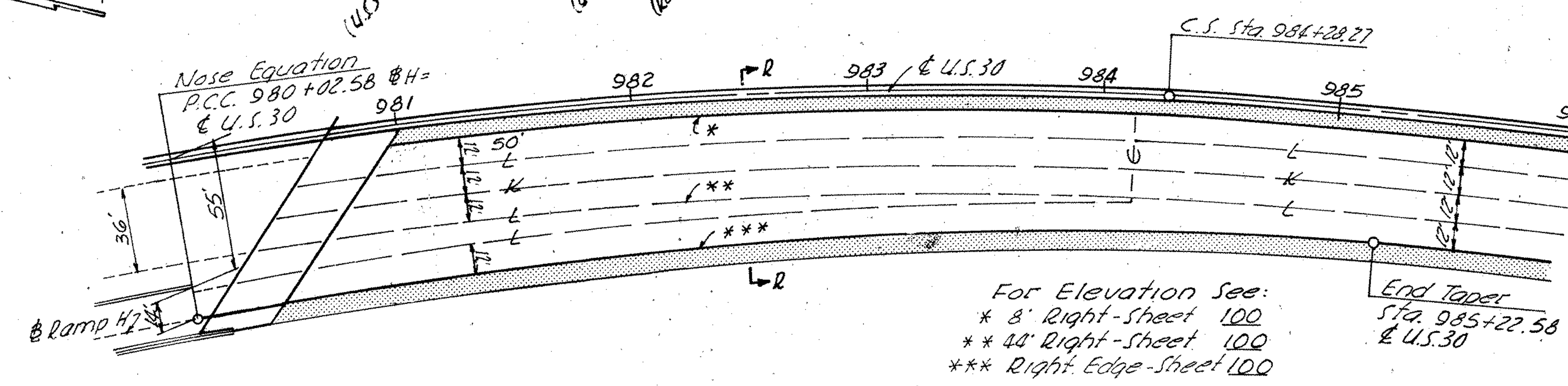


RAMP D

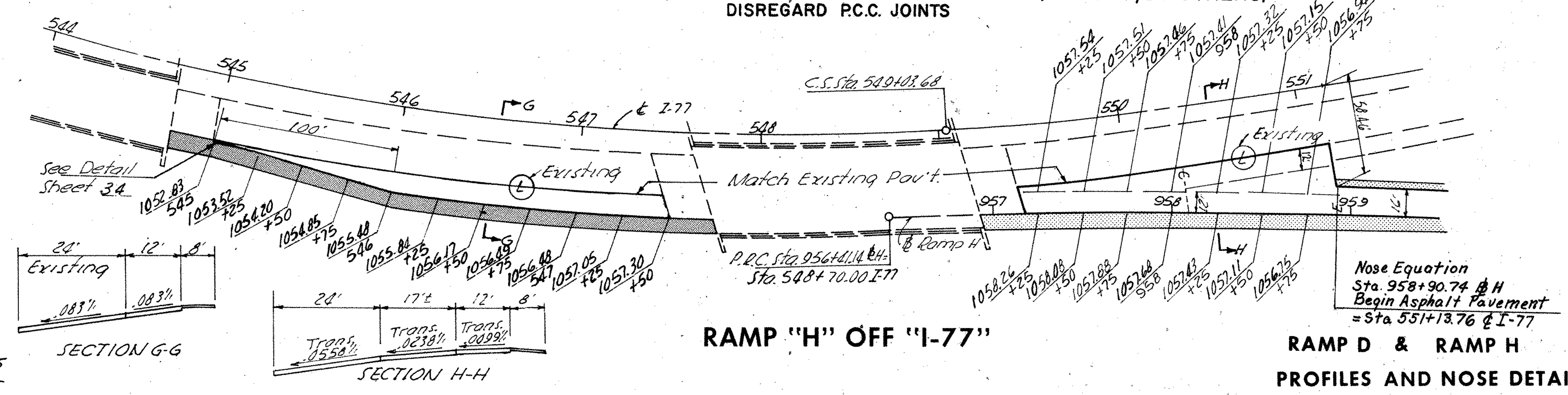




RAMP "D" OFF "U.S. 30" (FUTURE, BY OTHERS)
DISREGARD P.C.C. JOINTS



RAMP "H" ON TO "U.S. 30" (FUTURE, BY OTHERS)
DISREGARD P.C.C. JOINTS



RAMP "H" OFF "I-77"

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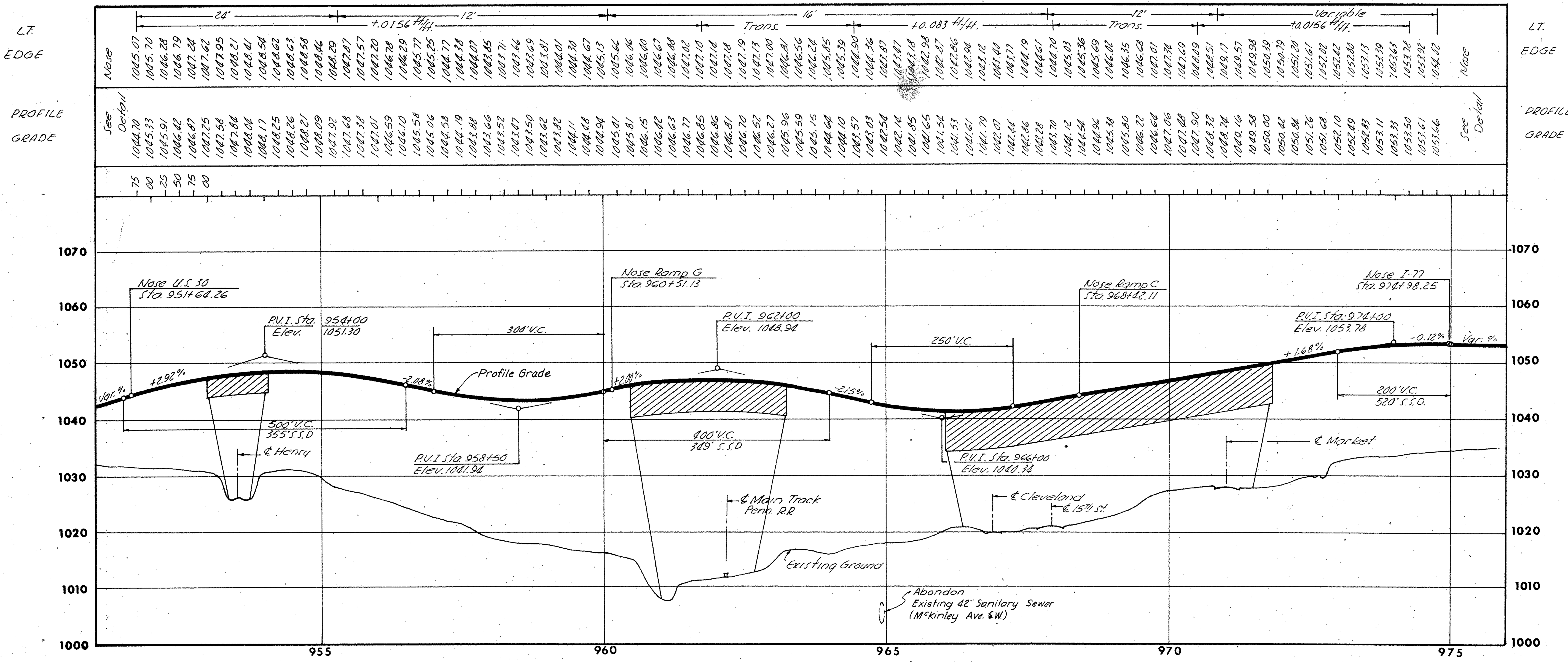
Ckd U.N.S. 5-25-75

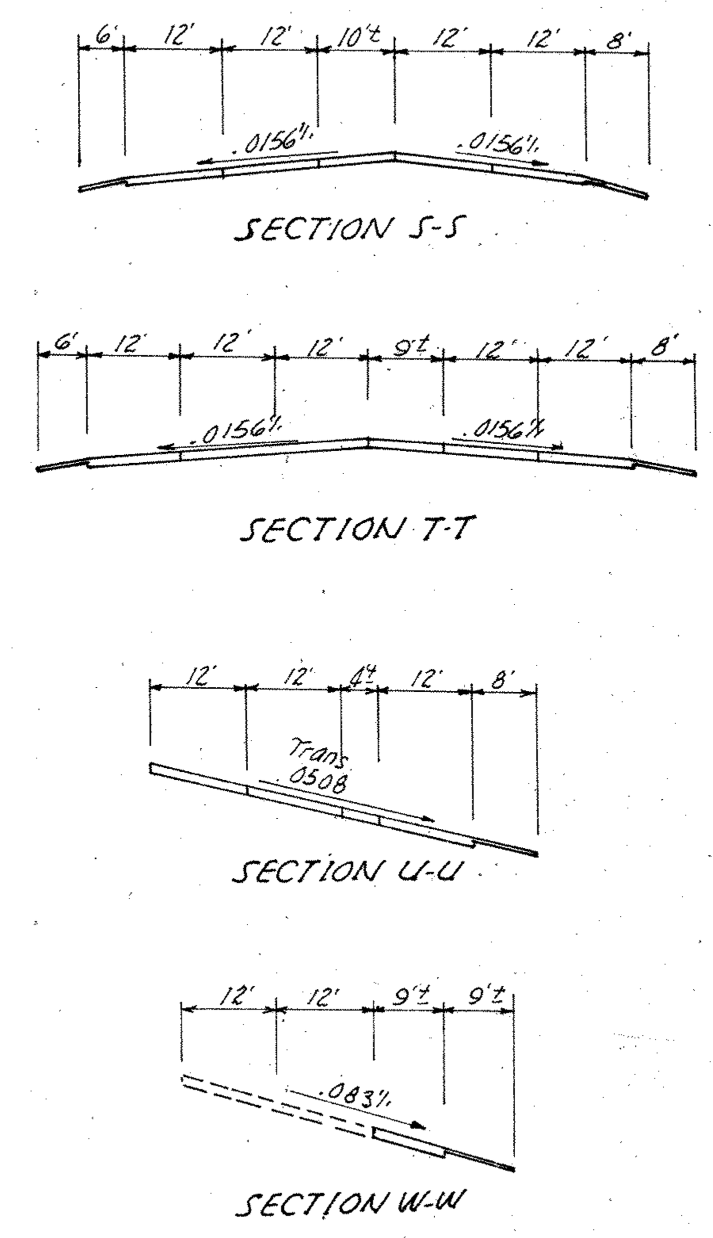
RAMP D & RAMP H
PROFILES AND NOSE DETAILS

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

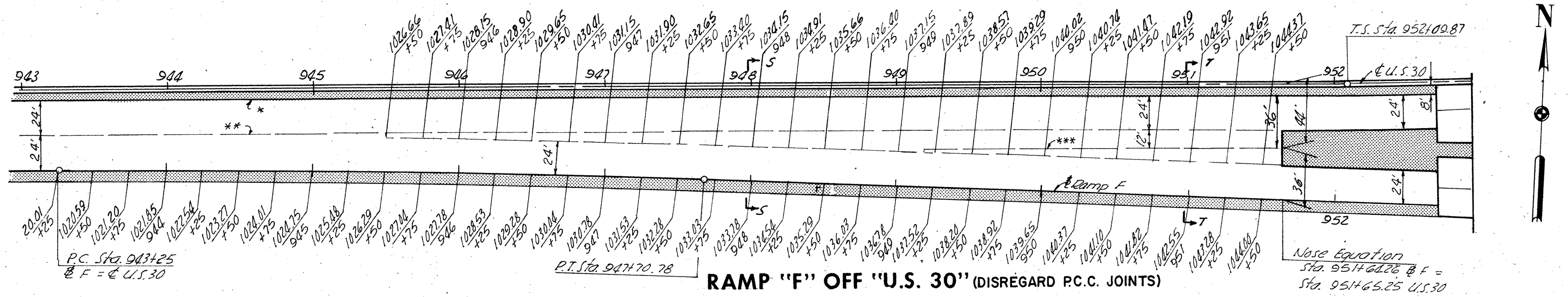


RAMP F

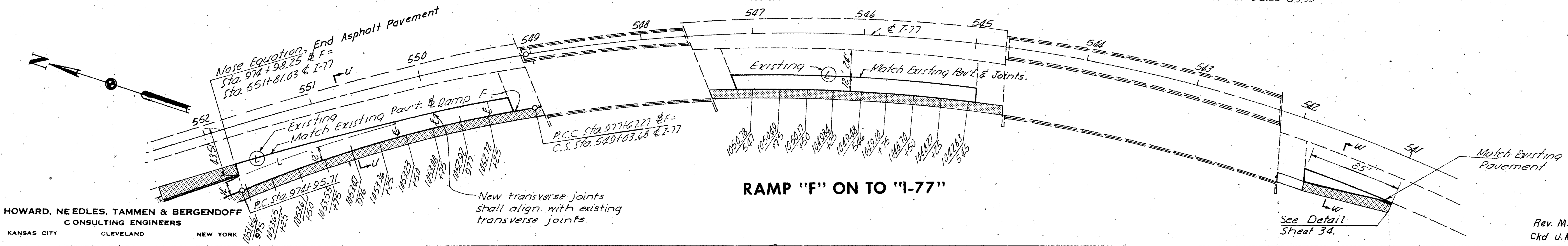


MICROFILMED
SEP 12

For Elevations
* 8' Right - Sheet 99
** 32' Right - Sheet 99
*** 44' Right - Sheet 99



RAMP "F" OFF "U.S. 30" (DISREGARD P.C.C. JOINTS)



RAMP "F" ON TO "I-77"

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Rev. M.G.B. 5-25-75
Ckd. J.N.S. 5-25-75

RAMP F
PROFILES AND NOSE DETAILS

RAMP "G" OFF RAMP "F"
DISREGARD P.C.C. JOINTS
For Elevations See
* Left Edge Ramp F Sheet 97.
** Profile Grade Ramp F Sheet 97.

Rev. M.G.B. 5-25-75
Ckd J.N.S. 5-25-75

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RAMP G & RAMP T
PROFILES AND NOSE DETAILS

U030 SUPERELEVATION TABLES @ HARRISON AVE.

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

99 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

LEFT EDGE ELEV.	LEFT EDGE DIST. LEFT	ELEVATION 56' LEFT	ELEVATION 44' LEFT	ELEVATION 32' LEFT	ELEVATION 20' LEFT	ELEVATION 8' LEFT	MEDIAN SHOULDER ELEVATION 2' LEFT	STATION / REMARK	MEDIAN SHOULDER ELEVATION 2' RIGHT	ELEVATION 8' RIGHT	ELEVATION 20' RIGHT	ELEVATION 32' RIGHT	ELEVATION 44' RIGHT	ELEVATION 56' RIGHT	RIGHT EDGE DIST. RIGHT	RIGHT EDGE ELEV.
			1030.76	1030.64		1030.26*		920+00		1030.24		1030.04	1029.85			
			1030.30	1030.24		1029.86		920+25		1029.81		1029.69	1029.50			
			1029.87	1029.80		1029.42		920+50		1029.39		1029.33	1029.14			
			1029.41	1029.38		1029.00		920+75		1028.98		1028.96	1028.77			
See 44'	44'		1028.97	1028.97		1028.59*	1028.34	921+00	1028.34	1028.59*		1028.59	1028.40		44'	See 44'
Left			1028.94	1028.94		1028.56*	1028.31	ST921+01.98 Back	1028.31	1028.56*		1028.56	1028.37			Right
								=921+03.28 Ahead								
			1028.55	1028.60		1028.22*	1027.97	921+25	1027.97	1028.22*		1028.32	1028.13			
			1028.12	1028.22		1027.84*	1027.59	921+50	1027.59	1027.84*		1028.08	1027.89			
			1027.68	1027.85		1027.47*	1027.22	921+75	1027.22	1027.47*		1027.81	1027.62			
			1027.30	1027.49		1027.11*	1026.86	922+00	1026.86	1027.11*		1027.49	1027.30			
			1026.95	1027.14		1026.76*	1026.51	922+25	1026.51	1026.76*		1027.14	1026.95			
			1026.62	1026.81		1026.43*	1026.18	922+50	1026.18	1026.43*		1026.81	1026.62			
			1026.29	1026.48		1026.10*	1025.85	922+75	1025.85	1026.10*		1026.48	1026.29			
			1025.97	1026.16		1025.78*	1025.53	923+00	1025.53	1025.78*		1026.16	1025.97			
			1025.67	1025.86		1025.48*	1025.23	923+25	1025.23	1025.48*		1025.86	1025.67			
			1025.37	1025.56		1025.18*	1024.93	923+50	1024.93	1025.18*		1025.56	1025.37			
			1025.09	1025.28		1024.90*	1024.65	923+75	1024.65	1024.90*		1025.28	1025.09			
			1024.81	1025.00		1024.62*	1024.37	924+00	1024.37	1024.62*		1025.00	1024.81			
			1024.55	1024.74		1024.36*	1024.11	924+25	1024.11	1024.36*		1024.74	1024.55			
			1024.30	1024.49		1024.11*	1023.86	924+50	1023.86	1024.11*		1024.49	1024.30			
			1024.05	1024.24		1023.86*	1023.61	924+75	1023.61	1023.86*		1024.24	1024.05			
			1023.82	1024.01		1023.63*	1023.38	925+00	1023.38	1023.63*		1024.01	1023.82			
			1023.60	1023.79		1023.41*	1023.16	925+25	1023.16	1023.41*		1023.79	1023.60			
			1023.39	1023.58		1023.20*	1022.95	925+50	1022.95	1023.20*		1023.58	1023.39			
			1023.19	1023.38		1023.00*	1022.75	925+75	1022.75	1023.00*		1023.38	1023.19			
			1023.02	1023.21		1022.83*	1022.58	926+00	1022.58	1022.83*		1023.21	1023.02			
			1022.83	1023.02		1022.64*	1022.39	926+25	1022.39	1022.64*		1023.02	1022.83			
			1022.66	1022.85		1022.47*	1022.22	926+50	1022.22	1022.47*		1022.85	1022.66			
			1022.51	1022.70		1022.32*	1022.07	926+75	1022.07	1022.32*		1022.70	1022.51			
			1022.36	1022.55		1022.17*	1021.92	927+00	1021.92	1022.17*		1022.55	1022.36			
			1022.22	1022.41		1022.03*	1021.78	927+25	1021.78	1022.03*		1022.41	1022.22			
			1022.08	1022.27		1021.89*	1021.64	927+50	1021.64	1021.89*		1022.27	1022.08			
			1021.94	1022.13		1021.75*	1021.50	927+75	1021.50	1021.75*		1022.13	1021.94			
			1021.80	1021.99		1021.61*	1021.36	928+00	1021.36	1021.61*		1021.99	1021.80			
			1021.66	1021.85		1021.47*	1021.22	928+25	1021.22	1021.47*		1021.85	1021.66			
			1021.52	1021.71		1021.33*	1021.08	928+50	1021.08	1021.33*		1021.71	1021.52			
			1021.38	1021.57		1021.19*	1020.94	928+75	1020.94	1021.19*		1021.57	1021.38			
			1021.24	1021.43		1021.05*	1020.80	929+00	1020.80	1021.05*		1021.43	1021.24			
			1021.10	1021.29		1020.91*	1020.66	929+25	1020.66	1020.91*		1021.29	1021.10			
			1020.96	1021.15		1020.77*	1020.52	929+50	1020.52	1020.77*		1021.15	1020.96			
			1020.82	1021.01		1020.63*	1020.38	929+75	1020.38	1020.63*		1021.01	1020.82			
			1020.68	1020.87		1020.49*	1020.24	930+00	1020.24	1020.49*		1020.87	1020.68			
			1020.54	1020.73		1020.35*	1020.10	930+25	1020.10	1020.35*		1020.73	1020.54			
			1020.40	1020.59		1020.21*	1019.96	930+50	1019.96	1020.21*		1020.59	1020.40			
			1020.26	1020.45		1020.07*	1019.82	930+75	1019.82	1020.07*		1020.45	1020.26			
			1020.12	1020.31		1019.93*	1019.68	931+00	1019.68	1019.93*		1020.31	1020.12			
			1019.98	1020.17		1019.79*	1019.54	931+25	1019.54	1019.79*		1020.17	1019.98			
			1019.84	1020.03		1019.65*	1019.40	931+50	1019.40	1019.65*		1020.03	1019.84			
			1019.70	1019.89		1019.51*	1019.26	931+75	1019.26	1019.51*		1019.89	1019.70			
			1019.56	1019.75		1019.37*	1019.12	932+00	1019.12	1019.37*		1019.75	1019.56			
			1019.42	1019.61		1019.23*	1018.98	932+25	1018.98	1019.23*		1019.61	1019.42			
			1019.28	1019.47		1019.09*	1018.84	932+50	1018.84	1019.09*		1019.47	1019.28			
			1019.14	1019.33		1018.95*	1018.70	932+75	1018.70	1018.95*		1019.33	1019.14			
			1019.00	1019.19		1018.81*	1018.56	933+00	1018.56	1018.81*		1019.19	1019.00			
			1018.86	1019.05		1018.67*	1018.42	933+25	1018.42	1018.67*		1019.05			68.38	1018.27
			1018.72	1018.91		1018.53*	1018.28	933+50	1018.28	1018.53*		1018.91			67.75	1018.16
			1018.58	1018.77		1018.39*	1018.14	933+75	1018.14	1018.39*		1018.77			67.12	1018.02
			1018.44	1018.63		1018.25*	1018.00	934+00	1018.00	1018.25*		1018.63			66.50	1017.90
See ℄	℄ Ramp		1018.30	1018.49		1018.11*	1017.86	934+25	1017.86	1018.11*		1018.49			65.88	1017.79
Ramp S	S		1018.16	1018.35		1017.97*	1017.72	934+50	1017.72	1017.97*		1018.35			65.25	1017.66
Sheet 94			1018.02	1018.21		1017.83*	1017.58	934+75	1017.58	1017.83*		1018.21			64.62	1017.54
			1017.88	1018.07		1017.69*	1017.44	935+00	1017.44	1017.69*		1018.07			64.00	1017.43
			1017.74	1017.93		1017.55*	1017.30	935+25	1017.30	1017.55*		1017.93			63.38	1017.30
			1017.60	1017.79		1017.41*	1017.16	935+50	1017.16	1017.41*		1017.79			62.75	1017.19
			1017.46	1017.65		1017.27*	1017.02	935+75	1017.02	1017.27*		1017.65			62.12	1017.06
			1017.32	1017.51		1017.13*	1016.88	936+00	1016.88	1017.13*		1017.51			61.50	1016.96
		1016.88		1017.38		1017.00*	1016.75	936+25	1016.75	1017.00*		1017.38			60.88	1016.84
56'	See 56'	1016.86		1017.24		1016.86*	1016.61	936+50	1016.61	1016.86*		1017.24			60.25	1016.74
	Left	1016.72		1017.10		1016.72*	1016.47	936+75	1016.47	1016.72*		1017.10			59.62	1016.60
		1016.58		1016.96		1016.58*	1016.33	937+00	1016.33	1016.58*		1016.96			59.00	1016.50
		1016.44		1016.82		1016.44*	1016.19	937+25	1016.19	1016.44*		1016.82			58.38	1016.38

* Profile Grade

LEFT EDGE ELEV.	LEFT EDGE DIST. LEFT	ELEVATION 56' LEFT	ELEVATION 44' LEFT	ELEVATION 32' LEFT	ELEVATION 20' LEFT	ELEVATION 8' LEFT	MEDIAN SHOULDER ELEVATION 2' LEFT	STATION / REMARK	MEDIAN SHOULDER ELEVATION 2' RIGHT	ELEVATION 8' RIGHT	ELEVATION 20' RIGHT	ELEVATION 32' RIGHT	ELEVATION 44' RIGHT	ELEVATION 56' RIGHT	RIGHT EDGE DIST. RIGHT	RIGHT EDGE ELEV.
		1016.30		1016.68		1016.30*	1016.05	937+50	1016.05	1016.30*		1016.68			57.75	1016.26
		1016.21		1016.59		1016.21*	1015.96	937+75	1015.96	1016.21*		1016.59			57.12	1016.19
		1016.15		1016.53		1016.15*	1015.90	938+00	1015.90	1016.15*		1016.53			56.50	1016.13
		1016.14		1016.52		1016.14*	1015.89	938+22.38 L.P.	1015.89	1016.14*		1016.52		1016.14		
See 56'	56'	1016.14		1016.52		1016.14*	1015.89	938+25	1015.89	1016.14*		1016.52		1016.14		
Left		1016.16		1016.54		1016.16*	1015.91	938+50	1015.91	1016.16*		1016.54		1016.16		
		1016.23		1016.61		1016.23*	1015.98	938+75	1015.98	1016.23*		1016.61		1016.23	56'	See 56'
		1016.33		1016.71		1016.33*	1016.08	939+00	1016.08	1016.33*		1016.71		1016.33		Right
		1016.48		1016.86		1016.48*	1016.23	939+25	1016.23	1016.48*		1016.86		1016.48		
		1016.66		1017.04		1016.66*	1016.41	939+50	1016.41	1016.66*		1017.04		1016.66		
		1016.88		1017.26		1016.88*	1016.63	939+75	1016.63	1016.88*		1017.26		1016.88		
		1017.15		1017.53		1017.15*	1016.90	940+00	1016.90	1017.15*		1017.53		1017.15		
		1017.45		1017.83		1017.45*	1017.20	940+25	1017.20	1017.45*		1017.83		1017.45		
		1017.80		1018.18		1017.80*	1017.55	940+50	1017.55	1017.80*		1018.18		1017.80		
		1018.18		1018.56		1018.18*	1017.83	940+75	1017.83	1018.18*		1018.56		1018.18		
		1018.61		1018.99		1018.61*	1018.36	941+00	1018.36	1018.61*		1018.99		1018.61		
		1019.07		1019.45		1019.07*	1018.82	941+25	1018.82	1019.07*		1019.45		1019.07		
		1019.57		1019.95		1019.57*	1019.32	941+50	1019.32	1019.57*		1019.95		1019.57		
		1020.01		1020.39		1020.01*	1019.76	941+70.11 Back	1019.76	1020.01*		1020.39		1020.01		
								=943+25 Ahead								
		1020.59		1020.97		1020.59*	1020.34	943+50	1020.34	1020.59*		1020.97				
		1021.20		1021.58		1021.20*	1020.95	943+75	1020.95	1021.20*		1021.58				
		1021.86		1022.24		1021.86*	1021.61	944+00	1021.61	1021.86*		1022.24				
		1022.55		1022.93		1022.55*	1022.30	944+25	1022.30	1022.55*		1022.93			℄ Ramp	See ℄
		1023.29		1023.67		1023.29*	1023.04	944+50	1023.04	1023.29*		1023.67			F	Ramp F
		1024.03		1024.41		1024.03*	1023.78	944+75	1023.78	1024.03*		1024.41				Sheet
		1024.77		1025.15		1024.77*	1024.52	945+00	1024.52	1024.77*		1025.15				97
		1025.51		1025.89		1025.51*	1025.26	945+25	1025.26	1025.51*		1025.89				
		1026.25		1026.63		1026.25*	1026.00	945+50	1026.00	1026.25*		1026.63				
		1026.99		1027.37		1026.99*	1026.74	945+75	1026.74	1026.99*		1027.37				
		1027.73		1028.11		1027.73*	1027.48	946+00	1027.48	1027.73*		1028.11				
		1028.47		1028.85		1028.47*	1028.22	946+25	1028.22	1028.47*		1028.85				
1029.20	56.50		1029.40	1029.59		1029.21*	1028.96	946+50	1028.96	1029.21*		1029.59				
1029.94	57.12		1030.14	1030.33		1029.95*	1029.70	946+75	1029.70	1029.95*		1030.33				
1030.67	57.75		1030.88	1031.07		1030.69*	1030.44	947+00	1030.44	1030.69*		1031.07				
1031.40	58.38		1031.62	1031.81		1031.43*	1031.18	947+25	1031.18	1031.43*		1031.81				
1032.13	59.00		1032.36	1032.55		1032.17*	1031.92	947+50	1031.92	1032.17*		1032.55				
1032.86	59.62		1033.10	1033.29		1032.91*	1032.66	947+75	1032.66	1032.91*		1033.29				
1033.59	60.25		1033.84	1034.03		1033.65*	1033.40	948+00	1033.40	1033.65*		1034.03				
1034.32	60.88		1034.58	1034.77		1034.39*	1034.14	948+25	1034.14	1034.39*		1034.77				
1035.05	61.50		1035.32	1035.51		1035.13*	1034.88	948+50	1034.88	1035.13*		1035.51				
1035.78	62.12		1036.06	1036.25		1035.87*	1035.62	948+75	1035.62	1035.87*		1036.25				
1036.51	62.75		1036.80	1036.99		1036.61*	1036.36	949+00	1036.36	1036.61*		1036.99				
1037.24	63.38		1037.54	1037.73		1037.35*	1037.10	949+25	1037.10	1037.35*		1037.73	1037.92			
1037.97	64.00		1038.28	1038.47		1038.09*	1037.84	949+50	1037.84	1038.09*		1038.47	1038.66			
1038.70	64.62		1039.02	1039.21		1038.83*	1038.58	949+75	1038.58	1038.83*		1039.21	1039.40			
1039.43	65.25		1039.76	1039.95		1039.57*	1039.32	950+00	1039.32	1039.57*		1039.95	1040.14			
1040.16	65.88		1040.50	1040.69		1040.31*	1040.06	950+25	1040.06	1040.31*		1040.69	1040.88			
1040.89	66.50		1041.24	1041.43		1041.05*	1040.80	950+50	1040.80	1041.05*		1041.43	1041.62			
1041.56	67.12		1041.92	1042.10		1041.79*	1041.54	950+75	1041.54	1041.79*		1042.17	1042.36			
1042.22	67.75		1042.59	1042.78		1042.53*	1042.28	951+00	1042.28	1042.53*		1042.91	1043.10			
1042.68	68.38		1043.27	1043.46		1043.27*	1043.02	951+25	1043.02	1043.27*		1043.65	1043.84			
1043.12	69.00		1043.95	1044.14		1044.01*	1043.76	951+50	1043.76	1044.01*		1044.39	1044.58			
			1044.63	1044.81		1044.75*	1044.50	951+75	1044.50	1044.75*		1045.13				
			1045.29	1045.48		1045.49*	1045.24	952+00	1045.24	1045.49*		1045.87				
See 44'	44'		1045.92	1046.11		1046.23*	1046.03	952+25	1046.03	1046.28		1046.66				
Left			1046.53	1046.72		1046.97*	1046.83	952+50	1046.83	1047.08		1047.45				
			1047.15	1047.35		1047.71*	1047.60	952+75	1047.60	1047.85		1048.25			32'	See 32'
																Right
			1047.76			1048.45*	1048.36	953+00	1048.36	1048.61		1049.07				
			1048.38			1049.19*	1049.10	953+25	1049.10	1049.35		1049.89				
			1049.00			1049.93*	1049.84	953+50	1049.84	1050.09		1050.71				
			1049.61			1050.67*	1050.58	953+75	1050.58	1050.83		1051.53				
			1050.23			1051.41*	1051.32	954+00	1051.32	1051.57		1052.36				
			1050.84			1052.15*	1052.06	954+25	1052.06	1052.31		1053.18				

U.S. 30 SUPERELEVATION TABLES

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

100
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

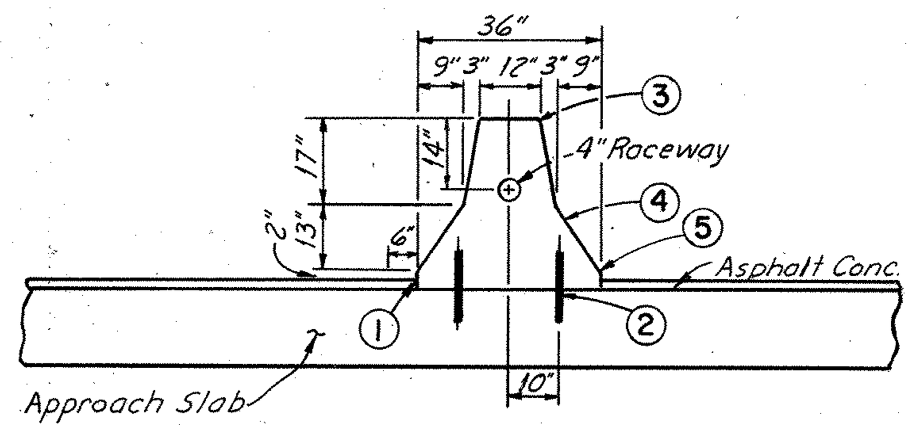
LEFT EDGE ELEV.	LEFT EDGE DIST. LEFT	ELEVATION 56' LEFT	ELEVATION 44' LEFT	ELEVATION 32' LEFT	ELEVATION 20' LEFT	ELEVATION 8' LEFT	MEDIAN SHOULDER ELEVATION 2' LEFT	STATION / REMARK	MEDIAN SHOULDER ELEVATION 2' RIGHT	ELEVATION 8' RIGHT	ELEVATION 20' RIGHT	ELEVATION 32' RIGHT	ELEVATION 44' RIGHT	ELEVATION 56' RIGHT	RIGHT EDGE DIST. RIGHT	RIGHT EDGE ELEV.
			1051.46			1052.89*	1052.80	954+50	1052.80	1053.05		1054.00				
			1052.07			1053.63*	1053.54	954+75	1053.54	1053.80		1054.84				
			1052.69			1054.37*	1054.28	955+00	1054.28	1054.56		1055.68				
			1053.30			1055.11*	1055.02	955+25	1055.02	1055.32		1056.52				
			1053.92			1055.85*	1055.76	955+50	1055.76	1056.08		1057.37				
			1054.53			1056.59*	1056.50	955+75	1056.50	1056.84		1058.21				
			1055.15			1057.33*	1057.24	956+00	1057.24	1057.60		1059.05				
			1055.76			1058.07*	1057.98	956+25	1057.98	1058.36		1059.90			32'	See 32'
			1056.38			1058.81*	1058.72	956+50	1058.72	1059.12		1060.74				Right
			1057.03			1059.55*	1059.46	956+75	1059.46	1059.88		1061.56				
			1057.73			1060.29*	1060.20	957+00	1060.20	1060.62		1062.33				
			1058.47			1061.03*	1060.94	957+25	1060.94	1061.36		1063.07				
			1059.21			1061.77*	1061.68	957+50	1061.68	1062.10		1063.81				
1059.92	44.47		1059.95			1062.51*	1062.42	957+75	1062.42	1062.84		1064.55				
1060.61	45.10		1060.69			1063.25*	1063.16	958+00	1063.16	1063.58		1065.29				
1061.31	45.72		1061.43			1063.99*	1063.90	958+25	1063.90	1064.32		1066.03				
1061.99	46.35		1062.16			1064.71*	1064.62	958+50	1064.62	1065.05		1066.75				
1062.64	46.97		1062.85			1065.40*	1065.31	958+75	1065.31	1065.74		1067.44				
1063.25	47.60		1063.51			1066.06*	1065.97	959+00	1065.97	1066.39		1068.10				
1063.83	48.22		1064.13			1066.69*	1066.59	959+25	1066.59	1067.02		1068.72				
1064.38	48.85		1064.72			1067.28*	1067.18	959+50	1067.18	1067.61		1069.31				
1064.89	49.47		1065.28			1067.84*	1067.74	959+75	1067.74	1068.17		1069.87				
1065.38	50.10		1065.81			1068.36*	1068.27	960+00	1068.27	1068.69		1070.40				
1065.82	50.72		1066.30			1068.85*	1068.76	960+25	1068.76	1069.19		1070.89				
1066.24	51.35		1066.76			1069.31*	1069.22	960+50	1069.22	1069.65		1071.35				
1066.61	51.97		1067.18			1069.74*	1069.65	960+75	1069.65	1070.07		1071.78				
1066.97	52.60		1067.58			1070.13*	1070.04	961+00	1070.04	1070.47		1072.17				
1067.29	53.22		1067.94			1070.49*	1070.40	961+25	1070.40	1070.83		1072.53				
1067.57	53.85		1068.27			1070.82*	1070.73	961+50	1070.73	1071.15		1072.86				
1067.82	54.47		1068.56			1071.12*	1071.02	961+75	1071.02	1071.45		1073.15				
1068.03	55.10		1068.82			1071.38*	1071.28	962+00	1071.28	1071.71		1073.41				
1068.22	55.72		1069.05			1071.61*	1071.51	962+25	1071.51	1071.94		1073.64				
1068.37	56.35		1069.25			1071.80*	1071.71	962+50	1071.71	1072.13		1073.84				
1068.49	56.97		1069.41			1071.96*	1071.87	962+75	1071.87	1072.30		1074.00				
1068.57	57.60		1069.54			1072.09*	1072.00	963+00	1072.00	1072.43		1074.13				
1068.62	58.22		1069.63			1072.19*	1072.10	963+25	1072.10	1072.52		1074.23				
1068.65	58.85		1069.70			1072.25*	1072.16	963+50	1072.16	1072.59		1074.29				
1068.63	59.47		1069.73			1072.28*	1072.19	963+75	1072.19	1072.62		1074.32				
1068.61	59.74		1069.73			1072.29*	1072.19	963+85.60 H.P.	1072.19	1072.62		1074.32				
1068.59	60.10		1069.73			1072.28*	1072.19	964+00	1072.19	1072.61		1074.32				
1068.50	60.72		1069.69			1072.25*	1072.15	964+25	1072.15	1072.58		1074.28				
1068.39	61.35		1069.62			1072.18*	1072.08	964+50	1072.08	1072.51		1074.21				
1068.24	61.97		1069.52			1072.08*	1071.98	964+75	1071.98	1072.41		1074.11				
1068.07	62.60		1069.39			1071.94*	1071.85	965+00	1071.85	1072.27		1073.98				
1067.88	63.22		1069.25			1071.77*	1071.68	965+25	1071.68	1072.10		1073.78				
1067.80	63.85		1069.14			1071.57*	1071.48	965+50	1071.48	1071.89		1073.51				
1067.71	64.47		1069.03			1071.34*	1071.25	965+75	1071.25	1071.63		1073.17				
1067.61	65.10		1068.90			1071.09*	1071.00	966+00	1071.00	1071.36		1072.82				
1067.52	65.72		1068.77			1070.84*	1070.75	966+25	1071.75	1071.09		1072.47				
1067.44	66.35		1068.64			1070.59*	1070.50	966+50	1070.50	1070.82		1072.12				
1067.36	66.97		1068.52			1070.34*	1070.25	966+75	1070.25	1070.55		1071.77				
1067.27	67.60		1068.39			1070.09*	1070.00	967+00	1070.00	1070.28		1071.41				
1067.20	68.22		1068.26			1069.84*	1069.75	967+25	1069.75	1070.01		1071.06				
1067.13	68.85		1068.13			1069.59*	1069.50	967+50	1069.50	1069.75		1070.72				
			1068.00			1069.34*	1069.25	967+75	1069.25	1069.50		1070.39				
			1067.87			1069.09*	1069.00	968+00	1069.00	1069.25		1070.06				
			1067.75			1068.84*	1068.75	968+25	1068.75	1069.00		1069.73				
			1067.62			1068.59*	1068.50	968+50	1068.50	1068.75		1069.40				
See 44'	44'		1067.49			1068.34*	1068.25	968+75	1068.25	1068.50		1069.06				
Left.			1067.36			1068.09*	1068.00	969+00	1068.00	1068.25		1068.73				
			1067.23			1067.84*	1067.74	969+25	1067.74	1067.99		1068.40				
			1067.10			1067.59*	1067.47	969+50	1067.47	1067.72		1068.05				
			1066.97			1067.34*	1067.19	969+75	1067.19	1067.44		1067.69				
			1066.85			1067.09*	1066.91	970+00	1066.91	1067.16		1067.32				
			1066.72			1066.84*	1066.62	970+25	1066.62	1066.87		1066.96				
			1066.61			1066.60*	1066.35	970+50	1066.35	1066.60*		1066.60				
			1066.50			1066.37	1066.12	970+75	1066.12	1066.34*		1066.26				
			1066.40			1066.16	1065.91	971+00	1065.91	1066.09*		1065.93				

*Profile Grade

LEFT EDGE ELEV.	LEFT EDGE DIST. LEFT	ELEVATION 56' LEFT	ELEVATION 44' LEFT	ELEVATION 32' LEFT	ELEVATION 20' LEFT	ELEVATION 8' LEFT	MEDIAN SHOULDER ELEVATION 2' LEFT	STATION / REMARK	MEDIAN SHOULDER ELEVATION 2' RIGHT	ELEVATION 8' RIGHT	ELEVATION 20' RIGHT	ELEVATION 32' RIGHT	ELEVATION 44' RIGHT	ELEVATION 56' RIGHT	RIGHT EDGE DIST. RIGHT	RIGHT EDGE ELEV.
			1066.31			1065.94	1065.69	971+25	1065.69	1065.84*		1065.60			32'	See 32'
			1066.21			1065.72	1065.47	971+50	1065.47	1065.59*		1065.26				Right
			1066.10			1065.49	1065.24	971+75	1065.24	1065.34*		1064.93				
See 44'	44'		1065.98			1065.25	1065.00	972+00	1065.00	1065.09*		1064.60			℄ Ramp	See ℄
Left			1065.85			1065.00	1064.75	972+25	1064.75	1064.84*		1064.27			B	Ramp B
			1065.72			1064.75	1064.50	972+50	1064.50	1064.59*		1063.94				Sheet
			1065.59			1064.50	1064.25	972+75	1064.25	1064.34*		1063.61				94
			1065.46			1064.25	1064.00	973+00	1064.00	1064.09*		1063.28				
			1065.33			1064.00	1063.75	973+25	1063.75	1063.84*		1062.95				
			1065.21			1063.75	1063.50	973+50	1063.50	1063.59*		1062.62				
			1065.09			1063.51	1063.25	973+75	1063.25	1063.34*		1062.29				
			1064.98			1063.28	1063.00	974+00	1063.00	1063.09*		1061.96				
			1064.87			1063.05	1062.75	974+25	1062.75	1062.84*		1061.62				
			1064.77			1062.82	1062.50	974+50	1062.50	1062.59*		1061.29				
			1064.66			1062.59	1062.25	974+75	1062.25	1062.34*		1060.96				
			1064.55			1062.36	1062.00	975+00	1062.00	1062.09*		1060.63				
			1064.44			1062.13	1061.75	975+25	1061.75	1061.84*		1060.30				
			1064.33			1061.90	1061.50	975+50	1061.50	1061.59*		1059.97				
			1064.19			1061.67	1061.25	975+75	1061.25	1061.34*		1059.66				
			1063.98			1061.42	1061.00	976+00	1061.00	1061.09*		1059.39				
			1063.73			1061.17	1060.75	976+25	1060.75	1060.84*		1059.14				
			1063.48			1060.92	1060.50	976+50	1060.50	1060.59*		1058.89				
			1063.23			1060.67	1060.25	976+75	1060.25	1060.34*		1058.64				
			1062.98			1060.42	1060.00	977+00	1060.00	1060.09*		1058.39				
			1062.73			1060.17	1059.75	977+25	1059.75	1059.84*			1057.28			
			1062.48			1059.92	1059.50	977+50	1059.50	1059.59*			1057.03			
			1062.23			1059.67	1059.25	977+75	1059.25	1059.34*			1056.78			
			1061.98			1059.42	1059.00	978+00	1059.00	1059.09*			1056.53		44	See 44'
																Right
			1061.73			1059.17	1058.75	978+25	1058.75	1058.84*			1056.28			
			1061.48			1058.92	1058.50	978+50	1058.50	1058.59*			1056.03			
			1061.23			1058.67	1058.25	978+75	1058.25	1058.34*			1055.78			
See ℄	℄ Ramp		1060.98			1058.42	1058.00	979+00	1058.00	1058.09*			1055.53			
Ramp D	D		1060.73			1058.17	1057.75	979+25	1057.75	1057.84*			1055.28			
Sheet 96			1060.48			1057.92	1057.50	979+50	1057.50	1057.59*			1055.03			
			1060.23			1057.67	1057.25	979+75	1057.25	1057.34*			1054.78			
			1059.98			1057.42	1057.00	980+00	1057.00	1057.09*			1054.53			
			1059.73			1057.17	1056.75	980+25	1056.75	1056.84*			1054.28		68.44	1052.54
			1059.48			1056.92	1056.50	980+50	1056.50	1056.59*			1054.03		67.81	1052.34
			1059.23			1056.67	1056.25	980+75	1056.25	1056.34*			1053.78		67.19	1052.13
			1058.98			1056.42	1056.00	981+00	1056.00	1056.09*			1053.53		66.56	1051.93
			1058.73			1056.17	1055.75	981+25	1055.75	1055.84*			1053.28		65.94	1051.72
			1058.48			1055.92	1055.50	981+50	1055.50	1055.59*			1053.03		65.31	1051.52
			1058.23			1055.67	1055.25	981+75	1055.25	1055.34*			1052.78		64.69	1051.31
			1057.98			1055.42	1055.00	982+00	1055.00	1055.09*			1052.53		64.06	1051.11
			1057.73			1055.17	1054.75	982+25	1054.75	1054.84*			1052.28		63.44	1050.90
			1057.48			1054.92	1054.50	982+50	1054.50	1054.59*			1052.03		62.81	1050.69
			1057.23			1054.67	1054.25	982+75	1054.25	1054.34*			1051.78		62.19	1050.49
1058.05			1056.98			1054.42	1054.00	983+00	1054.00	1054.09*			1051.53		61.56	1050.28
1057.92	68'		1056.73			1054.17	1053.75	983+25	1053.75	1053.84*			1051.28		60.94	1050.08
1057.80			1056.48			1053.92	1053.50	983+50	1053.50	1053.59*			1051.03		60.31	1049.87
1057.68			1056.23			1053.67	1053.25	983+75	1053.25	1053.34*			1050.78		59.69	1049.67
1057.56			1055.98			1053.42	1053.00	984+00	1053.00	1053.09*			1050.53		59.06	1049.49
1057.35			1055.69			1053.17	1052.75	984+25	1052.75	1052.84*			1050.32		58.44	1049.38
1056.94			1055.32			1052.90	1052.50	984+50	1052.50	1052.59*			1050.17		57.81	1049.31
1056.45			1054.92			1052.63	1052.25	984+75	1052.25	1052.34*			1050.05		57.19	1049.25
1055.95			1054.51			1052.36	1052.00	985+00	1052.00	1052.09*			1049.93		56.56	1049.20
1055.46			1054.11			1052.08	1051.75	985+25	1051.75	1051.84*				1049.14		
1054.96			1053.70			1051.81	1051.50	985+50	1051.50	1051.59*				1049.07		
1054.47			1053.30			1051.54	1051.25	985+75	1051.25	1051.34*				1049.00	56'	See 56'
1053.97			1052.89			1051.27	1051.00	986+00	1051.00	1051.09*				1048.93		Right
1053.48			1052.49			1051.00	1050.75	986+25	1050.75	1050.84*				1048.85		
1053.01			1052.10			1050.75	1050.50	986+50	1050.50	1050.59*				1048.78		

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

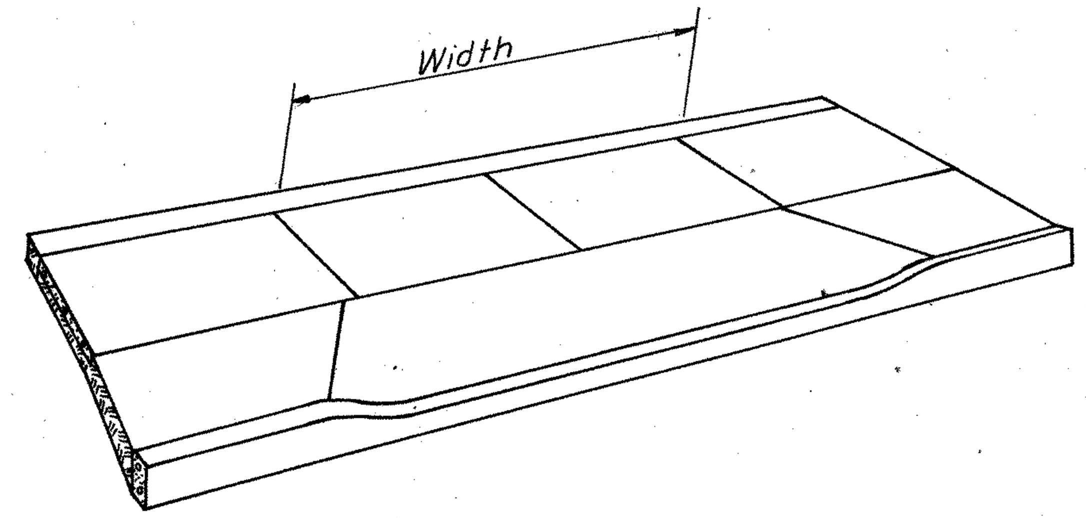
STARK COUNTY
STA-30-14.12
STA-77-9.22

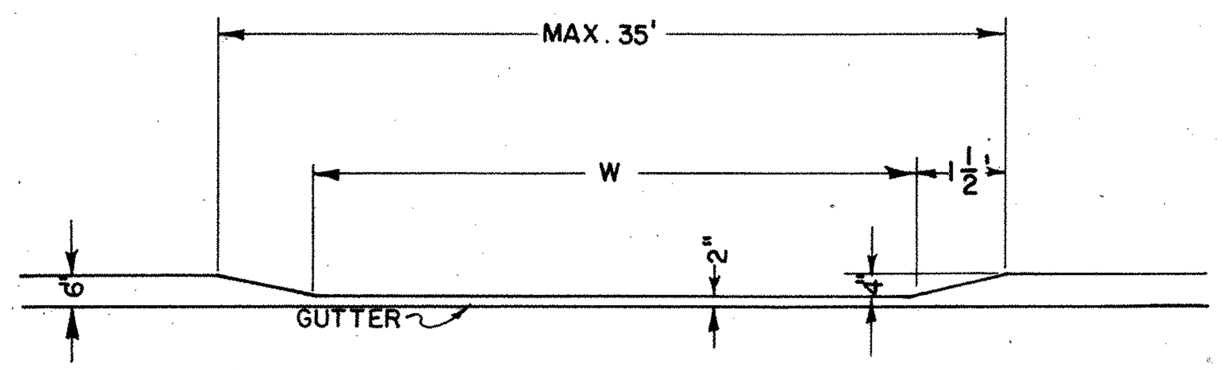


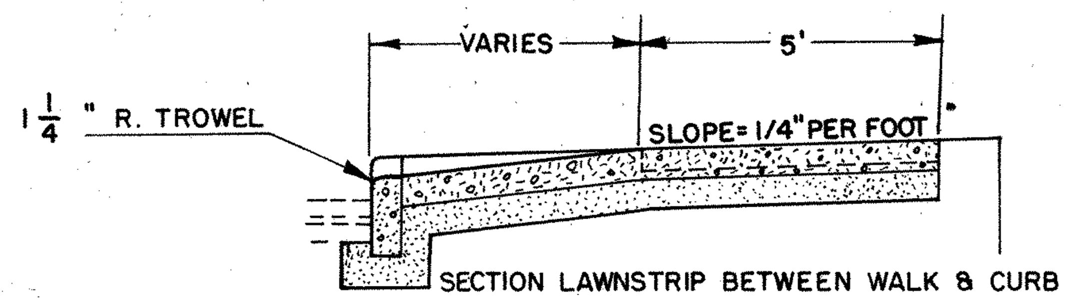
LEGEND

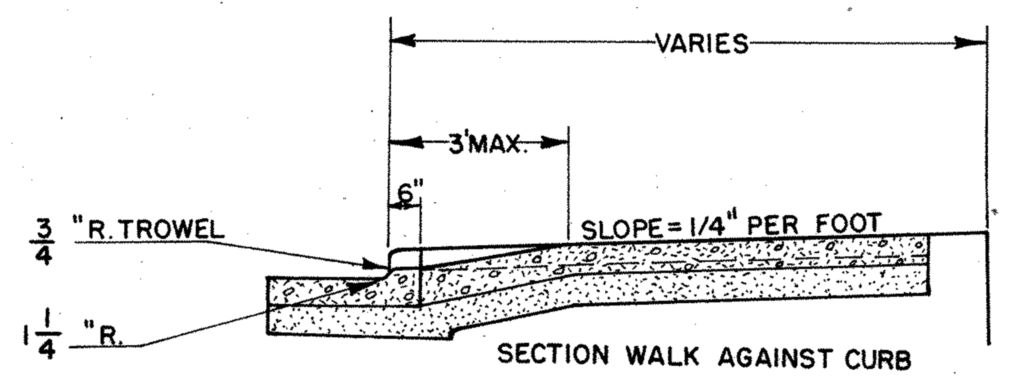
1. Expansion joint, 3/4" min. Preformed Filler 705.03.
2. No.8 deformed steel bars, 12" long, spaced on staggered (except Type D) 4" centers. Omit dowels when top is constructed integral with the base.
3. 1" Radius or 3/4" chamfer.
4. Permissible 10" Radius
5. Permissible 1" Radius

CONCRETE BARRIER TYPE B MODIFIED

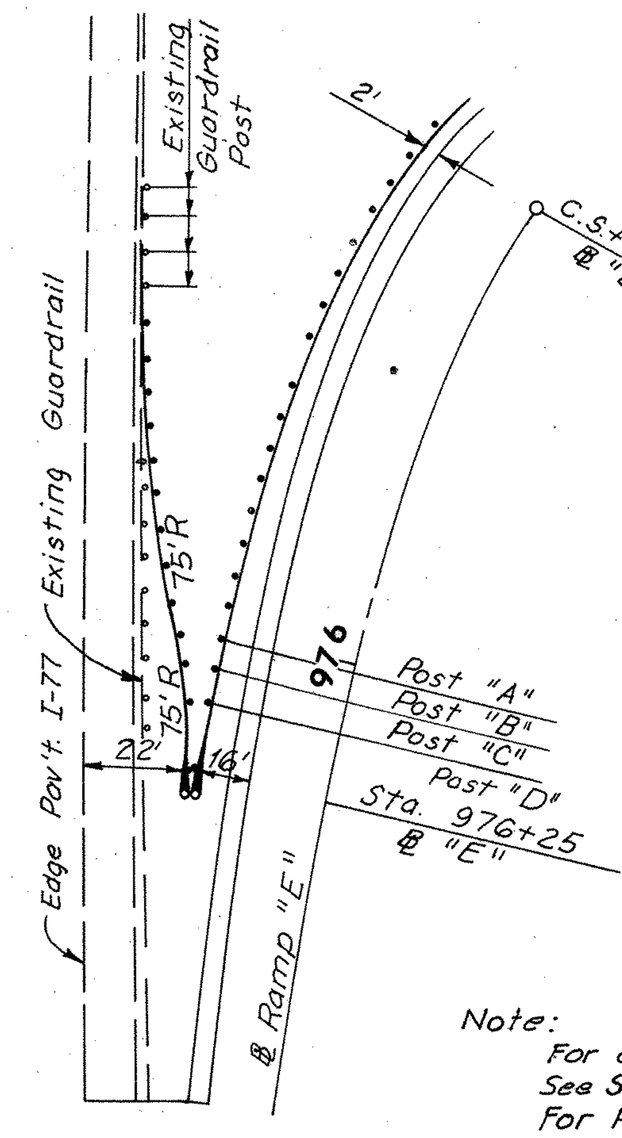






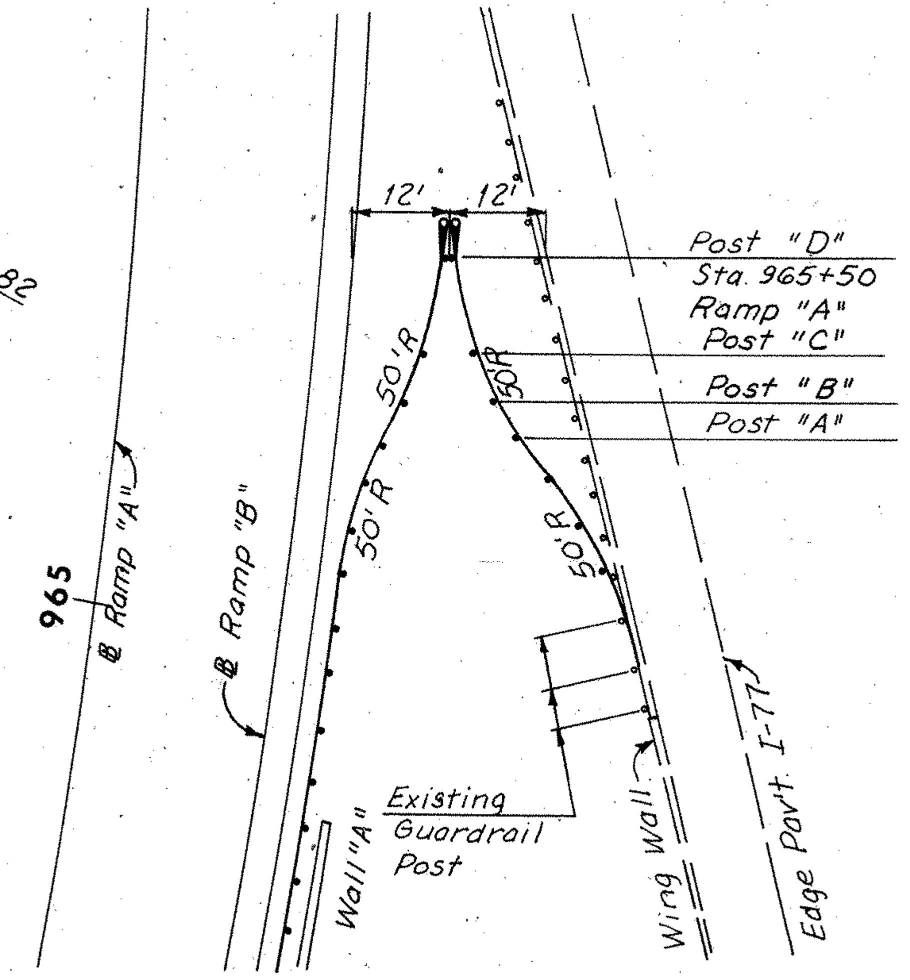


TYPICAL DRIVE WAY DETAILS

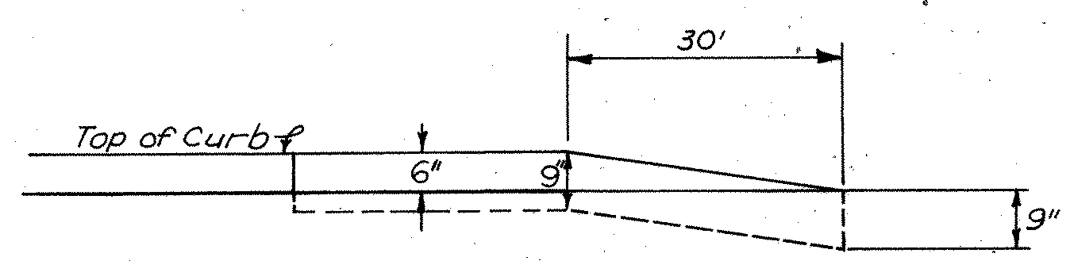


GUARDRAIL GORE RAMP E-I-77
No Scale

Note:
For details of Guardrail See Standard Construction Drawing GR-4.
For Pavement Details, See Sheet 30.



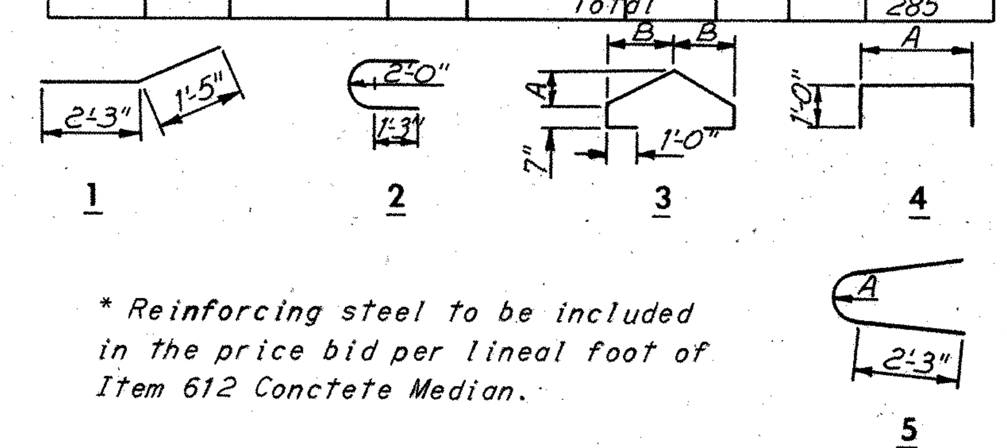
GUARDRAIL GORE RAMP A-I-77
No Scale



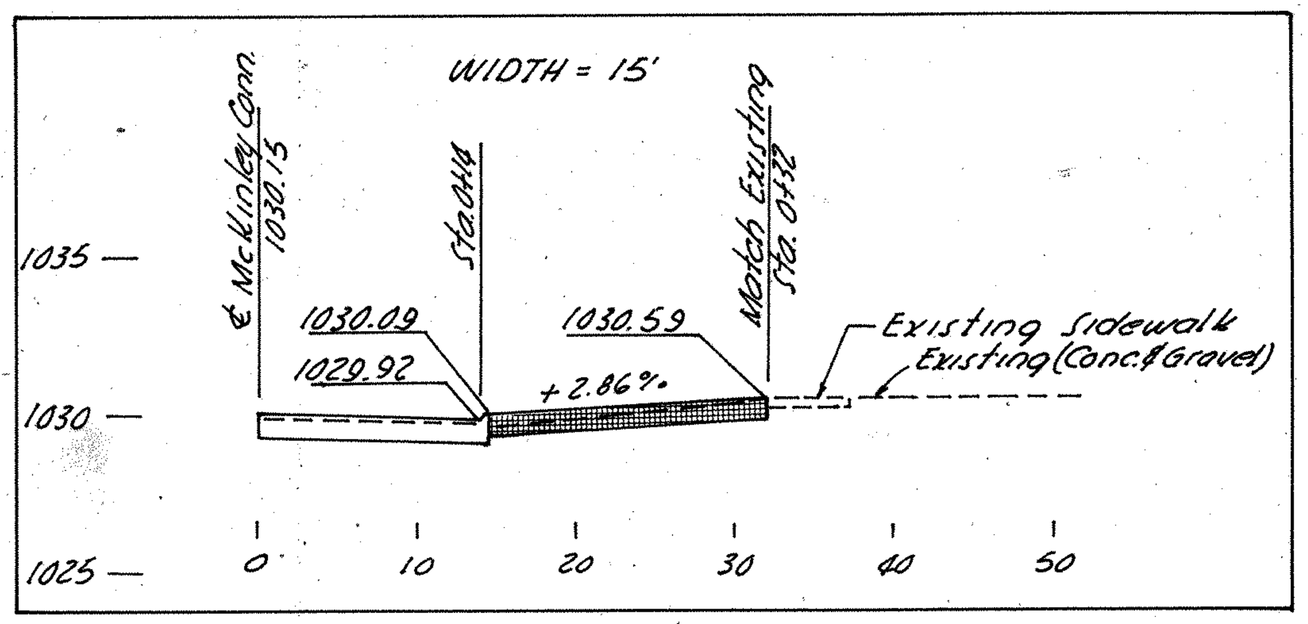
MEDIAN NOSE DETAIL
ALL APPROACH NOSES

BAR LIST* NOSE DETAIL "A"

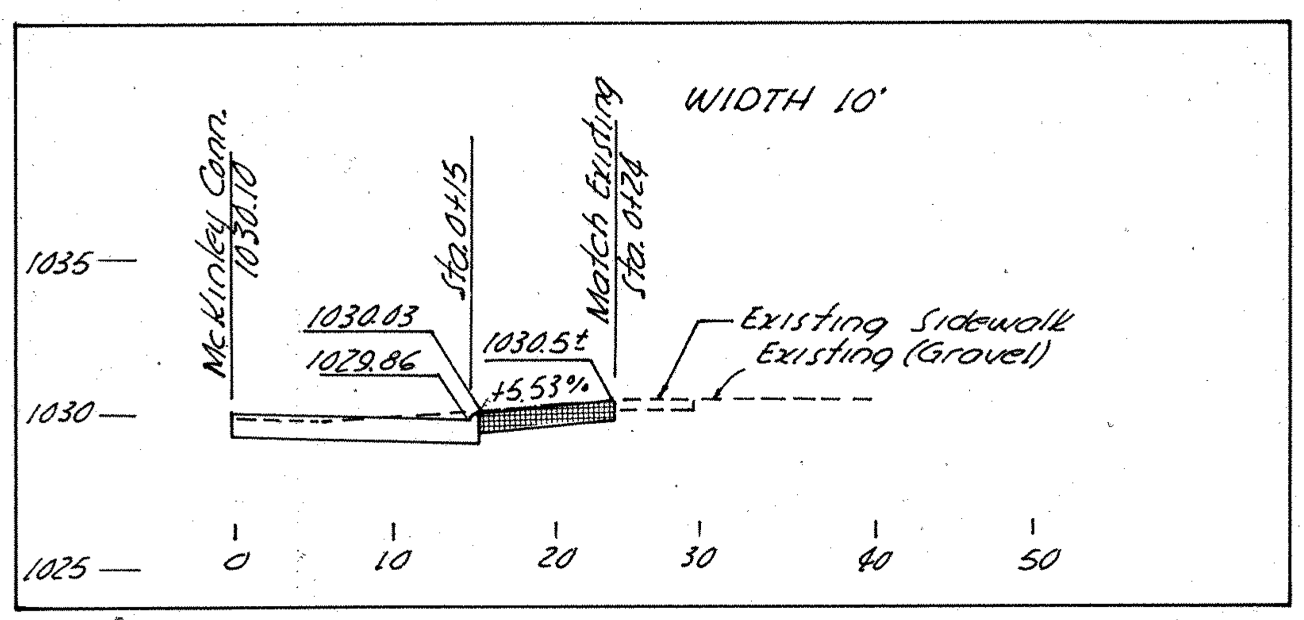
MARK	NO.	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE	WEIGHT LBS.
501	8	3'-8"	1					33
502	3	17'-0"	Str.					53
503	2	21'-9"	Str.					46
504	1	8'-9"	2					9
505	1 Ser.	7'-0"			1'-11"		A=1"	
	11	to 8'-11"	3	1" to 11"	to 2'-9"		B=1"	92
506	1	6'-2"	4	4'-2"				6
507	1	6'-0"	4	4'-0"				6
508	1	5'-4"	4	3'-4"				5
509	1	11'-0"	5	2'-1"				11
510	1	11'-10"	5	2'-4"				12
511	1	12'-1"	5	2'-5"				12
				Total				285



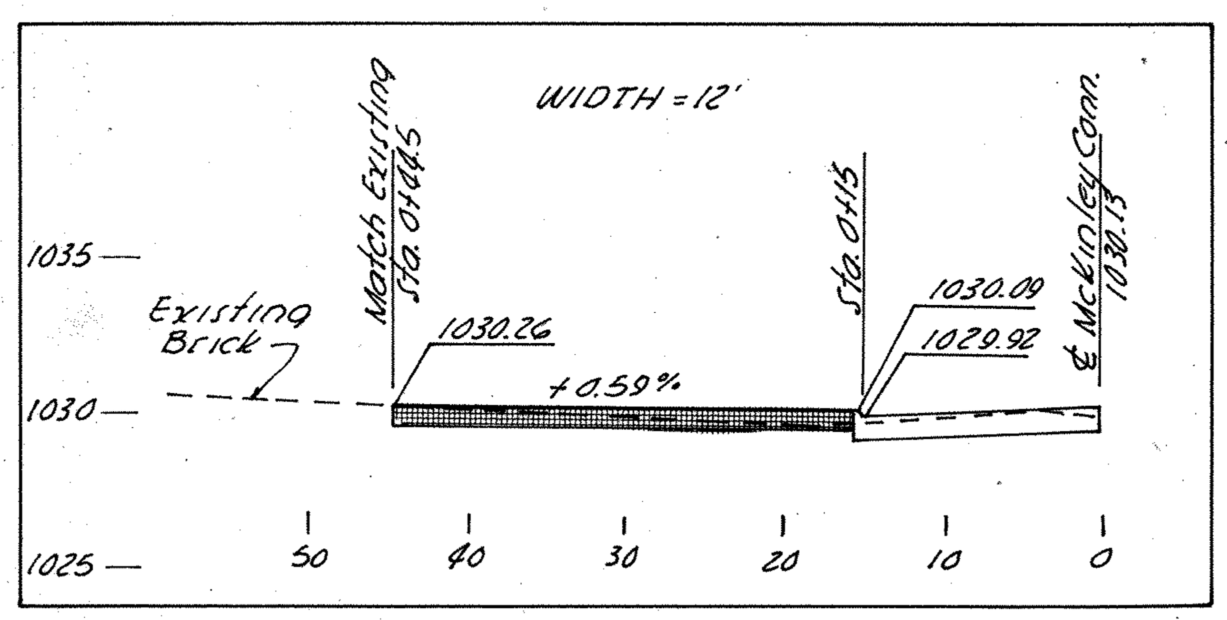
* Reinforcing steel to be included in the price bid per lineal foot of Item 612 Concrete Median.



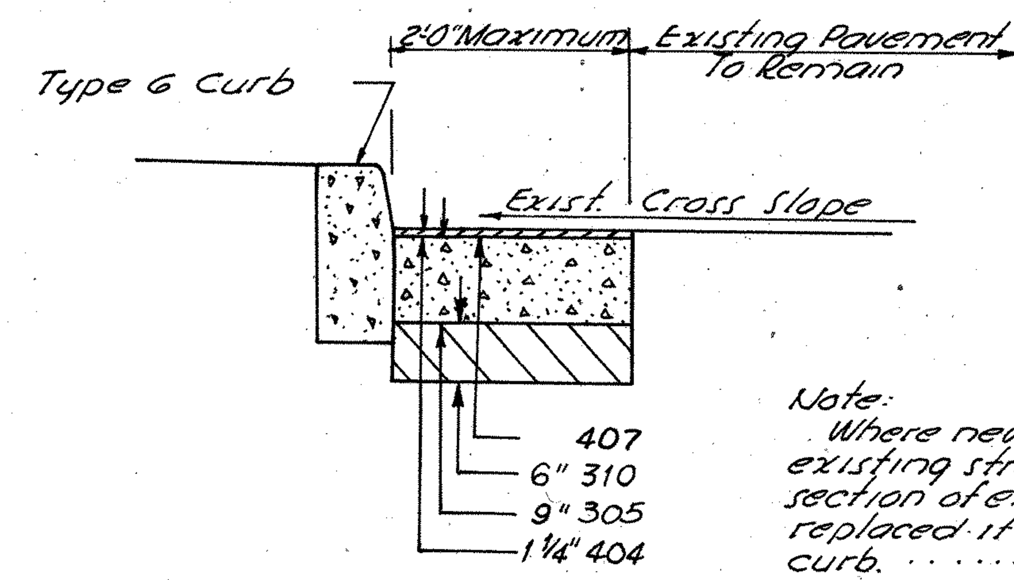
STA. 28+38 McKINLEY CONN., RT.



STA. 27+97 McKINLEY CONN., RT.
(℄ of Drive is Skewed to ℄ of McKinley Conn.)



STA. 28+20 McKINLEY CONN., LT.
(℄ of Drive is Skewed to ℄ of McKinley Conn.)



Note:
Where new curb is set adjacent to existing streets a 2'-0" maximum wide section of existing pavement may be replaced if damaged due to setting the curb. ....See Sheet 19 for quantities.

NEW CURB ADJACENT TO EXISTING STREETS

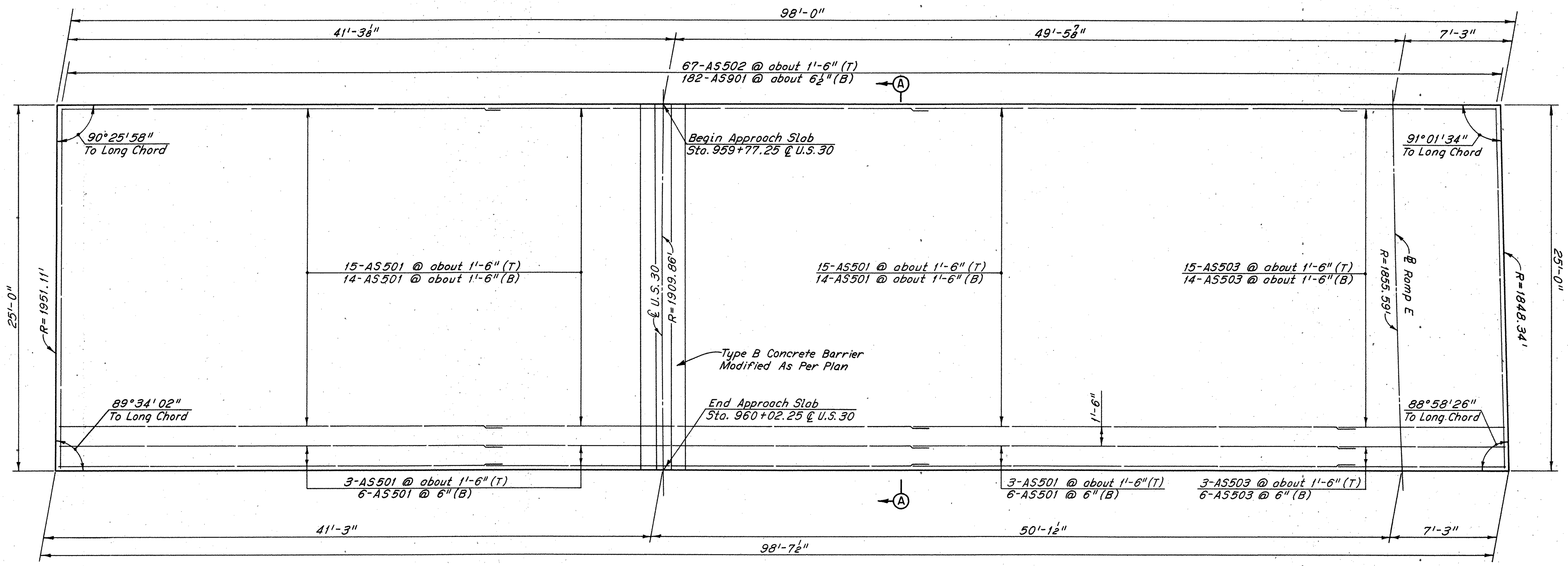
Rev. M.G.B. 5-30-75
Ckd. J.N.S. 8-19-75

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

MISCELLANEOUS DETAILS

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			102 / 389

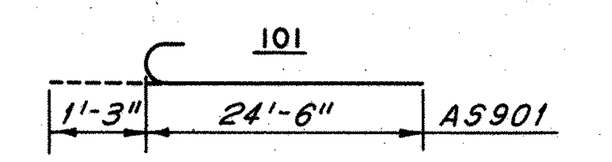
STARK COUNTY
STA-30-14.12
STA-77-9.22

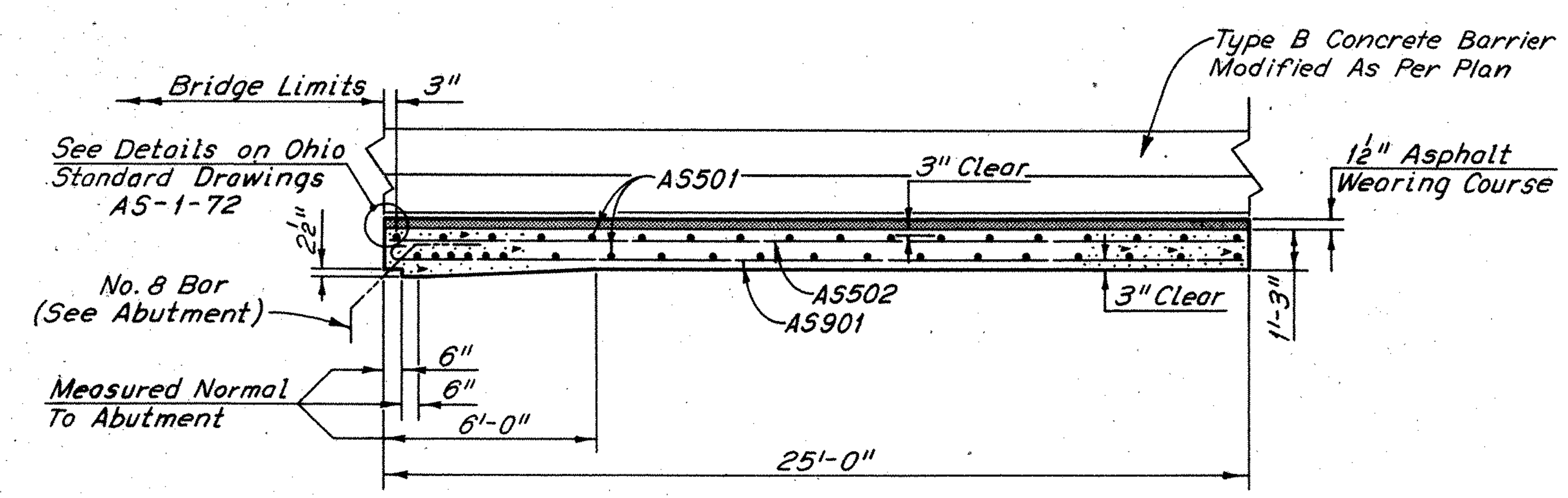


WEST APPROACH SLAB PLAN

REINFORCEMENT SCHEDULE

MARK	NO.	LENGTH	TYPE	SER. INCR.
AS501	114	30'-0"	Str.	
AS502	67	24'-6"	Str.	
AS503	38	11'-6"	Str.	
AS901	182	25'-9"	101	





SECTION A-A

Note:
The asphalt wearing course on the approach slab shall consist of the following:
1. Item 407, Tack Coat, at 0.10 Gal. per Sq. Yd.
2. Item 404, 1 1/2" Asphalt Concrete, AC-20.

Notes:
All dimensions of curved segments are arc dimensions.
Front and back sides of approach slab are parallel.
The jacking holes as called for on Ohio Standard Drawing AS-1-72 are not required.
The following abbreviations are used:
T = Top
B = Bottom
Typ. = Typical
For additional notes and details, see Ohio Standard Drawing AS-1-72.
For Details of Concrete Barrier, Type B Modified as per plan see sheet 101.

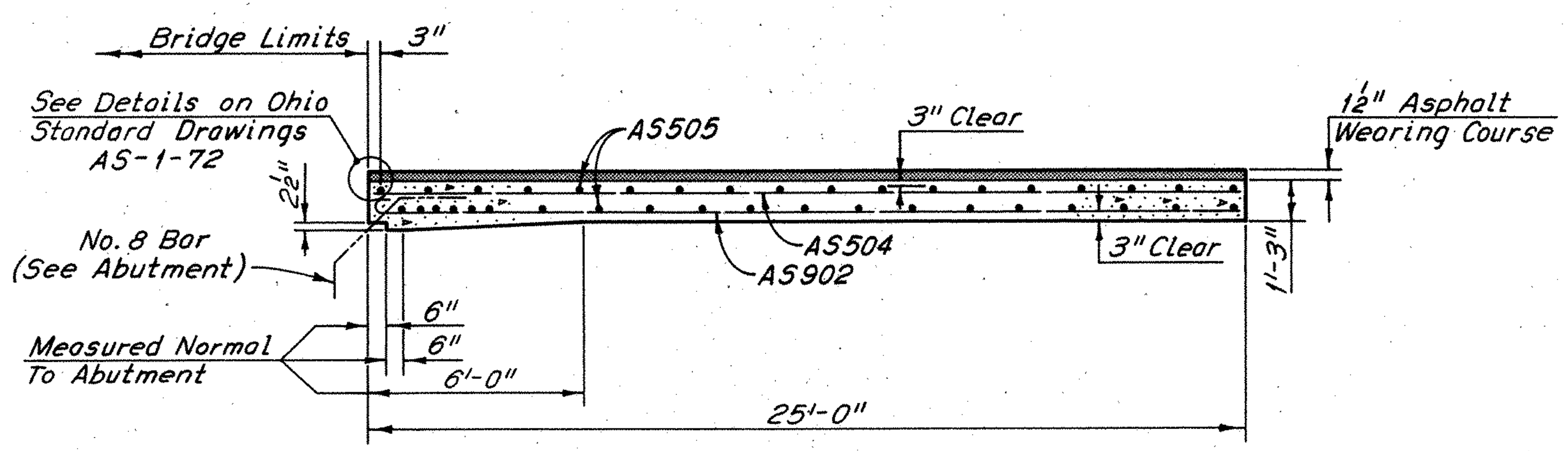
SCALE 1/4"=1'-0" HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
MADE E.P.S. DATE 7-10-75
TRCD. D.L.R. DATE 7-31-75
CKD. R.A.S. DATE 7-25-75

Br. No. 2
APPROACH SLAB DETAILS

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

EAST APPROACH SLAB PLAN

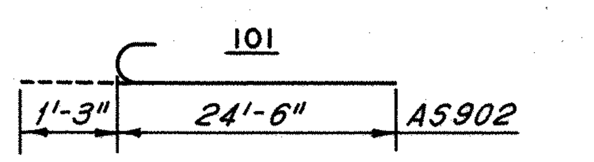


SECTION A-A

Note:
The asphalt wearing course on the approach slab shall consist of the following:
1. *Item 407, Tack Coat, at 0.10 Gal. per Sq. Yd.*
2. *Item 404, 1 1/2" Asphalt Concrete, AC-20.*

REINFORCEMENT SCHEDULE

MARK	NO.	LENGTH	TYPE	SER. INCR.
AS504	79	24'-6"	Str.	
AS505	152	30'-0"	Str.	
AS902	217	25'-9"	101	



Notes:
All dimensions of curved segments are arc dimensions.
Front and back sides of approach slab are parallel.
The jacking holes as called for on Ohio Standard Drawing AS-1-72 are not required.
The following abbreviations are used:
T = Top
B = Bottom
Typ. = Typical
For additional notes and details, see Ohio Standard Drawing AS-1-72.

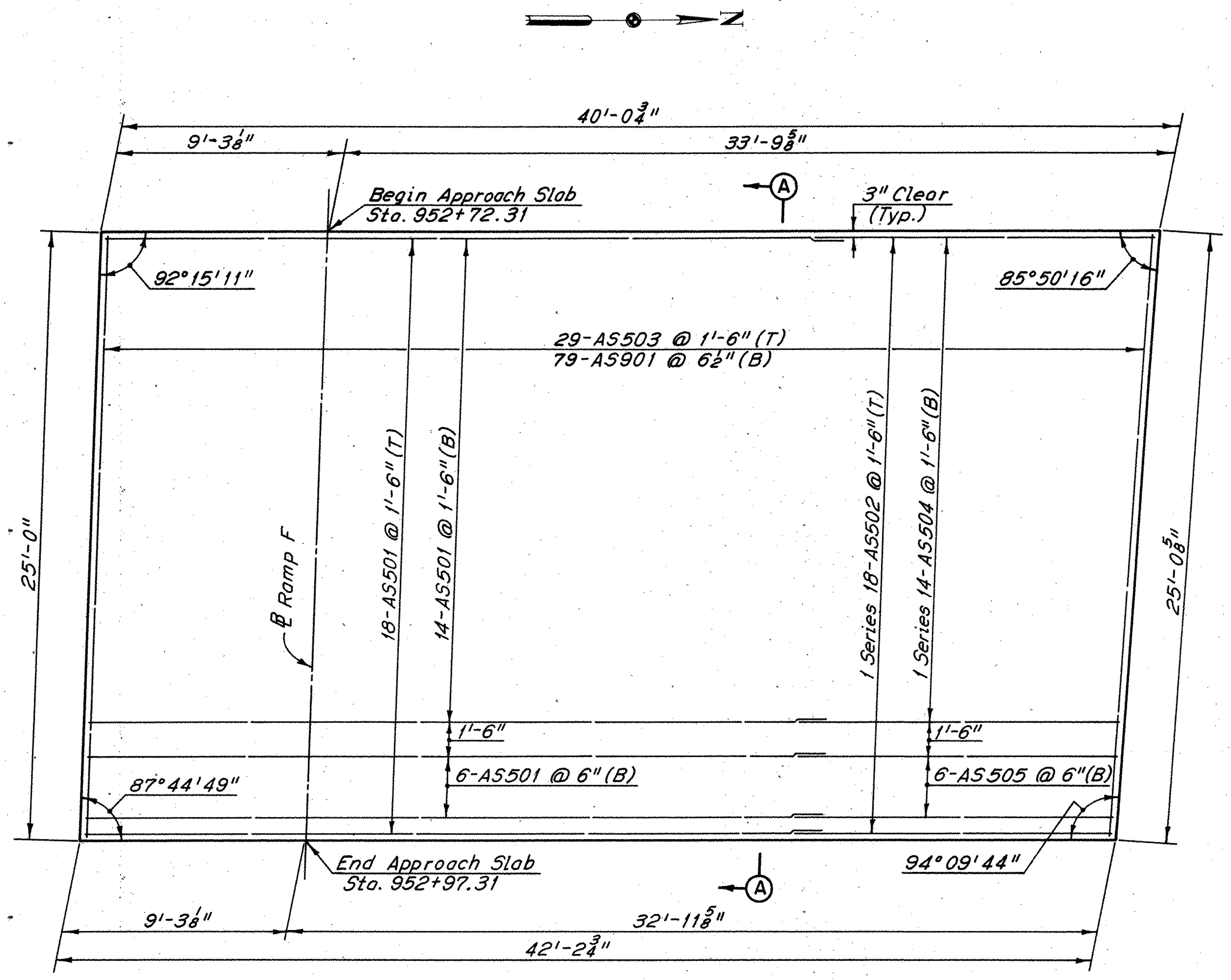
SCALE 1/4" = 1'-0" HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
MADE E.P.S. DATE 7-14-75
TRCD. D.L.R. DATE 8-1-75
CKD. R.A.S. DATE 7-25-75

Br. No. 2
APPROACH SLAB DETAILS

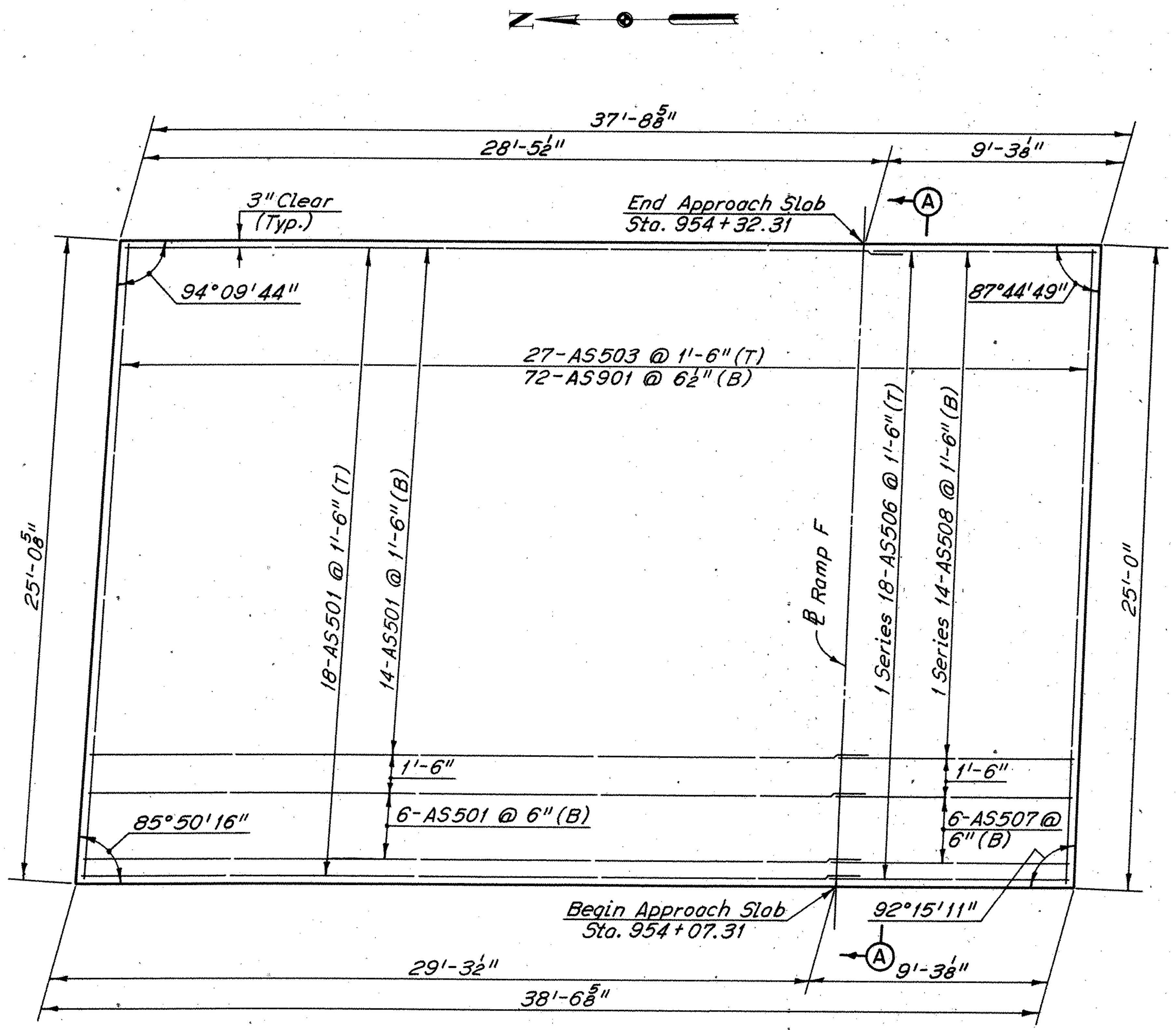
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

104/389

STARK COUNTY
STA-30-14.12
STA-77-9.22

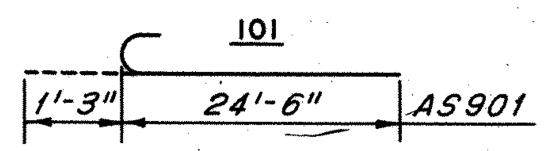


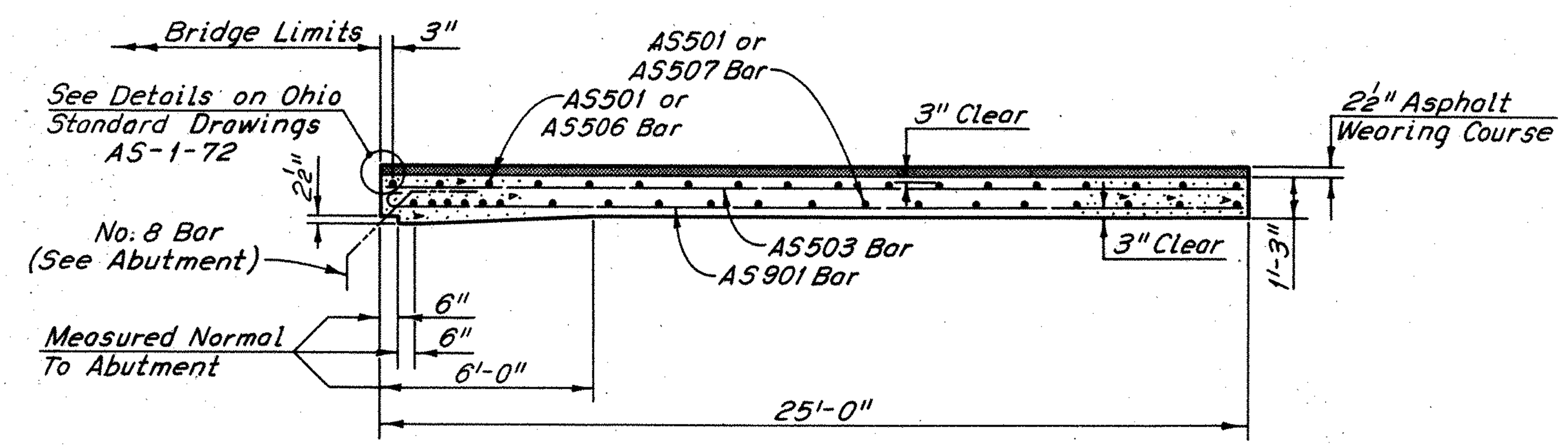
WEST APPROACH SLAB PLAN



EAST APPROACH SLAB PLAN

REINFORCEMENT SCHEDULE				
MARK	NO.	LENGTH	TYPE	SER. INCR.
AS501	76	30'-0"	Str.	
AS502	1 Ser. 18	10'-8" / 12'-10"	Str.	1 9/16"
AS503	56	24'-6"	Str.	
AS504	1 Ser. 14	10'-8" / 12'-8"	Str.	1 7/8"
AS505	6	13'-0"	Str.	
AS506	1 Ser. 18	8'-4" / 9'-2"	Str.	9/16"
AS507	6	9'-2"	Str.	
AS508	1 Ser. 14	8'-4" / 9'-0"	Str.	5/8"
AS901	151	25'-9"	101	





SECTION A-A

Notes:

All dimensions of curved segments are arc dimensions.

Front and back sides of approach slabs are parallel.

The jacking holes as called for on Ohio Standard Drawing AS-1-72 are not required.

The following abbreviations are used:
T = Top
B = Bottom
Typ. = Typical

For additional notes and details, see Ohio Standard Drawing AS-1-72.

Note:

The asphalt wearing course on the approach slabs shall consist of the following:

1. Item 407, Tack Coat, at 0.10 Gal. per Sq. Yd.
2. Item 404, 2 1/2" Asphalt Concrete, AC-20.

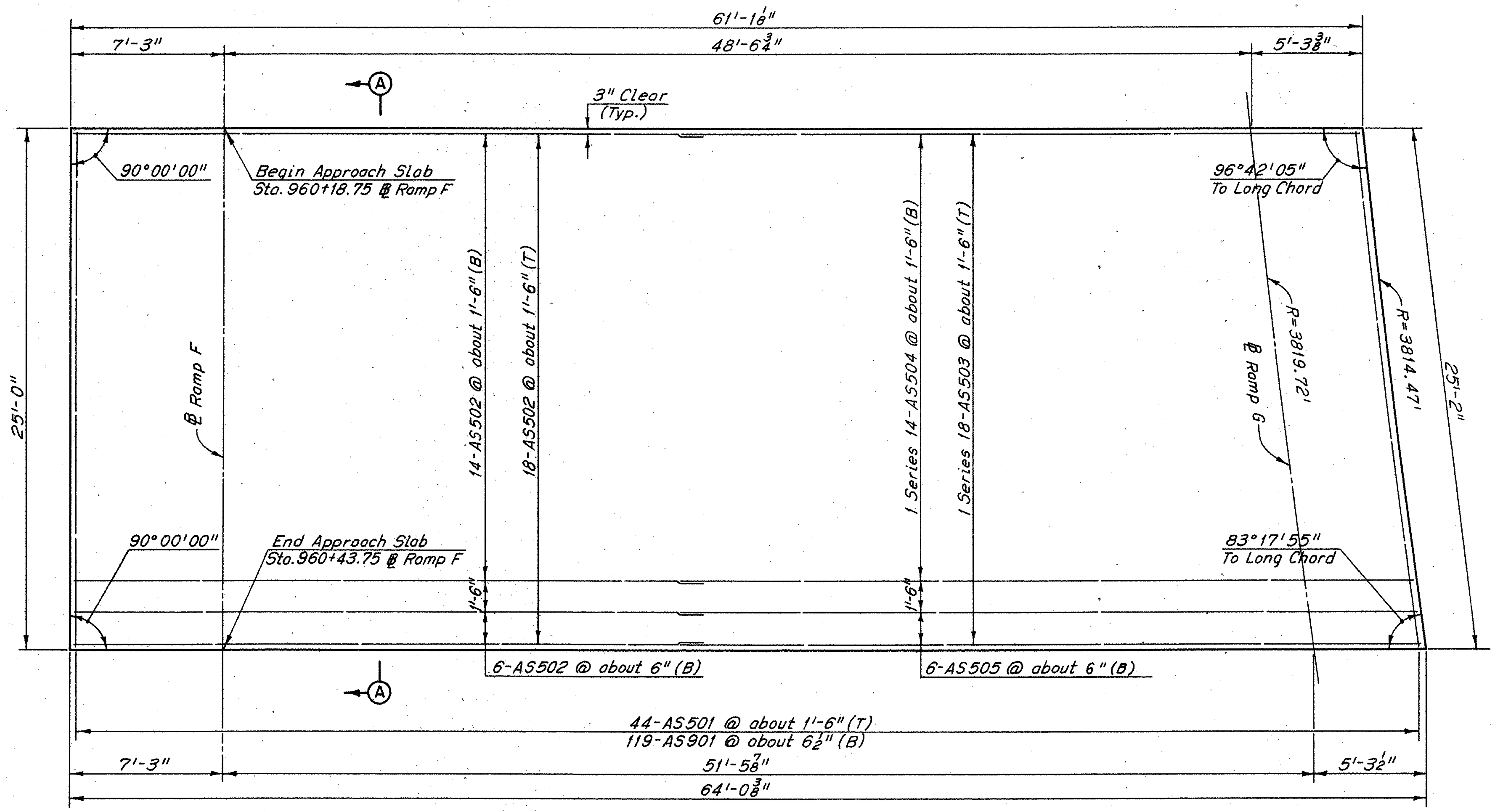
SCALE 1/4" = 1'-0"
MADE T.L.B. DATE 7-21-75
TRCD D.L.R. DATE 7-29-75
CKD R.A.S. DATE 7-28-75

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

Br. No. 5
APPROACH SLABS DETAILS

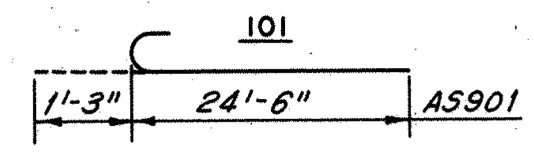
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

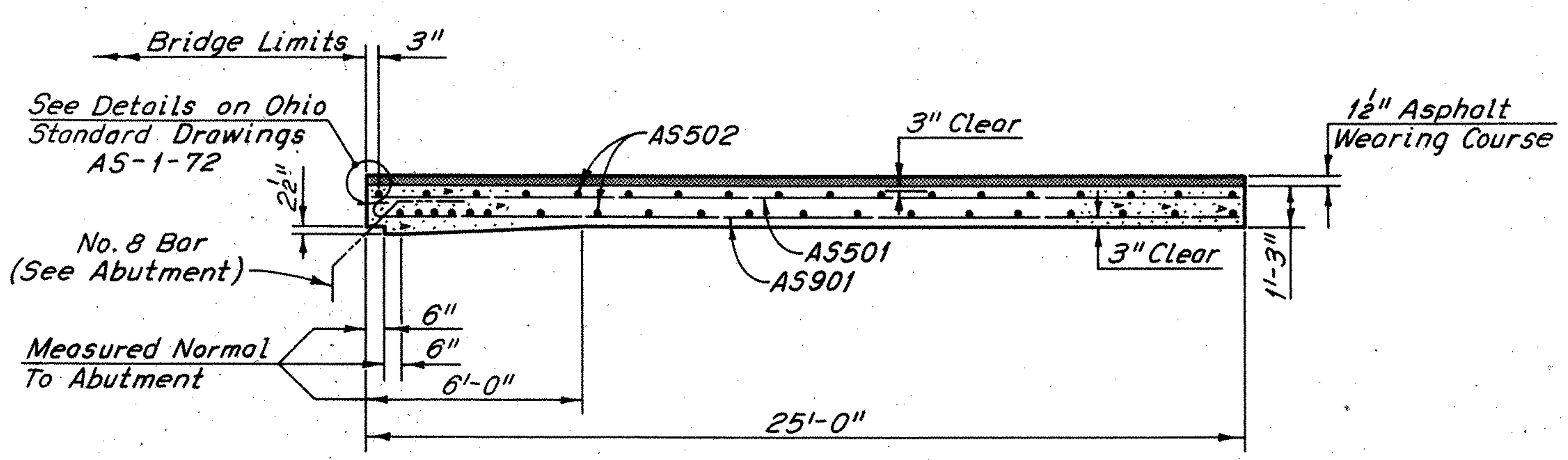
STARK COUNTY
STA-30-14.12
STA-77-9.22



APPROACH SLAB PLAN

REINFORCEMENT SCHEDULE				
MARK	NO.	LENGTH	TYPE	SER. INCR.
AS501	44	24'-6"	Str.	
AS502	38	30'-0"	Str.	
AS503	1 Ser. 18	31'-9" / 34'-7"	Str.	2"
AS504	1 Ser. 14	31'-9" / 34'-4"	Str.	2 3/8"
AS505	6	34'-9"	Str.	
AS901	119	25'-9"	101	





SECTION A-A

Notes:

All dimensions of curved segments are arc dimensions.

Front and back sides of approach slab are parallel.

The jacking holes as called for on Ohio Standard Drawing AS-1-72 are not required.

The following abbreviations are used:
T = Top
B = Bottom
Typ. = Typical

For additional notes and details, see Ohio Standard Drawing AS-1-72.

Note:

The asphalt wearing course on the approach slab shall consist of the following:

1. Item 407, Tack Coat, at 0.10 Gal. per Sq. Yd.
2. Item 404, 1 1/2" Asphalt Concrete, AC-20.

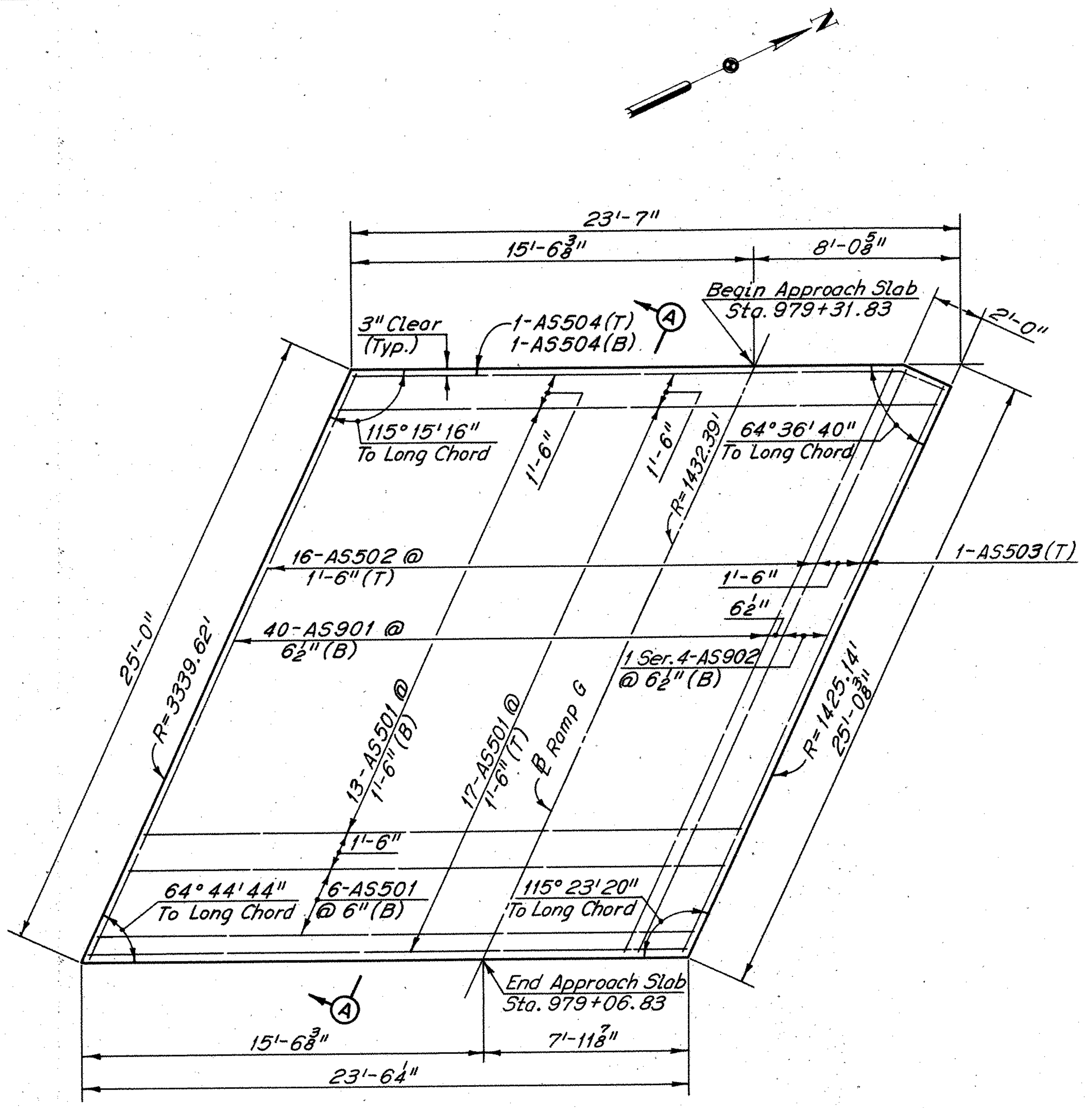
SCALE 1/4"=1'-0" HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
MADE E.P.S. DATE 7-22-75
TRCD D.L.R. DATE 7-30-75
CKD R.A.S. DATE 7-25-75

Br. No. 7
APPROACH SLAB DETAILS

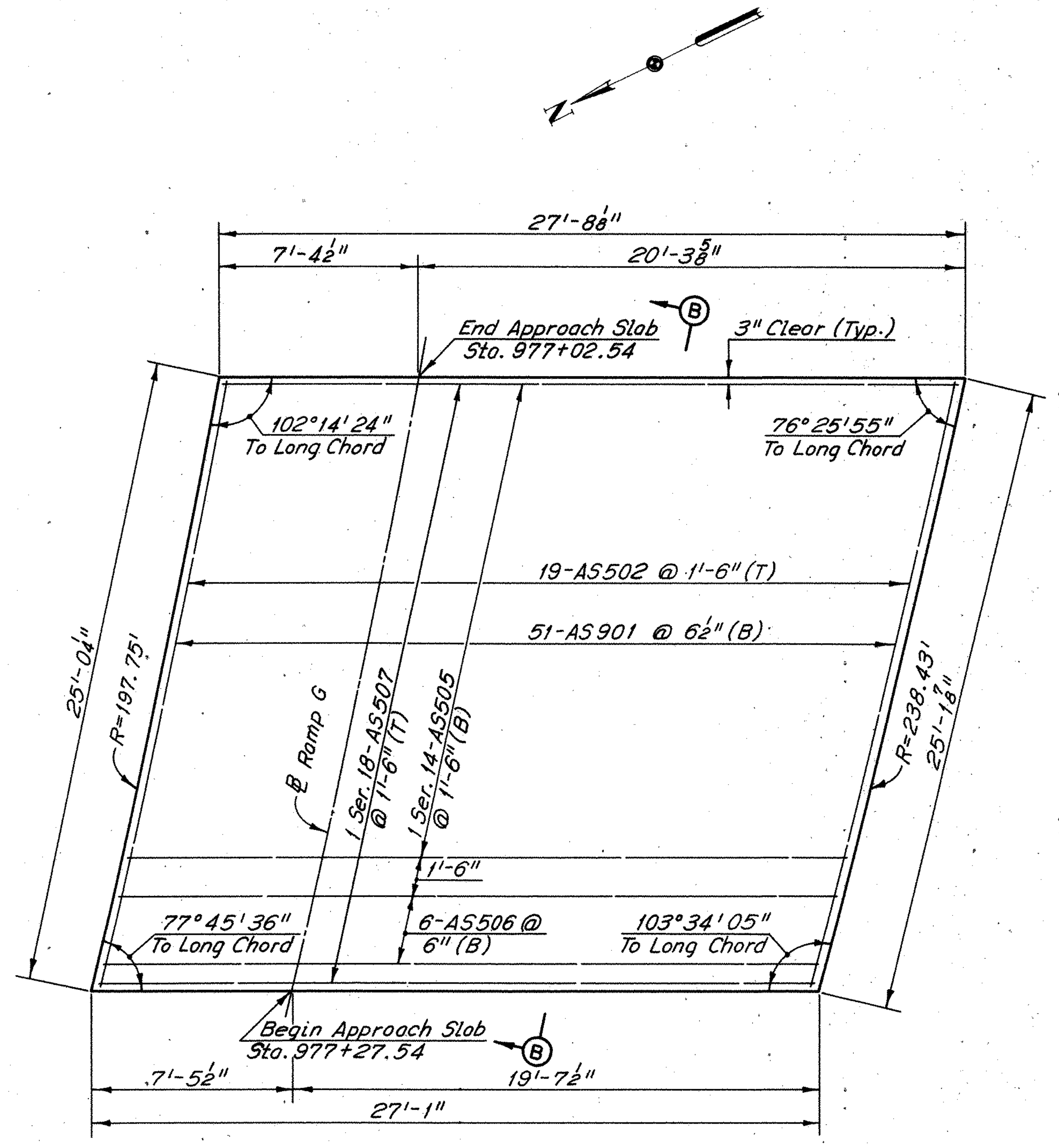
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

104 B
389

STARK COUNTY
STA-30-14.12
STA-77-9.22



NORTH APPROACH SLAB PLAN

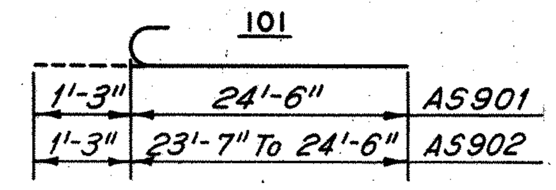


SOUTH APPROACH SLAB PLAN

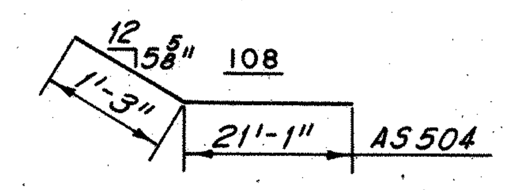
REINFORCEMENT SCHEDULE

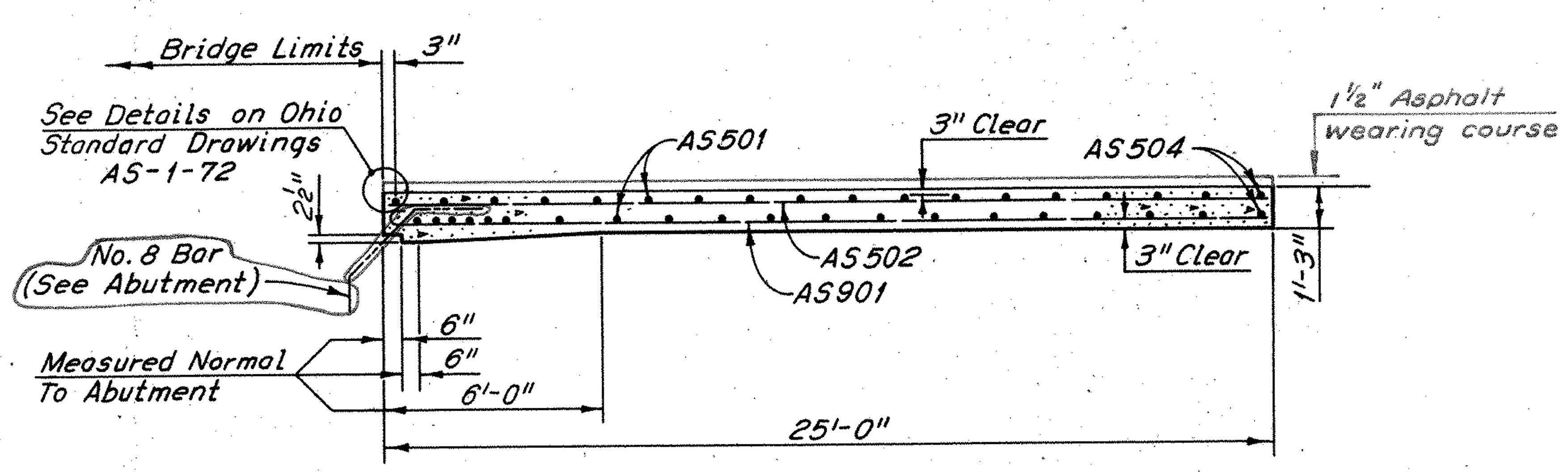
MARK	NO.	LENGTH	TYPE	SER. INCR.
AS501	36	23'-0"	Str.	
AS502	35	24'-6"	Str.	
AS503	1	23'-6"	Str.	
AS504	2	22'-10"	108	
AS505	1 Ser. 14	26'-7" / 27'-2"	Str.	7/16"
AS506	6	26'-6"	Str.	
AS507	1 Ser. 18	26'-7" / 27'-2"	Str.	7/16"
AS901	91	25'-9"	101	
AS902	1 Ser. 4	24'-10" / 25'-9"	101	3 1/16"

101

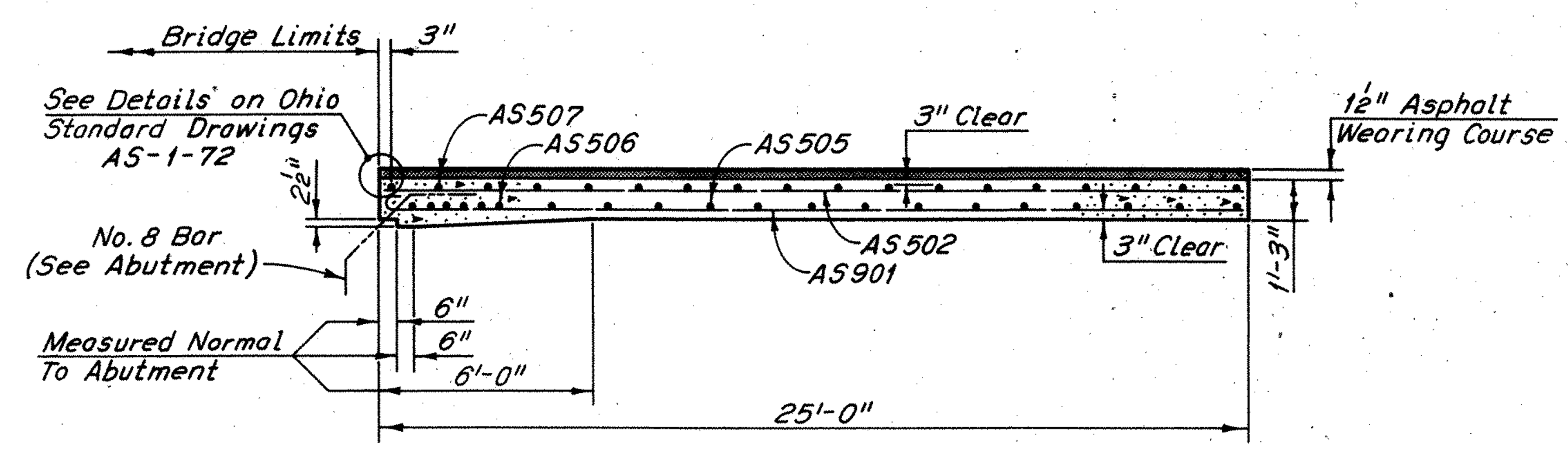


108





SECTION A-A



SECTION B-B

Notes:
All dimensions of curved segments are arc dimensions.
Front and back sides of approach slabs are parallel.
The jacking holes as called for on Ohio Standard Drawing AS-1-72 are not required.
The following abbreviations are used:
T = Top
B = Bottom
Typ. = Typical
For additional notes and details, see Ohio Standard Drawing AS-1-72.

Note:
The asphalt wearing course on the South approach slabs shall consist of the following:
1. Item 407, Tack Coat, at 0.10 Gal. per Sq. Yd.
2. Item 404, 1 1/2" Asphalt Concrete, AC-20.

SCALE 1/4" = 1'-0" HOWARD, NEEDLES, TAMMEN & BERGENDOFF
MADE J.L.B. DATE 7-24-75 CONSULTING ENGINEERS
TRCD. D.L.R. DATE 7-28-75
CKD. R.A.S. DATE 7-28-75 KANSAS CITY CLEVELAND NEW YORK

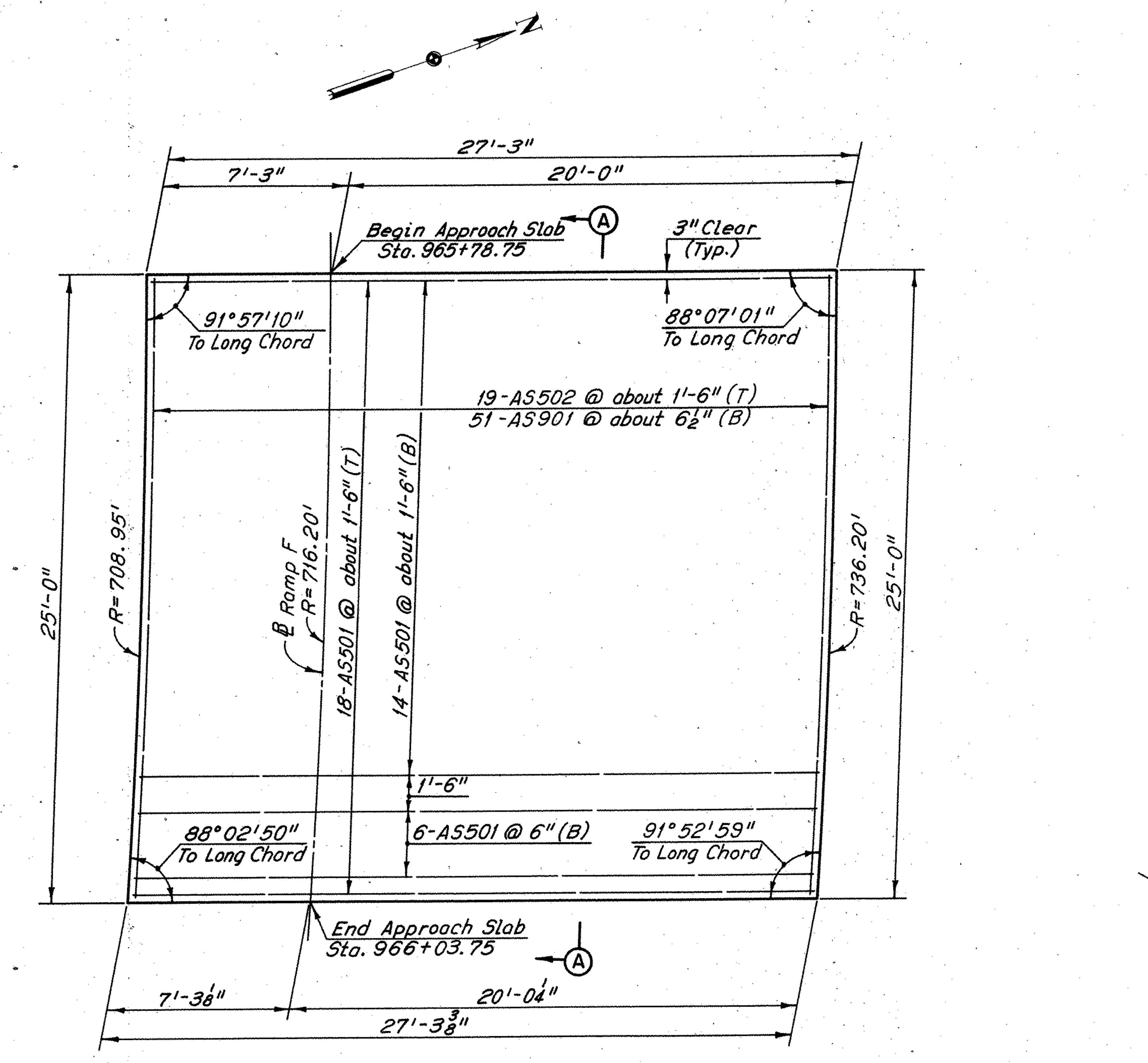
Br. No. 8
APPROACH SLABS DETAILS

Revised 4-28-77

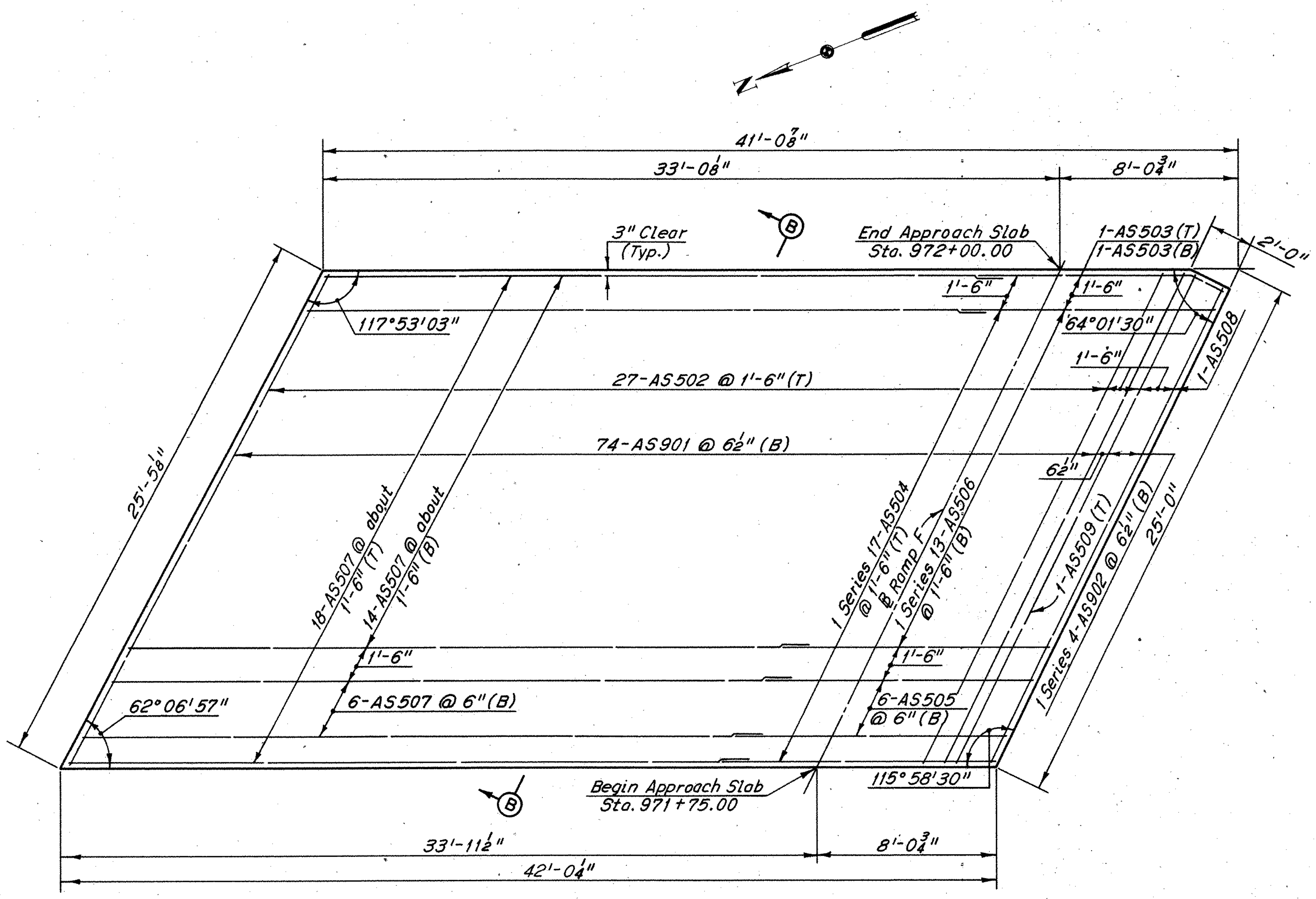
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

104C
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

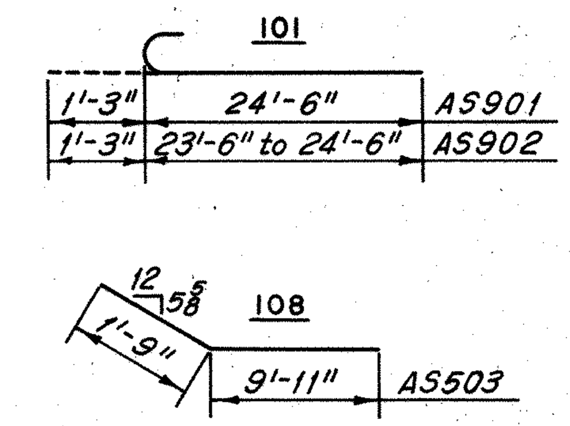


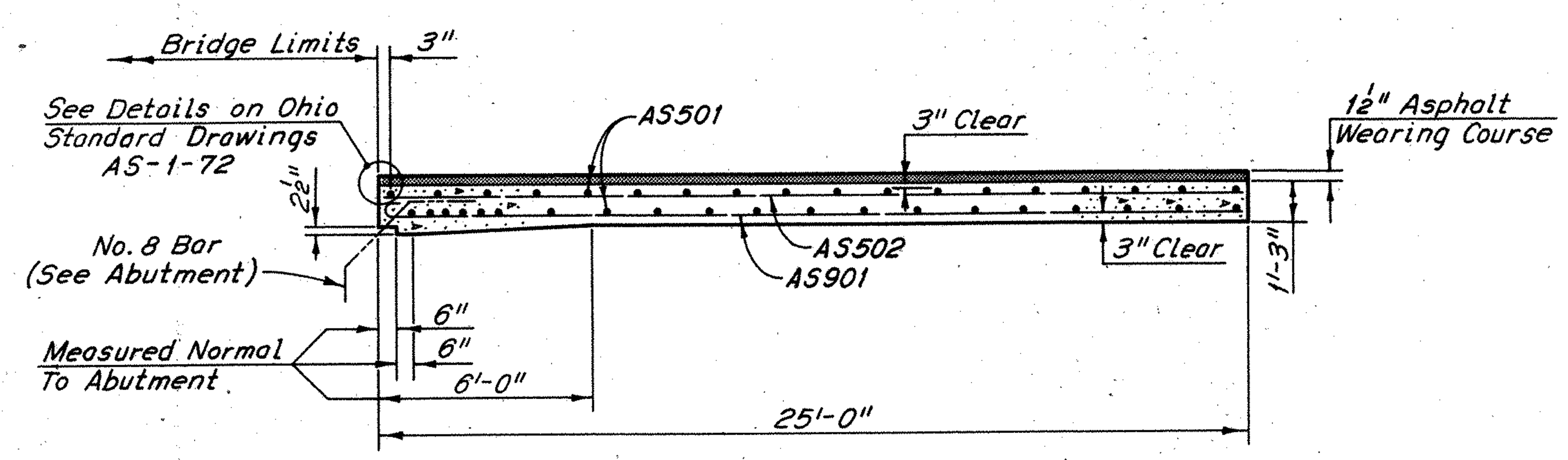
WEST APPROACH SLAB PLAN



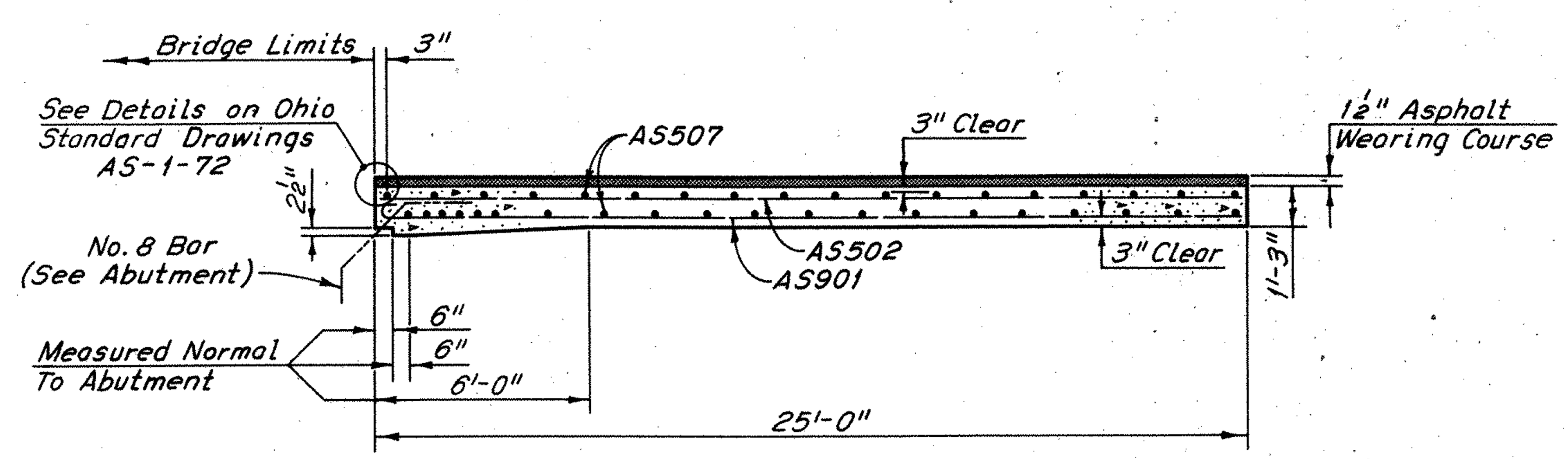
EAST APPROACH SLAB PLAN

REINFORCEMENT SCHEDULE				
MARK	NO.	LENGTH	TYPE	SER. INCR.
AS501	38	26'-9"	Str.	
AS502	46	24'-6"	Str.	
AS503	2	11'-8"	108	
AS504	1 Ser. 17	11'-8" / 12'-7"	Str.	11/16"
AS505	6	12'-6"	Str.	
AS506	1 Ser. 13	11'-8" / 12'-5"	Str.	3/4"
AS507	38	30'-0"	Str.	
AS508	1	23'-6"	Str.	
AS509	1	24'-3"	Str.	
AS901	123	25'-9"	101	
AS902	1 Ser. 4	24'-9" / 25'-9"	101	4"





SECTION A-A



SECTION B-B

Notes:

All dimensions of curved segments are arc dimensions.

Front and back sides of approach slabs are parallel.

The jacking holes as called for on Ohio Standard Drawing AS-1-72, are not required.

The following abbreviations are used:
T = Top
B = Bottom
Typ. = Typical

For additional notes and details, see Ohio Standard Drawing AS-1-72.

Note:

The asphalt wearing course on the approach slabs shall consist of the following:

1. *Item 407, Tack Coat, at 0.10 Gal. per Sq. Yd.*
2. *Item 404, 1½" Asphalt Concrete, AC-20.*

SCALE ¼"=1'-0" **HOWARD, NEEDLES, TAMMEN & BERGENDOFF**
MADE J.L.B. DATE 7-17-75 CONSULTING ENGINEERS
TRCD. D.L.R. DATE 7-30-75 KANSAS CITY CLEVELAND NEW YORK
CKD. E.P.S. DATE 8-11-75

Br. No. 9
APPROACH SLABS DETAILS

	CODE NO.	LOCATION				604 M.H. & C.B. TOP OF COVER ELEVATION EXIST.	PROP.	QUANTITY ADJUST EACH	RECON. EACH	202 ABANDON M.H. EACH	C.B. EACH	REMARKS
⑤*	A-1	924+45	U.S. 30	℄	C.B.		1023.92					
	A-2	925+40	U.S. 30	66'Rt.	M.H.							Connect U.D. to Exist. Stub
	A-3	930+50	U.S. 30	65'Rt.	C.B.							
	A-4	932+00	U.S. 30	65'Rt.	C.B.							
	A-5	932+00	U.S. 30	99'Rt.	C.B.							
	A-6	932+98	U.S. 30	53.5'Lt.	C.B.							
	A-7	937+75	U.S. 30	78'Lt.	C.B.							
⑤*	A-8	937+75	U.S. 30	℄	C.B.		1015.97					Connect U.D. to Exist Stub
	A-9	937+75	U.S. 30	79'Lt.	C.B.							
	A-10	938+25	U.S. 30	78'Lt.	M.H.							
⑤*	A-11	938+25	U.S. 30	℄	C.B.		1015.90					Connect U.D. to Exist Stub
	A-12	938+25	U.S. 30	78.5'Rt.	M.H.							
	A-13	938+75	U.S. 30	78'Lt.	C.B.							
⑤*	A-14	938+75		℄	C.B.		1015.99					Connect U.D to Exist Stub
	A-15	938+75	U.S. 30	78'Rt.	C.B.							
*	A-16	950+00	U.S. 30	℄	C.B.		1039.33					
	A-17	976+12	Ramp D	102' Lt	M.H.							Connect P-65
	A-20	10+45	Cleveland Ave.	26'Rt.	M.H.	1018.56	1017.18		1			Connect P-27
	A-21	953+80	Ramp A	60'Lt.	C.B.							No Work - Continue in Service
	A-22	953+68	Ramp A	60'Lt.	M.H.							No Work - Continue in Service
	A-23	953+68	Ramp F	21'Rt.	C.B.							No Work - Continue in Service
	A-24	953+58	Ramp F	30'Rt.	M.H.							No Work - Continue in Service
	A-25	Margaret St. S.W.			C.B.							No Work - Continue in Service
	A-26	Margaret St. S.W.			C.B.							No Work - Continue in Service
	A-27	Margaret St. S.W.			M.H.							No Work - Continue in Service
	A-28	5+00	Existing Ramp C-C	25'Rt.	C.B.						1	
	A-29	570+90	I-77 C	86'Rt.	C.B.						1	
	A-30	969+26	Ramp D	95'Rt.	C.B.						1	
	A-31	969+51	Ramp D	86'Lt.	C.B.						1	
	A-32	969+43	Ramp D	76'Lt.	M.H.	1025.16	1029.00		1			Connect P-6 & P-9 Plug Pipe from Catch Basin Plug 8" to South continue in Service
	A-33	969+54	Ramp D	67'Lt.	C.B.						1	
	A-34	973+38	Ramp E	69'Lt.	C.B.						1	
	A-35	972+87	Ramp E	114'Rt.	C.B.						1	
	A-36	972+91	Ramp E	76'Lt.	C.B.						1	
	A-37	973+18	Ramp E	98'Lt.	M.H.					1		
	A-38	968+43	Ramp E	64'Lt.	M.H.					1		
	A-39	968+01	U.S. 30	63'Rt.	C.B.						1	
	A-40	968+09	U.S. 30	85'Rt.	C.B.						1	
	A-41	967+84	U.S. 30	91'Rt.	M.H.					1		
	A-42	967+71	U.S. 30	79'Rt.	M.H.					1		
	A-43	971+45	Ramp D	110'Lt.	C.B.							No Work - Continue in Service
	A-44	971+59	Ramp D	106'Lt.	C.B.							No Work - Continue in Service
	A-45	971+40	Ramp D	96'Lt.	M.H.							Connect P-49 & P-A45 Plug Pipe to South
	A-46	970+50	Ramp C	37'Rt.	C.B.						1	
	A-47	970+61	Ramp C	41'Rt.	C.B.						1	
	A-48	970+52	Ramp C	45'Rt.	M.H.					1		
	A-49	971+05	Ramp E	13'Lt.	M.H.					1		
	A-50	27+00	McKinley Ave. Conn.	66'Lt.	C.B.							No Work - Continue in Service
	A-51	26+93	McKinley Ave. Conn.	37'Lt.	C.B.							No Work - Continue in Service
	A-52	26+82	McKinley Ave. Conn.	48'Lt.	M.H.							Connect P-A52 Plug 30" Outlet
	A-53	25+80	McKinley Ave.	77'Lt.	M.H.							No Work - Continue in Service
	A-54	973+29	Ramp D	4'Rt.	M.H.					1		
	A-55	972+70	Ramp C	66'Rt.	C.B.						1	
	A-56	972+65	Ramp C	64'Rt.	M.H.					1		
	A-57	971+79	U.S. 30	138'Lt.	C.B.						1	
	A-58	971+90	U.S. 30	122'Lt.	C.B.						1 ✓	

CODE NO.	LOCATION				604 M.H. & C.B. TOP OF COVER ELEVATION EXIST.	PROP.	QUANTITY ADJUST EACH	RECON. EACH	202 ABANDON M.H. EACH	C.B. EACH	REMARKS
A-59	971+79	U.S. 30	120'Lt.	M.H.					1		
A-60	971+00	U.S. 30	78'Lt.	M.H.					1		
A-61	968+78	U.S. 30	15'Lt.	C.B.						1	
A-62	969+01	U.S. 30	31'Rt.	C.B.						1	
A-63	968+78	U.S. 30	35'Rt.	M.H.					1		
A-64	25+95	Cleveland Ave. S.W.	4'Lt.	C.B.							No Work - Continue in Service
A-65	26+00	Cleveland Ave. S.W.	22'Rt.	C.B.							No Work - Continue in Service
A-66	25+88	Cleveland Ave. S.W.	8'Rt.	M.H.							No Work - Continue in Service
A-67	24+05	Cleveland Ave. S.W.	4'Lt.	C.B.						1	
A-68	24+01	Cleveland Ave. S.W.	22'Rt.	C.B.						1	
A-69	23+92	Cleveland Ave. S.W.	3'Rt.	M.H.	1027.73	1028.58	1				Connect P-38, P-38A; Continue in Service
A-70	21+92	Cleveland Ave. S.W.	2'Lt.	C.B.						1	
A-71	21+88	Cleveland Ave. S.W.	6'Rt.	M.H.	1027.03	1029.00		1			Plug pipe from C.B. Continue in Service
A-72	19+05	Cleveland Ave. S.W.	26'Rt.	C.B.						1	
A-73	19+05	Cleveland Ave. S.W.	2'Lt.	C.B.						1	
A-74	18+92	Cleveland Ave. S.W.	5'Rt.	M.H.	1025.2	1025.30	1				Connect P-16 Continue in Service
A-75	17+90	Cleveland Ave. S.W.	5'Rt.	M.H.	1024.34	1024.57	1				Plug 24" from West Continue in Service
A-76	14+84	Cleveland Ave. S.W.	4'Rt.	M.H.	1022.20	1022.38	1				Continue in Service
A-77	14+66	Cleveland Ave. S.W.	2'Lt.	C.B.						1	
A-78	14+66	Cleveland Ave. S.W.	25'Rt.	C.B.						1	
A-79	14+58	Cleveland Ave. S.W.	4'Rt.	M.H.	1022.08	1022.20	1				Connect P-20 Plug Pipes From Catch Basin Continue in Service
A-80	10+40	Cleveland Ave. S.W.	2'Lt.	C.B.						1	**
A-81	10+56	Cleveland Ave. S.W.	26'Rt.	C.B.						1	
A-82	10+33	Cleveland Ave. S.W.	℄	M.H.	1018.64	1018.35	1				Connect P-26
A-83	968+85	Ramp H	7'Rt.	C.B.							No Work - Continue in Service
A-84	974+50	Ramp G	50'Lt.	C.B.							No Work - Continue in Service
A-85	966+25	Ramp H	50'Lt.	C.B.							No Work - Continue in Service
A-86	964+75	Ramp H	125'Lt.	C.B.							No Work - Continue in Service
A-87	964+55	Ramp H	160'Lt.	C.B							No Work - Continue in Service
A-88	556+05	I-77	98'Rt.	C.B.							No Work - Continue in Service
A-89	556+05	I-77	119'Rt.	C.B.	1028.16						No Work - Continue in Service
A-90	964+18	Ramp H	120'Lt.	C.B.	1027.70						No Work - Continue in Service
A-91	960+59	Ramp H	114'Rt.	C.B.							No Work - Continue in Service
A-92	960+65	Ramp H	114'Rt.	M.H.							Connect P-46 & P-46A Continue in Service
A-93	960+87	Ramp H	123'Rt.	C.B.							No Work - Continue in Service
A-94	549+40	I-77	6'Lt.	C.B.							Adjust Outlet Pipe - Continue in Service
A-95	953+37	I-77	3'Rt.	C.B.							Adjust Outlet Pipe - Continue in Service
A-96	555+00	I-77	2'Rt.	C.B.							No Work - Continue in Service
A-97	971+76	Ramp F	24'Rt.	C.B.						1	
A-98	971+76	Ramp F	54'Rt.	M.H.	1026.11	1028.0		1			Connect P-32 Plug Pipe from East Continue in Service
A-99	971+45	Ramp F	25'Rt.	C.B.							No Work - Continue in Service
A-100	558+18	I-77	8'Lt.	C.B.							No Work - Continue in Service
A-101	965+25	Ramp F	155'Rt.	C.B.							No Work - Continue in Service
A-102	964+92	Ramp F	137'Rt.	M.H.					1		
A-103	964+98	Ramp F	103'Rt.	C.B.						1	
A-104	964+77	Ramp F	42'Rt.	C.B.						1	
A-105	954+49	Ramp C	℄	M.H.					1		
A-106	964+87	Ramp F	195'Rt.	M.H.							Plug 18" from North Continue in Service
A-107	962+78	Ramp F	199'Rt.	C.B.						1	
A-108	564+50	I-77	26'Rt.	C.B.							Adjust Outlet Pipe Continue in Service
	U-663(15)										
	I-77-4(44)107						6 ✓	4 ✓	13 ✓	29 ✓	1##

Made LAR 5-12-69
Ckd DKS 5-13-69

* Median Inlets A-1, A-8, A-11, A-14 and A-16, Sump portion Constructed under STA. 12.47 The Inlets shall be completed as per Standard Drawing, I-3, Median Inlets, and shall be included in the price bid for Item 604 Standard No. I-3B Median Inlet Modified as per plan.

⑤ U-663(15)

** C.B. to be removed.

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

EXISTING STORM DRAINAGE STRUCTURES

STARK COUNTY
STA-30-14.12
STA-77-9.22

CODE NO.	LOCATION		604 M.H. TOP OF COVER ELEVATION EXIST.	604 M.H. TOP OF COVER ELEVATION PROP.	604 M.H. QUANTITY ADJUST EACH	604 M.H. QUANTITY RECON. EACH	202 EACH M.H. ABAN-DONED	202 EACH M.H. REMOVED	REMARKS
B-1	953+56 Ramp A 20' Lt.	M.H.							No Work - Continue in Service
B-2	953+65 Ramp F 35' Rt.	M.H							No Work - Continue in Service
B-3	Margaret St. S.W.	M.H.		1024.86	1				
B-4	967+49 Ramp D 97' Lt.	M.H.					1		
B-5	12+10 Eagle Place ℄	M.H.	1025.59	1025.56	1				Continue in Service
B-6	973+11 Ramp E 80' Lt.	M.H.					1		
B-7	973+10 Ramp E 101' Lt.	M.H.					1		
B-8	974+62 Ramp E 13' Rt.	M.H.					1		
B-9	973+30 Ramp E 114' Lt.	M.H.					1		
B-10	968+40 Ramp E 75' Lt.	M.H.					1		
B-11	971+46 Ramp D 90' Lt.	M.H.						1	
B-12	971+30 Ramp E 25' Rt.	M.H.					1		
B-13	968+51 Ramp E 67' Lt.	M.H					1		
B-14	967+61 U.S. 30 86' Rt.	M.H.					1		
B-15	967+71 U.S. 30 92' Rt.	M.H.					1		
B-16	28+92 McKinley Conn. ℄	M.H.							No Work - Continue in Service
B-17	27+07 McKinley Conn. 47' Lt.	M.H.							No Work
B-18	973+32 Ramp D 10' Lt.	M.H.					1		
B-19	970+81 U.S. 30 74' Lt.	M.H.					1		
B-20	28+80 Cleveland Ave. S.W. ℄	M.H.							Connect Pipe S-14
B-21	25+38 Cleveland Ave. S.W. 11' Rt.	M.H.							No Work - Continue in Service
B-22	21+52 Cleveland Ave. S.W. 13' Rt.	M.H.	1026.88	1028.33		1			
B-23	18+00 Cleveland Ave. S.W. 11' Rt.	M.H.	1024.74	1024.55	1				
B-24	14+73 Cleveland Ave. S.W. 11' Rt.	M.H.	1022.46	1022.21	1				
B-25	12+38 Cleveland Ave. S.W. 11' Rt.	M.H.	1020.70	1020.46	1				
B-26	10+03 Cleveland Ave. S.W. 11' Rt.	M.H.							No Work - Continue in Service
B-27	961+00 Ramp F 191' Rt.	M.H.							No Work - Continue in Service
B-28	961+76 Ramp F 185' Rt.	M.H.							No Work - Continue in Service
B-29	961+78 Ramp F 225' Rt.	M.H.							No Work - Continue in Service
B-30	964+63 Ramp F 185' Rt.	M.H.					1		Replace with New M.H.
B-31	979+07 Ramp D 166' Lt.	M.H.					1		Connect S-14 Continue in Service
B-32	978+36 Ramp D 75' Lt.	M.H.					1		
B-33	977+68 Ramp D 12' Rt.	M.H.					1		
B-34	977+10 U.S. 30 23' Lt.	M.H.					1		
B-35	976+08 U.S. 30 55' Rt.	M.H.					1		
B-36	974+07 Ramp H 20' Lt.	M.H					1		
B-37	972+82 Ramp H 29' Lt.	M.H.					1		
B-38	970+73 Ramp H 97' Lt.	M.H.					1		
B-39	971+97 Ramp G 87' Rt.	M.H.					1		
B-40	976+11 Ramp G 13' Rt.	M.H.					1		
B-41	558+15 I-77 50' Lt.	M.H.				1			Cut & Plug - North Inlet Pipe
B-42	966+12 Ramp H 125' Rt.	M.H.							No Work - Continue in Service
B-43	967+92 Ramp H 133' Rt.	M.H.							No Work - Continue in Service
B-44	966+12 Ramp H 41' Rt.	M.H.					1		
B-45	966+12 Ramp H 52' Lt.	M.H.					1		
B-46	964+34 Ramp H 136' Lt.	M.H.					1		
B-47	961+07 Ramp H 16' Rt.	M.H.					1		
B-48	975+85 Ramp F 80' Rt.	M.H.							No Work - Continue in Service
B-49	973+77 Ramp F 109' Rt.	M.H.					1		
B-50	971+71 Ramp F 47' Rt.	M.H.	1026.11	1028.00		1			
B-51	967+85 Ramp H 23' Lt.	M.H.							Connect S-10
B-52	960+88 Ramp H 83' Rt.	M.H.	1029.35	1029.21	1				
	I-77-4(44)107				6 ✓	3 ✓	28 ✓	1 ✓	

Made LAR 5-13-69
Ckd DKS 5-14-69

CODE NO.	LOCATION	604 M.H. & C.B. TOP OF COVER ELEVATION EXIST.	604 M.H. & C.B. TOP OF COVER ELEVATION PROP.	604 M.H. & C.B. QUANTITY ADJUST EACH	604 M.H. & C.B. QUANTITY RECON. EACH	202 REMOVED M.H. EACH	202 REMOVED C.B. EACH	REMARKS

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

EXISTING SANITARY DRAINAGE STRUCTURES

UNDERDRAIN SUMMARY

FED. ROAD DIV. NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			107 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

CODE	LOCATION FROM	LOCATION TO	SIDE	INVERT ELEV. UPPER	INVERT ELEV. LOWER	605-6" PIPE SHALLOW 30" LIN. FT.	605-6" PIPE UNCL LIN. FT.	605-6" PIPE DEEP 50" LIN. FT.	6" TYPE F OUTLET PIPE LIN. FT.	6" TYPE F X-OVER PIPE LIN. FT.	6" TYPE B LIN. FT.	6" CONNECTIONS EACH TEE 605	TEE TYPE B	90° 605	90° TYPE B	60° 605	60° TYPE F	30° TYPE F
U-1	954+40 U.S. 30	Structure 1	Med.	1048.0	1047.8 ①	25			10									1
U-2	959+75 U.S. 30	Structure 1	Med.	1063.2	1049.0	490			10									1
U-4	959+75 U.S. 30	954+85 U.S. 30	Lt.	1060.3	1047.7	482												
U-5	954+85 U.S. 30	954+85 U.S. 30	Lt.	1047.7	1045.8	31			⑥10					1				
U-6	954+50 Ramp A	960+57 Ramp A	Lt.	1042.2	1033.9	607												
U-7	969+00 Ramp A	960+57 Ramp A	Lt.	1048.7	1033.9	843												
U-8	960+57 Ramp A	960+57 Ramp A	Lt.	1033.9	1033.7	12			⑥10			1						
U-9	958+50 Ramp B	956+44 Ramp B	Lt.	1037.7	1034.6	206												
U-10	955+00 Ramp B	956+44 Ramp B	Lt.	1036.1	1034.6	144												
U-11	956+44 Ramp B	956+44 Ramp B	Lt.	1034.6	1034.4	12			⑥10			1						
U-12	955+75 Ramp G	Structure 6	Lt.	1043.0	1039.0	265			10									
U-13	960+20 Ramp G	Structure 6	Lt.	1041.0	1039.0	160			10									
U-14	958+60 Ramp F	958+60 Ramp F	Rt.	1038.9	1038.3	13			⑥10			1						
U-15	954+35 Ramp F	958+40 Ramp F	Rt.	1043.7	1038.9	405												
U-16	960+20 Ramp F	958+60 Ramp F	Rt.	1040.8	1038.9	160												
U-17	958+40 Ramp F	958+40 Ramp F	Rt.	1038.9	1038.3	13			⑥10			1						
U-18	966+85 Ramp E	976+87 Ramp E	Lt.	1062.8	1036.0 ②	1002												
U-19	956+70 Ramp C	956+00 Ramp C	Lt.	1033.7	1033.3	70												
U-20	966+90 U.S. 30	969+10 U.S. 30	Med.	1065.5	1063.3	220												
U-22	953+70 Ramp C	956+00 Ramp C	Lt.	1036.7	1033.3	230												
U-23	957+10 Ramp C	956+70 Ramp C	Rt.	1034.4	1033.9	40												
U-24	956+70 Ramp C	956+70 Ramp C	Rt.to Lt.	1033.9	1033.7						20				2			
U-25	956+00 Ramp C	956+00 Ramp C	Rt.	1033.3	1032.7	14			⑥10			1						
U-26	962+45 Ramp F	965+75 Ramp F	Rt.	1041.1	1037.1	230												
U-27	965+75 Ramp F	965+75 Ramp F	Rt.	1037.1	1036.7	12			⑥10					1				
U-28	971+00 Ramp G	977+00 Ramp G	Rt.	1053.0	1036.7	600												
U-29	977+00 Ramp G	977+00 Ramp G	Rt.	1036.7	1036.2	27			⑥10					1				
U-30	974+86 Ramp F	973+45 Ramp F	Rt.	1049.3	1048.7	141												
U-31	972+25 Ramp F	973+35 Ramp F	Rt.	1048.6	1045.7	110												
U-32	974+86 Ramp F	977+25 Ramp F	Rt.	1049.1	1048.1	239												
U-33	977+25 Ramp F	977+25 Ramp F	Rt.	1048.1	1047.7	12			⑥10					1				
U-34	22+75 Cleveland	Structure 12	Lt.	1026.9	1022.0	378			10	12								
U-35	18+70 Cleveland	Structure 16	Lt.	1022.0	1021.1	110 ③			10									
U-36	17+45 Cleveland	Structure 18	Lt.	1021.1	1020.2	110 ③			10									
U-37	16+20 Cleveland	Structure 19	Lt.	1020.2	1019.3	110 ③			10									
U-38	14+95 Cleveland	Structure 24	Lt.	1019.3	1018.8	55 ③			10								1	
U-39	14+30 Cleveland	Structure 25	Lt.	1018.8	1015.5	365 ③			10								1	
U-40	22+25 Cleveland	Structure 13	Rt.	1026.8	1022.5	315 ③			10									
U-41	18+95 Cleveland	Structure 15	Rt.	1022.5	1021.1	135 ③			10									
U-42	17+45 Cleveland	Structure 21	Rt.	1021.1	1019.0	285 ③			10									
U-43	14+45 Cleveland	Structure 29	Rt.	1019.0	1016.5	285 ③			10									
U-44	11+45 Cleveland	Existing M.H. A-20	Rt.	1016.5	1015.7	80 ③				20								
U-45	27+75 McKinley Conn.	Structure 33	Rt.	1027.0	1026.8	95 ③			10									
U-46	26+25 McKinley Conn.	Structure 37	Rt.	1026.5	1025.6	85 ③			10									
U-47	26+50 McKinley Conn.	Structure 38	Lt.	1026.7	1024.8	186 ③			10	12								
U-48	23+25 McKinley Conn.	Structure 38	Lt.	1026.4	1024.8	104 ③			10									
U-49	22+75 Cleveland	Structure 39	Rt.	1026.9	1024.7	100 ③			10									
U-50	971+75 Ramp H	Structure 42	Rt.	1054.9	1053.4	65			10								1	
U-51	970+95 Ramp H	Structure 43	Rt.	1052.1	1050.6	160			10								1	
⑤ U-270	920+00 U.S. 30	Structure A-2	Rt.	1023.7	Exist. Stub			545								1		
⑤ U-271	925+45 U.S. 30	Structure A-3	Rt.	1017.4	Exist. Stub			506								1		
⑤ U-272	925+50 U.S. 30	Structure A-8	Med.	1018.6	Exist. Stub	1245												
⑤ U-273	934+80 U.S. 30	Structure A-11	Med.	1011.6	Exist. Stub	33												
⑤ U-274	938+70 U.S. 30	Structure A-11	Med.	1011.6	Exist. Stub	33												
U-275	952+90 U.S. 30	Structure A-16	Med.	1043.5	Exist. Stub	278												

CODE	LOCATION FROM	LOCATION TO	SIDE	INVERT ELEV. UPPER	INVERT ELEV. LOWER	605-6" PIPE SHALLOW 30" LIN. FT.	605-6" PIPE UNCL LIN. FT.	605-6" PIPE DEEP 50" LIN. FT.	6" TYPE F OUTLET PIPE LIN. FT.	6" TYPE F X-OVER PIPE LIN. FT.	6" TYPE B LIN. FT.	6" CONNECTIONS EACH TEE 605	TEE TYPE B	90° 605	90° TYPE B	60° 605	60° TYPE F	30° TYPE F
U-276	949+95 U.S. 30	943+25 U.S. 30	Med.	1034.8	1015.3	663												
U-277	952+90 U.S. 30	950+00	Rt.	1043.7	1035.1	294												
	950+00 U.S. 30	949+00	Rt.	1035.1	1030.5		100											
	949+00 U.S. 30	943+25	Rt.	1030.5	1013.9			575										
U-278	952+90 U.S. 30	950+00	Lt.	1043.7	1035.1	292												
	950+00 U.S. 30	949+00	Lt.	1035.1	1030.5		100											
	949+00 U.S. 30	946+30	Lt.	1030.5	1022.5			274										
⑤ U-279	925+45 U.S. 30	Structure A-4	Lt.	1017.4	Exist. Stub			654								1		
⑤ U-280	926+00 Ramp S	927+75 Ramp S	Lt.	Exist. Stub	1030.2			200										
⑤ U-281	927+75 Ramp S	927+75 Ramp S	Lt. to Rt.	1030.2	1030.0						27				2			
⑤ U-282	927+75 Ramp S	930+00 Ramp S	Rt.	1030.0	1020.7			223										
⑤ U-283	930+00 Ramp S	930+00 Ramp S	Rt. to Lt.	1020.7	1020.6						19				2			
⑤ U-234	930+00 Ramp S	932+07 Ramp S	Lt.	1020.6	1013.6			207										
⑤ U-285	932+70 Ramp S	932+07 Ramp S	Lt.	1013.9	1013.6			63										
⑤ U-286	932+07 Ramp S	Structure A-4		1013.6	Exist. Stub						36		1					
⑤ U-287	932+84 Ramp S	937+75 U.S. 30	Lt.	1012.3	1010.0			493										
⑤ U-288	938+20 U.S. 30	937+75 U.S. 30	Lt.	1010.2 ①	1010.0			45										
⑤ U-289	937+75 U.S. 30	Structure A-7	Lt.	1010.0	Exist. Stub			8				1						
⑤ U-290	938+30 U.S. 30	938+75 U.S. 30	Lt.	1010.3 ①	1010.1			45										
⑤ U-291	938+75 U.S. 30	Structure A-13	Lt.	1010.1	Exist. Stub			8				1						
⑤ U-292	926+62 Ramp T	930+53 Ramp T	Rt.	1031.1	1014.5			394										
⑤ U-293	930+53 Ramp T	Structure A-3	Lt.	1014.5	Exist. Stub						25		1					
⑤ U-294	931+28 Ramp T	930+53 Ramp T	Rt.	1014.7 ①	1014.5			76										
⑤ U-295	933+00 U.S. 30	937+75 U.S. 30	Rt.	1012.1	1010.5			478										
⑤ U-296	938+20 U.S. 30	937+75 U.S. 30	Rt.	1610.7 ①	1010.5			45										
⑤ U-297	937+75 U.S. 30	Structure A-9	Rt.	1010.5	Exist. Stub			8				1						
⑤ U-298	938+30 U.S. 30	938+75 U.S. 30	Rt.	1010.3 ①	1010.1			45										
⑤ U-299	938+75 U.S. 30	Structure A-12	Rt.	1010.1	Exist. Stub			8				1						
④ U-30A	973+48 Ramp F		Rt.			12			⑥10		38	1						
U-31A	972+25 Ramp F		Rt.	1046.3	1045.7	12			⑥10					1				
⑤ U-276	941+70 U.S. 30	Structure A-14	Med	1015.3	Exist. Stub	295												
⑤ U-277	941+70 U.S. 30	938+75 U.S. 30	Rt.	1013.9	1010.1			295										
⑤ U-278	946+30 U.S. 30	938+75 U.S. 30	Lt.	1022.5	1010.1			600										
U-60	963+40 Ramp H	964+50 Ramp H	Rt.	1045.6	1044.7	110												
U-61	966+85 Ramp H	964+50 Ramp H	Rt.	1047.1	1044.7	235												
U-62	964+50 Ramp H		Rt.	1044.7	1044.3	12			⑥10			1						
U-69	967+25 Ramp C	968+50 Ramp C	Rt.	1069.0	1065.0	125												
U-70	968+50 Ramp C 2 Rt.	968+50 Ramp C 8 Lt.	Lt.	1065.0	1064.9						20				2			
U-71	968+50 Ramp C	Structure A-62	Lt.	1064.9	1061.4	180					66							
U-72	970+75 Ramp D	967+75 Ramp D	Lt.	1060.5	1047.9	375												
U-73	967+75 Ramp D		Lt.	1047.9	1047.7	10			⑥10					1				
U-58	958+45 Ramp H	960+45 Ramp H	Rt.	1052.9	1050.1	200												
U-59	960+45 Ramp H		Rt.	1050.1	1049.7	12			⑥10					1				
Total	I-77-4(44)107					12,738	200	849	350	24	164	7	–	7	4	2	4	2
Total	U-663(15)					1,606	–	4,946	–	–	107	4	2	–	4	–	–	–

Made LAR 5-14-69
Ckd DKS 5-16-69

① Adverse to Grade
② Connect to Existing U.D.
③ 18" Shallow Underdrain
④ Existing Outlet Pipe to be removed Connect Type B to existing, to be placed under Ramp F.
⑤ U-663(15)
⑥ Provide Item 603, Animal Guard for Pipe Outlet.

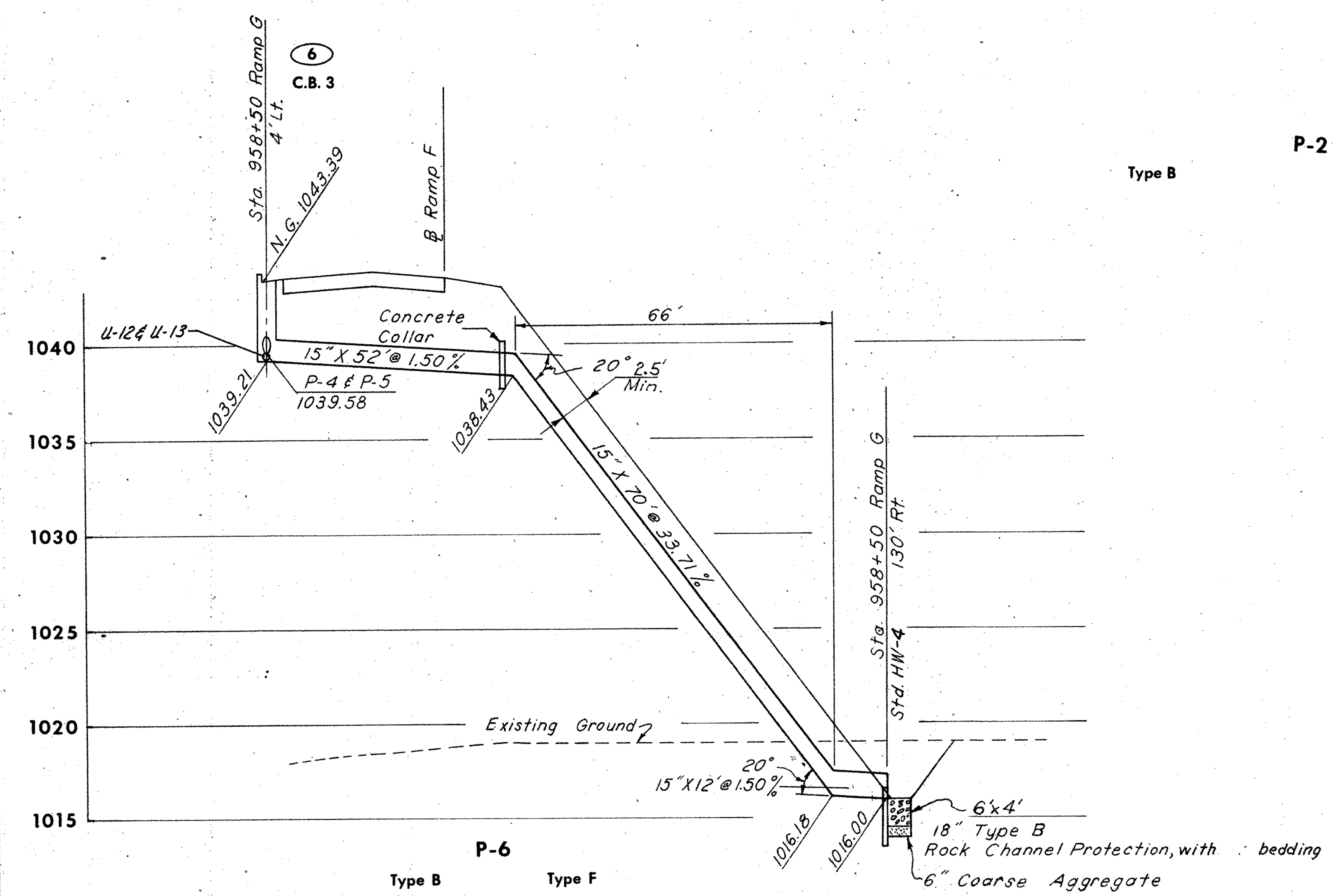
ITEM 603-ANIMAL GUARD FOR PIPE OUTLET
TOTAL - 14 each @ I-77-4(44)107

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

P-2

Type B Type F



604 CATCH BASINS & INLETS

CODE	STATION	SIDE		Std. No. I-3B Median Inlet	Std. No. 2-A-6 Paved Shoulder Inlet	Std. No 3 C.B.	Std. No. 6 C.B.
				Each	Each	Each	Each
1	954+75 U.S. 30	℄		1			
2	951+55 U.S. 30	52' Lt.					1
3	956+75 Ramp G	4' Lt.			1		
4	958+00 Ramp G	4' Lt.			1		
5	959+00 Ramp G	4' Lt.			1		
6	958+50 Ramp G	4' Lt.				1	
	Totals			1	3	1	1

CODE	STATION	INLET CODE		601	602	603	603	
				Rock Channel Protection Type B with bedding	Concrete Masonry	15" Conduit Type B	15" Conduit Type F	Bends and Branches
		FROM	TO	CU. YD.	CU. YD.	Lin. Ft.	Lin. Ft.	Each
P-1	U.S. 30	1	Outlet	1.8	0.27	79		
P-2	U.S. 30	2	Outlet	1.8	0.27	34	37	2
P-3	Ramp G	3	4			125		
P-4	Ramp G	4	6			50		
P-5	Ramp G	5	6			50		
P-6	Ramp G	6	Outlet	1.8	0.27	52	82	2
	Totals			5.4	0.81	390	119	

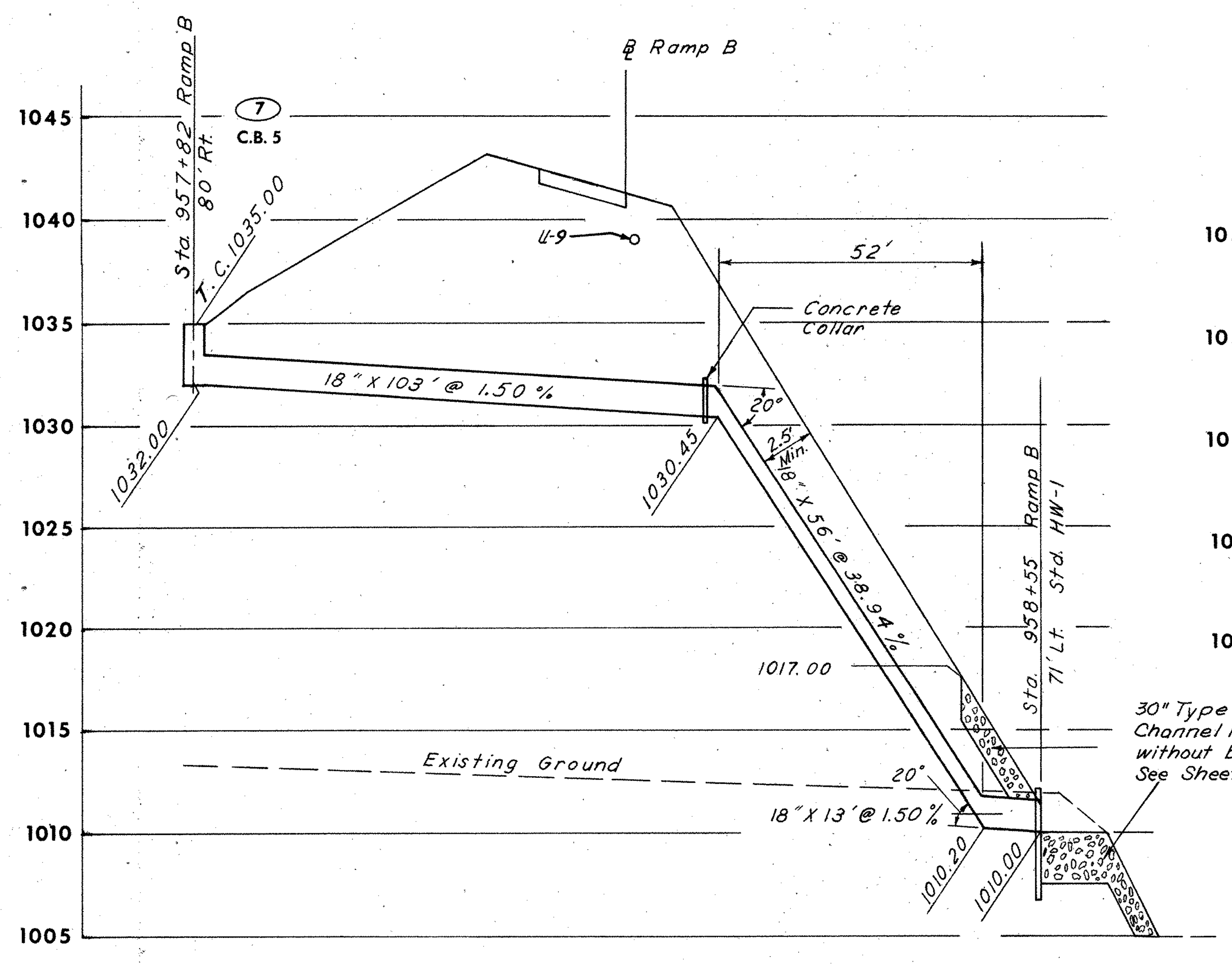
Made DKS 5-5-69
CKD CRJ 5-6-69

Scale: Hor. 1"=20' 10 0 20
Vert. 1"=5' 2 1 0 5

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

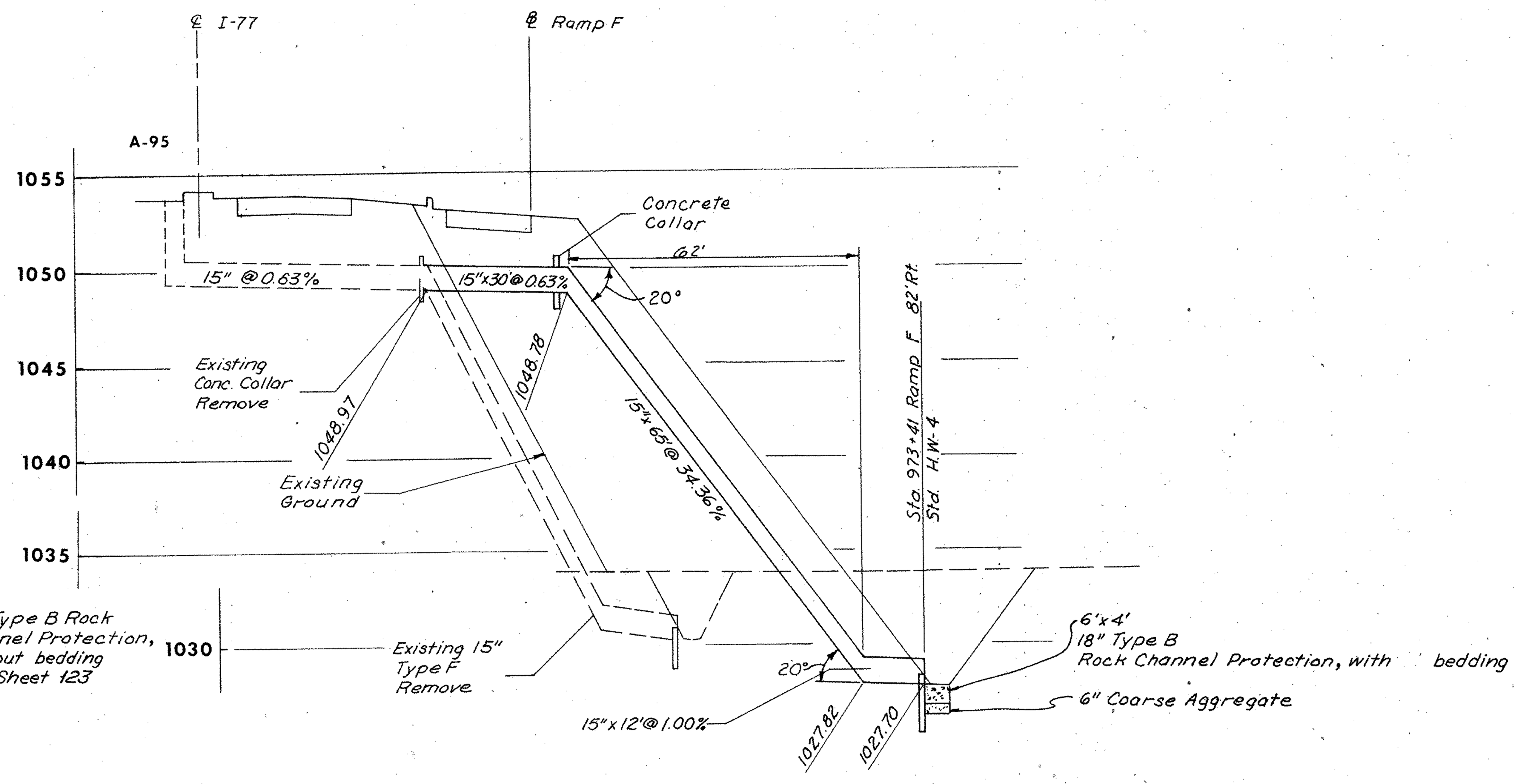
P-1 thru P-6
DRAINAGE PROFILES

STARK COUNTY
STA-30-14.12
STA-77-9.22



P-7

Type B Type F



P-A-95

Type B Type F

603 CONDUIT									602	601	
CODE	ROADWAY	INLET CODE		15" Conduit Type B	15" Conduit Type F	18" Conduit Type B	18" Conduit Type F	Concrete Masonry	Rock Channel Protection Type B with bedding	Bends and Branches
		FROM	TO	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	C.Y.	C.Y.	
P-7	Ramp B	7	Outlet			103	69	2.20		2
P-9	Void									
P-A-95	Ramp F	A-95	Outlet	30	77			0.27	1.8	2
	Totals			30	77	103	69	2.47	1.8	

604 MANHOLES, CATCH BASINS AND INLETS				
CODE	LOCATION	Standard No. 5 C.B.		
		Each		
7	957+82 Ramp B 80' Rt.	1		
	Totals	1		

Made DKS 5-5-69
Ckd CRJ 5-6-69

Scale: Hor. 1"=20' 10 0 20
Vert. 1"=5' 2 1 0 5

STARK COUNTY
STA-30-14.12
STA-77-9.22

P-10
Type B

P-11
Type B

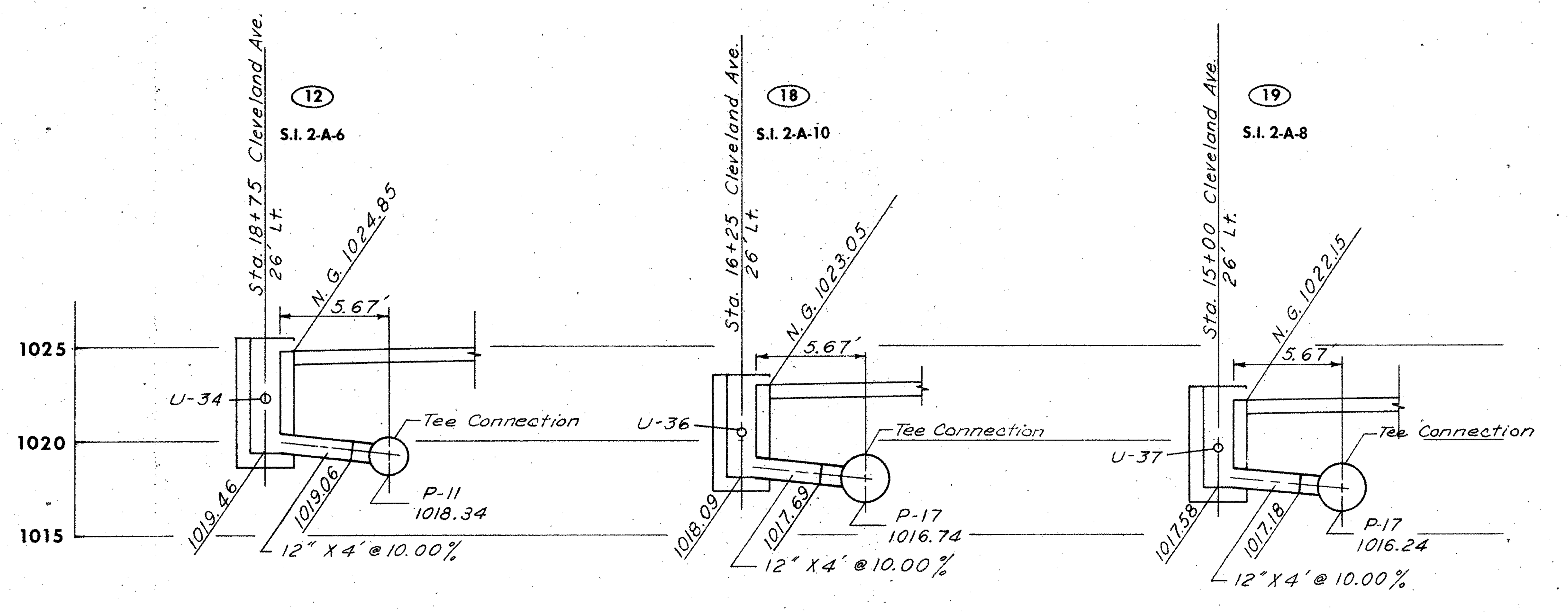
P-14
Type C

P-15
Type B

P-16
Type B

P-13
Type B

Scale: Hor. 1''=20'
Vert. 1''=5'



P-12
Type B

P-18
Type B

P-19
Type B

Scale: Hor. 1''=5'
Vert. 1''=5'

604 MANHOLES, CATCH BASINS AND INLETS

CODE	LOCATION	Standard No. 1 Manhole	Standard No. 2-A-6 Paved Shoulder Inlet	Standard No. 2-A-8 Paved Shoulder Inlet	Standard No. 2-A-10 Paved Shoulder Inlet	Standard No. 5 C.B.		
		Each	Each	Each	Each	Each		
10	21+00 Cleveland Ave. 60' Lt.					1		
11	20+00 Cleveland Ave. 21' Lt.	1						
12	18+75 Cleveland Ave 26' Lt.		1					
13	19+00 Cleveland Ave. 26' Rt.		1					
14	17+50 Cleveland Ave. 48' Rt.					1		
15	17+50 Cleveland Ave. 26' Rt.		1					
16	17+50 Cleveland Ave. 26' Lt.			1				
18	16+25 Cleveland Ave. 26' Lt.				1			
19	15+00 Cleveland Ave. 26' Lt.			1				
	Totals	1	3	2	1	2		

603 CONDUIT

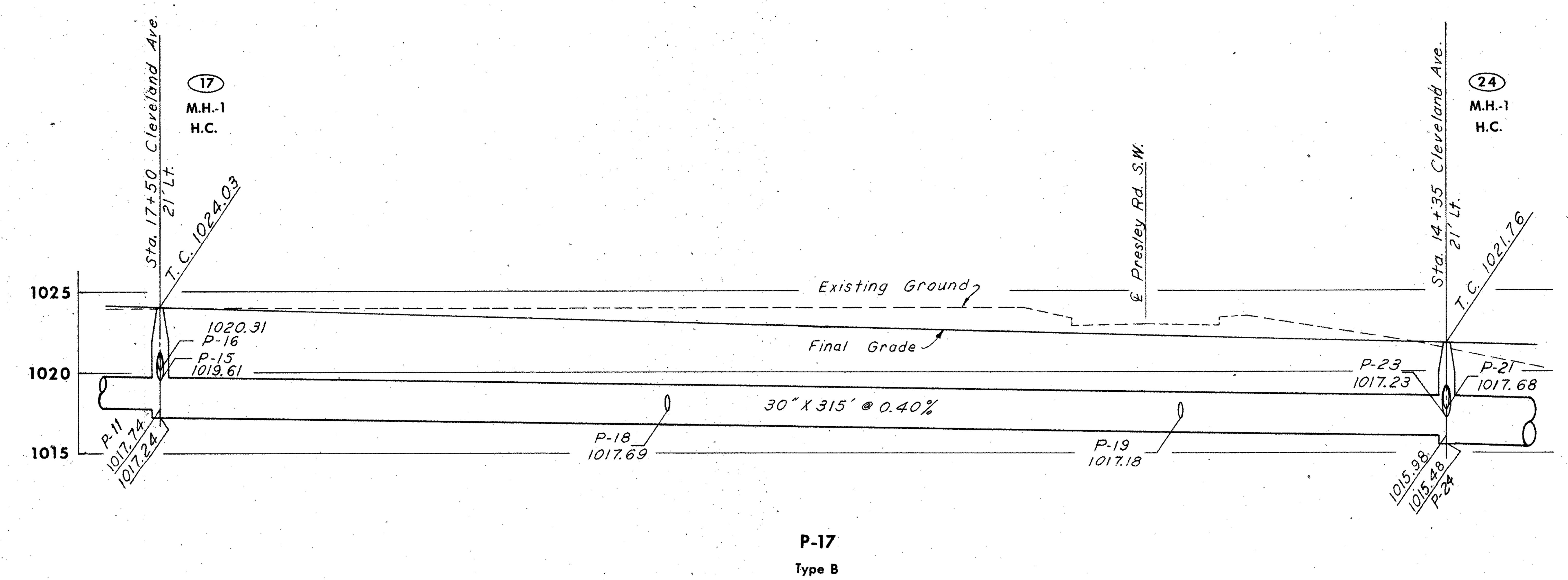
CODE	ROADWAY	INLET CODE FROM	INLET CODE TO	12" Conduit Type B	18" Conduit Type B	18" Conduit Type C	24" Conduit Type B				
				Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.				
P-10	Cleveland Ave.	10	11		105						
P-11	Cleveland Ave.	11	17				250				
P-12	Cleveland Ave	12	Tee	4							
P-13	Cleveland Ave.	13	A-74	20							
P-14	Cleveland Ave.	14	15			21					
P-15	Cleveland Ave	15	17		47						
P-16	Cleveland Ave.	16	17	6							
P-18	Cleveland Ave.	18	Tee	4							
P-19	Cleveland Ave.	19	Tee	4							
	Totals			38	152	21	250				

Made DKS 5-5-69
Ckd CRJ 5-6-70

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

P-10 thru P-16, P-18 & P-19
DRAINAGE PROFILES

STARK COUNTY
STA-30-14.12
STA-77-9.22



604 MANHOLES, CATCH BASINS AND INLETS

CODE	LOCATION		Standard No. 1 Manhole	Standard No. 2-A-6 Paved Shoulder Inlet	Standard No. 2-A-8 Paved Shoulder Inlet	Standard No. 3A C.B.	Standard No. 5 C.B.	
			Each	Each	Each	Each	Each	
17	17+50 Cleveland Ave.	21' Lt.	1					
24	14+35 Cleveland Ave.	21' Lt	1					
26	10+50 Cleveland Ave.	26' Lt.			1			
27	15+10 Cleveland Ave.	18' Lt.				1		
28	11+50 Cleveland Ave.	55' Rt.					1	
29	11+50 Cleveland Ave	26' Rt.		1				
30	11+50 Cleveland Ave	3' Rt.	1					
	Totals		3	1	1	1	1	

603 CONDUIT

CODE	ROADWAY	INLET CODE FROM	INLET CODE TO	12" Conduit Type B	12" Conduit Type C	30" Conduit Type B	36" Conduit Type B		
P-17	Cleveland Ave.	17	24			315			
P-24	Cleveland Ave.	24	25				370		
P-26	Cleveland Ave.	26	A82	31					
P-27	15th St. S.W.	27	A20	36					
P-28	Cleveland Ave.	25	29		28				
P-29	Cleveland Ave.	29	30	25					
	Totals			92 Lin. Ft.	28 Lin. Ft.	315 Lin. Ft.	370 Lin. Ft.		

Made DKS 5-5-69
CKD CRJ 5-7-69

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

Scale: Hor. 1"=20'
Vert. 1"=5'

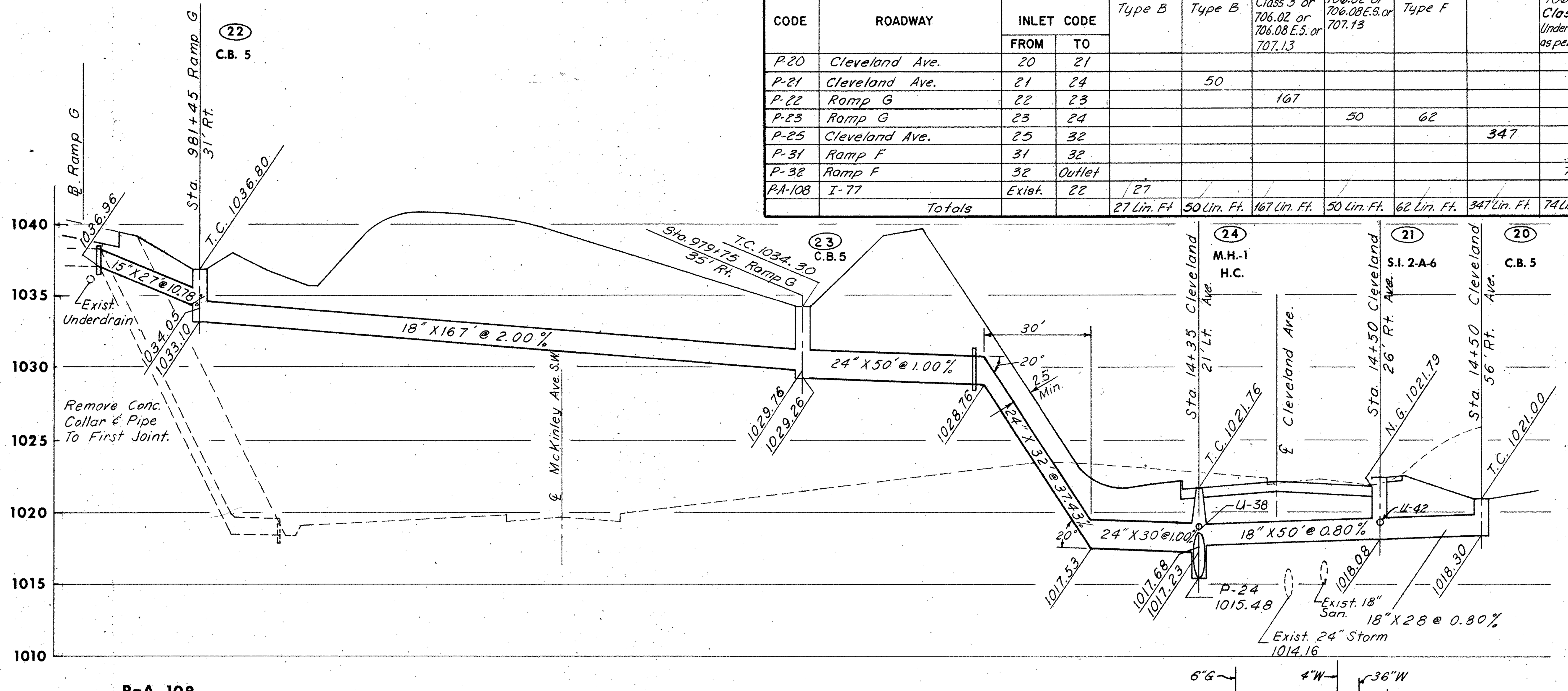
P-17, P-24, & P-26 thru P-29
DRAINAGE PROFILES

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			112 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

603 CONDUITS

CODE	ROADWAY	INLET CODE FROM	INLET CODE TO	15" Conduit Type B	18" Conduit Type B	18" Conduit Type C 706.01 Class 3 or 706.02 or 706.08 E.S. or 707.13	24" Conduit Type C 706.02 or 706.08E.S. or 707.13	24" Conduit Type F	36" Conduit Type B	42" Conduit Type B 706.02 Class V Under Railroad as per plan	42" Conduit Type C	602 Concrete Masonry	Bends and Branches	18" Conduit Type C	24" Conduit Type C 706.01 or 706.02 or 706.08
P-20	Cleveland Ave.	20	21											28	
P-21	Cleveland Ave.	21	24		50										
P-22	Ramp G	22	23			167									
P-23	Ramp G	23	24				50	62					2		
P-25	Cleveland Ave.	25	32						347						
P-31	Ramp F	31	32												18
P-32	Ramp F	32	Outlet							74	45	6.7			
P-A-108	I-77	Exist.	22	27											
	Totals			27 Lin. Ft	50 Lin. Ft.	167 Lin. Ft.	50 Lin. Ft.	62 Lin. Ft.	347 Lin. Ft.	74 Lin Ft.	45 Lin. Ft.	6.7 C.Y.	2 Each	28 Lin. Ft.	18 Lin. Ft.



P-A 108
Type B

P-22
Type C

Type C

P-23
Type F

P-21
Type B

P-20
Type C

604 MANHOLES, CATCH BASINS AND INLETS

CODE	LOCATION		Standard No. 1 Manhole	Standard No. 2 Manhole	Standard No. 5 C.B.	Standard No. 2 A-6 Paved Shoulder Inlet		
			Each	Each	Each	Each		
20	14+50 Cleveland Ave.	56' Rt.			1			
21	14+50 Cleveland Ave.	26' Rt.				1		
22	981+45 Ramp G	31' Rt.			1			
23	979+75 Ramp G	35' Rt.			1			
25	10+65 Cleveland Ave.	21' Lt.	1					
31	962+98 Ramp F	100' Rt.			1			
32	962+98 Ramp F	82' Rt.		1				
	Totals		1	1	4	1		

Made DKS 5-6-69
Ckd. CRJ 5-7-69

P-25
Type B

P-32

P-31
Type C

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

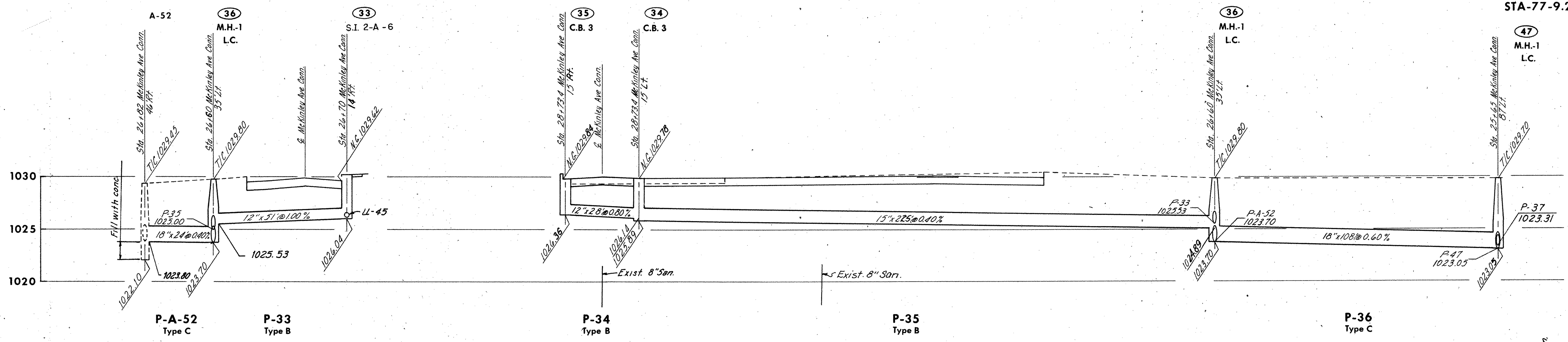
Scale: Hor. 1"=20' 10 0 20
Vert. 1"=5' 2 1 0 5

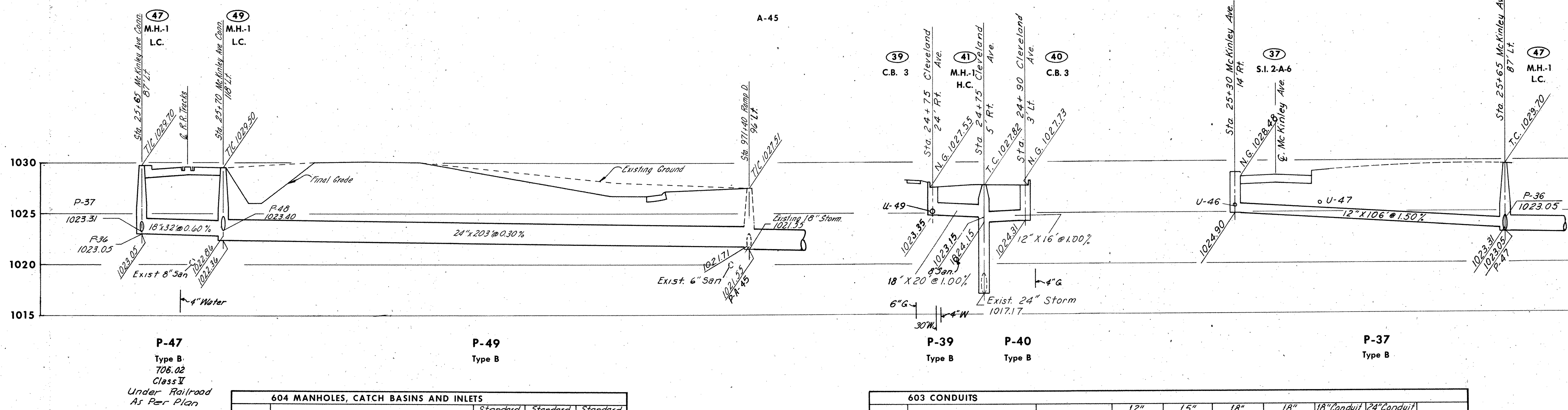
P-A-108
P-20 thru P-23, P-25, P-31, P-32
DRAINAGE PROFILES

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

113
389

STARK COUNTY
STA-30-14.12
STA-77-9.22





604 MANHOLES, CATCH BASINS AND INLETS				
CODE	LOCATION	Standard No. 1 Manhole	Standard No 2-A-6 Paved Shoulder Inlet	Standard No. 3 C.B.
		Each	Each	Each
33	26+70 McKinley Ave. 14' Rt.		1	
34	28+73.4 McKinley Ave. 15' Rt.			1
35	28+73.4 McKinley Ave. 15' Lt.			1
36	26+60 McKinley Ave. 35' Lt.	1		
37	25+30 McKinley Ave. 14' Rt.		1	
39	24+75 Cleveland Ave. 24' Rt.			1
40	24+90 Cleveland Ave. 3' Lt.			1
41	24+75 Cleveland Ave. 5' Rt.	1		
47	25+65 McKinley Ave. 87' Lt.	1		
49	25+70 McKinley Ave. 118' Lt.	1		
	Totals	4	2	4

Made DKS 5-6-69
Ckd CRJ 5-7-69

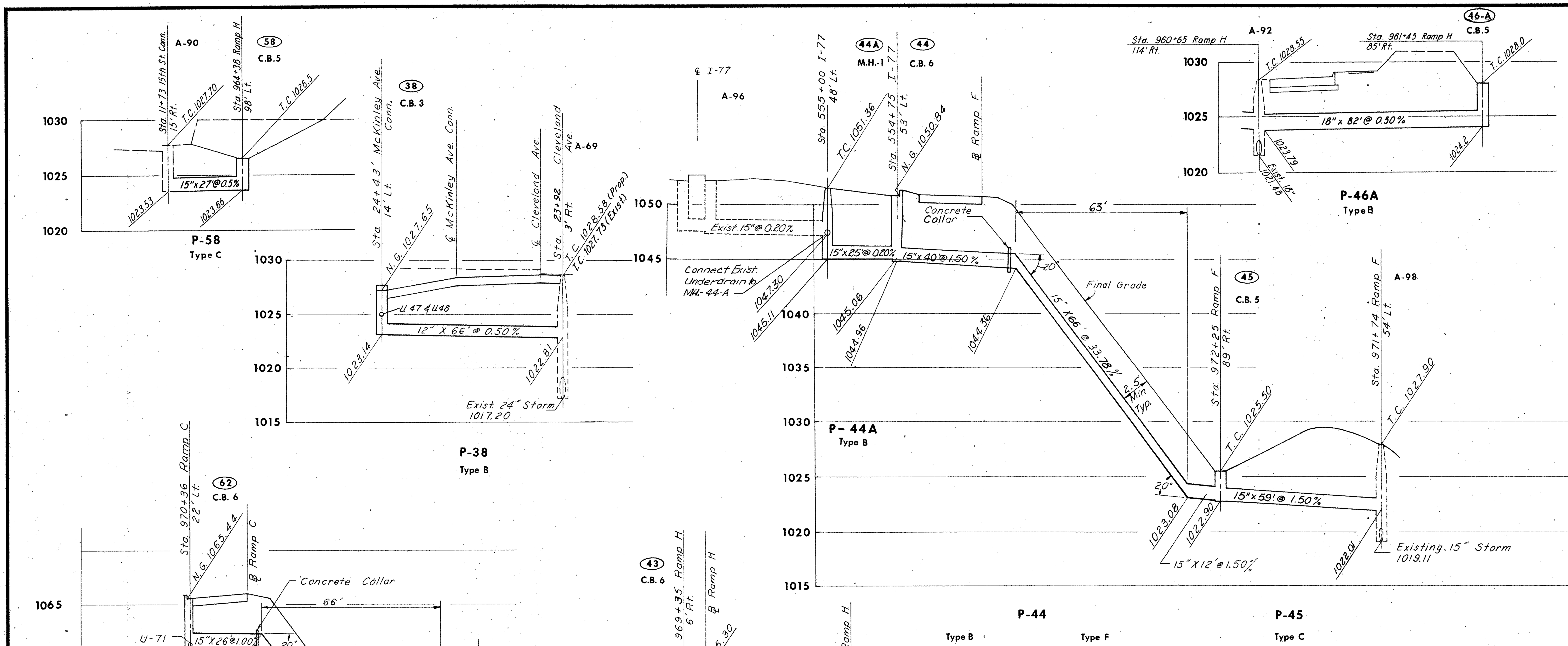
Scale: Hor. 1"=20'
Vert. 1"=5'

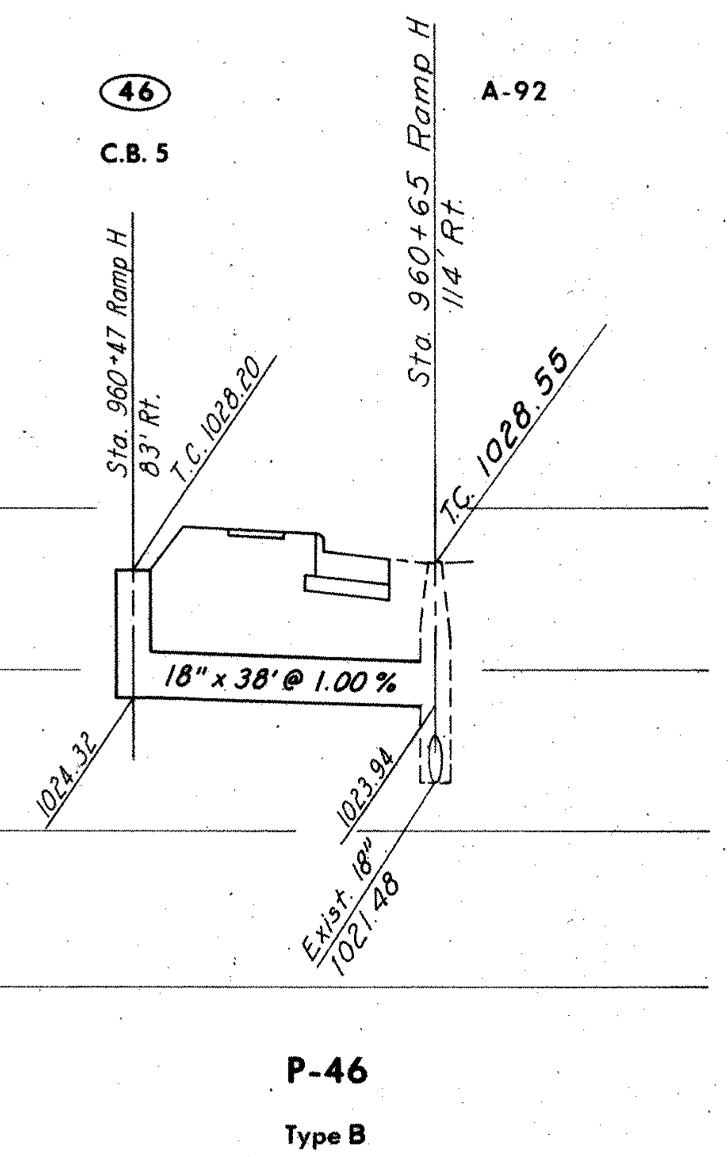
603 CONDUITS										
CODE	ROADWAY	INLET CODE FROM	INLET CODE TO	12" Conduit Type B	15" Conduit Type B	18" Conduit Type C	18" Conduit Type B	18" Conduit Type B, 706.02 Class V Under R.R. as per plan	24" Conduit Type B	
P-33	McKinley Ave.	33	36	51						
P-34	McKinley Ave.	35	34	28						
P-35	McKinley Ave.	35	36		225					
P-36	McKinley Ave	36	47			108				
P-37	McKinley Ave.	37	47	106						
P-39	Cleveland Ave.	39	41				20			
P-40	Cleveland Ave.	40	41	16						
P-47	McKinley Ave.	47	49					32		
P-49	McKinley Ave.	49	A-45						203	
PA-52	McKinley Ave.	A-52	36			24				
	Totals			201 Lin. Ft.	225 Lin. Ft.	132 Lin. Ft.	20 Lin. Ft.	32 Lin. Ft.	203 Lin. Ft.	

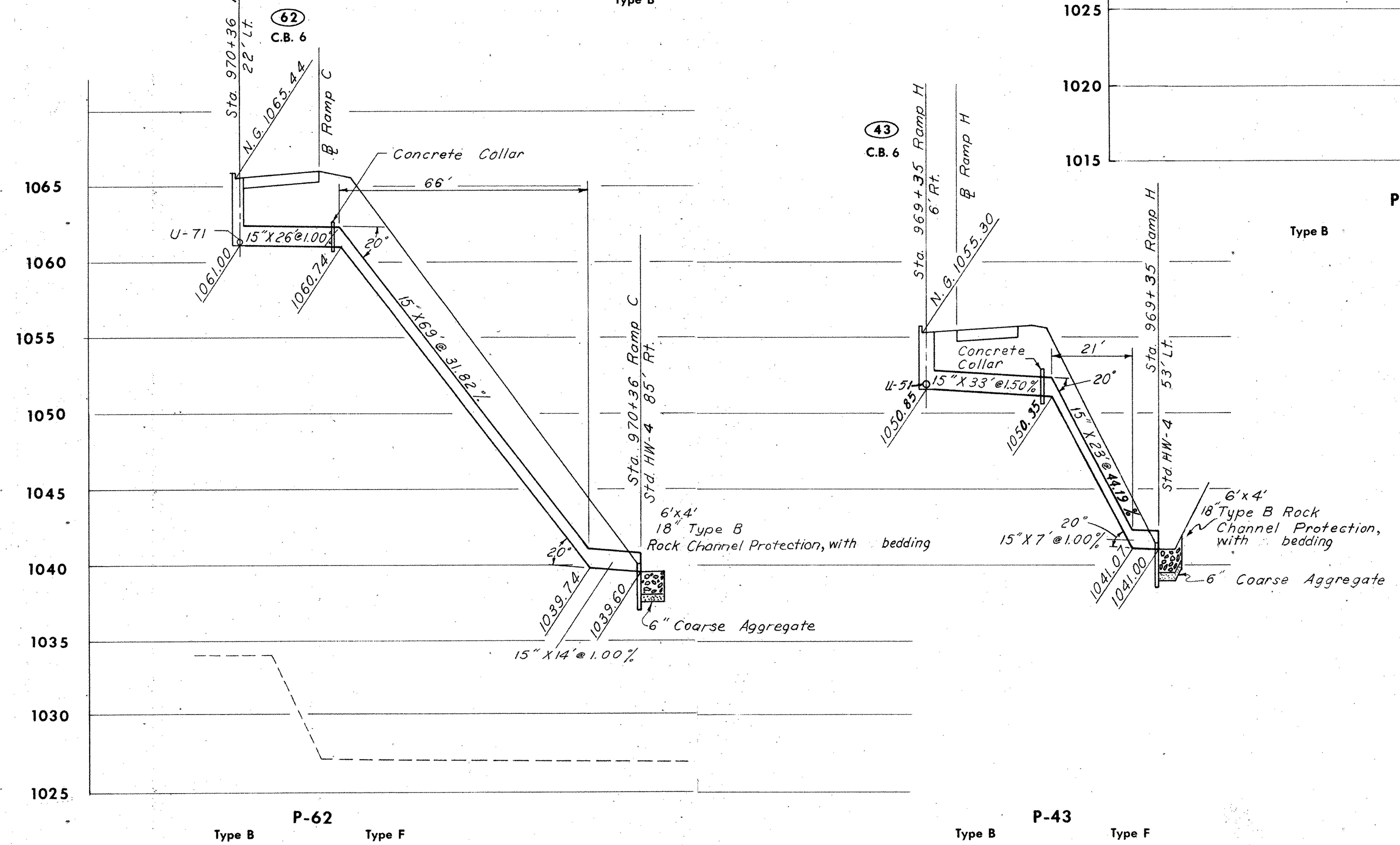
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

P-33 thru P-37, P-A-52, P-49, P-39, P-40, & P-47
DRAINAGE PROFILES

STARK COUNTY
STA-30-14.12
STA-77-9.22







603 CONDUITS									602	601	
CODE	ROADWAY	INLET CODE FROM	INLET CODE TO	12" Conduit Type B	15" Conduit Type B	15" Conduit Type C	15" Conduit Type F	18" Conduit Type B	Concrete Masonry	Rock Channel Protection Type B with bedding	Bends and Branches
P-38	McKinley Ave. Conn.	38	A-69	66							
P-43	Ramp H	43	Outlet		33		30		0.27	1.8	2
P-44	I-77	44	45		40		78				2
P-44A	I-77	44A	44		25						
P-45	Ramp F	45	A-98			59					
P-46	Ramp H	46	A-92					38			
P-62	Ramp C	62	Outlet		26		83		0.27	1.8	2
P-46A	Ramp H	46A	A-92					82			
P-58	Ramp H	58	A-90			27					
	Totals			66 Lin. Ft.	124 Lin. Ft.	86 Lin. Ft.	191 Lin. Ft.	120 Lin. Ft.	0.54 C.Y.	3.6 C.Y.	Each

604 MANHOLES, CATCH BASINS AND INLETS								
CODE	LOCATION		Standard No. 1 Manhole	Standard No. 3 C.B.	Standard No. 5 C.B.	Standard No. 6 C.B.		
			Each	Each	Each	Each		
58	964+38 Ramp H	98' Lt.			1			
38	24+43 McKinley Ave. Conn.	14' Lt.		1				
46A	961+48 Ramp H	85' Rt.			1			
43	969+35 Ramp H	6' Rt.				1		
44	554+75 I-77	53' Lt.				1		
44A	555+00 I-77	48' Lt.	1					
45	972+25 Ramp F	89' Rt.			1			
46	960+47 Ramp H	83' Rt.			1			
62	970+36 Ramp C	22' Lt.				1		
	Totals		1	1	4	3		

Revisions:
Made by A.H.S. 5-28-75
Ckd. M.G.B. 6-4-75

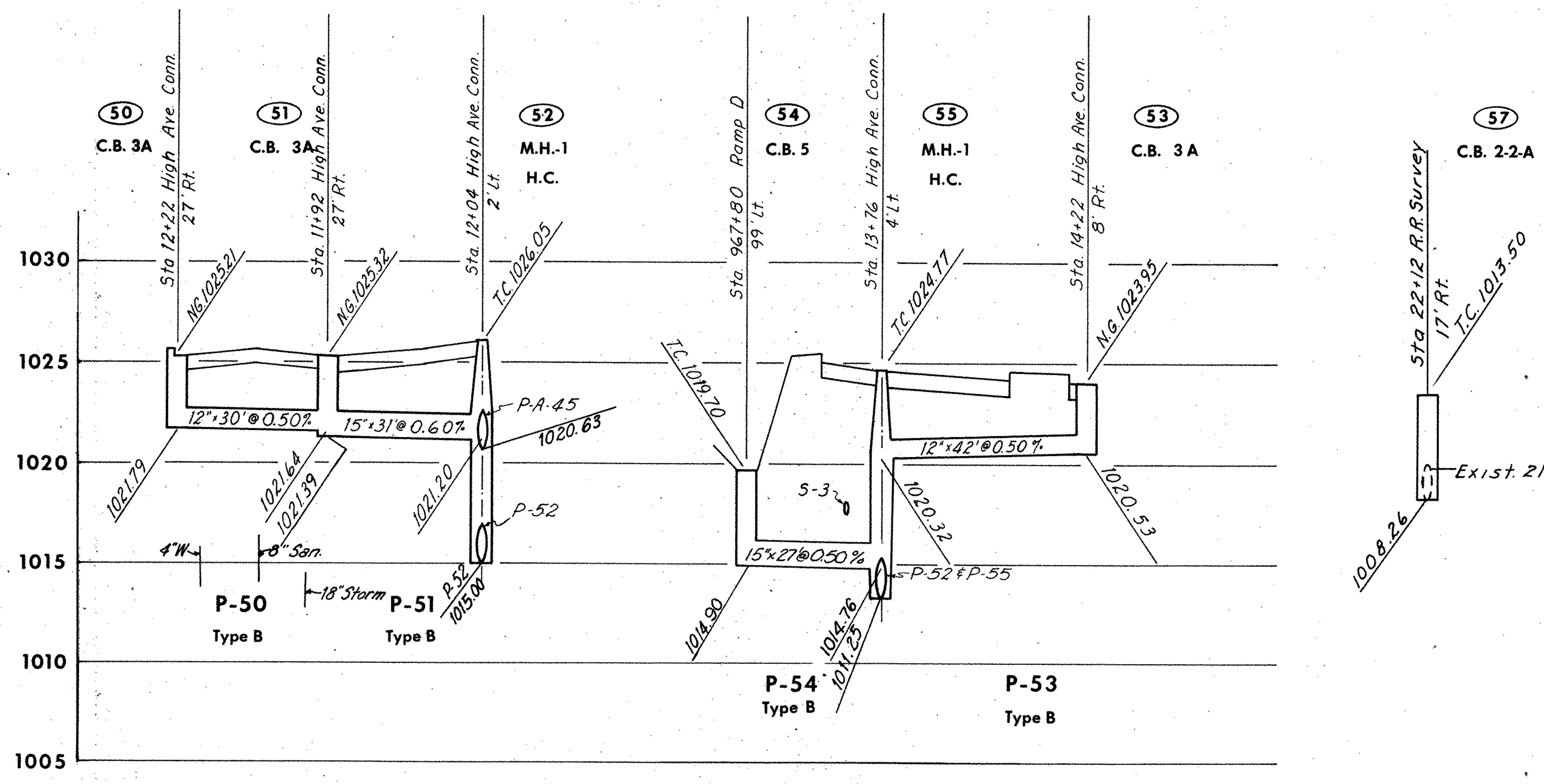
Scale: Hor. 1"=20'
Vert. 1"=5'

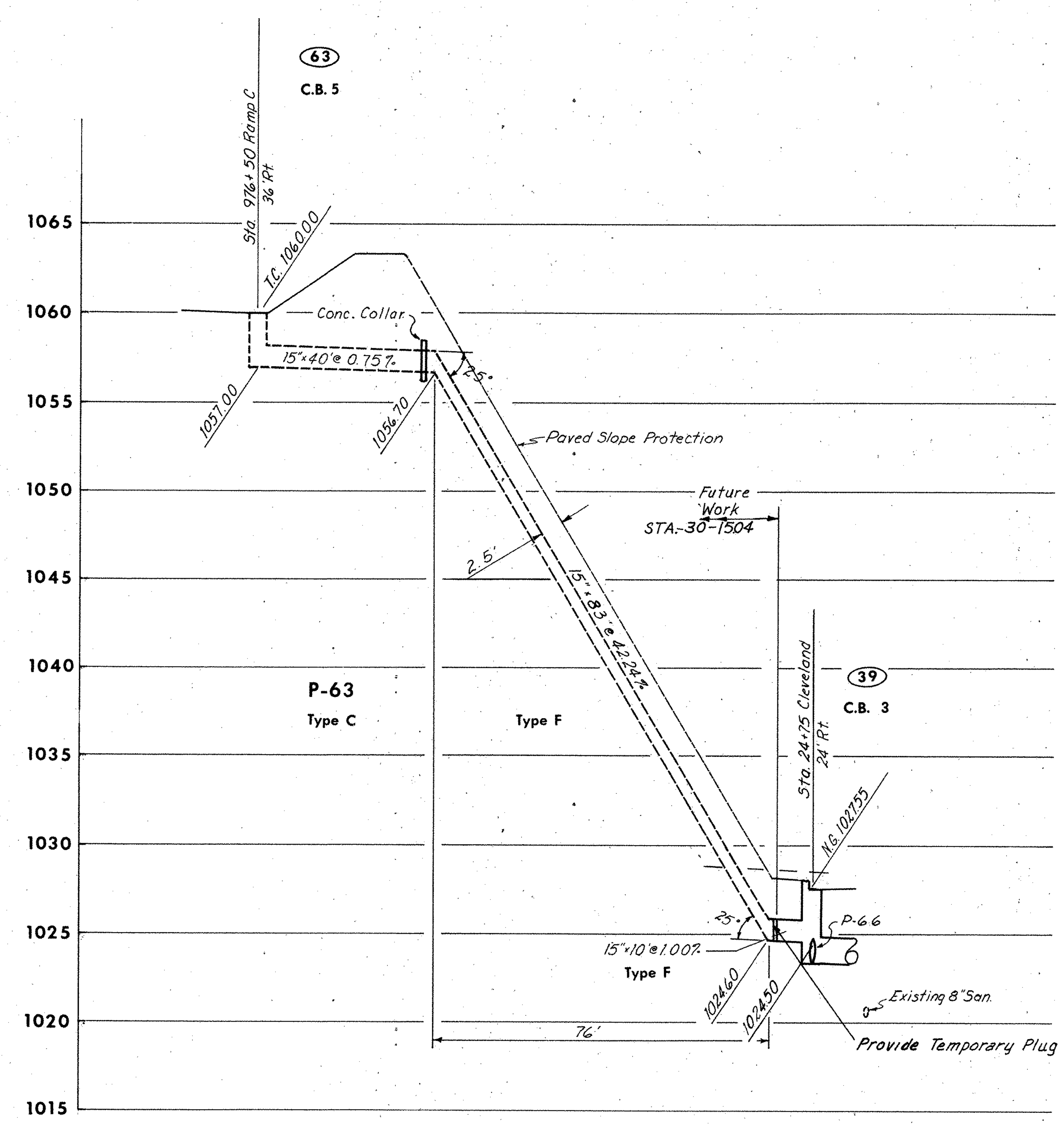
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

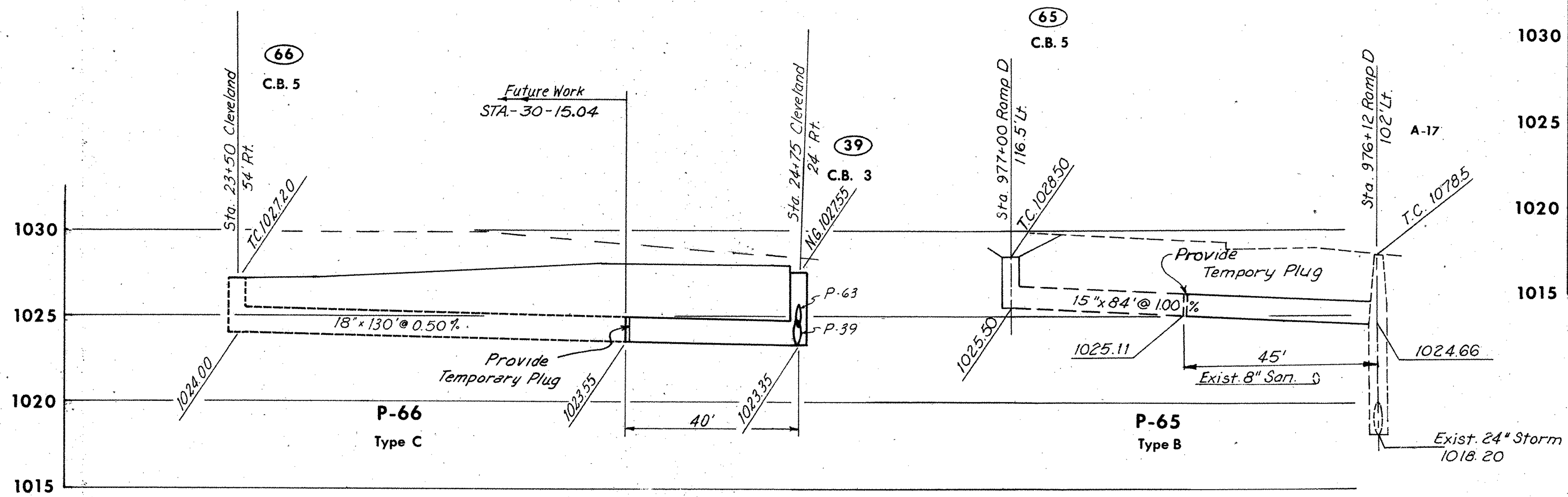
P-46A, P-58,
P-44A, P-38,
P-42 thru P-46 & P-62
DRAINAGE PROFILES

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			115 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22







604 MANHOLES, CATCH BASINS AND INLETS

CODE	LOCATION		Standard No. 3A C.B.	Standard No 5 C.B.	Standard No. 2-2-A C.B.
			Each	Each	Each
50	12+22 High Ave. Conn.	27' Rt.	1		
51	11+92 High Ave. Conn.	27' Rt.	1		
53	14+22 High Ave. Conn	8' Rt.	1		
54	976+80 Ramp D	99' Lt.		1	
57	22+12 R.R. Survey	17' Rt.			1
	Totals		3	1	1

Made DKS 5-7-69
Ckd CRJ 5-8-69

Scale: Hor. 1"=20'
Vert. 1"=5'

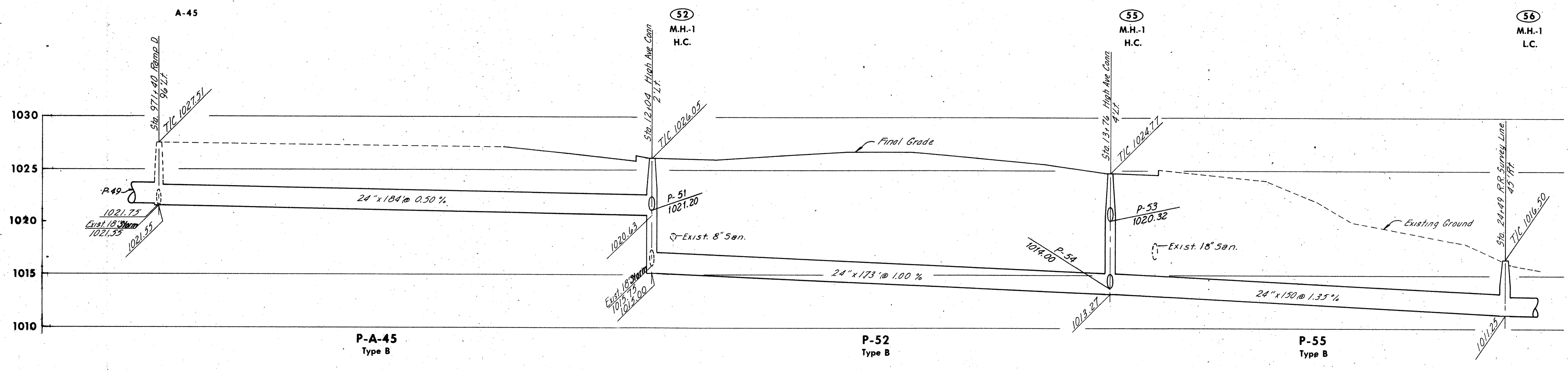
603 CONDUITS

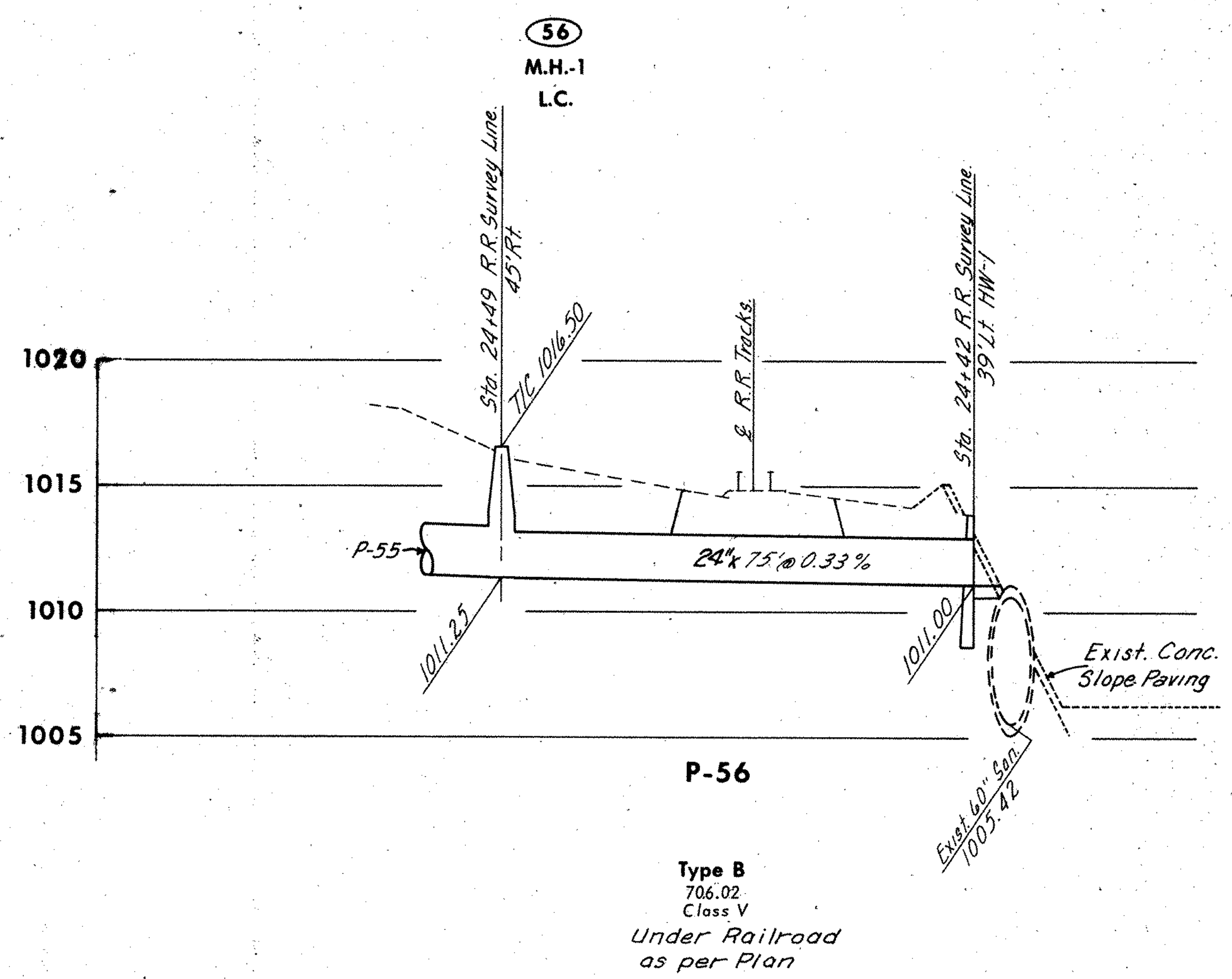
CODE	ROADWAY	INLET CODE FROM	INLET CODE TO	12" Conduit Type B	15" Conduit Type B	15" Conduit Type F	18" Conduit Type C	Remarks		
				Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.			
P-50	High Ave. Conn	50	51	30						
P-51	High Ave. Conn.	51	52		31					
P-53	High Ave. Conn.	53	55	42						
P-54	High Ave. Conn	54	55		27					
P-63	Cleveland Ave.	63	39			8		Stub/temporary plug		
P-65	Cleveland Ave.	65	A-17		45					
P-66	Cleveland Ave.	66	39				40	stub/temporary plug		
	Totals			72	103	8	40			

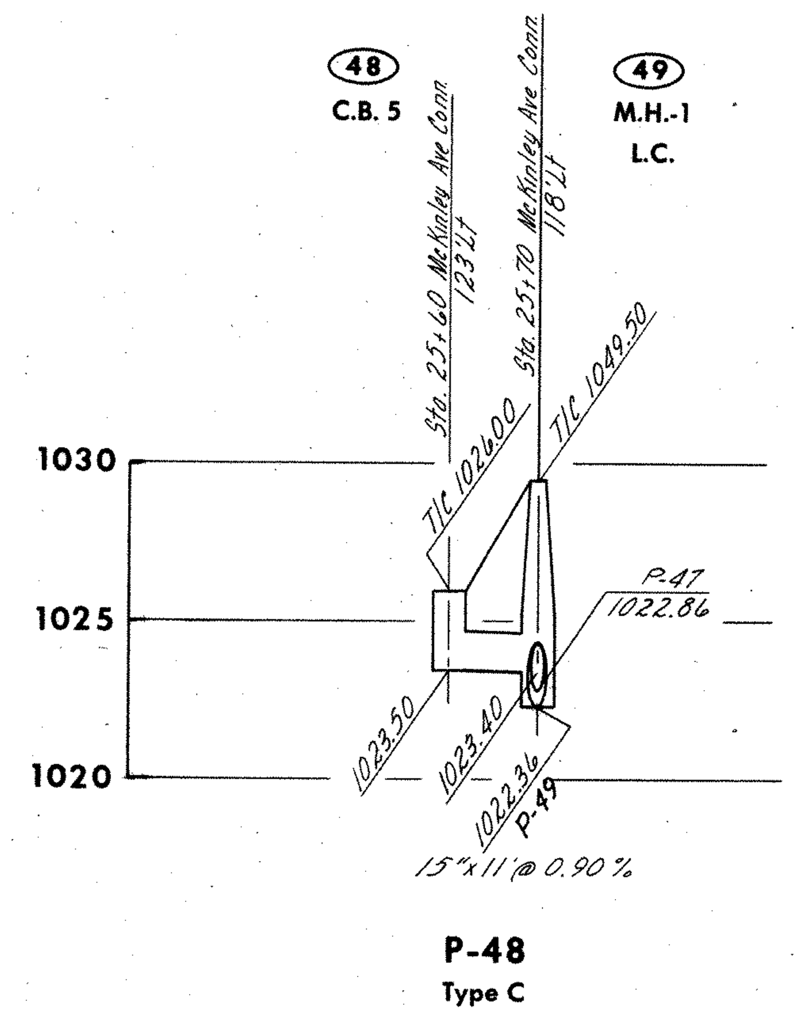
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

P-50, P-51, P-53, P-54, P-63, P-65 & P-66
DRAINAGE PROFILES

STARK COUNTY
STA-30-14.12
STA-77-9.22







603 CONDUITS							602		
CODE	ROADWAY	INLET CODE		15" Conduit Type C	24" Conduit Type B	24" Conduit Type B, 706.02 Class V Under R.R. as per plan	Concrete Masonry		
		FROM	TO						
P-48	McKinley Ave.	48	49	11					
PA-45	High Ave. Conn.	A 45	52		184				
P-52	High Ave. Conn.	52	55		173				
P-55	High Ave. Conn.	55	56		150				
P-56	R.R. Survey	56	Outlet			75	3.3		
	Totals			11 Lin. Ft.	507 Lin. Ft.	75 Lin. Ft.	3.3 C.Y.		

604 MANHOLES, CATCH BASINS AND INLETS					
CODE	LOCATION	Standard No. 1 Manhole	Standard No. 5 C.B.		
		Each	Each		
48	25+60 McKinley Ave. Conn. 123' Lt.		1		
49	25+70 McKinley Ave. Conn. 118' Lt.	1			
52	12+04 High Ave. Conn. 2' Lt.	1			
55	13+76 High Ave. Conn. 4' Lt.	1			
56	24+49 R.R. Survey Line 45' Rt.	1			
	Totals	4	1		

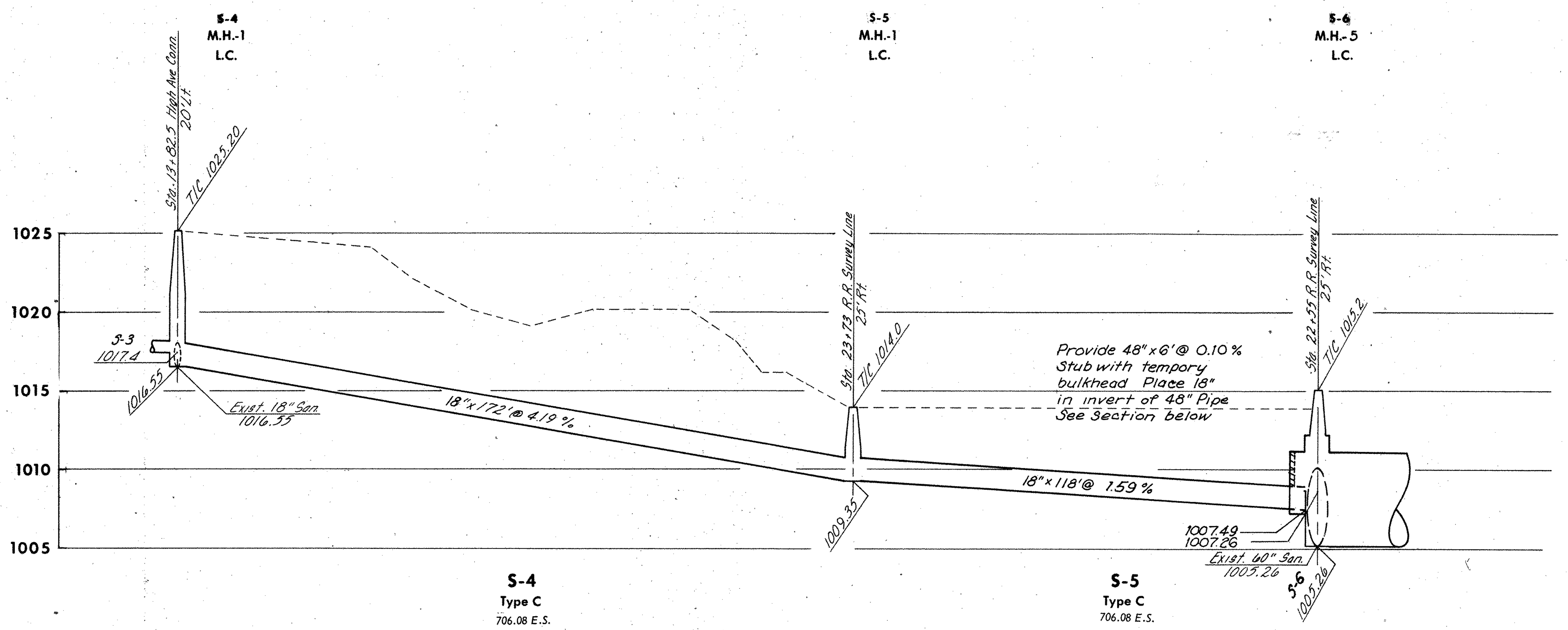
Made DKS 5-7-69
Ckd CRJ 5-8-69

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

Scale: Hor. 1" = 20'
Vert. 1" = 5'

P-A-45, P-48, P-52,
P-55, & P-56
DRAINAGE PROFILES

STARK COUNTY
STA-30-14.12
STA-77-9.22



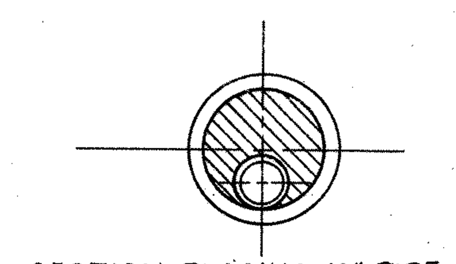
604 MANHOLES, CATCH BASINS AND INLETS

CODE	LOCATION	Manhole No. 1		
S-1	973+50 Ramp D 52' Lt.	1		
S-2	971+44 Ramp D 90' Lt.	1		
S-3	12+13.5 High Ave. Conn. 9' Lt.	1		
S-4	13+82.5 High Ave. Conn. 20' Lt.	1		
S-5	23+73 25' Rt.	1		
	Totals	5		

603 CONDUIT

CODE	ROADWAY	INLET CODE FROM	INLET CODE TO	8" Type B 706.08 E.S.	18" Type C 706.08 E.S.	48" Type C 706.02		
S-1	Ramp D	S-1	S-2	210				
S-2	Ramp D	S-2	S-3	200				
S-3	High Ave. Conn.	S-3	S-4	182				
S-4	High Ave. Conn.	S-4	S-5		172			
S-5	R.R. Survey Line	S-5	S-6		118	6		
	Totals			592	290	6		

Made DKS 5-7-69
Ckd CRJ 5-8-69



SECTION PLACING 18" PIPE
INSIDE 48" PIPE

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

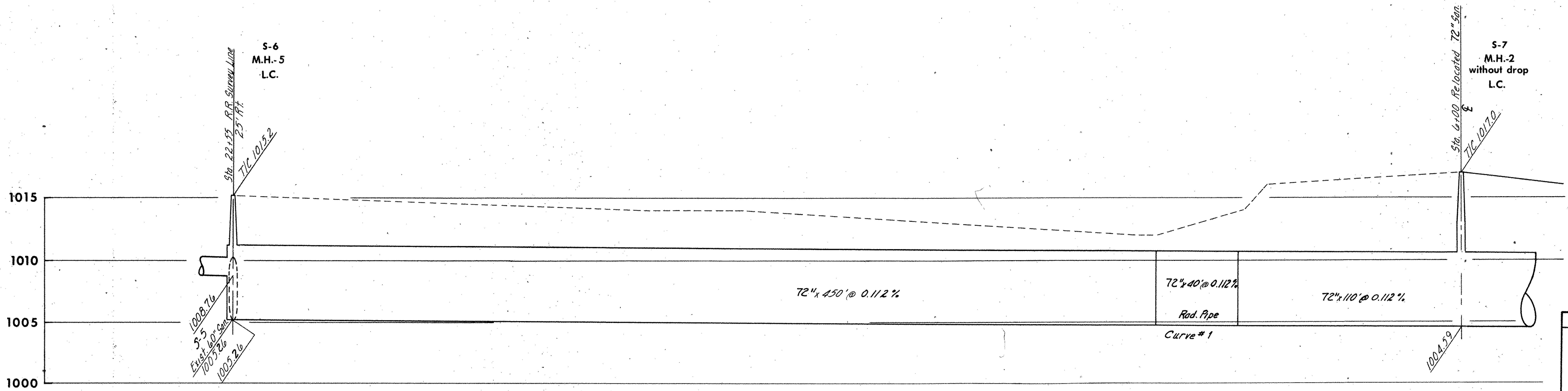
Scale: Hor. 1"=20' 10 0 20
Vert. 1"=5' 2 1 0 5

S-1 thru S-5
SANITARY SEWER PROFILES

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

118
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

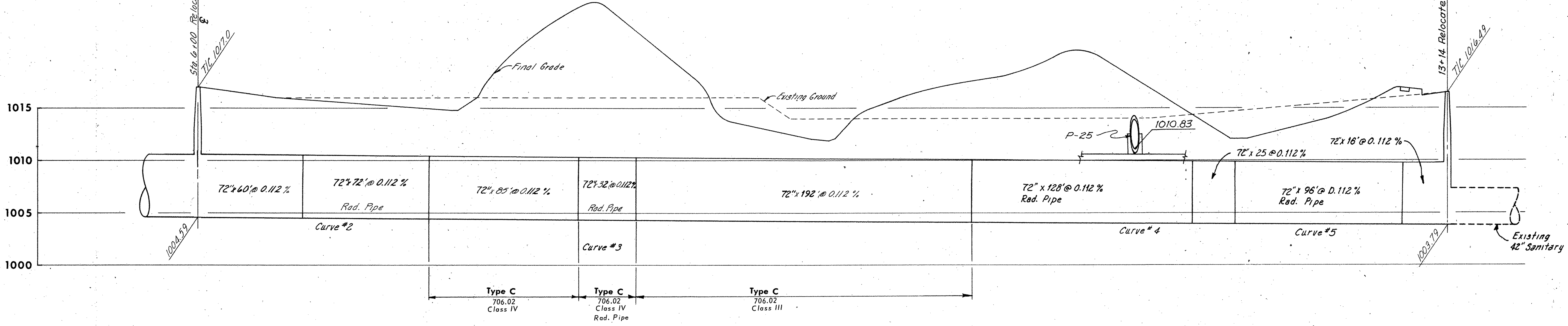


S-6
Type C
706.02
Class II

604 MANHOLES, CATCH BASINS AND INLETS			
CODE	LOCATION	Manhole No. 5	Manhole No. 2
S-6	22+55 R.R. Survey Line 25' Rt.	1	
S-7	6+00 Rel. 72" Sanitary Sewer		1
S-8	13+14 Rel. 72" Sanitary Sewer		1
	Totals	1 ✓	2 ✓

603 CONDUIT								
CODE	ROADWAY	INLET CODE FROM	INLET CODE TO	72" Type C 706.02 Class II	72" Type C Rad. Pipe 706.02 Class II	72" Type C 706.02 Class III	72" Type C 706.02 Class IV	72" Type C 706.02 Class IV Rad. Pipe
S-6	Rel. 72" Sanitary	S-6	S-7	560	40			
S-7	Rel. 72" Sanitary	S-7	S-8	101	296	192	85	32
	Totals			661	336	192	85	32
29% =	I-77-4(44) 107			192 ✓	97 ✓	56 ✓	25 ✓	9 ✓
71% =	100% City			469 ✓	239 ✓	136 ✓	60 ✓	23 ✓

Made D.K.S. 5-7-69
Ckd. C.R.J. 5-8-69



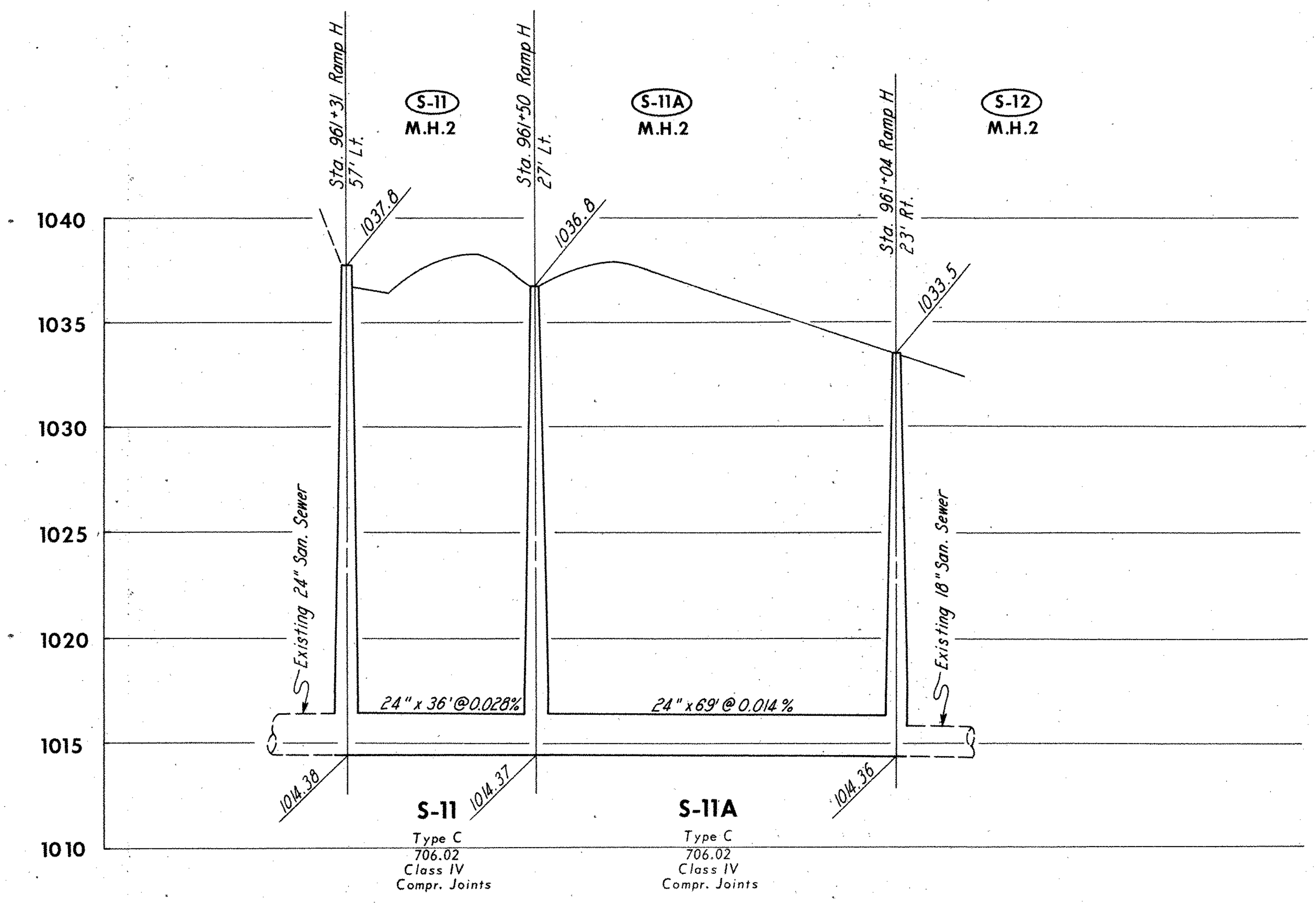
S-7
Class II

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

Scale: Hor. 1"=30'
Vert. 1"=5'

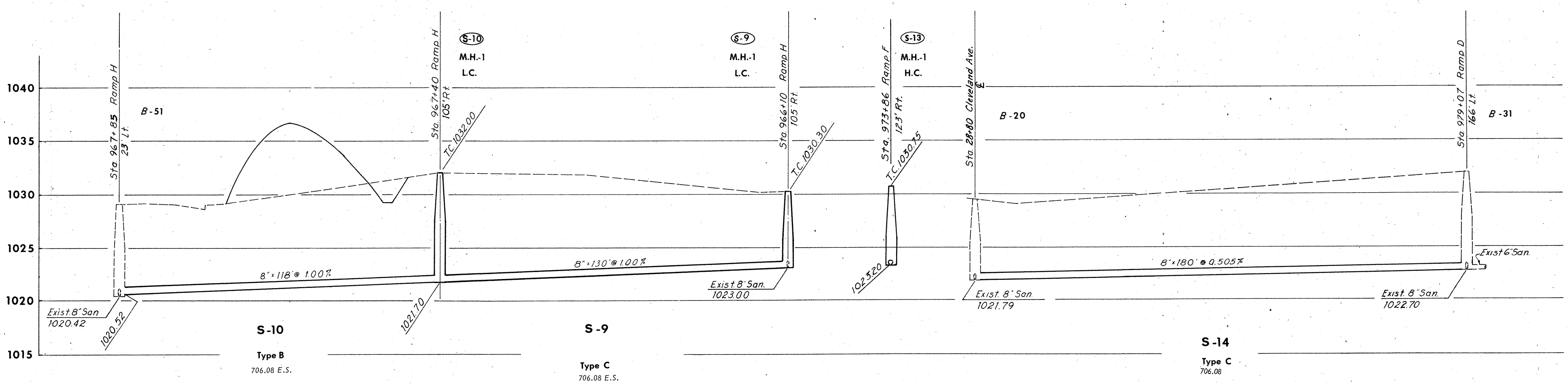
S-6 & S-7
SANITARY SEWER PROFILES

STARK COUNTY
STA-30-14.12
STA-77-9.22



604 MANHOLES, CATCH BASINS AND INLETS			
CODE	LOCATION	Manhole No. 1	Manhole No. 2 Without Drop
S-9	966+10 Ramp H 105' Rt.	1	
S-10	967+40 Ramp H	1	
S-11	961+31 Ramp H 57' Lt.		1
S-13	973+86 Ramp F	1	
S-11A	961+50 Ramp H 27' Lt.		1
S-12	961+04 Ramp H 23' Rt.		1
	Totals	3	3

603 CONDUIT							
CODE	ROADWAY	INLET CODE		8" Type B 706.08 E.S.	8" Type C 706.08 E.S.	8" Type C 706.08	24" Type C 706.02 Class IV Compr. Joints
		FROM	TO				
S-9	Ramp H	S-9	S-10		130		
S-10	Ramp H	S-10	B-51	118			
S-11	Ramp H	S-11	S-11A				36
S-14	Ramp D	B-31	B-20			180	
S-11A	Ramp H	S-11A	S-12				69
	Totals			118	130	180	105

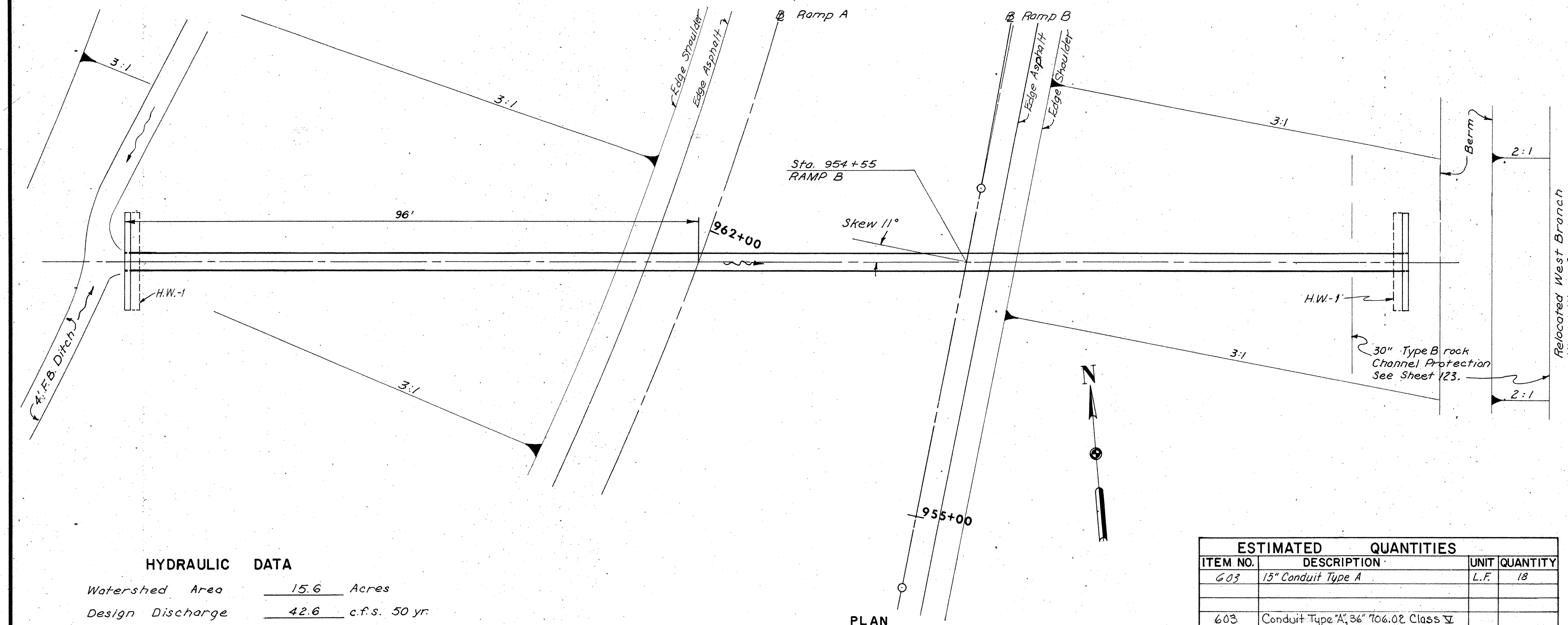


HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

Scale: Hor. 1"=20'
Vert. 1"=5'

S-11A,
S-9 thru S-11, & S-14
SANITARY SEWER PROFILES

STARK COUNTY
STA-30-14.12
STA-77-9.22



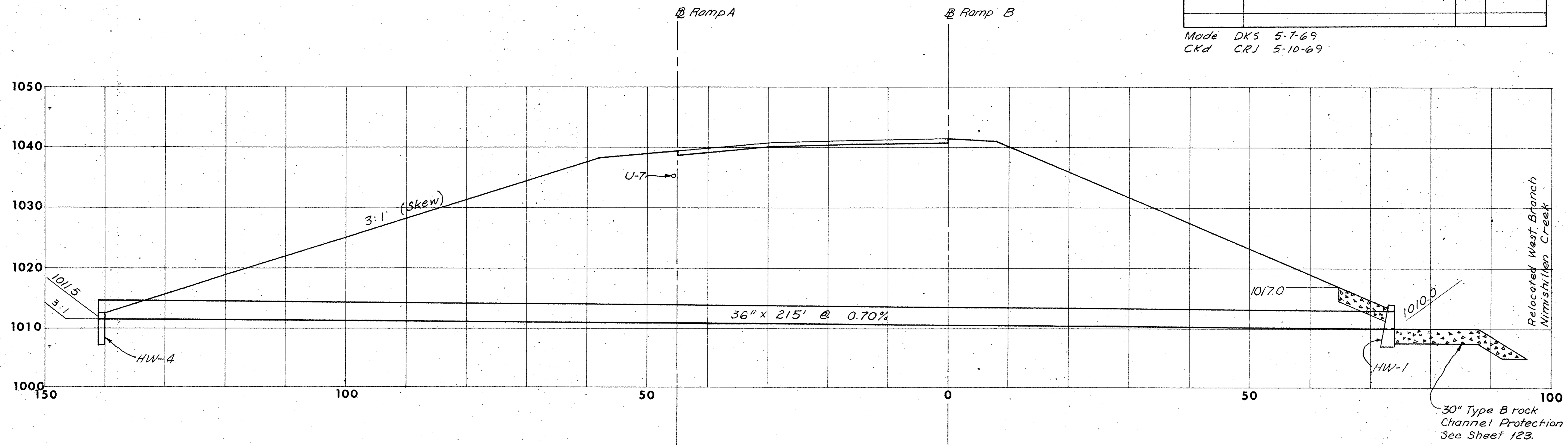
PLAN

HYDRAULIC DATA

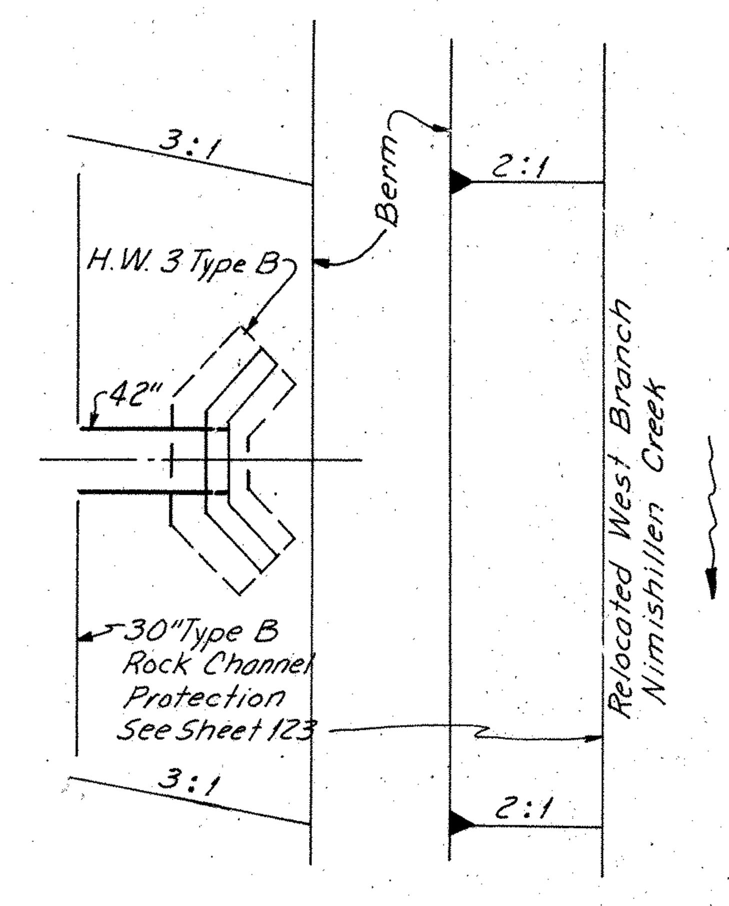
Watershed Area 15.6 Acres
Design Discharge 42.6 c.f.s. 50 yr.

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
603	15" Conduit Type A	L.F.	18
603	Conduit Type "A", 36" 706.02 Class V		
	or 42" 707.05 Type C	L.F.	215
602	Concrete Masonry	C.Y.	8.46

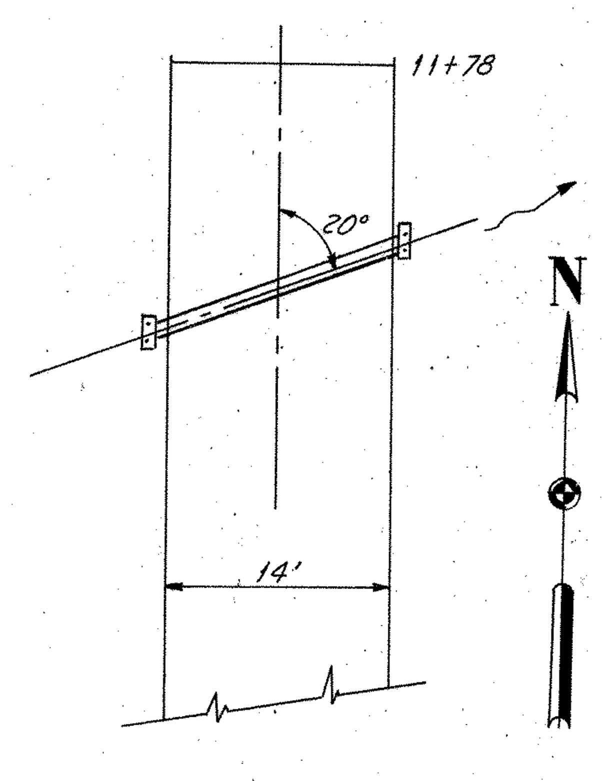
Made DKS 5-7-69
Ckd CRJ 5-10-69



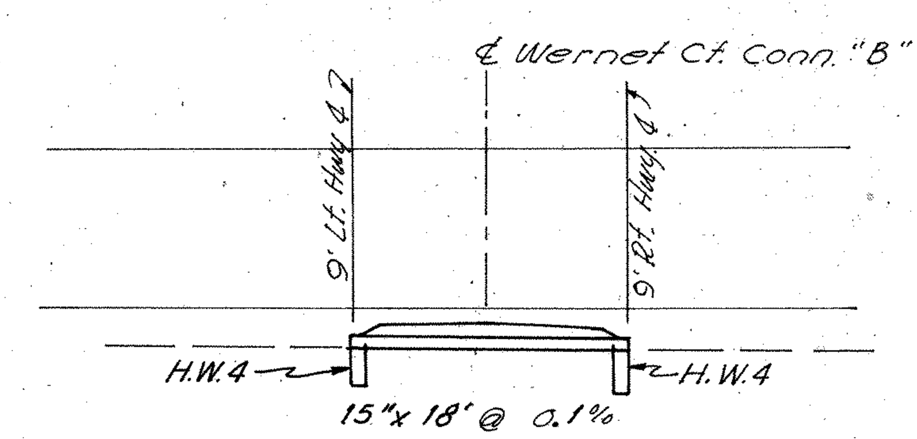
CULVERT C-1
STA. 954+55 RAMP B
SKEW ANGLE 11°



OUTLET DETAIL WITH HW-3



PLAN



CULVERT C-1A
STA. 10+30 WERNET CT. CONN. B
SKEW ANGLE 20°

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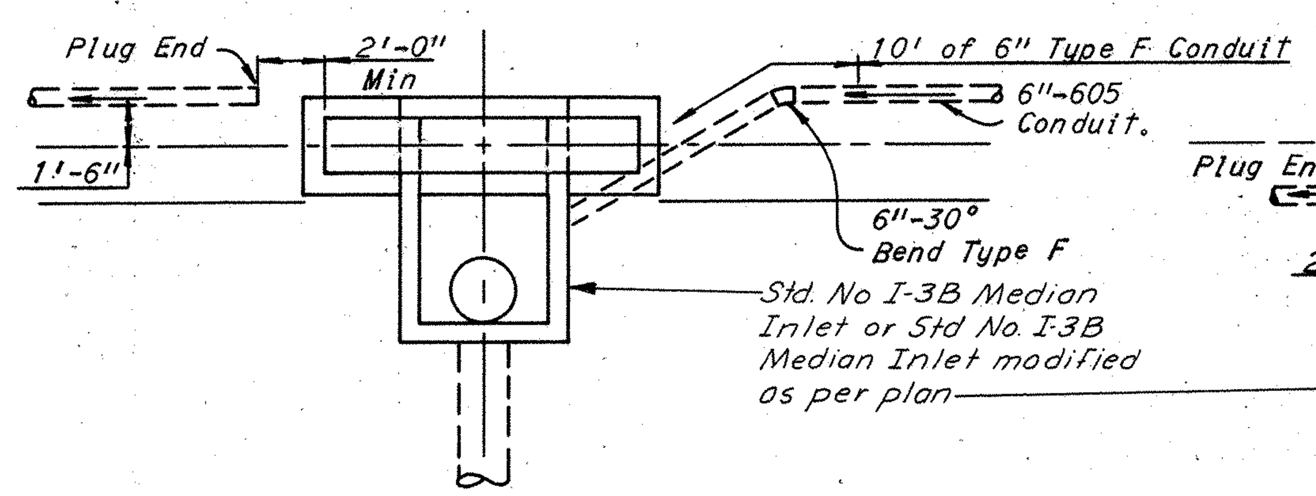
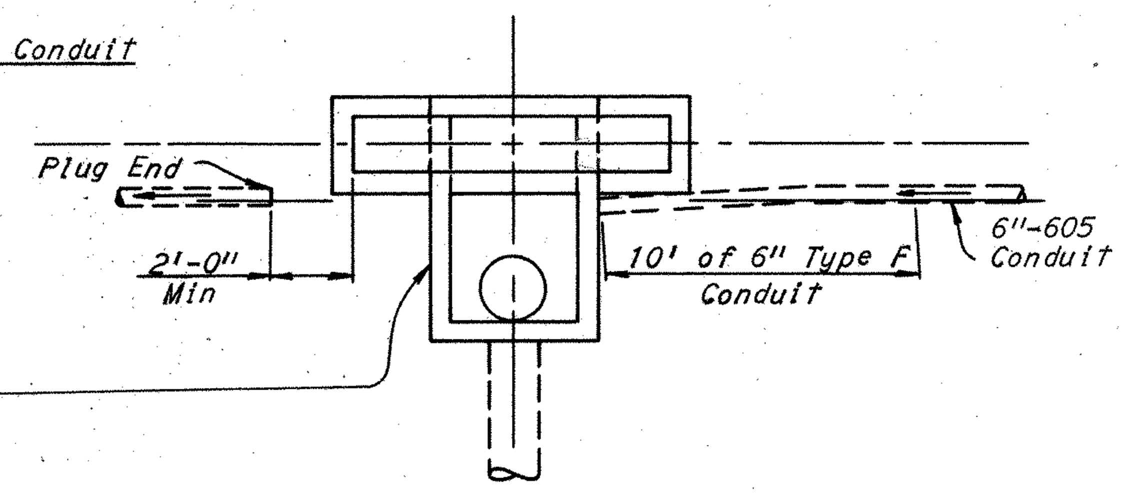
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

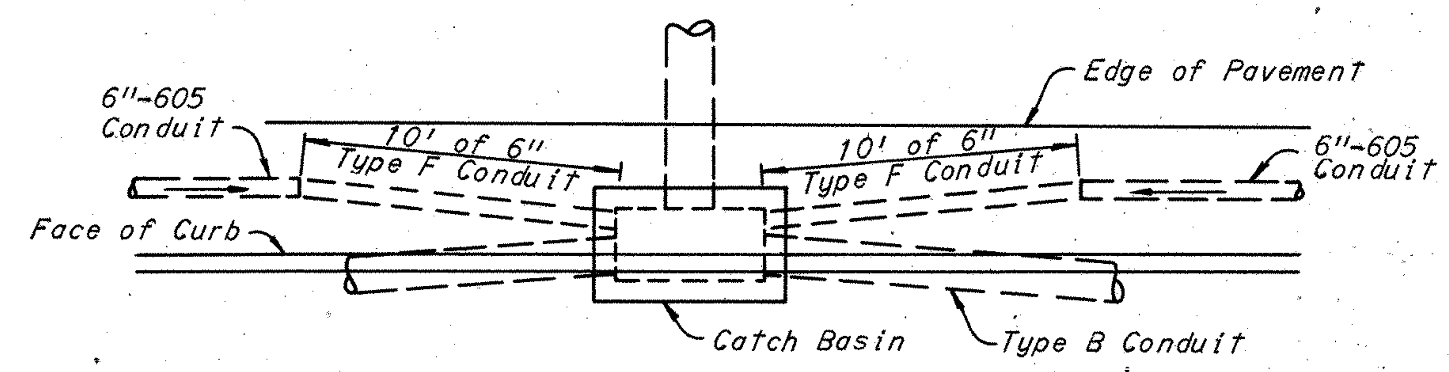
Rev. 3-23-76

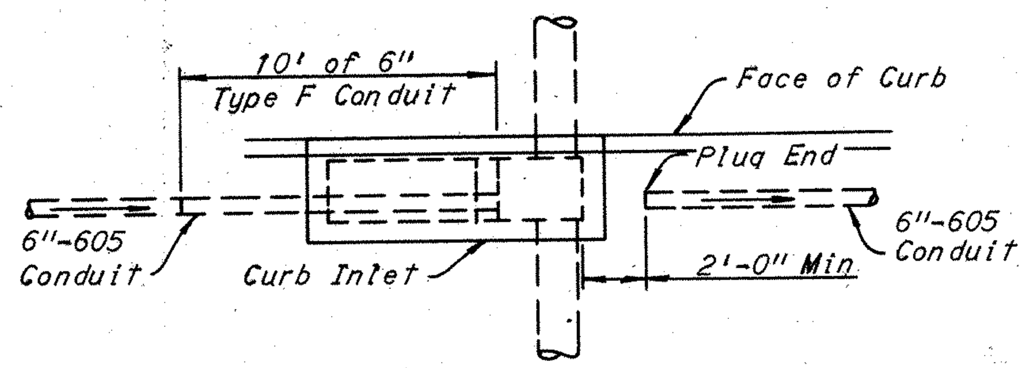
CULVERT PLAN - PROFILE

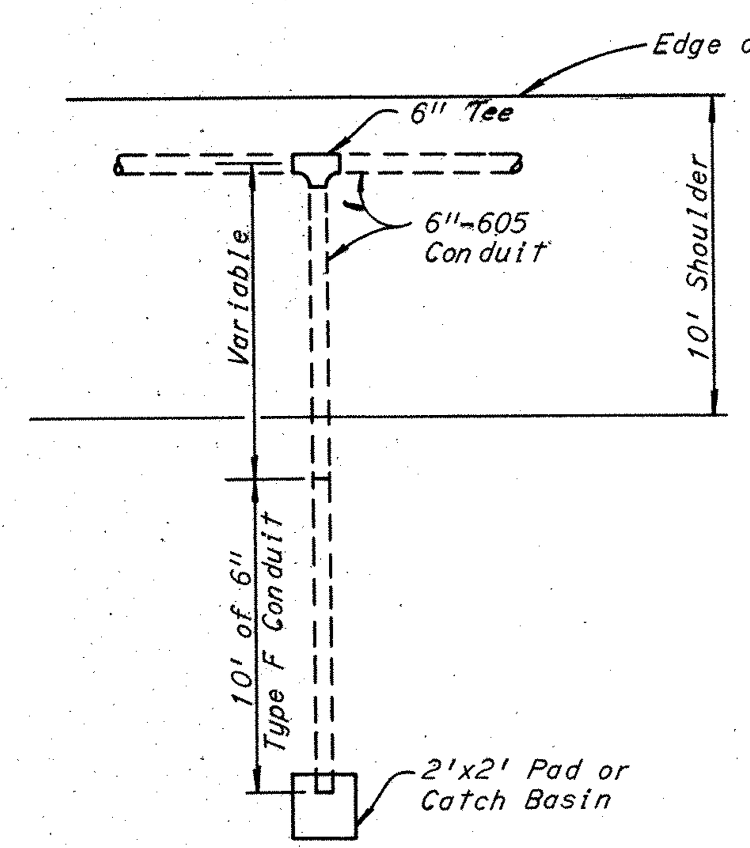
STARK COUNTY
STA-30-14.12
STA-77-9.22

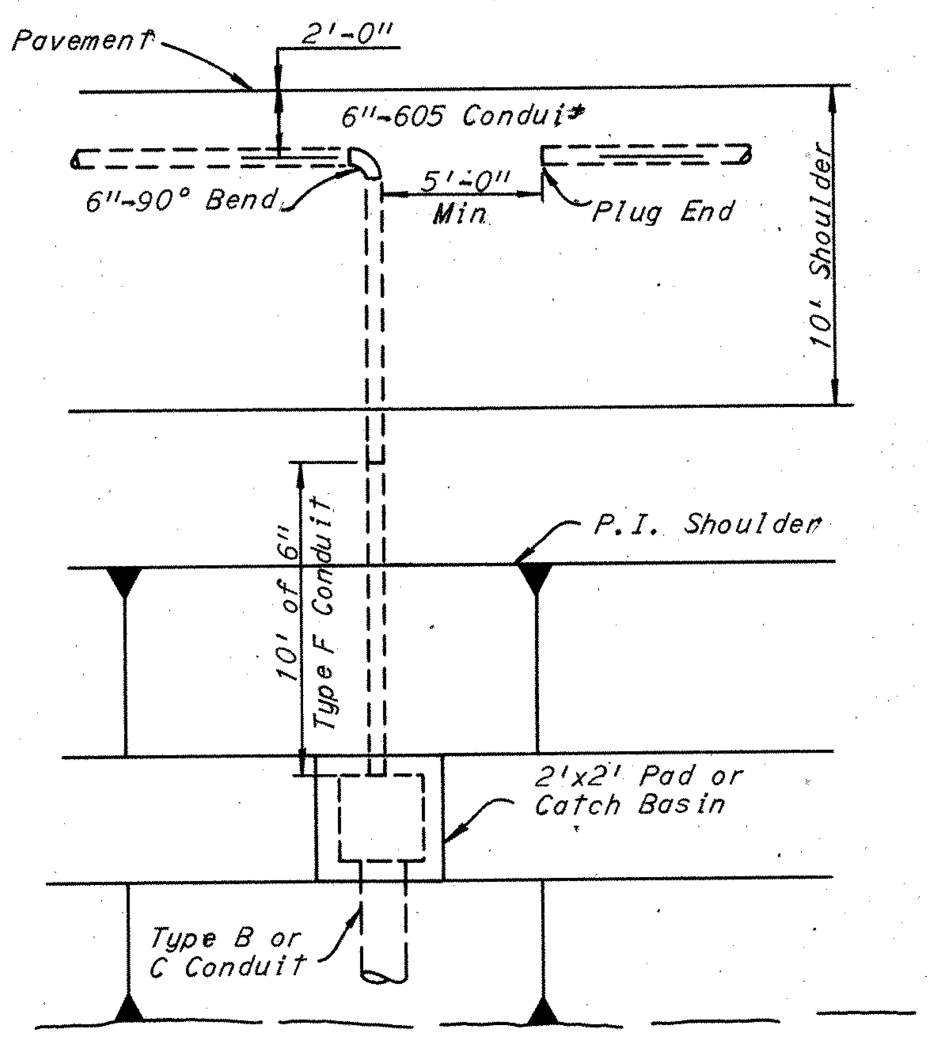


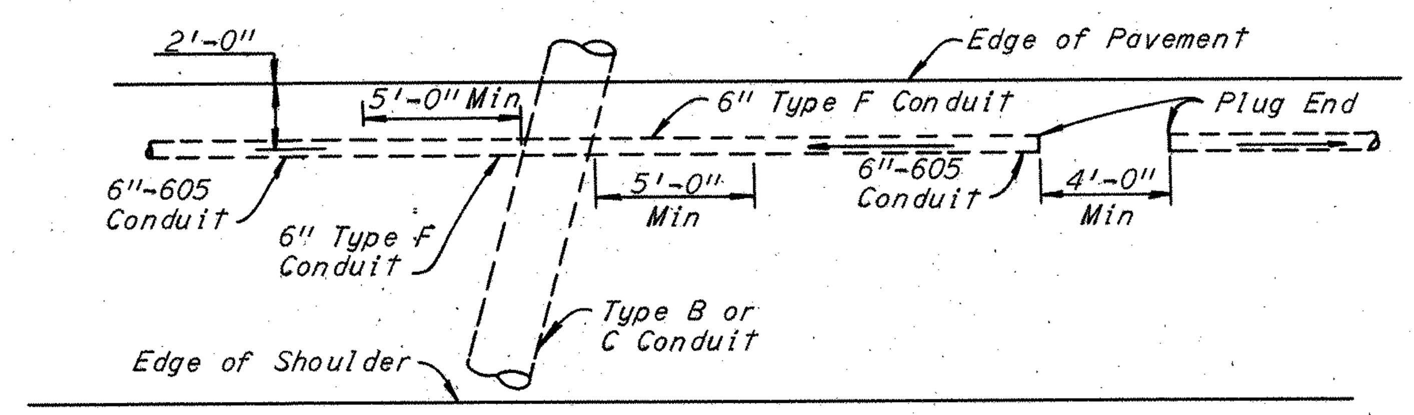


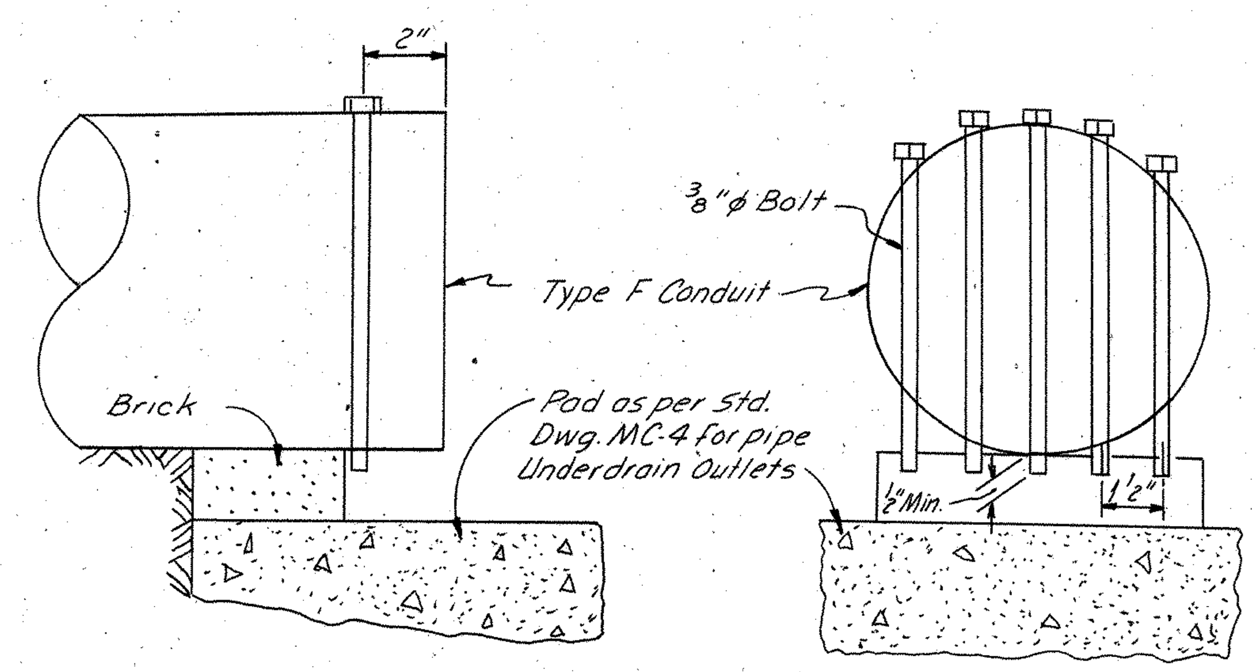




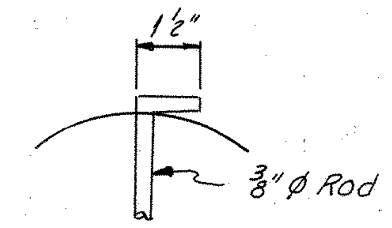




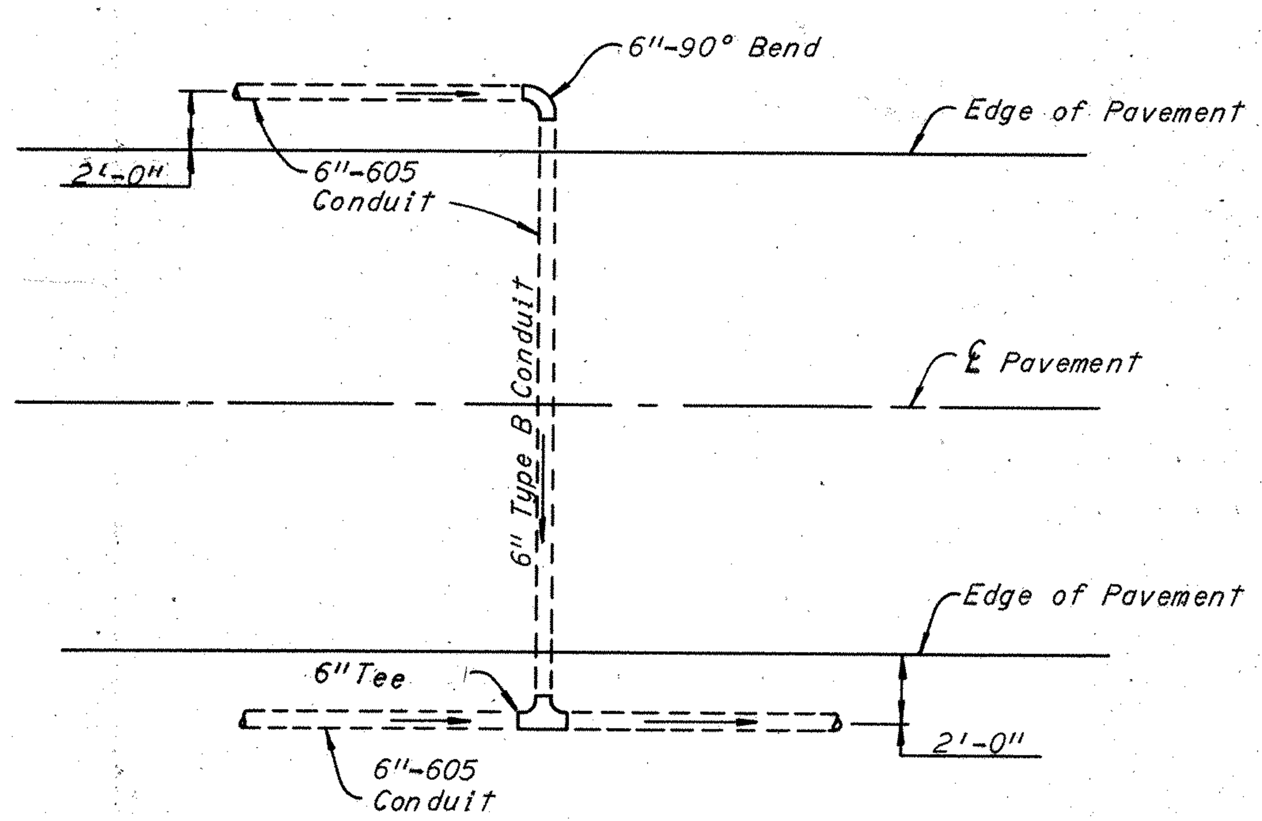


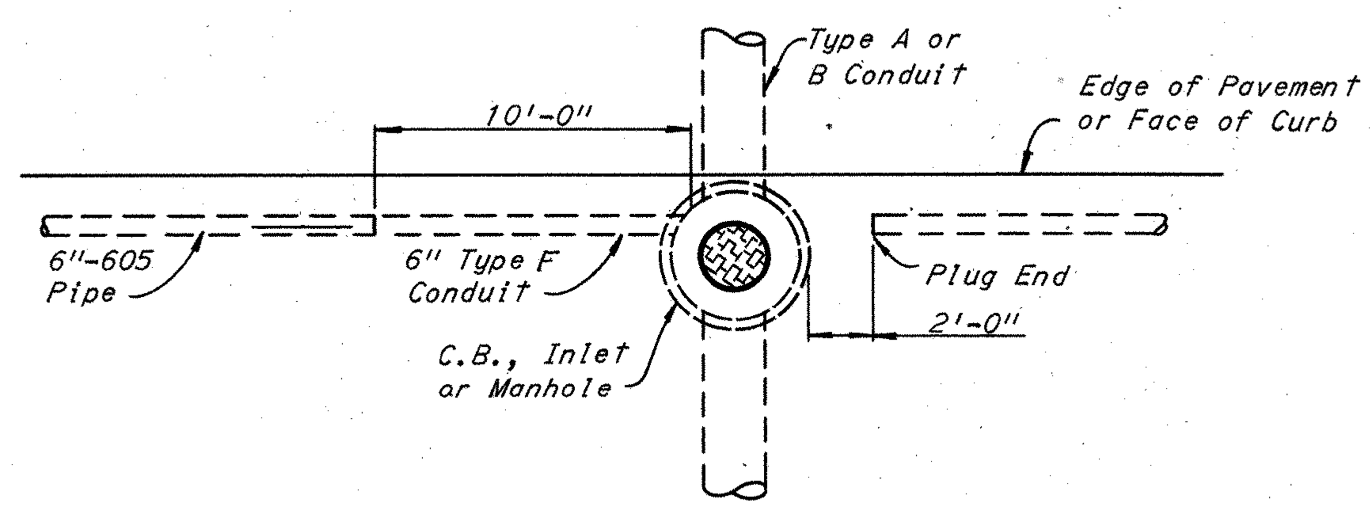


BOLT OR ROD TABLE							
Conduit Size	4"	6"	8"	10"	12"	15"	18"
No. of Bolts or Rods	2	3	5	6	7	9	11



ROD DETAIL





ANIMAL GUARD FOR PIPE OUTLET

The steel bolts or rods shall be galvanized in accordance with ASTM A153. The holes in the pipe shall be 1/2" diameter.

In lieu of drilling or punching holes into the pipe, a metal collar meeting all the above requirements may be clamped on the end of the pipe if, in the opinion of the Engineer, it will provide the same results.

When a Pad as shown on Std. Dwg. MC-4 is required at the outlet end of the pipe, a brick may be placed between the pad and the pipe to provide clearance for the bolts or rods.

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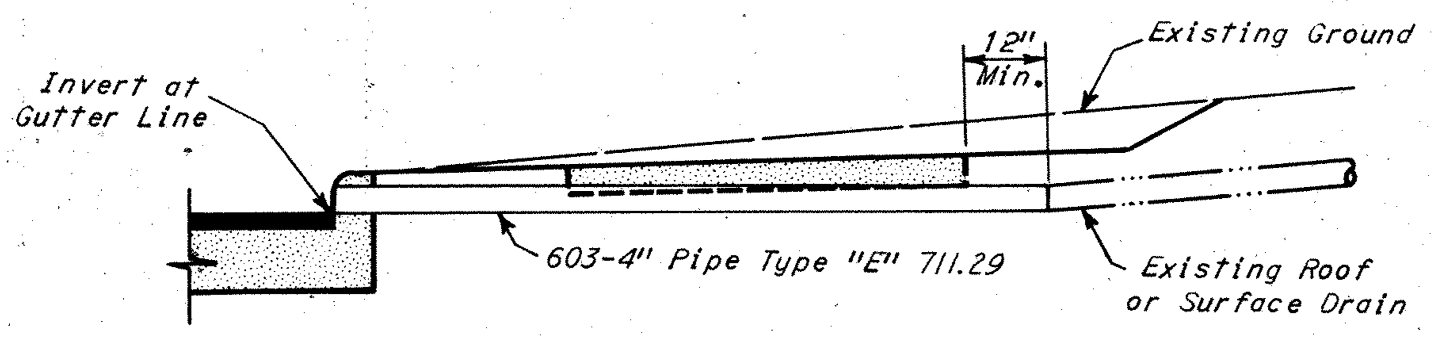
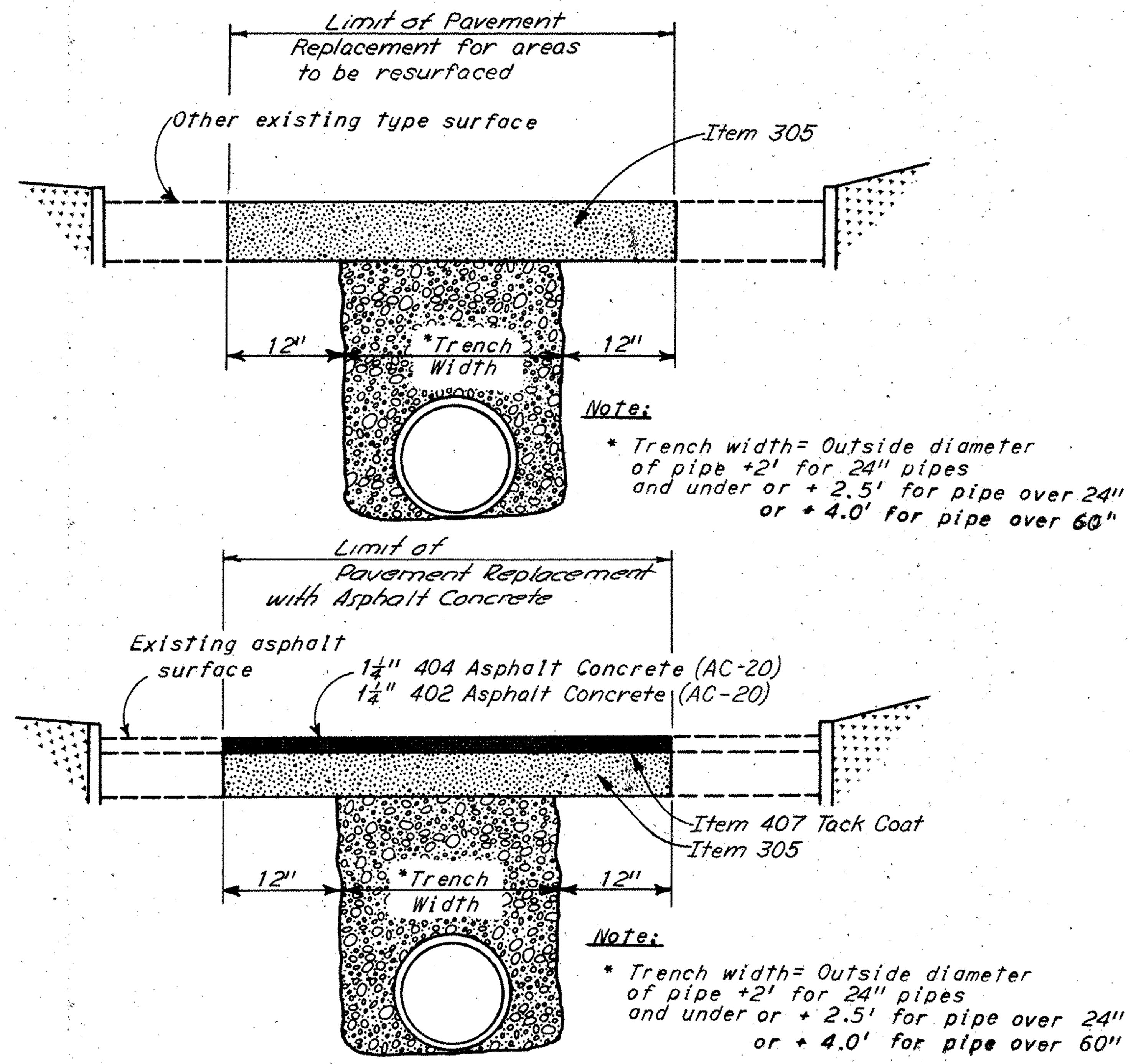
UNDERDRAIN DETAILS

STARK COUNTY
STA-30-14.12
STA-77-9.22



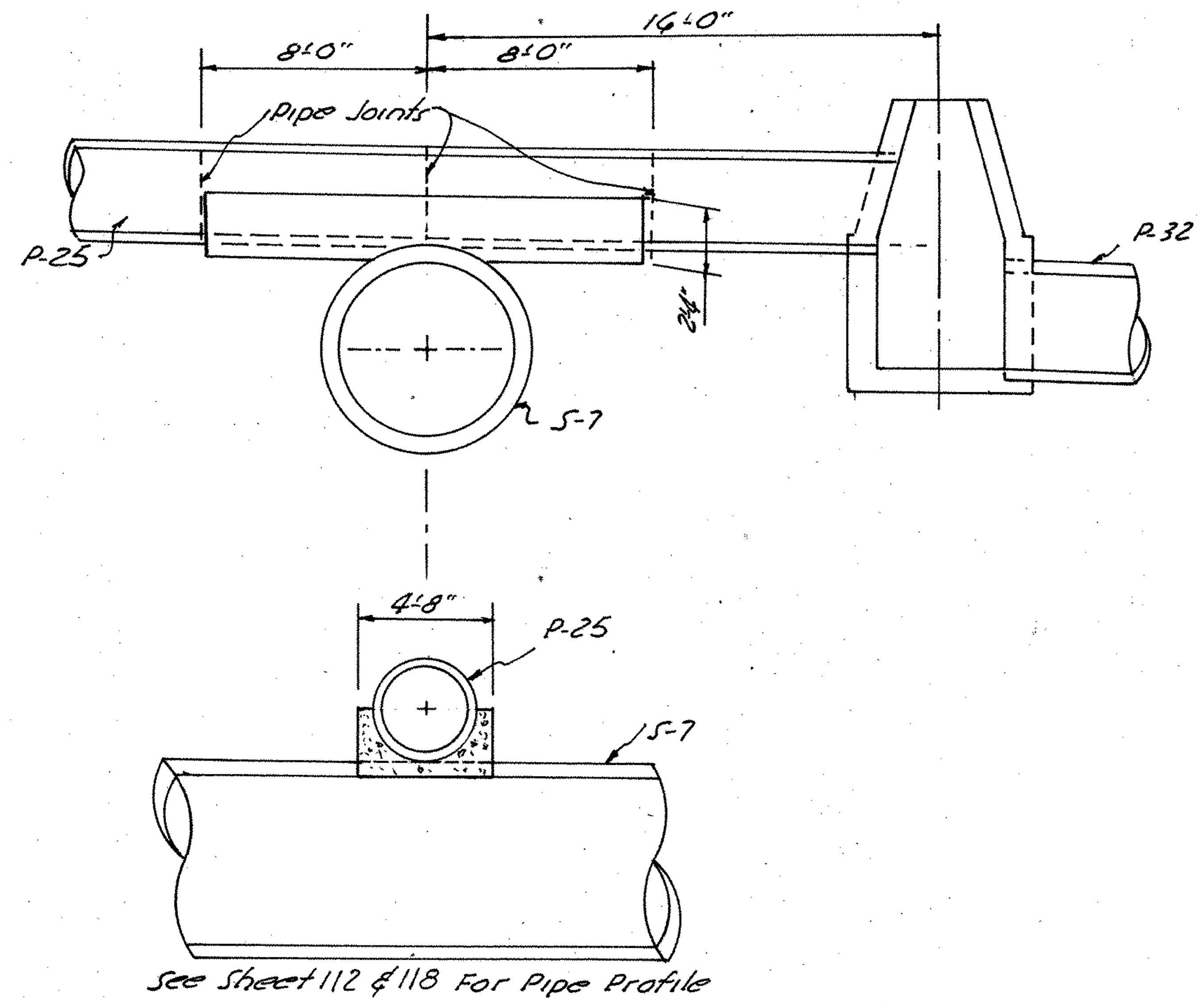
ROOF CONNECTION

Scale: ½" = 1'-0"



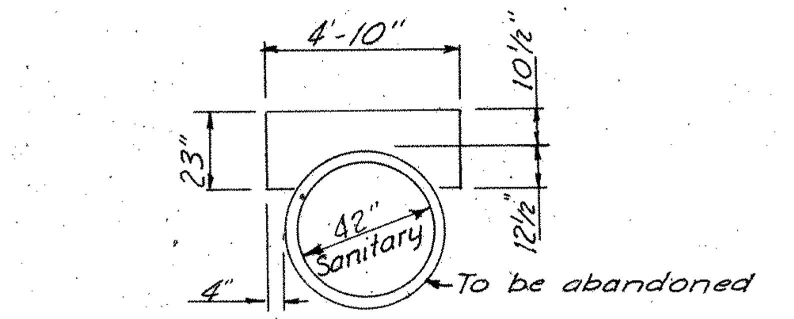
PAVEMENT REPLACEMENT DETAIL

No Scale

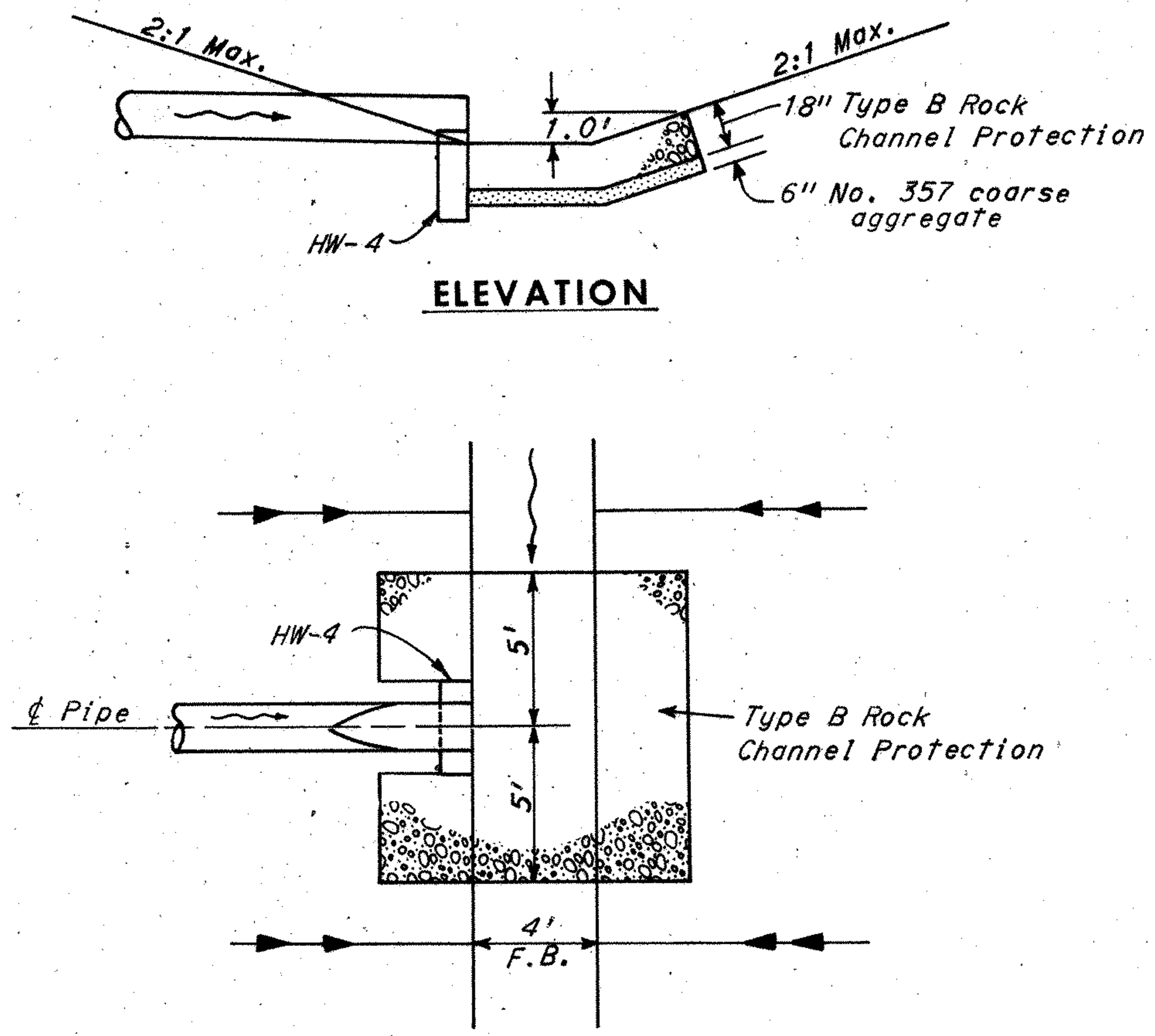


CONCRETE CRADLE

P-25 OVER S-7

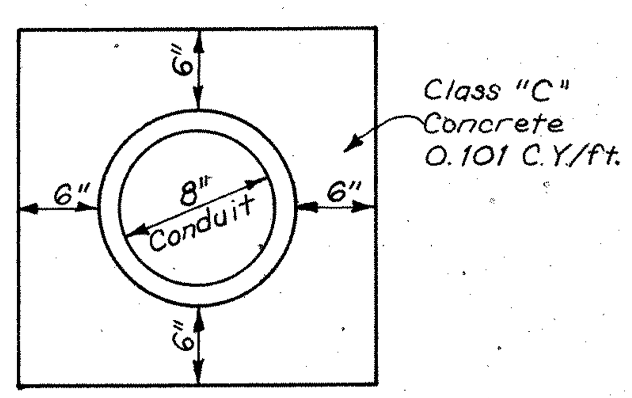


Existing saddle under I-77 @ exist. Mc Kinley
To be used for purposes of pier conflict.
See Drainage Plan sheet 33 for location.



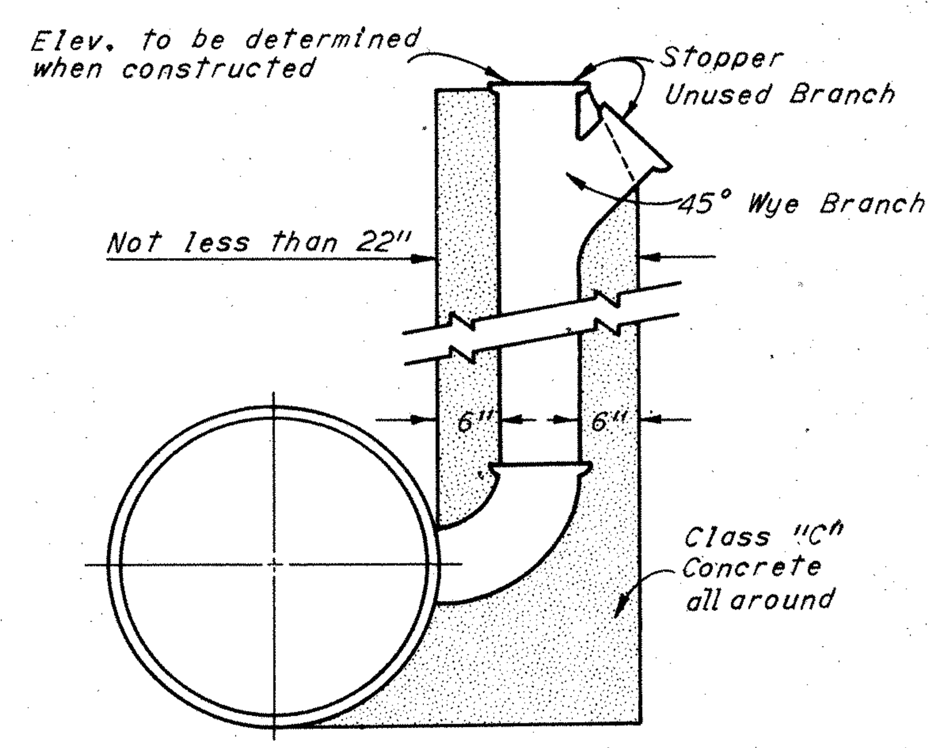
TYPICAL DITCH OUTLET

Scale: 1" = 5'



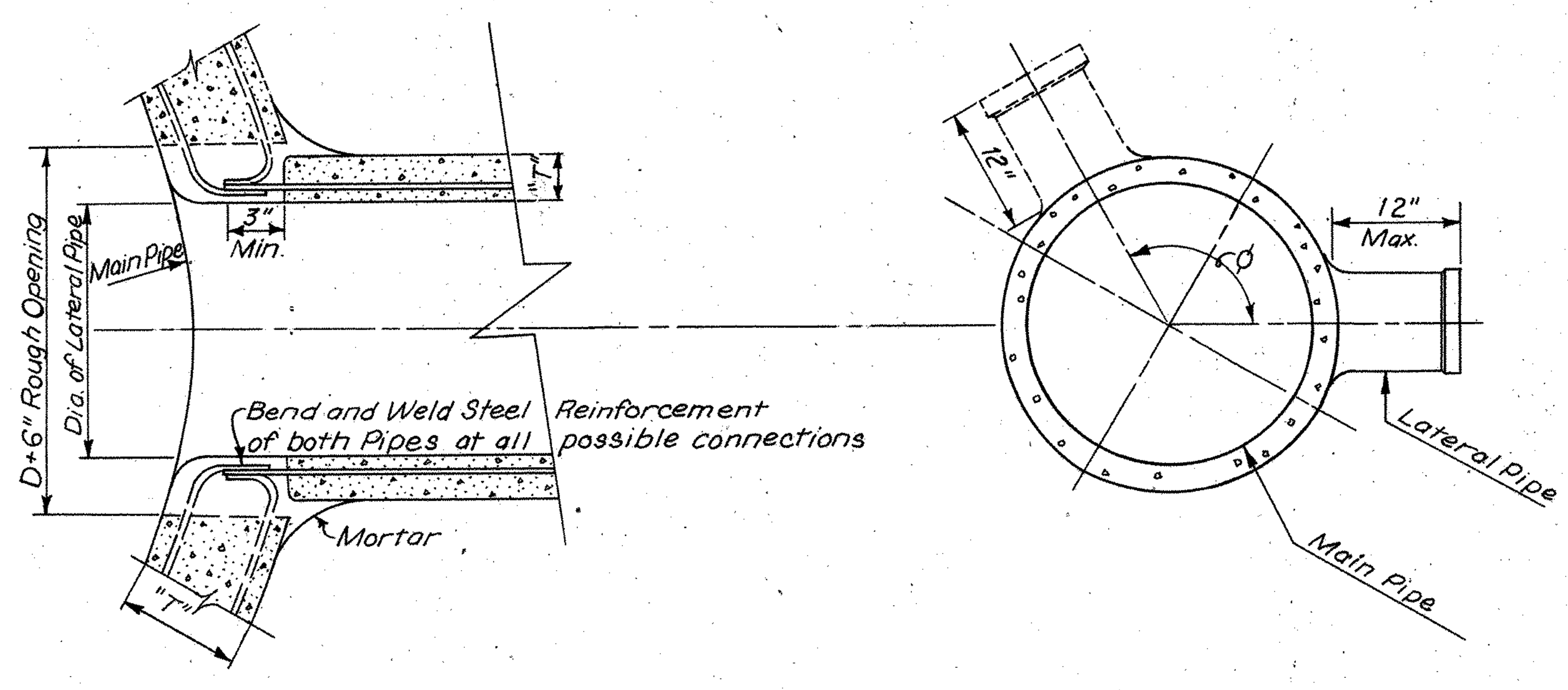
PIPE ENCASEMENT DETAIL

No Scale



RISER DETAIL

No Scale



PRE-FABRICATED "T" CONNECTION

(No Scale)

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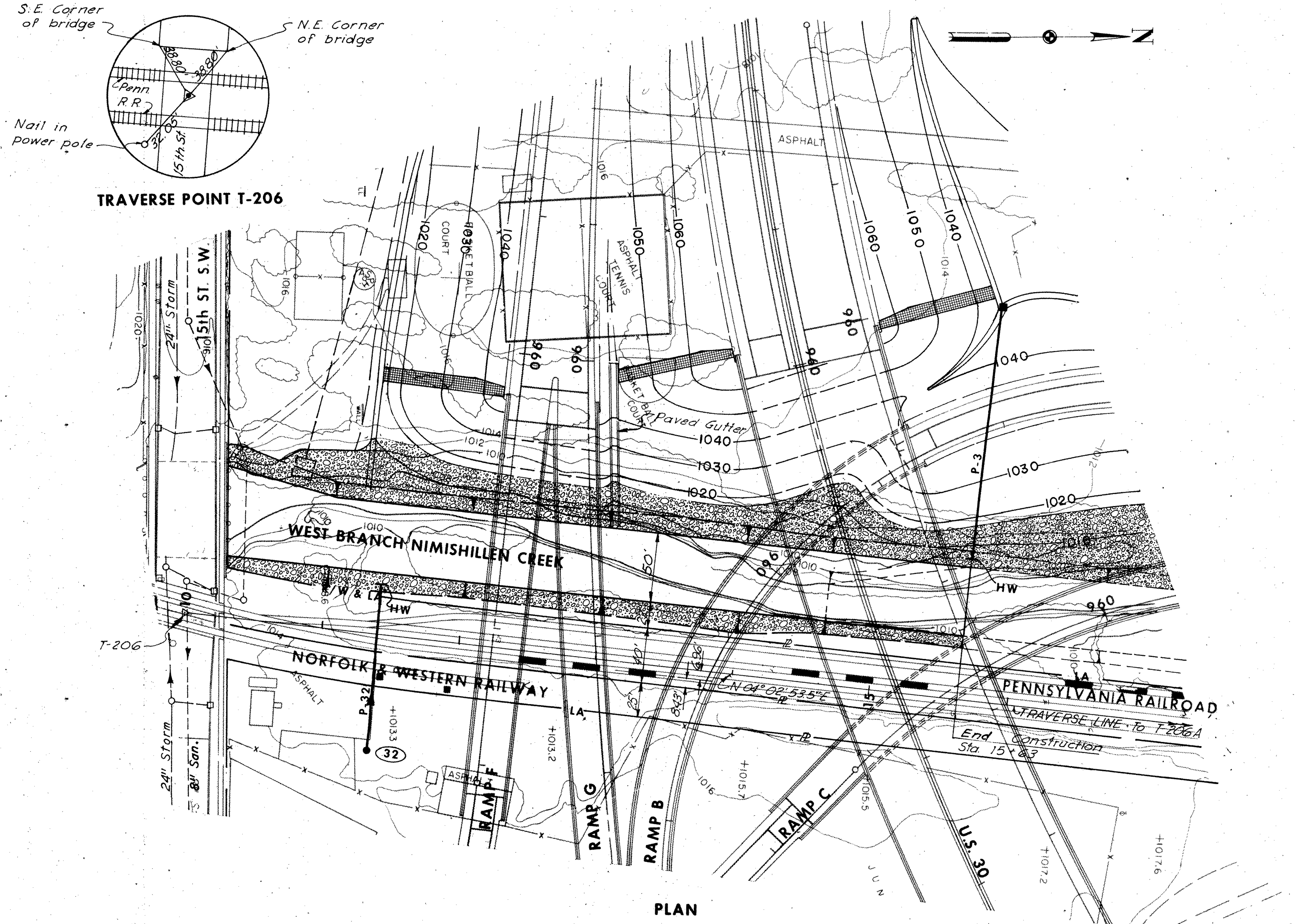
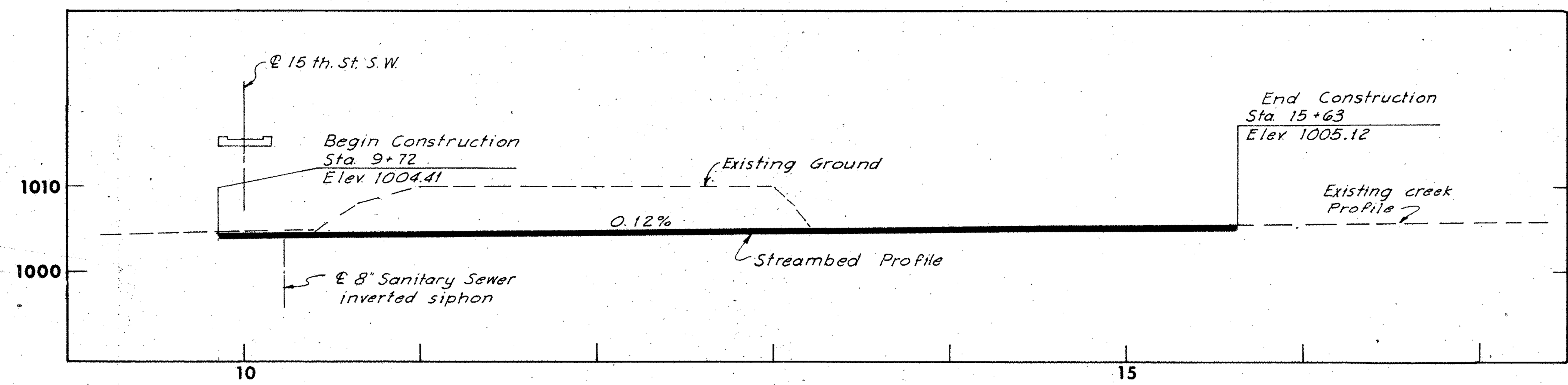
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

123
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

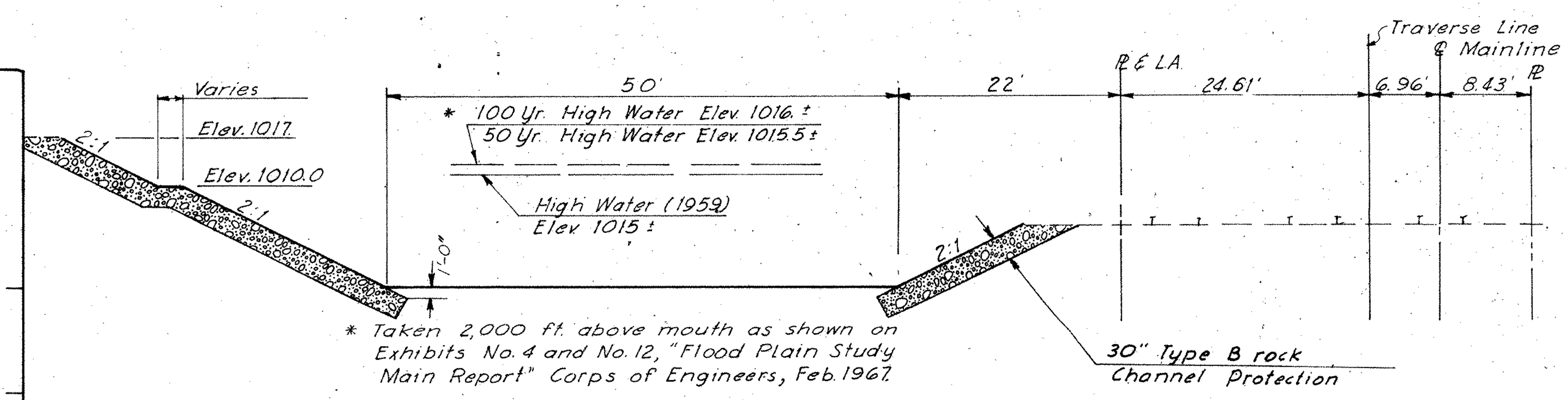


PLAN



PROFILE

Scale: Hor. 1"=50'
Vert. 1"=10'



TYPICAL SECTION

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Rev. 3-23-76

RELOCATED WEST BRANCH NIMISHILLEN CREEK

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			124 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

Note
For Legend see sheet 125.
For Quantities See sheet 125.

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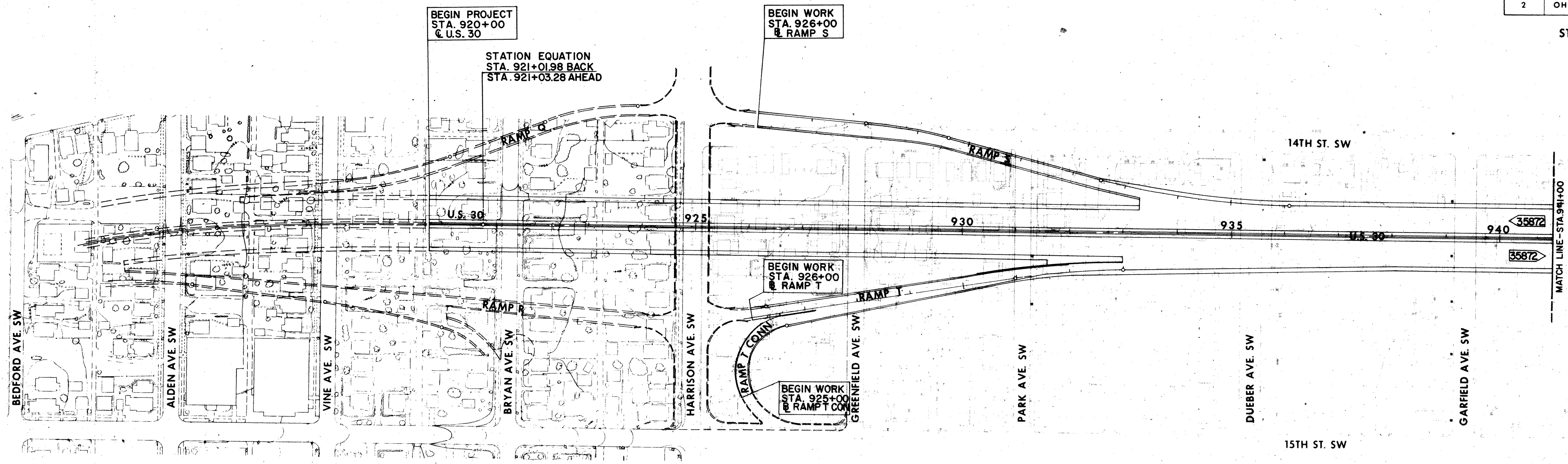
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

Scale: 1"=100'

FENCING PLANS

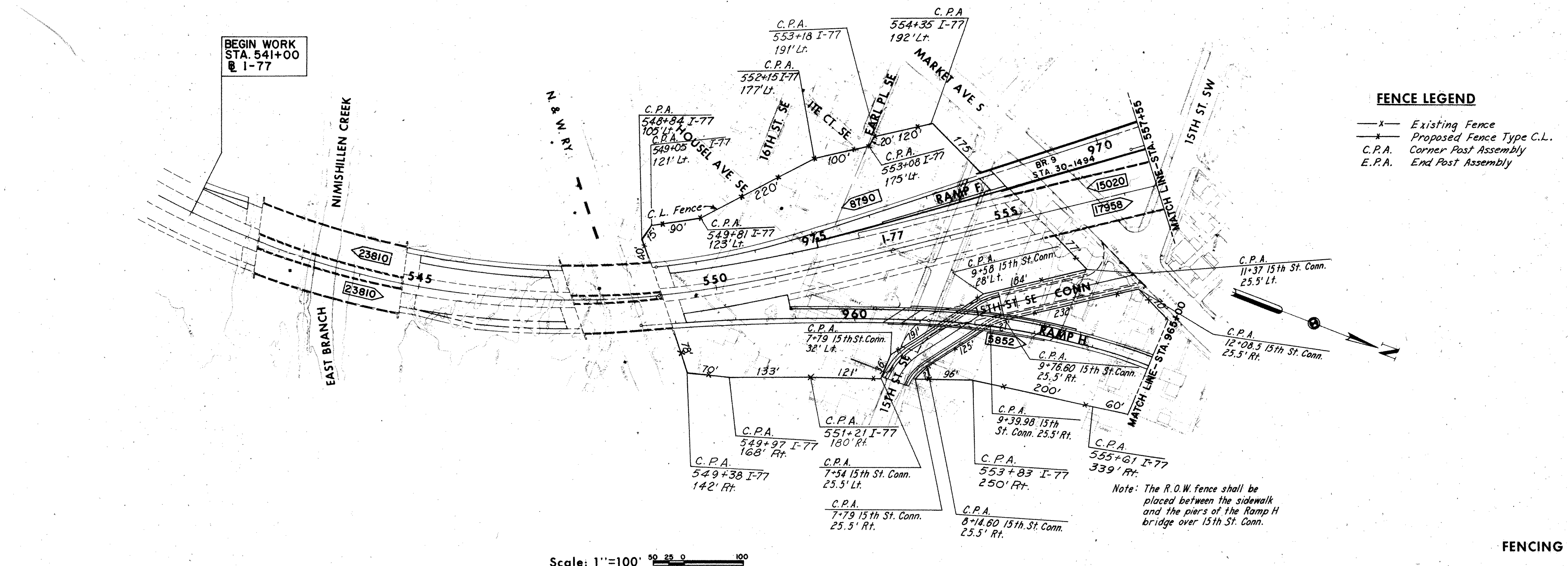
FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO		

STARK COUNTY
STA-30-14.12
STA-77-9.22



FENCE QUANTITIES

STATION TO STATION		SIDE	LENGTH	14' GATES
952+50 U.S-30	952+98 ℄ "A"	Lt	94	
954+28 ℄ "A"	964+48 ℄ "A"	Lt	950	1
952+15 ℄ "B"	958+80 ℄ "B"	Lt	665	
960+00 U.S-30	958+80 ℄ "B"	Lt & Rt	70	
960+00 U.S.-30	960+60 ℄ "G"	Rt-Lt.	200	
952+50 U.S-30	952+98 ℄ "F"	Rt	125	
954+12 ℄ "F"	960+43 ℄ "F"	Rt	895	
963+19 ℄ "F"	966+03 ℄ "F"	Rt	518	
953+56 ℄ "C"	961+50 I-77	Rt-Lt	90	
963+19 ℄ "F"	957+25 ℄ "C"	Lt	200	
Traverse - Line	A-206 To A-206A			
15+25	17+90	Rt	320	
21+45	23+10	Rt	227	
966+74 ℄ "D"	971+25 ℄ "D"	Lt	460	1
971+25 ℄ "D"	973+20 ℄ "D"	Lt.	197	
Wall "B"	10+80 Market	Lt	112	
10+80 Market	16+00 15th St.	Lt	230	
16+00 15th St.	12+90 Cleveland	Rt	325	
Cleveland	Ave.			
13+92	22+60	Lt	930	1
13+45	16+25	Rt	410	1
17+00	20+00	Rt	365	
973+20 ℄ "D"	22+60 Cleveland	Lt.	275	
548+84 I-77	554+35 I-77	Lt	780	
549+38 I-77	967+50 ℄ "H"	Rt.	1063	
8+65 Market	11+25 Market	Rt	232	
15th St. Conn.	7+54-12+08.5	Rt-Lt	822	
	Total		10555	4



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KANSAS CITY CLEVELAND NEW YORK

FENCING PLANS

STARK COUNTY
STA-30-14.12
STA-77-9.22

814 WATER MAIN SPECIFICATIONS

The State of Ohio Department of Highways Supplemental Specification 814 - Water Mains and Service Branches dated January 1, 1969 shall be used with the following exceptions additions.

DUCTILE IRON PIPE. Type required: push-on joints, cement lined, American Standards Association A21.50 thickness class 2, manufacturing standards ASA A21.51 and ASA A21.4. Cement Lining. Physical properties of ductile iron pipe: minimum tensile strength equals 60,000 psi, minimum field point equals 42,000 psi, and minimum elongation equals 10%.

CAST IRON FITTINGS. (tees, crosses, bends, reducers, couplings and plugs) Type required: called for in proposal; tees, crosses, bends and reducers are to be cement lined in all sizes except 2 inch; working pressure rating 250 psi for 2 inch through 12 inch fittings and 150 psi for 14 inch and larger, manufacturing standards ASA A21.4, ASA A21.10 and ASA A21.11.

BUTTERFLY VALVES. Type required: rubber seated, four underground service, mechanical joint accessories open right (clockwise), 2 inch square operating nut, pressure ratings: non shock working pressure 150 psi, hydrostatic test pressure 300 psi, manufacturing standards AWWA Specification C504-66, Dresser model 450, Pratt "Groundhog" or approved euqal.

TAPPING VALVES. Type required: iron body, bronze mounted, double disc, parallel seat, mechanical joint accessories, non-rising stem for underground service, O-ring packing preferred, open right (clockwise), 2 inch square operating nut, manufacturing standards and pressure ratings AWWA Specification C500.

TAPPING SLEEVES. Type required: mechanical joint tapping sleeve sizes 4"x4" thru 12"x12" made in two sections, furnished complete with joint accessories and fits all classes of cast iron pipe. Use Clow F-5205 or approved equal.

VALVE BOXES. Type required: two piece, cast iron, screw type for adjustable height, height range to be approximately 48 to 72 inches. They must include a well fitting cast iron lid, the word "WATER" to be cast on lid, Clow F-2454 666S or approved equal for sizes 2" to 10" and Clow F-2450 for 12" size.

The following work will be done by the City of Canton Water Department:

(1) Alterations to existing copper or galvanized water services where necessary.

(2)

(3) Operate all existing valves necessary to shut off water when making connections to existing mains.

(4) Test water samples from new mains for contamination.

(5) Make taps where tapping sleeves and valves are used if contractor is not equipped to make them. This work will be at contractor's expense.

New valves shall be installed on street property lines extended if possible.

PLUGGING EXISTING WATER MAINS

This item of Work shall consist of plugging the existing water mains and branches where shown on the plans or as directed by the Engineer.

The Contractor shall make the excavation, carefully cut and remove a section of existing pipe, install the Cast Iron Plug or Cap, firmly block the plug with woodblacking and concrete backing, install the rods and socket clamps, testing, sterilizing backfilling, surface restoration, and disposal of waste materials. The work shall be performed in accordance with requirements of Item 814.

Payment will be made at the Contract Unit price bid per Each Item 814 - Plugging Existing " Water Main which shall include all labor, material, small tools and equipment required to complete this item work.

TAPPINC SLEEVES AND VALVES AND BOXES

This item shall cover the furnishing and installing the Tapping Sleeves and Valves of the sizes shown on the Water Mains. The Contractor shall make all excavation, furnish and install the Tapping Sleeves and Valves, furnish and install the valve boxes, backfilling surface restoration, and sterilizing and Testing.

Payment will be made at the Contract unit price bid per each Item 814 -
6"x 4" Tapping Sleeve, 4" Valve and Box.
4"x 4" Tapping Sleeve, 4" Valve and Box.

which price and payment shall constitute full compensation for the furnishing of all labor, materials, incidentals small tools and equipment required to complete this item of work.

The work shall be done in accordance with the applicable requirements of Item 814.

REMOVAL OF EXISTING WATER MAINS AND APPURTENANCES

All items which are indicated for removal by the Contractor shall become his property and be removed and disposed of by him. No separate payment will be made for this work.

PLUGGING EXISTING SERVICE BRANCHES

This item of work shall consist of plugging the existing service branches where shown on the plans or as directed by the Engineer. The Contractor shall make the excavation, disconnect the existing service branch from the main line, plug the corporation stop, backfill, make surface restoration, and dispose of waste material. The work shall be performed in accordance with requirements of Item 814.

Payment will be made at the Contract Unit price bid per Each Item 814 - Plugging Existing 1¼"-2" Water Service Branch, which shall include all labor, material, small tools, and equipment required to complete this item of work.

ESTIMATED QUANTITIES
GENERAL SUMMARY

		I-77-4(44)107					TYPE	I-77			GRAND	UNIT	ITEM	DESCRIPTION
		127	128	131	132	133	CODE	4(44)107			TOTAL		NO.	
		446					Y060	446			446	Lin.Ft.	814	4" New Water Main Ductile Iron Pipe A.S.A. Class 2
														Push-on Type Joints including Cast Iron Fittings,
														Cement Lined, as per plan
		2					Y060	2			2	Each	814	4" Butterfly Valve and Box, Mechanical Joint
		1					Y060	1			1	Each	814	4"x4" Tapping Sleeve, 4" Valve and Box
		1					Y060	1			1	Each	814	6"x4" Tapping Sleeve, 4" Valve and Box
		1					Y060	1			1	Each	814	¾" Corporation Stop, as per plan
		25					Y060	25			25	Lin.Ft.	814	¾" New Copper Service Branch, as per plan
			2				Y060	2			2	Each	814	12" Butterfly Valve and Box, Mechanical Joint
					1		Y060	1			1	Each	814	Plugging Existing 6" Water Main
				2		2	Y060	4			4	Each	814	Fire Hydrant Removed and Disposed of
						3	Y060	3			3	Each	814	Plugging Existing 1¼"-2" Service Branch
						1	Y060	1			1	Each	814	Plugging Existing 4" Water Main
					2		Y060	2			2	Each	814	Plugging Existing 12" Water Main
			390				Y060	390			390	Lin.Ft.	814	12" New Water Main Ductile Iron Pipe ASA Class 2
														Push-on Type Joints including Cast Iron Fittings
														Cement Lined, as per plans
				2	6	1	Y060	9			9	Each	814	Adjusting Existing Curb or Valve Boxes to Grade
		1					Y060	1			1	Each	814	Curb Stop and Box, as per plan

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Made JEB 10-21-70
Ckd CRJ 10-29-70

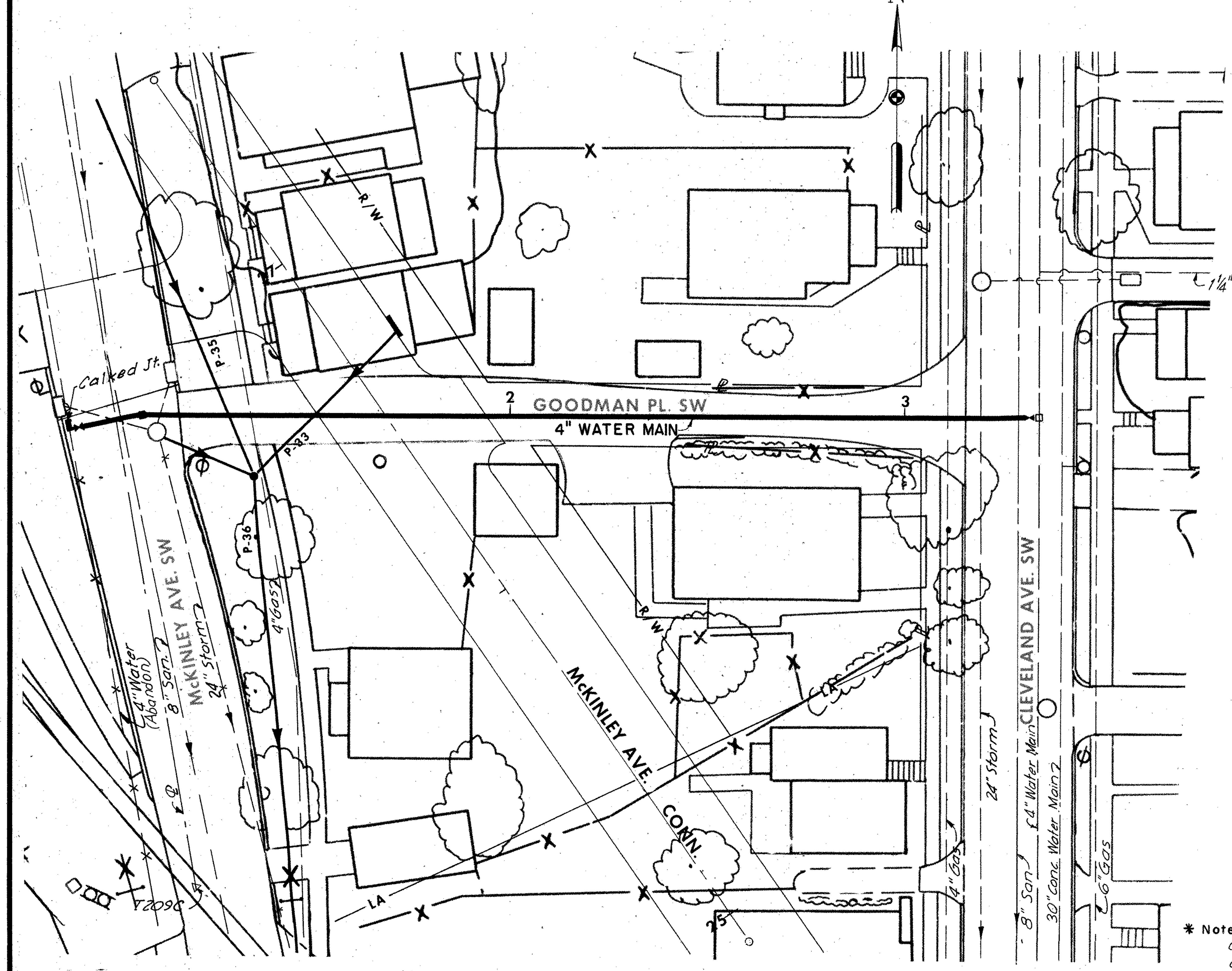
Rev. 1-29-76

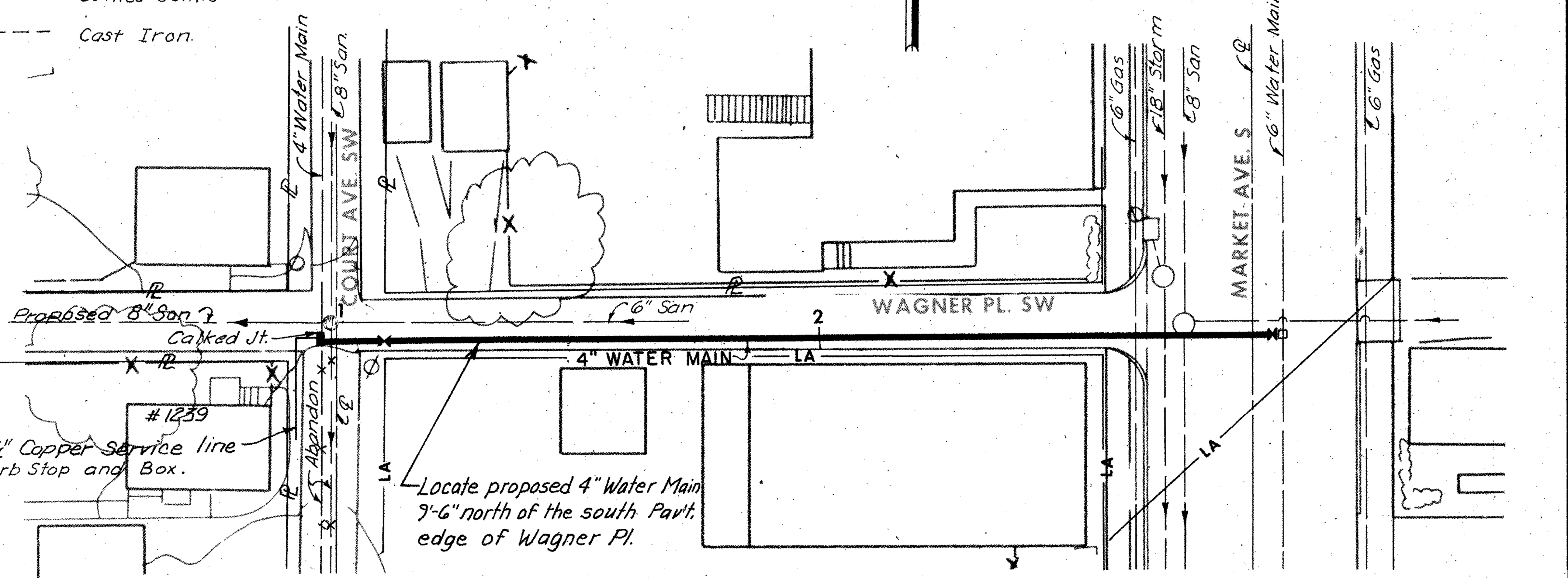
WATER MAIN NOTES AND
GENERAL SUMMARY OF QUANTITIES

STARK COUNTY
STA-30-14.12
STA-77-9.22

LEGEND
WATER

- 1 1/2 W — 1 1/2" ϕ Water line
- Proposed Valve
- Proposed Fire Hydrant
- Existing Valve (Plan Only)
- Proposed Bend
- Proposed Tapping Sleeve
- M.J. — Mechanical Joint
- C.J. — Calked Joints
- C.I. — Cast Iron.

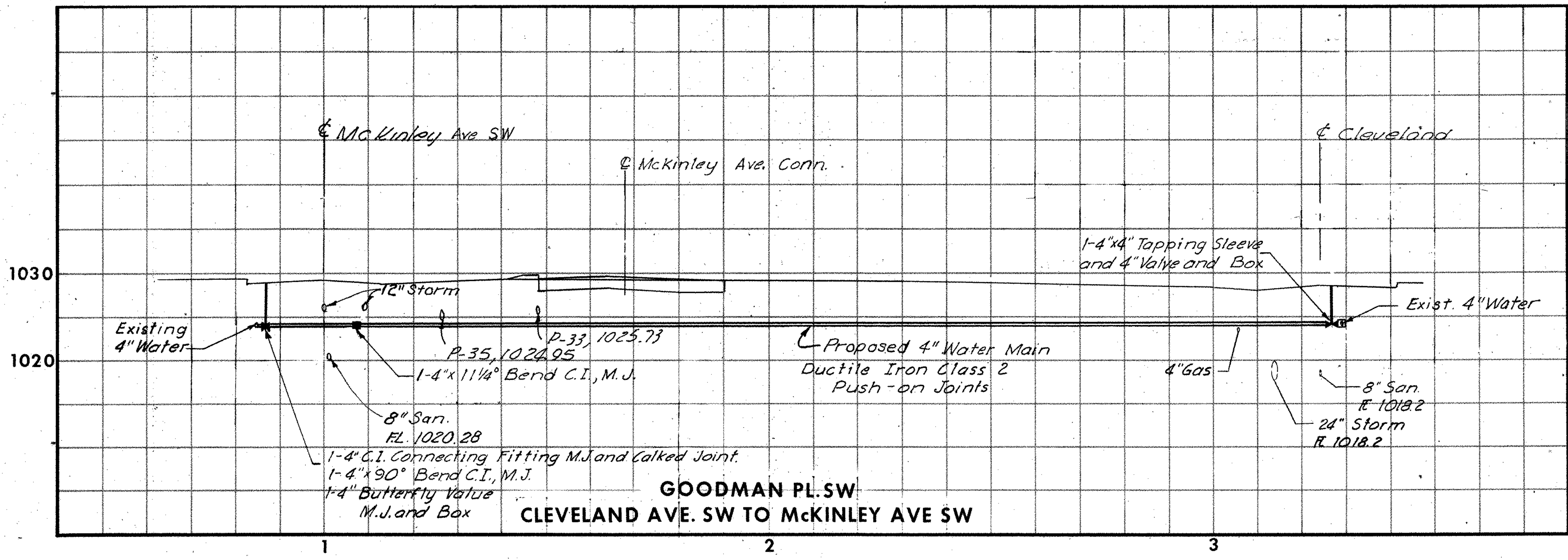




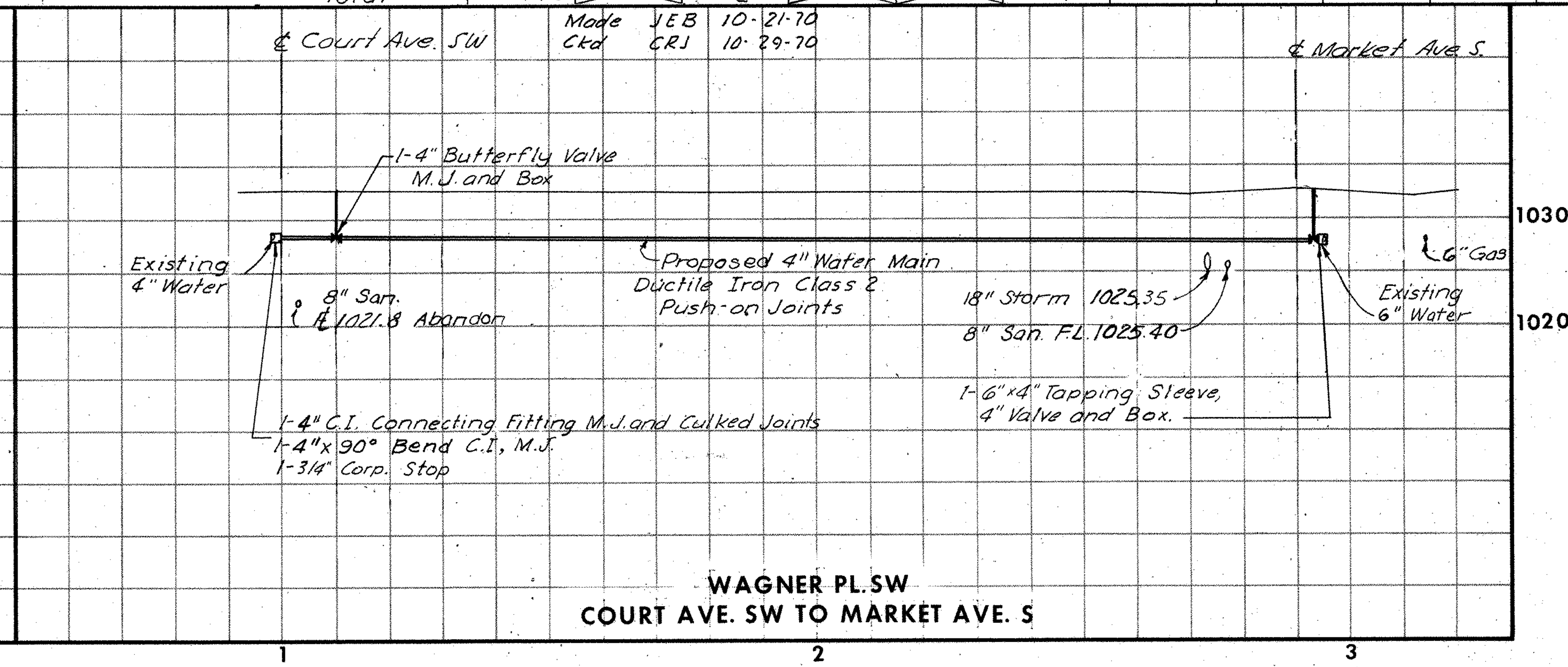
LOCATION	4" Pipe Ductile Iron Class 2 Push-on Joint L.F.	* 4" C.I. Connecting Fitting M.J. & C.J. Each	4" Butterfly Valve M.J. & Box Each	* 4" Bend 11 1/4° Each	* 4" Bend 90° Each	4"x 4" Tapping Sleeve, 4" Valve & Box Each	6"x 4" Tapping Sleeve, 4" Valve & Box Each	3/4" Corp. Stop Each	3/4" Copper Line L.F.	3/4" Curb Stop & Box
	ITEM 814									
0+88 to 3+34 Goodman Pl. S.W.	246	1			1					
0+92			1							
+08				1						
3+34						1				
House No. 1239 Court Ave. S.E.								1	25	
0+97 to 2+97 Wagner Pl. S.W.	200	1			1					
0+10			1							
2+96							1			1
Total	446		2			1	1	1	25	1

* Note: Quantities shown are for estimating only.

Made JEB 10-21-70
Ckd CRJ 10-29-70



GOODMAN PL. SW
CLEVELAND AVE. SW TO McKINLEY AVE SW



WAGNER PL. SW
COURT AVE. SW TO MARKET AVE. S

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CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

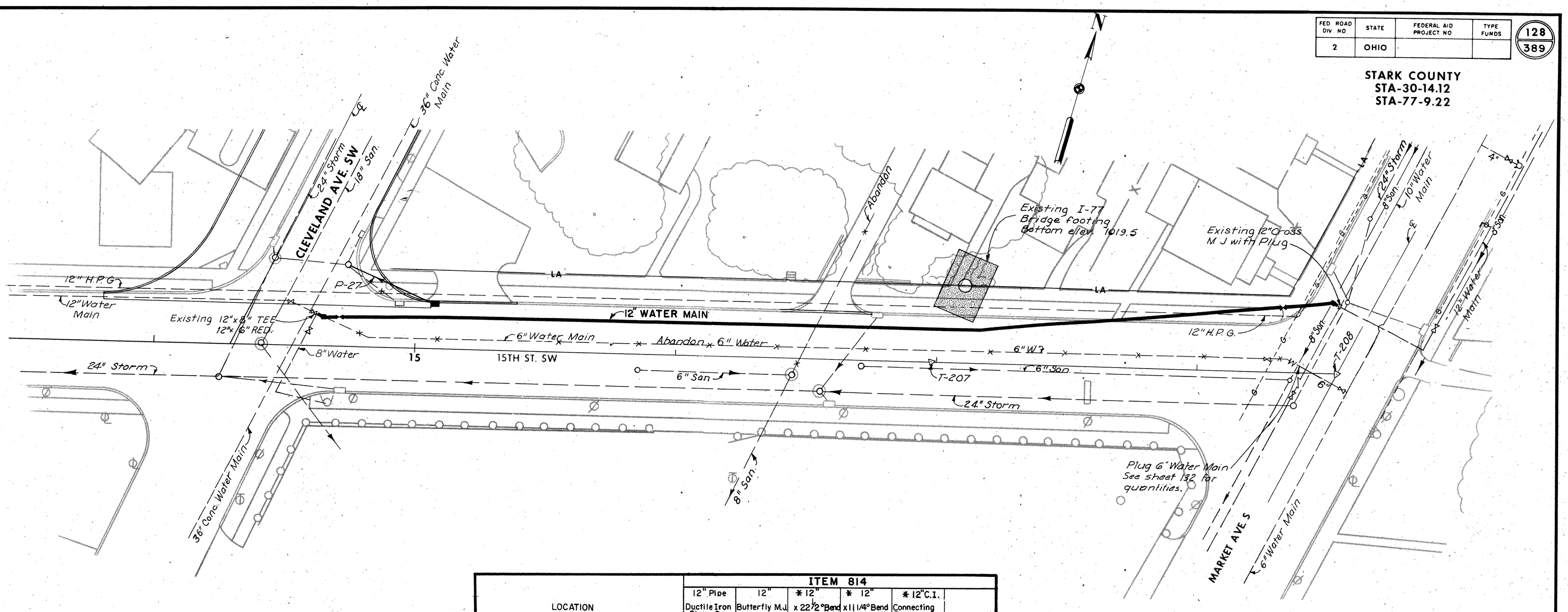
Scale: Hor. 1"=20'
Vert. 1"=10'

Rev. 1-29-76

WATER MAIN

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



LOCATION	ITEM 814					
	12" Pipe Ductile Iron Class 2 Push-on Joint L. F.	12" Butterfly M.J. & Box Each	* 12" x 22 1/2° Bend C.I. & M.J. Each	* 12" x 11 1/4° Bend C.I. & M.J. Each	* 12" C.I. Connecting Fitting C.I. & M.J. & C.J. Each	
14+64 to 18+52 15TH ST. S.E.	390	1	1			
18+34 15TH ST. S.E.		1				
18+40 15 TH ST. S.E.			1	1	1	
Total:	390	2				

* Note:
Quantities shown are for estimating only.

Made JEB 10-21-70
Ck'd CRJ 10-29-70

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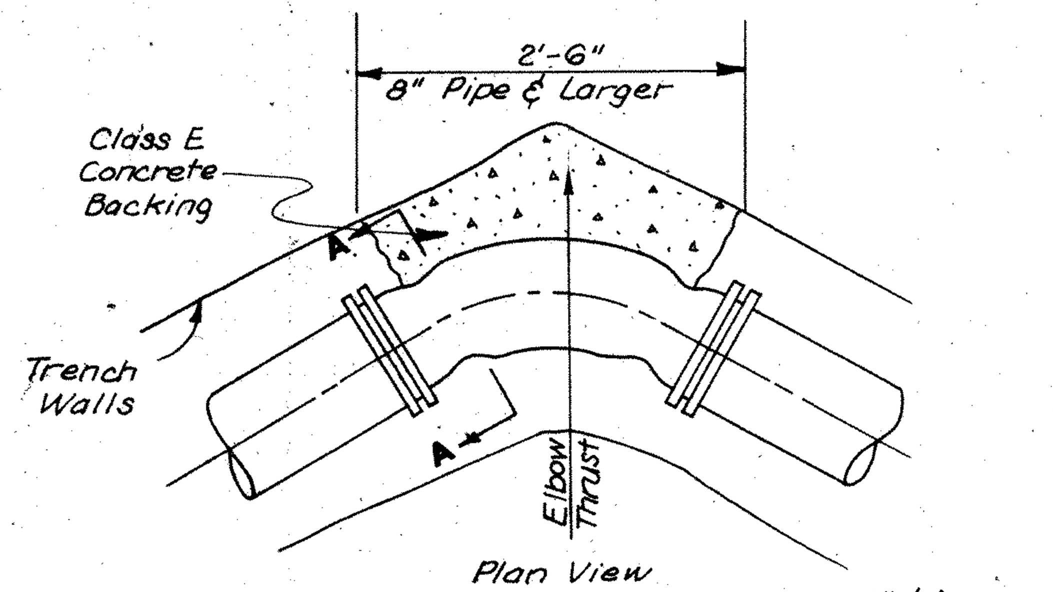
Scale: Hor. 1"=20'
Vert. 1"=10'

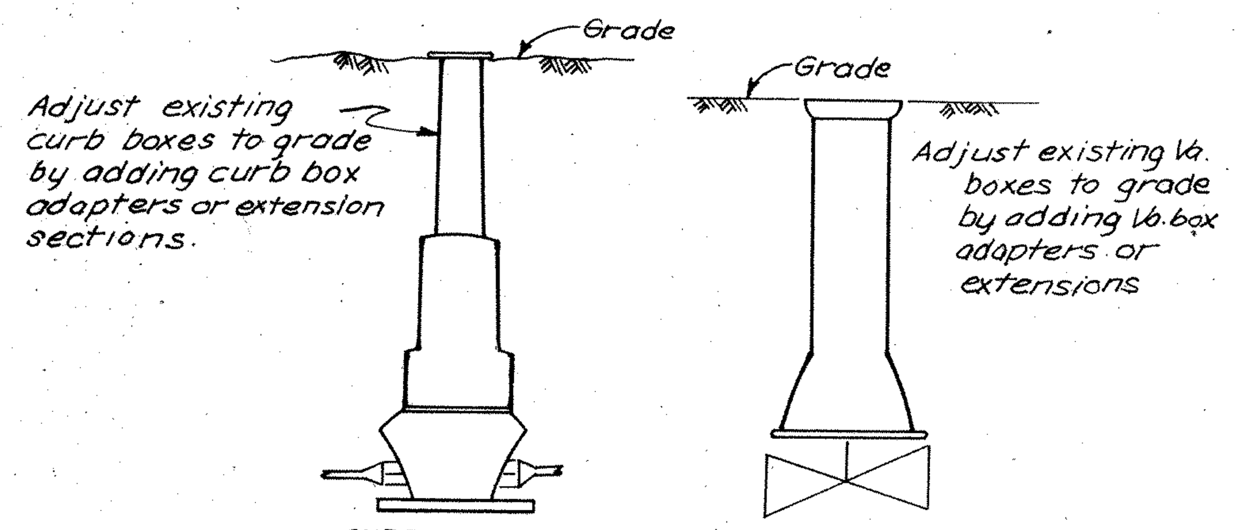
WATER MAIN

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

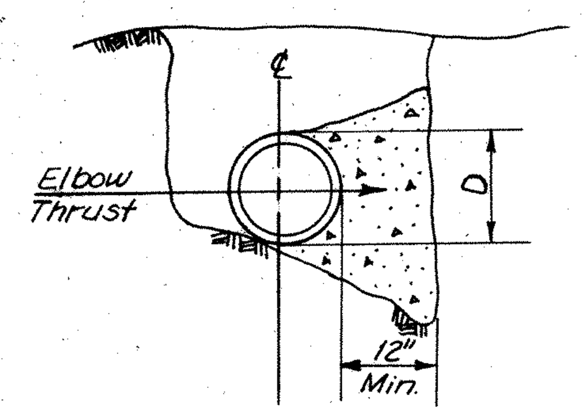
STARK COUNTY
STA-30-14.12
STA-77-9.22



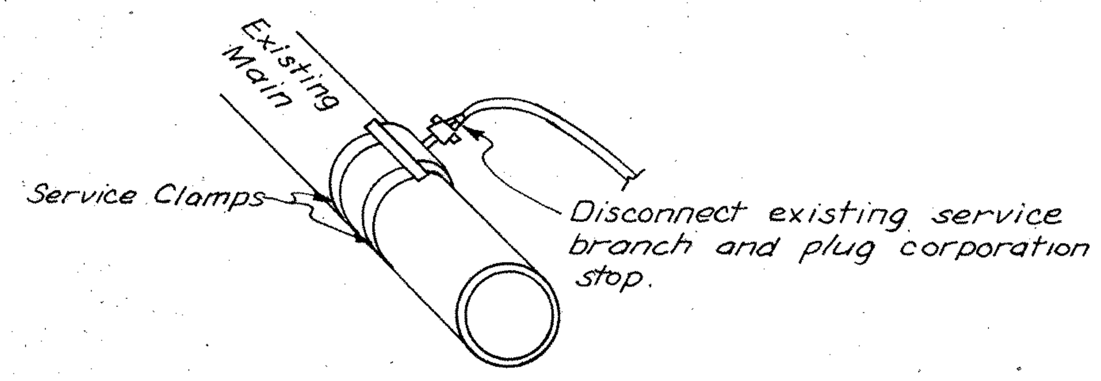
Plan View
ELBOW BLOCKING DESIGN 8" & Larger
No Scale



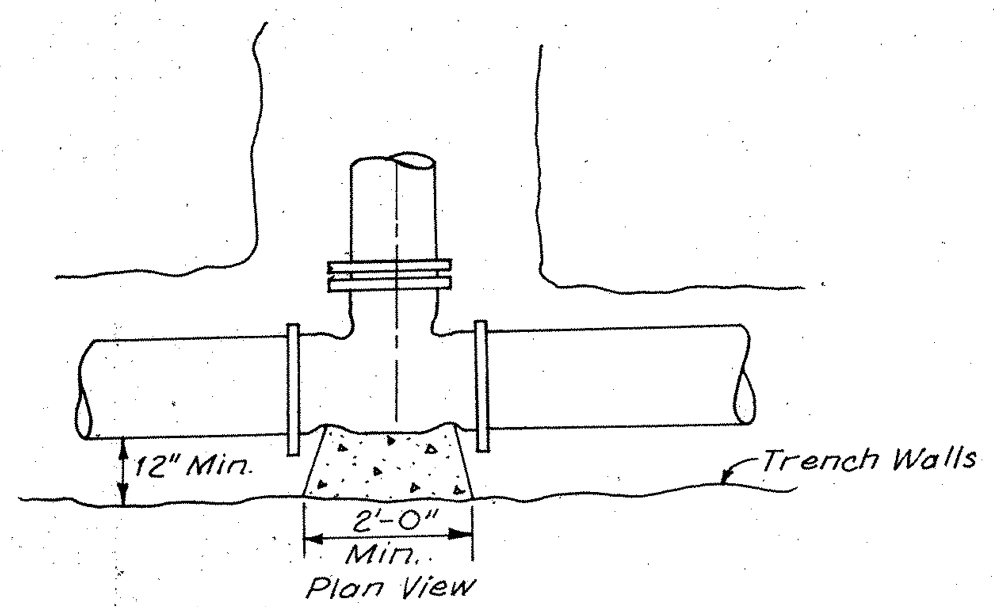
DETAIL OF ADJUSTING CURB BOXES & VALVE BOXES TO GRADE
No Scale



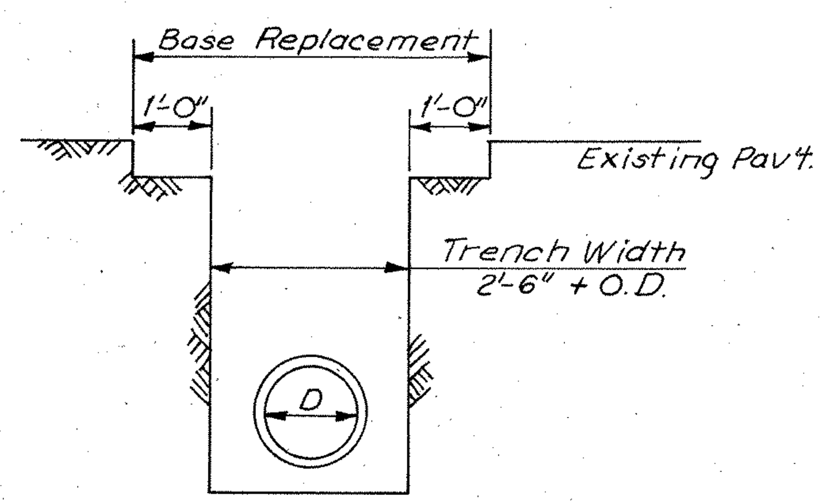
SECTION A-A
No Scale



PLUGGING EXISTING SERVICE BRANCH DETAIL
No Scale

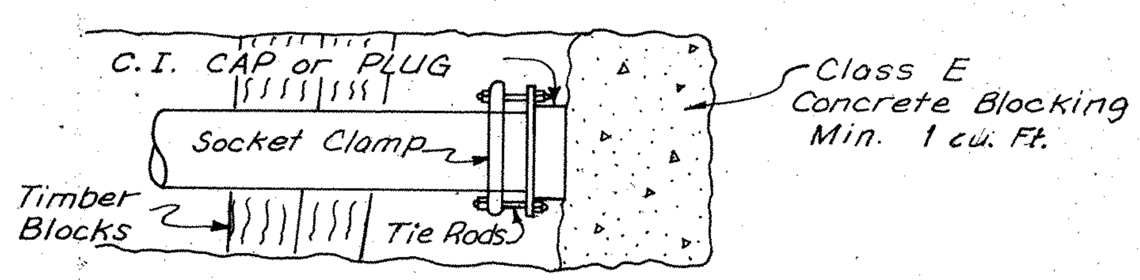


Plan View
TEE BLOCKING DESIGN
No Scale



BASE REPLACEMENT

Note:
The cost of furnishing and placing reaction backing shall be included in the Unit Price Bid Per Lineal Foot for Item (814) New Water Mains. Reaction Backing shall be provided for all plugs, caps, tees, and bends deflecting 22½° or more on mains 8" in diameter or larger and for the bowl of each fire hydrant. It shall consist of Class E concrete placed between the fitting on hydrant and solid earth in sufficient amount and such a manner as to prevent movement or displacement of the fitting or hydrant. The backing shall have a cross sectional area of not less than one square foot.



Plan View
PLUGGING EXISTING WATER MAIN
No Scale

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WATER MAIN DETAILS

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

130 / 389

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STARK COUNTY
STA-30-14.12
STA-77-9.22

EXISTING
UTILITY LEGEND

- 4"G — GAS
- 4"W — WATER
- 16" Storm — STORM SEWER
- 8" San — SANITARY SEWER
- T — TELEPHONE
- E — POWER LINES
- 4W-E4KV — 4 WIRE, PRIMARY; 4 KILOVOLT
- 3W-Es — 3 WIRE, SECONDARY
- WATER HYDRANT
- MANHOLE
- CATCH BASIN

LEGEND

Sidewalk & Pavement Removal

UTILITY PLAN

Scale: 1"=50'

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

131
389

18

STARK COUNTY
STA-30-14.12
STA-77-9.22

QUANTITIES
ITEM 814 WATER MAINS
Fire Hydrants Removed and Disposed of - 2 Each
Adjust Existing Curb or Valve Boxes to Grade - 2 Each

Made J&B 10-21-70
Ckd CRJ 10-29-70

LEGEND

Sidewalk & Pavement Removal

UTILITY PLAN

Scale: 1"=50' 25 0 50

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

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

QUANTITIES
ITEM 814 WATER MAINS
Plugging Existing 12" Water Main - 2 Each
Adjusting Existing Curb or Valve Boxes
to Grade - 6 Each
Plugging Existing 6" Water Main - 1 Each

Made JEB 10-22-70
Ckd CRJ 10-29-70

EXISTING UTILITY LEGEND

Symbol	Description
4"G	GAS
4"W	WATER
16" Storm	STORM SEWER
8" San	SANITARY SEWER
T	TELEPHONE
E	POWER LINES
4W-E4KV	4 WIRE, PRIMARY; 4 KILOVOLT
3W-Es	3 WIRE, SECONDARY
☋	WATER HYDRANT
○	MANHOLE
□	CATCH BASIN

LEGEND

Sidewalk & Pavement Removal

Scale: 1"=50'

UTILITY PLAN

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

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

133/389

20

STARK COUNTY
STA-30-14.12
STA-77-9.22

QUANTITIES	
ITEM 814 WATER MAINS	
Fire Hydrant Removed and Disposed of	-2 Each
Plugging Existing Service Branch 1¼"	-3 Each
Plugging Existing Water Main 4"	-1 Each
Adjusting Existing Curb or Valve Boxes to Grade	-1 Each

Made JEB 10-22-70
Ckd CRJ 10-30-70

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CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

Scale: 1"=50'

LEGEND
Sidewalk & Pavement Removal

UTILITY PLAN

LIGHTING PLANS

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			134 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

LEGEND

Sta. 0+00 — C — Ground Mounted Light Pole, Reference C
1A1-1 — Center No. (1A) Circuit No. (1) Lamp No. (1)
400-III-AT-15B41.7 — Light Pole Designation per HL-8
Type AT-( )Transformer Base per HL-3
Foundation per HL-1
1000 W. Mercury Style Luminaire (Type III -MC)
with 400 W. ballast for 400 W. Met. Hal. Lamp

Sta. 0+00 — B — Ground Mounted Light Pole, Reference B
250-II-AT10B34.2 — 400 W. Mercury Style Luminaire (Type II-MC)
with 250 W. ballast for 250 W. Met. Hal. Lamp

Sta. 0+00 — A — Median Mounted Light Pole, Reference A
1A1-1 — Special 14ft. Concrete Barrier Section for
400-III-A8BB39.0D — Light Pole Foundation, As per HL-17A & B
Light Pole Designation per HL-8
1000 W. Mercury Style Luminaire (Type III-MC)
with 400 W. ballast for 400 W. Met. Hal. Lamp

Underpass Lighting Unit, 250 W. Luminaire
with 175 W. Ballast for 175 W. Met. Hal. Lamp

Existing Underpass Lighting Unit to be replaced
with 250 W. Mercury Style Luminaire
with 175 W. ballast for 175 W. Met. Hal. Lamp

Sta. 0+00 / 1A1-1 — Light Tower, 713.21, with Asymetric Distribution
1000-ASY-A3BB100D — Light Tower Design No. per HL-8, height per plan
Asymetric (ANSI-IES Type III or IV) Distribution
1000 W. Luminaire with 1000 W. Metal Halide Lamp
(1)-Type-ϕ"×D' — Foundation No. - Platform Type - Foundation Depth (Platform Type "0" indicates no platform required)
Symbol on Schematic and Circuit Layout Map

Sta. 0+00 / 1A1-1 — Light Tower, 713.21, with Symmetric Distribution
1000-SYM-A3BBBB100D — Light Tower Design No. per HL-8 height per plan
Symmetric (ANSI-IES Type V) Distribution
1000 W. Luminaire with 1000 W. Metal Halide Lamp
(1)-Type-ϕ"×D' — Foundation No. - Platform Type - Foundation Depth (Platform Type "0" indicates no platform required)
Symbol on Schematic and Circuit Layout Map

Sta. 0+00 / 1A1-1 — Light Tower, 713.21 with Symmetric Distribution and "Offset Type" Luminaire
1000-SPC-A3BBBBB100D — Light Tower Design No. per HL-8, height per plan
Special Distribution
1000 W. Luminaire with 1000 W. Metal Halide Lamp
Symbol on Schematic and Circuit Layout Map

Existing Light Pole
Existing Light Pole To Be Removed
S — Structure Mounted Light Pole
Junction Box, Structure Mounted, Type II per HL-4
Pullbox, 18" Circular, 713.09, 18" or 24", size per plan
Pullbox, Median Barrier, 18" or 36", size per plan
Pullbox, Existing — Junction Box, Existing
Control Center — Control Center, Existing, To be removed
Existing Circuit
Conduit, 4" ϕ, Polyvinyl-chloride (PVC) in Median Barrier
Conduit, 3" ϕ, 713.04
Conduit, 3" ϕ, 713.04, Existing Under Pavement
Conduit, 2" ϕ, 713.04
Duct Cable 1½" ϕ, 713.03
Conduit, 1¼" ϕ, 713.04
Conduit, 2" ϕ, 713.06, concrete encased, per HL-12
Service To Light Tower, No. (6), As per plan
B — Structure Grounding, per HL-7
F — Fence Grounding, per HL-11
(E) — Expansion Fitting on Structure, per HL-5

MADE E.F.J. DATE 8-22-73
TRACED T.A.K. DATE 8-23-73
CHECKED E.F.J. DATE 10-2-73
SCALE 1" = 200'
Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO
HNTB

200 0 200 400 600 800
SCALE IN FEET

SCHEMATIC LIGHTING PLAN

LIGHTING NOTES

SPECIFICATIONS

These notes are supplemental to Items 625 and 713 of the State of Ohio Department of Transportation Construction and Material Specifications.

Reference shall be made to Standard Construction Drawings listed on the title sheet of these plans.

PLAN SPECIFICATION REFERENCES

References to Item 625 and 713 in these plans shall be considered to read as respective references to Items S625 and S713.

GENERAL

This project has been designed on the basis of full lighting with an average illumination of 1.2 ft.-cd. (initial) and a maximum uniformity ratio of 4.0 to 1. FOR CONVENTIONAL UNITS AND 3.0 TO 1. FOR TOWERS.

UTILITIES

The Contractor shall cooperate with the Ohio Power Company and the Bureau of Street Lighting whose addresses are:

Ohio Power Company	and	Chief
Canton Division		Bureau of Street Lighting
120 Central Plaza S		City of Canton
Canton, Ohio 44704		Canton, Ohio 44701

The Contractor will not be required to furnish or install the primary distribution lines, transformers, transformer poles, meters, or the primary switching. The Contractor shall provide connection to branch circuits and grounds as hereinafter specified, and shall coordinate all power service connections with the power supplying agency. The project will receive 480 volt secondary service from the Ohio Power Company.

PAYMENT FOR LIGHTING ITEMS

Payment for all roadway lighting, Item 625, will be made at the contract unit price bid for items as indicated in the Schedule of Quantities, which payment shall constitute full compensation for furnishing all materials, labor, equipment, tools and incidentals necessary, whether specifically mentioned or not, to complete the entire work, installed and in operating condition for full acceptance, according to the Plans and Specifications.

MAINTAINING EXISTING LIGHTING

Contractor shall maintain existing roadway and sign lighting circuit(s) in continuous operating condition until the new lighting system is installed and approved and High Voltage Test 839 is accomplished. Subject to the approval of the Engineer, the existing circuit(s) may be disconnected and the new roadway and sign lighting circuit(s) activated.

Basis of payment shall be at the lump sum bid price for Item 625 "Maintaining Existing Lighting" which shall be full compensation for furnishing all labor, materials and incidentals necessary to complete the item of work.

CONNECTOR KITS

At the option of the Contractor, Type IX cable connections may be substituted where Type II or III cable connections are specified in hand holes or transformer bases of light poles.

Type I through Type VII cable connections in pull boxes, junction boxes, and other enclosures below ground may be accomplished by the use of either of the following:

1. A sleeve or tee cable connector conforming to the general requirements of Style "S" or "H", or other connecting device approved by the Engineer. The connector shall be installed in accordance with the manufacturer's directions and the connection shall be sealed and waterproofed with a hi-dielectric compound such as "Aqua Seal" as manufactured by Kearney, or equal approved by the Engineer. The sealing material shall be applied in accordance with the manufacturer's directions to make a watertight connection. Connections not accomplished in-line or in tee form shall be additionally protected by use of a hi-dielectric PVC, or other approved material, boot with an approved fastening device.
2. A preassembled kit, as manufactured by Joy or Bussman, or approved equal, with a waterproof or water-tight rating acceptable to the Engineer.

POLYVINYL-CHLORIDE (PVC) PLASTIC CONDUIT

This specification covers polyvinyl chloride (PVC) conduits for either direct burial in earth or for encasement in concrete and shall be of the size and type specified.

Detail Requirements. Conduit furnished under this specification shall comply with the following:

Conduit conforming to NEMA Standards Publication No. TC6-74 With The exception that conduit and conduit fittings composed of acrylonitrile-butadiene-styrene (ABS) shall not be acceptable.

CONDUIT ON STRUCTURES AND STRUCTURE GROUNDING

The structure grounds and expansion joints shown in the plans should not be considered complete in number or better than approximate in location.

Expansion fittings for conduit on structures shall be OZ-Gedney Type AX, Crouse-Hinds Type XJ-4, Appleton Type XJ-4, or equal as approved by the Engineer, as indicated in the plans as -Ⓔ- and installed in the manner detailed on HL-5.

Each expansion fitting shall have a copper external bonding jumper to assure electrical continuity of the grounding system.

Basis of payment shall be included in the unit bid price of the 625 Item Conduit, installed complete, in place, with all materials, labor, and incidentals, approved and accepted.

PULL BOX COVERS

The air bell detailed on Standard Construction Drawing HL-10 shall be deleted. The cover detail reference shall be changed from 713.08 to S713.09 and modified as described herein.

Supplementing S713.09(3), covers for circular pullboxes shall be precast, steel reinforced concrete, of the size and dimensions detailed in the plans, with two (2) No. 4 Ga. galvanized steel lifting eyes recessed flush with the top of the cover. The cover shall be constructed with 4 x 4/6 reinforcing mesh and Class C concrete with No. 4 aggregate conforming to Item 499 of the Specifications.

Payment for Pullbox Covers, for circular pullboxes, shall be included in the unit price bid for Item 625 - "Pullbox, Circular, By Size."

ESTIMATED QUANTITIES

(a) An estimated quantity of " 200- lin. ft. of 605, 4-inch shallow pipe underdrains" is provided in the lighting general summary for use as directed by the Engineer in providing positive drainage for pull boxes in fill areas. It is intended that all pull boxes in these areas be provided with such drainage, provided the length of underdrain necessary to obtain a satisfactory outfall does not exceed 20 feet approximately. A perforated PVC pipe or conduit material approved by the Engineer may be used in the construction of this item.

(b) An estimated quantity of " 20- each of 625 Markers" is provided in the lighting general summary for use as directed by the Engineer in providing ground surface indication of the location of underground circuits. The markers shall be located directly over the centerline of the cable or duct. It is intended that a marker shall be provided at a point midway between adjacent side-mounted light units where the distance between units exceeds 300 feet but does not exceed 450 feet, and at intervals of approximately 200 feet on all other circuit sections located outside of paved areas.

STANDARD CONSTRUCTION DRAWING HL-3.

POLE BASE DETAILS SHOWN ON THIS DRAWING ARE ESSENTIALLY FOR GALVANIZED STEEL POLES. FOR ALUMINUM DESIGNS, OR OTHER PERMITTED STEEL MATERIAL DESIGNS, VARIATIONS FROM THESE DETAILS WILL BE ACCEPTABLE, AS APPROVED BY THE ENGINEER.

STANDARD CONSTRUCTION DRAWING HL-15.

WEEPHOLE DIAMETERS OF 1/8 INCH SHOWN ON THIS DRAWING SHALL BE INCREASED TO 1/4 INCH.

LAMPS

Supplementing 625.08 and 713.14 of the Specifications, Metal Halide lamps shall be of the type indicated in the plans and shall be General Electric "Multi-Vapor", Westinghouse "Metal Halide", Sylvania "Metal-Arc", or equal as approved by the Engineer.

175-watt Metal Halide lamps provided for installation in underpass luminaires shall be of the type compatible for mounting in the luminaire provided.

LUMINAIRES

Supplementing 625.07 and 713.11 of the Specifications, luminaires for median mounted light poles shall be 1000 watt, mercury type, horizontal style luminaires designed for roadway applications with an integral 400-watt auto-regulator ballast rated at 480-volts, and designed for use with 400-watt Metal Halide lamps rated at 34,000 lumens. Luminaires for ramp mounted light poles shall be 400-watt, mercury type, horizontal style luminaires designed for roadway applications with an integral 250-watt auto-regulator ballast rated at 480-volts and designed for use with 250-watt Metal Halide lamps rated at 19,500 lumens.

The luminaires shall be of the type indicated in the plans and shall be General Electric, Westinghouse, McGraw Edison "Unistyle", or equal as approved by the Engineer.

UNDERPASS LUMINAIRES

Supplementing 625.07 and 713.13 of the Specifications, luminaires for underpass lighting shall be 250-watt mercury type units with a wireguard or polycarbonate vandal-proof shield, an integral fuse holder with a 10-ampere fuse, an integral 175-watt auto-regulator ballast, 480 Volts, and designed for use with 175-watt Metal Halide lamps rated at 14,000 lumens.

The luminaire shall be Holophane, Westinghouse, McGraw-Edison, General Electric or equal as approved by the Engineer.

SERVICE TO UNDERPASS LIGHTING

This item shall consist of providing complete electrical service, except for luminaires, lamps and structure grounding, for an underpass lighting system on Bridges where shown in the plans.

The installation work shall include conduits, conduit grounding, mountings, fittings, junction boxes, cables, and all incidentals necessary to complete the item of work, ready for use with the service as detailed in the plans. Component parts not specifically mentioned but required for satisfactory operation of this item shall be furnished and considered paid for as part of the item.

The lump sum price bid for Item 625 - "Service to Underpass Lighting, As Per Plan", shall include payment for all equipment, labor and materials necessary to complete the work as specified, complete, tested, and accepted.

SERVICE TO LIGHT TOWER NO. 6

This item of work shall consist of providing electrical service to Light Tower No. 6 (IBL-3) from Structure No. Sta-77-Ramp D where special installation techniques are required.

The work shall consist of all trenching, drilling, mounting, and installation of conduit, junction boxes, expansion fittings, cable, and other incidentals necessary to complete the item of work as detailed in the plans on Sheet 151.

The lump sum bid price for Item 625-"Service To Light Tower, No. 6 , As Per Plan" shall include payment for all labor, equipment, and materials necessary to complete the work as specified, complete, in place, tested, and accepted.

ELECTRICAL SERVICE FOR ILLUMINATED SIGNS

The pay items in the Lighting General Summary include the pull box or junction box adjacent to each lighted sign and the electrical service conductors leading into the box, including connector kits in the pull box or junction box. Quantities for electrical service from the connector kits in the pull box or junction box to the sign are included in the Sign Lighting General Summary.

LIGHTING NOTES

LIGHT TOWER

Supplementing S625.05 and S713.21 of the Specifications, all light towers are to be supplied with provisions for installing six (6) arms and luminaires at time of construction or later. Number of luminaires to be installed shall be in conformance with the plans. Counterweights shall be provided on unused arms to balance luminaire ring assembly.

The hand hole shall be oriented toward the downslope side of the pole.

LIGHT TOWER FOUNDATIONS

The Contractor shall construct Light Tower Foundations of the type, size, and material indicated in the plans, at the location designated, in conformity with the lines, grades, and dimensions shown in the plans or established by the Engineer, and in accordance with the specifications for the various items required.

Supplementing Item S625 of the Specifications, Light Tower Foundations shall consist of the emplaced caisson to the dimensions specified; excavation; and restoration of the site to conform with the contiguous areas.

Light tower foundations shall be located longitudinally and laterally by the Contractor and staked with the proper surface elevation as detailed in the plans and in accordance with 623. After stakeout, the Contractor shall notify the Engineer at least three days or more in advance of the scheduled work so that the foundation locations and elevations may be verified and field checked for overhead and underground obstructions, and approval given by the Engineer to commence construction.

Excavation for the foundation caisson shall be made by auger of the specified diameter to the embedment depth shown in the plans, unless otherwise directed by the Engineer. The State assumes no responsibility for the accuracy of the test borings or rock elevation shown in the plans, even though this information is the result of field investigations. Extreme caution shall be exercized in areas of underground utilities during excavation operations as the contractor is fully responsible for the damage thereto. When slope or subsurface difficulties are encountered other than as shown in the plans, the foundation location or orientation shall be changed as directed by the Engineer. When subsurface obstructions are encountered, the Engineer may direct the Contractor to remove the obstruction or replace the excavating material and relocate the foundation. If excavation caving occurs, the Contractor shall continue excavation to the specified depth maintaining the sides as nearly vertical as possible using casing, sleeving, or other methods approved by the Engineer. Upon completion of the drilling operation, the Engineer shall inspect the dimensions and alignment of the shaft and the penetration into shale, if required, and direct the Contractor to make any adjustments thereto.

Light tower foundations shall be constructed as detailed in the plans with the work and materials conforming to the requirements of 511. Reinforcing steel rods shall be completely assembled into cages by wire tying and placed into position as a rigid unit. Cages may be assembled with spiral loops subject to the approval of the Engineer. Splicing of a unit to a lower unit may be accomplished at ground level with the lower unit partially inserted into the shaft. Anchor bolts and conduit ells, positioned as shown in the plans, shall be accurately held by a template during concrete placing and setting.

Concrete, conforming to 499.03, Class C, shall be emplaced in a continuous operation, same day, immediately after all excavation and inspection are complete and the reinforcing steel cages emplaced. The excavation shall be free from accumulated water and loose material removed from the base area. In the event water seepage cannot be stopped with casing, the water shall be allowed to rise in the casing until a stable elevation has been reached. A seal shall then be poured by the Tremie Method. After the concrete has hardened, the casing shall be unwatered and the remaining concrete poured in the dry void. A suitable Tremie Tube shall be used to prevent segregation of concrete material and unnecessary splashing on the reinforcing steel cage. The Tremie shall be made in sections to permit discharge and raised as the concrete emplacement progresses. The maximum free fall of concrete from the Tremie shall not exceed five feet and the concrete shall be consolidated by means of a vibrator as it is poured.

After the light tower has been set, leveled, and bolted into place, concrete grouting shall be used in the space between the anchor base and the foundation surface.

When directed by the Engineer, after testing, of the light tower installation, the Contractor shall restore the light tower and foundation construction site to conform with the contiguous areas. This work shall include backfilling, compaction, grading, renovating, liming, fertilizing with 12-12-12 grade commercial fertilizer, seeding, and mulching as directed by the Engineer essentially in conformance with 203, 654, 655, & 659 of the Specifications.

Basis of payment shall be at the unit bid price per each, Item 625 "Light Tower Foundation, By Size, By Embedment Depth", including all labor, materials, and incidentals to complete the item of work as specified and accepted.

LIGHT TOWER MAINTENANCE PLATFORM

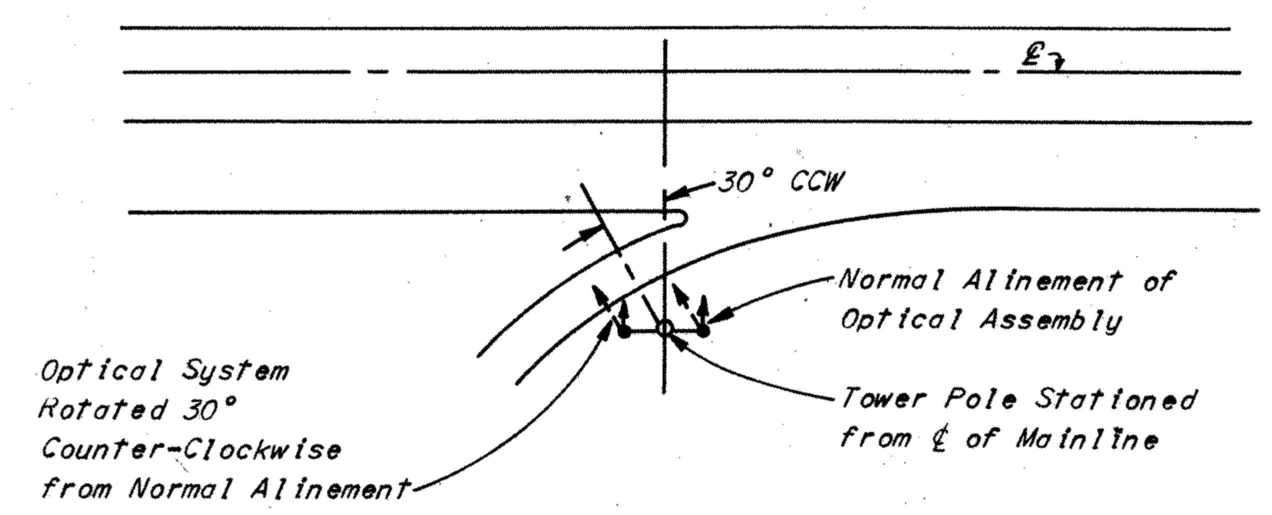
The Contractor shall construct Light Tower Maintenance Platforms of the type, size, and material indicated in the plans, at the location designated, in conformity with the lines, grades, and dimensions shown in the plans or established in accordance with the specifications for the various items.

Maintenance Platforms shall be constructed with work and materials conforming to the requirements of Item 511and as detailed in the plans.

When directed by the Engineer after testing of the light tower installation, the Contractor shall restore the platform construction sites to conform with the contiguous areas in the manner detailed in the plans. This work shall include backfilling, compacting, grading, renovating, liming, fertilizing with 12-12-12 grade commercial fertilizer, seeding and mulching as directed by the Engineer essentially in conformance with Items 203, 654, 655 and 659 of the Specifications.

Basis of payment shall be at the unit bid price per each, Item 625- "Light Tower Maintenance Platform, By Type, As per plan", including all labor, materials, equipment and incidentals to complete the item of work as specified and accepted.

STANDARD ASYMMETRIC HIGH MAST LUMINAIRE MOUNTING ARRANGEMENT



Two luminaire mounting arms shall be installed on the luminaire mounting ring assembly at 180 degrees and positioned so that the arms are parallel to the centerline or baseline of the pavement from which the pole is stationed. Normally the luminaires shall be installed so that the "Arrow" or "Street Side" designation on the reflector is positioned perpendicular to the centerline or baseline from which the pole is stationed.

When a third asymmetric luminaire is required, the three luminaires shall be aligned as above, equally spaced, with one of the three luminaires on the roadway side of the pole and on an arm perpendicular to the centerline or baseline from which the pole is stationed.

Any deviation from the standard luminaire alinement shall be specified in 5 degree increments of rotation of the luminaire optical assembly in a clockwise or counter-clockwise direction after the above alinement has been made.

LUMINAIRE, OFFSET TYPE

Supplementing 625.07 and 713.11 of the Specifications, an "Offset Type" luminaire shall be mounted on high mast light towers Nos. 13 and 14 in the manner detailed in the plans, positioned as shown on the plan sheets, and optically adjusted in the manner approved by the Engineer.

The luminaire shall be designed for use with a 1000 watt metal halide lamp rated at 95,000 lumens (minimum) and shall contain an integral 1000 watt auto regulator ballast rated at 480 volts.

The luminaire shall be Holophane "Expressway", ITT-American "Interstate", or an approved equal.

EXISTING LIGHT POLE and FOUNDATION, TO BE REMOVED

Supplementing Item 202 of the Specifications, the Contractor shall remove existing roadway lighting units, pole and foundation, where described in the plans.

The Contractor shall carefully remove and store on the project, at the location specified by the Engineer, the lamp and luminaire assembly from each light pole unit, all transformer bases and connector kits, and all poles, bracket arms and other items deemed salvageable by the Engineer. Circuit cable is to be abandoned in place or removed as directed in the plans. Foundations to be removed may either be removed completely, or removing the foundation at least one foot below grade. Pullboxes are to be abandoned in place, complete with existing or replacement covers, and filled with sand.

Upon removal of light poles on structures, protruding structure conduit shall be trimmed at the structure and a ¼" galvanized steel or aluminum cover plate, fitting the existing light pole mounting bolt pattern, gasketed or caulked and installed over the opening. Excess bolt material shall be trimmed at the nut.

The Contractor shall restore the disturbed areas to conform with the adjacent area. Use of a fill material shall be of a type approved by the Engineer, compacted to prevent future settling, and finished to grade. The Contractor shall be responsible and liable to the affected utility company for damage to utility lines and facilities due to removal operations.

Basis of payment shall be at the unit bid price per each:

Item 202-Existing Light Pole and Foundation, to be removed, as per Plan
Item 202-Existing Light Pole (Structure Mounted), to be removed, as per Plan

including all labor, material, equipment and incidentals to complete the item of work and accepted as specified.

EXISTING CONTROL CENTER AND SERVICE POLE, TO BE REMOVED

Supplementing Item 202 of the Specifications, the Contractor shall remove existing control center and service pole B, shown in the plans on Sheet 141.

The Contractor shall carefully remove and store on the project, at the location specified by the Engineer, the pole and all electrical items.

The Contractor shall coordinate his activities with the power company and be responsible and liable to the affected utility companies for damage to lines and facilities due to the removal operation. Disturbed areas may be restored to conform with the adjacent area as directed by the Engineer. Use of fill material shall be of an approved type, compacted to prevent future settling and finished to grade.

Basis of payment shall be at the lump bid price per each:

Item 202 - Existing Control Center and Service Pole, To Be Removed, As Per Plan

Including all labor, material, equipment and incidentals to complete the item of work and accepted as specified.

HIGH VOLTAGE DIRECT CURRENT TEST

A high voltage direct current test, as described in Supplemental Specification 839, shall be performed on all distribution cable and duct cable systems to be installed on this project. The test shall not be performed until after all new construction, such as guard rail, fence, delineator posts, sign supports, etc., in the immediate vicinity of the location of the cable run being tested, has been completed.

The testing requirements of 625.22(b) are hereby waived for those circuits on which the high voltage test is to be performed.

STARK COUNTY
STA-30-14.12
STA-77-9.22

FOR LEGEND SEE SHEET 134

FOR QUANTITIES SEE SHEET 154

MADE EFJ DATE 8-11-75
TRACED TAK DATE 8-12-75
CHECKED EFJ DATE 10-3-75
SCALE 1" = 50'-0"

Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO

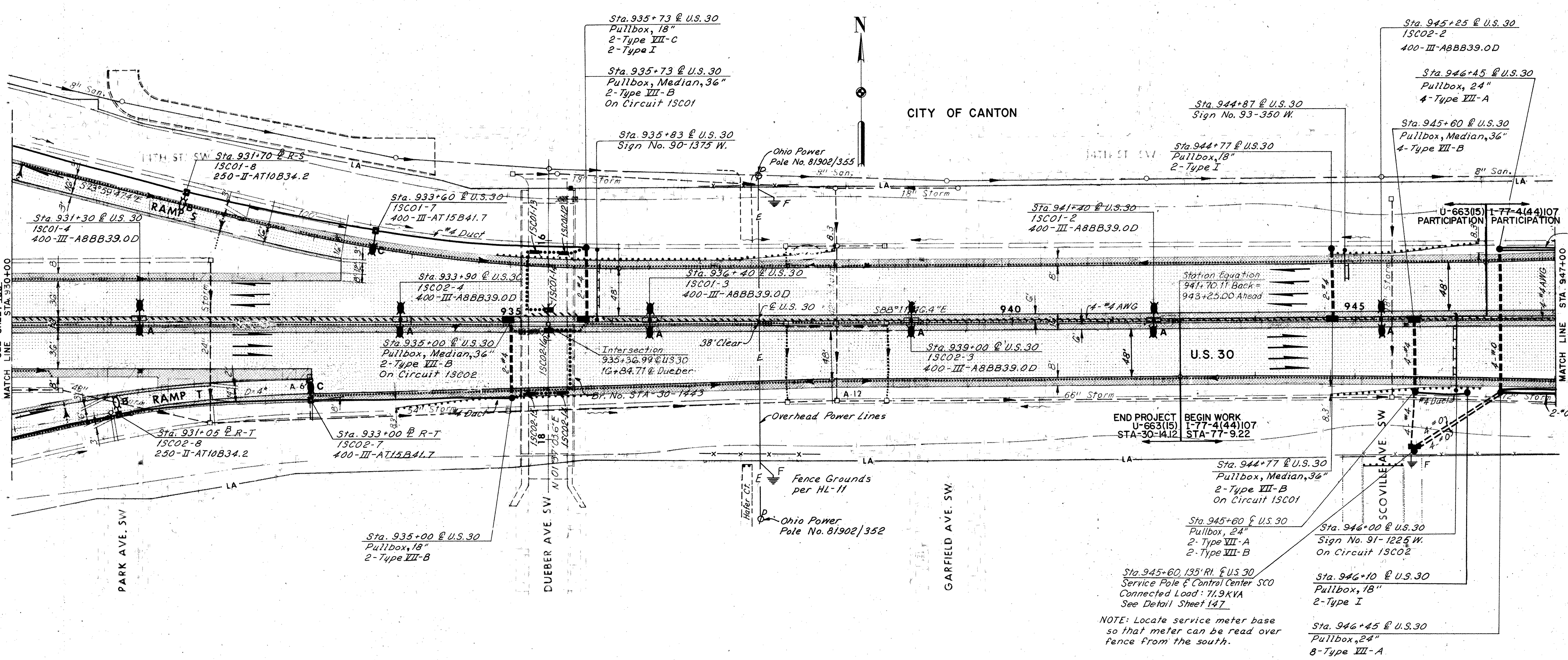
HNTB

50 0 50 100 150 200
SCALE IN FEET

LIGHTING PLAN STA. 920+00 TO STA. 930+00 US 30

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



NOTE: Locate service meter base so that meter can be read over fence from the south.

FOR LEGEND SEE SHEET 134
FOR QUANTITIES SEE SHEET 154

50 0 50 100 150 200
SCALE IN FEET

MADE EFJ DATE 8-13-75
TRACED FAK DATE 8-13-75
CHECKED EFJ DATE 10-3-75
SCALE 1"=50'-0"

Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO

HNTB

LIGHTING PLAN STA. 930+00 TO STA. 947+00 US 30

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			138/389

STARK COUNTY
STA-30-14.12
STA-77-9.22

NOTE: 2-Type VII-B Connector Kits in each structure junction box.

FOR LEGEND SEE SHEET 134
FOR QUANTITIES SEE SHEET 154 A&C

FOR LIGHT TOWER CROSS SECTIONS SEE SHEET 153

50 0 50 100 150 200
SCALE IN FEET

MADE EFJ DATE 8-13-75
TRACED TAS DATE 8-13-75
CHECKED EFJ DATE 10-3-75
SCALE 1" = 50'-0"

Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO

HNTB

LIGHTING PLAN STA. 947+00 TO STA. 963+00 US 30

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

NOTE: 2-Type VII-B Kits in each junction box

FOR LEGEND SEE SHEET 134
FOR QUANTITIES SEE SHEET 154 A&C
FOR LIGHT TOWER CROSS SECTIONS SEE SHEETS 153, 153A & 153B

MADE EFJ DATE 8-13-75
TRACED ZAK DATE 8-14-75
CHECKED EFJ DATE 10-6-75
SCALE 1"=50'-0"

Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO

HNTB

LIGHTING PLAN US 30 & I-77 INTERCHANGE (NORTH)

FED. ROAD DIV. NO. 2
STATE OHIO
FEDERAL AID PROJECT NO.
TYPE FUNDS
140
389
STARK COUNTY
STA-30-14.12
STA-77-9.22
CITY OF CANTON
N
MATCH LINE STA. 960+00
MATCH LINE STA. 958+00
MATCH LINE STA. 564+65 SEE SHEET 139
MATCH LINE STA. 55+00 SEE SHEET 139
MATCH LINE STA. 18+50 SEE SHEET 139
MATCH LINE STA. 21+50 SEE BELOW
MATCH LINE SEE SHEET 138 STA. 963+00
MATCH LINE STA. 21+50 SEE ABOVE
MATCH LINE SEE SHEET 141
STA. 971+00 RAMP F
STA. 555+80 ℄ I-77
STA. 963+00 RAMP H
PENN CENTRAL RAILROAD
N & W R.R.
Relocated Creek
RAMP B
RAMP G
RAMP F
RAMP C
RAMP H
I-77
CLEVELAND AVE.
℄ 15TH ST. SW
℄ MARKET AVE. S
MARKET AVE. S.
℄ B&O RR
WALL "D"
WALL "E"
WALL "B"
Sta. 957+00, 40' Lt. ℄ R-C
1BK-11
1000-SYM-A3BBBB140D
(12)-C-42"φx30'-0"
Sta. 957+00 ℄ R-C
Pullbox, 18"
2-Type VII-A
Sta. 966+65, 45' Lt. ℄ R-B
3SC02-3
1000-SYM-A3BBBB110D
(11)-A-36"φ x 25'-0"
Sta. 966+55 ℄ R-B
Pullbox, 18"
2-Type VII-A
BR. NO. STA-30-1489
Underpass Lighting
See Detail Sheet 149
BR. NO. STA-30-1488
Underpass Lighting
See Detail Sheet 150
Sta. 562+43 ℄ I-77
Sign No. 100-350 W.
Sta. 562+40
Exist. Pullbox
2-Type VII-B
2-Type I
Sta. 953+90, 30' Rt. ℄ R-C
1BK-10
1000-SPC-A3BBBB130D
(13)-C-36"φ x 25'-0"
(Orient "Offset" Type Luminaire to Cleveland Ave.)
Sta. 953+90 ℄ R-C
Pullbox, 18"
2-Type VII-B
Sta. 970+95 ℄ R-G
Pullbox, 18"
2-Type VII-B
Sta. 971+05, 73' Lt. ℄ R-G
2SC02-1
1000-SPC-A3BBBB120D
(14)-C-36"φ x 25'-0"
(Orient "Offset" Type Luminaire to Cleveland Ave.)
Sta. 968+80 ℄ R-H
Pullbox, 18"
BR. NO. STA-30-1499
Underpass Lighting
See detail Sheet 150
Sta. 977+00 ℄ R-G
Pullbox, 18"
2-Type VII-A
Circuit 2SC02
#2 Duct
Sta. 976+00 ℄ R-G
Pullbox, 18"
2-Type VII-B
Sta. 976+00, 110' Lt. ℄ R-G
2SC02-2
1000-SYM-A3BBBB120D
(15)-0-36"φ x 25'-0"
Sta. 966+45 ℄ R-H
Pullbox, 18"
2-Type VII-B
Sta. 966+60, 40' Rt. ℄ R-H
2BN-1
1000-ASY-A3BB110D
(16)-C-36"φ x 25'-0"
BR. NO. STA-30-1494
Underpass Lighting
See detail Sheet 150
Note: 2-Type VII-B Connector Kits in each structure junction box
New Circuit 1BL
2-#2 AWG
Remove Old Cir. L Cables
Existing Underpass Lighting Units to be replaced with 250 W. Luminaires, 175 W. Met. Halide lamp, and ballast in same location (Typical)
963+35 ℄ R-H
Pullbox, 18"
2-Type VII A
BR. NO. STA-30-1504
BR. NO. STA-77-0914
N87°58'58.0"E
N87°57'19.9"E
N36°59'51.7"E
Sta. 16+47.30
FOR LEGEND SEE SHEET 134
FOR QUANTITIES SEE SHEET 154 B&C
FOR LIGHT TOWER CROSS SECTIONS SEE SHEET 153B & 153C
50 0 50 100 150 200
SCALE IN FEET
MADE EFJ DATE 8-19-75
TRACED TAE DATE 8-25-75
CHECKED EFJ DATE 10-6-75
SCALE 1"=30'-0"
Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO
HNTB
LIGHTING PLAN US-30 & I-77 INTERCHANGE (SOUTH)

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

FOR LEGEND SEE SHEET 134

FOR QUANTITIES SEE SHEET 164 B &C

FOR LIGHT TOWER CROSS SECTIONS
SEE SHEET 153C

50 0 50 100 150 200
SCALE IN FEET

MADE EFJ DATE 8-13-75
TRACED TAK DATE 8-14-75
CHECKED BGT DATE 8-18-75
SCALE 1" = 50'-0"

Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO

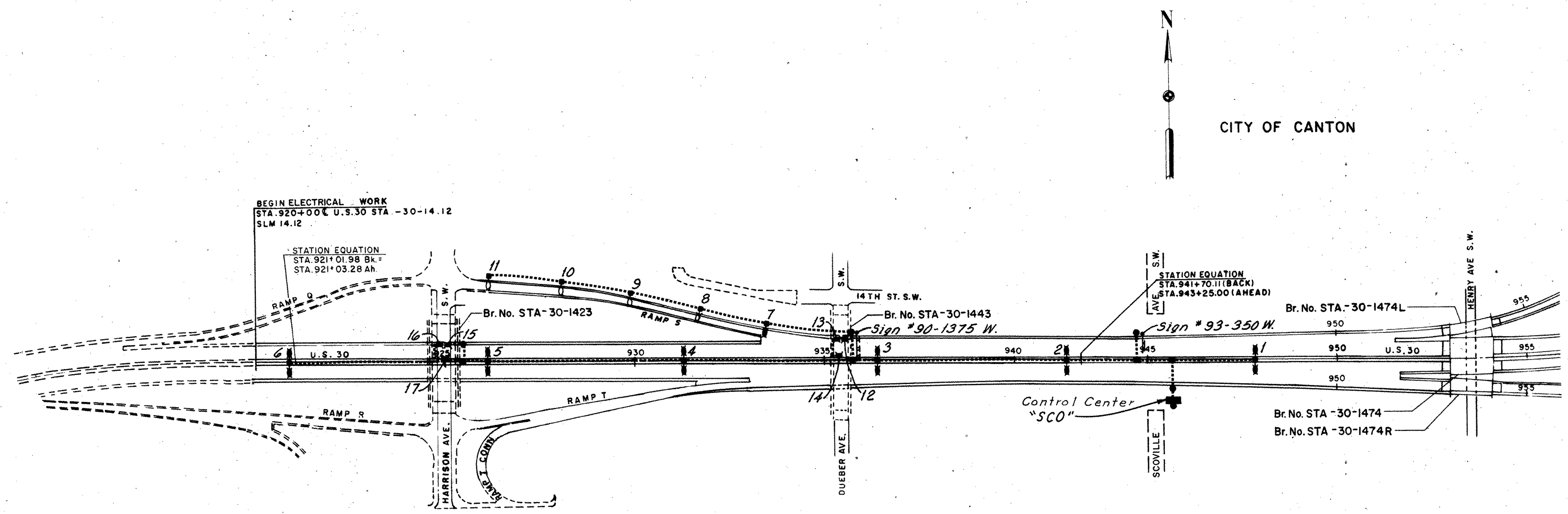
HNTB

LIGHTING PLAN STA. 555+80 TO STA. 532+10 I-77

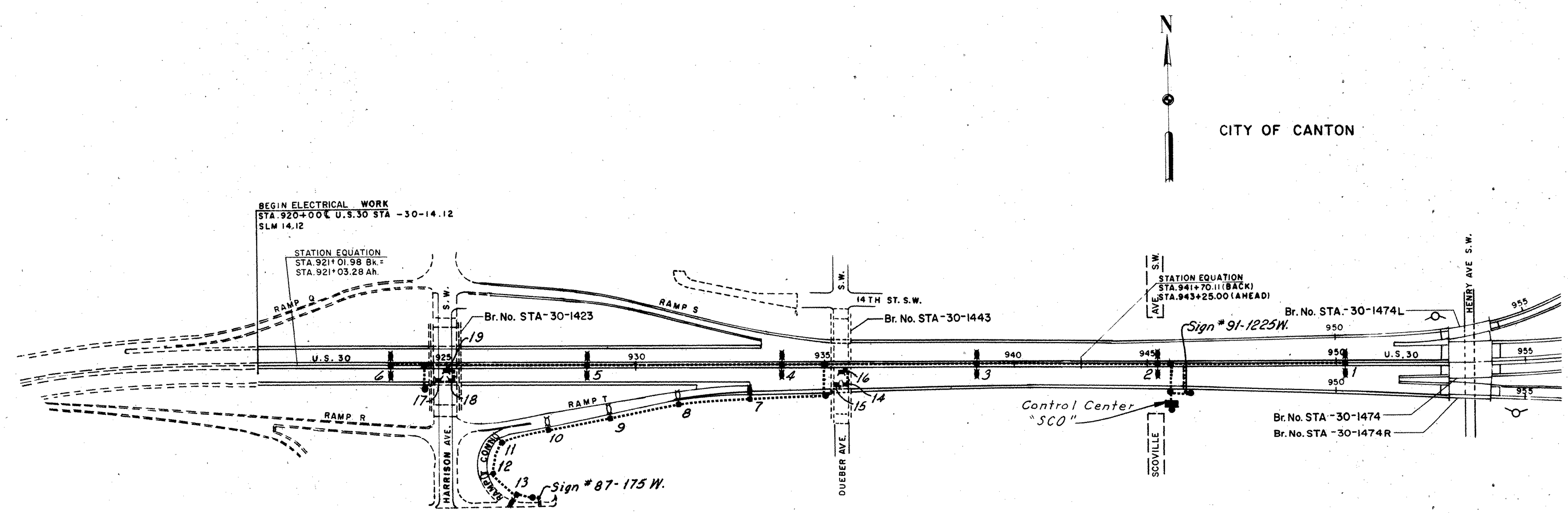
CIRCUIT LAYOUT MAPS

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			142 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22



CIRCUIT ISCO1



CIRCUIT ISCO2

FOR CONTROL CENTER DATA, SEE SHEET 147.

200 0 200 400 600 800
SCALE IN FEET

MADE WGP DATE 8-11-75
TRACED TAK DATE 8-15-75
CHECKED EFJ DATE 10-3-75
SCALE 1"=200'

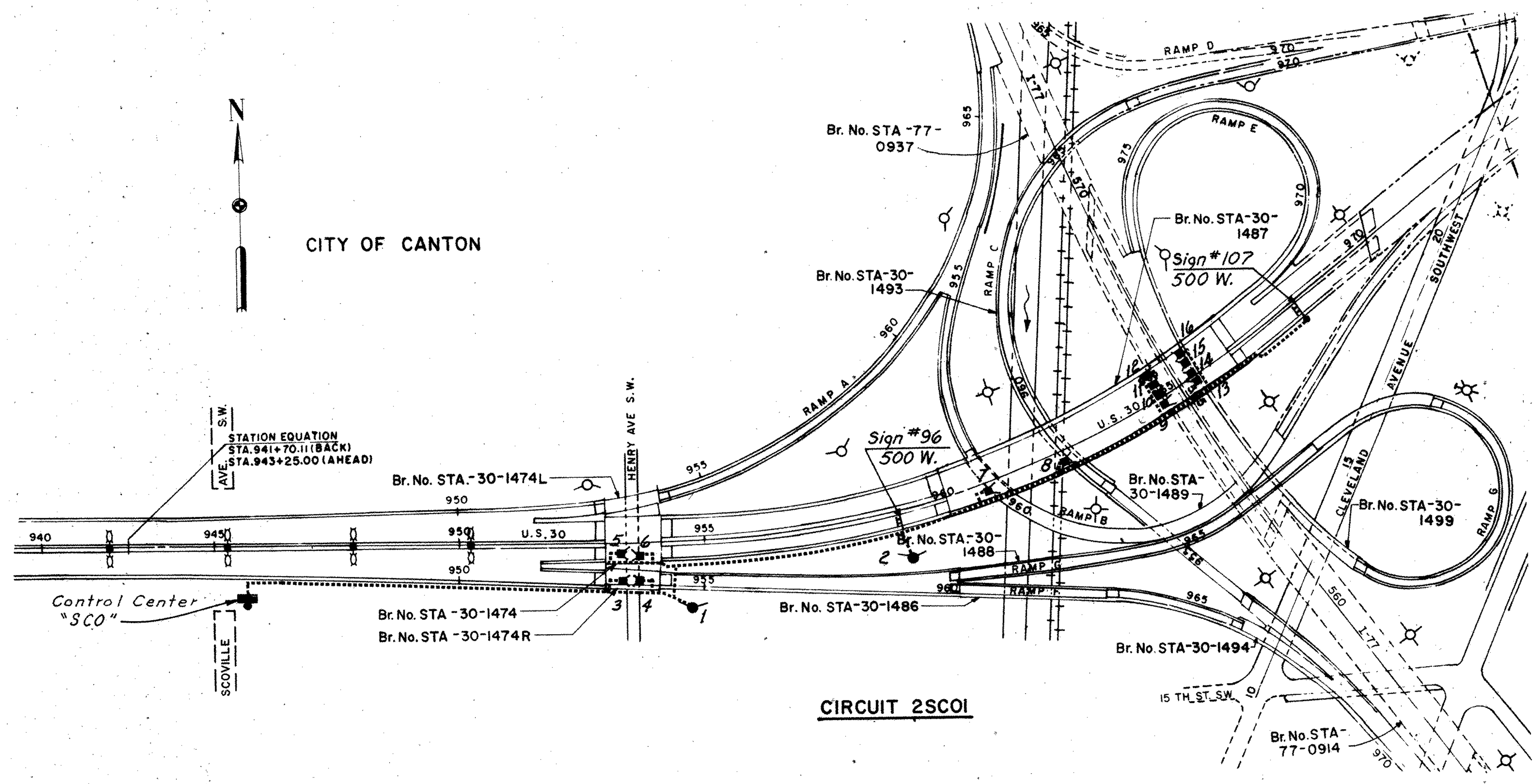
Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO

HNTB

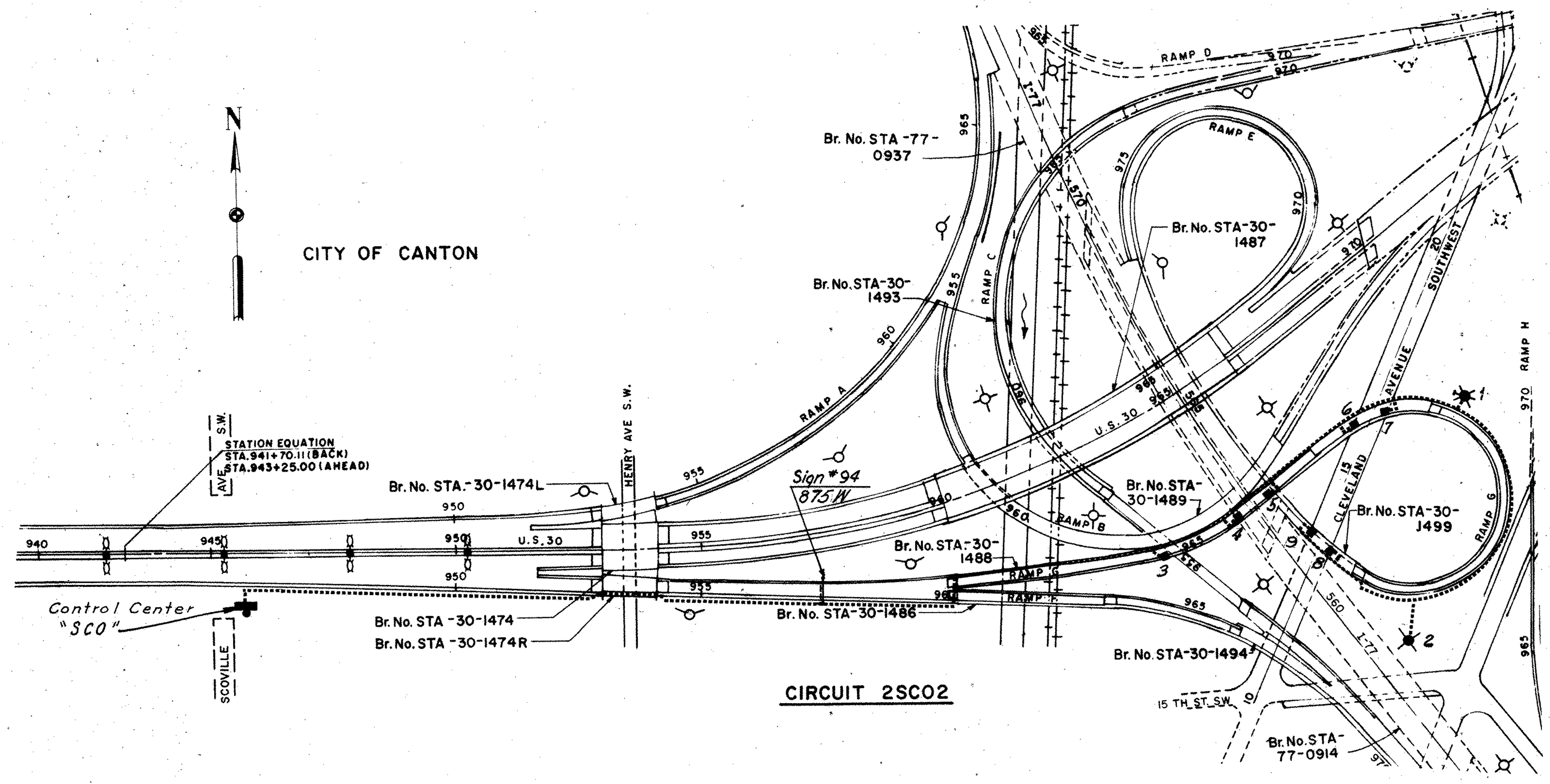
CIRCUIT LAYOUT MAP

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



CIRCUIT 2SC01



CIRCUIT 2SC02

FOR CONTROL CENTER DATA, SEE SHEET 147.

MADE WGP DATE 8-25-75
TRACED DBC DATE 8-26-75
CHECKED EFU DATE 10-8-76
SCALE 1" = 200'

Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO

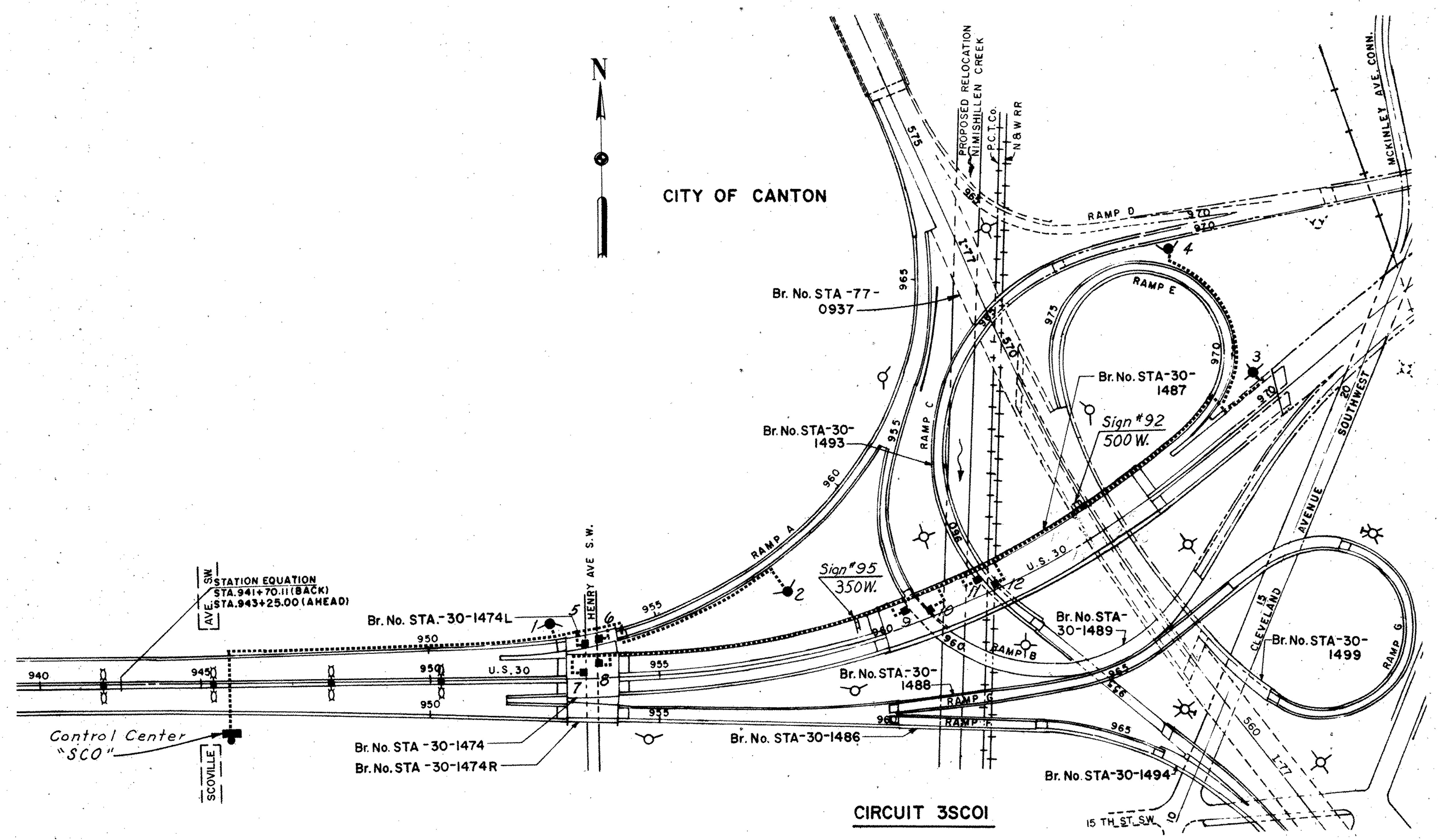
HNTB

200 0 200 400 600 800
SCALE IN FEET

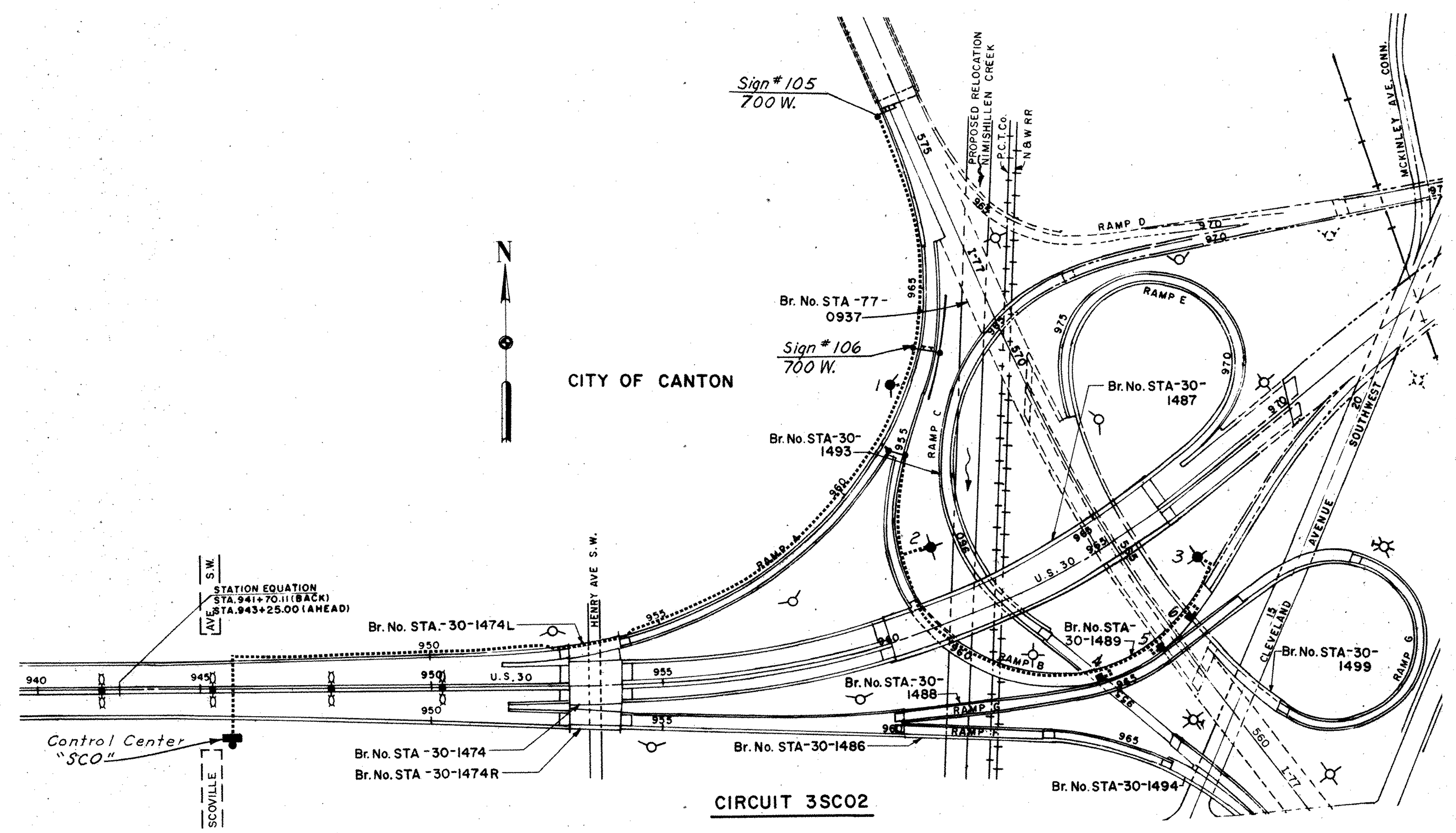
CIRCUIT LAYOUT MAP

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



CIRCUIT 3SC01



CIRCUIT 3SC02

FOR CONTROL CENTER DATA, SEE SHEET 147.

200 0 200 400 600 800
SCALE IN FEET

MADE WGP DATE 8-25-75
TRACED DBC DATE 8-26-75
CHECKED EFJ DATE 10-8-75
SCALE 1" = 200'

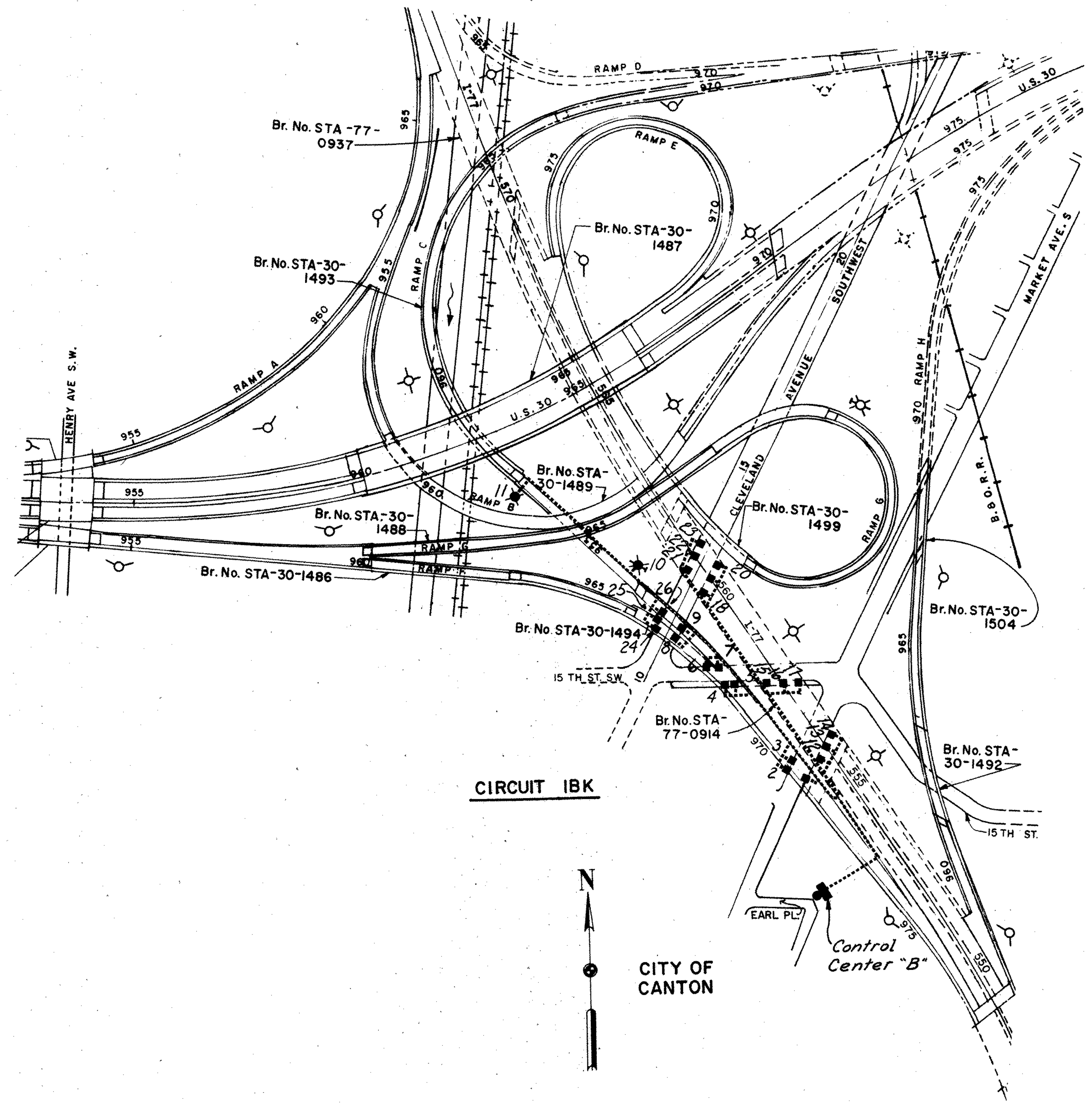
Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO

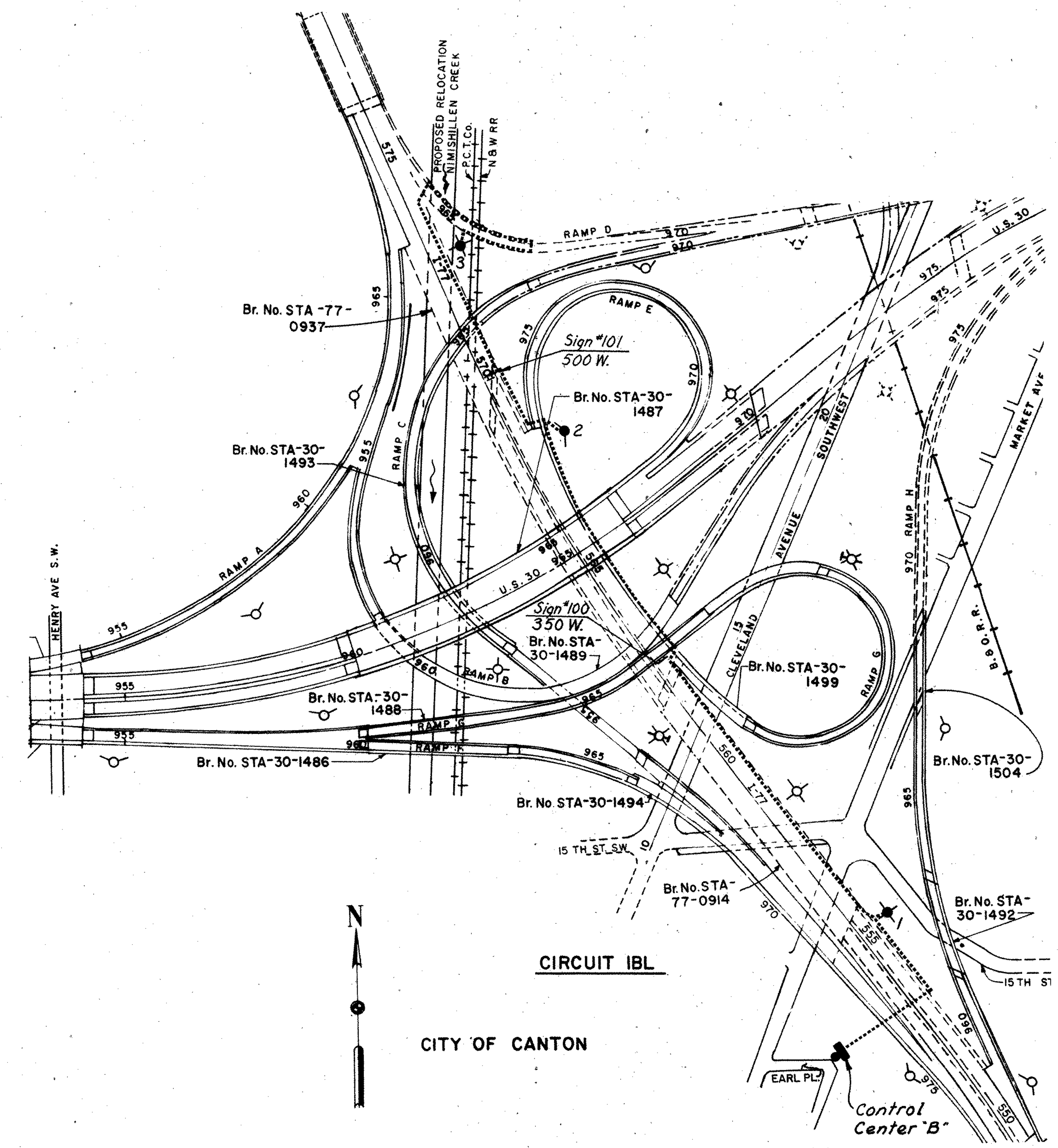
HNTB

CIRCUIT LAYOUT MAP

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			145 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22





FOR CONTROL CENTER DATA, SEE SHEET 147.

200 0 200 400 600 800
SCALE IN FEET

MADE WGP DATE 8-25-75
TRACED DBC DATE 9-26-75
CHECKED EFJ DATE 10-8-75
SCALE 1"=200'

Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO

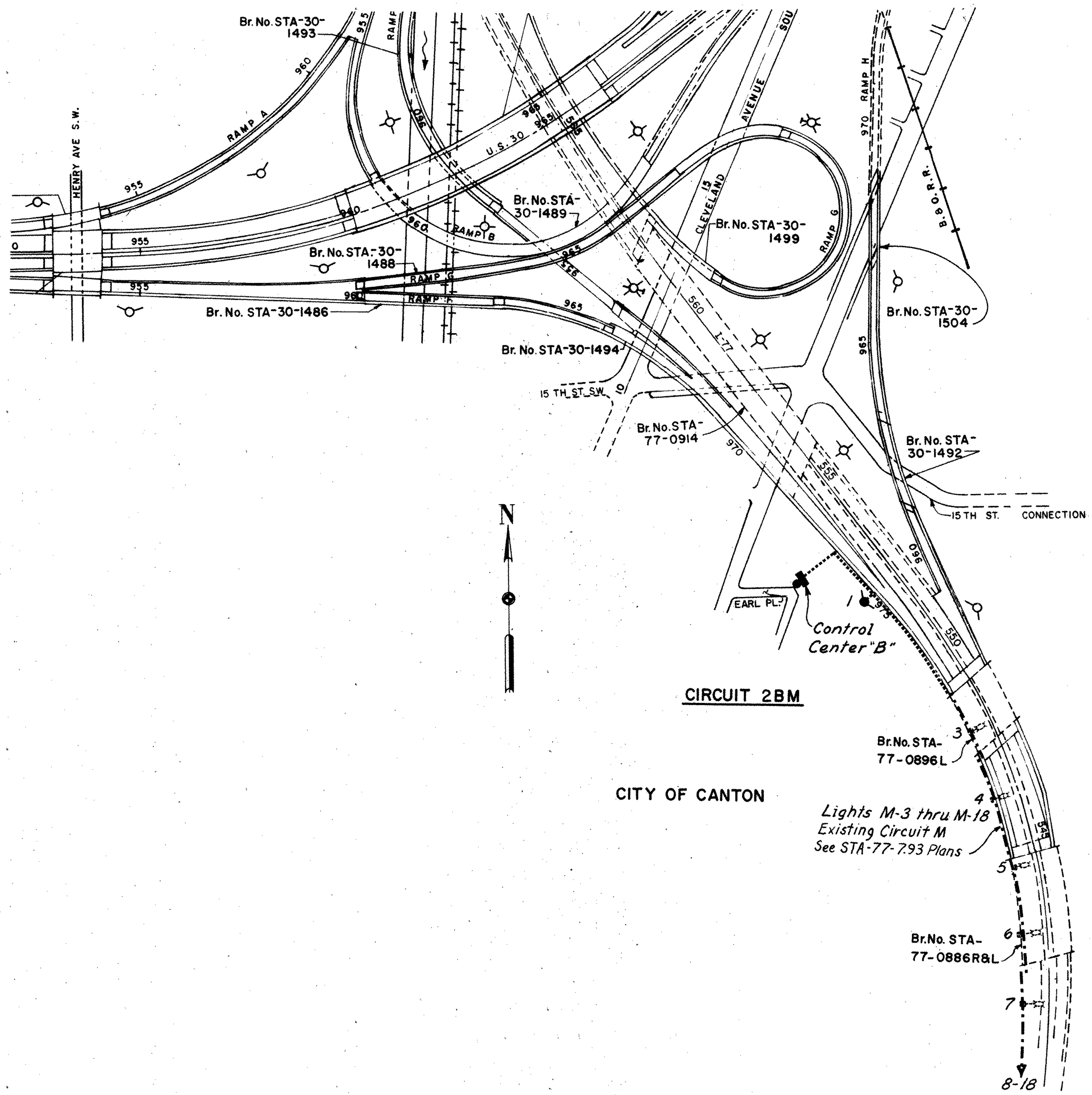
HNTB

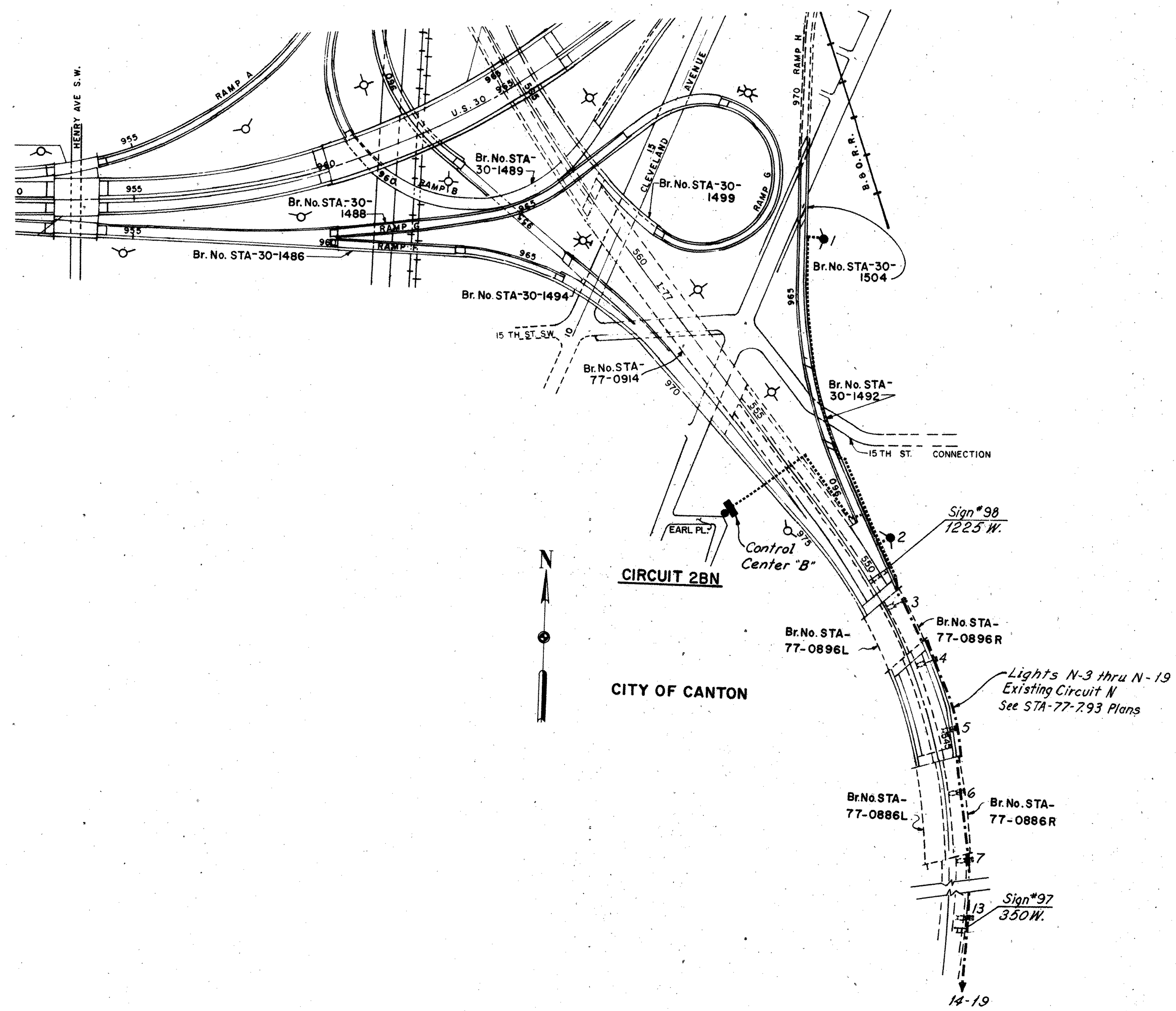
CIRCUIT LAYOUT MAP

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

146
389

STARK COUNTY
STA-30-14.12
STA-77-9.22





FOR CONTROL CENTER DATA, SEE SHEET 147.

200 0 200 400 600 800
SCALE IN FEET

MADE WGP DATE 8-25-75
TRACED DBC DATE 8-26-75
CHECKED EFJ DATE 10-8-75
SCALE 1"=200'

Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO

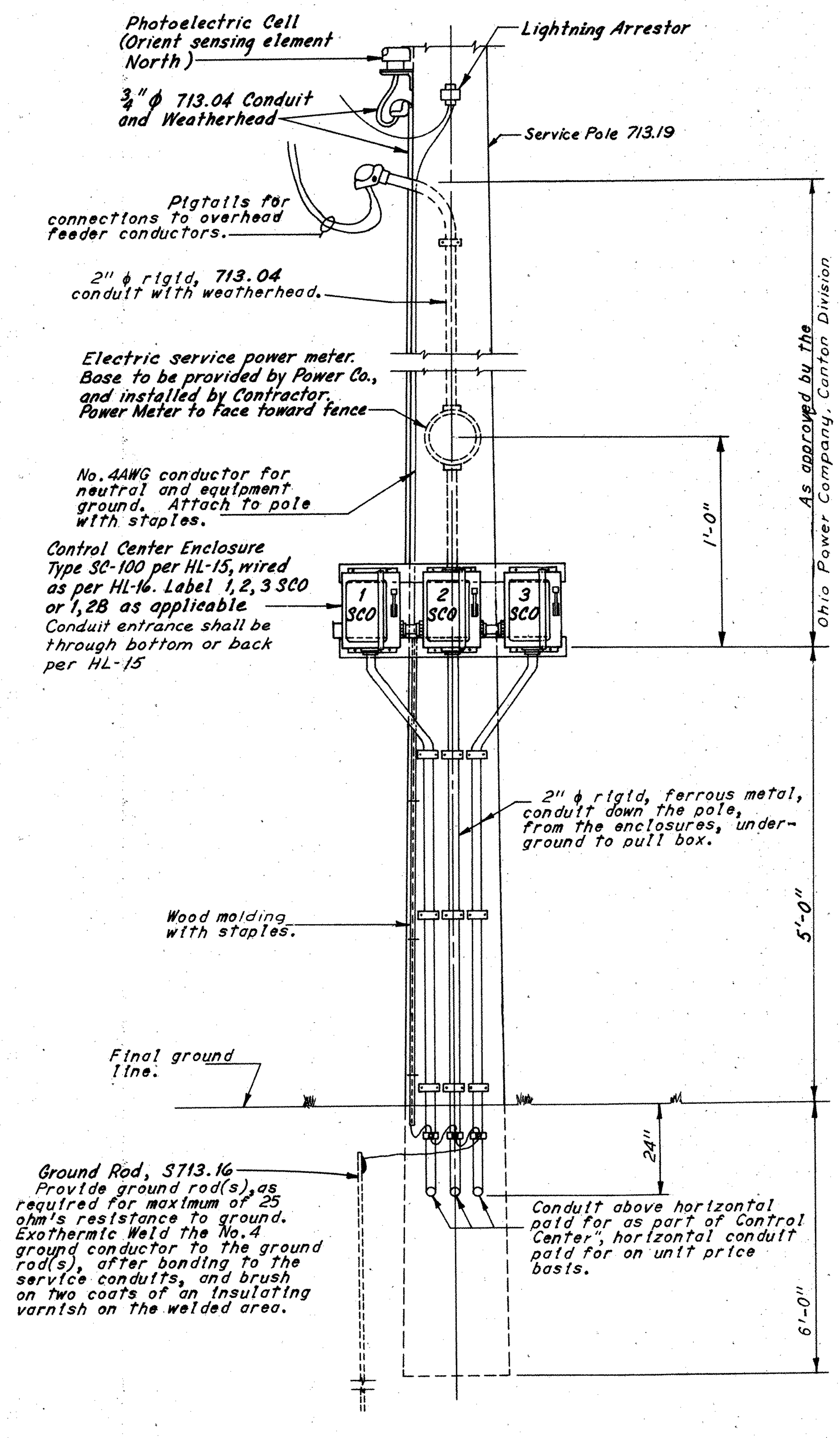
HNTB

CIRCUIT LAYOUT MAP

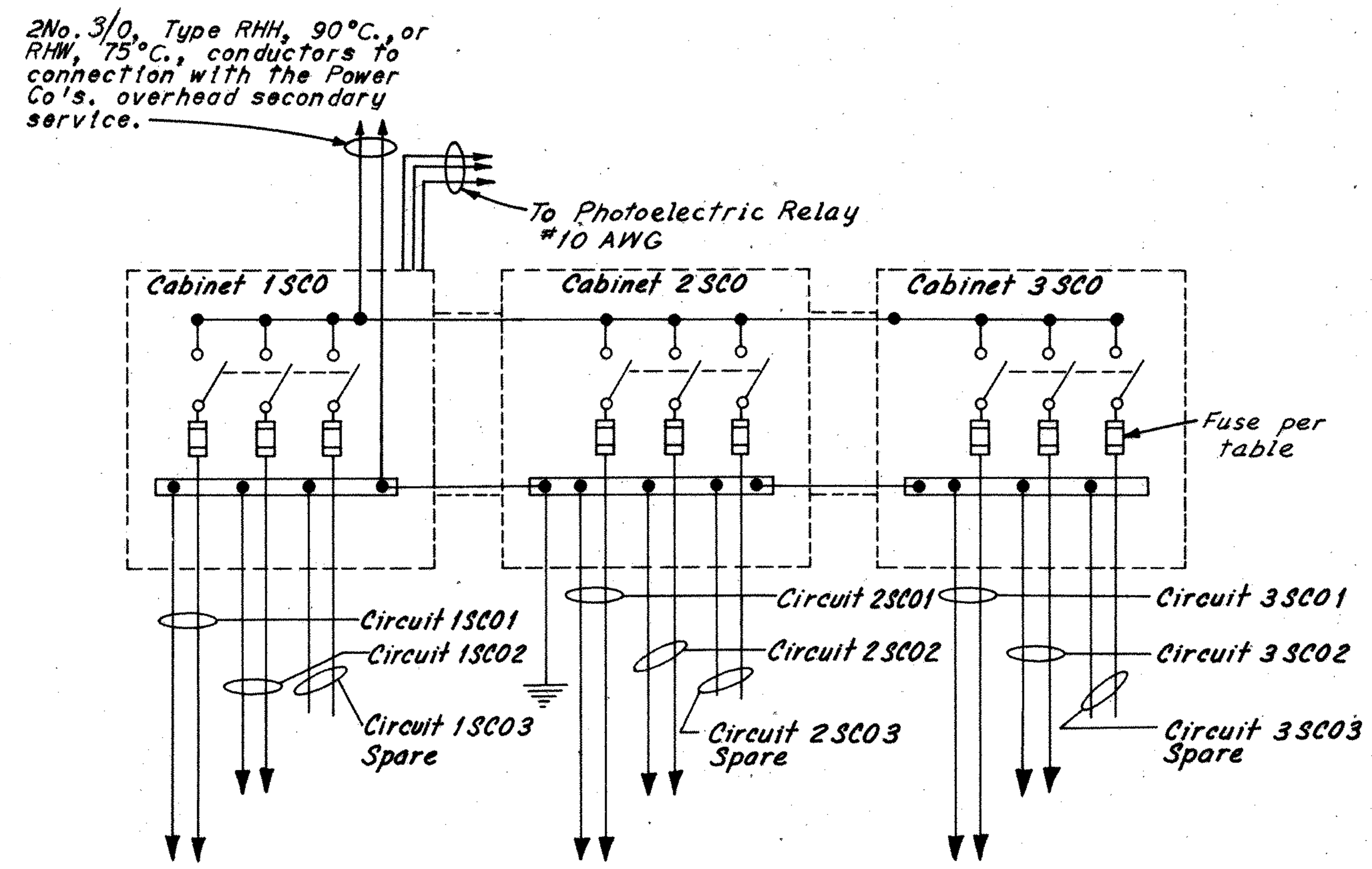
LIGHTING PLAN DETAILS

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

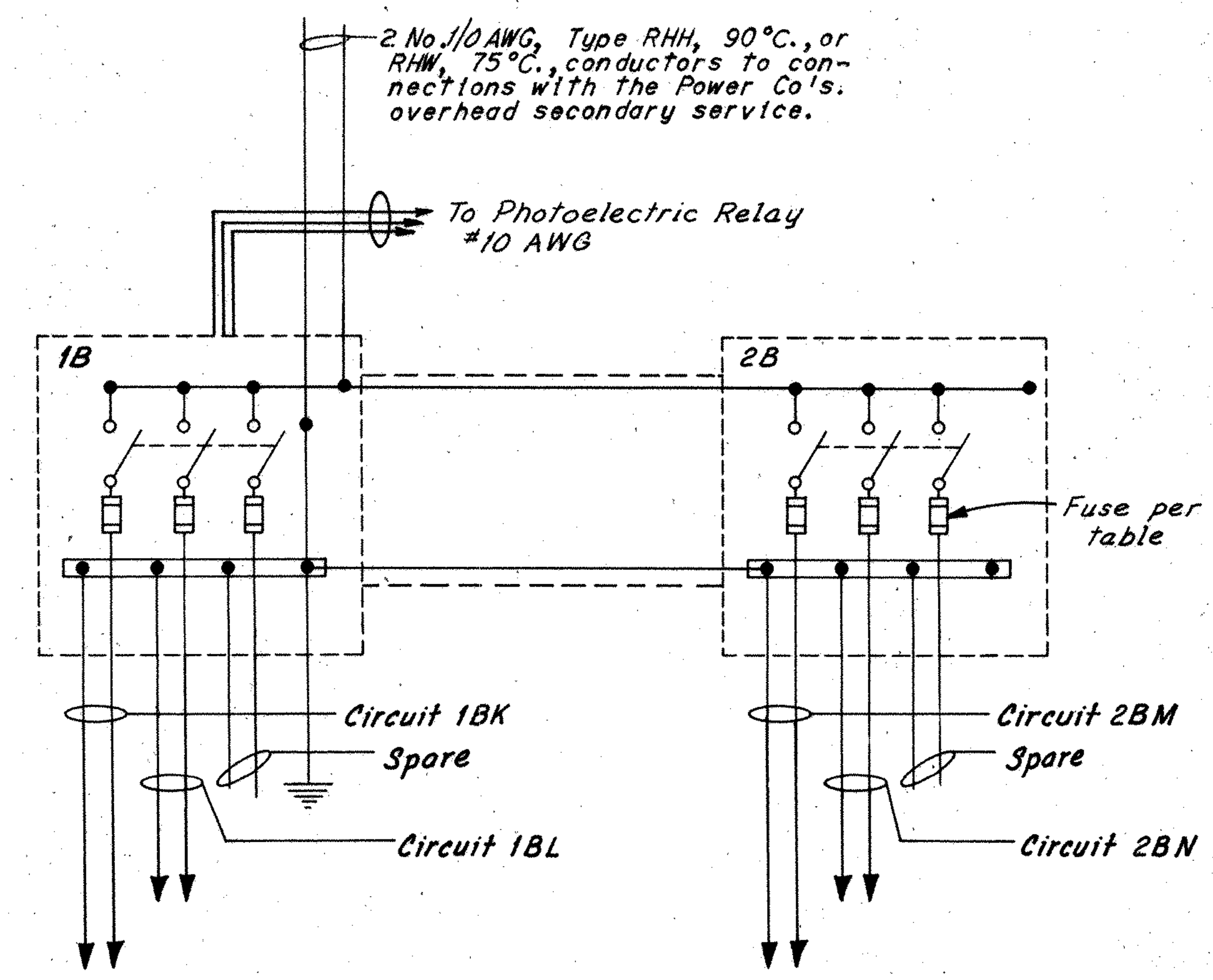
STARK COUNTY
STA-30-14.12
STA-77-9.22



SERVICE POLE AND CONTROL CENTER DETAIL
No Scale



WIRING DIAGRAM CONTROL CENTER SCO
(Initial connected load is 71.9 Kva.)



WIRING DIAGRAM CONTROL CENTER B
(Initial connected load is 52.9 Kva.)

NOTE: Refer to Standard Drawing HL-16 for detailed wiring diagram, GIVING THE CONTACTORS AND ADDITIONAL DETAILS NOT SHOWN IN THESE WIRING DIAGRAMS BUT NECESSARY.

CONTROL CENTER DATA

CENTER / CIRCUIT	LOCATION	SECONDARY VOLTAGE (VOLTS)	SECONDARY LOAD (KVA)	SECONDARY XFMR. (KVA)	SECONDARY CABLE (AWG)	SERVICE SWITCH (TYPE)	LAMP TYPE 175 W MET. HAL. 0.5A. Ea.	LAMP TYPE 250 W MET. HAL. 0.7A. Ea.	LAMP TYPE 400 W MET. HAL. 1.0A. Ea.	LAMP TYPE 1000 W MET. HAL. 2.4A. Ea.	SIGN LOAD (WATTS)	CIRCUIT LOAD (AMPS)	CIRCUIT FUSES (AMPS)	CIRCUIT DROP (%)	NOTES
1SCO	946+50 ℄ U.S. 30	480	22.1		3/0	SC-30/60						46.0			
1SCO-1			10.8				6	4	13	–	1725	22.5	30	2.88	
1SCO-2			11.3				6	5	14	–	1400	23.5	30	2.63	
1SCO-3													30		SPARE
2SCO	946+50 ℄ U.S. 30	480	21.9			SC-30/60						45.6			
2SCO-1			9.0				14	–	–	4	1000	18.7	25	1.35	
2SCO-2			12.9				7	–	–	9	875	26.9	35	4.86	
2SCO-3													25		SPARE
3SCO	946+50 ℄ U.S. 30	480	27.9			SC-30/60						58.2			
3SCO-1			14.3				8	–	–	10	850	29.8	35	3.68	
3SCO-2			13.6				3	–	–	10	1400	28.4	35	4.13	
3SCO-3													35		SPARE
1B	553+25 ℄ I-77	480	28.5		1/0	SC-30/60						59.5			
1BK			16.1				24		–	9	–	33.6	40	3.16	
1BL			12.4				–			10	850	25.9	35	3.50	
													40		SPARE
2B	553+25 ℄ I-77	480	24.4			SC-30/60						50.7			
2BM			10.0				–	–	16*	2	–	20.8	25	3.42	
2BN			14.4				–	–	17*	4	1575	29.9	35	4.36	
													35		SPARE
									*400W						
									Clr. Mer.						

MADE E.F.J. DATE 8-27-75
TRACED [illegible] DATE 8-28-75
CHECKED E.F.J. DATE 10-13-75
SCALE As Shown

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CLEVELAND, OHIO

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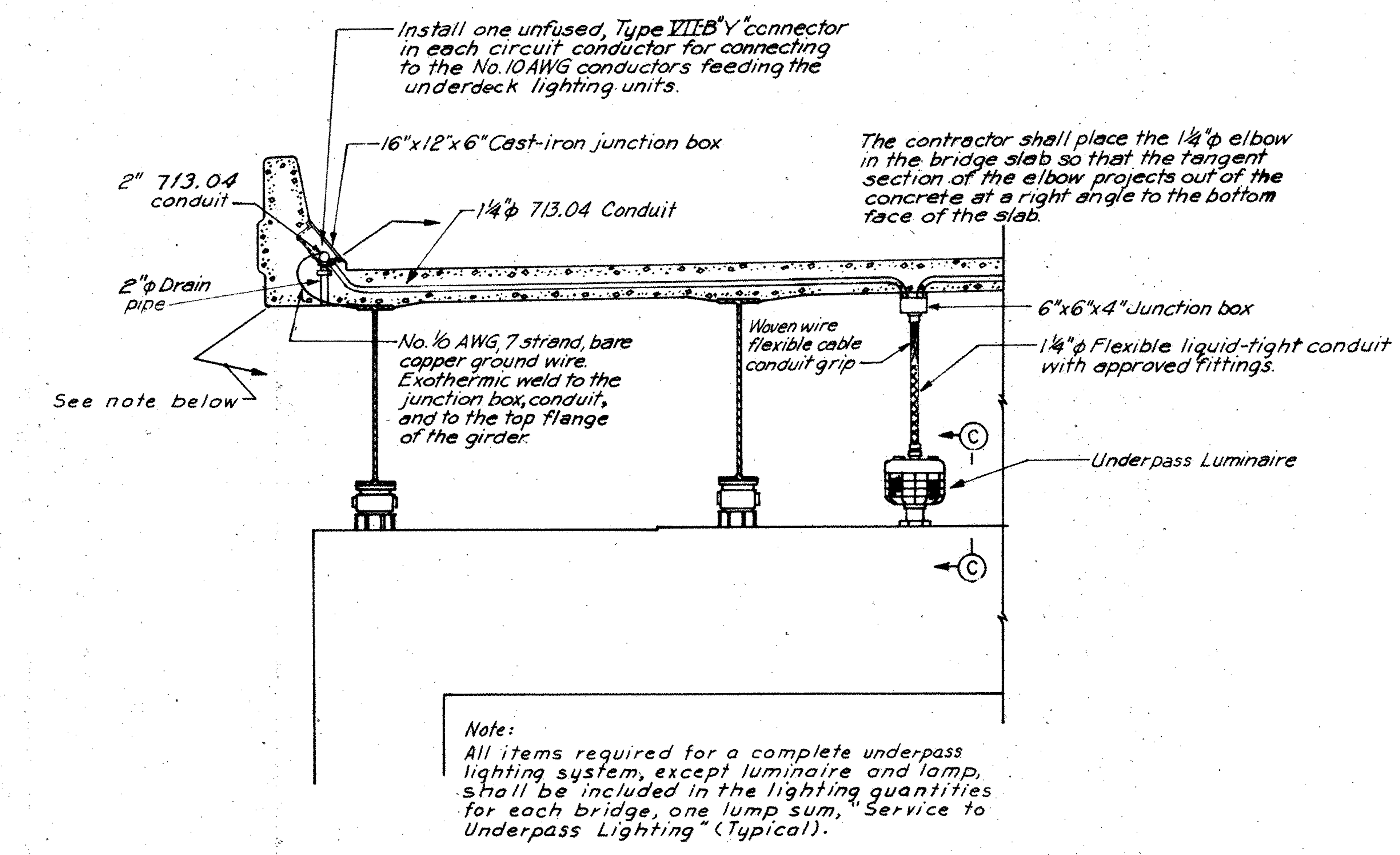
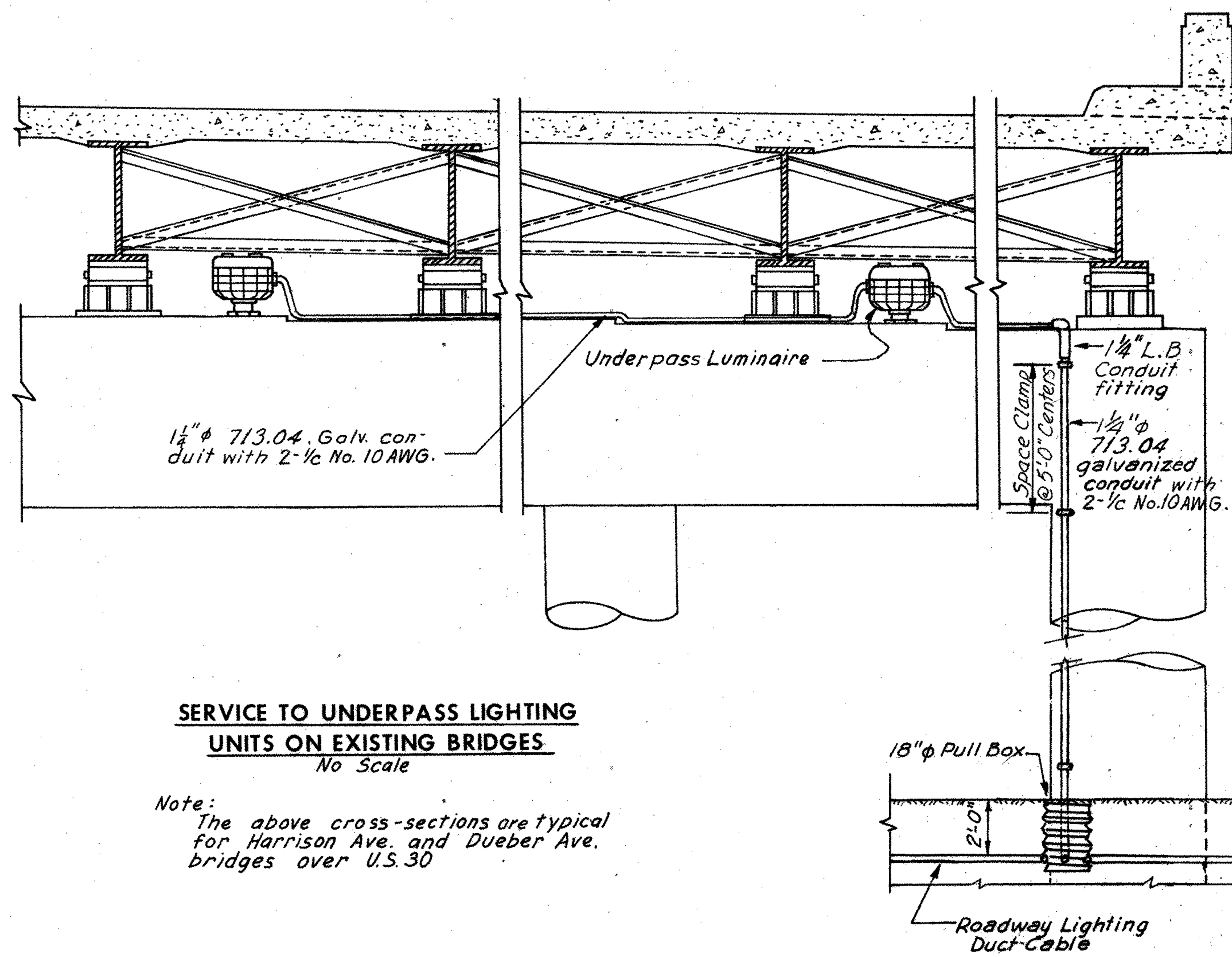
CONTROL CENTER

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			148/389

STARK COUNTY
STA-30-14.12
STA-77-9.22

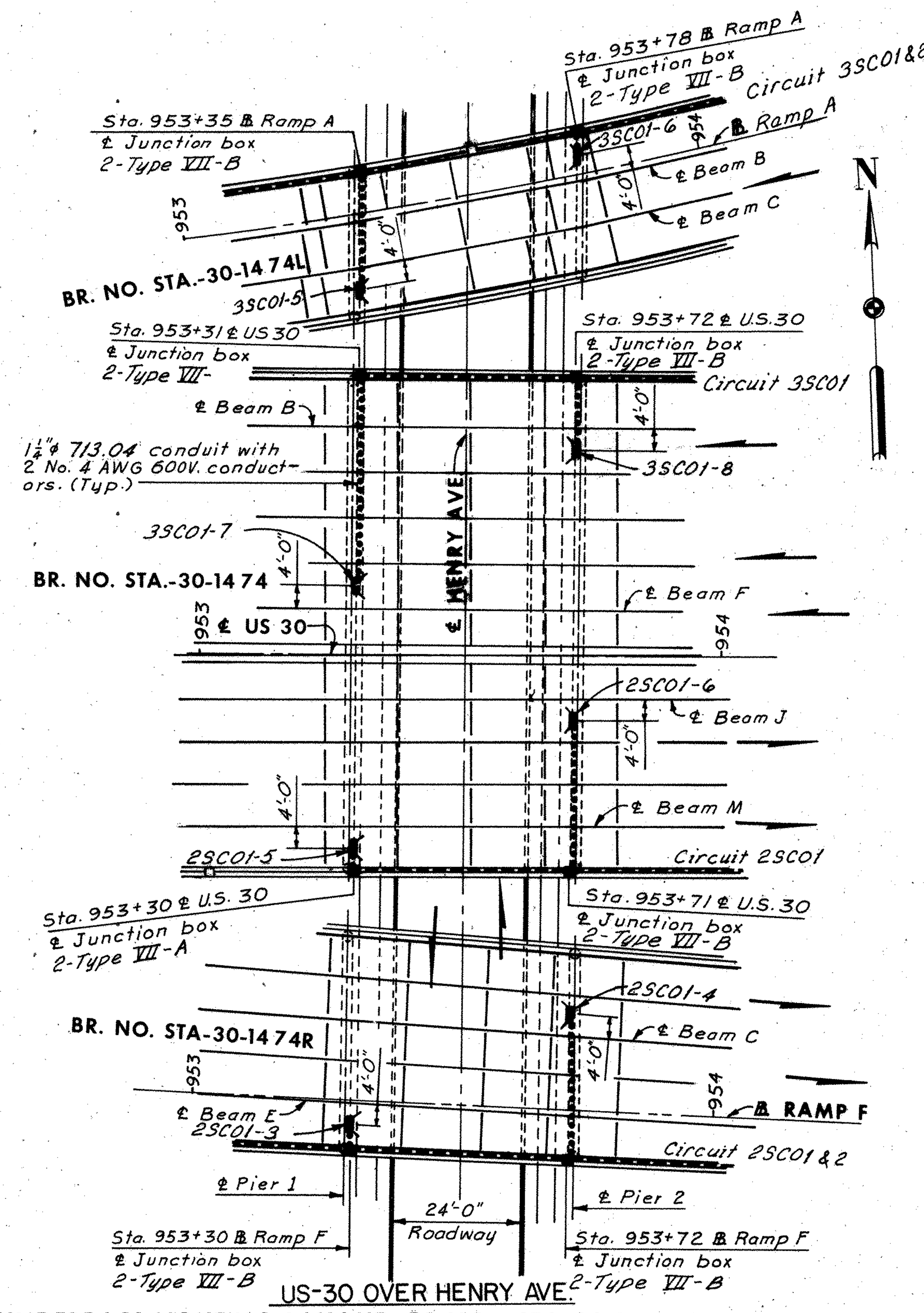


UNDERPASS LIGHTING UNIT ON PIER CAP, TYPE "A" MOUNTING
Scale: 3/8" = 1'-0"



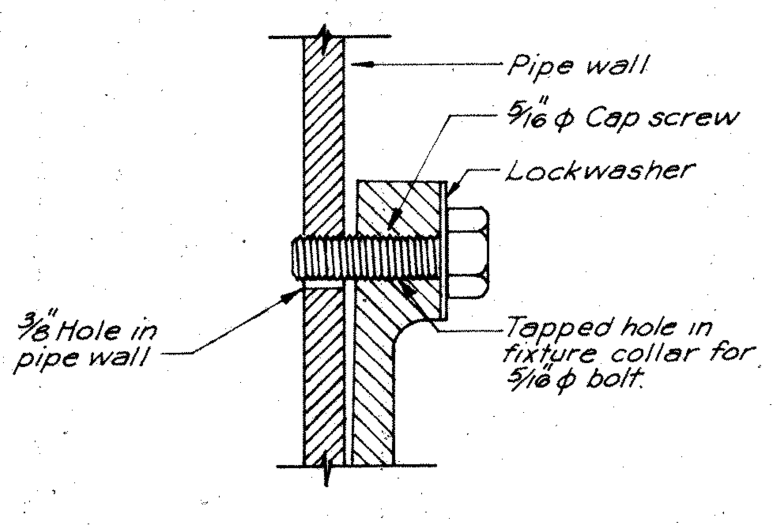
SERVICE TO UNDERPASS LIGHTING UNITS ON EXISTING BRIDGES
No Scale

Note:
The above cross-sections are typical for Harrison Ave. and Dueber Ave. bridges over U.S. 30

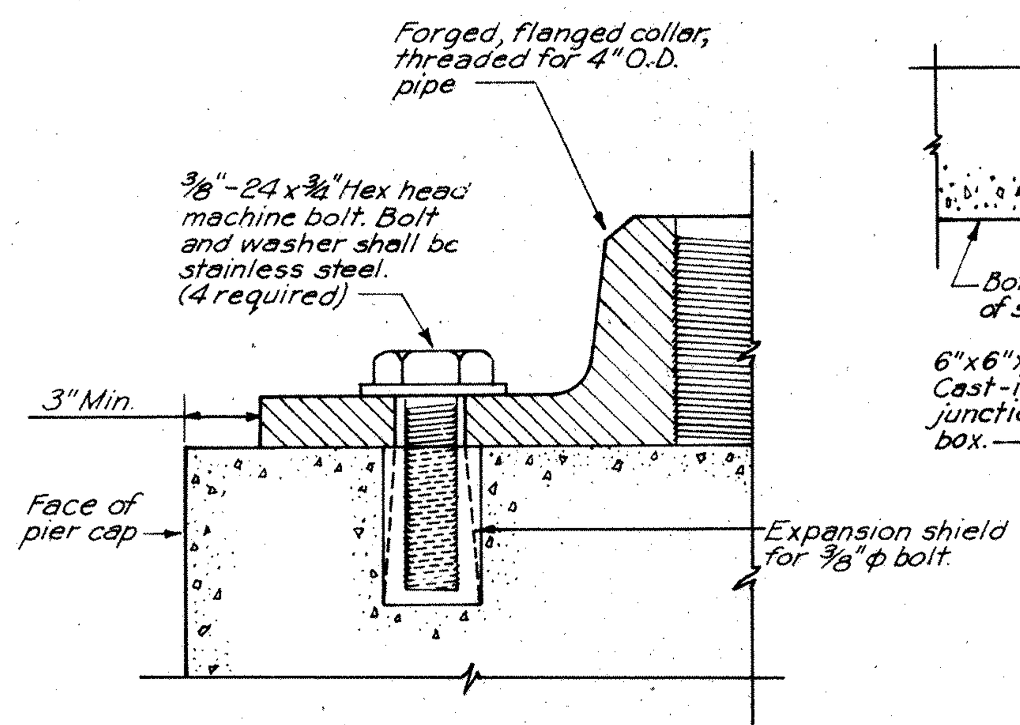


UNDERPASS LIGHTING LAYOUT BR. NO. STA-30-1474L, 1474 AND 1474R
Scale: 1" = 20'

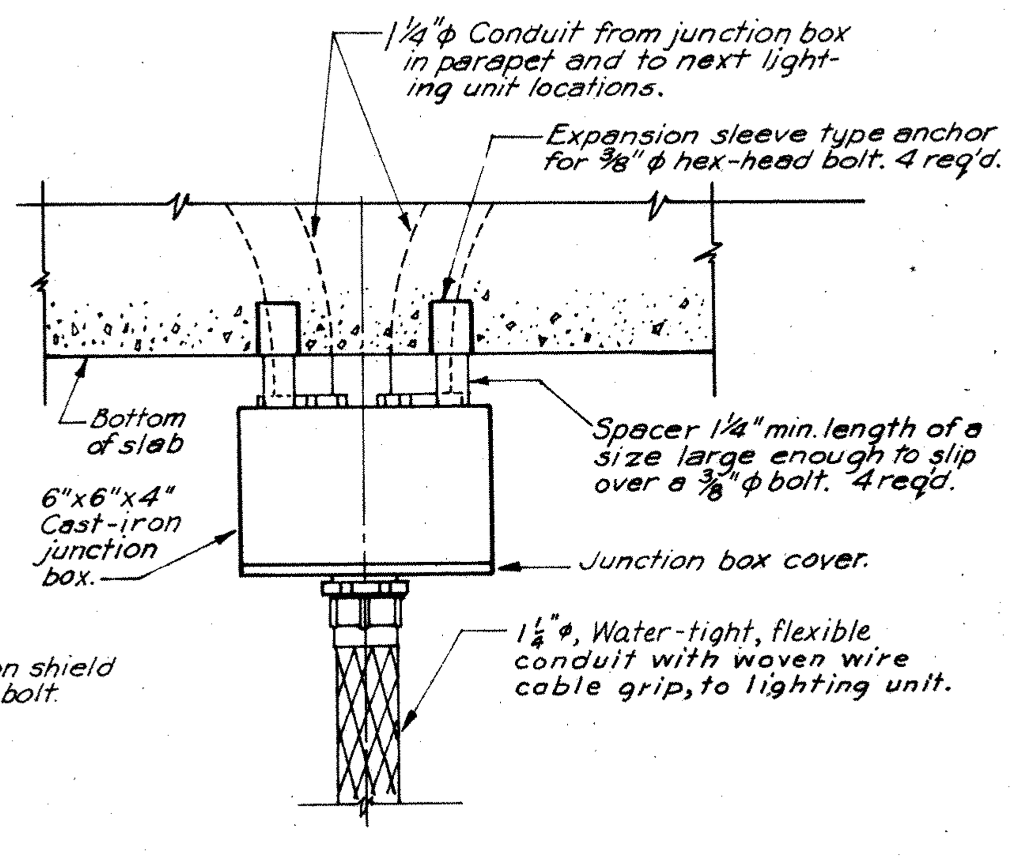
Note: Type A underpass lighting units mounted on pier cap as shown on detail this sheet.



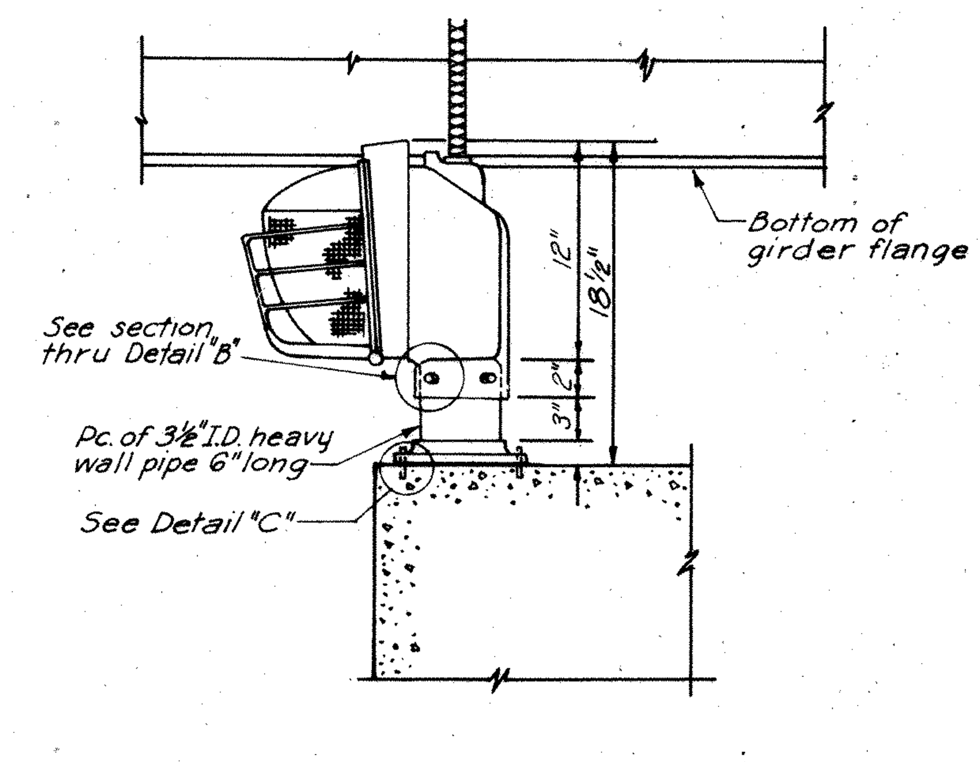
SECTION THRU DETAIL "B"
Full Scale



DETAIL "C"
No Scale



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



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

MADE EFJ DATE 8-25-75
TRACED JAG DATE 8-28-75
CHECKED EFJ DATE 10-9-75
SCALE As Shown

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CLEVELAND, OHIO

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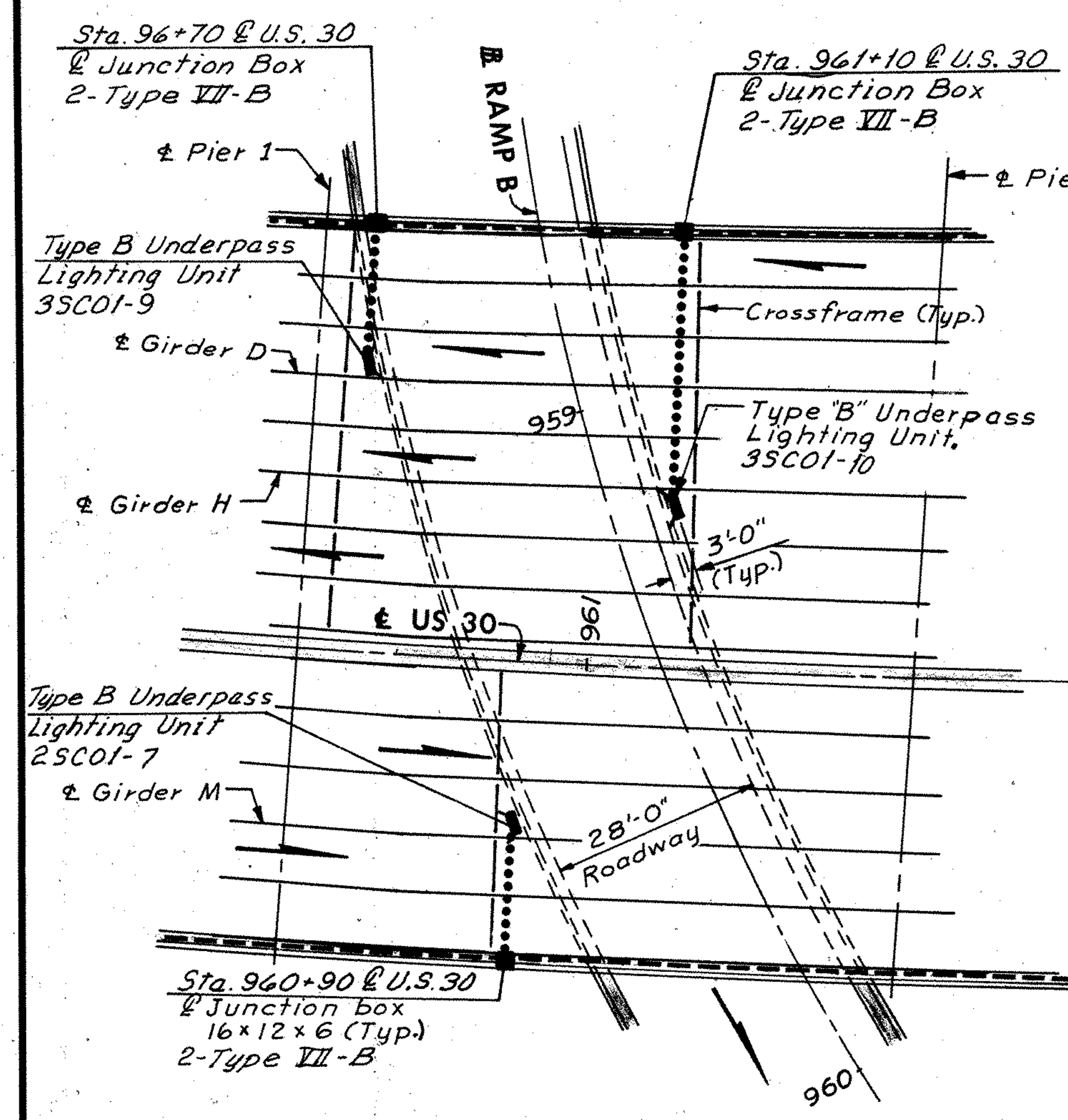
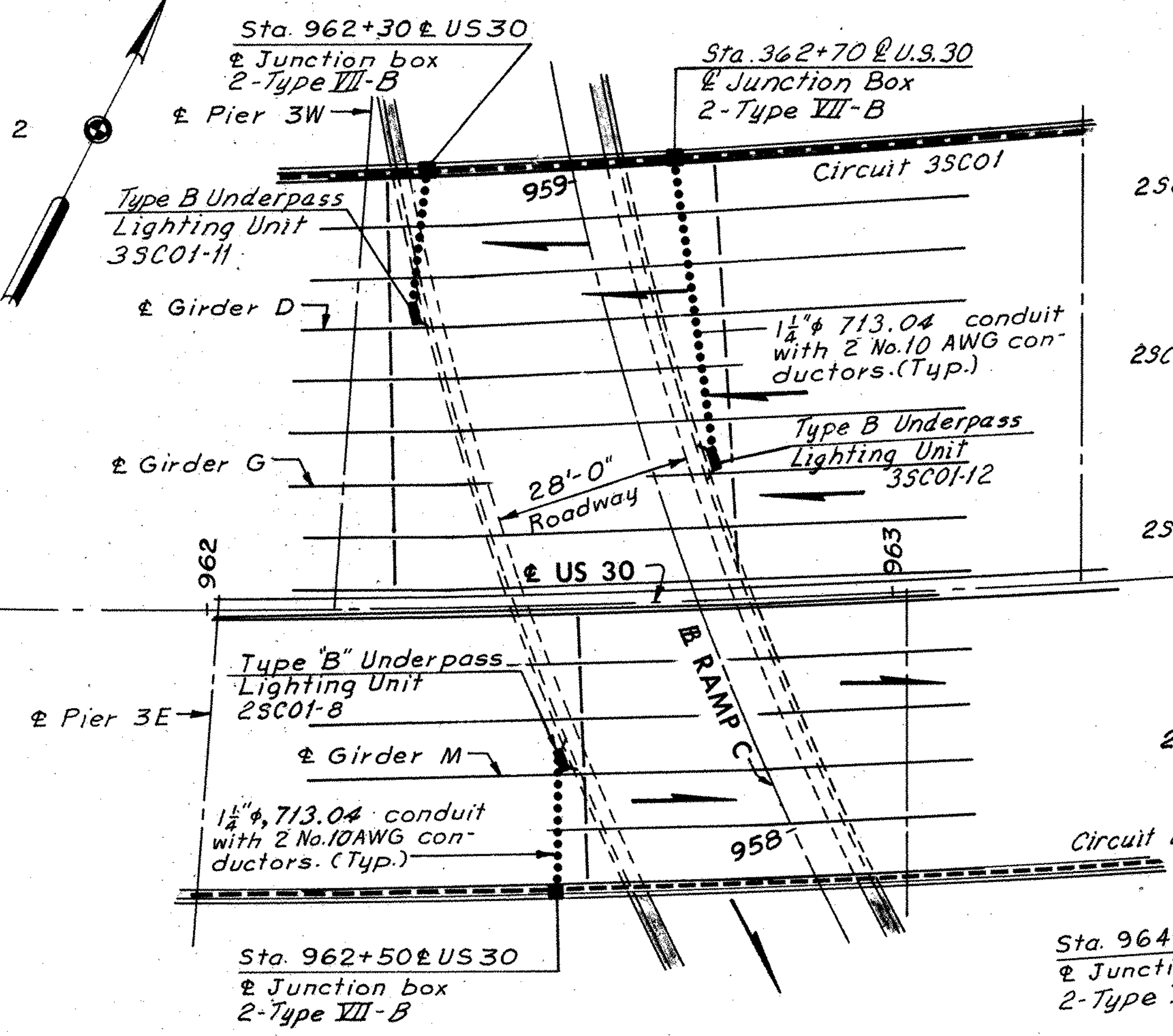
UNDERPASS LIGHTING DETAILS

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

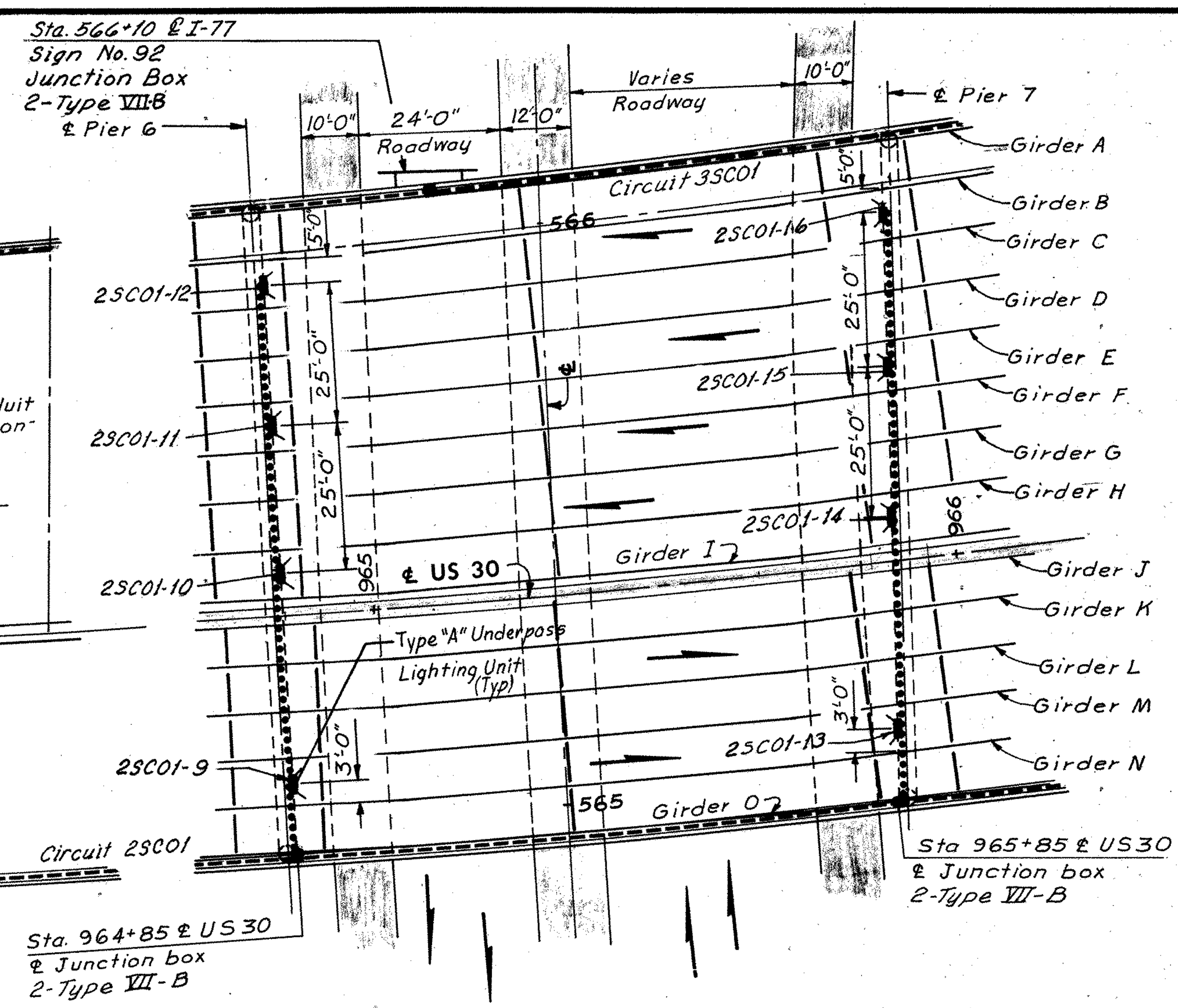
STARK COUNTY
STA-30-14.12
STA-77-9.22



U S 30 OVER RAMP B

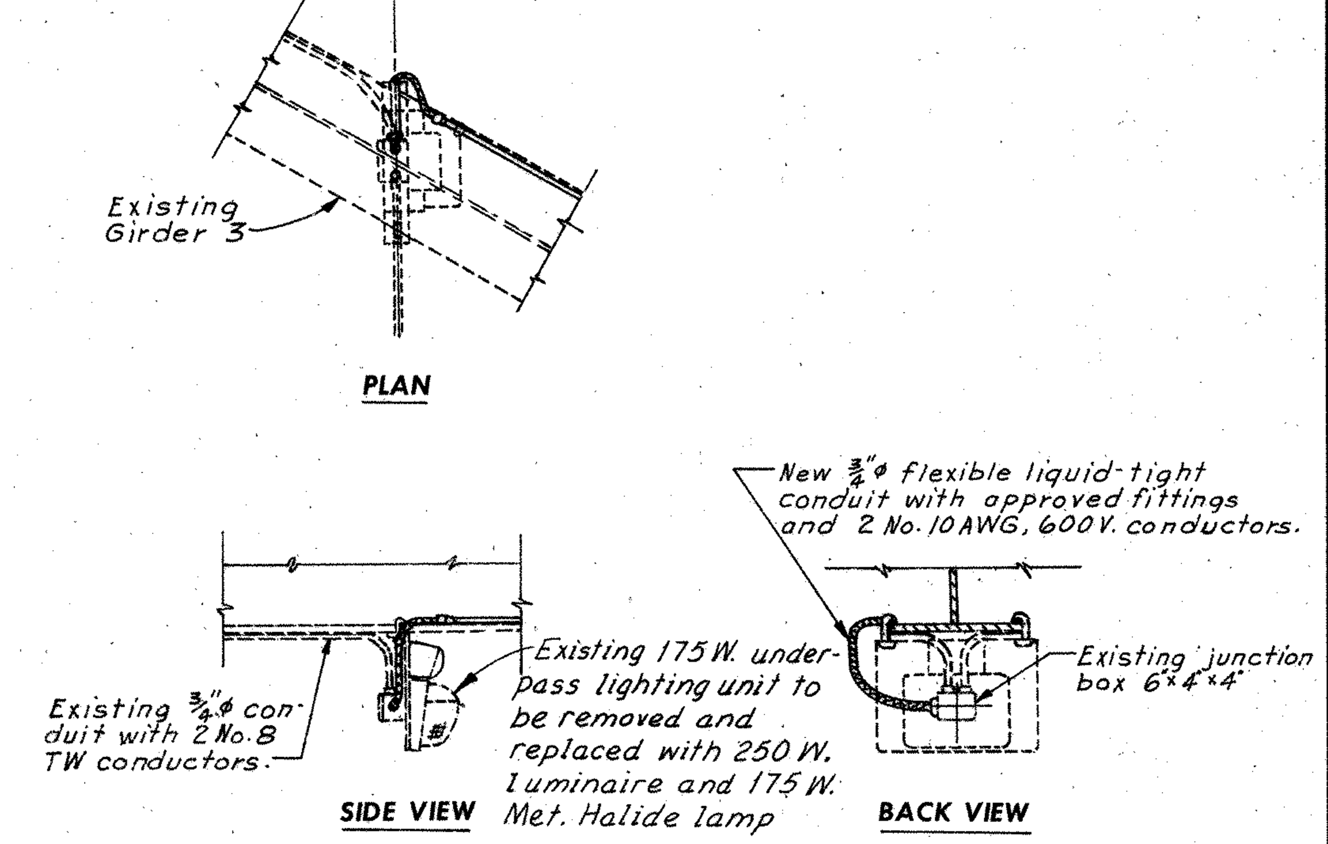


U S 30 OVER RAMP C



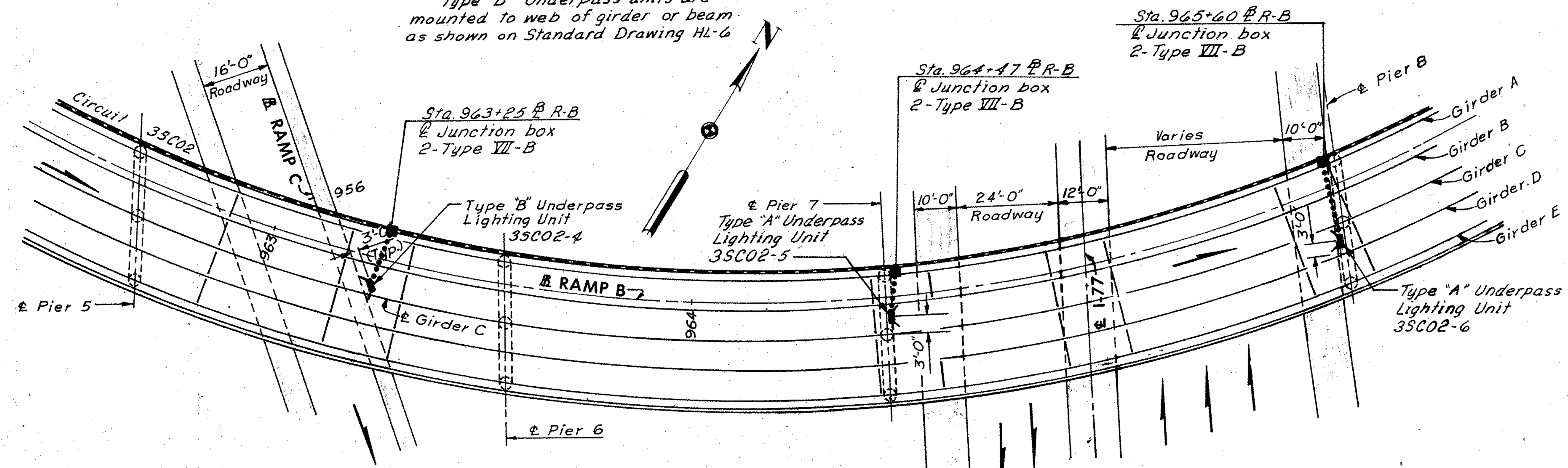
U S 30 OVER I-77

UNDERPASS LIGHTING LAYOUT, BR.NO. STA-30-14 87
Scale: 1" = 20'



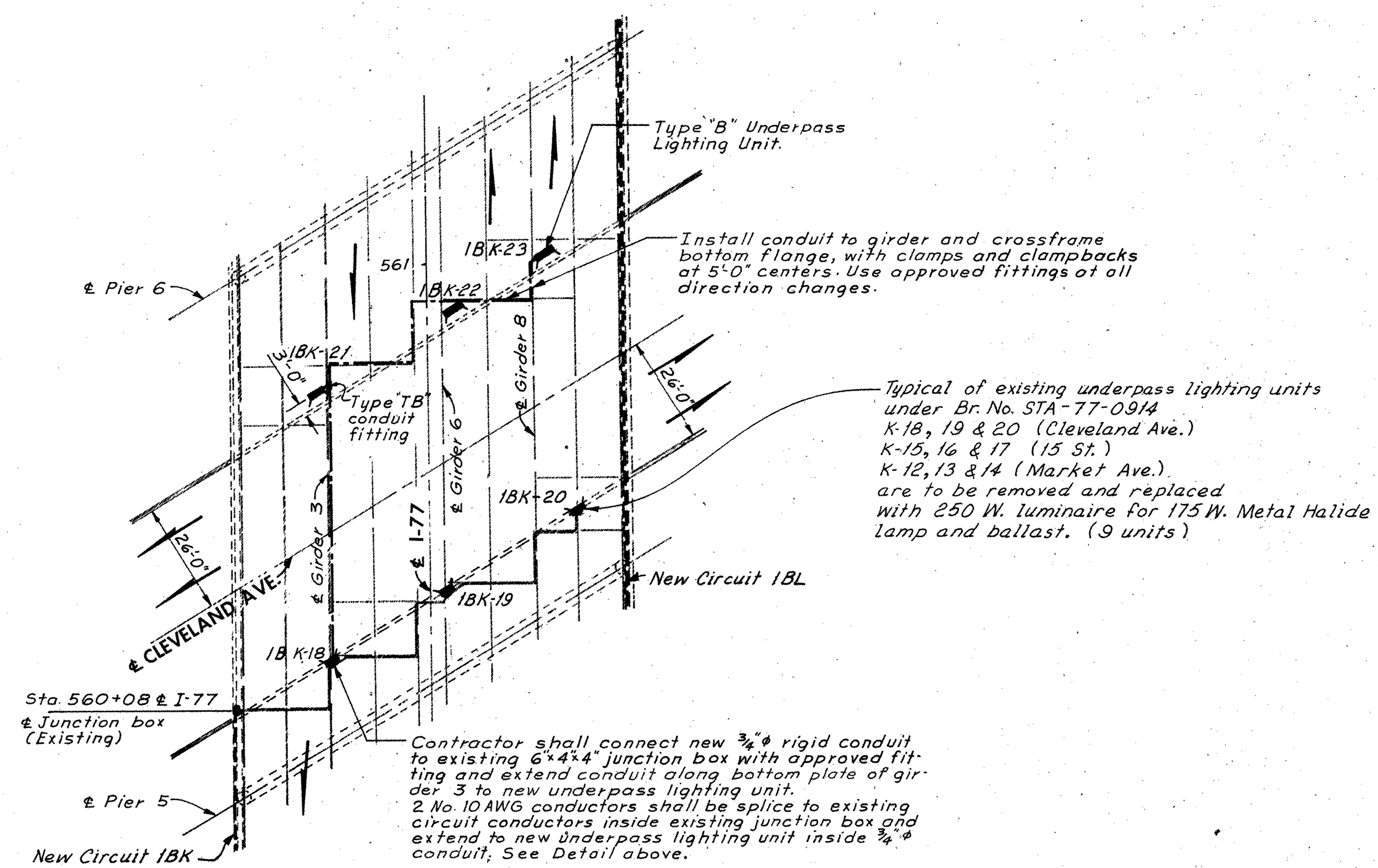
EXISTING UNDERPASS LIGHTING UNIT
No Scale

Type "A" Underpass units are mounted on pier cap as shown on detail sheet 148.
Type "B" Underpass units are mounted to web of girder or beam as shown on Standard Drawing HL-6



RAMP B OVER RAMP C **RAMP B OVER I-77**

UNDERPASS LIGHTING LAYOUT, BR.NO. STA.-30-14 89
Scale: 1" = 20'



EXISTING I-77 OVER CLEVELAND AVE.

UNDERPASS LIGHTING LAYOUT, BR.NO. STA-77-09 14
Scale: 1" = 20'

MADE EFJ DATE 8-21-75
TRACED TAK DATE 8-21-75
CHECKED EFJ DATE 10-9-75
SCALE 1" = 20'

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CLEVELAND, OHIO

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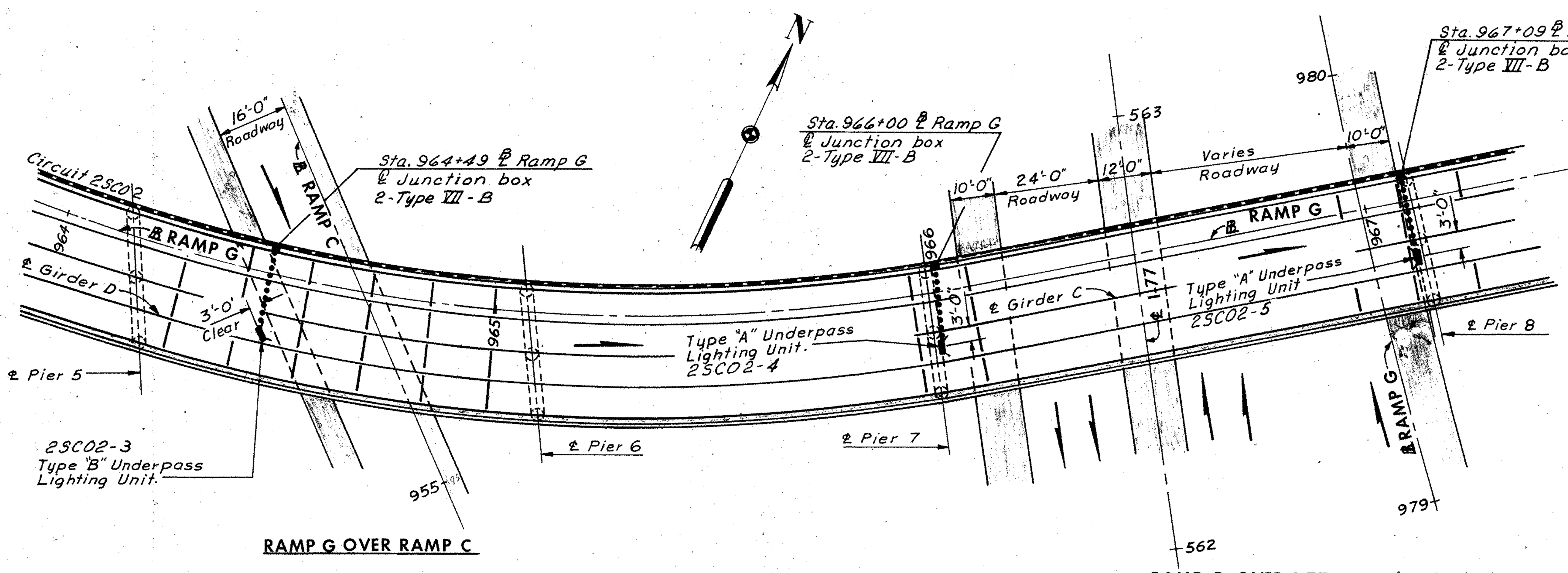
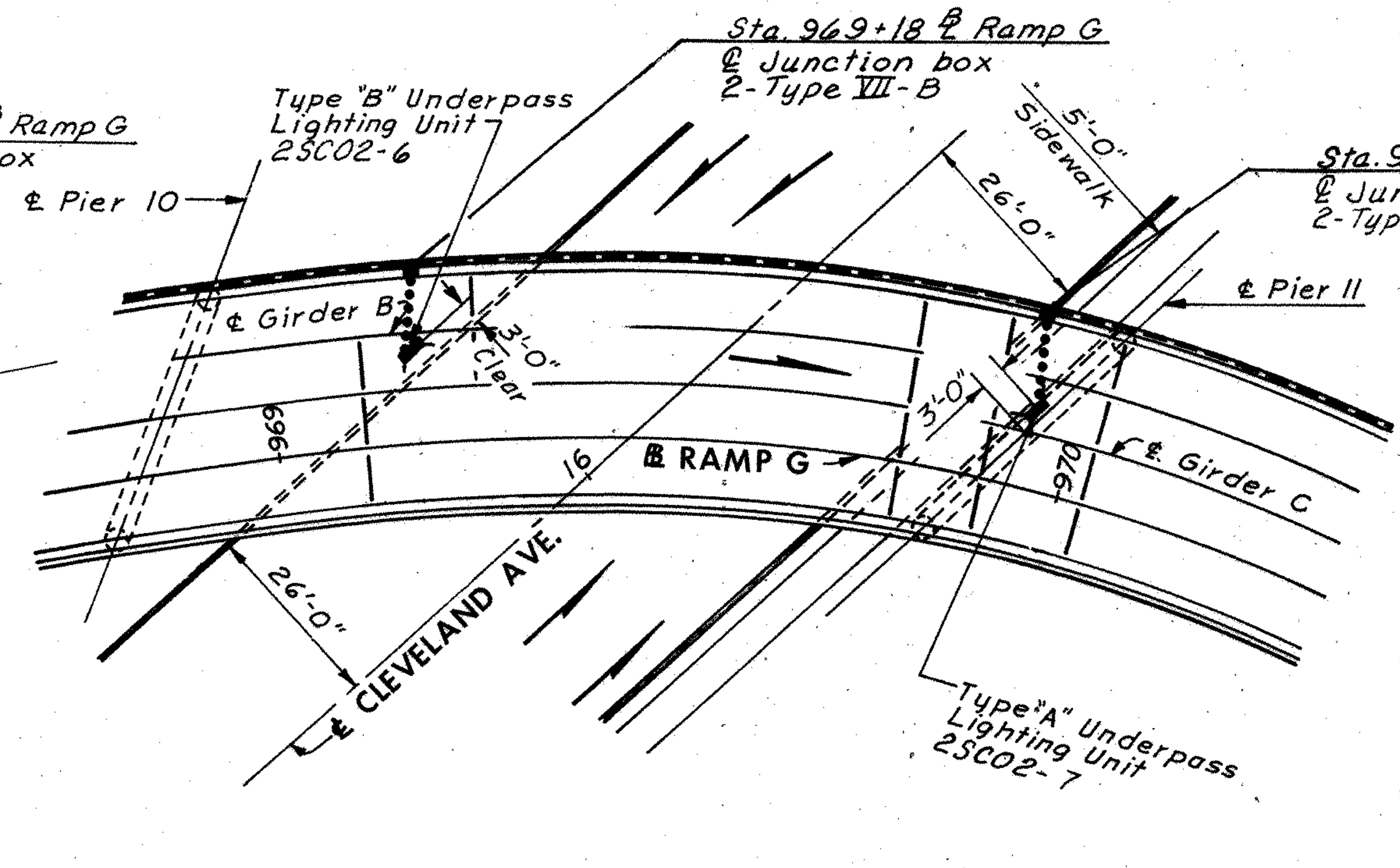
UNDERPASS LIGHTING LAYOUT



RAMP G OVER RAMP C

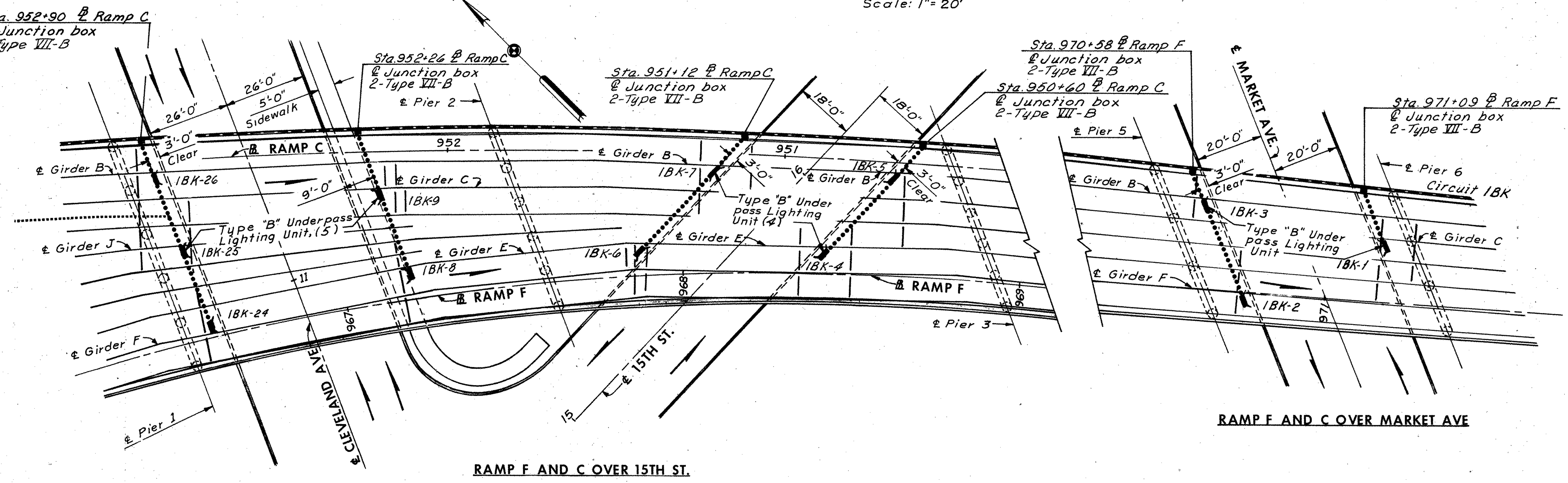
RAMP G OVER I-77



RAMP G OVER CLEVELAND AVE.

UNDERPASS LIGHTING LAYOUT, BR.NO. STA.-30-14 88

Scale: 1" = 20'



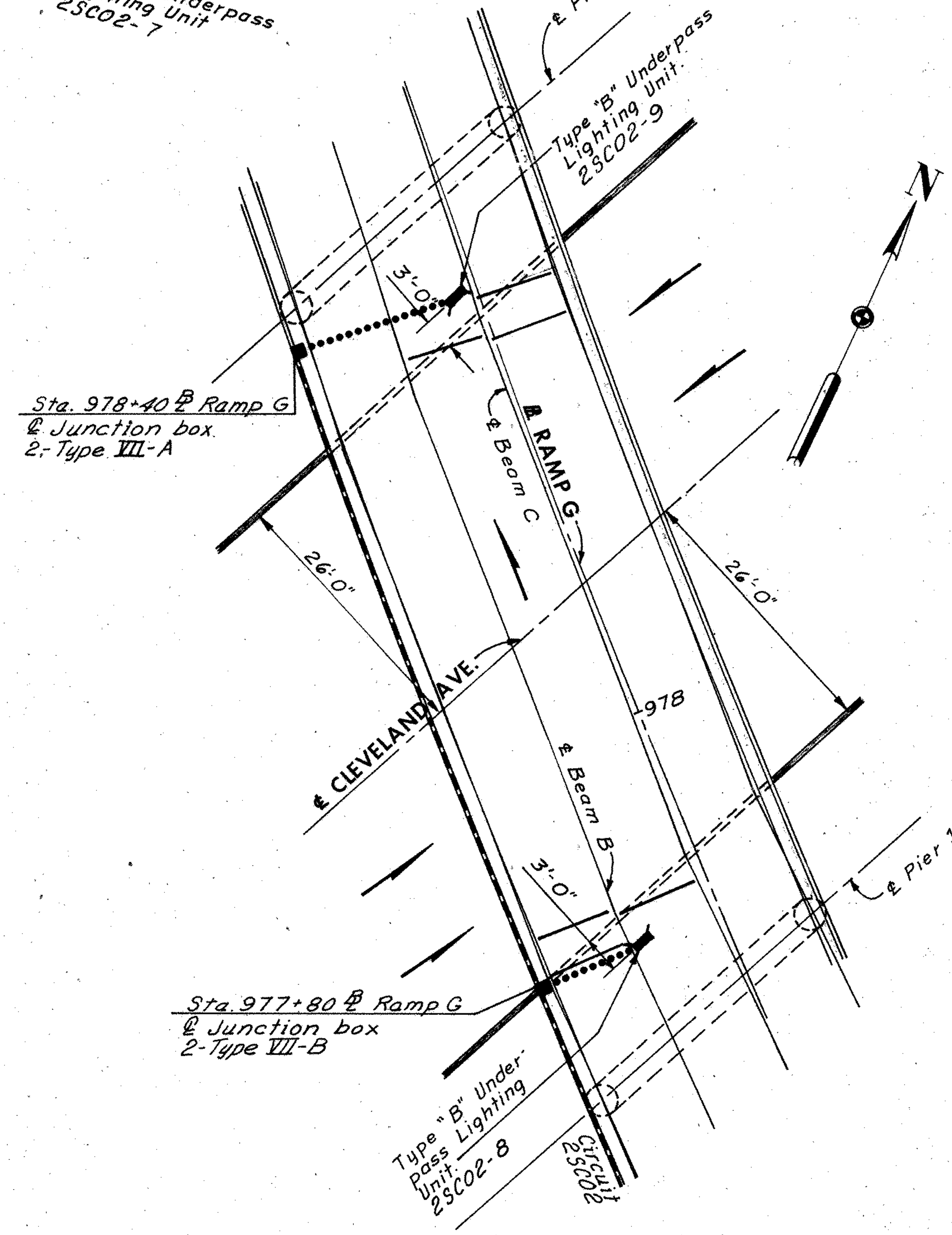
RAMP F AND C OVER 15TH ST.

RAMP F AND C OVER MARKET AVE

RAMP F AND C OVER CLEVELAND AVE.

UNDERPASS LIGHTING LAYOUT, BR.NO. STA.-30-14 94

Scale: 1" = 20'



RAMP G OVER CLEVELAND AVE.

UNDERPASS LIGHTING LAYOUT, BR.NO. STA.-30-14 99

Scale: 1" = 10'

NOTE:
Type "A" underpass units are mounted on pier cap as shown on detail sheet 148.
Type "B" underpass units are mounted to web of girder or beam as shown on Standard Drawing HL-6.

MADE EFJ DATE 8-21-75
TRACED TAK DATE 8-21-75
CHECKED EFJ DATE 10-9-75
SCALE 1" = 20'

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CLEVELAND, OHIO

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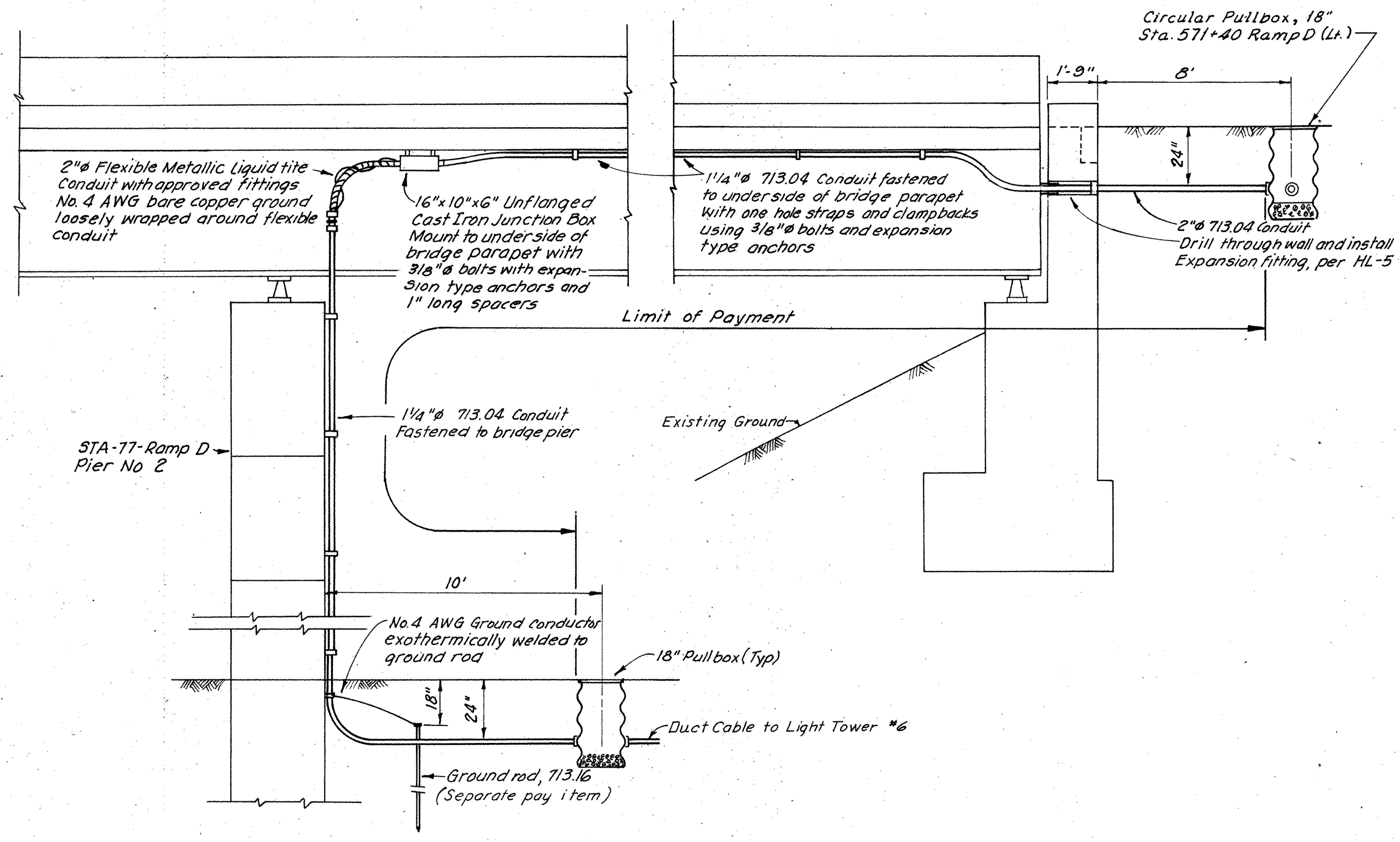
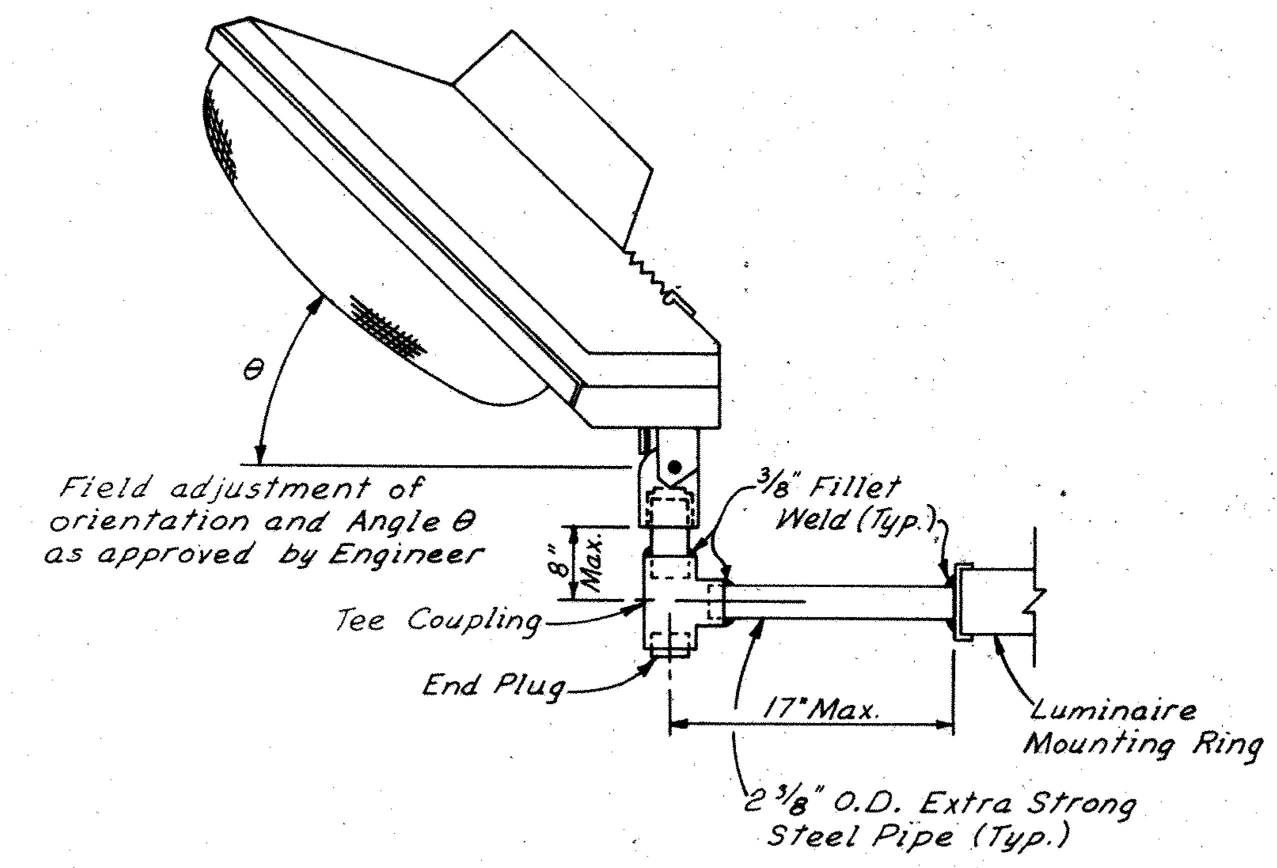
UNDERPASS LIGHTING LAYOUT



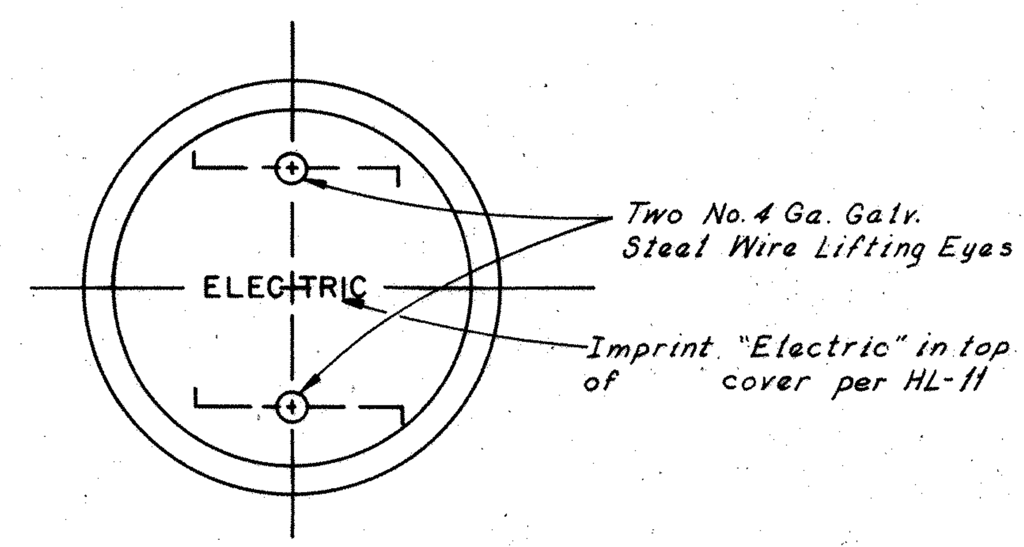
SERVICE TO LIGHT TOWER NO. 6
Scale: 3/8" = 1'-0"

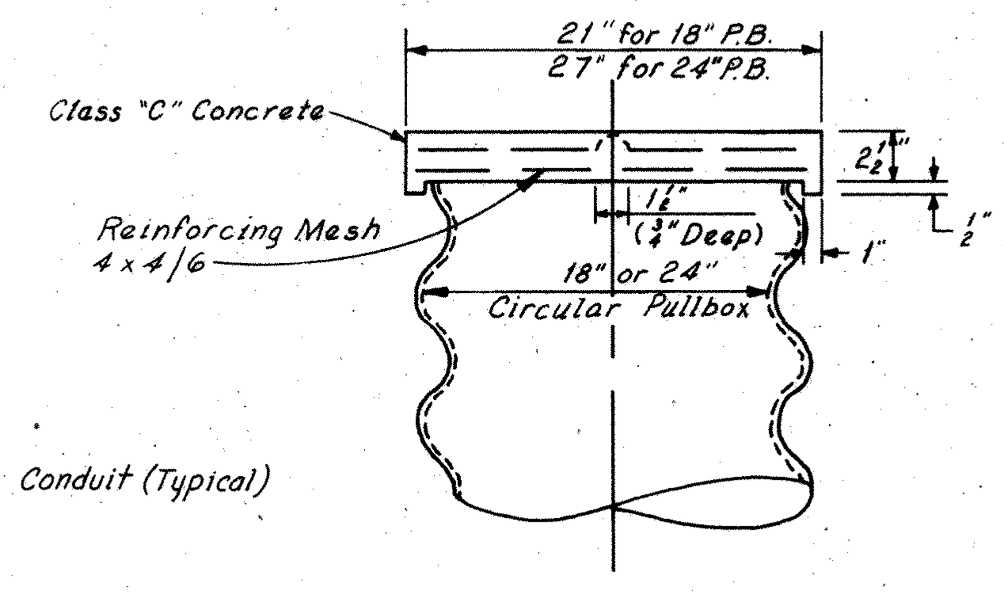


OFFSET LUMINAIRE
HIGH MAST TOWER MOUNTING DETAIL
No Scale

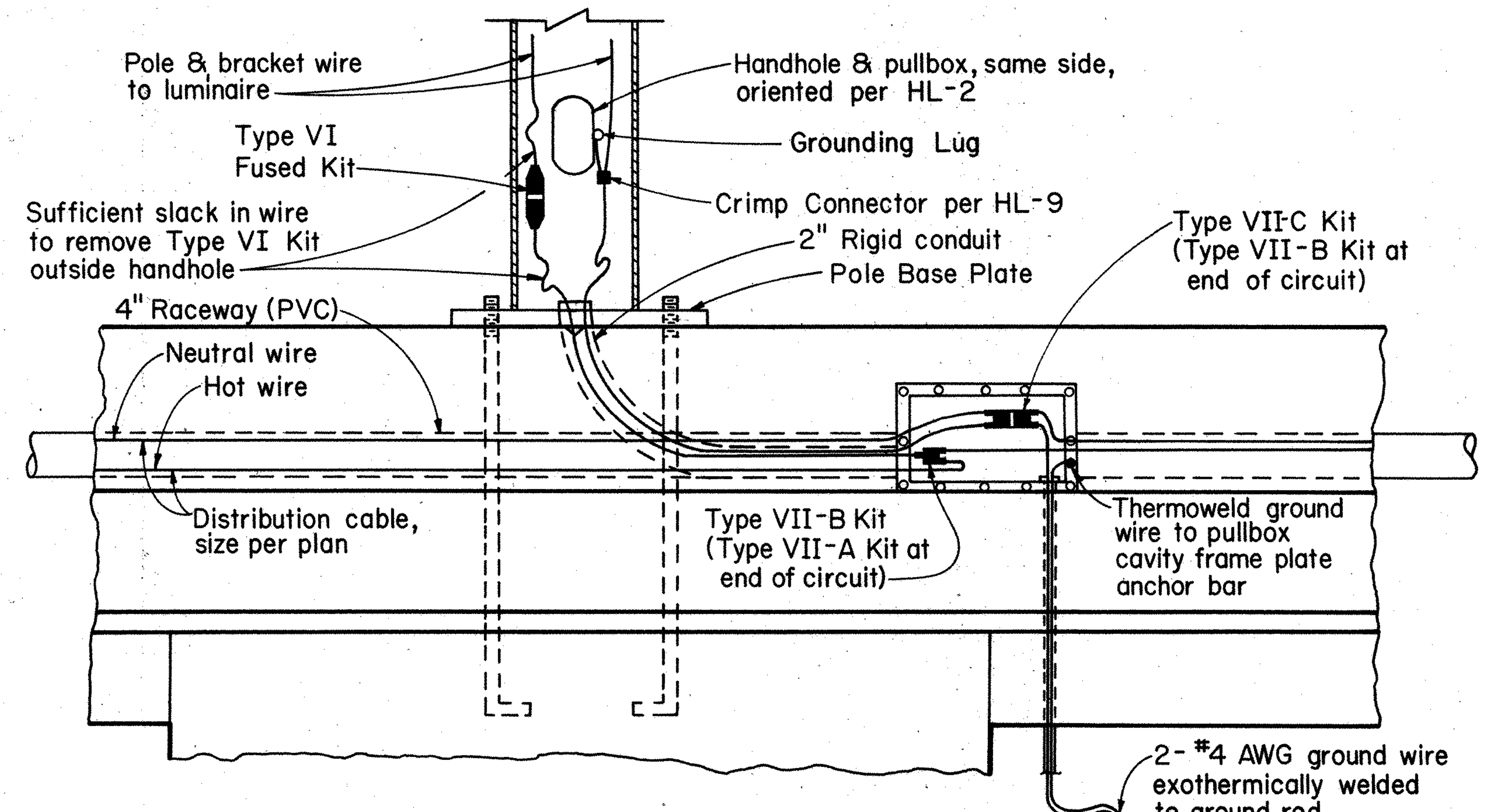
LIGHT POLE DATA

REFERENCE LETTER	DESIGN NUMBER	FOUNDATION ANCHOR BOLTS: SIZE DIAM. x LENGTH	FOUNDATION ANCHOR BOLTS: BOLT CIRCLE DIAMETER	TRANSFORMER BASE STYLE
A	A8B39.0D	1¼" x 42"	8"x18"	—
B	AT10B34.2	1"x40"	15"	AT-A
C	AT15B41.7	1"x40"	15"	AT-A
D	AT15B34.2	1"x40"	15"	AT-A



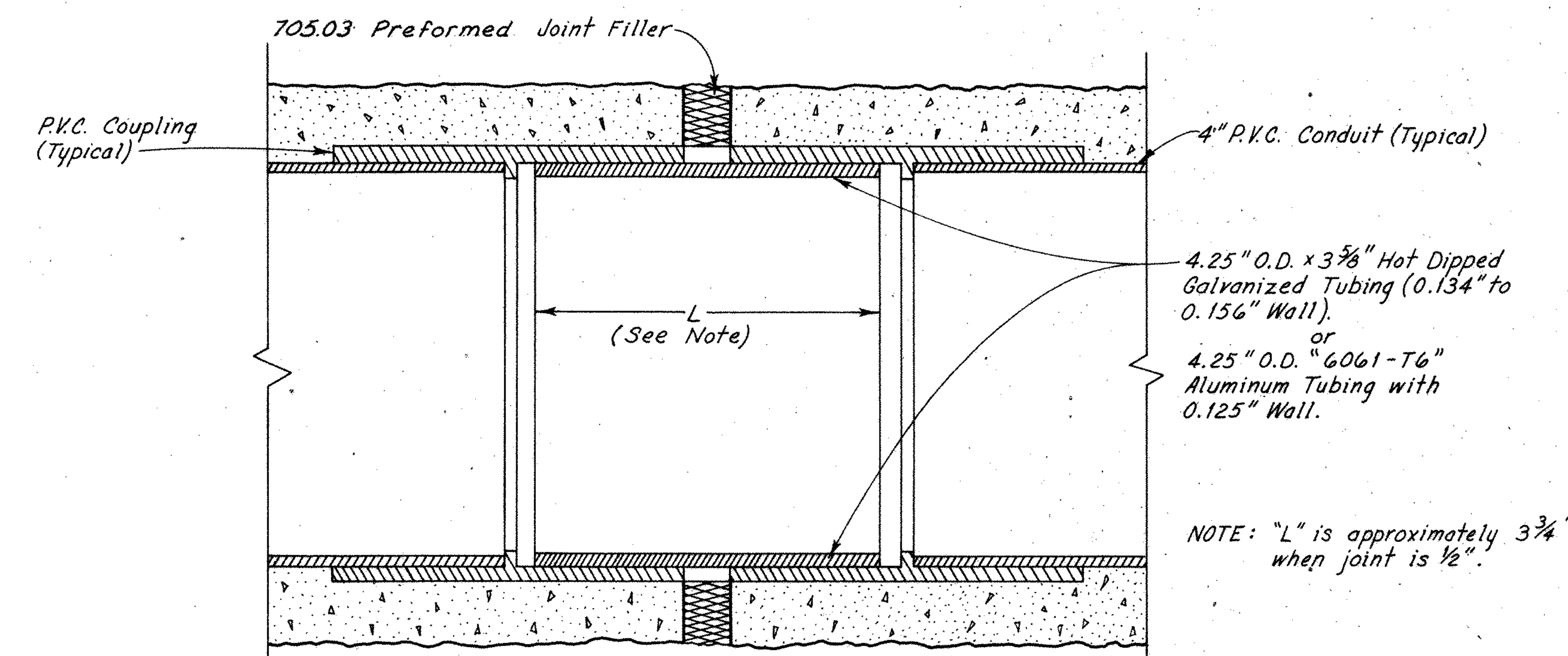


PULL BOX COVER DETAIL
No Scale



WIRING DIAGRAM
MEDIAN MOUNTED LIGHT POLES

NOTE:
Conduit couplings as detailed herein shall be provided at all median barrier joints where a joint filler is used, as required or permitted by Item 622 or standard construction drawing MC-9.



4" P.V.C. COUPLING AT CONSTRUCTION JOINT IN CONCRETE BARRIER MEDIAN
No Scale

MADE ERH DATE 8-29-75
TRACED TAK DATE 8-29-75
CHECKED EPH DATE 10-9-75
SCALE AS SHOWN

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CONSULTING ENGINEERS
CLEVELAND, OHIO

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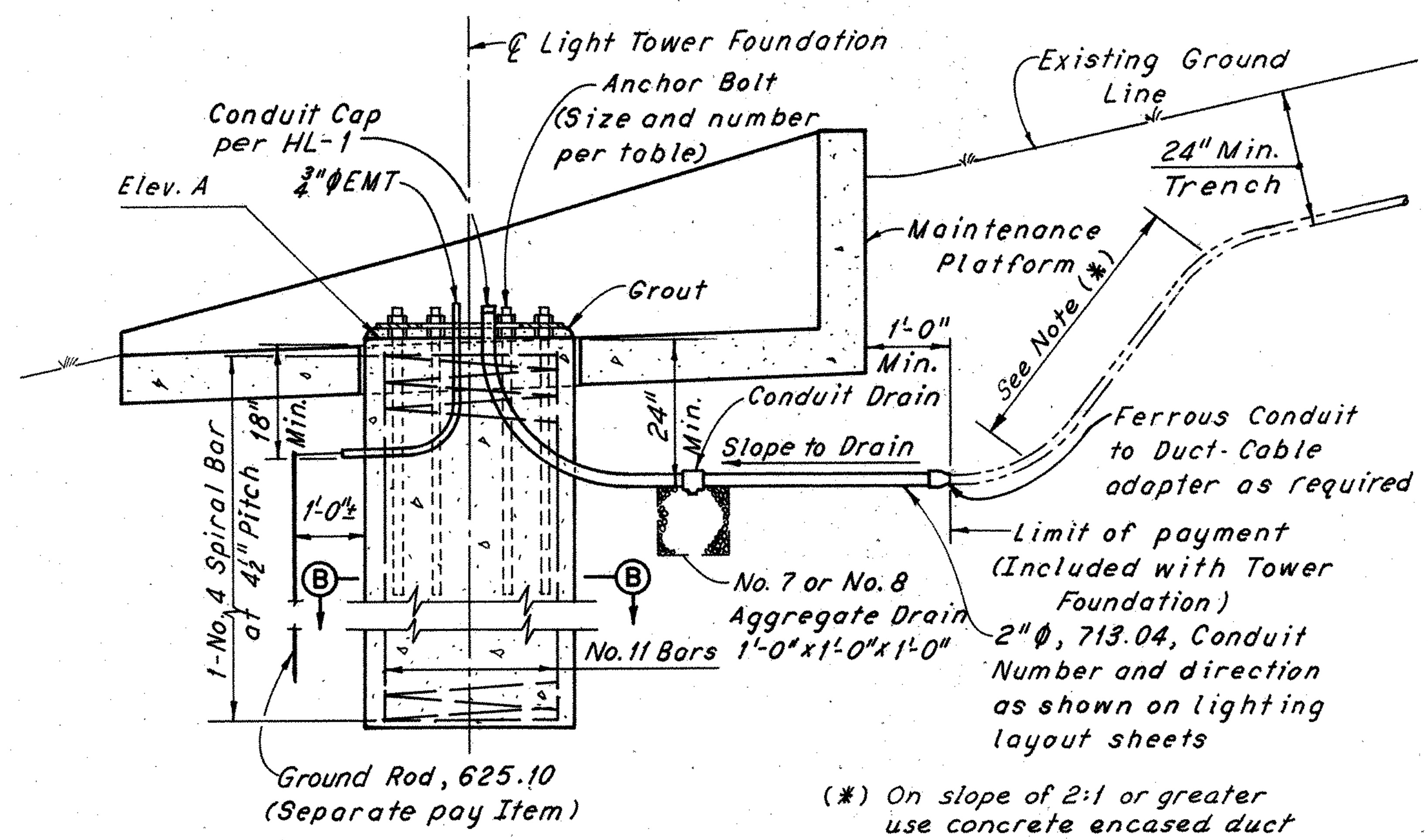
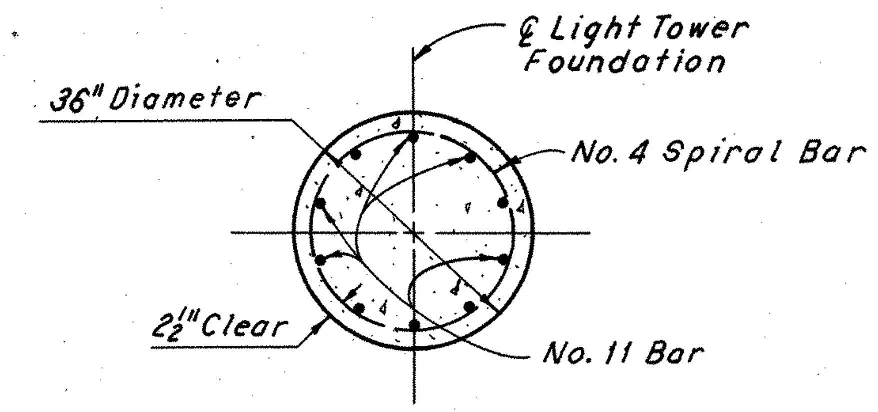
MISCELLANEOUS DETAILS

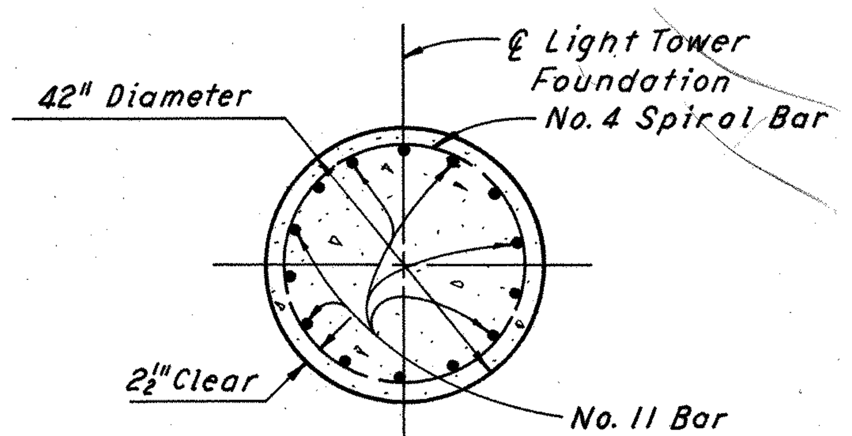
LIGHT TOWER FOUNDATION DETAILS



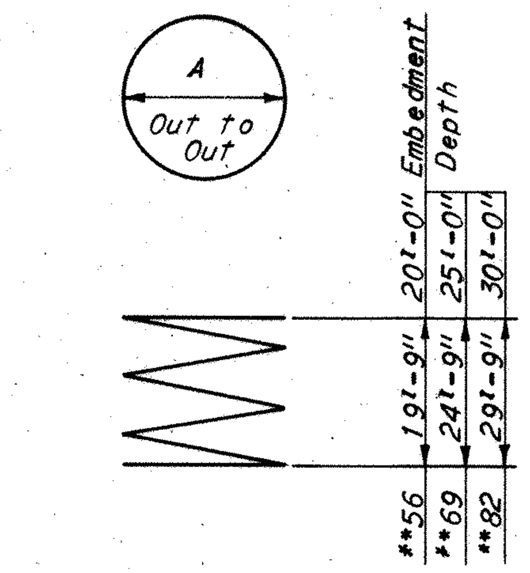
FOUNDATION WITH MAINTENANCE PLATFORM
(Greater than 6.0:1 slope)
(Maintenance Platform reinforcement not shown)



SECTION B-B
(10-No. 11 Bars)
(Anchor bolts not shown)



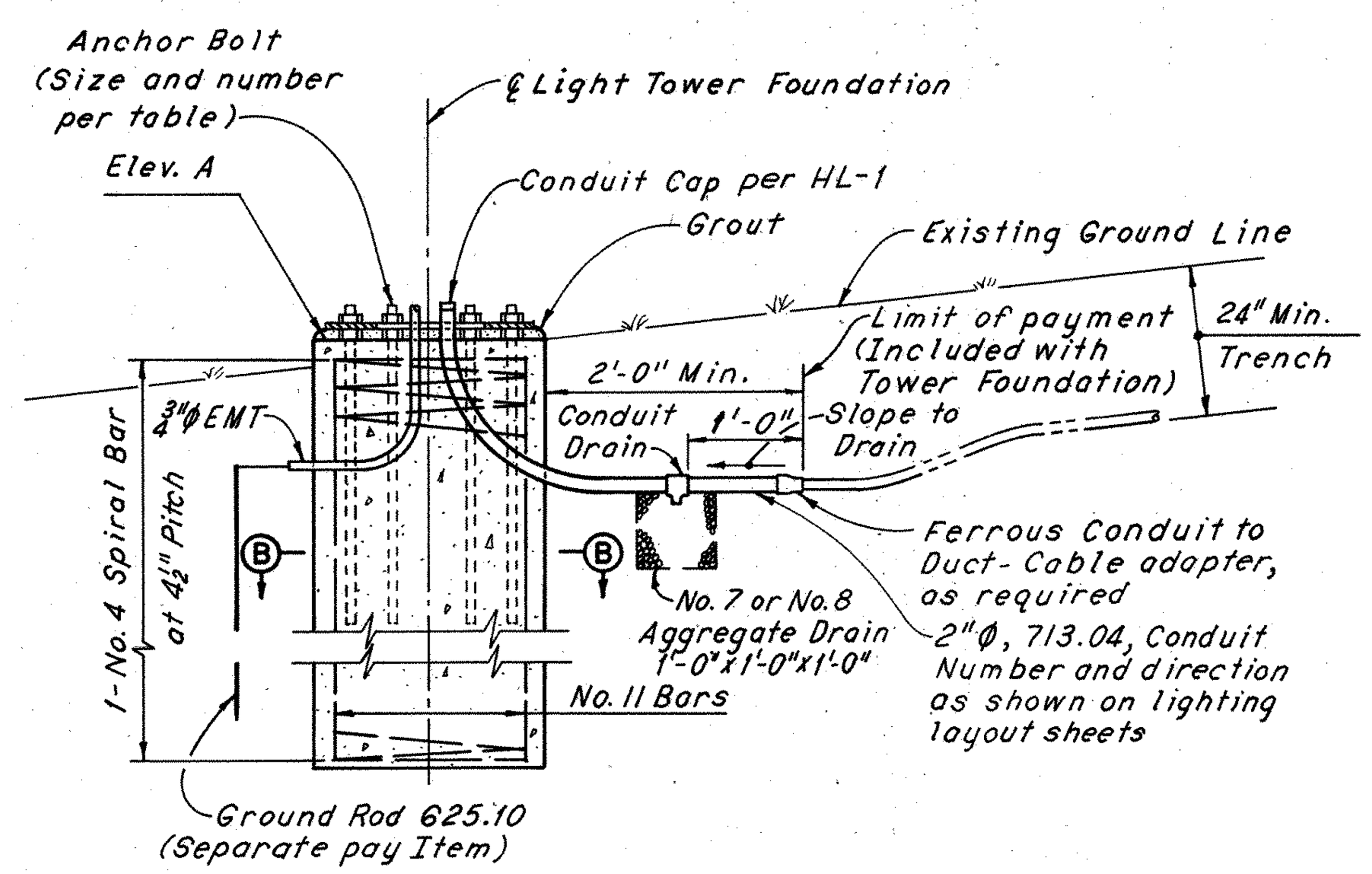
SECTION B-B
(14-No. 11 Bars)
(Anchor bolts not shown)



A = 2'-7" for a 36" foundation
A = 3'-1" for a 42" foundation

SPIRAL REINFORCEMENT NOTE:
The length shown on the No. 4 Spiral Bar Bending Diagram is the Foundation embedment depth with a 3" clearance.
Four steel channels, tee or angle spacers, weighing approximately 0.80 lbs. per foot of spacer shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil.

**Number of turns @ 4½" pitch includes 1½ turns at each end.
NO. 4 SPIRAL BAR



FOUNDATION WITHOUT MAINTENANCE PLATFORM
(Less than 6.0:1 slope)

POLE NO.	TOWER LIGHT DATA				FOUNDATION DATA			MAINTENANCE PLATFORM DATA	
	LIGHT TOWER DESIGN NO.	BOLT CIRCLE	BOLT SIZE	NO. OF BOLTS	DIAMETER	EMBEDMENT DEPTH	NO. 11 BAR LENGTH	TYPE	ELEV. A
1	A3BB110D	24.25"	1¾x90"	6	36"	20'-0"	19'-9"	E	1029.9
2	A3BB110D	24.25"	1¾x90"	6	36"	25'-0"	24'-9"	C	1037.2
3	A3BB100D	25.50"	2 x90"	4	36"	20'-0"	19'-9"	*	1039.5
4	A3BB120D	27.25"	2 x90"	6	36"	25'-0"	24'-9"	C	1048.9
5	A3BB110D	24.25"	1¾x90"	6	36"	25'-0"	24'-9"	C	1031.7
6	A3BBBB140D	30.75"	2¼x96"	6	42"	30'-0"	29'-9"	*	1012.0
7	A3BBBB150D	30.75"	2¼x96"	6	42"	30'-0"	29'-9"	C	1015.7
8	A3BB110D	24.25"	1¾x90"	6	36"	30'-0"	29'-9"	D	1060.2
9	A3BBBB110D	24.25"	1¾x90"	6	36"	25'-0"	24'-9"	D	1056.6
10	A3BB100D	25.50"	2 x90"	4	36"	25'-0"	24'-9"	*	1042.0
11	A3BBBB110D	24.25"	1¾x90"	6	36"	25'-0"	24'-9"	A	1059.2
12	A3BBBB140D	30.75"	2¼x96"	6	42"	30'-0"	29'-9"	C	1032.3
13	A3BBBBB130D	27.25"	2 x90"	6	36"	25'-0"	24'-9"	C	1031.8
14	A3BBBBB120D	27.25"	2 x90"	6	36"	30'-0"	29'-9"	C	1042.8
15	A3BBBB120D	27.25"	2 x90"	6	36"	25'-0"	24'-9"	*	1028.0
16	A3BB110D	24.25"	1¾x90"	6	36"	25'-0"	24'-9"	C	1039.2
17	A3BBBB120D	27.25"	2 x90"	6	36"	25'-0"	24'-9"	E	1032.5
18	A3BB110D	24.25"	1¾x90"	6	36"	25'-0"	24'-9"	C	1042.1
19	A3BB110D	24.25"	1¾x90"	6	36"	25'-0"	24'-9"	D	1045.9

* No platform used.

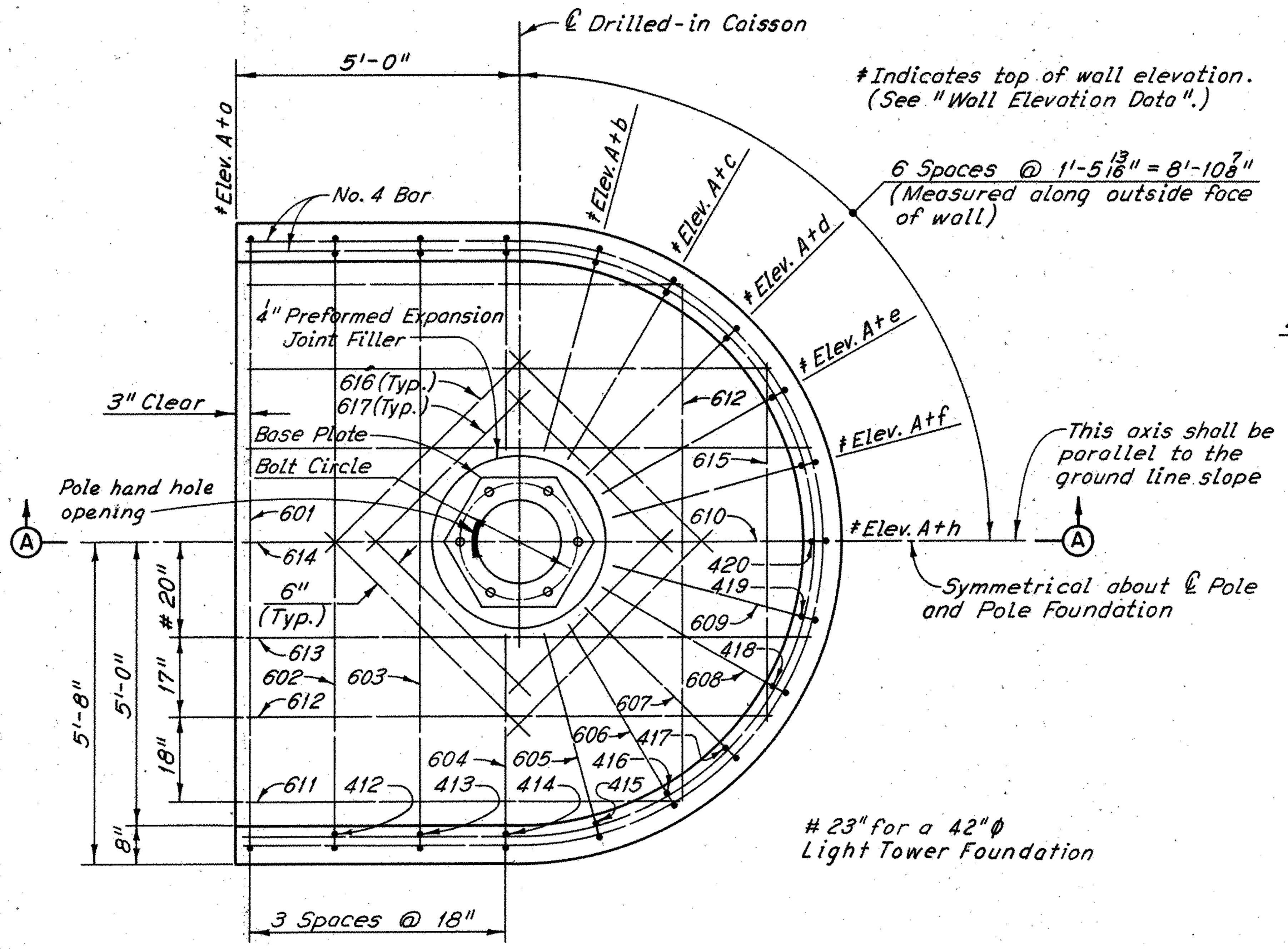
Notes:
Comments shown are supplemental to O.D.O.T. Standard Construction Drawing HL-1.
For platform grouping data see Light Tower Maintenance Platform Sheets 152A

A minimum clearance of 2" shall be provided between the vertical caisson reinforcement and tower light pole anchor bolts.

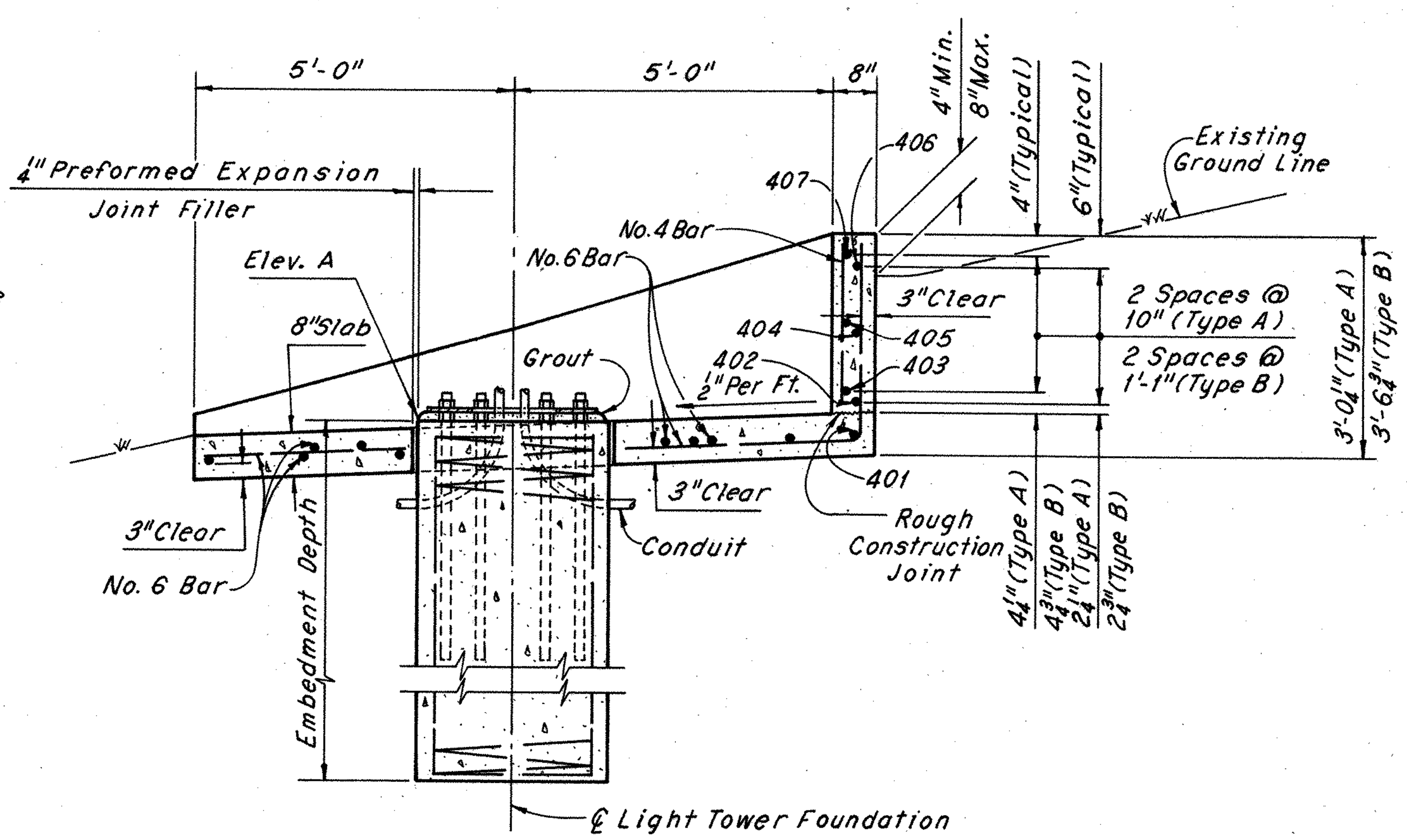
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	152A/389
2	OHIO			

LIGHT TOWER MAINTENANCE PLATFORM

STARK COUNTY
STA-30-14.12
STA-77-9.22

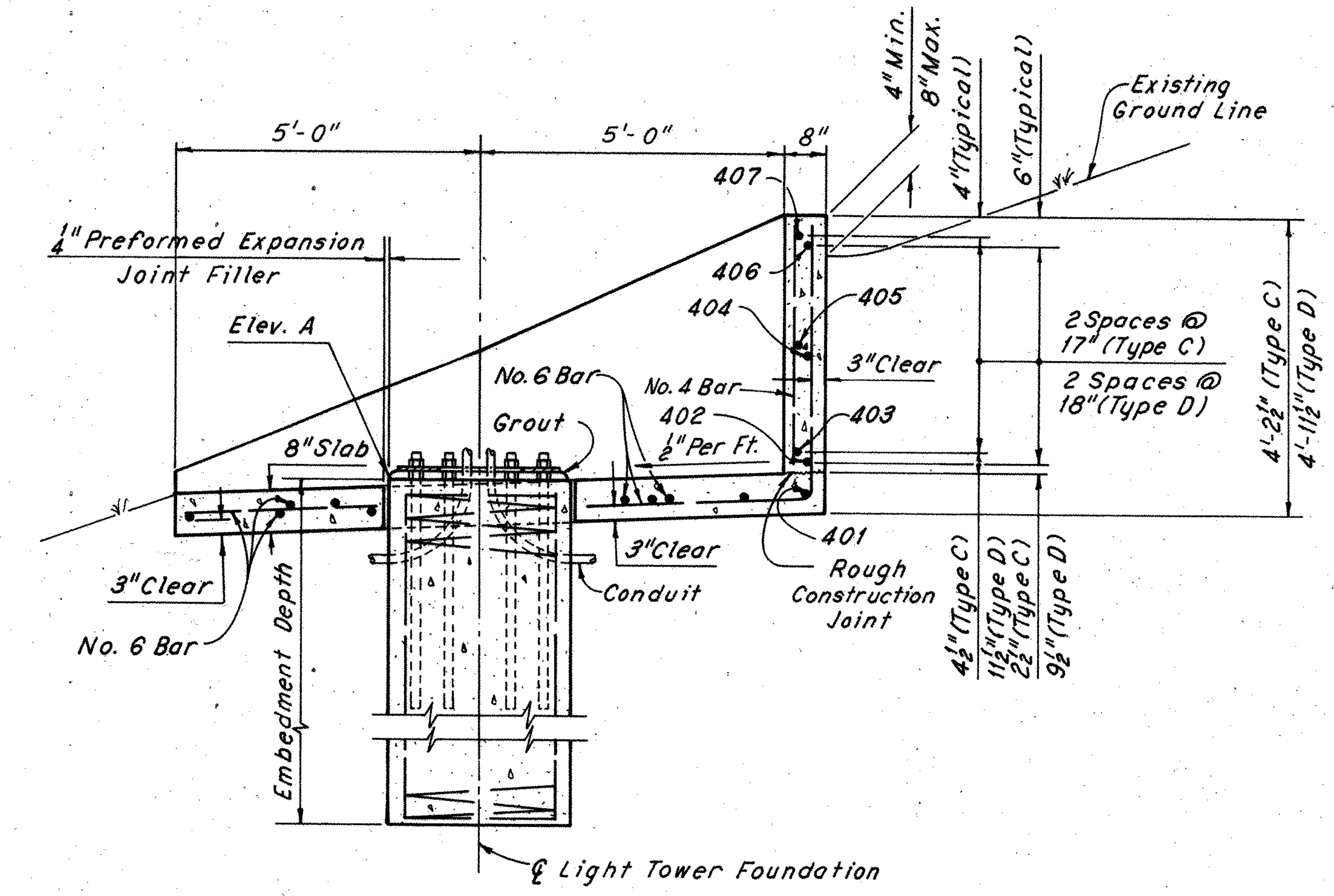


PLAN



SECTION A-A

(TYPE A AND TYPE B)

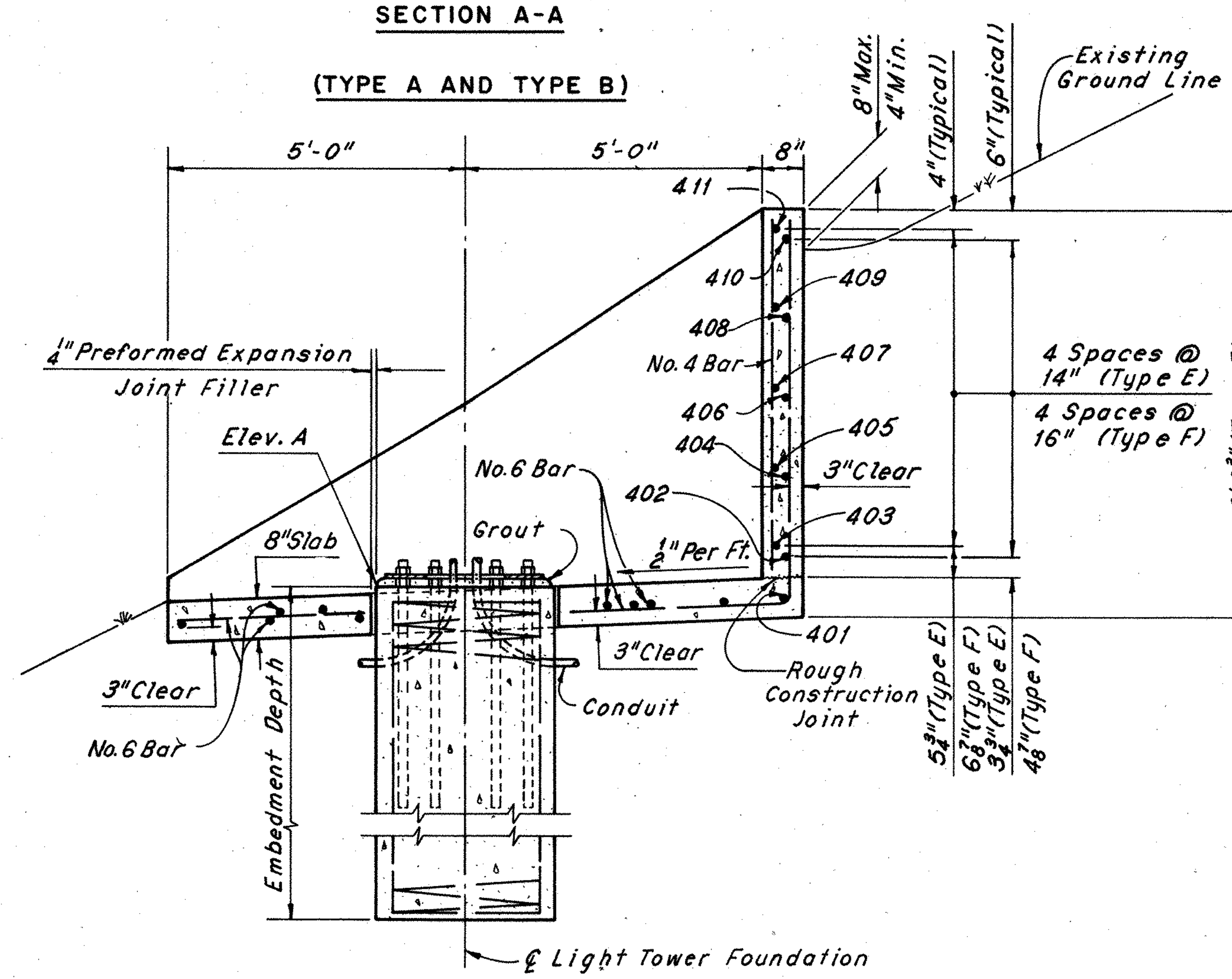


SECTION A-A

(TYPE C AND TYPE D)

WALL ELEVATION DATA								
TYPE	a	b	c	d	e	f	g	h
A	.07	1.22	1.56	1.87	2.14	2.35	2.48	2.52
B	.07	1.47	1.88	2.26	2.59	2.84	3.00	3.06
C	.08	1.78	2.28	2.74	3.14	3.45	3.64	3.71
D	.09	2.14	2.74	3.30	3.78	4.15	4.39	4.46
E	.10	2.70	3.46	4.17	4.79	5.25	5.55	5.65
F	.11	3.06	3.92	4.73	5.43	5.96	6.29	6.41

Note: The values shown are in feet



SECTION A-A

(TYPE E AND TYPE F)

PLATFORM GROUPING	
TYPE	SLOPE
A	*4.5:1 to 6.0:1
B	*3.75:1 to 4.5:1
C	*3.0:1 to 3.75:1
D	*2.5:1 to 3.0:1
E	*2.0:1 to 2.5:1
F	*1.75:1 to 2.0:1

*Inclusive

Notes:
Clearance for reinforcing bars is 2" typical, except as noted.
For Elevation A and embedment depth see Light Tower Foundation Details Sheet 152.
The following abbreviations are used:
No. = Number, Min. = Minimum, Max. = Maximum, Elev. = Elevation, Typ. = Typical.

MADE RCK DATE 8-16-75
TRACED RCK DATE 8-21-75
CHECKED R.A.S. DATE 8-26-75
SCALE

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CLEVELAND, OHIO

HNTB

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

152 B
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

LIGHT TOWER MAINTENANCE PLATFORM

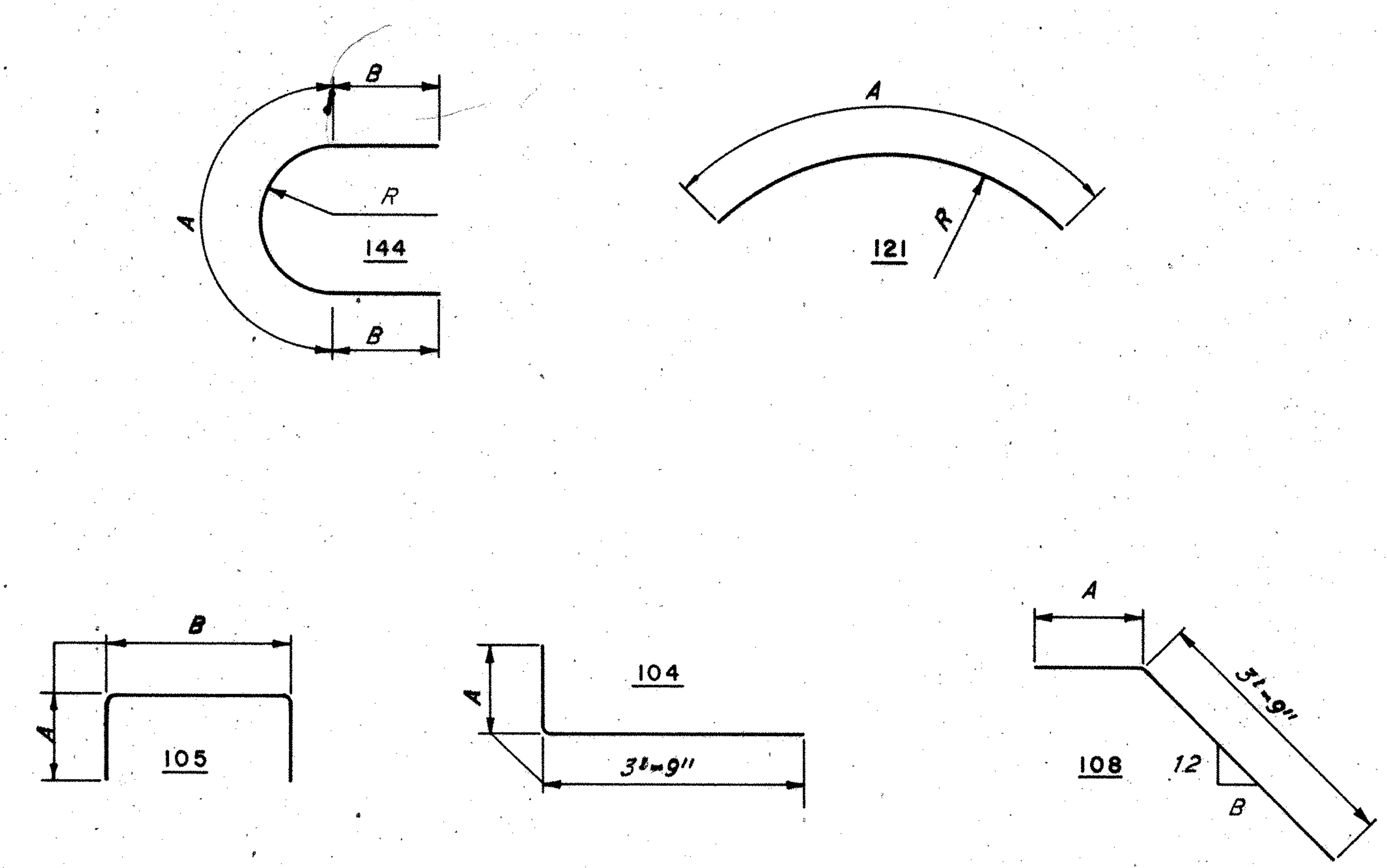
REINFORCEMENT SCHEDULE

MARK	WALL TYPE	NO. PER CASE	LENGTH	TYPE	A	B	R
401	A, B, C, D, E & F	1	26'-3"	144	16'-10"	4'-9"	5'-3¾"
402	A	1	22'-11"	144	16'-10"	3'-1"	5'-3¾"
402	B	1	23'-3"	144	16'-10"	3'-3"	5'-3¾"
402	C	1	23'-11"	144	16'-10"	3'-7"	5'-3¾"
402	D	1	21'-9"	144	16'-10"	2'-6"	5'-3¾"
402	E	1	24'-7"	144	16'-10"	3'-11"	5'-3¾"
402	F	1	25'-3"	144	16'-10"	4'-3"	5'-3¾"
403	A	1	21'-3"	144	16'-6"	2'-5"	5'-2½"
403	B	1	21'-7"	144	16'-6"	2'-7"	5'-2½"
403	C	1	22'-7"	144	16'-6"	3'-1"	5'-2½"
403	D	1	20'-7"	144	16'-6"	2'-1"	5'-2½"
403	E	1	23'-7"	144	16'-6"	3'-7"	5'-2½"
403	F	1	24'-5"	144	16'-6"	4'-0"	5'-2½"
404	A	1	15'-9"	121	15'-10"	——	5'-3¾"
404	B	1	15'-7"	121	15'-8"	——	5'-3¾"
404	C	1	15'-8"	121	15'-9"	——	5'-3¾"
404	D	1	14'-7"	121	14'-7"	——	5'-3¾"
404	E	1	20'-1"	144	16'-10"	1'-8"	5'-3¾"
404	F	1	20'-7"	144	16'-10"	1'-11"	5'-3¾"
405	A	1	14'-2"	121	14'-2"	——	5'-2½"
405	B	1	14'-2"	121	14'-3"	——	5'-2½"
405	C	1	14'-6"	121	14'-6"	——	5'-2½"
405	D	1	13'-6"	121	13'-6"	——	5'-2½"
405	E	1	19'-3"	144	16'-6"	1'-5"	5'-2½"
405	F	1	19'-9"	144	16'-6"	1'-8"	5'-2½"
406	A	1	7'-9"	121	7'-10"	——	5'-3¾"
406	B	1	6'-11"	121	6'-11"	——	5'-3¾"
406	C	1	6'-2"	121	6'-2"	——	5'-3¾"
406	D	1	5'-10"	121	5'-10"	——	5'-3¾"
406	E	1	15'-9"	121	15'-10"	——	5'-3¾"
406	F	1	16'-1"	121	16'-1"	——	5'-3¾"
407	A	1	5'-6"	121	5'-6"	——	5'-2½"
407	B	1	4'-8"	121	4'-8"	——	5'-2½"
407	C	1	4'-2"	121	4'-3"	——	5'-2½"
407	D	1	4'-0"	121	4'-0"	——	5'-2½"
407	E	1	14'-10"	121	14'-11"	——	5'-2½"
407	F	1	15'-3"	121	15'-3"	——	5'-2½"
408	E	1	11'-3"	121	11'-4"	——	5'-3¾"
408	F	1	11'-1"	121	11'-1"	——	5'-3¾"
409	E	1	10'-4"	121	10'-4"	——	5'-2½"
409	F	1	10'-2"	121	10'-2"	——	5'-2½"
410	E	1	5'-0"	121	5'-0"	——	5'-3¾"
410	F	1	4'-8"	121	4'-8"	——	5'-3¾"
411	E	1	3'-4"	121	3'-4"	——	5'-2½"
411	F	1	3'-2"	121	3'-2"	——	5'-2½"
412	D	2	9"	STR.	——	——	——
412	E & F	2	1'-0"	STR.	——	——	——
413	B	2	9"	STR.	——	——	——
413	C	2	1'-0"	STR.	——	——	——
413	D	2	1'-3"	STR.	——	——	——
413	E	2	1'-9"	STR.	——	——	——
413	F	2	2'-0"	STR.	——	——	——

MARK	WALL TYPE	NO. PER CASE	LENGTH	TYPE	A	B	R
414	A	2	1'-0"	STR.	——	——	——
414	B	2	1'-3"	STR.	——	——	——
414	C	2	1'-6"	STR.	——	——	——
414	D	2	1'-9"	STR.	——	——	——
414	E	2	2'-6"	STR.	——	——	——
414	F	2	2'-9"	STR.	——	——	——
415	A	2	1'-3"	STR.	——	——	——
415	B	2	1'-9"	STR.	——	——	——
415	C	2	2'-0"	STR.	——	——	——
415	D	2	2'-6"	STR.	——	——	——
415	E	2	3'-3"	STR.	——	——	——
415	F	2	3'-9"	STR.	——	——	——
416	A	2	1'-6"	STR.	——	——	——
416	B	2	2'-0"	STR.	——	——	——
416	C	2	2'-6"	STR.	——	——	——
416	D	2	3'-0"	STR.	——	——	——
416	E	2	3'-9"	STR.	——	——	——
416	F	2	4'-6"	STR.	——	——	——
417	A	2	1'-9"	STR.	——	——	——
417	B	2	2'-3"	STR.	——	——	——
417	C	2	2'-9"	STR.	——	——	——
417	D	2	3'-6"	STR.	——	——	——
417	E	2	4'-6"	STR.	——	——	——
417	F	2	5'-0"	STR.	——	——	——
418	A	2	2'-0"	STR.	——	——	——
418	B	2	2'-6"	STR.	——	——	——
418	C	2	3'-0"	STR.	——	——	——
418	D	2	3'-9"	STR.	——	——	——
418	E	2	4'-9"	STR.	——	——	——
418	F	2	5'-6"	STR.	——	——	——
419	A	2	2'-0"	STR.	——	——	——
419	B	2	2'-6"	STR.	——	——	——
419	C	2	3'-3"	STR.	——	——	——
419	D	2	4'-0"	STR.	——	——	——
419	E	2	5'-0"	STR.	——	——	——
419	F	2	5'-9"	STR.	——	——	——
420	A	1	2'-0"	STR.	——	——	——
420	B	1	2'-6"	STR.	——	——	——
420	C	1	3'-3"	STR.	——	——	——
420	D	1	4'-0"	STR.	——	——	——
420	E	1	5'-3"	STR.	——	——	——
420	F	1	6'-0"	STR.	——	——	——
601	A, B & C	1	11'-10"	105	8"	10'-10"	——
601	D, E & F	1	12'-0"	105	9"	10'-10"	——
602	A	1	12'-4"	105	11"	10'-10"	——
602	B	1	12'-6"	105	1'-0"	10'-10"	——
602	C	1	12'-10"	105	1'-2"	10'-10"	——
602	D	1	13'-0"	105	1'-3"	10'-10"	——
602	E	1	13'-6"	105	1'-6"	10'-10"	——
602	F	1	13'-8"	105	1'-7"	10'-10"	——
603	A	1	12'-10"	105	1'-2"	10'-10"	——
603	B	1	13'-2"	105	1'-4"	10'-10"	——
603	C	1	13'-8"	105	1'-7"	10'-10"	——
603	D	1	14'-2"	105	1'-10"	10'-10"	——
603	E	1	14'-10"	105	2'-2"	10'-10"	——
603	F	1	15'-4"	105	2'-5"	10'-10"	——

MARK	WALL TYPE	NO. PER CASE	LENGTH	TYPE	A	B	R
604	A	2	5'-1"	104	1'-6"	3'-9"	——
604	B	2	5'-4"	104	1'-9"	3'-9"	——
604	C	2	5'-7"	104	2'-0"	3'-9"	——
604	D	2	5'-11"	104	2'-4"	3'-9"	——
604	E	2	6'-6"	104	2'-11"	3'-9"	——
604	F	2	6'-10"	104	3'-3"	3'-9"	——
605	A	2	5'-5"	108	1'-10"	⅛"	——
605	B	2	5'-9"	108	2'-2"	⅛"	——
605	C	2	6'-1"	108	2'-6"	⅛"	——
605	D	2	6'-7"	108	3'-0"	⅛"	——
605	E	2	7'-3"	108	3'-8"	⅛"	——
605	F	2	7'-9"	108	4'-2"	⅛"	——
606	A	2	5'-3"	108	2'-1"	¼"	——
606	B	2	6'-0"	108	2'-5"	¼"	——
606	C	2	6'-6"	108	2'-11"	¼"	——
606	D	2	7'-1"	108	3'-6"	¼"	——
606	E	2	7'-11"	108	4'-4"	¼"	——
606	F	2	8'-6"	108	4'-11"	¼"	——
607	A	2	5'-10"	108	2'-3"	⅜"	——
607	B	2	6'-4"	108	2'-9"	⅜"	——
607	C	2	6'-10"	108	3'-3"	⅜"	——
607	D	2	7'-6"	108	3'-11"	⅜"	——
607	E	2	8'-6"	108	4'-11"	⅜"	——
607	F	2	9'-2"	108	5'-7"	⅜"	——
608	A	2	6'-1"	108	2'-6"	⅜"	——
608	B	2	6'-6"	108	2'-11"	⅜"	——
608	C	2	7'-2"	108	3'-7"	⅜"	——
608	D	2	7'-10"	108	4'-3"	⅜"	——
608	E	2	8'-11"	108	5'-4"	⅜"	——
608	F	2	9'-8"	108	6'-1"	⅜"	——
609	A	2	6'-1"	108	2'-6"	½"	——
609	B	2	6'-8"	108	3'-1"	½"	——
609	C	2	7'-4"	108	3'-9"	½"	——
609	D	2	8'-1"	108	4'-6"	½"	——
609	E	2	9'-2"	108	5'-7"	½"	——
609	F	2	9'-11"	108	6'-4"	½"	——
610	A	1	6'-2"	108	2'-7"	½"	——
610	B	1	6'-9"	108	3'-2"	½"	——
610	C	1	7'-4"	108	3'-9"	½"	——
610	D	1	8'-1"	108	4'-6"	½"	——
610	E	1	9'-4"	108	5'-9"	½"	——
610	F	1	10'-1"	108	6'-6"	½"	——
611	A, B, C, D, E & F	2	7'-6"	STR.	——	——	——
612	A, B, C, D, E & F	3	9'-3"	STR.	——	——	——
613	A, B, C, D, E & F	2	10'-0"	STR.	——	——	——
614	A, B, C, D, E & F	1	3'-0"	STR.	——	——	——
615	A, B, C, D, E & F	1	6'-6"	STR.	——	——	——
616	A, B, C, D, E & F	4	5'-6"	STR.	——	——	——
617	A, B, C, D, E & F	4	4'-6"	STR.	——	——	——

BENDING DIAGRAMS



MADE RCK DATE 8-15-75
TRACED RCK DATE 8-22-75
CHECKED R.A.S. DATE 8-27-75
SCALE

Howard, Needles, Tammen & Bergendoff
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CLEVELAND, OHIO

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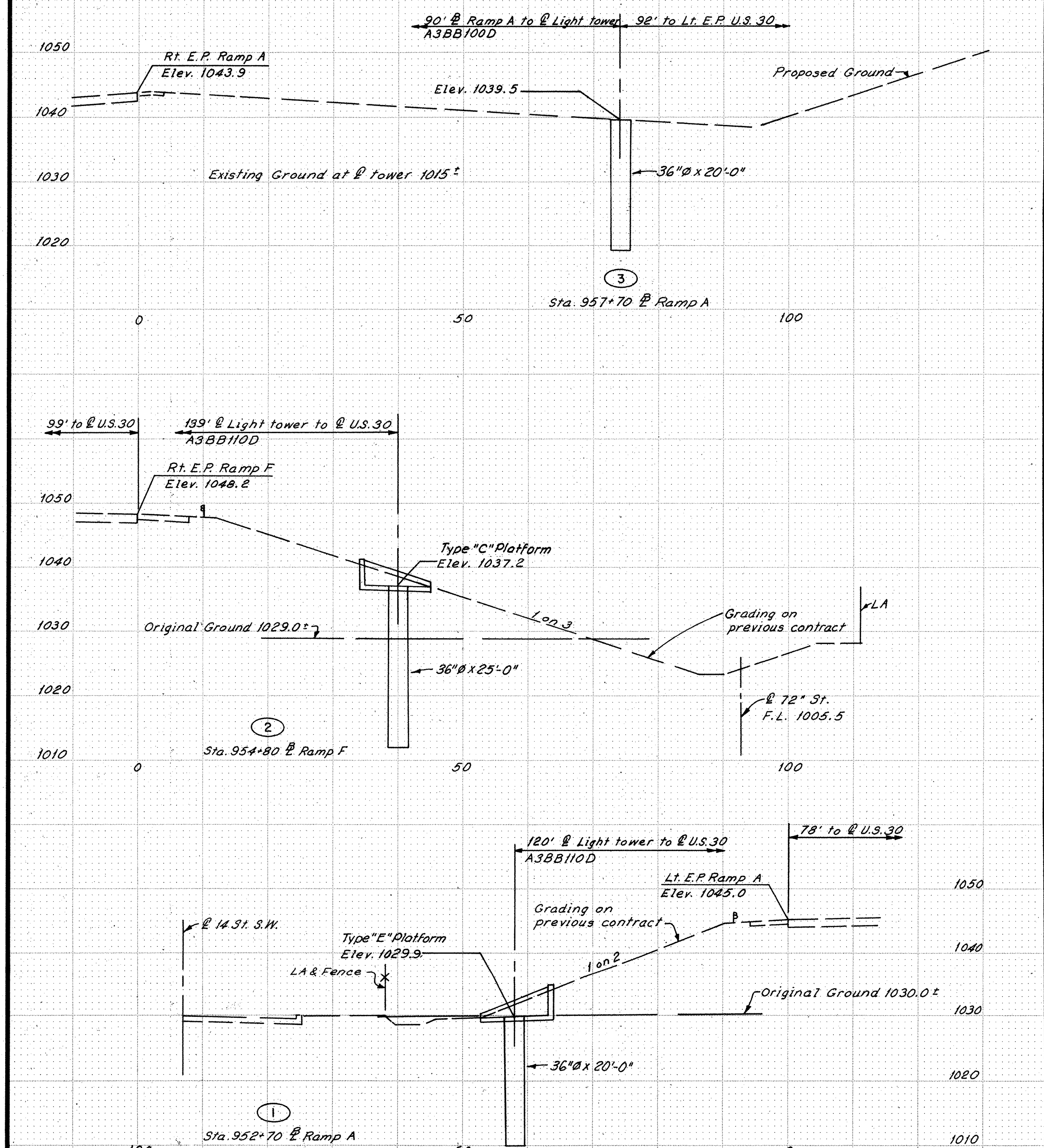
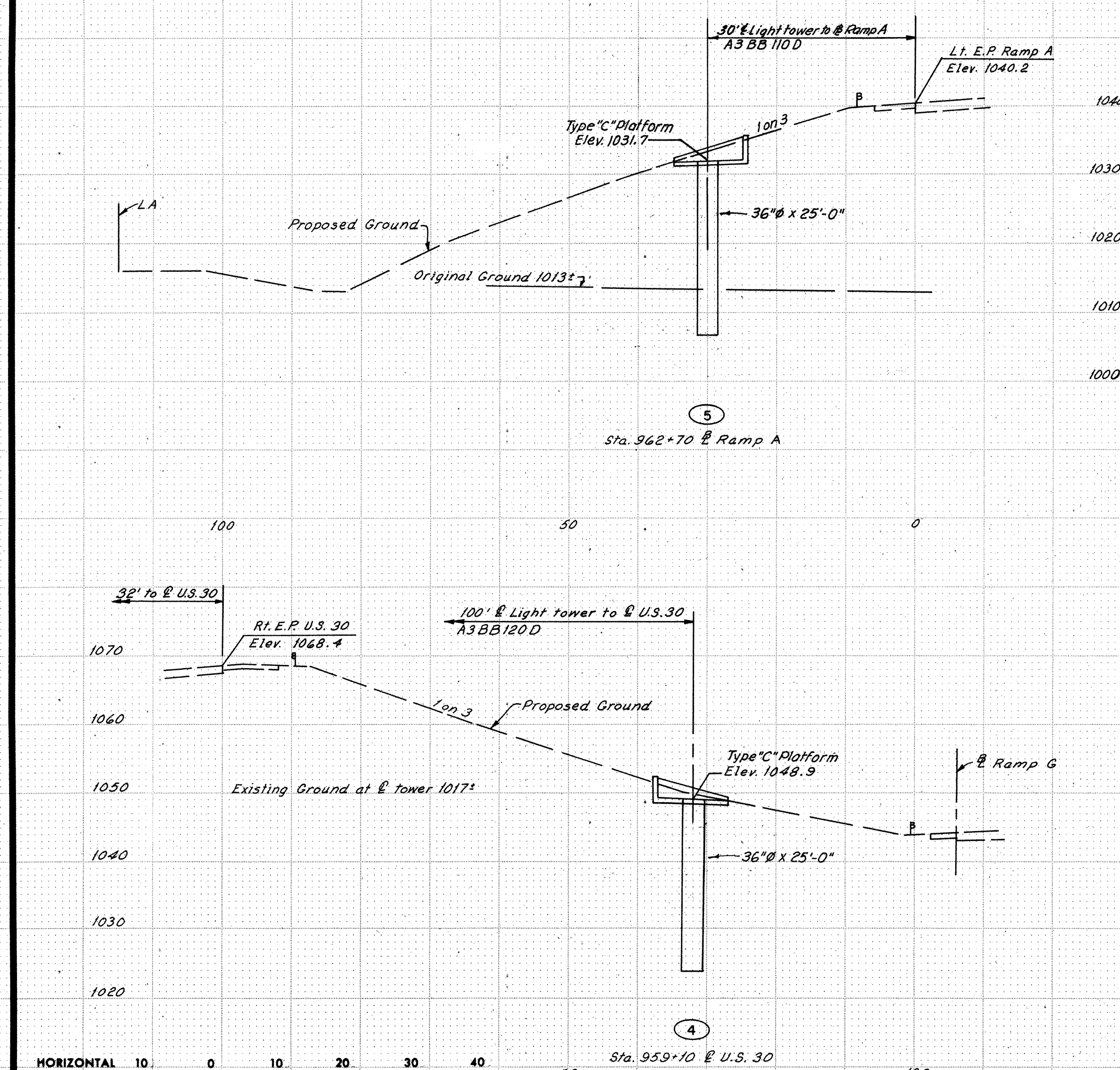
LIGHT TOWER MAINTENANCE PLATFORM

FHWA REGION	STATE	PROJECT		
5	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22





HORIZONTAL	10	0	10	20	30	40
VERTICAL	10	0	10	20	30	40

SCALE IN FEET

MADE ERH DATE 8-17-75
TRACED TAK DATE 8-18-75
CHECKED ERH DATE 10-14-75
SCALE 1" = 10' Hor. & Vert.

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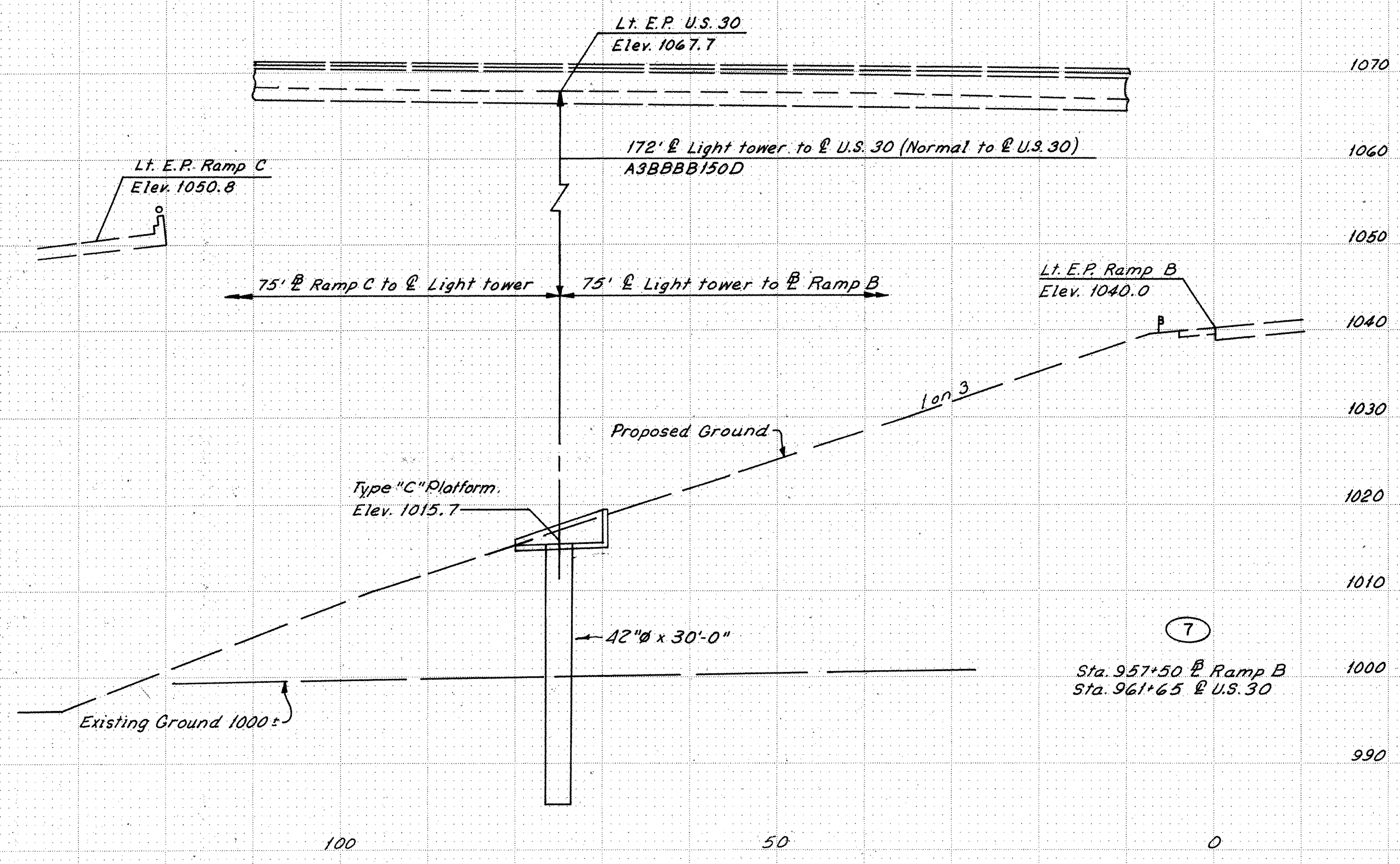
CROSS-SECTIONS FOR LIGHT TOWERS 1 thru 5

FHWA REGION	STATE	PROJECT		
5	OHIO			

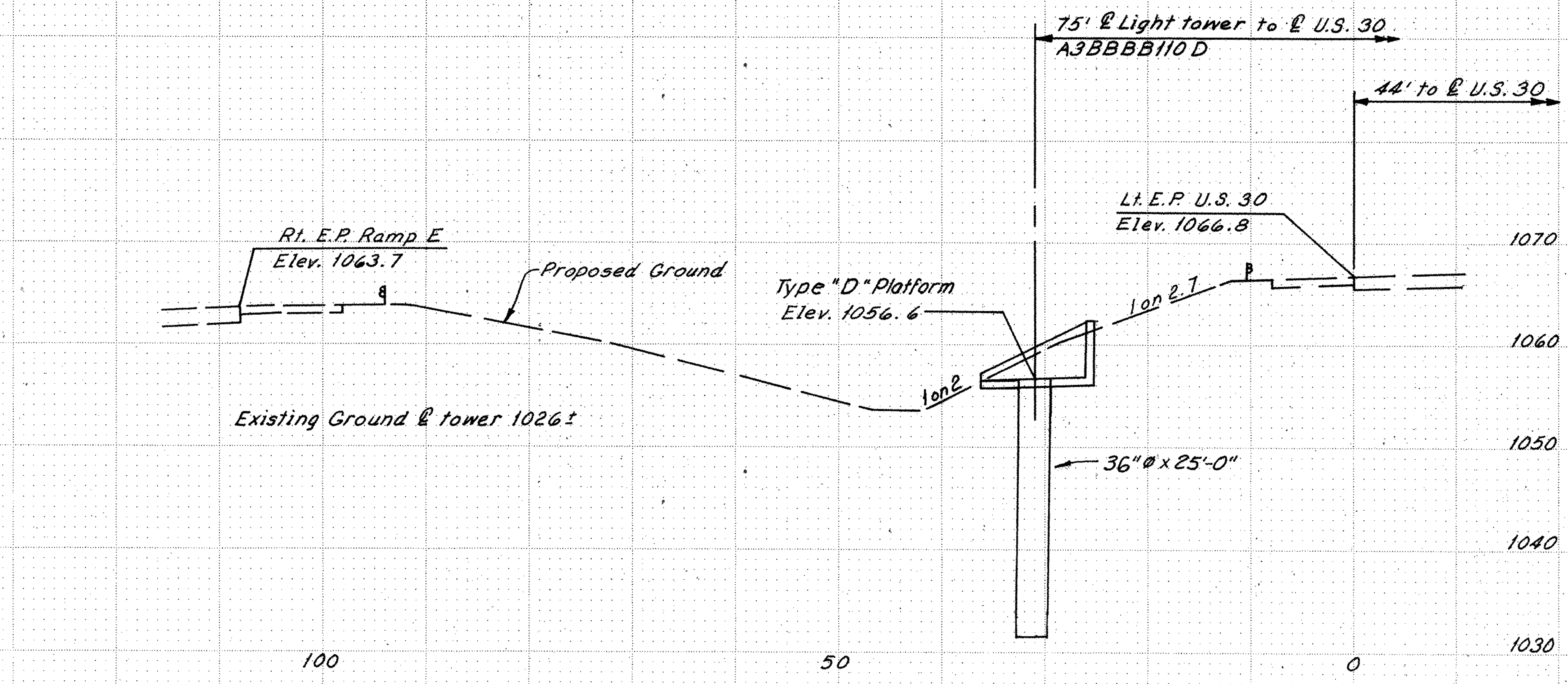
153A
389

STARK COUNTY
STA-30-14.12
STA-77-9.22



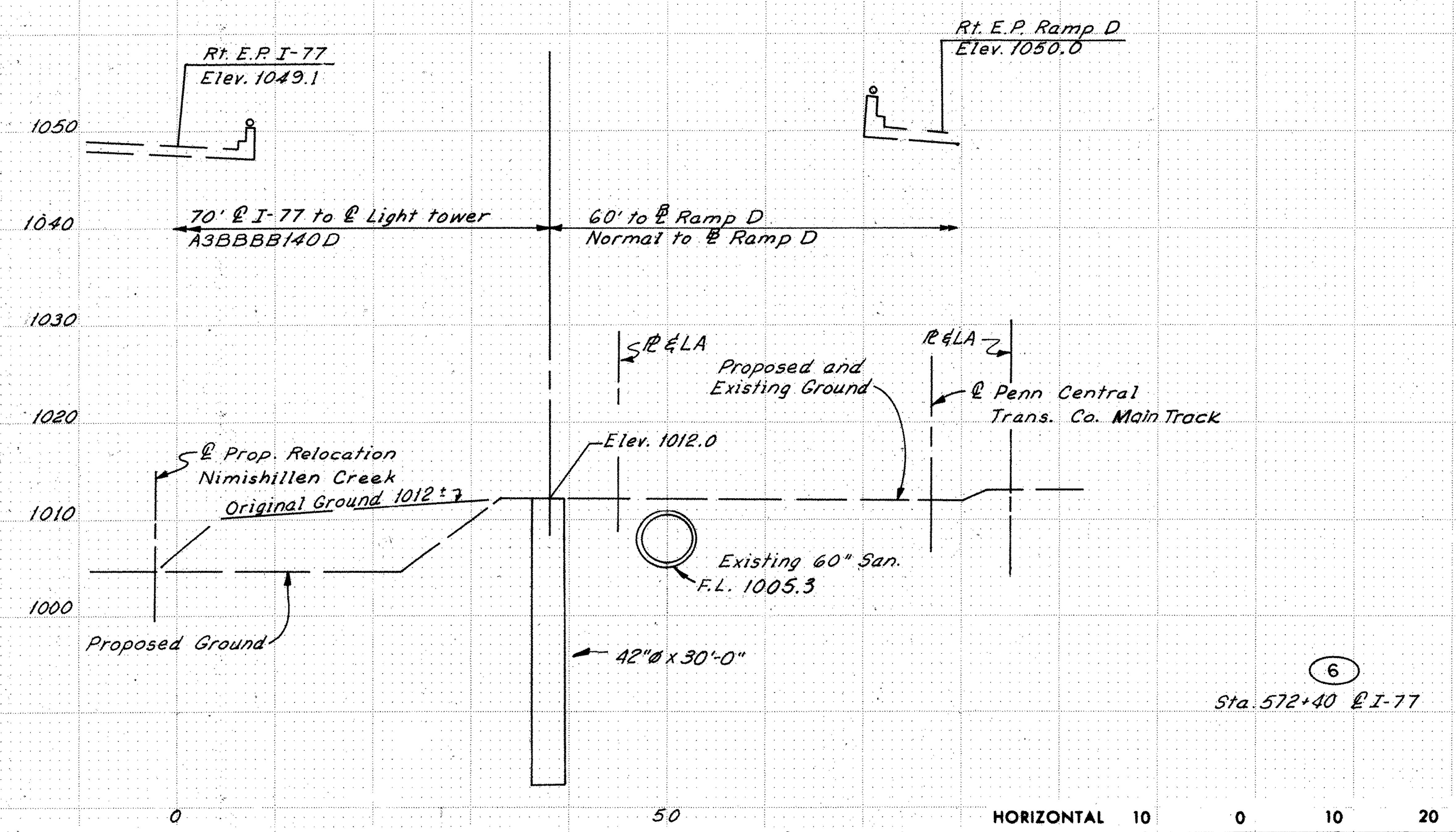
7

Sta. 957+50 ℄ Ramp B
Sta. 961+65 ℄ U.S. 30



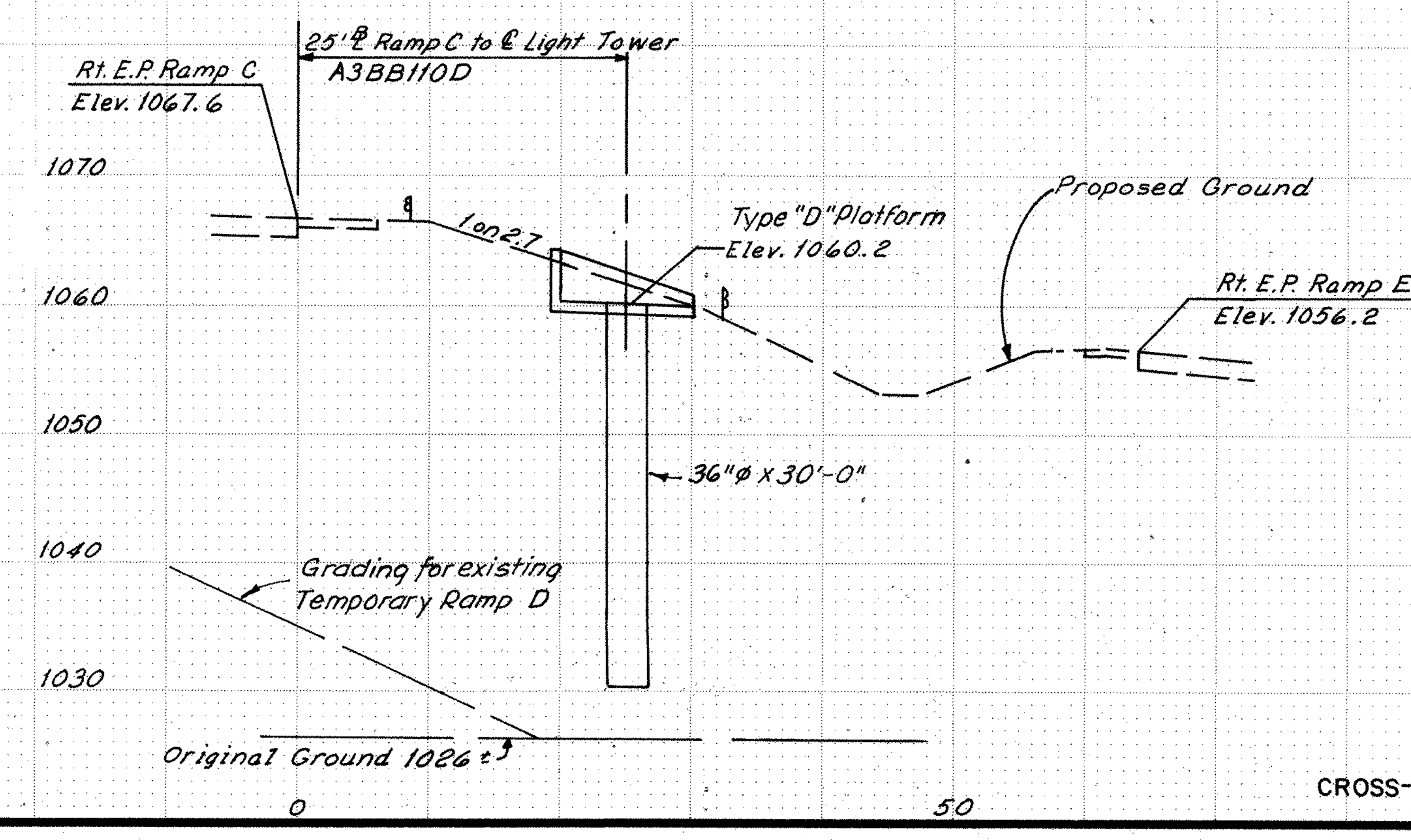
9

Sta. 970+15 ℄ U.S. 30



6

Sta. 572+40 ℄ I-77



8

Sta. 969+10 ℄ Ramp C

MADE ERH DATE 8-17-75
TRACED TAK DATE 8-18-75
CHECKED ERH DATE 10-14-75
SCALE 1"=10' Hor. & Vert.

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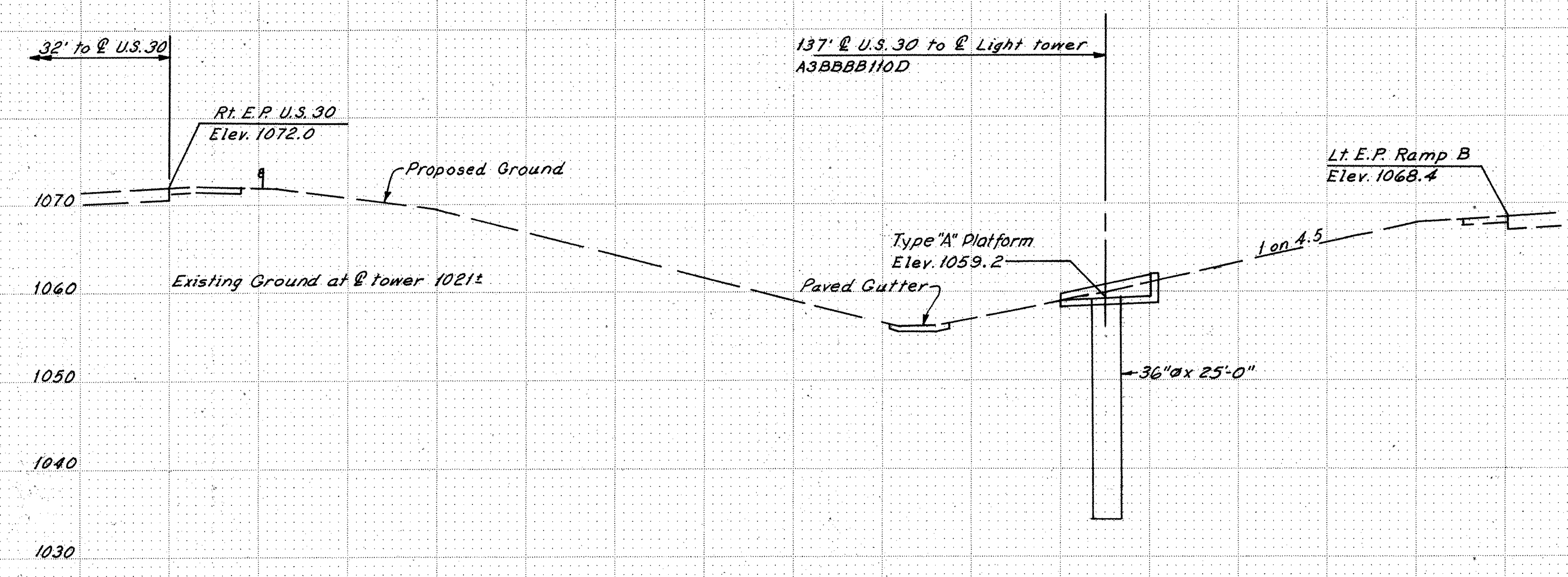
HORIZONTAL 10 0 10 20 30 40
VERTICAL 10 0 10 20 30 40
SCALE IN FEET

CROSS-SECTIONS FOR LIGHT TOWERS 6 thru 9

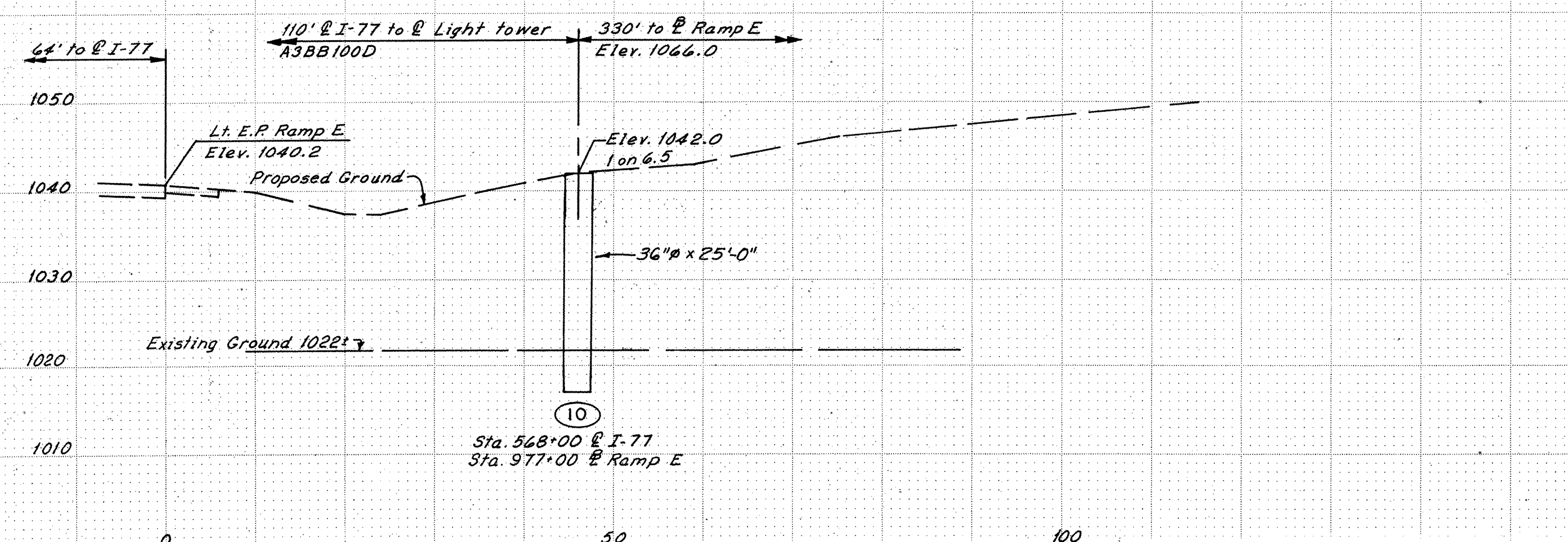
FHWA REGION	STATE	PROJECT	
5	OHIO		

1538 / 389

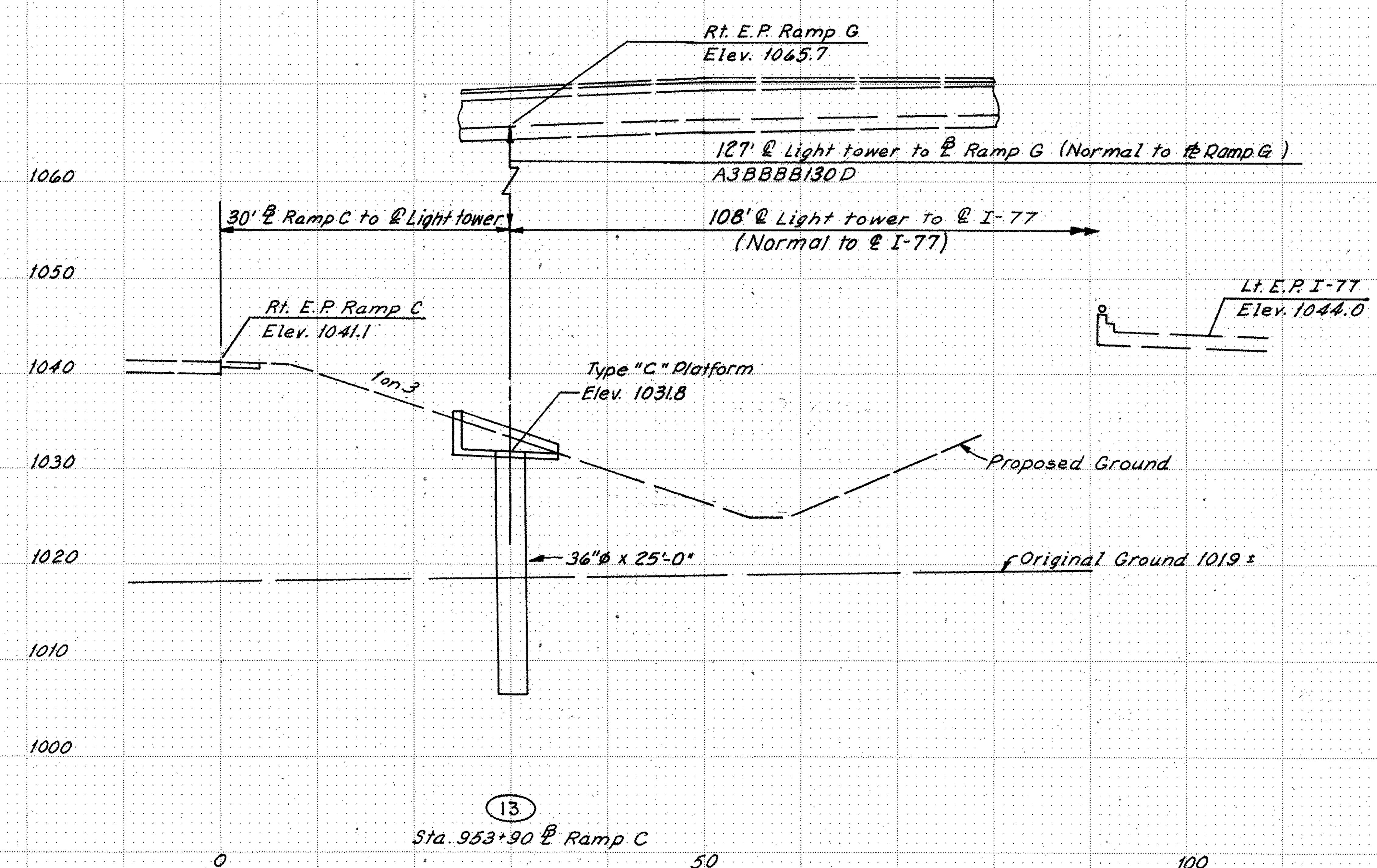
STARK COUNTY
STA-30-14.12
STA-77-9.22



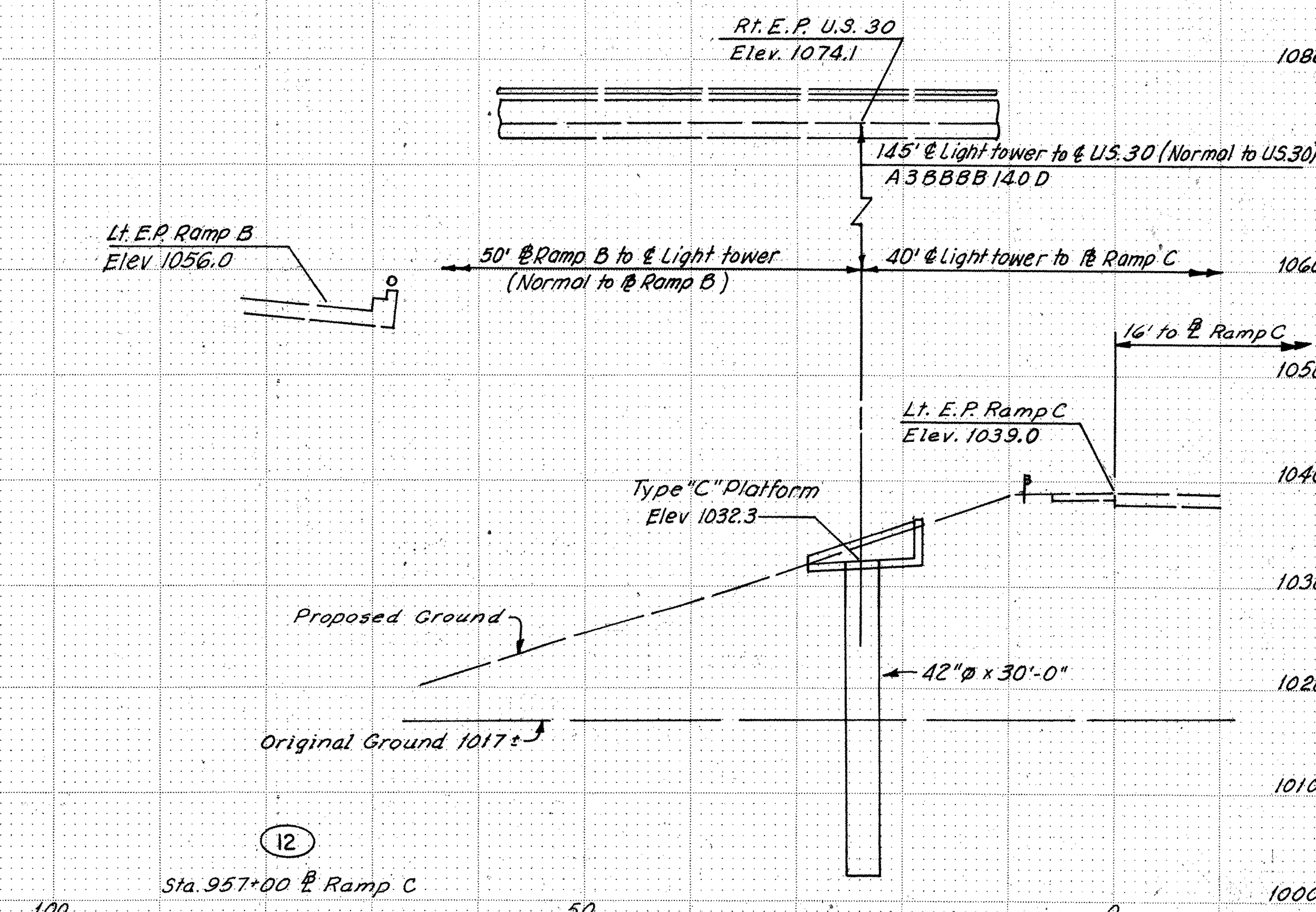
(11)
Sta. 966+60 ℄ U.S. 30



(10)
Sta. 568+00 ℄ I-77
Sta. 977+00 ℄ Ramp E



(13)
Sta. 953+90 ℄ Ramp C



(12)
Sta. 957+00 ℄ Ramp C

HORIZONTAL	10	0	10	20	30	40
VERTICAL	10	0	10	20	30	40

SCALE IN FEET

MADE ERH DATE 8-17-75
TRACED TAK DATE 8-18-75
CHECKED ERH DATE 10-16-75
SCALE 1"=10' Hor. & Vert.

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CROSS-SECTIONS FOR LIGHT TOWERS (10) thru (13)

FHWA REGION	STATE	PROJECT	
5	OHIO		

153C
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

HORIZONTAL 10 0 10 20 30 40
VERTICAL 10 0 10 20 30 40
SCALE IN FEET

MADE ERH DATE 8-17-75
TRACED TAK DATE 4-18-75
CHECKED ERH DATE 10-15-75
SCALE 1"=10' Hor. & Vert.

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CLEVELAND, OHIO

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CROSS-SECTIONS FOR LIGHT TOWERS 14 thru 19

LIGHTING QUANTITIES SUB-SUMMARIES

STARK COUNTY
STA-30-14.12
STA-77-9.22

	REFERENCE NO.	STATION	STATION	SIDE	S625 Light Pole Ref. A Design A888B39.0D Median Mounted S713.01	S625 Light Pole Ref. B Design A710B34.2 S713.01	Light Pole Ref. D Design A715B34.2 S713.01	S625 Light Pole Ref. C Design A715B41.7 S713.01	S625 No. 0 AWG, 600 Volt Distribution Cable S713.02	S625 No. 4 AWG, 600 Volt Distribution Cable S713.02	S625 No. 10 AWG Pole and Bracket Cable S713.02	S625 1 1/2" ⌀ Duct Cable W/2 - No. 0 AWG Cables S713.03	S625 1 1/2" ⌀ Duct Cable W/2 - No. 4 AWG Cable S713.03	S625 Conduit, 2" ⌀ S713.04	Conduit, 3" ⌀ S713.04	S625 Pullbox, 18" Circular	Pullbox, 24" Circular S713.09	S625 Luminaire 175 W. Underpass, Metal Halide As Per Plan	S625 Luminaire, 400 W. Type II, Metal Halide As Per Plan	S625 Luminaire, 1000 W. Type III, Metal Halide As Per Plan	S625 Lamp 175 W. Metal Halide	Lamp 250 W. Metal Halide	S625 Lamp 400 W. Metal Halide		S625 Connector Kit Type I	Connector Kit Type II	Connector Kit Type III 713.15	S625 Connector Kit Type VII A	Connector Kit Type VII B	Connector Kit Type VII C 713.15	S625 Connector Kit Type VI	Ground Rod S713.16		S625 Service Pole SCO As Per Plan S713.19	S625 Light Pole Foundation 24" x 6'-0"	S625 Light Pole Foundation 24" x 8'-0"	S625 Special 14 Ft. Concrete Barrier Section For Light Pole Foundation Modified As Per Plan	S625 Special Median Barrier Pullbox, 36" As Per Plan	S625 Trench 24" Deep	S625 Service To Underpass Lighting By Structure No. As Per Plan	
					EACH	EACH		EACH	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.		EACH		EACH	EACH	EACH	EACH		EACH		EACH			EACH			EACH			LUMP	EACH	EACH	EACH	EACH	LIN. FT.	LUMP	
	1	SHEET 136																																							
Station Equation	2	920+90	921+01.98	℄	1					29	140									2			2					1	1		1	1					1				
	3	921+03.28	923+50	℄	1					494	140									2			2					1	1		1	1					1				
	4	923+50	924+52	℄						418																			2									1			
	5	924+52		℄/Rt						130					60	1		3s			3s							2											57	Lump*s	Br. No. STA-30-1423
	6	924+52	925+38	℄						354																			2									1			
	7	925+38		℄/Lt						130					60	1		3s			3s							2											57	—	Br. No. STA-30-1423
	8	925+38	926+10	℄	1					298	140									2			2						1	1	1	1					1				
	9	926+10	928+70	℄	1					1050	140									2			2						1	1	1	1					1				
	10	928+70	930+00	℄						525																															
	11	926+00 R-S	929+90 R-S	Lt		3					264		415						3			3				3	3					3			3				390		
	12	923+70R-TCO	929+95 R-T	Rt		4	1				450		680			1			4	1		4	1		2	5	5					5			5				625		
	13																																								
	14																																								
	15	TOTAL	SHEET 136		4*	7*	1*			3428*	1274*		1095*		120*	3*		6*	7*	9*	6*	7*	9*		2*	8*	8*	6*	8*	2*	4*	12*			8*		4*	2*	1129*		
	16																																								
	17																																								
	18	SHEET 137																																							
	19	930+00	931+30	℄	1*					530*	140*									2*			2*						1*	1*	1*	1*					1*				
	20	931+30	933+90	℄	1*					1050*	140*									2*			2*						1*	1*	1*	1*					1*				
	21	933+90	935+00	℄						450*																			2*									1*			
	22	935+00		℄/Rt						160*					75*	1*		3*s			3*s								2*										72*	Lump*s	Br. No. STA-30-1443
	23	935+00	935+73	℄						302*																			2*									1*			
	24	935+73		℄/Lt						156*					73*	1*		3*s			3*s				2*					2*									70*	—	Br. No. STA-30-1443
	25	935+73	936+40	℄	1*					278*	140*									2*			2*						1*	1*	1*	1*					1*				
	26	936+40	939+00	℄	1*					1050*	140*									2*			2*						1*	1*	1*	1*					1*				
	27	939+00	941+40	℄	1*					970*	140*									2*			2*						1*	1*	1*	1*					1*				
Station Equation	28	941+40	941+70.11	℄						126*																															
	29	943+25	944+77	℄						613																			2*									1*			
	30	944+77		℄/Lt						154*					72*	1*									2*														69*		
	31	944+77	945+25	℄	1					202	140									2			2						1	1	1	1					1				
	32	945+25	945+60	℄						150																			4									1			
	33	945+60	Pole SCO	℄/Rt						575				63	75		1											2	2*			1		Lump					135		
	34	945+60	946+10	Rt									60			1									2														50		
	35	Pole SCO	946+45	Rt					880					210			1											8											105		
	36	946+45		Rt/Lt					592						143		1											4											143		
	37	946+45	947+00	Rt								120																											55		
	38	946+45	947+00	Lt								120																											55		
	39	945+60	947+00	℄						570																															
	40	929+90 R-S	935+73US-30	Lt		1*		1*			212*		610*						1*	1*		1*	1*			2*	2*					2*			1*	1*			585*		
	41	929+95 R-T	935+00US-30	Rt		1*		1*			212*		530*						1*	1*		1*	1*			2*	2*					2*			1*	1*			505*		
	42	937+30	on RW Fence	Lt/Rt																												2*									
		TOTAL PART *			5*	2*		2*		5226*	1124*		1140*		220*	3*		6*	2*	12*	6*	2*	12*		4*	4*	4*		15*	7*	5*	11*			2*	2*	5*	3*	1301*		
		TOTAL PART NORMAL			1				1472	2110	140	240	60	273	218	1	3			2			2		2			14	5	1	1	2		Lump			1	1	543		
		TOTAL SHEET 137			6	2		2	1472	7336	1264	240	1200	273	438	4	3	6	2	14	6	2	14		6	4	4	14	20	8	6	13		Lump	2	2	6	4	1844		

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HNTB

* Designates U-663(15) Participation; all others I-77-4(44)107 Participation
All stations are ℄ U.S. 30 unless otherwise designated

NOTE:
Light Tower related quantities are on sheet 154C
"S" denotes structure quantities

NOTE:
All Quantities on Sheet 136 are U-663(15) Participation

LIGHTING QUANTITIES SUB-SUMMARIES

QUANTITY CALCULATIONS
MADE BY ERH DATE 10-10-75
CHECKED BY EFJ DATE 10-14-75

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

REFERENCE NO.	STATION	STATION	SIDE	S625 Light Pole Design A88B39.0D Median Mounted S713.01		S625 1½" Ø Duct Cable w/2-No. 0 AWG Cables S713.03	S625 No. 2 AWG, 600 Volt Distribution Cable S713.02	S625 No. 4 AWG, 600 Volt Distribution Cable S713.02	S625 No. 10 AWG Pole and Bracket Cable S713.02	S625 1½" Ø Duct Cable W/2 - No. 2 AWG Cables S713.03	S625 1½" Ø Duct Cable W/2 - No. 4 AWG Cable S713.03	S625 Conduit 2" Ø	Conduit 3" Ø S713.04	S625 Conduit 2" Ø Concrete Encased S713.06	S625 Pullbox, 18" Circular	Pullbox, 24" Circular	S625 Luminaire 175 W. Underpass, Metal Halide As per plan	S625 Luminaire, 1000 W. Type III, Metal Halide As per plan	S625 Lamp 175 W. Metal Halide	S625 Lamp 400 W. Metal Halide	S625 Connector Kit Type I	S625 Connector Kit Type VII A	Connector Kit Type VII B	Connector Kit Type VII C S713.15	S625 Connector Kit Type VI	Ground Rod S713.16	S625 Structure Grounding System S713.17	S625 Service To Light Tower No. 6 As per plan	202 Removal of Existing Light Pole and Foundation	202 Removal of Existing Light Pole Structure Mounted	S625 Special 14 Ft. Concrete Barrier Section For Light Pole Foundation As Per Plan	S625 Junction Box, Type II 18"x8"x6" As Per Plan	S625 Trench 24" Deep	S625 Service To Underpass Lighting As Per Plan	
				EACH		LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.		LIN. FT.	EACH		EACH	EACH	EACH	EACH	EACH	EACH			EACH		EACH	LUMP	EACH	EACH	EACH	EACH	LIN. FT.	LUMP	
1	SHEET 138																																		
2	947+00	947+85	℄	1				385	140									2		2		1	1		1	1					1				
3	947+85	950+25	℄	1				485	140									2		2		1	1		1	1					1				
4	947+00	952+85 R-A	Lt			1200										1						2	2										585		
5	952+70 R-A	Tower #1	Lt					90						40																			40		
6	952+85 R-A	959+00 R-A	Lt				580s			485		135s				1	2s		2s			4	4s				1s					2s	475	Lump s	Br. No. STA-30-1474L
7	954+20 R-A	954+20	Lt/Lt				130						60																				60		
8	953+30 R-A	957+50 R-A	Lt/Rt					180s			370	80s			1	1	2s		2s			2	4s	2			1s					2s	355	Lump s	Br. No. STA-30-1474
9	957+50 R-A	Tower #3	Rt								75																						65		
10	954+20	963+00	Lt				685s			575		325s			2		4s		4s		2	2	2/8s				1s					4s	555	Lump s	Br. No. STA-30-1487
11	947+00	952+85 R-F	Rt			1200										1						4											590		
12	954+20 R-F	954+20	Rt/Rt				120						55																				55		
13	953+30	959+10	Rt					180s		500		80s			2		2s		2s		2		2/4s	2								2s	490		Br. No. STA-30-1474
14	959+10	Tower #4	Rt								60																						50		
15	959+10	963+00	Rt				660s			80		325s			1		2s		2s			2	4s									2s	65		Br. No. STA-30-1487
16	952+85 R-F	954+20 R-F	Rt				580s					135s				1	2s		2s			2	2/4s				1s					2s		Lump s	Br. No. STA-30-1474 R
17	954+20 R-F	Tower #2	Rt								95																						25		
18	954+20 R-F	960+20 R-F	Rt							620					2						2	2	2										600		
19	960+20 R-F	960+20 R-G	Rt/Lt				150						70		1							2											70		
20	952+85 R-F	954+20 R-F	Rt				570s					280s															1s							Lump s	Br. No. STA-30-1488
21																																			
22																																			
23	TOTAL	SHEET 138		2		2400	3475	1320	280	2260	600	1360	185	40	9	5	14	4	14	4	6	24	40	4	2	2	5				2	14	4080		
24																																			
25																																			
26	SHEET 139																																		
27	963+00	969+00 R-E	Lt				780s			225		385s			2							4	2s									1s	215		Br. No. STA-30-1487
28	969+00 R-E	969+00	Lt/Lt				90						40		1								2										40		
29	969+00	970+15	Lt							125					1							2											115		
30	970+15	Tower #9	Lt					50						20																			20		
31	969+00	972+45 R-E	Lt/Rt								360				1							2											350		
32	972+45	Tower #8	Rt					40						15																			15		
33	963+00	968+30	Rt				780s			155		385s			2		8s		8s		2	2	4s									2s	145		Br. No. STA-30-1487
34	959+00 R-A	962+70 R-A	Lt							385					2								4										370		
35	962+70 R-A	Tower #5	Lt								25																						20		
36	962+70 R-A	575+90I-77	Lt								555				2						4		2										535		
37	4+85 R-CC	11+85 R-CC	Lt																										6						
38	961+40 R-A	955+30 R-B	Lt/Lt				170						80		2							2											80		
39	955+30 R-B	957+50 R-B	Lt							230					1								2										220		
40	957+50 R-B	Tower #7	Lt								75																						65		
41	957+50 R-B	960+00 R-B	Lt				285s			110		140s			1							2					1s						100		Br. No. STA-30-1489
42	564+65I-77	976+60 R-E	Rt							390													2						2				380		
43	976+60 R-E	Tower #10	Rt								60																						50		
44	976+60 R-E	568+50I-77	Rt/Rt					90														2													
45	568+50I-77	573+75I-77	Rt					850s			135										2	2s	2						1	2s			125		Br. No. STA-77-0937
46	573+75I-77	574+20 R-D	Rt/Rt					90														2													
47	565+90 R-D	575+81 R-D	Rt					570s														2							5	2s					Br. No. STA-30-RampD
48	571+40 R-D		Rt/Lt					80					35		1							2											35		
49	571+40 R-D	968+60 R-D	Lt												1.							2						Lump s							Br. No. STA-30-Ramp D
50	968+00 R-D	Tower #6	Lt								50															1							40		
51	565+69I-77	573+60I-77	Lt																										3	2s					Br. No. STA-77-0937
52																																			
53																																			
54	TOTAL	SHEET 139					2105	1770		1620	1260	910	155	35	17		8		8		8	26	20			1	1	Lump	17	6		3	2920		

MADE ERH DATE 10-9-75
TRACED TAK DATE 10-10-75
CHECKED EFJ DATE 10-14-75
SCALE

Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO

HNTB

* Designates U-663(15) Participation; all others I-77-4(44)107 Participation
All stations are ℄ U.S. 30 unless otherwise designated

NOTE:
Light Tower related quantities are on sheet 154C
"S" denotes structure quantities

LIGHTING QUANTITIES SUB-SUMMARIES

QUANTITY CALCULATIONS
MADE BY ERH DATE 10-9-75
CHECKED BY EFJ DATE 10-14-75

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

REFERENCE NO.	STATION	STATION	SIDE	S625 No. 2 AWG, 600 Volt Distribution Cable S713.02 (LIN. FT.)	S625 No. 4 AWG, 600 Volt Distribution Cable S713.02 (LIN. FT.)	S625 1½" ϕ Duct Cable W/2 - No. 2 AWG Cables S713.03 (LIN. FT.)	S625 1¼" ϕ Duct Cable W/2 - No. 4 AWG Cable S713.03 (LIN. FT.)	S625 Conduit 2" ϕ S713.04 (LIN. FT.)	S625 Conduit 3" ϕ S713.04 (LIN. FT.)	S625 Pullbox, 18" Circular (EACH)	Pullbox, 24" Circular S713.09 (EACH)	S625 Luminaire 175 W. Underpass, Metal Halide As per plan (EACH)	S625 Junction Box Type II S713.10 (EACH)	S625 Conduit 2" ϕ Concrete Encased S713.06 (LIN. FT.)	S625 Lamp 175 W. Metal Halide (EACH)	S625 Connector Kit Type I S713.15 (EACH)	S625 Connector Kit Type VII A (EACH)	Connector Kit Type VII B S713.15 (EACH)	S625 Ground Rod S713.16 (EACH)	S625 Structure Grounding System S713.17 (EACH)	S625 Service Pole B As Per Plan. S713.19 (LUMP)	202 Removal of Existing Light Pole and Foundation (EACH)	202 Removal of Existing Light Pole Structure Mounted (EACH)	202 Removal of Existing Lighting Control Center and Service Pole B, As Per Plan (EACH)	S625 Trench 24" Deep (LIN. FT.)	S625 Service To Underpass Lighting As Per Plan (LUMP)	
1	SHEET 140																										
2	960+00 R-B	966+55 R-B	Lt	1330[s]				655[s]		1		3[s]	3[s]		3[s]		2	6[s]								Lump[s]	Br. No. STA-30-1489
3	966+55 R-B	Tower #11	Lt				50																		40		
4	963+00 R-G	970+95 R-G	Lt	1610[s]				795[s]		1		5[s]	5[s]		5[s]			2/10									Br. No. STA-30-1488
5	970+95 R-G	Tower 14	Lt				60																		50		
6	970+95 R-G	976+00 R-G	Lt			520				1								2							505		
7	976+00 R-G	Tower #15	Lt				90																		80		
8	976+00 R-G	979+35 R-G	Lt		500[s]		110	240[s]		1		2[s]	2[s]		2[s]		4	2[s]		1[s]					100	Lump[s]	Br. No. STA-30-1499
9	555+80I-77	562+40 R-G	Rt	1400[s]												2	2	2					3[s]				Br. No. STA-77-0914
10	562+40I-77	564+65I-77	Rt			235																1			225		
11	555+80I-77	560+08I-77	Lt		860[s]							3[s]			3[s]		2[s]	2[s]					2[s]			Lump[s]	Br. No. STA-77-0914
12	560+08I-77	564+65I-77	Lt																			2					
13	971+00 R-F	953+90 R-C	Rt		1170[s]			565[s]		1		11[s]	5[s]		11[s]			2/10[s]		1[s]						Lump[s]	Br. No. STA-30-1494
14	953+90 R-C	Tower #13	Rt				30																		20		
15	953+90 R-C	957+00 R-C	Rt				320			1							2								310		
16	957+00 R-C	Tower #12	Rt/Lt		90		20		40	1							2								50		
17	963+00 R-H	966+45 R-H	Rt		80[s]		320	35[s]		2							2	2							310		Br. No. STA-30-1492
18	966+45 R-H	Tower #16	Rt				40																		30		
19	966+45 R-H		Rt/Lt						40	1															40		
20	966+45 R-H	968+80 R-H	Lt					235[s]		1										1[s]							Br. No. STA-30-1504
21																											
22																											
23	TOTAL	SHEET 140		4340	2700	755	1040	2525	80	11		24	15		24	2	16	40		3		3	5		1760		
24																											
25																											
26	SHEET 141																										
27	549+30I-77	974+70 R-F	Lt/Rt				290			1							2	2				2			280		
28	974+70 R-F	Tower #18	Rt				40																		30		
29	974+70 R-F	973+55 R-F	Rt			95					1						8								85		
30	973+55 R-F	Cont. Ctr. B	Rt	920				210													Lump			1	105		
31	973+55 R-F	553+25I-77	Rt/Lt	200					40		1						6								40		
32	553+25I-77	555+80I-77	Lt		210[s]	175		100[s]										2				1	1[s]		165		Br. No. STA-77-0914
33	554+80I-77	971+00 R-F	Lt		210[s]			100[s]				1[s]	1[s]		1[s]			2[s]									Br. No. STA-30-1494
34	553+25I-77		Lt/Rt	400													4										
35	532+20I-77		Rt							1						2		2									
36	549+35I-77	958+20 R-H	Rt				120			2						2	2	4							110		
37	958+20 R-H	Tower #19	Rt		80									30											30		
38	958+20 R-H	959+10 R-H	Rt			100				1								2				1			90		
39	959+10 R-H	963+00 R-H	Rt		520[s]		145	255[s]		1							2			1[s]					135		Br. No. STA-30-1492
40	959+10 R-H	551+30I-77	Rt/Rt	90					40	1							2								40		
41	551+30I-77	555+10I-77	Rt			400				1								2				2			380		
42	555+10I-77	Tower #17	Rt		70									30											30		
43	555+10I-77	555+80I-77	Rt	70[s]		50		30									2								40		Br. No. STA-77-0914
44	554+60I-77	on RW fence	Lt																1								
45																											
46	TOTAL	SHEET 141		1680	1090	820	595	695	80	8	2	1	1	60	1	4	28	16	1	1	Lump	6	1	1	1560		

MADE ERH DATE 10-9-75
TRACED TAK DATE 10-13-75
CHECKED EFJ DATE 10-14-75
SCALE

Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO

HNTB

• Designates U-663(15) Participation; all others I-77-4(44)107 Participation
All stations are ℄ U.S. 30 unless otherwise designated

NOTE:
Light Tower related quantities are on sheet 154C
"S" denotes structure quantities

LIGHTING QUANTITIES SUB-SUMMARIES

LIGHTING QUANTITIES SUB-SUMMARIES

QUANTITY CALCULATIONS
MADE BY E.R.H. DATE 8-19-75
CHECKED BY E.F.J. DATE 8-29-75

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

154C
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

			S625 Light Tower Design A3BB100D S713.21 EACH	S625 Light Tower Design A3BB110D S713.21 EACH	S625 Light Tower Design A3BB120D S713.21 EACH	S625 Light Tower Design A3BBBB110D S713.21 EACH	S625 Light Tower Design A3BBBB120D S713.21 EACH	S625 Light Tower Design A3BBBB130D S713.21 EACH	S625 Light Tower Design A3BBBB140D S713.21 EACH	S625 Light Tower Design A3BBBB150D S713.21 EACH	S625 Light Tower Design A3BBBBB120D S713.21 EACH	S625 Light Tower Foundation 36" ø x 20' Deep As Per Plan EACH	S625 Light Tower Foundation 36" ø x 25' Deep As Per Plan EACH	S625 Light Tower Foundation 36" ø x 30' Deep As Per Plan EACH		S625 Light Tower Foundation 42" ø x 30' Deep As Per Plan EACH		S625 Light Tower Platform, Type A, As Per Plan EACH	S625 Light Tower Platform, Type C, As Per Plan EACH	S625 Light Tower Platform, Type D, As Per Plan EACH	S625 Light Tower Platform, Type E, As Per Plan EACH		S625 Lamp 1000 W. Metal Halide EACH	S625 Luminaire 1000 W. Asymmetric S713.21 EACH	S625 Luminaire 1000 W. Type V S713.21 EACH	S625 Luminaire 1000W. Set back Type As per plan EACH	S625 Ground Rod S713.16 EACH	S625 Portable Power Unit S713.21 EACH
1	Sheet	No. 138																										
2																												
3	Tower	No. 1		1								1									1		2	2			1	
4	Tower	No. 2		1									1						1				2	2			1	
5	Tower	No. 3	1									1											2	2			1	
6	Tower	No. 4			1								1						1				2	2			1	
7																												
8	TOTAL	Sheet No. 138	1	2	1							2	2						2		1		8	8			4	
9																												
10																												
11	Sheet	No. 139																										
12																												
13	Tower	No. 5		1									1						1				2	2			1	
14	Tower	No. 6							1							1							4		4		1	
15	Tower	No. 7								1						1			1				4		4		1	
16	Tower	No. 8		1										1						1			2	2			1	
17	Tower	No. 9				1							1							1			4		4		1	
18	Tower	No. 10	1										1										2	2			1	
19																												
20	TOTAL	Sheet No. 139	1	2		1			1	1			3	1		2			2	2			18	6	12		6	
21																												
22																												
23	Sheet	No. 140																										
24																												
25	Tower	No. 11				1							1					1					4		4		1	
26	Tower	No. 12							1							1			1				4		4		1	
27	Tower	No. 13						1					1						1				5		4	1	1	
28	Tower	No. 14									1			1					1				5		4	1	1	
29	Tower	No. 15					1						1										4		4		1	
30	Tower	No. 16		1									1						1				2	2			1	
31																												
32	TOTAL	Sheet No. 140		1		1	1	1	1		1		4	1		1		1	4				24	2	20	2	6	
33																												
34																												
35	Sheet	No. 141																										1
36																												
37	Tower	No. 17					1						1								1		4		4		1	
38	Tower	No. 18		1									1						1				2	2			1	
39	Tower	No. 19		1									1							1			2	2			1	
40																												
41	TOTAL	Sheet No. 141		2			1						3						1	1	1		8	4	4		3	1
42																												
43																												
44																												
45	TOTAL	SHEET NO. 154C	2	7	1	2	2	1	2	1	1	2	12	2		3		1	9	3	2		58	20	36	2	19	1

MADE E.R.H. DATE 8-19-75
TRACED [illegible] DATE 8-29-75
CHECKED E.F.J. DATE 8-29-75
SCALE —

Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO

HNTB

* Designates U-663(15) Participation; all others I-77-4(44)107 Participation
All stations are ℄ U.S. 30 unless otherwise designated

NOTE:
Light Tower related quantities are on sheet 154C
"S" denotes structure quantities

LIGHTING QUANTITIES SUB-SUMMARIES

GENERAL SUMMARY

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

155 / 389

QUANTITY CALCULATIONS
MADE BY ERH DATE 10-16-75
CHECKED BY EFJ DATE 10-17-75

STARK COUNTY
STA-30-14.12
STA-77-9.22

STRUCTURE NUMBER 1423	STA-30- 1443	1474L	1474	1474R	1487	1488	1489	1492	1494	1499	1504	RAMPD	STA-77- 0914	0937	SHEET NUMBER							ESTIMATED QUANTITIES	COST PARTICIPATION		QUANT. TOTAL	UNIT	ITEM	DESCRIPTION	
136	137	138	138	138	138 / 139	138 / 140	139 / 140	140 / 141	140 / 141	140	140	139	140 / 141	139	136	137	137	138	139	140	141								
II	II	I	I	I	I	I	I	I	I	I	I	I	I	I	II	I	II	I	I	I	I		I	II					
																												ROADWAY LIGHTING TYPE CODE 6203	1
																													2
															4	1	5	2					3	9	12	Each	S 625	Light Pole Design No. A8BB39.0D, S713.01 Ref. A	3
															7		2							9	9	Each	S 625	Light Pole Design No. AT8B34.2, S713.01 Ref. B	4
																	2							2	2	Each	S 625	Light Pole Design No. AT15B41.7, S713.01 Ref. C	5
															1									1	1	Each	S 625	Light Pole Design No. AT15B34.2, S713.01 Ref. D	6
																1472							1472		1472	Lin. Ft.	S625	No. 0 AWG 600 Volt Distribution Cable, S713.02	7
		580		580	2905	2180	1615						1470					400	260		1610		11600		11600	Lin. Ft.	S 625	No. 2 AWG, 600 Volt Distribution Cable, S713.02	8
			360					600	1380	500		570	1070	850	3428	2110	5226	960	350	90	150		8990	8654	17644	Lin. Ft.	S625	No. 4 AWG, 600 Volt Distribution Cable, S713.02	9
															1274	140	1124	280					420	2398	2818	Lin. Ft.	S625	No. 10 AWG, Pole and Bracket Cable, S713.02	10
																													11
																240		2400					2640		2640	Lin. Ft.	S625	1½" ∅ Duct Cable w/2 No. 0 AWG, 600 VOLT CABLES	12
																		2260	1620	755	820		5455		5455	Lin. Ft.	S625	1½" ∅ Duct Cable W/2 No. 2AWG, 600 VOLT CABLES	13
															1095	60	1140	600	1260	1040	595		3555	2235	5790	Lin. Ft.	S625	1½" ∅ Duct Cable W/2 No. 4AWG, 600 VOLT CABLES	14
																													15
																													16
		135	160	135	1420	1075	795	290	665	240	235		130			273					210		5763		5763	Lin. Ft.	S625	Conduit 2" ∅, S713.04	17
																		40	35		60		135		135	Lin. Ft.	S625	Conduit 2" ∅, Concrete Encased, S713.06	18
															120	218	220	185	155	80	80		718	340	1058	Lin. Ft.	S625	Conduit 3" ∅, S713.04	19
																													20
																													21
															3	1	3	9	17	11	8		46	6	52	Each	S625	Pullbox, 18" Circular, S713.09	22
																3		5			2		10		10	Each	S625	Pullbox, 24" Circular, S713.09	23
		2	4	2	9	5	3		6	2													33		33	Each	S625	Junction Box, Type II, 18"x8"x6", As Per Plan	24
																													25
6	6	2	4	2	14	5	3		12	2			3										47	12	59	Each	S625	Luminaire 175 W. Underpass, Metal Halide, As Per Plan	26
															7		2							9	9	Each	S625	Luminaire 400 W. Type II, Metal Halide, As Per Plan	27
															9	2	12	4					6	21	27	Each	S625	Luminaire 1000 W. Type III, Metal Halide, As Per Plan	28
																		8	6	2	4		20		20	Each	S625	Luminaire 1000 W, Asymmetric, S713.21	29
																			12	20	4		36		36	Each	S625	Luminaire 1000 W, Type V, S713.21	30
																				2			2		2	Each	S625	Luminaire 1000 W. Offset Type, As Per Plan	31
6	6	2	4	2	14	5	3		12	2			3										47	12	59	Each	S625	Lamp 175 W. Metal Halide, As Per Plan	32
															7		2							9	9	Each	S625	Lamp 250 W. Metal Halide, As Per Plan	33
															9	2	12	4					6	21	27	Each	S625	Lamp 400 W. Metal Halide, As Per Plan	34
																		8	18	24	8		58		58	Each	S625	Lamp 1000 W. Metal Halide, As Per Plan	35
																													36
															2	2	4	6	8	2	4		22	6	28	Each	S625	Connector Kit, Type I, AS PER PLAN	37
															8		4							12	12	Each	S625	Connector Kit, Type II, AS PER PLAN	38
															8		4							12	12	Each	S625	Connector Kit, Type III, AS PER PLAN	39
															4	1	5	2					3	9	12	Each	S625	Connector Kit, Type VI, AS PER PLAN	40
													2	2	6	14		24	24	14	28		108	6	114	Each	S625	Connector Kit, Type VIIA, AS PER PLAN	41
		4	8	4	18	10	6		12	2			2		8	5	15	12	14	10	14		121	23	144	Each	S625	Connector Kit, Type VIIB, AS PER PLAN	42
															2	1	7	4					5	9	14	Each	S625	Connector Kit, Type VIIC, AS PER PLAN	43
																													44
															12	2	11	6	7	6	4		25	23	48	Each	S625	Ground Rod	45
																													46
																													47
																													48
																													49
																Lump							Lump		Lump	Lump	S625	Service Pole and Control Center SCO, As Per Plan	50
																					Lump		Lump		Lump	Lump	S625	Service Pole and Control Center B, As Per Plan	51
																													52
															8		2							10	10	Each	S625	Light Pole Foundation, 24"0 x 6'-0"	53
																	2							2	2	Each	S625	Light Pole Foundation, 24"0 x 8'-0"	54
																													55
															1129	543	1301	4080	2920	1760	1560		10863	2430	13293	Lin. Ft.	S625	Trench 24" Deep	56
																													57
Lump																								Lump	Lump	Lump	S625	Service To Underpass Lighting, As Per Plan BR. NO. STA-30-1423	58
	Lump																							Lump	Lump	Lump	S625	Service To Underpass Lighting, As Per Plan BR. NO. STA-30-1443	59
		Lump																					Lump		Lump	Lump	S625	Service To Underpass Lighting, As Per Plan BR. NO. STA-30-1474L	60
			Lump																				Lump		Lump	Lump	S625	Service To Underpass Lighting, As Per Plan BR. NO. STA-30-1474	61
				Lump																			Lump		Lump	Lump	S625	Service To Underpass Lighting, As Per Plan BR. NO. STA-30-1474R	62
					Lump																		Lump		Lump	Lump	S625	Service To Underpass Lighting, As Per Plan BR. NO. STA-30-1487	63
						Lump																	Lump		Lump	Lump	S625	Service To Underpass Lighting, As Per Plan BR. NO. STA-30-1488	64
							Lump																Lump		Lump	Lump	S625	Service To Underpass Lighting, As Per Plan BR. NO. STA-30-1489	65
									Lump														Lump		Lump	Lump	S625	Service To Underpass Lighting, As Per Plan BR. NO. STA-30-1494	66
										Lump													Lump		Lump	Lump	S625	Service To Underpass Lighting, As Per Plan BR. NO. STA-30-1499	67
													Lump										Lump		Lump	Lump	S625	Service To Underpass Lighting, As Per Plan BR. NO. STA-77-0914	68

I Designates I-77-4(44)107 Participation (Normal)
II Designates U-663(15) Participation

MADE WGP DATE 8-27-75
TRACED DBC DATE 8-28-75
CHECKED EFJ DATE 9-29-75
SCALE

Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO

HNTB

LIGHTING
GENERAL SUMMARY

GENERAL SUMMARY

QUANTITY CALCULATIONS
MADE BY ERH DATE 10-16-75
CHECKED BY EFJ DATE 10-17-75

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

155A
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

STRUCTURE NUMBER													SHEET NUMBER											ESTIMATED QUANTITIES		COST PARTICIPATION		QUANT. TOTAL	UNIT	ITEM	DESCRIPTION	
STA-30-											STA-77-		135	136	137	137	138	139	140	141	135A			135								
1474L	1474	1474R	1487	1488	1489	1492	1494	1499	1504	RAMPD	0914	0937	I	II	I	II	I	I	I	I	I			I		I	II					
138	138	138	138 139	138 140	139 140	140 141	140 141	140	140	139	140 141	139																			ROADWAY LIGHTING TYPE CODE 6203	1
I	I	I	I	I	I	I	I	I	I	I	I	I																				2
																																3
														4	1	5	2									3	9	12	Each	S625	Special 14 Ft. Concrete Barrier Section for Light Pole	4
																															Foundation, As Per Plan	5
														2	1	3										1	5	6	Each	S625	Special Median Barrier Pullbox, 36" As Per Plan	6
																																7
																		Lump								Lump		Lump	Lump	S625	Service To Light Tower No. 6, As Per Plan	8
																																9
																	1	1								2		2	Each	S625	Light Tower, Design A3BB100D	10
																	2	2	1	2						7		7	Each	S625	Light Tower, Design A3BB110D	11
																	1									1		1	Each	S625	Light Tower, Design A3BB120D	12
																		1	1							2		2	Each	S625	Light Tower, Design A3BBBB110D	13
																			1	1						2		2	Each	S625	Light Tower, Design A3BBBB120D	14
																																15
																		1	1							2		2	Each	S625	Light Tower, Design A3BBBB140D	16
																		1								1		1	Each	S625	Light Tower, Design A3BBBB150D	17
																			1							1		1	Each	S625	Light Tower, Design A3BBBBB120D	18
																			1							1		1	Each	S625	Light Tower, Design A3BBBBB130D	19
																																20
																	2									2		2	Each	S625	Light Tower Foundation, 36"Ø x 20' Deep, As Per Plan	21
																	2	3	4	3						12		12	Each	S625	Light Tower Foundation, 36"Ø x 25' Deep, As Per Plan	22
																		1	1							2		2	Each	S625	Light Tower Foundation, 36"Ø x 30' Deep, As Per Plan	23
																																24
																		2	1							3		3	Each	S625	Light Tower Foundation, 42"Ø x 30' Deep, As Per Plan	25
																																26
																			1							1		1	Each	S625	Light Tower Platform, Type A, As Per Plan	27
																	2	2	4	1						9		9	Each	S625	Light Tower Platform, Type C, As Per Plan	28
																		2		1						3		3	Each	S625	Light Tower Platform, Type D, As Per Plan	29
																	1			1						2		2	Each	S625	Light Tower Platform, Type E, As Per Plan	30
																																31
																				1						1		1	Each	S625	Portable Power Unit, S 713.21	32
																								20		20		20	Each	S625	Markers	33
																																34
													Lump													Lump		Lump	Lump	S625	Maintaining Existing Lighting	35
																																36
																				Lump						Lump		Lump	Lump	202	Existing Lighting Control Center and Service Pole "B", To Be Removed	37
																		17	3	6						26		26	Each	202	Existing Lighting Unit, To Be Removed	38
										2	6	4														12		12	Each	202	Existing Lighting Unit Structure Mounted, To Be Removed	39
																																40
																								200		200		200	Lin. Ft.	605	4" Shallow Pipe Underdrains	41
																																42
																					Lump					Lump	Lump	Lump	Lump	839	High Voltage Test	43
																																44
																																45
																																46
1																										1		1	Each	S625	Structure Grounding System, Br. No. STA-30-1474L	47
	1																									1		1	Each	S625	Structure Grounding System, Br. No. STA-30-1474	48
		1																								1		1	Each	S625	Structure Grounding System, Br. No. STA-30-1474R	49
			1																							1		1	Each	S625	Structure Grounding System, Br. No. STA-30-1487	50
				1																						1		1	Each	S625	Structure Grounding System, Br. No. STA-30-1488	51
					1																					1		1	Each	S625	Structure Grounding System, Br. No. STA-30-1489	52
						1																				1		1	Each	S625	Structure Grounding System, Br. No. STA-30-1492	53
							1																			1		1	Each	S625	Structure Grounding System, Br. No. STA-30-1494	54
								1																		1		1	Each	S625	Structure Grounding System, Br. No. STA-30-1499	55
									1																	1		1	Each	S625	Structure Grounding System, Br. No. STA-30-1504	56
																																57
																																58
																																59
																																60
																																61
																																62
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																																66
																																67
																																68

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CLEVELAND, OHIO

HNTB

I Designates I-77-4(44)107 Participation (Normal)
II Designates U-663(15) Participation

LIGHTING
GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT		156 389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22

606 INTERIM BARRELS

THIS WORK SHALL CONSIST OF 1) FURNISHING, INSTALLING, AND MAINTAINING AND/OR 2) THE REMOVAL AND DISPOSAL OF 55 GALLON BARRELS AS SPECIFIED IN 606.04 AND LOCATED ON THE PLANS.
BARRELS SHALL BE SPACED AT 50' INTERVAL.

BASIS OF PAYMENT WILL BE AS FOLLOWS:

1) 606 INTERIM BARRELS, AT THE CONTRACT BID PRICE PER EACH WHICH PRICE WILL BE FULL COMPENSATION FOR FURNISHING, INSTALLING, AND MAINTAINING OF THE BARRELS.

620 INTERIM DELINEATORS

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING INTERIM DELINEATORS AS SPECIFIED.

THE WORK SHALL INCLUDE NO. 2 POSTS, 4'-0" LONG BOLTED TO THE INSIDE OF INTERIM BARRELS FURNISHED UNDER 606 USING A MINIMUM OF THREE 5/16" STEEL BOLTS SPACED ON 12" CENTERS. POST FLANGES SHALL BE 90 DEGREES TO INTERIM EDGE LINES FACING APPROACHING TRAFFIC. TYPE D DELINEATORS SHALL BE MOUNTED ON THE DRIVE POST FLANGES WITH THE TOP OF THE DELINEATOR 4' ABOVE THE PAVEMENT.

THE QUANTITY FURNISHED AND INSTALLED WILL BE PAID FOR AT THE PRICE BID PER EACH, 620 INTERIM DELINEATORS, WHICH PRICE WILL BE FULL COMPENSATION FOR FURNISHING AND INSTALLING DRIVE POSTS AND DELINEATORS INCLUDING NECESSARY HARDWARE, LABOR AND EQUIPMENT.

844 INTERIM POSTS, NO.3 , AS PER PLAN

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING INTERIM POSTS AS SPECIFIED FOR INTERIM PAVEMENT WIDTH TRANSITIONS. DETAILS ARE SHOWN ON SHEET 157 .

WORK SHALL CONSIST OF NO. 3 POSTS 11'-0" LONG BOLTED TO THE INSIDE OF TEMPORARY BARRELS FURNISHED UNDER 606 USING A MINIMUM OF THREE 5/16" STEEL BOLTS SPACED ON 12" CENTERS.

POST FLANGES SHALL BE 90 DEGREES TO THE INTERIM EDGE LINES FACING APPROACHING TRAFFIC. BEARING PLATES 3"x2" SHALL BE USED AT EACH BOLT OUTSIDE THE BARREL TO PREVENT PULL THROUGH. SIGNS MOUNTED ON THE POSTS SHALL HAVE A SEVEN FOOT CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SURFACE OF THE PAVEMENT. PAYMENT FOR FURNISHING AND ERECTION OF THESE SIGNS IS COVERED UNDER SEPARATE ITEMS WITHIN THE PLANS.

THE QUANTITY FURNISHED AND INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE BID PER LINEAR FOOT, 844 INTERIM POSTS, NO.3 , AS PER PLAN, WHICH PRICE WILL BE FULL COMPENSATION FOR FURNISHING AND INSTALLING THE POSTS, INCLUDING NECESSARY HARDWARE, LABOR AND EQUIPMENT.

844 INTERIM OVERLAY REMOVED AND DISPOSED OF

THIS WORK SHALL CONSIST OF THE REMOVAL OF RIVETS IN THE INTERIM OVERLAY AND THE DISPOSAL OF THE OVERLAY TO THE SATISFACTION OF THE ENGINEER.

RIVETS TO BE REMOVED SHALL BE DRILLED OUT AND THE OVERLAY REMOVED IN SUCH A WAY AS NOT TO HARM THE SURFACE OF THE SIGN. REMAINING RIVETS IN THE SIGN SHALL BE CHECKED AND ANY LOOSE OR DAMAGED RIVETS SHALL BE REPLACED.

THE QUANTITY OF INTERIM OVERLAY REMOVED AND DISPOSED OF WILL BE PAID FOR AT THE PRICE BID PER SQUARE FOOT, 844 INTERIM OVERLAY REMOVED AND DISPOSED OF, WHICH PRICE WILL BE FULL COMPENSATION FOR THE REMOVAL AND DISPOSAL OF THE INTERIM OVERLAY SIGN AND RIVETS, THE REPLACEMENT OF LOOSE OR DAMAGED RIVETS, AND ALL LABOR AND EQUIPMENT NECESSARY TO PERFORM THE REQUIRED WORK.

621 INTERIM PAVEMENT MARKING, BY TYPE

THIS WORK SHALL CONSIST OF THE FURNISHING AND INSTALLATION OF INTERIM REMOVABLE MARKINGS AS SPECIFIED HEREIN AND SHOWN ON THE PLANS.

1. MATERIAL

MATERIAL SHALL CONSIST OF A BACKING COATED WITH A PRESSURE-SENSITIVE ADHESIVE AND A WEATHER AND TRAFFIC RESISTANT REFLECTIVE WHITE OR YELLOW COLORED SURFACE AND ADDITIONAL REQUIREMENTS AS FOLLOWS:

A. REFLECTION - THE WHITE AND YELLOW STRIPING MATERIAL SHALL BE REFLEX-REFLECTIVE, REFLECTING WHITE OR YELLOW RESPECTIVELY AND SHALL BE READILY VISIBLE WHEN VIEWED WITH AUTOMOBILE HEADLIGHTS AT NIGHT.

B. ADHESIVE - THE STRIPING MATERIAL SHALL HAVE A PRECOATED PRESSURE-SENSITIVE ADHESIVE WHICH SHALL NOT REQUIRE A LINER FOR PROTECTION FROM CONTAMINATION, PREADHESION, OR BLOCKING WITHIN THE ROLL AS DELIVERED.

C. CONFORMABILITY - THE STRIPING MATERIAL SHALL BE THIN, FLEXIBLE, FORMABLE, AND FOLLOWING APPLICATION SHALL REMAIN CONFORMED TO THE TEXTURE OF THE PAVEMENT SURFACE.

D. REMOVABILITY - THE STRIPING MATERIAL BACKING SHALL PERMIT REMOVAL WITHOUT REQUIRING SANDBLAST, SOLVENT, OR GRINDING METHODS.

E. DURABILITY - THE STRIPING MATERIAL APPLIED IN ACCORDANCE WITH RECOMMENDED RROCEDURES SHALL BE WEATHER RESISTANT AND SHOW NO APPRECIABLE FADING, LIFTING OR SHRINKAGE, PRIOR TO COMPLETION OF THIS PROJECT.

F. GENERAL - THE STRIPING MATERIAL AS SUPPLIED SHALL BE OF GOOD APPEARANCE, FREE FROM CRACKS, AND EDGES SHALL BE TRUE, STRAIGHT, AND UNBROKEN. THE STRIPING MATERIAL SHALL BE SUPPLIED IN ROLLS AND THERE SHALL BE NO MORE THAN 3 SPLICES PER 60 YARDS OF LENGTH.

THE STRIPING MATERIAL SHALL BE PREPARED FOR DELIVERY IN STANDARD COMMERCIAL CONTAINERS SO CONSTRUCTED AS TO INSURE ACCEPTANCE BY THE CARRIER AND PREVENT DAMAGE DURING PROPER SHIPMENT AND STORAGE.

THE CONTRACTOR SHALL STORE THE MATERIAL IN A COOL, DRY LOCATION WHERE TEMPERATURE WILL NOT EXCEED 100 DEGREES F. PRIOR TO APPLICATION OF MARKING ON ROADWAY SURFACES.

2. ROAD SURFACE PREPARATION

THE ROAD SURFACE MUST BE CLEAN AND DRY, FREE OF OILS AND GREASE, DUST OR DIRT. ALL SURFACES MUST BE PRIMED.

CONCRETE PAVEMENT SHALL BE SURFACE TREATED IN ACCORDANCE WITH SECTION 621.04. SURFACE SHALL THEN BE GENEROUSLY FLUSHED WITH CLEAN WATER AND ALLOWED TO DRY THOROUGHLY PRIOR TO APPLICATION OF PRIMER AND INTERIM MARKINGS.

3. PRIMING

METHOD OF PRIMING SHALL BE AS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL SUBMIT A PROPOSAL FOR TYPE OF PRIMING TO BE USED. COST FOR PRIMING SURFACES SHALL BE INCIDENTAL TO THE COST OF VARIOUS ITEMS INCLUDED IN ITEM 615, TEMPORARY ROADS, AS PER PLAN.

4. APPLICATION

INTERIM LINES SHALL BE APPLIED TO THE ROAD SURFACE WITH A ROLLER TYPE APPLICATOR AND ROLLED IMMEDIATELY AFTERWARDS BY RUBBER-TIRED ROLLER WITH APPROXIMATE SINGLE WHEEL LOAD BETWEEN ONE THOUSAND (1000) AND TWO THOUSAND (2000) POUNDS.

5. SPECIAL PLAN DETAILS

DETAILS FOR LOCATION OF INTERIM MARKINGS ARE SHOWN ON SIGN LOCATION PLAN SHEETS.

6. BASIS OF PAYMENT

COST OF FURNISHING AND INSTALLATION OF INTERIM PAVEMENT MARKING, BY TYPE, SHALL BE AT THE CONTRACT UNIT PRICE PER LINEAR FOOT.

621 INTERIM PAVEMENT MARKINGS REMOVED, BY TYPE

THIS WORK SHALL CONSIST OF THE REMOVAL OR OBLITERATION OF INTERIM PAVEMENT MARKINGS ON THE PAVEMENT.

THE MARKINGS MAY BE REMOVED BY APPLYING HEAT OR A SOLVENT OR BY ANY OTHER METHOD APPROVED BY THE ENGINEER, EXCEPT THAT THE METHOD SHALL NOT BE INJURIOUS TO THE APPEARANCE, TEXTURE OR STRENGTH OF THE PAVEMENT.

UPON REMOVAL OF ALL PULL UP TAPE, THE PRIMER STAINS SHALL BE REMOVED BY USE OF KEROSENE, GASOLINE OR OTHER APPROVED SOLVENT.

PAYMENT FOR 621 INTERIM PAVEMENT MARKINGS REMOVED, BY TYPE, WILL BE MADE AT THE CONTRACT BID PRICE PER LINEAR FOOT AND WILL CONSTITUTE FULL COMPENSATION FOR ALL WORK, INCLUDING MATERIALS, EQUIPMENT, LABOR, INCIDENTALS AND DISPOSAL OF SURPLUS MATERIALS.

202 REMOVAL OF TEMPORARY GUARDRAIL

THIS WORK SHALL CONSIST OF EITHER 1) REMOVAL AND STORAGE OF TEMPORARY GUARDRAIL, 2) REMOVAL AND DISPOSAL OF TEMPORARY GUARDRAIL OR 3) REMOVAL AND REUSE OF 606.04 TEMPORARY GUARDRAIL. IT SHALL ALSO INCLUDE THE CLEANING OF THE SITE IN PREPARATION FOR OPENING TO TRAFFIC.

TO ASSURE MAINTENANCE OF ADEQUATE TRAFFIC CONTROL AT ALL TIMES, NO ITEMS SHALL BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

THE BASIS OF PAYMENT WILL BE AS FOLLOWS AND WILL BE FULL COMPENSATION FOR THE REMOVAL OF THE GUARDRAIL AND BARRELS, INCLUDING SIGNS, DELINEATORS, POSTS OR OTHER ITEMS ATTACHED THERETO AND THEIR STORAGE FOR REMOVAL BY STATE FORCES, DISPOSAL, OR REUSE ELSEWHERE ON THE PROJECT. PAYMENT WILL ALSO INCLUDE THE CLEANING OF THE SITE IN PREPARATION FOR OPENING TO TRAFFIC.

3) 202 REMOVAL AND REUSE OF TEMPORARY GUARDRAIL, AT THE CONTRACT BID PRICE PER LINEAR FOOT.

TRAFFIC CONTROL GENERAL NOTES

STARK COUNTY
STA.-30-14.12
STA.-77-9.22

202 INTERIM GUARD RAIL READJUSTED AS PER PLAN

THIS WORK SHALL CONSIST OF THE LATERAL READJUSTED INTERIM GUARD RAIL, BARRELS, SIGNS, DELINEATORS AND POSTS.

ALL OF THESE ITEMS SHALL BE CLEANED AND PUT IN WORKING ORDER, INCLUDING REPLACEMENT OF ANY DAMAGED ITEMS.

THE QUANTITIY OF INTERIM GUARD RAIL READJUSTED WILL BE PAID FOR AT THE PRICE BID FOR LINEAR FOOT WHICH PRICE SHALL BE FULL COMPENSATION FOR READJUSTMENT OF THE GUARD RAIL, BARRELS, SIGNS, DELINEATORS, POSTS AND CLEANING OF THESE ITEMS AND THE SITE, INCLUDING LABOR AND EQUIPMENT.

625 GROUNDING

EACH SIGN SUPPORT OR STRUCTURE SHALL BE GROUNDED WITH A #4 INSULATED CONDUCTOR. THE GROUNDING CONDUCTOR SHALL BE CONNECTED TO THE SWITCH THEN TO THE COMPRESSION CONNECTOR IN THE SIGN SUPPORT THEN TO A 1"x10' GROUND ROD. GROUND CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE GROUND ROD AND THEN TAPED WITH PLASTIC ELECTRICAL TAPE AT EACH EXPOSED PORTION OF THE CONDUCTOR. THE WELDED CONNECTION AND TAPED PORTION SHALL BE PAINTED WITH 2 COATS OF INSULATED ENAMEL.

202 REMOVAL OF GROUND MOUNTED SIGN INSTALLATIONS FOR STORAGE

THIS WORK SHALL CONSIST OF THE REMOVAL OF SIGN INSTALLATIONS AS SHOWN ON THE PLANS.

WORK SHALL CONSIST OF THE REMOVAL OF SIGN SUPPORTS, SIGNS AND FOUNDATIONS AND THE DISPOSAL OF SURPLUS MATERIAL.

ALL SIGNS, SUPPORTS AND ACCESSORIES REMOVED SHALL BE STORED WITHIN THE LIMITS OF THE PROJECT AT LOCATIONS APPROVED BY THE ENGINEER FOR REMOVAL BY STATE FORCES.

TO ASSURE MAINTENANCE OF ADEQUATE TRAFFIC CONTROL AT ALL TIMES, NO SIGNS SHALL BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

PAYMENT FOR REMOVAL OF GROUND MOUNTED SIGN INSTALLATIONS WILL INCLUDE ALL NECESSARY LABOR AND EQUIPMENT REQUIRED TO PERFORM THE REQUIRED WORK AS INDICATED ABOVE.

BASIS OF PAYMENT WILL BE AS FOLLOWS:

(1) 202 REMOVAL OF GROUND MOUNTED MAJOR SIGN INSTALLATIONS FOR STORAGE, AT THE CONTRACT BID PRICE PER EACH, FOR SIGNS 40 SQ.FT. OR GREATER.

(2) 202 REMOVAL OF GROUND MOUNTED SIGN INSTALLATIONS FOR STORAGE, AT THE CONTRACT BID PRICE PER EACH, FOR SIGNS LESS THAN FORTY (40) SQ.FT.

SIGN SUPPORT SYMBOLS

SIGNS ON ONE SUPPORT
SIGNS ON TWO SUPPORTS
SINGLE SUPPORT SEMI-OVERHEAD STRUCTURES
SINGLE SUPPORT OVERHEAD STRUCTURES
DOUBLE SUPPORT OVERHEAD STRUCTURES
SIGNS, BACK TO BACK ON ONE SUPPORT
SIGNS, THREE WAY, ON ONE SUPPORT
SIGNS, FOUR WAY, ON ONE SUPPORT

625 EXISTING POWER SUPPLY

ELECTRIC POWER SHALL BE OBTAINED FROM EXISTING 480 VOLT ROADWAY LIGHTING CIRCUITS UNLESS OTHERWISE NOTED OR SHOWN ON THE PLANS. ALL WORK NECESSARY TO INSTALL A COMPLETE OPERATIVE SYSTEM SHALL BE INCLUDED IN THE VARIOUS ELECTRICAL BID ITEMS IN THIS CONTRACT.

105 COOPERATION BETWEEN CONTRACTORS

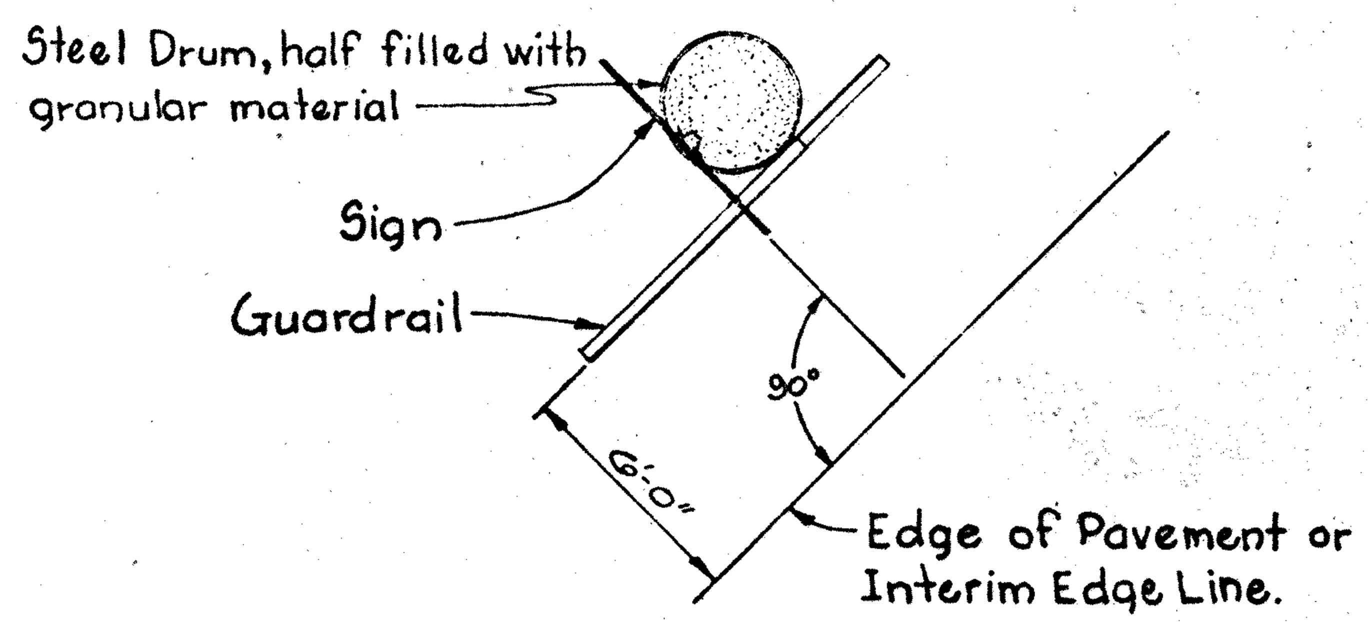
A SEPARATE CONTRACTOR MAY BE REQUIRED TO INSTALL OR ERECT TRAFFIC CONTROL DEVICES WITHIN THE WORK LIMITS OF THIS PROJECT PRIOR TO ITS COMPLETION.

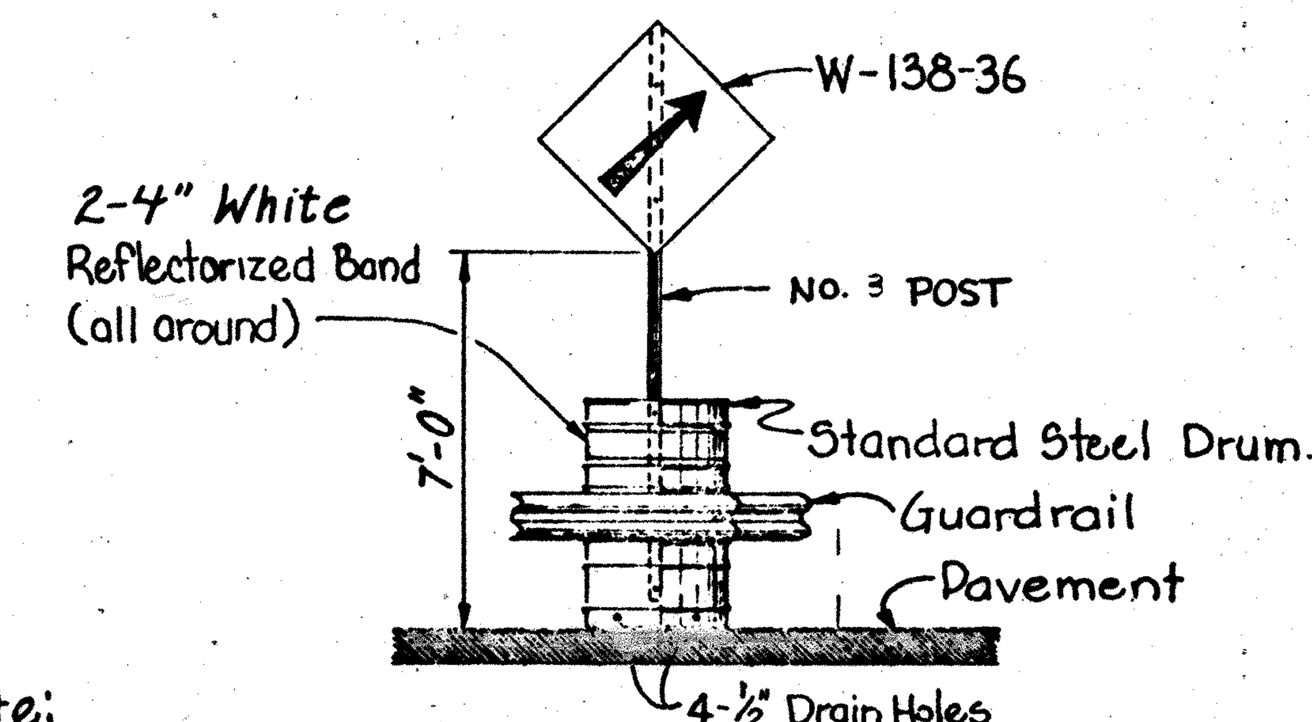
THE CONTRACTOR SHALL COOPERATE WITH THE SEPARATE CONTRACTOR IN ACCORDANCE WITH 105.07 TO ARRANGE A MUTUALLY ACCEPTABLE WORK SCHEDULE, SUBJECT TO THE APPROVAL OF THE ENGINEER. ANY PROPOSED CHANGES TO THIS WORK SCHEDULE SHALL BE SUBMITTED TO THE AFFECTED PARTIES AND THE ENGINEER A MINIMUM OF 7 DAYS PRIOR TO THE PROPOSED START OF WORK. ANY CONFLICTS BETWEEN CONTRACTORS INVOLVING WORK SCHEDULES, WORK AREAS OR COOPERATION WILL BE RESOLVED BY THE ENGINEER.

COMPENSATION FOR THE ABOVE COOPERATION WILL BE INCIDENTAL TO THE VARIOUS PAY ITEMS INCLUDED WITHIN THIS PROJECT.

SAFETY DEVICES

DURING OVERHEAD CONSTRUCTION THE CONTRACTOR SHALL PROVIDE SAFETY NETS AND/OR OTHER SAFETY DEVICES UNDER THE STRUCTURES IN ORDER TO PROTECT VEHICULAR TRAFFIC, PEDESTRIAN TRAFFIC, AND INDUSTRIAL WORK AREAS IN THE PROXIMITY OF SAID CONSTRUCTION.

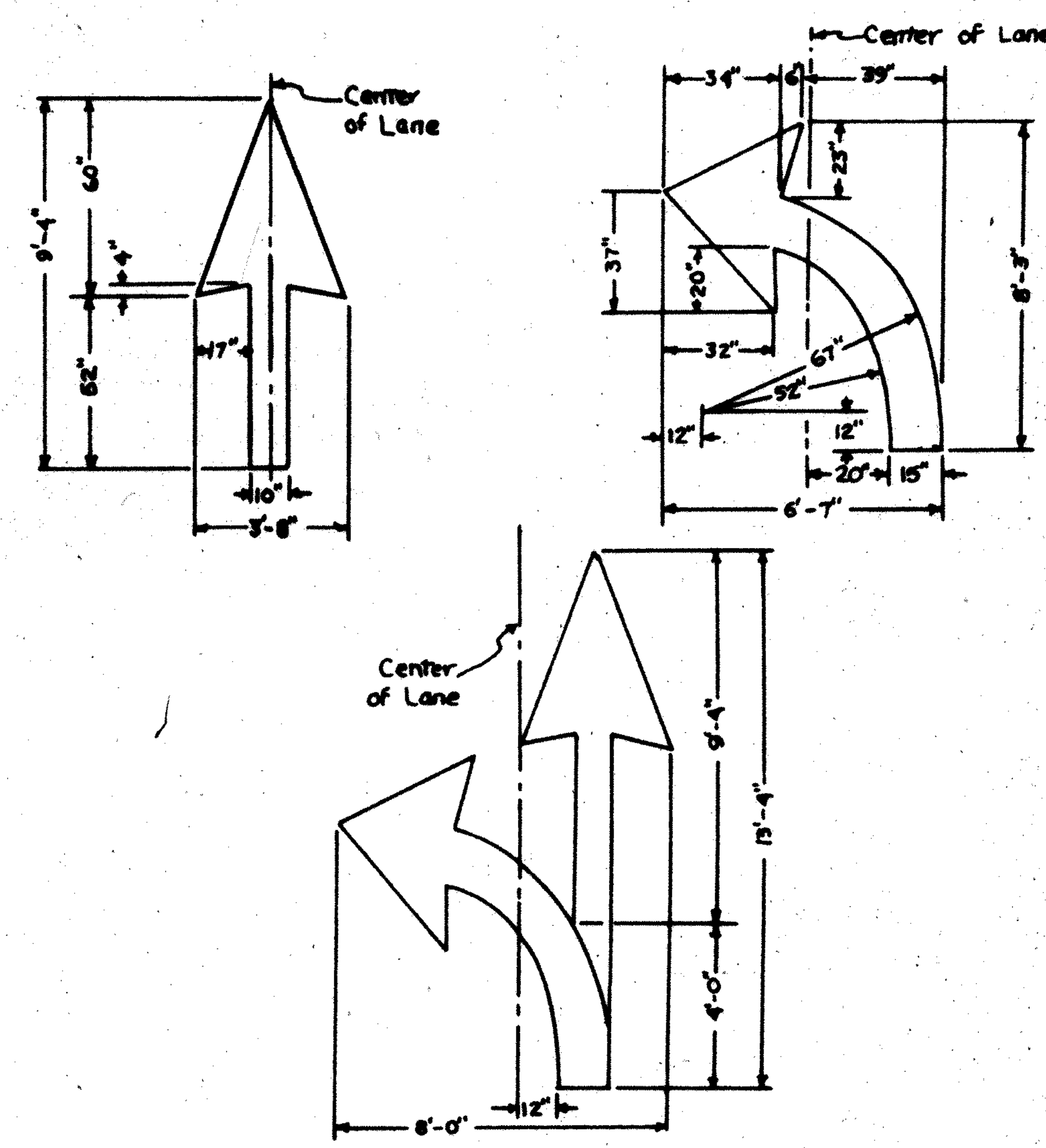


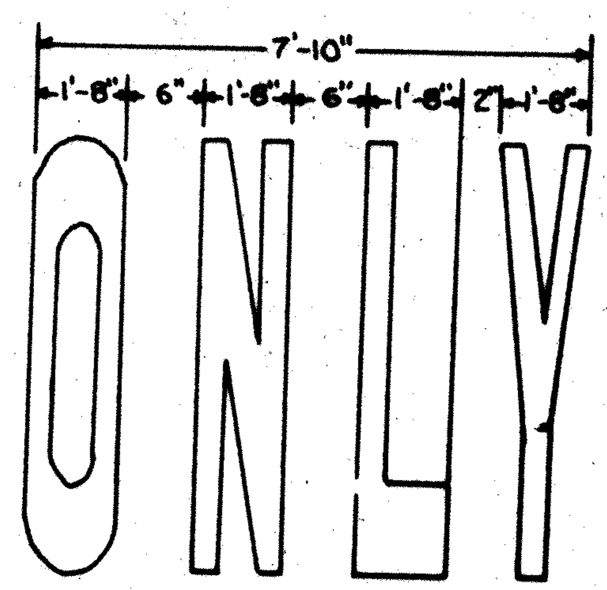


Note:
Erect W-138-36 signs on first barrel then every 100' for 300' then every 200' thereafter. For futher information see Page 2-62, Figure WS-4 of the "Ohio Manual of Uniform Traffic Control Devices"
Amber delineators shall be erected appoximately midway between signs on barrels. (D)

SIGN ATTACHMENT TO TEMPORARY BEAM RAIL

9-24-69
Rev 12-13-74





TRAFFIC CONTROL GENERAL NOTES

614 EXISTING SIGNS

EXISTING SIGNS LOCATED WITHIN THE ROADWORK AREAS WHICH ARE NECESSARY FOR INTERIM OR PERMANENT TRAFFIC CONTROL SHALL BE REMOVED AND RE-ERECTED IN LOCATIONS INDICATED BY THE PLANS OR AS APPROVED BY THE ENGINEER. STOP SIGNS SHALL BE MAINTAINED AT ALL TIMES WHILE TRAFFIC IS MAINTAINED. THE COST OF REMOVAL, REERECTION AND SUBSEQUENT REMOVAL IF REQUIRED WILL BE CONSIDERED A SUBSIDIARY WORK ITEM, THE COST OF WHICH WILL BE INCLUDED IN THE PRICE BID FOR THE ROADWAY ITEMS. THE SIGNS WHICH ARE TO BE RE-ERECTED OUTSIDE THE PAVED BERMS SHALL BE LOCATED WITH THE CENTER LINE OF SUPPORT ON THE POINT OF INTERSECTION (P.I.) OF THE SHOULDER.

620 DELINEATORS, BY TYPE

THE CONTRACTOR SHALL HAVE THE OPTION OF DRIVING OR CONCRETE EMBEDDING DELINEATOR POSTS IN ACCORDANCE WITH DETAILS SHOWN ON SHEET 179.

POSTS MAY BE TRIMMED ON THE EMBEDDED END TO ADJUST FOR GRADE AND REQUIRED DELINEATOR MOUNTING HEIGHT. CONCRETE SHALL BE 499 CLASS C.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO UNDERGROUND UTILITIES OR CABLE DURING PERFORMANCE OF THIS WORK.

COMPENSATION FOR THE ABOVE ITEM WILL BE INCIDENTAL TO VARIOUS DELINEATOR ITEMS INCLUDED WITHIN THIS PROJECT.

625 PLAN SPECIFICATION REFERENCES (S-625 & S-713)

REFERENCES TO ITEM 625 AND 713 IN THESE PLANS SHALL BE CONSIDERED TO READ AS RESPECTIVE REFERENCES TO ITEMS S625 AND S713.

844 MILE MARKER LOCATION

THE LOCATIONS SHOWN IN THE PLANS FOR MILE MARKERS ARE APPROXIMATE. THE BUREAU OF TRANSPORTATION TECHNICAL SERVICES WILL LOCATE THE LONGITUDINAL POSITION OF THE MILE MARKERS BY A PAINT MARK ON THE COMPLETED PAVEMENT EDGE. ON DIVIDED HIGHWAYS ONLY ONE PAVEMENT EDGE WILL BE MARKED. MARKERS FOR THE OPPOSITE DIRECTION SHALL BE SET ACROSS FROM THOSE ON THE MARKED EDGE. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER 30 DAYS IN ADVANCE OF THE PLANNED MARKER INSTALLATION. THE PROJECT ENGINEER WILL THEN NOTIFY THE BUREAU OF TRANSPORTATION TECHNICAL SERVICES. ANY DELINEATOR WITHIN 50 FEET OF A MILE MARKER SHALL BE OMITTED.

844 SIGNS FURNISHED BY THE STATE

THE CONTRACTOR SHALL SUBMIT, IN TRIPLICATE, A SCHEDULE FOR SIGN ERECTION TO THE ENGINEER AT LEAST 120 CALENDAR DAYS PRIOR TO THE START OF ANY SCHEDULED ERECTION WORK. THE SCHEDULE SHALL INCLUDE PROPOSED DATES, SIGN NUMBERS AND DELIVERY POINT. THE ENGINEER WILL FURNISH COPIES OF THE SCHEDULE TO THE DISTRICT TRAFFIC ENGINEER AND TO THE ENGINEER OF DESIGN SERVICES, 25 SOUTH FRONT STREET, COLUMBUS, OHIO 43215.

844 GROUND MOUNTED SUPPORTS, NO. 6 POST, AS PER PLAN

THIS WORK SHALL CONSIST OF THE FURNISHING, ASSEMBLY AND INSTALLATION OF TWO (2) NO. 3 DRIVE POSTS (NO. 6 POST) IN COMBINATION WITH A SQUARE WELDED OR SEAMLESS GALVANIZED TUBULAR POST EXTENSION SPLICED TO THE TOP OF THE NO. 6 POST. DETAILS ARE SHOWN ON SHEET 187.

SQUARE TUBULAR POST MATERIAL SHALL CONFORM TO ASTM A 570 GRADE B.

WORK SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND HARDWARE NECESSARY TO PERFORM THE REQUIRED WORK.

BASIS OF PAYMENT WILL BE FOR 844 GROUND MOUNTED SUPPORTS, NO. 6 POST, AS PER PLAN, PER LINEAR FOOT MEASURED BY THE TOTAL OVERALL LENGTH OF COMBINATION POST.

202-6
202 REMOVAL OF OVERHEAD SIGN SUPPORT FOR STORAGE, BY TYPE

THIS WORK SHALL CONSIST OF THE REMOVAL AND DISMANTLING OF THE OVERHEAD SIGN SUPPORT SHOWN ON THE PLANS. WORK SHALL ALSO INCLUDE REMOVAL OF SIGN SUPPORT FOUNDATIONS AND DISPOSAL OF ANY SURPLUS MATERIAL.

THIS SUPPORT AND ACCESSORIES REMOVED SHALL BE STORED WITHIN THE LIMITS OF THE PROJECT AT LOCATIONS APPROVED BY THE ENGINEER FOR REMOVAL BY THE STATE FORCES.

TO ASSURE MAINTENANCE OF ADEQUATE TRAFFIC CONTROL AT ALL TIMES, NO SIGNS SHALL BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

REMOVAL OF THE OVERHEAD MOUNTED SIGNS AND/OR SIGN LIGHTING IS COVERED UNDER A SEPARATE PAY ITEM.

PAVEMENT FOR REMOVAL OF THE SIGN SUPPORT WILL INCLUDE ALL NECESSARY LABOR AND EQUIPMENT REQUIRED TO PREFORM THE REQUIRED WORK AS INDICATED ABOVE.

BASIS OF PAYMENT WILL BE AT THE CONTRACT PRICE PER EACH FOR 202 REMOVAL OF OVERHEAD SIGN SUPPORT FOR STORAGE, BY TYPE.

844 DRIVE POSTS

DRIVE POSTS SHALL BE STEEL IN ACCORDANCE WITH 712.20.

844 ALTERNATE DESIGNS FOR SIGN SUPPORTS

IF THE CONTRACTOR DESIRES TO FURNISH ALTERNATE DESIGN(S) OR MATERIALS FOR SIGN SUPPORTS, THE ALTERNATE DESIGN(S) SHALL BE SUBMITTED TO THE STATE AT LEAST 21 DAYS PRIOR TO OPENING OF BIDS. THE BIDDER WILL BE NOTIFIED AS TO ACCEPTANCE OR REJECTION OF ALTERNATE DESIGN AT LEAST 7 DAYS BEFORE BIDS ARE TO BE OPENED. SUBMISSIONS SHALL BE MADE TO THE OHIO DEPARTMENT OF TRANSPORTATION, BUREAU OF DESIGN SERVICES, 25 SOUTH FRONT STREET, COLUMBUS, OHIO 43215.

BALLASTS

IN ADDITION TO THE REQUIREMENTS OF 844.10, BALLASTS FOR MERCURY VAPOR LUMINAIRES SHALL BE LOCATED WITHIN THE LUMINAIRE HOUSING OR CONTAINED IN A WEATHERPROOF HOUSING CONTIGUOUS TO THE LUMINAIRE.

844 DISCONNECT SWITCH ENCLOSURE MOUNTING BRACKETS

THIS WORK SHALL INCLUDE THE FABRICATING, FURNISHING AND INSTALLATION OF DISCONNECT SWITCH ENCLOSURE MOUNTING BRACKETS WHEN ENCLOSURES ARE MOUNTED ON EXISTING OVERHEAD SIGN SUPPORTS (NOT PART OF THIS PROJECT) OR ATTACHED TO CONCRETE BRIDGE COLUMNS OR ABUTMENTS.

WORK SHALL CONSIST OF FIELD DRILLING, ATTACHMENT AND HARDWARE AS DETAILED ON SHEET(S) 191.

BASIS OF PAYMENT WILL BE AT THE CONTRACT BID PRICE PER EACH, 844 DISCONNECT SWITCH ENCLOSURE MOUNTING BRACKET WHICH PRICE WILL BE FULL COMPENSATION FOR FURNISHING, FABRICATION AND INSTALLATION INCLUDING ALL LABOR, MATERIAL AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK.

844 PADLOCKS AND KEYS

PADLOCKS FURNISHED SHALL BE EITHER BRASS OR BRONZE PADLOCKS EQUAL TO MASTER NO. 4 BKA OR WILSON BOHANNAN 660 AND SHALL BE KEYED IN ACCORDANCE WITH 844.10.

PAYMENT WILL BE INCLUDED IN THE BID FOR THE ITEM(S) BEING LOCKED.

844
INTERIM COVERING FOR SIGNS

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING AN INTERIM COVER AND ATTACHMENT MATERIALS FOR SIGNS SO INDICATED IN THE PLANS OR AS DIRECTED BY THE ENGINEER. THIS ITEM SHALL ALSO INCLUDE THE SUBSEQUENT REMOVAL OF COVERS WHEN DIRECTED BY THE ENGINEER.

MATERIAL FOR COVERING SHALL BE PLASTIC COATED BURLAP BLANKETS IN CONFORMANCE WITH 705.08.

THE ENGINEER SHALL APPROVE THE METHOD PROPOSED FOR ATTACHING INTERIM COVERS TO SIGNS PRIOR TO INSTALLATION OF COVERS.

WORK SHALL INCLUDE ALL NECESSARY MATERIALS, HARDWARE, LABOR, AND EQUIPMENT REQUIRED TO PREFORM THE REQUIRED ITEM OF WORK.

BASIS OF PAYMENT SHALL BE INTERIM COVERING FOR SIGNS, PER SQUARE FOOT.

IN ADDITION TO THE 0.0 SQ.FT. REFERRED TO IN THE PLANS, AN ADDITIONAL QUANTITY OF 600.0 SQ.FT. FOR ITEM 844, INTERIM COVERING FOR SIGNS, HAVE BEEN INCLUDED TO COVER SIGNS AS DIRECTED BY THE ENGINEER.

844
BRIDGE CONNECTIONS FOR SMALL SIGNS

THIS WORK SHALL CONSIST OF THE FURNISHING, FABRICATION, AND ERECTION OF THE BRIDGE CONNECTION AS DETAILED ON SHEET 175.

PAYMENT FOR THE SIGNS IS COVERED UNDER SEPARATE ITEMS WITHIN THE PLAN.

BASIS OF PAYMENT WILL BE AS FOLLOWS AND WILL INCLUDE ALL MATERIALS, EQUIPMENT, LABOR AND INCIDENTALS REQUIRED TO PERFORM THE WORK.

844 BRIDGE CONNECTIONS FOR SMALL SIGNS, AT THE CONTRACT BID PRICE PER EACH.

621 THERMO-PLASTIC PAVEMENT MARKING, BY TYPE

THIS PAVEMENT MARKING MATERIAL SHALL BE REFLECTORIZED "PERMALINE" THERMO-PLASTIC COMPOUND OR RELFECTORIZED "CATATHERM" THERMO-PLASTIC COMPOUND AS MANUFACTURED BY CATAPHOTE CORPORATION, OR APPROVED EQUAL. IN ADDITION, THE THERMOPLASTIC MATERIAL FURNISHED ON THIS CONTRACT, SHALL MEET THE FOLLOWING SPECIFICATIONS:

GLASS BEADS MEETING OHIO SPECIFICATION NO. 712.05 SHALL BE UNIFORMLY MIXED THROUGHOUT THE MATERIAL AT THE RATE OF NOT LESS THAN 250 LBS. OF BEADS PER 1,000 LBS. OF THERMO-PLASTIC MATERIAL. IMMEDIATE REFLECTORIZATION SHALL BE ACCOMPLISHED BY THE APPLICATION OF BEADS CONFORMING TO THE FOLLOWING GRADING:

SIEVE NO.	TOTAL PERCENT PASSING
20	90-100
35	0-10

BEADS SHALL BE APPLIED TO THE SURFACE OF THE COMPOUND AT THE TIME THE THERMO-PLASTIC MATERIAL IS APPLIED TO THE PAVEMENT. A GLASS BEAD DISPENSER OF APPROVED DESIGN SHALL BE USED FOR A UNIFORM SURFACE APPLICATION OF BEADS AT A RATE OF NOT LESS THAN TWO (2) POUNDS OF BEADS PER 33 SQUARE FEET OF LINE.

THE MATERIAL SHALL WITHSTAND TEMPERATURE VARIATION FROM MINUS 20 DEGREES F. TO PLUS 120 DEGREES F., WITHOUT DEFORMATION OR DISCOLORATION, AND SHALL MAINTAIN ITS ORIGINAL DIMENSIONS AND PLACEMENT, FREE FROM TACK, CHIPPING, OR SPALLING. WHITE THERMO-PLASTIC MATERIAL SHALL BE FREE OF DIRT OR TINT. THE MATERIAL SHALL HARDEN SUFFICIENTLY WITHIN 15 MINUTES AFTER APPLICATION TO ALLOW TRAFFIC OVER THE LINE WITHOUT PICKUP OR IMPRESSION.

SAMPLES

THE CONTRACTOR SHALL FURNISH A 10 POUND MATERIAL SAMPLE OF THE THERMOPLASTIC COMPOUNDS FOR EACH COLOR HE PROPOSES TO FURNISH AND ALSO TYPICAL SAMPLES OF LINE 4 INCHES WIDE BY 10 INCHES LONG FOR EACH COLOR SPECIFIED TO BE USED.

MATERIAL INSTALLED ON THE ROAD ON THIS CONTRACT IN ACCORDANCE WITH THE CONTRACTOR'S STANDARD PRACTICE SHALL BE COMPARED WITH THE ORIGINAL SAMPLES AT LEAST 90 DAYS AFTER CONSTRUCTION AND SHALL SHOW NO DARKENING OR DISCOLORATION.

CONSTRUCTION DETAILS

PRE-MARKING: THE EXISTING EDGE LINES AND LANE LINES SHALL BE ADEQUATELY REFERENCED BY THE CONTRACTOR, BEFORE PAVING OPERATIONS BEGIN, TO ASSURE PROPER ALIGNMENT OF THE NEW PAVEMENT MARKINGS. PRE-MARKING SHALL BE LOCATED FROM THESE REFERENCE POINTS, AND ACCURATELY FOLLOW AN OFFSET LINE PARALLEL TO THE ORIGINAL PAVEMENT MARKINGS, PLAN PAVEMENT MARKINGS OR AS DIRECTED BY THE ENGINEER. NO MORE THAN ONE INCH DEVIATION FROM THE THEORETICAL LOCATION WILL BE PERMITTED. THE OFFSET SHALL BE PLACED IN SUCH A MANNER THAT THE EDGE OF THE PRE-MARK LINE WILL BE NO FURTHER THAN ONE (1) INCH FROM THE EDGE OF THE THERMOPLASTIC LINE. ALL OFFSETS SHALL BE IN THE SAME DIRECTION FROM CENTERLINE OF MAINLINE ROADWAY.

APPLICATION: LINES SHALL BE SHARP, AND WELL DEFINED. SCREED SPILLAGE OR NON-UNIFORM APPLICATION ARE UNACCEPTABLE. THE MATERIAL SHALL BE APPLIED TO A UNIFORM MINIMUM THICKNESS OF 1/8 INCH TO THE WIDTH SPECIFIED. LINE WIDTHS SHALL BE ACHIEVED BY THE USE OF 4", 6", 8", 10" and 12" COMBINATION APPLICATORS. THE MINIMUM NUMBER OF PASSES SHALL BE USED, THAT IS, A 24" LINE SHOULD CONSIST OF TWO 12" PASSES. WHEN THE WIDTH OF A LINE REQUIRES MORE THAN ONE PASS, THE INDIVIDUAL LINES SHALL NOT OVERLAP. A 1/4" GAP WILL BE ACCEPTABLE BETWEEN LINES IN THIS CASE.

ALL PAVEMENT MARKING SHALL BE APPLIED IN ACCORDANCE WITH THE STANDARD PAVEMENT MARKING SYMBOL, WORK OR LINE SPECIFICATIONS, DIMENSIONS DRAWING GOVERNING THE TYPES OF SYMBOLS OR LINES SHOWN ON THE PLANS. A SET OF TEMPLATES ARE REQUIRED FOR LAYOUT PRIOR TO THE INSTALLATION OF ARROWS AND WORDS.

ON ALL PAVEMENT SURFACES AND AT LOCATIONS WHERE A NEW THERMO-PLASTIC LINE IS TO BE APPLIED OVER AN OLD PAINTED LINE, THE CONTRACTOR SHALL PREPARE THE SURFACE TO INSURE ADHESION. NO LINES SHALL BE APPLIED DIRECTLY LONGITUDINALLY OVER ANY CONSTRUCTION CRACK OR JOINTS.

THE AIR TEMPERATURE AT THE TIME OF APPLICATION SHALL BE NOT LESS THAN 50 DEGREES F. THE TEMPERATURE OF THE COMPOUND DURING APPLICATION SHALL NEVER FALL BELOW 375 DEGREES F.

LINES SHALL BE STRAIGHT AND TRUE, AND SHALL BE PLACED IN THE SAME LOCATION AS THE ORIGINAL PAVEMENT MARKINGS, IN CONFORMANCE WITH THE PLANS, OR AS DIRECTED BY THE ENGINEER. LINES SHALL DEVIATE FROM THE APPROVED PRE-MARK LINE NO MORE THAN TWO (2) INCHES IN ONE HUNDRED (100) FEET, OR AN EQUIVALENT RATIO OF THE ABOVE DISTANCES (I.E. 1 INCH IN 50 FOOT, ETC.). UNDER NO CIRCUMSTANCE WILL ANY DEVIATION GREATER THAN THREE (3) INCHES FROM THE APPROVED PRE-MARK LINE BE PERMITTED. WHEN A LINE IS SKEWED IN SUCH A MANNER THAT IT CROSSES THE PRE-MARK LINE, THE OFFSETS TO THE RIGHT & LEFT OF THE PRE-MARK LINE WILL BE ADDED, AND THE TOLERANCE WILL BE DETERMINED FROM THE SUM OF THE OFFSETS.

PAVEMENT MARKINGS WHICH ARE IMPROPERLY LOCATED SHALL BE CORRECTED. IMPROPERLY LOCATED LINES SHALL BE REMOVED AND LINES SHALL BE APPLIED IN THE CORRECT LOCATIONS AT THE CONTRACTOR'S EXPENSE, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS.

ALL SPILLED MATERIALS SHALL BE REMOVED AT THE CONTRACTORS EXPENSE.

METHOD OF MEASUREMENT

THE LENGTH PAID FOR WILL BE THE NUMBER OF LINEAR FEET OR MILES OF THE SEVERAL TYPES OF LINES INSTALLED AND ACCEPTED, MEASURED IN PLACE. MEASUREMENTS WILL BE MADE BY A REPRESENTATIVE OF THE CONTRACTOR AND THE ENGINEER. THE LENGTH OF LANE LINES TO BE PAID FOR WILL BE THE ACTUAL NUMBER OF MILES, EXCLUSIVE OF GAPS, MEASURED IN PLACE, COMPLETED AND ACCEPTED. PAVEMENT ARROWS WILL BE MEASURED PER EACH AND TRANSVERSE STRIPES WILL BE PAID FOR ON A PER LINEAR FOOT BASIS.

BASIS OF PAYMENT

THESE ITEMS WILL BE PAID FOR IN ACCORDANCE WITH 621 OR AT THE CONTRACT UNIT PRICE PER MILE OF 4" OR 6" THERMO-PLASTIC LANE OR EDGE LINES: PER LINEAR FEET OF 8" THERMO-PLASTIC CHANNELIZATION LINES, AND 24" THERMO-PLASTIC STOP LINES, PER EACH FOR THERMO-PLASTIC PAVEMENT ARROWS AND PER LINEAR FOOT FOR 16" TRANSVERSE STRIPES AS SPECIFIED HEREIN. PRICE AND PAYMENT WILL CONSTITUTE FULL COMPENSATION FOR PROVIDING MATERIALS, HAULING, SURFACE PREPARATION, PLACING, PROTECTING ALL APPLIED ITEMS AS SPECIFIED OR REQUIRED BY THE ENGINEER, AND FOR ALL LABOR, TOOLS, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO LAY OUT AND COMPLETE THE WORK.

MAINTAINING TRAFFIC

PLACEMENT OF PAVEMENT MARKINGS ON FREEWAY LANES AND FREEWAY RAMP GORE AREAS SHALL BE ACCOMPLISHED ON WEEKDAYS (MONDAY THROUGH FRIDAY) BETWEEN THE HOURS OF 9:00 AM AND 3:00 PM, WITH A MAXIMUM OF ONE DIRECTIONAL FREEWAY LANE CLOSED AT ANY TIME.

THE CONTRACTOR SHALL PROVIDE 2 TRAILING VEHICLES PLUS A POLICE CRUISER WITH FLASHER FOLLOWING THE PAVEMENT MARKING EQUIPMENT WHEN MARKINGS ARE PLACED, IN ORDER TO PROVIDE ADVANCE WARNING TO MOTORISTS OF THE TEMPORARY LANE CLOSURE AND CONSTRUCTION. THE 2 TRAILING VEHICLES SHALL TRAVEL 500 FEET APART WITH THE REMOTE VEHICLE TRAVELING ON THE SHOULDER (LEFT OR RIGHT AS APPLICABLE) WHERE USABLE SHOULDER IS AVAILABLE. THE INTERMEDIATE TRAILING VEHICLE SHALL TRAVEL IN THE CLOSED LANE, 500 FEET BEHIND THE PAVEMENT MARKING EQUIPMENT. THE POLICE CRUISER SHALL TRAVEL 500 TO 1000 FEET BEHIND THE REMOTE TRAILING VEHICLE.

EACH TRAILING VEHICLE SHALL HAVE FLASHERS PLUS BLACK AND YELLOW WARNING SIGNS MOUNTED ON THE BACK FACING TRAFFIC WITH STANDARD TYPE MESSAGES ADVISING MOTORISTS OF THE WORK AHEAD, ADVISORY WARNING SPEED, AND WHICH LANE IS CLOSED.

WHEN MARKINGS ON RAMPS ARE PLACED, ONE FLAGMAN MAY BE SUBSTITUTED FOR ONE OF THE TRAILING VEHICLES WITH THE SAME DISTANCE INTERVALS TRAILING THE PAVEMENT MARKING EQUIPMENT.

COST OF ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS FOR MAINTAINING TRAFFIC SHALL BE INCLUDED IN THE COST OF THE VARIOUS THERMO-PLASTIC PAVEMENT MARKING ITEMS.

TRAFFIC CONTROL GENERAL SUMMARY

TYPE CODE 6203

ITEM NO.	SHEET NUMBER: 90% FEDERAL-5% STATE-5% CITY PARTICIPATION										FEDERAL-STATE-CITY PARTICIPATION U-663(15)										PARTICIPATION: FEDERAL-STATE-CITY	FEDERAL-STATE-CITY			GRAND TOTAL	UNIT	ITEM NO.	DESCRIPTION
			165	180	178	193							165		178	193					I-77-4(44)	U-663(15)						
202													1,000.0									1,000.0			1,000.0	LIN. FT.	202	Removal And Re-use of Temporary Guardrail
606			575										1,400								575	1,400			1,975	LIN. FT.	606	Guard Rail, Type 6
606													44									44			44	EACH	606	Interim Barrels, As Per Plan
620													44									44			44	EACH	620	Interim Delineator, Type D., As Per Plan
620																												
620																												
620					147										45						147	45			192	EACH	620	Delineator, Type D, Post Mounted
					113																113				113	EACH	620	Delineator, Type D, Bracket Mounted
621													1000.0									1,000.0			1,000.0	LIN. FT.	621	Existing Interim Pavement Marking Removed
621													2,155									2,155			2,155	LIN. FT.	621	Interim Pavement Marking
621				19.64																	19.64				19.64	MILES	621	4" Thermo Plastic Edge Line
621				0.92																	0.92				0.92	MILES	621	4" Thermo Plastic Yellow Center Line
621				9.45																	9.45				9.45	MILES	621	6" Thermo Plastic Lane Line
621				6476																	6476				6476	LIN. FT.	621	8" Thermo Plastic Channel Line
621				716																	716				716	LIN. FT.	621	12" Thermo Plastic Cross Walk Line
621				6699																	6699				6,699	LIN. FT.	621	24" Thermo Plastic Broad Transverse Lines
621				429																	429				429	LIN. FT.	621	24" Thermo Plastic Stop Lines
621				2819																	2,819				2,819	LIN. FT.	621	Curb Marking
621				1.95																	1.95				1.95	MILES	621	4" Thermo Plastic Lane Line
844						14										5					14	5			19	EACH	844	Disconnect Switch with Enclosure, 30 Amp
844						37										12					37	12			49	EACH	844	Mercury Vapor Luminaire, W/175 WATT Lamp
844						10										2					10	2			12	EACH	844	Mercury Vapor Luminaire, W/250 WATT Lamp
844																4						4			4	EACH	844	Ballast, Type CMRI-175-120
844						37										8					37	8			45	EACH	844	Ballast, Type CMRI-175-480
844						10										2					10	2			12	EACH	844	Ballast, Type CMRI-250-480
844						20										8					20	8			28	EACH	844	Signs Wired
844						12										3					12	3			15	EACH	844	Sign Service
844						2															2				2	EACH	844	Signs Wired, Overpass Structure Mounted
																2						2			2	EACH	844	Sign Service, Overhead, As per plan
625						14										5					14	5			19	EACH	625	Ground Rod
621				19																	19				19	EACH	621	Lane Arrow, Thermo Plastic
621				4																	4				4	EACH	621	Word 'Only" on Pavement, As per plan, Thermo Plastic

STARK COUNTY
STA-30-14.12
STA-77-9.22

TRAFFIC CONTROL GENERAL SUMMARY

TYPE CODE 6203

ITEM NO.	SHEET NUMBER: 90% FEDERAL-5% STATE-5% CITY PARTICIPATION 158	161	162	163	FEDERAL STATE-CITY PARTICIPATION U-663(15) 161	162	163	165	PARTICIPATION: FEDERAL-STATE-CITY I-77-4(44)	FEDERAL STATE CITY U-663(15)	GRAND TOTAL	UNIT	ITEM NO.	DESCRIPTION
844		4							4		4	EACH	844	Remove Existing Overhead Illuminated Signs
844	500.0								500.0		500	SQ. FT.	844	Interim Covering for Signs
844		4,549			1,247				4,549	1,247	5,796	SQ. FT.	844	Signs Erected Extru Sheet
844		27	371.1			183.8			398.2	183.8	582	SQ. FT.	844	Signs Erected Flat Sheet
844				1					1		1	EACH	844	Overhead Sign Support No. 7.65, Design 6, Modified, 54'-0" Span
844				1					1		1	EACH	844	Overhead Sign Support No. 7.65, Design 6, Modified, 59'-0" Span
844							1			1	1	EACH	844	Overhead Sign Support No. 7.65, Design 6, Modified, 71'-0" Span
844				1					1		1	EACH	844	Overhead Sign Support No. 7.65, Design 6, Modified, 75'-0" Span
844							1			1	1	EACH	844	Overhead Sign Support No. 12.30, Design 3, Modified, 14'-0" Arm
844							2			2	2	EACH	844	Overhead Sign Support No. 12.30, Design 3, Modified, 16'-0" Arm
844							1			1	1	EACH	844	Overhead Sign Support No. 12.30, Design 3, Modified, 16'-0" Arm
844				1					1		1	EACH	844	Overhead Sign Support No. 12.30, Design 7, Modified, 22'-0" Arm
844				1					1		1	EACH	844	Overhead Sign Support No. 12.30, Design 9, Modified, 23'-0" Arm
844				1					1		1	EACH	844	Overhead Sign Support No. 12.30, Design 9, Modified, 26'-0" Arm
844				2					2		2	EACH	844	Overhead Sign Support No. 12.30, Design 12, Modified, 27'-0" Arm
844				1					1		1	EACH	844	Overhead Sign Support No. 12.30, Design 8, Modified, 23'-0" Arm
844							1			1	1	EACH	844	Overhead Sign Support No. 12.30 Design 8, Modified, 27'-0" Arm
844				2					2		2	EACH	844	Overhead Sign Support No. 18.24
844								44		44	44	EACH	844	Interim No. 3 Post, As Per Plan
844		42				105			42	105	147	LIN. FT.	844	Ground Mounted Support, No. 3 Post
844		105	295		67	69			400	136	536	LIN. FT.	844	Ground Mounted Support, No. 6 Post
844				71.9			28.2		71.9	28.2	100.1	CU. YDS.	844	Concrete for Anchor Base Foundations
844				4					4		4	EACH	844	Disconnect Switch Enclosure Mounting Bracket.
844				1					1		1	EACH	844	Overhead Sign Support No. 12.30, Design 7, Modified, 22'-0" Arm
844				1					1		1	EACH	844	Overhead Sign Support No. 7.65, Design 8, Modified, 67'-0" Span
202				1					1		1	EACH	202	Removal of Overhead Sign Support No. 12.24
844						34				34	34	LIN. FT.	844	Ground Mounted Support No. 6, As Per Plan
844			5						5		5	EACH	844	Bridge Connection For Small Signs
844					120.0					120.0	120.0	Sq. Ft.	202	Overlay Removal
202			2						2		2	Each	202	Removal of Ground Mounted Major Sign Installations for Storage
202			1						1		1	EACH	202	Removal of Ground Mounted Sign Installations for Storage

SIGNS AND SUPPORTS

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	SHEET
2	OHIO			161 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

844 SIGNS — FLAT SHEET AND EXTRUSHEET

SHEET	ROADWAY	REFERENCE	STATION	10'-0"x7'-6"	10'-0"x4'-0"	13'-0"x7'-0"	15'-0"x10'-6"	15'-0"x13'-0"	16'-0"x10'-6"	16'-0"x13'-0"		17'-0"x8'-0"	
165	Ramp S	85	930+00		1Δ								
165	Harrison	86	31+00			1Δ							
165	Ramp T conn	87	923+60	1Δ									
165	Harrison	88	42+40	AΔ, BΔ									
165	Harrison	89	49+00			1Δ							
165	U.S.30 W.B.	90	935+83										
165	U.S.30 W.B.	151	933+50										
166	U.S.30 E.B.	91	946+00						C				
166	I-77 W.B.	92	566+10±										
166	U.S.30 W.B.	93	944+87										
166	Ramp F	94	958+75									B	
166	Ramp E	95	959+50										
166	U.S.30 E.B.	96	959+00							1			
166	I-77 N.B.	100	562+43±										
166	I-77 N.B.	101	569+85										
166	I-77 N.B.	103	22+40										
166	I-77 S.B.	104	20+73.66					1					
166	I-77 S.B.	105	576+00										
166	Ramp A	106	962+50										
166	U.S.30 E.B.	107	968+20							1			
166	I-77 S.B.	152	572+50										
166	I-77 N.B.	153	568+30										
166	U.S.30 E.B.	154	952+00										
164	U.S.30 E.B.	1	862+50										
164	U.S.30 E.B.	15	912+61										
164	U.S.30 E.B.	9	889+50										
165	I-77 N.B.	97	532+10				1						
165	I-77 N.B.	98	549+60				B						
	AREA/SIGN			75	40	91	157.5	195	168	208	—	136	—
	Δ SUB TOTAL SIGNS			3	1	2							
	Δ SUB TOTAL AREA			225	40	182							
	NORMAL SUB TOTAL SIGNS						2	1	1	2		1	
	NORMAL SUB TOTAL AREA						315	195	168	416		136	
	Δ SUBTOTAL												
	NORMAL SUBTOTAL												
	GRAND TOTAL												
TOTALS													
TOTALS: SQ. FT./PANEL													
TOTALS: SQ. FT													

SHEET	ROADWAY	REFERENCE	STATION	17'-0"x10'-6"	17'-0"x13'-0"	18'-0"x8'-0"	18'-0"x9'-6"	18'-0"x10'-6"	19'-0"x13'-0"	18'-0"x10'-0"	19'-0"x12'-6"	21'-0"x9'-6"	
165	Ramp S	85	930+00										
165	Harrison	86	31+00										
165	Ramp T conn	87	923+60										
165	Harrison	88	42+40										
165	Harrison	89	49+00										
165	U.S.30 W.B.	90	935+83	AΔ	BΔ							CΔ	
165	U.S.30 W.B.	151	933+50										
166	U.S.30 E.B.	91	946+00	A									
166	I-77 W.B.	92	566+10±								1		
166	U.S.30 W.B.	93	944+87				1Δ						
166	Ramp F	94	958+75										
166	Ramp E	95	959+50				1						
166	U.S.30 E.B.	96	959+00										
166	I-77 N.B.	100	562+43±							1			
166	I-77 N.B.	101	569+85						1				
166	I-77 N.B.	103	22+40						1				
166	I-77 S.B.	104	20+73.66										
166	I-77 S.B.	105	576+00	A				B					
166	Ramp A	106	962+50			A,B							
166	U.S.30 E.B.	107	968+20										
166	I-77 S.B.	152	572+50										
166	I-77 N.B.	153	568+30										
166	U.S.30 E.B.	154	952+00										
164	U.S.30 E.B.	1	862+50										
164	U.S.30 E.B.	15	912+61	1									
164	U.S.30 E.B.	9	889+50										
165	I-77 N.B.	97	532+10										
165	I-77 N.B.	98	549+60			C							
	AREA/SIGN			178.5	221	144	171	189	247	180	237.5	199.5	—
	Δ SUB TOTAL SIGNS			1	1		1					1	
	Δ SUB TOTAL AREA			178.5	221		171					199.5	
	NORMAL SUB TOTAL SIGNS			3		3	1	1	2	1	1		
	NORMAL SUB TOTAL AREA			535.5		432	171	189	494	180	237.5		
	Δ SUBTOTAL			1247.0									
	NORMAL SUBTOTAL			4549.0									
	GRAND TOTAL			5796.0									
TOTALS													
TOTALS: SQ. FT./PANEL													
TOTALS: SQ. FT													

SHEET	ROADWAY	REFERENCE	STATION	GF-96 8'-0"x5'-0"	GEP 9'-0"x2'-0"	GEP 11'-0"x2'-0"	M-1-36 3'x3'	GF-72 6'-0"x5'-0"	14'-0"x13'-0"	21'-0"x10'-6"	24'-0"x8'-0"	GEP 10'-0"x2'-0"	GF-108 108"x60"
165	Ramp S	85	930+00										
165	Harrison	86	31+00										
165	Ramp T conn	87	923+60										
165	Harrison	88	42+40										
165	Harrison	89	49+00										
165	U.S.30 W.B.	90	935+83										
165	U.S.30 W.B.	151	933+50					1Δ					
166	U.S.30 E.B.	91	946+00				1			B			
166	I-77 W.B.	92	566+10±		1*								
166	U.S.30 W.B.	93	944+87										
166	Ramp F	94	958+75				1				A		
166	Ramp E	95	959+50										
166	U.S.30 E.B.	96	959+00										
166	I-77 N.B.	100	562+43±			1*							
166	I-77 N.B.	101	569+85			1							
166	I-77 N.B.	103	22+40			1							
166	I-77 S.B.	104	20+73.66									1	
166	I-77 S.B.	105	576+00									1	
166	Ramp A	106	962+50										
166	U.S.30 E.B.	107	968+20										
166	I-77 S.B.	152	572+50	1									
166	I-77 N.B.	153	568+30										1
166	U.S.30 E.B.	154	952+00					1					
164	U.S.30 E.B.	1	862+50										
164	U.S.30 E.B.	15	912+61				1		1				
164	U.S.30 E.B.	9	889+50										
165	I-77 N.B.	97	532+10			1							
165	I-77 N.B.	98	549+60			2				A			
	AREA/SIGN			40	18	22	9≠	30	182	220.5	192	20	45
	Δ SUB TOTAL SIGNS							1					
	Δ SUB TOTAL AREA							30					
	NORMAL SUB TOTAL SIGNS			1		5	3≠	1	1	2	1	2	1
	NORMAL SUB TOTAL AREA			40		110	27≠	30	182	441	192	40	45
	Δ SUBTOTAL												
	NORMAL SUBTOTAL												
	GRAND TOTAL												
TOTALS													
TOTALS: SQ. FT./PANEL													
TOTALS: SQ. FT													

SHEET	ROADWAY	REFERENCE	STATION	202 OVERLAY REMOVAL 13'-0"x10'-6"	202 OVERLAY REMOVAL 16'-0"x7'-6"	844 STRUCTURAL SUPPORTS No. 6 Post LIN.FT.	844 STRUCTURAL SUPPORTS No. 3 Post	844 REMOVE EXISTING OVERHEAD ILLUMINATED SIGNS EACH		REFERENCE
165	Ramp S	85	930+00			1@16.0Δ 1@16.5Δ				85
165	Harrison	86	31+00							86
165	Ramp T conn	87	923+60							87
165	Harrison	88	42+40							88
165	Harrison	89	49+00							89
165	U.S.30 W.B.	90	935+83							90
165	U.S.30 W.B.	151	933+50			2@17.0Δ				151
166	U.S.30 E.B.	91	946+00				2@7'			91
166	I-77 W.B.	92	566+10±							92
166	U.S.30 W.B.	93	944+87							93
166	Ramp F	94	958+75				2@7'			94
166	Ramp E	95	959+50							95
166	U.S.30 E.B.	96	959+00							96
166	I-77 N.B.	100	562+43±							100
166	I-77 N.B.	101	569+85					1		101
166	I-77 N.B.	103	22+40							103
166	I-77 S.B.	104	20+73.66							104
166	I-77 S.B.	105	576+00					A,B,C		105
166	Ramp A	106	962+50							106
166	U.S.30 E.B.	107	968+20							107
166	I-77 S.B.	152	572+50			2@17.5'				152
166	I-77 N.B.	153	568+30			1@17.5' 1@18.5'				153
166	U.S.30 E.B.	154	952+00			2@17.0				154
164	U.S.30 E.B.	1	862+50		1Δ					1
164	U.S.30 E.B.	15	912+61				2@7'			15
164	U.S.30 E.B.	9	889+50							9
165	I-77 N.B.	97	532+10							97
165	I-77 N.B.	98	549+60							98
	AREA/SIGN				120					
	Δ SUB TOTAL SIGNS				1			—	—	
	Δ SUB TOTAL AREA				120					
	NORMAL SUB TOTAL SIGNS								—	
	NORMAL SUB TOTAL AREA									
	Δ SUBTOTAL				120.0	66.5	—	—		
	NORMAL SUBTOTAL				—	105.0	42	4		
	GRAND TOTAL				120.0	171.5	42	4		
TOTALS										
TOTALS: SQ. FT./PANEL										
TOTALS: SQ. FT										

Note:
Δ U-663(15) Participation. All other quantities are 90% Federal-5% State-5% City Participation.
The letters A, B, or C refer to a particular sign face on a sign structure.

* No Additional Quantity Required

≠ Flatsheet 27 Sq.Ft.

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

Rev. 1-29-76

SIGN AND SUPPORT QUANTITIES

SIGNS AND SUPPORTS

STARK COUNTY
STA-30-14.12
STA-77-9.22

TYPE				815 SIGNS (REGULATORY AND WARNING) FLAT SHEET																												816 STRUCTURAL SUPPORTS			
SHEET	ROADWAY	REFERENCE	STATION	R-2-48 4'x4'	R-2-60 5'x5'	R-10-48 4'x5'	R-16A-48 4'x4'	R-37R-36 3'x4'	R-41B36 3'x3'	R-41A-36 3'x2'	W-1-36 3'x3'	W-49R48 4'x4'	W-97-48 4'x5'	W-98-48 4'x5'	W-143-24 2'x2'	WP-49-24 24"x18"	M-1-36-2 3'x3'	M-5-24-2 2'x2'	M-5C-36-2 3'x3'	IM-8-24 1'x2'	IM-24-21 1'-9"x1'-3"	IM-37-36 3'x1'-6"	IM-38-36 3'x1'-6"	M-39-36 3'x1'-6"	W-32-96 8'x4'	R-1-48 48"x48"	R-43L-36 36"x12"	R-43R-36 36"x12"	R-15B-30 30"x30"	Remove Major Ground Mounted Installation	Remove Ground Mounted Installation	NO. 3 POST	NO. 6 POST	NO. 6 POST AS PER PLAN	BRIDGE CONNECTION FOR SMALL SIGNS
				EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	Sq Ft	EA	LIN. FT.	LIN. FT	LIN. FT.	EACH
167	US.30EB		930+00									1Δ				1Δ																	19.0Δ		
167	Ramp S		928+00 Lt.							1Δ																						15.0Δ			
167	Ramp S		928+00 Rt.							1Δ																						15.0Δ			
167	Ramp T conn.		924+60															1Δ		1Δ	1Δ											14.5Δ			
167	Ramp T conn.		927+50	1Δ																												15.5Δ			
167	Harrison		41+80															2Δ		2Δ	2Δ											14.5Δ			
168	US.30WB		954+50									1				1																	18.5		
168	US.30WB		940+50			1Δ	1Δ																										2@16.0Δ		
168	I-77 N.B.		560+50									1				1																			1
168	I-77 N.B.		572+00									1				1																			1
168	Ramp A		966+25										1																				18.0		
168	Ramp B		954+75											1																			18.0		
168	Ramp C		954+50									1				1																	18.5		
168	Ramp E		978+00										1																				18.0		
168	Ramp F		952+00											1																			18.0		
168	Ramp F		968+75		1																														1
168	Ramp G		965+50								1				1																				1
168	Ramp G		978+75		1																														1
168	Cleveland		24+25					1																									16.0		
168	McKinley Conn.		23+75						1																								16.0		
169	I-77 N.B.		13+73.66														1		1			1		1									17.5		
169	I-77 S.B.		526+00			1	1																										2@16.0		
169	I-77 S.B.		536+00																1				1										18.0		
169	I-77 S.B.		554+00									1				1																	18.5		
167	Ramp T		934+00		1Δ																												18.0Δ		
167	Ramp T		925+50																										1Δ			15.0Δ			
167	Ramp Conn.		925+00																										1Δ			15.0Δ			
167	Ramp S		925+40 Rt.						1Δ																	1Δ	1Δ	1Δ						17.0Δ	
167	Ramp S		925+40 Lt.						1Δ																	1Δ	1Δ	1Δ						17.0Δ	
164	U.S. 30EB	1A	837+00 Rt.																											1Δ					
164	U.S. 30EB	1A	837+00 Lt.																											1Δ					
164	U.S. 30EB		906+00																												1Δ				
168	I-77 N.B.		570+00 ±																					1									2@17.0		
168	Ramp G		971+00 ±																					1									2@17.0		
AREA SQ.FT./SIGN				6.9	10.8	20	16	12	9	6	9	16	20	20	4	3	9	4	9	2	2.2	4.5	4.5	4.5	32	16	3	3	6.25						
Δ SUB TOTAL SIGNS				1	1	1	1		2	2		1				1		3		3	3					2	2	2	2						
Δ SUB TOTAL AREA				6.9	10.8	20	16		18	12		16				3		12		6	6.6					32	6	6	12.5						
NORMAL SUB TOTAL SIGNS					2	1	1	1	1		1	5	2	2	1	5	1		2			1	1	1	2										
NORMAL SUB TOTAL AREA					21.6	20	16	12	9		9	80	40	40	4	15	9		18			4.5	4.5	4.5	64										
Δ SUB TOTAL				183.8																										2	1	104.5	69.0	34.0	—
NORMAL SUB TOTAL				371.1																										-	-	—	295.0	—	5
GRAND TOTAL				554.9																										2	1	104.5	364.0	34.0	5
TOTALS																																			
TOTALS: SQ. FT. 1 EACH																																			
TOTALS: SQ..FT.																																			

Note:
Δ U-663 (15) Participation
All other quantities are 90% Federal - 5% State - 5% City Participation.

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

Rev. 1-29-76

SIGN AND SUPPORT QUANTITIES

816 STRUCTURAL SIGN SUPPORTS

STARK COUNTY
STA-30-14.12
STA-77-9.22

SHEET	ROADWAY	REFERENCE	STATION	OVERHEAD SIGN SUPPORT TC 7.65 DESIGN NO.6,(MOD), 54'-0" SPAN, 24'-0" LT. POLE, 26'-0" RT. POLE	OVERHEAD SIGN SUPPORT TC 7.65 DESIGN NO.6,(MOD), 59'-0" Span, 23'-0" LT. POLE, 25'-0" RT. POLE	OVERHEAD SIGN SUPPORT TC 7.65 DESIGN NO.6,(MOD), 71'-0" SPAN, 25'-0" LT. POLE, 27'-6" RT. POLE	OVERHEAD SIGN SUPPORT TC 7.65 DESIGN NO.6,(MOD), 75'-0" SPAN, 23'-6" LT. POLE, 26'-0" RT. POLE	OVERHEAD SIGN SUPPORT TC 12.30 DESIGN NO.3,(MOD), 14'-0" ARM, 24'-0" POLE	OVERHEAD SIGN SUPPORT TC 12.30 DESIGN NO.3,(MOD), 16'-0" ARM, 24'-0" POLE	OVERHEAD SIGN SUPPORT TC 12.30 DESIGN NO.3,(MOD), 16'-0" ARM, 24'-6" POLE	OVERHEAD SIGN SUPPORT TC 12.30 DESIGN NO. 7,(MOD), 22'-0" ARM, 28'-0" POLE	OVERHEAD SIGN SUPPORT TC 12.30 DESIGN NO.9,(MOD), 23'-0" ARM, 28'-0" POLE	OVERHEAD SIGN SUPPORT TC 12.30 DESIGN NO.9 (MOD), 26'-0" ARM, 28'-0" POLE	OVERHEAD SIGN SUPPORT TC 12.30 DESIGN NO.12 27'-0" ARM,	OVERHEAD SIGN SUPPORT TC 12.30 DESIGN NO.8,(MOD), 25'-0" ARM, 30'-0" POLE	OVERHEAD SIGN SUPPORT TC 12.30 DESIGN NO.8,(MOD), 27'-0" ARM, 27'-0" POLE	OVERHEAD SIGN SUPPORT, TC 18.24		OVERHEAD SIGN SUPPORT TC 12.30 DESIGN NO. 7,(MOD) 22" ARM, 27'-0" pole	OVERHEAD SIGN SUPPORT TC 7.65 DESIGN NO. 8(MOD) 67' SPAN	REMOVAL OF OVERHEAD SIGN SUPPORT # 12.24	DISCONNECTOR SWITCH ENCLOSURER MOUNTING BRACKETS	CONCRETE FOR OVERHEAD SIGN SUPPORT FOUNDATIONS	REFERENCE
				EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.		EA.	EA.	EA	EA.	CU. YDS.	
165	Harrison	86	31+00							1Δ													30Δ	86
165	Ramp T conn.	87	923+60						1Δ														30Δ	87
165	Harrison	88	42+40					1Δ															30Δ	88
165	Harrison	89	49+00						1Δ														30Δ	89
165	U.S.30WB	90	935+83			1Δ																	12.1Δ	90
166	U.S.30EB	91	946+00				1																12.1	91
166	I-77 S.B.	92	566+10±														1					2	0.0	92
166	U.S.30WB	93	944+87													1Δ							4.1Δ	93
166	Ramp F	94	957+55		1																		9.5	94
166	Ramp E	95	959+50								1												4.1	95
166	U.S.30EB	96	959+00										1										4.1	96
166	I-77 N.B.	100	562+43±														1					2	0.0	100
166	I-77 N.B.	101	569+85											1							1		4.9	101
166	I-77 N.B.	103	22+40											1									4.9	103
166	I-77 S.B.	104	20+73.66												1								4.1	104
166	I-77 S.B.	105	576+00					Existing Structural Sign Support															0.0	105
166	Ramp A	106	963+63	1																			9.5	106
166	U.S.30EB	107	968+20									1											4.1	107
165	I-77NB	97	533+00																1				4.1	97
165	I77NB	98	519+60																	1			10.5	98
TOTALS				1	1	1Δ	1	1Δ	2Δ	1Δ	1	1	1	2	1	1Δ	2		1	1	1	4	28.2Δ / 71.9	
																						TOTAL	100.1	

Note:
Δ U-663 (15) Participation.
All other quantities are 90% Federal-5% State-5% City Participation.

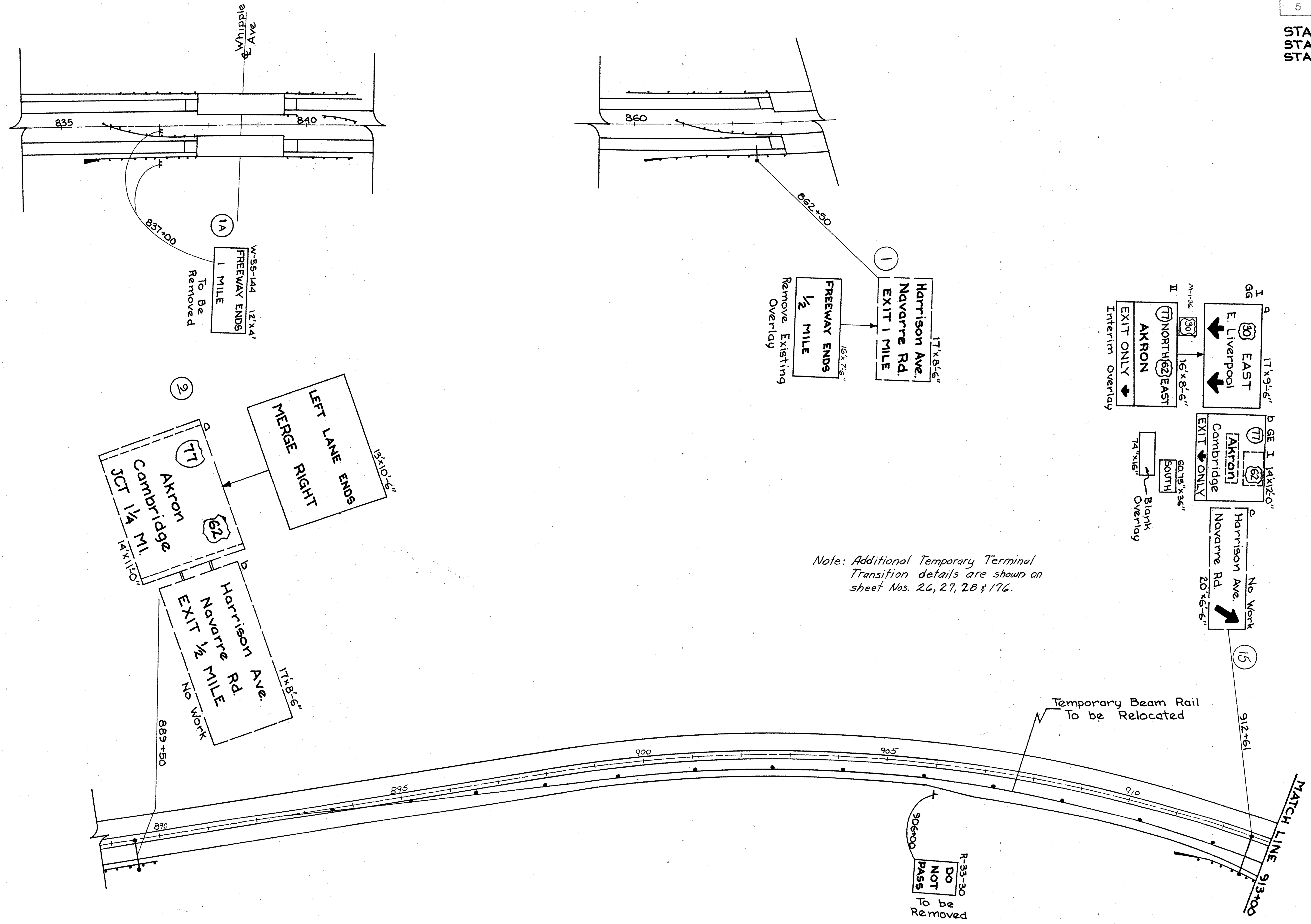
Rev. 1/29/76 [illegible]

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

OVERHEAD SIGN SUPPORT QUANTITIES

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

STARK COUNTY
STA.-30-14.12
STA.-77-9.22



Note: Additional Temporary Terminal Transition details are shown on sheet Nos. 26, 27, 28 & 176.

Rev. 1-29-76

SIGN LOCATION PLAN

STARK COUNTY
STA-30-14.12
STA-77-9.22

ROADWAY	STATION FROM	STATION TO	202 INTERIM GUARDRAIL Remove And Re-use		606 INTERIM BARRELS AS PER PLAN	620 INTERIM DELINEATOR, TYPE D, AS PER PLAN	844 # 3 POST AS PER PLAN	621 EXISTING INTERIM PAVEMENT MARKING REMOVED	621 4" INTERIM PAVEMENT MARKING	606 TEMPORARY BEAM RAIL
			LIN. FT.		EA.	EA.	EA.	LIN. FT.	LIN. FT.	LIN. FT.
US 30 E.B	904+00	914+00	1000Δ					1000Δ		
US 30 E.B	904+00	914+10							1010Δ	
US 30 E.B	914+00	936+00			44Δ	44Δ	44Δ			
US 30 E.B	936+00	946+00							845.11Δ	
US 30 E.B	936+00	941+70.11								575Δ
US 30 E.B	943+25	951+75								850
US 30 W.B	967+10	967+50								65
Ramp A	961+25	966+00								475
Ramp A	963+00	966+00							300Δ	
TOTALS			1000Δ		44Δ	44Δ	44Δ	1000Δ	2155.11Δ	575Δ
										1400

NOTE:
Δ- 95% State-5% City Participation
All other quantities are 90% Federal-5% State-5% City Participation.

Note: Additional Temporary Terminal Transition details are shown on sheet Nos. 26, 27, 28, & 176.

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

Scale: 1"=100' 50 25 0 100

Rev. 1-30-76

SIGN LOCATION PLAN

FED. ROAD DIV. NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	166 / 389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22

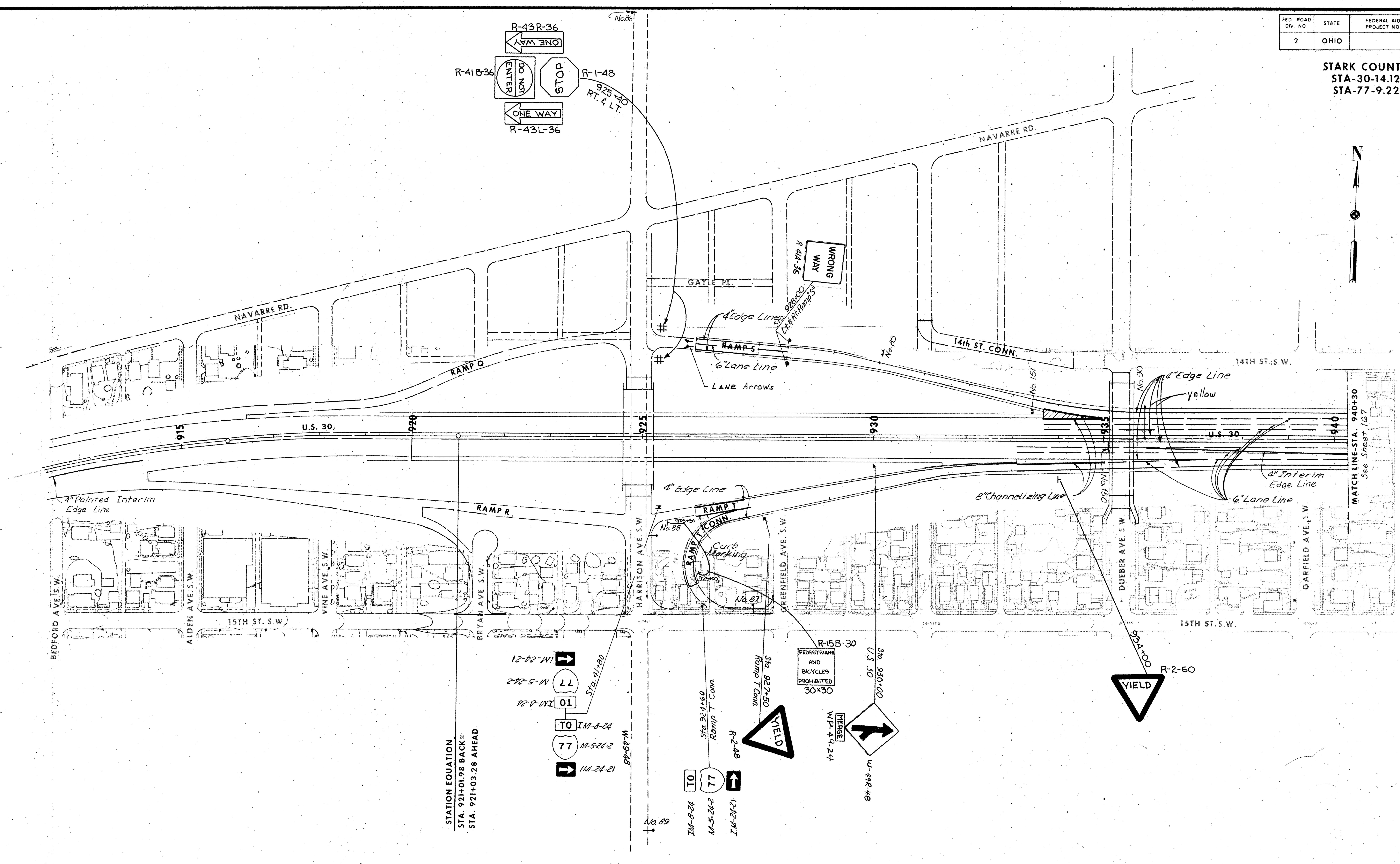
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

Rev. 1-29-76

SIGN LOCATION PLAN

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



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

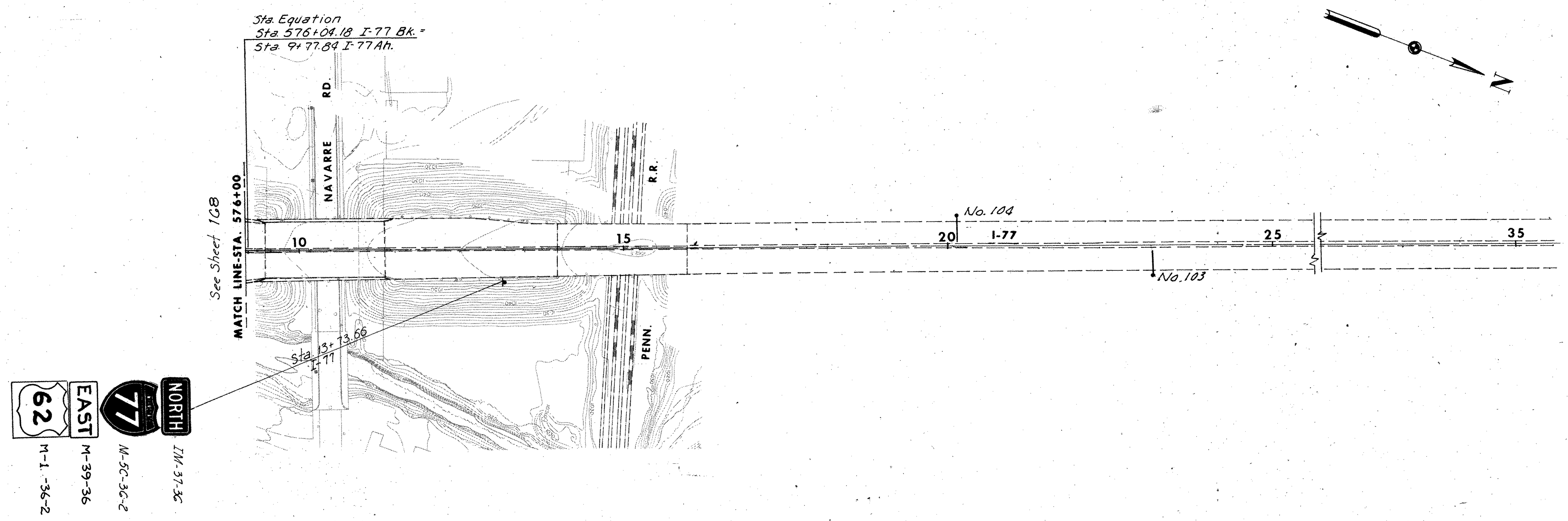
Scale: 1"=100' 50 25 0 100

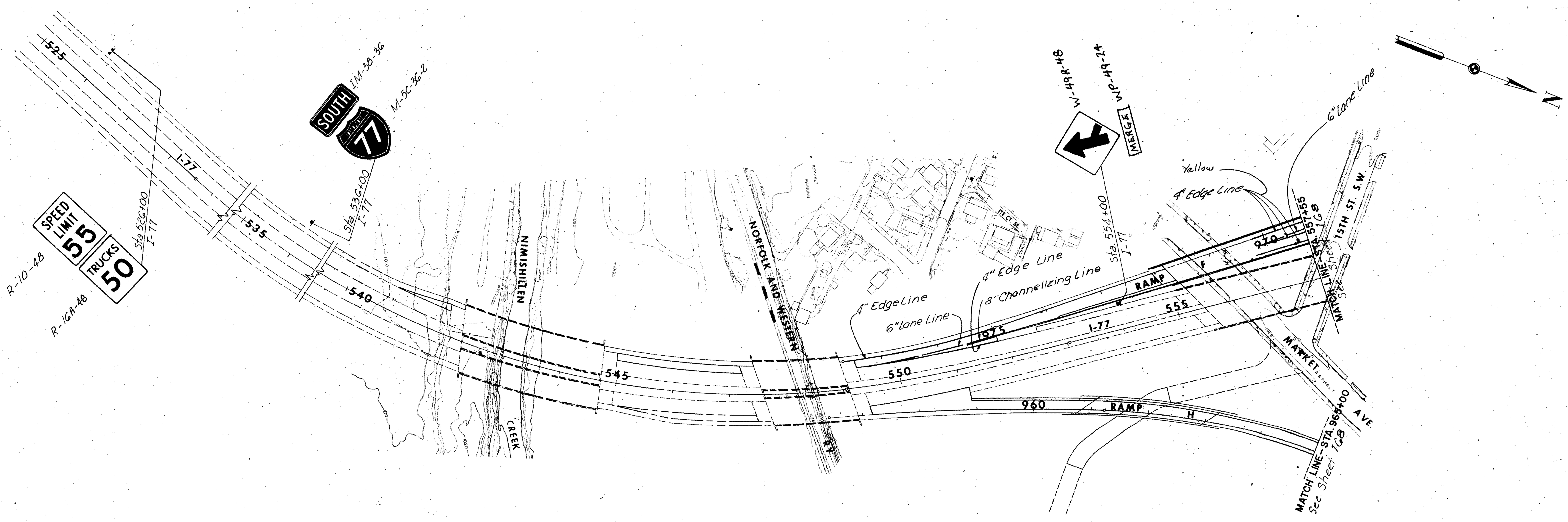
R & W SIGN LOCATION PLAN


FED. ROAD DIV. NO. 2
STATE OHIO
FEDERAL AID PROJECT NO.
TYPE FUNDS
168
389
STARK COUNTY
STA-30-14.12
STA-77-9.22
N
MATCH LINE-STA. 576+00
See Sheet 169
MATCH LINE-STA. 940+00
See Sheet 167
MATCH LINE-STA. 557+55
See Sheet 169
MATCH LINE-STA. 965+00
See Sheet 169
STATION EQUATION
STA. 941+70.11 BACK = STA. 943+25.0 AHEAD
SPEED LIMIT 55
TRUCKS 50
R-10-48
R-16A-48
Sta. 940+50 U.S. 30
MERGE
W-49R-48
WP-49-24
EXIT 40 MPH
W-97-48
EXIT 25 MPH
RAMP 35 MPH
W-98-48
RAMP 40 MPH
KEEP RIGHT
R-37R-36
DO NOT ENTER
R-41B-36
W-32-96
25 MPH
W-1-36
W-123-24
YIELD
R-2-60
U.S. 30
I-77
RAMP A
RAMP B
RAMP C
RAMP D
RAMP E
RAMP F
RAMP G
RAMP H
GARFIELD AVE.
ASPHALT S.W.
14TH ST. S.W.
15TH ST. S.W.
SCOVILLE
STARK
HENRY AVE.
CLEVELAND AVE.
McKINLEY CONN.
MARKET AVE.
BALTIMORE AVE.
PENN. R.R.
NORFOLK AND WESTERN RY.
OHIO AND R.R.
8" Channelizing Line
6" Lane Line
4" Edge Line Yellow
4" Interim Edge Line
4" Painted Edge Line
Centerline Double Solid
8" Cross Walk
24" Stop Line
Sta. 23+75 McKinley Conn.
Sta. 24+25 Cleveland
Sta. 978+00 Ramp "E"
Sta. 978+75 Ramp "G" On Structure
Sta. 560+50 I-77 (On Structure)
Sta. 572+00 I-77 (On Structure)
Sta. 965+50 "G" On Structure
LINE SYMBOLS
SUBDUED = Existing Conditions
SOLID = Construction Contract (Current)
DASHED = Construction Contract (By Others)
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
Scale: 1"=100' 50 25 0 100
R & W SIGN LOCATION PLAN

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			169/389

STARK COUNTY
STA-30-14.12
STA-77-9.22



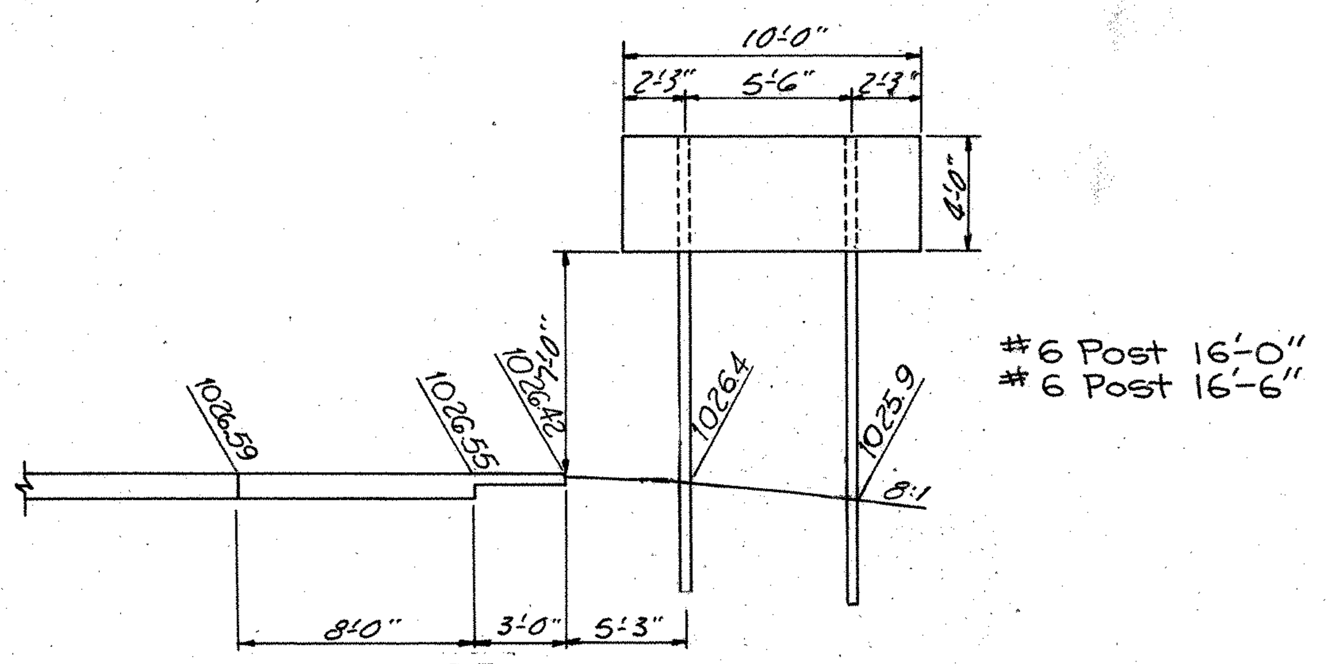


HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

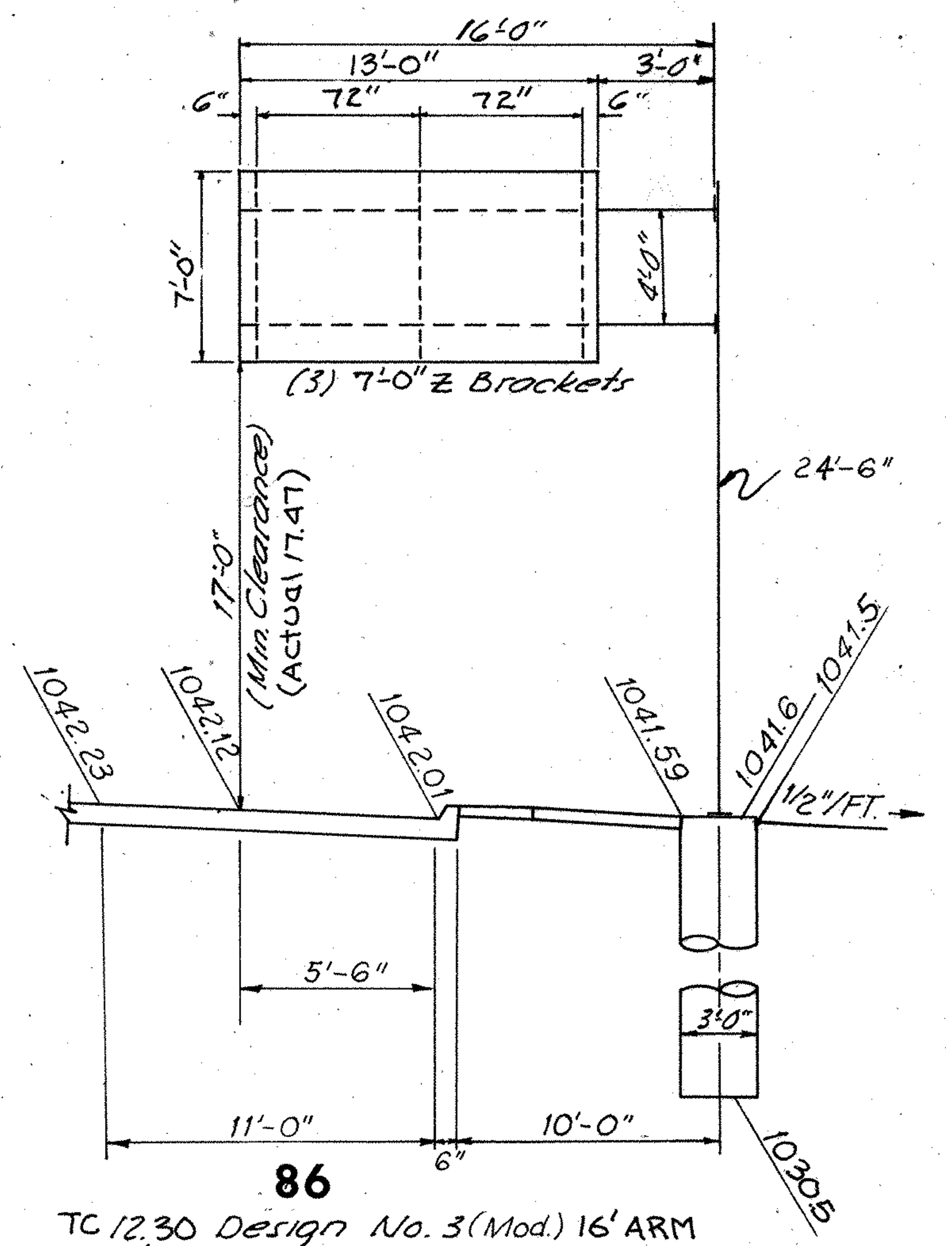
Scale: 1"=100' 50 25 0 100

R & W SIGN LOCATION PLAN

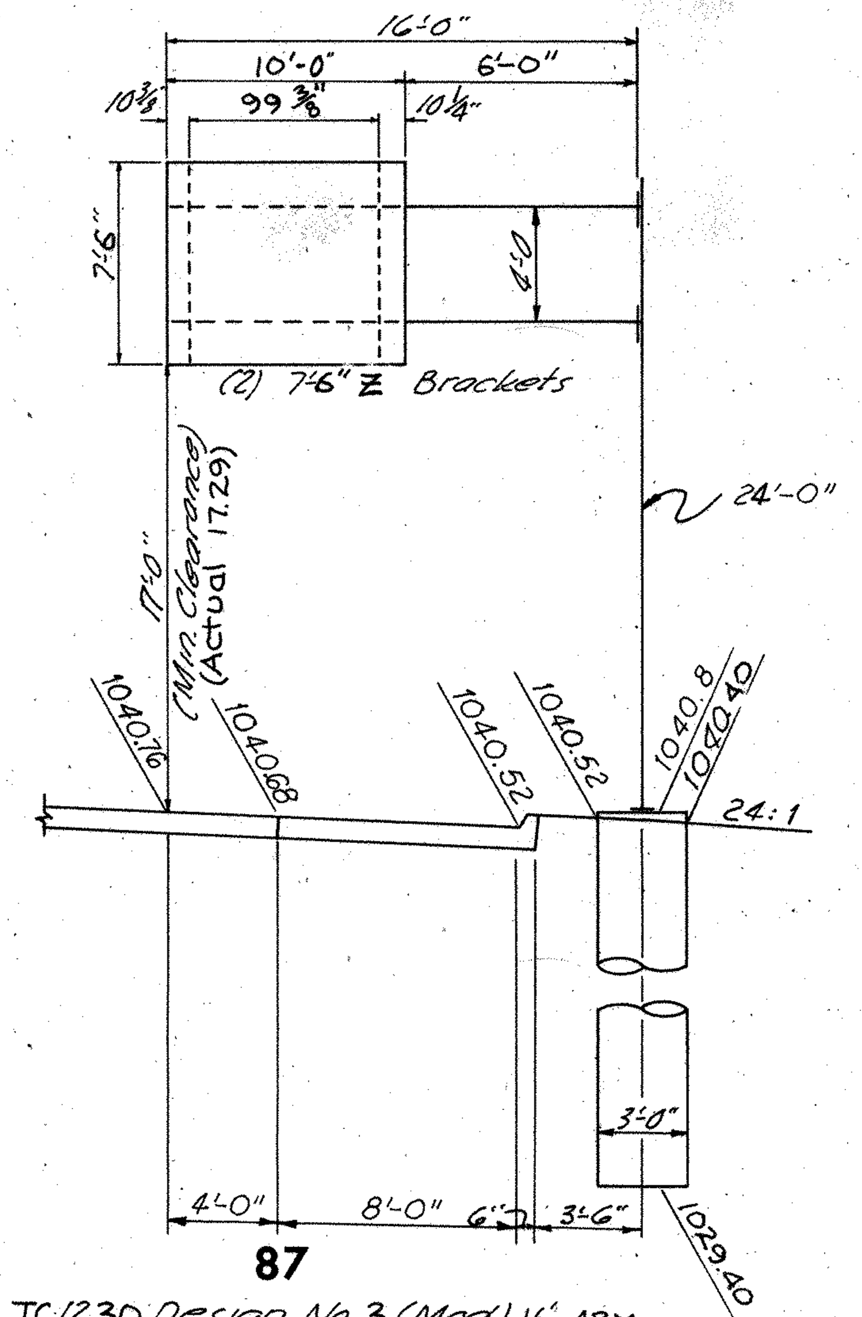
STARK COUNTY
STA-30-14.12
STA-77-9.22



85
Sta. 930+00 Ramp S

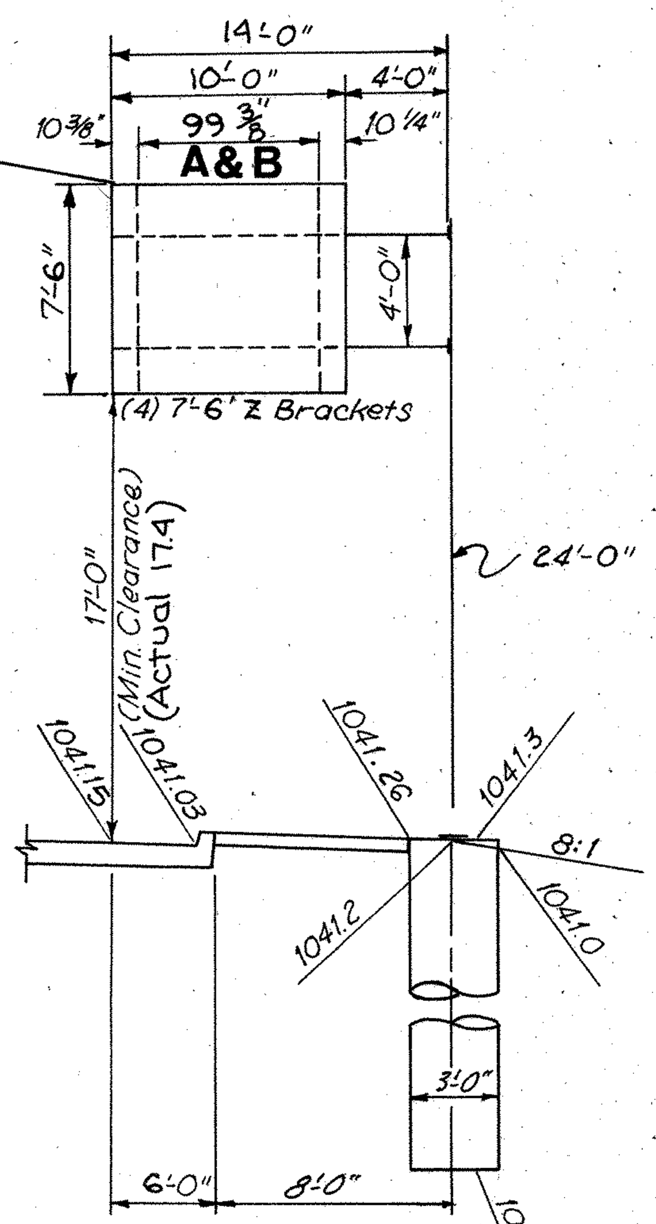


86
TC 12.30 Design No. 3 (Mod.) 16' ARM
Sta. 31+00 Harrison Ave. S.B.

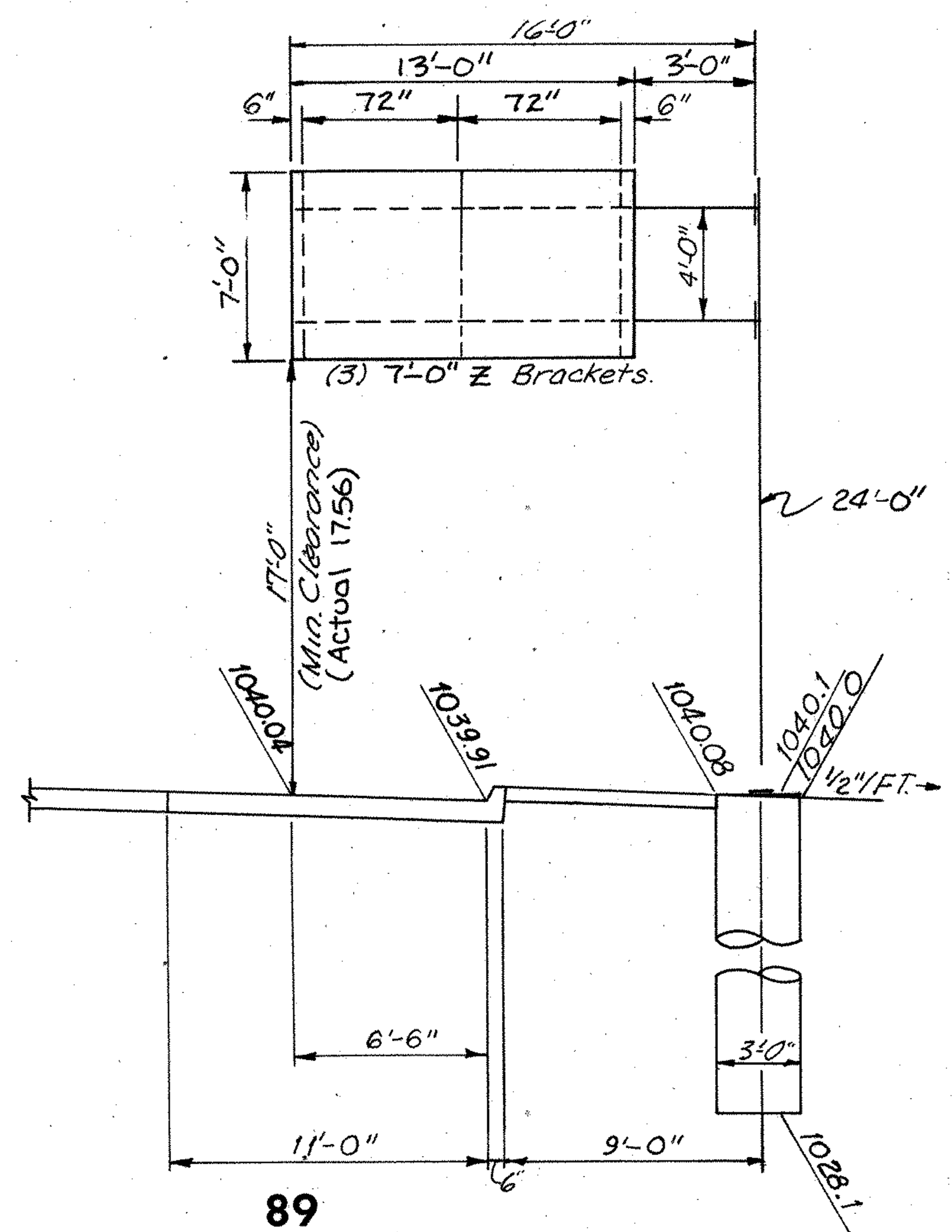


87
TC 12.30 Design No. 3 (Mod) 16' ARM
Sta. 923+60 Ramp T Conn.

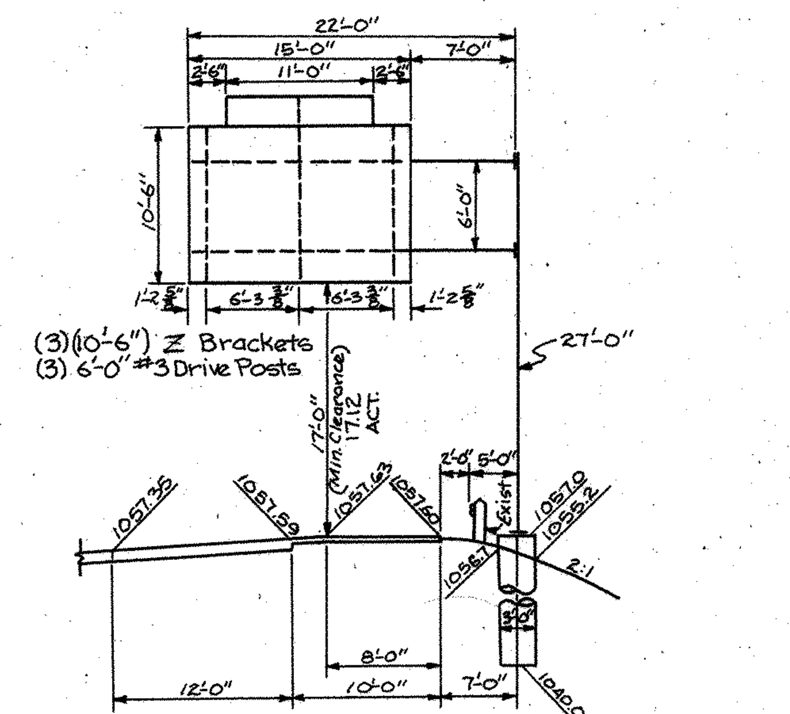
2 Signs Back to Back



88
TC 12.30 Design No. 3 (Mod) 14'-0" ARM
Sta. 42+40 Harrison Ave. N.B.



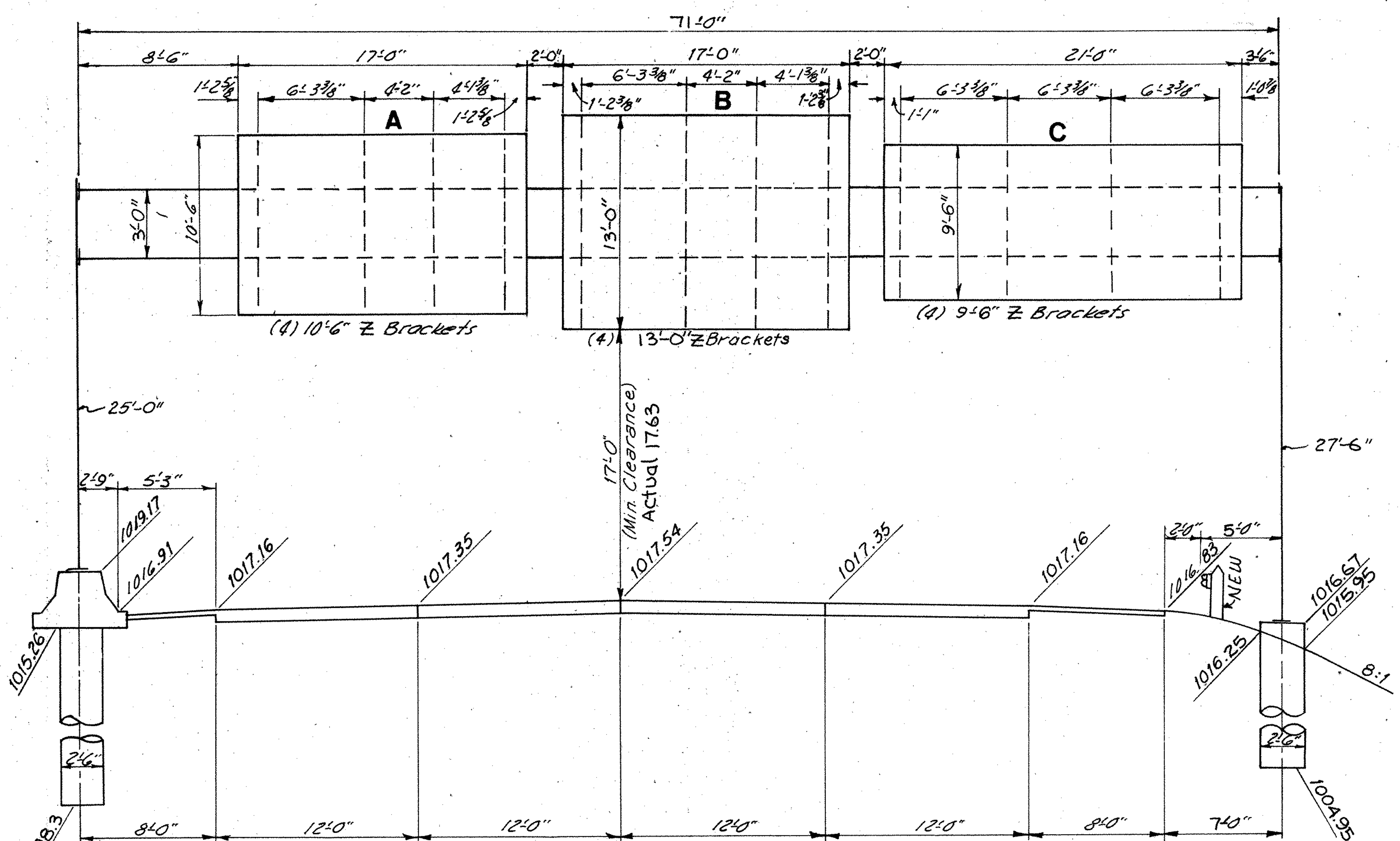
89
T.C. 12.30 Design No. 3 (Mod.) 16' ARM
Sta. 40+00 Harrison Ave. N.B.



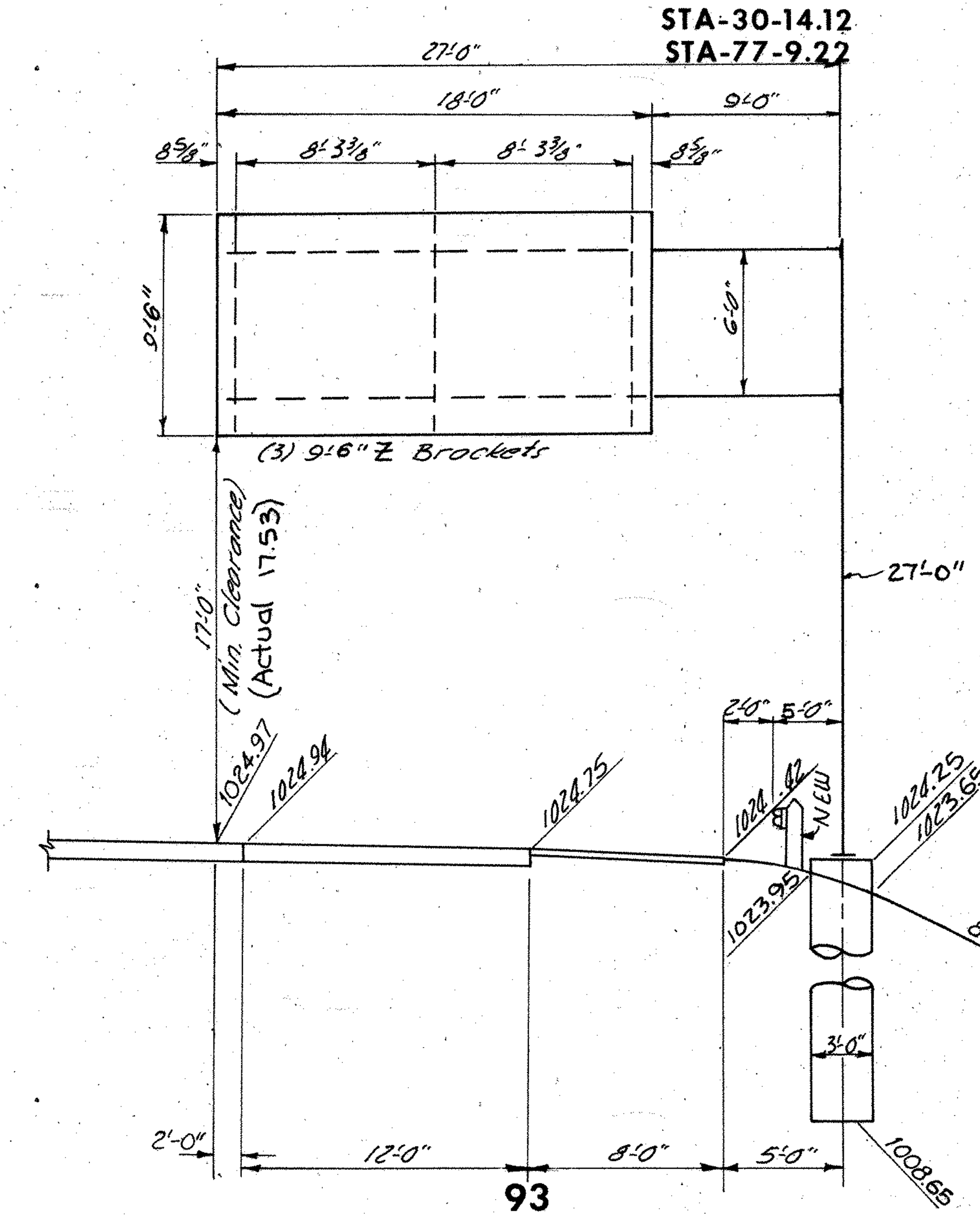
97
TC-12.30 Design 7-Mod.-22' ARM
Sta. 533+00 I-77 N.B.

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	171 / 389
2	OHIO			

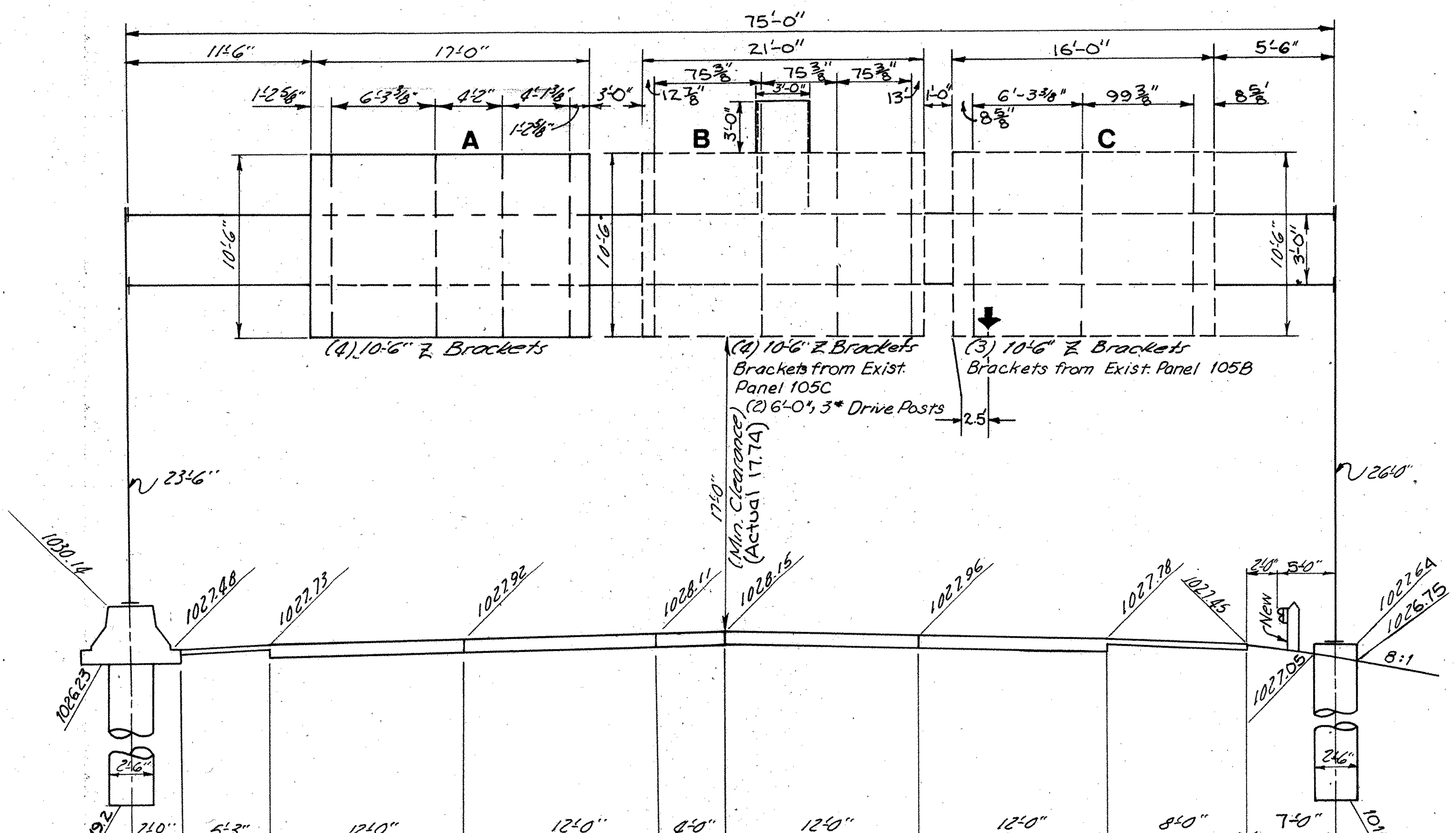
STARK COUNTY
STA-30-14.12
STA-77-9.22



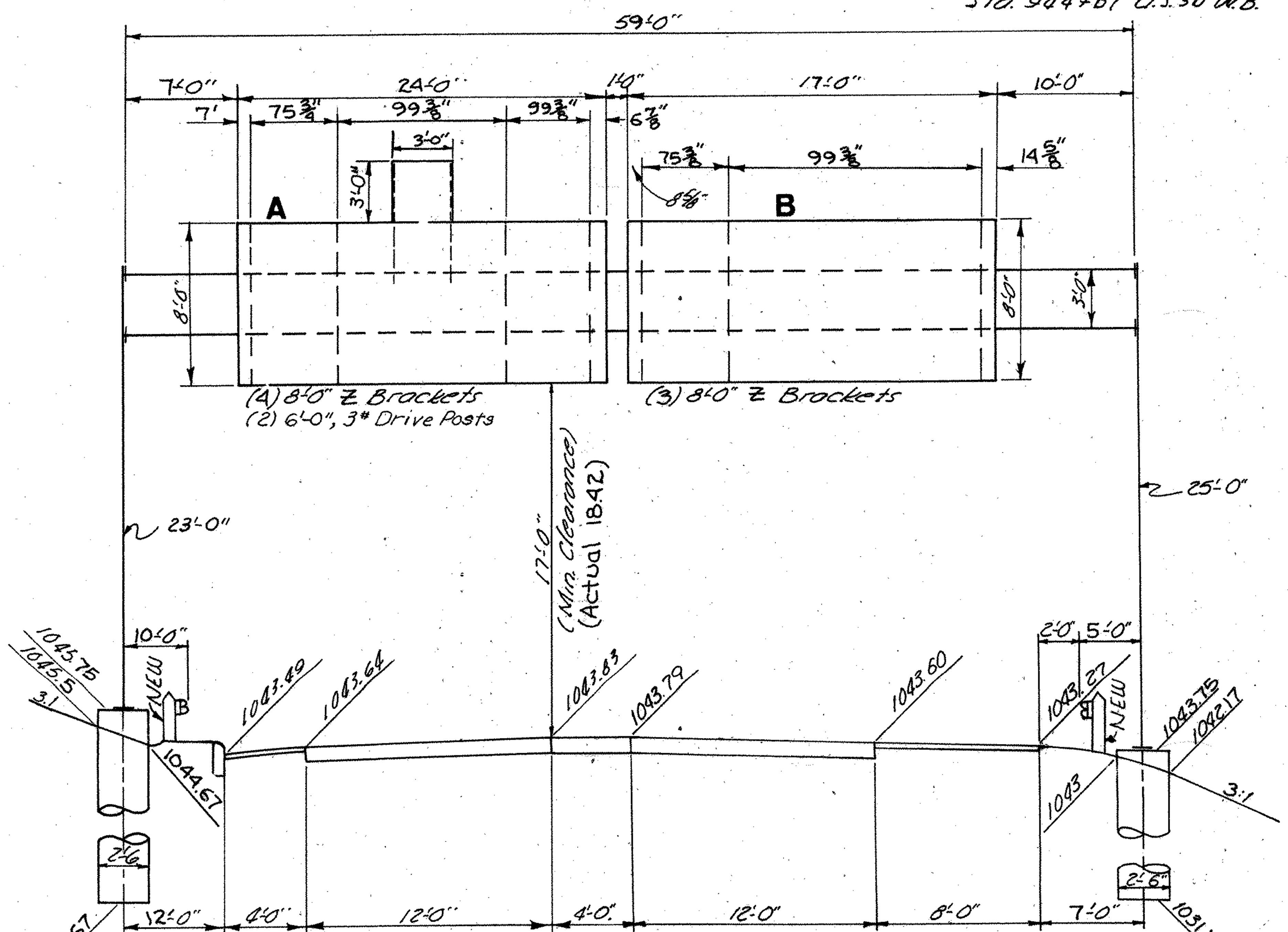
90
TC 7.65 Design No. 6 (Mod) 71'-0" SPAN
Sta. 935+87 U.S. 30 W.B.



93
TC 12.30 Design No. 8 (Mod) 27' ARM
Sta. 944+87 U.S. 30 W.B.



91
TC 7.65 Design No. 6 (Mod) 75'-0" SPAN
Sta. 946+00 U.S. 30 E.B.



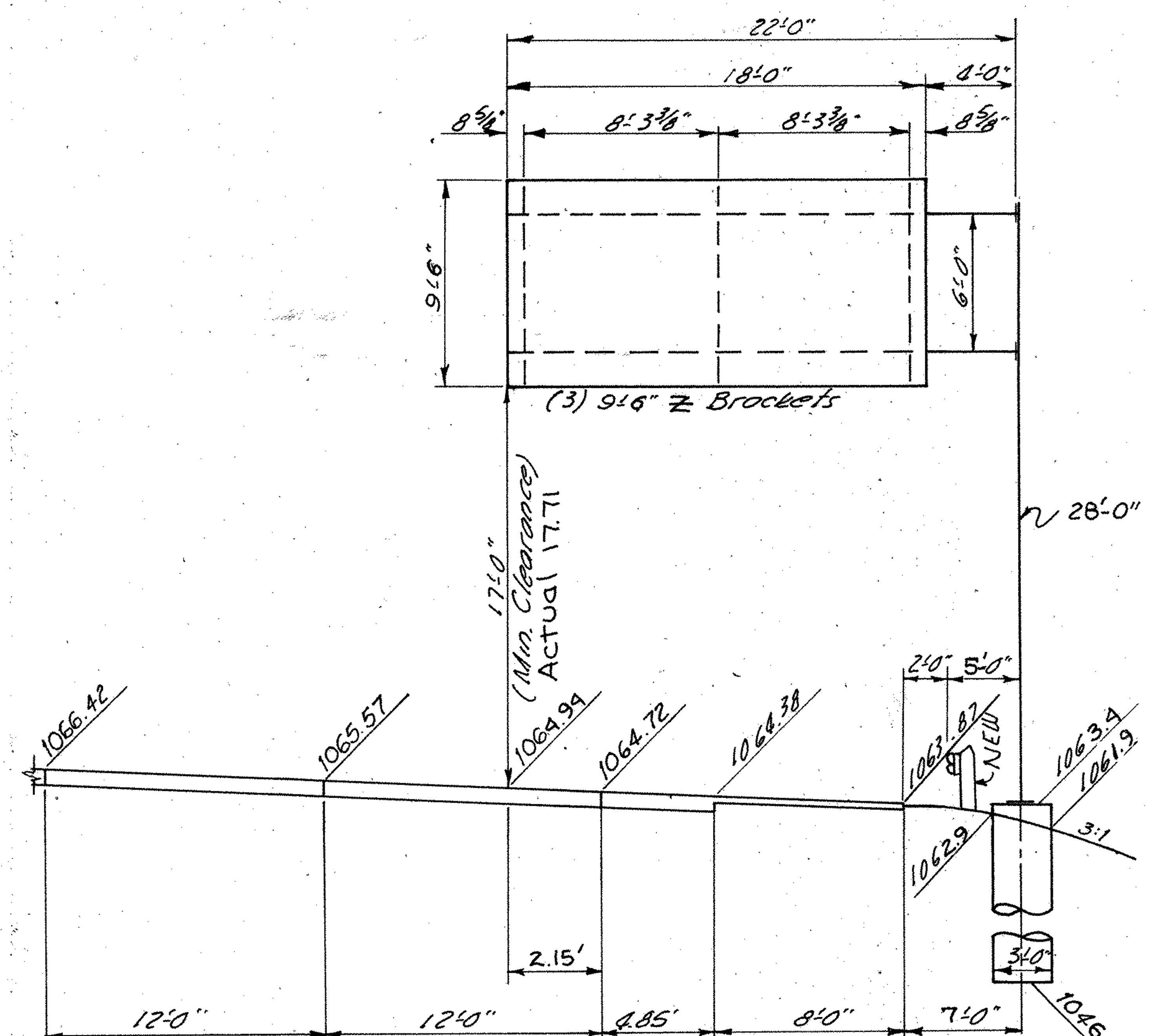
94
TC 7.65 Design No. 6 (Mod) 59'-0" SPAN
Sta. 958+75 Ramp F

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

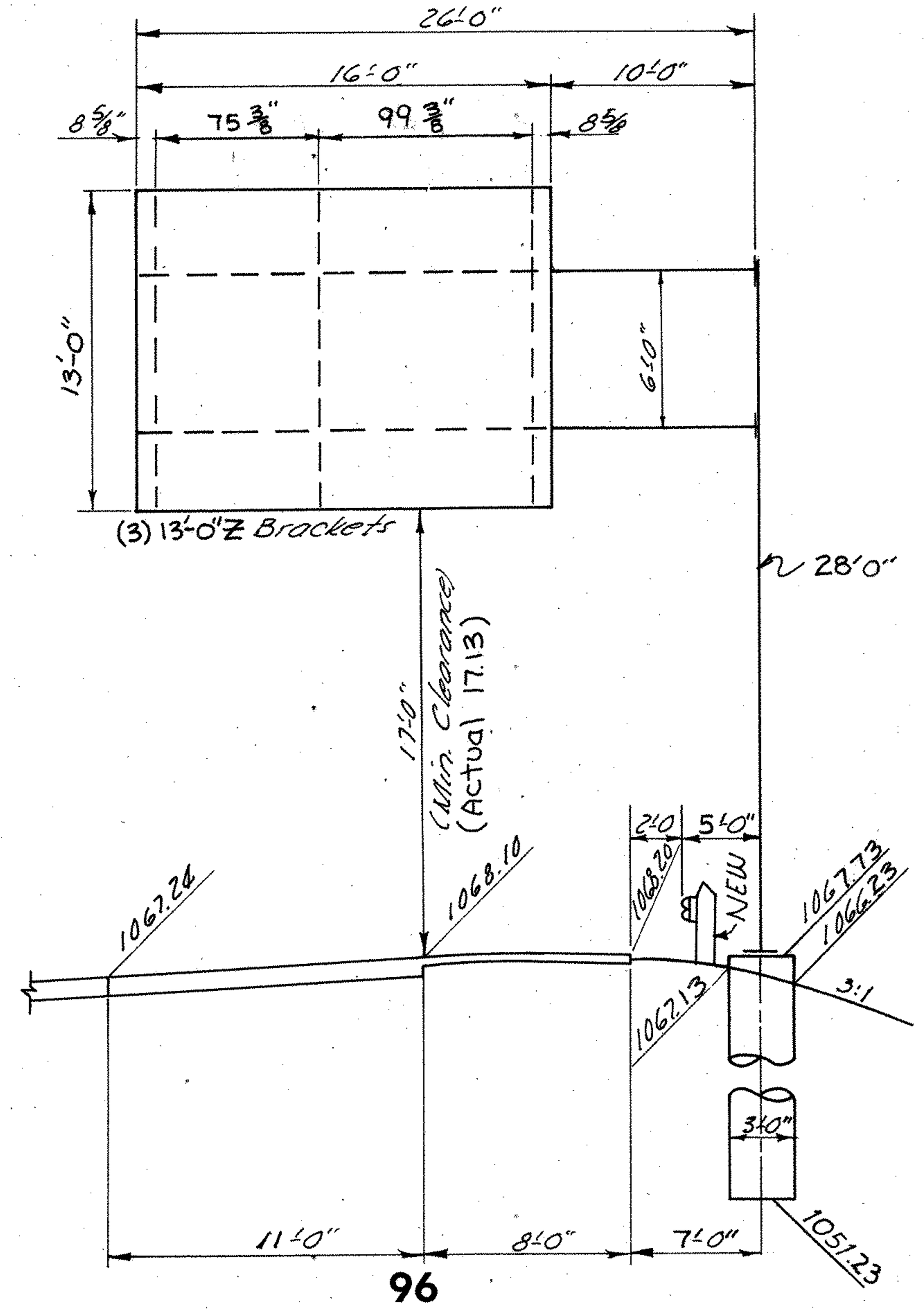
ELEVATION VIEWS

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

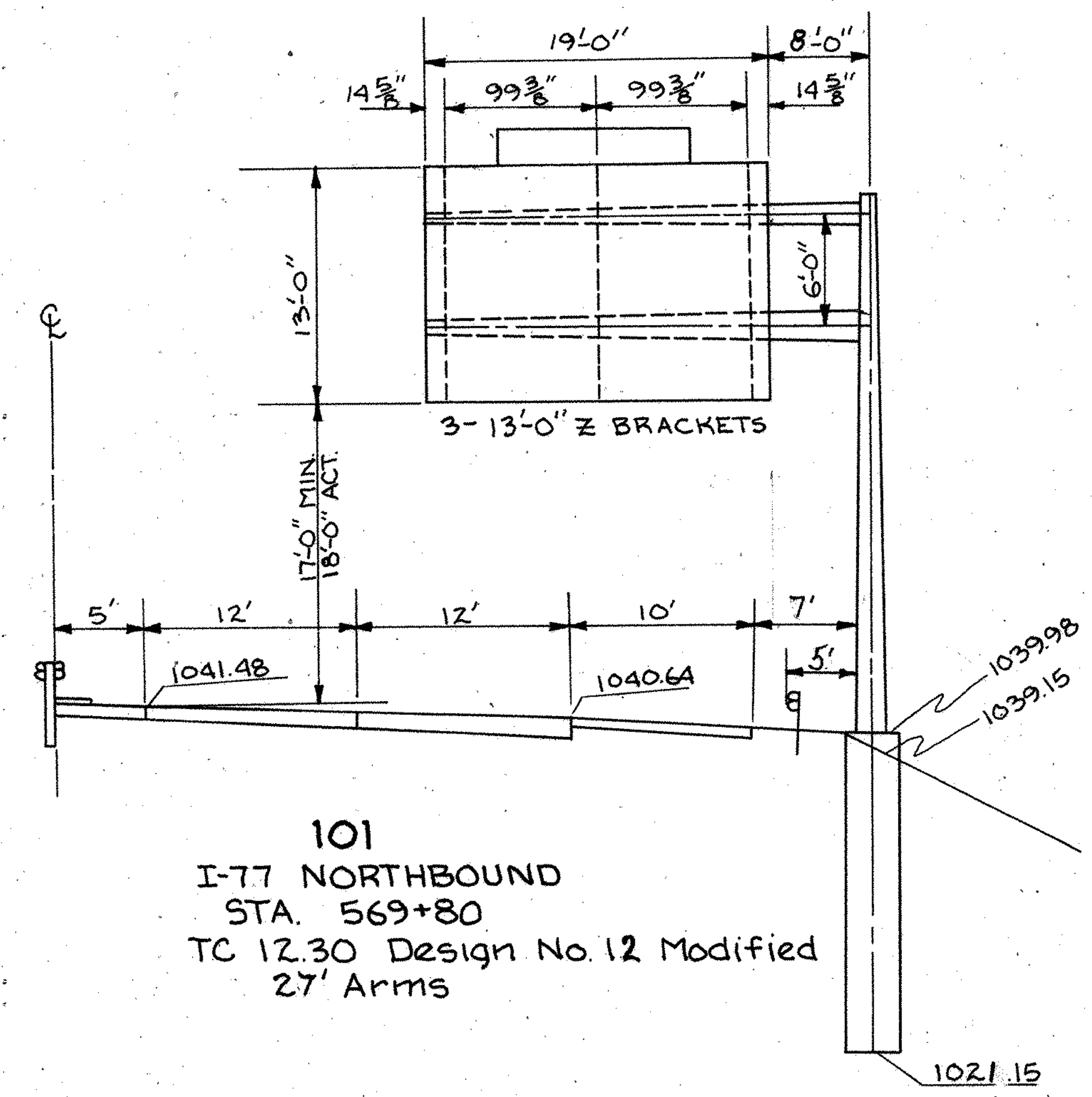
STARK COUNTY
STA-30-14.12
STA-77-9.22



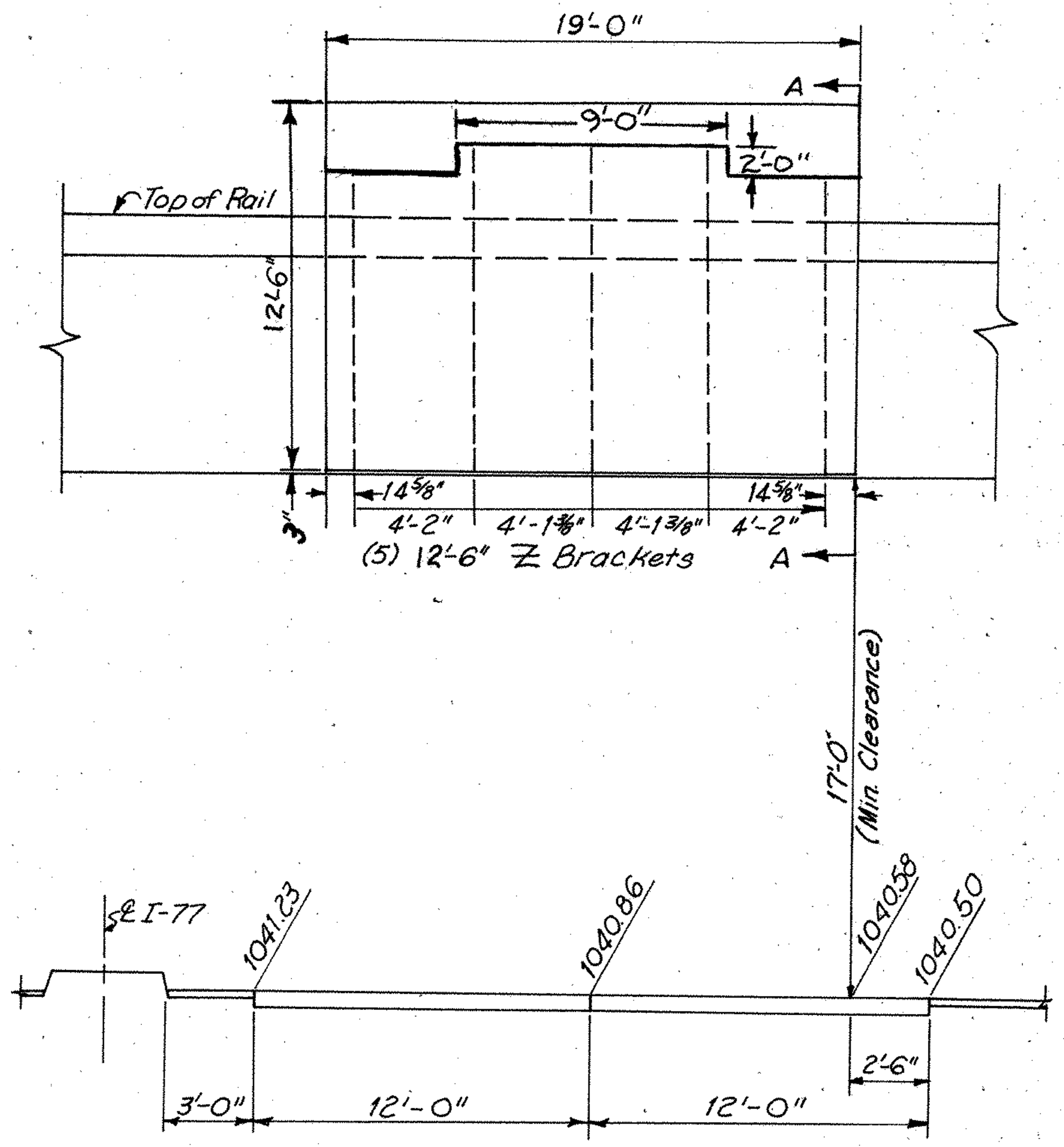
95
TC 12.30 Design No. 7 22' ARM
Sta. 959+50 RAMP E



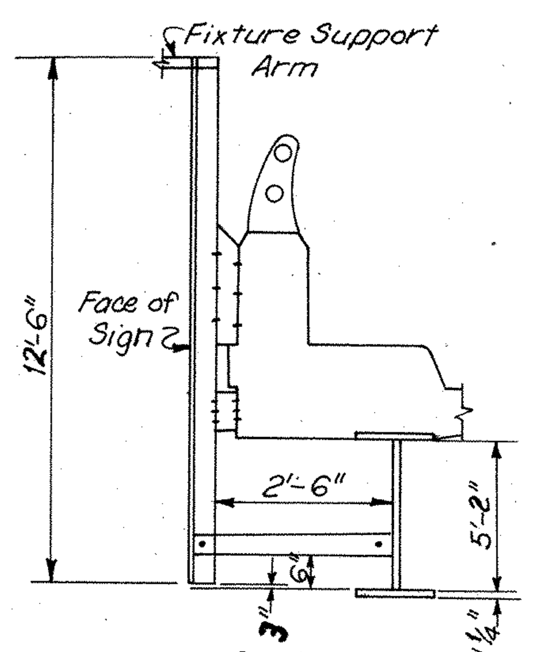
96
TC 12.30 Design No. 9 (Mod.) 26' ARM
Sta. 959+00 U.S. 30 E.B.



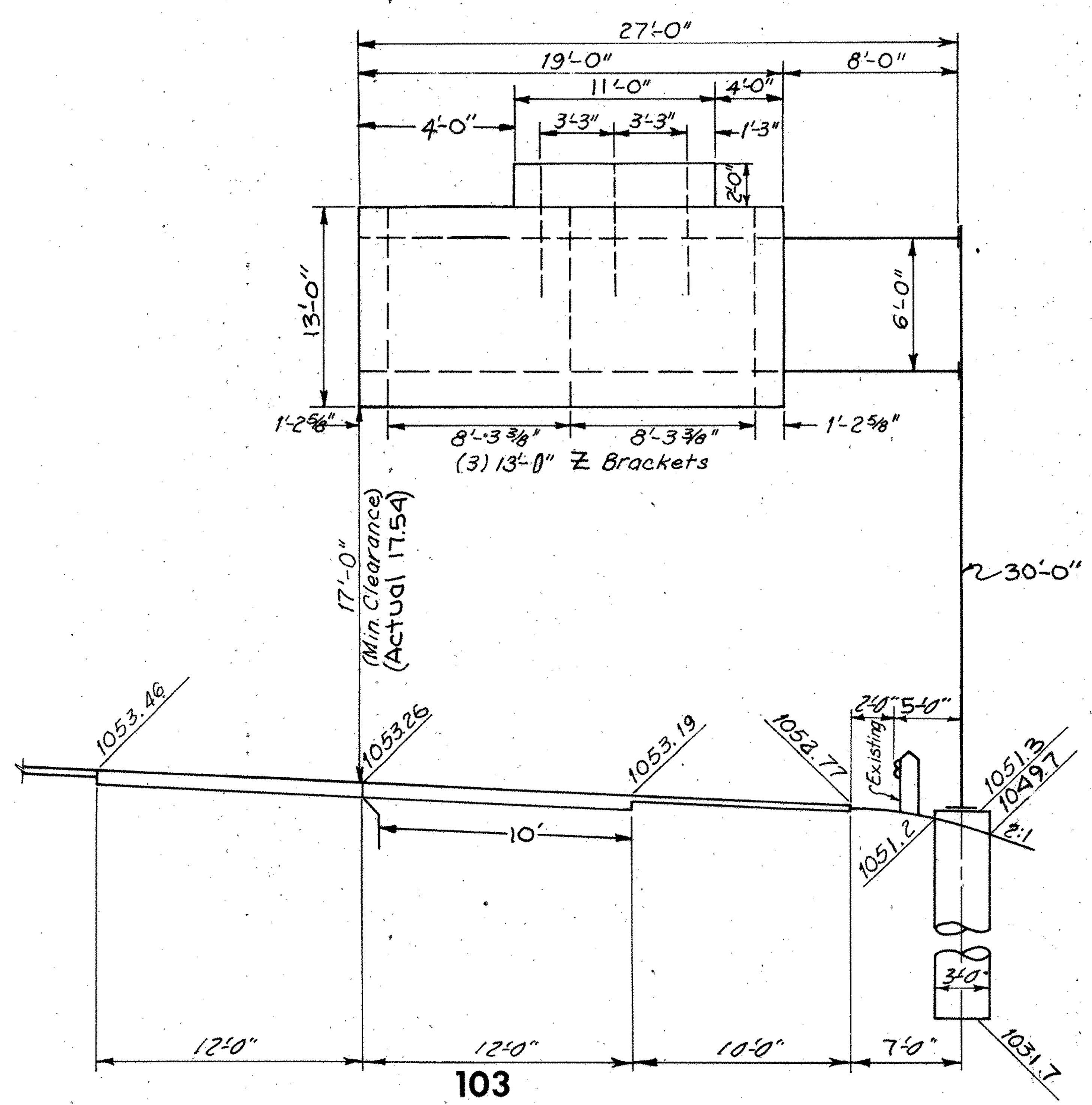
101
I-77 NORTHBOUND
STA. 569+80
TC 12.30 Design No. 12 Modified
27' Arms



92
TC 18.24
Sta. 562+43±
I-77 S.B.



Section A-A
Sta. 965+11.50±
U.S. 30 W.B.

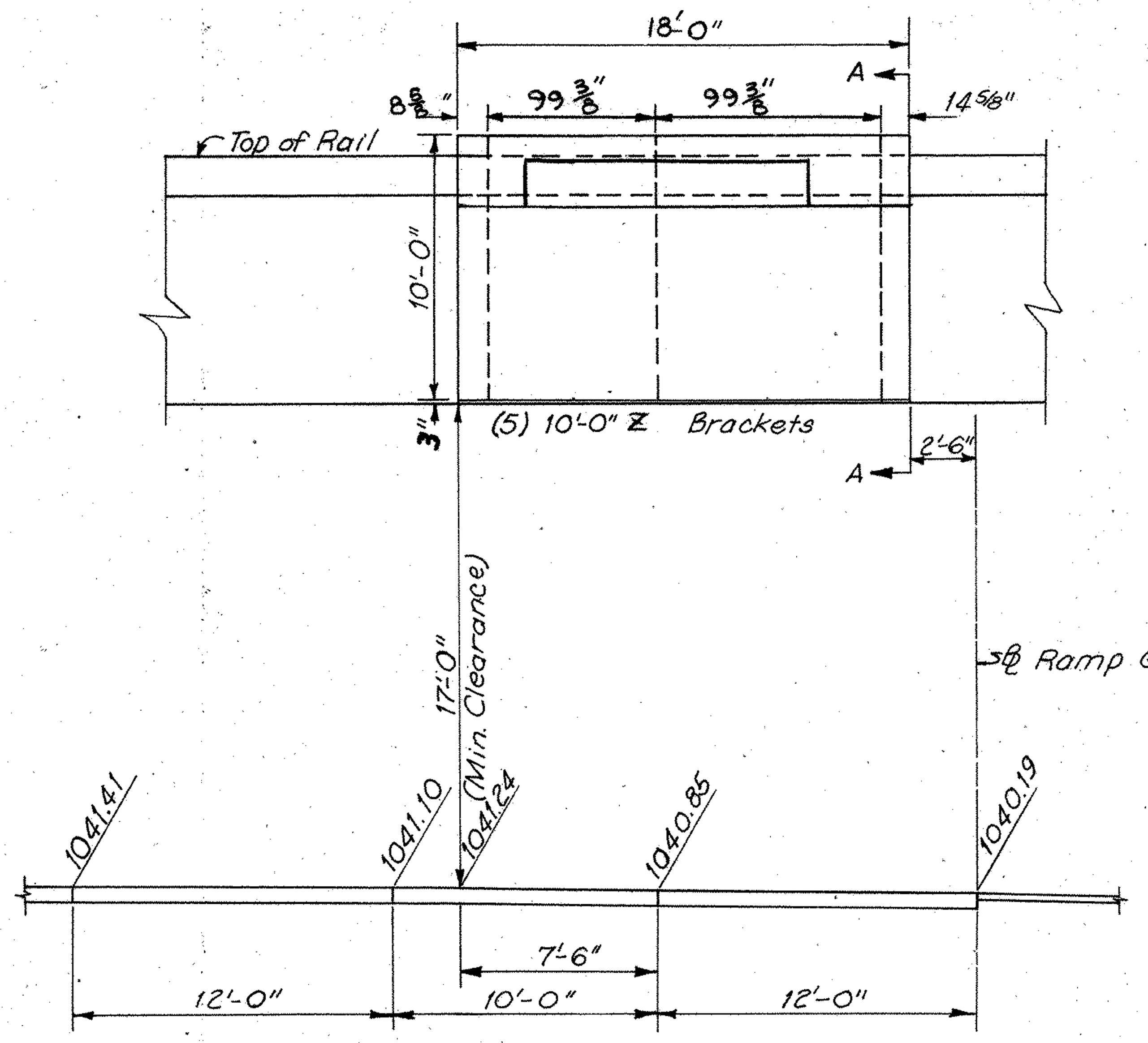


103
TC 12.30 Design No. 12 (Mod.) 27' ARM
Sta. 22+40 I-77 N.B.

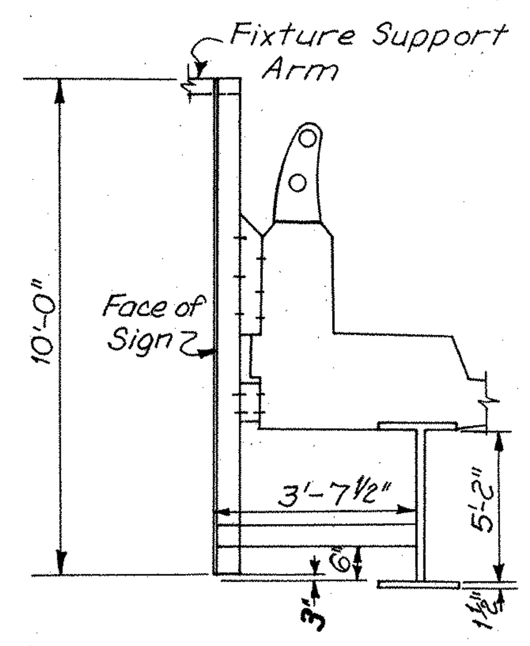
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

ELEVATION VIEWS

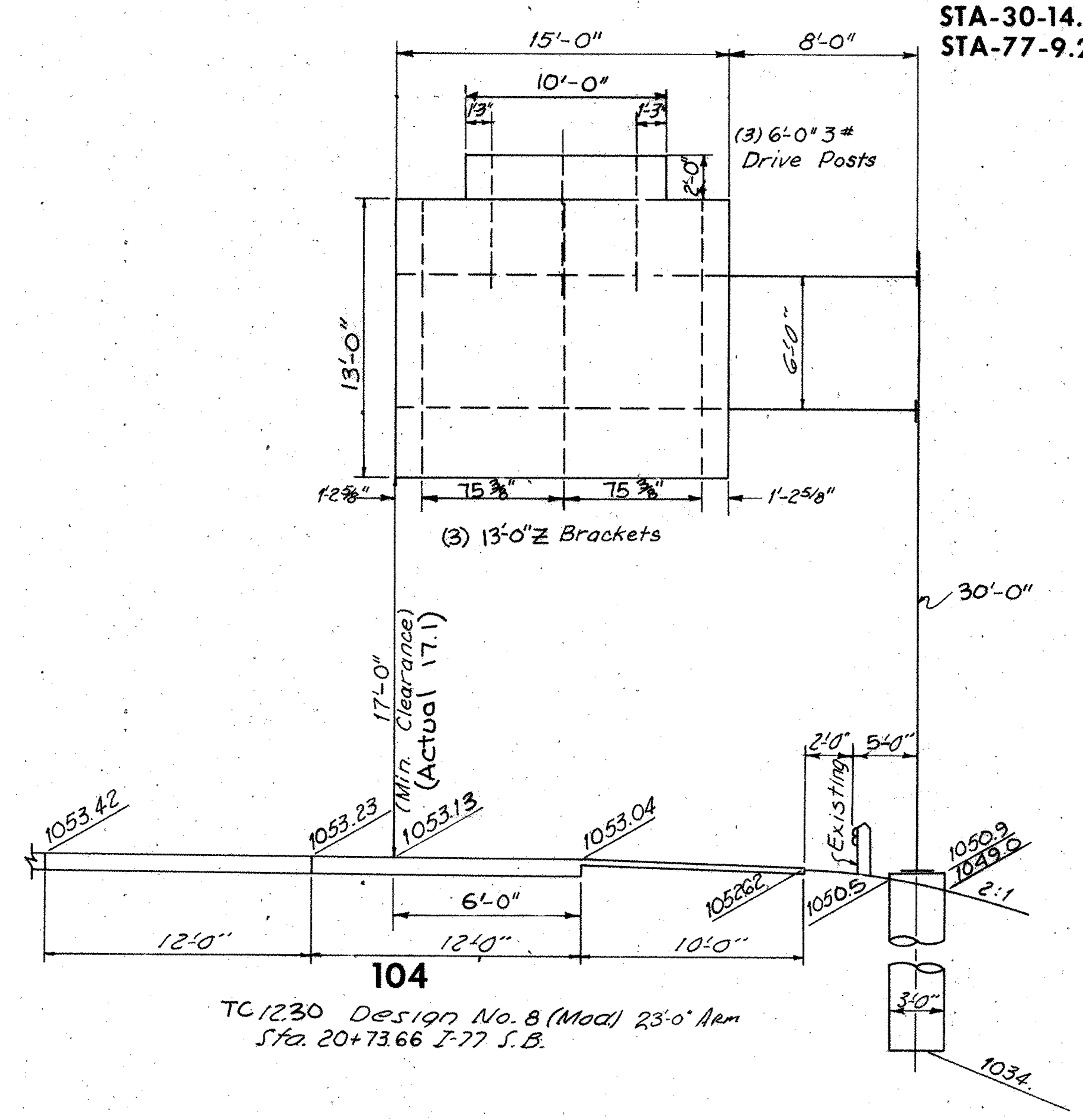
STARK COUNTY
STA-30-14.12
STA-77-9.22



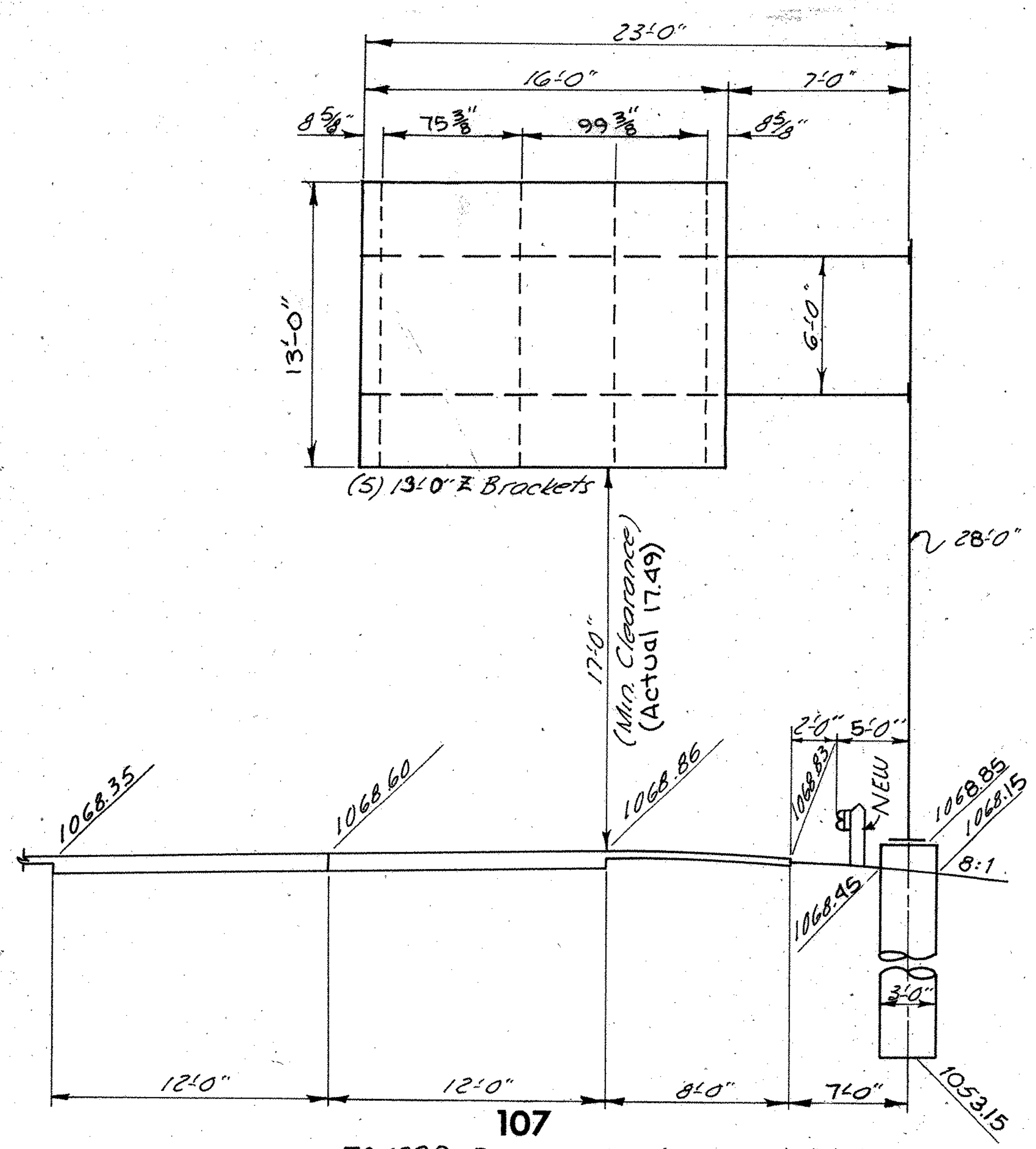
100
TC-18.24
Sta. 562+43± I-77 N.B.



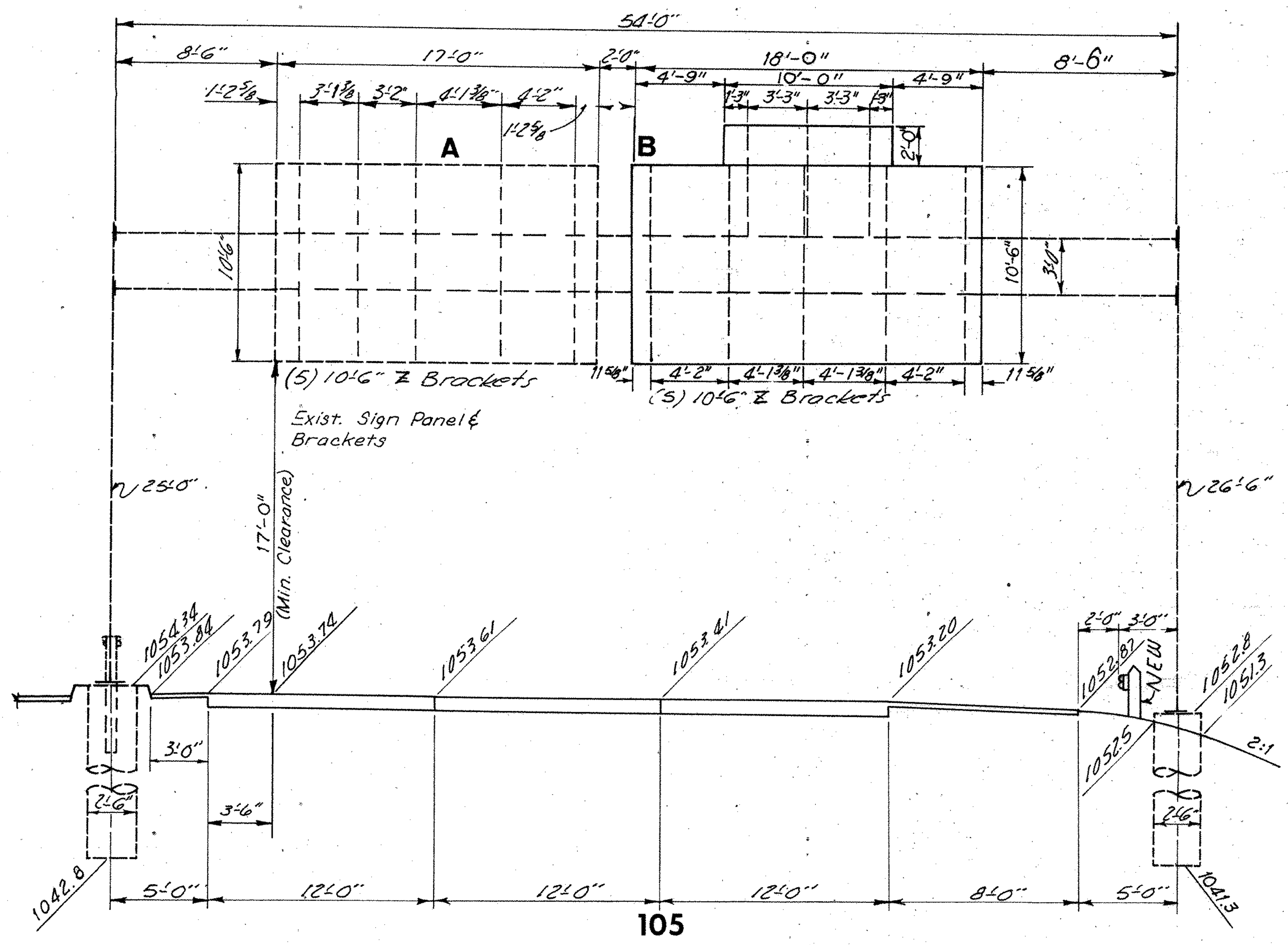
Section A-A
Sta. 666+97.5 Ramp G



104
TC 12.30 Design No. 8 (Mod) 23'-0" Arm
Sta. 20+73.66 I-77 S.B.



107
TC 12.30 Design No. 9 (Mod) 23'-0" Arm
Sta. 968+20 U.S. 30 E.B.



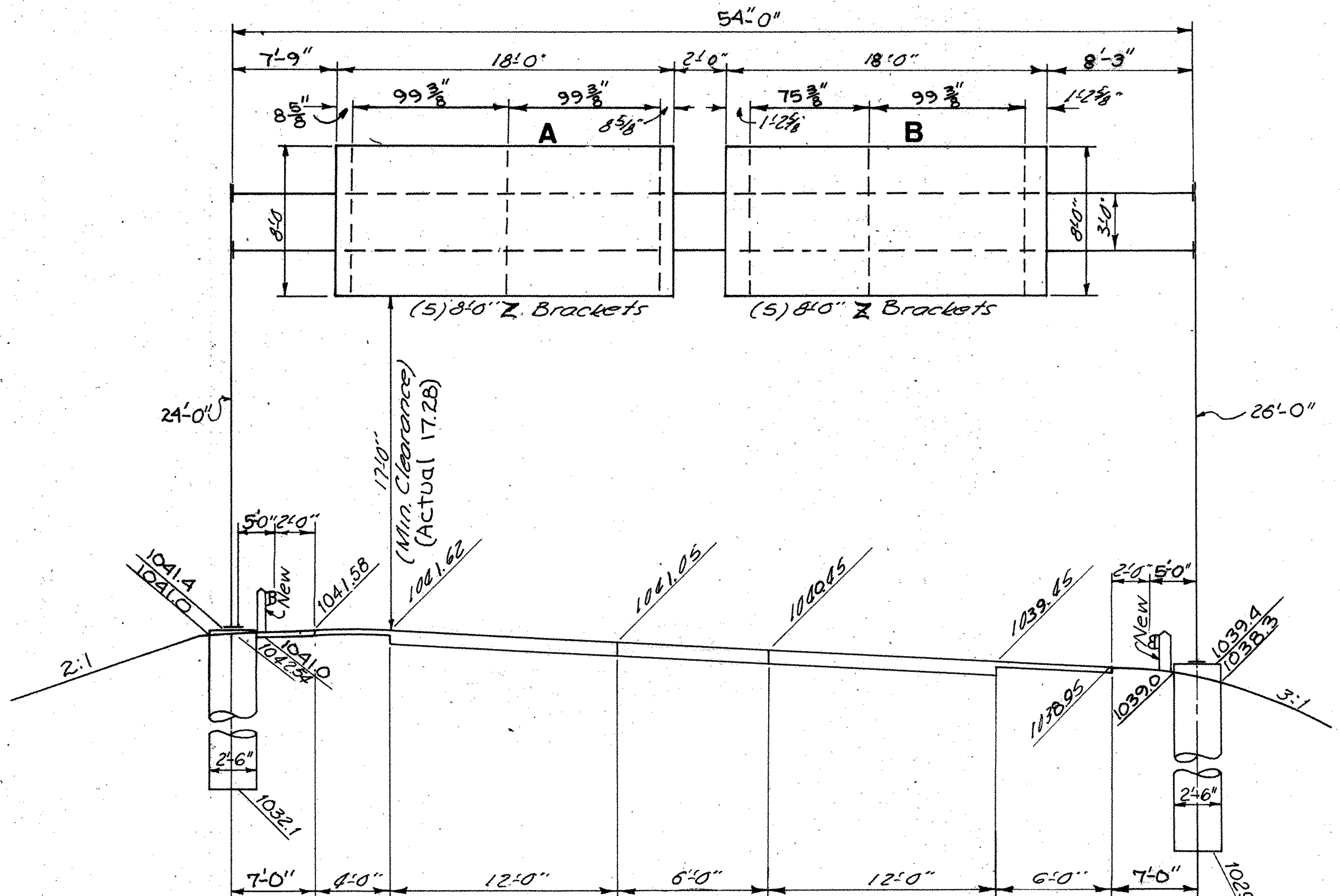
105
Existing Structural Sign Support

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

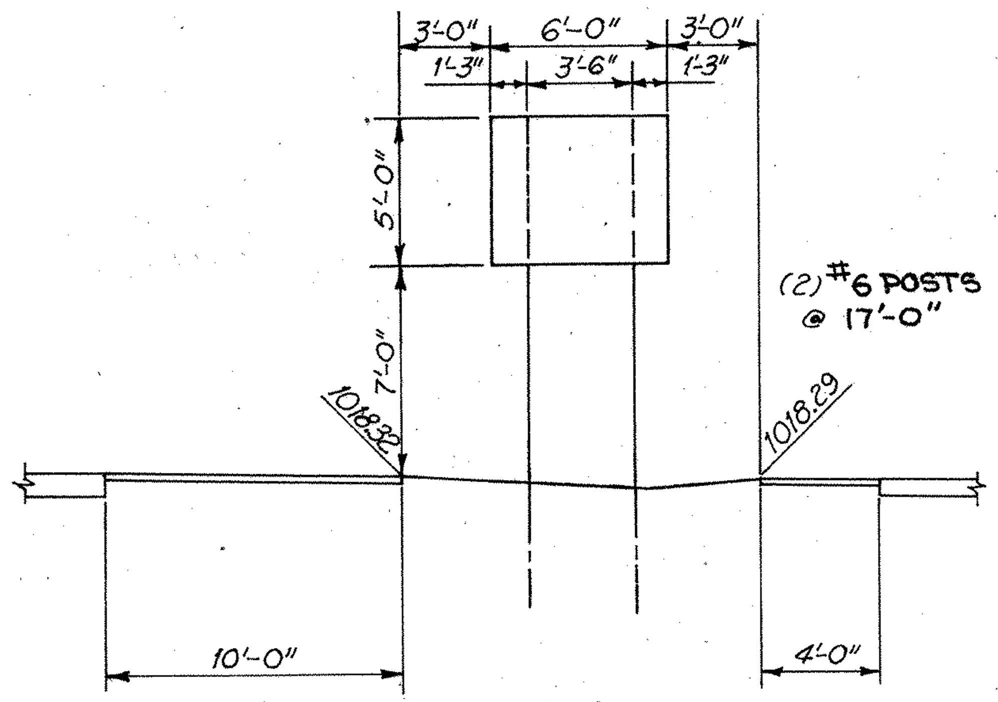
ELEVATION VIEWS

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

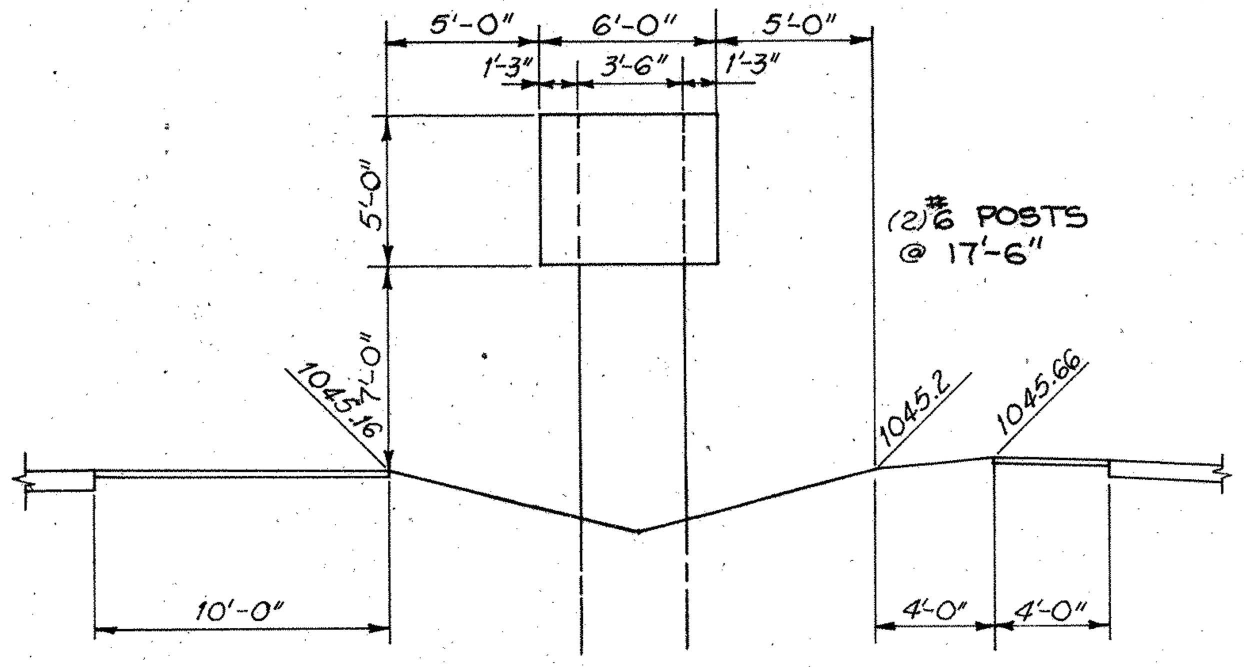
STARK COUNTY
STA-30-14.12
STA-77-9.22



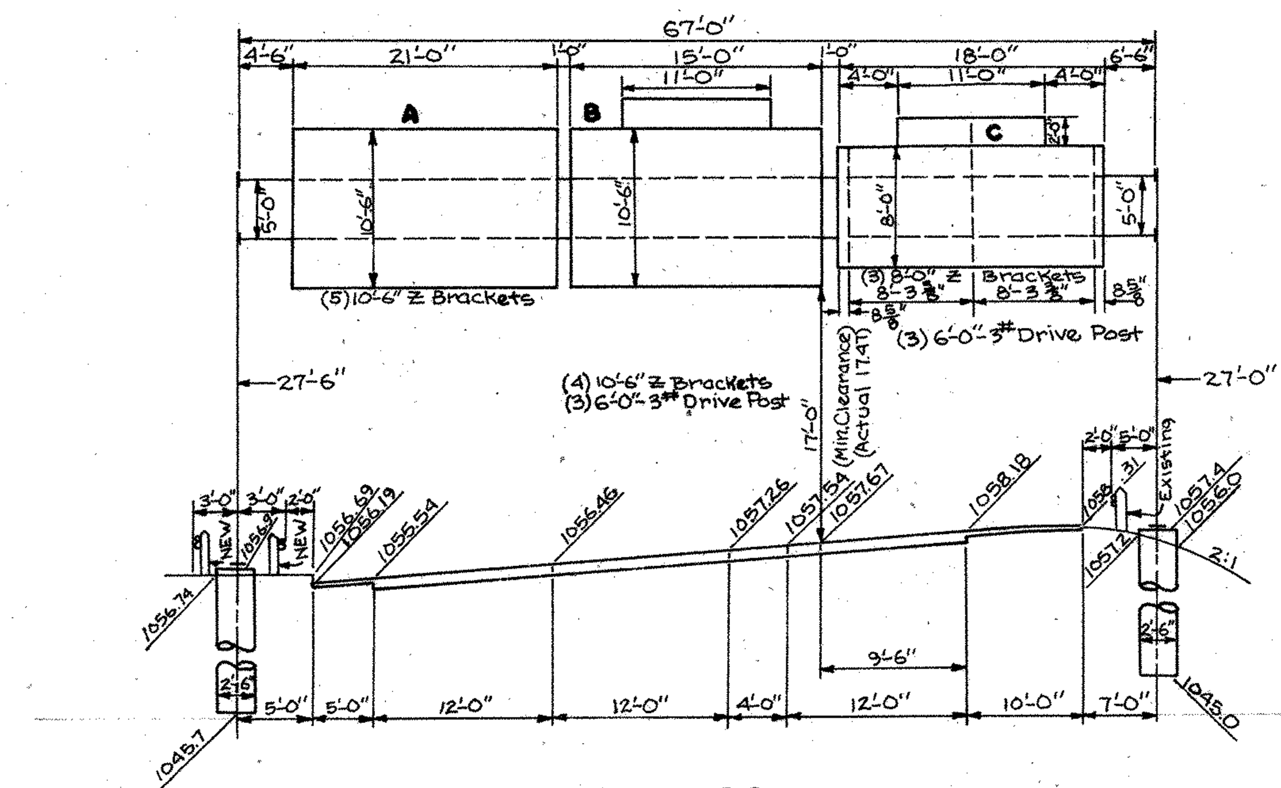
106
TC 7.65 Design No.6 (Mod.) 54'-0" SPAN
Sta. 962+50 Ramp A



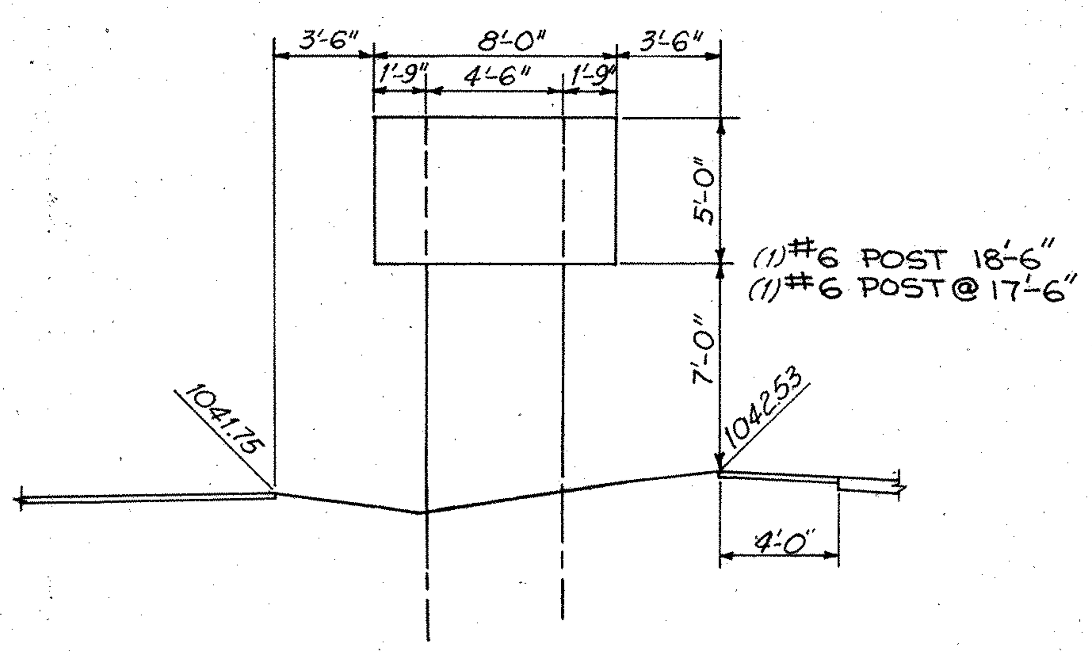
151
933+50 U.S. 30 W.B.



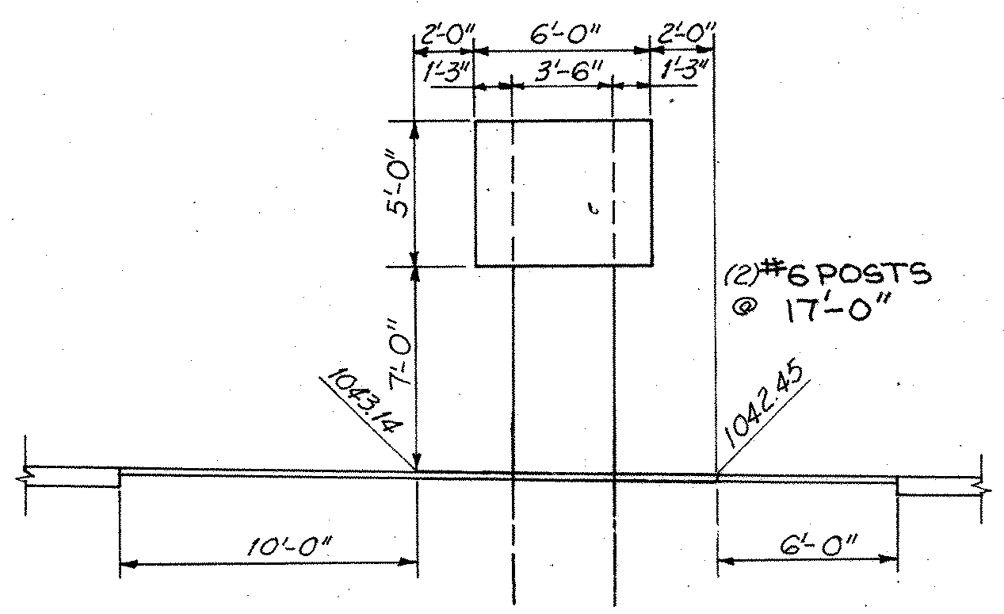
152
572+50 I-77 S.B.



98
TC 7.65 Design 8 (MOD) 67'-0" SPAN
Sta. 549+60 I-77 N.B.



153
568+30 I-77 N.B.

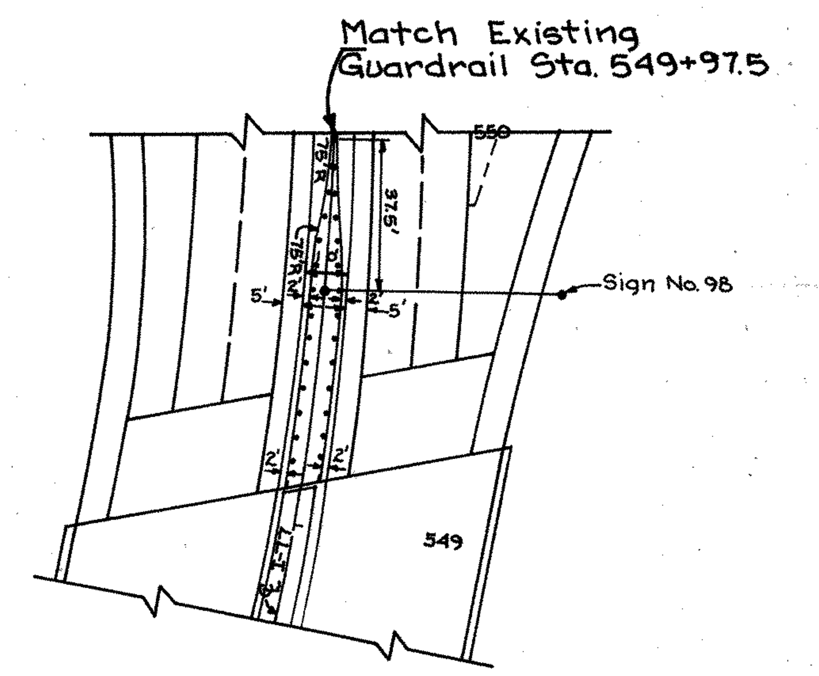


154
952+00 U.S. 30 E.B.

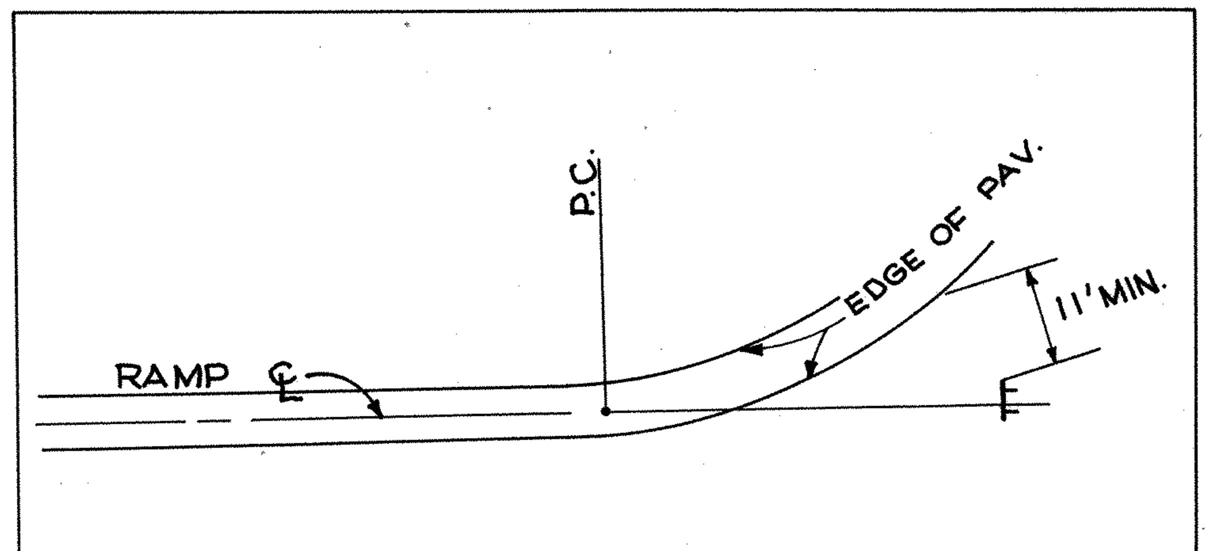
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

ELEVATION VIEWS

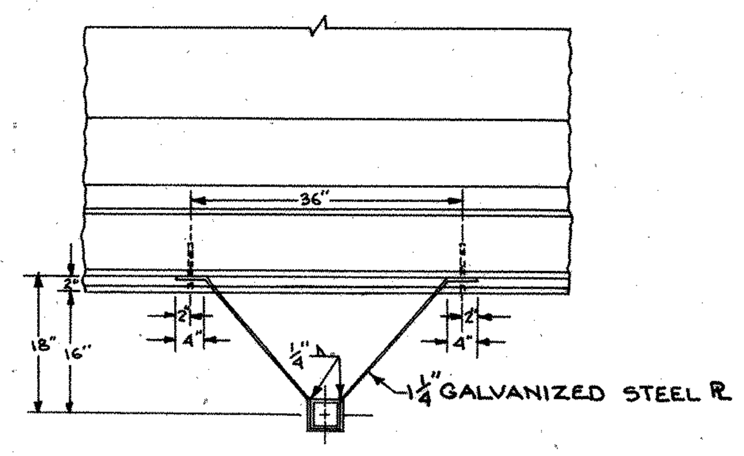
STARK COUNTY
STA-30-14.12
STA.-77-9.22

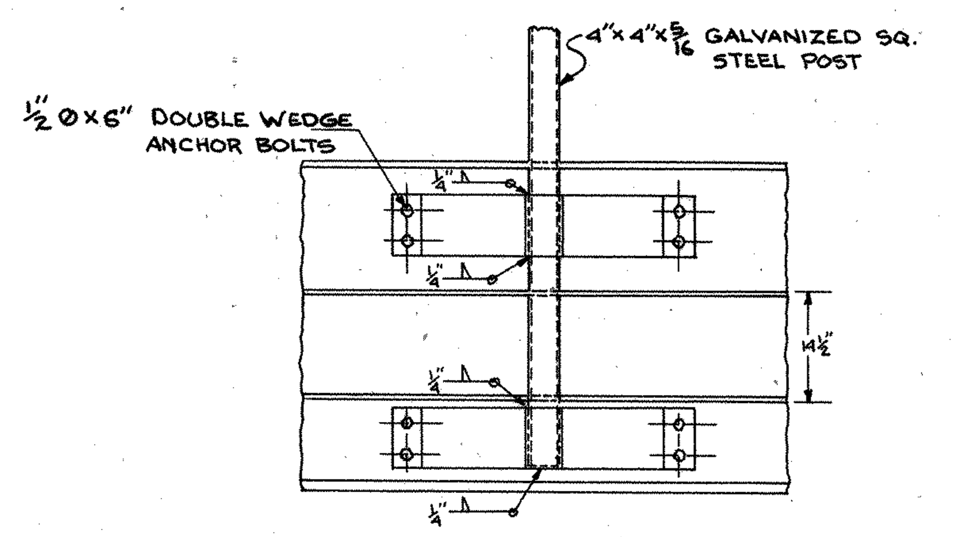


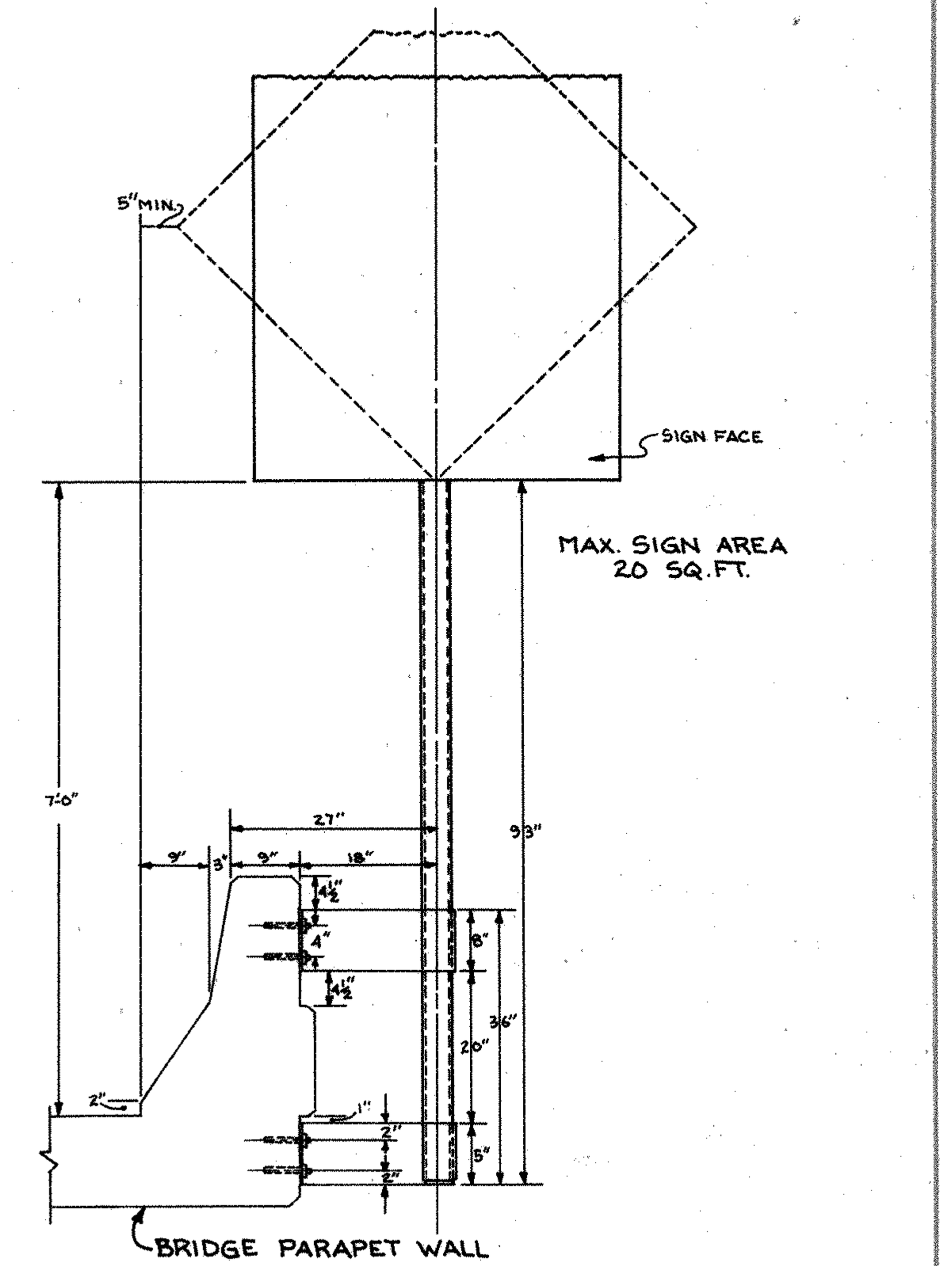
GUARD RAIL MODIFICATION
SIGN NO. 98 STA. 549+60
I-77 N.B.
(No Scale)



TYPICAL W-32 LOCATION





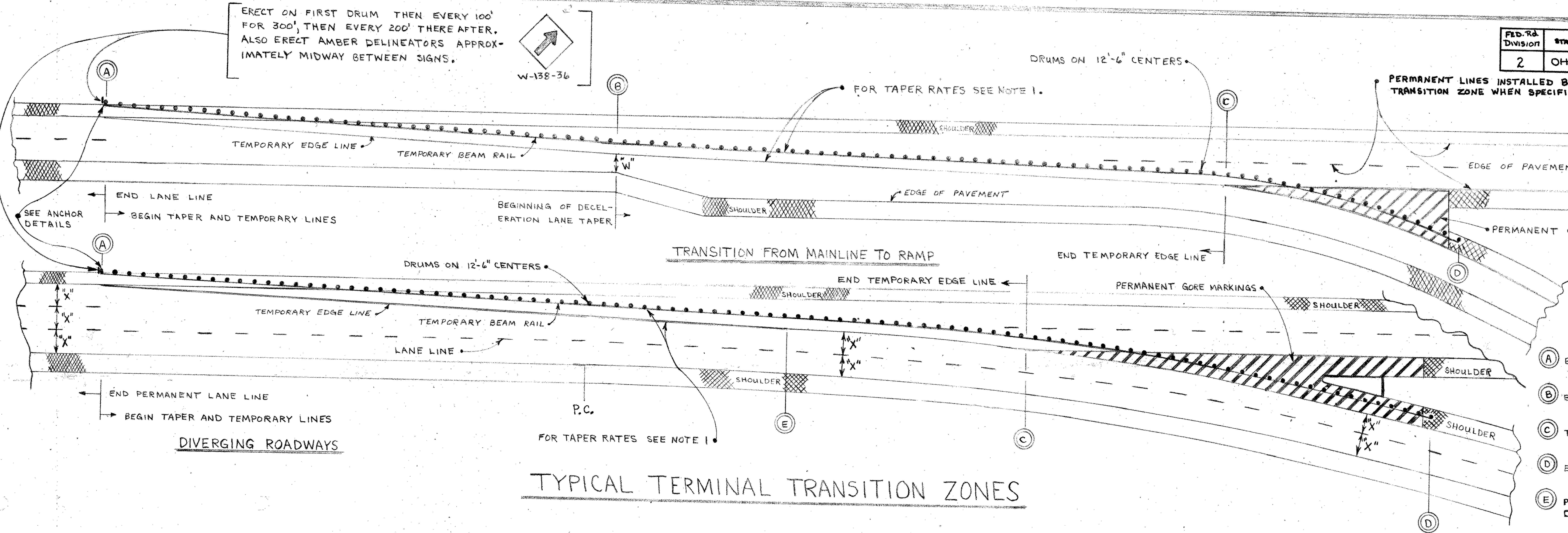


MISCELLANEOUS DETAILS

FED. Rd. Division	STATE	PROJECT		
2	OHIO			

176 / 389

STA-30-14.12
STA-77-9.22



TYPICAL TERMINAL TRANSITION ZONES

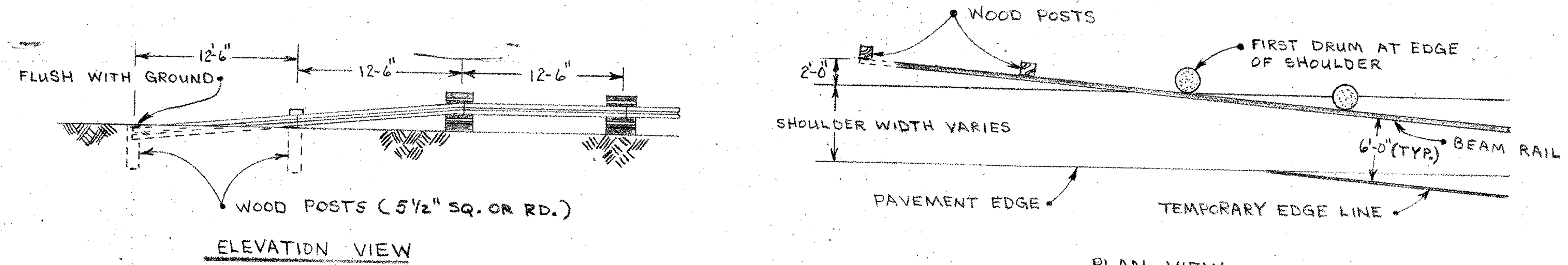
Ⓐ BEGINNING OF TEMPORARY GUARDRAIL

Ⓑ BEGINNING OF ADDITIONAL LANE TAPER

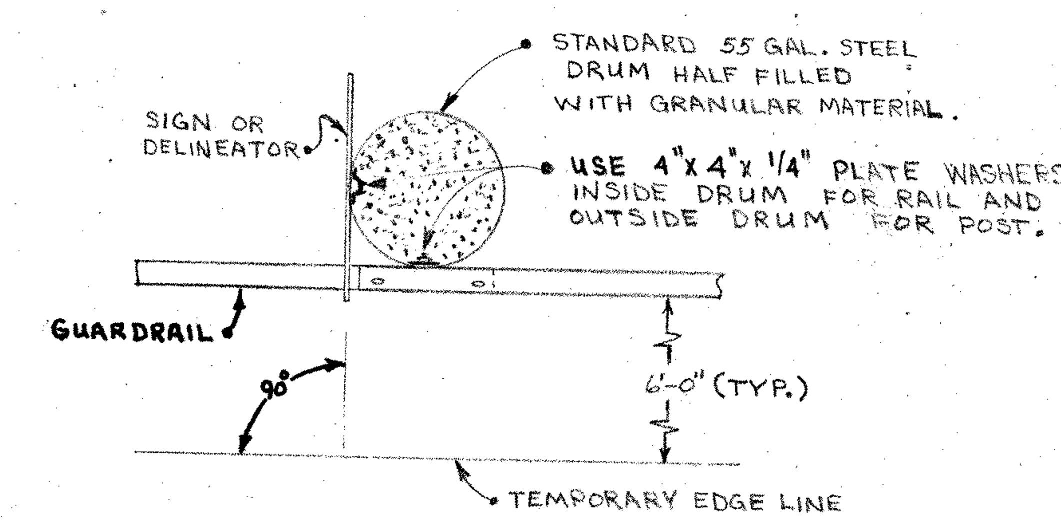
Ⓒ THEORETICAL GORE POINT

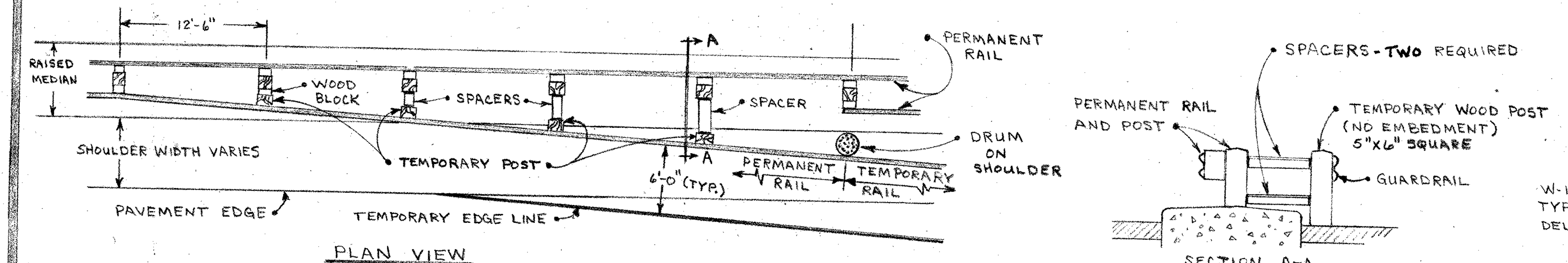
Ⓓ END OF TEMPORARY GUARDRAIL

Ⓔ POINT OF TANGENT FOR DIVERGING LANES

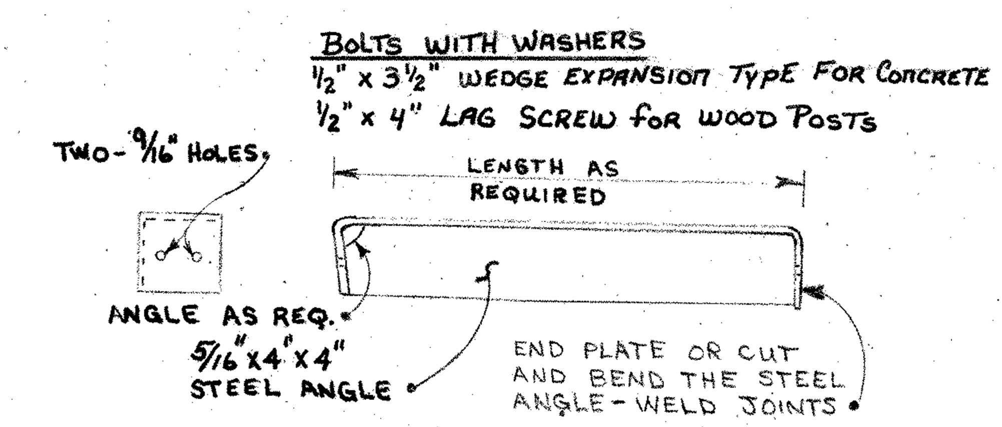


ANCHOR DETAIL IN UNPAVED AREAS

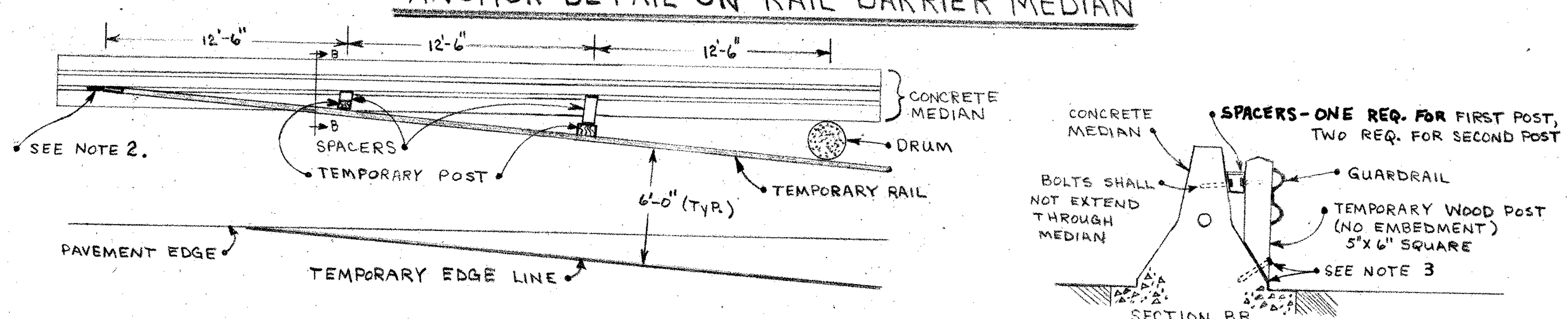




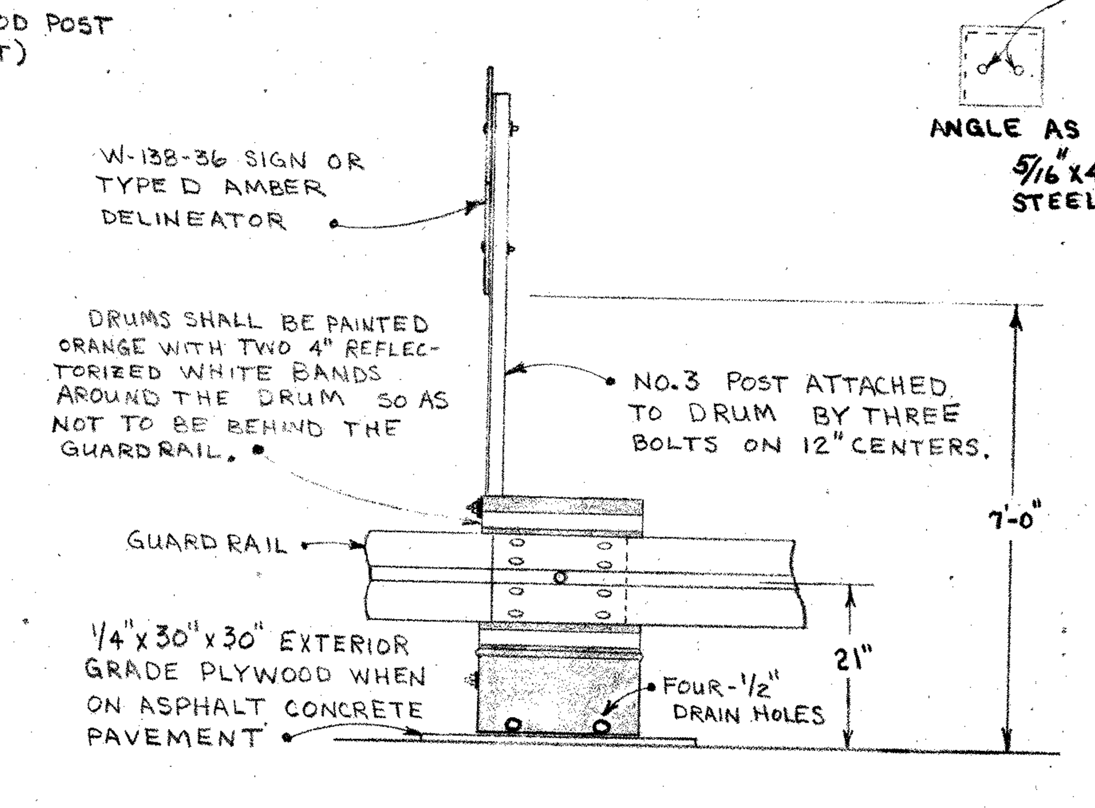
ANCHOR DETAIL ON RAIL BARRIER MEDIAN



SPACER DETAIL



ANCHOR DETAIL ON CONCRETE BARRIER MEDIAN



DRUM DETAILS

NOTES:

1. For the temporary guard rail and pavement marking edge line:
   a) The taper rate shall be 60:1 between points A and B or points A and E.
   b) A straight line taper shall connect points B and C.
   c) The curvature of the diverging roadway or ramp shall be followed between points C and D or points E and D.

   At point B, the width "W" shall be equal to 12 feet multiplied by the number of lanes on the exit ramp.
2. A guard rail end shoe shall be attached to the end of the temporary guard rail. The design of the end shoe shall be such that the end fastened to the concrete median will be flattened to provide a smooth transition onto the temporary guard rail. The end shoe shall be fastened to the concrete median by four ⅞" diameter bolts with concrete anchors (wedge expansion type).
3. The first temporary wood post used adjacent to the concrete median will require the post bottom to be cut to fit the median contour. The post bottom shall be anchored into the concrete median by one ⅞" bolt. The taper rate from the end shoe to the first drum should be approximately 12:1.

All items shall conform to construction and material specification 606 unless otherwise specified.

Rev. 1-29-76

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL

TEMPORARY TERMINAL TRANSITION DETAILS

DATE 2-2-76

APPROVED: ______________ Engineer of Design Services

620 DELINEATORS

ROADWAY	STATION TO STATION		SIDE	INTERVAL	POST	BRACK.	POST	BRACK.
			Lt.	200				
			Rt.	200				
			Rt.	200				
SUB-TOTALS								

ROADWAY	STATION TO STATION		SIDE	INTERVAL	D POST	D BRACK.	POST	BRACK.
Ramp S	927+00	935+00	Lt.	100	9^{Δ}			
Ramp T	925+20	927+00	Lt.	30	7^{Δ}			
Ramp T	927+00	941+00	Rt.	100	15^{Δ}			
W.B.U.S.30	936+00	941+00	Lt.	100	6^{Δ}			
W.B.U.S.30	943+50	945+50	Lt.	100	3^{Δ}			
Ramp F	943+50	962+50	Rt.	100	16	14		
Ramp F	962+50	963+00	Rt.	50		1		
Ramp F	963+00	966+50	Lt.	50	5	3		
Ramp F	966+50	969+00	Rt.	50		6		
Ramp F	970+00	974+00	Rt.	100	2	3		
Ramp F	975+00	977+10	Rt.	70	4			
Ramp F	978+00	985+00	Rt.	100	3	5		
Ramp F	985+00	985+50	Rt.	50	1			
Ramp G	960+50	963+50	Rt.	100		4		
Ramp G	964+20	966+20	Rt.	40		6		
Ramp G	966+90	967+90	Rt.	100		2		
Ramp G	967+90		Lt.			1		
Ramp G	968+50	978+10	Lt.	30	21	12		
Ramp G	978+70		Lt.			1		
Ramp G	978+70		Rt.			1		
Ramp G	979+40	981+00	Rt.	80	3			
Ramp A	946+50	951+50	Lt.	100	6			
Ramp A	952+30	953+00	Lt.	70	1	1		
Ramp A	953+00	960+80	Rt.	60	12	2		
Ramp A	966+00	969+00	Lt	60	6			
Ramp B	950+50	954+10	Lt.	60	7			
Ramp B	954+70	955+50	Lt.	40	3			
Ramp B	955+50	965+90	Rt.	40	8	19		
Ramp C	953+00	957+00	Lt.	100	4	1		
Ramp C	957+70	966+50	Lt.	40		23		
Ramp E	954+10	967+10	Lt.	100	6	8		
Ramp E	967+60	968+80	Lt.	30	5			
Ramp E	968+80		Rt.		1			
Ramp E	969+00	976+80	Rt.	30	27			
Ramp E	976+80		Lt.		1			
Ramp E	977+30	980+10	Lt.	70	5			
Ramp T Conn.	925+00	926+50	Lt.	30	5^{Δ}			
SUB-TOTALS					147 / 45^{Δ}	113		

ROADWAY	STATION TO STATION		SIDE	INTERVAL	POST	BRACK.	POST	BRACK.
SUB-TOTALS								

SUB-TOTALS	A POST	A BRACK.	D POST	D BRACK.	POST	BRACK.
Column No. 1	5	4				
Column No. 1 Δ	13^{Δ}	—				
Column No. 2			147	113		
Column No. 2 Δ			45^{Δ}	—		
SHEET TOTALS	5 / 13^{Δ}	4	147 / 45^{Δ}	113		

Note:
Δ 95% State - 5% City Participation.
All other quantities are 90% Federal - 5% State - 5% City Participation

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

DELINEATOR QUANTITIES

621 PAVEMENT MARKING

NOTE: ALL PAVEMENT MARKING
EXCEPT CURB MARKING
SHALL BE THERMOPLASTIC

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

STATION	TO STATION	SIDE	WHITE 4" EDGE LINE (LIN. FT.)	(LIN. FT.)	6" LANE LINE (LIN. FT.)	8" CHANNELIZING LINE (LIN. FT.)	12" CROSS WALK (LIN. FT.)	24" BROAD TRANSVERSE LINES (LIN. FT.)	24" STOP LINE (LIN. FT.)	CURB MARKING (LIN. FT.)	YELLOW 4" EDGE LINE (LIN. FT.)	LANE ARROW (EA)
U.S. 30												
920+00	941+70	Lt.									2170	
943+25	969+00	LT									2575	
920+00	941+70	Lt.	2170									
943+25	946+30	Lt.	305									
946+30	969+00	Lt.	2270									
920+00	941+70	Lt.&Rt.x4			8680							
943+25	946+30	Lt.x2			610							
946+30	969+00	Lt.x2			4540							
943+25	969+00	Rt.			2575							
920+00	937+20	Rt.	1720									
937+20	941+70	Rt.			450							
938+20	941+70	Rt.	350									
946+00	951+65	Rt.				565		1584				
951+65	969+00	Rt.	1735									
933+30	935+08	Lt.				178		420				
935+08	941+70	Lt.			662							
943+25	946+30	Lt.			305							
946+30	947+00	Lt.			70							
920+00	941+70										2170	
943+25	969+00	Rt.									2575	
Ramp S												
925+90												2
926+00	928+00	Rt.			200							
926+00	933+30	℄&Rt.x2	730								730	
933+30	935+08	Rt.				178						
Ramp T Conn												
925+00	926+62	℄&Lt.x2								324		
926+62	927+22	Lt.								60		
926+62	927+22	℄	60									
Ramp T												
926+00	927+22	Rt.								122		
926+00	927+22	Lt.	122									
927+22	932+00	Lt.&Rt.x2	478								478	
930+30	933+00	Lt.								270		
933+00	935+00	Lt.				200						
935+00	937+20	Lt.			220							
932+00	938+20	℄	620									
Ramp A												
949+50	952+95	℄	345									
947+00	949+50	Rt.			250							
949+50	951+50	Rt.				200						
951+50	952+95	Rt.								145		
952+95	961+30	℄&Rt.x2	835								835	
961+30	963+10	Rt.				180						
961+30	969+00	℄	770									
964+20	967+80	Rt.				360		2304				
SUB-TOTALS			12,510	0	18,562	1861	0	4,308	0	921	11533	2

STATION	TO STATION	SIDE	WHITE 4" EDGE LINE (LIN. FT.)	(LIN. FT.)	6" LANE LINE (LIN. FT.)	8" CHANNELIZING LINE (LIN. FT.)	12" CROSS WALK (LIN. FT.)	24" BROAD TRANSVERSE LINES (LIN. FT.)	24" STOP LINE (LIN. FT.)	CURB MARKING (LIN. FT.)	YELLOW 4" EDGE LINE (LIN. FT.)	LANE ARROW (EA)
Ramp B												
952+40	955+38	℄	298									
953+55	955+38	Rt.				183		390				
955+38	966+20	℄&Rt.x2	1082								1082	
Ramp C												
949+08	950+87	℄&Lt.x2	179								179	
950+87	951+70	℄	83									
950+87	953+35	Lt.								248		
951+70	966+67	℄&Lt.x2	1497								1497	
Ramp E												
966+70	968+56	℄	186									
962+65	966+70	Rt.			405							
966+70	967+56	Rt.				86						
967+56	969+56	Rt.								200		
968+56	976+87	℄&Rt.x2	831								831	
976+87	980+30	℄	343									
976+87	978+80	Rt.				193						
Ramp F												
943+25	946+00	Lt.x2			550							
943+25	951+64	℄	839									
946+00	951+64	Lt.				564						
946+00	955+86	Lt.			422							
951+64	955+86	℄&Lt.x2	422								422	
955+86	960+15	℄	429									
958+30	960+15	Lt.				185		356				
960+15	960+45	Lt.								30		
960+15	967+42	℄&Lt.x2	727								727	
966+05	968+42	Lt.								237		
968+42	970+18	Lt.			176							
967+42	970+18	℄	276									
970+18	973+78	℄&Lt.x2	360								360	
971+78	974+98	Lt.								320		
973+78	985+80	℄	1202									
974+98	975+55	Lt.				57						
975+55	981+00	Lt.			545							
Ramp G												
955+86	960+40	℄	454									
958+30	960+10	Rt.				180						
960+10	960+40	Rt.								30		
960+40	979+00	℄&Rt.x2	1860								1860	
979+00	981+67	℄	267									
979+00	979+25	Lt.								25		
979+25	979+80	Lt.				55						
979+80	980+55	Lt.			75							
SUB-TOTALS			11335	0	2,173	1,503	0	746	0	1,090	6958	

STATION	TO STATION	SIDE	WHITE 4" EDGE LINE (LIN. FT.)	4" DOUBLE YELLOW CENTER LINE (LIN. FT.)	6" LANE LINE (LIN. FT.)	8" CHANNELIZING LINE (LIN. FT.)	12" CROSS WALK (LIN. FT.)	24" BROAD TRANSVERSE LINES (LIN. FT.)	24" STOP LINE (LIN. FT.)	CURB MARKING (LIN. FT.)	YELLOW 4" EDGE LINE (LIN. FT.)	LANE ARROW (EA)	4" LANE LINE (LIN. FT.)
I-77													
549+45	551+81	Lt.									236		
562+00	562+25	Rt.								25			
561+90	563+60	Rt.	170										
566+25	568+20	Rt.				195		480					
572+93	574+80	Lt.				187							
McKinley Conn.													
23+20	28+80	℄			560								
Cleveland Ave.													
10+25	—						170						
10+40	11+40	Lt.				100							
11+40	23+20	Lt.			1180								
10+40	12+35	Rt.			1470								
10+30	23+90	℄		1360									
10+40	—	Lt.							26				
24+00	—	Lt.&Rt.					56						
SUB-TOTALS			170	1,360	3,210	482	226	480	26	25	236		

	WORD "ONLY" ON PAVEMENT											
SHEET 182	4	30478	3515	25931	2630	490	1165	403	783	30478	17	10280
Column No. 1	0	12,510	0	18,562	1,861	0	4,308	0	921	11533	2	0
Column No. 2	0	11,335	0	2,173	1,503	0	746	0	1,090	6958	0	0
Column No. 3	0	170	1,360	3,210	482	226	480	26	25	236	0	0
SHEET TOTALS	4	54493	4875	49,876	6476	716	6699	429	2819	49205	19	10280

	EACH	MILES	MILES	MILES	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	MILES	EACH	MILES
SHEET TOTALS	4	10.32	0.92	9.45	6476	716	6699	429	2819	9.32	19	1.95

NOTE: All quantities shown are
90% Federal 5% State 5% City

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

621 PAVEMENT MARKING SUB-SUMMARY

COMPLETED BY JKP DATE 10-15-75
CHECKED BY KG DATE 10-15-75

FHWA REGION	STATE	PROJECT	
5	OHIO		181/389

STA-30-14.12 / STA-77-9.22

LOCATION	SIDE	STATION FROM	STATION TO	4" Edge Lines (White) (Lin. Ft.)	4" Edge Lines (Yellow) (Lin. Ft.)	8" Channelizing Line (Lin. Ft.)	4" Center Lines: Double-Solid (Yellow) (Lin. Ft.)	4" Lane Lines (Lin. Ft.)	6" Lane Lines (Lin. Ft.)	Stop Lines 24" (Lin. Ft.)	Lane Arrows (Each)
STATE-FEDERAL-PARTICIPATION											
Eastbound-STA30	Lt.	832+00	865+64		3364						
	Rt.	832+00	865+64	3364							
12' from Lt. Edge		832+00	865+64						3364		
Westbound-STA30	Lt.	832+00	865+64	3364							
	Rt.	832+00	865+64		3364						
12' from Rt. Edge		832+00	865+64						3364		
Service Road "B"	L&R	0+31								88	
	℄	0+31	24+36					2435			
	Lt.	0+25	24+36	2440							
	Rt.	0+25	24+36		2414						
	℄	0+81									2
Service Road "C"	L&R	25+59								92	
	℄	0+25	25+58					2533			
	Lt.	0+25	25+64		2525						
	Rt.	0+25	25+64	2668							
		25+00									2
Raff Avenue	Lt.	12+39								45	
	Lt.	12+79	16+73	394							
	Lt.	18+01	21+95	394							
	Lt.	22+35	23+80	145							
	Lt.	23+80	24+04			24					
	Rt.	12+66	16+67	401							
	Rt.	18+04	21+59	355							
	Rt.	22+92	26+30	338							
	Lt.	12+39	17+59					520			
	℄	12+39	17+59				520				
	Rt.	12+39	17+59					520			
	Lt.	18+20	21+52					332			
	℄	18+20	21+52				332				
	Rt.	18+20	21+52					332			
	Lt.	22+50	24+40					190			
	℄	22+50	24+40				240				
	Rt.	22+50	25+45					295			
Ramp "O"	℄	863+84	866+37	318							
	Rt.	863+84	866+29		247						
	L&R	863+89								92	
		864+34									2
	Rt.	863+89	866+33					244			
Ramp "P"	Lt	863+89	864+62		77						
	Rt.	863+89	864+62	79							
Co.Rd. 247 Connect	℄	10+00	12+41				241				
TOTAL	STATE FEDERAL			14255	11991	24	1333	7401	6728	317	6
	or in Miles			2.70	2.27		0.25	1.40	1.27		
CITY-STATE-FEDERAL-PARTICIPATION											
Eastbound STA 30	Lt.	865+64	920+00		5436						
12' from Lt. Edge		865+64	920+00						5436		
24' from Lt. Edge		865+64	878+72	1308							
24' from Lt. Edge		879+92	920+00						4008		
	Rt.	881+00	905+80	2480							
Westbound STA-30	Rt.	865+64	920+00		5436						
12' from Rt. Edge		865+64	920+00						5436		
	Lt.	865+64	875+58	994							
24' from Rt. Edge		875+58	879+07			349					
24' from Rt. Edge		879+07	920+00						4093		
	Lt.	881+25	916+50	3525							
	Lt.	914+90	920+00	510							

LOCATION	SIDE	STATION FROM	STATION TO	4" Edge Lines (White) (Lin. Ft.)	4" Edge Lines (Yellow) (Lin. Ft.)	8" Channelizing Line (Lin. Ft.)	4" Center Lines: Double-Solid (Yellow) (Lin. Ft.)	Curb Marking (Lin. Ft.)	4" Lane Line (Lin. Ft.)	6" Lane Line (Lin. Ft.)	12" Crosswalk (Lin. Ft.)	Stop Lines 24" (Lin. Ft.)	Broad Transverse Lines 24" (Yellow) (Lin. Ft.)	Lane Arrows (Each)
Raff Avenue	℄	24+90	27+88				298							
	Rt.	26+30	27+88	179										
24' Lt. of ℄		24+04	25+76			172								
	Lt.	27+45	27+88	68										
12' Rt. of ℄		25+45	27+88						243					
12' Lt. of ℄		24+40	27+88						348					
Ramp "O"	℄	866+37	881+25	1488										
	Rt.	866+29	875+65		936									
12' Rt. of ℄		866+33	868+55						222					
14' Rt. of ℄		875+65	879+14			349								
island		875+65	879+14										453	
Ramp "P"	Lt.	864+62	877+01		1239									
curb	Lt.	875+31	878+01					270						
14' Lt. of Edge		878+02EB	878+72			70								
14' Lt. of Edge		878+72	879+92						120					
	Rt.	864+62	868+08	346										
	Rt.	868+08	881+00	1292										
Ramp "P" Conn.	Rt.	860+56	868+08	752										
12' Lt. of ℄		862+25	863+35			110								
island		862+25	863+35										143	
	Lt.	863+35	867+08		373									
curb		866+17	868+08					191						
	℄	868+08	869+22						114					
Ramp "R"	Rt.	905+80	917+73	1193										
	Lt.	914+11	924+01		990									
	℄	918+54	920+04			150								
	℄	920+04	923+88	384										
	Lt.	922+50	924+32						182					
	L&R	924+32										53		
	L&R	923+80												2
	L&R	924+42									86			
	L&R	924+37									65			
Ramp "R" Conn.	℄	917+73	921+19	346										
	Lt.	918+54	920+02			148								
island	Lt.	918+54	920+02										201	
	Lt.	920+02	921+19		117									
	L&R	922+25										33		
	Lt.	921+75												1
Ramp "Q"	Lt.	916+50	924+29	779										
	Rt.	912+10	914+90						280					
	Rt.	914+90	916+50			160								
	Rt.	916+50	919+72					322						
	Rt.	917+50	924+61		711									
	L&R	924+83									51			
	L&R	924+89									71			
Harrison Ave.	L&R	35+81									120			
	L&R	35+88									97			
17' Rt.		35+93	37+80						187					
17' Rt		38+50	41+70						320					
17' Rt.		42+30	44+03						173					
5' Rt.		35+90	37+80				190							
5' Rt.		38+50	39+50				100							
5' Rt. to 5' Lt.		39+50	40+60				110							
5' Rt.		40+60	41+60			100								
5' Rt		42+30	44+03			173								
5' Lt.		35+87	37+80			193								
5' Lt.		38+50	39+50			100								
5' Lt.		40+60	41+60				100							
5' Lt.		42+30	44+03				173							
17' Lt.		35+83	37+80						197					
17' Lt.		38+50	41+70						320					
17' Lt.		42+30	44+03						173					
SUB-TOTAL	CITY-STATE-PARTICIPATION FEDERAL			15644	15238	2074	971	783	2879	13,613	490	86	797	3

621 PAVEMENT MARKING SUB-SUMMARY

COMPLETED BY JKP DATE 10/15/75
CHECKED BY KG DATE 10/15/75

FHWA REGION	STATE	PROJECT	
5	OHIO		

STA-30-14.12 / STA-77-9.22

LOCATION	SIDE	STATION FROM	STATION TO	4" Edge Lines (White) (Lin. Ft.)	4" Edge Lines (Yellow) (Lin. Ft.)	8" Channelizing Line (Lin. Ft.)	4" Center Lines: Double-Solid (Yellow) (Lin. Ft.)	4" Lane Line (Lin. Ft.)	Curb Marking (Lin. Ft.)	6" Lane Line (Lin. Ft.)		12" Crosswalk (Lin. Ft.)	Stop Lines 24" (Lin. Ft.)	Broad Transverse Lines 24" (Yellow) (Lin. Ft.)		Lane Arrows (Each)	Word "Only" on Pavement, As Per Plan (Each)
Harrison Ave.																	
(continued)	℄	36+22														1	
	℄	36+95															1
	℄	37+70														1	
	℄	38+50														1	
	℄	39+00															1
	℄	39+40														1	
	℄	40+70														1	
	℄	41+10															1
	℄	41+60														1	
	℄	42+40														1	
	℄	43+03															1
	℄	43+70														1	
Dueber Ave.	℄	15+37	18+40				303										
15TH St. Conn.	℄	43+63	45+20				157										
Clarendon Ave.	℄	39+99	44+01				402										
14TH St. Conn.	℄	43+42	46+91				349										
CITY-STATE- SUB-TOTAL FEDERAL PARTICIPATION				579*		532*	1211			230*				368*		8	4
CITY-STATE- SUB-TOTAL FEDERAL PARTICIPATION (Sheet 181)				15644	15238	2074	971	2879	783	18,973		490	86	797		3	
CITY-STATE- TOTAL FEDERAL PARTICIPATION				16223	15238	2606	2182	2879	783	19,203		490	86	1165		11	4
or in Miles				3.07	2.89		0.41	0.55		3.64							
TOTAL STATE-FEDERAL (Sheet 181)				14255	11991	24	1333	7401		6728			317			6	
or in Miles				2.70	2.27		0.25	1.40		1.27							
GRAND TOTAL				30478	27229	2630	3515	10,280	783	25931		490	403	1165		17	4
or in Miles				5.77	5.16		0.66	1.95		4.91							
*East Bound Sta-30																	
*36' From Lt Edge		909+10	911+50							230*							
*36' From Lt Edge		911+50	914+21			271*											
*36' From Lt Edge		914+21	920+00	579*													
Ramp "R" 16' Lt of ℄		911+50	914+11			261*											
Between Ramp R & 36' From Lt Edge of "M"		911+50	914+21											368*			

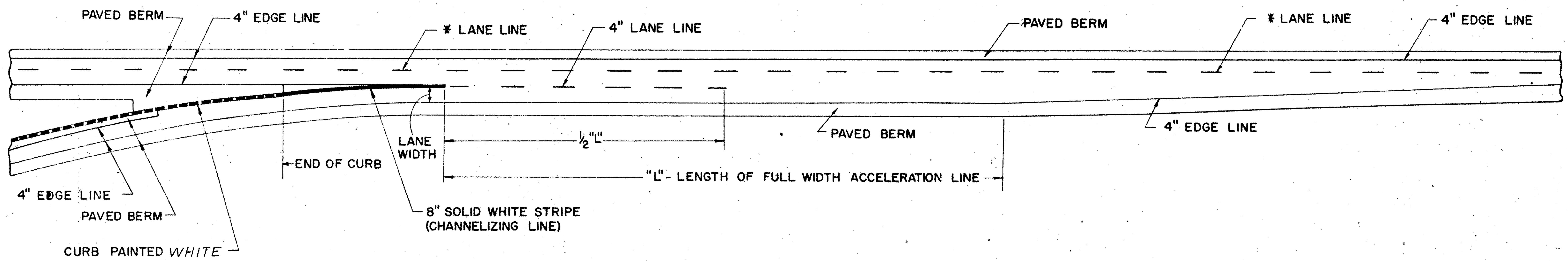
LOCATION	SIDE	STATION FROM	STATION TO	Edge Lines (White) (Lin. Ft.)			Center Lines: Double-Solid (Lin. Ft.)	Center Lines: Double-Broken and Solid (Lin. Ft.)			Channelizing Lines (White) (Lin. Ft.)		Stop Lines 24" (Lin. Ft.)	Broad Transverse Lines 24" (Yellow) (Lin. Ft.)		Lane Arrows (Each)	Word "Only" on Pavement, As Per Plan (Each)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

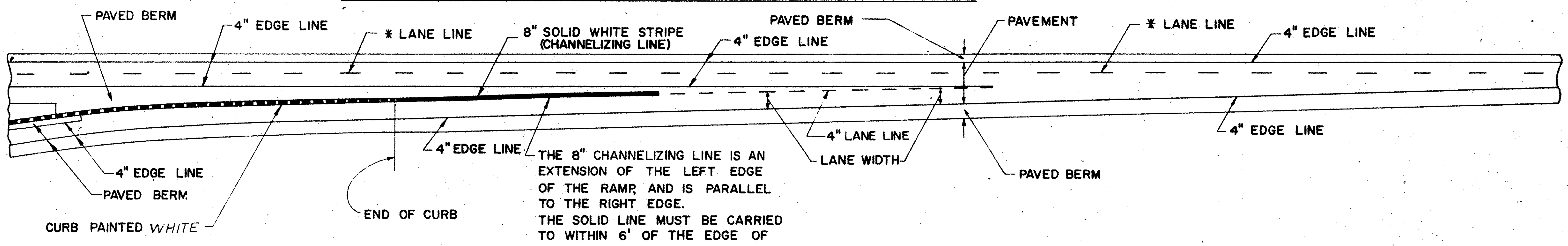
183
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

ENTRANCE TERMINAL - PARALLEL ACCELERATION LANE

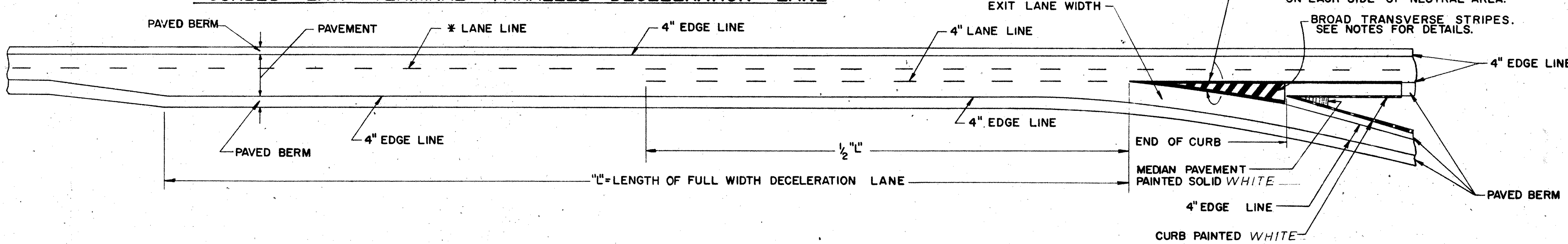


ENTRANCE TERMINAL - TAPERED ACCELERATION LANE

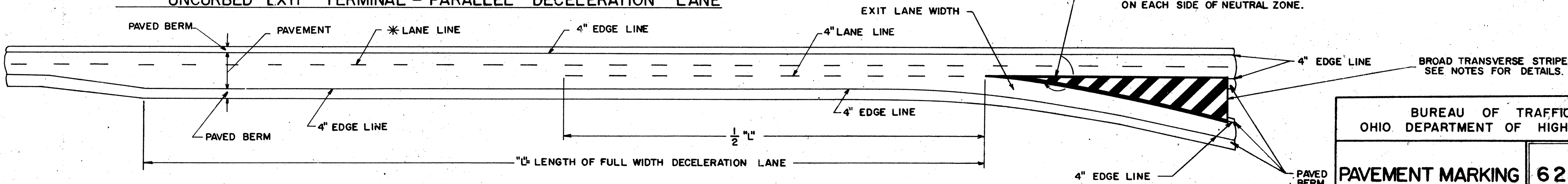


THE 8" CHANNELIZING LINE IS AN EXTENSION OF THE LEFT EDGE OF THE RAMP, AND IS PARALLEL TO THE RIGHT EDGE.
THE SOLID LINE MUST BE CARRIED TO WITHIN 6' OF THE EDGE OF THE THROUGH LANE, OR TO THE END OF THE RAMP CURVE IF CLOSER. THE 4" DASHED LINE SHOULD CONTINUE TO THE EDGE OF THE THROUGH LANE.

CURBED EXIT TERMINAL - PARALLEL DECELERATION LANE



UNCURBED EXIT TERMINAL - PARALLEL DECELERATION LANE



NOTES

DIAGONAL STRIPES AT EXIT RAMPS SHALL BE 24" BROAD TRANSVERSE STRIPES, 621.11, WITH A 6' SPACE BETWEEN STRIPES.

✱ 6" LANE LINE ON INTERSTATE HIGHWAYS ONLY.
4" LANE LINE ON ALL OTHER HIGHWAYS.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

PAVEMENT MARKING 621

DATE
7-17-61
4-6-62
5-24-65
9-2?-67
4-17-68
1-11-72

APPROVED Robert E. Lower
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJ.		
2	OHIO			

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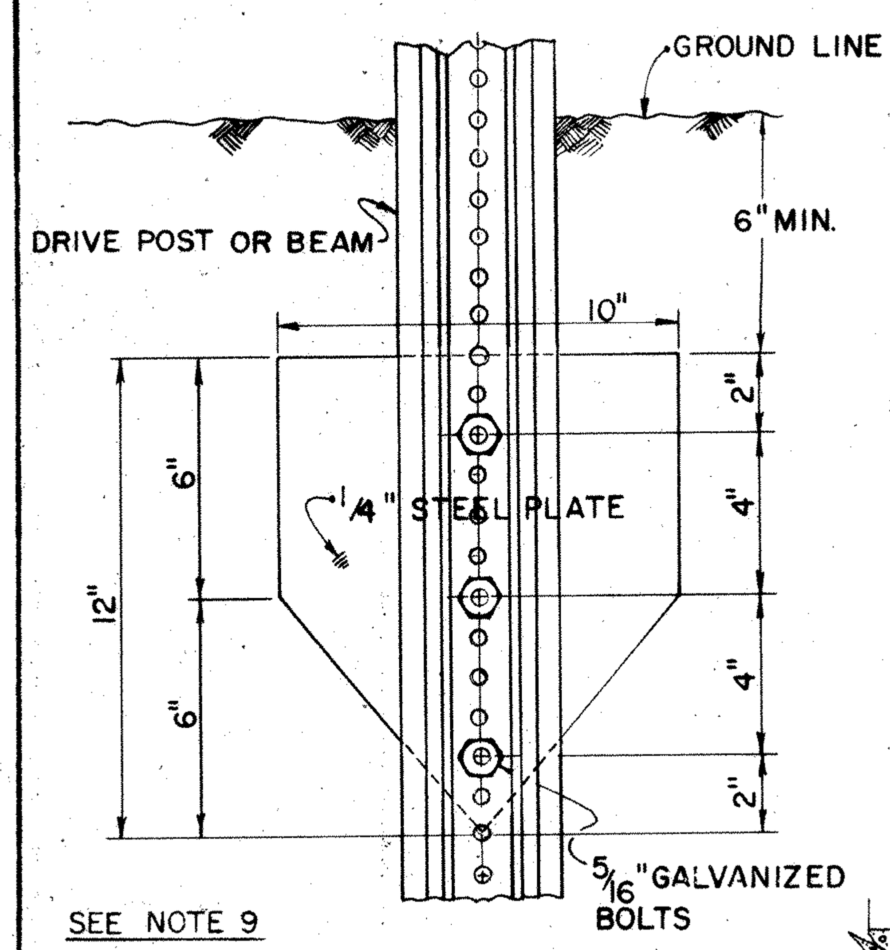
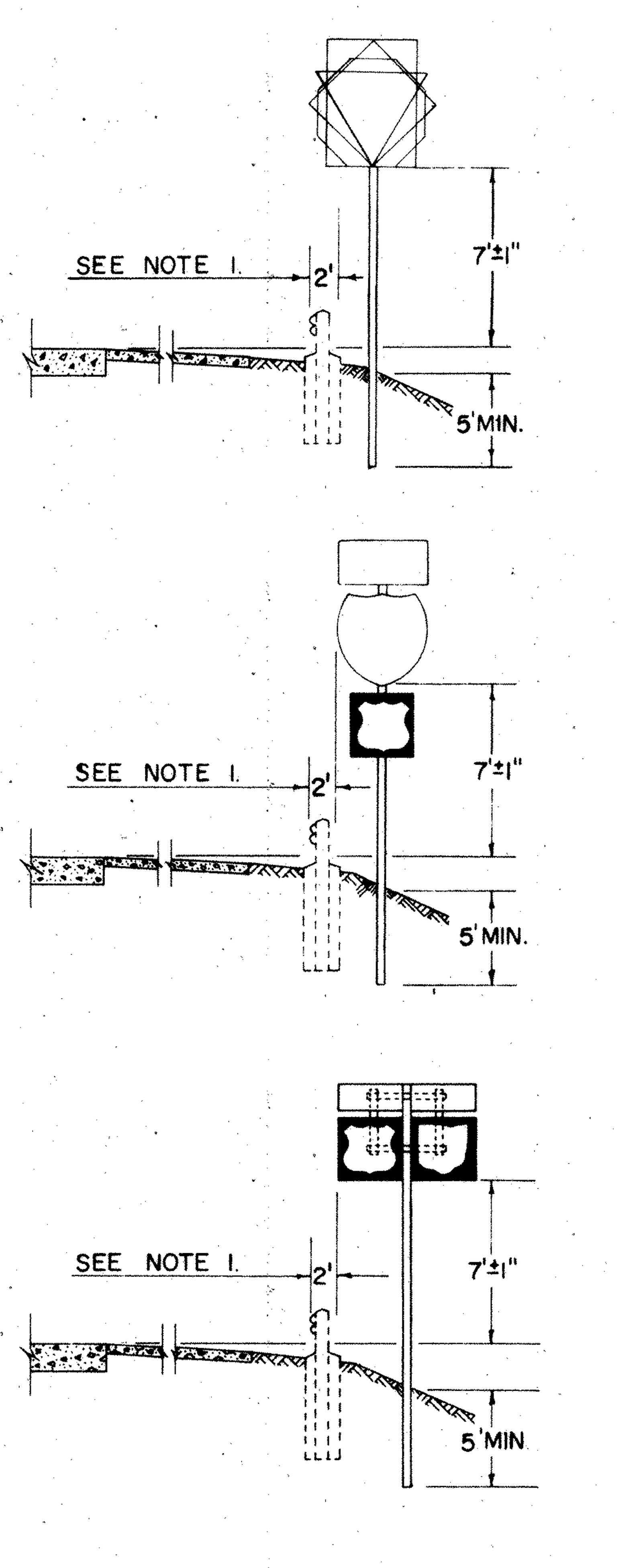
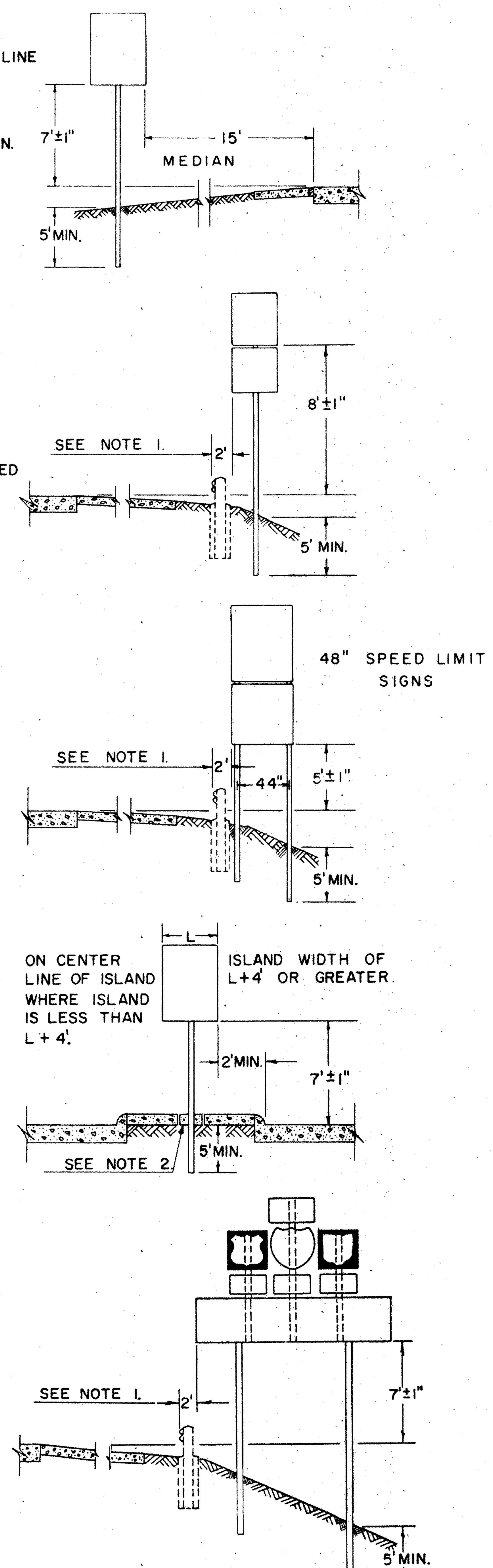
389

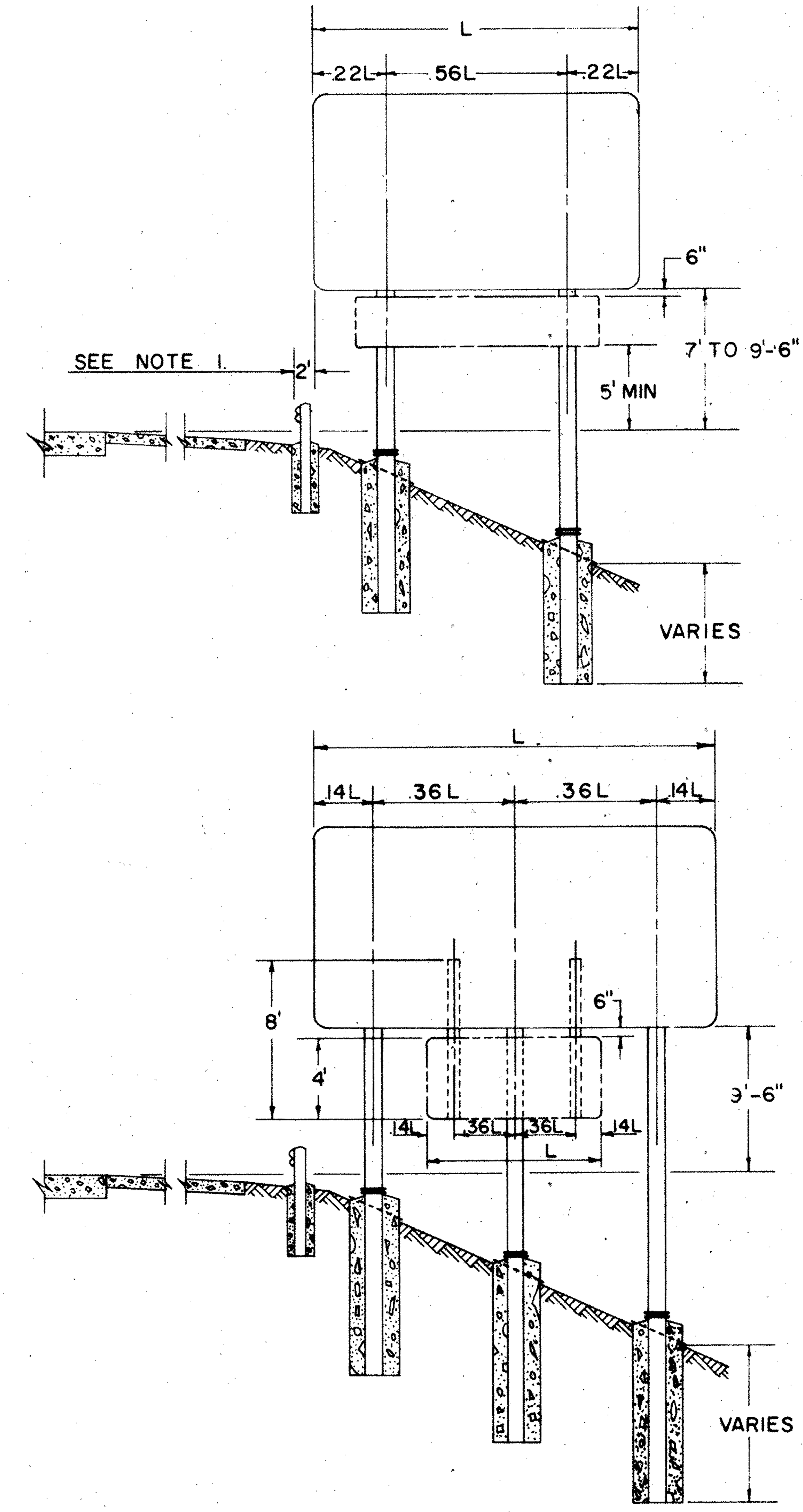
STARK COUNTY
STA.-30- 14.12
STA.-77- 9.22

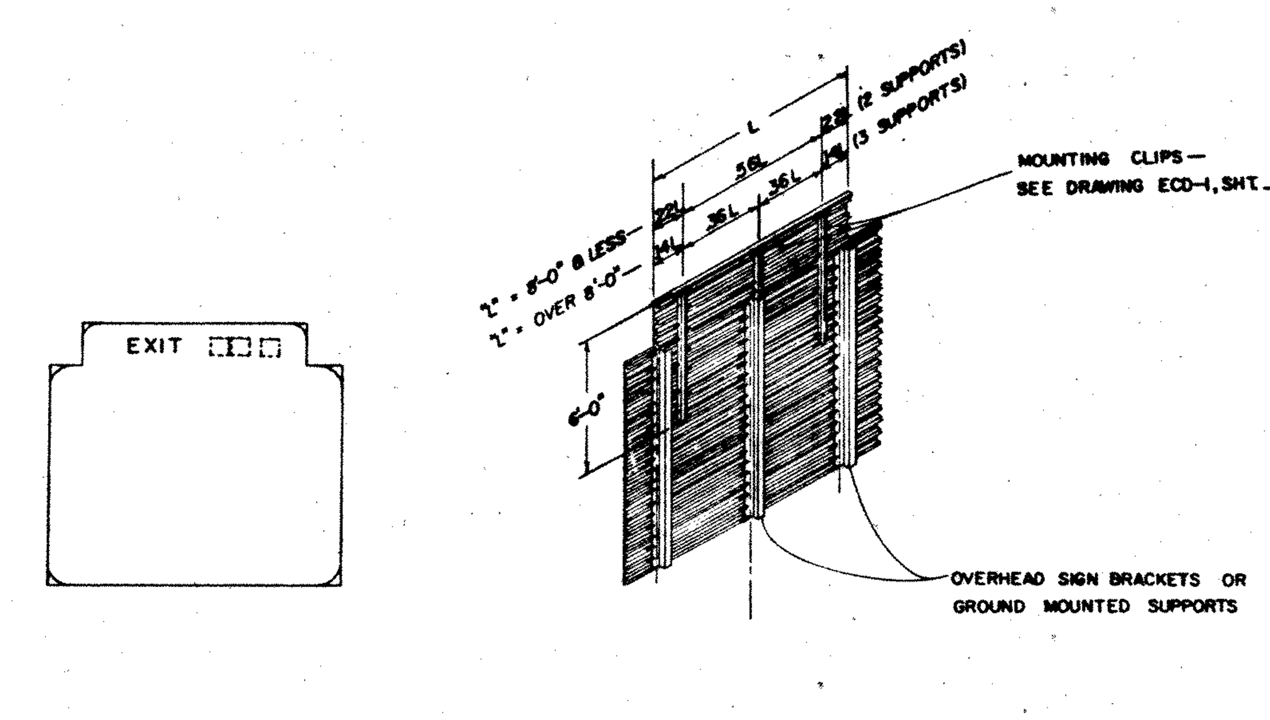


SOIL PLATE DETAIL

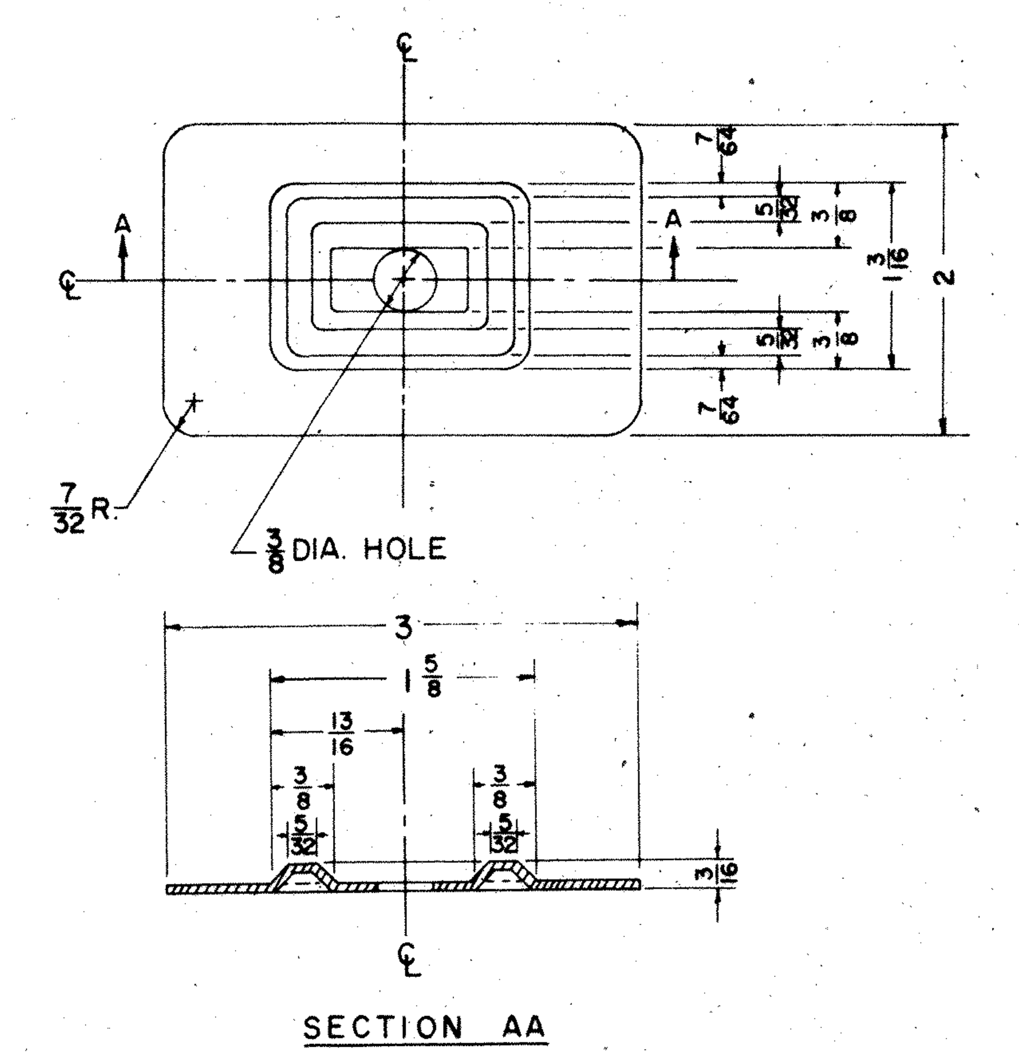






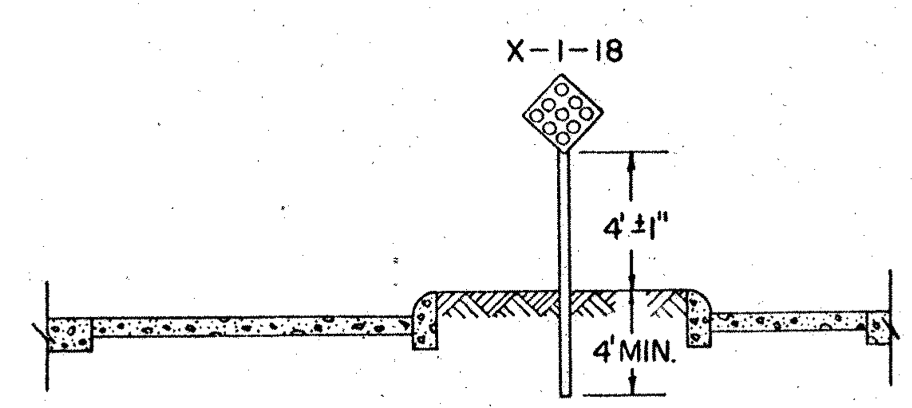


"EXIT" SIGN ATTACHMENT DETAIL



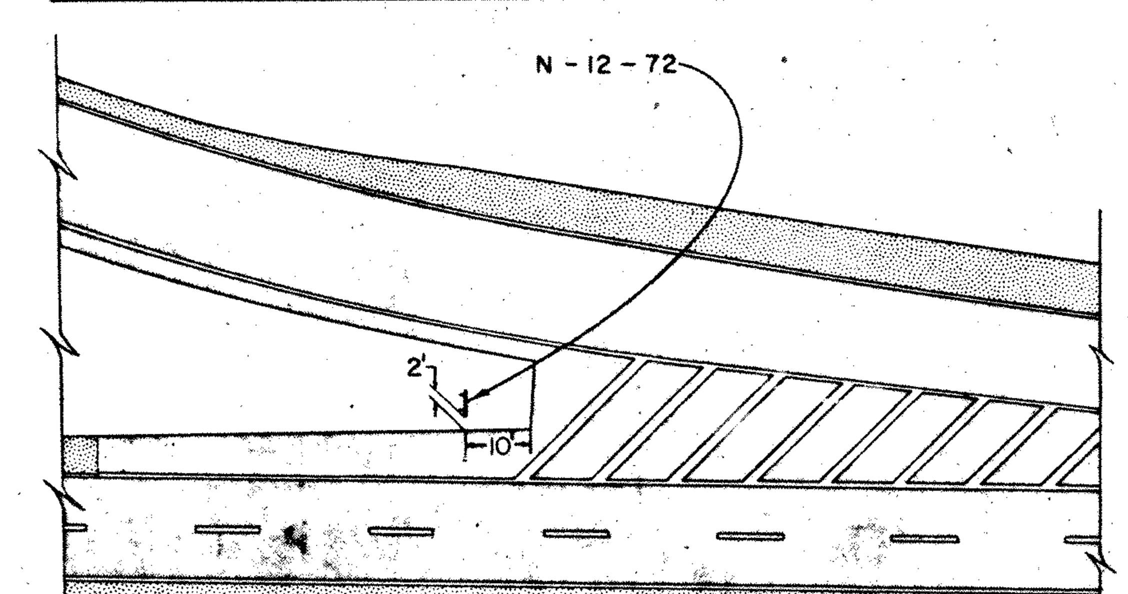
NOTE:
THE PLATE IS SYMMETRICAL ABOUT EITHER CENTERLINE.
METAL SHALL BE 16 GAUGE STEEL.
ALL DIMENSIONS ARE IN INCHES.

BEARING PLATE DETAIL



SIGN SUPPORT SPACING

L=FT	2 SUPPORTS		3 SUPPORTS		L=FT	2 SUPPORTS		3 SUPPORTS	
	.22	.56	.14	.36		.22	.56	.14	.36
5.0	1.10	2.80	0.70	1.80	17.0	3.74	9.52	2.38	6.12
6.0	1.32	3.36	0.84	2.16	18.0	3.96	10.08	2.52	6.48
7.0	1.54	3.92	0.98	2.52	19.0	4.18	10.64	2.66	6.84
8.0	1.76	4.48	1.12	2.88	20.0			2.80	7.20
9.0	1.98	5.04	1.26	3.24	21.0			2.94	7.56
10.0	2.20	5.60	1.40	3.60	22.0			3.08	7.92
11.0	2.42	6.16	1.54	3.96	23.0			3.22	8.28
12.0	2.64	6.72	1.68	4.32	24.0			3.36	8.64
13.0	2.86	7.28	1.82	4.68	25.0			3.50	9.00
14.0	3.08	7.84	1.96	5.04	26.0			3.64	9.36
15.0	3.30	8.40	2.10	5.40	27.0			3.78	9.72
16.0	3.52	8.96	2.24	5.76	28.0			3.92	10.08



DIRECTION OF TRAFFIC

NOTES

1. THE NEAR EDGE OF ALL MAIN LINE SIGNS, EXCEPT GORE INSTALLATIONS, SHALL BE LOCATED TWO FEET (2') BACK OF GUARD RAIL FACE. THIS DIMENSION SHALL BE DETERMINED BY ROADWAY TYPICAL SECTION & USED WHETHER OR NOT GUARD RAIL IS PRESENT.
   ON RAMPS THE NEAR EDGE OF SIGNS SHALL BE LOCATED TWO FEET (2') BACK OF GUARD RAIL FACE. THIS DIMENSION WILL BE DETERMINED AND USED AS FOR MAIN LINE ABOVE.
   ON APPROACHES THE NEAR EDGE OF SIGNS SHALL BE
   (A) TWO FOOT (2') BEHIND EXISTING GUARD RAIL
   (B) TWO FEET (2') FROM THE EDGE OF PAVED OR TRAVELED SHOULDER WITH A MINIMUM OF 6' FROM EDGE OF ROADWAY PAVEMENT.

2. POSTS PLACED IN CONCRETE MEDIANS SHALL BE INSTALLED BY DRIVING THROUGH A 6" SLEEVE OR CORE DRILLED HOLE. THE HOLE SHALL BE FILLED WITH ASPHALTIC CONCRETE AFTER THE POST IS IN THE PROPER POSITION.

3. HORIZONTAL BACK BRACING SHALL ALWAYS BE MOUNTED ON THE FRONT FLANGE OF THE SUPPORT EXCEPT WHERE SIGNS ARE MOUNTED BACK TO BACK. BACK BRACING SHALL NEVER EXTEND ABOVE TOP EDGE OF UPPERMOST SIGN PLATE AND SHALL BE ATTACHED TO SUPPORTS USING 5/16" GALVANIZED STEEL BOLTS.

4. SCREWS, NUTS, AND WASHERS FOR SIGN ERECTION SHALL BE ALUMINUM EXCEPT AS NOTED ABOVE. 5/16" TRUSS HEAD SLOTTED MACHINE SCREWS WITH HEX. NUTS PLAIN AND LOCKWASHERS SHALL BE USED. PLAIN WASHERS SHALL BE 5/16" "WIDE", USED ON SIGN FACE ONLY.

5. SIGN INSTALLATIONS SHALL BE PLACED SO THAT SUPPORTS ARE NOT PLACED IN DRAINAGE DITCHES.

6. HORIZONTAL CLEARANCES SHOWN PERTAIN TO NON-CURBED SECTIONS. SECTIONS WITH UNMOUNTABLE CURB SHALL HAVE A HORIZONTAL CLEARANCE OF 2'-0" MINIMUM FROM THE CURB FACE TO THE SIGN EDGE.

7. VERTICAL AND HORIZONTAL CLEARANCE BETWEEN SIGNS ON ONE ASSEMBLY SHALL BE A MAXIMUM OF 2" AND A MINIMUM OF 1".

8. GALVANIZED STEEL BEARING PLATES SHALL BE INCLUDED BETWEEN ALL SHEET ALUMINUM SIGNS ATTACHED TO VERTICAL SUPPORTS AT EACH SIGN BOLT LOCATION.

9. SOIL PLATES SHALL BE ATTACHED TO ALL 6 LB. BEAMS BETWEEN POSTS AS DETAILED ON THIS SHEET, EXCEPT WHERE BEAMS ARE PLACED IN CONCRETE MEDIANS AS COVERED IN NOTE 2.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

TYPICAL PLACEMENT OF SIGNS

TPS-1

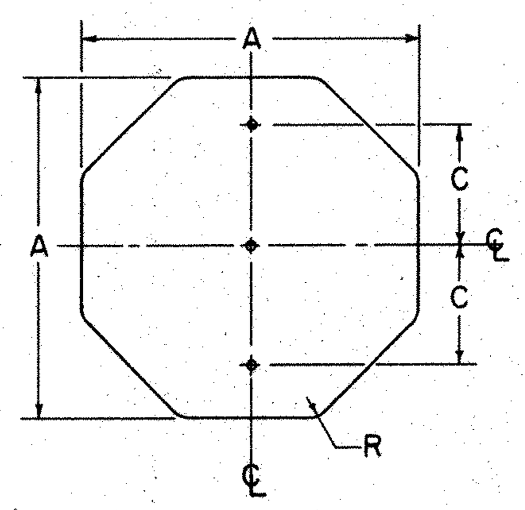
DATE
9-27-67
7-12-68
5-13-69
3-5-71
12-21-71
3-7-72

APPROVED ____________
ENGINEER OF TRAFFIC

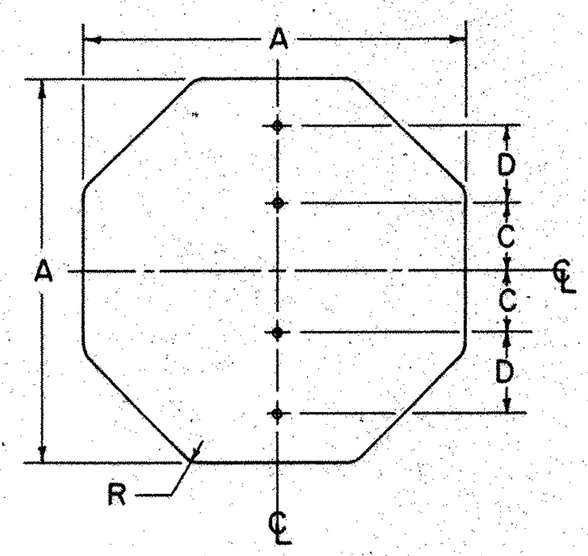
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

185
389

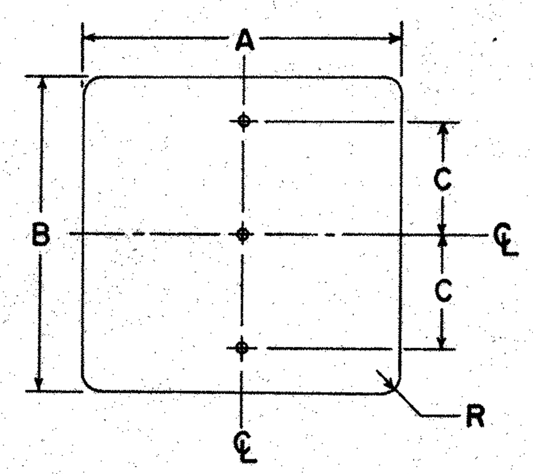
STARK COUNTY
STA-30-14.12
STA-77-9.22



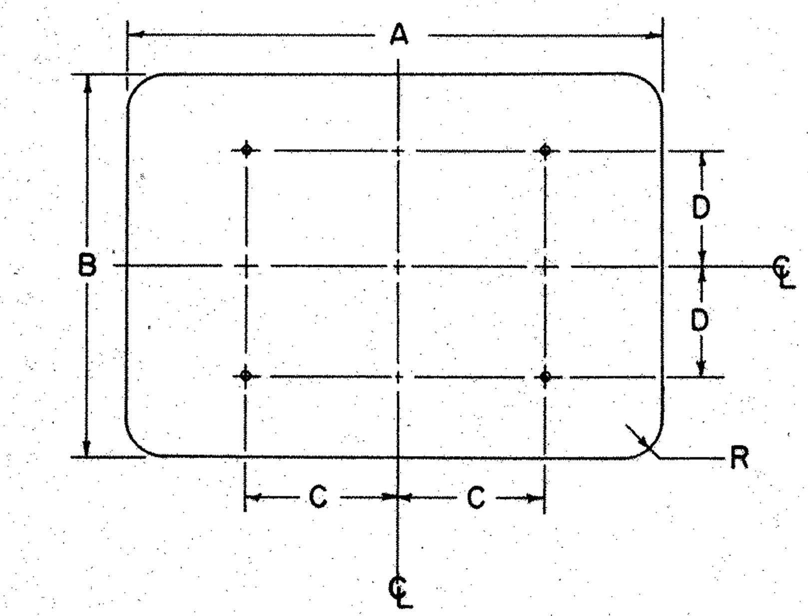
A	C	R	GAUGE
30	8	1 1/2	.080
36	8	1 1/2	.080



A	C	D	R	GAUGE
48	8	10	1 1/2	.100

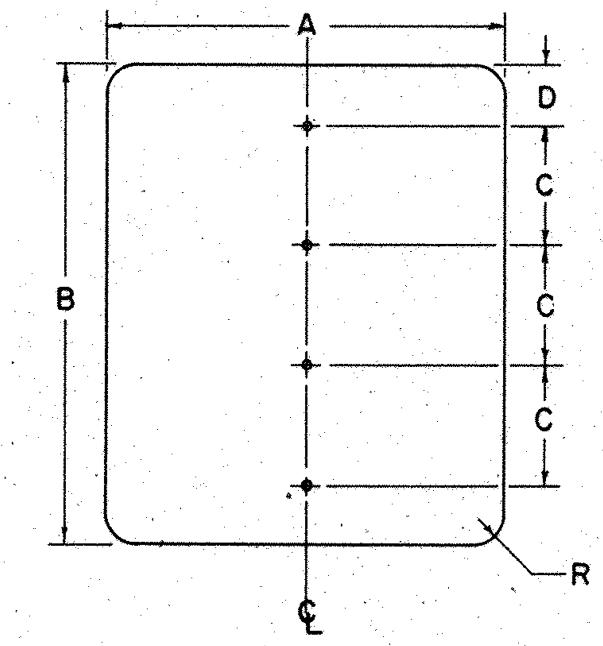


A	B	C	R	GAUGE
24	30	8	1 1/2	.063
24	48	15	1 1/2	.100
30	36	11	1 1/2	.080
30	42	12	1 1/2	.080
36	36	11	1 1/2	.080
36	42	15	1 1/2	.080
36	48	15	1 1/2	.080
48	24	10	3	.100
48	36	13	3	.100

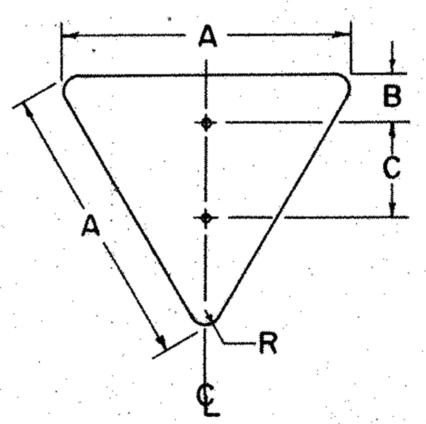


A	B	C	D	R	GAUGE
48	48	22	16	3	.100
48	60	22	22	3	.100

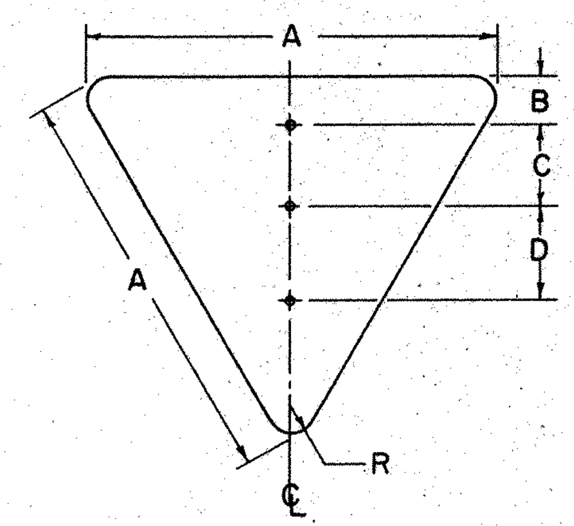
SPEED LIMIT SIGNS ON TWO SUPPORTS



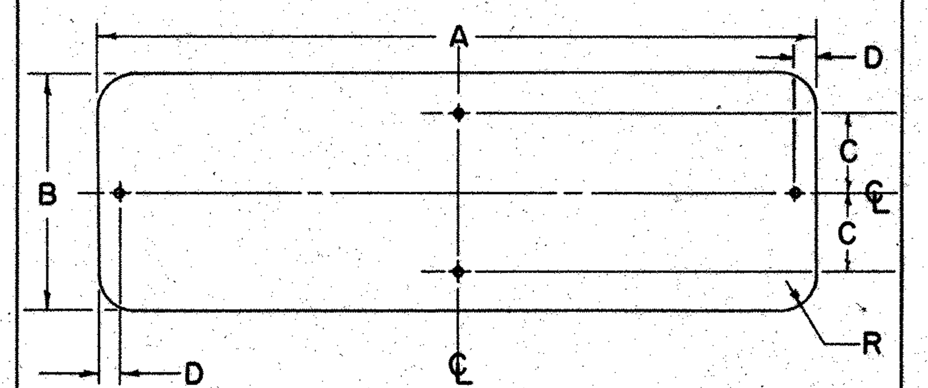
A	B	C	D	R	GAUGE
48	48	12	6	3	.100
48	60	15	7 1/2	3	.100



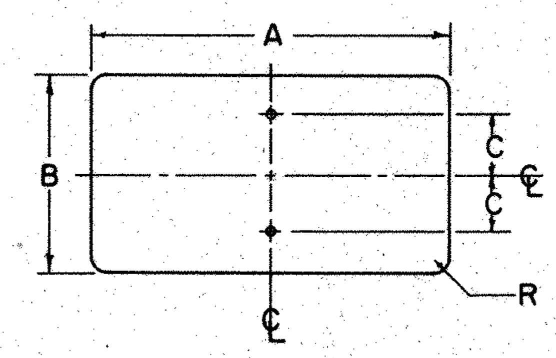
A	B	C	R	GAUGE
36	3	16	2 1/2	.080



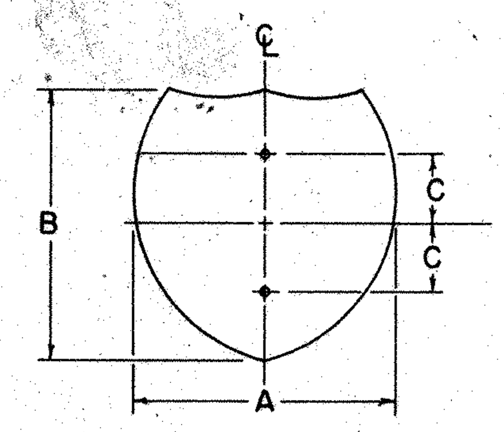
A	B	C	D	R	GAUGE
48	4	10	15	3	.100
60	5	10	15	4	.100



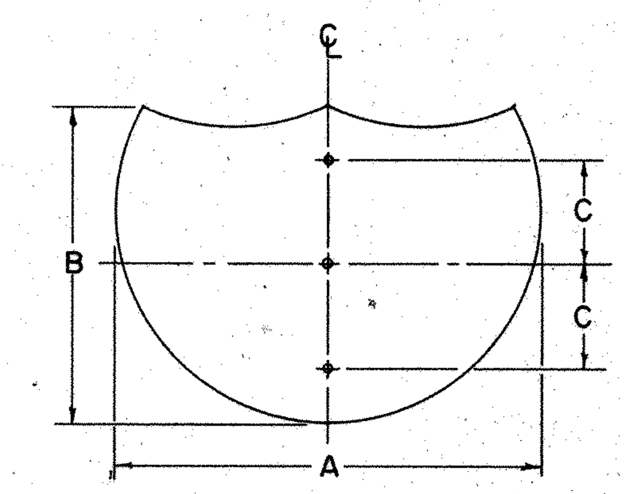
A	B	C	D	R	GAUGE
36	12	4	1	1 1/2	.080
72	12	—	16	1 1/2	.100
60	[illegible]	—	13	1 1/2	.100



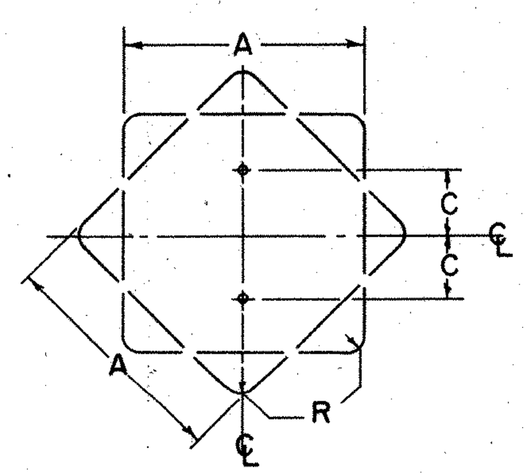
A	B	C	R	GAUGE
12	6	1 1/2	1 1/2	.063
20	15	6	1 1/2	.063
24	12	4 1/2	1 1/2	.063
24	18	7 1/2	1 1/2	.063
8	26	8	1	.063
36	18	7 1/2	1 1/2	.080



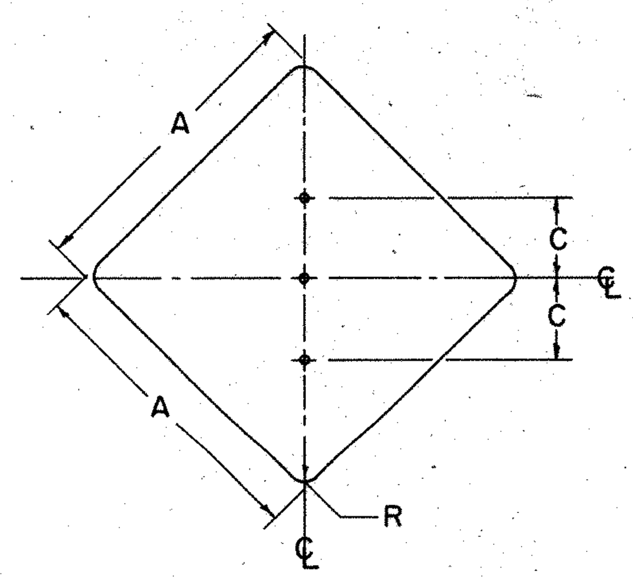
A	B	C	GAUGE
24	24	8	.063
30	24	8	.080



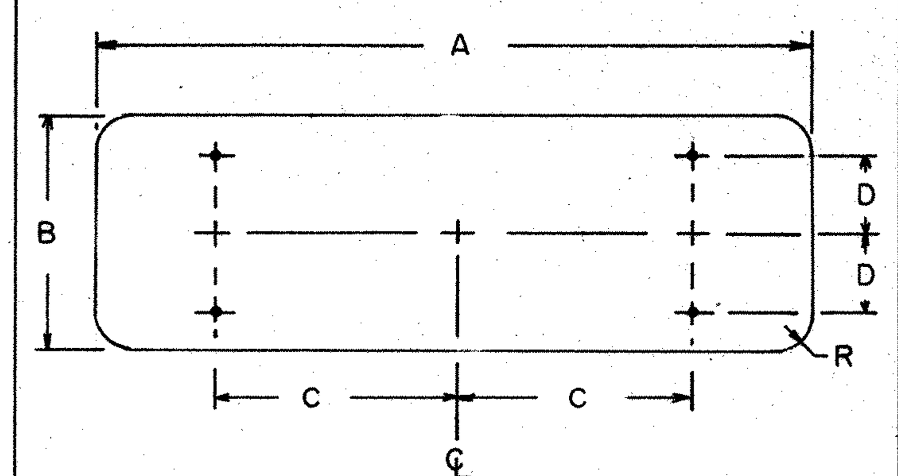
A	B	C	GAUGE
36	36	11	.080
48	36	11	.100



A	C	R	GAUGE
18	7 1/2	1 1/2	.063
24	8	1 1/2	.063
30	8	1 1/2	.080

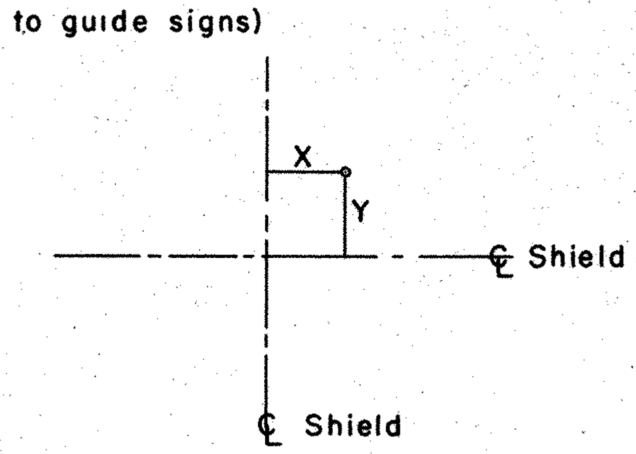


A	C	R	GAUGE
36	12	1 1/2	.080
48	14	3	.100



A	B	C	D	R	GAUGE
72	18	20	6	1 1/2	.100
72	24	20	8	1 1/2	.100
60	30	17	10	1 1/2	.100
96	18	27	6	1 1/2	.100

Location of holes on "Demountable Shields" (attached to guide signs)



SIZE	NO. HOLES	X	Y
(26) 24X24	4	7	7
30X24	4	8	8
(39) 36X36	4	10 0	10 10
48X36	6	15	10

For notes on fastening see drawing for miscellaneous "Signing Items" sheet.

NOTES:

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.

MATERIAL

FLAT SIGN BLANKS SHALL BE FURNISHED IN ALUMINUM ALLOY 6061-T6, (ASTM-B209, GS11A-T6) WITH MILL FINISH.

BOLT HOLES

THE BOLT HOLES SHALL BE 3/8" IN DIAMETER, AND MAY BE DRILLED, BLANKED OR PUNCHED TO FINISHED SIZE.

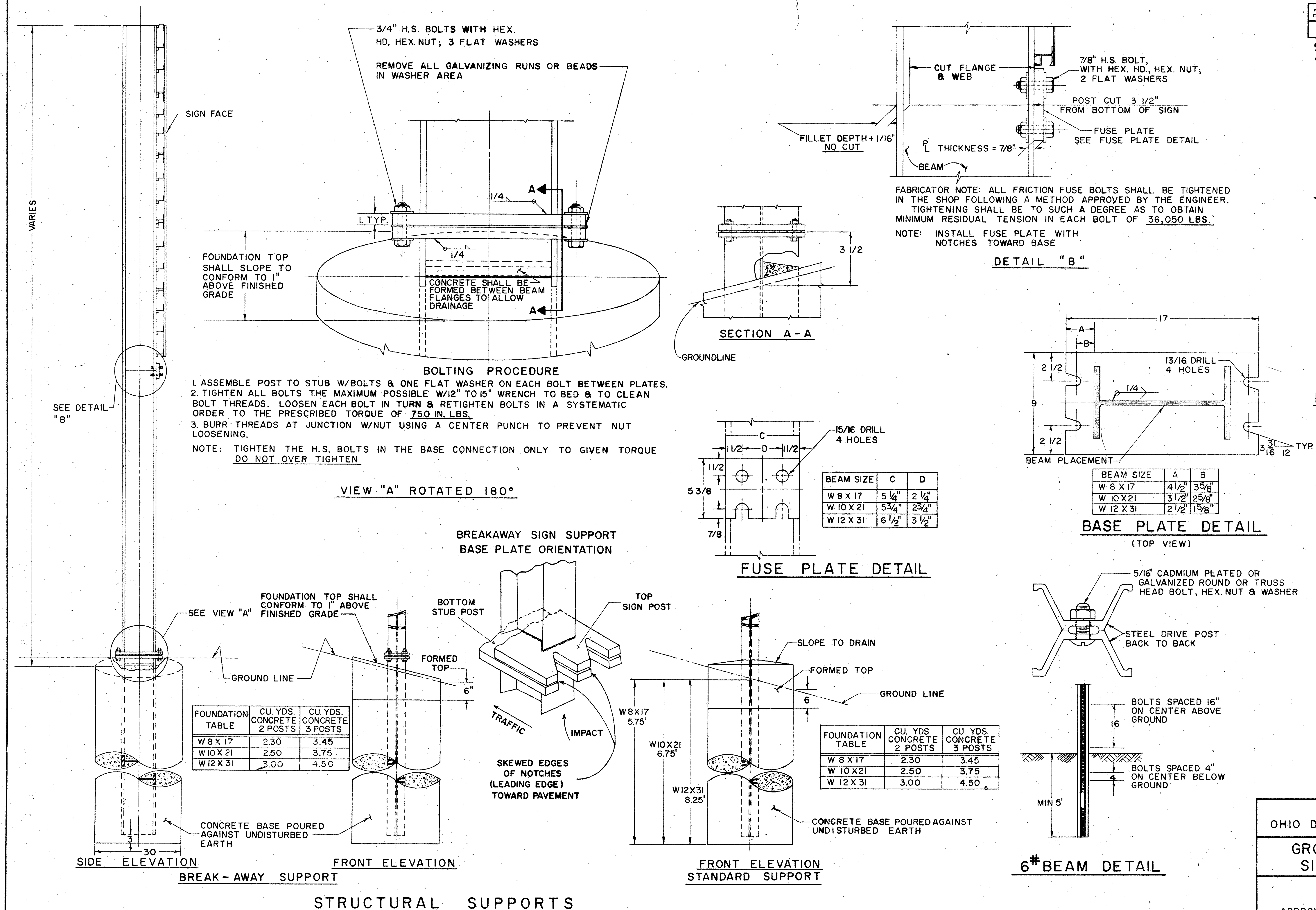
BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

SIGN BLANK DETAILS — SBD

DATE
4-14-67
5-10-68
10-1-68
5-27-69
6-18-69

APPROVED____________
ENGINEER OF TRAFFIC

STARK COUNTY
STA-30-14.12
STA-77-9.22



WEIGHT PER FOOT	X ± 3/32"	Y ± 1/8"
2.00 #	1 15/32"	3 1/16"
3.00 #	1 7/8"	3 1/2"
4.00 #	2"	3 5/8"

BEAM SIZE	A	B
W 8 X 17	4 1/2"	3 5/8"
W 10 X 21	3 1/2"	2 5/8"
W 12 X 31	2 1/2"	1 5/8"

BEAM SIZE	C	D
W 8 X 17	5 1/4"	2 1/4"
W 10 X 21	5 3/4"	2 3/4"
W 12 X 31	6 1/2"	3 1/2"

FOUNDATION TABLE	CU. YDS. CONCRETE 2 POSTS	CU. YDS. CONCRETE 3 POSTS
W 8 X 17	2.30	3.45
W 10 X 21	2.50	3.75
W 12 X 31	3.00	4.50

FOUNDATION TABLE	CU. YDS. CONCRETE 2 POSTS	CU. YDS. CONCRETE 3 POSTS
W 8 X 17	2.30	3.45
W 10 X 21	2.50	3.75
W 12 X 31	3.00	4.50

NOTES: ALL MATERIALS SHALL CONFORM TO THE STATE OF OHIO, CONSTRUCTION & MATERIALS SPECIFICATIONS OR AS OTHERWISE SPECIFIED

1.) 511 FOUNDATIONS
2.) 711.01 STRUCTURAL STEEL SHAPES & PLATES
3.) 711.09 H.S. STEEL BOLTS, NUTS & WASHERS

ALL DIMENSIONS IN INCHES UNLESS OTERWISE SHOWN

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

GROUND MOUNTED SIGN SUPPORTS

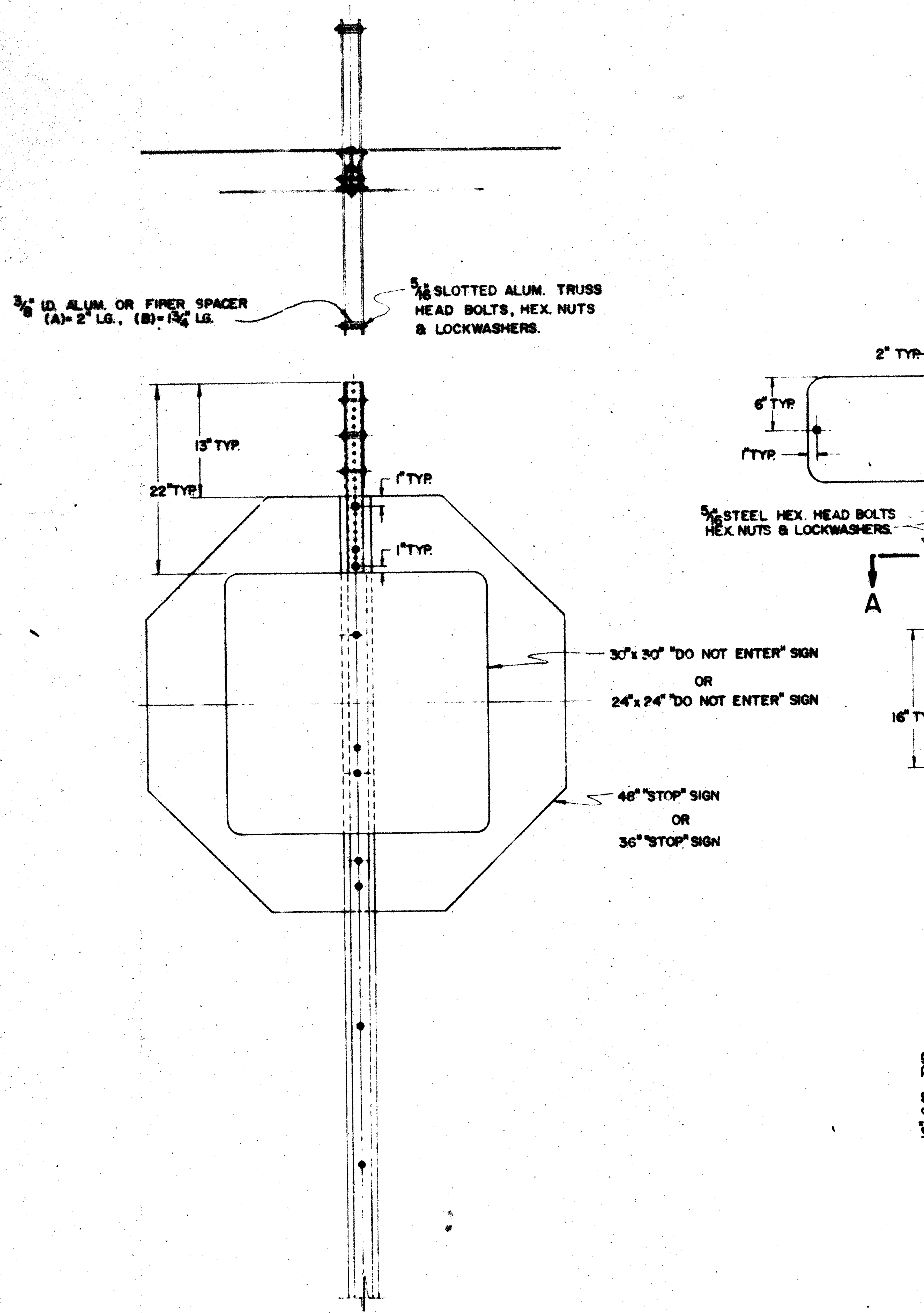
GMSS

DATE
5-10-68
7-12-68
5-23-69
9-16-69
12-20-71

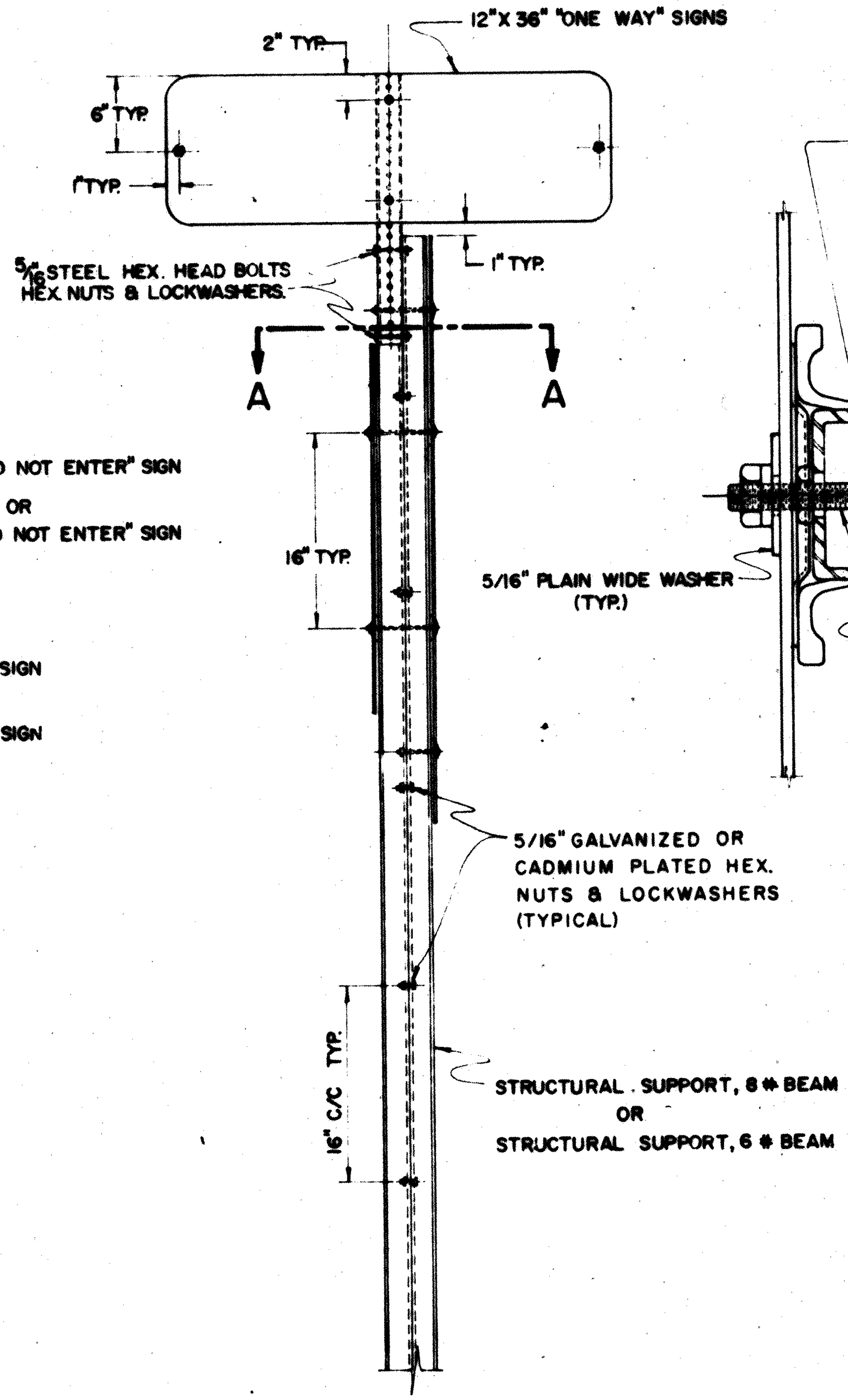
APPROVED ____________
ENGINEER OF TRAFFIC

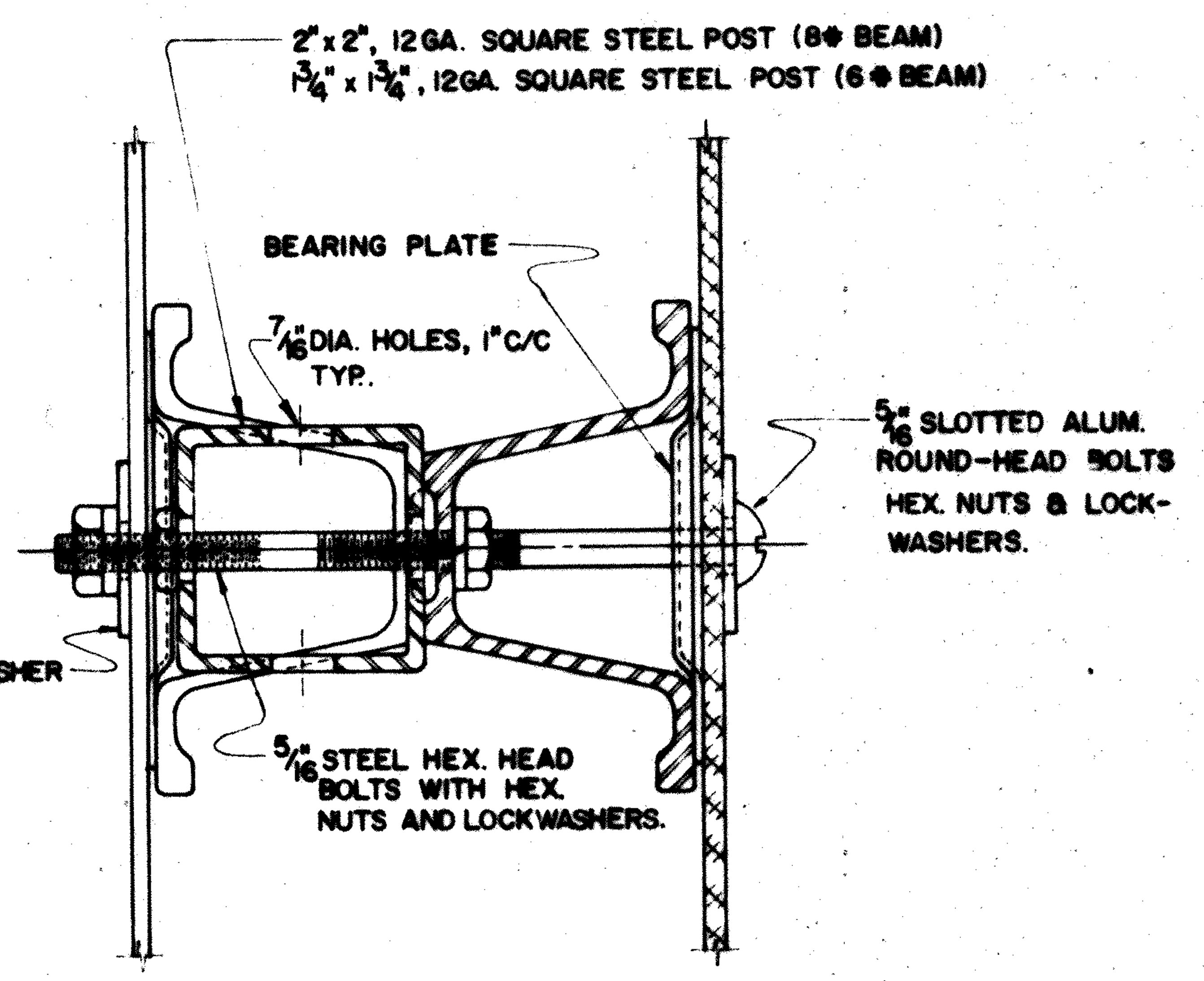
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
STA-30-14.12
STA-77-9.22



"ONE WAY", "STOP", "DO NOT ENTER", SIGN INSTALLATION.





SECTION A-A

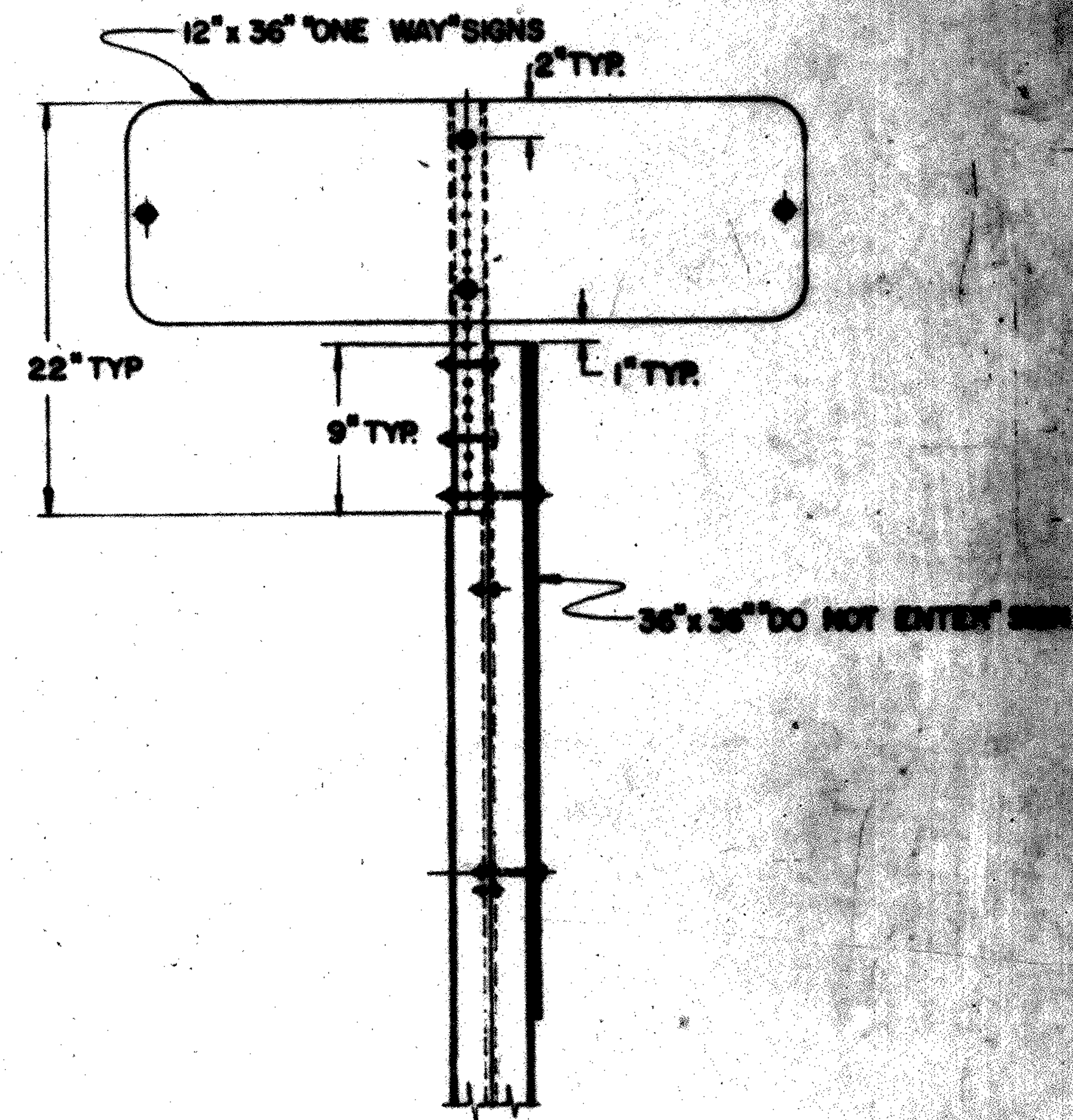
NOTES

MATERIALS

ALL SIGN MATERIALS SHALL BE IN ACCORDANCE WITH SUPPLEMENT SPECIFICATION 815.

ALL STRUCTURAL MATERIALS SHALL BE IN ACCORDANCE WITH SUPPLEMENT SPECIFICATION 815.

FOR SPECIFICATIONS FOR THE 2" & 1 3/4" SQUARE STEEL POST SEE GENERAL NOTES, SHEET NO.______.



"ONE WAY", "DO NOT ENTER" SIGN INSTALLATION

BUREAU OF TRAFFIC OHIO DEPARTMENT OF HIGHWAYS		
SPECIAL "ONE WAY" SIGN SUPPORT DETAILS	SOW	DATE 3-7-66 4-15-67
APPROVED ______ ENGINEER OF TRAFFIC		

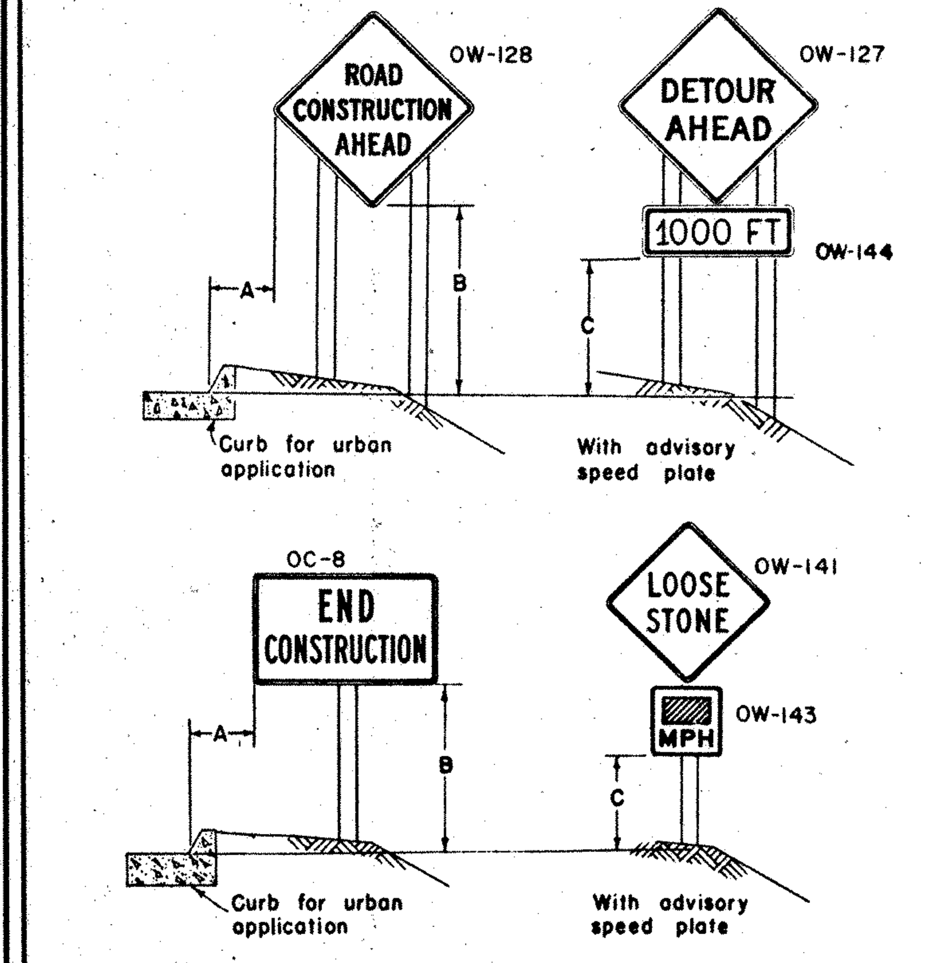
SPECIAL "ONE WAY" SIGN SUPPORT DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

188/389

STARK COUNTY
STA-30-14.12
STA-77-9.22

HEIGHT AND LATERAL LOCATION OF SIGNS
FOR
TYPICAL RURAL AND URBAN INSTALLATIONS

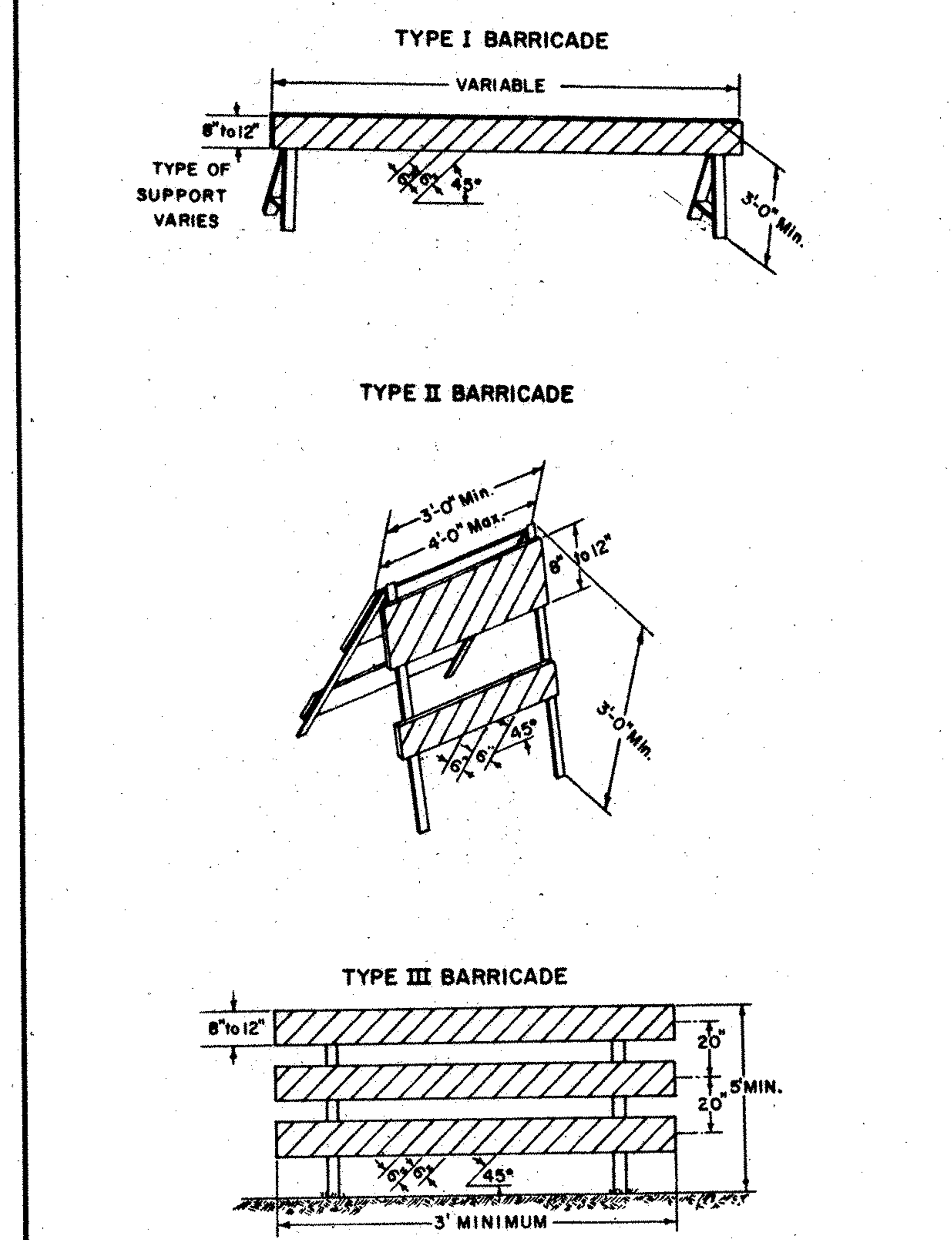


REF. SEC.
7B-5
7D-2
7D-3
7D-25
7D-26

Location	Urban	Rural
A	2'	6' to 12'
B	7'	5'
C	6'	4'

C-1

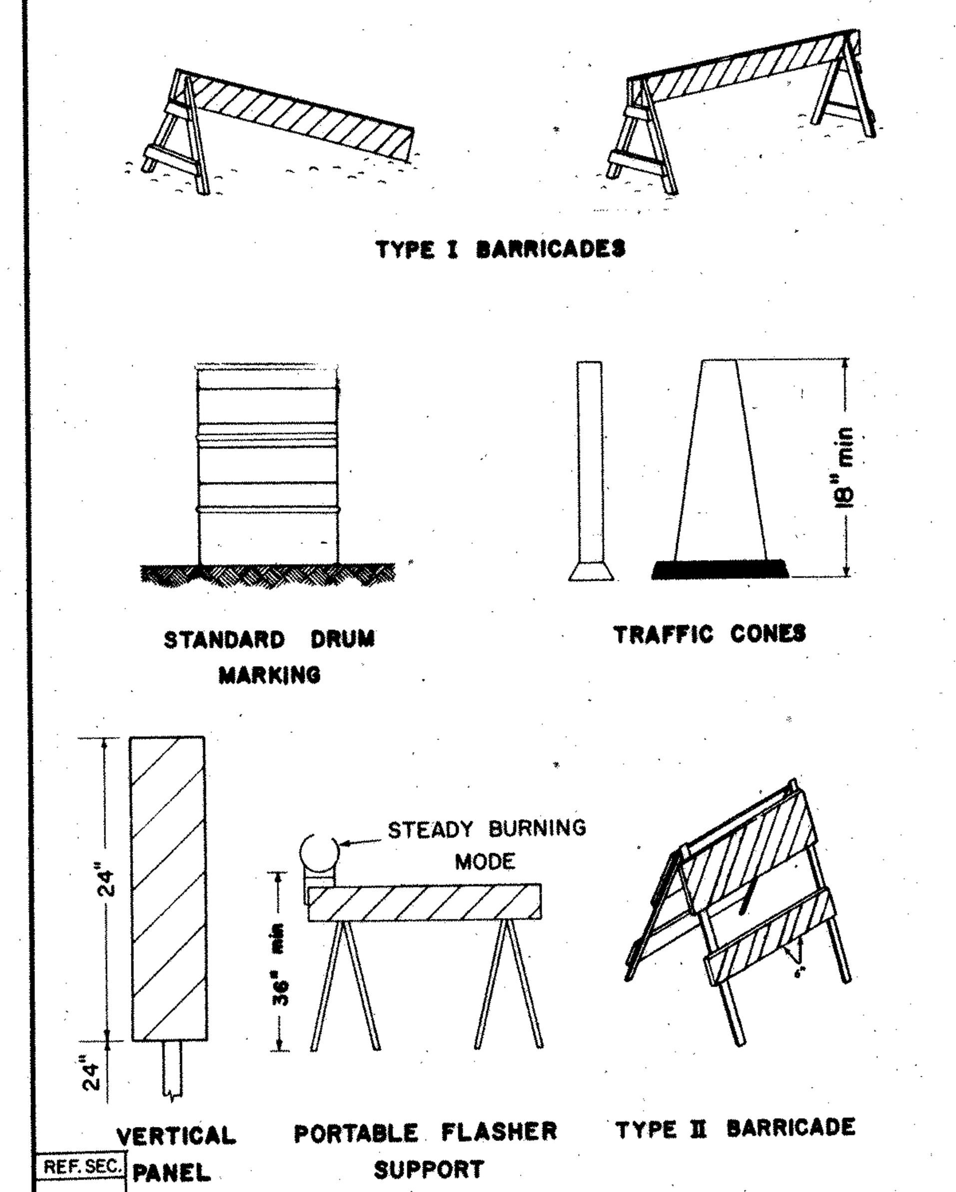
STANDARD BARRICADE TYPES



REF. SEC.
7F-2

C-4

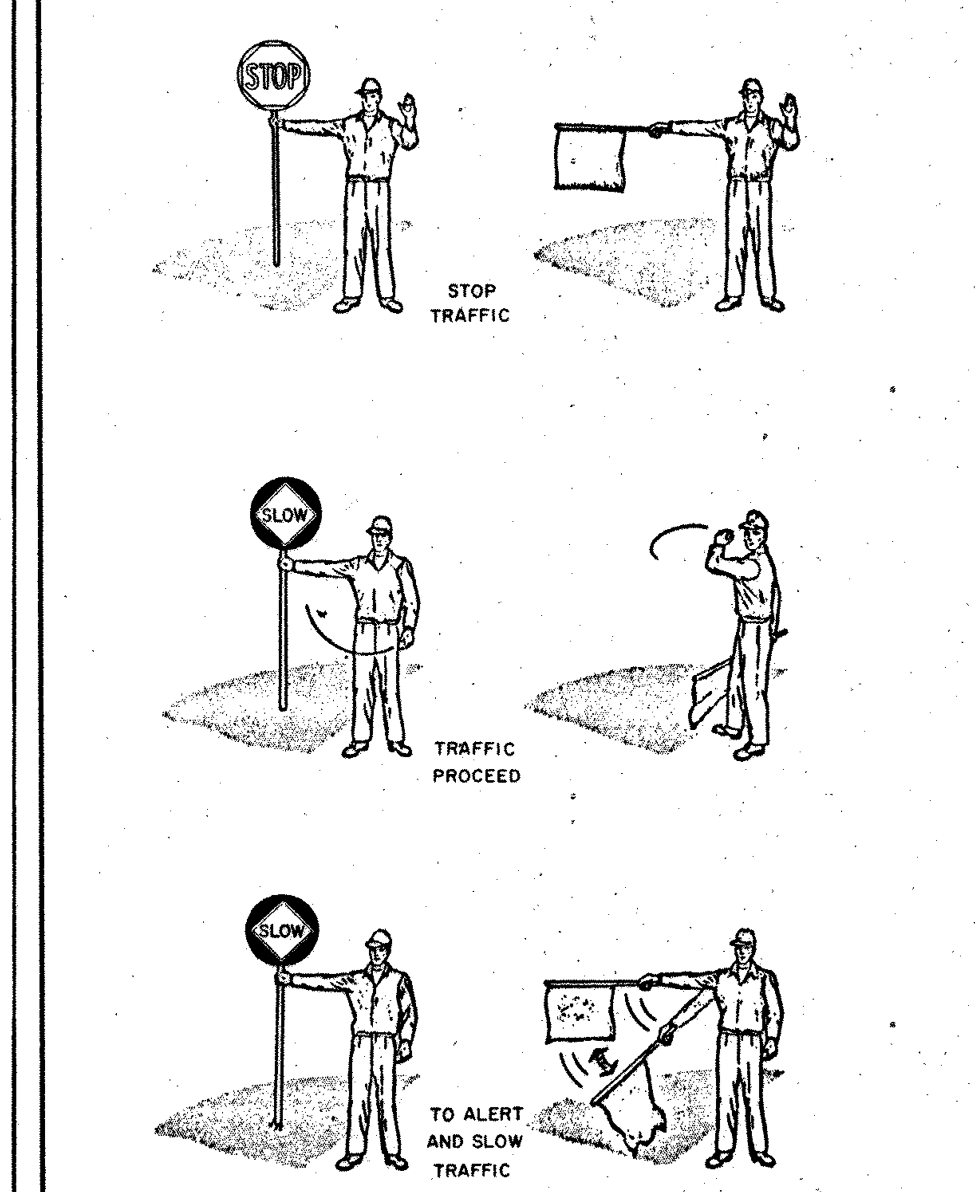
TYPICAL TEMPORARY CHANNELIZING DEVICES



REF. SEC.
7F-9
7F-17
7G-7
7F-6

C-8

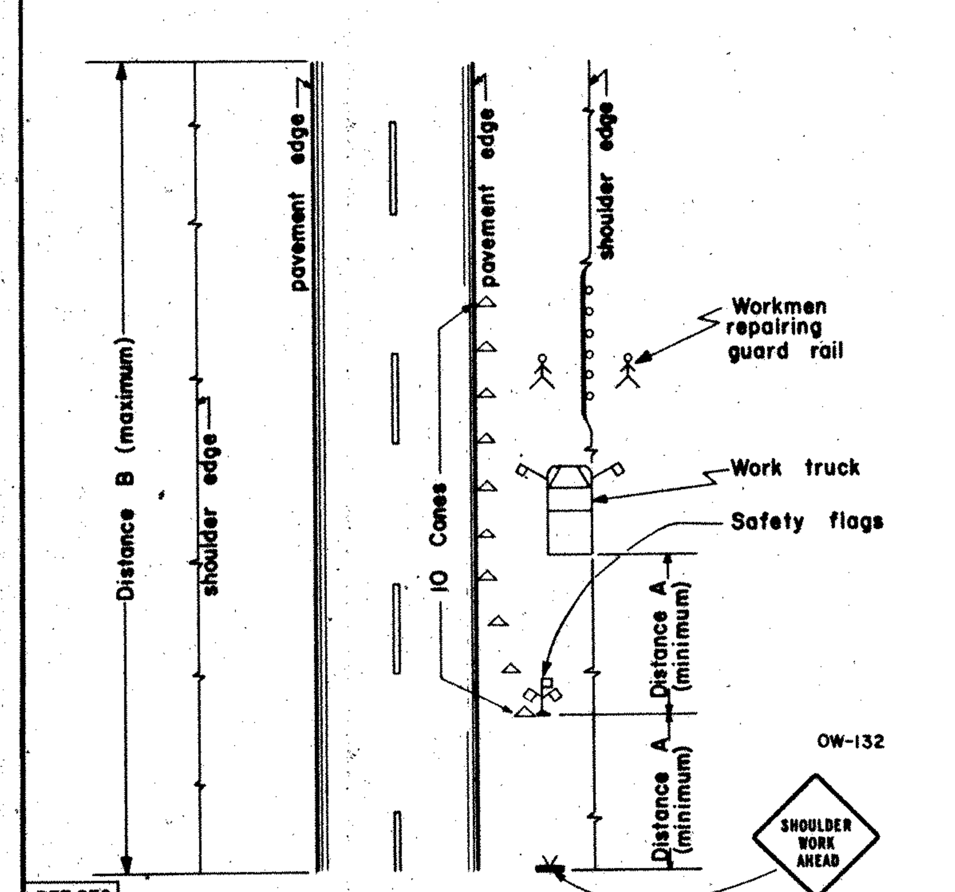
PROCEDURES FOR FLAGMAN



REF. SEC.
7H-2
7H-4

C-10

TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES FOR STATIONARY OPERATIONS ON THE SHOULDER



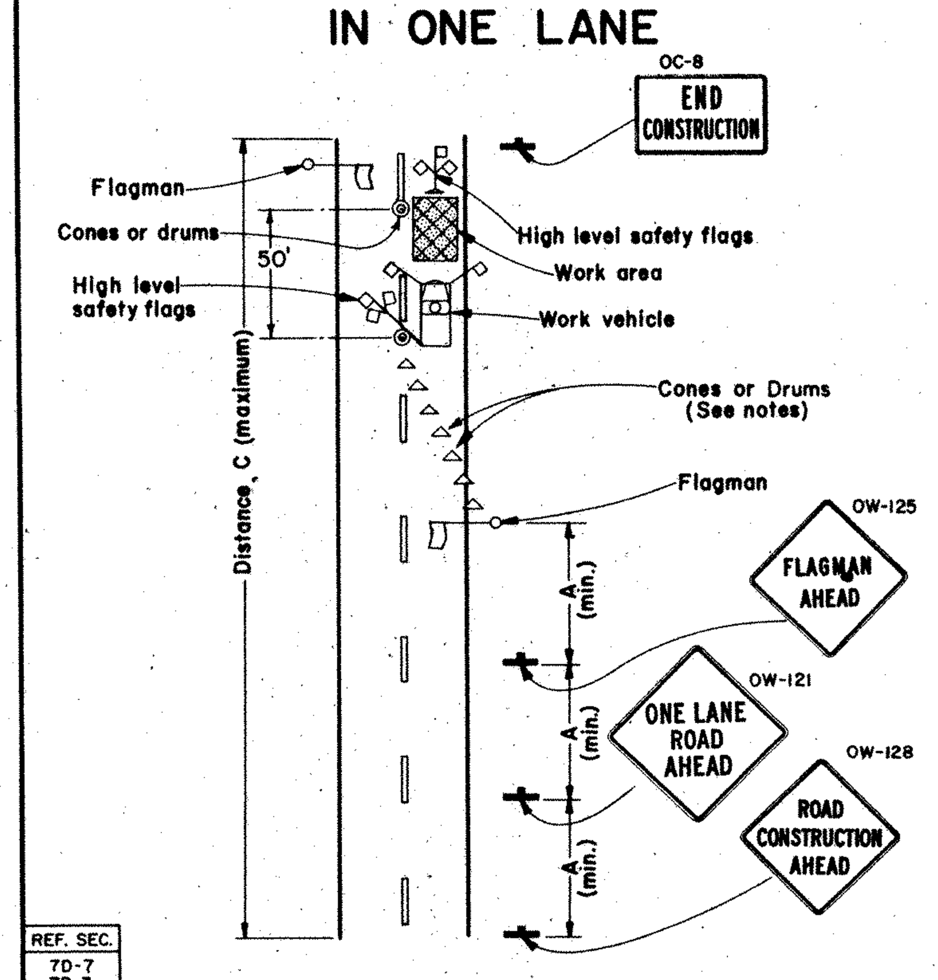
REF. SEC.
7D-16

NOTES:
1. Space the cones at 50' maximum.
2. For work within the median, install the same cones and signs for both directions of travel.

TYPE OF ROADWAY	DISTANCE A ft.	B mi.
Urban	200	0.5
Standard	500	1.0
Expressway	750	1.0

C-12

TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES FOR STATIONARY OPERATIONS IN ONE LANE



REF. SEC.
7D-7
7D-3
7D-9
7E-10

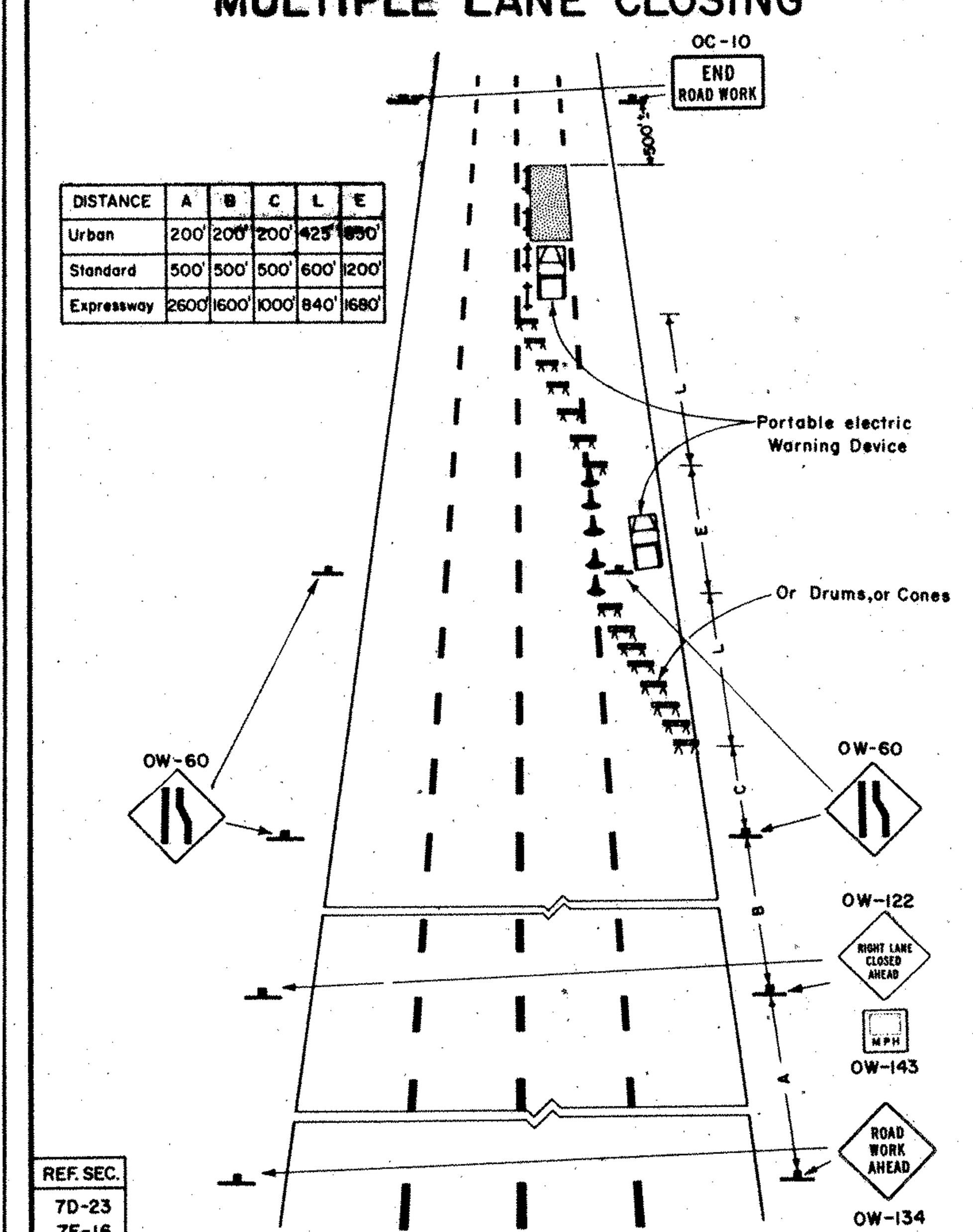
NOTES:
1. See Table 7-5 for taper lengths.
2. Use the same warning signs on the opposite approach.
3. Space the cones at 50' max. on tangent.

TYPE OF ROADWAY	DISTANCES A-ft.	C-mi
Urban	200	0.5
Standard	500	1.0

C-18

TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES FOR MULTIPLE LANE CLOSING

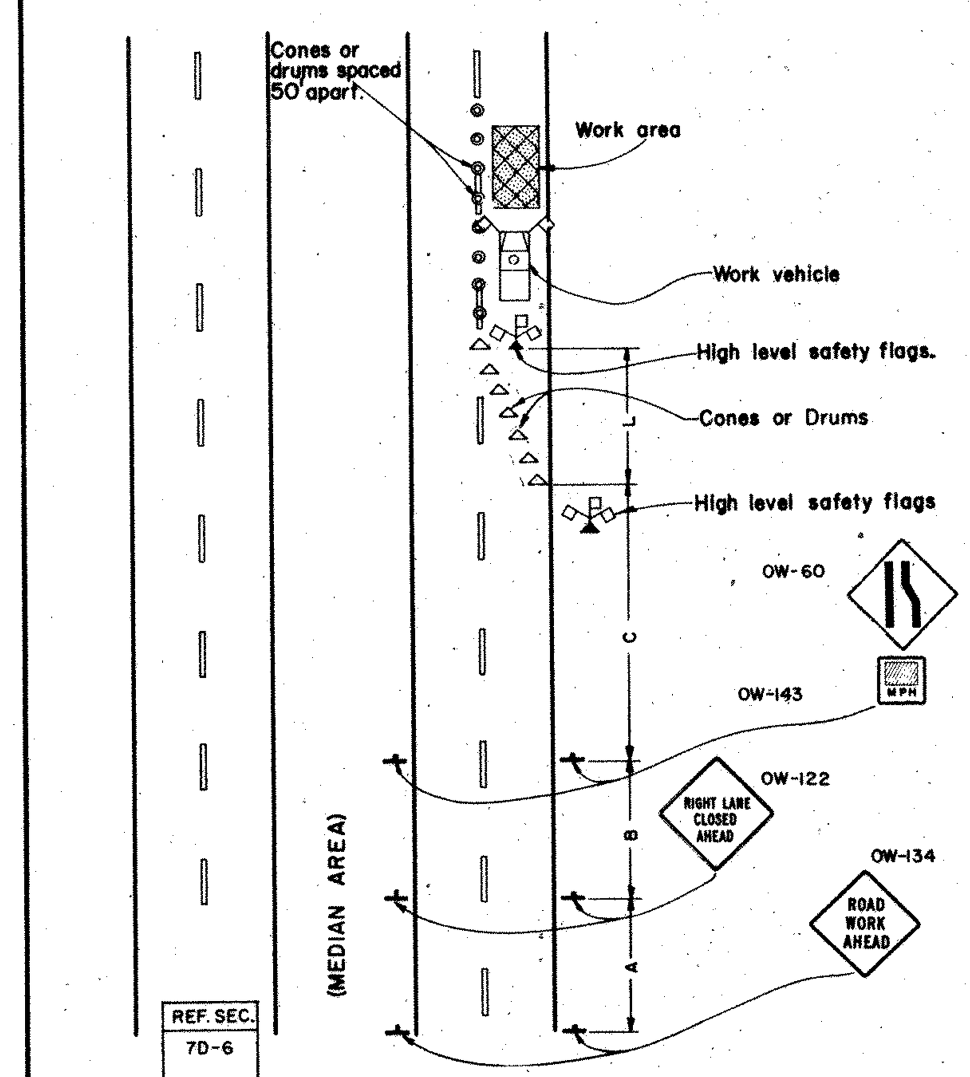
DISTANCE	A	B	C	L	E
Urban	200'	200'	200'	425'	850'
Standard	500'	500'	500'	600'	1200'
Expressway	2600'	1600'	1000'	840'	1680'



REF. SEC.
7D-23
7F-16
7G-8
7E-11

C-20

TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES FOR CLOSING ONE LANE ON A 4-LANE DIVIDED HIGHWAY



REF. SEC.
7D-6

DISTANCE	A	B	C	L
Urban	200'	200'	200'	425'
Standard	500'	500'	500'	600'
Expressway	2600'	1600'	1000'	840'

C-21

TABLE 7-5
TAPER LENGTHS (L)

MINIMUM NUMBER OF CONES, DRUMS, OR BARRICADES REQUIRED

Posted Speed MPH	(L) 10 Ft. Lane	No. of C,D, or B	(L) 12 Ft. Lane	No. of C, D or B
25	250	11	300	13
35	350	11	425	13
50	500	11	600	13
60	600	11	720	13
70	700	11	840	13

614 MAINTENANCE OF TRAFFIC

TRAFFIC SHALL BE MAINTAINED ON THE EXISTING PAVEMENT WITHOUT INTERRUPTION DURING CONSTRUCTION OF THE WORK EXCEPT AS OTHERWISE APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL SET UP AND OPERATE HIS EQUIPMENT IN SUCH A MANNER AS TO ENCROACH UPON THE TRAVELED WIDTH OF THE PAVEMENT TO A MINIMUM EXTENT.

ALL TRAFFIC CONTROL DEVICES REQUIRED INSIDE THE WORK LIMITS, EXCEPT REGULATORY AND GUIDE SIGNS AND PAVEMENT MARKINGS, SHALL BE FURNISHED, ERECTED AND MAINTAINED BY THE CONTRACTOR, INCLUDING THE ROAD CONSTRUCTION SIGN (OC-4 or OC-6) AND THE END CONSTRUCTION SIGN (OC-8) ERECTED ON THE WING BARRICADES IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING MC-3.

ALL WARNING, REGULATORY, AND GUIDE SIGNS REQUIRED OUTSIDE THE WORK LIMITS SHALL BE FURNISHED, ERECTED AND MAINTAINED BY THE DEPARTMENT.

ALL SIGNS, CONES, BARRICADES AND FLAGMEN SHALL BE UTILIZED IN CONFORMANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, 1972 EDITION.

LANE RESTRICTIONS ON ANY ROADWAY OR STREET SHALL OCCUR DURING HOURS OTHER THAN 7:00 A.M. TO 9:00 A.M. AND 4:00 P.M. TO 6:00 P.M. MONDAY THROUGH FRIDAY, OR AS DIRECTED BY THE ENGINEER.

WHEN IT IS NECESSARY TO STOP ALL TRAFFIC FOR ERECTION OF OVERHEAD SUPPORTS, THE WORK SHALL BE SO ARRANGED THAT THE STOPPAGE IS LESS THAN TEN (10) MINUTES IN ANY ONE (1) CONSECUTIVE THIRTY (30) MINUTE PERIOD.

NO TRAFFIC STOPPAGE SHALL OCCUR FOR ERECTION OF OVERHEAD SUPPORTS WITHOUT ENFORCEMENT PERSONNEL AT EACH SITE FOR ASSISTANCE IN CONTROLLING TRAFFIC AND INFORMING DRIVERS AS TO THE NATURE OF THE DELAY.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

MAINTENANCE of TRAFFIC

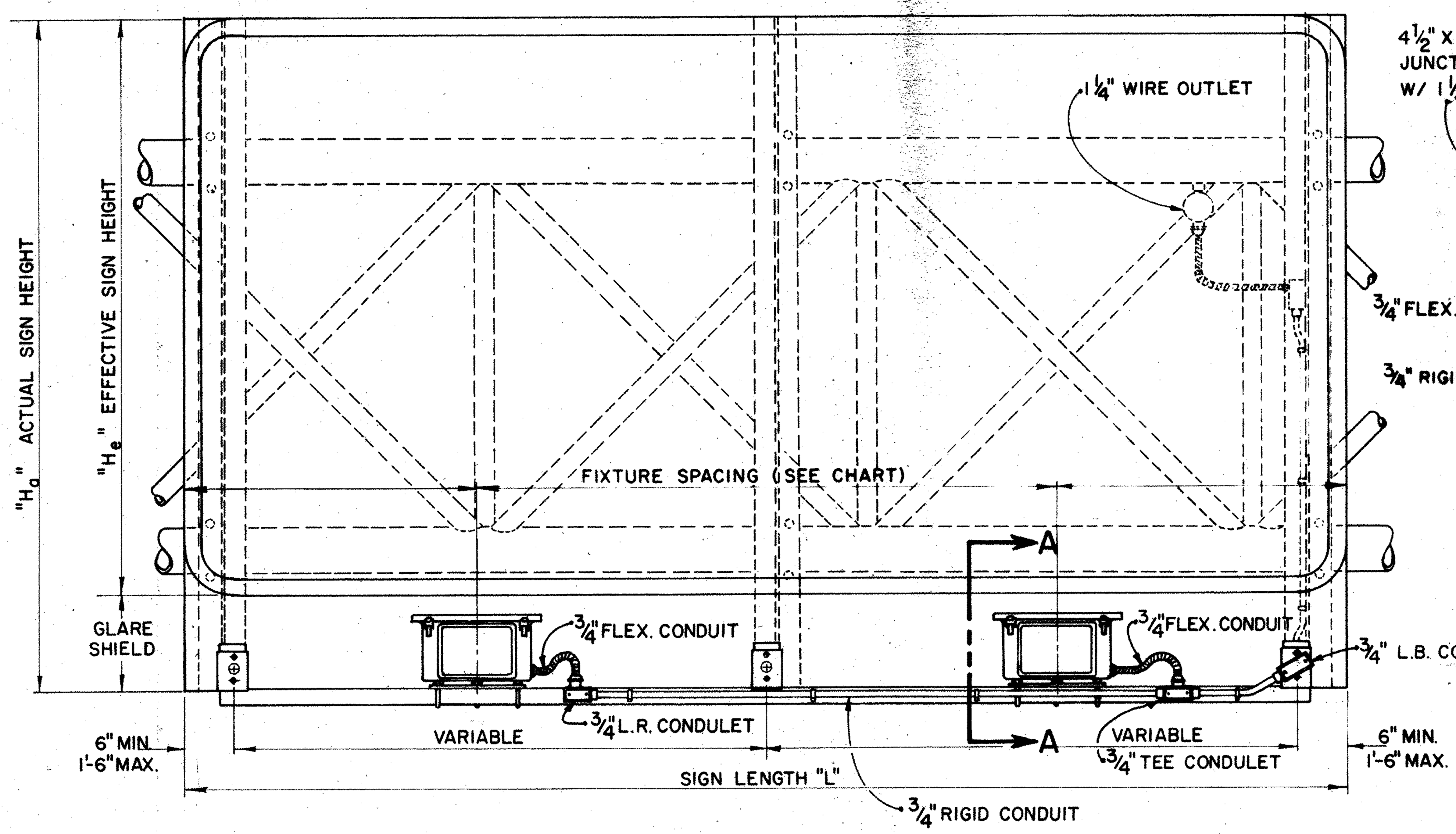
DATE 5-17-72

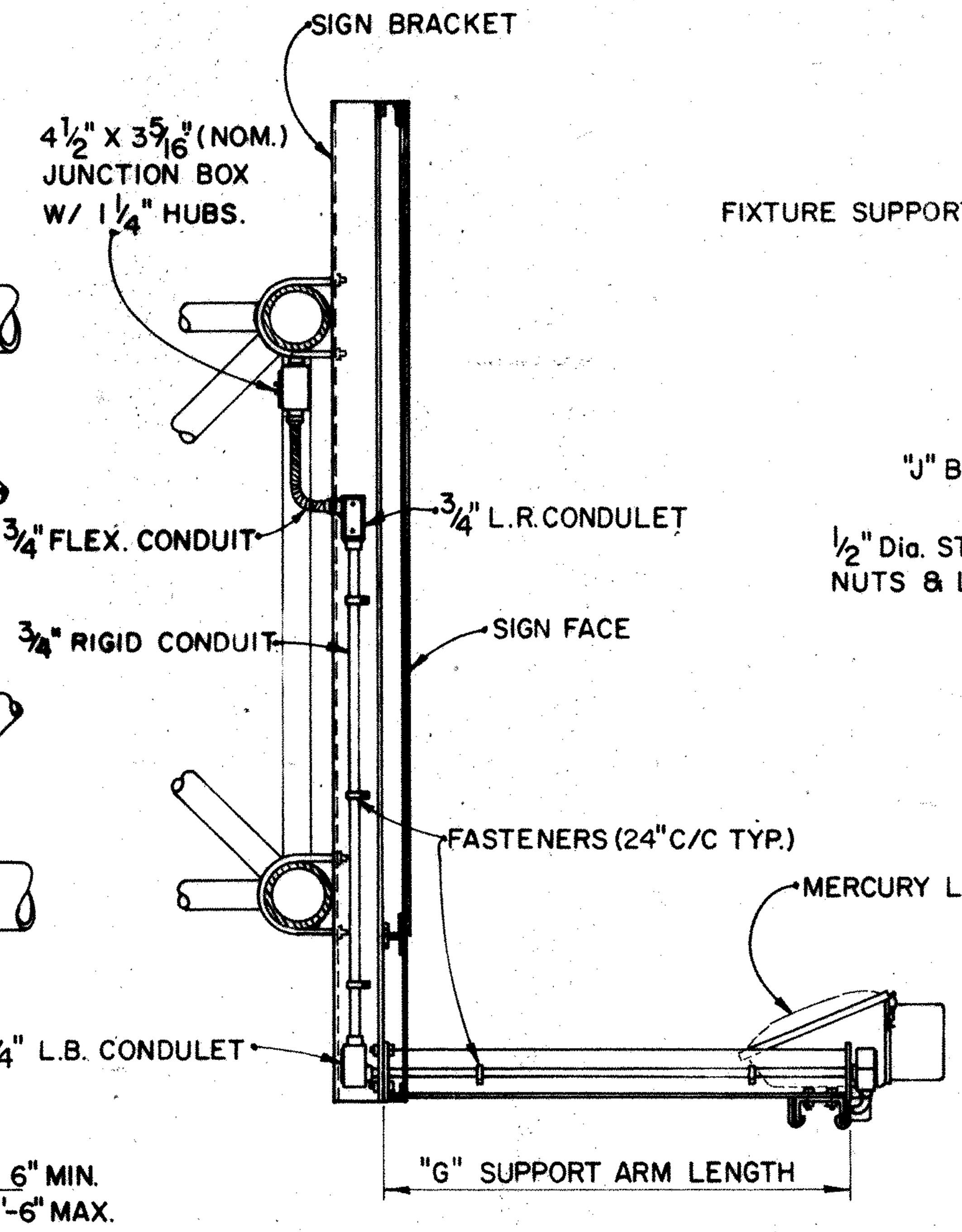
614

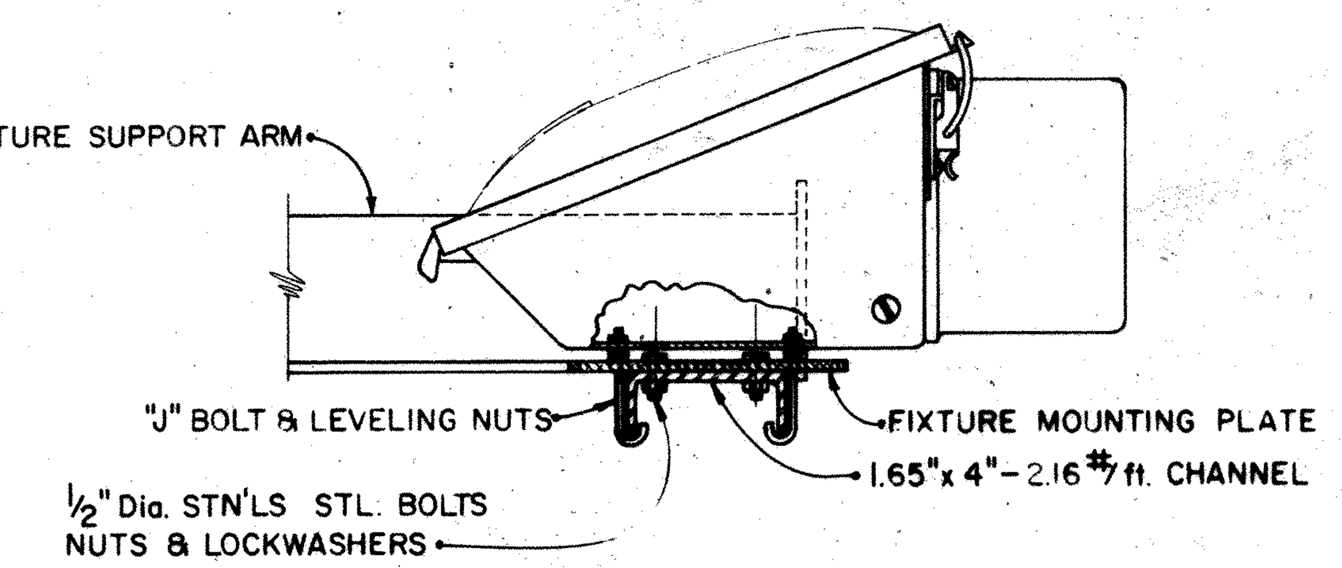
APPROVED R. D. McMillen
ENGINEER OF TRAFFIC

BRUNING 44-560 10943

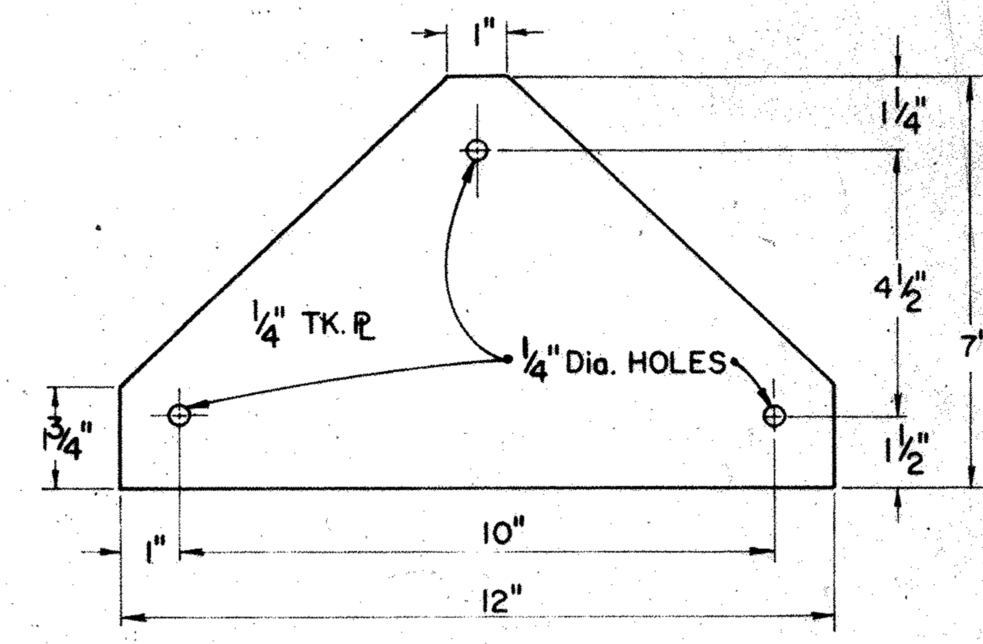
STARK COUNTY
STA.-30-14.12
STA.-77- 9.22



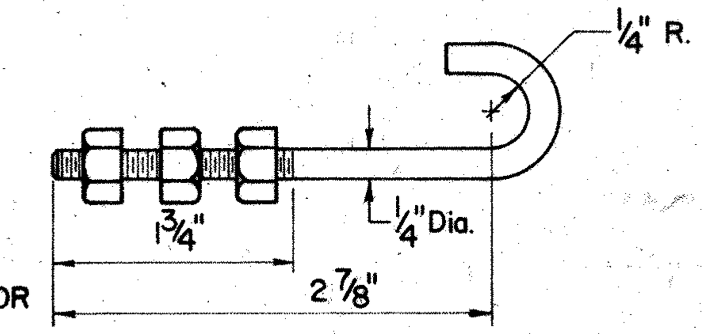




SECTION A-A



FIXTURE MOUNTING PLATE
(ALUMINUM)



"J" BOLT
(STAINLESS STEEL BOLT, NUTS & LOCKWASHERS)

SIGN LENGTH "L"	NO. OF FIXTURES	LIGHT FIXTURE SPACING						SUPPORT ARM SPACING					NO. OF SIGN BRACKETS
4'-0"	1	2'-0"	2'-0"					6"	36"	6"			2
5'-0"	1	2'-6"	2'-6"					6"	48"	6"			2
6'-0"	1	3'-0"	3'-0"					6"	60"	6"			2
7'-0"	1	3'-6"	3'-6"					6"	72"	6"			2
8'-0"	1	4'-0"	4'-0"					10 3/8"	75 3/8"	10 1/4"			2
9'-0"	1	4'-6"	4'-6"					16 3/8"	75 3/8"	16 1/4"			2
10'-0"	1	5'-0"	5'-0"					10 3/8"	99 3/8"	10 1/4"			2
11'-0"	1	5'-6"	5'-6"					16 3/8"	99 3/8"	16 1/4"			2
12'-0"	2	3'-0"	6'-0"	3'-0"				6"	66"	66"	6"		3
13'-0"	2	3'-6"	6'-0"	3'-6"				6"	72"	72"	6"		3
14'-0"	2	4'-0"	6'-0"	4'-0"				8 5/8"	75 3/8"	75 3/8"	8 5/8"		3
15'-0"	2	4'-6"	6'-0"	4'-6"				14 5/8"	75 3/8"	75 3/8"	14 5/8"		3
16'-0"	2	4'-0"	8'-0"	4'-0"				8 5/8"	75 3/8"	99 3/8"	8 5/8"		3
17'-0"	2	4'-6"	8'-0"	4'-6"				14 5/8"	75 3/8"	99 3/8"	14 5/8"		3
18'-0"	2	4'-0"	10'-0"	4'-0"				8 5/8"	99 3/8"	99 3/8"	8 5/8"		3
19'-0"	2	4'-6"	10'-0"	4'-6"				14 5/8"	99 3/8"	99 3/8"	14 5/8"		3
20'-0"	3	4'-0"	6'-0"	6'-0"	4'-0"			7"	75 3/8"	75 3/8"	75 3/8"	6 7/8"	4
21'-0"	3	4'-6"	6'-0"	6'-0"	4'-6"			13"	75 3/8"	75 3/8"	75 3/8"	12 7/8"	4
22'-0"	3	4'-0"	7'-0"	7'-0"	4'-0"			7"	75 3/8"	75 3/8"	99 3/8"	6 7/8"	4
23'-0"	3	4'-6"	7'-0"	7'-0"	4'-6"			13"	75 3/8"	75 3/8"	99 3/8"	12 7/8"	4
24'-0"	3	4'-0	8'-0"	8'-0	4'-0"			7"	75 3/8"	99 3/8"	99 3/8"	6 7/8"	4
25'-0"	3	4'-6"	8'-0"	8'-0"	4'-6			13"	75 3/8"	99 3/8"	99 3/8"	12 7/8"	4
26'-0"	4	4'-0"	6'-0"	6'-0"	6'-0"	4'-0"		7"	99 3/8"	99 3/8"	99 3/8"	6 7/8"	4
27'-0"	4	4'-6"	6'-0"	6'-0"	6'-0"	4'-6"		13"	99 3/8"	99 3/8"	99 3/8"	12 7/8"	4

EFFECTIVE SIGN HEIGHT "H"	SUPPORT ARM LENGTH "G"	APPROX. AIMING ANGLE	LAMP WATTS	ANSI LAMP CODE	BALLAST TYPE
3'-0" to 5'-0"	2'-9"	0°	100	H38-4HT	CMRI-100-(a)
5'-1" to 6'-6"	3'-3"	0°	175	H39-22KB	CMRI-175-(a)
6'-7" to 10'-0"	4'-3"	2°	175	H39-22KB	CMRI-175-(a)
10'-1" to 13'-0"	5'-9"	8°	250	H37-5KB	CMRI-250-(a)
13'-1" to 15'-0"	7'-3"	8°	250	H37-5KB	CMRI-250-(a)

(a) = OPERATING VOLTAGE (120V., 208V., 240V., 277V., OR 480V.)

BUREAU OF DESIGN SERVICES
OHIO DEPARTMENT OF HIGHWAYS

MERCURY VAPOR SIGN LIGHTING DETAILS

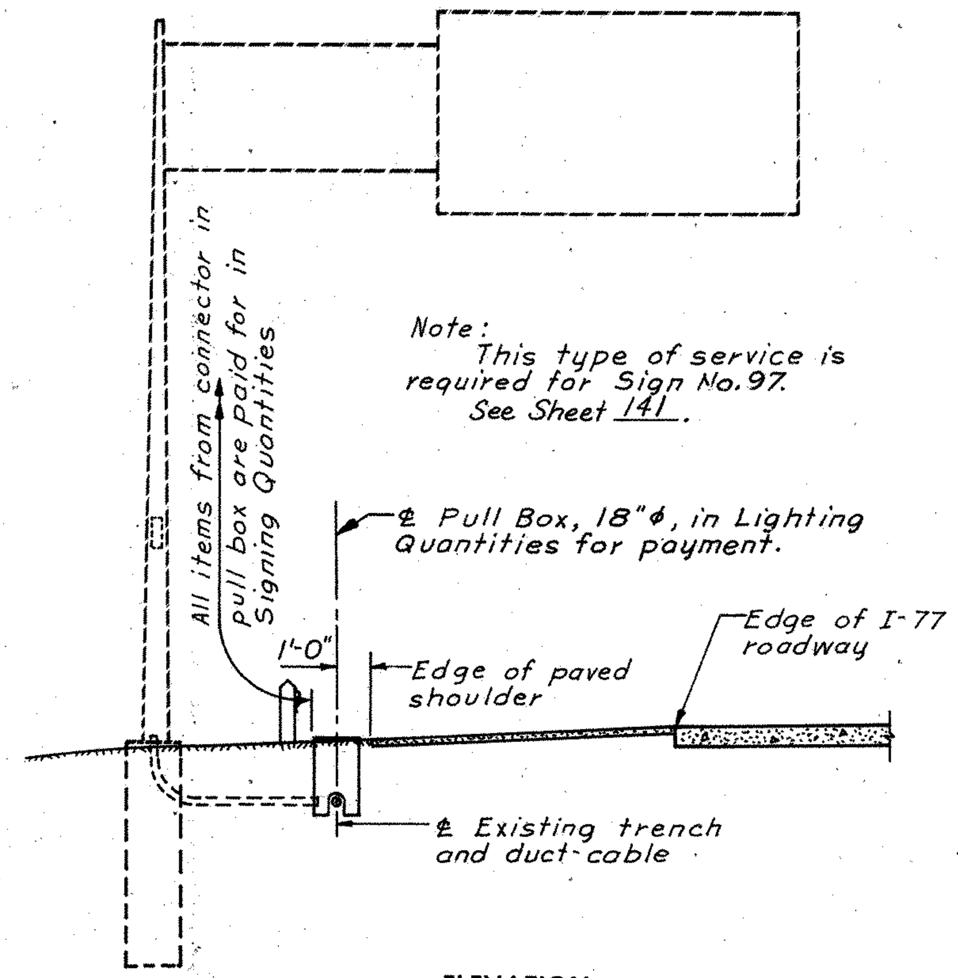
STANDARD CONSTRUCTION DRAWING

DATE 4-13-72

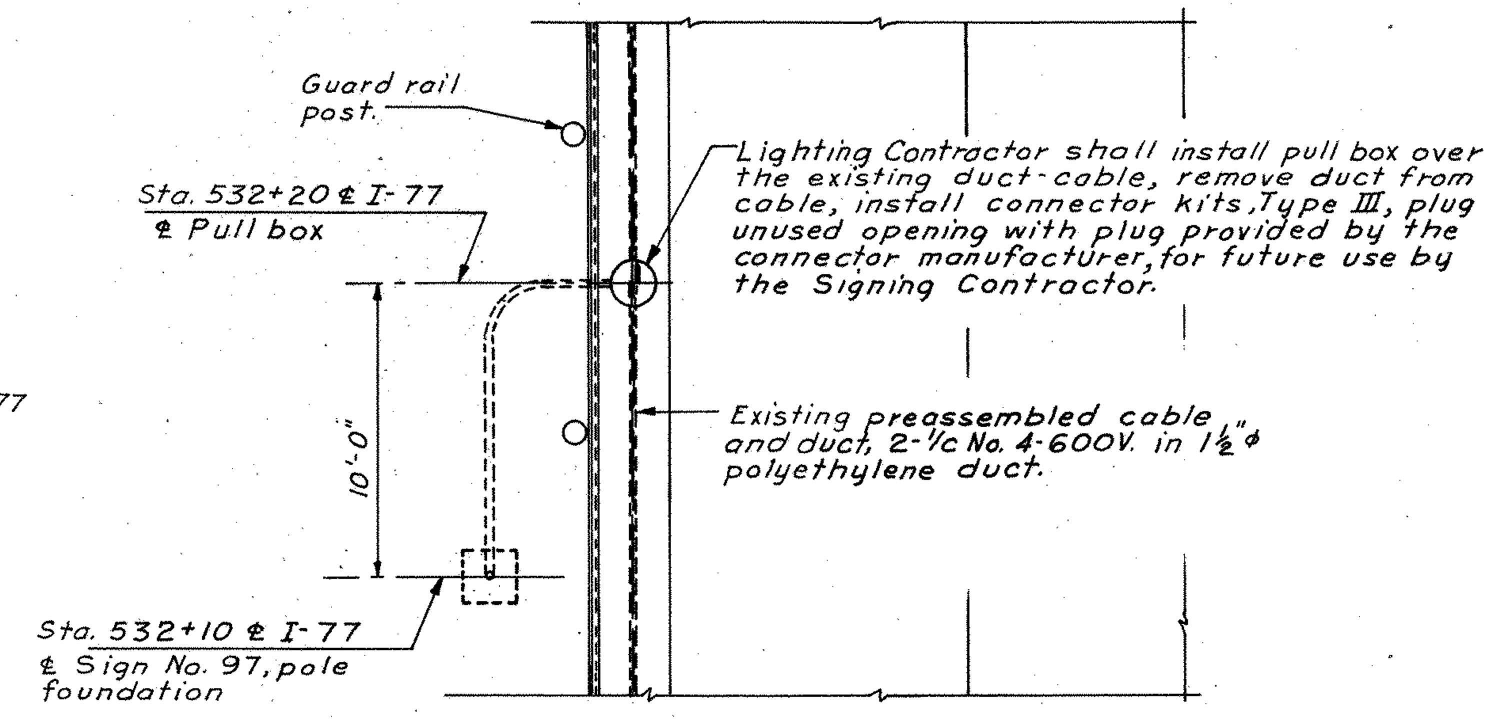
APPROVED ____________
ENGINEER OF DESIGN SERVICES

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	190
2	OHIO			389

STARK COUNTY
STA-30-14.12
STA-77-9.22



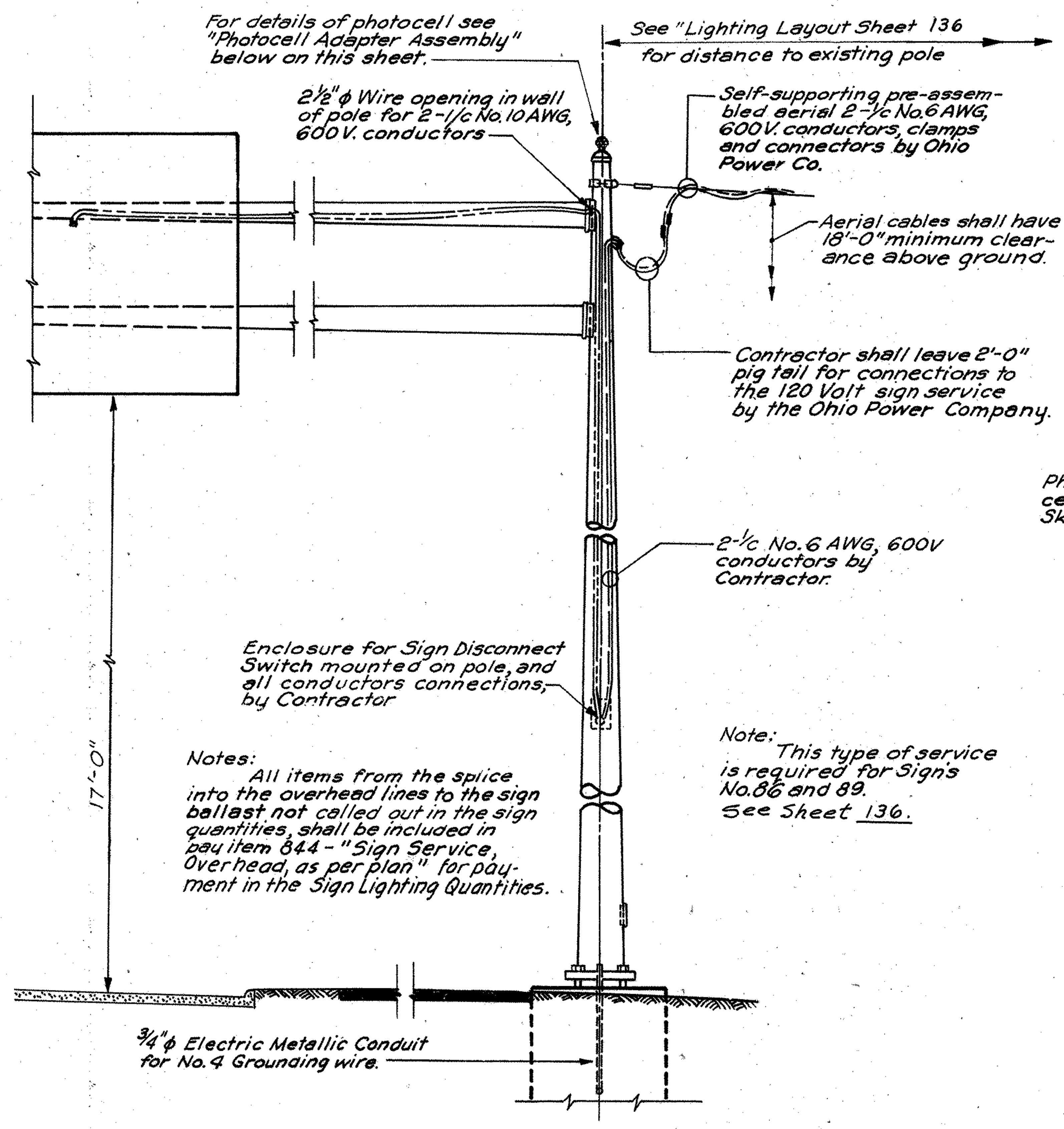
ELEVATION



PLAN

SIGN SERVICE FROM EXISTING ROADWAY LIGHTING CIRCUIT

No Scale



120V. OVERHEAD SIGN SERVICE

No Scale

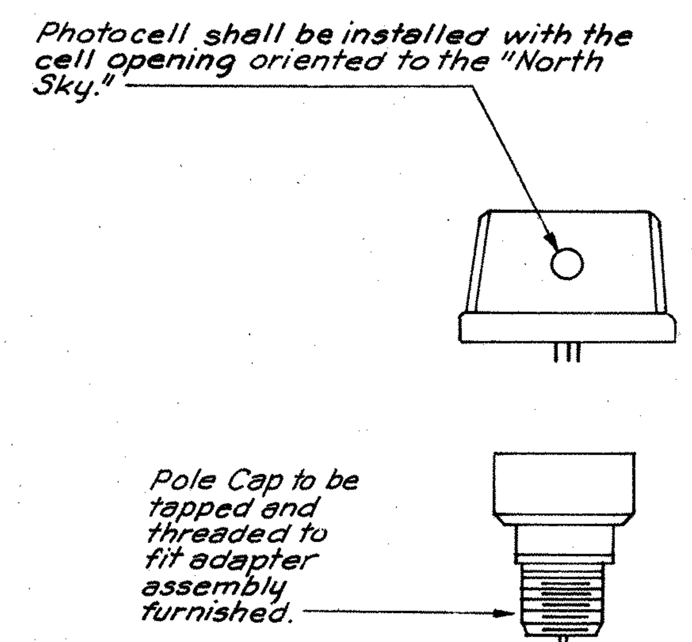


PHOTO CELL ADAPTER ASSEMBLY

No Scale

MADE W.G.P. DATE 8-27-75
TRACED D.A.C. DATE 8-28-75
CHECKED E.F.J. DATE 8-28-75
SCALE

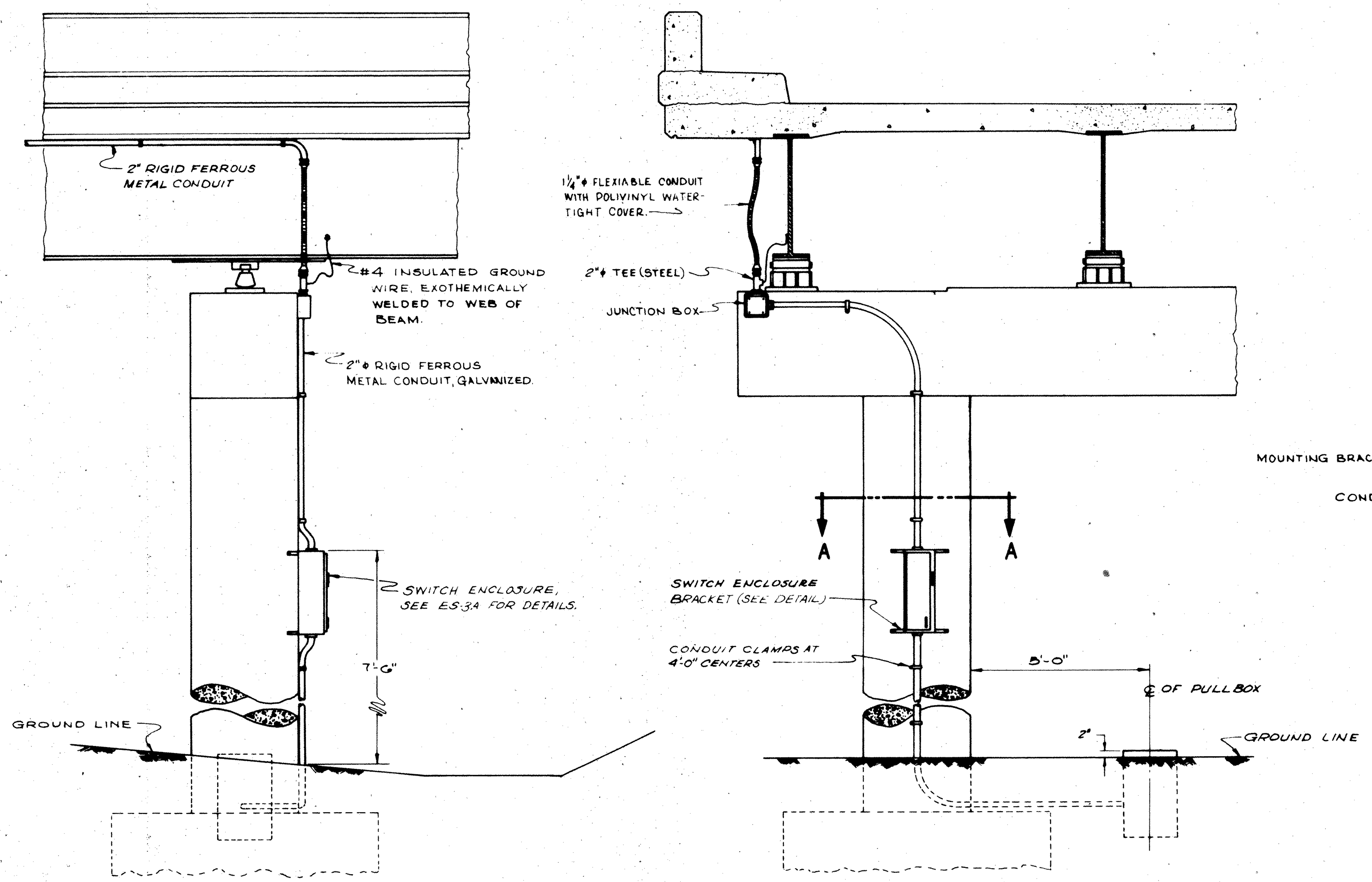
Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO

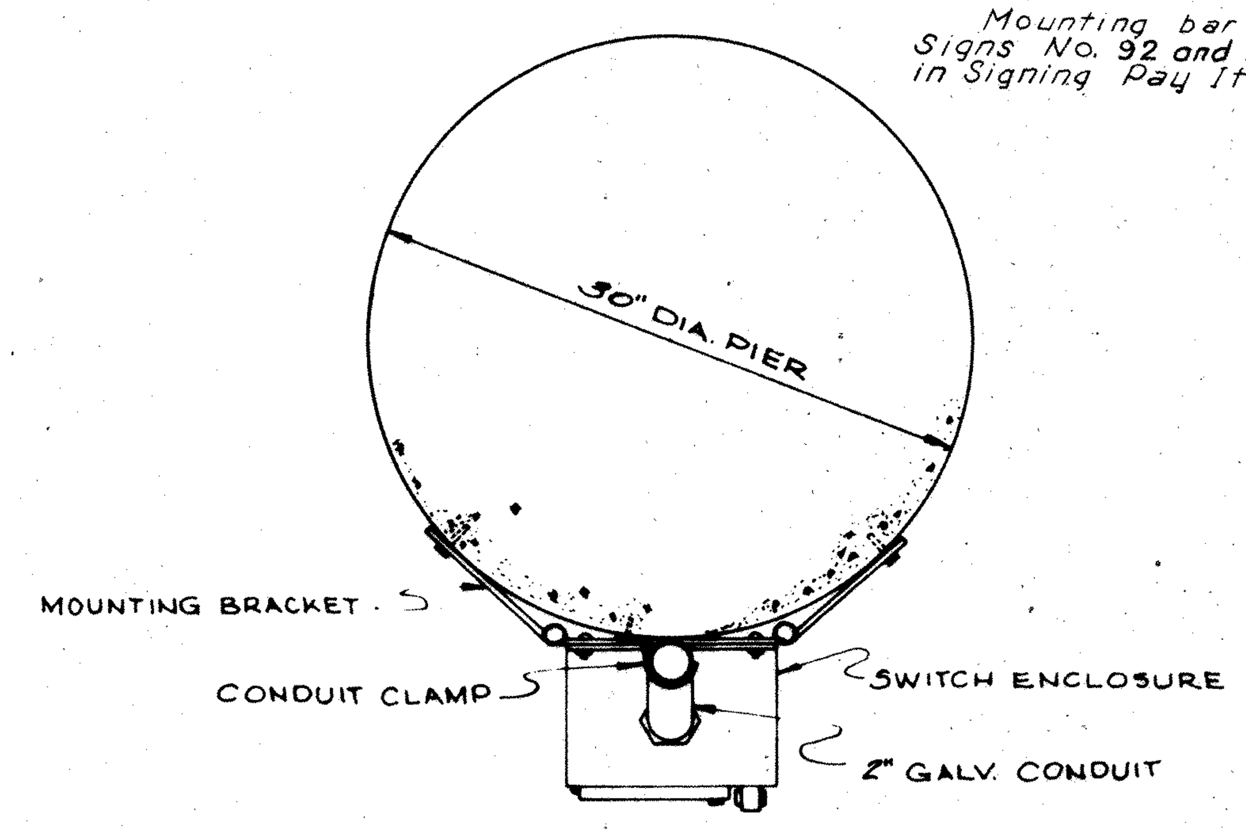
HNTB

SIGN ELECTRICAL SERVICE DETAILS

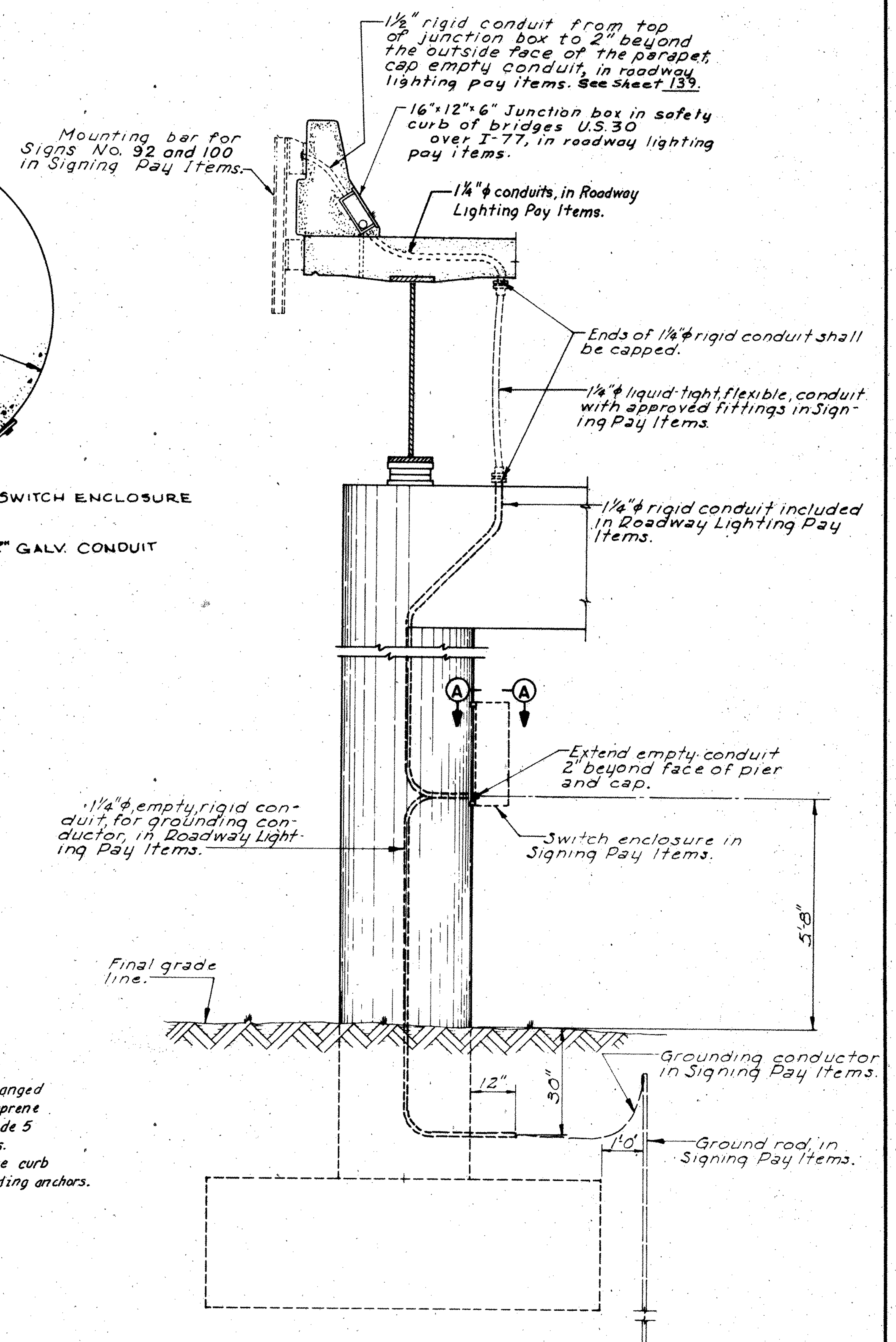
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22

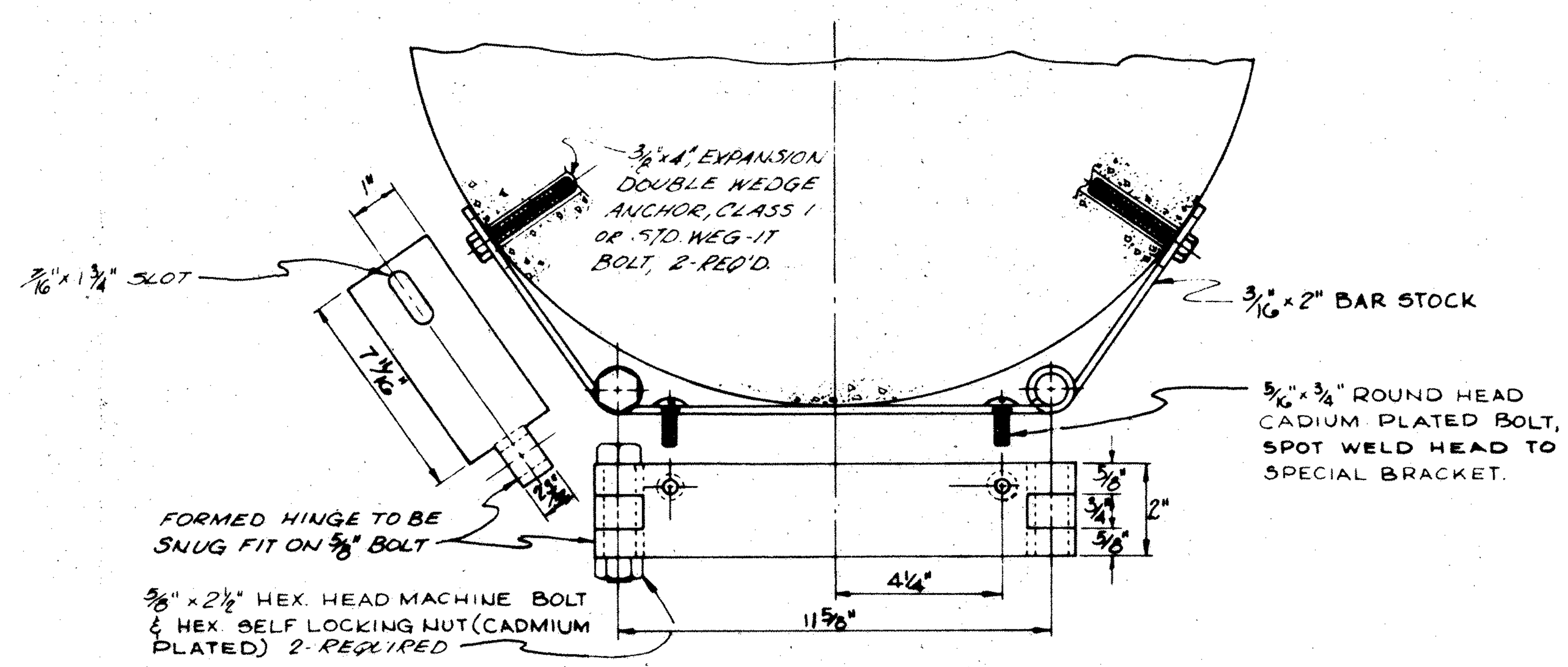




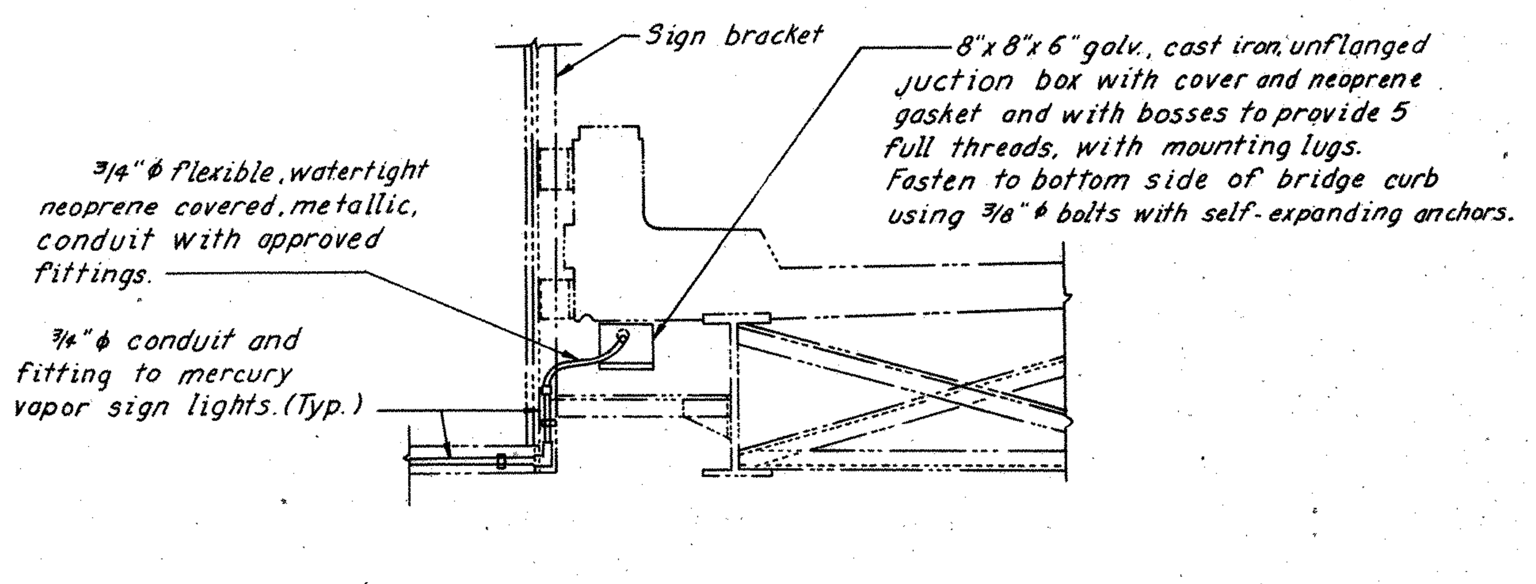
SECTION A-A



SIGN SERVICE - SIGN NO. 92
No Scale



ENCLOSURE MOUNTING BRACKET



SERVICE FOR SIGNS MOUNTED ON EXISTING OVERPASS STRUCTURE

MADE EFJ DATE 8-26-75
TRACED DBC DATE 8-26-75
CHECKED DATE
SCALE

Howard, Needles, Tammen & Bergendoff
CONSULTING ENGINEERS
CLEVELAND, OHIO

HNTB

STRUCTURE MOUNTED SIGN SERVICE DETAI

SIGN LIGHTING SUB-SUMMARIES

						844		844	844	844	844	844	844	844	844	844	625
SHEET NO.	ROADWAY	STATION	SIGN NO.	PANEL SIZE	SIGN WATTS	Disconnect Switch W/Enclosure		Signs Wired Overpass Structure Mounted	Signs Wired	Sign Service From Overhead Lines	Sign Service	Ballast Type CWRI-175-120	Ballast Type CWRI-175-480	Ballast Type CWRI-250-480	Mercury Vapor Luminaire w/175 Watt Lamp	Mercury Vapor Luminaire w/250 Watt Lamp	Ground Rod
						EACH		EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
	Harrison	31+00	86	13'x6'-0"	350	1*			1*	1*		2*			2*		1*
	Ramp T Conn.	923+60	87	10'x6'-6"	175	1*			1*		1*		1*		1*		1*
	Harrison	42+40	88A	10'x6'-6"	175	1*			1*		1*		1*		1*		1*
			88B	10'x6'-6"	175				1*				1*		1*		
	Harrison	49+00	89	13'x6'-0"	350	1*			1*	1*		2*			2*		1*
	U.S. 30 W.B.	935+83	90A	17'x9'-6"	350	1*			1*		1*		2*		2*		1*
			90B	17'x12'-0"	500				1*					2*		2*	
			90C	21'x8'-6"	525				1*				3*		3*		
	U.S. 30 E.B.	946+00	91A	17'x9'-6"	350	1			1		1		2		2*		1
			91B	21'x9'-6"	525				1				3		3*		
			91C	16'x9'-6"	350				1				2		2		
	I-77 S.B.	566+10+	92	19'x11'-6"	500	1		1			1			2		2	1
	U.S. 30 W.B.	944+87	93	18'x8'-6"	350	1			1		1		2		2		1
	Ramp F	957+55	94A	24' x 7'	525	1			1		1		3		3		1
			94B	17' x 7'-0"	350				1				2		2		
	Ramp E	959+50	95	18'x8'-6"	350	1			1		1		2		2		1
	U.S. 30 E.B.	959+00	96	16' x 12'	500	1			1		1			2		2	1
	I-77 N.B.	532+10	97	15'x9'-6"	350	1			1		1		2		2		1
	I-77 N.B.	549+60	98A	21'x9'-6"	525	1			1		1		3		3		1
			98B	15'x9'-6"	350				1				2		2		
			98C	18' x 7'	350				1				2		2		
	I-77 N.B.	562+43	100	18' x 9'	350	1		1			1		2		2		1
	I-77 N.B.	569+85	101	19' x 12'	500	1			1		1			2		2	1
	I-77 N.B.	22+40 (F)	103	19'x 12'		1											1
	I-77 S.B.	20+73.66 (F)	104	15' x 12'		1											1
	I-77 S.B.	576+00	105A	17'x9'-6"	350				1				2		2		
			105B	18'x9'-6"	350				1				2		2		
	Ramp A	963+63	106A	18' x 7'	350	1			1		1		2		2		1
			106B	18' x 7'	350				1				2		2		
	U.S. 30 E.B.	968+20	107	16' x 12'	500	1			1		1			2		2	1
	U.S. 30 E.B.	862+50	1	17'x8'-6"													
	U.S. 30 E.B.	912+61	15A	17'x9'-6"	350				1				2		2		
			15B	14' x 12'	500				1					2		2	
			15C	20' x 7'													
	SUB-TOTAL *					5*			8*	2*	3*	4*	8*	2*	12*	2*	5*
	SUB-TOTAL					14		2	20		12		37	10	37	10	14
	SHEET TOTAL					19		2	28	2	15	4	45	12	49	12	19

Notes:
Quantities are I-77-4(44)107 Participation (Normal)
except * Designates U-663(15) Participation
(F) Denotes Future by Others

1. DESIGN SPECIFICATIONS

The structures conform to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway Officials, 1969, including the Ohio "Supplement" to these specifications.

2. SUPPLEMENTAL CONSTRUCTION SPECIFICATIONS

Reference shall be made to Supplemental Specifications No. 808 (Water Reducing, Set-retarding Admixture) dated 1-1-71, 838 (Special Pile Test) dated 3-18-70, 836 (Concrete Curing and Protective Membrane) dated 3-12-75, and 927 (Self-Lubricating Bronze Bearing Plates) dated 1-1-71.

3. REFERENCE DRAWINGS

Reference shall be made to Standard Drawings Numbers RB-1-55 revised 2-2-59, BR-2-67 revised 10-15-71, SD-1-69 dated 6-12-69 (Sheet 1, 2, 3, and 4 of 4), AS-1-72 dated 6-30-72 (Sheets 1 and 2 of 2), and BR-1-67 (Sheets 1 and 3 of 3) revised 10-15-71.

4. DESIGN DATA

Design Loading - HS20-44 for all bridges and including the Interstate Alternate Loading for Bridge STA-30-1487, STA-30-1474 and STA-30-1504
Concrete Class C - basic unit stress 1,200 psi (for superstructure).
Concrete Class C - basic unit stress 1,333 psi (for substructure).
Structural Steel - ASTM A36 - basic unit stress 20,000 psi.
ASTM A-588 - basic unit stress 27,000 psi.
Reinforcing Steel - ASTM A615, A616 or A617 - basic stress unit 20,000 psi. Spiral reinforcement may be plain bars, ASTM A82 or A615.

5. DIMENSIONS

Dimensions given are measured horizontally and at 60 degrees F. unless otherwise shown.

6. UTILITIES

Any existing utility facilities encountered at the site of work which will interfere with portions of the finished expressway or structures will be removed or relocated by others unless otherwise shown on plans. All expense involved in relocating (installing) the affected utility lines shall be borne by the owner(s). The Contractor and Owner(s) are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum. The Contractor shall coordinate his operations with the work of the utility owners or others who may be making the relocations and shall notify the owners of the utilities of his schedule in advance to permit them to make the necessary alterations.

7. PILING

(All Bridges except STA-30-1492) Piles for abutments of all bridges shall be driven to a minimum bearing capacity of 45 tons per pile. Piles for piers of Bridges STA-30-1487, STA-30-1486, STA-30-1488, STA-30-1493, and STA-30-1489 shall be driven to a minimum bearing capacity of 50 tons per pile. All piles shall be 12" diameter cast-in-place reinforced concrete.

(Bridge STA-30-1492) All piles shall be HP 10 x 42 driven to refusal or 20 blows per inch for the last few inches of penetration.

8. EXCAVATION

(All Bridges) Excavation quantity includes the removal of fill material required for construction of the abutments, wingwalls and piers.

9. REINFORCING STEEL

All bars are designated on the plans by bar numbers. The bar size is designated by the first digit of three-digit numbers and by the first two digits of four-digit numbers.

The clear distance between reinforcing steel and face of concrete shall be 3" for all bars in footings, 2½" at bar mats under shoes and 2" elsewhere unless otherwise shown on the plans. The clear distance shall be measured from the inner face of surfaces with rustications.

All bar dimensions are given out to out.

All bars of a series shall vary by a constant increment.

10. WATERPROOFING

All contraction and expansion joints in back face of substructure against which earth is to be placed shall be waterproofed with a premolded sealing strip as shown on the plans.

11. LIGHTING NOTES

For lighting notes see Sheets 135 and 136.

12. INTERMEDIATE STIFFENERS

Intermediate stiffeners shall have a tight fit with the tension flange and may have either a tight fit or be welded to the compression flange with ¼" fillet weld. Tension flange areas are denoted by "T" on the girder elevation views of the framing plans.

The first two stiffener spaces at the simply supported ends of girders shall be at one-half the normal stiffener spacing.

13. CONSTRUCTION CLEARANCE

Construction clearance of 20 feet vertically above the top of the railroad rails and 8 feet horizontally from the center of the tracks shall be maintained at all times.

14. FOUNDATION BEARING PRESSURE

Pier footings for Bridges STA-30-1499, STA-30-1474, STA-30-1474R, STA-30-1474L and STA-30-1494 are designed for a maximum bearing pressure of 2.5 tons per sq. ft.

15. SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS (CVN)

Where a shape or plate is labeled "CVN", the material shall meet minimum notch toughness requirements in accordance with 711.01. The Fabricator shall submit to the Director a procedure designed for positive identification of material through all phases of fabrication. No material shall be fabricated until the Director has approved the procedure.

16. BEARING ANCHORS

At the option of the Contractor, bearing anchors (or formed holes), located and supported by templates, may be cast in place.

17. STEEL ERECTION

During the erection of end dams and crossframes, care shall be taken to insure that stringers, bearing parts and bridge seats remain in bearing contact.

18. BACKWALL CONCRETE

In addition to the provisions of 511.08, backwall concrete shall not be placed until after the deck concrete in the span adjacent to the backwall has been placed.

19. SHOULDER DELINEATION

Shoulder areas of the bridge decks shall be delineated by means of a bituminous seal coat using 0.0075 cubic yards of No. 9 aggregate per square yard and 0.25 gallon per square yard of 702.02, MC-800 or MC-3000: 702.03, CBAE 800: 702.04, RS-1, RS-2, or CRS-1, CRS-2, or 702.09, RT-9 or RT-10.

20. PLACING DECK CONCRETE AT INTERMEDIATE EXPANSION JOINTS

Blockouts shall be provided in the concrete deck, 5 ft. on each side of the expansion joints. Set expansion joints after the deck (with the exception of the blocked out areas) is poured on each side of the joint. Attach the end dam parallel to the deck surface and complete the pours in the blocked out areas.

21. HORIZONTALLY CURVED GIRDERS

The horizontal curvature for the girders of Bridges STA-30-1488, STA-30-1489 and STA-30-1493 may be obtained by cutting or by a heat-curve process. If curvature is obtained by a heat-curve process the girder deflections, cambers and gutterline elevations shall be adjusted in accordance with Article 1.7.116 of the 1974 Interim Specifications and with Errata No. 6, printed on Page 100 of the 1975 Interim to the "Standard Specifications for Highway Bridges," Eleventh Edition, adopted by the American Association of State Highway and Transportation Officials.

22. END DAMS AND SCUPPERS

Steel bar stock utilized for end dams and scuppers may be any weldable grade of low or mild carbon steel available commercially. This material is to be excluded from the requirements of 501.07 for test reports.

23. SLIDING PLATE INTERMEDIATE EXPANSION JOINT WITH NEOPRENE TROUGH

A. Description

This work shall include the fabrication and erection of all sliding plate expansion joints with neoprene troughs and hoses in accordance with the plans and specifications.

B. Materials

(a) Structural Steel - ASTM A36 - Unit stress 20,000 psi
(b) Nylon Reinforced Neoprene Sheet (trough and hose) - DuPont's Fairprene NN-0003, 1/32" thick or an approved equal.
The one-ply material shall conform to ASTM D751 and the following:

Tensile Strength Grab method Pounds	1000 x 1000
Warp X Fill, Minimum	
Mullins Burst, psi, minimum	1400
Heat Aging 70 Hours @ 212°F, 180° Bend, ⅛ Rod	No Cracking

(c) Adhesives and Primers (Neoprene Sheet to Steel)
The adhesives and primers shall conform with the pertinent provisions of sheet 365E.

C. Fabrication

Trough shop drawings shall be prepared to control the work. They shall be submitted for approval prior to the begining of trough fabrication.

Trough shall be preformed in the shop to conform with the trough shape shown in Section A-A on Sheet 356.

All joints or seams in the trough shall be lap spliced nylon reinforced neoprene sheets which shall extend at least 1½ inches on both sides of each joint. Splices shall be vulconized bonded under heat and pressure in the shop.

Ends of troughs shall be bonded together with the end reinforced as described above for joints or seams. Bonded sections shall be located at least 6" to 9" beyond the curb line.

Holes in the troughs shall be located with the aid of a template furnished by the structural steel fabricator.

D. Installation

Prior to final assembly in the field the surfaces of the neoprene & steel which are to be compressed together shall be prepared to conform with the approximate provisions on sheet 365E. The installation shall conform in essential respects to these provisions.

E. Measurement

Payment for accepted quantities shall be the actual number of linear feet of sliding plate intermediate expansion joints complete and in place. This payment shall include the cost of all labor, materials and equipment necessary for fabrication and erection of the structural steel components, and the cost of furnishing and placing the neoprene troughs and hoses including adhesives, support angles and bolts.

F. Payment

Payment will be made at the contract unit price bid for Item Special, Sliding Plate Intermediate Expansion Joint With Neoprene Trough.

H.N.T.B. Bridge No. 1 = State Bridge No. STA-30-1474
H.N.T.B. Bridge No. 5 = State Bridge No. STA-30-1474R
H.N.T.B. Bridge No. 15 = State Bridge No. STA-30-1474L
H.N.T.B. Bridge No. 2 = State Bridge No. STA-30-1487
H.N.T.B. Bridge No. 6 = State Bridge No. STA-30-1486
H.N.T.B. Bridge No. 7 = State Bridge No. STA-30-1488
H.N.T.B. Bridge No. 8 = State Bridge No. STA-30-1499
H.N.T.B. Bridge No. 9 = State Bridge No. STA-30-1494
H.N.T.B. Bridge No. 13 = State Bridge No. STA-30-1493
H.N.T.B. Bridge No. 14 = State Bridge No. STA-30-1489
H.N.T.B. Bridge No. 10 = State Bridge No. STA-30-1504
H.N.T.B. Bridge No. 22 = State Bridge No. STA-30-1492

Revised 7-25-75 By RAS

H.N.T.B BRIDGE NO. 1, 2, 5, 6, 7, 8, 9, 10, 13, 14, 15, 22

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

GENERAL NOTES

RELOCATED U.S. 30

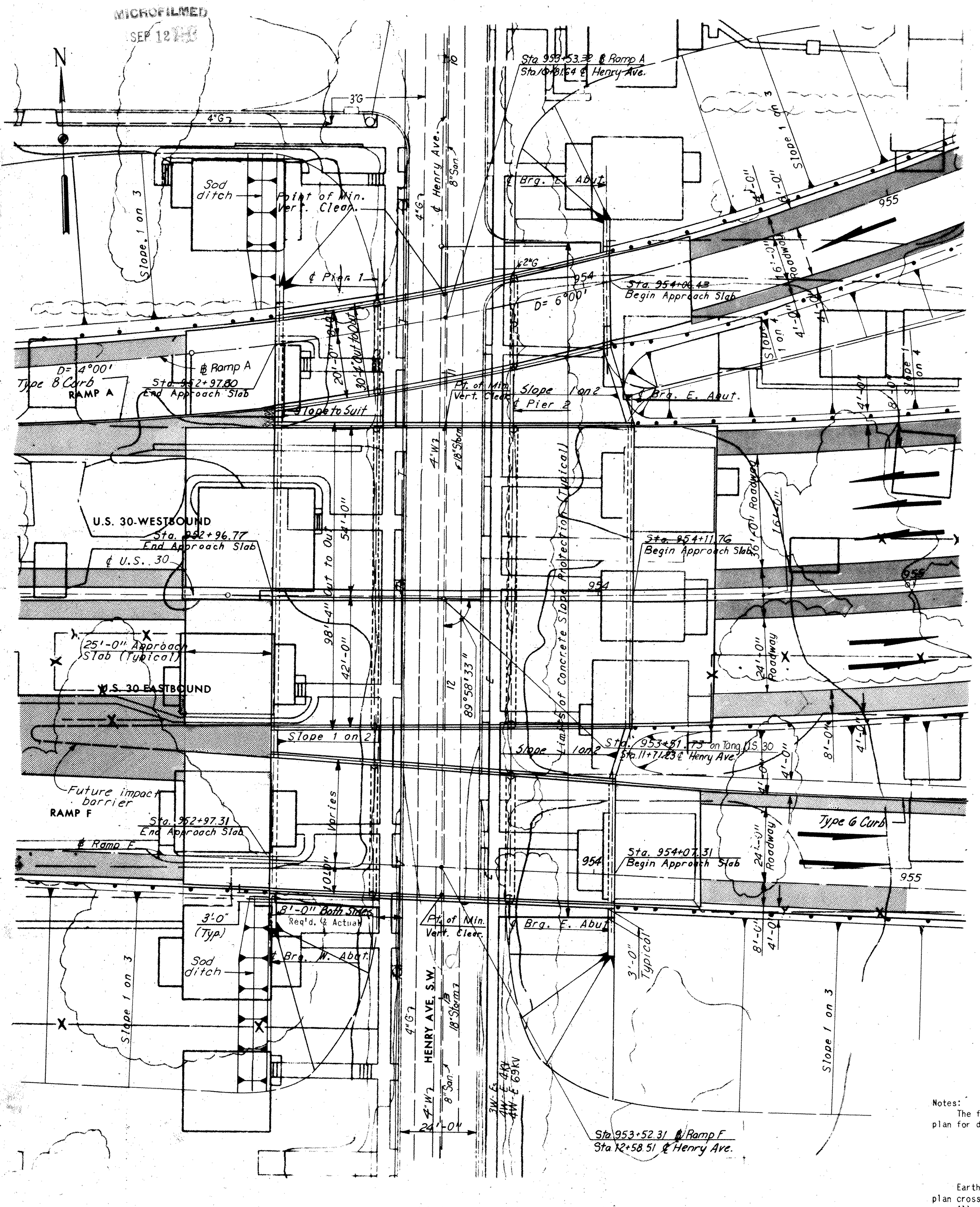
CANTON STARK COUNTY OHIO

DRAWN DGS	TRACED	CHECKED DWB	REVIEWED MJK	REVISED 3-2-76
DATE 3-4-70	DATE	DATE 6-29-70	DATE 11-22-71	1668

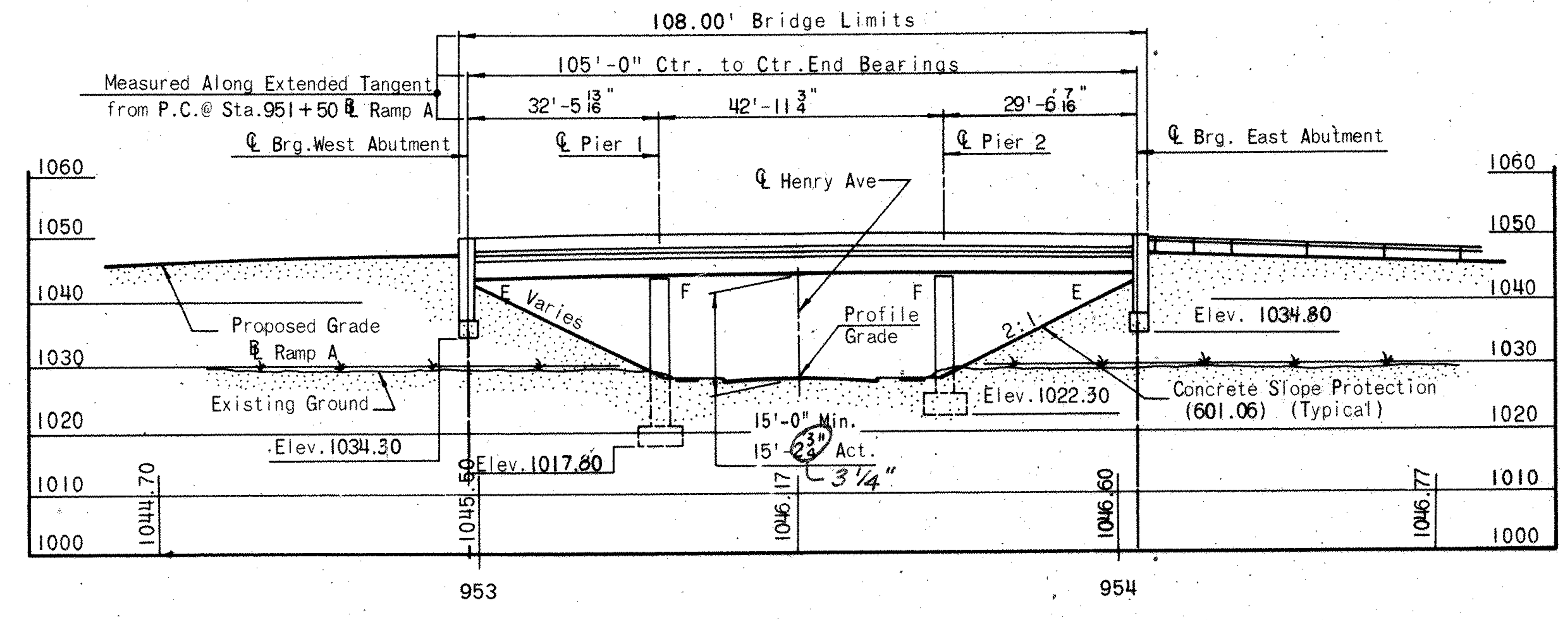
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

215
389

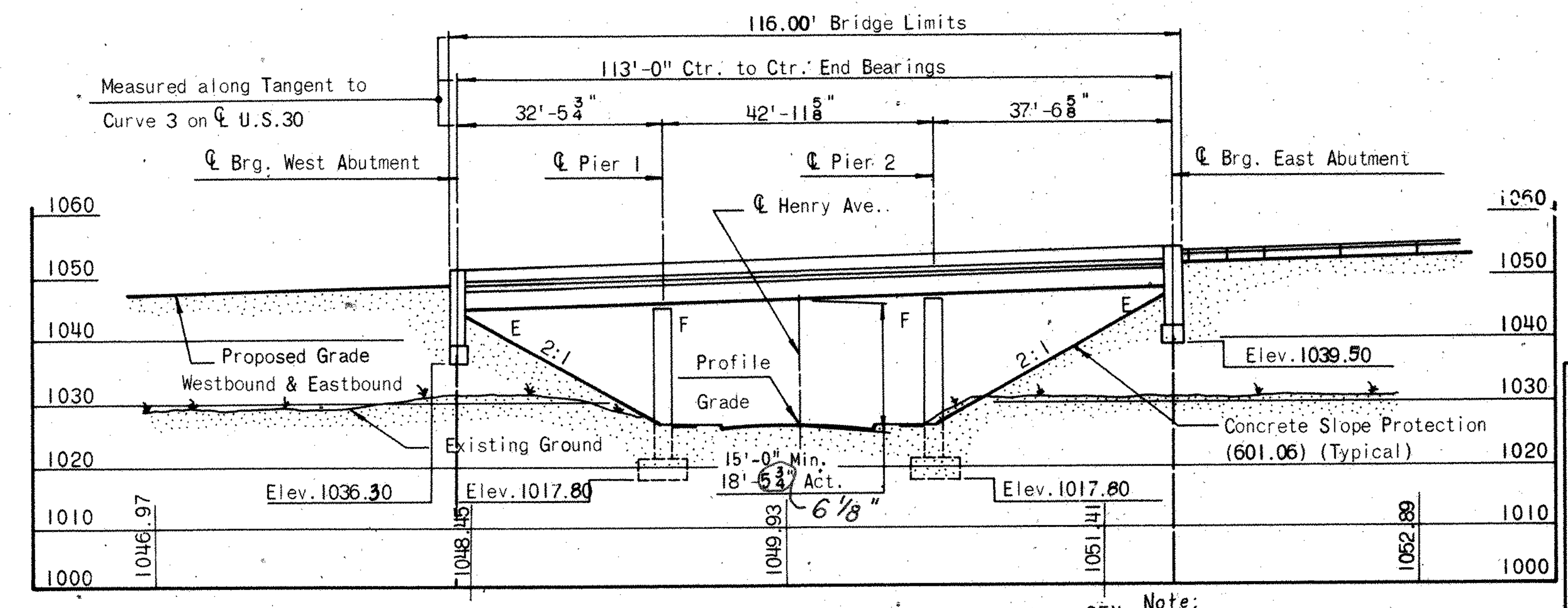
STARK COUNTY
STA-30-14.12
STA-77-9.22



PLAN

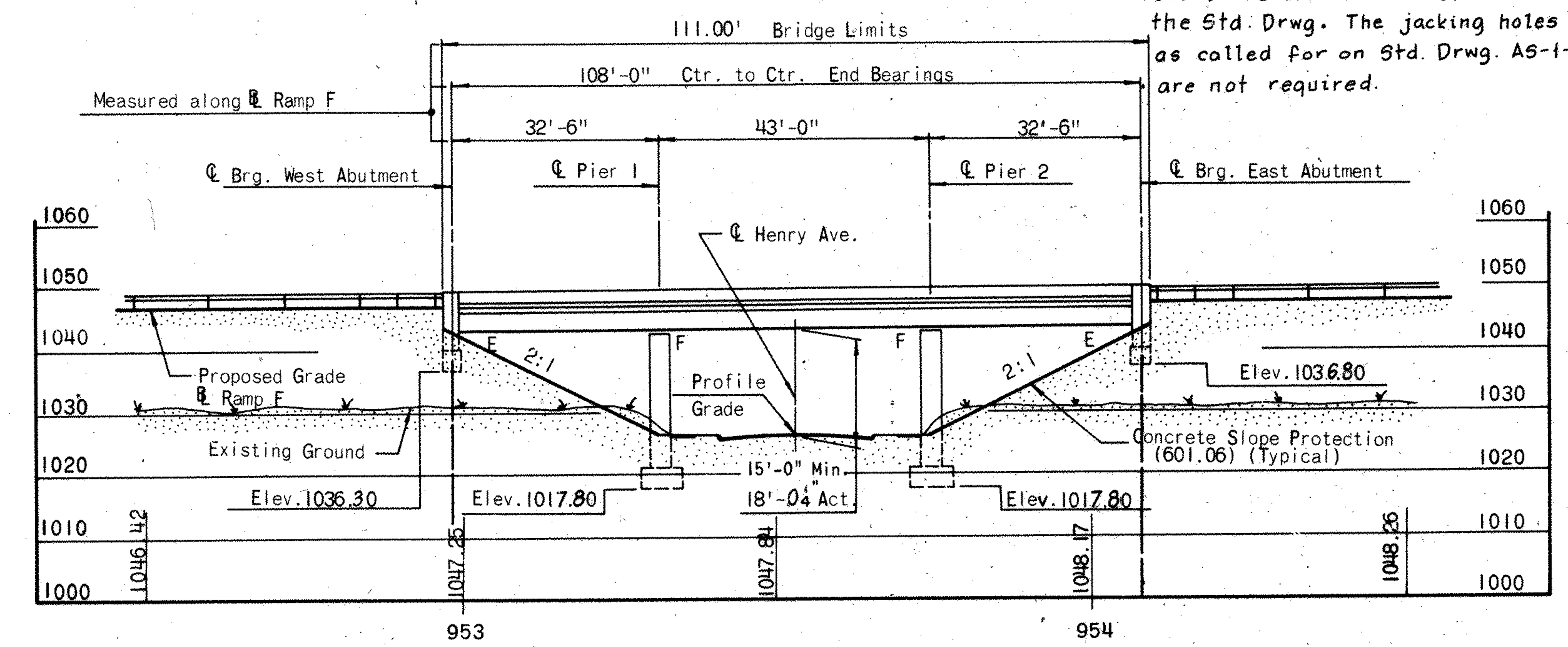


ELEVATION RAMP 'A'
STA-30-1474L



ELEVATION U.S. 30
STA-30-1474

Note:
Modify Std. Drwg. AS-1-72 by providing 3" clear over the top rebars instead of the 2" shown on the Std. Drwg. The jacking holes as called for on Std. Drwg. AS-1-72 are not required.



ELEVATION - RAMP 'F'
STA-30-1474R

PROPOSED STRUCTURE — RAMP 'A'

Type: Continuous Rolled Beams with Reinforced Concrete Slab.
Spans: 32'-5 13/16", 42'-11 3/4" and 29'-6 7/16" measured along extended tangent from P.C @ Sta. 951+50
Roadways: 28'-0" face to face of parapets
Loading: HS20-44
Skew: 11° 09' Lt. to tangent at Sta.953+53.3
Wearing Surface: 2½" Asphalt Concrete
Approach Slabs: AS-1-72 (25' Long) (Modified)
Alignment: 6° 00' Curve Left
1987 ADT: 13,981

PROPOSED STRUCTURE — U.S. 30

Type: Continuous Rolled Beams with Reinforced Concrete Slab
Spans: 32'-5 3/4", 42'-11 5/8", and 37'-6 5/8" measured along tangent to Curve 3 on ℄ U.S.30
Roadways: 96'-0" face to face of parapets including 3'-0" Median Barrier
Loadings: HS20-44
Skew: None
Wearing Surface: 2½" Asphalt Concrete
Approach Slabs: AS-1-72 (25' Long) (Modified)
Alignment: Spiral (Lt.)
1987 ADT: 21,891 W.B., 18,853 E.B.

PROPOSED STRUCTURE — RAMP 'F'

Type: Continuous Rolled Beams with Reinforced Concrete Slab.
Spans: 32'-6", 43'-0" and 32'-6" measured along ℄ Ramp F
Roadways: Varies; 40'-0½" to 43'-7¾" face to face of parapets along ℄ Bearing
Loadings: HS20-44
Skew: 2°15' Rt.
Wearing Surface: 2½" Asphalt Concrete
Approach Slabs: AS-1-72 (25' Long) (Modified)
Alignment: Tangent
1987 ADT: 16,919

EXISTING UTILITY LEGEND

4"G	GAS
4"W	WATER
16" Storm	STORM SEWER
8" San	SANITARY SEWER
T	TELEPHONE
E	POWER LINES
4W-E4KV	4 WIRE, PRIMARY 4 KILOVOLT
3W-Es	3 WIRE, SECONDARY
ʊ	WATER HYDRANT
o	MANHOLE
□	CATCH BASIN

Notes:
The following items are not included in the bridge plans. See roadway plan for details:
1. Relocation or removal of existing utilities.
2. Approach grading, pavements and slabs.
3. Guardrails.
4. Sod ditches.
5. Henry Avenue side walks.

Earthwork limits shown are schematic. Actual slopes shall conform to plan cross-sections.
All piling in abutments shall be 12" ø C.I.P.C. piles driven to 45 tons capacity. Estimated average pay lengths are 70 feet for West abutment and 82 feet for East abutment.
Embankments shall be constructed to the level of the subgrade for a minimum distance of 200 feet back of the abutments. Excavation shall then be made for the abutments and piers.

H.N.T.B. BRIDGE NOS. 1,5 AND 15 | Revised 6-13-75 | By W.E.B

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK | 1 / 18

SITE PLAN

BR. NO. STA. - 30-1474 — STA. 952+96.77
BR. NO. STA. - 30-1474R — STA. 954+11.76
BR. NO. STA. - 30-1474L
SCALE: 1" = 20'-0"

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
K.T.B. DATE 3-10-69	W.G.B. DATE 3-11-69	J.B.C. DATE 3-11-69	M.J.K. DATE 11-23-71	

1668

Revised 4-28-77

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

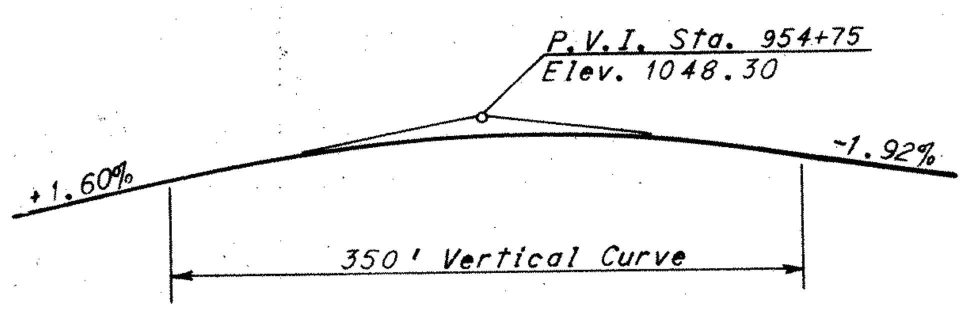
216 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

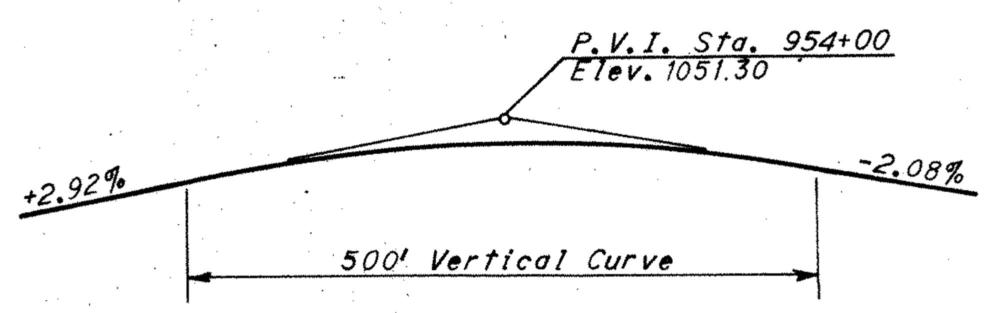
ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	BRIDGE STA.-30-1474 US-30						BRIDGE STA.-30-1474R RAMP F						BRIDGE STA.-30-1474L RAMP A					
				ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL			ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL			ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL		
404	138	Cu.Yd.	Asphalt Concrete, AC-20			81						34						23			
409	6	Cu.Yd.	Seal Coat Cover Aggregate, No. 9			3						2						1			
409	183	Gallon	Seal Coat Bituminous material : 702.02, MC-800 or																		
			MC-3000; 702.03, CBAE 800: 702.04, RS-1, RS-2 or																		
			CRS-1, CRS-2, or 702.09; RT-9 or RT-10.			101						50						32			
503	1,882	Cu. Yd.	Unclassified Excavation	253	766					179	324					160	200				
503	Lump Sum	Lump Sum	Cofferdams, Cribs and Sheeting				Lump Sum						Lump Sum						Lump Sum		
505	Lump Sum	Lump Sum	Test Pile*				Lump Sum						Lump Sum						Lump Sum		
507	4,975	Lin. Ft.	12" ø Cast-in-Place Reinforced Concrete Piles	2,103						1,520						1,352					
509	330,983	Pounds	Reinforcing Steel	15,109	61,894	111,286				9,278	23,841	50,490				7,313	15,961	35,811			
511	704	Cu. Yd.	Class "C" Concrete, Superstructure			391						178						135			
511	263	Cu. Yd.	Class "C" Concrete, Pier Caps and Columns		148						65						50				
511	242	Cu. Yd.	Class "C" Concrete, Abutments (Above Footings)	107						72						63					
511	481	Cu. Yd.	Class "C" Concrete, Footings	67	183					50	79					44	58				
512	368	Lin. Ft.	Premolded Sealing Strip	204						95						69					
513	303,600	Pounds	Structural Steel (ASTM A36)			176,000						74,700						52,900			
514	303,600	Pounds	Field Painting of Structural Steel			176,000						74,700						52,900			
516	314	Sq. Ft.	¼" Preformed Expansion Joint Filler	174						81						59					
516	232	Sq. Ft.	½" Preformed Expansion Joint Filler	114						65						53					
516	570	Sq. Ft.	1" Preformed Expansion Joint Filler	90	127					119	64					107	63				
518	902	Lin. Ft.	Subdrainage for Wearing Course, As Per Plan			460						222							220		
518	251	Cu. Yd.	Porous Backfill	119						72						60					
518	447	Lin. Ft.	6" Perforated Helical C.M.P. 707.01	202						127						118					
518	85	Lin. Ft.	6" Non-Perforated Helical C.M.P. including Specials, 707.01	17						34						34					
601	1723	Sq. Yd.	Concrete Slope Protection 601.06				896						456						371		
625			See Sheet 137 For Lighting Summary																		
808	704	Units	Chemical Admixture for Concrete, Type A, B or D.			391						178						135			
838	9	Hours	Special Pile Test				3						3						3		
Spec.	1982	Sq. Yds.	Membrane Waterproofing (See Proposal Note)			1169						493						320			

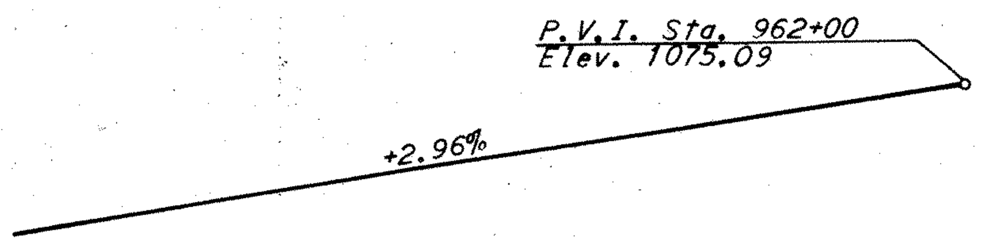
*Test pile may be driven at Sta.-30-14.74, Sta-30-14.74R or Sta.-30-14.74L



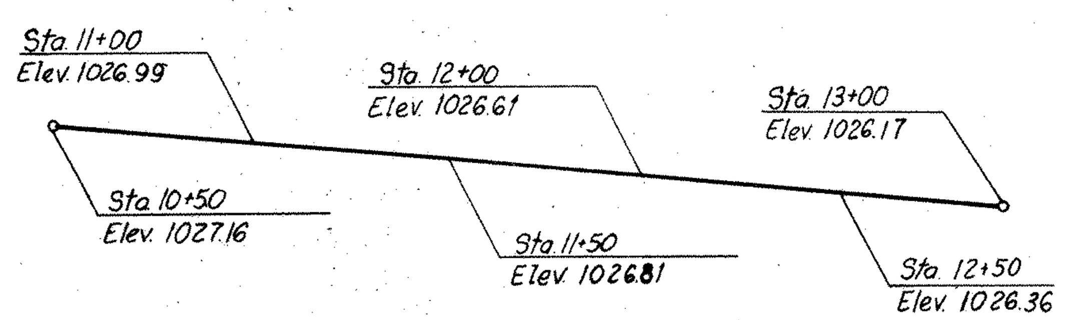
PROFILE GRADE-RAMP A



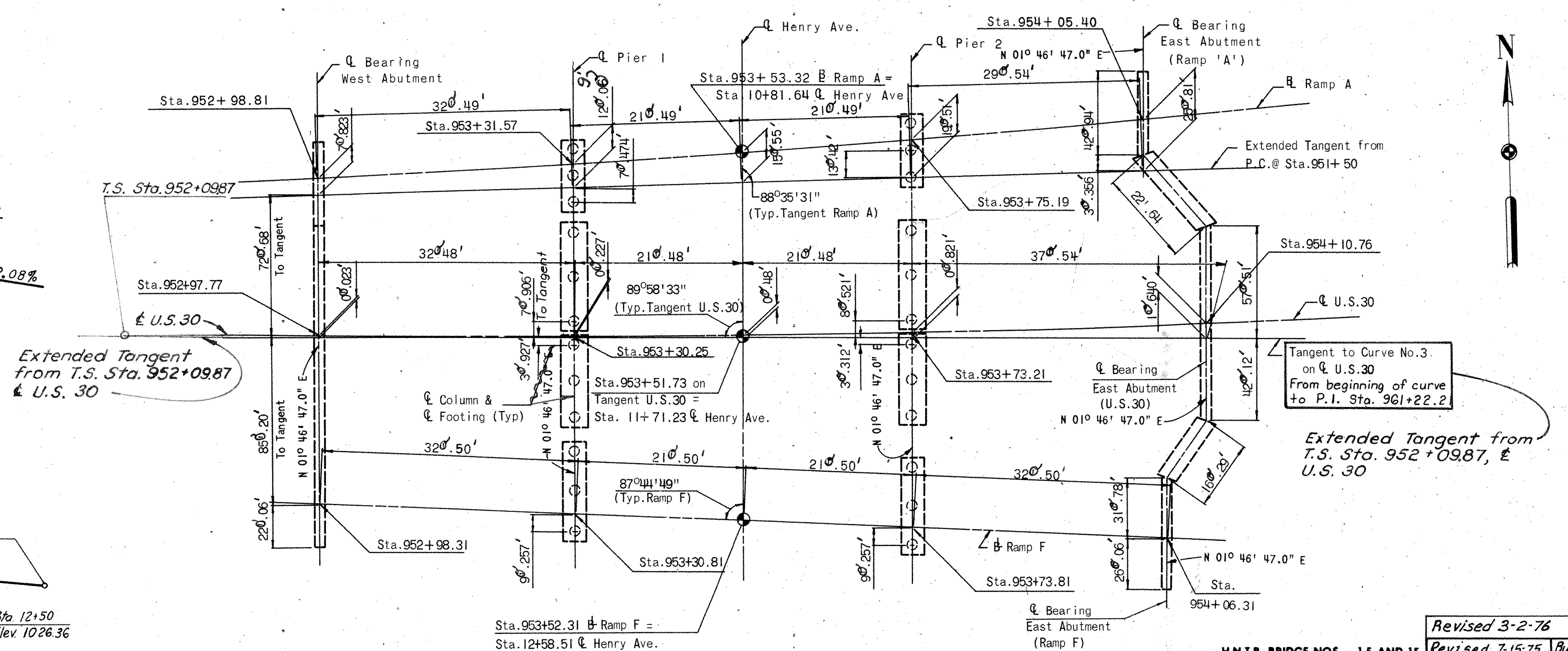
PROFILE GRADE-RAMP F



PROFILE GRADE-U.S. 30



PROFILE GRADE-HENRY AVE.



SUBSTRUCTURE LAYOUT DIAGRAM

Revised 3-2-76	
H.N.T.B. BRIDGE NOS. 1,5 AND 15 — Revised 7-15-75	By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 2 / 18
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PROFILES, SUBSTRUCTURE LAYOUT DIAGRAM & ESTIMATED QUANTITIES

BR. NO. STA. - 30-1474 — STA. 952+96.77
BR. NO. STA. - 30-1474R — STA. 954+11.76
BR. NO. STA - 30-1474L
SCALE: NO SCALE

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN K.T.B.	TRACED J.M.W.	CHECKED J.B.C.	REVIEWED MJK	REVISED 3-2-76
DATE 3-7-69	DATE 3-14-69	DATE 3-13-69	DATE 11-22-71	1668

Revised 4-28-77

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			217 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

Notes:
All piles shall be 12" ⌀ C.I.P.C.
The following abbreviation is used:
e.f. - each face.
Section A-A and B-B are similar for all three bridges.
6" C.M.P. shall be perforated only within limits of porous backfill.
See deck plans for abutment details above beam seats.
For reinforcement schedule see sheets 9, 13, 17 / 18.

H.N.T.B. BRIDGE NOS. 1,5 AND 15 *Revised 6-16-75 By W.E.B.*

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 3 / 18
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

WEST ABUTMENTS

BR. NO. STA. - 30-1474 STA. 952+96.77
BR. NO. STA. - 30-1474R STA. 954+11.76
BR. NO. STA. - 30-1474L

SCALE: 1" = 10'-0"

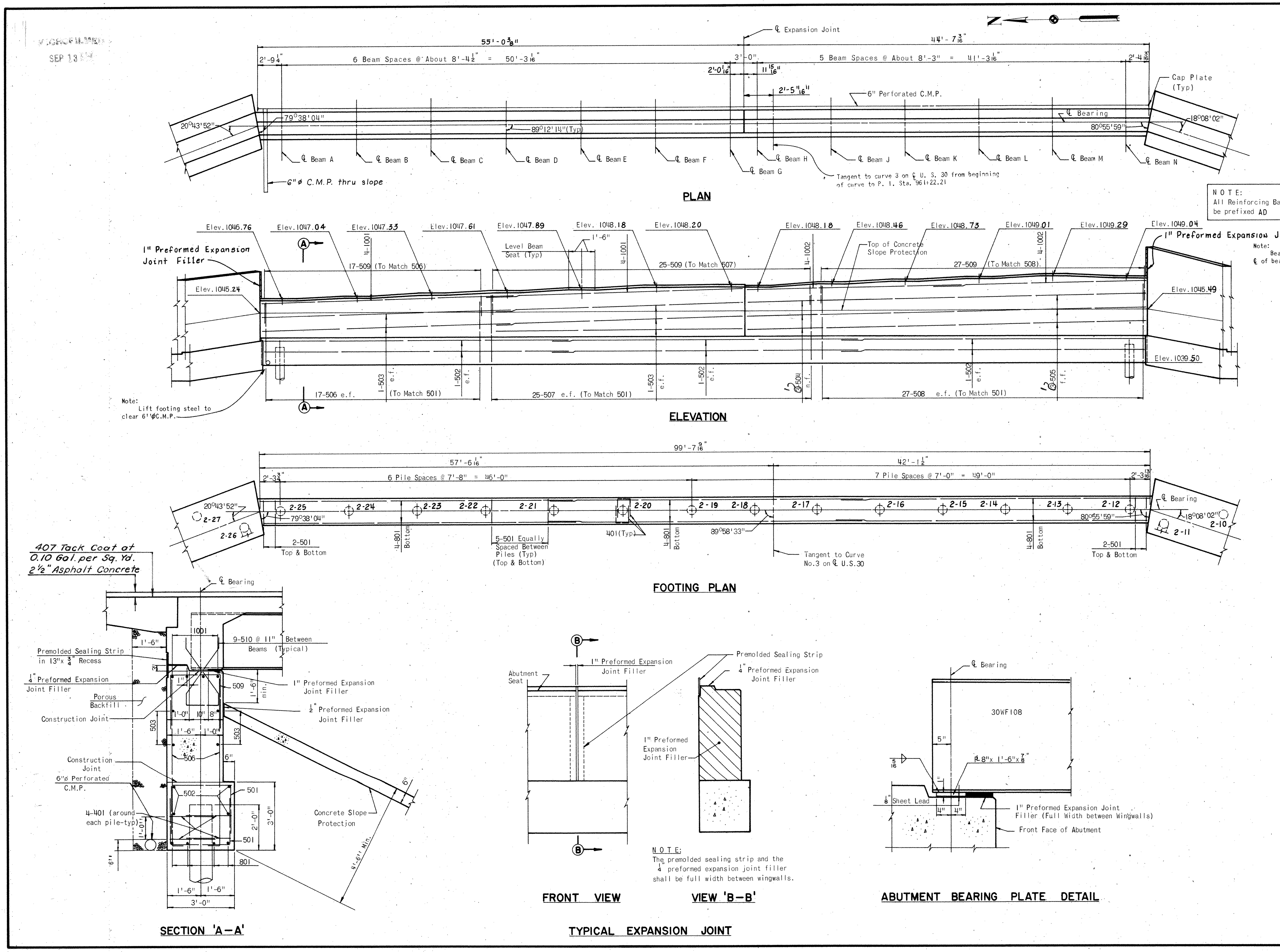
RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
K.T.B. DATE 2-21-69	J.M.W. DATE 3-6-69	J.A.H. DATE 3-4-69	MJK DATE 11-22-71	1668

Revised 4-28-77

STARK COUNTY
STA-30-14.12
STA-77-9.22



NOTE:
All Reinforcing Bar Marks shall be prefixed AD

NOTE:
The premolded sealing strip and the ¼" preformed expansion joint filler shall be full width between wingwalls.

Notes:
All piles shall be 12" φ C.I.P.C.
The following abbreviations are used:
e.f. = each face
n.f. = near face
f.f. = far face
For details of Wingwalls between the East Abutments of U.S. 30 and Ramps A and F. see Sheet 5/18
6" C.M.P. shall be perforated only within limits of porous backfill.
See deck plans for abutment details above beam seats.
For reinforcing schedule see Sheet 9/18
For details of C.M.P. at outlet see Sheet 3/18

H.N.T.B. BRIDGE NO. 1 — Revised 6-16-75 By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 4/18

EAST ABUTMENT

U.S. 30 OVER HENRY AVE.
BR. NO. STA-30-1474 — STA. 952+96.77
SCALE: NO SCALE — STA. 954+11.76

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
K.T.B. DATE 3-3-69	J.M.W. DATE 3-5-69	J.A.H. DATE 3-13-69	MJK DATE 11-22-71	1668

Revised 4-28-77

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

NOTE:
All Reinforcing Bar Marks shall be prefixed as follows:
Ramp 'F' – A E
Ramp 'A' – A F

Notes:
For Expansion Joint Details see Sheet 4/18.
For Abutment Bearing Plate Details see Sheet 4/18.
For other notes see Sheet 4/18.
For reinforcing schedule see Sheets 13, 17/18.

H.N.T.B. BRIDGE NOS. 5 AND 15 — *Revised 6-16-75 By W.E.B.*

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 5 / 18
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

EAST ABUTMENTS
RAMP 'A' & RAMP 'F'

BR. NO. STA. - 30-1474R — STA. 952+97.31
BR. NO. STA. - 30-1474L — STA. 954+07.31

SCALE: NO SCALE

RELOCATED U.S. 30

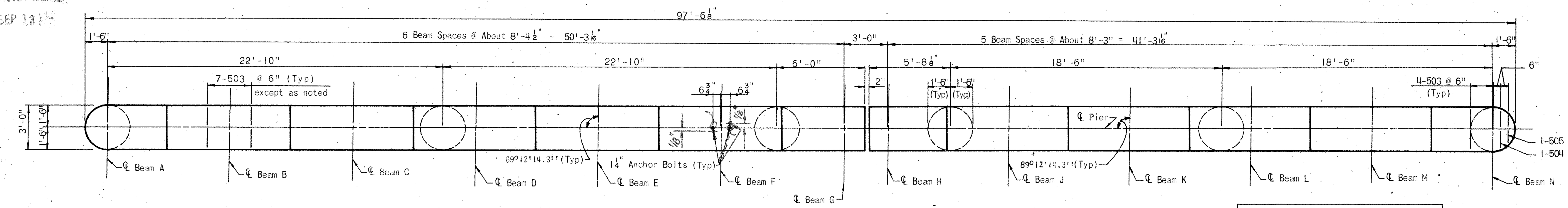
CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
J.B.C. DATE 3-3-69	W.G.B. DATE 3-10-69	J.A.H. DATE 3-6-69	MJK DATE 11-22-71	1668

Revised 4-28-77

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			220 / 389

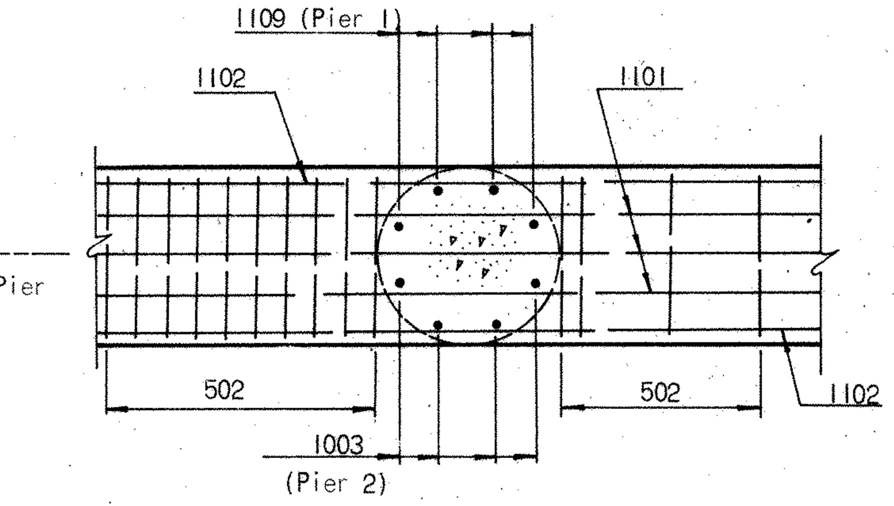
STARK COUNTY
STA-30-14.12
STA-77-9.22



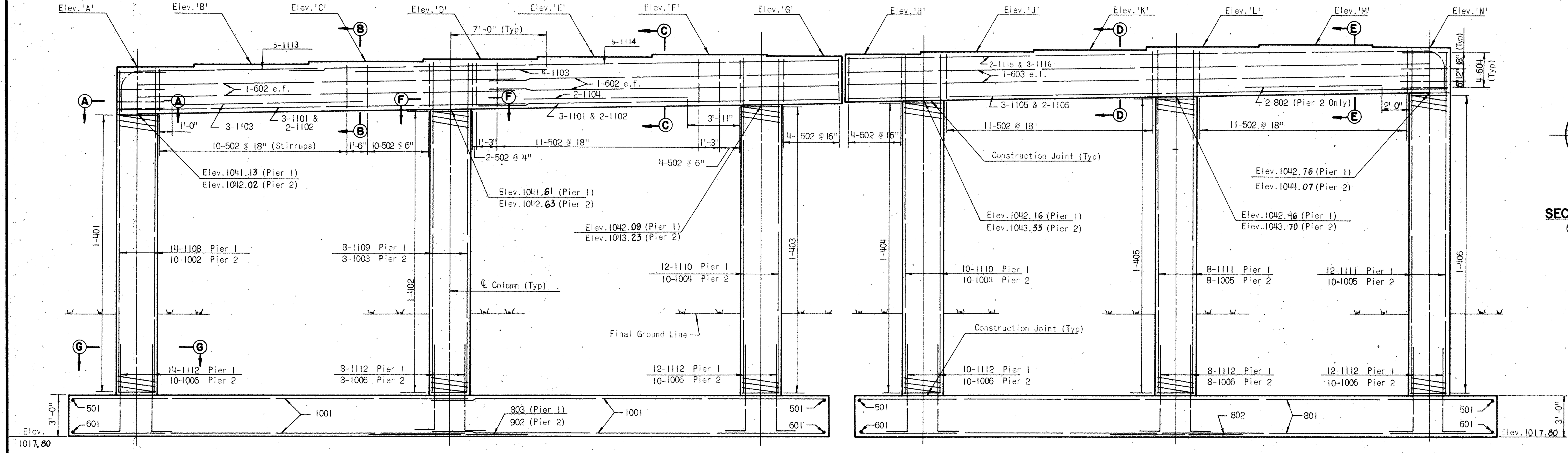
N O T E: Special care shall be taken when placing reinforcement so as not to interfere with anchor bolt setting. *The reinf. bar in top of the cap, shown near the ℄ Pier shall be placed 3" off the centerline*

PLAN

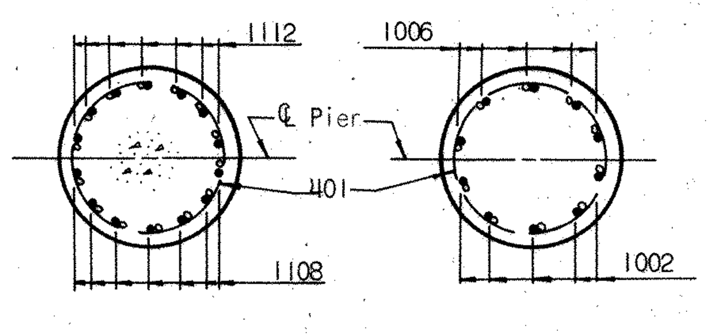
N O T E: All Reinforcing Bars shall be Prefixed as follows:
Pier 1 = PA
Pier 2 = PB



SECTION 'F-F'



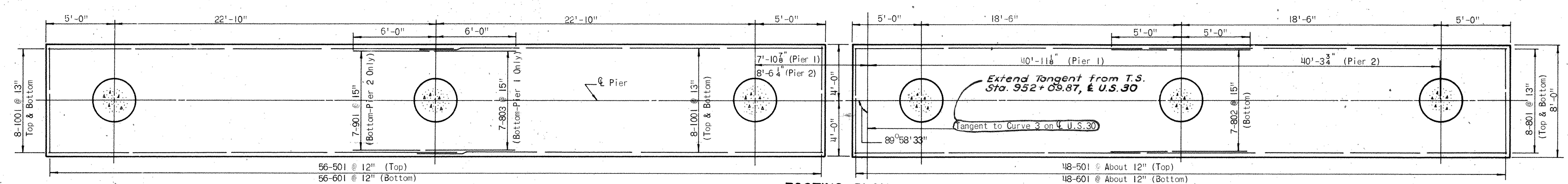
ELEVATION



SECTION 'G-G' (Pier 1)

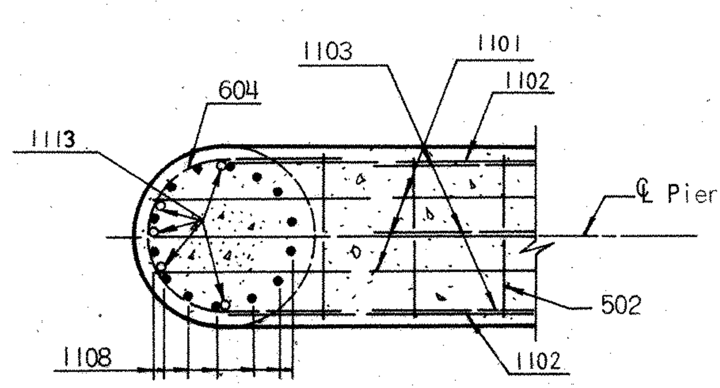
SECTION 'G-G' (Pier 2)

	BEAM SEAT ELEVATIONS	
	PIER 1	PIER 2
'A'	1044.77	1045.77
'B'	1044.97	1046.01
'C'	1045.16	1046.25
'D'	1045.35	1046.49
'E'	1045.55	1046.73
'F'	1045.74	1046.97
'G'	1045.74	1046.99
'H'	1045.71	1046.97
'J'	1045.99	1047.24
'K'	1046.18	1047.47
'L'	1046.37	1047.71
'M'	1046.55	1047.94
'N'	1046.31	1047.71

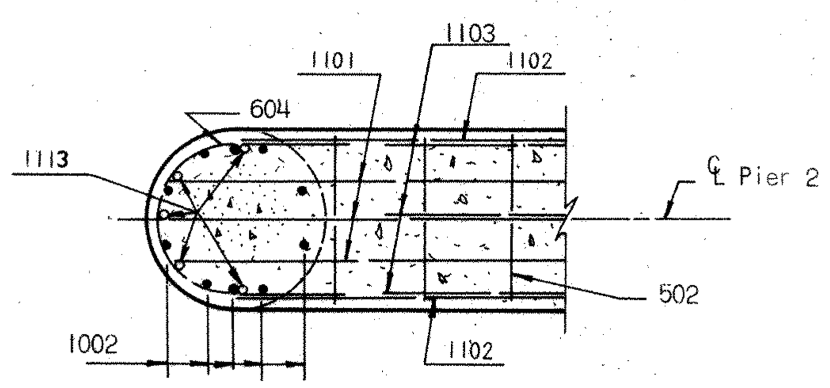


FOOTING PLAN

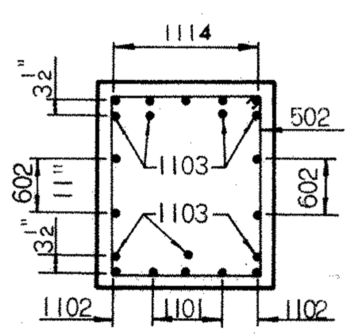
Notes:
For Anchor Bolt Details see Sheet 18/18.
For Layout Diagram see Sheet 2/18.
The following abbreviation is used:
e.f. = each face
Pier 1 is similar to Pier 2 except as noted.
For Reinforcing Schedule see Sheet 9/18.
All stirrups within 4 feet of ℄ Column shall be placed with hooks in the bottom of cap. All others shall be placed with hook in the top.



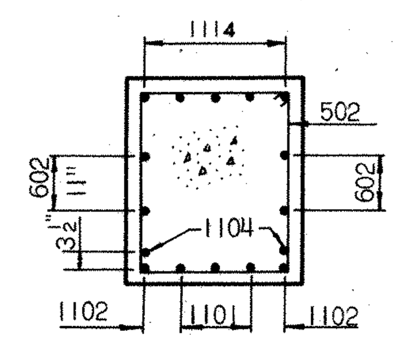
SECTION 'A-A'
(Pier 1)



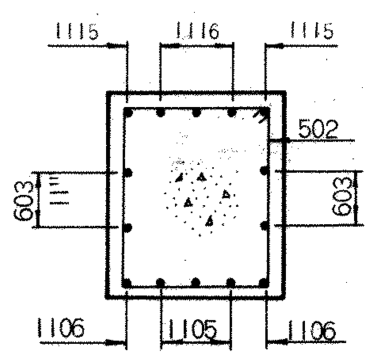
SECTION 'A-A'
(Pier 2)



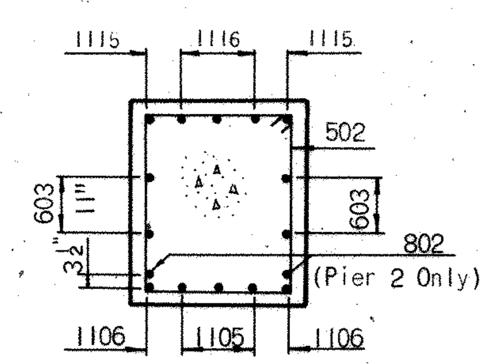
SECTION 'B-B'



SECTION 'C-C'



SECTION 'D-D'



SECTION 'E-E'

H.N.T.B. BRIDGE NO. 1 — *Revised 6-17-75* *By W.E.B.*

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 6 / 18
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIERS

U.S. 30 OVER HENRY AVE.
BR. NO. STA-30-1474 — STA. 952+96.77
SCALE: 1/4" = 1'-0" — STA. 954+11.76

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

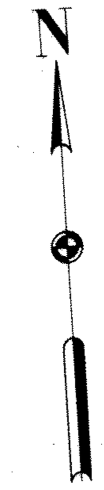
DRAWN	TRACED	CHECKED	REVIEWED	REVISED
J.A.H. DATE 1-20-69	J.M.W. DATE 2-24-69	K.T.B. DATE 2-24-69	MJK DATE 11-22-71	3-2-76

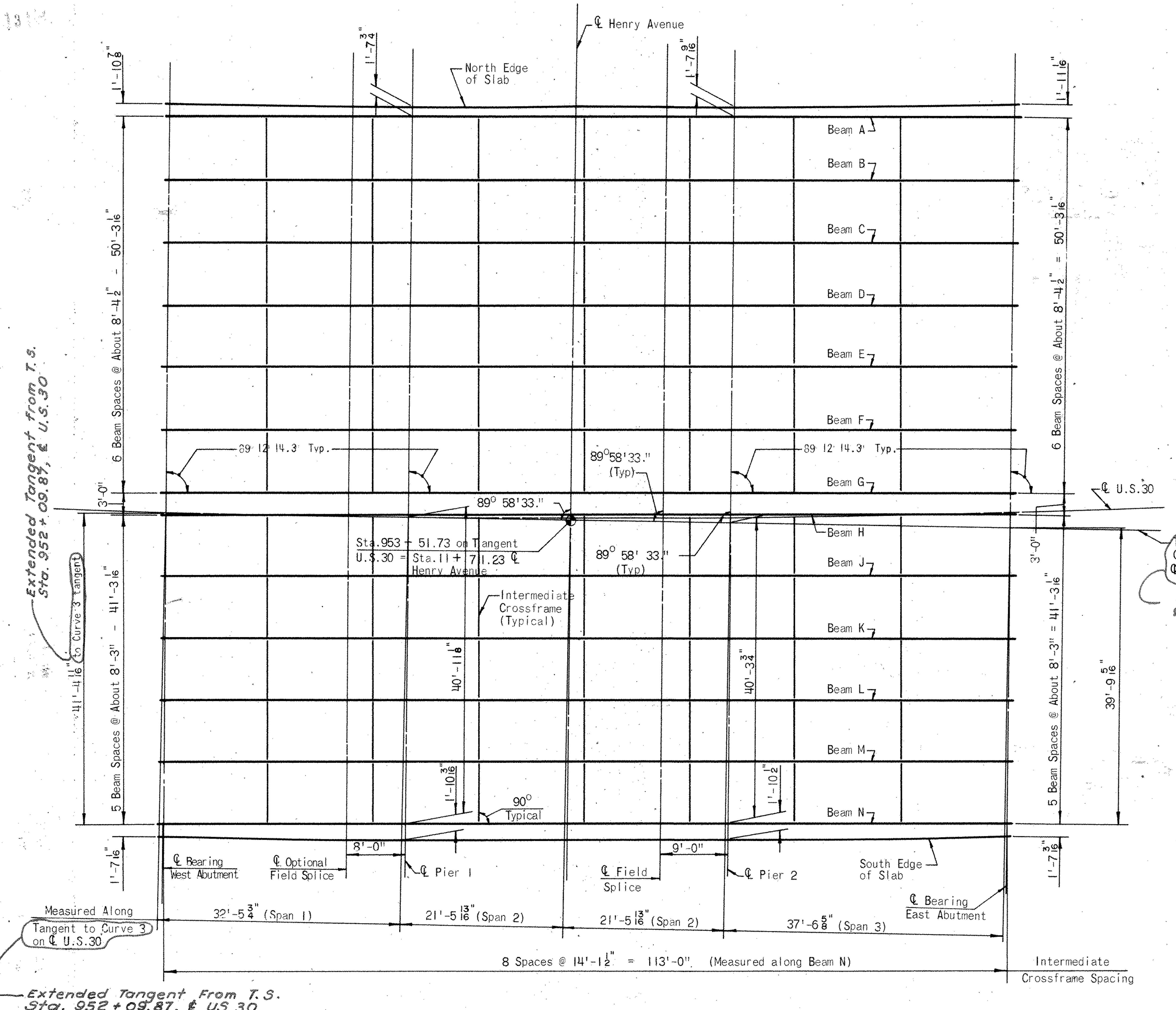
1668

Revised 4-28-77

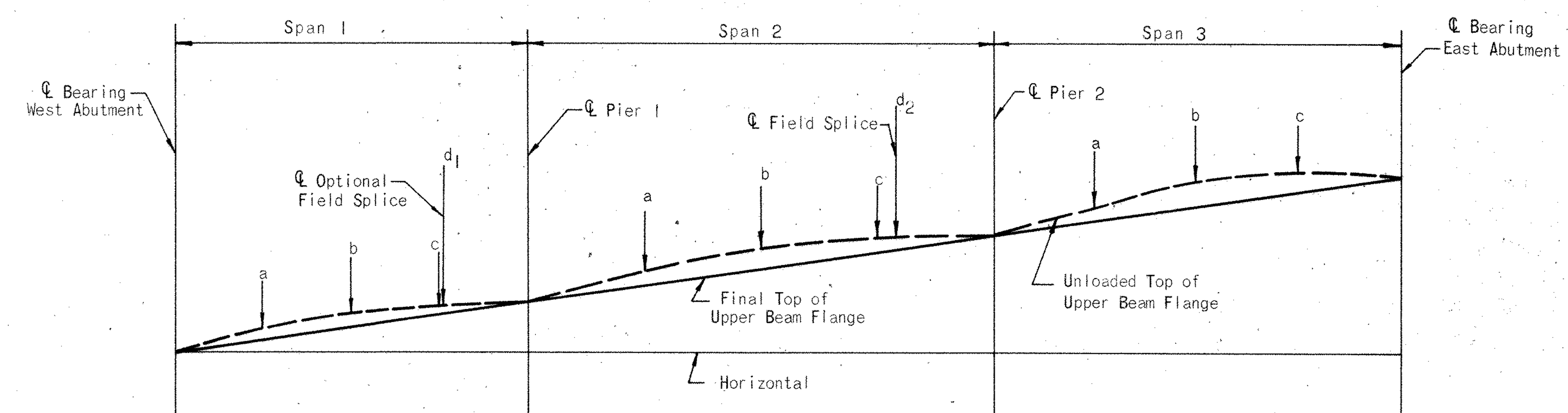
FED ROAD DIV NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

STARK COUNTY
STA-30-14.12
STA-77-9.22





FRAMING PLAN



	Span 1				Span 2				Span 3		
Deflection Due to Steel	0	0	0	0	0	0	0	0	0	0	0
Remaining Dead Load Deflection	1/16"	1/16"	1/16"	1/16"	1/16"	1/8"	1/16"	1/16"	1/16"	1/8"	1/8"
Required Shop Camber	1/16"	1/16"	1/16"	1/16"	1/16"	1/8"	1/16"	1/16"	1/16"	1/8"	1/8"

No Convexity Correction Required

CAMBER DIAGRAM

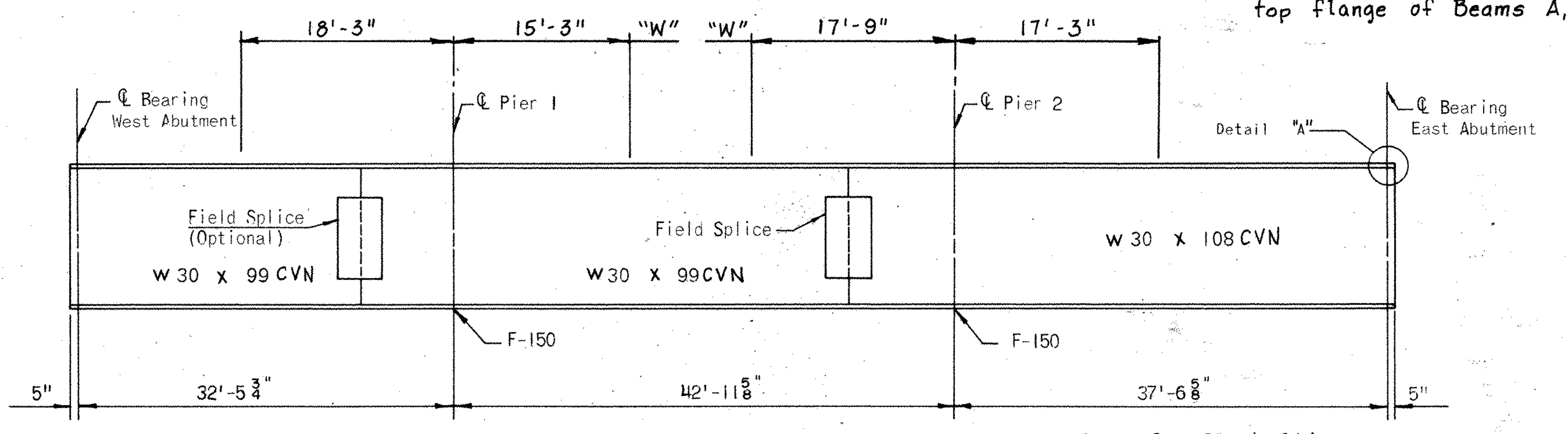
NOTE:
The ¼, ½, and ¾ points of each span are denoted by a, b and c respectively.
The optional Field Splice 1 and Field Splice 2 are denoted by d_1 and d_2 respectively.

HORIZONTAL OFFSETS	BEAM A to NORTH EDGE OF SLAB	BEAM N to SOUTH EDGE OF SLAB
℄ Brg. W. Abut.	1'-10⅞"	1'-7¹⁄₁₆"
¼	1'-9⅞"	1'-8¹⁄₁₆"
½	1'-9"	1'-8⅞"
¾	1'-8⁵⁄₁₆"	1'-9⅝"
℄ Pier 1	1'-7¾"	1'-10³⁄₁₆"
¼	1'-7⁵⁄₁₆"	1'-10¹¹⁄₁₆"
½	1'-7⅛"	1'-10⅞"
¾	1'-7³⁄₁₆"	1'-10¹³⁄₁₆"
℄ Pier 2	1'-7⁹⁄₁₆"	1'-10½"
¼	1'-8⅛"	1'-10"
½	1'-8¹⁵⁄₁₆"	1'-9¼"
¾	1'-9⅞"	1'-8¹⁵⁄₁₆" 5/16"
℄ Brg. E. Abut.	1'-11¹⁄₁₆"	1'-7³⁄₁₆"

Horizontal Offsets are given at ℄ Bearings and ¼ points between ℄ Bearings and are perpendicular to ℄ Beams

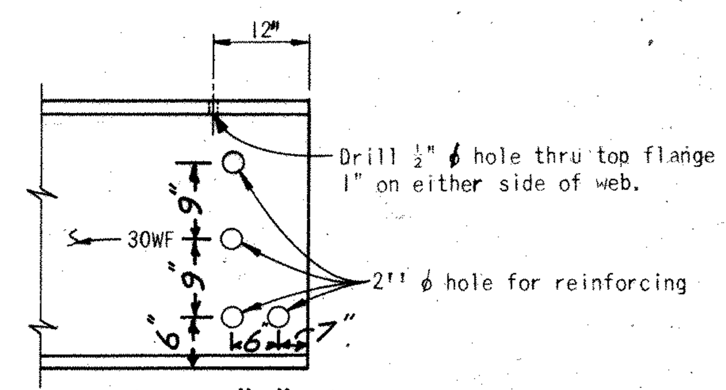
Notes:
For details of Fixed Bearing see Sheet 18/18
For details of Intermediate Crossframes see Sheet **360**.
For details of Beam Field Splices see Sheet **355**.
For Layout Dimensions not shown see Sheet 2/18.

Note:
"W" Denotes the range where welded attachments, cannot be made to the top flange of Beams A, G, H and N.



CVN - See Sheet 214.

TYPICAL BEAM ELEVATION



DETAIL "A"
Typical all Beam Ends

H.N.T.B. BRIDGE NO. 1 | Revised 6-17-75 By WEB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 7 / 18
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FRAMING PLAN

U.S. 30 OVER HENRY AVE.
BR. NO. STA-30-1474 STA. 952+96.77
SCALE: 1" = 10'-0" STA. 954+11.76
RELOCATED U.S. 30
CANTON STARK COUNTY OHIO

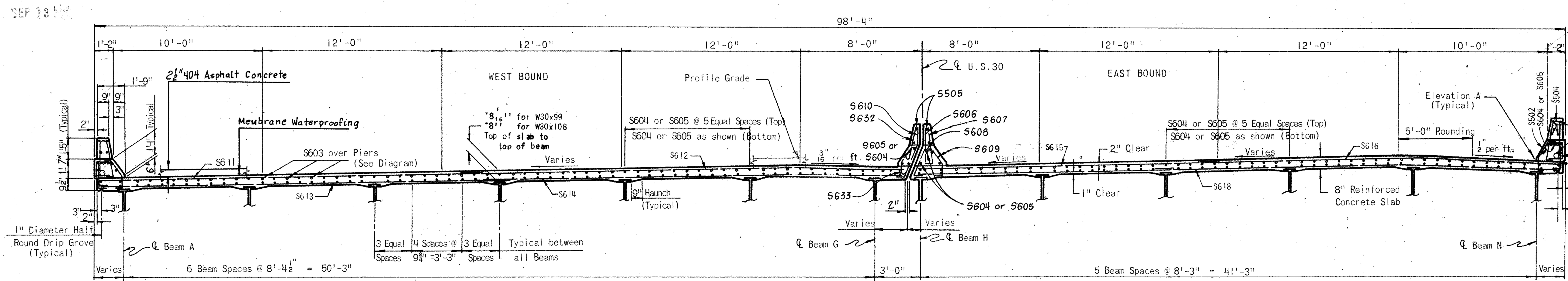
DRAWN J.A.H. DATE 1-16-69	TRACED J.M.W. DATE 2-11-69	CHECKED K.T.B. DATE 1-21-69	REVIEWED MJK DATE 11-22-71	REVISED 3-2-76 1668

Revised 4-28-77

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

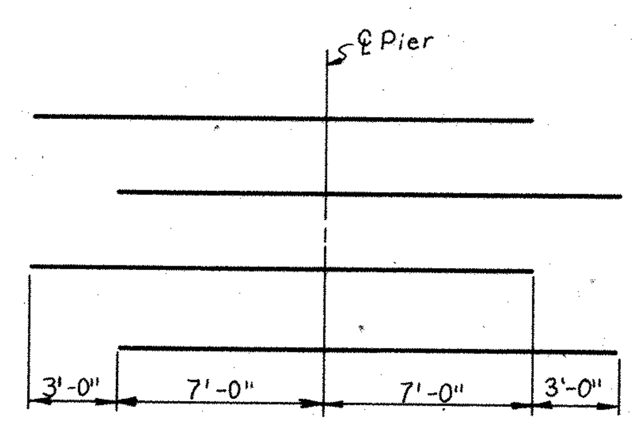
222 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

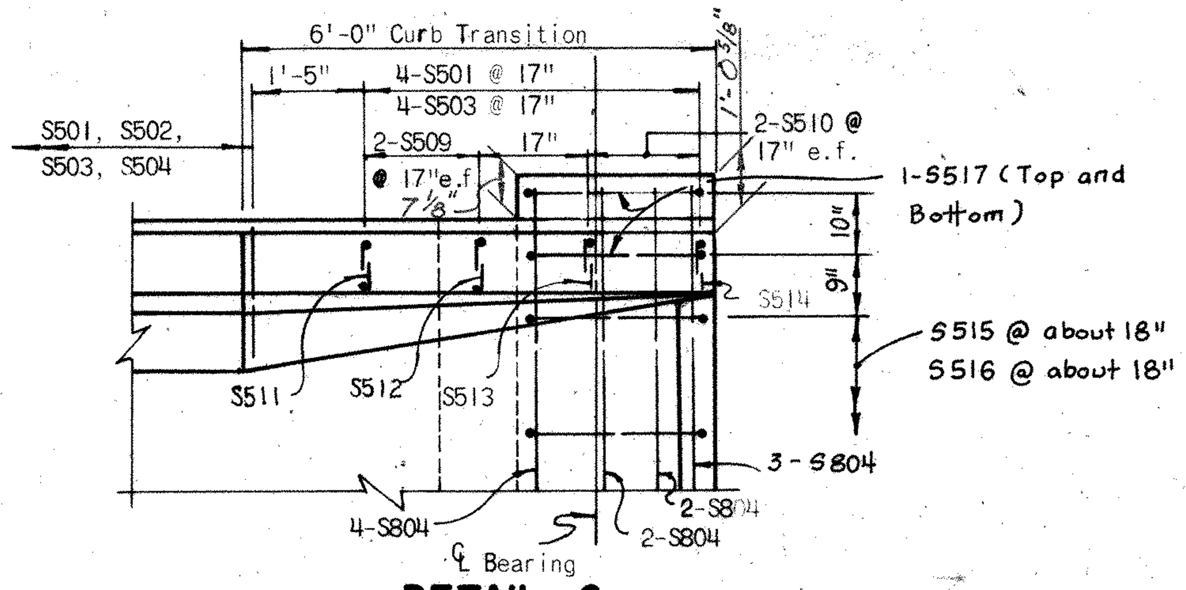


*Deck Slab Depth:
The distance shown from top of deck slab to top of steel beam is the design dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

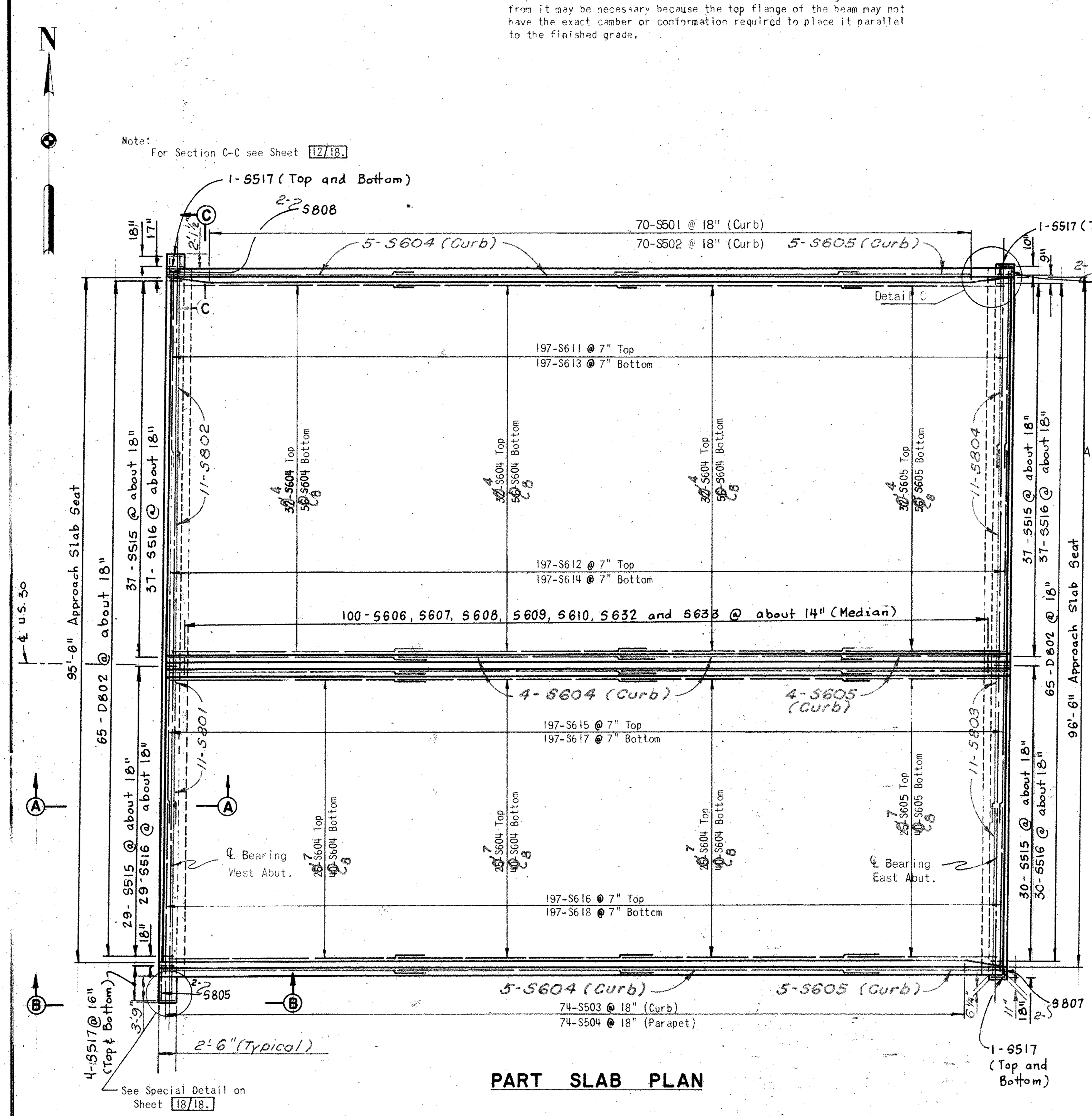
TYPICAL CROSS SECTION



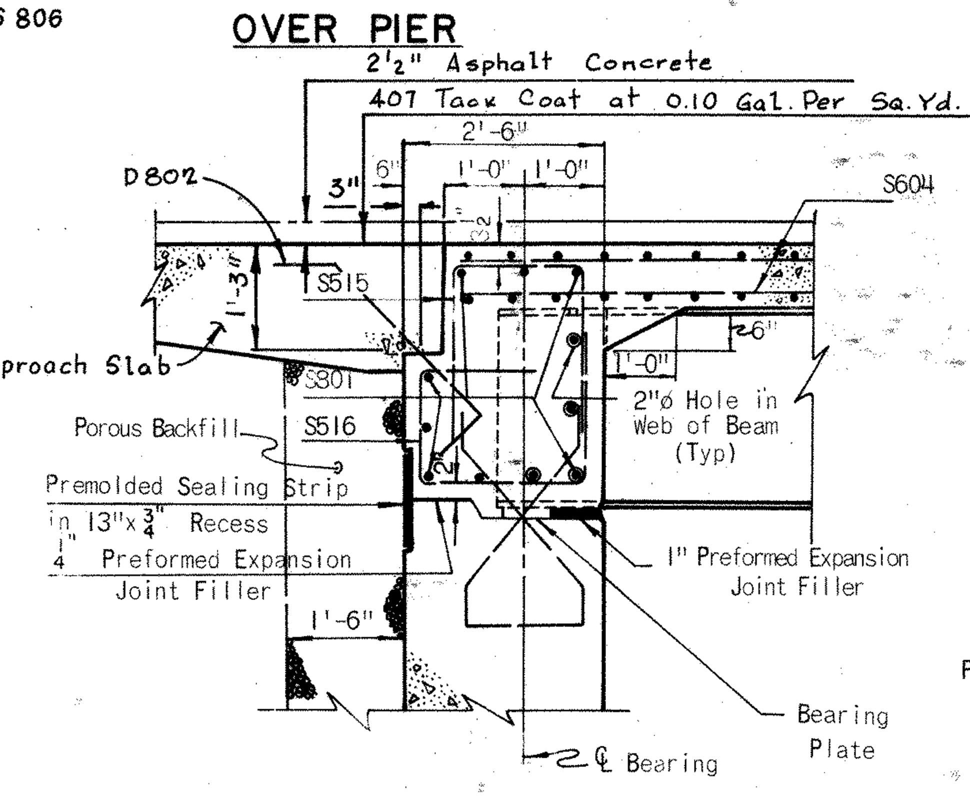
PLACEMENT OF S603 BARS OVER PIER



DETAIL C

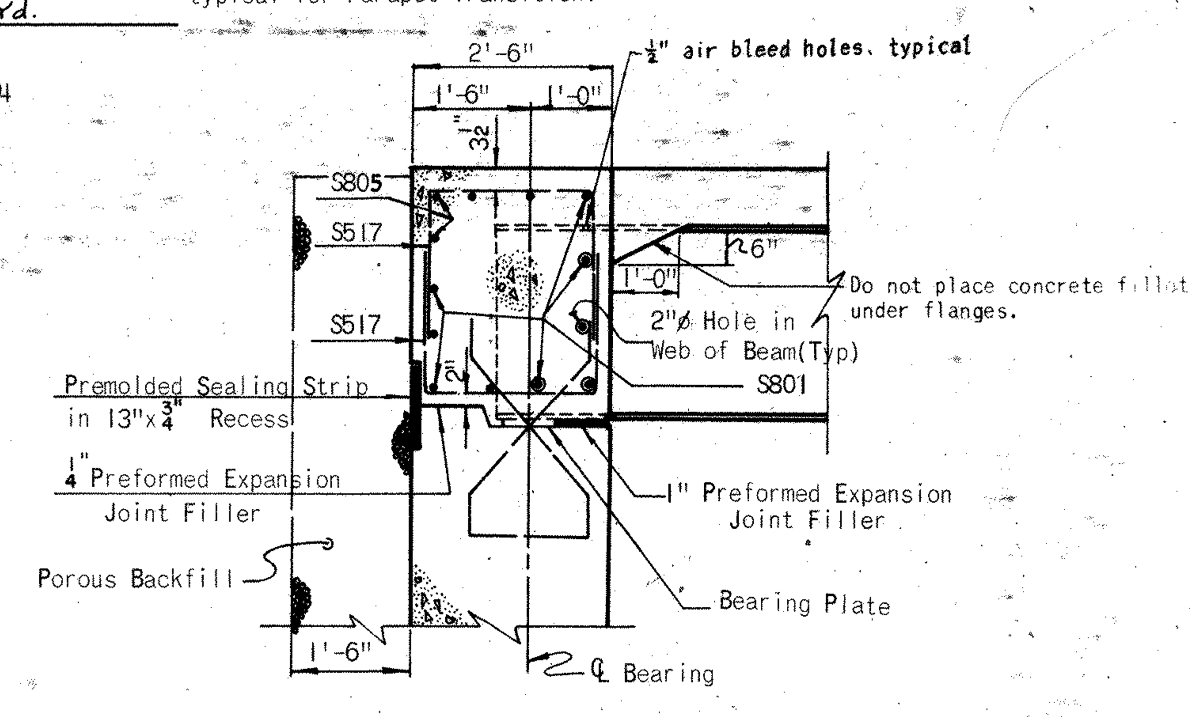


PART SLAB PLAN



SECTION 'A-A'

NOTE:
Reinforcing Bars S511 to S514 inclusive are typical for Curb Transition. Reinforcing Bars S509 and S510 are typical for Parapet Transition.



SECTION 'B-B'

ELEVATION A

LOCATION	WEST BOUND NORTH CURB	WEST BOUND SOUTH CURB	EAST BOUND NORTH CURB	EAST BOUND SOUTH CURB
℄ Brg.W.Abut	1047.33	1048.07	1048.07	1048.56
a	1047.52	1048.31	1048.31	1048.82
b	1047.71	1048.55	1048.55	1049.09
c	1047.90	1048.79	1048.79	1049.36
℄ Pier 1	1048.09	1049.03	1049.03	1049.63
a	1048.35	1049.35	1049.35	1049.98
b	1048.60	1049.67	1049.67	1050.34
c	1048.85	1049.99	1049.99	1050.69
℄ Pier 2	1049.11	1050.31	1050.31	1051.05
a	1049.33	1050.58	1050.58	1051.36
b	1049.55	1050.86	1050.86	1051.67
c	1049.77	1051.14	1051.14	1051.97
℄ Brg.E.Abut	1050.00	1051.42	1051.42	1052.28

Notes:

A typical haunch width of 9" shall be used for computing concrete quantities. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For Deflection Joint Details see Sheet 18/18.

For Median and Parapet dimensions see Sheet 359.

For Reinforcement Schedule see Sheet 9/18.

For details of parapet transition and guardrail anchors not shown see Ohio Standard Drawings BR-1-67, Sheets 1 and 3 of 3.

For other notes see Sheet 12/18.

For common details see Sheet 359.

Parapet transitions shall be as shown on Standard Drawing BR-1-67 revised 10-15-71. Reinforcing steel shall be field bent or cut to fit the revised shape.

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS

BEAM	A	B	C	D	E	F	G	H	J	K	L	M	N
℄ Brg.W.Abut.	1047.33	1047.49	1047.65	1047.80	1047.96	1048.11	1048.09	1048.07	1048.35	1048.51	1048.66	1048.81	1048.56
a	1047.52	1047.69	1047.85	1048.02	1048.18	1048.35	1048.34	1048.31	1048.59	1048.75	1048.92	1049.08	1048.82
b	1047.71	1047.89	1048.06	1048.24	1048.41	1048.59	1048.58	1048.55	1048.83	1049.00	1049.17	1049.34	1049.09
c	1047.90	1048.09	1048.27	1048.45	1048.64	1048.82	1048.82	1048.79	1049.07	1049.25	1049.43	1049.61	1049.36
℄ Pier 1	1048.09	1048.29	1048.48	1048.67	1048.87	1049.06	1049.06	1049.03	1049.31	1049.50	1049.69	1049.87	1049.63
a	1048.35	1048.55	1048.76	1048.96	1049.17	1049.37	1049.38	1049.35	1049.62	1049.82	1050.03	1050.23	1049.99
b	1048.60	1048.82	1049.03	1049.25	1049.47	1049.68	1049.70	1049.67	1049.94	1050.15	1050.37	1050.58	1050.34
c	1048.86	1049.08	1049.31	1049.54	1049.77	1050.00	1050.02	1049.99	1050.26	1050.48	1050.71	1050.93	1050.70
℄ Pier 2	1049.11	1049.35	1049.59	1049.83	1050.07	1050.31	1050.33	1050.31	1050.58	1050.81	1051.05	1051.28	1051.05
a	1049.33	1049.58	1049.83	1050.08	1050.34	1050.59	1050.61	1050.58	1050.86	1051.10	1051.35	1051.59	1051.36
b	1049.55	1049.81	1050.08	1050.34	1050.60	1050.86	1050.89	1050.86	1051.14	1051.39	1051.65	1051.90	1051.67
c	1049.77	1050.05	1050.32	1050.59	1050.87	1051.14	1051.16	1051.14	1051.42	1051.68	1051.95	1052.21	1051.97
℄ Brg.E.Abut	1050.00	1050.28	1050.57	1050.85	1051.13	1051.42	1051.44	1051.42	1051.70	1051.97	1052.25	1052.53	1052.28

NOTE: Points a, b and c are the $\frac{1}{4}$, $\frac{1}{2}$, and $\frac{3}{4}$ points of the span respectively.

H.N.T.B. BRIDGE NO. 1 | Revised 6-18-75 | By WEB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 8 / 18
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KANSAS CITY CLEVELAND NEW YORK

DECK REINFORCEMENT AND TYPICAL SECTION

U.S. 30 OVER HENRY AVE.
BR. NO. STA-30-1474 — STA. 952+96.77
SCALE: NO SCALE — STA. 954+11.76

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
J.A.H. DATE 1-24-69	W.G.B. DATE 3-4-69	J.B.C. DATE 2-14-69	MJK DATE 11-22-71	1668

Revised 4-28-77

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
WEST ABUTMENT								
AA401	56	5'-1"	105	1'-11"	1'-6"			190
AA501	138	6'-7"	105	2'-1"	2'-8"			948
AA502	12	34'-0"	Str.					426
AA503	8	24'-6"	Str.					205
AA504	8	28'-9"	Str.					240
AA505	74	7'-10"	104	7'-4"	7½"			605
AA506	64	8'-7"	104	8'-3"	7½"			573
AA507	69	6'-7"	105	2'-4"	2'-2"			474
AA508	99	8'-3"	167					852
AA801	12	34'-9"	Str.					1,113
AA1001	8	25'-3"	Str.					869
AA1002	8	29'-9"	Str.					1,024
				Total West Abutment =				7,519
EAST ABUTMENT								
AD401	56	5'-1"	105	1'-11"	1'-6"			190
AD501	138	6'-7"	105	2'-1"	2'-8"			948
AD502	12	34'-3"	Str.					429
AD503	10	28'-3"	Str.					295
AD504	3	44'-0"	Str.					138
AD505	3	44'-6"	Str.					139
AD506	34	7'-4"	104	6'-10"	7½"			260
AD507	50	8'-2"	104	7'-8"	7½"			426
AD508	54	8'-11"	104	8'-5"	7½"			502
AD509	69	6'-7"	105	2'-4"	2'-2"			474
AD510	99	8'-3"	167					852
AD801	12	35'-0"	Str.					1,121
AD1001	8	29'-0"	Str.					998
AD1002	8	23'-9"	Str.					818
				Total East Abutment =				7,590
PIER 1								
PA401	1	470.521	112	57	20'-3"			379
PA402	1	478.776	112	58	20'-9"			385
PA403	1	495.286	112	60	21'-3"			399
PA404	1	495.286	112	60	21'-4"			399
PA405	1	503.542	112	61	21'-7"			405
PA406	1	503.542	112	61	21'-11"			407
PA501	104	7'-6"	Str.					814
PA502	67	12'-2"	109	2'-8"	3'-2"			850
PA503	85	4'-7"	105	1'-1"	2'-8"			406 460
PA504	2	4'-5"	105	1'-1"	2'-6"			9
PA505	2	3'-9"	105	1'-1"	1'-10"			8
PA601	104	7'-6"	Str.					1,172
PA602	8	26'-9"	Str.					321
PA603	4	42'-6"	Str.					255
PA604	8	7'-11"	113	1'-11"	4'-1"	2'-8"		95
PA801	16	46'-6"	Str.					1,986
PA802	7	10'-0"	Str.					187
PA803	7	12'-0"	Str.					224
PA1001	32	29'-3"	Str.					4,028
PA1101	6-12	28'-0"	Str.				892	1,785
PA1102	4-8	27'-6"	Str.				584	1,169
PA1103	7	14'-0"	Str.					521
PA1104	2	12'-0"	Str.					128
PA1105	3-6	43'-9"	Str.				697	1,395
PA1106	2-4	42'-6"	Str.				452	903
PA1108	14	23'-9"	Str.					1,767
PA1109	8	24'-3"	Str.					1,031
PA1110	22	24'-6"	Str.					2,864
PA1111	20	25'-3"	Str.					2,683
PA1112	64	7'-8"	104	6'-6"	17½"			2,607
PA1113	5	18'-9"	104	16'-0"	3'-0"			490
PA1114	5	40'-0" 6	Str.					1,045 76
PA1115	2	45'-0"	104	42'-3"	3'-0"			479
PA1116	3	46'-3"	104	43'-6"	3'-0"			738
					Total	Pier 1 =		32,335 29,739
PIER 2								
PB401	1	487.031	112	59	21'-2"			394
PB402	1	503.542	112	61	21'-9"			406
PB403	1	520.052	112	63	22'-5"			419
PB404	1	520.052	112	63	22'-6"			419
PB405	1	528.307	112	64	22'-10"			426
PB406	1	536.562	112	65	23'-3"			433
PB501	104	7'-6"	Str.					814
PB502	67	12'-2"	109	2'-8"	3'-2"			850
PB503	85	4'-7"	105	1'-1"	2'-8"			406
PB504	2	4'-5"	105	1'-1"	2'-6"			9
PB505	2	3'-9"	105	1'-1"	1'-10"			8
PB601	104	7'-6"	Str.					1,172
PB602	8	26'-9"	Str.					321
PB603	4	42'-6"	Str.					255
PB604	8	7'-11"	113	1'-11"	4'-1"	2'-8"		95
PB801	16	46'-6"	Str.					1,986
PB802	9	10'-0"	Str.					240
PB901	7	12'-0"	Str.					286
PB1001	32	29'-3"	Str.					4,028
PB1002	10	24'-6"	Str.					1,054
PB1003	8	25'-3"	Str.					869
PB1004	20	25'-9"	Str.					2,216
PB1005	18	26'-6"	Str.					2,053
PB1005	56	7'-3"	104	6'-2"	1'-4½"			1,747
PB1101	6-12	28'-0"	Str.				892	1,785
PB1102	4-8	27'-6"	Str.				584	1,169
PB1103	7	14'-0"	Str.					521
PB1104	2	12'-0"	Str.					128
PB1105	3-6	43'-9"	Str.				697	1,395
PB1106	2-4	42'-6"	Str.				452	903
PB1113	5	18'-9"	104	16'-0"	3'-0"			490
PB1114	5	40'-0" 6	Str.					1,045 76
PB1115	2	45'-0"	104	42'-3"	3'-0"			479
PB1116	3	46'-3"	104	43'-6"	3'-0"			738
					Total	Pier 2 =		29,559 26,963
SUPERSTRUCTURE								
S501	156	2'-5"	104	1'-11"	7½"			393
S502	144	3'-3"	134	9"	9"			488
S503	156	2'-3"	105	7½"	1'-3"			366
S504	144	5'-8"	131	8"	2'-5"	5"		851
S505	120	7'-0"	Str.					880
S521	8	11'-3"	Str.					94
S522	8	16'-3"	Str.					136
S509	12	2'-6"	Str.					31
S510	12	2'-3"	Str.					28
S511	3	3'-0"	134	6"	7½"			9
S512	3	2'-11"	134	4"	7½"			9
S513	3	2'-11"	134	2"	7½"			9
S514	3	2'-6"	101	1'-11"				8
S515	133	5'-5"	105	2'-0"	1'-8"			751
S516	133	6'-8"	132	2'-0"	2'-2"	1'-4"		925
S517	18	5'-11"	105	2'-0"	2'-2"			111
S518	4-12	10'-0" 9	Str.				45	140
S519	12	12'-6"	Str.					156
S520	4-12	14'-6" 5 9	Str.				66	181
S603	122	17'-0"	Str.					3,115
S604	513 55	30'-0"	Str.					23,116 5,008
S605	171 85	31'-6"	Str.					8,091 753
S606	100	2'-6"	Str.					376
S607	100	3'-0"	119					451
S608	100	3'-0"	166					451
S609	100	2'-10"	134	9"	5"			426
S610	100	4'-0"	162					601
S611	197	24'-5"	101	23'-9"				7,225
S612	197	32'-0"	Str.					9,469
S613	197	27'-9"	Str.					8,200
S614	197	28'-0"	Str.					8,285
S615	197	21'-6"	Str.					6,362
S616	197	24'-6"	101	23'-10"				7,260
S617	197	17'-9	Str.					5,252
S618	197	27'-9"	Str.					8,200
S630	12	4'-0"	Str.					72
S631	4	15'-0"	109	2'-2	5'-0"			90
S632	100	3'-5"	101	2'-9"				513
S633	100	3'-0"	165					451
S801	22	25'-3"	Str.					1,483
S802	22	29'-0"	Str.					1,703
S803	22	23'-9"	Str.					1,395
S804	22	28'-3"	Str.					1,659
S805	2	5'-3"	Str.					28
S806	2	1'-3"	Str.					7
S807	2	1'-0"	Str.					5
S808	2	2'-9"	Str.					15
D802	130	4'-9"	124					1,649
				Total for Superstructure			=	111,286 113,860
					Total for Bridge 1		=	188,289 185,671

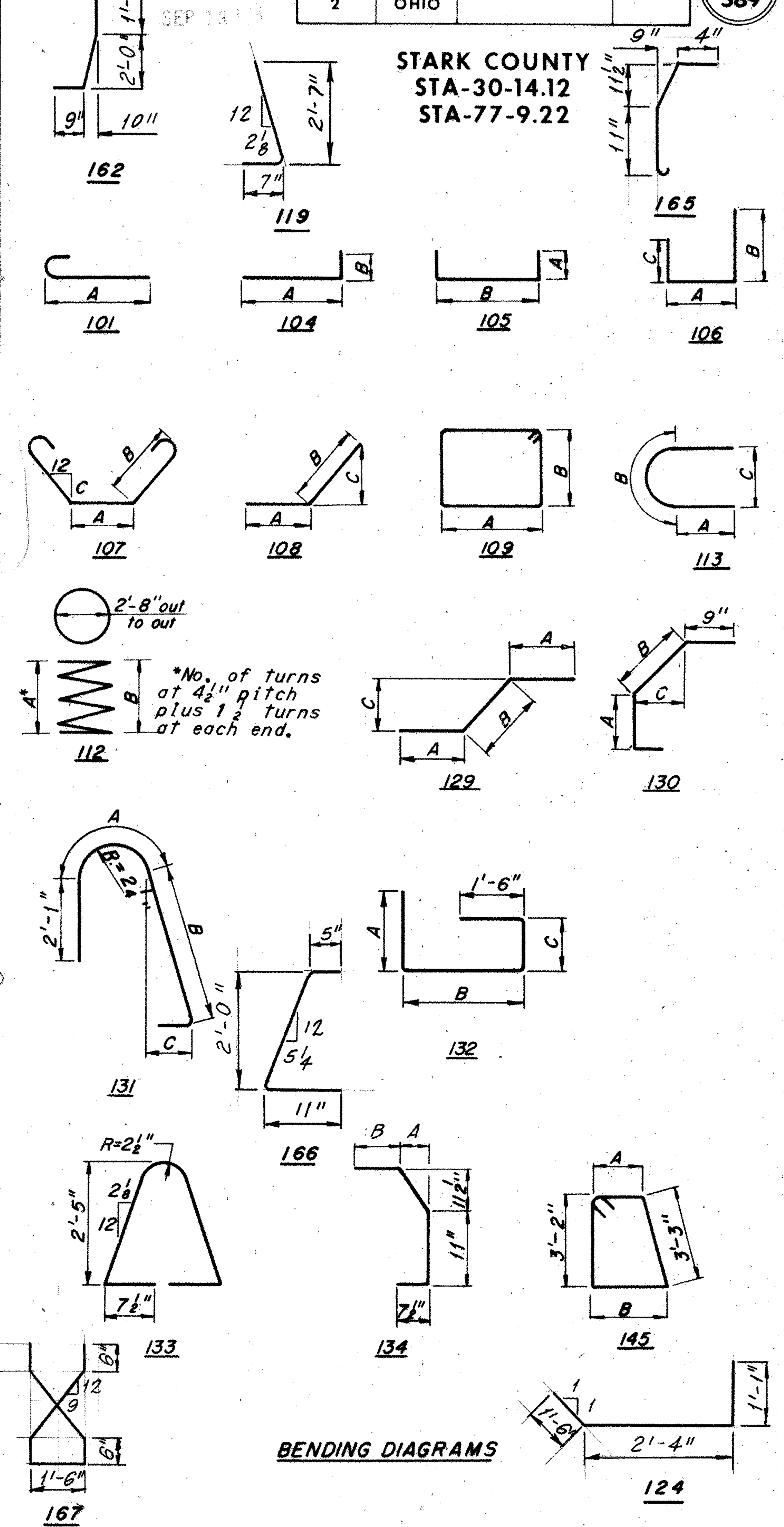
REPLACEMENT REINFORCEMENT SCHEDULE

Note:
Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.

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

223
389

STARK COUNTY
STA-30-14.12
STA-77-9.22



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 1 — Revised 6-19-75 By W.E.B

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 9 / 18
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

U.S. 30 OVER HENRY AVE.
BR. NO. STA-30-1474 — STA. 952+96.77
SCALE: NO SCALE — STA. 954+11.76

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

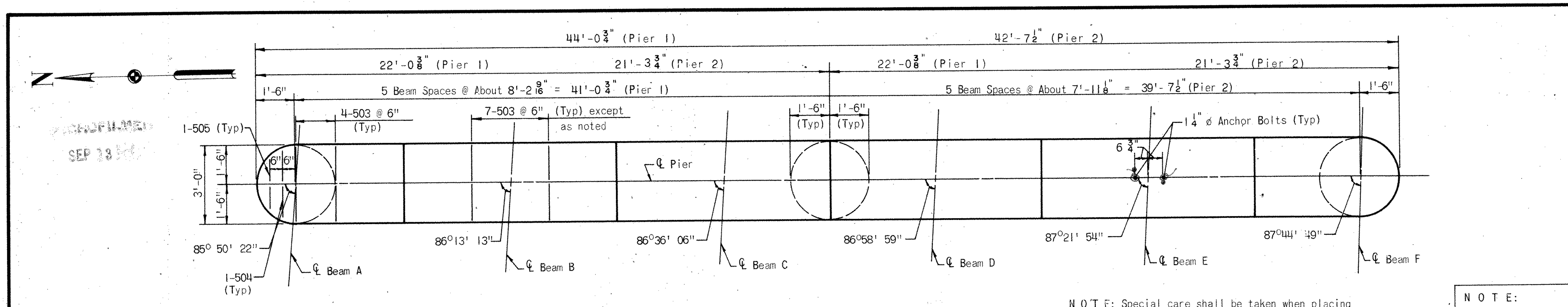
DRAWN J.M.W. DATE 3-6-69	TRACED J.M.W. DATE 3-12-69	CHECKED J.B.C. DATE 3-27-69	REVIEWED MJK DATE 11-22-71	REVISED 1668

Revised 4-28-77

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

224 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22



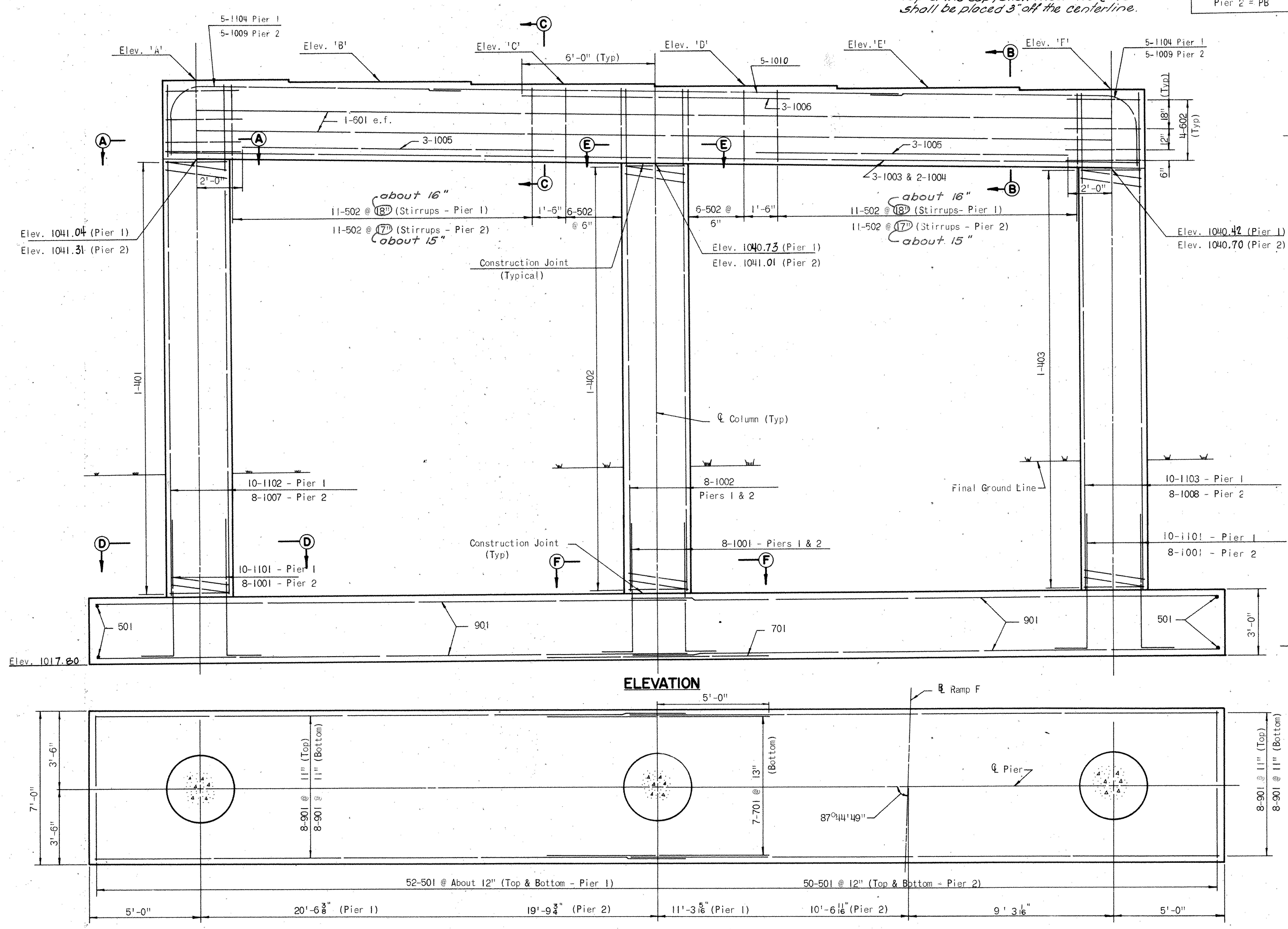
PLAN

NOTE: Special care shall be taken when placing reinforcement so as not to interfere with anchor bolt setting. *The reinf. bar in top of the cap, shown near the ℄ Pier shall be placed 3" off the centerline.*

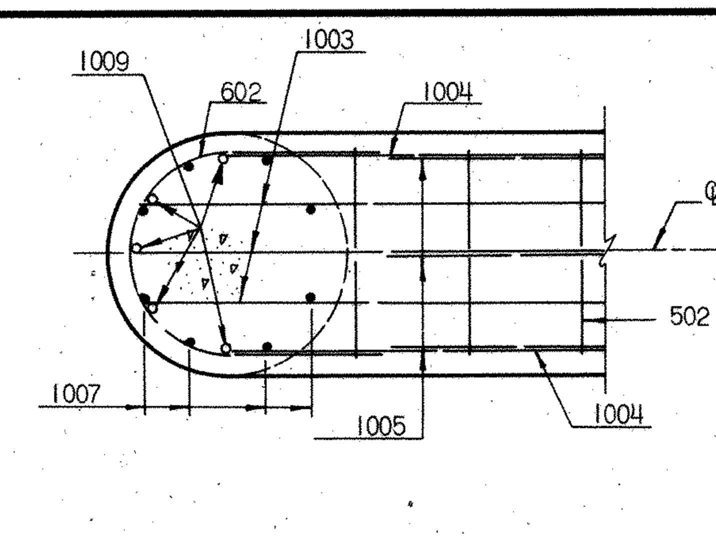
NOTE:
All Reinforcing Bars shall be prefixed as follows:
Pier 1 = PA
Pier 2 = PB

ELEVATION

FOOTING PLAN

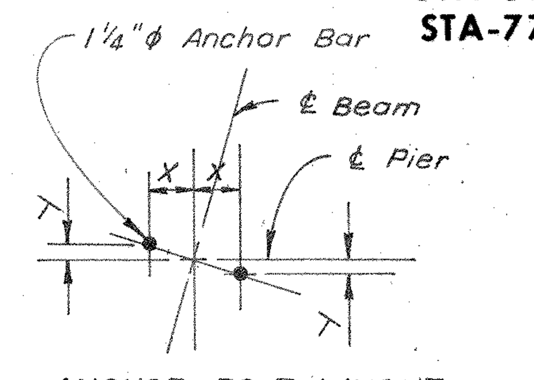


SECTION 'A-A'
(Pier 2)

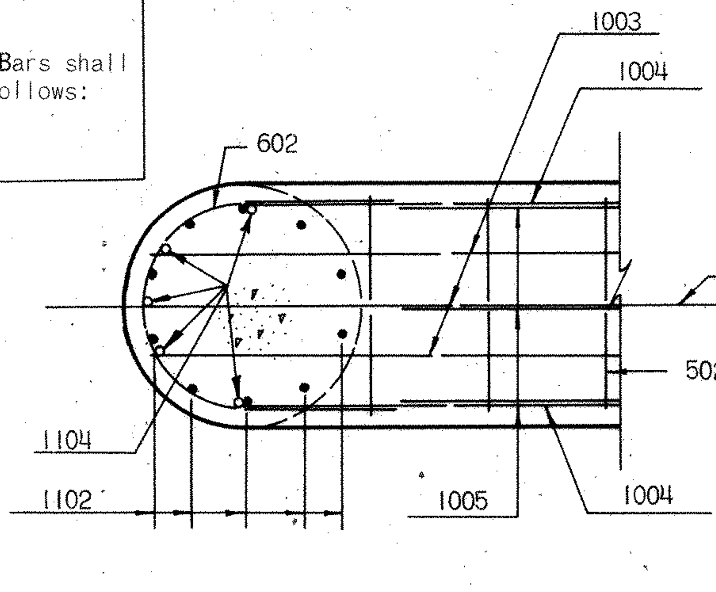


ANCHOR BOLT LAYOUT

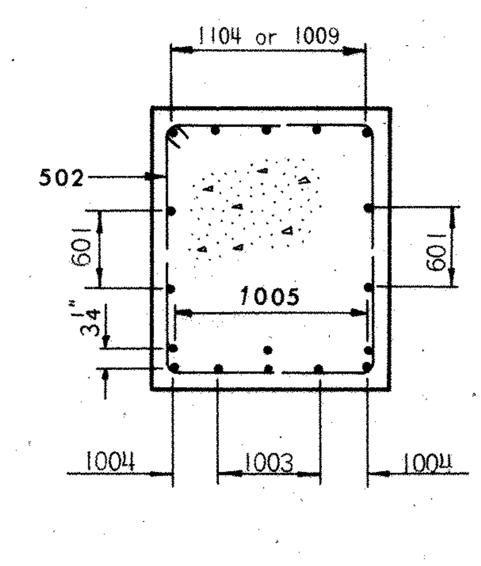
BEAM	X	Y
A	6¾"	½"
B	6¾"	½"
C	6¾"	3/8"
D	6¾"	3/8"
E	6¾"	¼"
F	6¾"	¼"



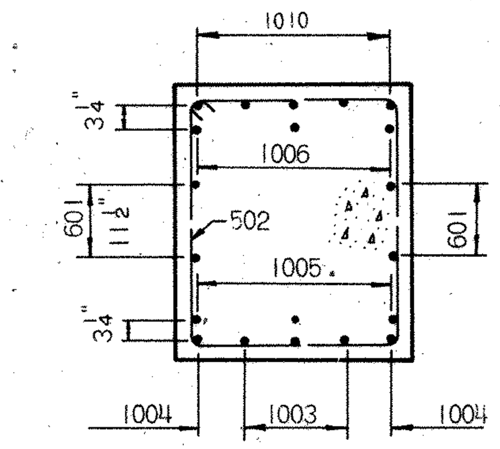
SECTION 'A-A'
(Pier 1)

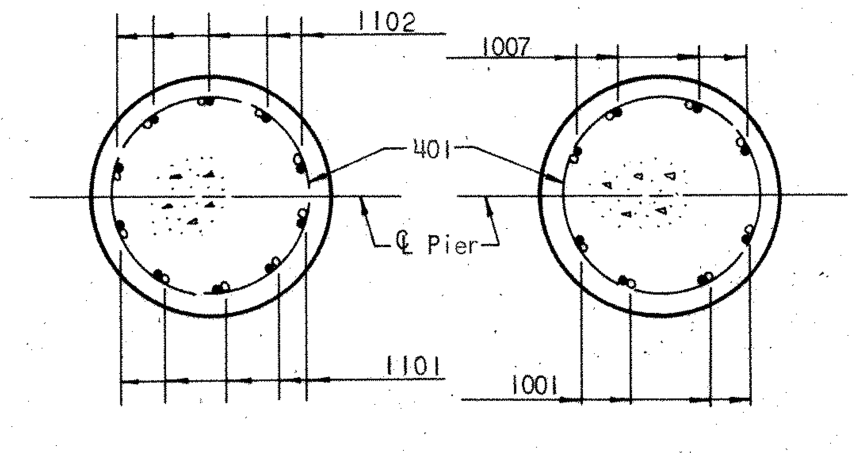


SECTION 'B-B'



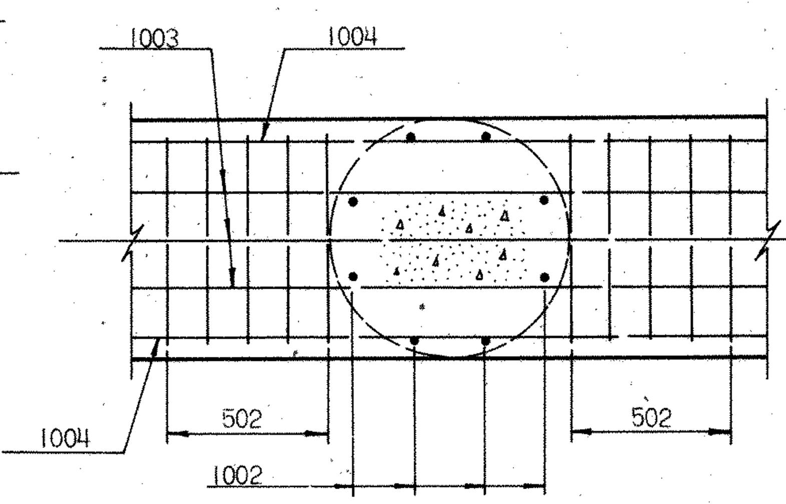
SECTION 'C-C'



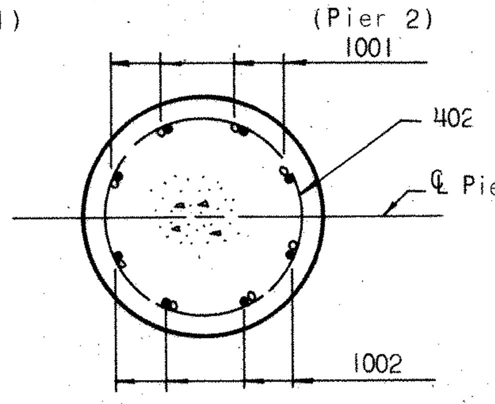


SECTION 'D-D'
(Pier 1)

SECTION 'D-D'
(Pier 2)



SECTION 'E-E'



SECTION 'F-F'

PIER SEAT ELEVATIONS		
	PIER 1	PIER 2
'A'	1044.60	1044.97
'B'	1044.47	1044.84
'C'	1044.35	1044.72
'D'	1044.22	1044.60
'E'	1044.10	1044.48
'F'	1043.98	1044.36

Notes:
For Anchor Bolt Details see Sheet 18/18.
For Layout Diagram see Sheet 2/18.
The following abbreviation is used:
e.f. = each face.
Pier 2 is similar to Pier 1 except as noted.
All stirrups within 4 feet of ℄ column shall be placed with hooks in the bottom of cap. All others shall be placed with hook in the top.

H.N.T.B. BRIDGE NO. 5 — *Revised 6-20-75 By WEB*

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 10/18
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIERS

RAMP F OVER HENRY AVE.
BR. NO. STA-30-1474R — STA. 952+97.31
SCALE: 3/8" = 1'-0" — STA. 954+07.31

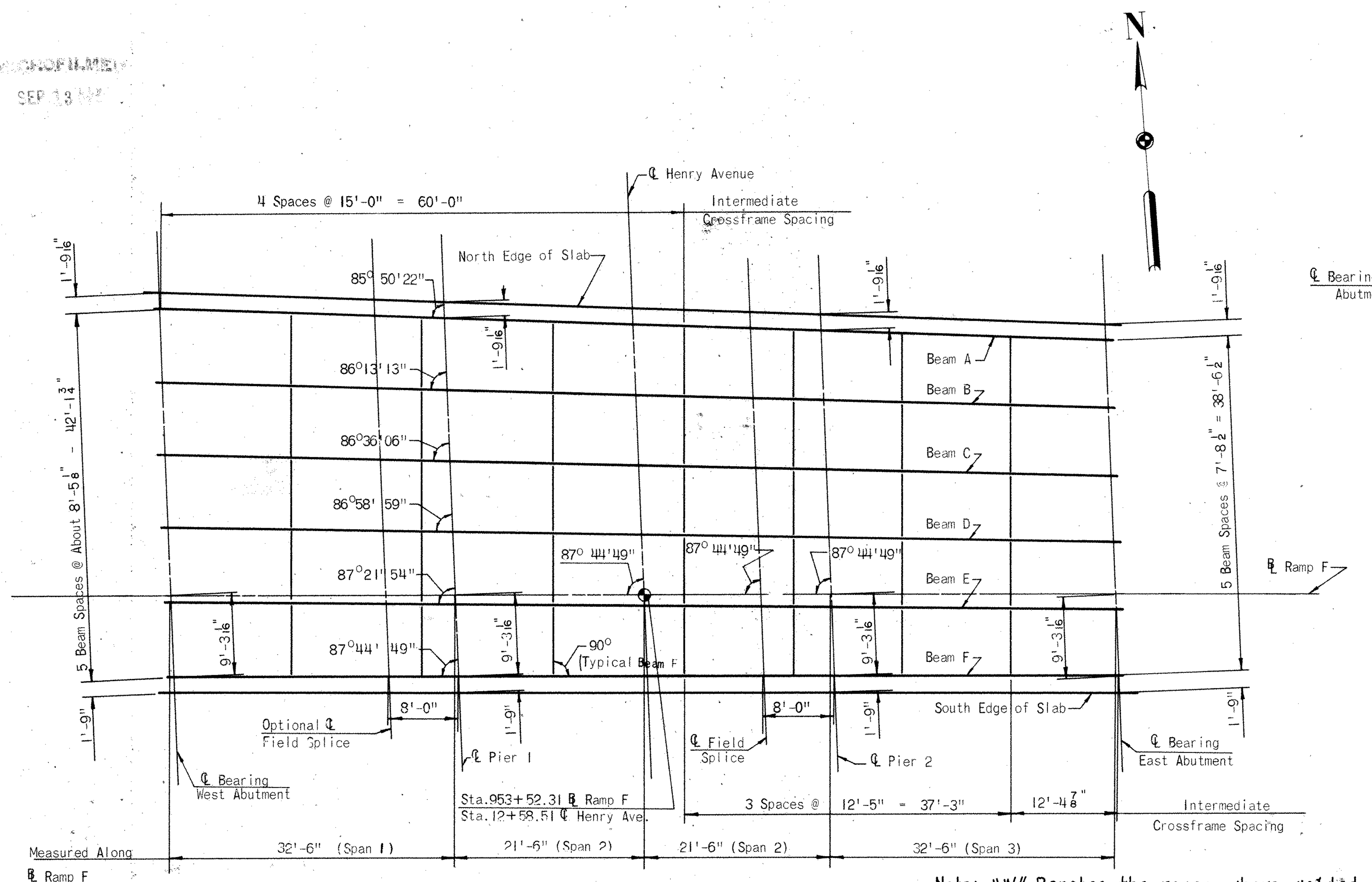
RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
K.T.B. DATE -14-69	J.M.W. DATE -17-69	J.B.C. DATE 2-26-69	MJK DATE 11-22-71	3-2-76 / 1668

Revised 4-28-77

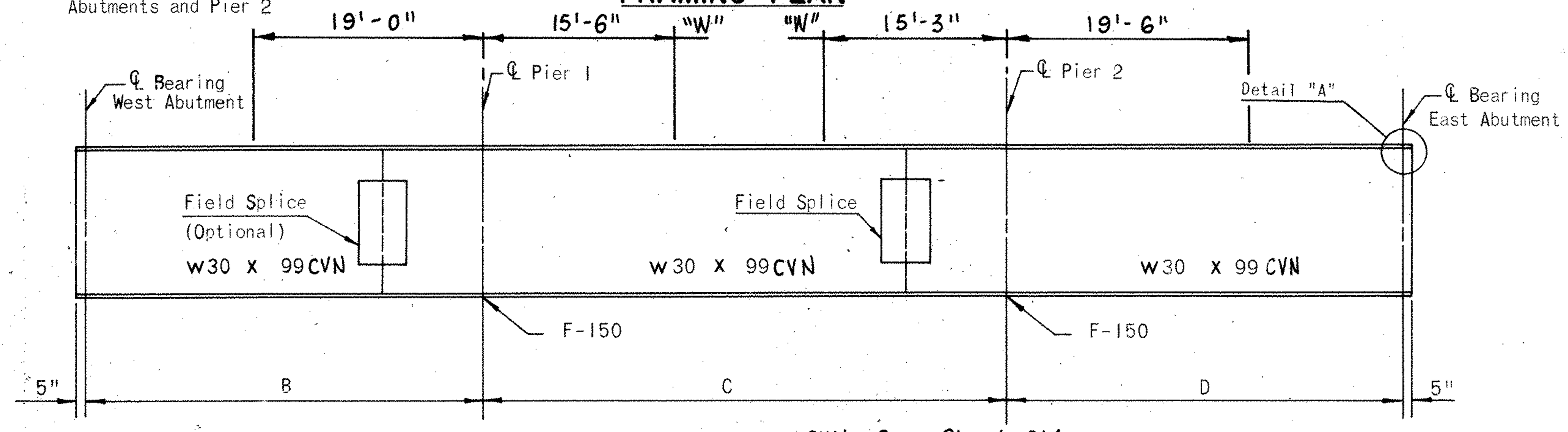
STARK COUNTY
STA-30-14.12
STA-77-9.22



NOTE:
The angles shown between the beams and ℄ Pier 1 are similar at the Abutments and Pier 2

Note: "W" Denotes the range where welded attachments cannot be made to the top flange of Beams A and F.

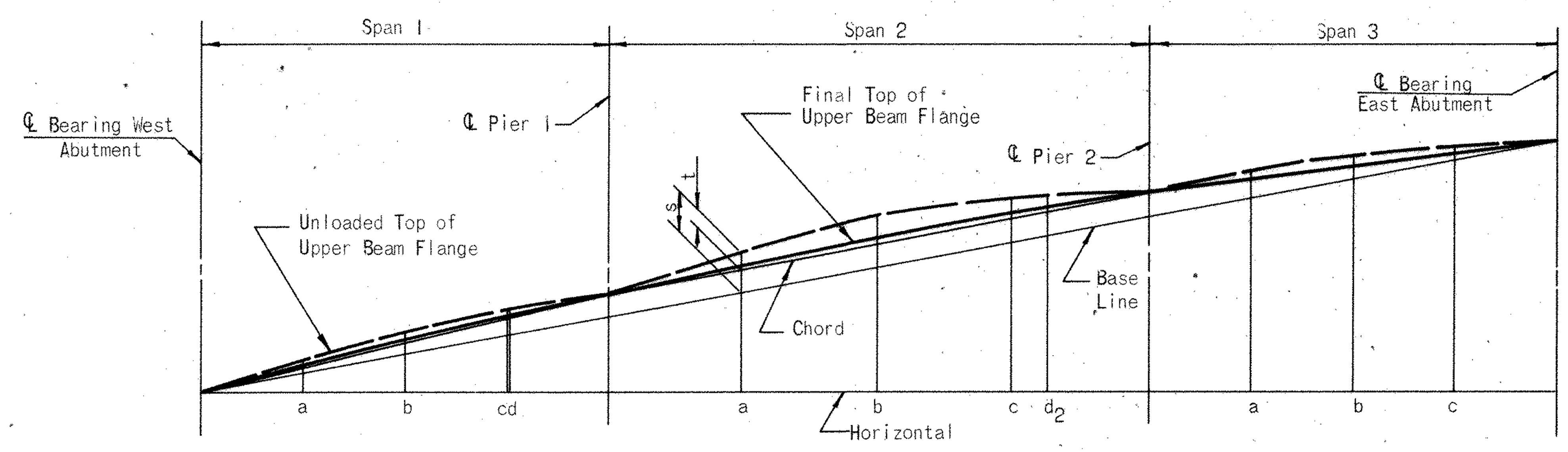
FRAMING PLAN



CVN - See Sheet 214

TYPICAL BEAM ELEVATION

TABLE OF DIMENSIONS			
BEAM	B	C	D
'A'	32'-6 3/4"	43'-1"	32'-6 3/4"
'B'	32'-6 9/16"	43'-0 3/4"	32'-6 9/16"
'C'	32'-6 3/8"	43'-0 1/2"	32'-6 3/8"
'D'	32'-6 1/4"	43'-0 5/16"	32'-6 1/4"
'E'	32'-6 1/8"	43'-0 1/8"	32'-6 1/8"
'F'	32'-6"	43'-0"	32'-6"



CAMBER DIAGRAM

(See Table Below)

NOTE:
The 1/4, 1/2, and 3/4 points of the spans are indicated by a, b and c respectively. The center lines of the optional Field Splice 1 and Field Splice 2 are indicated by d_1 and d_2 respectively.
Vertical Offsets measured from the base line between abutment bearings to the unloaded top of upper beam flange and measured from the chord between bearing points to the unloaded top of upper beam flange are indicated by s and t respectively.

VERTICAL OFFSETS FOR ALL BEAMS IN UNLOADED POSITION																							
Span 1										Span 2										Span 3			
1/4 Point a		1/2 Point b		3/4 Point c		Optional F.S.I. d_1		Pier 1		1/4 Point a		1/2 Point b		3/4 Point c		Field Splice d_2		Pier 2		1/4 Point a		1/2 Point b		3/4 Point c	
s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t
9/16	3/16	1	1/4	1 1/4	1/8	1 1/4	1/8	1 1/2	0	1 3/4	1/4	1 7/8	3/8	1 3/4	1/4	1 3/4	1/4	1 1/2	0	1 1/4	1/8	1	1/4	9/16	3/16

DEAD LOAD DEFLECTION AND CAMBER																																							
Span 1																Span 2																Span 3											
1/4 Point a				1/2 Point b				3/4 Point c				Optional F.S.I. d_1				1/4 Point a				1/2 Point b				3/4 Point c				Field Splice 2 d_2				1/4 Point a				1/2 Point b				3/4 Point c			
S.	R.	C.	T.	S.	R.	C.	T.	S.	R.	C.	T.	S.	R.	C.	T.	S.	R.	C.	T.	S.	R.	C.	T.	S.	R.	C.	T.	S.	R.	C.	T.	S.	R.	C.	T.	S.	R.	C.	T.	S.	R.	C.	T.
0	1/16	1/8	3/16	0	1/16	3/16	1/4	0	0	1/8	1/8	0	0	1/8	1/8	0	1/16	3/16	1/4	0	1/8	1/4	3/8	0	1/16	3/16	1/4	0	1/16	3/16	1/4	0	0	1/8	1/8	0	1/16	3/16	1/4	0	1/16	1/8	3/16

NOTES:
Deflections and Convexities are given to the nearest 1/16 inch.
The following abbreviations are used:
S. = Dead load deflection due to the weight of steel.
R. = Remaining dead load deflection
C. = Convexity
T. = Required shop camber

Notes:
For details of Fixed Bearing see Sheet 16/16
For details of Intermediate Crossframes see Sheet 360.
For details of Beam Field Splices see Sheet 355.
For Detail "A" see Sheet 7/18.
For Layout dimensions not shown see Sheet 2/18.

H.N.T.B. BRIDGE NO. 5 | Revised 6-20-75 By WEB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 11 / 18
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FRAMING PLAN

RAMP F OVER HENRY AVE.
BR. NO. STA-30-1474R STA. 952+97.31
SCALE: 1" = 10'-0" STA. 954+07.31
RELOCATED U.S. 30
CANTON STARK COUNTY OHIO

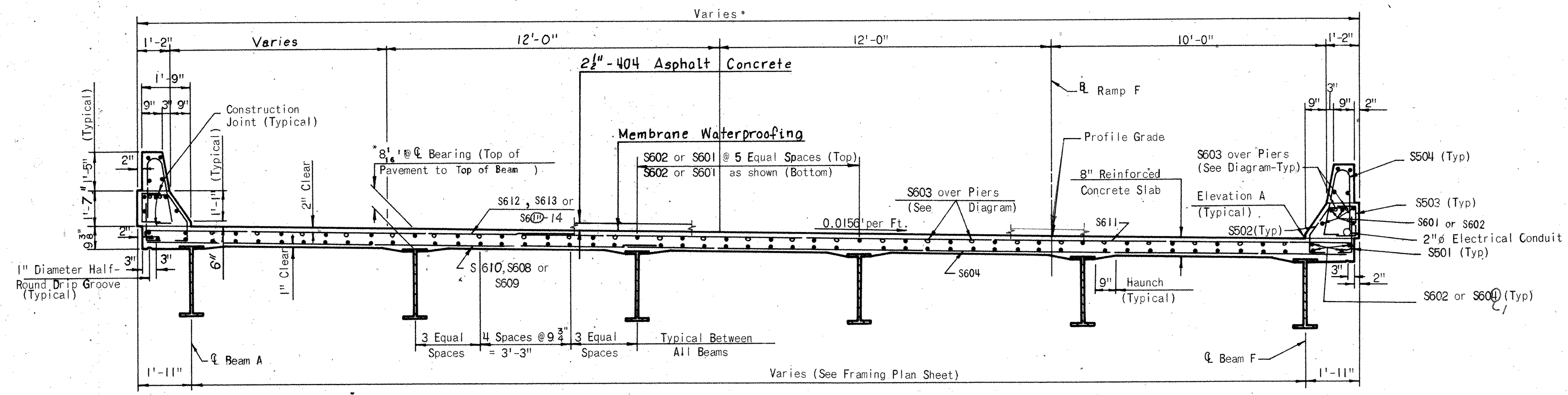
DRAWN	TRACED	CHECKED	REVIEWED	REVISED
K.T.B. DATE 1-9-69	J.M.W. DATE 2-12-69	J.A.H. DATE 1-10-69	MJK DATE 11-22-71	1668

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

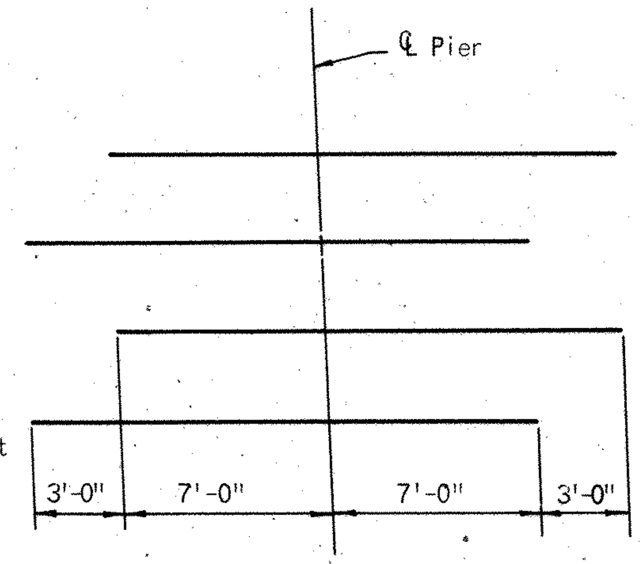
MICROFILMED SEP 13

NOTE:
A typical haunch width of 9" shall be used for computing quantity of concrete. However the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

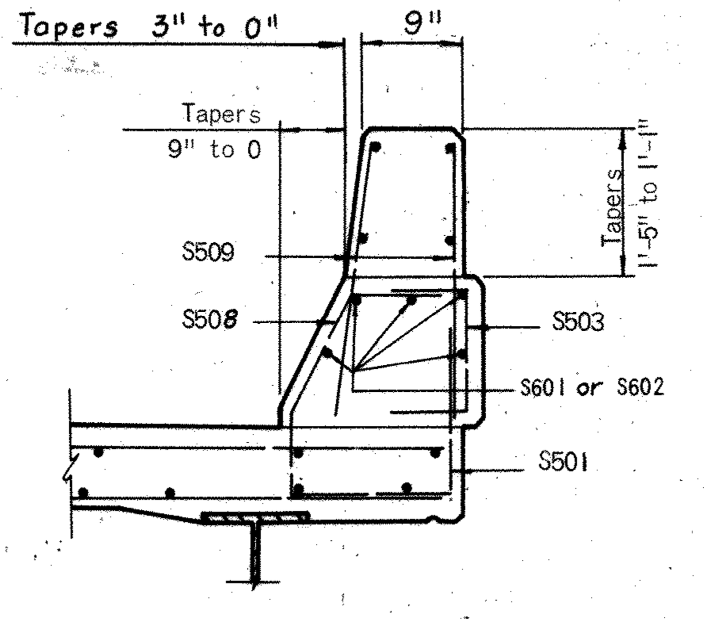


*Deck Slab Depth:
The distance shown from top of deck slab to top of steel beam is the design dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

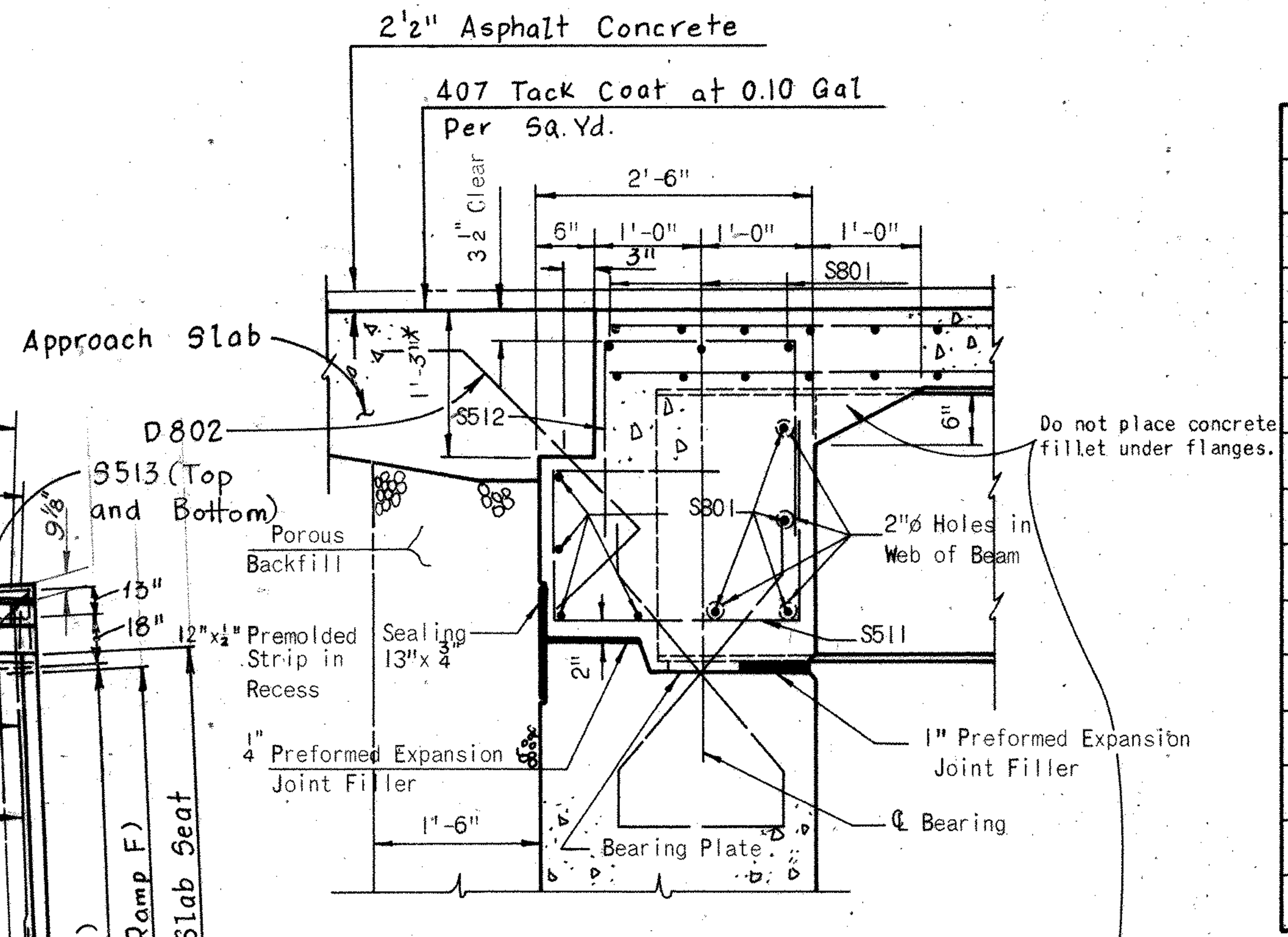
TYPICAL CROSS SECTION



PLACEMENT OF S603 BARS OVER PIERS



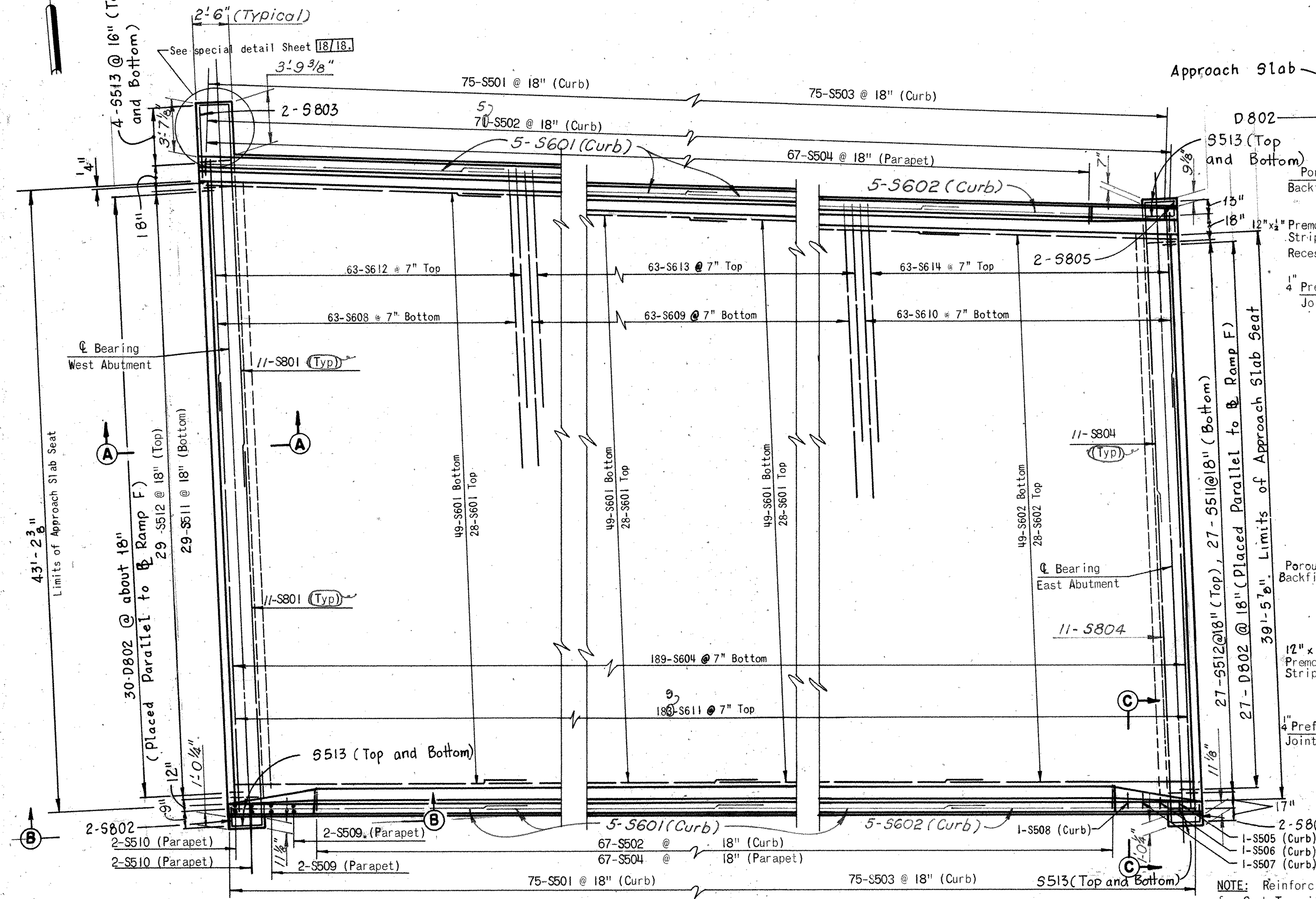
SECTION 'C-C'
(Bar marks shown are typical for Br. 5 only)



SECTION 'A-A'
* 1'-3" at ends of seat. The bottom of the approach slab seat shall be a plane.

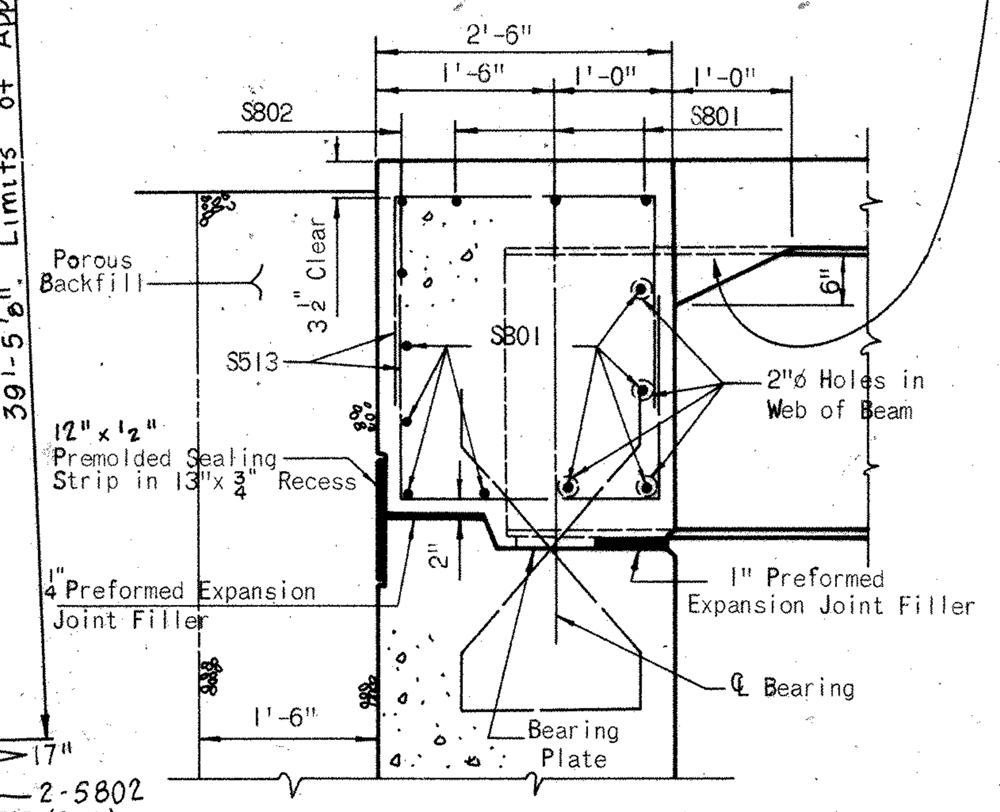
TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS						
BEAM	A	B	C	D	E	F
℄ Brg.W.Abut.	1047.52	1047.39	1047.26	1047.14	1047.01	1046.88
a	1047.63	1047.50	1047.37	1047.25	1047.12	1047.00
b	1047.73	1047.60	1047.48	1047.35	1047.23	1047.10
c	1047.83	1047.70	1047.58	1047.45	1047.33	1047.20
℄ Pier 1	1047.92	1047.79	1047.67	1047.54	1047.42	1047.30
a	1048.03	1047.90	1047.78	1047.66	1047.53	1047.41
b	1048.13	1048.00	1047.88	1047.76	1047.63	1047.51
c	1048.21	1048.09	1047.97	1047.85	1047.72	1047.60
℄ Pier 2	1048.29	1048.16	1048.04	1047.92	1047.80	1047.68
a	1048.34	1048.21	1048.09	1047.97	1047.85	1047.73
b	1048.38	1048.26	1048.14	1048.02	1047.90	1047.78
c	1048.41	1048.29	1048.17	1048.05	1047.93	1047.82
℄ Brg.E.Abut.	1048.44	1048.32	1048.20	1048.09	1047.97	1047.85

NOTE: Points a, b and c are the $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ points of the span respectively.



NOTE: Reinforcing Bars S505 to S508 inclusive are typical for Curb Transitions. Reinforcing Bars S509 to S510 are typical for Parapet Transitions. South North and South

PART SLAB PLAN



SECTION 'B-B'

ELEVATION A		
LOCATION	NORTH CURB	SOUTH CURB
℄ Brg.W.Abut.	1047.52	1046.88
a	1047.63	1047.00
b	1047.73	1047.10
c	1047.83	1047.20
℄ Pier 1	1047.92	1047.30
a	1048.03	1047.41
b	1048.13	1047.51
c	1048.21	1047.60
℄ Pier 2	1048.29	1047.68
a	1048.34	1047.73
b	1048.38	1047.78
c	1048.41	1047.82
℄ Brg.E.Abut	1048.44	1047.85

Notes:
For reinforcing schedule see Sheet 13/18.
For other notes see Sheet 8/18.
Parapet transitions shall be as shown on Standard Drawing BR-1-67 revised 10-15-71. Reinforcing steel shall be field bent or cut to fit the revised shape.

H.N.T.B. BRIDGE NO. 5 — Revised 7-9-75 By WEB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 12/18
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DECK REINFORCEMENT AND TYPICAL SECTION

RAMP F OVER HENRY AVE.
BR. NO. STA-30-1474R — STA. 952+97.31
SCALE: NO SCALE — STA. 954+07.31

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
K.T.B. DATE 2-13-69	J.M.W. DATE 2-17-69	J.B.C. DATE 2-26-69	MJK DATE 11-22-71	1668

Revised 4-28-77

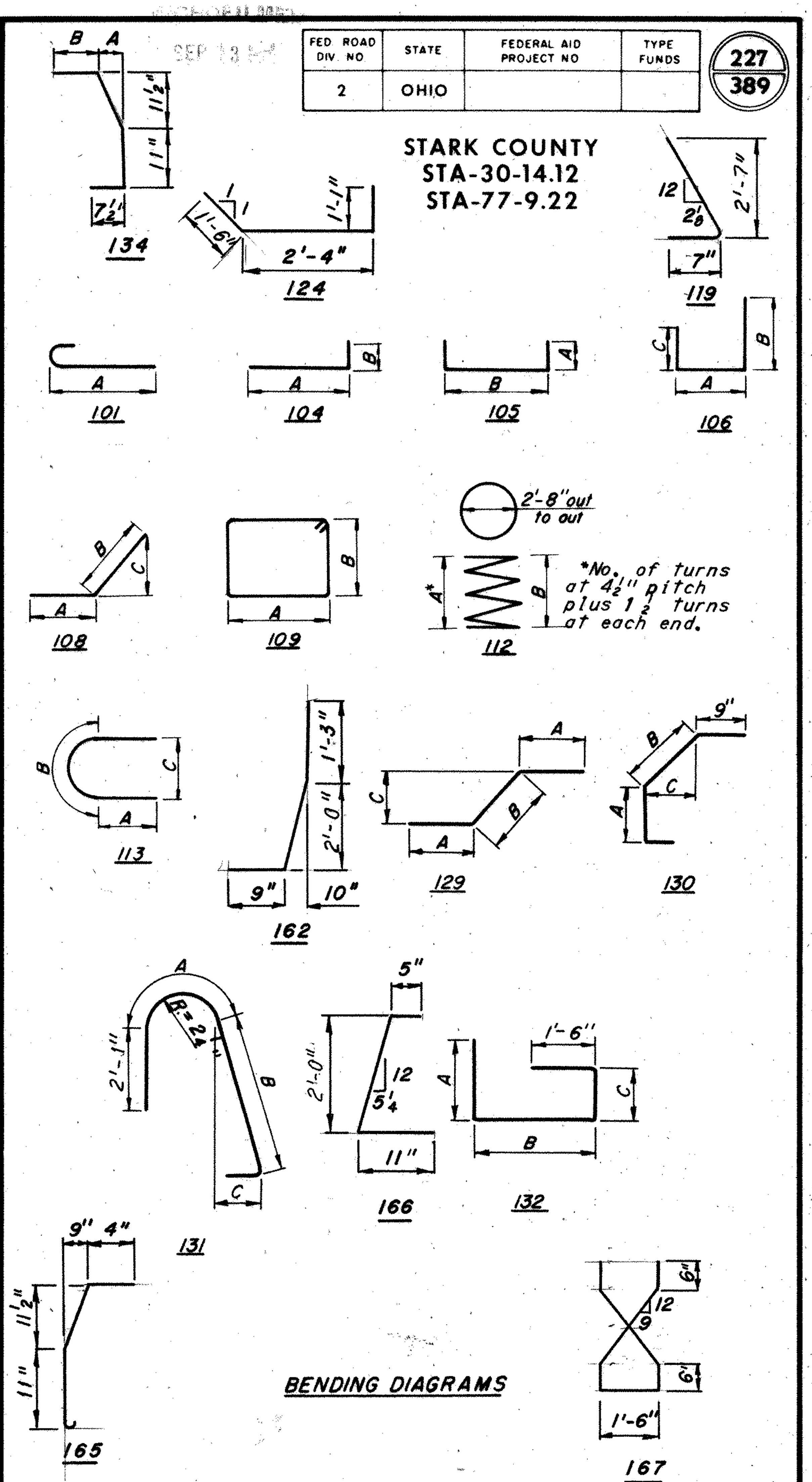
FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			227 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
				WEST ABUTMENT				
AB402	32	5'-1"	105	1'-11"	1'-6"			109
AB509	80	6'-7"	105	2'-1"	2'-8"			549
AB510	8	34'-0"	Str.					284
AB511	8	31'-0"	Str.					259
AB512	66	7'-5"	104	6'-11"	7½"			511
AB513	33	6'-5"	105	2'-3"	2'-2"			221
AB514	45	8'-3"	167					387
AB515	2 Ser. 7	10'-10" to 7'-10"	104	10'-4" to 7'-4"	7½"		6"	136
AB516	2	9'-6"	Str.					20
AB517	2	6'-6"	Str.					14
AB518	3	10'-1"	108	10"	9'-3"	3'-0"		32
AB519	7	5'-1"	105	1'-7"	2'-2"			37
AB802	8	34'-9"	Str.					742
AB1003	8	27'-9"	Str.					955
				Total West Abutment			=	4,256
				EAST ABUTMENT				
AE401	32	5'-1"	105	1'-11"	1'-6"			109
AE501	78	6'-7"	105	2'-1"	2'-8"			536
AE502	20	9'-5"	105	2'-1"	5'-6"			196
AE503	2 Ser. 10	7'-1" to 11'-3"	104	6'-7" to 10'-9"	7½"		5½"	191
AE504	58	7'-10"	104	7'-4"	7½"			474
AE505	20	12'-11"	104	12'-5"	7½"			270
AE506	16	29'-9"	Str.					496
AE507	2	11'-6"	Str.					24
AE508	2	7'-0"	Str.					15
AE509	3	14'-3"	108	1'-4"	12'-11"	4'-1"		45
AE510	15	15'-9"	Str.					246
AE511	10	5'-1"	105	1'-7"	2'-2"			53
AE512	39	6'-3"	105	2'-2"	2'-2"			254
AE513	40	8'-3"	167					344
AE801	8	30'-0"	Str.					641
AE802	8	15'-9"	Str.					336
AE1001	4	46'-0"	Str.					792
				Total	East Abutment			5,022
				PIER 1				
PA401	1	470.521	112	57	20'-3"			379
PA402	1	462.266	112	56	19'-11"			373
PA403	1	454.010	112	55	19'-7"			366
PA501	104	6'-6"	Str.					705
PA502	34	12'-2"	109	2'-8"	3'-2"			434
PA503	36	4'-7"	105	1'-1"	2'-8"			172
PA504	2	4'-5"	105	1'-1"	2'-6"			9
PA505	2	3'-9"	105	1'-1"	1'-10"			8
PA601	4	41'-0"	Str.					246
PA602	8	7'-11"	113	1'-11"	4'-1"	2'-8"		95
PA701	7	10'-0"	Str.					143
PA901	32	26'-9"	Str.					2,910
PA1001	8	7'-0"	104	5'-11"	16½"			241
PA1002	8	23'-0"	Str.					792
PA1003	3	43'-0"	Str.					559
PA1004	2	41'-0"	Str.					353
PA1005	6	14'-0"	Str.					361
PA1006	3	12'-0"	Str.					155
PA1010	5	24'-0"	Str.					540 16
PA1101	20	7'-5"	104	6'-3"	17½"			788
PA1102	10	23'-6"	Str.					1,249
PA1103	10	22'-9"	Str.					1,209
PA1104	10	15'-6"	104	12'-10"	3'-0"			825
					Total Pier	1 =		12,912 888

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
				PIER 2				
PB401	1	478.776	112	58	20'-6"			385
PB402	1	470.521	112	57	20'-2"			379
PB403	1	462.266	112	56	19'-11"			373
PB501	100	6'-6"	Str.					678
PB502	34	12'-2"	109	2'-8"	3'-2"			434
PB503	36	4'-7"	105	1'-1"	2'-8"			172
PB504	2	4'-5"	105	1'-1"	2'-6"			9
PB505	2	3'-9"	105	1'-1"	1'-10"			8
PB601	4	39'-9"	Str.					239
PB602	8	7'-11"	113	1'-11"	4'-1"	2'-8"		95
PB701	7	10'-0"	Str.					143
PB901	32	26'-0"	Str.					2,829
PB1001	24	7'-0"	104	5'-11"	16½"		723	241
PB1002	8	23'-3"	Str.					800
PB1003	3	42'-0"	Str.					542
PB1004	2	39'-9"	Str.					342
PB1005	6	14'-0"	Str.					361
PB1006	3	12'-0"	Str.					155
PB1007	8	23'-9"	Str.					818
PB1008	8	23'-0"	Str.					792
PB1009	10	5 14'-9" 7	104	12'-1" 10	3'-0"			637 71
PB1010	5	23'-0"	Str.					497
					Total Pier	2 =		10,929 11,445
				SUPERSTRUCTURE				
S501	150	2'-5"	104	1'-11"	7½"			378
S502	138 42	3'-5"	130	11½"	1'-2½"	9"	506	492
S503	150	2'-3"	105	7½"	1'-3"			352
S504	134 8	5'-8"	131	8"	2'-5"	5"	816	792
S505	2	2'-6"	101	1'-11"				5
S506	2	2'-11"	134	2"	7½"			6
S507	2	2'-11"	134	4"	7½"			6
S508	2	3'-0"	134	6"	7½"			6
S509	12	2'-6"	Str.					31
S510	12	2'-3"	Str.					28
S511	56	6'-8"	132	2'-0"	2'-2"	1'-4"		389
S512	56	5'-5"	105	2'-0"	1'-8"			316
S513	20	5'-11"	105	2'-0"	2'-2"			123
S514	80	7'-0"	Str.					586
S515	16	11'-0"	Str.					183
S516	8	12'-6"	Str.					104
S601	261	30'-0"	Str.					11,750
S602	87	25'-6"	Str.					3,330
S603	58	17'-0"	Str.					1,480
S604	189	76'-9" 26'	Str.					7,600
S608	63	20'-3"	Str.					1,920
S609	63	19'-0"	Str.					1,800
S610	63	17'-9"	Str.					1,680
S611	189	31'-5"	101	30'-9"				8,920
S612	63	16'-11"	101	16'-3"				1,600
S613	63	15'-8"	101	15'-0"				1,480
S614	63	14'-5"	101	13'-9"				1,370
S630	12	4'-0"	Str.					72
S631	4	15'-4" 1"	109	2'-2"	5'-0"			92
S801	22	26'-3"	Str.					1,542
S802	4	1'-6"	Str.					16
S803	2	5'-3"	Str.					28
S804	22 11	2 43'-6" 0"	Str.					1,278 351
S805	2	2'-3"	Str.					12
D802	57	4'-9"	124					723
				Total	Superstructure		=	50,490 601
					Total for Bridge 5 =			83,609 4,212

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For replacement reinforcement schedule see sheet 9/18
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 5 | Revised 7-9-75 | By WEB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 13 / 18
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

RAMP F OVER HENRY AVE.
BR. NO. STA-30-1474R STA. 952+97.31
SCALE: NO SCALE STA. 954+07.31

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

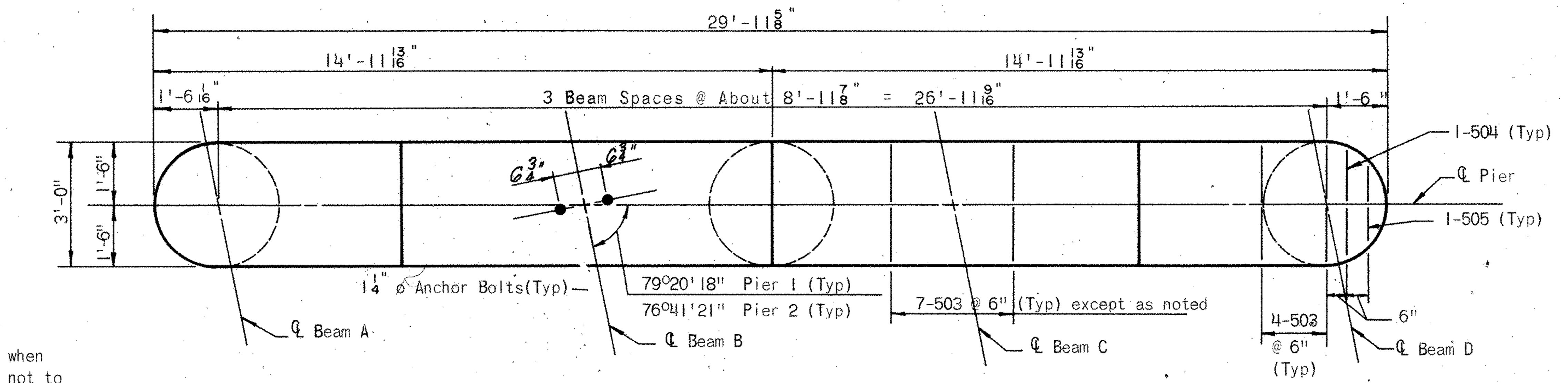
DRAWN	TRACED	CHECKED	REVIEWED	REVISED
J.M.W. DATE 3-6-69	J.M.W. DATE 3-12-69	J.A.H. DATE 3-31-69	MJK DATE 11-22-71	1668

Revised 4-28-77

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

228
389

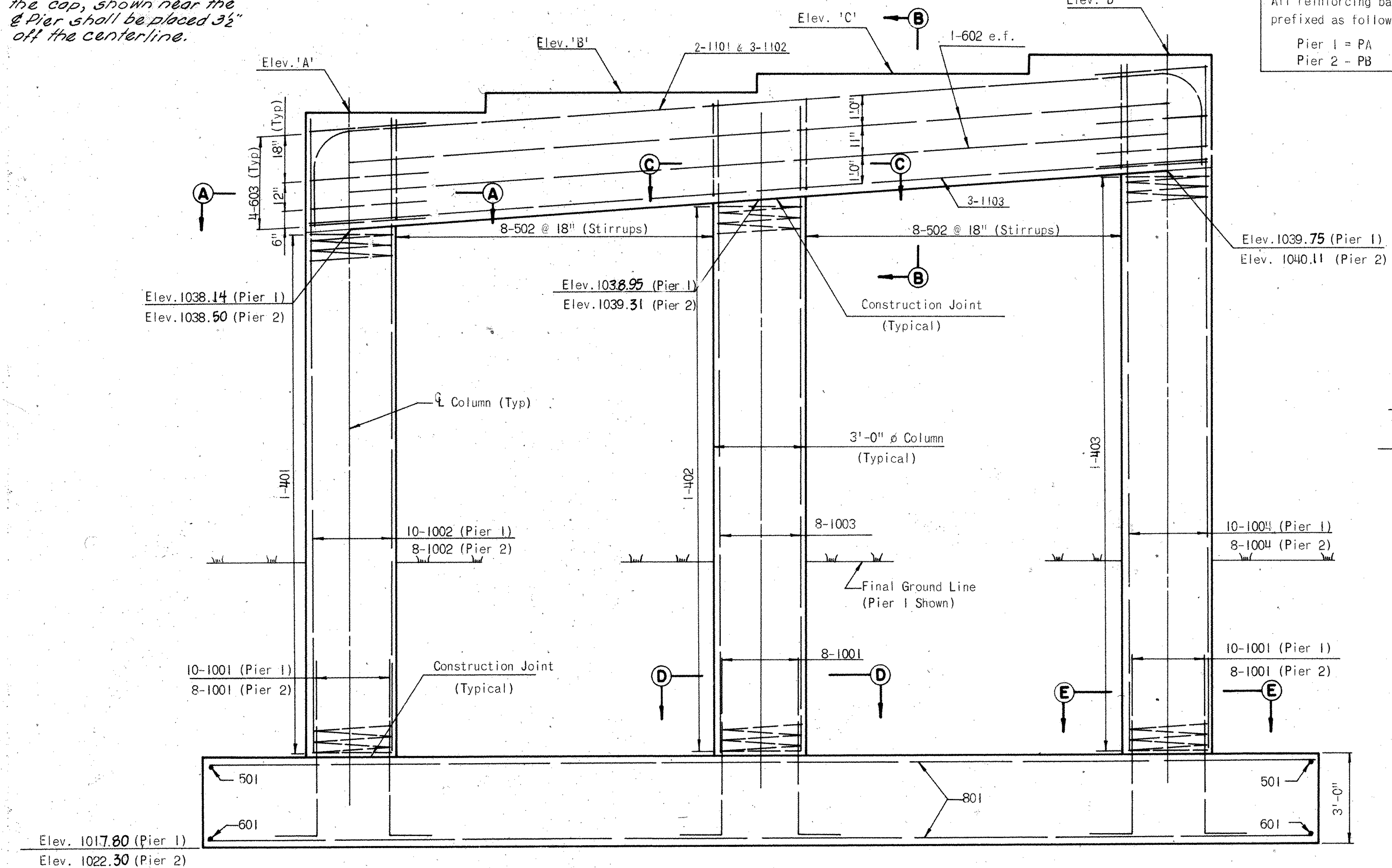
STARK COUNTY
STA-30-14.12
STA-77-9.22



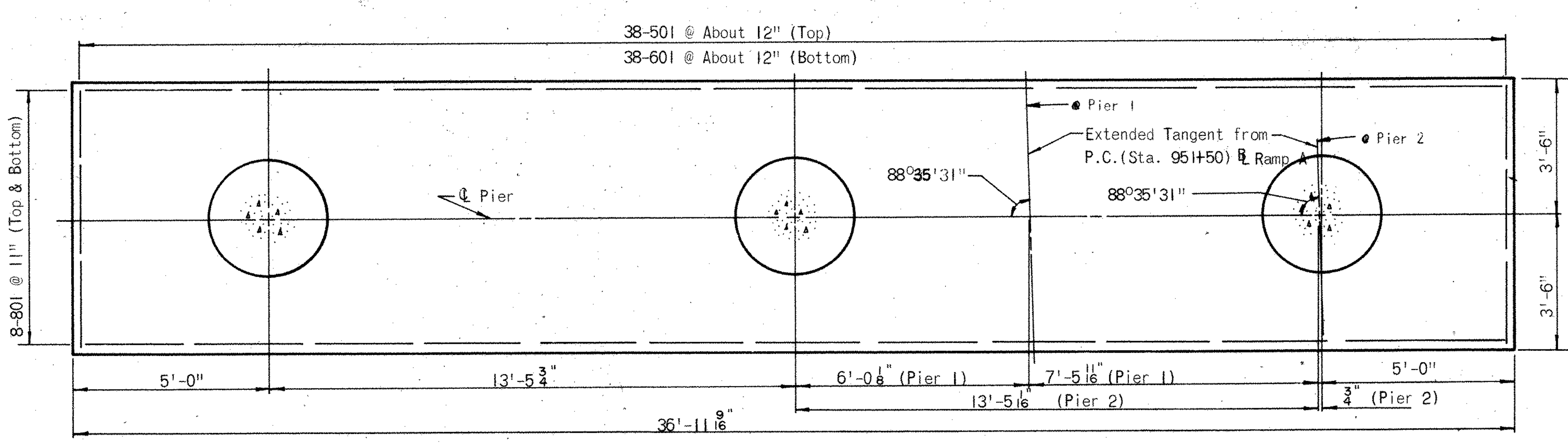
PLAN

NOTE:
Special care shall be taken when placing reinforcement so as not to interfere with anchor bolt setting.
The reinf. bar in the top of the cap, shown near the ℄ Pier shall be placed 3 1/2" off the centerline.

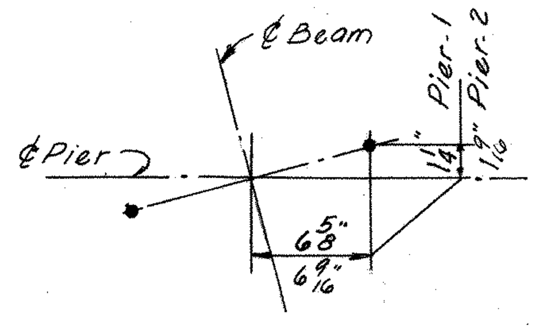
NOTE:
All reinforcing bars shall be prefixed as follows:
Pier 1 = PA
Pier 2 = PB



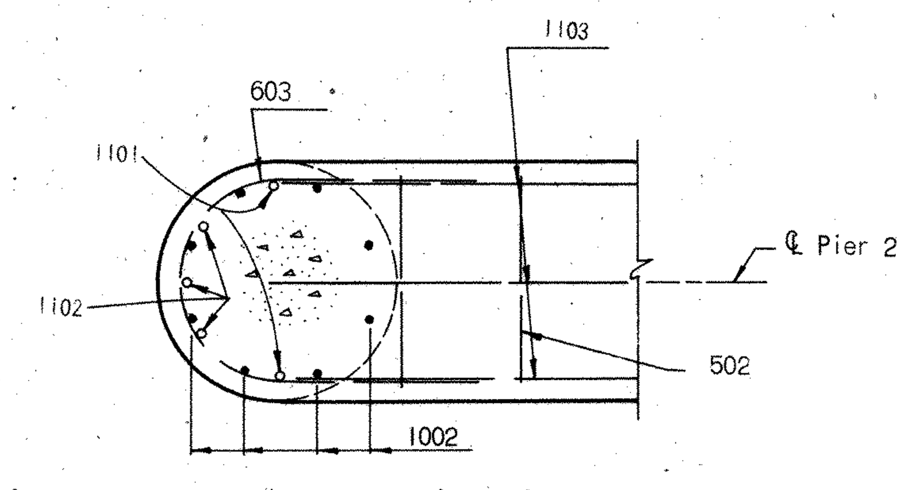
ELEVATION



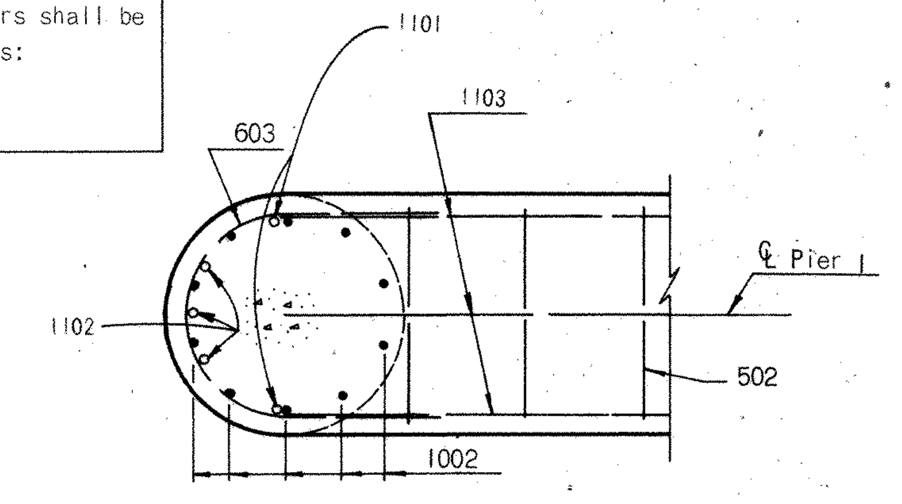
FOOTING PLAN



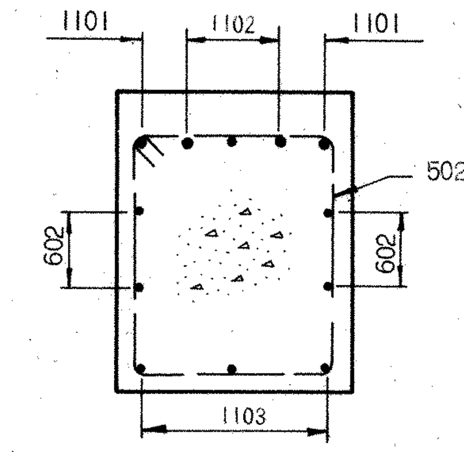
ANCHOR BOLT LAYOUT



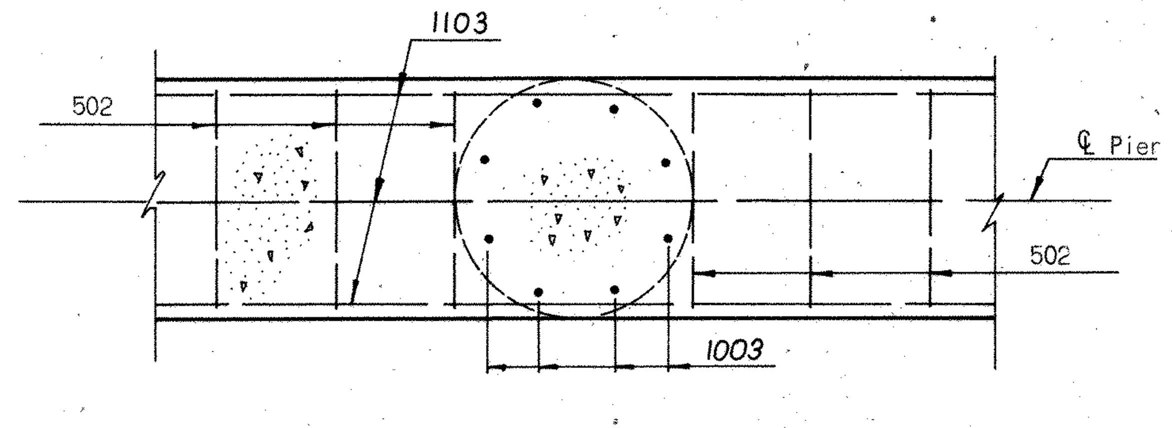
SECTION 'A-A'
(Pier 2)



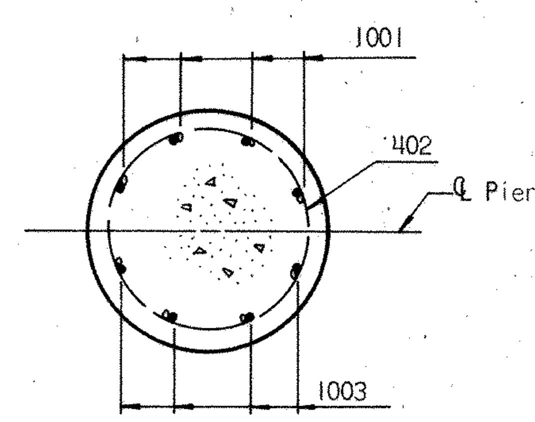
SECTION 'A-A'
(Pier 1)



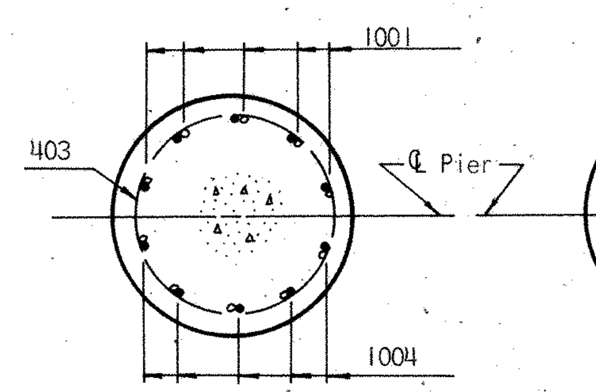
SECTION 'B-B'



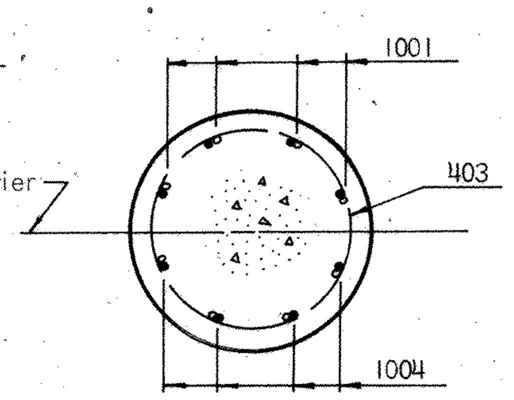
SECTION 'C-C'



SECTION 'D-D'



SECTION 'E-E'
(Pier 1)



SECTION 'E-E'
(Pier 2)

Notes:
For Anchor Bolt details see Sheet 18/18.
For Layout Diagram see Sheet 2/18.
The following abbreviation is used:
e.f. = each face.
Pier 2 is similar to Pier 1 except as noted.
All stirrups within 4 feet of ℄ Column shall be placed with hooks in the bottom of cap. All others shall be placed with hook in the top.

PIER SEAT ELEVATIONS		
	PIER 1	PIER 2
'A'	1041.95	1042.43
'B'	1042.49	1042.97
'C'	1043.03	1043.50
'D'	1043.56	1044.04

H.N.T.B. BRIDGE NO. 15 — *Revised 7-9-75 By WEB*

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 14/18
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIERS

RAMP A OVER HENRY AVE.
BR. NO. STA-30-1474L — STA. 952+97.80
SCALE: 3/8" = 1'-0" — STA. 954+06.43

RELOCATED U.S. 30

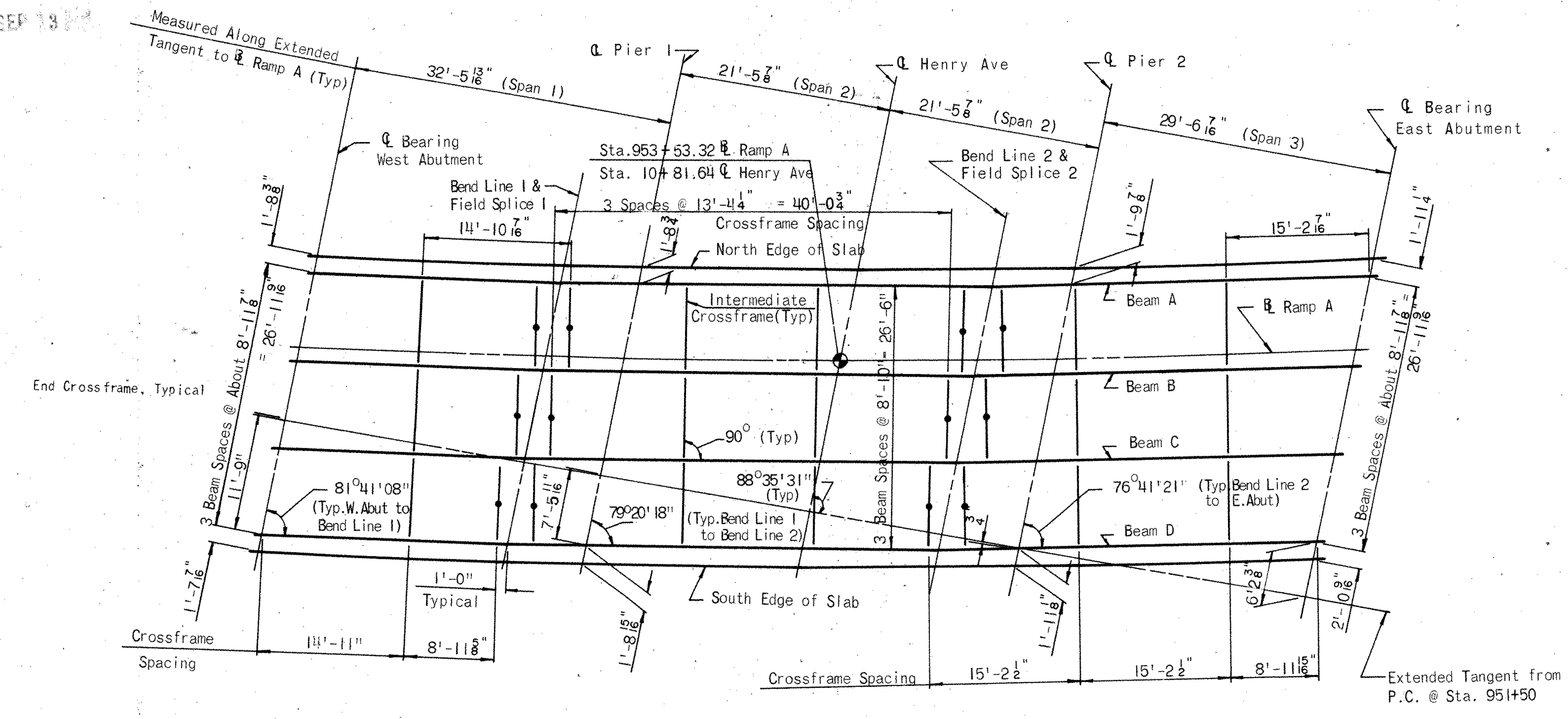
CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
J.B.C. DATE 2-20-69	J.M.W. DATE 2-26-69	K.T.B. DATE 2-25-69	MJK DATE 11-27-71	3-2-76

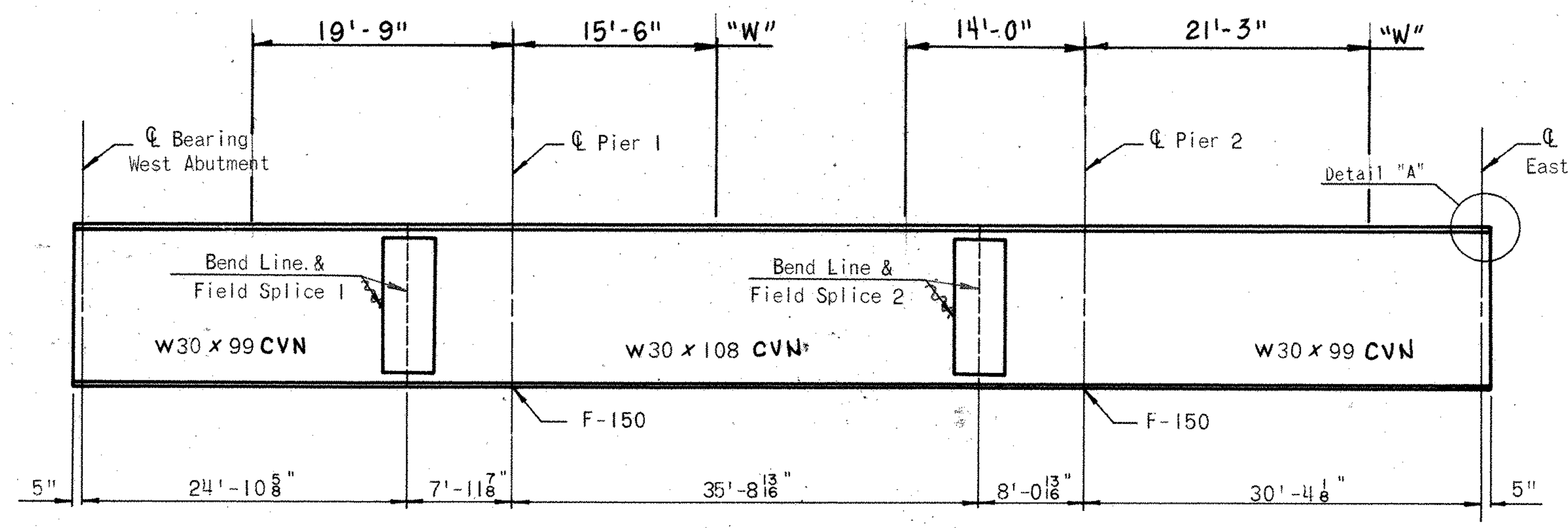
1668

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



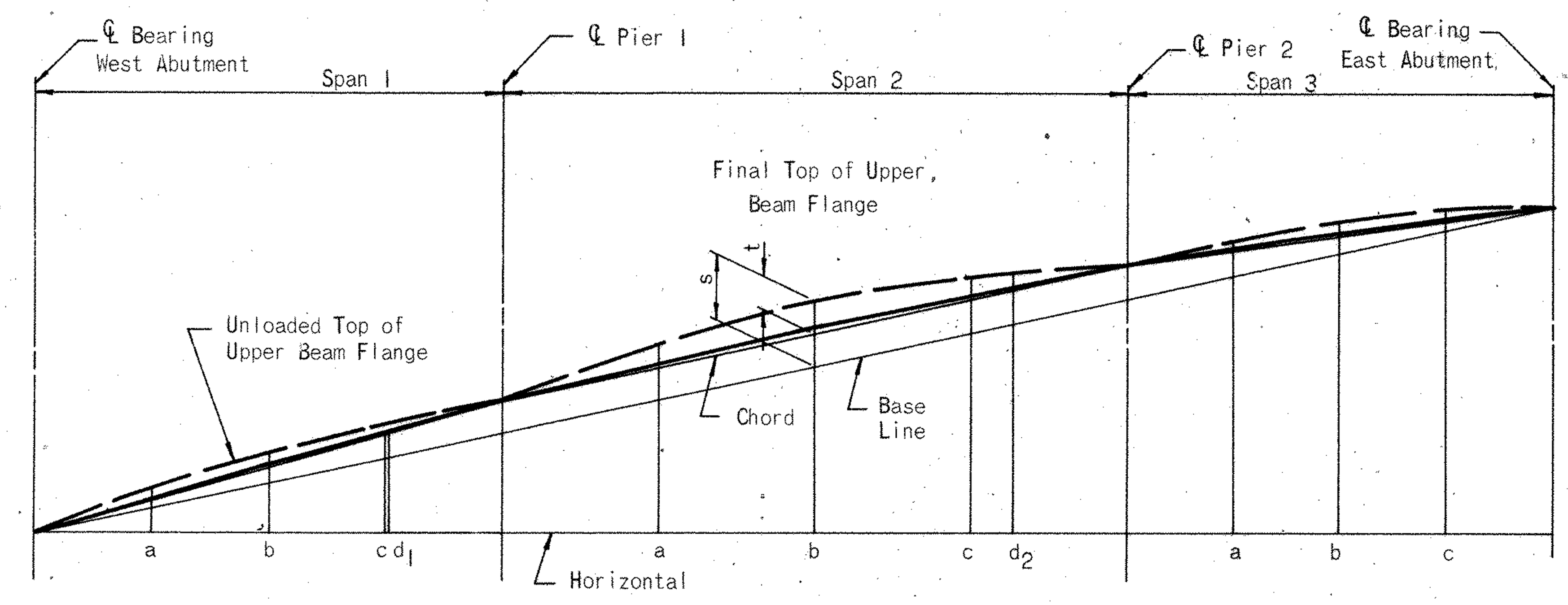
FRAMING PLAN



Note:
"W" Denotes the range where welded attachments cannot be made to the top flange of Beams A and D.

CVN- See Sheet 214.

TYPICAL BEAM ELEVATION



CAMBER DIAGRAM

(See Table)

NOTE:
The 1/4, 1/2, and 3/4 points of the spans are indicated by a, b, and c, respectively. The center lines of Bend Line 1 (Field Splice 1) and Bend Line 2 (Field Splice 2) are indicated by d_1 and d_2 respectively. Vertical offsets measured from the base line between abutment bearings to the unloaded top of upper flange and measured from the chord between bearing points to the unloaded top of upper beam flange are indicated by s and t respectively.

HORIZONTAL OFFSETS		
	BEAM A to NORTH EDGE SLAB	BEAM D to SOUTH EDGE SLAB
℄ Brg.W.Abut.	1'- 8 1/8"	1'- 7 1/4"
1/4	1'- 7 15/16"	1'- 7 7/8"
1/2	1'- 8 9/16"	1'- 7 11/16"
3/4	1'-10 1/16"	1'- 6 5/8"
Bend Line 1	1'-10"	1'- 6 1/2"
℄ Pier 1	1'- 8 7/16"	1'- 8 5/8"
1/4	1'- 7 9/16"	1'-10 3/16"
1/2	1'- 8 1/8"	1'-10 5/16"
3/4	1'-10 1/4"	1'- 8 15/16"
Bend Line 2	1'-10 15/16"	1'- 8 1/4"
℄ Pier 2	1'- 9 5/16"	1'-10 1/2"
1/4	1'- 8 9/16"	2'- 0"
1/2	1'- 8 1/2"	2'- 0 5/8"
3/4	1'- 9 1/8"	2'- 0 9/16"
℄ Brg.E.Abut.	1'-10 5/8" 1/2"	1'-11 15/16" 13/16

NOTE:
Horizontal offsets are given at Bend Lines, ℄ Bearings and 1/4 points between ℄ Bearings and are perpendicular to ℄ Beams

Notes:
For Details of Fixed Bearing see Sheet 18/18
For Details of Intermediate and Bend Line Crossframes see Sheet 360.
For Details of Beam Field Splices see Sheet 355.
For Detail "A" see Sheet 7/18.
Denotes Bend Line Crossframe

VERTICAL OFFSETS FOR ALL BEAMS IN UNLOADED POSITION

	Span 1										Span 2										Span 3						
	1/4 Point a		1/2 Point b		3/4 Point c		Bend Line 1 d_1		Pier 1		1/4 Point a		1/2 Point b		3/4 Point c		Bend Line 2 d_2		Pier 2		1/4 Point a		1/2 Point b		3/4 Point c		
BEAMS	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t	BEAMS
A	9/16	3/16	15/16	1/4	1 1/4	3/16	1 5/16	3/16	1 7/16	0	1 3/4	5/16	1 7/8	1/2	1 13/16	3/8	1 11/16	5/16	1 3/8	0	1 1/16	1/16	13/16	1/8	7/16	1/8	A
B	1/2	3/16	1	1/4	1 5/16	1/4	1 5/16	1/4	1 7/16	0	1 11/16	1/4	1 13/16	7/16	1 13/16	7/16	1 11/16	5/16	1 3/8	0	1 1/16	1/16	13/16	1/8	7/16	1/8	B
C	5/8	1/4	1 1/16	5/16	1 3/8	1/4	1 3/8	1/4	1 1/2	0	1 3/4	1/4	1 7/8	7/16	1 13/16	7/16	1 11/16	5/16	1 3/8	0	1 1/16	1/16	13/16	1/8	7/16	1/8	C
D	3/4	3/8	1 3/16	3/8	1 7/16	3/16	1 7/16	3/16	1 5/8	0	1 7/8	1/4	2	7/16	1 15/16	7/16	1 3/4	5/16	1 7/16	0	1 1/8	1/16	13/16	1/8	7/16	1/8	D

NOTES:
Deflections and Convexities are given to the nearest 1/16 inch
The following abbreviations are used:
S = Dead Load Deflection due to the weight of the steel
R = Remaining Dead Load Deflection
C = Convexity
T = Required Shop Camber

DEAD LOAD DEFLECTION AND CAMBER

	Span 1																Span 2																Span 3												
	1/4 Point a				1/2 Point b				3/4 Point c				Bend Line 1 d_1				1/4 Point a				1/2 Point b				3/4 Point c				Bend Line 2 d_2				1/4 Point a				1/2 Point b				3/4 Point c				
BEAM	S	R	C	T	S	R	C	T	S	R	C	T	S	R	C	T	S	R	C	T	S	R	C	T	S	R	C	T	S	R	C	T	S	R	C	T	S	R	C	T	S	R	C	T	BEAM
A	0	1/16	1/8	3/16	0	1/16	3/16	1/4	0	0	3/16	3/16	0	0	3/16	3/16	0	1/8	3/16	5/16	0	3/16	5/16	1/2	0	1/8	1/4	3/8	0	1/16	1/4	5/16	0	0	1/16	1/16	0	1/16	1/16	1/8	0	1/16	1/16	1/8	A
B	0	1/16	1/8	3/16	0	1/16	3/16	1/4	0	0	1/4	1/4	0	0	1/4	1/4	0	1/8	1/8	1/4	0	3/16	1/4	7/16	0	1/8	5/16	7/16	0	1/16	1/4	5/16	0	0	1/16	1/16	0	1/16	1/16	1/8	0	1/16	1/16	1/8	B
C	0	1/16	3/16	1/4	0	1/16	1/4	5/16	0	0	1/4	1/4	0	0	1/4	1/4	0	1/8	1/8	1/4	0	3/16	1/4	7/16	0	1/8	5/16	7/16	0	1/16	1/4	5/16	0	0	1/16	1/16	0	1/16	1/16	1/8	0	1/16	1/16	1/8	C
D	0	1/16	5/16	3/8	0	1/16	5/16	3/8	0	0	3/16	3/16	0	0	3/16	3/16	0	1/8	1/8	1/4	0	3/16	1/4	7/16	0	1/8	5/16	7/16	0	1/16	1/4	5/16	0	0	1/16	1/16	0	1/16	1/16	1/8	0	1/16	1/16	1/8	D

H.N.T.B. BRIDGE NO. 15 | Revised 7-9-75 By WEB

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

15/18

FRAMING PLAN

RAMP A OVER HENRY AVE.
BR. NO. STA-30-1474L STA. 952+97.80
SCALE: 1" = 10'–0" STA. 954+06.43

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

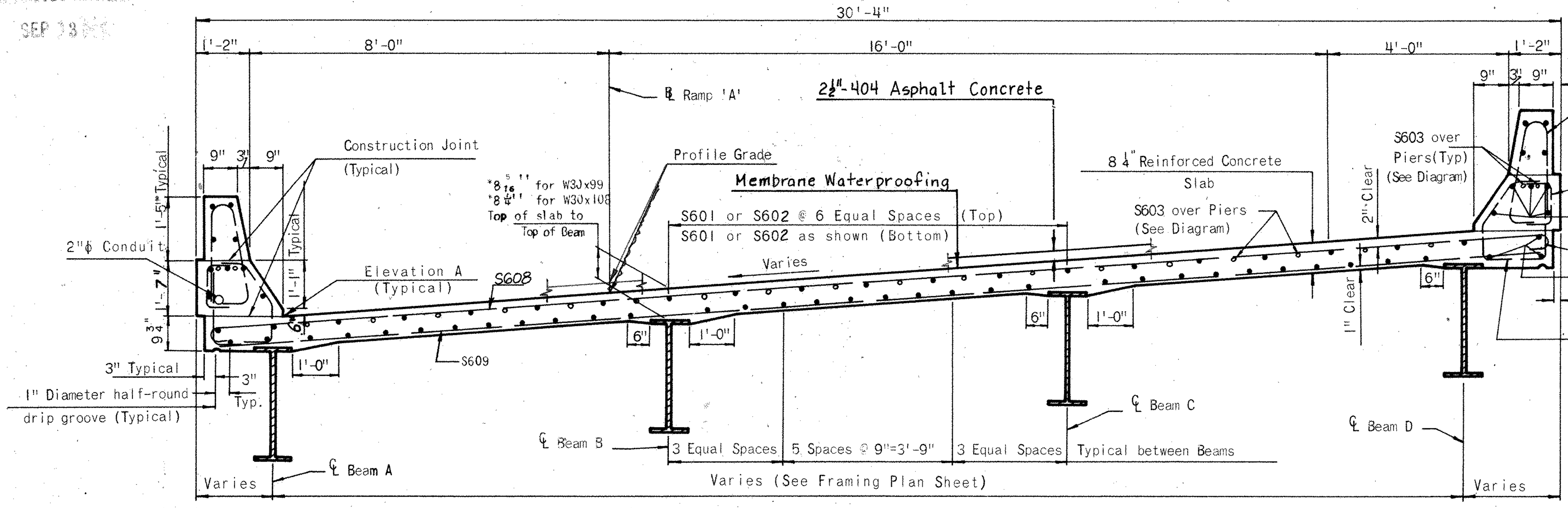
DRAWN J.B.C. DATE 1-31-69	TRACED J.M.W. DATE 2-26-69	CHECKED K.T.B. DATE 2-24-69	REVIEWED MJK DATE 11-22-71	REVISED 1668

Revised 4-28-77

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

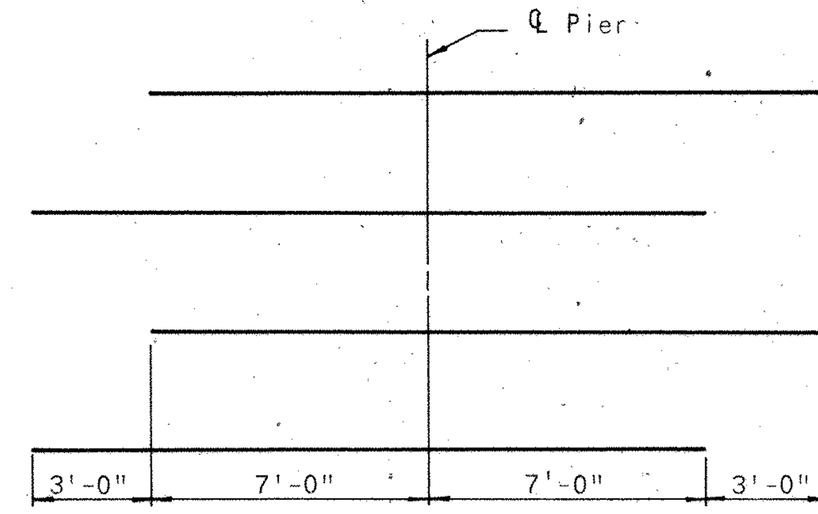
230
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

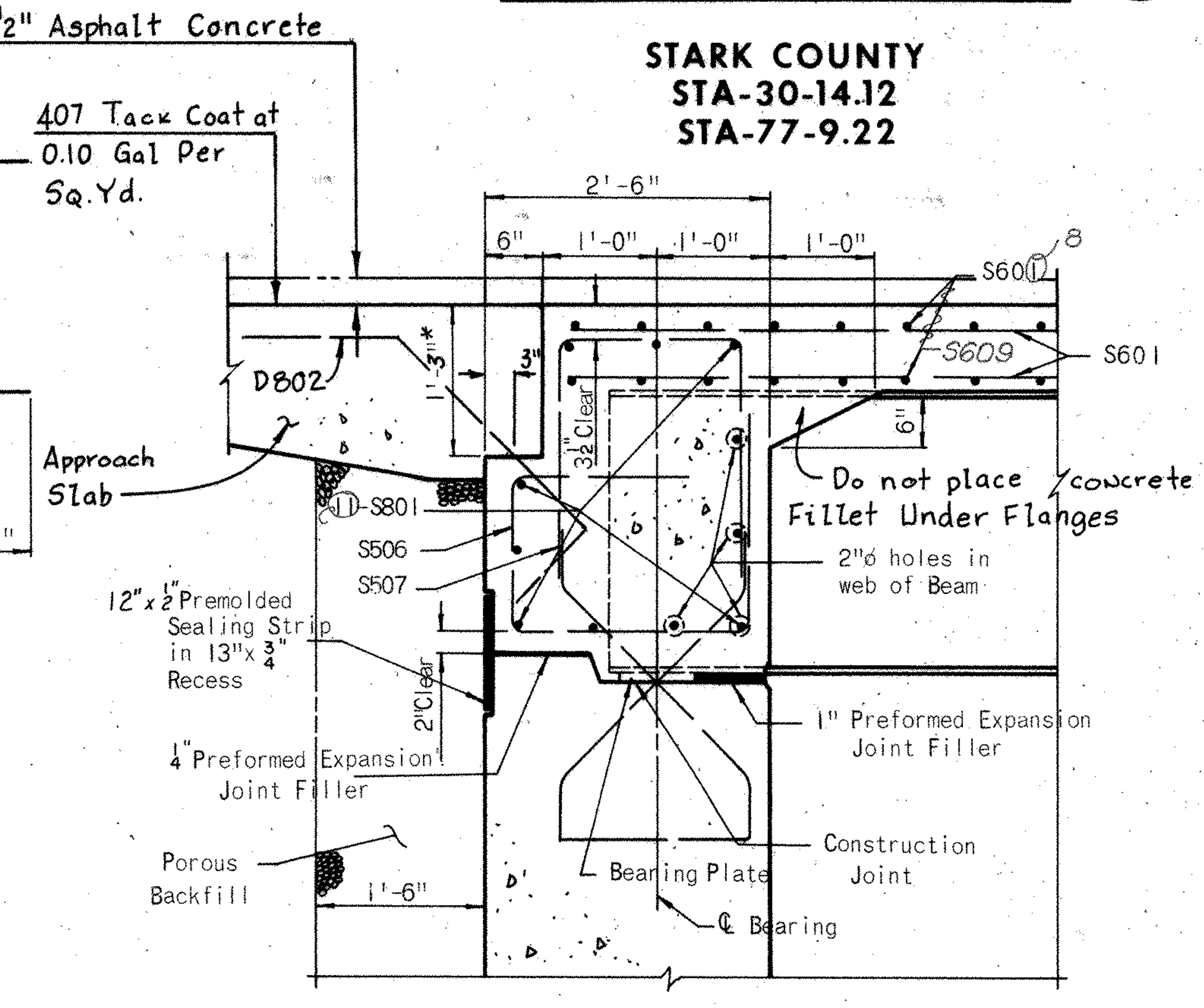


*Deck Slab Depth:
The distance shown from top of deck slab to top of steel beam is the design dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

TYPICAL CROSS SECTION

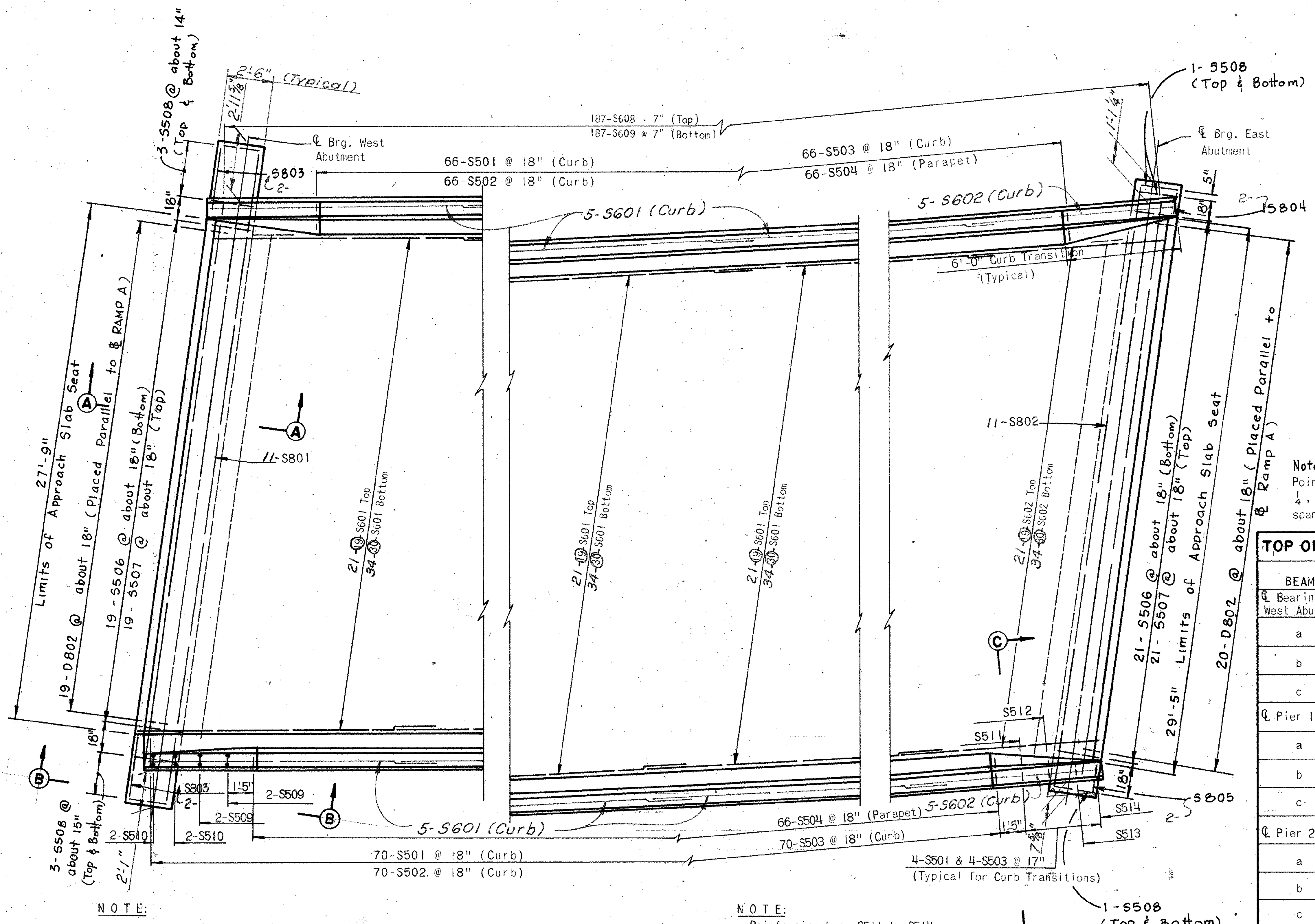


PLACEMENT OF S603 BARS OVER PIERS



SECTION 'A–A'

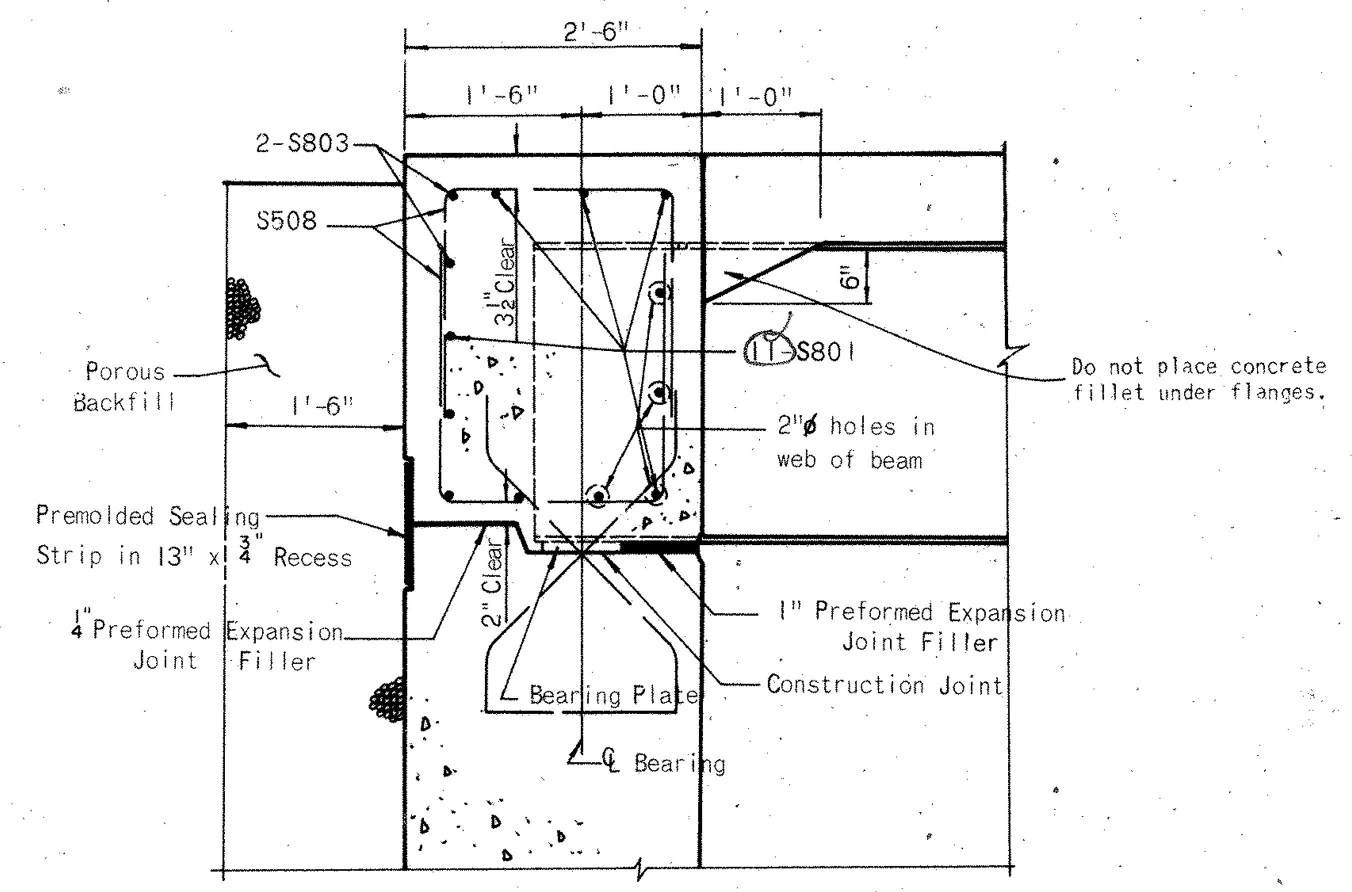
* 1'-3" at ends of seat. The bottom of the approach slab seat shall be a plane.



NOTE:
Reinforcing bars S509 and S510 are typical for Parapet Transition.

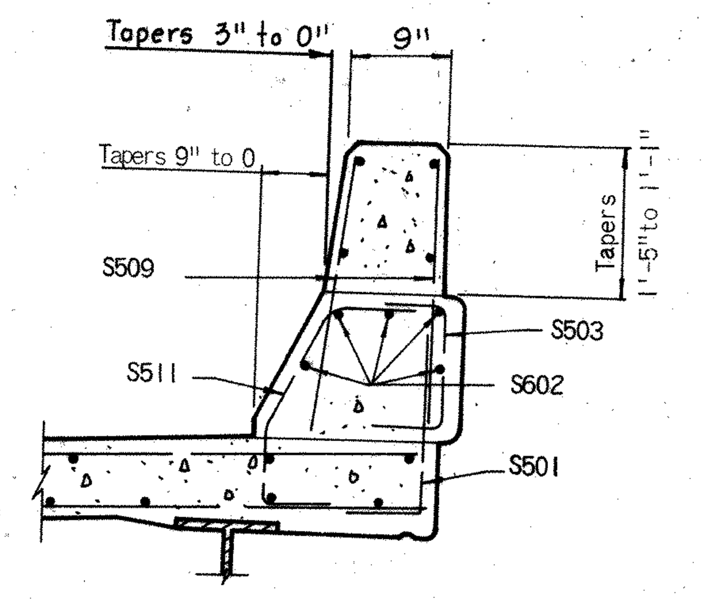
PART SLAB PLAN

NOTE:
Reinforcing bars S511 to S514 are typical for Curb Transition



SECTION 'B–B'

Note:
Points a, b and c are the $\frac{1}{4}$, $\frac{1}{2}$, and $\frac{3}{4}$ points of span respectively



SECTION 'C–C'

NOTES:
For Notes see Sheet 8/18

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS				
BEAM	A	B	C	D
℄ Bearing West Abutment	1044.83	1045.36	1045.90	1046.42
a	1044.96	1045.49	1046.03	1046.57
b	1045.08	1045.62	1046.16	1046.69
c	1045.20	1045.74	1046.28	1046.81
℄ Pier 1	1045.30	1045.84	1046.38	1046.91
a	1045.44	1045.97	1046.51	1047.04
b	1045.56	1046.09	1046.63	1047.17
c	1045.68	1046.21	1046.75	1047.29
℄ Pier 2	1045.77	1046.31	1046.84	1047.38
a	1045.83	1046.36	1046.90	1047.43
b	1045.88	1046.41	1046.95	1047.49
c	1045.93	1046.47	1047.00	1047.54
℄ Bearing East Abutment	1045.98	1046.52	1047.05	1047.59

ELEVATION A		
LOCATION	NORTH CURB	SOUTH CURB
℄ Bearing West Abutment	1044.83	1046.42
a	1044.96	1046.57
b	1045.08	1046.69
c	1045.20	1046.81
℄ Pier 1	1045.30	1046.91
a	1045.44	1047.05
b	1045.56	1047.17
c	1045.67	1047.29
℄ Pier 2	1045.77	1047.39
a	1045.83	1047.45
b	1045.88	1047.51
c	1045.93	1047.56
℄ Bearing East Abutment	1045.97	1047.61

H.N.T.B. BRIDGE NO. 15 Revised 7-11-75 By WEB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 16 / 18
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DECK REINFORCEMENT AND TYPICAL SECTION

RAMP A OVER HENRY AVE.
BR. NO. STA-30-1474L STA. 952+97.80
SCALE: NO SCALE STA. 954+06.43

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
J.B.C. DATE 1-22-69	J.M.W. DATE 3-11-69	J.A.H. DATE 2-17-69	MJK DATE 11-22-71	1668

Revised 4-28-77

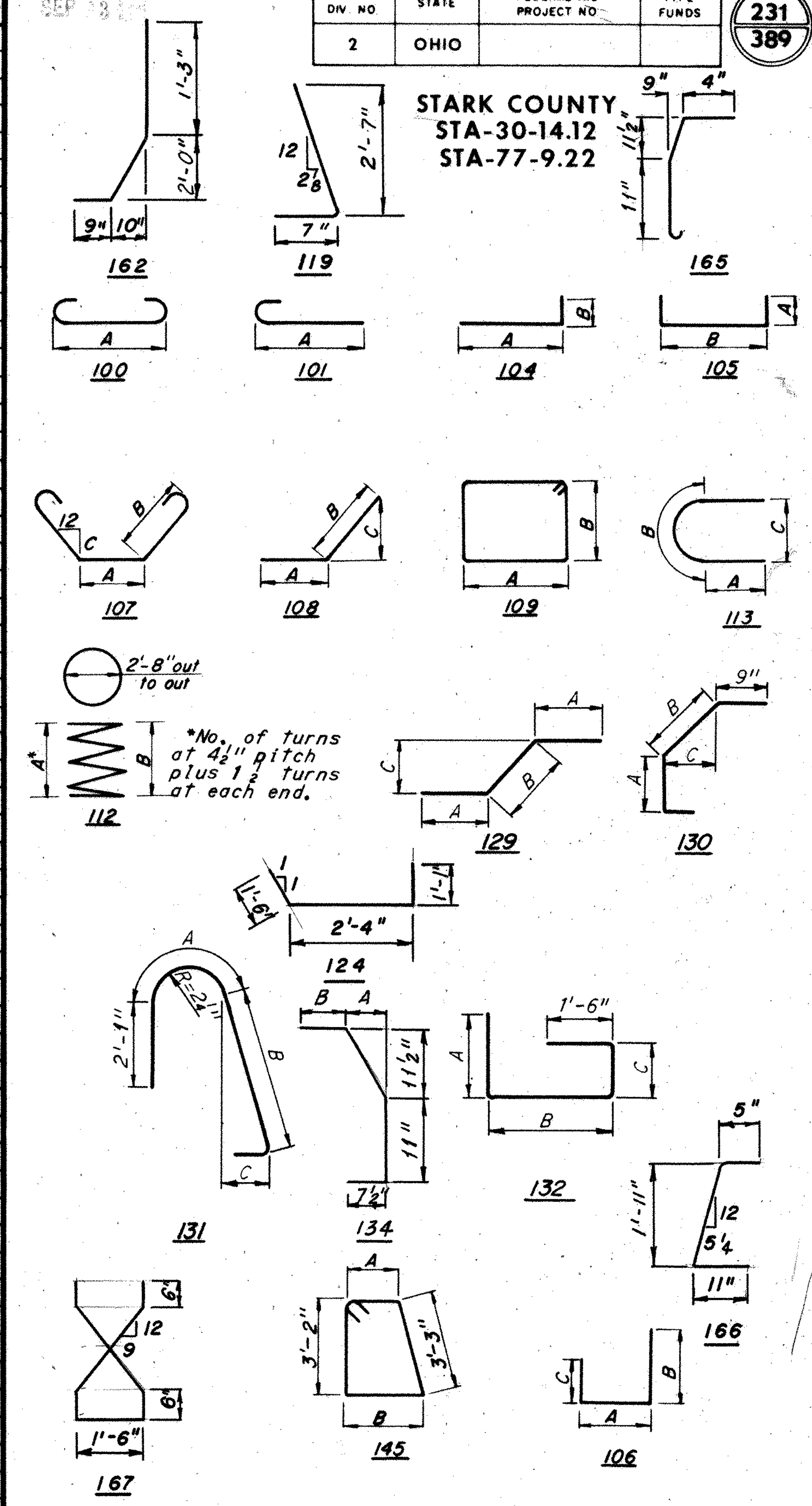
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
				WEST ABUTMENT				
AC403	24	5'-1"	105	1'-11"	1'-6"			81
AC520	56	6'-7"	105	2'-1"	2'-8"			384
AC521	8	42'-0"	Str.					350
AC522	24	7'-4"	104	6'-10"	7½"			184
AC523	22	8'-3"	104	7'-9"	7½"			189
AC524	23	6'-7"	105	2'-4"	2'-2"			158
AC525	2 Ser. 5	10'-9" to 8'-11"	104	10'-3" to 8'-5"	7½"		5½"	103
AC526	4	6'-6"	Str.					27
AC527	3	6'-11"	108	1'-4"	5'-7"	1'-10"		21
AC528	5	5'-1"	105	1'-7"	2'-2"			27
AC529	27	8'-3"	167					232
AC803	4	42'-0"	Str.					449
AC1004	4	37'-0"	Str.					637
				Total	West Abutment		=	2,842
				EAST ABUTMENT				
AF401	24	5'-1"	105	1'-11"	1'-6"			81
AF501	58	6'-7"	105	2'-1"	2'-8"			398
AF502	28	9'-5"	105	2'-1"	5'-6"			275
AF503	2 Ser. 7	8'-8" to 11'-5"	104	8'-2" to 10'-11"	7½"		5½"	147
AF504	20	8'-0"	104	7'-6"	7½"			167
AF505	24	8'-8"	104	8'-2"	7½"			217
AF506	2 Ser. 28 14	11'-11" to 12'-1" 11'-1"	104	11'-5" to 11'-7" 10'-7"	7½"		3/4"	353 36
AF507	5	42'-3"	Str.					220
AF508	5	42'-9"	Str.					223
AF509	2	7'-6"	Str.					16
AF510	3	10'-0"	108	1'-4"	8'-8"	2'-9"		31
AF511	13	22'-0"	Str.					298
AF512	21	5'-1"	105	1'-7"	2'-2"			111
AF513	22	6'-11"	105	2'-6"	2'-2"			159
AF514	27	8'-3"	167					232
AF801	2	42'-3"	Str.					226
AF802	2	42'-6"	Str.					227
AF803	8	22'-0"	Str.					470
AF1001	4	35'-0"	Str.					620
				Total	East	Abutment	=	4,471 54
				PIER 1				
PA401	1	404.479	112	49	17'-2"			325
PA402	1	420.990	112	51	18'-0"			339
PA403	1	437.500	112	52	18'-9"			352
PA501	38	6'-6"	Str.					258
PA502	16	12'-2"	109	2'-8"	3'-2"			203
PA503	22	4'-7"	105	1'-1"	2'-8"			105
PA504	2	4'-5"	105	1'-1"	2'-6"			9
PA505	2	3'-9"	105	1'-1"	1'-10"			8
PA601	38	6'-6"	Str.					371
PA602	4	27'-0"	Str.					162
PA603	8	7'-11"	113	1'-11"	4'-1"	2'-8"		95
PA801	16	36'-6"	Str.					1,559
PA1001	28	7'-0"	104	5'-11"	1'-4½"			843
PA1002	10	20'-9"	Str.					893
PA1003	8	21'-3"	Str.					732
PA1004	10	22'-6"	Str.					968
PA1101	2	32'-5"	105	3'-0"	27'-0"			345
PA1102	3	34'-5"	105	3'-0"	29'-0"			550
PA1103	3	27'-0"	Str.					431
					Total	Pier	1 =	8,548

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
				PIER 2				
PB401	1	313.672	112	38	13'-0"			251
PB402	1	330.182	112	40	13'-10"			265
PB403	1	346.693	112	42	14'-8"			279
PB501	38	6'-6"	Str.					258
PB502	16	12'-2"	109	2'-8"	3'-2"			203
PB503	22	4'-7"	105	1'-1"	2'-8"			105
PB504	2	4'-5"	105	1'-1"	2'-6"			9
PB505	2	3'-9"	105	1'-1"	1'-10"			8
PB601	38	6'-6"	Str.					371
PB602	4	27'-0"	Str.					162
PB603	8	7'-11"	113	1'-11"	4'-1"	2'-8"		95
PB801	16	36'-6"	Str.					1,559
PB1001	24	7'-0"	104	5'-11"	1'-4½"			723
PB1002	8	16'-9"	Str.					577
PB1003	8	17'-3"	Str.					594
PB1004	8	18'-3"	Str.					628
PB1101	2	32'-5"	105	3'-0"	27'-0"			345
PB1102	3	34'-5"	105	3'-0"	29'-0"			550
PB1103	3	27'-0"	Str.					431
					Total	Pier 2	=	7,413
				SUPERSTRUCTURE				
36								
S501	148	2'-5"	104	1'-11"	7½"			373
S502	136	3'-5"	130	11½"	1'-2½"	9"		485
S503	148	2'-3"	105	7½"	1'-3"			347
S504	132	5'-8"	131	8"	2'-5"	5"		780
S505	64	7'-0"	Str.					472
S506	40	6'-8"	132	2'-0"	2'-2"	1'-4"		278
S507	40	5'-5"	105	2'-0"	1'-8"			226
S508	18	5'-11"	105	2'-0"	2'-2"			111
S509	16	2'-6"	Str.					42
S510	16	2'-3"	Str.					38
S511	3	3'-0"	134	6"	7½"			9
S512	3	2'-11"	134	4"	7½"			9
S513	3	2'-11"	134	2"	7½"			9
S514	3	2'-6"	101	1'-11"				8
S515	4	18'-6"	Str.					77
S516	8	13'-3"	Str.					111
S517	8	16'-6"	Str.					138
S518	4	18'-0"	Str.					75
S601	195	30'-0"	Str.					8,800
S602	65	25'-6"	Str.					2,500
S603	44	17'-0"	Str.					1,123
S608	187	31'-4"	100	30'-0"				8,820
S609	187	30'-0"	Str.					8,450
S801	11	35'-0"	Str.					1,028
S802	11	32'-6"	Str.					955
S803	4	3'-6"	Str.					37
S804	2	1'-6"	Str.					8
S805	2	1'-3"	Str.					7
D802	39	4'-9"	124					495
					Total	Superstructure	=	35,811
								68
					Total	Bridge 15	=	59,085

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

231
389

STARK COUNTY
STA-30-14.12
STA-77-9.22



BENDING DIAGRAMS

Notes:

All bar dimensions are given out to out.

All bars of a series shall vary in length by a constant increment.

For replacement reinforcement schedule see sheet 9/18

Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 15 | Revised 7-11-75 By WEB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 17/18
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

RAMP A OVER HENRY AVE.
BR. NO. STA-30-1474L STA. 952+97.80
SCALE: NO SCALE STA. 954+06.43

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

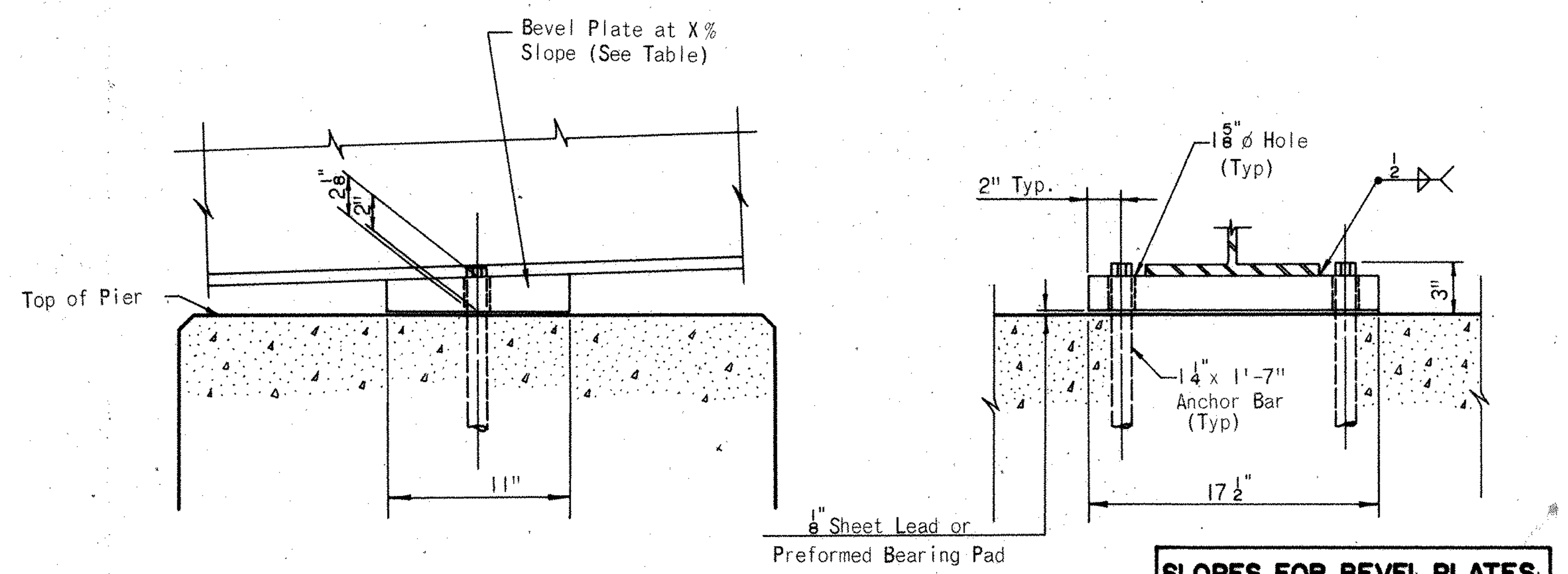
DRAWN	TRACED	CHECKED	REVIEWED	REVISED
J.M.W. DATE 3-6-69	J.M.W. DATE 3-12-69	J.B.C. DATE 3-27-69	MJK DATE 11-22-71	1668

Revised 4-28-77

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

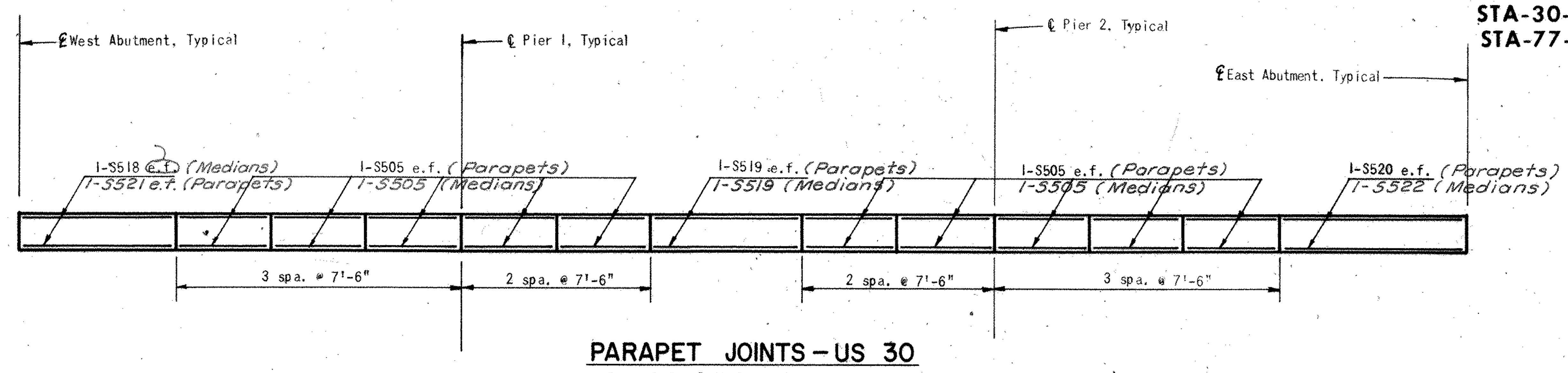
232
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

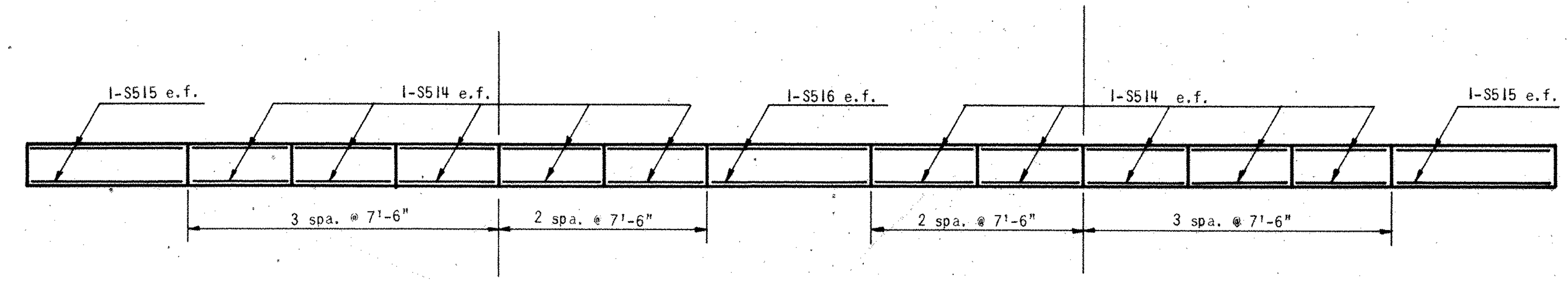


FIXED BEARING (F-150)

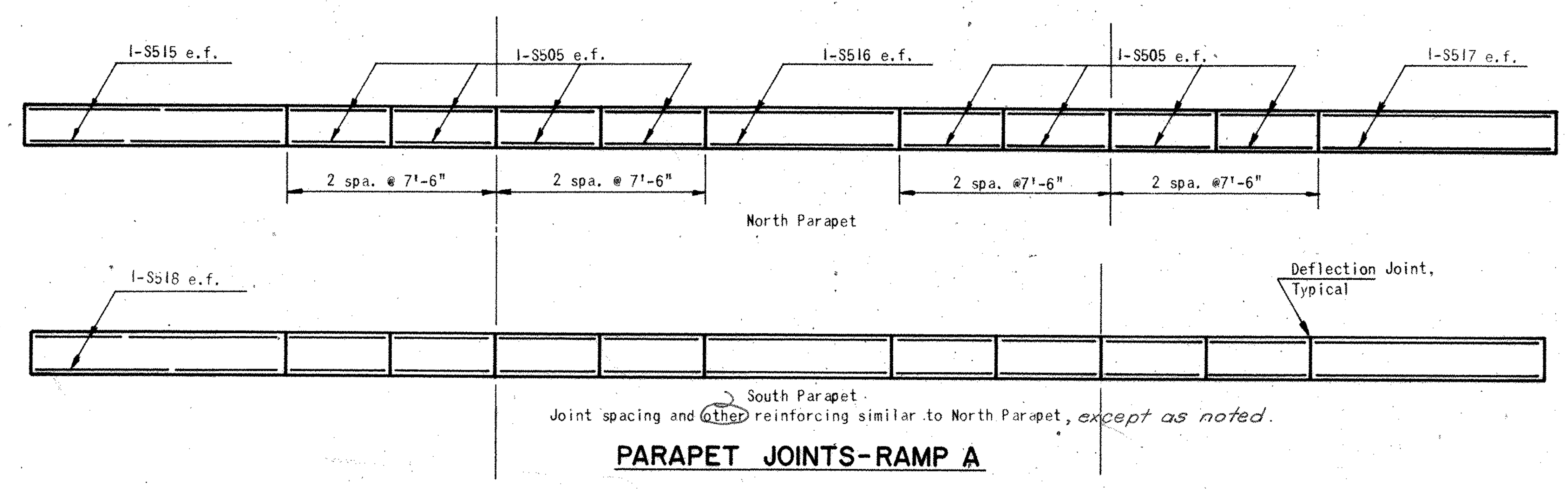
SLOPES FOR BEVEL PLATES		
		% SLOPE
Br. No. 1	Pier 1	2.96
	Pier 2	2.96
Br. No. 5	Pier 1	1.11
	Pier 2	0.68
Br. No. 15	Pier 1	1.28
	Pier 2	0.85



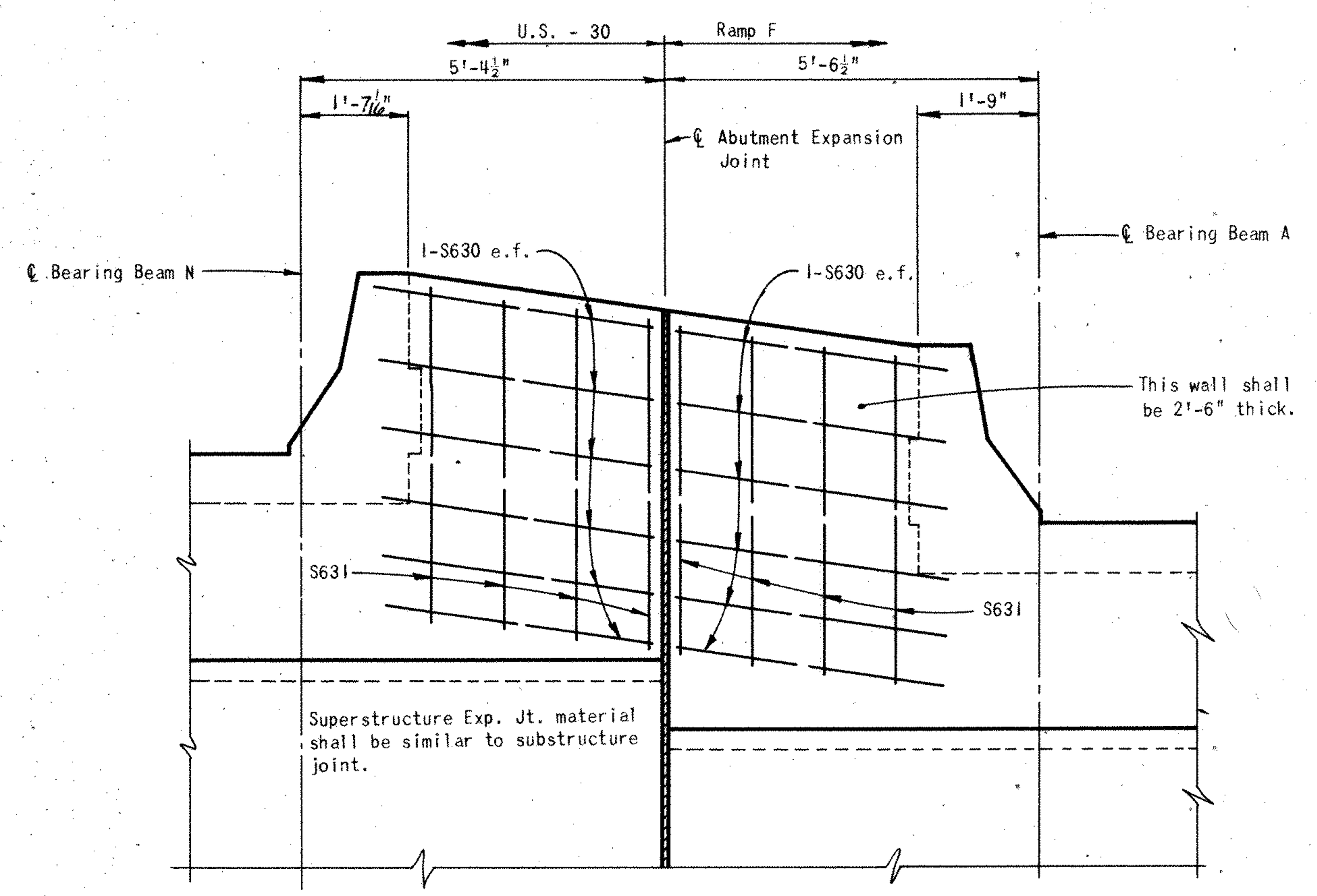
PARAPET JOINTS - US 30
Typical for Both Parapets and Median



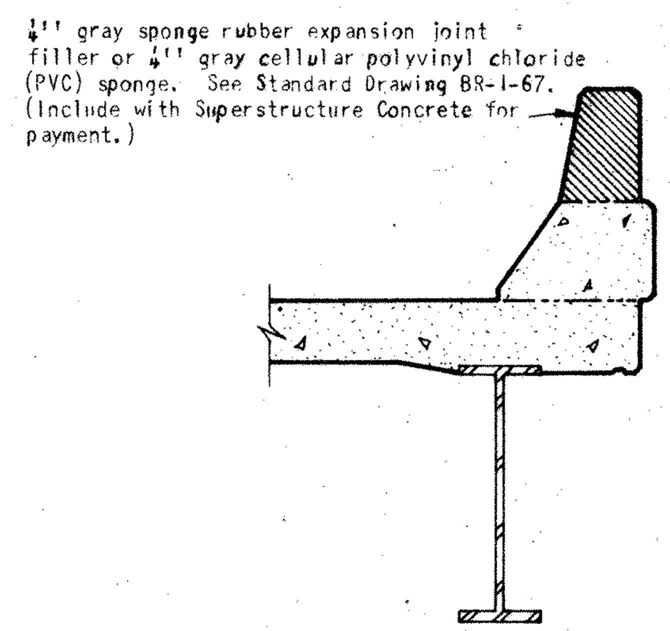
PARAPET JOINTS - RAMP F
Typical for Both Parapets



PARAPET JOINTS - RAMP A



BARRIER WALL AT WEST ABUTMENT



SECTION THRU DEFLECTION JOINT

H.N.T.B. BRIDGE NOS. 1,5 AND 15

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

18/18

SPECIAL DETAILS

BR. NO. STA. - 30-1474 STA. 952+96.77
BR. NO. STA. - 30-1474R STA. 954+11.76
BR. NO. STA. 30-1474L

SCALE: NO SCALE

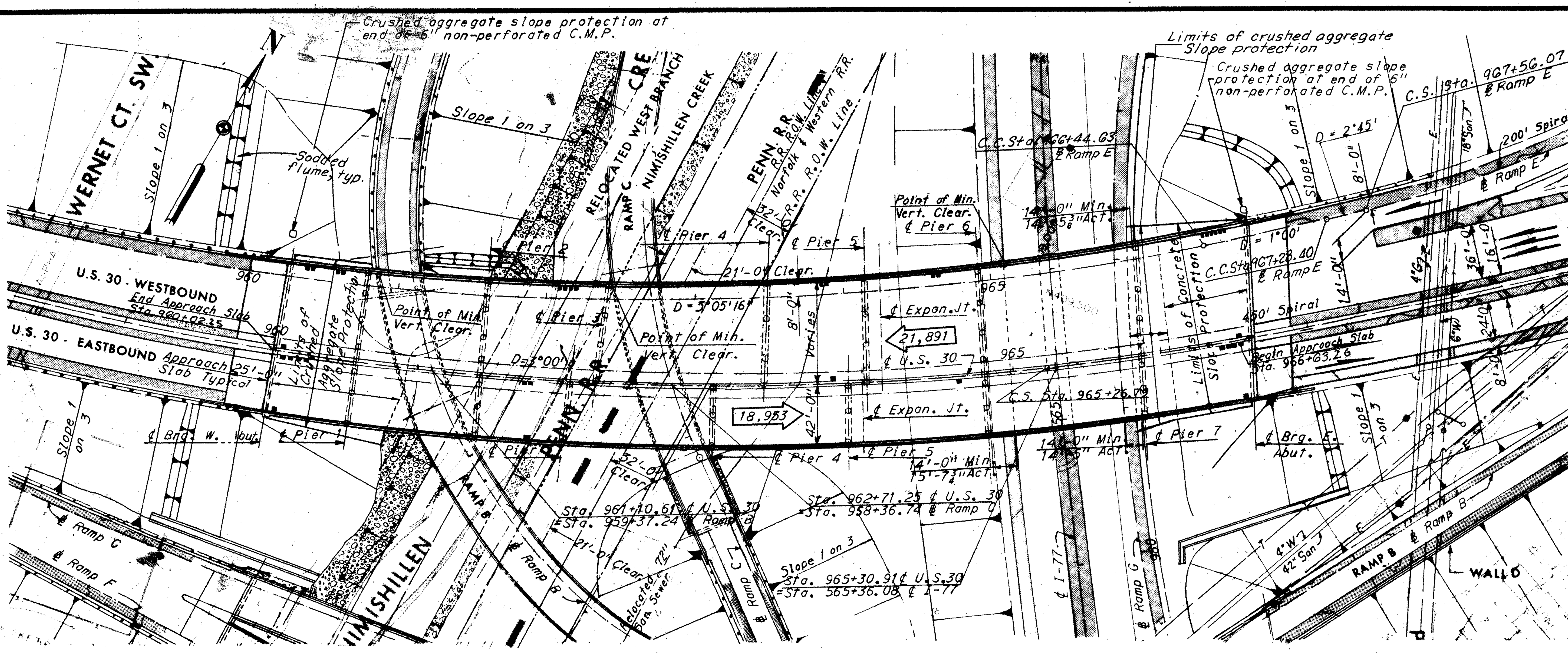
RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
K.T.B. DATE-6-69	J.M.W. DATE-10-69	J.B.C. DATE 1-19-69	MJK DATE 11-22-71	1668

Revised 4-28-77

STARK COUNTY
STA-30-14.12
STA-77-9.22



PLAN

U.S. 30 CURVE DATA

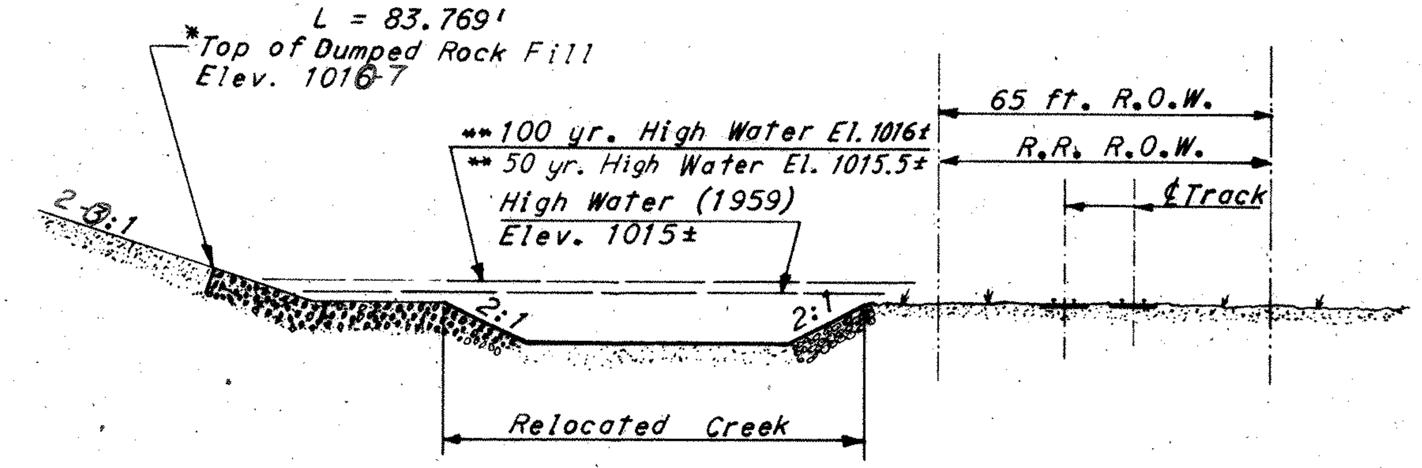
S.C. Sta. 956+59.867
C.S. Sta. 965+26.794
D_c = 3°00'00.0"
Δ = 39°30'28.1"Lt.
$Δ_c$ = 26°00'28.1"
R_c = 1909.859
T_s = 912.338
T_c = 441.063
L_s = 450.00
L_c = 866.927

RAMP E CURVE DATA

P.I. Sta. 962+21.944
D = 3°05'15.9"
Δ = 26°35'26.7"Lt.
R = 1855.585
T = 438.484
L = 861.167

P.I. Sta. 966+86.513
D = 1°00'00.0"
Δ = 0°50'15.7"Lt.
R = 5729.578'
T = 41.884'
L = 83.769'

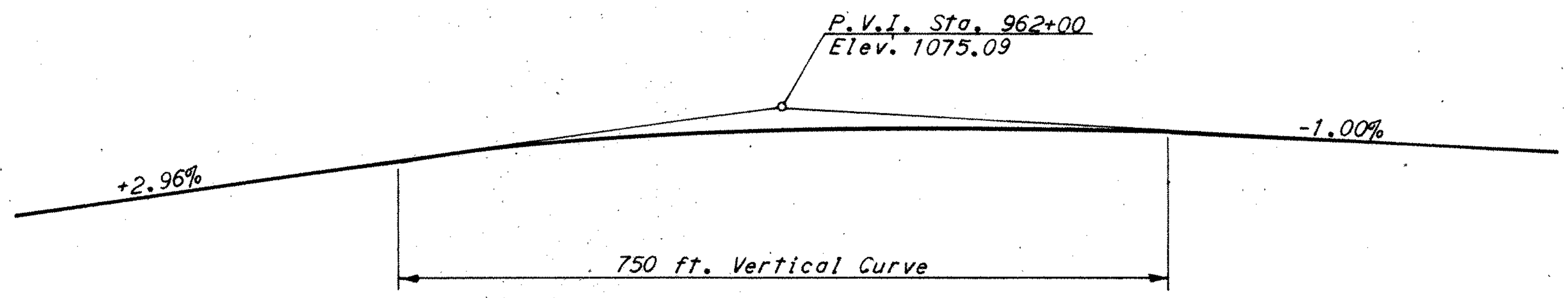
*To be paid for under "Rock without Channel Protection, Type A, with bedding." See Roadway Plans.



SECTION THRU W. BRANCH NIMISHILLEN CREEK

FLOOD DISCHARGE WEST BRANCH NIMISHILLEN CREEK AT NAVARRE ROAD BRIDGE					
Occurance Interval (years)	5	10	20	50	100
*Discharge Q (c.f.s.)	1360	1680	2010	2520	3000

*Taken from Table 5, "Flood Discharge-Frequency Relationship", page TA-23, "Flood Plain Study-Main Report", Corps of Engineers, Feb. 1967.
**Taken 2,000 ft. above mouth as shown on Exhibit No. 4 and Exhibit No. 12, "Flood Plain Study-Main Report", Corps of Engineers, Feb. 1967.



PROFILE GRADE - U.S. 30

NOTE: Profile grade is at the top of the Portland Cement Concrete on the bridge deck and approach slabs. The Contractor shall, in a length of 75 feet, make a vertical adjustment in the finished surface of the approach roadway in order to provide a 1½ inch vertical transition to the higher asphalt concrete roadway surface on the structure and approach slabs.

PROPOSED STRUCTURE

Type: Continuous Welded Girder with Reinforced Concrete Slab.
Spans: Eastbound; 55.5'±, 85.5'±, 55.5'±, 101.0'±, 91.0'±, 90.0'±, 107.5'±, 70.5'±= 656.5'± Ctr. to Ctr. End Bearings Along ℄ U.S. 30.
Westbound; 55.5'±, 85.5'±, 73.0'±, 110.0'±, 74.0'±, 80.5'±, 107.5'±, 70.5'±, = 656.5'± Ctr. to Ctr. End Bearings. Along ℄ U.S. 30.
Roadway: Varies; 102.0'± to 117.0± face to face of parapets including 3'-0" Median Barrier.
Loading: HS 20-44
Skews: Varies: 7°± Maximum from Local Radial Line
Wearing Surface: 1½" Asphalt Concrete
Approach Slab: AS-1-72 (25' Long) (Modified)
Alignment: 450' Spiral to 3°00' Curve to 450' Spiral Lt.

Modify Std. Drwg. AS-1-72 by providing 3" clear over the top rebars instead of the 2" shown on the Std. Drwg. The jacking holes as called for on Std. Drwg. AS-1-72 are not required.

EXISTING UTILITY LEGEND

4" G	GAS
4" W	WATER
16" Storm	STORM SEWER
8" San	SANITARY SEWER
T	TELEPHONE
E	POWER LINES
4W-E4KV	4 WIRE, PRIMARY 4 KILOVOLT
3W-E₃	3 WIRE, SECONDARY
⊍	WATER HYDRANT
○	MANHOLE
□	CATCH BASIN

Notes:
The following items are not included in the bridge plans. See roadway plans for detail.
1. Relocation or removal of existing utilities.
2. Approach grading, pavements and slabs.
3. Guardrails.
Earthwork limits shown are schematic. Actual slopes shall conform to plan cross-sections.
⇦ Denotes 1987 average daily traffic.
For information not shown see General Plan Sheet 2/24
▪ denotes Standard Scupper
For Estimated Quantities, see Sheet 365B
Piling for the West Abutment of Br. No. Sta. 30-1489 and the three northern most footings for Pier No. 1 of Br. No. Sta. 30-1487 shall be driven before placing any concrete for either substructure unit.

H.N.T.B. BRIDGE NO. 2 | Revised 6-9-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK | 1/24

SITE PLAN

U.S. 30 OVER RAMP B, C, I-77 AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 — STA. 960+02.25, STA. 966+63.26
SCALE: 1"=50'-0"

RELOCATED U.S. 30

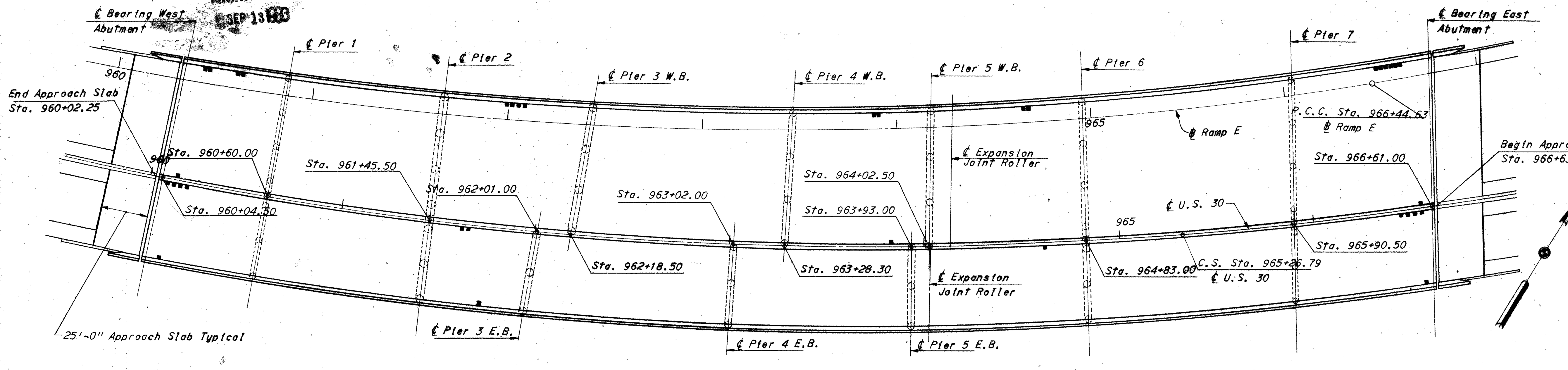
CANTON — STARK COUNTY — OHIO

DRAWN LDE	TRACED	CHECKED MAG	REVIEWED MJK	REVISED 10-29-76
DATE 12-11-69	DATE	DATE 5-26-70	DATE 11-23-71	1668

Revised 4-28-77

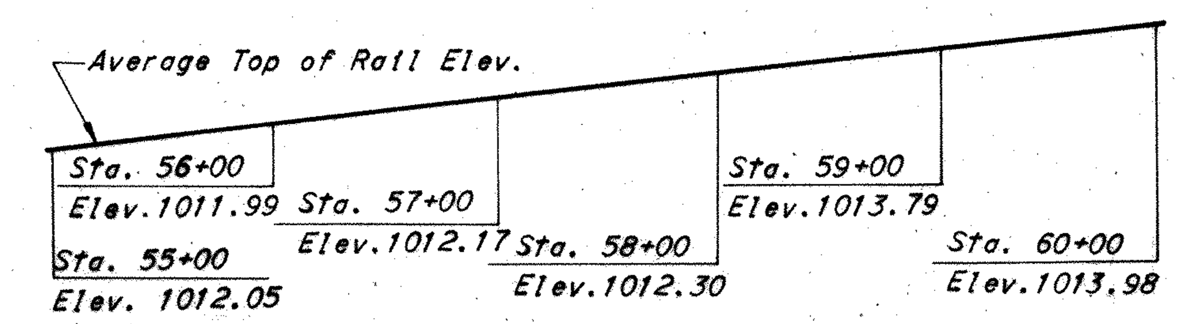
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	234 / 389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22

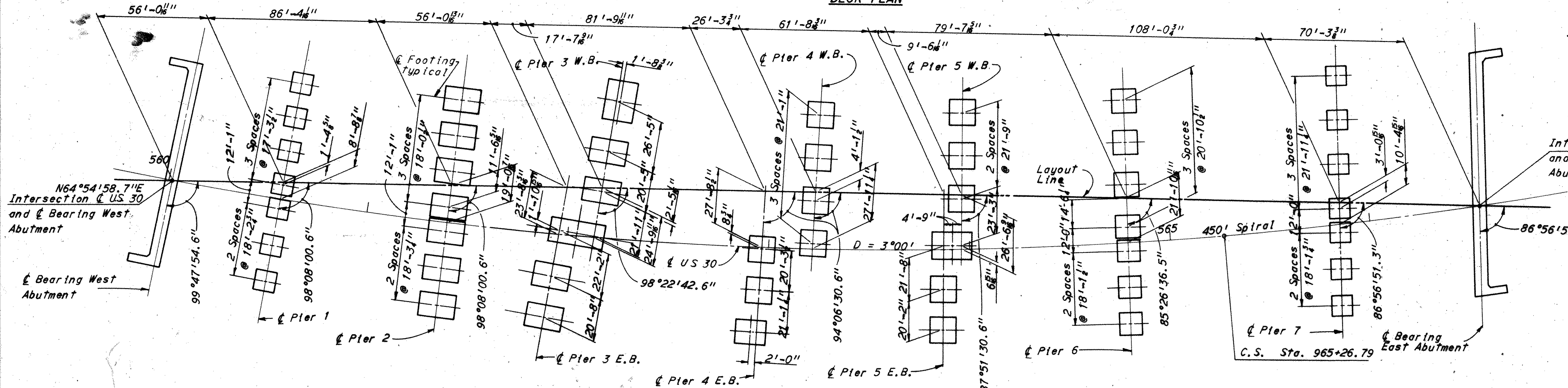


DECK PLAN

ESTIMATED AVERAGE PAY LENGTHS FOR PILING	
West Abutment	85'
Piers 1, 2 and 3	70'
Piers 4 and 5	60'
Piers 6 and 7	75'
East Abutment	85'



PROFILE GRADE - PENNSYLVANIA R.R.



FOOTING LAYOUT

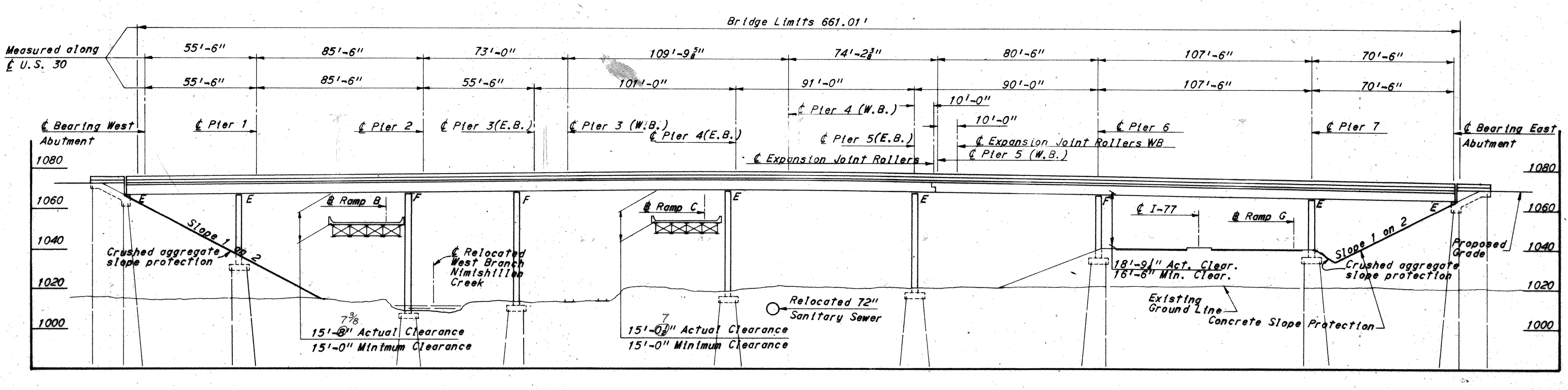
Notes:

For profile grades see Sheets 264, 1/24 and 325.

The embankments shall be constructed to the level of the subgrade for a minimum distance of 200 feet back of the abutments. Excavation shall then be made for the abutments and for piers 1, 6 and 7.

All earthwork in the area of the existing channel shall be completed before construction of piers 2 and 3.

For details of Piers 1 and 2 see Sheet 6/24
For details of Piers 3 and 4 Westbound see Sheet 7/24
For details of Piers 3 and 4 Eastbound see Sheet 8/24
For details of Pier 5 see Sheet 9/24
For details of Piers 6 and 7 see Sheet 10/24
For abutment details see Sheets 3/24 thru 5/24
For lighting details see Lighting Plans.
■ Denotes Standard Scupper.
W.B. denotes Westbound.
E.B. denotes Eastbound.
All piles shall be 12" ɸ cast-in-place concrete.



DEVELOPED ELEVATION

H.N.T.B. BRIDGE NO. 2 | Revised 6-9-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 2/24
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

GENERAL PLAN

U.S. 30 OVER RAMP B, C, I-77 AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 | STA. 960 + 02.25
SCALE: 1" = 30'-0" | STA. 966 + 63.26

RELOCATED U.S. 30

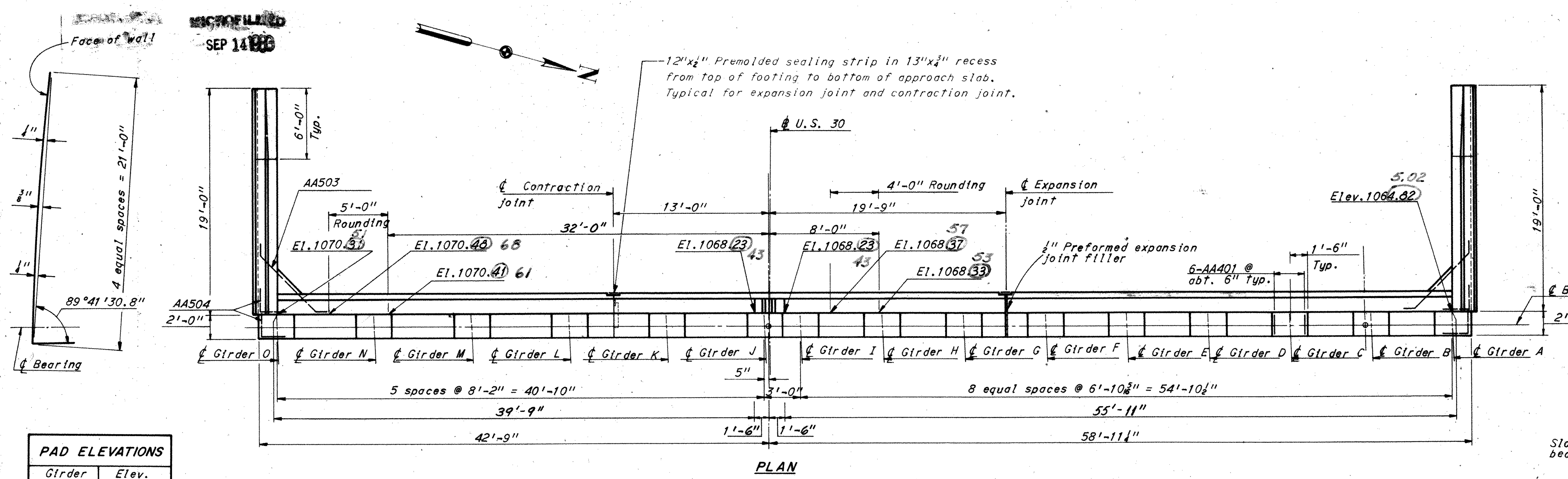
CANTON | STARK COUNTY | OHIO

DRAWN LDE DATE 12-3-69	TRACED DATE	CHECKED MAG DATE 6-16-70	REVIEWED MJK DATE 11-22-71	REVISED	1668

Revised 4-28-77

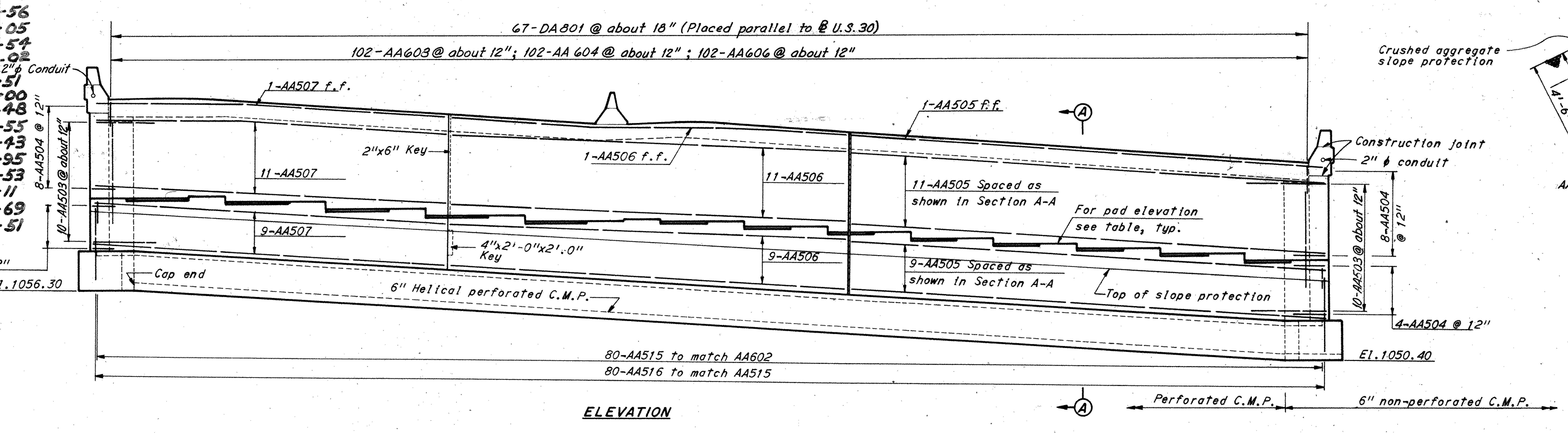
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

STARK COUNTY
STA-30-14.12
STA-77-9.22

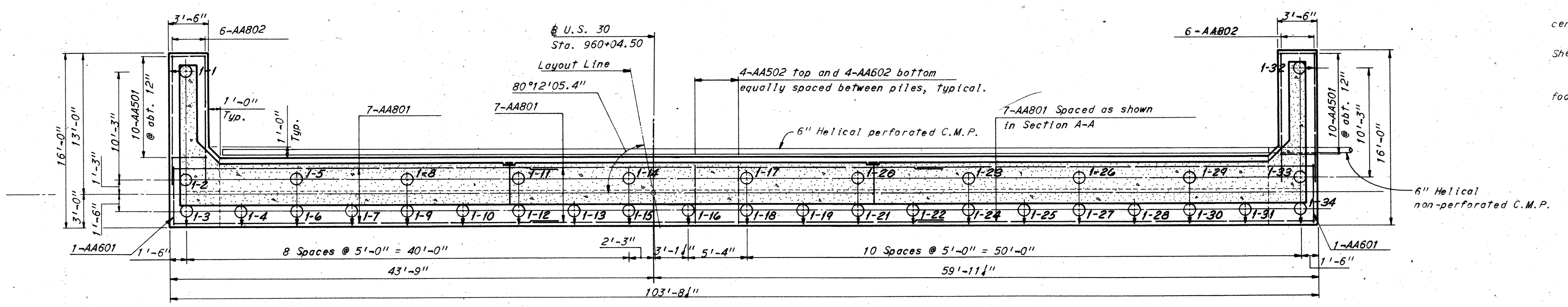


PLAN

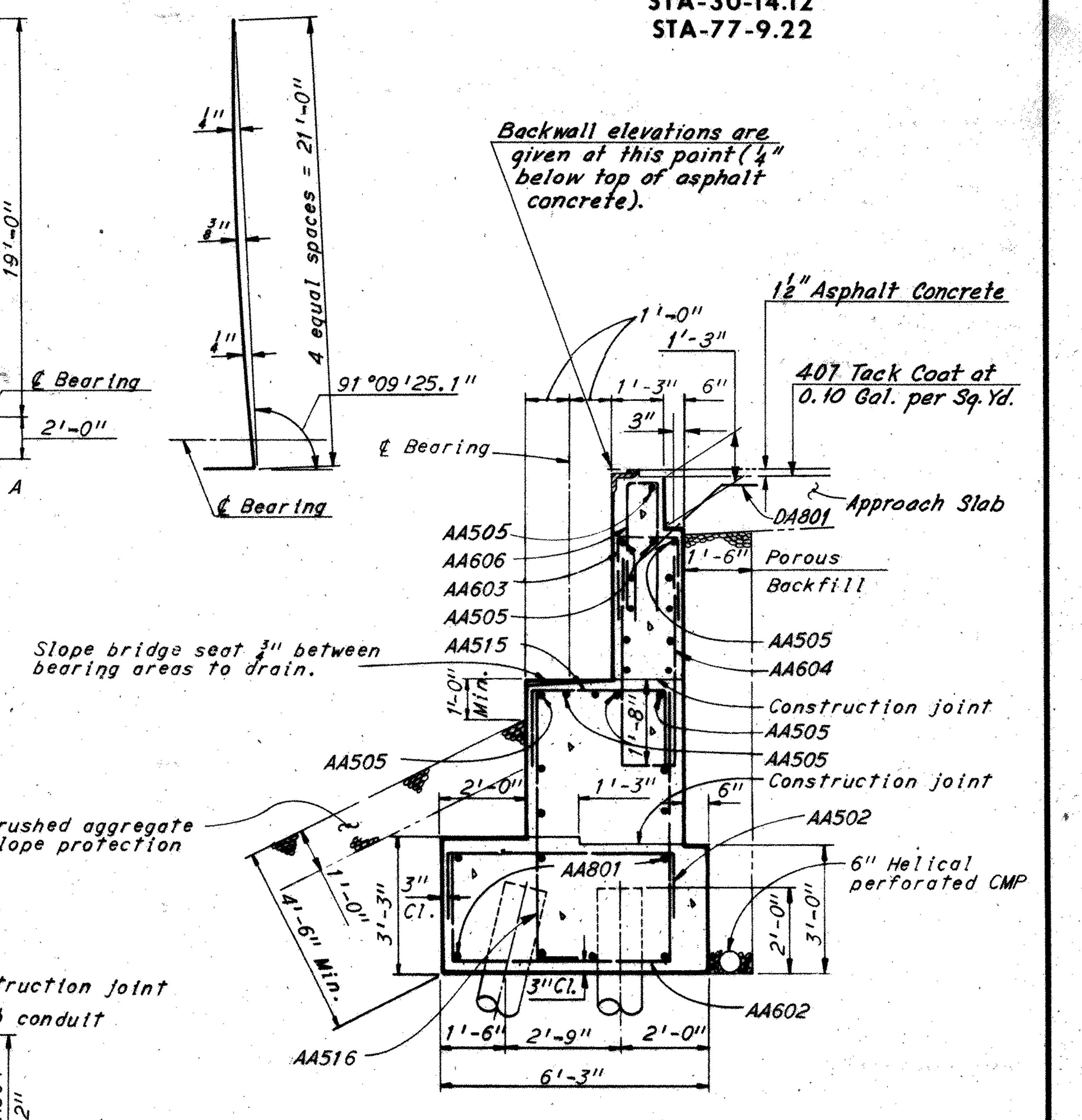
PAD ELEVATIONS		
Girder	Elev.	
A	1058.09	08
B	1058.58	56
C	1059.06	05
D	1059.55	54
E	1060.04	02
F	1060.52	51
G	1061.01	00
H	1061.50	48
I	1061.56	55
J	1061.44	43
K	1061.96	95
L	1062.54	53
M	1063.12	11
N	1063.70	69
O	1063.52	51



ELEVATION



FOOTING PLAN



SECTION A-A

Notes:

For details of C.M.P. outlet at side slopes see Sheet 359.

For girder skew angles see Sheet 12/24

For median details see Sheet 5/24

For wingwall details see Sheet 5/24

For roadway end dam details see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4, and Sheet 359.

AA401 bars shall be placed 2½"± below top of bridge seat.

n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.

For reinforcement schedule see Sheet 20/24

Shear keys at contraction joints shall be centered between front and back faces.

For placement of conduit in wingwalls see Sheet 5/24

All battered piles are battered 3 in 12.

Pile dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

Piles not shown in elevation.

○→ Denotes battered piles and direction of batter.

H.N.T.B. BRIDGE NO. 2 | Revised 6-9-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
3/24

WEST ABUTMENT

U.S. 30 OVER RAMP B, C, I-77 AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 STA. 960 + 02.25
SCALE: 3/16" = 1'-0" STA. 966 + 63.26

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

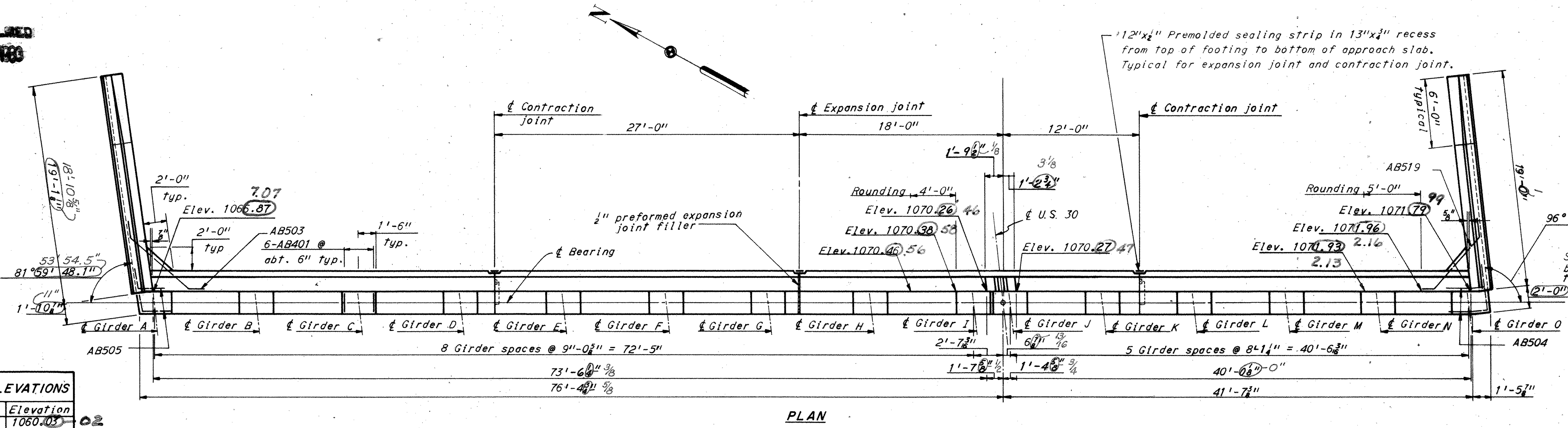
DRAWN D.M.B.	TRACED	CHECKED R.S.S.	REVIEWED M.J.K.	REVISED 7-12-76
DATE 4-15-70	DATE	DATE 5-6-70	DATE 11-23-71	1668

Revised 9-21-76

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

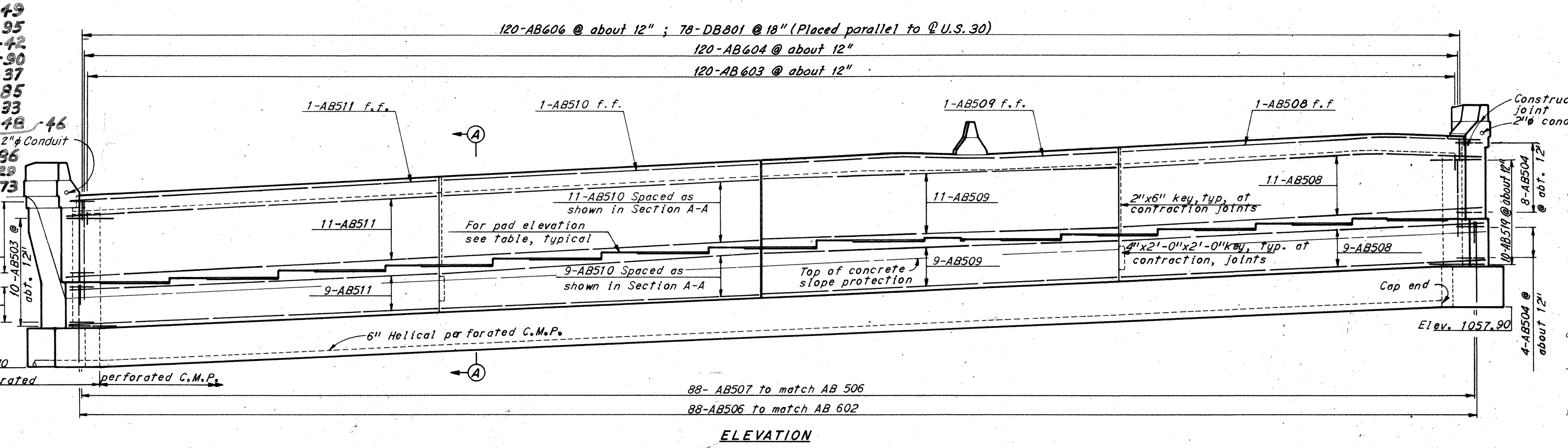
236
389

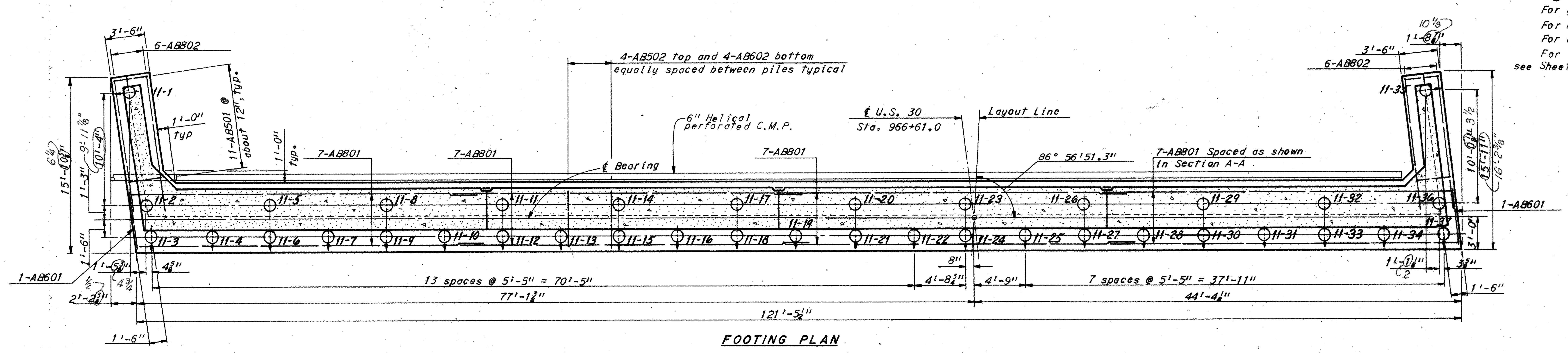
STARK COUNTY
STA-30-14.12
STA-77-9.22

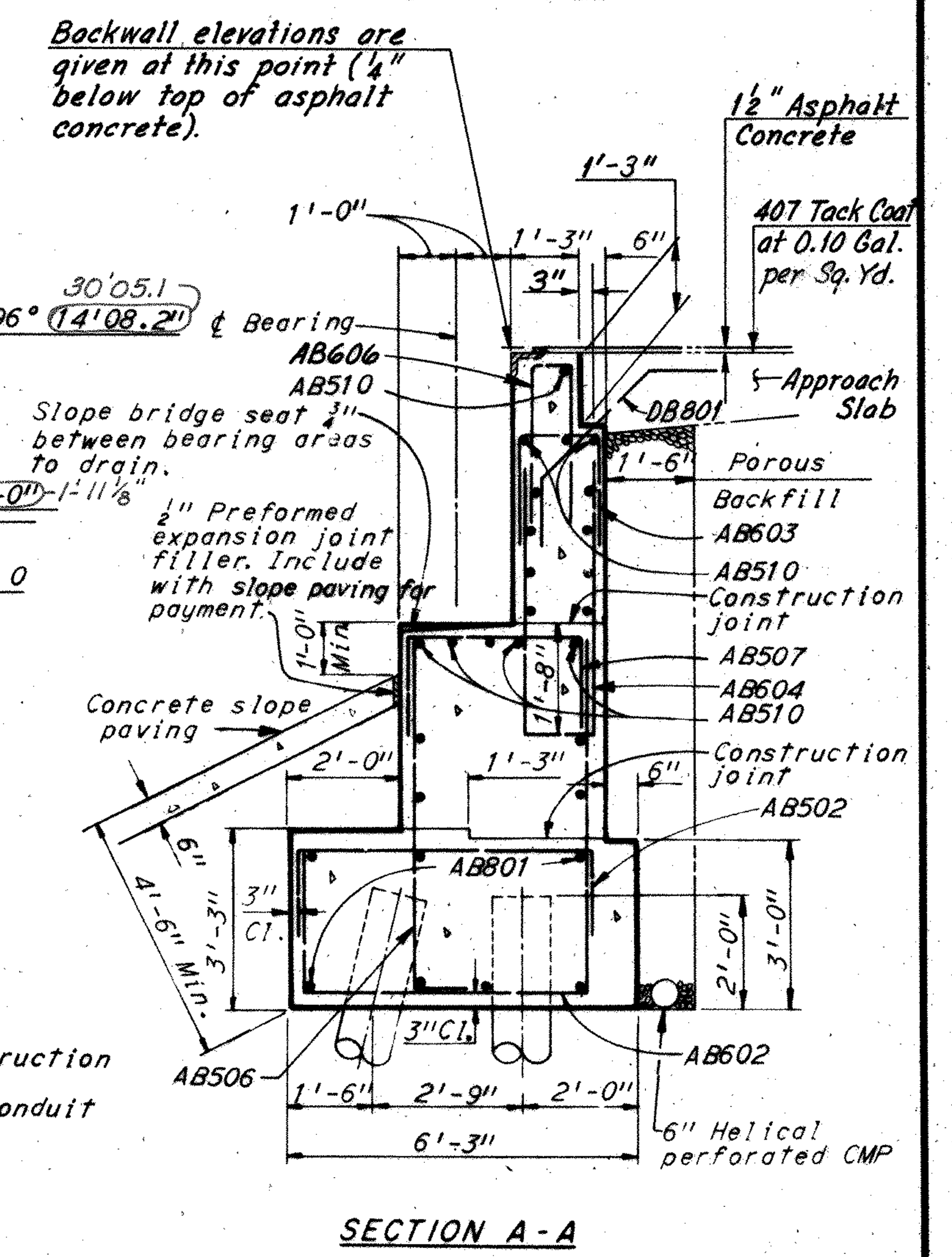


PAD ELEVATIONS

Girder	Elevation
A	1060.03 .02
B	1060.50 .49
C	1060.97 .95
D	1061.44 .42
E	1061.91 .90
F	1062.38 .37
G	1062.86 .85
H	1063.34 .33
I	1063.49 .48 .46
J	1063.47
K	1063.87 .86
L	1064.30 .29
M	1064.74 .73
N	1065.18 17
O	1065.02 .01







Notes:

For roadway end dam details see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4, and Sheet 359.

AB401 bars shall be placed 2½"± below top of bridge seat.

n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.

For reinforcement schedule see Sheet 20/24

Shear keys at contraction joints shall be centered between front and back faces.

For placement of conduit in wingwalls see Sheet. 5/24

All battered piles are battered 3 in 12.

Pile dimensions are measured along bottom of footing.

All piles are 12" φ cast-in-place concrete.

○→ Denotes battered piles and direction of batter.

For girder skew angles see sheet 12/24

For median Details see Sheet 5/24

For Wingwall details see Sheet 5/24

For details of C.M.P. outlet at side slopes see Sheet 359.

H.N.T.B. BRIDGE NO. 2 | Revised 6-9-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 4/24
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

EAST ABUTMENT

U.S. 30 OVER RAMP B, C, I-77 AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 — STA. 960+02.25
SCALE: 3/16"=1'-0" — STA. 966+63.26

RELOCATED U.S. 30

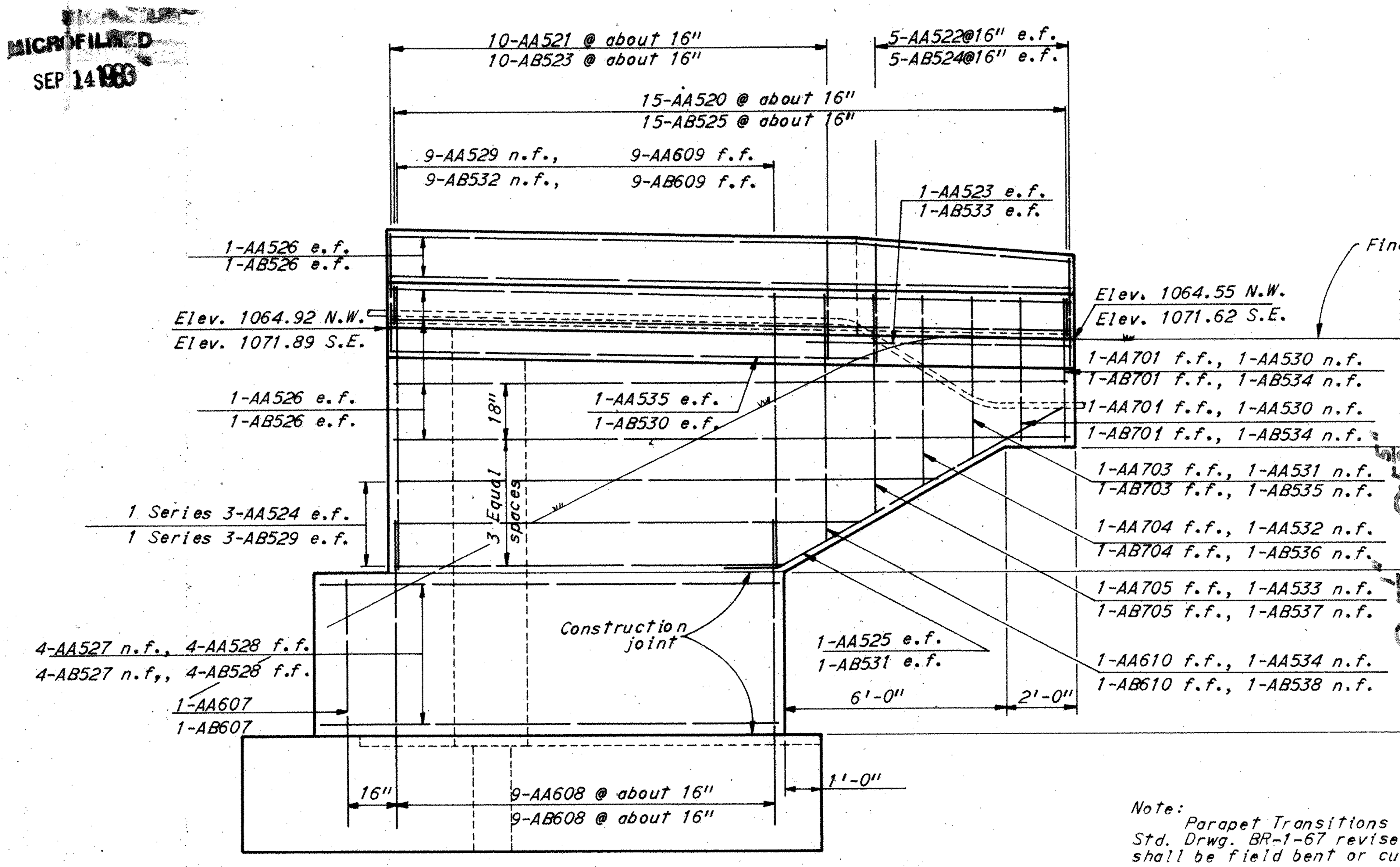
CANTON — STARK COUNTY — OHIO

DRAWN GWB	TRACED	CHECKED JJS	REVIEWED MJK	REVISED 7-12-76
DATE 4-20-70	DATE	DATE 5-6-70	DATE 11-22-71	1668

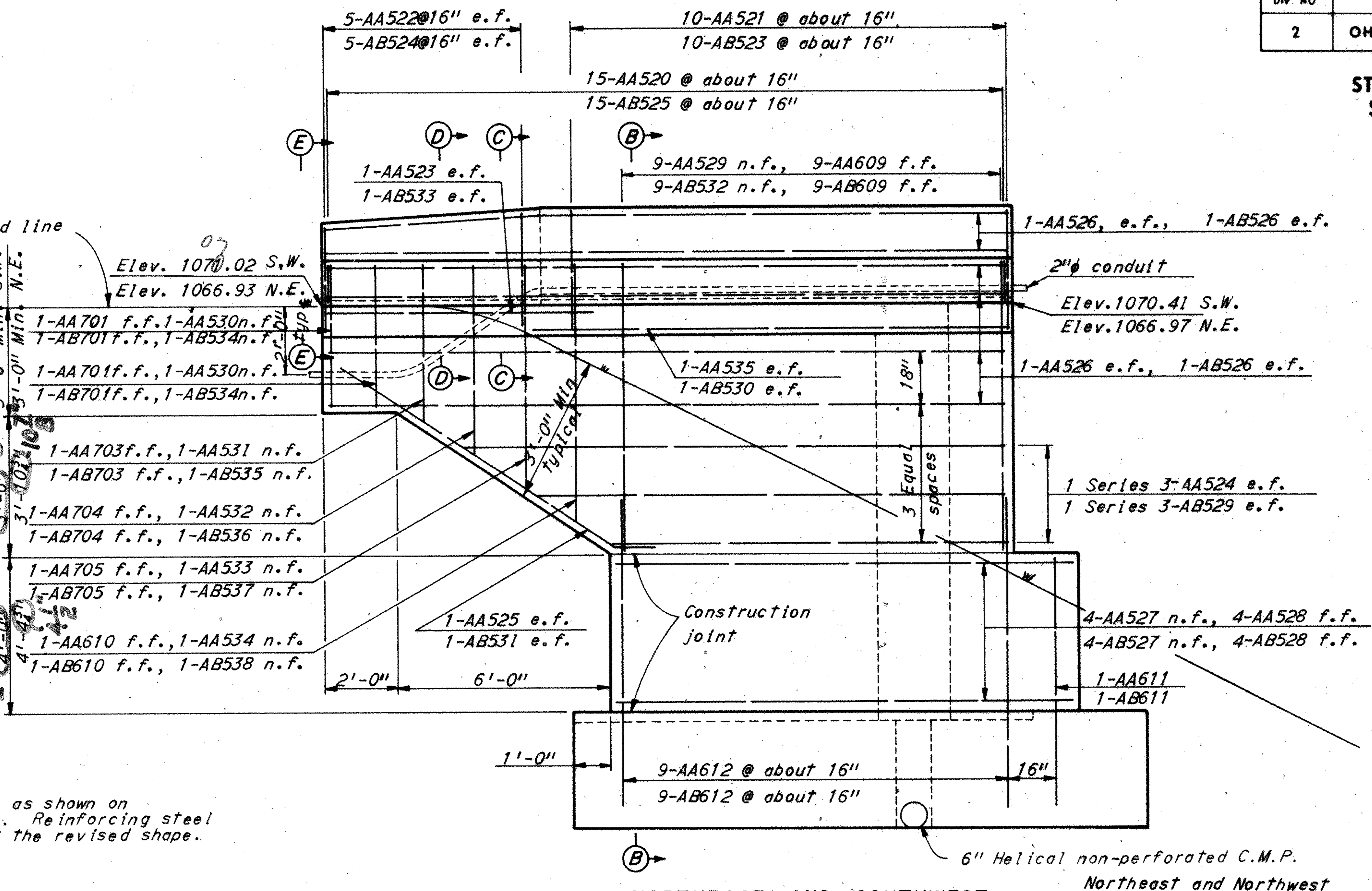
Revised 9-21-76 Revised 4-28-77

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			237 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

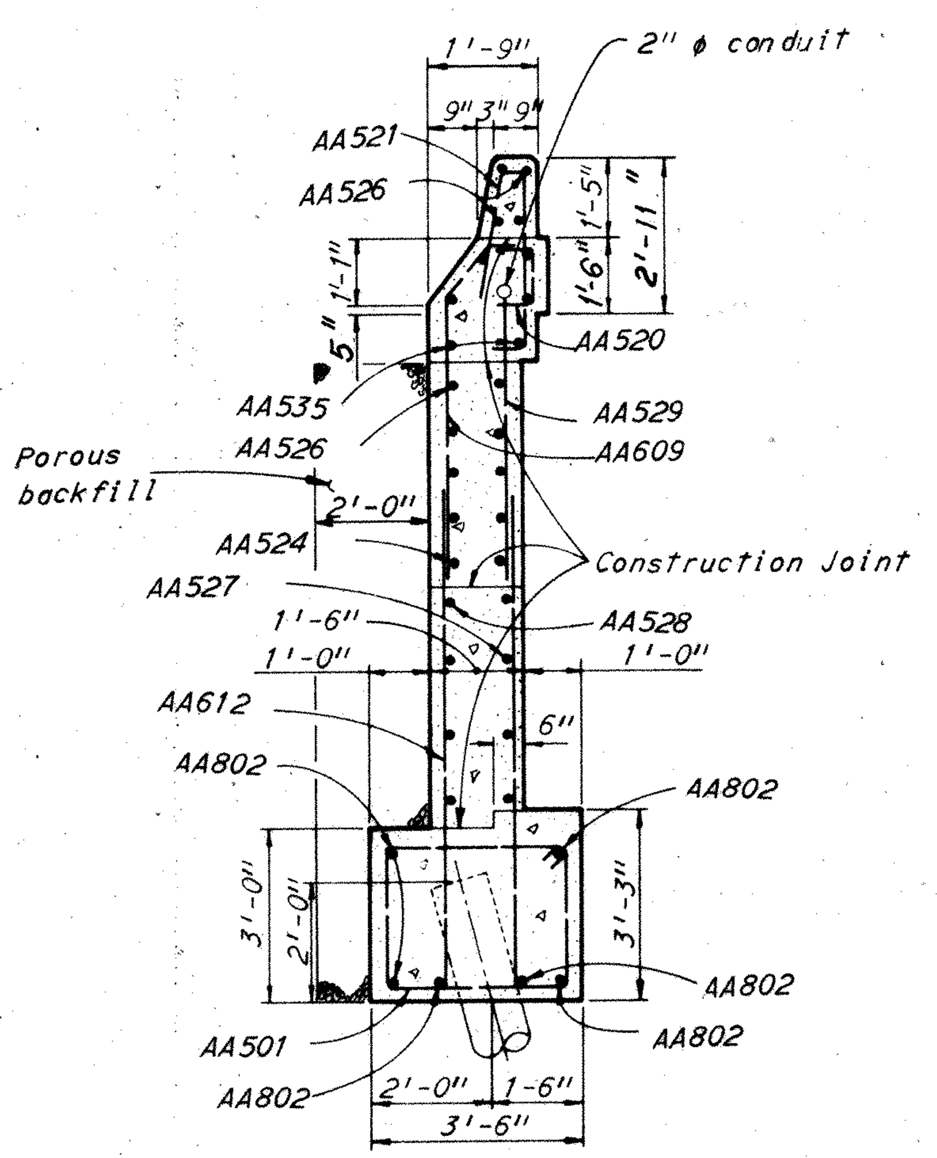


NORTHWEST AND SOUTHEAST WINGWALL ELEVATION

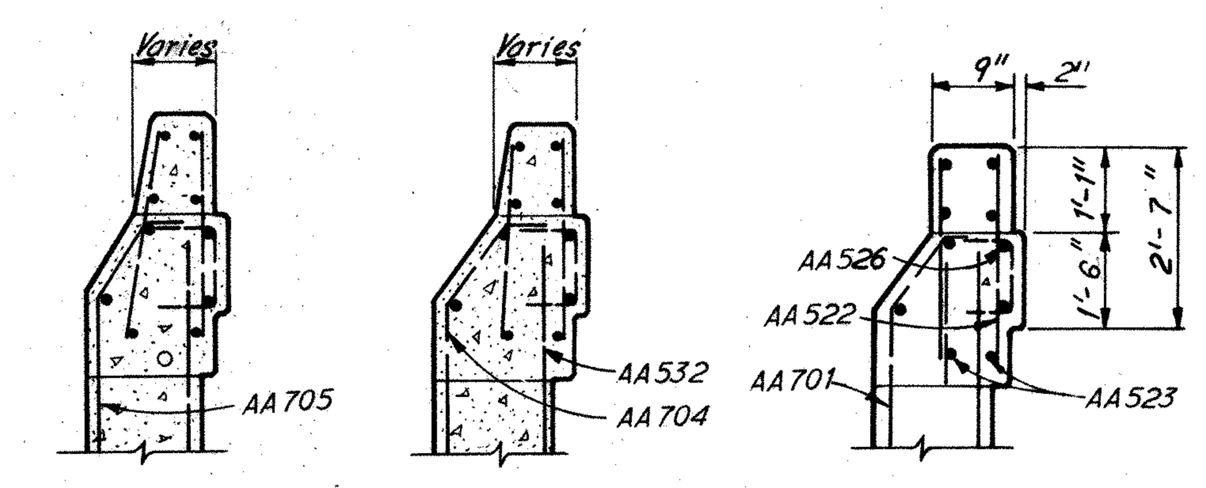


NORTHEAST AND SOUTHWEST WINGWALL ELEVATION

Note:
Parapet Transitions shall be as shown on Std. Drwg. BR-1-67 revised 10-15-71. Reinforcing steel shall be field bent or cut to fit the revised shape.



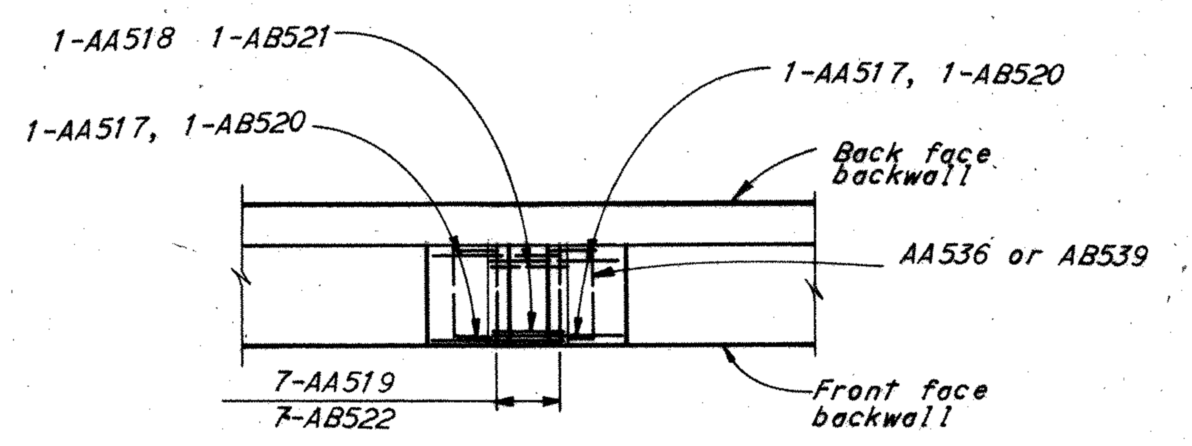
SECTION B-B



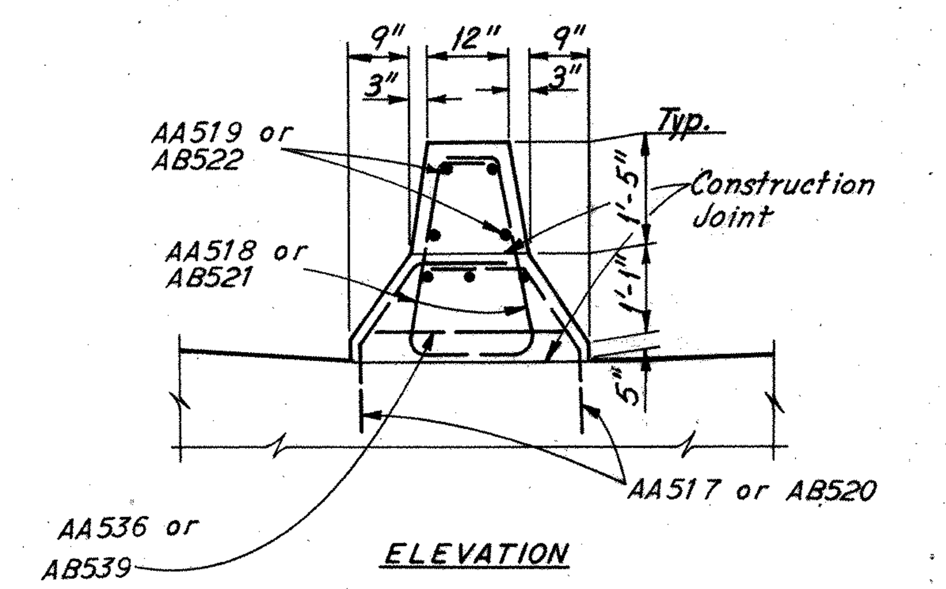
SECTION C-C SECTION D-D VIEW E-E

Note:

Sections shown are for Southwest Wingwall. Other wingwalls similar.



PLAN



ELEVATION

MEDIAN DETAILS

H.N.T.B. BRIDGE NO. 2	Revised 6-9-75	By RAS
HOWARD, NEEDLES, TAMMEN & BERGENDOFF, CONSULTING ENGINEERS, KANSAS CITY CLEVELAND NEW YORK		5 / 24

ABUTMENT DETAILS

U.S. 30 OVER RAMP B, C, I-77 AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 — STA. 960 + 02.25
SCALE: NONE — STA. 966 + 63.26

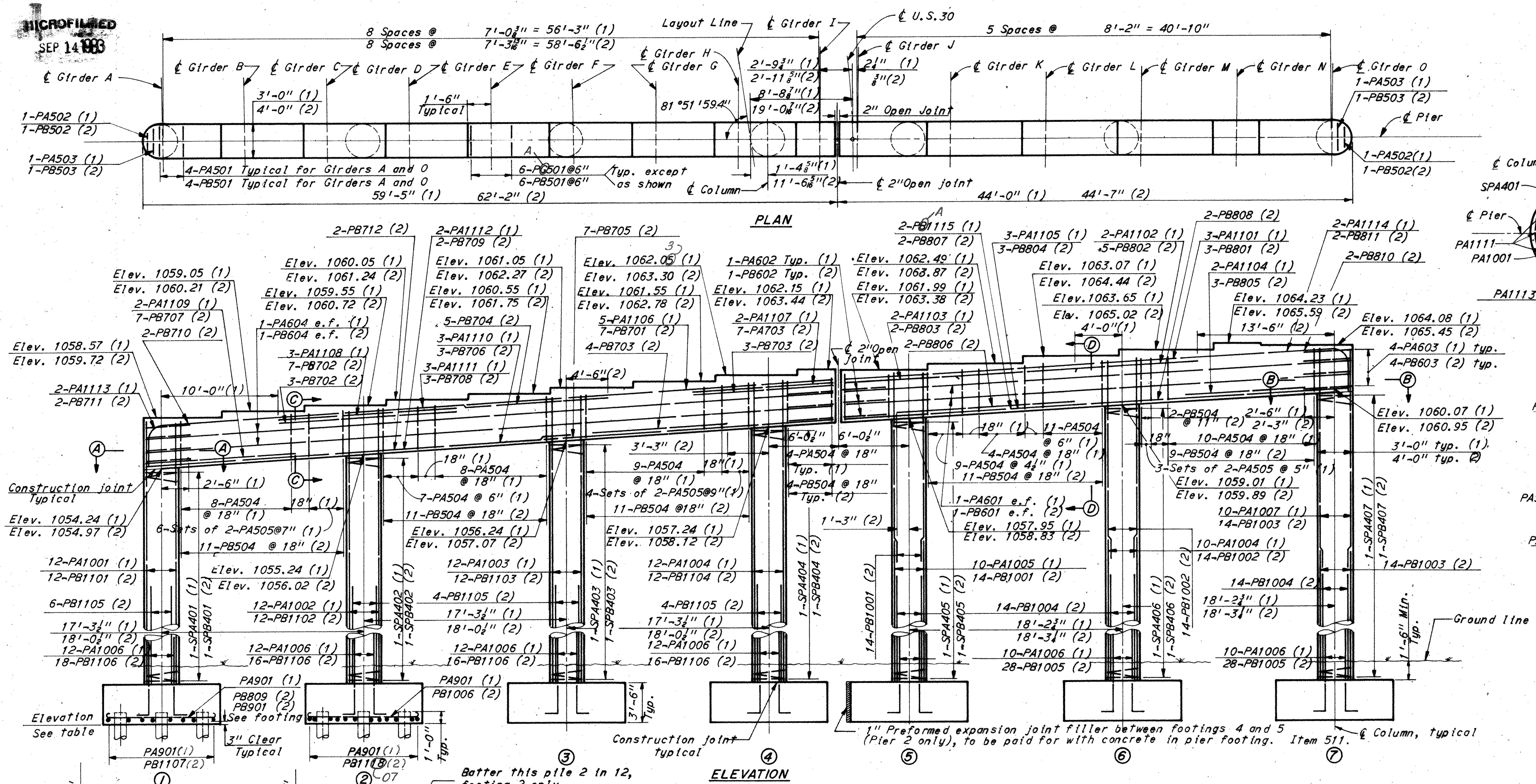
RELOCATED U.S. 30

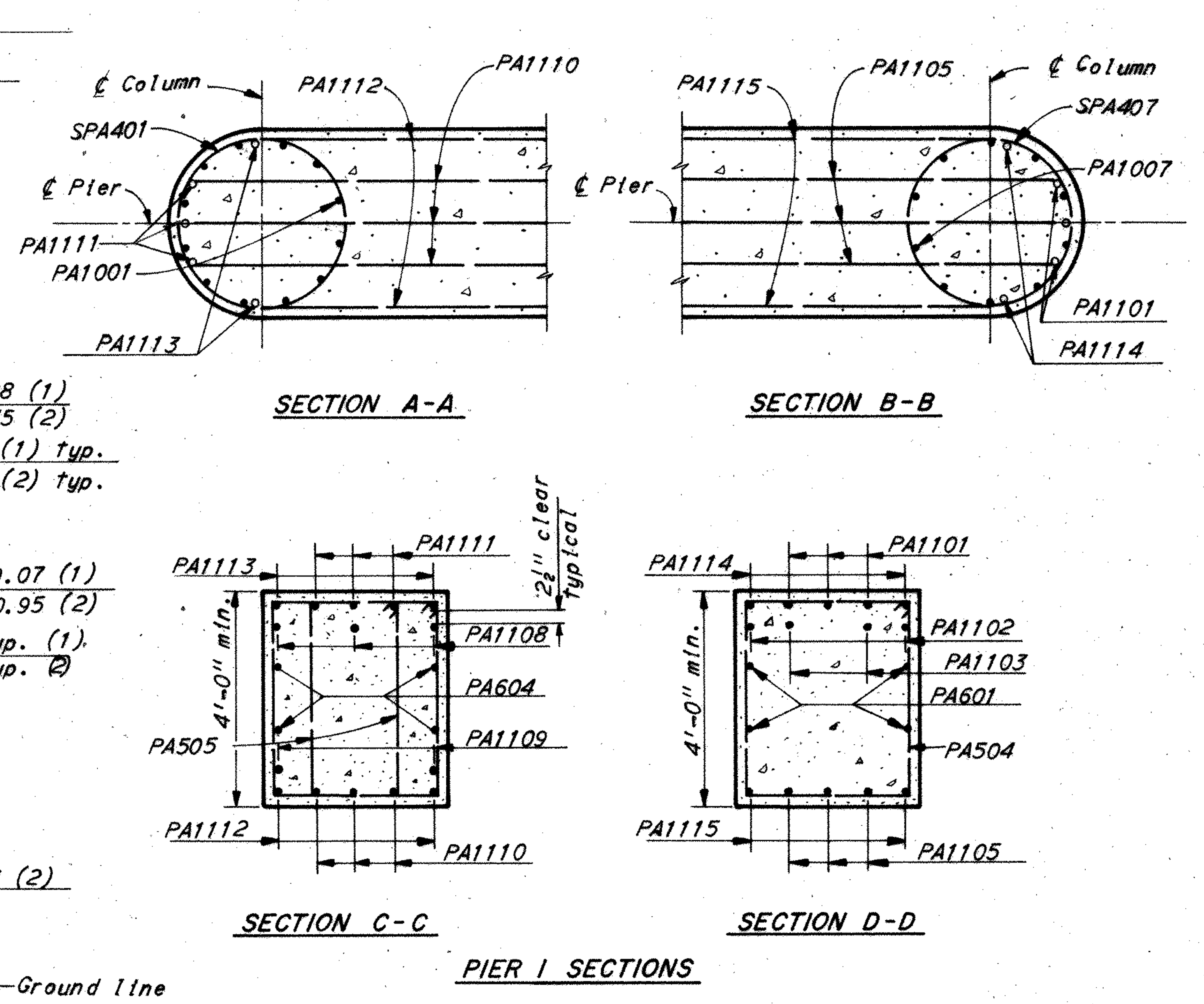
CANTON — STARK COUNTY — OHIO

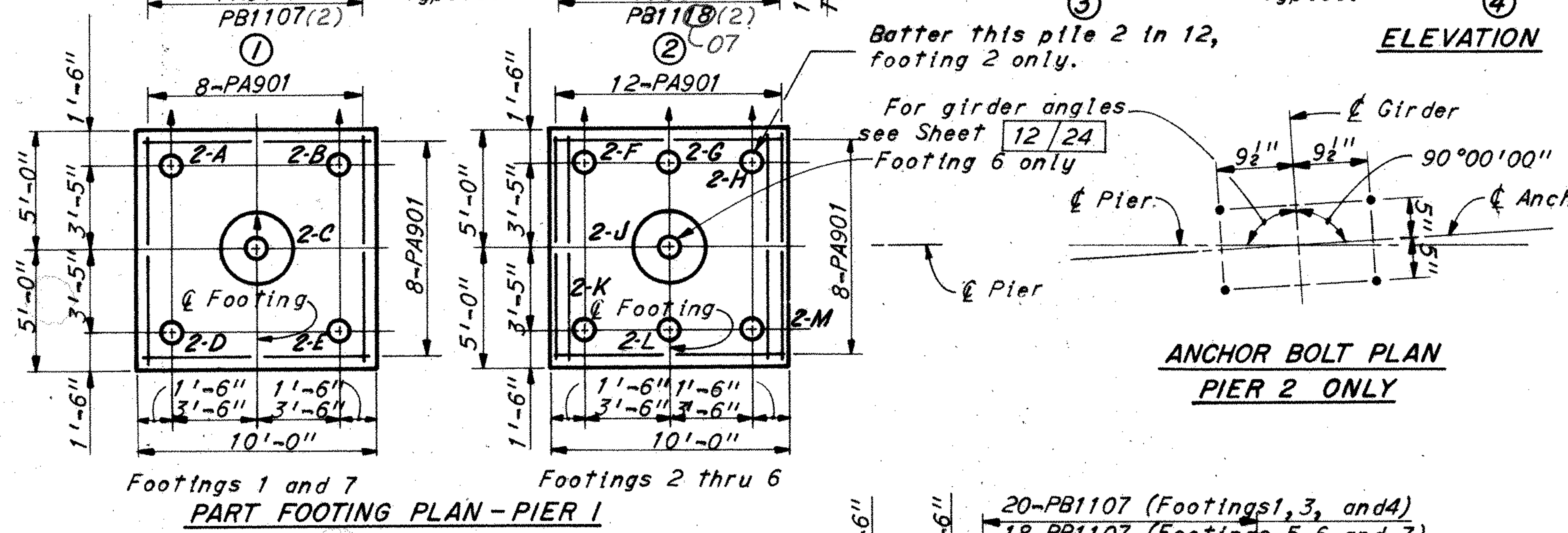
DRAWN D.W.B.	TRACED	CHECKED K.S.S.	REVIEWED M.J.K.	REVISED 9-21-76
DATE 4-23-70	DATE	DATE 5-6-70	DATE 11-22-71	1668

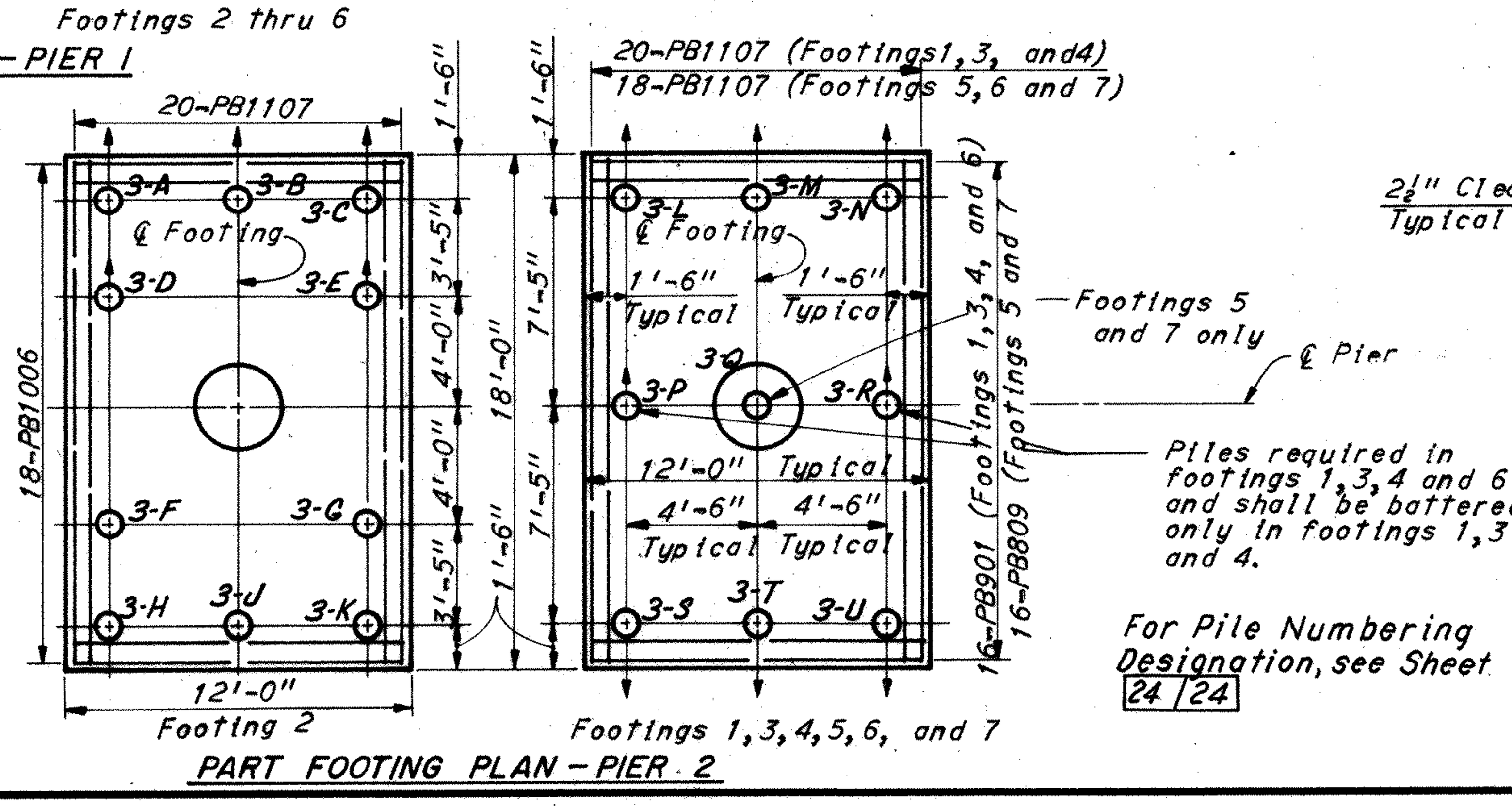
Revised 4-28-77

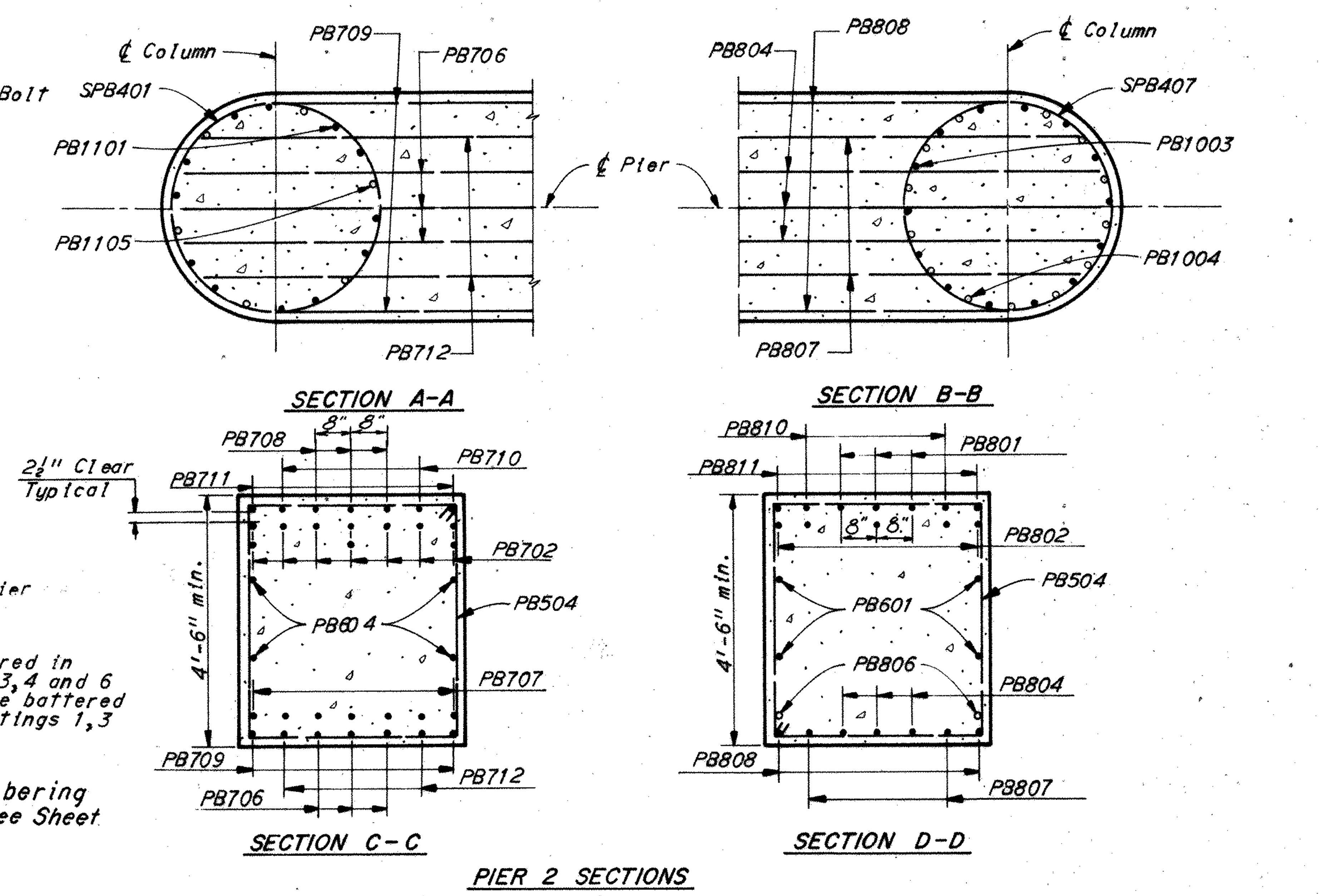
STARK COUNTY
STA-30-14.12
STA-77-9.22











BOTTOM OF FOOTING ELEVATION

Footing	Pier 1	Pier 2
1	1032.00	1007.00
2	1025.00	1004.50
3	1023.00	1001.50
4	1023.00	999.50
5	1024.00	999.50
6	1024.00	999.50
7	1024.00	999.50

Notes:

Special care shall be taken when placing reinforcing steel in cap beam so as not to interfere with anchor bolt setting. Pier 2 only. See Sheet 214.

PA501, PA502, PA503, PB501, PB502 and PB503 bars shall be placed 2¼" below top of cap beam.

(1) denotes Pier 1

(2) denotes Pier 2

For reinforcement schedule see Sheet 20/24

For footing layout see Sheet 2/24

e.f. denotes each face.

All stirrups within 4 feet of ℄ Columns and in cantilever areas shall be placed with hooks in the bottom of cap. All others shall be placed with hooks in the top.

○ Denotes battered Piles.

Pile dimensions are measured along bottom of footing

All battered piles shall be battered 3 in 12 except as shown.

All piles are 12" cast-in-place concrete.

H.N.T.B. BRIDGE NO. 2 | Revised 6-9-75 By RAS | 6/24

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

PIERS 1 AND 2

U.S. 30 OVER RAMP B, C, I-77 AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487
SCALE: 3/16" = 1'-0"
STA. 960 + 02.25
STA. 966 + 63.26

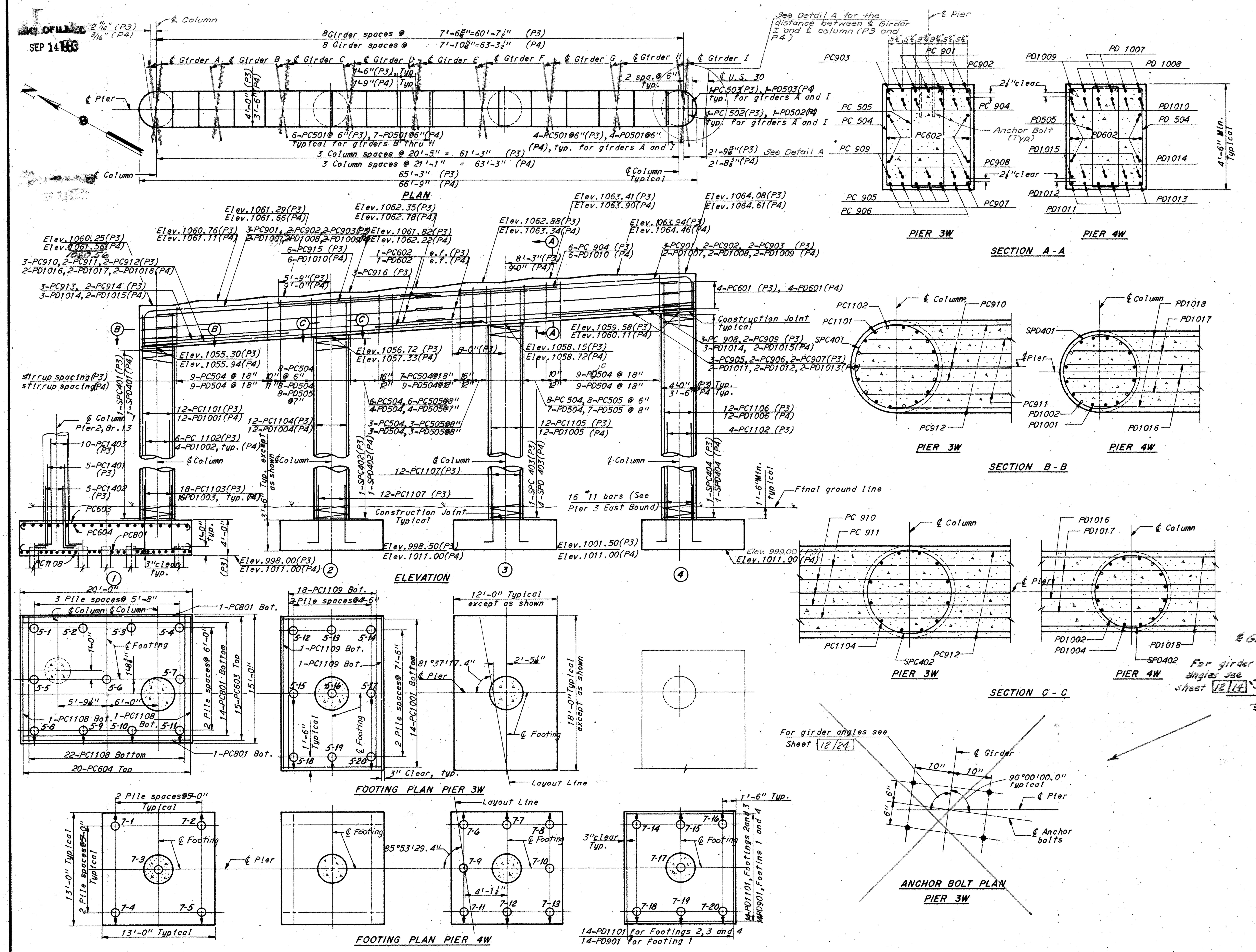
RELOCATED U.S. 30

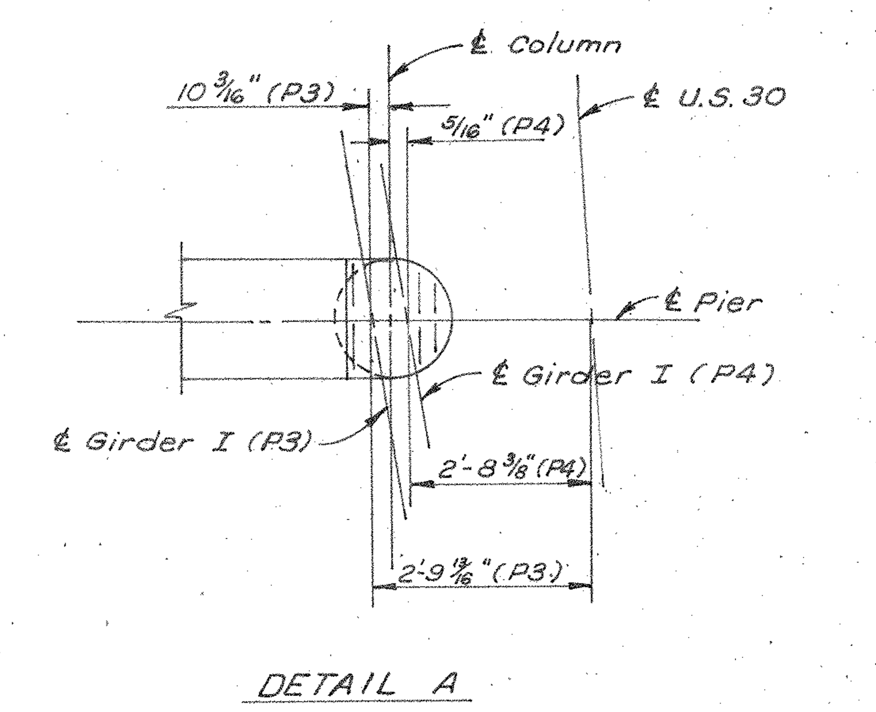
CANTON | STARK COUNTY | OHIO

DRAWN LDL	TRACED	CHECKED	REVIEWED MJK	REVISED 3-2-76
DATE 4-15-70	DATE	DATE 5-20-70	DATE 1-22-71	1668

Revised 4-28-77

STARK COUNTY
STA-30-14.12
STA-77-9.22





Notes:

PC501, PC502, PC503, PD501, PD502 and PD503 bars shall be placed 2¼" ± below top of cap beam.

Denotes battered piles.

All battered piles shall be battered 3 in 12.

Pile dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

(P3) Denotes Pier 3 and (P4) denotes Pier 4.

e.f. Denotes each face.

For footing 4 of Pier 3 details see Sheet 8/24

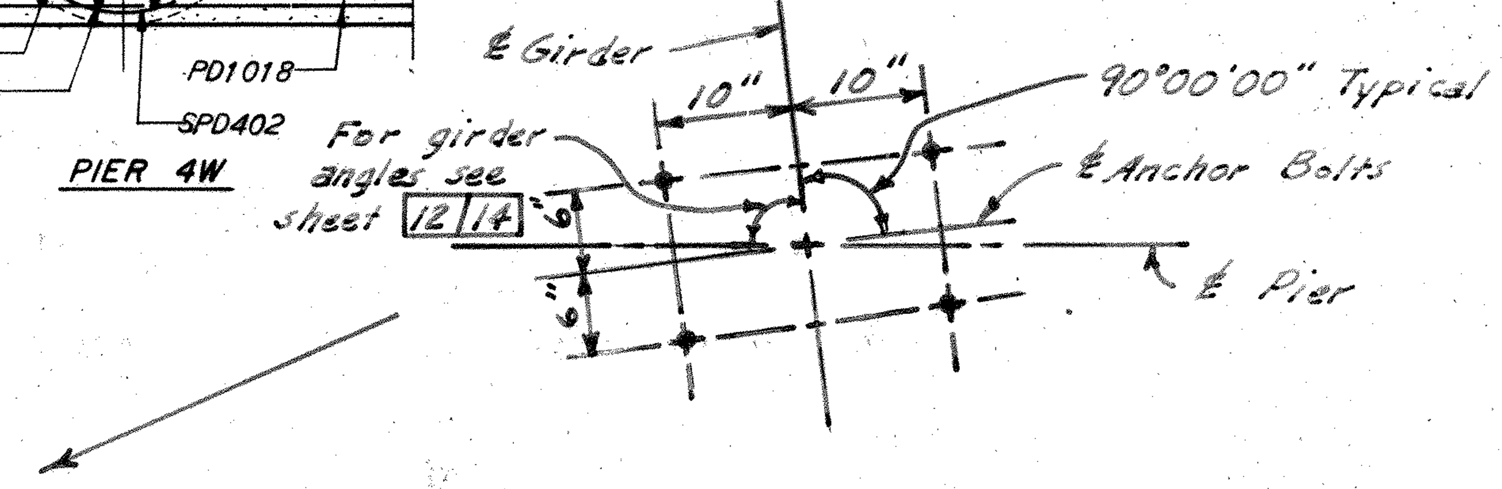
Footing 3 of Pier 3 is identical to Footing 2 of Pier 3.

Footing 2 of Pier 4 is identical to Footing 3 of Pier 4.

All stirrups within 4 feet of ℄ column shall be placed with hooks in the bottom of cap. All others shall be placed with hooks in the top.

Special care shall be taken when placing reinforcing steel so as not to interfere with anchor bolt settings. Pier 3 only. See Sheet 2/4.

For reinforcement schedule see Sheet 21/24



H.N.T.B. BRIDGE NO. 2 | Revised 6-9-75 By RAS

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CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIERS 3 AND 4 WESTBOUND

U.S. 30 OVER RAMP B, C, I-77 AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 STA. 960 + 02.25
SCALE: 3/16" = 1'-0" STA. 966 + 63.26

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN KSS DATE 4-22-70	TRACED DATE	CHECKED DATE 6-16-70	REVIEWED MJK DATE 11-22-71	REVISED 7-12-76 1668

Revised 4-28-77

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			240/389

STARK COUNTY
STA-30-14.12
STA-77-9.22

Notes:

Special care shall be taken when placing reinforcing steel so as not to interfere with anchor bolt settings. Pier 3 only. See Sheet 2/4

PF501, PF502, PF503, PG501, PG502 and PG503 bars shall be placed 2¼" ± below top of cap beam.

○→ Denotes battered piles.

All battered piles shall be battered 3 in 12.

Pile dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

(P3) Denotes Pier 3 and (P4) denotes Pier 4.

e.f. Denotes each face.

For reinforcement schedule see Sheet 22/24

All stirrups within 4 feet of ℄ Column shall be placed with hooks in the bottom of cap.

All others shall be placed with hooks in the top.

H.N.T.B. BRIDGE NO. 2 — Revised 6-9-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 8/24

PIERS 3 AND 4
EASTBOUND
U.S. 30 OVER RAMP B, C, I-77
AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 — STA. 960 + 02.25
SCALE: 1/4" = 1'-0" — STA. 966 + 63.26

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

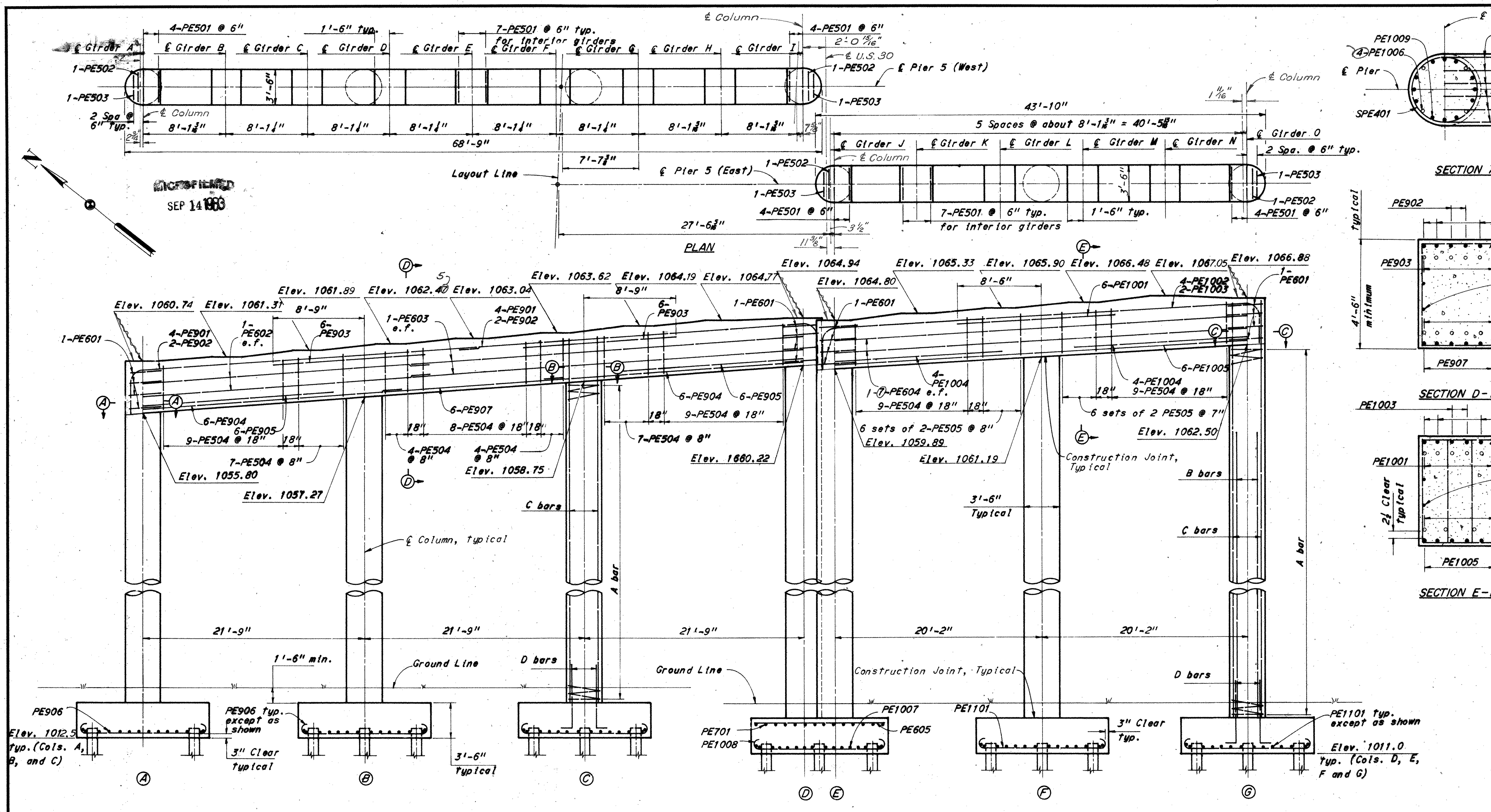
DRAWN KSS DATE 4-29-70 | TRACED DATE | CHECKED DATE 6-17-70 | REVIEWED MJK DATE 11-23-71 | REVISED 7-12-76 | 1668

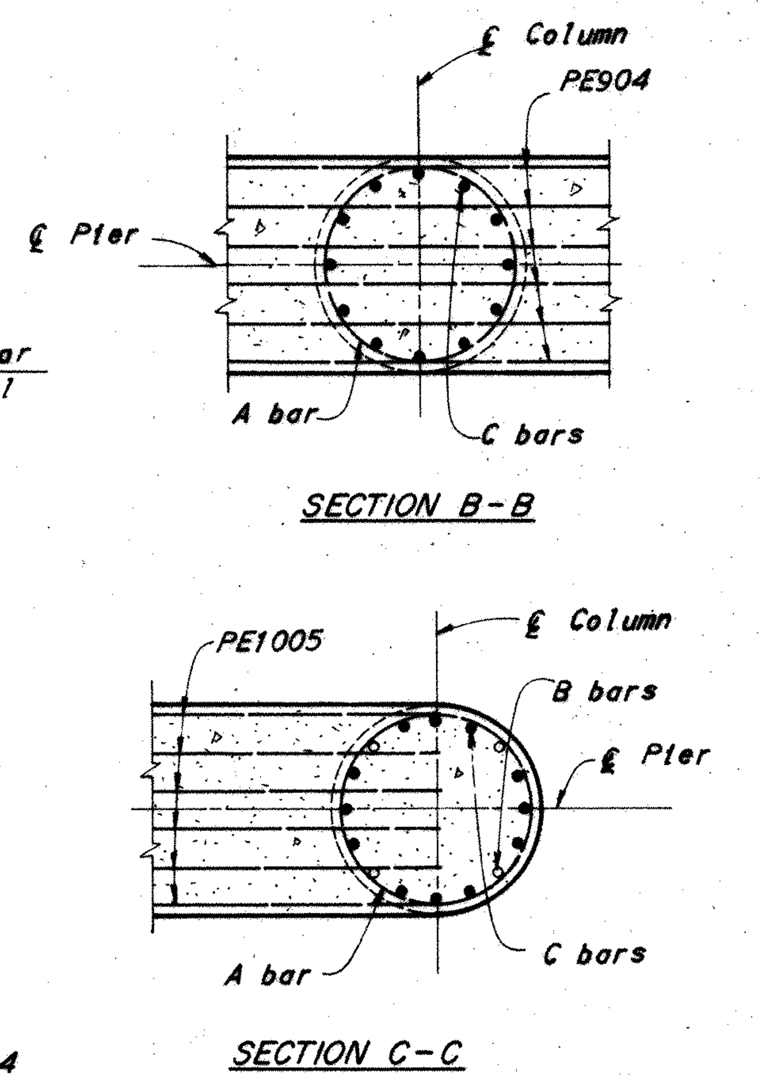
Revised 4-28-77

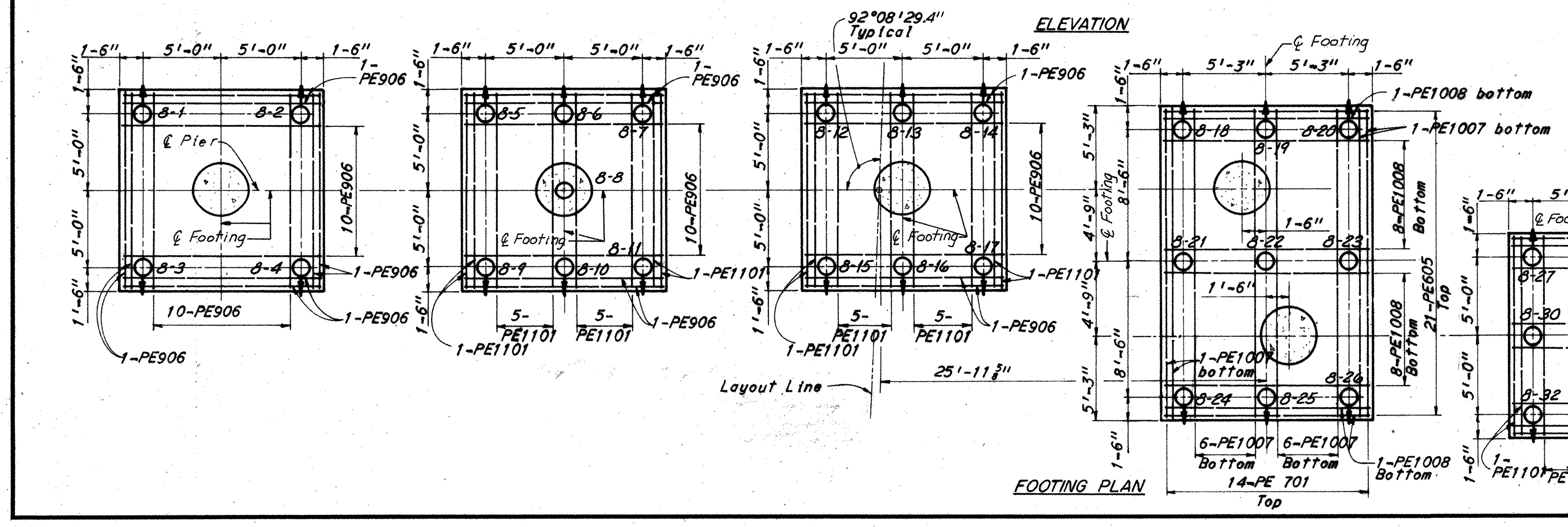
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

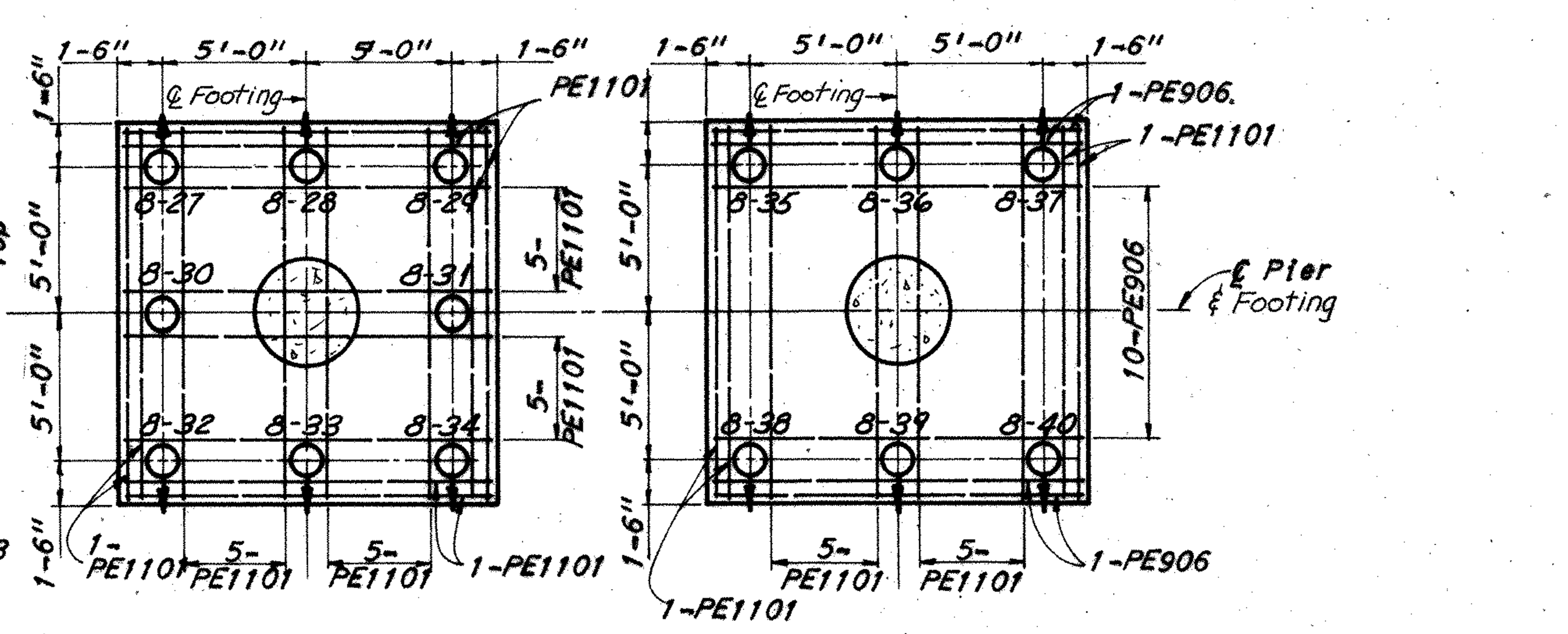
241/389

STARK COUNTY
STA-30-14.12
STA-77-9.22









Notes:

PE501, PE502 and PE503 bars shall be placed 2¼"± below top of cap beam.

For reinforcement schedule see Sheet 22/24

All battered piles shall be battered 3 in 12.

Piles dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

For girder angles see Sheet 12/24

e.f. denotes each face.

All stirrups within 4 feet of £ Column shall be placed with hooks in the bottom of cap. All others shall be placed with hooks in the top.

For footing layout see Sheet 2/24

O — Denotes battered piles.

COLUMN REINFORCING STEEL							
Column	A	B	C	D	E	F	G
A bars	1-SPE401	1-SPE402	1-SPE403	1-SPE404	1-SPE405	1-SPE406	1-SPE407
B bars	4-PE1006	-	-	-	4-PE1010	4-PE1010	4-PE1010
C bars	12-PE1009	12-PE1013	12-PE1014	12-PE1015	12-PE1015	12-PE1016	12-PE1012
D bars	16-PE1011	12-PE1011	12-PE1011	12-PE1011	16-PE1011	16-PE1011	16-PE1011

H.N.T.B. BRIDGE NO. 2 | Revised 6-9-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 9/24
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIER 5

U.S. 30 OVER RAMP B, C, I-77
AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 — STA. 960 + 02.25
SCALE: 3/16" = 1'-0" — STA. 966 + 63.26

RELOCATED U.S. 30

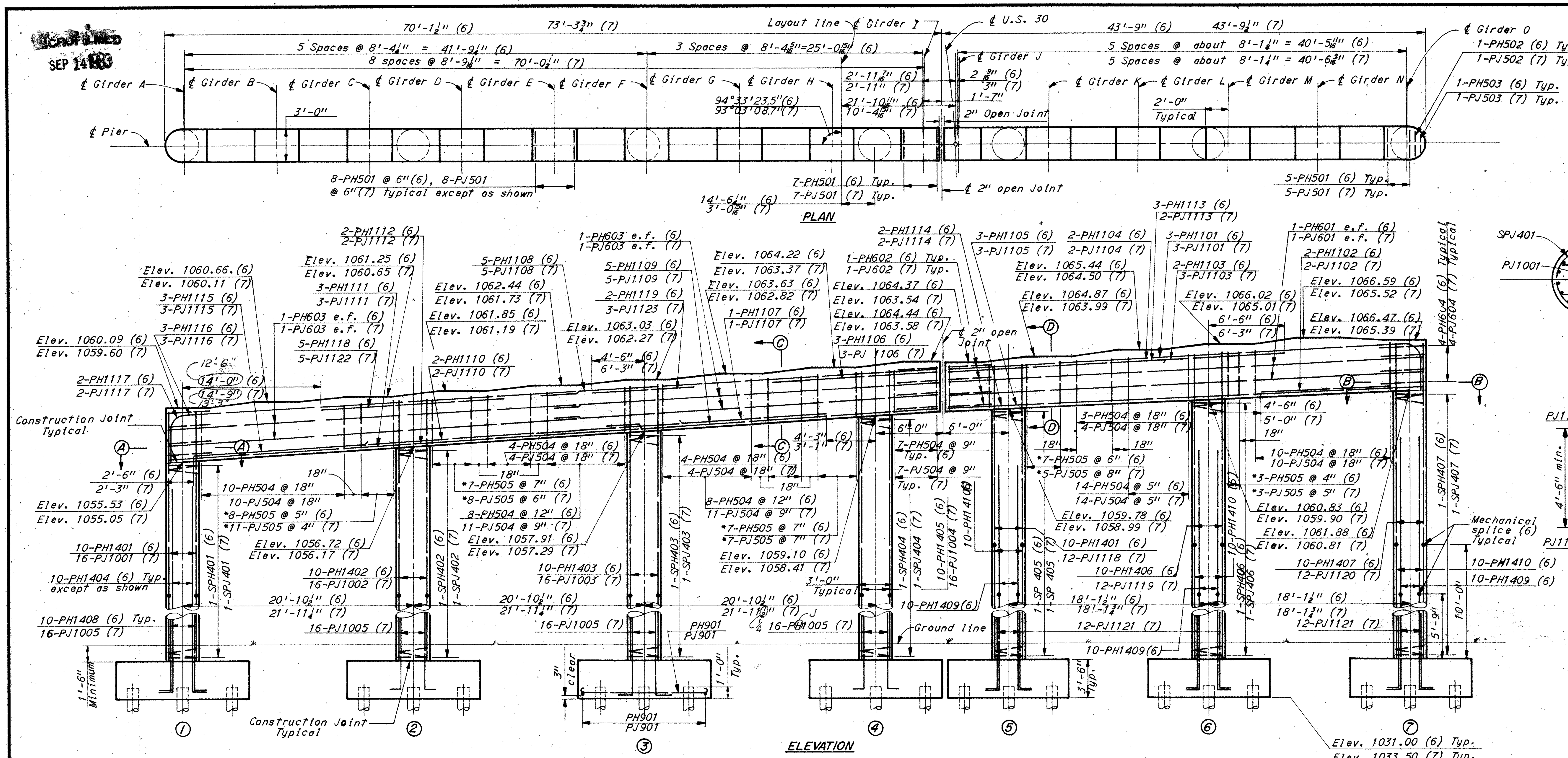
CANTON — STARK COUNTY — OHIO

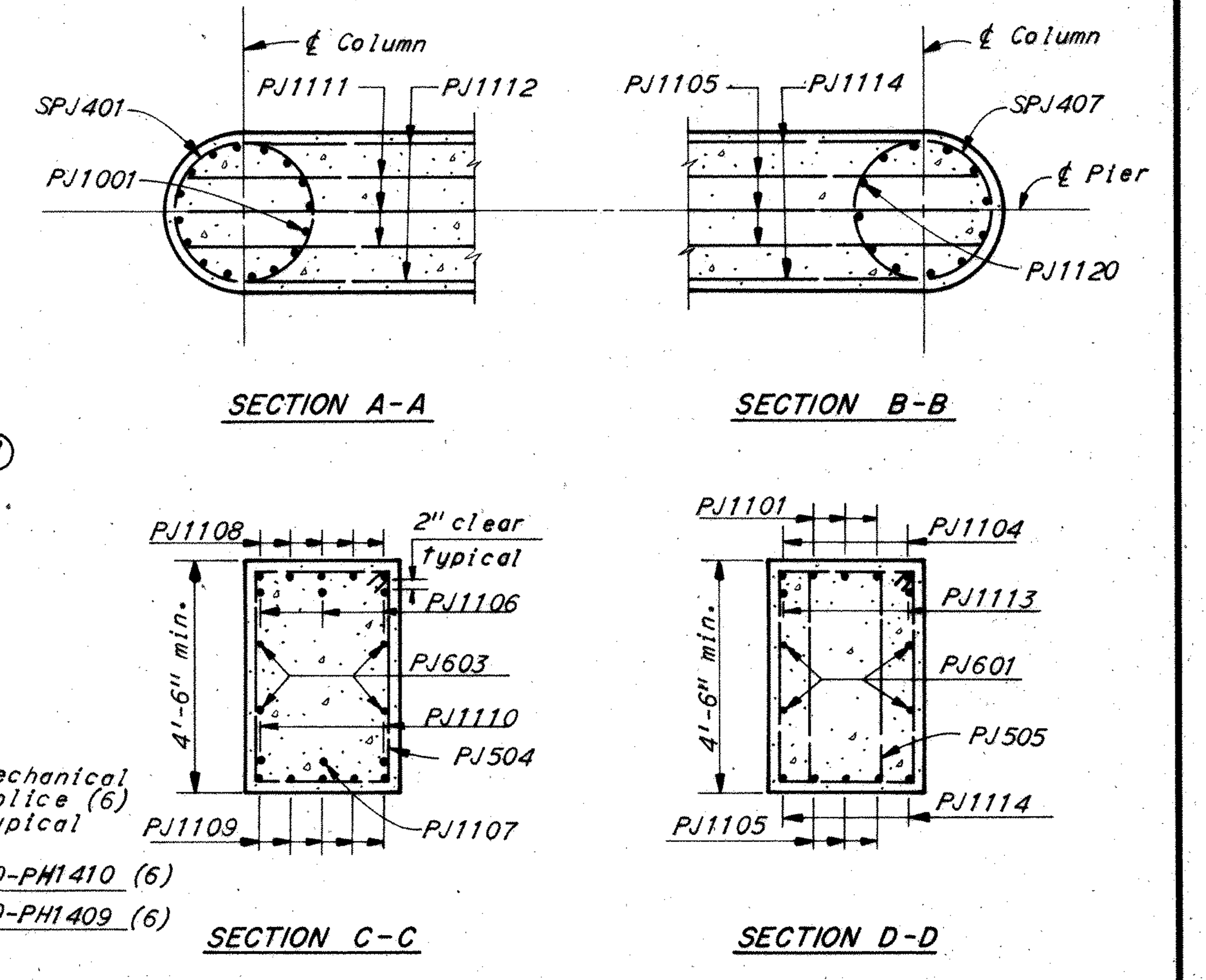
DRAWN B.M.	TRACED	CHECKED MRG	REVIEWED MJK	REVISED
DATE 4/24/70	DATE	DATE 5-21-70	DATE 11-22-71	1668

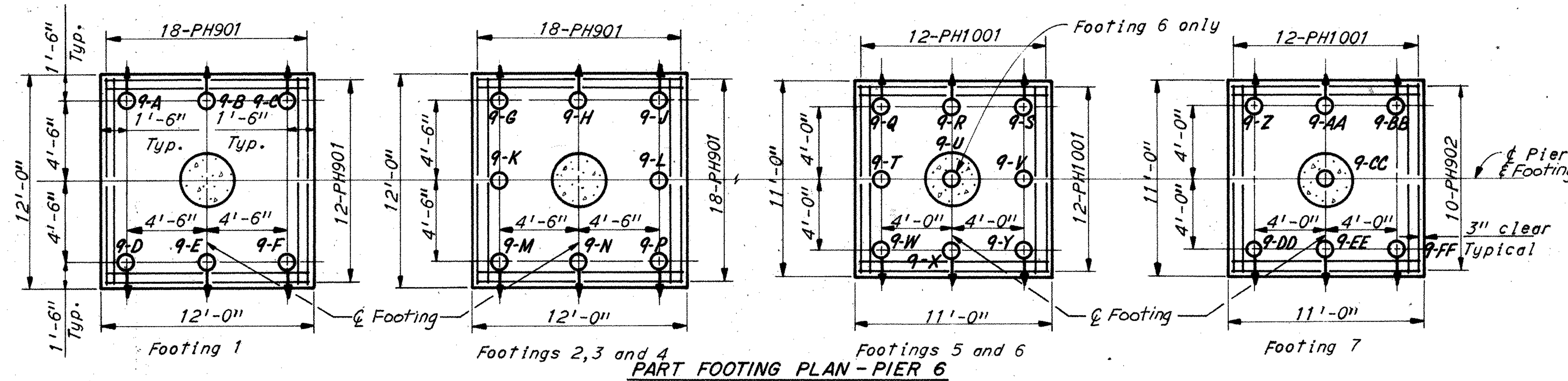
Revised 4-28-77

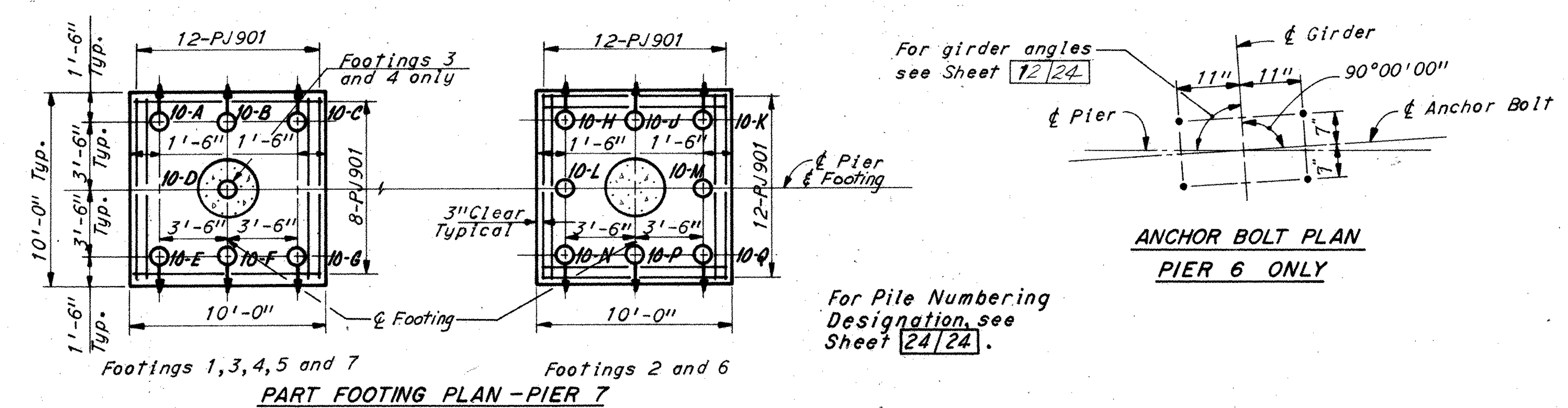
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			242 / 389

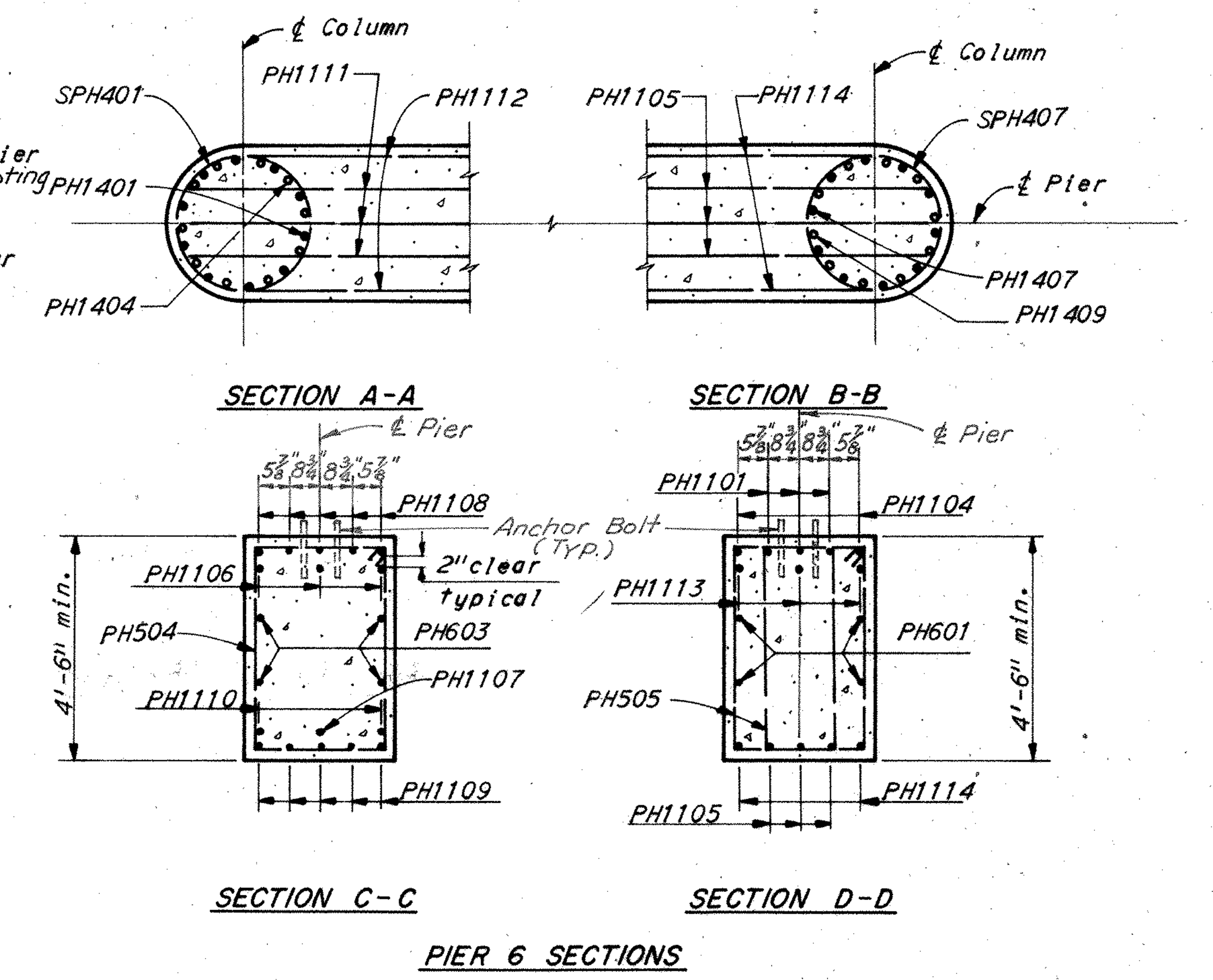
STARK COUNTY
STA-30-14.12
STA-77-9.22











Notes

PH501, PH502, PH503, PJ501, PJ502 and PJ503 bars shall be placed 2½" below top of cap beam.

(6) denotes Pier 6
(7) denotes Pier 7
For reinforcement schedule see Sheet 23/24
For footing layout see Sheet 2/24
e.f. denotes each face.

All stirrups within 4 feet of ℄ Columns and cantilever areas shall be placed with hooks in the bottom of cap. All others shall be placed with hooks in the top.

○→ Denotes battered piles.

Pile dimensions are measured along bottom of footing.

All battered piles shall be battered 3 in 12.

All piles are 12" cast-in-place concrete.

* Denotes number of sets of 2 PH505 or PJ505 stirrups.

Special care shall be taken when placing reinforcing steel so as not to interfere with anchor bolt setting. Pier 6 only. See Sheet 21/4

Splices in No. 14 size reinforcing bars shall be made by an approved positive mechanical method designed to develop 125% of the specified yield strength of the bar.

H.N.T.B. BRIDGE NO. 2 | Revised 6-9-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 10/24

PIERS 6 AND 7

U.S. 30 OVER RAMP B, C, I-77
AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 — STA. 960 + 02.25
SCALE: 3/16" = 1'-0" — STA. 966 + 63.26

RELOCATED U.S. 30

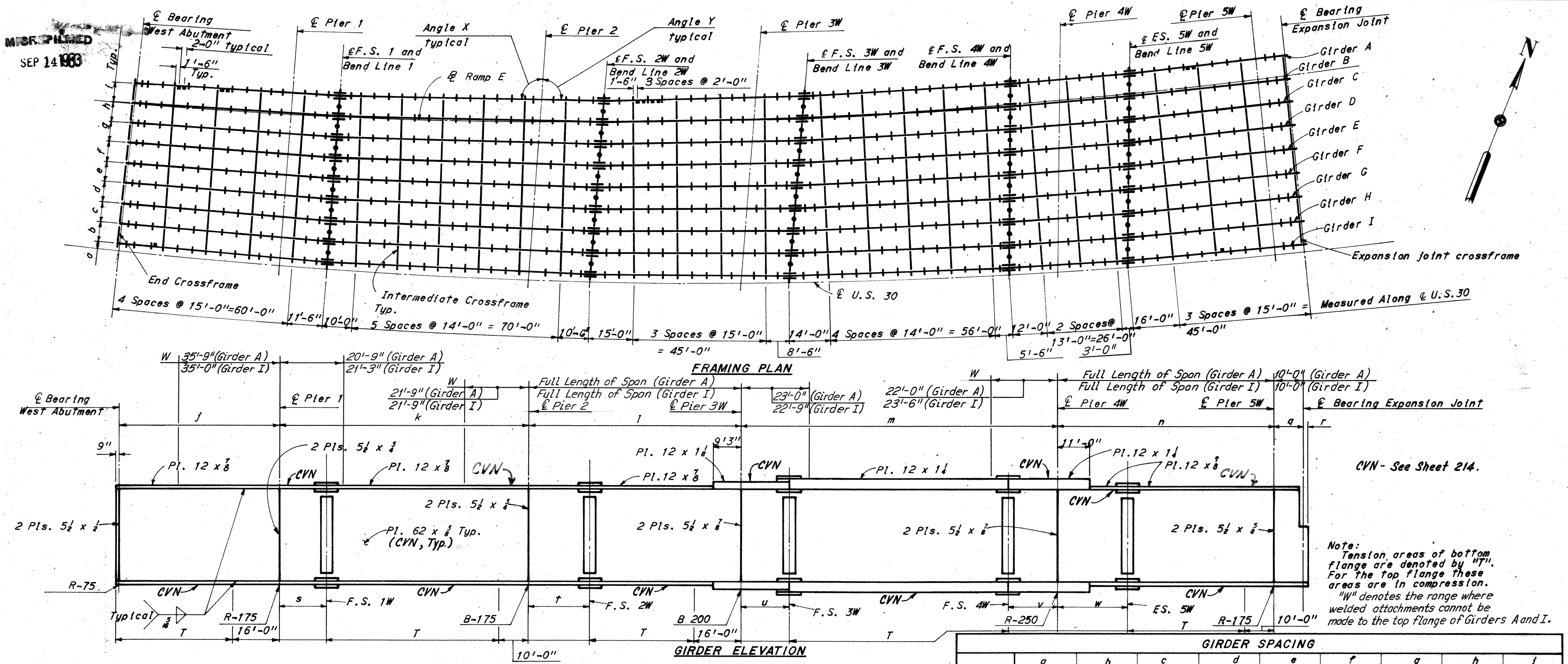
CANTON — STARK COUNTY — OHIO

DRAWN LDL	TRACED	CHECKED	REVIEWED MJK	REVISED 3-2-76
DATE 5-1-70	DATE	DATE 5-25-70	DATE 4-22-71	1668

Revised 4-28-77

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			243/389

STARK COUNTY
STA-30-14.12
STA-77-9.22



Notes:

Top and bottom flanges are identical in size.

All stiffeners shall be placed normal to girder flanges.

All intermediate stiffener to web welds shall be 1/4" continuous fillets on both sides of stiffeners.

For detail of field splices see Sheet 355.

All intermediate stiffeners shall be Pls. 4 1/2 x 3/8.

Intermediate stiffeners shall be placed as shown on framing plan, equally spaced between crossframes or crossframes and bearing stiffeners or crossframes and splices.

End crossframe details shall be same as shown on Ohio Standard Drawing SD-1-69, Sheet 1 of 4.

For intermediate crossframe details see Sheet 360.

All crossframes are intermediate crossframes unless shown otherwise.

For details of roadway end dam, see Ohio Standard Drawing SD-1-69, Sheet 1 of 4, and Sheet 359.

For details of curb plates at concrete bridge railing see Ohio Standard Drawing, SD-1-69, Sheet 2 of 4.

For details at rockers and bolsters see Ohio Standard Drawing RB-1-55.

The girders shall be fabricated to lines parallel to profiles formed by top of pavement elevations directly over girders, plus the camber required to compensate for dead load deflection.

The allowance to be made in screed settings to compensate for dead load deflections due to concrete and wearing course are to be made above or below the top of the pavement elevations as required. Screeds may require further adjustment due to irregularities in fabricated steel.

F.S. denotes Field Splice.

For girder angles see Sheet 12/24

Dimensions to scuppers are measured along centerline of girders.

■ Denotes standard scupper.

For bend point crossframe details see Sheet 360.

—•Denotes bend point crossframe.

For Camber and Deflection Table see Sheet 363.

For expansion joint crossframes see Sheet 360.

The rockers and bolsters of girders A and I shall have the 1/2" side plate omitted at Piers 3, 4 and 5.

For expansion joint details see sheet 357.

For detail of intermediate stiffeners see Sheet 360.

For underdeck lighting details see Lighting Plans.

Scupper shall be in accordance with Std. Drwg. SD-1-69 except that scupper pipe shall extend 8" below the bottom of the girders instead of 2".

TABLE OF DIMENSIONS

Girder	j	k	l	m	n			q	r	s	t	u	v	w
A	53'-9 15/16"	85'-7 1/8"	73'-5 1/8"	105'-2 7/8"	67'-0 1/16"			10'-0"	7 1/4"	16'-0"	21'-0 1/16"	16'-6 5/8"	17'-10 3/16"	23'-3"
B	54'-0 5/16"	85'-6 15/16"	73'-4 1/2"	105'-9 3/16"	67'-10 3/8"			10'-0"	7 1/4"	16'-0"	21'-0 1/16"	16'-6 3/8"	17'-10 1/8"	23'-2 7/8"
C	54'-2 11/16"	85'-6 13/16"	73'-3 13/16"	106'-3 13/16"	68'-8 11/16"			10'-0"	7 1/4"	16'-0"	21'-0"	16'-6 1/8"	17'-10 1/16"	23'-2 13/16"
D	54'-5 1/16"	85'-6 5/8"	73'-3 3/16"	106'-10 5/16"	69'-7 1/16"			10'-0"	7 1/4"	16'-0"	21'-0"	16'-6 1/16"	17'-10"	23'-2 11/16"
E	54'-7 7/16"	85'-6 1/2"	73'-2 3/8"	107'-4 13/16"	70'-5 3/8"			10'-0"	7 1/4"	16'-0"	20'-11 15/16"	16'-6"	17'-9 15/16"	23'-2 5/8"
F	54'-9 13/16"	85'-6 7/16"	73'-1 15/16"	107'-11 3/8"	71'-3 3/4"			10'-0"	7 1/4"	16'-0"	20'-11 7/8"	16'-5 15/16"	17'-9 7/8"	23'-2 9/16"
G	55'-0 1/4"	85'-6 3/8"	73'-1 3/8"	108'-5 15/16"	72'-2 1/8"			10'-0"	7 1/4"	16'-0"	20'-11 7/8"	16'-5 7/8"	17'-9 13/16"	23'-2 7/16"
H	55'-2 5/8"	85'-6 3/16"	73'-0 3/4"	109'-0 1/2"	73'-0 1/2"			10'-0"	7 1/4"	16'-0"	20'-11 7/8"	16'-5 13/16"	17'-9 3/4"	23'-2 3/8"
I	55'-5"	85'-6 1/8"	73'-0 1/8"	109'-7 1/16"	73'-10 7/8"			10'-0"	7 1/4"	16'-0"	20'-11 13/16"	16'-5 3/4"	17'-9 11/16"	23'-2 5/16"

GIRDER SPACING

	a	b	c	d	e	f	g	h	i
*W. Abut.	2'-7"	6'-10 5/16"	6'-10 5/16"	6'-10 5/16"	6'-10 5/16"	6'-10 5/16"	6'-10 5/16"	6'-10 5/16"	6'-10 5/16"
℄ Pier 1	2'-9 3/4"	7'-0 3/8"	7'-0 3/8"	7'-0 3/8"	7'-0 3/8"	7'-0 3/8"	7'-0 3/8"	7'-0 3/8"	7'-0 3/8"
F.S. 1	2'-7"	7'-1"	7'-1"	7'-1"	7'-1"	7'-1"	7'-1"	7'-1"	7'-1"
℄ Pier 2	2'-11 5/8"	7'-3 13/16"	7'-3 13/16"	7'-3 13/16"	7'-3 13/16"	7'-3 13/16"	7'-3 13/16"	7'-3 13/16"	7'-3 13/16"
F.S. 2W	2'-7 1/16"	7'-4 11/16"	7'-4 11/16"	7'-4 11/16"	7'-4 11/16"	7'-4 11/16"	7'-4 11/16"	7'-4 11/16"	7'-4 11/16"
℄ Pier 3W	2'-9 13/16"	7'-6 15/16"	7'-6 15/16"	7'-6 15/16"	7'-6 15/16"	7'-6 15/16"	7'-6 15/16"	7'-6 15/16"	7'-6 15/16"
F.S. 3W	2'-7 1/8"	7'-7 5/8"	7'-7 5/8"	7'-7 5/8"	7'-7 5/8"	7'-7 5/8"	7'-7 5/8"	7'-7 5/8"	7'-7 5/8"
F.S. 4W	2'-7 1/16"	7'-10 3/16"	7'-10 3/16"	7'-10 3/16"	7'-10 3/16"	7'-10 3/16"	7'-10 3/16"	7'-10 3/16"	7'-10 3/16"
℄ Pier 4W	2'-8 3/8"	7'-10 15/16"	7'-10 15/16"	7'-10 15/16"	7'-10 15/16"	7'-10 15/16"	7'-10 15/16"	7'-10 15/16"	7'-10 15/16"
F.S. 5W	2'-7 1/8"	7'-11 15/16"	7'-11 15/16"	7'-11 15/16"	7'-11 15/16"	7'-11 15/16"	7'-11 15/16"	7'-11 15/16"	7'-11 15/16"
℄ Pier 5W	2'-8 9/16"	8'-1 5/16"	8'-1 3/16"	8'-1 1/4"	8'-1 1/4"	8'-1 1/4"	8'-1 1/4"	8'-1 1/4"	8'-1 3/16"
‡Exp. Jt.	2'-7"	8'-1 11/16"	8'-1 11/16"	8'-1 11/16"	8'-1 11/16"	8'-1 11/16"	8'-1 11/16"	8'-1 11/16"	8'-1 11/16"

* ℄ Bearing West Abutment ‡ ℄ Bearing Expansion Joint

TOP OF PORTLAND CEMENT CONCRETE ELEVATION

Girder	℄ Brg. N. Abut.	0.25	0.50	0.75	℄ Pier 1	**0.25	0.50	0.75	℄ Pier 2	**0.25	0.50	0.75	℄ Pier 3W	0.10	** 0.20	0.30	0.40	0.50	0.60	0.70	**0.80	0.90	℄ Pier 4W
A	1064.94	1065.19	1065.43	1065.66	1065.88	1066.13	1066.51	1066.78	1067.03	1067.25	1067.40	1067.56	1067.70	1067.77	1067.80	1067.89	1067.94	1067.98	1068.02	1068.06	1068.09	1068.10	1068.12
B	1065.43	1065.67	1065.90	1066.13	1066.36	1066.63	1066.98	1067.25	1067.52	1067.77	1067.91	1068.06	1068.21	1068.29	1068.34	1068.41	1068.46	1068.50	1068.55	1068.59	1068.64	1068.65	1068.67
C	1065.92	1066.16	1066.39	1066.63	1066.86	1067.13	1067.49	1067.76	1068.03	1068.29	1068.43	1068.59	1068.74	1068.82	1068.87	1068.95	1069.00	1069.05	1069.10	1069.14	1069.20	1069.21	1069.23
D	1066.40	1066.65	1066.89	1067.12	1067.36	1067.63	1067.99	1068.28	1068.55	1068.81	1068.95	1069.11	1069.27	1069.36	1069.40	1069.49	1069.54	1069.59	1069.64	1069.69	1069.75	1069.77	1069.78
E	1066.89	1067.14	1067.38	1067.62	1067.86	1068.13	1068.50	1068.79	1069.06	1069.33	1069.47	1069.64	1069.80	1069.89	1069.94	1070.03	1070.08	1070.14	1070.19	1070.24	1070.31	1070.32	1070.34
F	1067.38	1067.63	1067.87	1068.12	1068.36	1068.63	1069.01	1069.30	1069.58	1069.85	1070.00	1070.17	1070.33	1070.42	1070.47	1070.56	1070.62	1070.68	1070.74	1070.79	1070.86	1070.88	1070.90
G	1067.86	1068.12	1068.37	1068.61	1068.86	1069.13	1069.51	1069.81	1070.09	1070.37	1070.52	1070.69	1070.86	1070.96	1071.01	1071.10	1071.16	1071.23	1071.28	1071.34	1071.41	1071.43	1071.46
H	1068.35	1068.61	1068.86	1069.11	1069.36	1069.63	1070.02	1070.32	1070.61	1070.89	1071.04	1071.22	1071.39	1071.49	1071.54	1071.64	1071.71	1071.77	1071.83	1071.89	1071.97	1071.99	1072.02
I	1068.42	1068.70	1068.97	1069.23	1069.46	1069.72	1069.16	1070.47	1070.75	1070.99	1071.17	1071.36	1071.53	1071.61	1071.65	1071.79	1071.87	1071.94	1072.00	1072.05	1072.10	1072.13	1072.17

70.

Girder	℄ Pier 4W	**0.25	0.50	0.75	℄ Pier 5W	℄ Brg. Exp. Jt.
A	1068.12	1068.13	1068.12	1068.10	1068.06	1068.03
B	1068.67	1068.69	1068.68	1068.65	1068.63	1068.61
C	1069.23	1069.25	1069.24	1069.23	1069.20	1069.18
D	1069.78	1069.82	1069.81	1069.80	1069.78	1069.76
E	1070.34	1070.38	1070.38	1070.37	1070.35	1070.34
F	1070.90	1070.95	1070.95	1070.94	1070.93	1070.92
G	1071.46	1071.51	1071.51	1071.51	1071.50	1071.50
H	1072.02	1072.08	1072.08	1072.08	1072.08	1072.07
I	1072.17	1072.22	1072.25	1072.26	1072.25	1072.23

** Elevations given are at Field Splice.

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS AT GUTTERLINE

	℄ Brg. W. Abut.	0.25	0.50	0.75	℄ Pier 1	0.25	0.50	0.75	℄ Pier 2	0.25	0.50	0.75	℄ Pier 3W	0.10
North Gutterline	1064.94	1065.19	1065.43	1065.66	1065.88	1066.23	1066.53	1066.80	1067.03	1067.23	1067.39	1067.55	1067.70	1067.79
South Gutterline	1068.35	1068.62	1068.88	1069.14	1069.38	1069.76	1070.09	1070.40	1070.66	1070.88	1071.09	1071.27	1071.44	1071.56
	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	℄ Pier 4W	0.25	0.50	0.75	℄ Pier 5W	℄ Brg. Exp. Jt.
North Gutterline	1067.87	1067.95	1068.01	1068.06	1068.09	1068.12	1068.12	1068.12	1068.12	1068.13	1068.12	1068.10	1068.06	1068.03
South Gutterline	1071.67	1071.77	1071.84	1071.92	1071.98	1072.03	1072.06	1072.08	1072.09	1072.14	1072.17	1072.18	1072.17	1072.16

6

Note:
The gutterline elevations shown have been adjusted for dead load deflections caused by the weight of concrete and wearing course and are the elevations required before the concrete deck is placed. No concrete shall be placed until the screed rails have been set for the entire unit.

H.N.T.B. BRIDGE NO. 2 | Revised 6-9-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 11/24
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FRAMING PLAN
UNIT I-WESTBOUND
U.S. 30 OVER RAMP B, C, I-77
AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 STA. 960 + 02.25
SCALE: 1"=20'-0" STA. 966 + 63.26

RELOCATED U.S. 30
CANTON STARK COUNTY OHIO

DRAWN OPK DATE 11-24-69	TRACED DATE	CHECKED DWS DATE 5-6-70	REVIEWED DATE 11-23-71	REVISED 7-12-76
				1668

Revised 4-28-77

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	244 / 389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22

UNIT 1 - WESTBOUND

		Girder A	Girder B	Girder C	Girder D	Girder E	Girder F	Girder G	Girder H	Girder I
℄ Bearing W. Abutment	X	92°33'53.4"	92°22'28.7"	92°11'07.9"	91°59'50.9"	91°48'37.6"	91°37'28.1"	91°26'22.4"	91°15'20.5"	91°04'22.2"
	Y	87°26'06.6"	87°37'31.3"	87°48'52.1"	88°00'09.1"	88°11'22.4"	88°22'31.9"	88°33'37.6"	88°44'39.5"	88°55'37.8"
℄ Pier 1	X	90°53'59.4"	90°42'34.7"	90°31'13.9"	90°19'56.9"	90°08'43.6"	89°57'34.1"	89°46'28.4"	89°35'26.5"	89°24'28.2"
	Y	89°06'00.6"	89°17'25.3"	89°28'46.1"	89°40'03.1"	89°51'16.4"	90°02'25.9"	90°13'31.6"	90°24'33.5"	90°35'31.8"
B. L. 1	X	90°53'59.4"	90°42'34.7"	90°31'13.9"	90°19'56.9"	90°08'43.6"	89°57'34.1"	89°46'28.4"	89°35'26.5"	89°24'28.2"
	Y	86°36'48.0"	86°48'23.2"	86°59'58.6"	87°11'34.3"	87°23'10.3"	87°34'46.4"	87°46'22.8"	87°57'59.3"	88°09'36.0"
℄ Pier 2	X	93°23'12.0"	93°11'36.8"	93°00'01.4"	92°48'25.7"	92°36'49.7"	92°25'13.6"	92°13'37.2"	92°02'00.7"	91°50'24.0"
	Y	86°36'48.0"	86°48'23.2"	86°59'58.6"	87°11'34.3"	87°23'10.3"	87°34'46.4"	87°46'22.8"	87°57'59.3"	88°09'36.0"
B.L. 2W	X	93°23'12.0"	93°11'36.8"	93°00'01.4"	92°48'25.7"	92°36'49.7"	92°25'13.6"	92°13'37.2"	92°02'00.7"	91°50'24.0"
	Y	84°08'25.0"	84°20'34.9"	84°32'46.1"	84°44.58.5"	84°57'12.0"	85°09'26.8"	85°21'42.6"	85°33'59.6"	85°46'17.7"
℄ Pier 3W	X	96°06'17.0"	95°54'07.1"	95°41'55.9"	95°29'43.5"	95°17'30.0"	95°05'15.2"	94°52'59.4"	94°40'42.4"	94°28'24.3"
	Y	83°53'43.0"	84°05'52.9"	84°18'04.1"	84°30'16.5"	84°42'30.0"	84°54'44.8"	85°07'00.6"	85°19'17.6"	85°31'35.7"
B.L. 3W	X	96°06'17.0"	95°54'07.1"	95°41'55.9"	95°29'43.5"	95°17'30.0"	95°05'15.2"	94°52'59.4"	94°40'42.4"	94°28'24.3"
	Y	81°43'41.8"	81°56'39.0"	82°09'24.2"	82°21'57.8"	82°34'20.0"	82°46'31.0"	82°58'31.0"	83°10'20.2"	83°21'59.0"
B.L. 4W	X	94°00'06.2"	93°47'09.0"	93°34'23.8"	93°21'50.2"	93°09'28.0"	92°57'17.0"	92°45'17.0"	92°33'27.8"	92°21'49.0"
	Y	84°15'46.4"	84°27'56.7"	84°40'07.5"	84°52'18.8"	85°04'30.5"	85°16'42.8"	85°28'55.4"	85°41'08.5"	85°53'21.9"
℄ Pier 4W	X	95°44'13.6"	95°32'03.3"	95°19'52.5"	95°07'41.2"	94°55'29.5"	94°43'17.2"	94°31'04.6"	94°18'51.5"	94°06'38.1"
	Y	84°15'46.4"	84°27'56.7"	84°40'07.5"	84°52'18.8"	85°04'30.5"	85°16'42.8"	85°28.55.4"	85°41'08.5"	85°53.21.9"
B.L. 5W	X	95°44'13.6"	95°32'03.3"	95°19'52.5"	95°07'41.2"	94°55'29.5"	94°43'17.2"	94°31'04.6"	94°18'51.5"	94°06'38.1"
	Y	82°47'33.4"	83°00'38.0"	83°13'18.2"	83°25'34.9"	83°37'29.2"	83°49'02.1"	84°00'14.6"	84°11'07.5"	84°21'41.7"
℄ Pier 5W	X	90°57'26.6"	90°44'22.0"	90°31'41.8"	90°19'25.1"	90°07'30.8"	89°55'57.9"	89°44'45.4"	89°33'52.5"	89°23'18.3"
	Y	89°02'33.4"	89°15'38.0"	89°28'18.2"	89°40'34.9"	89°52'29.2"	90°04'02.1"	90°15'14.6"	90°26'07.5"	90°36'41.7"
℄ Bearing Exp. Joint	X	90°57'26.6"	90°44'22.0"	90°31'41.8"	90°19'25.1"	90°07'30.8"	89°55'57.9"	89°44'45.4"	89°33'52.5"	89°23'18.3"
	Y	86°51'03.3"	87°02'32.5"	87°13'56.4"	87°25'15.0"	87°36'28.4"	87°47'36.6"	87°58'39.7"	88°09'37.8"	88°20'30.8"

UNIT 1 - EASTBOUND

		Girder J	Girder K	Girder L	Girder M	Girder N	Girder O
℄ Bearing W Abutment	X	91°04'22.2"	←			→	91°04'22.2"
	Y	88°55'37.8"	←			→	88°55'37.8"
℄ Pier 1	X	89°24'28.2"	←			→	89°24'28.2"
	Y	90°35'31.8"	←			→	90°35'31.8"
B.L. 1	X	89°24'28.2"	←			→	89°24'28.2"
	Y	88°09'36.0"	←			→	88°09'36.0"
℄ Pier 2	X	91°50'24.0"	←			→	91°50'24.0"
	Y	88°09'36.0"	←			→	88°09'36.0"
B.L. 2E	X	91°50'24.0"	←			→	91°50'24.0"
	Y	86°47'43.4"	←			→	86°47'43.4"
℄ Pier 3E	X	93°26'58.6"	←			→	93°26'58.6"
	Y	86°33'01.4"	←			→	86°33'01.4"
B.L. 3E	X	93°26'58.6"	←			→	93°26'58.6"
	Y	84°05'18.7"	←			→	84°05'18.7"
B.L. 4E	X	91°38'29.3"	←			→	91°38'29.3"
	Y	86°44'05.9"	←			→	86°44'05.9"
℄ Pier 4E	X	93°15'54.1"	←			→	93°15'54.1"
	Y	86°44'05.9"	←			→	86°44'05.9"
B.L. 5E	X	93°15'54.1"	←			→	93°15'54.1"
	Y	84°55'20.1"	←			→	84°55'20.1"
℄ Pier 5E	X	88°49'39.9"	←			→	88°49'39.9"
	Y	91°10'20.1"	←			→	91°10'20.1"
℄ Bearing Exp. Joint	X	88°49'39.9"	←			→	88°49'39.9"
	Y	88°20'30.8"	←			→	88°20'30.8"

UNIT 2 - WESTBOUND

		Girder A	Girder B	Girder C	Girder D	Girder E	Girder F	Girder G	Girder H	Girder I
℄ Bearing Exp. Joint	X	90°57'26.6"	90°44'22.0"	90°31'41.8"	90°19'25.1"	90°07'30.8"	89°55'57.9"	89°44'45.4"	89°33'52.5"	89°23'18.3"
	Y	86°51'03.3"	87°02'32.5"	87°13'56.4"	87°25'15.0"	87°36'28.4"	87°47'36.6"	87°58'39.7"	88°09'37.8"	88°20'30.8"
℄ Pier 6	X	90°44'02.6"	90°32'33.4"	90°21'09.5"	90°09'50.9"	89°58'37.5"	89°47'29.3"	89°36'26.2"	89°25'28.1"	89°14'35.1"
	Y	89°15'57.4"	89°27'26.6"	89°38'50.5"	89°50'09.1"	90°01'22.5"	90°12'30.7"	90°23'33.8"	90°34'31.9"	90°45'24.9"
B. L. 7	X	90°44'02.6"	90°32'33.4"	90°21'09.5"	90°09'50.9"	89°58'37.5"	89°47'29.3"	89°36'26.2"	89°25'28.1"	89°14'35.1"
	Y	86°49'50.6"	87°01'35.2"	87°13'24.7"	87°25'19.1"	87°37'18.6"	87°49'23'0"	88°10'32.5"	88°13'47.1"	88°26'06.8"
B. L. 8	X	94°40'24.2"	94°28'39.6"	94°16'50.1"	94°04'55.7"	93°52'56.2"	93°40'51.8"	93°28'42.3"	93°16'27.7"	93°04'08.0"
	Y	82°55'32.0"	83°09'45.0"	83°23'58.8"	83°38'13.4"	83°52'28.8"	84°06'44.9"	84°21'01.8"	84°35'19.4"	84°49'37.7"
℄ Pier 7	X	97°04'28.0"	96°50'15.0"	96°36'01.2"	96°21'46.6"	96°07'31.2"	95°53'15.1"	95°38'58.2"	95°24'40.6"	95°10'22.3"
	Y	82°55'32.0"	83°09'45.0"	83°23'58.8"	83°38'13.4"	83°52'28.8"	84°06'44.9"	84°21'01.8"	84°35'19.4"	84°49'37.7"
℄ Bearing E. Abutment	X	97°04'28.0"	96°50'15.0"	96°36'01.2"	96°21'46.6"	96°07'31.2"	95°53'15.1"	95°38'58.2"	95°24'40.6"	95°10'22.3"
	Y	82°55'32.0"	83°09'45.0"	83°23'58.8"	83°38'13.4"	83°52'28.8"	84°06'44.9"	84°21'01.8"	84°35'19.4"	84°49'37.7"

88° 01' 32.5"

UNIT 2 - EASTBOUND

		Girder J	Girder K	Girder L	Girder M	Girder N	Girder O
℄ Bearing Exp. Joint	X	88°49'39.9"	←			→	88°49'39.9"
	Y	88°20'30.8"	←			→	88°20'30.8"
℄ Pier 6	X	89°14'35.1"	←			→	89°14'35.1"
	Y	90°45'24.9"	←			→	90°45'24.9"
B. L. 7	X	89°14'35.1"	←			→	89°14'35.1"
	Y	88°26'06.8"	←			→	88°26'06.8"
B. L. 8	X	93°04'08.0"	←			→	93°04'08.0"
	Y	84°49'37.7"	←			→	84°49'37.7"
℄ Pier 7	X	95°10'22.3"	←			→	95°10'22.3"
	Y	84°49'37.7"	←			→	84°49'37.7"
℄ Bearing E. Abutment	X	95°10'22.3"	←			→	95°10'22.3"
	Y	84°49'37.7"	←			→	84°49'37.7"

H.N.T.B. BRIDGE NO. 2

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 12/24
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

GIRDER ANGLES

U.S. 30 OVER RAMP B, C, I-77
AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 STA. 960 + 02.25
SCALE: NONE STA. 966 + 63.26

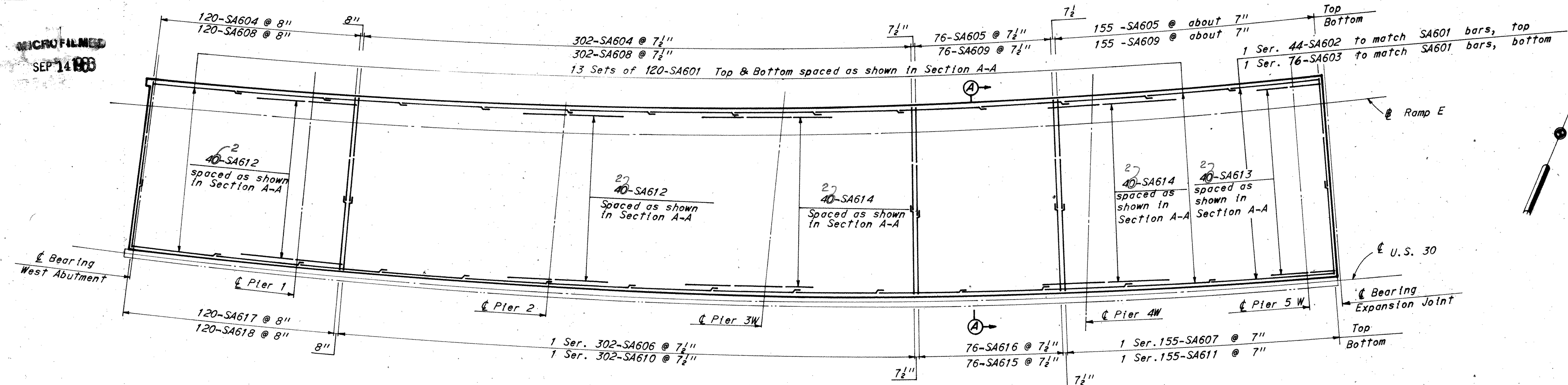
RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

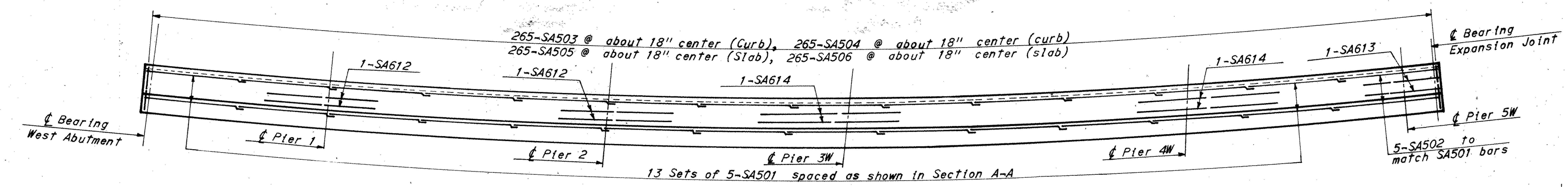
DRAWN D.W.B. DATE 5-6-70	TRACED DATE	CHECKED DATE 5-26-70	REVIEWED M.J.K. DATE 11-23-71	REVISED 7-12-76 1668

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



DECK PLAN



NORTH CURB PLAN

*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.18 of the Construction and Materials Specifications.

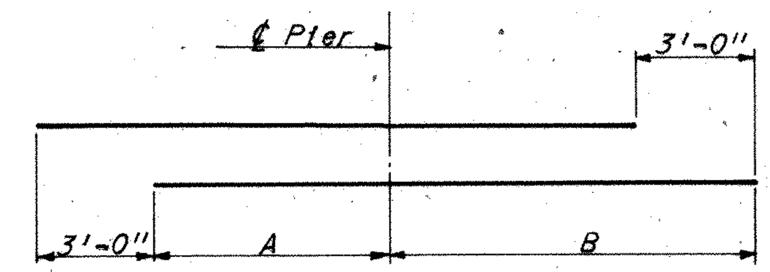


DIAGRAM SHOWING STAGGER OF
#ADDITIONAL BARS OVER PIERS

#SA612 and SA614 bars

	A	B
Pier 1	19'-0"	15'-0"
Pier 2	14'-0"	20'-0"
Pier 3	27'-0"	16'-0"
Pier 4	17'-0"	26'-0"

NOTES:

Reinforcing Steel shall be adjusted as required to clear scuppers.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For concrete railing details see Sheet 362.

For deflection joint details see Sheet 361.

For median and parapet details see Sheet 359.

For reinforcement schedule see Sheet 23/24

Transverse reinforcing steel shall be placed radial to ℄ U.S. 30 and spaced along left median gutterline.

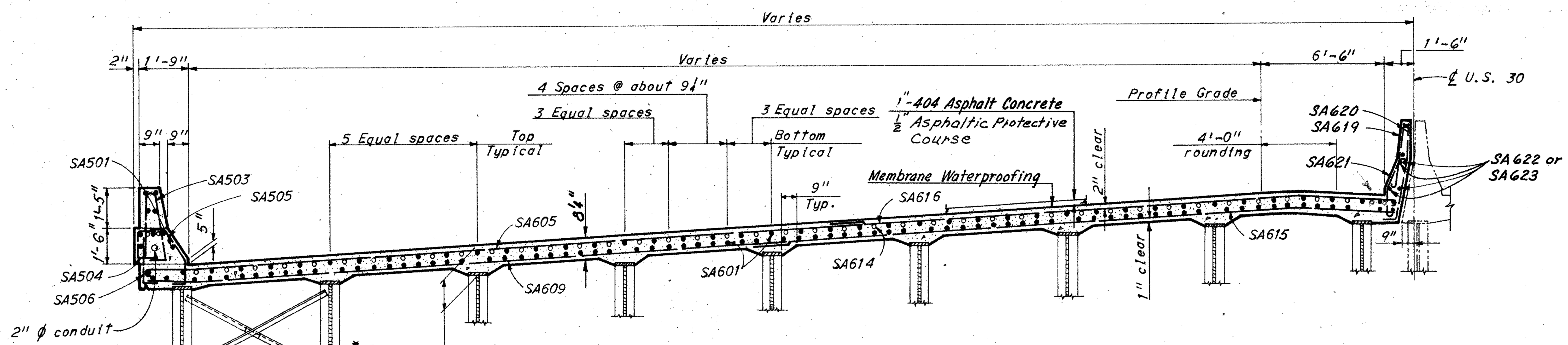
Slab horizontal offsets given are at tenth points between ℄ bearing and bend line, or between two bend lines.

For superelevation data see Sheet 15/24

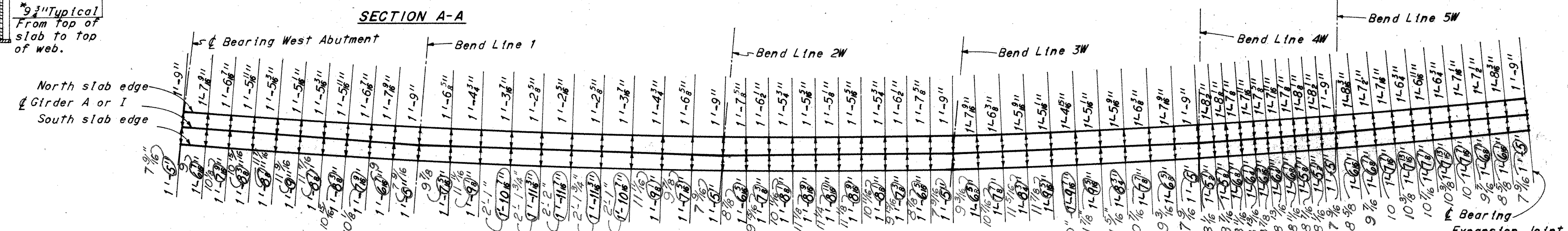
Concrete shall be placed from the expansion joint to Pier 6 before placing concrete from the expansion joint to Pier 4W.

For subdrainage details, see Sheet 365A.

For median curb plan, see Sheet 17/24



SECTION A-A



SLAB HORIZONTAL OFFSETS

H.N.T.B. BRIDGE NO. 2 | Revised 6-9-75 | By RAS

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

13/24

DECK PLAN
UNIT 1-WESTBOUND
U.S. 30 OVER RAMP B, C, I-77
AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 STA. 960 + 02.25
SCALE: NO SCALE STA. 966 + 63.26

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

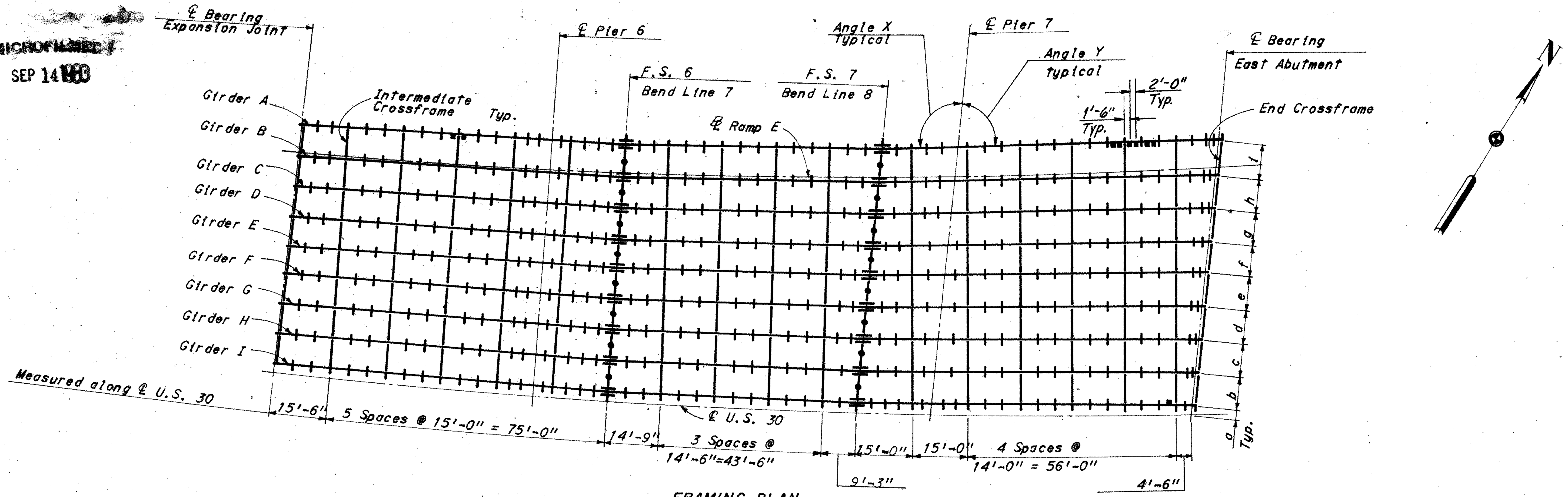
DRAWN OPK DATE 12-8-69	TRACED DATE	CHECKED MAG DATE 6-1-70	REVIEWED MJK DATE 11-22-71	REVISED 3-2-76

1668

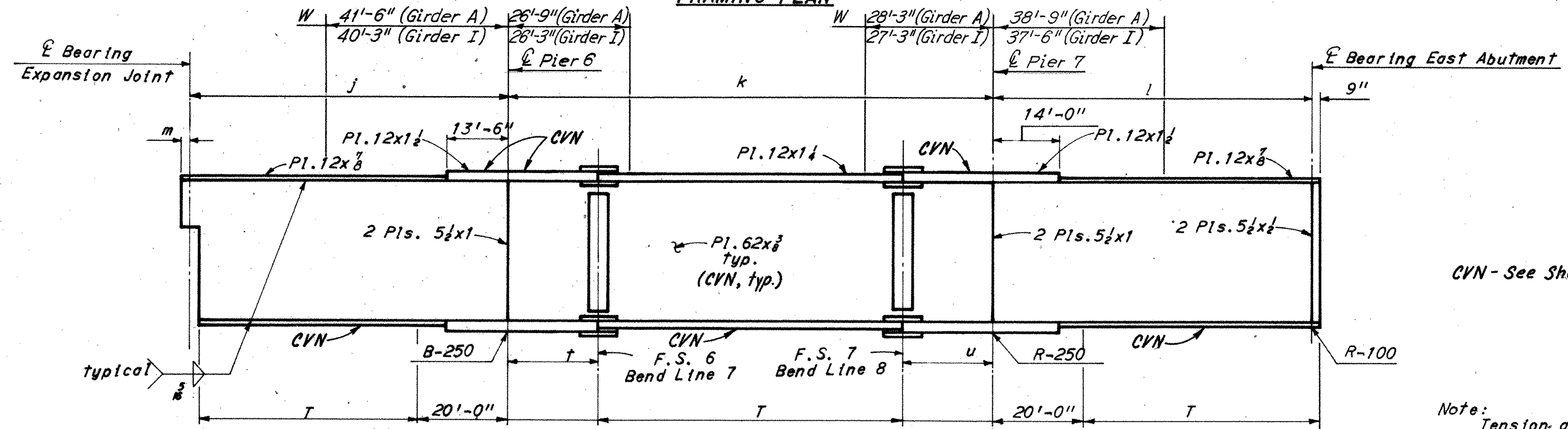
Revised 4-28-77

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



FRAMING PLAN



CVN - See Sheet 214.

GIRDER ELEVATION

Note:
Tension areas of bottom flange are denoted by "T". For the top flange, these areas are in compression.
"W" denotes the range where welded attachments cannot be made to the top flange of girders A and I.

TABLE OF DIMENSIONS								
Girder	j	k	l	m			t	u
A	67'-7 5/8"	109'-6 13/16"	70'-8 5/8"	7 3/8"			20'-0"	20'-1 3/16"
B	67'-11 3/4"	109'-3 13/16"	70'-8 3/16"	7 3/8"			20'-0"	20'-1 1/16"
C	68'-3 13/16"	109'-0 3/4"	70'-7 13/16"	7 3/8"			20'-0"	20'-0 15/16"
D	68'-7 15/16"	108'-9 15/16"	70'-7 3/8"	7 3/8"			20'-0"	20'-0 13/16"
E	69'-0 1/16"	108'-6 13/16"	70'-7"	7 3/8"			20'-0"	20'-0 3/4"
F	69'-4 3/16"	108'-3 7/8"	70'-6 5/8"	7 3/8"			20'-0"	20'-0 5/8"
G	69'-8 5/16"	108'-0 15/16"	70'-6 1/4"	7 3/8"			20'-0"	20'-0 1/2"
H	70'-0 7/16"	107'-10"	70'-5 15/16"	7 3/8"			20'-0"	20'-0 7/16"
I	70'-4 9/16"	107'-7 1/8"	70'-5 5/8"	7 3/8"			20'-0"	20'-0 5/16"

GIRDER SPACING									
	a	b	c	d	e	f	g	h	i
*Exp. Jt.	2'-7"	8'-1 11/16"	8'-1 11/16"	8'-1 11/16"	8'-1 11/16"	8'-1 11/16"	8-'1 11/16"	8'-1 11/16"	8'-1 11/16"
℄ Pier 6	2'-11 7/16"	8'-4 5/16"	8'-4 5/16"	8'-4 5/16"	8'-4 1/4"	8'-4 1/4"	8'-4 1/4"	8'-4 1/4"	8'-4 1/4"
F.S. 7	2'-7"	8'-5 1/16"	8'-5 1/16"	8'-5 1/16"	8'-5 1/16"	8'-5 1/16"	8'-5 1/16"	8'-5 1/16"	8'-5 1/16"
F.S. 8	2'-7 1/16"	8'-8 1/16"	8'-8 1/16"	8'-8 1/16"	8'-8 1/16"	8'-8 1/16"	8'-8 1/16"	8'-8 1/16"	8'-8 1/16"
℄ Pier 7	2'-11"	8'-9 1/16"	8'-9 1/16"	8'-9 1/16"	8'-9 1/16"	8'-9 1/16"	8'-9 1/16"	8'-9 1/16"	8'-9 1/16"
‡E. Abut.	2'-7 3/16"	9'-0 5/8"	9'-0 5/8"	9'-0 5/8"	9'-0 5/8"	9'-0 5/8"	9'-0 5/8"	9'-0 5/8"	9'-0 5/8"

* ℄ Bearing Expansion Joint. ‡℄ Bearing East Abutment.

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS																		
Girder	℄ Brg. Exp. Jt.	0.25	0.50	0.75	℄ Pier 6	0.10	**0.20	0.30	0.40	0.50	0.60	0.70	**0.80	0.90	℄ Pier 7	0.25	0.50	0.75	℄ Brg. E. Abut.
A	1068.03	1067.96	1067.88	1067.79	1067.67	1067.59	1067.52	1067.43	1067.37	1067.33	1067.30	1067.28	1067.24	1067.21	1067.18	1067.12	1067.07	1067.01	1066.97
B	1068.61	1068.52	1068.43	1068.34	1068.24	1068.17	1068.12	1068.02	1067.95	1067.90	1067.86	1067.83	1067.80	1067.75	1067.69	1067.61	1067.54	1067.48	1067.43
C	1069.18	1069.10	1069.02	1068.93	1068.83	1068.77	1068.72	1068.62	1068.55	1068.49	1068.44	1068.40	1068.35	1068.30	1068.23	1068.13	1068.05	1067.97	1067.90
D	1069.76	1069.69	1069.61	1069.52	1069.43	1069.37	1069.32	1069.22	1069.14	1069.08	1069.02	1068.97	1068.91	1068.85	1068.77	1068.66	1068.55	1068.46	1068.37
E	1070.34	1070.27	1070.19	1070.11	1070.02	1069.96	1069.91	1069.81	1069.74	1069.67	1069.61	1069.55	1069.48	1069.40	1069.31	1069.18	1069.06	1068.95	1068.85
F	1070.92	1070.85	1070.78	1070.70	1070.61	1070.56	1070.51	1070.41	1070.33	1070.26	1070.19	1070.12	1070.04	1069.95	1069.86	1069.71	1069.57	1069.44	1069.32
G	1071.50	1071.43	1071.36	1071.29	1071.21	1071.16	1071.11	1071.01	1070.93	1070.85	1070.77	1070.70	1070.60	1070.51	1070.40	1070.24	1070.08	1069.94	1069.80
H	1072.07	1072.01	1071.95	1071.88	1071.80	1071.75	1071.71	1071.61	1071.53	1071.44	1071.36	1071.27	1071.17	1071.06	1070.95	1070.77	1070.60	1070.43	1070.28
I	1072.23	1072.22	1072.18	1072.11	1072.02	1071.95	1071.89	1071.82	1071.74	1071.66	1071.57	1071.47	1071.34	1071.26	1071.16	1070.99	1070.81	1070.62	1070.43

** Elevations given are at Field Splice.

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS AT GUTTERLINE																			
	℄ Brg. Exp. Jt.	0.25	0.50	0.75	℄ Pier 6	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	℄ Pier 7	0.25	0.50	0.75	℄ Brg. E. Abut.
North Gutterline	1068.03	1067.97	1067.89	1067.79	1067.67	1067.60	1067.54	1067.48	1067.44	1067.39	1067.36	1067.33	1067.28	1067.22	1067.18	1067.12	1067.08	1067.02	1066.97
South Gutterline	1072.16	1072.14	1072.09	1072.01	1071.93	1071.88	1071.84	1071.79	1071.72	1071.64	1071.55	1071.45	1071.32	1071.20	1071.08	1070.90	1070.74	1070.56	1070.37

Notes:

Top and bottom flanges are identical in size.

All stiffeners shall be placed normal to girder flanges.

All intermediate stiffener to web welds shall be ¼" continuous fillets on both sides of stiffeners.

For detail of field splices see Sheet 355.

All intermediate stiffeners shall be Pls. 4½"x5/16".

F.S. denotes Field Splice.

Intermediate stiffeners shall be placed as shown on framing plan, equally spaced between crossframes or crossframes and bearing stiffeners or crossframes and splices.

End crossframe details shall be same as shown on Ohio Standard Drawing SD-1-69, Sheet 1 of 4.

For intermediate crossframe details see Sheet 360.

All crossframes are intermediate crossframes unless shown otherwise.

For details of roadway end dam, see Ohio Standard Drawing SD-1-69, Sheet 1 of 4, and Sheet 359.

For details at rockers and bolsters see Ohio Standard Drawing RB-1-55.

The girders shall be fabricated to lines parallel to profiles formed by top of pavement elevations directly over girders, plus the camber required to compensate for dead load deflection.

The allowance to be made in screed settings to compensate for dead load deflections due to concrete and wearing course are to be made above or below the top of the pavement elevations as required. Screeds may require further adjustment due to irregularities in fabricated steel.

For details of curb plates at concrete bridge railing see Ohio Standard Drawing SD-1-69, Sheet 2 of 4.

For bend point crossframe details see Sheet 360.

—•— Denotes bend point crossframe.

Set bend point crossframes normal to girder near the bend point.

Dimensions to scuppers are measured along center-line of girders.

■ Denotes standard scupper.

For Camber and Deflection Table see Sheet 363.

For girder angles see Sheet 12/24

For expansion joint details see Sheet 357.

The rockers and bolsters at girders A and I shall have the ½" side plate omitted.

For detail of intermediate stiffeners see Sheet 360.

For underdeck lighting details see Lighting Plans.

Scuppers shall be in accordance with Std. Dwg. SD-1-69 except that scupper pipes shall extend 8" below the bottom of girders instead of 2".

Note:
The gutterline elevations shown have been adjusted for dead load deflections caused by the weight of concrete and wearing course and are the elevations required before the concrete deck is placed. No concrete shall be placed until the screed rails have been set for the entire unit.

H.N.T.B. BRIDGE NO. 2 | Revised 6-9-75 | By RAS

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

14/24

FRAMING PLAN
UNIT 2-WESTBOUND

U.S. 30 OVER RAMP B, C, I-77
AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 STA. 960 + 02.25
SCALE: 1"=20'-0" STA. 966 + 63.26

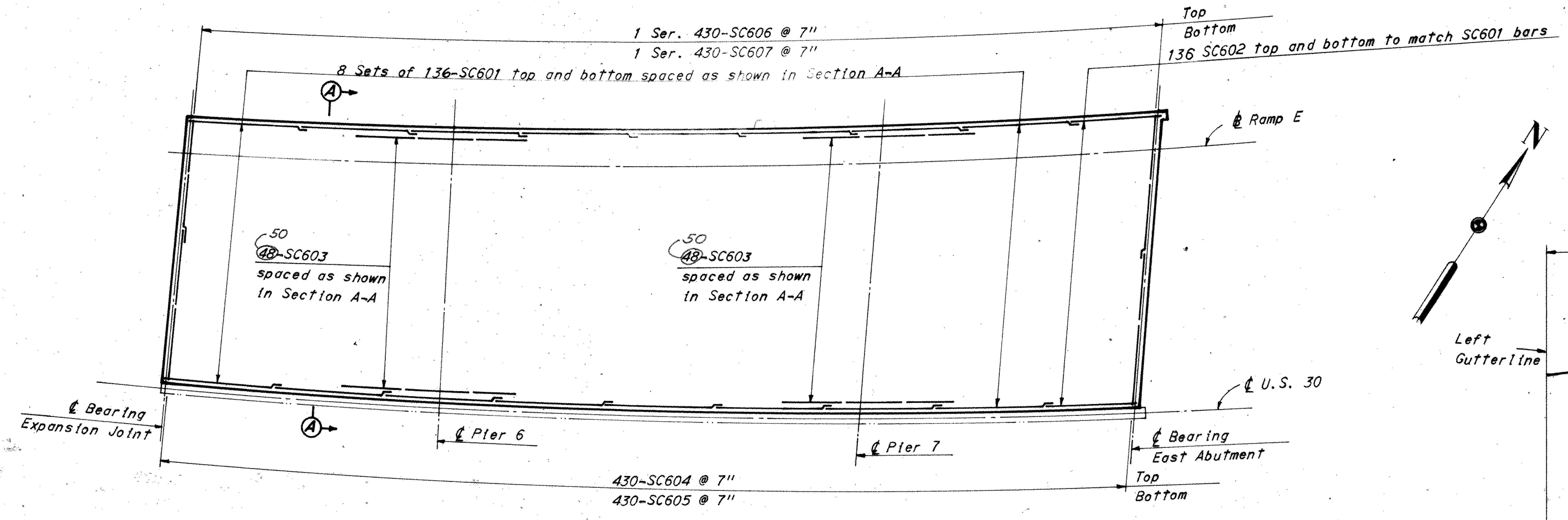
RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

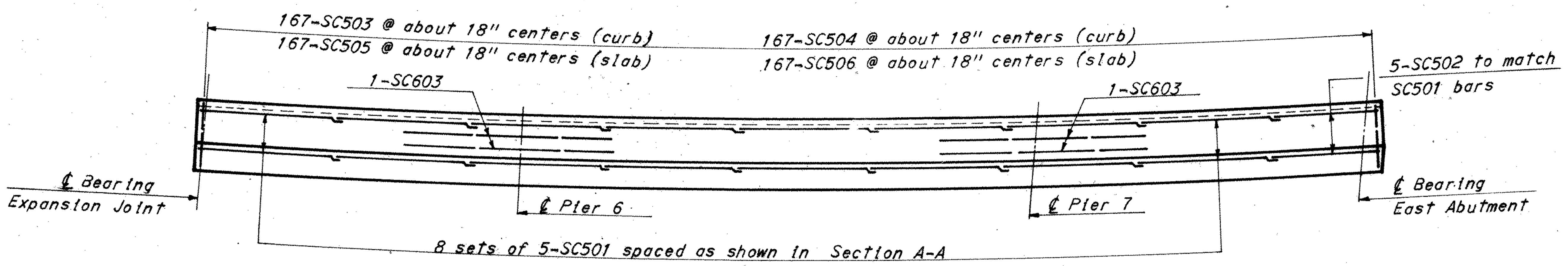
DRAWN OPK	TRACED	CHECKED DWB	REVIEWED MJK	REVISED
DATE 12-2-69	DATE	DATE 5-5-70	DATE 11-22-71	1668

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

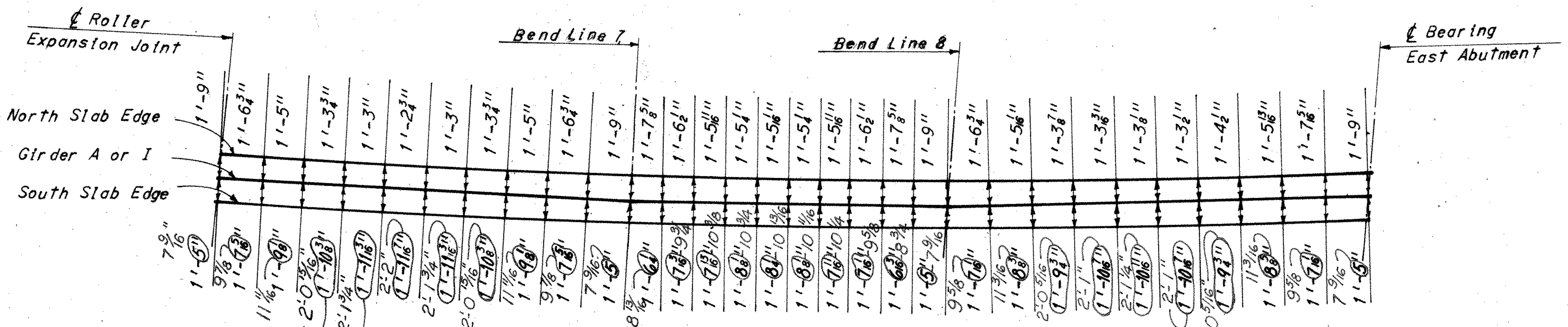
**STARK COUNTY
STA-30-14.12
STA-77-9.22**



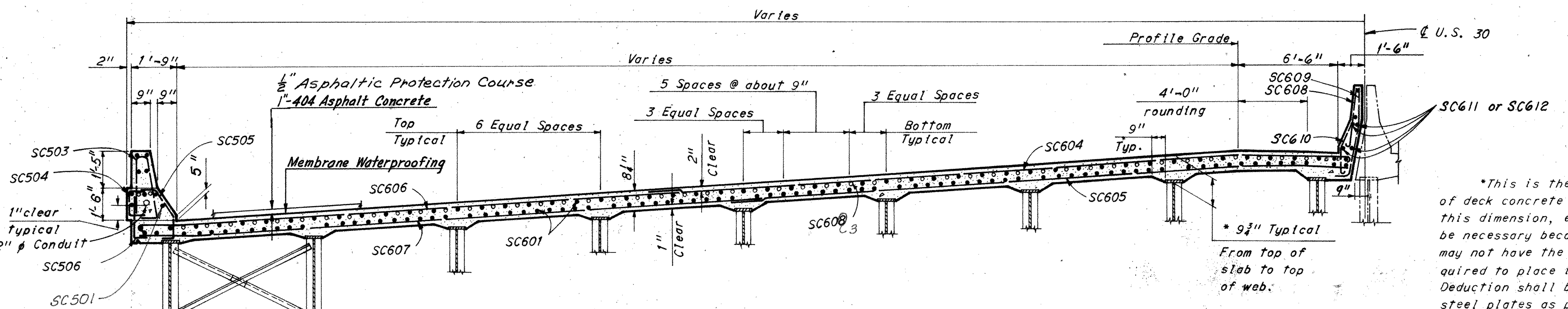
DECK PLAN



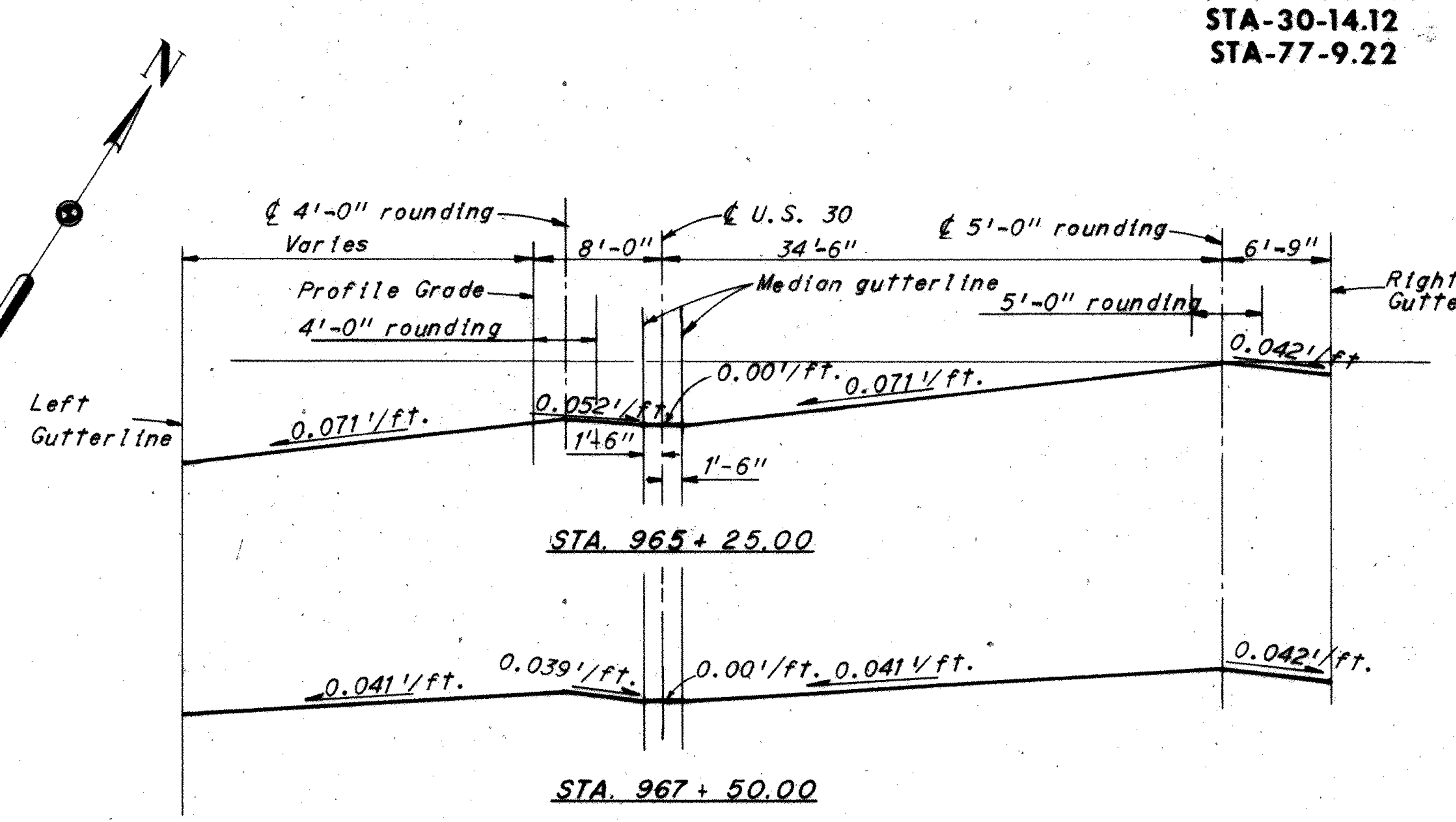
NORTH CURB PLAN



SLAB HORIZONTAL OFFSETS



SECTION A-A



SUPERELEVATION TRANSITION SCHEME

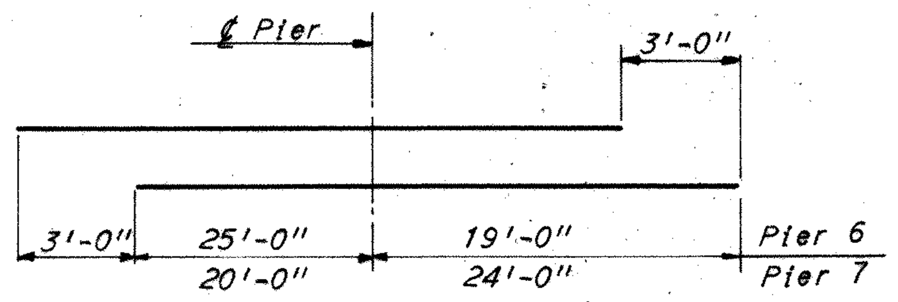


DIAGRAM SHOWING STAGGER OF SC 603 BARS OVER PIERS

NOTES:

Reinforcing steel shall be adjusted as required to clear scuppers.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For deflection joint details see Sheet 361.
For median and parapet details see Sheet 359.
For reinforcement schedule see Sheet 24/24.
For handrail and parapet details see Sheet 362.
Transverse reinforcing steel shall be placed parallel to ℄ Bearing East Abutment.
Slab horizontal offsets given are at tenth points between ℄ Bearing and ℄ Bend Line or between two Bend Lines.
For subdrainage details, see Sheet 365A.
For median curb plan, see Sheet 19/24.

*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.18 of the Construction and Materials Specifications.

H.N.T.B. BRIDGE NO. 2 | Revised 6-9-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 15/24
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DECK PLAN
UNIT 2-WESTBOUND
U.S. 30 OVER RAMP B, C, I-77
AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 — STA. 960 + 02.25
SCALE: 1"=20'-0" — STA. 966 + 63.26

RELOCATED U.S. 30

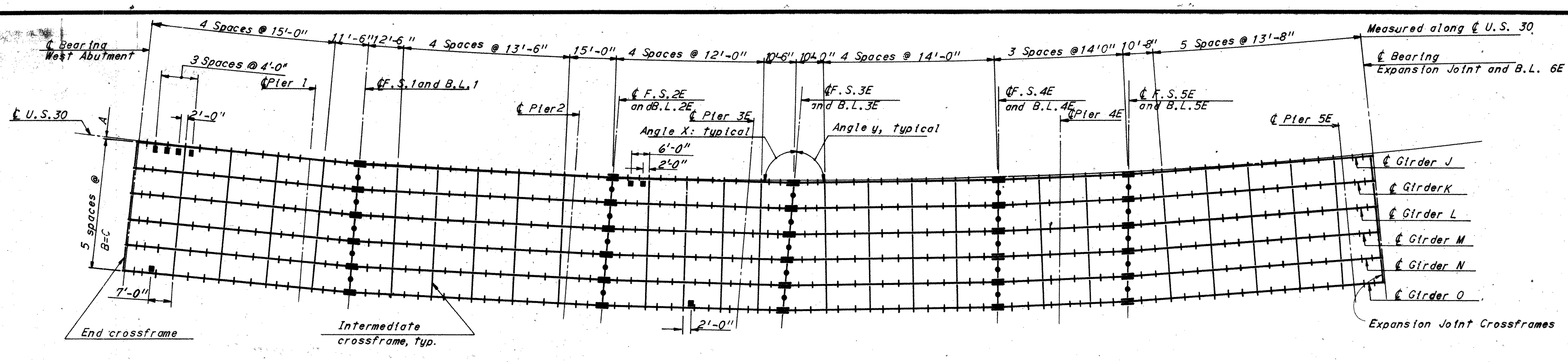
CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
OPK DATE 12-11-69	DATE	MAG DATE 6-2-70	MJK DATE 11-22-71	3-2-76 1668

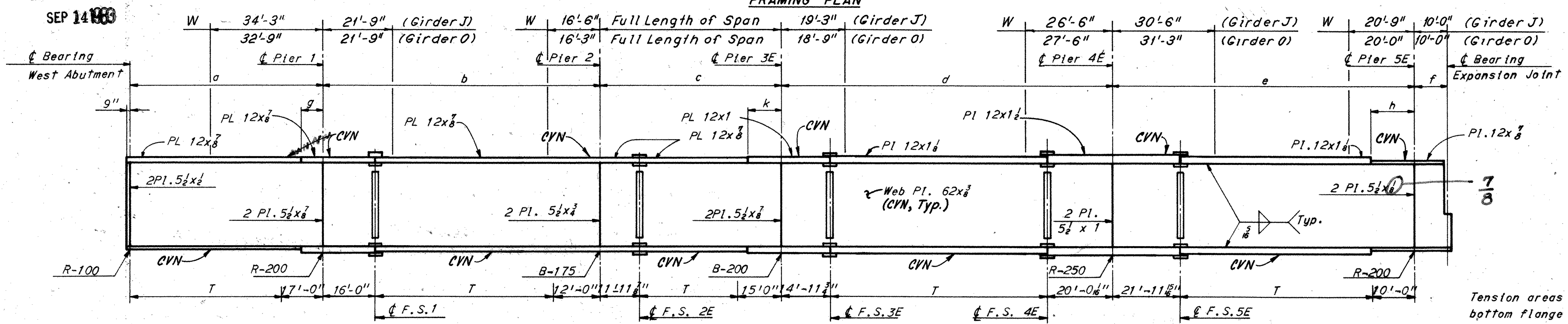
Revised 4-28-77

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



FRAMING PLAN



GIRDER ELEVATION

Tension areas of the bottom flange are denoted by "T". For the top flange these areas are in compression.

"W" denotes the range where welded attachments cannot be made to the top flange of girders J or O.

CVN - See Sheet 214.

TABLE OF DIMENSIONS										
Girder	a	b	c	d	e	f	g	h		k
J	55'-6 1/16"	85'-6 1/8"	55'-5 11/16"	101'-0 1/2"	91'-0[illegible]"	10'-0"	6'-6"	13'-5"		9'-7"
K	55'-8 15/16"	↑	55'-5 1/4"	101'-7 13/16"	91'-11 9/16"	↑	↑	13'-5"		↑
L	55'-11 13/16"		55'-4 13/16"	102'-3 1/8"	92'-10 1/8"			13'-0"		
M	56'-2 5/8"		55'-4 7/16"	102'-10 3/8"	93'-8 3/4"			12'-8"		
N	56'-5 1/2"	↓	55'-4"	103'-5 11/16"	94'-7 3/8"	↓	↓	12'-3"		↓
O	56'-8 5/16"	85'-6 1/8"	55''-3 9/16"	104''-1"	95'-6"	10'-0"	6'-6"	12'-3"		9'-7"

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS														
Girder	℄ Brg. W.Abut.	.25	.50	.75	℄ Pier 1	.25 *	.50	.75	℄ Pier 2	.25 *	.50	.75	℄ Pier 3E	.1 *
J	1068.35	1068.62	1068.89	1069.14	1069.38	1069.65	1070.07	1070.38	1070.66	1070.81	1070.99	1071.14	1071.28	1071.42
K	1068.87	1069.13	1069.38	1069.64	1069.89	1070.17	1070.56	1070.86	1071.15	1071.31	1071.49	1071.65	1071.80	1071.96
L	1069.45	1069.71	1069.96	1070.22	1070.47	1070.75	1071.13	1071.43	1071.72	1071.88	1072.06	1072.22	1072.37	1072.54
M	1070.03	1070.29	1070.54	1070.80	1071.05	1071.33	1071.71	1072.01	1072.30	1072.46	1072.64	1072.79	1072.95	1073.11
N	1070.61	1070.87	1071.12	1071.38	1071.63	1071.91	1072.29	1072.58	1072.87	1073.03	1073.21	1073.37	1073.52	1073.68
O	1070.43	1070.71	1070.98	1071.23	1071.47	1071.73	1072.16	1072.46	1072.73	1072.87	1073.06	1073.20	1073.33	1073.47
	.2	.3	.4	.5	.6	.7	.8 *	.9	℄ Pier 4E	.25 *	.50	.75	℄ Pier 5E	℄ Brg Exp Jt.
J	1071.47	1071.55	1071.63	1071.71	1071.78	1071.84	1071.90	1071.95	1072.00	1072.08	1072.14	1072.18	1072.18	1072.17
K	1072.01	1072.08	1072.16	1072.23	1072.30	1072.37	1072.44	1072.49	1072.53	1072.63	1072.66	1072.69	1072.71	1072.72
L	1072.58	1072.65	1072.73	1072.80	1072.88	1072.95	1073.02	1073.06	1073.11	1073.20	1073.24	1073.27	1073.29	1073.29
M	1073.15	1073.23	1073.30	1073.38	1073.45	1073.52	1073.59	1073.64	1073.68	1073.77	1073.81	1073.84	1073.86	1073.87
N	1073.72	1073.80	1073.88	1073.95	1074.02	1074.09	1074.17	1074.21	1074.26	1074.35	1074.39	1074.42	1074.44	1074.44
O	1073.52	1073.61	1073.69	1073.77	1073.84	1073.90	1073.97	1074.02	1074.07	1074.15	1074.23	1074.27	1074.26	1074.25

GIRDER SPACING			
	A	B	C
Abut	5"	8'-2"	40'-10"
Pier 1	2 1/4"	↑	↑
B.L. 1	5"		
Pier 2E	3/8"		
B.L. 2E	2 5/8"		
Pier 3E	6 1/16"	↓	↓
B.L. 3E	10"	8'-2"	40'-10"
B.L. 4E	10"	8'-1 1/2"	40'-7 1/2"
Pier 4E	8 5/8"	8'-1 1/2"	40'-7 1/2"
B.L. 5E	10"	8'-1 1/2"	40'-7 1/2"
Pier 5E	7 13/16"	8'-1 3/16"±	40'-5 13/16"
Exp. Jt	10"	8'-1 3/16±	40'-5 13/16"

* Denotes field splice

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS AT GUTTERLINE														
	℄ Brg. N. Abut.	.25	.50	.75	℄ Pier 1	.25	.50	.75	℄ Pier 2	.25	.50	.75	℄ Pier 3	.1
North Gutterline	1068.35	1068.62	1068.89	1069.14	1069.38	1069.76	1070.11	1070.41	1070.66	1070.82	1070.98	1071.13	1071.28	1071.40
South Gutterline	1070.43	1070.70	1070.97	1071.22	1071.46	1071.83	1072.18	1072.47	1072.72	1072.87	1073.03	1073.18	1073.33	1073.45
	.2	.3	.4	.5	.6	.7	.8	.9	℄ Pier 4	.25	.50	.75	℄ Pier 5	℄ Brg Exp Jt.
North Gutterline	1071.50	1071.60	1071.70	1071.77	1071.83	1071.88	1071.93	1071.96	1072.00	1072.10	1072.18	1072.21	1072.18	1072.16
South Gutterline	1073.55	1073.66	1073.76	1073.83	1073.89	1073.94	1073.99	1074.03	1074.07	1074.18	1074.26	1074.29	1074.26	1074.24

Note:
The gutterline elevations shown have been adjusted for dead load deflections caused by the weight of concrete and wearing course and are the elevations required before the concrete deck is placed. No concrete shall be placed until the screed rails have been set for the entire unit.

Notes:

Top and bottom flanges are identical in size.

All stiffeners shall be placed normal to girder flanges.

All intermediate stiffener to web welds shall be 1/4" continuous fillets on both sides of stiffeners.

For detail of field splices see Sheet 355.

All intermediate stiffeners shall be Pls 4 1/2" x 5/16"

For Camber and Deflection Table see Sheet 363.

Intermediate stiffeners shall be placed as shown on framing plan, equally spaced between crossframes or crossframes and bearing stiffeners or crossframes and splices.

End crossframe details shall be same as shown on Ohio Standard Drawing SD-1-69, Sheet 1 of 4.

For intermediate crossframe details see Sheet 360.

All crossframes are intermediate crossframes unless shown otherwise.

For details of roadway end dam, see Ohio Standard Drawing SD-1-69, Sheet 1 of 4, and Sheet 359.

For girder angles see sheet 12/24

For expansion joint details see sheets 356 and 357.

F.S. denotes field splice and B.L denotes bend line.

For details at rockers and bolsters see Ohio Standard Drawing RB-1-55.

The girders shall be fabricated to lines parallel to profiles formed by top of pavement elevations directly over girders, plus the camber required to compensate for dead load deflection.

The allowance to be made in screed settings to compensate for dead load deflections due to concrete and wearing course are to be made above or below the top of the pavement elevations as required. Screeds may require further adjustment due to irregularities in fabricated steel.

For details of curb plates at concrete bridge railing see Ohio Standard Drawing SD-1-69, Sheet 2 of 4.

For bend point crossframe details see Sheet 360.

—•— Denotes bend point crossframe.

Dimensions to scuppers are measured along centerline of girders.

■ Denotes standard scupper.

For details of expansion joint crossframe see sheet 360.

For detail of intermediate stiffners see sheet 360.

For underdeck light details see Lighting Plans.

Scuppers shall be in accordance with Std. Dwg. SD-1-69 except that scupper pipes shall extend 8" below the bottom of girders instead of 2".

H.N.T.B. BRIDGE NO. 2 | Revised 6-9-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 16/24
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FRAMING PLAN
UNIT I - EASTBOUND
U.S. 30 OVER RAMP B, C, I-77
AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 — STA. 960 + 02.25
SCALE: 1" = 20'-0" — STA. 966 + 63.26

RELOCATED U.S. 30

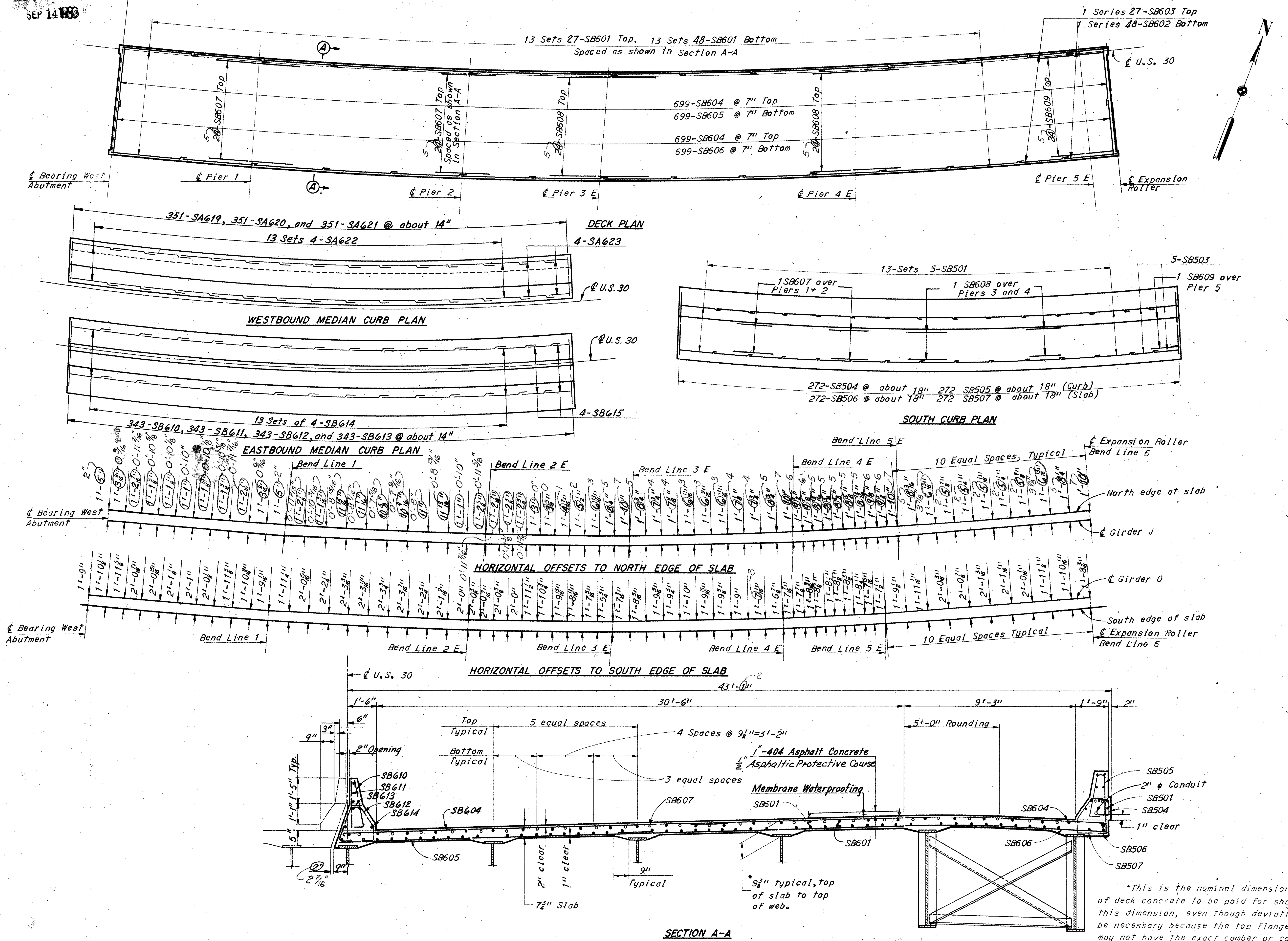
CANTON — STARK COUNTY — OHIO

DRAWN D.W.B. DATE 12-3-69	TRACED DATE	CHECKED DG.S. DATE 5-5-70	REVIEWED MJK DATE 11-22-71	REVISED 7-12-76 1668

Revised 4-28-77

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			249/389

STARK COUNTY
STA-30-14.12
STA-77-9.22



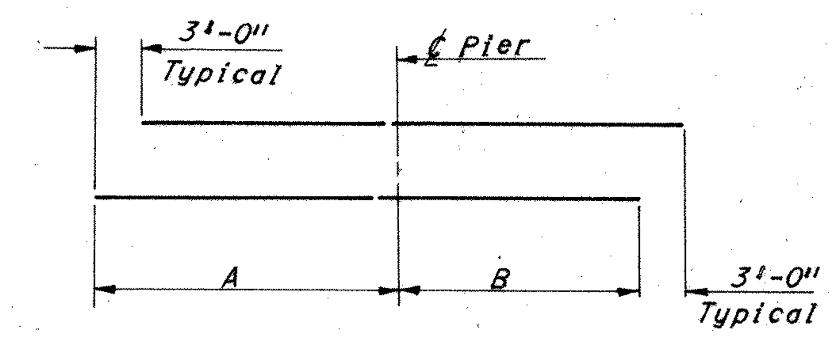


DIAGRAM SHOWING STAGGER OF SB607 AND SB608 BARS OVER PIERS 1 THRU 4

	A	B
Pier 1	19'-0"	15'-0"
Pier 2	12'-0"	22'-0"
Pier 3	27'-0"	15'-0"
Pier 4	21'-0"	21'-0"

Notes:

For Superelevation see Sheet 15/24

For Subdrainage details, see Sheet 365A.

Reinforcing steel shall be adjusted as required to clear scuppers.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For concrete railing details see Sheet 362.

For deflection joint details see Sheet 361.

For median details see Sheet 359.

For parapet details see Sheet 359.

Transverse reinforcing steel shall be placed radial to ℄ U.S. 30 and spaced along south edge of slab.

Concrete shall be placed from the expansion joint to Pier 6 before placing concrete from the expansion joint to Pier 4E.

*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.18 of the Construction and Materials Specifications.

H.N.T.B. BRIDGE NO. 2 — Revised 6-9-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 17/24

DECK PLAN-UNIT 1 EASTBOUND

U.S. 30 OVER RAMP B, C, I-77 AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 — STA. 960 + 02.25
SCALE: 1"=20'-0" — STA. 966 + 63.26

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

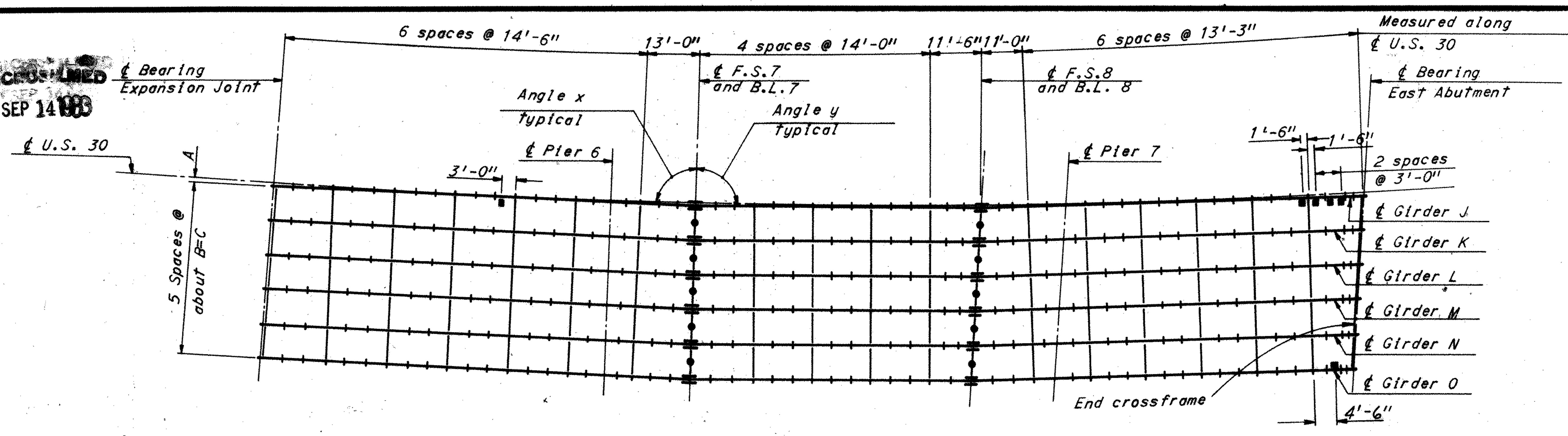
DRAWN LDE	TRACED	CHECKED MRG	REVIEWED MJK	REVISED 3-2-76
DATE 12-16-69	DATE	DATE 6-3-70	DATE 11-22-71	1668

Revised 4-28-77

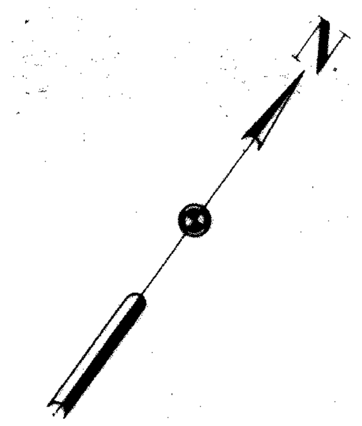
FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO		

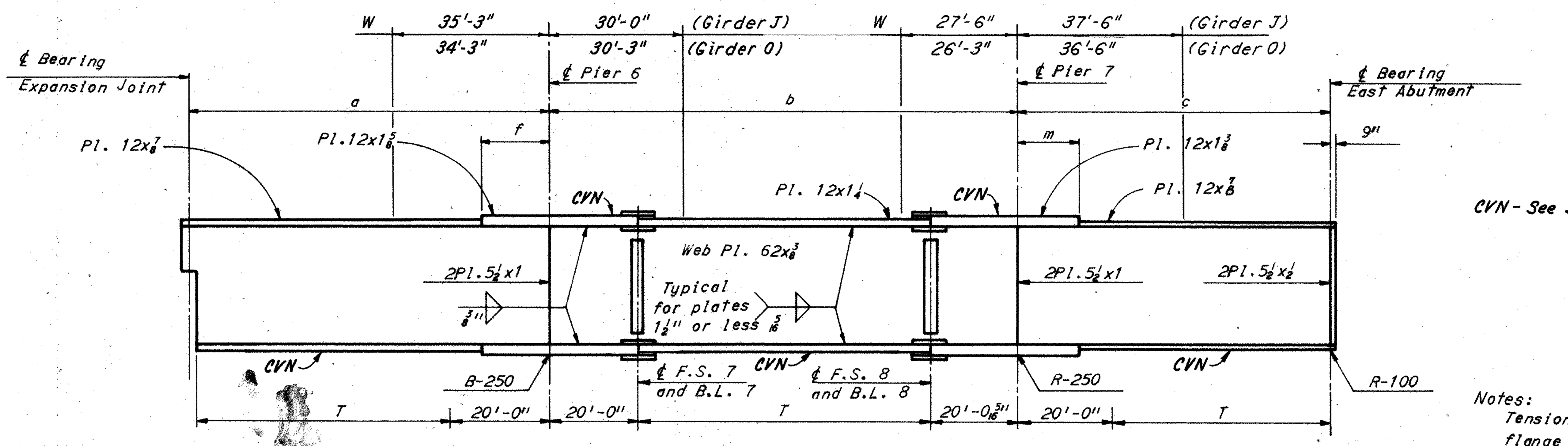
250 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22



FRAMING PLAN





GIRDER ELEVATION

CVN - See Sheet 214.

Notes:
Tension areas of the bottom flange are denoted by "T".
For the top flange, these areas are in compression.
"W" denotes the range where welded attachments cannot be made to the top flange of girders J and O.

TABLE OF DIMENSIONS					
Girder	a	b	c	f	m
J	$80'-0\frac{1}{4}''$	$107'-6\frac{1}{8}''$	$70'-5\frac{5}{8}''$	15'-0"	13'-9"
K	$80'-4\frac{5}{16}''$	$107'-3\frac{9}{16}''$	↕	↕	↕
L	$80'-8\frac{7}{16}''$	107'-1"			
M	$81'-0\frac{1}{2}''$	$106'-10\frac{1}{2}''$			
N	$81'-4\frac{5}{8}''$	$106'-7\frac{7}{8}''$			
O	$81'-8\frac{11}{16}''$	$106'-5\frac{3}{8}''$	$70'-5\frac{5}{8}''$	15'- 0"	13'-9"

GIRDER SPACING			
	A	B	C
Exp. Jt.	10"	$8'-1\frac{3}{16}''\pm$	$40'-5\frac{13}{16}''$
Pier 6	$2\frac{9}{16}''$	$8'-1\frac{1}{8}''\pm$	$40'-5\frac{11}{16}''$
B.L. 7	7"	$8'-1\frac{1}{8}''\pm$	$40'-5\frac{11}{16}''$
B.L. 8	7"	$8'-1\frac{1}{4}''\pm$	$40'-6\frac{3}{16}''$
Pier 7	3"	$8'-1\frac{1}{4}''\pm$	$40'-6\frac{3}{16}''$
E. Abut.	$6\frac{3}{16}''$	$8'-1\frac{1}{4}''\pm$	$40'-6\frac{3}{16}''$

$6\frac{7}{8}''$

Notes:

Top and bottom flanges are identical in size.

All stiffeners shall be placed normal to girder flanges.

All intermediate stiffener to web welds shall be 1/4" continuous fillets on both sides of stiffeners.

For detail of field splices see Sheet 355

All intermediate stiffeners shall be Pls $4\frac{1}{2}''\times\frac{5}{16}''$.

For Camber and Deflection Table see Sheet 363

Intermediate stiffeners shall be placed as shown on framing plan, equally spaced between crossframes or crossframes and bearing stiffeners or crossframes and splices.

End crossframe details shall be same as shown on Ohio Standard Drawing SD-1-69, Sheet 1 of 4.

For intermediate crossframe details see Sheet

All crossframes are intermediate crossframes unless shown otherwise.

For details of roadway end dam, see Ohio Standard Drawing SD-1-69, Sheet 1 of 4, and Sheet 359.

For girder angles see Sheet $\boxed{12/24}$

For expansion joint details see Sheets 356 and 357.

F.S. denotes field splice and B.L. denotes bend line.

For details at rockers and bolsters see Ohio Standard Drawing RB-1-55.

The girders shall be fabricated to lines parallel to profiles formed by top of pavement elevations directly over girders, plus the camber required to compensate for dead load deflection.

The allowance to be made in screed settings to compensate for dead load deflections due to concrete and wearing course are to be made above or below the top of the pavement elevations as required. Screeds may require further adjustment due to irregularities in fabricated steel.

For bend point crossframe details see Sheet 360.

—•— Denotes bend point crossframe.

Dimensions to scuppers are measured along centerline of girders.

■ Denotes standard scupper.

For underpass light support details see Lighting plans

For detail of intermediate stiffeners see Sheet 360 .

Scuppers shall be in accordance with Std. Dwg. SD-1-69 except that scupper pipes shall extend 8" below the bottom of girders instead of 2".

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS

Girder	℄ Brg. Exp. Jt.	.25	.50	.75	℄ Pier 6	.1	.2 *	.3	.4	.5	.6	.7	.8*	.9	℄ Pier 7	.25	.50	.75	℄ Brg. E. Abut
J	1072.17	1072.14	1072.10	1072.02	1071.93	1071.87	1071.82	1071.74	1071.66	1071.58	1071.49	1071.40	1071.28	1071.19	1071.08	1070.90	1070.73	1070.55	1070.38
K	1072.72	1072.66	1072.59	1072.51	1072.43	1072.39	1072.35	1072.25	1072.17	1072.08	1071.98	1071.88	1071.77	1071.65	1071.53	1071.33	1071.13	1070.95	1070.77
L	1073.29	1073.23	1073.16	1073.09	1073.01	1072.96	1072.92	1072.83	1072.74	1072.64	1072.54	1072.43	1072.30	1072.18	1072.04	1071.82	1071.61	1071.41	1071.21
M	1073.87	1073.81	1073.74	1073.66	1073.58	1073.54	1073.50	1073.40	1073.31	1073.20	1073.09	1072.97	1072.83	1072.70	1072.55	1072.31	1072.08	1071.86	1071.65
N	1074.44	1074.38	1074.31	1074.24	1074.16	1074.11	1074.07	1073.97	1073.88	1073.77	1073.65	1073.52	1073.36	1073.22	1073.06	1072.81	1072.56	1076.32	1072.09
O	1074.25	1074.24	1074.20	1074.13	1074.03	1073.97	1073.91	1073.83	1073.74	1073.64	1073.51	1073.37	1073.20	1073.08	1072.94	1072.69	1072.44	1072.19	1071.92

* Denotes field splice

2

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS AT GUTTERLINE

	℄ Brg. Exp. Jt.	.25	.50	.75	℄ Pier 6	.1	.2	.3	.4	.5	.6	.7	.8	.9	℄ Pier 7	.25	.50	.75	℄ Brg. E. Abut.
North Gutterline	1072.16	1072.16	1072.12	1072.03	1071.93	1071.88	1071.83	1071.78	1071.71	1071.63	1071.54	1071.44	1071.32	1071.20	1071.08	1070.90	1070.74	1070.56	1070.38
South Gutterline	1074.24	1074.24	1074.19	1074.11	1074.01	1073.96	1073.91	1073.86	1073.77	1073.67	1073.54	1073.40	1073.24	1073.07	1072.91	1072.66	1072.42	1072.17	1071.91

Note:
The gutterline elevations shown have been adjusted for dead load deflections caused by the weight of concrete and wearing course and are the elevations required before the concrete deck is placed. No concrete shall be placed until the screed rails have been set for the entire unit.

H.N.T.B. BRIDGE NO. 2 | Revised 6-9-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 18/24
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FRAMING PLAN
UNIT 2 - EASTBOUND
U.S. 30 OVER RAMP B, C, I-77
AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 STA. 960 + 02.25
SCALE: 1" = 20'-0" STA. 966 + 63.26

RELOCATED U.S. 30
CANTON STARK COUNTY OHIO

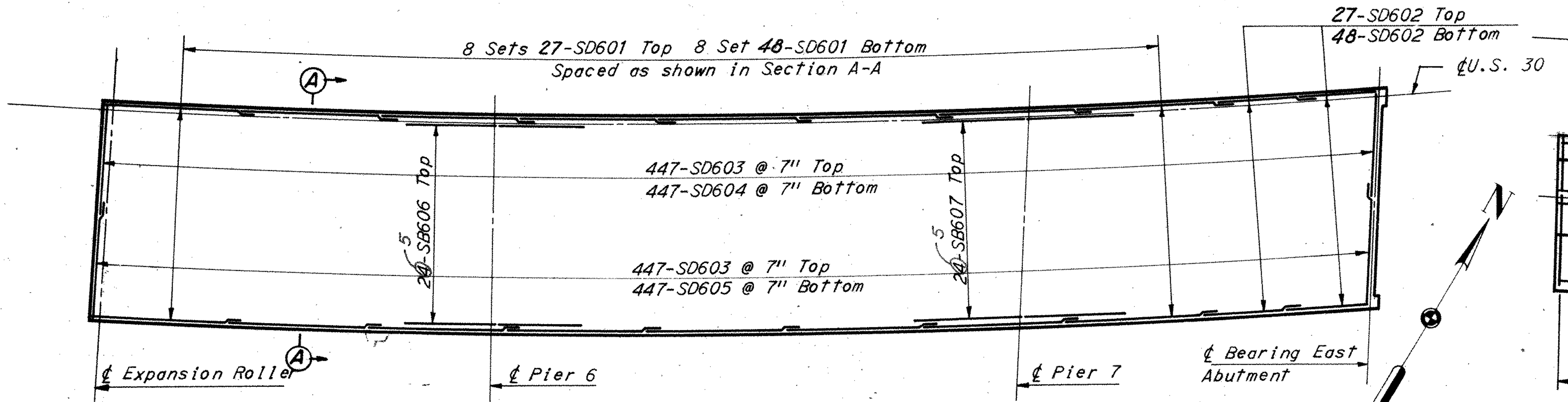
DRAWN D.W.B.	TRACED	CHECKED D.G.S.	REVIEWED MJK	REVISED 7-20-76
DATE 12-8-69	DATE	DATE 5-5-70	DATE 11-22-71	1668

Revised 4-28-77

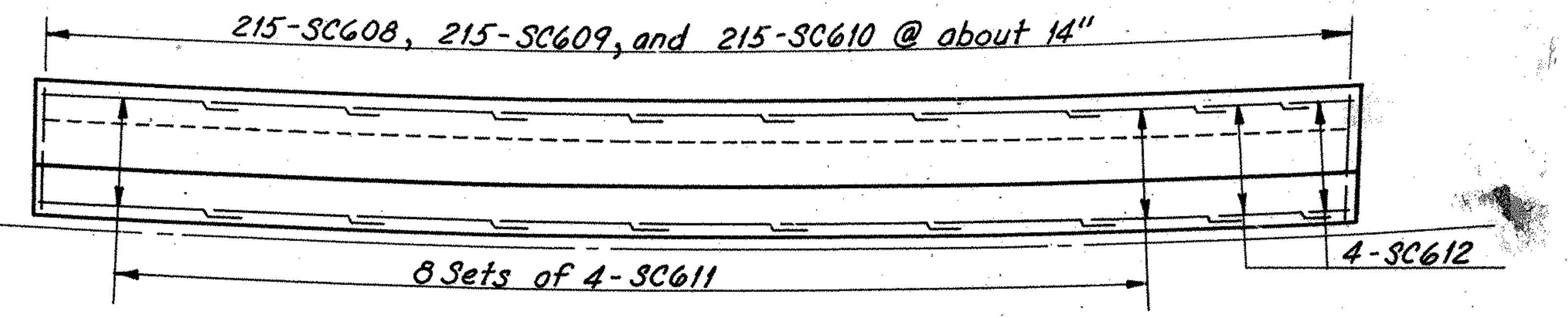
MICROFILMED
SEP 14 1983

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			251 / 389

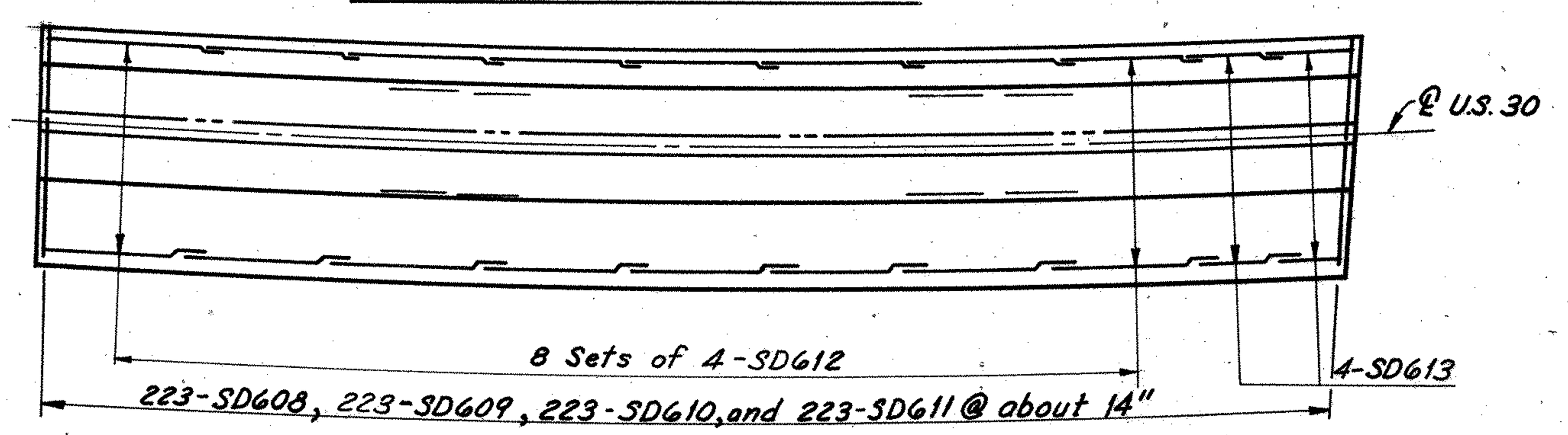
STARK COUNTY
STA-30-14.12
STA-77-9.22



DECK PLAN



WESTBOUND MEDIAN CURB PLAN



EASTBOUND MEDIAN CURB PLAN

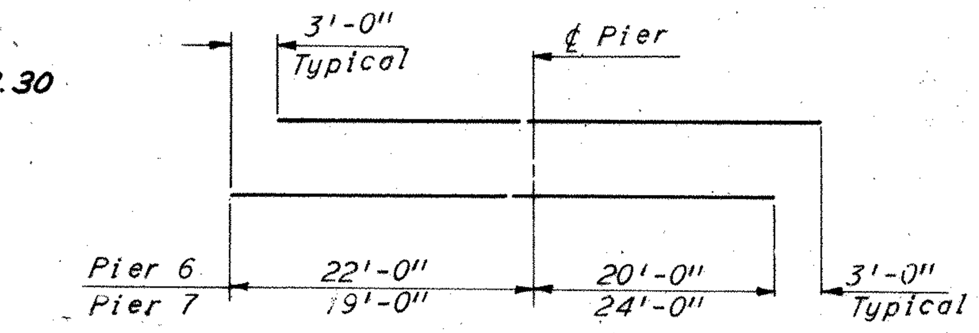
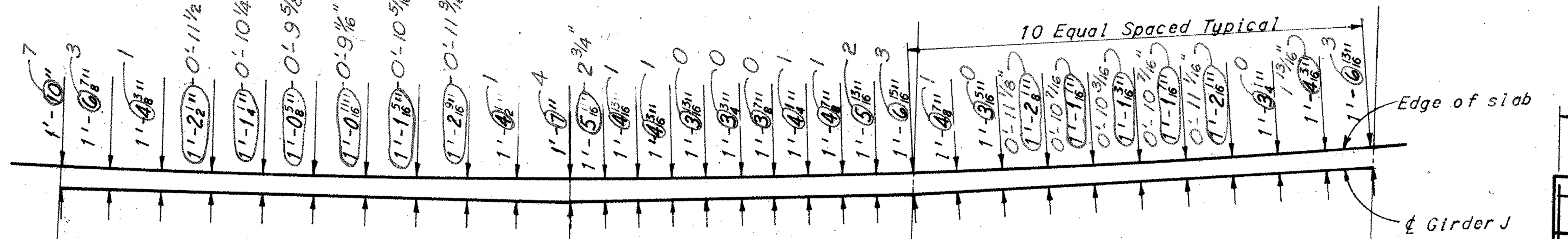
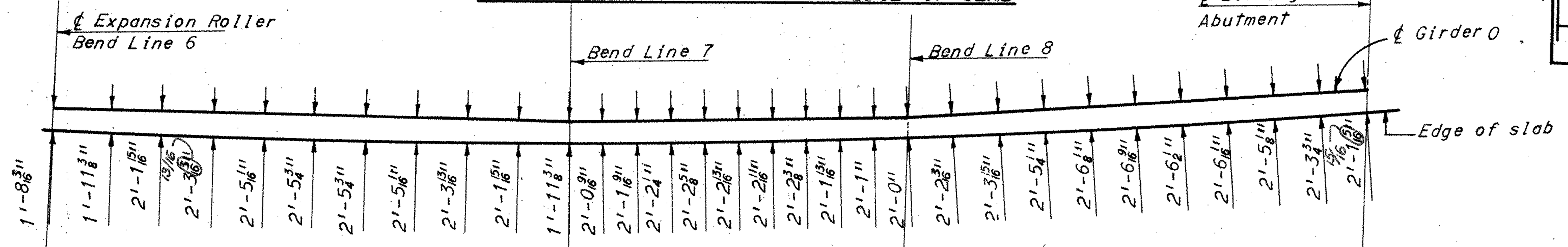


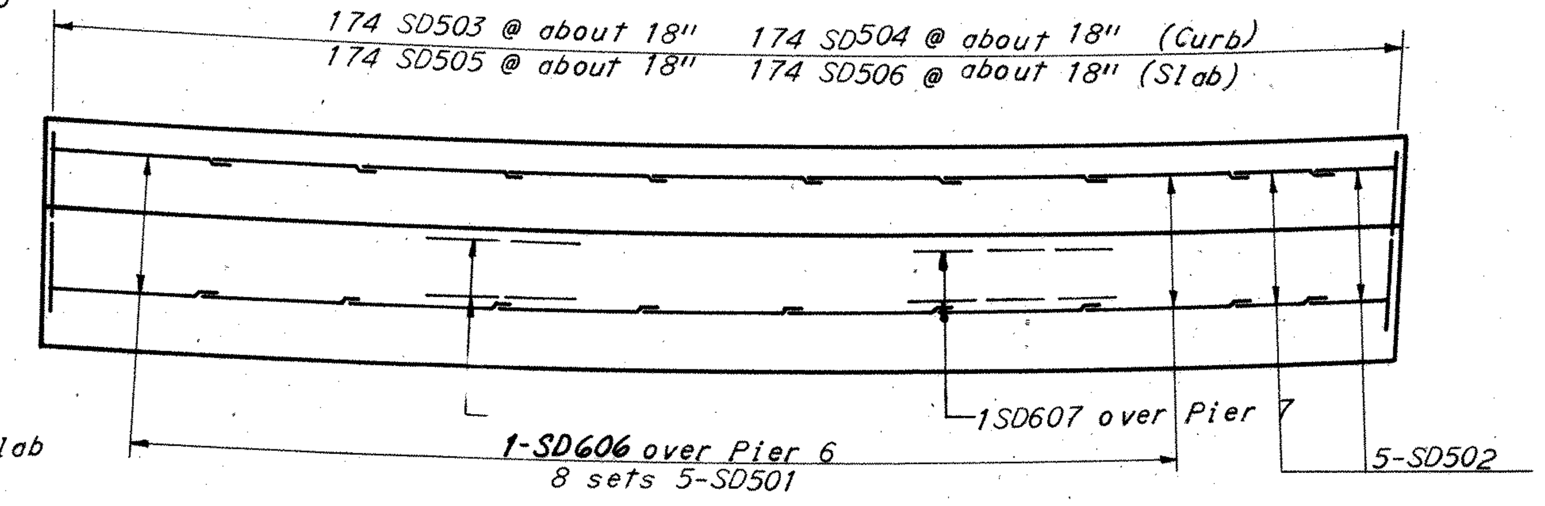
DIAGRAM SHOWING STAGGER OF SD606 AND SD607 BARS OVER PIERS 6 AND 7



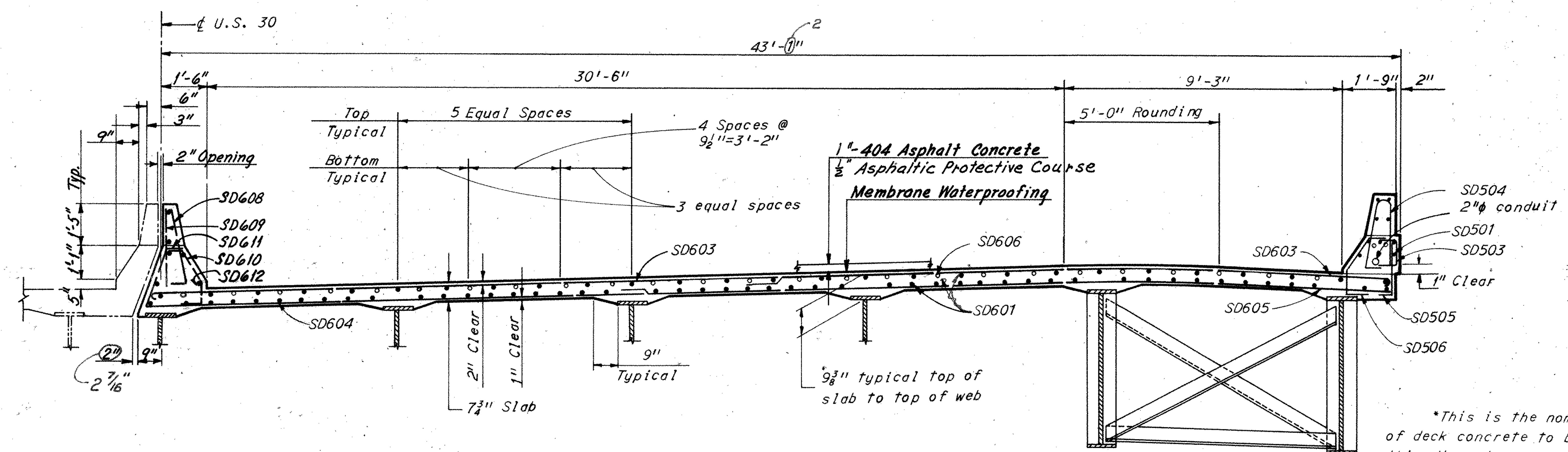
HORIZONTAL OFFSETS TO NORTH EDGE OF SLAB



HORIZONTAL OFFSETS TO SOUTH EDGE OF SLAB



SOUTH CURB PLAN



SECTION A-A

*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.18 of the Construction and Materials Specifications.

Notes:

Reinforcing steel shall be adjusted as required to clear scuppers.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For concrete railing details see Sheet 362.
For deflection joint details see Sheet 361.
For median details see Sheet 359.
For parapet details see Sheet 359.
Transverse reinforcing steel shall be placed parallel to ℄ Bearing East Abutment.

For Superelevation data see Sheet 15/24
For reinforcement schedule see Sheet 24/24
For subdrainage details, see Sheet 365-A.

H.N.T.B. BRIDGE NO. 2 — Revised 6-9-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 19/24

DECK PLAN-UNIT 2
EASTBOUND
U.S. 30 OVER RAMP B, C, I-77
AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 — STA. 960 + 02.25
SCALE: 1"=20'-0" — STA. 966 + 63.26

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN LDE	TRACED	CHECKED MAG	REVIEWED MJK	REVISED 3-2-76
DATE 12-16-69	DATE	DATE 6-3-70	DATE 11-23-71	1668

Revised 4-28-77

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			252 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

WEST ABUTMENT

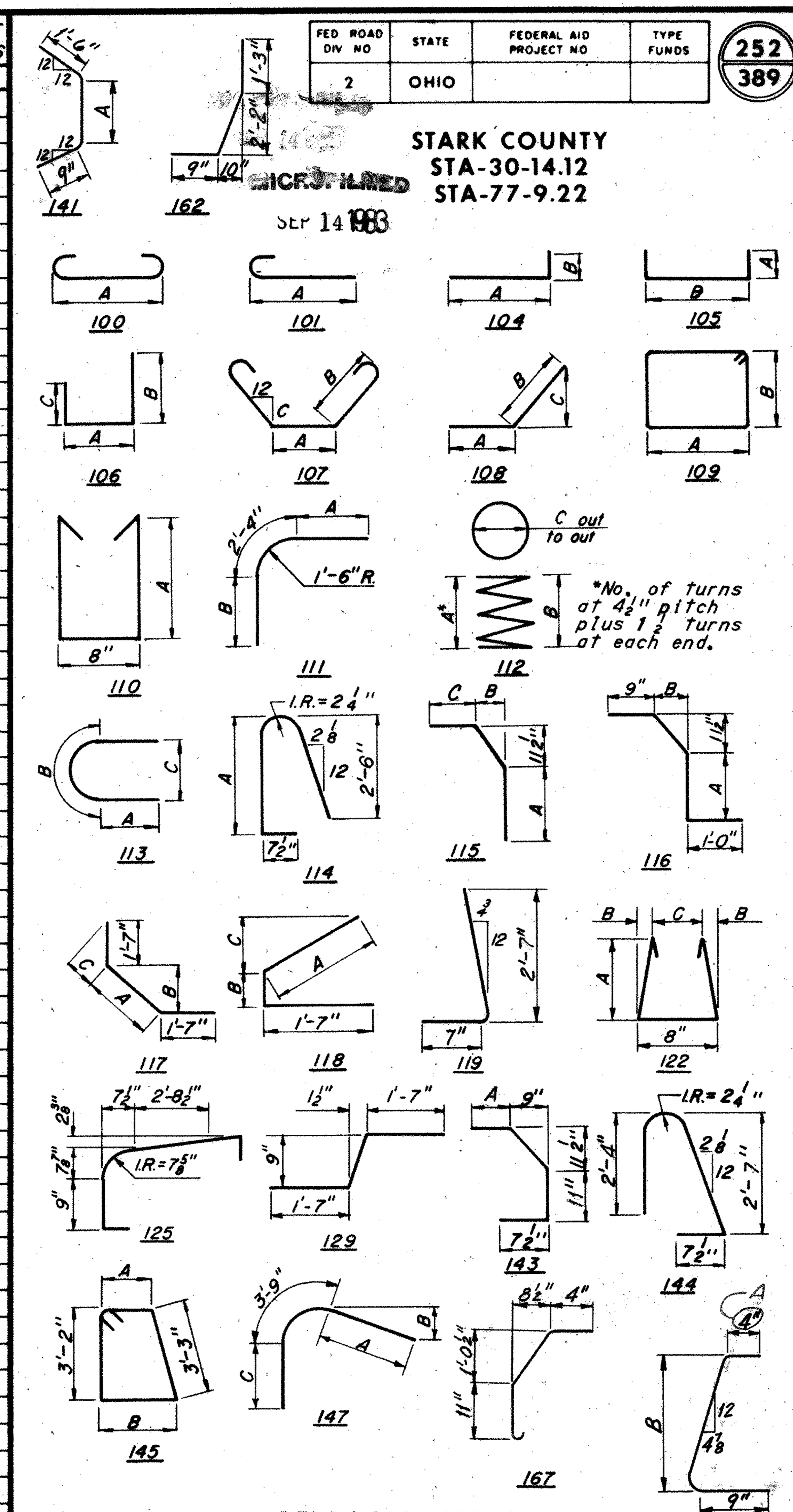
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
AA401	90	3'-5"	105	1'-0"	1'-8"			206
AA501	20	11'-10"	109	3'-0"	2'-6"			247
AA502	80	8'-4"	105	1'-7"	5'-5"			695
AA503	20	9'-8"	117	6'-6"	4'-7"	1'-2½"		202
AA504	24	3'-10"	104	2'-0"	2'-0"			96
AA505	21	38'-10"	Str.					851
AA506	21	32'-5"	Str.					710
AA507	21	29'-5"	Str.					644
AA515	80	6'-3"	105	1'-7"	3'-4"			530
AA516	80	7'-8"	104	6'-9"	1'-0"			640
AA517	4	4'-1"	115	1'-11"	9"	12"		17
AA518	4	3'-10"	168	9"	2'-7"			16
AA519	7	11"	Str.					7
AA520	30	2'-4"	105	9"	1'-1"			73
AA521	20	6'-10"	114	3'-2"				143
AA522	20	2'-9"	Str.					57
AA523	4	7'-0"	Str.					29
AA524	4 Ser. 3	11'-2" to 15'-2"	Str.				2'-0"	165
AA525	4	10'-7"	108	1'-7"	9'-0"	4'-6"		44
AA526	24	18'-8"	Str.					468
AA527	8	12'-6"	Str.					105
AA528	8	9'-0"	Str.					75
AA529	18	7'-3"	Str.					136
AA530	4	3'-6"	Str.					15
AA531	2	4'-0"	Str.					9
AA532	2	4'-9"	Str.					10
AA533	2	5'-6"	Str.					12
AA534	2	6'-3"	Str.					13
AA535	4	13'-6"	Str.					57
AA536	1	6'-10"	109	2'-3"	11"			7
AA601	2	16'-4"	109	5'-5"	2'-6"			49
AA602	80	14'-6"	106	5'-5"	6'-9"	2'-8"		1742
AA603	102	5'-1"	105	2'-0"	1'-5"			779
AA604	102	16'-7"	105	7'-9"	1'-5"			2,541
AA606	102	7'-3"	105	3'-4"	11"			1,111
AA607	1	8'-1"	104	1'-0"	7'-3"			12
AA608	9	19'-10"	105	9'-6"	1'-2"			268
AA609	18	8'-6"	115	6'-10"	9"	7½"		230
AA610	2	7'-9"	115	6'-1"	9"	7½"		23
AA611	1	7'-8"	104	1'-0"	6'-10"			12
AA612	9	19'-0"	105	9'-1"	1'-2"			257
AA701	4	5'-1"	115	3'-5"	9"	7½"		42
AA703	2	5'-7"	115	3'-11"	9"	7½"		23
AA704	2	6'-4"	115	4'-8"	9"	7½"		26
AA705	2	7'-1"	115	5'-5"	9"	7½"		29
DA801	67	5'-2"	141	3'-1"				924
AA801	21	36'-3"	Str.					2036
AA802	12	12'-3"	Str.					392
				Total	West	Abut.	=	16,775

EAST ABUTMENT

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
AB401	90	3'-5"	105	1'-0"	1'-8"			206
AB501	22	11'-10"	109	3'-0"	2'-6"			271
AB502	88	8'-4"	105	1'-7"	5'-5"			765
AB503	10	10'-0"	117	6'-10"	4'-6"	1'-5"		104
AB504	12	4'-7"	118	1'-7"	1'-6"	2"		57
AB505	12	3'-2"	108	1'-7"	1'-7"	1'-6"		40
AB506	88	7'-6"	104	6'-7"	1'-0"			689
AB507	88	6'-4"	105	1'-7"	3'-5"			581
AB508	21	30'-4"	Str					664
AB509	21	29'-8"	Str					650
AB510	21	26'-8"	Str					585
AB511	21	31'-0"	Str					679
AB519	10	9'-2"	117	6'-0"	4'-6"	1'-1"		96
AB520	4	4'-1"	115	1'-11"	9"	12"		17
AB521	4	3'-10"	168	9"	2'-7"			16
AB522	7	11"	Str					7
AB523	20	6'-10"	114	3'-2"				143
AB524	20	2'-9"	Str					57
AB525	30	2'-4"	105	9"	1'-1"			73
AB526	24	18'-8"	Str					467
AB527	8	12'-6"	Str					105
AB528	8	9'-6"	Str					80
AB529	4 Ser. 3	11'-2" to 15'-2"	Str				2'-0"	163
AB530	4	13'-6"	Str					56
AB531	4	10'-7"	108	1'-7"	9'-0"	4'-9"		44
AB532	18	7'-3"	Str					136
AB533	4	7'-0"	Str					29
AB534	4	3'-6"	Str					15
AB535	2	4'-0"	Str					8
AB536	2	4'-9"	Str					10
AB537	2	5'-6"	Str					12
AB538	2	6'-3"	Str					13
AB539	1	6'-10"	109	2'-3"	11"			7
AB601	2	16'-4"	109	5'-5"	2'-6"			49
AB602	88	14'-4"	106	5'-5"	6'-7"	2'-8"		1900
AB603	120	5'-1"	105	2'-0"	1'-5"			916
AB604	120	16'-1"	105	7'-6"	1'-5"			2,899
AB606	120	7'-3"	105	3'-4"	11"			1,307
AB607	1	7'-6"	104	1'-0"	6'-8"			11
AB608	9	18'-8"	105	8'-11"	1'-2"			252
AB609	18	8'-6"	115	6'-10"	9"	7½"		230
AB610	2	7'-10"	115	6'-2"	9"	7½"		24
AB611	1	8'-1"	104	1'-0"	7'-3"			12
AB612	9	19'-10"	105	9'-6"	1'-2"			268
AB701	4	5'-1"	115	3'-5"	9"	7½"		42
AB703	2	5'-8"	115	4'-0"	9"	7½"		23
AB704	2	6'-6"	115	4'-10"	9"	7½"		27
AB705	2	7'-4"	115	5'-8"	9"	7½"		30
DB801	78	5'-3"	141	3'-2"				1093
AB801	28	32'-3"	Str					2415
AB802	12	12'-9"	Str					410
				Total	East	Abut	=	18,657

PIER 1

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
SPA401	1	432'-11"	112	52.4	18'-8"	2'-8"		349
SPA402	1	609'-1"	112	73.8	26'-8"	2'-8"		492
SPA403	1	675'-1"	112	81.8	29'-8"	2'-8"		546
SPA404	1	697'-1"	112	84.4	30'-8"	2'-8"		564
SPA405	1	691'-7"	112	83.8	30'-5"	2'-8"		559
SPA406	1	713'-7"	112	86.4	31'-5"	2'-8"		577
SPA407	1	737'-6"	112	89.3	32'-6"	2'-8"		597
PA501	86	4'-5"	105	1'-0"	2'-8"			396
PA502	2	4'-0"	105	1'-0"	2'-3"			8
PA503	2	3'-1"	105	1'-0"	1'-4"			7
PA504	74	13'-4"	109	2'-8"	3'-8"			1030
PA505	26	12'-0"	109	2'-0"	3'-8"			326
PA601	4	42'-3"	Str					254
PA602	6	6'-2"	105	1'-11"	2'-8"			56
PA603	8	8'-1"	113	1'-11"	4'-3"	2'-8"		97
PA604	4	57'-6"	Str					346
PA901	132	12'-0"	100	9'-6"				5390
PA1001	12	22'-9"	Str					1174
PA1002	12	30'-9"	Str					1590
PA1003	12	34'-3"	Str					1770
PA1004	22	35'-3"	Str					3340
PA1005	10	34'-0"	Str					1464
PA1006	78	7'-3"	104	6'-5"	1'-1"			2440
PA1007	10	36'-3"	Str					1560
PA1101	3	47'-6"	111	42'-1"	2'-0"			756
PA1102	2	10'-3"	Str					109
PA1103	2	30'-3"	Str					322
PA1104	2	10'-6"	Str					112
PA1105	3	43'-6"	Str					693
PA1106	5	33'-3"	Str					884
PA1107	2	12'-3"	Str					130
PA1108	3	15'-3"	Str					243
PA1109	2	9'-0"	Str					96
PA1110	3	58'-6"	Str					931
PA1111	3	32'-6"	111	28'-2"	2'-0"			518
PA1112	2	57'-6"	Str					610
PA1113	2	31'-5"	111	27'-1"	2'-0"			334
PA1114	2	45'-1"	111	40'-9"	2'-0"			480
PA1115	2	42'-3"	Str					450
				Total	Pier 1	=		31,600



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For replacement reinforcement schedule see sheet 24/24
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 2 — Revised 6-9-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 20/24

REINFORCEMENT SCHEDULE

U.S. 30 OVER RAMP B, C, I-77
AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 — STA. 960 + 02.25, STA. 966 + 63.26
SCALE:

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED	
DGS DATE 7-6-70	DATE	RAP DATE 7-28-70	MJK DATE 11-22-71		1668

Revised 4-28-77

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
				PIER 2				
SPB401	1	1387'-4"	112	121.1	44'-5"	3'-8"		1069
SPB402	1	1497'-3"	112	130.7	48'-0"	3'-8"		1154
SPB403	1	1618'-8"	112	141.3	52'-0"	3'-8"		1247
SPB404	1	1713'-9"	112	149.6	55'-1"	3'-8"		1320
SPB405	1	1737'-10"	112	151.7	55'-10"	3'-8"		1339
SPB406	1	1766'-6"	112	154.2	56'-10"	3'-8"		1362
SPB407	1	1799'-8"	112	157.1	57'-11"	3'-8"		1385
PB501	86	5'-5"	105	1'-0"	3'-8"			486
PB502	2	5'-0"	105	1'-0"	3'-3"			10
PB503	2	4'-1"	105	1'-0"	2'-4"			9
PB504	63	16'-4"	109	3'-8"	4'-2"			1078
PB601	4	42'-3"	Str					254
PB602	6	7'-2"	105	1'-11"	3'-8"			65
PB603	8	9'-7"	113	1'-11"	5'-9"	3'-8"		115
PB604	4	59'-9"	Str					359
PB701	7	33'-0"	Str					472
PB702	10	12'-6"	Str					256
PB703	14	11'-6"	Str					330
PB704	5	9'-9"	Str					100
PB705	7	26'-0"	Str					372
PB706	3	37'-9"	Str					232
PB707	7	13'-3"	Str					190
PB708	3	36'-6"	111	31'-5"	2'-9"			224
PB709	2	36'-3"	Str					148
PB710	2	36'-1"	111	31'-0"	2'-9"			147
PB711	2	34'-10"	111	29'-9"	2'-9"			142
PB712	2	37'-3"	Str					151
PB801	3	47'-8"	111	42'-6"	2'-9"			381
PB802	5	10'-3"	Str					137
PB803	2	9'-9"	Str					52
PB804	3	43'-9"	Str					350
PB805	3	10'-0"	Str					80
PB806	2	15'-3"	Str					82
PB807	2	43'-6"	Str					232
PB808	2	42'-3"	Str					228
PB809	32	13'-8"	100	11'-6"				1160
PB810	2	47'-3"	111	42'-1"	2'-9"			252
PB811	2	46'-0"	111	40'-10"	2'-9"			246
PB901	64	14'-0"	100	11'-6"				3050
PB1001	28	31'-9"	Str					3820
PB1002	28	32'-3"	Str					3900
PB1003	28	32'-8"	Str					3920
PB1004	42	42'-9"	Str					7725
PB1005	84	7'-3"	104	6'-5¼"	1'-1"			2620
PB1006	18	14'-4"	100	11'-6"				1114

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PB1101	12	49'-0"	Str.					3120
PB1102	12	52'-6"	Str.					3350
PB1103	12	56'-3"	Str.					3590
PB1104	12	60'-0"	Str.					3830
PB1105	18	34'-9"	Str.					3325
PB1106	66	7'-8"	104	6'-9½"	1'-2"			2660
PB1107	134	20'-8"	100	17'-6"				1470 14,715
					Total	Pier	2 =	64,710 77,985
				PIER 3 WESTBOUND				
SPC401	1	1656'-0"	112	144.4	53'-2"	3'-8"		1277
SPC402	1	1699'-0"	112	148.2	54'-7"	3'-8"		1308
SPC403	1	1650'-0"	112	144.0	53'-0"	3'-8"		1270
SPC404	1	1588'-0" 1752'-0"	112	138.7 153.7	51'-0" 56'-6"	3'-8"		1223 1,350
PC501	50	5'-5"	105	1'-0"	3'-8"			282
PC502	2	4'-11"	105	1'-0"	3'-2"			10
PC503	2	4'-3"	105	1'-0"	2'-6"			9
PC504	50	16'-2"	109	3'-8"	4'-2"			840
PC505	17	12'-6"	109	1'-10"	4'-2"			222
PC601	8	9'-9"	113	2'-0"	5'-9"	3'-8"		117
PC602	12	31'-7"	Str.					568
PC603	15	20'-10"	100	19'-6"				470
PC604	20	15'-10"	100	14'-6"				476
PC801	16	21'-8"	100	19'-6"				926
PC901	6	37'-4"	111	32'-6"	2'-6"			762
PC902	4	37'-1"	111	32'-3"	2'-6"			505
PC903	4	36'-1"	111	31'-3"	2'-6"			490
PC904	6	14'-6"	Str.					296
PC905	3	28'-0"	Str.					286
PC906	2	27'-6"	Str.					187
PC907	2	26'-6"	Str.					180
PC908	3	16'-9"	Str.					171
PC909	2	15'-6"	Str.					106
PC910	3	39'-6"	Str.					403
PC911	2	39'-0"	Str.					265
PC912	2	38'-0"	Str.					258
PC913	3	17'-6"	Str.					179
PC914	2	16'-6"	Str.					112
PC915	6	13'-9"	Str.					280
PC916	3	8'-9"	Str.					89
PC1001	28	14'-4"	100	11'-6"				1730
PC1101	12	57'-0"	Str.					3640
PC1102	10	34'-0"	Str.					1810
PC1103	18	8'-8"	104	7'-9"	1'-2"			830
PC1104	12	58'-6"	Str.					3735
PC1105	12	56'-9"	Str.					3620
PC1106	12	54'-9"	Str					3500
		60'						3875

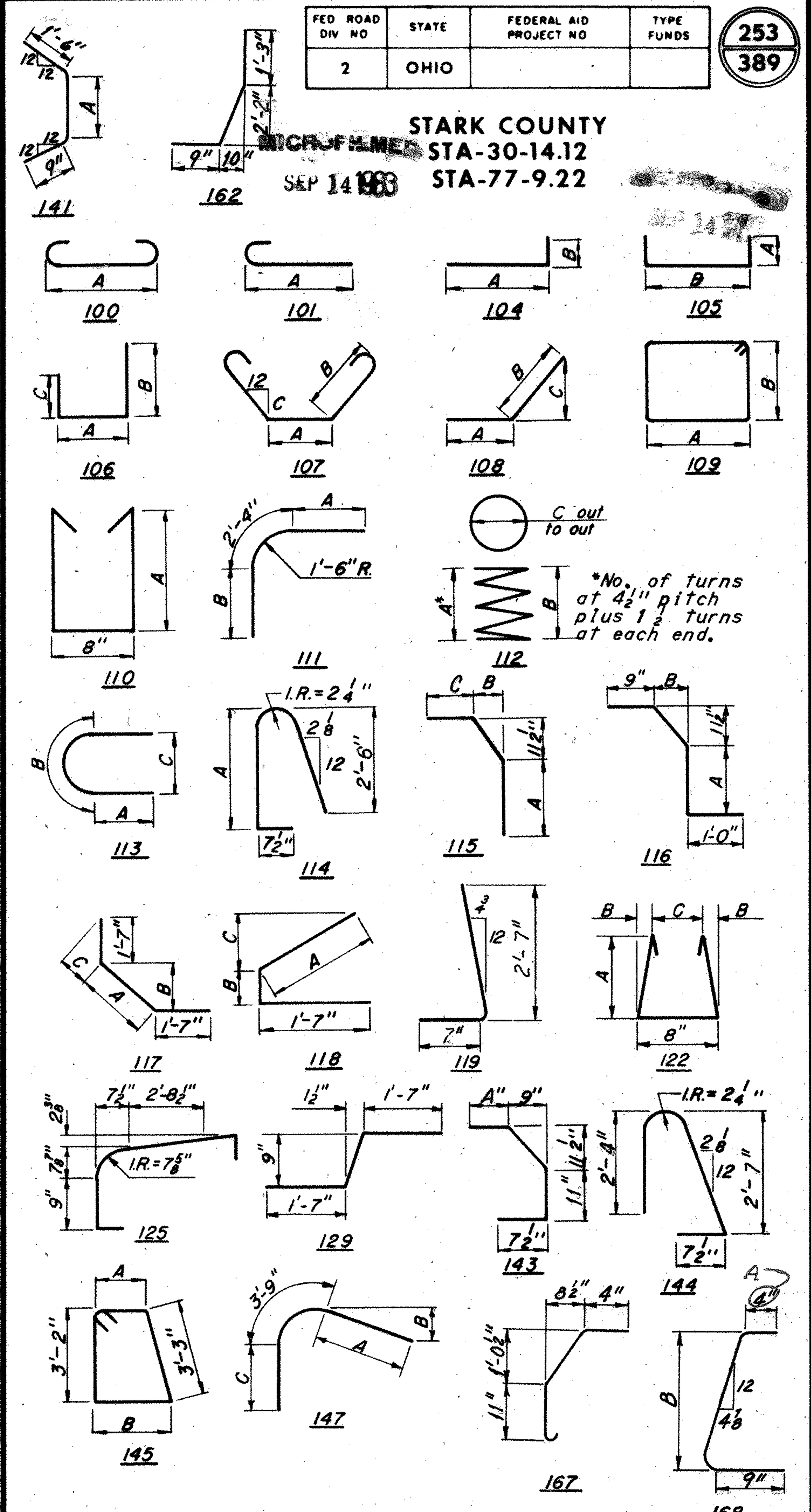
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PC1107	24	8'-2"	104	7'-3"	1'-2"			1043
PC1108	24	17'-8"	100	14'-6"				2255
PC1109	40	20'-8"	100	17'-6"				4400
PC1401	5	14'-8"	104	13'-0"	2'-1"			560
PC1402	5	10'-5"	104	8'-9"	2'-1"			400
PC1403	10	20'-8"	104	19'-0"	2'-1"			1585
					Total	Pier	3W =	42,675 43,177
				PIER 4 WESTBOUND				
SPD401	1	1111'-3"	112	113.1	41'-5"	3'-2"		874
SPD402	1	1148'-4"	112	116.9	42'-10"	3'-2"		904
SPD403	1	1178'-11"	112	120.0	44'-0"	3'-2"		928
SPD404	1	1220'-5"	112	124.2	45'-7"	3'-2"		961
PD501	57	4'-11"	105	1'-0"	3'-2"			292
PD502	2	4'-9"	105	1'-0"	3'-0"			10
PD503	2	4'-3"	105	1'-0"	2'-6"			9
PD504	49	15'-0"	109	3'-2"	4'-1"			767
PD505	22	11'-0"	109	1'-2"	4'-1"			253
PD601	8	9'-0"	113	2'-0"	5'-0"	3'-2"		108
PD602	12	33'-3"	Str.					600
PD901	42	15'-0"	100	12'-6"				2140
PD1001	12	45'-0"	Str.					2323
PD1002	16	24'-6"	Str.					1690
PD1003	64	7'-8"	104	6'-10"	1'-1"			2110
PD1004	12	46'-3"	Str.					2390
PD1005	12	47'-9"	Str.					2470
PD1006	12	49'-3"	Str.					2550
PD1007	4	38'-6"	111	33'-8"	2'-6"			663
PD1008	4	38'-2"	111	33'-4"	2'-6"			655
PD1009	4	37'-3"	111	32'-5"	2'-6"			640
PD1010	12	15'-3"	Str.					790
PD1011	2	27'-11"	Str.					240
PD1012	2	27'-8"	Str.					238
PD1013	2	26'-9"	Str.					230
PD1014	6	18'-9"	Str.					485
PD1015	4	17'-7"	Str.					302
PD1016	2	41'-10"	Str.					360
PD1017	2	41'-7"	Str.					358
PD1018	2	40'-8"	Str.					350
PD1101	70	15'-8"	100	12'-6"				5830
					Total	Pier	4W =	32,520

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

253/389

STARK COUNTY
STA-30-14.12
STA-77-9.22

MICROFILMED SEP 14 1983



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For replacement reinforcement schedule see sheet 24/24
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

Splices in No. 14 or No. 18 size reinforcing bars shall be made by an approved positive mechanical method designed to develop 125% of the specified yield strength of the bar.

H.N.T.B. BRIDGE NO. 2 — Revised 6-9-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 21/24

REINFORCEMENT SCHEDULE

U.S. 30 OVER RAMP B, C, I-77 AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 — STA. 960 + 02.25
SCALE: — STA. 966 + 63.26

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DGS		R.A.P.	MJK	3-2-76
DATE 7-6-70	DATE	DATE 7-28-70	DATE 11-22-71	1668

Revised 4-28-77

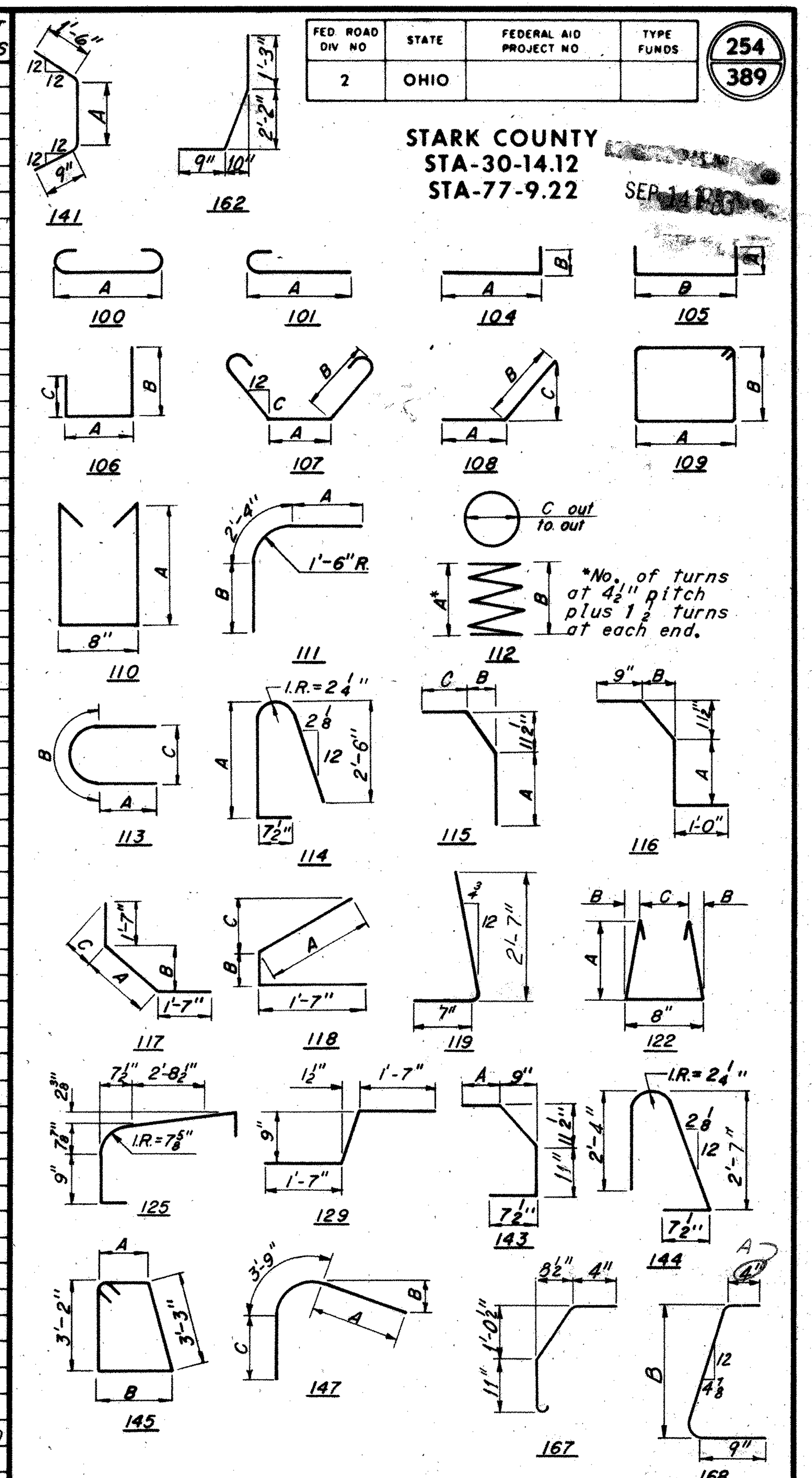
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			254 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PIER 3 EASTBOUND								
SPF401	1	1750'-5"	112	152.4	56'-2"	3'-8"		1350
SPF402	1	1732'-11"	112	150.0	55'-3"	3'-8"		1337
SPF403	1	1639'-6"	112	143.3	52'-9"	3'-8"		1264
PF501	32-4	5'-5"	105	1'-0"	3'-8"			92 181
PF502	2	5'-3"	105	1'-0"	3'-6"			11
PF503	1-2	4'-9"	105	1'-0"	3'-0"			10-5
PF504	34	16'-0"	109	3'-8"	4'-1"			568
PF505	18	12'-4"	109	1'-10"	4'-1"			232
PF601	8	9'-9"	113	2'-0"	5'-9"	3'-8"		117
PF602	6	41'-4"	Str					372
PF603	13	26'-6" 7'-10"	Str-100	26'-6"			45	517
PF604	19	10'-6" 2'-10"	Str-100	11'-6"			66	328
PF901	3	51'-2"	105	4'-0"	43'-8"			522
PF902	2	50'-6"	105	4'-0"	43'-0"			344
PF903	2	48'-6"	105	4'-0"	41'-0"			330
PF904	7	15'-0"	Str					357
PF905	3	44'-0"	Str					450
PF906	2	43'-4"	Str					295
PF907	2	41'-4"	Str					281
PF908	2	17'-9"	Str					121
PF909	2	17'-5"	Str					119
PF910	2	16'-9"	Str					114
PF911	2	17'-3"	Str					117
PF912	2	16'-11"	Str					115
PF913	2	16'-3"	Str					111
PF914	20	14'-0"	100	11'-6"				953
PF1001	32	14'-4"	100	11'-6"				1972
PF1101	88	8'-1"	104	7'-2"	1'-2"			3780
PF1102	36	47'-6"	Str					9100
PF1103	12	60'-0"	Str					3830
PF1104	12	59'-9"	Str					3813
PF1105	12	57'-0"	Str					3640
PF1106	16	29'-8"	100	26'-6"				2520
PF1107	40	20'-8"	100	17'-6"				4400
PF1108	10	14'-8"	100	11'-6"				780
					Total	Pier	3E =	44,346
PIER 4 EASTBOUND								
SPG401	1	1237'-10"	112	126.0	46'-3"	3'-2"		975
SPG402	1	1266'-3"	112	128.9	47'-4"	3'-2"		997
SPG403	1	1294'-7"	112	131.8	48'-5"	3'-2"		1020
PG501	36	4'-11"	105	1'-0"	3'-2"			185
PG502	2	4'-9"	105	1'-0"	3'-0"			10
PG503	2	4'-3"	105	1'-0"	2'-6"			9
PG504	36	15'-0"	109	3'-2"	4'-1"			564
PG505	16	11'-0"	109	1'-2"	4'-1"			184

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PG601	8	9'-0"	113	2'-0"	5'-0"	3'-2"		108
PG602	6	40'-7"	Str.					366
PG603	13	15'-10"	100	14'-6"				310
PG604	15	12'-10"	100	11'-6"				290
PG901	14	15'-0"	100	12'-6"				715
PG1001	2	50'-6"	105	4'-0"	43'-1"			435
PG1002	2	50'-0"	105	4'-0"	42'-7"			430
PG1003	2	48'-6"	105	4'-0"	41'-1"			418
PG1004	2	43'-5"	Str					374
PG1005	2	43'-1"	Str					370
PG1006	2	40'-7"	Str					350
PG1007	2	18'-0"	Str					155
PG1008	2	17'-10"	Str					154
PG1009	2	16'-9"	Str					144
PG1010	2	17'-6"	Str					156
PG1011	2	17'-4"	Str					149
PG1012	2	16'-4"	Str					141
PG1013	16	8'-1"	104	7'-3"	1'-1"			556
PG1014	12	17'-4"	100	14'-6"				895
PG1101	48	8'-1"	104	7'-2"	1'-2"			2065
PG1102	16	50'-6"	Str					4300
PG1103	16	51'-9"	Str					4400
PG1104	16	52'-9"	Str					4494
PG1105	14	14'-8"	100	11'-6"			90	1009
PG1106	4-32	15'-8"	100	12'-6"			3500	2660
PG1401	6	15'-6"	Str					712
					Total	Pier	4E =	30,100 -1,021
PIER 5								
SPE401	1	1065'-0"	112	108.4	39'-8"	3'-2"		839
SPE402	1	1104'-4"	112	112.4	41'-2"	3'-2"		870
SPE403	1	1144'-7"	112	116.5	42'-8"	3'-2"		901
SPE404	1	1220'-3"	112	124.2	45'-7"	3'-2"		961
SPE405	1	1211'-5"	112	123.3	45'-3"	3'-2"		954
SPE406	1	1245'-9"	112	126.8	46'-7"	3'-2"		982
SPE407	1	1277'-3"	112	130.0	47'-9"	3'-2"		1006
PE501	93	4'-11"	105	1'-0"	3'-2"			477
PE502	4	4'-6"	105	1'-0"	2'-9"			19
PE503	4	3'-9"	105	1'-0"	2'-0"			15
PE504	66	15'-2"	109	3'-2"	4'-2"			1045
PE505	24	13'-2"	109	2'-2"	4'-2"			329

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PE601	16	9'-0"	113	2'-0"	5'-0"	3'-2"		208
PE602	4	28'-2"	Str.					169
PE603	4	39'-0"	Str.					234
PE604	4	40'-4"	Str.					242
PE605	21	13'-0"	Str.					410
PE701	14	19'-6"	Str.					560
PE901	8	38'-0"	104	34'-3"	4'-0"			1035
PE902	4	39'-3"	104	35'-6"	4'-0"			534
PE903	12	15'-0"	Str.					612
PE904	12	26'-6"	Str.					1080
PE905	12	18'-9"	Str.					765
PE906	70	15'-0"	100	12'-6"				3570
PE907	6	18'-3"	Str.					372
PE1001	6	15'-6"	Str.					400
PE1002	4	47'-9"	105	4'-0"	40'-4"			822
PE1003	2	50'-9"	105	4'-0"	43'-4"			437
PE1004	8	17'-0"	Str.					585
PE1005	6	40'-4"	Str.					1040
PE1006	4	21'-3"	Str.					366
PE1007	16	22'-4"	100	19'-6"				1540
PE1008	20	15'-10"	100	13'-0"				1363
PE1009	12	43'-9"	Str.					2260
PE1010	12	28'-0"	Str.					1445
PE1011	100	7'-6"	104	6'-9"	1'-0"			3230
PE1012	12	51'-6"	Str.					2660
PE1013	12	45'-3"	Str.					2335
PE1014	12	46'-9"	Str.					2415
PE1015	24	49'-6"	Str.					5110
PE1016	12	50'-9"	Str.					2622
PE1101	70	15'-8"	100	12'-6"				5830
					Total	Pier	5 =	52,630



BENDING DIAGRAMS

Notes:
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For replacement reinforcement schedule see sheet 24/24
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H.N.T.B. BRIDGE NO. 2 — Revised 6-9-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 22/24

REINFORCEMENT SCHEDULE

U.S. 30 OVER RAMP B, C, I-77
AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 — STA. 960 + 02.25, STA. 966 + 63.26
SCALE:

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN DGS	TRACED	CHECKED RAP	REVIEWED MJK	REVISED 3-2-76
DATE 7-6-70	DATE	DATE 7-29-70	DATE 11-22-71	1668

Revised 4-28-77

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

255
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

SEP 14 1983

PIER 6

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
SPH401	1	484'-7"	112	58.7	21'-0"	2'-8"		391
SPH402	1	508'-6"	112	61.6	22'-1"	2'-8"		410
SPH403	1	534'-2"	112	64.7	23'-3"	2'-8"		431
SPH404	1	561'-5"	112	68.0	24'-6"	2'-8"		454
SPH405	1	576'-3"	112	69.8	25'-2"	2'-8"		466
SPH405	1	600'-3"	112	72.7	26'-3"	2'-8"		485
SPH407	1	621'-9"	112	75.3	27'-3"	2'-8"		503
PH501	112	4'-5"	105	1'-0"	2'-8"			515
PH502	2	4'-0"	105	1'-0"	2'-3"			8
PH503	2	3'-1"	105	1'-0"	1'-4"			7
PH504	75	14'-2"	109	2'-8"	4'-2"			1110
PH505	64	10'-0" C3 C2	109	1'-9" 2'-2"	4'-2"			823 79
PH601	4	41'-9"	Str					251
PH602	8	6'-0"	105	1'-11"	2'-6"			72
PH603	8	34'-6"	Str					414
PH604	8	8'-1"	113	1'-11"	4'-3"	2'-8"		97
PH901	138	14'-0"	100	11'-6"				6570
PH902	10	13'-0"	100	10'-6"				443
PH1001	60	13'-4"	100	10'-6"				3440
PH1101	3	46'-10"	111	41'-9"	2'-9"			735
PH1102	2	11'-9"	Str					125
PH1103	2	10'-9"	Str					115
PH1104	2	45'-4"	111	40'-3"	2'-9"			482
PH1105	3	42'-9"	Str					681
PH1106	3	13'-9"	Str					220
PH1107	1	13'-0"	Str					69
PH1108	5	37'-6"	Str					1000
PH1109	5	28'-0"	Str					745
PH1110	2	56'-0"	Str					596
PH1111	3	45'-3"	Str					721
PH1112	2	44'-3"	Str					471
PH1113	3	30'-6"	Str					486
PH1114	2	41'-9"	Str					445
PH1115	3	16'-0"	Str					256
PH1116	3	40'-4"	111	35'-3"	2'-9"			643
PH1117	2	38'-10"	111	33'-9"	2'-9"			414
PH1118	5	16'-6"	Str					439
PH1119	2	9'-3"	Str					99
PH1401	20	19'-6"	Str					2980
PH1402	10	20'-9"	Str					1588
PH1403	10	21'-9"	Str					1665
PH1404	40	23'-5"	104	21'-9"	2'-1"			7170
PH1405	10	23'-6"	Str					1800
PH1406	10	20'-6"	Str					1570
PH1407	10	21'-6"	Str					1645
PH1408	70	10'-8"	104	9'-0"	2'-1"			5700
PH1409	30	17'-3"	Str					3964
PH1410	30	14'-11"	104	13'-3"	2'-1"			3420
								.190
		Total Reinf. - Pier 6 =						57,044

PIER 7

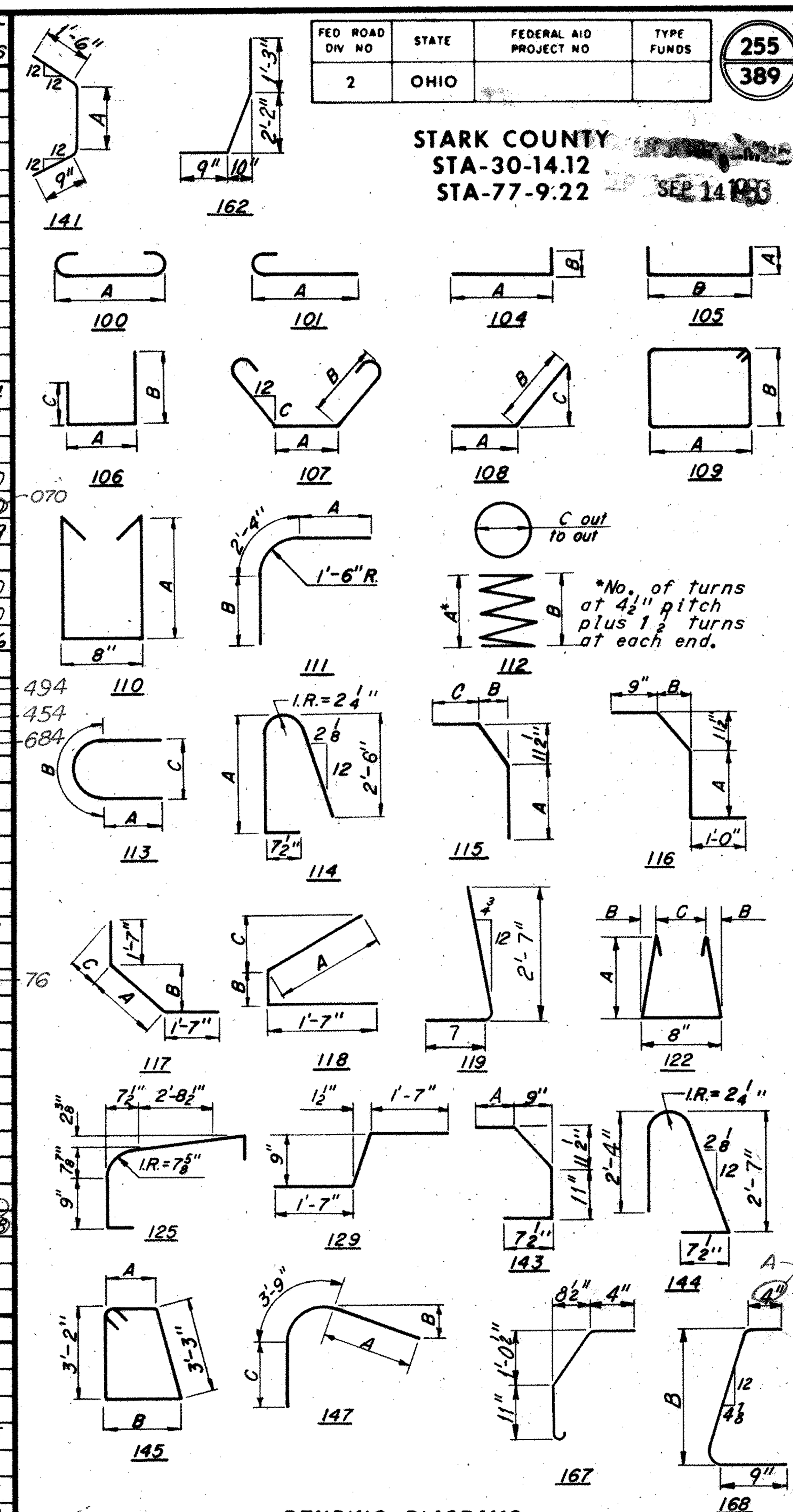
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
SPJ401	1	418'-6"	112	50.7	18'-0"	2'-8"		337
SPJ402	1	442'-6"	112	53.6	19'-1"	2'-8"		357
SPJ403	1	468'-1"	112	56.7	20'-3"	2'-8"		377
SPJ404	1	492'-0"	112	59.6	21'-4"	2'-8"		397
SPJ405	1	502'-9"	112	60.9	21'-10"	2'-8"		406
SPJ406	1	524'-1"	112	63.6	22'-10"	2'-8"		424
SPJ407	1	544'-11"	112	66.0	23'-9"	2'-8"		440
PJ501	112	4'-5"	105	1'-0"	2'-8"			516
PJ502	2	4'-0"	105	1'-0"	2'-3"			9
PJ503	2	3'-1"	105	1'-0"	1'-4"			7
PJ504	82	14'-2"	109	2'-8"	4'-2"			1212
PJ505	68	12'-10"	109	2'-0"	4'-2"			910
PJ601	4	42'-0"	Str.					252
PJ602	8	6'-0"	105	1'-11"	2'-6"			72
PJ603	8	36'-9"	Str.					440
PJ604	8	8'-1"	113	1'-11"	4'-3"	2'-8"		97
PJ901	148	12'-0"	100	9'-6"				6050
PJ1001	16	22'-0"	Str.					1515
PJ1002	16	23'-6"	Str.					1620
PJ1003	16	25'-0"	Str.					1720
PJ1004	16	26'-0"	Str.					1790
PJ1005	64	7'-3"	104	6'-5"	1'-1"			2000
PJ1101	3	47'-1"	111	42'-0"	2'-9"			752
PJ1102	2	11'-0"	Str.					117
PJ1103	3	10'-9"	Str.					172
PJ1104	2	45'-7"	111	40'-6"	2'-9"			485
PJ1105	3	43'-0"	Str.					686
PJ1106	3	14'-3"	Str.					228
PJ1107	1	15'-6"	Str.					83
PJ1108	5	41'-6"	Str.					1105
PJ1109	5	2 30'-6" 3	Str.					836
PJ1110	2	2 60'-0"	Str.					638
PJ1111	3	44'-3"	Str.					706
PJ1112	2	43'-6"	Str.					463
PJ1113	2	30'-3"	Str.					322
PJ1114	2	42'-0"	Str.					446
PJ1115	3	17'-3"	Str.					276
PJ1116	3	38'-7"	111	33'-6"	2'-9"			615
PJ1117	2	37'-1"	111	32'-0"	2'-9"			394
PJ1118	12	26'-3"	Str.					1673
PJ1119	12	27'-3"	Str.					1740
PJ1120	12	28'-0"	Str.					1790
PJ1121	36	7'-8"	104	6'-9"	1'-2"			1470
PJ1122	5	16'-9"	Str.					445
PJ1123	3	12'-6"	Str.					200
				Total	Reinf	-Pier	7 =	36,590

DECK - UNIT 1 - WESTBOUND

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
SA501	65	30'-0"	Str.					2040
SA502	5	26'-0"	Str.					136
SA503	265	5'-8"	144					1566
SA504	265	2'-2"	105	7½"	1'-2"			599
SA505	265	3'-7"	143	9"				990
SA506	265	2'-4"	104	7½"	1'-10"			645
SA601	1560	30'-0"	Str.					70,294
SA602	1 Ser.44	44'-0" to 30'-0"	Str.				4"	2445
SA603	1 Ser.76	44'-0" to 30'-0"	Str.				2¼"	4224
SA604	422	34'-8"	101	34'-0"				22,000
SA605	231	37'-8"	101	37'-0"				13,800 070
SA606	1 Ser302	34'-0" to 29'-9"	101	33'-4" to 29'-1"			3/16"	14,459
SA607	1 Ser155	33'-9" to 31'-9"	101	33'-1" to 31'-1"			⅛"	7625
SA608	422	30'-6"	Str.					19,320
SA609	231	33'-0"	Str.					11,450
SA610	1 Ser302	36'-9" to 32'-6"	Str.				3/16"	15,706
SA611	1 Ser155	37'-0" to 35'-0"	Str.				⅛"	8381
SA612	84 8	34'-0"	Str.					4300 494
SA613	42 4	22'-0"	Str.					1390 454
SA614	84 8	43'-0"	Str.					5430 684
SA615	76	35'-0"	Str.					3995
SA616	76	31'-9"	101	31'-1"				3624
SA617	120	29'-9"	101	29'-1"				5362
SA618	120	32'-6"	Str.					5858
SA619	351	3'-4"	101	2'-8"				1757
SA620	351	4'-2"	162					2197
SA621	351	3'-0"	167					1582
SA622	52	30'-0"	Str.					2343
SA623	8	20'-0" C3	Str.					240 76
					Total	Unit	1 W.B.	582 233,758

DECK - UNIT 1 - EASTBOUND

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
SB501	65	30'-0"	Str.					2034
SB503	10	22'-0"	Str.					230
SB504	272	2'-2"	105	7½"	1'-2"			615
SB505	272	5'-8"	144					1608
SB506	272	2'-4"	104	1'-10"	7½"			662
SB507	272	3'-7"	143	9"				1016
SB601	975	30'-0"	Str.					43,934
SB602	2 Ser.48	17'-6" to 22'-0"	Str.				1⅛"	2848
SB603	2 Ser.27	17'-6" to 22'-0"	Str.				2"	1602
SB604	1380 98	23'-4"	101	22'-8"				48,364 995
SB605	690 9	18'-0"	Str.					18,655 898
SB606	690 9	27'-9"	Str.					28,800 9,135
SB607	56 4	34'-0"	Str.					2860 758
SB608	56 4	42'-0"	Str.					3540 407
SB609	28 7	25'-0"	Str.					1050 14
SB610	343	3'-0"	119					1546
SB611	343	2'-6"	Str.					1288
SB612	343	2'-10"	143	5"				1460
SB613	343	2'-11"	168	5"	1'-11"			1503
SB614	52	30'-0"	Str.					2343
SB615	8	20'-0"	Str.					240
					Total	Reinf.	Unit 1 E.B. =	7,136 166,198



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For replacement reinforcement schedule see sheet 24/24.
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

Splices in No. 14 or No. 18 size reinforcing bars shall be made by an approved positive mechanical method designed to develop 125% of the specified yield strength of the bar.

H.N.T.B. BRIDGE NO. 2 | Revised 6-9-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
23/24

REINFORCEMENT SCHEDULE

U.S. 30 OVER RAMP B, C, I-77
AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487
SCALE:
STA. 960 + 02.25
STA. 966 + 63.26

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN D&S	TRACED	CHECKED RAP	REVIEWED MJK	REVISED 3-2-76
DATE 7-6-70	DATE	DATE 7-29-70	DATE 11-22-71	1668

Revised 4-28-77

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			256 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

MICROFILMED SEP 14

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
DECK - UNIT 2 - WESTBOUND								
SC501	40	30'-0"	Str.					1253
SC502	5	24'-6"	Str.					128
SC503	167	5'-8"	144					987
SC504	167	2'-2"	105	7½"	1'-2"			377
SC505	167	3'-7"	143	9"				624
SC506	167	2'-4"	104	7½"	1'-10"			406
SC601	1088	30'-0"	Str.					49025
SC602	136	25'-0"	Str.					5107
SC603	100-4	44'-0"	Str.				873	6620
SC604	430	40'-7"	101	39'-11"				26,211
SC605	430	36'-6"	Str.					23,574
SC606	1 Ser 430	38'-11" to 31'-5"	101	38'-3" to 30'-9"			3/16"	22,700
SC607	1 Ser 430	42'-0" to 34'-9"	Str.				3/16"	24,800
SC608	215	3'-4"	101	2'-8"				1076
SC609	215	4'-2"	162					1346
SC610	215	3'-0"	167					969
SC611	32	30'-0"	Str.					1442
SC612	8	18'-9" 3 3	Str.				160	225
			Total	Reinf.	Unit 2	W. B. =		7 058 166,870
DECK - UNIT 2 - EASTBOUND								
SD501	40	30'-0"	Str.					1252
SD502	10	17'-3"	Str.					180 360
SD503	174	2'-2"	105	7½"	1'-2"			393
SD504	174	5'-8"	144					1028
SD505	174	2'-4"	104	1'-10"	7½"			423
SD506	174	3'-7"	143	9"				650
SD601	600	30'-0"	Str.					27,036
SD602	150	19'-3"	Str.					4337
SD603	894	23'-4"	101	22'-8"				31,322
SD604	447	18'-0"	Str.					12,085
SD605	447	27'-9"	Str.					18,650
SD606	26-7	42'-0"	Str.					1640 - 703
SD607	26-7	43'-0"	Str.					1679 - 744
SD608	223	3'-0"	119					1005
SD609	223	2'-6"	Str.					837
SD610	223	2'-10"	143	5"				949
SD611	223	2'-11"	168	5"	1'-11"			977
SD612	32	30'-0"	Str.					1442
SD613	8	18'-9"	Str.					225
			Total	Reinf.	Unit 2	E. B. =		229 106,300

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
PARAPETS								940
R501	116-20	15'-6"	Str.					1876
R502	380-78	7'-0"	Str.				60	2774
R503	128-08	14'-6"	Str.				633	1938
R504	12-24	5'-6"	Str.				138	69
R505	8	5'-0"	Str.					42
R506	8	9'-9"	Str.					81
R507	40-32	14'-0"	Str.				476	585
R508	4	13'-9"	Str.					57
R509	12-30	13'-6"	Str.				422	169
R510	12	12'-6"	Str.					157
R511	4-2	10'-0"	Str.				20	42
R512	6	13'-0"	Str.					82
R513	2	8'-6"	Str.					18
					OUT	Total	=	7790
R514	2	6'-0"	Str.					13
						Total	=	7,830

*REPLACEMENT REINFORCEMENT SCHEDULE

Note:
Refer to CMS Section 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcimg steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.

*Note:
Includes Bridges Nos. STA.-30-1487, 1486, 1488, 1499, 1494, 1504, 1493 & 1489.

PILE NUMBERING DESIGNATIONS

PIER 1 (PREFIX 2)

PILE LETTER	FOOTING NUMBER 1	2	3	4	5	6	7
A	1	-	-	-	-	-	37
B	2	-	-	-	-	-	38
C	3	-	-	-	-	-	39
D	4	-	-	-	-	-	40
E	5	-	-	-	-	-	41
F	-	6	12	18	24	30	-
G	-	7	13	19	25	31	-
H	-	8	14	20	26	32	-
J	-	-	-	-	-	33	-
K	-	9	15	21	27	34	-
L	-	10	16	22	28	35	-
M	-	11	17	23	29	36	-

PIER 2 (PREFIX 3)

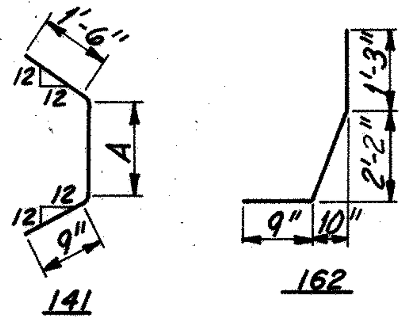
PILE LETTER	FOOTING NUMBER 1	2	3	4	5	6	7
A	-	9	-	-	-	-	-
B	-	10	-	-	-	-	-
C	-	11	-	-	-	-	-
D	-	12	-	-	-	-	-
E	-	13	-	-	-	-	-
F	-	14	-	-	-	-	-
G	-	15	-	-	-	-	-
H	-	16	-	-	-	-	-
J	-	17	-	-	-	-	-
K	-	18	-	-	-	-	-
L	1	-	19	27	35	42	50
M	2	-	20	28	36	43	51
N	3	-	21	29	37	44	52
P	4	-	22	30	-	45	-
Q	-	-	-	-	38	-	53
R	5	-	23	31	-	46	-
S	6	-	24	32	39	47	54
T	7	-	25	33	40	48	55
U	8	-	26	34	41	49	56

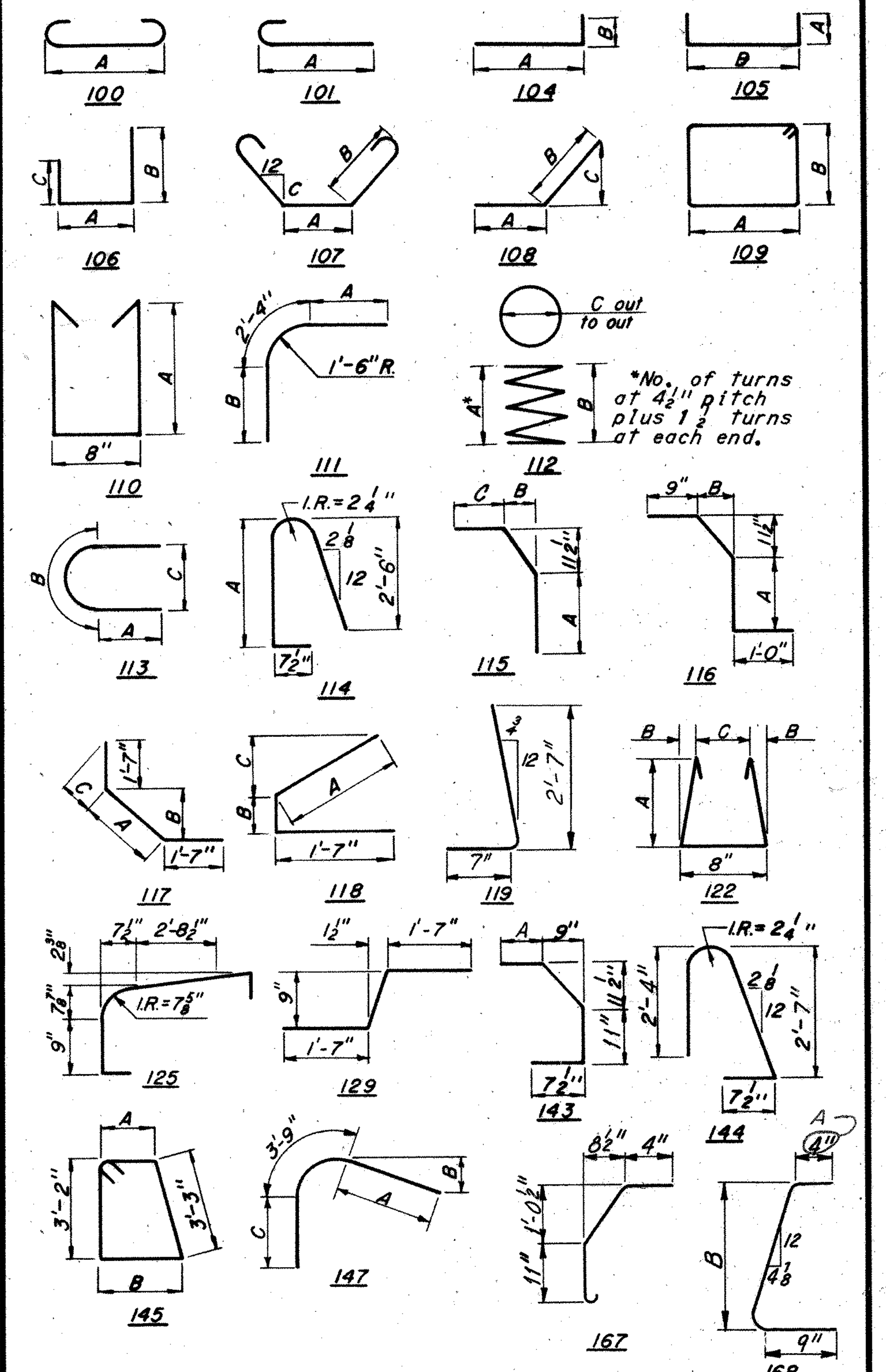
PIER 6 (PREFIX 9)

PILE LETTER	FOOTING NUMBER 1	2	3	4	5	6	7
A	1	-	-	-	-	-	-
B	2	-	-	-	-	-	-
C	3	-	-	-	-	-	-
D	4	-	-	-	-	-	-
E	5	-	-	-	-	-	-
F	6	-	-	-	-	-	-
G	-	7	15	23	-	-	-
H	-	8	16	24	-	-	-
J	-	9	17	25	-	-	-
K	-	10	18	26	-	-	-
L	-	11	19	27	-	-	-
M	-	12	20	28	-	-	-
N	-	13	21	29	-	-	-
P	-	14	22	30	-	-	-
Q	-	-	-	-	31	39	-
R	-	-	-	-	32	40	-
S	-	-	-	-	33	41	-
T	-	-	-	-	34	42	-
U	-	-	-	-	-	43	-
V	-	-	-	-	35	44	-
W	-	-	-	-	36	45	-
X	-	-	-	-	37	46	-
Y	-	-	-	-	38	47	-
Z	-	-	-	-	-	-	48
AA	-	-	-	-	-	-	49
BB	-	-	-	-	-	-	50
CC	-	-	-	-	-	-	51
DD	-	-	-	-	-	-	52
EE	-	-	-	-	-	-	53
FF	-	-	-	-	-	-	54

PIER 7 (PREFIX 10)

PILE LETTER	FOOTING NUMBER 1	2	3	4	5	6	7
A	1	-	15	22	29	-	43
B	2	-	16	23	30	-	44
C	3	-	17	24	31	-	45
D	-	-	18	25	-	-	-
E	4	-	19	26	32	-	46
F	5	-	20	27	33	-	47
G	6	-	21	28	34	-	48
H	-	7	-	-	-	35	-
J	-	8	-	-	-	36	-
K	-	9	-	-	-	37	-
L	-	10	-	-	-	38	-
M	-	11	-	-	-	39	-
N	-	12	-	-	-	40	-
P	-	13	-	-	-	41	-
Q	-	14	-	-	-	42	-





BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 2 | Revised 6-9-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
24/24

REINFORCEMENT SCHEDULE

U.S. 30 OVER RAMP B, C, I-77
AND PENNSYLVANIA R.R.

BR. NO. STA. 30-1487 — STA. 960 + 02.25
SCALE: — STA. 966 + 63.26

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

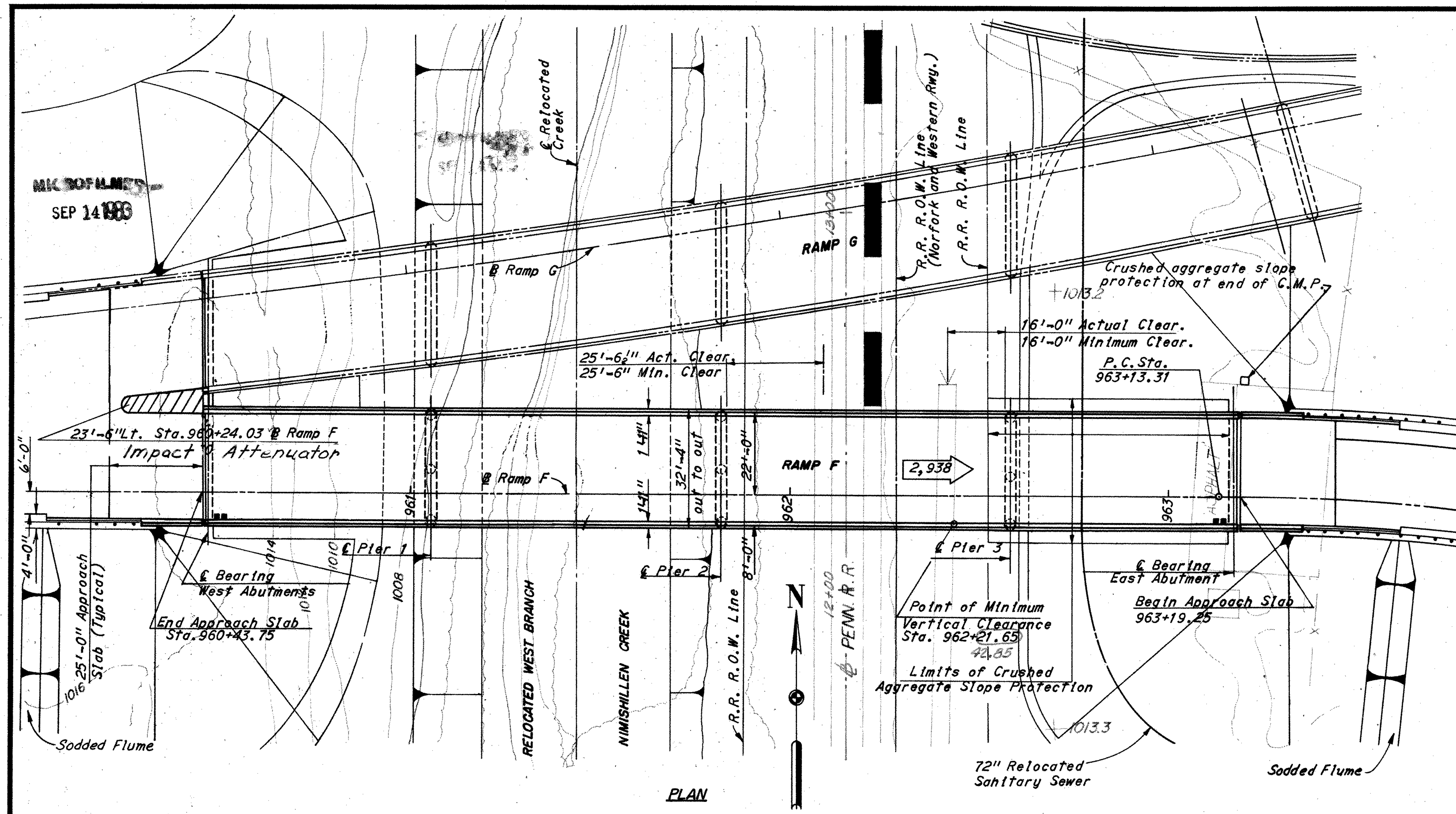
DRAWN DGS DATE 7-6-70	TRACED DATE	CHECKED R.A.P. DATE 7-29-70	REVIEWED MJK DATE 11-22-71	REVISED 1668

Revised 4-28-77

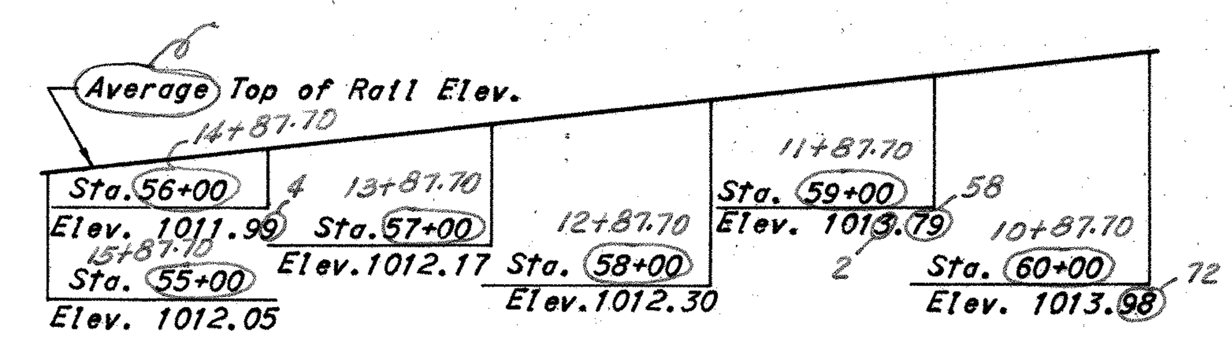
FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO		

257/389

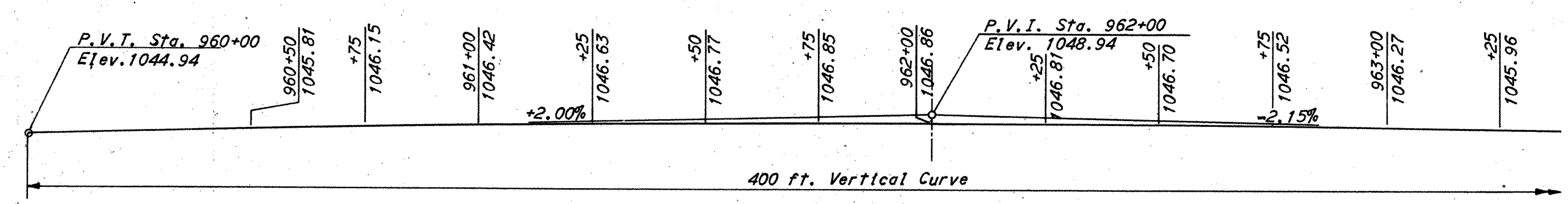
STARK COUNTY
STA-30-14.12
STA-77-9.22



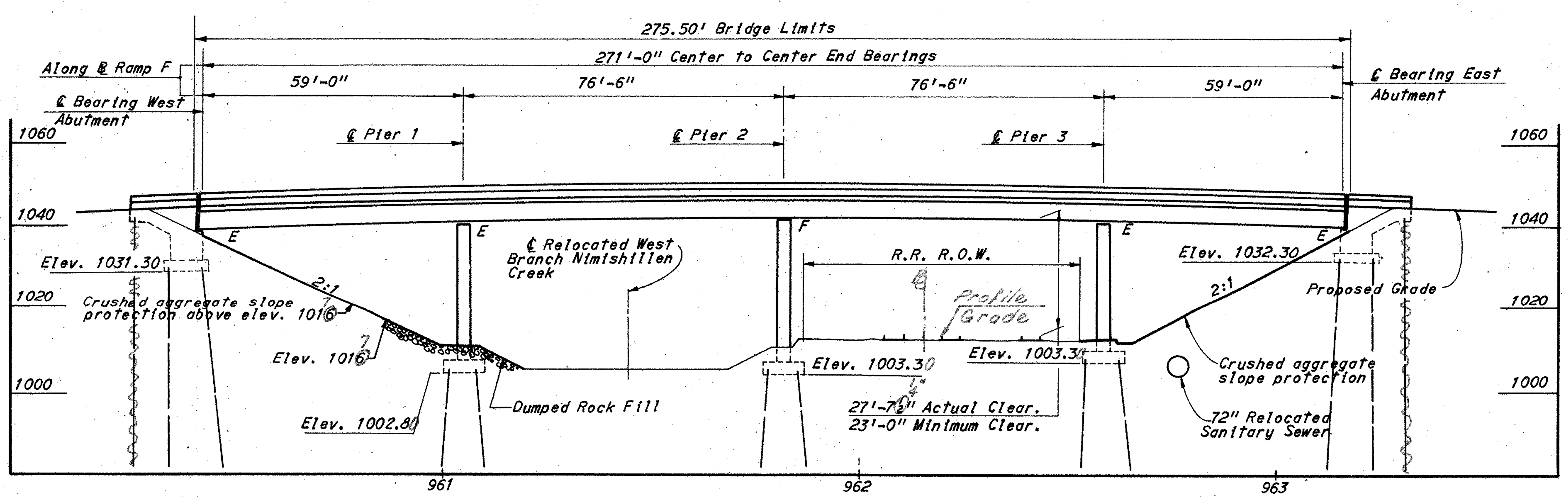
PLAN



PROFILE GRADE-PENNSYLVANIA RAILROAD



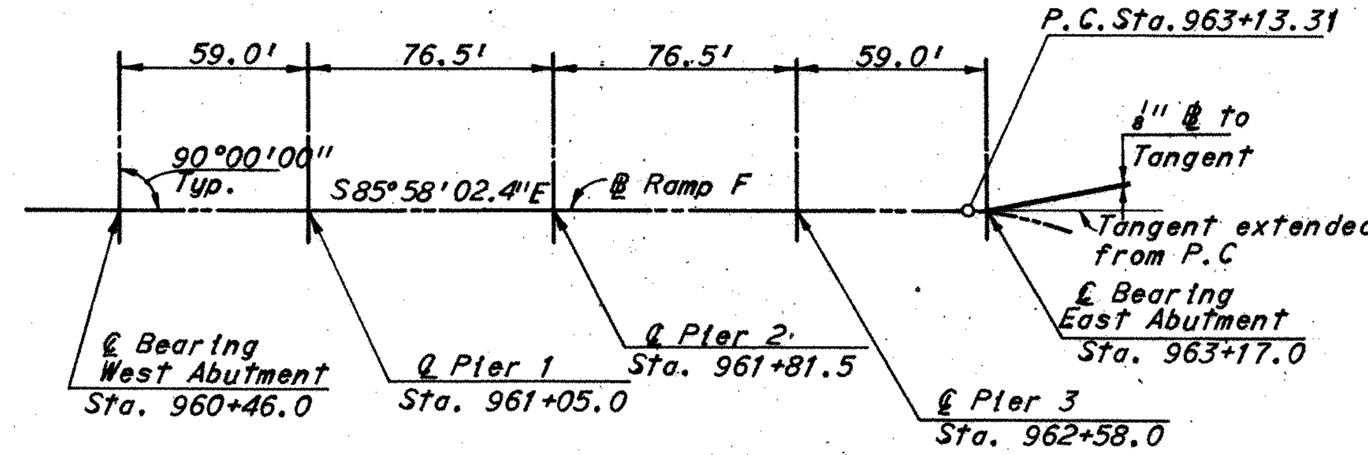
PROFILE GRADE-RAMP F



ELEVATION

HORIZONTAL CURVE DATA - RAMP F

P.I. Sta. 966+19.348
D = 8°00'00.0"
Δ = 46°16'32.0" Rt.
R = 716.197
T = 306.042
L = 578.444



LAYOUT SKETCH

Note:
Embankment construction should be completed to subgrade elev. before constructing the piers and abutments. Pre-boring through new or existing embankments before driving the piles will be allowed at the contractor's option and expense.

Notes:
For Estimated Quantities, see Sheet 365B.
For lighting details see Lighting Plans.
The following items are not included in the bridge plans. See roadway plans for details.
1. Relocation or removal of existing utilities.
2. Approach grading, pavements and slabs.
3. Guardrails

2,938 Denotes 1987 one way average daily traffic.
Earthwork limits shown are schematic. Actual slopes shall conform to plan cross-sections.
For hydraulic data and cross-section thru West Branch Nimishillen Creek see Sheet 263.
All piles shall be 12"ϕ cast-in-place concrete with an estimated average pay length of 80'-0" for the West Abutment and 70'-0" for Pier 1, Pier 2, Pier 3 and the East Abutment.
■ Denotes standard scupper.
The embankments shall be constructed to the level of the subgrade for a minimum distance of 200 feet back of the abutments. Excavation shall then be made for the abutments and for piers 1 and 3.
All earthwork in the area of the existing channel shall be completed before construction of piers 1 and 2.
For details of West Abutment see Sheet 268.

PROPOSED STRUCTURE

Type: Continuous Welded Girders with Reinforced Concrete Slab.
Spans: 59'-0", 76'-6", 76'-6", 59'-0" = 271'-0" ctr to ctr. end Bearings measured along ℄ RampF.
Roadway: 30'-0" face to face of parapets.
Loading: HS 20-44
Skews: None
Wearing Surface: 2½" Asphalt Concrete
Approach Slab: AS-1-72 (25'-0" long) (Modified)
Alignment: Tangent

Modify Std. Drwg. AS-1-72 by providing 3" clear over the top rebars instead of the 2" shown on the Std. Drwg. The jacking holes as called for on Std. Drwg. AS-1-72 are not required.

H.N.T.B. BRIDGE NO. 6 — Revised 5-23-75 By CKB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 1/6
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SITE PLAN

RAMP F OVER PENN. R.R.

BR. NO. STA 30-1486 — STA. 960 + 43.75
SCALE: 1"=20'-0" — STA. 963 + 19.25

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

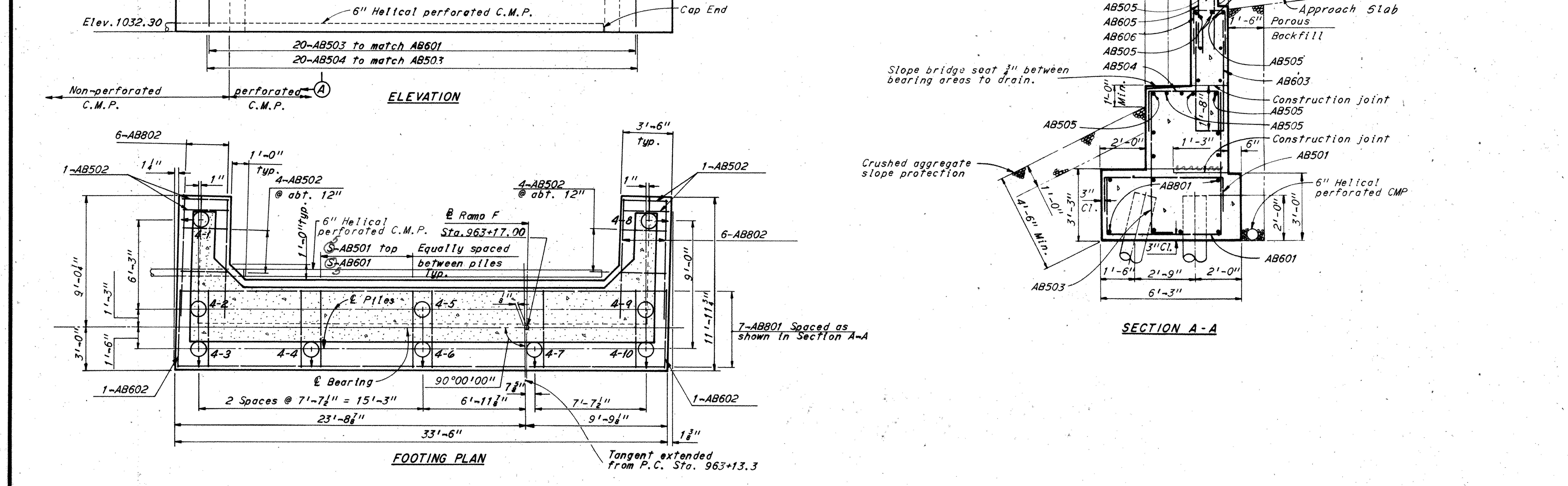
DRAWN LDE	TRACED	CHECKED BM	REVIEWED MJK	REVISED 3-2-76
DATE 10-5-69	DATE	DATE 1-20-70	DATE 11-22-71	1668

Revised 4-28-77

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

Note:
Parapet Transitions shall be as shown on Std. Drwg. BR-1-67 revised 10-15-71. Reinforcing steel shall be field bent or cut to fit the revised shape.



Notes:

For roadway end dam details see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4, and Sheet 359.

AB401 bars shall be placed 2½"± below top of bridge seat.

n denotes North Wingwall, s denotes South Wingwall.

n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.

For reinforcement schedule see Sheet 6/6.

Only that portion of the C.M.P. located in the porous backfill shall be perforated.

All battered piles are battered 3 in 12.

Pile dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

○→ Denotes battered piles and direction of batter.

For details of C.M.P. outlet at side slopes see Sheet 359.

H.N.T.B. BRIDGE NO. 6 | Revised 5-23-75 By CKB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 2/6
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

EAST ABUTMENT

RAMP F OVER PENN. R.R.

BR. NO. STA. 30-1486 — STA. 960 + 43.75
SCALE: 1/4" = 1'-0" — STA. 963 + 19.25

RELOCATED U.S. 30

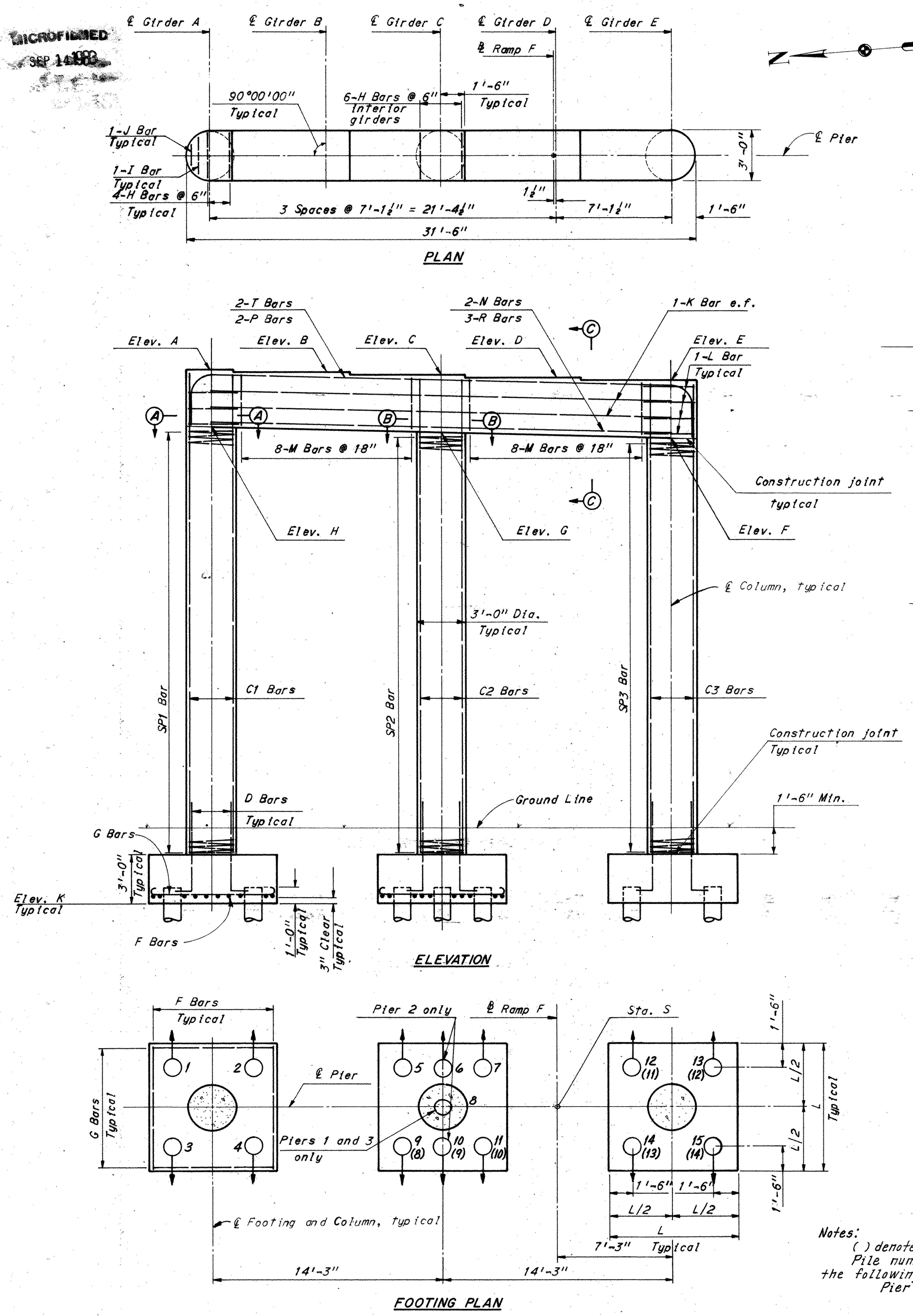
CANTON — STARK COUNTY — OHIO

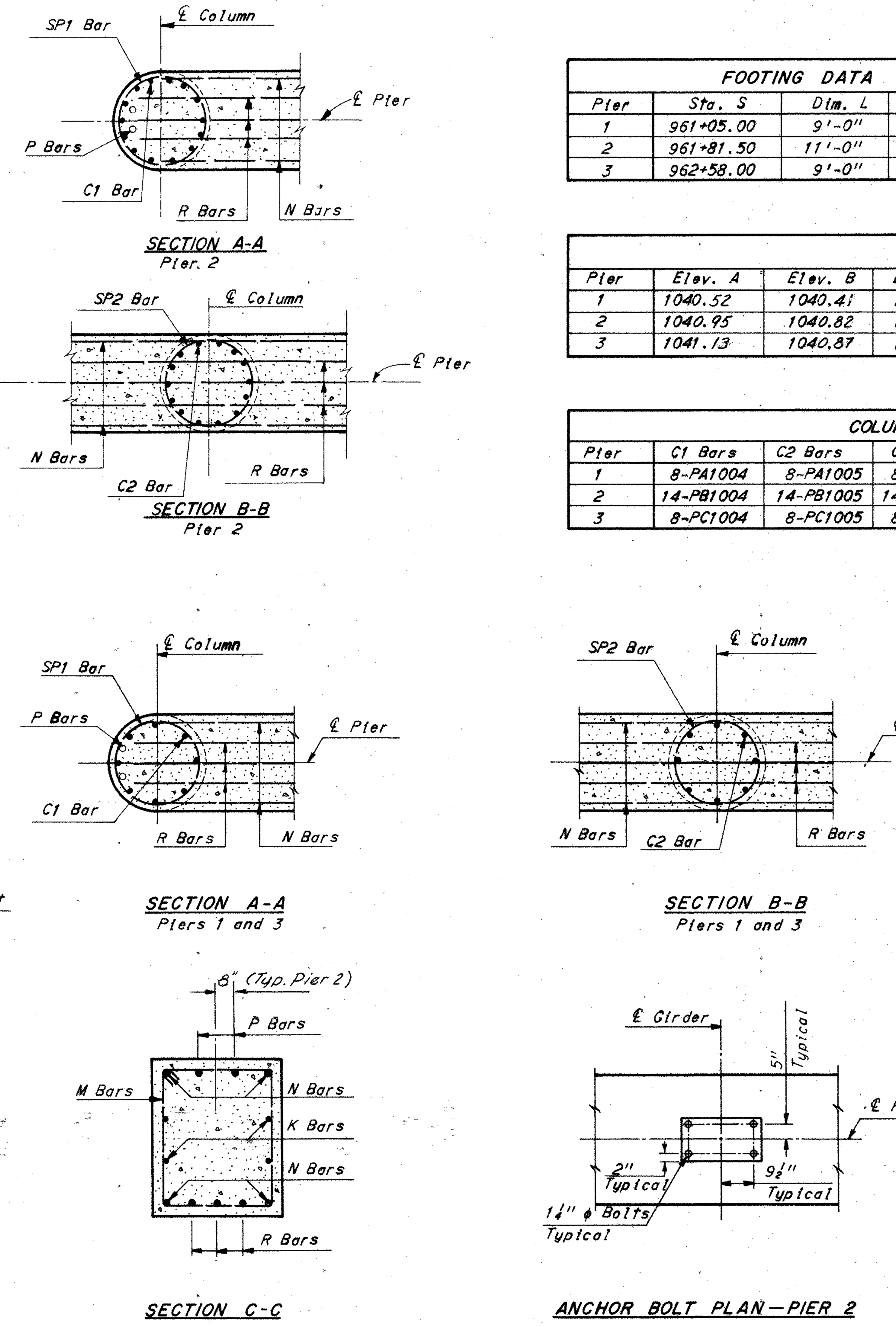
DRAWN	TRACED	CHECKED BM	REVIEWED MJE	REVISED
DATE 11-5-69	DATE	DATE 3-26-70	DATE 11-22-71	1668

Revised 4-28-77

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			259 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22





FOOTING DATA				
Pier	Sta. S	Dim. L	F Bars	G Bars
1	961+05.00	9'-0"	10-PA701	10-PA701
2	961+81.50	11'-0"	10-PB901	10-PB801
3	962+58.00	9'-0"	10-PC701	10-PC701

ELEVATIONS									
Pier	Elev. A	Elev. B	Elev. C	Elev. D	Elev. E	Elev. F	Elev. G	Elev. H	Elev. K
1	1040.52	1040.41	1040.29	1040.18	1040.07	1036.51	1036.69	1036.87	1002.80
2	1040.95	1040.82	1040.69	1040.57	1040.44	1036.91	1037.09	1037.27	1003.30
3	1041.13	1040.87	1040.62	1040.36	1040.10	1036.46	1036.89	1037.32	1003.30

COLUMN REINFORCING STEEL							
Pier	C1 Bars	C2 Bars	C3 Bars	D Bars	SP1 Bar	SP2 Bar	SP3 Bar
1	8-PA1004	8-PA1005	8-PA1006	8-PA1007	1-SPA401	1-SPA402	1-SPA403
2	14-PB1004	14-PB1005	14-PB1006	14-PB1007	1-SPB401	1-SPB402	1-SPB403
3	8-PC1004	8-PC1005	8-PC1006	8-PC1007	1-SPC401	1-SPC402	1-SPC403

Notes:

Special care shall be taken when placing reinforcing steel so as not to interfere with anchor bolt setting. Pier 2 only. See Sheet 214.

H Bars, I Bars and J Bars shall be placed 2¼"± below top of cap beam.

For reinforcement schedule see Sheet 6 \ 6

All battered piles shall be battered 3 in 12.

Piles dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

For girder angles see Sheet 4 \ 6

e.f. denotes each face.

All stirrups within 4 feet of ℄ Column shall be placed with hooks in the bottom of cap. All others shall be placed with hooks in the top.

CAPBEAM REINFORCING STEEL										
Pier	H Bars	I Bars	J Bars	K Bars	L Bars	M Bars	N Bars	P Bars	R Bars	T Bars
1	PA501	PA502	PA503	PA601	PA602	PA504	PA1001	PA1002	PA1003	PA1008
2	PB501	PB502	PB503	PB601	PB602	PB504	PB1001	PB1002	PB1003	PB1008
3	PC501	PC502	PC503	PC601	PC602	PC504	PC1001	PC1002	PC1003	PC1008

Notes:
( ) denotes Pier 2 designation only.
Pile numbering designations shall be preceded with the following subscripts:
Pier 1:1, Pier 2:2, Pier 3:3; i.e. 1-1, 1-2, etc.

H.N.T.B. BRIDGE NO. 6 — Revised 5-23-75 By CKB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 3 / 6
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KANSAS CITY CLEVELAND NEW YORK

PIERS 1, 2, 3

RAMP F OVER PENN. R.R.

BR. NO. STA. 30-1486 — STA. 960 + 43.75
SCALE: ¼"=1'-0" — STA. 963 + 19.25

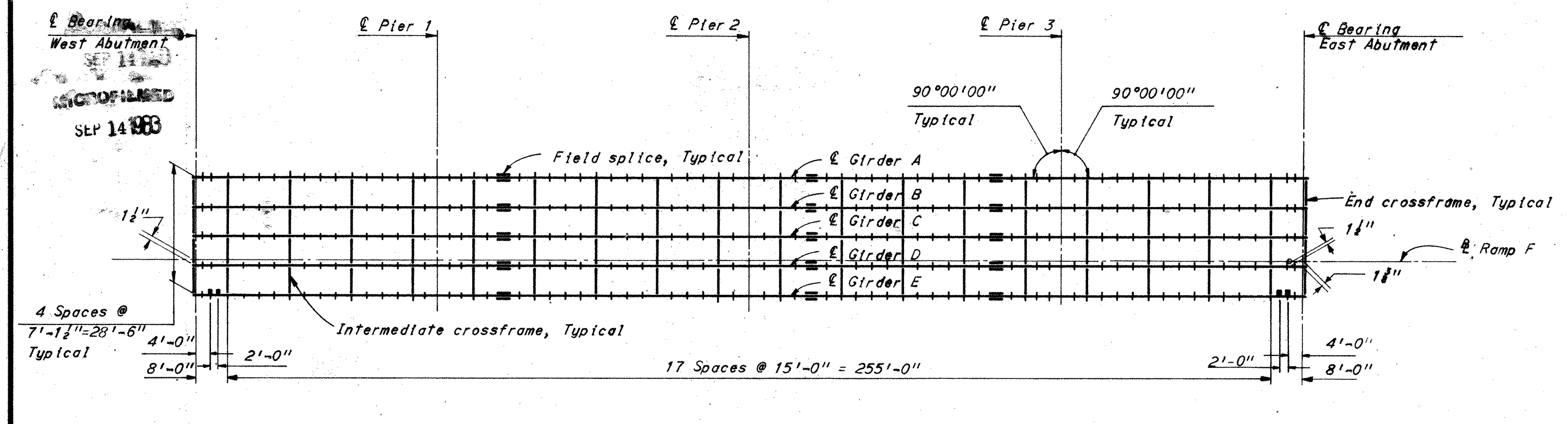
RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

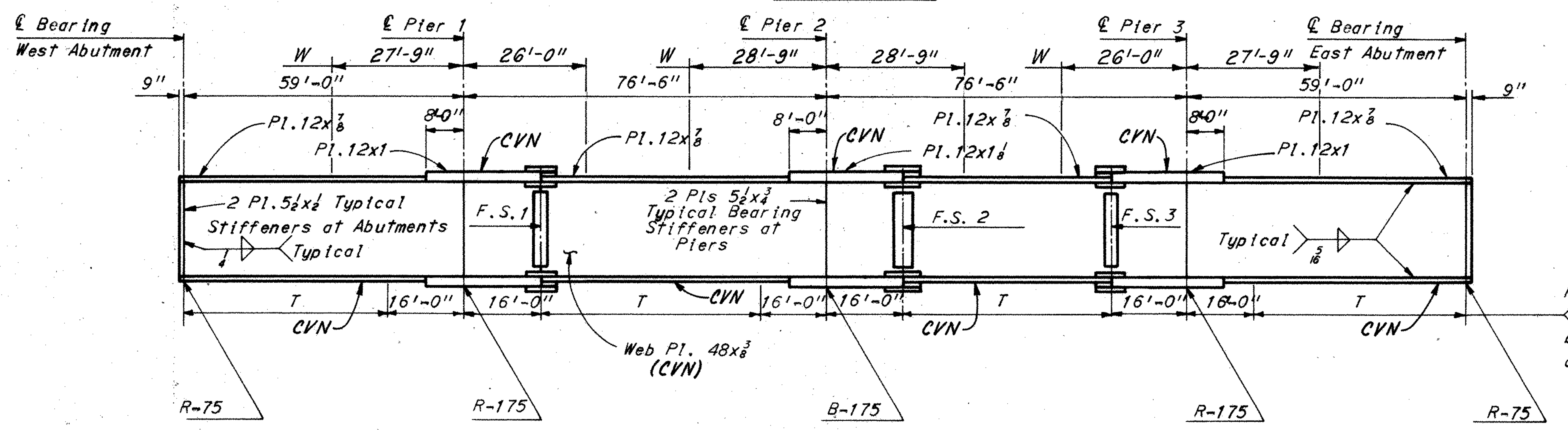
DRAWN O.W.B.	TRACED	CHECKED B.M.	REVIEWED M.J.K.	REVISED 3-2-76
DATE 7-23-69	DATE	DATE 1-26-70	DATE 11-22-71	1668

Revised 4-28-77

STARK COUNTY
STA-30-14.12
STA-77-9.22



FRAMING PLAN

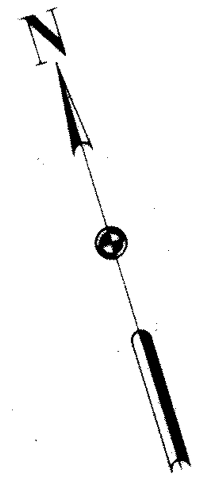


CVN - See Sheet 214.

GIRDER ELEVATION

Note:
"W" denotes the range where welded attachments cannot be made to the top flange of Girders A and E.

Note:
Tension areas of bottom flange are denoted by "T". For the top flange, these areas are in compression.



Notes:
Top and bottom flanges are identical in size.
All stiffeners shall be placed normal to girder flanges.
All intermediate stiffener to web welds shall be ¼" continuous fillets on both sides of stiffeners.
For detail of field splices see Sheet 355.
All intermediate stiffeners shall be Pls.4x$\frac{5}{16}$, except at field splices Ls 5x3½x⅜ shall be used.

Intermediate stiffeners shall be placed as shown on framing plan, equally spaced between crossframes or crossframes and bearing stiffeners or crossframes and splices.

End crossframe details shall be same as shown on Ohio Standard Drawing SD-1-69, Sheet 1 of 4.
For intermediate crossframe details see Sheet 360.
All crossframes are intermediate crossframes unless shown otherwise.
For details of roadway end dam, see Ohio Standard Drawing SD-1-69, Sheet 1 of 4, and Sheet 359.
For details of intermediate stiffeners see Sheet 360.

For details of rockers and bolsters see Ohio Standard Drawing RB-1-55.
The girders shall be fabricated to lines parallel to profiles formed by top of pavement elevations directly over girders, plus the camber required to compensate for dead load deflection.

For details of curb plates at concrete bridge railing see Ohio Standard Drawing SD-1-69, Sheet 2 of 4.
Dimensions to scuppers are measured along centerline of girders.

F.S. Denotes Field Splice
For Camber and Deflection Table see Sheet 364.
■ Denotes Standard scupper
Scuppers shall be in accordance with Std. Dwg. SD-1-69 except that scupper pipes shall extend 8" below the bottom of girders instead of 2".

The allowance to be made in screed settings to compensate for dead load deflections due to concrete and asphalt wearing course are to be made above or below the top of the pavement elevations as required. Screeds may require further adjustment due to irregularities in fabricated steel.

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS AT GUTTERLINE

	℄ Brg. W. Abut	.25	.50	.75	℄ Pier 1	.25	.50	.75	℄ Pier 2	.25	.50	.75	℄ Pier 3	.25	.50	.75	℄ Brg. E. Abut.
North Gutterline	1045.87	1046.09	1046.29	1046.45	1046.59	1046.74	1046.87	1046.95	1047.03	1047.12	1047.19	1047.21	1047.20	1047.17	1047.12	1047.04	1046.93
South Gutterline	1045.43	1045.65	1045.84	1046.00	1046.15	1046.30	1046.42	1046.49	1046.52	1046.49	1046.43	1046.32	1046.18	1046.04	1045.89	1045.71	1045.49

Note:
The gutterline elevations shown have been adjusted for dead load deflections caused by the weight of wearing course and concrete, and are the elevations required before the concrete deck is placed. No concrete shall be placed until the screed rails have been set for the entire bridge.

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS

Girder	℄ Brg. W.Abut.	.25	.50	.75	℄ Pier 1	.25*	.50	.75	℄ Pier 2	.25*	.50	.75*	℄ Pier 3	.25	.50	.75	℄ Brg. E. Abut.
A	1045.87	1046.09	1046.28	1046.44	1046.69	1046.72	1046.86	1046.95	1047.08	1047.12	1047.19	1047.21	1047.20	1047.17	1047.11	1047.03	1046.93
B	1045.76	1045.97	1046.17	1046.33	1046.48	1046.61	1046.75	1046.84	1046.91	1046.96	1047.00	1046.98	1046.95	1046.89	1046.80	1046.70	1046.57
C	1045.65	1045.86	1046.05	1046.22	1046.37	1046.50	1046.64	1046.72	1046.78	1046.81	1046.81	1046.76	1046.69	1046.60	1046.49	1046.36	1046.21
D	1045.54	1045.75	1045.94	1046.11	1046.26	1046.39	1046.53	1046.61	1046.65	1046.65	1046.62	1046.53	1046.43	1046.32	1046.19	1046.03	1045.85
E	1045.43	1045.64	1045.83	1046.00	1046.15	1046.28	1046.42	1046.49	1046.52	1046.50	1046.43	1046.30	1046.18	1046.04	1045.88	1045.70	1045.49

* At Location of Field Splice.

H.N.T.B. BRIDGE NO. 6 — Revised 5-23-75 By CKB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 4 / 6
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FRAMING PLAN

RAMP F OVER PENN. R.R.
BR. NO. STA. 30-1486 — STA. 960 + 43.75
SCALE: — STA. 963 + 19.25

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN DWB	TRACED	CHECKED BM	REVIEWED MJK	REVISED
DATE 7-14-69	DATE	DATE 1-21-70	DATE 11-22-71	1668

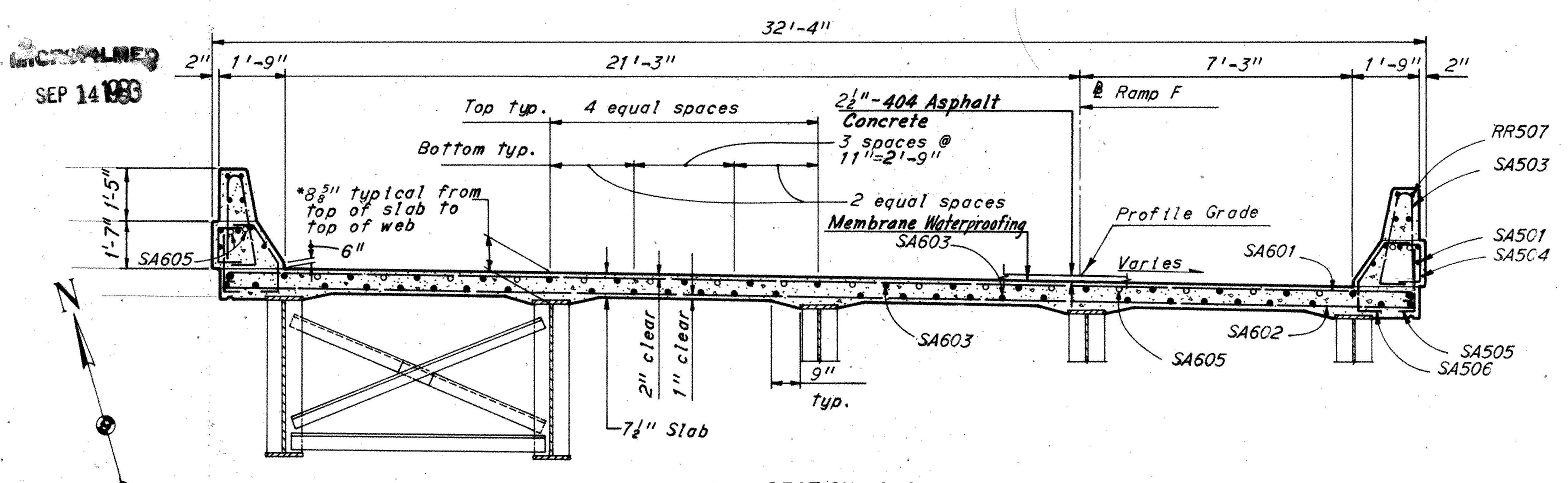
Revised 4-28-77

MICROFILMED SEP 14 1983

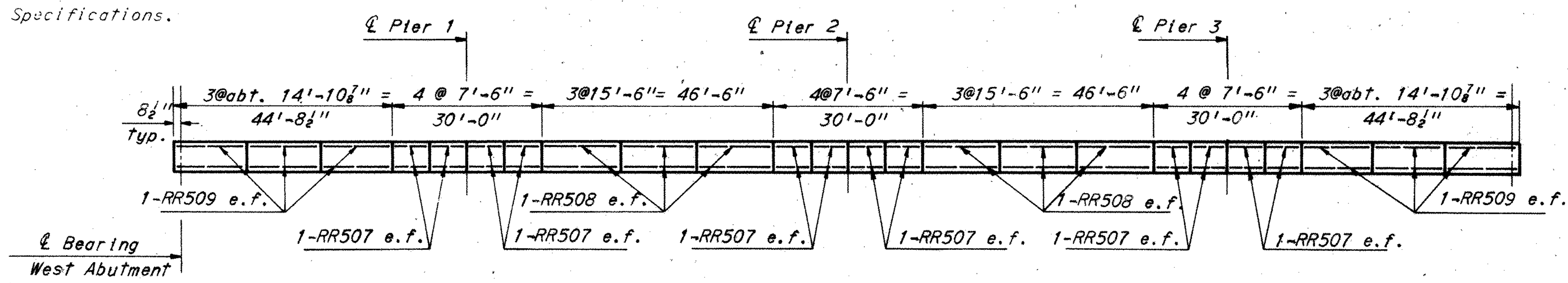
FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO		

STARK COUNTY
STA-30-14.12
STA-77-9.22

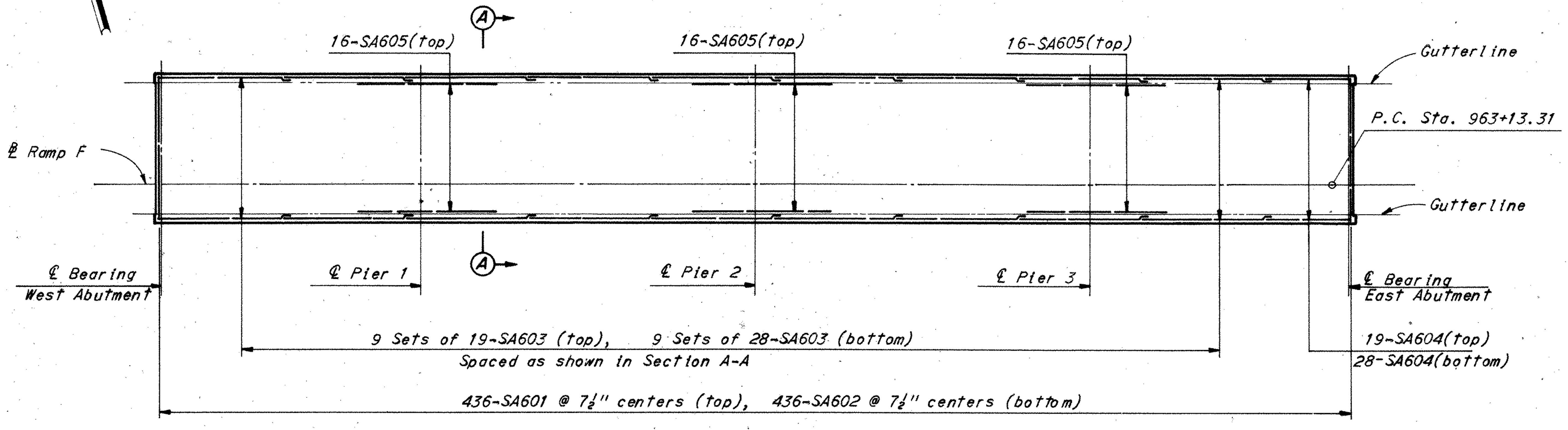
*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.18 of the Construction and Materials Specifications.



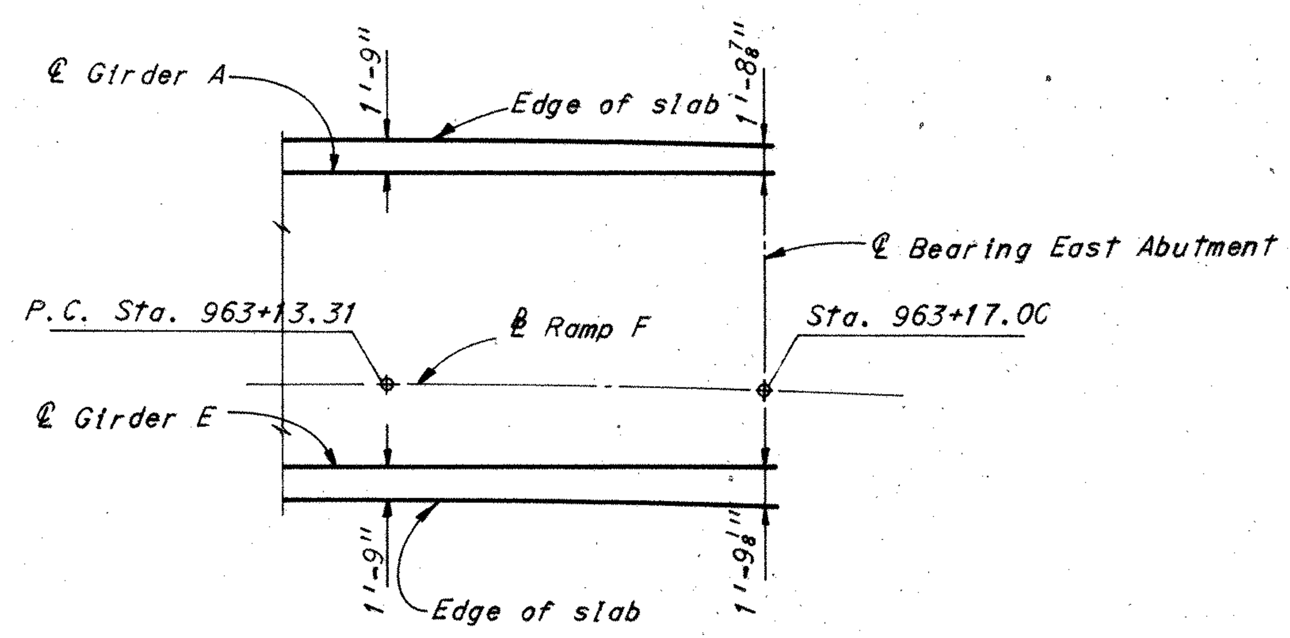
SECTION A-A



NORTH AND SOUTH PARAPET ELEVATION



DECK PLAN



HORIZONTAL OFFSETS TO EDGE OF SLAB

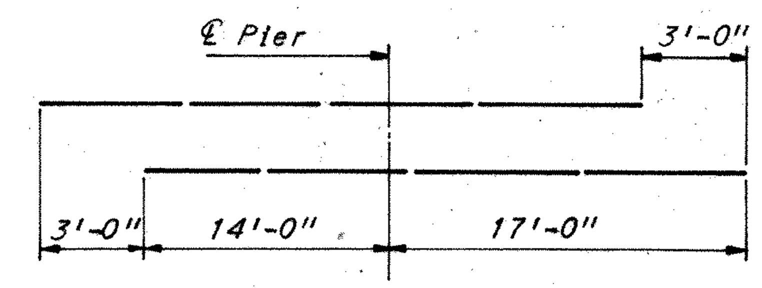
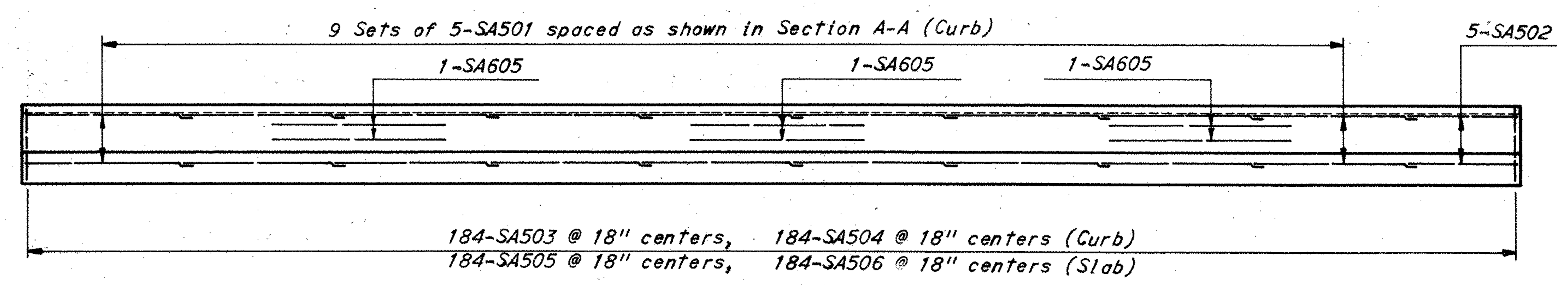
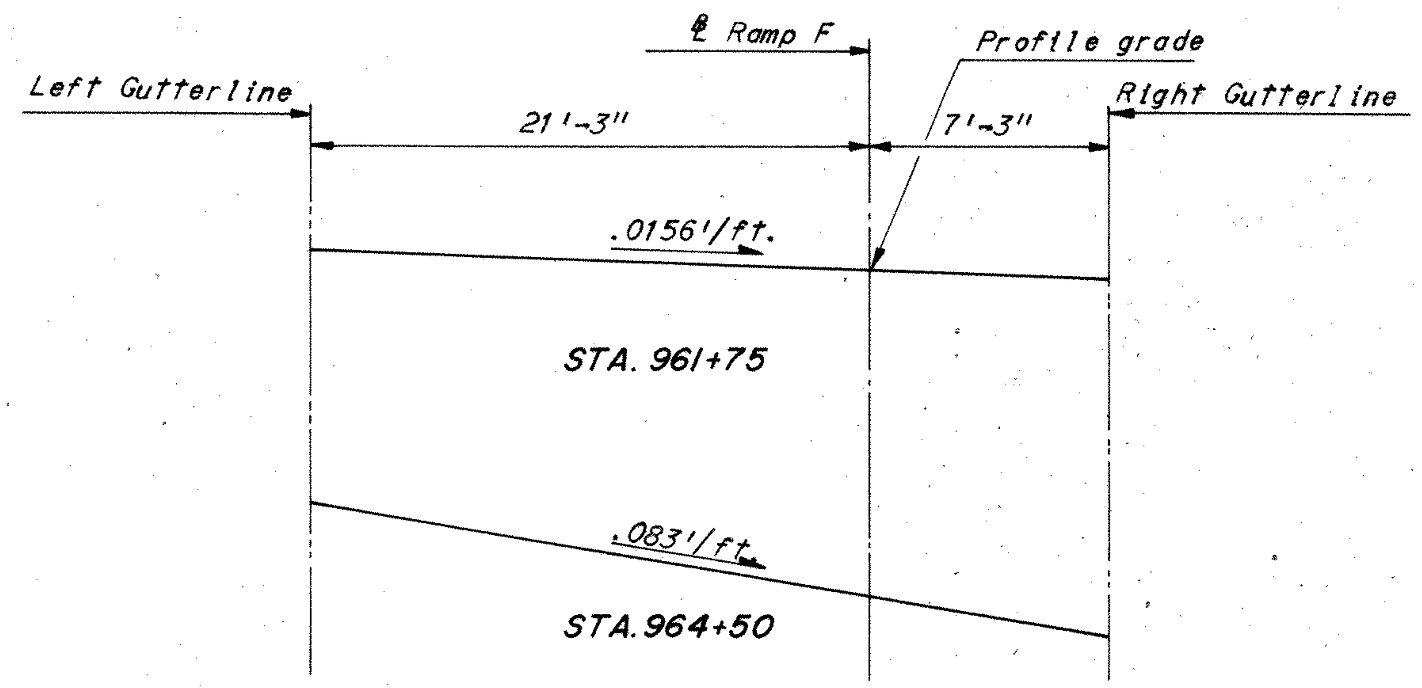


DIAGRAM SHOWING STAGGER OF SA605 BARS OVER PIERS

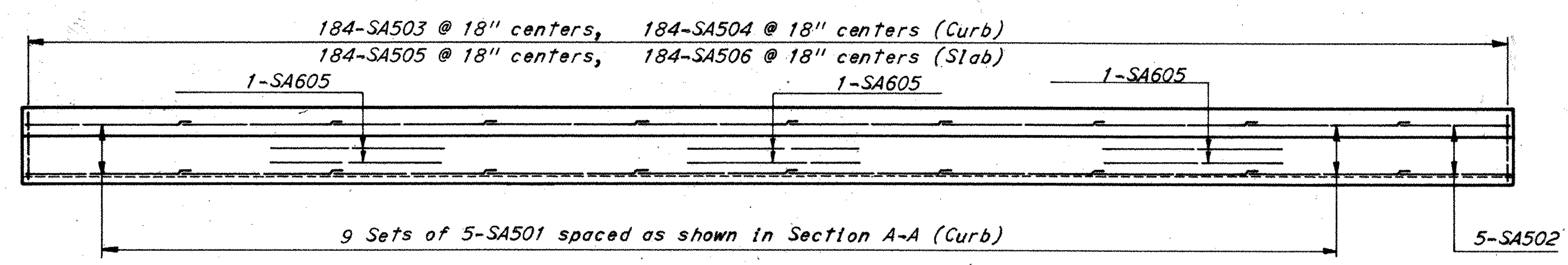


NORTH CURB PLAN



SUPERELEVATION TRANSITION SCHEME

Notes:
Reinforcing steel shall be adjusted as required to clear scuppers.
A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.
For curb and parapet dimensions see Sheet 359.
For deflection joint details see Sheet 361.
For reinforcement schedule see Sheet 6/6
For subdrainage details see Sheet 365A.



SOUTH CURB PLAN

H.N.T.B. BRIDGE NO. 6 — Revised 5-23-75 By CKB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 5/6
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DECK PLAN

RAMP F OVER PENN. R.R.
BR. NO. STA. 30-1486 — STA. 960 + 43.75
SCALE: NONE — STA. 963 + 19.25

RELOCATED U.S. 30
CANTON — STARK COUNTY — OHIO

DRAWN D.W.B	TRACED	CHECKED B.M.	REVIEWED MJK	REVISED
DATE 7-14-69	DATE	DATE 3-20-70	DATE 11-22-71	1668

MICROFILMED
SEP 14 1983

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

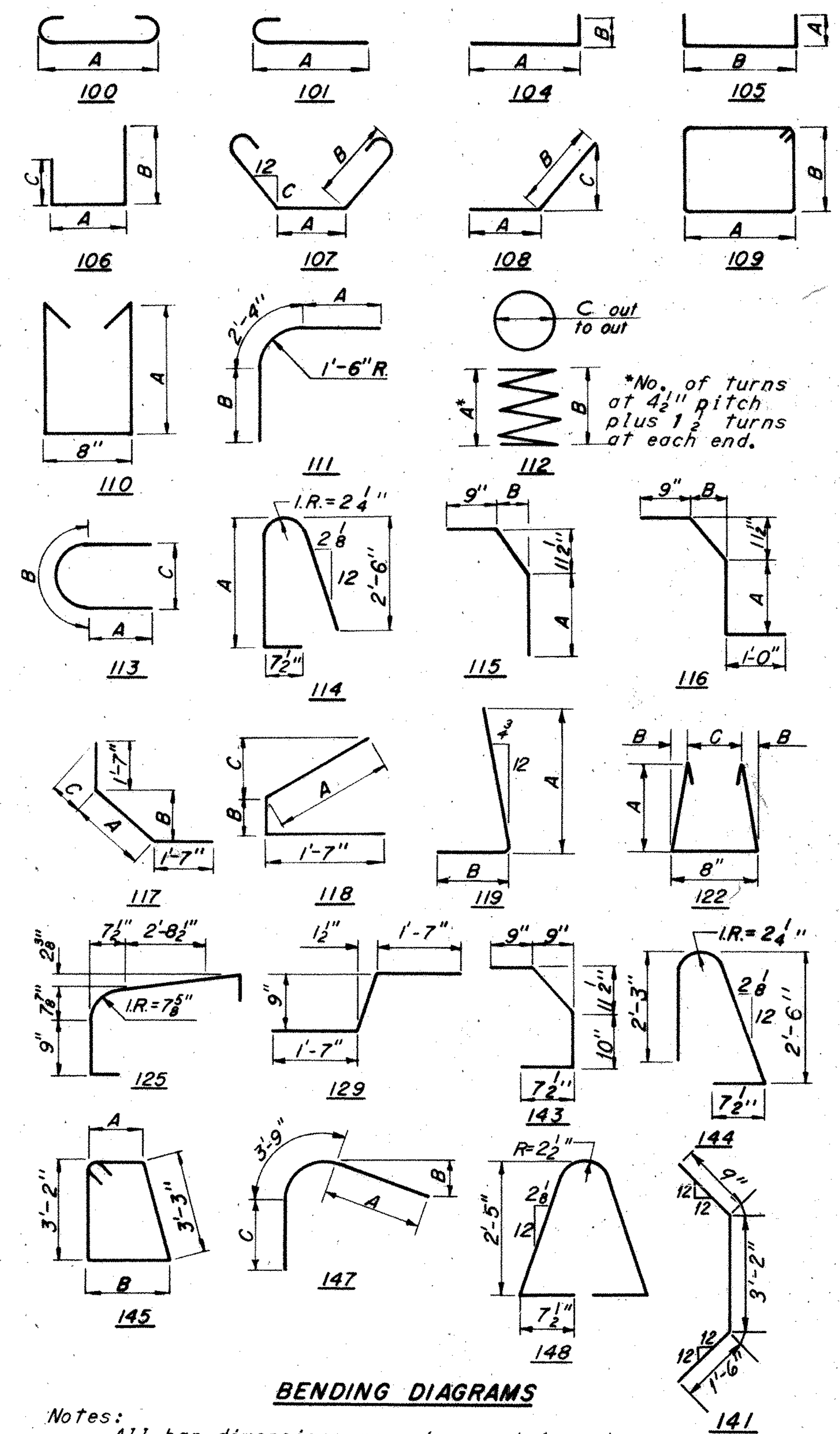
262
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
				EAST ABUTMENT				
AB401	30	3'-5"	105	1'-0"	1'-8"			68
AB501	20	8'-4"	105	1'-7"	5'-5"			174
AB502	12	11'-6"	109	3'-0"	2'-6"			144
AB503	20	7'-11"	104	1'-0"	7'-0"			165
AB504	20	9'-4"	105	3'-1"	3'-5"			195
AB505	17	31'-0"	Str.					550
AB506	24	3'-11"	104	2'-0"	2'-0"			98
AB507	24	6'-8"	108	5'-3"	1'-5"	1'-0"		167
AB508	9	8'-6"	Str.					80
AB509	9	6' 5'-6"	Str.					52 61
AB510	12	6'-9"	Str.					84
AB511	2	6'-0"	Str.					13
AB512	4	14'-3"	108	7'-9"	6'-6"	3'-0"		60
AB513	2	5'-9"	Str.					12
AB514	2	5'-0"	Str.					11
AB515	2	4'-3"	Str.					9
AB516	4	4'-0"	Str.					17
AB517	4	7'-0"	Str.					29
AB518	24	14'-6"	Str.					363
AB519	4	9'-6"	Str.					40
AB520	4	10'-3"	Str.					43
AB521	14	6'-9"	114	3'-1"				99
AB522	20	2'-6"	Str.					52
AB523	24	2'-3"	105	9"	1'-0"			56
AB601	20	14'-10"	106	5'-5"	7'-0"	2'-8"		445
AB602	2	16'-4 11"	109	5'-5"	2'-6 8"			49 51
AB603	29	12'-3"	105	5'-7"	1'-5"			534
AB605	29	5'-8"	105	2'-6"	11"			247
AB606	29	4'-2"	105	1'-6"	1'-5"			182
AB607	1	14'-11"	105	7'-0"	1'-2"			22
AB608	1	17'-11"	105	8'-6"	1'-2"			27
AB609	6	19'-1"	105	9'-1"	1'-2"			172
AB610	6	22'-1"	105	10'-7"	1'-2"			198
AB611	12	8'-2"	115	6'-2"	9"			147
AB612	2	7'-8"	115	5'-8"	9"			23
AB701	4	4'-10"	115	3'-1"	9"			40
AB702	2	5'-1"	115	3'-4"	9"			21
AB703	2	5'-11"	115	4'-2"	9"			24
AB704	2	6'-8"	115	4'-11"	9"			27
AB801	7	33'-0"	Str					615
AB802	12	8'-0"	Str					256
D801	21	5'-3"	141					294
							TOTAL	5,904 15
				PIER 1				
SPA401	1	705'-10"	112	85.5	31'-1"	2'-8"		572
SPA402	1	702'-6"	112	85.1	30'-11"	2'-8"		570
SPA403	1	699'-3"	112	84.7	30'-9"	2'-8"		566
PA501	26	4'-5"	105	1'-0"	2'-8"			120

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PA502	2	3'-11"	105	1'-0"	2'-2"			8
PA503	2	2'-9"	105	1'-0"	1'-0"			6
PA504	16	12'-2"	109	2'-8"	3'-2"			204
PA601	4	28'-3"	Str.					170
PA602	6 8	8'-0"	113	1'-11"	4'-2"	2'-8"		72 96
PA701	60	10'-2"	100	8'-6"				1,248
PA1001	2	28'-3"	Str.					244
PA1002	2	35'-2"	105	2'-9"	30'-3"			300
PA1003	3	30'-3"	Str.					390
PA1004	8	34'-3"	Str.					1,178
PA1005	8	34'-0"	Str.					1,170
PA1006	8	33'-9"	Str.					1,166
PA1007	24	7'-3"	104	6'-3"	1'-3"			750
PA1008	2	33'-2"	105	2'-9"	28'-3"			286
						TOTAL		9020 44
				PIER 2				
SPB401	1	704'-2"	112	85.3	31'-0"	2'-8"		570
SPB402	1	700'-10"	112	84.9	30'-10"	2'-8"		566
SPB403	1	696'-9"	112	84.4	30'-8"	2'-8"		553
PB501	26	4'-5"	105	1'-0"	2'-8"			120
PB502	2	3'-11"	105	1'-0"	2'-2"			8
PB503	2	2'-9"	105	1'-0"	1'-0"			6
PB504	16	12'-2"	109	2'-8"	3'-2"			202
PB601	4	28'-3"	Str.					170
PB602	6 8	8'-0"	113	1'-11"	4'-2"	2'-8"		96 72
PB801	30	12'-8"	100	10'-6"				1010
PB901	30	13'-0"	100	10'-6"				1,330
PB1001	2	28'-3"	Str.					243
PB1002	2	35'-2"	105	2'-9"	30'-3"			302
PB1003	3	30'-3"	Str.					390
PB1004	14	34'-3"	Str.					2060
PB1005	14	34'-0"	Str.					2043
PB1006	14	33'-9"	Str.					2040
PB1007	42	7'-3"	104	6'-3"	1'-3"			1,310
PB1008	2	33'-2"	105	2'-9"	28'-3"			285
						TOTAL		314 13,290

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
				PIER 3				
SPC401	1	704'-2"	112	85.3	31'-0"	2'-8"		570
SPC402	1	695'-1"	112	84.2	30'-7"	2'-8"		562
SPC403	1	686'-0"	112	83.1	30'-2"	2'-8"		555
PC501	26	4'-5"	105	1'-0"	2'-8"			120
PC502	2	3'-11"	105	1'-0"	2'-2"			8
PC503	2	3'-3" 2'-9	105	1'-0"	1'-0"			7
PC504	16	12'-2"	109	2'-8"	3'-2"			202
PC601	4	28'-3"	Str.					169
PC602	6 8	8'-0"	113	1'-11"	4'-2"	2'-8"		96 72
PC701	60	10'-2"	100	8'-6"				1,250
PC1001	2	28'-3"	Str.					243
PC1002	2	35'-2"	105	2'-9"	30'-3"			302
PC1003	3	30'-3"	Str.					390
PC1004	8	34'-3"	Str.					1,180
PC1005	8	33'-9"	Str.					1,168
PC1006	8	33'-3"	Str.					1,147
PC1007	24	7'-3"	104	6'-3"	1'-3"			750
PC1008	2	33'-2"	105	2'-9"	28'-3"			285
							TOTAL	8980 9004
				DECK				
SA501	90	30'-0"	Str.					2812
SA502	10	19'-0" 16'-6"	Str.					188 172
SA503	368	5'-10"	144					2,239
SA504	368	2'-3"	105	7½"	1'-3"			864
SA505	368	2'-5"	104	7½"	1'-11"			928
SA506	368	3'-8"	143					1,407
RR507	48	7'-0"	Str.					350
RR508	24	15'-0"	Str.					376
RR509	24	14'-6"	Str.					363
SA601	436	32'-10"	100	31'-6"				21,500
SA602	436	31'-6"	Str.					20,650
SA603	423	30'-0"	Str.					19,050
SA604	47	19'-6"	Str.					1,375
SA605	60	31'-0"	Str.					2,790
							TOTAL	74,902



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For replacement reinforcement schedule see Sheet 256.
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 6 — Revised 5-23-75 By CKB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 6 / 6

REINFORCEMENT SCHEDULE

RAMP F OVER PENN. R.R.

BR. NO. STA. 30-1486 — STA. 960 + 43.75, STA. 963 + 19.25
SCALE:

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

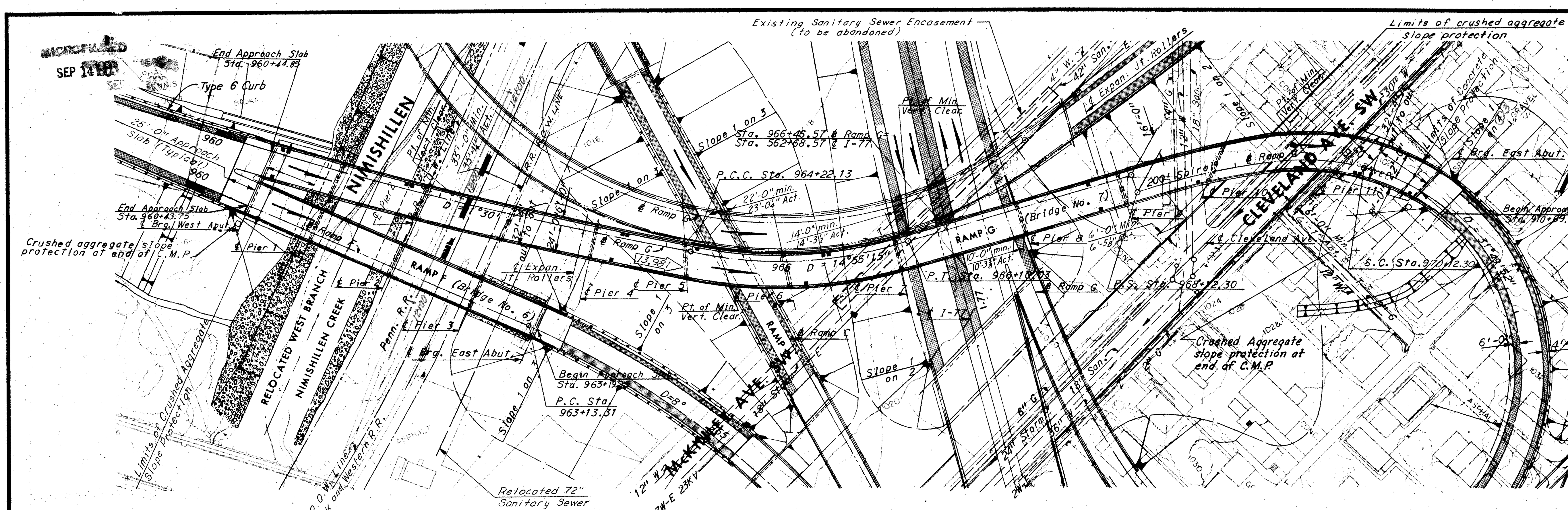
DRAWN D.G.S. DATE 6-2-70 | TRACED DATE | CHECKED D.W.B. DATE 7-2-70 | REVIEWED M.T.H. DATE 11-23-71 | REVISED | 1668

Revised 4-28-77

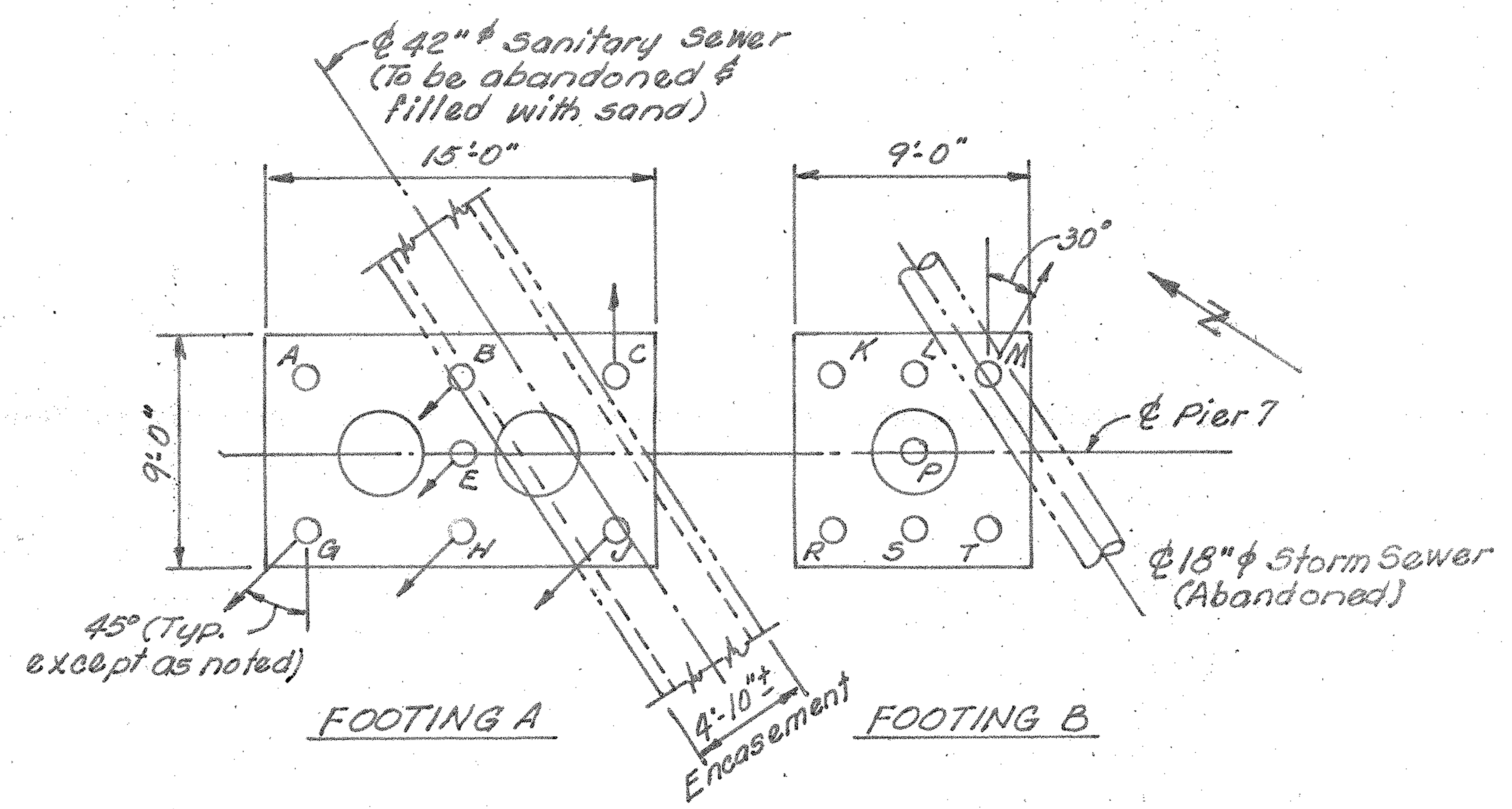
FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO		

263
389

STARK COUNTY
STA-30-14.12
STA-77-9.22



PLAN



FOOTING PILE PLAN - PIER-7

For details not shown see sheet 272
All piles are 12"⌀C.I.P.
Battered piles are inclined 3 in 12 in direction shown.

HORIZONTAL CURVE DATA - RAMP G

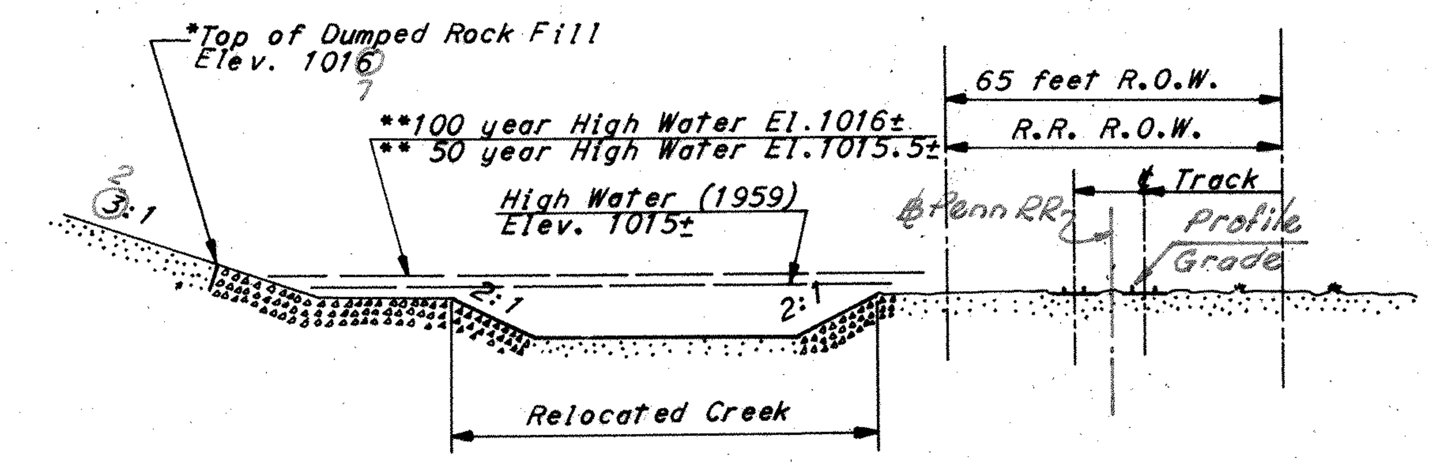
P.C. Sta. 955+86.26
D = 1°30'00.0"
Δ = 12°32'16.8" Lt.
R = 3819.719
T = 419.609
L = 835.867

P.C.C. Sta. 964+22.13
P.T. Sta. 966+10.03
D = 14°55'14.8"
Δ = 28°02'08.3" Lt.
R = 384.000
T = 95.869
L = 187.897

T.S. Sta. 968+12.301
Δ = 31°49'51.6" Rt.
θs = 31°49'51.6"
Ls = 200.000
Ts = 135.555

S.C. Sta. 970+12.301
D = 31°49'51.6"
Δ = 194°52'18.7" Rt.
R = 180.000
T = 1379.151
L = 612.208

*To be paid for under "Rock Channel Protection, Type A with bedding." See Roadway Plans.



SECTION THRU WEST BRANCH NIMISHILLEN CREEK

FLOOD DISCHARGE
WEST BRANCH NIMISHILLEN CREEK AT NAVARRE ROAD BRIDGE

Occurance Interval (Years)	5	10	20	50	100
* Discharge Q (c.f.s.)	1360	1680	2010	2520	3000

* Taken from Table 5, "Flood Discharge-Frequency Relationship", page TA-23, "Flood Plain Study-Main Report", Corps of Engineers, Feb. 1967.
** Taken 2,000 feet above mouth as shown on Exhibit No. 4 and Exhibit No. 12, "Flood Plain Study-Main Report", Corps of Engineers, Feb. 1967.

PROPOSED STRUCTURE - RAMP G

Type: Continuous Welded Curved Girders with Reinforced Concrete Slab.
Spans: 59.49', 77.33', 78.17', 74.20', 79.69', 91.31', 91.58', 112.12', 91.49', 79.90', 107.10', and 78.00' measured along ℄ Ramp G
Roadway: 30'-0" face to face of parapets
Loading: HS 20-44
Skew: Varies
Wearing Surface: 1½" Asphalt Concrete
Approach Slabs: AS-1-72 (25' Long) (Modified)
Alignment: 1°30' Curve Lt. to 14°55'15" Curve Lt. to 200' Tangent Spiral Rt. on ℄ Ramp G

Modify Std. Drwg. AS-1-72 by providing 3" clear over the top rebars instead of the 2" shown on the Std. Drwg. The jacking holes as called for on Std. Drwg. AS-1-72 are not required.

EXISTING UTILITY LEGEND

4"G	GAS
4"W	WATER
16" Storm	STORM SEWER
8" San	SANITARY SEWER
T	TELEPHONE
E	POWER LINES
4W-E4KV	4 WIRE, PRIMARY 4 KILOVOLT
3W-E₃	3 WIRE, SECONDARY
♉	WATER HYDRANT
o	MANHOLE
□	CATCH BASIN

Notes:

The following items are not included in the bridge plans. See roadway plans for details:
1. Relocation or removal of existing utilities.
2. Approach grading, pavements and slabs.
3. Guardrails

13,981 Denotes one way 1987 average daily traffic.

Earthwork limits shown are schematic. Actual slopes shall conform to plan cross-sections.

● Denotes standard scupper

Construction of Piers 7 and 8 footings for Ramp G will require removal and replacement of a portion of the paved shoulder along I-77 and Ramp G. To be paid for with Footing concrete Item 511.

For information not shown on this sheet see General Plan of each Unit.

For lighting details see Lighting Plans.

For Estimated Quantities, see Sheet 365B.

H.N.T.B. BRIDGE NO. 7 — Revised 6-5-75 By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 1/21

SITE PLAN
RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488 — STA. 960+44.85
SCALE: 1" = 50'-0" — STA. 970+69.80

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DOL		DGS	MJH	
DATE 12-10-69	DATE	DATE 6-17-70	DATE 11-22-71	1668

Revised 4-28-77

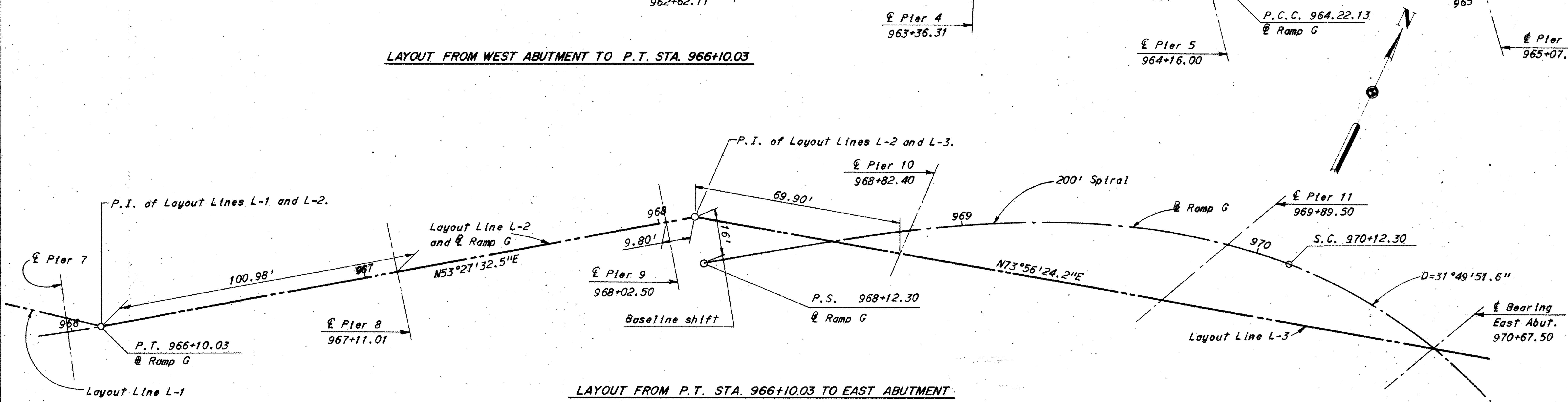
SEP 14 1969

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

264
389

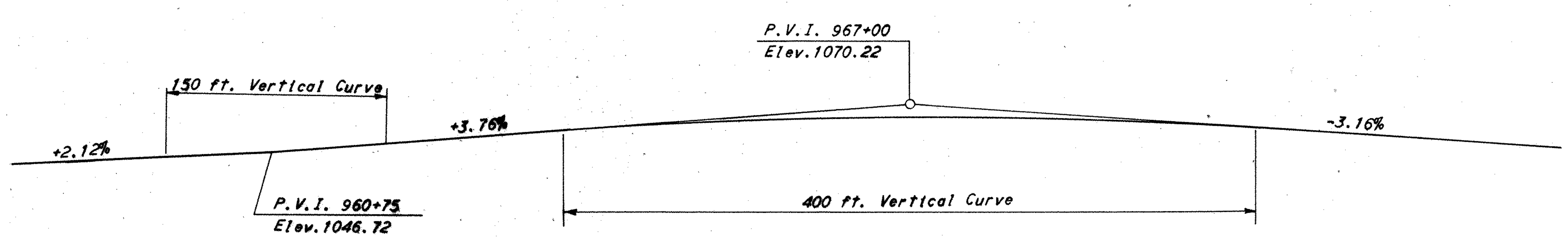
STARK COUNTY
STA-30-14.12
STA-77-9.22

LAYOUT FROM WEST ABUTMENT TO P.T. STA. 966+10.03

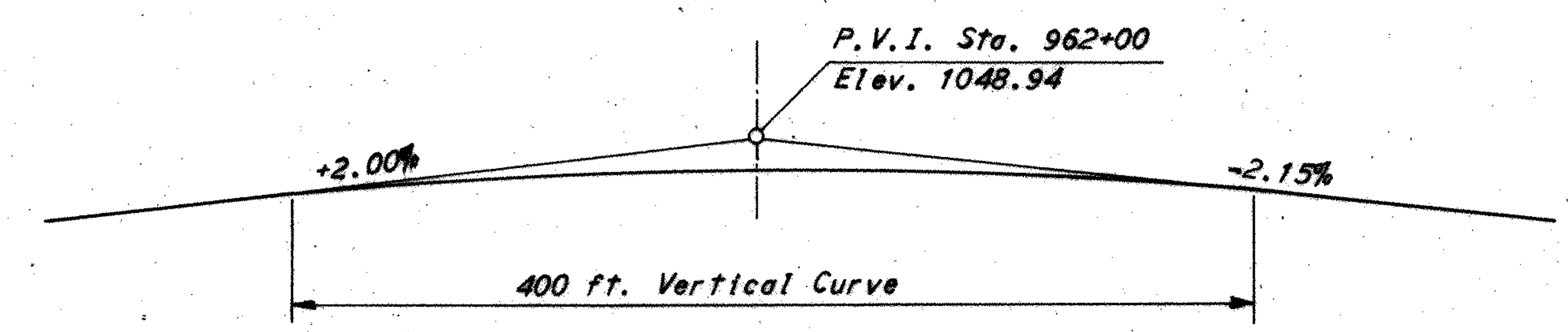


LAYOUT FROM P.T. STA. 966+10.03 TO EAST ABUTMENT

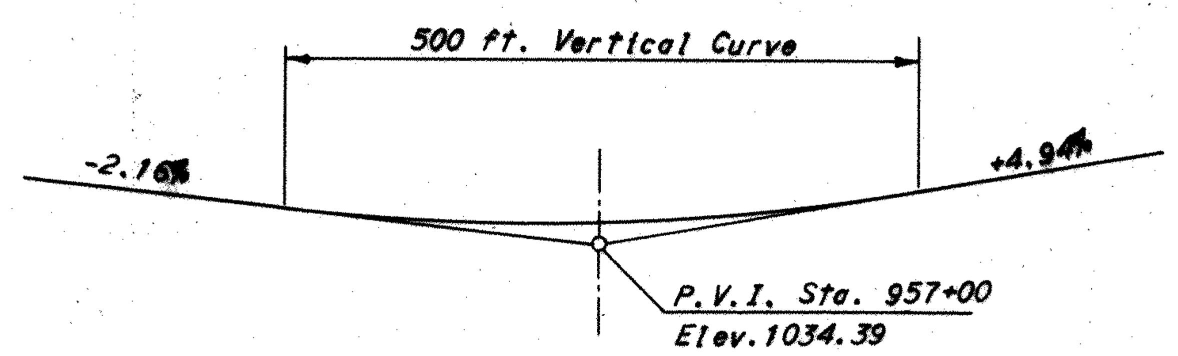
LAYOUT DIMENSIONS			
	"A"	"B"	ANGLE "C"
W. Abut.	0	0	74°42'38.9"
Pier 1	61.16'	8.51'	74°42'38.9"
Pier 2	79.31'	18.14'	74°42'38.9"
Pier 3	79.92'	26.25'	74°42'38.9"
Pier 4	66.94'	31.26'	90°10'21.6"
Pier 5	69.10'	37.55'	106°17'43.9"
Pier 6	91.06'	32.71'	108°36'38.1"
Pier 7	96.10'	4.95'	111°20'37.6"
Pier 8	—	0	91°08'54.4"
Pier 9	91.49'	0	90°00'00.0"
Pier 10	—	8.26'	76°38'11.3"
Pier 11	88.72'	28.93'	49°37'17.7"
E. Abut	92.94'	0	49°37'17.7"



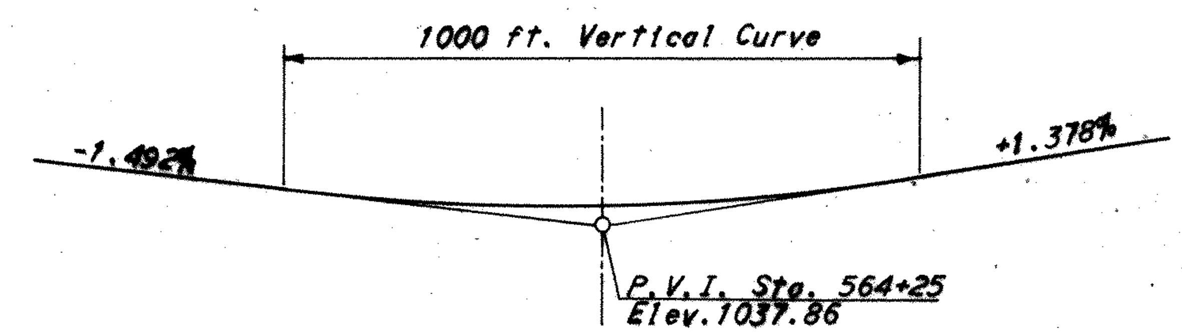
PROFILE GRADE - RAMP G



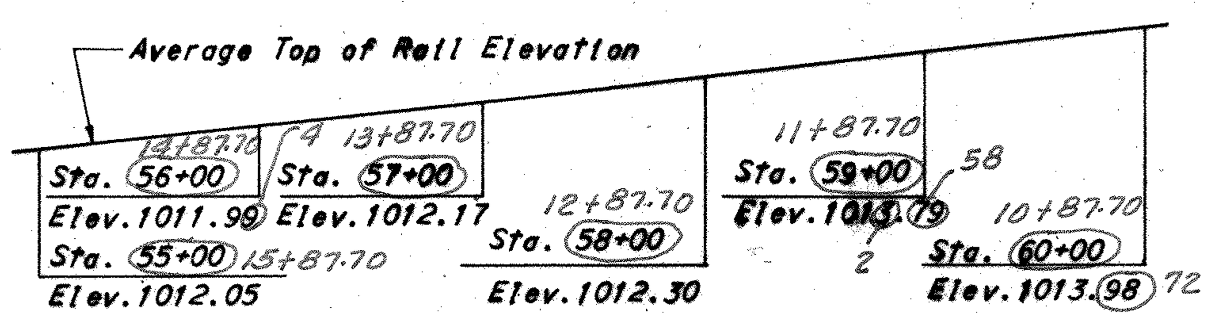
PROFILE GRADE - RAMP F



PROFILE GRADE - RAMP C



PROFILE GRADE - I-77



PROFILE GRADE-PENNSYLVANIA RAILROAD

(see sheet 1/21)

H.N.T.B. BRIDGE NO. 7

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

2/21

LAYOUT DATA

RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488 STA. 960 + 44.85
SCALE: 1" = 20'-0" STA. 970 + 69.80

RELOCATED U.S. 30

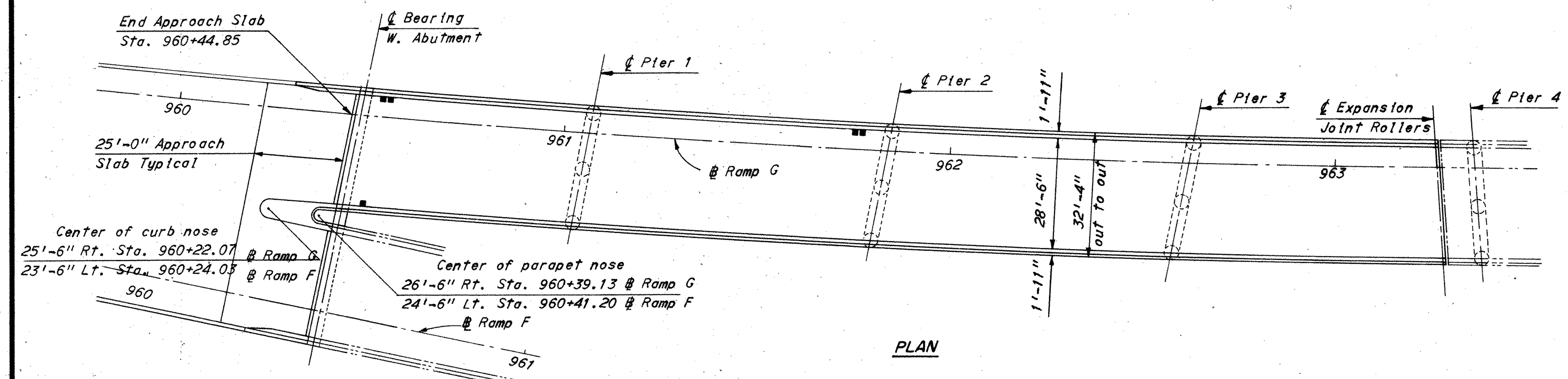
CANTON STARK COUNTY OHIO

DRAWN RAP	TRACED	CHECKED DGS.	REVIEWED MJK	REVISED
DATE 11-21-69	DATE	DATE 3-10-70	DATE 11-22-71	1668

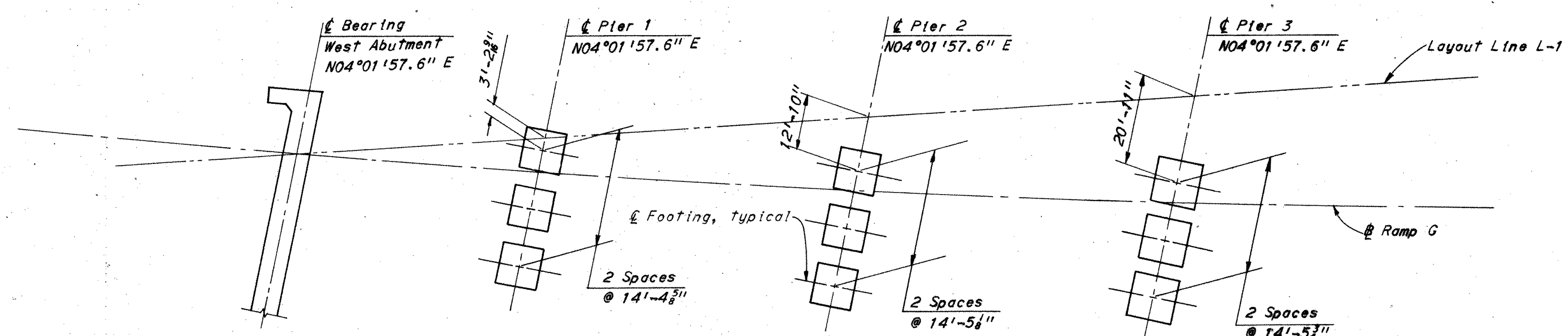
Revised 4-28-77

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

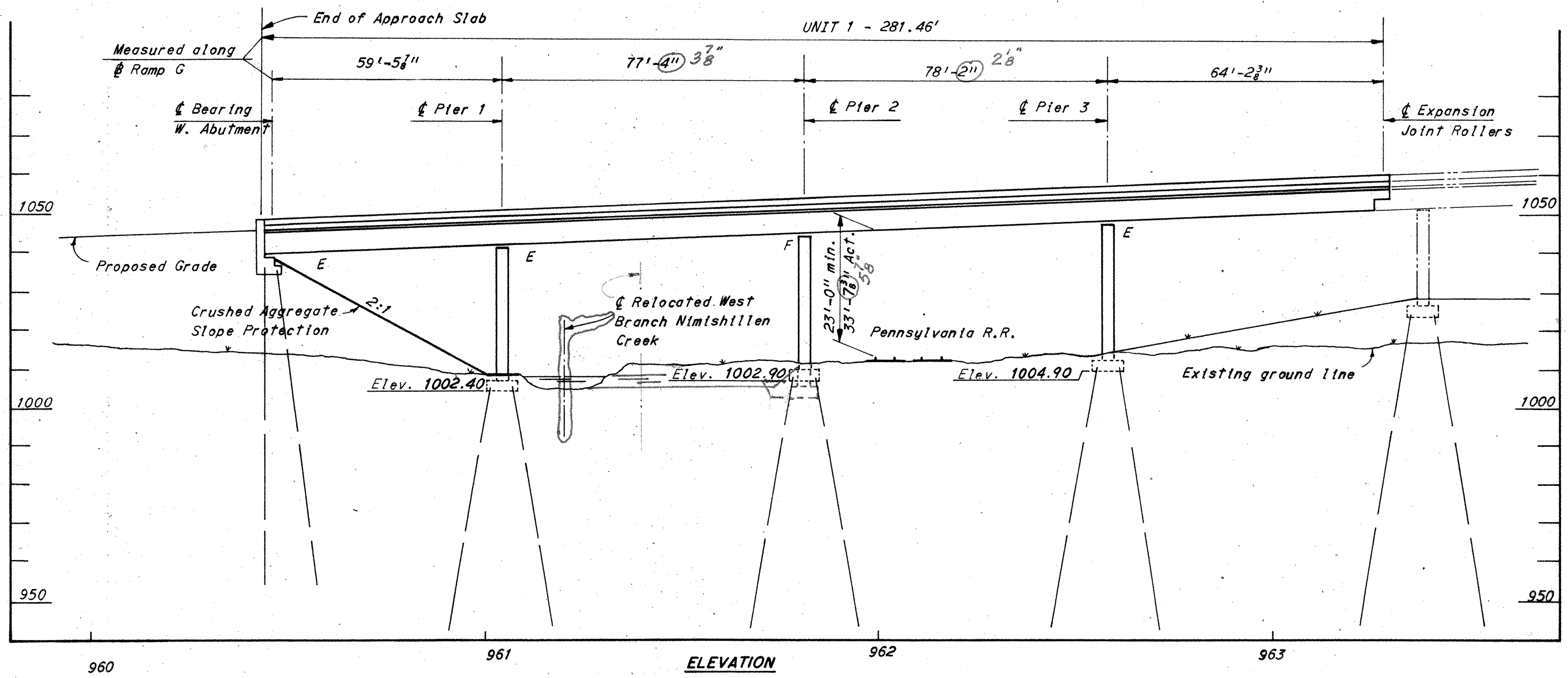
STARK COUNTY
STA-30-14.12
STA-77-9.22



PLAN



FOOTING LAYOUT



ELEVATION

ESTIMATED AVERAGE PAY LENGTHS FOR PILING	
West Abutment	80'
Pier 1	70'
Pier 2	70'
Pier 3	70'

These estimates are based on boring data and are approximate only. The contractor shall assume full responsibility for the length of piling selected for driving.

Notes:
For profile grade of Ramp G see Sheet 2/21
For details of Piers 1, 2, and 3 see Sheet 9/21
For details of West Abutment see Sheets 6/21 and 7/21
■ Denotes Standard Scupper
All piles shall be 12" ϕ cast-in-place concrete.
For lighting details see Lighting Plans.

For Layout Line see Sheet 2/21
For details of nose at West Abutment see Highway Plans.
The embankments shall be constructed to the level of the subgrade for a minimum distance of 200 feet back of the abutments. Excavation shall then be made for the abutments and for pier 1.
All earthwork in the area of the existing channel shall be completed before construction of pier 1.

H.N.T.B. BRIDGE NO. 7 | Revised 6-2-75 By W.E.B.

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

3/21

GENERAL PLAN—UNIT I

RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488 STA. 960 + 44.85
SCALE: 1" = 20'-0" STA. 970 + 69.80

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

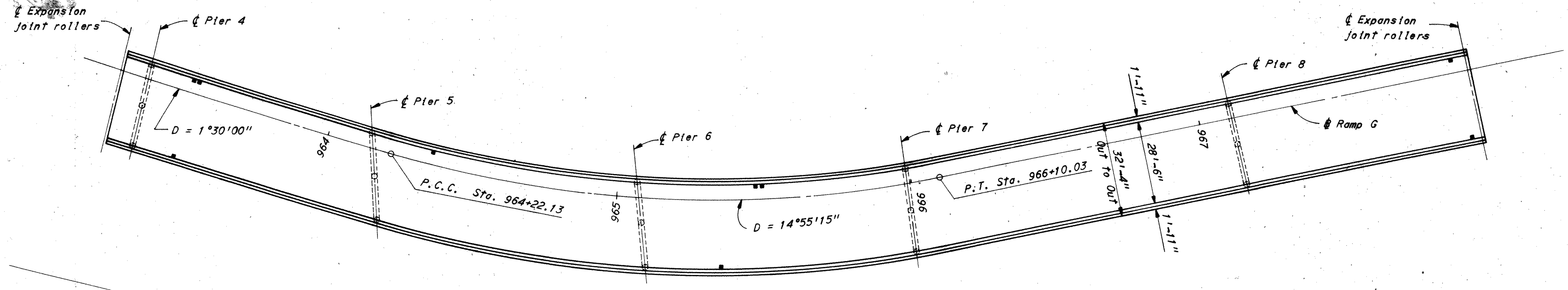
DRAWN RAP	TRACED	CHECKED DGS	REVIEWED MJK	REVISED
DATE 11-4-69	DATE	DATE 6-18-70	DATE 11-22-71	1668

Revised 4-28-77

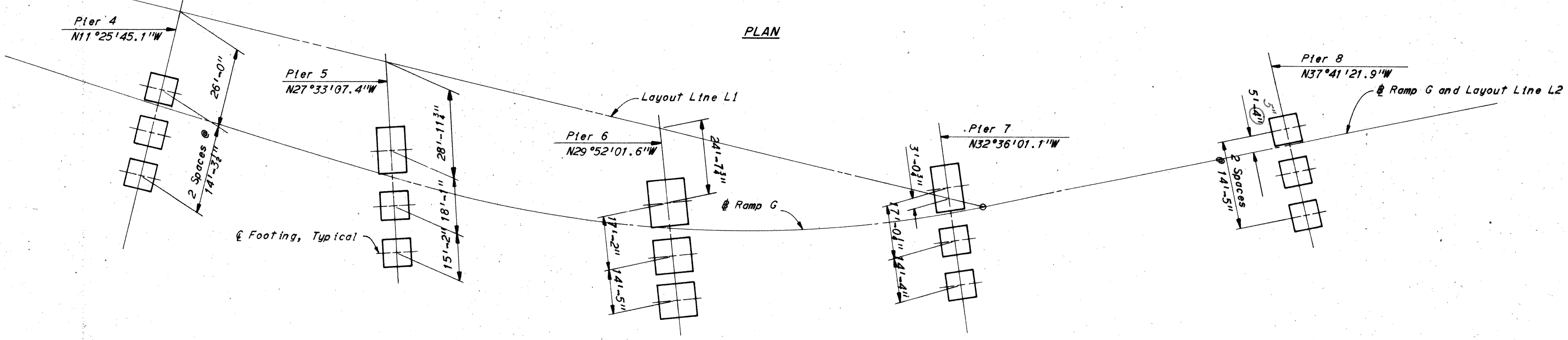
FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO		

266 / 389

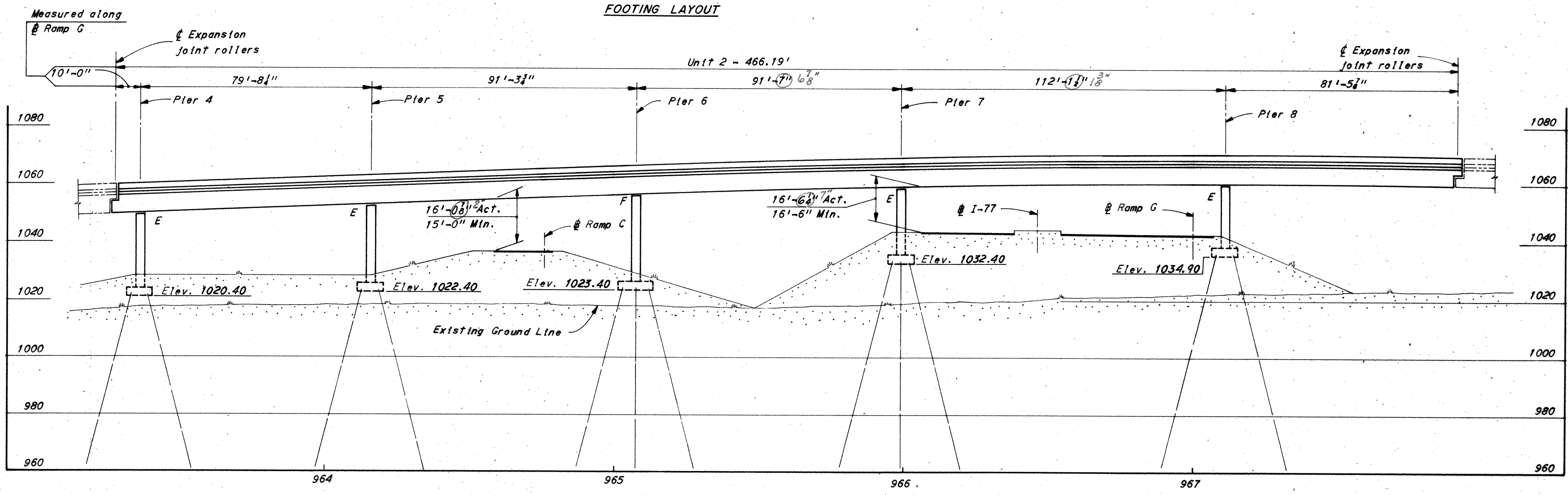
STARK COUNTY
STA-30-14.12
STA-77-9.22



PLAN



FOOTING LAYOUT



DEVELOPED ELEVATION

ESTIMATED AVERAGE PAY LENGTHS FOR PILING	
Pier 4	70'
Pier 5	70'
Pier 6	70'
Pier 7	70'
Pier 8	70'

These estimates are based on boring data and are approximate only. The contractor shall assume full responsibility for length of piling selected for driving.

Notes:

For profile grade of Ramp G see Sheet 2/21

■ Denotes Standard Scupper

All piles shall be 12" ϕ cast-in-place concrete.

For lighting details see Lighting Plans.

For layout lines see Sheet 2/21

For details of Pier 4 and Pier 8 see Sheet 9/21

For details of Piers 5, 6 and 7 see Sheet 10/21

H.N.T.B. BRIDGE NO. 7 — Revised 6-2-75 By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 4/21

GENERAL PLAN - UNIT 2
RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488 — STA. 960+44.85
SCALE: 1"=20'-0" — STA. 970+69.80

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

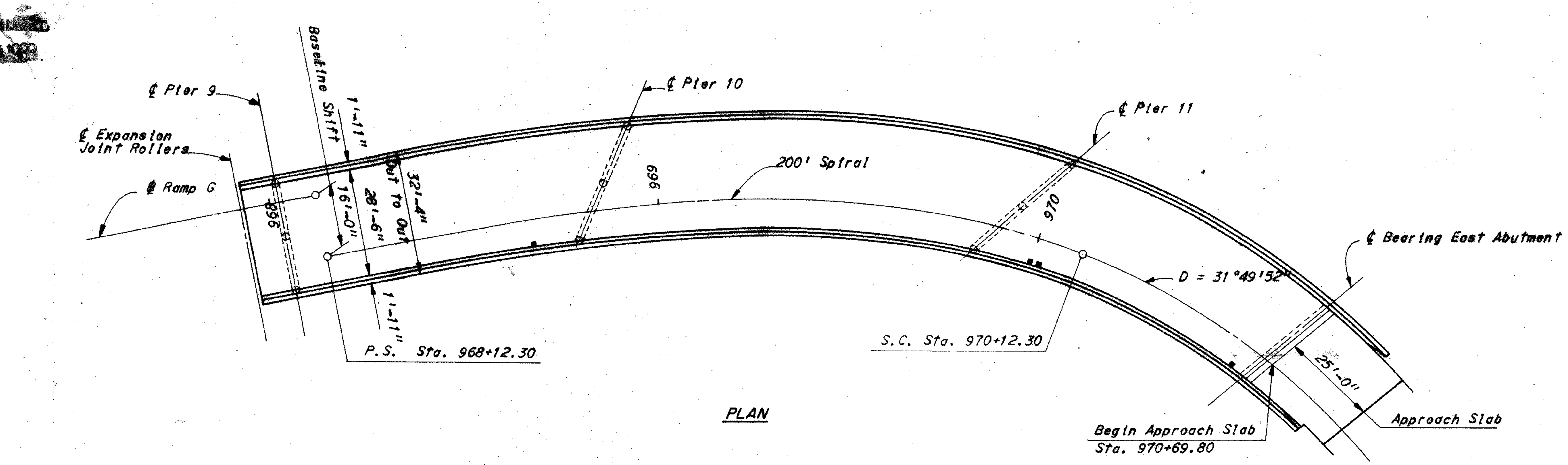
DRAWN L.D.L.	TRACED	CHECKED D.G.S.	REVIEWED MJK	REVISED
DATE 12-18-69	DATE	DATE 6-18-70	DATE 11-22-71	1668

Revised 4-28-77

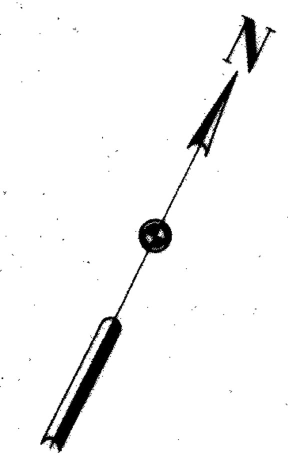
SEP 14

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	267 / 389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22

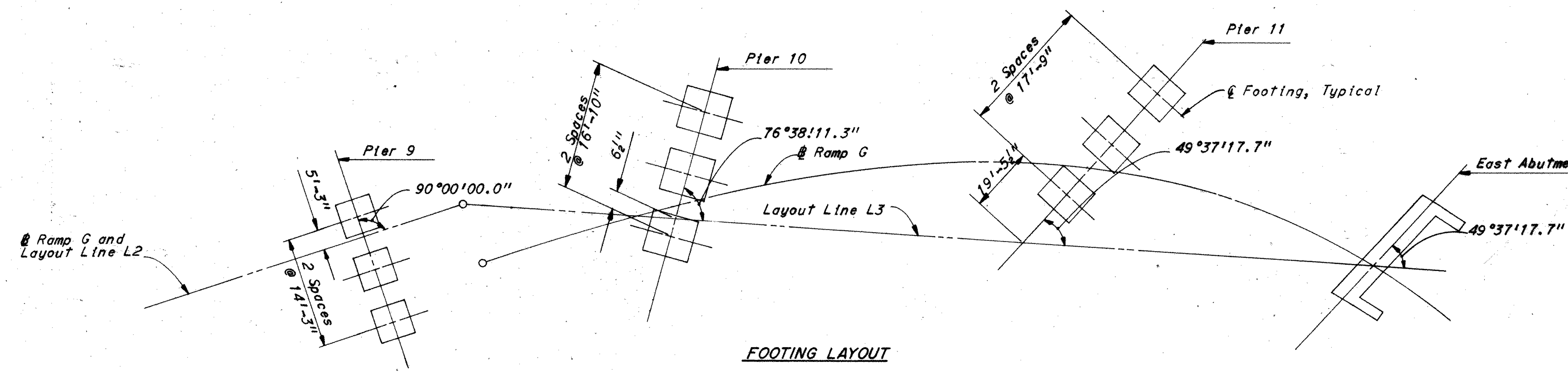


PLAN



ESTIMATED AVERAGE PAY LENGTHS FOR PILING	
Pier 9	60'
Pier 10	60'
Pier 11	50'
East Abutment	60'

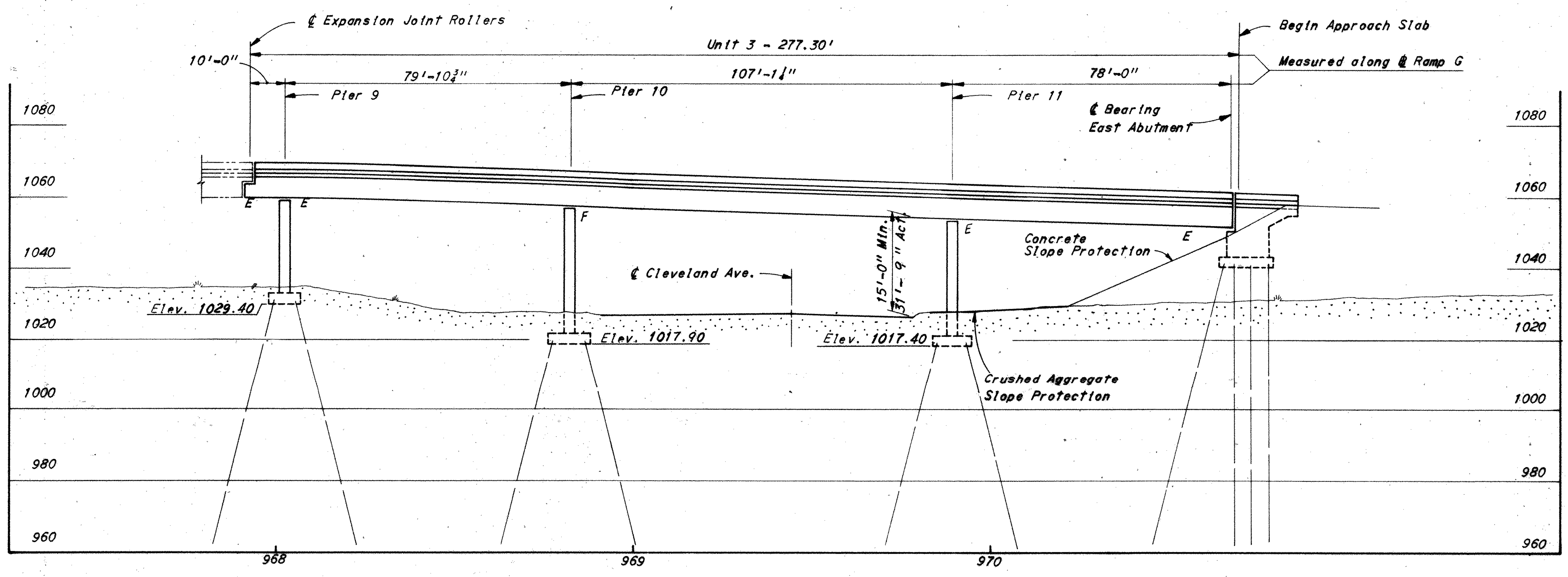
These estimates are based on boring data and are approximate only. The Contractor shall assume full responsibility for length of piling selected for driving.



FOOTING LAYOUT

Notes:

For profile grade of Ramp G see Sheet 2/21
■ Denotes Standard Scupper.
All piles shall be 12" ⌀ cast-in-place concrete.
For lighting details see Lighting Plans.
For layout lines see Sheet 2/21
For details of East Abutment see Sheet 8/21
For details of Piers 9, 10 and 11 see Sheet 11/21



DEVELOPED ELEVATION

H.N.T.B. BRIDGE NO. 7 | Revised 6-2-75 By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 5/21
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

GENERAL PLAN - UNIT 3

RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488 STA. 960 + 44.85
SCALE: 1" = 20'-0" STA. 970 + 69.80

RELOCATED U.S. 30

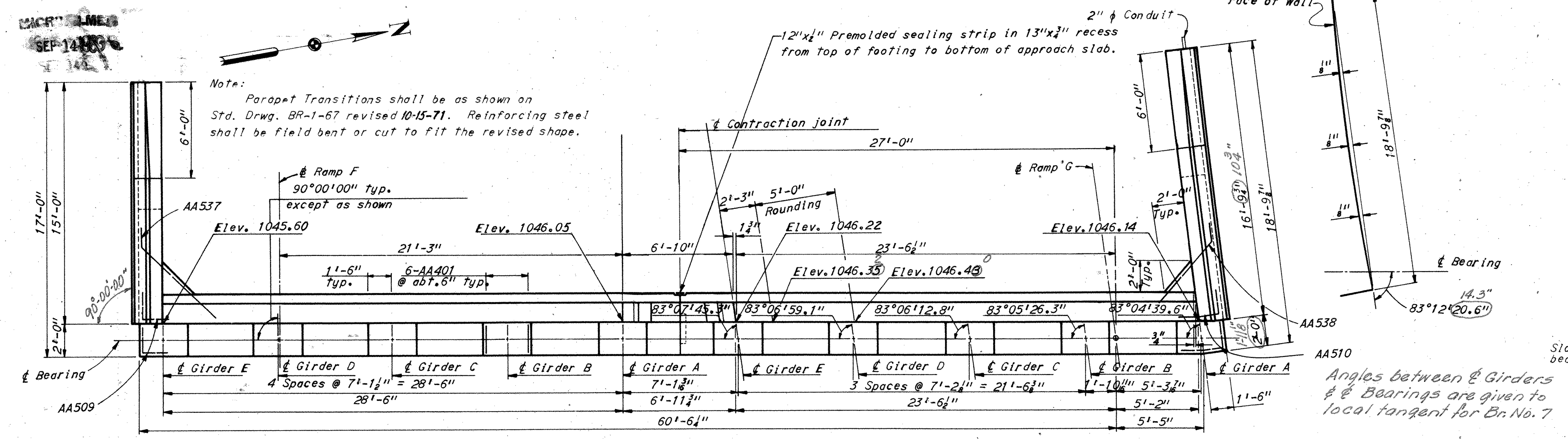
CANTON STARK COUNTY OHIO

DRAWN L.D.L.	TRACED	CHECKED D.G.S.	REVIEWED MJK	REVISED
DATE 1-7-70	DATE	DATE 6-18-70	DATE 11-22-71	1668

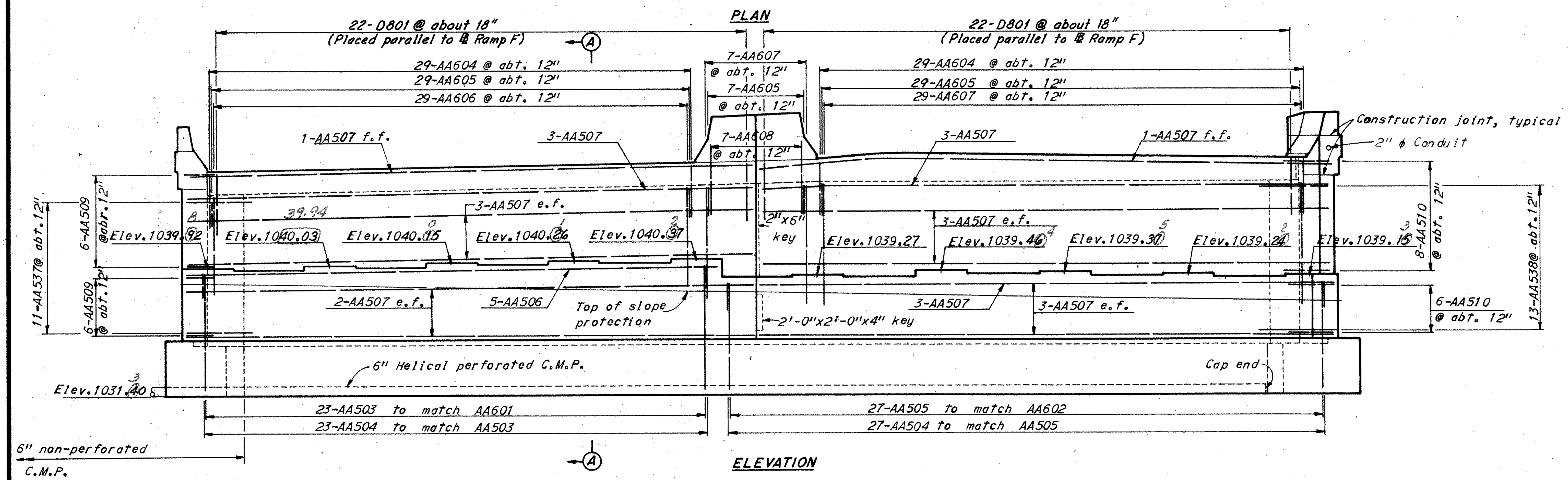
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			268 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

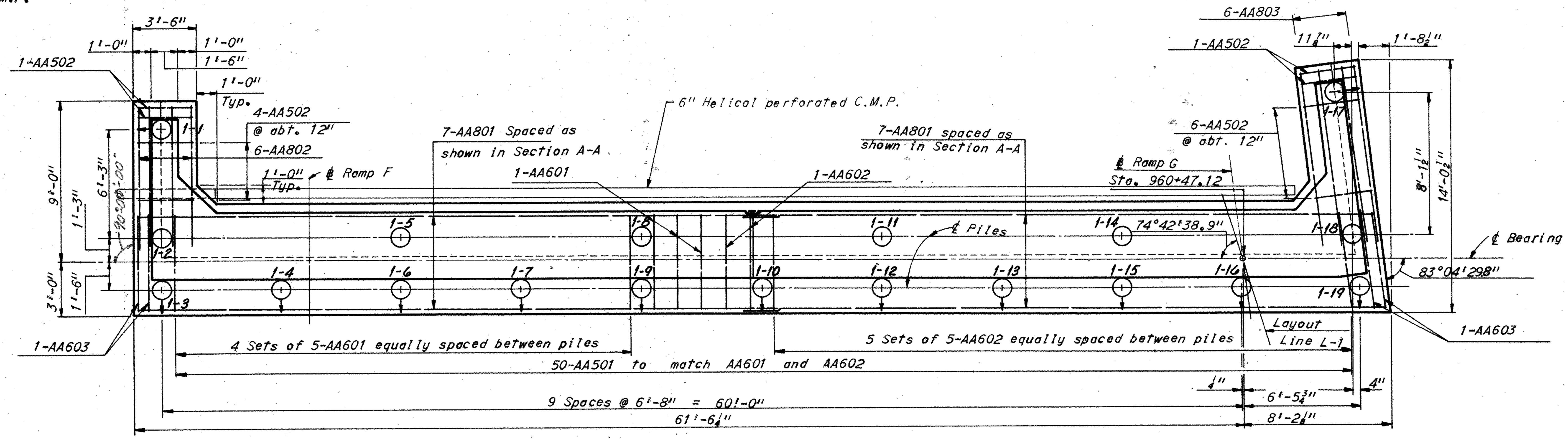
Note:
Parapet Transitions shall be as shown on Std. Drwg. BR-1-67 revised 10-15-71. Reinforcing steel shall be field bent or cut to fit the revised shape.



PLAN

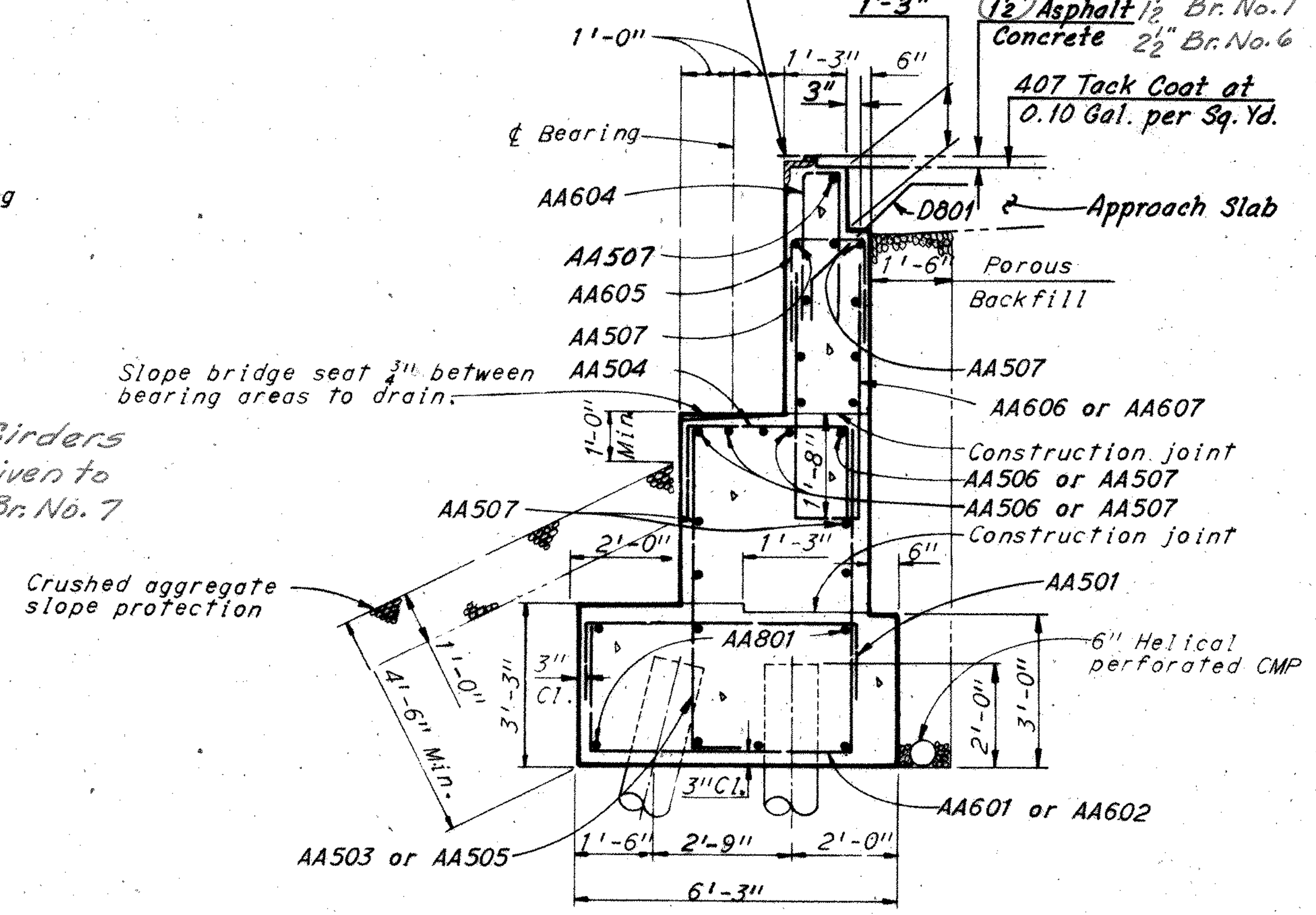


ELEVATION



FOOTING PLAN

Backwall Elevations are given at this point (¼" below top of asphalt concrete)



SECTION A-A
⅜"=1'-0"

Notes:

For roadway end dam details see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4, and Sheet 359.

AA401 bars shall be placed 2¼"± below top of bridge seat.

n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.

For reinforcement schedule see Sheet 18/21

For placement of conduit in wingwalls see Sheet 7/21

All battered piles are battered 3 in 12.

Pile dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

—○ Denotes battered piles and direction of batter.

For nose details see highway plans.

For ~~parapet~~ Wingwall details see Sheet 7/21

Only that portion of the C.M.P. located in the porous backfill shall be perforated.

For details of C.M.P. outlet at side slopes, see Sheet 359.

H.N.T.B. BRIDGE NO. 7 | Revised 6-3-75 By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK | 6/21

WEST ABUTMENT

RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488 — STA. 960 + 44.85
SCALE: 1/4" = 1'-0" — STA. 970 + 69.80

RELOCATED U.S. 30

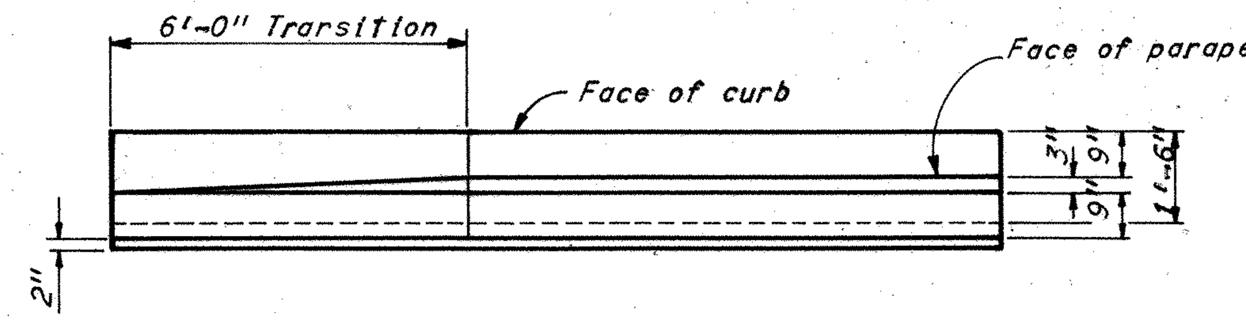
CANTON — STARK COUNTY — OHIO

DRAWN A.W.B.	TRACED	CHECKED B.M.	REVIEWED HJK	REVISED 3-2-76
DATE 10-28-69	DATE	DATE 1-6-70	DATE 11-22-71	1668

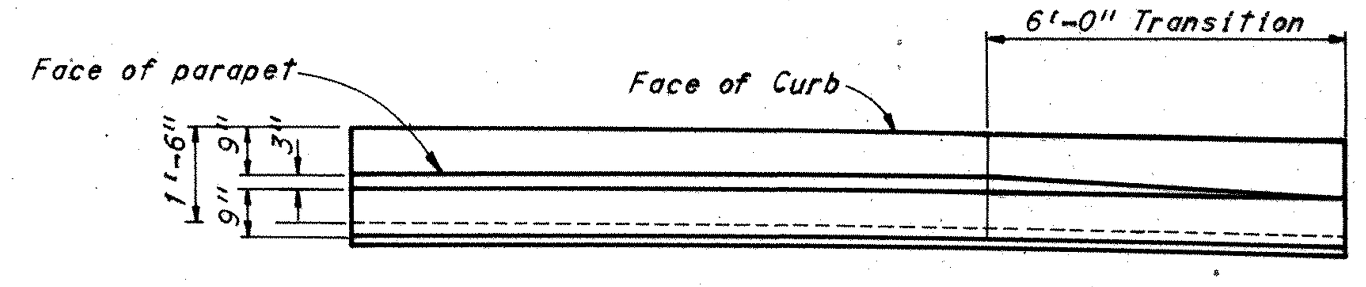
Revised 4-28-77

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

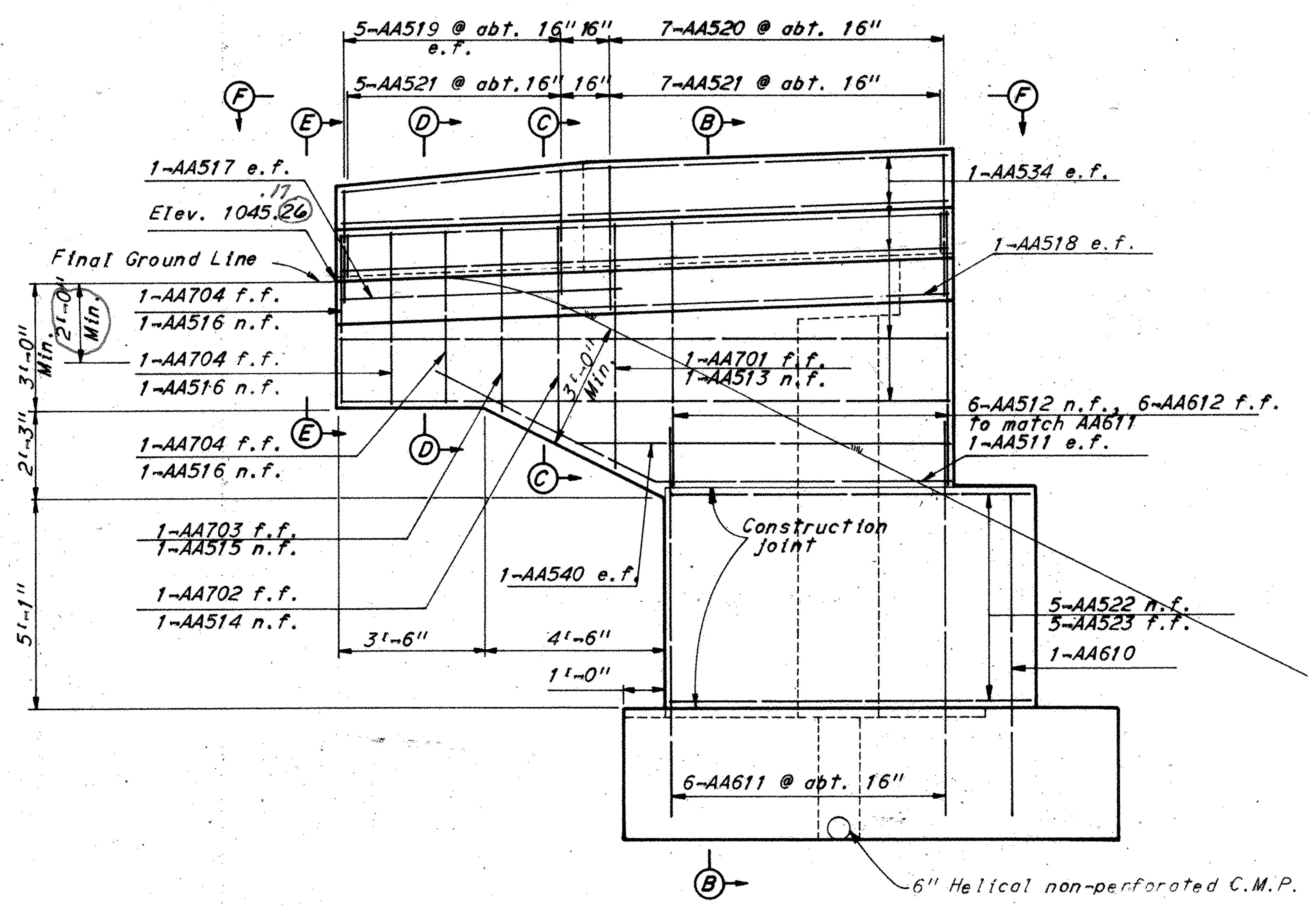
STARK COUNTY
STA-30-14.12
STA-77-9.22



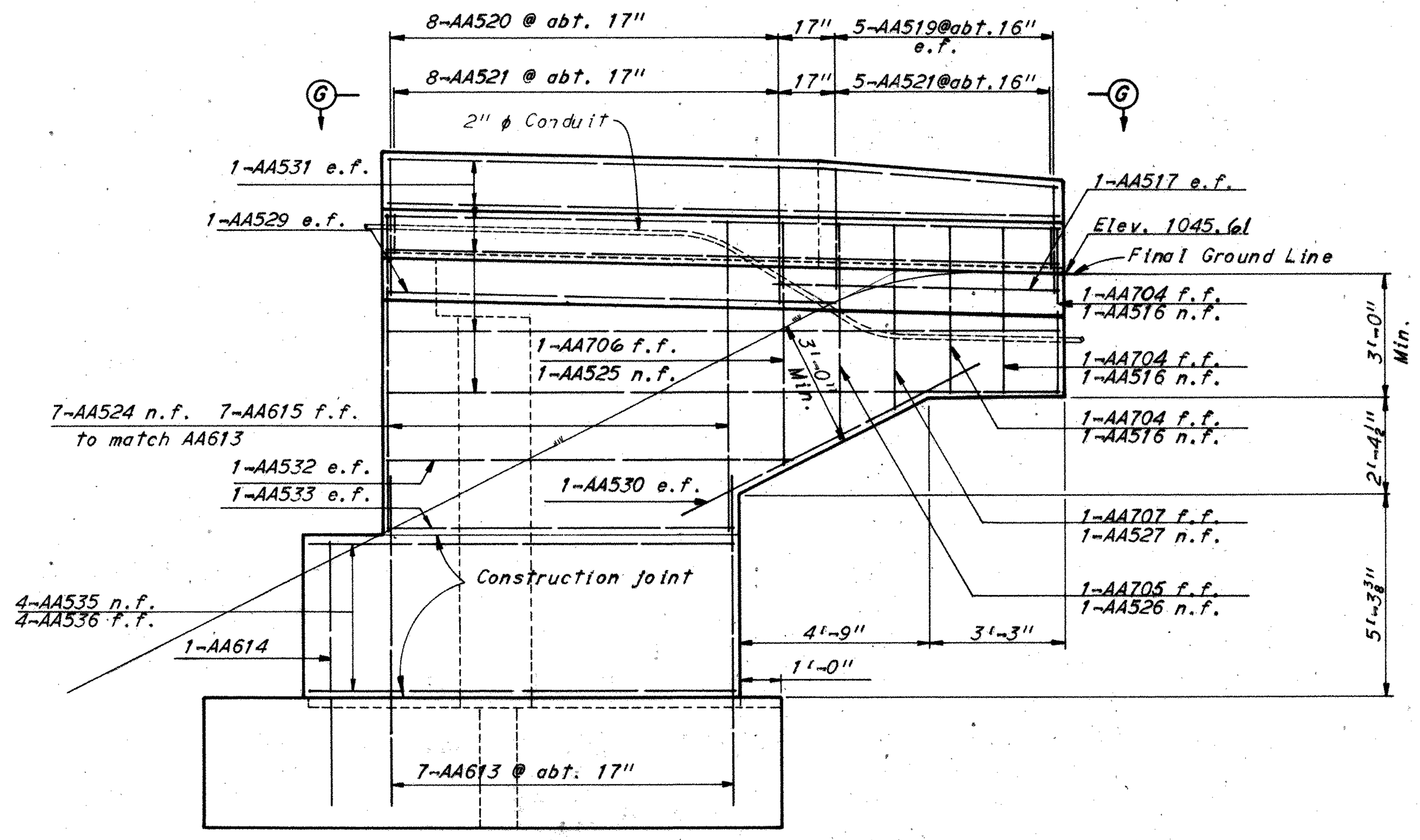
VIEW F-F



VIEW G-G

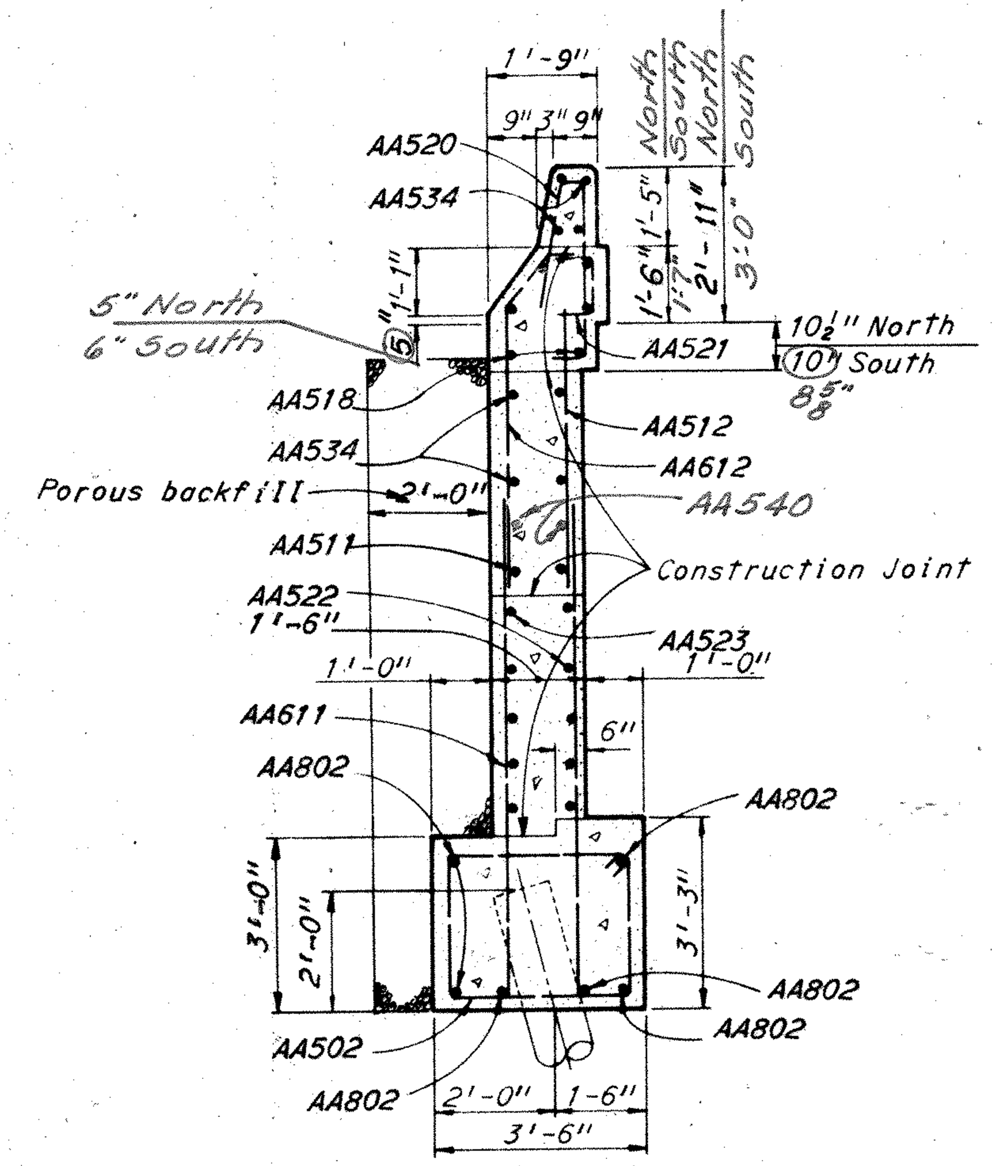


SOUTH WINGWALL ELEVATION

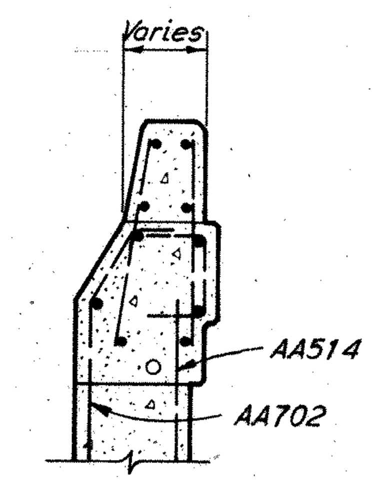


NORTH WINGWALL ELEVATION

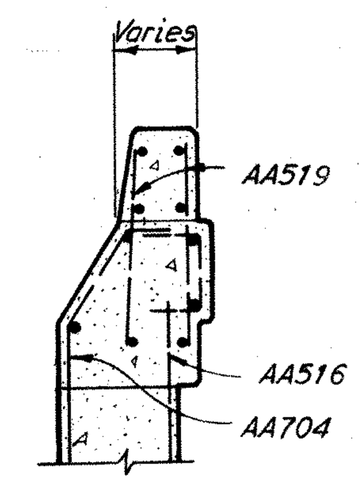
Note:
Parapet Transitions shall be as shown on Std. Drwg. BR-1-67 revised 10-15-71. Reinforcing steel shall be field bent or cut to fit the revised shape.



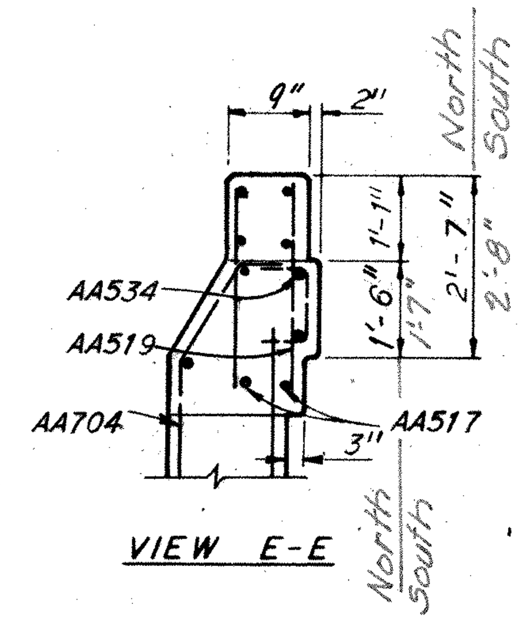
SECTION B-B



SECTION C-C



SECTION D-D



VIEW E-E

Note:
For notes see sheet 6/21

H.N.T.B. BRIDGE NO. 7 — Revised 6-3-75 By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 7/21
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

WEST ABUTMENT WINGWALLS

RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488 — STA. 960 + 44.85
SCALE: 3/8" = 1'-0" — STA. 970 + 69.80

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

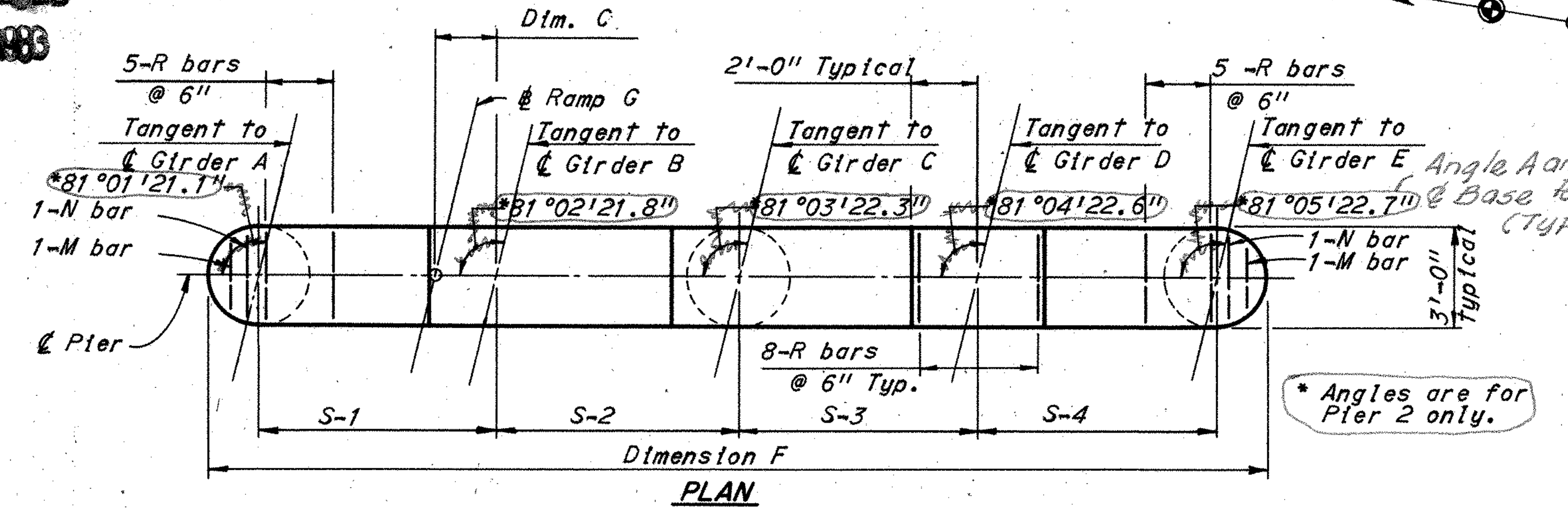
DRAWN D.H.B.	TRACED	CHECKED B.M.	REVIEWED	REVISED
DATE 10-28-69	DATE	DATE 1-7-70	DATE M.J.K. 11-25-71	1668

Revised 4-28-77

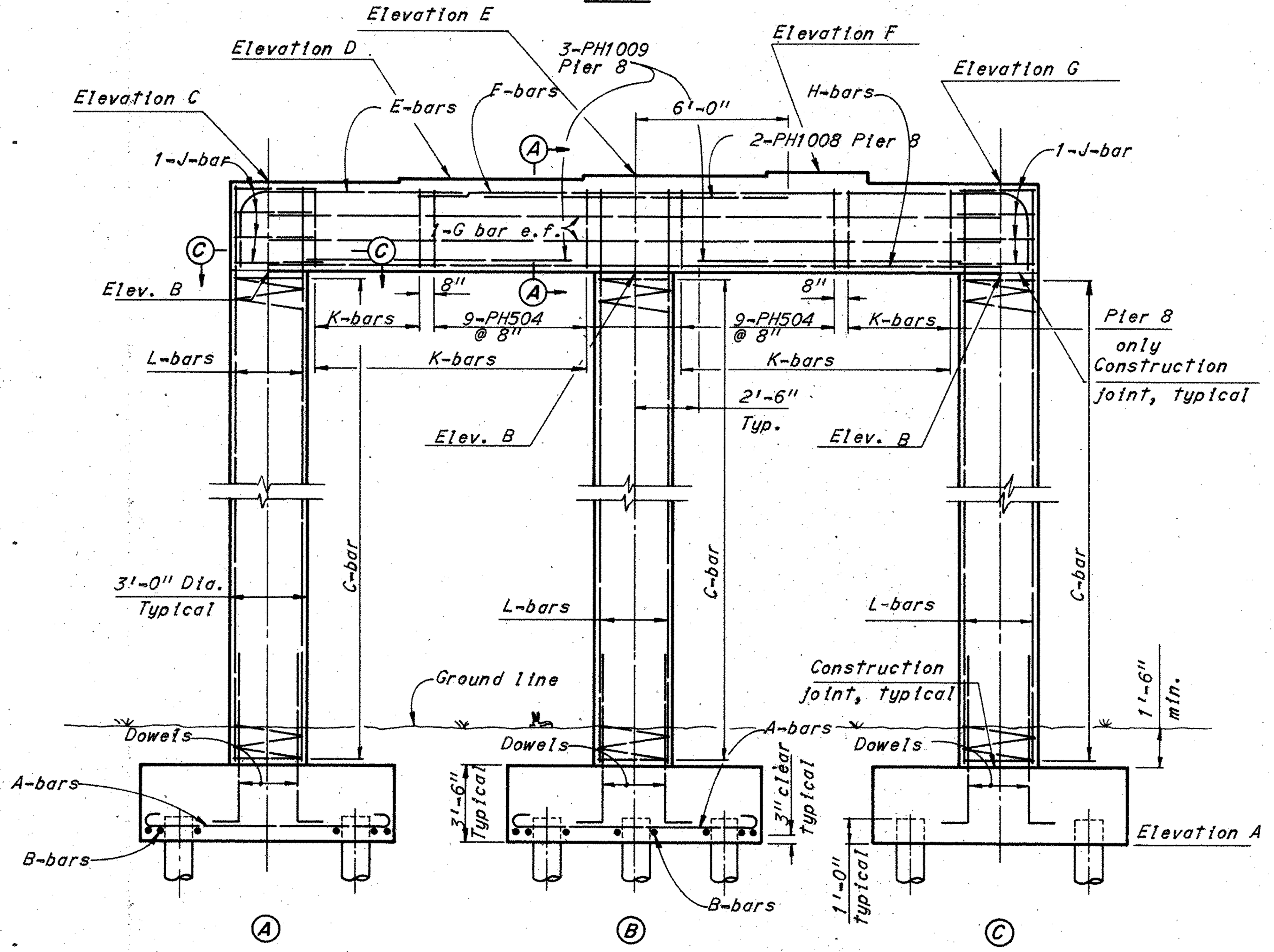

MICROFILMED SEP 14 1983
FED ROAD DIV NO | STATE | FEDERAL AID PROJECT NO | TYPE FUNDS
2 | OHIO
270
389
STARK COUNTY
STA-30-14.12
STA-77-9.22
Note:
Parapet Transitions shall be as shown on Std. Drwg. BR-1-67 revised 10-15-71. Reinforcing steel shall be field bent or cut to fit the revised shape.
Elev. 1060.20
Elev. 1058.00
6-AB401 @ abt. 6" Typ.
℄ Ramp G
℄ Girder A
℄ Girder B
℄ Girder C
℄ Girder D
℄ Girder E
℄ Bearing
AB501
AB502
AB505
AB506
79°44'56.4"
79°23'08.4"
78°58'34.6"
78°32'01.7"
78°03'14.6"
21'-9¾"
7'-2⅝"
7'-3¼"
7'-1⅝"
7'-3⅜"
30'-7⅛"
7'-7⅞"
19'-10½"
18'-0"
6'-0" Typ.
PLAN
Angles between ℄ girders and ℄ bearings are given to local tangent.
20-D801 @ 18" (Placed parallel to ℄ Ramp G)
30-AB602 @ 12"
30-AB603 @ 12"
11-AB509 Spaced as shown in Sect. A-A
1-AB509 f.f.
30-AB604 @ 12"
2"ϕ Conduit
5-AB505 @ about 18"
5-AB506 @ about 18"
5-AB501 @ abt. 18"
5-AB502 @ abt. 18"
Elev. 1053.08
Elev. 1052.52
Elev. 1052.02
Elev. 1051.47
Elev. 1050.92
3-AB505 @ 18"
1-AB512
1-AB513 n.f.
1-AB605 f.f.
Top of concrete slope paving
9-AB511 Spaced as shown in Sect. A-A
3-AB506 @ 18"
1-AB512
3-AB501 @ 18"
*5-AB512 @ 18"
6" ϕ Perforated Helical CMP
3-AB502 @ 18"
1-AB513 n.f.
1-AB605 f.f.
Elev. 1045.90
cap end
Elev. 1043.80
*5-AB513 @ 18" n.f.
*5-AB605 @ 18" f.f.
6" Helical perforated C.M.P.
6" Helical non-perforated C.M.P.
ELEVATION
1-AB804 Bot.
1-AB805 Bot.
1-AB806 Top and bot.
10-AB508 @ 12"
1'-0 Typ.
5-AB801 Spaced as shown in Sect. A-A
*5-AB514 @ 18"
Layout Line L-3
1-AB807 Top and bot. Sta. 970+67.50
℄ Ramp G
10-AB508 @ 12"
1-AB810 Top and bot.
1-AB809 Top and bot.
1-AB803 Top and bot.
Bend Line
49°37'17.7"
79°42'04.0"
6" Helical non-perforated C.M.P.
℄ Bearing
1-AB802 Top and bot.
1-AB808 Bot.
1-AB514
4 Spaces @ 7'-3"=29'-0"
13-1 13-2 13-3 13-4 13-5 13-6 13-7 13-8 13-9 13-10 13-11 13-12
FOOTING PLAN
8-AB516 @ about 18" n.f.
8-AB608 @ about 18" f.f.
1 Ser. 5-AB522 18" @ about 18" e.f.
5-AB524 18" @ about 18"
1-AB703 f.f.
8-AB523 @ about 18"
8-AB524 @ about 18"
1-AB515 e.f.
2" ϕ conduit (North Wingwall)
1-AB701 f.f.
Elev. 1059.59 N
Elev. 1057.31 S
Elev. 1060.10 N
Elev. 1057.90 S
1-AB521 n.f.
1-AB704 f.f.
1-AB517 n.f.
1-AB705 f.f.
1-AB515 e.f.
1-AB518 e.f.
1-AB519 e.f.
Construction Joint
1-AB607 n.f.
3-AB520 @ 18" e.f.
1-AB507 e.f.
3'-0" Min.
Slope ⅛" ft.
Elev. 1045.90 N
Elev. 1043.80 S
8-AB606 @ about 18"
3-AB525 @ 18" n.f.
+6" ϕ Non-Perforated CMP (alternate outlet)
+ South Wingwall only.
Piles not shown in elevation
Dimensions and callouts are typical for North and South Wingwall, unless shown otherwise.
NORTH AND SOUTH WINGWALL ELEVATION
Outside face of Wingwall
4 Equal spaces = 19'-10½"
82°21'54.2" N
81°02'17.2" S
℄ Bearing
NORTH AND SOUTH WINGWALL GEOMETRY
Backwall Elevations are given at this point (¼" below top of asphalt concrete)
1½" Asphalt Concrete
407 Tack Coat at 0.10 Gal. per Sq. Yd.
Approach Slab
D801
Porous Backfill
℄ Bearing
Slope bridge seat ⅛" between bearing areas to drain
*½" Preformed expansion joint filler
Concrete slope paving
Construction joint
6" Helical perforated CMP
AB602 AB509 AB603 AB604 AB512 AB511 AB514 AB513 AB801 AB802 AB605
* Include with slope paving for payment
SECTION A-A
AB525 AB703
SECTION C-C
AB521 AB704
SECTION D-D
AB515 AB522 AB701 AB516
VIEW E-E
AB523 AB515 2" ϕ Conduit
AB524
10½" N
10" S
AB516 AB608 AB518
Porous backfill
AB519
AB520 (or AB521)
Construction Joint
AB606
AB806 or AB807
AB803 or AB810
AB804 or AB809
AB803 or AB810
AB508
AB805 or AB808
SECTION B-B
Notes:
For roadway end dam details see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4, and Sheet 359.
AB401 bars shall be placed 2¼"± below top of bridge seat.
n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.
Only that portion of the C.M.P. located in the porous backfill shall be perforated.
For reinforcement schedule see Sheet 18/21
All battered piles are battered 3 in 12.
Pile dimensions are measured along bottom of footing.
All piles are 12" ϕ cast-in-place concrete.
N denotes North wingwall.
S denotes South wingwall.
† Denotes typical between piles.
O→ Denotes battered piles.
For details of C.M.P. outlet at side slopes, see Sheet 359.
H.N.T.B. BRIDGE NO. 7
Revised 6-3-75 By W.E.B.
HOWARD, NEEDLES, TAMMEN & BERGENDOFF 8/21
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
EAST ABUTMENT
RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77
BR. NO. STA 30-1488
SCALE: ¼"=1'-0"
STA. 960+44.85
STA. 970+69.80
RELOCATED U.S. 30
CANTON STARK COUNTY OHIO
DRAWN OPK DATE 10-29-69
TRACED DATE
CHECKED K.S.S. DATE 6-1-70
REVIEWED MJK DATE 11-22-71
REVISED
1668
Revised 4-28-77

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

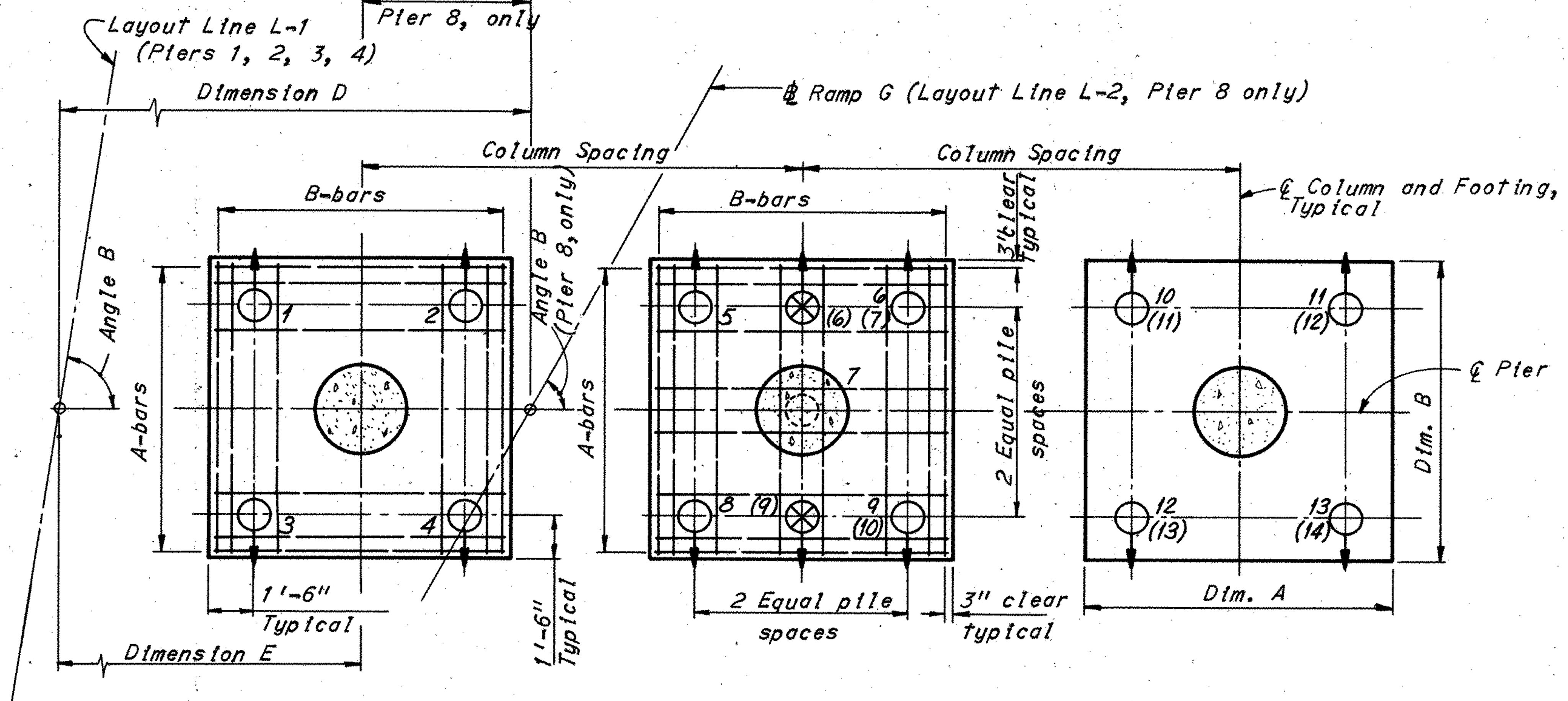
STARK COUNTY
STA-30-14.12
STA-77-9.22



PLAN



ELEVATION



FOOTING PLAN

⊗ Denotes piles added to Footing B, Piers 2, 3 and 8.

◌ Denotes pile added to Footing B, Piers 1 and 4.

Notes:
Footing A and C are similar.
( ) denotes Piers 2,3 and 8 designations only.
Pile numbering designations shall be preceded with the following subscripts: Pier 1:2, Pier 2:3, Pier 3:4, Pier 4:5, Pier 8:9 ; i.e. 2-1, 2-2, etc.

Pier No.	CAP BEAM REINFORCING STEEL								
	E-bars	F-bars	G-bars	H-bars	J-bars	K-bars	M-bars	N-bars	R-bars
1	5-PA1001	5-PA1002	PA601	5-PA1003	PA602	9-PA504 @ 18"	PA501	PA502	PA503
2	5-PB1003	5-PB1004	PB601	5-PB1002	PB602	9-PB504 @ 18"	PB501	PB502	PB503
3	5-PC1105	5-PC1104	PC601	5-PC1103	PC602	9-PC504 @ 18"	PC501	PC502	PC503
4	4-PD1001	4-PD1002	PD601	5-PD1003	PD602	9-PD504 @ 18"	PD501	PD502	PD503
8	4-PH1005	4-PH1006	PH601	5-PH1007	PH602	5-PH504 @ 18"	PH501	PH502	PH503

PIER CAP LAYOUT TABLE

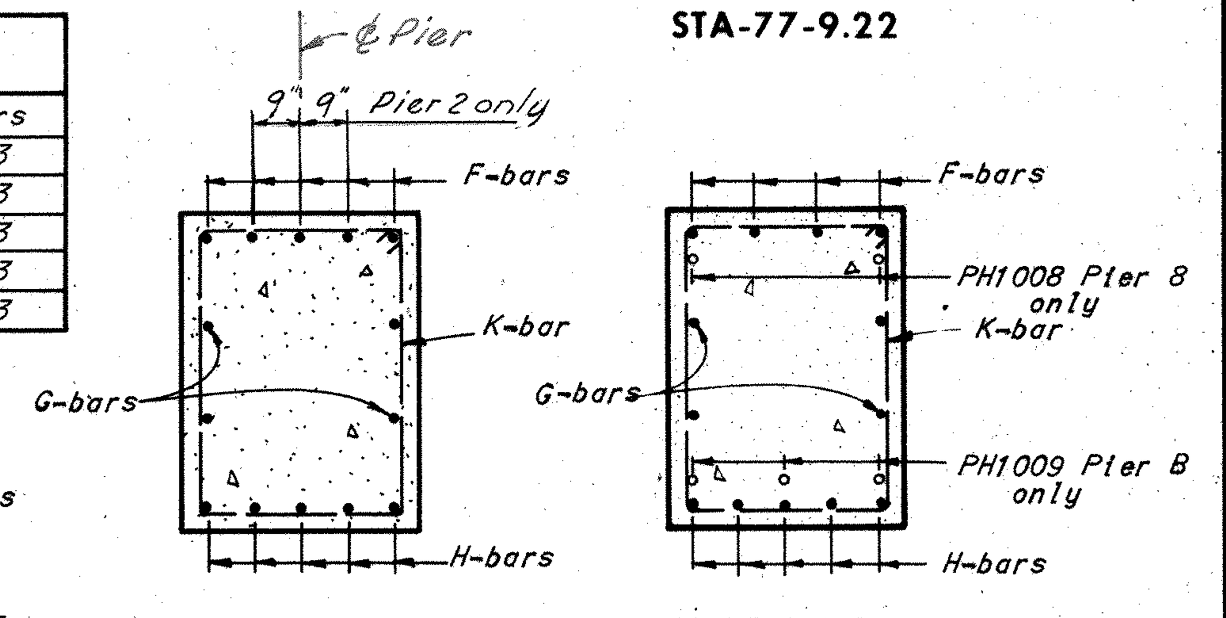
Pier No.	1	2	3	4	8
Dimension F	31'-9¼"	31'-10¼"	31'-11½"	31'-7"	31'-10"
Dimension C	1'-10 11/16"	1'-10¾"	1'-10⅞"	1'-10 9/16"	1'-10½"
Girder	A	A	A	A	A
Elevation C	1040.46 4	1043.26	1046.20	1049.00	1058.93
S-1	7'-2 5/16"	7'-2 9/16"	7'-2⅞"	7'-1¾"	7'-1½"
Girder	B	B	B	B	B
Elevation D	1040.54 2	1043.33	1046.27	1049.26	1059.14
S-2	7'-2 5/16"	7'-2 9/16"	7'-2⅞"	7'-1¾"	7'-1½"
Girder	C	C	C	C	C
Elevation E	1040.66 4	1043.44	1046.37	1049.57 5	1059.40
S-3	7'-2 5/16"	7'-2 9/16"	7'-2⅞"	7'-1¾"	7'-1½"
Girder	D	D	D	D	D
Elevation F	1040.74 2	1043.51	1046.44	1049.84 2	1059.61
S-4	7'-2 5/16"	7'-2 9/16"	7'-2⅞"	7'-1¾"	7'-1½"
Girder	E	E	E	E	E
Elevation G	1040.55 3	1043.30	1046.23	1049.74	1059.48

COLUMN DATA

Pier No.	Column	Elevation B	Reinforcing Steel		
			Dowels	L-bars	C-bars
1	A	1036.88	9-PA1101	9-PA1102	1-SPA401
	B	1036.90	9-PA1101	9-PA1102	1-SPA401
	C	1036.92	9-PA1101	9-PA1102	1-SPA401
2	A	1039.67	18-PB1101	18-PB1102	1-SPB401
	B	1039.67	18-PB1101	18-PB1102	1-SPB401
	C	1039.67	18-PB1101	18-PB1102	1-SPB401
3	A	1042.60	12-PC1101	12-PC1102	1-SPC401
	B	1042.59	12-PC1101	12-PC1102	1-SPC401
	C	1042.58	12-PC1101	12-PC1102	1-SPC401
4	A	1045.41	8-PD1101	8-PD1102	1-SPD401
	B	1045.76	8-PD1101	8-PD1103	1-SPD402
	C	1046.11	8-PD1101	8-PD1104	1-SPD403
8	A	1055.34	8-PH1001	8-PH1002	1-SPH401
	B	1055.59	8-PH1001	8-PH1003	1-SPH402
	C	1055.84	8-PH1001	8-PH1004	1-SPH403

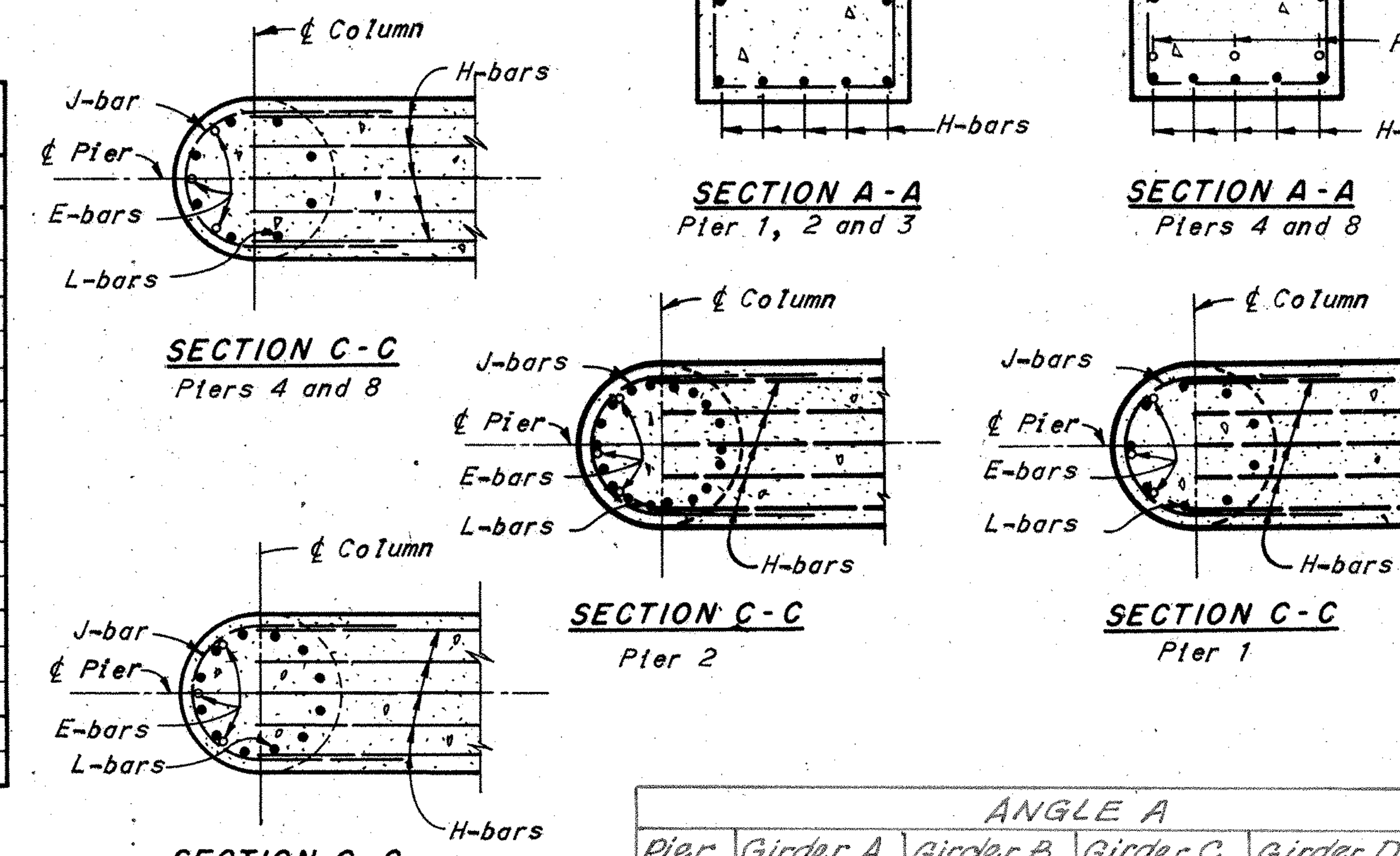
FOOTING DATA

Pier No.	Column Spacing	Footing	Elev. A	Dim. A	Dim. B	Dim. D	Dim. E	Angle B	Reinforcing Steel	
									A-bars	B-bars
1	14'-4⅝"	A	1002.40	11'-0"	11'-0"	8'-6⅛"	3'-2 9/16"	105°17' 21.1"	12-PA801	12-PA801
		B	1002.40	11'-0"	11'-0"				12-PA801	12-PA801
		C	1002.40	11'-0"	11'-0"				12-PA801	12-PA801
2	14'-5⅛"	A	1002.90	11'-0"	11'-0"	18'-1¾"	12'-10"	105°17" 21.1"	12-PB801	12-PB801
		B	1002.90	11'-0"	11'-0"				12-PB801	12-PB1001
		C	1002.90	11'-0"	11'-0"				12-PB801	12-PB801
3	14'-5¾"	A	1004.90	11'-0"	12'-0"	26'-3"	20'-11"	105°17' 21.1"	12-PC902	12-PC901
		B	1004.90	11'-0"	12'-0"				12-PC902	12-PC1106
		C	1004.90	11'-0"	12'-0"				12-PC902	12-PC901
4	14'-3½"	A	1012.40	10'-0"	10'-0"	31'-3⅛"	26'-0"	89°49' 38.4"	10-PD801	10-PD801
		B	1016.40	10'-0"	10'-0"				10-PD801	10-PD801
		C	1020.40	10'-0"	10'-0"				10-PD801	10-PD801
8	14'-5"	A	1034.90	9'-0"	9'-0"	—	5'-4" 5"	88°51' 05.6"	10-PH701	10-PH701
		B	1034.90	9'-0"	9'-0"				10-PH701	10-PH701 9
		C	1034.90	9'-0"	9'-0"				10-PH701	10-PH701



SECTION A-A
Pier 1, 2 and 3

SECTION A-A
Piers 4 and 8



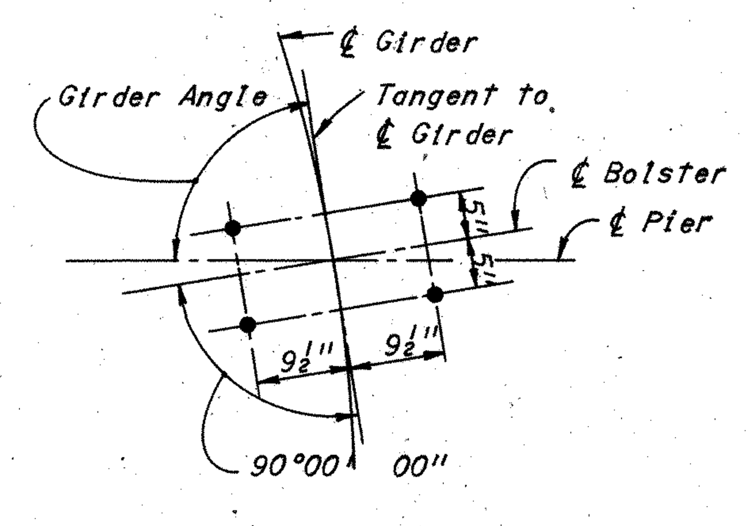
SECTION C-C
Piers 4 and 8

SECTION C-C
Pier 3

SECTION C-C
Pier 2

SECTION C-C
Pier 1

ANGLE A					
Pier	Girder A	Girder B	Girder C	Girder D	Girder E
1	82°11'02.6"	82°11'55.4"	82°12'48.0"	82°13'40.4"	82°14'32.5"
2	81°01'21.1"	81°02'21.8"	81°03'22.3"	81°04'22.6"	81°05'22.7"
3	79°50'53.5"	79°52'02.4"	79°53'11.0"	79°54'19.3"	79°55'27.4"
4	94°13'01.4"	94°12'33.1"	94°12'04.8"	94°11'36.7"	94°11'08.6"
8	91°08'54.4"	91°08'54.4"	91°08'54.4"	91°08'54.4"	91°08'54.4"



ANCHOR BOLT PLAN
Pier 2 only

Notes:
Special care shall be taken when placing reinforcing steel so as not to inerfere with anchor bolt or anchor bolt setting. Pier 2 only, see Sheet 214.
M, N, and R bars shall be placed 2½" ± below top of cap beam.
For reinforcement schedule see Sheet 18/21
All battered piles shall be battered 3 in 12.
Pile dimensions are measured along bottom of footing.
All piles are 12" ϕ cast-in-place concrete.
For footing layout see Sheet 3/21 and 5/21 4
e.f. denotes each face.
○→ denotes battered pile.
The stirrups within 4feet of the ℄ of columns shall be placed with hooks in the bottom of the cap. All others shall be placed with hooks in the top.

H.N.T.B. BRIDGE NO. 7 | Revised 6-4-75 | By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 9/21
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIERS 1, 2, 3, 4 AND 8
RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488 | STA. 960 + 44.85
SCALE: NONE | STA. 970 + 69.80

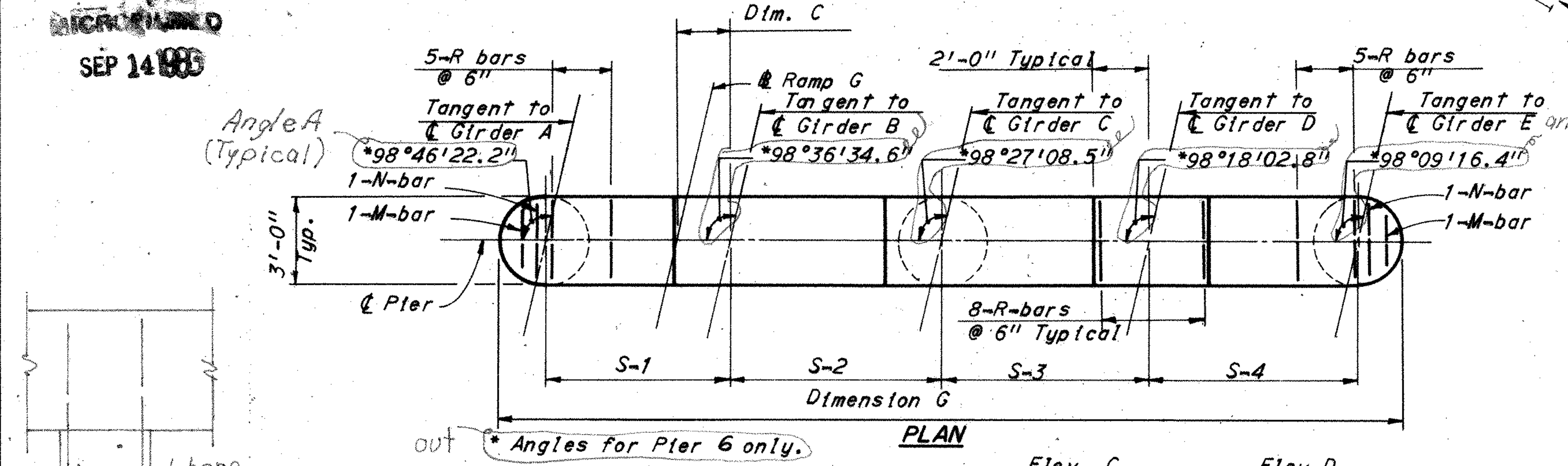
RELOCATED U.S. 30
CANTON | STARK COUNTY | OHIO

DRAWN RAS DATE 12-5-69	TRACED DATE	CHECKED MAG. DATE 6-5-70	REVIEWED MJK DATE 11-22-71	REVISED 3-2-76
				1668

Revised 4-28-77

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



PLAN

ANGLE A

Pier	Girder A	Girder B	Girder C	Girder D	Girder E
5	109°09'58.0	109°07'44.3"	109°05'31.2"	109°03'18.6"	108°46'49.6"
6	98°46'22.2"	98°36'34.6"	98°27'08.5"	98°18'02.8"	98°09'16.4"
7	87°41'23.1"	87°43'56.8"	87°46'24.8"	87°48'47.6"	87°51'05.4"

CAP BEAM REINFORCING STEEL

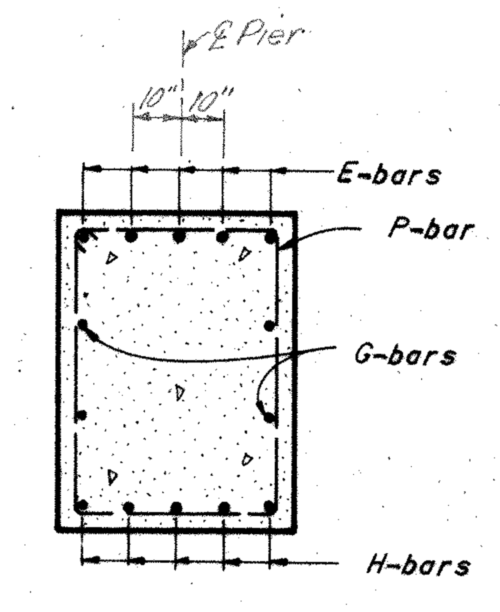
Pier No.	E-bars	F-bars	G-bars	H-bars	J-bars	K-bars	M-bars	N-bars	P-bars	R-bars
5	4-PE1001	4-PE1002	PE603	5-PE1003	PE602	7-PE501 @ 12"	PE502	PE503	4-PE501 @ 18"	PE504
6	5-PF1101	5-PF1102	PF603	5-PF1103	PF604	7-PF501 @ 12"	PF502	PF503	4-PF501 @ 18"	PF504
7	4-PG1001	4-PG1002	PG603	5-PG1003	PG604	10-PG501 @ 8"	PG502	PG503	4-PG501 @ 18"	PG504

PIER CAP LAYOUT TABLE

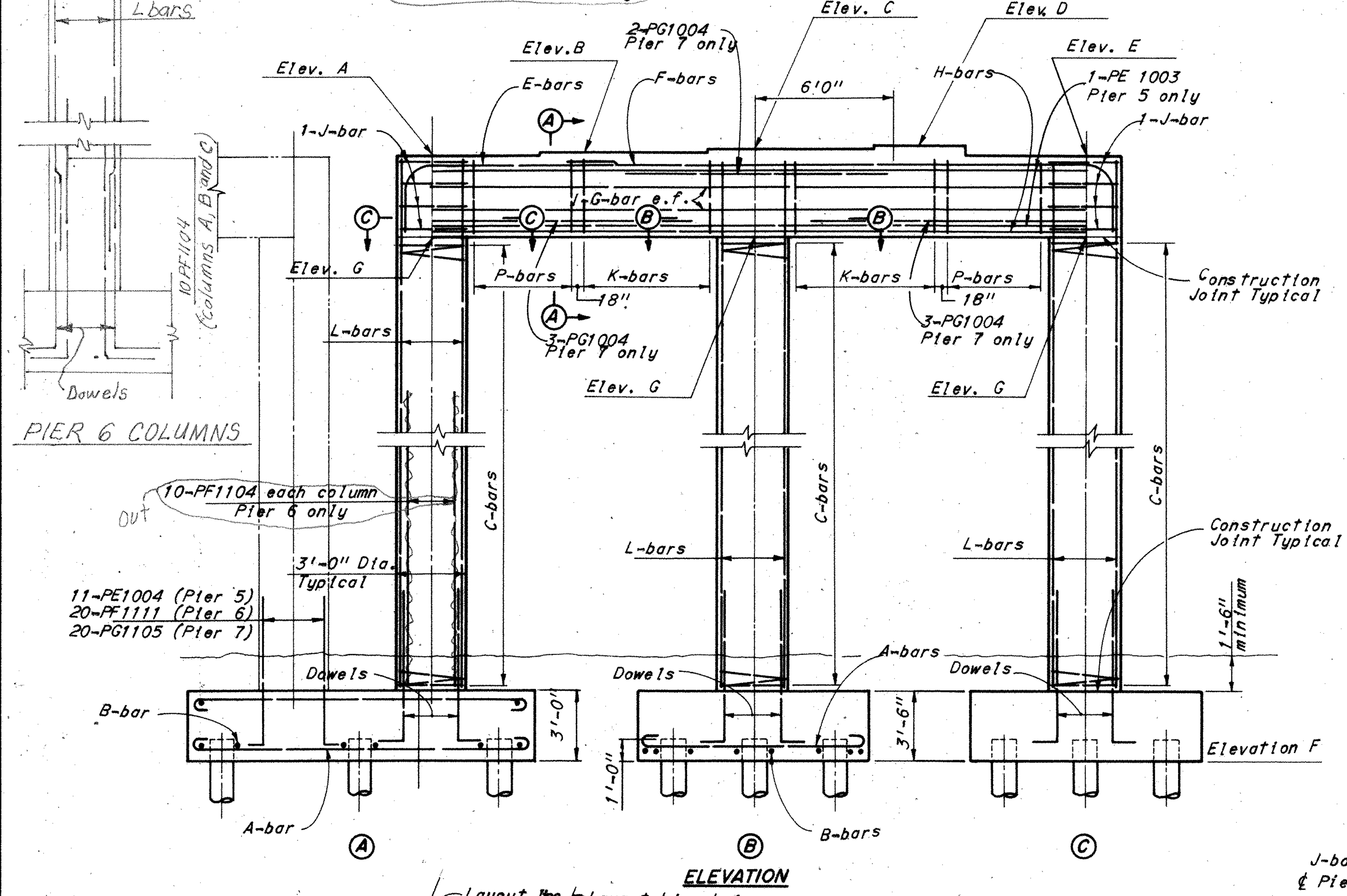
Pier No.	5	6	7
Dimension G	33'-4"	31'-10"	31'-8"
Dimension C	1'-11 13/16"	1'-10 3/4"	1'-10 1/2"
Girder	A	A	A
Elevation A	1051.50	1054.86	1057.46
S-1	7'-6 1/2"	7'-2 1/2"	7'-1 9/16"
Girder	B	B	B
Elevation B	1052.00	1055.48	1057.93
S-2	7'-6 1/2"	7'-2 7/16"	7'-1 9/16"
Girder	C	C	C
Elevation C	1052.55	1056.14	1058.42
S-3	7'-6 7/16"	7'-2 7/16"	7'-1 9/16"
Girder	D	D	D
Elevation D	1053.07	1056.76	1058.90
S-4	7'-6 3/8"	7'-2 3/8"	7'-1 9/16"
Girder	E	E	E
Elevation E	1053.11	1056.80	1058.85

FOOTING DATA

Pier No.	Column Spacing	Footing	Elev. F	Dim. A	Dim. B	Reinforcing Steel A-bars	Reinforcing Steel B-bars	Dim. D	Dim E	Dim. F
5	15'-2"	A	1024.90	9'-0"	15'-0"	10-PE701	16-PE702	2'-11"	28'-11 3/4"	37'-6 5/8"
		B	1023.40	10'-0"	10'-0"	10-PE801	10-PE1005			
		C	1022.40	10'-0"	10'-0"	10-PE801	10-PE801			
6	14'-5"	A	1019.90	12'0"	15'-0"	16-PF801	16-PF901	2'-9"	24'-7 3/4"	32'-8 9/16"
		B	1021.40	12'-0"	11'-0"	12-PF1110	12-PF1109			
		C	1023.40	12'-0"	11'-0"	12-PF902	12-PF1109			
7	14'-4"	A	1032.90	9'-0"	15'-0"	12-PG701	14-PG702	2'-8 1/4"	3'-0 3/4"	4'-1 13/16"
		B	1032.40	9'-0"	9'-0"	10-PG702	10-PG901			
		C	1032.40	9'-0"	9'-0"	10-PG702	10-PG702			



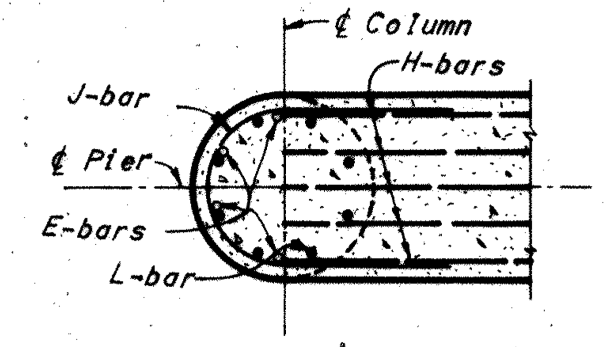
SECTION A-A
Pier 6



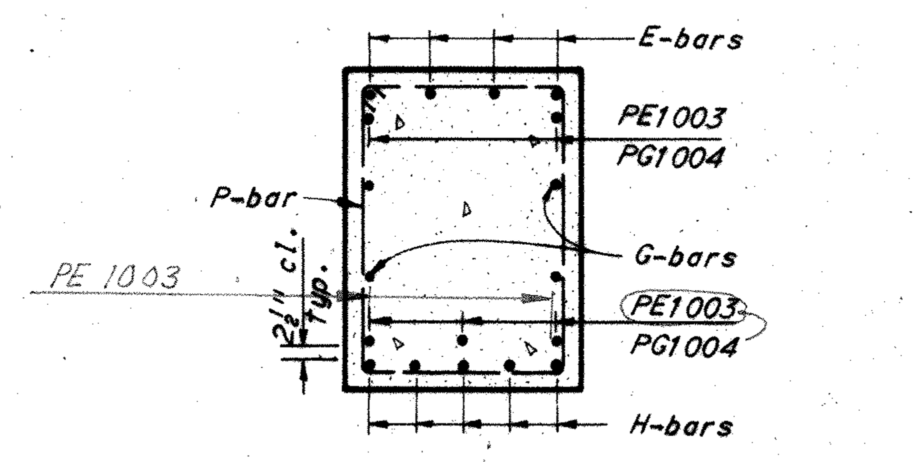
ELEVATION

COLUMN DATA

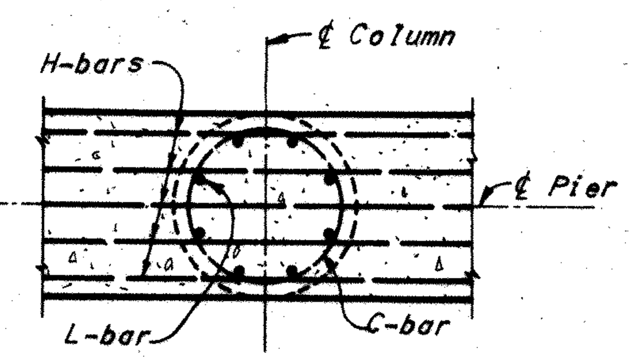
Pier No.	Column	Elevation G	Reinforcing Steel Dowels	Reinforcing Steel L-bars	Reinforcing Steel C-bars
5	A	1047.68	8-PE1104	8-PE1101	1-SPE401
	B	1048.58	8-PE1104	8-PE1102	1-SPE402
	C	1049.48	8-PE1104	8-PE1103	1-SPE403
6	A	1050.98	10-PF1108	10-PF1105	1-SPF401
	B	1052.18	10-PF1108	10-PF1106	1-SPF402
	C	1053.38	10-PF1108	10-PF1107	1-SPF403
7	A	1053.68	12-PG1104	12-PG1101	1-SPG401
	B	1054.53	12-PG1104	12-PG1102	1-SPG402
	C	1055.38	12-PG1104	12-PG1103	1-SPG403



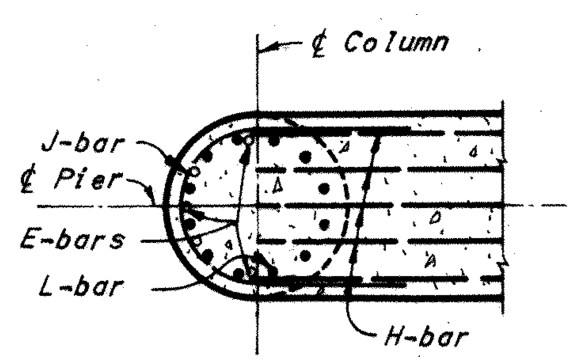
SECTION C-C
Pier 5



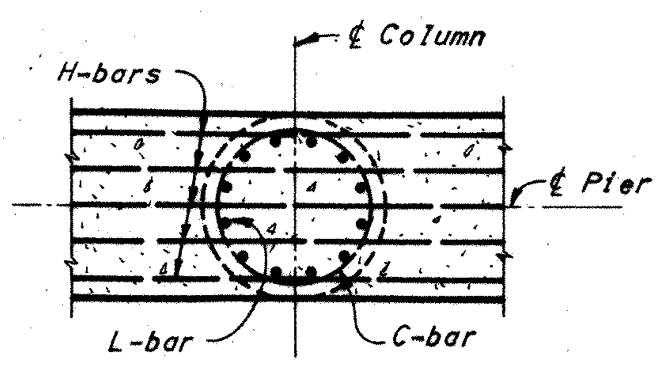
SECTION A-A
Pier 5 and 7



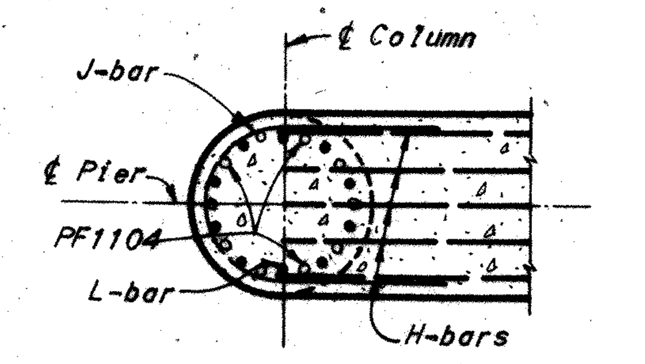
SECTION B-B
Pier 5



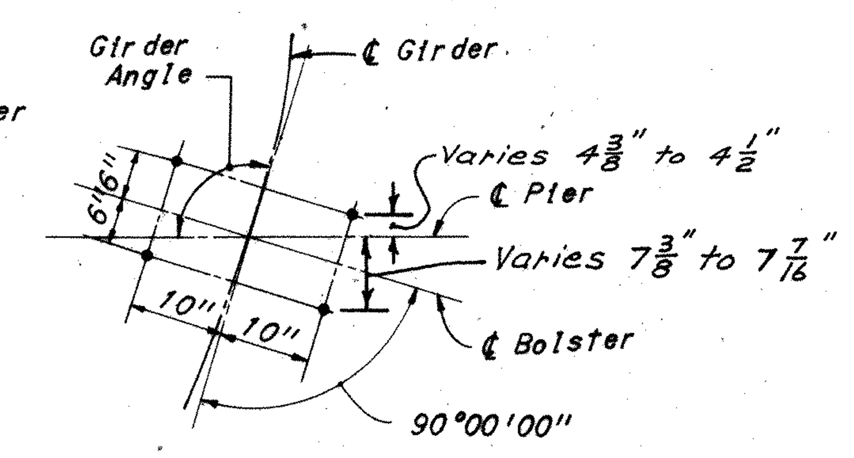
SECTION C-C
Pier 7



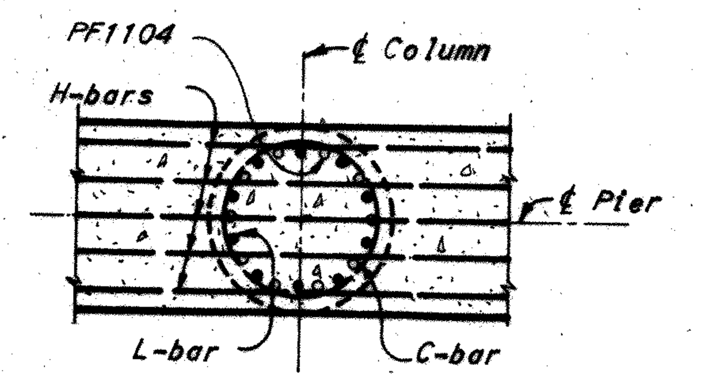
SECTION B-B
Pier 7



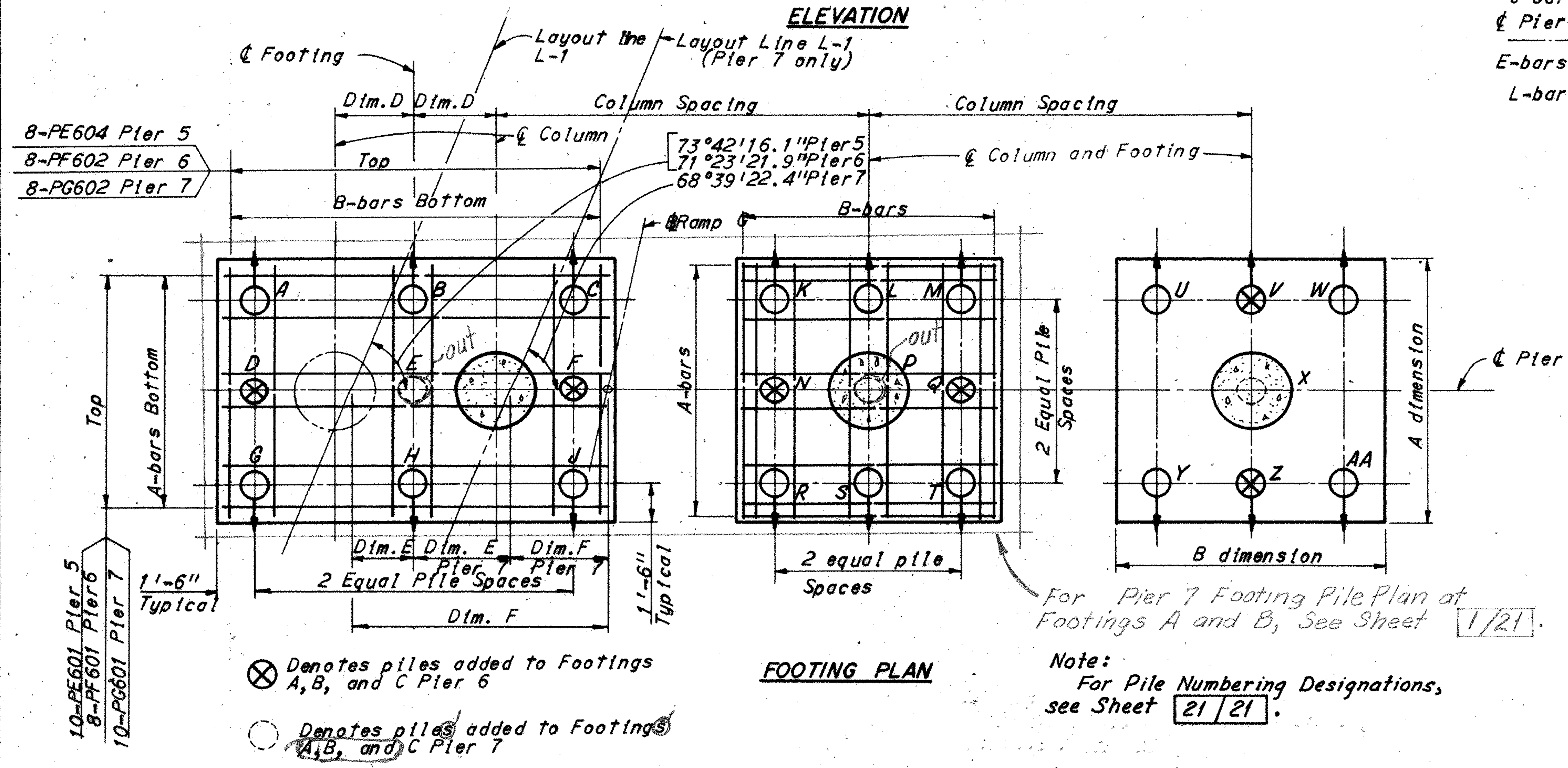
SECTION C-C
Pier 6



ANCHOR BOLT PLAN
PIER 6



SECTION B-B
Pier 6



⊗ Denotes piles added to Footings A, B, and C Pier 6

◌ Denotes piles added to Footings A, B, and C Pier 7

FOOTING PLAN

For Pier 7 Footing Pile Plan at Footings A and B, See Sheet 1/21.

Note:
For Pile Numbering Designations, see Sheet 21/21.

Notes:

Special care shall be taken when placing reinforcing steel so as not to interfere with anchor bolt setting. Pier 6 only. See Sheet 214.

M, N, and R bars shall be placed 2 1/2"± below top of cap beam.

For reinforcement schedule see Sheet 19/21

All battered piles shall be battered 3 in 12.

Piles dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

For footing layout see Sheet 4/21

e.f. denotes each face.

The stirrups within 4 feet of ℄ of columns shall be placed with hooks in the bottom of cap. All others shall be placed with hooks in the top.

O→ denotes battered pile.

H.N.T.B. BRIDGE NO. 7 | Revised 6-4-75 By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 10/21
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIERS 5, 6, AND 7

RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488 STA. 960 + 44.85
SCALE: NONE STA. 970 + 69.80

RELOCATED U.S. 30

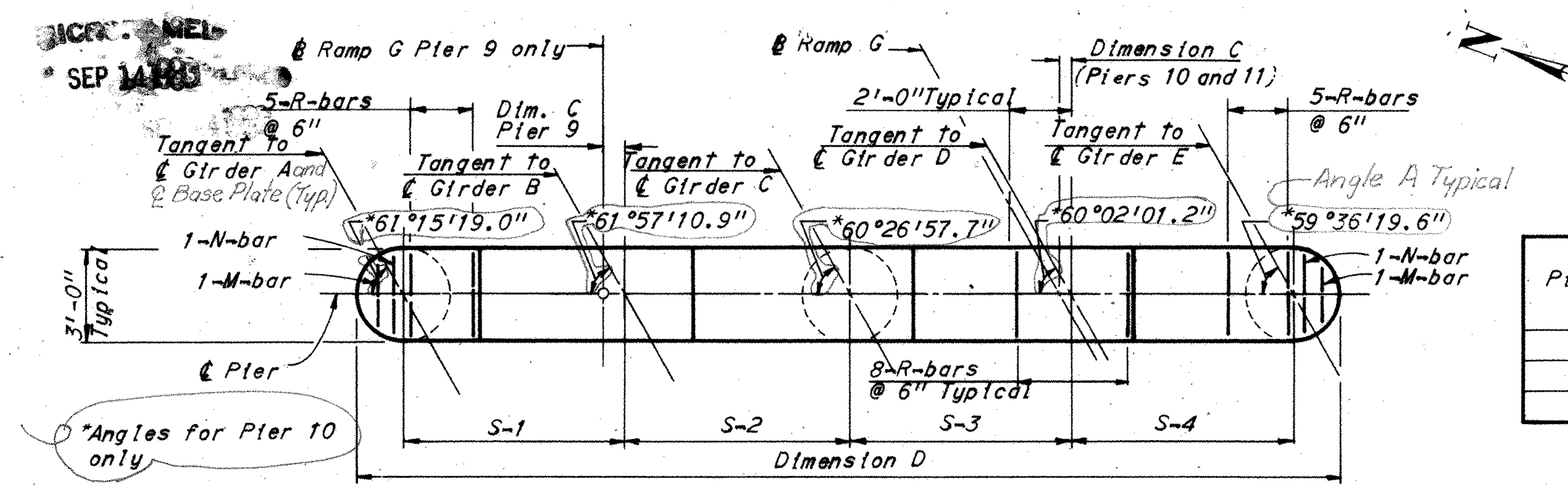
CANTON STARK COUNTY OHIO

DRAWN LDE	TRACED	CHECKED MAG	REVIEWED MJK	REVISED 3-2-76
DATE 1-9-70	DATE	DATE 6-10-70	DATE 11-22-71	1668

Revised 4-28-77

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			273 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

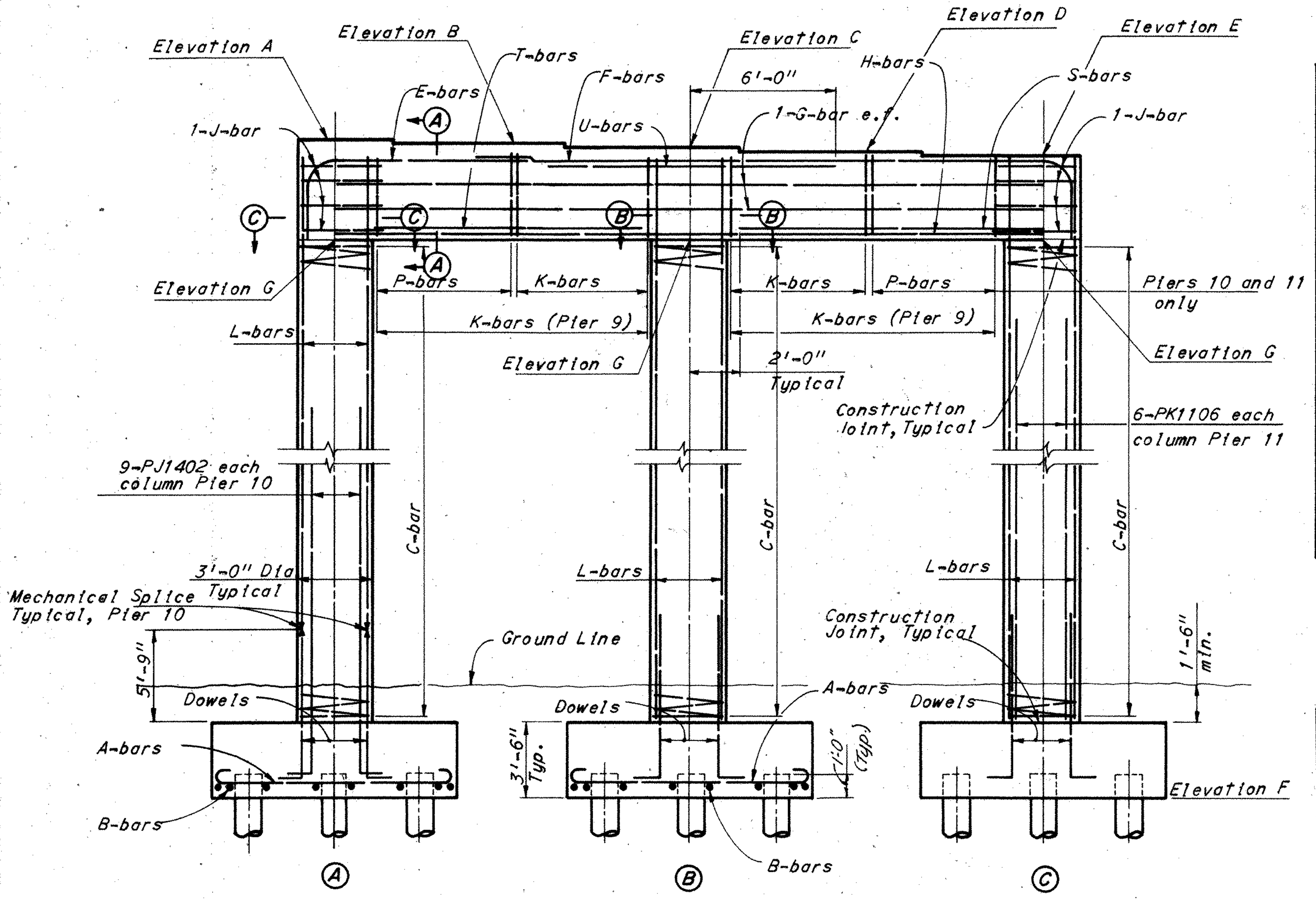


PLAN

ANGLE A					
PIER	Girder A	Girder B	Girder C	Girder D	Girder E
9	90°00'00.0"	90°00'00.0"	90°00'00.0"	90°00'00.0"	90°00'00.0"
10	61°15'19.0"	60°51'10.9"	60°26'57.7"	60°02'01.2"	59°36'19.6"
11	58°06'29.5"	56°49'33.4"	55°26'44.6"	54°05'57.4"	52°37'57.5"

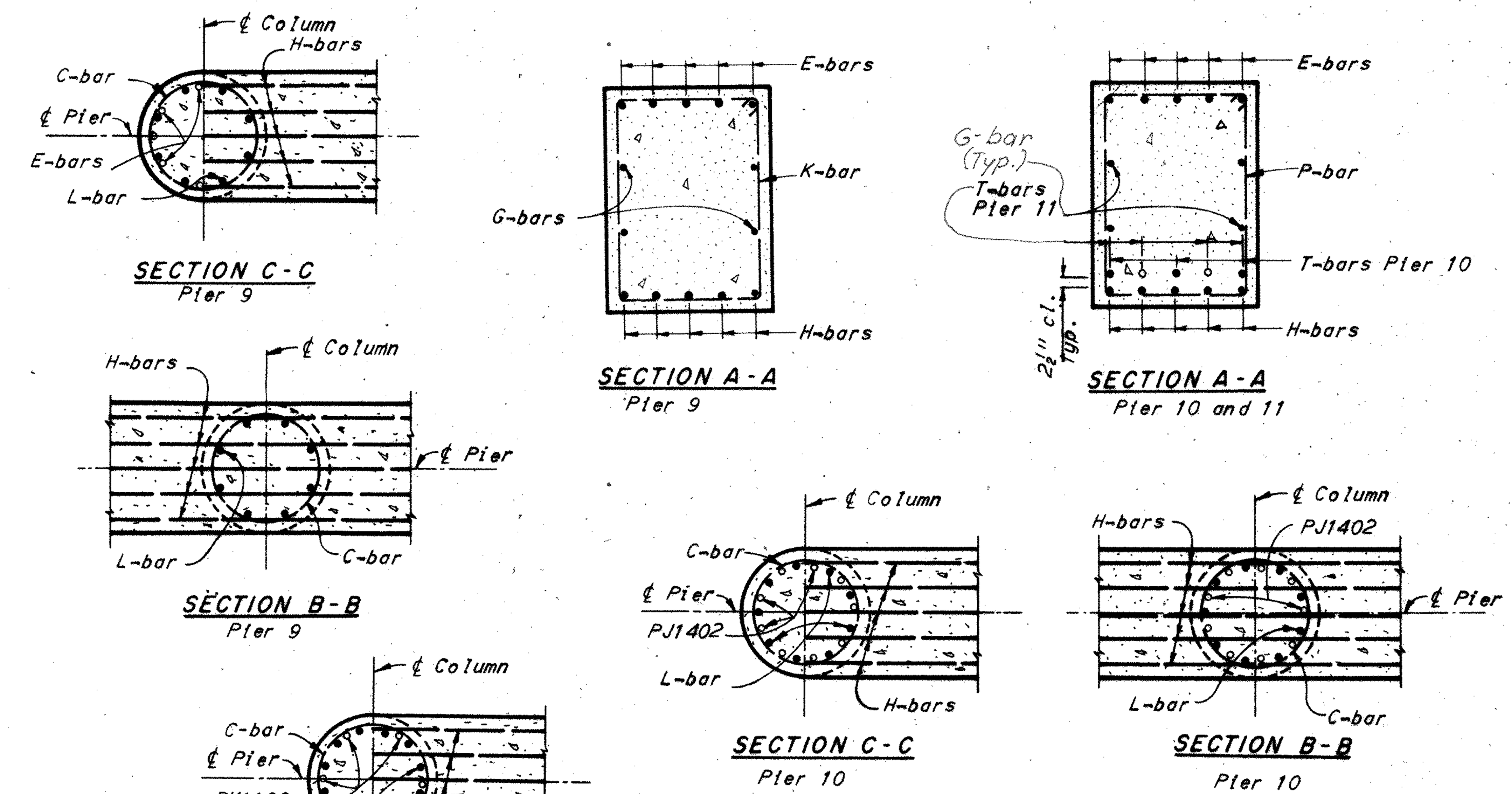
Pier No.	CAP BEAM REINFORCING STEEL												
	E-bars	F-bars	G-bars	H-bars	J-bars	K-bars	M-bars	N-bars	P-bars	R-bars	S-bars	T-bars	U-bars
9	5-PI1001	5-PI1002	PI602	5-PI1003	PI601	9-PI502 @ 18"	PI503	PI504	———	PI501	———	———	———
10	5-PJ1102	5-PJ1103	PJ602	5-PJ1104	PJ601	14-PJ503 @ 6"	PJ504	PJ502	5-PJ503 @ 18"	PJ501	3-PJ1105	3-PJ1105	2-PJ1105
11	5-PK1101	5-PK1102	PK602	5-PK1103	PK601	16-PK503 @ 6"	PK504	PK502	5-PK503 @ 18"	PK501	4-PK1105	4-PK1105	2-PK1104

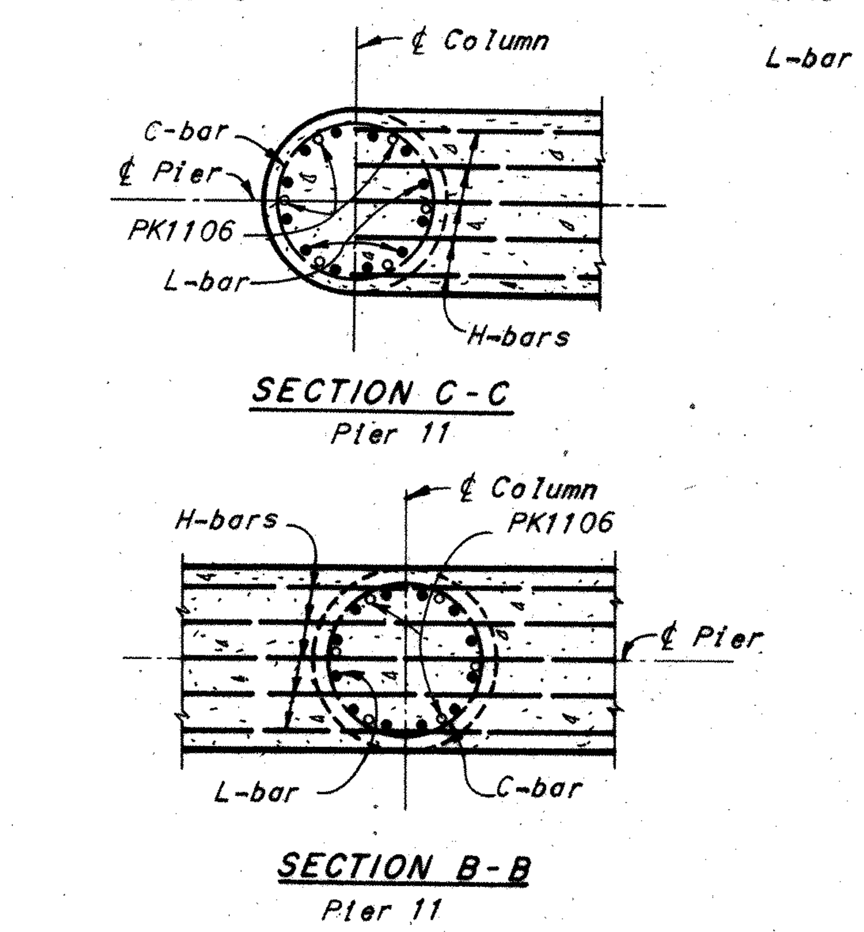
NOTE: The reinf. bars in the top of the cap, Pier 10, shown near the ℄ Pier, shall be placed 3" off of the centerline.



ELEVATION

PIER CAP LAYOUT TABLE			
Pier No.	9	10	11
Dimension D	31'-6"	36'-8"	38'-6"
Dimension C	1'-10½"	0'-1¾"	0'-1⅞"
Girder	A 58.66	A 6.91	A .18
Elevation A	1060.41	1058.02	1054.52
S-1	7'-1½"	8'-1 11/16"	8'-5 7/16"
Girder	B 8.65	B 6.81	B 3.83
Elevation B	1059.82	1057.56	1054.08
S-2	7'-1½"	8'-2 1/16"	8'-7"
Girder	C 8.70	C 6.76	C .56
Elevation C	1059.28	1057.15	1053.69
S-3	7'-1½"	8'-2½"	8'-8⅝"
Girder	D 69	D	D
Elevation D	1058.70	1056.70	1053.28
S-4	7'-1½"	8'-2⅞"	8'-10 9/16"
Girder	E	E	E
Elevation E	1058.10	1056.22	1052.86
	.68	.63	3.01





COLUMN DATA					
Pier No.	Column	Elevation G 4.66	Reinforcing steel 5.15		
			Dowels	L-bars	C-bars
9	A	1056.48	8-PI1004	8-PI1005	1-PI401
	B	1055.34	8-PI1004	8-PI1006	1-PI402
	C 3.33	1054.18	8-PI1004	8-PI1007	1-PI403
10	A 2.83	1053.88	9-PJ1401	9-PJ1403	1-PJ401
3.20	B 2.70	1053.13 3	9-PJ1401	9-PJ1404	1-PJ402
	C .08 .58	1052.88	9-PJ1401	9-PJ1405	1-PJ403
50.42 11	A 49.91	1050.63	18-PK1109	12-PK1110	1-PK401
	B .84 .34	1049.84	18-PK1109	12-PK1108	1-PK402
	C 8.78	1049.05	18-PK1109	12-PK1107	1-PK403

9.26

Notes:

Special care shall be taken when placing reinforcing steel so as not to interfere with anchor bolt settings. Pier 10 only. **See Sheet 214.**

M.N and R bars shall be placed 2½"± below top of cap beam.

For reinforcement schedule see Sheet 20/21

All battered piles shall be battered 3 in 12.

Piles dimensions are measured along bottom of footing.

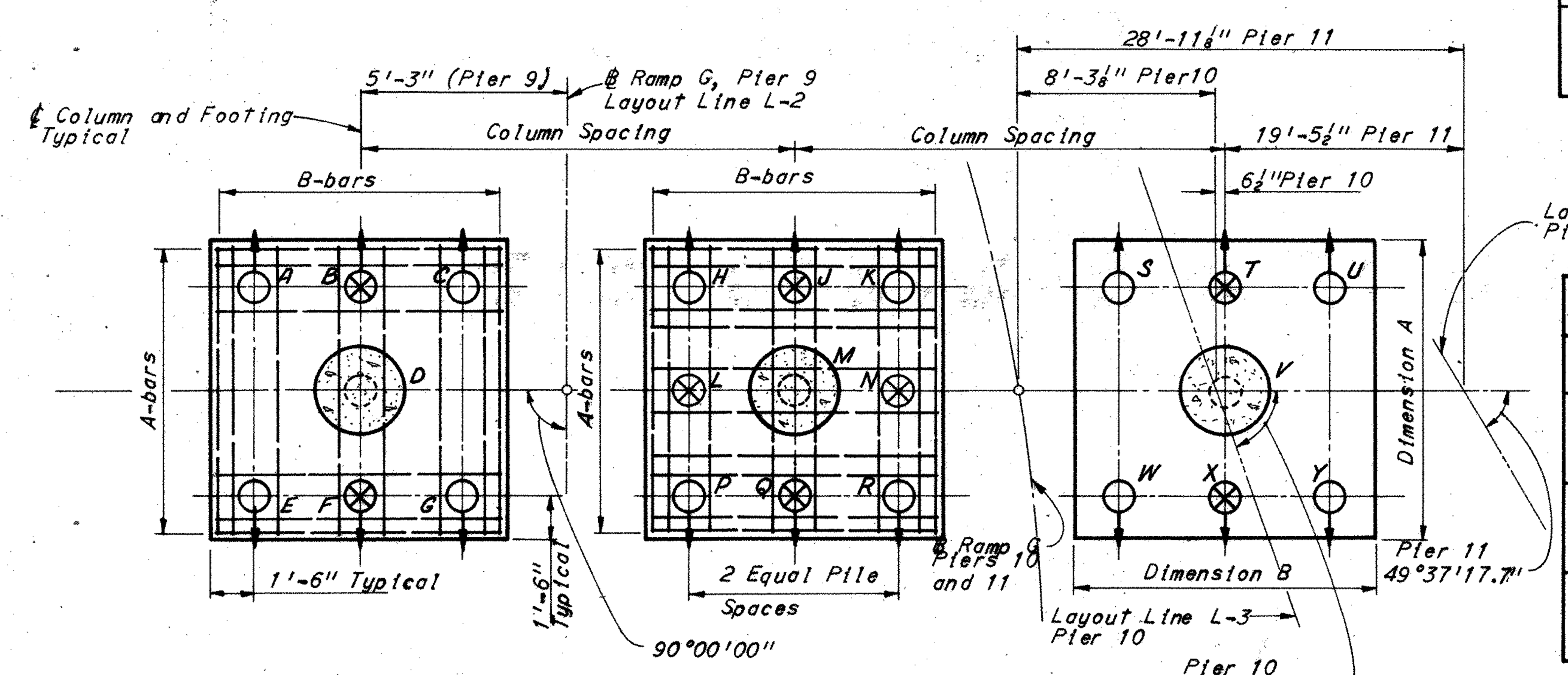
All piles are 12" ϕ cast-in-place concrete.

e.f. denotes each face.

O— denotes battered piles.

For footing layout see Sheet 5/21

The stirrups within 4 feet of ℄ of columns shall be placed with hooks in the bottom of cap. All others shall be placed with hooks in the top.



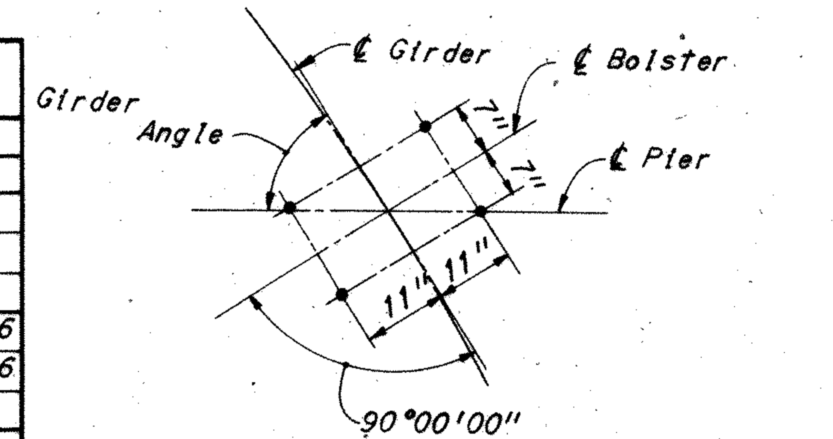
FOOTING PLAN

⊗ Denotes piles added to all footings for Pier 11 and footings A and B Pier 10.

◌ Denotes pile added to footings A and C Pier 10 and footing B Pier 9.

NOTE: For Pile Numbering Designations, see Sheet 21/21

FOOTING DATA							
Pier No.	Column Spacing	Footing	Elev.F	Dim.A	Dim.B	Reinforcing Steel	
						A-bars	B-bars
9	14'-3"	A	1041.40	9'-0"	9'-0"	10-PI701	10-PI701
		B	1034.90	9'-0"	9'-0"	10-PI701	10-PI701
		C	1029.40	9'-0"	9'-0"	10-PI701	10-PI701
10	16'-10"	A	1022.90	12'-0"	11'-0"	12-PJ901	12-PJ1106
		B	1018.90	12'-0"	11'-0"	12-PJ1101	12-PJ1106
		C	1017.90	12'-0"	11'-0"	12-PJ901	12-PJ902
11	17'-9"	A	1017.40	11'-0"	10'-0"	12-PK801	12-PK1001
		B	1017.40	11'-0"	10'-0"	12-PK1002	12-PK1001
		C	1017.40	11'-0"	10'-0"	12-PK801	12-PK1001



ANCHOR BOLT PLAN
PIER 10 ONLY

H.N.T.B. BRIDGE NO. 7 | Revised 6-4-75 | By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 11/21
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIERS 9, 10, AND 11

RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488 | STA. 960 + 44.85
SCALE: NONE | STA. 970 + 69.80

RELOCATED U.S. 30

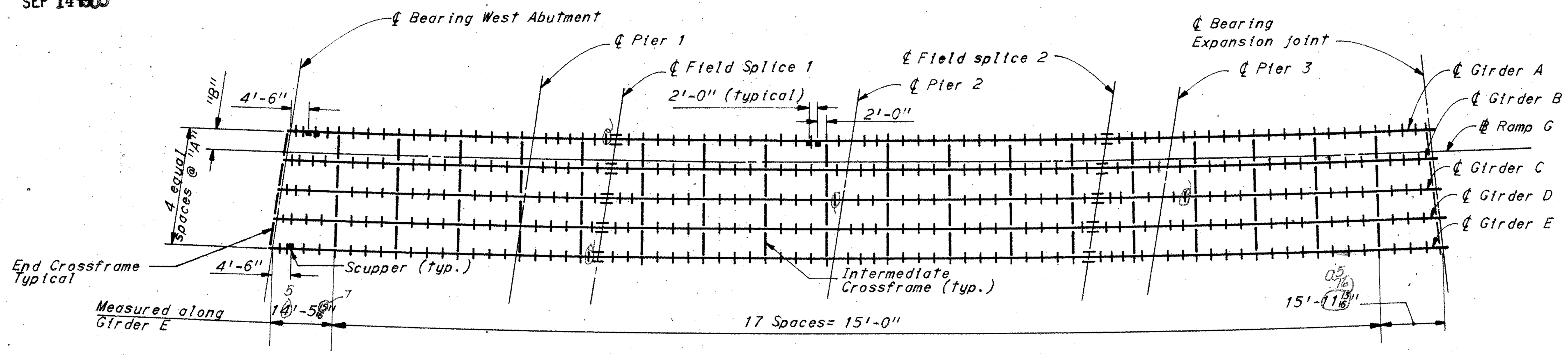
CANTON | STARK COUNTY | OHIO

DRAWN LDE	TRACED	CHECKED MAG	REVIEWED MJK	REVISED 3-2-76
DATE 1-16-70	DATE	DATE 6-11-70	DATE 11-22-71	1668

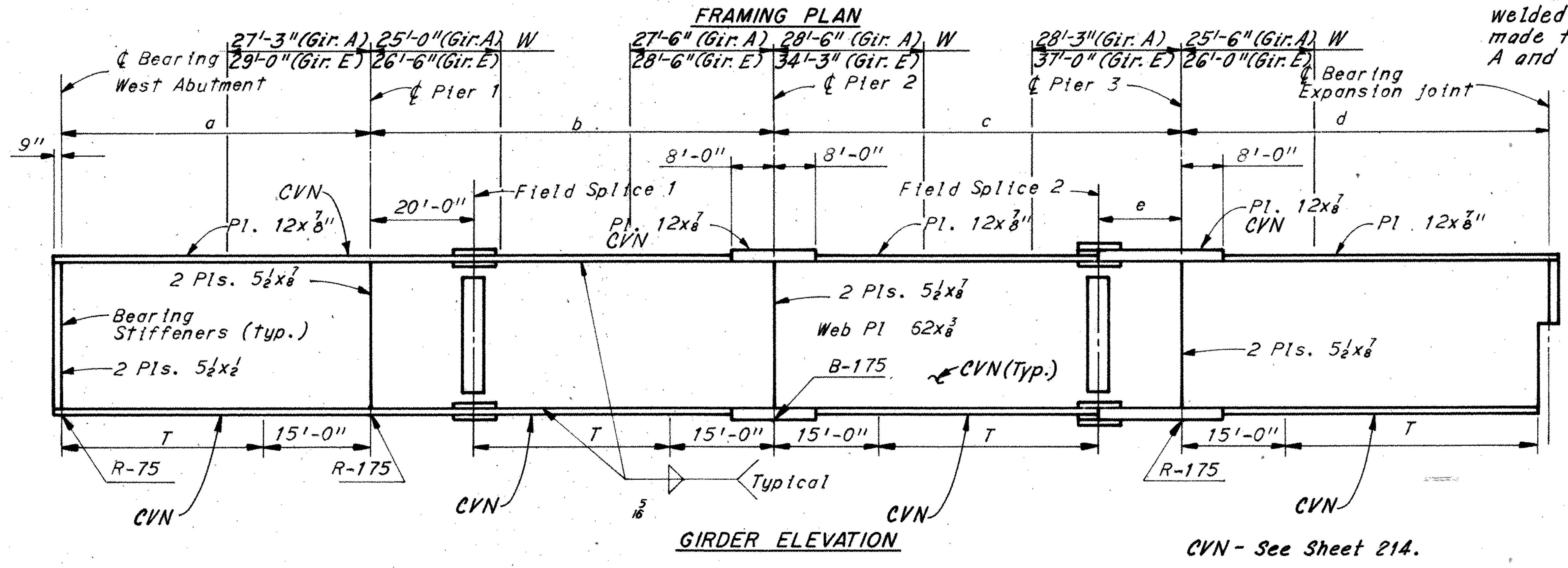
Revised 4-28-77 REV-8-27-76

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



FRAMING PLAN



GIRDER ELEVATION

Note:
"W" denotes the range where welded attachments cannot be made to the top flange of Girders A and E.

CVN - See Sheet 214.

TABLE OF GIRDER SPACINGS		
Location	"A"	"B"
West Abutment	7'-2$\frac{1}{8}$"	5'-3$\frac{7}{16}$"
Pier 1	7'-2$\frac{5}{16}$"	5'-3$\frac{9}{16}$"
Field Splice 1	7'-2$\frac{3}{8}$"	5'-3$\frac{5}{8}$"
Pier 2	7'-2$\frac{9}{16}$"	5'-3$\frac{3}{4}$"
Field Splice 2	7'-2$\frac{13}{16}$"	5'-3$\frac{15}{16}$"
Pier 3	7'-2$\frac{7}{8}$"	5'-4"
Expansion Joint	7'-1$\frac{3}{4}$"	5'-3$\frac{3}{16}$"

Notes:

Top and bottom flanges are identical in size.

All stiffeners shall be placed normal to girder flanges.

All intermediate stiffener to web welds shall be ¼" continuous fillets on both sides of stiffeners.

For detail of field splices see Sheet 355.

Intermediate stiffeners shall be placed as shown on framing plan, equally spaced between crossframes or crossframes and bearing stiffeners or crossframes and splices.

End crossframe details shall be same as shown on Ohio Standard Drawing SD-1-69, Sheet 1 of 4, and Sheet 359.

For intermediate crossframe details see Sheet 360.

All crossframes are intermediate crossframes unless shown otherwise.

For details of roadway end dam, see Ohio Standard Drawing SD-1-69, Sheet 1 of 4.

For details at rockers and bolsters see Ohio Standard Drawing RB-1-55.

The girders shall be fabricated to lines parallel to profiles formed by top of pavement elevations directly over girders, plus the camber required to compensate for dead load deflection.

The allowance to be made in screed settings to compensate for dead load deflections due to concrete and wearing course are to be made above or below the top of the pavement elevations as required. Screeds may require further adjustment due to irregularities in fabricated steel.

For details of curb plates at concrete bridge railing see Ohio Standard Dwg. SD-1-69, Sheet 2 of 4.

Dimensions to scuppers are measured along centerline of girders.

■ Denotes Standard scupper.

Tension areas of bottom flange are denoted by "T". For the top flange, these areas are in compression.

For Camber and Deflection Table see Sheet 364.

Intermediate stiffeners shall be Pls. 5x$\frac{5}{16}$.

For expansion joint details see Sheet 356.

For details of intermediate stiffeners see Sheet 360.

For underdeck lighting details see Lighting Plans

Scuppers shall be in accordance with Std. Dwg. SD-1-69 except that scupper pipes shall extend 8" below the bottom of girders instead of 2".

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS																	
Girder	℄ Brg. W. Abut	.25	.50	.75	℄ Pier 1	* .25	.50	.75	℄ Pier 2	.25	.50	* .75	℄ Pier 3	.25	.50	.75	℄ Brg. Exp. Jt.
A	1046.07	1046.47	1046.90	1047.36	1047.83	1048.52	1049.19	1049.92	1050.65	1051.38	1052.12	1052.99	1053.59	1054.17	1054.74	1055.31	1055.87
B	1046.15	1046.56	1046.99	1047.44	1047.91	1048.59	1049.27	1049.99	1050.71	1051.45	1052.18	1053.05	1053.65	1054.27	1054.88	1055.50	1056.11
C	1046.24	1046.64	1047.07	1047.52	1047.99	1048.67	1049.34	1050.06	1050.78	1051.52	1052.25	1053.12	1053.72	1054.36	1055.02	1055.69	1056.36
D	1046.33	1046.73	1047.15	1047.60	1048.07	1048.74	1049.41	1050.13	1050.85	1051.58	1052.32	1053.18	1058.78	1054.45	1055.15	1055.88	1056.60
E	1046.15	1046.54	1046.97	1047.41	1047.88	1048.55	1049.21	1049.93	1050.65	1051.38	1052.11	1052.97	1053.57	1054.27	1054.99	1055.74	1056.50

*Elevation given is at field splice

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS AT GUTTERLINE																	
	℄ Brg. W. Abut.	.25	.50	.75	℄ Pier 1	.25	.50	.75	℄ Pier 2	.25	.50	.75	℄ Pier 3	.25	.50	.75	℄ Brg. Exp. Jt.
North Gutterline	1046.07	1046.48	1046.91	1047.36	1047.83	1048.50	1049.20	1049.93	1050.65	1051.39	1052.13	1052.86	1053.59	1054.17	1054.75	1055.32	1055.87
South Gutterline	1046.15	1046.55	1046.98	1047.41	1047.88	1048.53	1049.22	1049.94	1050.65	1051.38	1052.12	1052.84	1053.57	1054.28	1055.01	1055.76	1056.50

Note

Gutterline elevations shown have been adjusted for dead load deflections caused by the weight of concrete and wearing course, and are the elevations required before the concrete deck is placed. No concrete shall be placed until the screed rails have been set for the entire unit.

TABLE OF DIMENSIONS					
Girder	a	b	c	d	e
A	59'-5$\frac{7}{8}$"	77'-3$\frac{15}{16}$"	78'-2$\frac{3}{16}$"	62'-9$\frac{3}{16}$"	16'-0"
B	59'-5$\frac{7}{8}$"	77'-3$\frac{15}{16}$"	78'-2$\frac{1}{8}$"	64'-8$\frac{7}{16}$"	16'-0"
C	59'-5$\frac{7}{8}$"	77'-3$\frac{7}{8}$"	78'-2$\frac{1}{16}$"	66'-7$\frac{11}{16}$"	16'-0"
D	59'-5$\frac{7}{8}$"	77'-3$\frac{13}{16}$"	78'-2"	68'-6$\frac{15}{16}$"	16'-0"
E	59'-5$\frac{13}{16}$"	77'-3$\frac{13}{16}$"	78'-1$\frac{15}{16}$"	70'-6$\frac{3}{16}$"	15'-11$\frac{15}{16}$"

H.N.T.B. BRIDGE NO. 7

Revised 6-4-75 By W.E.B.

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

12/21

FRAMING PLAN - UNIT I

RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488
SCALE: 1"=20'-0"

STA. 960 + 44.85
STA. 970 + 69.80

RELOCATED U.S. 30

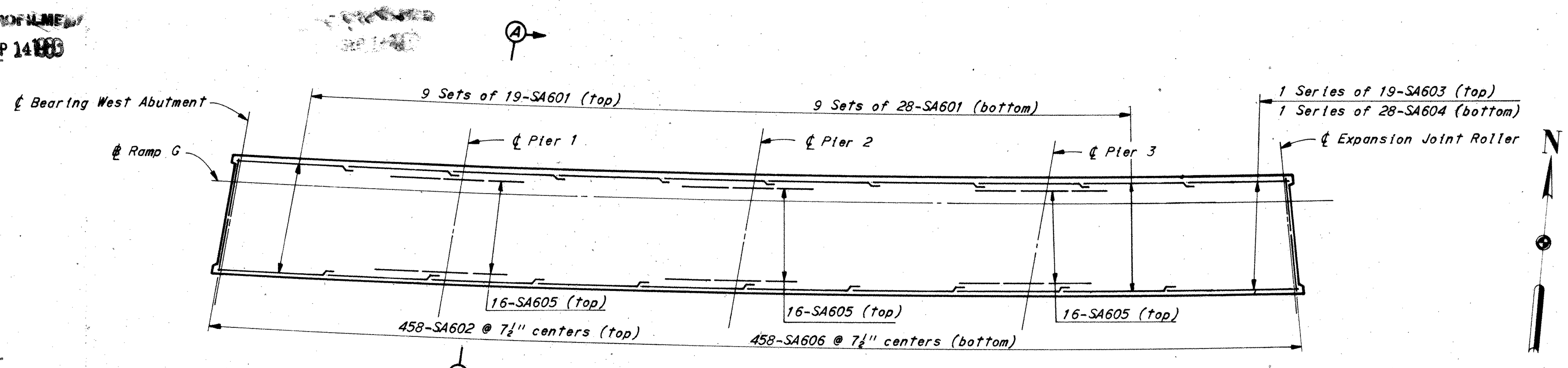
CANTON STARK COUNTY OHIO

DRAWN LDL	TRACED	CHECKED DWB	REVIEWED MJK	REVISED
DATE 10-30-69	DATE	DATE 5-18-70	DATE 11-22-71	1668

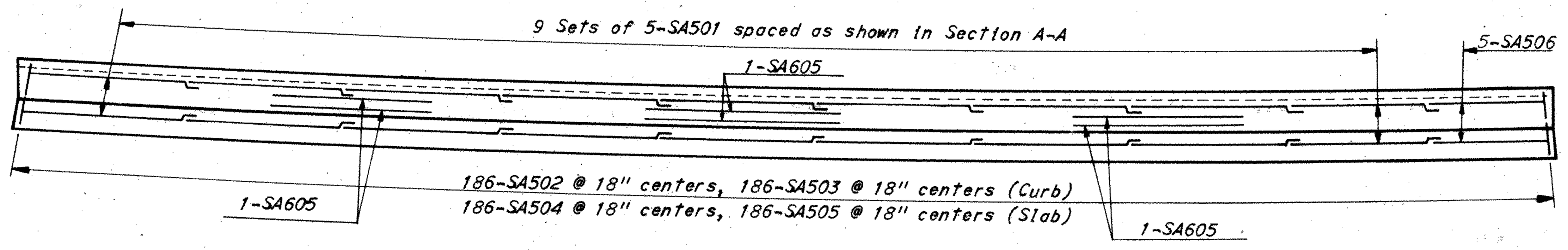
Revised 4-28-77

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			275 / 389

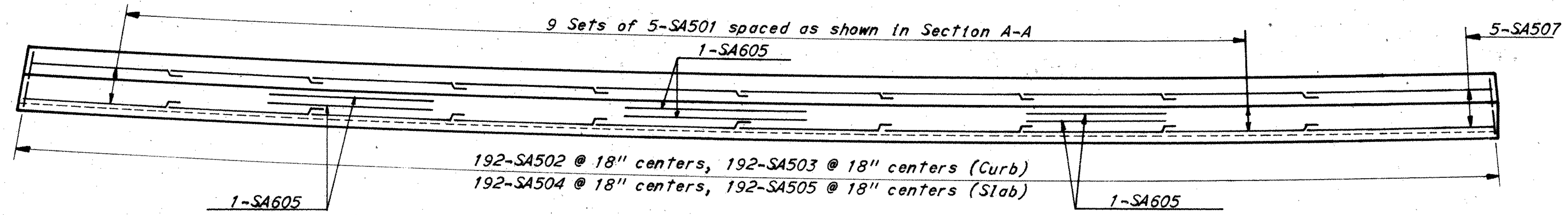
STARK COUNTY
STA-30-14.12
STA-77-9.22



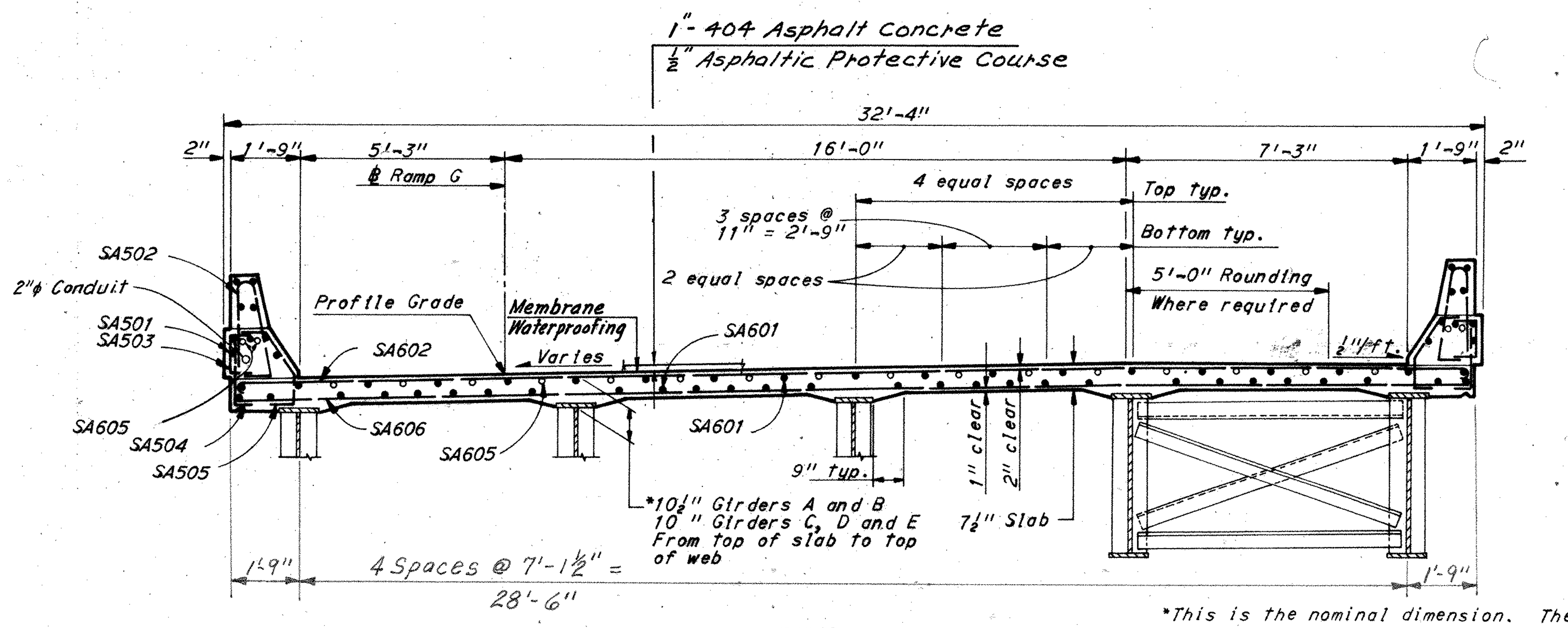
DECK PLAN



NORTH CURB PLAN

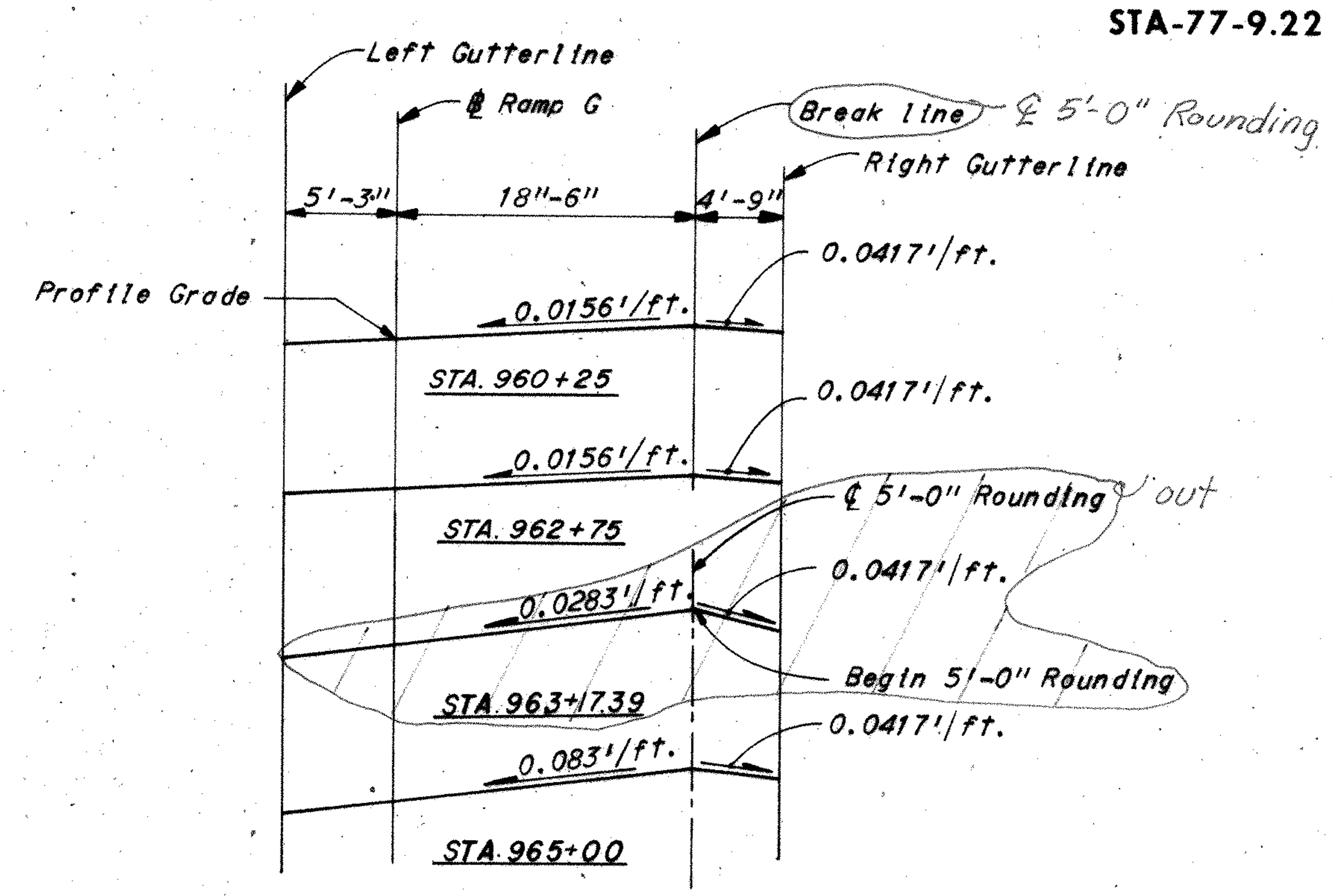


SOUTH CURB PLAN



SECTION A-A

*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.18 of the Construction and Materials Specifications.



SUPERELEVATION FOR RAMP G

Notes:

Reinforcing steel shall be adjusted as required to clear scuppers.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For concrete railing details see Sheet 361.

For deflection joint details see Sheet 361.

Transverse reinforcing steel shall be placed radial to and spaced along Girder E.

For reinforcement schedule see Sheet 20/21

For parapet details see Sheet 359.

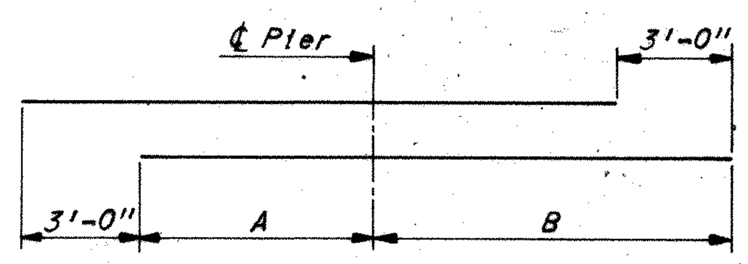


DIAGRAM SHOWING STAGGER OF S605 BARS OVER PIERS

	A	B
Pier 1	13'-6"	17'-6"
Pier 2	13'-0"	18'-0"
Pier 3	13'-6"	17'-6"

H.N.T.B. BRIDGE NO. 7 — Revised 6-4-75 By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 13/21

DECK PLAN UNIT 1

RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488 — STA. 960 + 44.85
SCALE: 1" = 20'-0" — STA. 970 + 69.80

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN L.D.L.	TRACED	CHECKED DWB	REVIEWED MJK	REVISED 3-2-76
DATE 11-17-69	DATE	DATE 3-19-70	DATE 11-22-71	1668

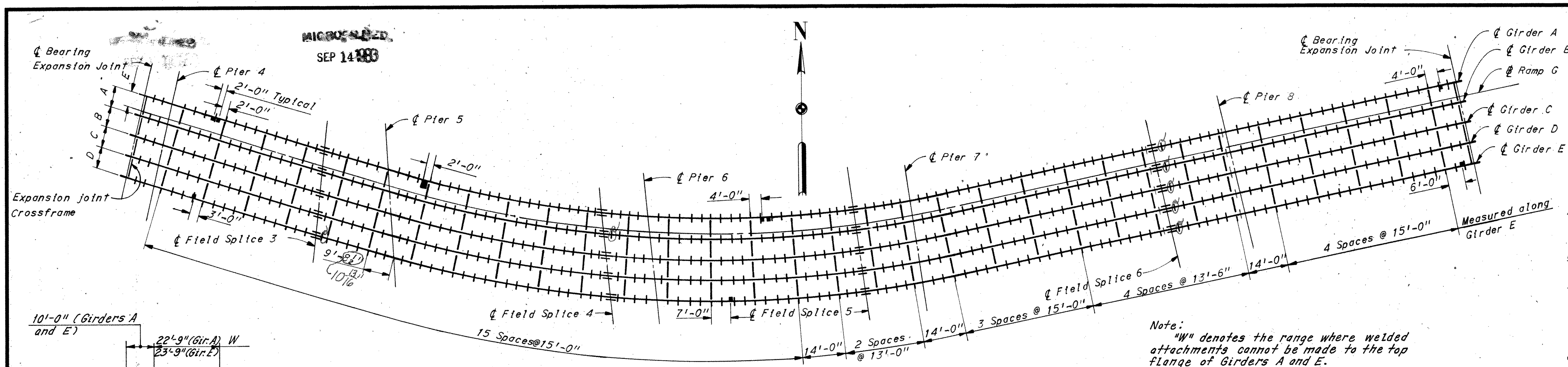
Revised 4-28-77

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

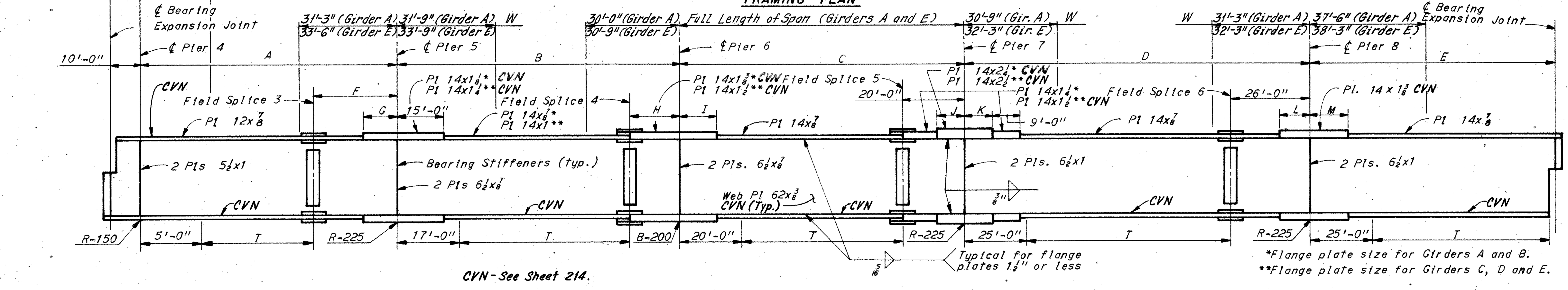
276 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

MICROFILMED SEP 14 1983



FRAMING PLAN



CVN - See Sheet 214.

GIRDER ELEVATION

Note:
"W" denotes the range where welded attachments cannot be made to the top flange of Girders A and E.

*Flange plate size for Girders A and B.
**Flange plate size for Girders C, D and E.

TABLE OF DIMENSIONS													
Girder	A	B	C	D	E	F	G	H	I	J	K	L	M
A	78'-1 3/4"	91'-2"	91'-4"	111'-7 13/16"	81'-7 1/8"	23'-0 7/8"	10'-0"	16'-0 1/16"	15'-0"	10'-0"	8'-0"	8'-0"	10'-0"
B	80'-2 15/16"	91'-4 7/16"	91'-7 15/16"	112'-3 7/16"	81'-5 7/16"	24'-4"	10'-0"	16'-0"	15'-0"	10'-0"	8'-0"	8'-0"	10'-0"
C	82'-4 1/16"	91'-6 7/8"	91'-11 15/16"	112'-11"	81'-3 3/4"	25'-7 1/8"	11'-0"	15'-11 7/8"	18'-0"	9'-0"	9'-0"	10'-0"	12'-0"
D	84'-5 1/4"	91'-9 5/16"	92'-3 15/16"	113'-6 5/8"	81'-2"	26'-10 1/4"	11'-0"	15'-11 3/4"	18'-0"	9'-0"	9'-0"	10'-0"	12'-0"
E	86'-6 3/8"	91'-11 13/16"	92'-7 15/16"	114'-2 1/4"	81'-0 5/16"	28'-1 5/16"	11'-0"	15'-11 11/16"	18'-0"	9'-0"	9'-0"	10'-0"	12'-0"

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS														
Girder	℄ Brg. Exp. Jt.	Pier 4	.25	.50	* .75	℄ Pier 5	.25	.50	* .75	℄ Pier 6	.25	.50	* .75	℄ Pier 7	0.1
A	1055.87	1056.23	1056.94	1057.64	1058.22	1059.05	1059.88	1060.71	1061.80	1062.39	1063.18	1063.90	1064.62	1065.11	1065.35
B	1056.11	1056.49	1057.26	1058.02	1058.63	1059.56	1060.42	1061.29	1062.42	1063.02	1063.80	1064.49	1065.15	1065.58	1065.79
C	1056.36	1056.76	1057.59	1058.41	1059.04	1060.07	1060.97	1061.87	1063.04	1063.64	1064.41	1065.07	1063.67	1066.05	1066.23
D	1056.60	1057.02	1057.92	1058.81	1059.46	1060.59	1061.53	1062.46	1063.66	1064.26	1065.03	1065.65	1066.20	1066.52	1066.68
E	1056.50	1056.93	1057.86	1058.78	1059.43	1060.64	1061.57	1062.51	1063.70	1064.30	1065.04	1065.65	1066.17	1066.48	1066.62

Girder	0.2	0.3	0.4	0.5	0.6	0.7	*0.8	0.9	℄ Pier 8	.25	.50	.75	℄ Brg. Exp. Jt.
A	1065.56	1065.76	1065.93	1066.08	1066.21	1066.31	1066.37	1066.46	1066.51	1066.53	1066.48	1066.36	1066.16
B	1065.98	1066.15	1066.29	1066.42	1066.52	1066.60	1066.65	1066.70	1066.72	1066.69	1066.59	1066.42	1066.18
C	1065.40	1066.54	1066.66	1066.76	1066.84	1066.89	1066.92	1066.94	1066.93	1066.85	1066.71	1066.49	1066.20
D	1066.82	1066.93	1067.03	1067.10	1067.16	1067.18	1067.19	1067.18	1067.14	1067.01	1066.82	1066.55	1066.22
E	1066.76	1066.87	1066.95	1067.02	1067.06	1067.08	1067.08	1067.06	1067.01	1066.91	1066.74	1066.51	1066.21

* Elevation given is at field splice.

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS AT GUTTERLINE														
	℄ Brg. Exp. Jt.	Pier 4	.25	.50	.75	℄ Pier 5	.25	.50	.75	℄ Pier 6	.25	.50	.75	℄ Pier 7	0.1
North Gutterline	1055.87	1056.23	1056.95	1057.65	1058.35	1059.05	1059.89	1060.73	1061.56	1062.39	1063.18	1063.90	1064.55	1065.11	1065.36
South Gutterline	1056.50	1056.93	1057.88	1058.80	1059.72	1060.64	1061.58	1062.53	1063.45	1064.30	1065.05	1065.66	1066.12	1066.48	1066.63

	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ Pier 8	.25	.50	.75	℄ Brg. Exp. Jt.
North Gutterline	1065.58	1065.80	1065.98	1066.13	1066.26	1066.35	1066.43	1066.47	1066.51	1066.53	1066.49	1066.37	1066.16
South Gutterline	1066.78	1066.91	1067.00	1067.07	1067.11	1067.12	1067.10	1067.07	1067.01	1066.91	1066.75	1066.52	1066.21

TABLE OF GIRDER SPACINGS					
Location	A	B	C	D	E
Expansion Joint	7'-1 3/4"	7'-1 3/4"	7'-1 3/4"	7'-1 3/4"	5'-3 3/16"
Pier 4	7'-1 3/4"	7'-1 3/4"	7'-1 3/4"	7'-1 3/4"	5'-3 3/16"
Field Splice 3	7'-2 13/16"	7'-2 13/16"	7'-2 13/16"	7'-2 13/16"	5'-4"
Pier 5	7'-6 1/2"	7'-6 1/2"	7'-6 7/16"	7'-6 3/8"	5'-6 11/16"
Field Splice 4	7'-3 1/8"	7'-3 1/16"	7'-3"	7'-2 15/16"	5'-4 3/16"
Pier 6	7'-2 1/2"	7'-2 7/16"	7'-2 7/16"	7'-2 3/8"	5'-3 3/4"
Field Splice 5	7'-1 1/2"	7'-1 1/2"	7'-1 1/2"	7'-1 1/2"	5'-3"
Pier 7	7'-1 9/16"	7'-1 9/16"	7'-1 9/16"	7'-1 9/16"	5'-3 1/16"
Field Splice 6	7'-1 1/2"	7'-1 1/2"	7'-1 1/2"	7'-1 1/2"	5'-3"
Pier 8	7'-1 1/2"	7'-1 1/2"	7'-1 1/2"	7'-1 1/2"	5'-3"
Expansion Joint	7'-1 1/2"	7'-1 1/2"	7'-1 1/2"	7'-1 1/2"	5'-3"

Note:
Gutterline elevations shown have been adjusted for dead load deflections caused by the weight of concrete and wearing course, and are the elevations required before the concrete deck is placed. No concrete shall be placed until the screed rails have been set for the entire unit.

Notes:

Top and bottom flanges are identical in size.

All stiffeners shall be placed normal to girder flanges.

All intermediate stiffener to web welds shall be 1/4" continuous fillets on both sides of stiffeners.

For detail of field splices see Sheet 355.

Intermediate stiffeners shall be placed as shown on framing plan, equally spaced between crossframes or crossframes and bearing stiffeners or crossframes and splices.

End crossframe details shall be same as shown on Ohio Standard Drawing SD-1-69, Sheet 1 of 4.

For intermediate crossframe details see Sheet 360.

All crossframes are intermediate crossframes unless shown otherwise.

For details of roadway end dam, see Ohio Standard Drawing SD-1-69, Sheet 1 of 4, and Sheet 359.

For details at rockers and bolsters see Ohio Standard Drawing RB-1-55.

The girders shall be fabricated to lines parallel to profiles formed by top of pavement elevations directly over girders, plus the camber required to compensate for dead load deflection.

The allowance to be made in screed settings to compensate for dead load deflections due to concrete and wearing course are to be made above or below the top of the pavement elevations as required. Screeds may require further adjustment due to irregularities in fabricated steel.

For details of curb plates at concrete bridge railing see Ohio Standard Dwg. SD-1-69, Sheet 2 of 4.

Dimensions to scuppers are measured along center-line of girders.

■ Denotes Standard scupper.

Tension areas of bottom flange are denoted by "T". For the top flange, these areas are in compression.

For Camber and Deflection Table see Sheet 364.

Intermediate stiffeners shall be Pls. 5x5/16.

For expansion joint details see Sheets 356 and 357.

For expansion joint crossframe see Sheet 360.

For detail of intermediate stiffeners see Sheet 360.

For underdeck lighting details see Lighting Plans.

Scuppers shall be in accordance with Std. Dwg. SD-1-69 except that scupper pipes shall extend 8" below the bottom of girders instead of 2".

H.N.T.B. BRIDGE NO. 7 | Revised 6-4-75 By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
14/21

FRAMING PLAN - UNIT 2

RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488
SCALE: 1"=20'-0"
STA. 960 + 44.85
STA. 970 + 69.80

RELOCATED U.S. 30

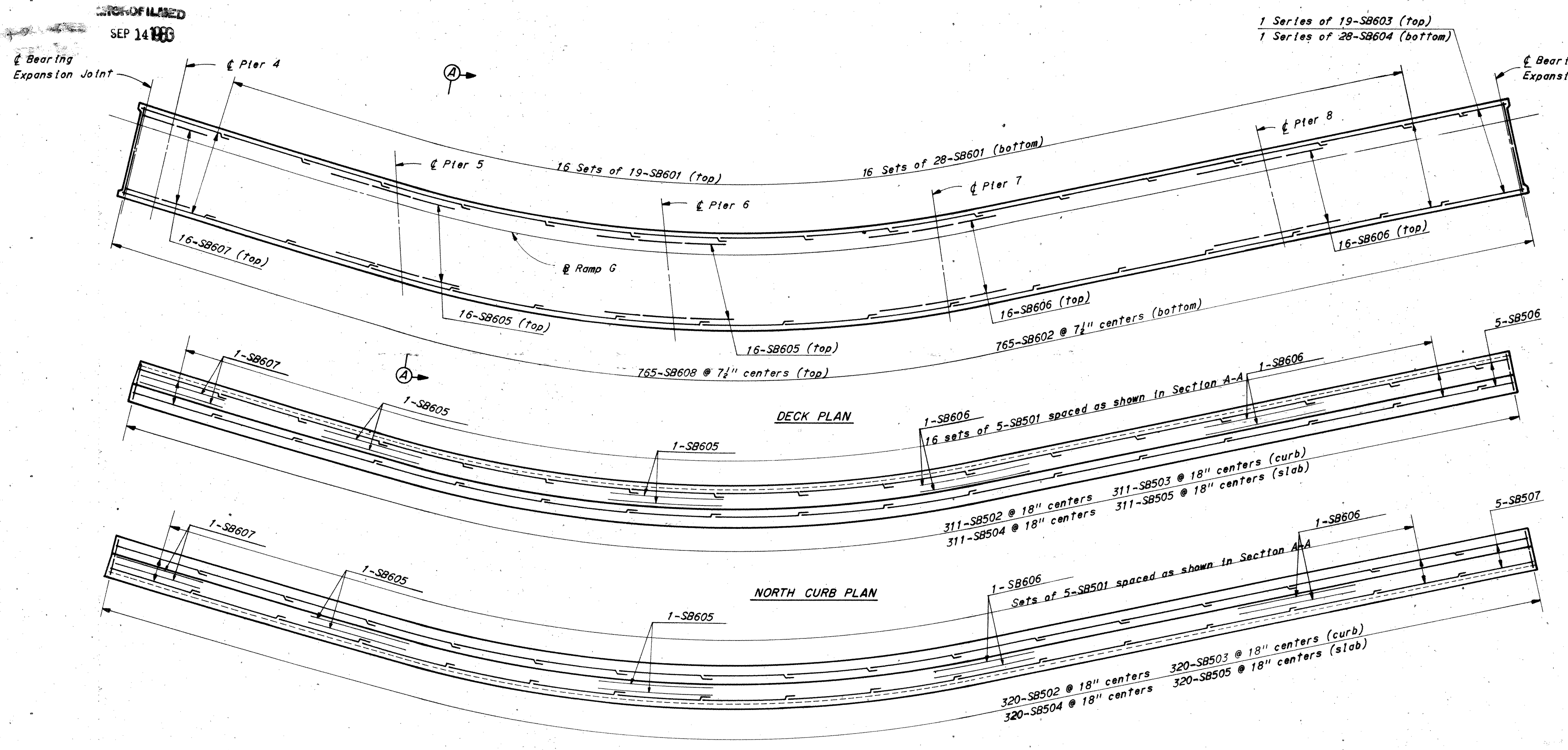
CANTON | STARK COUNTY | OHIO

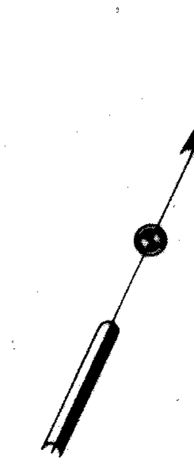
DRAWN LDL	TRACED	CHECKED DWB	REVIEWED MJK	REVISED 7-12-76
DATE 11-10-69	DATE	DATE 5-19-70	DATE 11-22-71	1668

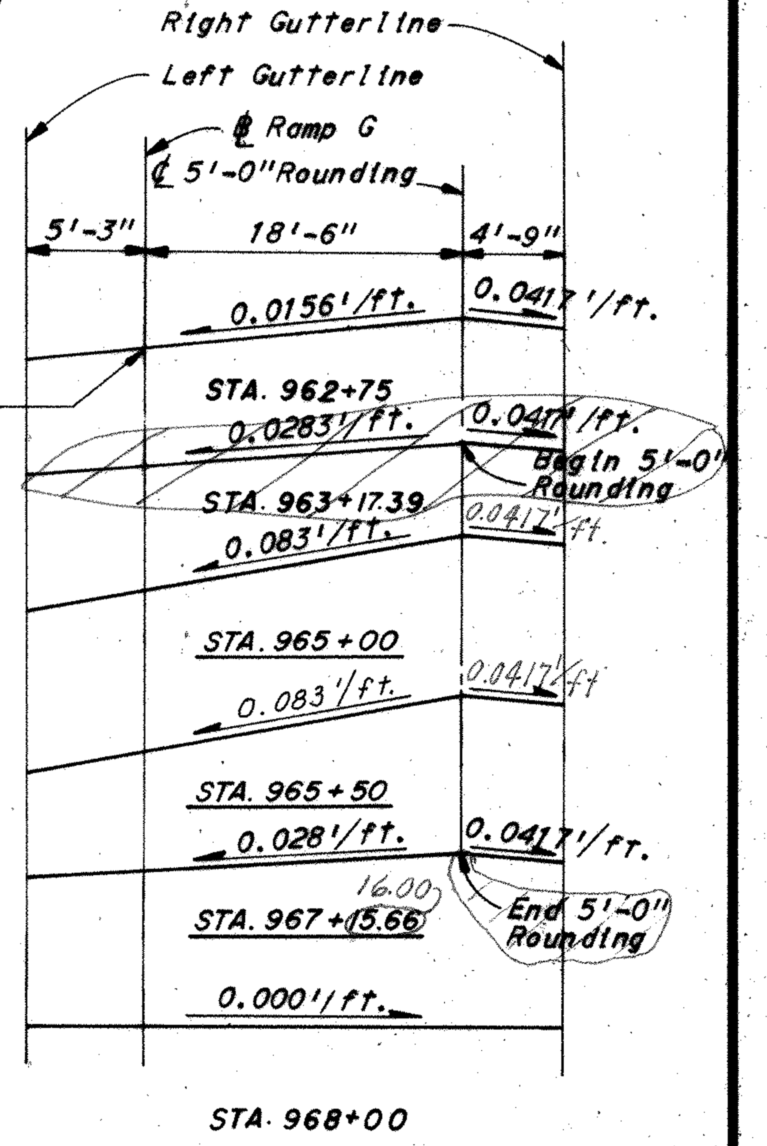
Revised 4-28-77

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			277/389

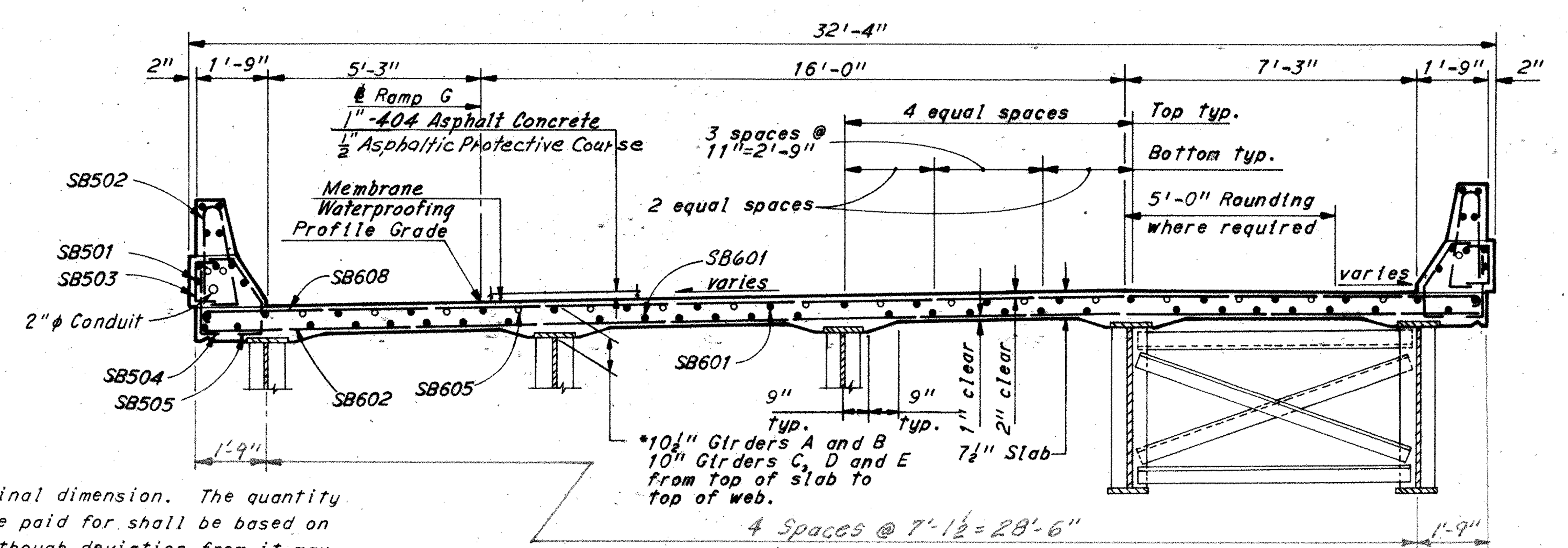
STARK COUNTY
STA-30-14.12
STA-77-9.22







SUPERELEVATION FOR RAMP G



SECTION A-A

*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.18 of the Construction and Materials Specifications.

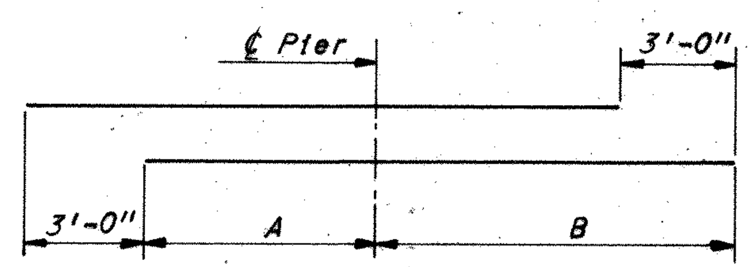


DIAGRAM SHOWING STAGGER OF SB605 AND SB606 BARS OVER PIERS

	A	B
Pier 5	16'-0"	21'-0"
Pier 6	16'-0"	21'-0"
Pier 7	17'-9"	28'-3"
Pier 8	21'-0"	25'-0"

Notes:

Reinforcing steel shall be adjusted as required to clear scuppers.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For concrete railing details see Sheet 361.

For deflection joint details see Sheet 361.

Transverse reinforcing steel shall be placed radial or normal to and spaced along Girder E.

For reinforcement schedule see Sheet 21/21.

For parapet details see Sheet 359.

Concrete shall be placed from the expansion joint near Pier 4 to Pier 3 before placing any concrete from the expansion joint to Pier 5.

H.N.T.B. BRIDGE NO. 7 — Revised 6-4-75 By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 15/21
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DECK PLAN UNIT 2

RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488 — STA. 960+44.85
SCALE: 1"=20'-0" — STA. 970+69.80

RELOCATED U.S. 30

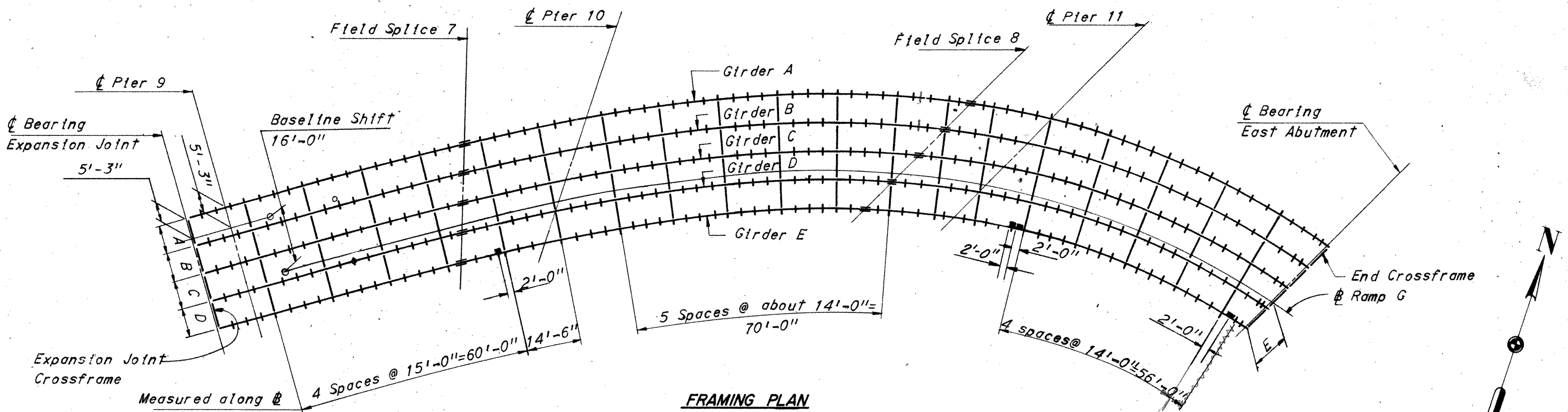
CANTON — STARK COUNTY — OHIO

DRAWN D.L. DATE 2-24-70	TRACED DATE	CHECKED D.W.S. DATE 5-22-70	REVIEWED M.J.K. DATE 11-23-71	REVISED 3-2-76
				1668

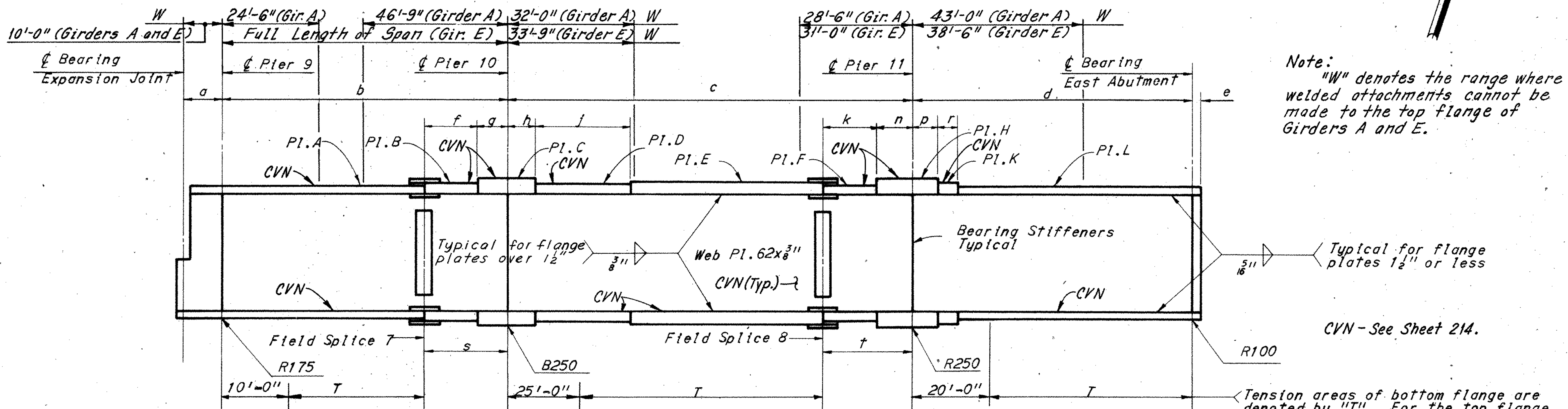
Revised 4-28-77

FED ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	278 / 389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22



FRAMING PLAN



GIRDER ELEVATION

TABLE OF DIMENSIONS

Girder	a	b	c	d	e	f	g	h	j	k	n	p	r	s	t
A	10'-0"	93'-6 1/4"	117'-9 3/8"	76'-4 1/8"	9 1/8"	22'-2 5/16"	9'-0"	9'-0"	24'-0"	9'-10 1/8"	11'-0"	8'-0"	8'-0"	31'-2 5/16"	20'-10 1/16"
B	10'-0"	88'-11 3/8"	114'-3"	76'-9 3/8"	9 3/8"	20'-9 5/16"	8'-0"	10'-0"	21'-0"	10'-2 3/8"	11'-0"	8'-0"	6'-0"	28'-9 5/16"	21'-2 3/8"
C	10'-0"	84'-4 13/16"	110'-8 3/4"	77'-4 3/8"	9 3/8"	18'-4 13/16"	8'-0"	11'-0"	15'-0"	10'-6 13/16"	11'-0"	8'-0"	6'-0"	26'-4 13/16"	21'-6 13/16"
D	10'-0"	79'-9 3/8"	107'-0 1/8"	78'-0 1/8"	9 3/8"	15'-11 1/4"	8'-0"	10'-0"	16'-0"	9'-0 1/8"	13'-0"	11'-0"	—	23'-11 1/4"	22'-0 1/4"
E	10'-0"	75'-2 1/16"	103'-3 7/8"	78'-8 13/16"	9 3/8"	13'-5 5/16"	8'-0"	10'-0"	16'-0"	9'-6 1/8"	13'-0"	11'-0"	—	21'-5 5/16"	22'-6 1/4"

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS

Girder	℄ Brg. Exp. Jt.	℄ Pier 9	.25	.50	*.75	℄ Pier 10	.1	.2	.3	.4	.5	.6	.7	*.8	.9	℄ Pier 11	.25	.50	.75	℄ Brg. E. Abut.
A	1066.16	1067.80	1067.41	1066.94	1066.57	1065.73	1065.38	1065.03	1064.68	1064.33	1063.98	1063.64	1063.30	1062.88	1062.62	1062.29	1061.75	1061.21	1060.67	1060.13
B	1066.18	1067.21	1066.84	1066.39	1066.02	1065.25	1064.91	1064.56	1064.22	1063.87	1063.53	1063.18	1062.84	1062.45	1062.16	1061.83	1061.26	1060.70	1060.14	1059.58
C	1066.20	1066.62	1066.27	1065.85	1065.48	1064.78	1064.45	1064.10	1063.76	1063.42	1063.08	1062.73	1062.40	1062.04	1061.72	1061.38	1060.79	1060.20	1059.61	1059.02
D	1066.22	1066.03	1065.70	1065.30	1064.94	1064.30	1063.99	1063.65	1063.31	1062.98	1062.64	1062.30	1061.96	1061.64	1061.28	1060.94	1060.33	1059.71	1059.09	1058.48
E	1066.21	1065.44	1065.13	1064.76	1064.39	1063.83	1063.53	1063.21	1062.87	1062.54	1062.20	1061.87	1061.54	1061.26	1060.86	1060.52	1059.88	1059.23	1058.58	1057.93

*Elevation given is at Field Splice

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS AT GUTTERLINE

	℄ Brg. Exp. Jt.	℄ Pier 9	.25	.50	.75	℄ Pier 10	.1	.2	.3	.4	.5	.6	.7	.8	.9	℄ Pier 11	.25	.50	.75	℄ Brg. E. Abut.
West Gutterline	1066.16	1067.80	1067.43	1066.96	1066.37	1065.73	1065.39	1065.05	1064.72	1064.37	1064.03	1063.68	1063.34	1062.98	1062.63	1062.29	1061.75	1061.21	1060.67	1060.13
East Gutterline	1066.21	1065.44	1065.13	1064.77	1064.32	1063.83	1063.53	1063.22	1062.88	1062.56	1062.22	1061.89	1061.54	1061.21	1060.86	1060.52	1059.88	1059.24	1058.59	1057.93

TABLE OF PLATES

Grd.	Pl.A	Pl.B	Pl.C	Pl.D	Pl.E	Pl.F		Pl.H	Pl.K	Pl.L
A	14x1	14x1 1/2	14x2 1/4	14x1 3/8	14x1 7/8	14x1 3/8		14x3	14x2 1/4	14x1 3/8
B	14x1	14x1 3/8	14x2	14x1 1/8	14x1 7/8	14x1 1/8		14x2 3/4	14x1 7/8	14x1 3/8
C	14x 7/8	14x1 1/4	14x1 3/4	14x 7/8	14x1 5/8	14x 7/8		14x2 1/2	14x1 5/8	14x1 3/8
D	14x 7/8	14x1 1/4	14x1 1/2	14x 7/8	14x1 3/8	14x 7/8		14x2 1/4	-	14x1 3/8
E	14x 7/8	14x1 1/4	14x1 1/2	14x 7/8	14x1 3/8	14x 7/8		14x2 1/4	-	14x1 3/8

Note:

Gutterline elevations shown have been adjusted for dead load deflections caused by the weight of concrete and wearing course, and are the elevations required before the concrete deck is placed. No concrete shall be placed until the screed rails have been set for the entire unit.

BEARING STIFFENERS

Girder	Pier 9	Pier 10	Pier 11	E. Abut.
A	6 1/2x 3/4	6 1/2x1 1/8	6 1/2x1 1/8	6 1/2x 5/8
B	6 1/2x 3/4	6 1/2x1 1/8	6 1/2x1 1/8	6 1/2x 5/8
C	6 1/2x 3/4	6 1/2x1 1/8	6 1/2x1 1/8	6 1/2x 5/8
D	6 1/2x 3/4	6 1/2x1 1/8	6 1/2x1 1/8	6 1/2x 5/8
E	6 1/2x 3/4	6 1/2x1 1/8	6 1/2x1 1/8	6 1/2x 5/8

TABLE OF GIRDER SPACINGS

Location	A	B	C	D	E
℄ Expansion Joint	7'-1 1/2"	7'-1 1/2"	7'-1 1/2"	7'-1 1/2"	-
℄ Pier 9	7'-1 1/2"	7'-1 1/2"	7'-1 1/2"	7'-1 1/2"	-
℄ Field Splice 7	7'-4 3/8"	7'-4 7/16"	7'-4 1/2"	7'-4 9/16"	7'-6 1/8"
℄ Pier 10	8'-1 11/16"	8'-2 1/16"	8'-2 1/2"	8'-2 7/8"	8'-4 5/8"
℄ Field Splice 8	9'-0 1/2"	9'-2 3/4"	9'-5 3/16"	9'-7 15/16"	9'-10"
℄ Pier 11	8'-5 7/16"	8'-7"	8'-8 5/8"	8'-10 9/16"	9'-0 3/8"
℄ East Abutment	7'-2 15/16"	7'-3 1/16"	7'-3 3/16"	7'-3 5/16"	7'-4 7/8"

Notes:

Top and bottom flanges are identical in size.

All stiffeners shall be placed normal to girder flanges.

All intermediate stiffener to web welds shall be 1/4" continuous fillets on both sides of stiffeners.

For detail of field splices see Sheet 355.

All intermediate stiffeners shall be Pls. 5 x 5/16.

Intermediate stiffeners shall be placed as shown on framing plan, equally spaced between crossframes or crossframes and bearing stiffeners or crossframes and splices.

End crossframe details shall be same as shown on Ohio Standard Drawing SD-1-69, Sheet 1 of 4.

For intermediate crossframe details see Sheet 360.

All crossframes are intermediate crossframes unless shown otherwise.

For details of roadway end dam, see Ohio Standard Drawing SD-1-69, Sheet 1 of 4, and Sheet 359.

For details at rockers and bolsters see Ohio Standard Drawing RB-1-55.

The girders shall be fabricated to lines parallel to profiles formed by top of pavement elevations directly over girders, plus the camber required to compensate for dead load deflection.

The allowance to be made in screed settings to compensate for dead load deflections due to concrete and wearing course are to be made above or below the top of the pavement elevations as required. Screeds may require further adjustment due to irregularities in fabricated steel.

For details of curb plates at concrete bridge railing see Ohio Standard Drawing SD-1-69, Sheet 2 of 4.

Dimensions to scuppers are measured along centerline of girders.

■ Denotes Standard scupper

For Camber and Deflection Table see Sheet 364.

For Expansion Joint crossframe details see Sheet 360.

For detail of intermediate stiffeners see Sheet 360.

For underdeck lighting details see Lighting Plans

Scuppers shall be in accordance with Std. Dwg. SD-1-69 except that scupper pipes shall extend 8" below the bottom of girders instead of 2".

H.N.T.B. BRIDGE NO. 7 | Revised 6-4-75 | By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 16/21
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FRAMING PLAN - UNIT 3

RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488 STA. 960 + 44.85
SCALE: 1" = 20'-0" STA. 970 + 69.80

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

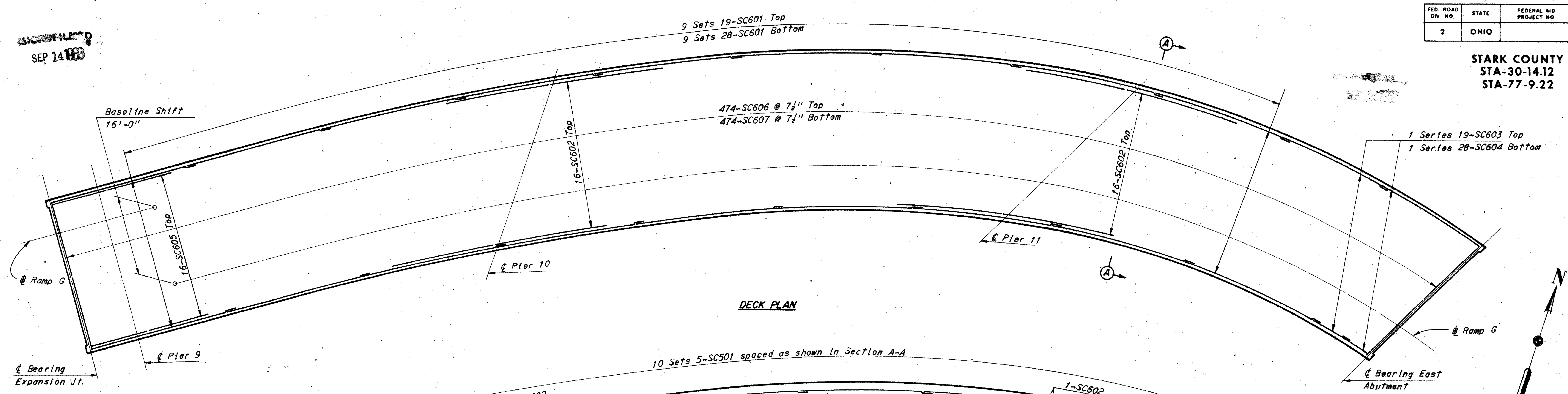
DRAWN LDE	TRACED	CHECKED D.W.B.	REVIEWED MJK	REVISED
DATE 11-14-69	DATE	DATE 5-21-70	DATE 11-22-71	1668

Revised 4-28-77

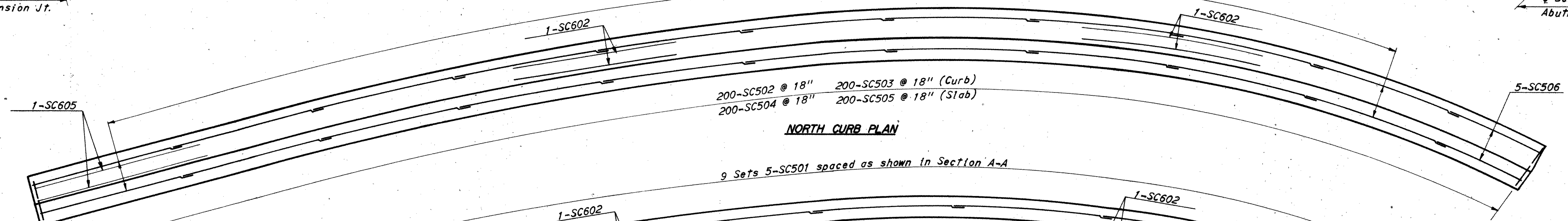
REV-8-27-76

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			279/389

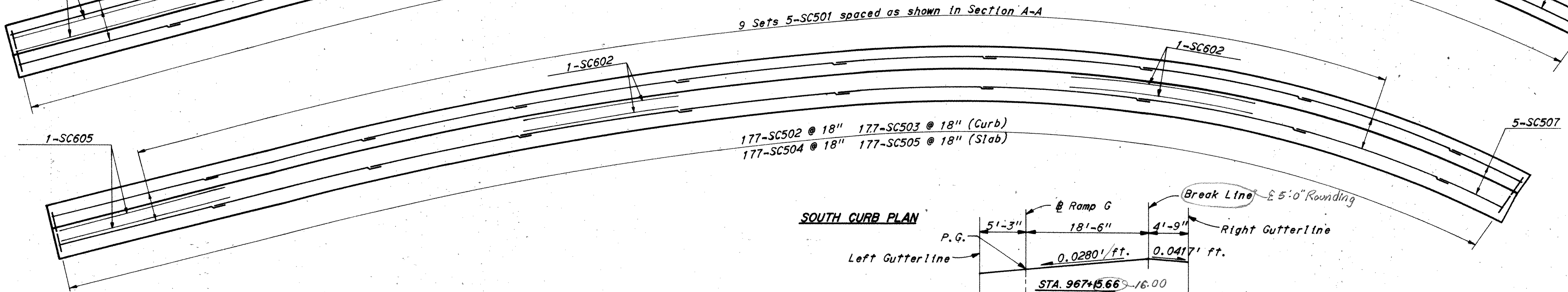
STARK COUNTY
STA-30-14.12
STA-77-9.22



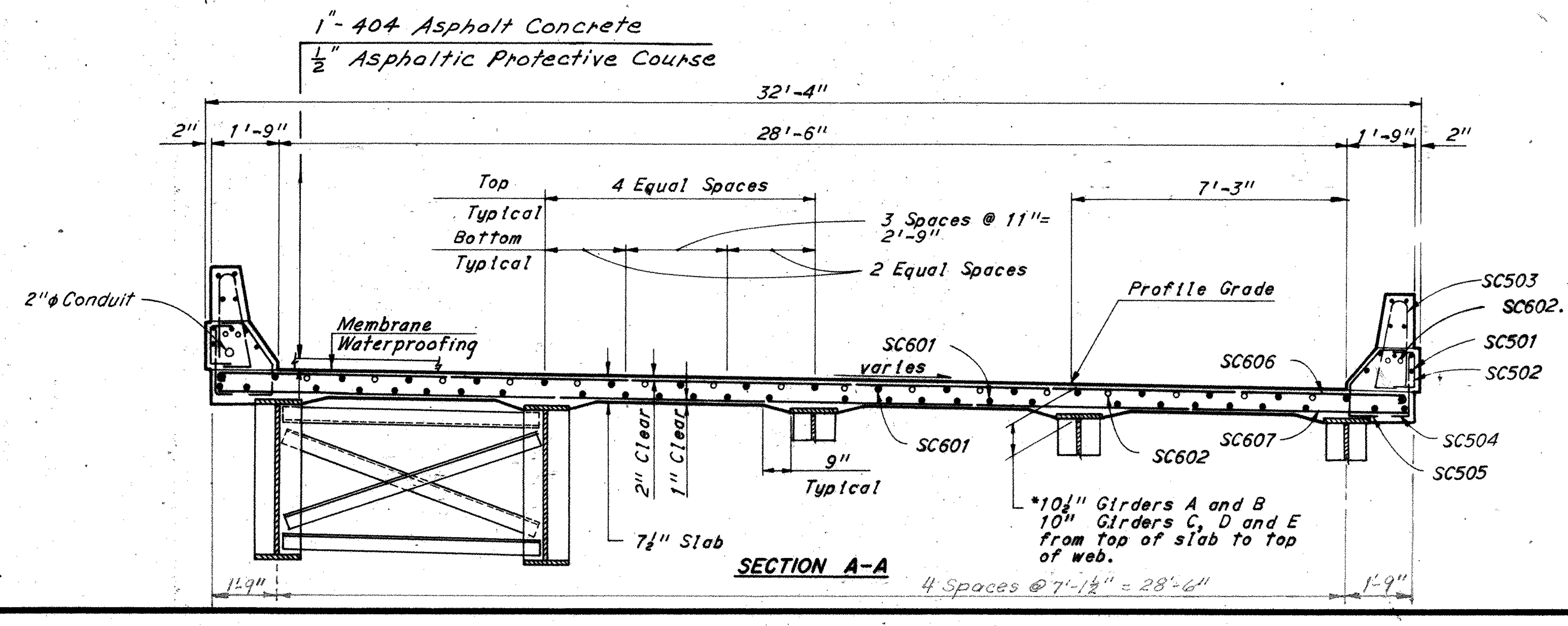
DECK PLAN



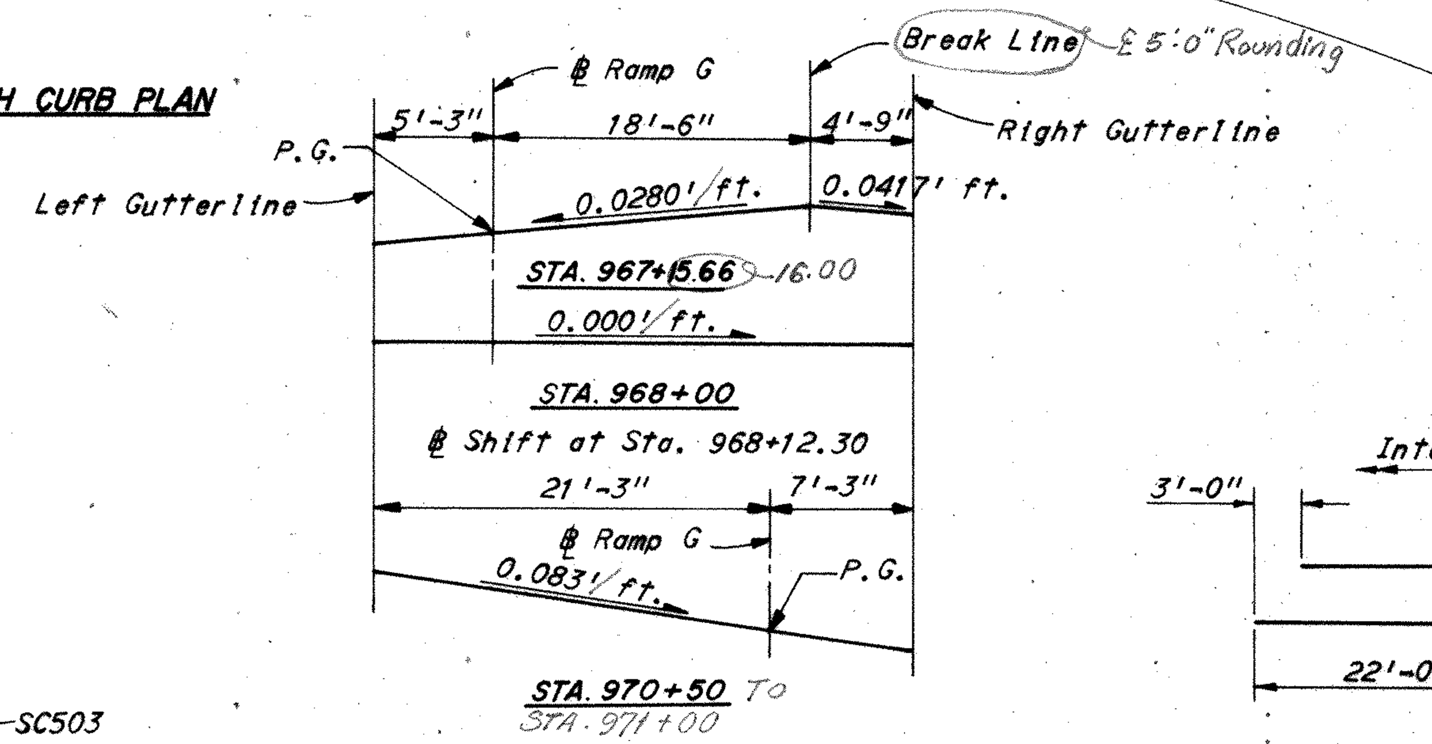
NORTH CURB PLAN



SOUTH CURB PLAN



SECTION A-A



SUPERELEVATION FOR RAMP G

*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.18 of the Construction and Materials Specifications.

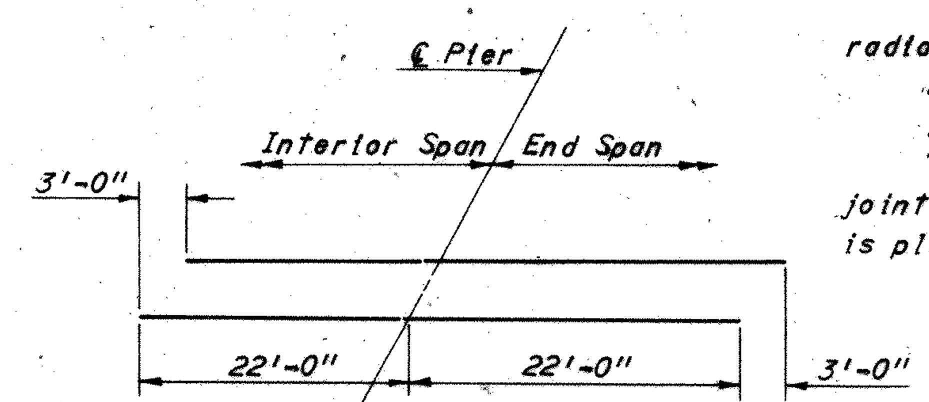


DIAGRAM SHOWING STAGGER OF SC602 BARS OVER PIER 10 & 11

Notes:

Reinforcing steel shall be adjusted as required to clear scuppers.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For concrete railing details see Sheet 361.

For deflection joint details see Sheet 361.

Transverse reinforcing steel shall be placed radial or normal to and spaced along Girder A.

For parapet details see Sheet 359.

For reinforcement schedule see Sheet 21/21

Concrete shall be placed from the expansion joint near Pier 9 to Pier 8 before any concrete is placed from the expansion joint to Pier 10.

H.N.T.B. BRIDGE NO. 7 — Revised 6-5-75 By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 17/21

DECK PLAN-UNIT 3

RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488 — STA. 960 + 44.85
SCALE: 1"=10'-0" — STA. 970 + 69.80

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN L.D.E. DATE 11-26-69	TRACED DATE	CHECKED D.W.B. DATE 5-28-70	REVIEWED M.J.T. DATE 11-27-71	REVISED 3-2-76
				1668

Revised 4-28-77

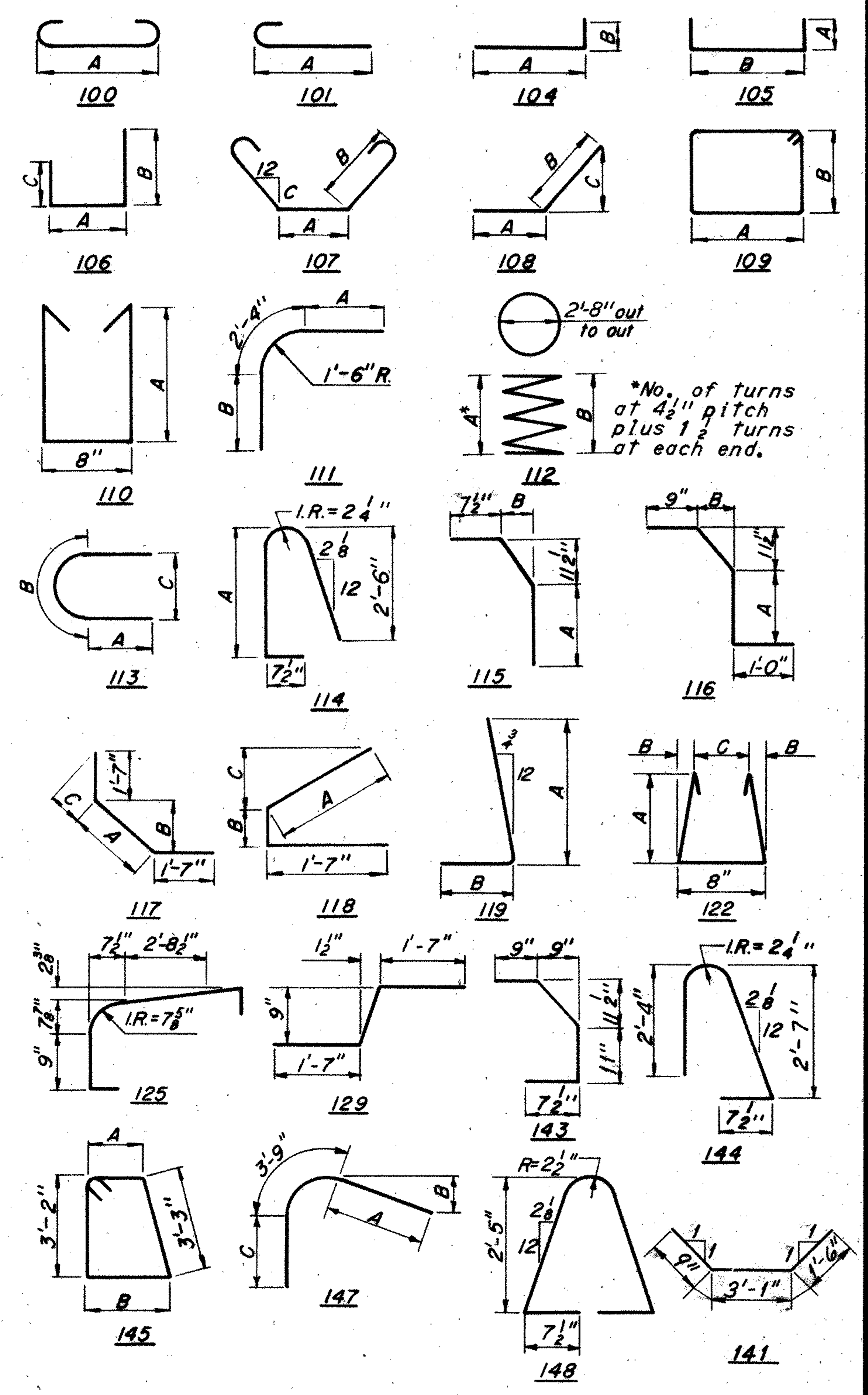
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
WEST ABUTMENT								
AB401 A	60	3'-5"	105	1'-0"	1'-8"			137
AA501	50	8'-4"	105	1'-7"	5'-5"			434
AA502	14	11'-6"	109	3'-0"	2'-6"			168
AA503	23	8'-11"	104	1'-0"	8'-0"			214
AA504	50	7'-2"	105	2'-0"	3'-5"			374
AA505	27	7'-11"	104	1'-0"	7'-0"			222
AA506	5	30'-6"	Str.					158
AA507	33	33'-0"	Str.					1136
AA509	12	2'-11"	104	1'-6"	1'-6"			36
AA510	14	4'-4"	118	1'-6"	1'-4"	1'-6"		63
AA511	2	13'-2"	108	7'-2"	6'-0"	2'-10"		27
AA512	6	6 5'-9" 0	Str.					38 36
AA513	1	5'-3"	Str.					6
AA514	1	4'-6"	Str.					5
AA515	1	4'-0"	Str.					4
AA516	6	3'-6"	Str.					22
AA517	4	7'-0"	Str.					29
AA518	2	9'-6"	Str.					20
AA519	20	3'-0"	Str.					62
AA520	15	7'-1"	114	3'-5"				111
AA521	25	2'-4"	105	9"	1'-1"			61
AA522	5	8'-8"	Str.					45
AA523	5	6'-9"	Str.					34
AA524	7	7'-9"	Str.					52
AA525	1	5'-3" 9	Str.					6
AA526	1	5 4'-6" 3	Str.					5
AA527	1	4'-0" 6	Str.					4
AA529	2	11'-6"	Str.					24
AA530	2	8-11'-0"	Str.					17 23
AA531	12	16'-6"	Str.					206
AA532	2	9'-6"	Str.					20
AA533	2	8'-0" 6	Str.					18 17
AA534	12	14'-6"	Str.					186
AA535	4	10'-3" 6	Str.					44 43
AA536	4	8'-3"	Str.					35
AA537	11	6'-6"	108	5'-6"	1'-0"	8½"		75
AA538	13	6'-3"	108	5'-3"	1'-0"	7¾" 9½"		85
AA540	2	9'-0"	Str.					19
AA601	23	15'-9"	106	5'-5"	8'-0"	2'-8"		545
AA602	27	14'-9"	106	5'-5"	7'-0"	2'-8"		597
AA603	4	16'-4" 7	109	5'-5"	2'-6"			100 98
AA604	58	5'-9"	105	2'-7"	11"			501
AA605	65	5 4'-3" 1	105	2-1'-7" 0	1'-5"			415 -96
AA606	29	12'-7"	105	5'-9"	1'-5"			548
AA607	36	15'-1"	105	7'-0"	1'-5"			816
AA608	7	7'-7"	105	3'-6"	11"			80
AA610	1	16'-10"	105	8'-0"	1'-2"			25
AA611	6	21'-4"	105	10'-3"	1'-2"			192
AA612	6	7'-7"	115	5'-11"	9"			68
AA613	7	19'-4" 10	105	9'-3" 6	1'-2"			2-103-9
AA614	1	14'-10" 4	105	7'-0" 3	1'-2"			22
AA615	7	8'-5" 10	115	7 6'-9" 0	9"			93 88
AA701	1	7 6'-5" 3	115	5 4'-9" 5	9"			13-5
AA702	1	6 5'-9" 6	115	4'-1" 8	9"			12-3
AA703	1	6 5'-1" 0	115	4 3'-5" 2	9"			10-2
AA704	6	5 4'-10" 7	115	3'-2" 9	9"			68 59
AA705	1	7 5'-10" 1	115	5 4'-2" 3	9"			12 4
AA706	1	7 6'-6" 7	115	5 4'-10" 9	9"			13-6
AA707	1	6 5'-2" 4	115	4 3'-6"	9"			10-3

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
AA801	14	35'-9"	Str.					1336
AA802	6	8'-0"	Str.					128
AA803	6	10'-0"	Str.					160
D801	44	5'-2"	141					607
				Total	West Abutment		=	10,662 816
EAST ABUTMENT								
AB401	30	3'-5"	105	1'-0"	1'-8"			68
AB501	8	6 7'-3"	Str.					60
AB502	8	5 6'-0"	Str.					50
AB505	8	3'-2"	108	1'-7"	1'-7"	1'-6"		26
AB506	8	4'-4"	118	1'-7"	1'-3"	1'-6"		36
AB507	4	8'-0"	Str.					33
AB508	20	11'-6"	109	3'-0"	2'-6"			242
AB509	12	30'-7"	Str.					383
AB511	9	31'-3"	Str.					295
AB512	22	6'-4"	105	1'-7"	3'-5"			145
AB513	22	7'-7"	104	6'-8"	1'-0"			174
AB514	22	8'-4"	105	1'-7"	5'-5"			191
AB515	28	17'-8"	Str.					516
AB516	16	8'-0"	Str.					134
AB517	2	5'-6"	Str.					11
AB518	4	12'-2"	Str.					51
AB519	8	9'-10"	Str.					82
AB520	12	11'-7"	Str.					145
AB521	2	4'-6"	Str.					9
AB522	4 Ser. 5	3'-3" to 2'-11"	Str.				1"	64
AB523	16	6'-5"	114	3'-2"				107
AB524	26	2'-2"	105	7½"	1'-2"			59
AB525	6	3'-9"	Str.					23
AB602	30	5'-7"	105	2'-6"	11"			252
AB603	30	5-4'-1"	105	2-1'-6" 0	1'-5"		229	184
AB604	30	15'-7"	105	7'-4"	1'-5"			702
AB605	22	14'-5"	106	5'-5"	6'-8"	2'-8"		477
AB606	16	18'-4"	105	8'-9"	1'-2"			440
AB607	4	7'-6"	104	6'-8"	1'-0"			45
AB608	16	9 8'-7" 2	115	7-6'-11" 4	9"			206 20
AB701	4	4'-10"	115	3'-2"	9"			40
AB703	2	4'-11"	115	3'-3"	9"			20
AB704	2	5'-8"	115	4'-0"	9"			23
AB705	2	6'-5"	115	4'-9"	9"			26
AB801	5	33'-2"	Str.					445
AB802	2	33'-9"	108	31'-6"	2'-3"	6-3"		180
AB803	2	17'-0" 9	108	14'-6" 3	2'-6"	2'-5"		91
AB804	1	14'-6" 3	Str.					39
AB805	1	13'-0"	Str.					35
AB806	2	11'-9"	Str.					63
AB807	2	11'-6"	Str.					62
AB808	1	14'-5" 3	Str.					39
AB809	1	14'-7" 3	Str.					39
AB810	2	16'-10" 7	104	14'-6" 3	2'-6"			90
D801	20	5'-2"	141					276
				Total East Abutment			=	6678 737

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
PIER 1								
SPA401	3	693'-10"	112	84.0	30'-6"			1682
PA501	2	3'-9"	105	1'-0"	2'-0"			8
PA502	2	4'-1"	105	1'-0"	2'-4"			9
PA503	34	4'-5"	105	1'-0"	2'-8"			157
PA504	18	12'-2"	109	2'-8"	3'-2"			228
PA601	4	28'-9"	Str.					173
PA602	8	8'-1"	113	1'-11"	4'-3"	2'-8"		93
PA801	72	12'-8"	100	10'-6"				2440
PA1001	5	11'-10"	111	8'-0"	1'-6"			257
PA1002	5	27'-10"	111	24'-0"	1'-6"			600
PA1003	5	28'-9"	Str.					623
PA1101	27	8'-9"	104	7'-0"	2'-0"			1255
PA1102	27	34'-0"	Str.					4875
					Total	Pier 1	=	12,400
PIER 2								
SPB401	3	743'-4"	112	90.0	32'-9"			1803
PB501	2	3'-9"	105	1'-0"	2'-0"			8
PB502	2	4'-1"	105	1'-0"	2'-4"			9
PB503	34	4'-5"	105	1'-0"	2'-8"			156
PB504	18	12'-2"	109	2'-8"	3'-2"			228
PB601	4	29'-0"	Str					173
PB602	8	8'-1"	113	1'-11"	4'-3"	2'-8"		93
PB801	60	12'-8"	100	10'-6"				2030
PB1001	12	13'-4"	100	10'-6"				690
PB1002	5	29'-0"	Str.					625
PB1003	5	12'-10"	111	9'-0"	1'-6"			276
PB1004	5	26'-10"	111	23'-0"	1'-6"			579
PB1101	54	8'-9"	104	7'-10" 0	2'-0"			2510
PB1102	54	36'-3"	Str.					10,420
					Total	Pier 2	=	19,600

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For replacement reinforcement schedule see sheet 256.
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 7 — Revised 6-3-75 By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 18/21
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488 — STA. 960 + 44.85
SCALE: — STA. 970 + 69.80

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN DGS DATE 7-1-70	TRACED DATE	CHECKED RRP DATE 7-24-70	REVIEWED MJK DATE 11-28-71	REVISED	1668

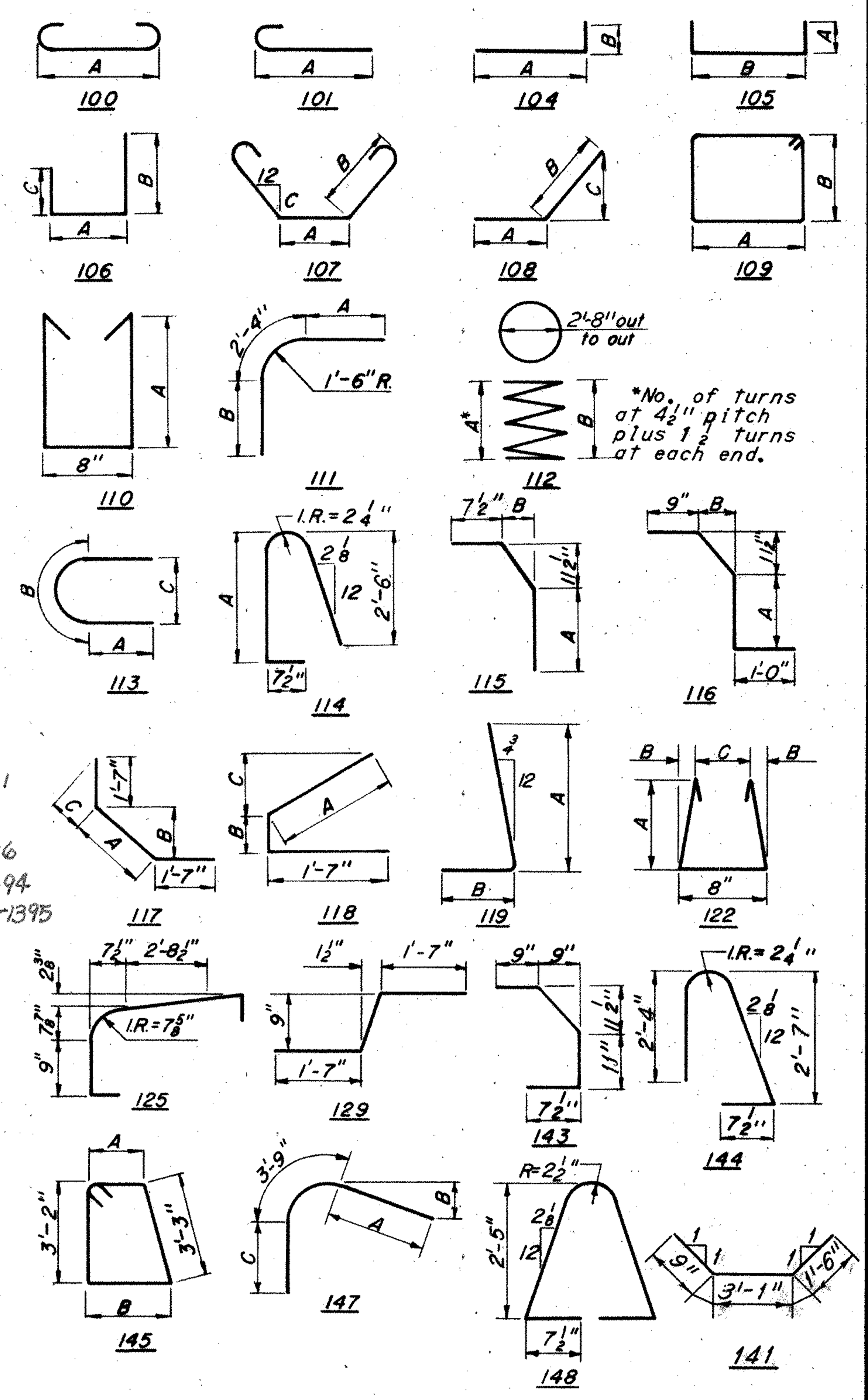
Revised 4-28-77

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

281
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
				PIER 3				
SPC401	3	770'-6"	112	93.3	34'-0"			1870
PC501	2	3'-9"	105	1'-0"	2'-0"			8
PC502	2	4'-1"	105	1'-0"	2'-4"			9
PC503	34	4'-5"	105	1'-0"	2'-8"			156
PC504	18	12'-2"	109	2'-8"	3'-2"			228
PC601	4	29'-0"	Str.					172
PC602	8	8'-1"	113	1'-11"	4'-3"	2'-8"		92
PC901	24	14'-0"	100	11'-6"				1140
PC902	36	13'-0"	100	10'-6"				1590
PC1101	36	8'-9"	104	7'-0"	2'-0"			1672
PC1102	36	37' 39'-3"	Str.				7125	7500
PC1103	5	29'-0"	Str.					772
PC1104	5	27'-10"	111	24'-0"	1'-6"			740
PC1105	5	12'-10"	111	9'-0"	1'-6"			345
PC1106	12	14'-8"	100	11'-6"				936
					Total	Pier	3 =	17,230 16,855
				PIER 4				
SPD401	1	660'-9"	112	80.0	29'-0"			534
SPD402	1	581'-6"	112	70.4	25'-5"			470
SPD403	1	501'-4"	112	60.7	21'9"			404
PD501	2	3'-9"	105	1'-0"	2'-0"			8
PD502	2	4'-1"	105	1'-0"	2'-4"			9
PD503	34	4'-5"	105	1'-0"	2'-8"			156
PD504	18	12'-2"	109	2'-8"	3'-2"			228
PD601	4	28'-6"	Str.					172
PD602	8	8'-1"	113	1'-11"	4'-3"	2'-8"		92
PD801	60	11'-8"	100	9'-6"				1870
PD1001	4	11'-10"	111	8'-0"	1'-6"			203
PD1002	4	27'-10"	111	24'-0"	1'-6"			480
PD1003	5	28'-6"	Str.					614
PD1101	24	8'-9"	104	7'-0"	2'-0"			1117
PD1102	8	32'-6"	Str.					1380
PD1103	8	29'-0"	Str.					1230
PD1104	8	25'-3"	Str.					1073
					Total	Pier	4 =	10,040
				PIER 5				
SPE401	1	455'-1"	112	55.1	19'-8"			364
SPE402	1	498'-11"	112	60.4	21'-8"			403
SPE403	1	541'-8"	112	65.6	23'-7"			437
PE501	22	12'-2"	109	2'-8"	3'-2"			280
PE502	2	3'-9"	105	1'-0"	2'-0"			8
PE503	2	4'-1"	105	1'-0"	2'-4"			9
PE504	34	4'-5"	105	1'-0"	2'-8"			157
PE601	10	15'-10"	100	14'-6"				238
PE602	8	8'-1"	113	1'-11"	4'-3"	2'-8"		93
PE603	4	30'-0"	Str.					180
PE604	8	9'-10"	100	8'-6"				118
PE701	10	16'-2"	100	14'-6"				330
PE702	16	10'-2"	100	8'-6"				332
PE801	30	11'-8"	100	9'-6"				936
PE1001	4	13'-1"	111	9'-3"	1'-6"			226
PE1002	4	29'-2"	111	25'-4"	1'-6"			504
PE1003	9	30'-0"	Str.					1165
PE1004	11	8'-0"	104	6'-3"	2'-0"			379
PE1005	10	12'-4"	100	9'-6"				531
PE1101	8	23'-3"	Str.					990
PE1102	8	25'-0"	Str.					1060
PE1103	8	26'-9"	Str.					1140
PE1104	24	8'-9"	104	7'-0"	2'-0"			1120
					Total	Pier	5 =	11,000
				PIER 6				
SPF401	1	638'-1"	112	77.3	28'-0"			516
SPF402	1	621'-7"	112	75.3	27'-3"			503
SPF403	1	600'-2"	112	72.7	26'-3"			485
PF501	22	12'-2"	109	2'-8"	3'-2"			280
PF502	2	3'-9"	105	1'-0"	2'-0"			8
PF503	2	4'-1"	105	1'-0"	2'-4"			9
PF504	34	4'-5"	105	1'-0"	2'-8"			157
PF601	8	15'-10"	100	14'-6"				190
PF602	8	12'-10"	100	11'-6"				154
PF603	4	28'-9"	Str.					172
PF604	8	8'-1"	113	1'-11"	4'-3"	2'-8"		93
PF801	16	16'-8"	100	14'-6"				710
PF901	16	14'-0"	100	11'-6"				762
PF902	12	13'-0"	100	10'-6"				530
PF1101	5	12'-9"	111	8'-11"	1'-6"			337
PF1102	5	27'-1"	111	23'-3"	1'-6"			720
PF1103	5	28'-9"	Str.					763
PF1104	30	15'-9"	104 Str	14'-0"	2'-0"			2500 1
PF1105	10	31'-6"	Str					1670
PF1106	10	30'-6" 31'-3"	Str					1620 6
PF1107	10	29'-6" 30'-0"	Str					1565 94
PF1108	3 60	8'-9"	104	7'-0"	2'-0"			2780 1395
PF1109	24	14'-8"	100	11'-6"				1870
PF1110	12	13'-8"	100	10'-6"				871
PF1111	20	8'-3"	104	6'-6"	2'-0"			875
					Total	Pier 6	=	20,140 18,834
				PIER 7				
SPG401	1	412'-9"	112	50.0	17'-9"			333
SPG402	1	430'-11"	112	52.2	18'-7"			347
SPG403	1	449'-1"	112	54.4	19'-5"			362
PG501	28	12'-2"	109	2'-8"	3'-2"			356
PG502	2	3'-9"	105	1'-0"	2'-0"			8
PG503	2	4'-1"	105	1'-0"	2'-4"			9
PG504	34	4'-5"	105	1'-0"	2'-8"			157
PG601	10	15'-10"	100	14'-6"				238
PG602	8	9'-10"	100	8'-6"				118
PG603	4	28'-6"	Str.					171
PG604	8	8'-1"	113	1'-11"	4'-3"	2'-8"		93
PG701	12	16'-2"	100	14'-6"				396
PG702	44	10'-2"	100	8'-6"				914
PG901	10	11'-0"	100	8'-6"				374



BENDING DIAGRAMS

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H.N.T.B. BRIDGE NO. 7 | Revised 6-3-75 | By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 19/21
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA.30-1488 | STA. 960 + 44.85
SCALE: | STA. 970 + 69.80

RELOCATED U.S. 30

CANTON | STARK COUNTY | OHIO

DRAWN DGS | TRACED | CHECKED KAP | REVIEWED MTK | REVISED
DATE 7-1-70 | DATE | DATE 7-24-70 | DATE 11-23-71 | 1668

Revised 4-28-77

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PG1001	4	12'-8"	111	8'-10"	1'-6"			218
PG1002	4	27'-0"	111	23'-2"	1'-6"			465
PG1003	5	28'-6"	Str.					612
PG1004	8	12'-0"	Str.					414
PG1101	12	21'-3"	Str.					1350
PG1102	12	22'-0"	Str.					1400
PG1103	12	22'-9"	Str.					1450
PG1104	36	8'-9"	104	7'-0"	2'-0"			1675
PG1105	20	8'-0"	104	6'-3"	2'-0"			850
					Total	Pier	7 =	12,310
PIER 8								
SPH401	1	385'-3"	112	46.7	16'-6"			310
SPH402	1	390'-9"	112	47.3	16'-9"			315
SPH403	1	396'-3"	112	48.0	17'-0"			319
PH501	2	3'-9"	105	1'-0"	2'-0"			8
PH502	2	4'-1"	105	1'-0"	2'-4"			9
PH503	34	4'-5"	105	1'-0"	2'-8"			156
PH504	28	12'-2"	109	2'-8"	3'-2"			357
PH601	4	28'-9"	Str.					173
PH602	8	8'-1"	113	1'-11"	4'-3"	2'-8"		93
PH701	50	10'-2"	100	8'-6"				1040
PH901	10	11'-0"	100	8'-6"				374
PH1001	24	8'-3"	104	6'-6"	2'-0"			852
PH1002	8	19'-6"	Str.					672
PH1003	8	20'-3"	Str.					698
PH1004	8	20'-6"	Str.					708
PH1005	4	11'-10"	111	8'-0"	1'-6"			206
PH1006	4	28'-10"	111	25'-0"	1'-6"			497
PH1007	5	28'-9"	Str.					618
PH1008	2	12'-0"	Str.					103
PH1009	6	10'-6"	Str.					272
					Total	Pier	8 =	7780
PIER 9		42 8			9 11			194
PI401	1	277'-0"	112	33.6 29.4	11'-7"			222
PI402	1	86 394'-5" 3	112	40.8 6	16'-11" 5			318
PI403	1	486'-2"	112	58.9	21'-1" 11			392
		507 8		61.5				409

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PI501	34	4'-5"	105	1'-0"	2'-8"			157
PI502	18	12'-2"	109	2'-8"	3'-2"			228
PI503	2	3'-9"	105	1'-0"	2'-0"			8
PI504	2	4'-1"	105	1'-0"	2'-4"			9
PI601	8	8'-1"	113	1'-11"	4'-3"	2'-8"		93
PI602	4	28'-6"	Str					172
PI701	60	10'-2"	100	8'-6"				1248
PI1001	5	12'-7"	111	8'-9"	1'-6"			272
PI1002	5	27'-10"	111	24'-0"	1'-6"			600
PI1003	5	28'-6"	Str					615
PI1004	24	8'-3"	104	6'-6"	2'-0"			852
PI1005	8	3 15'-3"	Str				456	525
PI1006	8	19 20'-6" 9	Str				680	706
PI1007	8	24'-9"	Str					853
		5 3						69
					Total	Pier	9 =	7270
PIER 10		08 1		3 7	6 6			
PJ401	1	625'-7"	112	75.8"	20'-5"		491	506
PJ402	1	697'-1"	112	84.4	30'-8"			564
PJ403	1	702'-7"	112	85.1 9	30'-11"			568
		17 9		6	1 5			79
PJ501	34	4'-5"	105	1'-0"	2'-8"			157
PJ502	2	4'-1"	105	1'-0"	2'-4"			9
PJ503	38	12'-2"	109	2'-8"	3'-2"			486
PJ504	2	3'-9"	105	1'-0"	2'-0"			8
PJ601	8	8'-1"	113	1'-11"	4'-3"	2'-8"		93
PJ602	4	33'-6"	Str					202
PJ901	24	13'-0"	100	10'-6"				1060
PJ902	12	14'-0"	100	11'-6"				572
PJ1101	12	13'-8"	100	10'-6"				870
PJ1102	5	13'-10"	111	10'-0"	1'-6"			368
PJ1103	5	31'-7"	111	27'-9"	1'-6"			840
PJ1104	5	33'-6"	Str					890
PJ1105	8	12'-0"	Str					510
PJ1006	24	14'-8"	100	11'-6"				1870
PJ1401	27	10'-7" 11'-1"	104	9'-0"	2'-0" 6			2180 2289
PJ1402	27	20'-6" 21'-0"	104	18'-11"	2'-0" 6		4338	4250
PJ1403	9	25'-6" 24'-3"	Str				1670	1750

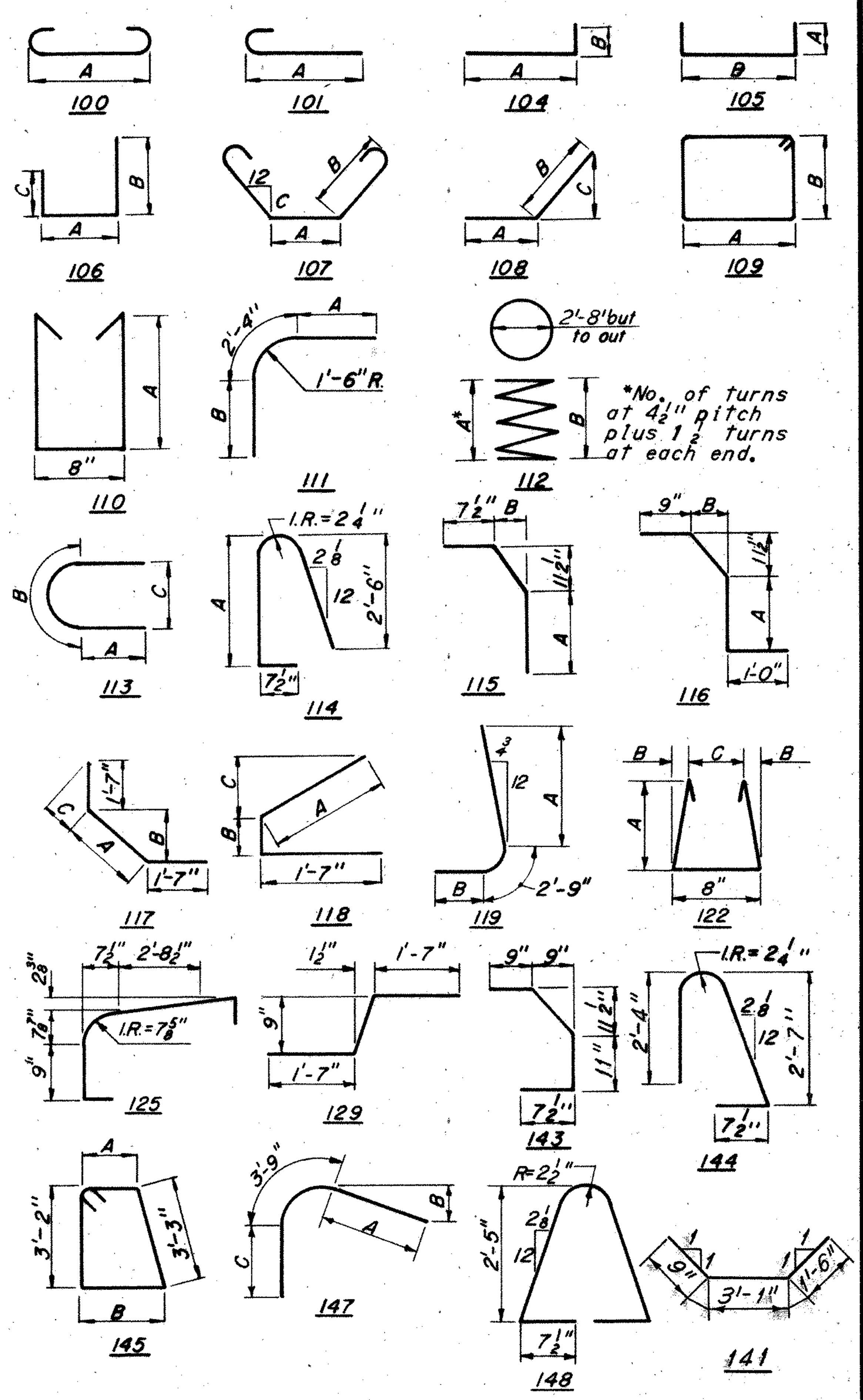
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PJ1404	9	28'-6" 3	Str				1945	1960
PJ1405	9	28'-9"	Str					1977
					Total	Pier	10 =	21,690 788
PIER 11								
PK401	1	675'-1"	112	81.8	29'-8"			546
PK402	1	658'-7"	112	79.8	28'-11"			532
PK403	1	640'-3"	112	77.6	28'-1"			518
PK501	34	4'-5"	105	1'-0"	2'-8"			157
PK502	2	4'-1"	105	1'-0"	2'-4"			9
PK503	42	12'-2"	109	2'-8"	3'-2"			532
PK504	2	3'-9"	105	1'-0"	2'-0"			8
PK601	8	8'-1"	113	1'-11"	4'-3"	2'-8"		93
PK602	4	35'-6"	Str					214
PK801	24	11'-8"	100	9'-6"				748
PK1001	36	13'-4"	100	10'-6"				2060
PK1002	12	12'-4"	100	9'-6"				636
PK1101	5	14'-7"	111	10'-9"	1'-6"			387
PK1102	5	32'-7"	111	28'-9"	1'-6"			863
PK1103	5	35'-6"	Str					941
PK1104	2	13'-0"	Str					138
PK1105	8	14'-0"	Str					595
PK1106	18	24'-6"	Str					2340
PK1107	12	31'-6"	Str					2010
PK1108	12	32'-6"	Str					2075
PK1109	54	8'-9"	104	7'-0"	2'-0"			2510
PK1110	12	33'-6" 2 9	Str					2138 08
					Total	Pier	11 =	20,050 0
DECK-UNIT 1								
SA501	90	30'-0"	Str					2817
SA502	378	5'-8"	144					2234
SA503	378	2'-2"	105	7½"	1'-2"			854
SA504	378	2'-4"	104	7½"	1'-10"			920
SA505	378	3'-4"	143					1314
SA506	5	23 16'-0"	Str					84 120
SA507	5	3 24'-0" 3	Str					125 79
SA601	423	30'-0"	Str.					19,100
SA602	458	32'-10"	100	31'-6"				22,600
SA603	1 Ser. 19	26'-0" to 34'-9"	Str.				$5\frac{13}{16}$"	865
SA604	1 Ser. 28	26'-0" to 34'-9"	Str.				$3\frac{7}{8}$"	1276
SA605	60	31'-0"	Str					2835

MICROFILMED
SEP 14 1983

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

282
389

STARK COUNTY
STA-30-14.12
STA-77-9.22



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For replacement reinforcement schedule see sheet 256.
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

Splices in No. 14 or No. 18 size reinforcing bars shall be made by an approved positive mechanical method designed to develop 125% of the specified yield strength of the bar.

H.N.T.B. BRIDGE NO. 7 | Revised 6-5-75 | By W.E.B.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 20/21
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REINFORCEMENT SCHEDULE

RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488 — STA. 960 + 44.85
SCALE: — STA. 970 + 69.80

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN DGS	TRACED	CHECKED RAP	REVIEWED MJK	REVISED
DATE 7-1-70	DATE	DATE 7-24-70	DATE 11-22-71	1668

Revised 4-28-77

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
SA606	458	31'-6"	Str					21,650
					Total Unit 1 Deck=			76,674 76
DECK - UNIT 2								
SB501	160	30'-0"	Str					5000
SB502	631	5'-8"	144					3729
SB503	631	2'-2"	105	$7\frac{1}{2}''$	1'-2"			1426
SB504	631	2'-4"	104	$7\frac{1}{2}''$	1'-10"			1536
SB505	631	3'-4"	143					2194
SB506	5	10'-6"	Str					55
SB507	5	24'-6"	Str					128
SB601	752	30'-0"	Str					33,800
SB602	765	31'-6"	Str					36,200
SB603	1 Ser. 19	15'-6" to 29'-6"	Str				$9\frac{5}{16}''$	643
SB604	1 Ser. 28	15'-6" to 29'-6"	Str				$6\frac{1}{4}''$	945
SB605	40	37'-0"	Str					2220
SB606	40	46'-0"	Str					2760
SB607	20	21'-0"	Str					630
SB608	765	32'-10"	100	31'-6"				37,700
					Total Unit 2 Deck =			128,966
DECK - UNIT 3								
SC501	95	30'-0"	Str					2980
SC502	377	2'-2"	105	$7\frac{1}{2}''$	1'-2"			852
SC503	377	5'-8"	144					2228
SC504	377	2'-4"	104	$7\frac{1}{2}''$	1'-10"			917
SC505	377	3'-4"	143					1311
SC506	5	16'-3"	Str					85
SC507	5	10'-9"	Str					56
SC601	423	30'-0"	Str					19,100
SC602	40	44'-0"	Str					2640
SC603	2 Ser. 19	24'-6" to 7'-6"	Str				$11\frac{5}{16}''$	910
SC604	2 Ser. 28	24'-6" to 7'-6"	Str				$7\frac{1}{2}''$	1340
SC605	20	25'-0"	Str					750
SC606	474	32'-10"	100	31'-6"				23,380
SC607	474	31'-6"	Str					22,400
					Total Unit 3 Deck=			78,949

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PARAPET								
R501	60 48	14'-0"	Str.					875 701
R502	404	7'-0"	Str.					2955
R503	112 24	13'-6"	Str.					1580 746
R504	56 68	15'-6"	Str.					905 1099
R505	4	12'-9"	Str.					53
R506	108 96	14'-6"	Str.					1635 452
R507	4	12'-6"	Str.					52
R508	4	8'-3"	Str.					34
R509	4	9'-6"	Str.					40
R510	4	13'-9"	Str.					57
R511	4	15'-3"	Str.					64
							Total=	8250 3

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS

PILE NUMBERING DESIGNATIONS

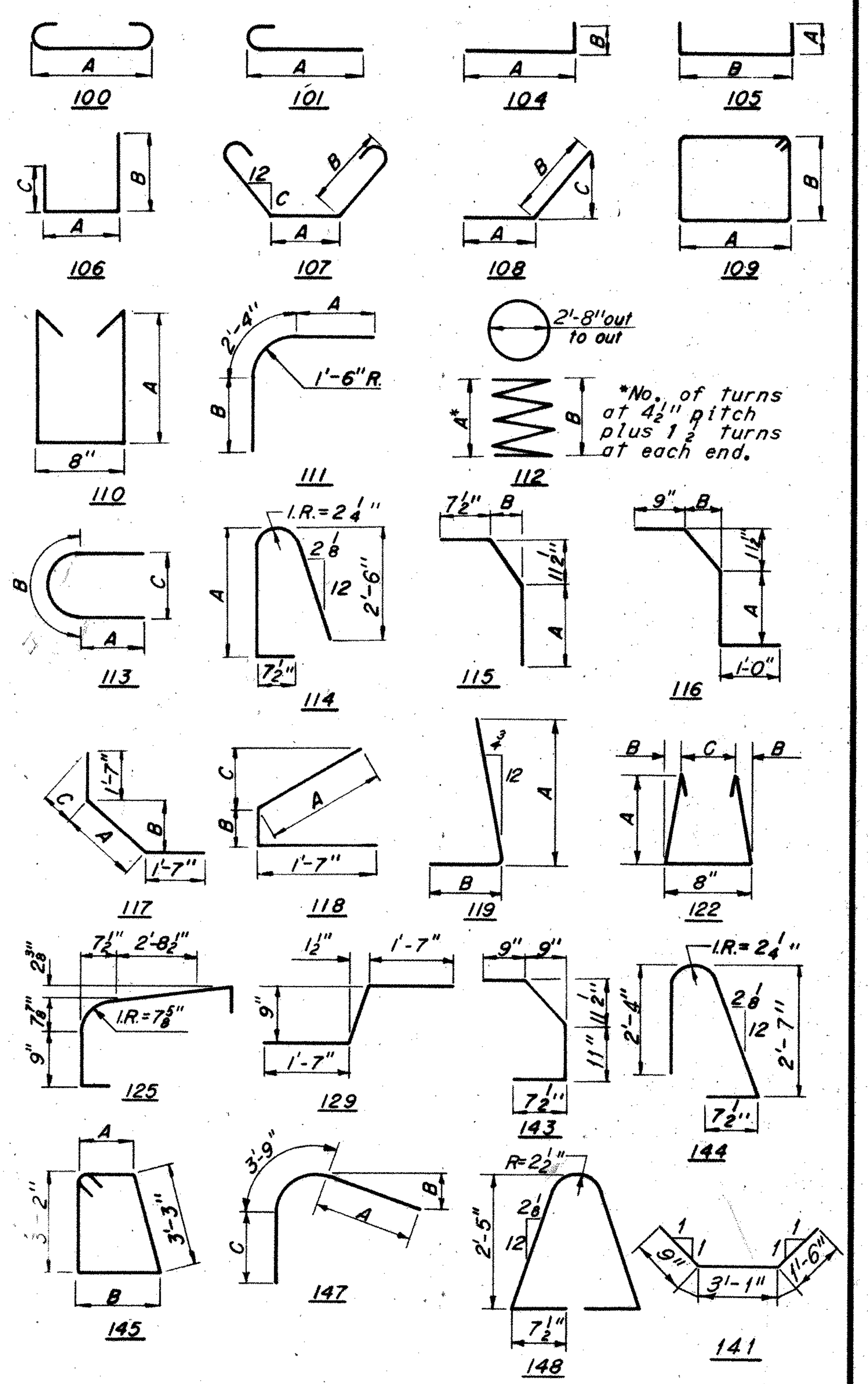
FOOTING	PILE	PIER 5 (PREFIX 6)	PIER 6 (PREFIX 7)	PIER 7 (PREFIX 8)	FOOTING	PILE	PIER 9 (PREFIX 10)	PIER 10 (PREFIX 11)	PIER 11 (PREFIX 12)
A	A	1	1	1	A	A	1	1	1
	B	2	2	2		B		2	2
	C	3	3	3		C	2	3	3
	D		4			D		4	
	E			4		E	3	5	4
	F		5			F		6	5
	G	4	6	5		G	4	7	6
	H	5	7	6		H	5	8	7
	J	6	8	7		J		9	8
B	K	7	9	8	B	K	6	10	9
	L	8	10	9		L		11	10
	M	9	11	10		M	7		
	N		12			N		12	11
	P			11		P	8	13	12
	Q		13			Q		14	13
	R	10	14	12		R	9	15	14
	S	11	15	13		S	10	16	15
	T	12	16	14		T			16
C	U	13	17	15	C	U	11	17	17
	V		18			V		18	
	W	14	19	16		W	12	19	18
	X			17		X			19
	Y	15	20	18		Y	13	20	20
	Z		21						
	AA	16	22	19					

NOTE:
For location of piers, see Sheets 10/21 and 11/21.

MICROFILMED
SEP 14 1983

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For replacement reinforcement schedule see sheet 256.
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 7 | Revised 6-5-75 | By W.E.B

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

21/21

REINFORCEMENT SCHEDULE

RAMP G OVER PENN. R.R.
RAMPS C AND G, I-77

BR. NO. STA. 30-1488
SCALE:

STA. 960 + 44.85
STA. 970 + 69.80

RELOCATED U.S. 30

CANTON | STARK COUNTY | OHIO

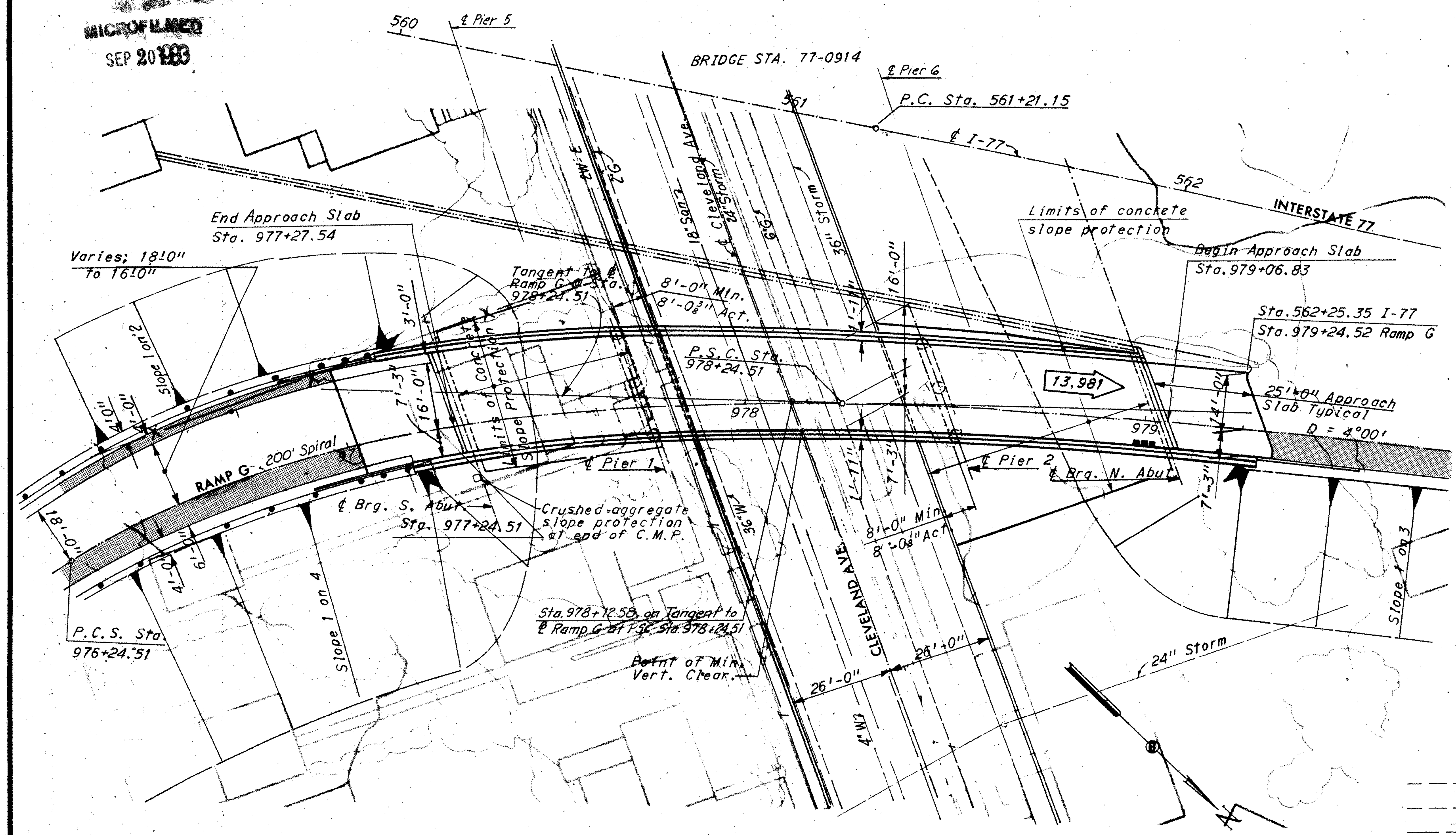
DRAWN DGS	TRACED	CHECKED RAP	REVIEWED MJK	REVISED
DATE 7-1-70	DATE	DATE 7-24-70	DATE 11-22-71	1668

Revised 4-28-77

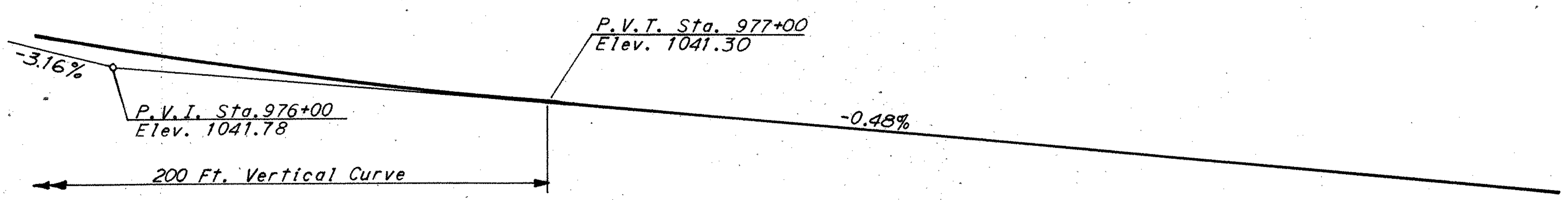
STARK COUNTY
STA-30-14.12
STA-77-9.22

CURVE DATA–RAMP G

C.S. Sta. 976+24.509	S.C. Sta. 978+24.509
Δ = 35°49'51.6" Rt.	D = 4°00'00.0"
θs = 27°49'51.6"	Δ = 13°42'12.8" Rt.
Ls = 200.000'	R = 1432.394'
Ts = 77.058'	T = 172.116'
Dc = 31°49'51.6"	L = 342.589'



PLAN



PROFILE GRADE-RAMP G

EXISTING UTILITY LEGEND

4" G	GAS
4" W	WATER
16" Storm	STORM SEWER
8" San	SANITARY SEWER
T	TELEPHONE
E	POWER LINES
4W-E4KV	4 WIRE, PRIMARY 4 KILOVOLT
3W-E₃	3 WIRE, SECONDARY
☋	WATER HYDRANT
○	MANHOLE
□	CATCH BASIN

Note:
The embankment shall be constructed to the level of the subgrade for a minimum distance of 200 feet back of the South abutment. Excavation shall then be made for the South abutment.
Pre-boring thru new or existing embankments before driving the piles will be allowed at the contractor's option and expense.

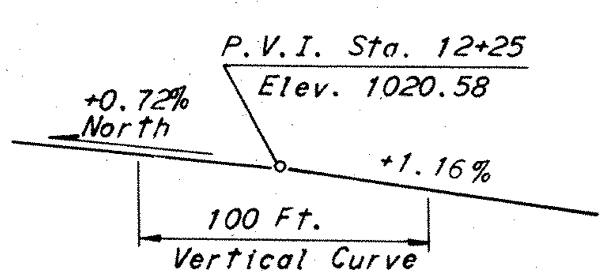
Notes:
The following items are not included in the bridge plans. See roadway plans for details
1. Relocation or removal of existing utilities.
2. Approach grading, pavements and slabs.
3. Guardrails.

13,981 Denotes one way 1987 average daily traffic.
Earthwork limits shown are schematic. Actual slopes shall conform to plan cross-sections.
All piles shall be 12"φ cast-in-place concrete with an estimated average pay length of 30'-0" for the South Abutment.
■ Denotes Standard scupper.
For lighting details see Lighting Plans
For Estimated Quantities, see Sheet 365C.

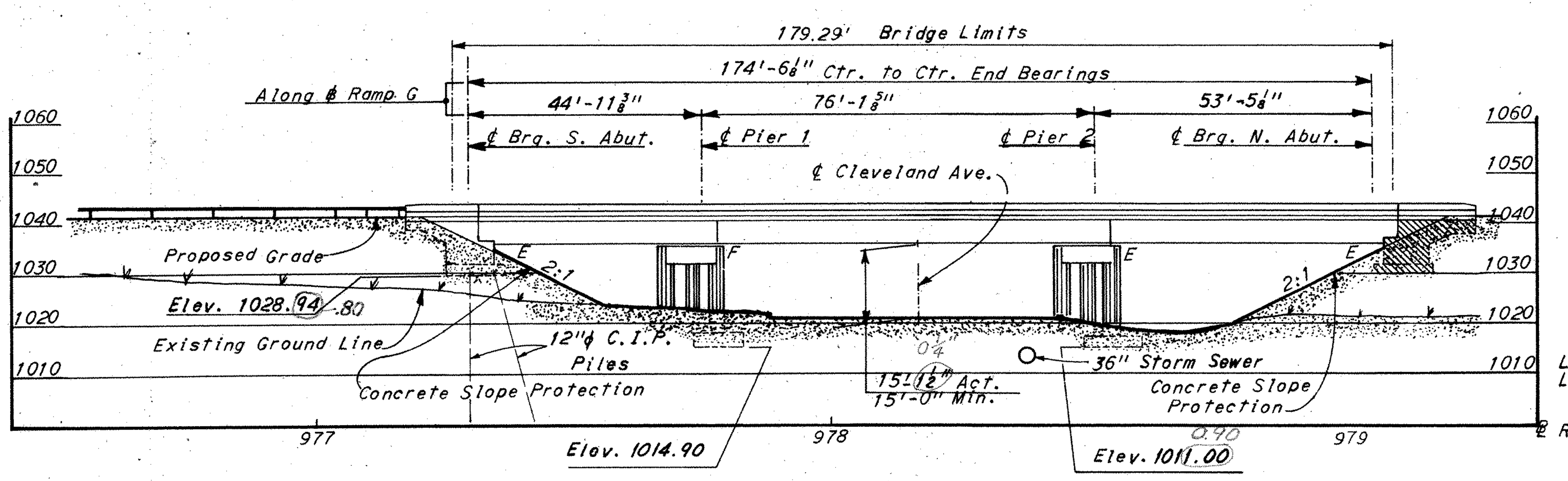
PROPOSED STRUCTURE

Type: Continuous Rolled Beams with Reinforced concrete slab and Substructure.
Spans: 44'-11⅞", 76'-1⅞", 53'-5¼"=174'-6⅞" ctr. to ctr. end bearings measured along ℄ Ramp G.
Roadway: Varies, 1'-11" parapet
Loading: HS20-44
Skew: 68°32'31.3"
Wearing Surface: 1½" Asphalt Concrete
Approach Slab: AS-1-72 (25'-0" Long) (Modified)
Alignment: 200' spiral, 4° curve

Modify Std. Drwg. AS-1-72 by providing 3" clear over the top rebars instead of the 2" shown on the Std. Drwg. The jacking holes as called for on Std. Drwg. AS-1-72 are not required in the North Approach Slab.

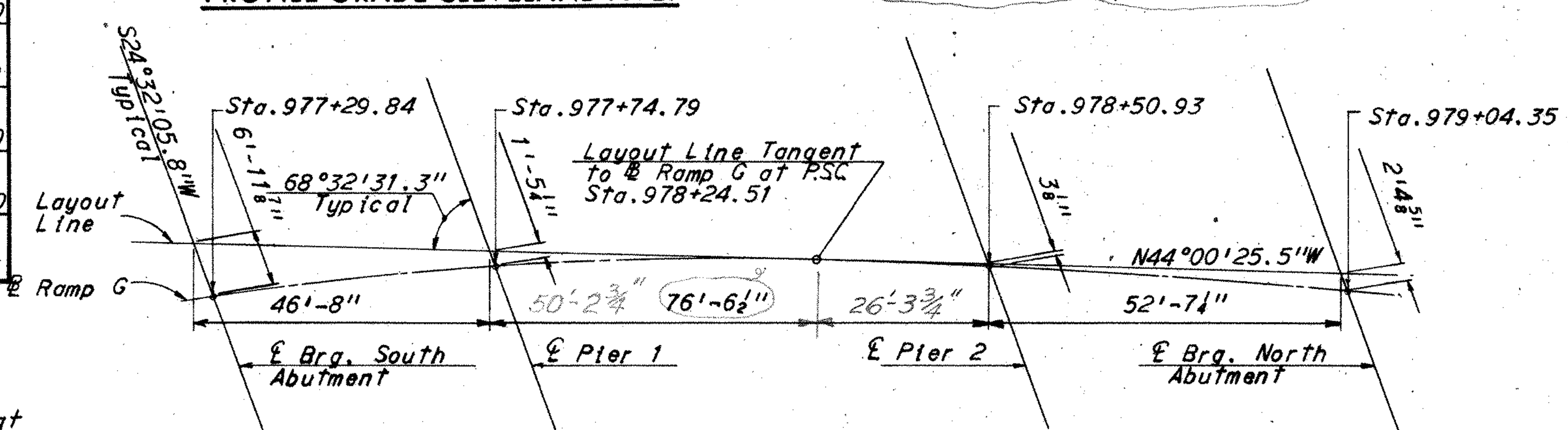


PROFILE GRADE-CLEVELAND AVE.



ELEVATIONS

Note:
Crosshatched area at North Abutment is existing.



LAYOUT SKETCH

H.N.T.B. BRIDGE NO. 8 | Revised 5-29-75 By CKB
HOWARD, NEEDLES, TAMMEN & BERGENDOFF 1/7
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SITE PLAN

RAMP G OVER CLEVELAND AVE.
BR. NO. STA. 30-1499 STA. 977+27.54
SCALE: 1" = 20'-0" STA. 979+06.83
RELOCATED U.S. 30
CANTON STARK COUNTY OHIO

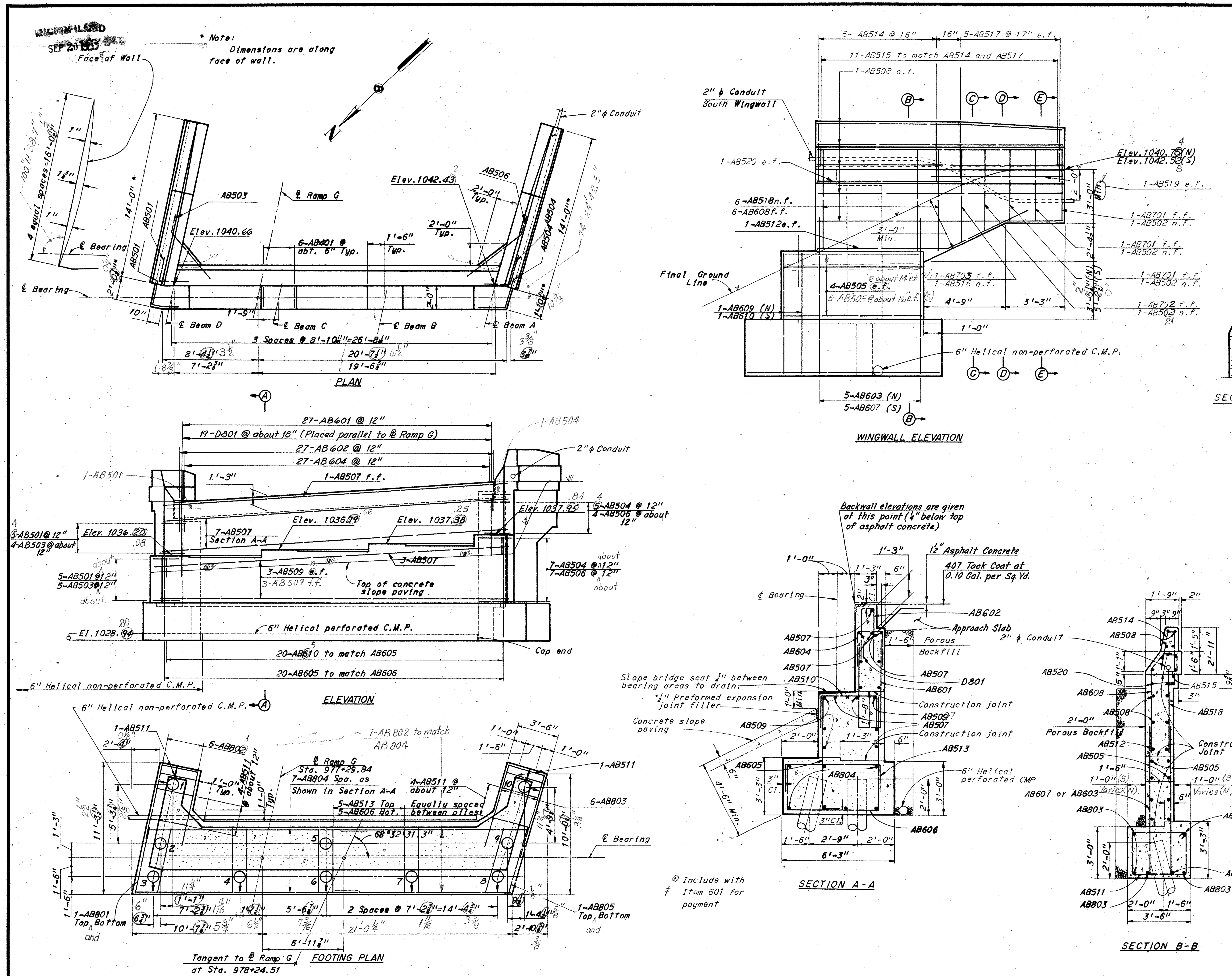
DRAWN B.M.	TRACED	CHECKED DWB	REVIEWED MJH	REVISED
DATE 10-31-69	DATE	DATE 2-17-70	DATE 11-20-71	1668

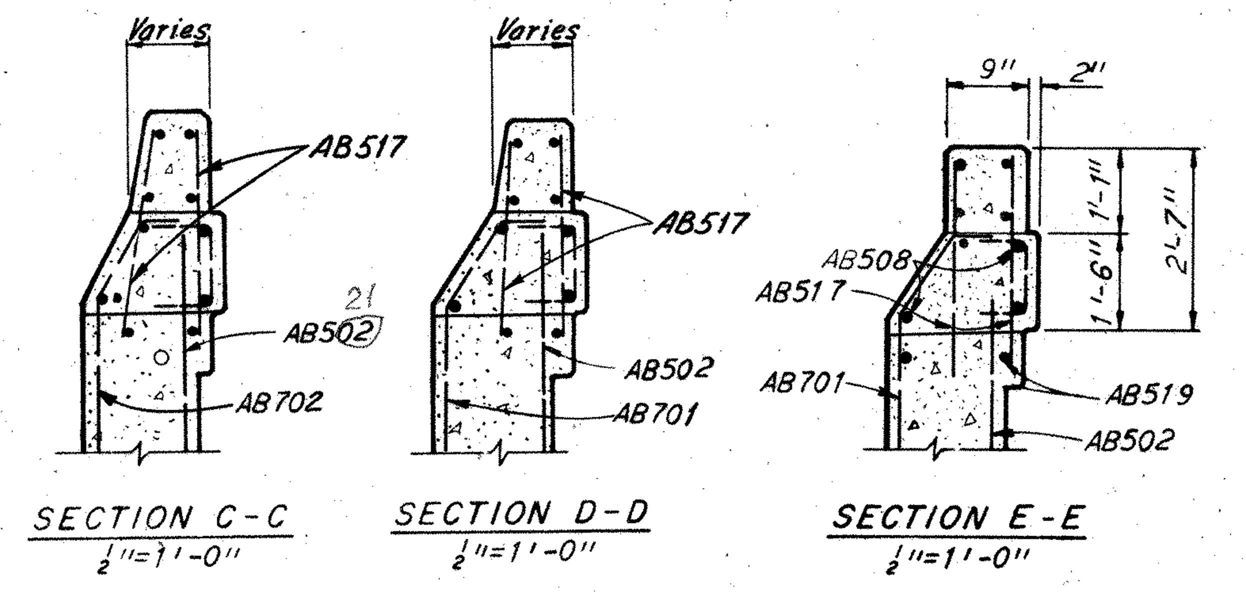
Revised 4-28-77

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			285/389

STARK COUNTY
STA-30-14.12
STA-77-9.22

* Note: Dimensions are along face of wall.





Notes:
For details of C.M.P. outlet at side slopes see Sheet 359.
For roadway end dam details see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4, and Sheet 359.
AB401 bars shall be placed 2½"± below top of bridge seat.
n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.
For reinforcement schedule see Sheet 7/7
Only that portion of the C.M.P. located in the porous backfill shall be perforated.
All battered piles are battered 3 in 12.
Pile dimensions are measured along bottom of footing.
All piles are 12" ϕ cast-in-place concrete.
○→ Denotes battered piles.
(N) Denotes north wingwall, (S) denotes south wingwall.
For railing and parapet details not shown see Sheet 6/7
Parapet transitions shall be as shown on Std. Drwg. BR-1-67 revised 10-15-71.

H.N.T.B. BRIDGE NO. 8 | Revised 6-3-75 | By CKB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 2/7

SOUTH ABUTMENT

RAMP G OVER CLEVELAND AVE.
BR. NO. STA 30-1499 — STA. 977+27.54
SCALE: 1/4" = 1'-0" — STA. 979+06.83

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN B.M. DATE 12-5-69	TRACED DATE	CHECKED D.W.E. DATE 1-15-70	REVIEWED MJK DATE 11-24-71	REVISED	1668

Revised 4-28-77

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

286/389

Notes:

Cut or bend existing steel as required to fit.

Structure within heavy lines to be built under this contract. The other is shown for information only.

For roadway end dam details see Ohio Standard Drawing SD-1-69 Sheets 1 and 2 of 4, and Sheet 359.

n.f. denotes near face.

f.f. denotes far face.

e.f. denotes each face.

For reinforcement schedule see Sheet 7/7

Exposed reinforcing steel placed with previous construction must be sandblasted free of rust and other foreign material before placing concrete. Payment to be included with concrete.

For details of parapet transitions, see Ohio Standard Drawing BR-1-67 revised 10-15-71.

H.N.T.B. BRIDGE NO. 8 — Revised 6-3-75 By CKB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 3/7

NORTH ABUTMENT

RAMP G OVER CLEVELAND AVE.

BR. NO. STA. 30-1499 — STA. 977+27.54
SCALE: ¼" = 1'-0" — STA. 979+06.83

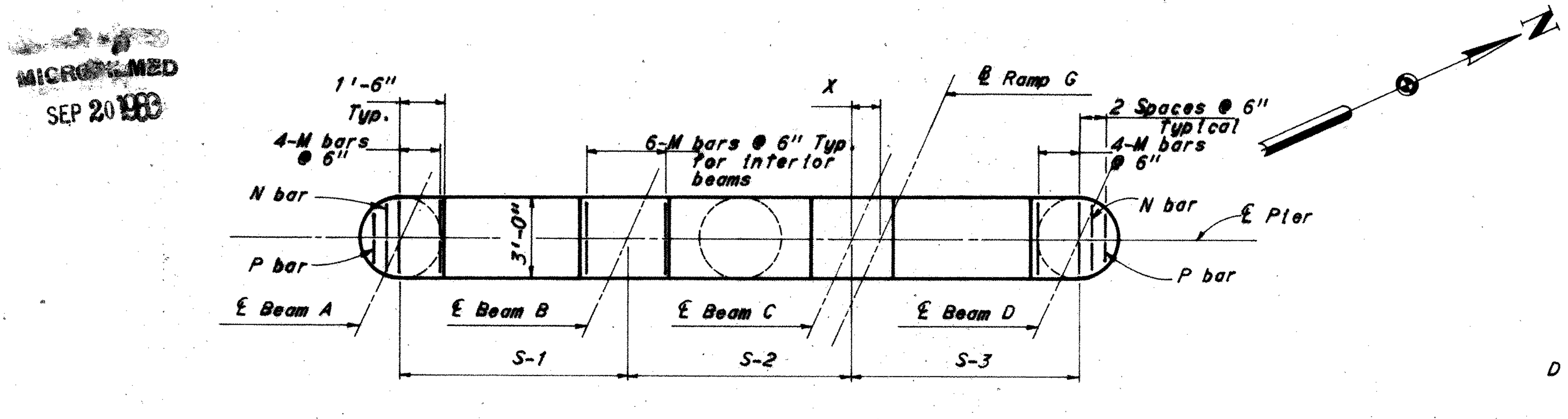
RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

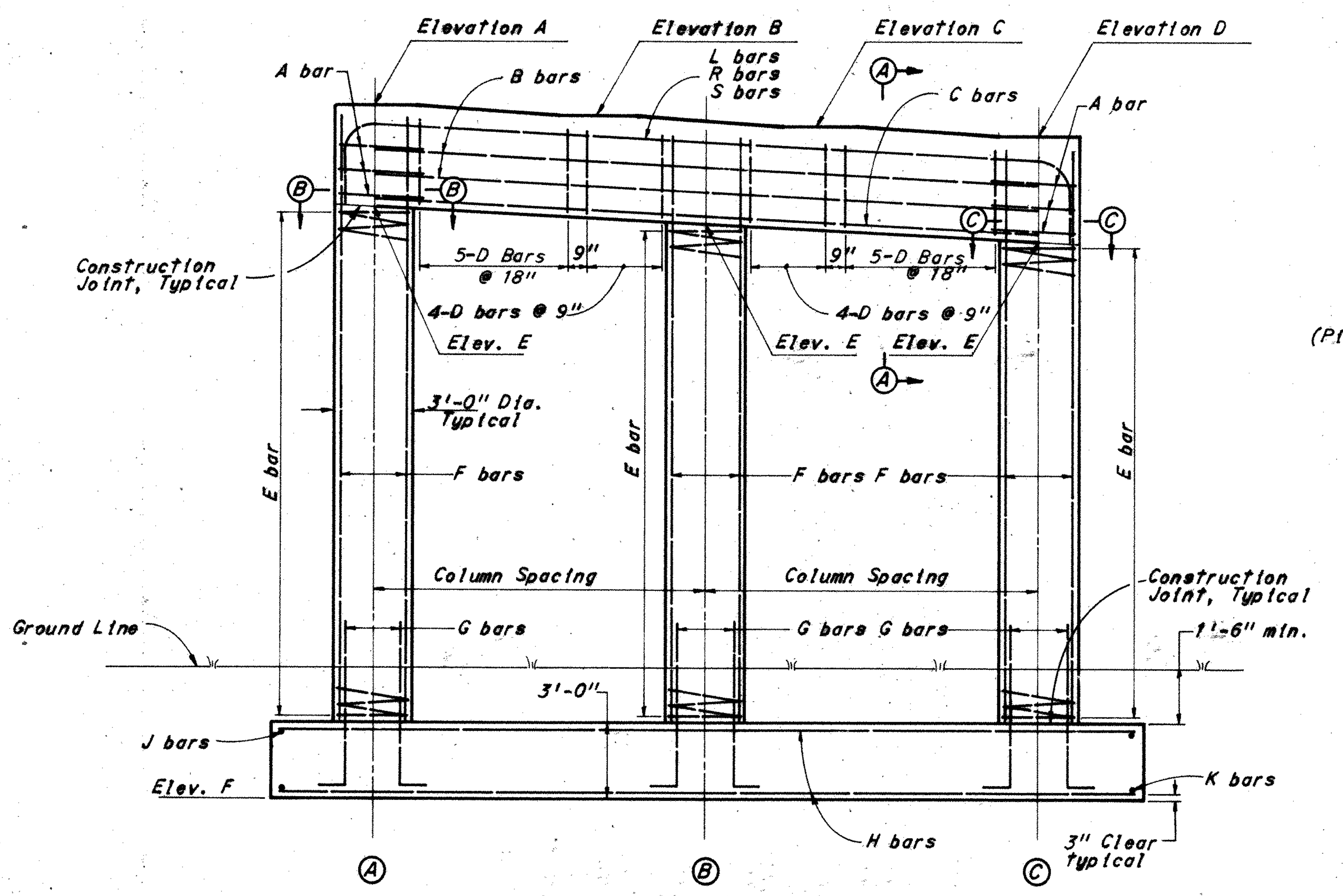
DRAWN B.M. DATE 12-12-69 | TRACED | CHECKED DATE 1-20-70 | REVIEWED DATE 11-20-71 | REVISED | 1668

Revised 4-28-77

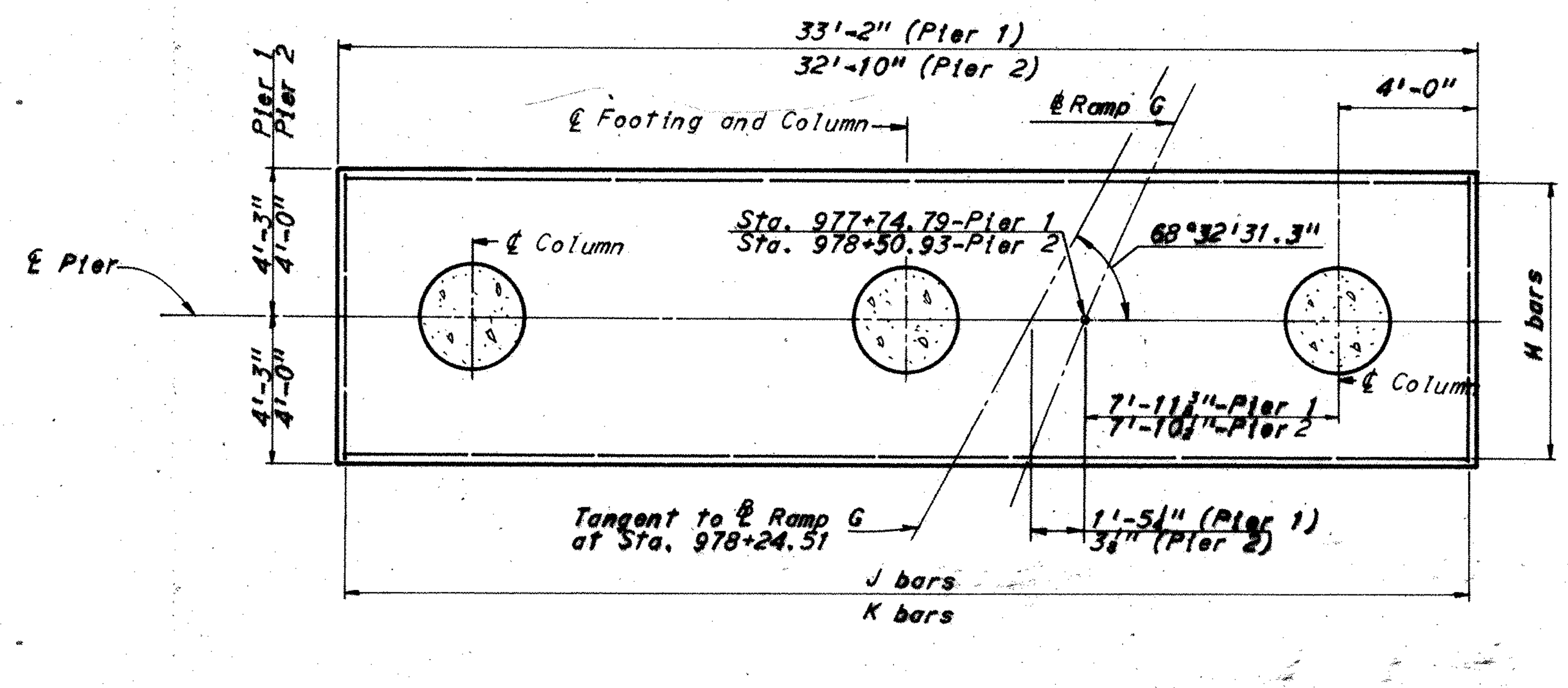
STARK COUNTY
STA-30-14.12
STA-77-9.22



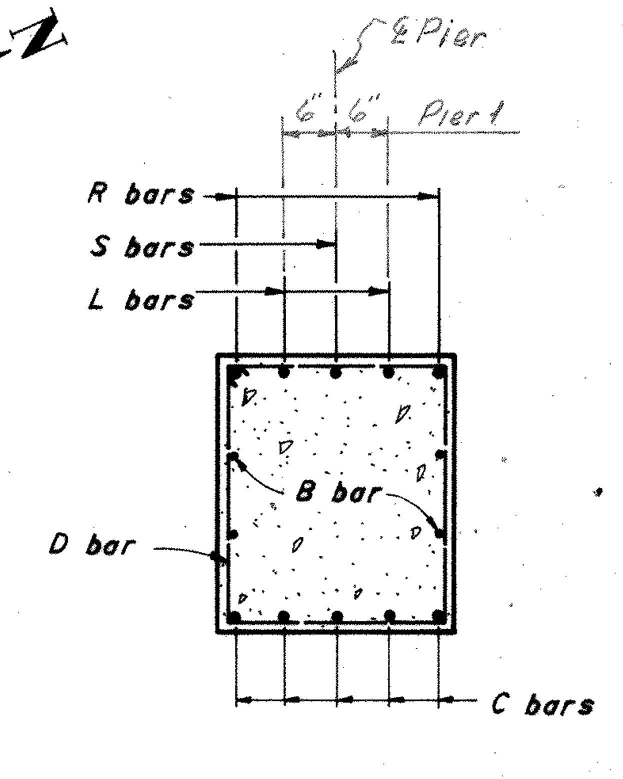
PLAN



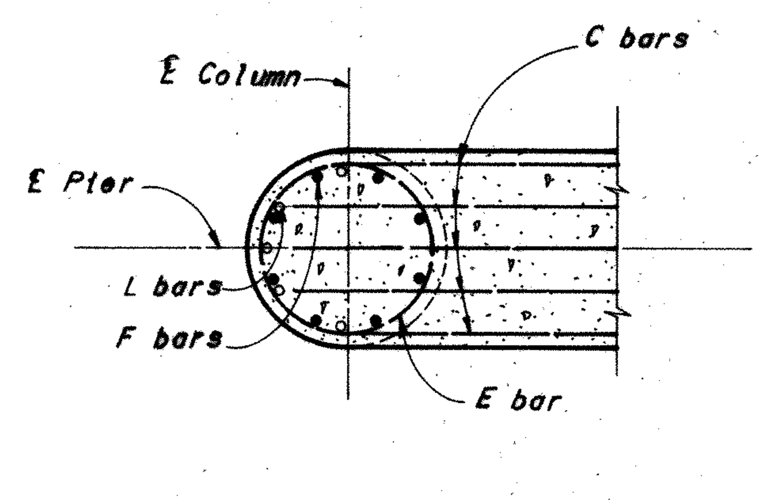
ELEVATION



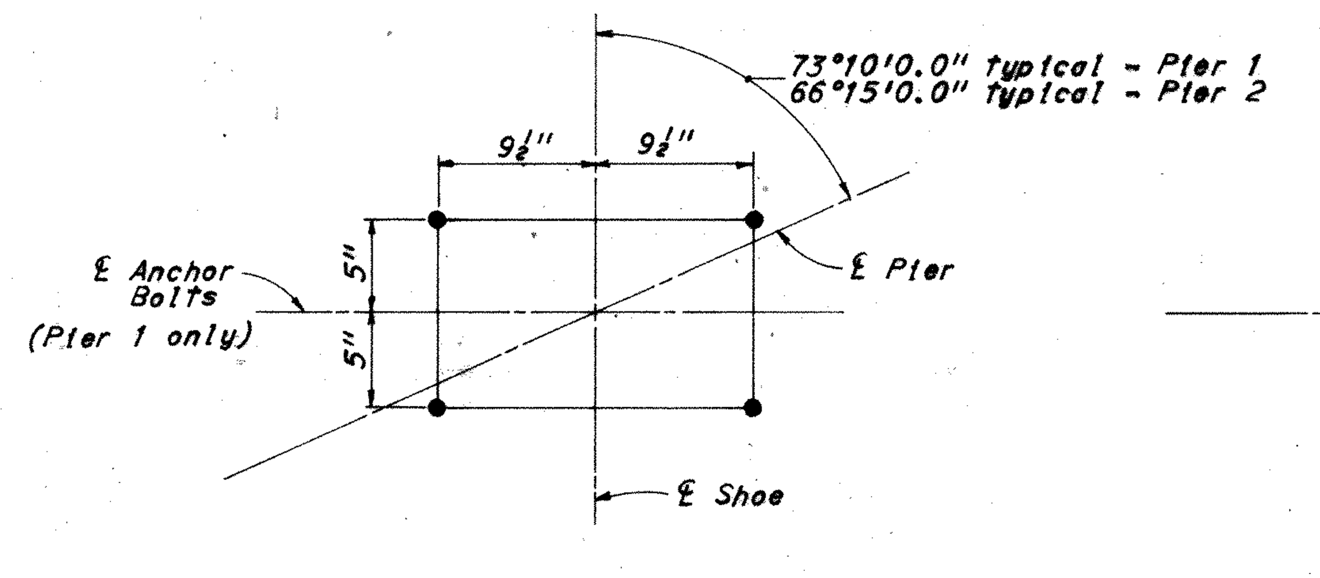
FOOTING PLAN



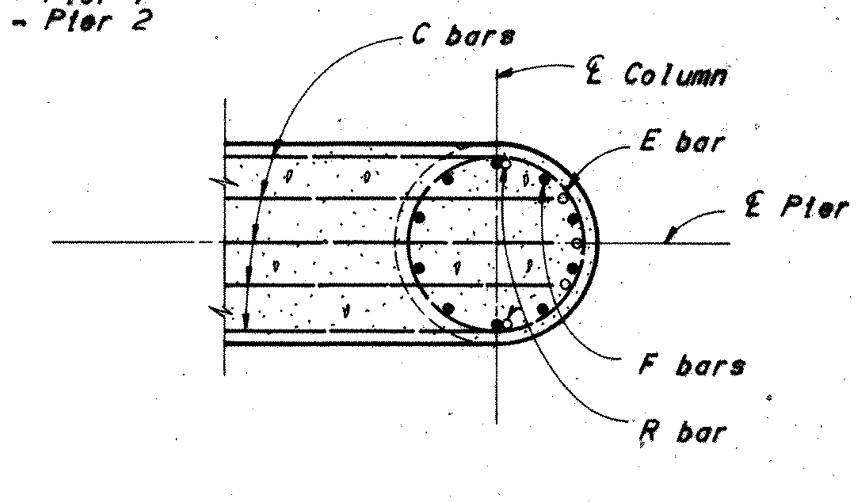
SECTION A-A



SECTION B-B
Columns A, B - Pier 1
Columns A, B, C - Pier 2



ANCHOR BOLT PLAN
Pier 1 only



SECTION C-C
Column C - Pier 1

COLUMN DATA					
Pier No.	Column	Elevation E 2.95	Reinforcing Steel		
			E bars	F bars	G bars
1	A	1033.03	1-SPA401	8-PA1001	8-PA1004
	B	1032.30 .20	1-SPA402	8-PA1002	8-PA1004
	C	1031.57 .45	1-SPA403	10-PA1003	10-PA1004
2	A	1032.56 0	1-SPB401	8-PB1001	8-PB1004
	B	1031.92 .85	1-SPB402	8-PB1002	8-PB1004
	C	1031.28	1-SPB403	8-PB1003	8-PB1004

FOOTING DATA					
Pier No.	Column Spacing	Elevation F 4.90	Reinforcing Steel		
			H bars	J bars	K bars
1	12'-7"	1015.00	10-PA701	34PA504	34-PA702
2	12'-5¼"	1011.00 0.90	10-PB701	34PB504	34-PB601

PIER CAP LAYOUT DATA		
Pier No.	1	2
℄ Pier Sta.*	977+74.79	978+50.93
Dimension X	0'-5⅜"	0'-5"
Beam	A .86	A .35
Elevation A	1036.99	1036.47
S-1	8'-4¹¹⁄₁₆"	8'-3⁷⁄₁₆"
Beam	B .36	B 5.92
Elevation B	1036.48	1036.04
S-2	8'-4¹¹⁄₁₆"	8'-3⁷⁄₁₆"
Beam	C .86	C .49
Elevation C	1035.98	1035.61
S-3	8'-4¹¹⁄₁₆"	8'-3⁷⁄₁₆"
Beam	D .38	D .06
Elevation D	1035.51	1035.18

* Station given along ℄ Ramp G

Notes:

Special care shall be taken when placing reinforcing steel so as not to interfere with anchor bolt or anchor rod setting. Pier 1 only. See Sheet 214.

M bars, N bars and P bars shall be placed 2½"± below top of cap beam.

For reinforcement schedule see Sheet 7/7

For beam angles see Sheet 5/7

e.f. denotes each face.

All stirrups within 4 feet of ℄ of column shall be placed with hooks in the bottom of cap. All others shall be placed with hooks in the top.

CAP BEAM REINFORCING STEEL										
Pier No.	A bars	B bars	C bars	D bars	L bars	M bars	N bars	P bars	R bars	S bars
1	1-PA601	1-PA602ef.	5-PA1007	1-PA505	2-PA1008	1-PA501	1-PA502	1-PA503	2-PA1005	1-PA1006
2	1-PB602	1-PB603ef.	5-PB1007	1-PB505	2-PB1008	1-PB501	1-PB502	1-PB503	2-PB1005	1-PB1006

H.N.T.B. BRIDGE NO. 8 | Revised 5-29-75 | By CKB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 4/7
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIERS 1 AND 2

RAMP G OVER CLEVELAND AVE.
BR. NO. STA. 30-1499 STA. 977+27.54
SCALE: ¼" = 1'-0" STA. 979+06.83

RELOCATED U.S. 30

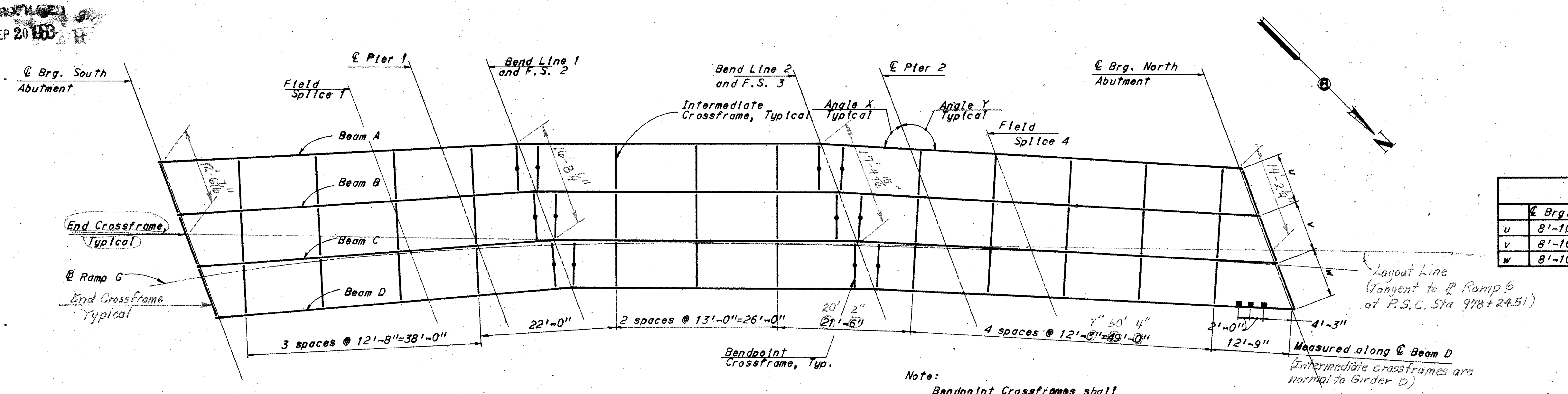
CANTON STARK COUNTY OHIO

DRAWN B.M.	TRACED	CHECKED D.W.B.	REVIEWED MJK	REVISED
DATE 11-7-69	DATE	DATE 1-22-70	DATE 11-20-71	1668

Revised 4-28-77

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			288 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

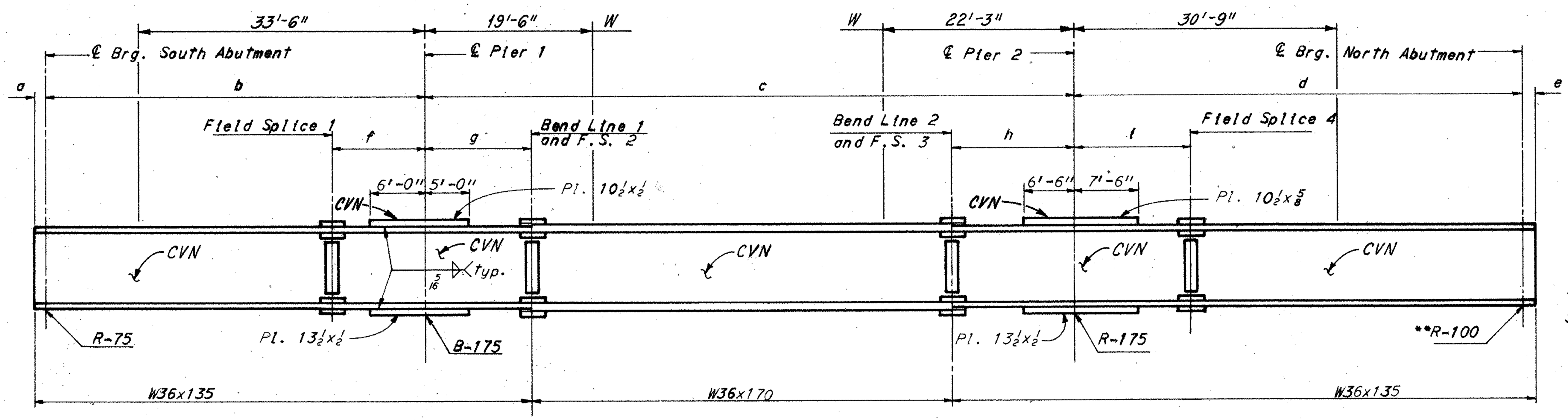


Note:
Bendpoint Crossframes shall be placed 1'-0" from bend lines.

FRAMING PLAN

TABLE OF BEAM SPACINGS						
	℄ Brg. SA	℄ Pier 1	B.L. 1	B.L. 2	℄ Pier 2	℄ Brg. NA
u	8'-10 11/16"	8'-4 11/16"	8'-3 1/16"	8'-4 1/16"	8'-3 7/16"	8'-1 1/8"
v	8'-10 11/16"	8'-4 11/16"	8'-3 1/16"	8'-4 1/16"	8'-3 7/16"	8'-1 1/8"
w	8'-10 11/16"	8'-4 11/16"	8'-3 1/16"	8'-4 1/16"	8'-3 7/16"	8'-1 1/8"

DIMENSIONS									
Beam	a	b	c	d	e	f	g	h	i
A	9 3/8"	45'-6 13/16"	76'-2 15/16"	53'-7 1/16"	9 13/16"	11'-2 3/8"	12'-5 1/2"	14'-6 5/8"	13'-9 5/8"
B	9 3/8"	45'-5 1/16"	76'-2 9/16"	53'-6 1/8"	9 13/16"	11'-2 3/8"	12'-5"	14'-6 7/16"	13'-9 5/8"
C	9 3/8"	45'-3 5/16"	76'-2 3/16"	53'-5 3/16"	9 13/16"	11'-2 3/8"	12'-4 9/16"	14'-6 3/16"	13'-9 5/8"
D	9 3/8"	45'-1 11/16"	76'-1 13/16"	53'-4 1/4"	9 13/16"	11'-2 3/8"	12'-4 1/16"	14'-5 15/16"	13'-9 5/8"



** Increase T dimension of 1 1/2" given on Standard Drawing RB-1-55 to 1 3/4" following
Beam A: 3 3/8"
Beam B: 3 1/2"
Beam C: 3 3/4"
Beam D: 3 5/8"

CVN - See Sheet 214.

Note:
"W" denotes the range where welded attachments cannot be made to the top flange of Girders A and D.

BEAM ELEVATION

TABLE OF BEAM ANGLES							
Beam	Angle	℄ Brg. S.A.	℄ Pier 1	Bend Line 1	Bend Line 2	℄ Pier 2	℄ Brg. N.A.
A	X	72°21'21.7"	72°21'21.7"	72°21'21.7"	69°19'45.1"	66°01'08.1"	66°01'08.1"
	Y	107°38'38.3"	107°38'38.3"	110°40'14.9"	113°58'51.9"	113°58'51.9"	113°58'51.9"
B	X	72°57'12.1"	72°57'12.1"	72°57'12.1"	69°14'23.7"	66°12'22.8"	66°12'22.8"
	Y	107°02'47.9"	107°02'47.9"	110°45'36.3"	113°47'37.2"	113°47'37.2"	113°47'37.2"
C	X	73°33'16.3"	73°33'16.3"	73°33'16.3"	69°09'02.7"	66°23'39.4"	66°23'39.4"
	Y	106°26'43.7"	106°26'43.7"	110°50'57.3"	113°36'20.6"	113°36'20.6"	113°36'20.6"
D	X	74°09'34.1"	74°09'34.1"	74°09'34.1"	69°03.42.0"	66°34'58.0"	66°34'58.0"
	Y	105°50'25.9"	105°50'25.9"	110°56'18.0"	113°25'02.0"	113°25'02.0"	113°25'02.0"

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS														
Beam	℄ Brg. S.A.	.25	.50	*.75	℄ Pier 1	B.L. 1	.25	.50	.75	B.L. 2	℄ Pier 2	*.25	.50	.75	℄ Brg. N.A.
A	1042.44	1042.30	1042.17	1042.06	1041.97	1041.88	1041.82	1041.69	1041.57	1041.55	1041.46	1041.37	1041.30	1041.23	1041.15
B	1041.86	1041.73	1041.62	1041.54	1041.47	1041.41	1041.36	1041.24	1041.14	1041.12	1041.03	1040.95	1040.88	1040.81	1040.75
C	1041.27	1041.16	1041.08	1041.02	1040.97	1040.93	1040.89	1040.79	1040.70	1040.69	1040.60	1040.52	1040.45	1040.39	1040.34
D	1040.69	1040.63	1040.58	1040.54	1040.49	1040.46	1040.42	1040.34	1040.27	1040.25	1040.17	1040.10	1040.04	1039.98	1039.93

* Values given are for Field Splice.

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS AT GUTTERLINE													
	℄ Brg. S.A.	.25	.50	.75	℄ Pier 1	.25	.50	.75	℄ Pier 2	.25	.50	.75	℄ Brg. N.A.
North Gutterline	1040.67	1040.63	1040.58	1040.54	1040.49	1040.44	1040.38	1040.28	1040.17	1040.11	1040.05	1039.99	1039.91
South Gutterline	1042.44	1042.30	1042.18	1042.07	1041.97	1041.85	1041.73	1041.59	1041.46	1041.39	1041.32	1041.25	1041.15

Note:
The gutterline elevations shown have been adjusted for dead load deflections caused by the weight of concrete and wearing course and are the elevations required before the concrete deck is placed. No concrete shall be placed until the screed rails have been set for the entire bridge.

Notes:
Scuppers shall be in accordance with Std. Dwg. SD-1-69 except that scupper pipes shall extend 8" below the bottom of girders instead of 2".
For details of curb plates see Ohio Standard Drawing SD-1-69, sheet 2 of 4
For end crossframe details see Ohio Standard Drawing SD-1-69, Sheet 1 of 4.
For field splice details see Sheet 355.
For intermediate crossframe details see Sheet 360.
For details of rockers and bolsters see Ohio Standard Drawing RB-1-55.
Dimensions to scuppers are measured along centerline of beam.
For details of moment plate connection see Ohio Standard Drawing SD-1-69, Sheet 3 of 4.
For underdeck light details see Lighting Plans.
For details of moment plate connection see Ohio Standard Drawing SD-1-69, Sheet 3 of 4.
The allowance to be made in screed settings to compensate for dead load deflections shall be made above or below the top of pavement elevations as required. Screeds may require further adjustment due to irregularities of the fabricated steel.
■ Denotes standard scupper.
For bend point crossframe details see Sheet 360.
—•— Denotes bend point crossframe.
Set bend point crossframes normal to beam near the bend point.
For Camber and Deflection Tables see Sheet 365.
F.S. denotes field splice.
For details of roadway end dam, see Ohio Standard Drawing SD-1-69, Sheet 1 of 4, and Sheet 359.

H.N.T.B. BRIDGE NO. 8

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 5/7
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FRAMING PLAN

RAMP G OVER CLEVELAND AVE.
BR. NO. STA. 30-1499 STA. 977+27.54
SCALE: 1" = 10'-0" STA. 979+06.83

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

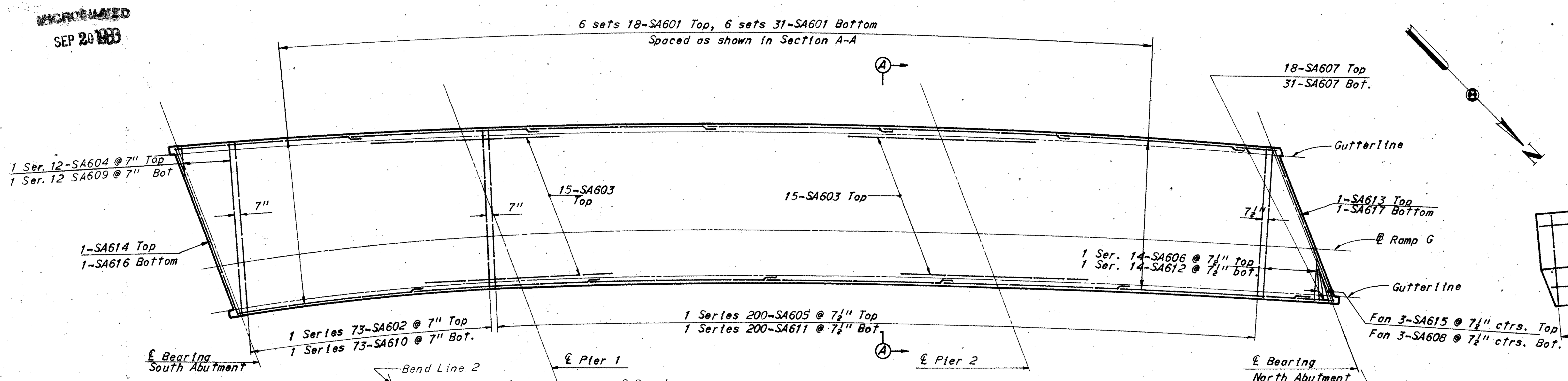
DRAWN B.M.	TRACED	CHECKED D.W.B.	REVIEWED MJK	REVISED
DATE 11-14-69	DATE	DATE 1-27-70	DATE 11-20-71	1668

Revised 5-29-75 By CKB

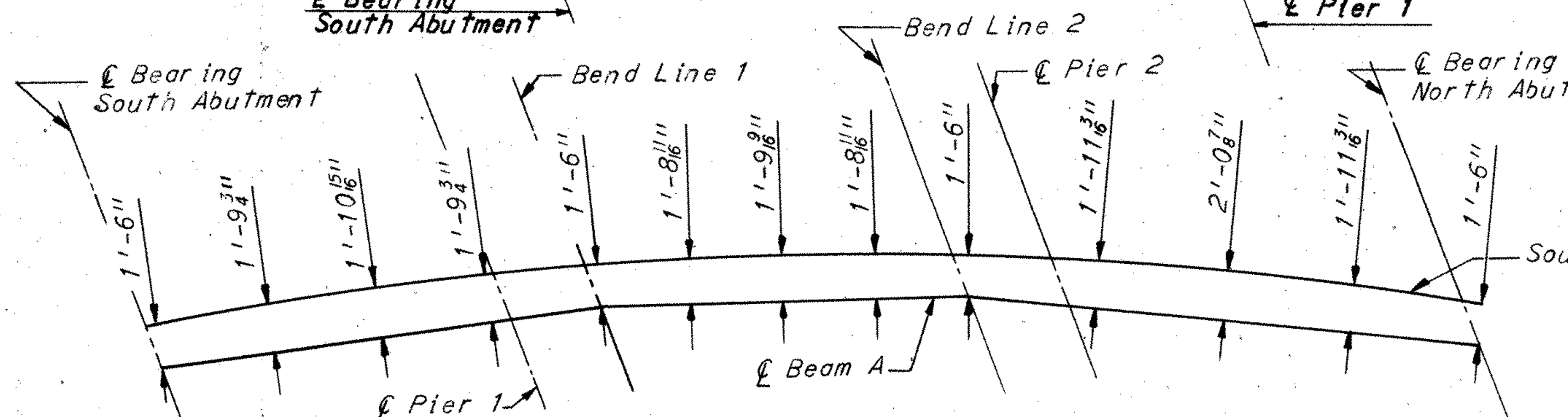
Revised 4-28-77

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

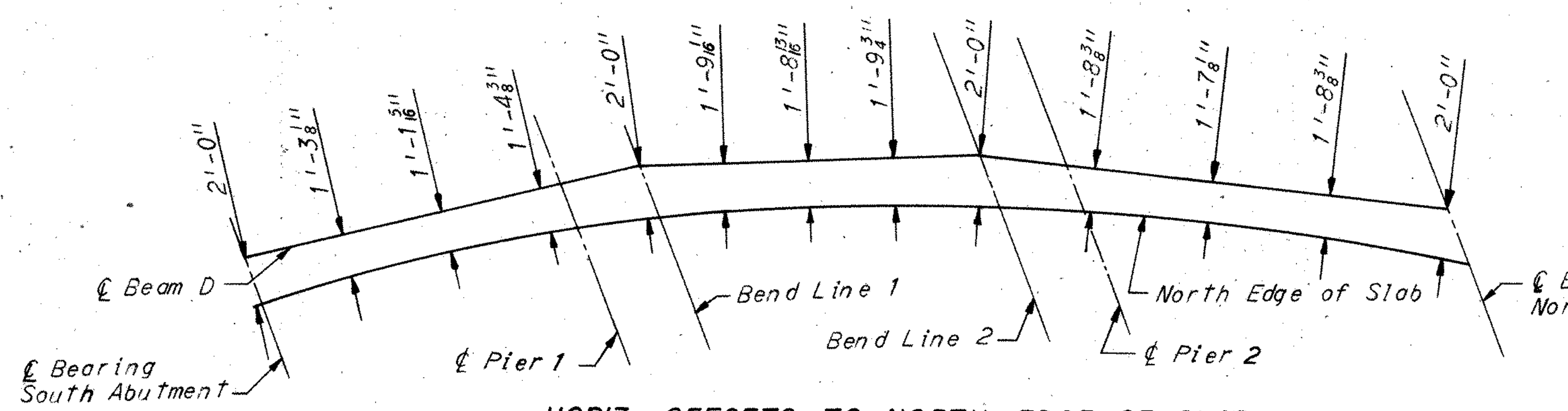
STARK COUNTY
STA-30-14.12
STA-77-9.22



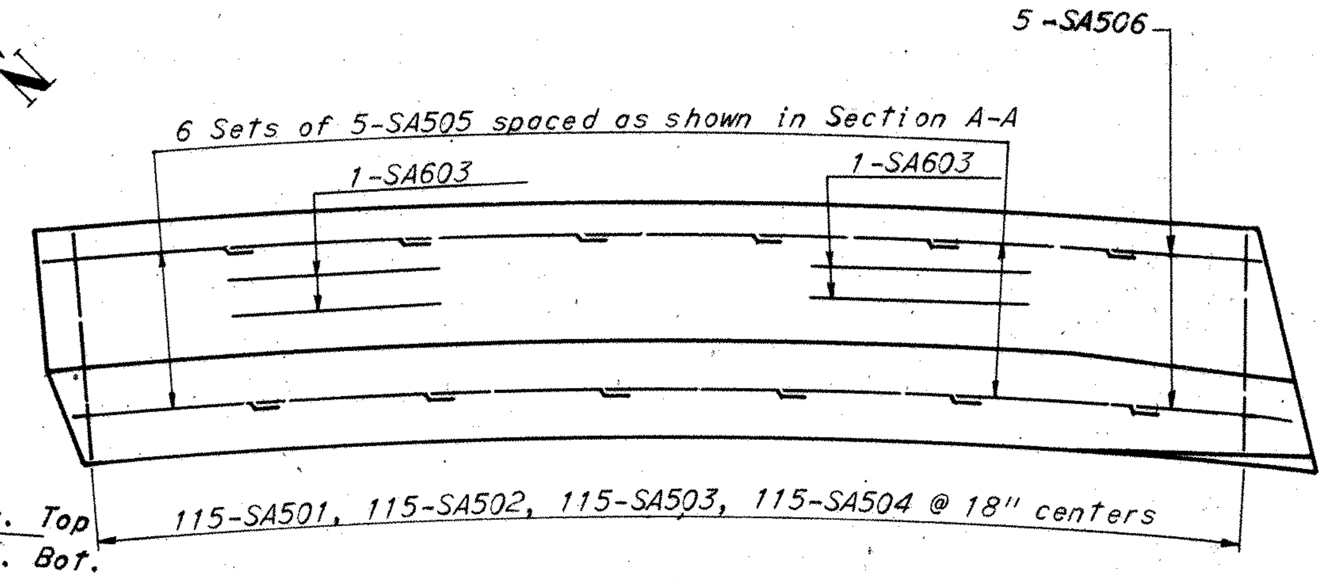
DECK PLAN



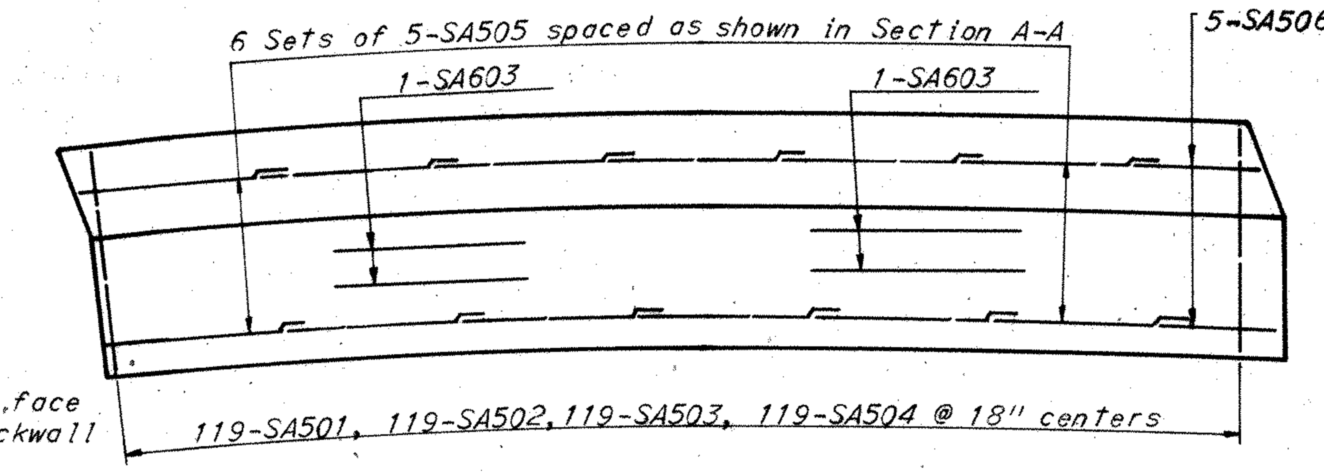
HORIZ. OFFSETS TO SOUTH EDGE OF SLAB



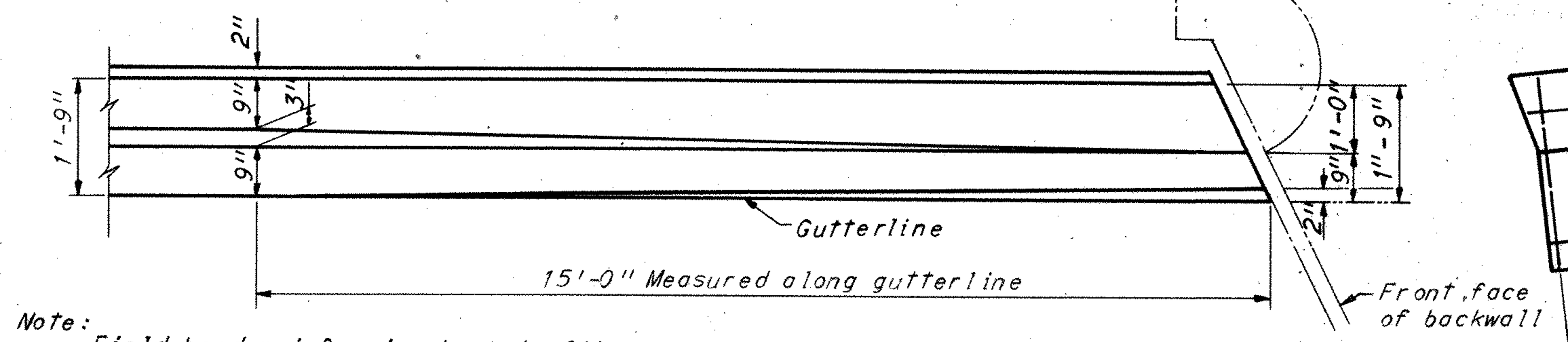
HORIZ. OFFSETS TO NORTH EDGE OF SLAB



SOUTH CURB PLAN

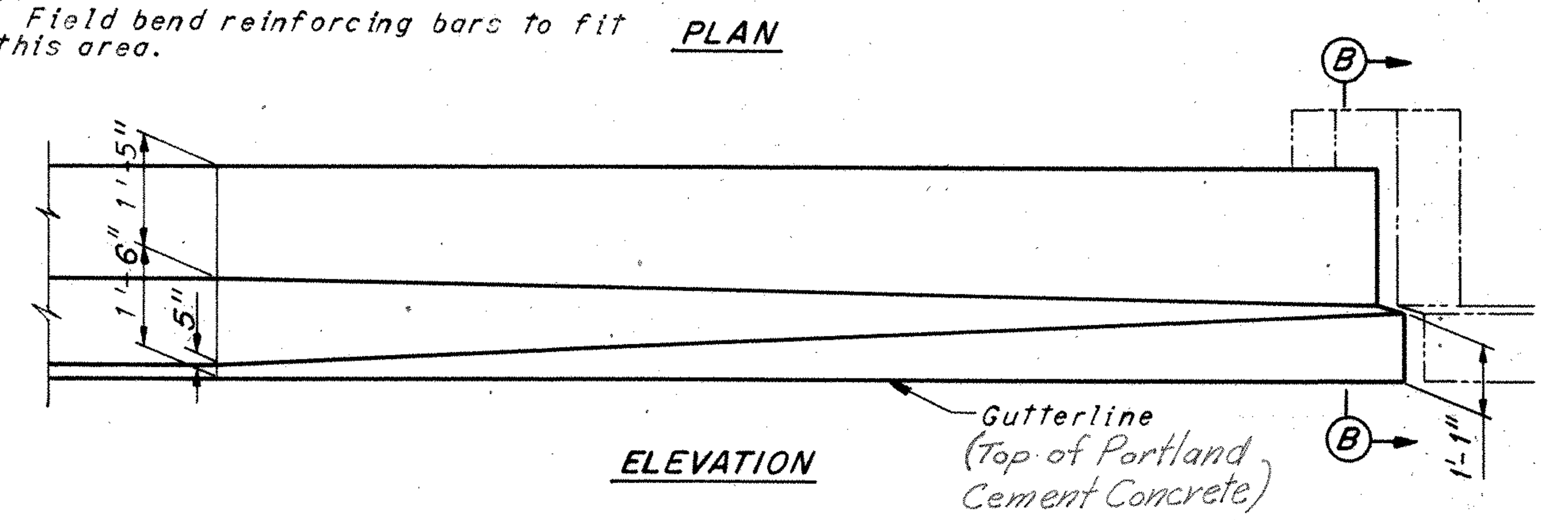


NORTH CURB PLAN



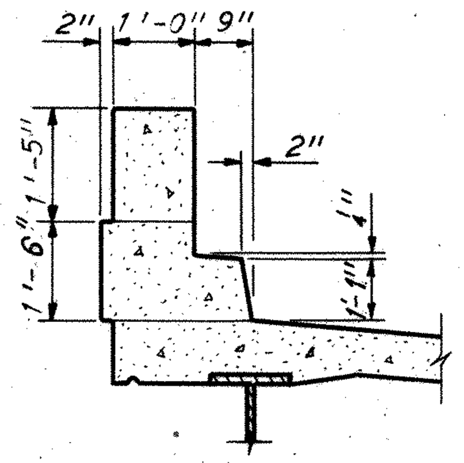
Note: Field bend reinforcing bars to fit in this area.

PLAN



ELEVATION

SOUTH CURB AND PARAPET TRANSITION AT NORTH ABUTMENT



SECTION B-B

Notes:

Reinforcing steel shall be adjusted as required to clear scuppers.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For curb and parapet dimensions see Sheet 359.

For deflection joint details, see Sheet 361.

(N) denotes North Parapet. (S) denotes South parapet.

Transverse reinforcing steel shall be placed radially to ℄ Ramp G.

Horizontal offsets are measured at quarter points between bend points.

e.f. denotes each face.

For reinforcement schedule, see Sheet 7/7

For Subdrainage Details, see Sheet 365A.

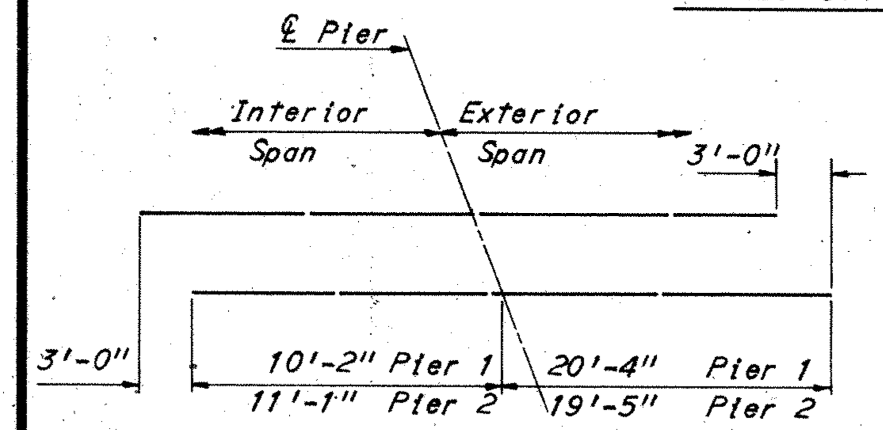
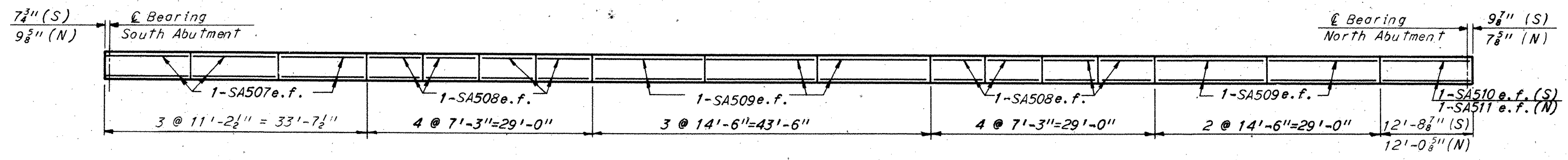
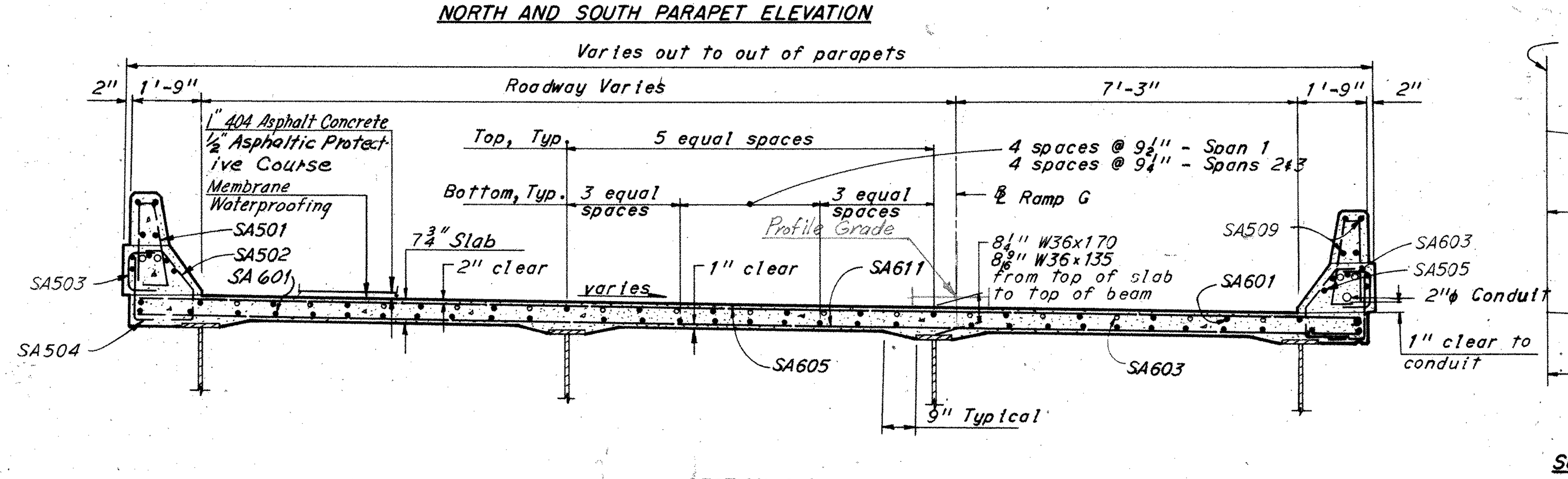


DIAGRAM SHOWING STAGGER OF SA603 BARS OVER PIERS 1 & 2

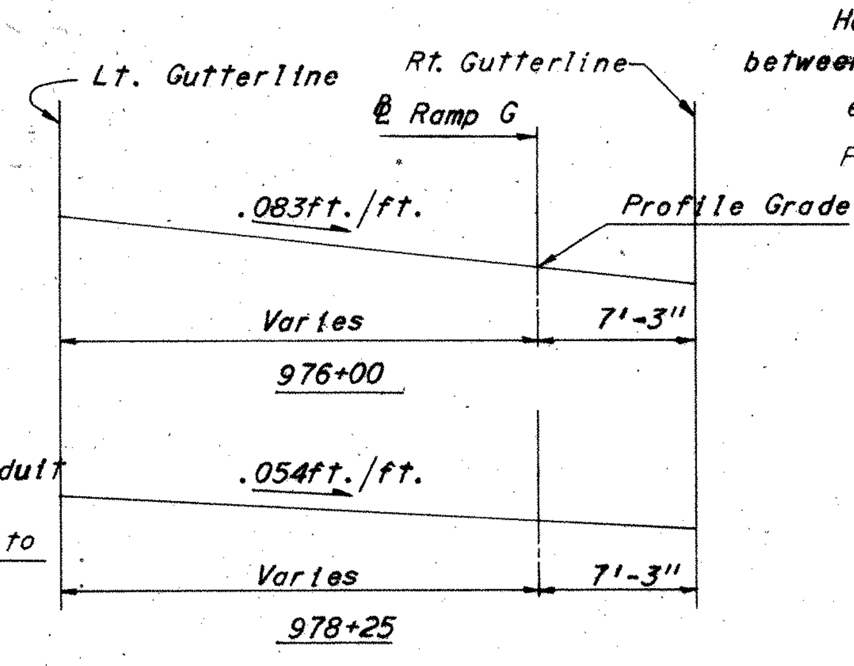


NORTH AND SOUTH PARAPET ELEVATION

Note:
Deck Slab Depth: The distance shown from top of deck slab to top of steel beam is the design dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.



SECTION A-A



SUPERELEVATION TRANSITION SCHEME

H.N.T.B. BRIDGE NO. 8 — Revised 5-29-75 By CKB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 6/7
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DECK PLAN

RAMP G OVER CLEVELAND AVE.

BR. NO. STA. 30-1499 — STA. 977+27.54
SCALE: NONE — STA. 979+06.83

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN B.M.	TRACED	CHECKED	REVIEWED	REVISED 3-2-76
DATE 11-21-69	DATE	DATE 2-4-70	DATE 11-20-71	1668

Revised 4-28-77

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
NORTH ABUTMENT								
AA550	2	27'-6"	str					58
AA552	2	9'-3"	str					19
AA553	2	7'-3"	str					15
AA554	11	2'-1"	105	7½"	1'-1"			24
AA555	8	14'-9"	str					123
AA556	4	7'-10"	144					33
AA557	6	6'-10"	114	3'-2"				43
AA558	10	2'-9"	str					29
AA607	4	6'-7"	106	4'-2"	2'-0"	9"		40
AA650	6	3'-3"	148	1'-0"	9"			29
AA751	5	3'-3"	148	1'-0"	9"			33
						TOTAL		451
SOUTH ABUTMENT								
AB401	24	3'-6"	105	1'-0"	1'-9"			56
AB501	10	3'-8" 4'-2"	118	2'-0"	9"	1"-0½" 11½"		38 43
AB502	8 6	4'-0"	str					33 25
AB503	9	6'-9"	108	5'-0"	1'-9"	1'-2"		63
AB504	12	3'-6"	108	1'-9"	1'-9"	1'-8"		44
AB505	16 18	7'-5"	str					124 141
AB506	11	6'-9"	108	5'-0"	1'-9"	1'-2"		77
AB507	10 14	29'-6"	str				431	308
AB508	24	13'-8"	str					344
AB509	6 3	29'-0" 28'-9"	str				90	182
AB510	20	9'-10"	105	3'-4"	3'-5"			205
AB511	12	12'-0" 11'-6"	109	3'-0"	2'-9" 6		144	150
AB512	4	12'-6"	108	7'-3"	5'-3"	2'-5"		52
AB513	20	8'-4"	105	1'-7"	5'-5"			174
AB514	12	6'-10"	114	3'-2"				86
AB515	22	2'-1"	105	7½"	1'-1"			48
AB516	2	5'-0"	str					10
AB517	20	3'-0"	str					63
AB518	12	5'-9"	str					72
AB519	4	7'-3"	str					30
AB520	4	8'-3"	str					34
AB521	2	4'-9"	str					10
AB601	27	10'-1"	105	4'-6"	1'-5"			406
AB602	27	6'-1"	105	2'-9"	11"			247
AB603	5	18'-4"	105	8'-9"	1'-2"			138
AB604	27	5'-1"	105	2'-0"	1'-5"			206
AB605	20	7'-7"	104	6'-9"	1'-0"			228
AB606	20	14'-6"	106	5'-5"	6'-9"	2'-8"		436
AB607	5	22'-10"	105	11'-0"	1'-2"			172
AB608	12	6'-7"	115	4'-11"	9"			119
AB609	2	13'-10	105	6'-6"	1'-2"			42
AB610	2	17'-4"	105	8'-3"	1'-2"			52
AB701	6	4'-10"	115	3'-1"	9"			59
AB702	2	5'-6"	115	3'-9"	9"			22
AB703	2	6'-1"	115	4'-4"	9"			25
AB801	2 8	6'-0" 9	str				144	32
AB802	6 7	6'-9" 14'-0"	str				262	108
AB803	6	7'-6"	str					120
AB804	7	31'-3" 20'-0"	str				374	584
AB805	2	6'-3" 5	str				28	33
D801	19	5'-3"	141					266
						TOTAL		5,487 5,588

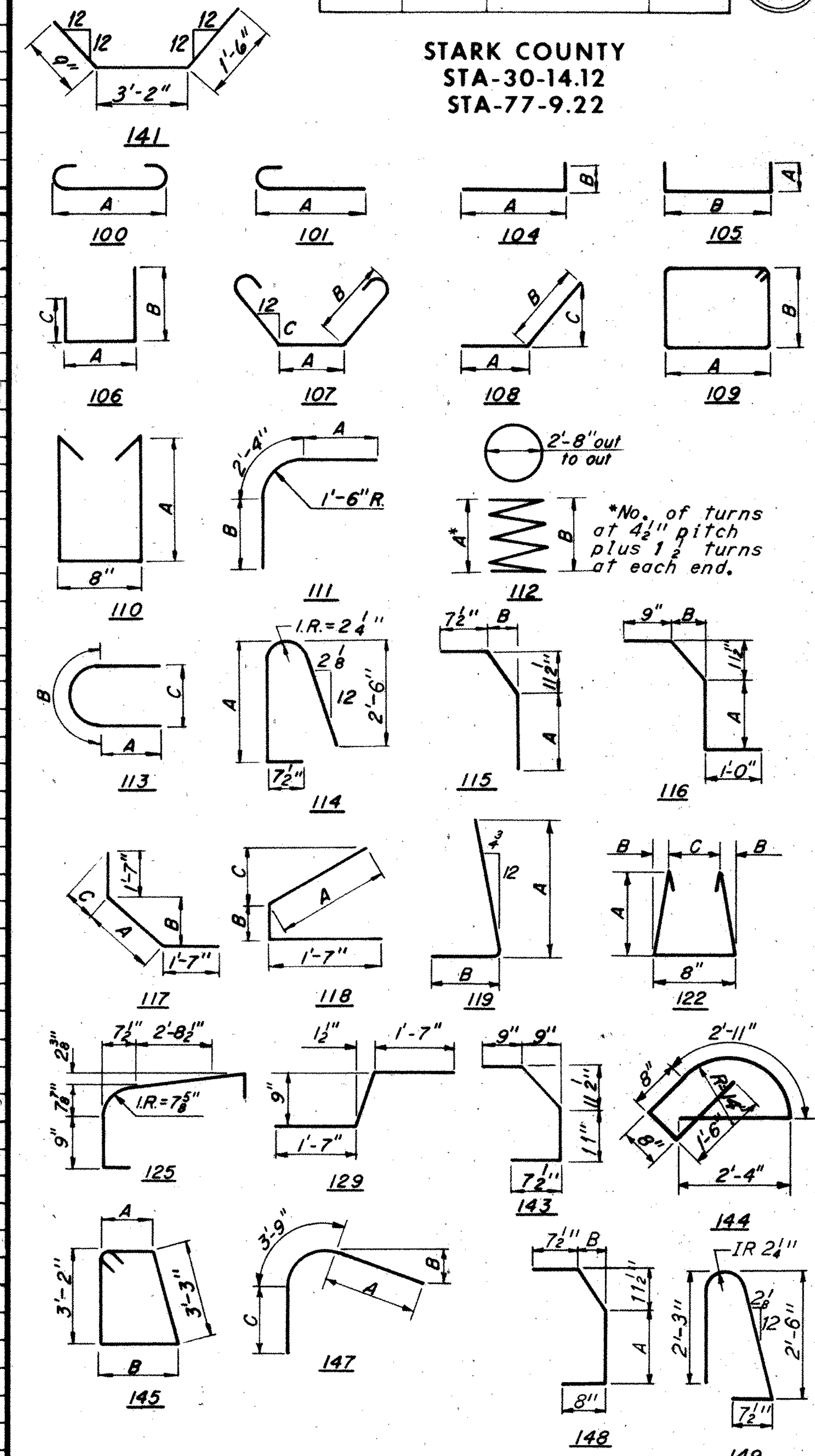
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PIER 1								
SPA401	1	352'-6"	112	42.7	15'-0"			284
SPA402	1	336'-0"	112	40.7	14'-3"			269
SPA403	1	319'-6"	112	38.7	13'-6"			258
PA501	20	4'-5"	105	1'-0"	2'-8" 5			92
PA502	2	3'-11" 4'-2"	105	1'-0"	2'-2"			8
PA503	2	2'-9" 3'-5"	105	1'-0"	1'-0" 8			6
PA504	34	8'-0"	str					286
PA505	18	12'-0"	109	2'-8"	3'-2"			226
PA601	6	8'-1"	113	1'-11"	4'-3"	2'-8"		73
PA602	4	25'-0"	str					150
PA701	10	32'-9"	str					670
PA702	34	8'-0"	str					556
PA1001	8	18'-0"	str					620
PA1002	8	17'-3"	str					594
PA1003	10	16'-6"	str					709
PA1004	26	7'-3"	104	6'-6"	1'-0"			809
PA1005	2	30'-2" 1	105	2'-9"	25'-3" 2			259
PA1006	1	32'-9" 8	105	2'-9"	27'-10" 9			141
PA1007	5	25'-3"	str					543
PA1008	2	32'-5" 3	105	2'-9"	27'-6" 4			279
						TOTAL		6832
PIER 2								
SPB401	1	429'-3"	112	52.0	18'-6"			347
SPB402	1	414'-5"	112	50.2	17'-10"			334
SPB403	1	402'-0"	112	48.7	17'-3"			324
PB501	20	4'-5"	105	1'-0"	2'-8"			92
PB502	2	3'-11" 4'-2"	105	1'-0"	2'-2" 5			8
PB503	2	2'-9" 3'-5"	105	1'-0"	1'-0" 8			6
PB504	34	7'-6"	str					268
PB505	18	12'-0"	109	2'-8"	3'-2"			226
PB601	34	7'-6"	str					382
PB602	6	8'-1"	113	1'-11"	4'-3"	2'-8"		73
PB603	4	24'-10"	str					149
PB701	10	32'-4"	str					661
PB1001	8	21'-6"	str					740
PB1002	8	21'-0"	str					722
PB1003	8	20'-3"	str					697
PB1004	24	7'-5"	104	6'-6"	1'-0"			765

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PB1005	2	29'-9"	105	2'-9"	24'-10"			256
PB1006	1	32'-5" 4	105	2'-9"	27'-6" 5			140
PB1007	5	24'-9"	str					532
PB1008	2	32'-1" 31'-11"	105	2'-9"	27'-2" 0			276
						TOTAL		6998
DECK PLAN								
SA501	234	5'-6"	149					1,342
SA502	234	3'-3"	143					793
SA503	234	2'-1"	105	7½"	1'-1"			508
SA504	234	2'-5"	104	7½"	1'-11"			590
SA505	60	30'-0"	str					1,878
SA506	10	6'-6"	str					68
SA507	24	10'-10"	str					272
SA508	64	6'-11"	str					462
SA509	40	14'-2"	str					592
SA510	4	12'-4"	str					51
SA511	4	11'-8"	str					48
SA601	294 73	30'-0"	str					13,302
SA602	1 Ser 3	30'-1" to28'-1"	100	28'-9"to26'-9"			5/16"	3180
SA603	38	30'-6"	str					1,742
SA604	1 Ser 12	29'-5"to 5'-5"	101	28'-9"to4'-9"			2'-2 3/16"	315
SA605	1Ser 200	28'-1"to26'-7"	100	26'-9"to25'-3"			3/32"	8200
SA606	1 Ser 14	25'-11"to5'-8"	101	25'-3"to5'0"			1'-8¼"	332
SA607	49	8'-3"	str					616
SA608	3	5'-0"	str					23
SA609	1 Ser 12	28'-9"to4'-9"	str				2'-2 3/16"	302
SA610	1 Ser 73	28'-9"to26'9"	str				5/16"	3040
SA611	1Ser. 200	26'-9"to25'-3"	str				3/32"	7800
SA612	1 Ser 14	25'-3"to5'-0"	str				1'-8¼"	317
SA613	1	28'-7"	100	27'-3"				43
SA614	1	30'-10"	100	29'-6"				46
SA615	3	5'-8"	101	5'-0"				26
SA616	1	29'-6"	str					44
SA617	1	27'-3"	str					41
						TOTAL		45,973

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

290
389

STARK COUNTY
STA-30-14.12
STA-77-9.22



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For replacement reinforcement schedule see sheet 256.
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 8 — Revised 6-3-75 By CKB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 7 / 7
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

RAMP G OVER CLEVELAND AVE.
BR. NO. STA. 30-1499 — STA. 977+27.54
SCALE: — STA. 979+06.83

RELOCATED U.S. 30

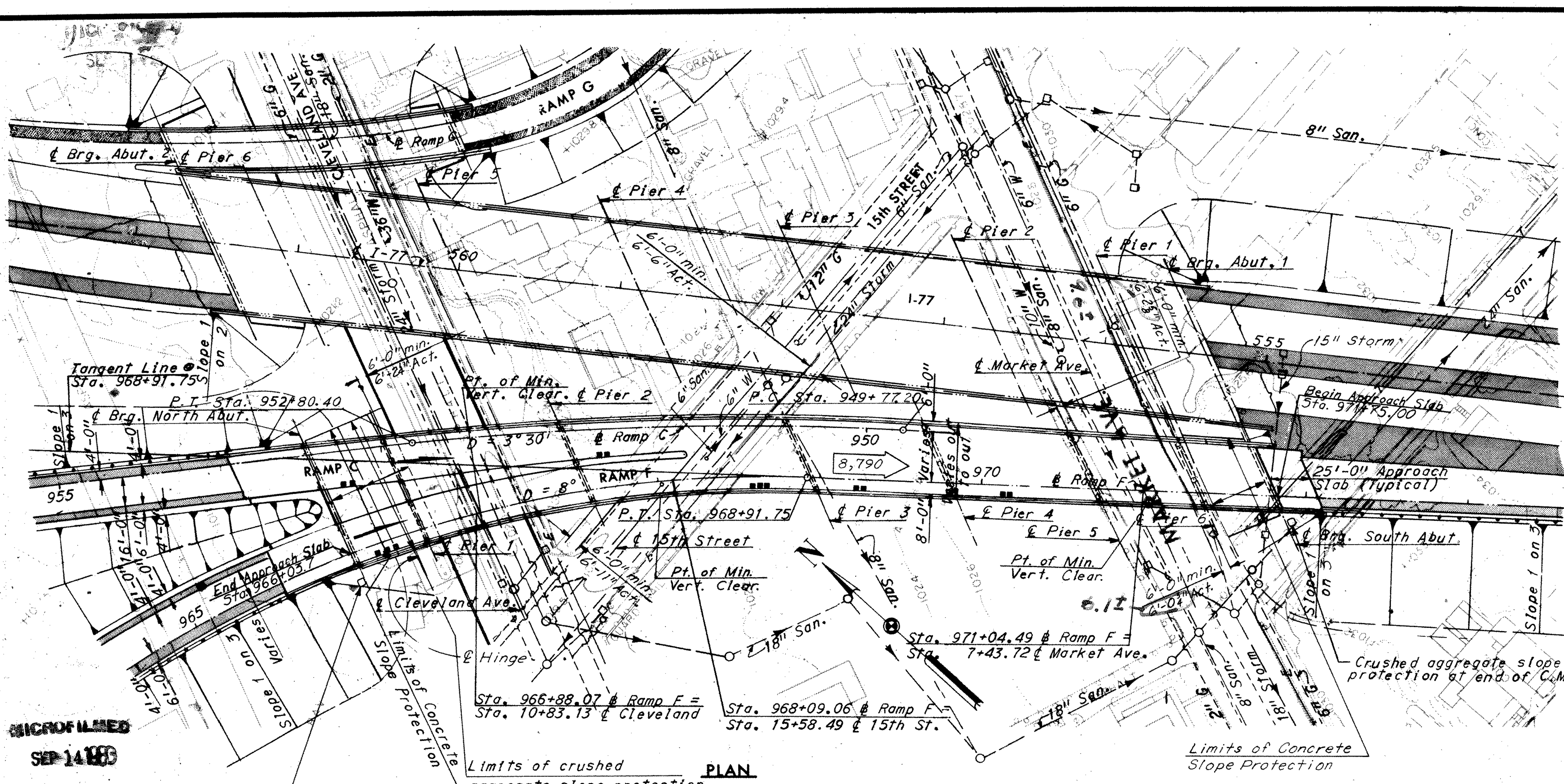
CANTON — STARK COUNTY — OHIO

DRAWN DGS	TRACED	CHECKED DHB	REVIEWED MJK	REVISED
DATE 6-2-70	DATE	DATE 7-6-70	DATE 11-28-71	1668

Revised 4-28-77

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

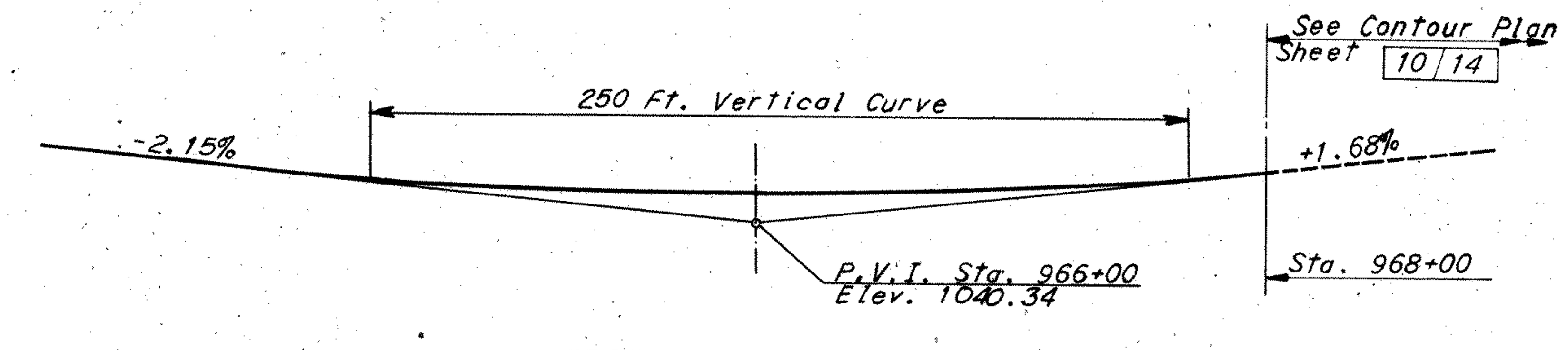
STARK COUNTY
STA-30-14.12
STA-77-9.22



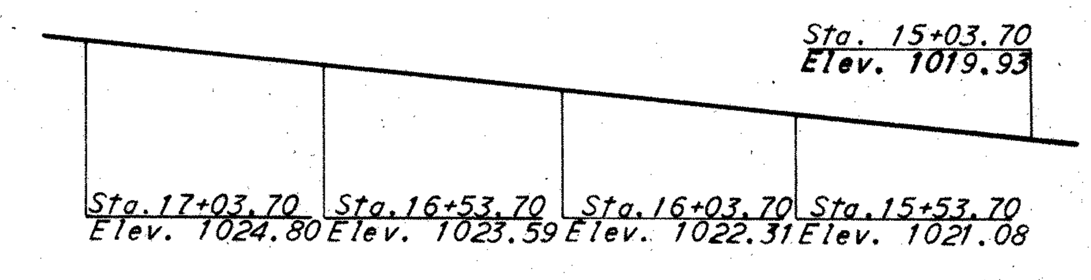
PLAN

Crushed aggregate slope protection at end of C.M.P.

NOTE: Profile grade is at the top of Portland Cement Concrete on the bridge deck and approach slabs. The Contractor shall in a length of 75 feet, make a vertical adjustment in the finished surface of the approach roadway in order to provide a 1 1/2 inch vertical transition to the higher asphalt concrete roadway surface on the structure and approach slabs.

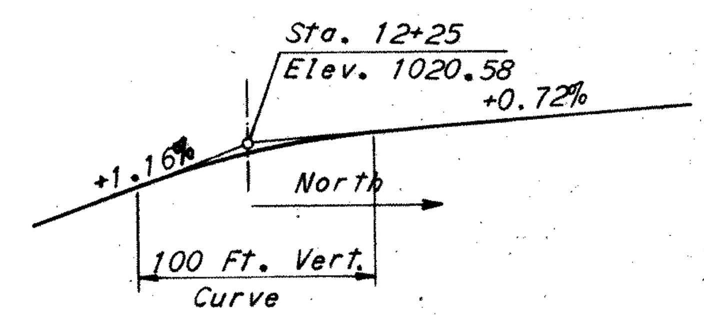


PROFILE GRADE - RAMP F

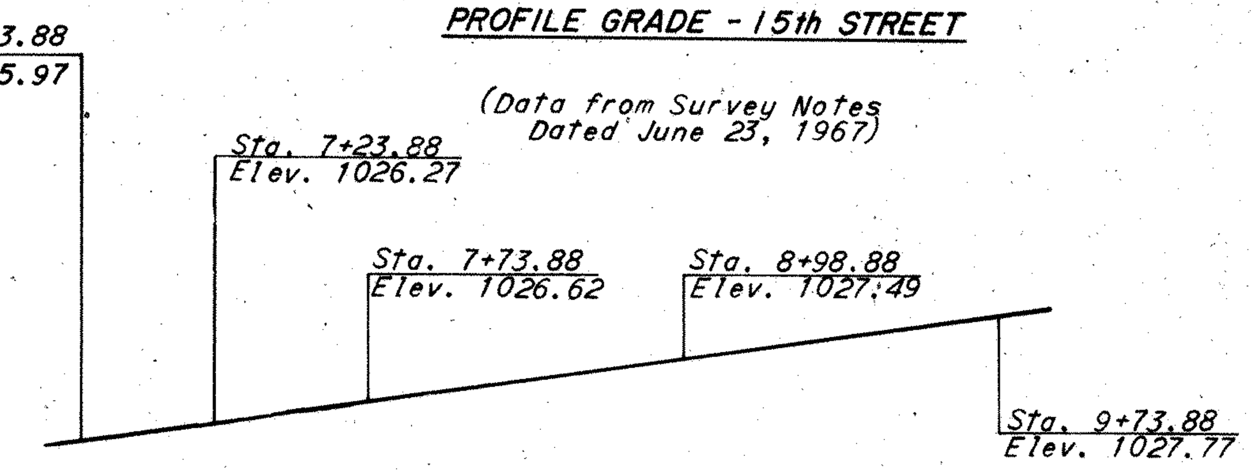


PROFILE GRADE - 15th STREET

(Data from Survey Notes Dated June 23, 1967)



PROFILE GRADE - CLEVELAND AVE.



PROFILE GRADE - MARKET AVE.

(Data from Survey Notes Dated June 23, 1967)

EXISTING UTILITY LEGEND

Symbol	Meaning
4" G	GAS
4" W	WATER
16" Storm	STORM SEWER
8" San	SANITARY SEWER
T	TELEPHONE
E	POWER LINES
4W-E4KV	4 WIRE, PRIMARY 4 KILOVOLT
3W-Es	3 WIRE, SECONDARY
ʊ	WATER HYDRANT
o	MANHOLE
□	CATCH BASIN

Notes:

The following items are not included in the bridge plans see roadway plans for details:

1. Relocation or removal of existing utilities
2. Approach grading, pavements and slabs.
3. Guardrails

■ Denotes Standard Scuppers

8,790 Denotes 1987 one way average daily traffic.

Earthwork limits shown are schematic. Actual slopes shall conform to plan-cross-sections.

For information not shown see General Plan Sheet 2/14.

For Estimated Quantities, see Sheet 365C.

PROPOSED STRUCTURE RAMP F

Type: Continuous Welded Girder with Reinforced Concrete Slab.

Spans: 46.0', 107.0', 133.0', 84.8', 84.8', ~~69.9'~~ 75.9', ~~39.0'~~ 33.0' = 564'-6" Ctr. to Ctr. End Bearing along ℄ Ramp F.

Roadway: Varies; 78.0'± to 39.5'± Face to face of parapets.

Loading: HS20-44

Skews: 64°01'30.4" to Tangent Line at Sta. 968+91.75 ℄ Ramp F, Rt.

Wearing Surface: 1½" Asphalt Concrete

Approach Slab: AS-1-72 (25' Long) (Modified)

Alignment: 8°00' Curve to tangent on ℄ Ramp F

Modify Std. Drwg. AS-1-72 by providing 3" Clear over the top rebars instead of the 2" shown on the Std. Drwg. The jacking holes as called for on Std. Drwg. AS-1-72 are not required.

H.N.T.B. BRIDGE NO. 9

HORIZONTAL CURVE DATA

RAMP F	RAMP C
P.I. Sta. 966+19.348	P.I. Sta. 951+29.236
D = 8°00'00.0"	D = 3°30'00.0"
Δ = 46°16'32.0" Rt.	Δ = 10°36'44.3" Lt.
R = 716.197	R = 1637.022
T = 306.042	T = 152.040
L = 578.444	L = 303.209

Revised 7-20-76 | Revised 6-11-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 1/14
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SITE PLAN

RAMP F AND RAMP C OVER
MARKET AVE. AND CLEVELAND AVE.

BR. NO. STA. 30-1494 — STA. 966+03.75 / STA. 971+75.00
SCALE: 1" = 50'-0"

RELOCATED U.S. 30

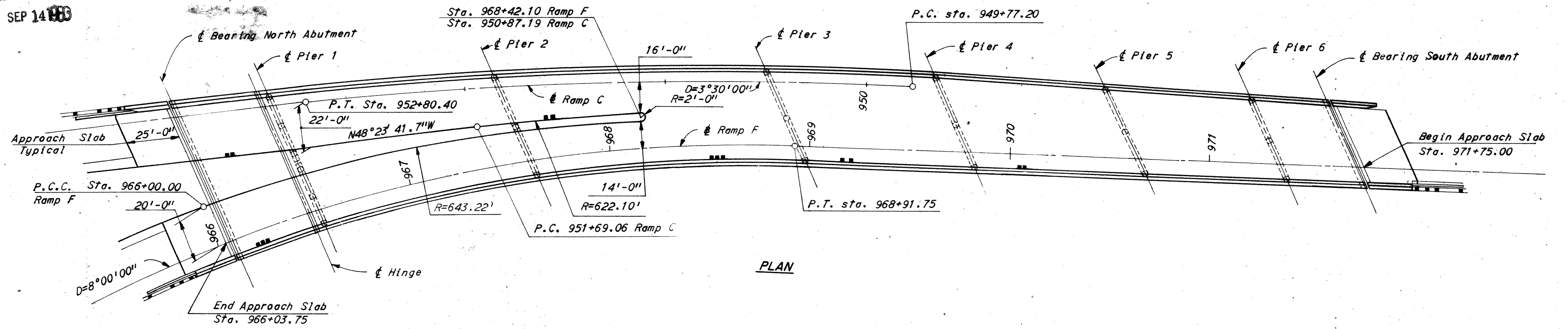
CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
L.D.L. DATE 1-22-70	DATE	DGS DATE 5-15-70	MJK DATE 11-20-71	10-29-76

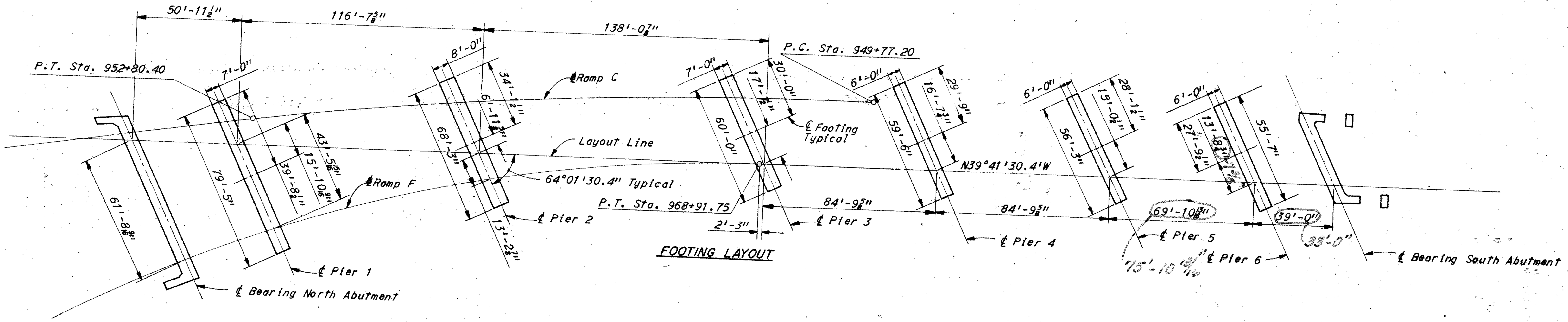
1668

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



PLAN



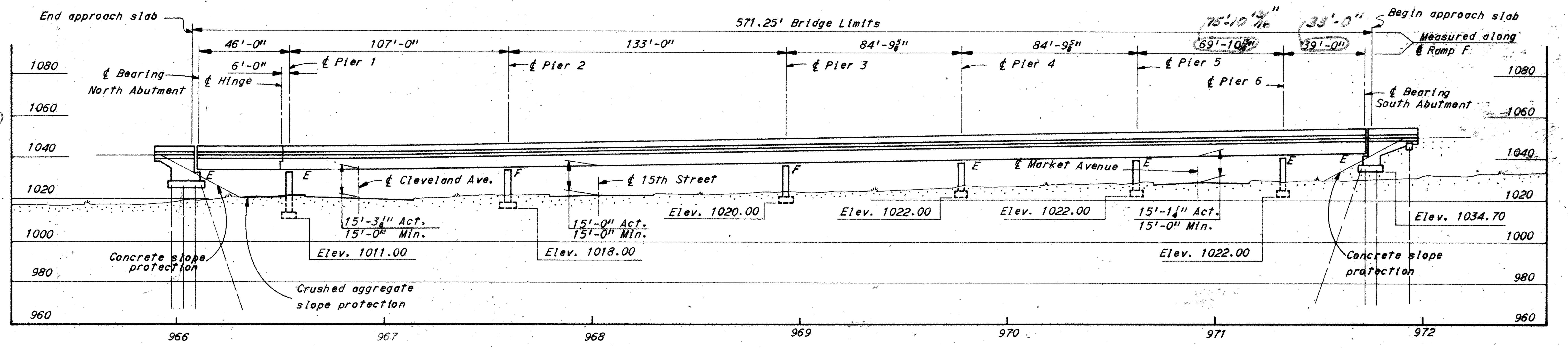
FOOTING LAYOUT

ESTIMATED AVERAGE PAY LENGTH FOR PILING

North Abutment	60'
South Abutment	40'

These estimates are based on boring data and are approximate only. The contractor shall assume full responsibility for length of piling selected for driving.

Notes:
■ Denotes Standard Scupper
All piles shall be 12" ϕ cast-in-place concrete.
For lighting details see Lighting Plans
For information not shown see Site Plan, Sheet 1/14



ELEVATION

H.N.T.B. BRIDGE NO. 9 — Revised 6-11-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 2/14

GENERAL PLAN
RAMP F AND RAMP C OVER
MARKET AVE. AND CLEVELAND AVE.

BR. NO. STA. 30-1494 — STA. 966+03.75
SCALE: 1" = 30'-0" — STA. 971+75.00

RELOCATED U.S. 30
CANTON — STARK COUNTY — OHIO

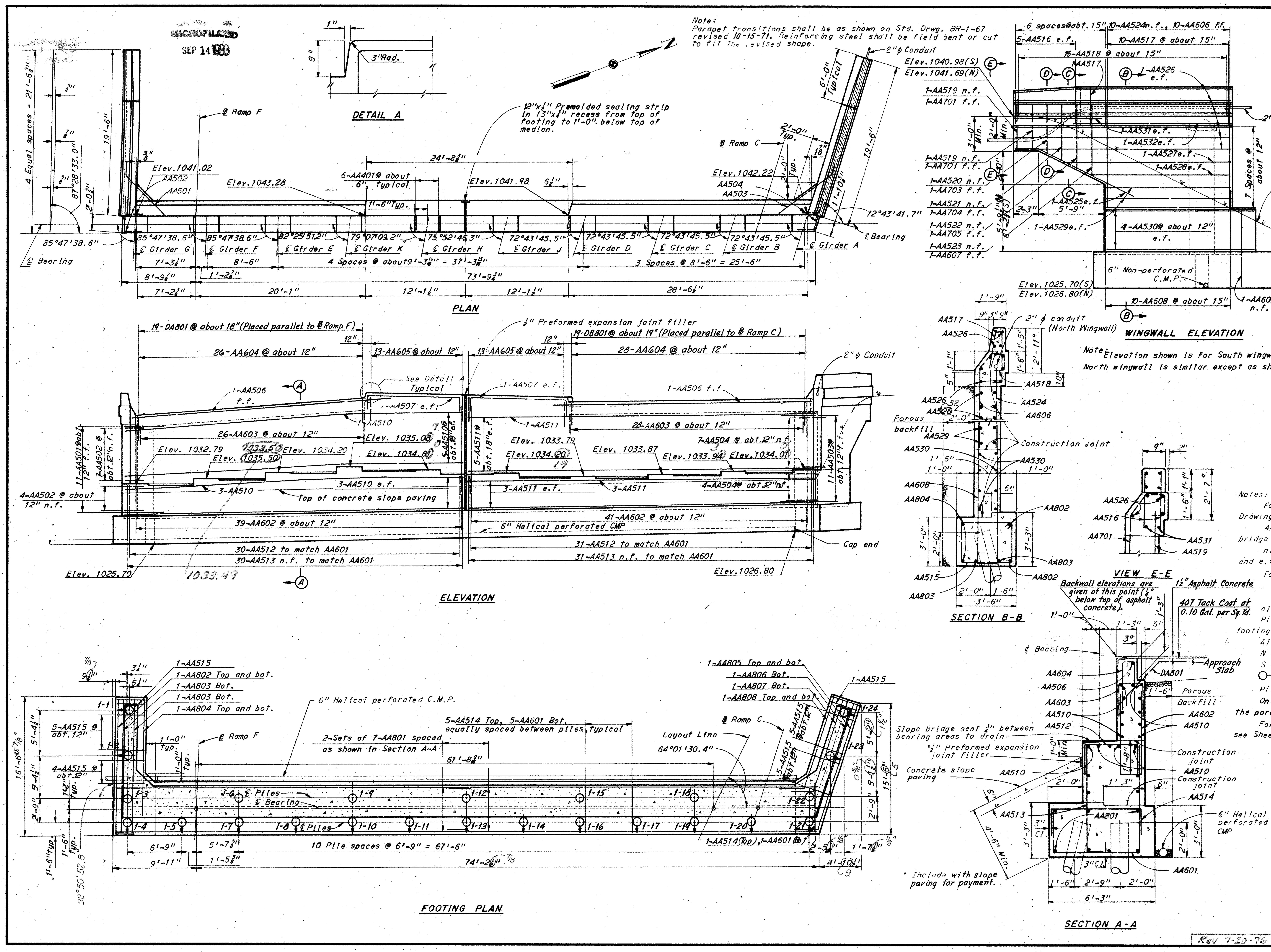
DRAWN LDL	TRACED	CHECKED DGS	REVIEWED MJK	REVISED 7-20-76
DATE 5-15-70	DATE	DATE 6-17-70	DATE 11-20-71	1668

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

293
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

MICROFILMED
SEP 14 1983



Notes:

For roadway end dam details see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4, and Sheet 359.

AA401 bars shall be placed $2\frac{1}{4}''\pm$ below top of bridge seat.

n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.

For reinforcement schedule see Sheet 12/14

All battered piles are battered 4 in 12.

Pile dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

N denotes North wingwall.

S denotes South wingwall.

O→ Denotes battered piles.

Piles not shown in elevation.

Only that portion of the C.M.P. located in the porous backfill shall be perforated.

For detail of C.M.P. outlet at side slope, see Sheet 359.

H.N.T.B. BRIDGE NO. 9 | Revised 6-14-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 3/14
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

NORTH ABUTMENT

RAMP F AND RAMP C OVER
MARKET AVE. AND CLEVELAND AVE.

BR. NO. 30-1494 STA. 966 + 03.75
SCALE: 3/16" = 1'-0" STA. 971 + 75.00

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
KSS DATE 4-9-70	DATE	D.W.B. DATE 6-3-70	MJK DATE 11-20-71	7-12-76

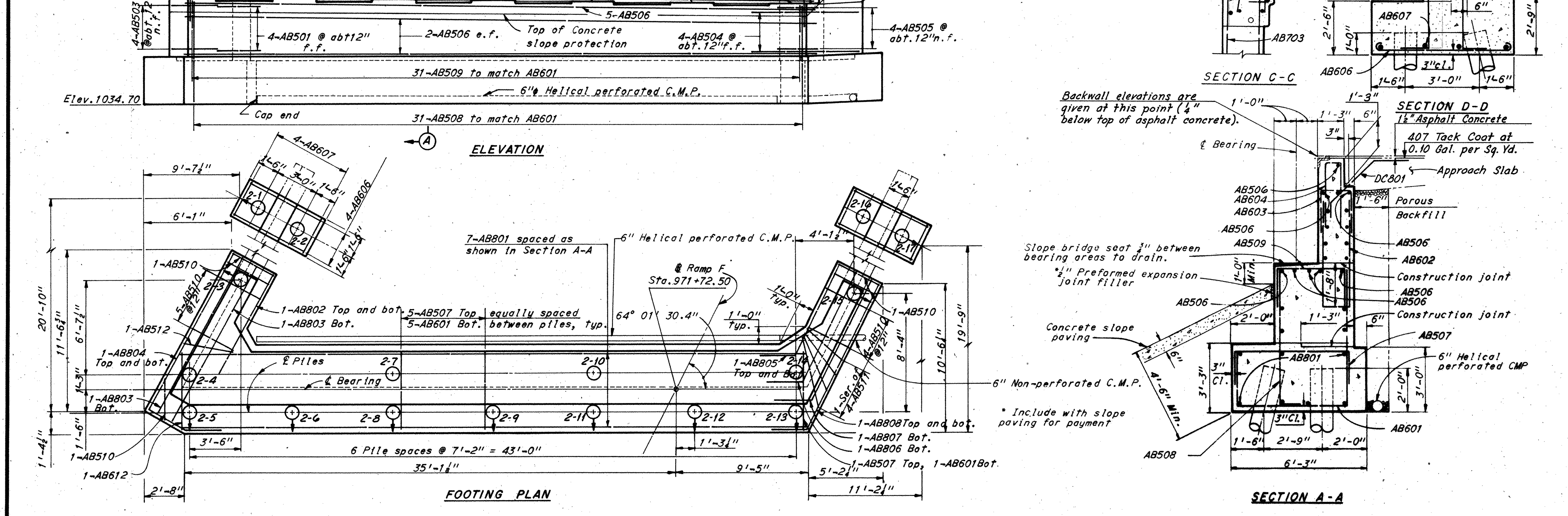
1668

Rev 7-20-76

Revised 4-28-77

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



Notes:

For roadway end dam details see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4, and Sheet 359.

AB401 bars shall be placed 2¼"± below top of bridge seat.

n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.

For reinforcement schedule see Sheet 12/14

Only that portion of the C.M.P. located in the porous backfill shall be perforated.

All battered piles are battered 4 in 12.

Pile dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

O→ Denotes battered piles.

Piles not shown in elevation.

E denotes East wingwall.

W denotes West wingwall.

For girder angles see Sheet 9/14

For detail of C.M.P. outlet at side slope, see Sheet 359.

H.N.T.B. BRIDGE NO. 9 — Revised 6-11-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 4/14
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SOUTH ABUTMENT

RAMP F AND RAMP C OVER
MARKET AVE. AND CLEVELAND AVE.

BR. NO. STA. 30-1494 — STA. 966 + 03.75
SCALE: 1/4" = 1'-0" — STA. 971 + 75.00

RELOCATED U.S. 30

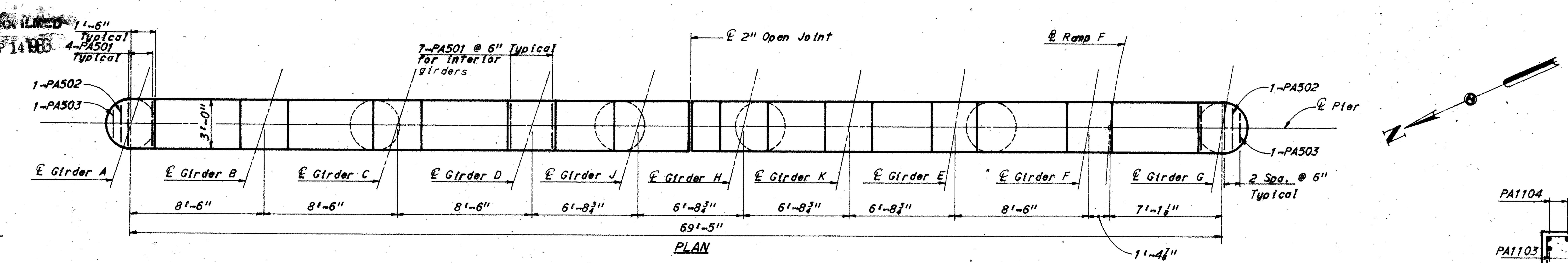
CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
KSS DATE 2-5-70	DATE	DWB DATE 6-5-70	MJK DATE 11-20-71	7-20-76

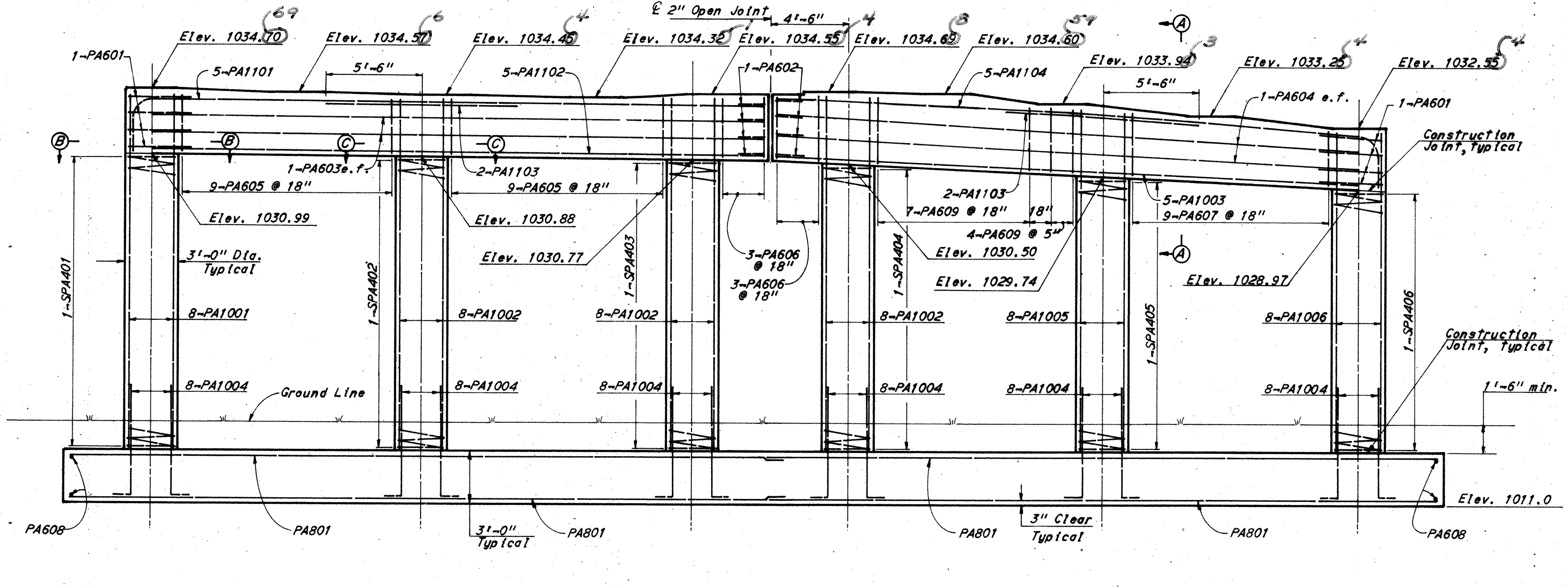
1668

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			295/389

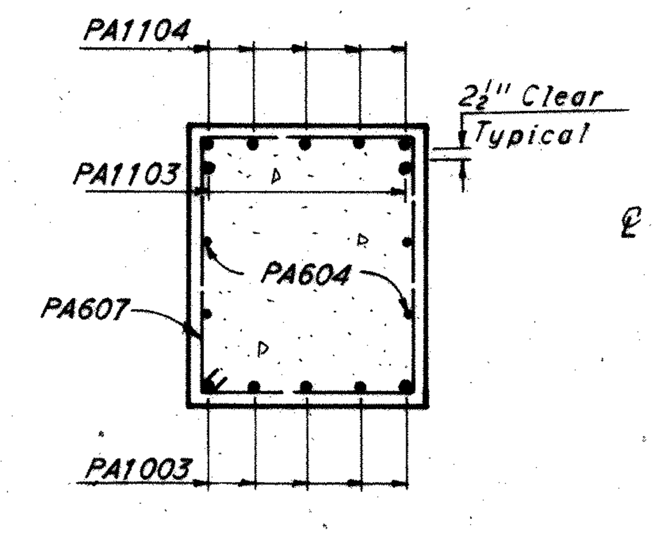
STARK COUNTY
STA-30-14.12
STA-77-9.22



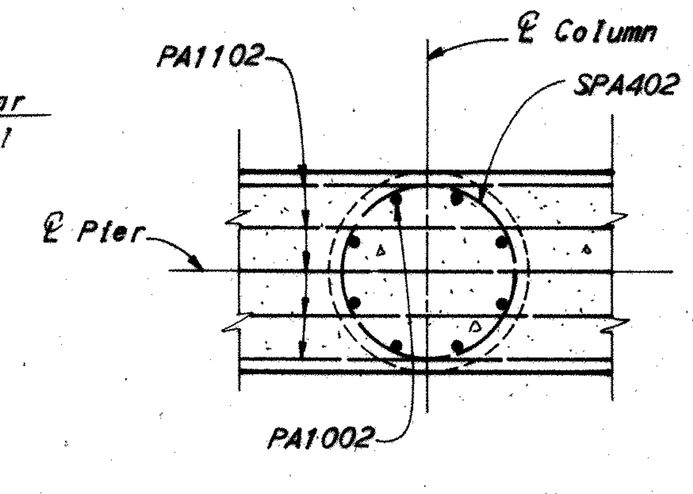
PLAN



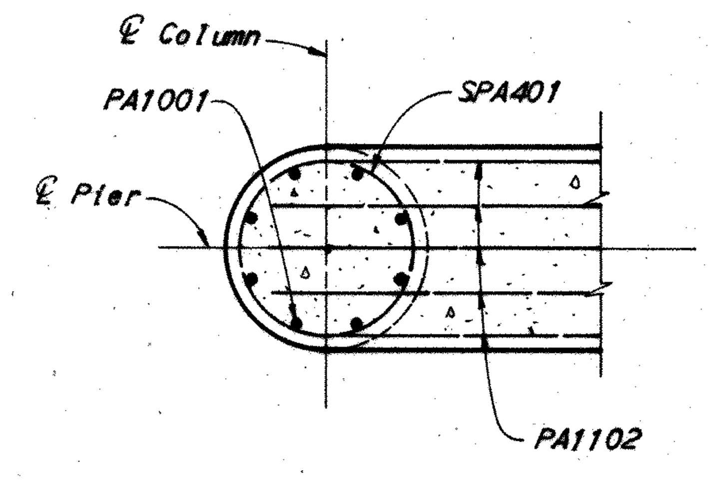
ELEVATION



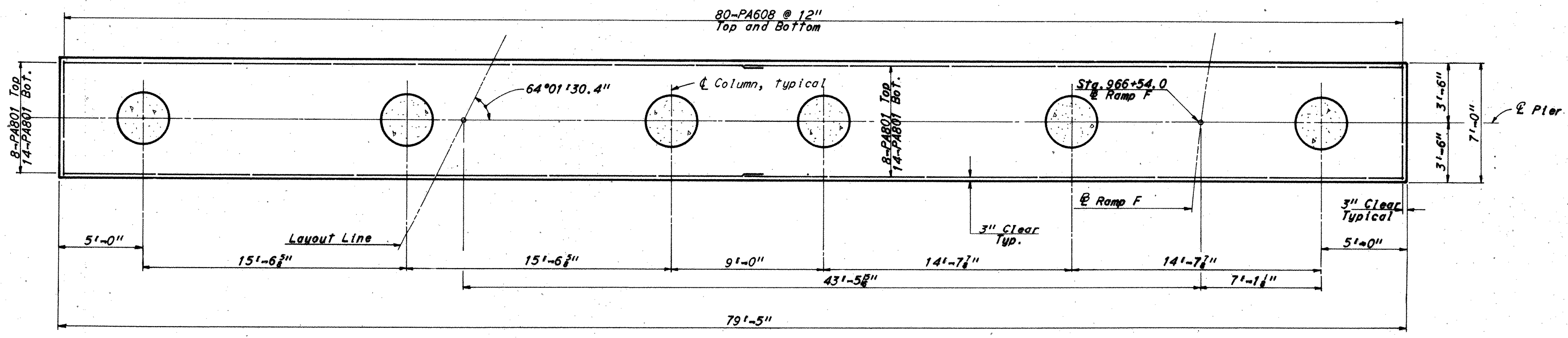
SECTION A-A



SECTION C-C



SECTION B-B



FOOTING PLAN

Notes:

PA501, PA502 and PA503 bars shall be placed 2¼"± below top of cap beam.

For reinforcement schedule see Sheet 12/14

For girder angles see Sheet 9/14

For Bridge 9 footing layout see Sheet 2/14

e.f. denotes each face.

All stirrups within 4 feet of ℄ of columns and in cantilever areas of cap beams shall be placed with hooks in the bottom of cap. All other stirrups shall be placed with hooks in the top of cap.

H.N.T.B. BRIDGE NO. 9

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 5/14
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIER 1

RAMP F AND RAMP C OVER
MARKET AVE. AND CLEVELAND AVE.

BR. NO. STA. 30-1494 — STA. 966 + 03.75
SCALE: 1/4" = 1'-0" — STA. 971 + 75.00

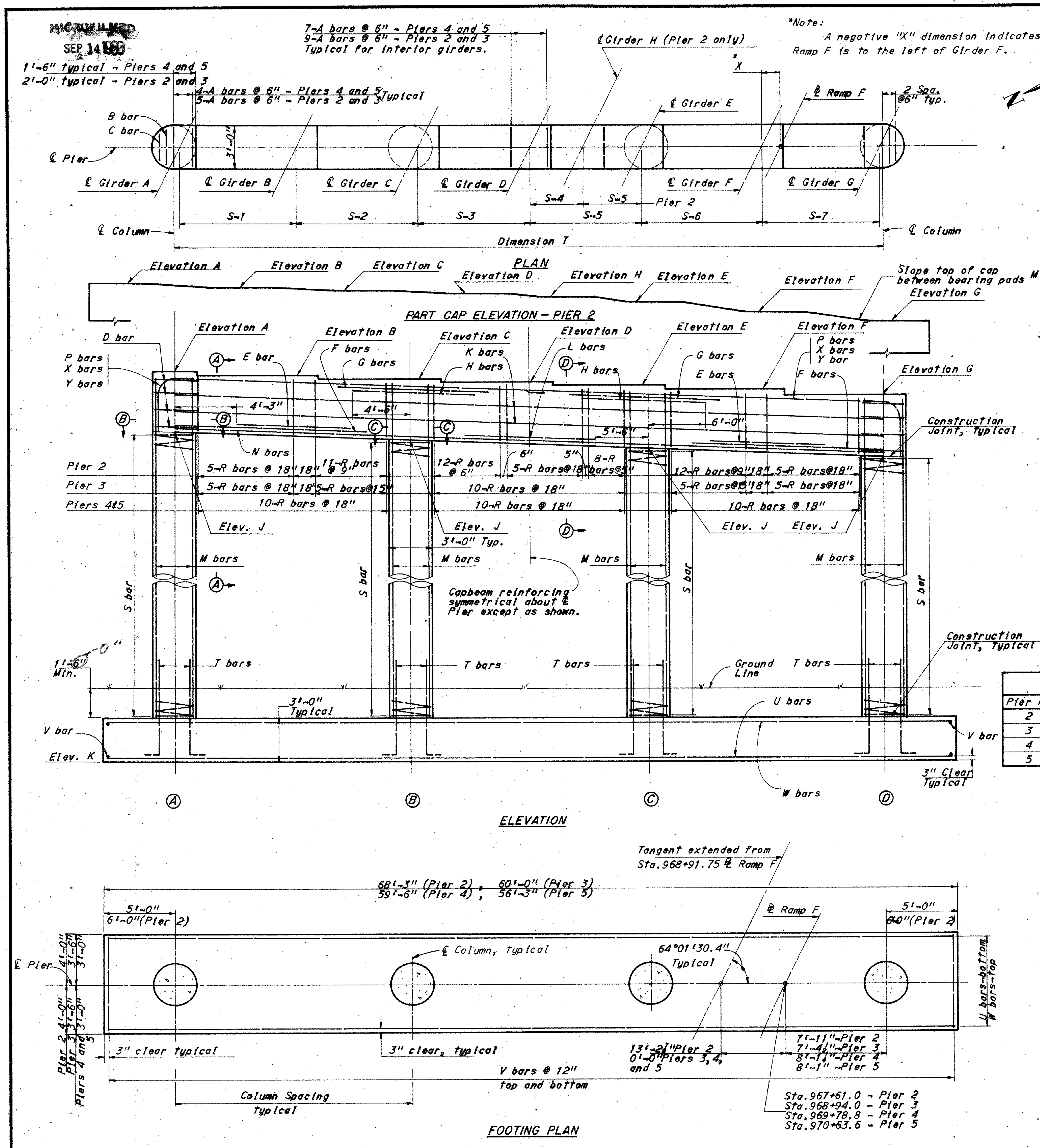
RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN BM	TRACED	CHECKED DGS	REVIEWED MJA	REVISED 7-30-76
DATE 2/19/70	DATE	DATE 4/24/70	DATE 11-20-71	1668

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

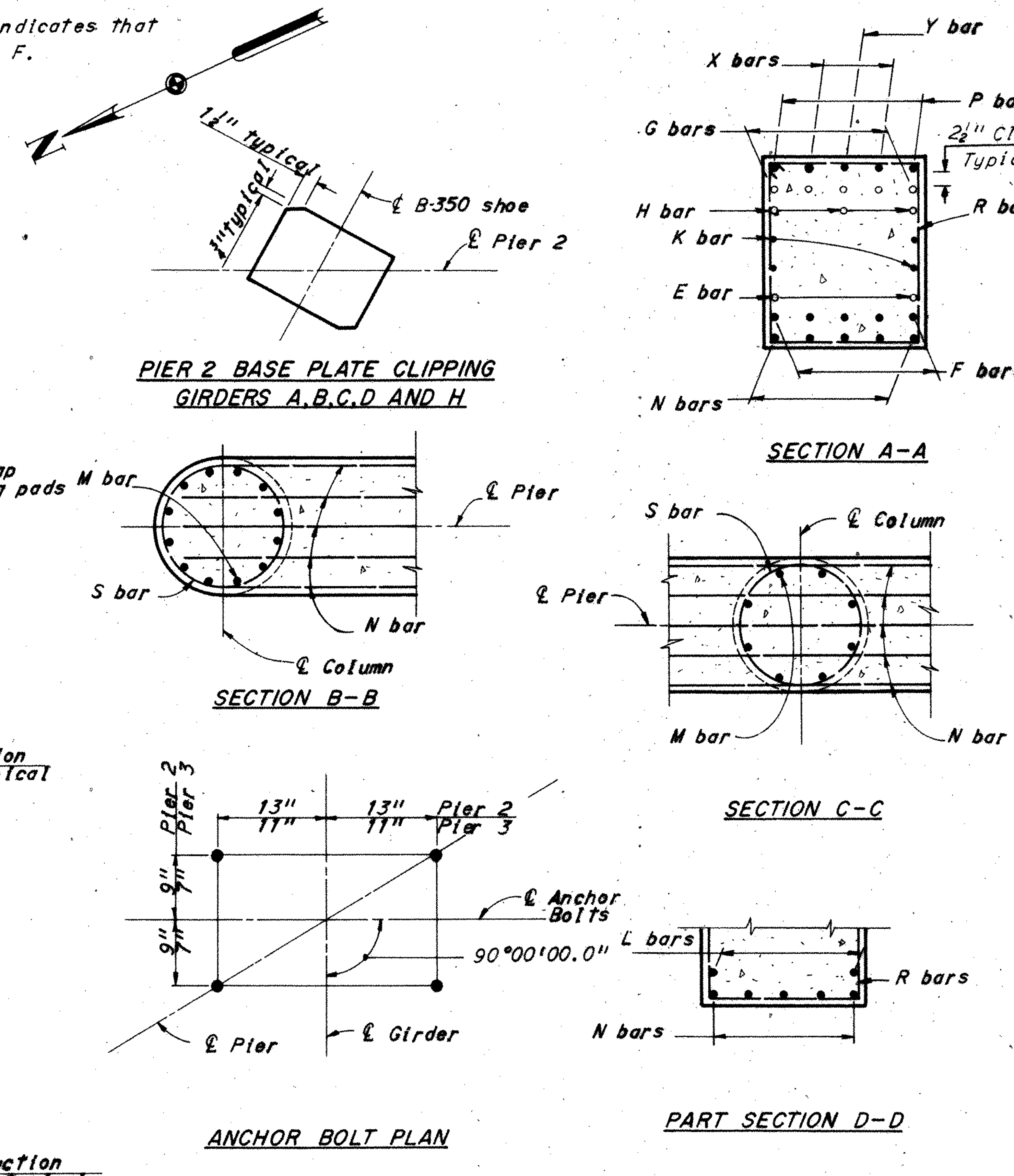


PLAN

PART CAP ELEVATION - PIER 2

ELEVATION

FOOTING PLAN



PIER 2 BASE PLATE CLIPPING GIRDERS A,B,C,D AND H

SECTION A-A

SECTION B-B

SECTION C-C

ANCHOR BOLT PLAN

PART SECTION D-D

NOTE: The reinf. bars in the top of the cap, Pier 3, shown near the ℄ Pier, shall be placed 4" off of the centerline.

COLUMN DATA

Pier No.	Column	Elevation J	Reinforcing Steel		
			M bars	S bar	T bars
2	A	1031.95	8-PB1101	1-SPB401	8-PB1103
	B	1030.97	8-PB1002	1-SPB402	8-PB1003
	C	1030.00	8-PB1001	1-SPB403	8-PB1003
	D	1029.02	8-PB1102	1-SPB404	8-PB1103
3	A	1033.82	12-PC1001	1-SPC401	12-PC1005
	B	1033.21	8-PC1002	1-SPC402	8-PC1005
	C	1032.59	8-PC1003	1-SPC403	8-PC1005
	D	1031.98	12-PC1004	1-SPC404	12-PC1005
4	A	1034.90	12-PD1101	1-SPD401	12-PD1103
	B	1034.56	8-PD1002	1-SPD402	8-PD1003
	C	1034.23	8-PD1001	1-SPD403	8-PD1003
	D	1033.89	12-PD1102	1-SPD404	12-PD1103
5	A	1036.31	12-PE1001	1-SPE401	12-PE1005
	B	1036.22	8-PE1002	1-SPE402	8-PE1005
	C	1036.13	8-PE1002	1-SPE403	8-PE1005
	D	1036.04	12-PE1004	1-SPE404	12-PE1005

FOOTING DATA

Pier No.	Column Spacing	Elevation K	Reinforcing Steel		
			U bars	V bars	W bars
2	18'-9"	~~1018.00~~	16-PB1004	136-PB601	10-PB1004
3	16'-8"	~~1020.00~~	14-PC 901	122-PC601	9-PC 901
4	16'-6"	~~1022.00~~	14-PD 801	120-PD601	8-PD 801
5	15'-5"	~~1022.00~~	12-PE 801	114-PE601	7-PE 801
2		1015.00			
3		1018.00			
4		1020.00			
5		1021.00			

Lap spirals and vertical bars. Extend by 3' at Pier 2, 2' at Piers 3 & 4 and extend spiral only by 1' at Pier 5.

CAP BEAM REINFORCING STEEL

Pier No.	A bars	B bars	C bars	D bars	E bars	F bars	G bars	H bars	K bars	L bars	N bars	P bars	R bars	X bars	Y bar
2	PB501	1-PB502	1-PB503	1-PB602	2-PB1104	5-PB1105	5-PB1106	3-PB1107	2-PB603	2-PB1108	5-PB1109	2-PB1110	PB604	2-PB1111	1-PB1112
3	PC501	1-PC502	1-PC503	1-PC602	-	2-PC1101	3-PC1102	-	2-PC603	-	5-PC1103	2-PC1104	PC604	2-PC1105	1-PC1106
4	PD501	1-PD502	1-PD503	1-PD602	-	2-PD901	2-PD1004	-	2-PD603	-	5-PD1005	2-PD1006	PD604	2-PD1007	1-PD1008
5	PE501	1-PE502	1-PE503	1-PE602	-	2-PE901	2-PE1006	-	2-PE603	-	5-PE1007	2-PE1008	PE604	2-PE1009	1-PE1003

PIER CAP LAYOUT DATA

Pier No.	2	3	4	5
Dimension T	56'-3"	50'-0"	49'-6"	46'-3"
Dimension X	1'-4 7/8"	1'-3 13/16"	0'-2 1/16"	-(0'-4 5/16")
Girder	A	A	A	A
Elevation A	1036.11	1037.98	1038.95 -4	1039.86 -5
S-1	8'-6"	8'-5 13/16"	8'-2 13/16"	7'-8 7/16"
Girder	B	B	B	B
Elevation B	1035.88	1037.75	1038.87 -6	1039.80 -79
S-2	8'-6"	8'-5 13/16"	8'-2 13/16"	7'-8 7/16"
Girder	C	C	C	C
Elevation C	1035.63	1037.51	1038.74 -3	1039.75 -4
S-3	8'-6"	7'-9 5/8"	8'-2 13/16"	7'-8 7/16"
Girder	D	D	D	D
Elevation D	1035.39	1037.29	1038.59 -8	1039.70 -69
S-4	6'-0 5/8"	-	-	-
Girder	H	-	-	-
Elevation H	1035.17	-	-	-
S-5	6'-0 5/8"	7'-9 5/8"	8'-2 13/16"	7'-8 7/16"
Girder	E	E	E	E
Elevation E	1034.71	1037.00	1038.43 -2	1039.66 -5
S-6	8'-6"	8'-5 13/16"	8'-2 13/16"	7'-8 7/16"
Girder	F	F	F	F
Elevation F	1034.07	1036.61	1038.24 -3	1039.62 -1
S-7	8'-6"	8'-5 13/16"	8'-2 13/16"	7'-8 7/16"
Girder	G	G	G	G
Elevation G	1033.43	1036.22	1038.03 -2	1039.58 -7

Notes:

Special care shall be taken when placing reinforcing steel so as not to interfere with anchor bolt settings. Piers 2 and 3 only. See Sheet 2/4.

A bars, B bars and C bars shall be placed 2½"± below top of cap beam.

For reinforcement schedule see Sheet 12/14

For girder angles see Sheet 9/14

e.f. denotes each face.

All stirrups within 4 feet of ℄ of Column shall be placed with hooks in the bottom of cap. All others shall be placed with hooks in the top.

H.N.T.B. BRIDGE NO. 9 | Revised 6-11-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK | 6 / 14

PIERS 2,3,4 AND 5

RAMP F AND RAMP C OVER MARKET AVE. AND CLEVELAND AVE.

BR. NO. STA. 30-1494 — STA. 966 + 03.75
SCALE: 1/4" = 1'-0" — STA. 971 + 75.00

RELOCATED U.S. 30

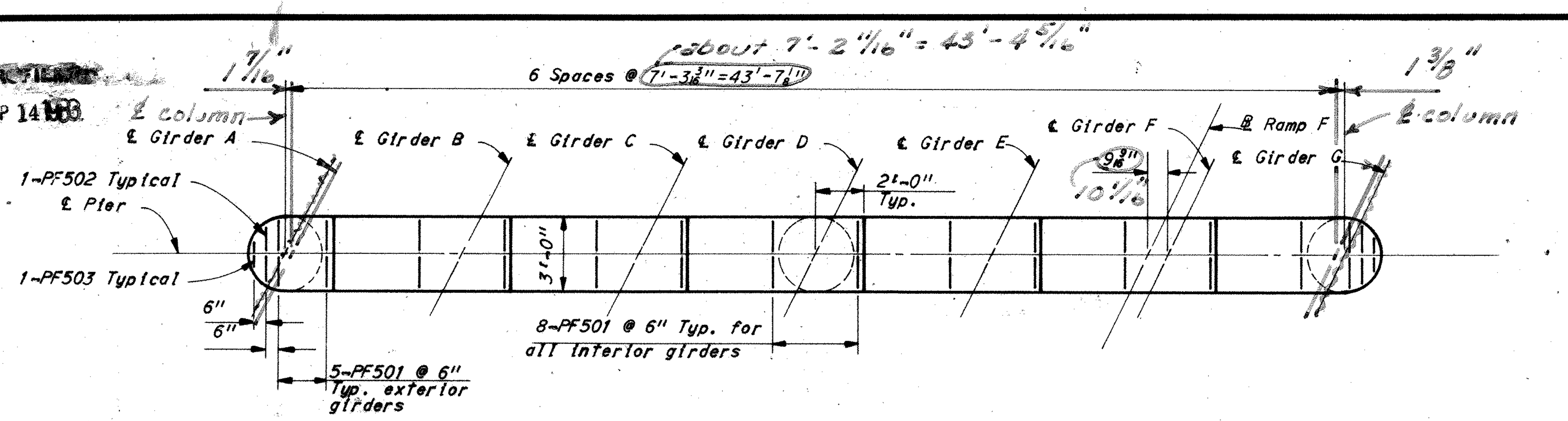
CANTON — STARK COUNTY — OHIO

DRAWN BM DATE 4/2/70	TRACED DATE	CHECKED DGS DATE 4-28-70	REVIEWED MJK DATE 11-20-71	REVISED 3-2-76 / 1668

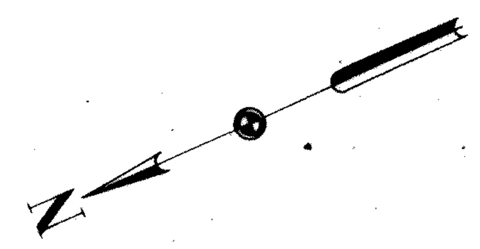
Rev. 7-20-76

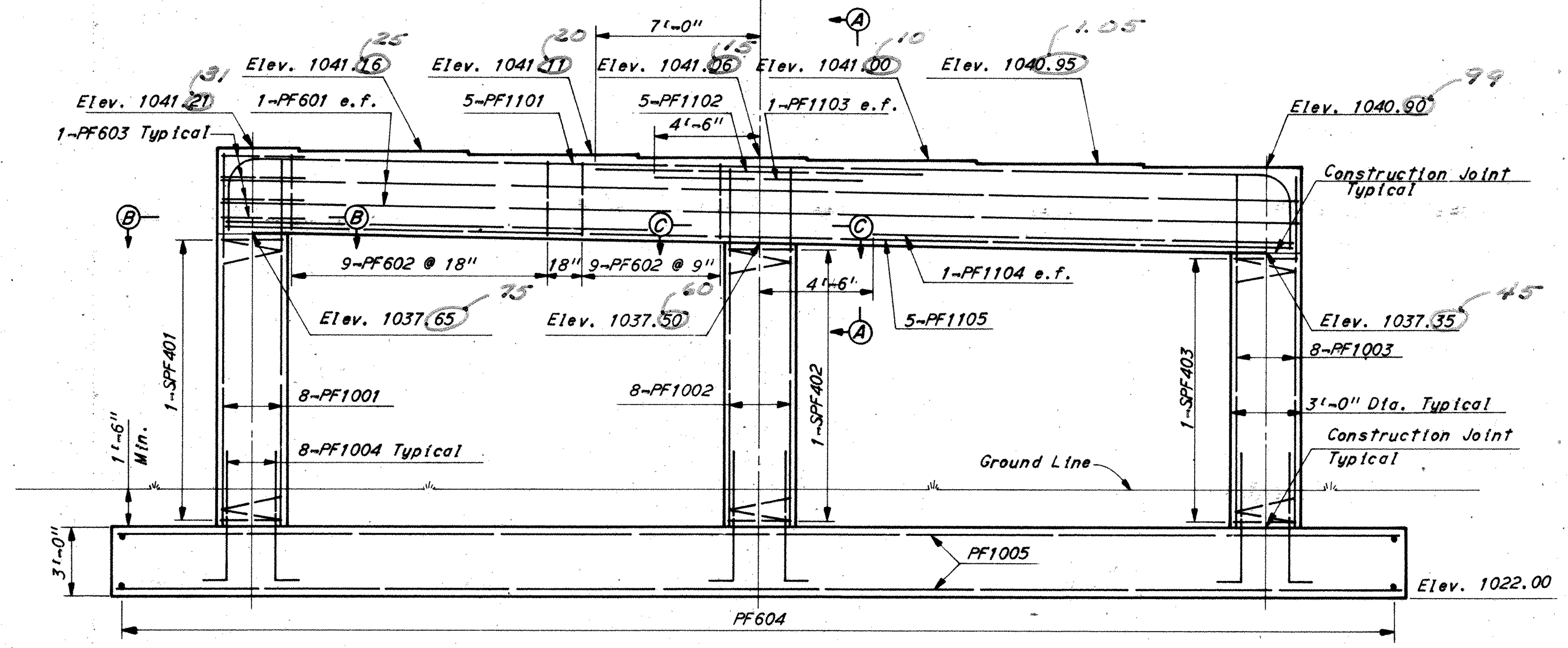
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	297 / 389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22

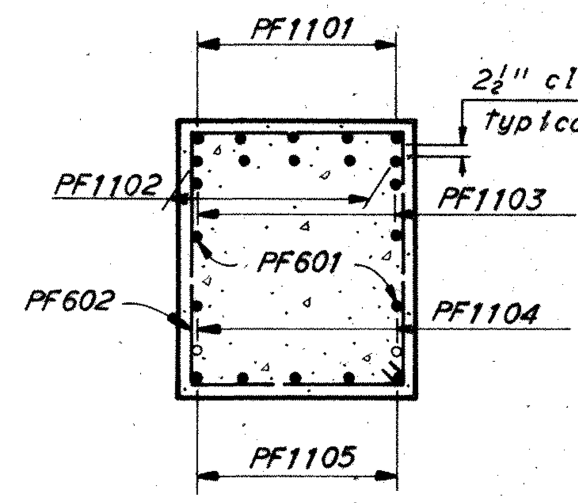


PLAN

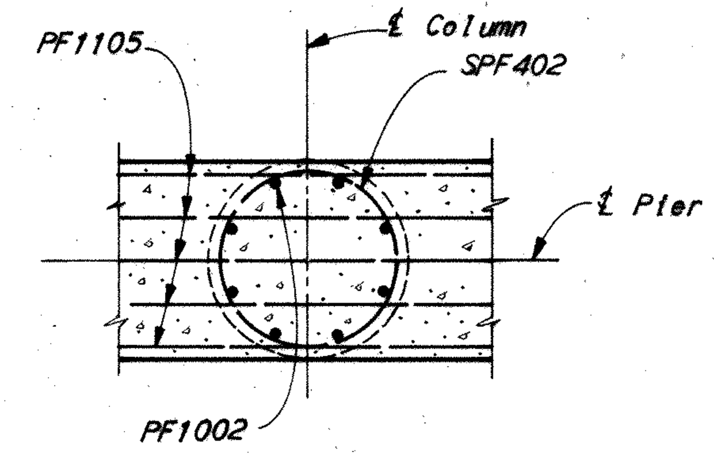




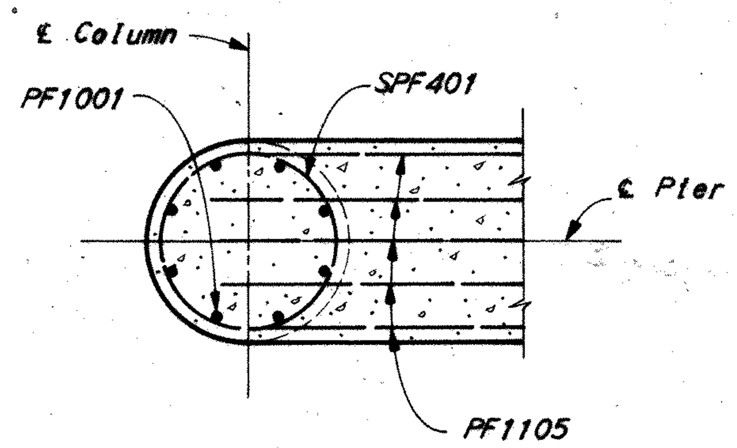
ELEVATION



SECTION A-A



SECTION C-C



SECTION B-B

Notes:

PF501, PF502 and PF503 bars shall be placed 2 1/2"± below top of cap beam.

For reinforcement schedule see Sheet 13/14

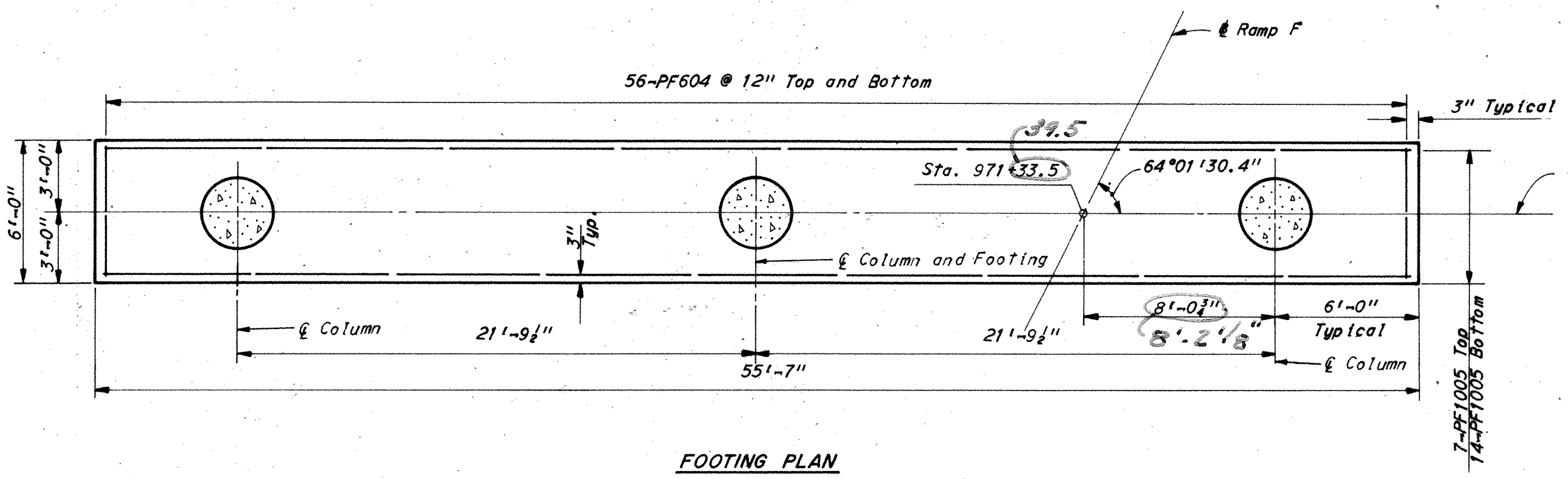
For girder angles see Sheet 9/14

e.f. denotes each face.

All stirrups within 4 feet of ℄ of columns shall be placed with hooks in the bottom of cap beams. All other stirrups shall be placed with hooks in the top.

Note:

1" Preformed Expansion Joint Filler (Item 516) shall be placed at the interface between the pier columns and the concrete slope protection. Included with Concrete Slope Protection for payment.



FOOTING PLAN

H.N.T.B. BRIDGE NO. 9

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 7/14
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIER 6

RAMP F AND RAMP C OVER
MARKET AVE. AND CLEVELAND AVE.

BR. NO. STA. 30-1494 STA. 966+03.75
SCALE: 1/4" = 1'-0" STA. 971+75.00

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN LDL	TRACED	CHECKED DBS	REVIEWED MJK	REVISED 7-20-76
DATE 3-19-70	DATE	DATE 4-27-70	DATE 11-29-71	1668

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			298/389

STARK COUNTY
STA-30-14.12
STA-77-9.22

FRAMING PLAN

GIRDERS A,B,C,D,E,F AND G

Note:
"W" denotes the range where welded attachments cannot be made to the top flange of Girders A and G.

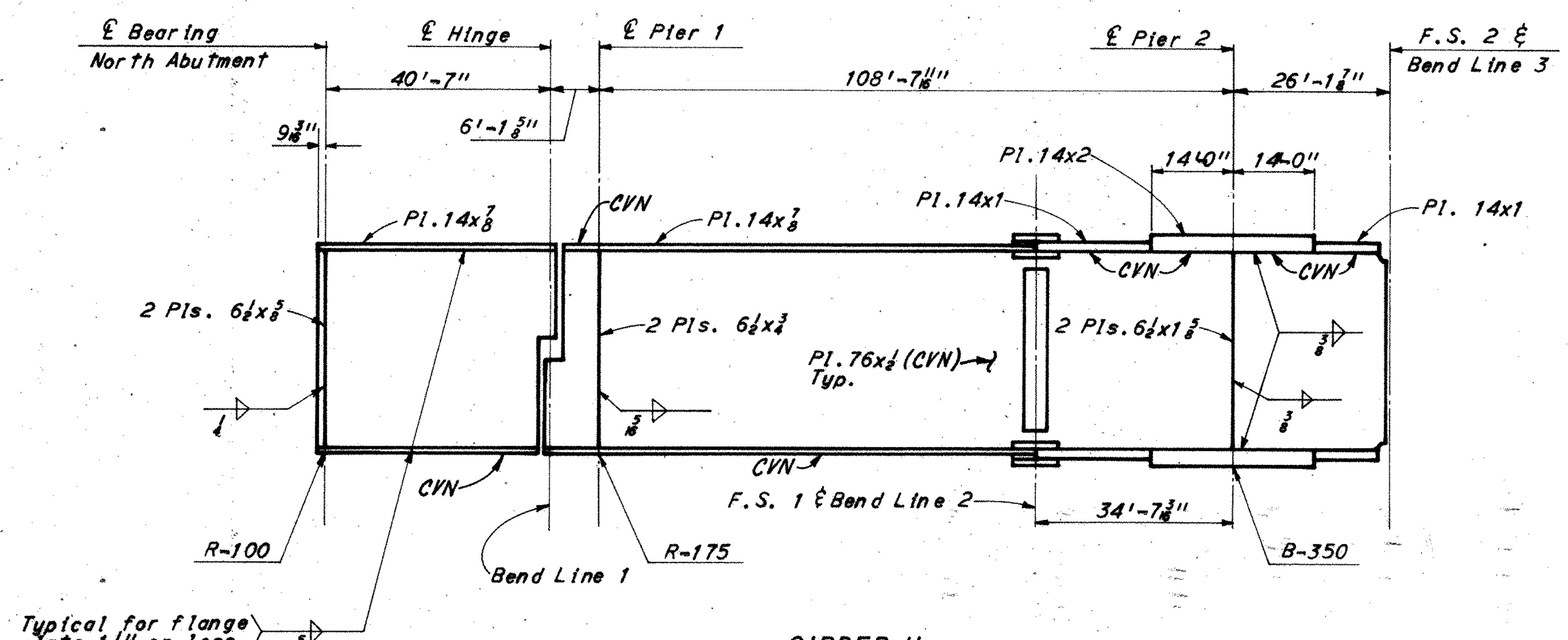
CVN - See Sheet 214.

* Tension areas of the bottom flange area denoted by "T". For the top flange these areas are in compression.

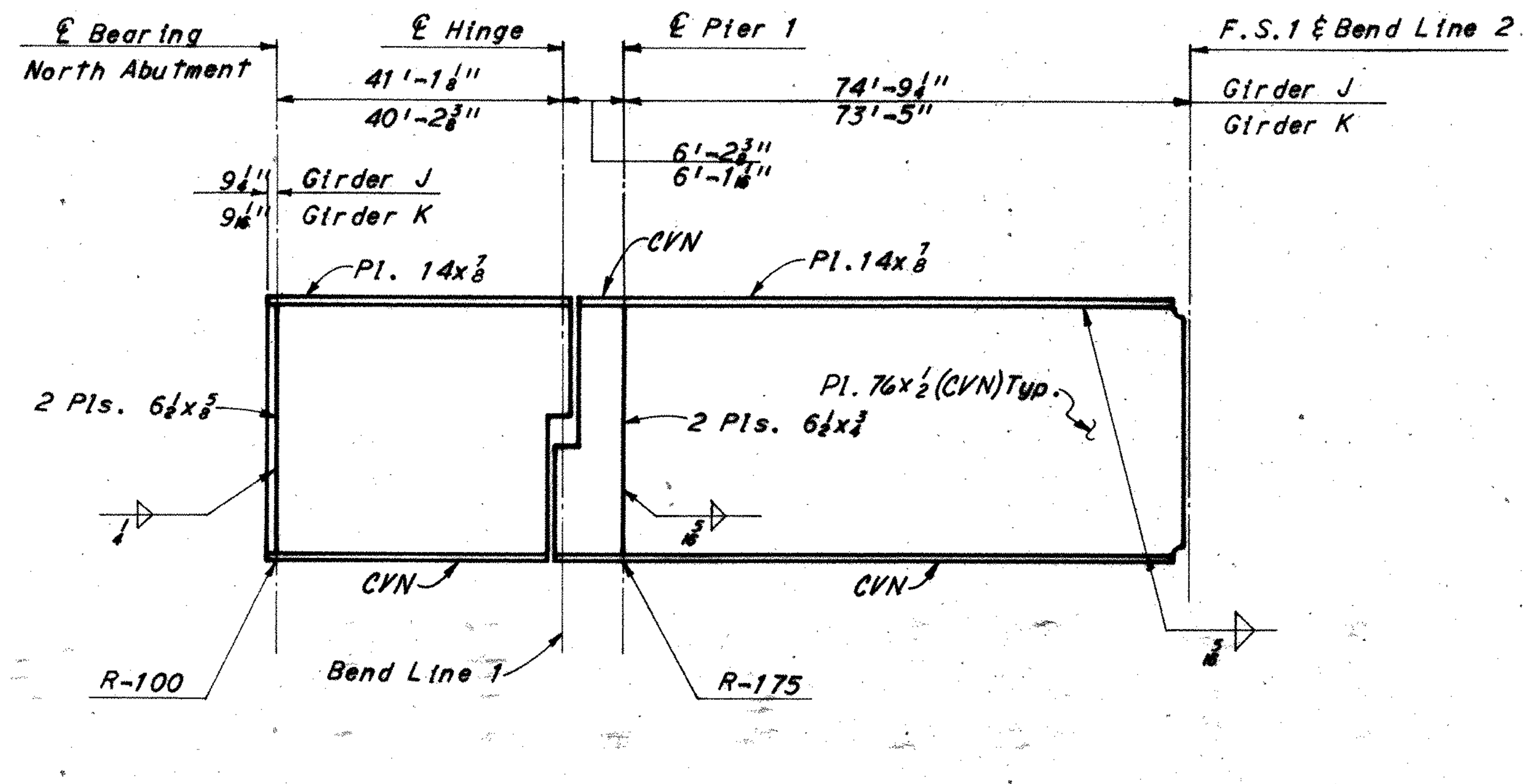
LEGEND: Indicates crossframe direction change

■ Indicates 90°

For notes see sheet 9/14



GIRDER H



GIRDERS J AND K

GIRDER ELEVATIONS

H.N.T.B. BRIDGE NO. 9 — Revised 6-11-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 8/14
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FRAMING PLAN

RAMP F AND RAMP C OVER
MARKET AVE. AND CLEVELAND AVE.

BR. NO. STA. 30-1494 — STA. 966+03.75
SCALE: NO SCALE — STA. 971+75.00

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
OPK DATE 12-22-69	DATE	DGS DATE 4-30-70	MJK DATE 11-20-71	7-20-76 1668

Revised 9-21-76

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

TABLE OF DIMENSIONS

Girder	a	b	c	d	e	f	g	h	j	k	m	n	p	q	g	h	q
A	41'-8 7/8"	6'-3 3/4"	110'-9 3/4"	134'-9 1/4"	85'-3 1/4"	86'-3"	71'-1 1/4"	39'-8"	12'-0 1/4"	35'-2 1/4"	26'-7 1/4"	25'-5 1/4"	17'-3 1/4"	12'-2 1/4"	77'-2 3/8"	33'-6 3/4"	18'-3 11/16"
B	41'-8 7/8"	6'-3 3/4"	110'-9 3/4"	134'-9 1/4"	85'-1 1/2"	86'-0"	70'-10 1/2"	39'-6 3/8"	12'-0 1/4"	35'-2 1/4"	26'-7 1/4"	25'-4 1/4"	17'-2 1/4"	12'-2 1/4"	76'-11 11/16"	33'-5 3/16"	18'-3 1/16"
C	41'-8 7/8"	6'-3 3/4"	110'-9 3/4"	134'-9 1/4"	85'-0 1/4"	85'-9 1/4"	70'-8 1/4"	39'-5 1/4"	12'-0 1/4"	35'-2 1/4"	26'-7 1/4"	25'-3 1/4"	17'-2 3/8"	12'-1 7/8"	76'-7 [illegible]	33'-4 [illegible]	18'-2 [illegible]
D	41'-8 7/8"	6'-3 3/4"	110'-9 3/4"	134'-5 1/4"	85'-2 1/2"	85'-6 1/4"	70'-5 1/2"	39'-3 3/8"	12'-0 1/4"	35'-2 1/4"	26'-7 1/4"	25'-2 1/4"	17'-1 1/8"	12'-1 3/8"	76'-[illegible]	33'-[illegible]	18'-[illegible]
E	39'-11 1/4"	6'-0 1/4"	107'-0"	133'-0 3/8"	85'-5"	85'-3 1/4"	70'-3 1/4"	39'-2 3/8"	12'-1 1/2"	34'-1 1/4"	25'-9 3/4"	25'-1 1/8"	17'-1 1/4"	12'-0 3/8"	76'-3 [illegible]	33'-2 [illegible]	18'-1 [illegible]
F	39'-11 1/4"	6'-0 1/4"	107'-0"	133'-0 3/8"	85'-3 1/4"	85'-0 3/4"	70'-1 1/4"	39'-1 3/8"	12'-1 1/4"	34'-1 1/4"	25'-9 3/4"	25'-0 3/8"	17'-0 3/8"	12'-0 3/8"	76'-1 [illegible]	33'-1 [illegible]	18'-0 [illegible]
G	39'-11 1/4"	6'-0 1/4"	107'-0"	133'-0 3/8"	85'-2 1/4"	84'-9 3/4"	69'-10 3/4"	39'-0"	12'-1 1/4"	34'-1 1/4"	25'-9 3/4"	25'-0"	17'-0"	12'-0"	75'-10 [illegible]	33'-0"	18'-0"

GIRDER SPACING

	℄ Brg. N. Abut.	℄ Hinge	℄ Pier 1	F.S. 1	℄ Pier 2	F.S. 2	F.S. 3	℄ Pier 3	F.S. 4	℄ Pier 4	F.S. 5	℄ Pier 5	F.S. 6	℄ Pier 6	℄ Brg. S. Abut.
S	7'-3 1/4"	6'-9 1/4"	7'-1 1/4"	6'-8"	7'-1 1/4"	6'-3 3/8"	6'-10 3/8"	7'-2"	8'-0 3/4"	8'-0 3/4"	8'-0 3/4"	8'-0 3/4"	8'-0 3/4"	8'-0 3/4"	8'-0 3/4"
S_1	8'-6"	8'-6"	8'-6"	8'-6"	8'-6"	8'-6"	8'-6"	8'-5 5/8"	8'-4 5/8"	8'-2 3/8"	7'-9 3/4"	7'-8 3/8"	7'-4 3/8"	7'-3 3/8"	7'-0 1/4"
S_2	8'-6"	8'-6"	8'-6"	8'-6"	8'-6"	8'-6"	8'-6"	8'-5 5/8"	8'-4 5/8"	8'-2 3/8"	7'-9 3/4"	7'-8 3/8"	7'-4 3/8"	7'-3 3/8"	7'-0 1/4"
S_3	9'-3 3/8"	6'-11 3/8"	6'-8 3/8"	3'-10 7/8"	6'-0 3/8"	4'-8 3/8"	7'-8 3/8"	7'-9 3/8"	8'-4 5/8"	8'-2 3/8"	7'-9 3/4"	7'-8 3/8"	7'-4 3/8"	7'-3 3/8"	7'-0 1/4"
S_4	9'-3 3/8"	6'-11 3/8"	6'-8 3/8"	3'-10 7/8"	6'-0 3/8"	4'-8 3/8"	7'-8 3/8"	7'-9 3/8"	8'-4 5/8"	8'-2 3/8"	7'-9 3/4"	7'-8 3/8"	7'-4 3/8"	7'-3 3/8"	7'-0 1/4"
S_5	9'-3 3/8"	6'-11 3/8"	6'-8 3/8"	3'-10 7/8"	8'-6"	8'-6"	8'-6"	8'-5 5/8"	8'-4 5/8"	8'-2 3/8"	7'-9 3/4"	7'-8 3/8"	7'-4 3/8"	7'-3 3/8"	7'-0 1/4"
S_6	9'-3 3/8"	6'-11 3/8"	6'-8 3/8"	3'-10 7/8"	8'-6"	8'-6"	8'-6"	8'-5 5/8"	8'-4 5/8"	8'-2 3/8"	7'-9 3/4"	7'-8 3/8"	7'-4 3/8"	7'-3 3/8"	7'-0 1/4"
S_7	8'-6"	8'-6"	8'-6"	8'-6"	8'-6"	8'-6"	—	—	—	—	—	—	—	—	—
S_8	8'-6"	8'-6"	8'-6"	8'-6"	—	—	—	—	—	—	—	—	—	—	—
S_9	8'-6"	8'-6"	8'-6"	8'-6"	—	—	—	—	—	—	—	—	—	—	—

2 11/16"

GIRDER ANGLES X AND Y

	Angle	Girder A	Girder B	Girder C	Girder D	Girder E	Girder F	Girder G	Girder H	Girder J	Girder K
℄ Bearing North Abut.	Y	107°16'14.5"	107°16'14.5"	107°16'14.5"	107°16'14.5"	94°12'21.4"	94°12'21.4"	94°12'21.4"	100°52'50.8"	104°07'13.7"	97°34'08.8"
℄ Hinge	X	72°43'45.5"	72°43'45.5"	72°43'45.5"	72°43'45.5"	85°47'38.6"	85°47'38.6"	85°47'38.6"	79°07'09.2"	75°52'46.3"	82°25'51.2"
	Y	108°00'55.4"	108°00'55.4"	108°00'55.4"	108°00'55.4"	99°32'38.2"	99°32'38.2"	99°32'38.2"	103°51'24.4"	105°57'27.5"	101°43'01.9"
℄ Pier 1	X	71°59'04.6"	71°59'04.6"	71°59'04.6"	71°59'04.6"	80°27'21.8"	80°27'21.8"	80°27'21.8"	76°08'35.6"	74°02'32.5"	78°16'58.1"
	Y	108°00'55.4"	108°00'55.4"	108°00'55.4"	108°00'55.4"	99°32'38.2"	99°32'38.2"	99°32'38.2"	103°51'24.4"	105°57'27.5"	101°43'01.9"
F.S. 1	X	71°59'04.6"	71°59'04.6"	71°59'04.6"	71°59'04.6"	80°27'21.8"	80°27'21.8"	80°27'21.8"	76°08'35.6"	74°02'32.5"	78°16'58.1"
	Y	110°24'41.4"	110°24'41.4"	110°24'41.4"	110°24'41.4"	104°51'15.2"	104°51'15.2"	104°51'15.2"	107°40'32.9"	—	—
℄ Pier 2	X	69°35'18.6"	69°35'18.6"	69°35'18.6"	69°35'18.6"	75°08'44.8"	75°08'44.8"	75°08'44.8"	72°19'27.1"	—	—
	Y	110°24'41.4"	110°24'41.4"	110°24'41.4"	110°24'41.4"	104°51'15.2"	104°51'15.2"	104°51'15.2"	107°40'32.9"	—	—
F.S. 2	X	69°35'18.6"	69°35'18.6"	69°35'18.6"	69°35'18.6"	75°08'44.8"	75°08'44.8"	75°08'44.8"	72°19'27.1"	—	—
	Y	113°09'53.0"	113°09'53.0"	113°09'53.0"	112°42'57.9"	111°44'24.3"	111°44'24.3"	111°44'24.3"	—	—	—
F.S. 3	X	66°50'07.0"	66°50'07.0"	66°50'07.0"	67°17'02.1"	68°15'35.7"	68°15'35.7"	68°15'35.7"	—	—	—
	Y	116°02'21.5"	115°57'44.0"	115°53'06.1"	116°23'30.0"	116°53'37.7"	116°49'04.2"	116°44'31.4"	—	—	—
℄ Pier 3	X	63°57'38.5"	64°02'16.0"	64°06'53.9"	63°36'30.0"	63°06'22.3"	63°10'55.8"	63°15'28.6"	—	—	—
	Y	116°02'21.5"	115°57'44.0"	115°53'06.1"	116°23'30.0"	116°53'37.7"	116°49'04.2"	116°44'31.4"	—	—	—
F.S. 4	X	63°57'38.5"	64°02'16.0"	64°06'53.9"	63°36'30.0"	63°06'22.3"	63°10'55.8"	63°15'28.6"	—	—	—
	Y	117°53'02.2"	117°34'13.0"	117°15'17.4"	116°56'15.3"	116°37'06.7"	116°17'51.6"	115°58'29.8"	—	—	—
℄ Pier 4	X	62°06'57.8"	62°25'47.0"	62°44'42.6"	63°03'44.7"	63°22'53.3"	63°42'08.4"	64°01'30.2"	—	—	—
	Y	117°53'02.2"	117°34'13.0"	117°15'17.4"	116°56'15.3"	116°37'06.7"	116°17'51.6"	115°58'29.8"	—	—	—
F.S. 5	X	62°06'57.8"	62°25'47.0"	62°44'42.6"	63°03'44.7"	63°22'53.3"	63°42'08.4"	64°01'30.2"	—	—	—
	Y	117°53'02.2"	117°34'13.0"	117°15'17.4"	116°56'15.3"	116°37'06.7"	116°17'51.6"	115°58'29.8"	—	—	—
℄ Pier 5	X	62°06'57.8"	62°25'47.0"	62°44'42.6"	63°03'44.7"	63°22'53.3"	63°42'08.4"	64°01'30.2"	—	—	—
	Y	117°53'02.2"	117°34'13.0"	117°15'17.4"	116°56'15.3"	116°37'06.7"	116°17'51.6"	115°58'29.8"	—	—	—
F.S. 6	X	62°06'57.8"	62°25'47.0"	62°44'42.6"	63°03'44.7"	63°22'53.3"	63°42'08.4"	64°01'30.2"	—	—	—
	Y	117°53'02.2"	117°34'13.0"	117°15'17.4"	116°56'15.3"	116°37'06.7"	116°17'51.6"	115°58'29.8"	—	—	—
℄ Pier 6	X	62°06'57.8"	62°25'47.0"	62°44'42.6"	63°03'44.7"	63°22'53.3"	63°42'08.4"	64°01'30.2"	—	—	—
	Y	117°53'02.2"	117°34'13.0"	117°15'17.4"	116°56'15.3"	116°37'06.7"	116°17'51.6"	115°58'29.8"	—	—	—
℄ Bearing South Abut.	X	62°06'57.8"	62°25'47.0"	62°44'42.6"	63°03'44.7"	63°22'53.3"	63°42'08.4"	64°01'30.2"	—	—	—

Note:
The gutterline elevations shown have been adjusted for dead load deflections caused by the weight of concrete and wearing course and are the elevations required before the concrete deck is placed. No concrete shall be placed until the screed rails have been set for the entire bridge.

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS

Girder	℄ Brg. N. Abut.	.25	.50	.75	℄ Pier 1	.1	.2	.3	.4	.5	.6	*.7	.8	.9	℄ Pier 2	.25	.50	.75	F. S. 2
E	1042.33	1042.32	1042.34	1042.40	1042.44	1042.48	1042.54	1042.63	1042.76	1042.91	1043.10	1043.27	1043.45	1043.62	1043.79	1043.90	1044.04	1044.14	1044.26
F	1041.63	1041.61	1041.64	1041.70	1041.75	1041.79	1041.85	1041.95	1042.08	1042.25	1042.44	1042.61	1042.80	1042.97	1043.15	1043.26	1043.37	1043.50	1043.65
G	1040.92	1040.92	1040.94	1041.00	1041.05	1041.11	1041.20	1041.31	1041.44	1041.59	1041.78	1041.96	1042.15	1042.32	1042.51	1042.61	1042.70	1042.85	1043.02
H	1042.74	1042.88	1043.00	1043.09	1043.20	1043.28	1043.36	1043.46	1043.56	1043.67	1043.77	1043.86	1044.00	1044.16	1044.26	1044.32	1044.40	1044.50	1044.63

Girder	℄ Brg. N. Abut.	.25	.50	.75	℄ Pier 1	.25	.50	.75	F. S. 1
K	1043.10	1043.03	1043.00	1043.00	1042.99	1043.01	1043.11	1043.30	1043.57

* Elevations given are at field splice.

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS AT GUTTERLINE

	℄ Brg. N. Abut.	.25	.50	.75	℄ Pier 1	.1	.2	.3	.4	.5	.6	.7	.8	.9	℄ Pier 2	.1	.2	.3	.4	.5	.6	.7	.8	.9
Lt. Gutterline	1042.13	1042.41	1042.67	1042.93	1043.20	1043.47	1043.71	1043.94	1044.18	1044.38	1044.57	1044.73	1044.88	1045.05	1045.20	1045.40	1045.58	1045.76	1045.92	1046.07	1046.22	1046.35	1046.48	1046.61
Lt. Median Gutter	1041.89	1042.13	1042.37	1042.57	1042.77	1042.96	1043.14	1043.30	1043.48	1043.61	1043.76	1043.92	1044.09	1044.27	1044.47	1044.66	1044.87	1045.06	1045.23	1045.39	1045.53	**1045.60	—	—
Rt. Median Gutter	1043.18	1043.18	1043.19	1043.21	1043.26	1043.33	1043.42	1043.51	1043.63	1043.73	1043.86	1043.98	1044.13	1044.27	1044.42	1044.59	1044.80	1045.00	1045.14	1045.27	1045.40	**1045.44	—	—
Rt. Gutterline	1040.92	1040.92	1040.94	1040.98	1041.04	1041.13	1041.23	1041.35	1041.49	1041.63	1041.79	1041.95	1042.11	1042.30	1042.48	1042.70	1042.95	1043.21	1043.48	1043.76	1043.99	1044.22	1044.48	1044.73

	℄ Pier 3	.25	.50	.75	℄ Pier 4	.25	.50	.75	℄ Pier 5	.25	.50	.75	℄ Pier 6	.25	.50	.75	℄ Brg. S. Abut.
Lt. Gutterline	1046.75	1046.97	1047.18	1047.35	1047.50	1047.66	1047.84	1048.06	1048.36	1048.65	1048.97	1049.26	1049.56	1049.72	1049.89	1050.05	1050.21
Rt. Gutterline	1044.96	1045.36	1045.75	1046.12	1046.53	1046.94	1047.34	1047.72	1048.08	1048.37	1048.68	1048.96	1049.25	1049.42	1049.58	1049.75	1049.91

** Elevation is at P.C.C. of curb.

Notes:
For treatment of girder ends at South Abutment see Sheet 360.
Top and bottom flanges are identical in size.
All stiffeners shall be placed normal to girder flanges.
All intermediate stiffener to web welds shall be 1/4" continuous fillets on both sides of stiffeners.
For detail of field splices see Sheet 355.
All intermediate stiffeners shall be Pls. 5x5/16, except at field splices Ls 6x4x3/8 shall be used.
Intermediate stiffeners shall be placed as shown on framing plan, equally spaced between crossframes or crossframes and bearing stiffeners or crossframes and splices.
Scuppers shall be in accordance with Std. Dwg. SD-1-69 except that scupper pipes shall extend 8" below the bottom of girders instead of 2".

For details at rockers and bolsters see Ohio Standard Drawing RB-1-55.
The girders shall be fabricated to lines parallel to profiles formed by top of pavement elevations directly over girders, plus the camber required to compensate for dead load deflection.
The allowance to be made in screed settings to compensate for dead load deflections due to concrete are to be made above or below the top of the pavement elevations as required. Screeds may require further adjustment due to irregularities in fabricated steel.
For details of curb plates see Ohio Standard Drawing SD-1-69, Sheet 2 of 4.

For bend point crossframe details see Sheet 360.
—•— Denotes bend point crossframe.
Set bend point crossframes normal to girder near the bend point.
Dimensions to scuppers are measured along centerline of girders.
End crossframe details shall be same as shown on Ohio Standard Drawing SD-1-69, **Sheet 1 of 4.**
For intermediate crossframe details see Sheet 360.
All crossframes are intermediate crossframes unless shown otherwise.
For details of roadway end dam, see Ohio Standard Drawing SD-1-69, **Sheet 1 of 4, and Sheet 359.**
■ Denotes **standard** scupper
For detail of girder end diaphragm see Sheet 360.
The rockers at Girders A, B, F and G at the North Abutment and Girders A and G at Pier 1 shall have the 1/2" side plates omitted.
For sidewalk end dam details see Ohio Standard Drawing SD-1-69, Sheet 2 of 4.
For Camber and Deflection Table see Sheet 365.
For Top of Pavement Elevations not shown, see Sheet 10/14
For B-350 dimensions see Sheet 314.
For hinge details see Sheet 358.
For details of intermediate stiffeners see Sheet 360.
For underdeck light details see Lighting Plans.

H.N.T.B. BRIDGE NO. 9 | Revised 6-11-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 9 / 14
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FRAMING PLAN DATA

RAMP F AND RAMP C OVER
MARKET AVE. AND CLEVELAND AVE.

BR. NO. STA. 30-1494 — STA. 966 + 03.75
SCALE: NO SCALE — STA. 971 + 75.00

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
OPK		DWB	MJK	7-20-76
DATE 12-24-69	DATE	DATE 3-23-70	DATE 11-20-71	1668

MICROFILMED
SEP 14 1983

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

300
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

NOTE:
Contour elevations are for top of portland cement concrete.

H.N.T.B. BRIDGE NO. 9 — Revised 6-11-75 By RAS

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KANSAS CITY CLEVELAND NEW YORK

10 / 14

CONTOUR PLAN

RAMP F AND RAMP C OVER
MARKET AVE. AND CLEVELAND AVE.

BR. NO. STA. 30-1494 — STA. 966 + 03.75
SCALE: 1" = 10'-0" — STA. 971 + 75.00

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN LDE	TRACED	CHECKED RAS	REVIEWED MJK	REVISED 7-20-76
DATE 12-4-69	DATE	DATE 4-27-70	DATE 11-20-71	1668

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

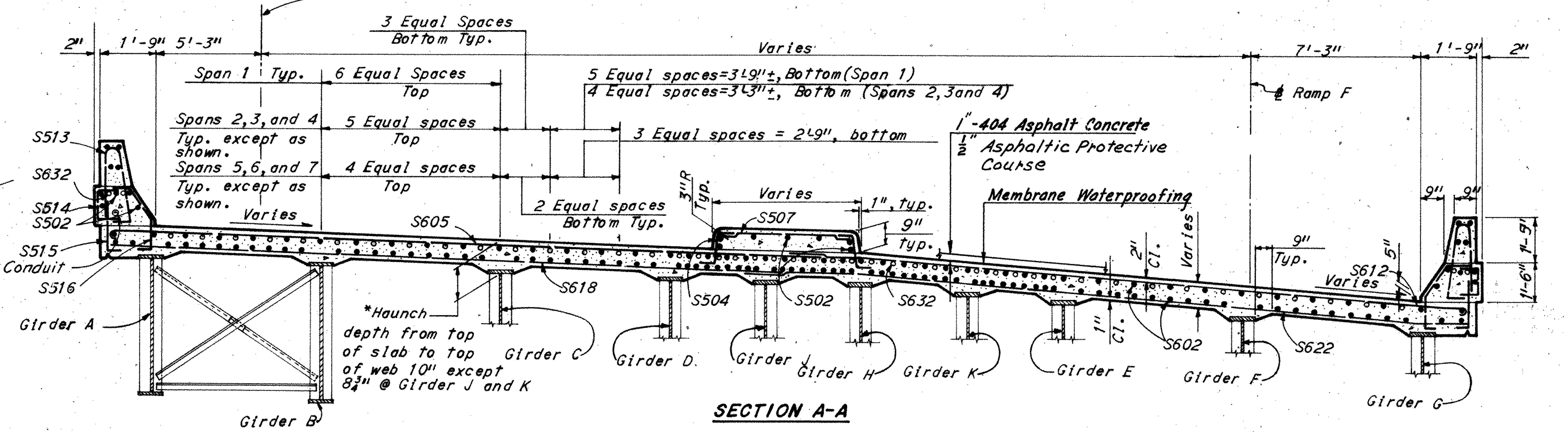
301
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

DECK PLAN

LEFT CURB PLAN

RIGHT CURB PLAN



SECTION A-A

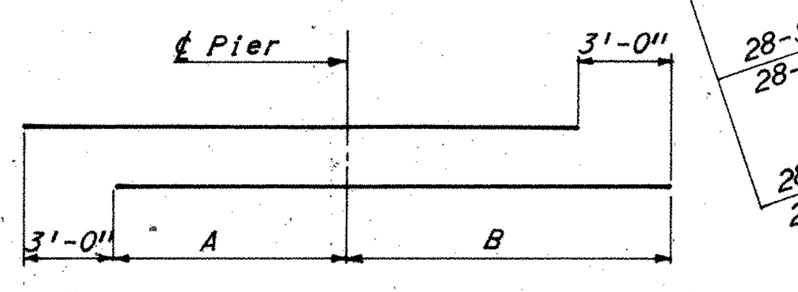
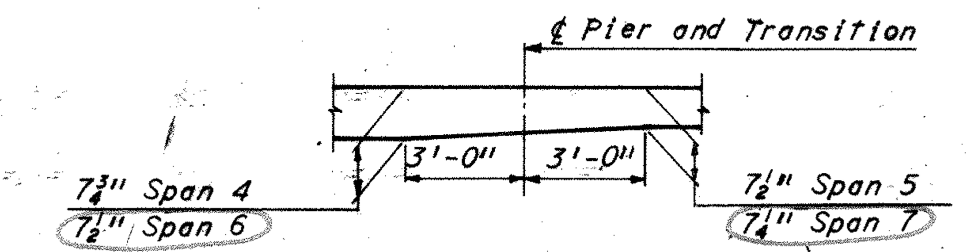
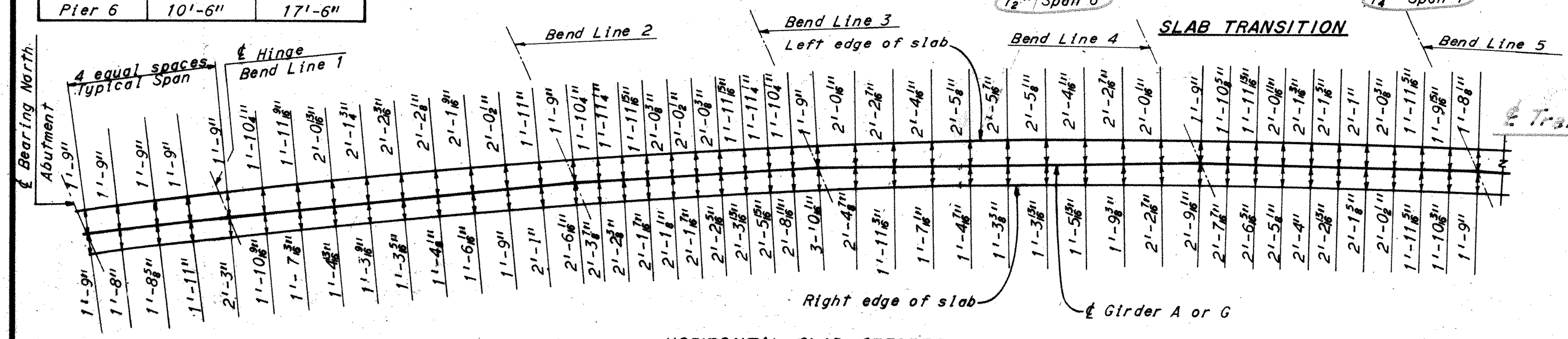


DIAGRAM SHOWING STAGGER OF S632, S633, AND S634 BARS OVER PIERS

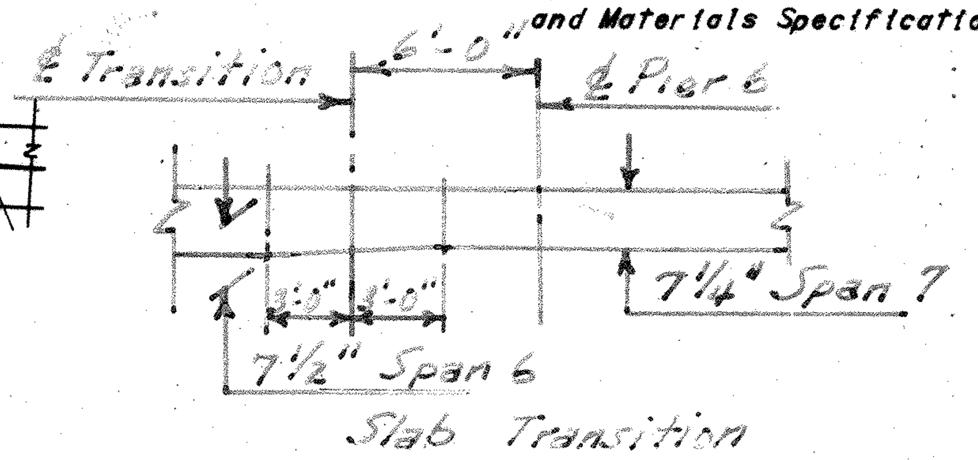
	A	B
Pier 2	25'-6"	28'-6"
Pier 3	21'-6"	32'-6"
Pier 4	17'-6"	16'-6"
Pier 5	18'-6"	21'-6"
Pier 6	10'-6"	17'-6"



SLAB TRANSITION



HORIZONTAL SLAB OFFSETS



*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.18 of the Construction and Materials Specifications.

Notes:

Reinforcing steel shall be adjusted as required to clear scuppers.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For concrete railing details see Sheet 359.

For deflection joint details see Sheet 361.

For curb and parapet details see Sheet 359.

Transverse slab reinforcing steel shall be spaced along the left edge of the slab and shall be placed normal to the left edge except as shown in Spans 1 and 2.

For superelevation data see Sheet 10/14

Concrete shall be placed from the hinged joint to the North Abutment before any concrete is placed from the hinge to Pier 2.

For subdrainage details, see Sheet 365A.

H.N.T.B. BRIDGE NO. 9 — Revised 6-11-76 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 11/14
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DECK PLAN

RAMP F AND RAMP C OVER
MARKET AVE. AND CLEVELAND AVE.

BR. NO. STA. 30-1494 — STA. 966+03.75
SCALE: 1" = 20'-0" — STA. 971+75.00

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
OPK, DATE 1-21-70	DATE	DGS, DATE 5-21-71	MSK, DATE 11-28-71	3-2-76

1668

Rev. 7-20-76

Revised 4-28-77

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
NORTH ABUTMENT								
AA401	60	3'-5"	105	1'-0"	1'-8"			137
AA501	11	7'-6"	108	6'-6"	1'-0"	9"		86
AA502	11	3'-1"	104	1'-7"	1'-7"			35
AA503	11	9'-0"	108	8'-0"	1'-0"	8"		103
AA504	11	3'-2"	108	1'-7"	1'-7"	1'-6"		37
AA506	2	30'-9"	Str.					64
AA507	4	13'-3"	105	11'-6"	1'-0"			55
AA510	20	40'-3"	Str.					840
AA511	20	41'-0"	Str.					855
AA512	61	11'-7'-2"	105	4'-0"	3'-5"		7/0	456
AA513	61	7'-5"	104	6'-6"	1'-0"			472
AA514	61	8'-4"	105	1'-7"	5'-5"			530
AA515	23	11'-6"	109	3'-0"	2'-6"			276
AA516	20	2'-9"	Str.					57
AA517	22	6'-5"	114	3'-2"				147
AA518	32	2'-2"	105	7½"	1'-2"			72
AA519	4	3'-6"	Str.					15
AA520	2	4'-0"	Str.					8
AA521	2	4'-6"	Str.					9
AA522	2	5'-3"	Str.					11
AA523	2	6'-0"	Str.					13
AA524	20	9'-0"	Str.					188
AA525	4	11'-0"	108	9'-0"	2'-0"	1'-0"		46
AA526	28	19'-2"	Str.					560
AA527	4	15'-0"	Str.					63
AA528	4	12'-6"	Str.					52
AA529	12	11'-0"	Str.					138
AA530	16	13'-0"	Str.					217
AA531	4	7'-0"	Str.					29
AA532	4	15'-3"	Str.					64
AA601	61	14'-1"	106	5'-5"	6'-6"	2'-6"		1290
AA602	80	19'-1"	105	9'-0"	1'-5"			2300
AA603	54	4'-11"	105	1'-11"	1'-5"			399
AA604	54	6'-7"	105	3'-0"	11"			534
AA605	26	7'-1"	105	3'-0"	1'-5"			277
AA606	20	10'-3"	115	8'-5"	9"			308
AA607	2	7'-6"	115	5'-8"	9"			23
AA608	20	18'-10"	105	9'-0"	1'-2"			566
AA609	2	7'-7"	104	6'-9"	1'-0"			23
AA701	4	4'-10"	115	3'-2"	9"			40
AA703	2	5'-4"	115	3'-8"	9"			22
AA704	2	6'-0"	115	4'-4"	9"			25
AA705	2	6'-7"	115	4'-11"	9"			27
AA801	14	43'-0"	Str.					1606
AA802	2	18'-4"	104	16'-0"	2'-6"			98
AA803	2	16'-0"	Str.					86
AA804	2	14'-0"	Str.					75
AA805	2	18'-6"	108	16'-0"	2'-6"	2'-5"		99
AA806	1	16'-9"	108	14'-3"	2'-6"	2'-5"		45
AA807	1	14'-3"	108	11'-9"	2'-6"	2'-5"		38
AA808	2	14'-0"	108	11'-6"	2'-6"	2'-5"		75
DA801	19	5'-2"	141	3'-1"				262
DB801	19	5'-3"	141	3'-2"				266
								373
		Total North Abut.						14,119

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
SOUTH ABUTMENT								
AB401	42	3'-5"	105	1'-0"	1'-8"			96
AB501	11	6'-6"	108	5'-6"	1'-0"	11"		75
AB502	8	4'-7"	118	2'-7"	6"	8"		38
AB503	4	4'-4"	118	1'-7"	1'-3"	8"		18
AB504	11	9'-3"	108	8'-3"	1'-0"	8"		106
AB505	12	3'-2"	108	1'-7"	1'-7"	1'-5"		40
AB506	21	44'-6"	Str.					975
AB507	31	8'-4"	105	1'-7"	5'-5"			270
AB508	31	7'-5"	104	6'-6"	1'-0"			240
AB509	31	7'-0"	105	1'-11"	3'-5"			226
AB510	14	11'-6"	109	3'-0"	2'-6"			168
AB511	1 ser. of 4	15'-6"	109	3'-3" to 5'-0"	2'-6"		7"	58
AB512	1	12'-4"	109	3'-6"	2'-6"			13
AB513	12	8'-3"	Str.					103
AB514	2 Ser. of 7	7'-7" to 3'-10"	Str.				7½"	83
AB515	4	3'-0"	Str.					13
AB516	6	6'-6"	104	5'-7"	1'-0"			41
AB517	4	18'-4"	108	6'-10"	11'-6"	4'-9"		77
AB518	4	3'-7"	108	1'-7"	2'-0"	9"		15
AB519	24	22'-8"	Str.					570
AB520	4 Ser. of 5	17'-3" to 9'-0"	Str.				2'-0¾"	274
AB521	8	8'-6"	Str.					71
AB522	8	9'-6"	Str.					79
AB523	26	6'-5"	114	3'-2"				174
AB524	20	2'-9"	Str.					57
AB525	36	2'-2"	105	7½"	1'-2"			81
AB528	4	17'-0"	Str.					71
AB529	4	7'-0"	Str.					29
AB601	31	14'-3"	106	5'-5"	6'-6"	2'-8"		664
AB602	44	16'-5"	105	7'-8"	1'-5"			1087
AB603	44	4'-11"	105	1'-11"	1'-5"			325
AB604	44	6'-7"	105	3'-0"	11"			435
AB606	8	6'-10"	100	5'-6"				82
AB607	8	2'-6"	Str.					30
AB608	6	18'-6"	105	8'-10"	1'-2"			167
AB609	6	19'-2"	105	9'-2"	1'-2"			173
AB610	12	10'-3"	115	8'-5"	9"			185
AB611	2 Ser. of 7	5'-10" to 9'-10"	115	4'-2" to 8'-2"	9"		8"	165
AB612	1	16'-0"	109	5'-3"	2'-6"			24
AB613	1	7'-10"	104	7'-0"	1'-0"			12
AB614	1	7'-6"	104	6'-8"	1'-0"			11
AB701	4	4'-9"	115	3'-1"	9"			39
AB703	6	7'-11"	116	5'-5"	9"			97
DC801	26	5'-4"	141	3'-3"				370
AB801	7	44'-9"	Str.					836
AB802	2	8'-0"	Str.					43
AB803	2	12'-6"	Str.					67
AB804	2	17'-7"	150	2'-9"	1'-3"	12'-6"		94
AB805	2	9'-6"	108	7'-0"	2'-6"	2'-3"		51
AB806	1	11'-0"	108	8'-6"	2'-6"	2'-3"		29
AB807	1	12'-0"	108	9'-6"	2'-6"	2'-3"		32
AB808	2	14'-0"	108	11'-6"	2'-6"	2'-3"		75
		Total South Abut.						9154

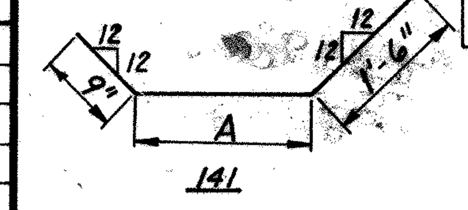
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
PIER 1								
SPA401	1	396'-3"	112	48.0	17'-0"	4½"		319
SPA402	1	394'-5"	112	47.8	16'-11"	4½"		316
SPA403	1	390'-9"	112	47.3	16'-9"	4½"		315
SPA404	1	385'-3"	112	46.7	16'-6"	4½"		310
SPA405	1	368'-9"	112	44.7	15'-9"	4½"		297
SPA406	1	350'-0"	112	42.4	14'-11"	4½"		282
PA501	64	4'-5"	105	1'-0"	2'-8"			295
PA502	2	3'-11"	105	1'-0"	2'-2"			8
PA503	2	2'-9"	105	1'-0"	1'-0"			6
PA601	8	7'-11"	113	1'-11"	4'-1"	2'-7"		95
PA602	8	6'-2"	105	1'-11"	2'-8"			74
PA603	4	35'-3"	Str.					212
PA604	4	33'-6"	Str.					201
PA605	24	12'-2"	109	2'-8"	3'-2"			438
PA606	6	12'-8"	109	2'-8"	3'-5"			114
PA607	9	12'-4"	109	2'-8"	3'-3"			167
PA608	80	6'-6"	Str.					780
PA609	11	13'-2"	109	2'-8"	3'-8"			218
PA801	44	41'-0"	Str.					4820
PA1001	8	20'-3"	Str.					697
PA1002	24	20'-0"	Str.					2068
PA1003	5	33'-6"	Str.					720
PA1004	48	6'-9"	104	6'-0"	1'-0"			1395
PA1005	8	18'-9"	Str.					645
PA1006	8	18'-0"	Str.					620
PA1101	5	38'-9"	104	36'-0"	3'-0"			1030
PA1102	5	35'-3"	Str.					939
PA1103	4	11'-0"	Str.					234
PA1104	5	36'-3"	104	33'-6"	3'-0"			965
				Total Reinf. - Pier 1 =				18,580
PIER 2								
SPB401	1	262'-4"	112	31.8	10'-11"	4½"		210
SPB402	1	412'-6"	112	50.0	9'-11"	2½"		309
SPB403	1	376'-2"	112	45.6	9'-0"	2½"		281
SPB404	1	198'-2"	112	24.0	8'-0"	4½"		159
PB501	64	4'-5"	105	1'-0"	2'-8"			295
PB502	2	3'-11"	105	1'-0"	2'-2"			8
PB503	2	2'-9"	105	1'-0"	1'-0"			6
PB601	136	7'-6"	Str.					1530
PB602	8	7'-11"	113	1'-11"	4'-1"	2'-7"		95

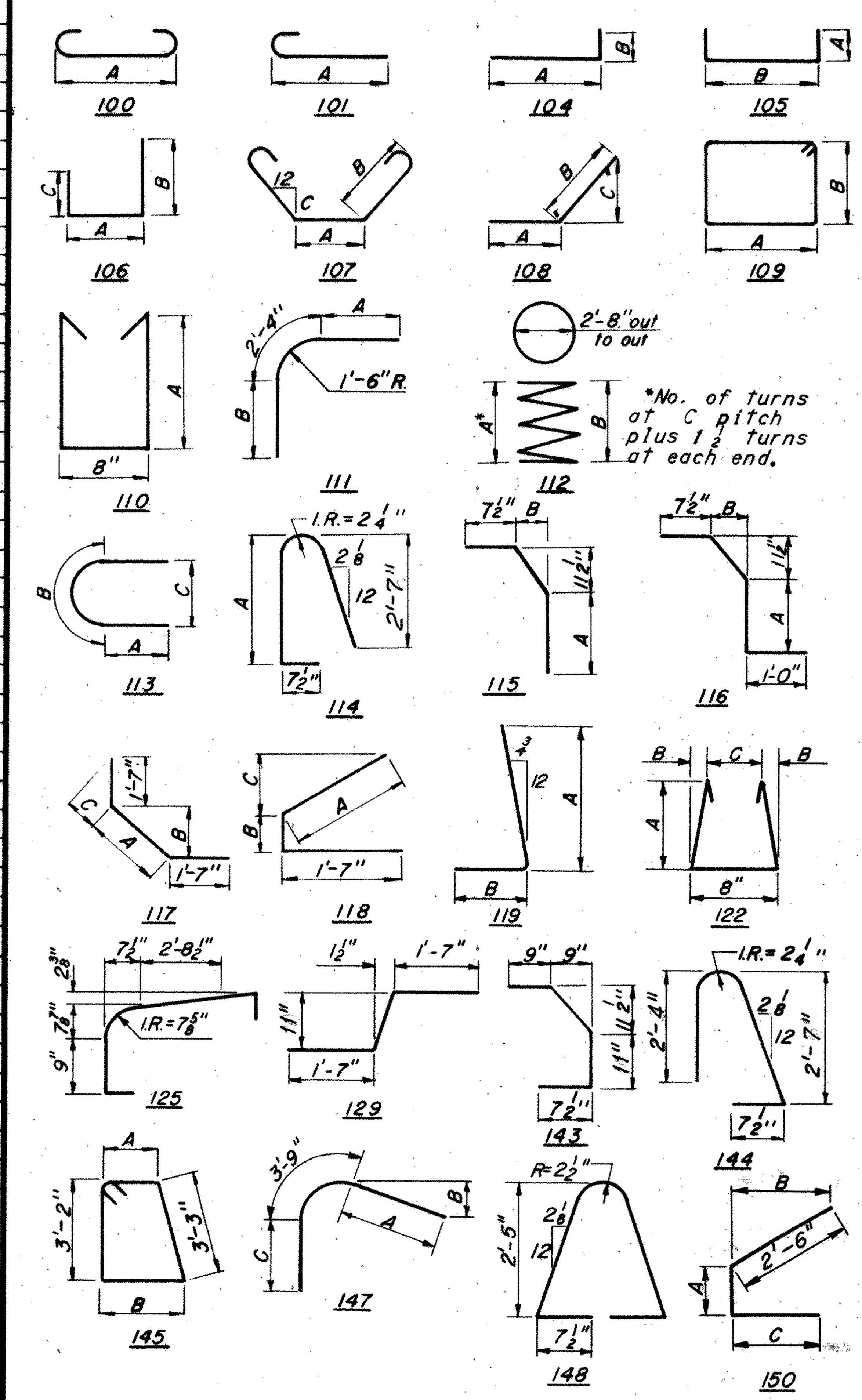
SEP 14 1983

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

302 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22





BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For replacement reinforcement schedule see sheet 256
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 9 — Revised 6-11-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 12 / 14
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

RAMP F AND RAMP C OVER
MARKET AVE. AND CLEVELAND AVE.

BR. NO. STA. 30-1494 — STA. 966 + 03.75
SCALE: — STA. 971 + 75.00

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
DGS DATE 6-29-70	DATE	DWB DATE 7-7-70	MJK DATE 11-20-71	1668

Revised 4-28-77

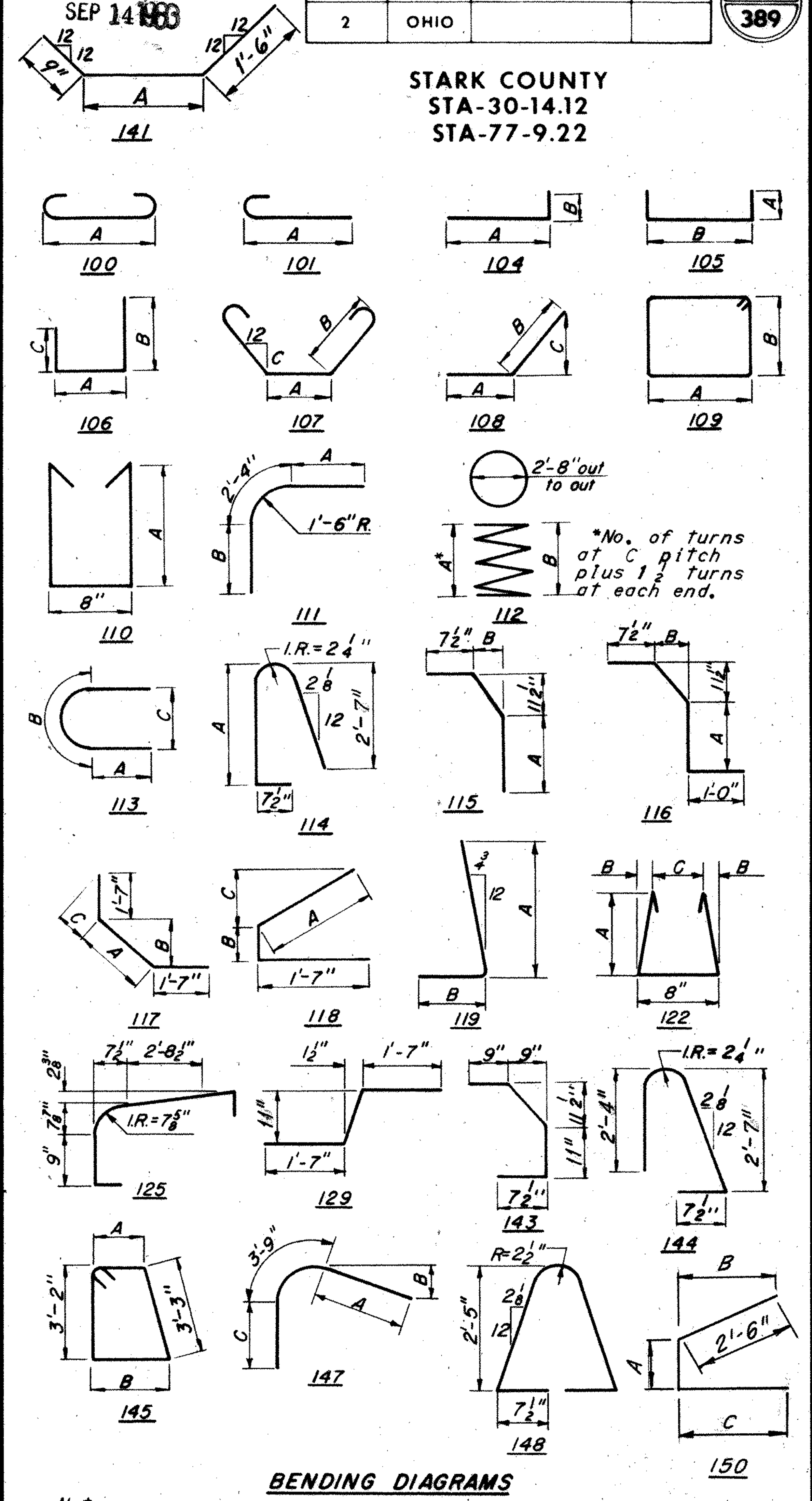
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PB603	4	56'-3"	Str					337
PB604	58	13'-2"	109	2'-8"	3'-8"			1148
PB1001	8	12'-9"	Str					439
PB1002	8	13'-9"	Str					474
PB1003	16	7'-3"	104	6'-6"	1'-0"			500
PB1004	26	67'-9"	Str					7576
PB1101	8	15'-9"	Str					670
PB1102	8	12'-0"	Str					510
PB1103	16	7'-6"	104	6'-9"	1'-0"			639
PB1104	4	9'-6"	Str					202
PB1105	10	16'-0"	Str					850
PB1106	10	13'-0"	Str					690
PB1107	6	9'-6"	Str					303
PB1108	2	10'-0"	Str					107
PB1109	5	56'-3"	Str					1497
PB1110	4	33'-0"	104	29'-6"	3'-6"			703
PB1111	4	34'-0"	104	30'-9"	3'-6"			724
PB1112	2	34'-6"	104	31'-3"	3'-6"			368
				Total Reinf. -	Pier 2	=		20,630
				PIER 3				
SPC401	1	258'-8"	112	31.3	10'-9"	4½"		207
SPC402	1	422'-4"	112	51.2	10'-2"	2½"		316
SPC403	1	399'-3"	112	48.4	9'-7"	2½"		298
SPC404	1	220'-2"	112	26.7	9'-0"	4½"		176
PC501	55	4'-5"	105	1'-0"	2'-8"			253
PC502	2	3'-11"	105	1'-0"	2'-2"			8
PC503	2	2'-9"	105	1'-0"	1'-0"			6
PC601	122	6'-6"	Str					1190
PC602	8	7'-11"	113	1'-11"	4'-1"	2'-7"		95
PC603	4	50'-0"	Str					300
PC604	30	13'-2"	109	2'-8"	3'-8"			593
PC901	23	59'-6"	Str					4650
PC1001	12	14'-6"	Str					750
PC1002	8	14'-0"	Str					482
PC1003	8	13'-3"	Str					456
PC1004	12	12'-9"	Str					654
PC1005	40	7'-3"	104	6'-6"	1'-0"			1250
PC1101	4	13'-9"	Str					293
PC1102	6	13'-0"	Str					415
PC1103	5	50'-0"	Str					1335
PC1104	4	30'-6"	104	27'-3"	3'-6"			650

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PC1105	4	30'-9"	104	27'-6"	3'-6"			650
PC1106	2	31'-3"	104	28'-0"	3'-6"			323
				Total Reinf. -	Pier 3		=	15,350
				PIER 4				
SPD401	1	238'-6"	112	28.9	9'-10"	4½"		191
SPD402	1	231'-2"	112	28.0	9'-6"	4½"		185
SPD403	1	225'-8"	112	27.3	9'-3"	4½"		181
SPD404	1	216'-6"	112	26.2	8'-10"	4½"		173
PD501	43	4'-5"	105	1'-0"	2'-8"			198
PD502	2	3'-11"	105	1'-0"	2'-2"			8
PD503	2	2'-9"	105	1'-0"	1'-0"			6
PD601	120	5'-6"	Str					993
PD602	8	7'-11"	113	1'-11"	4'-1"	2'-7"		95
PD603	4	49'-6"	Str					297
PD604	30	13'-2"	109	2'-8"	3'-8"			594
PD801	22	59'-0"	Str					3460
PD901	4	13'-6"	Str					184
PD1001	8	13'-0"	Str					448
PD1002	8	13'-3"	Str					456
PD1003	16	7'-3"	104	6'-6"	1'-0"			500
PD1004	4	13'-0"	Str					224
PD1005	5	49'-6"	Str					1069
PD1006	4	30'-0"	104	26'-9"	3'-6"			516
PD1007	4	30'-9"	104	27'-6"	3'-6"			529
PD1008	2	31'-3"	104	28'-0"	3'-6"			269
PD1101	12	13'-6"	Str					862
PD1102	12	12'-9"	Str					815
PD1103	24	7'-6"	104	6'-9"	1'-0"			957
				Total Reinf. -	Pier	4	=	13,210
				PIER 5				
SPE401	1	269'-8"	112	32.7	11'-3"	4½"		216
SPE402	1	267'-10"	112	32.4	11'-2"	4½"		215
SPE403	1	266'-0"	112	32.2	11'-1"	4½"		213
SPE404	1	264'-2"	112	32.0	11'-0"	4½"		212
PE501	43	4'-5"	105	1'-0"	2'-8"			198

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PE502	2	3'-11"	105	1'-0"	2'-2"			8
PE503	2	2'-9"	105	1'-0"	1'-0"			6
PE601	114	5'-6"	Str					942
PE602	8	7'-11"	113	1'-11"	4'-1"	2'-7"		95
PE603	4	46'-3"	Str					278
PE604	30	12'-2"	109	2'-8"	3'-2"			548
PE801	19	55'-9"	Str					2830
PE901	4	12'-6"	Str					170
PE1001	12	14'-6"	Str					750
PE1002	16	14'-3"	Str					981
PE1003	2	29'-3"	104	26'-6"	3'-0"			252
PE1004	12	14'-2"	Str					733
PE1005	40	7'-3"	104	6'-6"	1'-0"			1250
PE1006	4	13'-0"	Str					224
PE1007	5	46'-3"	Str					995
PE1008	4	28'-0"	104	25'-3"	3'-0"			483
PE1009	4	28'-9"	104	26'-0"	3'-0"			495
				Total Reinf. -	Pier 5		=	12,100
				PIER 6				
SPF401	1	298'-10"	112	36.2	12'-7"	4½"		240
SPF402	1	297'-2"	112	36.0	12'-6"	4½"		239
SPF403	1	293'-11"	112	35.6	12'-4"	4½"		236
PF501	50	4'-5"	105	1'-0"	2'-8"			231
PF502	2	4'-0"	105	1'-0"	2'-3"			8
PF503	2	3'-1"	105	1'-0"	1'-4"			6
PF601	4	43'-6"	Str					261
PF602	36	12'-2"	109	2'-8"	3'-2"			659
PF603	8	7'-11"	113	1'-11"	4'-1"	2'-7"		95
PF604	112	5'-6"	Str					926
PF1001	8	16'-0"	Str					551
PF1002	8	15'-9"	Str					543
PF1003	8	15'-6"	Str					534
PF1004	24	6'-9"	104	6'-0"	1'-0"			697
PF1005	21	55'-0"	Str					4960
PF1101	5	49'-3"	105	2'-9"	44'-3"			1310
PF1102	5	14'-0"	Str					372

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For replacement reinforcement schedule see sheet 256.
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 9 — Revised 6-11-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 13/14
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

RAMP F AND RAMP C OVER
MARKET AVE. AND CLEVELAND AVE.

BR. NO. STA. 30-1494 — STA. 966 + 03.75
SCALE: — STA. 971 + 75.00

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN DGS DATE 6-29-70 | TRACED DATE | CHECKED DWB DATE 7-7-70 | REVIEWED MJE DATE 11-20-71 | REVISED | 1668

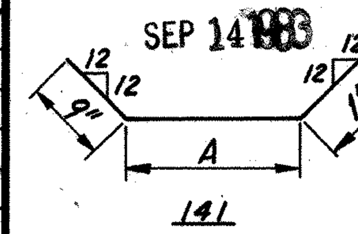
MARK.	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS	
PF1103	2	9'-0"	Str.					96	
PF1104	4	17'-9"	Str.					378	
PF1105	5	44'-3"	Str.					1178	
				Total Reinf. - Pier 6			=	13,520	
				DECK					
S501	36	22'-0"	Str.					827	
S502	232	30'-0"	Str.					7260	
S503	1 Ser. 4	33'-0"to28'-0"	Str.				1'-8"	132	27
S504	336	3'-10"	129					1343	
S505	1 Ser.28	23'-3"to14'-3"	Str.				4"	548	
S506	1 Ser 37	14'-3"to 6'-6"	Str.				$2\frac{9}{16}$"	400	
S507	1 Ser.35	6'-6" to 3'-6"	Str.				$1\frac{1}{16}$"	183	
S508	64	3'-6"	Str.					234	
S509	2	8'-8"	113	1'-7"	5'-6"	3'-6"		18	
S510	1	28'-0"	Str.					29	
S511	1	33'-0"	Str.					35	
S512	5	42'-0"	Str.					219	
S513	766-7	5'-8"	144					4527	33
S514	766-7	2'-2"	105	7"	1'-2"			1731	4
S515	766	2'-6"	104	2'-0"	$7\frac{1}{2}$"			1997	
S516	766	3'-3"	143					2597	
S517	5	22'-3"	Str.					116	
S518	5	40'-6"	Str.					211	
S519	5	13'-0"	Str.					68	
R501	44	14'-0"	Str.					644	
R502	40-36	13'-6"	Str.					564	07
R503	280-92	7'-0"	Str.					2045	2132
R504	44-0	14'-6"	Str.					666	05
R505	4	12'-9"	Str.					53	
R506	32	15'-6"	Str.					518	
R507	4	12'-3"	Str.					51	
R508	4	6'-0"	Str.					25	
S601	151	14'-6"	Str.					3290	
S602	1759-99	30'-0"	Str.					79,100	81,063
S603	1 Ser.27	21'-0"to30'-0"	Str.				$4\frac{1}{8}$"	1030	
S604	2 Ser.74	43'-1"to38'-8"	101	42'-5"to38'-0"			$\frac{3}{4}$"	9070	
S605	1 Ser.157	37'-8"to32'-5"	101	37'-0"to31'-9"			$\frac{3}{8}$"	8250	
S606	1 Ser.107	32'-5"to29'-5"	101	31'-9"to28'-9"			$\frac{5}{16}$"	4950	
S607	415	29'-5"	101	28'-9"				18,400	
S608	192	26'-5"	101	25'-9"				7640	
S609	1 Ser.27	40'-8"to 5'-2"	101	40'-0" to4'-6"			$1'-4\frac{3}{8}$"	930	
S610	4	5'-2"	101	4'-6"				31	
S611	1 Ser.40	30'-0"to21'-0"	Str.				$2\frac{3}{4}$"	1533	
S612	1 Ser.157	39'-8"to30'-8"	101	39'-0"to30'-0"			$\frac{11}{16}$"	8300	
S613	1 Ser.107	30'-8"to27'-2"	101	30'-0"to26'-6"			$\frac{1}{2}$"	4640	
S614	1 Ser.170	27'-5"to22'-5"	101	26'-9"to21'-9"			$\frac{3}{8}$"	6350	
S615	1 Ser 245	22'-5"to18'-11"	101	21'-9"to18'-3"			$\frac{3}{16}$"	7620	
S616	1 Ser.191	21'-11"to17'-11"	101	21'-3"to17'-3"			$\frac{1}{4}$"	5720	
S617	1 Ser.74	37'-9"to34'-9"	Str.				$\frac{11}{16}$"	4040	
S618	1 Ser.157	36'-0"to31'-0"	Str.				$\frac{3}{8}$"	7900	
S619	522-3	24'-9"	Str.					19,400	42
S620	192	22'-9"	Str.					6550	
S621	1 Ser.74	47'-9"to40'-9"	Str.				$1\frac{1}{8}$"	4920	
S622	1 Ser.157	40'-0"to30'-9"	Str.				$\frac{11}{16}$"	8340	
S623	1 Ser.107	37'-0"to30'-6"	Str.				$\frac{11}{16}$"	5425	
S624	1 Ser.170	30'-6"to25'-9"	Str.				$\frac{5}{16}$"	7180	
S625	1 Ser 245	25'-9"to22'-3"	Str.				$\frac{3}{16}$"	8840	
S626	1 Ser.191	24'-3"to20'-3"	Str.				$\frac{1}{4}$"	6390	
S627	1 Ser.27	40'-0"to 4'-6"	Str.				$1'-4\frac{3}{8}$"	900	
S628	4	4'-6"	Str.					27	
S629	1	22'-5"	101	21'-9"				34	
~~S630~~	~~1~~	~~24'-9"~~	~~Str.~~					~~37~~	
S631	45-9	44'-0"	Str.					2980	3,238
S632	73	54'-0"	Str.					5920	
S633	62	34'-0"	Str.					3170	
S634	28	28'-0"	Str.					1180	
				Total Reinf. in Deck				287,103 (997)	289,327

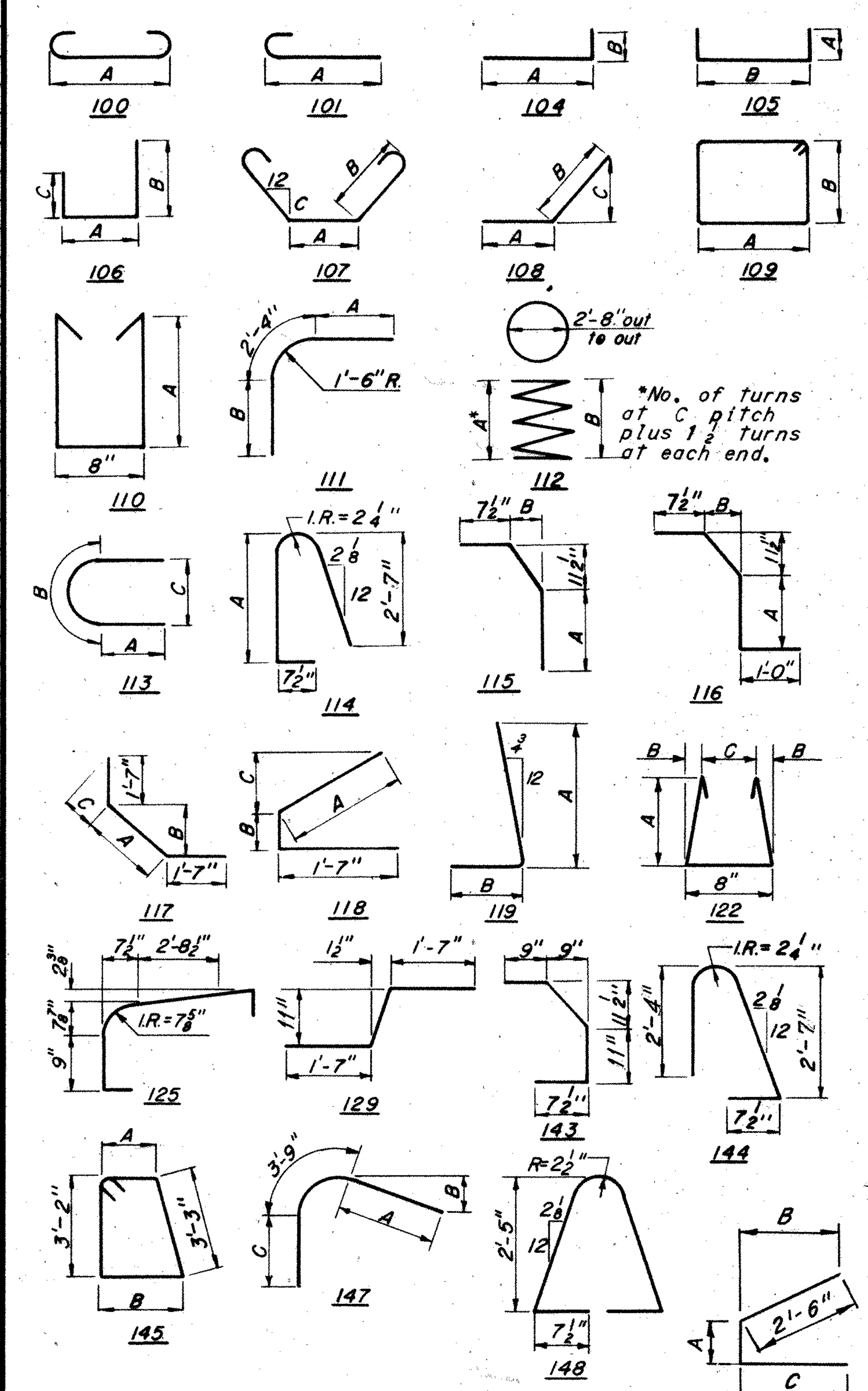
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS

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

STARK COUNTY
STA-30-14.12
STA-77-9.22





BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For replacement reinforcement schedule see sheet 256.
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 9 | Revised 6-11-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 14/14
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

RAMP F AND RAMP C OVER
MARKET AVE. AND CLEVELAND AVE.

BR. NO. STA. 30-1494 STA. 966 + 03.75
SCALE: STA. 971 + 75.00

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

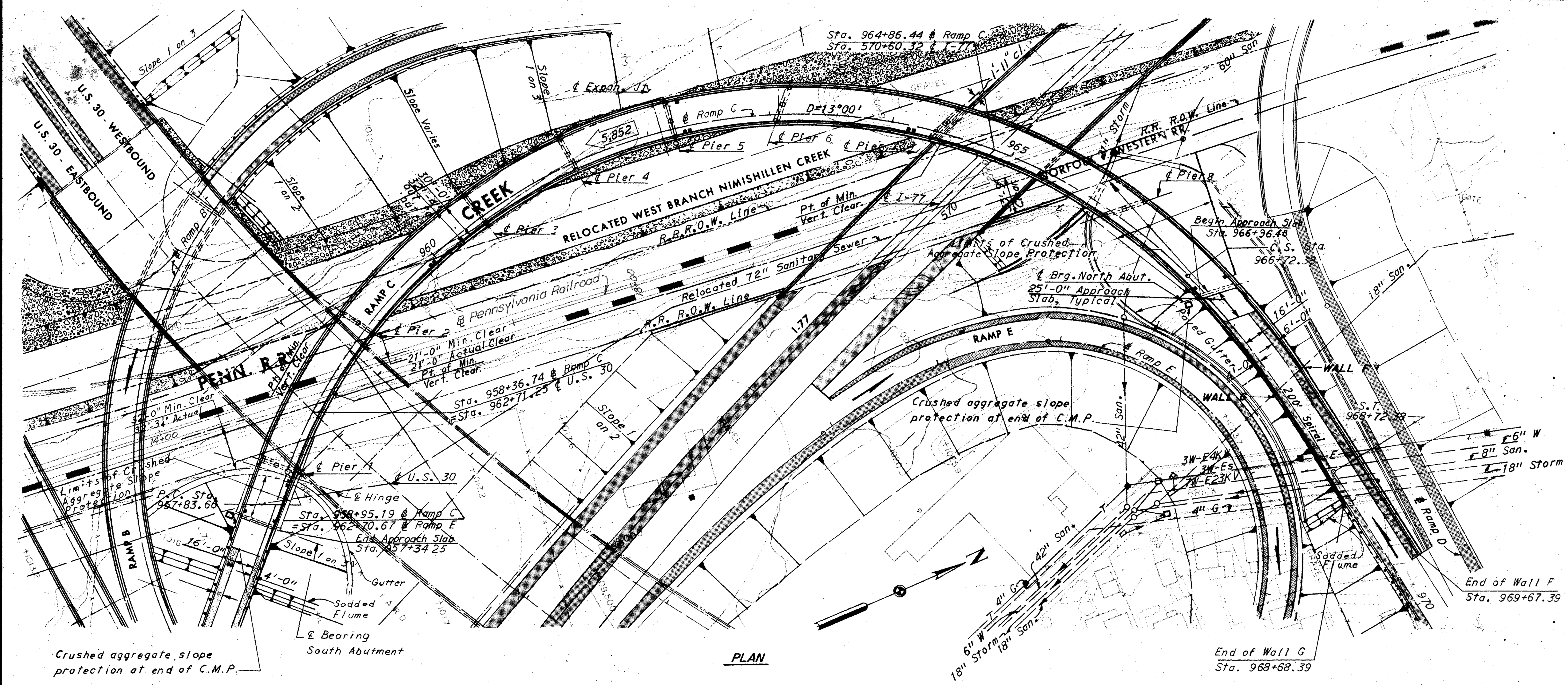
DRAWN DGS DATE 6-29-70	TRACED DATE	CHECKED DWB DATE 7-7-70	REVIEWED MJK DATE 11-20-71	REVISED 7-20-76 1668

Revised 4-28-77

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

305/389

STARK COUNTY
STA-30-14.12
STA-77-9.22



PLAN

PROPOSED STRUCTURE

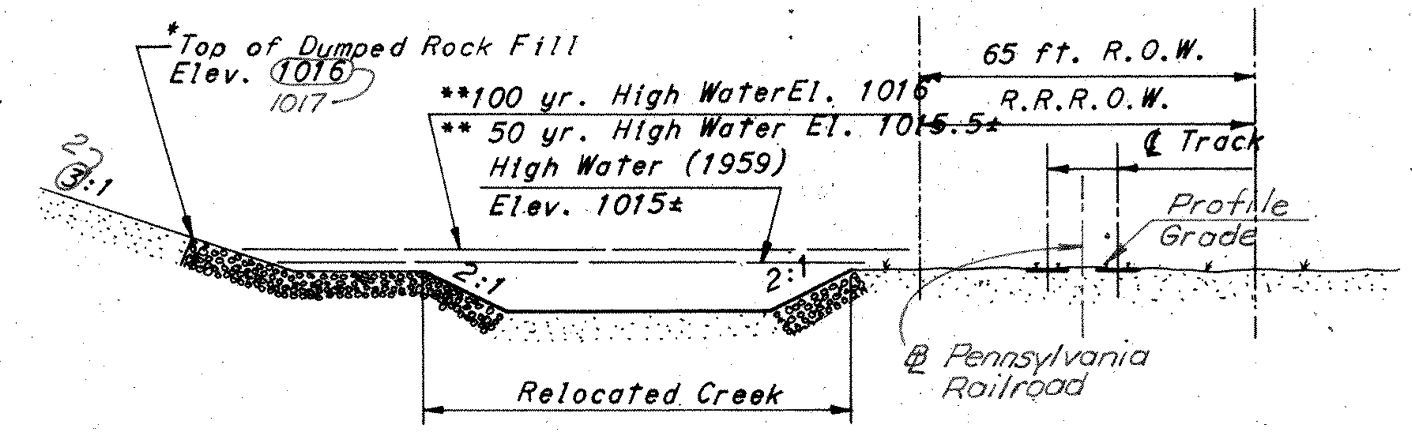
Type: Continuous Welded Curved Girders with Reinforced Concrete Slab.
Spans: 52.0', 128.5', 130.0', 87.0', 87.0', 87.0', 128.0', 156.0', 102.0' = 957.5'
Ctr. to Ctr. End Bearings along ℄ Ramp C.
Roadway: 30'-0" face to face parapets.
Loading: HS20-44
Skew: Varies; See Plan
Wearing Surface: 2½" Asphalt Concrete
Approach Slabs: AS-1-72 (25' Long) (Modified)
Alignment: Tangent to 13°00' Rt. on ℄ Ramp C

Modify Std. Drwg. AS-1-72 by providing 3" clear over the top rebars instead of the 2" shown on the Std. Drwg. The jacking holes as called for on Std. Drwg. AS-1-72 are not required.

EXISTING UTILITY LEGEND

4" G	GAS
4" W	WATER
16" Storm	STORM SEWER
8" San	SANITARY SEWER
T	TELEPHONE
E	POWER LINES
4W-E4KV	4 WIRE, PRIMARY 4 KILOVOLT
3W-E_s	3 WIRE, SECONDARY
	WATER HYDRANT
	MANHOLE
	CATCH BASIN

*To be paid for under "Rock Channel Protection, Type A, with bedding." See Roadway Plans.



SECTION THRU W. BRANCH NIMISHILLEN CREEK

Notes:
The following items are not included in the bridge plans. See roadway plans for detail.
1. Relocation or removal of existing utilities.
2. Approach grading pavements and slabs
3. Guardrails.

Earthwork limits shown are schematic. Actual slopes shall conform to plan cross-sections

⇦ Denotes 1987 average daily traffic.

For information not shown see General Plan Unit 1 sheet 3/19 and Unit 2 sheet 4/19

■ Denotes Standard Scupper

For details of retaining walls F and G see Sheets 14/19 and 15/19

For Estimated Quantities, see Sheet 365D.

FLOOD DISCHARGE WEST BRANCH NIMISHILLEN CREEK AT NAVARRE ROAD BRIDGE					
Occurance Interval (years)	5	10	20	50	100
* DischargeQ (c.f.s)	1360	1680	2010	2520	3000

* Taken from Table 5 "Flood Discharge-Frequency Relationship" page TA-23, "Flood Plain Study Main Report", Corps of Engineers, Feb. 1967.

** Taken 2,000 ft. above mouth as shown on Exhibit No. 4 and Exhibit No. 12, "Flood Plain Study-Main Report", Corps of Engineers, Feb. 1967.

H.N.T.B. BRIDGE NO. 13 | Revised 6-4-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 1/19
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KANSAS CITY CLEVELAND NEW YORK

SITE PLAN

RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD

BR. NO. STA. 30-1493 — STA. 957 + 34.25
SCALE: 1"=50'-0" — STA. 966 + 96.48

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN LDE DATE 12-18-69	TRACED DATE	CHECKED DGS DATE 6-17-70	REVIEWED MJK DATE 11-20-71	REVISED 3-2-76
				1668

Revised 4-28-77

MICROFILMED SEP 14 1983

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

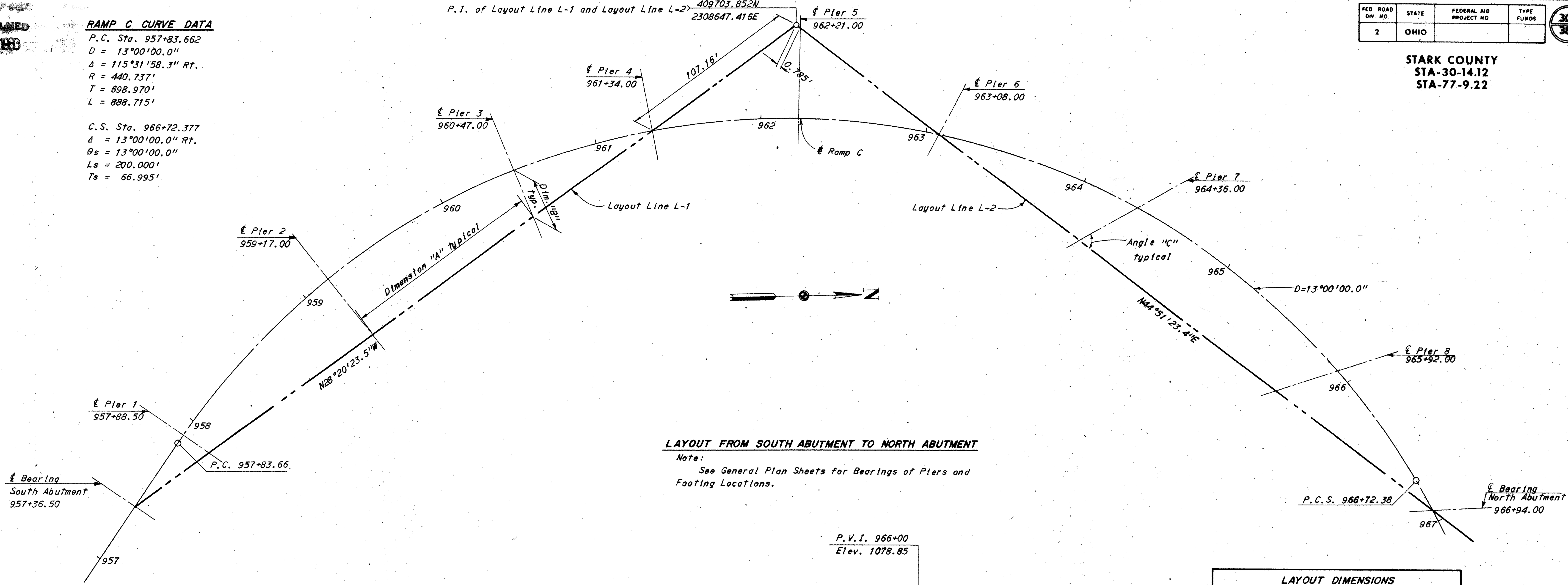
306/389

STARK COUNTY
STA-30-14.12
STA-77-9.22

RAMP C CURVE DATA

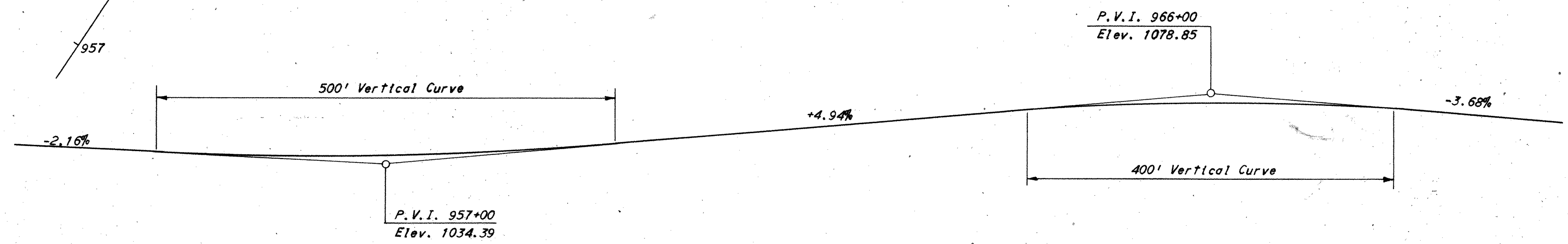
P.C. Sta. 957+83.662
D = 13°00'00.0"
Δ = 115°31'58.3" Rt.
R = 440.737'
T = 698.970'
L = 888.715'

C.S. Sta. 966+72.377
Δ = 13°00'00.0" Rt.
θs = 13°00'00.0"
Ls = 200.000'
Ts = 66.995'



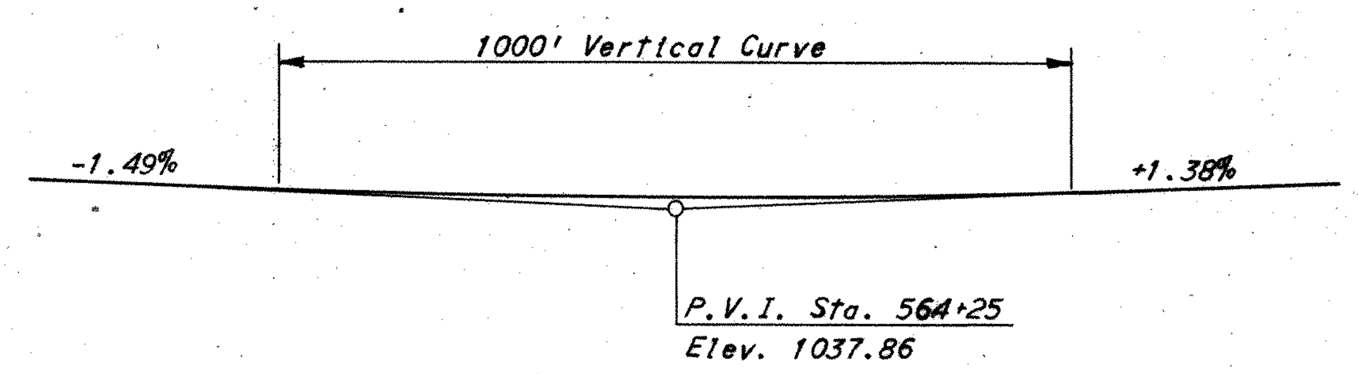
LAYOUT FROM SOUTH ABUTMENT TO NORTH ABUTMENT

Note:
See General Plan Sheets for Bearings of Piers and Footing Locations.

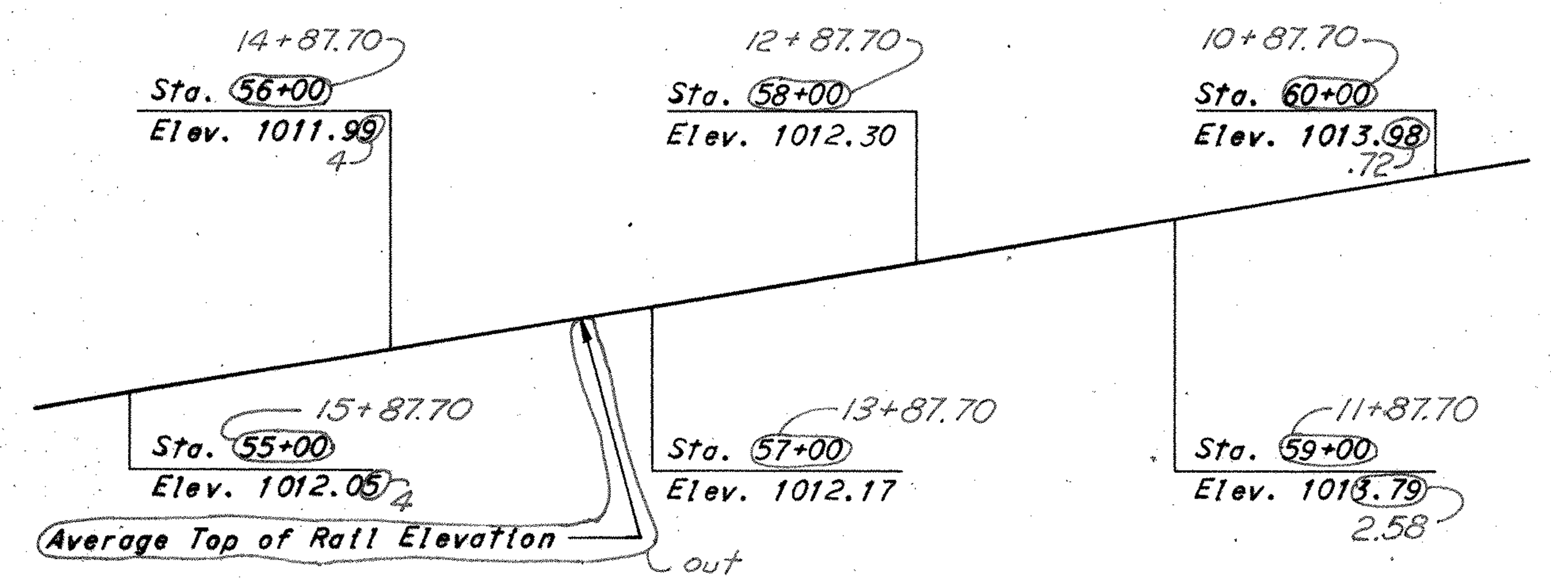


PROFILE GRADE - RAMP C

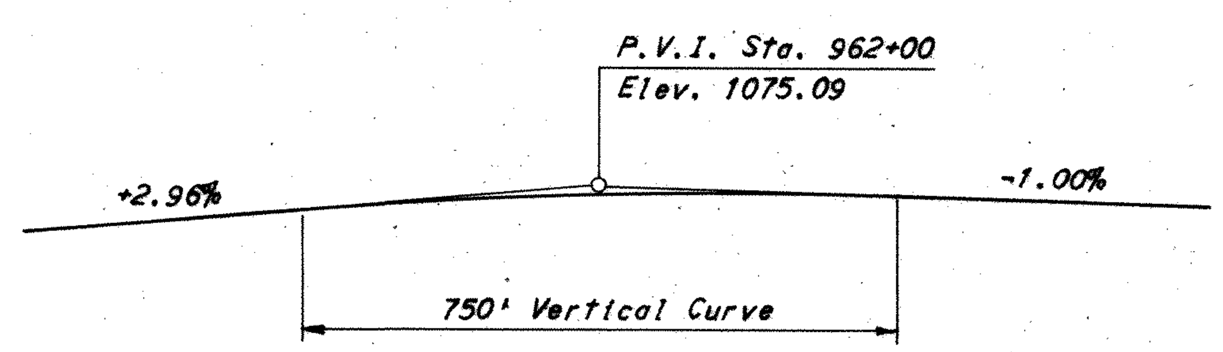
LAYOUT DIMENSIONS			
	A	B	ANGLE "C"
S. Abut.	0	0	110°03'18.2"
Pier 1	55.14	18.88	109°25'34.5"
Pier 2	121.40	42.45	92°43'16.5"
Pier 3	119.42	30.40	75°49'16.5"
Pier 4	89.15	0	64°30'40.5"
Pier 5	——	55.16	126°23'51.5"
Pier 6	107.38	0	99°05'15.5"
Pier 7	105.89	40.22	66°11'16.7"
Pier 8	148.94	39.24	55°10'03.6"
N. Abut.	118.96	0	40°03'10.2"



PROFILE GRADE - I-77



PROFILE GRADE - PENNSYLVANIA RAILROAD



PROFILE GRADE - U.S. 30

H.N.T.B. BRIDGE NO. 13

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

2/19

LAYOUT DATA

RAMP C OVER I-77 AND
PENNSYLVANIA RAILROAD

BR. NO. STA. 30-1493 STA. 957 + 34.25
SCALE: 1" = 30'-0" STA. 966 + 96.48

RELOCATED U.S. 30

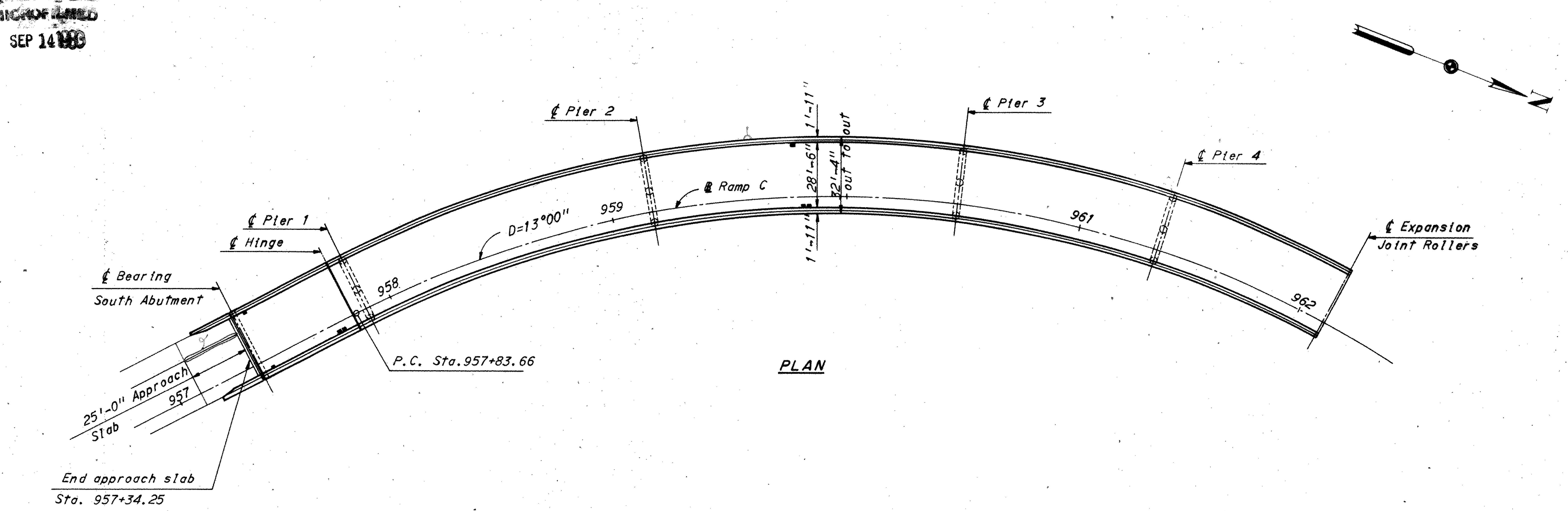
CANTON STARK COUNTY OHIO

DRAWN RAP	TRACED	CHECKED DGS	REVIEWED MJK	REVISED
DATE 11-12-69	DATE	DATE 3-6-70	DATE 11-20-71	1668

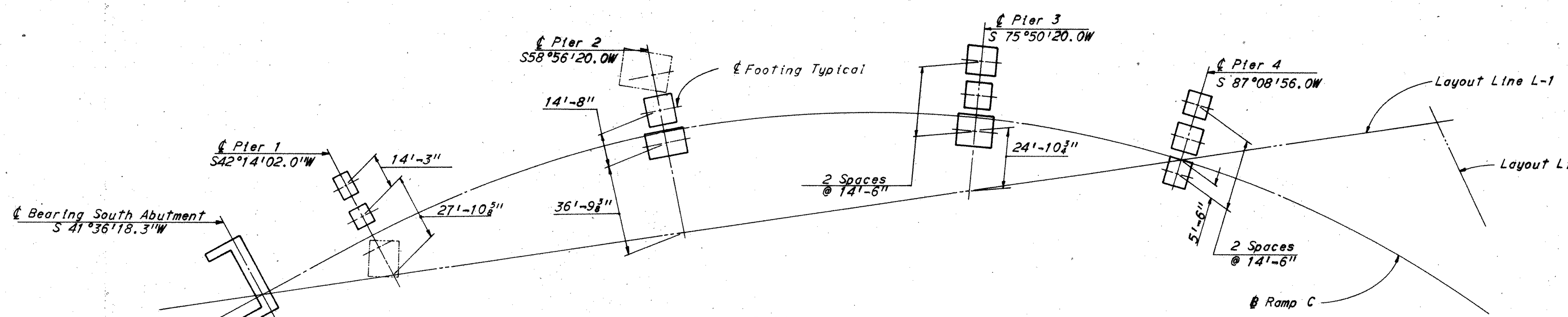
Revised 4-28-77

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



PLAN



FOOTING LAYOUT

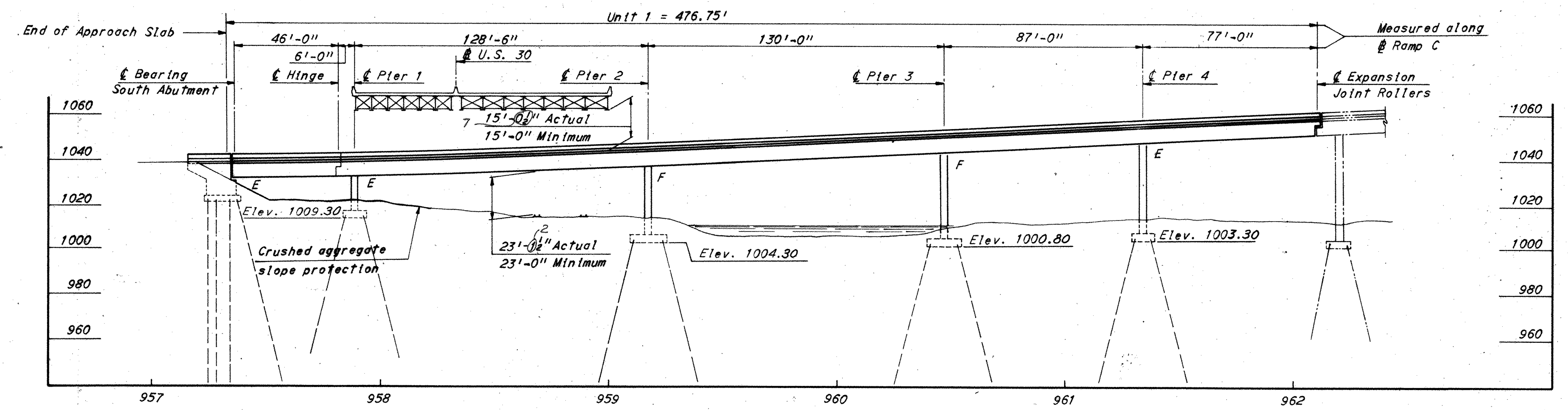
ESTIMATED AVERAGE PAY LENGTH FOR PILING	
South Abutment	80'
Pier 1	70'
Pier 2	70'
Pier 3	70'
Pier 4	70'

These estimates are based on boring data and are approximate only. The contractor shall assume full responsibility for length of piling selected for driving.

All earthwork, including the area of the existing channel shall be completed before construction of adjacent piers and abutments is started. Pre-boring through new or existing embankments before driving the piles will be allowed at the contractors option and expense.

Notes:

For profile grade see Sheet 2/19
For details of Pier 1 see Sheet 7/19
For details of Pier 2 see Sheet 7/19
For details of Pier 3 and Pier 4 see Sheet 8/19
For details of South Abutment see Sheet 5/19
■ Denotes Standard Scupper
All piles shall be 12" ϕ cast-in-place concrete.
For lighting details see Lighting Plans
For layout lines see Sheet 2/19



DEVELOPED ELEVATION

H.N.T.B. BRIDGE NO. 13 | Revised 6-4-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 3/19

GENERAL PLAN - UNIT I

RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD

BR. NO. STA. 30-1493
SCALE: 1"=30'-0"
STA. 957 + 34.25
STA. 966 + 96.48

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN DNB	TRACED	CHECKED DGS	REVIEWED MSK	REVISED
DATE 11-13-69	DATE	DATE 6-17-70	DATE 11-28-71	1668

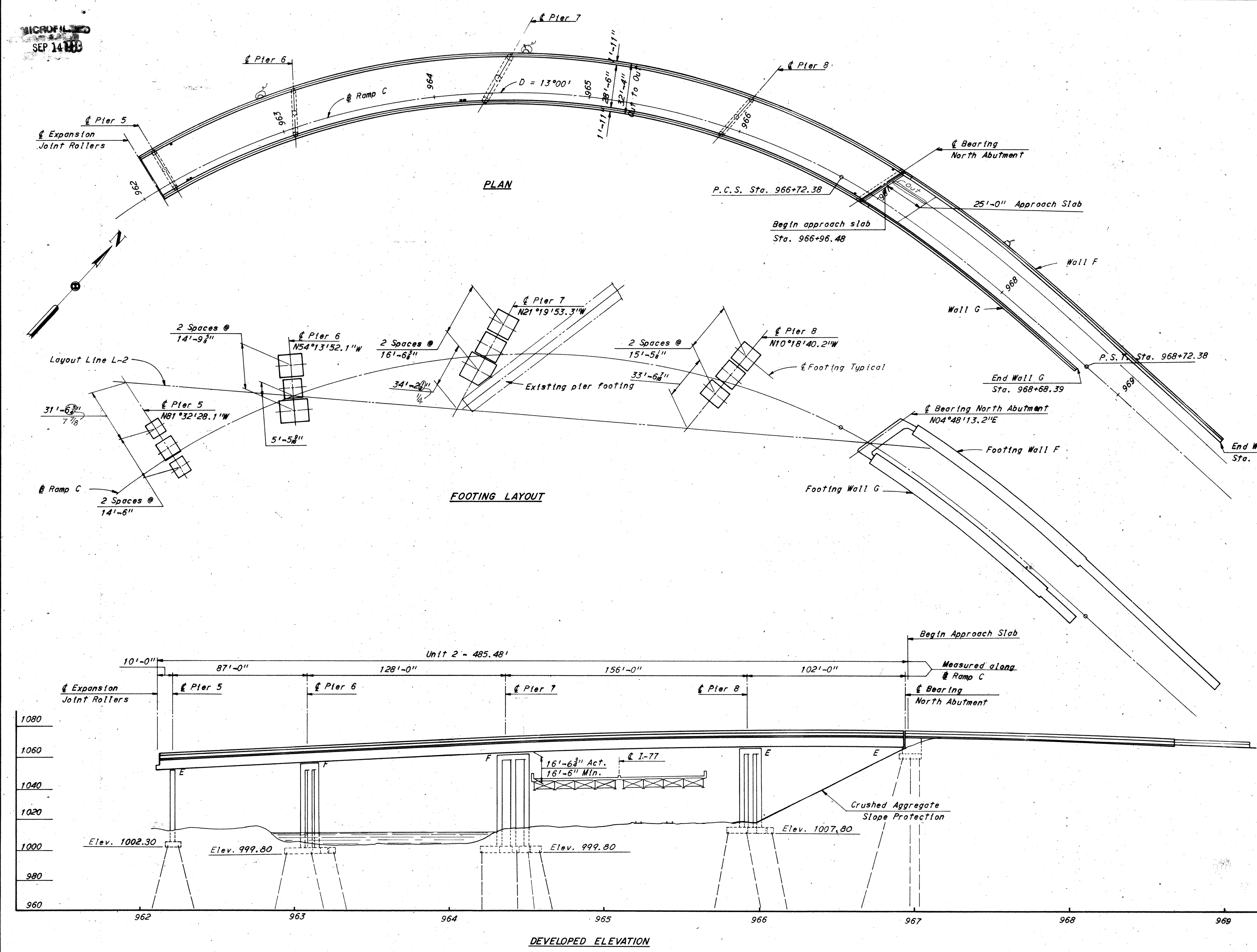
Revised 4-28-77

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			308/389

STARK COUNTY
STA-30-14.12
STA-77-9.22

ESTIMATED AVERAGE PAY LENGTH FOR PILING	
Pier 5	70'
Pier 6	70'
Pier 7	60'
Pier 8	60'
North Abutment	80'

These estimates are based on boring data and are approximate only. The contractor shall assume full responsibility for length of piling selected for driving.



Notes:
For profile grades see Sheet 2/19
For details of Pier 5 see Sheet 8/19
For details of Pier 6, Pier 7 and Pier 8 see Sheet 9/19
For details of North Abutment see Sheet 6/19
■ Denotes Standard Scupper
All piles shall be 12" ϕ cast-in-place concrete.
For lighting details see Lighting Plans.
All earthwork shall be completed before construction of adjacent piers and abutments started. Preboring through new or existing embankments before driving the piles will be allowed at the contractor's option and expense.
For layout lines see Sheet 2/19

H.N.T.B. BRIDGE NO. 13 | Revised 6-4-75 | By RAS

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

4/19

GENERAL PLAN - UNIT 2

RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD

BR. NO. STA. 30-1493 — STA. 957 + 34.25
SCALE: 1" = 30'-0" — STA. 966 + 96.48

RELOCATED U.S. 30

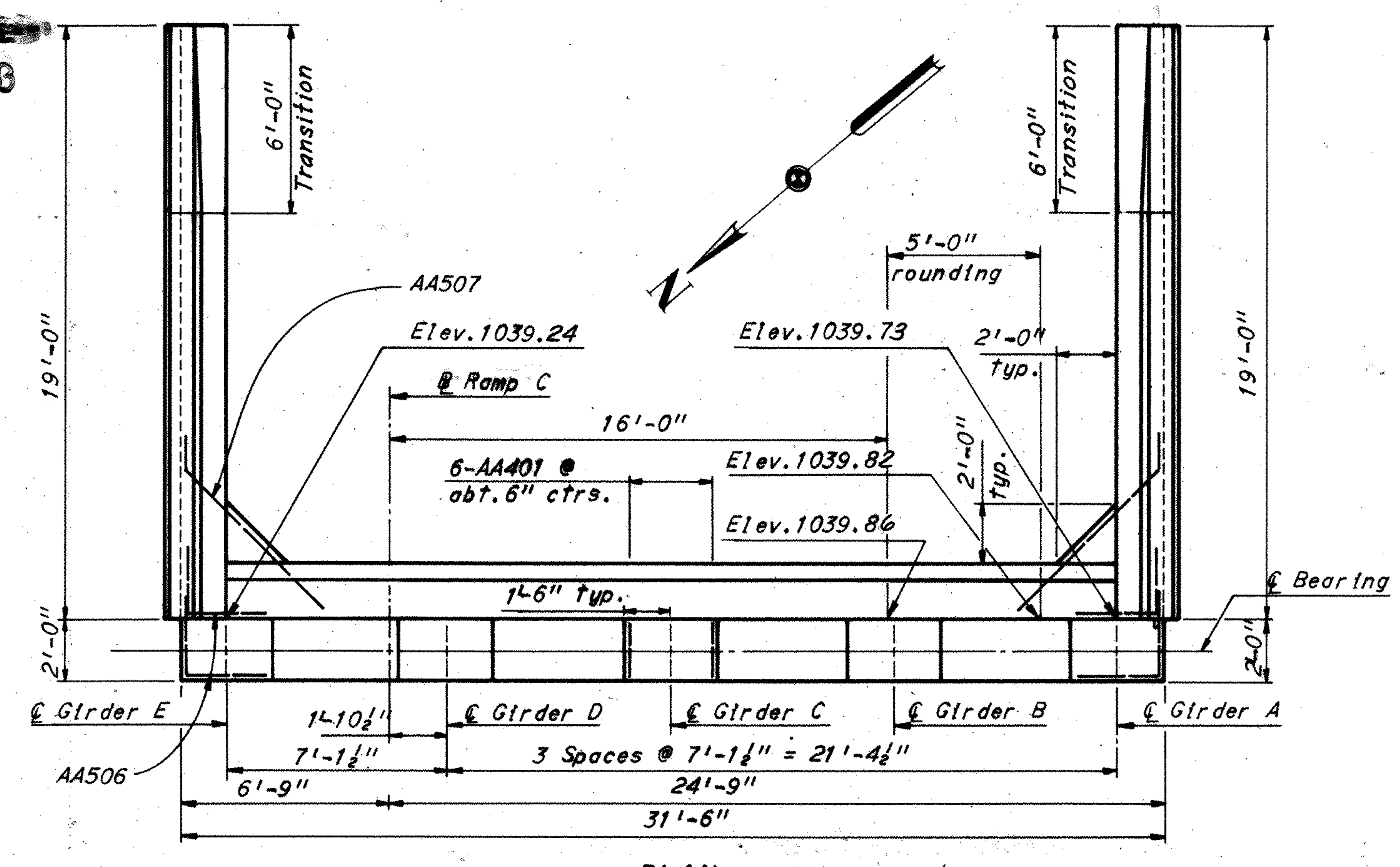
CANTON — STARK COUNTY — OHIO

DRAWN D.W.B.	TRACED	CHECKED DGS	REVIEWED MJK	REVISED 3-2-76
DATE 11-20-69	DATE	DATE 6-17-70	DATE 11-28-71	1668

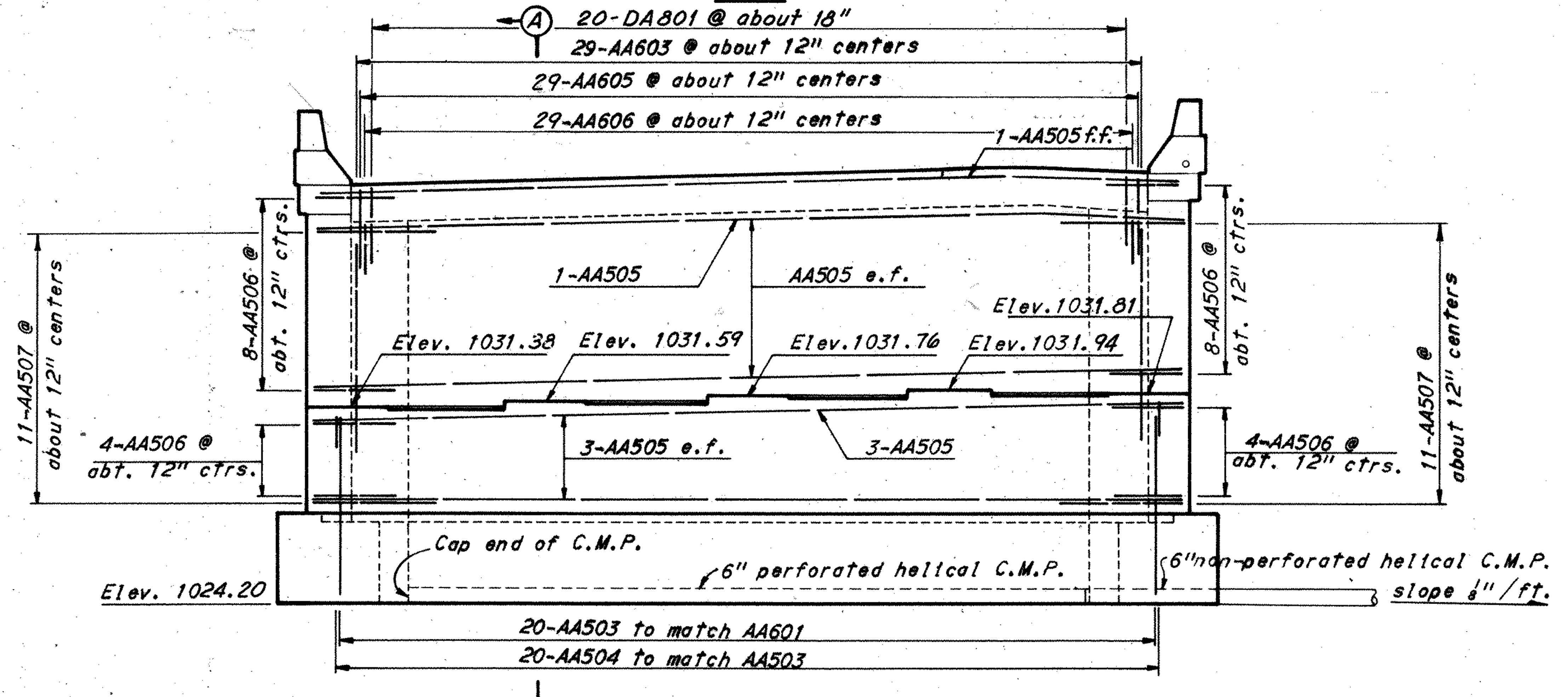
Revised 4-28-77

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			309/389

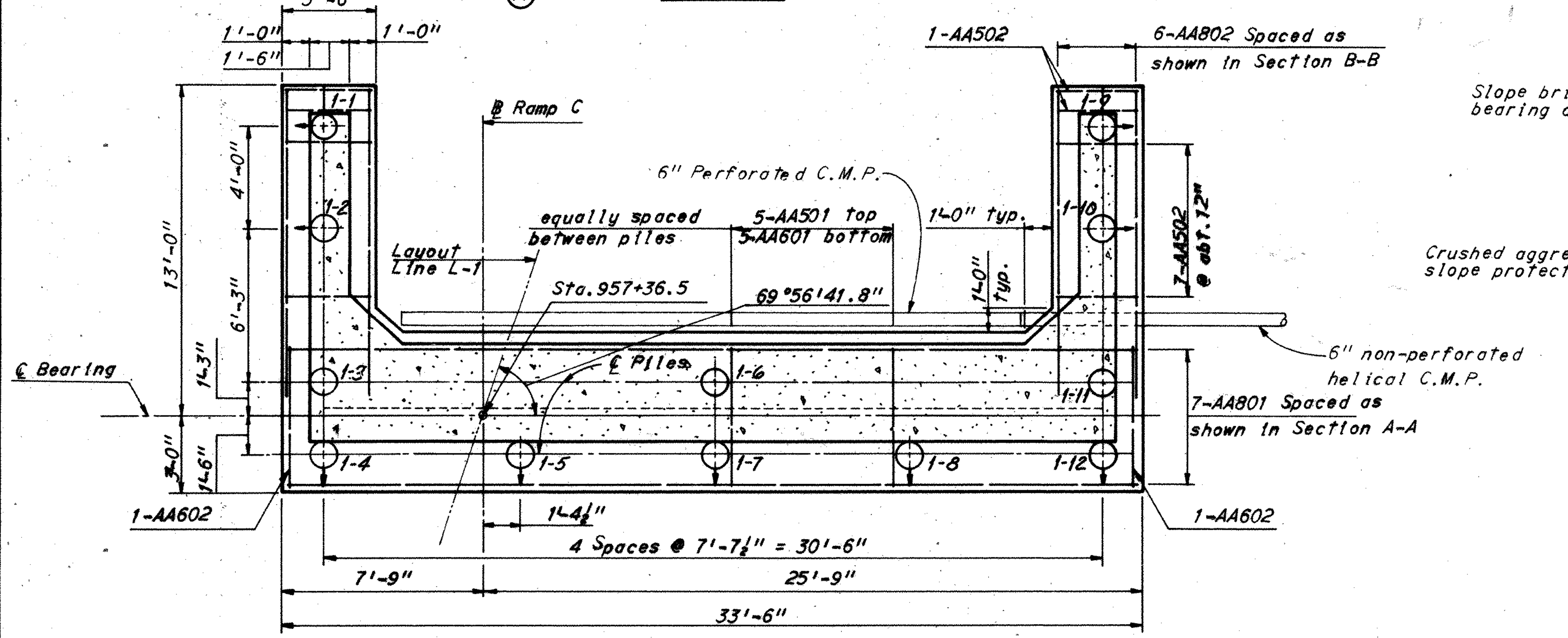
STARK COUNTY
STA-30-14.12
STA-77-9.22



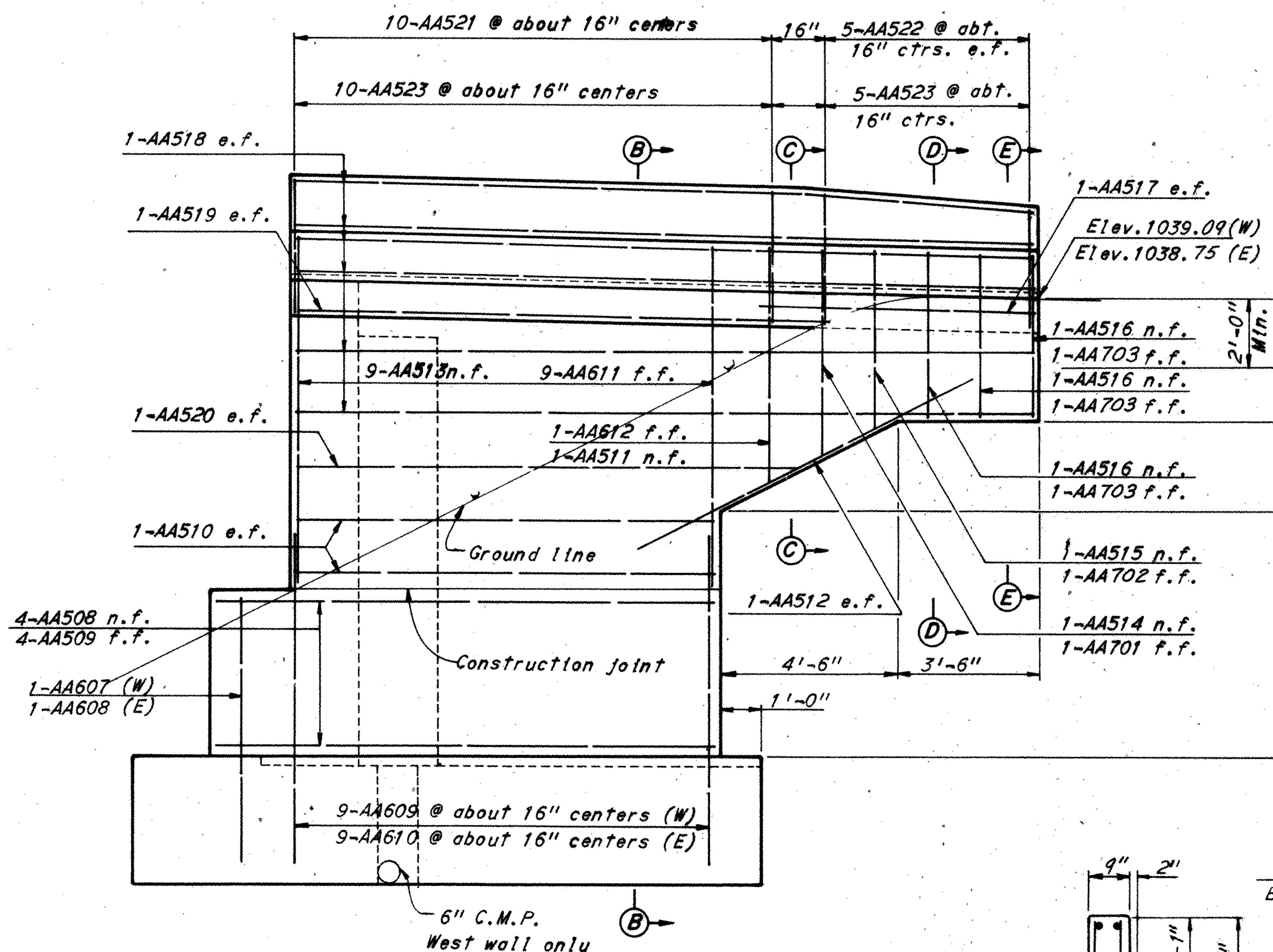
PLAN



ELEVATION

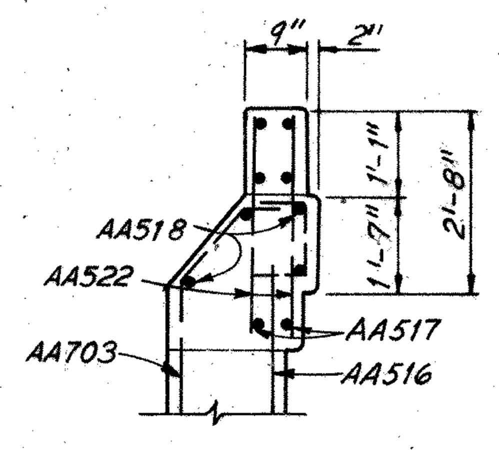


FOOTING PLAN

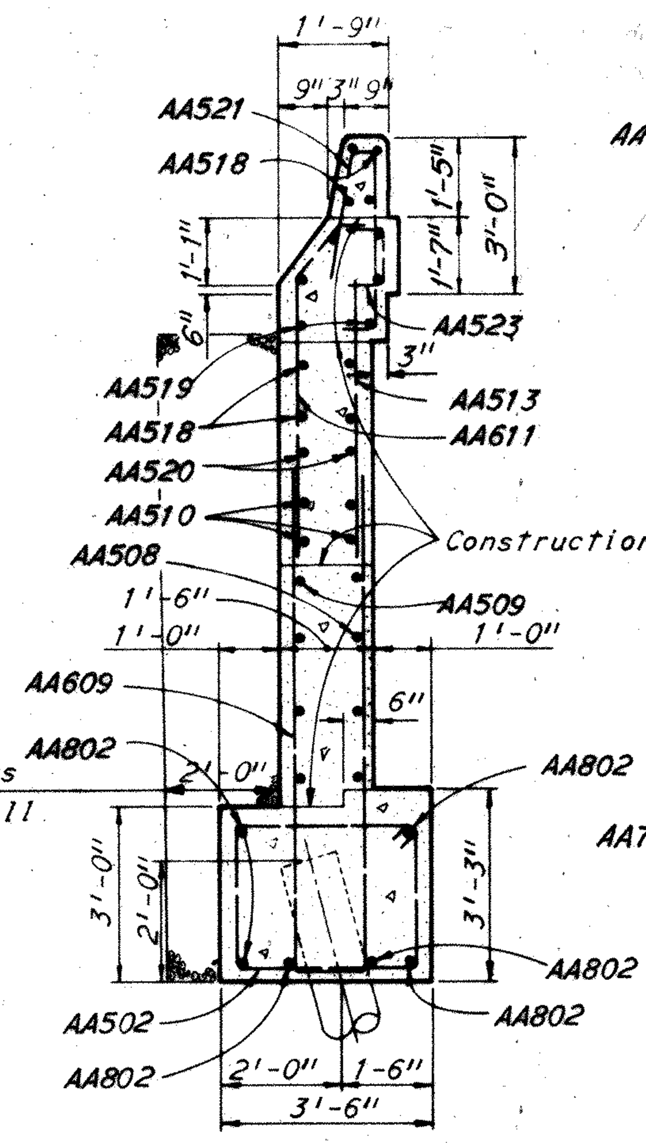


WINGWALL ELEVATION

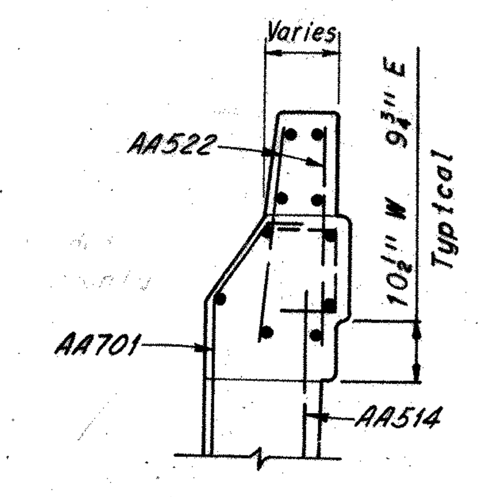
Note:
Parapet transitions shall be as shown on Std. Drwg. BR-1-67 revised 10-15-71. Reinforcing steel shall be field bent or cut to fit the revised shape.



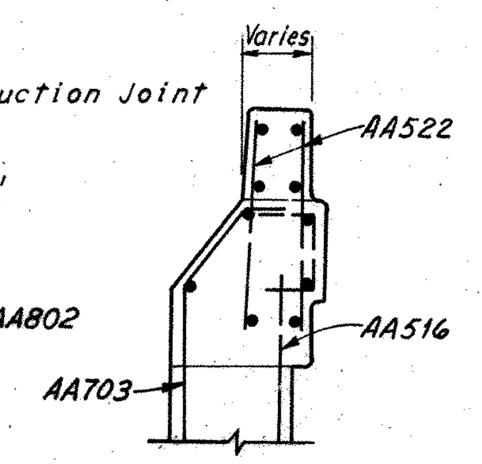
SECTION E-E



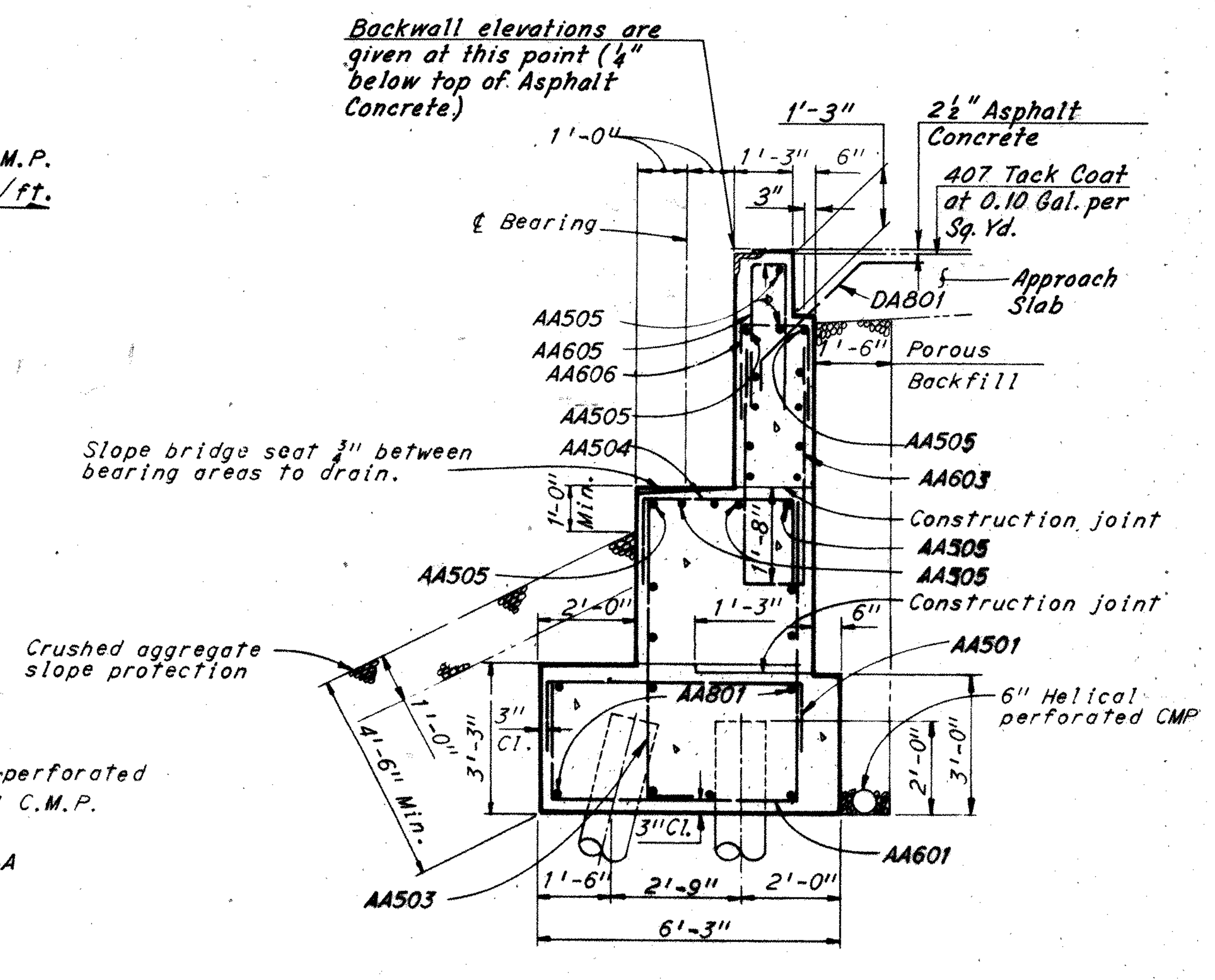
SECTION B-B



SECTION C-C



SECTION D-D



SECTION A-A

Notes:
For roadway end dam details see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4, **and Sheet 359.**
AA401 bars shall be placed 2½"± below top of bridge seat.
n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.
For reinforcement schedule see Sheet 16/19
All battered piles are battered 3 in 12.
Pile dimensions are measured along bottom of footing.
All piles are 12" ϕ cast-in-place concrete.
Only that portion of C.M.P. within the porous backfill shall be perforated.
E denotes East wingwall.
W denotes West wingwall.
○→ Denotes battered piles.
Piles not shown in elevations.
For details of C.M.P. outlet at side slopes, see Sheet 359.

H.N.T.B. BRIDGE NO. 13 | Revised 6-4-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK | 5/19

SOUTH ABUTMENT

RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD

BR. NO. STA. 30-1493 — STA. 957 + 34.25
SCALE: 1/4" = 1'-0" — STA. 966 + 96.48

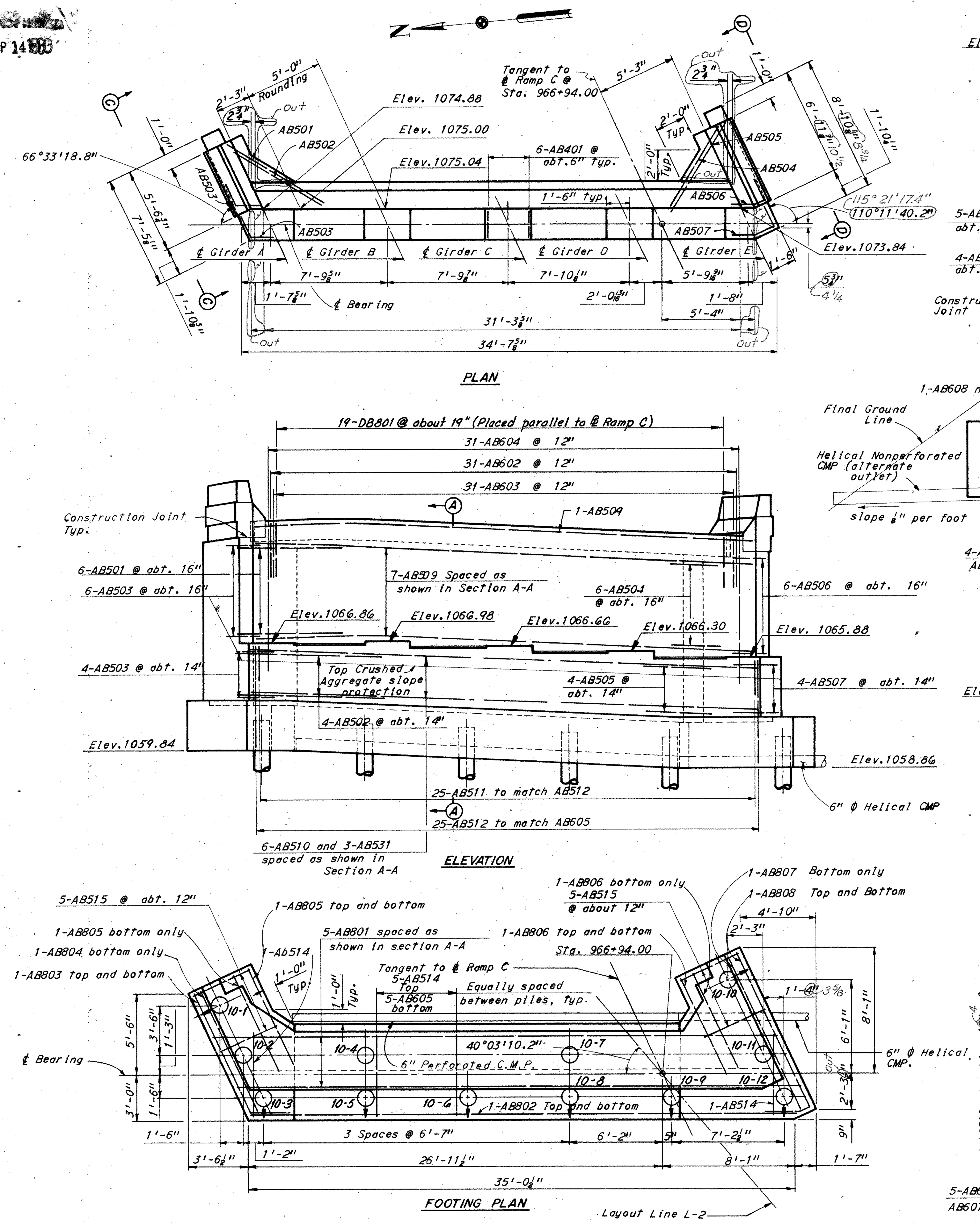
RELOCATED U.S. 30

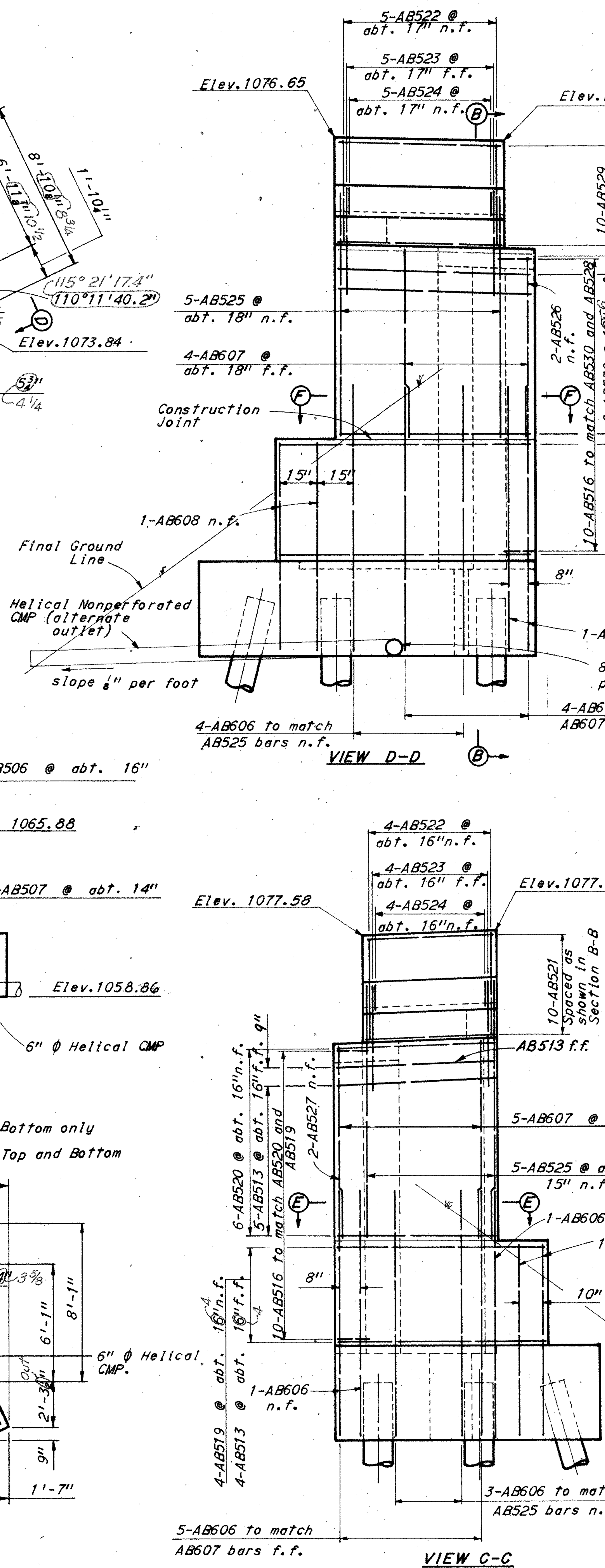
CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
a.m.s. DATE 11-1-69	DATE	MAG DATE 6-18-70	MJK DATE 11-24-71	1668

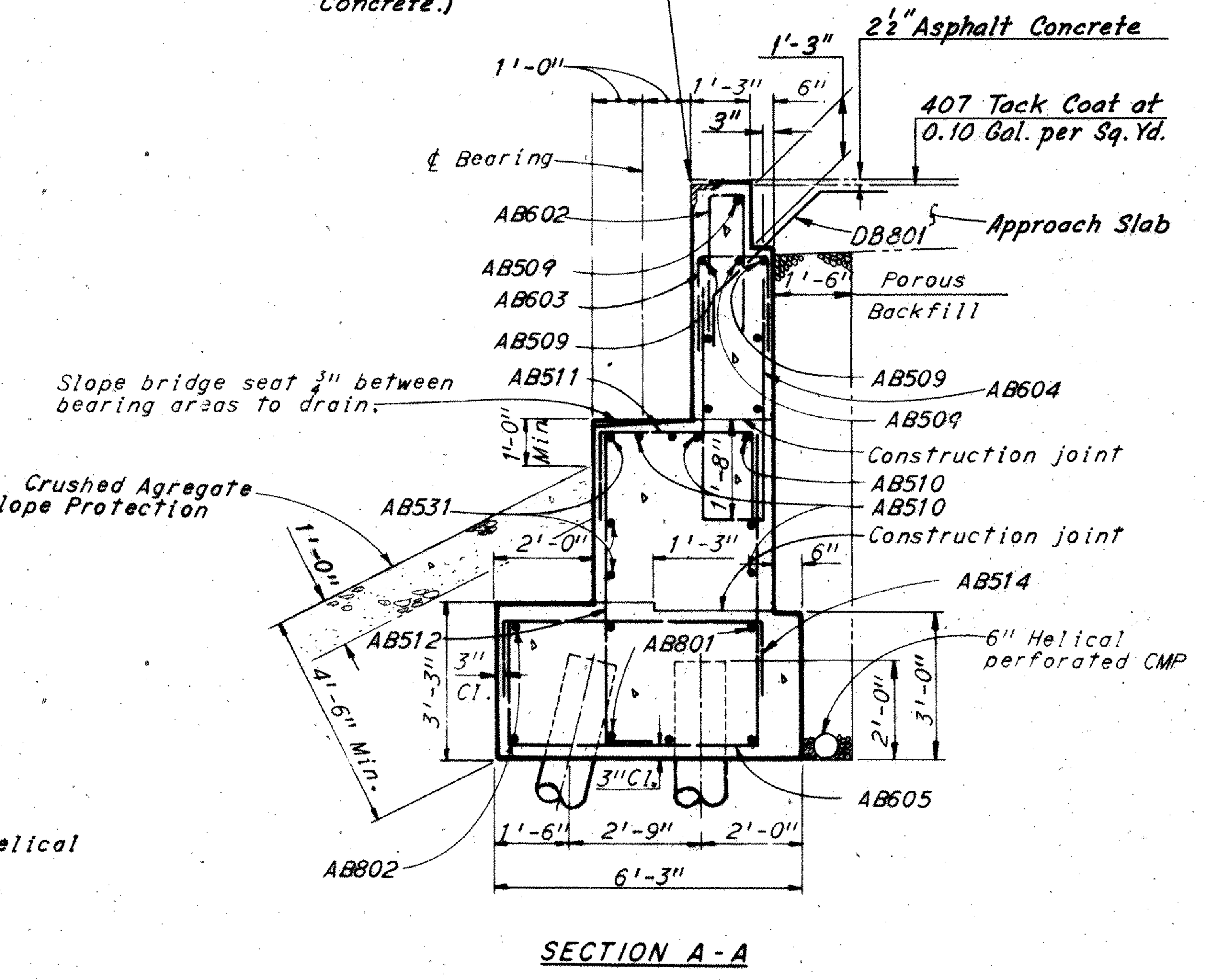
FED. ROAD DIV. NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO		

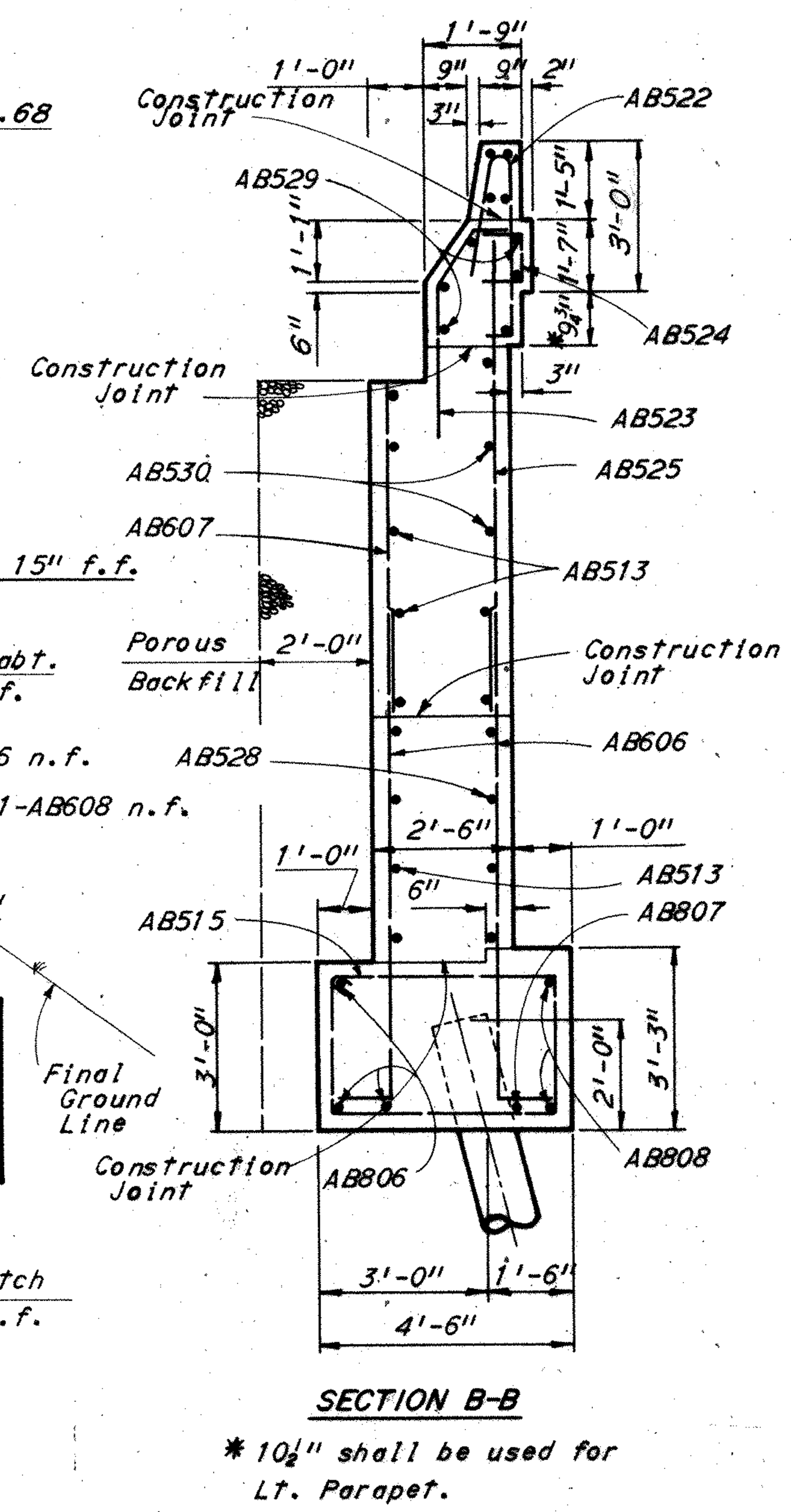
STARK COUNTY
STA-30-14.12
STA-77-9.22





Backwall Elevations are given at this point (¼" below top of Asphalt Concrete.)





✱ 10½" shall be used for Lt. Parapet.

Notes:

For roadway end dam details see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4, **and Sheet 359.**

AB401 bars shall be placed 2¼"± below top of bridge seat.

n.f. denotes near face, f.f. denotes far face.

○→ Denotes battered piles.

For reinforcement schedule see Sheet 16/19

Only that portion of the CMP located in the porous backfill shall be perforated.

All battered piles are battered 3 in 12.

Pile dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

For Section E-E, see Sheet 14/19

For Section F-F, see Sheet 15/19

For details of C.M.P. outlet at side slopes, see sheet 359.

H.N.T.B. BRIDGE NO. 13 | Revised 6-4-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK | 6/19

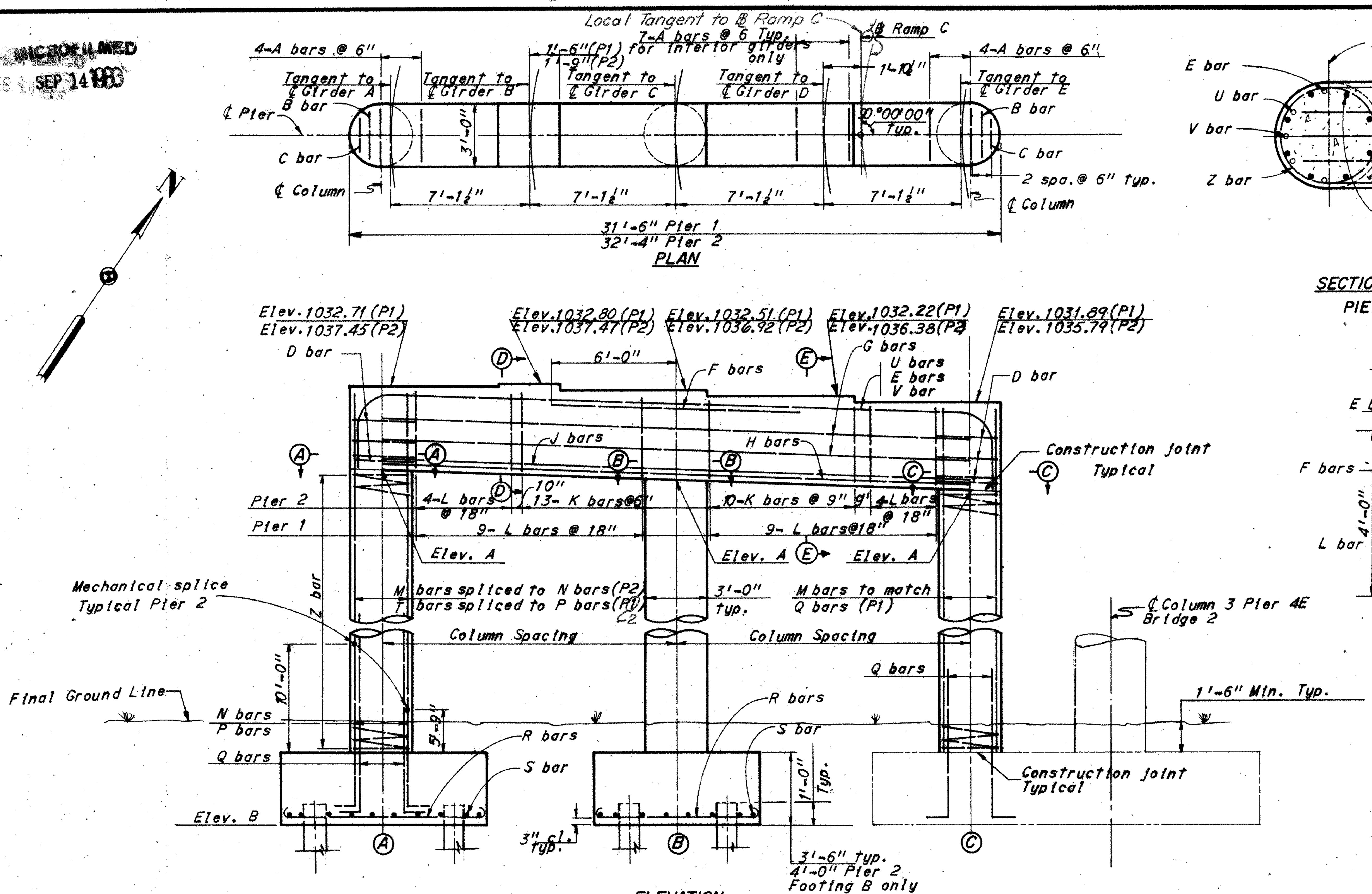
NORTH ABUTMENT
RAMP C OVER I-77 AND
PENNSYLVANIA RAILROAD
BR. NO. STA. 30-1493 — STA. 957 + 34.25
SCALE: 1/4"=1'-0" — STA. 966 + 96.48
RELOCATED U.S. 30
CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
OPK RAS DATE 3-24-70	DATE	BM DATE 5-14-70	MSK DATE 11-28-71	1668

Revised 4-28-77

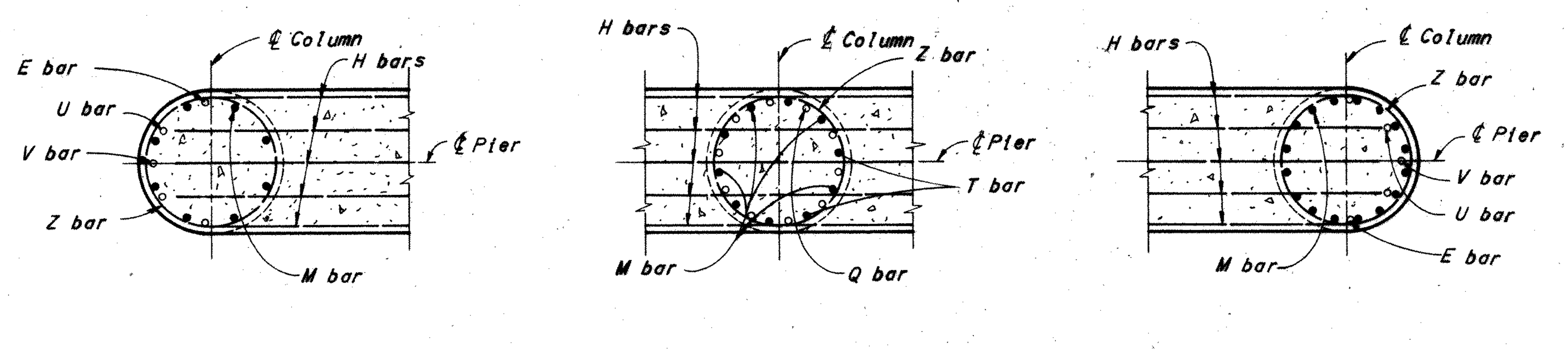
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

STARK COUNTY
STA-30-14.12
STA-77-9.22



PLAN

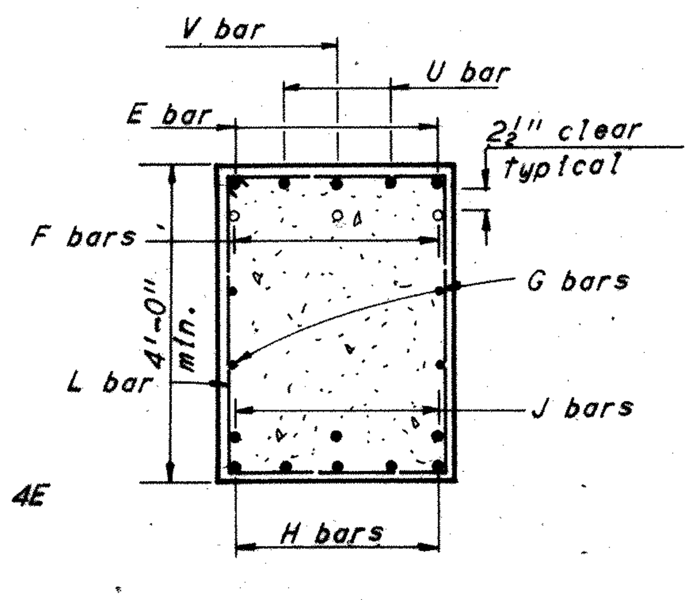
ELEVATION



SECTION A-A
PIER I

SECTION B-B
PIER 2

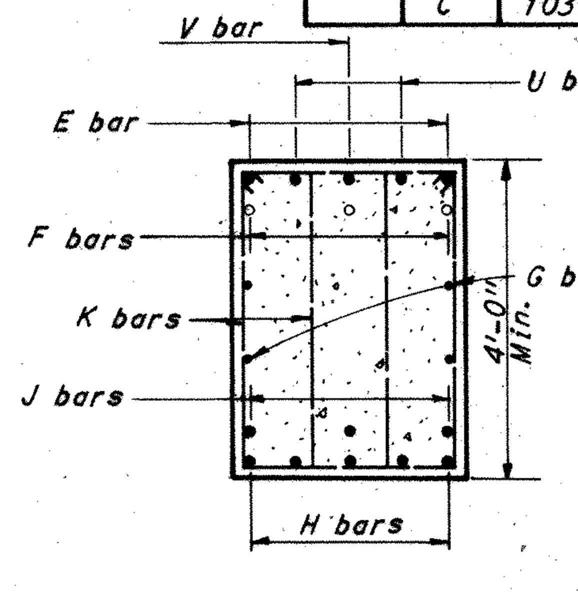
SECTION C-C
PIER I



SECTION D-D

COLUMN DATA								
Pier No.	Column	Elevation A	Reinforcing Steel					
			M bars	N bars	P bars	Q bars	T bars	Z bar
1	A	1028.77	8-PA1001	———	———	8-PA1004	———	1-SPA401
	B	1028.22	8-PA1002	———	———	8-PA1004	———	1-APA402
	C	1027.67	16-PA1003	———	———	16-#10 *	———	1-SPA403
2	A	1033.57	5-PB1401	5-# 14 *	5-#14 *	10 - #14 *	5-PB1410	1-SPB401
	B	1032.44	5-PB1402	5-PB1404	5-PB1405	10-PB1409	5-PB1411	1-SPB402
	C	1031.31	5-PB1403	5-PB1408	5-PB1406	10-PB1407	5-PB1412	1-SPB403

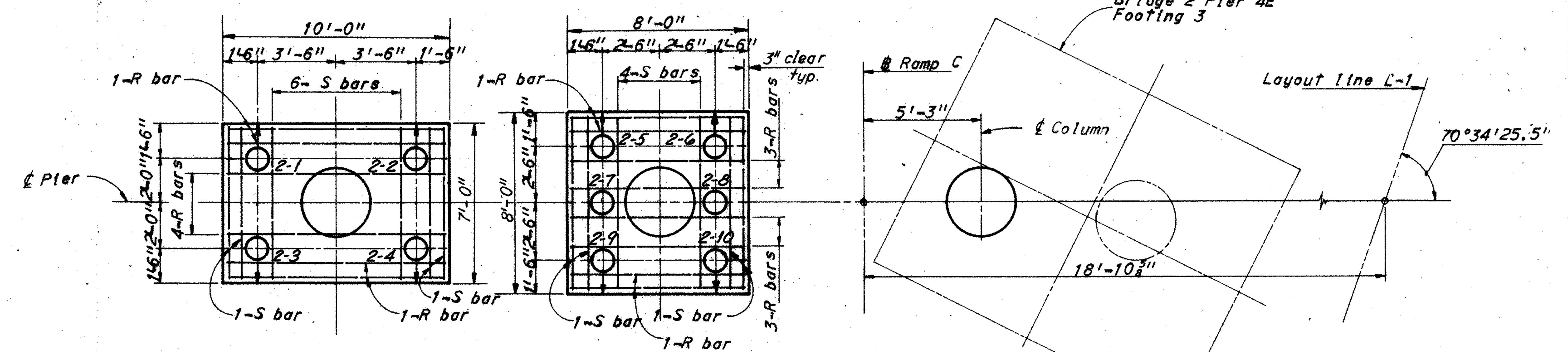
* Included with Bridge 2.



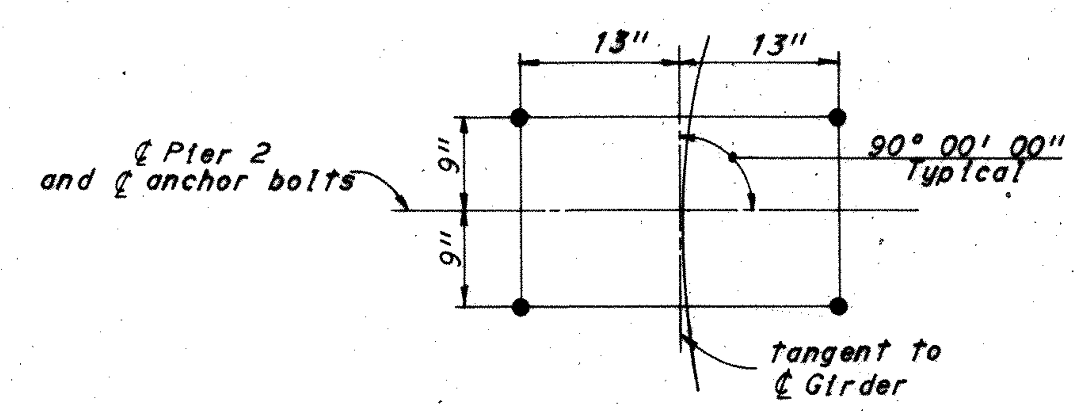
SECTION E-E

FOOTING DATA					
Pier No.	Column Spacing	Column	Elevation B	Reinforcing Steel	
				R- bar	S-bar
1	14'-3"	A	1009.80	PA901	PA603
		B	1009.80	PA801	PA801
		C	*	*	*
2	14'-8"	A	*	*	*
		B	997.80	PB1001	PB1101
		C	1004.30	PB801	PB1102

CAP BEAM REINFORCING STEEL													
Pier No	A bars	B bar	C bar	D bar	E bars	F bars	G bars	H bars	J bars	K bars	L bars	U bars	V bar
1	PA501	1-PA502	1-PA503	1-PA601	2-PA1005	———	PA602	5-PA1008	———	———	PA506	2-PA1006	1-PA1007
2	PA501	1-PB502	1-PB503	1-PB601	2-PB1103	3-PB1106	PB602	5-PB1107	3-PB1107	2-PB504	PB505	2-PB1104	1-PB1105

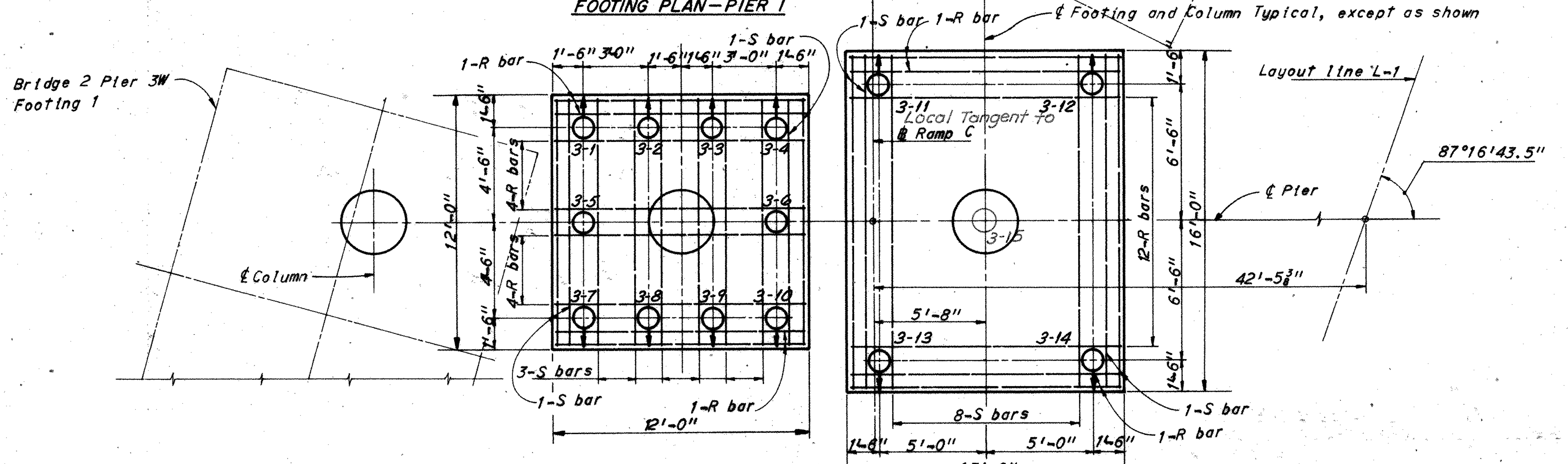


FOOTING PLAN—PIER I



ANCHOR BOLT PLAN
PIER 2

Note:
Splices in No.14 size reinforcing bars shall be made by an approved positive mechanical method designed to develop 125% of the specified yield strength of the bar.



FOOTING PLAN—PIER 2

Notes:

Special care shall be taken when placing reinforcing steel so as not to interfere with anchor bolt setting, Pier 2 only. See Sheet 214.

A bars, B bars and C bars shall be placed 2½"± below top of cap beam.

For reinforcement schedule see Sheet 16/19

All battered piles shall be battered 3 in 12.

Pile dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

(P1) Denotes Pier 1 and (P2) denotes Pier 2.

e.f. denotes each face.

Footing C of Pier 1 and footing A of Pier 2 will be built with Bridge 2. For details see sheets 239 and 240

All stirrups within 4 feet of ℄ column shall be placed with hooks in the bottom of cap. All others shall be placed with hooks in the top.

○→Denotes battered piles and direction of batter.

H.N.T.B. BRIDGE NO. 13 | Revised 6-4-75 | By RAS

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PIERS I AND 2

RAMP C OVER I-77 AND
PENNSYLVANIA RAILROAD

BR. NO. STA. 30-1493 STA. 957 + 34.25
SCALE: 1/4" = 1'-0" STA. 966 + 96.48

RELOCATED U.S. 30

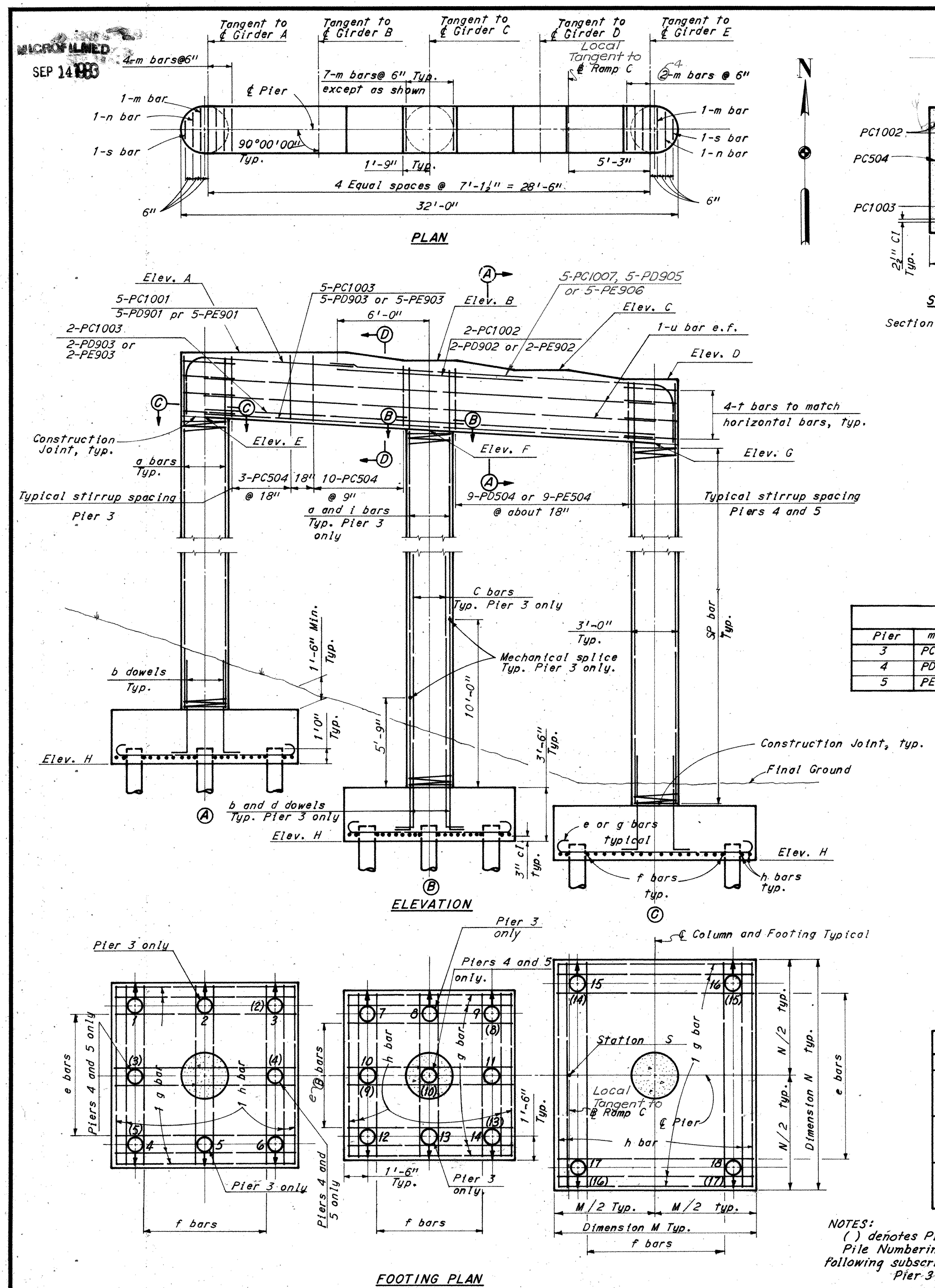
CANTON STARK COUNTY OHIO

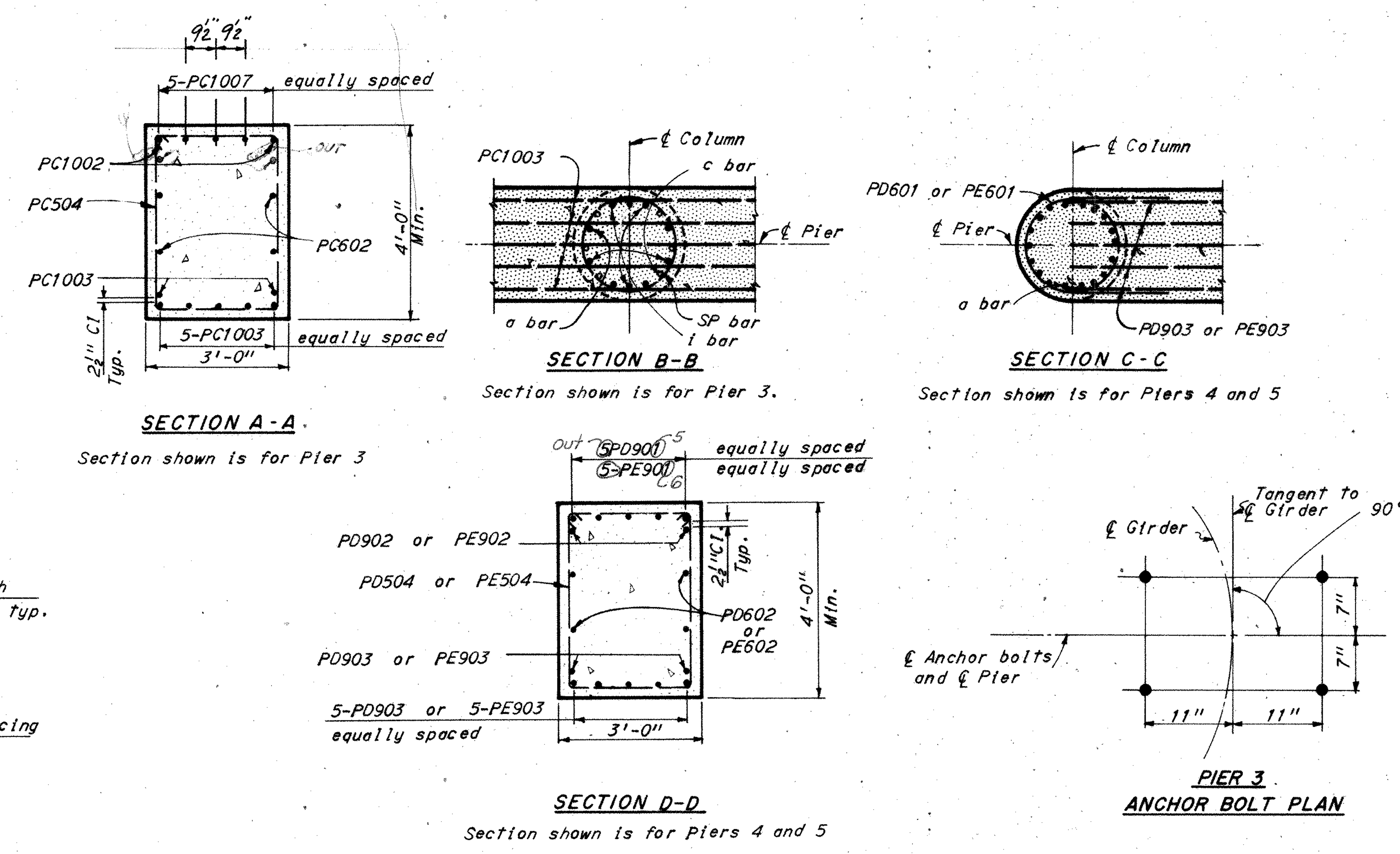
DRAWN B.M. DATE 4/16/70	TRACED DATE	CHECKED KSS DATE 5/26/70	REVIEWED MSK DATE 11-20-71	REVISED 1668

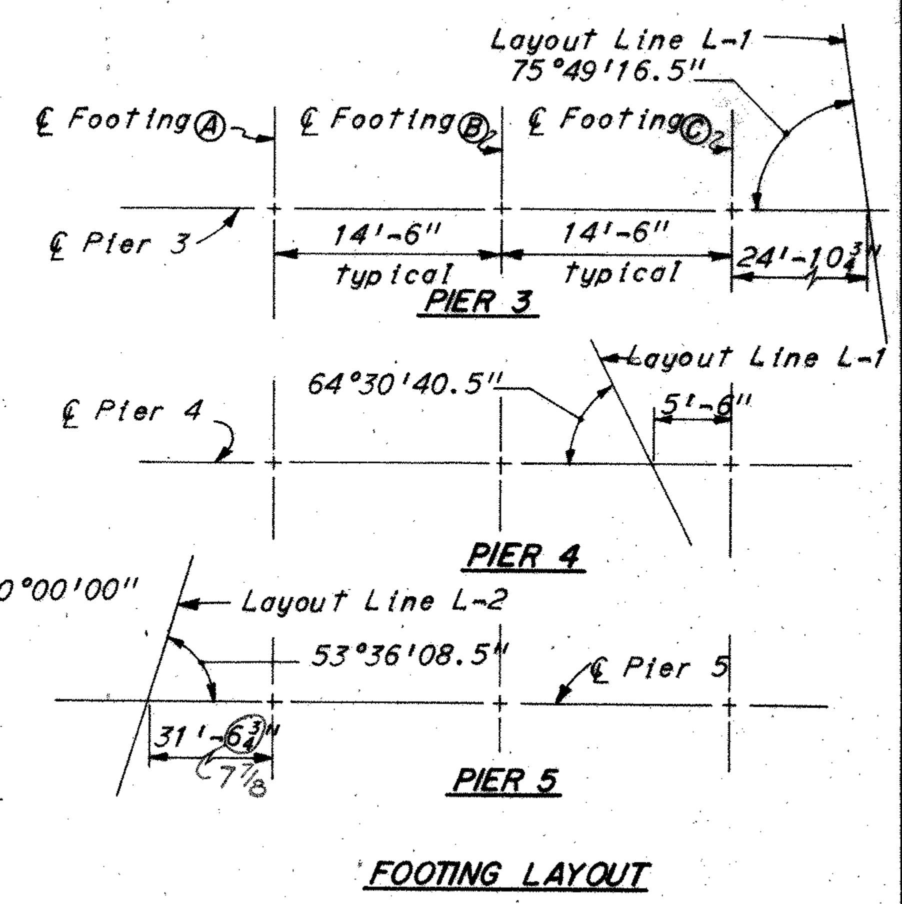
Revised 4-28-77

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			312 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22







CAP BEAM DATA												
Pier	m bar	n bar	s bar	Elev.A	Elev.B	Elev.C	Elev. D	Elev.E	Elev.F	Elev.G	t bar	u bar
3	PC501	PC502	PC503	1044.20	1043.65	1043.09	1042.50	1040.11	1039.25	1038.40	PC601	PC602
4	PD501	PD502	PD503	1048.61	1048.07	1047.50	1046.91	1044.52	1043.66	1042.81	PD601	PD602
5	PE501	PE502	PE503	1052.93	1052.38	1051.82	1051.23	1048.84	1047.98	1047.13	PE601	PE602

COLUMN REINFORCING STEEL							
Pier	Column	a bars	‡ b dowels	c bars	‡ d dowels	i bar	SP bar
3	A	5-PC1401	5-PC1404	6-PC1406	5-PC1407	5-PC1409	1-SPC401
	B	5-PC1402	5-PC1405 4	6-PC1406	5-PC1407	5-PC1408	1-SPC402
	C	5-PC1403	5-PC1404	6-PC1406	5-PC1407	5-PC1405	1-SPC403
4	A	16-PD1101	16-PD1104	———	———	———	1-SPD401
	B	16-PD1102	16-PD1104	———	———	———	1-SPD402
	C	16-PD1103	16-PD1104	———	———	———	1-SPD403
5	A	18-PE1101	18-PE1104	———	———	———	1-SPE401
	B	18-PE1102	18-PE1104	———	———	———	1-SPE402
	C	18-PE1103	18-PE1104	———	———	———	1-SPE403

‡ "b" dowels shall be matched with "a" bars and "d" dowels shall be matched with "i" bars, typ. Pier 3 only.

FOOTING DATA									
Pier	Station S	Footing	Elev. H	Dimension M	Dimension N	e bars	f bars	g bars	h bars
3	960+47.00	A	1003.30	12'-0"	12'-0"	8-PC901	8-PC1004	1-PC901	1-PC1004
		B	1000.80	11'-0"	11'-0"	8-PC1005	8-PC1005	1-PC1005	1-PC1005
		C	1000.80	13'-0"	15'-0"	12-PC801	9-PC1006	1-PC801	1-PC1006
4	961+34.00	A	1009.30	10'-0"	10'-0"	8-PD904	7-PD802	1-PD904	1-PD802
		B	1004.30	11'-0"	11'-0"	8-PD1001	8-PD801	1-PD1001	1-PD801
		C	1003.30	11'-0"	10'-0"	7-PD801	7-PD802	1-PD801	1-PD802
5	962+21.00	A	1009.30	10'-0"	10'-0"	8-PD904	7-PE801	1-PE904	1-PE801
		B	1004.80	12'-0"	12'-0"	8-PE1001	8-PE905	1-PE1001	1-PE905
		C	1002.30	11'-0"	10'-0"	7-PE802	7-PE801	1-PE802	1-PE801

NOTES:
( ) denotes Piers 4 and 5 only.
Pile Numbering Designations shall be proceeded with the following subscripts:
Pier 3:4 ; Pier 4:5 ; Pier 5:6 ; i.e. 4-1, 4-2, etc.

Notes:

Special care shall be taken when placing reinforcing steel so as not to interfere with anchor bolt setting. Pier 3 only. See sheet 214.

All stirrups within 4 feet of ℄ of column shall be placed with hooks in the bottom of cap. All others shall be placed with hooks in the top.

m, n, and s bars shall be placed 2½" ± below top of cap beam.

For reinforcement schedule see Sheet 17/19

All battered piles shall be battered 3 in 12.

Pile dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

○→ denotes battered piles.

e.f. denotes each face.

Splices in No. 14 size reinforcing bars shall be made by an approved positive mechanical method designed to develop 125% of the specified yield strength of the bar.

Bars pre-fixed "PC" are for Pier 3, bars pre-fixed "PD" are for Pier 4 and bars pre-fixed "PE" are for Pier 5.

H.N.T.B. BRIDGE NO. 13 | Revised 6-4-75 | By RAS

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8/19

PIERS 3, 4 AND 5
RAMP C OVER I-77 AND
PENNSYLVANIA RAILROAD

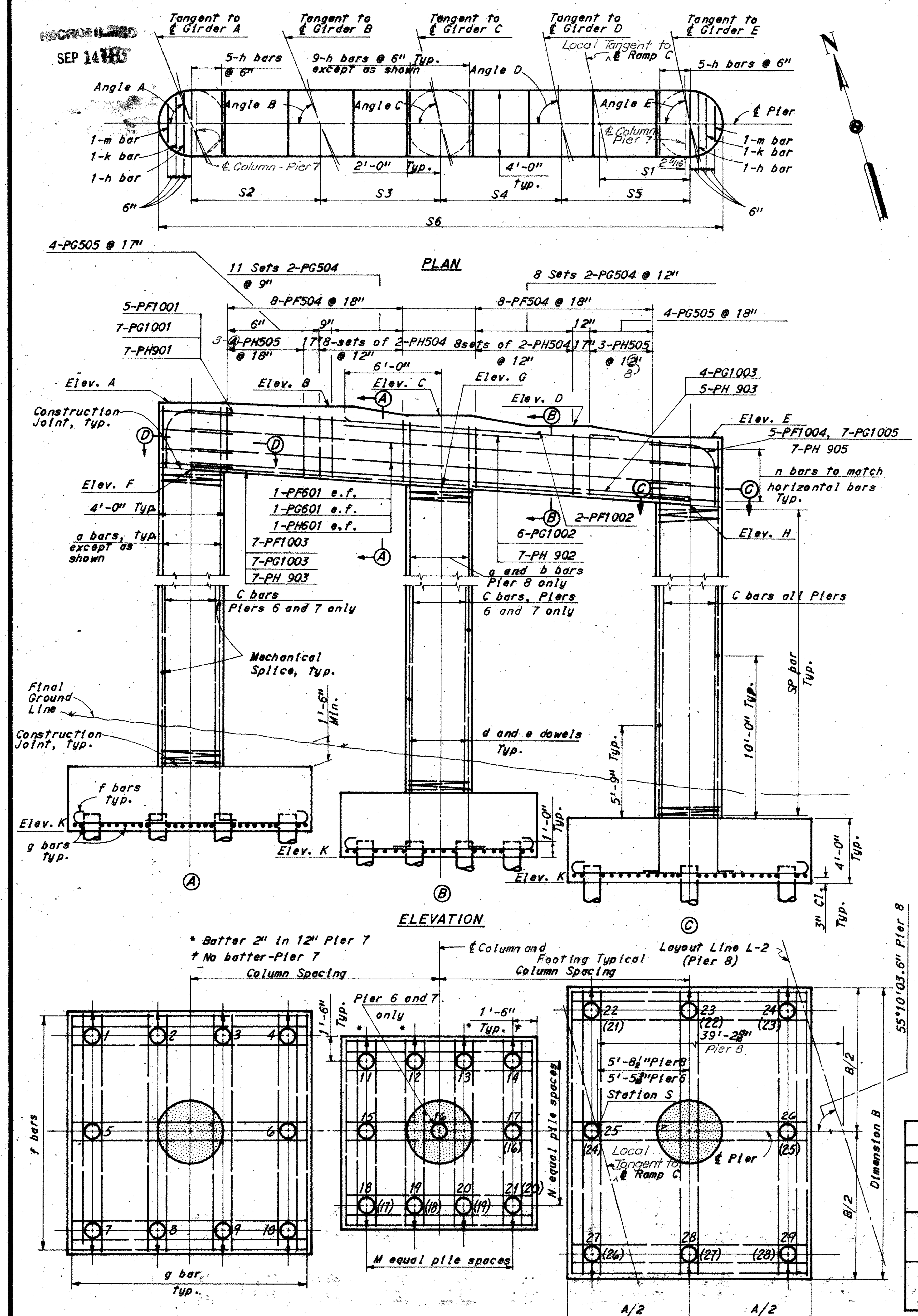
BR. NO. STA. 30-1493 STA. 957 + 34.25
SCALE: ¼"=1'-0" STA. 966 + 96.48

RELOCATED U.S. 30
CANTON STARK COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
OPK DATE 11-7-69	DATE	KSS DATE 6-4-70	MSK DATE 11-20-71	3-2-76 1668

Revised 4-28-77

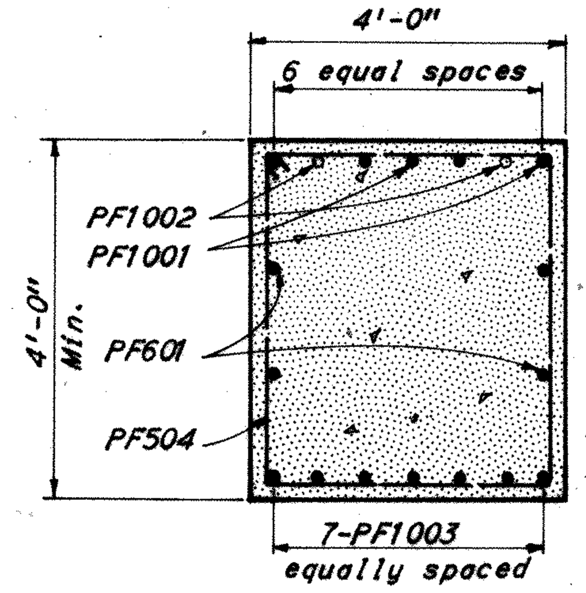
STARK COUNTY
STA-30-14.12
STA-77-9.22



PLAN

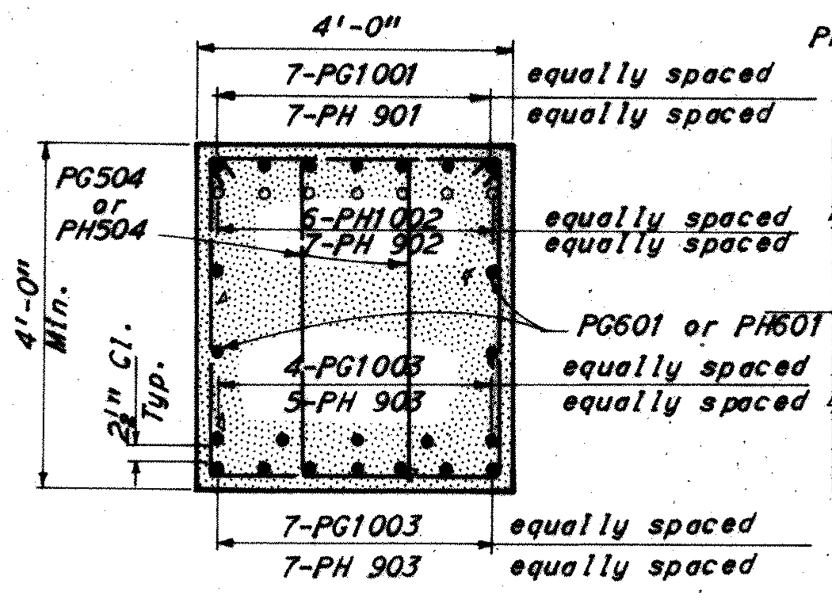
ELEVATION

FOOTING PLAN
(Except Footing C, Pier 7)



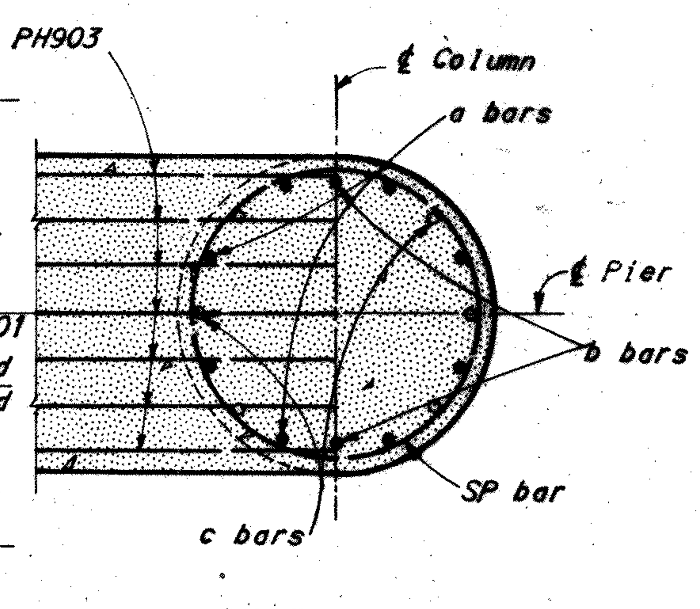
SECTION A-A

Section shown is for Pier 6 only.



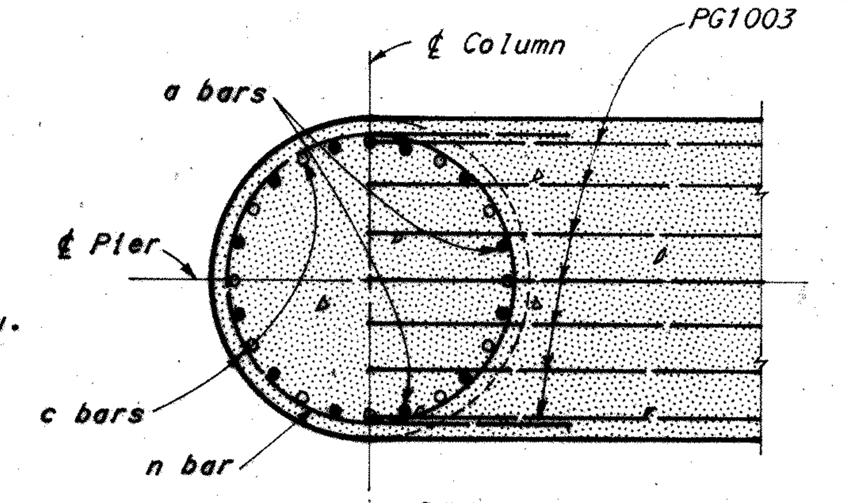
SECTION B-B

Section shown is for Piers 7 and 8 only.



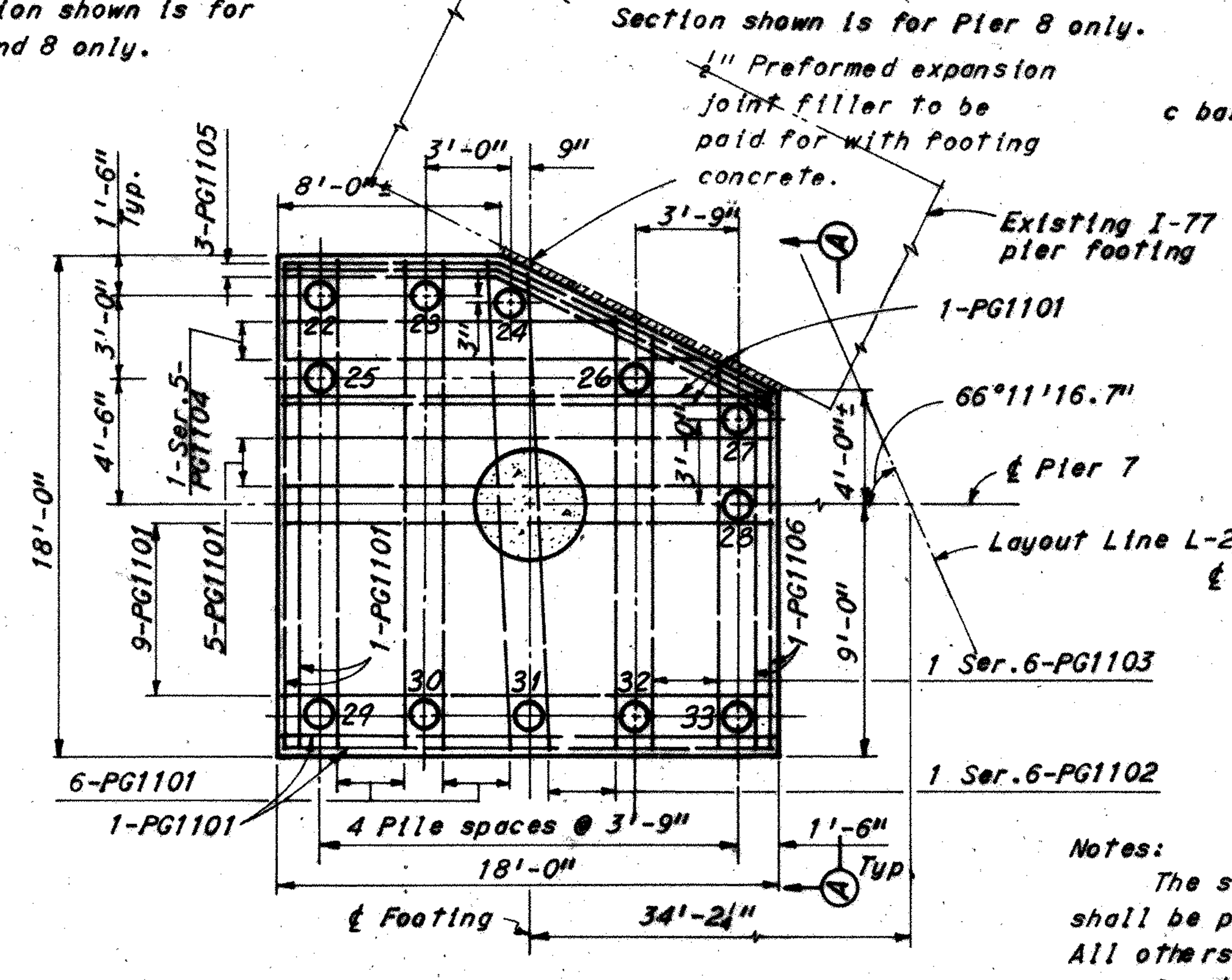
SECTION C-C

Section shown is for Pier 8 only.

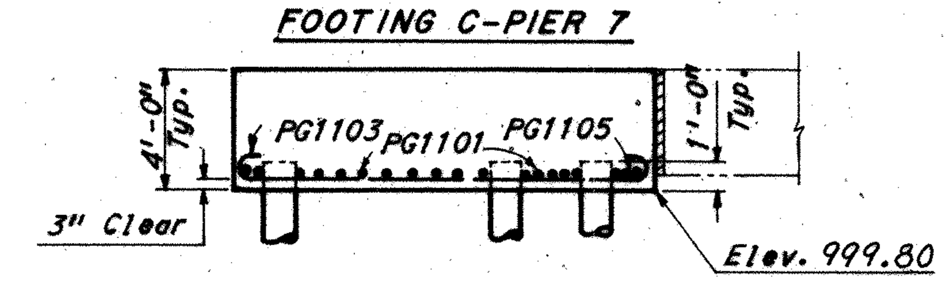


SECTION D-D

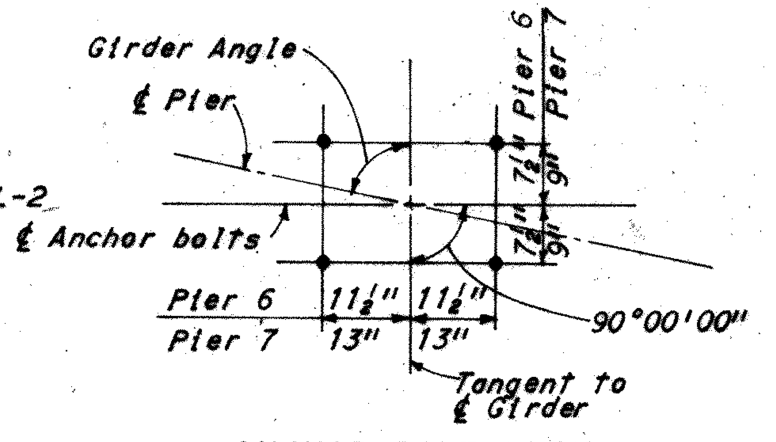
Section shown is for Pier 7 only, Pier 6 is similar except number of column bars



FOOTING C-PIER 7



VIEW A A



ANCHOR BOLT PLAN
Piers 6 and 7 only

CAP BEAM DATA			
Pier	6	7	8
Elev. A	1057.30	1063.42	1066.82
Elev. B	1057.23	1063.27	1066.84
Elev. C	1056.59	1062.56	1066.27
Elev. D	1055.95	1061.86	1065.71
Elev. E	1055.26	1061.08	1065.09
Elev. F	1053.16	1059.28	1062.70
Elev. G	1052.14	1058.11	1061.84
Elev. H	1051.12	1056.94	1060.97
S1	5'-5 9/16"	6'-2 11/16"	5'-8 1/8"
S2	7'-4 5/8"	8'-3 7/16"	7'-8 3/16"
S3	7'-4 3/4"	8'-4"	7'-8 7/16"
S4	7'-4 7/8"	8'-4 5/8"	7'-8 11/16"
S5	7'-4 15/16"	8'-5 1/4"	7'-8 15/16"
S6	33'-7 1/4"	37'-0 3/4"	34'-10 1/4"
h bar	PF501	PG501	PH501
k bar	PF502	PG502	PH502
m bar	PF503	PG503	PH503
n bars	4-PF602	4-PG602	4-PH602
Angle A	74°49'17.8"	59°32'06.2"	68°12'-48.0"
Angle B	74°34'44.6"	59°00'28.8"	67°51'-20.6"
Angle C	74°19'42.6"	58°27'40.3"	67°29'-09.0"
Angle D	74°04'10.5"	57°53'36.2"	67°06'-10.7"
Angle E	73°48'06.6"	57°18'11.8"	66°42'-23.3"

COLUMN REINFORCING STEEL							
Pier	Column	a bars	b bars	c bars	≠ d dowels	≠ e dowels	SP bar
6	A	10-PF1401	-	10-PF1404	10-PF1406	10-PF1405	SPF401
	B	10-PF1402	-	10-PF1404	10-PF1406	10-PF1405	SPF402
	C	10-PF1403	-	10-PF1404	10-PF1406	10-PF1405	SPF403
7	A	12-PG1401	-	12-PG1404	12-PG1406	12-PG1405	SPG401
	B	12-PG1402	-	12-PG1404	12-PG1406	12-PG1405	SPG402
	C	12-PG1403	-	12-PG1404	12-PG1406	12-PG1405	SPG403
8	A	6-PH1401	6-PH1404	-	6-PH1409	6-PH1408	SPH401
	B	6-PH1402	6-PH1405	-	6-PH1409	6-PH1408	SPH402
	C	8-PH1403	2-PH1406	6-PH1407	8-PH1409	8-PH1408	SPH403

≠ "d" dowels shall be matched with "a" bars and "e" dowels shall be matched with "b" and "c" bars.

FOOTING DATA											
Pier	Station S	Column Spacing	Footing	Elev. K	M	N	No. Piles	Dimension A	Dimension B	f bars	g bars
6	963+08.00	14'-9 5/8"	A	1007.80	3	1	8	15'-0"	15'-0"	16-PF801	19-PF1101
			B	1004.30	3	2	11	12'-0"	12'-0"	12-PF902	16-PF901
			C	999.80	2	1	6	15'-0"	19'-0"	16-PF801	18-PF1102
7	964+36.00	16'-6 3/4"	A	998.80	3	2	10	12'-0"	16'-0"	16-PG801	16-PG1107
			B	998.80	3	3	13	12'-0"	15'-0"	16-PG1004	16-PG1108
			C	999.80	-	-	12	-	-	-	-
8	965+92.00	15'-5 1/8"	A	1007.80	3	2	10	13'-6"	13'-6"	14-PH904	13-PH1101
			B	1007.80	3	3	12	13'-6"	13'-6"	13-PH1101	13-PH1101
			C	1007.80	2	2	8	12'-0"	15'-0"	16-PH801	12-PH1001

NOTES: ( ) denotes Pier 8 only.
Pile Numbering Designations shall be preceeded with the following subscripts:
Pier 6:7 ; Pier 7:8 ; Pier 8:9 ; 7-1, 7-2, etc.

Notes:

The stirrups within 4 feet of ℄ of columns shall be placed with hooks in the bottom of cap. All others shall be placed in the top.

Special care shall be taken when placing reinforcing steel so as not to interfere with anchor bolt setting. Piers 6 and 7 only. See sheet 214

h, k and m bars shall be placed 2 1/2"± below top of cap beam.

For reinforcement schedule see Sheet 17/19 and 18/19.

Pile dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

○→ denotes battered piles.

All battered piles shall be battered 3 in 12 except as shown.

e.f. denotes each face.

Splice in No. 14 size reinforcing bars shall be made by an approved positive mechanical method designed to develop 125% of the specified yield strength of the bar.

Bars pre-fixed "PF" are for Pier 6, bars pre-fixed "PG" are for Pier 7 and bars pre-fixed "PH" are for Pier 8.

H.N.T.B. BRIDGE NO. 13 — Revised 6-4-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK — 9/19

PIERS 6,7 AND 8
RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD
BR. NO. STA. 30-1493 — STA. 957 + 34.25
SCALE: 1/4"=1'-0" — STA. 966 + 96.48
RELOCATED U.S. 30
CANTON — STARK COUNTY — OHIO

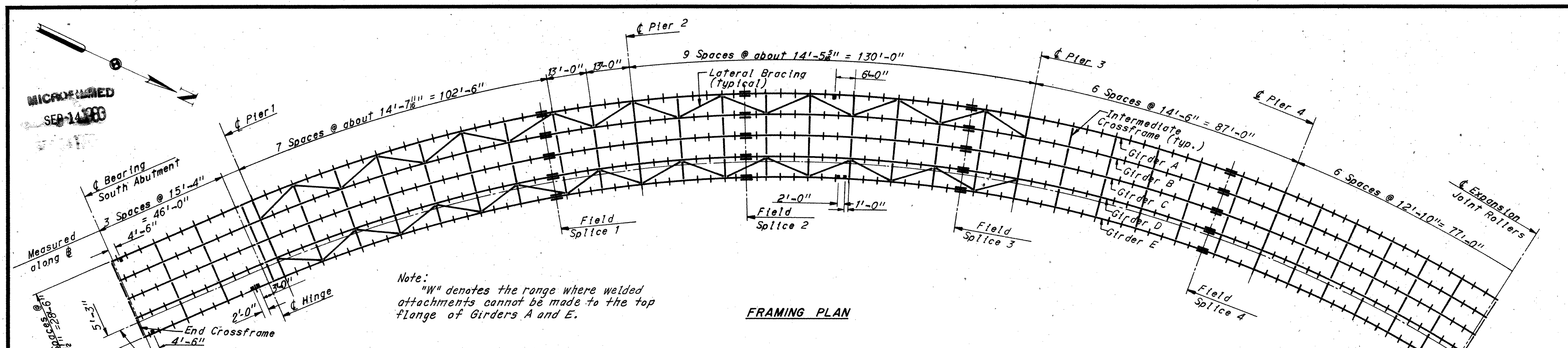
DRAWN OPK DATE 11-17-69	TRACED DATE	CHECKED KSS DATE 6-10-70	REVIEWED MSK DATE 11-20-71	REVISED

1668

Revised 4-28-77

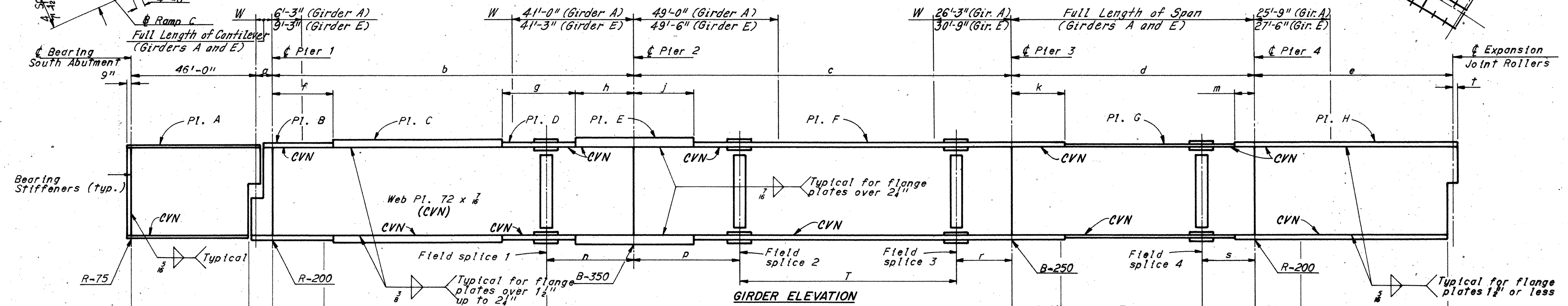
FED ROAD DIV. NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	314/389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22



Note:
"W" denotes the range where welded attachments cannot be made to the top flange of Girders A and E.

FRAMING PLAN



CVN - See Sheet 214.

GIRDER ELEVATION

TABLE OF DIMENSIONS

Girder	a	b	c	d	e	f	g	h	j	k	m	n	p	r	s	t
A	6'-3⅜"	135'-3⅜"	136'-10⅜"	91'-7⅝"	81'-0¾"	20'-0"	25'-0"	20'-0"	20'-0"	18'-0"	7'-0"	31'-7"	38'-5¼"	20'-0"	20'-0"	7"
B	6'-2⅛"	133'-2⅞"	134'-9⅞"	90'-2¾"	79'-9 13/16"	21'-0"	30'-0"	17'-0"	18'-0"	19'-0"	9'-0"	31'-1⅞"	37'-10"	19'-8¾"	19'-8¾"	7"
C	6'-1⅞"	131'-1¼"	132'-7⅞"	88'-9⅜"	78'-6⅞"	24'-0"	32'-0"	15'-0"	18'-0"	16'-0"	8'-0"	30'-7⅜"	37'-2⅝"	19'-4 11/16"	19'-4 11/16"	7"
D	6'-0¼"	129'-0⅞"	130'-6⅞"	87'-4⅝"	77'-3⅝"	23'-0"	32'-0"	16'-0"	17'-0"	15'-0"	10'-0"	30'-1⅞"	36'-7⅞"	19'-1"	19'-1"	7"
E	5'-11⅜"	126'-11⅜"	128'-5⅞"	85'-11⅜"	76'-1"	17'-0"	37'-0"	14'-0"	14'-0"	11'-0"	6'-0"	29'-7⅜"	36'-0¾"	18'-9⅜"	18'-9⅜"	7"

TABLE OF PLATES

Pl. A	Pl. B	Pl. C	Pl. D	Pl. E	Pl. F	Pl. G	Pl. H
12x⅞	18x1¼	18x2	18x1¼	18x2⅞	18x1¼	14x⅞	14x1⅛
12x⅞	18x1¼	18x1⅞	18x1¼	18x2⅝	18x1¼	14x⅞	14x1⅛
12x⅞	18x1⅛	18x1⅝	18x1⅛	18x2½	18x1⅛	14x⅞	14x1
12x⅞	18x1	18x1½	18x1	18x2¼	18x1⅛	14x⅞	14x1
12x⅞	18x1	18x1½	18x1	18x2¼	18x1⅛	14x⅞	14x1

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS

Girder	¢ Brg. S. Abut.	.25	.50	.75	¢ Pier 1	.1	.2	.3	.4	.5	.6	.7	.8 *	.9	¢ Pier 2	.1	.2	.3 *	.4
A	1039.56	1039.90	1040.27	1040.66	1041.06	1041.49	1041.95	1042.42	1042.92	1043.45	1044.00	1044.57	1044.95	1045.73	1046.31	1046.91	1047.53	1048.04	1048.81
B	1039.69	1040.02	1040.38	1040.75	1041.15	1041.57	1042.01	1042.48	1042.97	1043.49	1044.02	1044.58	1044.96	1045.73	1046.31	1046.91	1047.53	1048.04	1048.81
C	1039.48	1039.78	1040.11	1040.45	1040.82	1041.21	1041.62	1042.06	1042.52	1043.01	1043.51	1044.04	1044.40	1045.15	1045.72	1046.32	1046.94	1047.45	1048.22
D	1039.27	1039.54	1039.84	1040.15	1040.49	1040.85	1041.23	1041.64	1042.07	1042.52	1043.00	1043.50	1043.85	1044.57	1045.13	1045.73	1046.34	1046.86	1047.62
E	1039.07	1039.30	1039.56	1039.85	1040.16	1040.49	1040.84	1041.22	1041.62	1042.04	1042.49	1042.96	1043.29	1043.99	1044.54	1045.14	1045.75	1046.27	1047.03

Girder	.5	.6	.7	.8	.9 *	¢ Pier 3	.25	.50	.75 *	¢ Pier 4	.25	.50	.75	¢ Brg. Exp. Jt.
A	1049.45	1050.09	1050.73	1051.38	1051.72	1052.66	1053.73	1054.81	1056.02	1056.96	1057.91	1058.86	1059.81	1060.76
B	1049.45	1050.09	1050.73	1051.38	1051.72	1052.66	1053.73	1054.81	1056.02	1056.96	1057.91	1058.86	1059.81	1060.76
C	1048.86	1049.50	1050.14	1050.78	1051.13	1052.07	1053.14	1054.22	1055.43	1056.37	1057.32	1058.27	1059.22	1060.17
D	1048.27	1048.91	1049.55	1050.19	1050.54	1051.48	1052.55	1053.63	1054.84	1055.78	1056.73	1057.68	1058.63	1059.58
E	1047.68	1048.32	1048.96	1049.60	1049.95	1050.89	1051.96	1053.04	1054.25	1055.18	1056.14	1057.09	1058.04	1058.99

* Elevations given are at Field Splice.

BEARING STIFFENERS

Girder	S. Abut.	Pier 1	Pier 2	Pier 3	Pier 4
A	5x½	8x¾	8x1¼	8x¾	6x¾
B	5x½	8x¾	8x1¼	8x¾	6x¾
C	5x½	8x¾	8x1¼	8x¾	6x¾
D	5x½	8x¾	8x1	8x¾	6x¾
E	5x½	8x¾	8x1	8x¾	6x¾

DIMENSIONS FOR BOLSTER B-350 AND ROCKER R-350

	Dimensions (inches)												
	A	B	C	D	F	G	H	K	L	M	R	T	Y
B-350	4	22	4	—	⅞		20⅞	15	30	—	13¼	3½	1 15/16
R-350	4	22	4	3¼	⅞	12	20⅞	15	30	25	13¼	3½	1 15/16

Note:
The above table of dimensions applies to the standard details shown on the state of Ohio standard drawing No. RB-1-55 Revised 2-2-59.

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS AT GUTTERLINE

	¢ Brg. S. Abut.	.25	.50	.75	¢ Pier 1	.1	.2	.3	.4	.5	.6	.7	.8	.9	¢ Pier 2	.1	.2	.3	.4	.5
West Gutterline	1039.56	1039.91	1040.28	1040.66	1041.06	1041.52	1042.00	1042.48	1043.00	1043.51	1044.05	1044.61	1045.17	1045.74	1046.31	1046.92	1047.55	1048.20	1048.85	1049.51
East Gutterline	1039.07	1039.31	1039.57	1039.86	1040.16	1040.50	1040.87	1041.27	1041.66	1042.09	1042.52	1042.99	1045.48	1044.00	1044.54	1045.14	1045.76	1046.40	1047.04	1047.69

	.6	.7	.8	.9	¢ Pier 3	.25	.50	.75	¢ Pier 4	.25	.50	.75	¢ Brg. Exp. Jt.
West Gutterline	1050.15	1050.78	1051.41	1052.04	1052.66	1053.73	1054.81	1055.88	1056.96	1057.93	1058.88	1059.83	1060.76
East Gutterline	1048.34	1048.98	1049.61	1050.25	1050.89	1051.96	1053.04	1054.11	1055.18	1056.15	1057.10	1058.05	1058.99

Note:
The gutterline elevations shown have been adjusted for dead load deflections caused by the weight of concrete and wearing course and are the elevations required before the concrete deck is placed. No concrete shall be placed until the screed rails have been set for the entire unit.

Notes:

Top and bottom flanges are identical in size.

All stiffeners shall be placed normal to girder flanges.

All intermediate stiffener to web welds shall be ¼" continuous fillets on both sides of stiffeners.

For detail of field splices see Sheet 355

Scuppers shall be in accordance with Std. Dwg. SD-1-69 except that scupper pipes shall extend 8" below the bottom of the girders instead of 2".

Intermediate stiffeners shall be placed as shown on framing plan, equally spaced between crossframes or crossframes and bearing stiffeners or crossframes and splices.

End crossframe details shall be same as shown on Ohio Standard Drawing SD-1-69, Sheet 1 of 4.

For intermediate crossframe details see Sheet 360

All crossframes are intermediate crossframes unless shown otherwise.

For details of roadway end dam, see Ohio Standard Drawing SD-1-69, Sheet 2 of 4, and Sheet 359.

Intermediate stiffeners shall be Pls. 5 x 5/16 for flanges over 12", for 12" flanges use Pls. 5½ x ⅜.

For hinge details see sheet 358

For expansion joint details see sheet 356

For details at rockers and bolsters see Ohio Standard Drawing RB-1-55.

The girders shall be fabricated to lines parallel to profiles formed by top of pavement elevations directly over girders, plus the camber required to compensate for dead load deflection.

The allowance to be made in screed settings to compensate for dead load deflections due to concrete and wearing course are to be made above or below the top of the pavement elevations as required. Screeds may require further adjustment due to irregularities in fabricated steel.

For details of curb plates at concrete bridge railing see Ohio Standard Drawing SD-1-69, Sheet 2 of 4.

Dimensions to scuppers are measured along centerline of girders.

■ Denotes scupper.

Tension areas of bottom flange are denoted by T. For the top flange, the areas are in compression.

For details of expansion joint crossframe see sheet 360

For Camber and Deflection Table see Sheet 364

For details of intermediate stiffeners see Sheet 360.

For Underdeck light details, see Lighting Plans.

H.N.T.B. BRIDGE NO. 13 | Revised 6-9-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
10/19

FRAMING PLAN UNIT I

RAMP C OVER I-77 AND
PENNSYLVANIA RAILROAD

BR. NO. STA. 30-1493 — STA. 957 + 34.25
SCALE: 1" = 20'-0" — STA. 966 + 96.48

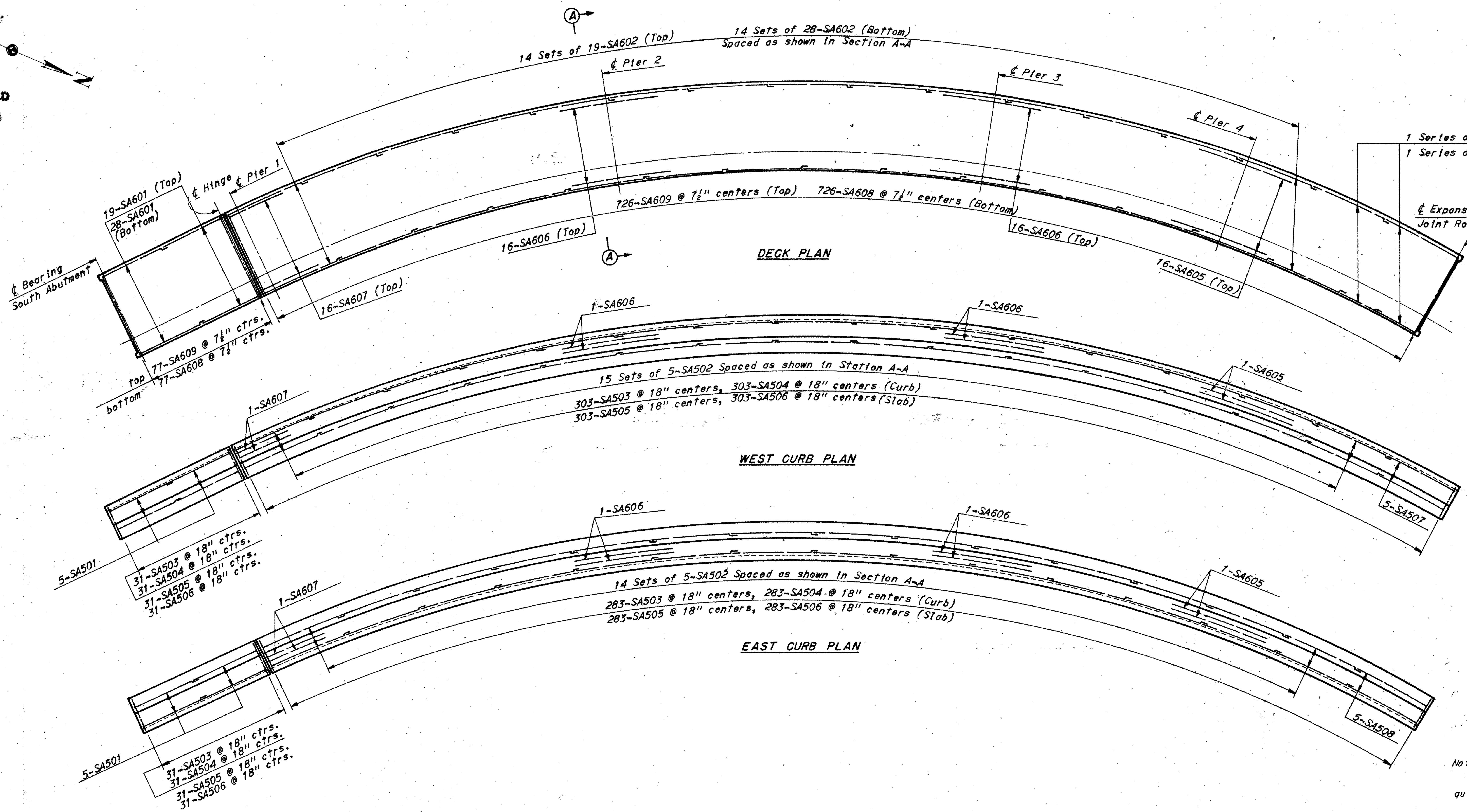
RELOCATED U.S. 30

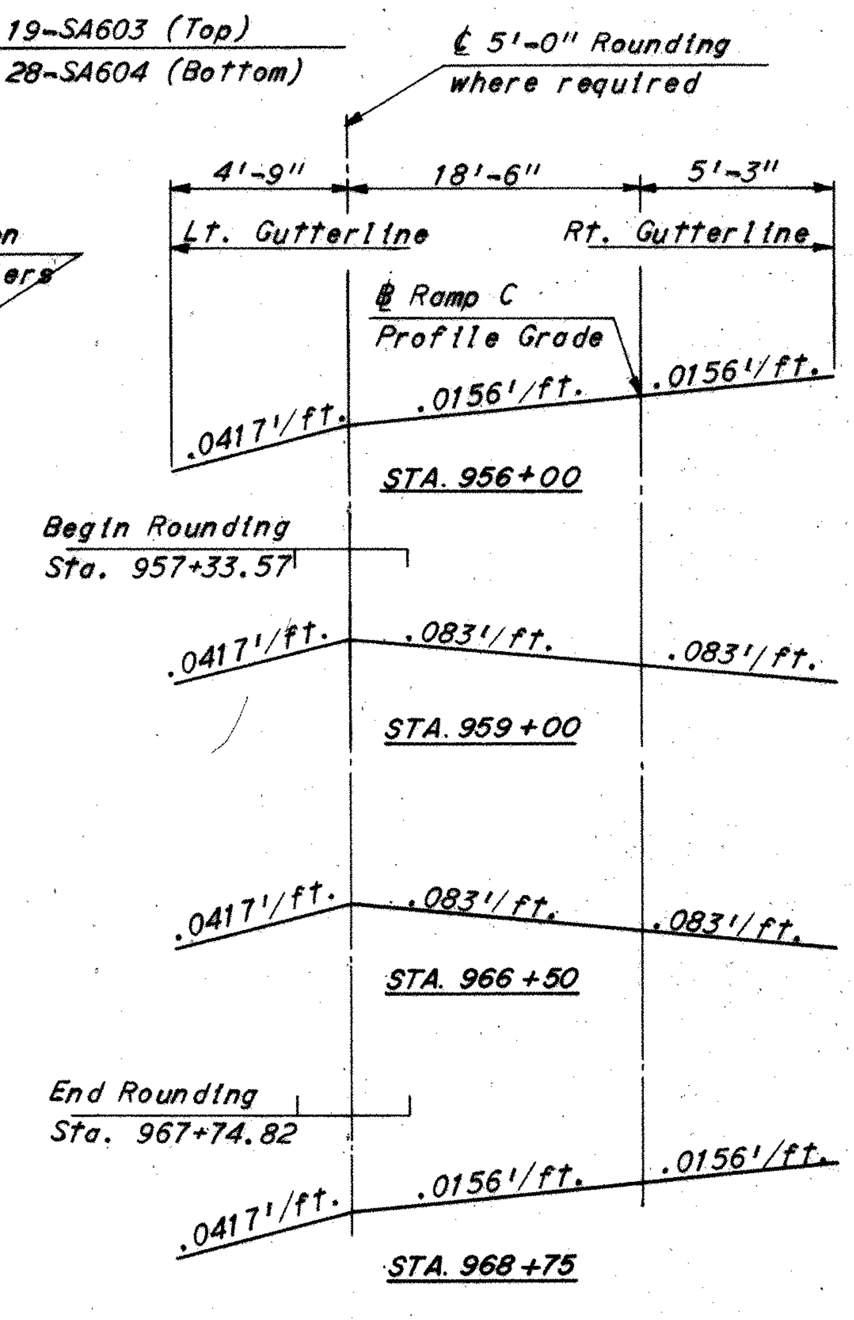
CANTON — STARK COUNTY — OHIO

DRAWN D.W.B. DATE 8-8-69	TRACED DATE	CHECKED KSS DATE 5-15-70	REVIEWED MJK DATE 11-20-71	REVISED 1668

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

STARK COUNTY
STA-30-14.12
STA-77-9.22





SUPERELEVATION DATA - RAMP C

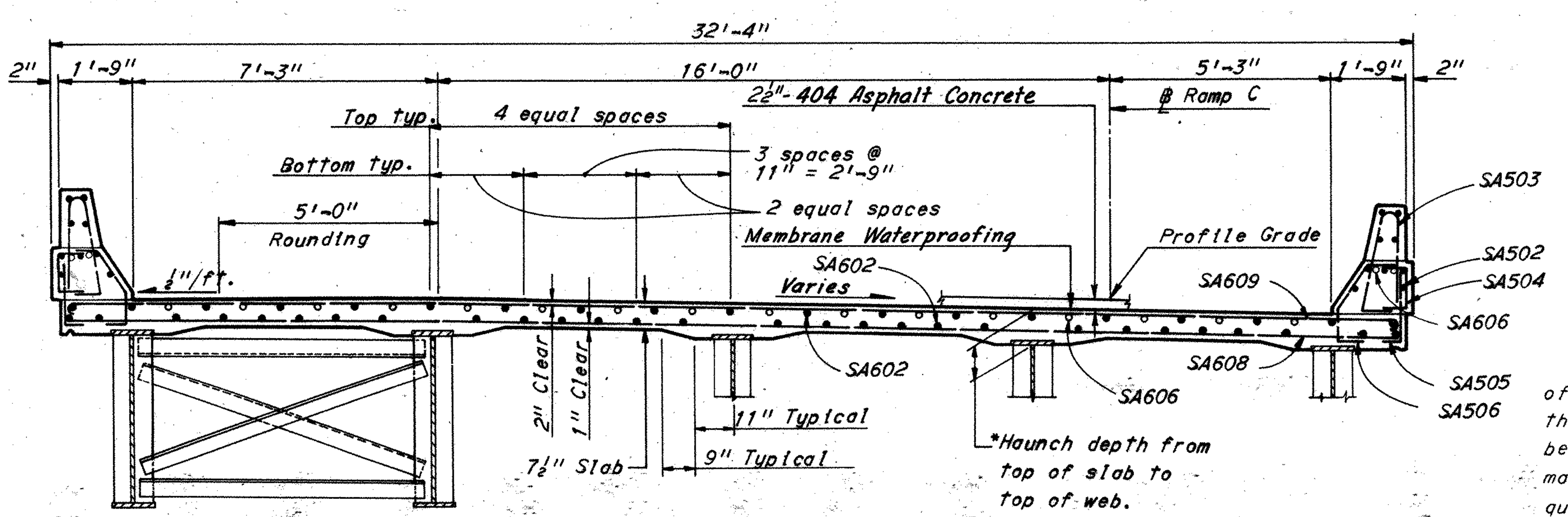
Notes:

Reinforcing steel shall be adjusted as required to clear scuppers.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For concrete railing details see Sheet 362
For deflection joint details see Sheet 361
Transverse reinforcing steel shall be placed radially.
For reinforcement schedule see Sheets 18/19 & 19/19.

For intermediate crossframe details see Sheet 360



SECTION A-A

HAUNCH DEPTHS	
Girder	Haunch Depth
A and B	10½"
C	10¼"
D and E	9¾"

*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.18 of the Construction and Materials Specifications.

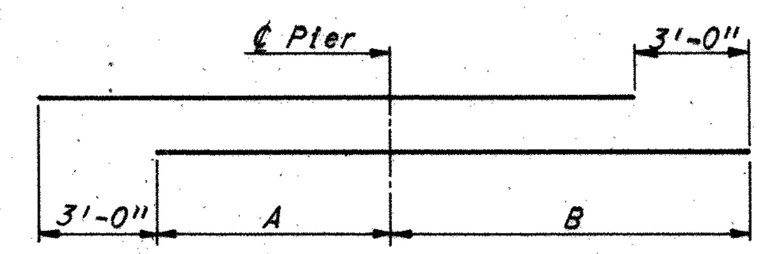


DIAGRAM SHOWING STAGGER OF SA605 AND SA606 BARS OVER PIERS

	A	B
Pier 2	21'-0"	31'-0"
Pier 3	19'-0"	33'-0"
Pier 4	17'-6"	17'-6"

H.N.T.B. BRIDGE NO. 13 — Revised 6-4-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 11/19
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DECK PLAN UNIT I

RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD

BR. NO. STA. 30-1493 — STA. 957 + 34.25
SCALE: 1" = 20'-0" — STA. 966 + 96.48

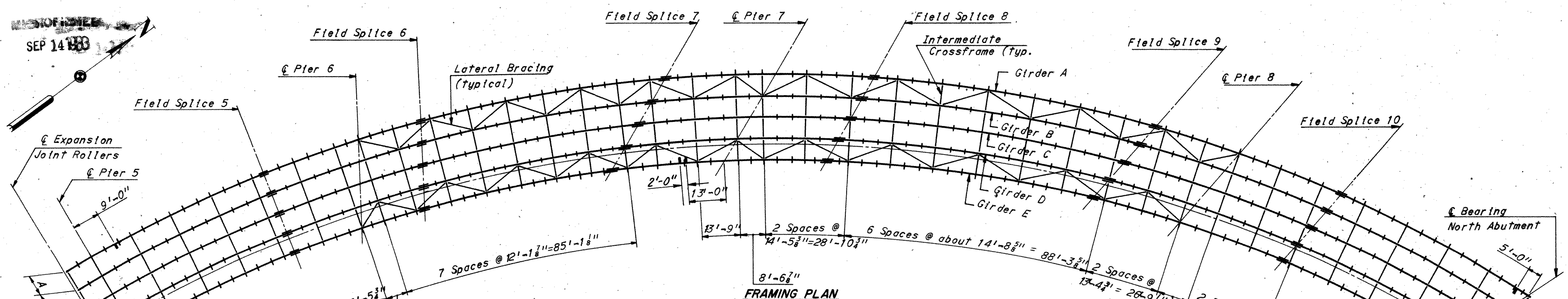
RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN D.W.B.	TRACED	CHECKED K.S.S.	REVIEWED M.S.K.	REVISED
DATE 7-30-69	DATE	DATE 6-15-70	DATE 11-24-71	1668

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			316 / 389

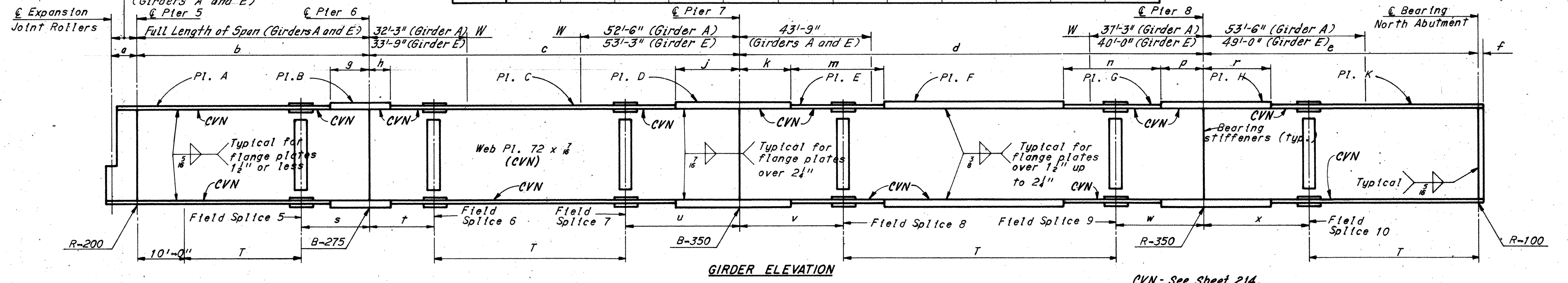
STARK COUNTY
STA-30-14.12
STA-77-9.22



FRAMING PLAN

TABLE OF GIRDER SPACINGS

	℄ Exp. Jt.	℄ Pier5	F.S. 5	℄ Pier6	F.S. 6	F.S. 7	℄ Pier7	F.S. 8	F.S. 9	℄ Pier8	F.S. 10	℄Brg. Abt.
A	7'-1 1/2"	7'-1 1/2"	7'-1 1/2"	7'-4 5/8"	7'-3 5/8"	8'-8 7/8"	8'-3 7/16"	7'-11 9/16"	7'-10 7/8"	7'-8 3/16"	7'-5 9/16"	7'-9 5/8"
B	7'-1 1/2"	7'-1 1/2"	7'-1 1/2"	7'-4 3/4"	7'-3 11/16"	8'-9 11/16"	8'-4"	7'-11 15/16"	7'-11 3/16"	7'-8 7/16"	7'-5 3/4"	7'-9 7/8"
C	7'-1 1/2"	7'-1 1/2"	7'-1 1/2"	7'-4 7/8"	7'-3 3/4"	8'-10 5/8"	8'-4 5/8"	8'-0 3/8"	7'-11 9/16"	7'-8 11/16"	7'-5 7/8"	7'-10 1/8"
D	7'-1 1/2"	7'-1 1/2"	7'-1 1/2"	7'-4 15/16"	7'-3 13/16"	8'-11 9/16"	8'-5 1/4"	8'-0 13/16"	7'-11 15/16"	7'-8 15/16"	7'-6 1/16"	7'-10 3/8"
E	5'-3"	5'-3"	5'-3"	5'-5 9/16"	5'-4 11/16"	6'-7 3/8"	6'-2 11/16"	5'-11 3/8"	5'-10 3/4"	5'-8 1/2"	5'-6 3/8"	5'-9 9/16"



GIRDER ELEVATION

CVN - See Sheet 214.

TABLE OF DIMENSIONS

Girder	a	b	c	d	e	f	g	h	j	k
A	10'-6 3/16"	98'-2 15/16"	142'-7 5/8"	159'-6 1/4"	108'-3 7/16"	9 7/8"	19'-0"	8'-0"	23'-0"	17'-0"
B	10'-4 3/8"	94'-9 5/8"	138'-2 1/8"	158'-5 1/16"	106'-4 3/8"	9 7/8"	14'-0"	7'-0"	24'-0"	17'-0"
C	10'-2 7/16"	91'-4 1/4"	133'-8 5/16"	157'-4 1/8"	104'-5 1/4"	9 7/8"	15'-0"	10'-0"	25'-0"	22'-0"
D	10'-0 1/2"	87'-10 7/8"	129'-2 1/4"	156'-3 5/16"	102'-6 1/8"	9 7/8"	13'-0"	7'-0"	21'-0"	17'-0"
E	9'-10 9/16"	84'-5 1/2"	124'-7 15/16"	153'-2 13/16" 5	100'-6 15/16"	9 7/8"	9'-0"	6'-0"	19'-0"	11'-0"

Girder	m	n	p	r	s	t	u	v	w	x
A	38'-0"	43'-0"	12'-0"	21'-0"	34'-0 5/16"	21'-11 1/8"	37'-1 5/8"	33'-5 7/16"	29'-8 1/4"	36'-8 15/16"
B	45'-0"	50'-0"	11'-0"	20'-0"	31'-6 13/16"	21'-11 3/8"	37'-4 9/16"	33'-7 5/16"	29'-9 5/16"	36'-9 13/16"
C	28'-0"	28'-0"	16'-0"	22'-0"	29'-1 5/16"	21'-11 5/8"	37'-7 11/16"	33'-9 5/16"	29'-10 1/2"	36'-10 3/4"
D	31'-0"	32'-0"	14'-0"	22'-0"	26'-7 3/4"	21'-11 15/16"	37'-11 1/16"	33'-11 7/16"	29'-11 11/16"	36'-11 3/4"
E	38'-0"	39'-0"	9'-0"	17'-0"	24'-2 3/16"	22'-0 3/16"	38'-2 11/16"	34'-1 11/16"	30'-0 15/16"	37'-0 3/4"

Note:
"W" denotes the range where welded attachments cannot be made to the top flange of Girders A and E.

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS

Girder	℄ Brg. Exp. Jt.	℄ Pier 5	.25	.50	.75 *	℄ Pier 6	.1	.2 *	.3	.4	.5	.6	.7 *	.8	.9	℄ Pier 7	.1
A	1060.76	1061.26	1062.41	1063.56	1064.27	1065.87	1066.53	1066.89	1067.87	1068.54	1069.21	1069.88	1070.79	1071.16	1071.75	1072.29	1072.85
B	1060.76	1061.26	1062.39	1063.51	1064.27	1065.77	1066.43	1066.82	1067.75	1068.41	1069.07	1069.73	1070.57	1071.00	1071.59	1072.13	1072.71
C	1060.17	1060.66	1061.77	1062.88	1063.68	1065.09	1065.73	1066.15	1067.03	1067.68	1068.32	1068.97	1069.74	1070.24	1070.83	1071.37	1071.97
D	1059.58	1060.07	1061.15	1062.23	1063.09	1064.40	1065.03	1065.48	1066.30	1066.94	1067.57	1068.21	1068.89	1069.47	1070.05	1070.60	1071.22
E	1058.99	1059.48	1060.54	1061.59	1062.50	1063.70	1064.33	1064.81	1065.57	1066.20	1066.82	1067.44	1068.03	1068.68	1069.27	1069.82	1070.46

Girder	.2 *	.3	.4	.5	.6	.7	.8 *	.9	℄ Pier 8	.1	.2	.3	.4 *	.5	.6	.7	.8	.9	℄ Brg. N. Abut.
A	1073.41	1073.83	1074.24	1074.60	1074.91	1075.18	1075.42	1075.56	1075.68	1075.73	1075.75	1075.75	1075.74	1075.64	1075.52	1075.36	1075.17	1074.95	1074.71
B	1073.30	1073.72	1074.15	1074.53	1074.85	1075.13	1075.38	1075.53	1075.66	1075.72	1075.75	1075.76	1075.75	1075.67	1075.57	1075.43	1075.26	1075.06	1074.84
C	1072.59	1073.01	1073.46	1073.85	1074.19	1074.48	1074.75	1074.91	1075.05	1075.11	1075.15	1075.17	1075.17	1075.12	1075.04	1074.94	1074.81	1074.65	1074.47
D	1071.88	1072.30	1072.76	1073.17	1073.53	1073.83	1074.10	1074.29	1074.43	1074.50	1074.55	1074.57	1074.58	1074.55	1074.51	1074.43	1074.34	1074.22	1074.08
E	1071.16	1071.58	1072.06	1072.49	1072.86	1073.18	1073.46	1073.66	1073.82	1073.89	1073.95	1073.98	1073.99	1073.98	1073.95	1073.91	1073.85	1073.77	1073.66

TABLE OF PLATES

Grd.	Pl. A	Pl. B	Pl. C	Pl. D	Pl. E	Pl. F	Pl. G	Pl. H	Pl. K
A	14x7/8	18x1 3/4	18x1 1/4	18x3	18x1 1/2	18x1 7/8	18x1 1/2	18x2 3/4	18x1
B	14x7/8	18x1 1/2	18x1 1/8	18x2 7/8	18x1 1/2	18x1 3/4	18x1 1/2	18x2 3/8	18x1
C	14x7/8	18x1 3/8	18x7/8	18x2 5/8	18x1	18x1 1/2	18x1	18x2 1/4	18x7/8
D	14x7/8	18x1 1/8	18x7/8	18x2 1/8	18x1	18x1 1/2	18x1	18x2	18x7/8
E	14x7/8	18x1 1/8	18x7/8	18x2 1/8	18x1	18x1 1/2	18x1	18x2	18x7/8

BEARING STIFFENERS

Girder	Pier 5	Pier 6	Pier 7	Pier 8	N. Abut.
A	6x3/4	8x3/4	8x1 1/4	8x1 1/4	8x3/4
B	6x3/4	8x3/4	8x1 1/4	8x1 1/4	8x3/4
C	6x3/4	8x3/4	8x1 1/4	8x1 1/4	8x3/4
D	6x3/4	8x3/4	8x1	8x3/4	8x3/4
E	6x3/4	8x3/4	8x1	8x3/4	8x3/4

* Elevations given are for Field Splice

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS AT GUTTERLINE

	℄ Brg. Exp. Jt.	℄ Pier 5	.25	.50	.75	℄ Pier 6	.1	.2	.3	.4	.5	.6	.7	.8	.9	℄ Pier 7	.1	.2
West Gutterline	1060.76	1061.26	1062.42	1063.58	1064.02	1065.87	1066.55	1067.23	1067.91	1068.60	1069.26	1069.92	1070.56	1071.18	1071.75	1072.29	1072.87	1073.40
East Gutterline	1058.99	1059.48	1060.55	1061.60	1062.65	1063.70	1064.34	1064.96	1065.59	1066.22	1066.84	1067.46	1068.08	1068.69	1068.27	1069.82	1070.47	1071.07

	.3	.4	.5	.6	.7	.8	.9	℄ Pier 8	.1	.2	.3	.4	.5	.6	.7	.8	.9	℄ Brg. N. Abut.
West Gutterline	1073.89	1074.32	1074.69	1075.00	1075.25	1075.43	1075.59	1075.68	1075.72	1075.75	1075.76	1075.73	1075.67	1075.55	1075.39	1075.20	1074.97	1074.71
East Gutterline	1071.62	1072.10	1072.54	1072.90	1073.22	1073.47	1073.67	1073.82	1073.89	1073.95	1073.99	1074.00	1074.00	1073.96	1073.92	1073.86	1073.78	1073.66

Note:
The gutterline elevations shown have been adjusted for dead load deflections caused by the weight of concrete and wearing course and are the elevations required before the concrete deck is placed. No concrete shall be placed until the screed rails have been set for the entire unit.

Notes:

Top and bottom flanges are identical in size.

All stiffeners shall be placed normal to girder flanges.

All intermediate stiffener to web welds shall be 1/4" continuous fillets on both sides of stiffeners.

For detail of field splices see Sheet 355

All intermediate stiffeners shall be Pls. 5x5/16.

For expansion joint details see Sheet 356.

Scuppers shall be in accordance with Std. Dwg. SD-1-69 except that scupper pipes shall extend 8" below the bottom of the girders instead of 2".

Intermediate stiffeners shall be placed as shown on framing plan, equally spaced between crossframes or crossframes and bearing stiffeners or crossframes and splices.

End crossframe details shall be same as shown on Ohio Standard Drawing SD-1-69, Sheet 1 of 4.

For intermediate crossframe details see Sheet 360

All crossframes are intermediate crossframes unless shown otherwise.

For details of roadway end dam, see Ohio Standard Drawing SD-1-69, Sheet 2 of 4, and Sheet 359.

For treatment of girder ends at North Abutment see Sheet 360

For details at rockers and bolsters see Ohio Standard Drawing RB-1-55 and Sheet 10/19

The girders shall be fabricated to lines parallel to profiles formed by top of pavement elevations directly over girders, plus the camber required to compensate for dead load deflection.

The allowance to be made in screed settings to compensate for dead load deflections due to concrete and wearing course are to be made above or below the top of the pavement elevations as required. Screeds may require further adjustment due to irregularities in fabricated steel.

For details of curb plates at concrete bridge railing see Ohio Standard Drawing SD-1-69, Sheet 2 of 4.

Dimensions to scuppers are measured along centerline of girders.

■ Denotes scupper

Tension areas of the bottom flange are denoted by "T". For the top flange, these areas are in compression.

For Camber and Deflection Table see Sheet 364

For detail of expansion crossframe see Sheet 360

For details of intermediate stiffeners see Sheet 360.

For underdeck light details see Lighting Plans.

H.N.T.B. BRIDGE NO. 13 | Revised 6-4-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK | 12/19

FRAMING PLAN UNIT 2

RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD

BR. NO. STA. 30-1493 — STA. 957 + 34.25
SCALE: 1" = 20'-0" — STA. 966 + 96.48

RELOCATED U.S. 30

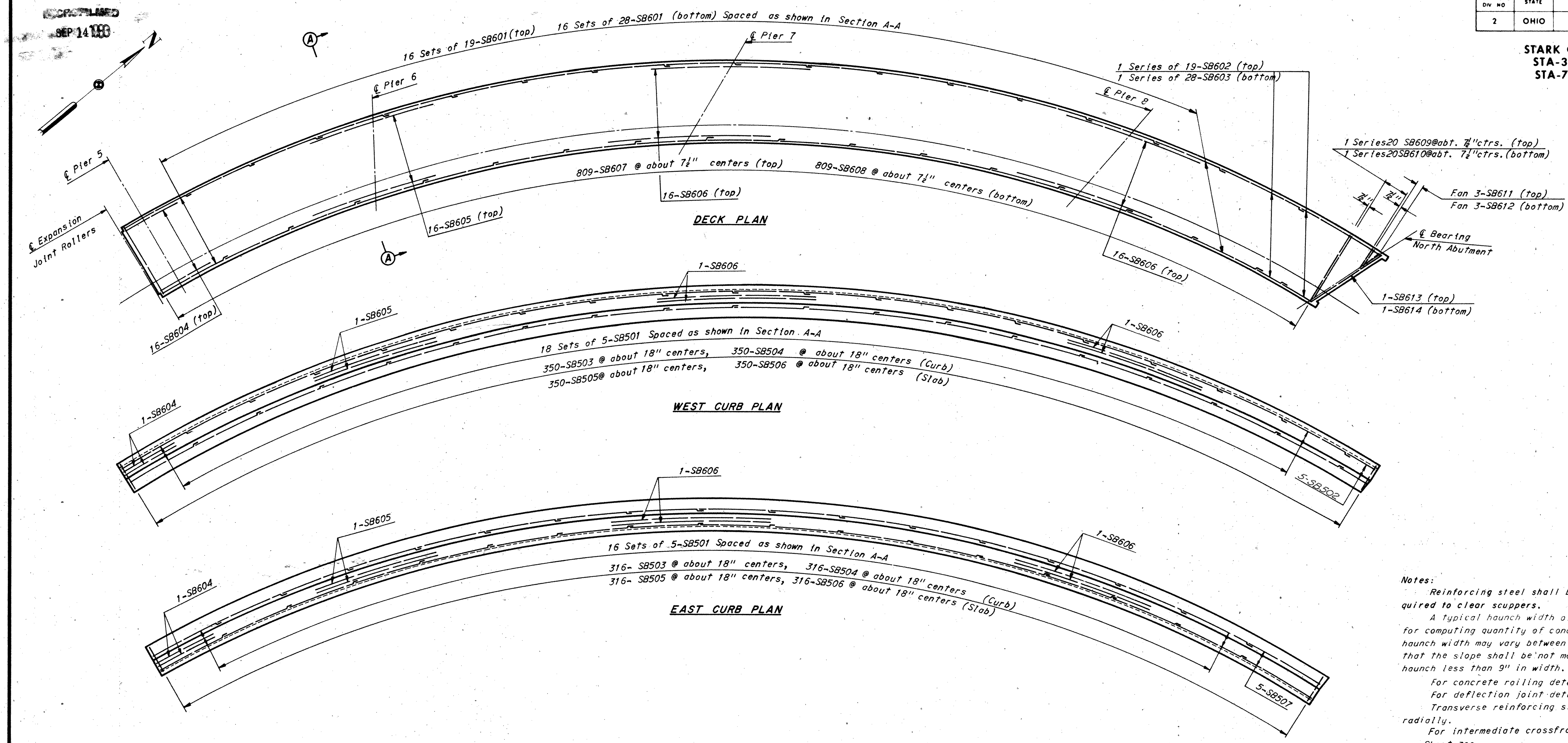
CANTON — STARK COUNTY — OHIO

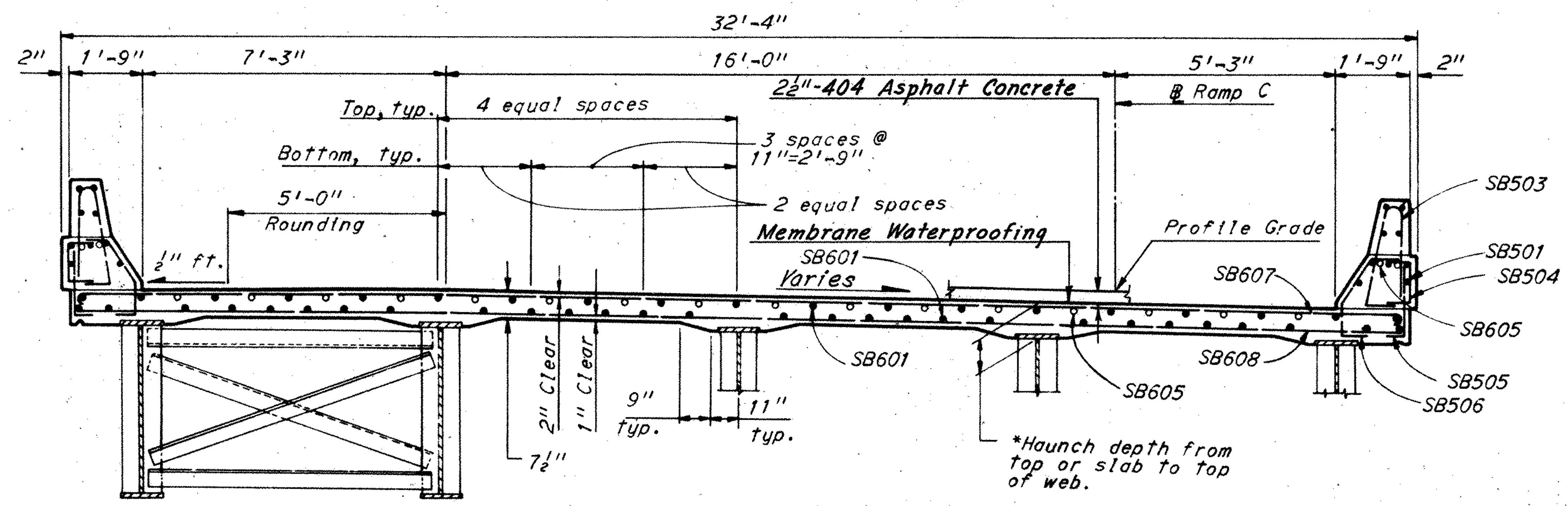
DRAWN G.W.B. DATE 8-5-69	TRACED DATE	CHECKED KSS DATE 6-12-70	REVIEWED MJK DATE 11-24-71	REVISED	1668

Revised 4-28-77

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			317/389

STARK COUNTY
STA-30-14.12
STA-77-9.22





SECTION A-A

HAUNCH DEPTHS	
Girder	Haunch Depth
A and B	10½"
C	10⅛"
D and E	9¾"

*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.18 of the Construction and Materials Specifications.

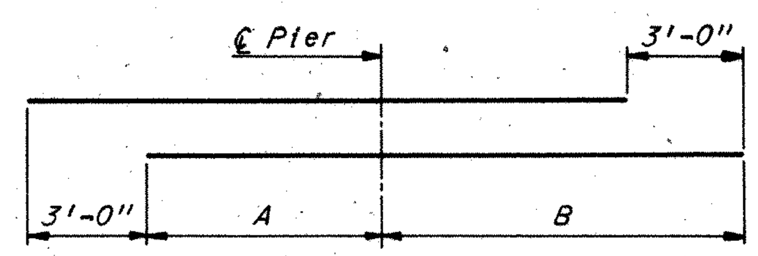


DIAGRAM SHOWING STAGGER OF SB605 AND SB606 BARS OVER PIERS

	A	B
Pier 6	26'-3"	25'-0"
Pier 7	30'-0"	30'-0"
Pier 8	25'-6"	34'-6"

Notes:

Reinforcing steel shall be adjusted as required to clear scuppers.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For concrete railing details see Sheet 362

For deflection joint details see Sheet 361

Transverse reinforcing steel shall be placed radially.

For intermediate crossframe details see Sheet 360

For reinforcement schedule see Sheets 18/19 & 19/19.

For superelevation data see Sheet 11/19

Concrete shall be placed from the expansion joint to Pier 4 before any concrete is placed from the expansion joint to Pier 6.

H.N.T.B. BRIDGE NO. 13 — Revised 6-4-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 13/19
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DECK PLAN UNIT 2

RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD

BR. NO. STA 30-1493 — STA. 957 + 34.25
SCALE: 1" = 20'-0" — STA. 966 + 96.48

RELOCATED U.S. 30

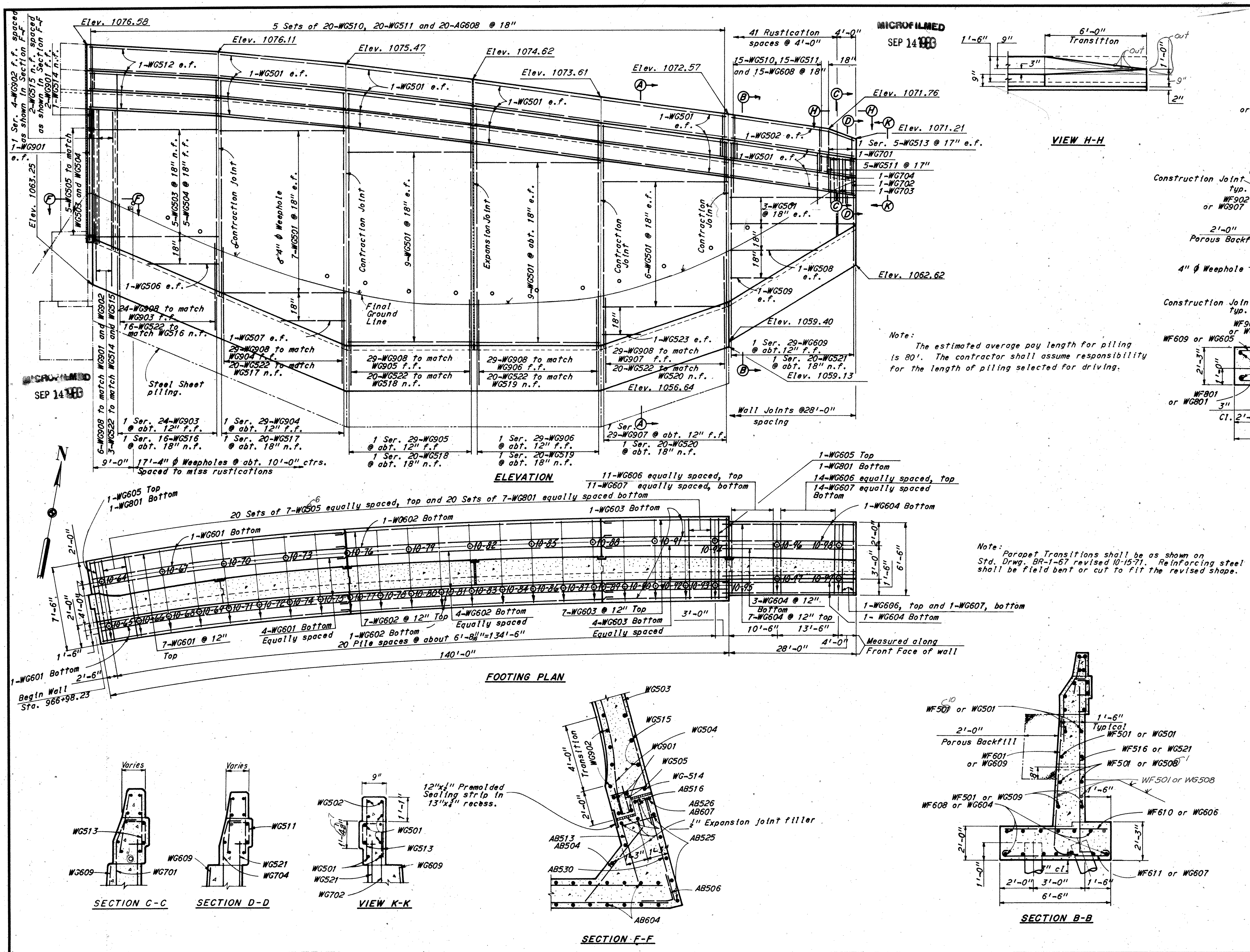
CANTON — STARK COUNTY — OHIO

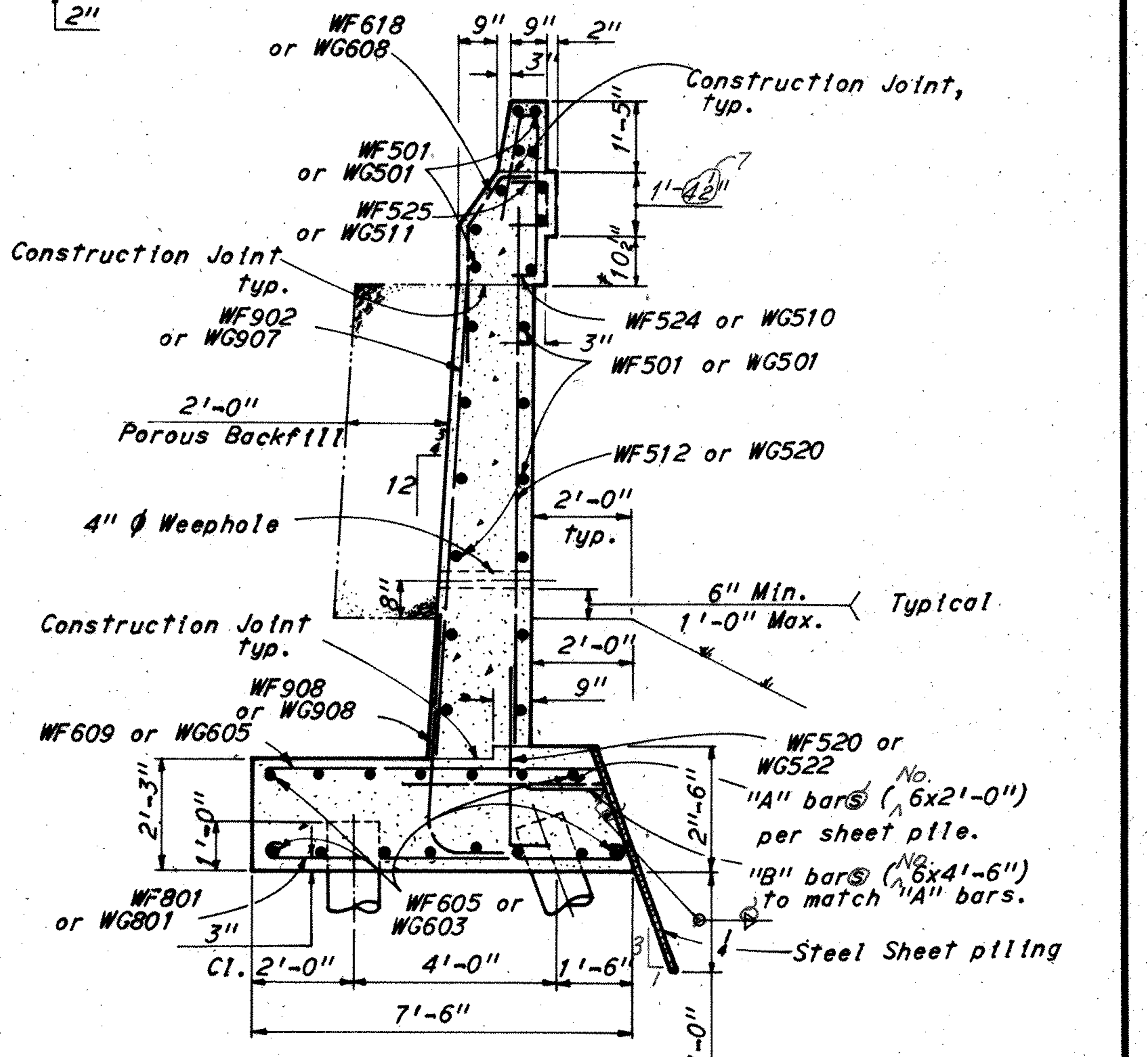
DRAWN DHB	TRACED	CHECKED KSS	REVIEWED MSK	REVISED
DATE 8-1-69	DATE	DATE 6-15-70	DATE 11-20-71	1668

Revised 4-28-77

FED ROAD DIV NO 2 | STATE OHIO | FEDERAL AID PROJECT NO | TYPE FUNDS
318
389
STARK COUNTY
STA-30-14.12
STA-77-9.22
MICROFILMED
SEP 14 1983
Elev. 1077.58
Elev. 1076.73
Elev. 1075.71
Elev. 1074.59
Elev. 1073.39
Elev. 1072.17
Elev. 1070.95
Elev. 1070.01
Elev. 1069.16
Elev. 1068.66
Elev. 1064.50
Elev. 1059.35
Elev. 1059.62
Elev. 1060.87
7 Sets of 20-WF524, 20-WF525 and 20-WF618 @ 18"
1-WF526 e.f.
1-WF501 e.f.
1-WF502 e.f.
1-WF503 e.f.
1-WF506 e.f.
1-WF507 e.f.
1-WF508 e.f.
1-WF509 e.f.
1-WF510 e.f.
2-WF906 n.f.
1-WF522 f.f.
1-WF906 e.f.
1 Ser. 4-WF907 n.f. Spaced as shown in Section E-E
2-WF523 f.f. Spaced as shown in Section E-E
1-WF908 to match WF906 n.f.
5-WF521 to match WF-504 and WF505
5-WF504 @ 18" n.f.
5-WF505 @ 18" f.f.
4-WF908 to match WF901 n.f.
3-WF520 to match WF522 and WF523
24-WF908 to match WF901 n.f.
16-WF520 to match WF511 f.f.
29-WF908 to match WF902 n.f.
20-WF520 to match WF512 f.f.
29-WF908 to match WF903 n.f.
20-WF520 to match WF513 f.f.
29-WF908 to match WF904 n.f.
20-WF520 to match WF514 f.f.
29-WF908 to match WF-905 n.f.
20-WF520 to match WF515 f.f.
Contraction Joint
Expansion Joint
4" Weephole
Final Ground Line
Steel sheet piling
22-WF524, 22-WF525 and 22-WF618 @ 18"
22/17-WF524, 22/17-WF525 and 22/17-WF618 @ 18"
1 Ser. 5-WF527 @ 17" e.f.
5-WF525 and 5-WF618 @ 17" 18"
3-WF502 @ 17" e.f.
1 Ser. 24-WF901 @ abt. 12" n.f.
1 Ser. 16-WF511 @ abt. 18" f.f.
1 Ser. 29-WF902 @ abt. 12" n.f.
1 Ser. 20-WF512 @ abt. 18" f.f.
1 Ser. 29-WF903 @ abt. 12" n.f.
1 Ser. 20-WF513 @ abt. 18" f.f.
1 Ser. 29-WF904 @ abt. 12" n.f.
1 Ser. 20-WF514 @ abt. 18" f.f.
1 Ser. 29-WF905 @ abt. 12" n.f.
1 Ser. 20-WF515 @ abt. 18" f.f.
1 Ser. 29-WF601 @ abt. 12" n.f.
1 Ser. 20-WF516 @ abt. 18" f.f.
1 Ser. 29-WF602 @ abt. 12" n.f.
1 Ser. 20-WF517 @ abt. 18" f.f.
1 Ser. 33-WF603 @ abt. 12" n.f.
1 Ser. 22-WF518 @ abt. 18" f.f.
1 Ser. 33-WF604 @ abt. 12" n.f.
1 Ser. 22-WF519 @ abt. 18" f.f.
64 Rustication Spaces @ 4'-0" f.f.
Wall joints @ 28'-0" spacing
32'-0"
21-4" Weepholes @ abt. 10'-0" ctrs. Spaced to miss Rustications.
ELEVATION
VIEW H-H
6'-0" Transition
VIEW K-K
SECTION C-C
SECTION D-D
Varies
WF502
WF503
WF525
WF527
WF604
WF519
WF618
140'-0"
120'-0"
.21 Pile spaces @ 6'5¼"
8 Pile spaces @ 13'-6¾"
Measured along Front Face of Wall
Front Face of Wall F
1-WF609 top
1-WF801, bottom
1-WF605 Bottom
1-WF606 Bottom
1-WF607 Bottom
1-WF608 Bottom
1-WF610, top
1-WF611, bottom
7-WF605 @ 12" Top
4-WF605 Bottom Equally Spaced
7-WF606 @ 12" Top
4-WF606 Bottom Equally spaced
7-WF607 @ 12" Top
4-WF607 Bottom Equally spaced
7-WF608 @ 12" Top
3-WF608 @ 12" Bottom
21 Sets of 7-WF609 equally spaced top
21 Sets of 7-WF801 equally spaced, bottom
8 Sets of 14-WF610 equally spaced, top
8 Sets of 14-WF611 equally spaced, bottom
10-WF610 equally spaced, top
10-WF611 equally spaced, bottom
Begin wall sta. 967+10.09
FOOTING PLAN
Begin Wall F sta. 967+10.09
Begin wall G sta. 966+98.23
Front Face of Wall F
Front Face of Wall G
℄ Ramp C
S.T. sta. 968+72.38
End Wall G Sta. 968+68.39
End Wall F sta. 969+67.39
LAYOUT SKETCH
Note: For notes and sections not shown see Sheet 15/19
WF504
WF505
WF523
WF906
WF521
WF522
WF907
AB516
AB527
AB520
AB525
AB503
AB607
AB513
AB501
AB604
4'-0" Transition
12"x½" Premolded sealing strip in 13"x¾" recess.
½" Expansion Joint Filler
SECTION E-E
½" Preformed expansion joint filler from top of footing to top of parapet.
12"x½" Premolded sealing strip in 13"x¾" recess from top of footing to bottom of curb.
Rustication
Key 1⅝"x5½" centered in wall
RUSTICATION DETAIL
EXPANSION JOINT
CONTRACTION JOINT
TYPICAL JOINT DETAIL
H.N.T.B. BRIDGE NO. 13
Revised 6-4-75 By RAS
HOWARD, NEEDLES, TAMMEN & BERGENDOFF 14/19
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
RETAINING WALL F
RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD
BR. NO. STA. 30-1493 STA. 957 + 34.25
SCALE: 1"=10'-0" STA. 966 + 96.48
RELOCATED U.S. 30
CANTON STARK COUNTY OHIO
DRAWN OPK DATE 4-20-70
CHECKED BM DATE 5-20-70
REVIEWED MJK DATE 11-20-71
1668
Revised 4-28-77

STARK COUNTY
STA-30-14.12
STA-77-9.22





SECTION A-A
9¾" shall be used for Wall "G"

Notes:

For detail of retaing wall excavation limits see Sheet 369

All pile dimensions given are measured along bottom of footing.

Piles are not shown in elevation.

All piles are 12" ϕ cast-in-place reinforced concrete piles.

○→ Denotes battered piles.

All battered piles are battered 4 in 12.

Steel sheet piling shall have a minimum section modulus of 7 in^3 per foot.

n.f. Denotes near face.

f.f. Denotes far face.

e.f. Denotes each face.

All dimensions and bar spacing are given along front face of wall.

"A" bars and "B" bars are to be included with item 504 steel sheet piling for payment.

For reinforcement schedule see Sheet. 19/19

Steel sheet piling left in place shall have a minimum section modulus of 7 in^3 per foot of wall. Used piling in good condition may be used.

For layout sketch see Sheet 14/19

For Typical Joint Details see Sheet 14/19

For Rustication Detail see Sheet 14/19

All sheet piling are battered 4 in 12.

H.N.T.B. BRIDGE NO. 13 — Revised 6-4-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 15/19

RETAINING WALL G

RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD

BR. NO. STA. 30-1493 — STA. 957 + 34.25, STA. 966 + 96.48

SCALE: 1"=10'-0"

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
OPK DATE 4-28-70	DATE	BM DATE 5-22-70	MJK DATE 11-20-71	1668

Revised 4-28-77

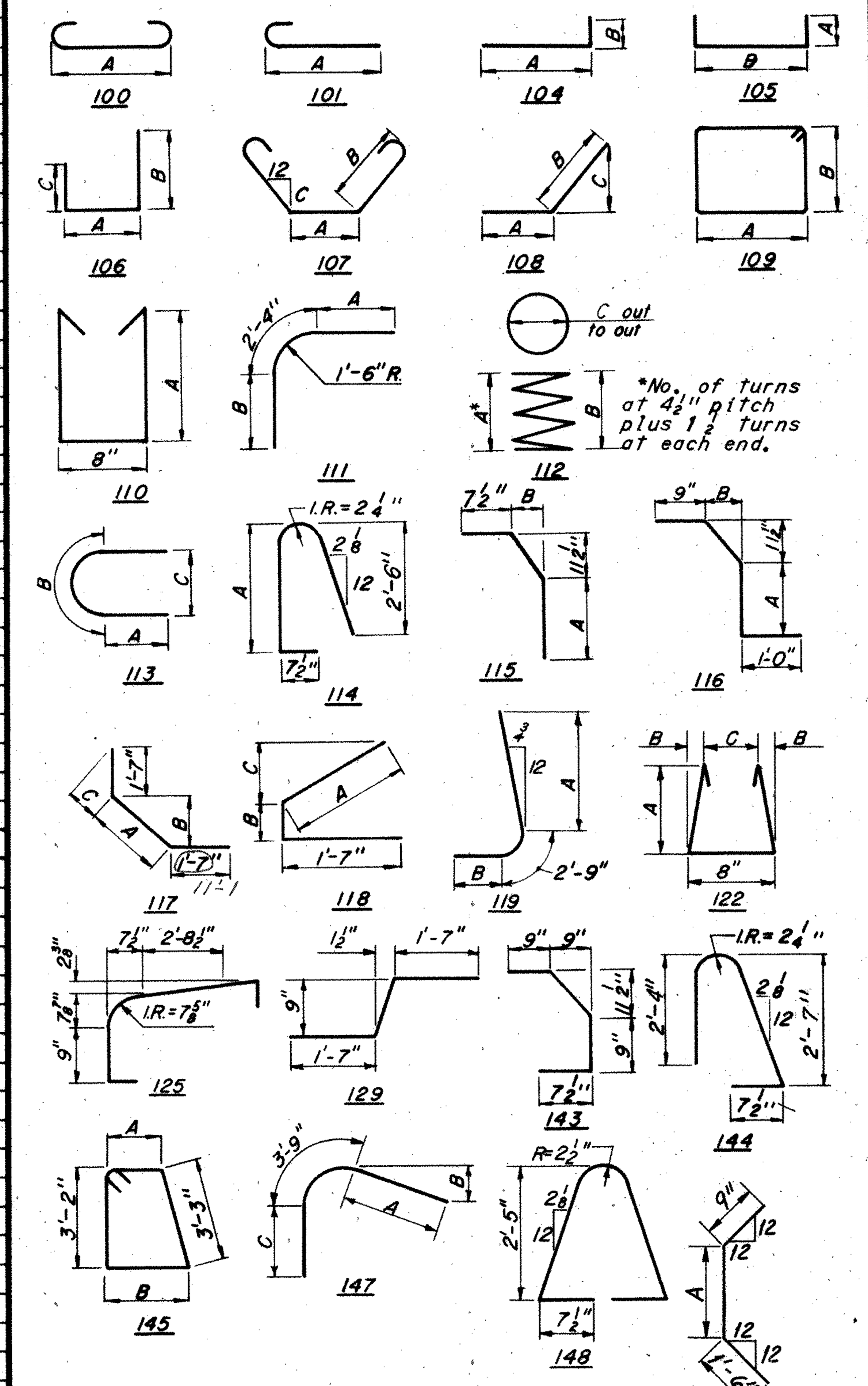
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
			SOUTH ABUTMENT					
AA401	30	3'-5"	105	1'-0"	1'-8"			70
AA501	20	8'-4"	105	1'-7"	5'-5"			174
AA502	18	10'-10" 11'-5	109	3'-0"	2'-9" 6		214	222
AA503	20	7'-8"	104	1'-0"	6'-9"			160
AA504	20	7'-8"	105	2'-3"	3'-5"			160
AA505	21	31'-0"	Str.					677
AA506	24	3'-11"	104	2'-0"	2'-0"			98
AA507	22	6'-8"	108	5'-3"	1'-5"	1'-0"		153
AA508	8	12'-6"	Str.					104
AA509	8	9'-6"	Str.					79
AA510	8	10'-6"	Str.					88
AA511	2	5'-0"	Str.					10
AA512	4	9'-0"	Str.					38
AA513	18	7'-11"	Str.					149
AA514	2	4'-4"	Str.					9
AA515	2	3'-8"	Str.					8
AA516	6	3'-0"	Str.					19
AA517	4	7'-0"	Str.					29
AA518	24	18'-6"	Str.					463
AA519	4	13'-6"	Str.					56
AA520	4	12'-9"	Str.					53
AA521	20	6'-11"	114	3'-3"				144
AA522	20	2'-9"	Str.					57
AA523	30	2'-3"	105	7½"	1'-3"			70
AA601	20	14'-6"	106	5'-5"	6'-9"	2'-8"		435
AA602	2	16'-9" 7	109	5'-5"	2'-6"		50	48
AA603	29	16'-11"	105	7'-11"	1'-5"			737
AA605	29	5'-7"	105	2'-6"	11"			243
AA606	29	4'-1"	105	1'-6"	1'-5"			178
AA607	1	14'-6"	105	6'-10"	1'-2"			22
AA608	1	13'-6"	105	6'-4"	1'-2"			20
AA609	9	18'-8"	105	8'-11"	1'-2"			252
AA610	9	17'-8" 19'-6	105	8'-5" 9'-4	1'-2"		264	238
AA611	18	9'-7"	115	7'-11"	9"			259
AA612	2	6'-8"	115	5'-0"	9"			20
AA701	2	6'-0"	115	4'-4"	9"			25
AA702	2	5'-4"	115	3'-8"	9"			22
AA703	6	4'-8"	115	3'-0"	9"			57
AA801	7	33'-0"	Str					616
AA802	12	12'-0"	Str					384
DA801	20	5'-2"	141	3'-1"				276
				Total South Abut.		=		6922 C4
			NORTH ABUTMENT					
AA401	30	3'-5"	105	1'-0"	1'-8"			70
AB501	6	7'-6"	Str.					47
AB502	4	6'-0"	Str.					25
AB503	10	3'-2"	108	1'-7"	1'-7"	1'-6"		33
AB504	6	6'-3"	Str					39

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
AB505	4	5'-6"	Str.					23
AB506	6	3'-9"	117	7"	7"	1'-6"		24
AB507	4	4'-5"	117	1'-3"	1'-6"	1'-6"		18
AB509	8	33'-6"	Str.					280
AB510	6	34'-3"	Str.					214
AB511	25	6'-4"	105	1'-7"	3'-5"			165
AB512	25	7'-4"	104	6'-6"	1'-0"			191
AB513	20 19	6'-0"	104	4'-6"	1'-7"		119	188
AB514	26	8'-4"	105	1'-7"	5'-5"			226
AB515	10	14'-1" 13'-6	109	4'-2" 0	2'-8" 6		141	147
AB516	20	3'-8"	105	1'-7"	9"			78
AB519	4	7'-0"	Str.					29
AB520	6	5'-3"	Str.					33
AB521	10	4'-0"	Str.					42
AB522	9	6'-9"	114	3'-6"				63
AB523	9	4'-5"	115	2'-8"	9"			41
AB524	9	2'-3"	105	7½"	1'-3"			21
AB525	10	8'-9"	Str.					91
AB526	2	6'-6"	Str.					14
AB527	2	5'-9"	Str.					12
AB528	4	8'-6"	Str.					35
AB529	10	5'-6"	Str.					57
AB530	6	6'-9"	Str.					42
AB531	3	33'-0"	Str.					103
AB602	31	5'-7"	105	2'-6"	11"			260
AB603	31	4'-1"	105	1'-6"	1'-5"			190
AB604	31	17'-1"	105	8'-0"	1'-5"			797
AB605	25	14'-4"	106	5'-5"	6'-7"	2'-8"		540
AB606	21	9'-6"	104	8'-8"	1'-0"			303
AB607	9	6'-6"	Str.					91
AB608	4	7'-7"	104	6'-9"	1'-0"			46
AB801	5	36'-6"	Str.					486
AB802	2	36'-2"	108	34'-8"	1'-6"	7"		193
AB803	2	11'-10"	108	8'-10"	3'-0"	2'-9"		63
AB804	1	9'-0"	Str.					24
AB805	3	6'-0"	Str.					48
AB806	3	5'-7"	Str.					45
AB807	1	11'-1"	Str.					29
AB808	2	12'-5" C3	104 C-118	11'-1" 1'-0	1'-6"	11"	72	66
DB801	19	5'-3"	141	3'-2"				266
					Total	North	Abut=	5798 C29
				PIER 1				
SPA401	1	361'-7"	112	43.8	15'-5"	2'-8"		291
SPA402	1	350'-0"	112	42.4	14'-11"	2'-8"		282
SPA403	1	337'-8"	112	40.9	14'-4"	2'-8"		271
PA501	29	4'-5"	105	1'-0"	2'-8"			134
PA502	2	3'-11"	105	1'-0"	2'-2"			8
PA503	2	3'-6"	105	1'-0"	1'-9"			7
PA504	18	13'-2"	109	2'-8"	3'-8"			248

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
PA601	8	8'-1"	113	1'-11"	4'-3"	2'-8"		96
PA602	4	28'-6"	Str					171
PA603	10	7'-10"	100	6'-6"				117
PA801	18	9'-8"	100	7'-6"				467
PA901	8	12'-0"	100	9'-6"				325
PA1001	8	19'-0"	Str					655
PA1002	8	18'-6"	Str					637
PA1003	16	18'-0"	Str					1236
PA1004	16	8'-1"	104	7'-3"	1'-1"			552
PA1005	2	35'-5"	105	3'-9"	28'-6"			305
PA1006	2	37'-5"	105	3'-9"	30'-6"			322
PA1007	1	37'-11"	105	3'-9"	31'-0"			163
PA1008	5	28'-6"	Str					613
				Total	Pier 1	=		6900
				PIER 2				
SPB401	1	720'-8"	112	87.3	31'-9"	2'-8"		583
SPB402	1	695'-1"	112	84.2	30'-7"	2'-8"		562
SPB403	1	539'-1"	112	65.3	23'-6"	2'-8"		435
PB501	29	4'-5"	105	1'-0"	2'-8"			134
PB502	2	3'-11"	105	1'-0"	2'-2"			8
PB503	2	3'-6"	105	1'-0"	1'-9"			7
PB504	46	11'-6"	109	1'-10"	3'-8"			552
PB505	8	13'-2"	109	2'-8"	3'-8"			110
PB601	8	8'-1"	113	1'-11"	4'-3"	2'-8"		96
PB602	4	29'-4"	Str.					177
PB801	16	14'-8"	100	12'-6"				625
PB1001	12	14'-4"	100	11'-6"				740
PB1101	13	14'-8"	100	11'-6"				1010
PB1102	12	18'-8"	100	15'-6"				1190
PB1103	2	35'-9"	105	3'-6"	29'-4"			379
PB1104	2	37'-9"	105	3'-6"	31'-4"			400
PB1105	1	38'-0"	105	3'-6"	31'-7"			202
PB1106	3	12'-0"	Str.					191
PB1107	8	29'-4"	Str.					1240

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a-series shall vary in length by a constant increment.
For replacement reinforcement schedule see sheet 256
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 13 | Revised 6-4-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK | 16/19

REINFORCEMENT SCHEDULE

RAMP C OVER I-77 AND PENNSYLVANIA RAILROAD

BR. NO. STA. 30-1493 — STA. 957 + 34.25
SCALE: — STA. 966 + 96.48

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN RAP DATE 7-13-70 | TRACED DATE | CHECKED DGS DATE 7-22-70 | REVIEWED MTK DATE 11-20-71 | REVISED | 1668

Revised 4-28-77

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
PB1401	5	25'-3"	Str.					965
PB1402	5	24'-0"	Str.					917
PB1403	5	17'-0" 6	Str.				669	650
PB1404	5	15'-0" 7	104	13'-6"	2'-0" 6		596	580
PB1405	5	10'-11" 11'-4	104	9'-3"	2'-0" 6		433	418
PB1406	5	10'-5" 10	104	8'-9"	2'-0" 6		414	398
PB1407	10	20'-8" 21'-1	104	19'-0"	2'-0" 6		1613	1581
PB1408	5	14'-8" 15'-1	104	13'-0"	2'-0" 6		577	561
PB1409	10	21'-0" 7	104	19'-6"	2'-0" 6		1651	1630
PB1410	5	29'-6"	Str.					1129
PB1411	5	28'-5"	Str.					1088
PB1412	5	21'-3" 22'-9	Str.				870	812
				Total	Pier2	=		19,370 563
PIER 3								
SPC401	1	751'-3"	112	91.1	33'-2"	2'-8"		609
SPC402	1	785'-2"	112	95.1	34'-8"	2'-8"		635
SPC403	1	767'-8"	112	93.0	33'-11"	2'-8"		622
PC501	31	4'-5"	105	1'-0"	2'-8"			143
PC502	2	4'-2"	105	1'-0"	2'-5"			9
PC503	2	3'-6" 2'-7	105	1'-0"	1'-9" 10"			5 7
PC504	26	13'-2"	109	2'-8"	3'-8"			357
PC601	8	8'-1"	113	1'-11"	4'-3"	2'-8"		97
PC602	4	29'-0"	Str.					174
PC801	16	14'-8"	100	12'-6"				625
PC901	12	14'-0"	100	11'-6"				570
PC1001	5	16'-4"	111	12'-0"	2'-0"			352
PC1102	2	12'-0"	Str					103
PC1003	7	29'-0"	Str					873
PC1004	12	14'-4"	100	11'-6"				741
PC1005	24	13'-4"	100	10'-6"				1379
PC1006	13	17'-4"	100	14'-6"				965
PC1007	5	24'-7"	111	20'-3"	2'-0"			530
PC1401	5	30'-10"	Str					1185
PC1402	5	32'-4"	Str					1286
PC1403	5	31'-6"	Str					1208
PC1404	15	10'-4" 10	104	8'-9"	2'-0" 6		1243	1148
PC1405	5	27'-4"	Str					1045
PC1406	18	23'-7" 24'-1"	104	22'-0"	2'-0" 6		3316	3560
PC1407	15	14'-7" 15'-1"	104	13'-0"	2'-0" 6		1731	1670
PC1408	5	28'-0"	Str					1072
PC1409	5	26'-6"	Str					1015
				Total	Pier 3	=		21,980 841

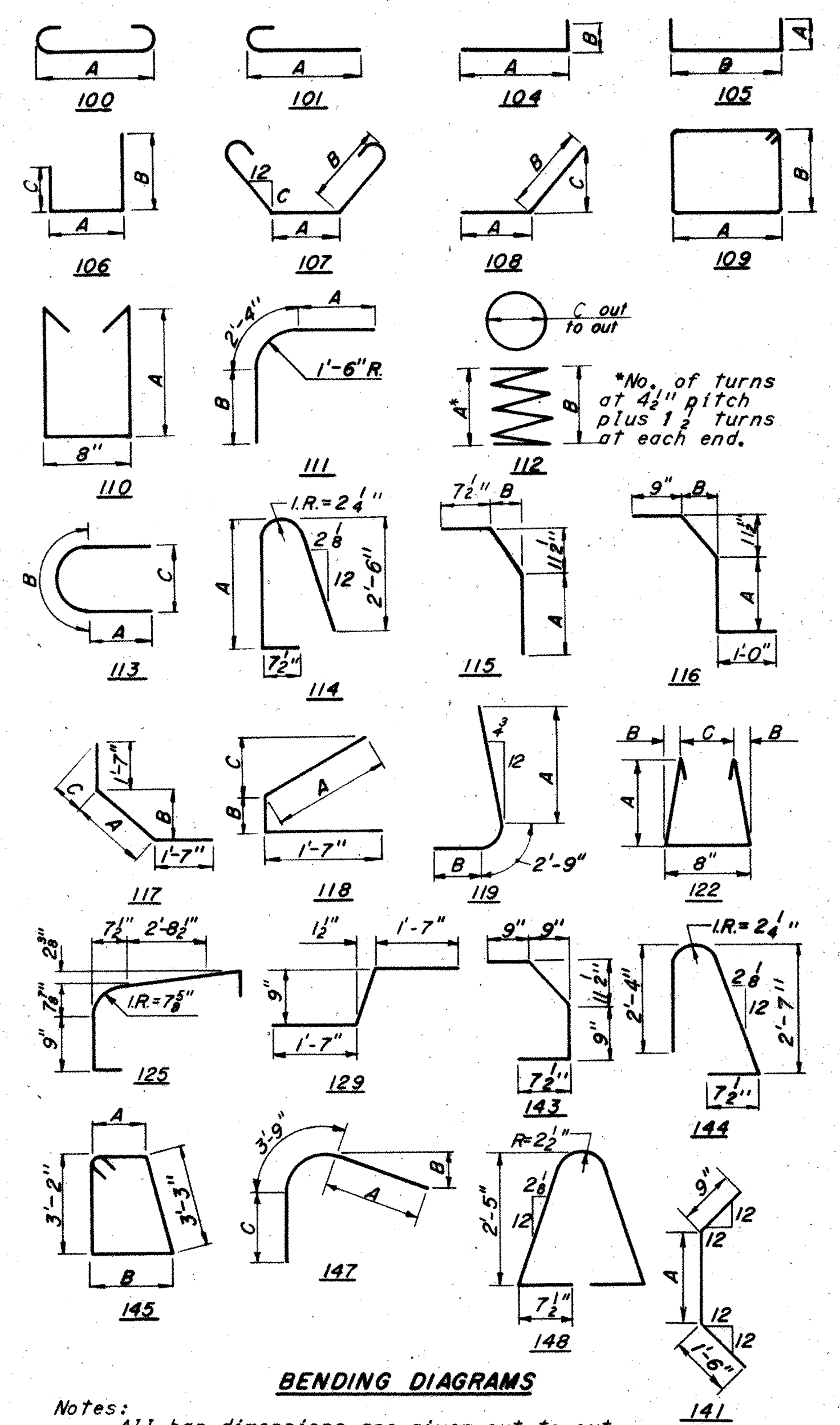
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
PIER 4								
SPD401	1	716'-8"	112	86.9	31'-6"	2'-8"		578
SPD402	1	806'-6"	112	97.8	35'-8"	2'-8"		653
SPD403	1	810'-10"	112	98.2	35'-10'	2'-8"		656
PD501	31	4'-5"	105	1'-0"	2'-8"			143
PD502	2	4'-2"	105	1'-0"	2'-5"			9
PD503	2	3'-6"	105	1'-0"	1'-9"			7
PD504	18	13'-2"	109	2'-8"	3'-8"			248
PD601	8	8'-1"	113	1'-11"	4'-3"	2'-8"		97
PD602	4	29'-0"	Str.					174
PD801	23	12'-8"	100	10'-6"				778
PD802	22	11'-8"	100	9'-6"				685
PD901	5	16'-4"	111	12'-0"	2'-0"			278
PD902	2	12'-0"	Str.					82
PD903	7	29'-0"	Str.					690
PD904	12	12'-0"	100	9'-6"				490
PD905	5	24'-4"	111	20'-0"	2'-0"			414
PD1001	12	13'-4"	100	10'-6"				690
PD1101	16	35'-3"	Str.					2995
PD1102	16	39'-4"	Str.					3340
PD1103	16	39'-6"	Str.					3365
PD1104	48	7'-3" 9	104	6'-6"	1'-0" 6		1976	1848
					Total	Pier 4	=	18,220 348
PIER 5								
SPE401	1	812'-8"	112	98.4	35'-11"	2'-8"		658
SPE402	1	889'-9"	112	107.8	39'-5"	2'-8"		720
SPE403	1	926'-11"	112	112.2	41'-1"	2'-8"		750
PE501	31	4'-5"	105	1'-0"	2'-8"			143
PE502	2	4'-2"	105	1'-0"	2'-5"			9
PE503	2	3'-6"	105	1'-0"	1'-9"			7
PE504	18	13'-2"	109	2'-8"	3'-8"			248
PE601	8	8'-1"	113	1'-11"	4'-3"	2'-8"		97
PE602	4	29' 0"	Str.					174

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
PE801	22	11'-8"	100	9'-6"				685
PE802	11	12'-8"	100	10'-6"				372
PE901	5	16'-4"	111	12'-0"	2'-0"			278
PE902	2	12'-0"	Str.					82
PE903	7	29'-0"	Str.					690
PE904	12	12'-0"	100	9'-6"				490
PE905	12	14'-0"	100	11'-6"				572
PE906	5	24'-4"	111	20'-0"	2'-0"			414
PE1001	12	14'-4"	100	11'-6"				741
PE1101	18	39'-6"	Str.					3755
PE1102	18	43'-2"	Str.					4120
PE1103	18	44'-10"	Str.					4280
PE1104	54	7'-3" 9	104	6'-6"	1'-0" 6		2223	2075
					Total	Pier 5	=	21,360 508
PIER 6								
SPF401	1	1293'-3"	112	112.9	41'-4"	3'-8"		996
SPF402	1	1369'-8"	112	119.6	43'-10"	3'-8"		1055
SPF403	1	1474'-0"	112	128.7	47'-3"	3'-8"		1136
PF501	39	5'-5"	105	1'-0"	3'-8"			212
PF502	2	4'-9"	105	1'-0"	3'-0"			10
PF503	2	3'-9"	105	1'-0"	2'-0"			8
PF504	16	15'-2"	109	3'-8"	3'-8"			253
PF601	4	29'-7"	Str.					177
PF602	8	10'-8"	113	2'-6"	5'-8"	3'-8"		130
PF801	32	16'-8"	100	14'-6"				1425
PF901	28	14'-0"	100	11'-6"				1333
PF1001	5	26'-4"	111	22'-0"	2'-0"			566
PF1002	2	12'-0"	Str.					103
PF1003	7	29'-7"	Str.					890
PF1004	5	15'-4"	111	11'-0"	2'-0"			330

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

321 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22



BENDING DIAGRAMS

Notes:

All bar dimensions are given out to out.

All bars of a series shall vary in length by a constant increment.

For replacement reinforcement schedule see sheet 256

Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

Splices in No. 14 or No. 18 size reinforcing bars shall be made by an approved positive mechanical method designed to develop 125% of the specified yield strength of the bar

H.N.T.B. BRIDGE NO. 13 | Revised 6-4-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 17/19
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

RAMP C OVER I-77 AND
PENNSYLVANIA RAILROAD

BR. NO. STA. 30-1493 — STA. 957 + 34.25
SCALE: — STA. 966 + 96.48

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN R.A.P. DATE 7-13-70	TRACED DATE	CHECKED DGS DATE 7-22-70	REVIEWED MJK DATE 11-20-71	REVISED 1668

Revised 4-28-77

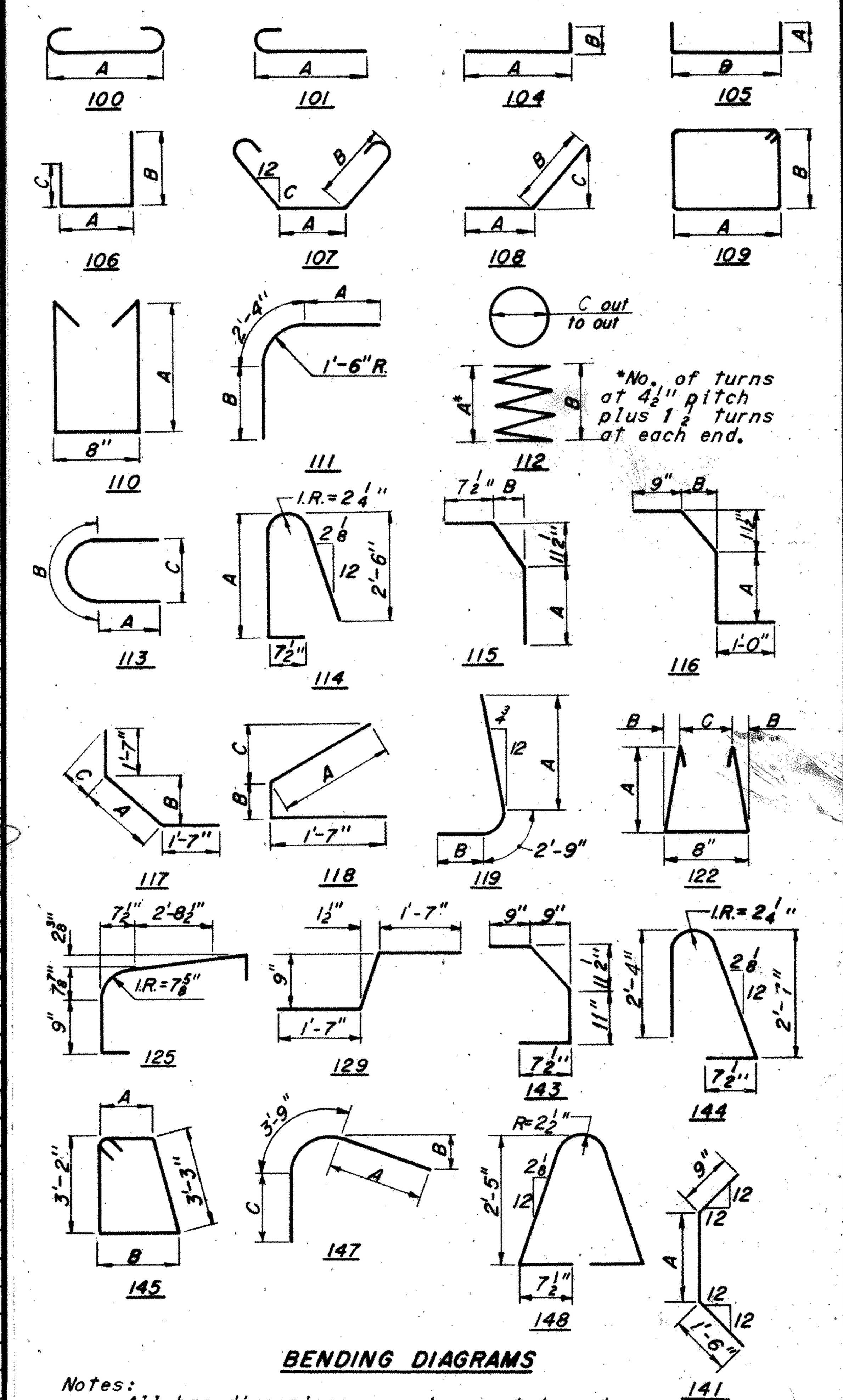
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			322/389

STARK COUNTY
STA-30-14.12
STA-77-9.22

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PF1101	19	17'-8"	100	14'-6"				1780
PF1102	18	21'-8"	100	18'-6"				2070
PF1401	10	34'-10"	Str					2662
PF1402	10	37'-4"	Str					2855
PF1403	10	40'-10"	Str					3121
PF1404	30	19'-3"	Str					4420
PF1405	30	9'-10" 11'-4	104	9'-3	1'-0"	2'-6	2600	2258
PF1406	30	14'-1" 15'-7	104	13'-6"	1'-0"	2'-6	3576	3230
					Total	Pier 6	=	31,030 709
PIER 7								
SPG401	1	1748'-11"	112	152.7	56'-3"	3'-8"		1349
SPG402	1	1713'-4"	112	149.6	55'-1"	3'-8"		1321
SPG403	1	1652'-3"	112	144.2	53'-1"	3'-8"		1273
PG501	39	5'-5"	105	1'-0"	3'-8"			212
PG502	2	4'-9"	105	1'-0"	3'-0"			10
PG503	2	3'-9"	105	1'-0"	2'-0"			8
PG504	38	12'-10"	109	2'-6"	3'-8"			508
PG505	8	15'-2"	109	3'-8"	3'-8"			126
PG601	4	33'-0"	Str					198
PG602	8	10'-8"	113	2'-6"	5'-8"	3'-8"		130
PG801	16	13'-8"	100	11'-6"				585
PG1001	7	28'-10"	111	24'-6"	2'-0"			868
PG1002	6	12'-0"	Str					310
PG1003	11	33'-1"	Str					1565
PG1004	16	14'-4"	100	11'-6"				974
PG1005	7	16'-4"	111	12'-0"	2'-0"			491
PG1101	32	20'-8"	100	17'-6"				3510
PG1102	1 Ser. 6	18'-10"to20'-2"	100	15'-8"to17'-0"			3 3/8"	620
PG1103	1 Ser. 6	16'-10"to18'-2"	100	13'-8"to15'-0"			3 3/8"	557
PG1104	1 Ser. 5	15'-8"to18'-2"	100	12'-6"to15'-0"			7 1/2"	448
PG1105	3	18'-8"	108	7'-8"	11'-0"	5'-0"		297
PG1106	2	15'-10"	100	12'-8"				168
PG1107	18 16	18'-8"	100	15'-6"			1587	1782
PG1108	16	17'-8"	100	14'-6"				1500

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PG1401	12	50'-0"	Str					4590
PG1402	12	48'-10"	Str					4480
PG1403	12	46'-8"	Str					4280
PG1404	36	23'-3"	Str					6400
PG1405	36	9'-10" 11'-4	104	9'-3"	1'-0"	2'-6	3121	2700
PG1406	36	14'-1" 15'-7	104	13'-6"	1'-0"	2'-6	4292	3880
					Total	Pier	7 =	45,140 778
PIER 8								
SPH401	1	1583'-6"	112	138.2	50'-10"	3'-8"		1220
SPH402	1	1558'-0"	112	136.0	50'-0"	3'-8"		1201
SPH403	1	1532'-7"	112	133.8	49'-2"	3'-8"	1181	1118
PH501	39	5'-5"	105	1'-0"	3'-8"			212
PH502	2	4'-9"	105	1'-0"	3'-0"			10
PH503	2	3'-9"	105	1'-0"	2'-0"			8
PH504	32	12'-10"	109	2'-6"	3'-8"			430
PH505	6	15'-2"	109	3'-8"	3'-8"			95
PH601	4	30'-10"	Str					185
PH602	8	10'-8"	113	2'-6"	5'-8"	3'-8"		130
PH801	16	13'-8"	100	11'-6"				585
PH901	7	27'-4"	111	23'-0"	2'-0"			650
PH902	7	13'-0"	Str					310
PH903	12	30'-10"	Str					1260
PH904	14	15'-6"	100	13'-0"				740
PH905	7	15'-4"	111	11'-0"	2'-0"			365
PH1001	12	17'-4"	100	14'-6"				888
PH1101	39	16'-2"	100	13'-0"				3340
PH1401	6	44'-5"	Str					2045
PH1402	6	43'-6"	Str					2000
PH1403	8	42'-8"	Str					2610
PH1404	6	48'-8"	Str					2240
PH1405	6	47'-9"	Str					2195
PH1406	2	46'-11"	Str					720
PH1407	6	19'-3"	Str					885
PH1408	20	9'-10" 11'-4	104	9'-3"	1'-0"	2'-6	1734	1505
PH1409	20	14'-1" 15'-7	104	13'-6"	1'-0"	2'-6	2384	2150
					Total	Pier 8	=	29,160 623

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
DECK - UNIT 1								
SA501	20	24'-3"	Str					505
SA502	145	30'-0"	Str					4550
SA503	648	5'-8"	144					3830
SA504	648	2'-3"	105	7 1/2"	1'-3"			1521
SA505	648	2'-5"	104	7 1/2"	1'-11"			1633
SA506	648	3'-5"	143					2309
SA507	5	26'-6"	Str					138
SA508	5	25'-6"	Str					133
SA601	94	24'-0"	Str				3390	3600
SA602	658	30'-0"	Str					29,700
SA603	2 Ser. 19	30'-9"to15'-3"	Str				10 3/4"	1310
SA604	2 Ser. 28	30'-9"to15'-3"	Str				6 7/8"	1935
SA605	20	35'-0"	Str					1050
SA606	40	52'-0"	Str					3120
SA607	20	26'-0"	Str					780
SA608	803	31'-6"	Str					38,000
SA609	803	32'-10"	100	31'-6"				39,600
				Total	Unit	1 Deck	=	133,714 504
DECK - UNIT 2								
SB501	170	30'-0"	Str					5330
SB502	5	11'-0"	Str					57
SB503	666	5'-8"	144					3936
SB504	666	2'-3"	105	7 1/2"	1'-3"			1563
SB505	666	2'-5"	104	7 1/2"	1'-11"			1679
SB506	666	3'-5"	143					2373
SB507	5	18'-0"	Str					94
SB601	752	30'-0"	Str					33,850
SB602	2 Ser. 19	37'-3"to12'-6"	Str				1'-4 1/2"	1411
SB603	2 Ser. 28	37'-3"to12'-6"	Str				11"	2085
SB604	20	24'-6"	Str					735
SB605	20	51'-3"	Str					1540
SB606	40	60'-0"	Str					3600
SB607	809	32'-10"	100	31'-6"				39,806
SB608	809	31'-6"	Str					38,250
SB609	1 Ser. 20	29'-2"to4'-8"	101	28'-6"to4'-0"			1'-3 1/2"	508
SB610	1 Ser. 20	28'-6"to4'-0"	Str				1'-3 1/2"	488
SB611	3	4'-8"	101	4'-0"				21
SB612	3	4'-0"	Str					18
SB613	1	35'-10"	100	34'-6"				54
SB614	1	34'-6"	Str					52
				Total	Unit 2	Deck	=	137,450



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For replacement reinforcement schedule see Sheet 256

Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

Splices in No. 14 or No. 18 size reinforcing bars shall be made by an approved positive mechanical method designed to develop 125% of the specified yield strength of the bar.

H.N.T.B. BRIDGE NO. 13 | Revised 6-4-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 18/19
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

RAMP C OVER I-77 AND
PENNSYLVANIA RAILROAD

BR. NO. STA. 30-1493 STA. 957 + 34.25
SCALE: STA. 966 + 96.48

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN R.A.P. DATE 7-13-70 | TRACED DATE | CHECKED DGS DATE 7-22-70 | REVIEWED MJA DATE 11-20-71 | REVISED | 1668

Revised 4-28-77

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
				PARAPET				
R501	96	15'-6"	Str.					1554
R502	8	14'-9"	Str.					125
R503	364	7'-0"	Str.					2660
R504	164	14'-6"	Str.					2480
R505	36	13'-6"	Str.					508
R506	4	10'-9"	Str.					45
R507	20	14'-0"	Str.					292
R508	4	12'-9"	Str.					53
R509	4	13'-3"	Str.					55
R510	4	13'-9"	Str.					58
						Total	=	7830
				RETAINING WALL F				
WF501	124	27'-8"	Str.					3580
WF502	28 30	31'-8"	Str.				990	925
~~WF503~~	~~2~~	~~31'-8"~~	~~108~~	~~25'-10"~~	~~5'-10"~~	~~4"~~		~~64~~
WF504	5	28'-8"	Str.	OUT				149
WF505	5	29'-8"	104	27'-8"	2'-2"			155
WF506	2	14'-0"	Str.					29
WF507	2	14'-6"	Str.					30
WF508	2	18'-6"	Str.					39
WF509	2	18'-0"	Str.					38
WF510	2	21'-8"	Str.					45
WF511	1 Ser.16	8'-6"to10'-0"	Str.				1 1/8" 3/16	154
WF512	1 Ser.20	10'-0"to11'-9"	Str.				5/8" 1 1/8	227
WF513	1 Ser.20	10'-6"to11'-9"	Str.				13/16"	232
WF514	1 Ser.20	9'-3"to10'-6"	Str.				13/16"	206
WF515	1 Ser.20	7'-6"to9'-3"	Str.				1 1/8"	176
WF516	1 Ser.20	9'-3"to12'-2"	104	8'-6"to11'-3"	1'-0"		1 7/16" 3/4	225
WF517	1 Ser.20	8'-3"to9'-5"	104	7'-4"to8'-6"	1'-0"		7/8" 3/4	185
WF518	1 Ser.22	7'-3"to8'-3"	104	6'-4"to7'-4"	1'-0"		9/16"	178
WF519	1 Ser.22	6'-2"to7'-3"	104	5'-3"to6'-4"	1'-0"		5/8"	155
WF520	99	4'-11"	104	4'-0"	1'-0"			515
WF521	5	3'-7"	105	1'-7"	8"			19
WF522	1	7'-0"	Str.					7
WF523	2	8'-3"	Str.					17
WF524	179 184	6'-7"	114	3'-4"			1263	1229
WF525	184	2'-1"	105	7 1/2"	1'-1"			400
WF526	10	28'-8"	Str.	OUT				300
~~WF527~~	~~2 Ser. 5~~	~~2'-11"to3'-3"~~	~~Str.~~	OUT			OUT ~~1"~~	~~32~~
WF601	1 Ser.29	8'-9"to11'-5"	119	5'-0"to7'-8"	1'-0"		1 1/8"	439
WF602	1 Ser.29	7'-7"to8'-9"	119	3'-10"to5'-0"	1'-0"		1 1/2"	356
WF603	1 Ser.33	6'-7"to7'-7"	119	2'-10"to3'-10"	1'-0"		3/8"	352
WF604	1 Ser.33	5'-6"to6'-7"	119	1'-9"to2'-10"	1'-0"		3/8"	299
WF605	15	58'-0"	Str.					1309
WF606	15	60'-0"	Str.					1355
WF607	15	28'-4"	Str.					638
WF608	42	42'-7"	Str.					2690
WF609	151	7'-0" 6'-4	Str.				1436	1590
WF610	124	6'-0"	Str.					1120
WF611	124	7'-4"	100	6'-0"				1365
WF618	184	5'-3"	115	3'-3"	9"			1451
WF801	151	9'-2"	100	7'-0"				3705

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
WF901	1 Ser.24	7'-4"to8'-8"	Str.				11/16"	653
WF902	1 Ser.29	8'-8"to10'-0"	Str.				9/16"	925
WF903	1 Ser.29	9'-4"to10'-3"	Str.				3/8"	965
WF904	1 Ser.29	8'-0"to9'-0"	Str.				7/16"	838
WF905	1 Ser.29	6'-3"to8'-0"	Str.				3/4"	703
WF905	4	7'-0"	Str.					95
WF907	1 Ser. 4	7'-0"to7'-3"	Str.				1"	97
WF908	145	7'-3"	119	3'-6"	1'-0"			3590
				Total	Ret.	Wall	F =	33,846
								33,695
				RETAINING WALL G				
WG501	116	27'-8"	Str.					3340
WG502	2	27'-8"	108	21'-10"	5'-10"	4"		58
WG503	5	29'-8"	104	27'-8"	2'-2"			155
WG504	5	28'-8"	Str.					149
WG505	5	3'-7"	105	1'-7"	8"			19
WG506	2	14'-6"	Str.					30
WG507	2	15'-6"	Str.					32
WG508	2	15'-0"	Str.					31
WG509	2	2'-9"	Str.					6
WG510	115	6'-7"	114	3'-4"				790
WG511	120	2'-1"	105	7 1/2"	1'-1"			261
WG512	10	28'-8"	Str.					290
WG513	2 Ser. 5	2'-11"to3'-3"	Str.				1"	32
WG514	1	8'-9"	Str.					9
WG515	2	9'-0"	Str.					19
WG516	1 Ser.16	9'-3"to11'-6"	Str.				1 13/16"	174
WG517	1 Ser.20	11'-6"to14'-3"	Str.				1 3/4"	269
WG518	1 Ser.20	13'-6"to14'-3"	Str.				3/4"	284
WG519	1 Ser.20	12'-6"to13'-6"	Str.				3/8"	271
WG520	1 Ser.20	8'-9"to12'-6"	Str.				2 3/8"	222
WG521	1 Ser.20	7'-5"to11'-8"	104	6'-6"to10'-9"	1'-0"		2 3/8"	200
WG522	99	4'-11"	104	4'-0"	1'-0"			515
WG523	2	9'-0"	Str.					19
WG601	15	59'-0"	Str.					1330
WG602	15	60'-0"	Str.					1355
WG603	15	30'-0"	Str.					677
WG604	14	29'-9"	Str.					627
WG605	144	7'-0" 6'-4	Str.				1370	1515
WG606	27	6'-0"	Str.					244
WG607	27	7'-4"	100	6'-0"				298
WG608	115	5'-3"	115	3'-3"	9"			907
WG609	1 Ser.29	7'-0"to11'-3"	119	3'-3"to7'-6"	1'-0"		1 13/16"	398
WG701	2	5'-3"	115	3'-3"	6"			21
WG702	1	4'-6"	Str.					9
WG703	2	5'-1"	115	3'-3"	4"			21
WG704	1	5'-1"	115	3'-3"	2 1/2"			10
WG801	144	9'-2"	100	7'-0"				3532

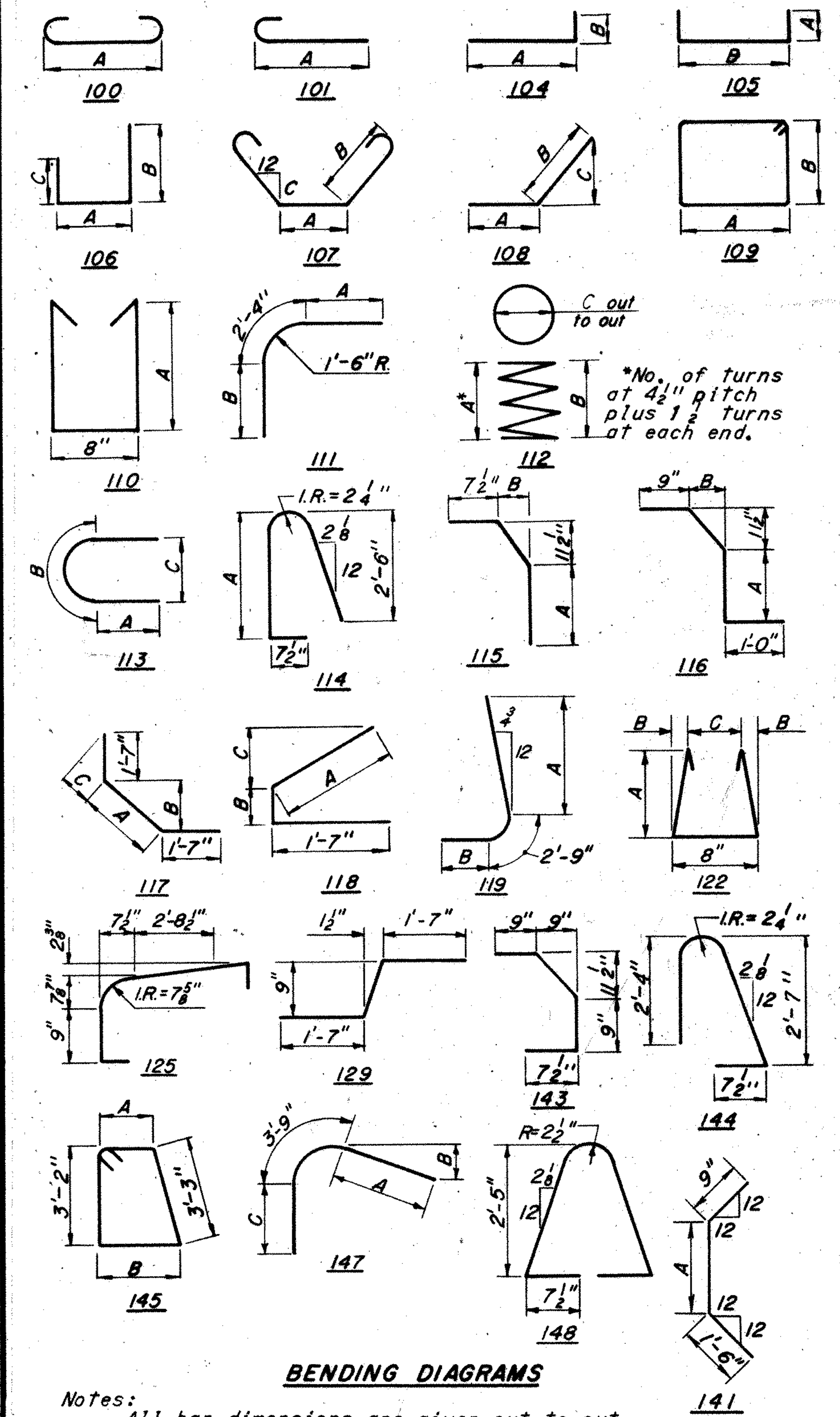
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
WG901	4	7'-3"	Str					99
WG902	1 Ser. 4	7'-3"to7'-6"	Str				1"	100
WG903	1 Ser.24	7'-6"to10'-3"	Str.			3/16	1 1/16"	728
WG904	1 Ser.29	10'-3"to13'-0"	Str.				1 7/16"	1145
WG905	1 Ser.29	12'-3"to13'-0"	Str.				5/16"	1242
WG906	1 Ser.29	11'-3"to12'-3"	Str.				7/16"	1158
WG907	1 Ser.29	7'-6"to11'-3"	Str.			1 5/8	2 1/16"	924
WG908	146	7'-3"	119	3'-6"	1'-0"			3600
					Total	Wall G	=	27,123
								26,970

MICROFILMED
SEP 14 1983

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

323
389

STARK COUNTY
STA-30-14.12
STA-77-9.22



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For replacement reinforcement schedule see sheet 256
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 13 | Revised 6-4-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
19/19

REINFORCEMENT SCHEDULE

RAMP C OVER I-77 AND
PENNSYLVANIA RAILROAD

BR. NO. STA. 30-1493 STA. 957 + 34.25
SCALE: STA. 966 + 96.48

RELOCATED U.S. 30

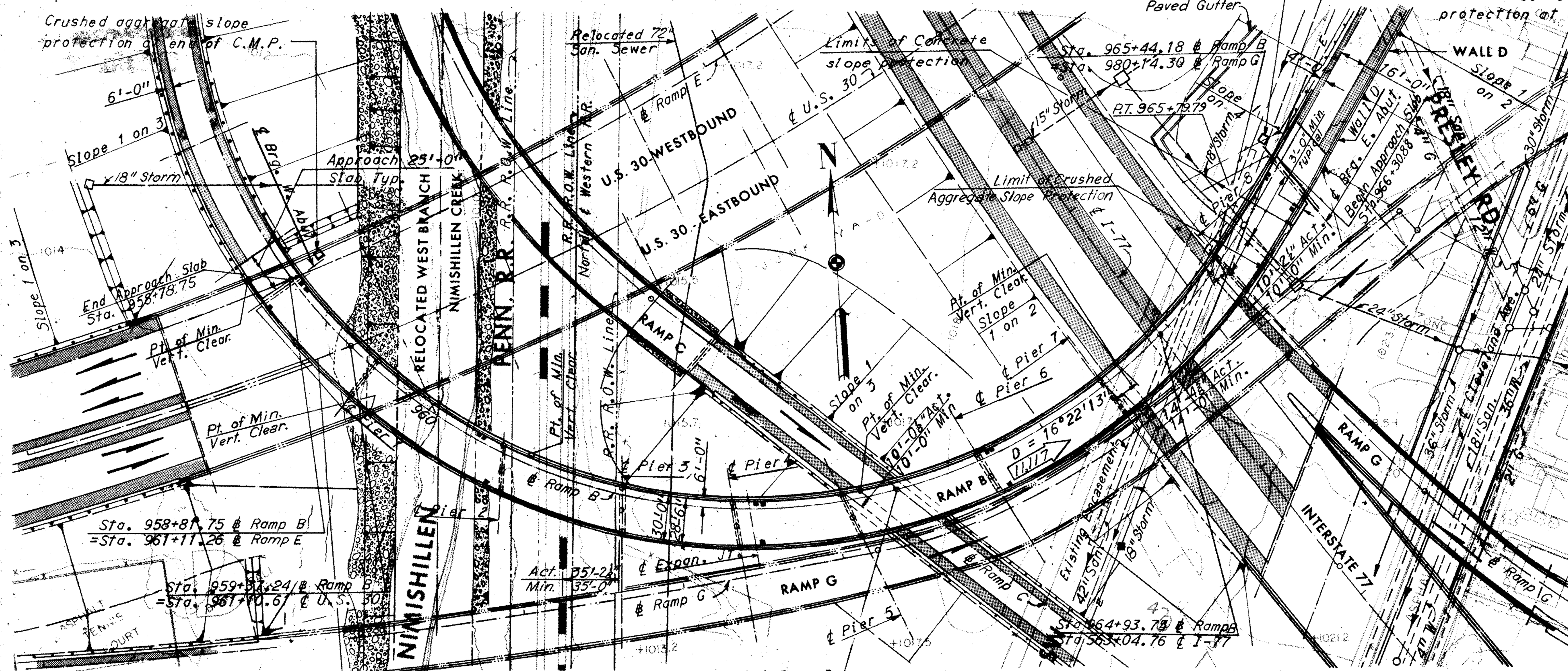
CANTON STARK COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
R.A.P. DATE 7-13-70	DATE	DGS DATE 1-22-70	MJK DATE 11-20-71	1668

Revised 4-28-77

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	324/389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22

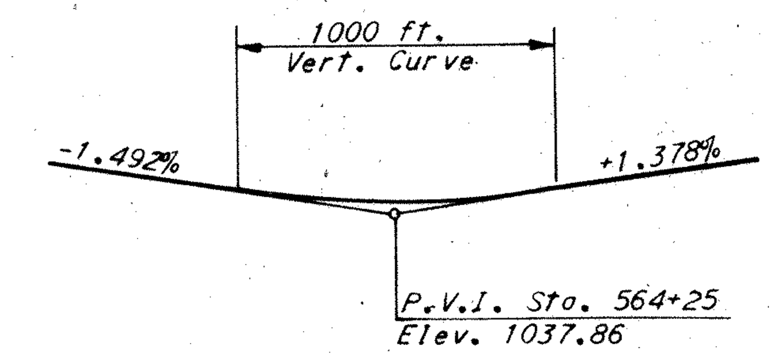


MICROFILMED
SEP 14 19__

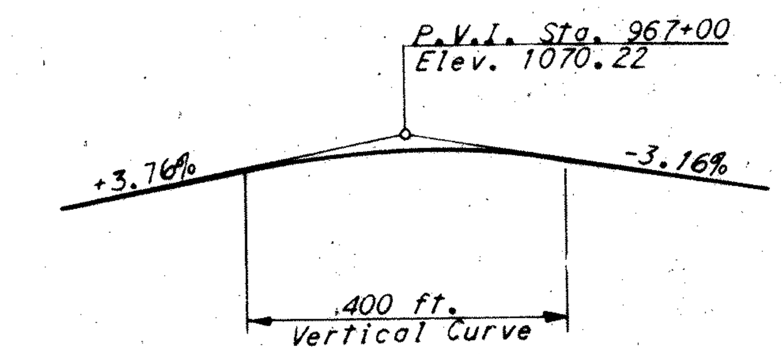
PLAN

EXISTING UTILITY LEGEND

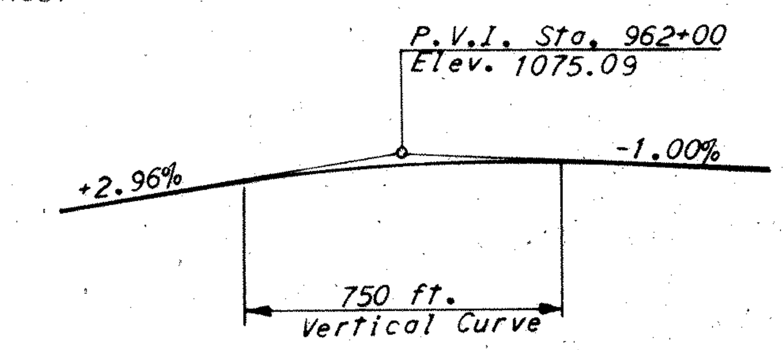
4" G	GAS
4" W	WATER
16" Storm	STORM SEWER
8" San	SANITARY SEWER
T	TELEPHONE
E	POWER LINES
4W-E4KV	4 WIRE, PRIMARY 4 KILOVOLT
3W-E₁	3 WIRE, SECONDARY
☋	WATER HYDRANT
o	MANHOLE
▫	CATCH BASIN



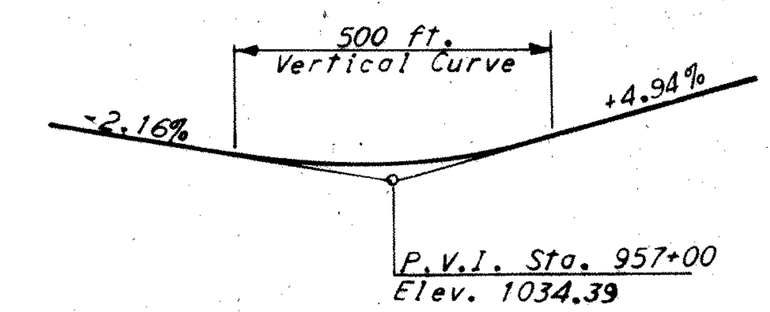
PROFILE GRADE - I-77



PROFILE GRADE - RAMP G

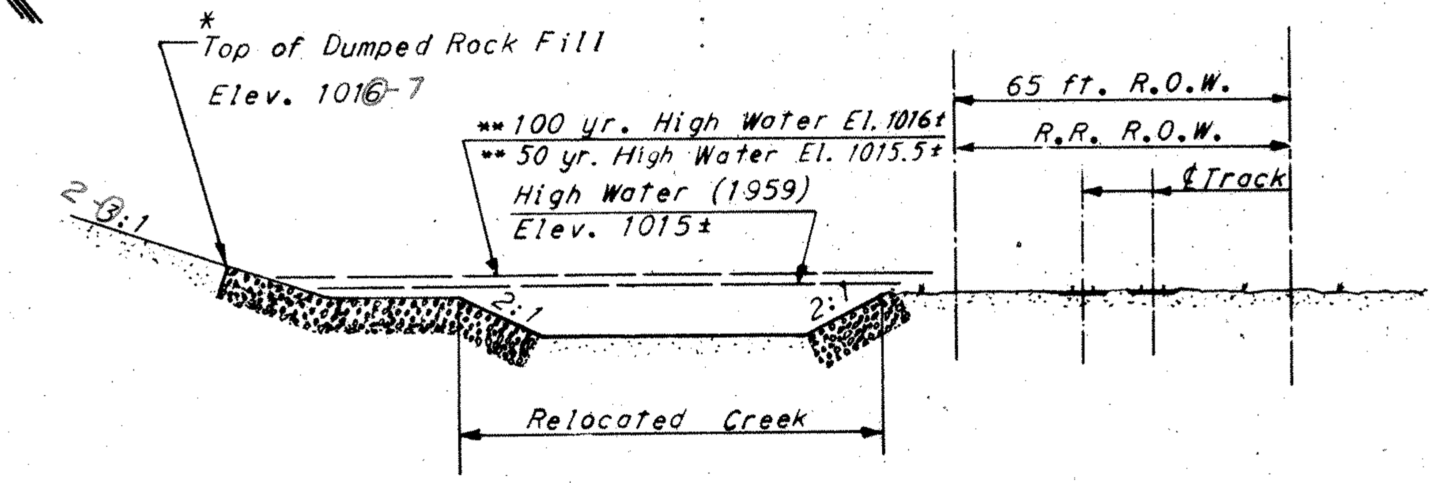


PROFILE GRADE - U.S. 30



PROFILE GRADE - RAMP C

*To be paid for under "Rock Channel Protection, Type A, with Bedding." without
See Roadway Plans.



SECTION THRU W. BRANCH NIMISHILLEN CREEK

FLOOD DISCHARGE WEST BRANCH NIMISHILLEN CREEK AT NAVARRE ROAD BRIDGE					
Occurance Interval (years)	5	10	20	50	100
*Discharge Q (c.f.s.)	1360	1680	2010	2520	3000

* Taken from Table 5, "Flood Discharge-Frequency Relationship", page TA-23, "Flood Plain Study-Main Report", Corps of Engineers, Feb. 1967.
** Taken 2,000 ft. above mouth as shown on Exhibit No. 4 and Exhibit No. 12, "Flood Plain Study-Main Report", Corps of Engineers, Feb. 1967.

PROPOSED STRUCTURE

Type: Continuous Welded Curved Girders with Reinforced Concrete Slab.
Spans: 74'-0", 97'-0", 81'-0", 61'-6", 71'-0", 90'-6", 90'-0", 110'-6", 72'-0" = 747'-6" Ctr. to Ctr. End Bearings along ℄ Ramp B.
Roadway: 30'-0" face to face of parapets.
Loading: HS 20-44.
Skews: Varies; see Plan.
Wearing Surface: 1½" Asphalt Concrete
Alignment: 350' Radius Left on ℄ Ramp B.
Approach Slab: AS-1-72 (25' Long)(Modified)

Modify Std. Drwg. AS-1-72 by providing 3" clear over the top rebars instead of the 2" shown on the Std. Drwg. The jacking holes as called for on Std. Drwg. AS-1-72 are not required.

NOTES:
Embankment shall be constructed to the level of the subgrade for a minimum distance of 200 feet back of the abutments. Excavation may then be made for the abutments, Pier No. 8 and piles driven.
Other embankment in which piers are to be placed shall be constructed to the level of the sub-grade for a minimum distance of 200 feet, or to the limits of the embankment before excavation for the footings is made and piles driven.
Piling for the West Abutment of Br. No. Sta. 30-1489 and the three northern most footings for Pier No. 1 of Br. No. Sta. 30-1487 shall be driven before placing any concrete for either substructure unit.

Notes:
The following items are not included in the bridge plans. See roadway plans for details:
1. Relocation or removal of existing utilities.
2. Approach grading, pavements and slabs.
3. Guardrails.

11,117 Denotes one way 1987 average daily traffic.
Earth work limits shown are schematic. Actual slopes shall conform to plan cross-sections.
■ Denotes standard scupper.

For details of Wall D see Sheets 368 and 369
For profile grade of Ramp B see Sheet 2/16
For information not shown on this sheet see General Plans Sheets 3/16 and 4/16
For Estimated Quantities, see Sheet 365D.

H.N.T.B. BRIDGE NO. 14 | Revised 6-26-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 1/16
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SITE PLAN
RAMP B OVER RAMPS C AND G, I-77 AND PENN. R.R.

BR. NO. STA. 30-1489 — STA. 958 + 78.75
SCALE: 1"=50'-0" — STA. 966 + 30.88

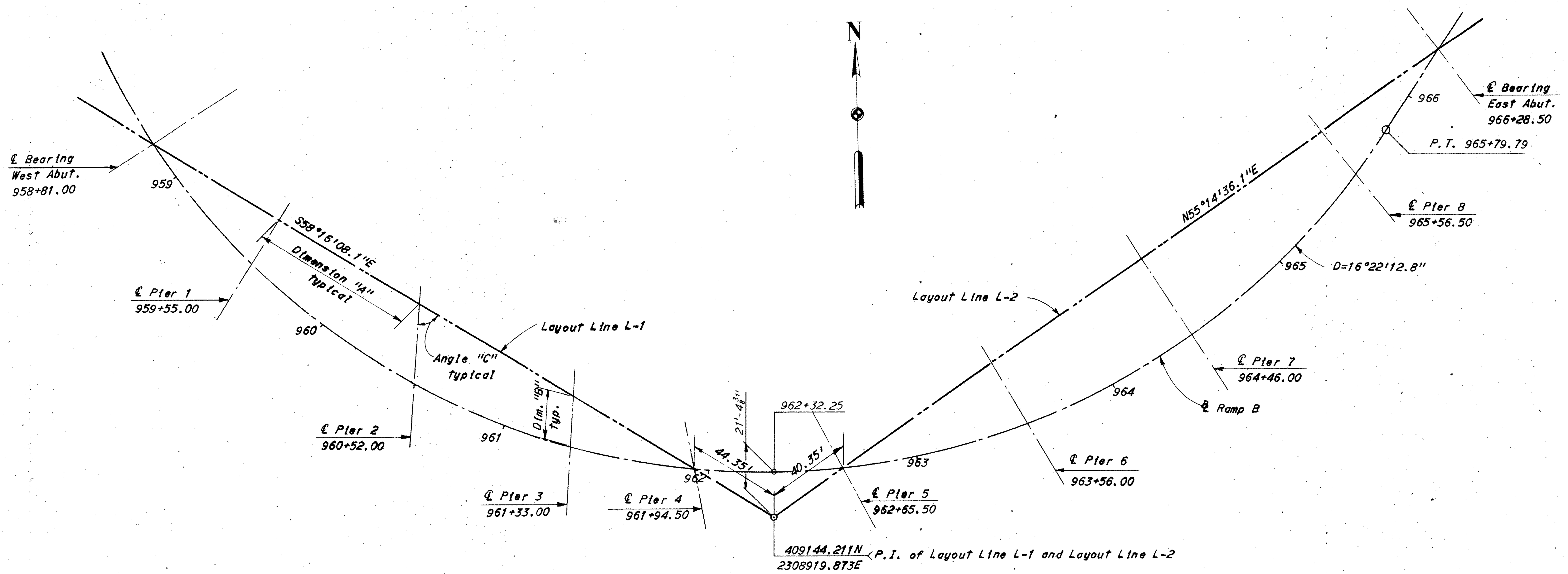
RELOCATED U.S. 30
CANTON — STARK COUNTY — OHIO

DRAWN KSS DATE 2-12-70	TRACED DATE	CHECKED DWB DATE 6-20-70	REVIEWED MJK DATE 11-20-71	REVISED	1668

Revised 4-28-77

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

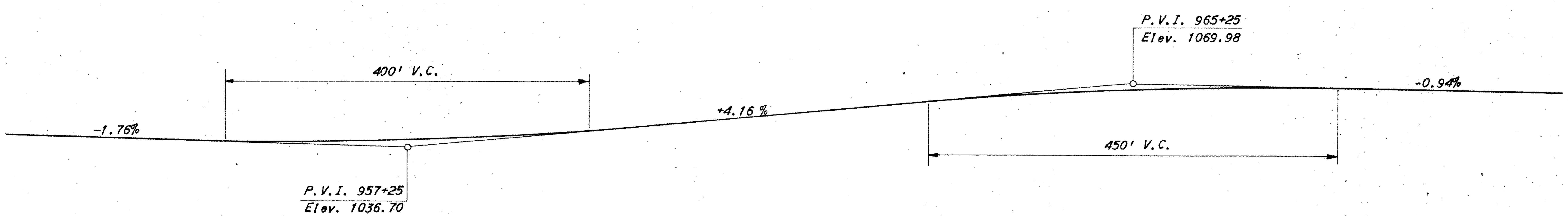
STARK COUNTY
STA-30-14.12
STA-77-9.22



LAYOUT DIMENSIONS			
	"A"	"B"	ANGLE "C"
W. Abut.	0	0	115°39'37.3"
Pier 1	69.82'	24.78'	90°32'47.0"
Pier 2	78.11'	38.62'	62°25'02.2"
Pier 3	86.41'	24.41'	62°25'02.2"
Pier 4	68.79	0	46°50'23.0"
Pier 5	-	0	97°12'16.5"
Pier 6	86.66'	33.63'	94°53'22.3"
Pier 7	87.89'	44.52'	92°09'22.8"
Pier 8	105.53'	26.57'	87°04'02.0"
E. Abut.	68.28'	0	87°04'02.0"

LAYOUT FROM WEST ABUTMENT TO EAST ABUTMENT

Note:
See General Plan Sheets for bearings of piers and footing locations.



PROFILE GRADE - RAMP B

HORIZONTAL CURVE DATA - RAMP B

P.I. Sta. 975+73.567
D = 16°22'12.8"
Δ = 159°51'14.5" Lt.
R = 350.000'
T = 1970.268
L = 976.493

H.N.T.B. BRIDGE NO. 14

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

2/16

LAYOUT DATA

RAMP B OVER RAMPS C AND G,
I-77 AND PENN. R.R.

BR. NO. STA. 30-1489 STA. 958 + 78.75
SCALE: 1"=30'-0" STA. 966 + 30.88

RELOCATED U.S. 30

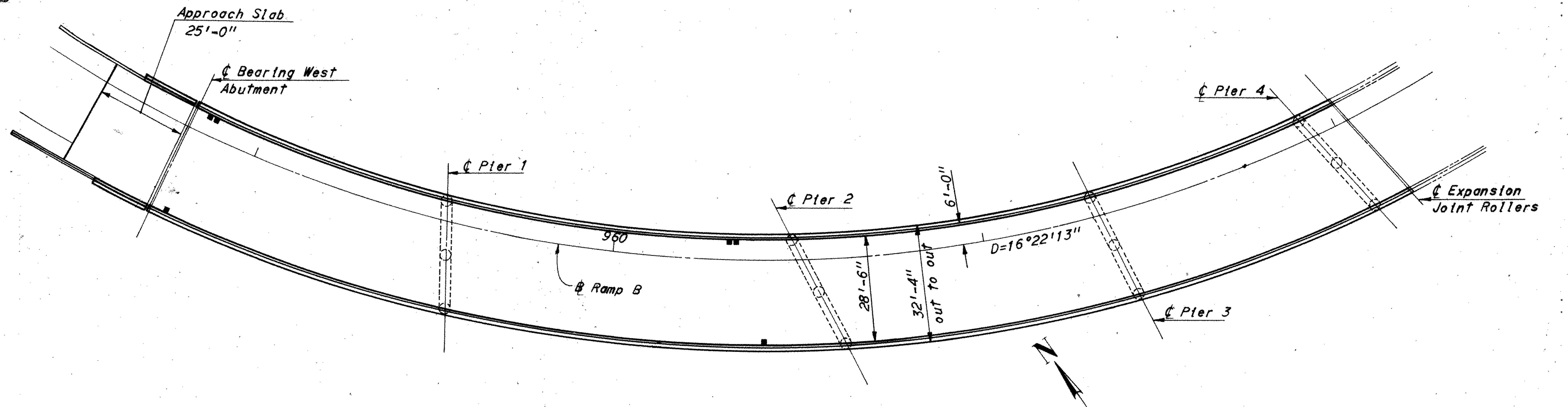
CANTON STARK COUNTY OHIO

DRAWN RAP	TRACED	CHECKED DGS	REVIEWED MJK	REVISED
DATE 11-19-69	DATE	DATE 4-8-70	DATE 11-20-71	1668

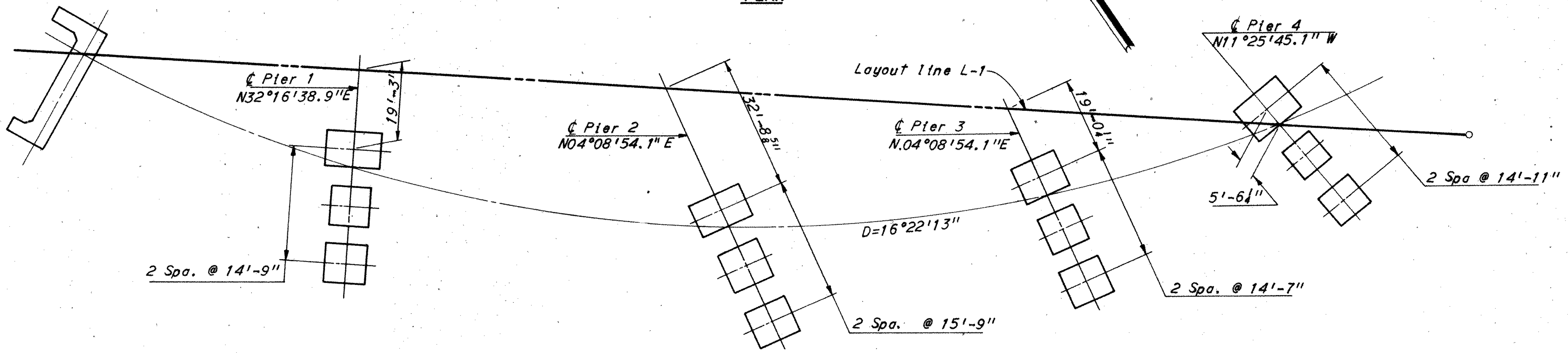
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

326/389

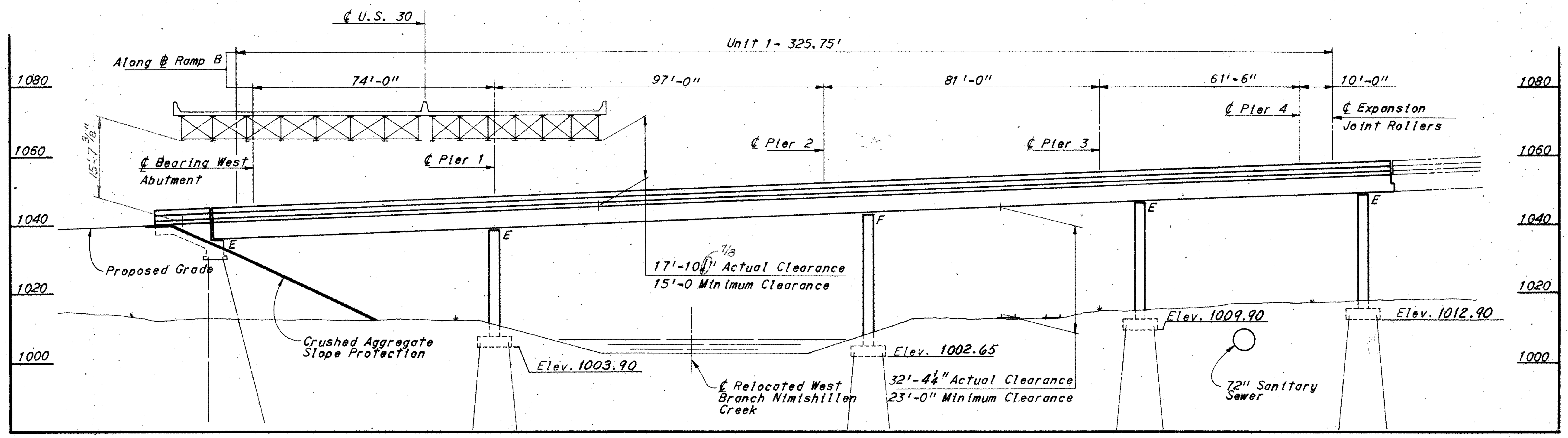
STARK COUNTY
STA-30-14.12
STA-77-9.22



PLAN



FOOTING LAYOUT



DEVELOPED ELEVATION

ESTIMATED AVERAGE PAY LENGTHS FOR PILING	
West Abutment	70'
Pier 1	70'
Pier 2	70'
Pier 3	70'
Pier 4	70'

Notes:
For Profile grades see Sheet 2/16
For details of Piers 1,2,3,and 4 see Sheet 7/16
For details of West Abutment see Sheet 5/16
For lighting details see Lighting Plans.

▪Denotes standard scupper.
For Layout data see Sheet 2/16

H.N.T.B. BRIDGE NO. 14 | Revied 6-25-75 | By RAS

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

3/16

GENERAL PLAN-UNIT I

RAMP B OVER RAMPS C AND G,
I-77 AND PENN. R.R.

BR. NO. STA. 30-1489 STA. 958 + 78.75
SCALE: 1"= 20'-0" STA. 966 + 30.88

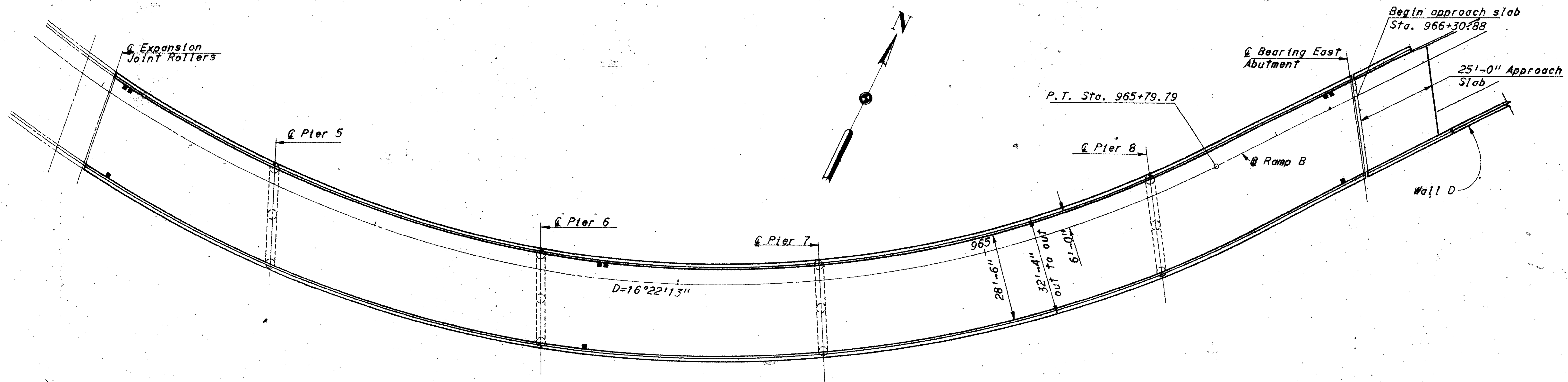
RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

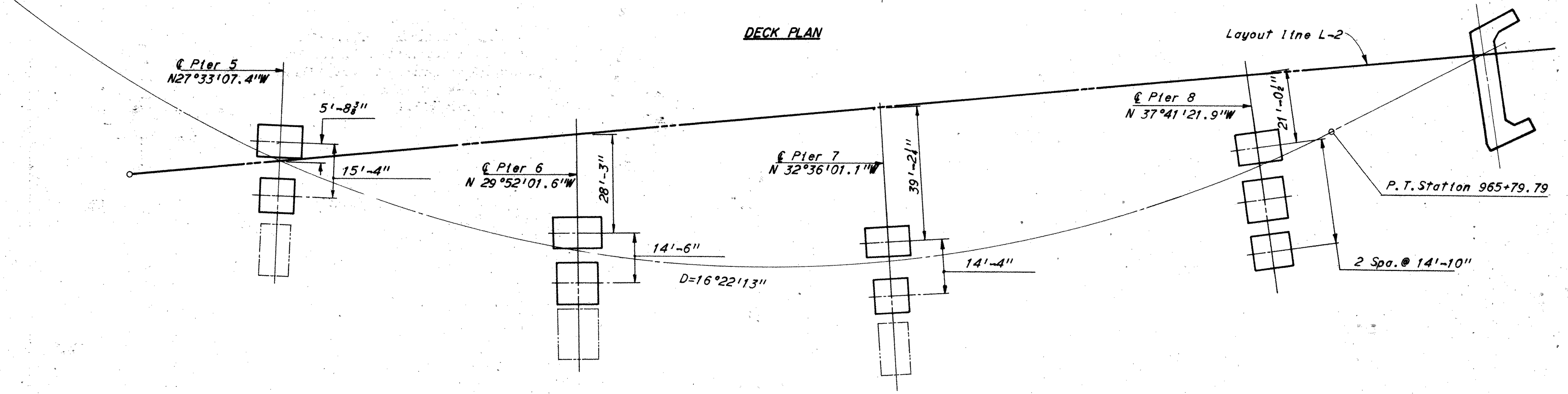
DRAWN LDE	TRACED	CHECKED DWB	REVIEWED MJK	REVISED
DATE 10-21-69	DATE	DATE 6-20-70	DATE 11-20-71	1668

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

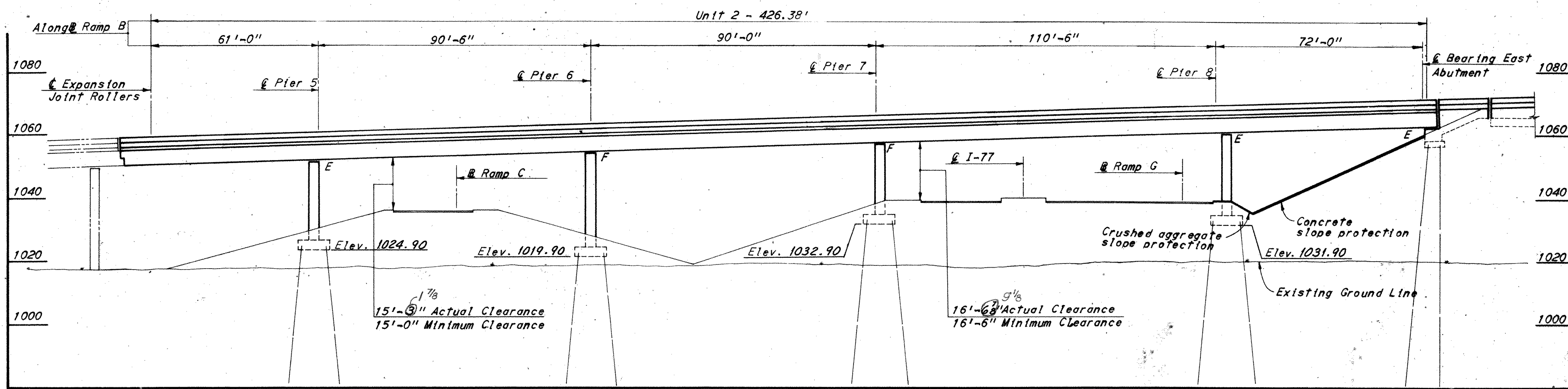
STARK COUNTY
STA-30-14.12
STA-77-9.22



DECK PLAN



FOOTING LAYOUT



DEVELOPED ELEVATION

ESTIMATED AVERAGE PAY LENGTHS FOR PILING	
Pier 5	70'
Pier 6	70'
Pier 7	70'
Pier 8	70'
East Abutment	80'

Notes:

For profile grades see Sheets 1/16 and 2/16
For details of Pier 5, 6, and 7 see Sheet 9/16
For details of Pier 8 see Sheet 8/16
For details of East Abutment see Sheet 6/16
For lighting details see Lighting Plans.
■ Denotes standard scupper
For layout data see Sheet 2/16

H.N.T.B. BRIDGE NO. 14 — Revised 6-25-75 By RAS

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

4/16

GENERAL PLAN-UNIT 2

RAMP B OVER RAMPS C AND G,
I-77 AND PENN. R.R.

BR. NO. STA. 30-1489 — STA. 958 + 78.75
SCALE: 1"=20'-0" — STA. 966 + 30.88

RELOCATED U.S. 30

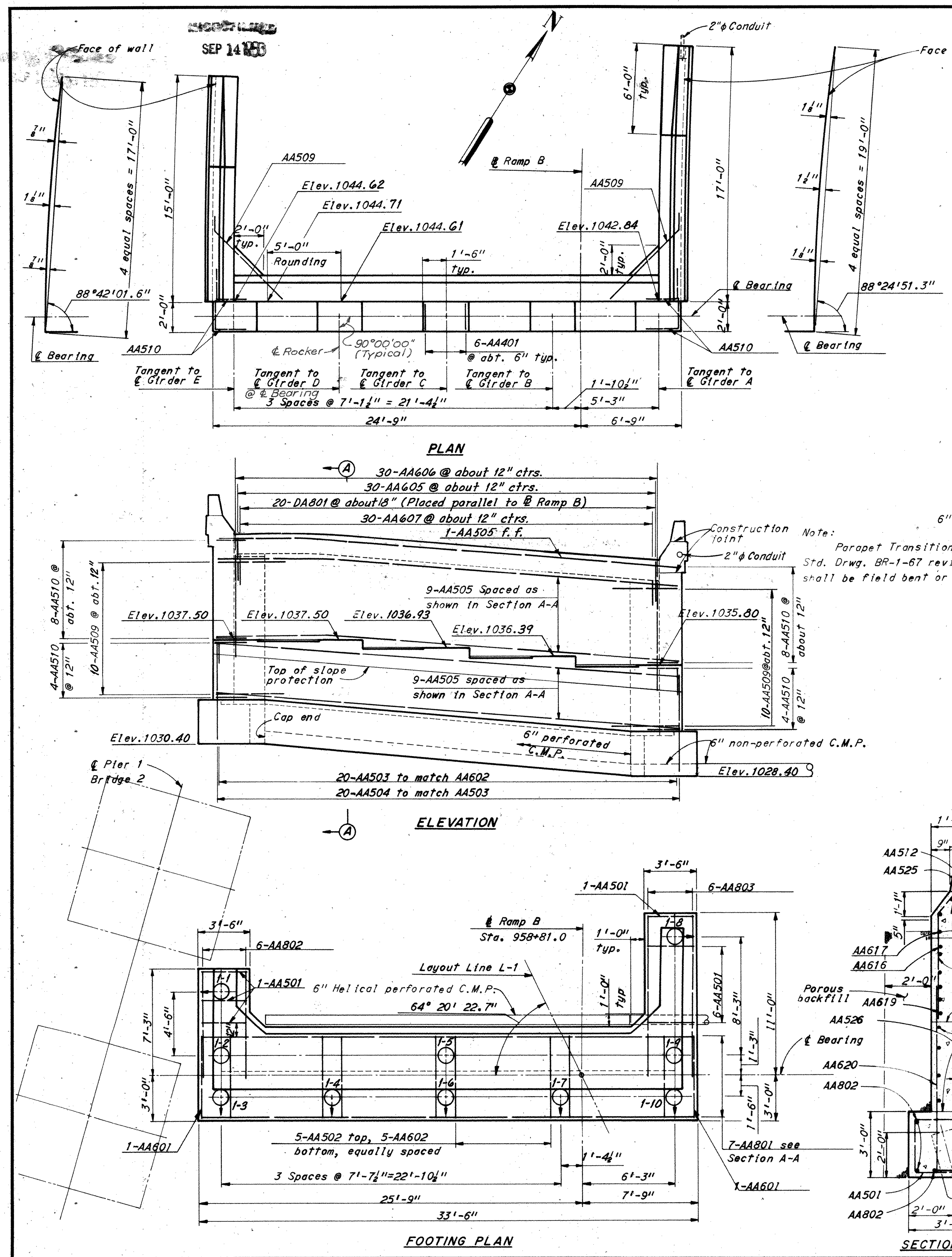
CANTON — STARK COUNTY — OHIO

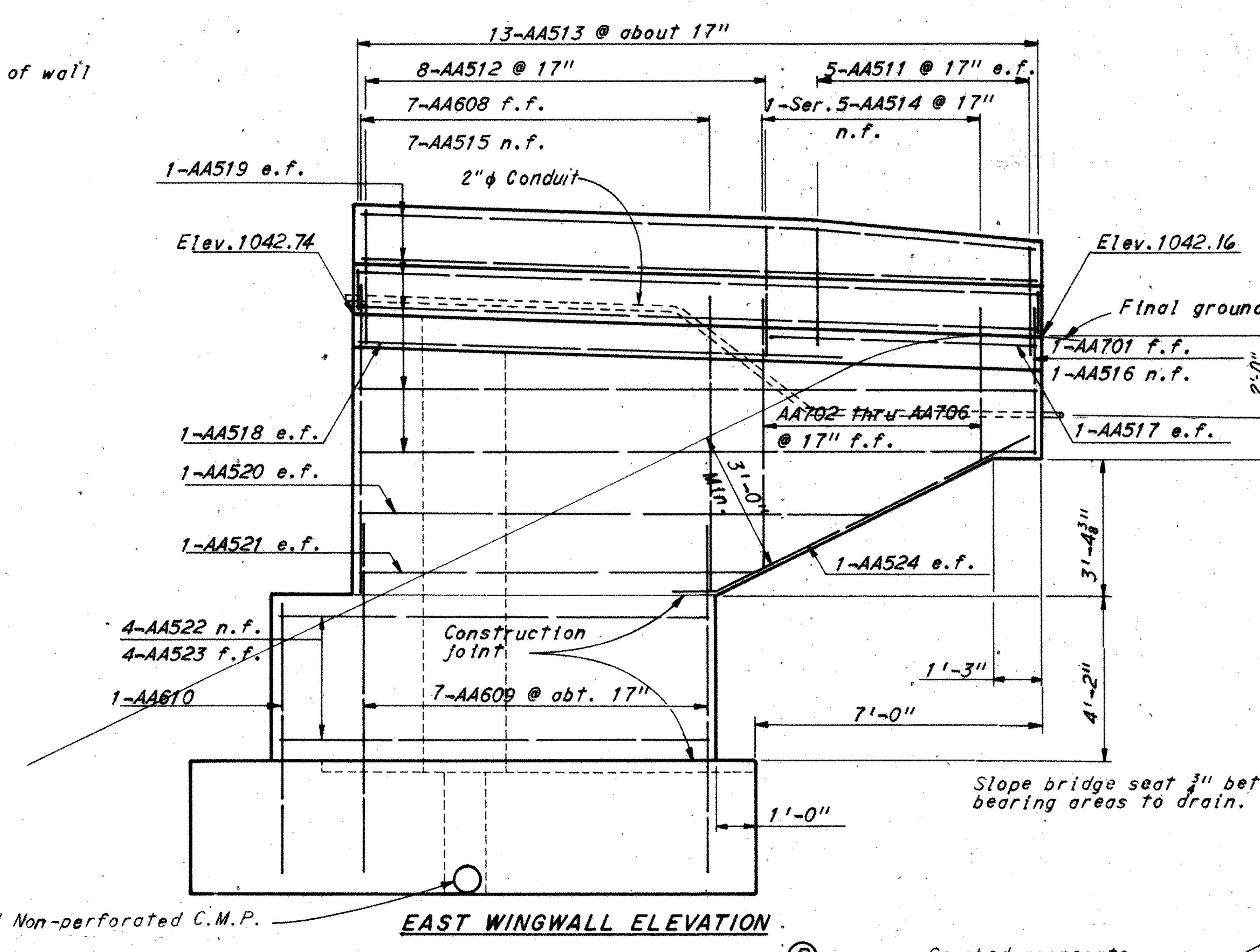
DRAWN LDE DATE 10-28-69	TRACED DATE	CHECKED DWB DATE 6-20-70	REVIEWED MJK DATE 11-20-71	REVISED 1668

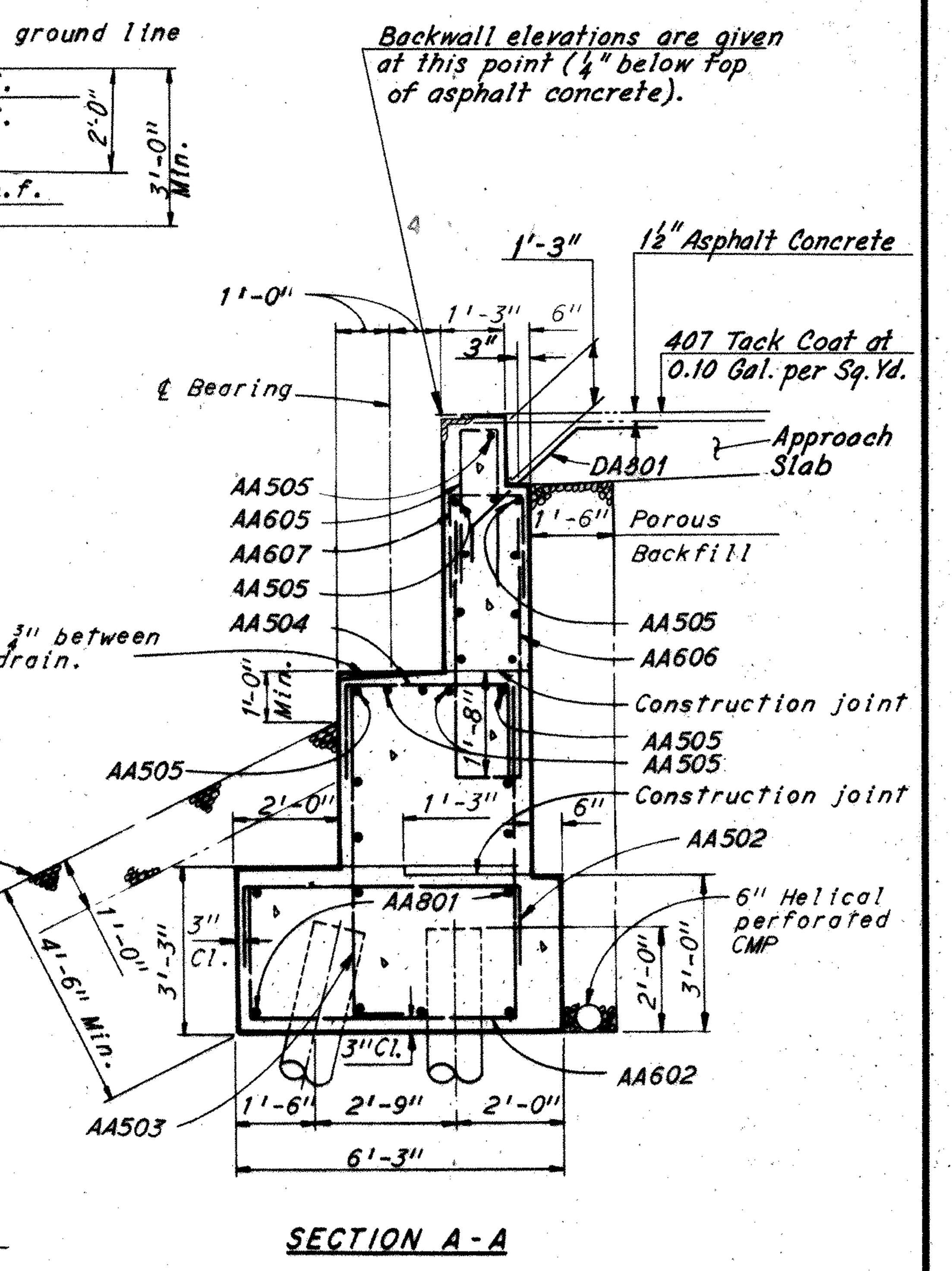
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO	.	

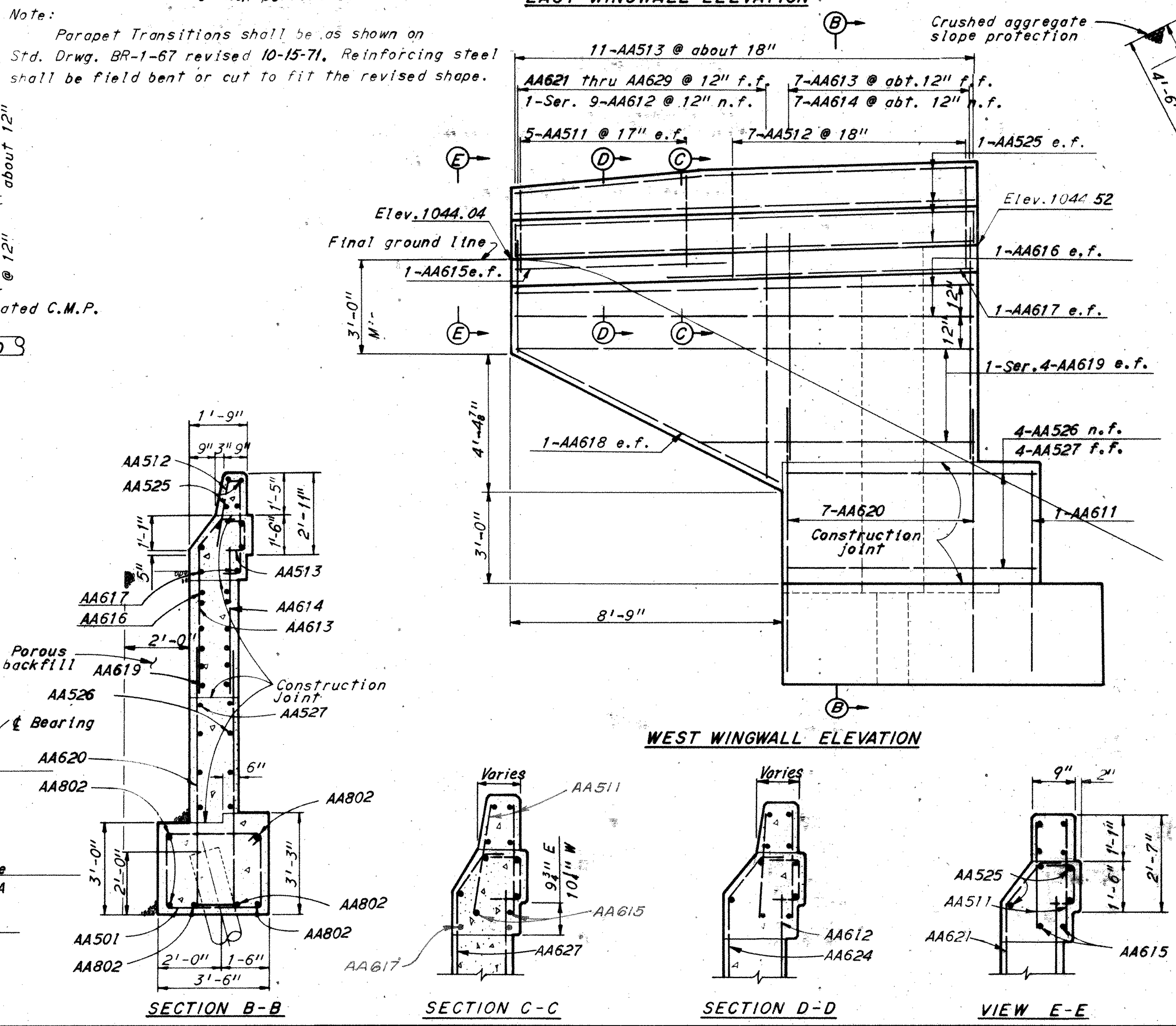
328/389

STARK COUNTY
STA-30-14.12
STA-77-9.22









Notes:

For roadway end dam details see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4, and Sheet 359.

AA401 bars shall be placed 2½"± below top of bridge seat.

n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.

For reinforcement schedule see Sheet 14/16

For details of C.M.P. outlet at side slopes see Sheet 359.

All battered piles are battered 3 in 12.

Pile dimensions are measured along bottom of footing.

All piles are 12" φ cast-in-place concrete.

E denotes East wingwall.

W denotes West wingwall.

○→ Denotes battered piles.

Piles not shown in elevations.

H.N.T.B. BRIDGE NO. 14 | Revised 6-25-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK | 5/16

WEST ABUTMENT

RAMP B OVER RAMPS C AND G, I-77 AND PENN. R.R.

BR. NO. STA-30-1489 — STA. 958+78.75
SCALE: 1/4" = 1'-0" — STA. 966+30.88

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN OWB	TRACED	CHECKED MAG	REVIEWED	REVISED
DATE 4-10-70	DATE	DATE 6-23-70	DATE 11-24-71	1668

Revised 4-28-77

STARK COUNTY
STA-30-14.12
STA-77-9.22

Note:
Parapet transitions shall be as shown on Std. Drwg. BR-1-67 revised 10-15-71. Reinforcing Steel shall be field bent or cut to fit the revised shape.

Notes:

For roadway end dam details see Ohio Standard Drawing **SD-1-69**, Sheets **1** and **2** of **4**, and Sheet **359**.

AB401 bars shall be placed 2½"± below top of bridge seat.

n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.

For reinforcement schedule see Sheet 14/16

For details of Retaining Wall "D" see Sheet 368.

All battered piles are battered **4 in 12.**

Pile dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

○→ Denotes battered piles.

Piles not shown in elevation views.

Only that portion of the CMP located in the porous backfill shall be perforated.

For details of C.M.P. outlet at side slope see Sheet 359.

H.N.T.B. BRIDGE NO. 14 — Revised 6-25-75 By RAS — 6/16

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

EAST ABUTMENT

RAMP B OVER RAMPS C AND G, I-77 AND PENN. R.R.

BR. NO. STA. 30-1489 — STA. 958 + 78.75
SCALE: 1/4" = 1'-0" — STA. 966 + 30.88

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

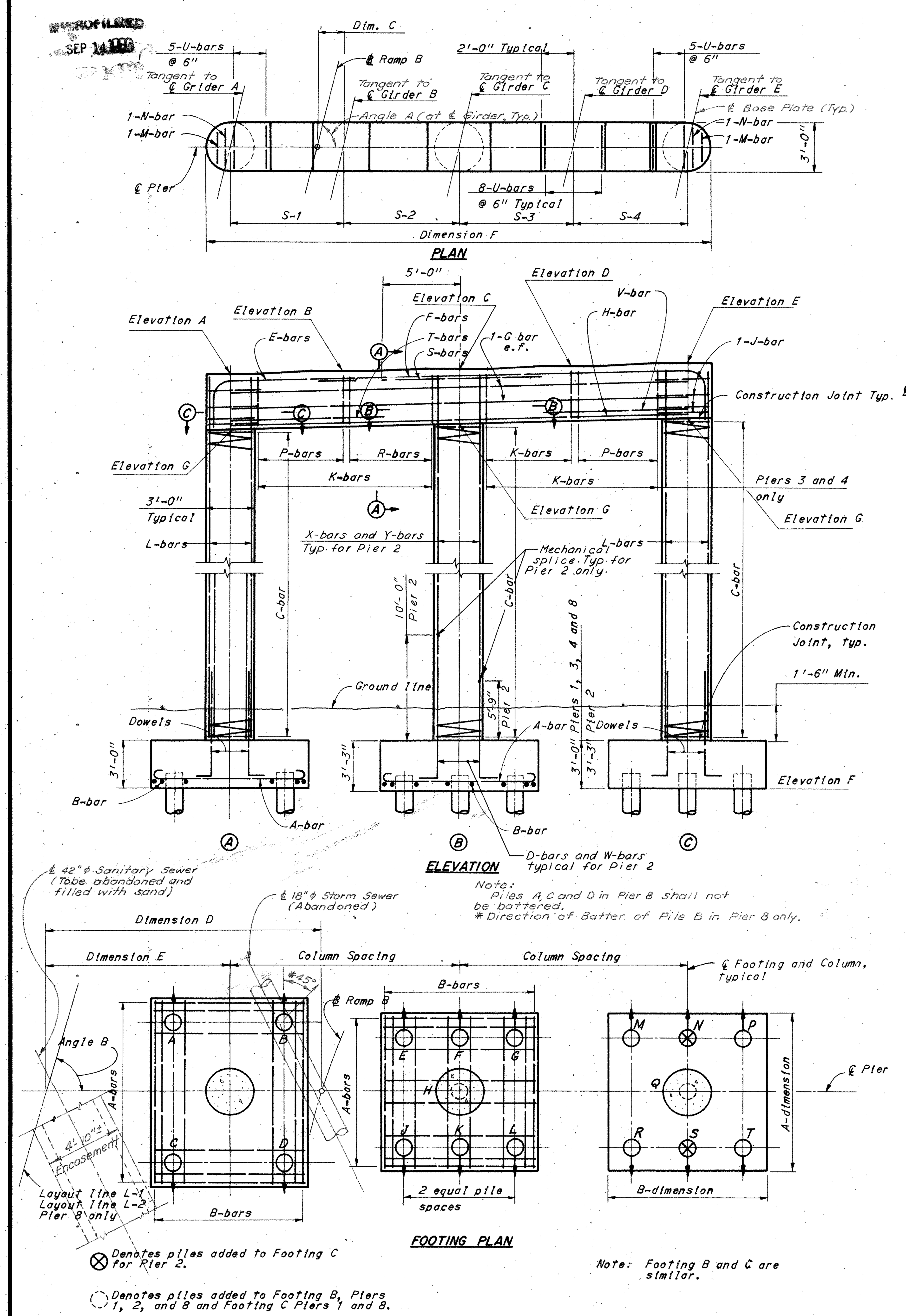
DRAWN	TRACED	CHECKED	REVIEWED	REVISED	
KSS DATE 3-2-70	DATE	DGS DATE 5-12-70	RJK DATE 11-20-71		1668

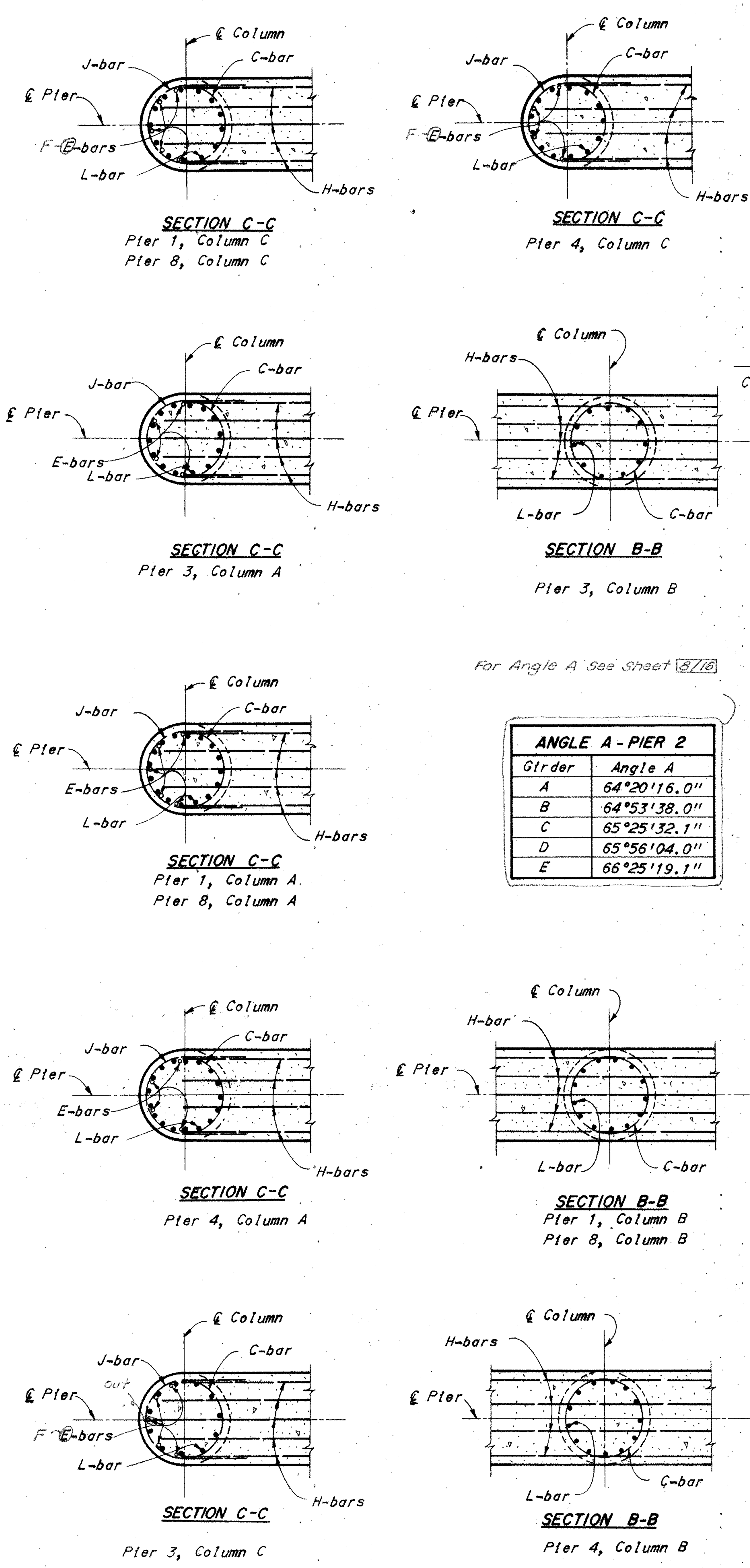
Revised 4-28-77

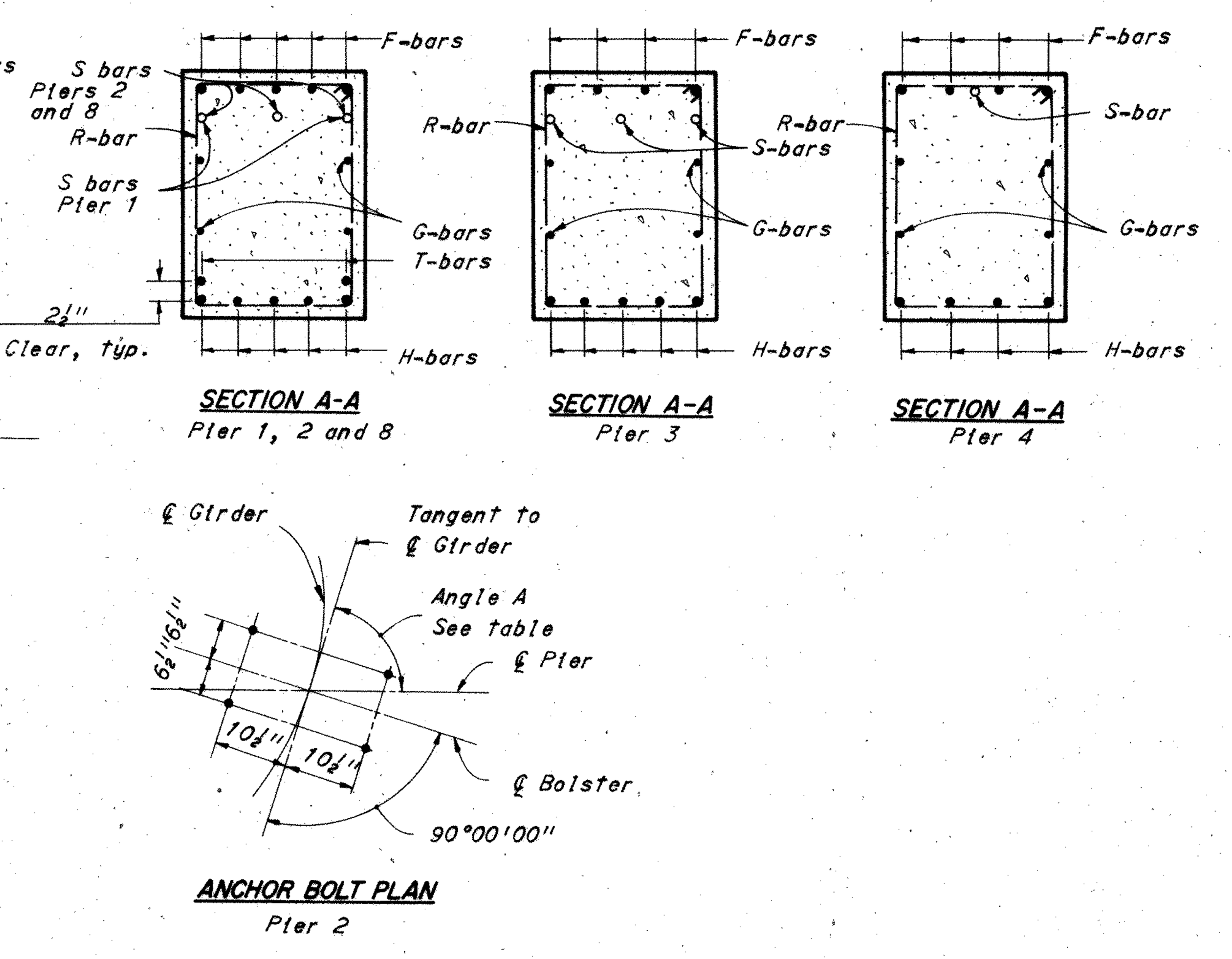
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	330 / 389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22

NOTE: The reinf. bars in the top of the cap, Pier 2, shown near ℄ Pier, shall be placed 4" off of the centerline.





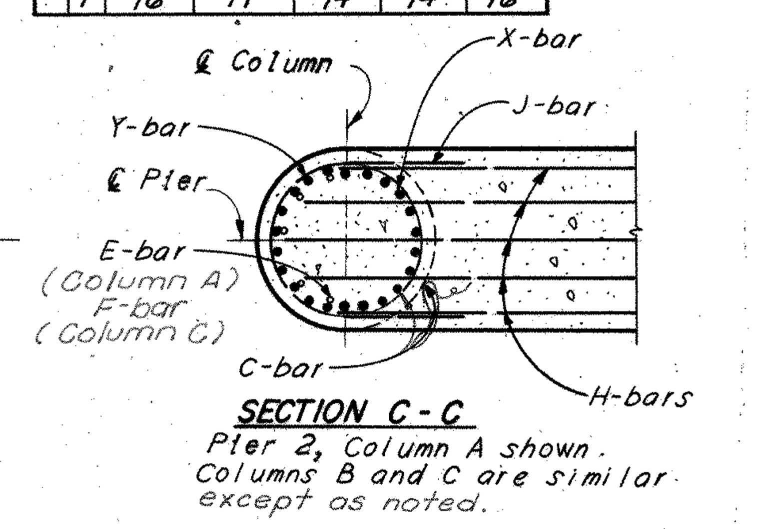


For Angle A See Sheet 8/16

ANGLE A - PIER 2	
Girder	Angle A
A	64°20'16.0"
B	64°53'38.0"
C	65°25'32.1"
D	65°56'04.0"
E	66°25'19.1"

PILE NUMBERING DESIGNATIONS

FOOTING	PILE	PIER 1 (PREFIX 2)	PIER 2 (PREFIX 3)	PIER 3 (PREFIX 4)	PIER 4 (PREFIX 5)	PIER 8 (PREFIX 9)
A	A	1	1	1	1	1
	B	2	2	2	2	2
	C	3	3	3	3	3
	D	4	4	4	4	4
B	E	5	5	5	5	5
	F	6	6	6	6	6
	G	7	7	7	7	7
	H	8	8			8
	J	9	9	8	8	9
	K	10	10	9	9	10
	L	11	11	10	10	11
C	M	12	12	11	11	12
	N	-	13	-	-	-
	P	13	14	12	12	13
	Q	14		-	-	14
	R	15	15	13	13	15
	S	-	16	-	-	-
	T	16	17	14	14	16



Notes:

Special care shall be taken when placing reinforcing steel so as not to interfere with anchor bolt setting. Pier 2 only. See Sheet 214.

M, N, and U. bars shall be placed 2½"± below top of cap beam.

For reinforcement schedule see Sheet 14/16

All battered piles shall be battered 3 in 12.

Piles dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

For footing layout see Sheet 3/16 and 4/16

e.f. denotes each face.

All stirrups within 4 feet of ℄ of columns shall be placed with hooks in bottom of cap. All others shall be placed with hooks in the top.

For data not given, see Sheet 8/16

H.N.T.B. BRIDGE NO. 14 — Revised 6-25-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 7/16
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIERS 1, 2, 3, 4 AND 8
RAMP B OVER RAMPS C AND G,
I-77 AND PENN. R.R.

BR. NO. STA. 30-1489 — STA. 958 + 78.75
SCALE: NONE — STA. 966 + 30.88

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN LDE	TRACED	CHECKED DWB	REVIEWED MJK	REVISED 3-2-76
DATE 2-11-70	DATE	DATE 5-15-70	DATE 11-24-71	1668

Revised 4-28-77

STARK COUNTY
STA-30-14.12
STA-77-9.22

Pier No.	CAP BEAM REINFORCING STEEL													
	E-bars	F-bars	G-bars	H-bars	J-bars	K-bars	M-bars	N-bars	P-bars	R-bars	S-bars	T-bars	U-bars	V-bars
1	5-PA1004	5-PA1003	PA602	5-PA1005	PA601	7-PA502 @ 9"	PA503	PA504	5-PA502 @ 18"	5-PA502 @ 15"	2-PA1007	2-PA1006	PA501	2-PA1006
2	5-PB1001	5-PB1002	PB602	5-PB1003	PB601	7-PB502 @ 12"	PB503	PB504	5-PB502 @ 18"	6-PB502 @ 15"	3-PB1005	2-PB1004	PB501	2-PB1006
3	4-PC1002	4-PC1003	PC602	5-PC1004	PC601	9-PC502 @ 18"	PC503	PC504	———	———	3-PC1005	———	PC501	———
4	4-PD1001	4-PD1002	PD602	4-PD1003	PD601	9-PD502 @ 18"	PD503	PD504	———	———	1-PD1004	———	PD501	———
8	5-PH1004	5-PH1005	PH602	5-PH1006	PH601	8-PH502 @ 9"	PH503	PH504	5-PH502 @ 18"	6-PH502 @ 12"	3-PH1008	2-PH1009	PH501	2-PH1007

PIER CAP LAYOUT TABLE

Pier No.	1	2	3	4	8
℄ Pier Sta.	959+55.00	960+52.00	961+33.00	961+94.50	965+56.50
Dimension C	1'-11 1/16"	2'-0 7/8"	1'-11"	1'-11 9/16"	1'-11 5/16"
Girder	A	A	A	A	A
Elevation A	1038.05	1042.09	1045.74	1048.43	1059.67
S-1	7'-3 3/4"	7'-10 5/8"	7'-3 7/16"	7'-5 11/16"	7'-4 3/4"
Girder	B	B	B	B	B
Elevation B	1038.71	1042.82	1046.39	1049.11	1059.93
S-2	7'-3 11/16"	7'-10 3/8"	7'-3 3/8"	7'-5 1/2"	7'-4 5/8"
Girder	C	C	C	C	C
Elevation C	1039.29	1043.49	1047.00	1049.74	1060.15
S-3	7'-3 9/16"	7'-9 13/16"	7'-3 1/4"	7'-5 3/8"	7'-4 1/2"
Girder	D	D	D	D	D
Elevation D	1039.93	1044.19	1047.64	1050.42	1060.41
S-4	7'-3 1/2"	7'-9 7/16"	7'-3 3/16"	7'-5 3/16"	7'-4 3/8"
Girder	E	E	E	E	E
Elevation E	1039.98	1044.31	1047.70	1050.50	1060.30
Dimension F	32'-6"	34'-6"	32'-2"	32'-10"	32'-8"

FOOTING DATA

Pier No.	Column Spacing	Footing	Elev. F	Dim. A	Dim. B	Reinforcing Steel		Dim. D	Dim. E	Angle B
						A-bars	B-bars			
1	14'-9"	A	1003.90	14'-0"	9'-0"	15-PA801	12-PA1101	24'-9 3/8"	19'-3"	90°32' 47.0"
		B	1003.65	10'-0"	10'-0"	10-PA901	12-PA1001			
		C	1003.90	11'-0"	10'-0"	10-PA1001	10-PA1002			
2	15'-9"	A	1002.90	14'-0"	9'-0"	15-PB801	12-PB1101	38'-7 3/8"	32'-8 5/8"	62°35' 02.2"
		B	1002.65	11'-0"	11'-0"	12-PB901	12-PB1102			
		C	1002.65	11'-0"	10'-0"	10-PB902	12-PB1102			
3	14'-7"	A	1009.90	12'-0"	10'-0"	10-PC1001	10-PC1101	24'-5"	19'-0 1/4"	62°25' 02.2"
		B	1009.65	10'-0"	10'-0" 10	9-PC901	12-PC1001			
		C	1009.90	10'-0"	9'-0"	9-PC902	10-PC901			
4	14'-11"	A	1016.90	14'-0"	10'-0"	14-PD901	13-PD1101	0'-0"	** 5'-6 1/4"	46°50' 23.0"
		B	1014.15	9'-0"	9'-0"	8-PD801	10-PD902			
		C	1012.90	10'-0"	9'-0"	9-PD902	10-PD901			
8	14'-10"	A	1031.90	13'-0"	9'-0"	13-PH8012	11-PH1101	26'-6 7/8"	21'-0 1/2"	87°04' 02.0"
		B	1031.65	12'-0"	12'-0"	12-PH1002	16-PH1107			
		C	1031.90	11'-0"	10'-0"	10-PH1001	10-PH1003			

** See Sheet 3/16

ANGLE A

Girder	Pier 1	Pier 2	Pier 3	Pier 4	Pier 8
A	76°47'54.5"	64°20'16.0"	77°49'28.2"	72°13'28.9"	105°44'31.6"
B	77°04'13.7"	64°53'38.0"	78°04'28.9"	72°35'46.5"	105°24'55.2"
C	77°19'53.0"	65°25'32.1"	78°18'53.1"	72°57'08.4"	105°06'07.3"
D	77°34'54.8"	65°56'04.0"	78°32'43.0"	73°17'38.2"	104°48'04.8"
E	77°49'21.4"	66°25'19.1"	78°46'00.5"	73°37'18.9"	104°30'45.1"

COLUMN DATA

Pier No.	Column	Elevation G	Reinforcing Steel		
			Dowels	L-bars	C-bars
1	A	1034.09	16-PA1102	16-PA1103	1-SPA401
	B	1035.32	13-PA1106	13-PA1104	1-SPA402
	C	1036.56	13-PA1102	13-PA1105	1-SPA403
3	A	1041.77	14-PC1102	14-PC1103	1-SPC401
	B	1043.02	11-PC1106	11-PC1104	1-SPC402
	C	1044.27	11-PC1102	11-PC1105	1-SPC403
4	A	1044.45	17-PD1102	17-PD1103	1-SPD401
	B	1045.75	13-PD1106	13-PD1104	1-SPD402
	C	1047.05	13-PD1102	13-PD1105	1-SPD403
8	A	1055.99	16-PH1102	16-PH1103	1-SPH401
	B	1056.49	13-PH1106	13-PH1104	1-SPH402
	C	1056.96	13-PH1102	13-PH1105	1-SPH403

COLUMN DATA - PIER 2

Column	Elevation G	Reinforcing Steel				
		D-bars	W-bars	X-bars	Y-bars	C-bars
A	1038.12	11-PB1401	11-PB1402	11-PB1403	11-PB1404	1-SPB401
B	1039.47	11-PB1405	11-PB1406	11-PB1407	11-PB1408	1-SPB402
C	1040.81	11-PB1405	11-PB1406	11-PB1409	11-PB1410	1-SPB403

Note:
D-bars shall be spliced to X-bars and W-bars spliced to Y-bars.

H.N.T.B. BRIDGE NO. 14 — Revised 6-25-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 8/16
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIERS 1, 2, 3, 4 AND 8

RAMP B OVER RAMPS C AND G,
I-77 AND PENN. R.R.

BR. NO. STA. 30-1489 — STA. 958 + 78.75
SCALE: NONE — STA. 966 + 30.88

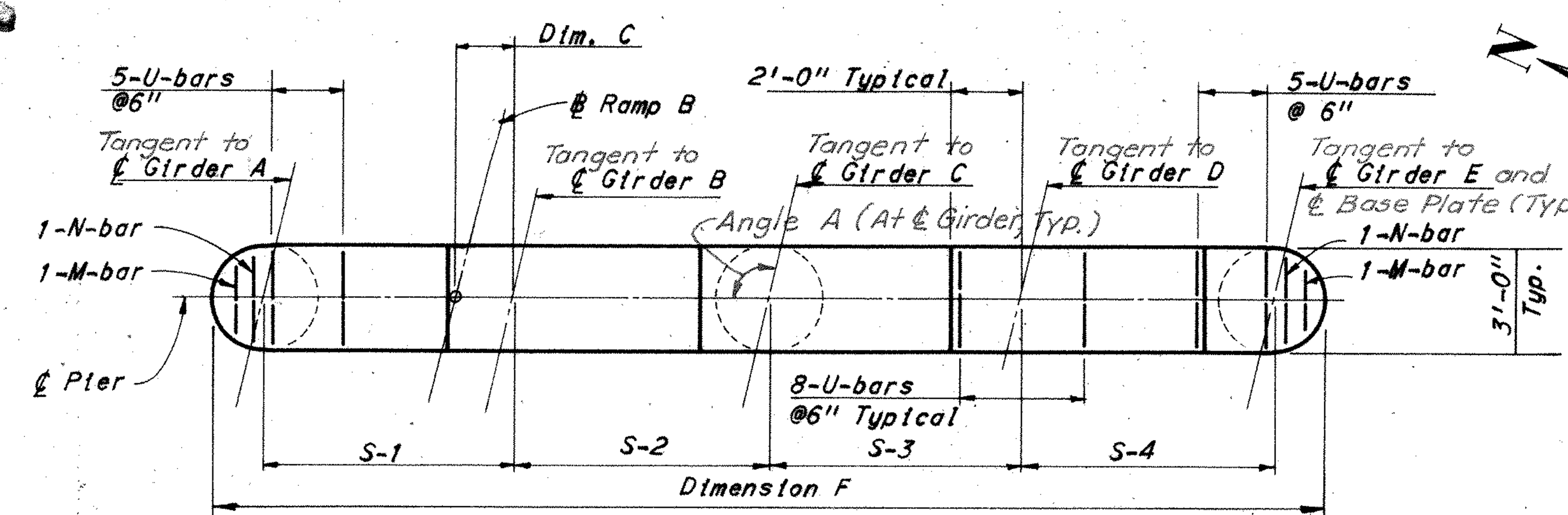
RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

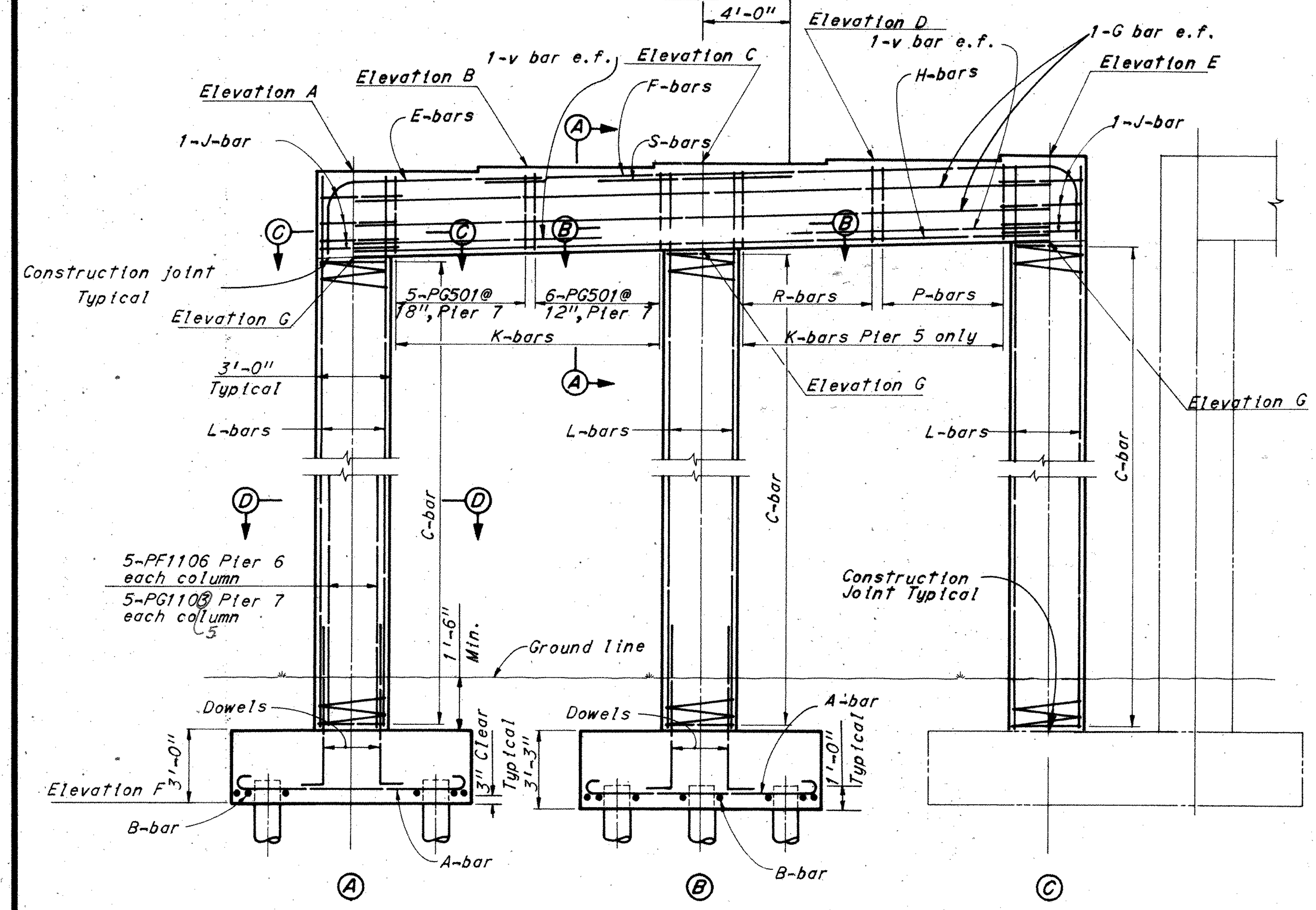
DRAWN LDE DATE 2-11-70	TRACED DATE	CHECKED DWB DATE 5-15-70	REVIEWED MJK DATE 11-20-71	REVISED 1668

Revised 4-28-77

STARK COUNTY
STA-30-14.12
STA-77-9.22



PLAN



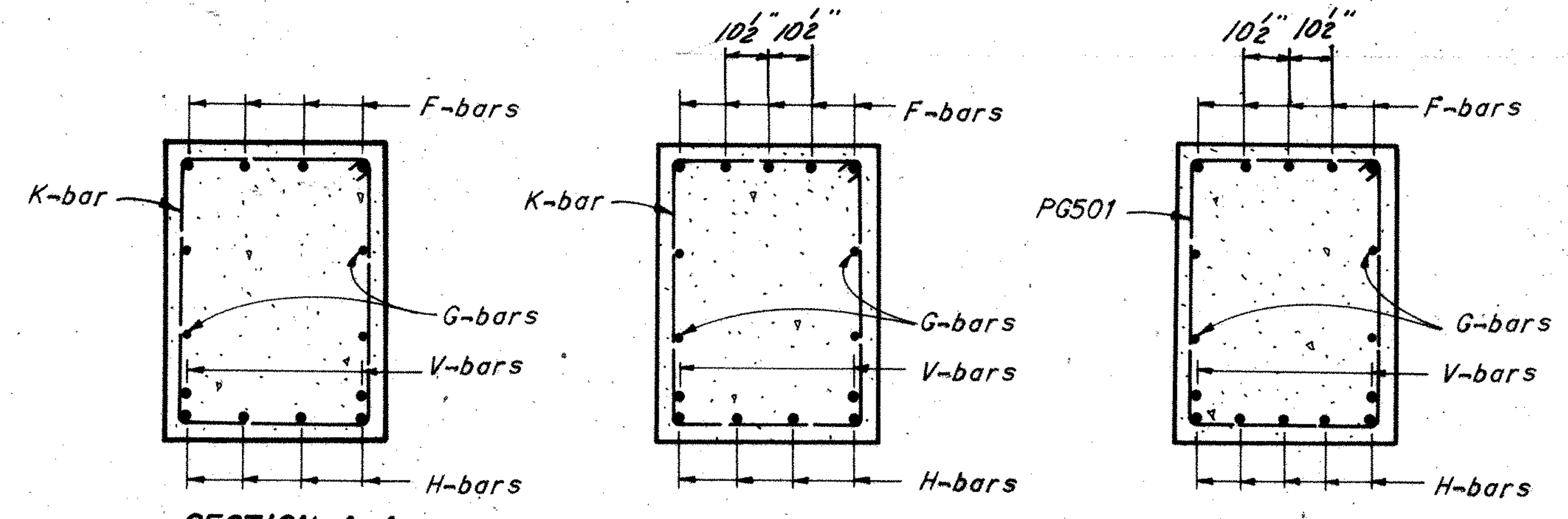
ELEVATION

CAP BEAM REINFORCING STEEL													
Pier No.	E-bars	F-bars	G-bars	H-bars	J-bars	K-bars	M-bars	N-bars	P-bars	R-bars	S-bars	U-bars	V-bars
5	4-PE1003	4-PE1002	PE602	4-PE1004	PE601	9-PE501 @ 18"	PE502	PE503	———	———	2-PE1005	PE504	PE1011
6	5-PF1003	5-PF1002	PF602	4-PF1004	PF601	8-PF501 @ 18"	PF502	PF503	5-PF501 @ 18"	5-PF501 @ 15"	2-PF1005	PF504	PF1006
7	5-PG1003	5-PG1002	PG602	5-PG1004	PG601	———	PG502	PG503	5-PG501 @ 18"	7-PG501 @ 9"	2-PG1005	PG504	PG1006

PIER CAP LAYOUT TABLE			
Pier No.	5	6	7
Dimension F	33'-8"	32'-0"	31'-8"
Dimension C	2'-0¼"	1'-10 13/16"	1'-10½"
Girder	A	A	A
Elevation A	1051.07	1054.68	1057.33
S-1	7'-8¼"	7'-2 11/16"	7'-1 9/16"
Girder	B	B	B
Elevation B	1051.78	1055.32	1057.86
S-2	7'-8"	7'-2⅝"	7'-1 9/16"
Girder	C	C	C
Elevation C	1052.44	1055.91	1058.32
S-3	7'-7 11/16"	7'-2⅝"	7'-1 9/16"
Girder	D	D	D
Elevation D	1053.13	1056.53	1058.85
S-4	7'-7 7/16"	7'-2 9/16"	7'-1 9/16"
Girder	E	E	E
Elevation E	1053.24	1056.57	1058.83

FOOTING DATA										
Pier No.	Column Spacing	Footing	Elev. F	Dim. A	Dim. B	Reinforcing Steel A-bars	Reinforcing Steel B-bars	Dim. D	Dim. E	Angle B
5	15'-4"	A	1028.90	13'-0"	9'-0"	11-PE1101	13-PE801	0'-0"	5'-8⅜"	97°12'16.5"
		B	1027.65	10'-0"	10'-0"	12-PE1001	10-PE901			
		C	———	———	———	———	———			
6	14'-6"	A	1016.90	14'-0"	9'-0"	12-PF1101	15-PF801	33'-7⅝"	28'-3"	94°53'22.3"
		B	1018.65	12'-0"	12'-0"	16-PF1102	12-PF1001			
		C								
7	14'-4"	A	1032.90	14'-0"	9'-0"	12-PG1101	15-PG801	44'-6¼"	39'-2¼"	92°09'22.8"
		B	1032.65	10'-0"	10'-0"	12-PG1001	10-PG901			
		C	———	———	———	———	———			

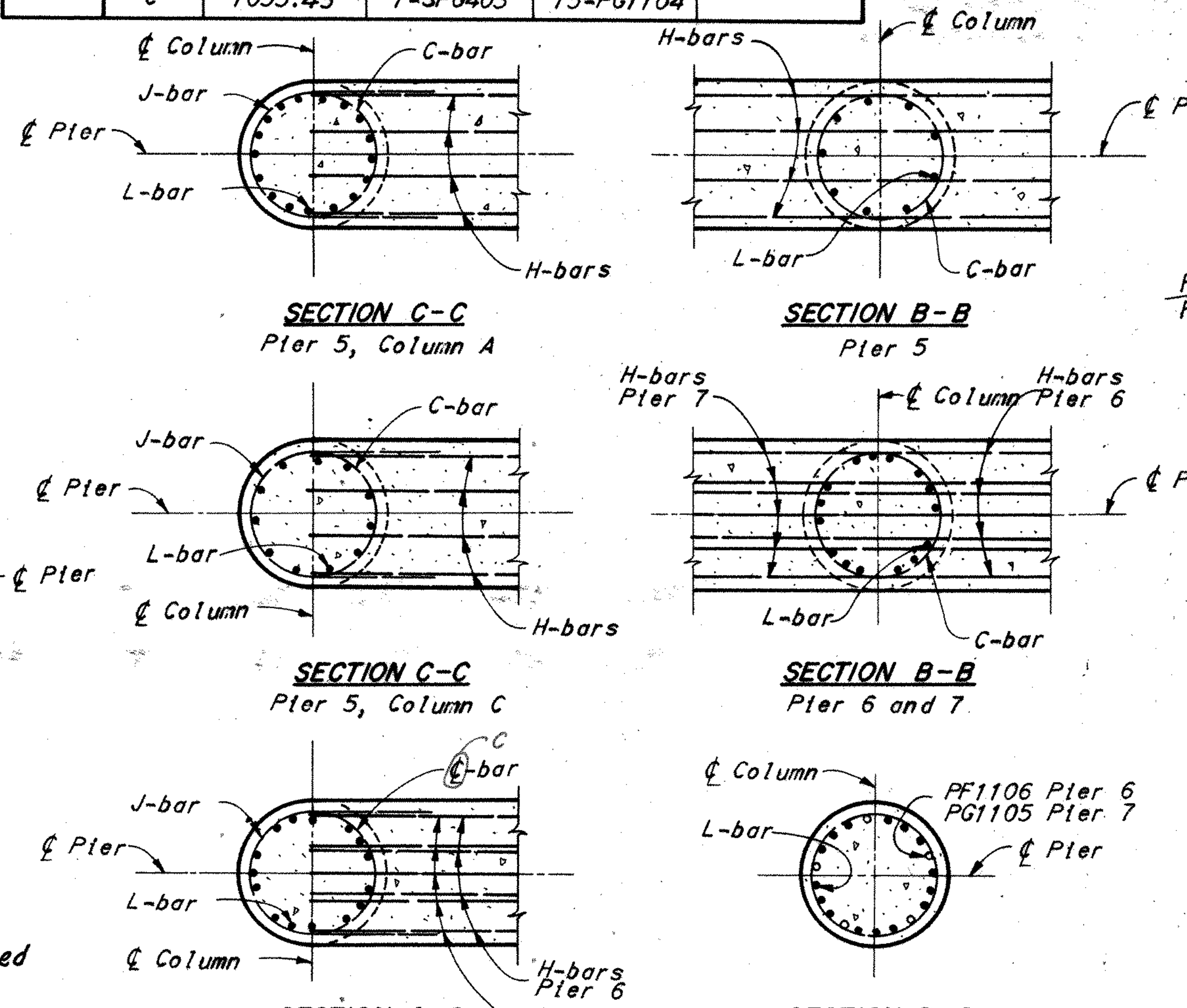
COLUMN DATA					
Pier No.	Column	Elevation G	Reinforcing Steel C-bars	Reinforcing Steel L-bars	Reinforcing Steel Dowels
5	A	1047.09	1-SPE401	17-PE1006	17-PE1009
	B	1048.42	1-SPE402	9-PE1007	9-PE1010
	C	1049.76	1-SPE403	11-PE1008	
6	A	1050.72	1-SPF401	15-PF1103	20-PF1107
	B	1051.94	1-SPF402	15-PF1104	20-PF1108
	C	1053.16	1-SPF403	15-PF1105	
7	A	1053.44	1-SPG401	15-PG1102	20-PG1106
	B	1054.44	1-SPG402	15-PG1103	20-PG1107
	C	1055.45	1-SPG403	15-PG1104	



SECTION A-A
Pier 5

SECTION A-A
Pier 6

SECTION A-A
Pier 7



SECTION C-C
Pier 5, Column A

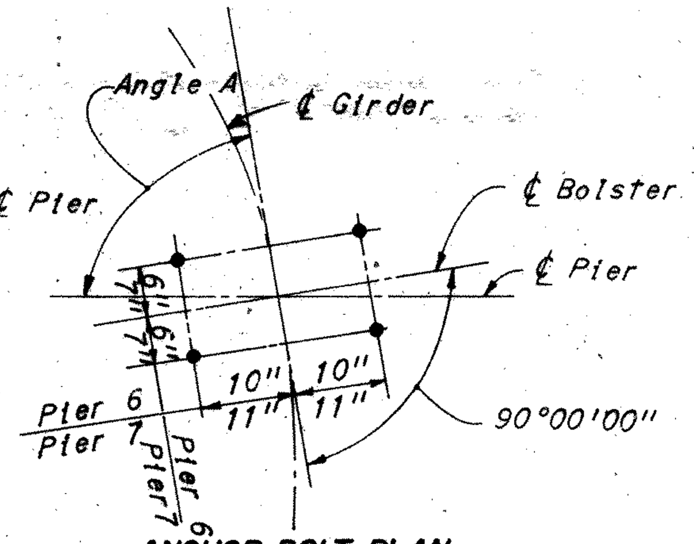
SECTION B-B
Pier 5

SECTION C-C
Pier 5, Column C

SECTION B-B
Pier 6 and 7

SECTION C-C
Pier 6 and 7

SECTION D-D
Piers 6 and 7, All Columns



ANCHOR BOLT PLAN
Pier 6 and 7

ANGLE A			
Grd.	Pier 6	Pier 7	Pier 5
A	99° 38' 45.8"	87° 27' 42.8"	112°21'10.7"
B	99° 26' 56.1"	87° 30' 48.0"	111°52'36.1"
C	99° 15' 35.0"	87° 33' 45.8"	111°25'15.0"
D	99° 04' 40.7"	87° 36' 36.6"	110°59'02.6"
E	98° 54' 11.8"	87° 39' 20.9"	110°33'54.5"

Notes:

Special care shall be taken when placing reinforcing steel so as not to interfere with anchor bolt or anchor bolt setting. Piers 6,7 only. See Sheet 214.

M, N, and U bars shall be placed 2¼"± below top of cap beam.

For reinforcement schedule see Sheet 15/16

All battered piles shall be battered 3 in 12.

Piles dimensions are measured along bottom of footing.

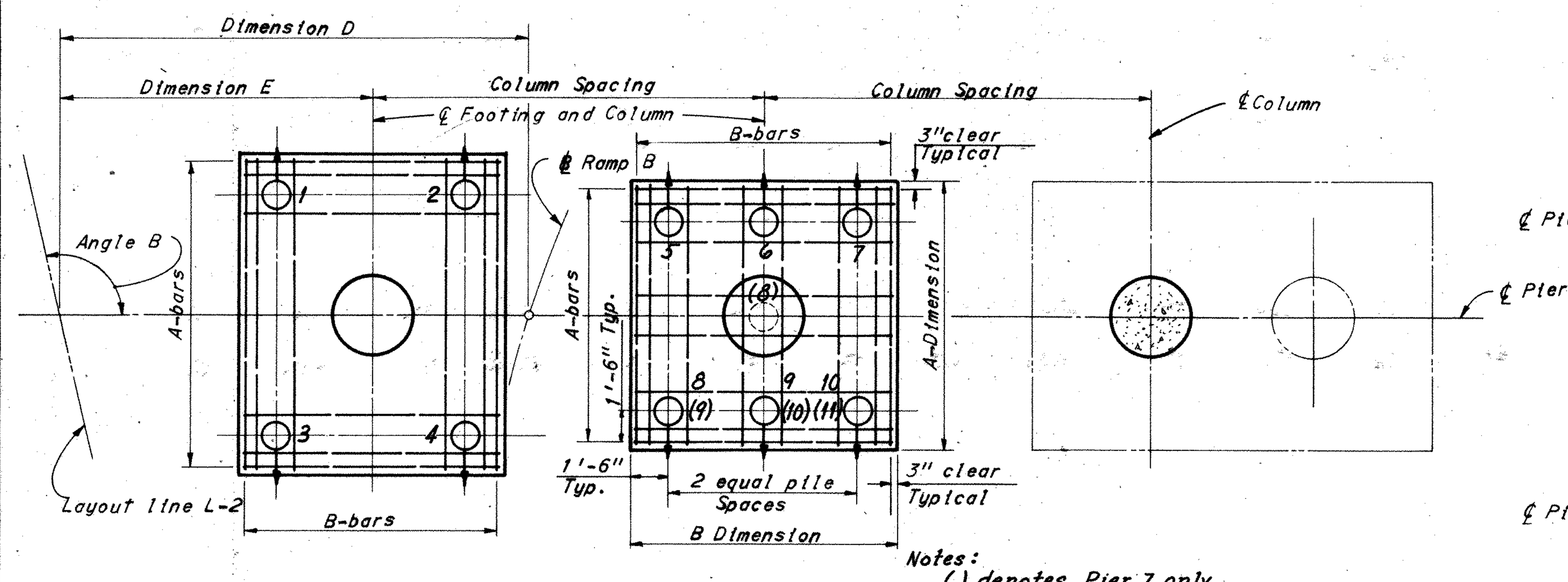
All piles are 12" ϕ cast-in-place concrete.

For footing layout see Sheet 4/16

e.f. denotes each face.

For footing C data see Sheet 272.

All stirrups within 4 feet of ℄-column shall be placed with hooks in bottom of cap. All others shall be placed with hooks in the top.



Denotes pile added to Footing B, Pier 7.

FOOTING PLAN

Notes:
() denotes Pier 7 only.
Pile Numbering Designations shall be prefixed with subscripts:
Pier 5:6 ; Pier 6:7 ; Pier 7:8

H.N.T.B. BRIDGE NO. 14 — Revised 6-25-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 9/16

PIERS 5, 6, AND 7

RAMP B OVER RAMPS C AND G,
I-77 AND PENN. R.R.

BR. NO. STA. 30-1489 — STA. 958 + 78.75
SCALE: NONE — STA. 966 + 30.88

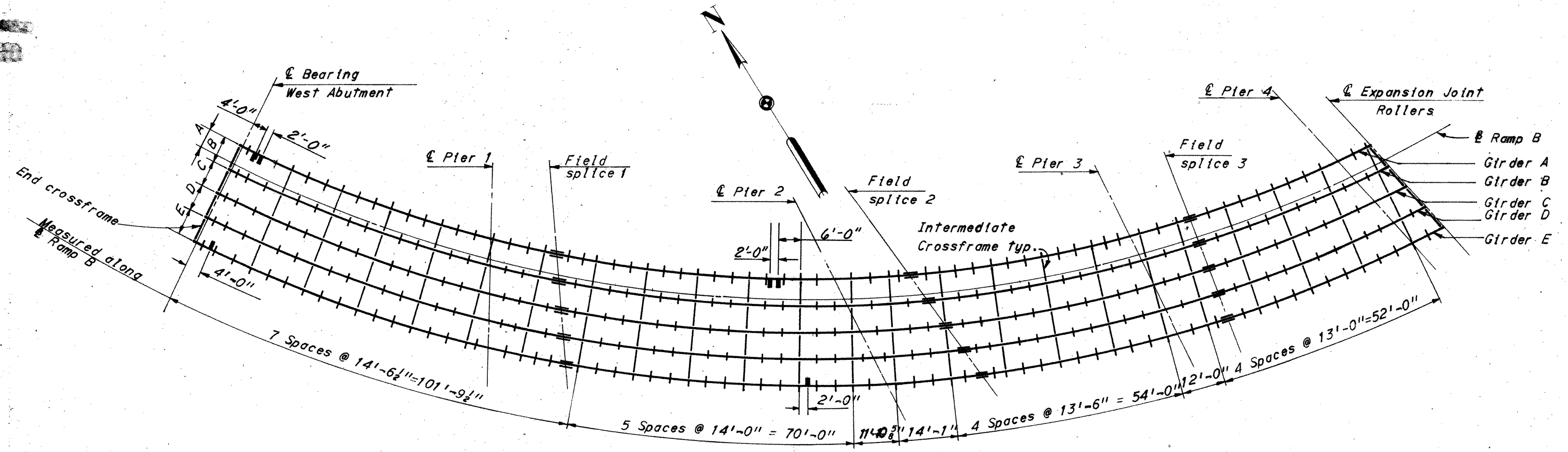
RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

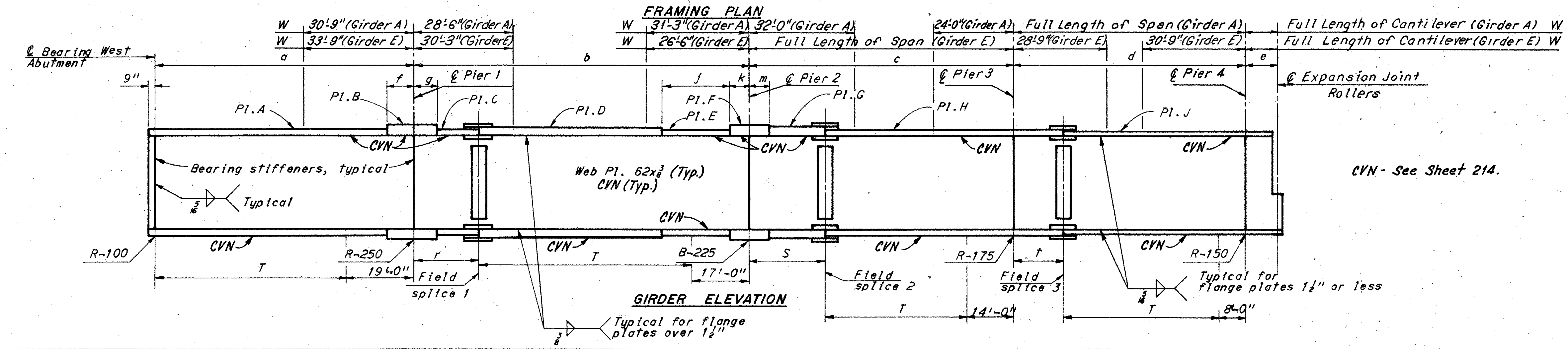
DRAWN LDE DATE 2-19-70	TRACED DATE	CHECKED DWB DATE 6-11-70	REVIEWED MJK DATE 11-20-71	REVISED 3-2-76
				1668

Revised 4-28-77

STARK COUNTY
STA-30-14.12
STA-77-9.22



FRAMING PLAN



GIRDER ELEVATION

Notes:

Top and bottom flanges are identical in size.

All stiffeners shall be placed normal to girder flanges.

All intermediate stiffener to web welds shall be 1/4" continuous fillets on both sides of stiffeners.

For detail of field splices see Sheet 355.

All intermediate stiffeners shall be Pls. 5x5/16.

Intermediate stiffeners shall be placed as shown on framing plan, equally spaced between crossframes or crossframes and bearing stiffeners or crossframes and splices.

End crossframe details shall be same as shown on Ohio Standard Drawing SD-1-69, Sheet 1 of 4, and Sheet 359.

For intermediate crossframe details see Sheet 360.

All crossframes are intermediate crossframes unless shown otherwise.

For details of roadway end dam, see Ohio Standard Drawing SD-1-69, Sheet 1 of 4.

For Expansion joint details see Sheet 356.

For details of expansion joint crossframe see Sheet 360.

For Camber and Deflection Table see Sheet 365.

For details at rockers and bolsters see Ohio Standard Drawing RB-1-55.

The girders shall be fabricated to lines parallel to profiles formed by top of pavement elevations directly over girders, plus the camber required to compensate for dead load deflection.

The allowance to be made in screed settings to compensate for dead load deflections due to concrete and wearing course are to be made above or below the top of the pavement elevations as required. Screeds may require further adjustment due to irregularities in fabricated steel.

For details of curb plates at concrete bridge railing see Ohio Standard Drawing SD-1-69, Sheet 2 of 4.

■ Denotes standard scupper.

Dimensions to scuppers are measured along centerline of girders.

For detail of intermediate stiffeners see Sheet 360.

Scuppers shall be in accordance with Std. Dwg. SD-1-69 except that scupper pipes shall extend 8" below the bottom of girders instead of 2".

For underdeck lighting details see Lighting Plans.

TABLE OF DIMENSIONS

Girder	a	b	c	d	e	f	g		j	k	m			r	s	t
A	71'-8 1/8"	94'-3 3/8"	81'-1 3/8"	60'-0 7/16"	10'-0 3/16"	8'-0"	7'-0"		20'-0"	6'-0"	6'-0"			18'-5 1/4"	20'-6 1/4"	17'-0 1/16"
B	74'-9 5/8"	97'-11 5/8"	80'-11 3/8"	62'-0 1/4"	9'-11 13/16"	6'-0"	8'-0"		18'-0"	8'-0"	5'-0"			19'-2 1/8"	21'-10 1/4"	16'-3 3/8"
C	77'-11 3/4"	101'-7 3/16"	80'-9 3/8"	64'-0 1/8"	9'-11 3/4"	8'-0"	10'-0"		19'-0"	7'-0"	5'-0"			19'-11 3/8"	23'-2 1/4"	15'-7 3/8"
D	81'-1 3/8"	105'-3 3/8"	80'-7"	65'-11 3/8"	9'-11 9/16"	7'-0"	7'-0"		25'-0"	5'-0"	6'-0"			20'-8 1/8"	24'-5 1/4"	14'-11 3/8"
E	84'-3 3/8"	108'-11 3/8"	80'-5 1/8"	67'-11 3/8"	9'-11 3/8"	9'-0"	9'-0"		23'-0"	7'-0"	6'-0"			21'-5 1/4"	25'-9 1/4"	14'-3 3/8"

Note:

Tension areas of bottom flange are denoted by "T". For the top flange, these areas are in compression.

"W" denotes the range where welded attachment cannot be made to the top flange of Girders A and E.

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS

Girder	℄ Brg. W. Abut.	.25	.50	.75	℄ Pier 1	* .25	.50	.75	℄ Pier 2	* .25	.50	.75	℄ Pier 3	* .25	.50	.75	℄ Pier 4	℄ Exp. Jt. Rollers
A	1042.78	1043.44	1044.15	1044.90	1045.66	1046.44	1047.65	1048.65	1049.64	1050.51	1051.36	1052.21	1053.07	1053.79	1054.34	1054.97	1055.61	1056.03
B	1043.37	1044.05	1044.78	1045.55	1046.32	1047.12	1048.35	1049.34	1050.38	1051.28	1052.05	1052.89	1053.73	1054.40	1055.01	1055.65	1056.29	1056.71
C	1043.96	1044.65	1045.40	1046.17	1046.98	1047.79	1049.04	1050.07	1051.10	1052.04	1052.74	1053.56	1054.38	1055.01	1055.68	1056.32	1056.97	1057.38
D	1044.55	1045.26	1046.02	1046.83	1047.63	1048.46	1049.73	1050.78	1051.82	1052.80	1053.43	1054.23	1055.03	1055.62	1056.34	1057.00	1057.65	1058.05
E	1044.55	1045.27	1046.05	1046.87	1047.69	1048.53	1049.82	1050.88	1051.95	1052.95	1053.51	1054.30	1055.08	1055.64	1056.41	1057.07	1057.73	1058.12

* Elevations given are at field splice.

BEARING STIFFENERS

Girder	W. Abut.	Pier 1	Pier 2	Pier 3	Pier 4
A	5 1/2x1/2	5 1/2x5/8	5 1/2x5/8	5 1/2x1/2	5 1/2x1/2
B	5 1/2x1/2	5 1/2x7/8	5 1/2x7/8	5 1/2x3/4	5 1/2x5/8
C	5 1/2x1/2	5 1/2x1	5 1/2x1	5 1/2x3/4	5 1/2x5/8
D	5 1/2x1/2	5 1/2x1 1/8	5 1/2x1	5 1/2x3/4	5 1/2x5/8
E	5 1/2x1/2	5 1/2x1 1/8	5 1/2x1	5 1/2x3/4	5 1/2x3/8

TOP OF PORTLAND CEMENT CONCRETE AT GUTTERLINE

	℄ Bearing W. Abut.	0.25	0.50	0.75	℄ Pier 1	0.25	0.50	0.75	℄ Pier 2	0.25	0.50	0.75	℄ Pier 3	0.25	0.50	0.75	℄ Pier 4	℄ Exp. Jt. Rollers
North Gutter-line	1042.78	1043.45	1044.16	1044.90	1045.66	1046.67	1047.67	1048.66	1049.64	1050.51	1051.37	1052.22	1053.07	1053.70	1054.34	1054.97	1055.61	1056.03
South Gutter-line	1044.55	1045.29	1046.07	1046.88	1047.69	1048.78	1049.86	1050.90	1051.95	1052.73	1053.51	1054.30	1055.08	1055.75	1056.42	1057.08	1057.73	1058.12

TABLE OF PLATES

Girder	Pl. A	Pl. B	Pl. C	Pl. D	Pl. E	Pl. F	Pl. G	Pl. H	Pl. J
A	12x1 1/4	12x1 7/8	12x1	12x1 3/8	12x1	12x1 1/8	12x1 1/2	12x1	12x7/8
B	12x1 1/4	12x1 7/8	12x1	12x1 3/8	12x1	12x1 7/8	12x1 1/2	12x1	12x7/8
C	12x1 3/8	12x2 1/4	12x1 1/8	12x1 5/8	12x1 1/8	12x2 1/8	12x1 5/8	12x1	12x1
D	12x1 3/8	12x2 1/2	12x1 1/4	12x1 7/8	12x1 1/4	12x2 3/8	12x1 3/4	12x1 1/8	12x1
E	12x1 5/8	12x2 5/8	12x1 1/2	12x2	12x1 1/2	12x2 3/8	12x1 3/4	12x1 1/8	12x1

TABLE OF GIRDER SPACINGS

	℄ Brg. W Abutment	℄ Pier 1	Field Splice 1	℄ Pier 2	Field Splice 2	℄ Pier 3	Field Splice 3	℄ Pier 4	℄ Exp. Jt. Rollers
A	5'-3"	5'-4 11/16"	5'-5 1/2"	5'-9 3/4"	6'-1 5/8"	5'-4 7/16"	5'-3 3/16"	5'-6 1/8"	5'-5 9/16"
B	7'-1 1/2"	7'-3 3/4"	7'-4 15/16"	7'-10 5/8"	8'-3 13/16"	7'-3 7/16"	7'-1 11/16"	7'-5 11/16"	7'-4 15/16"
C	7'-1 1/2"	7'-3 11/16"	7'-4 3/4"	7'-10 3/16"	8'-3 1/16"	7'-3 3/8"	7'-1 11/16"	7'-5 1/2"	7'-4 3/4"
D	7'-1 1/2"	7'-3 9/16"	7'-4 5/8"	7'-9 13/16"	8'-2 7/16"	7'-3 1/4"	7'-1 11/16"	7'-5 3/8"	7'-4 5/8"
E	7'-1 1/2"	7'-3 1/2"	7'-4 1/2"	7'-9 7/16"	8'-1 13/16"	7'-3 3/16"	7'-1 11/16"	7'-5 3/16"	7'-4 1/2"

Note:

The gutterline elevations shown have been adjusted for the dead load deflections caused by the weight of concrete and wearing course and are the elevations required before the concrete deck is placed. No concrete shall be placed until the screed rails have been set for the entire unit.

H.N.T.B. BRIDGE NO. 14 | Revised 6-25-75 | By RAS

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CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
10/16

FRAMING PLAN - UNIT I

RAMP B OVER RAMPS C AND G,
I-77 AND PENN. R.R.

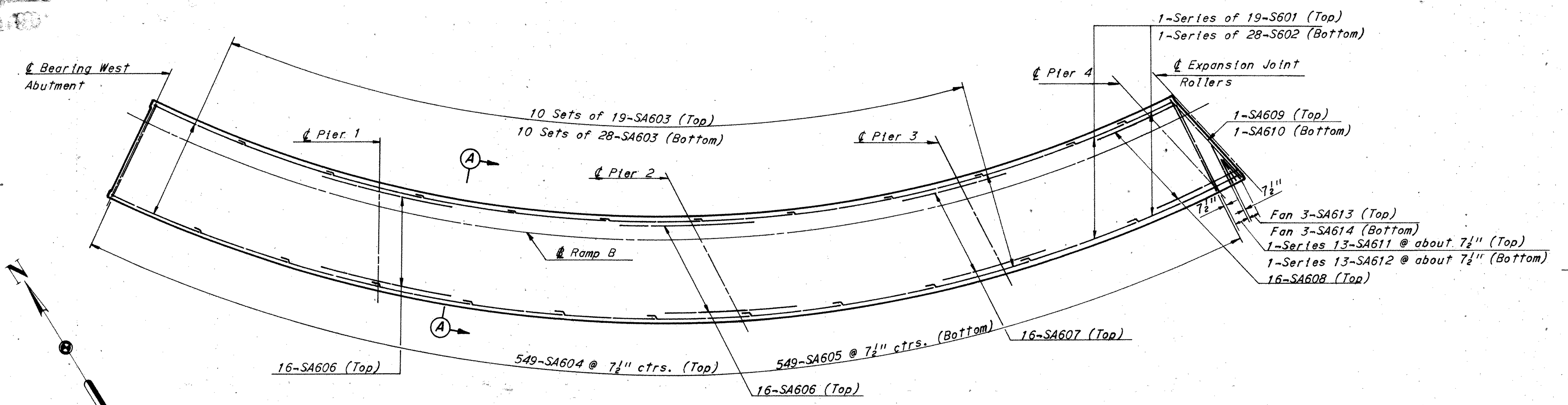
BR. NO. STA. 30-1489 STA. 958 + 78.75
SCALE: 1" = 20'-0" STA. 966 + 30.88

RELOCATED U.S. 30

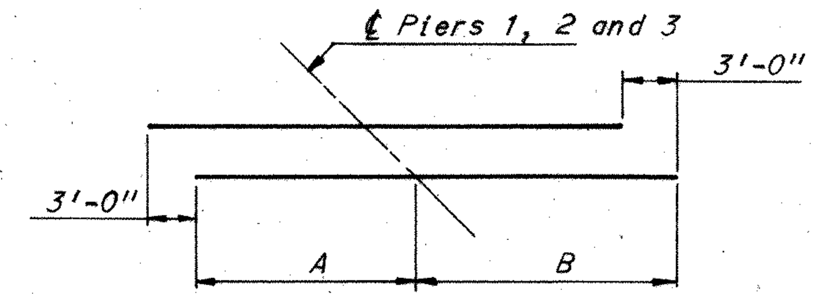
CANTON STARK COUNTY OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
KSS DATE 10-24-69	DATE	DWB DATE 5-12-70	MJK DATE 11-20-71	1668

STARK COUNTY
STA-30-14.12
STA-77-9.22

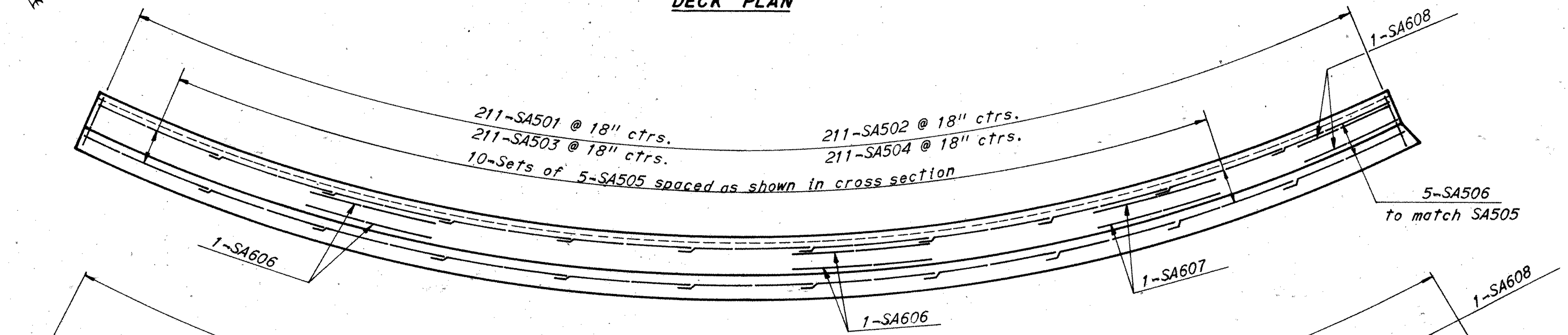


DECK PLAN

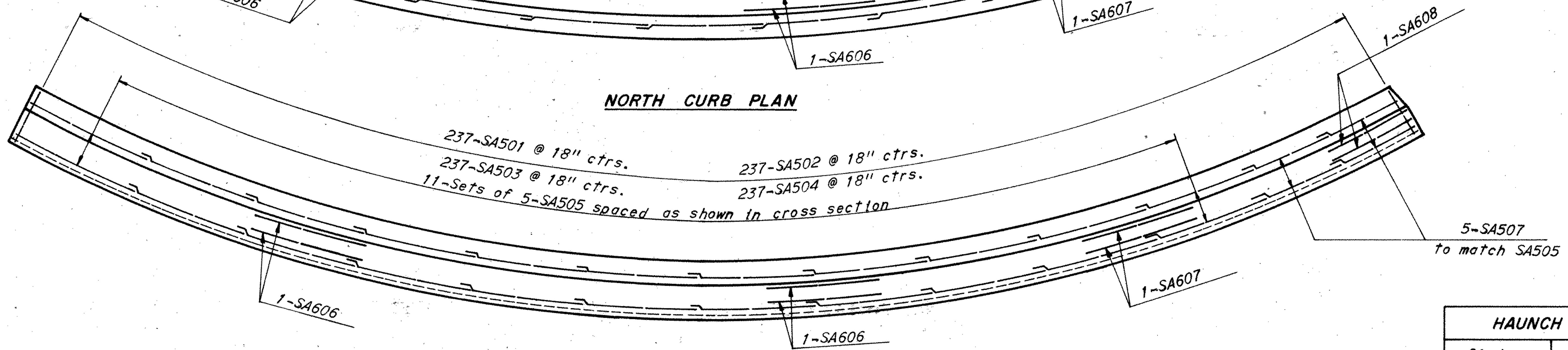


DIAGRAMS SHOWING STAGGER OF NO. 6 BARS OVER PIERS

	A	B
Pier 1	20'-6"	21'-6"
Pier 2	16'-6"	25'-6"
Pier 3	14'-6"	17'-6"



NORTH CURB PLAN



SOUTH CURB PLAN

Notes:

Reinforcing steel shall be adjusted as required to clear scuppers.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For concrete railing details see Sheet 361

For deflection joint details see Sheet 361

For Superelevation Data see Sheet 13/16

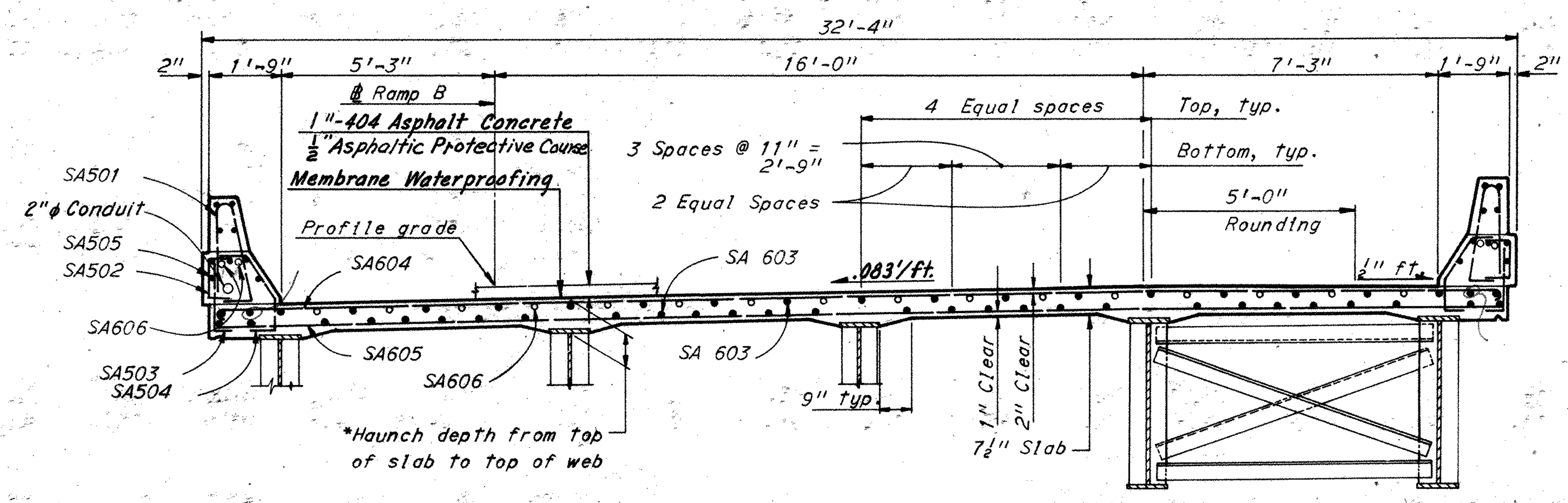
For reinforcement schedule see Sheet 16/16

Transverse reinforcing steel shall be placed radially along South edge of slab.

Concrete shall be placed from the expansion joint to Pier 5 before any concrete is placed from the expansion joint to Pier 3.

For subdrainage details, see Sheet 365A.

HAUNCH DEPTHS	
Girder	Haunch Depth
A	9¾"
B	9¾"
C	10¼"
D	10¼"
E	10¼"



SECTION A - A

*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.18 of the Construction and Materials Specifications.

H.N.T.B. BRIDGE NO. 14 | Revised 6-25-75 By RAS

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

11/16

DECK PLAN UNIT I

RAMP B OVER RAMPS C AND G, I-77 AND PENN. R.R.

BR. NO. STA. 30-1489 — STA. 958 + 78.75
SCALE: 1" = 20'-0" — STA. 966 + 30.88

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN KSS DATE 2-10-70	TRACED DATE	CHECKED DWB DATE 6-11-70	REVIEWED MSK DATE 11-28-71	REVISED 3-2-76
				1668

Revised 4-28-77

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	335/389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22

SEP 14 1983

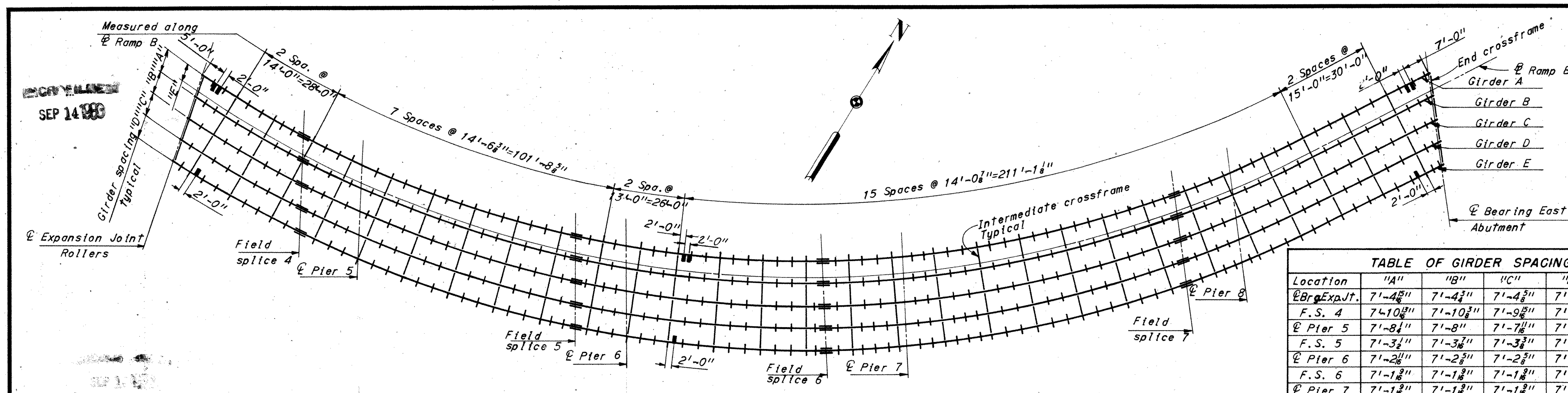
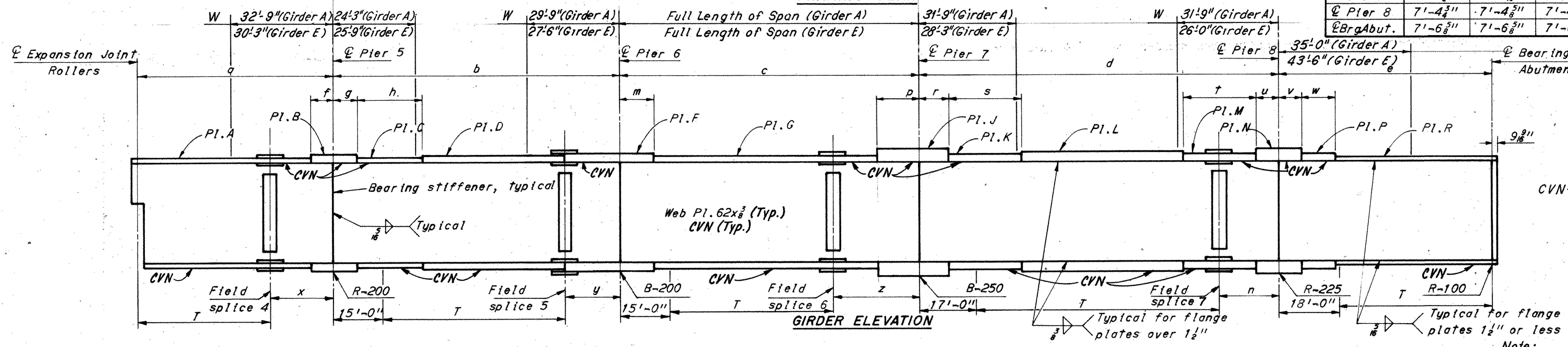


TABLE OF GIRDER SPACINGS					
Location	"A"	"B"	"C"	"D"	"E"
℄ Brg. Exp. Jt.	7'-4 15/16"	7'-4 3/4"	7'-4 5/8"	7'-4 1/2"	5'-5 9/16"
F.S. 4	7'-10 13/16"	7'-10 3/8"	7'-9 15/16"	7'-9 9/16"	5'-9 7/8"
℄ Pier 5	7'-8 1/4"	7'-8"	7'-7 11/16"	7'-7 7/16"	5'-8"
F.S. 5	7'-3 1/2"	7'-3 7/16"	7'-3 3/8"	7'-3 5/16"	5'-4 1/2"
℄ Pier 6	7'-2 11/16"	7'-2 5/8"	7'-2 5/8"	7'-2 9/16"	5'-3 7/8"
F.S. 6	7'-1 9/16"	7'-1 9/16"	7'-1 9/16"	7'-1 9/16"	5'-3 1/16"
℄ Pier 7	7'-1 9/16"	7'-1 9/16"	7'-1 9/16"	7'-1 9/16"	5'-3 1/16"
F.S. 7	7'-3 1/2"	7'-3 7/16"	7'-3 3/8"	7'-3 5/16"	5'-4 1/2"
℄ Pier 8	7'-4 3/4"	7'-4 5/8"	7'-4 1/2"	7'-4 3/8"	5'-5 7/16"
℄ Brg. Abut.	7'-6 5/8"	7'-6 5/8"	7'-6 5/8"	7'-6 5/8"	5'-6 3/4"



CVN- See Sheet 214

Note:

Tension areas of bottom flange are denoted by "T". For Top flange, these areas are in compression.

"W" denotes the range where welded attachments cannot be made to the top flange of Girgers A and E.

TABLE OF DIMENSIONS																						
Girder	a	b	c	d	e	f	g	h			m	n	p	r	s	t	u	v	w	x	y	z
A	59'-5 7/8"	90'-4 5/8"	89'-9 1/4"	110'-0 3/8"	72'-0 7/8"	8'-0"	7'-0"	21'-0"			9'-0"	19'-6 3/8"	8'-6"	8'-0"	33'-0"	31'-0"	10'-0"	6'-0"	9'-0"	21'-0 3/4"	17'-0 1/8"	26'-0"
B	61'-6 5/8"	90'-6 1/4"	90'-1 1/8"	110'-7 1/8"	71'-11 1/4"	9'-0"	8'-0"	15'-0"			9'-0"	19'-5 3/8"	11'-6"	9'-0"	20'-0"	21'-0"	8'-0"	7'-0"	10'-0"	20'-11 3/4"	16'-11 13/16"	26'-0"
C	63'-7 1/8"	90'-8 1/4"	90'-5"	111'-2 1/4"	71'-11 1/4"	7'-0"	5'-0"	22'-0"			9'-0"	19'-5 3/8"	13'-0"	9'-0"	22'-0"	22'-0"	7'-0"	7'-0"	8'-0"	20'-10 13/16"	16'-11 13/16"	26'-0"
D	65'-8 3/8"	90'-10 1/2"	90'-8 5/8"	111'-9 5/8"	71'-10 5/8"	8'-0"	8'-0"	19'-0"			10'-0"	19'-5 3/8"	12'-6"	10'-0"	18'-0"	21'-0"	7'-0"	7'-0"	10'-0"	20'-9 15/16"	16'-11 11/16"	26'-0"
E	67'-9 5/8"	91'-0 3/8"	91'-0 5/8"	112'-5 1/4"	71'-10"	8'-0"	7'-0"	20'-0"			10'-0"	19'-5 1/8"	13'-0"	9'-0"	22'-0"	22'-0"	7'-0"	7'-0"	10'-0"	20'-9 1/8"	16'-11 9/16"	26'-0"

* Elevations given are at field splice.

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS																		
Girder	℄ Exp. Jt. Rollers	.25	.50	*.75	℄ Pier 5	.25	.50	*.75	℄ Pier 6	.25	.50	*.75	℄ Pier 7	.1	.2	*.3	.4	.5	.6
A	1056.03	1056.66	1057.28	1057.65	1058.54	1059.49	1060.44	1061.56	1062.19	1062.96	1063.68	1064.24	1064.97	1065.26	1065.54	1065.80	1066.05	1066.29	1066.51
B	1056.71	1057.34	1057.98	1058.38	1059.25	1060.19	1061.12	1062.21	1062.82	1063.58	1064.28	1064.83	1065.51	1065.77	1066.02	1066.25	1066.47	1066.68	1066.87
C	1057.38	1058.02	1058.67	1059.11	1059.96	1060.88	1061.79	1062.85	1063.45	1064.20	1064.89	1065.42	1066.04	1066.28	1066.50	1066.70	1066.90	1067.08	1067.25
D	1058.05	1058.70	1059.35	1059.83	1060.66	1061.57	1062.46	1063.50	1064.08	1064.81	1065.49	1066.01	1066.58	1066.79	1066.98	1067.16	1067.33	1067.48	1067.62
E	1058.12	1058.78	1059.44	1059.96	1060.77	1061.66	1062.53	1063.55	1064.12	1064.84	1065.50	1066.01	1066.56	1066.76	1066.94	1067.11	1067.27	1067.41	1067.54

Girder	.7	*.8	.9	℄ Pier 8	.25	.50	.75	℄ Brg. E. Abut.
A	1066.72	1066.95	1067.09	1067.25	1067.49	1067.69	1067.85	1067.97
B	1067.05	1067.26	1067.37	1067.51	1067.71	1067.87	1067.99	1068.08
C	1067.40	1067.57	1067.67	1067.78	1067.94	1068.06	1068.15	1068.20
D	1067.75	1067.90	1067.97	1068.06	1068.18	1068.26	1068.31	1068.33
E	1067.66	1067.80	1067.87	1067.95	1068.05	1068.13	1068.17	1068.18

BEARING STIFFENERS					
Girder	Pier 5	Pier 6	Pier 7	Pier 8	E. Abut.
A	5 1/2x5/8	5 1/2x5/8	5 1/2x3/4	5 1/2x3/4	5 1/2x1/2
B	5 1/2x3/4	5 1/2x7/8	5 1/2x1	5 1/2x1	5 1/2x1/2
C	5 1/2x7/8	5 1/2x7/8	5 1/2x1	5 1/2x1	5 1/2x1/2
D	5 1/2x7/8	5 1/2x1	5 1/2x1 1/8	5 1/2x1 1/8	5 1/2x1/2
E	5 1/2x7/8	5 1/2x7/8	5 1/2x1 1/8	5 1/2x1	5 1/2x1/2

TABLE OF PLATES															
Girder	Pl.A	Pl.B	Pl.C	Pl.D		Pl.F	Pl.G		Pl.J	Pl.K	Pl.L	Pl.M	Pl.N	Pl.P	Pl.R
A	12x7/8	12x1 3/8	12x5/8	12x1 1/4		12x1 5/8	12x1		12x2 1/4	12x1 1/4	12x1 7/8	12x1 1/4	12x2 1/4	12x1 1/4	12x7/8
B	12x7/8	12x1 3/8	12x7/8	12x1 1/4		12x1 3/8	12x1		12x2 1/4	12x1 1/4	12x1 7/8	12x1 1/4	12x2 1/4	12x1 1/4	12x7/8
C	12x7/8	12x1 1/2	12x1	12x1 3/8		12x1 3/8	12x1		12x2 5/8	12x1 3/8	12x2 1/4	12x1 3/8	12x2 3/8	12x1 3/8	12x7/8
D	12x1	12x1 5/8	12x1	12x1 3/8		12x1 5/8	12x1 1/8		12x2 3/4	12x1 1/2	12x2 3/8	12x1 1/2	12x2 1/2	12x1 1/2	12x7/8
E	12x1	12x1 5/8	12x1	12x1 3/8		12x1 7/8	12x1 1/8		12x2 3/4	12x1 1/2	12x2 3/8	12x1 1/2	12x2 1/2	12x1 1/2	12x7/8

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS AT GUTTERLINE																			
	℄ Exp. Jt. Rollers	.25	.50	.75	℄ Pier 5	.25	.50	.75	℄ Pier 6	.25	.50	.75	℄ Pier 7	.1	.2	.3	.4	.5	.6	.7
North Gutterline	1056.03	1056.67	1057.29	1057.91	1058.54	1059.50	1060.46	1061.35	1062.19	1062.96	1063.69	1064.35	1064.97	1065.27	1065.55	1065.82	1066.08	1066.32	1066.54	1066.74
South Gutterline	1058.12	1058.79	1059.45	1060.11	1060.77	1061.67	1062.55	1063.36	1064.12	1064.84	1065.51	1066.08	1066.56	1066.77	1066.96	1067.14	1067.31	1067.46	1067.58	1067.70

	.8	.9	℄ Pier 8	.25	.50	.75	℄ Brg. E. Abut.
North Gutterline	1066.92	1067.10	1067.25	1067.49	1067.70	1067.86	1067.97
South Gutterline	1067.79	1067.88	1067.95	1068.05	1068.13	1068.18	1068.18

Note:

The gutterline elevations shown have been adjusted for the dead load deflections caused by the weight of concrete and wearing course, and are the elevations required before the concrete deck is placed. No concrete shall be placed until the screed rails have been set for the entire unit.

Notes:

Top and bottom flanges are identical in size.

All stiffeners shall be placed normal to girder flanges.

All intermediate stiffener to web welds shall be 1/4" continuous fillets on both sides of stiffeners.

For detail of field splices see Sheet 355

All intermediate stiffeners shall be Pls. 5x5/16.

Scuppers shall be in accordance with Std. Dwg. SD-1-69 except that scupper pipes shall extend 8" below the bottom of the girders instead of 2".

Intermediate stiffeners shall be placed as shown on framing plan, equally spaced between crossframes or crossframes and bearing stiffeners or crossframes and splices.

End crossframe details shall be same as shown on Ohio Standard Drawing **SD-1-69, Sheet 1 of 4.**

For intermediate crossframe details see Sheet 360

All crossframes are intermediate crossframes unless shown otherwise.

For details of roadway end dam, see Ohio Standard Drawing **SD-1-69, Sheet 1 of 4. and Sheet 359**

For details at rockers and bolsters see Ohio Standard Drawing RB-1-55.

The girders shall be fabricated to lines parallel to profiles formed by top of pavement elevations directly over girders, plus the camber required to compensate for dead load deflection.

The allowance to be made in screed settings to compensate for dead load deflections due to concrete and wearing course, are to be made above or below the top of the pavement elevations as required. Screeds may require further adjustment due to irregularities in fabricated steel.

For details of curb plates at concrete bridge railing see Ohio Standard Drawing SD-1-69, Sheet 2 of 4.

Dimensions to scuppers are measured along centerline of girders.

■ Denotes standard scupper

For details of expansion joint crossframe see Sheet 360

For Camber and Deflection Table see Sheet 365

For expansion joint details see Sheet 356

For detail of intermediate stiffeners see Sheet 360

Tension areas of bottom flange are denoted by "T". For the top flange, these areas are in compression.

For underdeck lighting details see Lighting Plans

H.N.T.B. BRIDGE NO. 14 | Revised 6-25-75 By RAS

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

12/16

FRAMING PLAN - UNIT 2

RAMP B OVER RAMPS C AND G,
I-77 AND PENN. R.R.

BR. NO. STA. 30-1489 — STA. 958 + 78.75
SCALE: 1" = 20'- 0" — STA. 966 + 30.88

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

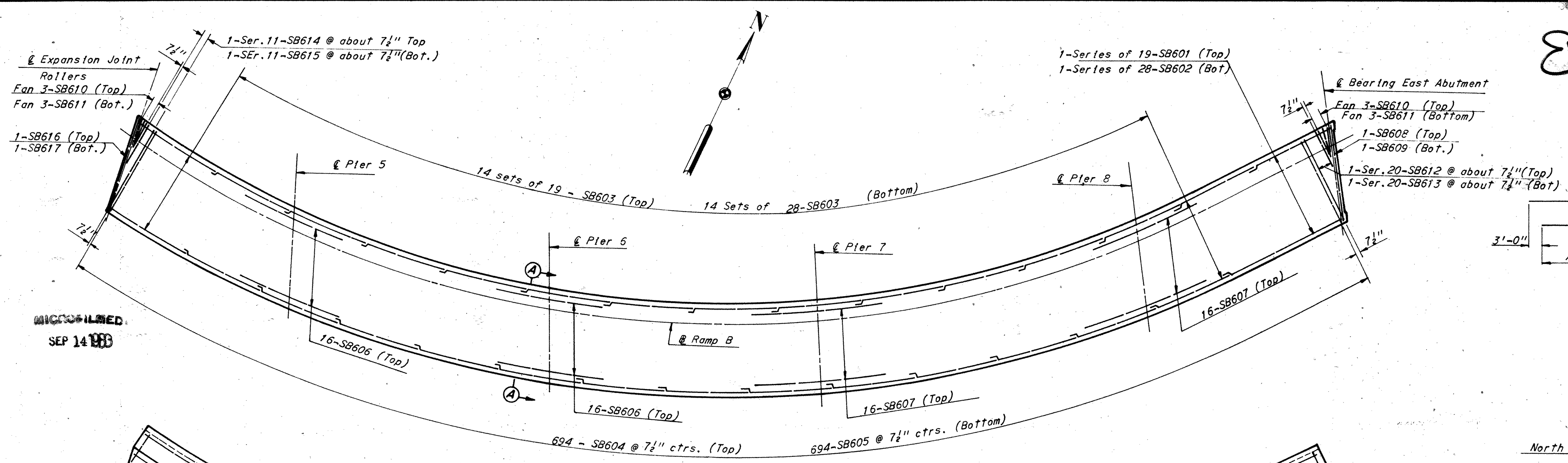
DRAWN	TRACED	CHECKED	REVIEWED	REVISED
KSS DATE 10-31-69	DATE	DWB DATE 5-12-70	MJK DATE 11-20-71	1668

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

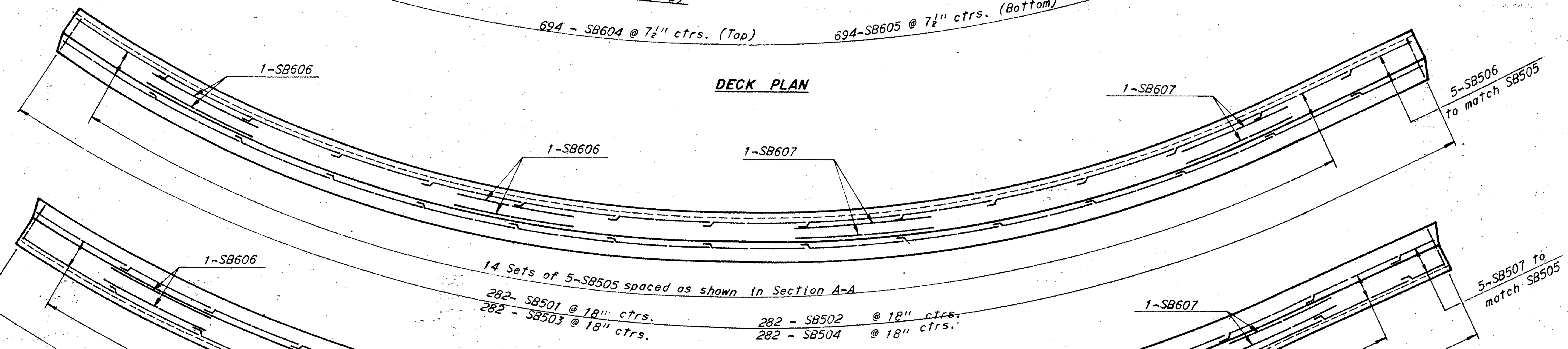
336
389

1604-B

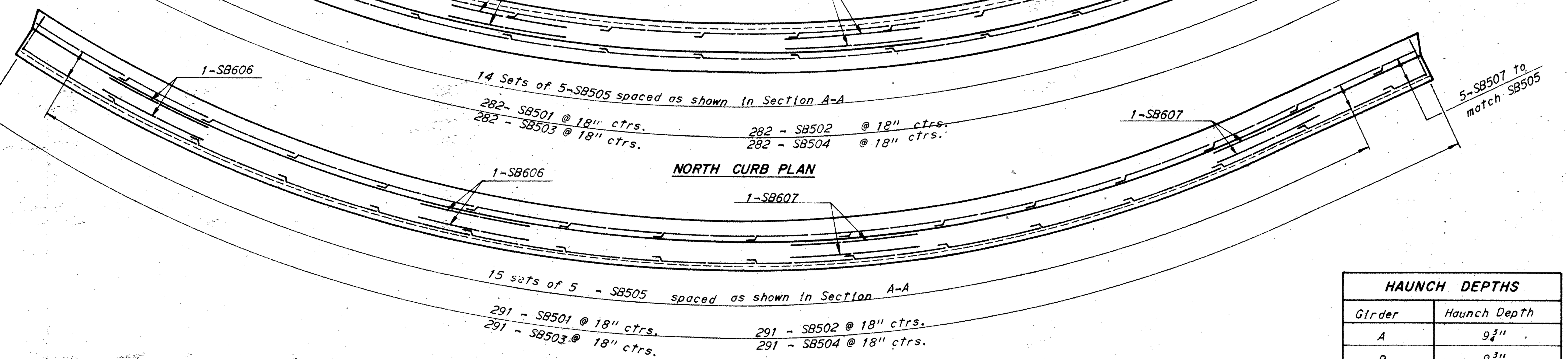
STARK COUNTY
STA-30-14.12
STA-77-9.22



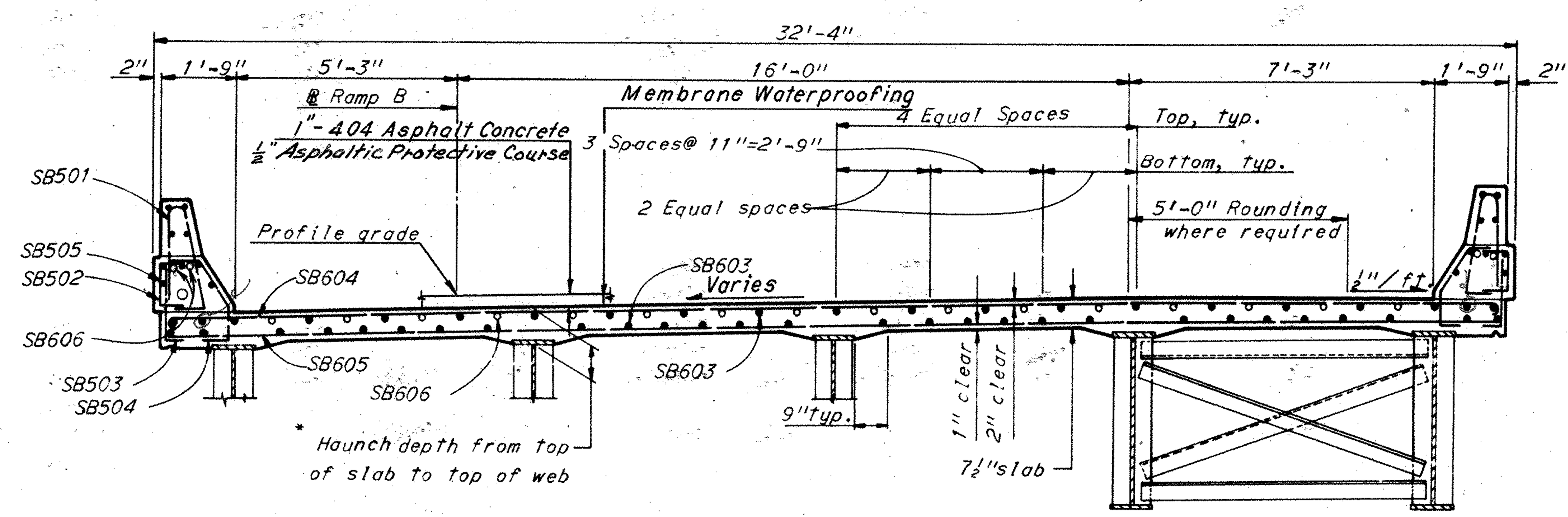
DECK PLAN



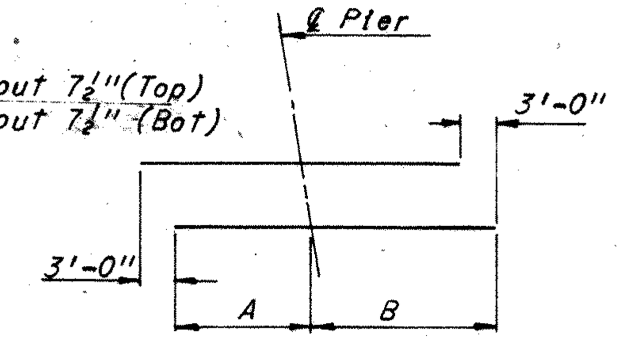
NORTH CURB PLAN



SOUTH CURB PLAN

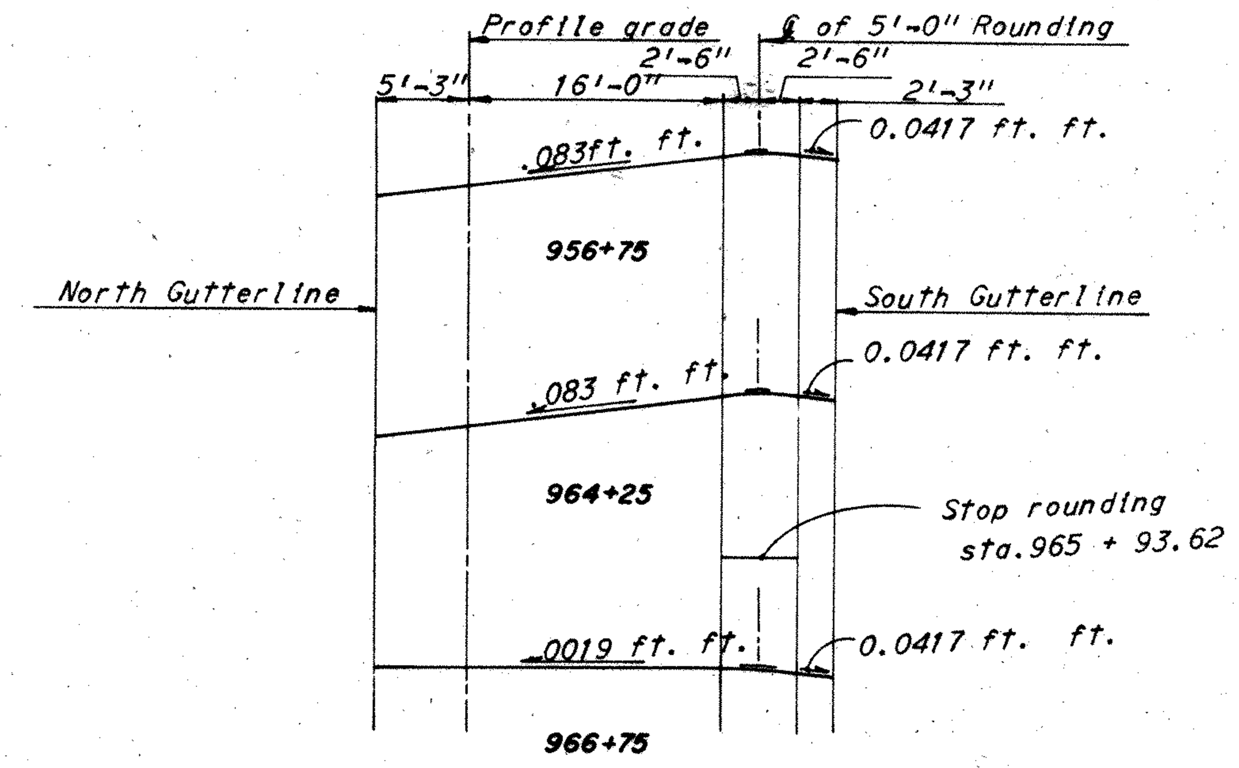


SECTION A-A



	A	B
Pier 5	17'-6"	18'-6"
Pier 6	14'-6"	21'-6"
Pier 7	25'-6"	19'-6"
Pier 8	17'-0"	28'-0"

DIAGRAM SHOWING STAGGER OF SB606 AND SB607 BARS OVER PIERS



SUPERELEVATION TRANSITION SCHEME

Notes:

Reinforcing steel shall be adjusted as required to clear scuppers.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For concrete railing details see Sheet 361

For deflection joint details see Sheet 361

Transverse reinforcing steel shall be placed radially along South edge of slab.

For reinforcement schedule see Sheet 16/16.

For subdrainage details, see Sheet 365A.

HAUNCH DEPTHS	
Girder	Haunch Depth
A	9¾"
B	9¾"
C	10¼"
D	10¼"
E	10¼"

*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.18 of the Construction and Materials Specifications.

H.N.T.B. BRIDGE NO. 14 — Revised 6-25-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 13/16

DECK PLAN UNIT 2

RAMP B OVER RAMPS C AND G
I-77 AND PENN. R.R.

BR. NO. STA.-30-1489 — STA. 958 + 78.75
SCALE: 1" = 20'-0" — STA. 966 + 30.88

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN KSS DATE 2-10-70	TRACED DATE	CHECKED DWB DATE 6-11-70	REVIEWED MJK DATE 11-20-71	REVISED 3-2-76
				1668

Revised 4-28-77

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
		WEST ABUTMENT						
AA401	30	3'-5"	105	1'-0"	1'-8"			69
AA501	10	11'-6"	109	3'-0"	2'-6"			120
AA502	20	8'-4"	105	1'-7"	5'-5"			174
AA503	20	7'-8"	104	6'-9"	1'-0"			160
AA504	20	7'-2"	105	2'-0"	3'-5"			150
AA505	19	31'-2"	Str.					618
AA509	20	7'-0"	108	6'-0"	1'-0"	8½"		146
AA510	24	3'-11"	104	2'-0"	2'-0"			98
AA511	20	2'-9"	Str.					57
AA512	15	6'-7"	114	3'-2"				103
AA513	24	2'-2"	105	7½"	1'-2"			54
AA514	1 Ser. 5	6'-9"to3'-11"	Str.				8½"	28
AA515	7	7'-6"	Str.					55
AA516	1	3'-6"	Str.					4
AA517	2	7'-0"	Str.					15
AA518	2	11'-6"	Str.					24
AA519	12	16'-8"	Str.					208
AA520	2	12'-6"	Str.					26
AA521	2	9'-8"	Str.					20
AA522	4	10'-8"	Str.					44
AA523	4	6'-11"	Str.					29
AA524	2	10'-8"	108	1'-11"	8'-9"	4'-0"		22
AA525	8	14'-8"	Str.					122
AA526	4	7'-11"	Str.					33
AA527	4	4'-3"	Str.					18
AA601	2	16'-4"	109	5'-5"	2'-6"			49
AA602	20	14'-6"	106	5'-5"	6'-8"	2'-8"		440
AA605	30	5'-8"	105	2'-6"	11"			255
AA606	30	16'-4"	105	7'-7"	1'-5"			736
AA607	30	4'-2"	105	1'-6"	1'-5"			188
AA608	7	8'-8"	115	7'-0"	9"			91
AA609	7	19'-0"	105	9'-1"	1'-2"			200
AA610	1	7'-7"	104	6'-9"	1'-0"			11
AA611	1	7'-6"	104	6'-8"	1'-0"			11
AA612	1 Ser. 9	3'-8"to 8'-0"	Str.				6½"	79
AA613	7	8'-11"	115	7'-2"	9"			94
AA614	7	7'-6"	Str.					79
AA615	2	7'-0"	Str.					21
AA616	4	14'-8"	Str.					88
AA617	2	9'-6"	Str.					29
AA618	2	9'-4"	Str.					28
AA619	1 Ser. 4	14'-8"to8'-10"	Str.				1'-11⅓"	71
AA620	7	18'-4"	105	8'-9"	1'-2"			193
AA621	1	4'-11"	115	3'-3"	9"			7
AA622	1	5'-5"	115	3'-9"	9"			8
AA623	1	5'-11"	115	4'-3"	9"			9
AA624	1	6'-6"	115	4'-9"	9"			10
AA625	1	7'-0"	115	5'-3"	9"			11
AA626	1	7'-6"	115	5'-9"	9"			11
AA627	1	8'-0"	115	6'-3"	9"			12
AA628	1	8'-6"	115	6'-9"	9"			13
AA629	1	9'-0"	115	7'-4"	9"			14
AA701	1	4'-8"	115	3'-0"	9"			10
AA702	1	8'-1"	115	6'-3"	9"			17
AA703	1	7'-2"	115	5'-6"	9"			15
AA704	1	6'-6"	115	4'-10"	9"			13
AA705	1	5'-10"	115	4'-2"	9"			12
AA706	1	5'-2"	115	3'-6"	9"			11
DA801	20	5'-2"	141	3'-1				276

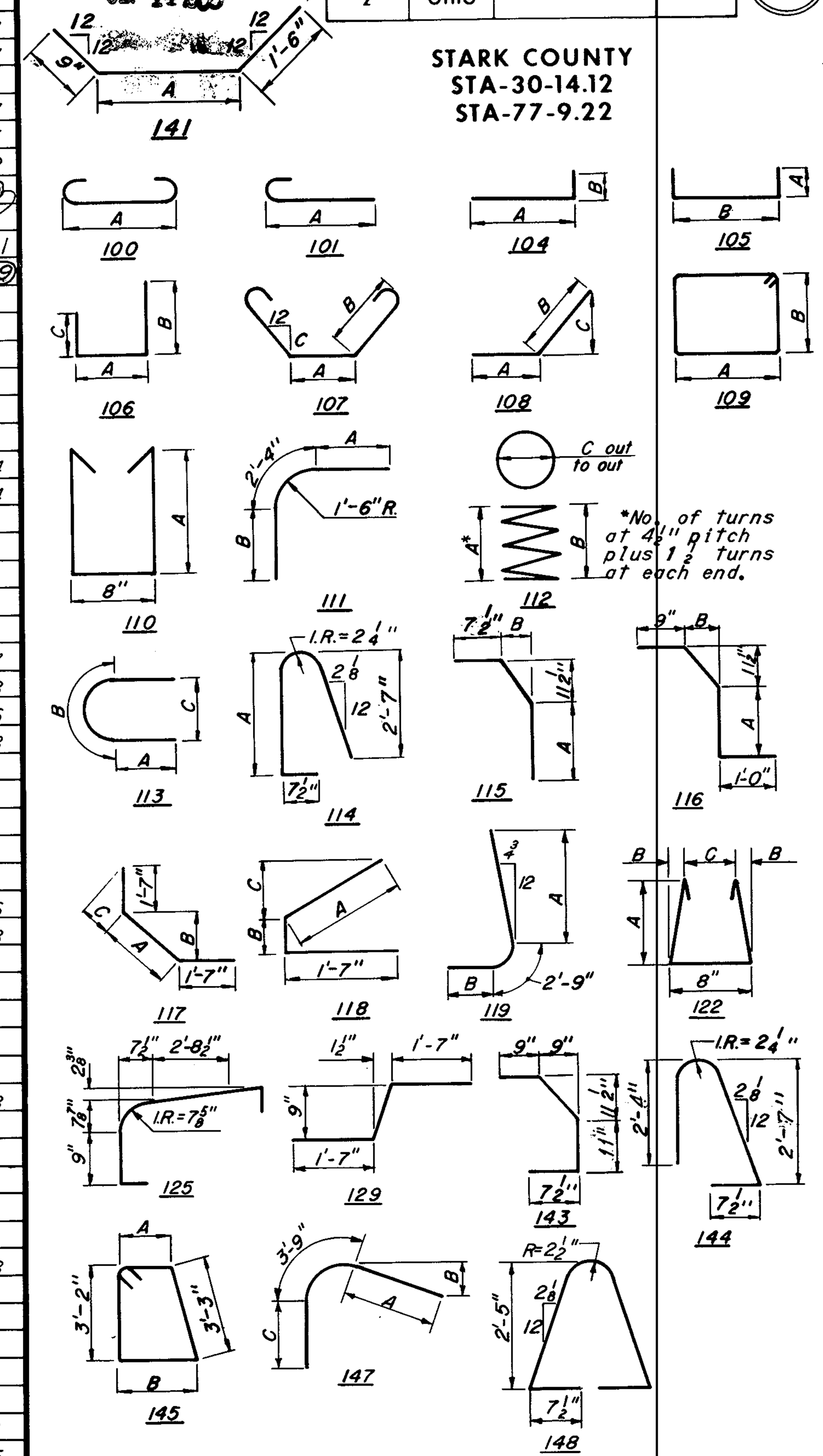
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
AA801	7	33'-0"	Str.					618
AA802	6	7'-6"	Str.					120
AA803	6	11'-0"	Str.					177
				Total West Abutment			=	6424
		EAST ABUTMENT						
AB401	30	3'-5"	105	1'-0"	1'-8"			69
AB501	10	7'-6"	Str.					78
AB502	11	3'-2"	108	1'-7"	1'-7"	1'-6"		36
AB503	10	6'-0"	Str.					63
AB504	7	3'-7"	118	1'-7"	6"	1'-6"		26
AB505	4	4'-4"	118	1'-7"	1'-3"	1'-6"		18
AB506	21	32'-0" 9	Str.					1700
AB507	26	8'-4"	105	1'-7"	5'-5"			228
AB508	26	7'-8"	104	6'-9"	1'-0"			209
AB509	26	7'-0"	105	1'-11"	3'-5"			190
AB510	19	11'-6"	109	3'-0"	2'-6"			228
AB511	1	13'-0"	109	3'-9"	2'-6"			14
AB513	2	9'-0"	Str.					19
AB514	1	13'-2"	109	3'-10"	2'-6"			14
AB515	14	7'-3"	Str.					106
AB516	1	5'-6"	Str.					6
AB517	1	5'-0"	Str.					5
AB518	1	4'-6"	Str.					5
AB519	1	4'-0"	Str.					4
AB520	5	3'-9"	Str.					20
AB521	21	6'-7"	114	3'-2"				144
AB522	26	2'-2"	105	7½"	1'-2"			59
AB523	10	3'-0"	Str.					31
AB524	32	16'-6"	Str.					551
AB525	2 Ser. 3	9'-0"to12'-9"	Str.				1'-10½"	68
AB526	4	8'-6"	Str.					35
AB527	8	10'-6"	Str.					88
AB528	2	11'-0"	Str.					23
AB529	1 Ser. 3	3'-6"to5'-0"	Str.				9"	13
AB531	8	10'-3"	Str.					86
AB532	2 Ser. 3	8'-6"to12'-3"	Str.				1'-10½"	65
AB601	26	14'-2"	106	5'-3"	6'-9"	2'-6"		554
AB602	31	15'-7"	105	7'-3"	1'-5"			725
AB603	31	5'-1"	105	2'-0"	1'-5"			237
AB604	31	5'-7"	105	2'-6"	11"			260
AB606	2	7'-4"	104	6'-6"	1'-0"			22
AB607	14	19'-2"	105	9'-2"	1'-2"			402
AB608	14	8'-10"	115	7'-2"	9"			186
AB609	1 Ser. 3	5'-4"to6'-10"	115	3'-8"to5'-2"	9"		9"	27
AB610	2	7'-7"	104	6'-9"	1'-0"			24
AB611	3	4'-8"	115	3'-0"	9"			21
AB701	1	6'-4"	115	4'-8"	9"			13
AB702	1	5'-10"	115	4'-2"	9"			12
AB703	1	5'-1"	115	3'-5"	9"			10
AB704	2	5'-0"	115	3'-4"	9"			20
AB705	1	6'-10"	115	5'-2"	9"			14
DB801	20	5'-3"	141	3'-2"				280
AB801	5	34'-6"	Str.					460
AB802	2	11'-3"	108	8'-9"	2'-6"	2'-5"		60

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
AB803	1	11'-6"	108	9'-0"	2'-6"	2'-5"		31
AB804	1	14'-0"	108	11'-6"	2'-6"	2'-5"		37
AB805	2	15'-6"	108	13'-0"	2'-6"	2'-5"		83
AB806	2	7'-9"	Str.					41
AB807	1	8'-6"	Str.					23
AB808	1	13'-3"	Str.					35
AB809	2	15'-4"	104	13'-3"	2'-3"			82
AB810	2	39'-6" 4	108	30'-3" 2	2'-3"	9"		179 84 61
					Total	East Abut.	=	7039
		PIER 1						
SPA401	1	620'-0"	112	75.1	27'-2"	2'-8"		501
SPA402	1	647'-7"	112	78.4	28'-5"	2'-8"		524
SPA403	1	673'-8"	112	81.6	29'-7"	2'-8"		544
PA501	34	4'-5"	105	1'-0"	2'-8"			157
PA502	22	12'-2"	109	2'-8"	3'-2"			278
PA503	2	2'-11"	105	1'-0"	1'-2"			6
PA504	2	3'-11"	105	1'-0"	2'-2"			8
PA601	8	8'-0"	113	1'-11"	4'-2"	2'-8"		96
PA602	4	29'-6"	Str.					178
PA801	15	10'-8"	100	8'-6"				428
PA901	10	12'-0"	100	9'-6"				408
PA1001	22	12'-4"	100	9'-6"				1171
PA1002	10	13'-4"	100	10'-6"				575
PA1003	5	28'-4"	111	24'-0"	2'-0"			610
PA1004	5	15'-6"	111	11'-2"	2'-0"			334
PA1005	5	29'-6"	Str.					636
PA1006	4	9'-9"	Str.					168
PA1007	2	10'-0"	Str.					86
PA1101	12	16'-8"	100	13'-6"				1062
PA1102	29	8'-3"	104	6'-6"	2'-0"			1270
PA1103	16	30'-9"	Str.					2623
PA1104	13	32'-0"	Str.					2210
PA1105	13	32'-9"	Str.					2260
PA1106	13	8'-6"	104	6'-9"	2'-0"			587
				Total	Pier	1	=	16,720

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			337/389

MICROFILMED SEP 14 1983

STARK COUNTY
STA-30-14.12
STA-77-9.22



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For replacement reinforcement schedule see sheet 256
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 14 | Revised 6-26-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 14/16
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE
RAMP B OVER RAMPS C AND G,
I-77 AND PENN. R.R.
BR. NO. STA. 30-1489 | STA. 958 + 78.75
SCALE: | STA. 966 + 30.88
RELOCATED U.S. 30
CANTON | STARK COUNTY | OHIO

DRAWN DGS DATE 7-6-70	TRACED DATE	CHECKED RAP DATE 7-27-70	REVIEWED NTK DATE 11-20-71	REVISED	1668

Revised 4-28-77

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

338
389

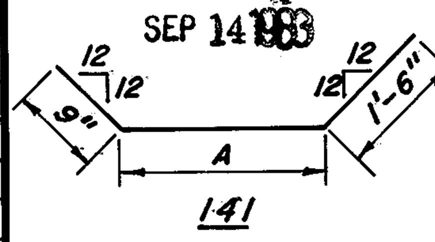
MICROFILMED SEP 14 1983

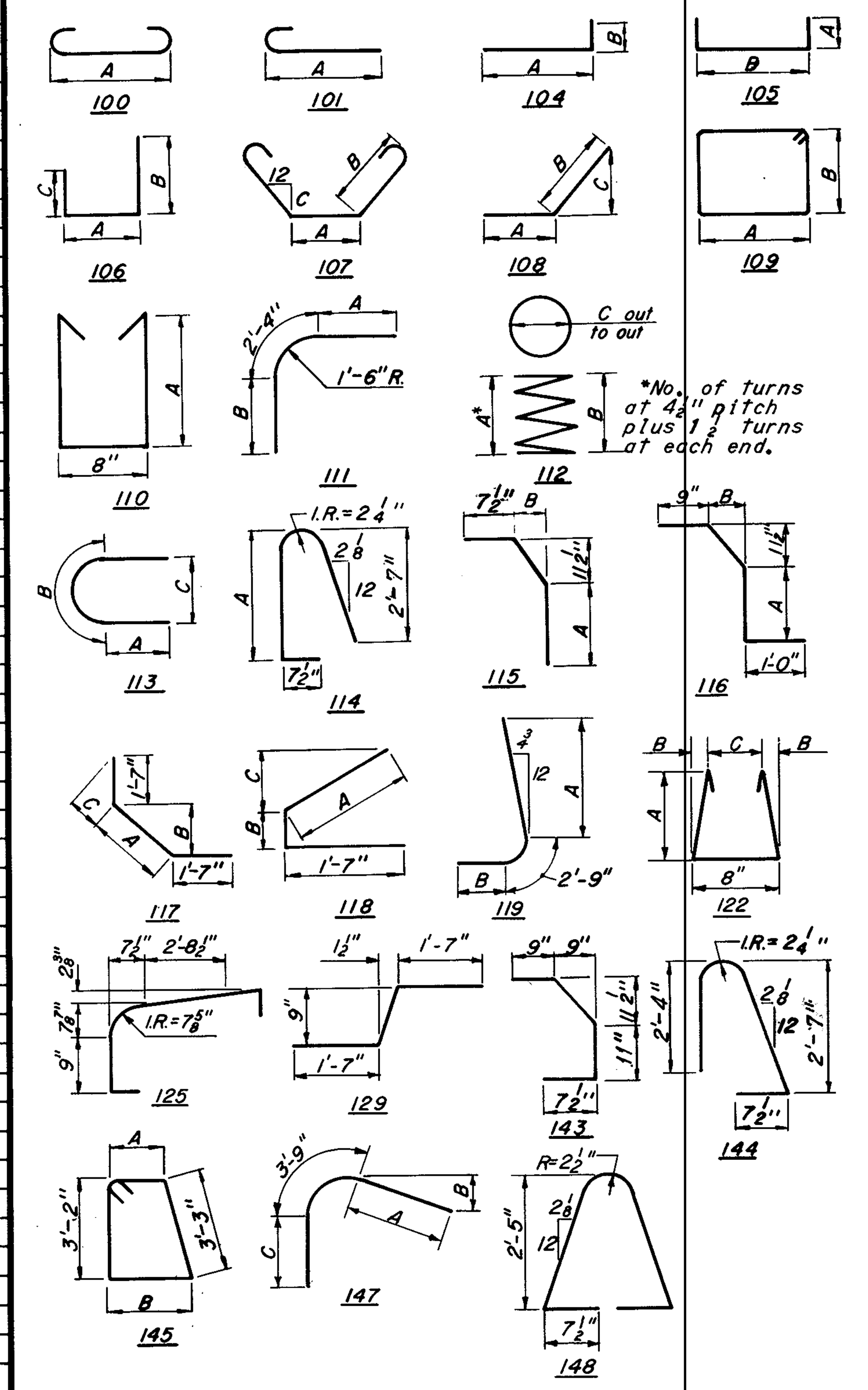
STARK COUNTY
STA-30-14.12
STA-77-9.22

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
				PIER 2				
SPB401	1	730'-1"	112	88.4	32'-2"	2'-8"		589
SPB402	1	761'-4"	112	92.2	33'-7"	2'-8"		616
SPB403	1	790'-10"	112	95.8	34'-11"	2'-8"		640
PB501	34	4'-5"	105	1'-0"	2'-8"			157
PB502	23	12'-2"	109	2'-8"	3'-2"			292
PB503	2	2'-11"	105	1'-0"	1'-2"			6
PB504	2	3'-11"	105	1'-0"	2'-2"			8
PB601	8	8'-0"	113	1'-11"	4'-2"	2'-8"		96
PB602	4	31'-6"	Str					190
PB801	15	10'-8"	100	8'-6"				428
PB901	12	13'-0"	100	10'-6"				528
PB902	10	12'-0"	100	9'-6"				408
PB1001	5	15'-7"	111	11'-3"	2'-0"			335
PB1002	5	31'-4" 1	111	27'-0"	2'-0"	1'-9"		674
PB1003	5	31'-7"	Str					678
PB1004	2	10'-9"	Str					93
PB1005	3	9'-0"	Str					116
PB1006	2	11'-9"	Str					102
PB1101	12	16'-8"	100	13'-6"				1062
PB1102	24	13'-8"	100	10'-6"				1742
PB1401	11	7 10'-0"	104	8'-5"	7 2'-0"			91 840
PB1402	11	14'-8" 10	104	12'-8"	2'-0" 7			1200 49
PB1403	11	30'-0"	Str					2524
PB1404	11	25'-11"	Str		7			2181
PB1405	22	10'-6" 10	104	8'-8"	2'-0"			1025 824
PB1406	22	5 10'-6" 1	104	12'-11"	2'-0" 7			2640 538
PB1407	11	31'-6"	Str					2650
PB1408	11	27'-3"	Str					2290
PB1409	11	32'-4"	Str					2720
PB1410	11	28'-1"	Str					2360
					Total	Pier	2 =	29,690 987
				PIER 3				
SPC401	1	656'-9"	112	79.5	28'-10"	2'-8"		531
SPC402	1	684'-4"	112	82.9	30'-1"	2'-8"		553
SPC403	1	711'-7"	112	86.2	31'-4"	2'-8"		576
PC501	34	4'-5"	105	1'-0"	2'-8"			157
PC502	18	12'-2"	109	2'-8"	3'-2"			228
PC503	2	2'-11"	105	1'-0"	1'-2"			6
PC504	2	3'-11"	105	1'-0"	2'-2"			8
PC601	6	8'-0"	113	1'-11"	4'-2"	2'-8"		72
PC602	4	29'-3"	Str					176

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PC901	19-20	2 10'-0"	100	9'-6"				16 840
PC902	9	11'-0"	100	8'-6"				336
PC1001	22	12'-4"	100	9'-6"				1171
PC1002	4	14'-11"	111	10'-7"	2'-0"			256
PC1003	4	28'-6" 3	111	24'-2"	2'-0"	1'-9"		490
PC1004	5	29'-3"	Str					629
PC1005	3	8'-0"	Str					103
PC1101	10	14'-8"	100	11'-6"				780
PC1102	25	8'-3"	104	6'-6"	2'-0"			1095
PC1103	14	32'-6"	Str					2417
PC1104	11	33'-9"	Str					1970
PC1105	11	34'-6"	Str					2020
PC1106	11	8'-6"	104	6'-9"	2'-0"			496
					Total	Pier	3 =	14,910 886
				PIER 4				
SPD401	1	563'-0"	112	68.2	24'-7"	2'-8"		455
SPD402	1	645'-6"	112	78.2	28'-4"	2'-8"		522
SPD403	1	706'-7"	112	85.6	31'-1"	2'-8"		571
PD501	34	4'-5"	105	1'-0"	2'-8"			157
PD502	18	12'-2"	109	2'-8"	3'-2"			228
PD503	2	2'-11"	105	1'-0"	1'-2"			6
PD504	2	3'-11"	105	1'-0"	2'-2"			8
PD601	8-6	8'-0"	113	1'-11"	4'-2"	2'-8"		72-96
PD602	4	30'-0"	Str					180
PD801	8	10'-8"	100	8'-6"				228
PD901	24	12'-0"	100	9'-6"				980
PD902	19	11'-0"	100	8'-6"				711
PD1001	4	15'-7"	111	11'-3"	2'-0"			268
PD1002	4	30'-0" 4	111	26'-3"	2'-0"	1'-9"		525
PD1003	4	30'-0"	Str					516
PD1004	1	9'-0"	Str					39
PD1101	13	16'-8"	100	13'-6"				1150
PD1102	30	8'-3"	104	6'-6"	2'-0"			1310
PD1103	17	28'-3"	Str					2563
PD1104	13	32'-0"	Str					2210
PD1105	13	34'-3"	Str					2360
PD1106	13	8'-6"	104	6'-9"	2'-0"			587
					Total	Pier	4 =	15,670 46

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
				PIER 5				
SPE401	1	355'-9"	112	43.1	15'-2"	2'-8"		286
SPE402	1	407'-0"	112	49.3	17'-6"	2'-8"		328
SPE403	1	502'-9"	112	60.9	21'-10"	2'-8"		406
PE501	18	12'-2"	109	2'-8"	3'-2"			228
PE502	2	2'-11"	105	1'-0"	1'-2"			6
PE503	2	3'-11"	105	1'-0"	2'-2"			8
PE504	34	4'-5"	105	1'-0"	2'-8"			157
PE601	8	8'-0"	113	1'-11"	4'-2"	2'-8"		96
PE602	4	30'-10"	Str					185
PE801	13	14'-8"	100	12'-6"				509
PE901	10	12'-0"	100	9'-6"				408
PE1001	12	12'-4"	100	9'-6"				637
PE1002	4	28'-7"	111	24'-9"	1'-6"			491
PE1003	4	13'-4" 7	111	9'-6"	1'-6" 9			230
PE1004	4	30'-10"	Str					529
PE1005	2	9'-0"	Str					78
PE1006	17	18'-9"	Str					1370
PE1007	9	21'-3"	Str					819
PE1008	11	25'-0"	Str					1185
PE1009	17	8'-0"	104	6'-3"	2'-0"			582
PE1010	9	8'-3"	104	6'-6"	2'-0"			319
PE1011	4	17'-0"	Str					291
PE1101	11	11'-8"	100	8'-6"				682
					Total	Pier	5 =	9830
				PIER 6				
SPF401	1	700'-10"	112	84.9	30'-10"	2'-8"		567
SPF402	1	682'-8"	112	82.7	30'-0"	2'-8"		552
SPF403	1	686'-0"	112	83.1	30'-2"	2'-8"		555
PF501	18	12'-2"	109	2'-8"	3'-2"			228
PF502	2	2'-11"	105	1'-0"	1'-2"			6
PF503	2	3'-11"	105	1'-0"	2'-2"			8
PF504	34	4'-5"	105	1'-0"	2'-8"			157
PF601	8	8'-0"	113	1'-11"	4'-2"	2'-8"		96
PF602	4	29'-0"	Str					174
PF801	15	15'-8"	100	13'-6"				626





BENDING DIAGRAMS

Notes:

All bar dimensions are given out to out.

All bars of a series shall vary in length by a constant increment.

For replacement reinforcement schedule see sheet 256

Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

Splices in No. 14 or No. 18 size reinforcing bars shall be made by an approved positive mechanical method designed to develop 125% of the specified yield strength of the bar.

H.N.T.B. BRIDGE NO. 14 | Revised 6-26-75 | By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 15/16
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

RAMP B OVER RAMPS C AND G,
I-77 AND PENN. R.R.

BR. NO. STA. 30-1489 — STA. 958 + 78.75, STA. 966 + 30.88
SCALE:

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN DGS DATE 7-6-70	TRACED DATE	CHECKED RAP DATE 7-24-70	REVIEWED MJK DATE 11-20-71	REVISED 1668

Revised 4-28-77

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
PF1001	12	14'-4"	100	11'-6"				736
PF1002	5	27'-4"	111	23'-6"	1'-6"			588
PF1003	5	10'-10" 4	111	9'-0"	1'-6"	2'-0"	87	276
PF1004	4	3 29'-0"	Str					500
PF1005	2	9'-0"	Str					78
PF1006	4	16'-0"	Str					274
PF1101	12	11'-8"	100	8'-6"				743
PF1102	16	14'-8"	100	11'-6"				1245
PF1103	15	34'-6"	Str					2750
PF1104	15	33'-9"	Str					2685
PF1105	15	33'-3"	Str					2650
PF1106	15	20'-0"	Str					1592
PF1107	20	8'-3"	104	6'-6"	2'-0"			879
PF1108	20	8'-6"	104	6'-9"	2'-0"			905
					Total	Pier	6 =	18,870 81
				PIER 7				
SPG401	1	407'-0"	112	49.3	17'-6"	2'-8"		328
SPG402	1	429'-3"	112	52.0	18'-6"	2'-8"		346
SPG403	1	451'-6"	112	54.7	19'-6"	2'-8"		364
PG501	23	12'-2"	109	2'-8"	3'-2"			292
PG502	2	2'-11"	105	1'-0"	1'-2"			6
PG503	2	3'-11"	105	1'-0"	2'-2"			8
PG504	34	4'-5"	105	1'-0"	2'-8"			157
PG601	8	8'-0"	113	1'-11"	4'-2"	2'-8"		96
PG602	4	28'-8"	Str					172
PG801	15	15'-8"	100	13'-6"				626
PG901	10	12'-0"	100	9'-6"				408
PG1001	12	12'-4"	100	9'-6"				637
PG1002	5	26'-2"	111	22'-4"	1'-6"			562
PG1003	5	14'-0" 6	111	10'-2"	1'-6"	2'-0"	12	301
PG1004	5	28'-6"	Str					614
PG1005	2	8'-0"	Str					68
PG1006	4	10'-6"	Str					181
PG1101	12	11'-8"	100	8'-6"				743
PG1102	15	21'-0"	Str					1673
PG1103	15	22'-0"	Str					1753
PG1104	15	22'-6"	Str					1797
PG1105	15	15'-0"	Str					1197
PG1106	20	8'-0"	104	6'-3"	2'-0"			852
PG1107	20	8'-3"	104	6'-6"	2'-0"			879
					Total	Pier	7 =	14,060 71

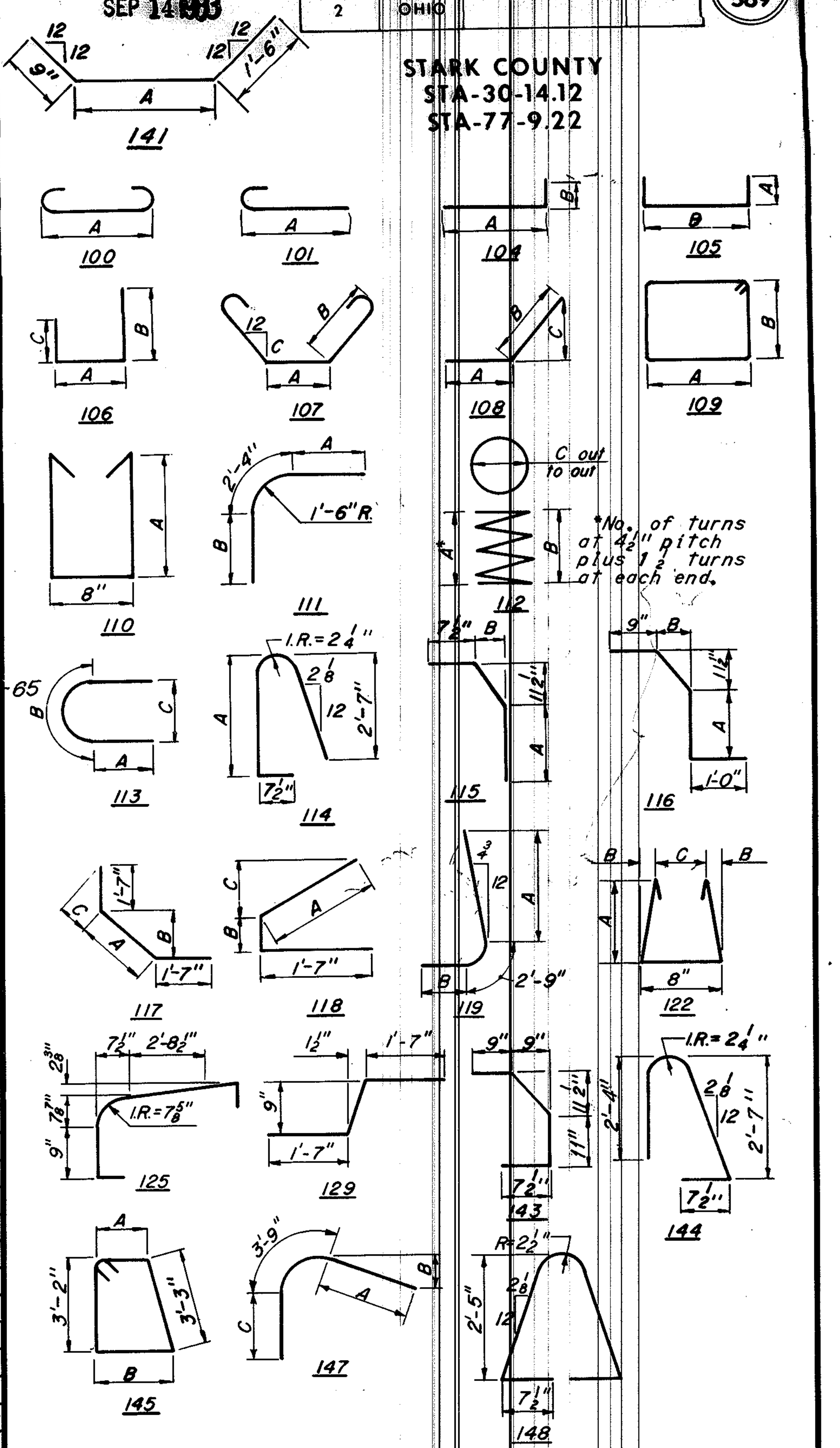
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
				PIER 8				
SPH401	1	486'-1"	112	58.9	21'-1"	2'-8"		392
SPH402	1	497'-2"	112	60.2	21'-7"	2'-8"		401
SPH403	1	504'-6"	112	61.1	21'-11"	2'-8"		407
PH501	34	4'-5"	105	1'-0"	2'-8"			157
PH502	24	12'-2"	109	2'-8"	3'-2"			304
PH503	2	2'-11"	105	1'-0"	1'-2"			6
PH504	2	3'-11"	105	1'-0"	2'-2"			8
PH601	8	8'-0"	113	1'-11"	4'-2"	2'-8"		96
PH602	4	29'-6"	Str					178
PH801	13	10'-8"	100	8'-6"				370
PH1001	10	12'-4"	100	9'-6"				534
PH1002	12	14'-4"	100	11'-6"				740
PH1003	10	13'-4"	100	10'-6"				573
PH1004	5	13'-10"	111	9'-6"	2'-0"			290
PH1005	5	30'-2" 29'-8"	111	25'-10"	2'-0"	1'-6"		406
PH1006	5	29'-6"	Str					635
PH1007	2	10'-9"	Str					93 84
PH1008	3	9'-0"	Str					116
PH1009	2	9'-9"	Str					84 76
PH1101	11	15'-8"	100	12'-6"				915
PH1102	29	8'-3"	104	6'-6"	2'-0"			1270
PH1103	16	24'-6"	Str					2095
PH1104	13	24'-9"	Str					1710
PH1105	13	25'-0"	Str					1730
PH1106	13	8'-6"	104	6'-9"	2'-0"			587
PH1107	16	14'-8"	100	11'-6"				1245
					Total	Pier	8 =	15,570
				DECK-UNIT 1				
SA501	448	5'-8"	144					2648
SA502	448	2'-1"	105	6¾"	1'-2"			973
SA503	448	2'-2"	104	1'-8"	7"			1012
SA504	448	3'-3"	143					1519
SA505	105	30'-0"	Str					3285
SA506	5	30'-10"	Str					161
SA507	10	20'-10"	Str					218
SA601	2 Ser.19	18'-0"to37'-6"	Str				1'-1"	1583
SA602	2 Ser.28	18'-0"to37'-6"	Str				8¾"	2340
SA603	470	30'-0"	Str					21,178
SA604	549	33'-0"	100	31'-8"				27,200
SA605	549	31'-8"	Str					26,104
SA606	40	42'-0"	Str					2520
SA607	20	32'-0"	Str					963
SA608	20	26'-0"	Str					781
SA609	1	34'-2"	100	32'-10"				51
SA610	1	32'-10"	Str					49
SA611	1 Ser.13	28'-8"to6'-8"	101	28'-0"to6'-0"			1'-10"	345
SA612	1 Ser.13	28'-0"to6'-0"	Str				1'-10"	333
SA613	3	4'-8"	101	4'-0"				21
SA614	3	4'-0"	Str					18
				Total Deck	Unit 1			93,302

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
				DECK-UNIT 2				
SB501	573	5'-8"	144					3387
SB502	573	2'-1"	105	6¾"	1'-2"			1245
SB503	573	2'-2"	104	1'-8"	7"			1295
SB504	573	3'-3"	143					1942
SB505	145	30'-0"	Str					4550
SB506	5	22'-10"	Str					118
SB507	5	7'-4"	Str					38
SB601	1 Ser.19	28'-0"to41'-6"	Str				9" 1'-1"	995
SB602	1 Ser.28	28'-0"to41'-6"	Str			6"	8¾"	1462 65
SB603	658	30'-0"	Str					29,700
SB604	694	33'-0"	100	31'-8"				34,401
SB605	694	31'-8"	Str					33,000
SB606	40	36'-0"	Str					2160
SB607	40	45'-0"	Str					2710
SB608	1	34'-10"	100	33'-6"				52
SB609	1	33'-6"	Str					50
SB610	6	4'-8"	101	4'-0"				42
SB611	6	4'-0"	Str					36
SB612	1 Ser.20	28'-8"to6'-8"	101	28'-0"to6'-0"			1'-1½"	531
SB613	1 Ser.20	28'-0"to6'-0"	Str				1'-1½"	511
SB614	1 Ser.11	28'-8"to6'-8"	101	28'-0"to6'-0"			2'-2½"	292
SB615	1 Ser.11	28'-0"to6'-0"	Str				2'-2½"	281
SB616	1	34'-2"	100	32'-10"				51
SB617	1	32'-10"	Str					48
					Total	Deck Unit 2	=	4 118,897
				PARAPET				
R501	84	13'-6"	Str					1185
R502	252	7'-0"	Str					1844
R503	96	15'-6"	Str					1558
R504	20	5'-6"	Str					115
R505	4	5'-9"	Str					24
R506	84	14'-6"	Str					1273
R507	4	9'-6"	Str					40
R508	4	6'-6"	Str					27
R509	4	8'-3"	Str					34
					Total	Parapet	=	6100

MICROFILMED SEP 14 1983

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			339 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For replacement reinforcement schedule see sheet 256
Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 14 — Revised 6-26-75 By. RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 16/16

REINFORCEMENT SCHEDULE
RAMP B OVER RAMPS C AND G, I-77 AND PENN. R.R.

BR. NO. STA. 30-1489 — STA. 958 + 78.75, STA. 966 + 30.88
SCALE:

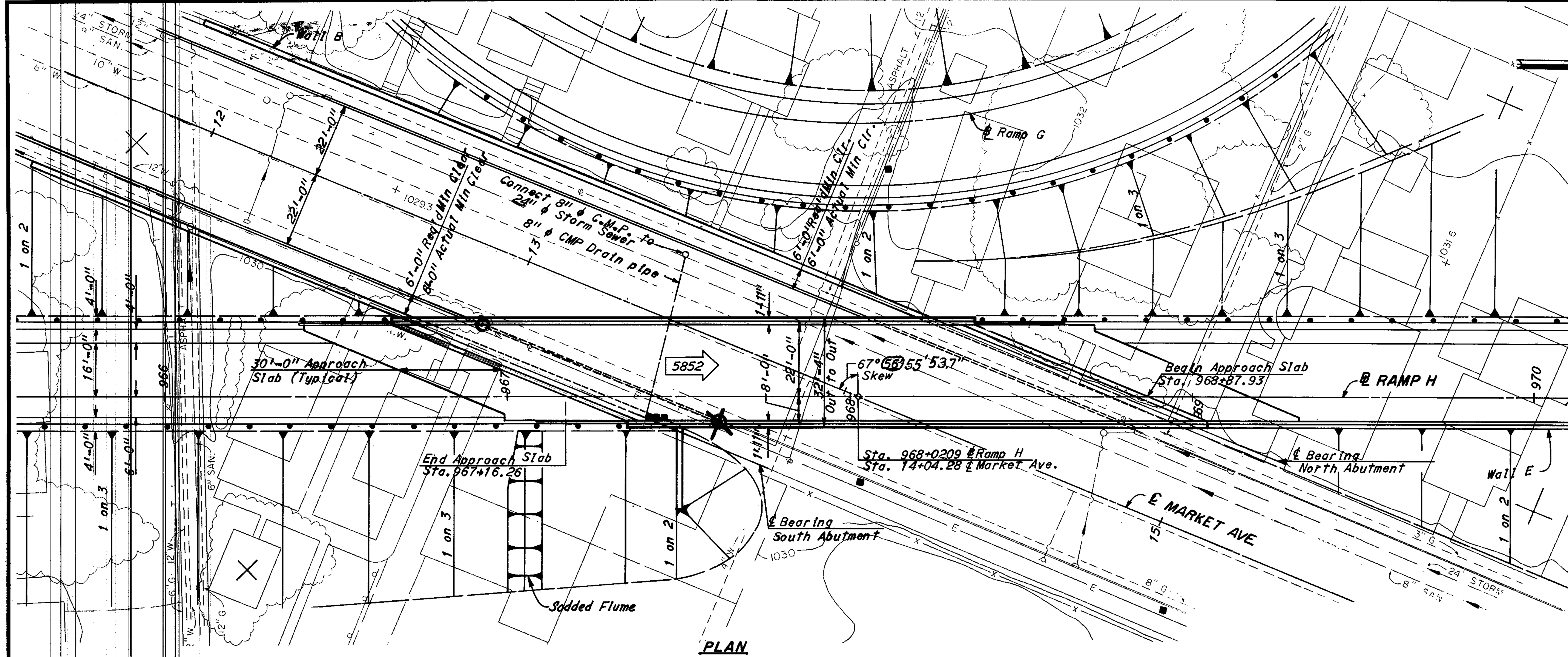
RELOCATED U.S. 30
CANTON — STARK COUNTY — OHIO

DRAWN DGS DATE 7-6-70 | TRACED DATE | CHECKED RAP DATE 7-27-70 | REVIEWED DATE 11-20-71 | REVISED | 1668

Revised 4-28-77

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



Notes:

The following items are not included in the bridge plans. See roadway plans for details.

1. Relocation or removal of existing utilities.
2. Approach grading, pavements and slabs
3. Guardrails.

5852 Denotes one way average daily traffic.

Earthwork limits are schematic. Actual slopes shall conform to plan cross-sections.

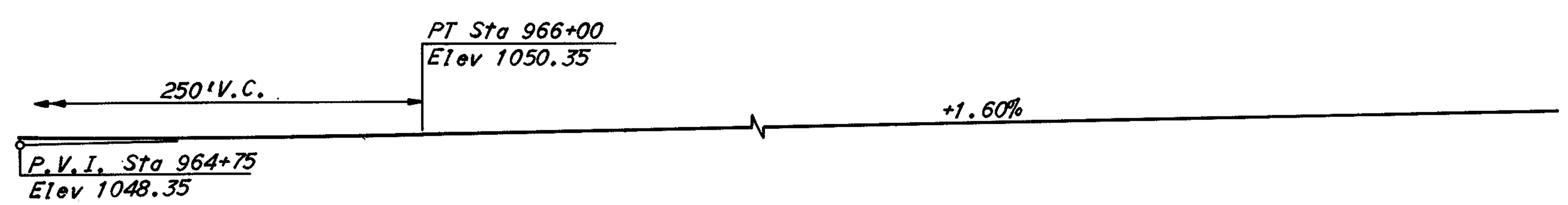
⊙ Denotes point of minimum vertical clearance

■ Denotes Standard Type Scupper

All piles shall be 12"∅ cast-in-place concrete with an average estimated pay length of 70'-0" for both abutments, Southwest and Southeast retaining walls and retaining wall B. These estimates are based on boring data and are approximate only. The contractor shall assume full responsibility for the length of piling selected for driving.

For Estimated Quantities, see Sheet 365C.

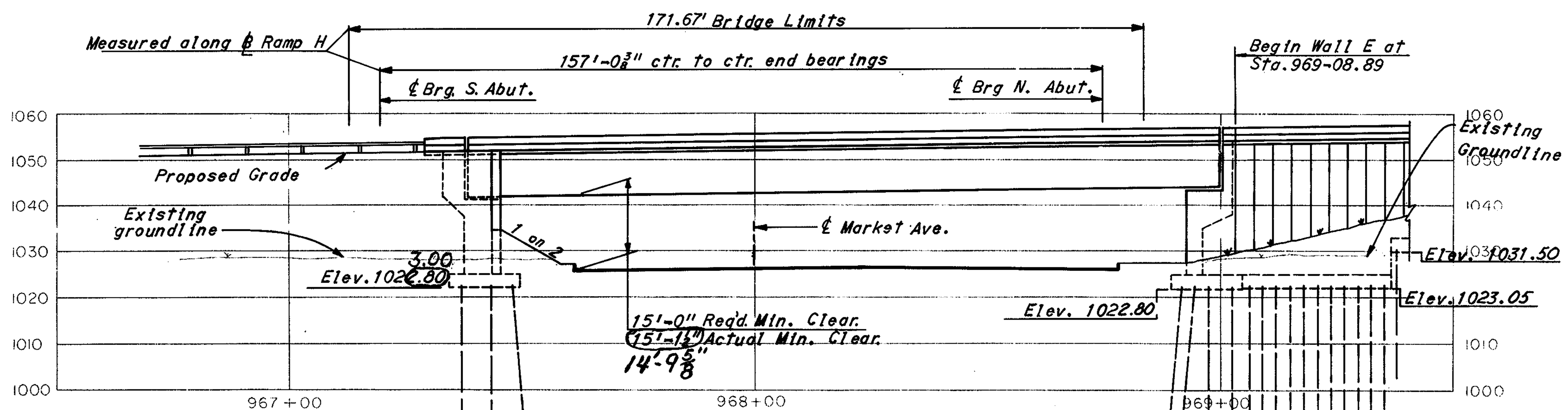
Note: Profile grade is .07 ft. above the top of Portland Cement Concrete on the bridge deck and approach slabs. The Contractor shall in a length of 75 feet, make a vertical adjustment in the finished surface of the approach roadway in order to provide a 1 3/8-inch vertical transition to the higher asphalt concrete roadway surface on the structure and approach slabs.



PROFILE GRADE - RAMP H

UTILITY LEGEND

G	Gas
W	Water
SS	Storm Sewer
San	Sanitary Sewer
T	Telephone
E	Power Lines
4W-E4KV	4 Wire, Primary 4 Kilovolt
3W-Es	3 Wire, Secondary
∞	Manhole
■	Catch Basin
○	Pole Telephone



ELEVATION

Modify Std. Drwg. AS-1-72 by providing 3" clear over the top rebars instead of the 2" shown on the Std. Drwg. The jacking holes as called for on Std. Drwg. AS-1-72 are not required.

PROPOSED STRUCTURE

Type: Simple Span Welded Girders with Reinforced Concrete Slab.
Span: 157'-0 3/4" Ctr. to Ctr. End Bearings along Ramp H
Roadway: 30'-0" Face to face of parapets.
Loading: HS20-44
Skew: 67° 56' Rt. 55' 53.7"
Wearing Surface: 2 1/2" Asphalt Concrete
Approach Slab: AS-1-72 (30' Long) (Modified)
Alignment: Tangent

H.N.T.B. BRIDGE NO. 10 — Revised 6-2-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 1 / 13

SITE PLAN

RAMP H OVER MARKET AVENUE
BR. NO. STA-30-1504 — STA. 967+16.26
SCALE: — STA. 968+87.93

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN ELH DATE 10-29-69	TRACED DATE	CHECKED BM DATE 6-5-70	REVIEWED MTK DATE 11-30-71	REVISED 1-24-77

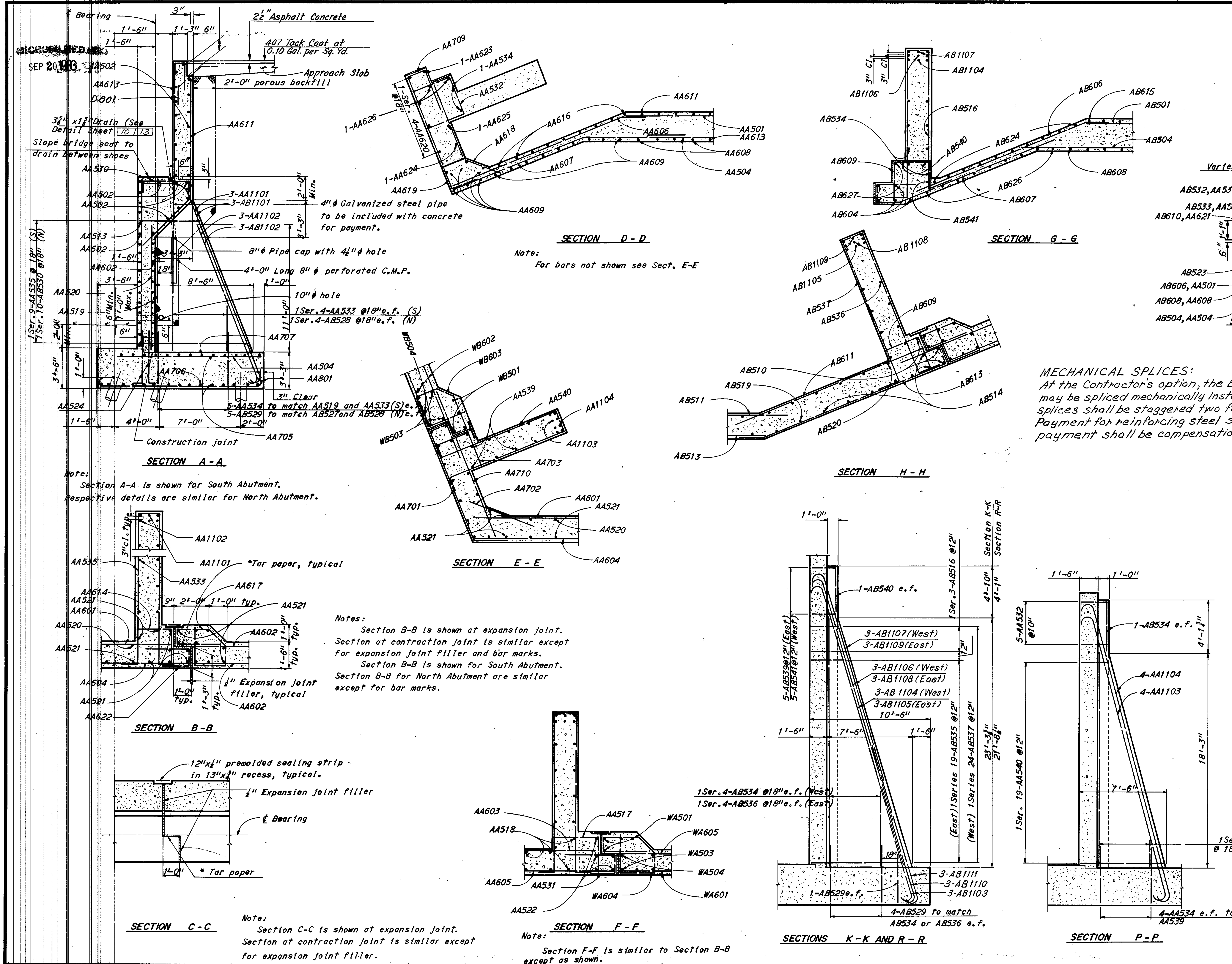
1668

FED. ROAD DIV. NO. 2
STATE OHIO
FEDERAL AID PROJECT NO.
TYPE FUNDS
341
389
STARK COUNTY
STA-30-14.12
STA-77-9.22
SEP 20 1983
PLAN
ELEVATION
FOOTING PLAN
VIEW Q-Q
SECTION M-M
75'-10¼"
87'-3¾"
4 Spaces @ 18'-11⅜" = 75'-10¼"
26'-3⅞"
60'-11⅞"
6'-0"
℄ Girder A
℄ Girder B
℄ Girder C
℄ Girder D
℄ Girder E
℄ Ramp H
℄ Bearing
12"x½" Premolded sealing strip in 13"x½" recess from top of footing to bottom of approach slab, or from top of footing to top of the wall.
½" Expansion joint filler
Contraction joint
4" ϕ Galvanized steel pipe, typ. spaced as shown
6-AA401 @ 6" Typ. except as shown
12"x8" reducer
20-D801 @ about 4'-0" (Placed Parallel to ℄ Ramp H)
* Backwall elevations are given at the point indicated and are ¼" below top of asphalt concrete.
2" ϕ Conduit
2"x6" key
Construction joint
Ground line
6" ϕ Weep hole, typ. spaced at abt. 10'-0" ctrs.
Key 6"x12"x5'-0", typ.
136-AA524 to match AA519 thru AA523
13-AA617 to match AA602
13-AA622 to match AA605
13-AA614 to match AA603
12-AA524 to match AA518 and AA522
Note:
Piles not shown in elevation.
25-spaces @ 3'-6" = 87'-6"
4 Spaces @ 11'-4" = 45'-4"
29'-2⅜"
67'-11⅞"
97'-2⅝"
1 Ser. 8-AA707 Top spaced as shown in Sect. A-A
2 Ser. 5-AA705 Top and bot. spaced as shown in Sect. A-A
89-AA504 @ 12" top
Notes:
For Section W-W see Sheet 5/13
For notes and sections not shown see Sheets 3, 4/13
H.N.T.B. BRIDGE NO. 10
Revised 5-30-75 By RAS
HOWARD, NEEDLES, TAMMEN & BERGENDOFF 2/13
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
SOUTH ABUTMENT
RAMP H OVER MARKET AVENUE
BR. NO. STA-30-1504
STA. 967+16.26
SCALE: 1/4"=1'-0"
STA. 968+87.93
RELOCATED U.S. 30
CANTON
STARK COUNTY
OHIO
DRAWN CYK
DATE 2-4-70
TRACED
DATE
CHECKED MAG
DATE 4-9-70
REVIEWED MJK
DATE 11-20-71
REVISED 9-21-76
1668
Revised 12-3-76, 1-24-77

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

342 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22



MECHANICAL SPLICES:
At the Contractor's option, the bars in the back face of the counterforts may be spliced mechanically instead of being lapped as shown. Mechanical splices shall be staggered two feet minimum between adjacent bars. Payment for reinforcing steel shall be for the quantity shown, which payment shall be compensation for mechanical splices if used.

Notes:

For roadway end dam details see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4.

AA401 thru AA403, and AB401 thru AB404 bars shall be placed $2\frac{1}{2}$" ± below top of bridge seat.

n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.

For reinforcement schedule see Sheet 11/13

All battered piles are battered 4 in 12.

Pile dimensions are measured along bottom of footing.

All piles are 12" ϕ cast-in-place concrete.

○→ Denotes battered piles.

(S) Denotes South abutment and (N) denotes North abutment.

Weep holes shall be sloped $\frac{1}{4}$" per foot.

* To be included with "Item 511, Class C concrete, abutments and retaining wall above footings" for payment.

H.N.T.B. BRIDGE NO. 10 — Revised 6-2-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 3/13
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

ABUTMENT DETAILS

RAMP H OVER MARKET AVENUE
BR. NO. STA-30-1504 — STA. 967+16.26
SCALE: 3/8" = 1'-0" — STA. 968+87.93

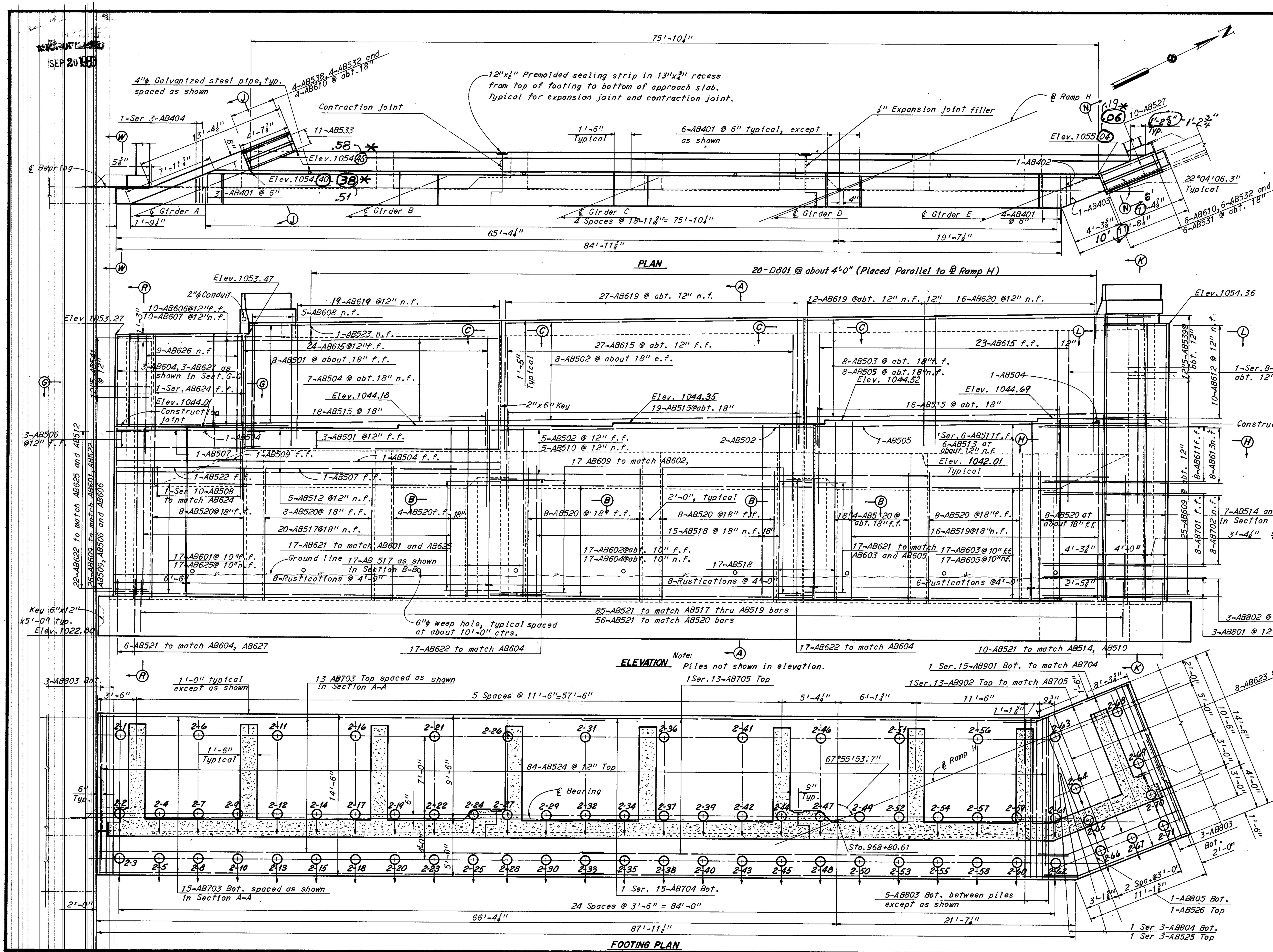
RELOCATED U.S. 30

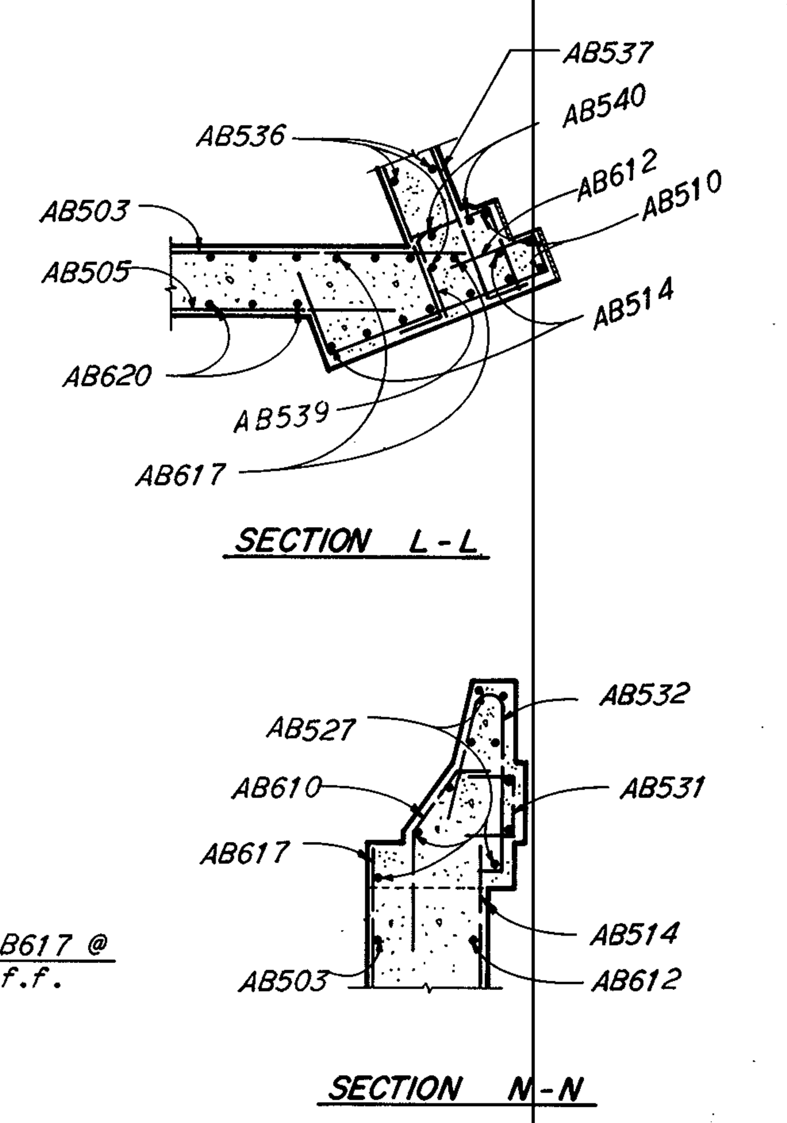
CANTON — STARK COUNTY — OHIO

DRAWN CYK DATE 2-18-70	TRACED DATE	CHECKED MAG DATE 4-9-70	REVIEWED MJK DATE 11-20-71	REVISED 3-2-76 1668

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			343/389

STARK COUNTY
STA-30-14.12
STA-77-9.22





* Backwall elevations are given at the point indicated and are 1/4" below top of asphalt concrete.

Note:
For notes and sections not shown see Sheet 3/13

H.N.T.B. BRIDGE NO. 10 — Revised 6-2-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 4/13

NORTH ABUTMENT

RAMP H OVER MARKET AVENUE
BR. NO. STA-30-1504 — STA. 967+16.26
SCALE: 1/4"= 1'-0" — STA. 968+87.93

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
CYK DATE 1-21-70	DATE	MAG DATE 4-1-70	MJY DATE 11-20-71	9-21-76

1668

Revised 1-24-77

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

344
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

Notes:
For notes and sections not shown see Sheet 6/13
For Section F-F see Sheet 3/13

H.N.T.B. BRIDGE NO. 10
Revised 5-30-75 By RAB

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 5/13
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SOUTHWEST RETAINING WALL

RAMP H OVER MARKET AVENUE
BR. NO. STA-30-1504 STA. 967+16.26
SCALE: 3/16"=1'-0" STA. 968+87.93
RELOCATED U.S. 30
CANTON STARK COUNTY OHIO

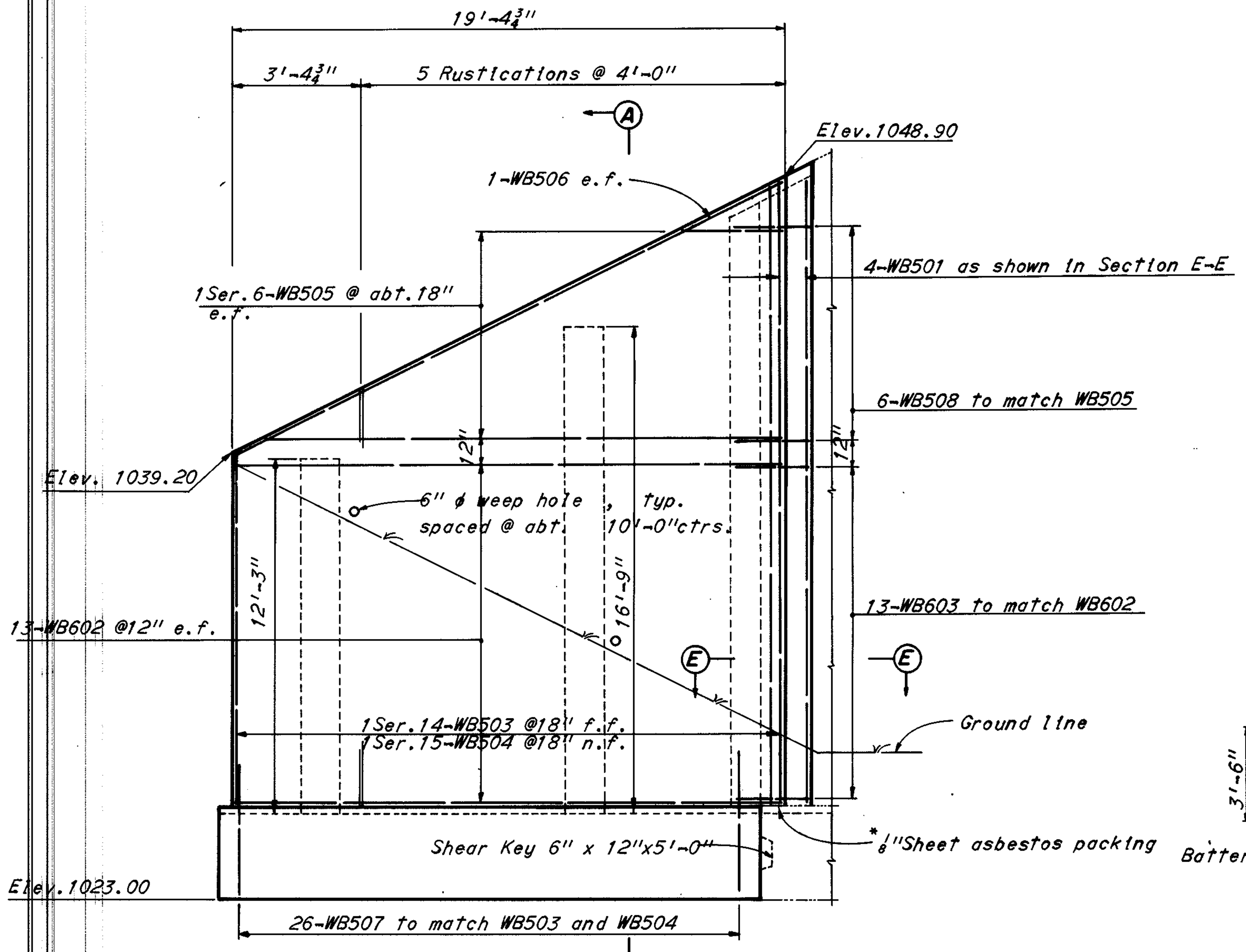
DRAWN CYK	TRACED	CHECKED LL	REVIEWED MJK	REVISED
DATE 4-6-70	DATE	DATE 4-15-70	DATE 11-20-71	1668

FED. ROAD DIV. NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	345/389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22

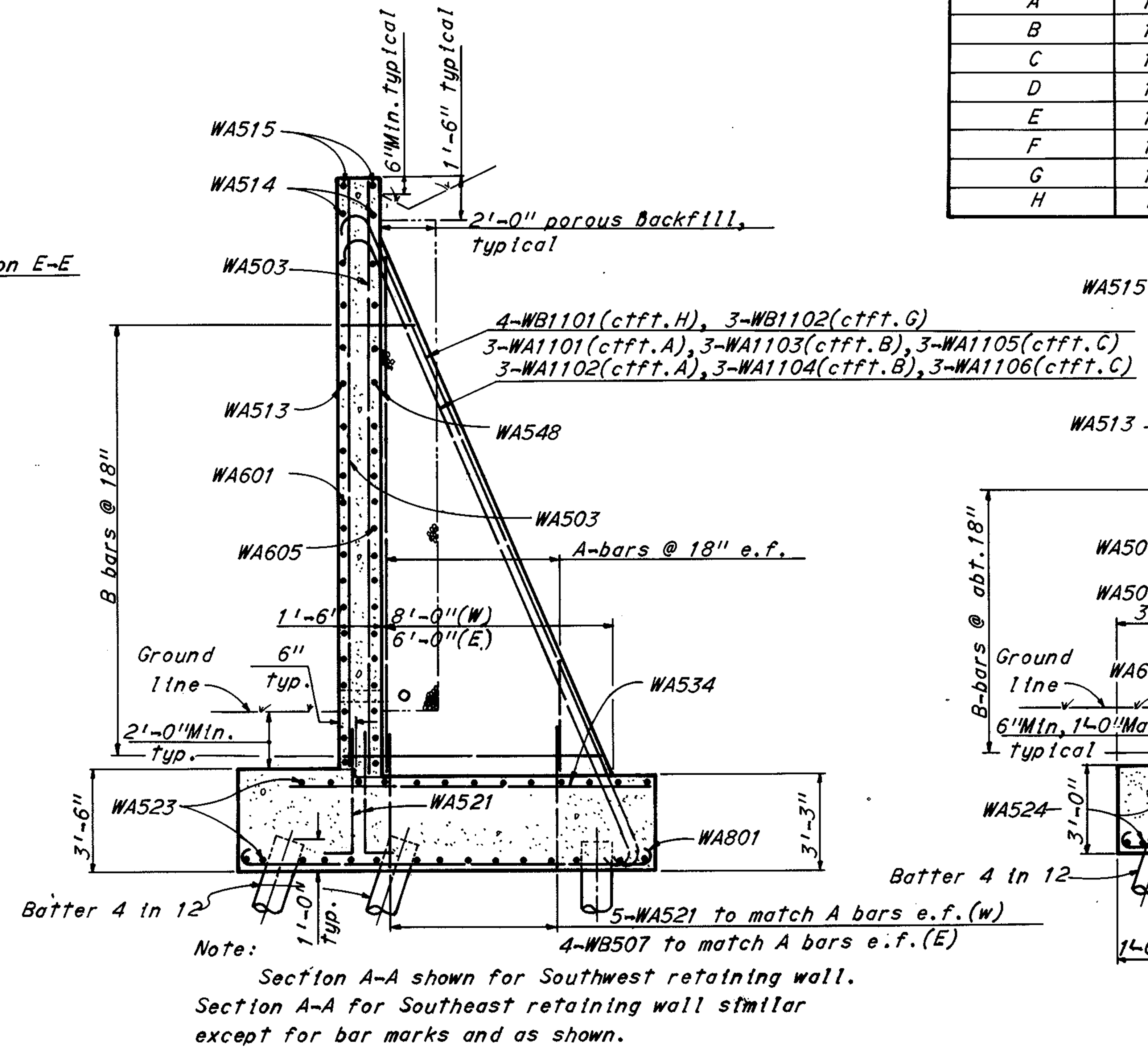
COUNTERFORT REINFORCING

Counterfort	A-Bars	B-Bars
A	1-Ser. 5-WA523	1-Ser.14-WA545
B	1-Ser. 5-WA544	1-Ser.13-WA556
C	1-Ser. 5-WA553	1-Ser.12-WA557
D	1-Ser. 3-WA546	1-Ser. 9-WA547
E	1-Ser. 3-WA554	1-Ser. 8-WA558
F	1-Ser. 3-WA555	1-Ser. 7-WA559
G	1-Ser. 4-WB509	1-Ser. 8-WB502
H	1-Ser. 4-WB510	1-Ser.11-WB511



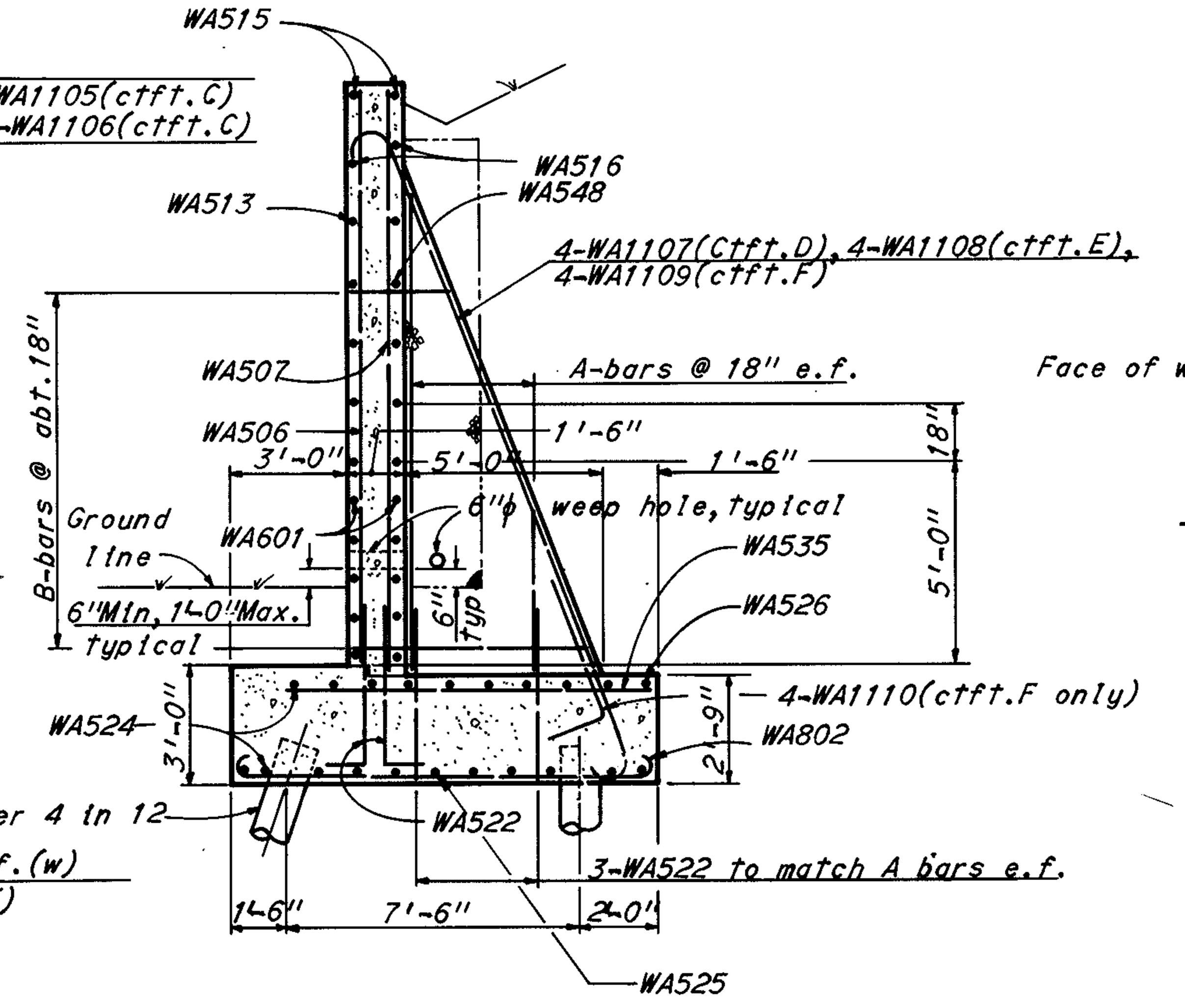
ELEVATION

Note: Piles not shown in elevation.

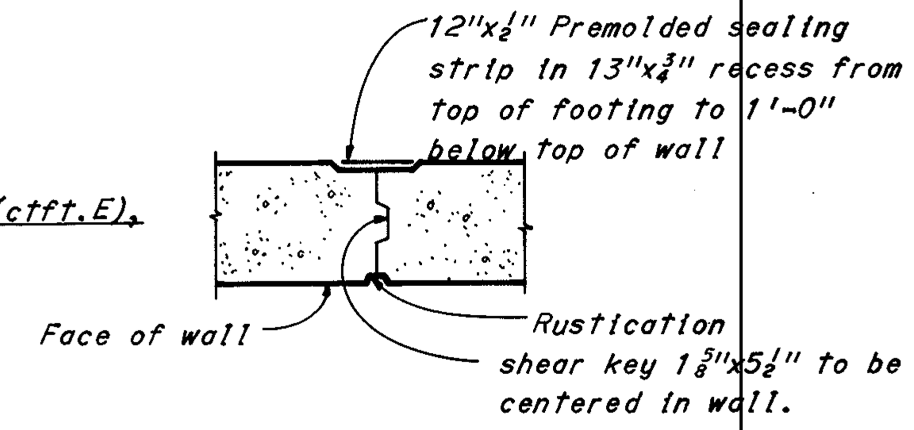


Note:
Section A-A shown for Southwest retaining wall.
Section A-A for Southeast retaining wall similar except for bar marks and as shown.

SECTION A-A

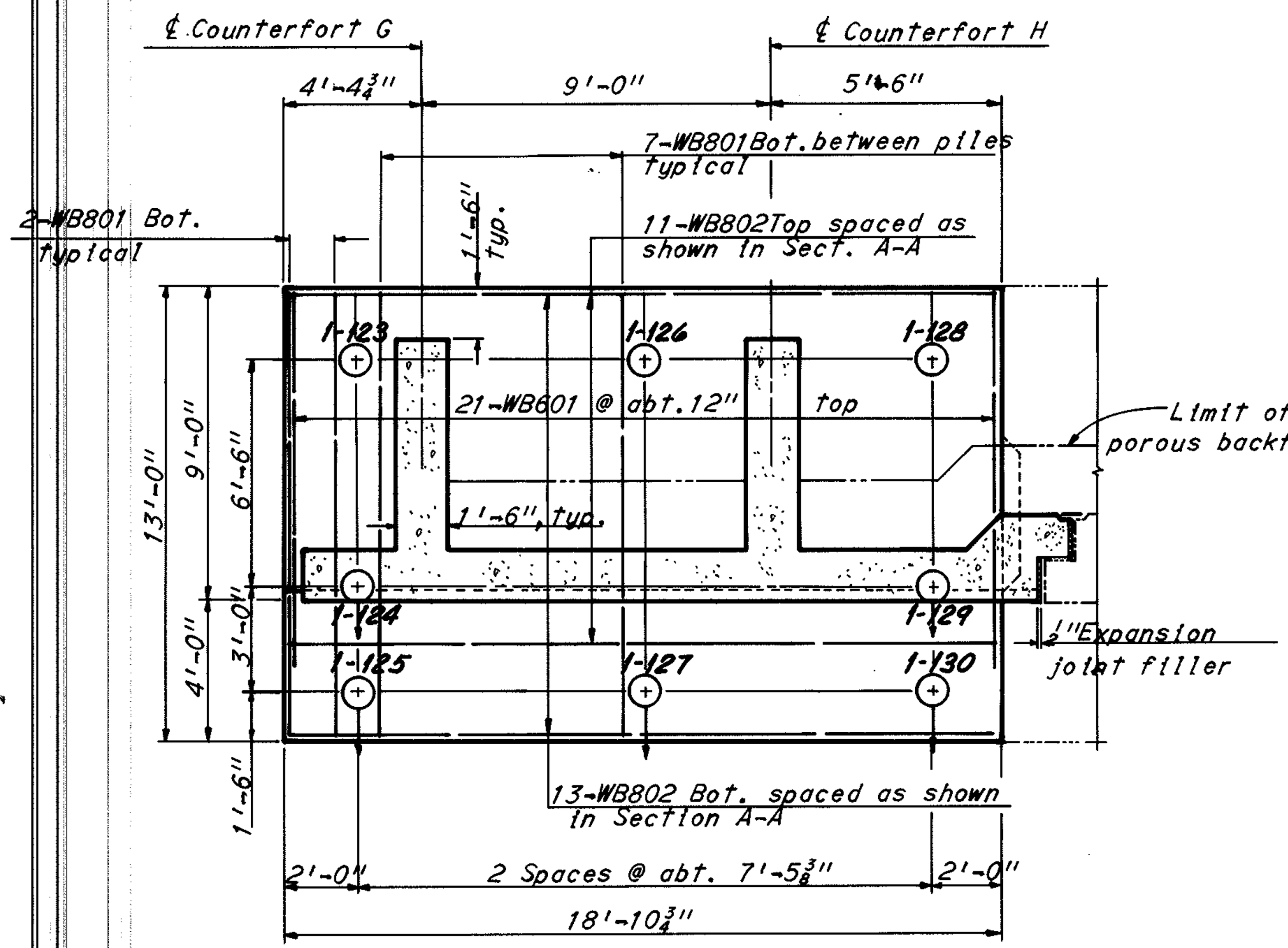


SECTION B-B

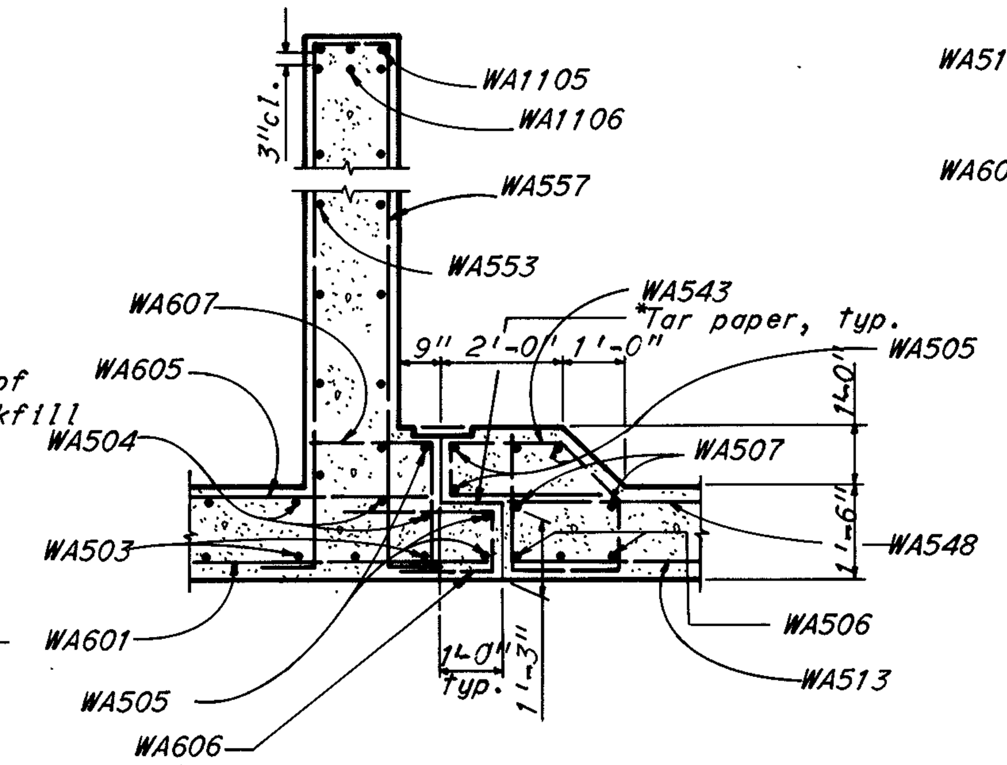


CONTRACTION JOINT DETAIL

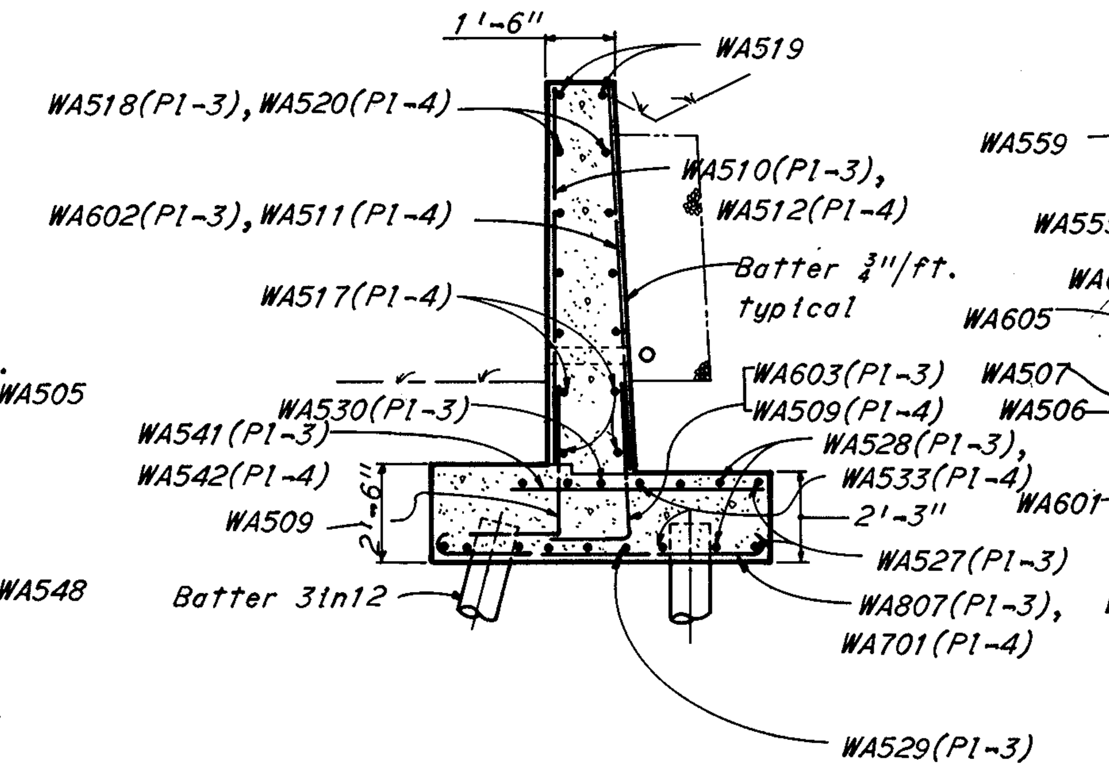
Notes:
n.f. denotes near face.
f.f. denotes far face.
e.f. denotes each face.
Cfft. denotes counterfort.
Pl-1 denotes panel 1, etc.
E denotes Southeast retaining wall.
W denotes Southwest retaining wall.
For rustications details see Sheet 10/13
Pile dimensions are measured along bottom of footing.
All piles are 12" ϕ cast-in-place concrete.
⊖→ Denotes battered piles.
Weep holes shall be sloped ¼" per foot.
For reinforcement schedule see Sheet 12/13
To be included with "Item 511, class C Concrete retaining wall above footings" for payment.
For Section E-E see Sheet 3/13



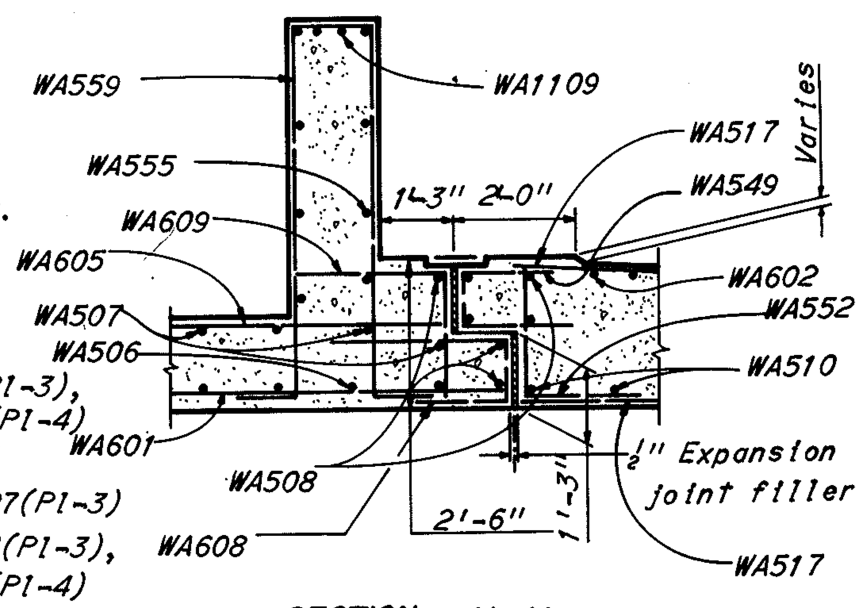
FOOTING PLAN



SECTION D-D



SECTION C-C



SECTION V-V

H.N.T.B. BRIDGE NO. 10 | Revised 5-30-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 6/13
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SOUTHEAST RETAINING WALL

RAMP H OVER MARKET AVENUE
BR. NO. STA-30-1504 STA. 967+16.26
SCALE: STA. 968+87.93

RELOCATED U.S. 30

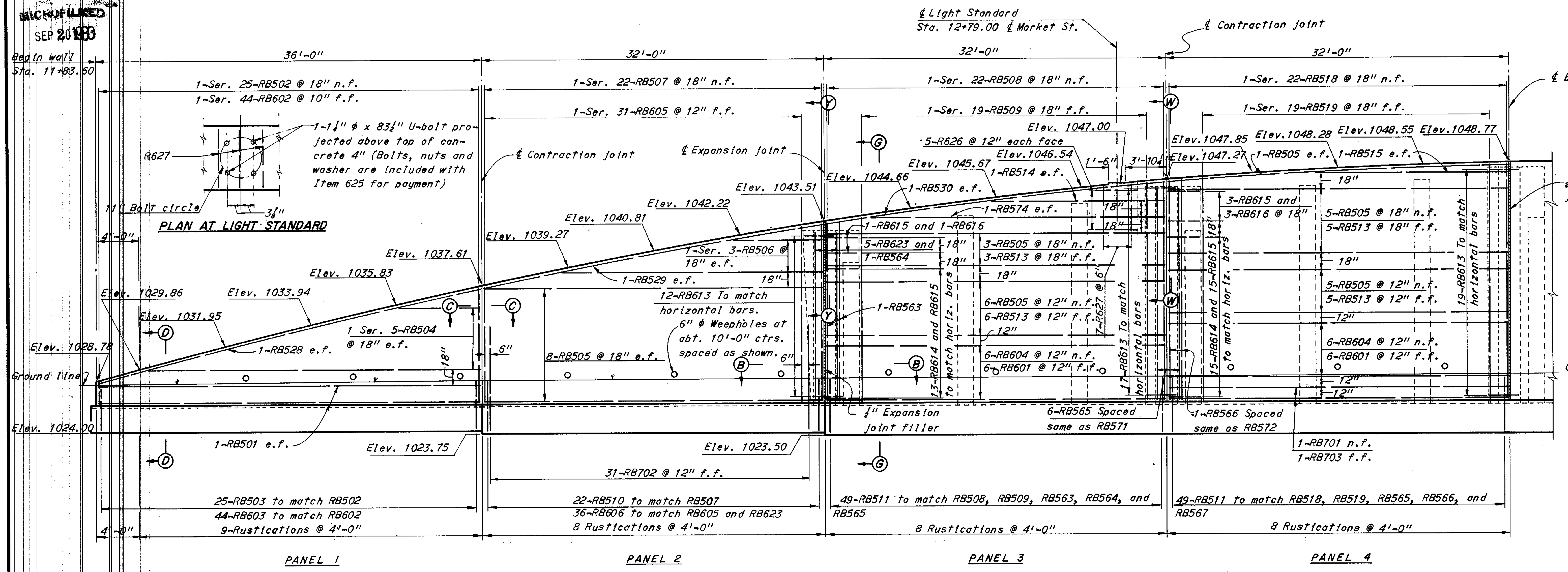
CANTON STARK COUNTY OHIO

DRAWN CYK	TRACED	CHECKED MAG	REVIEWED MJR	REVISED
DATE 4-13-70	DATE	DATE 4-22-70	DATE 11-30-71	1668

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

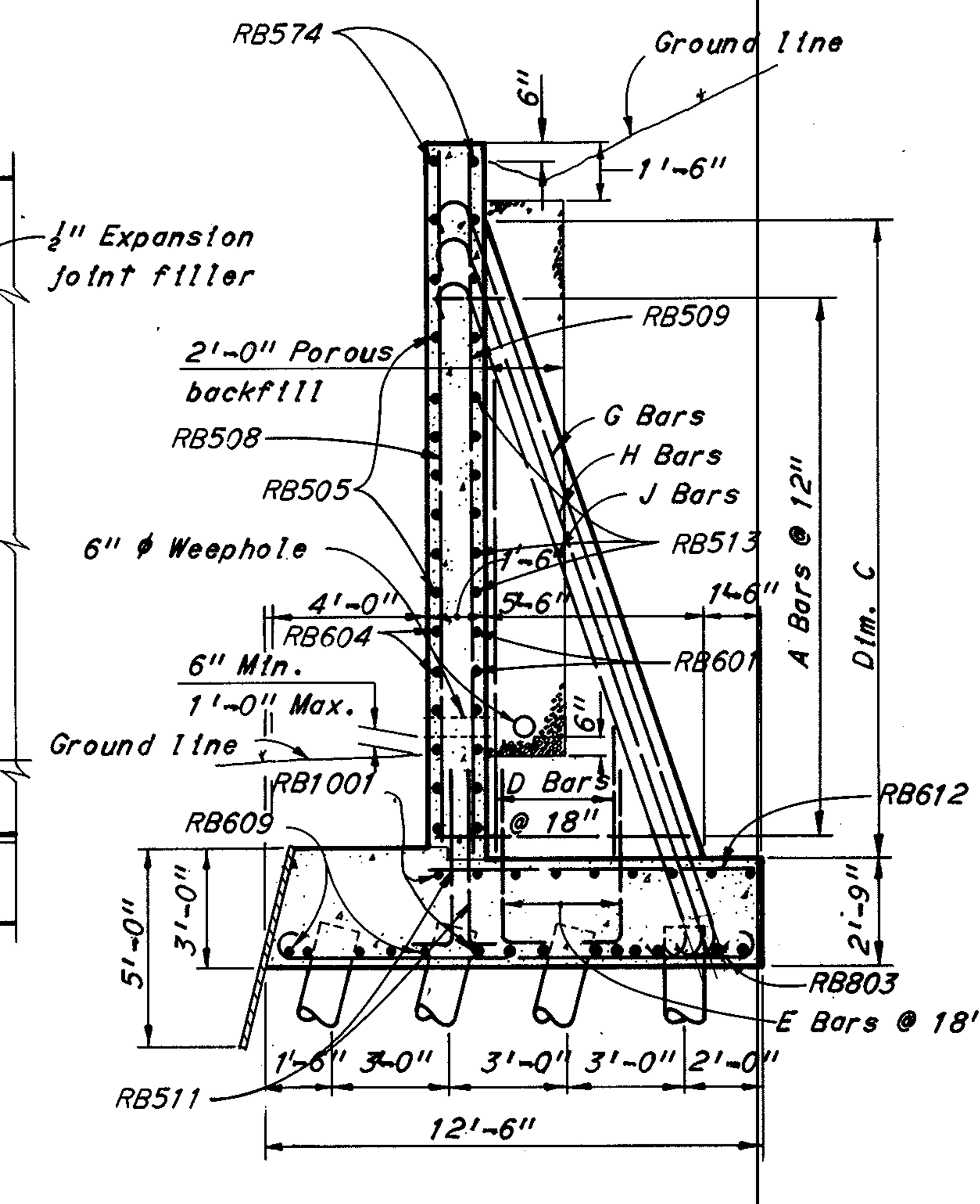
346/389

STARK COUNTY
STA-30-15.04
STA-77-9.22

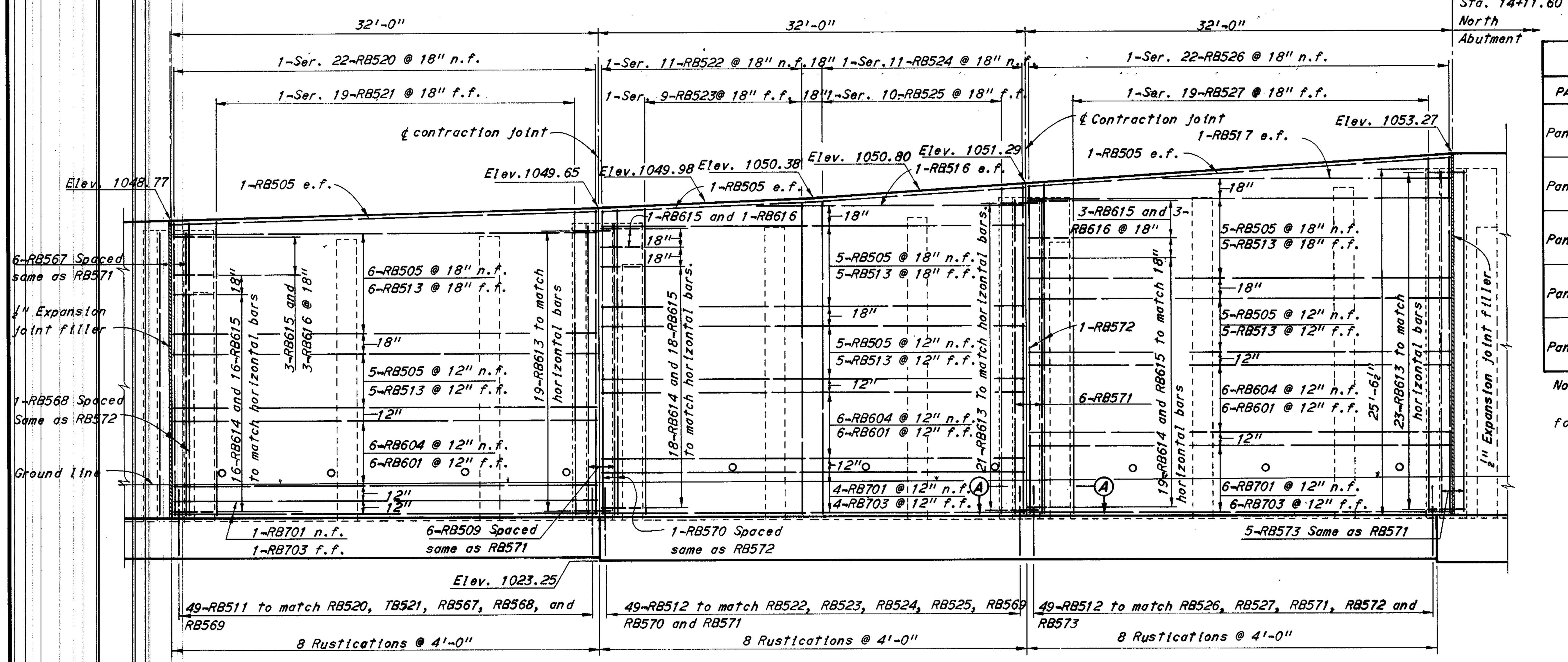


PANEL 1 PANEL 2 PANEL 3 PANEL 4

ELEVATION



SECTION G-G



PANEL 5 PANEL 6 PANEL 7

ELEVATION

COUNTERFORT DATA										
PANEL	CFT.	A BARS	DIM. B	DIM. C	D BARS	E BARS	F BAR	G BARS	H BARS	J BARS
Panel 3	1	1-Ser. 14-RB531	3'-2"	12'-9"	2 Ser. 3-RB546	6-RB561	1-RB617	3-RB1101	3-RB1102	———
	2	1-Ser. 16-RB532	———	17'-0$\frac{3}{4}$"	2-Ser. 3-RB547	6-RB561	———	3-RB1103	3-RB1104	———
	3	1-Ser. 17-RB533	———	18'-3$\frac{1}{4}$"	2-Ser. 3-RB548	6-RB561	———	3-RB1105	3-RB1106	———
Panel 4	1	1-Ser. 18-RB534	4'-2"	15'-8"	2-Ser. 3-RB549	6-RB561	1-RB618	3-RB1107	3-RB1135	———
	2	1-Ser. 18-RB535	———	19'-10$\frac{1}{2}$"	2-Ser. 3-RB550	6-RB561	———	3-RB1108	3-RB1109	———
	3	1-Ser. 19-RB536	———	20'-3$\frac{1}{2}$"	2-Ser. 3-RB551	6-RB561	———	3-RB1110	3-RB1111	———
Panel 5	1	1-Ser. 18-RB537	4'-7"	16'-10"	2-Ser. 3-RB552	6-RB561	1-RB619	3-RB1112	3-RB1113	———
	2	1-Ser. 19-RB538	———	20'-10$\frac{5}{8}$"	2-Ser. 3-RB553	6-RB561	———	3-RB1114	3-RB1115	———
	3	1-Ser. 19-RB539	———	21'-2$\frac{1}{8}$"	2-Ser. 3-RB554	6-RB561	———	3-RB1116	3-RB1108	———
Panel 6	1	1-Ser. 20-RB540	3'-10$\frac{3}{8}$"	18'-7$\frac{5}{8}$"	2-Ser. 4-RB555	8-RB562	1-RB620	3-RB1117	3-RB1118	3-RB1119
	2	1-Ser. 20-RB541	———	21'-11$\frac{1}{4}$"	2-Ser. 4-RB556	8-RB562	———	3-RB1120	3-RB1121	3-RB1122
	3	1-Ser. 21-RB542	———	22'-6$\frac{1}{2}$"	2-Ser. 4-RB557	8-RB562	———	3-RB1123	3-RB1124	3-RB1125
Panel 7	1	1-Ser. 21-RB543	4'-1$\frac{1}{8}$"	20'-1$\frac{1}{4}$"	2-Ser. 4-RB558	8-RB562	1-RB621	3-RB1126	3-RB1127	3-RB1134
	2	1-Ser. 22-RB544	———	23'-10$\frac{1}{4}$"	2-Ser. 4-RB559	8-RB562	———	3-RB1128	3-RB1129	3-RB1133
	3	1-Ser. 22-RB545	———	24'-6$\frac{1}{4}$"	2-Ser. 4-RB560	8-RB562	———	3-RB1130	3-RB1131	3-RB1132

Note:
Counterforts shown in table are numbered left to right. for each panel.

Notes:
For Footing Plan See Sheet 8/13
For Section A-A, Section B-B, Section C-C, and Section D-D, see Sheet 8/13
For additional notes see Sheet 8/13
Piles were not shown in Elevation.
Top of wall elevations are at 8' intervals unless shown otherwise.
Top of wall shall be built on a smooth curve as required thru elevations as shown.
Section W-W is typical at keys unless shown otherwise.
For Section W-W and Y-Y see Sheet 5/13

H.N.T.B. BRIDGE NO. 10

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

7/13

RETAINING WALL B

RAMP H OVER MARKET AVENUE
BR. NO. STA-30-1504 STA. 967+16.26
SCALE: 3/16" = 1'-0" STA. 968+87.93

RELOCATED U.S. 30

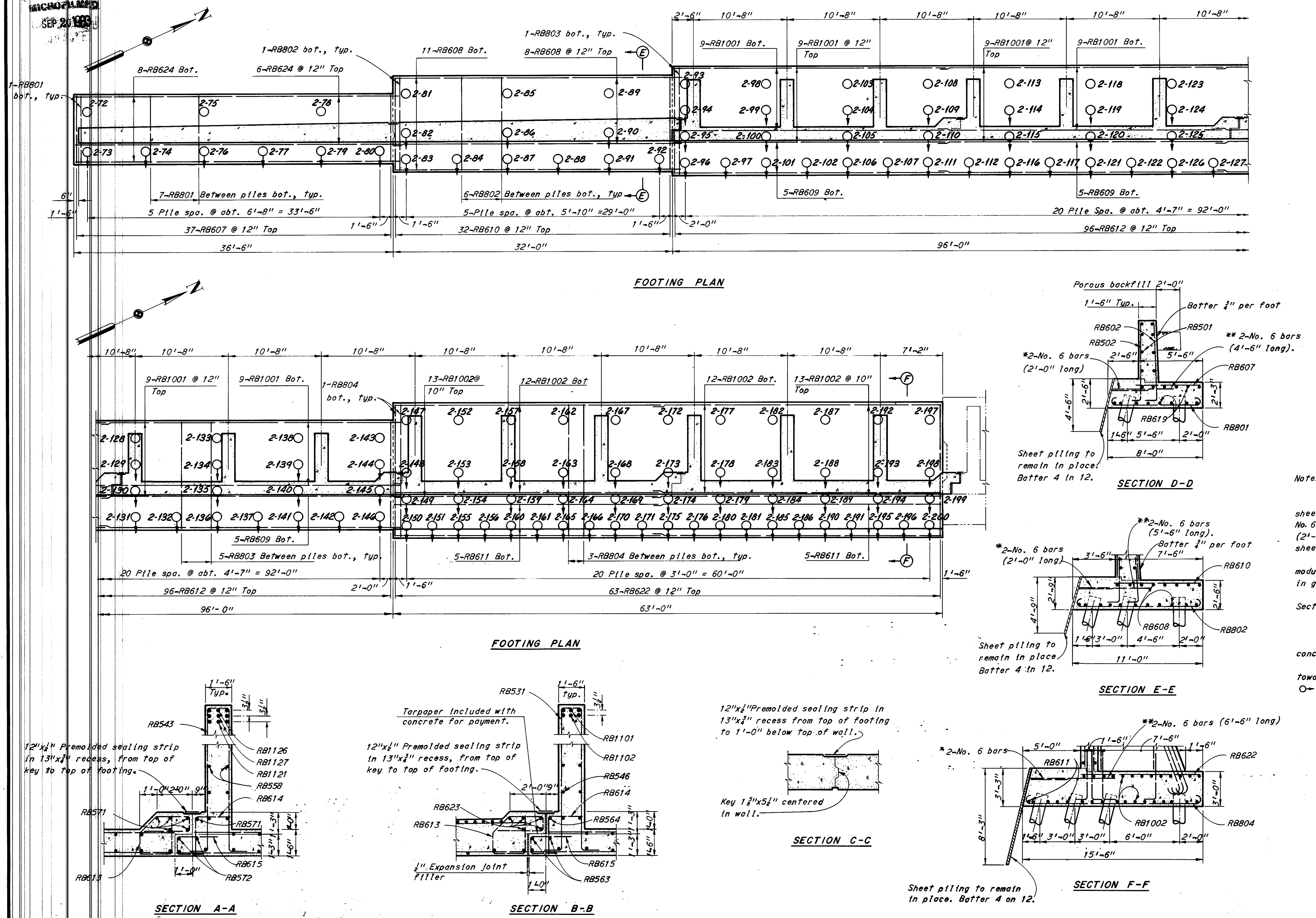
CANTON STARK COUNTY OHIO

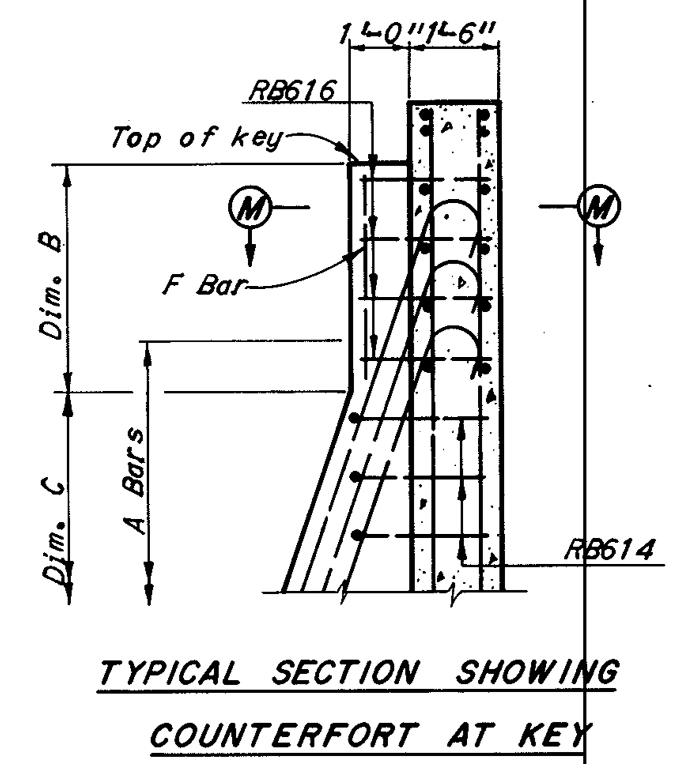
DRAWN TPS	TRACED	CHECKED L.L.	REVIEWED MJK	REVISED
DATE 4/28/70	DATE	DATE 6-16-70	DATE 11-20-71	1668

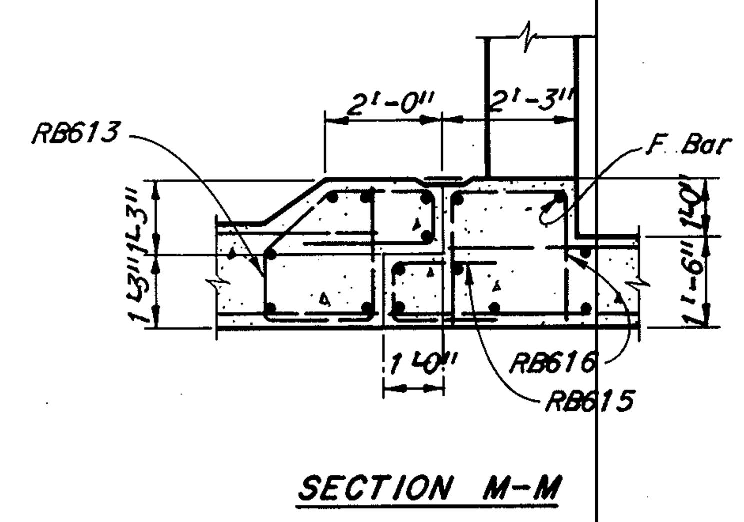
FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO		

347
389

STARK COUNTY
STA-30-15.04
STA-77-9.22







Notes:

* 2-No. 6 (2'-0" long) shall be welded to each sheet pile and 2-No. 6 bars shall be lapped with 2-No. 6 bars (2'-0" long) as shown. The No. 6 bars (2'-0" long) shall be included for payment with sheet piling.

Sheet piling shall have a minimum section modulus of 7 inches cubed per foot. Used piling in good condition may be used.

For location of Section A-A, Section B-B, Section C-C, and Section D-D, see Sheet 7/13

For reinforcing schedule see Sheet 12/13

For rustication details see Sheet 10/13

** To be included with Item 511, Class "C" concrete above footings for payment.

Weep holes shall be sloped 1/4" per foot toward front face of wall.

O← Denotes battered piles.

All battered piles shall be battered 4 in 12.

H.N.T.B. BRIDGE NO. 10 — Revised 5-30-75 By RAS

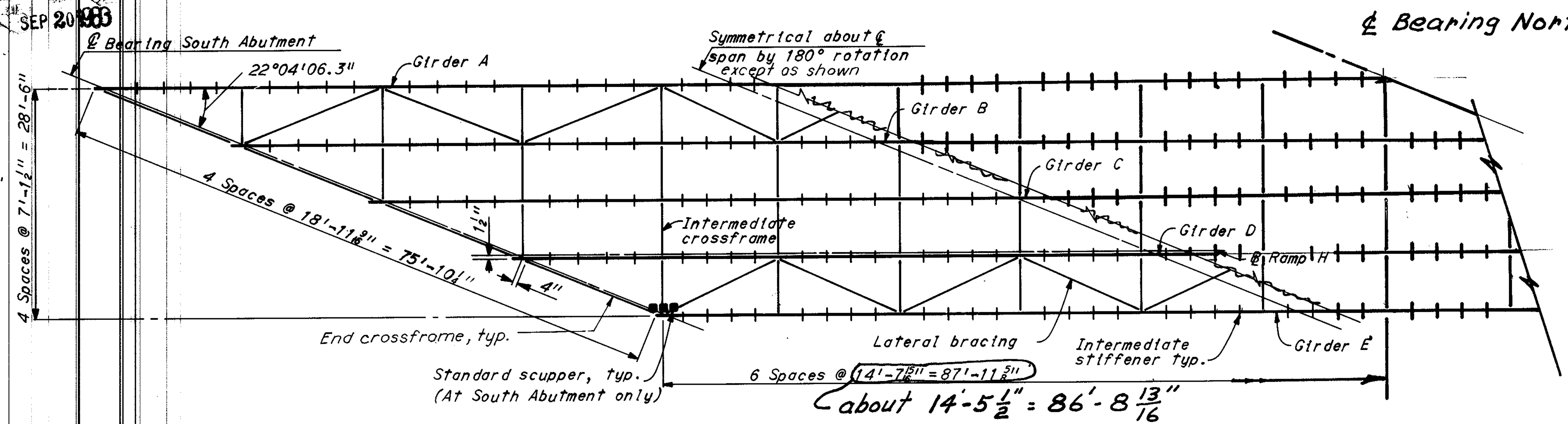
HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 8/13

RETAINING WALL B

RAMP H OVER MARKET AVENUE
BR. NO. STA-30-1504 — STA. 967+16.26
SCALE: 3/16" = 1'-0" — STA. 968+87.93
RELOCATED U.S. 30
CANTON — STARK COUNTY — OHIO

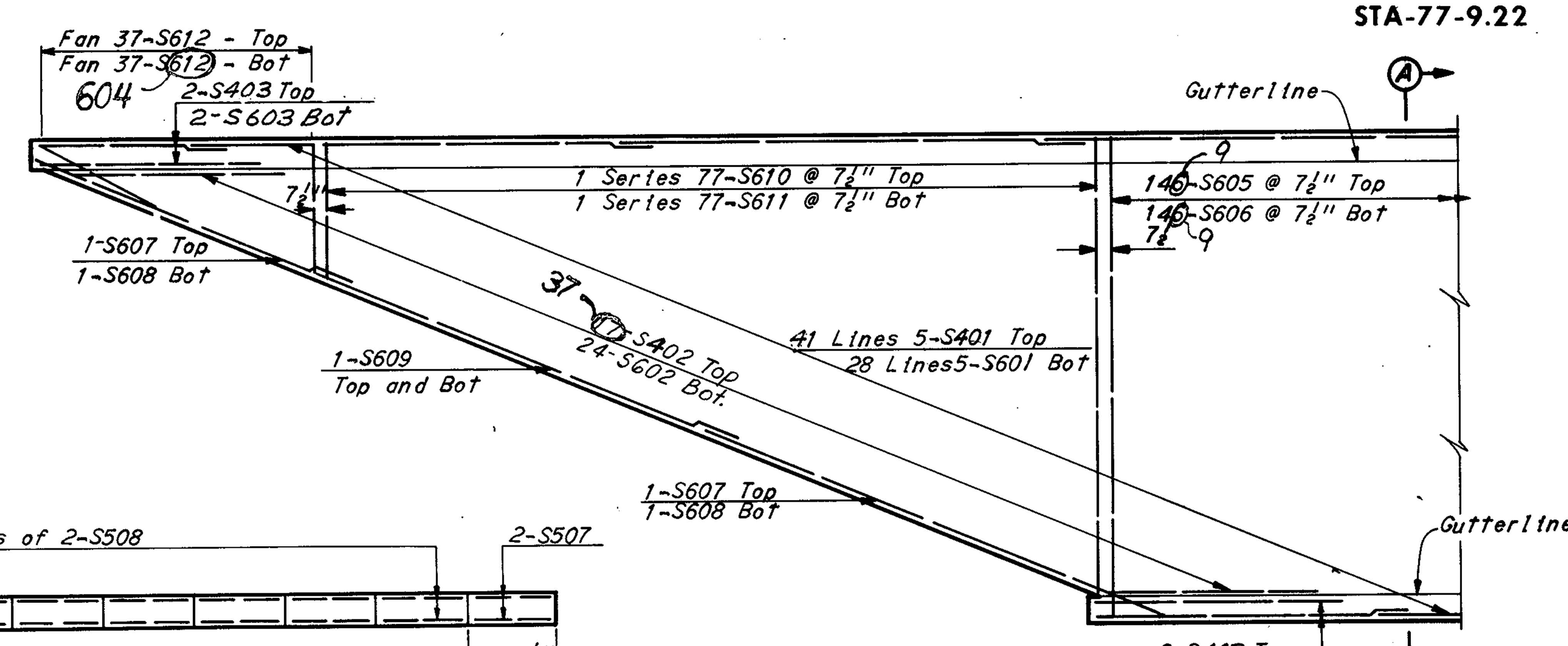
DRAWN TPS	TRACED	CHECKED LL	REVIEWED MJK	REVISED
DATE 4/29/70	DATE	DATE 6-17-70	DATE 11-24-71	1668

STARK COUNTY
STA-30-14.12
STA-77-9.22

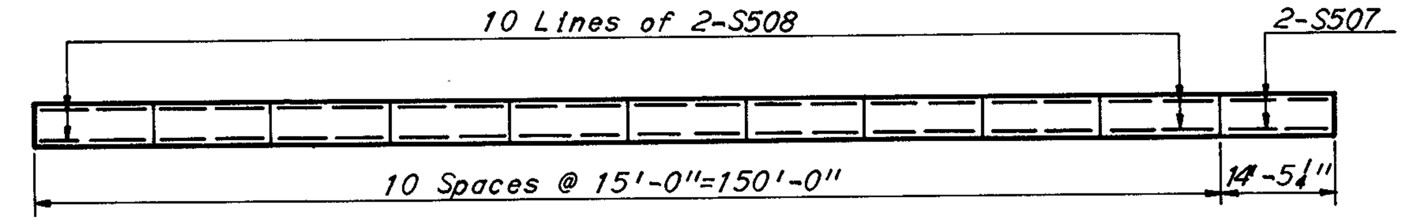


Note:
Welded attachments can be made on the top flange of Girders A and E for the full length of the span.

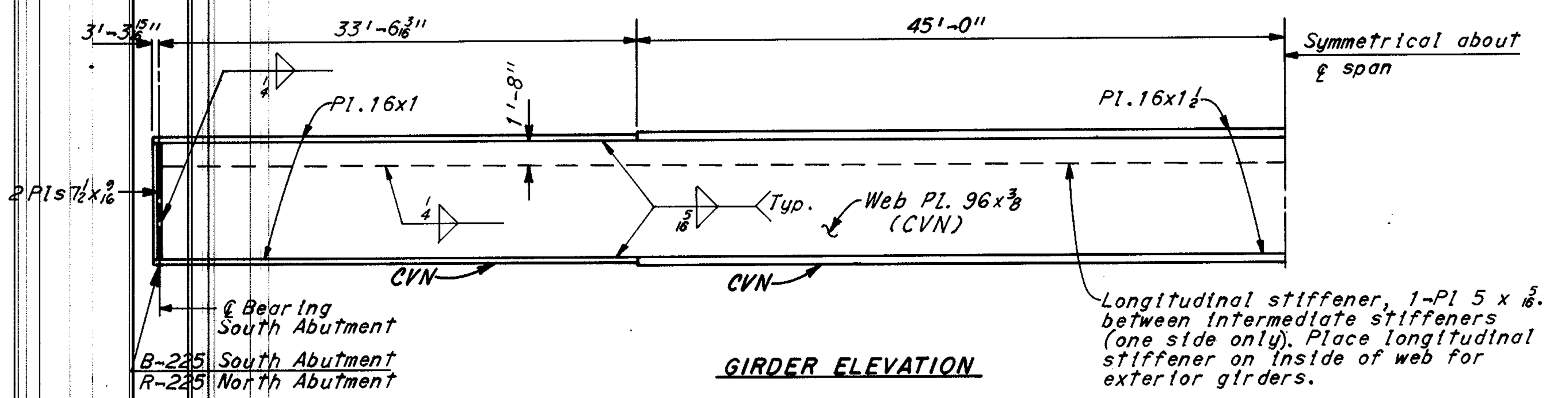
FRAMING PLAN



PART DECK PLAN

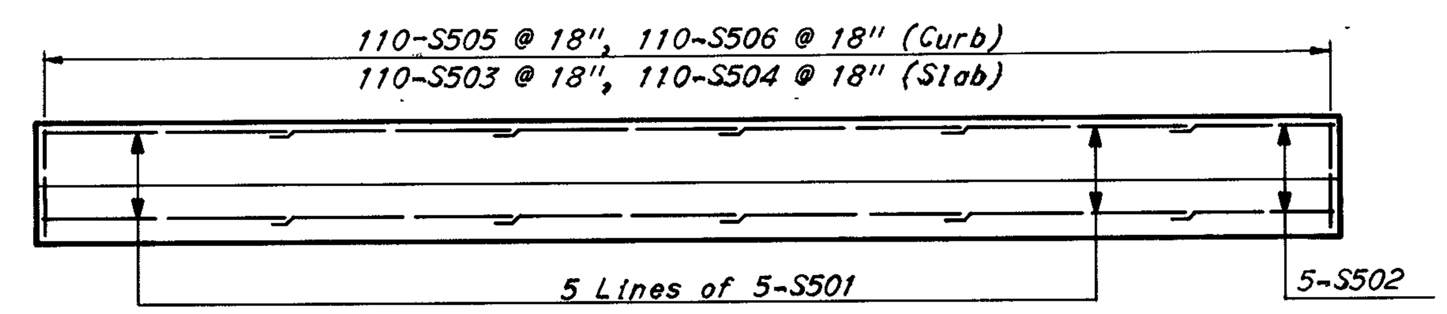


PARAPET ELEVATION
East parapet shown, West parapet similar

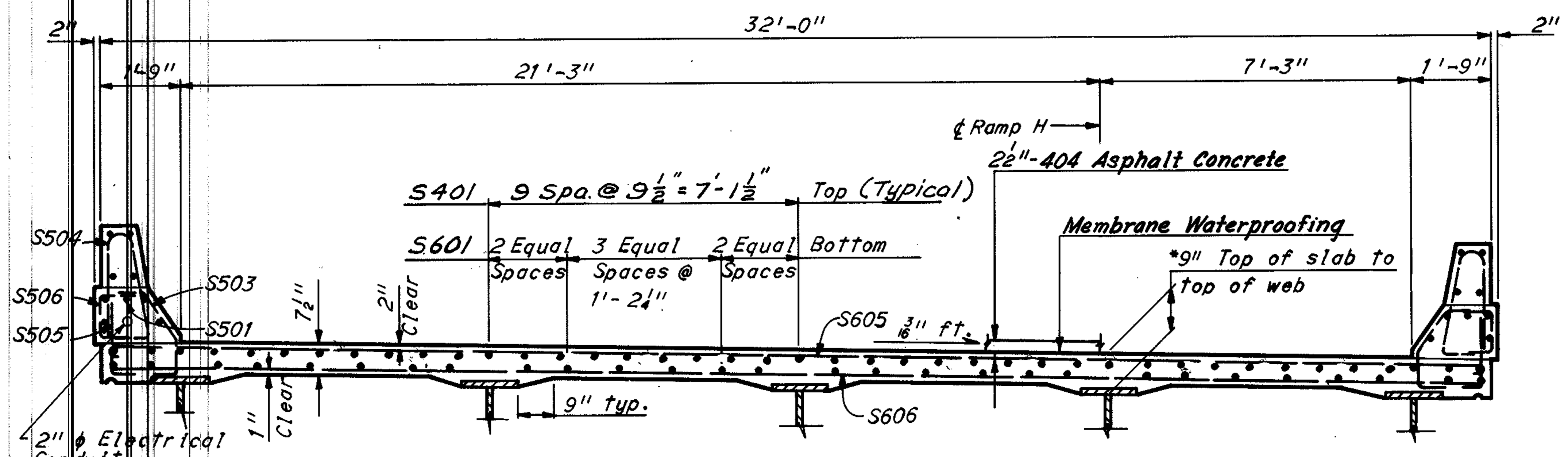


GIRDER ELEVATION

CVN - See Sheet 214.



CURB PLAN
(West curb shown. East Curb similar)



*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.18 of the Construction and Materials Specifications.

SECTION A-A

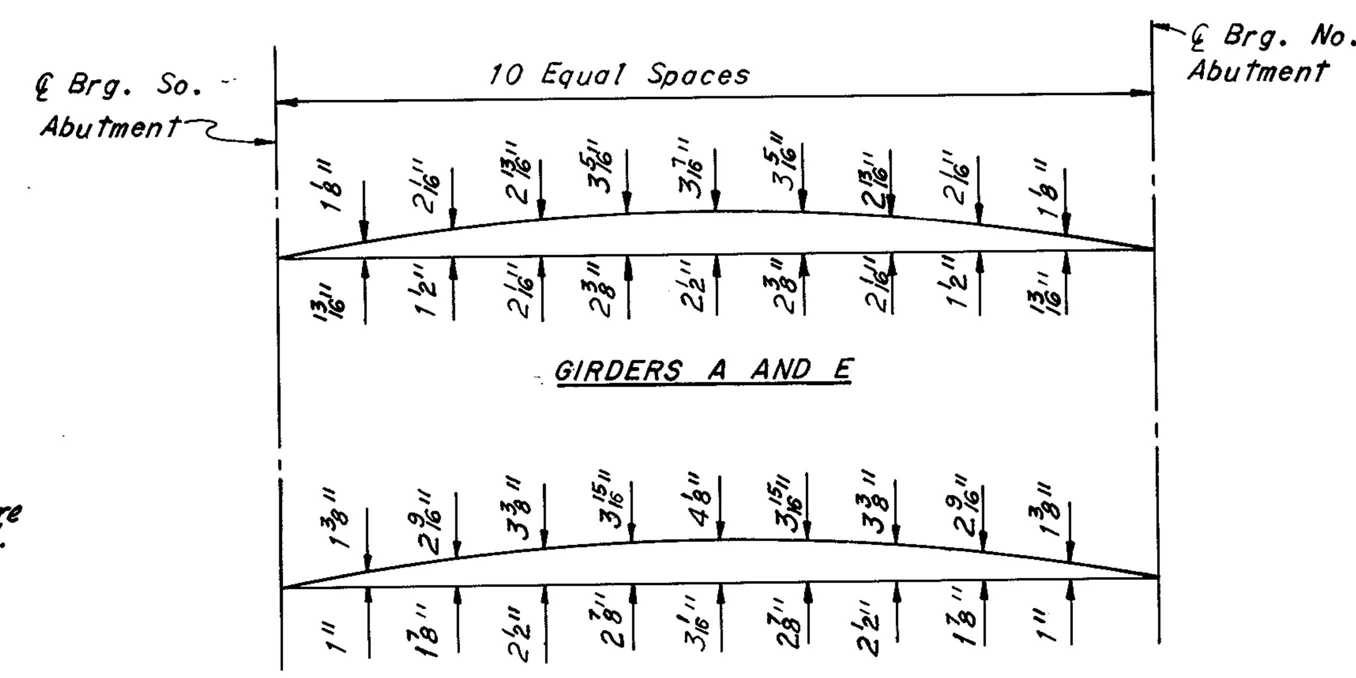
Note:
The gutterline elevations shown have been adjusted for the dead load deflections caused by the weight of concrete and wearing course and are the elevations required before concrete deck is placed.

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS

Beam	So. Abut.	.1	.2	.3	.4	.5	.6	.7	.8	.9	No. Abut.
A	1051.61	1051.86	1052.11	1052.36	1052.61	1052.87	1053.12	1053.37	1053.62	1053.87	1054.12
B	1051.78	1052.03	1052.28	1052.53	1052.79	1053.04	1053.29	1053.54	1053.79	1054.04	1054.29
C	1051.95	1052.20	1052.45	1052.70	1052.95	1053.21	1053.46	1052.71	1053.96	1054.21	1054.46
D	1052.12	1052.37	1052.62	1052.87	1053.13	1053.38	1053.63	1053.88	1054.13	1054.38	1054.63
E	1052.29	1052.54	1052.79	1053.04	1053.29	1053.55	1053.80	1054.05	1054.30	1054.55	1054.80

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS AT GUTTERLINE

Gutterline	So. Abut.	.1	.2	.3	.4	.5	.6	.7	.8	.9	No. Abut
West	1051.61	1051.92	1052.24	1052.53	1052.80	1053.08	1053.31	1053.54	1053.75	1053.93	1054.12
East	1052.29	1052.60	1052.92	1053.21	1053.48	1053.76	1053.99	1054.22	1054.43	1054.61	1054.80



GIRDERS A AND E

GIRDERS B, C AND D

DEAD LOAD DEFLECTION DIAGRAMS

Note:
Total dead load deflections are shown above the line and deflections due to concrete and wearing course only below the line. Deflections are given to the nearest 1/16".
Girders shall be cambered for total dead load deflections.

Notes:
All stiffeners shall be placed normal to girder flanges.
All intermediate stiffener to web welds shall be ¼" continuous fillets on both sides of stiffeners.
All intermediate stiffeners shall be Pls. 6x⅜.

Intermediate stiffeners shall be placed as shown on framing plan, equally spaced between crossframes or crossframes and bearing stiffeners.
For drainage details see Sheet 10/13
Place lateral connection plate 6 inches above top of bottom flange.
For intermediate crossframe details see Sheet 360.
All crossframes are intermediate crossframes unless shown otherwise.
For details of roadway end dam, see Ohio Standard Drawing SD-1-69, Sheet 1 of 4.
For details at rockers and bolsters see Ohio Standard Drawing RB-1-55.
The girders shall be fabricated to lines parallel to profiles formed by top of pavement elevations directly over girders, plus the camber required to compensate for dead load deflection.
The allowance to be made in screed settings to compensate for dead load deflections due to concrete are to be made above or below the top of the pavement elevations as required. Screeds may require further adjustment due to irregularities in fabricated steel.
For details of curb plates at concrete bridge railing see Sheet 10/13

Reinforcing steel shall be adjusted as required to clear scuppers.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.
For concrete railing details see Sheet 359.
For deflection joint details see Sheet 361.
For reinforcement schedule see Sheet 13/13 10
For lateral connection details see sheet 12/13
For subdrainage details, see Sheet 365A.

Revised 6-2-75 By RAS

H.N.T.B. BRIDGE NO. 10

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 9/13
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SUPERSTRUCTURE DETAILS

RAMP H OVER MARKET AVENUE
BR. NO. STA-30-1504 STA. 967+16.26
SCALE: NONE STA. 968+87.93

RELOCATED U.S. 30

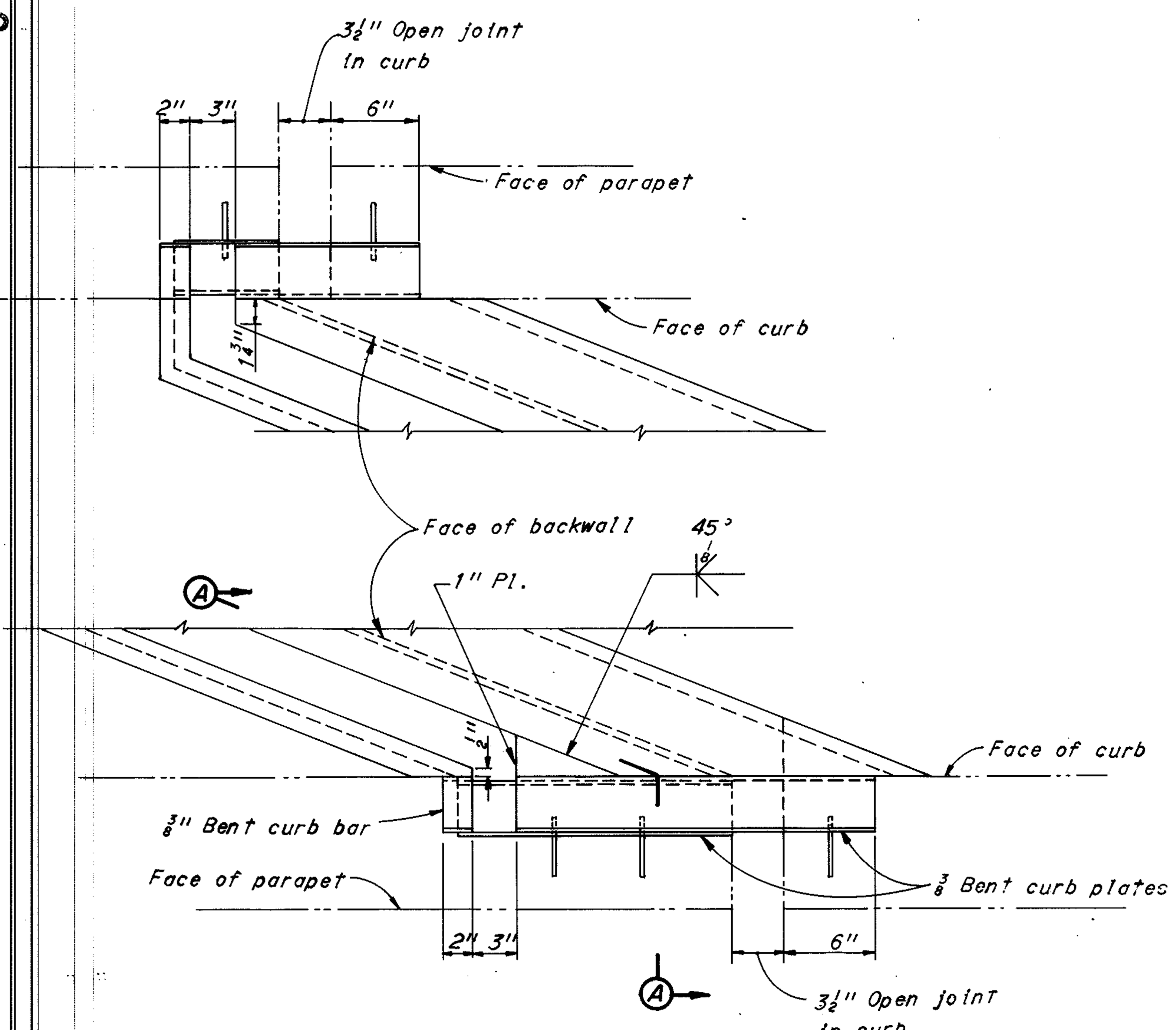
CANTON STARK COUNTY OHIO

DRAWN ELH	TRACED	CHECKED LL	REVIEWED MJL	REVISED 3-2-76
DATE 1-5-70	DATE	DATE 1-16-70	DATE 11-20-71	1668

Rev. 6-14-76
1-24-77

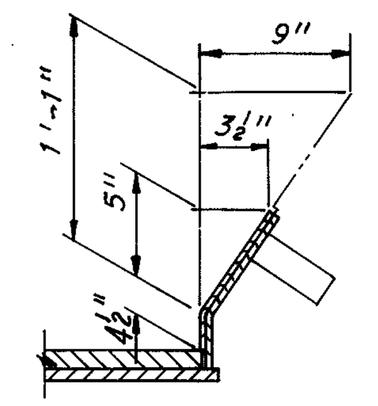
FED. ROAD DIV. NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO		

STARK COUNTY
STA-30-14.12
STA-77-9.22



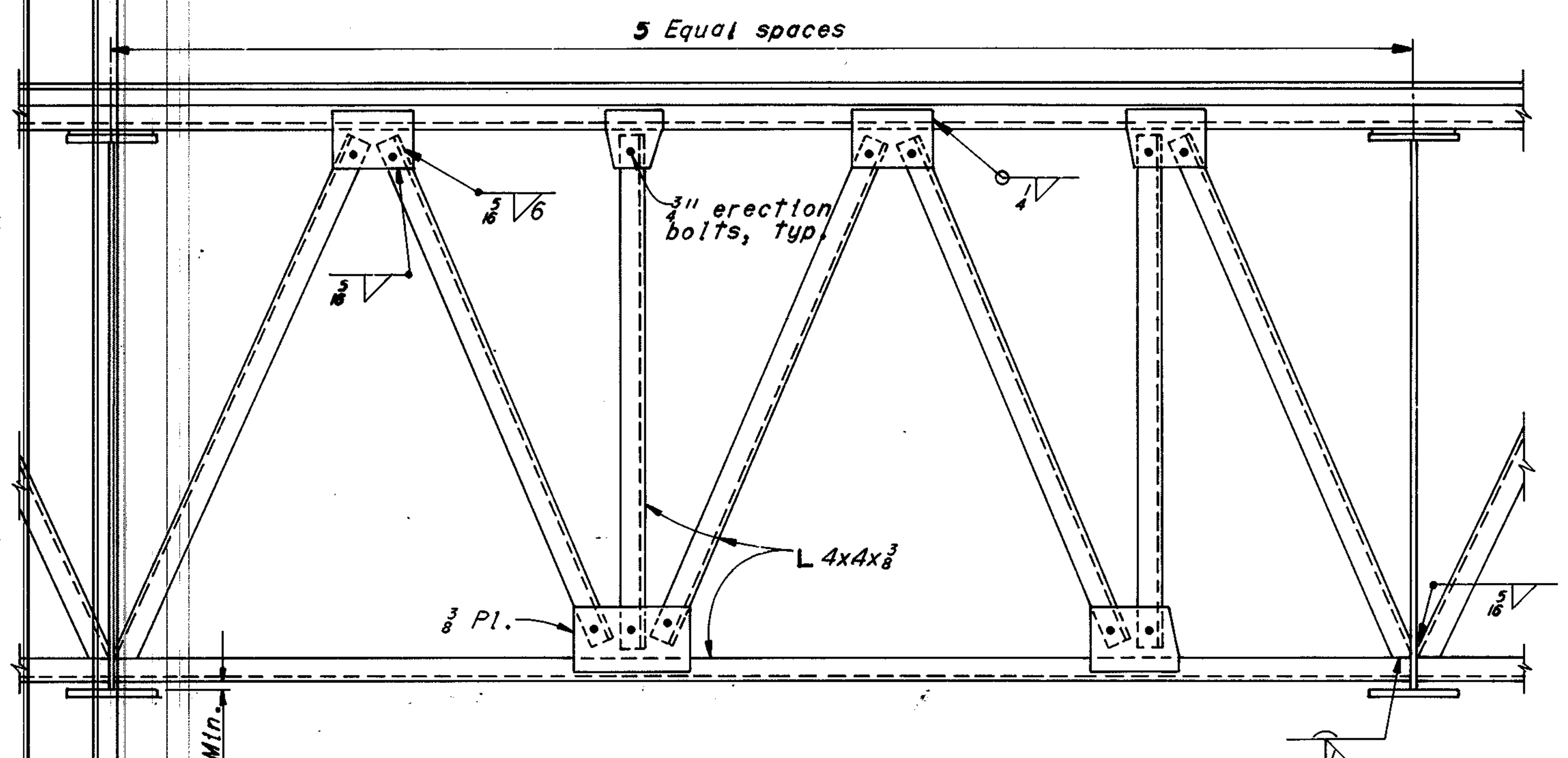
PART DECK PLAN

Note:
For curb plate details not shown see Ohio Standard Drawing SD-1-69 Sheet 2 of 4.

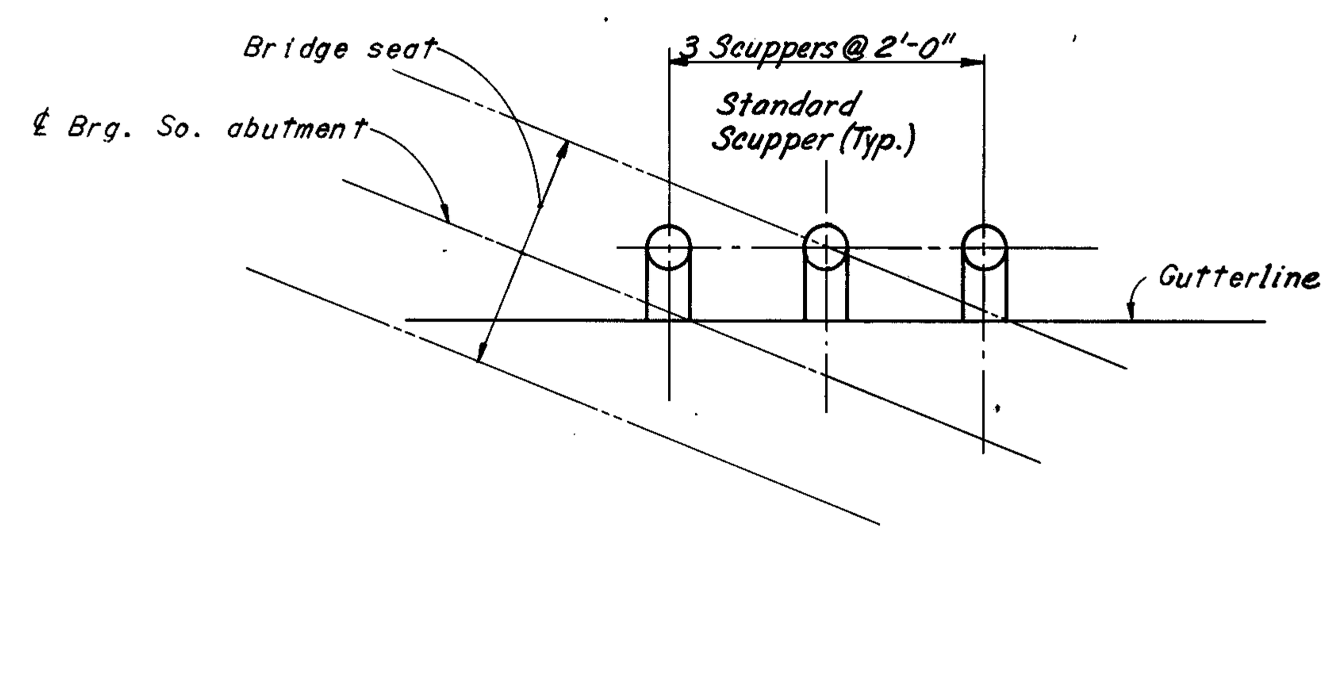


SECTION A-A

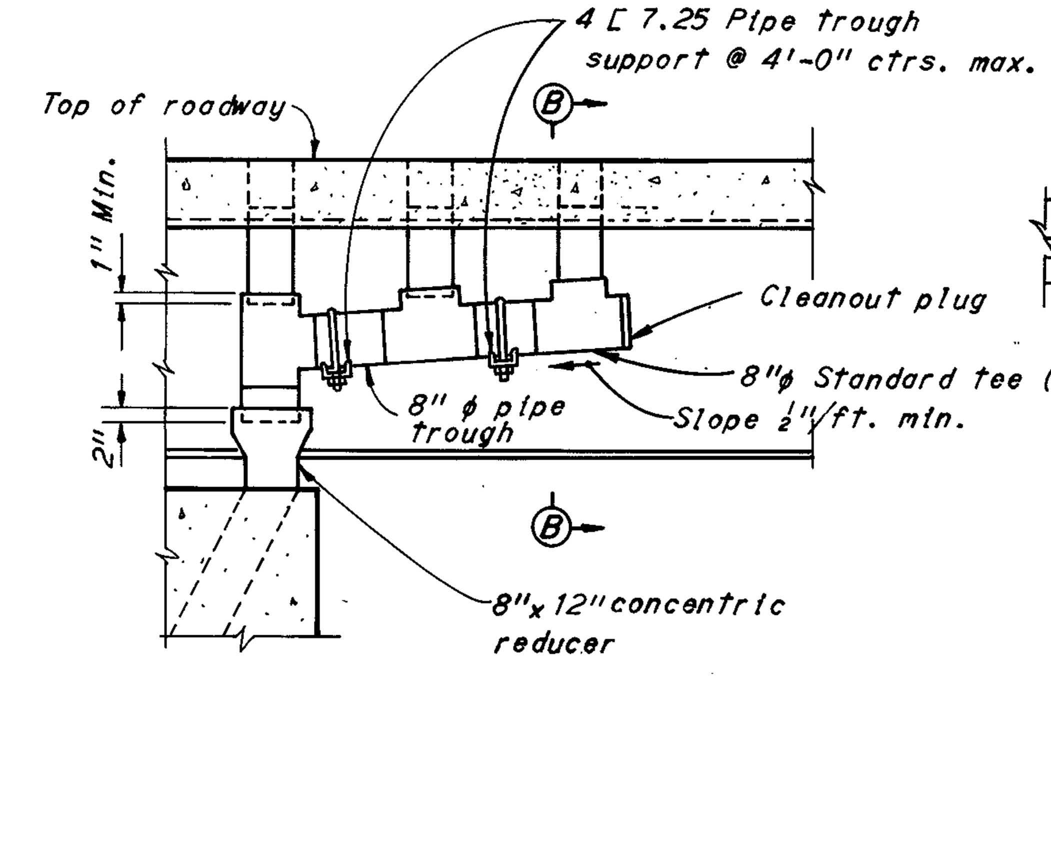
CURB PLATE DETAILS



END CROSSFRAME

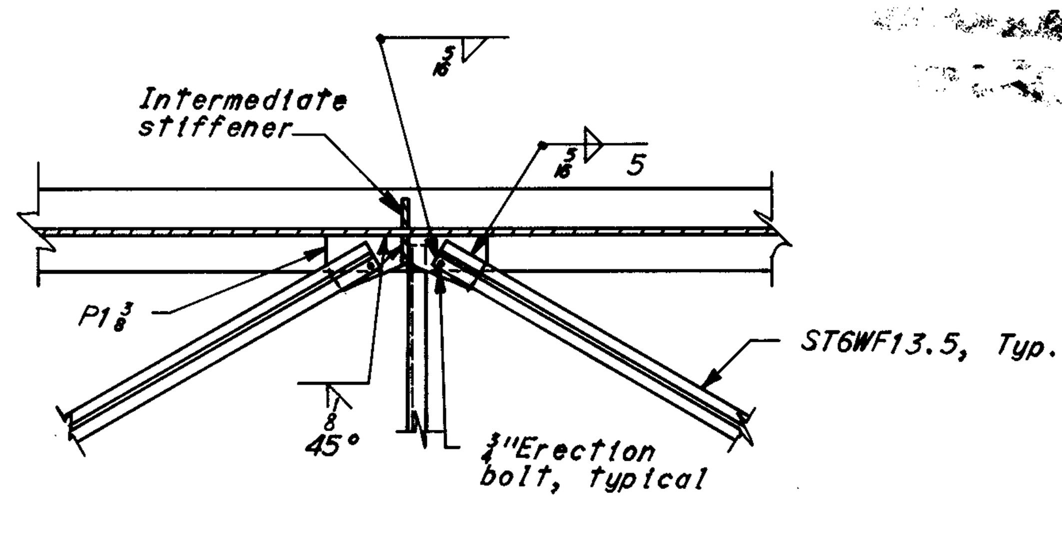


PLAN

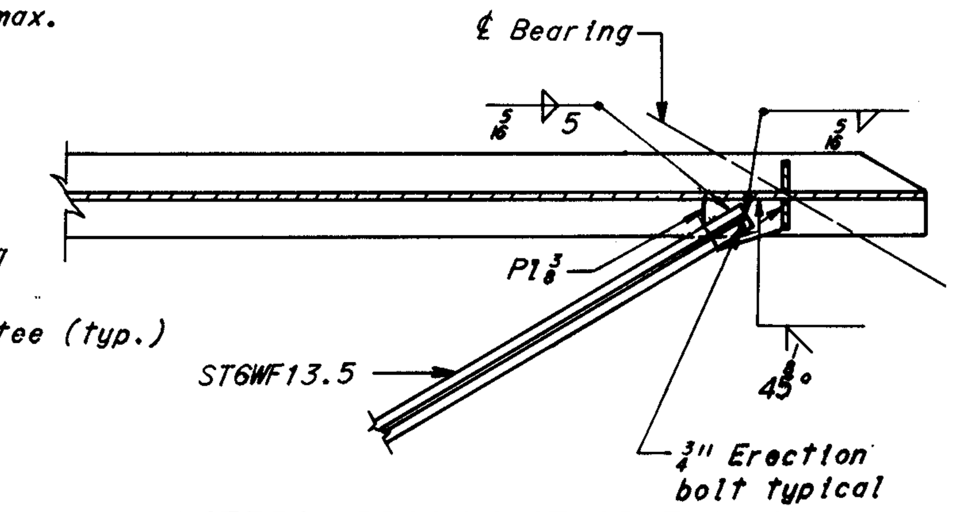


ELEVATION

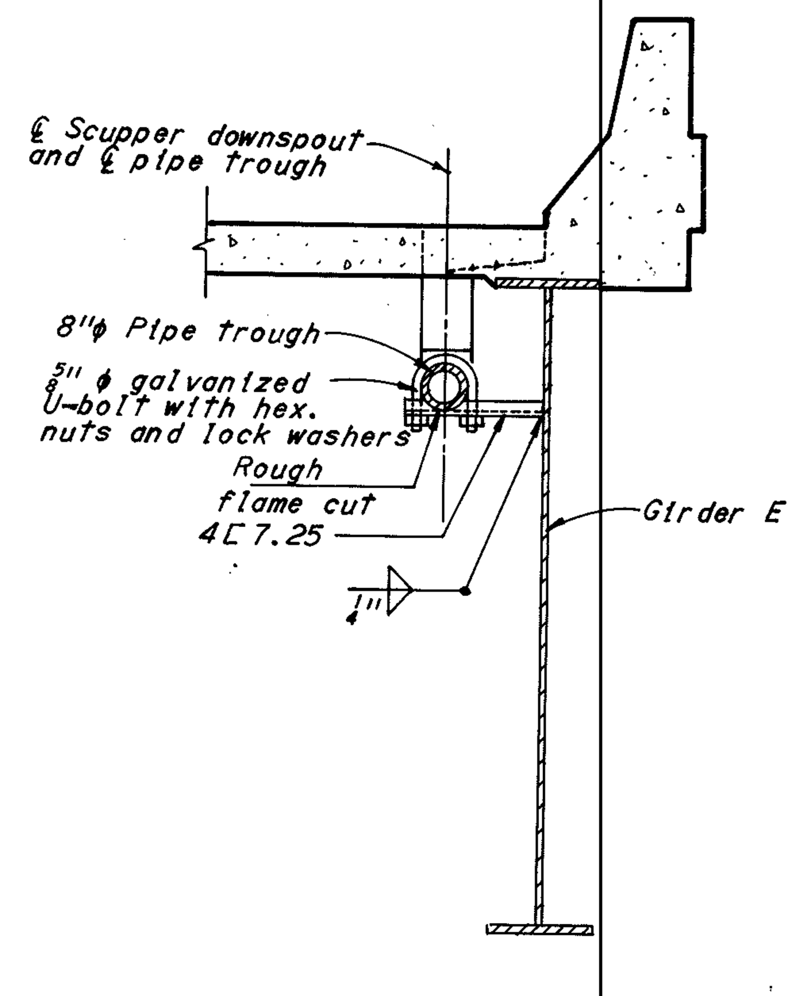
TROUGH DETAILS AT SOUTH ABUTMENT



LATERAL BRACING AT CROSSFRAME



LATERAL BRACING AT ABUTMENTS



PART SECTION B-B

Notes:

8" ϕ Pipe trough including specials and 8" ϕ downspouts including specials and accessories shall be alloy (707.11) or hot dipped galvanized steel pipe. The pipe joints shall be made by welding or by the use of a clamp type coupling with a ring gasket. All welding shall be done before galvanizing.

For bolts, galvanizing as called for in Section 711.02 will be considered adequate.

Trough support 4[7.25 shall be carbon steel and painted in accordance with Item 514.

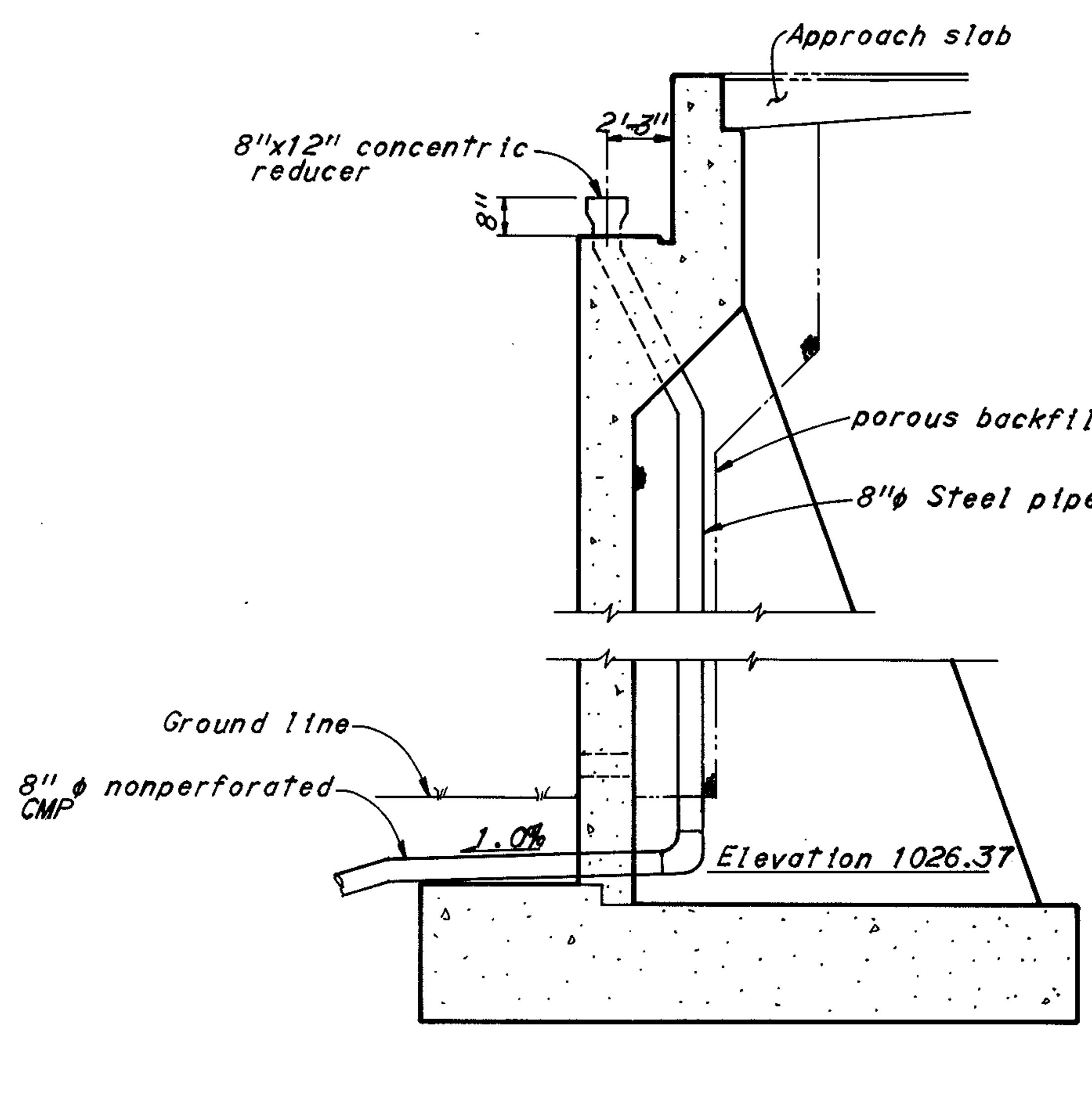
Pipe trough tees, cleanout plugs and pipe supports shall be included in Item 518, Pipe Troughs, for payment.

Downspouts thru abutment and reducers shall be included in Item 518, Downspouts, for payment.

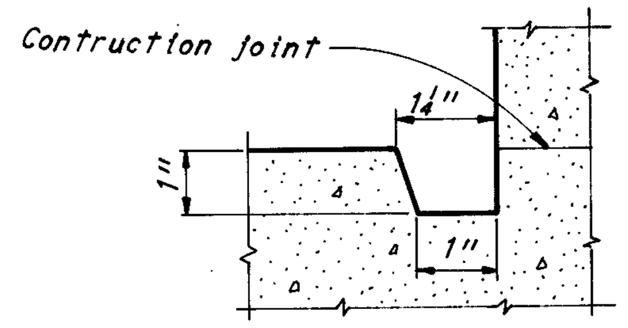
For scupper details and notes see Ohio Standard Drawing SD-1-69, Sheet 3 of 4.

Scuppers, including two supporting ∠s 2½ x2½ x¼ attached 6" ϕ pipe, and 1½"x½" bar supports are included with Item 518, Scuppers, for payment.

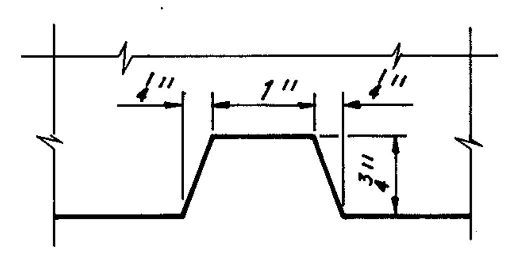
The 8" ϕ CMP, including all materials and labor necessary for connections to the 8"ϕ downspouts and to the existing storm sewer line, shall be included with the appropriate Item for payment.



SECTION THRU ABUTMENT
SHOWING DOWNSPOUT DETAILS
Section taken looking Northeast



ABUTMENT BRIDGE SEAT
DRAIN DETAIL



RUSTICATION DETAIL

H.N.T.B. BRIDGE NO. 10 — Revised 6-2-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 10/13
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

MISCELLANEOUS DETAILS

RAMP H OVER MARKET AVENUE
BR. NO. STA-30-1504 — STA. 967+16.26
SCALE: 1/2"=1'-0" — STA. 968+87.93

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN LL	TRACED	CHECKED BM	REVIEWED MJK	REVISED
DATE 4-23-70	DATE	DATE 6/9/70	DATE 11-20-71	1668

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
SOUTH ABUTMENT								
AA401	27	4'-0"	105	1'-0"	2'-3"			73
AA402	1	3'-10"	105	1'-0"	2'-1"			3
AA403	1	3'-8"	105	1'-0"	1'-11"			2
AA501	11	13'-3"	Str.					152
AA502	23	30'-9"	Str.					736
AA503	15	35'-9"	Str.					562
AA504	77	12'-6"	Str.					1005
AA505	8	34'-0"	108	31'-8"	2'-4"	1'-0"		284
AA506	2	17'-6"	Str.					37
AA507	2	20'-6"	Str.					43
AA508	1 Ser. 9	3'-9"to8'-0"	151	1'-9"to6'-0"	2'-0"		$6\frac{3}{8}$"	55
AA509	3	12'-9"	108	10'-9"	2'-0"	10"		40
AA510	2	3'-3"	Str.					7
AA511	1	5'-6"	108	3'-6"	2'-0"	10"		6
AA512	6	23'-9"	Str.					149
AA513	5	28'-9"	Str.					150
AA514	5	39'-6"	Str.					206
AA515	8	5'-6"	104	4'-0"	1'-7"			46
AA516	8	10'-10"	152	3'-$0\frac{1}{2}$"	5'-8"	1'-7"		91
AA517	26	4'-6"	104	2'-1"	2'-6"			122
AA518	7	25'-0"	Str.					183
AA519	38	15'-3"	Str.					605
AA520	51	12'-3"	Str.					652
AA521	40	15'-6"	Str.					646
AA522	5	25'-0"	Str.					130
AA523	29	15'-0"	Str.					454
AA524	164	5'-9"	104	4'-10"	1'-0"			985
AA525	4	2'-3"	105	$7\frac{1}{2}$"	1'-3"			9
AA526	1 Ser.9	9'-6"to12'-6"	Str.				$4\frac{1}{2}$"	103
AA527	1	12'-8"	Str.					14
AA528	1 Ser.3	4'-0"to8'-6"	Str.				2'-3"	20
AA529	1	10'-0"	104	8'-6"	1'-7"			10
AA530	55	7'-1"	105	1'-6"	4'-4"			407
AA531	18	5'-6"	106	11"	2'-11"	1'-11"		103
AA532	5	5'-11"	105	2'-1"	2'-0"			31
AA533	16 Ser.4	15'-3"to4'-0"	Str.				3'-9"	642
AA534	90	4'-10"	Str.					454
AA535	8 Ser.9	13'-2"to21'-8"	121	5'-3"to 9'-6"	1'-2"		$6\frac{3}{8}$"	1310
AA536	4	4'-1"	106	2'-1"	1'-7"	$7\frac{1}{2}$"		17
AA537	8	7'-4"	114	3'-6"				61
AA538	22	4'-3"	Str.					98
AA539	2 Ser.4	19'-6"to2'-6"	Str.				5'-8"	92
AA540	1 Ser.19	7'-2"to16'-8"	121	2'-3"to7'-0"	1'-2"		$3\frac{1}{8}$"	237
AA541	1	9'-6"	108	7'-6"	2'-0"	10"		10
AA601	13	23'-3"	Str.					454
AA602	26	28'-9"	Str.					1121
AA603	13	37'-0"	Str.					721
AA604	13	24'-3"	Str.					475
AA605	13	39'-6"	Str.					772
AA606	12	12'-9"	108	10'-9"	2'-0"	10"		230
AA607	12	13'-0"	108	7'-9"	5'-3"	2'-0"		235
AA608	4	12'-3"	Str.					74
AA609	15	11'-3"	Str.					253
AA611	81	17'-0"	108	11'-0"	6'-0"	4'-3"		2,068
AA613	74	15'-3"	106	11"	12'-2"	2'-6"		1,676
AA614	26	3'-10"	104	2'-1"	1'-11"			150
AA616	1 Ser.9	11'-8"to16'-0"	Str.				$6\frac{1}{2}$"	187
AA617	26	10'-3"	133					400
AA618	4	1'-9"	Str.					10
AA619	4	3'-1"	104	1'-3"	2'-0"			18
AA620	1 Ser.4	22'-5"to24'-8"	Str.				9"	141
AA621	8	5'-1"	115	3'-5"	9"	$7\frac{1}{2}$"		61
AA622	26	5'-3"	106	11"	2'-10"	1'-10"		205
AA623	1	22'-3"	Str.					66
AA624	1	24'-6"	Str.					37
AA625	[illegible]	24'-0"	Str.					36
AA626	2	22'-9"	Str.					68

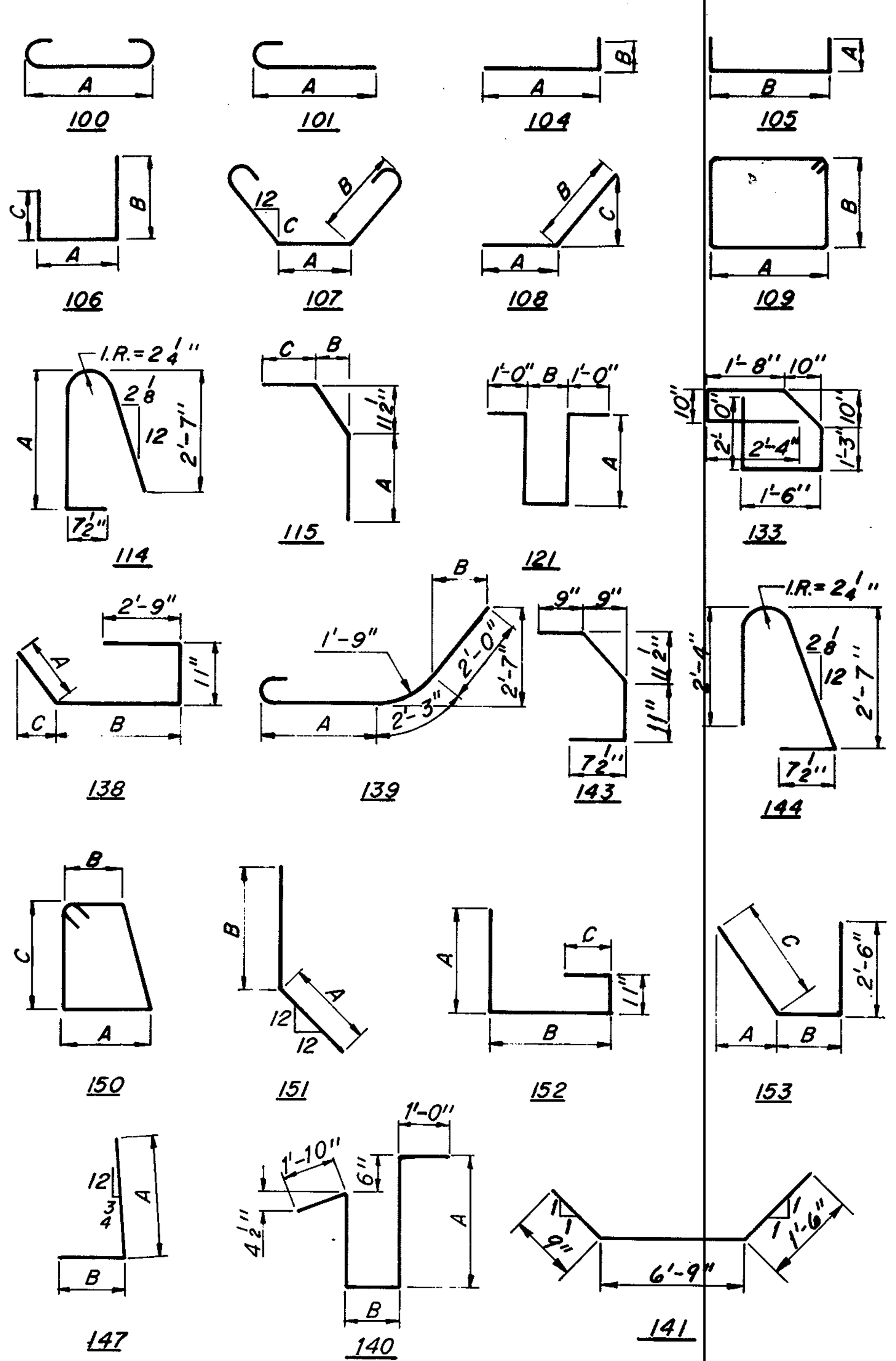
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
AA701	19	12'-1"	138	2'-0"	6'-9"	9"		470
AA702	29	4'-0"	Str					233
AA703	27	3'-10"	104	2'-1"	1'-11"			212
AA704	28	50'-0"	Str					2873
AA705	2 Ser.5	41'-3"to51'-3"	Str				2'-6"	945
AA706	1 Ser.10	52'-6"to49'-0"	Str				$4\frac{1}{2}$"	1040
AA707	1 Ser.8	52'-6"to49'-9"	Str				$4\frac{1}{2}$"	835
AA708	2	8'-3"	108	2'-3"	6'-0"	1'-11"		34
AA709	8	11'-11"	152	11"	6'-9"	2'-0"		197
AA710	27	5'-6"	Str					304
AA801	127	16'-2"	100	14'-0"				5484
AA802	1 Ser.3	6'-2"to10'-8"	100	4'-0" to8'-6"			2'-3"	67
AA803	1 Ser.9	13'-2"to16'-2"	100	11'-0"to14'-0"			$4\frac{1}{2}$"	353
AA804	1	9'-7"	101	8'-6"				27
AA805	1	12'-4"	104	10'-0"	2'-6"			33
AA806	1	12'-8"	Str					35
AA1101	24	23'-3"	139	17'-4"	6"			2960
AA1102	24	16'-4"	101					2080
AA1103	4	29'-2"	100	26'-0"				616
AA1104	4	30'-2"	100	27'-0"				640
D801	20	8'-10"	141					472
							Total	40,410

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
SOUTHWEST RETAINING WALL								
WA501	4	25'-0"	Str					104
WA502	1	32'-6"	Str					33
WA503	1 Ser.22	25'-0"to18'-9"					$3\frac{9}{16}$"	502
WA504	1 Ser.21	25'-0"to19'-0"					$3\frac{5}{8}$"	481
WA505	7	17'-9"						129
WA506	1 Ser.22	19'-0"to12'-9"					$3\frac{9}{16}$"	364
WA507	1 Ser.21	19'-0"to13'-3"					$3\frac{7}{16}$"	354
WA508	7	11'-6"	Str					83
WA509	66	4'-9"	104	3'-10"	1'-0"			327
WA510	1 Ser.20	12'-9"to7'-6"	Str				$3\frac{5}{16}$"	208
WA511	1 Ser.29	7'-6"to2'-0"	Str				$2\frac{3}{8}$"	144
WA512	1 Ser.20	7'-6"to2'-0"	Str				$3\frac{1}{2}$"	99
WA513	37	31'-6"	Str					1217
WA514	2 Ser.4	31'-6"to9'-6"	Str				7'-4"	171
WA515	3	31'-6"	Str					99
WA516	2 Ser. 4	31'-6"to4'-0"	Str				9'-2"	148
WA517	14	27'-6"	Str					400
WA518	2 Ser.4	27'-6"to4'-0"	Str				7'-10"	132
WA519	4	28'-3"	Str					118
WA520	2 Ser.4	27'-6" to 7'-6"	Str				6'-8"	146
WA521	78	5'-3"	104	4'-10"	1'-0"			470
WA522	62	5'-3"	104	4'-4"	1'-0"			340
WA523	2 Ser.5	19'-0"to2'-9"	Str				4'-$0\frac{3}{4}$"	114
WA524	4	33'-9"	Str					141
WA525	1 Ser.8	33'-9"to30'-0"	Str				$6\frac{7}{16}$"	266
WA526	1 Ser.9	33'-9"to30'-0"	Str				$5\frac{5}{8}$"	300
WA527	2	25'-6"	Str					53
WA528	2	26'-6"						55
WA529	1 Ser.4	26'-6"to24'-6"	Str				8"	106
WA530	1 Ser. 5	26'-6"to24'-6"	Str				6"	134
WA531	1	24'-6"	Str					26
WA532	1	22'-6"	Str					23
WA533	13	29'-0"	Str					394
WA534	32	12'-6"	Str					418
WA535	29	9'-6"	Str					287
WA536	1	5'-3"	Str					5
WA537	1	10'-6"	Str					11
WA538	1	11'-3"	108	2'-9"	8'-6"	3'-6"		11
WA539	2	8'-8"	108	1'-9"	7'-0"	3'-0"		18
WA540	1 Ser.2	4'-3"to6'-6"	Str				2'-3"	11
WA541	22	6'-6"	Str					148

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
WA542	28	5'-6"	Str					161
WA543	17	10'-3"	133					182
WA544	2 Ser. 5	17'-0"to2'-6"	Str				3'-$7\frac{1}{2}$"	102
WA545	1 Ser.14	20'-8"to6'-4"	121	9'-0"to1'-10"	1'-2"		$6\frac{5}{8}$"	198
WA546	2 Ser. 3	14'-0"to4'-8"	Str				4'-8"	58
WA547	1 Ser.9	14'-8"to7'-2"	121	6'-0"to2'-3"	1'-2"		$5\frac{5}{8}$"	102
WA548	9	30'-6"	Str					286
WA549	14	5'-2"	106	11"	2'-11"	1'-7"		75
WA550	3	3'-10"	104	2'-1"	1'-11"			12
WA551	5	5'-7"	106	11"	3'-4"	1'-7"		29
WA552	12	4'-5"	104	2'-7"	1'-11"			55
WA553	2 Ser.5	15'-3"to2'-3"	Str				3'-3"	86
WA554	2 Ser.3	12'-0"to4'-0"	Str				4'-0"	50
WA555	2 Ser.3	10'-3"to3'-6"	Str				3'-$4\frac{1}{2}$"	43
WA556	1 Ser.13	20'-8"to6'-2"	121	9'-0"to1'-9"	1'-2"		$7\frac{1}{4}$"	175
WA557	1 Ser.12	20'-8"to7'-0"	121	9'-0"to2'-2"	1'-2"		$7\frac{7}{8}$"	173
WA558	1 Ser.8	14'-8"to7'-0"	121	6'-0"to2'-2"	1'-2"		$6\frac{5}{8}$"	91
WA559	1 Ser.7	14'-8"to7'-0"	121	6'-0"to2'-2"	1'-2"		$7\frac{7}{8}$"	79
WA560	2	6'-4"	105	2'-1"	2'-5"			14
WA561	4	2'-0"	Str					8
WA562	2	5'-11"	105	2'-1"	2'-0"			13
WA601	21	31'-6"	Str					996
WA602	1 Ser.42	12'-9"to7'-6"	Str				$1\frac{1}{8}$"	640
WA603	39	5'-0"	104	4'-2"	1'-0"			293
WA604	21	10'-3"	133					323
WA605	21	30'-6"	Str					961
WA606	15	5'-5"	106	11"	2'-11"	1'-11"		122
WA607	15	3'-10"	104	2'-1"	1'-11"			87
WA608	6	5'-10"	106	11"	3'-4"	1'-11"		53
WA609	6	4'-6"	104	2'-7"	2'-1"			41
WA701	28	8'-2"	100	6'-6"				467
WA801	44	16'-2"	100	14'-0"				1895
WA802	30	12'-8"	100	10'-6"				1014
WA803	1 Ser.3	10'-4"to7'-10"	101	9'-3"to6'-9"			1'-3"	72
WA804	2	12'-11"	100	10'-9"				70
WA805	1	11'-7"	101	10'-6"				32
WA806	1	11'-3"	108	2'-9"	8'-6"	3'-6"		29
WA807	22	10'-2"	100	8'-0"				598
WA808	1 Ser.2	5'-4"to7'-7"	101	4'-3"to6'-6"			2'-3"	35
WA809	2	8'-8"	108	1'-3"	7'-5"	3'-3"		45
WA1101	3	30'-2"	100	27'-0"				483
WA1102	3	29'-2"	100	26'-0"				468
WA1103	3	27'-2"	100	24'-0"				436
WA1104	3	26'-2"	100	23'-0"				419
WA1105	3	25'-2"	100	22'-0"				404
WA1106	3	24'-2"	100	21'-0"				383
WA1107	4	22'-8"	100	19'-6"				484
WA1108	4	20'-8"	100	17'-6"				441
WA1109	4	15'-1"	101	13'-6"				318
WA1110	4	7'-0"	104	5'-0"	2'-3"			149
							Total	22,340

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For Replacement Reinforcement schedule see sheet 256.

H.N.T.B. BRIDGE NO. 10 — Revised 6-2-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 11/13
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

RAMP H OVER MARKET AVENUE
BR. NO. STA-30-1504 STA. 967+16.26
SCALE: STA. 968+87.93

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN DAP DATE 7-3-70 | TRACED DATE | CHECKED RSS DATE 7-14-70 | REVIEWED MJT DATE 11-28-71 | REVISED

1668

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
				SOUTHEAST RETAINING WALL				
WB501	4	21'-9"	Str.					91
WB502	1Ser. 8	6'-2"to16'-8"	121	1'-9"to7'-0"	1'-2"	9"	1'-6"	95
WB503	1Ser. 14	12'-6"to21'-3"	Str.				8 1/16"	246
WB504	1Ser. 15	12'-6"to22'-0"	Str.				8 1/8"	270
WB505	2Ser. 6	18'-0"to3'-0"	Str.				3'-0"	131
WB506	2	23'-0"	Str.					48
WB507	42	5'-8"	104	4'-9"	1'-0"			248
WB508	6	10'-3"	133					65
WB509	2Ser. 4	11'-0"to2'-0"	Str.				3'-0"	54
WB510	2Ser. 4	15'-3"to3'-0"	Str.				4'-1"	76
WB511	1Ser. 11	5'-10"to17'-0"	121	1'-7"to7'-2"	1'-2"		6 11/16"	131
WB601	21	11'-0"	Str.					347
WB602	26	19'-0"	Str.					741
WB603	13	10'-3"	133					200
WB801	18	14'-8"	100	12'-6"				705
WB802	24	18'-4"	Str.					1177
WB1101	4	24'-5"	100	21'-3"				521
WB1102	3	20'-5"	100	17'-3"				324
							Total	5470
				NORTH ABUTMENT				
AB401	25	4'-0"	105	1'-0"	2'-3"			67
AB402	1	3'-10"	105	1'-0"	2'-1"			2
AB403	1	3'-8"	105	1'-0"	1'-11"			2
AB404	3	3'-6"	105	1'-0"	1'-9"			7
AB501	11	22'-0"	Str.					252
AB502	23	25'-9"	Str.					619
AB503	8	32'-9"	Str.					274
AB504	10	26'-3"	Str.					274
AB505	9	29'-0"	Str.					272
AB506	3	11'-8"	108	9'-8"	2'-0"	10"		37
AB507	2	31'-0"	Str.					65
AB508	1 Ser. 10	7'-6"to3'-9"	151	1'-9"to5'-6"	2'-0"		5"	59
AB509	1	9'-6"	108	7'-6"	2'-0"	10"		10
AB510	8	27'-6"	Str.					230
AB511	1 Ser. 6	32'-9"to27'-3"	Str.				1-1 1/4"	188
AB512	5	34'-3"	Str.					179
AB513	6	22'-3"	Str.					140
AB514	7	28'-3"	Str.					207
AB515	53	7'-1"	105	1'-6"	4'-4"			392
AB516	1 Ser. 3	6'-8"to7'-6"	140	2'-3"to2'-8"	1'-2"		2 1/2"	22
AB517	37	17'-3"	Str.					665
AB518	32	17'-6"	Str.					584
AB519	16	17'-9"	Str.					296
AB520	56	13'-0"	Str.					760
AB521	157	5'-9"	104	4'-10"	1'-0"			945
AB522	1	6'-6"	108	4'-6"	2'-0"	10"		7
AB523	1	21'-8"	Str.					23
AB524	84	12'-6"	Str.					1097
AB525	1 Ser. 3	9'-3"to10'-3"	Str.				6"	30
AB526	1	12'-3"	Str.					13
AB527	10	7'-1"	Str.					174
AB528	14 Ser. 4	17'-3"to5'-0"	Str.				4'-1"	650
AB529	90	4'-10"	Str.					456
AB530	7 Ser. 10	13'-2"to21'-8"	121	5'-3"to9'-6"	1'-2"		5 11/16"	1275
AB531	6	2'-3"	105	7 1/2"	1'-3"			14

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
AB532	10	7'-4"	114	3'-6"				76
AB533	11	4'-3"	Str.					49
AB534	2 Ser. 4	21'-3" to6'-6"	Str.				4'-11"	116
AB535	1 Ser.19	8'-6"to19'-9"	121	2'-11" to8'-6"	1'-2"		3 3/4"	280
AB536	2 Ser. 4	22'-9"to7'-0"	Str.				5'-3"	124
AB537	1 Ser.21	7'-3"to19'-9"	121	2'-3"to8'-6"	1'-2"		3 3/4"	296
AB538	4	4'-1"	106	2'-1"	1'-7"	7 1/2"		17
AB539	5	5'-11"	105	2'-1"	2'-0"			31
AB540	4	3'-6"	Str.					15
AB541	5	5'-5"	106	2'-0"	2'-1"		1'-7"	28
AB601	17	33'-2"	Str.					848
AB602	17	25'-6"	Str.					653
AB603	17	23'-0"	Str.					588
AB604	20	27'-6"	Str.					826
AB605	17	22'-3"	Str.					569
AB606	10	11'-8"	108	9'-8"	2'-0"	10"		175
AB607	10	13'-3"	138	8'-0"	1'-6"	8'-0"		199
AB608	5	12'-3"	Str.					92
AB609	85	3'-10"	104	2'-1"	1'-11"			490
AB610	10	5'-1"	115	3'-5"	9"	7 1/2"		76
AB611	8	10'-6"	Str.					126
AB612	10	12'-8"	152	2'-6"	7'-0"	2'-9"		191
AB613	8	16'-1"	138	1'-11"	11'-4"	1'-9"		193
AB615	74	17'-3"	108	11'-3"	6'-0"	4'-3"		1917
AB617	1 Ser. 8	15'-6"to13'-6"	151	4'-7"to2'-6"	11'-0"		3 9/16"	174
AB619	58	15'-6"	106	11"	12'-5"	2'-6"		1,350
AB620	16	15'-9"	106	11"	12'-8"	2'-6"		379
AB621	34	10'-3"	133					523
AB622	56	5'-3"	106	11"	2'-10"	1'-10"		442
AB623	8	12'-6"	Str.					150
AB624	1 Ser.10	11'-2"to14'-5"	Str.				4 3/8"	192
AB625	17	34'-3"	Str.					874
AB626	9	11'-3"	Str.					152
AB627	3	26'-9"	Str.					120
AB701	8	10'-6"	Str.					172
AB702	8	16'-9"	138	2'-3"	11'-4"	2'-1"		274
AB703	28	45'-0"	Str.					2579
AB704	1 Ser.15	43'-3"to44'-9"	Str.				1 3/8"	1350
AB705	1 Ser.13	43'-3"to44'-3"	Str.				1"	1164
AB801	3	10'-6"	Str.					84
AB802	3	17'-2"	138	2'-6"	11'-4"	2'-3"		138
AB803	136	16'-2"	100	14'-0"				5859
AB804	1 Ser. 3	10'-4"to11'-4"	101	9'-3"to10'-3"			6"	87
AB805	1	13'-4"	101	12'-3"				36
AB901	1 Ser. 15	9'-9" to 13'-9"	108	7'-3" to 11'-3"	2'-6"	11 1/2"	3 1/16"	599
AB902	1 Ser. 13	9'-9" to 13'-3"	108	7'-3" to 10'-9"	2'-6"	11 1/2"	3 1/2"	519
AB1101	21	25'-0"	139	19'-2"	6"			2789
AB1102	21	15'-10"	101	14'-3"				1770
AB1103	6	8'-6"	101	7'-0"				271
AB1104	3	27'-6"	101	26'-0"				438
AB1105	3	29'-6	101	28'-0"				470
AB1106	3	24'-0"	101	22'-6"				383
AB1107	3	20'-6"	101	19'-0"				328
AB1108	3	26'-0"	101	24'-6"				415
AB1109	3	22'-6"	101	21'-0"				359
AB1110	6	12'-0"	101	10'-6"				383
AB1111	6	15'-6"	101	14'-0"				494
D801	20	8'-10"	141					472
							Total	44,051

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
				RETAINING WALL B				
RB501	4	35'-6"	Str.					148
RB502	1 Ser.25	2'-2"to10'-11"	Str.				4 3/8"	171
RB503	25	4'-9"	104	3'-10 1/2"	1'-0"			124
RB504	2 Ser. 5	7'-0"to31'-0"	Str.				6'-0"	198
RB505	74	31'-8"	Str.					2445
RB506	2 Ser. 3	8'-6"to24'-6"	Str.				8'-0"	103
RB507	1 Ser.22	11'-0"to18'-10"	Str.				3 3/8"	320
RB508	1 Ser.22	16'-10"to20'-7"	Str.				2 1/8"	429
RB509	1 Ser.19	17'-7"to20'-8"	Str.				2 1/4"	379
RB510	22	5'-0"	104	4'-1 1/2"	1'-0"			115
RB511	147	5'-3"	104	4'-4 1/2"	1'-0"			805
RB512	98	5'-6"	104	4'-7 1/2"	1'-0"			562
RB513	50	30'-8"	Str.					1600
RB514	2	14'-10"	Str.					34
RB515	2	18'-0"	Str.					38
RB516	2	20'-0"	Str.					42
RB517	2	21'-6"	Str.					45
RB518	1 Ser.22	20'-7"to22'-1"	Str.				7/8"	490
RB519	1 Ser.19	21'-1"to22'-3"	Str.				3/4"	432
RB520	1 Ser.22	22'-1"to23'-0"	Str.				1/2"	517
RB521	1 Ser.19	22'-4"to23'-1"	Str.				1/2"	454
RB522	1 Ser.11	23'-0"to23'-8"	Str.				13/16"	266
RB523	1 Ser. 9	23'-4"to23'11"	Str.				7/8"	222
RB524	1 Ser.11	23'-7 1/2"to24'-7"	Str.				1"	277
RB525	1 Ser.10	23'-11"to24'-9"	Str.				1 1/8"	254
RB526	1 Ser.22	24'-7"to26'-7"	Str.				1 1/8"	587
RB527	1 Ser.19	25'-1"to26'-9"	Str.				1 1/8"	514
RB528	2	36'-7"	Str.					76
RB529	2	32'-2"	Str.					67
RB530	2	31'-10"	Str.					67
RB531	1 Ser.14	6'-7"to15'-9"	121	1-11 1/2"to6-6 1/2"	1'-2"		8 5/8"	163
RB532	1 Ser.16	6'-1"to15'-9"	121	1-8 1/2"to6'-6 1/2"	1'-2"		7 3/4"	182
RB533	1 Ser.17	6'-2"to15'-9"	121	1'-9"to6'-6 1/2"	1'-2"		7 3/8"	195
RB534	1 Ser.18	6'-0"to15'-9"	121	1'-8"to6'-6 1/2"	1'-2"		6 7/8"	204
RB535	1 Ser.18	6'-4"to15'-9"	121	1'-10"to6'-6 1/2"	1'-2"		6 11/16"	207
RB536	1 Ser.19	6'-0"to15'-9"	121	1'-8"to6'-6 1/2"	1'-2"		6 5/8"	216
RB537	1 Ser.19	6'-2"to15'-9"	121	1'-9"to6'-6 1/2"	1'-2"		6 3/8"	215
RB538	1 Ser.19	6'-3"to15'-9"	121	1'-9 1/2"to6'-6 1/2"	1'-2"		6 3/8"	218
RB539	1 Ser.19	5'-11"to15'-9"	121	1'-7 1/2"to6'-6 1/2"	1'-2"		6 3/8"	231
RB540	1 Ser.20	6'-4"to19'-8"	121	1'-10"to8'-6"	1'-2"		8 7/8"	271
RB541	1 Ser.20	6'-8"to19'-8"	121	2'-0"to8'-6"	1'-2"		7 3/8"	275
RB542	1 Ser.21	6'-4"to19'-8"	121	1'-10"to8'-6"	1'-2"		8"	285
RB543	1 Ser.21	6'-8"to19'-8"	121	2'-0"to8'-6"	1'-2"		8 5/8"	288
RB544	1 Ser.22	6'-5"to19'-8"	121	1'-10 1/2"to8'-6"	1'-2"		7 5/8"	300
RB545	1 Ser.22	6'-10"to19'-8"	121	2'-1"to8'-6"	1'-2"		7 3/8"	304
RB546	2 Ser. 3	4'-1" to12'-5"	Str.				4'-2"	52
RB547	2 Ser. 3	4'-6"to13'-8"	Str.				4'-7"	57
RB548	2 Ser. 3	4'-10"to14'-9"	Str.				4-11 1/2"	61
RB549	2 Ser. 3	5'-2"to15'-9"	Str.				5'-3 1/2"	65
RB550	2 Ser. 3	5'-4"to16'-4"	Str.				5'-6"	68
RB551	2 Ser. 3	5'-7"to16'-8"	Str.				5'-6 1/2"	70
RB552	2 Ser. 3	5'-7"to16'-10"	Str.				5'-7 1/2"	70
RB553	2 Ser. 3	5'-8"to17'-1"	Str.				5'-8 1/2"	71
RB554	2 Ser. 3	5'-9"to17'-4"	Str.				5'-9 1/2"	72
RB555	2 Ser. 4	4'-6"to17'-5"	Str.				4'-3 1/2"	91
RB556	2 Ser. 4	4'-8"to17'-11"	Str.				4'-5"	94
RB557	2 Ser. 4	4'-10"to18'-4"	Str.				4'-6"	97
RB558	2 Ser. 4	4'-7"to18'-6"	Str.				4'-7 1/2"	96
RB559	2 Ser. 4	4'-9"to19'-1"	Str.				4'-9 1/2"	100
RB560	2 Ser. 4	4'-11"to19'-7"	Str.				4'-10 1/2"	102
RB561	54	5'-0"	104	4'-1 1/2"	1'-0"			282
RB562	48	5'-3"	104	4'-4 1/2"	1'-0"			263
RB563	2	17'-1"	Str.					36
RB564	1	15'-9"	Str.					16
RB565	6	19'-8"	Str.					123
RB566	2	20'-10"	Str.					44
RB567	6	21'-3"	Str.					133
RB568	2	22'-4"	Str.					47
RB569	6	21'-2"	Str.					133
RB570	2	23'-3"	Str.					49
RB571	6	24'-0"	Str.					150
RB572	2	24'-10"	Str.					52
RB573	5	25'-7"	Str.					133
RB574	2	27'-6"	Str.					57

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

For notes and bending diagrams see Sheet 11 / 13

H.N.T.B. BRIDGE NO. 10 — Revised 5-30-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 12 / 13
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

RAMP H OVER MARKET AVENUE
BR. NO. STA-30-1504 — STA. 967+16.26
SCALE: — STA. 968+87.93

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN DAP DATE 7-2-70	TRACED DATE	CHECKED KSS DAP DATE 7-13-70	REVIEWED MZH DATE 11-24-71	REVISED	1668

MICROFILMED
SEP 20 1983

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			352 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
RETAINING WALL B (CON'T.)								
RB601	30	30'-8"	Str					1383
RB602	1 Ser. 44	2'-5"to11'-2"	Str.				2 7/16"	449
RB603	44	4'-9"	104	3'-11"	1'-0"			314
RB604	30	31'-8"	Str.					1428
RB605	1 Ser. 31	11'-3"to16'-9"	Str.				2 3/16"	651
RB606	36	5'-0"	104	4'-2"	1'-0"			270
RB607	37	5'-8"	Str.					315
RB608	19	32'-6"	Str.					927
RB609	15	33'-10"	Str.					761
RB610	32	7'-0"	Str.					336
RB611	10	32'-3"	Str.					484
RB612	96	8'-9"	Str.					1261
RB613	111	10'-3"	133					1680
RB614	81	3'-10"	104	1'-11"	2'-1"			466
RB615	94	5'-5"	106	11"	2'-11"	1'-11"		765
RB616	13	5'-9"	105	1'-11"	2'-1"			112
RB617	1	2'-10"	Str.					4
RB618	1	3'-9"	Str.					6
RB619	1	4'-3"	Str.					6
RB620	1	3'-6"	Str.					5
RB621	1	3'-8"	Str.					6
RB622	63	10'-9"	Str.					1017
RB623	5	15'-9"	Str.					118
RB624	14	37'-0"	Str.					778
RB701	14	31'-8"	Str.					906
RB702	31	10'-7"	104	9'-9"	1'-0"			670
RB703	14	30'-8"	Str.					877
RB801	39	9'-8"	100	7'-6"				1007
RB802	34	12'-8"	100	10'-6"				1150
RB803	104	14'-2"	100	12'-0"				3937
RB804	64	17'-2"	100	15'-0"				2935
RB1001	54	34'-0"	Str.					7890
RB1002	50	32'-10"	Str.					7060
RB1101	3	21'-3"	100	18'-1"				339
RB1102	3	20'-4"	100	17'-2"				324
RB1103	3	23'-5"	100	20'-3"				374
RB1104	3	22'-5"	100	19'-3"				358
RB1105	3	24'-8"	100	21'-6"				393
RB1106	3	23'-7"	100	20'-5"				376
RB1107	3	25'-5"	100	22'-3"				405
RB1108	6	26'-1"	100	22'-11"				832
RB1109	3	25'-0"	100	21'-10"				398
RB1110	3	26'-5"	100	23'-3"				421
RB1111	3	25'-4"	100	22'-2"				403
RB1112	3	26'-1"	100	22'-11"				415
RB1113	3	24'-10"	100	21'-8"				396
RB1114	3	27'-1"	100	23'-11"				431
RB1115	3	25'-11"	100	22'-9"				413
RB1116	3	27'-5"	100	24'-3"				437
RB1117	3	27'-8"	100	24'-6"				441
RB1118	3	26'-7"	100	23'-5"				424
RB1119	3	25'-7"	100	22'-5"				408
RB1120	3	28'-2"	100	25'-0"				449
RB1121	3	27'-1"	100	23'-11"				431
RB1122	3	26'-0"	100	22'-10"				414
RB1123	3	29'-5"	100	26'-3"				469
RB1124	3	28'-4"	100	25'-2"				451
RB1125	3	27'-2"	100	24'-0"				433
RB1126	3	30'-2"	100	27'-0"				481
RB1127	3	29'-0"	100	25'-10"				462
RB1128	3	30'-9"	100	27'-7"				430

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
RB1129	3	29'-7"	100	26'-5"				471
RB1130	3	30'-8"	100	27'-6"				488
RB1131	3	29'-5"	100	26'-3"				469
RB1132	3	28'-3"	100	25'-1"				450
RB1133	3	28'-5"	100	25'-3"				453
RB1134	3	27'-10"	100	24'-8"				443
RB1135	3	24'-3"	100	21'-1"				387
							Total	73,220
RETAINING WALL E								
R501	22	8'-4"	Str.					191
R502	26	11'-6"	109	3'-0"	2'-6"			312
R503	128	3'-8"	115	1'-11"	9"	9"		501
R504	128	2'-5"	105	9"	1'-2"			323
R505	128	6'-7"	114	3'-4"				879
R506	20	5'-0"	104	4'-1 1/2"	1'-0"			104
R507	1 Ser. 20	14'-6"to15'-0"	Str.				5 11/16"	308
R508	44	4'-9"	104	3'-10"	1'-0 1/2"			218
R509	1 Ser. 22	8'-6" to 9'-0"	Str.				5/16"	201
R510	1 Ser. 22	9'-10"to10'-3"	Str.				1/4"	229
R511	1 Ser. 13	13'-3"to14'-1"	105	16'-2"to6'-7"	1'-2"		13/16"	186
R512	6 Ser. 4	5'-5"to21'-10"	Str.				5'-5 11/16"	342
R513	3 Ser. 26	6'-0"to19'-8"	121	1'-8"to8'-6"	1'-2"		6 9/16"	1043
R514	6 Ser. 3	5'-6"to16'-3"	Str.				5'-4"	203
R515	3 Ser. 19	5'-8"to15'-8"	121	1'-6"to6'-6"	1'-2"		6 11/16"	632
R516	65	5'-6"	104	4'-7"	1'-0 1/2"			372
R517	59	5'-3"	104	4'-4"	1'-0 1/2"			323
R518	2	11'-11"	104	11'-0"	1'-0 1/2"			25
R519	8	20'-0"	Str.					167
R520	1 Ser. 18	28'-6"to29'-0"	Str.				3/8"	538
R521	1 Ser. 18	28'-9"to29'-3"	Str.				3/8"	543
R522	14	24'-1"	Str.					352
R523	2	10'-2"	104	9'-3"	1'-0 1/2"			21
R524	8	13'-10"	Str.					116
R525	1 Ser. 18	20'-9"to21'-3"	Str.				3/8"	394
R526	1 Ser. 18	21'-0"to21'-6"	Str.				3/8"	398
R527	84	31'-8"	Str.					2767
R528	10	32'-8"	Str.					341
R529	7	27'-10"	Str.					203
R530	12	7'-9"	105	2'-11"	2'-2"			97
R531	2	4'-0"	Str.					8
R532	5	28'-3"	Str.					147
R533	5	20'-7"	Str.					107
R601	16	30'-6"	Str.					735
R602	32	12'-6"	Str.					600
R603	32	10'-2"	100	8'-6"				490
R604	64	5'-6"	Str.					530
R605	30	6'-2"	147	4'-5"	1'-11"			278
R606	1 Ser. 30	14'-9"to15'-3"	Str.				3/16"	676
R607	1 Ser. 33	8'-9"to9'-3"	Str.				3/16"	446
R608	32	7'-9"	147	6'-0"	1'-11"			382
R609	66	5'-8"	147	3'-11"	1'-11"			561
R610	12	32'-8"	Str.					589
R611	32	9'-1"	147	7'-4"	1'-11"			436
R612	1 Ser. 33	10'-2"to10'-7"	Str.				1/8"	513
R615	37	31'-8"	Str.					1760
R616	37	30'-8"	Str.					1710
R617	30	10'-3"	133					454
R618	30	3'-10"	104	2'-1"	1'-11"			173
R619	30	5'-3"	106	11"	2'-9"	1'-11"		238
R621	8	5'-11"	105	2'-1"	1'-11"			72
R625	28	31'-6"	Str.					1325
R626	10	5'-6"	100	4'-2"				82
R627	7	8'-10"	105	4'-0"	1'-2"			93

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS	
R701	36	12'-8"	100	11'-0"				931	
R702	31	6'-6"	Str.					413	
R703	3	31'-8"	Str.					194	
R704	3	30'-8"	Str.					188	
R705	10	32'-8"	Str.					670	
R801	6	23'-11"	Str.					384	
R802	34	16'-2"	100	14'-0"				1470	
R803	68	9'-2"	100	7'-0"				1670	
R804	6	32'-8"	Str.					523	
R901	26	31'-6"	Str.					2780	
R902	30	14'-10"	147	12'-3"	2'-10"			1510	
R1001	21	31'-6"	Str.					2854	
R1002	12	25'-1"	100	22'-3"				1300	
R1003	12	26'-3"	100	23'-5"				1363	
R1101	9	8'-1"	101	6'-6"				387	
R1102	9	23'-0"	101	21'-5"				1100	
R1103	9	25'-2"	101	23'-7"				1203	
R1104	9	27'-7"	101	26'-0"				1320	
R1105	9	11'-7"	101	10'-0"				554	
R1106	9	15'-1"	101	13'-6"				721	
							Total	46,269	
DECK									
S501	50	30'-0"	Str.					1560	
S502	10	23'-3" 22'-0"	Str.					229	242
S503	220	3'-3"	143					746	
S504	220	5'-8"	144					1301	
S505	220	2'-5"	104	1'-11"	7 1/2"			555	
S506	220	2'-3"	105	7 1/2"	1'-3"			516	
S507	8	14'-0 1"	Str.					118	
S508	80	14'-8"	Str.					1225	
S601	140	30'-0"	Str.					6308	
S602	24	21'-6" 25'-2"	Str.					775	907
S603	4	23'-3" 25'-5"	Str.					140	152
S604	74	8'-6" 10'-4"	Str.					940	1148
S605	146 9	33'-0"	100	31'-8"				7225	7385
S606	146 9	31'-8"	Str.					6945	7087
S607	4	29'-10"	101	29'-2"				178	
S608	4	29'-2"	Str.					175	
S609	4	11' 30'-0" 30'-5"	Str.	10' 29'-9"				180	
S610	2 Ser. 77	9'-2"to32'-4" 29'-9"	101	8'-6"to31'-8"			3 1/16" 3 5/8"	4809	
S611	2 Ser. 77	8'-6"to31'-8"	Str.				3 5/8"	4620	4655
S612	74 10"	9'-2" 11'-0"	101	8'-6" 10'-4"				1018	1222
S401	205	30'-0"	Str.					4108	
S402	37	21'-4" 8'-6"	Str.					457	527
S403	4	21'-7" 20'-3"	Str.					54	58
							Total	44,173 45,162	

For notes and bending diagrams see Sheet 11 / 13

H.N.T.B. BRIDGE NO. 10 | Revised 6-2-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 13 / 13
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

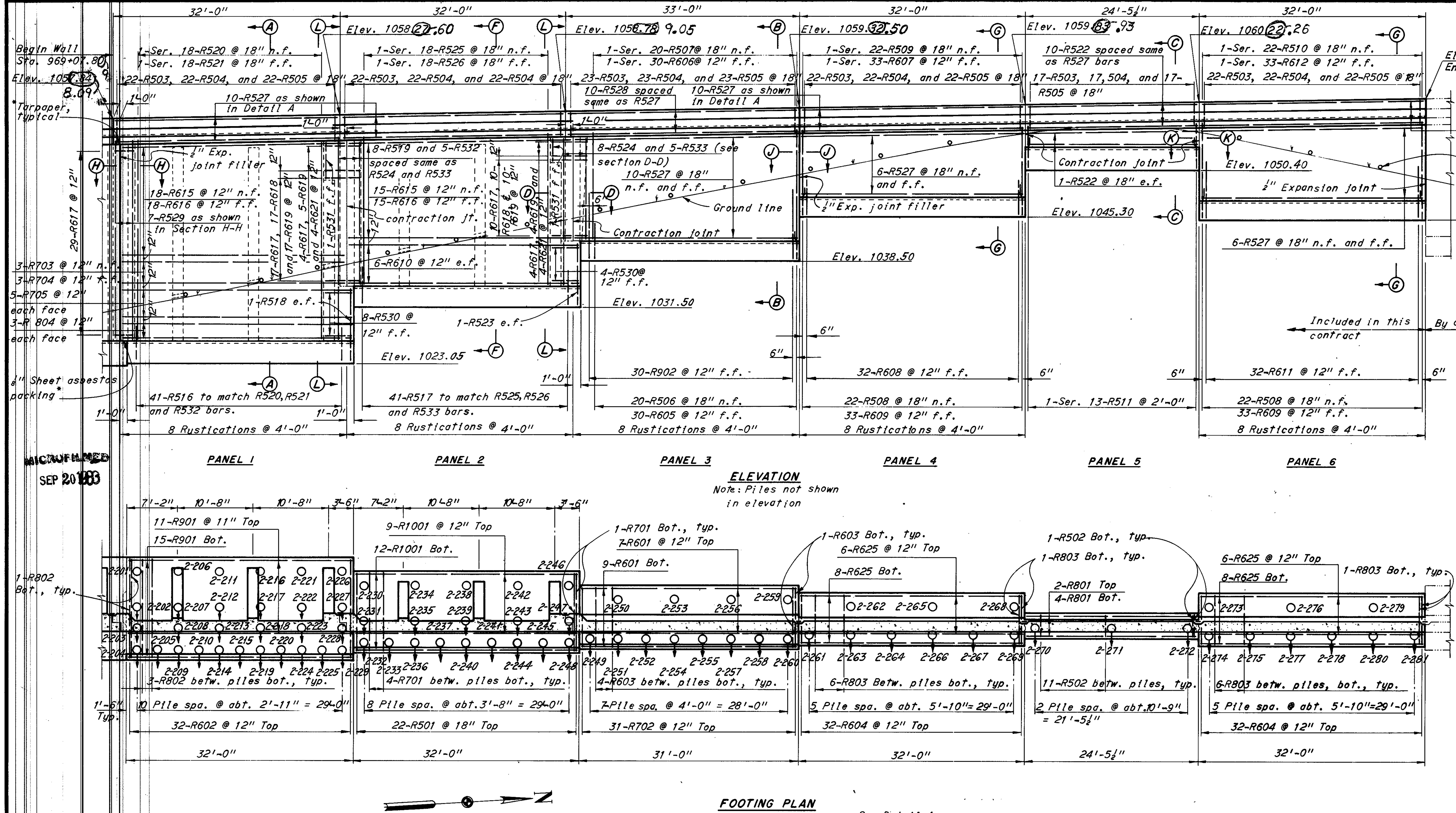
RAMP H OVER MARKET AVENUE
BR. NO. STA-30-1504 STA. 967+16.26
SCALE: STA. 968+87.93

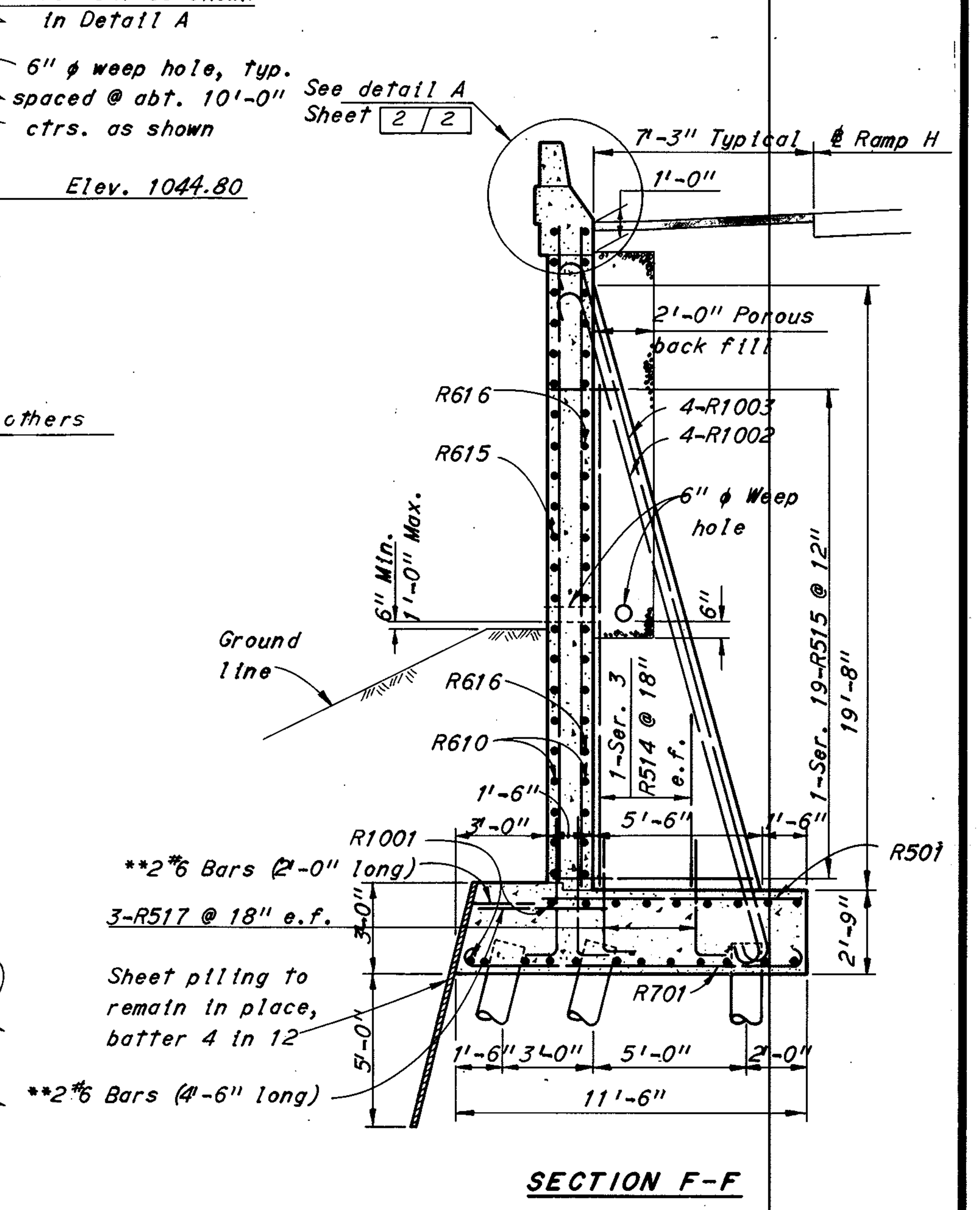
RELOCATED U.S. 30

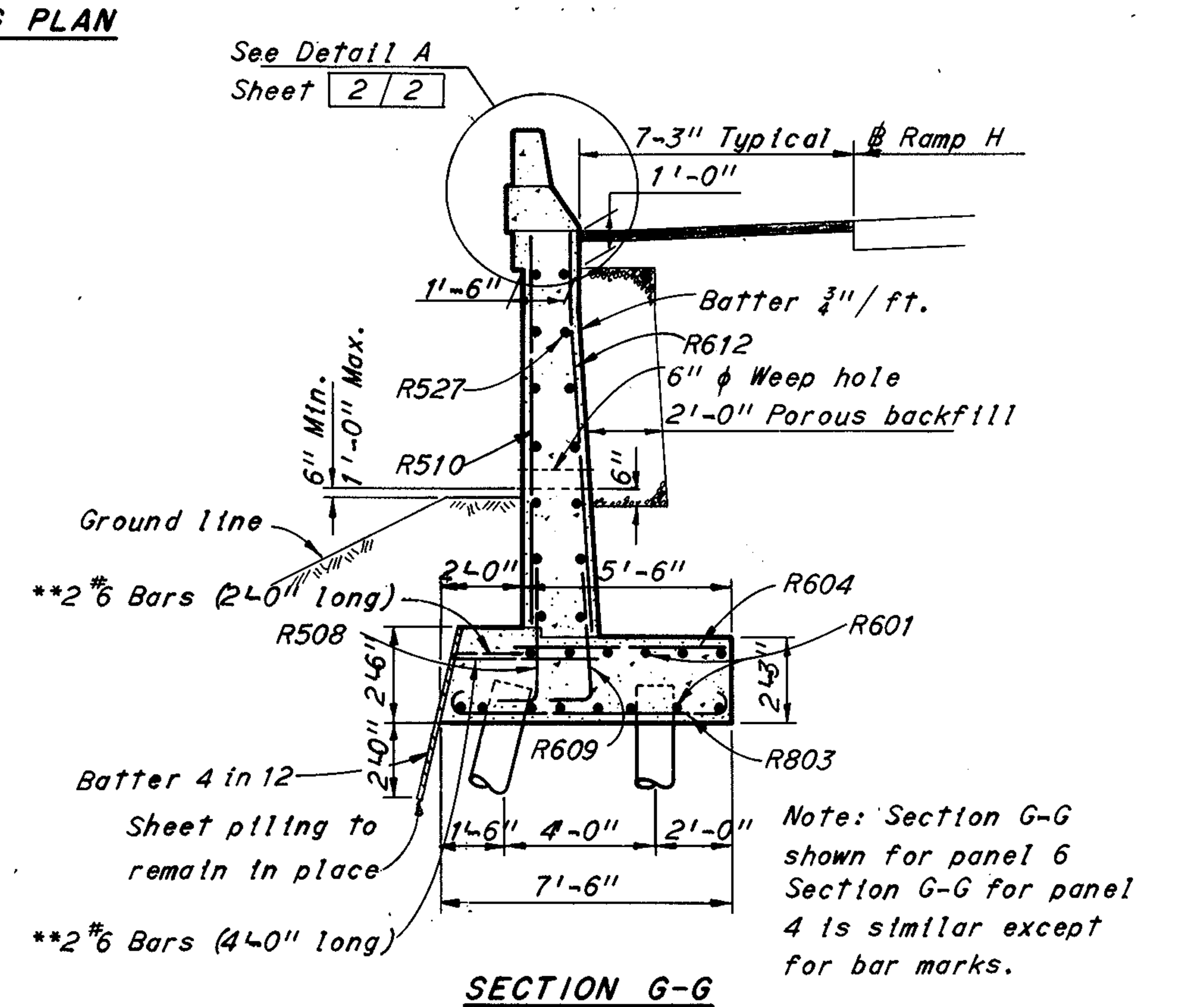
CANTON STARK COUNTY OHIO

DRAWN DAP DATE 7-1-70 | TRACED DATE | CHECKED KSS DATE 7-10-70 | REVIEWED MJ DATE 11-24-71 | REVISED 3-2-76 | 1668

Revised 1-24-77







ESTIMATED QUANTITIES FOR RETAINING WALL E I-77-4(44)					
ITEM	TOTAL	UNIT	DESCRIPTION		
503	613	Cu. Yd.	Unclassified Excavation		
504	1073	Sq. Ft.	Sheet Piling left in place, steel, (min. Sect. Mod. 7 in.³ per foot of wall)		
507	6492	Lin. Ft.	12" Cast-in-Place Reinforced Concrete Piles		
509	46,269	Lbs.	Reinforcing Steel		
511	232	Cu. Yd.	Class "C" Concrete, Walls above Footing		
511	169	Cu. Yd.	Class "C" Concrete, Footings		
512	48	Lin. Ft.	Premolded Sealing Strip		
516	19	Sq. Ft.	½" Preformed Joint Filler		
518	108	Cu. Yd.	Porous Backfill		
625			See Sheet 137 for Lighting Summary		

Notes:

* To be included with 'Item 511, Class "C" concrete above footings' for payment.

e.f. Denotes each face.

Battered piles shall be battered 4 in 12.

n.f. Denotes near face

f.f. Denotes far face.

For rustications details see Sheet 349.

For reinforcing schedule see Sheet 352.

For Section A-A, section B-B, and Section C-C see Sheet 2/2

Weep hole shall be sloped ¼" per foot.

** See notes on Sheet 2/2.

Note:

The estimated average pay lengths for piling are as follows:

Panel 1 = 70 feet
Panel 2 = 79 feet
Panel 3 = 86 feet
Panel 4 = 93 feet
Panel 5 = 98 feet
Panel 6 = 92 feet

These estimates are based on boring data and are approximate only. The contractor shall assume full responsibility for the length of piling selected for driving.

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

353 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

H.N.T.B. BRIDGE NO. 10 — Revised 7-23-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 1/2
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

RETAINING WALL E

RAMP H OVER MARKET AVENUE
BR. NO. STA-30-1504 STA. 967+16.26
SCALE: 1/8" = 1'-0" STA. 968+87.93

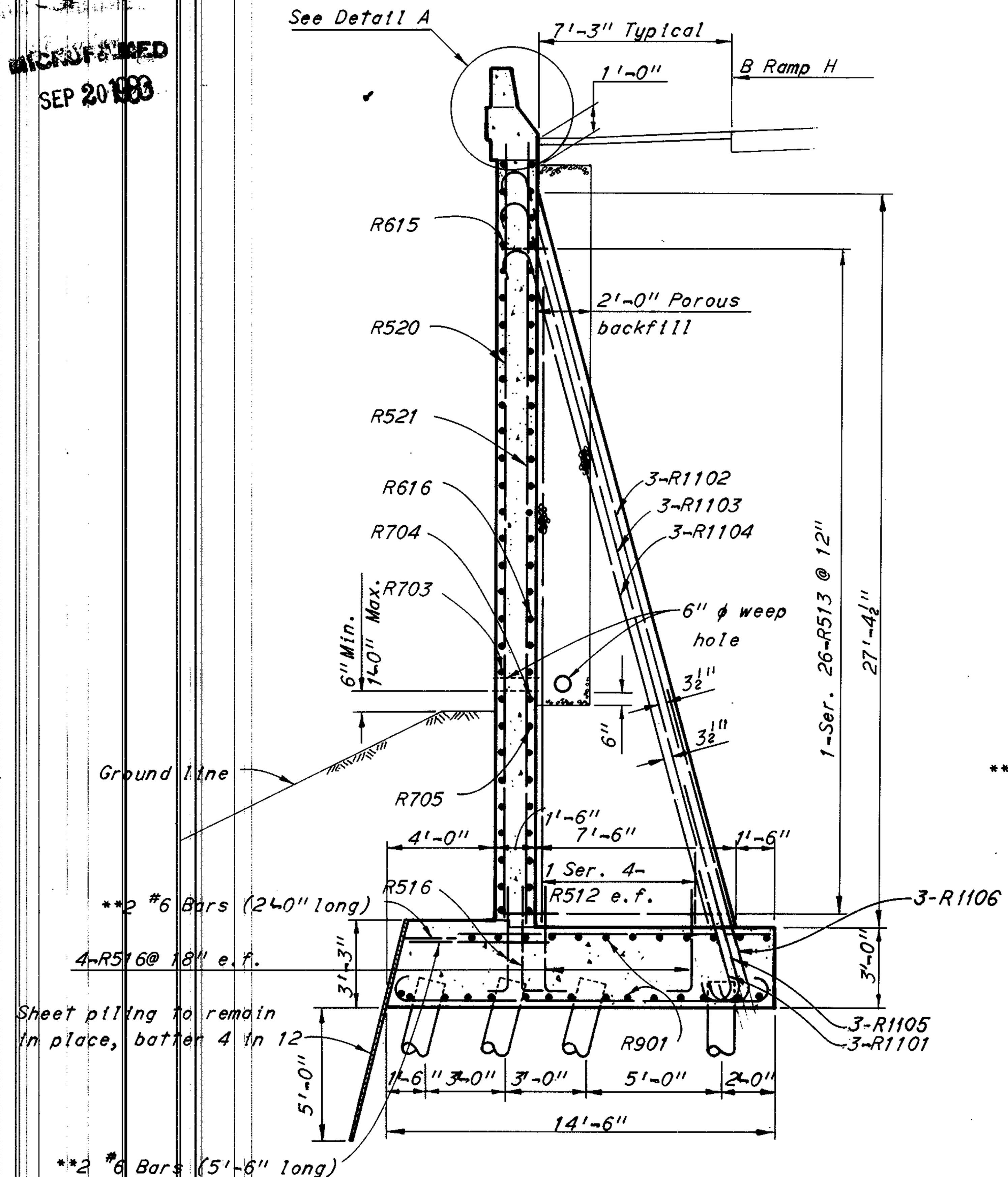
RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

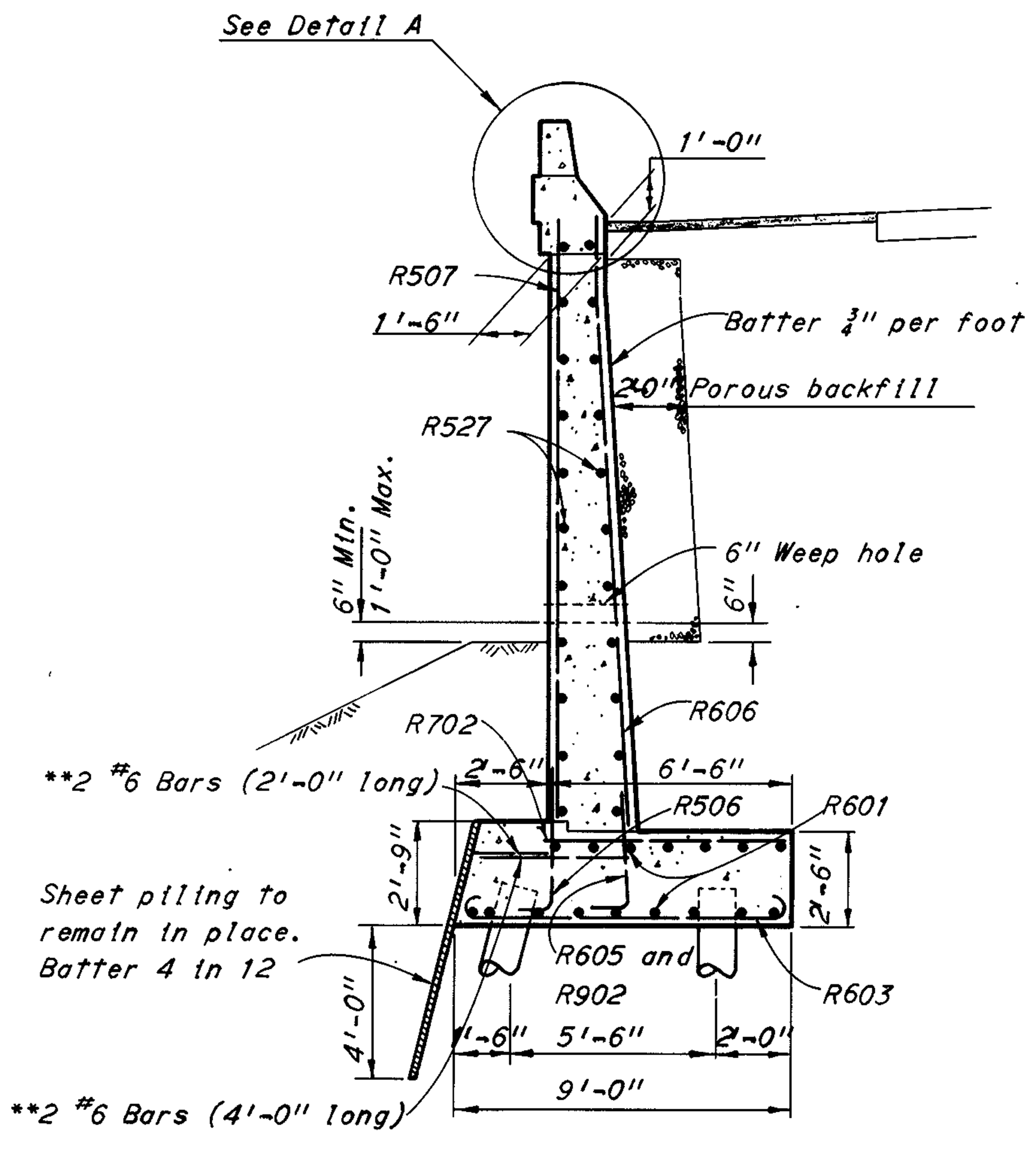
DRAWN TPS, DATE 2-20-70 | TRACED, DATE | CHECKED LL, DATE 4-15-70 | REVIEWED MJF, DATE 11-28-71 | REVISED 1-24-77 | 1668

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			354 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22



SECTION A-A



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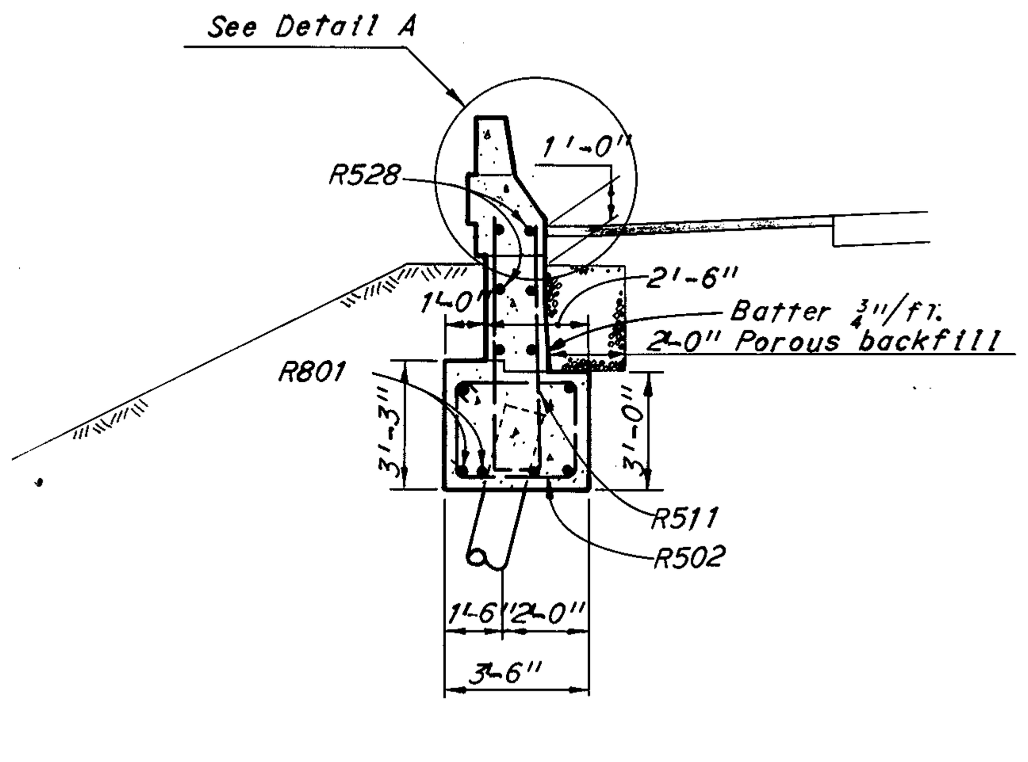

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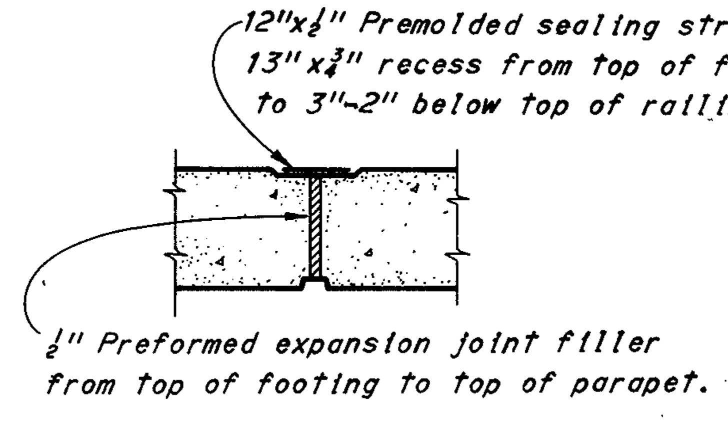
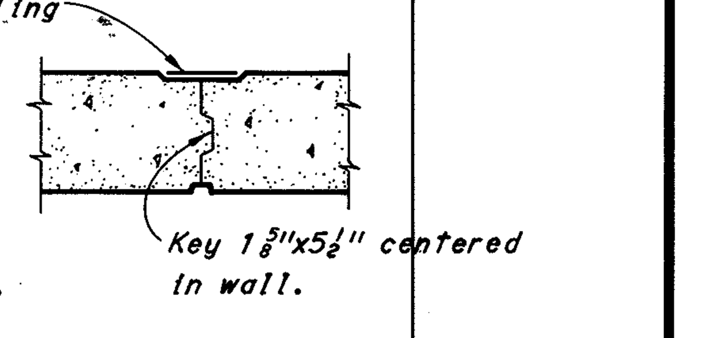
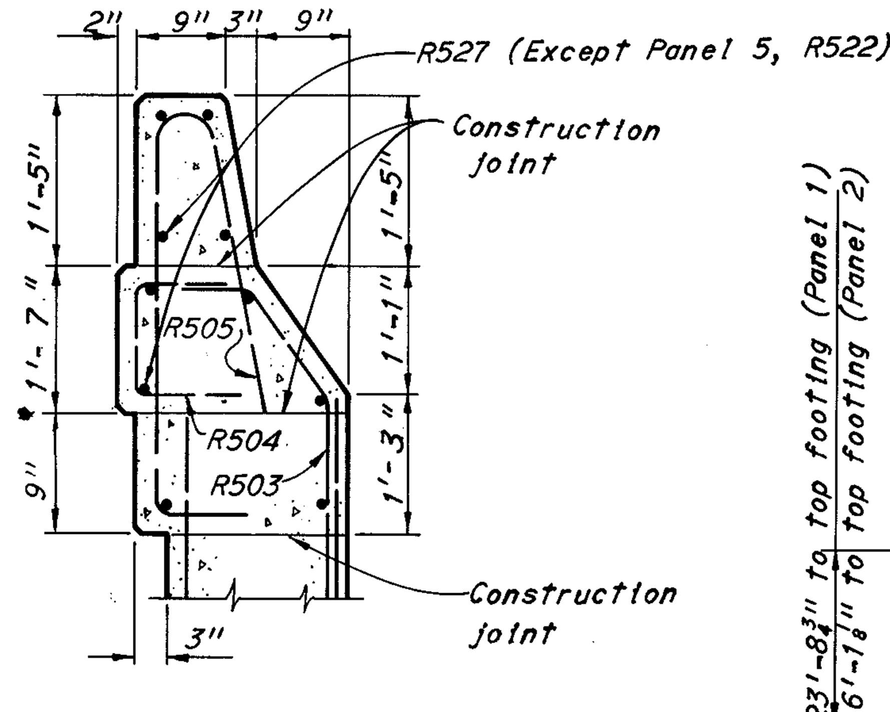


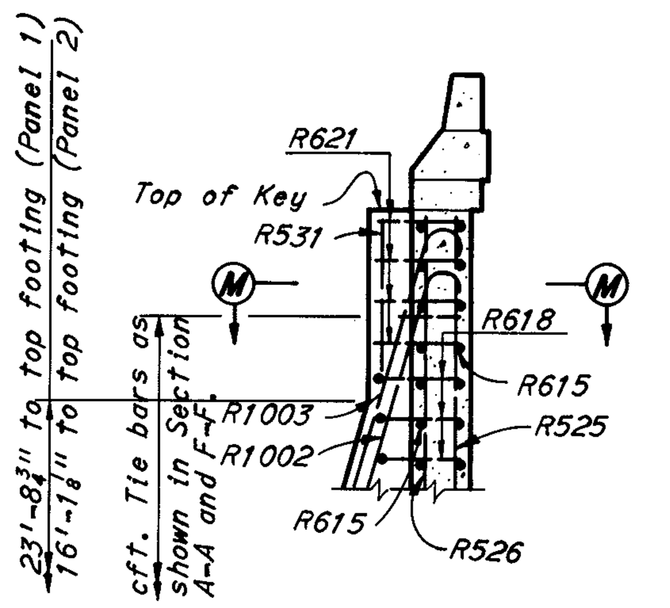
SECTION J-J



SECTION K-K

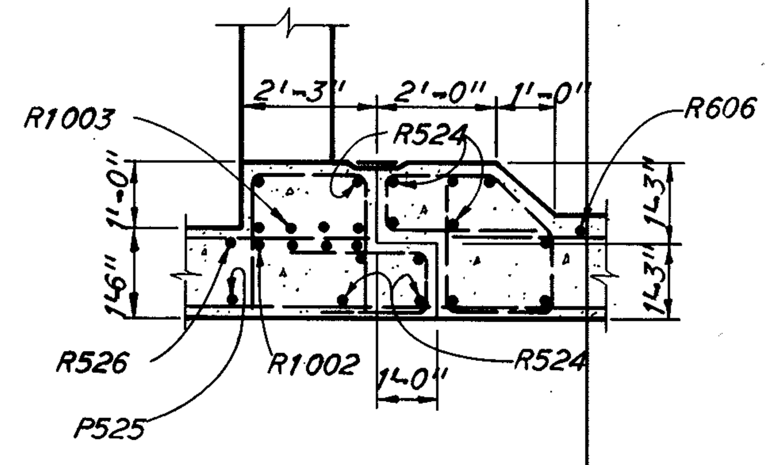


DETAIL A

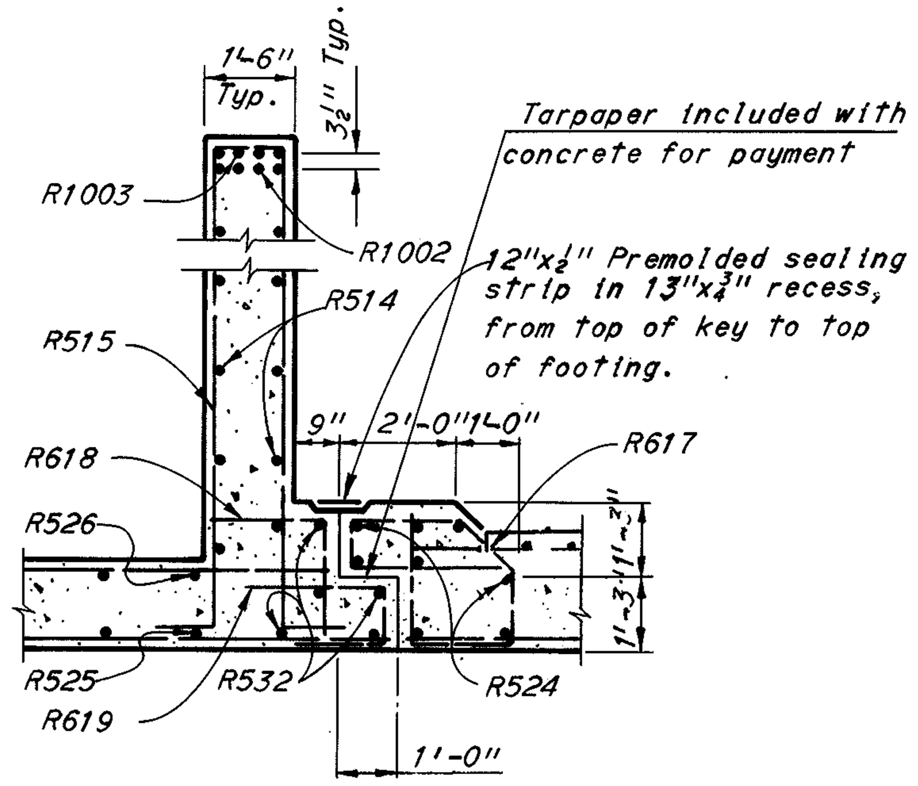


SECTION L-L

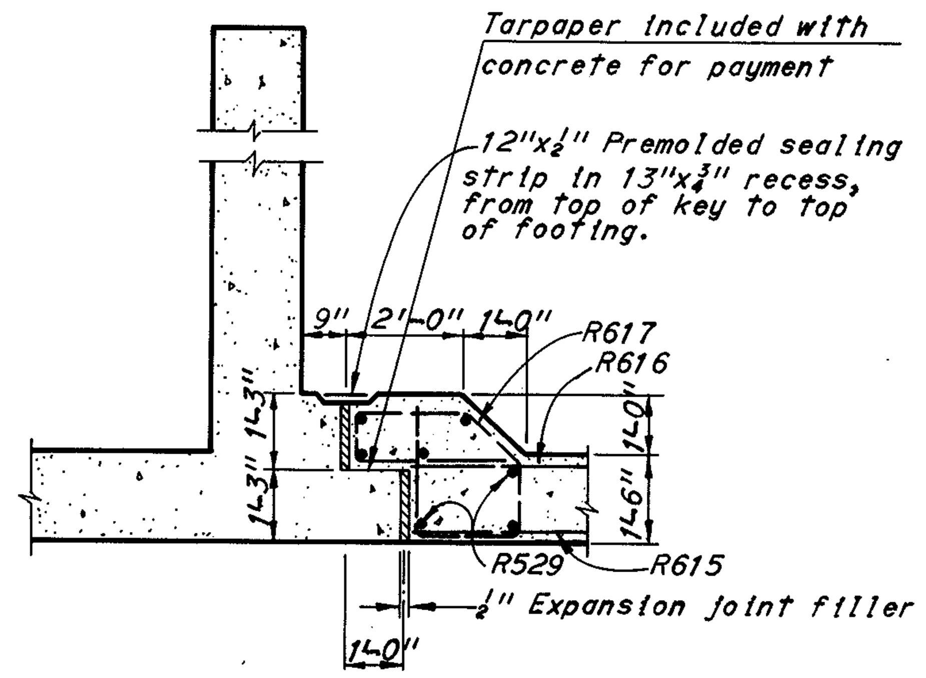
Note:
Section L-L shown for Panel 2
Section L-L for Panel 1 similar except for bar marks and as shown.



SECTION M-M



SECTION D-D



SECTION H-H

Notes:
Battered piles shall be battered 4 in 12.
n.f. Denotes near face.
f.f. Denotes far face.
e.f. Denotes each face.
cft. Denotes counterfort.
For reinforcing schedule see Sheet 352.
For Plan and Elevation views see Sheet 1/2
**2-No. 6 (2'-0" long) shall be welded to each sheet pile and 2-No. 6 bars shall be lapped with 2-No. 6 bars (2'-0" long) as shown. The No. 6 bars shall be included for payment with sheet piling.
Sheet piling shall have a minimum section modulus of 7 inches cubed per foot. Used piling in good condition may be used.

H.N.T.B. BRIDGE NO. 10 — Revised 7-23-75 By RAS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 2/2
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

RETAINING WALL E DETAILS

RAMP H OVER MARKET AVENUE
BR. NO. STA-30-1504 — STA. 967+16.26
SCALE: 1/4" = 1'-0" — STA. 968+87.93

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN TPS	TRACED	CHECKED LL	REVIEWED MTK	REVISED
DATE 2-20-70	DATE	DATE 4-15-70	DATE 11-20-71	1668

STARK COUNTY
STA-30-14.12
STA-77-9.22

DETAILS OF BEAM SPLICES

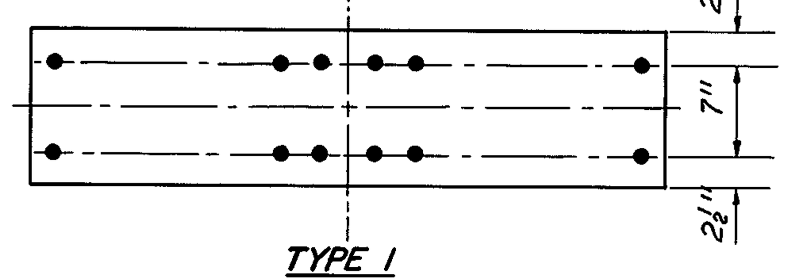
CONNECTION	WEB SPLICES: TYPE	WEB PLATES 2 Required	WEB BOLTS No.	FILL PLS.	FLANGE PLATES: TYPE	Outside 2 Required	Inside 4 Required	FILL PLATES: TYPE	Thickness (In.) X	Y	Z	FLANGE BOLTS: No.	Spa. N	Pitch	A	B	C
W36X135 to 170	A	13 1/2x3/8x2'-7"	40	-	-	11x3/8x2'-4 1/2"	4 1/2x1/2x2'-4 1/2"	-	5/16	5/16	-	32	3	3 1/2	2	-	7
W36X135 to 135	A	13 1/2x3/8x2'-7"	40	-	-	11x3/8x2'-4 1/2"	4 1/2x1/2x2'-4 1/2"	-	-	-	-	32	3	3 1/2	2	-	7
W30X99 to 108	A	13 1/2x3/8x2'-1"	32	-	-	10x3/8x1'-9 1/2"	4x3/8x1'-9 1/2"	-	-	-	-	24	2	3 1/2	2 3/8	-	6
W30X99 to 99	A	13 1/2x3/8x2'-1"	32	-	-	10x3/8x1'-9 1/2"	4x3/8x1'-9 1/2"	-	-	-	-	24	2	3 1/2	2 1/4	-	6

TABLE OF GIRDER FLANGE SPLICES

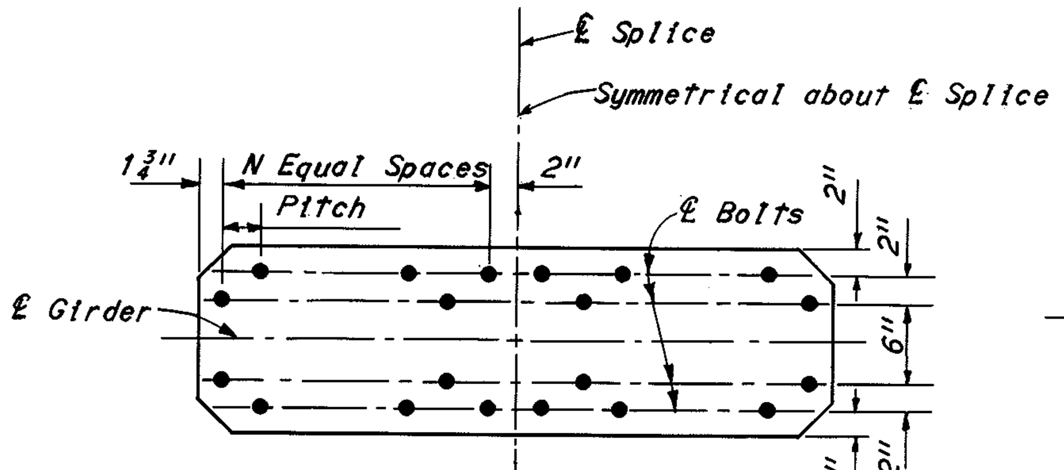
CONNECTION	TYPE	Outside Plate 2 Required	Inside Plate 4 Required	Fill Plate 2 Required	N Spaces	Pitch (In.)
12x7/8 to 12x7/8	1	12x1/2x2'-7 1/2"	5x1/2x2'-7 1/2"	-	4	3
12x7/8 to 12x1	1	12x1/2x2'-7 1/2"	5x1/2x2'-7 1/2"	1/8	4	3
12x7/8 to 12x1 1/8	1	12x1/2x2'-7 1/2"	5x1/2x2'-7 1/2"	1/4	4	3
12x7/8 to 12x1 5/8	1	12x1/2x2'-7 1/2"	5x1/2x2'-7 1/2"	3/4	4	3
12x1 to 12x1	1	12x1/2x2'-7 1/2"	5x5/8x2'-7 1/2"	-	4	3
12x1 to 12x1 1/8	1	12x1/2x2'-7 1/2"	5x5/8x2'-7 1/2"	1/8	4	3
12x1 to 12x1 3/8	1	12x1/2x2'-7 1/2"	5x5/8x2'-7 1/2"	3/8	4	3
12x1 to 12x1 1/2	1	12x1/2x2'-7 1/2"	5x5/8x2'-7 1/2"	1/2	4	3
12x1 to 12x1 5/8	1	12x1/2x2'-7 1/2"	5x5/8x2'-7 1/2"	5/8	4	3
12x1 1/8 to 12x1 1/8	1	12x1/2x3'-1 1/2"	5x3/4x3'-1 1/2"	-	5	3
12x1 1/8 to 12x1 1/4	1	12x1/2x3'-1 1/2"	5x3/4x3'-1 1/2"	1/8	5	3
12x1 1/8 to 12x1 1/2	1	12x1/2x3'-1 1/2"	5x3/4x3'-1 1/2"	3/8	5	3
12x1 1/8 to 12x1 5/8	1	12x1/2x3'-1 1/2"	5x3/4x3'-1 1/2"	1/2	5	3
12x1 1/8 to 12x1 3/4	1	12x1/2x3'-1 1/2"	5x3/4x3'-1 1/2"	5/8	5	3
12x1 1/4 to 12x1 1/4	1	12x5/8x3'-1 1/2"	5x3/4x3'-1 1/2"	-	5	3
12x1 1/4 to 12x1 3/8	1	12x5/8x3'-1 1/2"	5x3/4x3'-1 1/2"	1/8	5	3
12x1 1/4 to 12x1 1/2	1	12x5/8x3'-1 1/2"	5x3/4x3'-1 1/2"	1/4	5	3
12x1 1/4 to 12x1 5/8	1	12x5/8x3'-1 1/2"	5x3/4x3'-1 1/2"	3/8	5	3
12x1 1/4 to 12x1 3/4	1	12x5/8x3'-1 1/2"	5x3/4x3'-1 1/2"	1/2	5	3
12x1 3/8 to 12x1 3/8	1	12x5/8x3'-7 1/2"	5x7/8x3'-7 1/2"	-	6	3
12x1 3/8 to 12x1 3/4	1	12x5/8x3'-7 1/2"	5x7/8x3'-7 1/2"	3/8	6	3
12x1 3/8 to 12x1 7/8	1	12x5/8x3'-7 1/2"	5x7/8x3'-7 1/2"	1/2	6	3
12x1 1/2 to 12x1 1/2	1	12x3/4x3'-7 1/2"	5x7/8x3'-7 1/2"	-	6	3
12x1 1/2 to 12x1 7/8	1	12x3/4x3'-7 1/2"	5x7/8x3'-7 1/2"	3/8	6	3
12x1 1/2 to 12x2	1	12x3/4x3'-7 1/2"	5x7/8x3'-7 1/2"	1/2	6	3
14x7/8 to 14x7/8	2	14x3/8x3'-1 1/2"	6x1/2x3'-1 1/2"	-	5	3
14x7/8 to 14x1	2	14x3/8x3'-1 1/2"	6x1/2x3'-1 1/2"	1/8	5	3
14x7/8 to 14x1 1/4	2	14x3/8x3'-1 1/2"	6x1/2x3'-1 1/2"	3/8	5	3
14x7/8 to 14x1 3/8	2	14x3/8x3'-1 1/2"	6x1/2x3'-1 1/2"	1/2	5	3
14x7/8 to 14x1 1/2"	2	14x3/8x3'-1 1/2"	6x1/2x3'-1 1/2"	5/8	5	3
14x7/8 to 14x1 5/8	2	14x3/8x3'-1 1/2"	6x1/2x3'-1 1/2"	3/4	5	3
14x1 to 14x1	2	14x1/2x3'-1 1/2"	6x1/2x3'-1 1/2"	-	5	3
14x1 to 14x1 1/4	2	14x1/2x3'-1 1/2"	6x1/2x3'-1 1/2"	1/4	5	3
14x1 to 14x1 3/8	2	14x1/2x3'-1 1/2"	6x1/2x3'-1 1/2"	3/8	5	3
14x1 to 14x1 1/2	2	14x1/2x3'-1 1/2"	6x1/2x3'-1 1/2"	1/2	5	3
14x1 1/8 to 14x1 7/8	2	14x1/2x3'-1 1/2"	6x5/8x3'-1 1/2"	3/4	5	3
14x1 3/8 to 14x1 7/8	2	14x5/8x4'-1 1/2"	6x3/4x4'-1 1/2"	1/2	7	3
18x7/8 to 18x7/8	3	18x1/2x2'-1"	8x1/2x2'-1"	-	3	3
18x1 to 18x1	3	18x1/2x2'-1"	8x5/8x2'-1"	-	3	3
18x1 1/8 to 18x1 1/8	4	18x5/8x2'-7"	8x5/8x2'-7"	-	4	3
18x1 1/4 to 18x1 1/4	4	18x5/8x3'-1"	8x3/4x3'-1"	-	5	3
18x1 1/2 to 18x1 1/2	4	18x3/4x3'-7"	8x1x3'-7"	-	6	3

WEB SPLICES

Web Depth	"A" Bolts Per Row	Pitch "B"
48"	10	4"
62"	12	4 1/2"
72"	16	4"
76"	17	4"



TYPE 1



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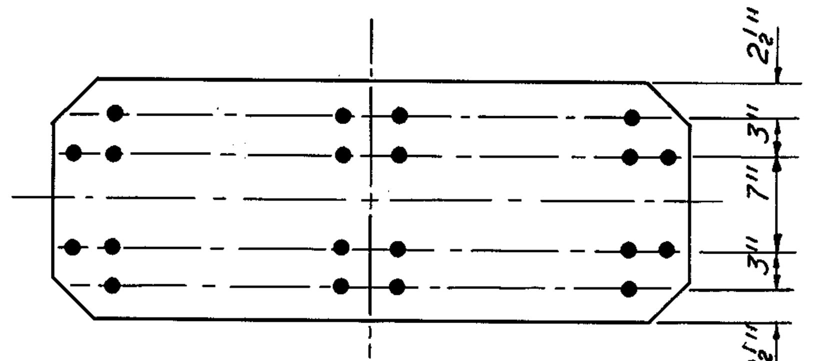

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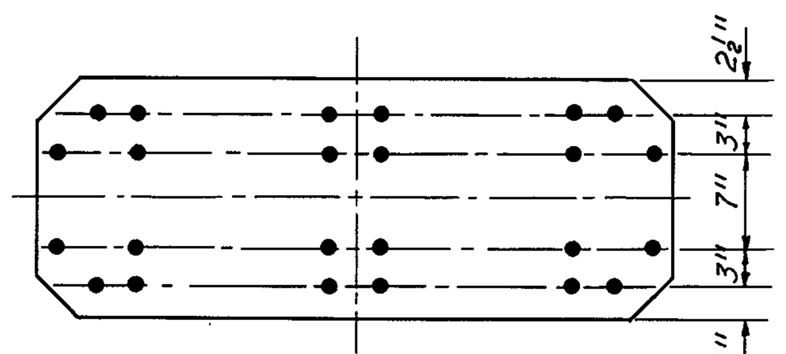


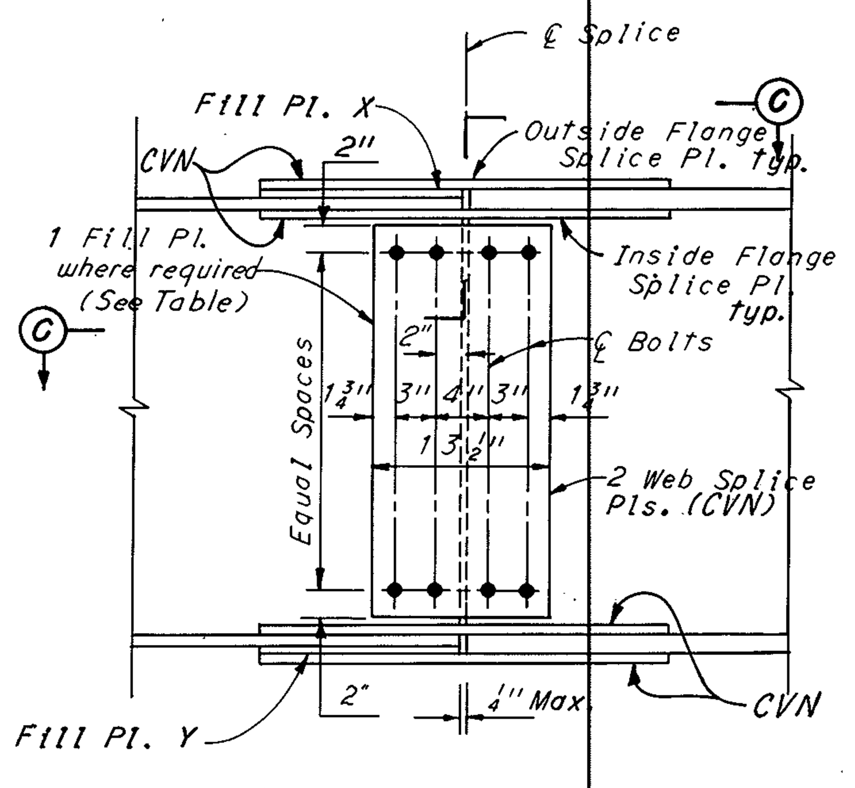
TYPE 4

GIRDER FLANGE SPLICES

Note:
For dimensions and notes not shown on girder flange types 1, 3 and 4 see Type 2.

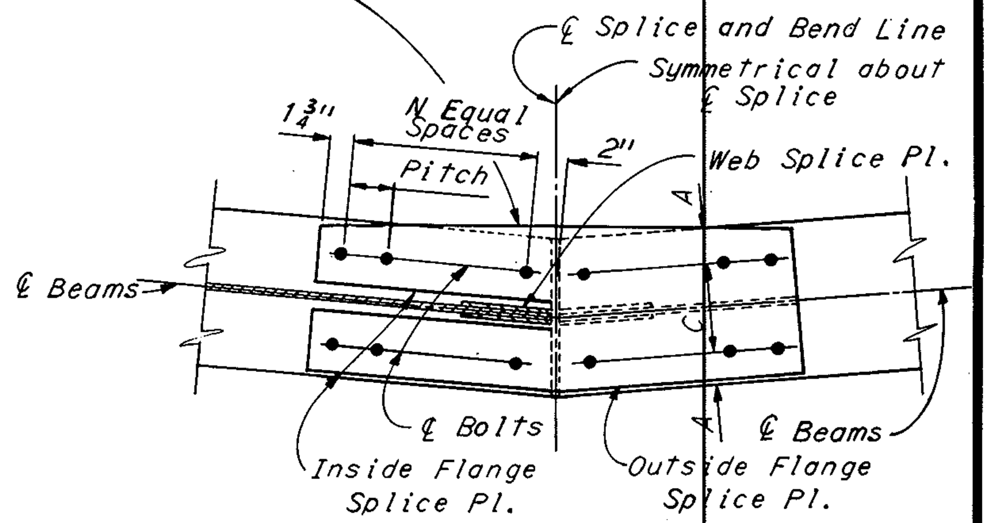
Note:
Centerline of flange bolt is centered on inside flange plate on beam splices.

CVN-See Sheet 214.



BEAM SPLICE DETAIL 2
WEB SPLICE TYPE A

Edge of flange splice plate shall be straight between ends. No re-entrant cuts

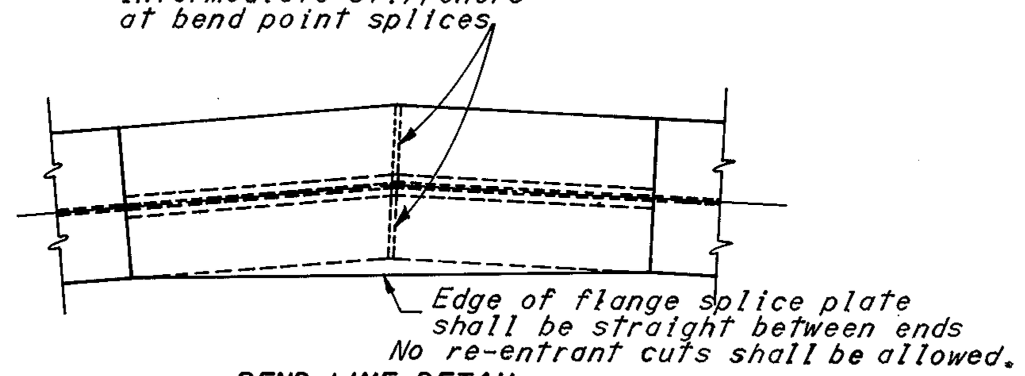


SECTION C-C

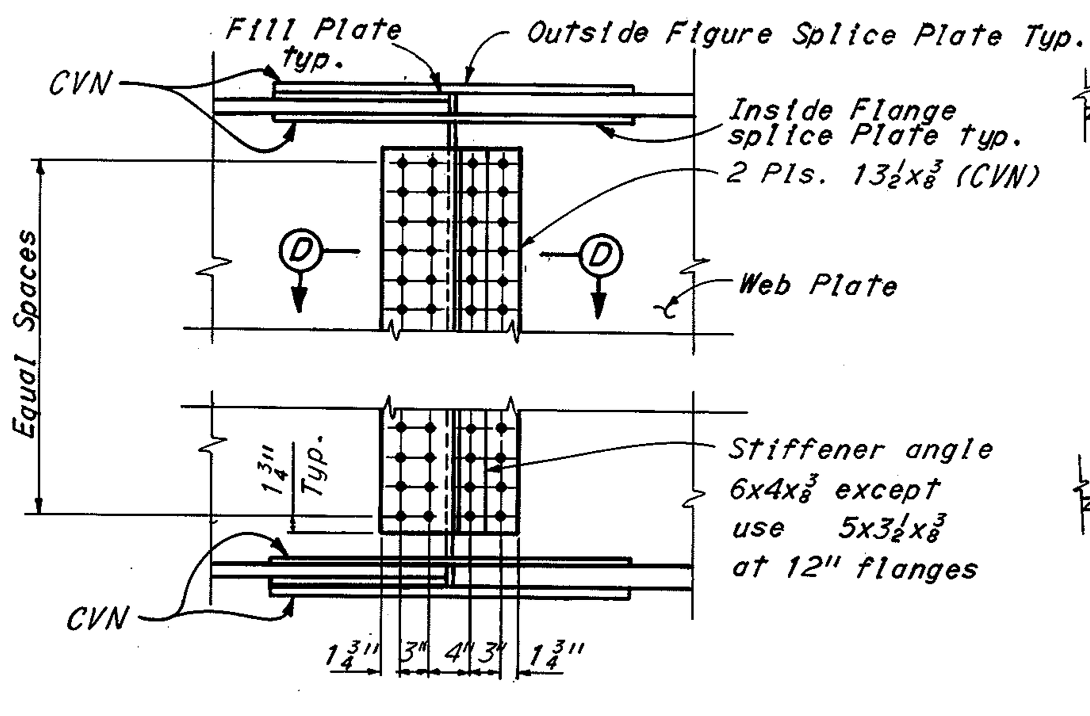
Note:
In the final shop assembly, fills shall be furnished to the nearest 1/16 inch in thickness based on the actual measured sizes of the members being spliced.

Optional shop splices will be permitted in the webs and flanges of girders but their locations shall be submitted to the director for approval.

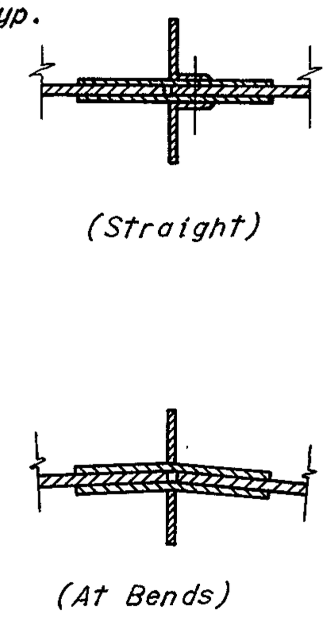
Intermediate stiffeners at bend point splices



BEND LINE DETAIL



WEB SPLICE



SECTION D-D

GIRDER SPLICE DETAILS

Notes:
Both top and bottom flange splices are identical.
All field splices shall be made with 1 1/8 high strength bolts. The bolts shall be placed with the heads on the outside face of the exterior girders, and the bottom of the girder flange.
Use intermediate stiffener plates rather than angles where splices are located at bend points and where crossframes are located at splices on curved girders.
Align stiffeners as required to accomodate crossframes.

H.N.T.B. BRIDGE NO. 1 2 5 6 7 8 9 10 13 14 15

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

SPLICE DETAILS

SCALE: NONE

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

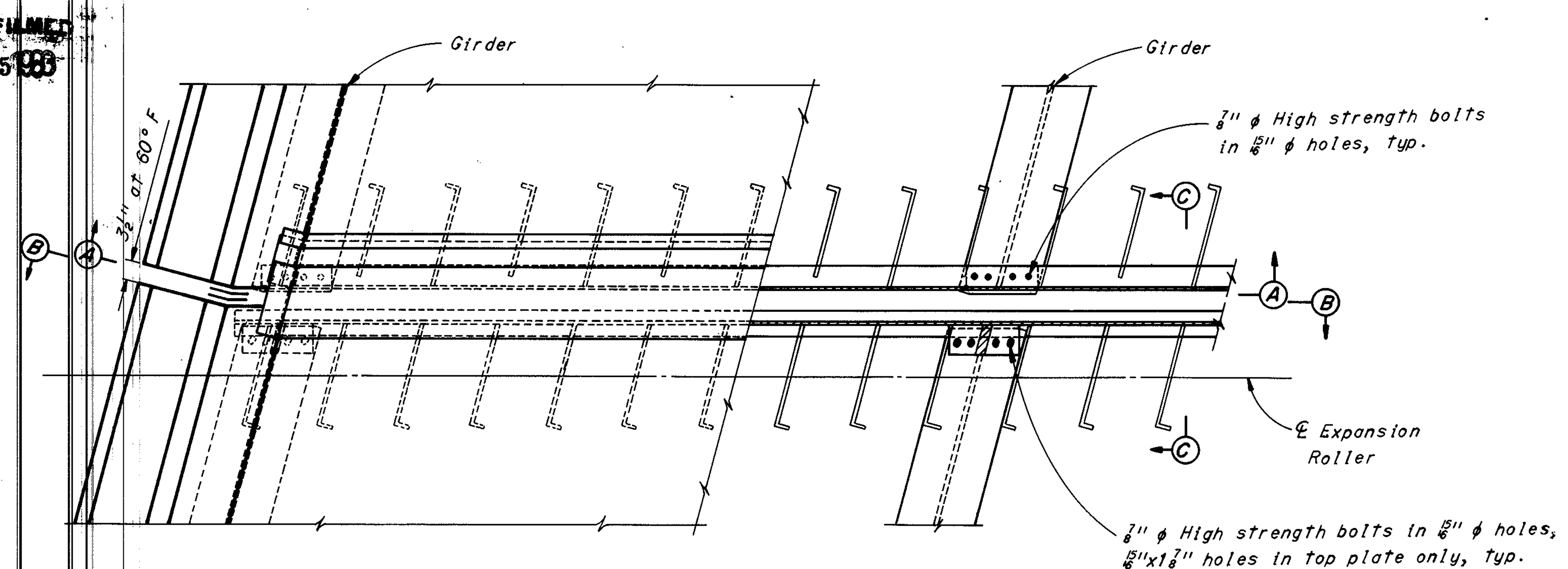
Revised 7-23-75 By R.A.S.

DRAWN R.A.P.	TRACED	CHECKED B.M.	REVIEWED	REVISED
DATE 12-15-69	DATE	DATE 1-13-70	DATE 11-23-71	

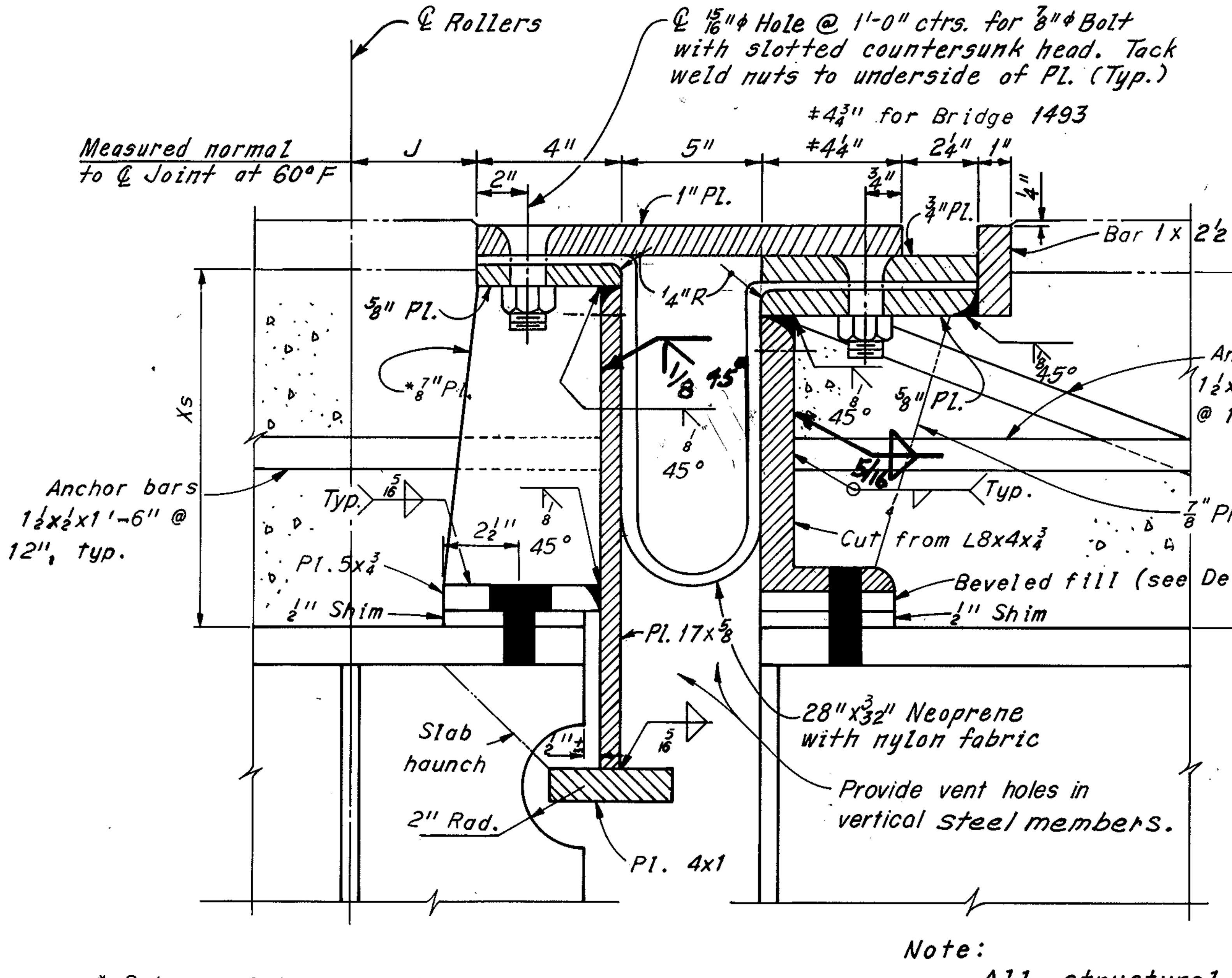
1668

FED. ROAD DIV. NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			356 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22



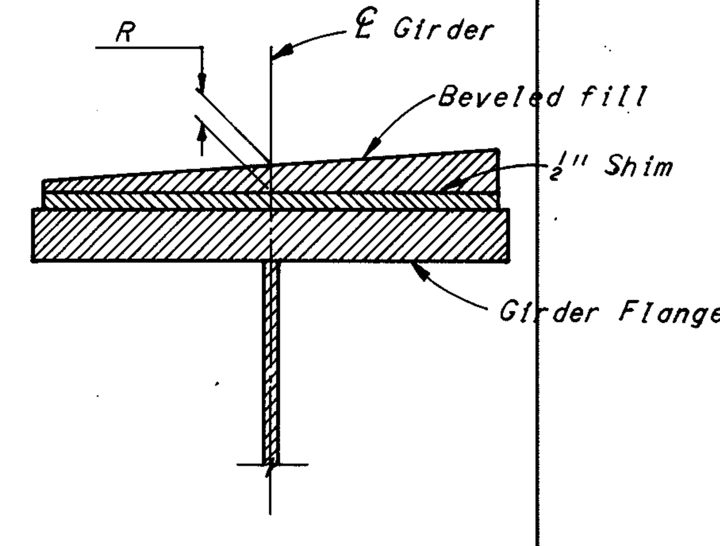
PART PLAN AT EXPANSION JOINT



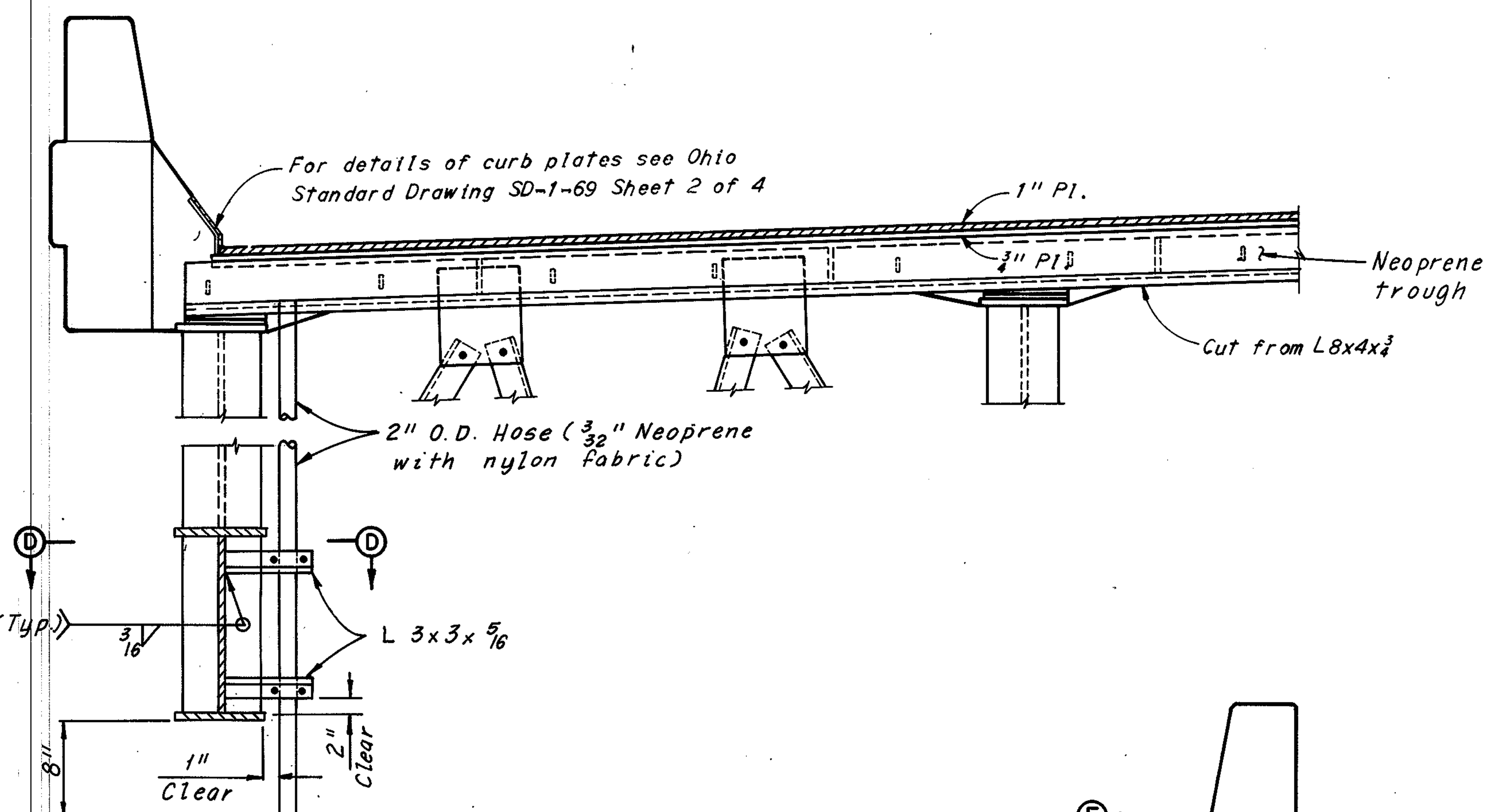
* Set normal to girder flange

SECTION C-C

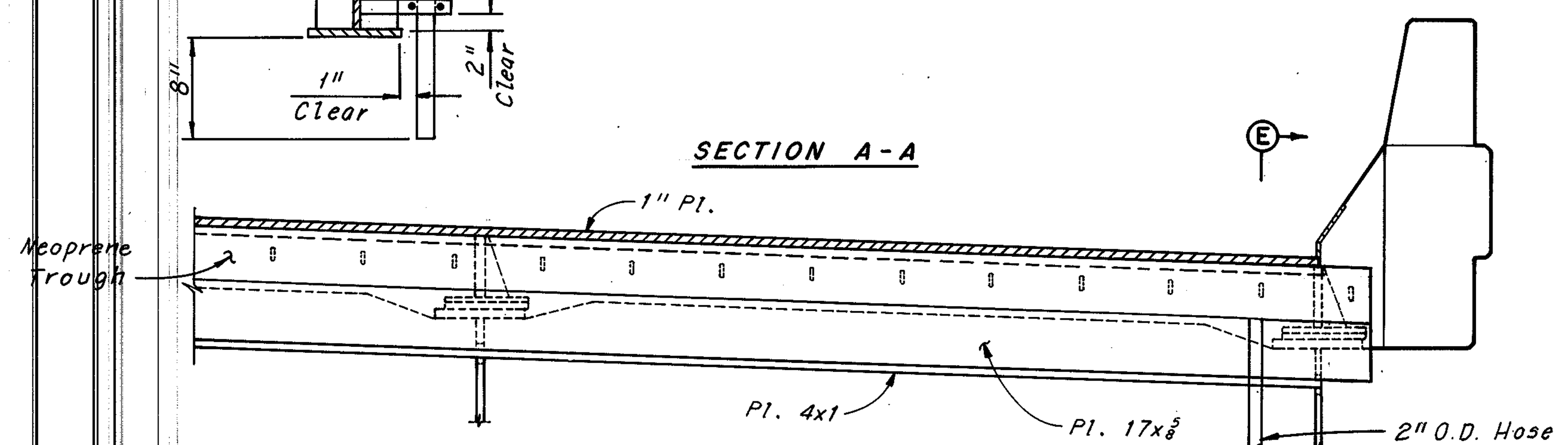
Note:
All structural steel components of the deck expansion joints including curb plates, anchor bars, shims, bevel fills and anchor bolts shall be included with Item Special, Sliding Plate Intermediate Expansion Joint With Neoprene Trough, for payment.



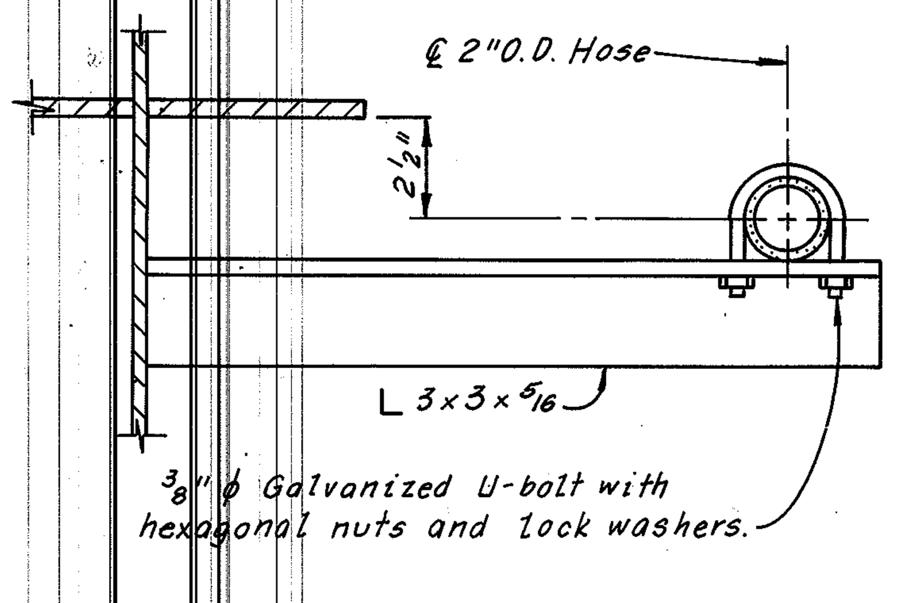
DETAIL A



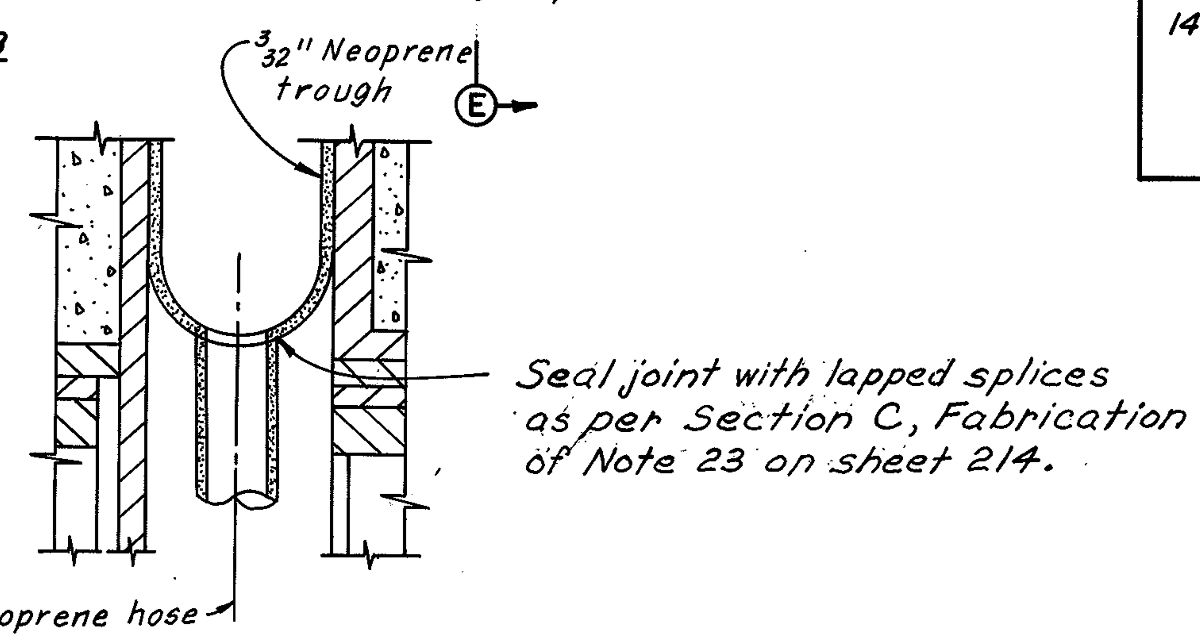
SECTION A-A



SECTION B-B



SECTION D-D



PART SECTION E-E

TABLE OF DIMENSIONS

BRIDGE	UNITS	GIRDER	A	B	R	C	D	x_s	x_c	E	F	J	G	H
1487 W. bound	1 to 2	All Girders	4"	2"	3/4"	2'-7"	6"	9"	9"	1'-1 1/2"	7 3/8"	4 1/2"	7 1/4"	10 1/2"
								8 7/8"	8 7/8"					
									8 1/2"	8 1/2"				
1487 E. bound	1 to 2	J, K, L, M, and N	4"	2"	3/4"	2'-7"	6"	8 1/2"	8 7/8"	1'-1 3/8"	7 1/4"	4 3/8"	7 1/4"	10 1/2"
		O	4"	2"	3/4"	2'-7"	6"	8 1/2"	8 7/8"	1'-1 3/8"	7 1/4"	4 3/8"	7 1/4"	10 1/2"
								9 5/8"	9 5/8"					
1488	1 to 2	A and B	4"	2"	1 1/4"	2'-7"	6"	9 1/4"	9 1/4"	1'-1 5/8"	7 1/2"	4 5/8"	7 1/2"	10 3/4"
		C, D and E	4"	2"	3/4"	2'-7"	6"	9 1/4"	9 1/4"	1'-1 5/8"	7 1/2"	4 5/8"	7 1/2"	10 3/4"
							9 5/8"	9 1/8"						
	2 to 3	A and B	4 1/2"	2 1/2"	1 1/4" 1 1/8"	2'-7"	7"	9 3/4"	9 1/2"	1'-1 1/8"	7"	4 1/8"	7"	10"
		C	4 1/2"	2 1/2"	3/4"	2'-7"	7"	9 1/4"	9 1/8"	1'-1 1/8"	7"	4 1/8"	7"	10"
		D and E	4 1/2"	2 1/2"	3/4"	2'-7"	7"	9 1/4"	9 1/4"	1'-1 1/8"	7"	4 1/8"	7"	10"
1493	1 to 2	A	4 1/2"	2 1/2"	1 5/8"	3'-0"	7"	9 3/8"	9 5/8"	1'-1 1/8"	7"	4 1/8"	7"	10"
		B	4 1/2"	2 1/2"	1 5/8"	3'-0"	7"	9 3/8"	9 5/8"	1'-1 1/8"	7"	4 1/8"	7"	10"
		C	4 1/2"	2 1/2"	1 1/4"	3'-0"	7"	9 1/8"	9 3/8"	1'-1 1/8"	7"	4 1/8"	7"	10"
		D and E	4 1/2"	2 1/2"	7/8"	3'-0"	7"	8 3/4"	9"	1'-1 1/8"	7"	4 1/8"	7"	10"
								8 7/8"		9 1/4"				
1489	1 to 2	A and B	4"	2"	7/8"	2'-7"	6"	8 7/8"	8 7/8"	1'-2 7/8"	8 3/4"	5 7/8"	8 3/4"	11 3/4"
		C	4"	2"	1 3/8" 1 1/4"	2'-7"	6"	9 3/8"	9 1/4"	1'-2 7/8"	8 3/4"	5 7/8"	8 3/4"	11 3/4"
		D and E	4"	2"	7/8" 1 1/4"	2'-7"	6"	9 1/4"	9 1/4"	1'-2 7/8"	8 3/4"	5 7/8"	8 3/4"	11 3/4"

Notes:
For location of dimensions see Sheet 357 and Section C-C.
Xc indicates depth of slab from top of portland cement concrete to top of flange of cantilevered girder.
Xs indicates depth of slab from top of portland cement concrete to top of flange of supported girder.
For details of crossframes at expansion joints see Sheet 360

H. N. T. B. BRIDGES NO. 2,7,13, AND 14

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

EXPANSION JOINT DETAILS

SCALE: NONE

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

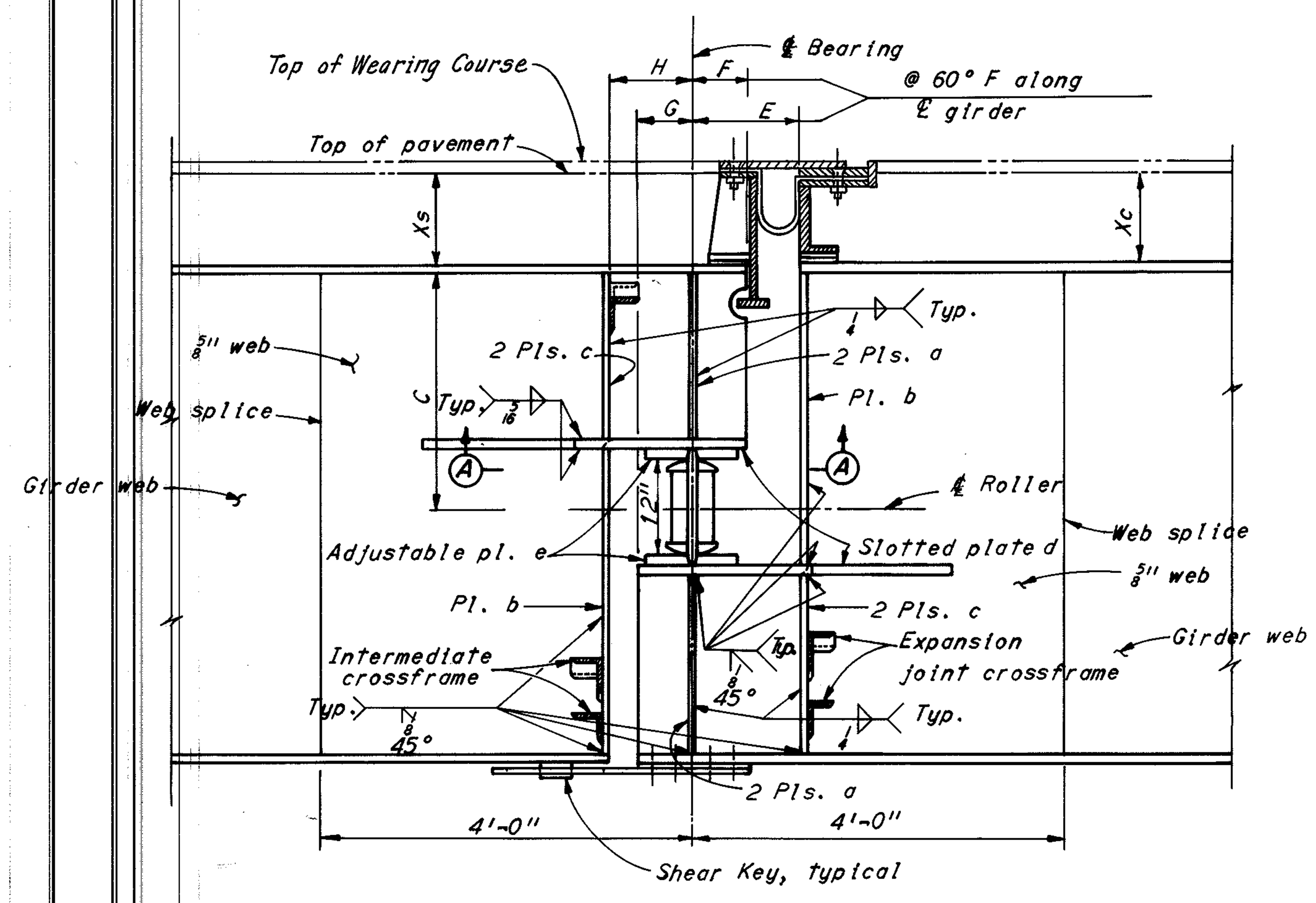
11-26-76

Revised 7-23-75 By R.A.S.

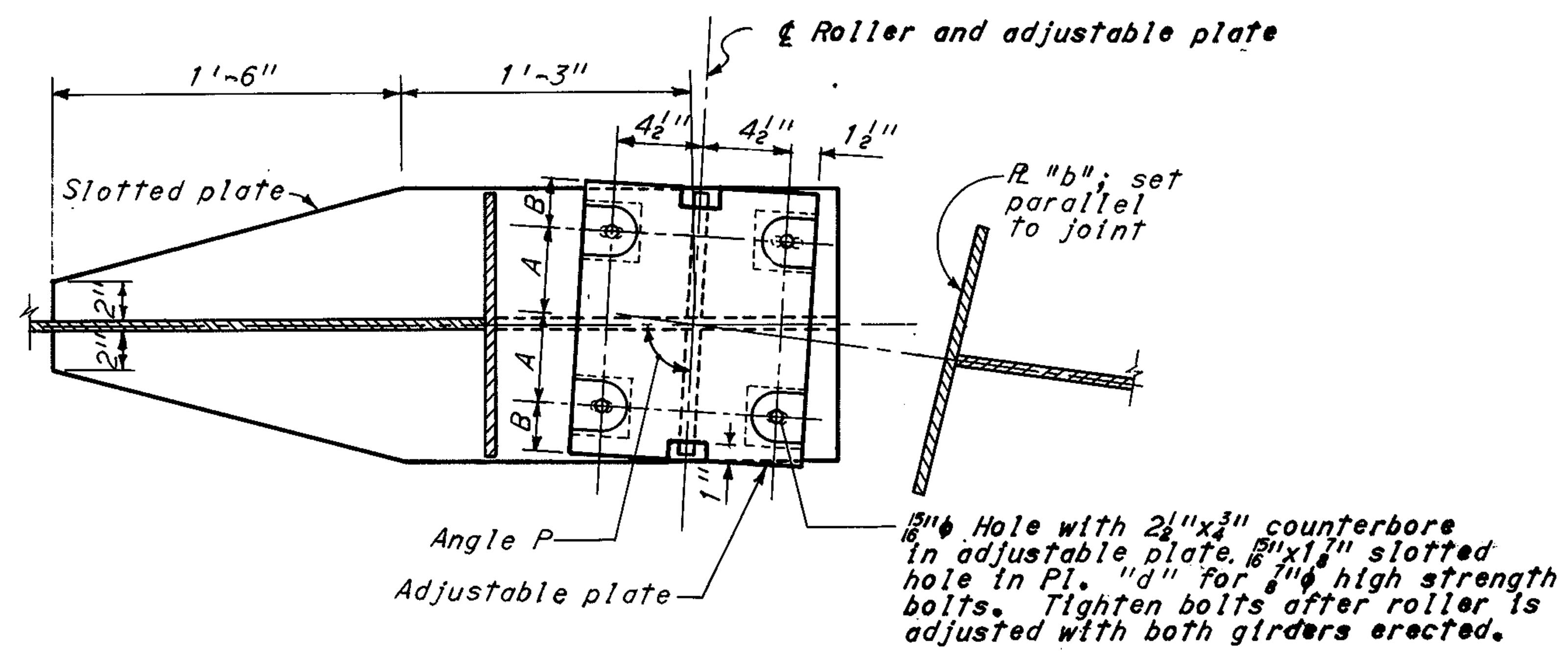
DRAWN RWB	TRACED	CHECKED DGS	REVIEWED MTK	REVISED 3-2-76
DATE 12-15-69	DATE	DATE 1-12-70	DATE 11-22-71	1668

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			357/389

STARK COUNTY
STA-30-14.12
STA-77-9.22



GIRDER TO GIRDER DETAILS

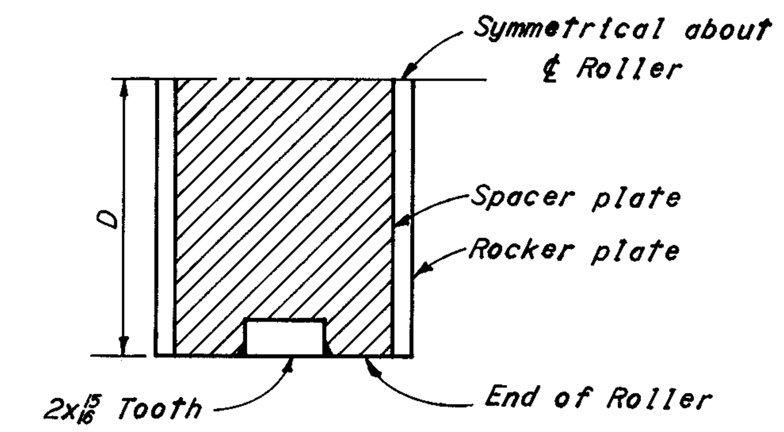


SECTION A-A

TABLE OF PLATES AND ANGLES

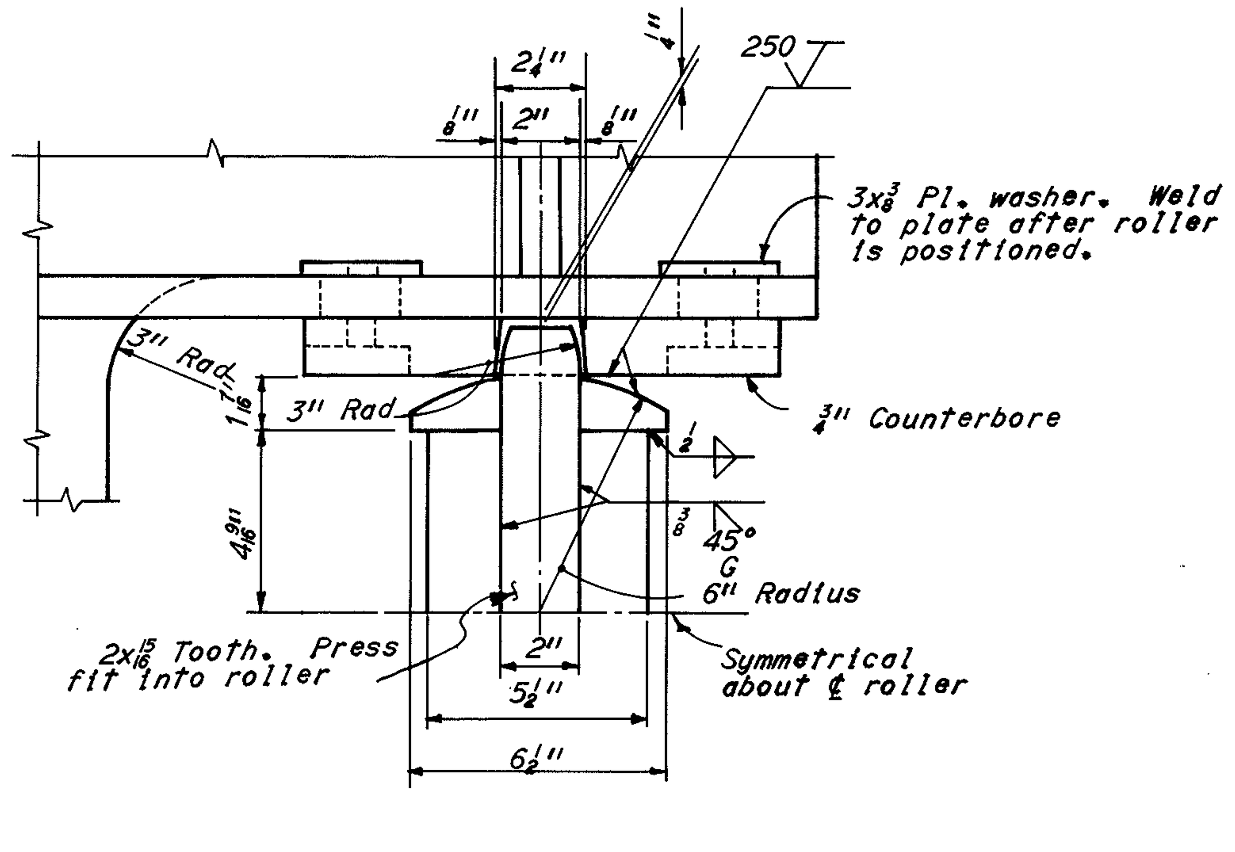
Bridge	Units	Girder	Pl. a	Pl. b	Pl. c	Pl. d	Pl. e	*Angle P
1487 W.bound	1 to 2	A	5½x¾	12x½	5½x½	12x1	12x1½x12	89°12'56"
		B	↑	↑	↑	↑	↑	89°26'00"
		C						89°38'41"
		D						89°50'57"
		E						90°02'51"
		F						90°14'24"
		G						90°25'37"
		H	↓	↓	↓	↓	↓	90°36'30"
		I	5½x¾	12x½	5½x½	12x1	12x1½x12	90°47'04"
1487 E.bound	1 to 2	J,K,L,M,N,O	5½x¾	12x½	5½x½	12x1	12x1½x12	90°00'00"
1488	1 to 2	A,B,C,D,E	5½x¾	12x½	5½x½	12x1	12x1½x12	N07°04'41"W
	2 to 3	A,B,C,D,E	6½x¾	14x½	6½x½	14x1	12x1½x14	90°00'00"
1493	1 to 2	A,B,C,D,E	6½x¾	14x½	6½x½	14x1	12x1½x14	N82°52'28"W
1489	1 to 2	A,B,C,D,E	5½x¾	12x½	5½x½	12x1	12x1½x12	N04°01'34"E

* At curved girders, the bearing of the ℄ roller and adjustable plate is given rather than the angle P.

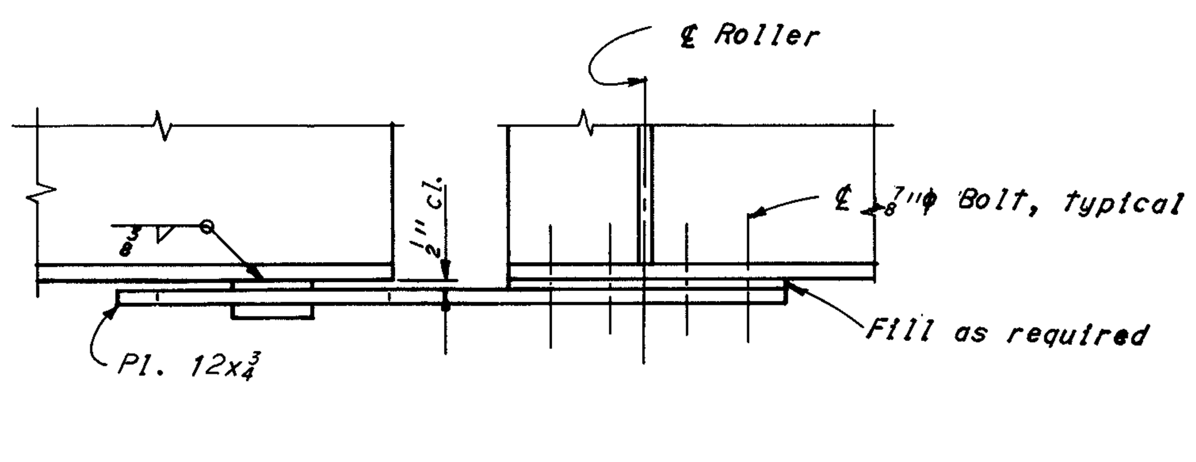


SECTION THRU ROLLER

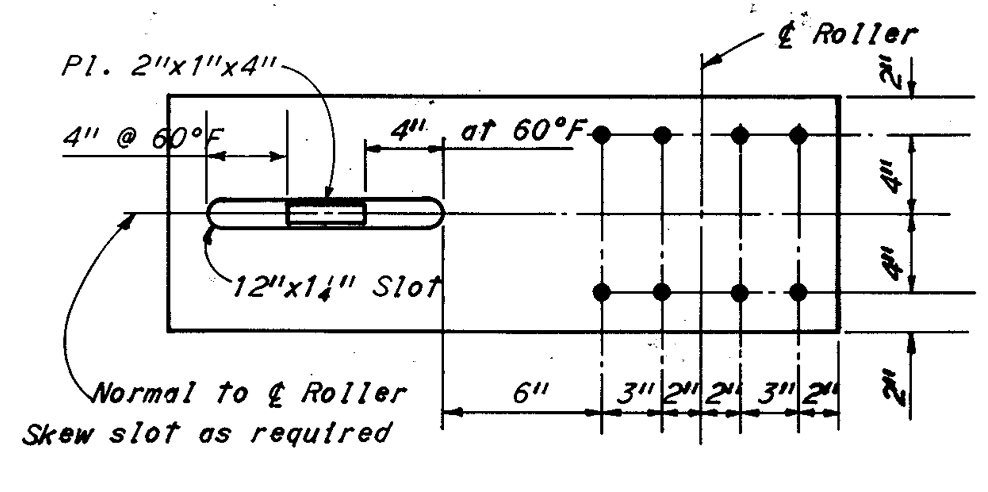
Notes:
For Table of Dimensions see Sheet 356
For expansion joint details see Sheet 356
For expansion joint crossframes see Sheet 360
Rollers and adjustable plates are to be fabricated from ASTM A588 steel (to be included with A36 for payment).
Spacer plates and tooth bars shall be fabricated of structural carbon steel conforming to ASTM A36.



ROLLER ELEVATION



ELEVATION



PLAN

SHEAR KEY DETAILS

H.N.T.B. BRIDGES NO. 2, 7, 13 AND 14

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

EXPANSION JOINT ROLLER DETAILS

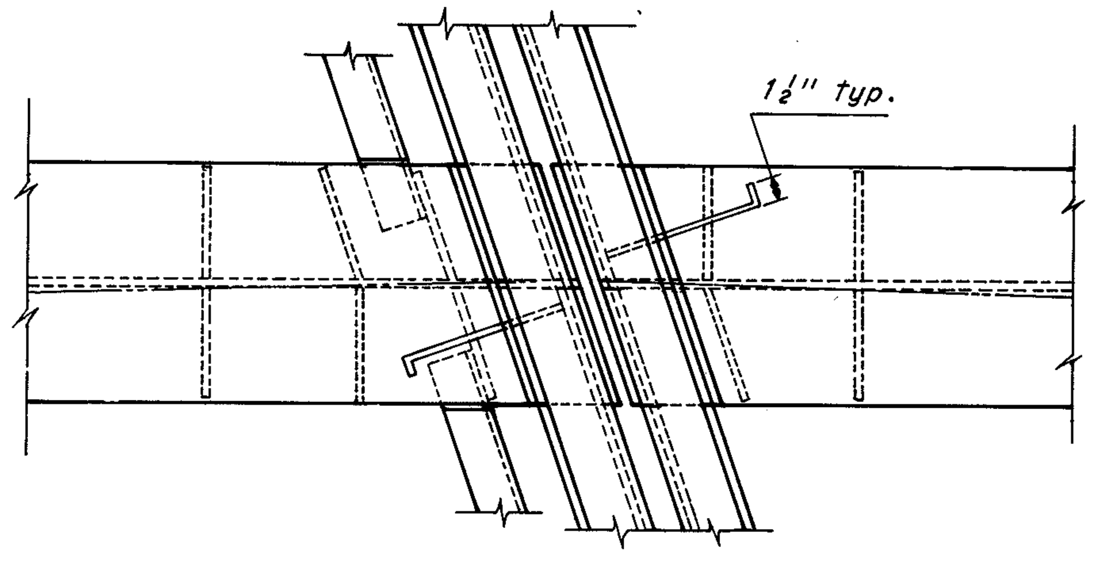
SCALE: NONE
RELOCATED U.S. 30
CANTON STARK COUNTY OHIO

DRAWN KSS	TRACED	CHECKED D.D.S.	REVIEWED M.S.K.	REVISED
DATE 12-15-69	DATE	DATE 1-12-70	DATE 11-22-71	1668

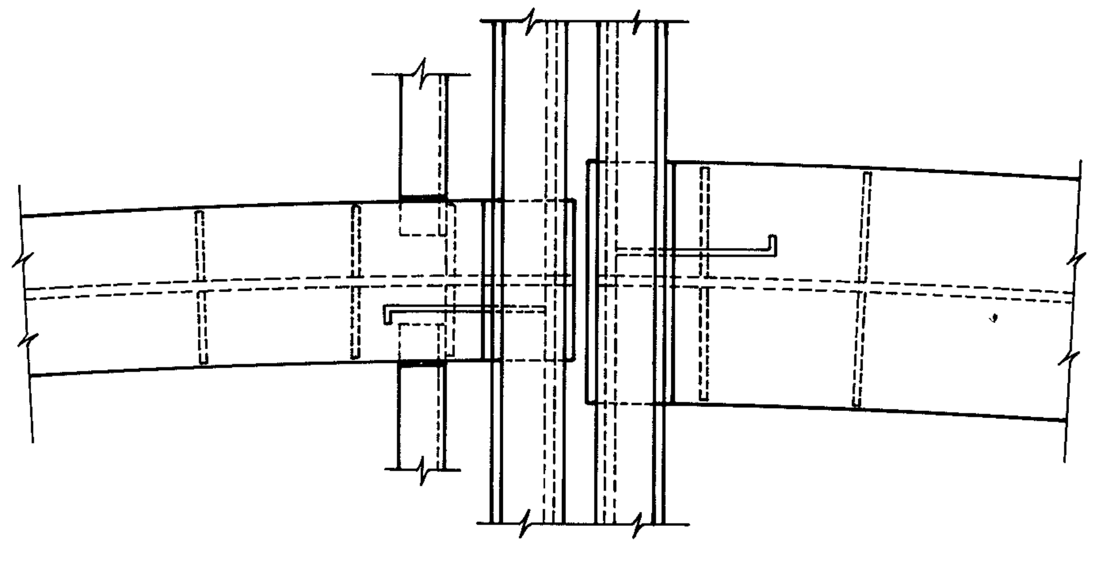
Revised 7-23-75 By R.A.S.

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			358 / 389

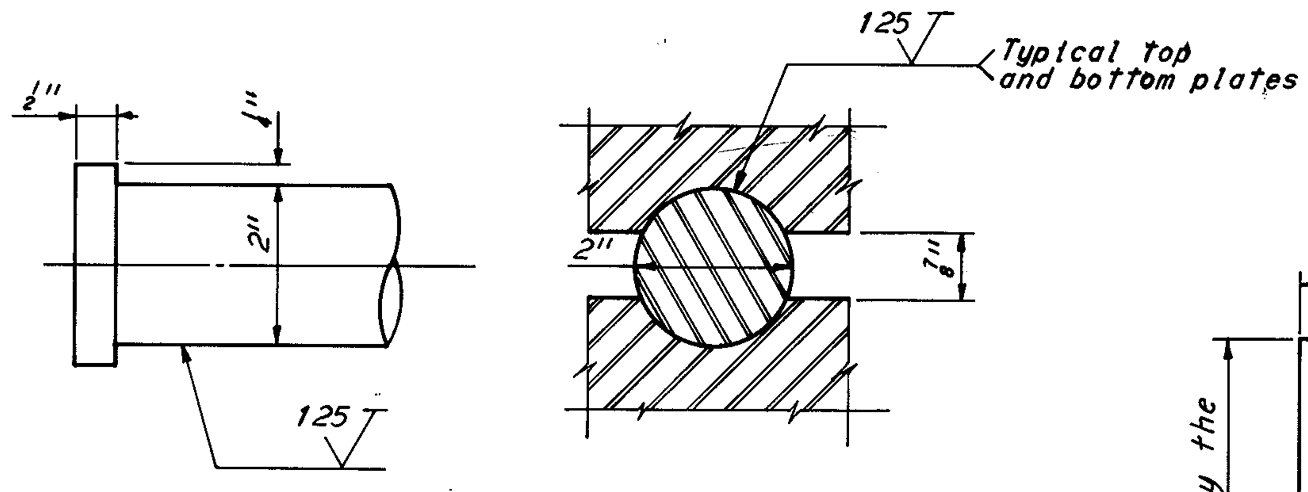
STARK COUNTY
STA-30-14.12
STA-77-9.22



PLAN BR. 9

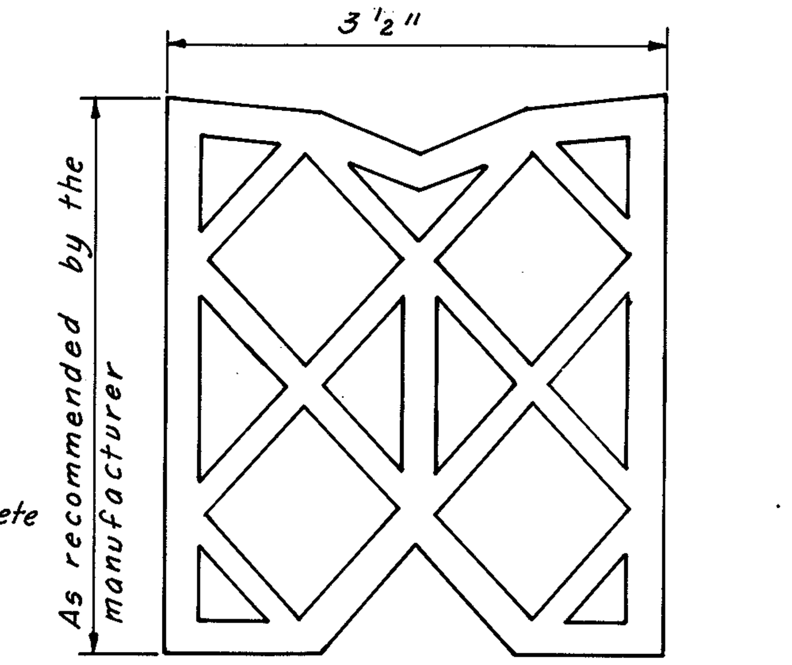


PLAN BR. 13



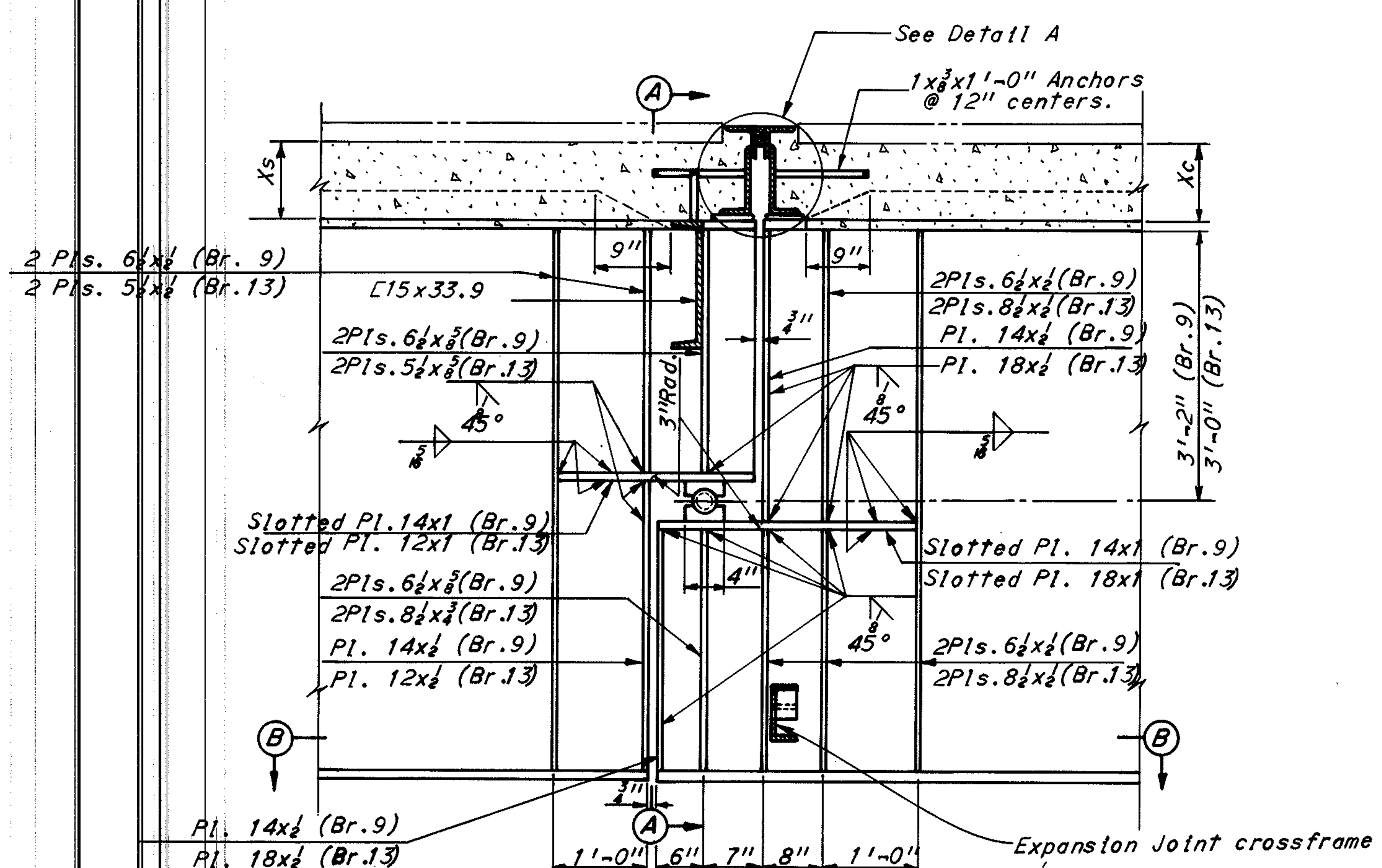
HINGE PIN DETAIL

Note:
Pin shall conform to ASTM Designation A-108.

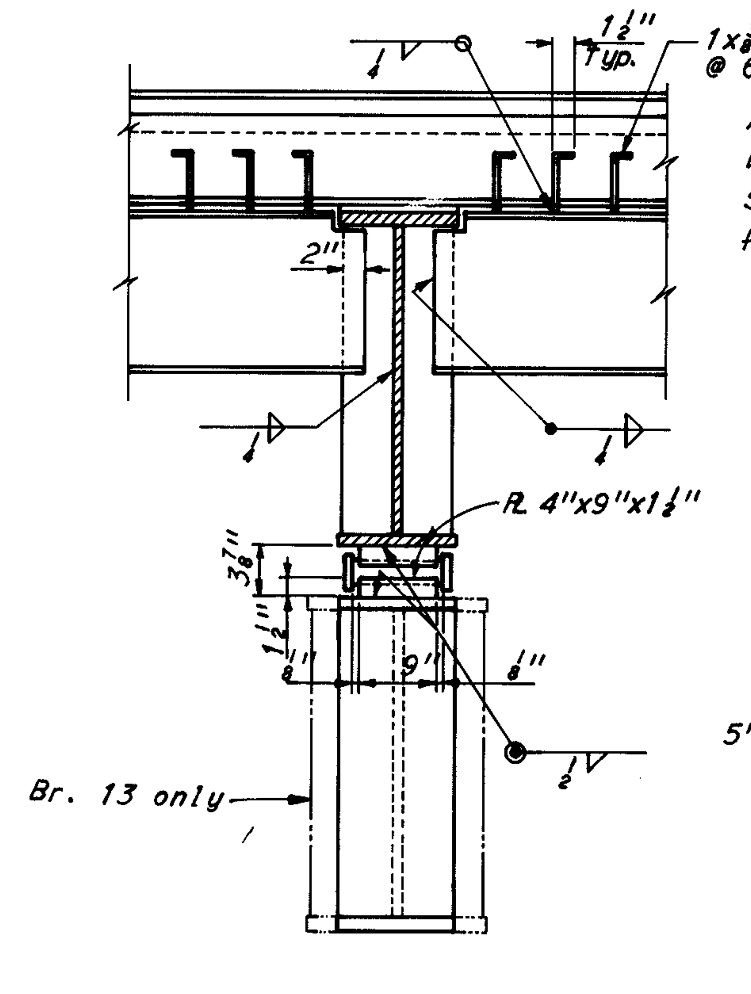


PREFORMED ELASTIC JOINT SEALER

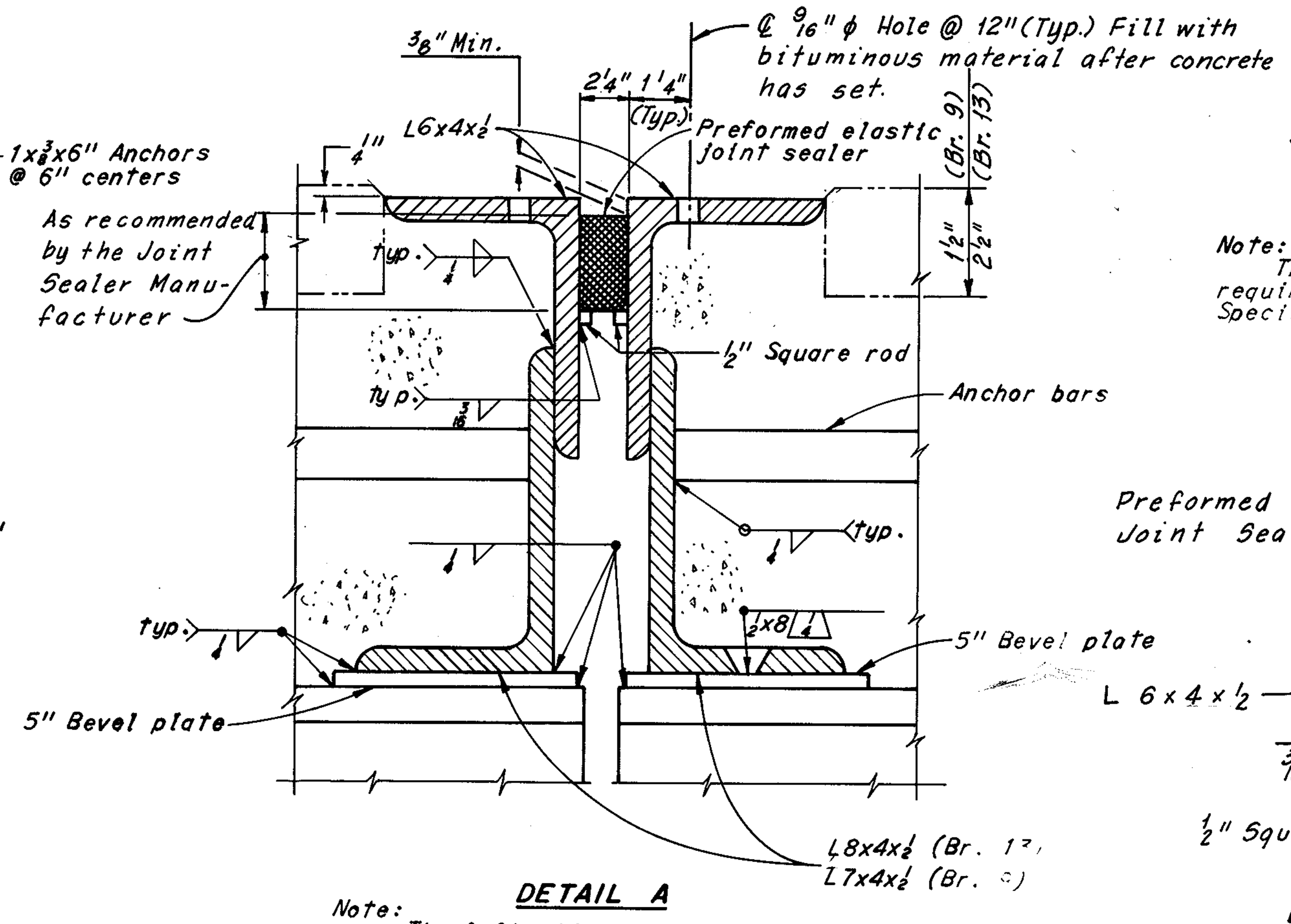
Note:
The preformed elastic joint sealer shall meet the requirements of Item 705.11 of "Construction and Material Specifications"



ELEVATION

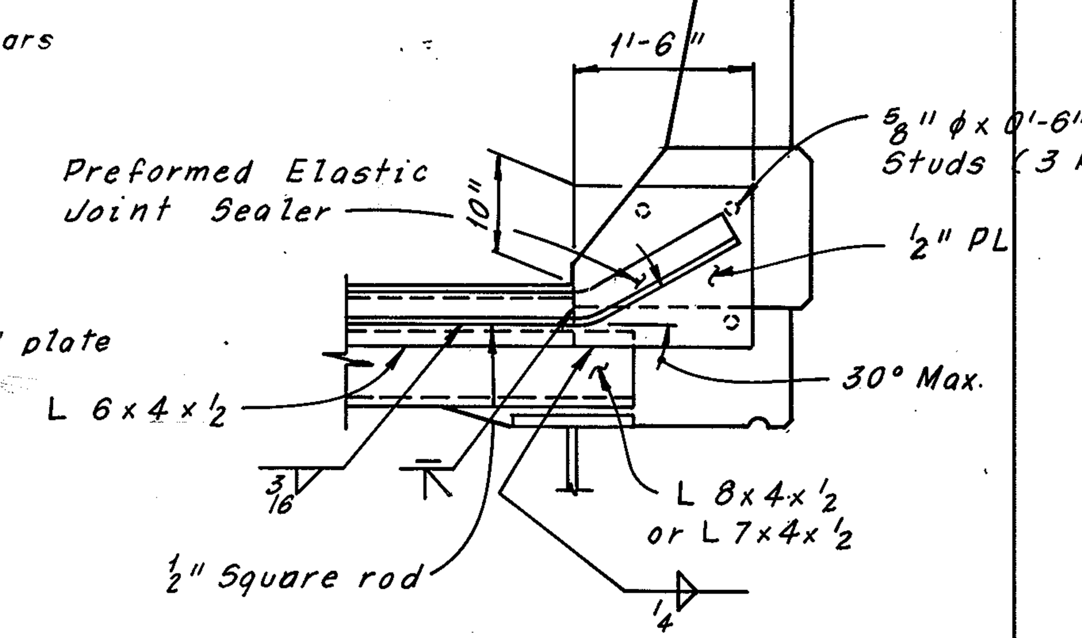


SECTION A-A



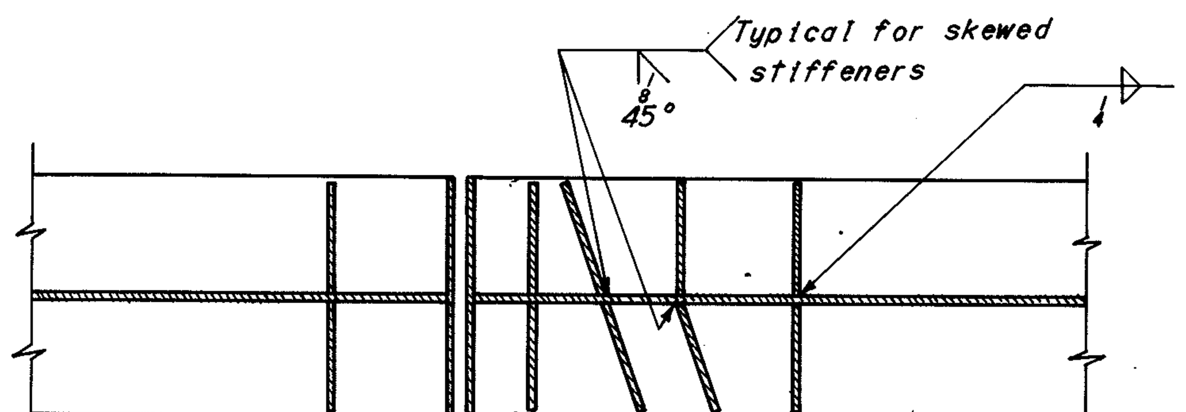
DETAIL A

Note:
The left side of the joint as shown above, must be welded to supporting girders before right side is welded.

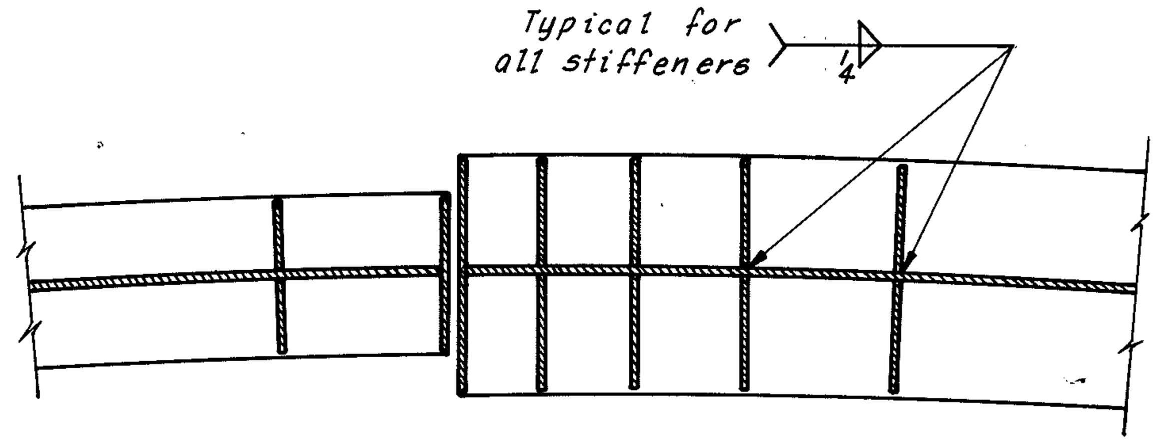


DETAILS OF JOINT AT CURB

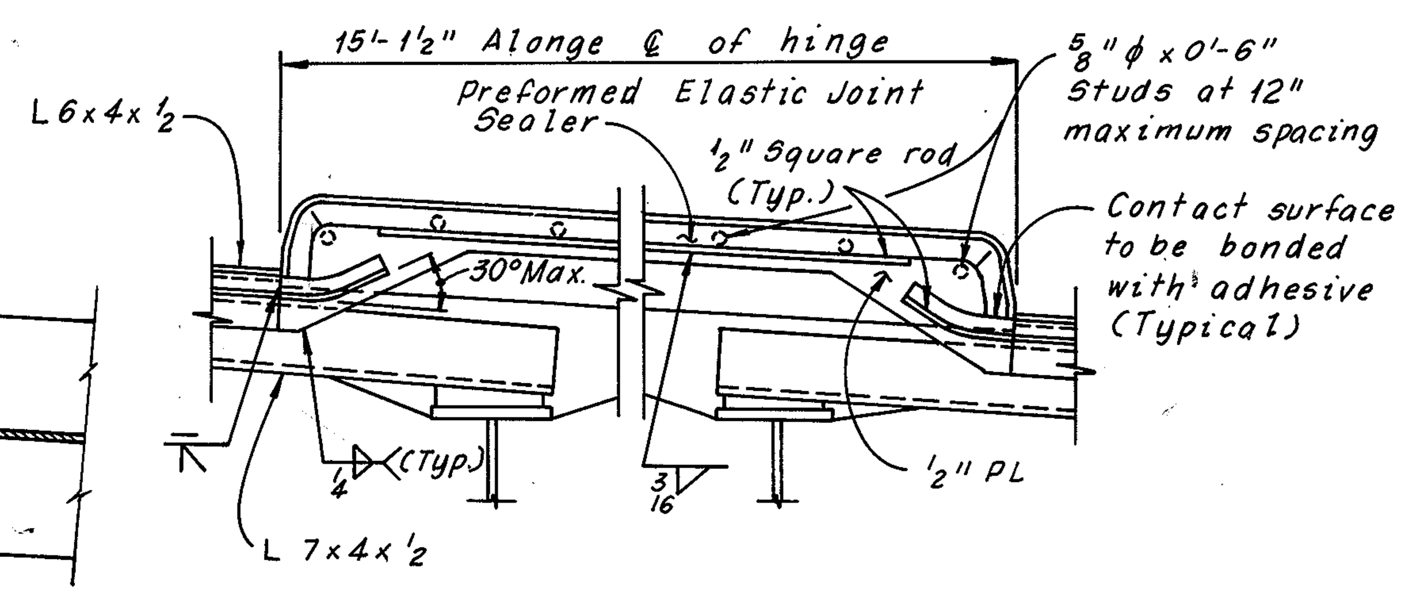
Notes:
Installation of preformed elastic joint sealer shall be in accordance with Special Provisions For Elastomeric Compression Seals In Structural Steel Joints, Sheet 365E.
Steel joint members shall be furnished in lengths as long as practicable. At all joints they shall be rigidly fastened together prior to placing concrete.
For crossframe at hinge, use expansion joint crossframe as shown on Sheet 360.
Hinge shoe plate shall conform to ASTM Designation A-36-62T.



SECTION B-B BR. 9



SECTION B-B BR. 13



DETAILS OF JOINT AT MEDIAN-BRIDGE 9

SLAB DEPTH AT GIRDERS			
Bridge	Girders	Xs (in.)	Xc (in.)
9	A, B, C, D	9¼	9¼
	E, F, G, H	9¼	9¼
	J	8	8
	K	8	8
13	A	9¾	9¼
	B	9¾	9¼
	C	9⅜	9
	D, E	9	8¾

Note:
Xs denotes depth of slab from top of pavement to top of flange of supported girder.
Xc denotes depth of slab from top of pavement to top of flange of cantilevered girder.

H.N.T.B. Bridge No. 9 = State Bridge No. STA.-30-1494
H.N.T.B. Bridge No. 13 = State Bridge No. STA.-30-1493

H.N.T.B. BRIDGES NO. 9 AND 13 | Revised 7-23-75 | By R.A.S.

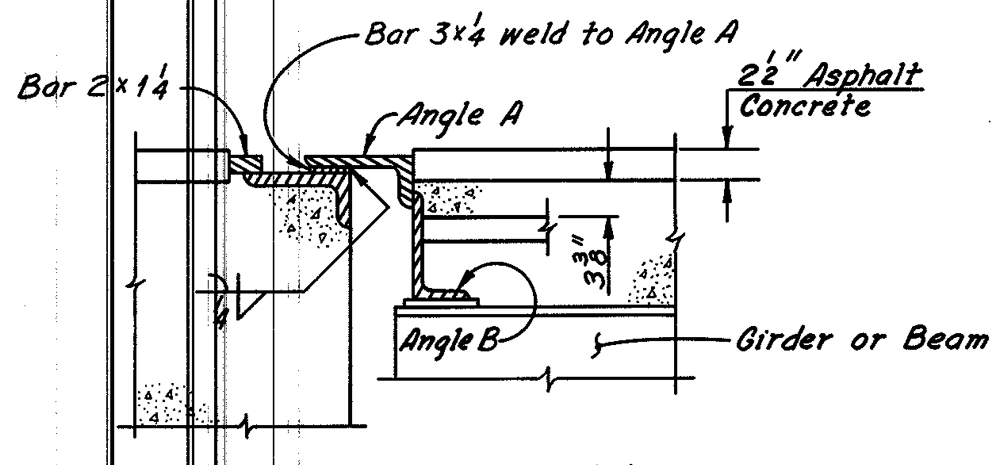
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

HINGE DETAILS

SCALE: NONE
RELOCATED U.S. 30
CANTON STARK COUNTY OHIO

DRAWN KSS DATE 12-5-69	TRACED DATE	CHECKED DGS DATE 12-23-69	REVIEWED MJK DATE 11-22-71	REVISED 1668

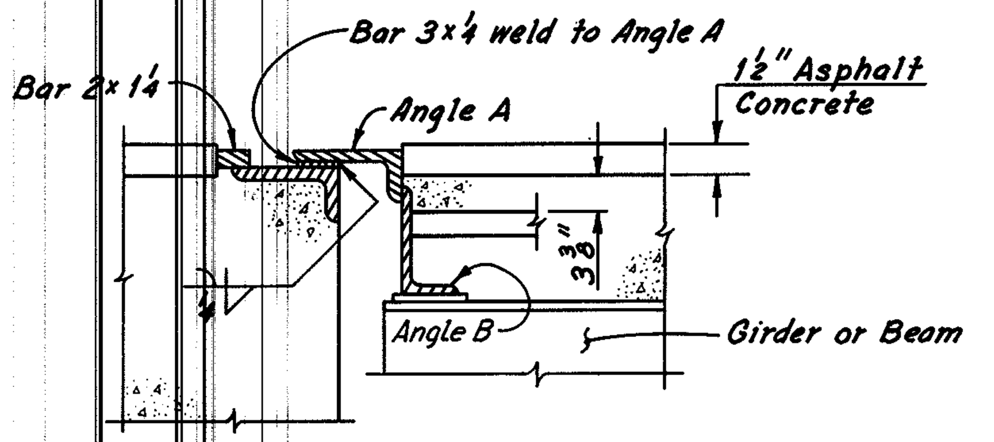
STARK COUNTY
STA-30-14.12
STA-77-9.22



NOTE: For additional end dam details see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4.

BRIDGES 1486, 1504, 1493 AND 1492

Note:
Asphalt concrete wearing course shown is not applicable at North Approach Slab, Bridge 1499.

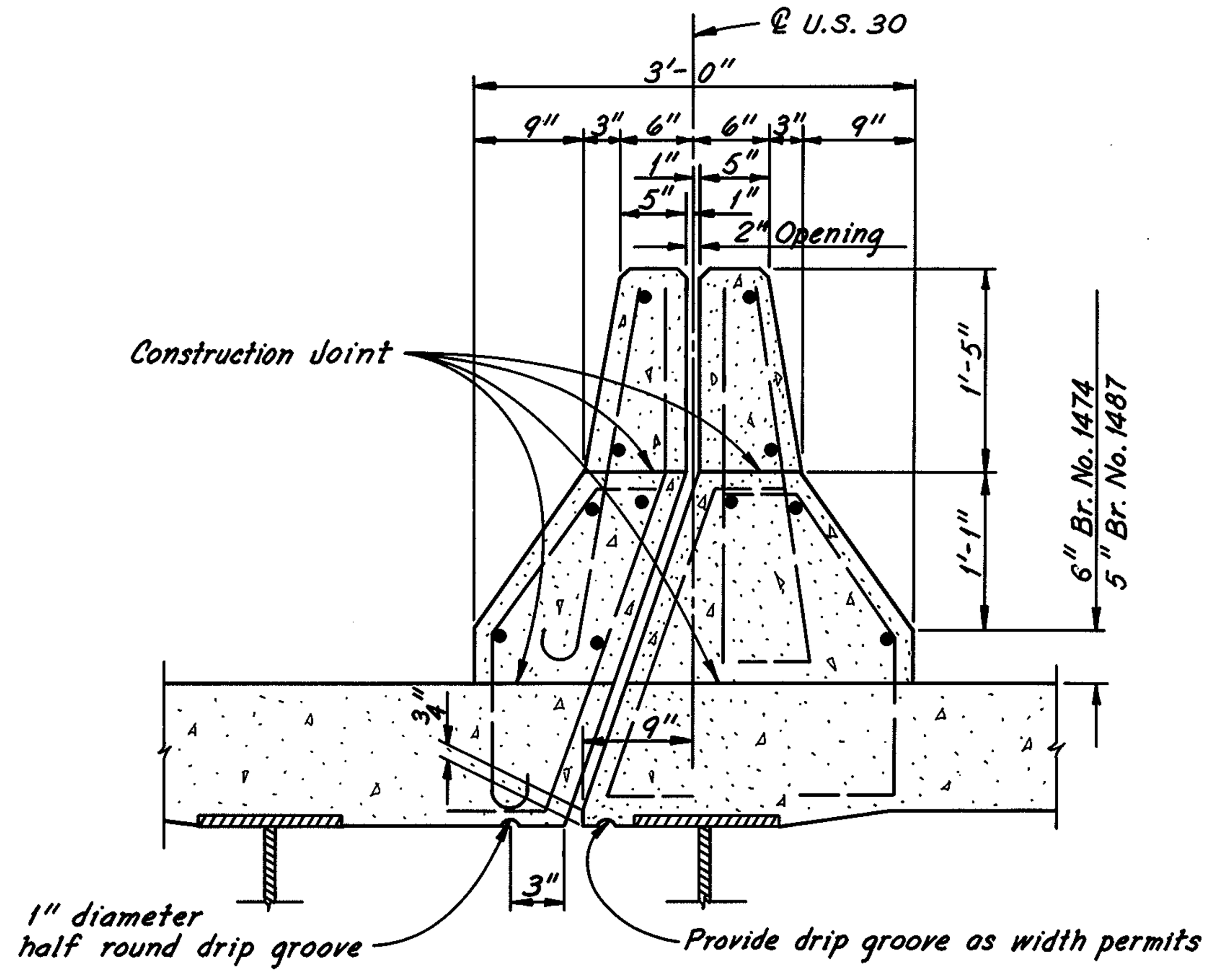


NOTE: For additional end dam details see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4.

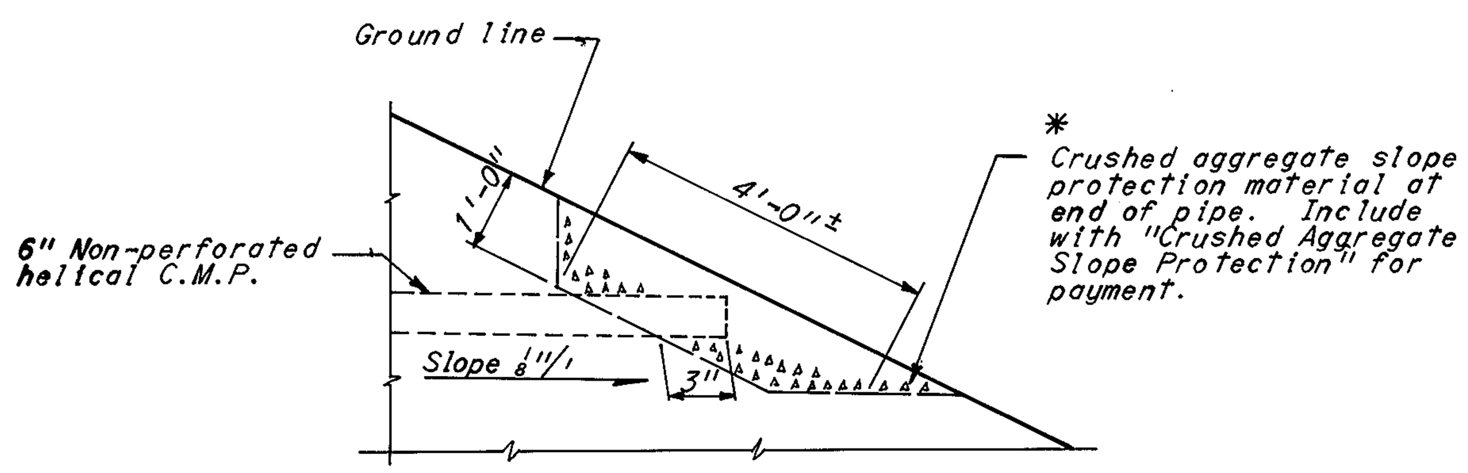
BRIDGES 1487, 1488, 1499, 1494 AND 1489

TABLE OF ANGLE SIZES		
Br. No.	Angle A	Angle B
1487	8 x 4 x 1	7 x 4 x 3/4
1486	8 x 4 x 1	7 x 4 x 3/4
1488	8 x 4 x 1	8 x 4 x 3/4
1499	8 x 4 x 1	7 x 4 x 3/4
1494	8 x 4 x 1	8 x 4 x 3/4
1504	8 x 4 x 1	8 x 4 x 3/4
1493	8 x 6 x 1	7 x 4 x 3/4
1489	8 x 4 x 1	8 x 4 x 3/4
1492	8 x 4 x 1	8 x 4 x 3/4

END DAM DETAILS

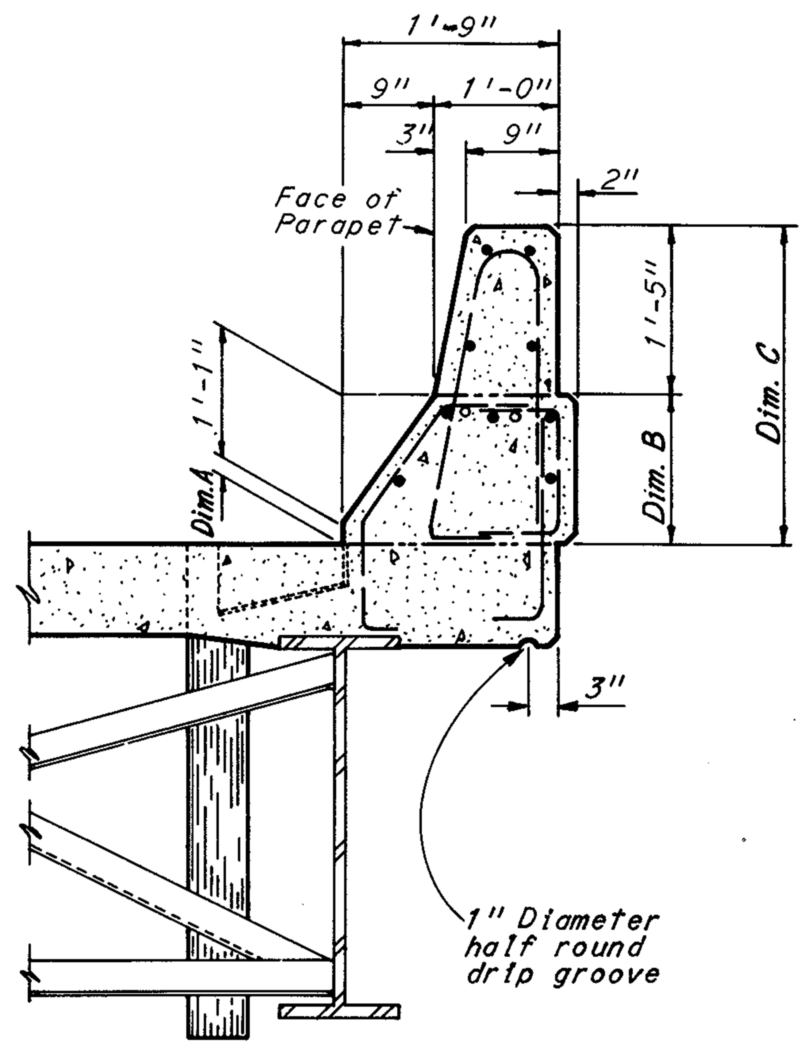


MEDIAN DETAIL BRIDGES 1474 AND 1487
(Asphalt Wearing Course not shown)



C.M.P OUTLET AT SIDE SLOPES

* For Bridge 1499 only, include with 6" Non-perforated helical C.M.P. for payment. Does not apply to Bridges 1474, 1474R or 1474L.



CONCRETE BRIDGE ROADWAY RAILING DETAILS
(Asphalt Wearing Course not shown)

TABLE OF DIMENSIONS			
Br. No.	Dim. A	Dim. B	Dim. C
1474	6"	1'-7"	3'-0"
1487	5"	1'-6"	2'-11"
1474R	6"	1'-7"	3'-0"
1486	6"	1'-7"	3'-0"
1488	5"	1'-6"	2'-11"
1499	5"	1'-6"	2'-11"
1494	5"	1'-6"	2'-11"
1504	6"	1'-7"	3'-0"
1493	6"	1'-7"	3'-0"
1489	5"	1'-6"	2'-11"
1474L	6"	1'-7"	3'-0"
1492	6"	1'-7"	3'-0"

H.N.T.B BRIDGE NO. 1, 2, 5, 6, 7, 8, 9, 10, 13, 14, 15, 22

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

COMMON DETAILS

SCALE: NONE

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN RAP DATE 1-9-70	TRACED DATE	CHECKED DGS DATE 2-6-70	REVIEWED MYK DATE 11-22-71	REVISED

Revised 7-23-75 By R.A.S.

1668

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

H.N.T.B BRIDGE NO. 1, 2, 5, 6, 7, 8, 9, 10, 13, 14, 15

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

CROSSFRAME AND DIAPHRAGM DETAILS

SCALE: NONE

RELOCATED U.S. 30

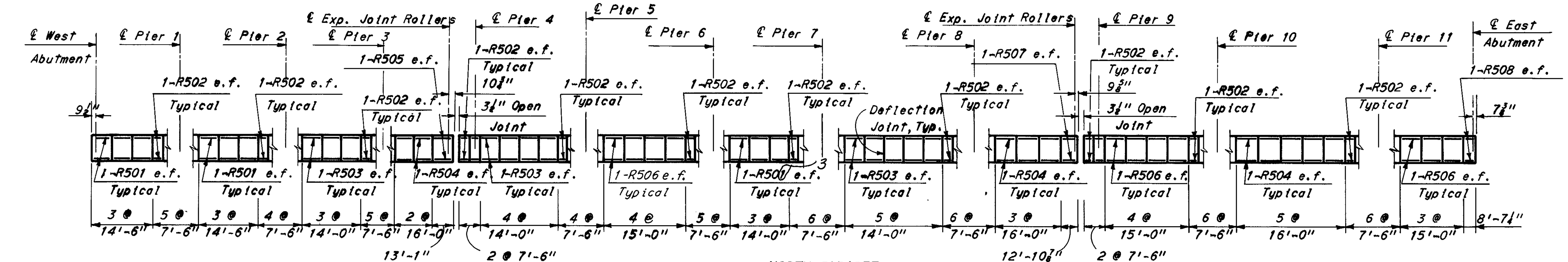
CANTON STARK COUNTY OHIO

DRAWN DWE DATE 12-30-69 | TRACED DATE | CHECKED DGS DATE 4-30-70 | REVIEWED MJK DATE 11-22-71 | REVISED 5-19-76 7-12-76 1668

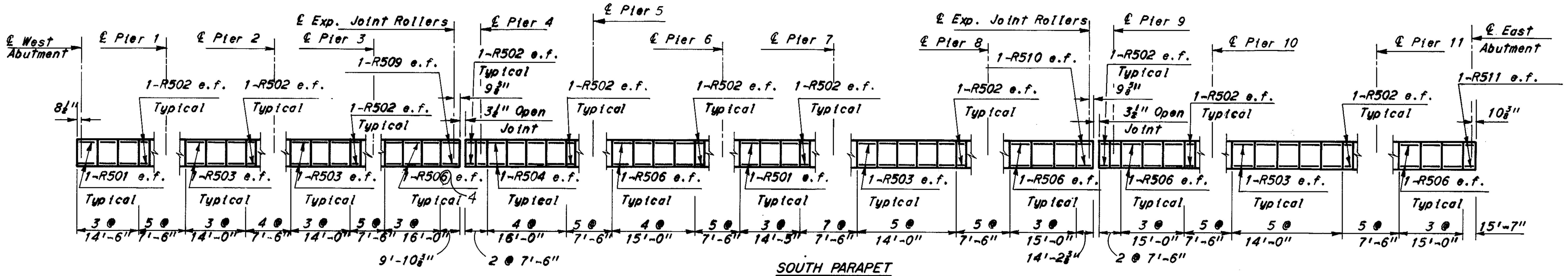
Revised 7-23-75 By R.A.S.

FED. ROAD DIV. NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	361/389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22

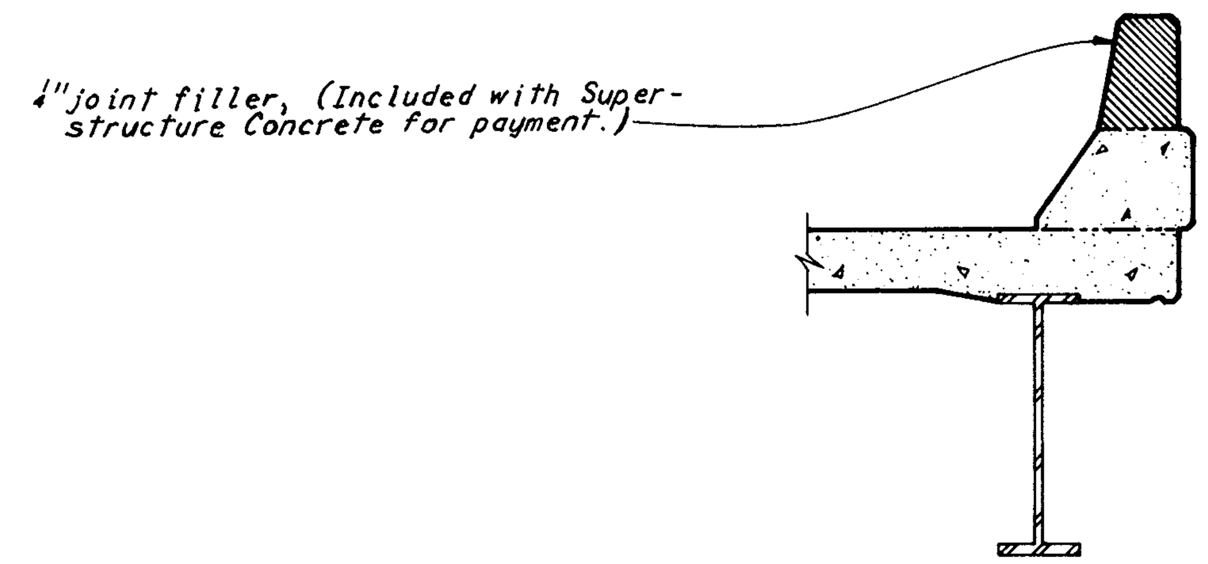


NORTH PARAPET

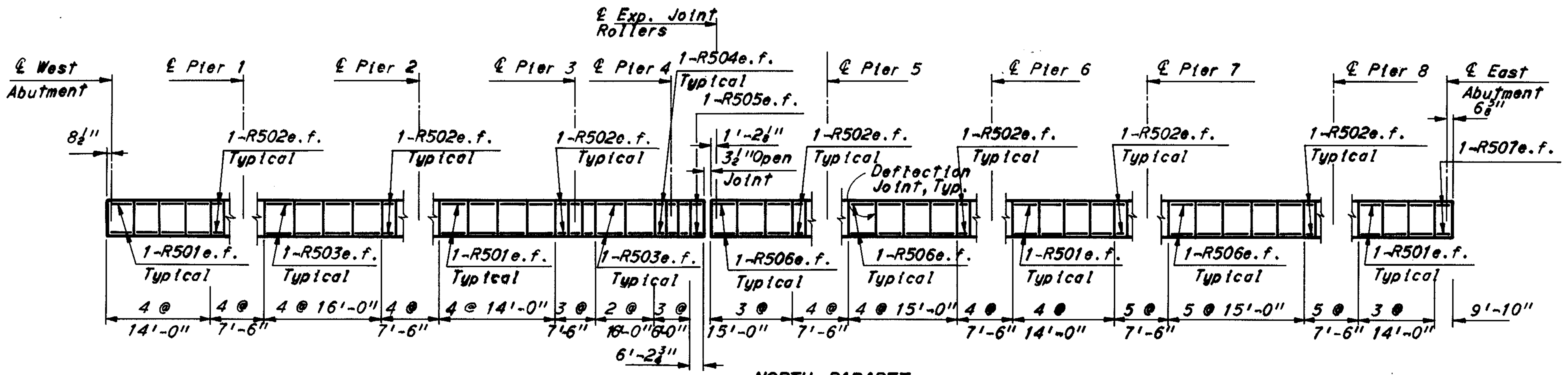


SOUTH PARAPET

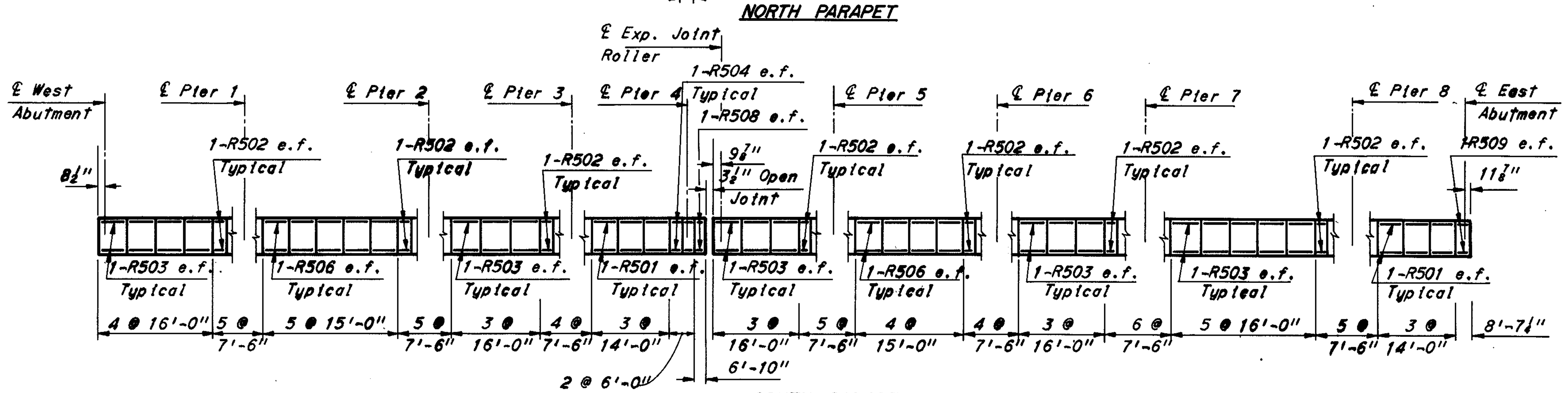
BRIDGE 1488



SECTION THRU DEFLECTION JOINT



NORTH PARAPET



SOUTH PARAPET

BRIDGE 1489

Notes:

The preformed expansion joint filler may be either ¼" gray sponge rubber or ¼" gray cellular polyvinyl chloride (PVC) sponge. Either material shall meet the requirements of AASHO M-153, Type I, except the density of the PVC sponge be not less than 20lbs. per cu. ft.

All dimensions measured along centerline of parapets.

e.f. denotes each face

H.N.T.B. BRIDGE NO. 7 & 14

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

RAILING DETAILS

SCALE: NONE

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN L.D.E.	TRACED	CHECKED B.M.	REVIEWED M.T.K.	REVISED
DATE 3-20-70	DATE	DATE 3-26-70	DATE 11-22-71	1668

Revised 4-28-77

STARK COUNTY
STA-30-14.12
STA-77-9.22

Notes:
All parapet dimensions are measured along ℄ parapet.
For section through deflection joint see Sheet 361
e.f. denotes each face

H.N.T.B. BRIDGE NO. 2,9, & 13

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

RAILING DETAILS

SCALE: NONE

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN LDE	TRACED	CHECKED DES	REVIEWED MJH	REVISED 7-26-76
DATE 3-10-70	DATE	DATE 3-16-70	DATE 11-28-71	1668

Revised 4-28-77

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			363 / 389

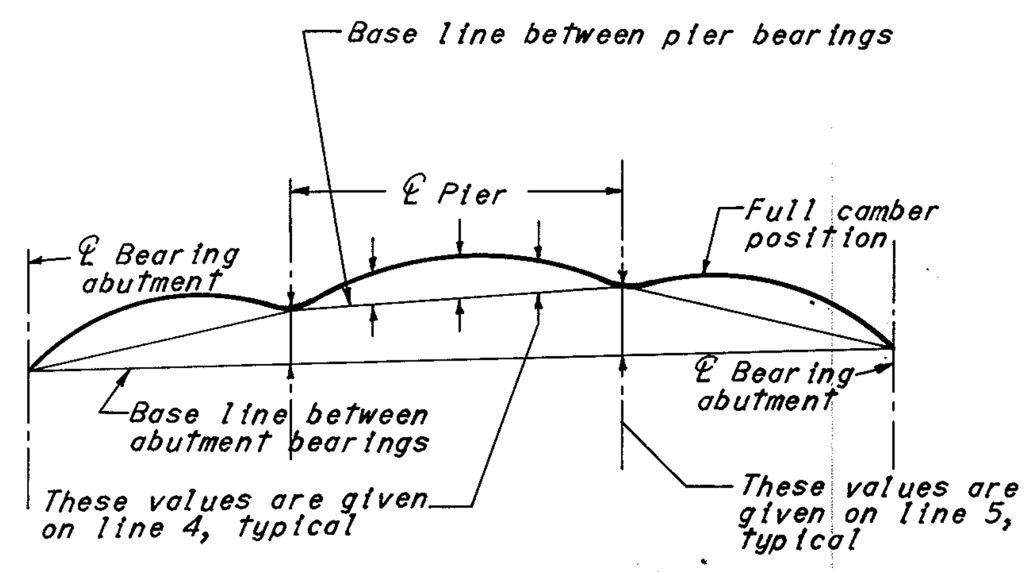
STARK COUNTY
STA-30-14.12
STA-77-9.22

BRIDGE 1487 - WESTBOUND

Girder	Line	W.Abut.	.25	.50	.75	Pier 1	*	.50	.75	Pier 2	*	.50	.75	Pier 3	.1	*	.3	.4	.5	.6	.7	*	.9	Pier 4	.25	*	.5	.75	Pier 5	Exp.	Jt.	.25	.50	.75	Pier 6	.1	*	.3	.4	.5	.6	.7	*	.9	Pier 7	.25	.50	.75	E.Abut.
Girder A	1	0	0	0	0	0	1/16	1/16	1/16	0	0	0	0	0	1/16	1/8	3/16	3/16	1/4	3/16	3/16	1/8	1/16	0	0	0	0	0	0	0	0	0	0	0	0	1/16	1/8	1/8	3/16	3/16	3/16	1/8	1/8	1/16	0	0	1/16	1/16	0
	2	0	1/16	0	0	0	3/16	3/8	1/4	0	-1/16	-1/16	-1/8	0	3/16	1/2	3/4	15/16	15/16	15/16	11/16	7/16	3/16	0	-1/16	-1/16	1/16	1/16	0	0	0	1/8	1/8	0	0	3/16	7/16	11/16	13/16	7/8	13/16	11/16	7/16	3/16	0	0	1/8	1/8	0
	3	0	1/4	5/16	3/16	0	3/8	5/8	1/2	0	5/16	1/2	5/16	0	5/16	1/2	3/4	15/16	15/16	15/16	3/4	9/16	3/8	0	5/16	5/16	3/8	3/8	0	0	0	3/16	5/16	3/16	0	-3/8	-3/4	-1 1/8	-1 3/16	-1 1/8	-13/16	-9/16	-5/16	-1/8	0	-1/16	-1/16	-1/16	0
	4	0	5/16	5/16	3/16	0	5/8	1 1/16	13/16	0	1/4	7/16	3/8	0	9/16	1 1/8	1 11/16	2 1/16	2 1/8	2 1/16	1 5/8	1 1/8	5/8	0	1/4	1/4	7/16	1/4	0	0	0	5/16	7/16	3/16	0	-1/8	-3/16	-5/16	-7/16	-1/16	3/16	1/4	1/4	1/8	0	-1/16	1/8	1/8	0
	5	0				9 3/16"				1'-7 13/16"				2'-1 1/16"										2'-2"					1'-10 7/8"						1'-3 1/4"										5 3/16"				0
Girder B	1	0	0	0	0	0	1/16	1/16	1/16	0	0	0	0	0	1/16	1/8	3/16	3/16	1/4	3/16	3/16	1/8	1/16	0	0	0	0	0	0	0	0	0	0	0	0	1/16	1/8	1/8	3/16	3/16	3/16	1/8	1/8	1/16	0	0	1/16	1/16	0
	2	0	1/16	0	0	0	3/16	3/8	1/4	0	-1/16	-1/16	-1/8	0	3/16	1/2	3/4	15/16	15/16	15/16	11/16	7/16	3/16	0	-1/16	-1/16	1/16	1/16	0	0	0	1/8	1/8	0	0	3/16	7/16	11/16	13/16	7/8	13/16	11/16	7/16	3/16	0	0	1/8	1/8	0
	3	0	1/16	1/16	1/16	0	7/16	1/2	5/16	0	9/16	1/2	5/16	0	7/16	5/8	3/4	13/16	13/16	13/16	3/4	9/16	3/8	0	5/16	5/16	3/8	3/16	0	0	0	3/16	3/16	1/8	0	-1/8	-5/16	-11/16	-7/8	-13/16	-9/16	-1/4	0	0	0	-3/16	-1/4	-3/16	0
	4	0	1/8	1/16	1/16	0	11/16	15/16	5/8	0	1/2	7/16	3/8	0	11/16	1 1/4	1 11/16	1 15/16	2	1 15/16	1 5/8	1 1/8	5/8	0	1/4	1/4	7/16	1/4	0	0	0	5/16	5/16	1/8	0	1/8	1/4	1/8	1/8	1/4	7/16	9/16	9/16	1/4	0	-1/16	-1/16	0	0
	5	0				9 3/16"				1'-7 7/8"				2'-1 7/16"										2'-3"					1'-11 15/16"						1'-4 7/16"										5 3/4"				0
Girder C	1	0	0	0	0	0	1/16	1/16	1/16	0	0	0	0	0	1/16	1/8	3/16	3/16	1/4	3/16	3/16	1/8	1/16	0	0	0	0	0	0	0	0	0	0	0	0	1/16	1/8	1/8	3/16	3/16	3/16	1/8	1/8	1/16	0	0	1/16	1/16	0
	2	0	1/16	0	0	0	3/16	3/8	1/4	0	-1/16	-1/16	-1/8	0	3/16	1/2	3/4	15/16	15/16	15/16	11/16	7/16	3/16	0	-1/16	-1/16	1/16	1/16	0	0	0	1/8	1/8	0	0	3/16	7/16	11/16	13/16	7/8	13/16	11/16	7/16	3/16	0	0	1/8	1/8	0
	3	0	1/16	1/16	1/16	0	7/16	1/2	5/16	0	9/16	1/2	5/16	0	7/16	5/8	3/4	13/16	13/16	13/16	3/4	9/16	3/8	0	5/16	5/16	3/8	3/16	0	0	0	1/8	3/16	3/16	0	-1/16	-1/8	-7/16	-9/16	-9/16	-3/8	-1/8	1/8	1/16	0	-3/16	-1/4	-3/16	0
	4	0	1/8	1/16	1/16	0	11/16	15/16	5/8	0	1/2	7/16	3/8	0	11/16	1 1/4	1 11/16	1 15/16	2	1 15/16	1 5/8	1 1/8	5/8	0	1/4	1/4	7/16	1/4	0	0	0	5/16	5/16	1/8	0	3/16	7/16	3/8	7/16	1/2	5/8	11/16	11/16	5/16	0	-3/16	-1/16	0	0
	5	0				9 3/8"				1'-8 1/4"				2'-2 1/16"										2'-3 15/16"					2'-1 1/8"						1'-5 7/8"										6 9/16"				0
Girder D	1	0	0	0	0	0	1/16	1/16	1/16	0	0	0	0	0	1/16	1/8	3/16	3/16	1/4	3/16	3/16	1/8	1/16	0	0	0	0	0	0	0	0	0	0	0	0	1/16	1/8	1/8	3/16	3/16	3/16	1/8	1/8	1/16	0	0	1/16	1/16	0
	2	0	1/16	0	0	0	3/16	3/8	1/4	0	-1/16	-1/16	-1/8	0	3/16	1/2	3/4	15/16	15/16	15/16	11/16	7/16	3/16	0	-1/16	-1/16	1/16	1/16	0	0	0	1/8	1/8	0	0	3/16	7/16	11/16	13/16	7/8	13/16	11/16	7/16	3/16	0	0	1/8	1/8	0
	3	0	1/16	1/16	1/16	0	7/16	1/2	5/16	0	9/16	1/2	5/16	0	7/16	5/8	3/4	13/16	13/16	13/16	3/4	9/16	3/8	0	3/8	3/8	3/8	3/16	0	0	0	3/16	3/16	1/8	0	1/16	1/16	-1/16	-1/4	-1/4	-1/8	1/16	1/4	1/8	0	-3/16	-1/4	-3/16	0
	4	0	1/8	1/16	1/16	0	11/16	15/16	5/8	0	1/2	7/16	3/8	0	11/16	1 1/4	1 11/16	1 15/16	2	1 15/16	1 5/8	1 1/8	5/8	0	5/16	5/16	7/16	1/4	0	0	0	5/16	5/16	1/8	0	5/16	5/8	5/8	3/4	13/16	7/8	7/8	13/16	3/8	0	-3/16	-1/16	0	0
	5	0				9 1/2"				1'-8 5/8"				2'-2 5/8"										2'-4 15/16"					2'-2 1/4"						1'-7 3/16"										7 3/8"				0
Girder E	1	0	0	0	0	0	1/16	1/16	1/16	0	0	0	0	0	1/16	1/8	3/16	3/16	1/4	3/16	3/16	1/8	1/16	0	0	0	0	0	0	0	0	0	0	0	0	1/16	1/8	1/8	3/16	3/16	3/16	1/8	1/8	1/16	0	0	1/16	1/16	0
	2	0	1/16	0	0	0	3/16	3/8	1/4	0	-1/16	-1/16	-1/8	0	3/16	1/2	3/4	15/16	15/16	15/16	11/16	7/16	3/16	0	-1/16	-1/16	1/16	1/16	0	0	0	1/8	1/8	0	0	3/16	7/16	11/16	13/16	7/8	13/16	11/16	7/16	3/16	0	0	1/8	1/8	0
	3	0	1/16	1/16	1/16	0	7/16	1/2	5/16	0	9/16	1/2	5/16	0	7/16	5/8	3/4	13/16	13/16	13/16	3/4	9/16	3/8	0	3/8	3/8	3/8	3/16	0	0	0	3/16	3/16	1/8	0	1/8	1/4	1/16	0	0	1/8	1/4	3/8	3/16	0	-3/16	-3/16	-1/8	0
	4	0	1/8	1/16	1/16	0	11/16	15/16	5/8	0	1/2	7/16	3/8	0	11/16	1 1/4	1 11/16	1 15/16	2	1 15/16	1 5/8	1 1/8	5/8	0	3/8	5/16	7/16	1/4	0	0	0	5/16	5/16	1/8	0	3/8	13/16	7/8	1	1 1/16	1 1/8	1 1/16	15/16	7/16	0	-3/16	0	1/16	0
	5	0				9 11/16"				1'-9 1/16"				2'-3 3/16"										2'-5 7/8"					2'-3 1/16"						1'-8 5/8"										8 3/16"				0
Girder F	1	0	0	0	0	0	1/16	1/16	1/16	0	0	0	0	0	1/16	1/8	3/16	3/16	1/4	3/16	3/16	1/8	1/16	0	0	0	0	0	0	0	0	0	0	0	0	1/16	1/8	1/8	3/16	3/16	3/16	1/8	1/8	1/16	0	0	1/16	1/16	0
	2	0	1/16	0	0	0	3/16	3/8	1/4	0	-1/16	-1/16	-1/8	0	3/16	1/2	3/4	15/16	15/16	15/16	11/16	7/16	3/16	0	-1/16	-1/16	1/16	1/16	0	0	0	1/8	1/8	0	0	3/16	7/16	11/16	13/16	7/8	13/16	11/16	7/16	3/16	0	0	1/8	1/8	0
	3	0	1/16	1/16	1/16	0	7/16	7/16	1/4	0	9/16	1/2	5/16	0	7/16	9/16	3/4	3/4	3/4	3/4	3/4	9/16	3/8	0	3/8	3/8	3/8	3/16	0	0	0	3/16	3/16	1/8	0	1/4	7/16	5/16	5/8	5/8	3/8	7/16	7/16	1/4	0	-3/16	-3/16	-3/16	0
	4	0	1/8	1/16	1/16	0	11/16	7/8	9/16	0	1/2	7/16	3/8	0	11/16	1 3/16	1 11/16	1 7/8	1 15/16	1 7/8	1 5/8	1 1/8	5/8	0	5/16	5/16	7/16	1/4	0	0	0	5/16	5/16	1/8	0	1/2	1	1 1/8	1 5/16	1 3/8	1 3/8	1 1/4	1	1/2	0	-3/16	0	0	0
	5	0				9 13/16"				1'-9 3/8"				2'-3 3/4"										2'-6 3/4"					2'-4 1/2"						1'-9 15/16"										8 15/16"				0
Girder G	1	0	0	0	0	0	1/16	1/16	1/16	0	0	0	0	0	1/16	1/8	3/16	3/16	1/4	3/16	3/16	1/8	1/16	0	0	0	0	0	0	0	0	0	0	0	0	1/16	1/8	1/8	3/16	3/16	3/16	1/8	1/8	1/16	0	0	1/16	1/16	0
	2	0	1/16	0	0	0	3/16	3/8	1/4	0	-1/16	-1/16	-1/8	0	3/16	1/2	3/4	15/16	15/16	15/16	11/16	7/16	3/16	0	-1/16	-1/16	1/16	1/16	0	0	0	1/8	1/8	0	0	3/16	7/16	11/16	13/16	7/8	13/16	11/16	7/16	3/16	0	0	1/8	1/8	0
	3	0	1/16	1/16	1/16	0	7/16	7/16	1/4	0	9/16	1/2	5/16	0	7/16	9/16	3/4	3/4	3/4	3/4	3/4	9/16	3/8	0	3/8	3/8	3/8	3/16	0	0	0	1/16	1/8	1/16	0	5/16	9/16	9/16	9/16	9/16	9/16	5/8	9/16	5/16	0	-3/16	-3/16	-1/8	0
	4	0	1/8	1/16	1/16	0	11/16	7/8	9/16	0	1/2	7/16	3/8	0	11/16	1 3/16	1 11/16	1 7/8	1 15/16	1 7/8	1 5/8	1 1/8	5/8	0	5/16	5/16	7/16	1/4	0	0	0	3/16	1/4	1/16	0	9/16	1 1/8	1 3/8	1 9/16	1 5/8	1 9/16	1 7/16	1 1/8	9/16	0	-3/16	0	1/16	0
	5	0				10"				1'-9 3/4"				2'-4 3/8"										2'-7 11/16"					2'-5 5/8"						1'-11 1/4"										9 3/4"				0
Girder H	1	0	0	0	0	0	1/16	1/16	1/16	0	0	0	0	0	1/16	1/8	3/16	3/16	1/4	3/16	3/16	1/8	1/16	0	0	0	0	0	0	0	0	0	0	0	0	1/16	1/8	1/8	3/16	3/16	3/16	1/8	1/8	1/16	0	0	1/16	1/16	0
	2	0	1/16	0	0	0	3/16	3/8	1/4	0	-1/16	-1/16	-1/8	0	3/16	1/2	3/4	15/16	15/16	15/16	11/16	7/16	3/16	0	-1/16	-1/16	1/16	1/16	0	0	0	1/8	1/8	0	0	3/16	7/16	11/16	13/16	7/8	13/16	11/16	7/16	3/16	0	0	1/8	1/8	0
	3	0	1/16	1/16	1/16	0	7/16	7/16	1/4	0	9/16	1/2	5/16	0	7/16	9/16	3/4	3/4	3/4	3/4	3/4	9/16	3/8	0	3/8	3/8	3/8	3/16	0	0	0	1/16	1/8	1/16	0	7/16	13/16	13/16	13/16	13/16	13/16	13/16	11/16	3/8	0	-3/16	-3/16	-1/8	0
	4	0	1/8	1/16	1/16	0	11/16	7/8	9/16	0	1/2	7/16	3/8	0	11/16	1 3/16	1 11/16	1 7/8	1 15/16	1 7/8	1 5/8	1 1/8	5/8	0	5/16	5/16	7/16	1/4	0	0	0	3/16	1/4	1/16	0	11/16	1 3/8	1 5/8	1 13/16	1 7/8	1 13/16	1 5/8	1 1/4	5/8	0	-3/16	0	1/16	0
	5	0				10 1/8"				1'-10 1/8"				2'-4 15/16"										2'-8 5/8"					2'-6 3/4"						2'-0 9/16"										10 9/16"				0
Girder I	1	0	0	0	0	0	1/16	1/16	1/16	0	0	0	0	0	1/16	1/8	3/16	3/16	1/4	3/16	3/16	1/8	1/16	0	0	0	0	0	0	0	0	0	0	0	0	1/16	1/8	1/8	3/16	3/16	3/16	1/8	1/8	1/16	0	0	1/16	1/16	0
	2	0	1/16	0	0	0	3/16	3/8	1/4	0	-1/16	-1/16	-1/8	0	3/16	1/2	3/4	15/16	15/16	15/16	11/16	7/16	3/16	0	-1/16	-1/16	1/16	1/16	0	0	0	1/8	1/8	0	0	3/16	7/16	11/16	13/16	7/8	13/16	11/16	7/16	3/16	0	0	1/8	1/8	0
	3	0	1/4	3/8	1/4	0	1/4	11/16	9/16	0	3/16	3/8	3/8	0	1/4	7/16	13/16	1	1 1/16	1 1/16	7/8	1/2	5/16	0	5/16	5/16	1/16	3/8	0	0	0	3/8	9/16	3/8	0	1/4	3/8	5/8	13/16	7/8	13/16	5/8	5/16	3/16	0	1/8	3/8	1/16	0
	4	0	5/16	3/8	1/4	0	1/2	1 1/8	7/8	0	1/8	5/16	1/4	0	1/2	1 1/16	1 3/4	2 1/8	2 1/4	2 3/16	1 3/4	1 1/16	9/16	0	1/4	1/4	1/2	7/16	0	0	0	1/2	11/16	3/8	0	1/2	15/16	1 7/16	1 13/16	1 15/16	1 13/16	1 7/16	7/8	7/16	0	1/8	3/8	5/16	0
	5	0				10 1/2"				1'-10 13/16"				2'-5 7/16"										2'-9 1/8"					2'-7 3/8"						2'-1 5/8"										11 15/16"				0

BRIDGE 1487 - EASTBOUND

Girder	Line	W.Abut.	.25	.50	.75	Pier 1	*	.50	.75	Pier 2	*	.50	.75	Pier 3	*	.2	.3	.4	.5	.6	.7	*	.9	Pier 4	*	.50	.75	Pier 5	Exp. Jt.		.25	.50	.75	Pier 6	.1	*	.3	.4	.5	.6	.7	*	.9	Pier 7	.25	.50	.75	E Abut.
Girder J	1	0	0	0	0	0	1/16	1/8	1/16	0	0	0	0	0	1/8	1/8	1/8	3/16	3/16	3/16	1/8	1/16	1/16	0	1/16	1/8	1/16	0	0	0	1/16	1/16	0	0	0	1/16	1/8	1/8	3/16	3/16	1/8	1/16	1/16	0	0	1/16	1/16	0
	2	0	0	0	-1/16	0	1/4	9/16	3/8	0	-1/8	-3/16	-3/16	0	1/2	1/2	3/4	7/8	7/8	13/16	5/8	3/8	3/16	0	5/16	1/2	7/16	0	-3/16	0	5/16	3/8	1/8	0	1/8	3/8	9/16	3/4	13/16	3/4	5/8	3/8	3/16	0	1/16	1/8	1/8	0
	3	0	3/16	1/4	3/16	0	1/4	9/16	7/16	0	1/8	1/4	3/16	0	3/8	1/2	11/16	3/4	13/16	3/4	11/16	1/2	5/16	0	1/2	11/16	1/2	0	0	0	3/8	1/2	3/8	0	5/16	9/16	3/4	7/8	1/8	13/16	3/4	1/2	1/4	0	0	0	0	0
	4	0	3/16	1/4	1/8	0	9/16	1 1/4	7/8	0	0	1/16	0	0	1	1 1/8	1 9/16	1 13/16	1 7/8	1 3/4	1 7/16	15/16	9/16	0	7/8	1 5/16	1	0	-3/16	0	3/4	15/16	1/2	0	7/16	1	1 7/16	1 3/4	1 7/8	1 3/4	1 1/2	15/16	1/2	0	1/16	3/16	3/16	0
	5	0				10 3/8"				1'-10 1/2"				2'-3 15/16"										2'-8 3/4"				2'-7 9/16"						2'-1 1/4"										11 1/16"				0
Girder K	1	0	0	0	0	0	1/16	1/8	1/16	0	0	0	0	0	1/8	1/8	1/8	3/16	3/16	3/16	1/8	1/16	1/16	0	1/16	1/8	1/16	0	0	0	1/16	1/16	0	0	0	1/16	1/8	1/8	3/16	3/16	1/8	1/16	1/16	0	0	1/16	1/16	0
	2	0	0	0	-1/16	0	1/4	9/16	3/8	0	-1/8	-3/16	-3/16	0	1/2	1/2	3/4	7/8	7/8	13/16	5/8	3/8	3/16	0	5/16	1/2	7/16	0	-3/16	0	5/16	3/8	1/8	0	1/8	3/8	9/16	3/4	13/16	3/4	5/8	3/8	3/16	0	1/16	1/8	1/8	0
	3	0	1/16	1/16	1/16	0	3/8	7/16	1/4	0	3/16	3/16	1/8	0	9/16	11/16	3/4	3/4	3/4	3/4	11/16	5/8	5/16	0	9/16	1/2	5/16	0	0	0	1/8	1/8	1/8	0	9/16	1	1 1/8	1 1/8	1 3/16	1 1/8	1	7/8	7/16	0	-1/8	-3/16	-1/8	0
	4	0	1/16	1/16	0	0	11/16	1 1/8	11/16	0	1/16	0	-1/16	0	1 3/16	1 5/16	1 5/8	1 13/16	1 13/16	1 3/4	1 7/16	1 1/16	9/16	0	15/16	1 1/8	13/16	0	-3/16	0	1/2	9/16	1/4	0	11/16	1 7/16	1 13/16	2	2 3/16	2 1/16	1 3/4	1 5/16	11/16	0	-1/16	0	1/16	0
	5	0				10 5/16"				1'-10 7/16"				2'-4 3/8"										2'-9 5/8"				2'-8 5/8"						2'-2 1/8"										11 1/2"				0
Girder L	1	0	0	0	0	0	1/16	1/8	1/16	0	0	0	0	0	1/8	1/8	1/8	3/16	3/16	3/16	1/8	1/16	1/16	0	1/16	1/8	1/16	0	0	0	1/16	1/16	0	0	0	1/16	1/8	1/8	3/16	3/16	1/8	1/16	1/16	0	0	1/16	1/16	0
	2	0	0	0	-1/16	0	1/4	9/16	3/8	0	-1/8	-3/16	-3/16	0	1/2	1/2	3/4	7/8	7/8	13/16	5/8	3/8	3/16	0	5/16	1/2	7/16	0	-3/16	0	5/16	3/8	1/8	0	1/8	3/8	9/16	3/4	13/16	3/4	5/8	3/8	3/16	0	1/16	1/8	1/8	0
	3	0	1/16	1/16	1/16	0	3/8	7/16	1/4	0	3/16	3/16	1/8	0	9/16	11/16	3/4	3/4	3/4	3/4	11/16	5/8	5/16	0	9/16	1/2	5/16	0	0	0	1/8	1/8	1/8	0	5/8	1 3/16	1 5/16	1 3/8	1 3/8	1 5/16	1 3/16	1	1/2	0	-1/8	-3/16	-1/8	0
	4	0	1/16	1/16	0	0	11/16	1 1/8	11/16	0	1/16	0	-1/16	0	1 3/16	1 5/16	1 5/8	1 13/16	1 13/16	1 3/4	1 7/16	1 1/16	9/16	0	15/16	1 1/8	13/16	0	-3/16	0	1/2	9/16	1/4	0	3/4	1 5/8	2	2 1/4	2 3/8	2 1/4	1 15/16	1 7/16	3/4	0	-1/16	0	1/16	0
	5	0				10 7/16"				1'-10 3/4"				2'-4 13/16"										2'-10 5/16"				2'-9 1/2"						2'-3 1/4"										1'-0 3/16"				0
Girder M	1	0	0	0	0	0	1/16	1/8	1/16	0	0	0	0	0	1/8	1/8	1/8	3/16	3/16	3/16	1/8	1/16	1/16	0	1/16	1/8	1/16	0	0	0	1/16	1/16	0	0	0	1/16	1/8	1/8	3/16	3/16	1/8	1/16	1/16	0	0	1/16	1/16	0
	2	0	0	0	-1/16	0	1/4	9/16	3/8	0	-1/8	-3/16	-3/16	0	1/2	1/2	3/4	7/8	7/8	13/16	5/8	3/8	3/16	0	5/16	1/2	7/16	0	-3/16	0	5/16	3/8	1/8	0	1/8	3/8	9/16	3/4	13/16	3/4	5/8	3/8	3/16	0	1/16	1/8	1/8	0
	3	0	1/16	1/16	1/16	0	3/8	7/16	1/4	0	3/16	3/16	1/8	0	9/16	11/16	3/4	3/4	3/4	3/4	11/16	5/8	5/16	0	9/16	1/2	5/16	0	0	0	1/8	1/8	1/8	0	11/16	1 5/16	1 9/16	1 5/8	1 5/8	1 9/16	1 5/16	1 1/16	9/16	0	-1/8	-3/16	-1/8	0
	4	0	1/16	1/16	0	0	11/16	1 1/8	11/16	0	1/16	0	-1/16	0	1 3/16	1 5/16	1 5/8	1 13/16	1 13/16	1 3/4	1 7/16	1 1/16	9/16	0	15/16	1 1/8	13/16	0	-3/16	0	1/2	9/16	1/4	0	13/16	1 3/4	2 1/4	2 1/2	2 5/8	2 1/2	2 1/16	1 1/2	13/16	0	-1/16	0	1/16	0
	5	0				10 9/16"				1'-11 1/16"				2'-5 1/4"										2'-11 1/16"				2'-10 1/2"						2'-4 7/16"										1'-0 15/16"				0
Girder N	1	0	0	0	0	0	1/16	1/8	1/16	0	0	0	0	0	1/8	1/8	1/8	3/16	3/16	3/16	1/8	1/16	1/16	0	1/16	1/8	1/16	0	0	0	1/16	1/16	0	0	0	1/16	1/8	1/8	3/16	3/16	1/8	1/16	1/16	0	0	1/16	1/16	0
	2	0	0	0	-1/16	0	1/4	9/16	3/8	0	-1/8	-3/16	-3/16	0	1/2	1/2	3/4	7/8	7/8	13/16	5/8	3/8	3/16	0	5/16	1/2	7/16	0	-3/16	0	5/16	3/8	1/8	0	1/8	3/8	9/16	3/4	13/16	3/4	5/8	3/8	3/16	0	1/16	1/8	1/8	0
	3	0	1/16	1/16	1/16	0	3/8	7/16	1/4	0	3/16	3/16	1/8	0	9/16	11/16	3/4	3/4	3/4	3/4	11/16	5/8	5/16	0	9/16	1/2	5/16	0	0	0	1/8	1/8	1/8	0	3/4	1 1/2	1 3/4	1 7/8	1 7/8	1 3/4	1 1/2	1 3/16	5/8	0	-1/8	-3/16	-1/8	0
	4	0	1/16	1/16	0	0	11/16	1 1/8	11/16	0	1/16	0	-1/16	0	1 3/16	1 5/16	1 5/8	1 13/16	1 13/16	1 3/4	1 7/16	1 1/16	9/16	0	15/16	1 1/8	13/16	0	-3/16	0	1/2	9/16	1/4	0	7/8	1 15/16	2 7/16	2 3/4	2 7/8	2 11/16	2 1/4	1 5/8	7/8	0	-1/16	0	1/16	0
	5	0				10 11/16"				1'-11 3/8"				2'-5 5/8"										2'-11 3/4"				2'-11 3/8"						2'-5 9/16"										1'-1 9/16"				0
Girder O	1	0	0	0	0	0	1/16	1/8	1/16	0	0	0	0	0	1/8	1/8	1/8	3/16	3/16	3/16	1/8	1/16	1/16	0	1/16	1/8	1/16	0	0	0	1/16	1/16	0	0	0	1/16	1/8	1/8	3/16	3/16	1/8	1/16	1/16	0	0	1/16	1/16	0
	2	0	0	0	-1/16	0	1/4	9/16	3/8	0	-1/8	-3/16	-3/16	0	1/2	1/2	3/4	7/8	7/8	13/16	5/8	3/8	3/16	0	5/16	1/2	7/16	0	-3/16	0	5/16	3/8	1/8	0	1/8	3/8	9/16	3/4	13/16	3/4	5/8	3/8	3/16	0	1/16	1/8	1/8	0
	3	0	1/4	3/8	1/4	0	1/4	5/8	1/2	0	1/8	1/4	3/16	0	3/8	1/2	11/16	13/16	7/8	13/16	11/16	1/2	5/16	0	1/2	13/16	5/8	0	0	0	7/16	5/8	1/2	0	9/16	1 1/16	1 1/2	1 3/4	1 13/16	1 5/8	1 1/4	13/16	7/16	0	1/8	1/8	1/8	0
	4	0	1/4	3/8	3/16	0	9/16	1 5/16	15/16	0	0	1/16	0	0	1	1 1/8	1 9/16	1 7/8	1 15/16	1 13/16	1 7/16	15/16	9/16	0	7/8	1 7/16	1 1/8	0	-3/16	0	13/16	1 1/16	5/8	0	11/16	1 1/2	2 3/16	2 5/8	2 13/16	2 9/16	2	1 1/4	11/16	0	3/16	5/16	5/16	0
	5	0				11"				1'-11 7/8"				2'-5 9/16"										2'-11 9/16"				2'-11 5/16"						2'-6 1/16"										1'-2 1/16"				0



SCHEMATIC DETAIL

Notes:
Line 1. Deflection due to weight of steel.
Line 2. Deflection due to remaining dead load.
Line 3. Adjustment required for vertical curve.
Line 4. Required shop camber.
Line 5. Vertical offset at bearings only.
Negative deflections indicate upward deflections.
Values given in table are to nearest 1/16 inch.
* Denotes field splice.

H.N.T.B. BRIDGE NO. 2 | Revised 6-17-75 | By R.A.S.

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

DEFLECTION AND CAMBER

SCALE:

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN DGS	TRACED	CHECKED KSS	REVIEWED MJK	REVISED
DATE 3-26-70	DATE	DATE 5-12-70	DATE 11-22-71	1668

STARK COUNTY
STA-30-14.12
STA-77-9.22

BRIDGE - 1488

9'-9 7/8" 1 13/16 1 9/16 1 15/16 1 7/8 1 9/16

Girder		W.Abut	.25	.50	.75	Pier 1	*	.50	.75	Pier 2	.25	.50	*	Pier 3	.25	.50	.75	Exp. Jt.		Pier 4	.25	.50	*	.75	Pier 5	.25	.50	.75	*	Pier 6	.25	.50	*	Pier 7	.1	.2	.3	.4	.5	.6	.7	*	.9	Pier 8	.25	50	75	Exp. Jt		Pier 9	25	50	*	75	Pier 10
Girder A	1	0	0	0	0	0	0	1/16	0	0	0	1/16	0	0	0	1/16	0	0	0	0	0	1/16	0	0	0	1/16	1/16	1/16	0	0	0	0	0	0	1/16	1/16	1/8	3/16	3/16	3/16	1/8	1/16	0	0	0	1/16	1/16	0	0	0	1/16	1/16	0	0	0
	2	0	1/16	1/16	1/16	0	1/16	3/16	1/16	0	1/16	1/8	1/8	0	1/16	1/8	1/8	0	-1/16	0	1/8	1/8	1/16	1/16	0	1/8	1/4	1/4	1/16	0	1/16	1/16	-1/16	0	1/16	5/16	7/16	9/16	5/8	9/16	3/8	5/16	1/8	0	1/16	3/16	3/16	0	-1/16	0	3/16	1/16	1/16	1/16	0
	3	0	-7/16	-9/16	-7/16	0	-9/16	-9/16	-5/16	0	0	0	0	0	1/16	1/8	1/16	0	0	0	0	0	0	0	0	-1/16	-1/8	-1/8	-1/16	0	1 3/16	1 13/16	1 1/4	0	1 3/16	2 1/8	2 3/4	3 1/8	3 1/4	3 1/8	2 3/4	2 1/4	1 3/16	0	1 5/16	1 3/4	1 3/8	0	-1/16	0	1 1/2	2 1/8	1 3/8	1 3/8	0
	4	0	-3/8	-1/2	-3/8	0	-1/2	-5/16	-1/4	0	1/16	3/16	1/16	0	3/16	5/16	3/16	0	-1/16	0	1/8	3/16	1/16	0	0	1/8	1/4	1/4	1/16	0	1 7/16	1 7/8	1 3/8	0	1 3/8	2 1/2	3 3/8	3 7/8	4 1/16	3 7/8	3 5/8	2 5/8	1 5/8	0	1 3/8	2	1 9/16	0	-1/16	0	1 3/8	2 5/8	1 11/16	1 9/16	0
	5	0				11 9/16"				2'-8 3/4"				4'-7 3/8"						6'-3 5/8"					8'-0 7/16"					10'-1 11/16"				11'-7 7/16"										11'-6 1/8"						11'-6 3/4"					8'-2 11/16"
Girder B	1	0	0	0	0	0	0	1/16	0	0	0	1/16	0	0	0	1/16	1/16	0	0	0	1/16	1/16	0	0	0	1/16	1/16	1/16	0	0	0	0	0	0	0	1/8	1/8	1/8	3/16	3/16	1/8	1/16	0	0	0	1/16	1/16	0	0	0	1/16	1/16	0	0	0
	2	0	1/8	1/8	1/16	0	1/8	3/16	1/8	0	1/16	3/16	1/8	0	1/16	3/16	3/16	0	-1/16	0	1/8	1/8	1/16	1/16	0	3/16	3/8	1/4	1/8	0	1/16	1/16	0	0	3/16	3/8	5/8	13/16	7/8	13/16	5/8	3/8	1/8	0	1/16	3/16	3/16	0	-1/16	0	3/16	1/8	1/16	1/16	0
	3	0	-7/16	-9/16	-7/16	0	-9/16	-5/16	-5/16	0	0	0	0	0	-1/16	-1/16	0	0	0	0	0	0	0	0	0	1/16	1/16	1/8	1/16	0	1 3/4	2 5/8	1 1/2	0	1 3/8	2 1/8	2 3/4	3 1/8	3 1/4	3 1/8	2 3/4	2 1/4	1 3/8	0	1 3/8	1 11/16	1 5/8	0	0	0	1 7/16	1 15/16	1 1/2	1 7/16	0
	4	0	-5/16	-7/16	-3/8	0	-7/16	-3/8	-5/16	0	1/16	3/16	1/16	0	1/16	1/4	1/8	0	-1/16	0	3/16	1/4	1/8	1/16	0	5/16	1/2	5/16	1/8	0	1 15/16	2 3/8	1 1/2	0	1 3/8	2 5/8	3 1/2	4 1/16	4 5/8	4 1/8	3 1/2	2 13/16	1 3/8	0	1 3/8	1 15/16	1 9/16	0	-1/16	0	1 11/16	2 1/8	1 9/16	1 1/2	0
	5	0				11 7/8"				2'-9 7/8"				4'-8 9/16"						6'-7 1/8"					8'-7 3/8"					10'-10 11/16"				12'-3 1/8"										11'-11 7/8"				10'-1 3/16"		11'-3 1/2"					8'-1 3/4"
Girder C	1	0	0	0	0	0	0	1/16	0	0	0	0	0	0	0	1/16	1/16	0	0	0	0	1/16	1/16	0	0	1/16	1/8	1/16	0	0	0	0	0	0	0	1/16	1/8	3/16	3/16	3/16	1/8	1/8	1/16	0	0	1/16	1/16	0	0	0	1/16	0	0	0	0
	2	0	1/8	1/8	1/16	0	1/8	3/16	1/8	0	1/16	1/8	1/8	0	1/16	1/8	1/8	0	-1/16	0	3/16	1/16	1/16	1/16	0	1/8	3/8	1/4	1/8	0	1/8	3/16	0	0	3/16	3/8	5/8	3/4	13/16	3/4	5/8	3/8	1/16	0	0	1/16	3/16	0	-1/16	0 1 9/16	1/8	1/16	0	0	0
	3	0	-7/16	-9/16	-7/16	0	-9/16	-3/8	-5/16	0	0	0	0	0	-3/16	-1/4	-1/8	0	0	0	0	0	0	0	0	1/8	1/4	5/16	3/16	0	2 1/8	2 11/16	1 3/4	0	1 1/8	2 1/8	2 3/4	3 1/8	3 1/4	3 1/8	2 3/4	2 5/8	1 3/8	0	1 5/16	1 11/16	1 5/8	0	-1/16	0	1 3/8	1 3/8	1 1/4	1 3/8	0
	4	0	-5/16	-7/16	-3/8	0	-7/16	-3/8	-3/16	0	0	0	0	0	-1/16	1/16	1/8	0	-1/16	0	3/16	1/4	1/8	1/16	0	7/16	3/4	9/16	5/16	0	2 3/8	2 7/8	1 3/4	0	1 5/16	2 1/2	3 1/2	4 1/16	4 1/4	4 1/16	3 1/2	2 7/8	1 3/8	0	1 5/16	1 15/16	1 9/16	0	-1/16	0 1 5/8	1 9/16	2 1/8	1 1/2	1 3/8	0
	5	0				1'-0 3/8"				2'-10 3/8"				4'-9 13/16"						6'-10 5/8"					9'-2 7/16"					11'-7 11/16"				12'-10 15/16"										12'-4 13/16"				10'-4 11/16		10'-11 1/2"					8'-0 7/8"
Girder D	1	0	0	0	0	0	0	1/16	0	0	0	0	0	0	0	1/16	0	0	0	0	0	1/16	1/16	0	0	1/16	1/16	1/16	0	0	0	0	0	0	1/16	1/16	1/8	3/16	3/16	3/16	1/8	1/16	1/16	0	0	0	1/16	0	0	0	0	1/16	0	0	0
	2	0	1/8	1/8	1/16	0	1/8	3/16	1/8	0	1/16	1/8	1/8	0	1/16	1/8	1/8	0	-1/16	0	3/16	1/8	1/16	1/16	0	3/16	3/8	1/4	1/16	0	1/16	1/16	0	0	1/16	3/8	9/16	3/4	13/16	3/4	5/8	3/8	1/8	0	0	3/16	3/16	0	0	0	1 3/8	1/8	1/16	0	0
	3	0	-7/16	-9/16	-7/16	0	-9/16	-5/16	-5/16	0	0	0	-1/16	0	-3/16	-1/8	-1/16	0	-1/16	0	0	0	0	0	0	3/16	1/4	1/2	1/8	0	2 3/8	3 1/4	1 5/8	0	1 1/2	2 1/8	2 3/4	3 1/8	3 5/8	3 3/8	2 13/16	2 5/8	1 3/8	0	1 3/8	1 11/16	1 5/8	0	0	0 1 7/16	1 1/2	1 5/8	1 3/8	1 1/4	0
	4	0	-3/8	-7/16	-3/8	0	-7/16	-3/8	-3/16	0	1/16	1/8	0	0	-1/8	-1/16	0	0	-1/16	0	1/4	5/16	3/16	1/16	0	7/16	7/8	3/4	1/2	0	2 7/8	3 1/4	1 5/8	0	1 5/16	2 1/2	3 1/2	4 1/16	4 5/8	4 1/2	3 9/16	2 7/8	1 3/8	+0	1 5/8	1 7/8	1 9/16	0	0	0	1 3/8	1 5/16	1 3/8	1 5/16	0
	5	0				1'-0 1/2"				2'-10 15/16"				4'-11 1/8"						7'-2 3/8"					9'-9 3/4"					12'-4 13/16"				13'-6 7/16"										12'-10 1/4"				10'-8 3/16"		10'-8"					8'-0 1/4"
Girder E	1	0	0	0	0	0	0	1/16	0	0	0	0	0	0	1/16	1/16	1/16	0	0	0	0	1/16	1/16	1/16	0	0	1/16	1/16	0	0	0	0	0	0	0	1/16	1/16	1/8	1/8	1/8	1/8	1/16	1/16	0	0	0	0	0	0	0	0	0	0	0	0
	2	0	1/8	1/8	0	0	1/8	3/16	1/16	0	1/16	1/8	1/8	0	1/16	1/8	1/16	0	-1/16	0	1/8	3/16	1/8	1/16	0	3/16	5/16	3/16	1/8	0	1/16	1/8	0	0	1/16	1/8	7/16	9/16	5/8	9/16	7/16	5/16	1/8	0	0	1/16	1/16	0	0	0	1/16	1/8	1/16	1/16 1 1/4	0
	3	0	-7/16	-9/16	-7/16	0	-9/16	-11/16	-3/8	0	0	0	-1/16	0	-1/2	-9/16	-5/16	0	-1/16	0	0	0	1/16	0	0	1/4	1/2	9/16	3/8	0	2 7/8	3 3/8	1 5/8	0	1 1/8	2 1/8	2 3/4	3 3/8	3 5/8	3 3/8	2 13/16	2 5/8	1 3/8	0	1 3/8	1 5/8	1 1/4	0	0	0	1 1/4	1 1/2	1 3/8	1 1/4	0
	4	0	-3/8	-7/16	-3/8	0	-9/16	-1/2	-1/4	0	0	0	0	0	-5/16	-1/4	-1/16	0	-1/16	0	0	1/16	1/8	0	0	7/16	7/8	15/16	7/8	0	2 1/2	3 5/8	1 5/8	0	1 1/4	2 3/8	3 5/8	3 7/8	4 1/16	3 7/8	3 3/8	2 3/4	1 5/8	0	1 3/8	1 13/16	1 7/16	0	0	0	1 3/8	1 5/8	1 1/4	1 3/8 1 5/16	0
	5	0				1'-0 5/8"				2'-11 1/4"				4'-11 9/16"						7'-4 3/4"					10'-1 3/8"					12'-8 5/8"				13'-10 1/16"										13'-0 3/4"				11'-0 1/2"		10'-5 3/4"					7'-11 3/4"

1 5/8
7'-1 1/2"
1 11/16"
1 3/4"
7'-4 13/16"
1 3/8"
1 7/16"
7'-8 5/16"
8'-4 11/16"

BRIDGE-1488

7'-1 1/2" -3/16 -3/16 -3/16 -3/16 -3/16 -1/8 -1/16 7/16 3/4 5/8

Girder		Pier 10	.1	.2	.3	.4	.5	.6	.7	*	.9	Pier 11	.25	.50	.75	E.Abut.
Girder A	1	0	0	1/16	1/8	1/8	1/8	1/8	1/8	1/16	0	0	0	0	0	0
	2	0	1/16	1/8	3/16	1/4	3/16	3/16	3/16	1/8	1/16	0	0	1/16	1/16	0 11/16
	3	0	-1/16	-1/16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7/16	0	0	0	0 13/16
	4	0	-1/16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	0	0
	5	8'-2 11/16"		3/8	7/16	1/2	7/16	3/16	1/4	1/16	11'-2 1/4"	2-10 5/16				0
Girder B	1	0	1/16	0	0	1/16	1/16	1/16	1/16	1/16	0	0	0	0	0	0
	2	0	1/16	1/8	3/16	3/16	1/4	3/16	3/16	1/8	-1/16	0	0	0	0 7/16	0
	3	0	[illegible]	[illegible]	-1/8	-1/8	-1/8	-1/8	[illegible]	-1/16	0	0	0	0	1/16	0
	4	0 1/8	[illegible]	[illegible]	[illegible]	1/4	1/4	1/4	1/4	[illegible]	0	0	0	0	[illegible]	0
	5	8'-1 3/4"	7'-4 13/16"	5/16	3/16					3'-0 1/8"			5/8	9/16		0
Girder C	1	0	0	1/16	1/16	1/8	1/8	1/8	1/16	1/16	0	0	0	0	0	0
	2	0	1/16	1/8	3/16	3/16	1/4	3/16	3/16	1/8	1/16	0	0	0	0	0
	3	0	3/8	1/4	1/8	0	0	0	0	0	0	0 1/8	0	1/4 0	0	0
	4	0	1/16	1/8	3/16	1/4	3/16	1/8	1/16	0	0	0 1/4	0	0	0 3/8	0
	5	8'-0 7/8"	7'-8 5/16"									3'-3 3/4"	3-2 3/16"			0
Girder D	1	0	0	0	1/16	1/16	1/16	1/16	1/16	0	0	0	0	0	0	0
	2	0	1/16	1/8	3/16	3/16	1/4	3/16	3/16	1/8	1/16	0	0	0	0	0
	3	0	1/8	1/8	1/8	1/16	1/16	1/16	1/16	0	0	0	0	0	0	0
	4	0	1/16	1/8	3/16	3/16	1/4	3/16	1/8	1/16	0	0	0	0	0	0
	5	8'-0 1/4"									3'-4 3/8"					0
Girder E	1	0	0	0	1/16	1/16	1/16	1/16	1/16	0	0	0	0	0	0	0
	2	0	1/16	1/8	3/16	3/16	1/4	3/16	3/16	1/8	1/16	0	0	1/16	1/16	0
	3	0	3/8	1/16	7/16	3/8	3/8	5/16	1/4	3/16	1/8	0-1/8	0	0	0 -1/4	0
	4	0	7/16	13/16	11/16	5/8	11/16	9/16	1/2	5/16	3/16	0-1/8	0	1/16	1/16 -3/16	0
	5	7'-11 3/4"		1/2	5/8	7/16	11/16					3'-5 3/8"	-1/4	3/16		0

BRIDGE - 1493

Girder		S.Abut.	.50	Hinge		Pier 1	.1	.2	.3	.4	.5	.6	.7	*	.9	Pier 2	.1	.2	*	.4	.5	.6	.7	*	.9	Pier 3	.25	.50	*	Pier 4	.25	.50	.75	Exp. Jt.		Pier 5	.25	.50	*	.75	Pier 6	.1	*	.3	.4	.5	.6	*	.8	.9	Pier 7
Girder A	1	0	0	0	0	0	1/8	1/4	3/8	3/8	3/8	5/16	1/4	3/16	1/16	0	0	1/16	1/16	1/8	1/8	1/8	1/16	1/16	0	0	0	0	0	0	1/16	1/16	1/16	0	0	0	1/16	1/16	0	0	0	1/8	1/4	1/4	1/4	1/4	1/8	1/16	0	0	0
	2	0	1/16	0	-3/16	0	5/8	9/16	3/4	13/16	3/4	11/16	1/2	5/8	1/8	0	1/16	3/16	3/8	9/16	11/16	11/16	9/16	5/16	3/16	0	-1/16	1/16	0	0	1/8	1/4	3/16	0	0	0	3/16	1/8	1/16	0	0	1/8	1/4	1/2	5/8	5/8	1/2	1/4	1/8	0	0
	3	0	-1/4	0	0	0	-1 1/8	-2	-2 3/8	-2 5/8	-2 3/4	-2 5/8	-2 1/4	-1 1/4	-3/8	0	-5/16	-5/16	-3/8	-1/2	-3/8	-1/2	-1/4	-3/8	-1/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3/8	1/4	1 1/8	1 3/8	1 3/8	1 7/8	2 1/8	1 7/8	1 3/8	0
	4	0	-1/8	0	0	0	-1 1/16	-1 1/2	-1 7/8	-1 15/16	-1 1/2	-1 3/8	-1 3/8	-5/8	-1/8	0	-3/8	-1/16	-1/2	3/8	5/8	9/16	3/4	1/4	3/16	0	-1/16	1/16	0	0	3/16	1/8	1/4	0	0	0	1/8	1/8	1/16	0	0	1/2	1/8	1 1/8	2 3/8	2 1/2	2 1/2	2 1/2	2 1/16	1 5/8	0
	5	0				-3 1/4"										3 1/8"										1'-0 1/2"				3'-0 1/8"						4'-1 3/8"					5'-4 3/8"										6'-10 1/8"
Girder B	1	0	0	0	0	0	1/8	1/4	3/8	3/8	3/8	5/16	1/4	3/16	1/16	0	0	1/16	1/16	1/8	1/8	1/8	1/16	1/16	1/16	0	0	0	0	0	1/16	1/16	1/16	0	0	0	1/16	1/16	0	0	0	1/16	1/8	1/8	1/8	1/8	1/8	1/16	0	0	0
	2	0	1/16	0	-1/8	0	3/8	1/16	7/8	1	1	7/8	5/8	3/8	1/8	0	1/16	3/16	5/16	1/2	11/16	11/16	1/2	3/8	1/8	0	-1/16	1/16	0	0	1/8	1/16	1/8	0	0	0	1/8	1/8	1/16	0	0	1/8	1/4	3/8	1/2	1/2	3/8	1/4	1/8	0	0
	3	0	-3/8	0	0	0	-1 1/4	-2	-2 3/8	-2 5/8	-2 5/8	-2 1/2	-2 1/8	-1 1/2	-3/8	0	-5/16	-11/16	-3/8	-1/2	-3/8	-1/2	-1/4	-3/8	-1/16	0	-1/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1/4	3/8	1 1/8	1 1/2	1 3/8	1 1/4	1 1/2	1 1/8	1 1/16	0
	4	0	-1/8	0	-1/4	0	-1/2	-1 1/16	-1 3/8	-1 9/16	-1 1/8	-1 1/2	-1 7/16	-1 3/16	-5/8	0	-1/8	-1/16	-1/8	3/8	5/8	5/8	3/4	1/4	1/8	0	-1/8	1/16	0	0	1/8	1/4	1/8	0	0	0	1/8	1/8	1/16	0	0	1/2	1/8	1 3/8	2 1/8	2 3/8	2 1/8	1 5/8	1 1/4	1 1/16	0
	5	0				-4 1/8"										1 1/4"										1'-8 3/8"				2'-9 3/4"						3'-4 1/8"					5'-1 1/4"										6'-1 7/8"
Girder C	1	0	0	0	0	0	1/8	1/4	3/8	3/8	5/16	5/16	1/4	3/16	1/16	0	0	1/16	1/8	3/16	3/16	3/16	3/16	1/16	1/16	0	0	0	0	0	1/16	1/16	1/16	0	0	0	1/16	1/16	0	0	0	1/16	3/16	3/16	3/16	3/16	1/8	1/16	0	0	0
	2	0	1/16	0	-1/8	0	3/8	11/16	7/8	1	1	7/8	5/8	3/8	1/8	0	1/16	3/16	3/8	5/8	13/16	13/16	5/8	3/8	1/8	0	-1/16	1/16	0	0	1/16	1/8	1/16	0	0	0	1/8	1/8	1/16	0	0	1/16	1/8	3/8	1/2	1/2	3/8	1/4	1/8	0	0
	3	0	-3/8	0	0	0	-1 3/8	-2 3/16	-2 5/8	-2 3/4	-3 1/8	-3	-2 5/8	-1 7/8	-1	0	-5/16	-11/16	-7/16	-5/8	-1/2	-5/8	-1/2	-3/8	-1/8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1/4	3/8	1 1/8	1 1/4	1 3/8	1 5/16	1 3/8	1 1/16	0	0
	4	0	-1/8	0	0	0	-1/16	-1 1/16	-1 7/8	-1 7/16	-1 11/16	-1 3/8	-1 3/8	-1 1/4	-5/8	0	-3/8	-3/16	-1/16	5/16	3/8	7/16	5/16	1/8	1/16	0	-1/8	1/16	0	0	1/8	1/4	1/8	0	0	0	1/8	1/4	1/8	0	0	1/2	1 1/16	1 1/2	1 5/8	2 1/16	2	1 11/16	1 5/16	0	0
	5	0				-6 1/4"										-3 5/8"										1'-3 3/4"				2'-5 3/8"						3'-6 3/8"					4'-8 3/8"										6'-3"
Girder D	1	0	0	0	0	0	1/8	3/16	1/4	5/16	5/16	1/4	3/16	1/8	1/16	0	0	1/16	1/16	1/8	3/16	3/16	1/8	1/16	1/16	0	0	0	0	0	0	1/16	1/16	0	0	0	0	0	0	0	0	1/16	1/16	1/8	1/8	1/8	1/8	1/16	0	0	0
	2	0	1/16	0	-1/8	0	3/8	5/8	7/8	1	1	7/8	5/8	3/8	1/8	0	1/8	1/4	1/4	3/8	1/2	5/8	5/8	3/8	1/8	0	0	0	0	0	1/16	1/16	1/16	0	0	0	1/16	1/16	0	0	0	1/8	3/16	3/8	5/8	7/8	7/8	5/8	3/8	1/16	0
	3	0	-3/8	0	0	0	-1 1/4	-2 1/4	-2 7/8	-3 3/8	-3 1/4	-3 3/8	-2 1/4	-2 3/8	-1 3/8	0	-1/4	-11/16	-1/2	-3/8	-1/2	-1/4	-3/8	-3/8	-1/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1/4	3/8	1 1/8	1	1 1/16	1 1/8	1 1/4	1 1/16	1/16	0
	4	0	-1/8	0	-1/8	0	-1 5/16	-1 7/8	-1 3/8	-2 1/4	-2 1/8	-2 3/8	-2 3/8	-1 5/8	-1	0	-1/2	-1/2	-5/8	0	1/4	3/8	5/16	1/4	1/16	0	0	0	0	0	3/16	3/16	3/16	0	0	0	0	0	0	0	0	3/8	5/8	1 1/16	1 5/16	1 7/16	1 9/16	1 1/2	1 3/8	5/8	0
	5	0				-7 5/8"										-8 3/8"										11 3/8"				2'-0 7/8"						3'-2 1/4"					4'-4 1/4"										5'-0 5/8"
Girder E	1	0	0	0	0	0	1/16	1/8	3/16	1/4	1/4	3/16	1/8	1/8	1/16	0	0	0	1/16	1/16	1/8	1/8	1/8	1/16	0	0	0	0	0	0	1/16	1/16	1/16	0	0	0	1/16	1/16	0	0	0	1/16	1/16	1/8	1/8	1/8	1/16	1/16	0	0	0
	2	0	1/16	0	-1/8	0	3/16	3/8	1/2	9/16	1/2	7/16	5/16	1/4	1/16	0	0	1/16	1/8	3/16	1/4	1/4	1/4	1/16	1/16	0	0	1/16	0	0	1/16	1/8	1/16	0	0	0	1/16	1/16	0	0	0	1/16	3/16	1/4	1/4	1/4	3/16	1/8	0	0	0
	3	0	-9/16	0	0	0	-1 5/16	-2 5/16	-3 1/16	-3 1/4	-3 11/16	-3 5/8	-3 3/16	-2 1/8	-1 7/16	0	-1/2	-11/16	-11/16	-9/16	-7/16	-3/8	-5/16	-3/16	-1/8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3/8	1/4	7/8	1 1/16	1 1/16	1 1/16	1 1/8	1 1/4	3/8	0
	4	0	-1/2	0	-1/8	0	-1 1/16	-1 13/16	-2 3/8	-2 11/16	-2 15/16	-3	-2 3/4	-2 1/8	-1 3/8	0	-1/2	-3/8	-1/2	-5/16	-1/16	0	0	-1/16	-1/16	0	0	1/16	0	0	1/16	3/16	3/16	0	0	0	1/16	1/16	0	0	0	3/16	3/8	3/4	1 5/8	1 1/16	1 1/16	1 5/16	1 1/8	3/4	0
	5	0				-9 11/16"										-1'-0 15/16"										6 11/16"				1'-8 1/4"						2'-0 1/4"					3'-11 3/4"										5'-6 3/4"

8'-4 11/16" 3'-7 3/4"

BRIDGE - 1493

Girder		Pier 7	.1	*	.3	.4	.5	.6	.7	*	.9	Pier 8	.1	.2	*	.4	.5	.6	.7	.8	.9	N. Abut.
Girder A	1	0	1/8	1/4	3/8	1/2	9/16	1/2	7/16	1/4	1/8	0	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0
	2	0	3/16	1/2	3/4	1	1 1/16	1	13/16	1/2	1/4	0	-1/16	0	1/16	3/16	5/16	3/8	3/8	5/16	3/16	0
	3	0	2 11/16	4 9/16	6 1/4	7 1/8	7 7/16	7 1/8	6 1/4	4 9/16	2 11/16	0	1 3/4	3 1/4	4 3/4	5 1/8	5 5/16	5 1/16	4 5/16	3 3/16	1 3/4	0
	4	0	3	5 5/16	7 3/8	8 5/8	9 1/16	8 5/8	7 1/2	5 5/16	3 1/16	0	1 11/16	3 1/4	4 7/8	5 3/8	5 11/16	5 1/2	4 3/4	3 9/16	2	0
	5	6'-10 1/8"										4'-8 1/2"										0
Girder B	1	0	1/16	1/8	3/16	1/4	1/4	1/4	3/16	1/8	1/16	0	0	0	0	1/16	1/16	1/16	1/16	1/16	1/16	0
	2	0	1/4	5/8	1 1/16	1 3/8	1 1/2	1 1/16	1 3/16	3/4	5/16	0	0	0	1/8	1/4	3/8	7/16	7/16	5/16	3/16	0
	3	0	2 3/4	5	6 3/8	7 1/4	7 9/16	7 1/4	6 3/8	5	2 3/4	0	1 5/8	3 1/16	4 1/2	4 13/16	5 1/16	4 13/16	4 3/16	3 1/16	1 11/16	0
	4	0	3 1/16	5 3/4	7 5/8	8 7/8	9 5/16	8 15/16	7 3/4	5 7/8	3 1/8	0	1 5/8	3 1/16	4 5/8	5 1/8	5 1/2	5 5/16	4 11/16	3 7/16	1 15/16	0
	5	6'-7 3/8"										4'-6 3/4"										0
Girder C	1	0	1/16	1/4	5/16	7/16	7/16	7/16	3/8	3/16	1/8	0	0	0	0	1/16	1/16	1/16	1/16	1/16	1/16	0
	2	0	1/4	5/8	7/8	1 1/8	1 1/4	1 3/16	15/16	9/16	1/4	0	0	1/16	1/8	1/4	3/8	7/16	7/16	5/16	3/16	0
	3	0	2 3/4	5 1/16	6 7/16	7 3/8	7 11/16	7 3/8	6 7/16	5 1/16	2 3/4	0	1 7/16	2 5/8	3 13/16	4 1/8	4 5/16	4 1/8	3 9/16	2 11/16	1 1/2	0
	4	0	3 1/16	5 13/16	7 5/8	8 15/16	9 3/8	9	7 3/4	5 13/16	3 1/8	0	1 7/16	2 11/16	3 15/16	4 7/16	4 3/4	4 5/8	4 1/16	3 1/16	1 3/4	0
	5	6'-3"										4'-3 11/16"										0
Girder D	1	0	1/16	3/16	5/16	3/8	3/8	3/8	5/16	3/16	1/16	0	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0
	2	0	1/4	5/8	7/8	1 1/16	1 3/16	1 1/8	7/8	9/16	1/4	0	0	0	1/8	3/16	1/4	1/4	1/4	3/16	1/8	0
	3	0	2 13/16	5 3/16	6 9/16	7 1/2	7 13/16	7 1/2	6 9/16	5 3/16	2 13/16	0	1 1/4	2 1/4	3 3/16	3 7/16	3 9/16	3 7/16	3	2 1/4	1 1/4	0
	4	0	3 1/8	6	7 3/4	8 15/16	9 3/8	9	7 3/4	5 15/16	3 1/8	0	1 1/4	2 1/4	3 3/8	3 11/16	3 7/8	3 3/4	3 5/16	2 1/2	1 7/16	0
	5	5'-10 5/8"										4'-0 13/16"										0
Girder E	1	0	1/16	1/8	3/16	1/4	1/4	1/4	3/16	1/8	1/16	0	0	0	1/16	1/16	1/16	1/16	1/16	1/16	0	0
	2	0	1/8	5/16	7/16	9/16	5/8	9/16	1/2	5/16	1/8	0	0	0	1/8	1/8	3/16	3/16	3/16	1/8	1/16	0
	3	0	2 13/16	5 1/4	6 11/16	7 5/8	8	7 5/8	6 11/16	5 1/4	2 13/16	0	1 1/16	1 15/16	2 5/8	2 3/4	2 7/8	2 11/16	2 3/8	1 13/16	1 1/16	0
	4	0	3	5 11/16	7 5/16	8 7/16	8 7/8	8 7/16	7 3/8	5 11/16	3	0	1 1/16	1 15/16	2 13/16	2 15/16	3 1/8	2 15/16	2 5/8	2	1 1/8	0
	5	5'-6 3/4"										3'-10 1/16"										0

BRIDGE - 1486

Girder		W.Abut.	.25	.50	.75	Pier 1	*	.50	75	Pier 2	.25	50	*	Pier 3	.25	.50	75	E.Abut.
Girder A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	0	1/8	1/8	0	0	0	1/16	-1/16	0	-1/16	1/16	0	0	0	1/8	1/8	0
	3	0	7/16	9/16	7/16	0	1/2	5/8	5/16	0	1/2	13/16	5/8	0	7/16	9/16	7/16	0
	4	0	9/16	11/16	7/16	0	1/2	11/16	1/4	0	7/16	7/8	5/8	0	7/16	11/16	9/16	0
	5	0				5 7/8				7 3/8				6 1/16				0
Girder B	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	0	1/8	1/8	0	0	0	1/16	-1/16	0	-1/16	1/16	0	0	0	1/8	1/8	0
	3	0	7/16	9/16	7/16	0	9/16	11/16	7/16	0	9/16	13/16	5/8	0	7/16	9/16	7/16	0
	4	0	9/16	11/16	7/16	0	9/16	3/4	3/8	0	1/2	7/8	5/8	0	7/16	11/16	9/16	0
	5	0				6 1/8				8 7/8				6 5/8				0
Girder C	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	0	1/8	1/8	0	0	0	1/16	-1/16	0	-1/16	1/16	0	0	0	1/8	1/8	0
	3	0	7/16	9/16	7/16	0	5/8	13/16	9/16	0	5/8	7/8	11/16	0	7/16	9/16	7/16	0
	4	0	9/16	11/16	7/16	0	5/8	7/8	1/2	0	9/16	15/16	11/16	0	7/16	11/16	9/16	0
	5	0				7 1/8				10 3/16				7 3/16				0
Girder D	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	0	1/8	1/8	0	0	0	1/16	-1/16	0	-1/16	1/16	0	0	0	1/8	1/8	0
	3	0	7/16	9/16	7/16	0	11/16	15/16	11/16	0	11/16	15/16	11/16	0	7/16	9/16	7/16	0
	4	0	9/16	11/16	7/16	0	11/16	1	5/8	0	5/8	1	11/16	0	7/16	11/16	9/16	0
	5	0				7 13/16				11 7/16				7 13/16				0
Girder E	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	0	1/8	1/8	0	0	0	1/16	-1/16	0	-1/16	1/16	0	0	0	1/8	1/8	0
	3	0	7/16	9/16	7/16	0	3/4	1	13/16	0	3/4	15/16	11/16	0	7/16	9/16	7/16	0
	4	0	9/16	11/16	7/16	0	3/4	1 1/16	3/4	0	11/16	1	11/16	0	7/16	11/16	9/16	0
	5	0				8 7/16				1'-0 3/4"				8 3/8				0

Note:
For notes and schematic detail of camber and deflections see Sheet 363

H.N.T.B. BRIDGE NO. 6, 7, 13 Revised 7-8-75 By R.A.S.

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

DEFLECTION AND CAMBER

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN R.A.P.	TRACED	CHECKED L.D.L.	REVIEWED M.J.K.	REVISED
DATE 3-23-70	DATE	DATE 5-14-70	DATE 11-22-71	1668

REV-8-27-76

FED. ROAD DIV. NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	SHEET
2	OHIO			365 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

BRIDGE – 1489

Girder	Line	W. Abut.	.25	.50	.75	Pier 1	.1	*	.3	.4	.5	.6	.7	.8	.9	Pier 2	*	.50	.75	Pier 3	*	.50	.75	Pier 4
A	1	0	0	0	0	0	0	0	1/16	1/16	1/16	1/16	1/16	0	0	0	0	0	0	0	0	0	0	0
A	2	0	1/8	1/8	1/16	0	0	1/16	1/8	3/16	3/16	3/16	1/8	1/16	0	0	1/16	1/8	1/16	0	0	0	0	0
A	3	0	-11/16	-13/16	-7/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A	4	0	-9/16	-11/16	-3/8	0	0	1/16	3/16	1/4	1/4	1/4	3/16	1/16	0	0	1/16	1/8	1/16	0	0	0	0	0
A	5	0				5 1/4"										1'-2 1/2"				1'-10 3/8"				2'-4 1/4"
B	1	0	1/16	1/16	0	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	0	0	0	0	0	0	0	0
B	2	0	1/8	3/16	1/16	0	0	1/8	1/4	5/16	5/16	5/16	1/4	1/8	0	0	0	1/8	1/16	0	0	1/16	0	0
B	3	0	-3/4	-13/16	-7/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	4	0	-9/16	-9/16	-3/8	0	0	3/16	5/16	3/8	3/8	3/8	5/16	3/16	0	0	0	1/8	1/16	0	0	1/16	0	0
B	5	0				5 7/8"										1'-3 13/16"				2'-0 1/16"				2'-6 5/16"
C	1	0	1/16	1/16	0	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	0	0	0	0	0	0	0	0
C	2	0	3/16	3/16	1/16	0	1/16	3/16	1/4	5/16	3/8	5/16	1/4	3/16	1/16	0	0	1/8	1/16	0	0	1/16	1/16	0
C	3	0	-3/4	-13/16	-7/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	4	0	-1/2	-9/16	-3/8	0	1/16	1/4	5/16	3/8	7/16	3/8	5/16	1/4	1/16	0	0	1/8	1/16	0	0	1/16	1/16	0
C	5	0				6 1/2"										1'-5 3/16"				2'-1 5/8"				2'-8 3/8"
D	1	0	1/16	1/16	0	0	0	1/16	1/16	1/16	1/8	1/8	1/16	1/16	0	0	0	0	0	0	0	0	0	0
D	2	0	3/16	3/16	1/16	0	1/16	3/16	5/16	3/8	7/16	3/8	5/16	3/16	1/16	0	0	1/16	1/16	0	1/16	1/16	1/16	0
D	3	0	-3/4	-13/16	-7/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	4	0	-1/2	-9/16	-3/8	0	1/16	1/4	3/8	7/16	9/16	1/2	3/8	1/4	1/16	0	0	1/16	1/16	0	1/16	1/16	1/16	0
D	5	0				7 1/16"										1'-6 9/16"				2'-3 1/4"				2'-10 7/16"
E	1	0	1/16	1/16	0	0	0	1/16	1/16	1/8	1/8	1/8	1/16	1/16	0	0	0	0	0	0	0	0	0	0
E	2	0	3/16	3/16	1/16	0	1/16	3/16	5/16	7/16	7/16	7/16	3/8	1/4	1/8	0	0	1/16	1/16	0	1/16	1/8	1/16	0
E	3	0	-3/4	-13/16	-7/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	4	0	-1/2	-9/16	-3/8	0	1/16	1/4	3/8	9/16	9/16	9/16	7/16	5/16	1/8	0	0	1/16	1/16	0	1/16	1/8	1/16	0
E	5	0				7 5/16"										1'-7"				2'-3 3/8"				2'-10 15/16"

Girder	Line	Exp. Jt.		.25	.50	*	.75	Pier 5	.25	.50	.75	*	Pier 6	.25	.50	*	Pier 7	.1	.2	.3	.4	.5	.6	.7	*	.9	Pier 8	.25	.50	.75	E. Abut.
A	1	0	0	0	0	0	0	0	1/16	1/16	1/16	0	0	0	0	0	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	0	1/16	1/16	0
A	2	0	0	1/16	1/16	0	0	0	1/8	1/4	1/8	1/16	0	0	1/16	0	0	1/16	3/16	1/4	5/16	3/8	5/16	1/4	3/16	1/16	0	1/16	1/8	1/8	0
A	3	0	0	0	0	0	0	0	1/2	1	13/16	5/8	0	15/16	1 3/16	13/16	0	3/4	1 3/8	1 3/4	2 1/16	2 1/8	2 1/16	1 3/4	1 3/8	3/4	0	11/16	15/16	11/16	0
A	4	0	0	1/16	1/16	0	0	0	11/16	1 5/16	1	11/16	0	15/16	1 1/4	13/16	0	13/16	1 5/8	2 1/16	2 7/16	2 9/16	2 7/16	2 1/16	1 5/8	13/16	0	3/4	1 1/8	7/8	0
A	5							2'-11 1/16"					3'-5 13/16"				3'-2 1/2"										1'-8 13/16"				0
B	1	0	0	0	0	0	0	0	1/16	1/16	1/16	0	0	0	0	0	0	0	1/16	1/16	1/8	1/8	1/8	1/16	1/16	0	0	0	1/16	1/16	0
B	2	0	0	1/16	1/16	1/16	0	0	3/16	1/4	3/16	1/8	0	1/16	1/16	0	0	1/8	1/4	3/8	7/16	1/2	7/16	3/8	1/4	1/16	0	0	1/8	1/8	0
B	3	0	0	0	0	0	0	0	9/16	1	13/16	5/8	0	1 1/16	1 7/16	1 1/8	0	3/4	1 5/16	1 3/4	2	2 1/16	2	1 3/4	1 5/16	3/4	0	5/8	7/8	11/16	0
B	4	0	0	1/16	1/16	1/16	0	0	13/16	1 5/16	1 1/16	3/4	0	1 1/8	1 1/2	1 1/8	0	7/8	1 5/8	2 3/16	2 9/16	2 11/16	2 9/16	2 3/16	1 5/8	13/16	0	5/8	1 1/16	7/8	0
B	5							3'-1 9/16"					3'-8 5/8"				3'-5 1/4"										1'-9 5/8"				0
C	1	0	0	0	0	0	0	0	1/16	1/16	1/16	0	0	0	0	0	0	0	1/16	1/16	1/8	1/8	1/8	1/16	1/16	0	0	0	0	1/16	0
C	2	0	0	1/16	1/8	1/16	0	0	3/16	1/4	3/16	1/8	0	0	1/16	0	0	1/8	1/4	3/8	7/16	1/2	7/16	3/8	1/4	1/8	0	0	1/8	1/8	0
C	3	0	0	0	0	0	0	0	9/16	1	13/16	5/8	0	1 3/16	1 11/16	1 3/8	0	3/4	1 5/16	1 11/16	1 15/16	2	1 15/16	1 11/16	1 5/16	3/4	0	5/8	13/16	5/8	0
C	4	0	0	1/16	1/8	1/16	0	0	13/16	1 5/16	1 1/16	3/4	0	1 3/16	1 3/4	1 3/8	0	7/8	1 5/8	2 1/8	2 1/2	2 5/8	2 1/2	2 1/8	1 5/8	7/8	0	5/8	15/16	13/16	0
C	5							3'-4 1/8"					3'-11 7/16"				3'-8"										1'-10 7/16"				0
D	1	0	0	0	0	0	0	0	1/16	1/16	1/16	0	0	0	0	0	0	0	1/16	1/16	1/8	1/8	1/8	1/16	1/16	0	0	0	0	0	0
D	2	0	0	1/8	1/8	1/16	1/16	0	3/16	5/16	3/16	1/8	0	0	1/16	0	0	1/8	1/4	3/8	7/16	1/2	1/2	3/8	1/4	1/8	0	0	1/16	1/8	0
D	3	0	0	0	0	0	0	0	9/16	1	13/16	9/16	0	1 5/16	1 15/16	1 9/16	0	11/16	1 1/4	1 5/8	1 7/8	1 15/16	1 7/8	1 5/8	1 1/4	11/16	0	5/8	13/16	5/8	0
D	4	0	0	1/8	1/8	1/16	1/16	0	13/16	1 3/8	1 1/16	11/16	0	1 5/16	2	1 9/16	0	13/16	1 9/16	2 1/16	2 7/16	2 9/16	2 1/2	2 1/16	1 9/16	13/16	0	5/8	7/8	3/4	0
D	5							3'-6 11/16"					4'-2 3/16"				3'-10 3/4"										1'-11 1/4"				0
E	1	0	0	0	0	0	0	0	1/16	1/16	1/16	0	0	0	0	0	0	0	1/16	1/8	1/8	1/8	1/8	1/8	1/16	0	0	0	0	0	0
E	2	0	0	1/8	1/8	1/16	1/16	0	3/16	5/16	3/16	1/8	0	1/16	1/16	0	0	1/8	1/4	7/16	1/2	9/16	1/2	7/16	1/4	1/8	0	-1/16	1/16	1/16	0
E	3	0	0	0	0	0	0	0	5/8	1	13/16	9/16	0	1 5/16	1 15/16	1 5/8	0	11/16	1 1/4	1 5/8	1 13/16	1 7/8	1 13/16	1 5/8	1 1/4	11/16	0	9/16	13/16	5/8	0
E	4	0	0	1/8	1/8	1/16	1/16	0	7/8	1 3/8	1 1/16	11/16	0	1 3/8	2	1 5/8	0	13/16	1 9/16	2 3/16	2 7/16	2 9/16	2 7/16	2 3/16	1 9/16	13/16	0	1/2	7/8	11/16	0
E	5							3'-7 5/16"					4'-2 5/8"				3'-11 1/16"										1'-11 3/16"				0

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Girder	Line	N. Abut.	.50	Hinge		Pier 1	.1	.2	.3	.4	.5	.6	*	.8	.9	‡Pier 2
A	1	0	0	0	0	0	1/16	1/8	1/8	3/16	1/8	1/8	1/16	1/16	0	0
A	2	0	1/16	0	-3/16 -1/8	0	3/16	3/8	1/2	9/16	1/2	7/16	5/16	1/8	0	0
A	3	0	1/16	0	0	0	1/2	7/8	1 1/8	1 3/8	1 1/2	1 1/2	1 3/8	1 3/16	3/4	0
A	4	0	1/8	0	-3/16 -1/8	0	3/4	1 3/8	1 3/4	2 1/8	2 1/8	2 1/16	1 3/4	1 3/8	3/4	0
A	5	0				4 11/16"										9 7/8"
B	1	0	0	0	0	0	1/16	1/8	1/8	1/8	1/8	1/8	1/16	0	0	0
B	2	0	1/16	0	-3/16 -1/8	0	1/4	7/16	9/16	9/16	9/16	7/16	5/16	1/8	0	0
B	3	0	1/16	0	0	0	3/8	11/16	7/8	1	1 1/16	1 1/8	1 1/16	3/4	7/16	0
B	4	0	1/8	0	-3/16 -1/8	0	11/16	1 1/4	1 9/16	1 11/16	1 3/4	1 11/16	1 7/16	7/8	7/16	0
B	5	0				3 15/16"										7 7/8"
C	1	0	0	0	0	0	1/16	1/8	1/8	1/8	1/8	1/8	1/16	0	0	0
C	2	0	1/16	0	-3/16 -1/8	0	1/4	7/16	9/16	9/16	9/16	7/16	5/16	1/8	0	0
C	3	0	1/8	0	0	0	3/16	7/16	1/2	3/4	11/16	5/8	3/4	5/8	1/4	0
C	4	0	3/16	0	-3/16 -1/8	0	1/2	1	1 3/16	1 7/16	1 3/8	1 3/16	1 1/8	3/4	1/4	0
C	5	0				3 1/8"										5 9/16"
D	1	0	0	0	0	0	1/16	1/8	1/8	1/8	1/8	1/8	1/16	0	0	0
D	2	0	1/16	0	-3/16 -1/8	0	1/4	7/16	9/16	9/16	9/16	7/16	5/16	1/8	0	0
D	3	0	3/16	0	0	0	1/16	3/16	1/8	1/8	1/16	1/8	1/16	1/4	1/4	0
D	4	0	1/4	0	-3/16 -1/8	0	3/8	3/4	13/16	13/16	3/4	11/16	7/16	3/8	1/4	0
D	5	0				2 5/8"										3 9/16"
J	1	0	0	0	0	0	0	1/16	1/16	1/8	3/16	3/16	1/8	1/8	1/8	1/16
J	2	0	1/8	0	-3/16 -1/8	0	3/16	3/8	1/2	11/16	11/16	3/4	11/16	5/8	7/16	5/16
J	3	0	1/4	0	0	0	-1/16	-1/16	-1/8	-5/16	-5/16	-1/4	-3/8	-3/16	-1/16	0
J	4	0	3/8	0	-3/16 -1/8	0	1/8	3/8	7/16	1/2	9/16	11/16	7/16	9/16	1/2	3/8
J	5	0				13/16"										0
H	1	0	0	0	0	0	1/16	1/8	1/8	1/8	1/8	1/8	1/16	0	0	0
H	2	0	1/8	0	-3/16 -1/8	0	1/4	7/16	9/16	9/16	9/16	7/16	5/16	1/8	0	0
H	3	0	7/16	0	0	0	-3/16	-9/16	-3/4	-11/16	-3/4	-5/8	-9/16	-7/16	-1/2	0
H	4	0	9/16	0	-3/16 -1/8	0	1/8	0	-1/16	0	-1/16	-1/16	-3/16	-5/16	-1/2	0
H	5	0				-1/4"										-15/16"
K	1	0	0	0	0	0	0	1/16	1/16	1/8	3/16	3/16	1/8	1/8	1/8	1/16
K	2	0	1/16	0	-3/16 -1/8	0	3/16	3/8	1/2	11/16	11/16	3/4	11/16	5/8	7/16	5/16
K	3	0	-5/8	0	0	0	-3/4	-1 3/8	-1 3/4	-2	-2 1/8	-2	-1 3/4	-1 3/8	-3/4	0
K	4	0	-9/16	0	-3/16 -1/8	0	-9/16	-15/16	-1 3/16	-1 3/16	-1 1/4	-1 1/16	-15/16	-5/8	-3/16	3/8
K	5	0				-3 1/2"										0
E	1	0	0	0	0	0	1/16	1/8	1/8	1/8	1/8	1/8	1/16	0	0	0
E	2	0	1/16	0	-3/16 -1/8	0	1/4	7/16	9/16	9/16	9/16	7/16	5/16	1/8	0	0
E	3	0	-9/16	0	0	0	-1 3/16	-2 1/16	-2 9/16	-2 11/16	-2 7/16	-1 13/16	-1 1/16	-7/8	-1/2	0
E	4	0	-1/2	0	-3/16 -1/8	0	-7/8	-1 1/2	-1 7/8	-2	-1 3/4	-1 1/4	-11/16	-3/4	-1/2	0
E	5	0				-6 1/8"										-7 5/16"
F	1	0	0	0	0	0	1/16	1/8	1/8	1/8	1/8	1/8	1/16	0	0	0
F	2	0	1/16	0	-3/16 -1/8	0	1/4	7/16	9/16	9/16	9/16	7/16	5/16	1/8	0	0
F	3	0	-9/16	0	0	0	-1 1/4	-2 1/16	-2 9/16	-2 11/16	-2 7/16	-1 13/16	-1 1/16	-7/8	-1/2	0
F	4	0	-1/2	0	-3/16 -1/8	0	-15/16	-1 1/2	-1 7/8	-2	-1 3/4	-1 1/4	-11/16	-3/4	-1/2	0
F	5	0				-6 11/16"										-8 3/4"
G	1	0	0	0	0	0	1/16	1/8	1/8	3/16	1/8	1/8	1/16	1/16	0	0
G	2	0	1/16	0	-3/16 -1/8	0	3/16	3/8	1/2	9/16	1/2	7/16	5/16	1/8	0	0
G	3	0	-9/16	0	0	0	-1 1/16	-1 11/16	-2 1/8	-2 5/16	-2 5/16	-1 13/16	-1	-13/16	-1/2	0
G	4	0	-1/2	0	-3/16 -1/8	0	-13/16	-1 3/16	-1 1/2	-1 9/16	-1 11/16	-1 1/4	-5/8	-5/8	-1/2	0
G	5	0				-7 3/16"										-10 1/8"

Girder	Line	#.1	*	.3	.4	.5	.6	.7	.8	*	Pier 3	.25	.50	*	Pier 4	.25	.50	*	Pier 5	.25	.50	*	.75	Pier 6	.50	S. Abut.
A	1	[illegible]	[illegible]	[illegible]	[illegible]	1/4	1/4	[illegible]	[illegible]	1/16	0	0	0	0	0	0	1/16	0	0	0	[illegible]	0	0	0	0	0
A	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3/16	0	-3/16	-1/8	-1/16	0	3/16	1/4	1/8	0	[illegible]	1/16	1/16	1/16	0	0	0
A	3	9/16	1/2	3/8	3/16	1/16	0	0	-1/16	0	0	3/8	5/8	9/16	0	-1/4	-1 1/8	-1	0	[illegible]	[illegible]	[illegible]	1/16	0	[illegible]	0
A	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1/4	0	3/16	1/2	1/2	0	-1/16	-13/16	-7/8	0	[illegible]	[illegible]	[illegible]	1/8	0	[illegible]	0
A	5										5 3/4"				0"				-3 3/8"					[illegible]		0
B	1	[illegible]	[illegible]	[illegible]	[illegible]	1/4	1/4	[illegible]	[illegible]	1/16	0	0	0	0	0	0	1/16	0	0	0	[illegible]	0	0	0	0	0
B	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3/16	0	-3/16	-1/8	-1/16	0	3/16	1/4	1/8	0	[illegible]	1/16	1/16	1/16	0	0	0
B	3	1/8	7/16	5/16	-1/16	-1/4	-1/4	-1/16	-1/16	0	0	3/16	7/16	7/16	0	-5/8	-1	-15/16	0	[illegible]	[illegible]	[illegible]	1/16	0	[illegible]	0
B	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1/4	0	0	5/16	3/8	0	-7/16	-11/16	-13/16	0	[illegible]	[illegible]	[illegible]	1/8	0	[illegible]	0
B	5										3 3/8"				-3/8"				-3 3/8"					[illegible]		0
C	1	[illegible]	[illegible]	[illegible]	[illegible]	1/4	1/4	[illegible]	[illegible]	1/16	0	0	0	0	0	0	1/16	0	0	0	[illegible]	0	0	0	0	0
C	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3/16	0	-3/16	-1/8	-1/16	0	3/16	1/4	1/8	0	[illegible]	1/16	1/16	1/16	0	0	0
C	3	5/16	1/16	1/8	1/16	-1/4	-9/16	-1/2	-3/16	-1/16	0	1/8	1/4	5/16	0	-3/8	-11/16	-11/16	0	[illegible]	[illegible]	[illegible]	1/16	0	1/16	0
C	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3/16	0	-1/16	1/8	1/4	0	-3/16	-3/8	-9/16	0	[illegible]	[illegible]	[illegible]	1/8	0	1/16	0
C	5										1 3/8"				-1 5/16"				-3 3/8"					[illegible]		0
D	1	[illegible]	[illegible]	[illegible]	[illegible]	1/4	1/4	[illegible]	[illegible]	1/16	0	0	0	0	0	0	1/16	0	0	0	[illegible]	0	0	0	0	0
D	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3/16	0	-3/16	-1/8	-1/16	0	3/16	1/4	1/8	0	[illegible]	1/16	1/16	1/16	0	0	0
D	3	3/16	1/16	1/4	3/16	-1/8	-9/16	-1/4	-1/4	-1/16	0	-1/4	-1/8	1/8	0	-5/16	-7/16	-3/8	0	1/16	[illegible]	[illegible]	0	0	1/16	0
D	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3/16	0	-7/16	-1/4	1/16	0	-1/8	-1/8	-1/4	0	[illegible]	[illegible]	[illegible]	1/16	0	1/16	0
D	5										-1/2"				-2 3/8"				-3 3/8"					[illegible]		0
J	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
J	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
J	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
J	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
J	5										—				—				—					—		—
H	1	0	1/16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H	2	1/16	1/4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H	3	-5/16	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H	4	-1/4	5/16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H	5		0								—				—				—					—		—
K	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
K	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
K	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
K	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
K	5										—				—				—					—		—
E	1	[illegible]	[illegible]	[illegible]	[illegible]	1/4	1/4	[illegible]	[illegible]	1/16	0	0	0	0	0	0	1/16	0	0	0	[illegible]	0	0	0	0	0
E	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3/16	0	-3/16	-1/8	-1/16	0	3/16	1/4	1/8	0	[illegible]	1/16	1/16	1/16	0	0	0
E	3	9/16	1 3/16	7/16	-1/4	-9/16	-1/2	-1/8	-3/16	3/16	0	-1/8	-1/2	-5/16	0	-7/16	-3/8	-5/16	0	[illegible]	[illegible]	0	0	0	[illegible]	0
E	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7/16	0	-5/16	-5/8	-3/8	0	-1/4	-1/16	-3/16	0	[illegible]	[illegible]	1/16	1/16	0	[illegible]	0
E	5										-5 1/2"				-5 3/16"				-4 3/8"					[illegible]		0
F	1	[illegible]	[illegible]	[illegible]	[illegible]	1/4	1/4	[illegible]	[illegible]	1/16	0	0	0	0	0	0	1/16	0	0	0	[illegible]	0	0	0	0	0
F	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3/16	0	-3/16	-1/8	-1/16	0	3/16	1/4	1/8	0	[illegible]	1/16	1/16	1/16	0	0	0
F	3	5/16	3/4	-3/16	-7/8	-1 1/8	-1 1/4	-13/16	-7/16	1/8	0	5/16	-1/4	-5/16	0	-1/16	-1/8	-3/16	0	[illegible]	[illegible]	[illegible]	0	0	[illegible]	0
F	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3/8	0	1/8	-3/8	-3/8	0	1/8	3/16	-1/16	0	1/16	1/8	[illegible]	1/16	0	[illegible]	0
F	5										-5 13/16"				-4 5/16"				-2 13/16"					[illegible]		0
G	1	[illegible]	[illegible]	[illegible]	[illegible]	1/4	1/4	[illegible]	[illegible]	1/16	0	0	0	0	0	0	1/16	0	0	0	[illegible]	0	0	0	0	0
G	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3/16	0	-3/16	-1/8	-1/16	0	3/16	1/4	1/8	0	[illegible]	1/16	1/16	1/16	0	0	0
G	3	1/16	5/16	-11/16	-1 1/8	-7/8	-5/8	-13/16	-7/16	3/16	0	0	-1/8	-5/16	0	1/4	3/16	1/16	0	0	-1/16	[illegible]	1/16	0	0	0
G	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7/16	0	-3/16	-1/4	-3/8	0	7/16	1/2	3/16	0	[illegible]	[illegible]	[illegible]	1/8	0	0	0
G	5										-6 1/16"				-3 9/16"				-1 1/8"					[illegible]		0

Notes for Bridge 1494:
For Girders J and K, the values on line 5 are given to a baseline from North Abutment to Bend Line 2.
For Girder H, the values on line 5 are given to a baseline from North Abutment to Bend Line 3.
+Denotes Bendline 2 for Girder J and K.
#Denotes location of .5 point for Girder H.
‡Denotes end of Girders J and K at Field Splice 1.

BRIDGE – 1499

Beam	Line	S. Abut.	.25	.50	*	Pier 1	*	.25	.50	.75	*	Pier 2	*	.50	.75	N. Abut.
A	1	0	0	0	0	0	1/16	1/16	1/16	1/16	1/16	0	0	0	0	0
A	2	0	1/16	0	0	0	3/16	5/16	1/8	9/16	3/16	0	0	1/16	1/16	0
A	3	0	-1/8	-1/2	-1/8	0	-1/16	-1/8	-1/16	-1/16	0	0	-1/8	-1/16	-1/8	0
A	4	0	-3/8	-1/2	-3/8	0	3/16	1/4	1/16	1/16	1/4	0	-1/8	-1/16	0	0
A	5	0				-1 1/4"						-1 1/4"				0
B	1	0	0	0	0	0	1/16	1/8	1/8	1/16	1/16	0	0	0	0	0
B	2	0	1/16	0	0	0	1/4	3/16	3/16	1/8	1/16	0	0	1/16	1/16	0
B	3	0	-1/8	-1/2	-1/8	0	0	0	-1/8	1/16	0	0	-1/8	-1/8	-1/8	0
B	4	0	-3/8	-1/2	-3/8	0	3/8	7/16	5/16	1/4	3/16	0	-1/8	0	0	0
B	5	0				-1 3/8"						-13/16"				0
C	1	0	0	0	0	0	1/16	1/8	1/8	1/16	1/16	0	0	0	0	0
C	2	0	1/16	0	0	0	1/4	3/16	3/16	1/8	1/16	0	0	1/16	1/16	0
C	3	0	-1/8	-1/2	-1/8	0	1/16	1/8	1/16	1/8	0	0	-1/8	-1/8	-1/8	0
C	4	0	-3/8	-1/2	-3/8	0	3/8	9/16	13/16	5/16	3/16	0	-1/8	0	0	0
C	5	0				-3/4"						-13/16"				0
D	1	0	0	0	0	0	1/16	1/16	1/8	1/16	1/16	0	0	0	0	0
D	2	0	1/16	0	0	0	3/16	5/16	1/2	5/16	3/16	0	0	1/16	1/16	0
D	3	0	-1/8	0	-1/16	0	1/16	1/8	1/16	1/16	0	0	-1/16	-1/8	-1/16	0
D	4	0	-1/8	-1/8	-1/16	0	5/16	1/2	3/4	5/16	3/16	0	-1/16	1/16	0	0
D	5	0				1/16"						1/8"				0

Note:
For notes and schematic detail of camber and deflections see Sheet 363

H.N.T.B. BRIDGE NO. 8, 9, 14 | Revised 7-15-75 | By R.A.S.

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

DEFLECTION AND CAMBER

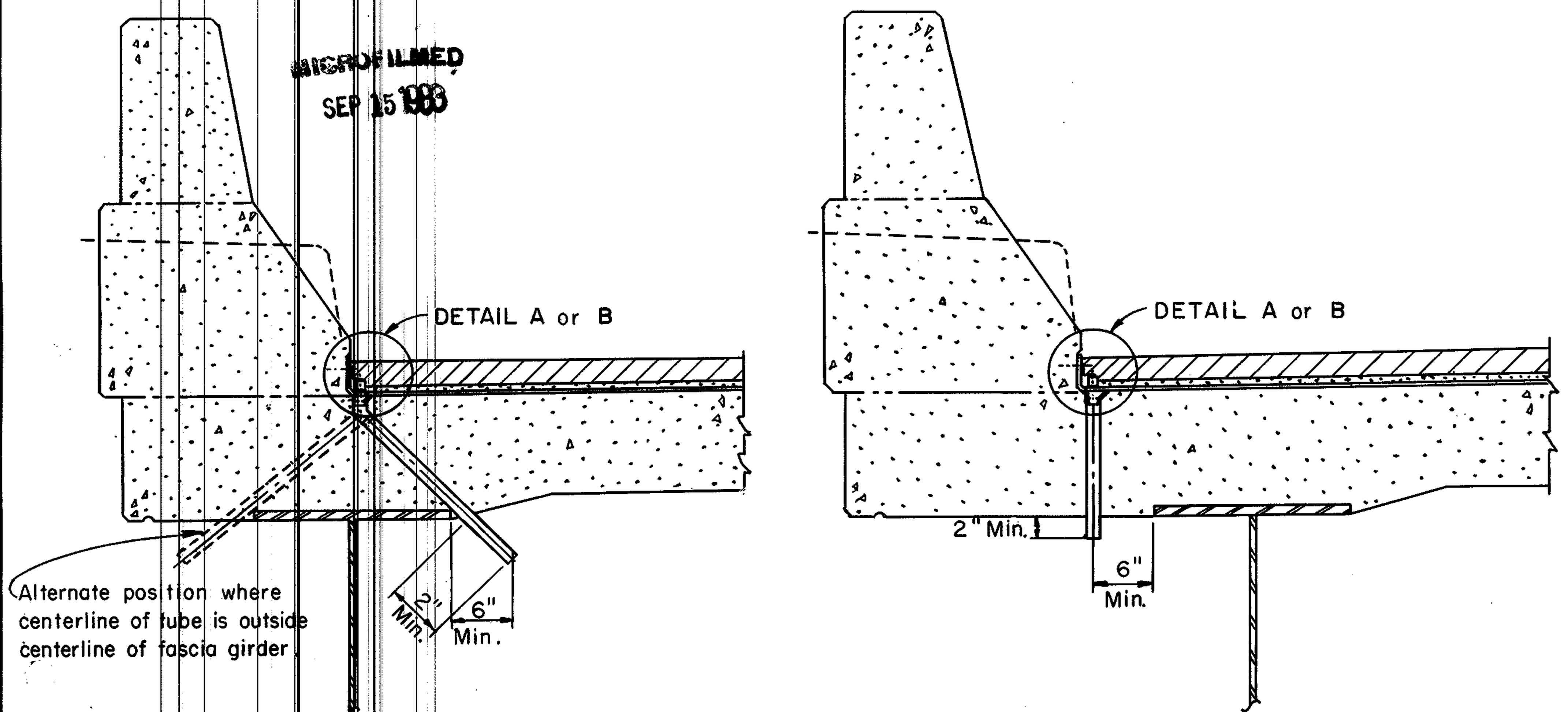
RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN RAP	TRACED	CHECKED RAS	REVIEWED	REVISED 7-20-76
DATE 3-17-70	DATE	DATE 6-30-70	DATE 11-20-71	1668

FHWA REGION	STATE	PROJECT		
5	OHIO			

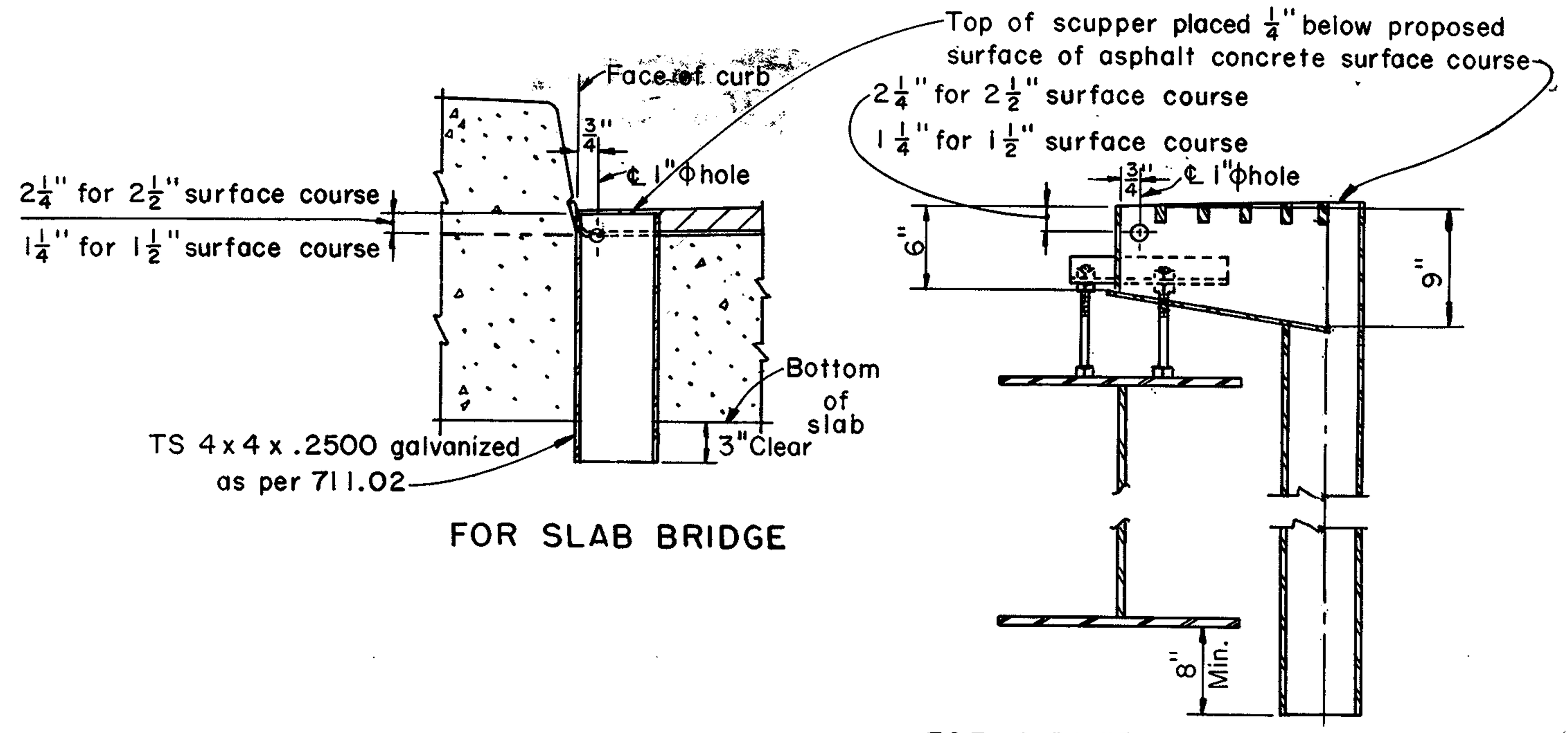
365A
389



STRUCTURAL STEEL BELOW CURB LINE

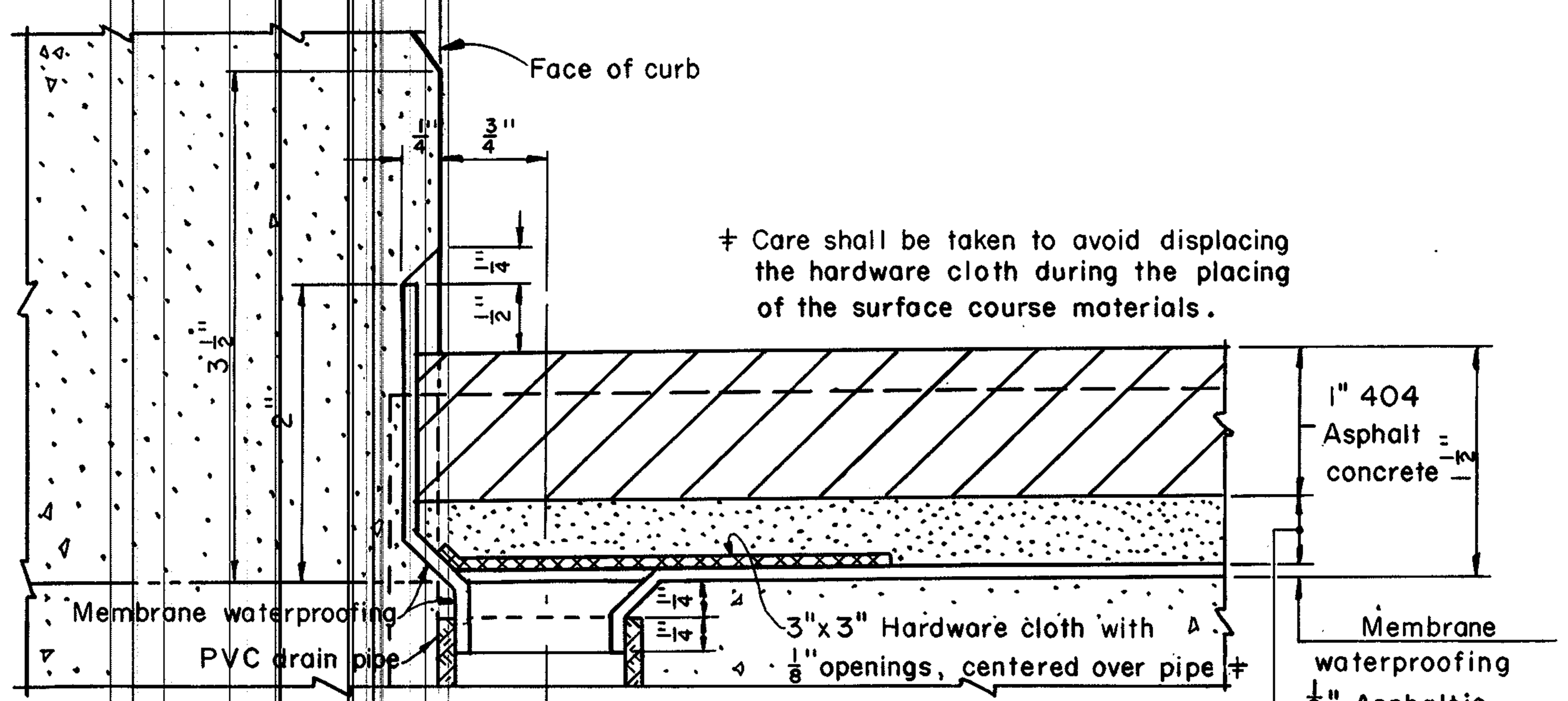
NO STRUCTURAL STEEL BELOW CURB LINE

DRAINAGE TUBE ARRANGEMENT



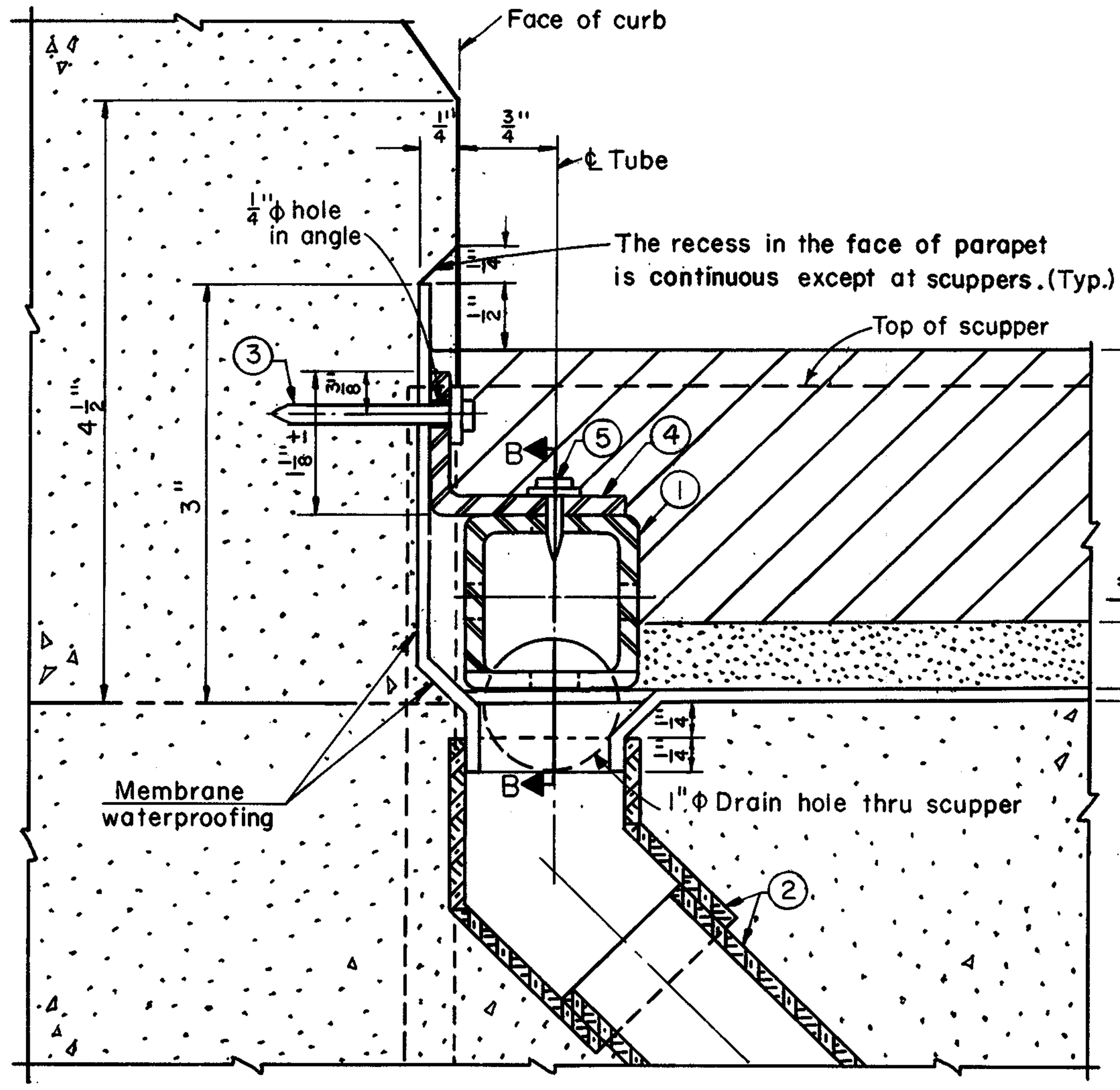
SCUPPER DETAILS

(Scupper details conform to SD-1-69 except as noted)



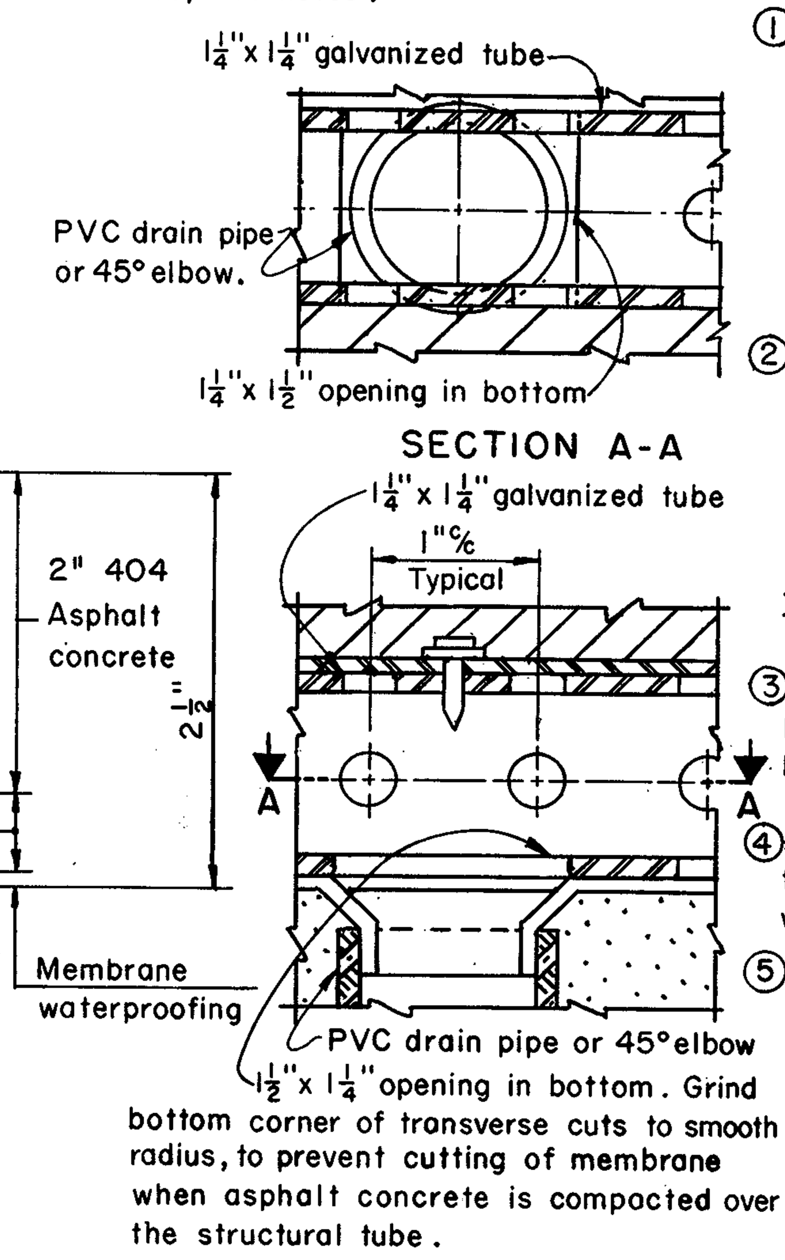
DETAIL B

SUBDRAINAGE FOR $1\frac{1}{2}$" SURFACE COURSE



DETAIL A

SUBDRAINAGE FOR $2\frac{1}{2}$" SURFACE COURSE



SUBDRAINAGE FOR ASPHALT CONCRETE SURFACE COURSE

The subdrainage system shall consist of PVC pipes and fittings and structural tubes as specified on this sheet. The pipes shall be spaced at approximately six foot intervals with a pipe placed within one foot of each expansion joint, except that they shall be relocated or extended as necessary for any discharge to clear bridge seats, structural members such as beams, diaphragms and crossbracing by at least six (6) inches. Pipes shall not be placed over or within four (4) feet of a pavement or sidewalk, within ten (10) feet of the centerline of a railroad track or along curb lines where the deck configuration does not permit water to accumulate.

Where the plans specify a two and one half ($2\frac{1}{2}$) inch surface course, the subdrainage shall be as shown on Detail A. The structural tube may be placed in any convenient lengths using butt joints. The price bid per linear foot for this drainage system shall include all PVC pipe and fittings, structural tubes, and all labor necessary to complete the item. The quantity will be the actual length of structural tube required. Payment will be made at the contract price for: Item 518, Lin. Ft., Subdrainage for wearing course, as per plan.

Where the plans specify a one and one half ($1\frac{1}{2}$) inch surface course, the subdrainage shall be as shown in Detail B. The price bid for each drain shall include the PVC pipe and fitting, the hardware cloth and all necessary labor to complete the item. Payment will be made at the contract price for: Item 518, Ea., Subdrainage for wearing course, as per plan.

If no asphaltic protective course is specified, the 404 shall be either $2\frac{1}{2}$" placed in two $1\frac{1}{4}$" courses or $1\frac{1}{2}$" placed in one course.

(1) - $1\frac{1}{4}$"x$1\frac{1}{4}$" galvanized, perforated, structural tube with $\frac{11}{32}$" ± ϕ holes 1" on centers on all four sides as shown. Cut $1\frac{1}{2}$" ± x $1\frac{1}{4}$" opening in bottom, centered over each PVC drain pipe. The steel for the structural tube shall conform to the following:
PREGALVANIZED, ASTM A446, Grade A Steel, Galvanizing as per ASTM A525.
POSTGALVANIZED, ASTM A569 or A366, Galvanizing as per 711.02.

The minimum steel thickness shall be 0.105".
Any damaged galvanizing shall be repaired as per AASHO M36.

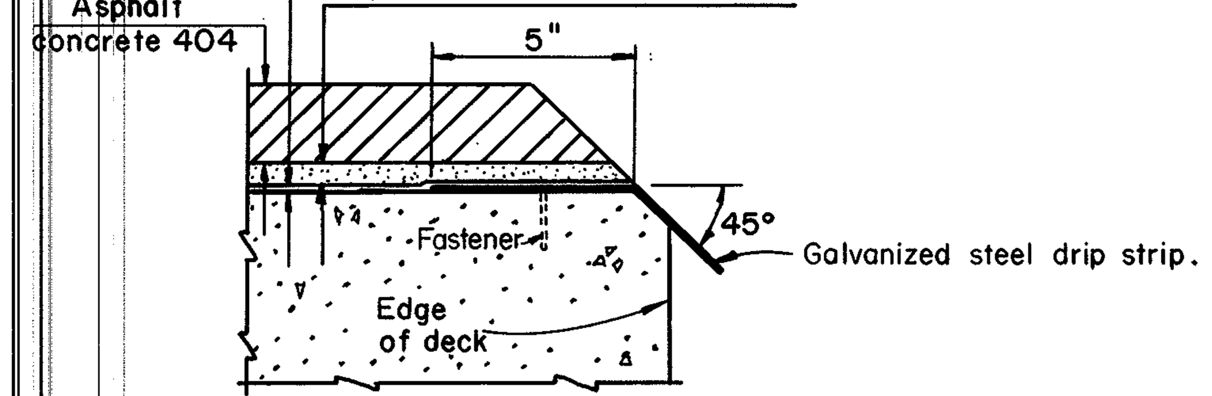
(2) - $1\frac{1}{4}$" PVC DRAIN PIPE AND 45° ELBOW. Position accurately to match $1\frac{1}{2}$"x$1\frac{1}{4}$" openings in perforated tube. Place membrane to lap into the pipe, and seal the hole around the lip of the pipe. (This operation is important to the servicability of the membrane.) The drain pipe and elbow shall comply with ASTM D2661 or ASTM D2665. The elbow shall be used only where structural steel is below curb line. Where the elbow is not adequate to provide clearance between the PVC pipe and the structural steel, the elbow shall be canted as required and cut on a line $\frac{1}{4}$" below and parallel with the deck surface. The solvent cement for the pipe and fittings shall conform to ASTM D2235 or ASTM D2564.

(3) - $1\frac{1}{4}$"x$\frac{5}{32}$"x$\frac{1}{4}$" flat head drive pin and washer.
Fastening of the structural tube by methods other than shown shall be subject to approval by the Engineer. (Driving pins into bridge deck is prohibited.)

(4) - L $1\frac{1}{2}$"x $1\frac{1}{2}$"x $\frac{1}{8}$", 3" long, clipped and galvanized, or bent galvanized steel plate $2\frac{1}{2}$"x3"x0.105" thick. Attach to curb at approximately 10'-0"% except near joints, where the angle shall be placed within 6" of the end of each tube section.

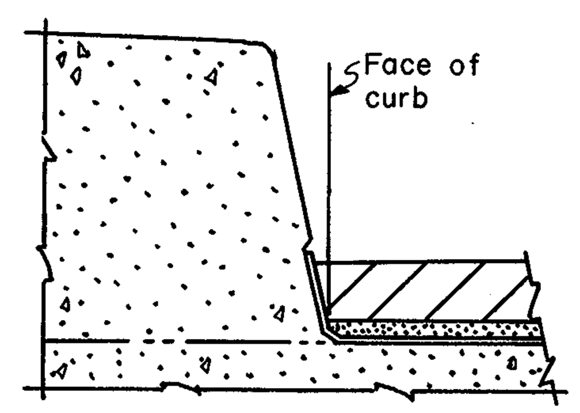
(5) - $\frac{1}{2}$"x$\frac{1}{8}$"x$\frac{1}{4}$" flat head drive pin and washer driven thru angle and tube.

Note: Wherever "PVC" appears it shall be considered to read "PVC or ABS".



DRIP STRIP
BRIDGES WITHOUT CURBS

Galvanized Steel Drip Strip: Prior to applying deck membrane waterproofing a bent galvanized steel drip strip, 8"x0.105" shall be installed along the edges of the deck as shown. The strips shall be fastened at 3'-0"% maximum with power driven pins or # 10 galvanized expansion screws, subject to the approval of the Engineer. The strips shall be placed the full length of the deck. Where splices are required a 3"(min.) lap shall be used, with a fastener through the lap. Steel shall meet the requirements of ASTM A568 and galvanizing shall be in accordance with 711.02. Payment shall be at the contract price bid for Item Special, Sq. Ft., Galvanized steel drip strip, which shall include all materials, labor, tools and incidentals necessary to complete the item.



SHAPE OF SIDEWALK CURB

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BUREAU OF BRIDGES

DECK DRAINAGE DETAILS FOR BRIDGES WITH ASPHALT CONCRETE SURFACE COURSE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DLM	GJ	—	CPD	WJJ	7-27-73	

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

365B
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

ESTIMATED QUANTITIES - BRIDGE 1487

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPERSTR.	GENERAL
404	203	Cu. Yd.	Asphalt Concrete, AC-20			203	
409	16	Cu. Yd.	Seal Coat Cover Aggregate, No. 9			16	
409	537	Gallon	Seal Coat Bituminous Material: 702.02, MC-800 or MC-3000; 702.03, CBAE 800; 702.04, RS-1, RS-2 or CRS-1, CRS-2, 702.09, RT-9 or RT-10.			537	
503	Lump Sum	Lump Sum	Cofferdams, Cribs and Sheeting				Lump Sum
503	2,565	Cu. Yd.	Unclassified Excavation	567	1,998		
505	Lump Sum	Lump Sum	Test Pile				Lump Sum
507	30,910	Lin. Ft.	12" Cast-In-Place Reinforced Concrete Piles	6,180	24,730		
509	1,108,563	Lbs.	Reinforcing Steel	35,432	392,215	680,916	
511	2,200	Cu. Yd.	Class "C" Concrete, Superstructure			2,200	
511	1,185	Cu. Yd.	Class "C" Concrete, Pier Caps and Columns		1,185		
511	308	Cu. Yd.	Class "C" Concrete, Abutments above Footings	308			
511	1,176	Cu. Yd.	Class "C" Concrete, Abutment and Pier Footings	175	1,001		
512	60	Lin. Ft.	Premolded Sealing Strip	60			
513	2,046,055	Lbs.	Structural Steel (ASTM A36)			2,046,055	
514	2,046,055	Lbs.	Field Painting of Structural Steel			2,046,055	
516	65	Sq. Ft.	½" Preformed Expansion Joint Filler	65			
518	2,630	Lin. Ft.	Subdrainage for Wearing Course, As Per Plan			2,630	
518	195	Cu. Yd.	Porous Backfill	195			
518	215	Lin. Ft.	6" Helical Perforated C.M.P., 707.01	215			
518	50	Lin. Ft.	6" Helical Non-Perforated C.M.P., Including Specials 707.01	50			
518	35	Each	Scuppers, Including Supports			35	
601	1,916	Sq. Yd.	Crushed Aggregate Slope Protection				1,916
601	896	Sq. Yd.	Concrete Slope Protection 601.06				896
625			See Sheet 137 For Lighting Summary				
808	2,200	Units	Chemical Admixture for Concrete, Type A, B or D			2,200	
838	3	Hours	Special Pile Test				3
Spec.	102	Cu. Yd.	Asphaltic Protective Course (See Proposal Note)			102	
Spec.	7,316	Sq. Yd.	Membrane Waterproofing, Cold Applied Liquid (See Proposal Note)			7,316	
Spec.	108	Lin. Ft.	Sliding Plate Intermediate Expansion Joint with Neoprene Trough			108	

ESTIMATED QUANTITIES - BRIDGE 1486

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPERSTR.	GENERAL
404	60	Cu. Yd.	Asphalt Concrete, AC-20			60	
409	3	Cu. Yd.	Seal Coat Cover Aggregate, No. 9			3	
409	95	Gallon	Seal Coat Bituminous Material: 702.02, MC-800 or MC-3000; 702.03, CBAE 800; 702.04, RS-1, RS-2 or CRS-1, CRS-2, 702.09, RT-9 or RT-10.			95	
503	Lump Sum	Lump Sum	Cofferdams Cribs and Sheeting				Lump Sum
503	404	Cu. Yd.	Unclassified Excavation	104	300		
505	Lump Sum	Lump Sum	Test Pile				Lump Sum
507	3500	Lin. Ft.	12" Cast-In-Place Reinforced Concrete Piles	700	2,800		
509	112,096	Lbs.	Reinforced Steel	5,904	31,290	74,902	
511	289	Cu. Yd.	Class "C" Concrete, Superstructure			289	
511	110	Cu. Yd.	Class "C" Concrete, Pier Caps and Columns		110		
511	50	Cu. Yd.	Class "C" Concrete, Abutments above Footings	50			
511	122	Cu. Yd.	Class "C" Concrete, Abutment and Pier Footings	29	93		
513	231,094	Lbs.	Structural Steel (ASTM A36)			231,094	
514	231,094	Lbs.	Field Painting of Structural Steel			231,094	
518	27	Cu. Yd.	Porous Backfill	27			
518	4	Each	Scuppers, Including Supports			4	
518	25	Lin. Ft.	6" Helical Perforated C.M.P., 707.01	25			
518	25	Lin. Ft.	6" Helical Non-Perforated C.M.P. Including Specials, 707.01	25			
518	273	Lin. Ft.	Subdrainage For Wearing Course, As Per Plan			273	
601	321	Sq. Yd.	Crushed Aggregate Slope Protection				321
625			See Sheet 137 For Lighting Summary				
808	289	Units	Chemical Admixture for Concrete, Type A, B or D			289	
838	3	Hours	Special Pile Test				3
Spec.	862	Sq. Yd.	Membrane Waterproofing, (See Proposal Note)			862	

ESTIMATED QUANTITIES - BRIDGE 1488

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPERSTR.	GENERAL
404	91	Cu. Yd.	Asphalt Concrete, AC-20			91	
409	11	Cu. Yd.	Seal Coat Cover Aggregate, No. 9			11	
409	359	Gallon	Seal Coat Bituminous Material: 702.02, MC-800 or MC-3000; 702.03, CBAE 800; 702.04, RS-1, RS-2 or CRS-1, CRS-2, 702.09, RT-9 or RT-10.			359	
503	Lump Sum	Lump Sum	Cofferdams, Cribs and Sheeting				Lump Sum
503	1,365	Cu. Yd.	Unclassified Excavation	309	1,056		
505	Lump Sum	Lump Sum	Test Pile				Lump Sum
507	14,220	Lin. Ft.	12" Cast-In-Place Reinforced Concrete Piles	2,310	11,910		
509	469,689	Lbs.	Reinforcing Steel	17,340	159,510	292,839	
511	1,372	Cu. Yd.	Class "C" Concrete, Superstructure			1,372	
511	374	Cu. Yd.	Class "C" Concrete, Pier Caps and Columns		374		
511	145	Cu. Yd.	Class "C" Concrete, Abutments above Footings	145			
511	555	Cu. Yd.	Class "C" Concrete, Abutment and Pier Footings	87	468		
512	12	Lin. Ft.	Premolded Sealing Strip	12			
513	1,157,026	Lbs.	Structural Steel (ASTM A36)			1,157,026	
514	1,157,026	Lbs.	Field Painting of Structural Steel			1,157,026	
518	1,780	Lin. Ft.	Subdrainage for Wearing Course, As Per Plan			1,780	
518	84	Cu. Yd.	Porous Backfill	84			
518	85	Lin. Ft.	6" Helical Perforated C.M.P., 707.01	85			
518	50	Lin. Ft.	6" Helical Non-Perforated C.M.P. Including Specials, 707.01	50			
518	18	Each	Scuppers, Including Supports			18	
601	598	Sq. Yd.	Crushed Aggregate Slope Protection				598
601	358	Sq. Yd.	Concrete Slope Protection 601.06				358
625			See Sheet 137 For Lighting Summary				
808	1,372	Units	Chemical Admixture for Concrete, Type A, B, or D			1,372	
838	3	Hours	Special Pile Test				3
Spec.	46	Cu. Yd.	Asphaltic Protective Course (See Proposal Note)			46	
Spec.	3,275	Sq. Yd.	Membrane Waterproofing, Cold Applied Liquid (See Proposal Note)			3,275	
Spec.	57	Lin. Ft.	Sliding Plate Intermediate Expansion Joint with Neoprene Trough			57	

H.N.T.B. BRIDGE NO. 2, 6 & 7

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

ESTIMATED QUANTITIES

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN E.P.S.	TRACED T.P.M.	CHECKED R.A.S.	REVIEWED	REVISED 3-2-76
DATE 7-23-75	DATE 7-24-75	DATE 7-28-75	DATE	1668

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

365C
389

MICROFILMED
SEP 15 1986

STARK COUNTY
STA-30-14.12
STA-77-9.22

ESTIMATED QUANTITIES - BRIDGE 1499							
ITEM	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPERSTR.	GENERAL
404	13	Cu. Yd.	Asphalt Concrete, AC-20			13	
409	2	Cu. Yd.	Seal Coat Cover Aggregate, No. 9			2	
409	50	Gallon	Seal Coat Bituminous Material: 702.02, MC-800 or				
			MC-3000; 702.03, CBAE 800; 702.04, RS-1, RS-2 or				
			CRS-1, CRS-2, 702.09, RT-9 or RT-10.			50	
503	Lump Sum	Lump Sum	Cofferdams, Cribs and Sheeting				Lump Sum
503	257	Cu. Yd.	Unclassified Excavation	98	159		
505	Lump Sum	Lump Sum	Test Pile				Lump Sum
507	300	Lin. Ft.	12" Cast-In-Place Reinforced Concrete Piles	300			
509	65,741	Lbs.	Reinforcing Steel	5,938	13,830	45,973	
511	162	Cu. Yd.	Class "C" Concrete, Superstructure			162	
511	50	Cu. Yd.	Class "C" Concrete, Pier Caps and Columns		50		
511	45	Cu. Yd.	Class "C" Concrete, Abutments above Footings	45			
511	88	Cu. Yd.	Class "C" Concrete, Abutment and Pier Footings	27	61		
513	135,127	Lbs.	Structural Steel (ASTM A36)			135,127	
514	135,127	Lbs.	Field Painting of Structural Steel			135,127	
518	20	Cu. Yd.	Porous Backfill	20			
518	24	Lin. Ft.	6" Perforated Helical C.M.P., 707.01	24			
518	176	Lin. Ft.	Subdrainage For Wearing Course, As Per Plan			176	
518	40	Lin. Ft.	6" Non-perforated Helical C.M.P. Including				
			Specials, 707.01	40			
518	3	Each	Scuppers, Including Supports			3	
601	584	Sq. Yd.	Concrete Slope Protection, 601.06				584
625			See Sheet 137 For Lighting Summary				
808	162	Units	Chemical Admixture For Concrete, Type A, B, or D			162	
838	3	Hours	Special Pile Test				3
Spec.	7	Cu. Yd.	Asphaltic Protective Course (See Proposal Note)			7	
Spec.	468	Sq. Yd.	Membrane Waterproofing, Cold Applied Liquid (See				
			Proposal Note)			468	

ESTIMATED QUANTITIES - BRIDGE 1494							
ITEM	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPERSTR.	GENERAL
404	81	Cu. Yd.	Asphalt Concrete, AC-20			81	
409	8	Cu. Yd.	Seal Coat Cover Aggregate, No. 9			8	
409	267	Gallon	Seal Coat Bituminous Material: 702.02, MC-800 or				
			MC-3000; 702.03, CBAE 800: 702.04, RS-1, RS-2 or				
			CRS-1, CRS-2, 702.09, RT-9 or RT-10			267	
503	930	Cu. Yd.	Unclassified Excavation	355	575		
503	Lump Sum	Lump Sum	Cofferdams, Cribs, and Sheeting				Lump Sum
505	Lump Sum	Lump Sum	Test Pile				Lump Sum
507	2,150	Lin. Ft.	12" Cast-In-Place Reinforced Concrete Piles	2,150			
509	403,766	Lbs.	Reinforcing Steel	23,273	93,390	287,103	
511	981	Cu. Yd.	Class "C" Concrete, Superstructure			981	
511	235	Cu. Yd.	Class "C" Concrete, Pier Caps and Columns		235		
511	211	Cu. Yd.	Class "C" Concrete, Abutments above Footings	211			
511	400	Cu. Yd.	Class "C" Concrete, Abutment and Pier Footings	112	288		
512	13	Lin. Ft.	Premolded Sealing Strip	13			
513	1,238,700	Lbs.	Structural Steel (ASTM A36)			1,238,700	
514	1,238,700	Lbs.	Field Painting of Structural Steel			1,238,700	
516	25	Sq. Ft.	½" Preformed Expansion Joint Filler	25			
516	75	Lin. Ft.	Elastomeric Compression Seals in Structural Steel				
			Joints, Including Specials			75	
518	817	Lin. Ft.	Subdrainage for Wearing Course, As Per Plan			817	
518	126	Cu. Yd.	Porous Backfill	126			
518	120	Lin. Ft.	6" Perforated Helical C.M.P., 707.01	120			
518	50	Lin. Ft.	6" Non-Perforated Helical C.M.P. Including Specials, 707.01	50			
518	14	Each	Scuppers, Including Supports			14	
601	303	Sq. Yd.	Crushed Aggregate Slope Protection				303
601	585	Sq. Yd.	Concrete Slope Protection 601.06				585
625			See Sheet 137 For Lighting Summary				
808	981	Units	Chemical Admixture For Concrete, Type A, B or D			981	
838	3	Hours	Special Pile Tests				3
Spec.	40	Cu. Yd.	Asphaltic Protective Course (See Proposal Note)			40	
Spec.	2883	Sq. Yd.	Membrane Waterproofing, Cold Applied Liquid (See				
			Proposal Note)			2883	

ESTIMATED QUANTITIES - BRIDGE 1504							
ITEM	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	* RET. WALLS	SUPERSTR.	GENERAL
404	36	Cu. Yd.	Asphalt Concrete, AC-20			36	
409	2	Cu. Yd.	Seal Coat Cover Aggregate, No. 9			2	
409	56	Gallon	Seal Coat Bituminous Material: 702.02, MC-800 or				
			MC-3000; 702.03, CBAE 800; 702.04, RS-1, RS-2 or				
			CRS-1, CRS-2, 702.09, RT-9 or RT-10.			56	
506	1	Each	Subsequent Pile Test Load				1
503	2,050	Cu. Yd.	Unclassified Excavation	831	1,219		
504	1,390	Sq. Ft.	Sheet Piling left in place (min. section modulus				
			of 7.0 in.^{3}/ft.)		1,390		
505	Lump Sum	Lump Sum	Test Pile				Lump Sum
506	Lump Sum	Lump Sum	Pile Test Load				Lump Sum
507	23,100	Lin. Ft.	12" Cast-In-Place Reinforced Concrete Piles	9,940	13,160		
509	229,664	Lbs.	Reinforcing Steel	84,461	101,030	44,173	
511	174	Cu. Yd.	Class "C" Concrete, Superstructure			174	
511	936	Cu. Yd.	Class "C" Concrete, Abuts. and Ret. Walls above Footings	461	475		
511	799	Cu. Yd.	Class "C" Concrete, Abutment and Ret. Wall Footings	347	452		
512	345	Lin. Ft.	Premolded Sealing Strip	211	134		
‡ 513	286,064	Lbs.	Structural Steel (ASTM A588)			286,064	
514	286,064	Lbs.	Field Painting of Structural Steel			286,064	
516	560	Sq. Ft.	½" Preformed Expansion Joint Filler	409	151		
518	631	Cu. Yd.	Porous Backfill	305	326		
518	32	Lin. Ft.	8" Perforated C.M.P., 707.01	32			
518	47	Lin. Ft.	8" Non-Perforated C.M.P. Including Specials, 707.01				
				47			
518	3	Each	Scuppers, Including Supports			3	
518	8	Lin. Ft.	8" Pipe Troughs Including Specials			8	
518	20	Lin. Ft.	8" Galvanized Steel Pipe Downspouts Including Specials	20			
518	164	Lin. Ft.	Subdrainage For Wearing Course, As Per Plan			164	
625			For Lighting Quantities see Sheet 137				
808	174	Units	Chemical Admixture for Concrete, Type A, B, or D			174	
838	3	Hours	Special Pile Test				3
Spec.	506	Sq. Yd.	Membrane Waterproofing (See Proposal Note)			506	

* Quantities are not included for Retaining Wall E.

‡ In lieu of the A588 steel the end dam and the lower portion of the bearings may be A36, galvanized. The sole plate shall be A588 steel.

H.N.T.B. BRIDGE NOS. 8, 9 & 10

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

ESTIMATED QUANTITIES

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN E.P.S.	TRACED T.M.P.	CHECKED R.A.S.	REVIEWED	REVISED 3-2-76
DATE 7-23-75	DATE 7-24-75	DATE 7-28-75	DATE	1668

Rev. 3-23-76

MICROFILMED SEP 15 1980

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

3650
389

STAKR COUNTY
STA-30-14.12
STA-77-9.22

ESTIMATED QUANTITIES - BRIDGE 1493

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPERSTR.	RET. WALL	GENERAL
404	216	Cu. Yd.	Asphalt Concrete, AC-20			216		
409	10	Cu. Yd.	Seal Coat Cover Aggregate, No. 9			10		
409	341	Gallon	Seal Coat Bituminous Material: 702.02, MC-800 or MC-3000; 702.03, CBAE 800; 702.04, RS-1, RS-2 or CRS-1, CRS-2, 702.09, RT-9 or RT-10.			341		
503	Lump Sum	Lump Sum	Cofferdams, Cribs and Sheeting					Lump Sum
503	2,013	Cu. Yd.	Unclassified Excavation	236	1,003		774	
504	1,330	Sq. Ft.	Sheet Steel Piling Left In Place (Minimum Section Modulus Of 7 in^3 Per Foot Of Wall)				1,330	
505	Lump Sum	Lump Sum	Test Pile					Lump Sum
507	20,200	Lin. Ft.	12" Cast-In-Place Reinforced Concrete Piles	1,970	11,180		7,050	
509	545,843	Lbs.	Reinforcing Steel	12,720	193,160	278,994	60,969	
511	1,086	Cu. Yd.	Class "C" Concrete, Superstructure			1,086		
511	426	Cu. Yd.	Class "C" Concrete, Pier Caps and Columns		426			
511	98	Cu. Yd.	Class "C" Concrete, Abutments above Footings	98				
511	550	Cu. Yd.	Class "C" Concrete, Pier and Abutment Footings	62	488			
511	256	Cu. Yd.	Class "C" Concrete, Retaining Wall Footings				256	
511	300	Cu. Yd.	Class "C" Concrete, Retaining Walls above Footings				300	
512	135	Lin. Ft.	Premolded Sealing Strip				135	
513	1,486,804	Lbs.	Structural Steel (ASTM A36)			1,486,804		
514	1,486,804	Lbs.	Field Painting of Structural Steel			1,486,804		
516	103	Sq. Ft.	½" Preformed Expansion Joint Filler				103	
516	33	Lin. Ft.	Elastomeric Compression Seals in Structural Steel Joints, Inclding Specials			33		
518	221	Cu. Yd.	Porous Backfill	58			163	
518	14	Each	Scuppers, Including Supports			14		
518	50	Lin. Ft.	6" Perforated Helical C.M.P., 707.01	50				
518	43	Lin. Ft.	6" Non-Perforated Helical C.M.P., Including Specials, 707.01	43				
518	1,963	Lin. Ft.	Subdrainage for Wearing Course, As Per Plan			1,963		
601	1,215	Sq. Yd.	Crushed Aggregate Slope Protection					1,215
625			See Sheet 137 for Lighting Summary					
808	1,086	Units	Chemical Admixture For Concrete, Type A, B, or D			1,086		
838	3	Hours	Special Pile Test					3
Spec.	3,108	Sq. Yd.	Membrane Waterproofing (See Proposal Note)			3,108		
Spec.	29	Lin. Ft.	Sliding Plate Intermediate Expansion Joints with Neoprene Trough			29		

ESTIMATED QUANTITIES - BRIDGE 1489

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPERSTR.	GENERAL
404	67	Cu. Yd.	Asphalt Concrete, AC-20			67	
409	8	Cu. Yd.	Seal Coat Cover Aggregate, No. 9			8	
409	268	Gallon	Seal Coat Bituminous Material: 702.02, MC-800 or MC-3000; 702.03, CBAE 800; 702.04, RS-1, RS-2 or CRS-1, CRS-2, 702.09, RT-9 or RT-10.			268	
503	Lump Sum	Lump Sum	Cofferdams, Cribs and Sheeting				Lump Sum
503	878	Cu. Yd.	Unclassified Excavation	238	640		
505	Lump Sum	Lump Sum	Test Pile				Lump Sum
507	9,210	Lin. Ft.	12" Cast-In-Place Reinforced Concrete Piles	1,540	7,670		
509	367,082	Lbs.	Reinforcing Steel	13,463	135,320	218,299	
511	822	Cu. Yd.	Class "C" Concrete, Superstructure			822	
511	274	Cu. Yd.	Class "C" Concrete, Pier Caps and Columns		274		
511	96	Cu. Yd.	Class "C" Concrete, Abutments and Wingwalls above Footings	96			
511	332	Cu. Yd.	Class "C" Concrete, Abutments, Pier and Wingwall Footings	59	273		
513	883,181	Lbs.	Structural Steel (ASTM A36)			883,181	
514	883,181	Lbs.	Field Painting of Structural Steel			883,181	
518	63	Cu. Yd.	Porous Backfill	63			
518	50	Lin. Ft.	6" Perforated Helical C.M.P., 707.01	50			
518	60	Lin. Ft.	6" Non-Perforated Helical C.M.P. Including Specials, 707.01	60			
518	15	Each	Scuppers, Including Supports			15	
518	1528	Lin. Ft.	Subdrainage For Wearing Course, As Per Plan			1528	
601	109	Sq. Yd.	Crushed Aggregate Slope Protection				109
601	229	Sq. Yd.	Concrete Slope Protection 601.06				229
625			See Sheet 137 For Lighting Summary				
808	822	Units	Chemical Admixture For Concrete, Type A, B or D			822	
838	3	Hours	Special Pile Test				3
Spec.	34	Cu. Yd.	Asphaltic Protective Course (See Proposal Note)			34	
Spec.	2414	Sq. Yd.	Membrane Waterproofing, Cold Applied Liquid (See Proposal Note)			2414	
Spec.	30	Lin. Ft.	Sliding Plate Intermediate Expansion Joints with Neoprene Trough			30	

H.N.T.B. BRIDGE NO. 13 & 14

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

ESTIMATED QUANTITIES

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN E.P.S. DATE 7-24-75	TRACED T.P.M. DATE 7-27-75	CHECKED R.A.S. DATE 7-28-75	REVIEWED DATE	REVISED 3-2-76

1668

SPECIAL PROVISIONS FOR ELASTOMERIC COMPRESSION SEALS IN STRUCTURAL STEEL JOINTS

<u>DESCRIPTION:</u> THESE PROVISIONS ARE FOR THE PRODUCTION, FABRICATION, AND INSTALLATION CONTROL OF ELASTOMERIC COMPRESSION SEALS IN STRUCTURAL STEEL JOINTS.

<u>QUALIFICATION:</u> EACH LOT OF COMPRESSION SEALS, ADHESIVES AND METAL SURFACE PRIMERS FURNISHED UNDER THESE PROVISIONS SHALL BE IDENTIFIED AS SPECIFIED, SHALL BE PRODUCTS WHICH HAVE BEEN TESTED BY THE MANUFACTURER OR A COMMERCIAL LABORATORY, AND SHALL COMPLY WITH THESE PROVISIONS.

<u>CERTIFICATION:</u> CERTIFIED COPIES OF THE QUALIFICATION TEST RESULTS FOR THE COMPRESSION SEALS, INDICATING THAT THE TESTED MATERIALS COMPLY WITH THESE PROVISIONS, SHALL BE SUBMITTED TO THE TESTING LABORATORY FOR APPROVAL. SAMPLING, IF REQUESTED, WILL BE IN ACCORDANCE WITH 106.03 EXCEPT THAT WHERE COMPRESSION SEALS ARE PREFABRICATED ACCORDING TO PLAN REQUIREMENTS, SEAL SAMPLES SHALL BE MADE AVAILABLE PRIOR TO FABRICATION. FROM EACH LOT AND EACH PROJECT SEAL SAMPLES SHALL BE ONE PIECE TWO FEET LONG.

<u>ACCEPTANCE:</u> MATERIAL ACCEPTANCE WILL BE BASED UPON LABORATORY EVALUATION OF CERTIFIED TEST RESULTS SUBMITTED, UPON LABORATORY TEST OF SAMPLED MATERIAL, OR UPON THE EVALUATION OF BOTH CERTIFICATES AND TESTED SAMPLES.

<u>COMPOSITION:</u> COMPRESSION SEALS OF THE SIZE, SHAPE AND TOLERANCES SHOWN ON THE PLANS SHALL BE COMPOSED OF AN EXTRUDED VULCANIZED ELASTOMERIC VIRGIN POLYCHLOROPRENE MATERIAL. THE ADHESIVE SHALL BE A ONE-PART MOISTURE CURING POLYURETHANE AND HYDROCARBON MIXTURE. THE METAL SURFACE PRIMER SHALL BE INDUSTRIAL WASH PRIMER P60G2 AS MANUFACTURED BY THE SHERWIN WILLIAMS COMPANY OF CLEVELAND, OHIO; CHEMGLAZE WASH PRIMER 9924 AS MANUFACTURED BY THE HUGHSON CHEMICAL COMPANY OF ERIE, PENNSYLVANIA; OR AN APPROVED EQUIVALENT.

<u>REQUIREMENTS:</u> EXCEPT AS PROVIDED HEREIN, COMPRESSION SEALS, ADHESIVES AND PRIMERS SHALL CONFORM TO THE PERTINENT PROVISIONS OF AASHTO M220.

(A) COMPRESSION SEALS SHALL BE RESILIENT AND SHALL NOT SOFTEN EXCESSIVELY OR BECOME BRITTLE BETWEEN THE TEMPERATURES OF -30°F AND 160°F. THEY SHALL BE FURNISHED IN ONE CONTINUOUS PIECE OR BE PREFABRICATED IN THE SHOP TO FIT THE STRUCTURAL JOINT DESCRIBED IN THE PLANS. CUTTING OR STRETCHING OF THE COMPRESSION SEALS IN THE FIELD TO CORRECT A MISFIT WITH THE STRUCTURAL STEEL WILL NOT BE PERMITTED. THEREFORE, WHERE PREFABRICATION IS NECESSARY, THE SEAL DIMENSIONS SHALL BE QUALIFIED BY TEMPLATES WHICH MATCH THE JOINT, OR BY PRELIMINARY SHOP ASSEMBLY OF THE SEAL WITH THE ACTUAL STRUCTURAL JOINT.

THE SEAL FABRICATOR SHALL ALSO FURNISH SEAL END CLOSURES PERMANENTLY FASTENED OR VULCANIZED TO THE ENDS OF ALL DECK JOINT SEALS. THESE CLOSURES SHALL BE DESIGNED TO PREVENT THE ENTRANCE INTO THE SEALS OF PRECIPITATION, SURFACE DRAINAGE OR ROADWAY DEBRIS. SUCH CLOSURES SHALL NOT DETRIMENTALLY AFFECT THE COMPRESSIVE BEHAVIOR OF THE SEALS OR THE INTEGRITY OF THE JOINT. PROVISIONS SHALL ALSO BE MADE IN THE CLOSURE DESIGN TO VENTILATE ALL SEAL COMPARTMENTS TO INSURE THAT AIR PRESSURE EQUILIBRIUM IS MAINTAINED THROUGHOUT ALL COMPRESSION-EXPANSION CYCLES.

THE ADEQUACY OF THE CLOSURE DEVICES SHALL BE ESTABLISHED BY TEST. A SAMPLE COMPRESSION SEAL WITH A CLOSURE DEVICE ATTACHED TO EACH END SHALL BE CAPABLE OF WITHSTANDING 500 CYCLES (40% COMPRESSION ± 20% COMPRESSION-EXPANSION) AT ROOM TEMPERATURE (70° ± 10°F) WITHIN A 24 HOUR PERIOD WITHOUT VISIBLE DISTRESS TO THE SEAL OR THE CLOSURE DEVICES.

SHARP CHANGES IN THE ALIGNMENT OF DECK JOINTS OR OF THE COMPRESSION SEALS WITHIN SUCH JOINTS SHALL BE MADE BY MITER CUTTING AND ADHESIVE BONDING. GENERALLY, SUCH SPLICES SHALL BE MADE IN THE SHOP. HOWEVER, FIELD SPLICES SHALL BE MADE WHERE SPECIFIED ON THE PLANS OR WHERE DIRECTED BY THE ENGINEER.

AT EACH ROADWAY SEAL MITER SPLICE, SEVERAL INCHES OF INTERNAL WEBBING ON EACH SIDE OF THE SPLICE SHALL BE REMOVED AND REPLACED WITH A SINGLE SNUG FITTING PIECE OF CLOSED CELL FOAM REINFORCEMENT. FOAM INSERTS AND THE ADHESIVE USED FOR BONDING THE INSERTS AND THE SEAL ELEMENTS TOGETHER SHALL BE AS RECOMMENDED BY THE SEAL MANUFACTURER FOR THIS PURPOSE.

PROVISIONS SHALL BE MADE TO VENTILATE SEAL SECTIONS WHICH ARE LOCATED BETWEEN FOAM REINFORCED SPLICES. ALL CHAMBERS OF THE SEAL SHALL BE VENTILATED THROUGH A BOTTOM OPENING LOCATED AT THE LOWERMOST POINT OF THE JOINT SEAL.

THE SPLICING ADHESIVE AND THE CLOSED CELL FOAM SHALL BE COMPATIBLE WITH THE OTHER MATERIALS SPECIFIED HEREIN, AND THEY SHALL BE COMPOUNDED TO FURNISH SIMILAR RESISTANCE AND DURABILITY CHARACTERISTICS.

AFTER COMPLETION, SPLICES SHALL HAVE NO VISIBLE OFFSET ON EXTERIOR SURFACES, AND AFTER INSTALLATION, THERE SHALL BE NO EVIDENCE OF BOND FAILURE AT THE SPLICES.

(B) ADHESIVES SHALL BE STORED AT TEMPERATURES BETWEEN 50° TO 80°F AND SHALL BE USED WITHIN 270 DAYS AFTER THE DATE OF ITS MANUFACTURE. THE ADHESIVE SHALL BE BON-LASTIC AS MANUFACTURED BY WATSON-BOWMAN ASSOCIATES, INC. BUFFALO, NEW YORK, PRIMA-LUBE AS MANUFACTURED BY ACME HIGHWAY PRODUCTS CORP., BUFFALO, NEW YORK, OR AN APPROVED EQUAL.

(C) PRIMERS SHALL NOT BE APPLIED TO STEEL SURFACES WHICH WILL BE HEATED TO A TEMPERATURE IN EXCESS OF 300°F. CONSEQUENTLY, WHERE HEAT GENERATING OPERATIONS ARE REQUIRED ADJACENT TO BONDED AREAS, THE PRIMER APPLICATION SHALL BE DELAYED UNTIL SUCH WORK IS COMPLETED UNLESS THE PRIMED AREA CAN BE MAINTAINED AT LESSER TEMPERATURES BY THE USE OF APPROVED COOLING PROCEDURES.

(D) THE PRIMER SOLVENTS AND THE SOLVENTS SPECIFIED AS CLEANING AGENTS IN THESE PROVISIONS ARE VOLITILE, COMBUSTIBLE AND, IN SOME INSTANCES, IRRITATING TO THE SKIN. CONTAINERS SHALL BE KEPT TIGHTLY CLOSED AND AWAY FROM HEAT AND OPEN FLAMES. DURING APPLICATION, ALL FLAMES, WELDING AND SMOKING SHALL BE PROHIBITED. PROLONGED BREATHING OF VAPORS AND CONTACT WITH THE SKIN SHALL BE AVOIDED. IN CONFINED AREAS, VENTILATION SHALL BE PROVIDED DURING APPLICATION AND DRYING.

<u>PREPARATION:</u> PRIOR TO INSTALLING COMPRESSION SEALS IN STRUCTURAL STEEL JOINTS, STEEL AND SEAL SURFACES WHICH ARE TO BE BONDED TOGETHER SHALL BE CAREFULLY AND THOROUGHLY CLEANED TO REMOVE ALL RUST, MILL SCALE, DIRT, AND OTHER CONTAMINANTS WHICH WOULD BE DETRIMENTAL TO BONDING.

THE BARE STEEL SURFACES SHALL BE PREPARED TO GRADE SA 3, ASTM D-2200; GALVANIZED STEEL SURFACES SHALL BE LIGHTLY SANDED. IMMEDIATELY AFTER MECHANICAL PREPARATION THE FRESH SURFACES SHALL BE WIPED WITH METHYL ETHYL KETONE, TOLUENE, OR OTHER SUITABLE SOLVENT TO REMOVE ALL CONTAMINANT TRACES. THEY THEN SHOULD BE COATED WITH PRIMER. CLEANED AND UNCOATED STEEL SURFACES SHOULD NOT BE ALLOWED TO BECOME WET. THEY ARE HIGHLY SENSITIVE TO MOISTURE AND ANY CORROSION MAY MAKE THEM UNSUITABLE FOR COATING. IT IS ESSENTIAL, THEREFORE, THAT THE PRIMER BE APPLIED BEFORE THE CLEANED SURFACES CAN BE DULLED BY OXIDATION, A PROCESS WHICH CAN OCCUR VERY QUICKLY IN HUMID WEATHER.

THE PRIMER SHALL BE APPLIED ONLY TO CLEAN DRY SURFACES. THICKNESS OF PRIMER SHALL BE APPROXIMATELY 1.0 MIL WET FILM, 0.40 MIL DRY FILM. CARE SHALL BE TAKEN TO INSURE THAT THE COMPLETE BONDING AREA PLUS AT LEAST 1/4 INCH WIDTH OF ADJACENT METAL SURFACE AREA SHALL BE PRIMED FOR FIELD ADHESION. STEEL SHALL BE MAINTAINED DRY AND AT A TEMPERATURE OF 50°F OR ABOVE DURING SEAL INSTALLATION.

TO IMPROVE ADHESION, THE GLOSSY SEAL SURFACES WHICH ARE TO BE BONDED SHALL FIRST BE CLEANED WITH SOLVENT USING CLEAN, DISPOSABLE CLOTHS AND THEN BUFFED WITH BELT SANDERS, WIRE BRUSHES OR GRINDERS. CLEANING AND BUFFING MAY BE DONE IN THE SHOP PROVIDED THAT THE CLEANED SEALS ARE CAREFULLY WRAPPED TO PROTECT THEM FROM CONTAMINATION PRIOR TO INSTALLATION.

<u>INSTALLATION:</u> SEAL INSTALLATION PREFERABLY SHALL FOLLOW THE PRIMING OPERATION AS SOON AS PRACTICABLE, BUT NOT SOONER THAN TWO HOURS AFTER PRIMER APPLICATION NOR LATER THAN ONE WEEK. JUST PRIOR TO SEAL INSTALLATION, THE BONDING SURFACES OF THE SEAL AND THE PRIMED STEEL SHALL BE WIPED WITH METHYL ETHYL KETONE, TOLUENE OR OTHER SUITABLE SOLVENT. IF THE PRIMED STEEL SURFACE HAS BECOME CONTAMINATED WITH CONSTRUCTION MATERIALS OR OTHER DIRT AND DEBRIS WHICH CANNOT BE REMOVED WITHOUT DAMAGE TO THE PRIMER, THE CONTAMINATED PRIMER SHALL BE REMOVED AND THE STEEL SURFACE CLEANED AND RE-PRIMED AS ORIGINALLY SPECIFIED.

TO CLEAN AND DRY PRIMED STEEL SURFACES, ADHESIVE SHALL BE APPLIED TO A THICKNESS OF 1/32 (-0, +1/32) INCH. THEN THE CLEAN AND DRY ELASTOMERIC SEAL SHALL BE COMPRESSED SUFFICIENTLY SO THAT IT CAN BE INSERTED AND ALLOWED TO EXPAND WITHIN THE JOINT AND AGAINST THE ADHESIVE COATED SIDES. CARE SHALL BE TAKEN TO SEE THAT THE CLEAN AND DRY SIDES OF THE COMPRESSION SEAL ARE NOT CONTAMINATED DURING INSTALLATION. AFTER INSTALLATION, A SMALL BEAD OF ADHESIVE, APPROXIMATELY 1/4 INCH IN DIAMETER, SHALL BE APPLIED ALONG THE TOP EDGE WHERE THE SEAL TOUCHES THE SIDES OF THE JOINT.

ADHESIVES SHALL BE APPLIED ONLY TO DRY SURFACES AND ONLY DURING PERIODS WHEN THE TEMPERATURE IS 50°F OR HIGHER. SINCE THE ADHESIVE IS MOISTURE CURING, THE COMPLETED INSTALLATION NEED NOT BE PROTECTED FROM PRECIPITATION.

THE JOINT SEAL SHALL BE INSTALLED WITH EQUIPMENT DESIGNED SPECIFICALLY FOR THE INSTALLATION OF ELASTOMERIC JOINT SEALS. THIS EQUIPMENT SHALL NOT ELONGATE THE SEAL LONGITUDINALLY, CAUSE STRUCTURAL DAMAGE TO THE SEAL, NOR TWIST, DISTORT, OR CAUSE OTHER MALFORMATIONS IN THE COMPLETED SEAL. EQUIPMENT THAT DOES NOT PROVIDE A PROPERLY INSTALLED SEAL SHALL NOT BE USED.

PORTIONS OF THE STEEL JOINT NOT ENCASED IN CONCRETE, NOT IN CONTACT WITH A COMPRESSION SEAL, AND NOT COVERED BY ADHESIVES SHALL BE CLEANED AND PAINTED IN CONFORMANCE WITH 514. UNLESS SEPARATELY ITEMIZED, CLEANING AND PAINTING SHALL BE INCLUDED WITH THIS ITEM FOR PAYMENT.

<u>PAYMENT:</u> PAYMENT FOR FURNISHING AND PLACING THE COMPRESSION SEALS, PRIMERS, ADHESIVES AND ALL OTHER INCIDENTALS NECESSARY TO COMPLETE THIS WORK ACCORDING TO THE PLANS AND THESE PROVISIONS SHALL BE INCLUDED UNDER ITEM 516.

ITEM	UNIT	DESCRIPTION
516	LIN.FT.	ELASTOMERIC COMPRESSION SEALS IN STRUCTURAL STEEL JOINTS, INCLUDING SPECIALS

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BUREAU OF BRIDGES

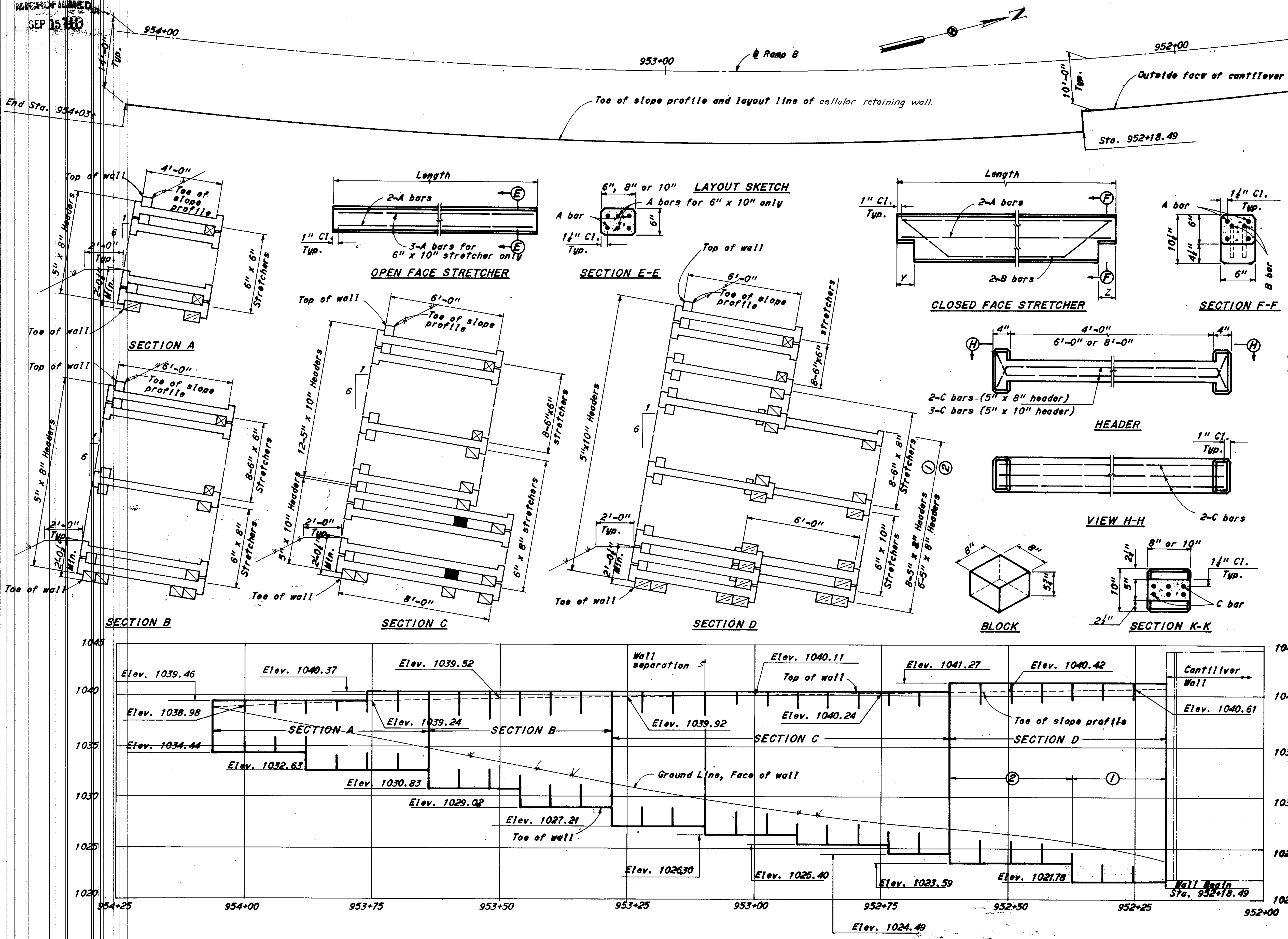
SPECIAL PROVISIONS FOR ELASTOMERIC COMPRESSION SEALS IN STRUCTURAL STEEL JOINTS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.P.B.		T.G.C.	W.T.F.	B.F.G	11-1-74	

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

366/389

STARK COUNTY
STA-30-14.12
STA-77-9.22



Size	Length	Y	Z	Location		For use with		B Bar	
				*INT.	END	5" x 8" H	5" x 10" H	a	b
OPEN FACE STRETCHER									
6" x 6"	6'-0"	-	-	X		X	X	-	-
6" x 6"	6'-4"	-	-		X	X		-	-
6" x 6"	6'-5"	-	-		X		X	-	-
6" x 8"	6'-0"	-	-	X		X	X	-	-
6" x 8"	6'-4"	-	-		X	X		-	-
6" x 8"	6'-5"	-	-		X		X	-	-
6" x 10	6'-0"	-	-	X		X	X	-	-
6" x 10	6'-4"	-	-		X	X		-	-
6" x 10	6'-5"	-	-		X		X	-	-
CLOSED FACE STRETCHER									
6" x 10½"	6'-0"	4"	4"	X		X		10½"	10½"
6" x 10½"	6'-0"	5"	5"	X			X	11½"	11½"
6" x 10½"	6'-4"	4"	8"		X	X		10½"	1'-2½"
6" x 10½"	6'-5"	5"	10"		X		X	11½"	1'-4½"

* Intermediate

Notes:

For excavation and backfill limits see Sheet 2/2

Use a closed face stretcher in the front face only.

Double roll of headers shall be used at wall separation.

¾" chamfer shall be used on exposed edges of Headers of Headers and Stretchers except where shown otherwise.

No chamfer on Blocks.

All reinforcing steel shall be #3 bars.

"A" bars shall be straight bars.

☐ Denotes Closed Face Stretcher.

☒ Denotes 6" x 6" stretcher.

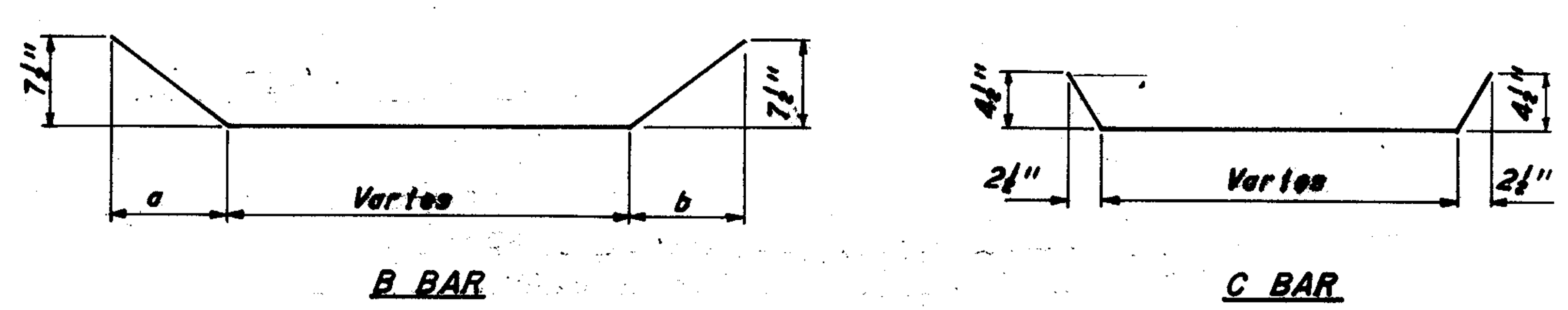
⧅ Denotes 6" x 8" stretcher.

▨ Denotes 6" x 10" stretcher.

■ Denotes Blocks.

For cantilever wall details see, Sheet 2/2

Closing section of cantilever wall shall be constructed before constructing cellular retaining wall.



HOWARD, NEEDLES, TAMMEN & BERGENDOFF 1/2
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

RETAINING WALL A
ALONG RAMP B

SCALE: 1"=10'-0"

STA. 951+70.00
STA. 954+04.00

RELOCATED U.S. 30

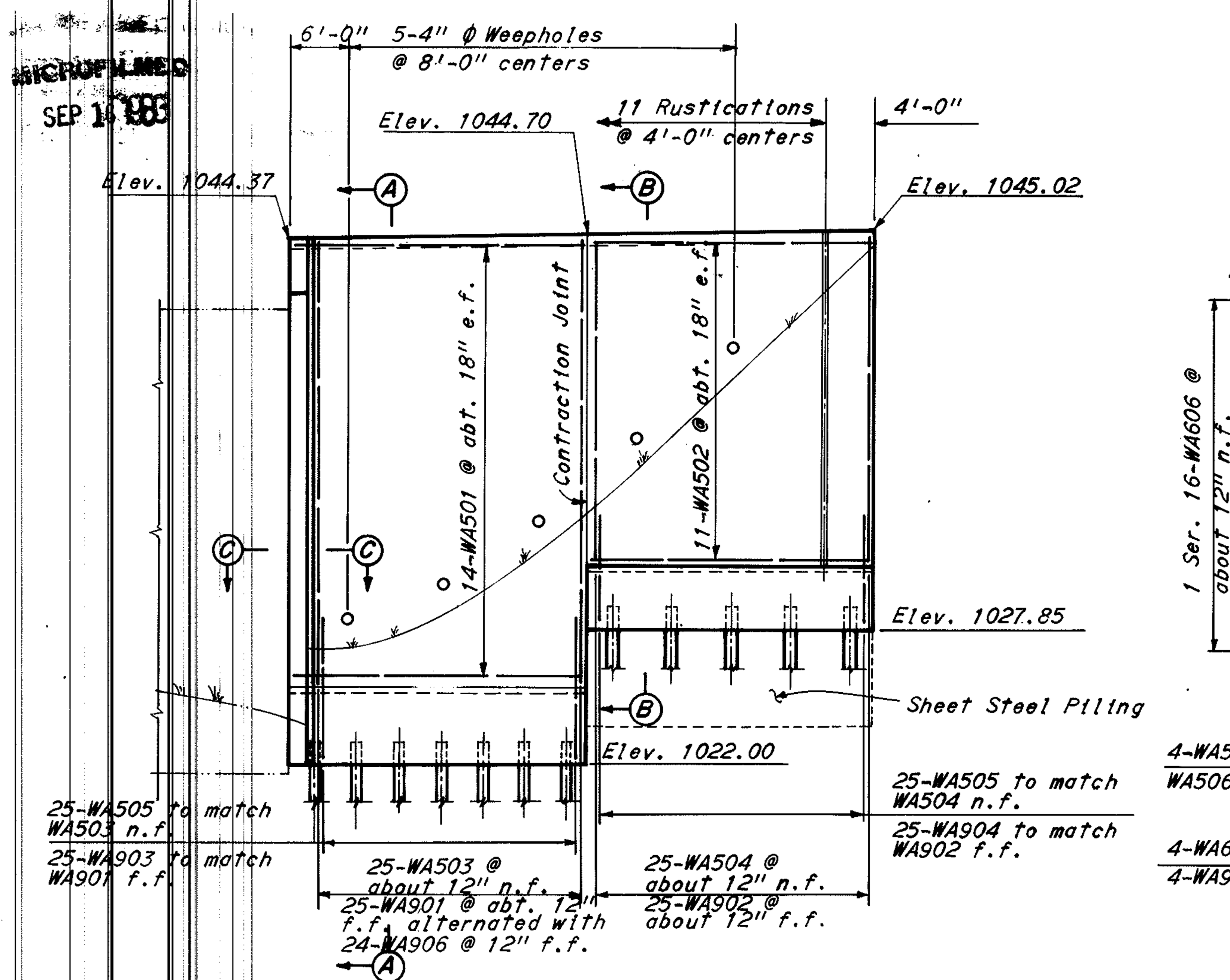
CANTON STARK COUNTY OHIO

DRAWN OPK DATE 3-3-70	TRACED DATE	CHECKED DATE 5-28-70	REVIEWED MTK DATE 11-22-71	REVISED

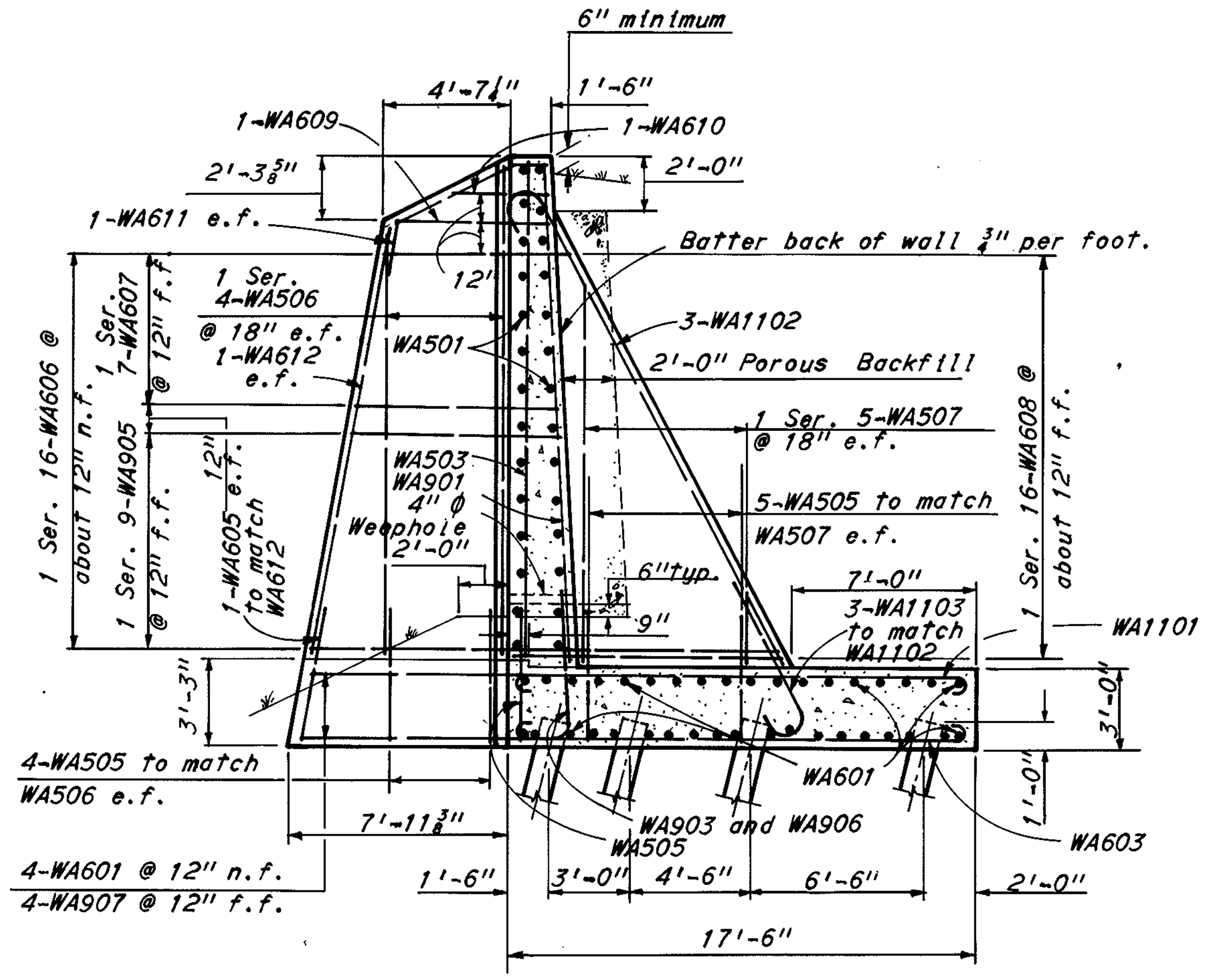
1668

FED. ROAD DIV. NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			367 / 389

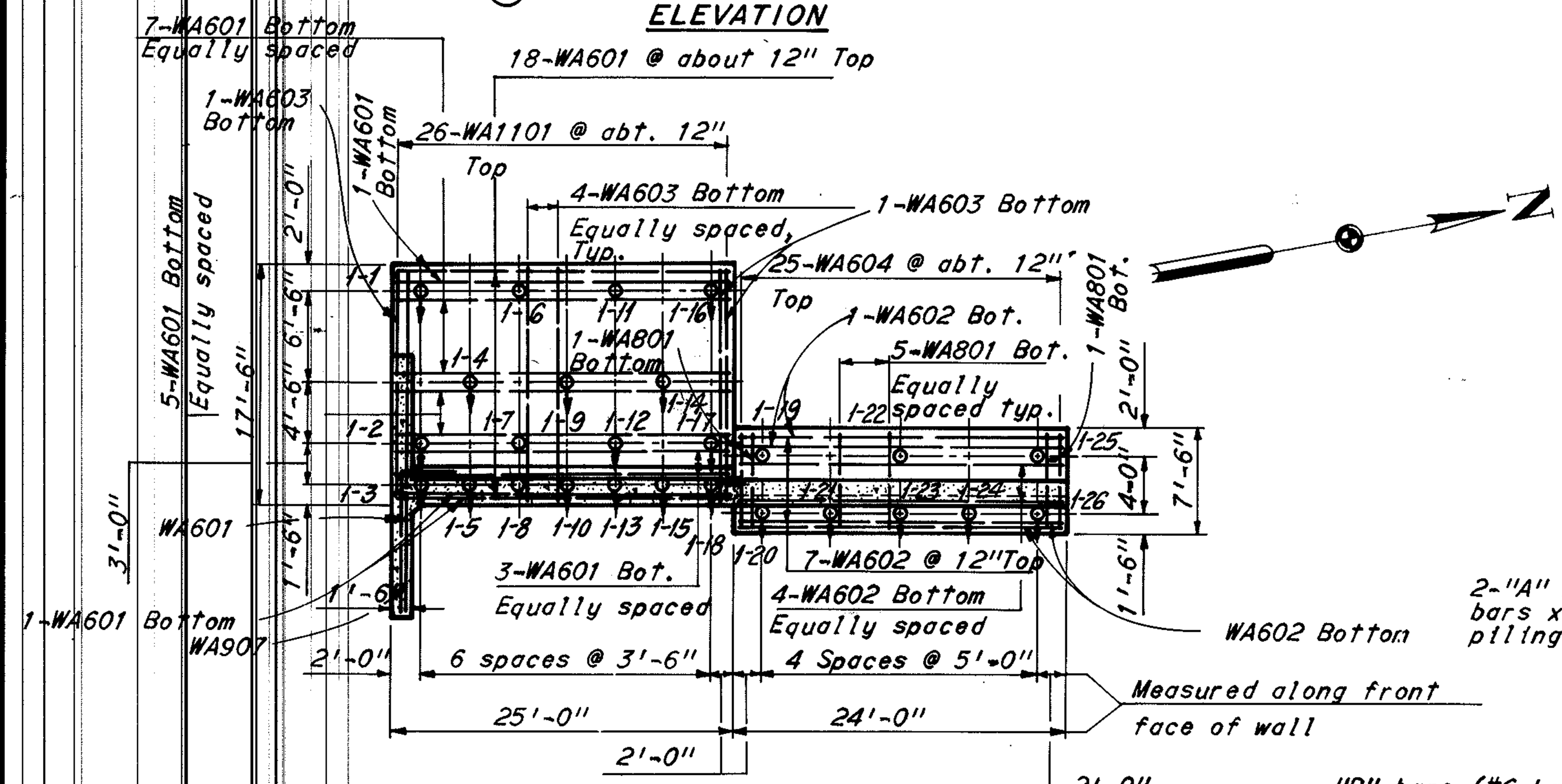
STARK COUNTY
STA-30-14.12
STA-77-9.22



ELEVATION

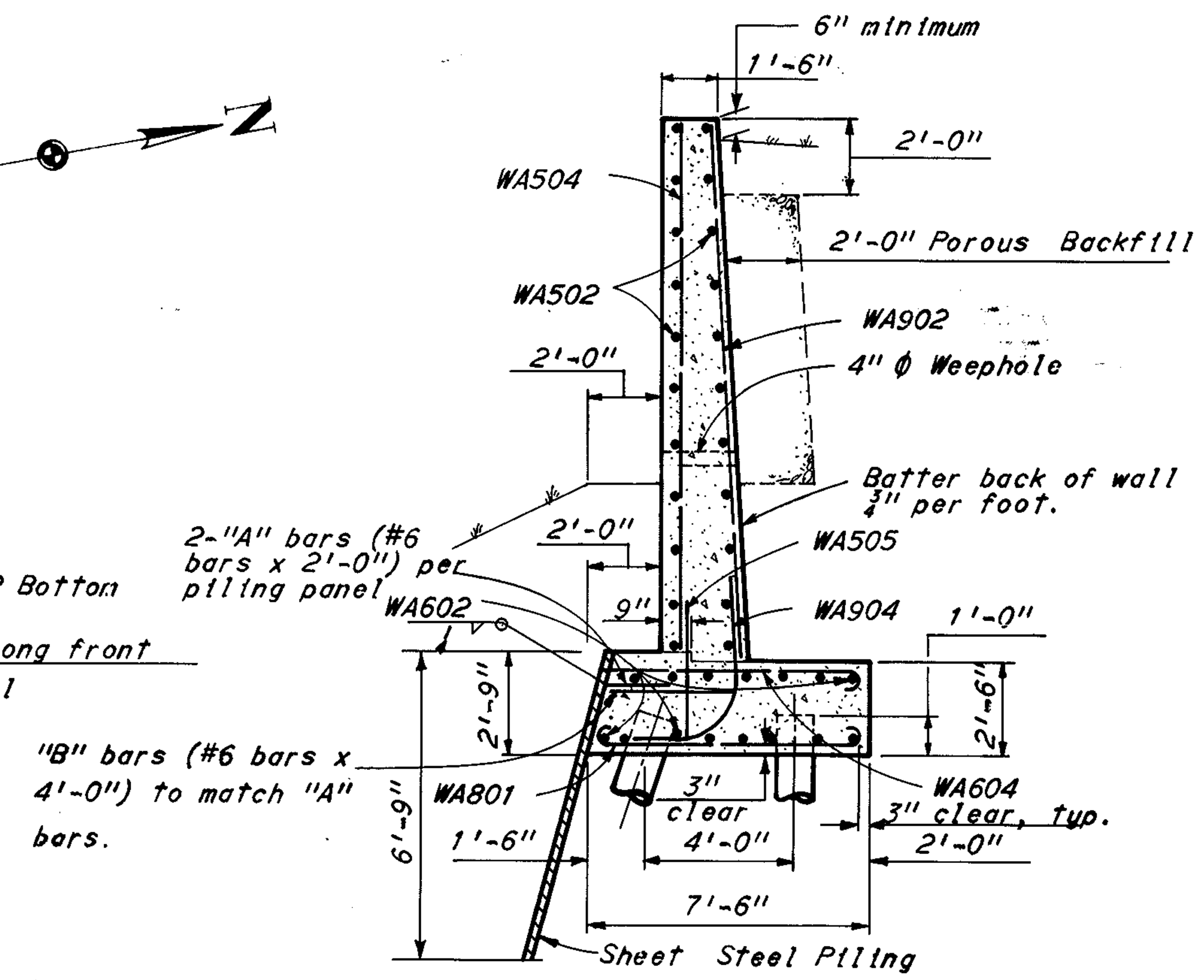


SECTION A-A



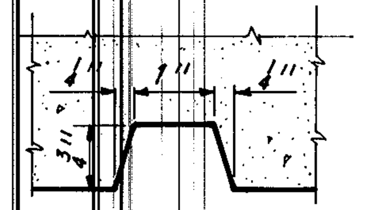
FOOTING PLAN

*Batter 2 in 12.

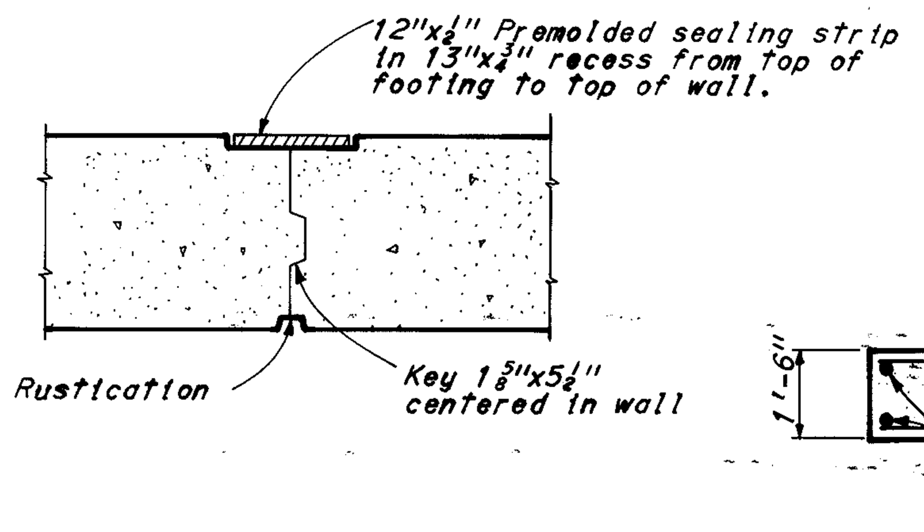


"B" bars (#6 bars x 4'-0") to match "A" bars.

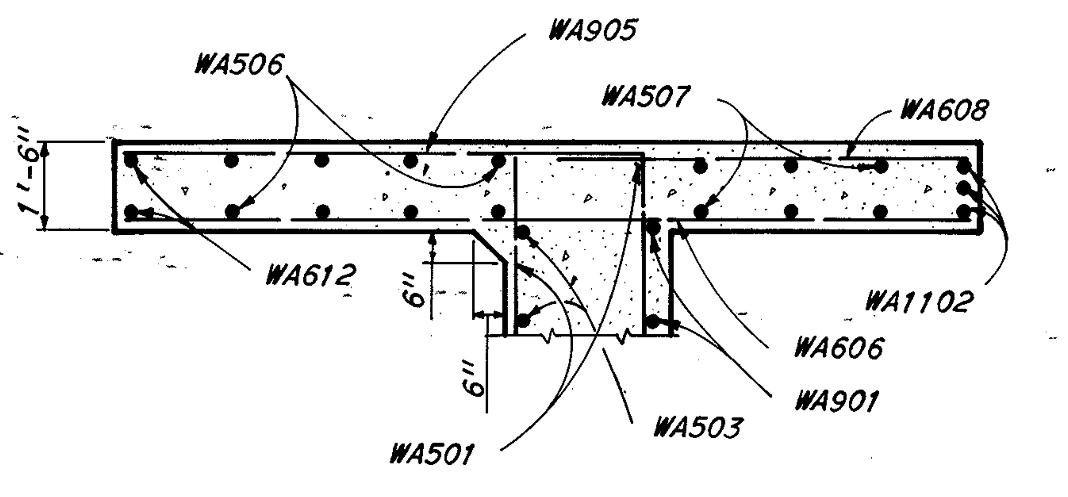
SECTION B-B



RUSTICATION DETAIL

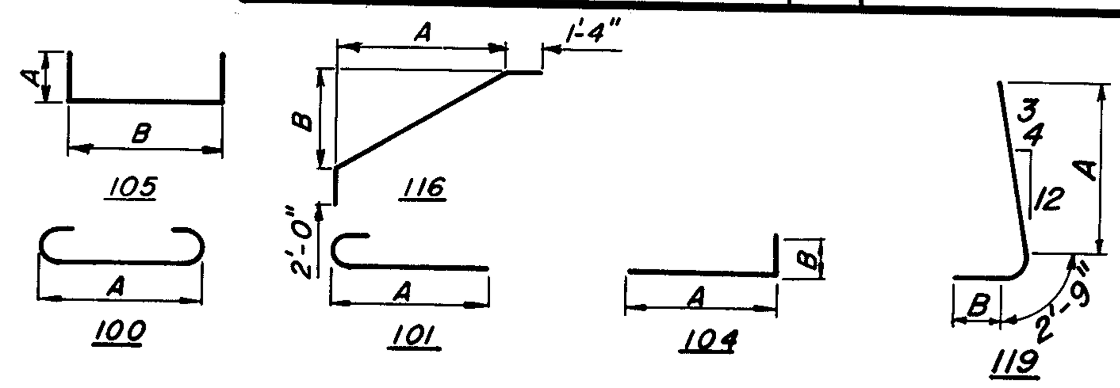


CONTRACTION JOINT DETAIL



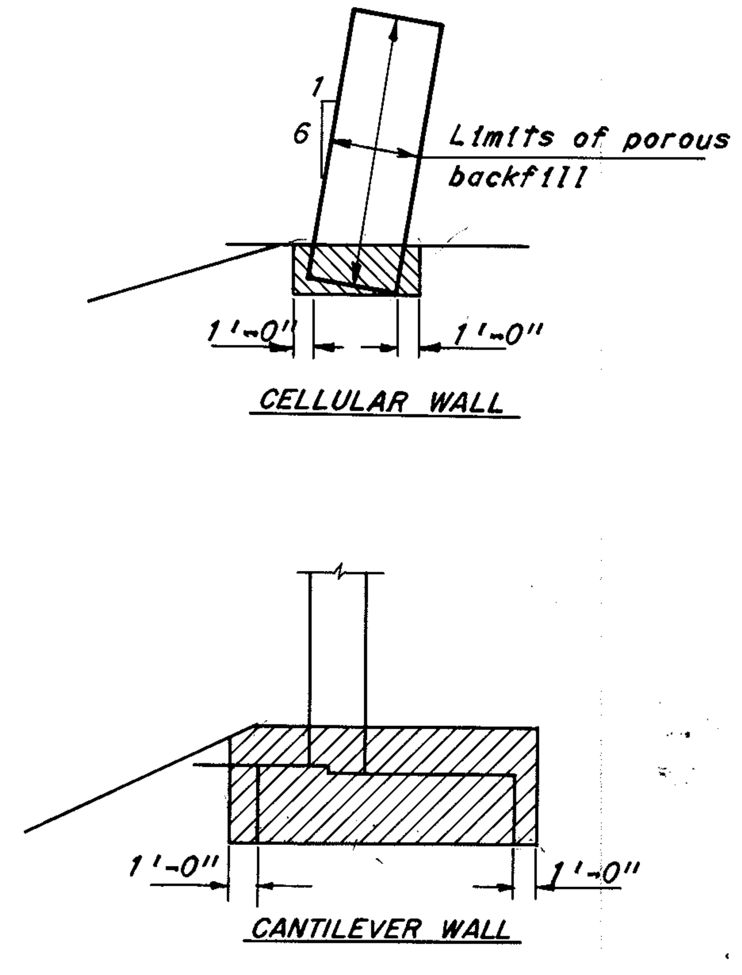
SECTION C-C

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
WA501	28	24'-8"	Str.					720
WA502	22	23'-8"	Str.					544
WA503	25	19'-0"	Str.					495
WA504	25	13'-9"	Str.					358
WA505	68	4'-9"	Str.					337
WA506	2 Ser. 4	16'-9"to19'-0"	Str.				9"	149
WA507	2 Ser. 5	3'-0"to14'-6"	Str.				2'-10½"	92
WA601	41	24'-6"	Str.					1510
WA602	15	23'-6"	Str.					530
WA603	27	18'-4"	100	17'-0"				745
WA604	25	6'-8"	101	6'-0"				251
WA605	2	5'-6"	Str.					17
WA606	1 Ser. 16	7'-0"to17'-8"	Str.				8 9/16"	297
WA607	1 Ser. 7	10'-2"to11'-6"	104	6'-4"to7'-8"	4'-0"		2 11/16"	114
WA608	1 Ser. 16	2'-8"to10'-2"	Str.				6"	154
WA609	1	9'-10"	105	4'-6"	1'-2"			15
WA610	1	7'-10"	105	3'-6"	1'-2"			12
WA611	2	7'-9"	116	4'-5"	2'-2"			23
WA612	2	18'-0"	Str.					54
WA801	24	9'-2"	100	7'-0"				588
WA901	25	19'-0"	Str.					1615
WA902	25	14'-0"	Str.					1190
WA903	25	9'-6"	119	6'-0"	9"			808
WA904	25	9'-0"	119	5'-6"	9"			765
WA905	1 Ser. 9	11'-7"to13'-6"	104	7'-10"to9'-9"	4'-0"		2⅞"	384
WA906	24	15'-6"	119	12'-0"	9"			1266
WA907	4	12'-6"	104	8'-9"	4'-0"			170
WA1101	26	20'-2"	100	17'-0"				2782
WA1102	3	22'-1"	101	20'-6"				352
WA1103	3	8'-4"	101	6'-9"				133
						Total		16,470



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.



RETAINING WALL EXCAVATION LIMITS

Notes:
The estimated average pay length for piling is 70'. The contractor shall assume responsibility for the length of piling selected for driving.
All piles are 12" φ cast-in-place reinforced concrete piles.
○→ Denotes battered piles.
All battered piles are battered 3" in 12", except as shown.
All pile dimensions are measured along bottom of footing.
n.f. Denotes near face
f.f. Denotes far face
e.f. Denotes each face
All piles shall be pre-drilled at least to Elevation 1000.00. Caution shall be taken so that existing wall will not be damaged.
Sheet piling left in place shall have a minimum section modulus of 7 inches cubed per foot of wall. Used piling in good condition may be used.
"A" bars and "B" bars to be included with Item 504 (Sheet Steel Piling).

ESTIMATED QUANTITIES I-77-4(44)					
Item	Description	Unit	Total		
503	Cofferdams, cribs and sheeting	Lump Sum	Lump Sum		
503	Unclassified excavation	Cu. Yd.	890 *		
504	Sheet Steel Piling, Left in place (min. sect. mod. 7 in.³ per foot of wall)	Sq. Ft.	170		
507	12" Cast-in-place reinforced concrete piles Ⅲ	Lin. Ft.	1850		
509	Reinforcing steel	Lb.	16,470		
511	Class C concrete, Wall above footing	Cu. Yd.	72		
511	Class C concrete, Footing	Cu. Yd.	68		
512	Premolded Sealing Strip	Lin. Ft.	15		
518	Porous Backfill	Cu. Yd.	581 ‡		
610	Cellular Retaining Wall	Sq. Ft.	2420		
625	See Sheet 137 for Lighting Summary				

Ⅲ As per plan
* Includes 596 cu. yd. for the cellular wall.
‡ Includes 555 cu. yd. for the cellular wall.

Revised 7-23-75 By R.A.S.

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

2/2

RETAINING WALL A ALONG RAMP B

STA. 951+70.00
STA. 954+04.00

SCALE: 1" = 5'-0"

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN OPK	TRACED	CHECKED MAG	REVIEWED MTF	REVISED
DATE 5-7-70	DATE	DATE 5-28-70	DATE 11-22-71	1668

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

368/389

STARK COUNTY
STA-30-14.12
STA-77-9.22

Note:
For notes and additional details see Sheet 2/2

H.N.T.B. RETAINING WALL D — Revised 7-22-75 By R.A.S. — 1/2

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

RETAINING WALL D

SCALE: 1" = 10'-0" HOR., 1" = 5'-0" VERT.
STA. 966+38.15 — STA. 969+70.13

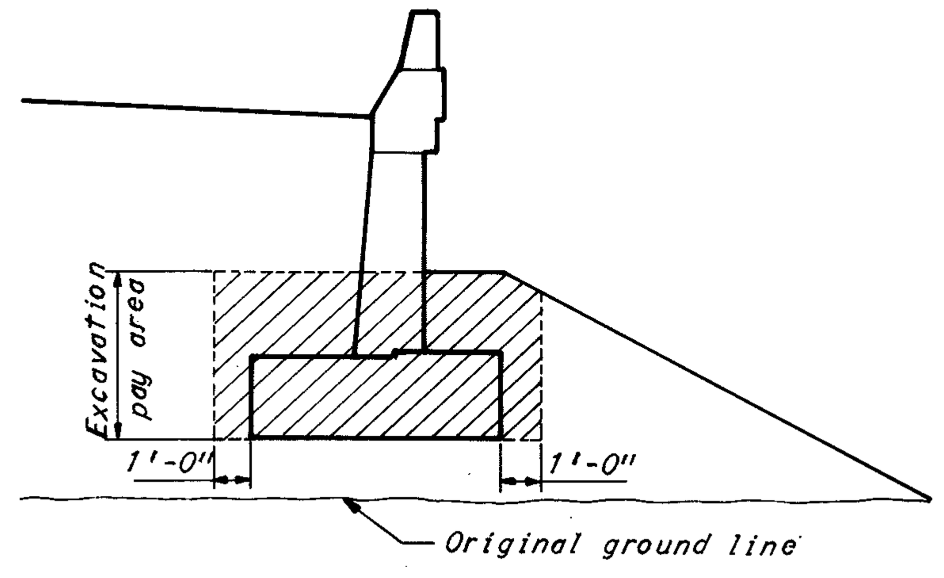
RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

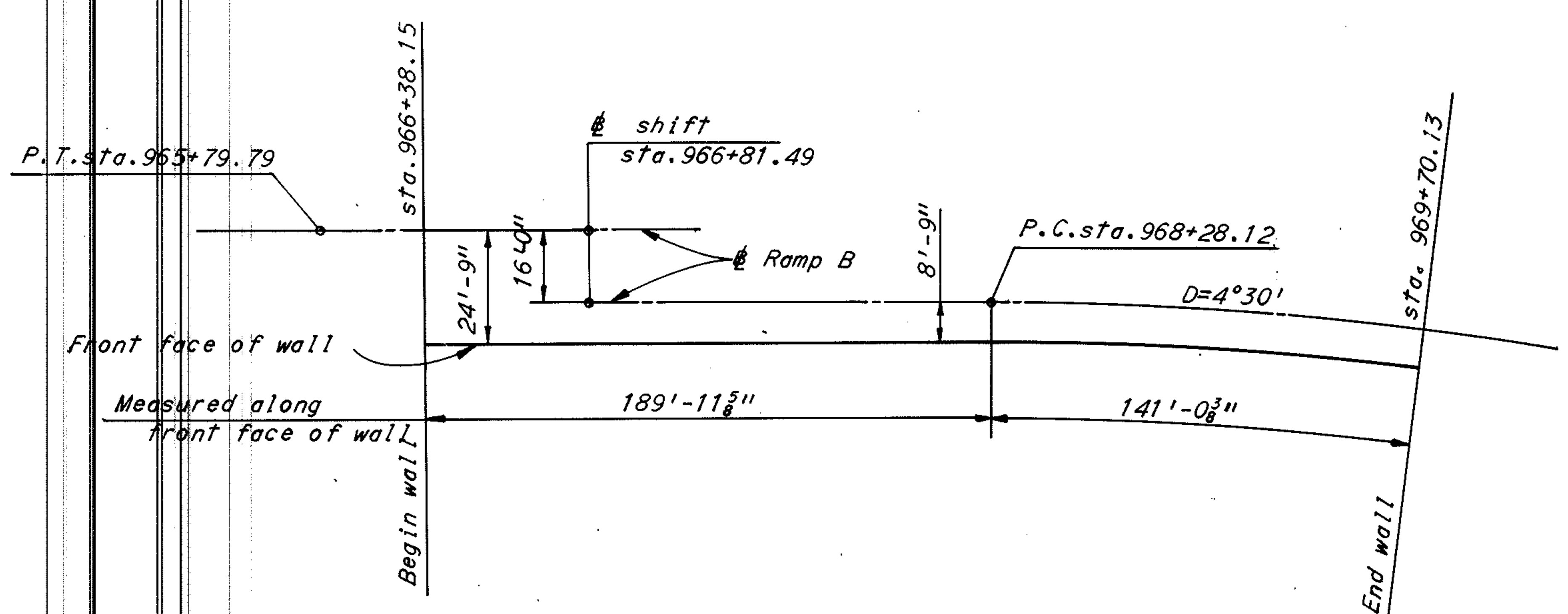
DRAWN KSS DATE 3-24-70 | TRACED DATE | CHECKED DATE 6-18-70 | REVIEWED MJK DATE 11-22-71 | REVISED | 1668

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



RETAINING WALL EXCAVATION LIMITS



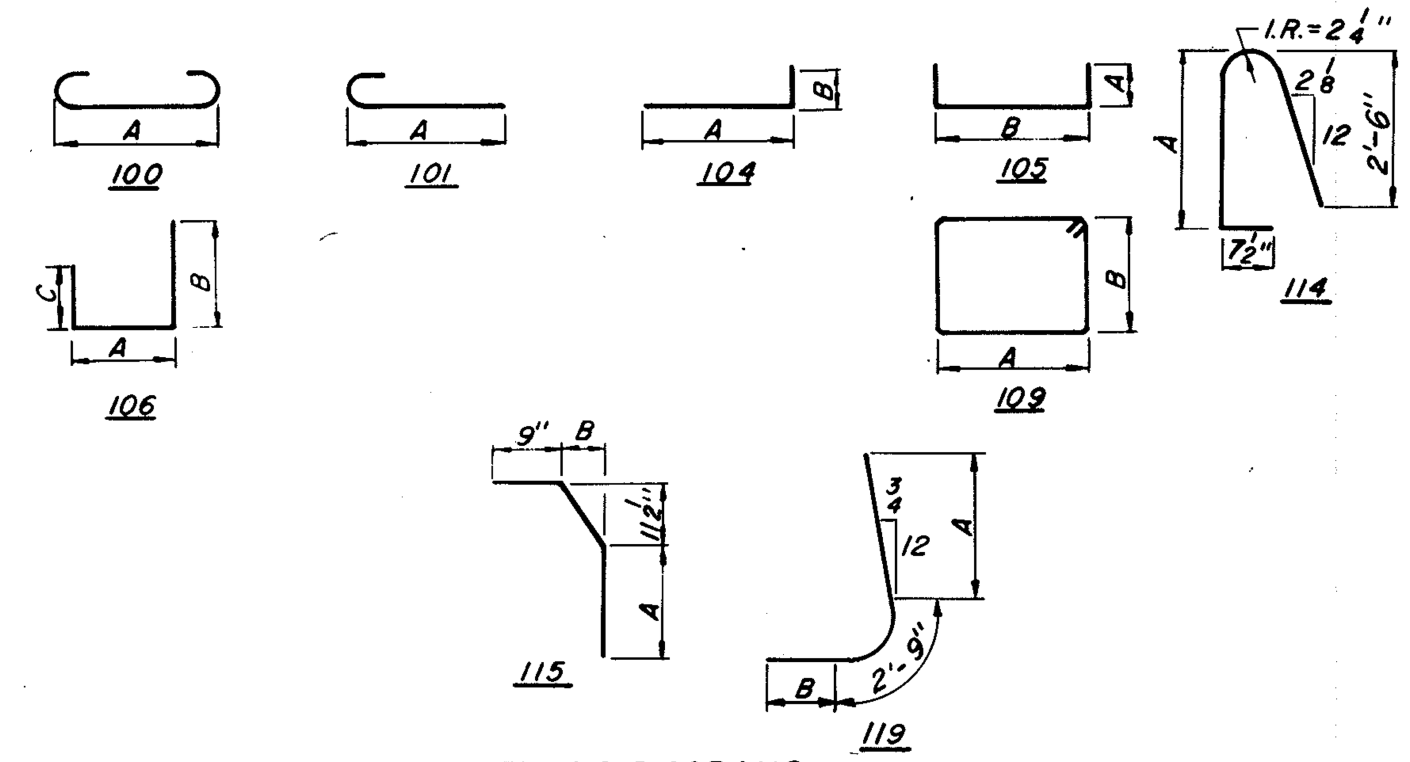
LAYOUT SKETCH

REINFORCEMENT SCHEDULE

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
WD501	236	2'-2"	105	$7\frac{1}{2}$"	1'-2"			533
WD502	236	6'-8"	114	3'-2"				1641
WD503	236	4'-8"	115	2'-10"	9"			1149
WD504	164	27'-6"	Str.					4710
WD505	10	28'-0"	Str.					292
WD506	14	18'-6"	Str.					270
WD507	160	9'-6"	109	3'-0"	1'-6"			1580
WD508	22	5'-3"	104	4'-4"	1'-0"			121
WD509	1 Ser.22	15'-0"to18'-9"	Str.				$2\frac{1}{16}$"	386
WD510	1 Ser.20	14'-6"to17'-3"	Str.				$1\frac{3}{4}$"	332
WD511	1 Ser.20	11'-9"to14'-5"	Str.				$1\frac{11}{16}$"	275
WD512	1 Ser.20	9'-6"to11'-9"	Str.				$1\frac{7}{16}$"	223
WD513	2	22'-0"	Str.					46
WD514	2	21'-0"	Str.					44
WD515	2	14'-0"	Str.					29
WD516	2	13'-0"	Str.					27
WD517	2	24'-0"	Str.					50
WD518	2	12'-0"	Str.					25
WD519	28	31'-6"	Str.					920
WD520	2	32'-0"	Str.					67
WD521	1 Ser.20	7'-3"to9'-6"	Str				$1\frac{7}{16}$"	175
WD522	114	5'-6"	Str					655
WD523	1 Ser.20	5'-6"to7'-3"	Str				1"	133
WD604	160	6'-2"	119	2'-9"	8"			1482
WD605	1 Ser.28	6'-0"to7'-3"	119	2'-3"to3'-6"	1'-0"		$\frac{1}{2}$"	279
WD606	1 Ser.28	7'-3"to9'-6"	119	3'-6"to5'-9"	1'-0"		1"	352
WD607	8	21'-0"	Str.					252
WD608	106	30'-0"	Str.					4780
WD610	27	4'-6"	Str.					183
WD612	55	6'-0"	Str.					496
WD613	55	7'-4"	100	6'-0"				606
WD615	57	7'-0"	Str.					600
WD616	27	5'-10"	100	4'-6"				236
WD617	31	9'-10"	100	8'-6"				458
WD618	17	33'-11"	Str.					866
WD701	31	8'-0"	Str.					507
WD801	57	9'-2"	100	7'-0"				1400
WD901	1 Ser.28	9'-9"to11'-9"	119	6'-0"to8'-0"	1'-0"		$\frac{7}{8}$"	1023
WD902	1 Ser.28	14'-1"to16'-4"	119	8'-6"to10'-9"	2'-10"		1"	1450
WD903	1 Ser.28	16'-7"to19'-1"	119	11'-0"to13'-6"	2'-10"		$1\frac{1}{16}$"	1698
WD904	1 Ser.64	13'-0"to16'-9"	Str.				$\frac{11}{16}$"	3230
WD905	64	8'-11"	119	3'-4"	2'-10"			1940
				Total Retaining Wall D			=	35,521

ESTIMATED QUANTITIES I-77-4(44)

ITEM	UNIT	DESCRIPTION	TOTAL		
503	Lump Sum	Cofferdams, Cribs, and Sheeting	Lump Sum		
503	Cu. Yd.	Unclassified Excavation	440		
504	Sq. Ft.	Sheet Steel Piling (minimum section modulus of 7in.^{3}per foot)	370		
507	Lin. Ft.	12"Cast-In-Place Reinforced Concrete Piles	3645		
509	Lbs.	Reinforcing Steel	35,521		
511	Cu. Yd.	Class"C"Concrete, Retaining Wall above Footings	189		
511	Cu. Yd.	Class"C"Concrete, Retaining Wall Footings	147		
512	Lin. Ft.	Premolded Sealing Strip	86		
516	Sq. Ft.	$\frac{1}{2}$" Preformed Expansion Joint Filler	70		
518	Cu. Yd.	Porous Backfill	88		
625		See Sheet 137 for Lighting Summary			



BENDING DIAGRAMS

Notes:

All bar dimensions are given out to out.
All bars of a ~~series~~ shall vary in length by a constant increment.
Piles ~~are not~~ shown in elevation.
~~All~~ piles are 12"ϕ cast-in-place reinforced concrete piles.
○→ Denotes battered piles.
All battered piles are battered 4 in 12.
All pile dimensions are measured along bottom of footing.

All sheet steel pilings are battered 4 in 12.
n.f. denotes near face

f.f. denotes far face
e.f. denotes each face.
All dimensions and bar spacings are given along front face of wall.
Sheet steel piling left in place shall have a minimum section modulus of 7in^3. per foot of wall. Used piling in good condition may be used.
The estimated average pay length of concrete piling is 80'.
The contractor shall assume responsibility for the length of piling selected for driving.

H.N.T.B. RETAINING WALL D | Revised 7-22-75 | By R.A.S.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | 2/2
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

RETAINING WALL D

SCALE: NONE
STA. 966+38.15
STA. 969+70.13

RELOCATED U.S. 30

CANTON | STARK COUNTY | OHIO

DRAWN KSS DATE 3-26-70	TRACED DATE	CHECKED DHB DATE 6-18-70	REVIEWED MJK DATE 11-22-71	REVISED

1668

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	369A / 389
2	OHIO			

STARK COUNTY
STA-30-14.12
STA-77-9.22

PLAN

P.V.I. Sta 9+26.60
Elev. 1031.70
100' V.C.

PROFILE GRADE - 15TH STREET

Notes:

The following items are not included in the bridge plans. See roadway plans for details.

1. Relocation or removal of existing utilities.
2. Approach grading, pavements and slabs.
3. Guardrails

Earthwork limits shown are schematic. Actual slopes shall conform to plan cross-sections.

All piles shall be HP 10x42 with an allowable design bearing capacity of 9,000 psi and an estimated average pay length of 32'-0" for the South Abutment, 16'-0" for Pier 1, 24'-0" for Pier 2, and 48'-0" for the North Abutment.

■ Denotes scupper.

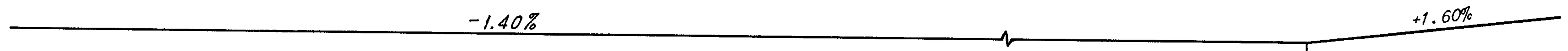
Embankment construction shall be completed to pavement subgrade elevation for a distance of at least 200 feet beyond the ends of the bridge before constructing abutments and piers.

See lighting details see Lighting Plans.
For Footing Layout see sheet 2/11
For Estimated Quantities see sheet 2/11
5852 Denotes 1987 one way average daily traffic.

Modify Std. Dwg. AS-1-72 by providing 3" clear over the top rebars instead of the 2" shown on the Std. Dwg. The jacking holes as called for on Std. Dwg. AS-1-72 are not required.

RAMP H CURVE DATA

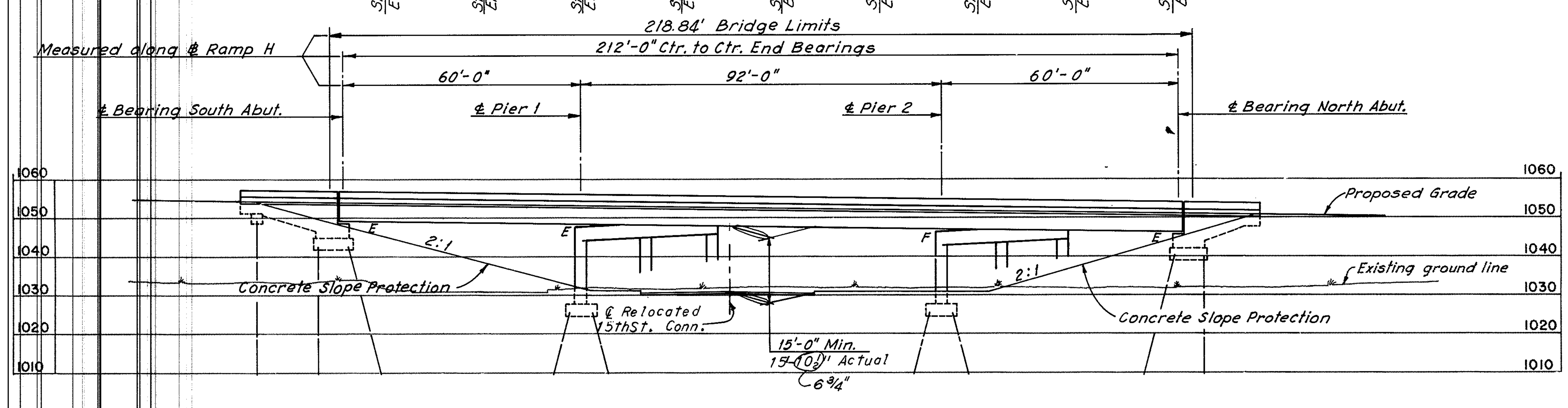
	CURVE 43	CURVE 44
D =	1°30'00.0"	5°00'00.0"
Δ =	7°13'27.2" Rt.	21°02'25.3" Rt.
R =	3819.719'	1145.916'
L =	481.614'	420.807'
T =	241.127'	212.801'
BEG STA =	956+41.143	961+22.757
END STA =	961+22.757	965+43.564



PROFILE GRADE - RAMP H

P.V.I. Sta. 964+75
Elev. 1048.35
250' V.C.

Note:
Elevations given are Profile Grade elevations.



ELEVATION

EXISTING UTILITY LEGEND

Symbol	Meaning
2" Gas	GAS
6" Water Main	WATER
18" San.	SANITARY SEWER
Power Line	POWER LINE
○ M.H.	MANHOLE
□ C.B.	CATCH BASIN
8" San. —x—x—	ABANDONED
24" San. — — —	PROPOSED

PROPOSED STRUCTURE

Type: Continuous Welded Curved Girders With Reinforced Concrete Slab
Spans: 60'-0", 92'-0", 60'-0"=212'-0" Ctr. to Ctr. End Bearings along Ramp H
Roadway: 30'-0" face to face parapets.
Loading: HS20-44
Skew: 48° 46' 10.5" to Layout Line
Wearing Surface: 2½" Asphalt Concrete
Approach Slab: 30'-0" (AS-1-72) (Modified)
Alignment: 1°30' Curve Right to 5°00' Curve Right

H.N.T.B. BRIDGE NO. 22 — Revised 6-17-75 By E.P.S.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 1/11
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SITE PLAN

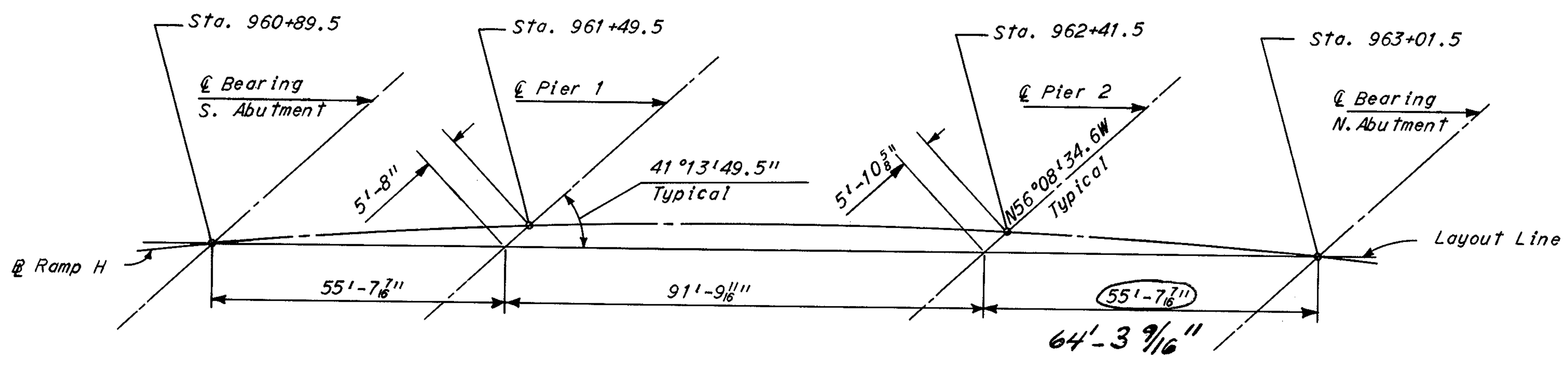
RAMP H OVER 15TH STREET
BR. NO. STA-30-1492 — STA. 960+85.76
SCALE: 1" = 20'-0" — STA. 963+04.60
RELOCATED U.S. 30
CANTON — STARK COUNTY — OHIO

DRAWN CSP	TRACED	CHECKED LDE	REVIEWED	REVISED
DATE 9-24-73	DATE	DATE 9-26-73	DATE 10-19-73	3030

Revised 4-28-77

FED. ROAD DIV. NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS	
2	OHIO			369B / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22



FOOTING LAYOUT SKETCH

ESTIMATED QUANTITIES									
ITEM	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPERSTR.	GENERAL		
404	47	Cu. Yd.	Asphalt Concrete, AC-20			47			
409	76	Gallon	Seal Coat Bituminous Material: 702.02, MC-800 or MC-3000; 702.03, CBAE 800; 702.04, RS-1, RS-2 or CRS-1, CRS-2; 702.09, RT-9 or RT-10.			76			
409	3	Cu. Yd.	Seal Coat Cover Aggregate, No. 9			3			
503	Lump Sum	Lump Sum	Cofferdams Cribs and Sheeting				Lump Sum		
503	488	Cu. Yd.	Unclassified Excavation	335	153				
505	Lump Sum	Lump Sum	Test Pile				Lump Sum		
506	Lump Sum	Lump Sum	Pile Test Load				Lump Sum		
506	3	Each	Subsequent Pile Test Load				3		
507	2,082	Lin. Ft.	Steel Piles, HP 10x42	1,522	560				
509	94,638	Lbs.	Reinforcing Steel	20,145	17,810	56,683			
511	225	Cu. Yd.	Class "C" Concrete, Superstructure			225			
511	61	Cu. Yd.	Class "C" Concrete, Pier Caps and Columns		61				
511	152	Cu. Yd.	Class "C" Concrete, Abutment above Footings	152					
511	158	Cu. Yd.	Class "C" Concrete, Abutment and Pier Footings.	95	63				
513	228,683	Lbs.	Structural Steel (ASTM A36)			228,683			
514	228,683	Lbs.	Field Painting of Structural Steel			228,683			
518	92	Cu. Yd.	Porous Backfill	92					
518	76	Lin. Ft.	6" Perforated Helical CMP, 707.01	76					
518	45	Lin. Ft.	6" Non-Perforated Helical CMP, Inc. Specials 707.01	45					
518	210	Lin. Ft.	Subdrainage for wearing course			210			
518	4	Each	Scuppers Including Supports			4			
601	492	Sq. Yd.	Concrete Slope Protection				492		
625			For Lighting Quantities see Lighting Details						
808	225	Units	Chemical Admixture for concrete Type A, B or D			225			
Spec.	675	Sq. Yd.	Membrane Waterproofing (See Proposal Note)			675			

H.N.T.B. BRIDGE NO. 22 Revised 6-17-75 By E.P.S.
HOWARD, NEEDLES, TAMMEN & BERGENDOFF 2 / 11
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

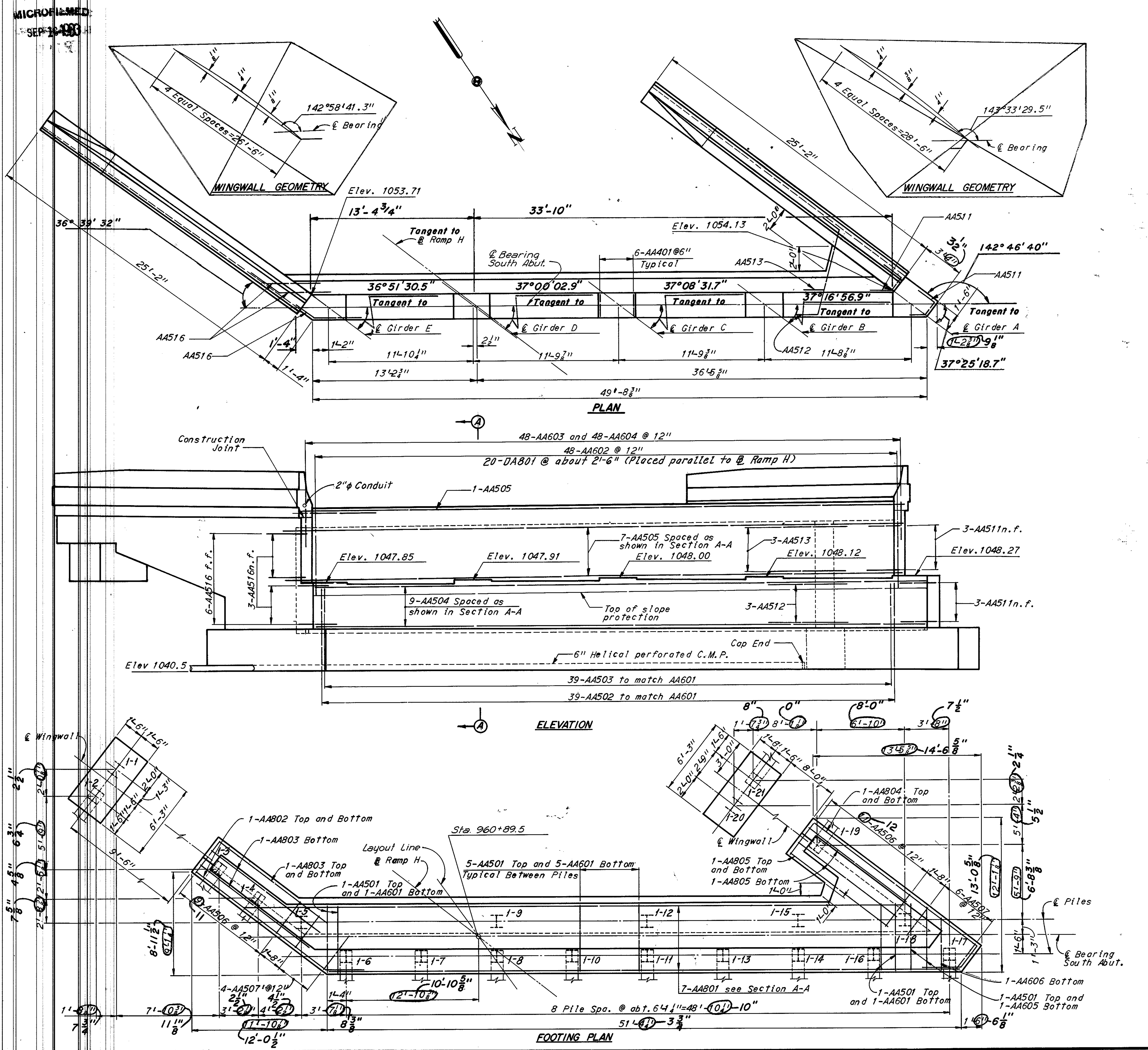
FOOTING LAYOUT SKETCH AND ESTIMATED QUANTITIES
RAMP H OVER 15TH STREET
BR. NO. STA-30-1492 STA. 960+85.76
SCALE: NONE STA. 963+04.60
RELOCATED U.S. 30
CANTON STARK COUNTY OHIO

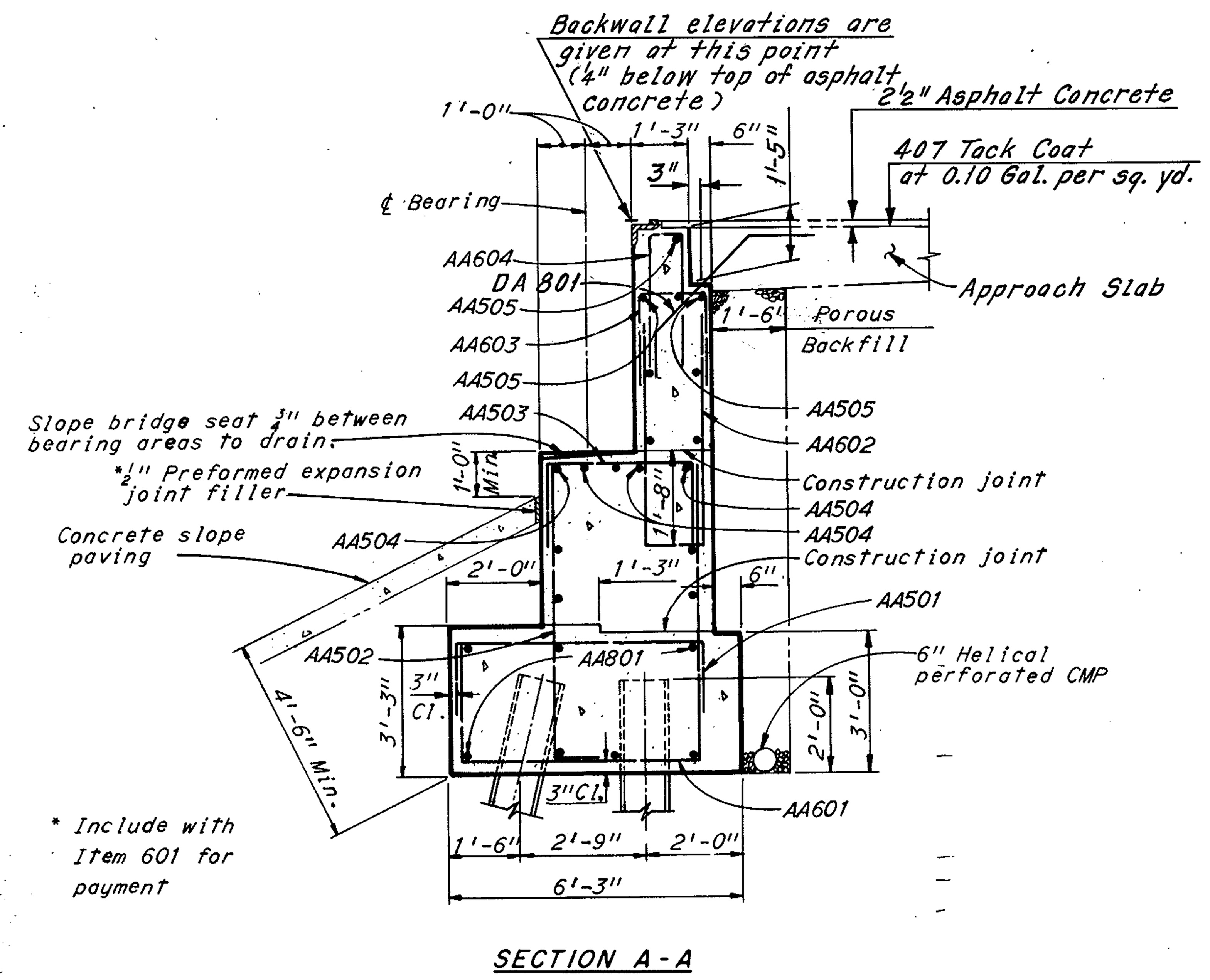
DRAWN C.J.S.	TRACED	CHECKED D.W.B.	REVIEWED M.J.K.	REVISED 3-2-76
DATE 9-6-73	DATE	DATE 10-18-73	DATE 10-19-73	3030

Rev. 7-20-76

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS	
2	OHIO			369C / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22





* Include with Item 601 for payment

Notes:

For roadway end dam details see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4, and Sheet 359.

AA401 bars shall be placed 2 1/4"± below top of bridge seat.

n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.

For reinforcement schedule see Sheet 10/11

All piles are HP 10x42.

For placement of conduit in wingwalls see Sheet. 4/11

All battered piles are battered 3 in 12.

Pile dimensions are measured along bottom of footing.

H.N.T.B. BRIDGE NO. 22 — Revised 6-17-75 By E.P.S.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 3/11

SOUTH ABUTMENT

RAMP H OVER 15TH STREET
BR. NO. STA-30-1492 — STA. 960+85.76
SCALE: 1/4"=1'-0" — STA. 963+04.60
RELOCATED U.S. 30
CANTON — STARK COUNTY — OHIO

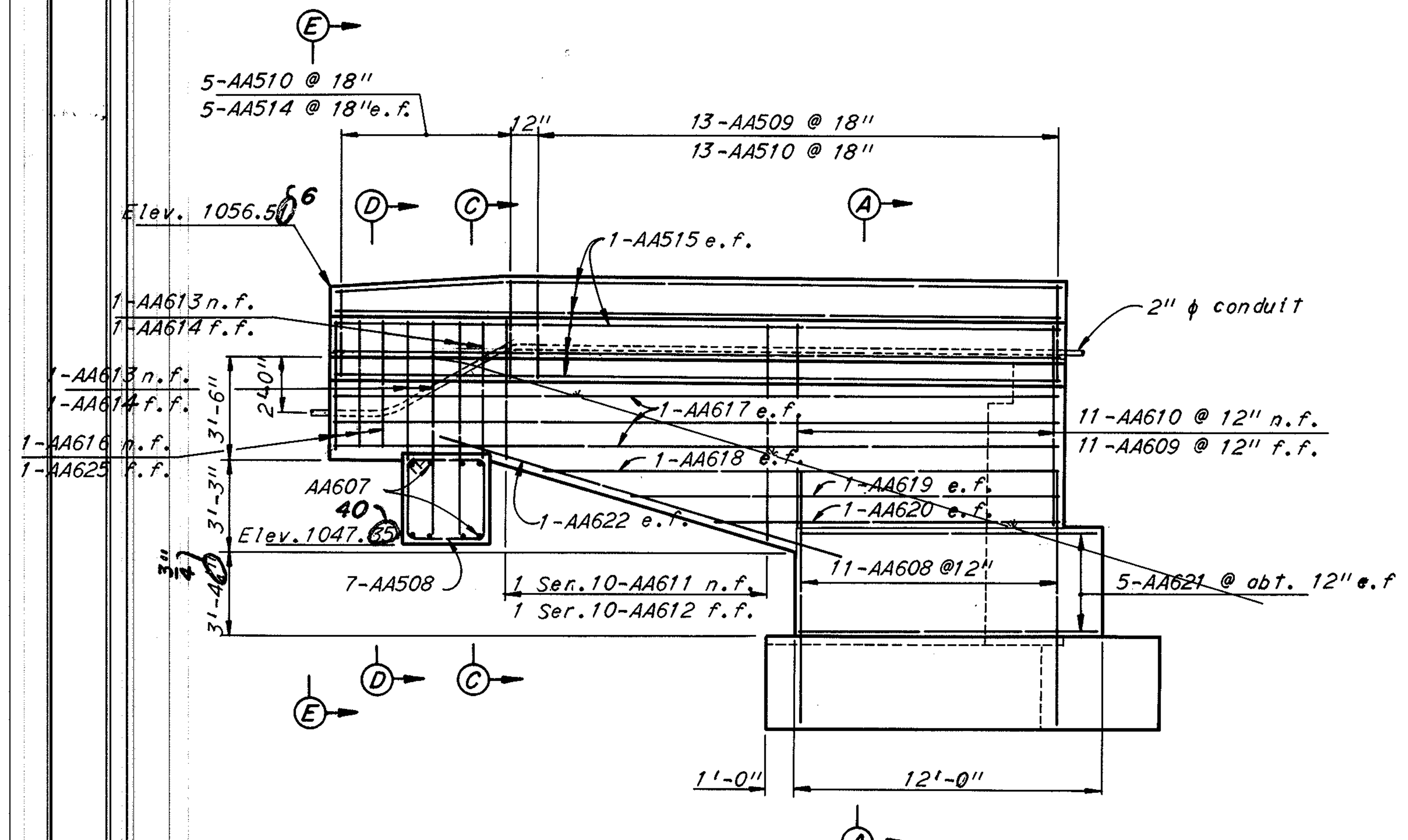
DRAWN LDE	TRACED	CHECKED ELG	REVIEWED	REVISED
DATE 9-19-73	DATE	DATE 10-12-73	DATE 10-19-73	3030

REV. 2-11-77

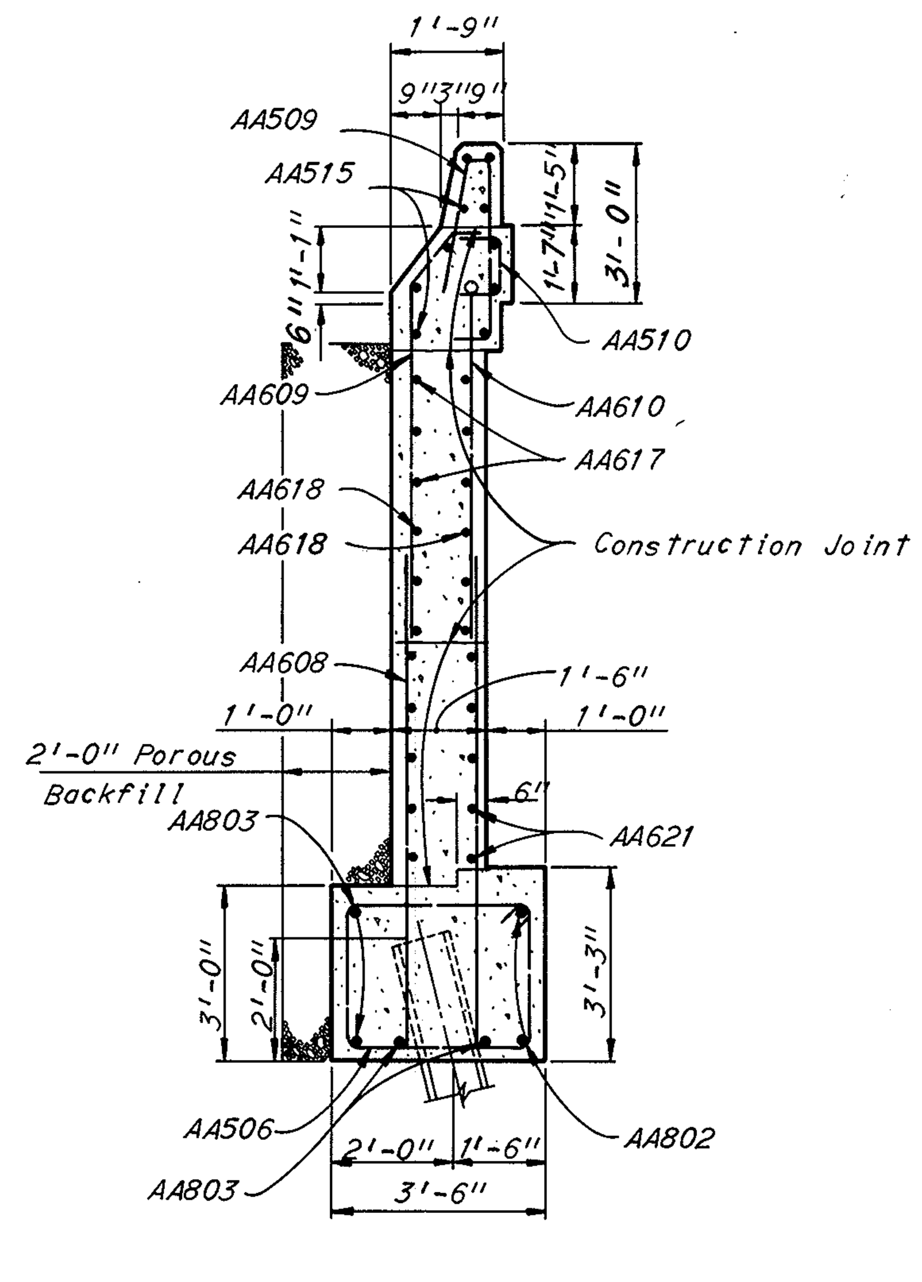
FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO		

369D
389

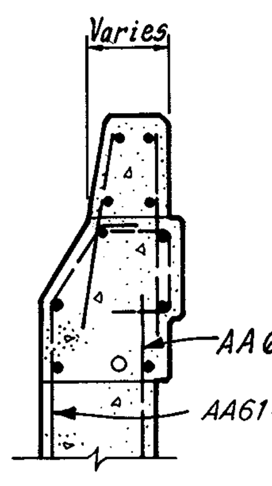
STARK COUNTY
STA-30-14.12
STA-77-9.22



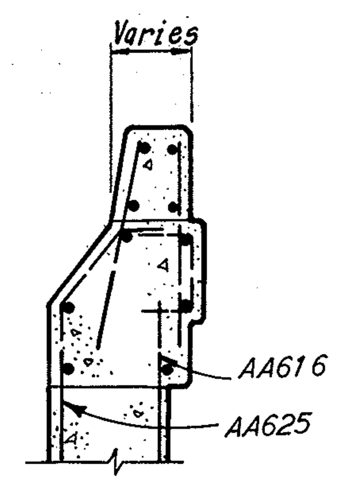
EAST WINGWALL ELEVATION



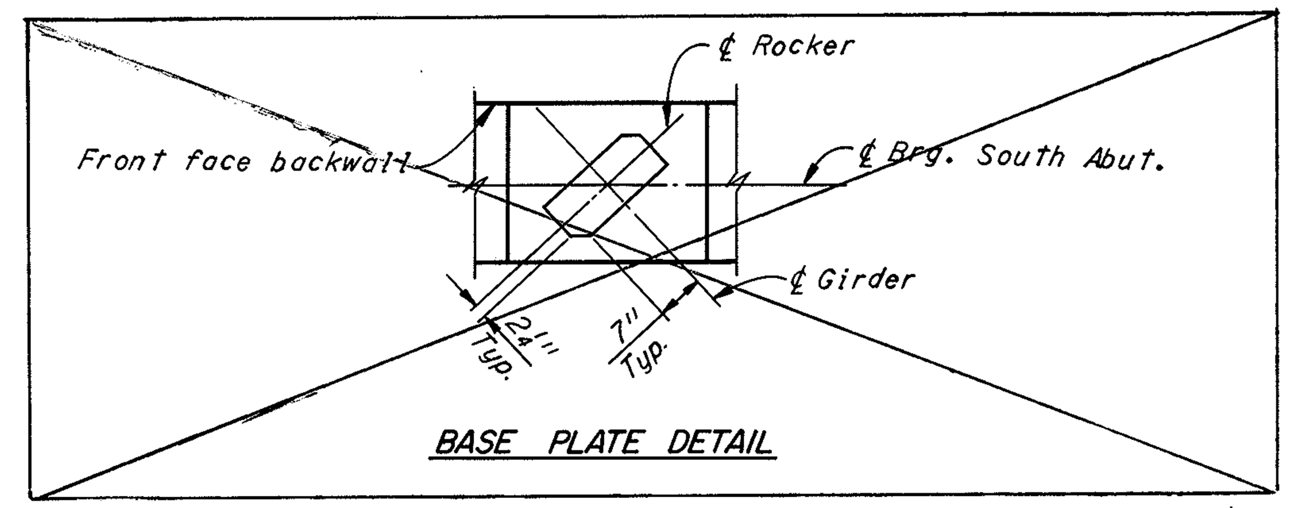
SECTION A-A



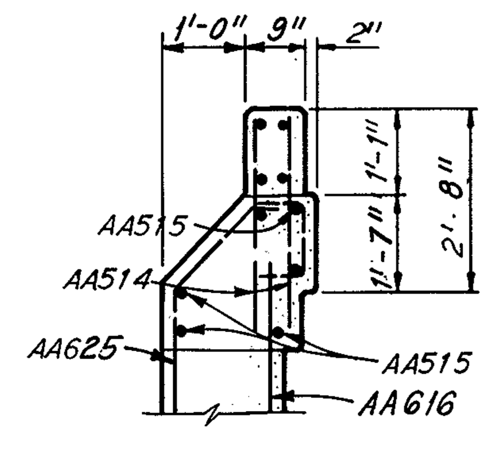
SECTION C-C



SECTION D-D

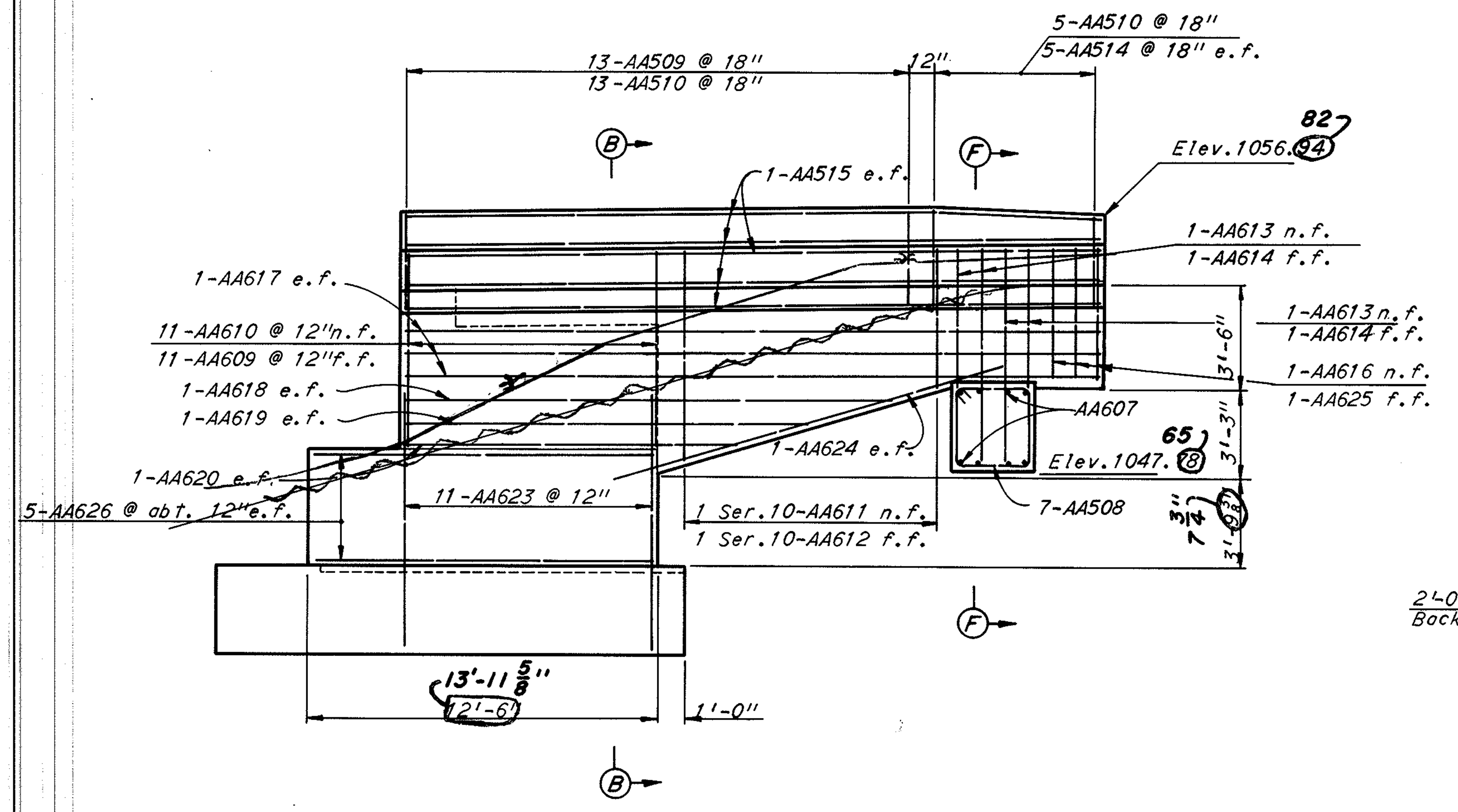


BASE PLATE DETAIL

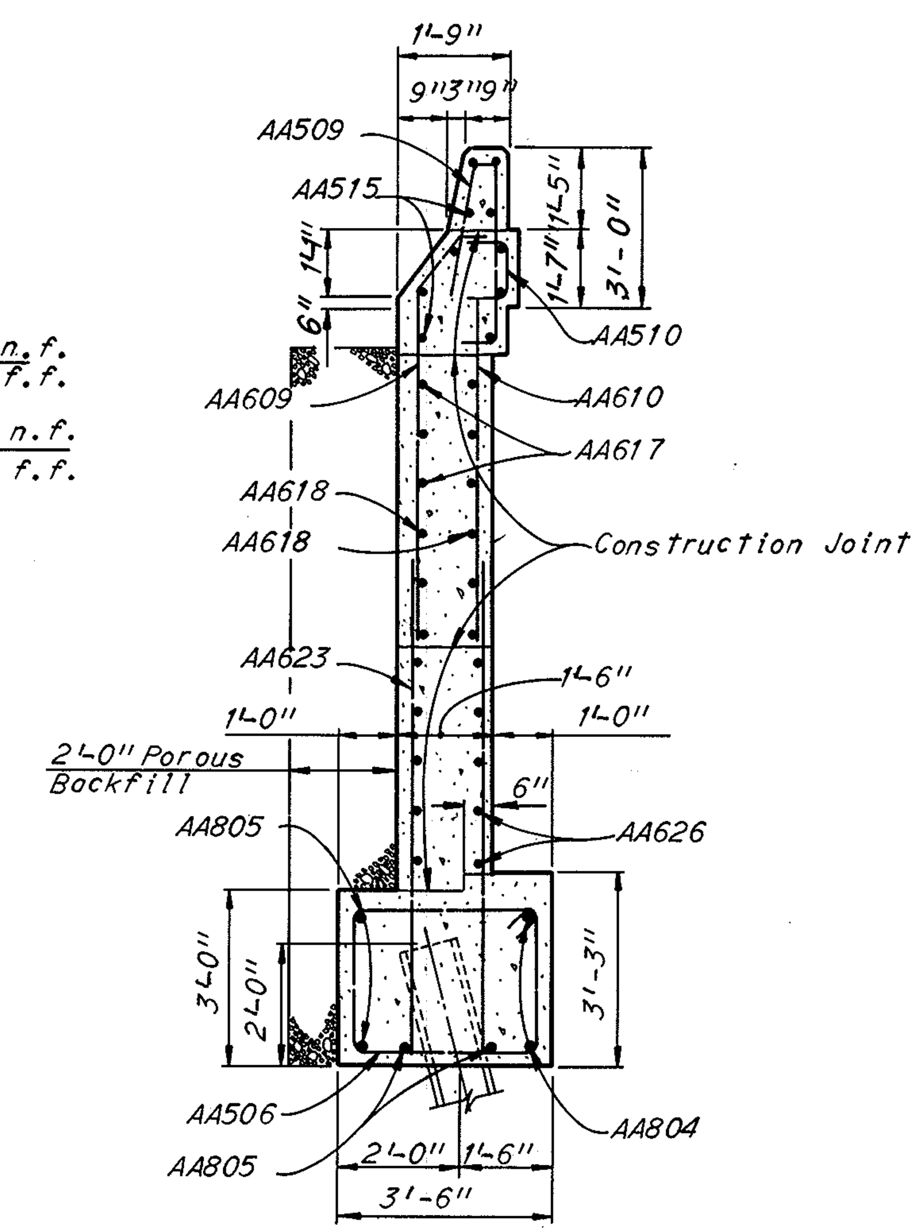


VIEW E-E

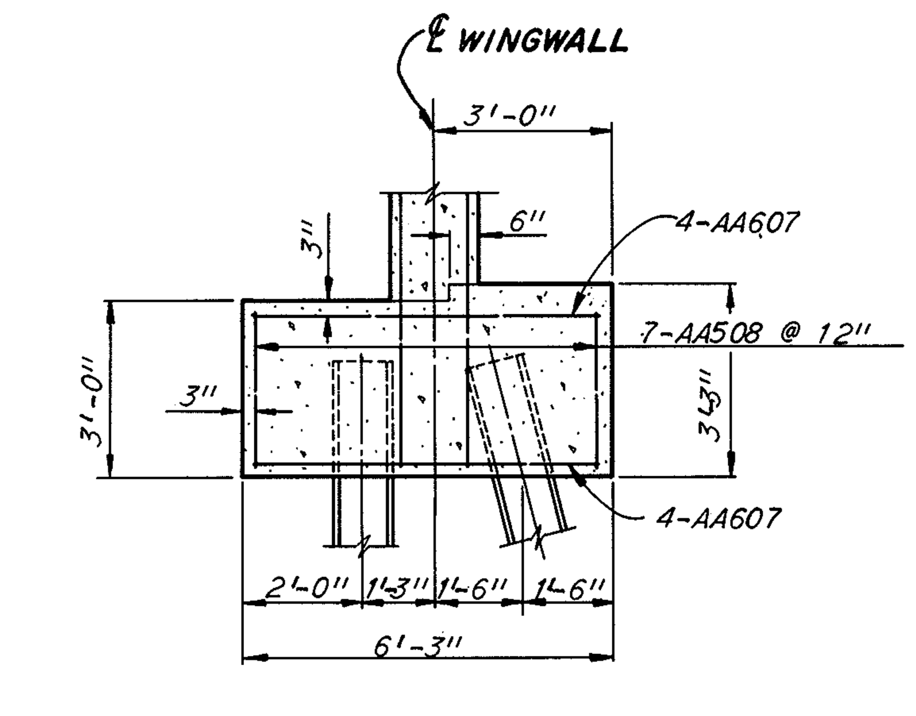
Notes:
Parapet Transitions shall be as shown on Std. Drwg. BR-1-67 revised 10-15-71. Reinforcing steel shall be field bent or cut to fit the revised shape.
For additional notes see Sheet 3/11



WEST WINGWALL ELEVATION



SECTION B-B



SECTION F-F

H.N.T.B. BRIDGE NO. 22 | Revised 6-17-75 By E.P.S.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 4/11
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

SOUTH ABUTMENT DETAILS

RAMP H OVER 15TH STREET
BR. NO. STA-30-1492 STA. 960+85.76
SCALE: NONE STA. 963+04.60
RELOCATED U.S. 30
CANTON STARK COUNTY OHIO

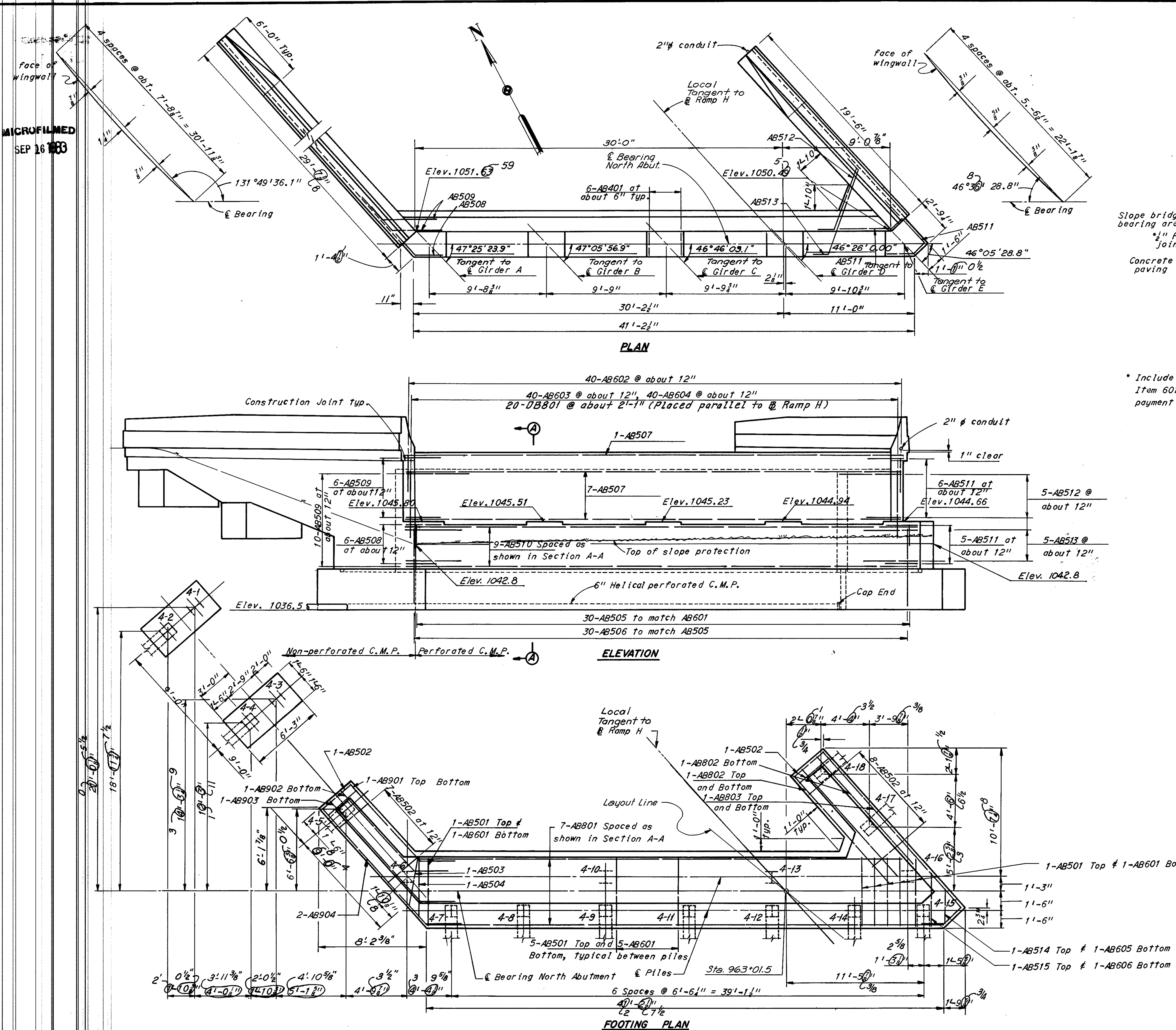
DRAWN LDE	TRACED	CHECKED ELG	REVIEWED	REVISED
DATE 9-19-73	DATE	DATE 10-12-73	DATE 10-19-73	3030

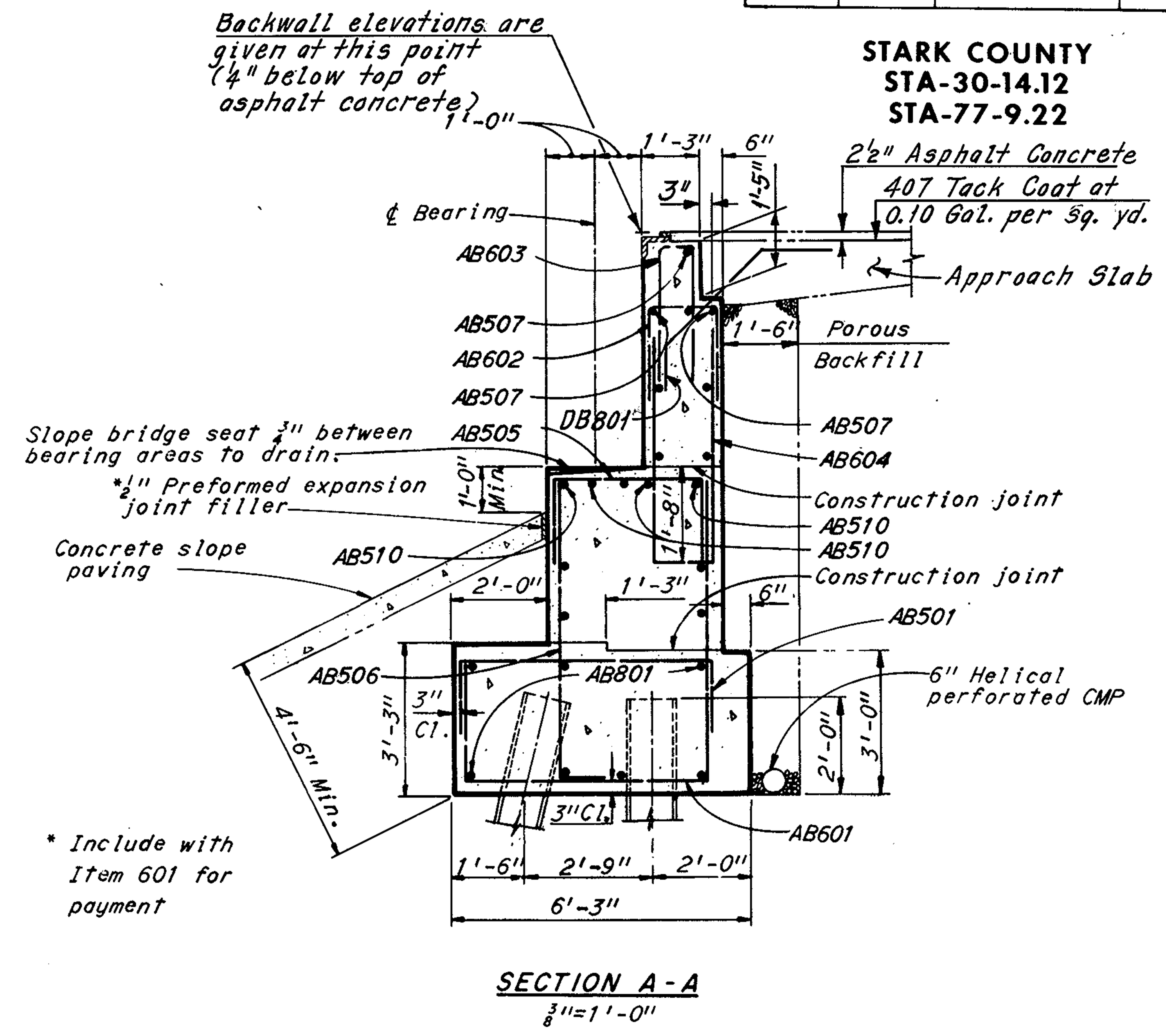
REV. 2-11-77

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

369E
389

STARK COUNTY
STA-30-14.12
STA-77-9.22





* Include with Item 601 for payment

Notes:

For roadway end dam details see Ohio Standard Drawing SD-1-69, Sheets 1 and 2 of 4, and Sheet 359.

AB401 bars shall be placed 2 1/2"± below top of bridge seat.

n.f. denotes near face, f.f. denotes far face, and e.f. denotes each face.

For reinforcement schedule see Sheet 10/11

For placement of conduit in wingwalls see Sheet 6/11

All battered piles are battered 3 in 12.

Pile dimensions are measured along bottom of footing.

Piles not shown in elevation.

H.N.T.B. BRIDGE NO. 22 — Revised 6-17-75 By E.P.S.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 5/11
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

NORTH ABUTMENT

RAMP H OVER 15TH STREET
BR. NO. STA-30-1492 — STA. 960+85.76
SCALE: 1/4"=1'-0" — STA. 963+04.60

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

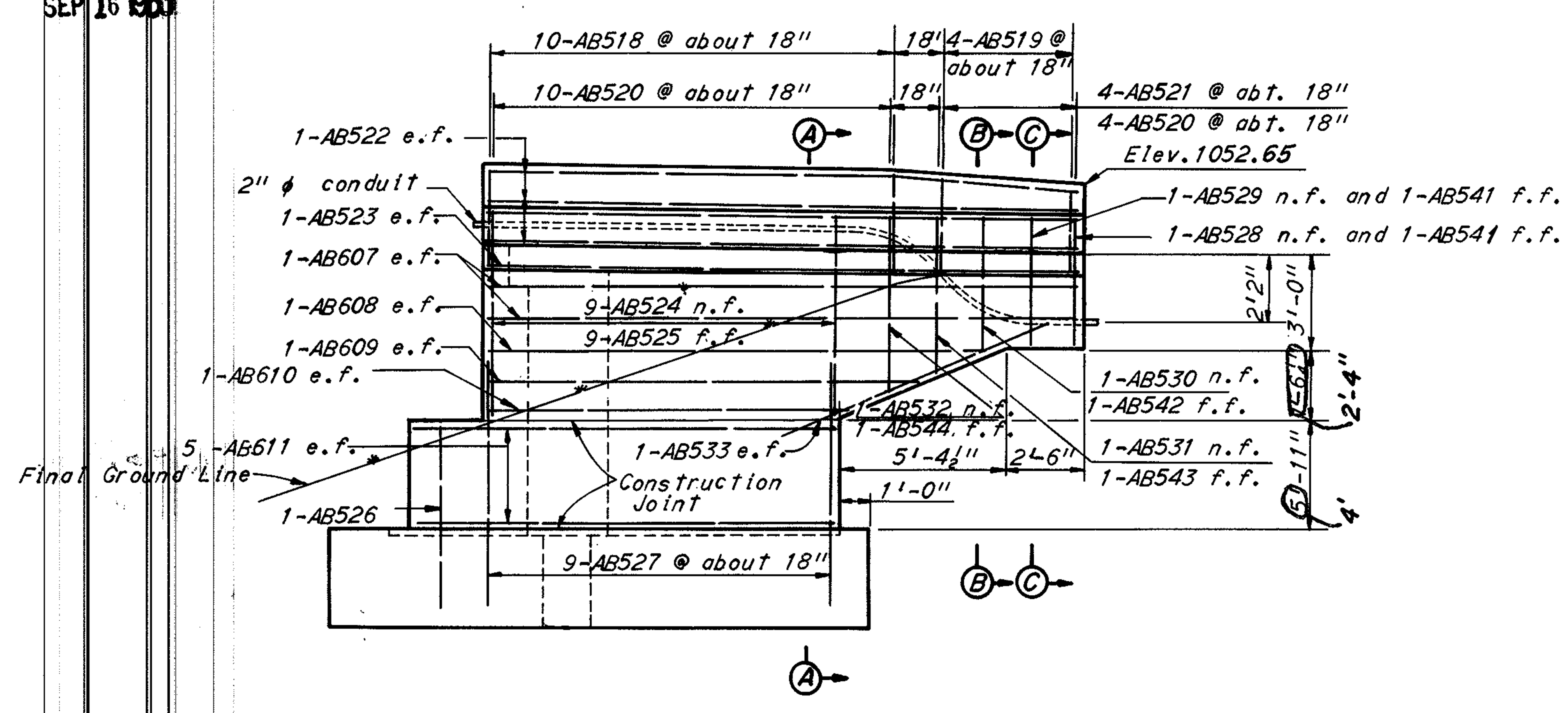
DRAWN JPE DATE 8-73	TRACED DATE	CHECKED ELG DATE 8-21-73	REVIEWED DATE 10-19-73	REVISED	3030

Revised 4-28-77

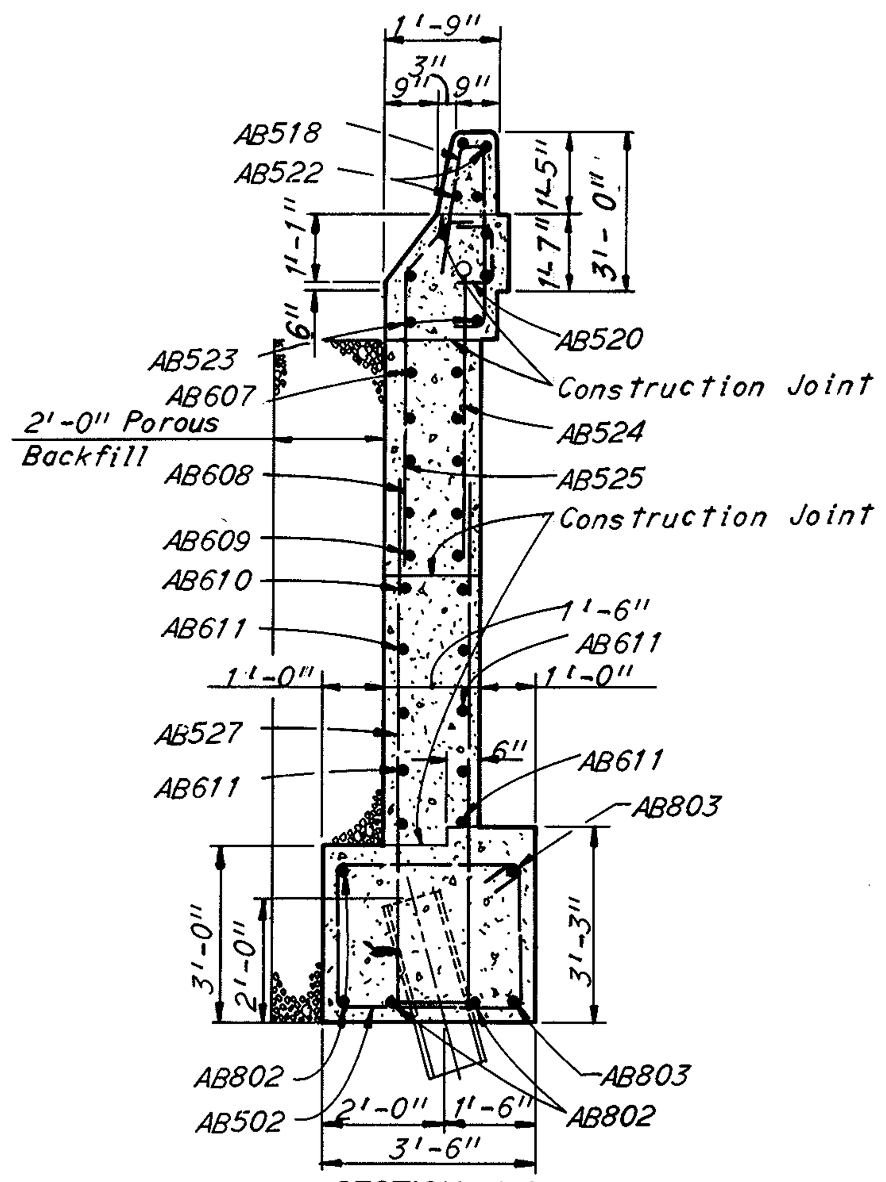
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

369F
389

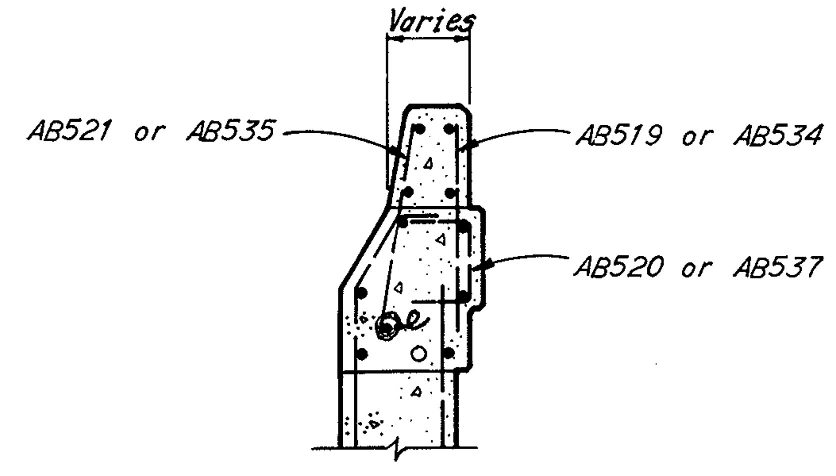
STARK COUNTY
STA-30-14.12
STA-77-9.22



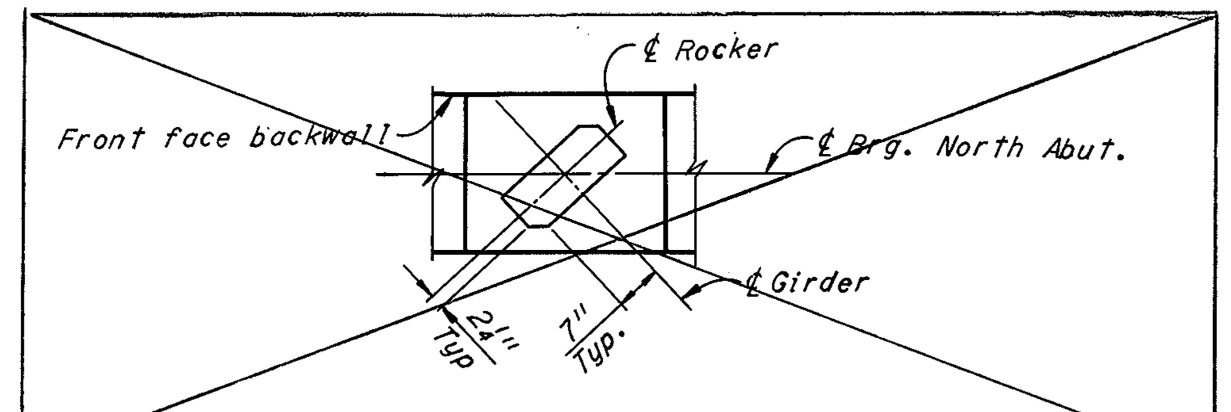
EAST WINGWALL ELEVATION



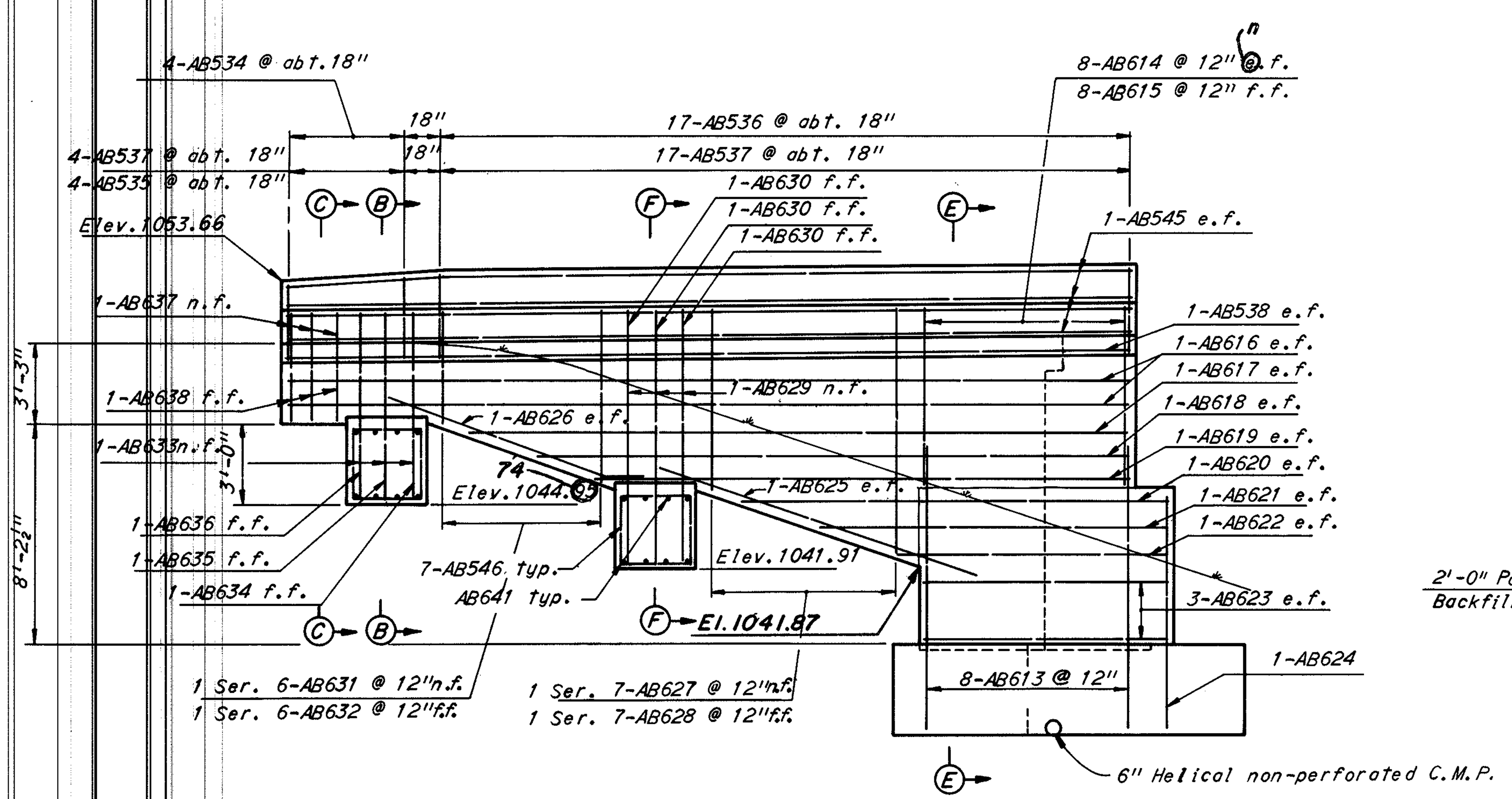
SECTION A-A



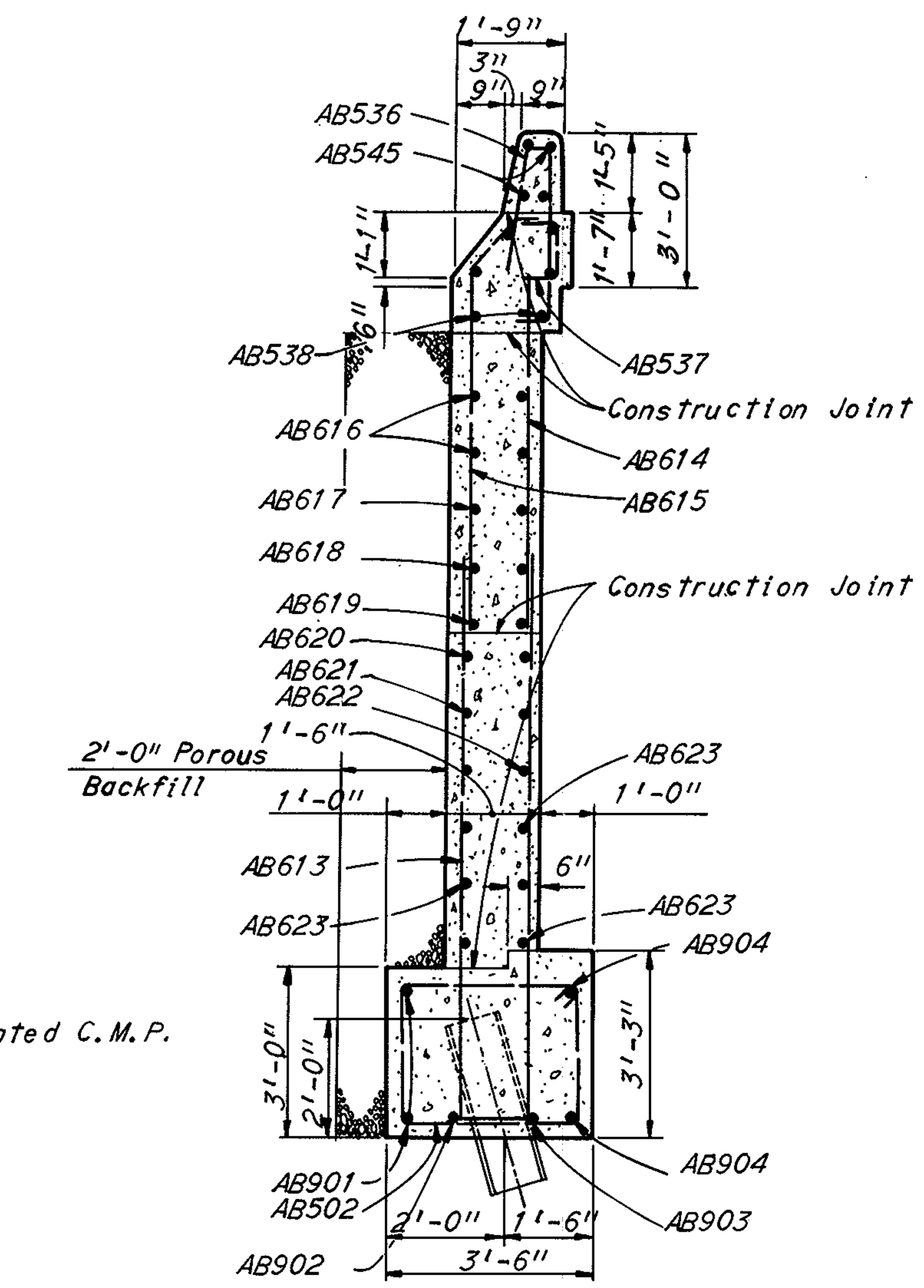
SECTION B-B



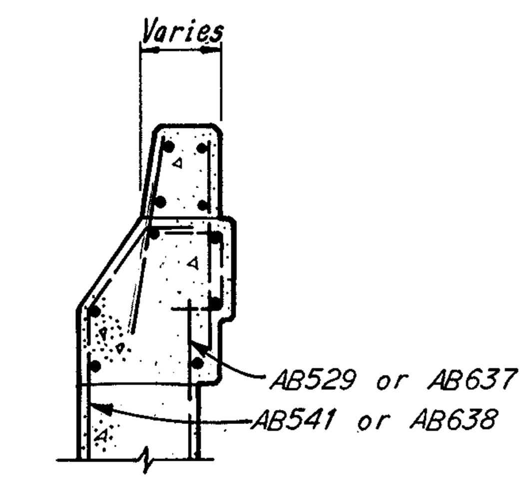
BASE PLATE DETAIL



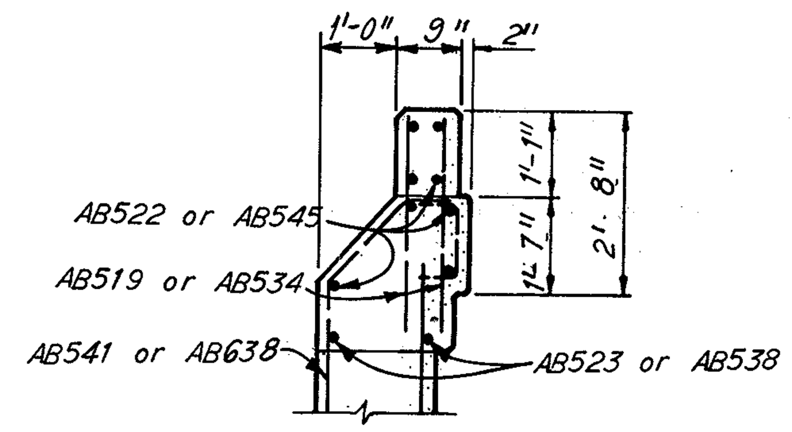
WEST WINGWALL ELEVATION



SECTION E-E



SECTION C-C

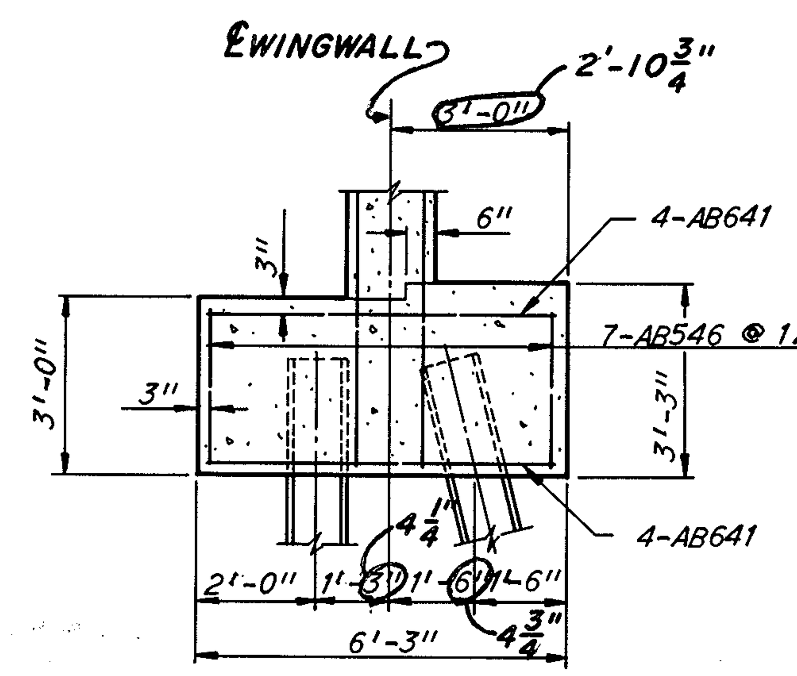


END VIEW

Notes:

Parapet Transitions shall be as shown on Std. Drwg. Br-1-67 revised 10-15-71. Reinforcing steel shall be field bent or cut to fit the revised shape.

For additional notes see Sheet 3/11



SECTION F-F

H.N.T.B. BRIDGE NO. 22 — Revised 6-18-75 By E.P.S.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — CONSULTING ENGINEERS — KANSAS CITY CLEVELAND NEW YORK — 6/11

NORTH ABUTMENT DETAILS

RAMP H OVER 15TH STREET
BR. NO. STA-30-1492 — STA. 960+85.76
SCALE: NONE — STA. 963+04.60

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

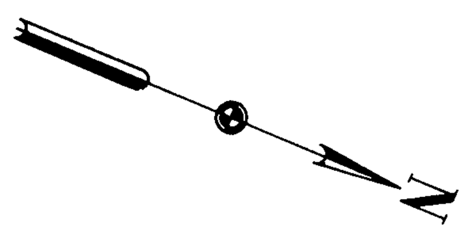
DRAWN	TRACED	CHECKED	REVIEWED	REVISED
JPE DATE 8-73	DATE	ELG DATE 8-21-73	MGK DATE 10-19-73	3030

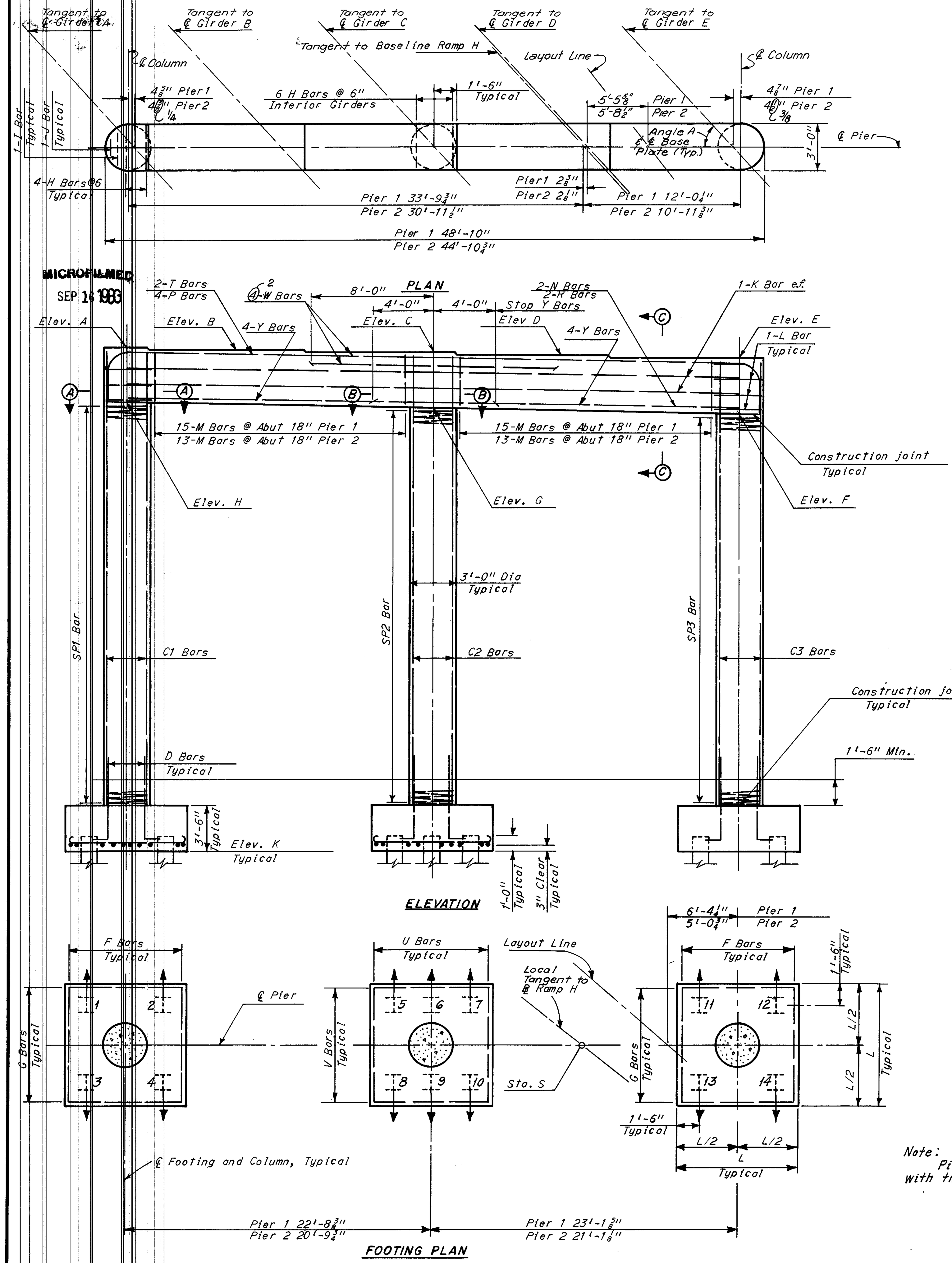
REV. 2-11-77

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

369G
389

STARK COUNTY
STA-30-14.12
STA-77-9.22



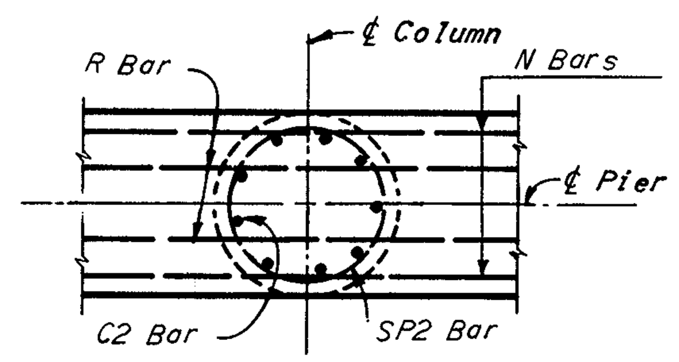


FOOTING DATA						
Pier	Sta. S	Dim. L	F Bars	G Bars	U Bars	V Bars
1	961+49.50	9'-0"	10-PA603	10-PA603	9 PA901	9-PA901
2	962+41.50	9'-0"	10-PB603	10-PB603	9-PB901	9-PB901

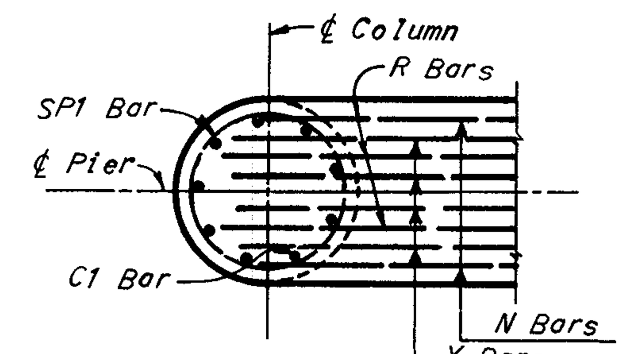
ELEVATIONS									
Pier	Elev. A	Elev. B	Elev. C	Elev. D	Elev. E	Elev. F	Elev. G	Elev. H	Elev. K
1	1047.23	1046.98	1046.76	1046.57	1046.41	1042.41 11	1042.76 57	1043.25 01	1025.70
2	1046.11	1045.83	1045.55	1045.28	1045.01	1041.01 0.73	1041.55 31	1042.11 1.87	1025.70

COLUMN REINFORCING STEEL							
Pier	C1 Bars	C2 Bars	C3 Bars	D Bars	SP1 Bar	SP2 Bar	SP3 Bar
1	9-PA1004	9-PA1005	9-PA1006	9-PA1007	1-SPA401	1-SPA402	1-SPA403
2	9-PB1004	9-PB1005	9-PB1006	9-PB1007	1-SPB401	1-SPB402	1-SPB403

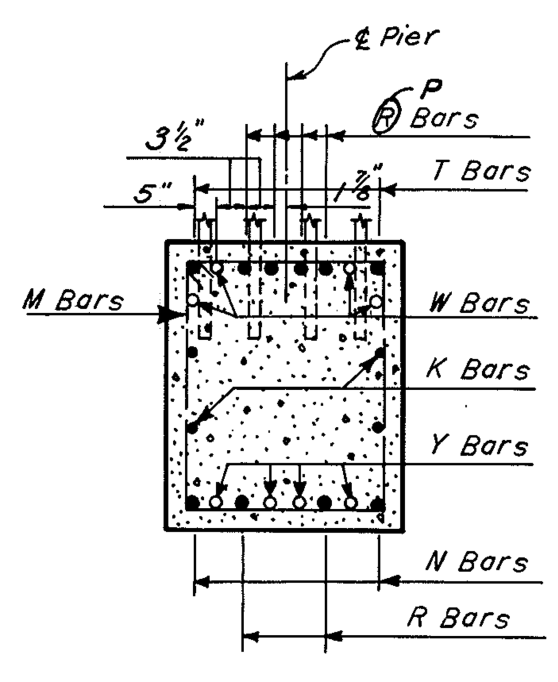
CAPBEAM REINFORCING STEEL												
Pier	H Bars	I Bars	J Bars	K Bars	L Bars	M Bars	N Bars	P Bars	R Bars	T Bars	Y Bar	W Bars
1	PA501	PA502	PA503	PA601	PA602	PA504	PA1101	PA1102	PA1103	PA1104	PA1106	PA1105
2	PB501	PB502	PB503	PB601	PB602	PB504	PB1101	PB1102	PB1103	PB1104	PB1106	PB1105



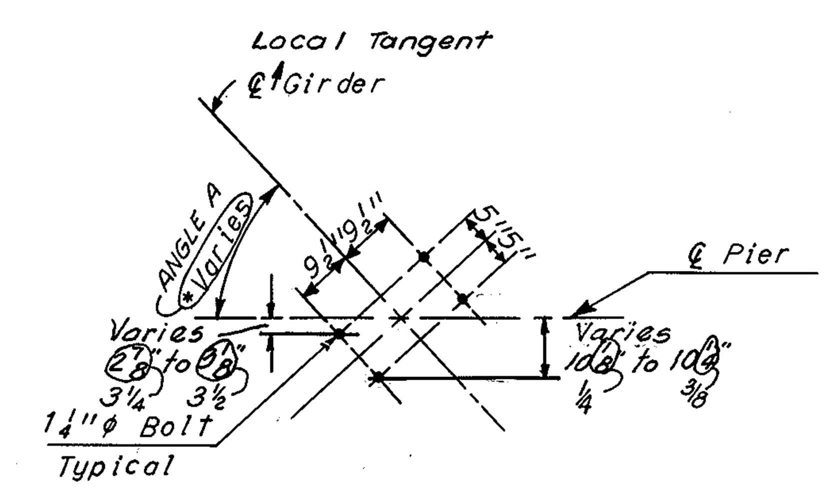
SECTION B-B



SECTION A-A



SECTION C-C



ANCHOR BOLT PLAN—PIER 2

Notes:

Special care shall be taken when placing reinforcing steel so as not be interfere with anchor bolt or anchor rod setting. Pier 2 only. See Sheet 214.

H bars I bars and J bars bars shall be placed 2½"± below top of cap beam.

For reinforcement schedule see Sheet 11/11

All battered piles shall be battered 3 in 12.

Piles dimensions are measured along bottom of footing.

All piles are HP 10 X 42.

e.f. denotes each face.

All stirrups within 4 feet of ℄ Column shall be placed with hooks in the bottom of cap. All others shall be placed with hooks in the top.

*ANCHOR BOLT ANGLES- ANGLE A					
Pier	Girder A 47.9	Girder B 15.9	Girder C 19.5	Girder D 57.6	Girder E 09.6
2	44° 31'5"	44° 10'2"	43° 48'2"	43° 25'6"	43° 03'1"
1	40° 07'02.2"	39°41'52.1"	39°16'09.6"	38°49'53.5"	38°23'02.2"

Note:
Pile numbering designations shall be preceded with the following subscripts:
Pier 1:2, Pier 2:3 ; i.e. 2-1, 2-2, etc.

H.N.T.B. BRIDGE NO.22 — Revised 6-18-75 By E.P.S.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 7/11
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

PIERS 1 AND 2

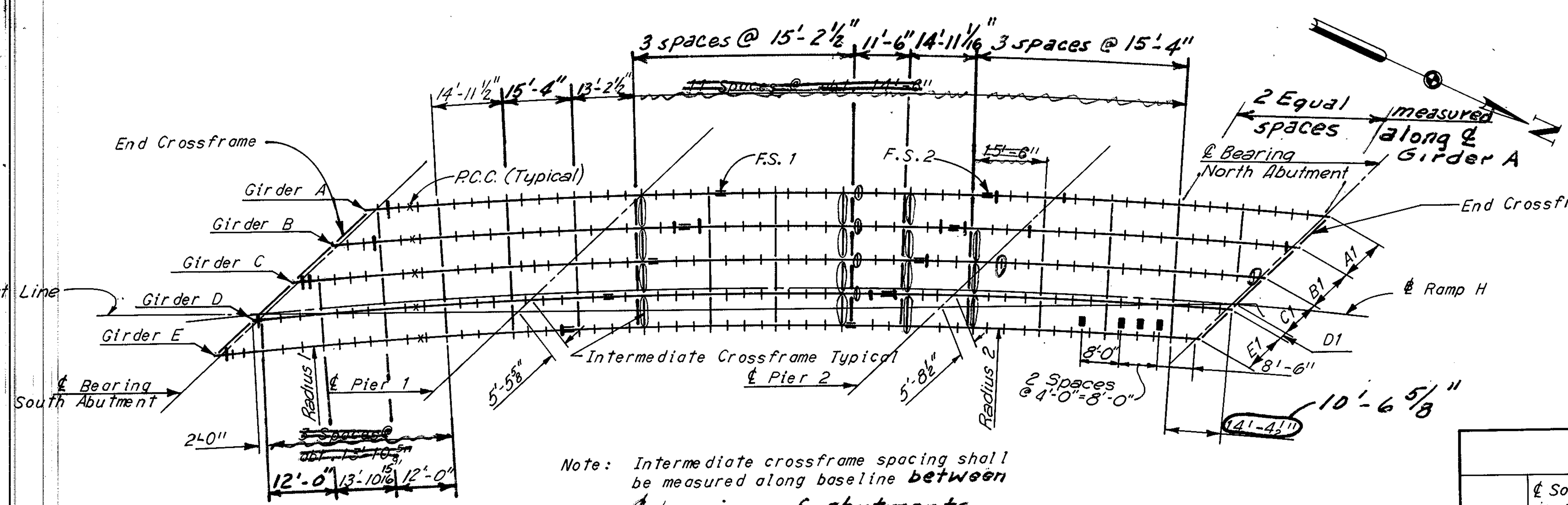
RAMP H OVER 15TH STREET
BR. NO. STA-30-1492 — STA. 960+85.76
SCALE: NONE — STA. 963+04.60
RELOCATED U.S. 30
CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
C.J.S. DATE 7-31-73	DATE	J.L.R. DATE 8-3-73	mJK DATE 10-19-73	3-2-76
				3030

Revised 4-28-77

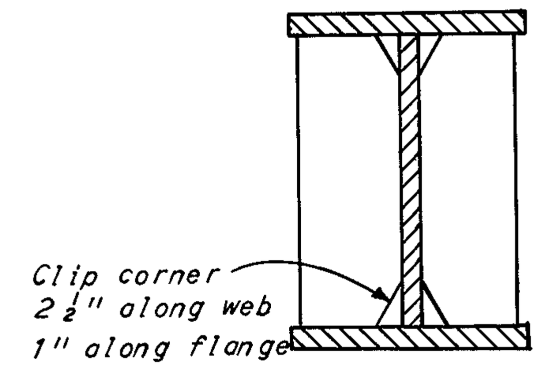
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO		

STARK COUNTY
STA-30-14.12
STA-77-9.22

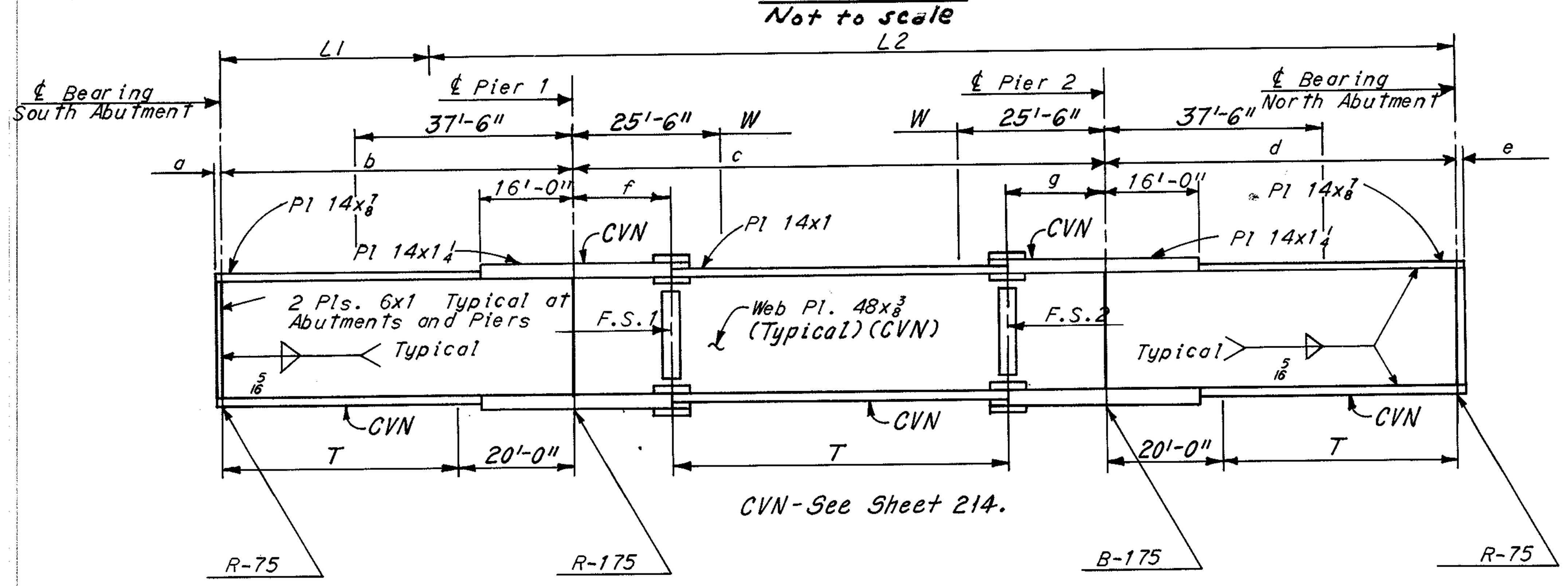


Note: Intermediate crossframe spacing shall be measured along baseline between ℄ bearings of abutments except as noted.

FRAMING PLAN
Not to scale



INTERMEDIATE STIFFENER DETAIL



CVN-See Sheet 214.

Note: "W" denotes the range where welded attachment cannot be made to the top flange of Girders A and E.

GIRDER ELEVATION

Note: Tension areas of bottom flange are denoted by "T". For the top flange these areas are in compression.

TABLE OF GIRDER SPACINGS

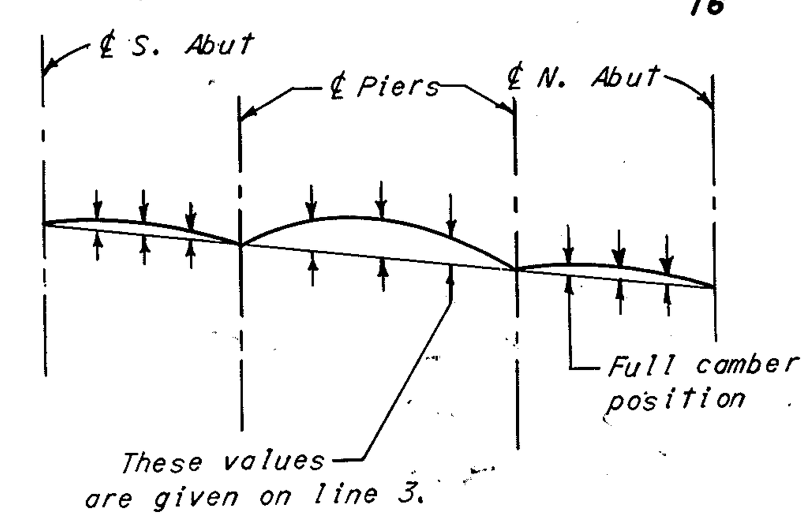
	℄ South Abut.	℄ Pier 1	F.S. 1	F.S. 2	℄ Pier 2	℄ North Abut.
A1	11'-8 7/8"	11'-1 1/4"	10'-11"	10'-4 5/8"	10'-2 1/4"	9'-8 3/8"
B1	11'-9 3/8"	11'-2 1/2"	11'-0 1/4"	10'-5"	10'-3 1/4"	9'-9"
C1	11'-7 3/8"	11'-1 3/8"	10'-11"	10'-3 3/8"	10'-1 3/8"	9'-7 3/8"
D1	0'-2 1/2"	0'-2 3/8"	0'-2 3/8"	0'-2 1/4"	0'-2 1/8"	0'-2 1/8"
E1	11'-10 1/4"	11'-5"	11'-2 1/2"	10'-6 3/8"	10'-4 3/8"	9'-10 3/8"

DEFLECTION AND CAMBER

		S. Abut	.25	.50	.75	Pier 1	*.25	.50	*.75	Pier 2	.25	.50	.75	N. Abut.
Gdr A	1	0	0	0	0	0	1/16	1/8	1/16	0	0	0	0	0
	2	0	1/8	1/8	0	0	3/8	5/8	3/8	0	0	1/8	1/8	0
	3	0	1/8	1/8	0	0	7/16	3/4	7/16	0	0	1/8	1/8	0
Gdr B	1	0	0	0	0	0	1/16	1/8	1/16	0	0	0	0	0
	2	0	1/8	1/8	0	0	1/2	3/4	1/2	0	0	1/8	1/8	0
	3	0	1/8	1/8	0	0	9/16	7/8	9/16	0	0	1/8	1/8	0
Gdr C	1	0	0	0	0	0	1/16	1/8	1/16	0	0	0	0	0
	2	0	1/8	1/8	0	0	1/2	3/4	1/2	0	0	1/8	1/8	0
	3	0	1/8	1/8	0	0	9/16	7/8	9/16	0	0	1/8	1/8	0
Gdr D	1	0	0	0	0	0	1/16	1/8	1/16	0	0	0	0	0
	2	0	1/8	1/8	0	0	1/2	3/4	1/2	0	0	1/8	1/8	0
	3	0	1/8	1/8	0	0	9/16	7/8	9/16	0	0	1/8	1/8	0
Gdr E	1	0	0	0	0	0	1/16	1/8	1/16	0	0	0	0	0
	2	0	1/8	1/8	0	0	3/8	5/8	3/8	0	0	1/8	1/8	0
	3	0	1/8	1/8	0	0	7/16	3/4	7/16	0	0	1/8	1/8	0
	4	0	1/4	1/4	1/16	0	1/2	1/2	1/2	0	1/16	1/4	1/4	0

3/16

* Values given are at field splices



SCHEMATIC DETAIL

Line1. Deflection due to weight of steel

Line2. Deflection due to remaining dead load

Line3. Required shop camber

Line 4. Additional camber required if girders are to be heat-curved. (Typical all girders).

TABLE OF GIRDER RADII

Gdr.	L1	R1	L2	R2
A	5'-4 5/16"	3840'-11 5/8"	202'-1 3/8"	1167'-2"
B	14'-8 5/8"	3833'-10 5/8"	194'-3 5/8"	1160'-0 1/2"
C	24'-0 1/2"	3826'-8 5/8"	186'-5 3/4"	1152'-11"
D	33'-5"	3819'-7 5/8"	178'-7 5/8"	1145'-9 1/2"
E	42'-9 5/16"	3812'-5 5/8"	170'-8 1/16"	1138'-8"

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS AT GUTTERLINE

	℄ Brg S. Abut.	.25	.50	.75	℄ Pier 1	.25	.50	.75	℄ Pier 2	.25	.50	.75	℄ Brg N. Abut.
West Gutterline	1053.90	1053.77	1053.63	1053.49	1053.35	1053.17	1052.90	1052.58	1052.23	1052.03	1051.84	1051.63	1051.42
East Gutterline	1053.47	1053.25	1053.01	1052.77	1052.53	1052.21	1051.86	1051.51	1051.13	1050.92	1050.72	1050.51	1050.28

Note: The gutterline elevations shown have been adjusted for dead load deflections caused by the weight of concrete and wearing course, and are the elevations required before the concrete deck is placed. No concrete shall be placed until the screed rails have been set for the entire bridge.

Note: "Top of Portland Cement Concrete Elevations" and "Top of Portland Cement Concrete Elevations At Gutterline" shown are 2½" below design grade elevations.

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS

Girder	℄ Brg S. Abut.	.25	.50	.75	℄ Pier 1	F.S. 1	.50	F.S. 2	℄ Pier 2	.25	.50	.75	℄ Brg. N. Abut.
A	1053.90	1053.76	1053.63	1053.49	1053.35	1053.19	1052.85	1052.46	1052.23	1052.03	1051.83	1051.62	1051.42
B	1053.75	1053.59	1053.43	1053.27	1053.11	1052.92	1052.58	1052.19	1051.96	1051.75	1051.55	1051.34	1051.14
C	1053.63	1053.44	1053.26	1053.07	1052.89	1052.68	1052.31	1051.91	1051.68	1051.47	1051.27	1051.06	1050.85
D	1053.54	1053.33	1053.12	1052.91	1052.70	1052.46	1052.05	1051.65 54	1051.41	1051.20	1050.99	1050.78	1050.57
E	1053.48	1053.24	1053.01	1052.77	1052.54	1052.46 26	1051.81	1051.64 38	1051.14	1050.92	1050.71	1050.50	1050.28

TABLE OF DIMENSIONS

Girder	a	b	c	d	e	f	g
A	1'-2 13/16"	58'-7 7/8"	89'-10 3/8"	58'-11 1/4"	1'-0 1/8"	16'-6 3/4"	16'-7 3/8"
B	1'-2 7/8"	59'-1 13/16"	90'-6 13/16"	59'-3 3/8"	1'-0 3/8"	16'-8 3/8"	16'-9 1/4"
C	1'-2 7/8"	59'-7 1/4"	91'-3 5/16"	59'-7 7/16"	1'-0 3/8"	16'-10 1/8"	16'-10 5/16"
D	1'-2 5/8"	60'-0 1/16"	92'-0 3/8"	60'-0 1/16"	1'-0 3/8"	17'-0"	17'-0"
E	1'-3"	60'-4 1/4"	92'-9 1/16"	60'-4 1/16"	1'-0 1/8"	17'-2"	17'-1 1/2"

Notes:

Top and bottom flanges are identical in size.

All stiffeners shall be placed normal to girder flanges.

All intermediate stiffener to web welds shall be ¼" continuous fillets on both sides of stiffeners.

For detail of field splices see Sheet 355

All intermediate stiffeners shall be Pls. 4x5/16, except at field splices Ls 6x4x3/8 shall be used.

Intermediate stiffeners shall be placed as shown on framing plan, equally spaced between crossframes or crossframes and bearing stiffeners or crossframes and splices.

End crossframe details shall be same as shown on Ohio Standard Drawing SD-1-69, Sheet 1 of 4.

For intermediate crossframe details see Sheet 360

All crossframes are intermediate crossframes unless shown otherwise.

For details of roadway end dam, see Ohio Standard Drawing SD-1-69, Sheet 1 of 4, SD-1-69a, and Sheet 359.

For details at rockers and bolsters see Ohio Standard Drawing RB-1-55.

The girders shall be fabricated to lines parallel to profiles formed by top of pavement elevations directly over girders, plus the camber required to compensate for dead load deflection.

The allowance to be made in screed settings to compensate for dead load deflections due to concrete and wearing course are to be made above or below the top of the pavement elevations as required. Screeds may require further adjustment due to irregularities in fabricated steel.

For details of curb plates at concrete bridge railing see Ohio Standard Drawing SD-1-69, Sheet 2 of 4.

Dimensions to scuppers are measured along center-line of girders.

F.S. Denotes Field Splice

■ Denotes scupper

Scuppers shall be in accordance with Std. Dwg. SD-1-69 except that scupper pipes shall extend 8" below the bottom of girders instead of 2".

For treatment of girder ends at abutments see sheet 360.

Girders are to be horizontally curved to the radii given. Curvature may be obtained by cutting or by a heat-curve process.

H.N.T.B. BRIDGE NO. 22 | Revised 6-18-75 By E.P.S.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
8 / 11

FRAMING PLAN

RAMP H OVER 15TH STREET
BR. NO. STA-30-1492 STA. 960+85.76
SCALE: 1"=20'-0" STA. 963+04.60

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

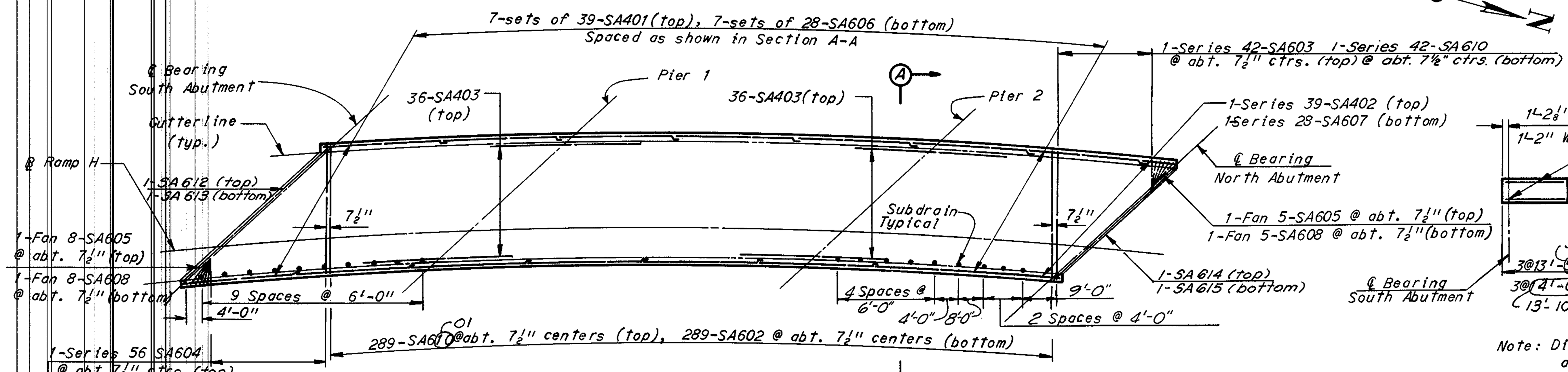
DRAWN	TRACED	CHECKED	REVIEWED	REVISED
C.J.S. DATE 7-20-73	DATE	J.L.R. DATE 7-25-73	DATE 10-19-73	7-20-76

3030

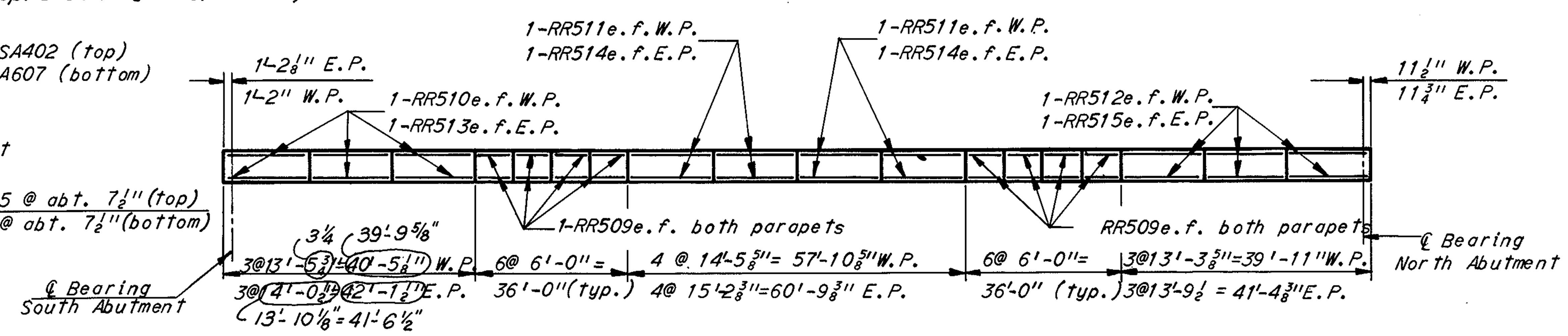
REV. 2-11-77

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

STARK COUNTY
STA-30-14.12
STA-77-9.22

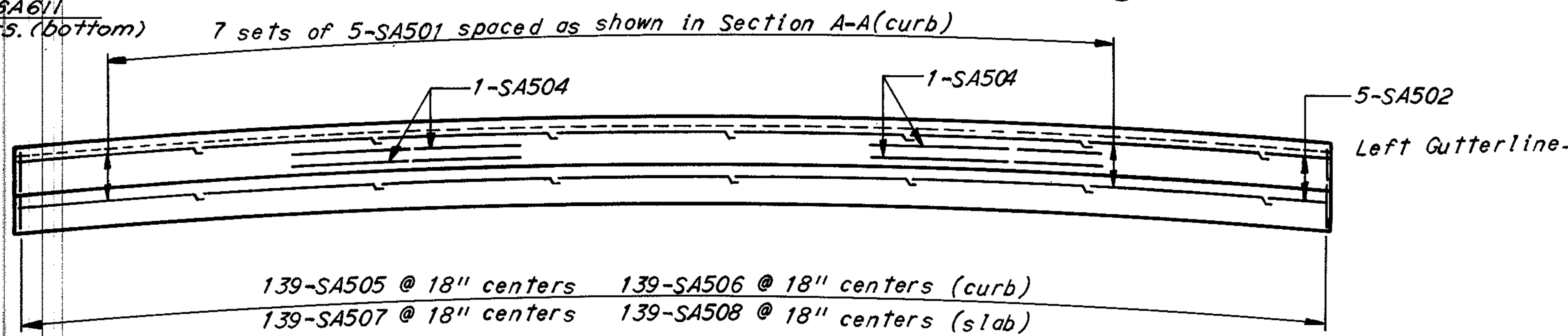


DECK PLAN

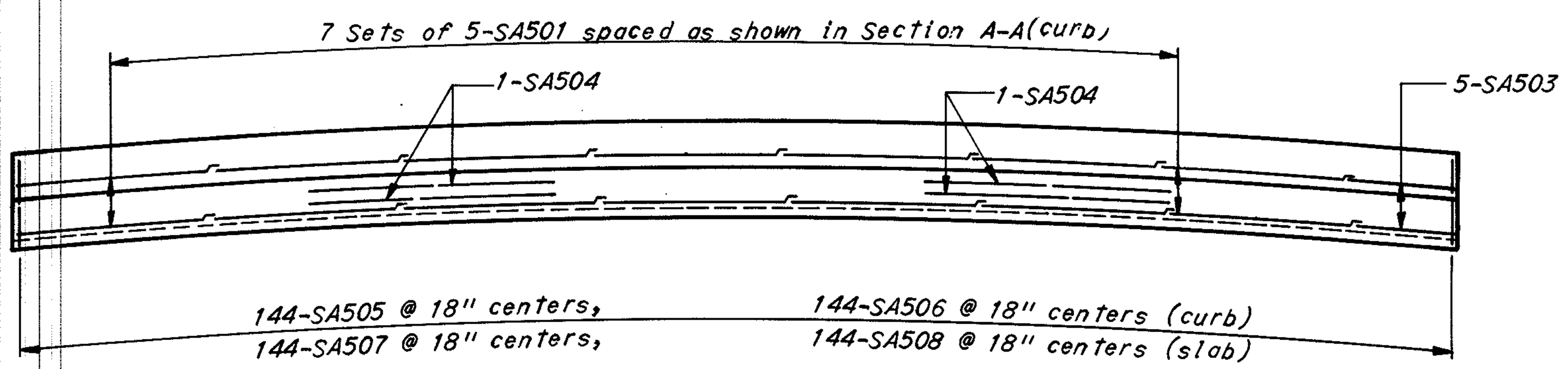


Note: Distance measured along gutterline.

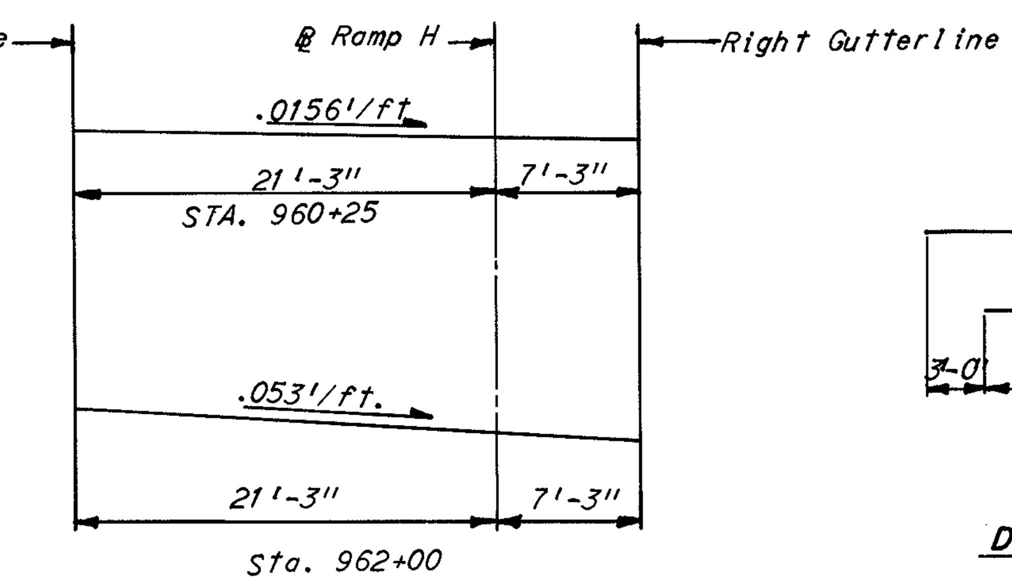
WEST AND EAST PARAPET ELEVATION



WEST CURB PLAN



EAST CURB PLAN



SUPERELEVATION TRANSITION SCHEME

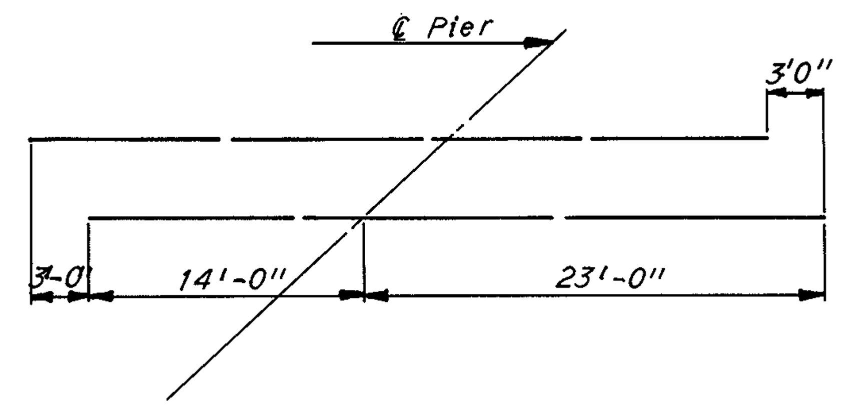


DIAGRAM SHOWING STAGGER OF BARS OVER PIERS 1 & 2

Notes:

Reinforcing steel shall be adjusted as required to clear scuppers.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

e.f. denotes each face.

For deflection joint details see Sheet 361.

At the contractor's option, a portion (not to exceed 25%) of the upper longitudinal bars (SA401 and SA402) in the deck slab may be placed beneath the upper transverse bars for support of the top mat.

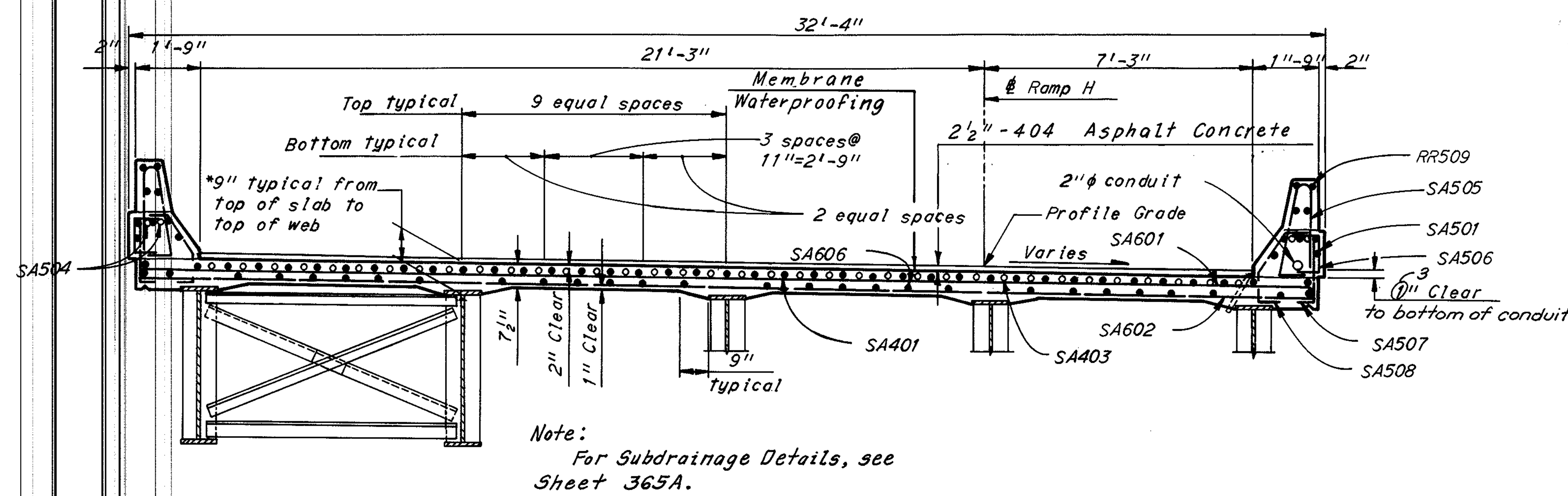
Transverse reinforcing steel shall be placed radial to and spaced along the right gutterline.

*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.19 of the Construction and Materials Specifications.

W.P. denotes West Parapet. E.P. denotes East Parapet.

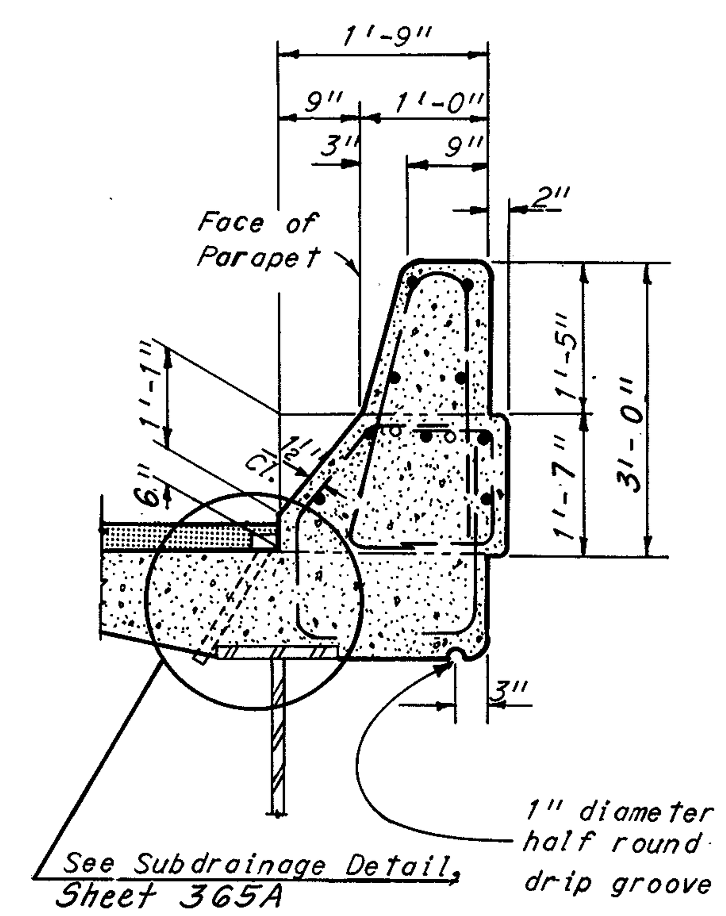
For reinforcing schedule see Sheet 11\11

For type of membrane waterproofing see Proposal Note.



Note: For Subdrainage Details, see Sheet 365A.

SECTION A-A



CONCRETE BRIDGE ROADWAY RAILING DETAILS

H.N.T.B. BRIDGE NO. 22 — Revised 6-18-75 By E.P.S.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 9/11
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

DECK PLAN

RAMP H OVER 15TH STREET
BR. NO. STA-30-1492 — STA. 960+85.76
SCALE: 1"=20'-0" — STA. 963+04.60

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN RLB	TRACED	CHECKED JLK	REVIEWED mgL	REVISED
DATE 6-28-73	DATE	DATE 7-27-73	DATE 10-19-73	3030

Revised 4-28-77

SOUTH ABUTMENT

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
AA401	30	3'-5"	105	1'-0"	1'-8"			68
AA501	41	8'-4"	105	1'-7"	5'-5"			356
AA502	39	7'-8"	104	6'-11"	1'-0"			312
AA503	39	7'-6"	105	2'-2"	3'-5"			305
AA504	9	49'-3"	Str.					462
AA505	8	47'-0"	Str.					392
AA506	20 3	11'-6"	109	3'-0"	2'-6"		276	240
AA507	10	7'-9"	105	2'-6"	3'-0"			83
AA508	14	10'-6"	109	2'-6"	2'-6"			153
AA509	26	7'-0"	114	3'-5"				190
AA510	36	2'-3"	105	7½"	1'-3"			84
AA511	6	4'-3"	118	1'-7"	1'-3"	1'-0"		27
AA512	3	10'-4"	117	7'-2"	6'-9" OUT	6"		32
AA513	3	8'-3"	117	5'-1"	4'-10" OUT	6"		26
AA514	20	3'-0"	Str.					63
AA515	20	24'-9"	Str.					520
AA516	12	6'-0" 5'-9	108	3'-9"	2'-0"	1'-3"	72	60
AA601	39	14'-8"	106	5'-5"	6'-11"	2'-8"		859
AA602	48	13'-5" 12'-7	105	6'-2" 5'-9	1'-5"		907	967
AA603	48	4'-1"	105	1'-6"	1'-5"			294
AA604	48	5'-7"	105	2'-6"	11"			403
AA605	2	10'-5"	105	2'-8"	5'-5"			31
AA606	1	9'-0"	105	2'-8"	4'-0"			14
AA607	16	5'-9"	Str.					142
AA608	11	18'-10"	105	9'-0"	1'-2"			311
AA609	22	7'-10"	115	6'-1"	9"	9"		259
AA610	22 10	6'-0"	Str.					198
AA611	1 2 Ser 20	4'-0" to 6'-6"	Str.				3 5/16 - 1½"	158
AA612	1 2 Ser 20	5'-10" to 8'-4"	115	4'-1" to 6'-7"	9"	9"	3 5/16 - 1½"	213
AA613	8 10	6'-3"	Str.					75
AA614	8	8'-0"	115	6'-4"	9"	7½"		96
AA616	6	3'-6"	Str.					32
AA617	12	24'-9"	Str.					450
AA618	4	17'-3"	Str.					104
AA619	4	14'-6"	Str.					88
AA620	4	11'-9"	Str.					72
AA621	10	11'-8"	Str.					176
AA622	2	15'-0"	Str.					45
AA623	11	19'-8"	105	9'-5"	1'-2"			325
AA624	2	15'-0"	Str.					45
AA625	6	5'-3"	115	3'-7"	9"	7½"		47
AA626	10	12'-2"	Str.					182
AA801	7	52'-0" -1 -3	Str.				958	972
AB802	2	17'-3"	108	14'-9"	2'-6"	1'-6"		92
AA803	4	12 - 13'-0"	Str.				128	117
AA804	2	20'-11" 22'-1	142	2'-3" 6	2'-0" 1'-6	16'-4" 7'-9"	118	112
AA805	4	10'-0"	Str.					107
DA801	20	6'-8"	141	4'-7"				356
					TOTAL			10,705 6

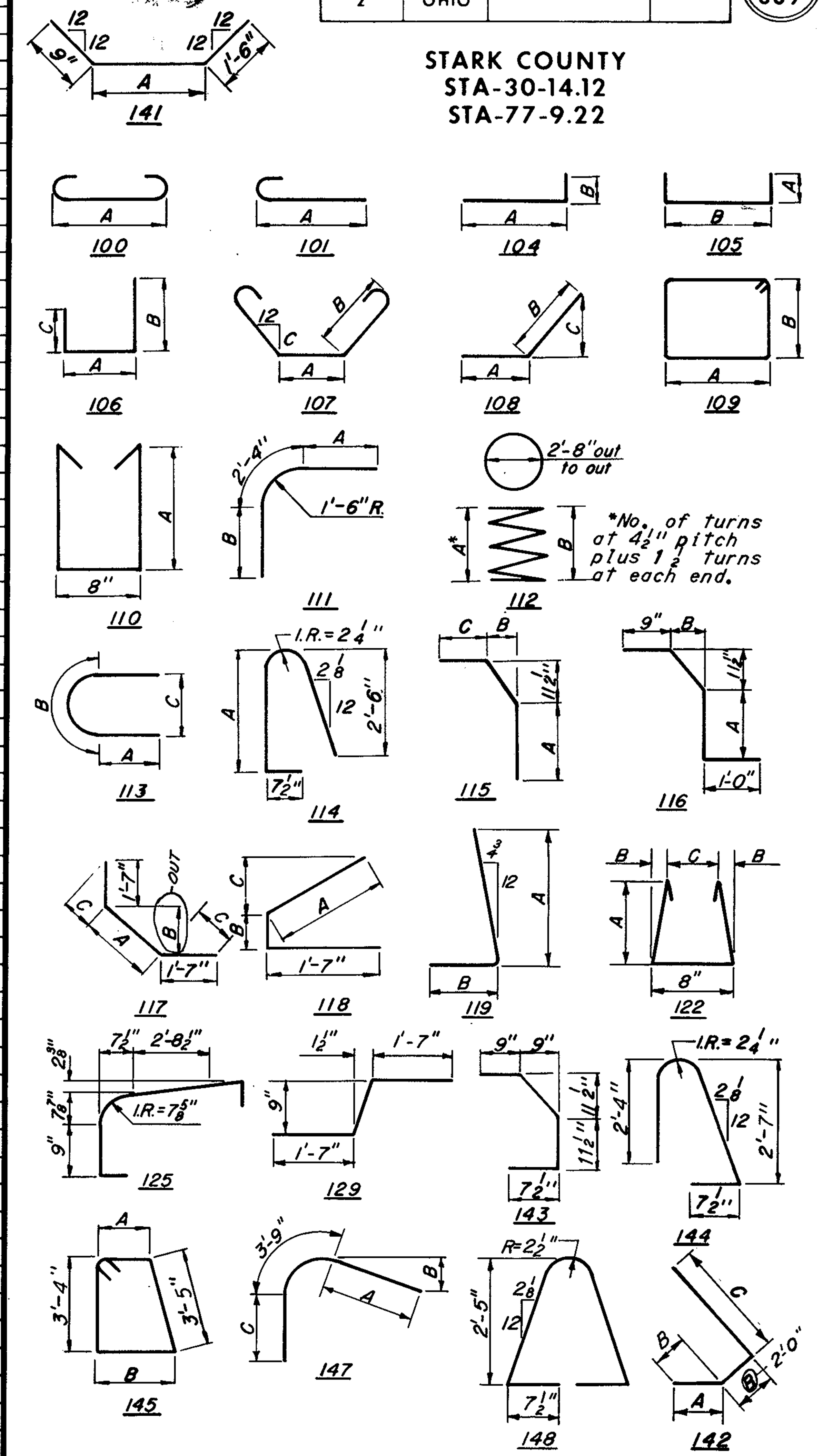
NORTH ABUTMENT

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
AB401	30	3'-5"	105	1'-0"	1'-8"			68
AB501	31	8'-4"	105	1'-7"	5'-5"			269
AB502	19	11'-6"	109	3'-0"	2'-6"			228
AB503	1	13'-6"	109	4'-0"	2'-6"			14
AB504	1	15'-4"	109	4'-11"	2'-6"			16
AB505	30	8'-8"	105	2'-9"	3'-5"			269
AB506	30	8'-8"	104	7'-9"	1'-0"			271
AB507	8	39'-0"	Str.					325
AB508	1 - 6	3'-2"	108	1'-7"	1'-7"	1'-2"		20
AB509	16	5'-4"	108	1'-7"	3'-9"	2'-9"		89
AB510	9	41'-0"	Str.					385
AB511	11	4'-3"	118	1'-7"	1'-2"	1'-2"		49
AB512	5	8'-6"	117	5'-4" OUT	4'-9"	1'-2"	7½	44
AB513	5	10'-5"	117	7'-3" OUT	6'-6"	1'-2"	7½	54
AB514	1	7'-1"	105	1'-7"	4'-0"			7
AB515	1	5'-9"	105	1'-7"	2'-8"			6
AB518	10	7'-0"	114	3'-5"				73
AB519	4	3'-0"	Str.					13
AB520	14	2'-3"	105	7½"	1'-3"			33
AB521	4	3'-0"	Str.					13
AB522	8	19'-3"	Str.					161
AB523	2	19'-3"	Str.					40
AB524	9	5'-9"	Str.					54
AB525	9	7'-9"	115	5'-11"	9"	9"		73
AB526	1	16'-5"	105	7'-9"	1'-2"			17
AB527	9	19'-11"	105	9'-6"	1'-2"			187
AB528	1	2'-9"	Str.					3
AB529	1	2'-9"	Str.					3
AB530	1	3'-3"	Str.					3
AB531	1	3'-6"	Str.					4
AB532	1	4'-0"	Str.					4
AB533	2	7'-9"	Str.					16
AB534	4	3'-0"	Str.					13
AB535	4	3'-0"	Str.					13
AB536	17	7'-0"	114	3'-5"				124
AB537	21	2'-3"	105	7½"	1'-3"			49
AB538	2	29'-3"	Str.					61
AB541	2	4'-7" 5'-0	115	2'-10" 3'-3	9"	7½"		10
AB542	1	5'-1"	115	3'-4"	9"	7½"		5
AB543	1	5'-6"	115	3'-8"	9"	9"		6
AB544	1	5'-11"	115	4'-1"	9"	9"		6
AB545	8	29'-3"	Str.					244
AB546	14	10 9'-6"	109	2'-6"	2'-6"		153	139
AB601	31	15'-7"	106	5'-5"	7'-9"	2'-8"		723
AB602	40	4'-2"	105	1'-6"	1'-5"			250
AB603	40	5'-8"	105	2'-6"	11"			340
AB604	40	13'-0"	105	5'-11"	1'-5"			781
AB605	1	8'-9"	105	2'-6"	4'-0"			13
AB606	1	7'-5"	105	2'-8"	2'-6"			11
AB607	4	19'-2"	Str.					115
AB608	2	15'-9"	Str.					47
AB609	2	12'-9"	Str.					38
AB610	2	12'-3"	Str.					37
AB611	10	16'-6" 14'-0	Str.				210	248
AB613	8	22'-11"	105	11'-0"	1'-2"			275
AB614	8	6'-0"	Str.					72
AB615	8	7'-10"	115	6'-1"	9"	9"		94
AB616	4	29'-3"	Str.					176
AB617	2	23'-9"	Str.					71
AB618	2	21'-9"	Str.					65
AB619	2	19'-6"	Str.					59
AB620	2	15'-9"	Str.					47
AB621	2	13'-6"	Str.					41
AB622	2	11'-3"	Str.					34
AB623	6	9'-0"	Str.					81
AB624	1	18'-5"	105	8'-9"	1'-2"			28
AB625	2	10'-9"	Str.					32
AB626	2	10'-9"	108	8'-6"	2'-3"	1'-0"		32
AB627	1 Ser 7	9'-3" to 6'-6"	Str.				5½"	82
AB628	1 Ser 7	11'-4" to 8'-6"	115	9'-7" to 6'-9"	9"	9"	5½"	104
AB629	3	9'-3"	Str.					42
AB630	3	11'-0"	115	9'-3"	9"	9"		50

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INCRE.	WEIGHT POUNDS
AB631	1 Ser 6	6'-0" to 3'-6"	Str.				6"	43
AB632	1 Ser 6	8'-0" to 5'-6"	115	6'-3" to 3'-9"	9"	9"	6"	61
AB633	3	6'-0"	Str.					27
AB634	1	8'-0"	115	6'-3"	9"	9"		12
AB635	1	7'-11"	115	6'-3"	9"	7½"		12
AB636	1	7'-11"	115	6'-3"	9"	7½"		12
AB637	3	3'-0"	Str.					14
AB638	3	5'-0"	115	3'-4"	9"	7½"		23
AB641	16	5'-9"	Str.					138
AB801	7	42'-6 41'-0"	Str.				794	766
AB802	4	13'-9"	Str.					149
AB803	2	22'-4"	142	2'-0"	1'-10"	17'-11"		119
AB901	2	10'-8"	108	7'-10"	2'-10"	2'-1"		73
AB902	1	12'-3"	108	9'-5"	2'-10"	2'-1"		42
AB903	1	13'-8"	108	10'-10"	2'-10"	2'-1"		46
AB904	2	15'-6"	108	12'-8"	2'-10"	2'-1"		105
DB801	20	6'-2"	141	4'-1"				329
					TOTAL			9440 4

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



BENDING DIAGRAMS

Notes:
All bar dimensions are given out to out.
All bars of a series shall vary in length by a constant increment.
For replacement reinforcement schedule see sheet 11 / 11
Spiral reinforcement may be plain bars but shall in other respects conform to Item 509. Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 22 — Revised 6-18-75 By E.P.S.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF — 10 / 11
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

RAMP H OVER 15TH STREET
BR. NO. STA-30-1492 — STA. 960+85.76, STA. 963+04.60

RELOCATED U.S. 30

CANTON — STARK COUNTY — OHIO

DRAWN	TRACED	CHECKED	REVIEWED	REVISED
D.W.B. DATE 10-16-73	DATE	R.E.B. DATE 10-18-73	DATE 10-19-73	3030

Revised 4-28-77

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
PIER 1								
SPA401	1	331'-2"	112	37.1	13'-11"	2'-8"		266
SPA402	1	322'-0"	112	36.0	13'-6"	2'-8"		258
SPA403	1	312'-10"	112	34.9	13'-1"	2'-8"		251
PA501	26	4'-5"	105	1'-0"	2'-8"			120
PA502	2	3'-11"	105	1'-0"	2'-2"			8
PA503	2	2'-9"	105	1'-0"	1'-0"			6
PA504	30	13'-2"	109	2'-8"	3'-8"			411
PA601	4	45'-7"	Str.					274
PA602	6	8'-0"	113	1'-11"	4'-2"	2'-8"		72
PA603	40	10'-2" 9'-10"	100	8'-6"				611 591
PA901	18	10'-2" 11'-0"	100	8'-6"				622 673
PA1004	9	17'-6"	Str.					677
PA1005	9	17'-3"	Str.					668
PA1006	9	16'-8"	Str.					645
PA1007	27	7'-9"	104	6'-9"	1'-3"			900
PA1101	2	45'-7"	Str.					484
PA1102	4	52'-2"	105	2'-9"	47'-3"			1105
PA1103	2	47'-7"	Str.					506
PA1104	2	50'-6"	105	2'-9"	45'-7"			536
PA1105	4	16'-0"	Str.					340
PA1106	4-8	18'-10"	Str.					400 800
					TOTAL			9,160 9591
PIER 2								
SPB401	1	307'-4"	112	34.2	12'-10"	2'-8"		246
SPB402	1	296'-3"	112	32.9	12'-4"	2'-8"		238
SPB403	1	283'-6"	112	31.3	11'-9"	2'-8"		227
PB501	26	4'-5"	105	1'-0"	2'-8"			120
PB502	2	3'-11"	105	1'-0"	2'-2"			8
PB503	2	2'-9"	105	1'-0"	1'-0"			6
PB504	26	13'-2"	109	2'-8"	3'-8"			357
PB601	4	41'-11"	Str.					252
PB602	6	8'-0"	113	1'-11"	4'-2"	2'-8"		72
PB603	40	10'-2" 9'-10"	100	8'-6"				611 591
PB901	18	10'-2" 11'-0"	100	8'-6"				622 673
PB1004	9	16'-5"	Str.					635
PB1005	9	15'-10"	Str.					613
PB1006	9	15'-4"	Str.					593
PB1007	27	7'-11"	104	6'-9"	1'-3"			919

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS
PB1101	2	41'-8"	Str					443
PB1102	4	48'-7"	105	2'-9"	43'-4"			1030
PB1103	2	43'-8"	Str					464
PB1104	2	46'-7"	105	2'-9"	41'-8"			495
PB1105	4	16'-0"	Str.					340
PB1106	4-8	16'-10"	Str.					359 715
					TOTAL			8,650 9037
DECK								
SA401	273	30'-0"	Str.					5471
SA402	1 Ser 39	8'-6" to 14'-6"	Str.				$2\frac{1}{8}$"	300
SA403	72	37'-0"	Str.					1780
SA501	70	30'-0"	Str.					2190
SA502	5	11'-6"	Str.					60
SA503	5	17'-6"	Str.					91
SA504	8	37'-0"	Str.					309
SA505	283	5'-8"	144					1667
SA506	283	2'-3"	105	$7\frac{1}{2}$"	1'-3"			664
SA507	283	2'-7"	104	$7\frac{1}{2}$"	1'-$11\frac{1}{2}$"			763
SA508	283	3'-7"	143					1058
RR509	96	5'-8"	Str.					567
RR510	12	13'-2"	Str.					165
RR511	16	14'-2"	Str.					236
RR512	12	13'-0"	Str.					163
RR513	12	13'-~~9"~~ 6	Str.				169	172
RR514	16	14'-11"	Str.					249
RR515	12	13'-6"	Str.					169
SA601	289	33'-0"	100	31'-8"				14,306
SA602	289	31'-8"	Str	100				13,725
SA603	1 Ser 42	5'-2 to 33'-0"	101	3'-10" to 31'-8"		$8\frac{1}{8}$	$7\frac{1}{2}$"	1,205
SA604	1 Ser 56	5'-2 to 33'-0"	101	3'-10" to 31'-8"		$7\frac{1}{16}$	$7\frac{1}{2}$"	1,605
SA605	13	5'-2"	101	3'-10"				186
SA606	196	30'-0"	Str.					8,832
SA607	1 Ser 28	13'6" to 19'-6"	Str.				$2\frac{11}{16}$"	672
SA608	13	3'-10"	Str.					78
SA610	1 Ser. 42	3'-10" to 31'-8"	Str.				$8\frac{1}{8}$"	1120
SA611	1 Ser. 56	3'-10" to 31'-8"	Str.				$6\frac{1}{16}$	1493
SA612	1	51'-4"	100	50'-0"				77
SA613	1	50'-0"	Str.					75
SA614	1	42'-10"	100	41'-6"				64
SA615	1	41'-6"	Str.					62
					TOTAL			56,683 59571

REPLACEMENT REINFORCEMENT SCHEDULE

Note:

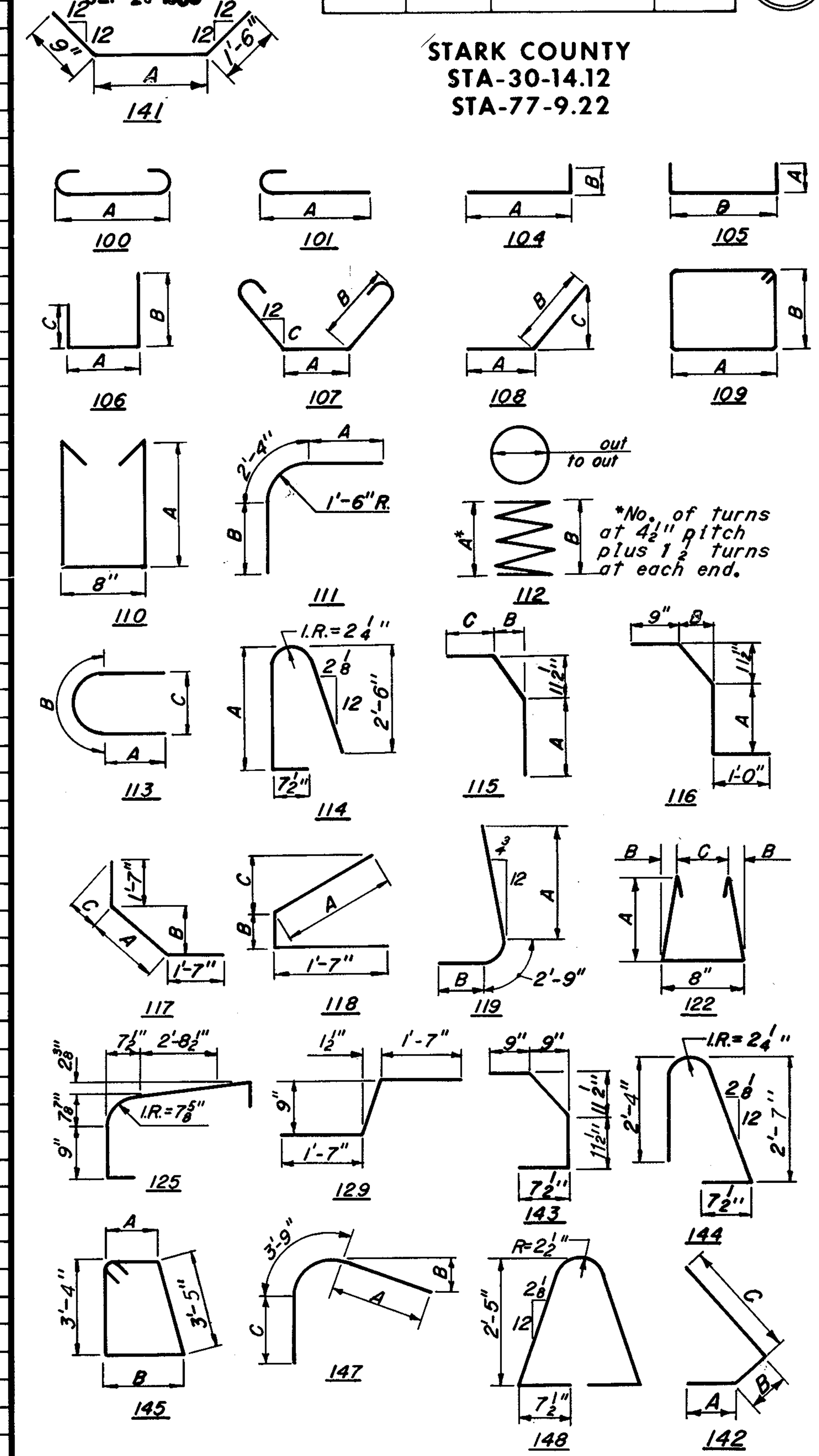
Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.

MARK	NUMBER	LENGTH	TYPE	DIMENSIONS A	B	C	SERIES INCRE.	WEIGHT POUNDS

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

369K
389

STARK COUNTY
STA-30-14.12
STA-77-9.22



BENDING DIAGRAMS

Notes:

All bar dimensions are given out to out.

All bars of a series shall vary in length by a constant increment.

Spiral reinforcement may be plain bars but shall in other respects conform to Item 509. Four steel channels, tee or angle spacers, weighing approximately 0.80 pounds per linear foot shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. An allowance of 0.80 pounds per linear foot for spacers is included with the weight of the spiral bars and paid for as reinforcing steel.

H.N.T.B. BRIDGE NO. 22 | Revised 6-18-75 | By E.P.S.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 11 / 11
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

REINFORCEMENT SCHEDULE

RAMP H OVER 15TH STREET
BR. NO. STA-30-1492 STA. 960+85.76 STA 963+04.60

RELOCATED U.S. 30

CANTON STARK COUNTY OHIO

DRAWN D.W.B. DATE 10-16-73	TRACED DATE	CHECKED LDE DATE 10-17-73	REVIEWED MGK DATE 10-19-73	REVISED 3030

Revised 4-28-77

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO	I-77-4(42) R/W ONLY	

STARK COUNTY
STA-30-14.12
STA-77-9.22

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

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
STA-30-14.12
STA-77-9.22
STARK COUNTY
CITY OF CANTON
HARRISON AVE. TO CLEVELAND AVE.
GRADE SEPARATIONS WITH THE NORFOLK & WESTERN RAILWAY CO.
GRADE SEPARATIONS WITH THE PENN CENTRAL TRANSPORTATION CO.

LIMITED ACCESS
I-77-4(42)R/W ONLY

1969 SPECIFICATIONS

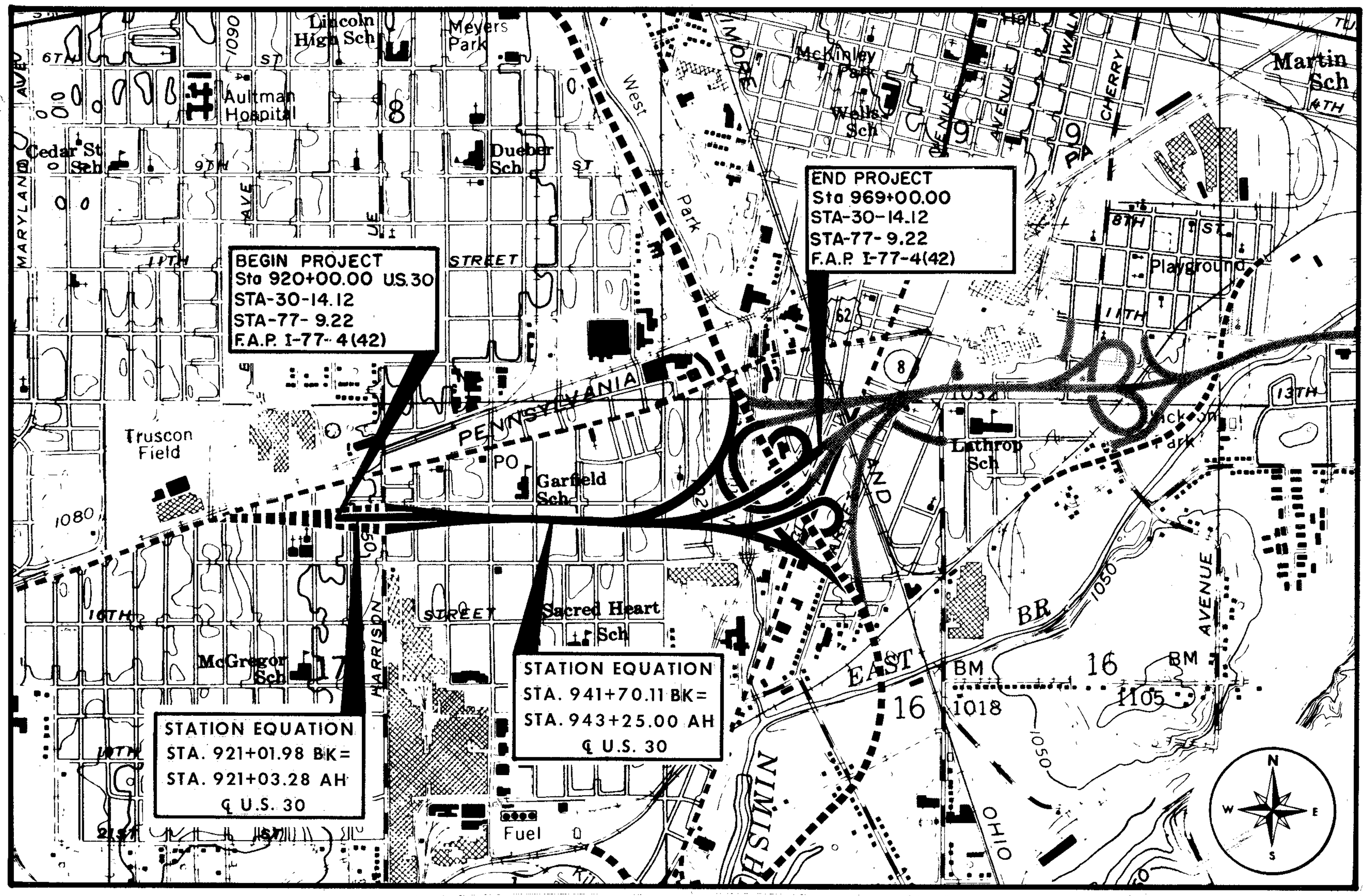
THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO DEPARTMENT OF HIGHWAYS, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH IN THE PLANS AND ESTIMATE.

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

PLAN
CONVENTIONAL SIGNS

Right of Way Only — R/W
Limited Access Only — LA
Right of Way & Limited Access — R/W&LA
Work Agreement Limits
Property Line — ℄
Existing I-77 R/W and Easements
Construction Limits
Common Ownership — Z
Creek Channel Relocation
Section Line
Center Line or Base Line
Fire Hydrant
Fence Line — x
Telephone Pole
Power Pole
Telephone and Power poles (Combined Usage)



APPROVED DATE ______ DEPUTY DIRECTOR OF RIGHT OF WAY

APPROVED DATE ______ DIRECTOR OF HIGHWAYS

Note: "Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example- Parcel 241WL would be considered to read Parcel 1241 WL."

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

H.G. SOURS
ASSOCIATE
COLUMBUS

LOCATION MAP

0 1000 2000 3000 4000
SCALE IN FEET

CONVENTIONAL SIGNS

PORTION TO BE IMPROVED
PREVIOUS CONSTRUCTION
FUTURE CONSTRUCTION
CORPORATION LINE
OTHER ROADS
RAILROAD
INTERSTATE HIGHWAY
STATE ROUTE
U.S. ROUTES

RIGHT OF WAY ONLY

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: ____________

DIVISION ENGINEER ______ DATE ______

FILE NO.	STARK COUNTY SEC. STA-30-14.12 STA-77-9.22 DATE OF LETTING ______ CONTRACT NO. ______

CENTERLINE SURVEY PLAT
U.S. ROUTE 30 & I-S-R 77
STARK COUNTY, OHIO
CITY OF CANTON
McKINLEY TWP
SECT. 9, 16 & 17 T-10-N, R-8-W
Scale: 1"=100'
* (R/W ONLY: STA-30-12.47)
FED ROAD DIV NO 2 | STATE OHIO | FEDERAL AID PROJECT NO I-77-4(42) | TYPE FUNDS STATE FED. | 371 389
STARK COUNTY
* STA-30-14.12
STA-77-9.22
2 / 19
THIS IMPROVEMENT HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY FROM STATION 920+00 TO STATION 969+00 BY ACTION OF THE DIRECTOR OF HIGHWAYS AND RECORDED IN VOLUME 49, PAGE 883, OF THE DIRECTOR'S JOURNAL PURSUANT TO LAW.
CENTERLINE SURVEY CURVE NO. 3 DATA
P.I. Sta. 961+22.20
Δ = 39°30'28" Lt.
Ts = 912.34'
Ls = 450.00'
θs = 06°45'00"
Xc = 449.38'
Yc = 17.65'
Es = 124.11'
P = 4.42'
K = 224.90'
ST = 150.20'
LT = 300.22'
LC = 449.72'
Dc = 3°00'00"
Δc = 26°00'28" Lt.
R = 1909.86'
Tc = 441.06'
Ec = 50.27'
Lc = 866.93'
SUBSTITUTE CURVE DATA FOR RIGHT OF WAY
3a - P.I. Sta. 955+10.09
3b - P.I. Sta. 966+76.99
Δ = 6°45'00" Lt.
R = 2546.92'
T = 150.20'
L = 300.05'
E = 4.43'
BEGIN PROJECT
Sta 920+00.00
STA-30-14.12
STA-77-9.22
F.A.P. I-77-4(42)
CENTERLINE SURVEY CURVE NO. 2 DATA
P.I. Sta. 565+94.90
Δ = 13°49'45" Rt.
D = 1°28'00"
R = 3906.53'
T = 473.75'
L = 942.90'
CURVE NO. 46 DATA
P.I. Sta. 24+06.69
Δ = 33°10'02" Lt.
D = 19°05'55"
R = 300.00'
T = 89.34'
L = 173.66'
E = 13.02'
CURVE NO. 47 DATA
P.I. Sta. 28+18.14
Δ = 22°58'54" Rt.
D = 19°05'55"
R = 300.00'
T = 60.99'
L = 120.33'
E = 6.14'
END PROJECT
Sta 969+00.00
STA-30-14.12
STA-77-9.22
BEGIN PROJECT
Sta 969+00.00
STA-30-15.04
STA-77-9.22
STA. EQUATION
Sta. 921+01.98 (Back) = Sta. 921+03.28 (Ahead)
NOTE: See STA-30-12.47 & STA-77-9.22 Book 39, Page 43.
Sta. Equation
Sta. 941+70.11 (Back) = Sta. 943+25.00 (Ahead)
Bearing Equation
S88°12'24"E (Back) = S88°11'46"E (Ahead)
STATION EQUATION
(R/W Only) P.C.C. Sta. 956+59.94 (Bk) = (S.C.) Sta. 956+59.87 (Ah.)
STATION EQUATION
(R/W Only) P.C.C. Sta. 975+79.53 = (S.C.) Sta. 975+79.46 (Ah.)
CENTERLINE SURVEY CURVE NO. 4 DATA
P.I. Sta. 980+31.56
Δ = 38°57'52" Rt.
Ts = 902.11'
Ls = 450.00'
θs = 06°45'00"
Xc = 449.38'
Yc = 17.65'
Es = 120.67'
P = 4.42'
K = 224.90'
ST = 150.20'
LT = 300.22'
LC = 449.72'
Dc = 03°00'00"
Δc = 25°25'52" Rt.
R = 1909.86'
Tc = 431.53'
Ec = 48.16'
Lc = 848.81'
SUBSTITUTE CURVE DATA FOR RIGHT OF WAY
4a P.I. Sta. 974+29.68
4b P.I. Sta. 985+78.47
Δ = 6°45'00" Rt.
R = 2546.92'
T = 150.20'
L = 300.05'
E = 4.43'
CENTERLINE SURVEY CURVE NO. 1 DATA
P.I. Sta. 543+03.45
Δ = 81°46'00" Lt.
Ts = 1443.94'
Ls = 400.00'
θs = 8°00'00"
Xc = 399.22'
Yc = 18.59'
Es = 468.35'
P = 4.65'
K = 199.87'
ST = 133.58'
LT = 266.94'
LC = 399.65'
Dc = 4°00'00"
Δc = 65°46'00"
R = 1432.39'
Tc = 926.07'
Lc = 1644.17'
Spiral P.I. Equation
550+37.26 Bk. = 550+36.74 Ahd.
NOTE:
Spiral curves indicated on this plan are developed as outlined in "Transition Curves For Highways" by Joseph Barnett, Published in 1940 by U.S. Government Printing Office.
● CENTERLINE REFERENCE MONUMENTS
STATION
921+01.98 - 53' Lt. & Rt.
930+00 - 53' Lt. & Rt.
940+00 - 78' Lt. 65' Rt.
952+09.87 - 78' Lt. 90' Rt.
956+59.87 - 53' Lt. 41' Rt.
969+76.79 - 53' Lt. 41' Rt.
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK
APPROVED ____ 19__
DIVISION DEPUTY DIRECTOR
RECEIVED ____ 19__
RECORDED ____ 19__
BOOK ____ PAGE ____
COUNTY RECORDER
I HEREBY CERTIFY THAT THIS PLAT IS A TRUE DELINEATION OF A SURVEY MADE FOR THE OHIO DEPARTMENT OF HIGHWAYS IN ____ BY HNTB
S5330 DATE 12-5-69
Date | Description | By
REVISIONS
CENTERLINE SURVEY PLAT SHEET 1 OF 1
HENRY AVE. SW
MARGARET ST. SW
WERNET CT. SW
14TH ST. SW
15TH ST. SW
HIGH AVE. SW
EAGLE PL. SW
WELLS AVE. SW
PRESLEY RD. SW
McKINLEY AVE. SW
CLEVELAND AVE. SW
RELOCATED CLEVELAND AVE. SW
MARKET AVE. S
EARL PL. SE
16TH ST. SE
15TH ST. SE
HOUSEL AVE. SE
ANTON PL. SW
RAMP A
RAMP B
RAMP C
RAMP D
RAMP E
RAMP F
RAMP G
RAMP H
NIMISHILLEN CREEK
WEST BRANCH
PENN. R.R.
N. & W. RY.
B. & O. R.R.
McKINLEY CONN.
MATCH LINE

PROPERTY MAP
STA-30-14.12 STA-77-9.22
McKINLEY TWP.
STARK COUNTY, OHIO
CITY OF CANTON
FED ROAD DIV NO 2
STATE OHIO
FEDERAL AID PROJECT NO I-77-4(42) R/W ONLY
372 / 389
3 / 19
STARK COUNTY
STA-30-14.12
STA-77-9.22
END PROJECT STA-30-14.12 STA-77-9.22 Sta. 969+00.00
BEGIN PROJECT STA-30-15.04 STA-77-9.22 Sta. 969+00.00
UTILITIES OWNERS
CITY OF CANTON SANITARY AND STORM SEWERS 200 Cleveland Avenue, S.W. Canton 2, Ohio
CANTON WATER WORKS 200 Cleveland Avenue, S.W. Canton 2, Ohio
NORFOLK AND WESTERN RAILWAY COMPANY Lake Region Box 6119 Cleveland, Ohio 44101
THE EAST OHIO GAS COMPANY East Ninth Street at Superior Cleveland, Ohio 44114
OHIO POWER COMPANY 301-315 Cleveland Avenue, S.W. Canton 2, Ohio
OHIO BELL TELEPHONE COMPANY 217 Fourth Street, N.E. Canton, Ohio
BALTIMORE AND OHIO RAILROAD COMPANY P.O. Box 6419 Cleveland, Ohio 44101
PENN CENTRAL TRANSPORTATION CO. Pennsylvania Station Pittsburgh, Pennsylvania 15222
LANDLOCKED PARCELS
PARCEL | AREA RIGHT | AREA LEFT
NONE
BEGIN PROJECT STA-30-14.12 STA-77-9.22 F.A.P. I-77-4(42) Sta. 920+00.00
BEGIN ACQUISITION STA-30-14.12 STA-77-9.22 Sta. 953+71.72
END ACQUISITION STA-30-14.12 STA-77-9.22 F.A.P. I-77-4(42) Sta. 974+02.80
BEGIN ACQUISITION STA-30-15.04 STA-77-9.22 F.A.P. I-77-4(42)
NAVARRE ROAD SW
HENRY AVE. SW.
MARGARET ST. SW
WERNET CT. SW.
NIMISHILLEN CREEK
WEST BRANCH
PENN CENTRAL RR
NORFOLK & WESTERN RY. CO.
I-77
U.S. 30
RAMP A
RAMP B
RAMP C
RAMP D
RAMP E
RAMP F
RAMP G
RAMP H
TEMPORARY RAMP "D"
KNUTSEN PL. SW
15TH ST. SW.
HUNTINGTON PL. SW
MARION AVE. SW
HIGH AVE. SW
WELLS AVE. SW
EAGLE PL. SW
B & O R.R.
GOODMAN PL. SW
PRESLEY RD. SW
McKINLEY AVE. SW.
STEINER PL. SW
ANTON PL.
CLEVELAND AVE. SW.
LEONARD PL. SW
COURT AVE. SW
KILLIAN PL. SW
GERBER PL. SW
KILLIAN PL. SE
MARKET AVE. S
HOUSEL AVE. S.E.
EARL PL. S.E.
15TH ST. S.E.
16TH ST. SE.
15TH ST. S.E. CONN.
ALLEY
Existing Channel Easement
Existing Aerial Easement
Acquired on Project STA-8-10.86
Acquired on Project STA-77-7.93
Acquired on Project STA-77-7.93
15th Street has access to Allen Ave. east of B&O R.R.
Match Line Sta. 557+50
Match Line Sta. 964+00
SW 1/4 Sec. 9
NW 1/4 Sec. 16
Crossing
Note: "Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example-Parcel 241WL would be considered to read Parcel 1241WL."
LEGEND (THIS SHEET ONLY)
LA or R/W
EXISTING I-77 LA
EXISTING CHANNEL EASEMENT
PROPERTY LINE
PAVEMENT EDGE
BASELINE or CENTERLINE
BUILDING
PARCEL NUMBER
4-18-74 Added Pcls. 20AS, BS & 32S, AS
2-12-74 Removed Bldg. 111WL R.I.
11-29-73 Added R.R. Plats Pcl 20
3-10-72 Revised Location Of LA Line
Added Prop. R/W Line - Pcl 3
Changed Residue Of Pcl. 30WL
To Pcl. 30WD
4-20-72 Added Pcl 38AWL
8-1-72 Deleted Pcl 21 & Combined into Pcl 35
10-4-73 Deleted Pcl. 30WD & Added 30T
Date | Description | By
REVISIONS
DELETED PCL. 1117 3-7-75
PROPERTY MAP
Scale: 1"=100'
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO	I-77-4(42) R/W ONLY	

373
389

STARK COUNTY
STA-30-14.12
STA-77-9.22

4
19

SUMMARY OF ADDITIONAL RIGHT OF WAY REQUIRED

TOTAL TAKES 116
TOTAL NO. OF OWNERS 137
TOTAL NO. OF STRUCTURES 114

PARCEL NO.	OWNER	TYPE FUND	RECORDED BOOK	RECORDED PAGE	DEED AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE LAND	NET TAKE BLDG.	NET RESIDUE LEFT	NET RESIDUE RIGHT	SHEET NO.	REMARKS	LOT NO.
1 WL	Mincks, William B. and Anna	"I"	2176	503	6000	–	438	–	438	No	5562	–	6&11		14804
2 WL	Mario Marchione & Christine Marchione	"I"	3506	711	6000	–	2495	–	2495	Yes	3505	–	6&11	S. 4' Drwy. Easement	14803
(1) * 3 WL	Streiber, Donald L. and Ethel K.	"I"	1246	57	6000	–	5717	–	5717	Yes	–	–	6&11	N. 4' Drwy. Easement	14802
4 WL	DOROTHY R. FOX, VIRGINIA M. LITTLE & JOSEPH C. WEISS	"I"	3353 3351	166 427	6000	–	6000	–	6000	Yes	–	–	6		14801
5 WL	Gemma, Nellie J. (L.C. HOLDERS: EARL A. COLE & JEAN M. COLE)	"I"	2788	199	6450	–	6450	–	6450	Yes	–	–	6	N. 3' of 14809	14808
6 WL	1006 – ANNA MAE DUFF, MARY ELIZABETH DATKO, MARY EBNER, STEVE M. DATKO, ROSE M. LORENZO.	"I"	3665	714	5550	–	5550	–	5550	Yes	–	–	6		14809
7 WL	Barkheimer, Robert C. and Charles W.	"I"	3197	443	6000	–	6000	–	6000	Yes	–	–	6		14810
8 WL	Vesely, Joseph and Anna	"I"	2087	583	6000	–	6000	–	6000	Yes	–	–	6		14113
9 WL	John Vesely a.k.a. JOHN J. Vesely	"I"	2757 2087	276 581	6000	–	6000	–	6000	Yes	–	–	6		14112
10 WL	Estate of Elmer Gonser, Deceased	"I"	531	134	495	–	495	–	495	No	–	–	6		14112
11 WL	Green, Annette	"I"	3083 3083	441 21	39 230	–	15946	–	15946	No	–	23284	6&11	(3083:21)	14106-14111
12 WL	Schaefer, G.C.	"I"	1576	276	3969	–	3969	–	3969	No	–	–	6		15683
13 WL	Henry A. Curwen, Darcey Curwen, William L. Curwen	"I"	3504	28	3919	–	3919	–	3919	Yes	–	–	6	SHED - Personal Property	15682
14 WL	Bradley Blanc, Marc Blanc, Robert Bruce Blanc & Sharon Green	"I"	3584	683	3195	–	3195	–	3195	No.	–	–	6		15681
15 WL	(1)	"I"	3149	566	3161	–	3161	–	3161	Yes	–	–	6		15680
16 WL	Furman, Jacob 1639/277	"I"	1676 1725	153 144	12300	–	12300	–	12300	No	–	–	6		15676-15679
17 WL	DEAN BURKHART	"I"	3599	553	3967	–	2695	–	2695	No	–	1272	6&11		15668
18 WL	Belknap, Wendell B. & Desylvia A.	"I"	2897	541	7111	–	5313	–	5313	Yes	–	1798	6&11		15669-15670
32D Aerial	Penn-Central Transportation Co.	"I"					28						16		
19 WL	UNITED STATES STEEL CORPORATION, a DELAWARE CORPORATION	"I"	3125 2134	535 310	15486	–	15486	–	15486	Yes	–	–	6	(Vol: Pg) (1677:80)	15671-15675
(3) *38AWL	Frederick T. & Leah M. Schario	"I"	2148	7	3350	–	3350	–	3350	Yes	–	–	7		6413
20 A	Norfolk and Western Ry. Co.-LESSEE; WHEELING AND LAKE ERIE RAILROAD COMPANY: LESSOR	"I"	329	510					699	No			6&7&17	P.T.O.L. 68	
20 B	Norfolk and Western Ry. Co. " " " "	"I"	130	699					53				17	SEE NOTE - SHEETS 16&17	
20 C	Norfolk and Western Ry. Co. " " " "	"I"							23				17		
20 D	Norfolk and Western Ry. Co. " " " "	"I"							114				17		
20 Aerial	Norfolk and Western Ry. Co. " " " "	"I"			35763				10773				6,17	Aerial Easement	
20E Aerial	Norfolk and Western Ry. Co. " " " "	"I"							1238				7,7A,17	Aerial Easement	
20 S	NORFOLK AND WESTERN RAILROAD COMPANY: LESSEE; WHEELING AND LAKE ERIE RAILROAD COMPANY: LESSOR	"I"							12330				6,7,17	Sewer Easement	
20 AS	"								749				7,17	" "	
20 BS	"								649				6,17	" "	
32 S	See Pcl. 32 Aerial					–		–	1199		–	–	7,16	" "	
22 WL	Beck, Robert E.	"I"	2966	719	10934	–	10934	–	10934	No	–	–	6&9A		P.T.O.L. 69
23 WL	Pearl E. McCarty	"I"	(3)	(3)	3450	–	3450	–	3450	Yes	–	–	6&9A	Lot 6443,	P.T.O.L. 69
24 WL	Burton, William and Gladys C.	"I"	1954	331	3450	–	3450	–	3450	Yes	–	–	6&9A		P.T.O.L. 69
25 WL	Excel Alexander, Maggie Alexander	"I"	3550	485	3450	–	3450	–	3450	Yes	–	–	6&9A		P.T.O.L. 69
26 WL	Frisch, Irvin and Lillian	"I"	2082	31	1725	–	1725	–	1725	No	–	–	6&9A		P.T.O.L. 69
27 WL	CLARA R. BENEAR	"I"	3320	577	1932	–	1932	–	1932	Yes	–	–	6&9A		P.T.O.L. 69
28 WL	JOHN P. HANLON	"I"	2941	53	2398	–	2398	–	2398	No	–	–	6&9A		P.T.O.L. 69
29 WL	1029 – LILLIAN S. BOERNER, GERTRUDE R. MORLAND, PRESLEY S. CAMPBELL & KATHRYN L. FRIES	"I"	1856	269	5505	–	5505	–	5505	No	–	–	6		29907
30 WL	City of Canton *513/263-519/267-519/302-519/265	"I"	*			440,988	634,474	440,988	193,486	Yes	–		6,7&7A	O.L. 333 & O.L. 170 thru O.L. 175	
30 T	City of Canton 519/266-519/274-491/380-519/269	"I"				–	2,936	–	2,936	No.	–	–	6&7A	Channel Relocation, Lot No. Same as 30WL	
30-1 WL	City of Canton 513/264-564-90-519/271-519/270 519/272	"I"	3196	678	2429	–	2429	–	2429	NO	–	–	6		29890
(2) * 34	NOT REQUIRED														
31 WL	Campbell, Presley S. Jr.	"I"	1169 1152	52 212	8282	–	8282	–	8282	No	–	–	6		29899
32 AS	See Pcl. 32 Aerial								1014				6,16	Sewer Easement	
32 Aerial	Penn-Central Transportation Co.-LESSEE;	"I"	325	108	57368				16624				16		
32 A	PITTSBURGH, FT. WAYNE AND CHICAGO RAILROAD CO.-LESSOR	"I"							66				16		
32 B	" " " " " "	"I"							57				16		
32 C	" " " " " "	"I"							22				16		
32-1 WL	" " " " " "	"I"	650	599	157,526	87,626	157,526	87,626	69,900	Yes	–	–	6&7A		P.T.O.L. 68
33 WD	Leahy, Robert W. and Rosemary C.	"I"	3151	396	6953	–	49	–	49	No	–	6904	7&11		1689
33 T	" " " " " "	"I"				–	469	–	469		–	–	7&11	Temporary: Construct Slope No Sidewalk Removal	
(2) * 35 WL	Holland, Thomas O. and Anna M.	"I"	(2)	(2)	43972	–	43972	–	43972	Yes	–	–	6,7&9A		P.T.O.L. 68
36 WL	Davis, Beulah M.	"I"	2823 2408	17 32	3716	–	3716	–	3716	No	–	–	7		6412
37 WL	Kinney, Dorothy E.	"I"	2836	243	3135	–	3135	–	3135	Yes	–	–	7		6412
(3) SEE ABOVE Pcl. 38AWL – * 38 WL	Campbell, Samuel S. - SEE REMARKS	"I"	3156	642	3121	–	3121	–	3121	NO	–	–	7	TRAILER: PERSONAL PROPERTY, NOT COUNTED AS STRUCTURE.	6413
39 WL	GARY L. WILHELM, CHARLOTTE E. WILHELM, MINNIE MAE SAUNIER & HELEN M. WILHELM	"I"	3190 3006	20 704	5610	–	5610	–	5610	Yes	–	–	7		6414
40 WL	Behringer, Anthony Carl and Marguerite M.	"I"	2974	105	5179	–	5179	–	5179	Yes	–	–	7		6415
41 WL	Stevens, Anthony G. and Lena A.	"I"	1887	526	5830	–	3149	–	3149	Yes	2681	–	8&12		1821
41 WA	Stevens, Anthony G. and Lena A.	"I"			–	–	–	–	–	–	–	–		Building Removal	1821
42 WL	Cirelli, Arthur J. and Joan M.	"I"	3016	388	4373	–	2708	–	2708	Yes	–	–	8&12		1820
42 ER	Cirelli, Arthur J. and Joan M.	"I"			–	–	1665	–	1665	–	–	–		Building Removal (UNECON. REM.)	1820
43 WL	OTIS TALLEY aka OTIS TULLEY	"I"	3741 3671 3670	847 348 190	1768	–	1768	–	1768	No	–	–	8&12	Presently Landlocked,	1820
44 WL	Sirpilla, Mary *1443/49	"I"	*3124	386	13 686	–	5690	–	5690	Yes	–	7996	8&13		1828-1829
45 WL	STARK OUTDOOR ADVERTISING COMPANY, INC., A MINNESOTA CORPORATION fka NAEGELE OF CANTON, INC.	"I"	3778 3582	283 488	12 863	–	5965	–	5965	No	6898	–	8&12		29080-29082, 29092&29093
46 WL	Madgett, Scott and Carrie J.	"I"	2625	252	2583	–	1841	–	1841	Yes		–	8&12	4' Drwy. Easement	29083
46 ER	Madgett, Scott and Carrie J.	"I"			–	–	742	–	742		—	—		Building Removal (UNECON. REM.)	
46 AWL	ESTATE of JAMES A. FIFE, DECEASED	"I"	2092 2131	247,607 587	4290	–	705	–	705	No	3585	–	8&12		1826 & 1827

4-20-72 Added Pcl. 38 AWL D.R.P.
2-13-74 Name change Pcl. 43

(1) (PCL 15)
Huberty, Paul J.
Huberty, Thomas W.
Latino, Doris Marie

(2) (PCL 35)
Vol. 3184 Page 146
Vol. 2364 Page 43
Vol. 2912 Page 575

(3) (PCL 23)
Vol. 3441 Page 213
Vol. 3440 Page 167
Vol. 1898 Page 10

REMOVED STRUCTURE PCL. 1030-1WL 4-25-74
NAME CHANGE; ADDED VOLUME & PAGE - PCL. 45 3-27-74
Added R.R. Plats Pcls 20,32 11-29-73
ADDED OWNERSHIP TO PCL 1029 Sands 10-31-73
DELETED PCL 30WD & ADDED PCL. 30T 10-4-73
REMOVAL OF STRUCT. PCL 1031 - 5-14-73
PCL 1026WL ~
REMOVAL OF BUILDINGS - 4-2-73
PCL 1038 NO STRUCTURE - 9-26-72 NOTE ADDED
REMOVED STRUCTURES - PCL 1036 - 9-20-72
NEW OWNER: PCL 1017 - 7-31-72
OWNERSHIP CHANGE PCL. 1014-WL 6-2-72
PCL 1046 "ER" - 7-3-74

Note:
All areas in square feet unless otherwise shown.

Note: "Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example - Parcel 241WL would be considered to read Parcel 1241WL." Rev. Name Pcl 9WL 5-10-72
3-21-72 REVISED T.B.A. PCL 1028WL
3-10-72 REVISED T.B.A. PARCEL 3WL

Date	Description	By
9-24-71	REVISED NAME PCLS. 4, 27 & 39	
	ADDED VOL & PG PCLS 31 & 36	L.S.
1-5-72	Rev. Name Pcls. 2, 6, 9, 10 & 12	
	Vol. & Pg. Change Pcl. 11	E.D.
1-7-72	Rev. Name Pcls. 13, 17, 23, 25 & 43	
	Vol. & Pg. Change Pcl. 26	E.D.
2-4-72	Completion Date	
	ADDED PCL 1046 ER	2-19-74

REVISIONS

ADDED Pages & Vols - Pcls. 16-30-&36 - 8-9-72
Deleted Pcl 21 WL & Combined it with Pcl 35WL 8-1-72
Added Vol & Pg. Pcl. 46 AWL - 6-13-72
Revised Vol. & Pg. Pcl. 19 WL, 45WL - 6-13-72
Revised Name Pcls. 29 WL & 46AWL - 6-13-72
Changed Name Pcls. 19WL & 45WL - 6-13-72
Changed Residue of Pcl 1030WL To Pcl 1030WD - 3-10-71

Added Pcls. 20AS, BS & 32S, AS 6-28-74
2-19-74: Deleted 20T, 20T-1, 32T-1, 32T; Rev Name - Pcl 20 & 32
New Owners: Pcl 1006 - 2-12-73

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

Pcl 1046-5-8-73
Rev. Name Pcl 69 - 11-14-72
Rev. Pcls 49-[illegible]-54-(8-9-72)
Changed Vol & Pg. Pcl. 67 WL 6-13-72
Revise Name Pcls. 51 WL & 54 WL, AWL 6-13-72
Add Name Pcl. 50 WL - 6-13-72
Changed Names Pcls. 62 WL & 67 WL - 6-13-72
Changed Pcl. 54 1WL to 54AWL - 6-13-72

Revised Name 1066, 1081 11-14-74
Deleted Land Contract Holders 51AWL, AWA. 1-18-74
Rev. Name Pcl 75-WL 5-8-73
Add Vol. & Pg. Pcls. 51 AWA & 54 WL 6-13-72
Revise & Add Name Pcls. 51AWA & 51AWL - 6-15-72

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO	I-77-4(42) R/W ONLY	

374 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

5 / 19

SUMMARY OF ADDITIONAL RIGHT OF WAY REQUIRED

PARCEL NO.	OWNER	TYPE FUND	RECORDED BOOK	RECORDED PAGE	DEED AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE LAND	NET TAKE BLDG.	NET RESIDUE LEFT	NET RESIDUE RIGHT	SHEET NO.	REMARKS	LOT NO.
47WL	JOHN HAYWOOD & ELIZABETH HAYWOOD	"I"	3484	129	3357	—	3357	—	3357	Yes	—	—	8 & 12		29084, 29085
48 WL	Jackson, Nathaniel	"I"	3395	476	4500	—	4500	—	4500	Yes	—	—	8 & 13		4790
49 WL	GRIFFEN BENDER, aka WILLIE G. BENDER aka WILLIE GRIFFEN BENDER	"I"	1399	449	7578	—	5391	—	5391	Yes	—	2187	8 & 13	(3396:657)	4791
49 WA	" "	"I"	3396	657	—	—	—	—	—	—	—	—		Building Removal	4791
49A WL	Gardner, E.E.	"I"	2489	200	7578	—	758	—	758	No	—	6820	8 & 13		4792
50 WL	Eiler, Mildred, OWNER	"I"	3014	372	18,583	—	4169	—	4169	No	—	14,414	8 & 14		6479, 6480, 6486
50A WL	ELOISE DONALD	"I"	3518 / 3404	629 / 640	3580	—	3580	—	3580	Yes	—	—	8 & 13		4844, 4845
51 WL	Title Mortgage Company, A CORPORATION	"I"	2485	400	3577	—	3577	—	3577	Yes	—	—	8 & 14		6486, 6480
51A WL	CLARENCE MILLER & JEANNE MILLER	"I"	1725	334	3534	—	1532	—	1532	Yes	—	2002	8 & 13	Pt. O.L. 48,	4845
51A WA	CLARENCE MILLER & JEANNE MILLER	"I"	1725	334	—	—	—	—	—	—	—	—	8 & 13	Building Removal	4845
52WL	JUANITA GREEN aka JUANITA THERESA GREEN	"I"	3399	137	8901	—	8901	—	8901	Yes	—	—	8 & 14		6480
53WL	Shafer, Alice H.	"I"	1379	560	13241	—	13241	—	13241	Yes	—	—	8 & 14		6479
54WL	③	"I"	3220	483	39670	—	17815	—	17815	Yes	—	21,855	8 & 14	(2824:521), (3087:301)	831, 832
54 T	③	"I"	2824 / 3046	521 / 325	—	—	2571	—	2571	Yes	—	—	8 & 14	Building Removal	832
54 S	③	"I"	3087	301	—	—	2783	—	2783	—	—	—	8 & 14	Construct Sanitary Sewer	832
54-AWL	③	"I"	3181	422	8580	—	8580	—	8580	No	—	—	8		2535, 2567, 1314
54-BWL	Nathan M. Worshil	"I"	1151	68	7500	—	7500	—	7500	Yes	—	—	8		1313
55 WL	Vader, Ida G	"I"	2247	384	3296	—	3296	—	3296	Yes	—	—	8		2539
56 WL	CLARA NICHOLSON	"I"	3403 / 2413	597 / 443	5581	—	5581	—	5581	Yes	—	—	8		2538
57 WL	ESTATE OF VINCENT C. DOLLIVE, DECEASED	"I"	3228	23	11286	—	11286	—	11286	Yes	—	—	8		2536, 2537
58 WL	Martin, Bessie	"I"	3087	11	5814	—	5814	—	5814	Yes	—	—	8		2536, 2537
59 WL	McGrady, Bessie M.	"I"	1897	140	5625	—	5625	—	5625	Yes	—	—	8		2535
60 WL	MARY LIPPKA	"I"	3347	523	3375	—	3375	—	3375	Yes	—	—	8		2535
61 WL	Hilton, Susan A.	"I"	2462	65	2250	—	2250	—	2250	Yes	—	—	8		2535, 2567
62 WL	⑤	"I"	3039	129	3120	—	3120	—	3120	Yes	—	—	8		2567, 1314
63 & 64	NOT REQUIRED														
65 WL	WORSHIL AUTO PARTS DISTRIBUTING CO.	"I"	3258	544	7500	—	7500	—	7500	Yes	—	—	8		1312
66 WL	S. and W. Realty Company, an Ohio corporation	"I"	3190	644	7500	—	7500	—	7500	Yes	—	—	8	See 77WL also	1311
67 WL	ANN BARRINO	"I"	3317	194	7500	—	7500	—	7500	Yes	—	—	8		1310
68 WL	⑥	"I"	3479	426	6843	—	6843	—	6843	Yes	—	—	8		1309
69 WL	ANN D. HARP F.K.A. ANN D. VUKICH	"I"	2316 / 2294	308 / 178	4708	—	4708	—	4708	Yes	—	—	8		1308
70-1 WL	Baltimore and Ohio R.R. Co.	"I"	180	135	8,845	—	1618	—	1618	No.	—	—	8		
70-2 WL	Baltimore and Ohio R.R. Co.	"I"	180	133	2678	—	2678	—	2678	No.	—	—	9		2569, 6444
70A	Baltimore and Ohio R.R. Co.	"I"	180	131		—		—	1522	—	—	—	8 & 9, 18		
70B	Baltimore and Ohio R.R. Co.	"I"				—		—	32	—	—	—	8, 9, 18		
70C	Baltimore and Ohio R.R. Co.	"I"				—		—	433		—	—	8, 9, 18		
70D	Baltimore and Ohio R.R. Co.	"I"				—		—	1070		—	—	8, 9, 18		
(4)* 70E	Baltimore and Ohio R.R. Co.	"I"				—		—	288		—	—	8, 9, 18		
71 WL	Coen Oil Company	"I"	3260	642	6155	—	6155	—	6155	Yes	—	—	8		1306, 1307
71-1 WL	Coen Oil Company	"I"	2112 / 2570	41 / 254	7495	—	7495	—	7495	No	—	—	9	(2570:254) Subject To R.R. R/W	1325, 1326
71-2 WL	Coen Oil Company	"I"	2788 / 2761	286 / 32	14876	—	14876	—	14876	Yes	—	—	9		1323, 1324
72 WL	Grosse, Harry R. and Mary A.	"I"	1698	13	7500	—	7500	—	7500	Yes	—	—	8 & 9A	Pt. 2568 P.T.O.L.	67
73 WL	Sawa, Agnes	"I"	2147 / 1679	524 / 71	2258	—	2258	—	2258	Yes	—	—	8 & 9A	Pt. 6471, P.T.O.L	67, 2568
74	NOT REQUIRED														
75 WL	Louis C. Mayers & Ruth Mayers, Fee Owners; Lorenzo Pullin & Emma Pullin, Holders of Land Contract	"I"	2568	199	4672	—	4672	—	4672	Yes	—	—	8 & 9A	Unrecorded Land Contract P.T.O.L.	67, 2568
76 WL	Fred G. Portofe aka Fred Portofe	"I"	2871 / 2861	7 / 515	9975	—	9975	—	9975	Yes	—	—	8 & 9A	(2871:7)	2568, 6471, 1315
77 WL	W. & S. Realty Co., a corporation	"I"	2659	306	3850	—	3850	—	3850	Yes	—	—	8		1316
78 WL	Jesse Grant and Anna Lee Grant	"I"	2581	79	3650	—	3650	—	3650	Yes	—	—	8		1316
79 WL	Lawrence E. Coffey and Bertha I. Coffey	"I"	3146	341	4000	—	4000	—	4000	Yes	—	—	8		1317
80 WL	Joseph Z. Kapp	"I"	3483	137	3500	—	3500	—	3500	Yes	—	—	8		1317
81 WL	Stark Spring Co., an Ohio corporation	"I"	2482	639	7500	—	7500	—	7500	Yes	—	—	8		1318
82 WL	Michael P. Hudak & Delores A. Hudak fka Delores A. Seifert	"I"	2533	456	3500	—	3500	—	3500	Yes	—	—	8		1319
83 WL	Klepadlo, Anthony and Genieve	"I"	1619	579	4000	—	4000	—	4000	Yes	—	—	8		1319
84 WL	R. LAWRENCE ALEXANDER & SUSAN E. KUMPF fka SUSAN ALEXANDER	"I"	3711 / 2526	184 / 192	3500	—	3500	—	3500	Yes	—	—	8		1320
85 WL	Hanenkrat, Roy E. and Violet M.	"I"	1401	323	4000	—	4000	—	4000	Yes	—	—	8		1320
86 WL	Thomas, William R.	"I"	1334	368	1875	—	1875	—	1875	Yes	—	—	8		1321
87 WL	Rocket Oil Company, an Ohio corporation	"I"	3481	121	9375	—	9375	—	9375	Yes	—	—	8	(1253:577)	1321, 1322
88 WL	Beck, Mildred A.	"I"	2092 / 2092	610 / 247	3750	—	3750	—	3750	Yes	—	—	8		1321
89 WL	Coen Oil Company	"I"	3260	642	20045	—	2888	—	2888	No	17157	—	9 & 15		1694, 1695, 1696
90 WL	James T. Parker & Perline Parker	"I"	3364	364	3223	—	3223	—	3223	Yes	—	—	9 & 9A	P.T.O.L.	69
91 WL	LOUIS ROGOVIN & BERNIE GREEN	"I"	3597	592	3724	—	3724	—	3724	Yes	—	—	9 & 9A	P.T.O.L.	69
92 WL	Behringer, Anthony C.	"I"	1695 / 1695	556 / 549	2090	—	2090	—	2090	Yes	—	—	9 & 9A	P.T.O.L.	69
93 WL	Howard J. Volzer & Anna M. Volzer	"I"	3231	482	2750	—	2750	—	2750	Yes	—	—	9		6418
94 WL	Kohler, Ernest P. and Helen N.	"I"	934	449	2200	—	2200	—	2200	Yes	—	—	9		6417, 6418
95 WL	Title Mortgage Company, The, a corporation	"I"	2081	47	1650	—	1650	—	1650	Yes	—	—	9		6417
+ 96 WL	Betty C. DeHoff & Dale G. Hossler, OWNERS:	"I"	3009 / 3008	586 / 579	5316	—	5316	—	5316	Yes	—	—	9		6416
97 WL	Sellman, Vera Treesh	"I"	1444	75	1750	—	1750	—	1750	Yes	—	—	9		6424
98 WL	Leona Sanders & Debbie Sanders	"I"	3355	628	1750	—	1750	—	1750	Yes	—	—	9		6425
						—		—			—	—			
						—		—			—	—			

③ Worshil Auto Parts Distributing Inc. aka The Worshil Auto Parts Distributing Company, an Ohio corporation aka Worshil Auto Parts Distributing, Inc., an Ohio corporation
&
Nathan M. Worshil

⑤ Knell, Morris L.
Frederick, Paul H.
Frederick, Charles E.

⑥ Potie, Hattie
Webb, Eugene } Life Estate
Eugene Webb, Guardian of Estates of
Anita Margo Webb
Michele Arlene Webb } Minors

Note: "Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example- Parcel 241WL would be considered to read Parcel 1241WL."

ADDED 54-T - 1-28-75

Note:
All areas in square feet unless otherwise shown.
Rev. Name Pcl. 1084 - 12-4-73
Added R.R. Plats Pcl 70 11-29-73
Rev. Name Pcl 1050WL - 10-15-73
Rev. Name Pcl 1068WL - 8-16-73

Pcl 1096 -
+ Betty C. DeHoff & Dale G. Hossler, Owners:
L.C. Holders:-
Harry L. Carrell &
Thelma Carrell - Unrecorded.

Date	Description	By
9-28-71	Revised Name Pcls. 47, 50AWL	L.S.
	52, 56, 57, 60 & 65	
1-18-72	Rev. Name Pcls. 68, 76, 77, 78, 79, 80 & 82	E.D.
1-19-72	Rev. Name Pcls. 84, 87, 90, 91, 93, 96 & 98	E.D.
1-20-72	Vol. & Pg. Change 69, 71-1WL, 73, 88 & 92	"
	Rev. Name Pcls. 94 & 95	E.D.
2-4-72	Completion Date	

REVISIONS

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

FED ROAD DIV. NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO	I-77-4(42) R/W ONLY	

375 / 389

SUMMARY OF ADDITIONAL RIGHT OF WAY REQUIRED

STARK COUNTY
STA-30-14.12
STA-77-9.22

5A / 19

PARCEL NO.	OWNER	TYPE FUND	RECORDED BOOK	RECORDED PAGE	DEED AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE LAND	NET TAKE BLDG.	NET RESIDUE LEFT	NET RESIDUE RIGHT	SHEET NO.	REMARKS / LOT NO.
99 WL	George E. Alsup & Mamie B. Alsup	"I"	3517	504	1750	–	1750	–	1750	Yes	–	–	9	6426
100 WL	Ward, Orville E. and Blanche G.	"I"	2311	160	1750	–	1750	–	1750	Yes	–	–	9	6427
101 WL	Hoagland, Leroy M. and Jennie F.	"I"	2007	459	5250	–	5250	–	5250	Yes	–	–	9	6428, 6445
102 WL	Neimanis, Voldemars and Anna	"I"	2865	692	3500	–	3500	–	3500	Yes	–	–	9	6429
103 WL	Estate of Andrew Fomich & Rose Fomich	"I"	3069	639	1750	–	1750	–	1750	Yes	–	–	9	6430
104 WL	Gipe, Lawrence G.	"I"	3193	390	2800	–	2800	–	2800	Yes	–	–	9	6431
105 WL	(3)	"I"	2717	344	2450	–	2450	–	2450	Yes	–	–	9	6432
106 WL	Patterson, Carlos A. and Mary C.	"I"	.836	341	1750	–	1750	–	1750	Yes	–	–	9	6433
107 WL	Olive Crane	"I"	3228	305	1750	–	1750	–	1750	Yes	–	–	9	6434
108 WL	C. Earl Williams aka C. Earle M. Williams	"I"	2718 3156	579 88	3500	–	3500	–	3500	Yes	–	–	9	6435, 6436
109 WD	(4)	"I"	3359	142	2770	–	561	–	561	Yes	–	–	9 & 15	942
109 EL&T	(4)	"I"	"	"	–	–	2269	–	2269	YES	–	–	9 & 15	Remove House & Garage 942
110 WD	Swiney, Otis D.	"I"	3125	382	1573	–	782	–	782	Yes		–	9 & 15	18269, 942
110 ER	Swiney, Otis D.	"I"			–	–	791	–	791		–	–		Building Removal 18269, 942
111 WD	Weintraub, Moses	"I"	1252	309	1410	–	1108	–	1108	No	–	–	9 & 15	Structure Razed 1697, 18269
111 ER	" "						- 302		302	NO	–		15	(Uneconomic Remnant)
112 WD	Lillian Glaser	"I"	3437 2584	380 195	2004	–	2004	–	2004	No	–	–	9 & 15	1697
113 WD	Boum, Niles H.	"I"	2417 2113	209 562	2367	–	2367	–	2367	Yes	–	–	9 & 15	1697
114 WL	Frederick L. Poore and Darlene R. Poore	"I"	2722	156	3180	–	3180	–	3180	Yes	–	–	9 & 15	PT 6437
114AWD	Elonia Youngblood and Willie Christian	"I"	3444	41	8723	–	3493	–	3493	–	5230	–	9 & 15	PT 6437, 2574
* 114AT	Elonia Youngblood and Willie Christian	"I"	3183	166	–	–	–	–	–		–	–		
115 WL	(5)	"I"	2823	632	4375	–	4375	–	4375	Yes	–	–	9 & 15	6437
116 WL	Kame, George K.	"I"	2793	318	4745	–	4745	–	4745	No	–	–	9	6438
118 WL	Glenn R. Stofer	"I"	3405	279	2062	--	2062	–	2062	Yes	–	–	9	2570
119 WL	Garner, Dorthy Ann	"I"	2914	600	2062	–	2062	–	2062	Yes	–	–	9	2570
120 WL	Snedeker, Hazel	"I"	1092	347	4050	–	4050	–	4050	Yes	–	–	9	2571
121 WL	Yennie, Donald L.	"I"	2944	634	1875	–	1875	–	1875	Yes	–	–	9	2572
122 WL	Paul H. Boldt, Jr. & Donna J. Boldt	"I"	3255	532	1875	–	1875	–	1875	No	–	–	9	2572
123 WL	Alfonso A. Lebbano & Sarah B. Lebbano	"I"	2063	43	1875	–	1875	–	1875	Yes	–	–	9	2572
124 WL	Wiegreff, Darline A.	"I"	2704	657	1875	–	1875	–	1875	No	–	–	9	2572
125 WL	Bush, L.B. and Ethel C.	"I"	2082	360	3750	–	3750	–	3750	Yes	–	–	9	2573
126 WL	M. Catherine Dollive, Catherine D. Pavlos, B. Vincent Dollive, Peter D. Dollive	"I"	3317	363	3750	–	3750	–	3750	Yes	–	–	9	2573
127 WL	(8)	"I"	2318	109	3750	–	3750	–	3750	Yes	–	–	9	6440
128 WL	Leidtke, Homer J.	"I"	1169	372	3750	–	3750	–	3750	Yes	–	–	9	6440
129 WL	Kuemerle, Ethel D. Vol. 1443 P. 448	"I"	2757	91#93	3750	–	3750	–	3750	Yes	–	–	9	6441
130 WL	Gary Harris	"I"	3670	202	3750	–	3750	–	3750	Yes	–	–	9	6441
131 WL	Johnson, Cleveland and Lucille	"I"	2944	600	1875	–	1875	–	1875	Yes	–	–	9	6442
132 WL	Meyers, Louis C. and Ruth	"I"	2609	527	1875	–	1875	–	1875	Yes	–	–	9	6442
133 WL	Bain, Getrude	"I"	1971 1362	453 562	1500	–	1500	–	1500	Yes	–	–	9	6442
134 WL	United Housing, Inc.	"I"	3121	466	2250	–	2250	–	2250	Yes	–	–	9	6442
135 WL	Albert O. Henninger	"I"	3515	13	1875	–	1875	–	1875	Yes	–	–	9	6442
136 WL	Betty Becker f.k.a. Betty Kalil	"I"	3717 3147	629 597	1875	–	1875	–	1875	Yes	–	–	9	6442
137 WL	(6)	"I"	3398	296	1875	–	1875	–	1875	Yes	–	–	9	6442
138 WL	(7)	"I"	3546	247	1875	–	1875	–	1875	Yes	–	–	9	6442
138AWL	Demea, David D.	"I"	3230	255	2100	–	2100	–	2100	Yes	–	–	9	6436
138BWL	Boyce, Louis E. & Ida M.	"I"	3474	414	2095	–	2095	–	2095	Yes	–	–	9	6436
138CWL	Salimbeni, Russel J. & Susie J.	"I"	1597	446	2202	_	2202	–	2202	Yes	–	–	9	6436
(1) 3 WD	Donald L. Streibar & Ethel K. Streibar	"I"					283		283					
*					–	–	–	–	–		–	–		
(4) 70 Aerial	Baltimore and Ohio Ry. Co.	"I"						–	3930				8, 9, 18	
" 70H-Aerial	" " " "	"I"							163				8, 9, 18	
" 70I-Aerial	" " " "	"I"							467				8, 9, 18	
" 70J-Aerial	" " " "	"I"							6472				8, 9, 18	
" 70K-Aerial	" " " "	"I"							5253				8, 9, 18	
" 70L-Aerial	" " " "	"I"							395				8, 9, 18	
" 70M-Aerial	" " " "	"I"							11833				8, 9, 18	
70-F	"	"I"							664				8, 9, 18	
70-G	Baltimore and Ohio R.R. Co.	"I"							513				8, 9, 18	

(3) Raymond L. Byers
Frederick W. Byers
Charles N. Byers, Owners
Pearl E. Byers, Life Estate

(4) Randel C. Dotson & Estate of
Dollie K. Dotson, Deceased, Owners.
Nelson Hess & Barbara Hess,
Land Contract Holders
1109EL TBA = 2209SF

(5) Ginella, Stephen A.
Ginella, Pauline C.
Kiko, Russell T.
Kiko, Colletta

(6) Haubert, Earl
King, Catherine M.
Schawlem, Marie
Henrich, George J.
Henrich, Robert

(7) M. Catherine Dollive
Catherine D. Pavlos
B. Vincent Dollive
Peter D. Dollive

(8) Estate of Weldon Williams, Deceased
Earline Williams, aka Erlean Williams,
aka Erlean T. Williams

Note: "Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example - Parcel 241WL would be considered to read Parcel 1241 WL." 4-25-75 - 1109 ER ADDED
11-1-74 DELETED PCL 117-WD
114AWA TO 114AT - 10-24-74 111ER - 2-14-75
Name change, Vol. & Pg Pcl. 117 6-18-74
ADDED 1109 EL [illegible]-74
Note:
All areas in square feet unless otherwise shown. ADDED [illegible] [illegible] ER 5-16-74
ADDED PCL 110E - 5-6-74
ADDED (PCL 111-E - 2-15-74 - DELETED - 5-21-74)
2-12-74 REMOVED STRUCT 111WA - DELETED 111-WA R.S.
12-12-73 NEW OWNER PCL 1130WL
ADDED PCL 1109-T - 11-22-74
11-29-73 Added R.R. Plats Pcl 70

Date	Description	By
1-31-72	Rev. Name Pcls. 99, 103, 105, 107, 108, 109	E.D.
2-1-72	Rev. Name Pcls. 112, 114, 114A-B,	
	118, 122, 123, 135, 138	E.D.
2-2-72	Vol. & Pg. Change Pcls. 113, 130, 133	E.D.
3-9-72	Added Parcel 3WD	
11-13-73	Rev. Name Pcl 1127	JRT
2-4-72	Completion Date	

REVISIONS

Added Name & Added Vol & Pg Pcl 137 BWL 6-16-72
Changed Name & Changed Vol & Pg Pcl 126WL 6-16-72

Rev. Name Pcl 1136 - 12-27-73

Deleted Pcl 1117WD 3-7-75
5-21-74 [illegible] 114 AWA
2-18-74 Deleted 70T, F, [illegible]

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

PARCEL NO	OWNER	AREA
1WL	Mincks, William B. and Anna	438
2WL	Mario Marchione & Christine Marchione	2495
3WL	Donald L. Streiber & Ethel K. Streiber	5717
3WD	Streiber, Donald L. and Ethel K.	283
4WL	Dorothy R. Fox, Virginia M. Little & Joseph C. Weiss	6000
5WL	Gemma, Nellie J. *	6450
6WL	See Summary Sheet #4	5550
7WL	Barkheimer, Robert C. and Charles W.	6000
8WL	Vesely, Joseph and Anna	6000
9WL	John Vesely aka John J. Vesely	6000
10WL	Estate of Elmer Gonser, Deceased	495
11WL	Green, Annette	15946
12WL	Schaefer, G.C.	3969
13WL	Henry A. Curwen, Darcey Curwen, William L. Curwen	3919
14WL	Bradley Blanc, Marc Blanc, Robert Bruce Blanc & Sharon Green	3195
15WL	See Summary Sheet No. 4	3161

* Land Contract Holders: Earl A. & Jean M. Cole

PARCEL NO	OWNER	AREA
29WL	See Summary Sheet No. 4	5505
30WL	City of Canton	634474
30 T	City of Canton	238.0
30-1 WL	City of Canton	2429
31 WL	Campbell, Presley S. Jr.	8282
32 Aerial	Penn-Central R.R.-Lessee;	69300 NET 87626 PRO
32-1 WL	Pittsburgh, Ft. Wayne & Chicago R.R.-Lessor	
32 AS	"	1014
35 WL	Holland, Thomas O. & Anna M.	43972

LEGEND

S	Story	O	Office
F	Frame	Ch	Church
B	Brick	Sh	Shead
Bl	Conc. Block	CW	Concrete Walk
M	Metal	RW	Retaining Wall
H	House	C	Concrete
G	Garage	D	Drive
Bldg	Building	W	Wire Fence

CURVE DATA I-77
P.I. Sta. 565+94.90
Δ = 13°49'45" Rt.
D = 1°28'00"
R = 3906.53'
T = 473.75'
L = 942.90'

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO	I-77-4(42) R/W ONLY	

376 / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

6 / 19

CITY OF CANTON
McKINLEY TOWNSHIP
SECTION NO.16
T-10-N, R-8-W

"I" FUNDS

NEW OWNER - Pcl 1017 - 7-31-72

PARCEL NO	OWNER	AREA
16WL	Furman, Jacob	12300
17WL	Dean Burkhart	2695
18WL	Bellnap, Wendell B. & Desylvia A.	5313
19WL	United States Steel Corporation, a Delaware Corporation	15486
20S	Norfolk and Western Ry. Co: LESSEE;	3477
20 Aerial	Wheeling & Lake Erie Ry. Co. - LESSOR	10773
20 BS	"	649
22WL	Beck, Robert E.	10934
23WL	Pearl E. McCarty	3450
24WL	Burton, William and Gladys C.	3450
25WL	Excel Alexander, Maggie Alexander	3450
26WL	Frisch, Irvin and Lillian	1725
27WL	Clara R. Benear	1932
28WL	John P. Hanlon	2398

Date	Description	By
1-11-72	Rev. Name Pcls. 2, 4, 6, 9, 10 & 12	
	Vol. & Pg. Change Pcls. 11, 26 & 31	E.D.
1-12-72	Rev. Name Pcls. 13, 17, 23, 25 & 27	E.D.
3-10-72	Revised T.B.A. Parcel 3-WL	
	Added Pcl 3-WD	
	Changed Residue of Pcl 30WL	
	To Pcl 30WD	

REVISIONS

Revised Area Pcl 32AS & 20BS 6-28-74
Added Pcl. 32AS & 20BS 4-19-74
Building Removed Pcl 1006 - 2-12-73
New Owner Pcl 1006 - 5-10-72
Name Rev. Pcl 9WL 5-10-72
Removed Structure Pcl 1030-1WL 6-25-74
Added Pcl. 1415 & 1413 1-29-73
Deleted Pcl. 30WD & Added Pcl. 30T 10-4-73
Ownership Change Pcl 1011WL 6-2-72
2-18-74: Deleted 20T, 32T - Revised Name 20S & 32
Deleted Pcl 21WL & Combined it with Pcl 35WL 8-1-72
Changed Name Pcl. 19WL 6-16-72

Note: "Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example - Parcel 241WL would be considered to read Parcel 1241WL."

Note:
Partial Take Details - Sheet 11.
Railroad Easement Details - Sheets 16 & 17.
Supplemental R/W Plan - Sheet 7A & 9A.

Scale: 1" = 50'

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

R/W PLAN

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO	I-77-4(42) R/W ONLY	

377/389

7/19

STARK COUNTY
STA-30-14.12
STA-77-9.22

LEGEND

S	Story
F	Frame
B	Brick
Bl	Conc. Block
M	Metal
H	House
G	Garage
Bldg	Building
O	Office
Ch	Church
Sh	Shed
CW	Concrete Walk
RW	Retaining W
C	Concrete
D	Drive
W	Wire Fence

PARCEL NO	OWNER	AREA
20 Aerial	Norfolk and Western Ry. Co-Lessee	
	Wheeling and Lake Erie Ry. Co.-Lessor	749
20 AS	"	
30WL	City of Canton	634,474
32 Aerial	Penn-Central R.R.-Lessee	
	Pittsburgh, Ft. Wayne and Chicago Ry. Co.-Lessor	49
33WD	Leahy, Robert W. and Rosemary C.	
33T	" " " "	469
35WL	Holland, Thomas O. and Anna M.	43972
36WL	Davis, Beulah M.	3716
37WL	Kinney, Dorothy E.	3135
38WL	Campbell, Samuel S.	3121
39WL	Gary L. Wilhelm, Charlotte E. Wilhelm, Minnie Mae Saunier & Helen M. Wilhelm	5610
40WL	Behringer, Anthony Carl and Marguerite M.	5179
38AWL	Frederick T. 'edh N. Schario	3350
32 S	SEE PCL. 32 AERIAL	1199

Revised Area Pcl. 20 AS 6-28-74
Added Pcls. 20 AS & 32 S 4-19-74
2-15-74: Corrected Name 20 & 32, Deleted 20T-1 & 32T-1

℄ R/W & SURVEY I-77
P.I. Sta. 565+94.90
Δ = 13°49'45" Rt.
D = 1°28'00"
T = 473.75'
L = 942.90'
R = 3906.53'

Note: "Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example - Parcel 241WL would be considered to read Parcel 1241WL."

Note:
Supplemental R/W Plan - Sheet 7A & 9A
Partial Take Details - Sheet 11.
Railroad Easement Details - Sheets 16 & 17.

Scale: 1"=50'

R/W PLAN

"I" FUNDS

Added R.R. Plats Pcls 20 & 32 11-29-73

Date	Description	By
9-24-71	Revised Name Pcl. 39	
	Vol. & Pg. Change Pcl. 36	L.S.
4-20-72	Added Pcl. 38-AWL	D.P.
8-1-72	Deleted Pcl 21WL & Combined it	
	with Pcl 35WL	T.B
9-20-72	REMOVED STRUCTURES - Pcl 1036	J.R.T.
9-26-72	NO STRUCTURE - Pcl 1038 & ADDED BRGS. TO STREETS	JRT

REVISIONS

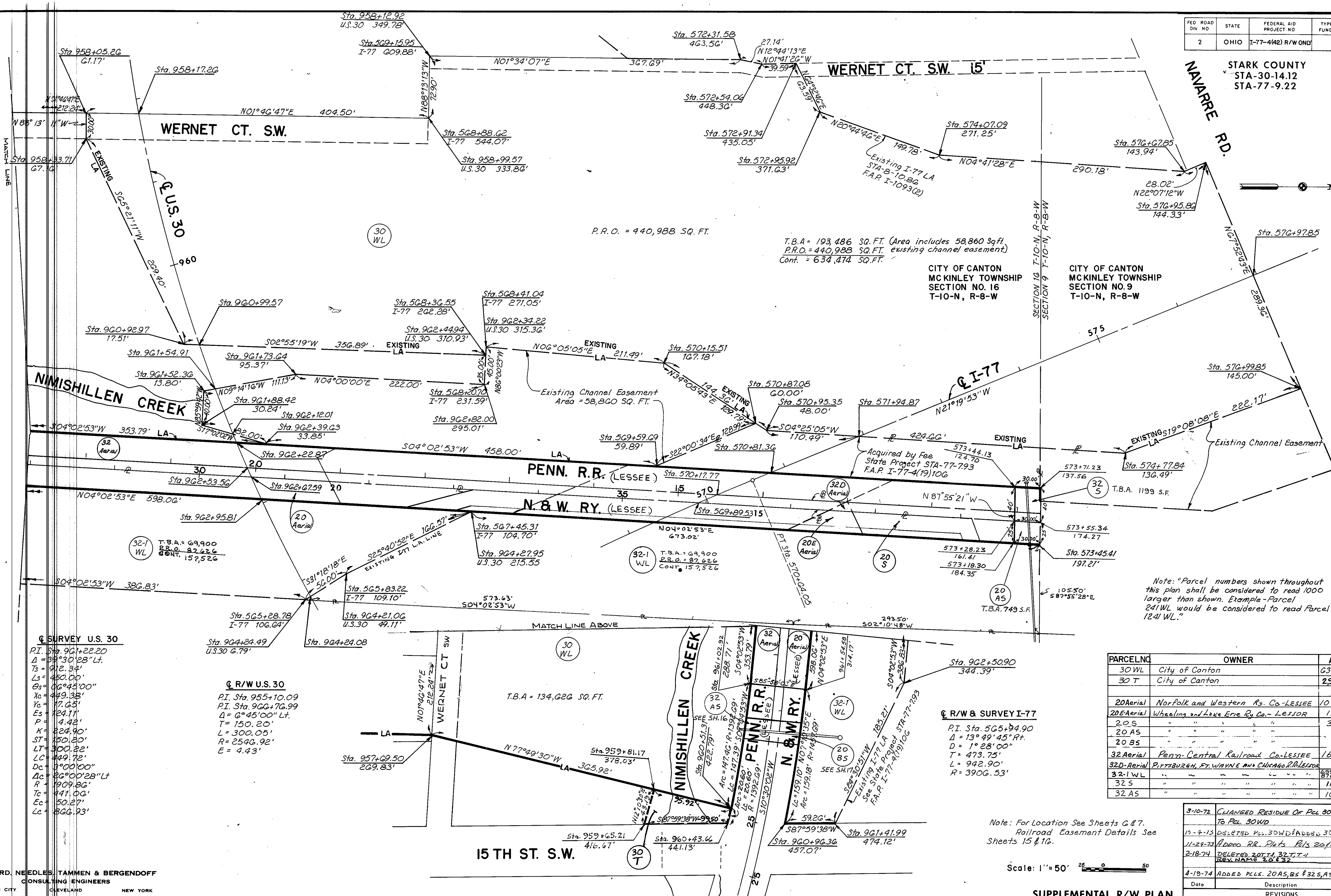
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO	I-77-4(42) R/W ONLY	

378/389

7A/19

STARK COUNTY
STA-30-14.12
STA-77-9.22



Note: "Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example-Parcel 241 WL would be considered to read Parcel 1241 WL."

℄ SURVEY U.S. 30
P.I. Sta. 961+22.20
Δ = 39°30'28" Lt.
Ts = 912.34'
Ls = 450.00'
θs = 06°45'00"
Xc = 449.38'
Yc = 17.65'
Es = 124.11'
P = 4.42'
K = 224.90'
ST = 150.20'
LT = 300.22'
LC = 449.72'
Dc = 3°00'00"
Δc = 26°00'28" Lt
R = 1909.86'
Tc = 441.06'
Ec = 50.27'
Lc = 866.93'

℄ R/W U.S. 30
P.I. Sta. 955+10.09
P.I. Sta. 966+76.99
Δ = 6°45'00" Lt.
T = 150.20'
L = 300.05'
R = 2546.92'
E = 4.43'

℄ R/W & SURVEY I-77
P.I. Sta. 565+94.90
Δ = 13°49'45" Rt.
D = 1°28'00"
T = 473.75'
L = 942.90'
R = 3906.53'

PARCEL NO	OWNER	AREA
30 WL	City of Canton	634,474 Sq.Ft.
30 T	City of Canton	2,986 Sq.Ft.
20 Aerial	Norfolk and Western Ry. Co.-LESSEE	10773
20E-Aerial	Wheeling and Lake Erie Ry Co.-LESSOR	1238
20 S	" " " " "	3477
20 AS	" " " " "	749
20 BS	" " " " "	649
32 Aerial	Penn-Central Railroad Co.-LESSEE	16624
32D-Aerial	PITTSBURGH, FT. WAYNE AND CHICAGO R.R.-LESSOR	28
32-1 WL	" " " " " " "	69900 NET 87626 PRO
32 S	" " " " " " "	1199
32 AS	" " " " " " "	1014

Note: For Location See Sheets 6 & 7.
Railroad Easement Details See Sheets 15 & 16.

Scale: 1" = 50'

Date	Description	By
3-10-72	CHANGED RESIDUE OF PCL 30WL TO PCL. 30WD	
10-4-73	DELETED PCL. 30WD & ADDED 30T	
11-29-73	ADDED RR. Plats Pcls 20 & 32	
2-18-74	DELETED 20T,T-1, 32T,T-1 REV. NAME 20 & 32	
4-19-74	ADDED PCLS. 20AS, BS & 32S, AS	

REVISIONS

SUPPLEMENTAL R/W PLAN

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

REVISED PCLS. 20AS, BS & 32S, AS 6-28-74

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO	I-77-4(42) R/W ONLY	

STARK COUNTY
STA-30-14.12
STA-77-9.22

CITY OF CANTON
MC KINLEY TOWNSHIP
SECTION NO.16
T-10-N, R-8-W

Note: "Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example - Parcel 241WL would be considered to read Parcel 1241 WL."

PARCEL NO.	OWNER	AREA
41WL	Stevens, Anthony G. and Lena A.	3149
41WA	Stevens, Anthony G and Lena A	—
42WL	Cirelli, Arthur J. and Joan M.	2708
42ER	Cirelli, Arthur J. and Joan M.	1665
43WL	Otis Tailey aka Otis Tolley	1768
44WL	Sirpilla, Mary	5690
45WL	STARK OUTDOOR ADVERTISING COMPANY, INC., A MINNESOTA CORPORATION fka NAEGELE OF CANTON, INC.	5965
46WL	Madgett, Scott and Carrie J.	1841
46ER	Madgett, Scott and Carrie J.	—
47WL	John Haywood & Elizabeth Haywood	3357
48WL	Jackson, Nathaniel	4500
49WL	Bender, Griffen aka Willie G., aka Willie Griffen	5391
49WA	Bender, Griffen aka Willie G, aka Willie Griffen	—
49AWL	Gardner, E.E.	758
50WL	Eiler, Mildred, Owner	4169
50AWL	Eloise Donald	3580
51WL	Title Mortgage Company, a Corporation	3577
51AWL	Clarence Miller & Jeanne Miller	1532
51AWA	Clarence Miller & Jeanne Miller	—
52WL	Juanita Greene aka Juanita Theresa Greene	8901
53WL	Shafer, Alice H.	13241
54WL	Worshil Auto Parts Distributing, Inc. aka The Worshil Auto Parts Distributing Company, an Ohio Corporation aka Worshil Auto Parts Distributing, Inc., an Ohio Corporation & Nathan M. Worshil	17815
54S	Worshil Auto Parts Distributing Inc.	2783
54AWL	Worshil Auto Parts Distributing, Inc. aka The Worshil Auto Parts Distributing Company, an Ohio Corporation aka Worshil Auto Parts Distributing, Inc., An Ohio Corporation	8580
54BWL	Nathan M. Worshil	7500

PARCEL NO.	OWNER	AREA
71WL	Coen Oil Company	6155
72WL	Grosse, Harry R. and Mary A	7500
73WL	Sawa, Agnes	2258
75WL	Louis C. Mayer & Ruth Mayer, Fee Owners, Lorenzo Pullin & Emma Pullin, Holders of Land Contract	4672
76WL	Fred G. Portofe aka Fred Portofe	9975
77WL	W.E.S. Realty Co., a corporation	3850
78WL	Jesse Grant and Anna Lee Grant	3650
79WL	Lawrence E. Coffey and Bertha I. Coffey	4000
80WL	Joseph Z. Kapp	3500

PARCEL NO.	OWNER	AREA
81WL	Stark Spring Co.	7500
82WL	Michael P. Hudak & Dolores A. Hudak fka Dolores A. Seifert	3500
83WL	Klepodlo, Anthony and Genieve	4000
84WL	SEE SHEET #5	3500
85WL	Honenkrat, Ray E. and Violet M.	4000
86WL	Thomas, William R.	1875
87WL	Rocket Oil Company, an Ohio corporation	9375
88WL	Beck, Mildred A.	3750
46A WL	Estate of James Fife, Deceased.	705

℄ R/W I-77
P.I. Sta. 531+26.45
P.I. Sta. 550+37.46
$\Delta = 8°00'00''$ Lt.
T = 133.58'
L = 266.73
R = 1910.30'
E = 4.66'

LEGEND

S	Story
F	Frame
B	Brick
Bl	Conc. Block
M	Metal
H	House
G	Garage
Bldg.	Building
O	Office
Ch	Church
Sh	Shed
CW	Concrete Walk
RW	Retaining Wall
C	Concrete
D	Drive
W	Wire Fence

℄ SURVEY DATA I-77
P.I. Sta. 543+03.45

Δ = 81°46'06" Lt.	E_s = 468.35'		
T_s = 1443.94'	P = 4.65'		
L_s = 400.00'	k = 199.87'		
θ_s = 8°00'00"	ST = 133.58'		
X_c = 399.22'	LT = 266.94'		
Y_c = 18.59'	LC = 399.65'		
	Dc = 4°00'00"		
	Δc = 65°46'00"		
	R = 1432.39'		
	Tc = 926.07'		
	Lc = 1644.17'		

ADDED 1054-T-1-28-75
DELETED 1050 ... & ADDED NOTE-PCL 70 2-15-74
Deleted Land Contract Holder, Pcl 51AWL, 51AWA, 1-10-74
REV. NAME PCL 1084-12-4-73
Revised Parcel ... 11-29-73
Changed Pcl 51AWL to 51AWA 6-16-72
Rev. Name & Added Name Pcl 51AWL, 51AWA 6-16-72
NAME CHANGE PCL 45 3-27-74
Rev. Name PCL 75WL 5-8-73

PARCEL NO.	OWNER	AREA	PARCEL NO.	OWNER	AREA
54WA	Worshil Auto Parts Distributing Inc.	—	62WL	Knell, Morris L., Frederick, Paul H. and Charles E.	3120
55WL	Vader, Ida G.	3296			
56WL	Clara Nicholson	5581	65WL	Worshil Auto Parts Distributing Co.	7500
57WL	Estate of Vincent C. Dollive, Deceased	11286	66WL	S and W. Realty Company	7500
58WL	Martin, Bessie	5814	67WL	Ann Burrino	7500
59WL	Mc Grady, Bessie M.	5625	68WL	See Summary Sheet No. 5	6843
60WL	Mary Lippka	3375	69WL	Ann D. Harp fka Ann D. Vukich	4708
61WL	Hilton, Susan A.	2250	70-1WL	Baltimore and Ohio R.R. Co.	1618
			70-1 Aerial	" " " " " "	3930

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

Scale: 1"=50'

Note:
Supplemetal R/W Plan - Sheet 9A.
Partial Take Details - Sheets 12, 13, & 14.
Railroad Easement Details - Sheet 17.

11-14-72 Rev. Name Pcl 69
1046 ... 7-3-74
1047 ... 6-17-74

Date	Description	By
1-21-72	Rev. Name Pcls. 43, 47, 50AWL, 52 & 56	E.D.
1-25-72	Rev. Name Pcls. 57, 60, 65, 68, 76 & 77	E.D.
1-26-72	Rev. Name Pcls. 78, 79, 80, 82, 84 & 87	E.D.
1-27-72	Vol. & Pg. Change 69, 73 & 88	E.D.
6-16-72	Changed Name Pcl 45WL	T.B.
6-16-72	Rev. Name Pcl 46AWL, 51WL, 51AWL, 51AWA	T.B.
6-16-72	Added Name Pcl 50WL, 51AWL, 51AWA	T.B.

REVISIONS

REV NAME - PCL 1050 - 10-15-73

"I" FUNDS
R/W PLAN

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO	I-77-4(42) R/W ONLY	

380 / 389

9 / 19

STARK COUNTY
STA-30-14.12
STA-77-9.22

END ACQUISITION
STA-30-14.12
STA-77-9.22
F.A.P. I-77-4(42)
Sta. 974+02.80

BEGIN ACQUISITION
STA-30-15.04
STA-77-9.22
F.A.P. I-77-4(42)

℄ SURVEY U.S. 30
P.I. Sta. 980+31.56
Δ = 38°57'52" Rt.
Ts = 902.11'
Ls = 450.00'
Os = 06°45'00"
Xc = 449.38'
Yc = 17.65'
Es = 120.67'
P = 4.42'
K = 224.90'
ST = 150.20'
LT = 300.22'
Lc = 449.72'
Dc = 03°00'00"
Δc = 25°25'52" Rt.
R = 1909.86'
Tc = 431.53'
Ec = 48.14'
Lc = 848.81'

CITY OF CANTON
MCKINLEY TOWNSHIP
SECTION NO. 9
T-10-N, R-8-W

Note: "Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example - Parcel 241/WL would be considered to read Parcel 1241/WL."

CITY OF CANTON
MCKINLEY TOWNSHIP
SECTION NO. 16
T-10-N, R-8-W

℄ R/W U.S. 30
P.I. Sta. 974+29.68
P.I. Sta. 985+78.47
Δ = 6°45'00" Rt.
R = 2546.92'
T = 150.20'
L = 300.05'
E = 4.43'

END FEDERAL PROJECT FUNDING
BEGIN 100% STATE FUNDING
STA-77-9.22
F.A.P. I-77-4(42)
Sta. 984+34.42

LEGEND

S	Story
F	Frame
B	Brick
Bl	Conc. Block
M	Metal
H	House
G	Garage
Bldg	Building
O	Office
Ch	Church
Sh	Shed
CW	Conc. Walk
RW	Retaining Wall
C	Concrete
D	Drive
W	Wire Fence

Note:
Crosshatched Area
Aquired for STA-30-15.04.

"I" FUNDS ADDED 1109-T 11-22-74
11-1-74 DELETED PCL 117-WD 1111ER 2-14-75

Date	Description	By
11-29-73	ADDED Pcl 70 (R.R. Plats)	
2-12-74	PCL 111WL - SHOWED STRUCTURE AS "RAZED" - DELETED 111WA	R.S.
2-15-74	ADDED 111-E - DELETED 5-21-74	JRT
2-20-74	DELETED 70T-1, T-2, T-3, T-4, T-5, T-6	R.S.
5-21-74	DEL. 1114 BWA	J.K.
~~6-10-74~~ 4-24-75	ADDED 1109 EL	JRT
10-21-74	CHANGE 114AWA TO 114AT	J.K.

REVISIONS

Note:
Partial Take Details - Sheet 15
Railroad Easement Details - Sheets 18
Parcel Tabulation - Sheet 10
Supplemental R/W Plan - Sheet 9A

Scale: 1" = 50'

R/W PLAN

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

DELETED 117WA 3-7-75

FED ROAD DIV NO	STATE	FEDERAL AID PROJECT NO	TYPE FUNDS
2	OHIO	I-77-4(42)R/W ONLY	

9A
19

STARK COUNTY
STA-30-14.12
STA-77-9.22

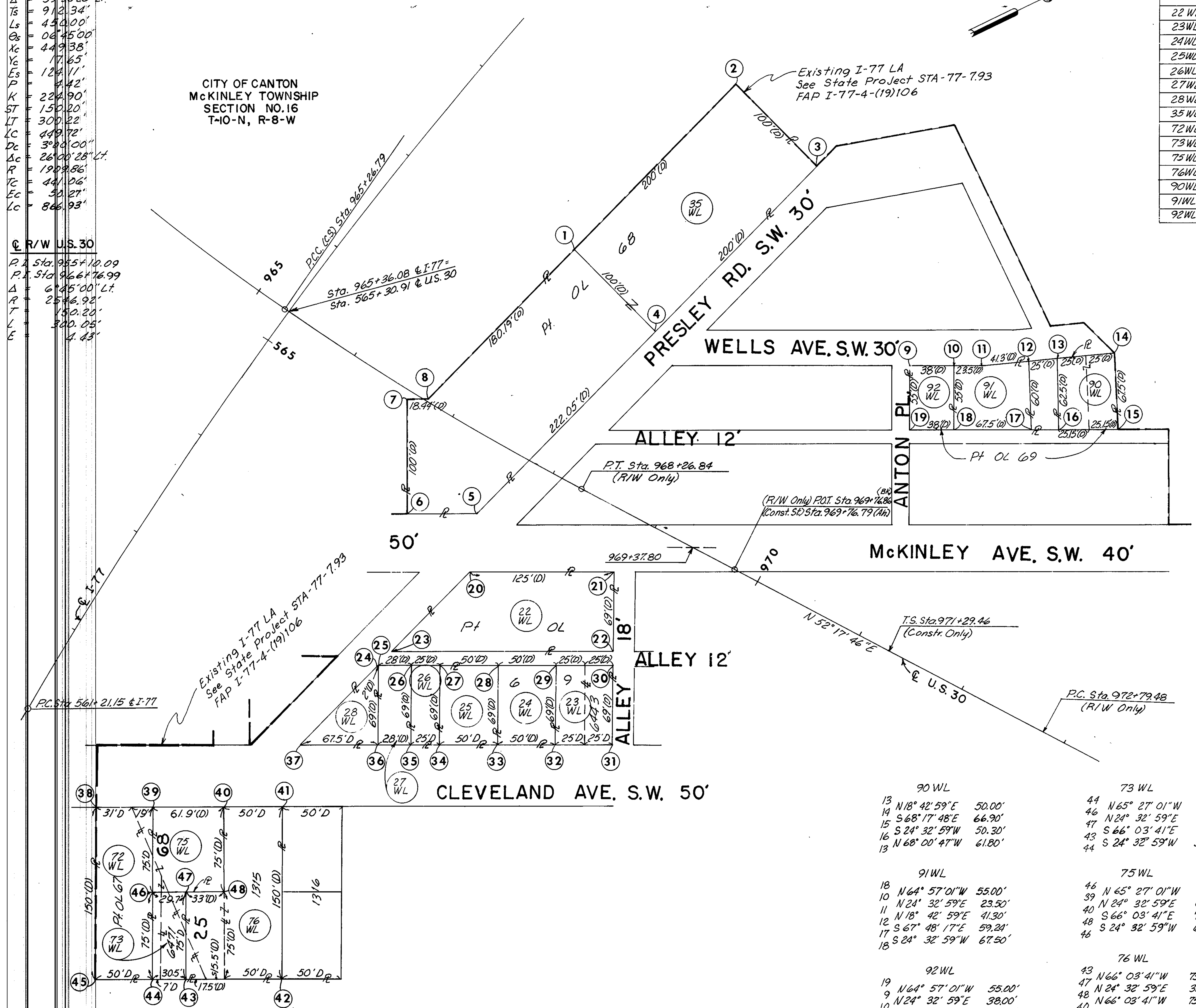
Deleted Pcl 21WL & Combined it with Pcl 35WL 8-1-72

℄ SURVEY U.S. 30

P.I. Sta. 961+22.20
Δ = 39°30'28" Lt.
Ts = 912.34'
Ls = 450.00'
θs = 06°45'00"
Xc = 449.38'
Yc = 17.65'
Es = 124.11'
P = 4.42'
K = 224.90'
ST = 150.20'
LT = 300.22'
LC = 449.72'
Dc = 3°00'00"
Δc = 26°00'28" Lt.
R = 1909.86'
Tc = 441.06'
Ec = 50.27'
Lc = 866.93'

℄ R/W U.S. 30

P.I. Sta. 955+10.09
P.I. Sta. 966+76.99
Δ = 6°45'00" Lt.
R = 2546.92'
T = 150.20'
L = 300.05'
E = 4.43'



PARCEL NO	OWNER	AREA
22 WL	Beck Robert E.	10934
23 WL	Pearl E. McCarty	3450
24 WL	Burton, William and Gladys C.	3450
25 WL	Excel Alexander, Maggie Alexander	3450
26 WL	Frisch, Irvin and Lillian	1725
27 WL	Clara R. Benear	1932
28 WL	JOHN P. HANLON	2398
35 WL	Holland, Thomas O. and Anna M.	43972
72 WL	Grosse, Harry R. and Mary A.	7500
73 WL	Sawa, Agnes	2258
75 WL	Louis C. Meyers & Ruth Meyers, Fee Owners; Loranzo Pullins, Emma Pulins Holders of Land Contract	4672
76 WL	Fred G. Portofe aka Fred Portofe	9975
90 WL	James T. Parker & Perline Parker	3223
91 WL	LOUIS ROGOVIN & BERNIE GREEN	3724
92 WL	Behringer, Anthony C.	2090

POINT	STATION	OFFSET
1	967+17.48	177.60' Lt.
2	967+74.82	370.96' Lt.
3	968+77.84	341.56' Lt.
4	968+20.18	149.92' Lt.
5	967+59.20	61.83' Lt.
6	967+07.62	92.33' Rt.
7	966+57.55	7.17' Rt.
8	966+73.28	2.43' Lt.
9	970+28.67	226.23' Lt.
10	970+62.30	243.92' Lt.
11	970+83.10	254.86' Lt.
12	971+17.50	277.70' Lt.
13	971+38.33	291.53' Lt.
14	971+79.99	319.18' Lt.
15	972+14.04	261.60' Lt.
16	971+69.52	238.18' Lt.
17	971+47.22	226.44' Lt.
18	970+87.48	195.02' Lt.
19	970+53.85	177.33' Lt.
20	967+76.83	108.91' Rt.
21	968+85.33	50.20' Rt.
22	969+16.92	111.54' Rt.
23	967+52.90	202.06' Rt.
24	967+48.91	218.28' Rt.
25	967+49.37	218.00' Rt.
26	967+71.93	204.32' Rt.
27	967+92.27	192.30' Rt.
28	968+33.91	168.77' Rt.
29	968+78.16	145.49' Rt.
30	969+22.41	122.21' Rt.
31	969+54.00	183.56' Rt.
32	969+09.75	206.84' Rt.
33	968+65.50	230.11' Rt.
34	968+21.75	253.40' Rt.
35	968+01.74	265.17' Rt.
36	967+79.51	278.55' Rt.
37	967+26.82	311.70' Rt.
38	966+18.83	445.33' Rt.
39	966+55.08	418.82' Rt.
40	967+00.84	386.85' Rt.
41	967+38.54	361.73' Rt.
42	968+02.05	492.14' Rt.
43	967+41.60	532.36' Rt.
44	967+19.79	547.56' Rt.
45	966+84.50	572.98' Rt.
46	966+88.12	482.95' Rt.
47	967+09.66	467.82' Rt.
48	967+33.84	451.26' Rt.

22 WL

21–22	S 64° 57' 01"E	69.00'
22–23	S 24° 32' 59"W	191.94'
23–20	N 21° 04' 01"W	96.54'
20–21	N 24° 32' 59"E	125.01'

23 WL

30–31	S 64° 57' 01"E	69.00'
31–32	S 24° 32' 59"W	50.00'
32–29	N 64° 57' 01"W	69.00'
29–30	N 24° 32' 59"E	50.00'

24 WL

29–32	S 64° 57' 01"E	69.00'
32–33	S 24° 32' 59"W	50.00'
33–28	N 64° 57' 01"W	69.00'
28–29	N 24° 32' 59"E	50.00'

25 WL

28–33	S 64° 57' 01"E	69.00'
33–34	S 24° 32' 59"W	50.00'
34–27	N 64° 57' 01"W	69.00'
27–28	N 24° 32' 59"E	50.00'

26 WL

27–34	S 64° 57' 01"E	69.00'
34–35	S 24° 32' 59"W	25.00'
35–26	N 64° 57' 01"W	69.00'
26–27	N 24° 32' 59"E	25.00'

27 WL

26–35	S 64° 57' 01"E	69.00'
35–36	S 24° 32' 59"W	28.00'
36–25	N 64° 57' 01"W	69.00'
25–26	N 24° 32' 59"E	28.00'

28 WL

25–36	S 64° 57' 01"E	69.00'
36–37	S 24° 32' 59"W	67.50'
37–24	N 21° 04' 01"W	96.54'
24–25	N 24° 32' 59"E	0.57'

90 WL

13–14	N 18° 42' 59"E	50.00'
14–15	S 68° 17' 48"E	66.90'
15–16	S 24° 32' 59"W	50.30'
16–13	N 68° 00' 47"W	61.80'

91 WL

18–10	N 64° 57' 01"W	55.00'
10–11	N 24° 32' 59"E	23.50'
11–12	N 18° 42' 59"E	41.30'
12–17	S 67° 48' 17"E	59.24'
17–18	S 24° 32' 59"W	67.50'

92 WL

19–9	N 64° 57' 01"W	55.00'
9–10	N 24° 32' 59"E	38.00'
10–18	S 64° 57' 01"E	55.00'
18–19	S 24° 32' 59"W	38.00'

73 WL

44–46	N 65° 27' 01"W	75.00'
46–47	N 24° 32' 59"E	29.70'
47–43	S 66° 03' 41"E	75.00'
43–44	S 24° 32' 59"W	30.50'

75 WL

46–39	N 65° 27' 01"W	75.00'
39–40	N 24° 32' 59"E	61.90'
40–48	S 66° 03' 41"E	75.00'
48–46	S 24° 32' 59"W	62.70'

76 WL

43–47	N 66° 03' 41"W	75.00'
47–48	N 24° 32' 59"E	33.00'
48–40	N 66° 03' 41"W	75.00'
40–41	N 24° 32' 59"E	50.00'
41–42	S 66° 03' 41"E	150.01'
42–43	S 24° 32' 59"W	83.00'

72 WL

45–38	N 65° 27' 01"W	150.00'
38–39	N 24° 32' 59"E	50.00'
39–44	S 65° 27' 01"E	150.00'
44–45	S 24° 32' 59"W	50.00'

35 WL

1–2	N 21° 04' 01"W	200.00'
2–3	N 69° 39' 59"W	100.00'
3–4	S 21° 04' 01"E	200.00'
4–5	S 21° 04' 01"E	220.05'
5–6	S 24° 32' 59"W	61.28'
6–7	N 65° 24' 01"W	99.28'
7–8	N 24° 32' 59"E	18.44'
8–1	N 21° 04' 01"W	180.28'

Note: For Location See Sheets 6, 7, 8 & 9.

Note: "Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example - Parcel 241 WL would be considered to read Parcel 1241 WL."

"I" FUNDS

Date	Description	By
1-17-72	Revised Name Pcls. 23, 25, 27 Vol. & Pg. Change Pcl. 26	E.D.
1-28-72	Revised Name Pcls. 76, 90, & 91 Vol. & Pg. Change 73 & 92	E.D.
3-21-72	Name CHANGE & Rev. TBA Pcl. 1028 WL	
7-17-72	OUTSALE - Pcl. 1091 NEW Owner	JRT
5-8-73	Revised Name Pcl. 75-WL	

REVISIONS

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

Scale: 1"=50' 25 0 50

SUPPLEMENTAL R/W PLAN

STARK COUNTY
STA-30-14.12
STA-77-9.22

PARCEL NO.	OWNER	AREA

PARCEL NO.	OWNER	AREA

PARCEL NO.	OWNER	AREA
70A	Baltimore and Ohio R.R. Co.	1522
70B	" " " "	32
70C	" " " "	433
70D	" " " "	1070
70E	" " " "	288
70F	" " " "	664
70G	Baltimore and Ohio R.R. Co.	513
70 Aerial	Baltimore and Ohio R.R. Co.	3930
70H-Aerial	" " " "	163
70I-Aerial	" " " "	467
70J-Aerial	" " " "	6472
70K-Aerial	" " " "	5253
70L-Aerial	" " " "	395
70M-Aerial	Baltimore and Ohio R.R. Co.	11833
70-2 WL	" " " "	2678

PARCEL NO.	OWNER	AREA
71-1WL	Coen Oil Company	7495
71-2WL	Coen Oil Company	14876
89WL	Coen Oil Company	2888
90WL	James T. Parker & Perline Parker	3223
91WL	Morris Cooper	3724
92WL	Behringer, Anthony C.	2090
93WL	Howard J. Volzer & Anna M. Volzer	2750
94WL	Kohler, Ernest P. and Helen N.	2200
95WL	The Title Mortgage Company, a corporation	1650
96WL	Betty C. Dehoff & Dale G. Hossler	5316
97WL	Sellman, Vera Treesh	1750
98WL	Leona Sanders & Debbie Sanders	1750
99WL	George E. Alsup & Mamie B. Alsup	1750
100WL	Ward, Orville E. and Blanche G	1750
101WL	Hoagland, Leroy M. and Jennie F.	5250
102WL	Neimanis, Voldemars and Anna	3500
103WL	Estate of Andrew Fomich & Rose Fomich	1750
104WL	Gipe, Lawrence G.	2800
105WL	Raymond L. Byers, Frederick W. Byers, Charles N. Byers, Owners; Pearl E. Byers, Life Estate	2450
106WL	Patterson, Carlos A. and Mary C.	1750
107WL	Olive Crane	1750
108WL	C. Earl Williams aka C. Earle M. Williams	3500
109WD	Randel C. Dotson & Estate of Dollie K. Dotson, Deceased, Owner. Nelson	561
109WA	Hess & Barbara Hess, Holder of Land Contract	—
110WD	Swiney, Otis D.	788
110WA	Swiney, Otis D.	—
111WD	Weintraub, Moses	1108
111WA	Weintraub, Moses	—

PARCEL NO.	OWNER	AREA
112WD	Lillian Glaser	2004
113WD	Baum, Niles H.	2367
114WL	Frederick L. Poore & Darlene R. Poore	3180
114AWD	Elonia Youngblood & Willie Christian	3493
114BWA	Elonia Youngblood & Willie Christian	—
115WL	Stephen A Ginella, Pauline C. Ginella, Russell T. Kiko, Colletta Kiko	4375
116WL	Kame George K.	4745
117WD	Dwight W. Sheffer	8
117WA	Dwain R. Sheffer	—
118WL	Glenn R. Stofer Owner; Grace L. Stofer, Life Estate	2062
119WL	Garner, Dorthy Ann	2062
120WL	Snedeker, Hazel	4050
121WL	Yennie, Donald L.	1875
122WL	Paul H. Boldt, Jr. & Donna J. Boldt	1875
123WL	Alfonso A. Lebbano & Sarah B. Lebbano	1875
124WL	Wiegreff, Darline A.	1875
125WL	Bush, L.B. and Ethel D	3750
126WL	Bacher, Henry and Mary	3750
127WL	Williams, Weldon and Earline	3750
128WL	Leidtke, Homer J.	3750
129WL	Kuemerle, Ethel C.	3750
130WL	Cook, Bernice M and Berdine B.	3750
131WL	Johnson, Cleveland and Lucille	1875
132WL	Meyers, Louis C. and Ruth	1875
133WL	Bain, Getrude	1500
134WL	United Housing, Inc.	2250
135WL	Albert O. Henninger	1875
136WL	Betty Becker Fka Betty Kalil	1875
137WL	Earl Haubert, Catherine M. King, Marie Schawlem, George J. Henrich, Robert Henrich	1875
138WL	M. Catherine Dollive, Catherine D. Pavlos, B. Vincent Dollive, Peter D. Dollive	1875
138AWL	Demeo, David D	2100
138BWL	Riner, Frank	2095
138CWL	Salimbeni, Russel J. & Susie J.	2202

Parcel tabulation for Sheet 9 Project STA 30-14.12

Note: "Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example - Parcel 241WL would be considered to read Parcel 1241 WL."

6-18-74 Name change Pcl. 117
2-20-74: DELETED 70T, T-1, T-2, T-3, T-4, T-5, T-6 R.S.

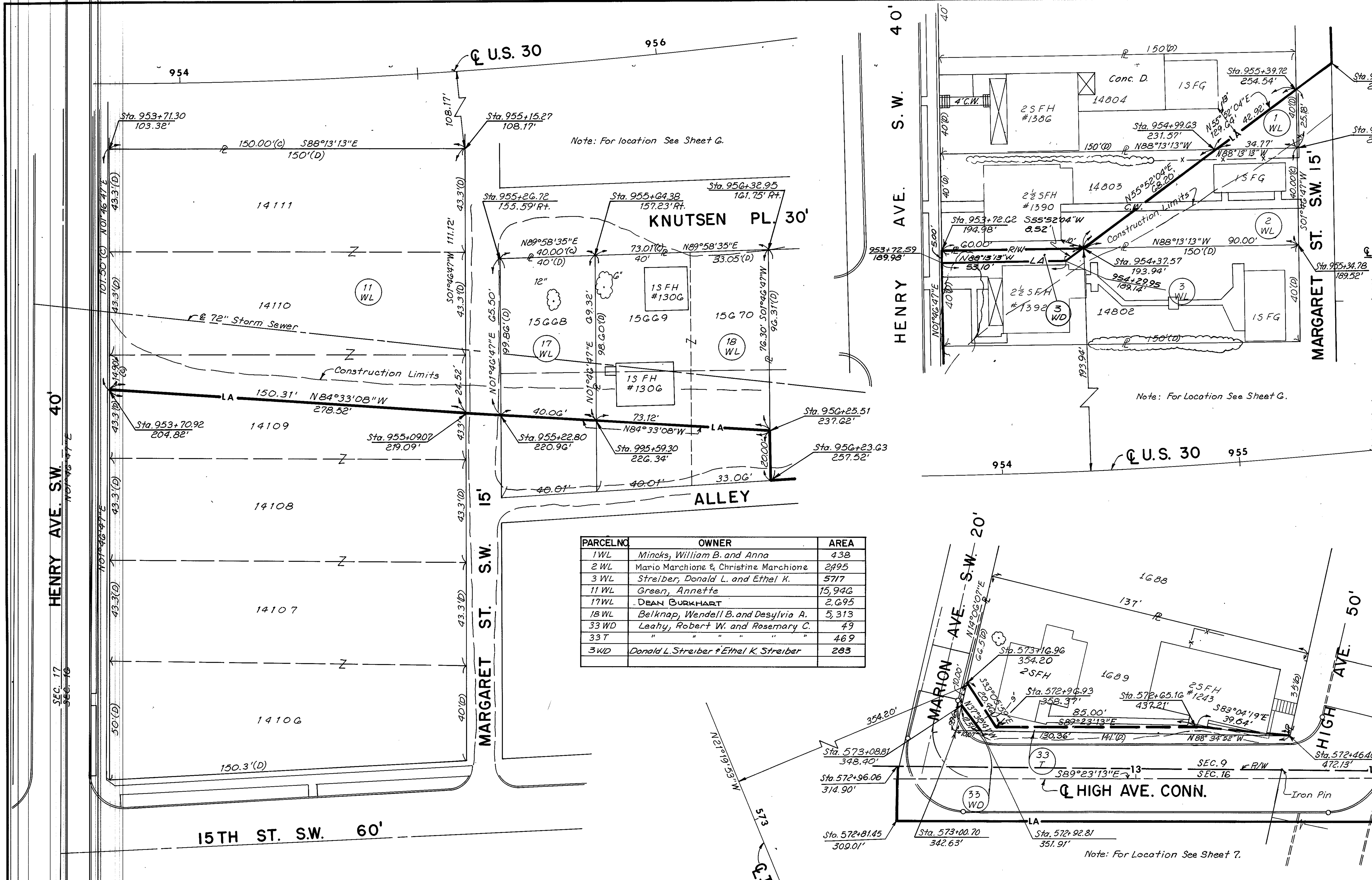
12-27-73 Pcl. 136 Rev. Name JRT

Date	Description	By
2-2-72	Rev. Name Pcls. 90, 91, 93, 94, 95 & 96	
	Rev. Name Pcls. 98, 99, 103, 105 & 107	E.D.
2-3-72	Rev. Name Pcls. 108, 109, 112, 114,	
	114A-B, 118, 122, 123, 135, & 138	E.D.
2-4-72	Vol. & Pg. Change Pcls. 71-1WL, 92, 113,	
	130 & 133	E.D.
11-29-73	Added R.R. Plats Pcl 70	

REVISIONS

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

STARK COUNTY
STA-30-14.12
STA-77-9.22



PARCEL NO.	OWNER	AREA
1 WL	Mincks, William B. and Anna	438
2 WL	Mario Marchione & Christine Marchione	2495
3 WL	Streiber, Donald L. and Ethel K.	5717
11 WL	Green, Annette	15,946
17 WL	Dean Burkhart	2,695
18 WL	Belknap, Wendell B. and Desylvia A.	5,313
33 WD	Leahy, Robert W. and Rosemary C.	49
33 T	" " " " " "	469
3 WD	Donald L. Streiber & Ethel K. Streiber	283

℄ SURVEY U.S. 30
P.I. Sta. 961+22.20
Δ = 39°30'28" Lt.
Ts = 912.34'
Ls = 450.00'
θs = 06°45'00"
Xc = 449.38'
Yc = 17.65'
Es = 124.11'
P = 4.42'
K = 224.90
LT = 300.22'
LC = 449.72'
Dc = 3°00'00"
Δc = 26°00'28" Lt.
R = 1909.86'
Tc = 441.06'
Ec = 50.27'
Lc = 866.93'
ST = 150.20'

℄ R/W U.S. 30
P.I. Sta. 955+10.09
P.I. Sta. 966+76.99
Δ = 6°45'00" Lt.
T = 150.20'
L = 300.05'
R = 2546.92'
E = 4.43'

CITY OF CANTON
MCKINLEY TOWNSHIP
SECTION NO. 16
T-10-N, R-8-W

"I" FUNDS

Note: "Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example - Parcel 241 WL would be considered to read Parcel 1241 WL."

Date	Description	By
1-12-72	Rev. Name Pcls. 2 & 17	
	Vol. & Pg. Change Pcl. 11	E.D.
3-10-72	Added Pcl 3-WD, Revised T.B.A. Pcl. 3WL	
7-31-72	New Owner Pcl 1017	JRT

REVISIONS

Scale: 1" = 20'

PARTIAL TAKE DETAILS

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

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO	I-77-4(42) R/W ONLY	

384 / 389

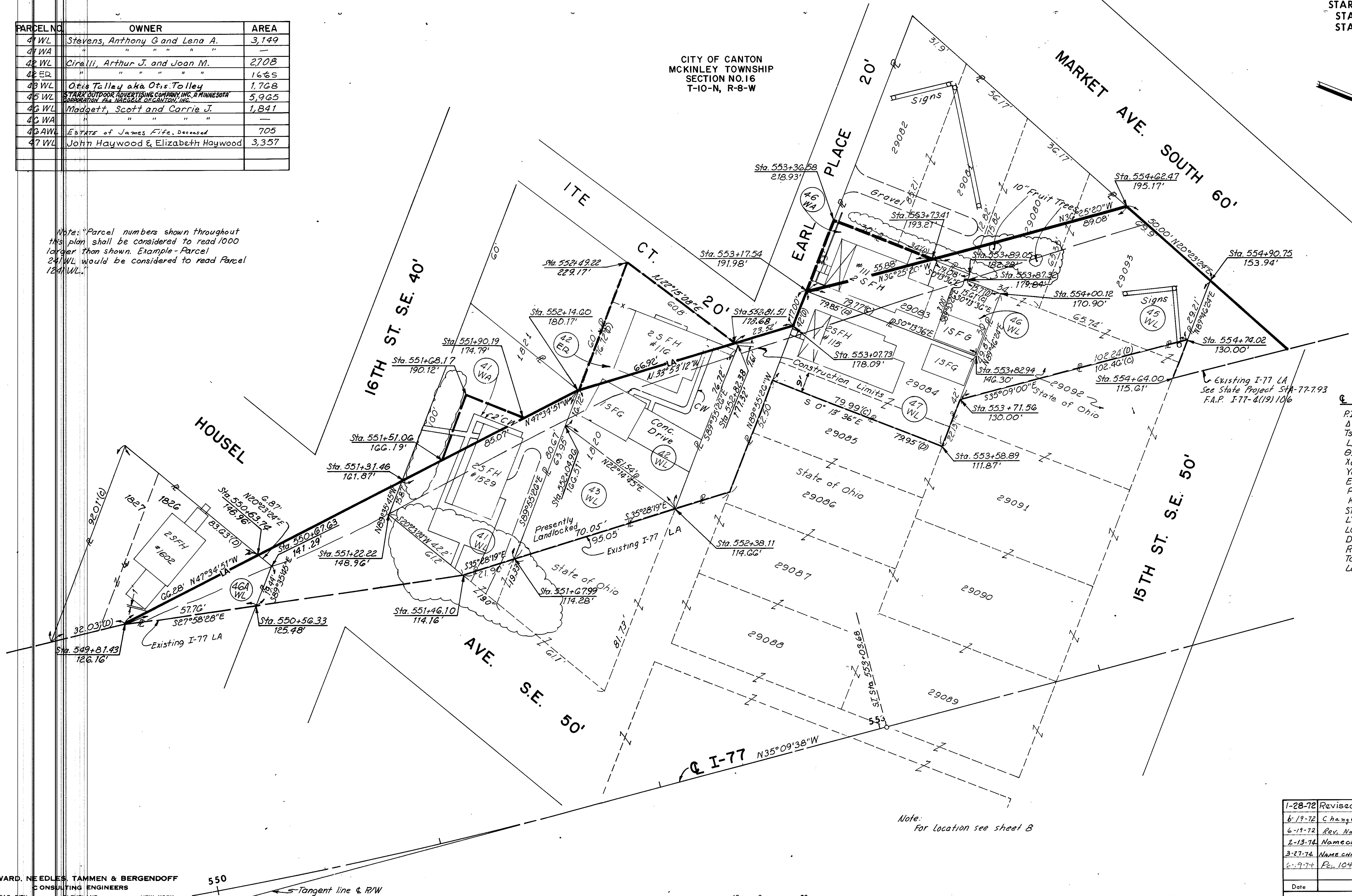
12 / 19

STARK COUNTY
STA-30-14.12
STA-77-9.22

CITY OF CANTON
MCKINLEY TOWNSHIP
SECTION NO.16
T-10-N, R-8-W

PARCEL NO.	OWNER	AREA
41 WL	Stevens, Anthony G and Lena A.	3,149
41 WA	" " " " " "	—
42 WL	Cirelli, Arthur J. and Joan M.	2708
42 ER	" " " " " "	1665
43 WL	Otis Talley aka Otis Tolley	1,768
45 WL	STARK OUTDOOR ADVERTISING COMPANY, INC., A MINNESOTA CORPORATION fka NAEGELE OF CANTON, INC.	5,965
46 WL	Madgett, Scott and Carrie J.	1,841
46 WA	" " " " "	—
46 AWL	Estate of James Fife, Deceased	705
47 WL	John Haywood & Elizabeth Haywood	3,357

Note: "Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example - Parcel 241WL would be considered to read Parcel 1241WL."



℄ SURVEY DATA I-77

P.I. Sta. 543+03.45
Δ = 81°46'00" Lt.
Ts = 1443.94'
Ls = 400.00'
θs = 8°00'00"
Xc = 399.22'
Yc = 18.59'
Es = 468.35'
P = 4.65'
K = 199.87'
ST = 133.58'
LT = 266.94'
LC = 399.65'
Dc = 4°00'00"
R = 1432.39'
Tc = 962.07'
Lc = 1644.17'

Note:
For location see sheet 8

"I" FUNDS

Date	Description	By
1-28-72	Revised Name Pcls. 43 & 47	E.D.
6-19-72	Changed Name Pcl. 45WL	T.B.
6-19-72	Rev. Name Pcl. 46AWL	TB
2-13-74	Namechange Pcl. 43	GAS
3-27-74	NAME CHANGE Pcl. 45	GAS
6-19-74	Pcl. 1042 ER	JZ

REVISIONS

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

Scale: 1"=20' 10 0 20

PARTIAL TAKE DETAILS

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO	I-77-4(42) R/W ONLY	

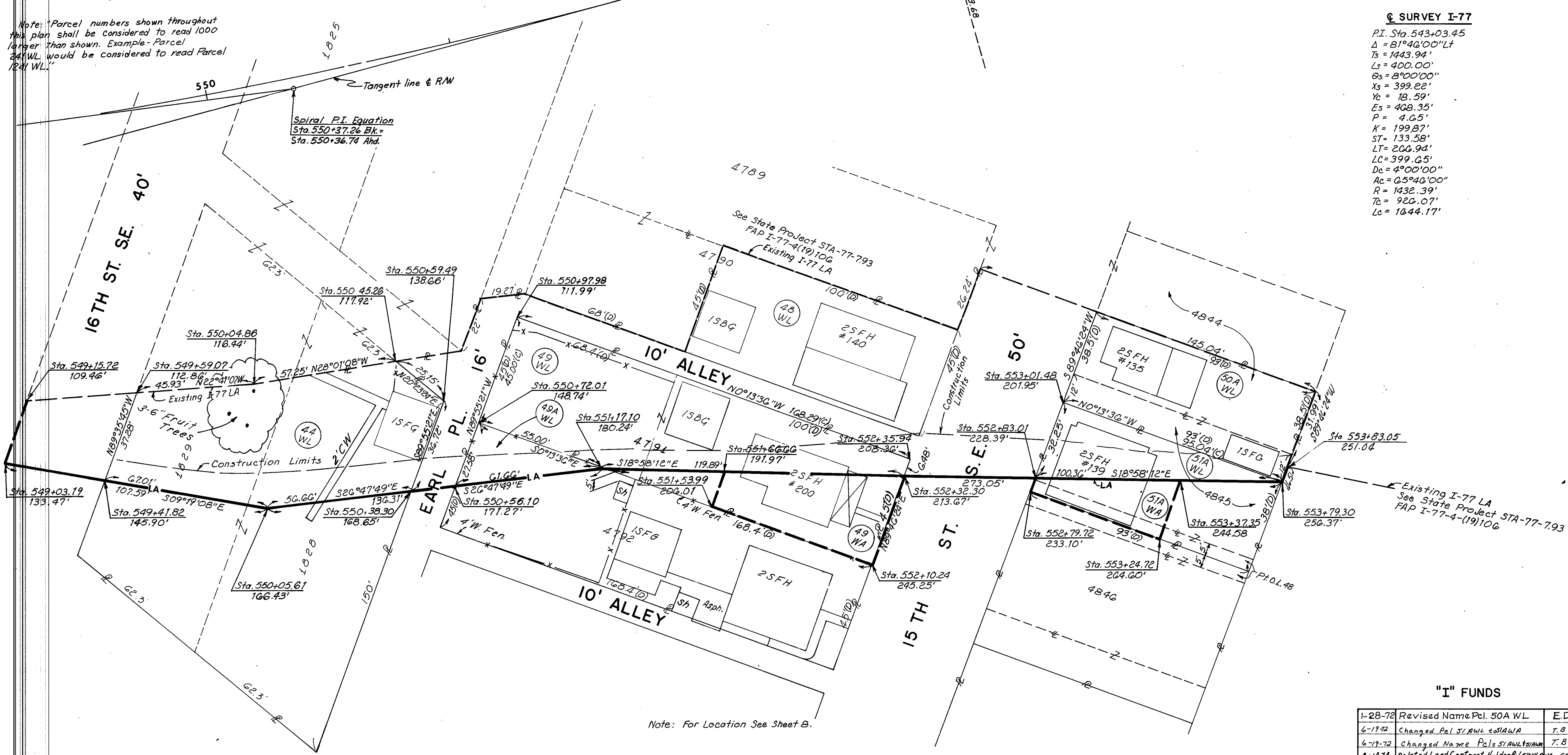
CITY OF CANTON
MC KINLEY TOWNSHIP
SECTION NO.16
T-10-N, R-8-W

STARK COUNTY
STA-30-14.12
STA-77-9.22

PARCEL NO.	OWNER	AREA
44 WL	Sirpilla, Mary	5690
48 WL	Jackson, Nathaniel	4500
49 WL	Bender, Griffen ▫	5391
49 WA	" "	——
49 AWL	Gardner, E.E.	758
50 AWL	Eloise Donald	3580
51 AWL	CLARENCE MILLER & JEANNE MILLER	1532
51 AWA	CLARENCE MILLER & JEANNE MILLER	——

▫ See Ownership Summary for Complete Name.

Note: "Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example - Parcel 241 WL would be considered to read Parcel 1241 WL."



℄ SURVEY I-77
P.I. Sta. 543+03.45
Δ = 81°46'00" Lt
Ts = 1443.94'
Ls = 400.00'
θs = 8°00'00"
Xs = 399.22'
Yc = 18.59'
Es = 468.35'
P = 4.65'
K = 199.87'
ST = 133.58'
LT = 266.94'
LC = 399.65'
Dc = 4°00'00"
Ac = 65°46'00"
R = 1432.39'
Tc = 926.07'
Lc = 1644.17'

Note: For Location See Sheet 8.

"I" FUNDS

Date	Description	By
1-28-72	Revised Name Pcl. 50A WL	E.D.
6-19-72	Changed Pcl 51 AWL to 51AWA	T.B
6-19-72	Changed Name Pcls 51 AWL & 51AWA	T.B
1-14-74	Deleted Land Contract Holder, Pcl, 51AWL & AWA	GAS

REVISIONS

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

Scale: 1"=20' 10 0 20

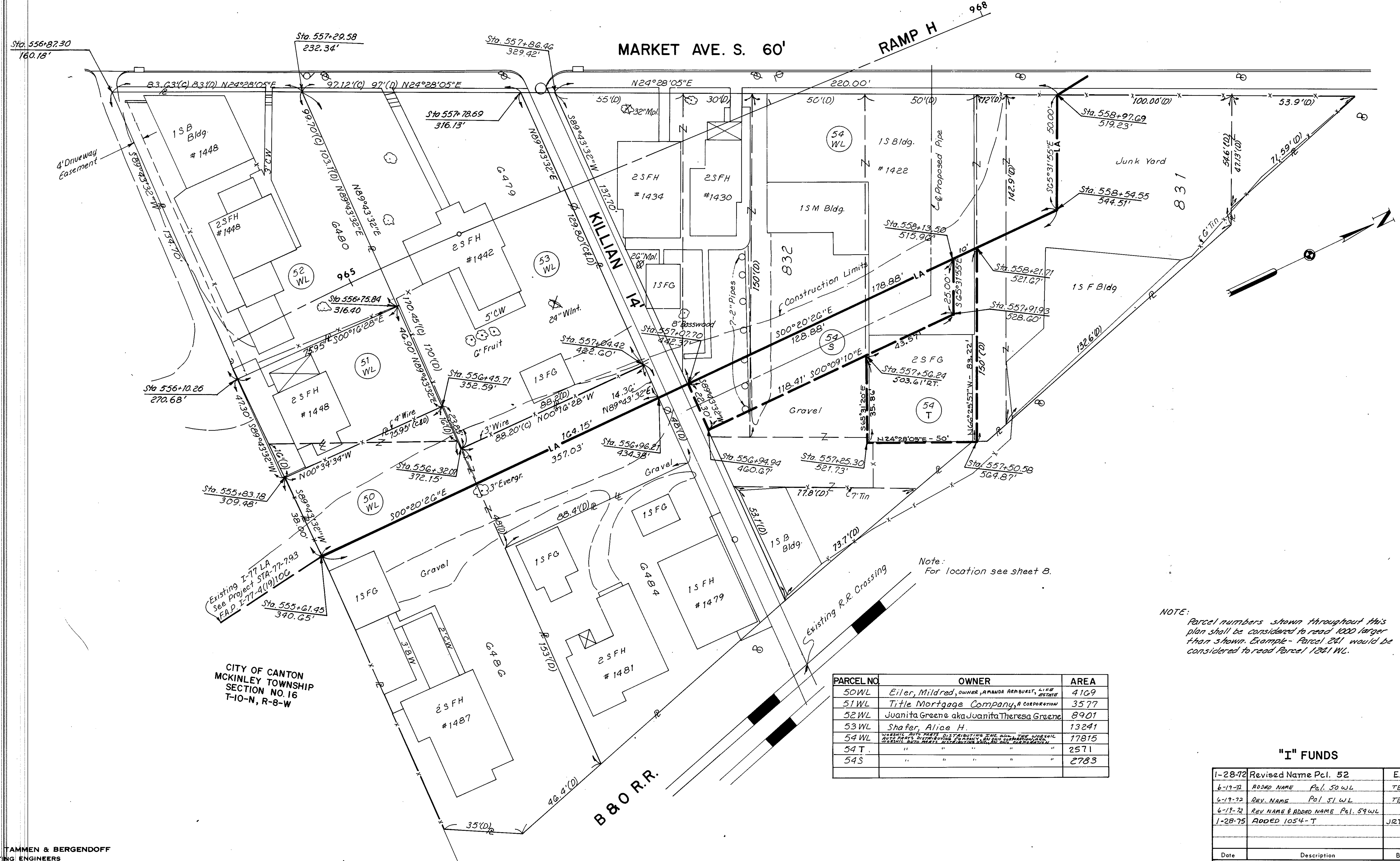
PARTIAL TAKE DETAILS

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO	I-77-4(42) R/W ONLY	

386/389

14/19

STARK COUNTY
STA-30-14.12
STA-77-9.22



Note:
For location see sheet 8.

NOTE:
Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example- Parcel 261 would be considered to read Parcel 1261 WL.

PARCEL NO.	OWNER	AREA
50WL	Eiler, Mildred, OWNER, AMANDA ARMBURST, LIFE ESTATE	4169
51WL	Title Mortgage Company, A CORPORATION	3577
52WL	Juanita Greene aka Juanita Theresa Greene	8901
53WL	Shafer, Alice H.	13241
54WL	WORSHIL AUTO PARTS DISTRIBUTING INC. aka. THE WORSHIL AUTO PARTS DISTRIBUTING COMPANY, AN OHIO CORPORATION, aka WORSHIL AUTO PARTS DISTRIBUTING INC., AN OHIO CORPORATION	17815
54T	" " " " "	2571
54S	" " " " "	2783

"I" FUNDS

Date	Description	By
1-28-72	Revised Name Pcl. 52	E.D.
6-19-72	ADDED NAME Pcl. 50 WL	TB
6-19-72	REV. NAME Pcl 51 WL	TB
6-19-72	REV NAME & ADDED NAME Pcl. 54WL	
1-28-75	ADDED 1054-T	JRT

REVISIONS

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

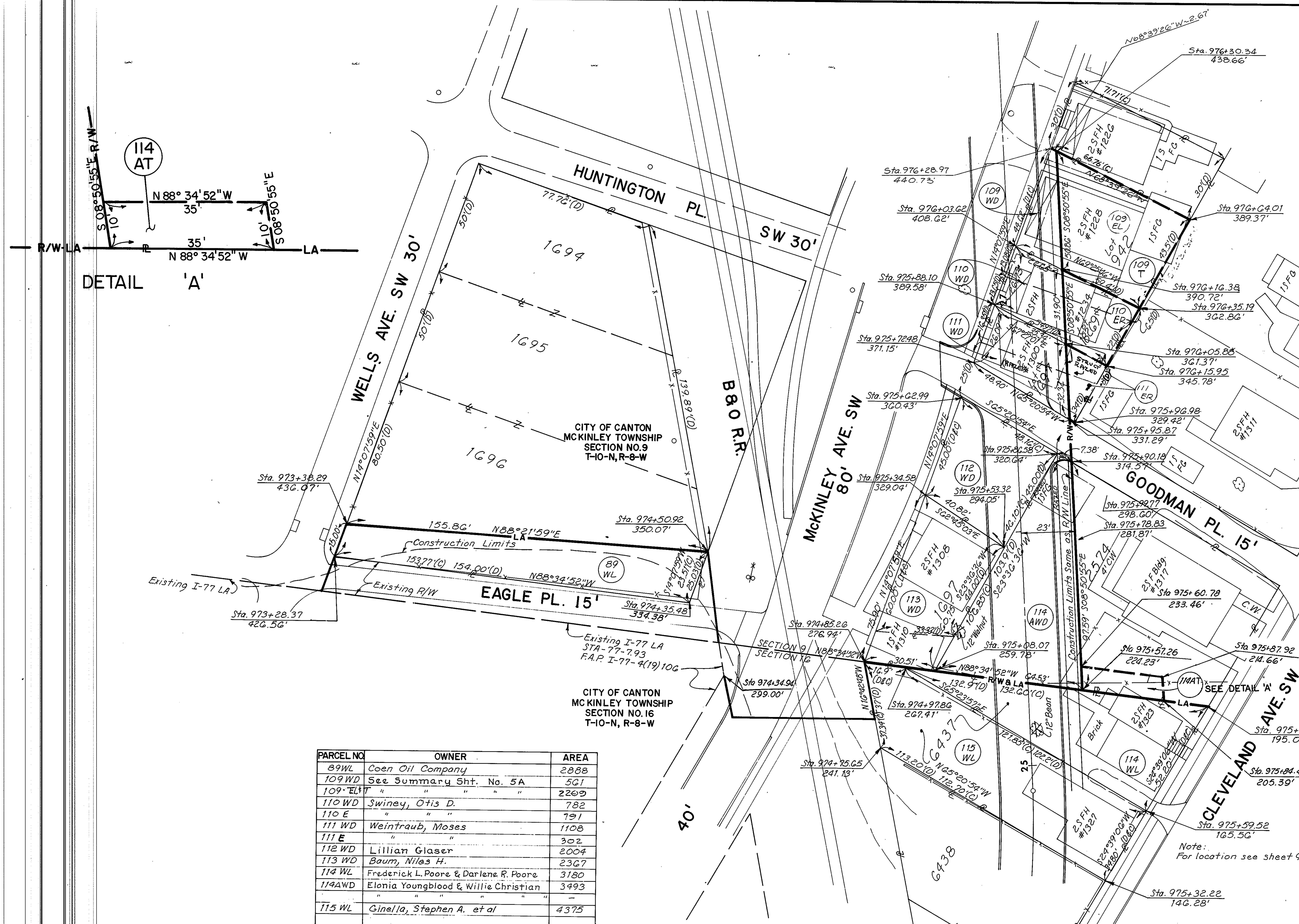
PARTIAL TAKE DETAILS

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	TYPE FUNDS
2	OHIO	I-77-4(42) R/W ONLY	

387 / 389

15 / 19

STARK COUNTY
STA-30-14.12
STA-77-9.22



PARCEL NO.	OWNER	AREA
89WL	Coen Oil Company	2888
109 WD	See Summary Sht. No. 5A	561
109-EL & T	" " " " "	2209
110 WD	Swiney, Otis D.	782
110 E	" " "	791
111 WD	Weintraub, Moses	1108
111 E	" "	302
112 WD	Lillian Glaser	2004
113 WD	Baum, Niles H.	2367
114 WL	Frederick L. Poore & Darlene R. Poore	3180
114AWD	Elonia Youngblood & Willie Christian	3493
	" " " " " "	–
115 WL	Ginella, Stephen A. et al	4375
114A T	Elonia Youngblood & Willie Christian	344

Note: "Parcel numbers shown througout this plan shall be considered to read 1000 larger than shown. Example – Parcel 241WL would be considered to read Parcel 1241WL.

1111ER - 2-14-75
ADDED PCL 1109-T - 11-22-74 ADDED 1109EL - 4-24-75
11-1-74 DELETED PCL 117-WD, REVISED PROPOSED SIDEWALK PCLS. 109-WD, 110, WD & 111-WD

Name change Pcl. 117 6-18-74

Note:
For location see sheet 9.

10-21-74 CHANGE 114AWA TO 114-AT J.K.

"I" FUNDS

Date	Description	By
2-4-72	Rev. Name Pcls. 109, 112, 114 & 114A-B	
	Vol. & Pg. Change Pcl. 113	E.D.
2-12-74	REMOVED STRUCT. 111 WL-DELETED 111WA	R.S.
2-15-74	ADDED 111-E · DELETED · 5-21-74	JRT
5-6-74	ADDED 110-E	
5-21-74	DELETED 114 BWA (GAR. RAZED)	
6-10-74	ADDED 1109 EL	

REVISIONS

DELETED PCL 117WA 3-7-75

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

Scale: 1"=20'

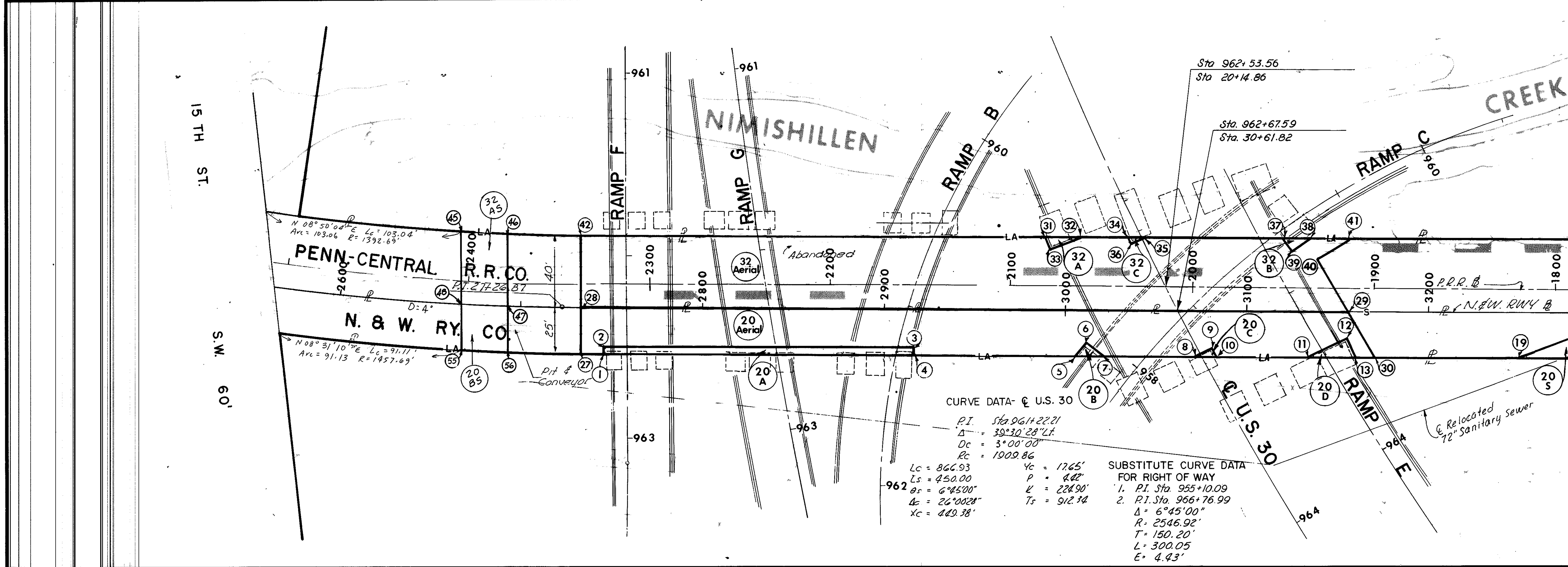
PARTIAL TAKE DETAILS

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

388 / 389

16 / 19

STARK COUNTY
STA-30-14.12
STA-77-9.22

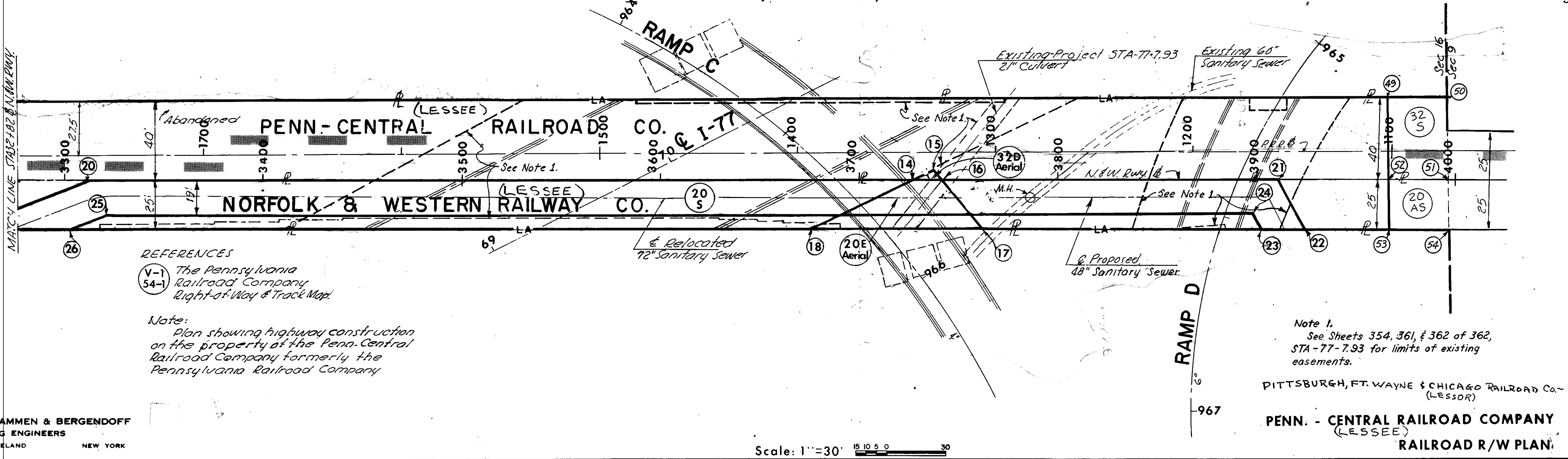


NOTE- PARCEL 1020 SERIES:

All rights required by this parcel series are claimed by rights retained for the City of Canton in the instrument from A.J. Underhill et al to the Cleveland, Canton & Southern Railroad Company, predecessor of the Wheeling & Lake Erie Railway Company, recorded on February 8, 1896 in the records of Stark County in Volume 329 Page 510. (NO NEW INSTRUMENT REQUIRED) This Action Concurred in by Letter Dated Feb. 25, 1975.

Note:
Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example Parcel 241 WL would be considered to read Parcel 1241 WL.

For Metes & Bounds See Supplemental Sheet No. 16A.



REFERENCES
V-1 54-1 The Pennsylvania Railroad Company Right-of-Way & Track Map.

Note:
Plan showing highway construction on the property of the Penn-Central Railroad Company formerly the Pennsylvania Railroad Company

Note 1.
See Sheets 354, 361, & 362 of 362, STA-77-7.93 for limits of existing easements.

"I" FUNDS

Date	Description	By
2-20-74	DELETED: 20T, T-1, 32T, T-1	R.S.
2-20-74	Revised OWNERSHIP 20 & 32	R.S.
4-19-74	Added Pcls. 20AS, BS & 32AS, S	
6-28-74	Revised Pcls. 32AS, S & 20AS, BS	

REVISIONS

PITTSBURGH, FT. WAYNE & CHICAGO RAILROAD Co. (LESSOR)

PENN. - CENTRAL RAILROAD COMPANY (LESSEE)

RAILROAD R/W PLAN

Scale: 1" = 30' 15 10 5 0 30

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

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

388A / 389

16A / 19

✱ Distance Represents Chord Length on Curved Segment.

PARCEL NUMBER	EASEMENT REQUIRED	TOTAL AREA	AREA OF OVERLAP SEWER	AREA OF OVERLAP AERIAL	AREA OF OVERLAP HIGHWAY	SIDE	BEARING	✱ DISTANCE	ARC	RADIUS
32A	Highway	66□'		66□'		31-32	N 04° 02' 53" E	19.92'		
						32-33	S 16° 42' 19" E	18.62'		
						33-31	S 73° 17' 41" W	7.06'		
32B	Highway	57□'		57□'		37-38	N 04° 02' 53" E	15.58'		
						38-39	S 31° 03' 40" E	12.75'		
						39-37	S 58° 56' 20" W	8.96'		
32 C	Highway	22□'		22□'		34-35	N 04° 02' 53" E	11.42'		
						35-36	S 16° 42' 19" E	10.68'		
						36-34	S 73° 17' 41" W	4.05'		
32 Aerial	Aerial	16624□'			145□'	42-41	N 04° 02' 53" E	424.74'		
						41-40	S 29° 32' 45" E	20.75'	20.75'	415.74'
						40-29	N 64° 29' 16" E	32.79'	32.79'	1830.58
						29-28	S 04° 02' 53" W	423.62'		
						28-42	N 85° 58' 02" W	40.00'		
32 D-Aerial	Aerial	28□'				14-15	N 21° 19' 53" W	10.15'		
						15-16	N 53° 08' 48" E	5.75'	5.75'	479.74'
						16-14	S 04° 02' 53" W	12.93'		
32 S	Sewer	1199□'				49-50	N 04° 02' 53" E	30.00'		
						50-51	S 87° 55' 28" E	40.00'		
						51-52	S 04° 02' 53" W	30.00'		
						52-49	N 87° 55' 21" W	40.00'		
32 AS	Sewer	1014□'				45-46	N 06° 12' 29" E	25.00'	25.00'	1392.69'
						46-47	S 84° 18' 23" E	40.00'		
						47-48	S 06° 12' 29" W	25.72'	25.72'	1432.69'
						48-45	N 83° 16' 04" W	40.00'		

PARCEL NUMBER	EASEMENT REQUIRED	TOTAL AREA	AREA OF OVERLAP SEWER	AREA OF OVERLAP AERIAL	AREA OF OVERLAP HIGHWAY	SIDE	BEARING	✱ DISTANCE	ARC	RADIUS

POINT	STATION	OFFSET
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14	966+ 86.74	560.67'
	13+ 40.67	12.50'
15	966+ 89.73	570.55'
	13+ 31.51	8.15'
16	966+ 97.14	570.76'
	13 + 27.74	12.50'
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28	961+35.30	302.91'
	23+ 38.26	12.50'
29	963+ 12.48	82.94'
	19+ 14.65	12.50'
30		
31	962+ 00.21	48.01'
	20+ 81.68	27.50'
32	962+ 08.56	30.00'
	20+ 61.77	27.50'
33	962+ 07.08	48.57'
	20+ 79.18	20.90'

STARK COUNTY
STA-30-14.12
STA-77-9.22

POINT	STATION	OFFSET
34	962+ 19.65	6.66'
	20+ 87.66	27.50'
35	962+ 24.63	3.61'
	20+ 99.08	27.50
36	962+ 23.67	7.02'
	20+ 34.45	23.72
37	962+ 58.14	69.71'
	19+ 50.65	27.50'
38	962+ 65.52	83.59'
	19+ 35.06	27.50'
39	962+ 67.35	70.96'
	19+ 45.49	20.17'
40	962+ 78.22	82.08'
	19+ 30.82	16.02'
41	962+ 75.91	102.71'
	19+ 13.54	27.50'
42		
43		
44		
45	960+80.90	348.40'
46	960+89.51	325.55'
47	961+20.63	341.82'
48	961+11.50	365.16'
49	969+04.95	757.45'
	11+05.72	27.50'
50	969+41.58	777.95'
	10+75.72	27.50'
51	969+87.74	749.10'
	10+74.35	12.50'
52	969+51.20	729.13'
	11+04.35	12.50'
53		
54		
55		
56		
57		
58		
59		
60		

"I" FUNDS

Date	Description	By
2-21-74	DELETED 32T, T-1	
4-19-74	ADDED PCLS. 32S, AS	
6-28-74	REVISED PCLS. 32S, AS ADDED METES & BOUNDS	

REVISIONS

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

Note: Supplemental Sheet for Sheet No. 16.

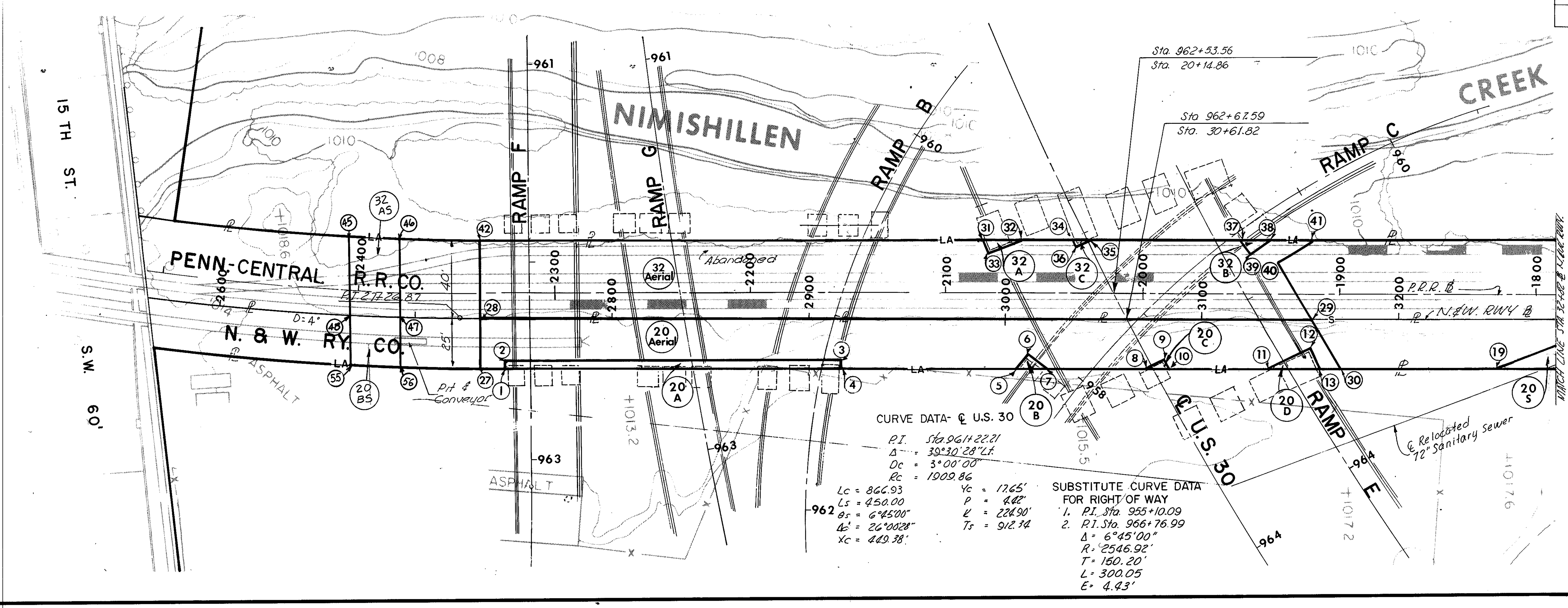
PENN-CENTRAL RAILROAD COMPANY
RAILROAD R/W PLAN

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

388B / 389

17 / 19

STARK COUNTY
STA-30-14.12
STA-77-9.22



CURVE DATA- ℄ U.S. 30

P.I. Sta. 961+22.21
Δ = 39°30'28" Lt.
Dc = 3°00'00"
Rc = 1909.86

Lc = 866.93
Ls = 450.00
θs = 6°45'00"
Δc' = 26°00'28"
Xc = 449.38'

Yc = 17.65'
P = 4.42'
K = 224.90'
Ts = 912.34

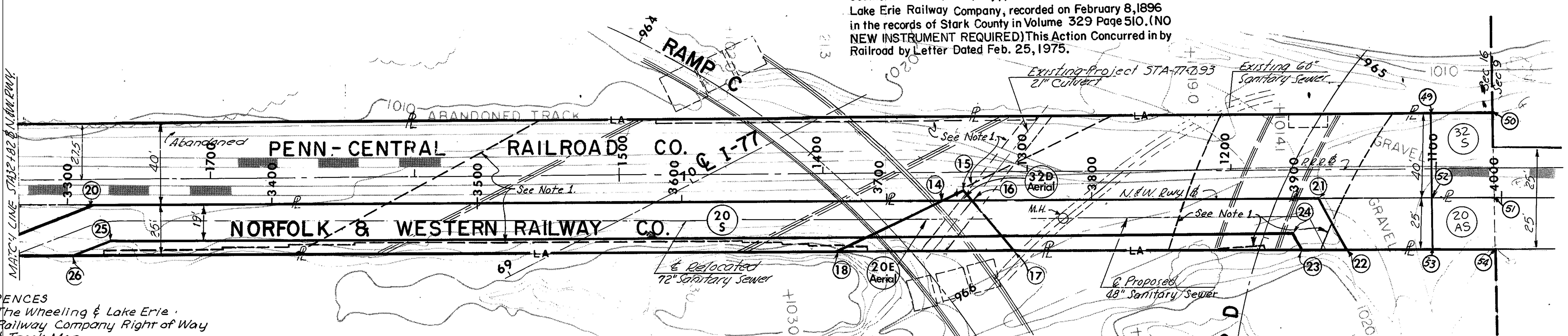
SUBSTITUTE CURVE DATA FOR RIGHT OF WAY
1. P.I. Sta. 955+10.09
2. P.I. Sta. 966+76.99
Δ = 6°45'00"
R = 2546.92'
T = 150.20'
L = 300.05
E = 4.43'

NOTE - PARCEL 1020 SERIES -

All rights required by this parcel series are claimed by rights retained for the City of Canton in the instrument from A.J. Underhill et al to the Cleveland, Canton & Southern Railroad Company, predecessor of the Wheeling & Lake Erie Railway Company, recorded on February 8, 1896 in the records of Stark County in Volume 329 Page 510. (NO NEW INSTRUMENT REQUIRED) This Action Concurred in by Railroad by Letter Dated Feb. 25, 1975.

Note:
Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example Parcel 241 WL would be considered to read Parcel 1241 WL.

For Metes & Bounds See Supplemental Sheet No. 17A.



REFERENCES
V-3 24-A The Wheeling & Lake Erie Railway Company Right of Way & Track Map.

Note:
Plan showing highway Construction on the property of the Norfolk & Western Railway Company formerly the Wheeling & Lake Erie Railway Co.

Note 1.
See Sheets 354, 361, & 362 of 362, STA-77-7.93 for limits of existing easements.

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

Scale: 1"=30'

WHEELING & LAKE ERIE RAILWAY CO.-LESSOR
NORFOLK & WESTERN RAILWAY COMPANY (LESSEE)
RAILROAD R/W PLAN

"I" FUNDS

Date	Description	By
2-21-74	DELETED 20T, T-1, 32T, T-1 & REVISED OWNERSHIP	
4-19-74	ADDED PCLS. 20AS, BS & 32 S, AS	
6-28-74	REVISED PCLS. 20AS, BS & 32 S, AS	

REVISIONS

* Distance Represents chord Length on Curved Segment.

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

388C / 389

17A / 19

STARK COUNTY
STA-30-14.12
STA-77-9.22

PARCEL NUMBER	EASEMENT REQUIRED	TOTAL AREA	AREA OF OVERLAP SEWER	AREA OF OVERLAP AERIAL	AREA OF OVERLAP HIGHWAY	SIDE	BEARING	* DISTANCE	ARC	RADIUS
20A	Highway	699 □'		699 □'		1-2	N 85°58'02"W	4.06'		
						2-3	N 04°02'53"E	171.86'		
						3-4	S 85°58'02"E	4.06'		
						4-1	S 04°02'53"W	171.86'		
20B	Highway	53 □'		53 □'		5-6	N 47°45'58"W	9.10'		
						6-7	N 42°14'02"E	11.58'		
						7-5	S 04°02'53"W	14.73'		
20C	Highway	23 □'		23 □'		8-9	N 20°58'31"W	9.95'		
						9-10	N 69°01'29"E	4.64'		
						10-8	S 04°02'53"W	10.98'		
20D	Highway	114 □'		114 □'		11-12	N 20°58'31"W	22.08'		
						12-13	N 69°01'29"E	10.31'		
						13-11	S 04°02'53"W	24.37'		
20 Aerial	Aerial	10773 □'			889 □'	27-28	N 85°58'02"W	25.00'		
						28-29	N 04°02'53"E	423.62'		
						29-30	N 63°31'13"E	29.03'	29.03'	1830.58'
						30-27	S 04°02'53"W	438.35'		
20E Aerial	Aerial	1238 □'	775 □'		45 □'	14-16	N 04°02'53"E	12.93'		
						16-17	N 55°24'08"E	32.01'	32.02'	479.74'
						17-18	S 04°02'53"W	85.62'		
						18-14	N 21°19'53"W	58.33'		
20AS	Sewer	749 □'				51-52	S 04°02'53"W	30.00'		
						52-53	S 87°55'21"E	25.00'		
						53-54	N 04°02'53"E	30.00'		
						54-51	N 87°55'28"W	25.00'		
20BS	Sewer	649 □'				47-48	S 06°12'29"W	25.72'	25.72'	1432.69'
						48-55	S 83°16'40"E	25.00'		
						55-56	N 06°12'29"E	26.17'	26.17'	1457.69'
						56-47	N 84°18'23"W	25.00'		
20S	Sewer	12330 □'		6608 □'		19-20	N 16°57'07"W	69.76'		
						20-21	N 04°02'53"E	595.36'		
						21-22	N 65°02'53"E	28.58'		
						22-23	S 04°02'53"W	21.72'		
						23-24	S 65°02'53"W	6.86'		
						24-25	S 04°02'53"W	580.64'		
						25-26	S 16°57'07"E	16.74'		
						26-19	S 04°02'53"W	53.02'		

PARCEL NUMBER	EASEMENT REQUIRED	TOTAL AREA	AREA OF OVERLAP SEWER	AREA OF OVERLAP AERIAL	AREA OF OVERLAP HIGHWAY	SIDE	BEARING	* DISTANCE	ARC	RADIUS

POINT	STATION	OFFSET
1	961+61.07	297.21'
	27+44.30	25.00'
2	961+57.85	295.56'
	27+44.30	20.94'
3	962+22.84	139.66'
	29+16.17	20.94'
4	962+26.24	141.44'
	29+16.17	25.00'
5	962+64.31	61.23'
	30+05.83	25.00'
6	962+60.61	52.96'
	30+11.46	17.84'
7	962+70.86	48.14'
	30+20.56	25.00'
8	962+94.34	2.76
	30+71.79	25.00'
9	962+94.87	7.17'
	30+80.80	20.79'
10	962+99.52	6.92'
	30+82.77	25.00'
11	963+24.32	51.78'
	31+33.84	25.00'
12	963+25.88	73.82'
	31+53.86	15.66'
13	963+36.57	73.08'
	31+58.21	25.00'
14	966+86.74	560.67'
	37+29.64	
15		
16	966+97.14	570.76'
	37+42.57	
17	967+38.39	570.40'
	37+62.56	25.00'
18	966+70.11	503.85'
	36+76.94	25.00'
19	963+86.20	153.80'
	32+51.46	25.00'
20	963+99.62	222.50'
	33+16.58	
21	968+39.04	699.68'
	39+11.94	
22	968+66.92	693.37'
	39+25.80	25.00'
23	968+52.45	677.17'
	39+04.08	25.00'
24	968+45.76	678.68'
	39+00.75	19.00'
25	964+20.00	215.58'
	33+20.11	19.00'
26	964+16.50	199.13'
	33+04.48	25.00'
27	961+56.77	308.40'
	27+32.05	25.00'
28	961+35.30	302.91'
	27+32.05	
29	963+12.48	82.94'
	31+55.66	
30	963+42.81	83.70'
	31+70.41	25.00'
31		
32		
33		

POINT	STATION	OFFSET
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47	961+20.63	341.82'
48	961+11.50	365.16'
49		
50		
51	969+87.74	749.10'
	39+95.96	
52	969+51.20	729.13'
	39+65.96	
53	969+78.99	711.09'
	39+66.82	25.00'
54	970+15.42	730.73'
	39+96.82	25.00'
55	961+30.40	375.94'
56	961+39.83	352.30'
57		
58		
59		
60		

"I" FUNDS

Date	Description	By
2-21-74	DELETED 20T, T-1	
4-19-74	ADDED PCLS. 20 AS, BS	
6-28-74	REVISED PCLS. 20 AS, BS ADDED METES AND BOUNDS	

REVISIONS

Note: Supplemental Sheet for Sheet No. 17.

NORFOLK & WESTERN RAILWAY COMPANY
SUPPLEMENTAL SHEET

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

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

388D / 389

STARK COUNTY
STA-30-14.12
STA-77-9.22

18 / 19

CURVE DATA - ℄ U.S. 30

P.I. Sta. 980+31.56
Δ = 38°57'52" Rt.
Dc = 3°00'00"
Rc = 1909.86'
Lc = 848.81'
Ls = 450.00'
θs = 6°45'00"
Δc = 25°27'52"
Xc = 449.38'
Yc = 17.65'
P = 4.42'
K = 224.90'
Ts = 902.11'

SUBSTITUTE CURVE DATA
FOR RIGHT OF WAY

1. P.I. Sta. 974+29.68
2. P.I. Sta. 985+78.47
Δ = 6°45'00"
R = 2546.92'
T = 150.20'
L = 300.05'
E = 4.43'

Note:
Parcel numbers shown throughout this plan shall be considered to read 1000 larger than shown. Example Parcel 241WL would be considered to read Parcel 1241WL.
For Metes & Bounds See Supplemental Sheet No. 19.

"I" FUNDS

Date	Description		By
2-21-74	DELETED: 70T, T-1, T-2, T-3, T-4, T-5, T-6	ADDED 70-2WL 70-1WL	R.S.

REVISIONS

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

Scale: 1"=30'

BALTIMORE AND OHIO RAILROAD COMPANY
RAILROAD R/W PLAN

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

389 / 389

19 / 19

STARK COUNTY
STA-30-14.12
STA-77-9.22

✳ Note : Distance Represents Chord Length on Curved Segment

PARCEL NUMBER	EASEMENT REQUIRED	TOTAL AREA	AREA OF OVERLAP SEWER	AERIAL	HIGHWAY	SIDE	BEARING	✳ DISTANCE	ARC	RADIUS
70 A	Highway	1522□'		1522□'		1 - 2	N 66° 17'09"W	4.81'		
						2 - 3	N 16°42'48" W	80.99'		
						3 - 4	N 23°42'22" E	28.61'		
						4 - 5	S 16°42' 10"E	74.50'		
						5 - 1	S 08° 38'50"W	34.73'		
70 B	Highway	32□'		32□'		6 - 7	N 75°21'12"W	18.39'		
						7 - 8	N 16°42'09"W	3.81'		
						8 - 6	S 66°17'09"E	22.17'		
70 C	Highway	433□'		433□'		10 - 11	N 66°17'09"W	20.62'		
						11 - 12	N 16°42'10"W	11.69'		
						12 - 13	N 23°42'22"E	24.21'		
						13 - 10	S 16°42'48"E	43.49'		
70 D	Highway	1070□'		1070□'		14 - 15	S 23°42'22"W	23.43'		
						15 - 16	N 16°42'10"W	35.64'		
						16 - 17	N 73°17'50"E	1.50'		
						17 - 18	N 16°42'10"W	32.00'		
						18 - 19	N 73°17'50"E	1.50'		
						19 - 20	N 16°42'10" W	23.76'		
						20 - 21	S 66° 17'09"E	15.92'		
						21 - 14	S 16°42'48"E	63.20'		
70 E	Highway	288□'		288□'		22 - 23	N 16°42'48"W	18.89'		
						23 - 24	N 24°19'06"E	15.78'		
						24 - 25	S 66°17'09"E	12.58'		
						25 - 22	S 24° 39'06"W	30.16'		
70 F	Highway	664□'		664□'		26 - 27	N 66°17'09"W	12.68'		
						27 - 28	N 24°19'06"E	25.62'		
						28 - 29	N 20°50'25"E	34.46'	34.48'	28400'
						29 - 30	S 16°42'48"E	22.88'		
						30 - 26	S 24°39'05"W	42.63'		
70 G	Highway	513□'		513□'		31 - 32	N 16°42'48" W	35.48'		
						32 - 33	N 24°39'06"E	18.55'		
						33 - 34	S 16°21'43"E	49.48'		
						34 - 31	S 73°38'17"W	11.96'		
70-Aerial	Aerial	3930□'			1554□'	2 - 3	N 16°42'48"W	80.99'		
						3 - 35	N 23°42'22" E	38.35'		
						35 - 6	S 66°17'09"E	44.82'		
						6 - 9	S 10°14'10"W	102.82'	102.93'	691.20'
						9 - 2	N 66°17'09"W	16.26'		
70H-Aerial	Aerial	163□'				36 - 37	N 16°42'48"W	25.70'		
						37 - 38	S 66°17'09"E	16.66'		
						38 - 36	S 23°42'22"W	19.56'		
70I-Aerial	Aerial	467□'			433□'	10 - 39	N 66°17'09"W	28.20'		
						39 - 13	N 23°42'22"E	33.11'		
						13 - 10	S 16°42'48"E	43.49'		
70J-Aerial	Aerial	6472□'			1070□'	21 - 14	S 16°42'48"E	63.20'		
						14 - 40	S 23°42'22"W	51.89'		
						40 - 41	N 66°17'10"W	31.99'		
						41 - 42	N 16°42'48"W	131.37'		
						42 - 21	S 66°17'09" E	76.19'		

PARCEL NUMBER	EASEMENT REQUIRED	TOTAL AREA	AREA OF OVERLAP SEWER	AERIAL	HIGHWAY	SIDE	BEARING	✳ DISTANCE	ARC	RADIUS
70K-Aerial	Aerial	5253□'				43 - 44	N 66°17'09"W	95.51'		
						44 - 45	N 24° 39'06"E	110.02'		
						45 - 43	S 16°42'48"E	144.50'		
70L-Aerial	Aerial	395□'			288□'	22 - 46	N 16°42'48"W	39.62'		
						46 - 25	S 66°17'09"E	26.18'		
						25 - 22	S 24°39'06"W	30.16'		
70M-Aerial	Aerial	11833□'			1177□'	26 - 47	N 66°17'09" W	41.81'		
						47 - 32	N 16°42'48" W	163.72'		
						32 - 48	N 24°39'06"E	38.52'		
						48 - 49	N 82°52'41"E	34.76'	35.03'	4298.56'
						49 - 30	S 16°42'48"E	181.91'		
						30 - 26	S 24° 39'05"W	42.63'		
~~70-T~~	~~Temporary~~	~~3930□'~~		~~3930□'~~	~~1554□'~~	~~2-3~~	~~N 16°42'48"W~~	~~80.99'~~		
						3 - 35	N 23°42'22"E	38.35'		
						35 - 6	S 66°17'09"E	44.82'		
						6 - 9	S 10°14'10"W	102.82'	102.93'	691.20'
						9 - 2	N 66°17'09"W	16.26'		
70-T-1	Temporary	163□'		163□'		36 - 37	N 16°42' 48"W	25.70'		
						37 - 38	S 66° 17' 09"E	16.66'		
						38 - 36	S 23° 42' 22"W	19.56'		
70-T-2	Temporary	467□'		467□'	433□'	10 - 39	N 66° 17'09"W	28.20'		
						39 - 13	N 23°42' 22"E	33.11'		
						13 - 10	S 16° 42'48" E	43.49'		
70 - T-3	Temporary	6472□'		6472□'	1070□'	21 - 14	S 16° 42'48" E	63.20'		
						14 - 40	S 23° 42' 22" W	51.89'		
						40 - 41	N 66° 17' 10"W	31.99'		
						41 - 42	N 16° 42' 48" W	131.37'		
						42 - 21	S 66° 17'09" E	76.19'		
70 - T-4	Temporary	5253□'		5253□'		43 - 44	N 66° 17' 09"W	95.51'		
						44 - 45	N 24° 39'06" E	110.02'		
						45 - 43	S 16° 42' 48" E	144.50'		
70 - T-5	Temporary	395□'		395□'	288□'	22 - 46	N 16° 42'48"W	39.62'		
						46 - 25	S 66° 17'09" E	26.18'		
						25 - 22	S 24° 39' 06"W	30.16'		
70 - T-6	Temporary	11833□'		11833□'	1177□'	26 - 47	N 66° 17' 09"W	41.81'		
						47 - 32	N 16° 42'48" W	163.72'		
						32 - 48	N 24° 39.06" E	38.52'		
						48 - 49	N 82° 52'41" E	34.76'	35.03'	4298.56'
						49 - 30	S 16° 42'48" E	181.91'		
						~~30 - 26~~	~~S 24° 39'05" W~~	~~42.63'~~		
70-1 WL		1618□'				52 - 3	N 23°42'22" E	61.65'		
						3 - 2	S 16°42'48" E	80.99'		
						2 - 52	N 66° 17'09" W	52.51'		
70-2 WL		3042□'				51 - 30	S 24°39'05" W	83.40'		
						30 - 50	N 16°42'48" W	110.40'		
						50 - 51	S 65°46'30" E	72.96'		

DELETED

DELETED

DELETED

POINT	STATION	OFFSET
1	972+06.16	360.03'
	3142+03.09	26.34'
2	972+03.86	355.86'
	3141+99.97	30.00'
3	972+32.88	280.24'
	3141+18.98	30.00'
4	972+58.00	266.55'
	3140+97.20	11.45'
5	972+31.29	336.11'
	3141+71.70	11.46'
6	972+88.42	300.10'
	3141+18.02	28.00'
7	972+76.14	285.56'
	3141+08.44	12.30'
8	972+77.50	282.00'
	3141+04.64	12.30'
9	972+11.64	370.14'
	3142+10.52	17.62'
10	972+97.85	277.98'
	3140+94.31	28.00'
11	972+86.71	259.92'
	3140+81.00	12.30'
12	972+91.32	248.99'
	3140+69.31	12.30'
13	973+14.70	237.21'
	3140+50.90	28.00'
14	973+24.00	214.04'
	3140+26.20	28.00'
15	973+01.65	225.52'
	3140+44.04	12.81'
16	973+15.16	192.10'
	3140+08.39	12.82'
17	973+16.68	192.62'
	3140+08.39	14.32'
18	973+28.46	162.55'
	3139+76.39	14.32'
19	973+29.97	163.06'
	3139+76.39	15.82'
20	973+38.52	140.70'
	3139+52.63	15.83'
21	973+47.00	154.55'
	3139+63.00	28.00'
22	973+31.58	32.55'
	3137+85.06	30.00'
23	973+57.72	50.38'
	3137+66.17	30.00'
24	973+71.12	58.24'
	3137+54.27	19.64'
25	973+77.41	47.43'
	3137+62.42	10.07'
26	973+92.69	56.44'
	3137+48.91	1.83'
27	973+86.30	67.30'
	3137+40.69	7.82'
28	974+07.73	80.35'
	3137+21.36	9.00'
29	974+35.11	99.94'
	3136+94.04	30.00'
30	974+28.44	78.13'
	3137+16.92	30.00'
31	974+10.17	213.94'
	3135+98.57	30.00'
32	974+20.19	247.70'
	3135+58.08	30.00'
33	974+34.66	257.24'
	3135+44.16	17.78'

POINT	STATION	OFFSET
34	974+20.65	210.19'
	3135+93.64	18.04'
35	972+66.54	261.89'
	3140+89.79	5.14'
36	972+41.72	257.20'
	3140+94.30	30.00'
37	972+50.92	233.21'
	3140+68.60	30.00'
38	972+58.89	247.84'
	3140+79.41	17.32'
39	972+82.67	253.28'
	3140+76.08	6.53'
40	972+74.70	239.23'
	3149+65.71	5.65'
41	972+59.39	211.14'
	3140+44.96	30.00'
42	973+07.42	88.34'
	3139+13.59	30.00'
43	973+55.32	132.24'
	3139+39.36	28.00'
44	973+06.20	49.31'
	3138+77.42	44.70'
45	974+02.96	4.60'
	3137+94.85	28.00'
46	973+64.35	69.96'
	3137+45.44	30.00'
47	973+71.83	92.32'
	3137+21.80	30.00'
48	974+50.13	267.62'
	3135+29.19	5.57'
49	974+78.60	252.03'
	3135+35.01	30.00'
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"I" FUNDS

Date	Description	By
2-22-74	ADDED 70-1WL AND 70-2WL DELETED 70-T, T-1, T-2, T-3, T-4, T-5, T-6	Sands

REVISIONS

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

BALTIMORE AND OHIO RAILROAD COMPANY
SUPPLEMENTAL SHEET