MICROFILMED
NOV 0 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

SUMMIT COUNTY
SUM-277-0.00

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
SUM-277-0.00
CITY OF AKRON
COVENTRY TOWNSHIP
SUMMIT COUNTY

I-277-6-(3)123

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 HIGHWAYS IN ACCORDANCE WITH PROVISIONS OF SECTION 5511.02 REVISED CODE OF OHIO.

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

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

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

APPROVED Clifton W. Kinsel
DATE 2-17-66 DIVISION DEPUTY DIRECTOR

APPROVED C.H. Albrecht
DATE 4-8-66 ENGINEER OF BRIDGES

APPROVED R.D. Bibler
DATE 4-14-66 ENGINEER OF LOCATION AND DESIGN

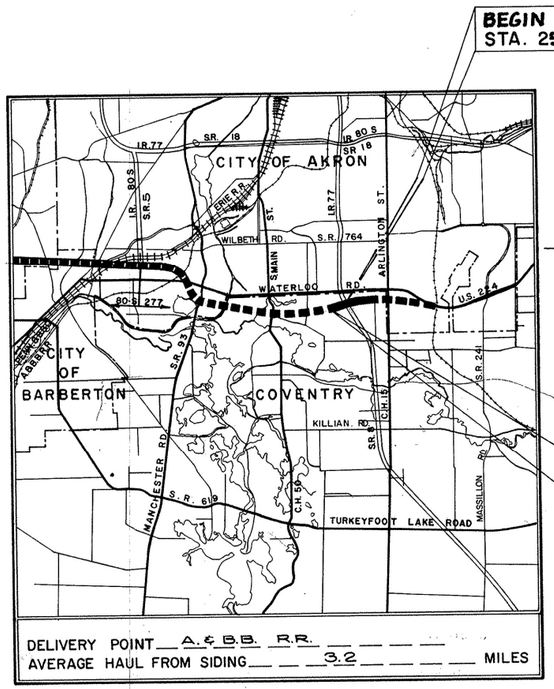
APPROVED R.E. Shultz
DATE 4-15-66 DEPUTY DIRECTOR OF DESIGN AND CONSTRUCTION

APPROVED T.N. Ward
DATE 4-22-66 DEPUTY DIRECTOR OF RIGHT OF WAY

APPROVED E.W. Wilson
DATE 4-22-66 DEPUTY DIRECTOR OF PLANNING AND PROGRAMMING

APPROVED _____
DATE _____ FIRST ASSISTANT DIRECTOR

APPROVED P.E. Mashy
DATE 4/22/66 DIRECTOR OF HIGHWAYS



DELIVERY POINT A. & B.B. R.R.
AVERAGE HAUL FROM SIDING 3.2 MILES

LOCATION MAP
SCALE OF MILES 0 1 2

OTHER EXPRESSWAYS
STATE & MAJOR ROADS
OTHER ROADS
COMPLETED PORTION INTERSTATE ROUTE

PLAN 1"= 50'
PROFILE HORIZONTAL 1"= 50'
PROFILE VERTICAL 1"= 5'
CROSS SECTIONS: HORIZONTAL & VERTICAL 1"= 10'

CONVENTIONAL SIGNS

- Township Line
- Center Line
- Corporation Line
- Fence Line
- Guard Rail (existing)
- Guard Rail (proposed)
- Railroad
- Power Poles
- Telephone Poles
- Power or Telephone Poles with guys
- Limited Access & Right of Way — L/A & R/W
- Right of Way — R/W
- Trees or Stumps (existing)

MICROFILMED
JUL 31 1979
REPRODUCTION

INDEX

TITLE SHEET	1
SCHEMATIC PLAN & DESIGN DESIGNATION	2
TYPICAL SECTIONS	3-6
GENERAL NOTES	7-8
SUMMARY OF TABLES	9-10
PAVEMENT CALCULATIONS & EARTHWORK SUMMARY	11-12
GENERAL SUMMARY	13-14
PLAN AND PROFILE	15-20
CROSS SECTION LAYOUT AND CROSS SECTIONS	21-38
GEOMETRIC INTERCHANGE PLAN	39-40
GRADING AND FENCE PLAN	41-42
RAMP "A" PLAN, PROFILE AND CROSS SECTIONS	43-47
RAMP "A" PAVEMENT ELEVATIONS & JOINT DETAILS	48-49
RAMP "B" PLAN, PROFILE AND CROSS SECTIONS	50-58
RAMP "B" PAVEMENT ELEVATIONS AND JOINT DETAILS	59-60
RAMPS "B-1" AND "B-2" PLAN, PROFILE AND CROSS SECTIONS	61-73
RAMPS "B-1" AND "B-2" PAVEMENT ELEVATIONS & JOINT DETAILS	74-77
RAMP "C" PLAN, PROFILE AND CROSS SECTIONS	78-85
RAMP "C" PAVEMENT ELEVATIONS & JOINT DETAILS	86-88
RAMPS "C-1" AND "C-2" PLAN, PROFILE AND CROSS SECTIONS	89-99
RAMPS "C-1" AND "C-2" PAVEMENT ELEVATIONS & JOINT DETAILS	100-103
RAMP "D" PLAN, PROFILE AND CROSS SECTIONS	104-109
RAMP "D" PAVEMENT ELEVATIONS & JOINT DETAILS	110-111
I-77 PLAN, PROFILE AND CROSS SECTIONS	112-130
WOODLEY BLVD. AND WOODVIEW DRIVE RELOCATION	131-135
GREGG ROAD CUL-DE-SAC	136-137
I-77 TRAFFIC MAINTENANCE	138-139
ROADWAY AND DRAINAGE DETAILS	140-144
STRUCTURES 20' SPAN & UNDER	145-154
UTILITY WORK AND UTILITY DETAILS	155-156
TRAFFIC CONTROL PLAN AND DETAILS	157-175
LIGHTING PLAN	176-184
STRUCTURES OVER 20' SPAN	185-231
RIGHT-OF-WAY PLAN	231-A, 232-234
SOIL PROFILE	

Sheet No. 205 revised 8-24-66
Sheet No. 196 revised 10-31-66

LINE DATA

		PROJECT LENGTH	WORK LENGTH
BEGIN WORK	STATION 275+00.00		
BEGIN PROJECT	STATION 252+81.85		
END PROJECT	STATION 228+68.84		
LENGTH		2,413.01 FT	
END WORK	STATION 225+50.00		
LENGTH			4,950.00 FT.
I-77 SEE SHEET 2			4,395.00 FT.
WOODVIEW & WOODLEY STATION 48+10 TO STATION 58+50			1,040.00 FT.
		2,413.01 FT. = 0.457 MILES	10,385.00 FT. = 1.966 MILES

FILE NO.	SUMMIT COUNTY SUM-277-0.00
	DATE OF LETTING _____ 196
	CONTRACT NO. _____

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

AS-1-54	8-10-65	C.B.-6	6-1-65	HW-E	6-1-65	BR-1-65	2-1-65
				HW-1	6-1-65		
B.P.-1	6-1-65	F-1	6-1-65			SD-1-63 Sh.1	11-12-63
B.P.-2	6-1-65	F-2	6-1-65	I-2A	6-1-65		
B.P.-3	6-1-65	F-3	6-1-65			SD-1-65	11-8-65
B.P.-4	6-1-65			L-1	6-1-65		
B.P.-5	6-1-65	F.A.C.I.-1	6-1-65			FSB-1-62	1-15-63
B.P.-6	6-1-65	F.A.C.I.-2	6-1-65	M.C. 1	6-1-65		
B.P.-7	1-1-66			M.C. 3	6-1-65	HL-1	11-1-65
		G.R.-1	6-1-65	M.C. 4	6-1-65	HL-2	11-1-65
C.B.-2-2-A&B	6-1-65	G.R.-2-A	6-1-65	M.C. 5	6-1-65	HL-3	11-1-65
C.B.-2-3 & 2-4	6-1-65	G.R.-6	6-1-65	M.C. 6	6-1-65	HL-4	1-1-66
C.B. 5	6-1-65			SP-53	6-30-61		

SUPPLEMENTAL SPECIFICATIONS

801	9-2-65
806	3-3-66
808	7-14-65
811	3-25-65
816	8-6-65
825	4-22-65
828	7-21-65
1001	9-2-65
815	8-6-65

PREPARED AND RECOMMENDED BY
BEISWENGER, HOCH & ARNOLD, CONSULTING ENGINEERS
AKRON OHIO CLEVELAN

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED:

_____ DIVISION ENGINEER

_____ DATE

MICROFILMED
JUL 31 1979
REPRODUCTION

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

SUMMIT COUNTY
SUM-277-0.00

N.B. STA. 527+44.42 } BACK =
S.B. STA. 521+36.85 }
℄ STA. 325+00.64 AHEAD

F.A.C.I. SIGN
STA. 329+50 S.B.

SUSPEND WORK
STA. 516+75

EXIST. US. 224

CORP. LINE
COVENTRY TWP

CITY OF AKRON

WATERLOO ROAD

CHAFFIN RD.

BEGIN PAVEMENT

BEGIN PROJECT
SUM-224(10.48)
U-458 (24)

S. ARLINGTON ST.

STA. 273+82.76

CHAFFIN
T.R. 358

3028

BEGIN WORK
STA. 275+00.00

BEGIN PROJECT
SUM-277-0.00
I-277-G-(3)-123

STA. 252+81.85

BRIDGE Nº SUM-8-0932
STA. 508+26.65 S.B.
STA. 8+21.47 RAMP "B-2"

2715

RAMP "B"

RAMP "B-2"

RAMP "D"

WOODVIEW DR.

CHAFFIN CT.

1444

1780

RAMP "C-1"

GREGG RD.
T.R. 315

ALFRED RD.
T.R. 359

RELOC. BREWSTER RUN

STA. 252+81.85 SUM-277
STA. 500+69.00 ℄ S.B.

RELOC. CHANNEL OFF
BREWSTER RUN

PRIVATE DRIVE

RAMP "B-1"

2475

RAMP "A"

RAMP "C-2"

BRIDGE Nº SUM.-8-0930
STA. 491+37.12 N.B.
STA. 10+36.11 RAMP "C-2"

BEGIN PROJECT
SUM-277-0.00
I-277-G-(1)-123

END PROJECT
SUM-277-0.00
I-277-G-(5)-123

BREWSTER RUN

STA. 28+68.84

3319

I-277-G-(3)-123

3315

END WORK
STA. 225+50.00

BEGIN WORK STA. 48+10
WOODVIEW DR.
RELOC. WOODVIEW
℄ WOODLEY

WOODLEY BLVD

BRIDGE Nº
SUM-277-0.000

SOUTHBOUND I-77

NORTHBOUND I-77

END WORK
STA. 88+50

SOUTH PLAZA DR.

DARNELL DR.

STA. 480+00

2646

BRIDGE
CARRYING
I-77 NB
OVER
I-77 (4.29) 180

BRIDGE
CARRYING
I-77 SB
OVER
I-77 (4.18) 116

PROJECT
SUM-277-12.12

RESUME WORK
STA. 473+30 N.B.

F.A.C.I. SIGN
STA. 460+00 N.B.

I-77 Line Data	
Sign at 455+00	10
Sign at 466+00	10
Resume Work 473+30 } Suspend Work 516+75 N.B. }	4345
Sign at 522+00	10
Sign at 330+00	10
Sign at 339+00	10
Work Length I-77	4395

DESIGN DESIGNATION

1780 = 1975 DDHV

DESIGN SPEED = 60 M.P.H.
T. = 4%
D. = 55%
K. = 11%

SCALE 1"=200'

SCHEMATIC PLAN
Revised 6-30-66

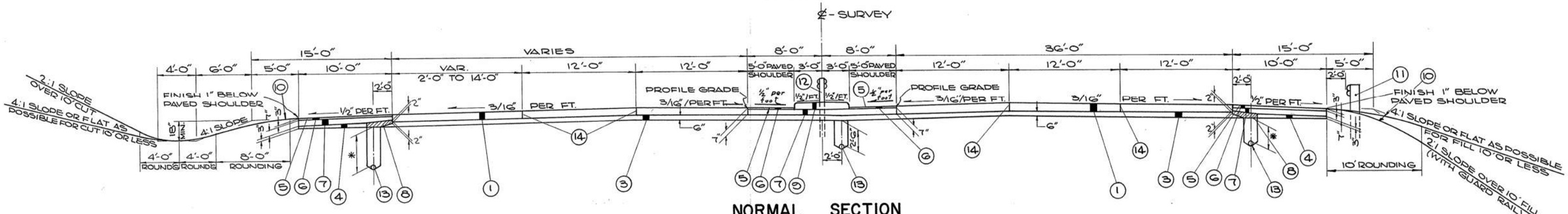
FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G-(3)123	

3
234

SUMMIT COUNTY
SUM-277-0.00

TYPICAL SECTIONS

TYPE - 451
CODE TYPE - 7221
SCALE: 3/16" = 1'0"

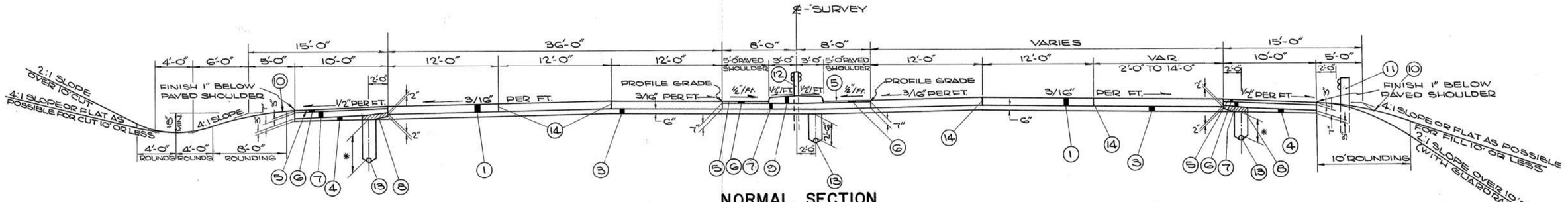


NORMAL SECTION

LIMITING STATIONS

STA. 228+68.84 TO STA. 251+17.15

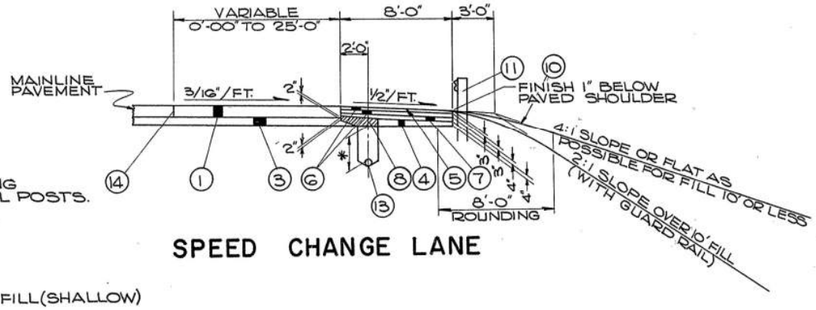
BRIDGE LIMITS : STA. 251+17.15 TO STA. 256+78.35 = 561.20 LIN.FT.



NORMAL SECTION

LIMITING STATIONS

STA. 256+78.35 TO STA. 273+82.76



SPEED CHANGE LANE

LEGEND

(1)	451	10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
(3)	310	SUBBASE, GRADING "A" OR "B" AS PER PLAN
(4)	310	SUBBASE
(5)	409	SEAL COAT BITUMINOUS MATERIAL (SEE NOTE IN PROPOSAL) APPLIED AT THE RATE OF 0.25 GAL. PER SQ.YD. SEAL COAT COVER AGGREGATE, Nº 8 (ONE APPLICATION 0.008 CU.YD. PER SQ.YD.)
(6)	301	3" BITUMINOUS AGGREGATE BASE, AS PER PLAN, 702.01 (85-100) OR 702.09 RT-12 (SEE NOTE IN PROPOSAL)
(7)	304	AGGREGATE BASE
(8)		SPECIAL DRAINAGE CONNECTION, USING Nº 8 AGGREGATE (SEE NOTE IN PROPOSAL)
(9)	*612	CONCRETE MEDIAN PAVEMENT
(10)	659	SEEDING AND MULCHING
(11)	606	GUARD RAIL, TYPE 4
(12)	*606	GUARD RAIL, TYPE 4, BARRIER DESIGN, USING 6"x8" SQUARE SAWED WOOD POSTS OR STEEL POSTS.
(13)	605	6" PIPE UNDERDRAIN
(14)		STANDARD LONGITUDINAL JOINT

* DENOTES 50" COVER IN CUT (DEEP); 30" COVER IN FILL (SHALLOW)

★ SEE MEDIAN JOINT DETAIL ON SHEET 140.

NOTE:
SEQUENCE OF OPERATIONS: (1) INSTALL PIPE UNDERDRAIN ON OUTSIDE SHOULDER, INSTALLATION OF SHALLOW UNDERDRAIN IN MEDIAN MAY BE DEFERRED UNTIL 451 IS PLACED, (2) PLACE SUBBASE OUT TO OUTSIDE EDGE OF UNDERDRAIN OR TO ONE FOOT BEYOND EDGE OF PAVEMENT WHERE NO UNDERDRAIN IS PRESENT, (3) CONSTRUCT 451, (4) REMOVE SUBBASE AND ANY CONTAMINATED BACKFILL OVER DRAIN AND REPLACE WITH Nº 8 AGGREGATE AS SHOWN BY (8) (5) COMPLETE SHOULDER CONSTRUCTION.

TYPICAL SECTIONS

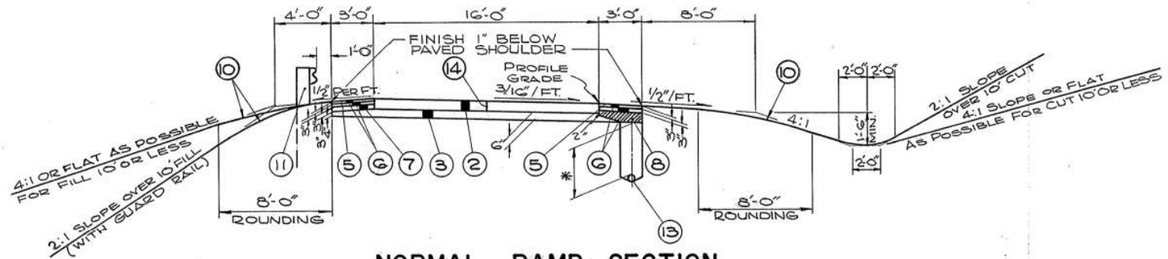
TYPICAL SECTIONS

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G-(3)123	

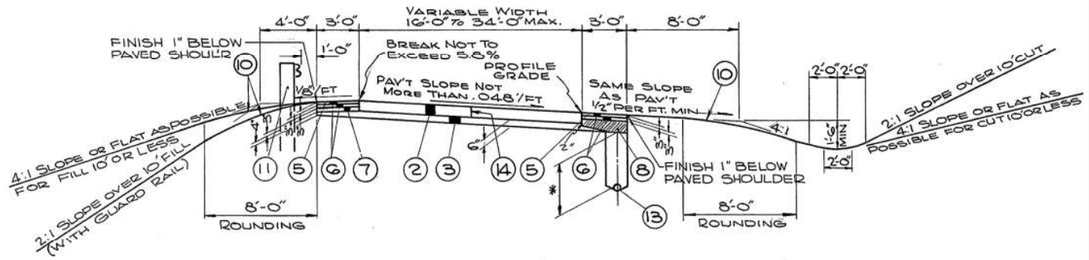
4/234

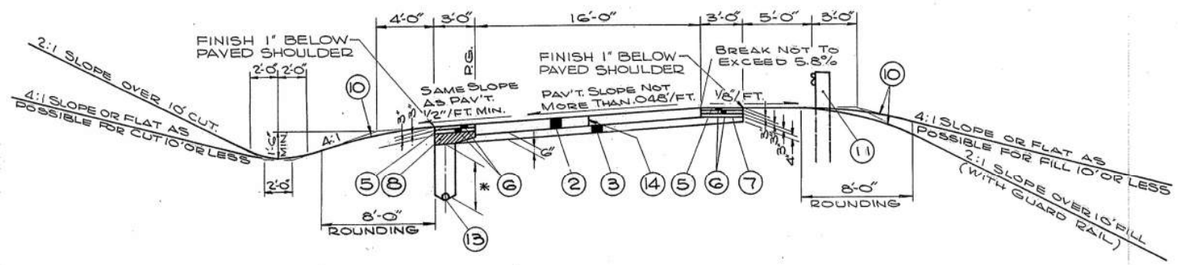
SUMMIT COUNTY
SUM-277-0.00

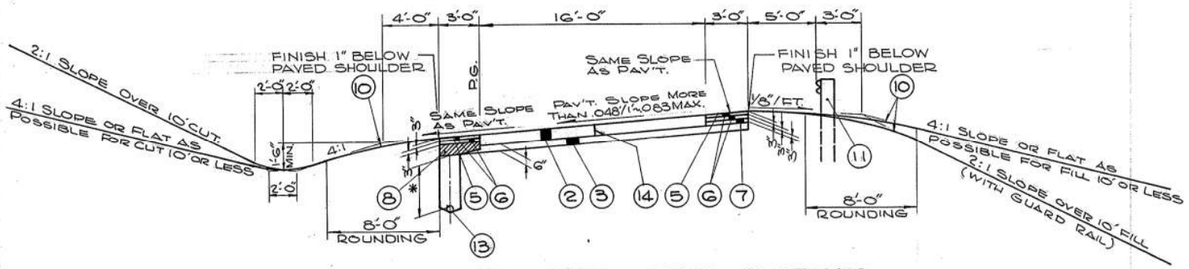
TYPE - 451
CODE TYPE - 7221
SCALE: 3/16" = 1'0"



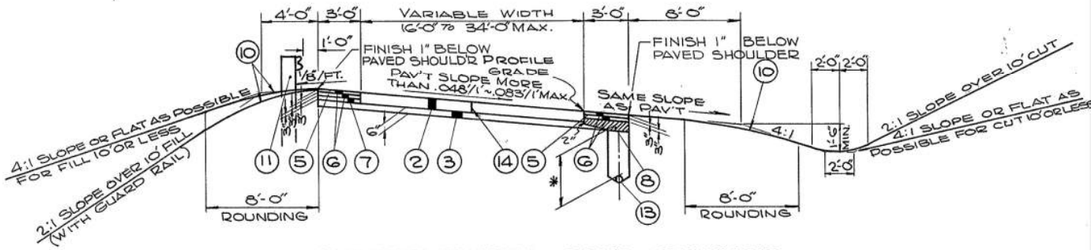
NORMAL RAMP SECTION







SUPERELEVATED RAMP SECTIONS



SUPERELEVATED RAMP SECTIONS

LEGEND

(2)	451	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
(3)	310	SUBBASE, GRADING "A" OR "B" AS PER PLAN
(5)	409	SEAL COAT BITUMINOUS MATERIAL (SEE NOTE IN PROPOSAL) APPLIED AT THE RATE OF 0.25 GAL. PER SQ. YD. SEAL COAT COVER AGGREGATE, Nº 8 (ONE APPLICATION 0.008 CU. YD. PER SQ. YD.)
(6)	301	3" BITUMINOUS AGGREGATE BASE, AS PER PLAN, 702.01 (85-100) OR 702.09 RT-12 (SEE NOTE IN PROPOSAL)
(7)	304	AGGREGATE BASE
(8)		SPECIAL DRAINAGE CONNECTION USING Nº 8 AGGREGATE (SEE NOTE IN PROPOSAL)
(10)	659	SEEDING AND MULCHING
(11)	606	GUARD RAIL, TYPE 4
(13)	605	6" PIPE UNDERDRAIN
(14)		STANDARD LONGITUDINAL JOINT

NOTE:
SEQUENCE OF OPERATIONS: (1) INSTALL PIPE UNDERDRAIN ON OUTSIDE SHOULDER, INSTALLATION OF SHALLOW UNDERDRAIN IN MEDIAN MAY BE DEFERRED UNTIL 451 IS PLACED, (2) PLACE SUBBASE OUT TO OUTSIDE EDGE OF UNDERDRAIN OR TO ONE FOOT BEYOND EDGE OF PAVEMENT WHERE NO UNDERDRAIN IS PRESENT (3) CONSTRUCT 451, (4) REMOVE SUBBASE AND ANY CONTAMINATED BACKFILL OVER DRAIN AND REPLACE WITH Nº 8 AGGREGATE AS SHOWN BY (8)(5) COMPLETE SHOULDER CONSTRUCTION.

* - DENOTES 50" COVER IN CUT (DEEP); 30" COVER IN FILL (SHALLOW)

RAMP TYPICAL SECTIONS

EXIST. S.R.8 TYPICAL SECTIONS

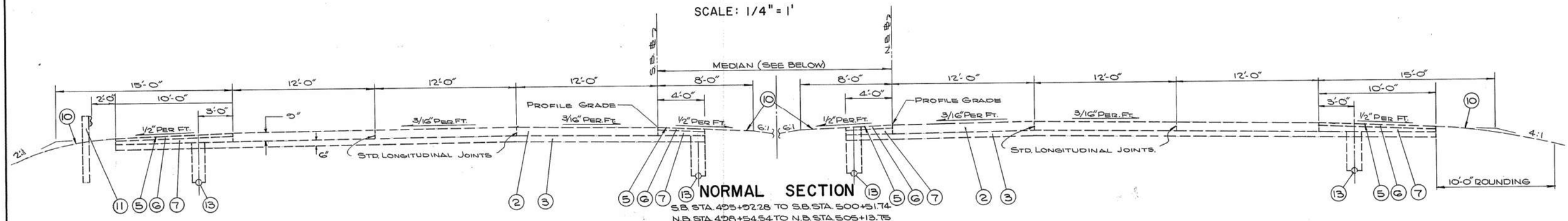
FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

5
234

SUMMIT COUNTY
SUM-277-0.00

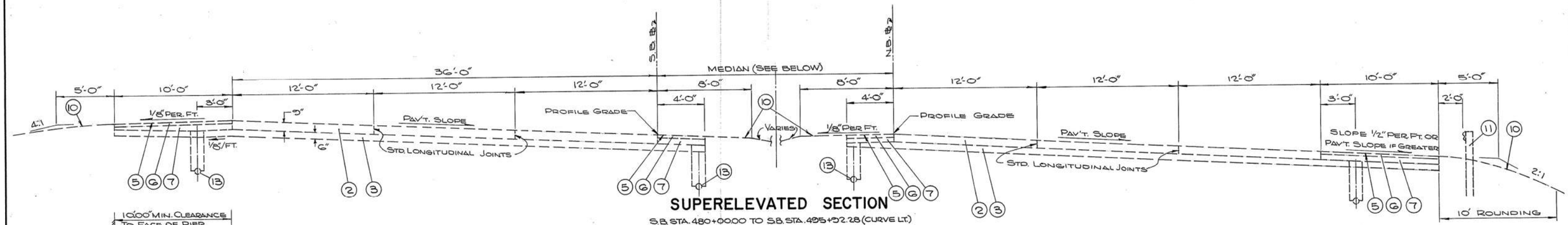
TYPE - 451

SCALE: 1/4" = 1'



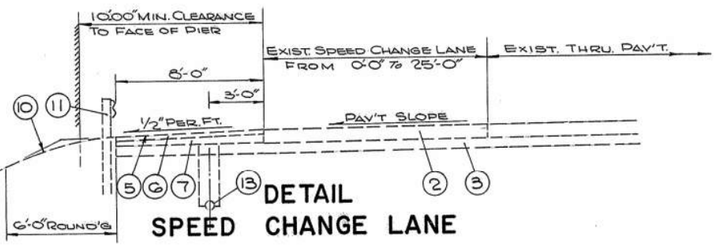
NORMAL SECTION

S.B. STA. 495+92.28 TO S.B. STA. 500+51.74
N.B. STA. 498+54.54 TO N.B. STA. 505+13.75



SUPERELEVATED SECTION

S.B. STA. 480+00.00 TO S.B. STA. 495+92.28 (CURVE LT.)
N.B. STA. 480+00.00 TO N.B. STA. 498+54.54 (CURVE LT.)
S.B. STA. 500+51.74 TO S.B. STA. 515+35.15 (CURVE RT.)
N.B. STA. 505+13.75 TO N.B. STA. 515+37.10 (CURVE RT.)

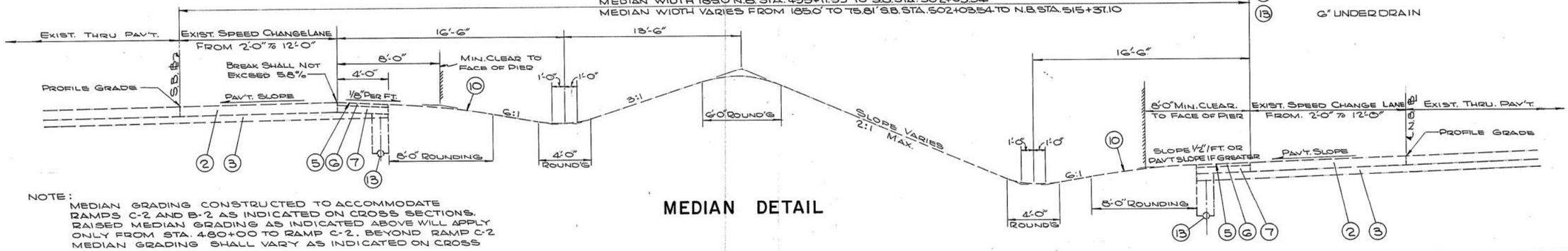


DETAIL SPEED CHANGE LANE

LEGEND

2	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT.
3	SUBBASE.
5	BITUMINOUS SURFACE TREATMENT.
6	3" BITUMINOUS AGGREGATE BASE
7	AGGREGATE BASE
10	SEEDING AND MULCHING
11	GUARD RAIL
13	6" UNDERDRAIN

MEDIAN WIDTH VARIES FROM S.B. STA. 480+00 TO N.B. STA. 495+71.59
MEDIAN WIDTH 18.50' N.B. STA. 495+71.59 TO S.B. STA. 502+03.54
MEDIAN WIDTH VARIES FROM 18.50' TO 75.81' S.B. STA. 502+03.54 TO N.B. STA. 515+37.10



MEDIAN DETAIL

NOTE:
MEDIAN GRADING CONSTRUCTED TO ACCOMMODATE RAMPS C-2 AND B-2 AS INDICATED ON CROSS SECTIONS. RAISED MEDIAN GRADING AS INDICATED ABOVE WILL APPLY ONLY FROM STA. 480+00 TO RAMP C-2. BEYOND RAMP C-2 MEDIAN GRADING SHALL VARY AS INDICATED ON CROSS SECTIONS

EXIST. S.R.8 (I-77) TYPICAL SECTIONS

TYPICAL SECTIONS

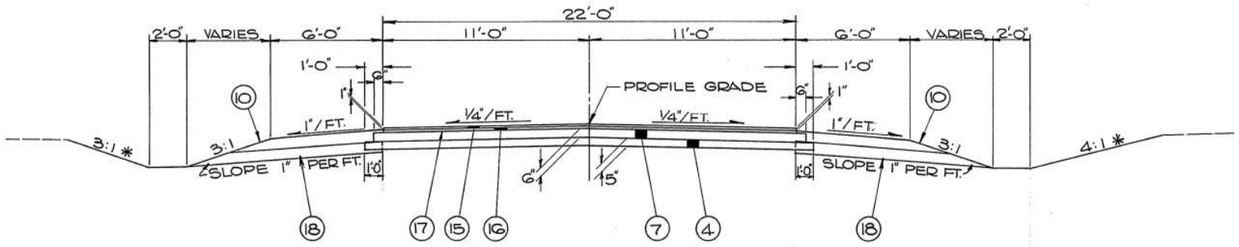
FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G-(3)123	

6/234

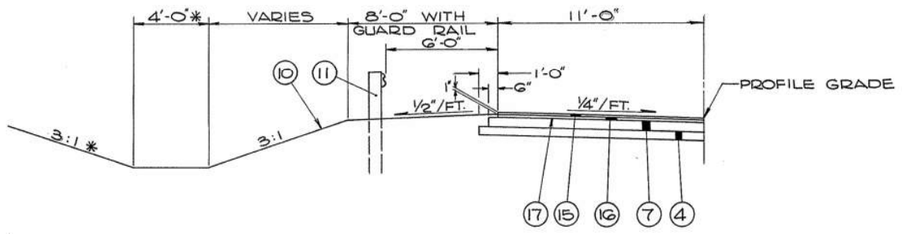
SUMMIT COUNTY
SUM-277-0.00

TYPE - 404 on 304

SCALE: 1/4" = 1'0"

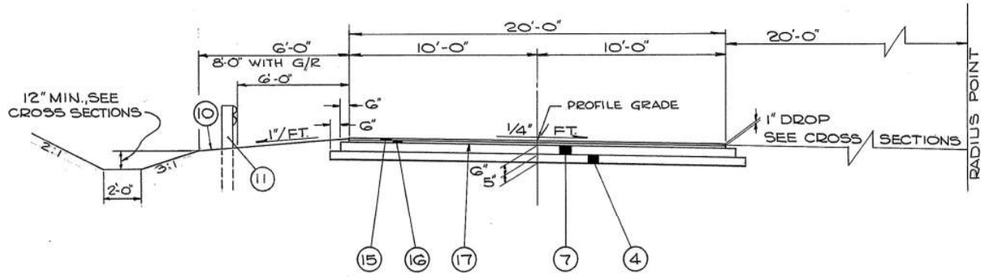


NORMAL SECTION
LIMITING STATIONS
STA. 48+10 TO STA. 49+00
STA. 51+15 TO STA. 51+35



SUPERELEVATED SECTION
LIMITING STATIONS
STA. 49+00 TO STA. 51+15

WOODVIEW AVE. & WOODLEY BLVD. RELOCATION



NORMAL SECTION
GREGG ROAD TURN-AROUND

LEGEND

(4)	310	SUBBASE
(7)	304	AGGREGATE BASE
(10)	659	SEEDING AND MULCHING
(11)	606	GUARD RAIL, TYPE 4
(15)	404	1¼" ASPHALT CONCRETE (70-85)
(16)	402	1¼" ASPHALT CONCRETE (70-85)
(17)	408	BITUMINOUS PRIME COAT- 702.09, RT-2 OR RT-3, APPLIED AT THE RATE OF 0.40 GAL. PER SQ. YD.
(18)	605	AGGREGATE DRAIN

* - TYPICAL, UNLESS SHOWN OTHERWISE ON CROSS SECTIONS

TYPICAL SECTIONS

GENERAL NOTES

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

7/234

SUMMIT COUNTY
SUM-277-0.00

FIELD OFFICE

THE CONTRACTOR SHALL, IN ADDITION TO THE REQUIREMENTS OF ITEM 105.152, PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 500 SQ. FT. OF FLOOR SPACE. THE CONTRACTOR SHALL HAVE A TELEPHONE INSTALLED AND MAINTAINED IN THIS FIELD OFFICE DURING THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL ALSO PROVIDE AND MAINTAIN SANITARY PROVISIONS AS PER ITEM 107.06. ALL OF THE ABOVE IS TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR "FIELD OFFICE".

RIGHT OF WAY FENCE

FOR LOCATION AND TYPE OF RIGHT-OF WAY FENCE SEE SHEET NO. 41 & 42.

R/W MONUMENTS, FEDERAL PROJECTS MARKERS, AND SECTION MARKERS

EXISTING R/W MONUMENTS, BENCH MARKS, FEDERAL PROJECT MARKERS AND SECTION MARKERS THAT WILL BE REMOVED BY CONSTRUCTION, SHALL BE PROTECTED BY THE CONTRACTOR AS PER ITEM 107.12 UNTIL THEY CAN BE WITNESSED, REFERENCED AND RESET BY THE CONTRACTOR.

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON U. S. G. S. DATUM.

CONSTRUCTION LAYOUT STAKES

SEE NOTE IN PROPOSAL DESCRIBING THE WORK INCLUDED IN THIS LUMP SUM PAY ITEM.

ESTIMATED QUANTITIES

SPECIFIC LOCATIONS AND USAGE OF ESTIMATED QUANTITIES SET UP ON 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 THE COMPLETION OF THIS PROJECT. THESE QUANTITIES SHALL NOT BE ORDERED UNTIL DIRECTED BY THE ENGINEER.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER OR CALCIUM CHLORIDE FOR DUST CONTROL PURPOSES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616 CALCIUM CHLORIDE FOR DUST CONTROL - 18 TONS
ITEM 616 WATER FOR DUST CONTROL 75M. GALS

ITEM 203 PROOF ROLLING

AN ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN PROVIDED IN THE GENERAL SUMMARY FOR USE IN ITEM 203 PROOF ROLLING OF SUBGRADE ON THE MAINLINE, RAMP PAVEMENTS, AND PAVED SHOULDERS, IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 801.

ITEM 605 AGGREGATE DRAINS, WOODLEY-WOODVIEW RELOCATION

AGGREGATE DRAINS SHALL BE PLACED AT FIFTY FOOT (50') INTERVALS ON EACH SIDE OF NORMAL CROWNED SECTIONS AND AT TWENTY-FIVE FOOT (25') INTERVALS ON THE LOW SIDE ONLY OF SUPERELEVATED SECTIONS, EXCEPT WHERE ITEM 605 PIPE UNDERDRAINS HAVE BEEN PROVIDED.

A STONE UNDERDRAIN SHALL BE PLACED AT THE LOW POINT OF EACH SAG VERTICAL CURVE.

UNDERGROUND UTILITIES

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

UTILITIES

EAST OHIO GAS COMPANY	1717 E. 9TH STREET	CLEVELAND, OHIO
CITY OF AKRON (SEWER DEPT)	MUNICIPAL BLDG.	AKRON, OHIO 44308
OHIO EDISON COMPANY	47 N. MAIN STREET	AKRON, OHIO
OHIO BELL TELEPHONE COMPANY	50 W. BOWERY STREET	AKRON, OHIO

EROSION CONTROL AT BRIDGES

SODDED CHANNELS SHALL BE PROVIDED AT ENDS OF BRIDGES WHERE REQUIRED BY THE PLANS. COST OF ALL WORK NECESSARY TO COMPLETE THE ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE YARD FOR ITEM SPECIAL, SODDING FOR SPECIAL BERM AND SLOPE PROTECTION. SEE SHEET NO. 140 FOR DETAILS.

ITEM 410 TRAFFIC COMPACTED SURFACE

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 410 TRAFFIC COMPACTED SURFACE, TYPE "A" OR "B", 75 CU. YDS.
TYPE "C" 75 CU. YDS.

FEDERAL AID CONSTRUCTION IDENTIFICATION SIGNS

THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE FEDERAL AID CONSTRUCTION IDENTIFICATION SIGNS ON I-77 AT THE LOCATIONS SHOWN ON THE SCHEMATIC PLAN.

SIGN DETAILS SHALL BE AS SPECIFIED ON STANDARD DRAWING FACI-1 CODE N-55 (1) - 120 (2).

THE SIGNS SHALL BE ERECTED IN ACCORDANCE WITH STANDARD DRAWING FACI-2. ADDITIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH NOTES IN THE PROPOSAL.

REMOVAL OF TREES

ALL TREES SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT SHALL BE REMOVED UNDER THE LUMP SUM PRICE BID FOR ITEM 201 CLEARING AND GRUBBING.

THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES TO BE REMOVED:

SIZES	NO. OF TREES
18"	402
30"	1

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.

FARM DRAINS

ALL FARM DRAINS WHICH ARE ENCOUNTERED DURING CONSTRUCTION SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS AS DIRECTED BY THE ENGINEER. EXISTING COLLECTORS WHICH ARE LOCATED BELOW THE ROADWAY DITCH ELEVATIONS AND WHICH CROSS THE ROADWAY SHALL BE REPLACED WITHIN THE RIGHT-OF-WAY LIMITS BY ITEM 603 CONDUIT, TYPE B WITH CLASS "B" BEDDING.

EXISTING COLLECTORS AND ISOLATED FARM DRAINS WHICH ARE ENCOUNTERED ABOVE THE ELEVATION OF THE ROADWAY DITCHES SHALL BE OUTLETTED INTO THE ROADWAY DITCH BY ITEM 603 TYPE F CONDUIT. THE OPTIMUM OUTLET ELEVATION SHALL BE ONE FOOT ABOVE THE FLOW LINE ELEVATION OF THE DITCH. LATERAL TILE FIELDS WHICH CROSS THE ROADWAY SHALL BE INTERCEPTED BY ITEM 603 TYPE E CONDUIT AND CARRIED IN A LONGITUDINAL DIRECTION TO AN ADEQUATE OUTLET OR ROADWAY CROSSING.

THE LOCATION, TYPE, SIZE AND GRADE OF REQUIRED REPLACEMENTS SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION AND PAYMENT SHALL BE MADE ON FINAL MEASUREMENTS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE. THESE ESTIMATED QUANTITIES SHALL NOT BE ORDERED UNTIL SO DIRECTED BY THE ENGINEER.

ITEM 603	6" CONDUIT, TYPE B WITH CLASS B BEDDING	400 LIN. FT.
ITEM 603	8" CONDUIT, TYPE B WITH CLASS B BEDDING	200 LIN. FT.
ITEM 603	6" CONDUIT, TYPE E	200 LIN. FT.
ITEM 603	8" CONDUIT, TYPE E	100 LIN. FT.
ITEM 603	6" CONDUIT, TYPE F	60 LIN. FT.
ITEM 603	8" CONDUIT, TYPE F	30 LIN. FT.

ALL NECESSARY PIPE SPECIALS SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEM.

CONTRACTION AND EXPANSION JOINTS

ALTHOUGH SPECIFIC LOCATIONS OF CERTAIN EXPANSION AND CONTRACTION JOINTS HAVE BEEN DETAILED ON THIS PLAN, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. PROVISION OF EXPANSION JOINTS AT ALL MAJOR STRUCTURES AND THE MAXIMUM SPACING BETWEEN CONTRACTION JOINTS SHALL IN ALL CASES, BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING BP-4.

ITEM 310 SUBBASE, GRADING A OR B AS PER PLAN

MATERIAL FOR THIS ITEM SHALL MEET THE REQUIREMENTS OF GRADING A OR B OF 310.02 EXCEPT THAT FOR EITHER GRADING, NO MORE THAN 10% OF THE MATERIAL SHALL PASS A NO. 200 SIEVE AFTER ALL OPERATIONS OF PLACING AND COMPACTING HAVE BEEN COMPLETED.

REMOVAL OF EXISTING PIPE

THE REMOVAL OF ALL EXISTING PIPE DRAINS WITHIN THE LIMITS OF PROPOSED EXCAVATION ITEMS SHALL BE INCLUDED FOR PAYMENT IN THE UNIT PRICES BID FOR THE RESPECTIVE EXCAVATION ITEMS, UNLESS OTHERWISE ITEMIZED IN THE PLANS.

ITEM SPECIAL, DRILLED WATER WELLS ABANDONED

THE EXISTING CONCRETE OR STONE SLAB WELL COVER AND PUMPING EQUIPMENT SHALL BE REMOVED AND DISPOSED OF. THE CASING SHALL BE CUT OFF AT LEAST TWO FEET BELOW THE PROPOSED FINISHED GRADE OUTSIDE PROPOSED PAVEMENT AREAS OR AT LEAST TWO FEET BELOW THE PROPOSED SUBGRADE ELEVATION INSIDE PROPOSED PAVEMENT AREAS AND CAPPED WITH CLASS "E" CONCRETE OR A STANDARD THREADED PIPE CAP.

THE UNIT PRICE BID FOR EACH "DRILLED WELL ABANDONED" SHALL INCLUDE PAYMENT FOR ALL LABOR, TOOLS, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

SPRING DRAINS

REFERENCE IS MADE TO THE DETAILED DRAWING ON SHEET NO. 144 SHOWING THE METHOD OF DRAINING ANY SPRINGS THAT MAY BE SHOWN ON THE PLAN OR ENCOUNTERED DURING CONSTRUCTION. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THIS PURPOSE:

ITEM 605-6" PIPE SEC. 707.06 OR 707.12 (WITH GRANULAR FILTER BACKFILL)-------400 LIN. FT.
ITEM 605 - AGGREGATE DRAINS FOR SPRINGS, AS PER PLAN---------- 20 LIN. FT.

THE CONTRACTOR SHALL NOT ORDER MATERIALS FOR "SPRING DRAINS" UNTIL AUTHORIZED BY THE ENGINEER AND IN THE EVENT NO SPRINGS ARE ENCOUNTERED, THE ITEMS SHALL BE NON-PERFORMED.

CONNECTIONS TO EXISTING PIPE

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

MAINTENANCE OF SEWER FLOWS

THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO AS TO MAINTAIN AT ALL TIMES SEWER FLOWS THROUGH EXISTING FACILITIES TO REMAIN IN PLACE AND THROUGH EXISTING FACILITIES TO BE REPLACED UNTIL THE NEW FACILITIES ARE COMPLETED AND PLACED INTO USE.

PAYMENT FOR ANY ADDITIONAL COSTS INVOLVED IN MAINTAINING THESE FLOWS BY PUMPING OR BY ANY OTHER MEANS APPROVED BY THE ENGINEER SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE RESPECTIVE PIPE ITEMS.

INSPECTION

THE CITY OF AKRON SEWER DEPARTMENT SHALL BE NOTIFIED TWENTY-FOUR (24) HOURS PRIOR TO THE MAKING OF ANY CONNECTION TO EXISTING SANITARY SEWER LINES IN ORDER TO HAVE AN OPPORTUNITY TO INSPECT THESE CONNECTIONS.

MANHOLES, INLETS AND CATCH BASINS ARE STATIONED AND LOCATED AS FOLLOWS:

MANHOLES-CENTER LINE COVER

NO. 2-A-8 TO 2-A-12 INLETS CENTER LINE COVER
NO. 2-2-A AND No. 2-2-B CATCH BASINS CENTER LINE GRATE
NO. 6 CATCH BASINS, CENTER LINE GRATE AT FACE OF CURB
NO. 5 AND NO. 2-3 CATCH BASINS CENTER LINE GRATE

ALL ELEVATIONS SHOWN ON THE PLANS FOR MANHOLES, INLETS AND CATCH BASINS ARE ACTUAL FINISH GRADE ELEVATIONS. ALL MANHOLE COVERS SHALL BE SET TO CONFORM TO ALL LOCAL GRADES OR AS DIRECTED BY THE ENGINEER.

ITEM 604 MANHOLE NO. 3

THE 604 NO. 3 MANHOLES CALLED FOR ON THESE PLANS ARE CITY OF AKRON STANDARD MANHOLES AS PER DETAILS ON SHEET NO. 155.

ITEM 604 MANHOLE REBUILT

THIS ITEM SHALL CONSIST OF THE CAREFUL REMOVAL OF THE EXISTING MANHOLE TO A DEPTH SUFFICIENT TO ALLOW RECONSTRUCTION TO THE NEW GRADE USING THE SALVAGED MANHOLE FRAME AND COVER. THE RECONSTRUCTION SHALL CONFORM TO THE EXISTING DIMENSIONS AND TYPE OF CONSTRUCTION.

PAYMENT FOR THE REMOVAL, RECORBELLING AND RESETTING OF THE FRAME AND COVER SHALL BE AT THE UNIT BID PRICE OF ITEM 604 "MANHOLES REBUILT."

ITEM 202 MANHOLES REMOVED

CASTINGS REMOVED UNDER 202 "MANHOLES REMOVED" SHALL BE DISPOSED OF BY THE CONTRACTOR.

GENERAL NOTES

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G-(9)123	

8
234

SUMMIT COUNTY
SUM.-277-0.00

ITEM SPECIAL - CLEANING AND DISPOSAL OF SEPTIC TANKS

THIS ITEM SHALL INCLUDE CLEANING, BACKFILLING AND REMOVAL OF ALL OR ANY PORTION OF EXISTING SEPTIC TANKS.

ALL SEPTIC TANKS LYING WITHIN THE PROPOSED RIGHT-OF-WAY LIMITS SHALL BE CLEANED AND EMPTIED. MATERIAL REMOVED FROM THESE TANKS SHALL BE CLASSIFIED AS UNSUITABLE AND DISPOSED OF OUTSIDE THE RIGHT-OF-WAY OR EASEMENT LINES.

WHEN THE SEPTIC TANKS ARE LOCATED ABOVE THE FINISHED PAVEMENT OR GROUND LINES, THEY SHALL BE ENTIRELY REMOVED AND DISPOSED OF IN ACCORDANCE WITH SEC. 202.06.

WHEN THE TANKS ARE LOCATED BELOW THE FINISHED PAVEMENT OR GROUND LINES, THE TOPS OF THE TANKS SHALL BE REMOVED, AND THE WALLS SHALL BE REMOVED TO A DEPTH OF 3 FEET BELOW THE FINISHED SUBGRADE OR GROUND LINES. THE REMOVED MATERIAL SHALL BE DISPOSED OF AS EXPLAINED ABOVE. THE TANKS SHALL BE BACKFILLED WITH SUITABLE SOIL OR GRANULAR MATERIAL IN ACCORDANCE WITH SEC. 203.08.

THIS ITEM SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH FOR "ITEM SPECIAL - CLEANING AND DISPOSAL OF SEPTIC TANKS," WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR CLEANING, REMOVING, AND DISPOSING OF EXCESS MATERIALS, BACK-FILLING, AND FOR ALL LABOR, TOOLS, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM INCLUDING INCIDENTAL EXCAVATION.

PRIVATE SANITARY SEWER TAPS

A. WITHIN THE INTERSTATE LIMITED ACCESS RIGHT-OF-WAY NO PRIVATE SANITARY SEWER CONNECTIONS SHALL BE MADE TO THE CLOSED STORM SEWER SYSTEM WITHIN THE LIMITED ACCESS RIGHT-OF-WAY.

PRIVATE SANITARY SEWERS MAY OUTLET AT OPEN DITCH PORTIONS OF THE PROPOSED HIGHWAY DRAINAGE SYSTEM IF THE PROPERTY OWNER OBTAINS WRITTEN APPROVAL FROM THE LOCAL BOARD OF HEALTH OF SATISFACTORY EFFLUENT. IF THE PROPERTY OWNER FAILS TO SHOW PROOF FROM THE HEALTH BOARD OF SATISFACTORY EFFLUENT, THE DRAIN SHALL BE PLUGGED AT THE RIGHT-OF-WAY LINE AND QUANTITIES SHALL BE NON—PERFORMED. COST OF PLUGGING DRAINS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203, ROADWAY EXCAVATION.

PRIVATE SEWERS MAY BE CONNECTED IF THEY CARRY ONLY WATER FROM ROOF DRAINS, FIELD DRAINS AND ENCLOSED NATURAL DRAINAGE SOURCES WHICH WOULD REACH THE ROAD THROUGH NATURAL CHANNELS IF SUCH WATER WAS NOT CONDUCTED ARTIFICALLY.

B SIDE ROADS

ALL EXISTING SANITARY SEWERS ENCOUNTERED DURING CONSTRUCTION OPERATIONS THAT ARE NOW OUTLETTING INTO THE HIGHWAY DRAINAGE SYSTEM MAY BE CONNECTED TO THE HIGHWAY DRAINAGE SYSTEM, AS DIRECTED BY THE ENGINEER, PROVIDED THE PROPERTY OWNER OBTAINS WRITTEN APPROVAL FROM THE LOCAL BOARD OF HEALTH OF SATISFACTORY EFFLUENT. IF THE PROPERTY OWNER FAILS TO SHOW PROOF FROM THE HEALTH BOARD OF SATISFACTORY EFFLUENT, THE DRAIN SHALL BE PLUGGED AT THE RIGHT-OF-WAY LINE AND QUANTITIES SHALL BE NON-PERFORMED. COST OF PLUGGING DRAINS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203, ROADWAY EXCAVATION.

C. INSPECTION WELLS, AS PER PLAN

THE INSPECTION WELLS CALLED OUT IN THE PLANS SHALL BE PROVIDED AT THE LOCATIONS SHOWN ONLY AFTER A PERMIT HAS BEEN ISSUED FOR THE SANITARY CONNECTION. THEY SHALL BE CONSTRUCTED ACCORDING TO THE DETAILS ON SHEET No. 144 AND LOCATED BETWEEN THE RIGHT-OF-WAY LINE AND THE FENCE.
THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR ADDITIONAL USE AS DIRECTED BY THE ENGINEER.

ITEM 603 6" CONDUIT, TYPE C WITH CLASS "B" BEDDING	100 LIN.FT.
ITEM 603 8" CONDUIT, TYPE C WITH CLASS "B" BEDDING	50 LIN.FT.

ALL NECESSARY PIPE SPECIALS SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEM.

LIMITS OF SEEDING

"MAINLINE" QUANTITIES FOR SEEDING ARE CALCULATED FOR 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.

"SIDE ROADS" QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN THE WORK LIMITS AS SHOWN ON THE CROSS SECTIONS.

SPECIAL SEEDING PREPARATION AREAS

THE REFERENCE IN THE FIRST PARAGRAPH OF SECTION 659.09 TO PREPARATION OF THE SEED BED IN FRONT OF RESIDENCES, ETC. SHALL ON THIS PROJECT BE CONSIDERED TO BE PARTICULARLY APPLICABLE TO THE AREAS LISTED ON SHEET No. 12

AGRICULTURAL LIMING MATERIAL

THE LOCATION AND NEED FOR AGRICULTURAL LIMING MATERIALS WILL BE DETERMINED BY THE ENGINEER ON THE BASIS OF LABORATORY TEST AFTER ROUGH GRADING OPERATIONS HAVE BEEN PERFORMED. THE QUANTITY OF AGRICULTURAL LIMING MATERIALS SHOWN ON THE PLANS IS SUFFICIENT FOR APPLICATION TO THE ENTIRE EXPOSED SOIL AREA OF THE CONTRACT BUT MAY BE PARTIALLY OR COMPLETELY OMITTED, AS MAY BE DIRECTED BY THE ENGINEER IF LABORATORY TESTS INDICATE THE ITEM IS NOT NEEDED. AGRICULTURAL LIMING MATERIAL SHALL BE APPLIED AT THE RATE OF 100 POUNDS PER 1,000 SQUARE FEET OF SURFACE AREA.

THE QUANTITY OF AGRICULTURAL LIMING MATERIAL IS ESTIMATED AND IS INCLUDED FOR USE ONLY WHEN AND IN AMOUNTS AS DIRECTED BY THE ENGINEER. THE AMOUNT OF THIS ITEM AND ITS LOCATION SHALL BE RECORDED AS USED, AND PAYMENT WILL BE INCLUDED IN THE FINAL PAYMENT ESTIMATE.

MAINTAINING TRAFFIC

TEN (10) DAYS PRIOR TO ANY INTERRUPTION OF NORMAL TRAFFIC FLOW WITHIN THE LIMITS OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT IN WRITING HIS PROPOSED METHODS AND PROCEDURES PLANNED FOR THE MAINTENANCE OF TRAFFIC THROUGHOUT THE LIFE OF THE PROJECT. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL OF HIS PLAN FROM THE ENGINEER BEFORE CAUSING ANY INTERRUPTIONS IN THE TRAFFIC FLOW.

I-77

THE TRAFFIC ON EACH OF THE NORTHBOUND AND SOUTHBOUND LANES OF I-77 MAY BE RESTRICTED TO TWO LANES DURING CONSTRUCTION OF THE RESPECTIVE RAMP BRIDGES AND THE PAVEMENT WITHIN THE MEDIAN. THE RESTRICTION IS TO BE ACCOMPLISHED BY THE CHANNELIZATION AND SIGNING SHOWN ON SHEET Nos. 138 & 139.

WHILE IT IS INTENDED THAT ALL CONSTRUCTION IN THE MEDIAN BE COMPLETED WHILE THE TRAFFIC IS RESTRICTED TO TWO LANES, THE TIME OF RESTRICTION IS TO BE KEPT TO A MINIMUM.

STRUCTURAL STEEL MAY BE ERECTED OVER THE TRAVELED LANES OF I-77 ONLY BETWEEN THE HOURS OF 9 A.M. & 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 & 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 & WEST SIDES OF I-77 MUST BE ACCOMPLISHED THROUGH USE OF WATERLOO RD. OR THE PROJECT BRIDGES. ACCESS TO THE MEDIAN MUST BE ACCOMPLISHED THROUGH USE OF THE EXISTING INTERCHANGES AT WILBETH RD. OR S. ARLINGTON ST. OR THE RAMP BRIDGES. PARKING OF CONSTRUCTION EQUIPMENT OR VEHICLES USED FOR PERSONAL TRANSPORTATION OR STORING OF MATERIALS ON THE THROUGH LANES OR PAVED BERMS OF I-77 WILL NOT BE PERMITTED.

WOODVIEW DRIVE AND WOODLEY BOULEVARD

ACCESS FOR LOCAL TRAFFIC IS TO BE MAINTAINED AT ALL TIMES BY USE OF EITHER THE EXISTING PAVEMENT, THE PROPOSED PAVEMENT, OR A TEMPORARY ROADWAY SURFACED WITH ITEM 410 AGGREGATE AND STABLIZED WITH ITEM 616 CALCIUM CHLORIDE.

THE LIMITS & 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.

GREGG ROAD

GREGG ROAD IS TO BE CLOSED TO THRU TRAFFIC. ROAD CLOSED SIGNS ARE TO BE ERECTED AT CHAFFIN ROAD AND ALFRED ROAD. BARRICADES ARE TO BE ERECTED OUTSIDE THE CONSTRUCTION LIMITS OF THE MAIN LINE.

ALTERNATE METHODS

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.

CENTERLINE REFERENCE MONUMENTS, AS PER PLAN

MONUMENTS SHALL BE CONSTRUCTED OF CLASS "C" CONCRETE, CAST-IN-PLACE IN A CIRCULAR HOLE EIGHT (8) INCHES IN DIAMETER AND FORTY-FOUR (44) INCHES IN DEPTH. TOP OF CONCRETE SHALL BE FINISHED AT A DEPTH OF TWO (2) INCHES BELOW GROUND LEVEL AND THE UPPER SIX (6) INCH PORTION OF THE CONCRETE SHALL BE FORMED. ONE-HALF (1/2) INCH STEEL RODS SIX (6) INCHES LONG SHALL BE EMBEDDED IN THE WET CONCRETE AS DIRECTED BY THE ENGINEER TO MARK THE CENTERLINE AND STATION.

ITEM 606 TEMPORARY GUARD RAIL

Steel 55 gal. drums shall be used in lieu of posts for this item. The drums shall be painted yellow and shall be half-filled with sand in order to hold them in position. The rail elements shall be steel beam type meeting the requirements of either 710.06 (Deep) or 710.07 (Shallow), except that in lieu of furnishing new rail, used rail which is in good condition and approved by the Engineer may be used. The rail shall be securely bolted to the traffic side of the drums in a manner satisfactory to to the Engineer and the center of the rail element shall be approximately 2 feet above the surface of the pavement or ground.

ITEM 606 TEMPORARY GUARD RAIL REBUILT

This item shall meet the above requirements except that existing rail elements and steel drums shall be used.

ITEM 606 YELLOW PAINTED DRUMS WITHOUT RAIL ELEMENT

This item shall meet the above requirements for steel drums and shall be spaced @ 12'-6" c/c. See sheets 138 & 139.

The following estimated quantity has been included in the General Summary:

Item 606 Yellow painted drums without rail element, 350 Each.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

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

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

SUMMARY OF TABLES

SUMMIT COUNTY
SUM-277-0.00

706.01, 706.02 or 706.08

SHEET Nº	LOCATION	503	509	511	601				602	603 CONDUIT													604										605			660	604	667
					PAVED GUTTER					TYPE "A" *			TYPE "B"*					TYPE C *	TYPE D	TYPE E	TYPE "D"	TYPE "F"		MANHOLE ADJUST'D TO GRADE	INLETS			CATCH BASINS					UNDERDRAIN		AGGREGATE DRAINS	SODDING	BERM & SLOPE PROTECT'N	IN-SPECT'N WELLS AS PER PLAN	JUTE MATTING
		UNCLASSIFIED EXCAVATION	REINFORCING STEEL	CONCRETE FOR STRUCTURES	STD. TYPE 1-2	STD. TYPE 1-4	DUMPED ROCK CHANN'L PROTECTION	RIP RAP USING 6" REINF. CONC.	CONCRETE MASONRY	21" 706.02 CLASS IV	24" 706.02 CLASS V	36" 707.03 GAGE 8-5	6"	15" 706.02 CLASS V	15"	24"	30"X19" ELLIP 706.04 CL III	6"	15"	24"	12" 707.01 OR 707.02	6"	15"		Nº 2-A-8 MOD.	Nº 2-A-10 MOD.	Nº 2-A-12 MOD.	Nº 2-3 STD.	Nº 2-2-A STD.	Nº 2-2-B STD.	Nº 5 STD.	Nº 6 STD.	6" SHALLOW PIPE	6" DEEP PIPE					
		C.Y.	LBS.	C.Y.	LIN. FT.		C.Y.	S.Y.	C.Y.	LIN. FT.														EACH								LIN. FT.			SQ. YD.	EACH	S.Y.
	SUM-277																																				
15	225+00 TO 230+00						1.3		0.41						62							5	20		1							384					639
16	230+00 TO 240+00						2.2		0.52						162							50				2					1	1579	1463				1074
17	240+00 TO 250+00						1.3		0.41						92							30	38		1						1	1966	335				
18	250+00 TO 260+00						1.3		0.41						58							30	56			1						914				123	
19	260+00 TO 270+00						14.5		0.82						162							50	98			1	1				1	2317	233				149
20	270+00 TO 280+00						1.3		0.26						74			92				20	28				1					742	383			4	375
43	RAMP "A"																					10										786					499
44																																650					283
50					113																											390			38		386
51	RAMP "B"						1.3		0.41						30							10	50								1	586	400				175
52																						10											304				232
62	RAMP "B-1" & "B-2"						21.5		0.26				24	174																1		2307				45		426
78	RAMP "C"																					10										312					122
79																						10										1006					1351
80																						10										577					498
90	RAMP "C-1" & "C-2"												20									20										1906	520			28		522
104	RAMP "D"					714			1.38											74		10										796	320		238		2	680
105						203	55.6																									600			67			217
131	WOODVIEW-WOODLEY REL.						2.7		0.92							52	44		90		22			1					1	1	1			78				542
145	CULV. C-1 SUM-277	114.6	127,957	72.8			101.7	14.5				31.6																										218
148	CULV. C-2 RAMP "B-1"						178.9		14.8																											55		
152	CULV. C-3 RAMP "B"						8.3		6.6			144																								13		
153	CULV. C-4 RAMP "C-2"								6.6			142																								13		
154	CULV C-5 RAMP "D"								5.6	100																										5		
	SHEET TOTAL	114.6	127,957	72.8	113	917	351.9	14.5	39.4	100	286	31.6	44	174	640	52	44	92	90	74	22	275	290	1	2	4	2	1	1	1	1	4	17,818	3958	78	429	196	6	8738

* - DENOTES CONDUIT CONSTRUCTED WITH CLASS B BEDDING.

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

10
234

SUMMIT COUNTY
SUM-277-0.00

SUMMARY OF TABLES

SHEET Nº	LOCATION	202 PIPE REMOVED 24" & UNDER	202 PIPE REMOVED	202	202 EXIST. CONC. CURB REMOVED	202 TEMPORARY GUARD RAIL REMOVED FOR REUSE	203 SUB-GRADE PREPARATION	301 3" BITUMINOUS AGGREGATE BASE		304 AGGREGATE BASE	310 SUB-BASE GRADING "A" OR "B" AS PER PLAN	310 SUB-BASE	402 1¼" ASPHALT CONCRETE	404 1¼" ASPHALT CONCRETE	408 BITUMINOUS PRIME COAT	409 SEAL COAT BITUMINOUS MATERIAL	409 SEAL COAT COVER AGGREGATE Nº 8	SPECIAL DRAINAGE CONNECTION USING Nº 8 AGG.	451 10" REINF. PORTLAND CEMENT CONCRETE PAVEMENT	451 9" REINF. PORTLAND CEMENT CONCRETE PAVEMENT	606 GUARD RAIL TYPE 4	606 GUARD RAIL TYPE 4 BARRIER DESIGN	606 GUARD RAIL TEMPORARY	606 GUARD RAIL TEMPORARY RE-BUILT	609 CONCRETE CURB	609 CONCRETE CURB STD. TYPE G	609 CONCRETE CURB STD. TYPE 7	609 CONCRETE CURB STD. TYPE 8	611 REINF. CONCRETE APPROACH SLABS T = 13"	612 CONCRETE MEDIAN PAVEMENT	612 CONCRETE TRAFFIC ISLAND	604 STD. MONUMENT ASSEMBLY
		LIN. FT.					SQ.YD.	C.Y.		C.Y.	CU. YD.		C.Y.	C.Y.	GAL.	GAL.	CU.YD.	CU.YD.	CU. YD.		LIN. FT.				LIN. FT.				SQ.YD.	SQ. YD.		EACH
	SUM-277																														
15	225+00 TO 230+00																				262	131								87.44		
16	230+00 TO 240+00																				489	1000								GGG.G7		1
17	240+00 TO 250+00	18																			231.5	1000	1000							GGG.G7		2
18	250+00 TO 260+00																				491.0	439	600	400					333.34	292.58		
19	260+00 TO 270+00																				765.0	1000	21							GGG.G7		2
20	270+00 TO 280+00																					383								255.17		
43	RAMP "A"	48			20		4020	182.4		71.4	594.7	35.4				273.6	8.8	94.7	1026.74	1864.52	2087.5					114	79.5				34.12	
50	RAMP "B"						4950	197.7		48.5	834.1	7.5				296.5	9.5	131.2		3764.26	2268.1						22.5	354.8				
62	RAMP "B-1" & "B-2"				20		6371	289.8		93.3	1012.1	27.8				434.6	13.9	161.6	901.86	3585.92	4150.6					144	64		122.21		22.45	
78	RAMP "C"						5646	225.3		55.4	922.8	7.4				338.0	10.8	149.5		4295.77	3228						182	395				
89	RAMP "C-1" & "C-2"				20		6564	298.5		94.8	1035.6	26.8				447.8	14.3	168.2	878.92	3740.83	3027.0					144	164.5		122.21		22.45	
104	RAMP "D"				20		4874	221.3		78.8	738.8	35.4				331.9	10.6	119.2	1026.74	2485.76	2537.5					114	78.5				34.12	
112	I-77 485+00 TO 495+00					100															287.5											
114	I-77 495+00 TO 505+00					300															731.5											
116	I-77 505+00 TO 516+00																				262.5											
131	WOODVIEW-WOODLEY REL.	193					871			148.0		121.0	29.64	29.64	340.7						175											
136	GREGG RD. CUL-DE-SAC	35					628			99.8		87.2	19.77	19.77	227.8						62.5											
	SHEET TOTAL	294			80	400	38,924	1415.0		690.0	5138.1	348.5	49.41	49.41	568.5	2122.4	67.9	824.4	3834.26	19,744.06	21,056.2	3953	1621	400		516	793.5	749.8	577.76	2635.15	113.14	5

DRILLED WELLS ABANDONED & CLEANING & DISPOSING OF EXIST. SEPTIC TANKS			
LOCATION	SIDE	WELLS ABANDON'D	CLEANING & DISPOSING OF EXIST. SEPTIC TANKS
		EACH	EACH
SUM-277 ~ 246 + 21	Rt.	1	
SUM-277 ~ 246 + 85 ±	Rt.	1	
SUM. 277 ~ 247 + 20 ±	Lt.		1
SUM. 277 ~ 249 + 98	Rt.		1
SUM. 277 ~ 250 + 27	Rt.	1	
SUM. 277 ~ 250 + 65 ±	Rt.		1
SUM. 277 ~ 251 + 00	Rt.	1	
SUM. 277 ~ 259 + 65	Rt.	1	1
SUM. 277 ~ 260 + 50	Lt.		1
SUM. 277 ~ 267 + 92	Rt.		1
TOTALS		5*	6*

*- THE VALUES SHOWN ARE ONLY ESTIMATED QUANTITIES WHERE LOCATIONS HAVE BEEN SHOWN AS ±. IT WAS NOT POSSIBLE TO LOCATE EITHER ITEM IN THE FIELD.

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

SUMMIT COUNTY
SUM-277-0.00

PAVEMENT CALCULATIONS

LINE NO.			UNIT
	451 10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT		
1	Five Lane Pav't Sta. 228+68.84 to Sta. 273+82.76 = 4513.92 Ft.		
2	Deduct for Structure and Approach Slabs: SUM 277-0000: 611.20 Ft.		
3	Net Length = 4513.92 - 611.20 = 3902.72 Ft.		
4	Area = 3902.72 x 5 x 12 ÷ 9 = 26,018.13 S.Y.	26,018.13	S.Y.
5	Area of Decel. Pav't for Ramps "A" & "D" = 442.11 + 442.11 = 884.22 S.Y.	884.22	S.Y.
6	Area of Accel Pav't for Ramp "B" = 1077.78 S.Y.	1077.78	S.Y.
7	Area of Recovery Pav't for Ramps "B-1" & "C-1" = 288.89 + 288.89 = 577.78 S.Y.	577.78	S.Y.
8	Area for Ramps "A", "B-1", "C-1", & "D" = 3834.26 S.Y. from Sheet Nº 10	3834.26	S.Y.
9	TOTAL AREA 10" 451 = SUM OF LINES 4, 5, 6, 7, & 8 →	32,392.17	S.Y.
	451 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT		
10	Area from Tabulated Summary of Pav't & R'dwy Quantities, Sheet Nº 10 = 19,744.06 S.Y.	19,744.06	S.Y.
11	TOTAL AREA 9" 451 = LINE 10 →	19,744.06	S.Y.
	310 SUBBASE GRADING "A" OR "B"		
12	STA. 228+68.84 to STA. 273 + 82.76 minus Structure : SUM 277-0000 (561.20 Ft) = 3952.72 Ft.		
13	End Area = 40.66667 S.F. VOL = 3952.72 x 40.66667 ÷ 27 = 5953.48 C.Y.	5953.48	C.Y.
14	For Ramp "A" & "D" Decel Lanes Area from Line 5 = 884.22 S.Y.		
15	VOL = 884.22 x 6 ÷ 36 = 147.37 C.Y.	147.37	C.Y.
16	For Ramp "B" Accel. Lane Area from Line 6 = 1077.78 S.Y.		
17	VOL = 1077.78 x 6 ÷ 36 = 179.63 C.Y.	179.63	C.Y.
18	For Ramp "B-1" & "C-1" Recovery Lanes Area from Line 7 = 577.78 S.Y.		
19	VOL = 577.78 x 6 ÷ 36 = 96.30 C.Y.	96.30	C.Y.
20	From Tabulated Summary of Pav't & R'dwy Quantities, Sheet Nº 10		
21	VOL = 5133.1 C.Y.	5133.10	C.Y.
22	TOTAL VOL 310 - GRADING "A" OR "B" = SUM OF LINES 13, 15, 17, 19 & 21 →	11,509.88	C.Y.
	310 SUBBASE		
23	NORMAL 10' SHOULDER SECTION WITH UNDERDRAIN - END AREA = 250125 S.F. (ONE SHOULDER)		
24	Rt. Sta. 228+68.84 to Sta. 237+98.53 = 929.69 Ft.		
25	Lt. Sta. 233+88.84 to Sta. 241+56.25 = 767.41 Ft.		
26	Rt. Sta. 246+98.53 to Sta. 250+65.00 = 366.47 Ft.		
27	Lt. Sta. 257+32.00 to Sta. 263+01.73 = 569.73 Ft.		
28	Lt. Sta. 272+01.74 to Sta. 273+82.76 = 181.02 Ft.		
29	Rt. Sta. 266+23.28 to Sta. 273+82.76 = 759.48 Ft.		
30	TOTAL LENGTH 10' SHOULDER = 3573.80 Ft. VOL = 3573.80 x 250.125 ÷ 27 = 331.07 C.Y.	331.07	C.Y.
31	8' SHOULDER SECTION WITH UNDERDRAIN (ADJ. TO SPEED CHANGE LANES) - E.A. = 2.05926 SQ. FT. (ONE SHOULDER)		
32	Lt. Sta. 229+48.84 to Sta. 233+88.84 = 440.00 Ft.		
33	Rt. Sta. 238+98.53 to Sta. 241+78.72 = 280.19 Ft.		
34	Lt. Sta. 268+21.55 to Sta. 271+01.74 = 280.19 Ft.		
35	TOTAL LENGTH 8' SHOULDER = 1000.38 Ft. VOL. = 1000.38 x 2.05926 ÷ 27 = 76.30 C.Y.	76.30	C.Y.
36	VARIABLE SHOULDER SECTION WITH UNDERDRAIN (ADJ. TO RECOVERY LANES)		
37	Lt. Sta. 241+56.25 to Sta. 246+56.25 = 350 Ft. Variable Shoulder (10' to 3') + 150 Ft. of 3' Shoulder		
38	VOL = 18.61 C.Y.	18.61	C.Y.
39	Rt. Sta. 261+23.28 to Sta. 266+23.28 = 150 Ft. of 3' Shoulder + 350 Ft. Variable Shoulder (3' to 10')		
40	VOL = 18.61 C.Y.	18.61	C.Y.
41	Addit'l Vol for Ramp "A" & "D" Decel Lanes = 8.95 + 8.95 = 17.90 C.Y.	17.90	C.Y.
42	Addit'l Vol for Ramp "B" Accel Lane = 7.24 C.Y.	7.24	C.Y.
43	Addit'l Vol for Paved Shoulders @ Ramp "B" & "C" Nose = 5.33 + 5.33 = 10.66 C.Y.	10.66	C.Y.
44	Addit'l Vol for Mainline Shoulder Taper (10' to 8' @ Parapet). Each end Bridge Sum 277-0000 = 7.15 + 7.28 = 14.43 C.Y.	14.43	C.Y.
45	Addit'l Vol from Tabulated Summary of Pav't & R'dwy Quantities, Sht. Nº 10 = 348.5 C.Y.	348.50	C.Y.
46	TOTAL VOL. 310 = SUM OF LINES 30, 35, 38, 40, 41, 42, 43, 44, & 45 →	843.32	C.Y.

LINE NO.			UNIT
	409 SEAL COAT		
47	LENGTH & AREA 10' SHOULDERS		
48	Length from Line 30 = 3573.80 Ft.		
49	Area = 3573.80 x 10 ÷ 9 = 3970.89 S.Y.		
50	LENGTH & AREA 8' SHOULDERS		
51	Length from Line 35 = 1000.38 Ft.		
52	Area = 1000.38 x 8 ÷ 9 = 889.23 S.Y.		
53	LENGTH & AREA MEDIAN SHOULDER		
54	Length from Line 12 = 3952.72 Ft.		
55	Area 3952.72 x 5 x 2 ÷ 9 = 4391.91 S.Y.		
56	LENGTH & AREA VARIABLE SHOULDERS ADJ. TO RECOVERY LANES		
57	Length from Lines 37 & 39 = 2[350 Ft. (10' to 3' taper) + 150 Ft. (3' Shoulder)]		
58	Area = 2[(10+3/2 x 350) + 3(150)] ÷ 9 = 605.56 S.Y.		
59	Addit'l Area for Ramp "A" & "D" Decel Lanes = 100.00 + 100.00 = 200.00 S.Y.		
60	Addit'l Area for Ramp "B" Accel Lane = 80.00 S.Y.		
61	Addit'l Area for Paved Shoulder @ Ramp "B" & "C" Nose = 63.91 + 63.91 = 127.82 S.Y.		
62	Addit'l Area for Mainline Shoulder Taper (10' to 8' @ Parapet), Each end Bridge Sum 277-0000 = 86.61 + 88.31 = 174.92 S.Y.		
63	TOTAL AREA (MAINLINE) = SUM OF LINES 49, 52, 55, 58, 59, 60, 61, & 62 = 10,440.33 S.Y.		
64	BITUMINOUS MATERIAL :		
65	VOL = 10,440.33 x 0.25 = 2610.08 GAL.	2610.08	GAL.
66	Addit'l Vol from Tabulated Summary of Pav't & Roadway Quantities, Sht Nº 10 = 2122.4 GAL.	2122.40	GAL.
67	TOTAL VOL. BITUMINOUS MATERIAL = SUM OF LINES 65 & 66 →	4732.48	GAL.
68	COVER AGGREGATE, Nº 8:		
69	Vol = 10,440.33 x 0.008 = 83.52 C.Y.	83.52	C.Y.
70	Addit'l Vol from Tabulated Summary of Pav't & R'dwy Quantities, Sht. Nº 10 = 67.90 C.Y.	67.90	C.Y.
71	TOTAL VOL COVER AGGREGATE Nº 8 = SUM of LINES 69 & 70 →	151.42	C.Y.
	301 3" BITUMINOUS AGGREGATE BASE		
72	Total Area of Mainline Shoulders = Sum of Lines 49, 55, 58, 61, & 62 = 9271.10 S.Y.		
73	Vol = 9271.10 x 3 ÷ 36 = 772.59 C.Y.	772.59	C.Y.
74	Total Area of Shoulders Adj to Accel & Decel Lanes = Sum of Lines 52, 59, & 60 = 1169.23 S.Y.		
75	Vol = 1169.23 x 6 ÷ 36 = 194.87 C.Y.	194.87	C.Y.
76	Addit'l Vol from Tabulated Summary of Pav't & R'dwy Quantities, Sht Nº 10 = 1415.00 C.Y.	1415.00	C.Y.
77	TOTAL VOL 301 BITUMINOUS AGGREGATE BASE = SUM OF LINES 73, 75, & 76 →	2382.46	C.Y.
	304 AGGREGATE BASE		
78	NORMAL 10' SHOULDER SECTION WITH UNDERDRAIN - END AREA = 5.61111 FT² (ONE SHOULDER)		
79	Total Length 10' Shoulder from Line 30 = 3573.80 Ft.		
80	Vol = 3573.80 x 5.61111 ÷ 27 = 742.70 C.Y.	742.70	C.Y.
81	8' SHOULDER SECTION WITH UNDERDRAIN (ADJ. TO SPEED CHANGE LANES) - E.A. = 2.44444 FT² (ONE SHOULDER)		
82	Total Length 8' Shoulder from Line 35 = 1000.38 Ft.		
83	Vol = 1000.38 x 2.44444 ÷ 27 = 90.57 C.Y.	90.57	C.Y.
84	MEDIAN SHOULDERS - END AREA = 9.47395 FT² (BOTH SHOULDERS & @ MEDIAN)		
85	Total Length Median Shoulders from Line 12 = 3952.72 Ft.		
86	Vol = 3952.72 x 9.47395 ÷ 27 = 1386.96 C.Y.	1386.96	C.Y.
87	VARIABLE SHOULDER SECTION WITH UNDERDRAIN (ADJ TO RECOVERY LANES)		
88	Lt - Sta. 241+56.25 to Sta. 246+56.25 = 350 Ft. Var. Shoulder (10' to 3') + 150 Ft. of 3' Shoulder - Vol = 54.76 C.Y.	54.76	C.Y.
89	Rt - Sta. 261+23.28 to Sta. 266+23.28 = 150 Ft. of 3' Shoulder + 350 Ft. Var. Shoulder (10' to 3') - Vol = 54.76 C.Y.	54.76	C.Y.
90	Addit'l Vol for Ramp "A" & "D" Decel Lanes = 10.29 + 10.29 = 20.58 C.Y.	20.58	C.Y.
91	Addit'l Vol for Ramp "B" Accel Lane = 8.23 C.Y.	8.23	C.Y.
92	Addit'l Vol for Paved Shoulder @ Ramp "B" & "C" Nose = 12.43 + 12.43 = 24.86 C.Y.	24.86	C.Y.
93	Addit'l Vol for Mainline Shoulder Taper (10' to 8' @ Parapet) Each End Bridge Sum 277-0000 = 16.11 + 16.42 = 32.53 C.Y.	32.53	C.Y.
94	Addit'l Vol from Tabulated Summary of Pav't & R'dwy Quantities, Sht Nº 10 = 690.0 C.Y.	690.00	C.Y.
95	TOTAL VOL 304 AGGREGATE BASE = SUM OF LINES 80, 83, 86, 88, 89, 90, 91, 92, 93, & 94 →	3,105.95	C.Y.

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

12
234

SUMMIT COUNTY
SUM-277-0.00

PAVEMENT CALCULATIONS

LINE NO.			UNIT
	SPECIAL DRAINAGE CONNECTION, USING Nº 8 AGGREGATE		
96	NORMAL UNDERDRAIN SECTION ~ END AREA = 1.24181 FT.²		
97	Length from Lines 30,37 & 39 = 3573.80+2(500) = 4573.80 FT.		
98	Addit'l Length for Mainline Shoulder Taper (10' to 8' @ parapet), Each End Bridge Sum. 277-0000 = 88.61+90.53+179.14 FT.		
99	Total Length Normal Underdrain = Sum of Lines 97 & 98 = 4573.80 + 179.14 = 4752.94 FT.		
100	Vol. = 4752.94 x 1.24181 ÷ 27 = 218.60 C.Y.	218.60	C.Y.
101	UNDERDRAIN SECTION ADJ. TO SPEED CHANGE LANES ~ END AREA = 1.24629 FT.²		
102	Length from Line 35 = 1000.38 FT.		
103	Addit'l Length for Ramp "A" & "D" Decel. Lanes = 100.00(2) = 200.00 FT.		
104	Addit'l Length for Ramp "B" Accel. Lane = 80.00 FT.		
105	Total Length Underdrain Adj. to Speed Change Lanes = Sum of Lines 102 thru 104 = 1280.38 FT.		
106	Vol. = 1280.38 x 1.24629 ÷ 27 = 59.10 C.Y.	59.10	C.Y.
107	Addit'l Vol. from Tabulated Summary of Pav't & R'dwy Quantities, Sheet Nº 10 = 824.4 C.Y.	824.4	C.Y.
108	TOTAL VOL. SPECIAL DRAINAGE CONNECTION, USING Nº 8 AGGREGATE = SUM OF LINES 100, 106 & 107 ⟶	1102.10	C.Y.
	203 SUBGRADE PREPARATION		
109	Area of 451-10" from Lines 4,5,6 & 7 = 26,018.13+884.22+1077.78+577.78 = 28,558 S.Y.	28,558	S.Y.
110	Area of Shoulders from Line 63 = 10,440 S.Y.	10,440	S.Y.
111	Area of Mainline Concrete Median Pav't = 3952.72 (from Line 12) x 6 ÷ 9 = 2635 S.Y.	2,635	S.Y.
112	Area of Approach Slabs from Tabulated Summary of Pav't & R'dwy Quantities, Sh't. Nº 10 = 578 S.Y.	578	S.Y.
113	Addit'l Area from Tabulated Summary of Pav't & R'dwy Quantities, Sh't. Nº 10 = 33,924 S.Y.	33,924	S.Y.
114	TOTAL AREA 203 SUBGRADE PREPARATION = SUM OF LINES 109 thru 113 ⟶	76,135	S.Y.
	659 SEEDING & MULCHING		
115	Seeding from Table at right = 253,551 S.Y.		
116	Area Sodded from Sheet Nº 9 = 429 + 196 = 625 S.Y.		
117	NET AREA = LINE 115 MINUS LINE 116 ⟶	252,926	S.Y.
	659 COMMERCIAL FERTILIZER (12-12-12) APPLIED AT RATE OF 20 LBS. PER 1000 S.F.		
118	Area Seeded from Line 115 = 253,551 S.Y.		
119	VOL. COMMERCIAL FERTILIZER = 253,551 x 9 x 20 ÷ (1000 x 2000) ⟶	22.82	TONS
	659 AGRICULTURAL LIMING		
120	Area Limed = 253,551 S.Y. (Same as Area fertilized)		
121	VOL. = 253,551 x 100 x 9 ÷ (1000 x 2000) ⟶	114.09	TONS
	203 WATER		
122	Embankment = 672,668 C.Y.		
123	310 Subbase Grading "A" or "B" = 11,509 C.Y. (from Line 22)		
124	VOL. WATER = (SUM OF LINES 122 & 123) 684,177 x 5 ÷ 1000 ⟶	3421	M.G.

LINE NO.			UNIT
	203 PROOF ROLLING		
125	Total Area Subgrade Preparation, From Line 114 = 76,135 S.Y.		
126	Area of Subgrade Preparation other than mainline & ramps, From Sh'ts 131 & 136 = 871+628 = 1499 S.Y.		
127	Net Area Subgrade Preparation = Line 125 minus Line 126 = 76,135-1499 = 74,636 S.Y.		
128	TOTAL TIME, IN HRS., REQUIRED = 74,636 ÷ 2000 ⟶	37.3	Hrs.
	304 WATER		
129	Total Vol. Item 304 from Line 95 = 3106 C.Y.		
130	Vol. Water = 3106 x 5 ÷ 1000 = 15.5 M.G.	15.5	M.G.

FROM SHEET Nº.	LOCATION FROM	LOCATION TO	203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION CU.YDS.	203 EMBANKMENT CU.YDS.		659 SEEDING & MULCHING SQ.YDS.	
15	225+00	230+00	686	6,484		2,224	
16	230+00	240+00	38,173	9,764		12,298	
17	240+00	250+00	14,955	77,605		10,554	
18	250+00	260+00	318	73,376		8,191	
19	260+00	270+00	34,217	61,508		10,950	
20	270+00	280+00	1,760	9,064		3,792	
	RAMP "A"						
43	0+00	8+00	1,342	32,374		10,581	
44	8+00	17+90.67	716	30,925		9,583	
	RAMP "B"						
50	0+00	10+00	2,397	26,244		13,338	
51	10+00	20+00	17,814	36,562		20,319	
52	20+00	22+77.60	865	365		2,467	
	RAMP "B-1"						
62	0+00	17+90.87	31,661	84,661		32,857	
	RAMP "B-2"						
63	0+00	16+13.00	373	52,103		6,722	
	RAMP "C"						
78	0+00	10+00	164	5,679		3,516	
79	10+00	20+00	2,870	47,128		15,834	
80	20+00	25+86.97	2,161	8,277		6,236	
	RAMP "C-1"						
90	0+00	18+62.37	70,961	28,210		31,838	
	RAMP "C-2"						
91	0+00	17+80.92	1,238	36,086		8,843	
	RAMP "D"						
104	0+00	11+00	3,520	26,148		11,740	
105	11+00	21+60.12	757	14,599		7,914	
	EXIST. I-77 N. BOUND						
113	485+00	495+00	3,623	326		6,053	
115	495+00	505+00	715	185		2,574	
	EXIST. I-77 S. BOUND						
115	495+00	505+00	0	2,244		1,549	
117	505+00	516+00	229	1,539		2,906	
131	WOODVIEW-WOODLEY		2,275	303		4,536	
136	GREGG RD. CUL-DE-SAC		775	24		1,022	
149	RELOCATED CHANNEL		9,358	885		5,114	
	TOTALS		243,923	672,668		253,551	

SPECIAL SEEDING AREAS

Woodley-Woodview Relocation Rt. Sta. 48+10 to 51+50

KAE

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6-(3)123	

13
234

SUMMIT COUNTY
SUM - 277 - 0.00

GENERAL SUMMARY

ROADWAY TYPE CODE 7221

GRAND TOTAL	ITEM	UNIT	DESCRIPTION	SHEET No.
LUMP	201	LUMP	CLEARING AND GRUBBING	7
294	202	L.F.	PIPE REMOVED 24" AND UNDER	10
400	202	L.F.	TEMPORARY GUARD RAIL REMOVED FOR REUSE	10
80	202	L.F.	EXISTING CONCRETE CURB REMOVED AND DISPOSED OF	10
243,923	203	C.Y.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	12
76,135	203	S.Y.	SUBGRADE PREPARATION	12
672,668	203	C.Y.	EMBANKMENT	12
37.3	203	HRS.	PROOF ROLLING	12
3,421	203	M.G.	WATER	12
75	410	C.Y.	TRAFFIC COMPACTED SURFACE, TYPE "A" OR "B"	7
75	410	C.Y.	TRAFFIC COMPACTED SURFACE, TYPE "C"	7
5	604	EACH	STANDARD MONUMENT ASSEMBLY	10
21,056.2	606	L.F.	GUARD RAIL, TYPE 4	10
3,953	606	L.F.	GUARD RAIL, TYPE 4, BARRIER DESIGN	10
1,621	606	L.F.	GUARD RAIL, TEMPORARY	10
400	606	L.F.	GUARD RAIL, TEMPORARY REBUILT	10
350	606	EACH	YELLOW PAINTED DRUMS WITHOUT RAIL ELEMENT	8
75	616	M.G.	WATER	7
18	616	TONS	CALCIUM CHLORIDE	7
6	SPEC.	EACH	CLEANING AND DISPOSING OF EXISTING SEPTIC TANKS, AS PER PLAN	10
5	SPEC.	EACH	DRILLED WELLS ABANDONED, AS PER PLAN	10
5,344	607	L.F.	FENCE, TYPE CL	41
4,401	607	L.F.	FENCE, TYPE 47	41
LUMP	202	LUMP	REMOVAL OF TILE SHED PARCEL No. 140 WL	
LUMP	202	LUMP	REMOVAL OF FRAME SHED PARCEL No. 143 WL	
LUMP	202	LUMP	REMOVAL OF FRAME SHED PARCEL No. 144 WL	

EROSION CONTROL - CODE Y005

252,926	659	S.Y.	SEEDING AND MULCHING	12
22.82	659	TONS	COMMERCIAL FERTILIZER (12-12-12)	12
114.09	659	TONS	AGRICULTURAL LIMING	12
429	660	S.Y.	SODDING	9
8,738	667	S.Y.	JUTE MATTING	9
196	660	S.Y.	SODDING FOR SPECIAL BERM AND SLOPE PROTECTION	9
145	601	S.Y.	RIPRAP USING 6" REINFORCED CONCRETE SLAB, AS PER PLAN	9
392	601	C.Y.	DUMPED ROCK CHANNEL PROTECTION	9
113	601	L.F.	STANDARD PAVED GUTTER TYPE I-2	9
917	601	L.F.	STANDARD PAVED GUTTER TYPE I-4	9

DRAINAGE TYPE CODE 7221

GRAND TOTAL	ITEM	UNIT	DESCRIPTION	SHEET No.
39.4	602	C.Y.	CONCRETE MASONRY	9
100	603	L.F.	21" CONDUIT, TYPE A WITH CLASS B BEDDING, SEC. 706.02 CLASS IV	9
286	603	L.F.	24" CONDUIT, TYPE A WITH CLASS B BEDDING SEC. 706.02 CLASS V	9
316	603	L.F.	96" CONDUIT, TYPE A WITH CLASS B BEDDING SEC. 707.038-5 GAGE	9
444	603	L.F.	6" CONDUIT, TYPE B WITH CLASS B BEDDING	7,9
200	603	L.F.	8" CONDUIT, TYPE B WITH CLASS B BEDDING	7
174	603	L.F.	15" CONDUIT TYPE B WITH CLASS B BEDDING SEC. 706.02 CLASS V	9
640	603	L.F.	15" CONDUIT, TYPE B WITH CLASS B BEDDING	9
52	603	L.F.	24" CONDUIT, TYPE B WITH CLASS B BEDDING	9
44	603	L.F.	30" x 19" CONDUIT, TYPE B WITH CLASS B BEDDING 706.04 CLASS HE-II	9
192	603	L.F.	6" CONDUIT, TYPE C WITH CLASS "B" BEDDING	8,9
50	603	L.F.	8" CONDUIT, TYPE C WITH CLASS "B" BEDDING	8
74	603	L.F.	24" CONDUIT, TYPE E	9
90	603	L.F.	15" CONDUIT, TYPE D, 706.01, 706.02 or 706.08	9
22	603	L.F.	12" CONDUIT, TYPE D, 707.01 OR 707.02	9
200	603	L.F.	6" CONDUIT, TYPE E	7
100	603	L.F.	8" CONDUIT, TYPE E	7
335	603	L.F.	6" CONDUIT, TYPE F	7,9
30	603	L.F.	8" CONDUIT, TYPE F	7
290	603	L.F.	15" CONDUIT, TYPE F	9
2	604	EACH	STANDARD No. 2-A-8 PAVED SHOULDER INLET, MODIFIED, AS PER PLAN	9
4	604	EACH	STANDARD No. 2-A-10 PAVED SHOULDER INLET, MODIFIED, AS PER PLAN	9
2	604	EACH	STANDARD NO. 2-A-12 PAVED SHOULDER INLET, MODIFIED, AS PER PLAN	9
1	604	EACH	STANDARD No. 2-2-B CATCH BASIN	9
1	604	EACH	STANDARD No. 2-3 CATCH BASIN	9
1	604	EACH	STANDARD No. 5 CATCH BASIN	9
1	604	EACH	STANDARD No. 2-2-A CATCH BASIN	9
4	604	EACH	STANDARD No. 6 CATCH BASIN	9
6	604	EACH	INSPECTION WELLS, AS PER PLAN	9
17,818	605	L.F.	6" SHALLOW PIPE UNDERDRAINS	9
3,958	605	L.F.	6" DEEP PIPE UNDERDRAINS	9
78	605	L.F.	AGGREGATE DRAINS	9
400	605	L.F.	6" PIPE SEC. 707.06 OR 707.12, AS PER PLAN	7
20	605	L.F.	AGGREGATE DRAINS FOR SPRINGS, AS PER PLAN	7
1,146	503	C.Y.	EXCAVATION FOR STRUCTURES	145
127,957	509	LBS.	REINFORCING STEEL	145
728	511	C.Y.	CONCRETE, CLASS C	145

SANITARY SEWERS - CODE Y060

252	603	L.F.	24" CONDUIT, TYPE "B" WITH CLASS "B" BEDDING SEC. 706.08 WITH COMPRESSION JOINTS	156
1	604	EACH	CITY OF AKRON, TYPE 3 MANHOLE	156
1	604	EACH	MANHOLE REBUILT, AS PER PLAN	156
1	604	EACH	MANHOLE ADJUSTED TO GRADE	9
1	202	EACH	MANHOLES REMOVED	156

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6-(3)123	

14
234

SUMMIT COUNTY
SUM-277-0.00

GENERAL SUMMARY

PAVEMENT TYPE CODE 7221

			GRAND TOTAL	ITEM	UNIT	DESCRIPTION	SHEET No.
			2,382	301	C.Y.	BITUMINOUS AGGREGATE BASE, 702.01 (85-100) OR 702.09 RT-12, AS PER PLAN	11
			3,106	304	C.Y.	AGGREGATE BASE	11
			15.5	304	M.G.	WATER	12
			11,510	310	C.Y.	SUBBASE, GRADING "A" OR "B", AS PER PLAN	11
			843	310	C.Y.	SUBBASE	11
			49	402	C.Y.	ASPHALT CONCRETE (70-85)	10
			49	404	C.Y.	ASPHALT CONCRETE (70-85)	10
			568	408	GAL.	BITUMINOUS PRIME COAT, 702.09 RT.-2 OR RT.-3	10
			4,732	409	GAL.	SEAL COAT BITUMINOUS MATERIAL, AS PER PLAN	11
			151	409	C.Y.	SEAL COAT COVER AGGREGATE, No. 8	11
			32,392	451	S.Y.	10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	11
			19,744	451	S.Y.	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	11
			516	609	L.F.	CONCRETE CURB STANDARD TYPE "6"	10
			794	609	L.F.	CONCRETE CURB STANDARD TYPE "7"	10
			750	609	L.F.	CONCRETE CURB STANDARD TYPE "8"	10
			578	611	S.Y.	REINFORCED CONCRETE APPROACH SLABS (T=13")	10
			2,635	612	S.Y.	CONCRETE MEDIAN, STANDARD	10
			113	612	S.Y.	CONCRETE TRAFFIC ISLAND	10
			1,102	SPEC.	C.Y.	DRAINAGE CONNECTION USING No. 8 AGGREGATE	12
						BRIDGE No. SUM 277 - 0000 FOR QUANTITIES SEE SHEET 188	
						BRIDGE No. SUM 8 - 0932 FOR QUANTITIES SEE SHEET 220	
						BRIDGE No. SUM 8 - 0930 FOR QUANTITIES SEE SHEET 205	
						FOR LIGHTING QUANTITES SEE SHEET 177	
						FOR TRAFFIC CONTROL QUANTITIES SEE SHEET 158	
			LUMP	614	LUMP	MAINTAINING TRAFFIC	
			LUMP		LUMP	CONSTRUCTION LAYOUT STAKES	
			LUMP		LUMP	FIELD OFFICE	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(8)123	

15
234

SUMMIT COUNTY
SUM-277-0.00

℄ CURVE DATA:
P.I. STA. 223+49.46
Δ = 4°00'41" LT.
D_c = 0°28'
R = 12,277.67
T = 429.97'
L_c = 859.58'
E = 7.53'

IRON PINS — CURVE — TAN. — IRON PINS

EQUATION
STA. 228+00 BACK = STA. 222+59.78 AH'D

REF. P.T. STA. 227+79.07

Steel Tower

BEGIN SHEET STA. 225+00

℄ RELOC. BREWSTER RUN Nº 2

SAN M.H.

LA & R/W

P.T. STA. 227+79.07

36" SAN. SEWER

N 85°34'30" E

Brewster Run

Light Brush

Woods

BEGIN PROJECT
SUM-277-0.46
STA. 228+68.84
S.L.M. = 0.46
I-277-G(1)124

END PROJECT
SUM-277-0.00
STA. 228+68.84
I-277-G(3)123

BEGIN WORK
SUM-277-0.46
STA. 229+82

520' PAV'T TAPER

7.5' JUTE MATTING — Const. Limits

11' JUTE MATTING — Const. Limits

5'-G" TYPE F

DROP GX4

Steel Tower

San. M.H.

END WORK
SUM-277-0.00
STA. 225+50

END SHEET STA. 230+00

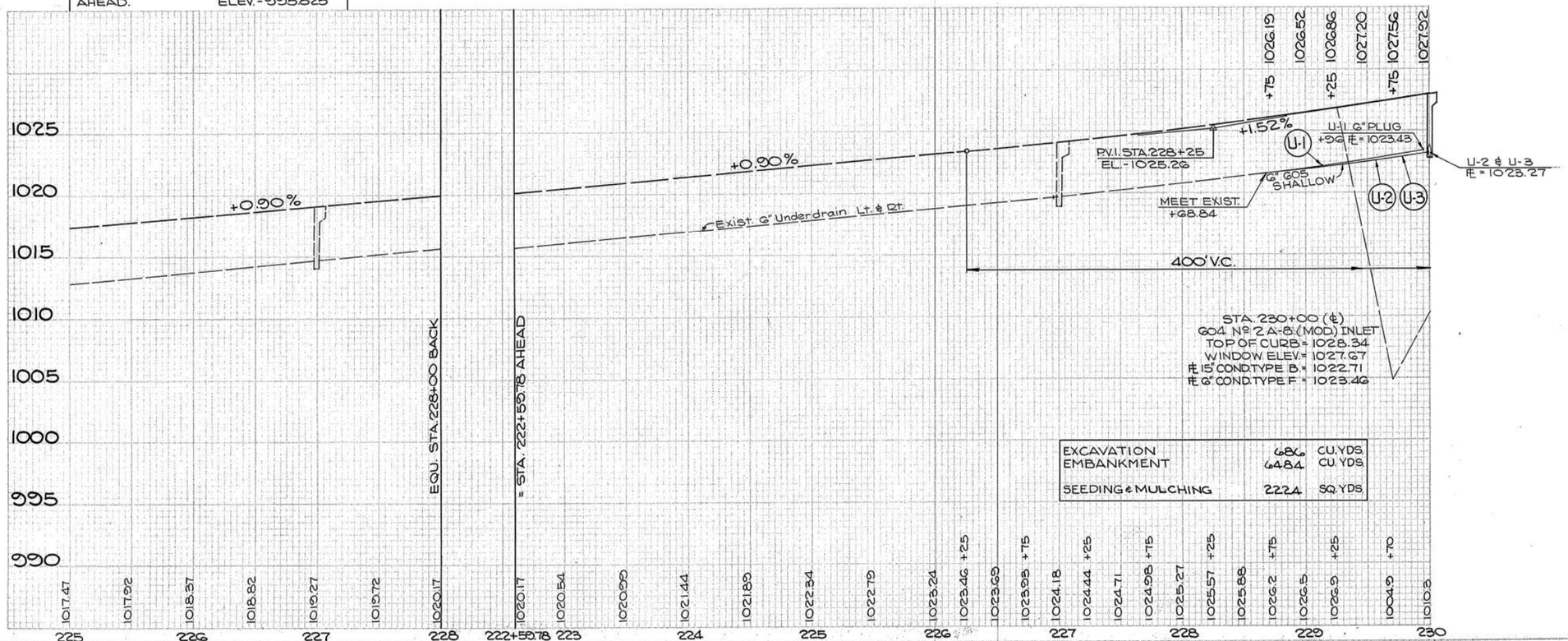
B.M #23-TOP BOLT N.E. LEG OF TRANS. TOWER #6, 150' RT. OF ℄ STA. 224+05 AHEAD. ELEV. - 995.825

DRAINAGE QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	601 DUMPED ROCK CHANNEL PROTECTION C.Y.	602 CONCRETE MASONRY C.Y.	603 CONDUIT 15" TYPE B WITH CL. B BEDD'G LIN. FT.	603 CONDUIT TYPE F 6" LIN. FT.	603 CONDUIT TYPE F 15" LIN. FT.	PIPE SPECIAL 15" 25° BEND EACH	604 Nº 2-A-8 INLET (MOD) EACH	605 UNDERDRAIN 6" SHALLOW LIN. FT.	607 JUTE MATTING S.Y.
U-1	228+68.84	229+96	℄								127	
U-2	228+68.84	230+00	RT.				5				126	
U-3	228+68.84	230+00	LT.								131	
D-1	230+00		℄ RT.	1.3	0.41	62		20	2	1		47
D-2	225+50	230+00	RT.									167
D-3	228+00	230+00	LT.									169
SHEET TOTAL				1.3	0.41	62	5	20	2	1	384	639

PAVEMENT ℄ ROADWAY QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	606 GUARD RAIL TYPE 4 LIN. FT.	606 GUARD RAIL TYPE 4 BARRIER LIN. FT.	612 CONCRETE MEDIAN PAVEMENT SQ. YD.
GR-1	228+68.84	230+00	℄		131	
GR-2	228+68.84	230+00	LT.	131		
GR-3	228+68.84	230+00	RT.	131		
P-1	228+68.84	230+00	℄			87.44
SHEET TOTAL				262	131	87.44



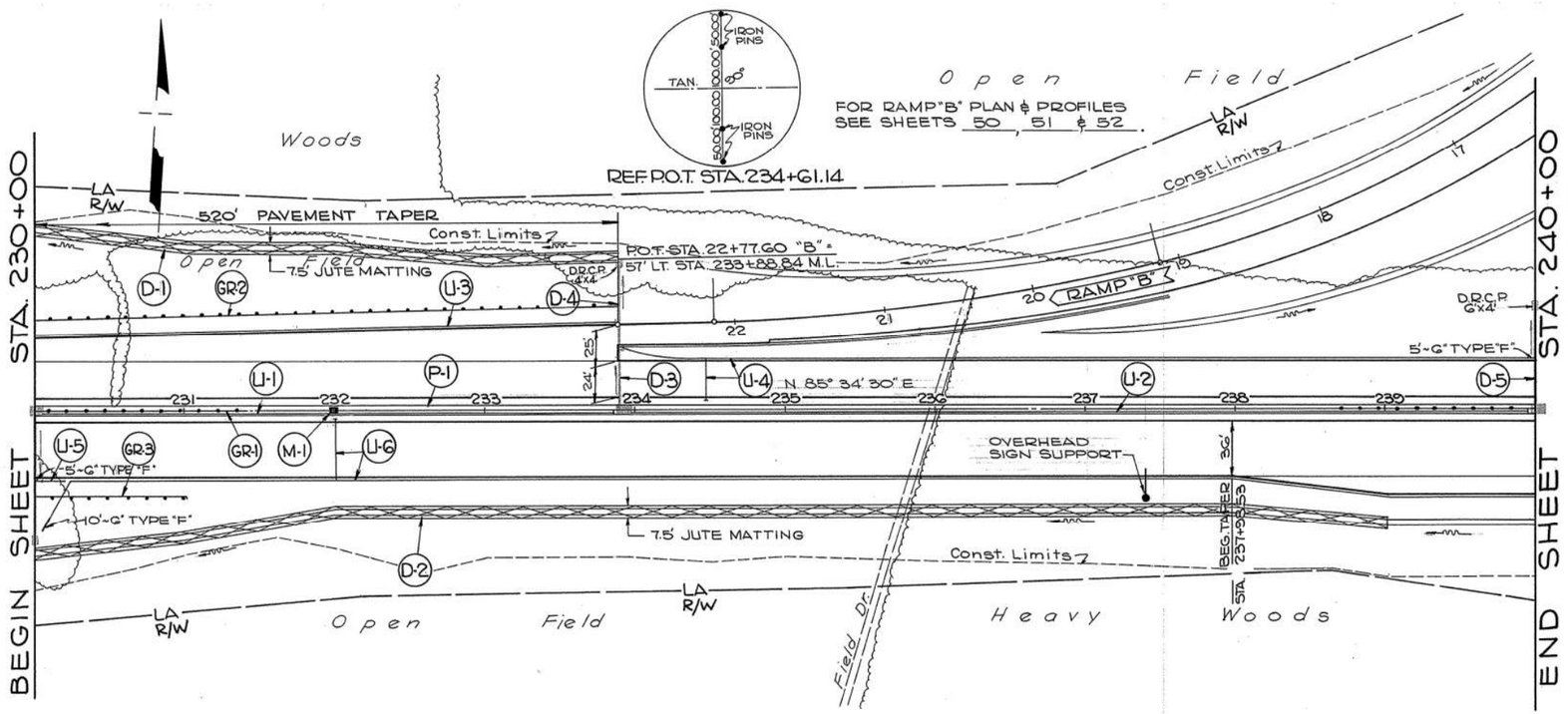
EXCAVATION	686	CU. YDS.
EMBANKMENT	6484	CU. YDS.
SEEDING & MULCHING	2224	SQ. YDS.

STA. 225+00 to STA. 228+00 BK.; STA. 222+59.78 AH'D to STA. 230+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

IG 234

SUMMIT COUNTY
SUM-277-0.00



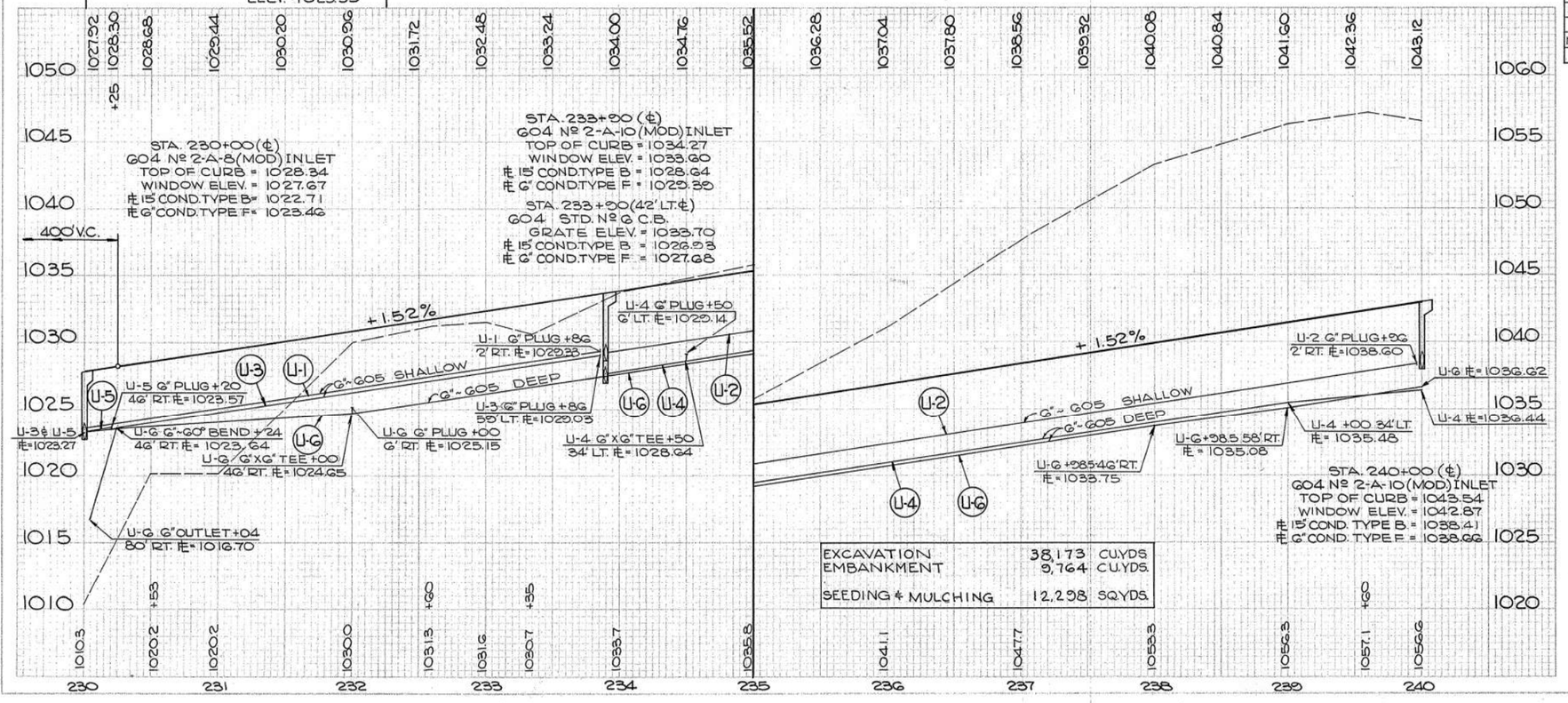
DRAINAGE QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	G01 DUMPED ROCK CHANNEL PROTECTION C.Y.	G02 CONCRETE MASONRY C.Y.	G03 CONDUIT 15" TYPE B WITH CL. B BEDDING LIN. FT.	G03 CONDUIT TYPE F 6" LIN. FT.	PIPE SPECIAL 6"X6" TEE EACH	PIPE SPECIAL 6"X6" ELBOW EACH	G04 Nº 2-A-10 INLET (MOD.) EACH	G04 Nº 6 C.B. STD. EACH	G05 UNDERDRAIN 6" SHALLOW LIN. FT.	G05 UNDERDRAIN 6" DEEP LIN. FT.	GG JUTE MAT SQ.Y
U-1	230+00	233+86	℄				10					376		
U-2	233+50	239+06	℄				10					556		
U-3	230+00	233+86	LT.									386		
U-4	233+50	240+00	LT.				15		1				623	
U-5	230+00	230+20	RT.				5					15		
U-6	230+04	240+00	RT.				10		1 1			206	840	
D-1	230+00	233+88.84	LT.											324
D-2	230+00	239+00	RT.											756
D-3	233+50		℄ & LT.			42				1				
D-4	233+50		RT.	0.9	0.26	54					1			
D-5	240+00		℄ & RT.	1.3	0.26	66				1				
SHEET TOTAL				2.2	0.52	162	50		2 1	2	1	1576	1463	1080

PAVEMENT & ROADWAY QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	G04 STANDARD MONUMENT ASSEMBLY EACH	G06 GUARD RAIL TYPE 4 LIN. FT.	G06 GUARD RAIL TYPE 4 BARRIER LIN. FT.	G12 CONCRETE MEDIAN PAVEMENT SQ.YD.
GR-1	230+00	240+00	℄			1000	
GR-2	230+00	233+88.84	LT.		389		
GR-3	230+00	231+00	RT.		100		
P-1	230+00	240+00	℄				666.67
M-1	@ 232+00		℄	1			
SHEET TOTAL				1	489	1000	666.67

B.M. #24 - SPIKE IN S. ROOT OF 24" ELM
120' LT. OF ℄ STA. 231+85.
ELEV. - 1023.99



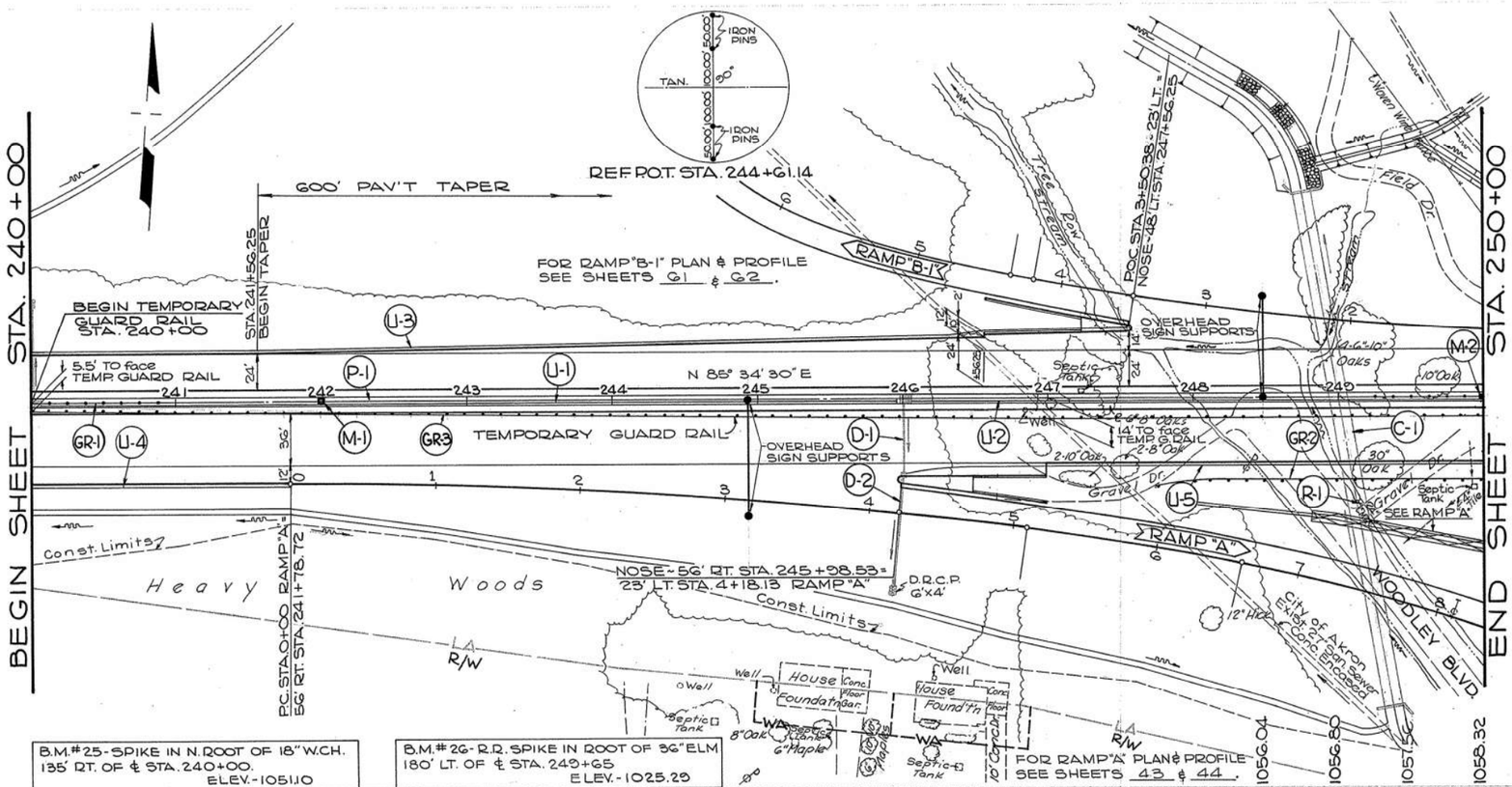
EXCAVATION	38,173	CU.YDS.
EMBANKMENT	9,764	CU.YDS.
SEEDING & MULCHING	12,298	SQ.YDS.

STA. 230+00 to STA. 240+00

FED. RD DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

17
234

SUMMIT COUNTY
SUM-277-0.00

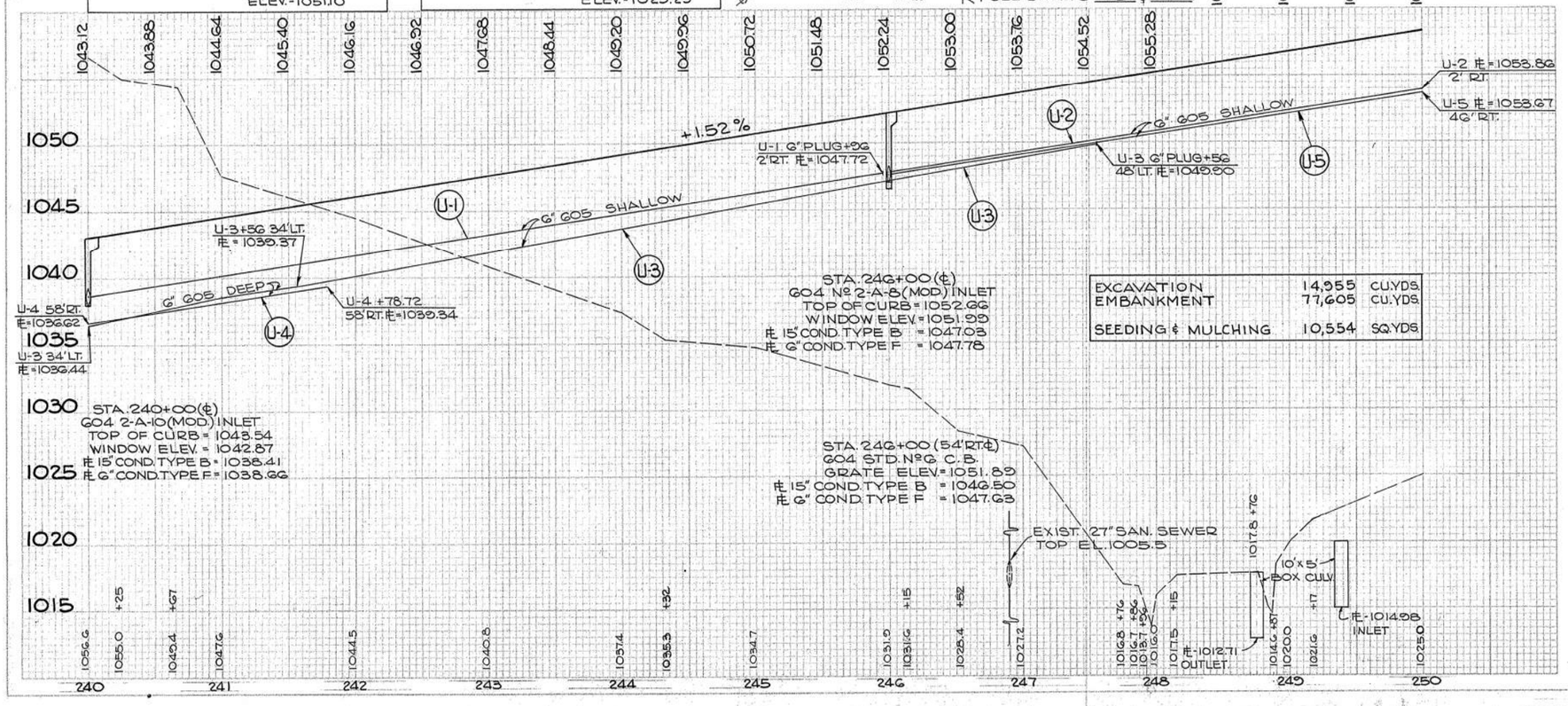


DRAINAGE QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	601 DUMPED ROCK CHANNEL PROTECTION C.Y.	602 CONCRETE MASONRY C.Y.	603 CONDUIT 15" TYPE B WITH CL. B BEDDING LIN. FT.	603 CONDUIT TYPE F 15" LIN. FT.	603 CONDUIT TYPE F 6" LIN. FT.	PIPE SPECIAL 15"-25" BEND EACH	604 Nº 2-A-8 INLET (MOD.) EACH	604 Nº 6 C.B. STD. EACH	605 UNDERDRAIN 6" SHALLOW LIN. FT.	605 UNDERDRAIN 6" DEEP LIN. FT.
U-1	240+00	245+96	℄					10				586	
U-2	246+00	250+00	℄					10				390	
U-3	240+00	247+56.25	LT.									600	150
U-4	240+00	241+78.72	RT.										179
U-5	246+00	250+00	RT.					10				390	
D-1	246+00		℄ & RT.			52				1			
D-2	246+00		RT.	1.3	0.41	40		38	2		1		
SHEET TOTAL				1.3	0.41	92		38	30	2	1	1	1986	329

PAVEMENT & ROADWAY QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	202 PIPE REMOVED 24" & UNDER LIN. FT.	606 GUARD RAIL TYPE 4 LIN. FT.	606 GUARD RAIL TEM-POR'Y LIN. FT.	606 GUARD RAIL TYPE 4 BARRIER LIN. FT.	604 STANDARD MONUMENT ASSEMBLY EACH	612 CONCRETE MEDIAN PAVEMENT SQ.YD.
GR-1	240+00	250+00	℄				1000		
GR-2	247+68.5	250+00	RT.		231.5				
GR-3	240+00	250+00	RT.			1000			
P-1	240+00	250+00	℄						666.67
R-1	249+15	249+25	RT.	18					
M-1	@ 242+00		℄					1	
M-2	@ 250+00		℄					1	
SHEET TOTAL				18	231.5	1000	1000	2	666.67



EXCAVATION	14,955	CU.YDS.
EMBANKMENT	77,605	CU.YDS.
SEEDING & MULCHING	10,554	SQ.YDS.

STRUCTURES - 20' SPAN & UNDER

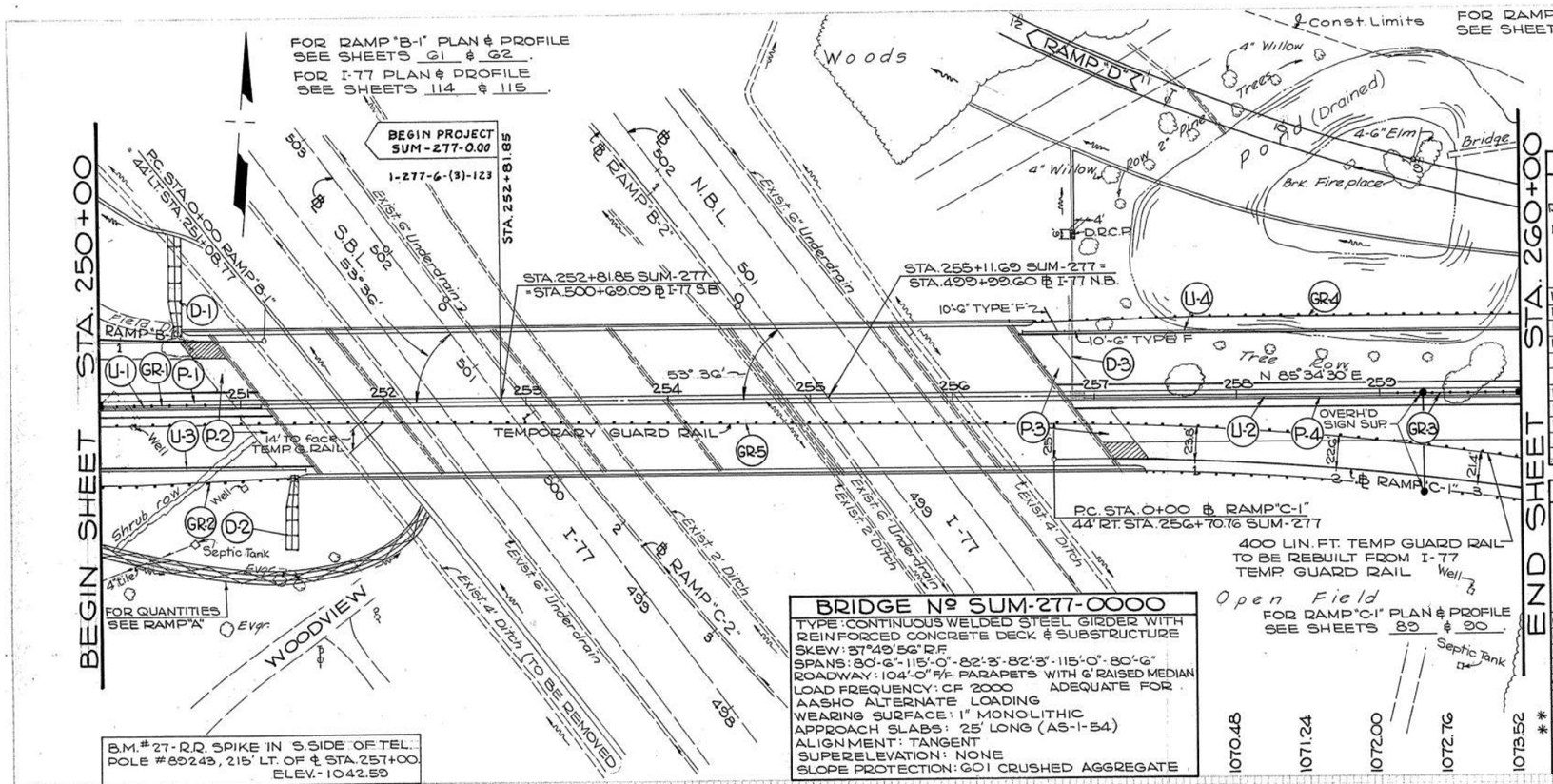
REF. Nº	STATION	TYPE	SIZE	SHEET Nº
C-1	249+00	10' x 5' REIN. CONC. BOX CULVERT		145

STA. 240+00 to STA. 250+00

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

18
234

SUMMIT COUNTY
SUM-277-0.00



BRIDGE № SUM-277-0000

TYPE: CONTINUOUS WELDED STEEL GIRDER WITH REINFORCED CONCRETE DECK & SUBSTRUCTURE
SKEW: 37°49'56" R.F.
SPANS: 80'-6"-115'-0"-82'-3"-82'-3"-115'-0"-80'-6"
ROADWAY: 104'-0" F/F PARAPETS WITH 6" RAISED MEDIAN
LOAD FREQUENCY: CF 2000 ADEQUATE FOR AASHO ALTERNATE LOADING
WEARING SURFACE: 1" MONOLITHIC
APPROACH SLABS: 25' LONG (AS-1-54)
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
SLOPE PROTECTION: 601 CRUSHED AGGREGATE

B.M. # 27 - R.R. SPIKE IN S. SIDE OF TEL. POLE # 892243, 215' LT. OF ℄ STA. 257+00. ELEV. - 1042.59

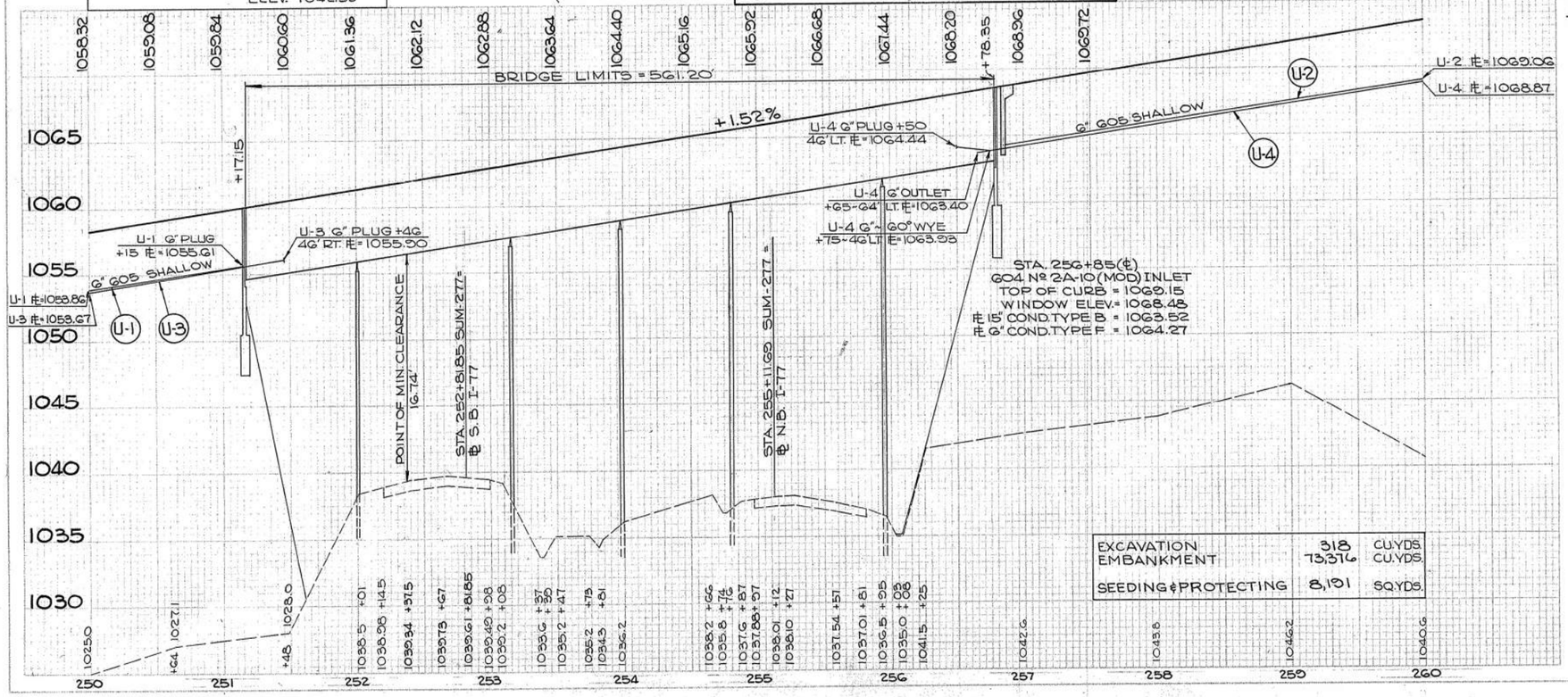
DRAINAGE QUANTITIES

REF. №	STATION FROM	STATION TO	SIDE	601 DUMPED ROCK CHANNEL PROTECTION C.Y.	602 CONCRETE MASONRY C.Y.	603 CONDUIT 15" TYPE B WITH CL. B BEDDING LIN. FT.	603 CONDUIT TYPE F 6" LIN. FT.	603 CONDUIT TYPE F 15" LIN. FT.	PIPE SPECIALS 6"-90° WYE EACH	PIPE SPECIALS 15"-25° BEND EACH	604 № 2-A-10 INLET (MOD) EA.	605 UNDERDRAIN 6" SHALLOW LIN. FT.	660 BERM & SLOPE PROT'N SQ. YD.
U-1	250+00	251+15	℄									115	
U-2	256+85	260+00	℄				10					305	
U-3	250+00	251+46	RT.									146	
U-4	256+50	260+00	LT.				20		1			348	
D-1	250+56		LT.										70
D-2	251+37		RT.										53
D-3	256+85		℄ & LT.	1.3	0.41	58		56		2	1		
SHEET TOTAL				1.3	0.41	58	30	56	1	2	1	914	123

PAVEMENT & ROADWAY QUANTITIES

REF. №	STATION FROM	STATION TO	SIDE	611 REINFORC'D CONCRETE APPROACH SLAB T=13" SQ. YD.	606 GUARD RAIL TYPE 4 LIN. FT.	606 GUARD RAIL TYPE 4 BARRIER LIN. FT.	606 GUARD RAIL TEMP. RE-BUILT LIN. FT.	606 GUARD RAIL TEMP. ORARY LIN. FT.	612 CONCRETE MEDIAN PAVEMENT SQ. YD.
GR-1	250+00	251+17	℄			117			
GR-2	250+00	251+48.5	RT.		143.5				
GR-3	256+78	260+00	℄			322			
GR-4	256+52.5	260+00	LT.		347.5				
GR-5	250+00	260+00	RT.				400	600	
P-1	250+00	251+17.15	℄						78.10
P-2	250+92.15	251+17.15	LT & RT.	166.67 *					
P-3	256+78.35	257+03.35	LT & RT.	166.67 *					
P-4	256+78.35	260+00	℄						214.43
SHEET TOTAL				333.34	491.0	439	400	600	292.53

* - EXCLUDES APPROACH SLAB AREA ON RAMPS "B-1" & "C-1".



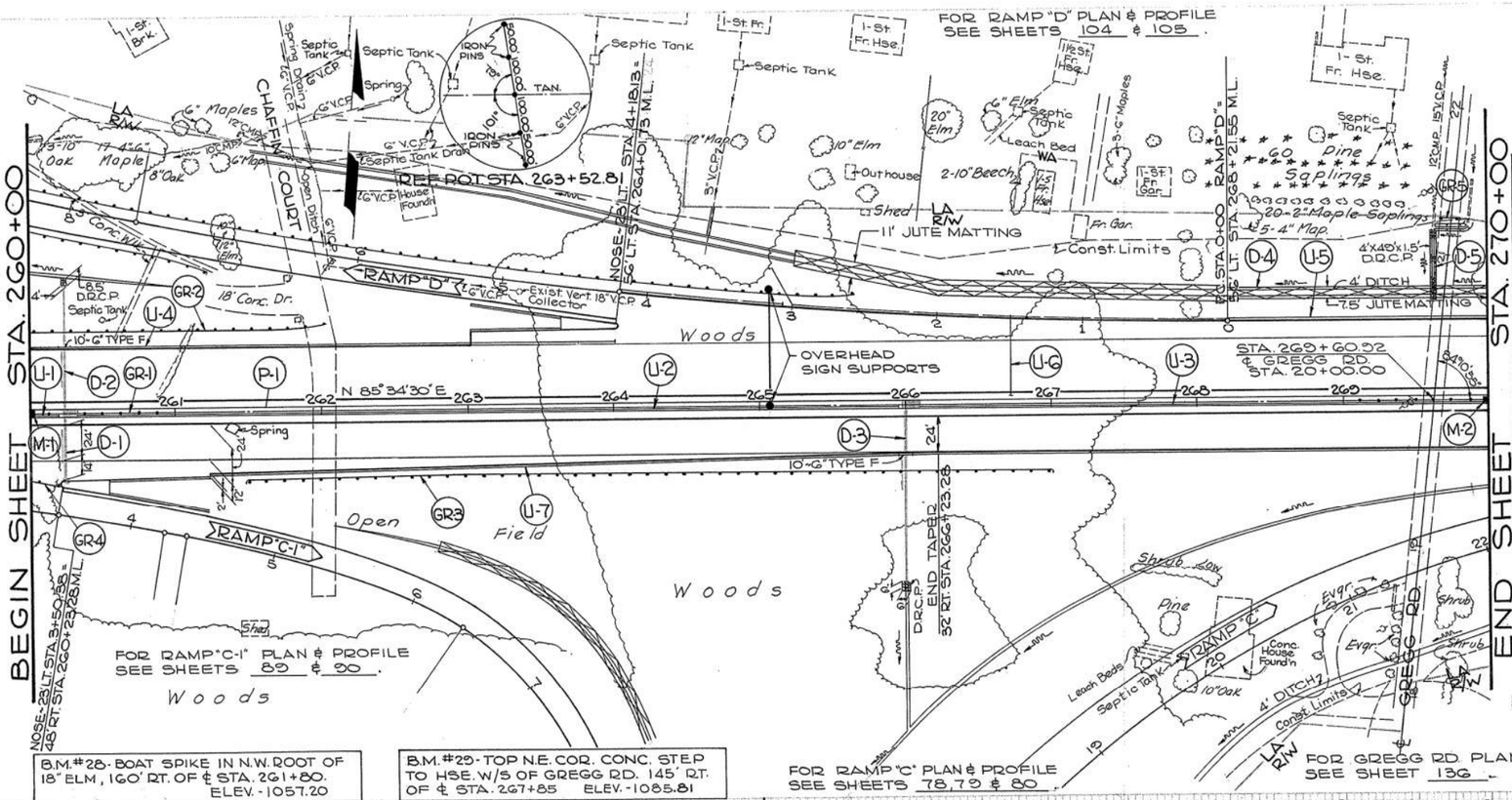
EXCAVATION	318	CU. YDS.
EMBANKMENT	73,376	CU. YDS.
SEEDING & PROTECTING	8,191	SQ. YDS.

STA. 250+00 to STA. 260+00

FED. AID DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

19
234

SUMMIT COUNTY
SUM-277-0.00

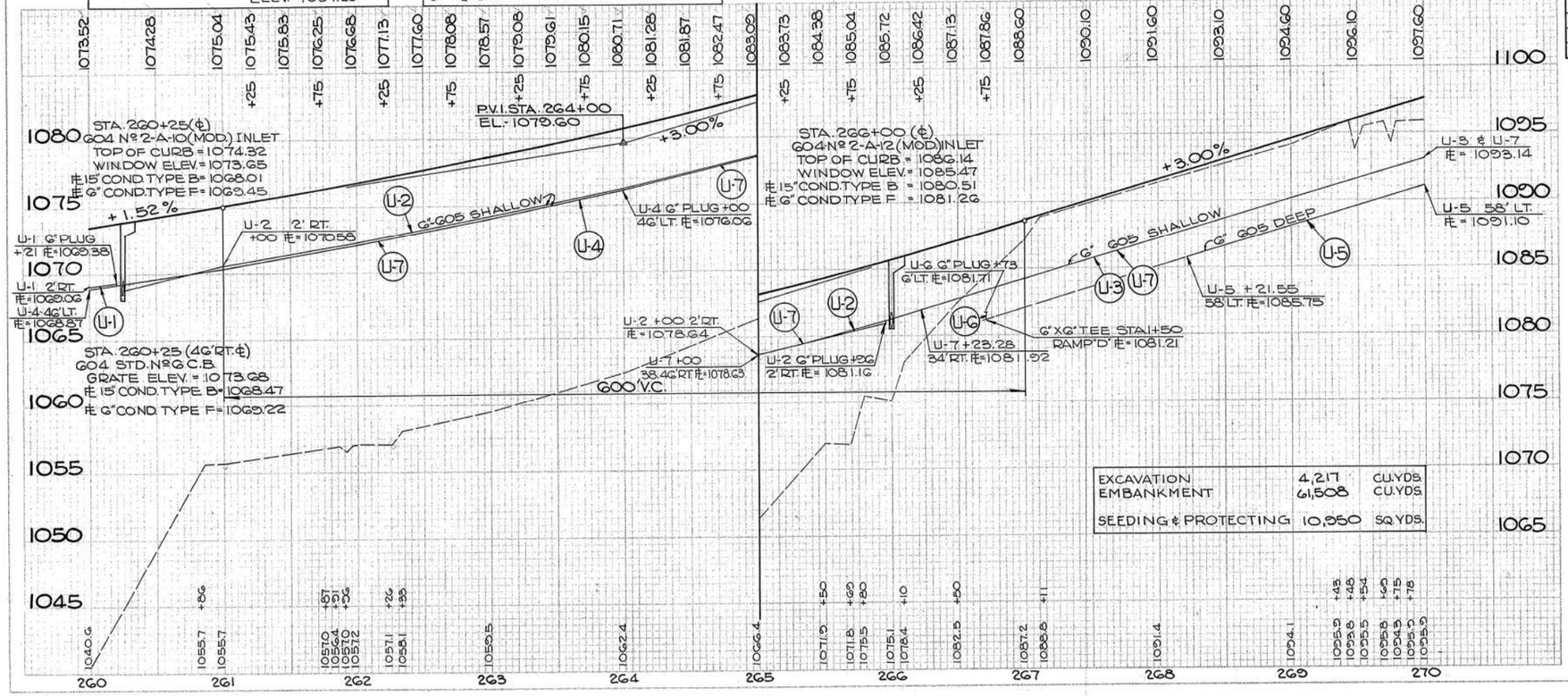


DRAINAGE QUANTITIES

REF. №	STATION FROM	STATION TO	SIDE	601 DUMPED ROCK CHANNEL PROTECTION C.Y.	602 CONCRETE MASONRY C.Y.	607 JUTE MATTING S.Y.	603 COND. 15" TYPE B WITH CL. B BEDD'G LIN. FT.	603 COND. TYPE F 15"	603 COND. TYPE F 6"	PIPE SPECIAL 15"x12" EQ. EQUIV.	PIPE SPECIAL 18"x11" EQ. EQUIV.	PIPE SPECIAL 18"x13" EQ. EQUIV.	604 INLETS № 2-A-10 (MOD) EACH	604 INLETS № 2-A-12 (MOD) EACH	604 № 6 C.B. STD. EACH	605 UNDERDRAINS 6" SHALLOW LIN. FT.	605 UNDERDRAINS 6" DEEP LIN. FT.
U-1	260+00	260+21	℄													21	
U-2	260+25	265+96	℄						10							561	
U-3	266+00	270+00	℄						10							350	
U-4	260+00	264+00	LT.						10							350	
U-5	268+21.55	270+00	LT.														178
U-6	266+72		LT.							1							55
U-7	260+25	270+00	RT.						20							955	
D-1	260+25		RT.				46					1					
D-2	260+25		℄&LT.	1.0	0.41		60	26			2		1				
D-3	266+00		℄&RT.	1.3	0.41		56	72		2				1			
D-4	268+21.55	270+00	LT.			149											
D-5	269+60	69' to 118'	LT.	11.3													
SHEET TOTAL				14.5	0.82	149	162	98	50	2	1	2	1	1	1	2317	233

PAVEMENT & ROADWAY QUANTITIES

REF. №	STATION FROM	STATION TO	SIDE	606 GUARD RAIL TYPE 4 LIN. FT.	606 GUARD RAIL TYPE 4 BARRIER LIN. FT.	TEMPORARY GUARD RAIL LIN. FT.	612 CONCRETE MEDIAN PAVEMENT SQ.YD.	604 STANDARD MONUMENT ASSEMBLY EACH
GR-1	260+00	270+00	℄		1000			
GR-2	260+00	262+02.5	LT.	202.5				
GR-3	261+50	267+00	RT.	550				
GR-4	260+00	260+21	RT.			21		
GR-5	269+70	269+82.5	LT.	12.5				
P-1	260+00	270+00	℄				GGG.G7	
M-1	@ 260+00		℄					1
M-2	@ 270+00		℄					1
SHEET TOTAL				765.0	1000	21	GGG.G7	2



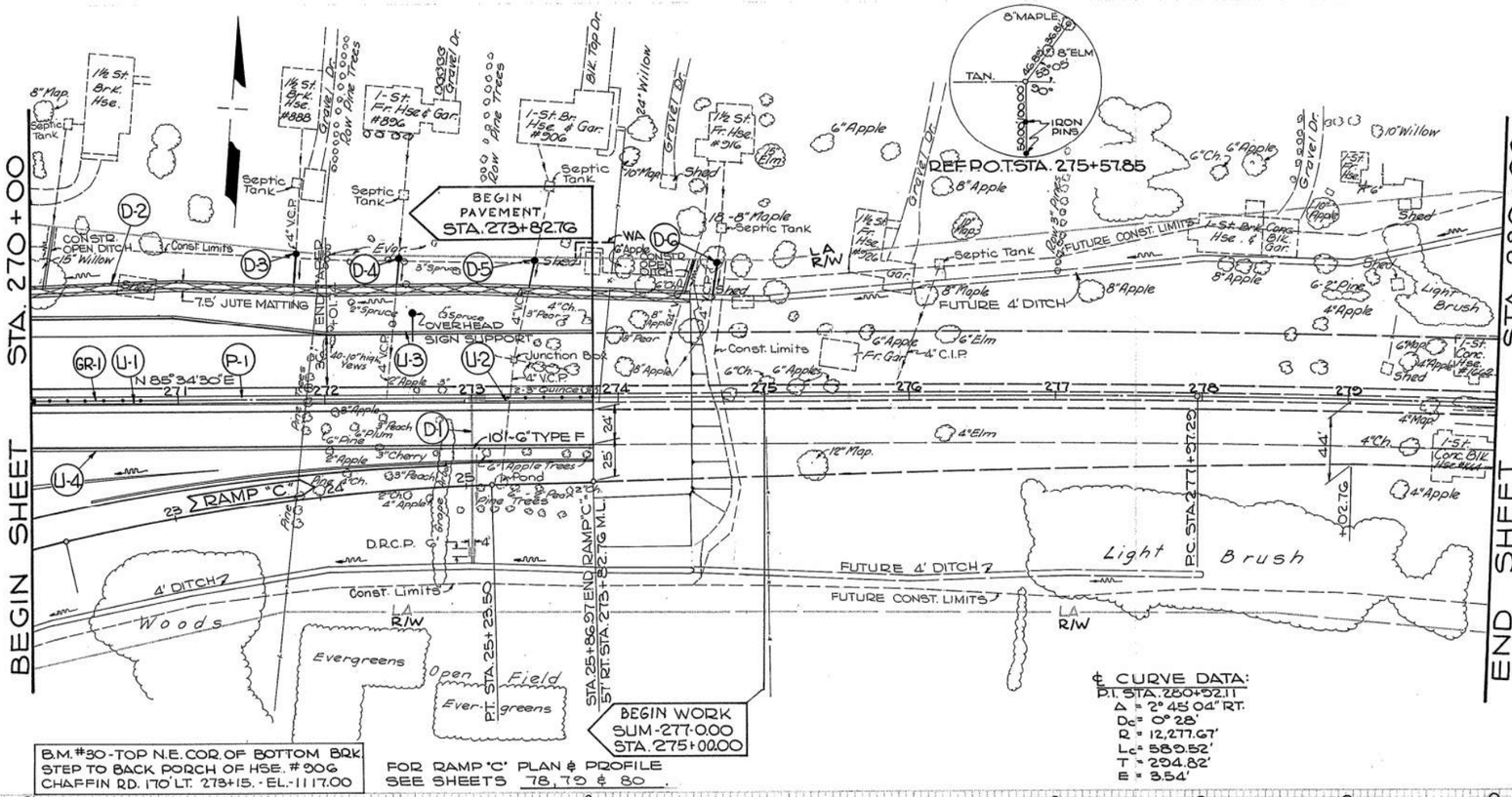
EXCAVATION	4,217	CU.YDS.
EMBANKMENT	61,508	CU.YDS.
SEEDING & PROTECTING	10,950	SQ.YDS.

STA. 260+00 to STA. 270+00

FED. AID SYMBOL	STATE	PROJECT		
2	OHIO	I-277-G(3)123		

20
234

SUMMIT COUNTY
SUM-277-0.00



B.M. #30 - TOP N.E. COR. OF BOTTOM BRK STEP TO BACK PORCH OF HSE. # 906 CHAFFIN RD. 170' LT. 278+15. - EL. - 1117.00

FOR RAMP "C" PLAN & PROFILE SEE SHEETS 78, 79 & 80.

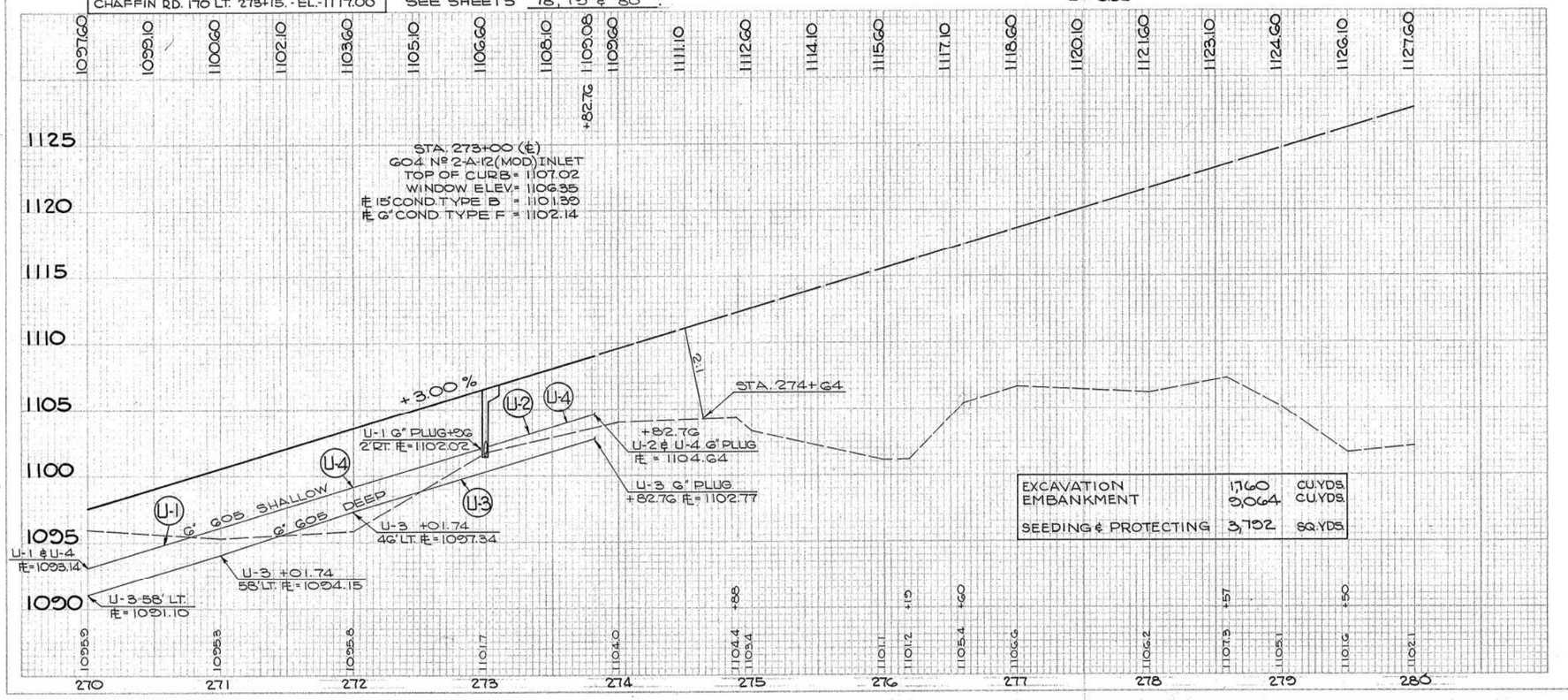
℄ CURVE DATA:
P.I. STA. 280+52.11
Δ = 2° 45' 04" RT.
D_c = 0° 28'
R = 12,277.67'
L_c = 589.52'
T = 294.82'
E = 3.54'

DRAINAGE QUANTITIES

REF. NO.	STATION FROM	STATION TO	SIDE	601 DUMPED ROCK CHANNEL PROTECTION C.Y.	602 CONCRETE MASONRY C.Y.	603 CONDUIT 15" TYPE B WITH CL. B BEDDING LIN. FT.	603 CONDUIT G" TYPE C WITH CL. B BEDDING LIN. FT.	603 CONDUIT TYPE F G" LIN. FT.	603 CONDUIT TYPE F 15" LIN. FT.	PIPE SPECL 15"-25" BEND EACH	604 Nº 2-A-12 INLET (MOD.) EACH	INSPECTION WELL AS PER PLAN EACH	605 UNDERDRAINS G" SHALLOW LIN. FT.	605 UNDERDRAINS G" DEEP LIN. FT.	607 JUTE MATTING SY.
U-1	270+00	272+96	℄										296		
U-2	273+00	273+82.76	℄					10					73		
U-3	270+00	273+82.76	LT.											383	
U-4	270+00	273+82.76	RT.					10					373		
D-1	273+00		℄ & RT.	1.3	0.26	74			28	2	1				375
D-2	270+00	274+50	LT.									1			
D-3	271+82		LT.				26					1			
D-4	272+52		LT.				22					1			
D-5	273+45		LT.				20					1			
D-6	274+70		LT.				24					1			
SHEET TOTAL				1.3	0.26	74	92	20	28	2	1	4	742	383	375

PAVEMENT & ROADWAY QUANTITIES

REF Nº	STATION FROM	STATION TO	SIDE	606 GUARD RAIL TYPE 4 BARRIER LIN. FT.	612 CONCRETE MEDIAN PAVEMENT SQ.YD.
GR-1	270+00	273+82.76	℄	383	
P-1	270+00	273+82.76	℄		255.17
SHEET TOTAL				383	255.17



EXCAVATION	1,760	CU.YDS.
EMBANKMENT	5,064	CU.YDS.
SEEDING & PROTECTING	3,752	SQ.YDS.

STA. 270+00 to STA. 280+00

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

21
234

SUMMIT COUNTY
SUM-277-0.00

END PROJECT
SUM-277-0.00
STA. 228+68.84

MATCH LINE

END TAPER
STA. 225+68.84

520' TAPER 2.5' PER 100'

57.00' LT. OF
P.O.T. STA. 233+88.84 =
RAMP "B" STA. 22+77.60

MATCH LINE

800' DECEL. LANE

PC. STA. 0+00 RAMP "A"
STA. 241+78.72 SUM-277

END TAPER
STA. 241+56.25

STA 237+98.53

PCC

PCC STA. 15+14.10

RELOC. BREWSTER RUN

END RAMP "B-2"
STA. 13+13.00

RAMP "B"

RAMP "B-2"

RAMP "B-1"

RAMP "A"

RAMP "C-2"

RAMP "D"

CORP. LINE
S.B. LANE
Sta. 515+35.15 S.B.

CORP. LINE
N.B. LANE
Sta. 515+37.10 N.B.

CORPORATION

COVENTRY TWP
CITY OF AKRON

COVENTRY ST.

WATERLOOROAD

RELOC. WOODVIEW-WOODLEY ROADS

NOSE - 56' LT. STA. 245+28.53 =
25' LT. & STA. 4+18.13 RAMP "A"

TS 4+36.67
ST. 4+20.64

SC 6+36.67

SC 6+59.70

SC 12+73.06

SC 14+13.06

SC 5+66.20

SC 5+66.32

SC 500+03.54

SC 13+40.12

TS 502+03.54

TS 505+66.15

ST 505+29.11

ST 527+01.87

ST 523+64.75

ST 527+44.42

CS 523+01.87

CS 523+44.42

END TAPER
STA. 522+45.15

STA. 0+00 RAMP "B"
ROC STA. 13+25 S.B.L.

STA 508+26.65 & S.B.L. =
STA. 8+21.47 & RAMP "B-2"
BRIDGE No. SUM-8-0552

STA 252+41.35 & N.B.L. SUM-277 (I-277)
STA 500+50.00 & S.B.L. SUM-8 (I-77)
BRIDGE No. SUM-277-1010

12' DT. STA 501+48.92 S.B.L. =
RC STA. 0+00 RAMP "B-2"
RC STA. 0+00 RAMP "C-2"
RC STA. 500+50.00 N.B.L.

PT STA. 21+60.72 RAMP "D" =
6' LT. S.C. STA 510+65.75 N.B.L.

N 01°08'30" E
S 01°08'30" W

N 40°49'30" W

S 40°49'30" E

NORTHBOUND

SOUTHBOUND

(I-77)

E 9,500
E 10,000
E 10,500
E 11,000

N 111,500
N 112,000
N 112,500

LEGEND

M.L. = MATCH LINE

+05 = CROSS SECTION

CROSS SECTION LAYOUT
SCALE: 1"=100

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

22
234

SUMMIT COUNTY
SUM-277-0.00

E 11,500
E 12,000
E 12,500
E 13,000
N 109,500
N 110,000
N 110,500

END PROJECT SUM-8-6.72
BEGIN PROJECT SUM-8-9.07
STA. 480+00

SOUTHBOUND SUM-8
NORTHBOUND SUM-8
N 40° 49' 30" W
N 10° 16' 30" W
BRIDGE Nº SUM-8-09.30
PC STA. 472+26.33
PC STA. 474+68.64
BEGIN RAMP "C" STA. 0+00
48' RT. STA. 477+11.93 N.B.L.
NOSE - 48' RT. STA. 481+33.46
23' LT. STA. 4+25.85 RAMP "C"
PC 482+86.86
RAMP "C"
RAMP "C1"
RAMP "C2"
RAMP "A"
RAMP "B-1"
RAMP "B-2"
RAMP "D"
ST. STA. 17+20.67 RAMP "A"
POC S.B. SUM-8 STA. 492+00
C.S. 16+40.67
P.T. 488+09.28
P.T. 495+71.59
NOSE - 48' RT. STA. 489+53.74
23' LT. STA. 4+15.13
BRIDGE Nº SUM-277-1.00
ACCEL. LANE
DECEL. LANE
STA. 255+11.00 SUM-277 (I-277) ↑
STA. 459+99.00 & N.B. SUM-8 (I-77)
P.C. STA. 0+00 RAMP "B-2"
12' LT. & STA. 500+80 O.N.B.L.
PC STA. 0+00 RAMP C-1
45° PT. M.L. STA. 256+10.76
POT STA. 18+62.37 RAMP C-1 ↑
POT STA. 457+30.00 N.B.
ST. 15+62.37
NOSE - 48' RT. STA. 260+23.23
23' LT. & STA. 3+50.38 "C-1" ↑
P.T. 4+23.08
T.S. 4+35.07
S.C. 6+39.01
C.S. 7+53.78
PC STA. 0+00 RAMP "D" =
POT. STA. 268+21.55 SUM-277
END TAPER STA. 266+25.28
P.C.C. 22+23.50
P.T. 25+17.53
57.00' RT. OF POT STA. 273+82.76 =
STA. 25+86.97 RAMP "C"
END RAMP "C-2" STA. 17+48.87
P.T. 16+61.74
PT. 15+65.36 P.C.C.
STA. 17+12.80 RAMP "C"
NOSE - 56' RT. STA. 264+01.74
25' LT. & STA. 4+18.13 RAMP "D"
DECEL. LANE
600' TAPER
STA. 271+02.74
STA. 271+01.74
MATCH LINE
STA. 279+02.76
STA. 281+26.99 SUM-277 =
STA. 38+34.93 S. ARLINGTON
S. ARLINGTON ST.
P.T. STA. 286+25.71
520' TAPER 2.5 PER 100'

LEGEND
M.L. = MATCH LINE
+05 = CROSS SECTION

SCALE: 1" = 100'

CROSS SECTION LAYOUT

SEEDING END WIDTH	SEEDING SQ. YDS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-Q(3)123	

23
234

SUMMIT COUNTY
SUM-277-0.00

2:1

1000

997.30

996.0

1025.27
228+00
996.5

1000

997.10

995.5

1024.71
227+50
996.3

STA. 227+00 ℄ AHEAD
604 Nº 2-A-8 (MOD) INLET (EXIST.)
TOP OF CURB = 1024.60
WINDOW ELEV. = 1023.93
℄ 6" PIPE = 1019.69
℄ 15" PIPE = 1018.94

1000

996.90
HW-E HEADWALL
℄ = 370.00

995.0

1024.18
227+00
996.2

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

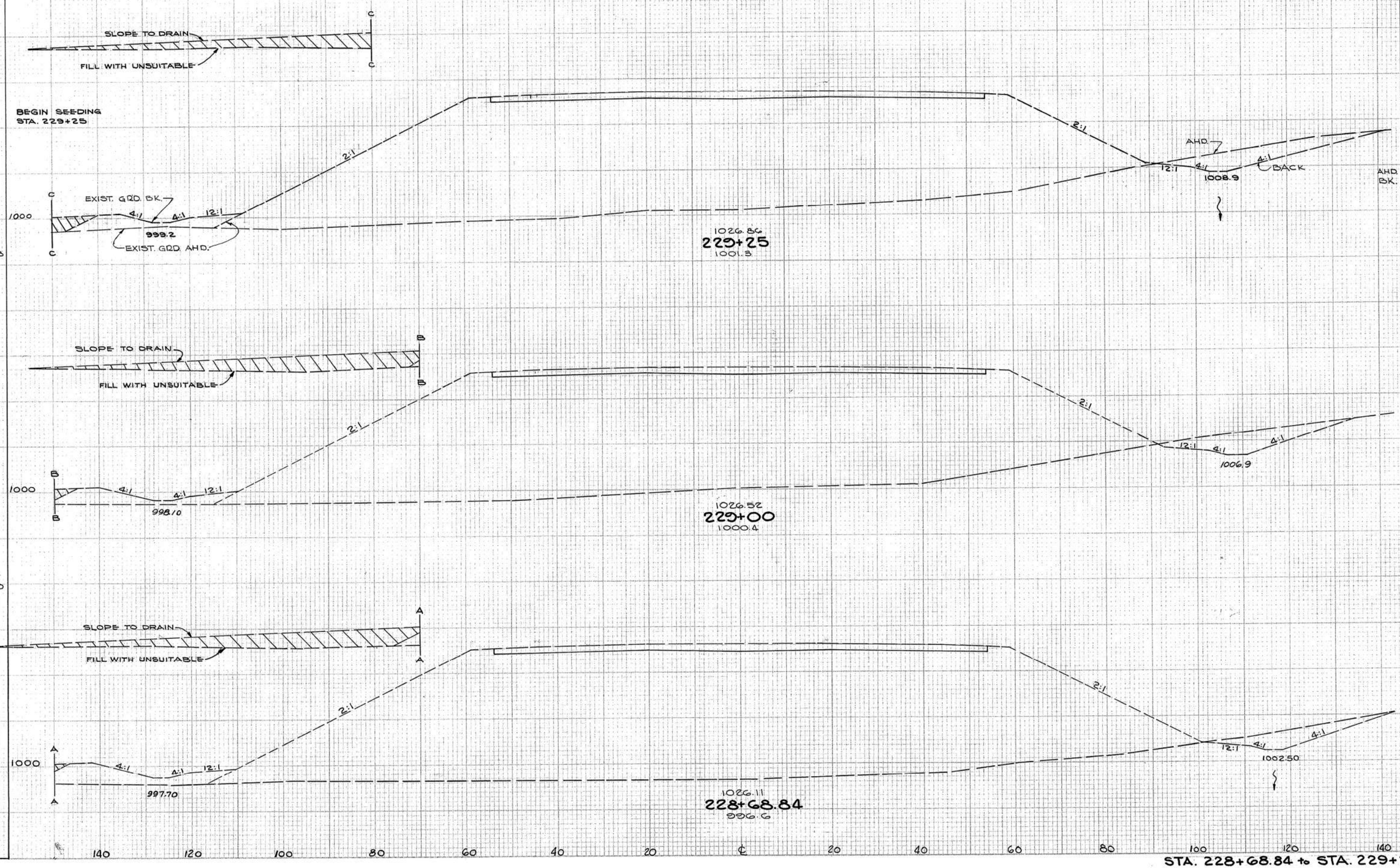
STA. 227+00 to STA. 228+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

24
234

SUMMIT COUNTY
SUM - 277 - 0.00

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	CU. YDS CUT	CU. YDS FIL
204					
		AHD.	300	78	
		BK.	160	0	
	283			148	3
			160	0	
20					
	69			184	0
20			160	0	



STA. 228+68.84 to STA. 229+25

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

25
234

SUMMIT COUNTY
SUM-277-0.00

SEEDING		END AREA		CU.YDS.	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
173		81	1226		
	765			142	1722
180		116	1159		
	1267			226	4201
194					
	689			84	2561
				62	321
249				36	3631
	1183			252	321

1020
1010.9
2:1 4:1 4:1 12:1
1029.44
231+00
1020.1
4:1 4:1
1023.0

1020
1007.5
2:1 4:1 4:1 12:1
1028.85
230+61
1020.0
3:1 12:1 4:1
1019.88

1020
1002.4
2:1 4:1 4:1 12:1
G2'~15" CONDUIT TYPE "B" w/CL. "B" BEDDING @ 3.00%
CONC. COLLAR
15"~25° BEND
E=1020.82
15"~25° BEND
E=1015.20
2:1
12'~15" COND. TYPE "F"
8'~15" COND. TYPE "F" @100%
12:1 4:1
1015.0
G 4'x1.5' D.R.C.P.
HWE HEADWALL
E=1015.11
1027.92
230+00
1010.1

STA. 230+00(℄)
604 No. 2-A-B(MOD) INLET
TOP OF CURB = 1028.34
WINDOW ELEV.= 1027.67
E 15" COND. TYPE "B" = 1022.71
E 6" COND. TYPE "F" = 1023.46

1020
SLOPE TO DRAIN
FILL WITH UNSUITABLE
A A
200 180 160 150
A A
4:1 4:1 12:1
1001.2
2:1
2:1 12:1 4:1 4:1
1012.7
1027.63
229+72
1003.4

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

STA. 229+72 TO STA. 231+00 AHEA

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

26
234

SUMMIT COUNTY
SUM-277-0.00

SEEDING	
END WIDTH	SQ. YDS.
68	
149	
	1481
151	
	666
150	
	1013
154	
	702
162	
	1117

FULL SECTION BACK

Match Line Ahead

AHD. 1030
BK. 1030

4'x4'x1.5' D.R.C.P.

4:1

1024.97 HWE. HEADWALL
℄ - 1025.10

54'~15" CONDUIT TYPE "B" w/CLASS "B" BEDDING @ 3.38%

42'~15" CONDUIT TYPE "B" w/CL. "B" BEDDING @ 4.07%

STA. 233+90 (42' LT. ℄)
604 STD. Nº. G C.B.
GRATE ELEV.- 1033.70
℄ 15" COND. TYPE "B" - 1026.93
℄ 6" COND. TYPE "F" - 1027.68

1033.83
233+88.84
1035.8

STA. 233+90 (℄)
604 Nº. 2-A-10 (MOD.) INLET
TOP OF CURB - 1034.27
WINDOW ELEV.- 1033.60
℄ 15" COND. TYPE "B" - 1028.64
℄ 6" COND. TYPE "F" - 1029.39

1031.52

1032.48
233+00
1031.8

1023.50

1031.87
232+60
1032.1

1022.00

1030.96
232+00
1032.11

1019.4

1030.35
231+60
1027.0

1016.0

1030.17

1029.56

1028.65

1026.40

END AREA		CU. YDS	
CUT	FILL	CUT	FIL
370	41		
403	162		
		1250	54
357	166		
		556	27
448	199		
		688	44
171	201		
		168	55
56	551		
		152	19

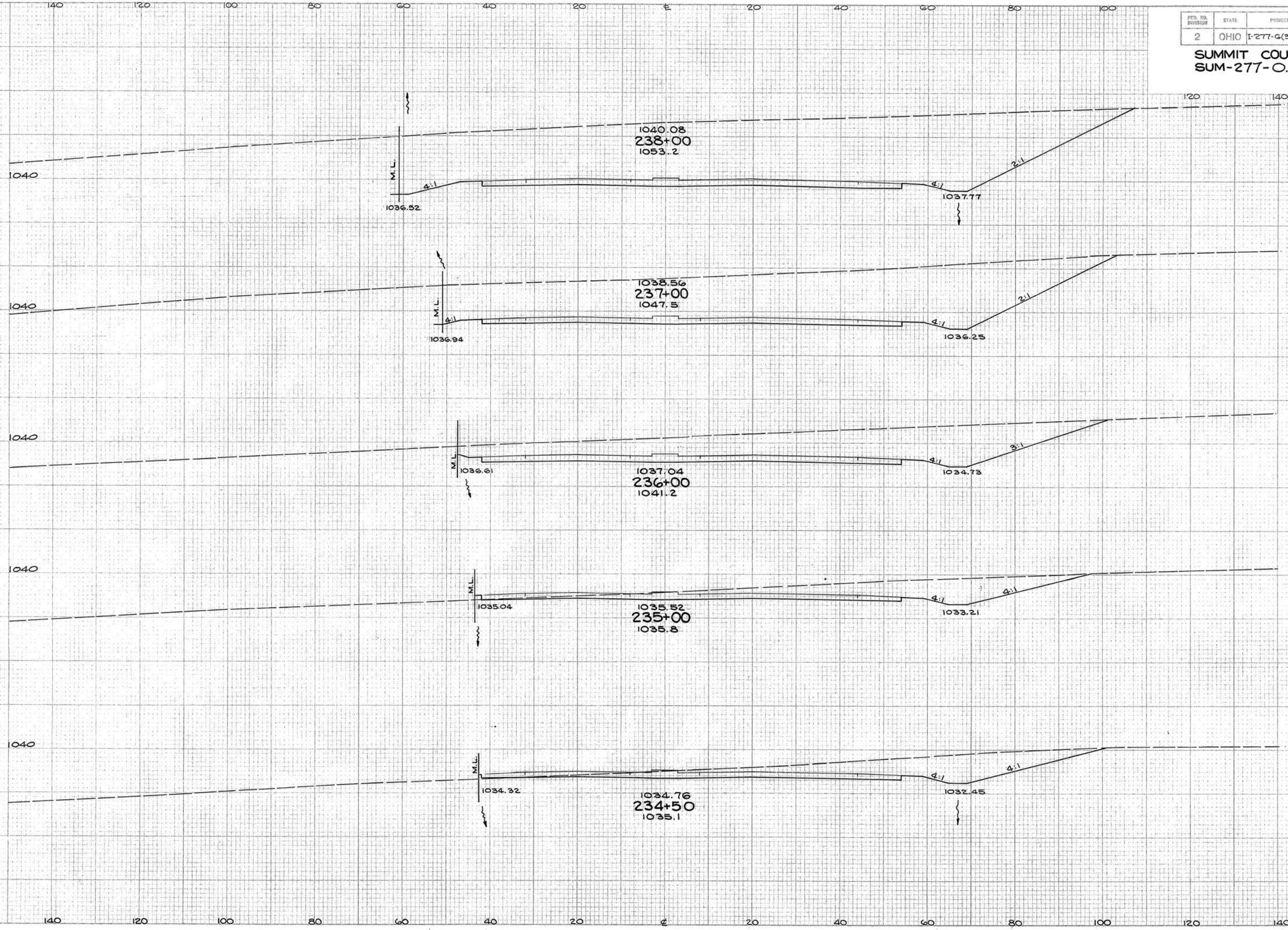
140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

STA. 231+60 TO STA. 233+88.84

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

27
234

SUMMIT COUNTY
SUM-277-0.00



SEEDING END WIDTH	SEEDING SQ. YDS.
79	839
72	754
71	772
68	375
67	450

END AREA CUT	END AREA FILL	CU. YDS CUT	CU. YDS FILL
2318	0		
		7198	
1569	0		
		4400	0
861	0		
		2256	4
357	2		
		673	3
370	1		
		838	48

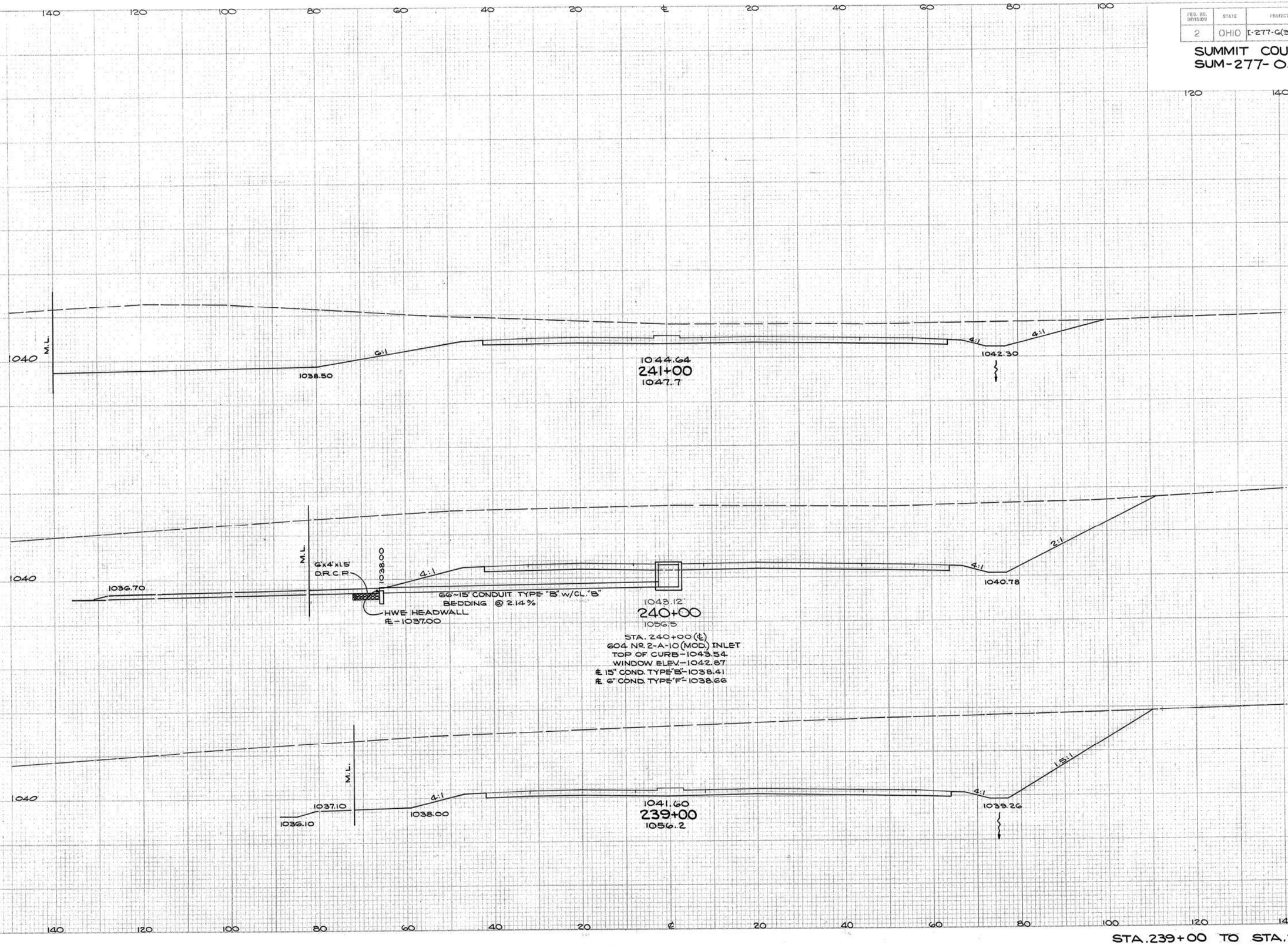
STA. 234+50 TO STA. 238+00

FED. RD. DIV.NO.	STATE	PROJECT	
2	OHIO	I-277-0(3)123	

28
234

SUMMIT COUNTY
SUM-277-0.00

SEEDING END WIDTH	SEEDING SQ YDS
175	
	1578
109	
110	
88	
139	



END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
1839	0		
		8262	0
2622	0		
		10,074	0
2818	0		
		9512	0

STA. 239+00 TO STA. 241+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

29
234

SUMMIT COUNTY
SUM-277-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
109	1800
216	400
208	1692
159	360
140	1797
236	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

1040 M.L. 1040.00 G:1 1039.50 M.L. 1049.20 **244+00** 1037.6

240 220 200 180 160 150 1040 D D M.L.

1040 D D G:1 1039.50 M.L. 1047.68 **243+00** 1040.8

240 220 200 180 160 150 1040 C C M.L.

1040 C C G:1 1039.50 M.L. 1047.42 **242+83** 1041.1

200 180 160 150 1040 B B M.L.

1040 B B G:1 1039.00 M.L. 1046.16 **242+00** 1044.4

180 160 150 1040 A A M.L.

AHD. BK. 1040 A A G:1 1039.00 M.L. (Ahead) 1045.84 **241+78.72** 1045.4 1043.49

AHD BK. 1040 1085

END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. F
0	1419		
		281	47
152	855		
		116	4
216	677		
		1353	11
668	56		
		674	2
1085	0		
		4268	0

STA. 241+78.72 to STA. 244+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-C(3)123	

30
234

SUMMIT COUNTY
SUM-277-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
22	
	147
25	
	317
32	
	456
50	
	883

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

1030

M.L. (Back)

M.L. (Ahead)

M.L.

4:1 4:1

1051.30

1054.62
247+56.25
1017.0

M.L.

M.L.

1030

1053.76
247+00
1027.1

1030

M.L. (Back)

6:1

1046.4

M.L.

STA. 246+00 (℄)
604 No. 2-A-8 (MOD.) INLET
TOP OF CURB = 1052.66
WINDOW ELEV. = 1051.99
℄ 15" TYPE "B" COND.=1047.03
℄ 6" TYPE "F" COND.=1047.78

54'=15" TYPE "B" COND. W/CL. "B" BEDDING @1.00%

M.L. (Ahead)

STA. 246+00 (54' RT. ℄)
604 No. 6 CATCH BASIN
GRATE ELEV. = 1051.89
℄ 15" TYPE "B" COND.=1046.50
℄ 6" TYPE "F" COND.=1047.63

1030

1052.24
246+00
1031.9

6:1

1043.31

M.L.

M.L.

1030

1050.72
245+00
1034.8

	END AREA CUT	END AREA FILL	CU. YD. CUT	CU. YD. FI
AHD.	0	3543		
BK.	0	4235		
			0	78
	0	3277		
			0	10
AHD.	0	2617		
BK.	0	2354		
			0	8
	0	2221		
			0	6

STA. 245+00 TO STA. 247+56.25

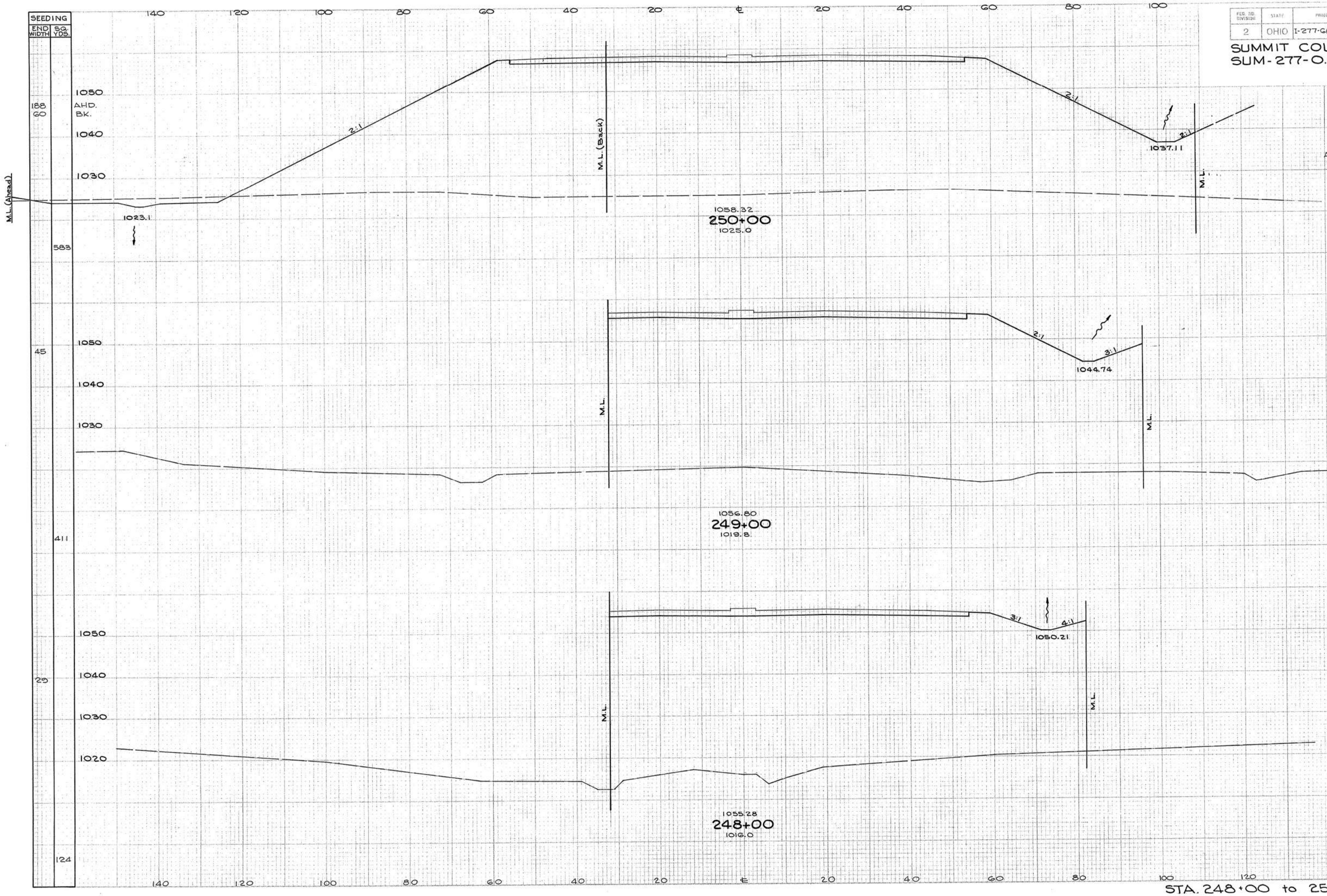
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

31
234

SUMMIT COUNTY
SUM-277-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
188	583
60	
45	411
25	124

END AREA CUT	END AREA FILL	CU. YDS CUT	CU. YDS FIL
AHD. 83	5840		
BK 0	3025		
		0	15,0
0	4545		
		0	155
0	4071		
		0	6



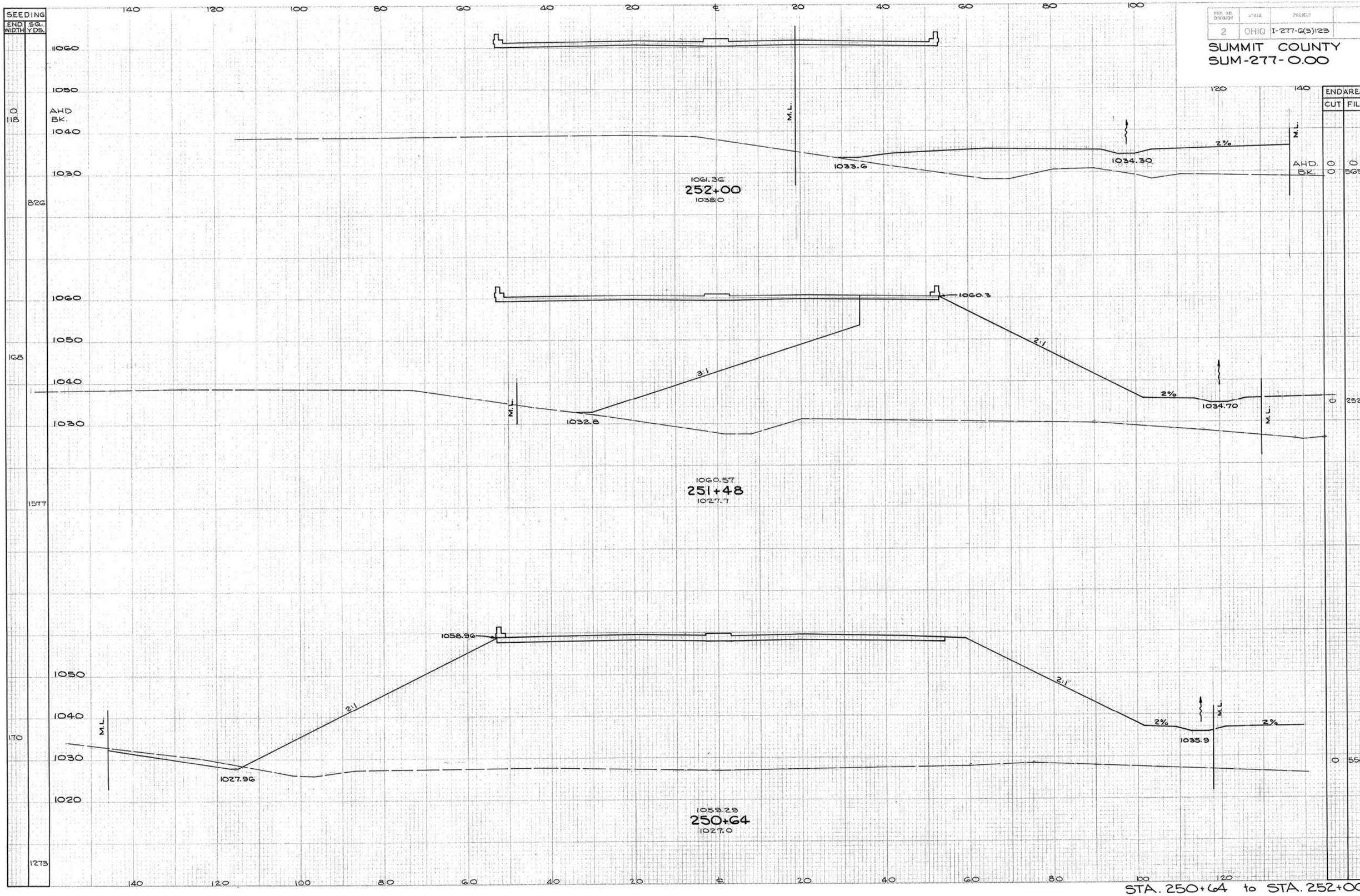
FED. HWY. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

32
234

SUMMIT COUNTY
SUM-277-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
0	
118	826
168	1577
170	1273

END AREA CUT	END AREA FILL	CU. YD. CUT	CU. YD. F.
0	0		
0	569		
		0	30
0	2528		
		0	12
0	5542		
			98



STA. 250+64 to STA. 252+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

SUMMIT COUNTY
SUM-277-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
191	
	913
191	
	849
68 0	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1060

L58'-15" CONDUIT TYPE B @ 2.33% WITH CL. B BEDDING
℄=1062.15
15" 25° BEND
STA. 256+85 (℄)
604 Nº 2-A-10 (MOD) INLET
TOP OF CURB = 1069.15
WINDOW ELEV. = 1068.48
℄ 15" COND. TYPE B = 1063.52
℄ 9" COND. TYPE F = 1064.27

48'-15" CONDUIT TYPE F

M.L.

D.R.C.P.
4'X6'X1.5' DEEP

2' BOTTOM DITCH @ 0.4%
℄ 1040.76
HW-E HEADWALL

℄=1040.84 ~ 15" ~ 25° BEND
8'-15" CONDUIT TYPE F @ 1.00%

1068.91
256+90
1042.4

M.L.

END AREA CUT	END AREA FILL	CU. Y CUT
5	3282	

1060

M.L.

M.L.

1068.15
256+47
1042.0

		4
0	1724	

1060

AHD BK.

M.L.

M.L.

1067.26
255+88
1041.1

RESUME EARTHWORK AHD. STA. 255+88

		51
AHD	47	0
BK.	0	0

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

STA. 255+88 TO STA. 256+90

FED. AD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

34
234

SUMMIT COUNTY
SUM-277-0.00

SEEDING			END AREA		CU. YDS.	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
		AHD.	0	2642		
		BK.	0	2287		
					0	69
35	102					
			0	2538		
44	550				0	1070
			0	3066		
56	683				0	1170
		AHD.	0	3295		
68	819	BK.	36	4683	114	1000
44						
			57	3878	51	580
144						

1060

8.5'x4'x1.5' DEEP D.R.C.P.
1058.50
℄ = 1058.62
HW-E HEADWALL
M.L.
2:1
8'-15" TYPE F @ 1.00%
18"-15 TYPE F
℄ = 1058.70
15'-25° BEND
℄ = 1067.40
15'-25° BEND
60'-15" TYPE B COND @ 1.00%
WITH CL. B BEDDING
40'-15" TYPE B COND @ 1.00%
WITH CL. B BEDDING
STA. 260+25(℄)
604 Nº 2-A-10(MOD.) INLET
TOP OF CURB = 1074.32
WINDOW ELEV = 1073.65
℄ 15" TYPE B COND. = 1068.01
℄ 6" TYPE B COND. = 1068.45
M.L. BK.
M.L. AHD.
STA. 260+25(46' RT. ℄)
604 STD. Nº 6 C.B.
GRATE ELEV. = 1073.68
℄ 15" TYPE B COND = 1068.47
℄ 6" TYPE B COND = 1068.22
AHD.
BK.

1073.87
260+23.28 NOSE
1051.9

1073.52
260+00
1050.5

1072.00
259+00
1046.4

STA. 1+28
RAMP "C-1"

1070.48
258+00
1043.7

1069.49
257+34
1043.1

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 140 160

STA. 257+34 TO STA. 260+23.28

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(B)123	

35
234

SUMMIT COUNTY
SUM-277-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
99	520
82	513
58	513
52	544
46	345

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1080 / 1070 / 1060

M.L. Bk. M.L. AHD. M.L. 4:1

1080.75
264+01.73
1062.6

1080 / 1070 / 1060

M.L. 4:1 M.L.

1079.61
263+50
1061.3

1080 / 1070 / 1060

M.L. 6:1 1076.0 4:1 M.L.

1078.26
262+84
1059.5

1080 / 1070 / 1060

M.L. 4:1 4:1 M.L.

1076.68
262+00
1057.5

1070 / 1060 / 1050

M.L. 3:1 M.L.

1075.04
261+00
1055.8

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
AHD 0	2378		
Bk. 0	2555		
		0	45
0	2738		
		0	45
0	2565		
		0	8
0	2589		
		0	0
0	2519		
		0	TR

STA. 261+00 TO STA. 264+01.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-Q(3)123	

SUMMIT COUNTY
SUM-277-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
72	452
91	1127
128	2133
256	1444
264 220	855

END AREA CUT	END AREA FILL	CU. YD. CUT	CU. YD. F
302	60		
		582	19
338	150		
		626	22
0	1618		
		0	76
0	2438		
		0	446
AHD. 0	2612		
BK. 0	2542		

1090.10
267+50
1089.4

1088.60
267+00
1087.3

1085.72
266+00
1075.1

STA. 266+00 (℄)
GO4 No. 2-A-12 (MOD) INLET
TOP OF CURB = 1086.14
WINDOW ELEV. = 1085.47
℄ 15" COND. TYPE B = 1080.51
℄ 6" COND. TYPE F = 1081.26

1083.08
265+00
1066.4

1081.61
264+50
1064.5

3.40%
56'-15" CONDUIT TYPE B WITH CLASS B BEDDING
CONC. COLLAR
15"-12" BEND ℄ 1078.6
58'-15" COND TYPE F
15"-12" BEND ℄ 1063.7
14"-15" COND TYPE F
℄ 1063.2
1.0'X 0.4'X 1.5' D.R.C.P. HW-E HEADWALL

4:1

M.L.
M.L. BK.
M.L. AHD.

1080
1070
1060
1050

40 20 ℄ 20 40 60 80 100 120 140 160 180 200 220 240

STA. 264+50 TO STA. 267+50

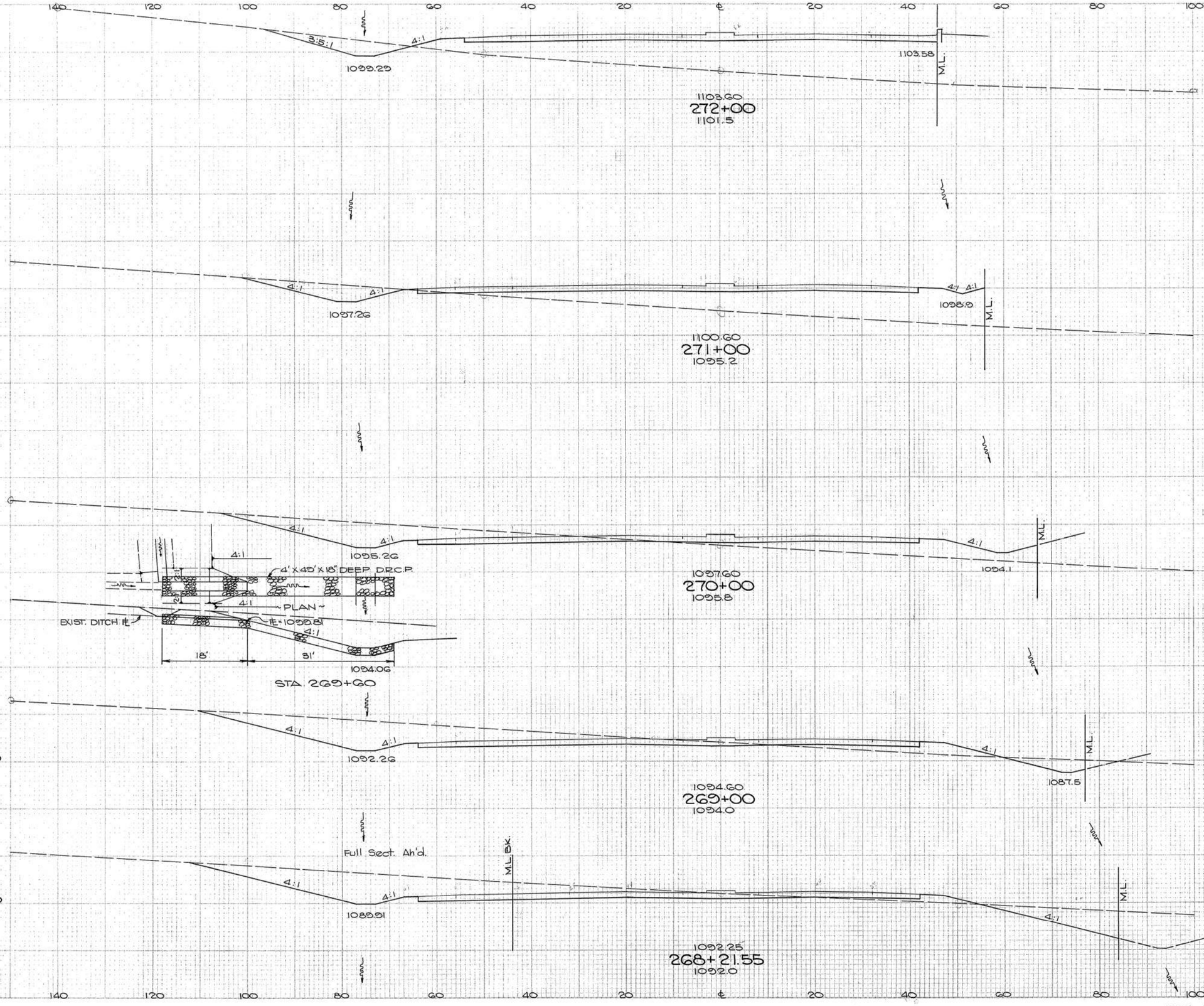
FED. DIV. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

SUMMIT COUNTY
SUM-277-0.00

37
234

SEEDING END WIDTH	SEEDING SQ. YDS
47	594
60	806
85	1033
101	920
110	449
43	

END AREA CUT	END AREA FILL	CU.YD CUT	CU.YD F
61	612		
		276	19
88	460		
		598	11
235	162		
		1126	5
373	81		
		1213	
AHD BK	481 108	14 14	
		660	



STA. 268+21.55 TO STA. 272+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-Q(9)123	

38
234

SUMMIT COUNTY
SUM-277-0.00

SEEDING END WIDTH	SEEDING SQ. YDS
0	
	242
242	
	289
129	
	260
128 42	
	395
44	
	506

END AREA CUT	END AREA FILL	CU YDS CUT	CU YDS FILL
0	0		
		0	64
0	267		
		17	38
67	1217		
			227 25
			294 115
		127	347
			348 17

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

1100
END SEEDING
STA. 274+82

275+00
1103.5
1090.6

END EARTHWORK
STA. 274+77

2:1

274+64
1103.7

1100

4:1 4:1
1108.29

1111.10
274+50
1103.6
1090.4

1100

AHD BK.
3:1 4:1
1105.60

M.L. BK.
Full Sect. Ahd.
2:1

1109.08
273+82.76
1103.4
END PAVEMENT
1090.1

AHD 115 832
BK. 65 414

1100

25:1 4:1
1102.20

M.L.
CONC COLLAR
74'-15" COND. TYPE B @ 3.04%
WITH CL. B BEDDING
℄ = 1088.14
15"-25° BEND
18'-15" COND. TYPE F
2:1
℄ = 1089.90
HWE HEADWALL

1106.60
273+00
1101.5

STA. 273+00 (℄)
604 Nº 2-A-12 (MOD) INLET
TOP OF CURB = 1107.02
WINDOW ELEV. = 1106.35
℄ 15" COND. TYPE B = 1101.50
℄ 6" COND. TYPE F = 1102.14

℄ = 1090.00
15"-25° BEND
10'-15" COND. TYPE F @ 1.00%
1089.8
6' x 4' x 1.5' DEEP

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

STA. 273+00 TO STA. 275+00

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

SUMMIT COUNTY
SUM - 277 - 0.00

TRANSITION CURVE DATA (COMPOUND)

SHEET NO.	CURVE NO.	C.S.~S.C.	NORTH	EAST	POINT OF INTERSECTION	NORTH	EAST	S.C.~C.S.	NORTH	EAST	θs	θa	Ls	T1	T2	pa	D1	D2	R1	R2	REMARKS
	6-A	5+09.70 C.S.	110,717.703	10,668.556	5+96.08	110,712.850	10,704.800	6+59.70 S.C.	110,704.708	10,767.957	04°07'30"	01°52'30"	150.00'	86.38	63.68	0.41	01°30'00"	04°00'00"	3,819.72	1,432.39	RAMP "A" ℄
	10-B	12+73.06 C.S.	111,362.798	10,558.651	13+50.90	111,349.028	10,636.303	14+73.06 S.C.	111,269.070	10,734.380	25°00'00"	21°00'00"	200.00'	126.54	77.84	6.08	04°00'00"	25°00'00"	1,432.39	229.18	RAMP "B-1"
	13-A	5+86.18 C.S.	111,338.004	10,838.586	6+70.24	111,380.593	10,866.108	7+36.18 S.C.	111,415.581	10,814.978	10°30'00"	01°30'00"	150.00'	93.06	57.36	2.61	02°00'00"	12°00'00"	2,864.79	477.46	RAMP "B-2"
	16-A	8+51.58 C.S.	110,344.266	11,785.341	9+47.38	110,287.421	11,862.441	10+01.58 S.C.	110,265.108	11,912.493	12°22'30"	10°07'30"	150.00'	95.70	54.80	2.23	01°30'00"	15°00'00"	3,819.72	381.97	RAMP "C-2"
	21-A	7+53.78 C.S.	111,044.054	11,383.181	8+38.75	111,054.240	11,886.783	9+03.78 S.C.	111,066.240	11,834.860	03°45'00"	01°30'00"	150.00	85.01	65.05	0.33	01°30'00"	03°30'00"	3,819.72	1,637.02	RAMP "D"
	21-B	17+10.12 C.S.	111,400.323	11,103.932	17+82.16	111,445.516	11,053.801	18+60.12 S.C.	111,493.276	10,987.861	04°41'15"	00°33'45"	150.00'	78.04	72.04	0.12	02°45'00"	03°30'00"	2,083.48	1,637.02	RAMP "D" ℄

TRANSITION CURVE DATA

SHEET NO.	CURVE NO.	T.S.~C.S.	NORTH	EAST	POINT OF INTERSECTION	NORTH	EAST	S.C.~S.T.	NORTH	EAST	θs	Ls	L.T.	S.T.	L.C.	Xc	yc	p	K	Dc	Rc	REMARKS
	2-A	502+03.54 T.S.	110,955.033	11,116.884	504+70.27	111,156.870	10,942.508	506+03.54 S.C.	111,263.653	10,862.553	04°00'00"	400.00	266.73	133.40	399.91	399.80	9.30	2.32	199.97	02°00'00"	2,864.79	S.B.I.R.77 ℄
	2-B	523+01.87 C.S.	112,837.867	10,294.508	524+35.27	112,971.101	10,287.856	527+01.87 S.T.	113,237.778	10,293.170	04°00'00"	400.00	266.73	133.40	399.91	399.80	9.30	2.32	199.97	02°00'00"	2,864.79	S.B.I.R.77 ℄
	4-A	506+65.75 T.S.	111,375.108	10,998.443	508+32.52	111,576.975	10,824.042	510+65.75 S.C.	111,685.161	10,745.944	05°00'00"	400.00	266.77	133.43	399.86	399.70	11.63	2.91	199.95	02°30'00"	2,291.83	N.B.I.R.77 ℄
	4-B	523+44.42 C.S.	112,872.378	10,317.544	524+77.85	113,005.506	10,308.566	527+44.42 S.T.	113,272.223	10,313.881	05°00'00"	400.00	266.77	133.43	399.86	399.70	11.63	2.91	199.95	02°30'00"	2,291.83	N.B.I.R.77 ℄
	G-B	16+40.67 C.S.	110,268.534	11,625.296	16+90.68	110,232.207	11,659.667	17+30.67 S.T.	110,156.063	11,724.507	03°00'00"	150.00	100.01	50.01	149.98	149.96	2.62	0.65	74.99	04°00'00"	1,432.39	RAMP "A" ℄
	7-A	3+66.20 T.S.	112,094.935	10,356.832	4+99.67	111,963.656	10,380.915	5+66.20 S.C.	111,896.924	10,383.707	08°00'00"	200.00	133.47	66.79	199.83	199.61	9.30	2.33	99.93	08°00'00"	716.20	RAMP "B" ℄
	7-B	8+78.65 C.S.	111,591.754	10,329.335	9+45.44	111,530.092	10,303.668	10+78.65 S.T.	111,415.209	10,235.727	08°00'00"	200.00	133.47	66.79	199.83	199.61	9.30	2.33	99.93	08°00'00"	716.20	RAMP "B" ℄
	10-A	4+36.67 T.S.	110,891.622	10,592.876	5+71.36	110,905.914	10,458.946	6+36.67 S.C.	110,940.970	10,400.800	25°00'00"	200.00	134.68	67.90	198.31	196.23	28.70	7.22	99.37	25°00'00"	229.18	RAMP "B-1" ℄
	13-B	13+12.68 C.S.	111,343.595	10,277.685	13+62.80	111,309.850	10,240.512	14+62.68 S.T.	111,231.784	10,177.868	09°00'00"	150.00	100.13	50.12	149.84	149.63	7.84	1.96	74.94	12°00'00"	477.46	RAMP "B-2" ℄
	18-A	13+62.37 C.S.	110,357.957	12,010.648	14+30.17	110,385.255	11,948.586	15+62.37 S.T.	110,484.862	11,858.086	24°00'00"	200.00	134.58	67.80	198.44	196.52	27.58	6.94	99.42	24°00'00"	238.73	RAMP "C-1" ℄
	18-B	4+39.07 T.S.	110,831.354	12,094.248	5+73.65	110,816.932	12,168.052	6+39.07 S.C.	110,782.910	12,226.681	24°00'00"	200.00	134.58	67.80	198.44	196.52	27.58	6.94	99.42	24°00'00"	238.73	RAMP "C-1" ℄

SUB TRAVERSE FOR RAMP LOCATIONS

SHEET NO.	POINT NO.	BEARING	DISTANCE	NORTH	EAST	LOCATION
	2			109,471.032	12,398.971	P.I. Pt. S.B. S.R. 8 ℄
	13	N 40°49' 30" W	1,826.68	110,853.299	11,204.777	℄ U.S. 224 ℄ S.B. ℄
	14	S 85°34' 30" W	173.08	110,839.945	11,032.213	℄ U.S. 224 - RAMP "B-1"
	15	S 85°34' 30" W	930.05	10,768.189	10,104.934	℄ U.S. 224 - RAMP "A"
	16	S 85°34' 30" W	789.83	110,707.246	9,317.410	℄ U.S. 224 - RAMP "B"
	17	N 85°34' 30" E	3993.992	111,015.394	13,299.426	℄ U.S. 224 - RAMP "C"
	18	S 85°34' 30" W	561.21	110,972.094	12,739.888	℄ U.S. 224 - RAMP "D"
	19	S 85°34' 30" W	1,150.79	110,888.306	11,592.529	℄ U.S. 224 - RAMP "C-1"
	20	S 85°34' 30" W	159.07	110,871.033	11,433.988	℄ U.S. 224 - N.B. ℄
	13	S 85°34' 30" W	229.84	110,853.300	11,204.778	℄ U.S. 224 - S.B. ℄
	21	S 40°49' 30" E	665.48	110,349.725	11,639.836	S.B. ℄ - RAMP "B-1"
	Sub P.I.	S 40°49' 30" E	148.97	110,236.998	11,737.225	S.B. ℄
	22	S 38°13' 20" E	54.64	110,194.664	11,771.776	S.B. ℄ - RAMP "A"
	Rad. Pt.	S 50°46' 40" W	3906.53	107,724.453	8,745.990	Radial Pt.
	P.T.	S 40°49' 30" E	1,066.87	110,278.350	11,701.500	S.B. ℄ P.T.
	2			109,471.039	12,398.967	
	20			110,871.033	11,433.933	℄ U.S. 224 ℄ N.B. ℄
	26	N 40°49' 30" W	90.40	110,939.440	11,374.834	N.B. ℄ - RAMP "B-2"
	23	S 40°49' 30" E	360.00	110,667.024	11,610.184	N.B. ℄ - RAMP "C-1"
	Sub P.I.	S 40°49' 30" E	345.79	110,405.361	11,836.244	N.B. ℄
	24	S 35°19' 58" E	187.30	110,252.495	11,944.610	N.B. ℄ & RAMP "C-2"
	Sub P.I.	S 35°19' 58" E	751.67	109,639.277	12,378.315	N.B. ℄
	25	S 13°33' 00" E	751.67	108,908.529	12,555.431	N.B. ℄ - RAMP "C"
	Sub P.I.	S 13°33' 00" E	111.68	108,799.358	12,581.507	N.B. ℄
	10	S 10°16' 30" E	111.68	108,690.068	12,601.518	N.B. ℄ P.C.
	13			110,853.299	11,204.777	℄ U.S. 224 ℄ S.B. ℄
	Sub P.I.	N 40°49' 30" W	401.18	111,156.876	10,942.505	S.B. ℄
	Sub P.I.	N 36°49' 30" W	245.01	111,352.999	10,795.653	S.B. ℄
	28	N 32°21' 46" W	111.61	111,447.273	10,735.911	S.B. ℄ & RAMP "B-2"
	Sub P.I.	N 32°21' 46" W	556.00	111,916.911	10,438.238	S.B. ℄
	29	N 10°23' 45" W	556.00	112,463.784	10,337.970	S.B. ℄ - RAMP "B"
	Sub P.I.	N 10°23' 45" W	188.71	112,649.306	10,303.918	S.B. ℄
	Sub P.I.	N 02°51' 30" W	322.11	112,971.100	10,287.854	S.B. ℄ S.T.
	4	N 01°08' 30" E	266.73	113,237.777	10,293.168	S.B. ℄ S.T.

LEGEND

- 7 — CIRCULAR CURVE NUMBER
- 7-B — TRANSITION CURVE NUMBER
- 3 — I.R. 77 TRAVERSE COORDINATE POINT AND NO.
- 9 — RAMP ENTRANCE AND EXIT COORDINATE POINT AND NUMBER.
- BASELINE
- CENTERLINE
- ANGLE POINTS
- ALL OTHER POINTS
- E / N — COORDINATES

INTERCHANGE LAYOUT
SUM-277 & SUM-77
SCALE: 1"=100'

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

40
234

SUMMIT COUNTY
SUM-277-0.00

I.R.77 N.B. & S.B. TRAVERSE

SHEET NO.	POINT	BEARING	DISTANCE	NORTH	EAST
	1			108,421.271	12,589.272
	2	N 10°16'30"W	1,066.87	109,471.032	12,398.571
	3	N 40°48'30"W	3,260.72	111,938.451	10,267.273
	4	N 01°08'30"E	1,295.55	113,237.783	10,253.167
	5	S 88°51'30"E	10.01	113,237.584	10,303.175
	6	N 01°08'30"E	34.86	113,272.437	10,303.870
	7	S 88°51'30"E	10.01	113,272.238	10,313.878
	8	S 01°08'30"W	1,080.05	112,192.402	10,292.355
	9	S 40°48'30"E	3,241.08	109,755.845	12,411.218
	10	S 10°16'30"E	1,066.87	108,690.084	12,601.515
	11	S 78°43'30"W	30.00	108,684.733	12,572.000
	12	S 10°16'30"E	262.31	108,426.630	12,618.789
	1	S 79°43'30"W	30.00	108,421.279	12,589.270

N 108,500 · N 109,000 · N 109,500 · N 110,000 · N 110,500 · E 11,500 · E 12,000 · E 12,500 · E 13,000

LEGEND

- 7 — CIRCULAR CURVE NUMBER
- 8₂ — CIRCULAR CURVE NUMBER
- 7-B — TRANSITION CURVE NUMBER
- 3 — I.R.77 TRAVERSE COORDINATE POINT AND NO.
- 9 — RAMP ENTRANCE AND EXIT COORDINATE POINT AND NUMBER
- BASELINE
- CENTERLINE
- ANGLE POINTS
- ALL OTHER POINTS
- N 10 / E 20 — COORDINATES

END PROJECT SUM-8-6.72 | BEGIN PROJECT SUM-8-2.07

STA. 480+00.00

1200' ACCEL. LANE

SOUTHBOUND SUM-8

NORTHBOUND SUM-8

N 40° 49' 30" W

N 40° 49' 30" W BRIDGE Nº SUM-8-0930

N 10° 16' 30" W

PC. 472+26.33

PC. 474+88.64

BEGIN RAMP "C" STA. 0+00
48' RT. STA. 477+11.93 N.B.L.

NOSE ~ 48' RT. STA. 481+33.46
23' LT. STA. 4+25.88 RAMP "C"

RAMP "C"

RAMP "C-1"

RAMP "C-2"

P.C. 15+86.86

P.T. 15+65.36

P.C. 15+78.61

STA. 17+18.99 RAMP "C"

STA. 17+18.937 END RAMP "C-2"

ST. STA. 17+90 GCT RAMP "A"
P.C.S.B. & SUM-8 STA. 492+00

RAMP "A"

RAMP "B-1"

ACCEL. NOSE ~ 27' RT. STA. 487+23.11
495 23' RT. @ STA. 4+18.15

P.T. 489+09.28

C.S. 16+40.67

P.T. 495+71.59

ST. 15+62.37

C.S. 13+62.37

P.C.C. 24+55.12

RAMP "B-2"

DC. STA. 0+00 RAMP "B-2"
12' LT. @ STA. 500+50.00 N.B.L.

ACCEL. LANE

8,000' DECEL. LANE

4 BRIDGE Nº SUM-277-0000

8.00' DECEL. LANE

53° 36'

1000'

44'

PC. STA. 0+00 RAMP "C-1"
44° 21' M.L. STA. 256+70.76

POT. STA. 18+62.37 RAMP "C-1"
POT. STA. 497+30.00 N.B.

NOSE ~ 46' RT. STA. 260+23.28
23' LT. @ STA. 3+50.58 "C-1"

P.T. 4+23.08

T.S. 4+35.07

SC. 6+39.01

RAMP "D"

SC. 3+03.78

CS. 7+53.78

NOSE ~ 56' RT. STA. 264+01.74
23' LT. @ STA. 4+18.13 RAMP "D"

600' TAPER

S 85° 34' 30" E

END TAPER
STA. 266+23.28

PC. STA. 0+00 RAMP "D"
POT. STA. 268+21.55 SUM-277

800' DECEL. LANE

P.C.C. 22+23.50

P.T. 25+17.53

272+01.14

57.00' RT. OF
P.O.T. STA. 273+82.76 =
STA. 25+86.91 RAMP "C"

MATCH LINE

520' TAPER 2.5 PER 100'

STA. 275+02.76

S. ARLINGTON ST.

CIRCULAR CURVE DATA

SHEET Nº	CURVE Nº	PC~PCC~SC	NORTH	EAST	POINT OF INTERSECT.	NORTH	EAST	PT~PCC~CS	NORTH	EAST	Δc	D	R	T	L	E	REMARKS	Δ	Δ STATION	POINT
	1	472+26.33 PC	108,421.270	12,589.272	482+93.20	109,471.031	12,398.971	493+09.28 PT.	110,278.348	11,701.501	30°33'00" Lt.	01°28'00"	3,906.53	1,066.87	2,082.95	143.06	S.B.I.R. 77 Ⓑ			
	2	506+03.54 SC	111,263.653	10,862.553	514+78.48	111,964.016	10,358.138	523+01.87 CS	112,837.867	10,294.508	33°58'00" Rt.	02°00'00"	2,864.79	874.94	1,698.33	130.63	S.B.I.R. 77 Ⓑ	41°58'00" Rt.	515+03.13	3
	3	474+88.64 PC	108,680.075	12,601.521	485+55.51	109,730.836	12,411.220	495+71.59 PT.	110,547.153	11,713.750	30°33'00" Lt.	01°28'00"	3,906.53	1,066.87	2,082.95	143.06	N.B.I.R. 77 Ⓑ			
	4	510+65.75 SC	111,685.161	10,745.944	517+22.20	112,217.416	10,361.716	523+44.42 CS	112,872.378	10,317.544	31°58'00" Rt.	02°30'00"	2,291.83	656.45	1,278.67	92.16	N.B.I.R. 77 Ⓑ	41°58'00" Rt.	517+45.80	8
	5	0+00.00 PC	110,712.350	10,109.260	2+55.23	110,732.042	10,363.729	5+09.70 CS	110,717.703	10,618.556	07°38'44" Rt.	01°30'00"	3,819.72	255.23	509.70	8.52	RAMP "A"			
	6	6+59.70 SC	110,704.708	10,767.957	11+70.30	110,682.426	11,274.367	16+40.67 CS	110,268.534	11,625.296	39°14'19" Rt.	04°00'00"	1,432.39	510.60	980.97	88.28	RAMP "A"			
	7	5+66.20 SC	111,886.924	10,383.707	7+24.95	111,738.313	10,390.343	8+78.65 CS	111,591.754	10,329.335	24°59'46" Rt.	08°00'00"	716.20	158.75	312.45	17.38	RAMP "B"			
	8	12+74.10 PC	111,246.977	10,196.234	13+94.38	111,143.447	10,075.006	15+14.10 PCC	111,051.578	9,997.370	09°36'00" Rt.	04°00'00"	1,432.39	120.28	240.00	5.04	RAMP "B"			
	8_1	15+14.10 PCC	111,051.578	9,997.370	17+19.08	110,895.016	9,865.063	19+13.38 PCC	110,832.160	9,669.958	31°56'35" Rt.	08°00'00"	716.20	204.98	399.28	28.76	RAMP "B"			
	8_2	19+13.38 PCC	110,832.160	9,669.958	20+63.93	110,785.924	9,526.661	22+13.38 PT.	110,770.630	9,376.897	12°00'00" Rt.	04°00'00"	1,432.39	150.55	300.00	7.89	RAMP "B"			
	9	0+00.00 PC	110,883.814	11,028.818	2+10.91	110,867.541	10,818.536	4+20.64 PT.	110,889.921	10,608.816	10°30'58" Rt.	02°30'00"	2,291.83	210.91	420.64	9.68	RAMP "B-1"			
	10	6+36.67 SC	110,940.978	10,400.800	——	——	——	12+73.06 CS	111,362.798	10,559.691	159°05'53" Rt.	25°00'00"	229.18	——	636.38	——	RAMP "B-1"			
	11	14+73.06 SC	111,269.070	10,734.380	15+80.18	111,201.383	10,817.405	16+86.90 PT.	111,122.100	10,889.439	08°33'13" Rt.	04°00'00"	1,432.39	107.12	213.84	4.00	RAMP "B-1"			
	12	0+00.00 PC	110,931.588	11,365.760	2+94.12	111,154.153	11,173.479	5+86.18 CS	111,333.004	10,939.984	11°43'25" Lt.	02°00'00"	2,864.79	294.12	586.18	15.06	RAMP "B-2"			
	13	7+36.18 SC	111,415.591	10,814.978	10+65.43	111,564.818	10,521.487	13+12.68 CS	111,343.535	10,277.685	69°10'46" Lt.	12°00'00"	477.46	329.25	576.50	102.52	RAMP "B-2"			
	14	7+06.86 PC	109,606.963	12,436.486	11+49.44	110,037.224	12,332.792	15+65.36 PT.	110,450.987	12,488.883	34°20'24" Rt.	04°00'00"	1,432.39	442.58	858.50	66.81	RAMP "C"			
	15	0+00.00 PC	110,921.547	11,161.673	4+27.57	110,898.001	11,441.197	8+51.59 CS	110,344.266	11,785.341	12°46'26" Lt.	01°30'00"	3,819.72	427.57	851.59	23.86	RAMP "C-2"			
	16	10+01.59 SC	110,265.109	11,912.493	12+64.17	110,160.153	12,147.930	14+55.12 PCC	110,339.238	12,333.360	68°01'46" Lt.	15°00'00"	381.97	257.78	453.53	78.85	RAMP "C-2"			
	16_1	14+55.12 PCC	110,339.238	12,333.360	15+58.97	110,411.376	12,408.064	16+61.74 PT.	110,495.891	12,462.317	14°27'48" Lt.	07°00'00"	818.51	103.85	206.62	6.56	RAMP "C-2"			
	17	15+78.61 PC	110,463.372	12,404.588	19+24.77	110,786.993	12,617.455	22+23.50 PCC	110,891.769	12,947.377	51°35'29" Rt.	08°00'00"	716.20	346.16	644.89	79.27	RAMP "C"			
	17_1	22+23.50 PCC	110,891.769	12,947.377	23+71.03	110,936.423	13,087.987	25+17.53 PT.	110,951.478	13,234.747	11°45'41" Rt.	04°00'00"	1,432.39	147.53	294.03	7.58	RAMP "C"			
	18	6+30.07 SC	110,782.676	12,226.679	——	——	——	13+62.37 CS	110,357.957	12,010.648	173°35'27" Rt.	24°00'00"	238.73	——	723.30	——	RAMP "C-1"			
	19	0+00.00 PC	110,839.437	11,595.924	2+12.14	110,855.803	11,807.432	4+23.08 PT.	110,833.068	12,018.350	10°34'37" Rt.	02°30'00"	2,291.83	212.14	423.08	9.80	RAMP "C-1"			
	20	0+00.00 PC	111,027.921	12,735.570	3+78.17	110,998.748	12,358.517	7+53.78 CS	111,044.054	11,983.181	11°18'24" Rt.	01°30'00"	3,819.72	378.12	753.78	18.67	RAMP "D"			
	21	9+03.78 SC	111,066.240	11,884.860	13+15.30	111,142.163	11,430.404	17+10.12 CS	111,400.323	11,109.232	28°13'19" Rt.	03°30'00"	1,637.02	411.52	806.84	50.83	RAMP "D"			
	22	18+60.12 SC	111,499.276	10,951.261	20+10.38	111,602.786	10,888.340	21+60.12 PT.	111,720.854	10,795.400	08°15'00" Rt.	02°45'00"	2,083.48	150.26	300.00	5.41	RAMP "D"			

INTERCHANGE LAYOUT
SUM-277 & SUM-77
SCALE: 1" = 100'

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

41
234

SUMMIT COUNTY
SUM - 277-0.00

MATCH LINE

END TAPER STA. 225+68.84

BEGIN PROP CHAIN LINK FENCE ~ 225+68.84 ~ 155' LT.

BEGIN PROP TYPE 47 FENCE ~ 228+68.84 152' RT.

520' TAPER 2.5' PER 100'

I.A.P.A. 232+15.5 ~ 123.0' RT.

232+15.5 123.00'

232+15.5 110.50'

232+19 138.50'

238+59.5 106.50

E.P.A. 232+21 ~ 136.5' LT.

I.A.P.A. 238+59.5 ~ 104.5' RT.

24' 25'

57.00' LT. OF P.O.T. STA. 233+88.64 = RAMP 'B' STA. 22+77.60

MATCH LINE

PROP TYPE 47 FENCE

I.A.P.A. 242+63 103.0' RT.

244+03.5 184.50'

I.A.P.A. 246+79.5 200.5' RT.

246+79.5 211.50'

I.A.P.A. 1+00 128.0'

WOODVIEW-WOODLEY RELOCATION 2

Exist. L/A

E.P.A. 1+72 76.0' RT.

E.P.A. 8+02 72.0' RT.

RAMP 'A'

C.P.A. 10+68 82' RT.

251+30 311.00'

C.P.A. 10+20 66.0' RT.

251+55 356.50'

252+30 357.50'

I.A.P.A. 252+30 356.5' RT.

I.A.P.A. 253+56.5 416.5' RT.

253+56.5 418.50'

254+55.5 196.00'

RAMP 'C-2'

N 85° 34' 30" E

℄ SUM-277-0.00

E.P. 234+62 148.0' LT.

236+82 150.00'

PROP CHAIN LINK FENCE

E.P. 239+39 255.5' LT.

239+39 257.50'

E.P.A. 240+39 345.0' LT.

240+38 350.00'

E.P.A. 13+44 124.0' RT.

E.P.A. 12+58 75' RT.

Exist L/A

RAMP 'B-1'

E.P. 9+50 88' RT.

E.P. 10+00 92' RT.

RAMP 'B-2'

11+88 70'

11+00 83'

9+00 82' RT.

E.P.A. 5+88 66' RT.

RAMP 'B'

E.P.A. 5+32 98' RT.

END PROP CHAIN LINK FENCE
BEGIN EXIST. CHAIN LINK FENCE
STA. 243+77.5 ~ 1140.0' LT.

243+75.5 1140.00'

Exist. Chain Link Fence

244+08 1407.00'

CORPORATION

COVENTRY ST.

525

520

515

510

E.P. 2+80 82' RT.

E.P. 3+07 135' RT.

E.P. 2+38 144' RT.

E.P. 2+80 82' RT.

SOUTH BOUND SUM-505.8 (I-77)

NORTH BOUND SUM-505.8 (I-77)

RAMP 'D'

Exist. Chain Link Fence / Exist L/A

254+19 467.00

250+51 801.00'

249+82 1123.00'

248+46.5 1251.00'

248+66.5 1442.50'

COVENTRY TWP
CITY OF AKRON

WATERLOO ROAD

FENCE QUANTITIES

REF. Nº	LOCATION	PROPOSED FENCE TYPE CL LIN. FT.	PROPOSED FENCE TYPE 47 LIN. FT.
F-1	NORTHWEST QUADRANT	2238	
F-2	NORTHEAST QUADRANT	2000	
F-3	SOUTHWEST QUADRANT		2724
F-4	SOUTHEAST QUADRANT		1677
F-5	INSIDE RAMP "B-1"	1106	
	TOTALS	5344	4401

GRADING & FENCE PLAN

SCALE: 1"=100'

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

42
234

SUMMIT COUNTY
SUM-277-0.00

END PROJECT SUM-8-6.72

BEGIN PROJECT SUM-8-9.07

STA. 480+00

SOUTHBOUND SUM-8

NORTHBOUND SUM-8

RAMP "A"

RAMP "B"

RAMP "B-2"

RAMP "C"

RAMP "C-1"

RAMP "C-2"

RAMP "D"

SUM-277-0.00

END PROP TYPE 47 FENCE
BEGIN EXIST. TYPE 47 FENCE
STA. 254+50.5 ~494.0' LT.

BEGIN PROP TYPE 47 FENCE
END EXIST. TYPE 47 FENCE
STA. 485+31 - 230.5' RT.

PROP TYPE 47 FENCE
Exist. L/A

Exist. Woven Wire Fence

Exist L/A

PROP L/A

PROP CHAIN LINK FENCE
Exist. L/A

BEGIN PROP CHAIN LINK FENCE
END EXIST. CHAIN LINK FENCE
STA. 503+00 ~ 268.20' RT.

MATCH LINE

E.R.A. 274+73.59
143.0' RT. ~ END FENCE
520' TAPER
2.5 PER 100'

E.R.A. 274+97.49
68.0' LT. ~ END FENCE

S. ARLINGTON ST.

PT. STA. 285+25.71

FOR FENCE QUANTITIES, SEE SHEET Nº 41

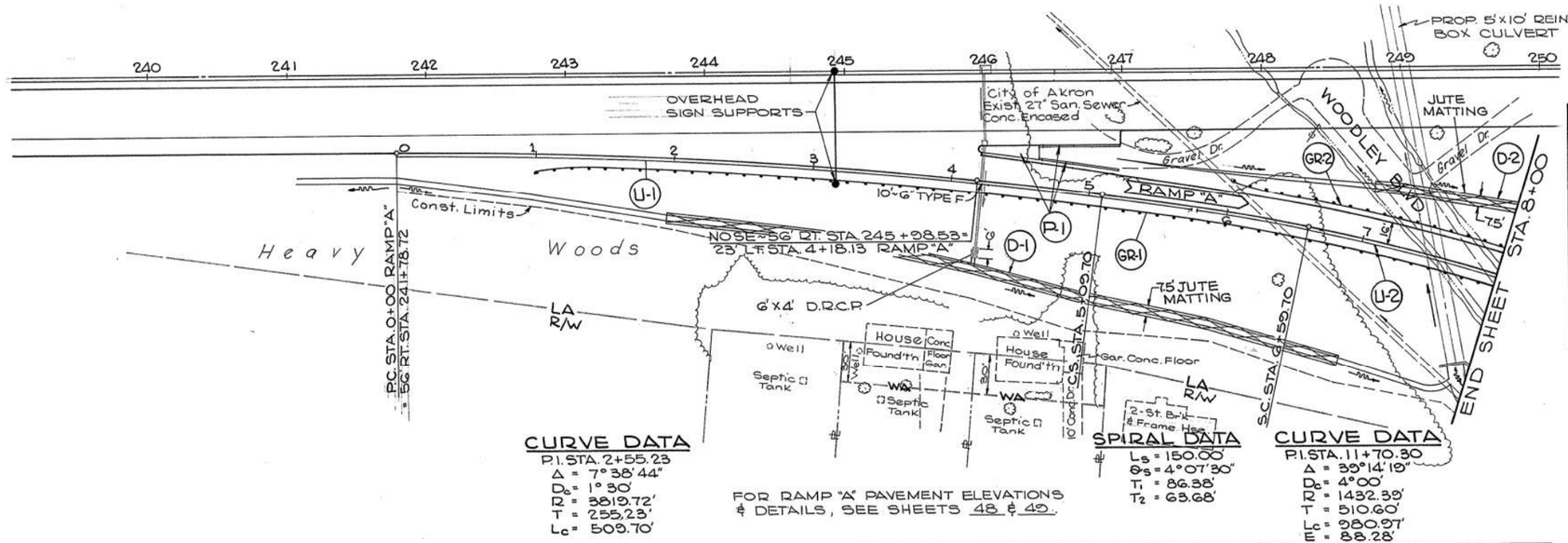
GRADING & FENCE PLAN

SCALE: 1"=100'

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G-(3)123	

43
234

SUMMIT COUNTY
SUM-277-0.00



CURVE DATA
P.I. STA. 2+55.23
Δ = 7°38'44"
D_c = 1°30'
R = 3819.72'
T = 255.23'
L_c = 509.70'

FOR RAMP "A" PAVEMENT ELEVATIONS & DETAILS, SEE SHEETS 48 & 49.

SPIRAL DATA
L_s = 150.00'
Θ_s = 4°07'30"
T_1 = 86.38'
T_2 = 63.68'

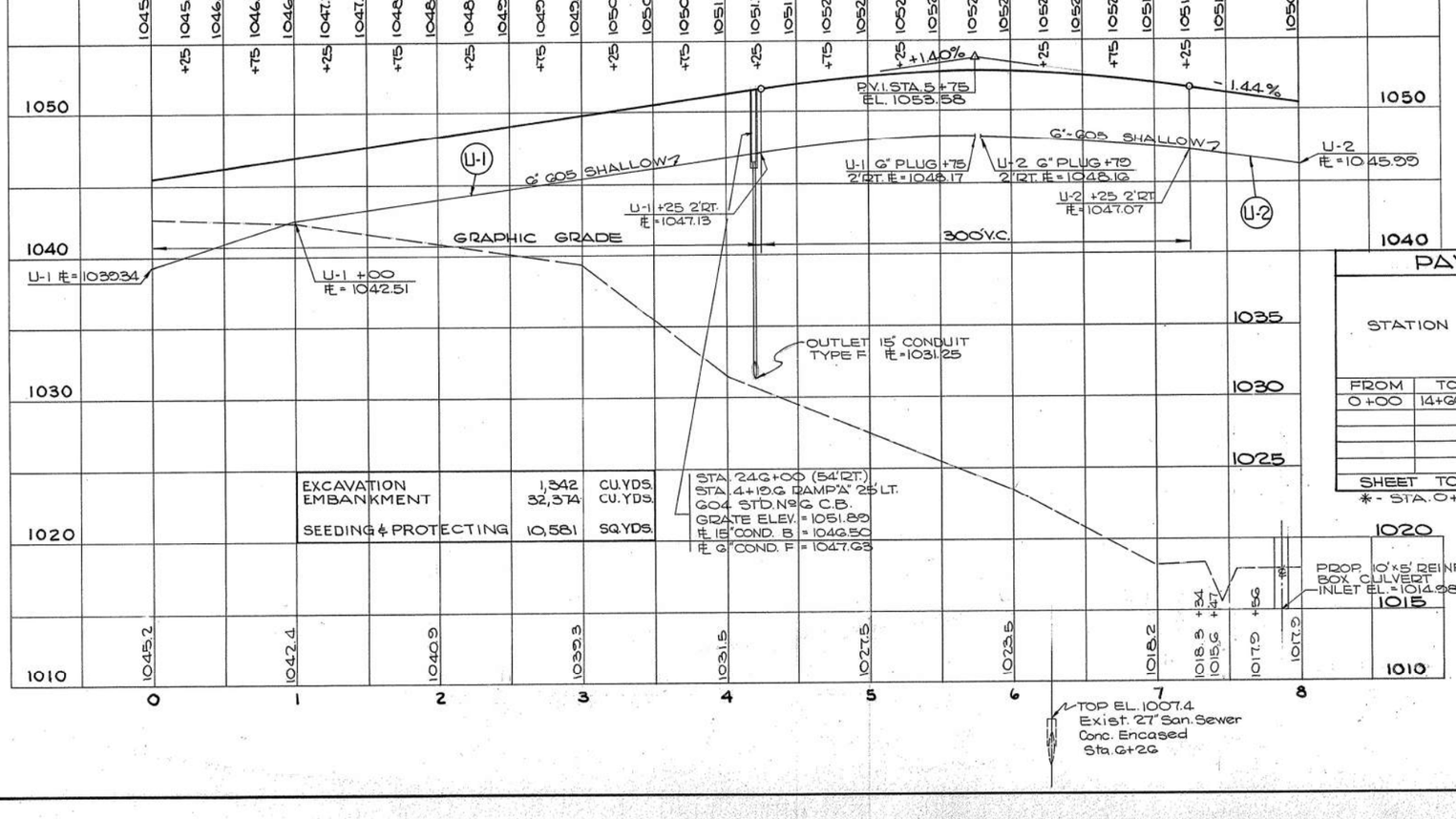
CURVE DATA
P.I. STA. 11+70.30
Δ = 39°14'19"
D_c = 4°00'
R = 1432.39'
T = 510.60'
L_c = 980.97'
E = 88.28'

DRAINAGE QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	603 6" CONDUIT TYPE F	605 6" UNDER-DRAIN SHALLOW	GG7 JUTE MATTING
				LIN. FT.	LIN. FT.	S.Y.
U-1	0+00	5+75	RT.	10	565	
U-2	5+75	8+00	RT.		221	
D-1	2+00	7+00	RT.			413
D-2	7+00	8+00	LT.			86
SHEET TOTAL				10	786	499

PAVEMENT & ROADWAY QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	606 GUARD RAIL TYPE 4	202 PIPE REMOVED 24" & UNDER	612 CONC. TRAFFIC ISLAND	609 CONCRETE CURB STD. TYPE 7	609 CONCRETE CURB STD. TYPE G	207 EXIST. CONC. CURB RE-MOVED
				LIN. FT.	LIN. FT.	SQ. YD.	LIN. FT.		L.F.
GR-1	1+03	14+90.5	RT.	1387.5					
GR-2	6+00	13+00	LT.	700					
P-1	4+18.13	5+18.13	LT.			34.12		114	
P-2	14+00	14+79.5	LT.				79.5		20
R-1	8+65	9+08	RT.		48				
SHEET TOTAL				2087.5	48	34.12	79.5	114	20



PAVEMENT & ROADWAY QUANTITIES

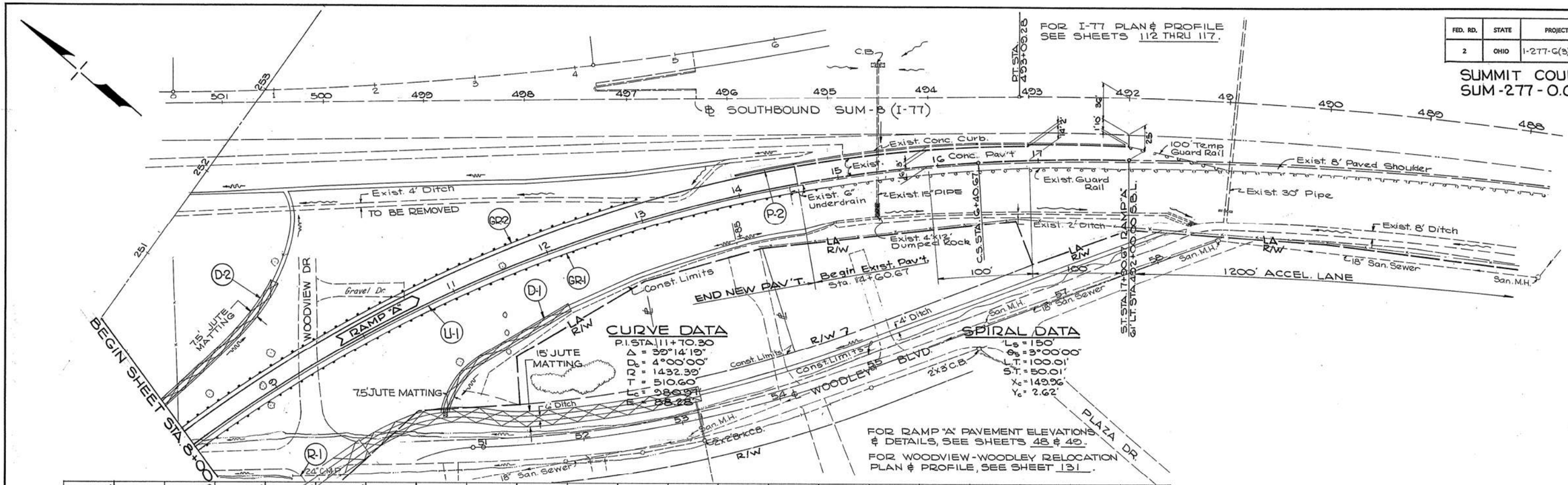
STATION FROM	STATION TO	SIDE	451 10" REINF. P.C.C. PAV'T	451 9" REINF. P.C.C. PAV'T	310 SUB-BASE GRAD'G "A" OR "B"	310 SUB-BASE	409 SEAL COAT BIT. MAT'L	409 SEAL COAT COVER AGG. Nº 8	203 SUB-GRADE PREPARAT'N	301 3" BIT. AGG. BASE	304 AGG. BASE	SPEC'L DRAIN. CONNECT'N USING Nº 8 AGG.
			SQ. YD.		CU. YD.		GAL.	C.Y.	S.Y.	C.Y.	C.Y.	C.Y.
0+00	14+60G7	LT&RT	10266.74*	1864.52	504.7	35.4	273.6	8.8	4020	182.4	71.4	94.7
SHEET TOTAL			10266.74*	1864.52	504.7	35.4	273.6	8.8	4020	182.4	71.4	94.7

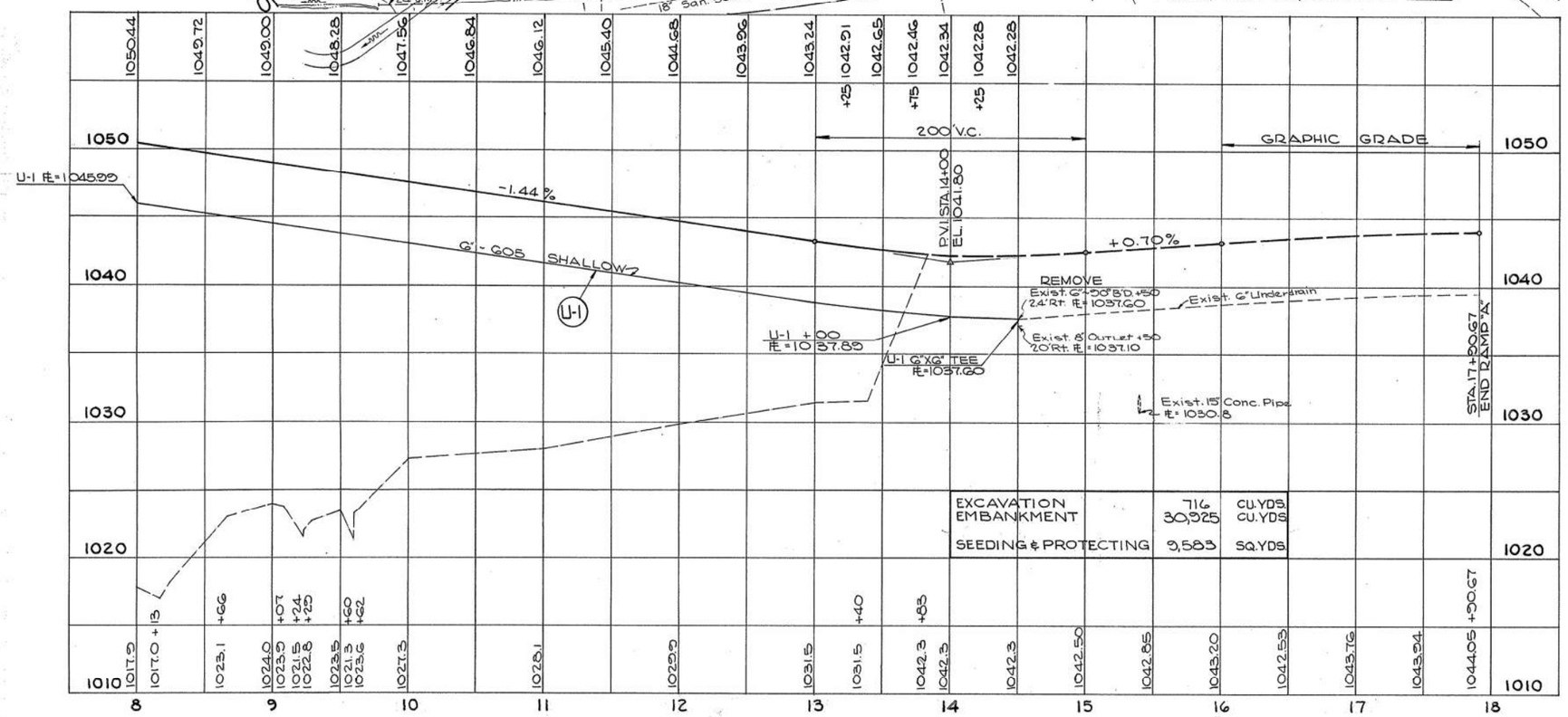
*- STA. 0+00 TO STA. 4+18.13

RAMP "A"
PLAN & PROFILE
STA. 0+00 TO STA. 8+00

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

SUMMIT COUNTY
SUM-277-0.00





FOR RAMP "A" PAVEMENT & ROADWAY QUANTITIES SEE SHEET Nº 43.

DRAINAGE QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	PIPE SPECIAL 6"X6" TEE EACH	G67 JUTE MATTING SQ.YDS.	G05 6" UNDERDRAIN SHALLOW LIN.FT.
U-1	8+00	14+50	RT.	1		G50
D-1	10+30	12+00	RT.		148	
D-2	8+00	9+50	LT.		135	
SHEET TOTAL				1	283	G50

RAMP "A"
PLAN & PROFILE
STA. 8+00 TO STA. 17+90.67

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(8)123	

45
234

SUMMIT COUNTY
SUM - 277 - 0.00

| | | |

RAMP A STA.7+00 to STA. 12+00

SEEDING	
END WIDTH	SQ YDS
122	1700
184	2044
211	
157	1604
132	1278
98	1235
125	1544
143	

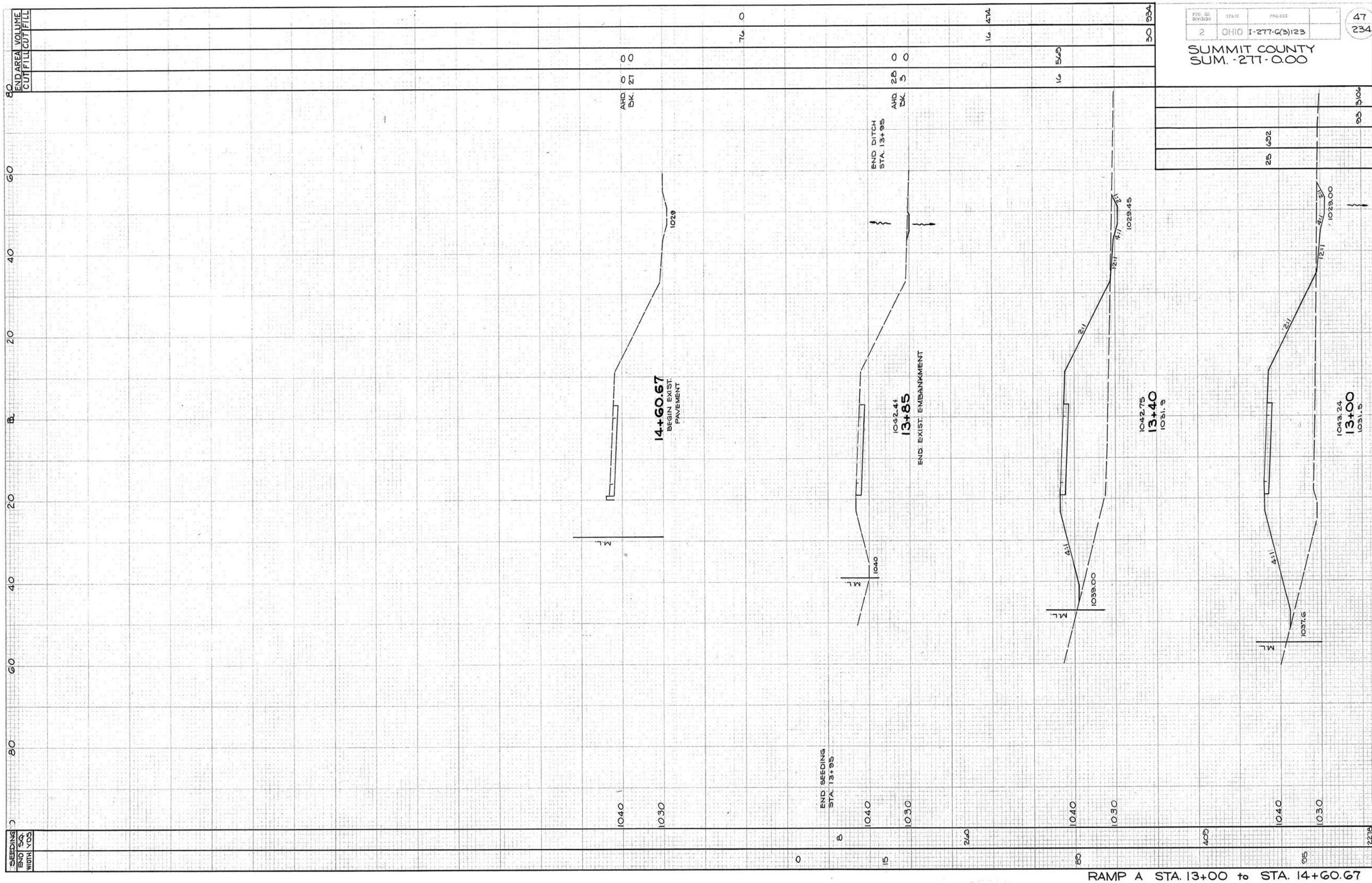
| | | |

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-2(3)123	

47
234

SUMMIT COUNTY
SUM.-277-0.00

END AREA		0	474	934
VOLUME CUT		0	76	1610	3056
VOLUME FILL		0	0	569	0
AHD BK.		0	0	25	0
AHD BK.		27	3	16	63
				25	632



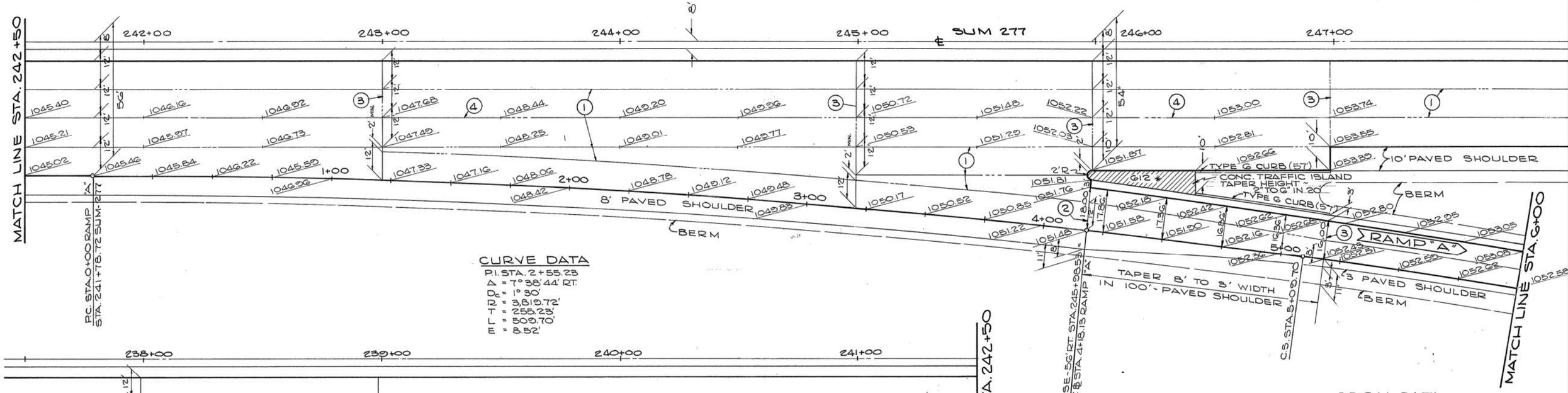
RAMP A STA. 13+00 to STA. 14+60.67

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

48
234

SUMMIT COUNTY
SUM - 277-0.00

* - FOR NOSE DETAIL SEE SHEET Nº 141.

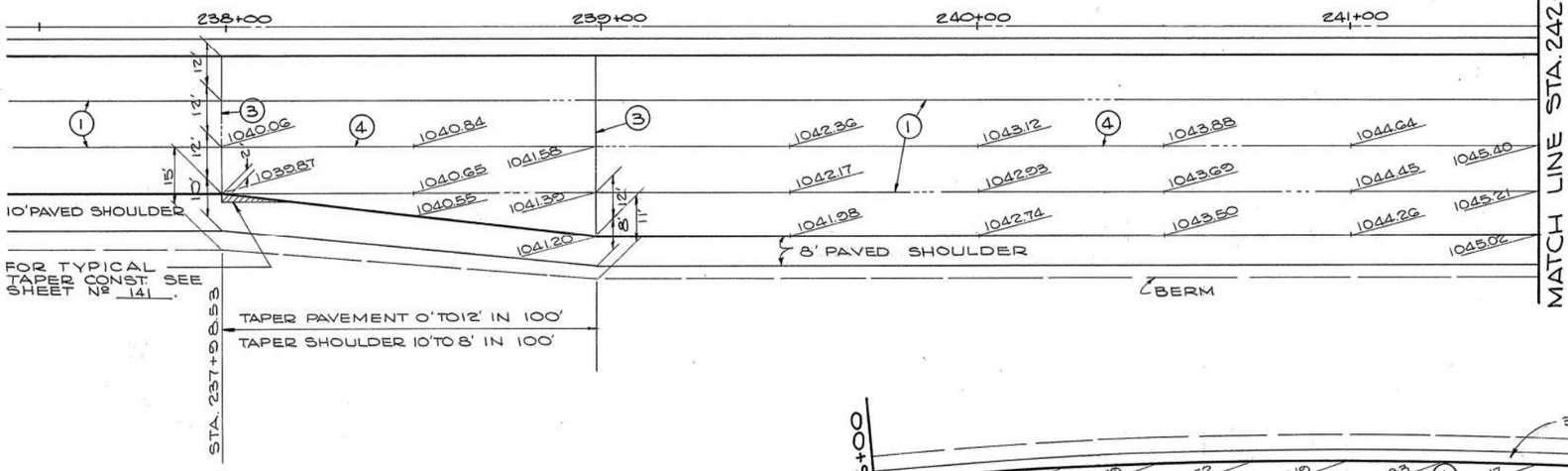


CURVE DATA

P.I. STA. 2+55.23
Δ = 7° 38' 44" RT.
D_c = 1° 30'
R = 3,819.72'
T = 255.23'
L = 509.70'
E = 8.52'

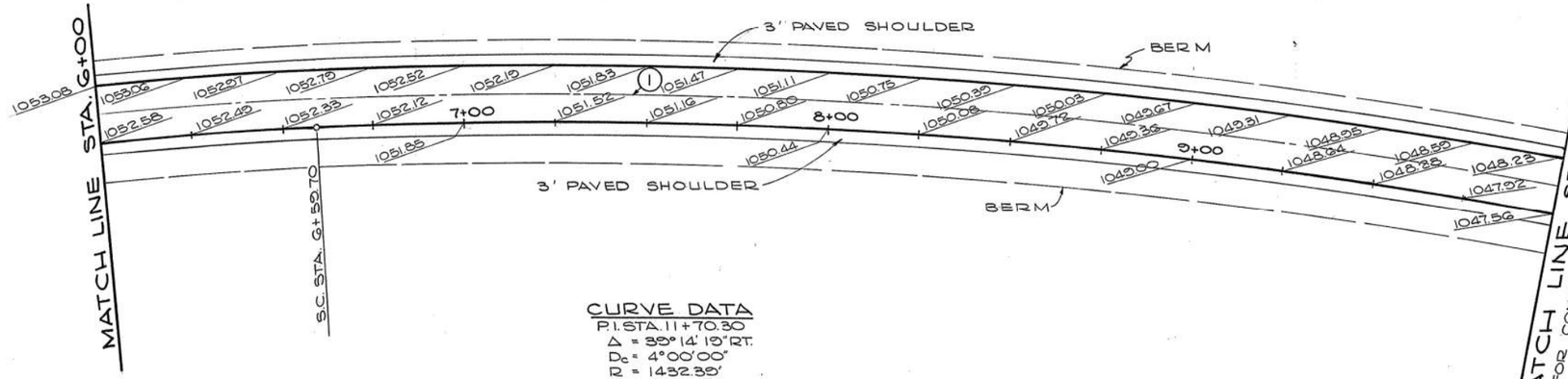
SPIRAL DATA

L_s = 150'
θ_s = 4° 07' 30"
T_1 = 86.38'
T_2 = 63.68'



JOINT LEGEND

(1) STANDARD LONGITUDINAL JOINT
(2) STANDARD EXPANSION JOINT
(3) STANDARD CONTRACTION JOINT
(4) KEY JOINT WITHOUT TIEBARS



CURVE DATA

P.I. STA. 11+70.30
Δ = 38° 14' 19" RT.
D_c = 4° 00' 00"
R = 1432.39'
T = 510.60'
L_c = 980.97'
E = 88.28'

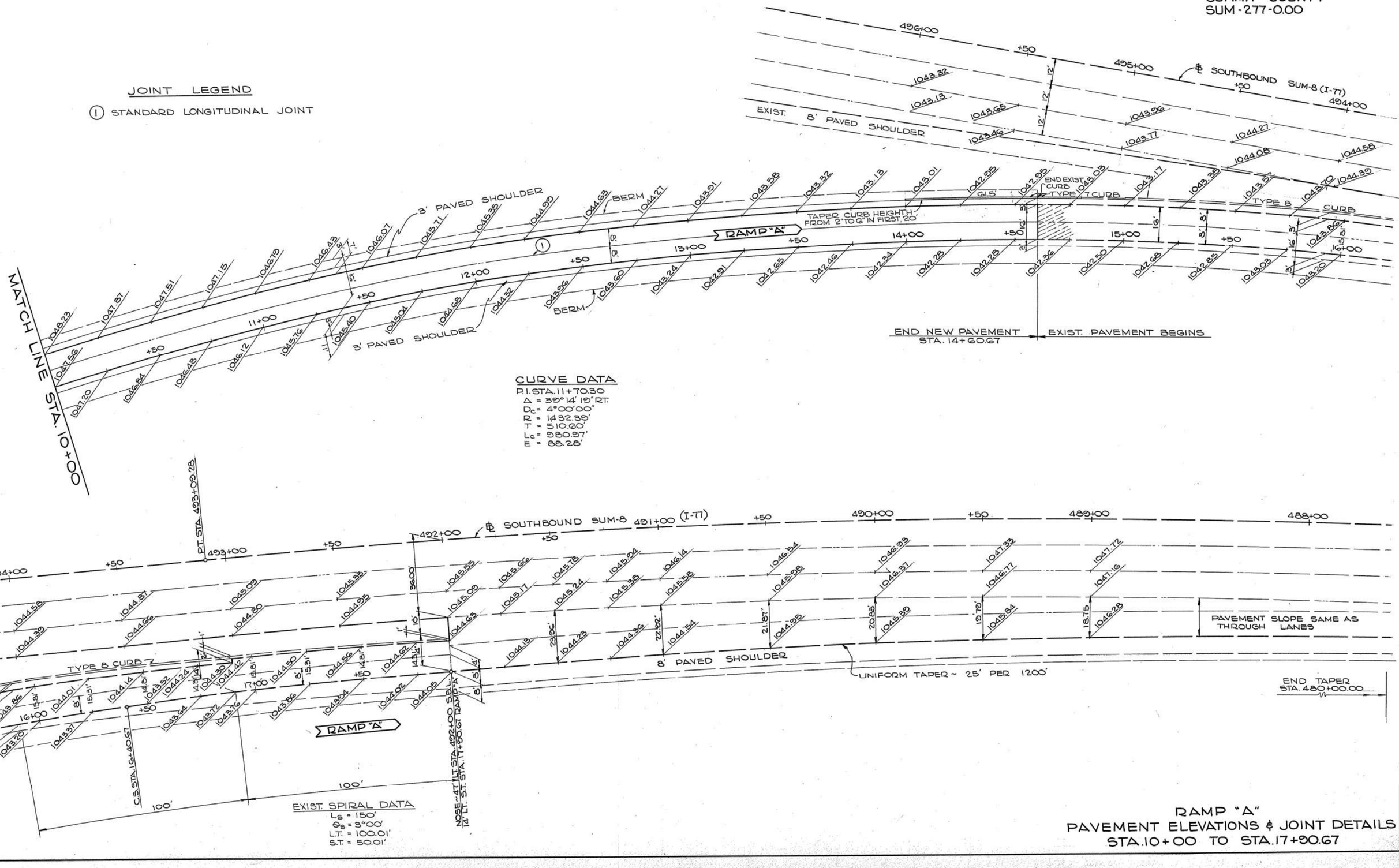
RAMP "A"
PAVEMENT ELEVATIONS & JOINT DETAILS
STA. 0+00 TO STA. 10+00

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

SUMMIT COUNTY
SUM-277-0.00

JOINT LEGEND

(1) STANDARD LONGITUDINAL JOINT



CURVE DATA

P.I. STA. 11+70.30
Δ = 39° 14' 19" RT.
D_c = 4°00'00"
R = 1432.39'
T = 510.60'
L_c = 980.97'
E = 88.28'

EXIST. SPIRAL DATA

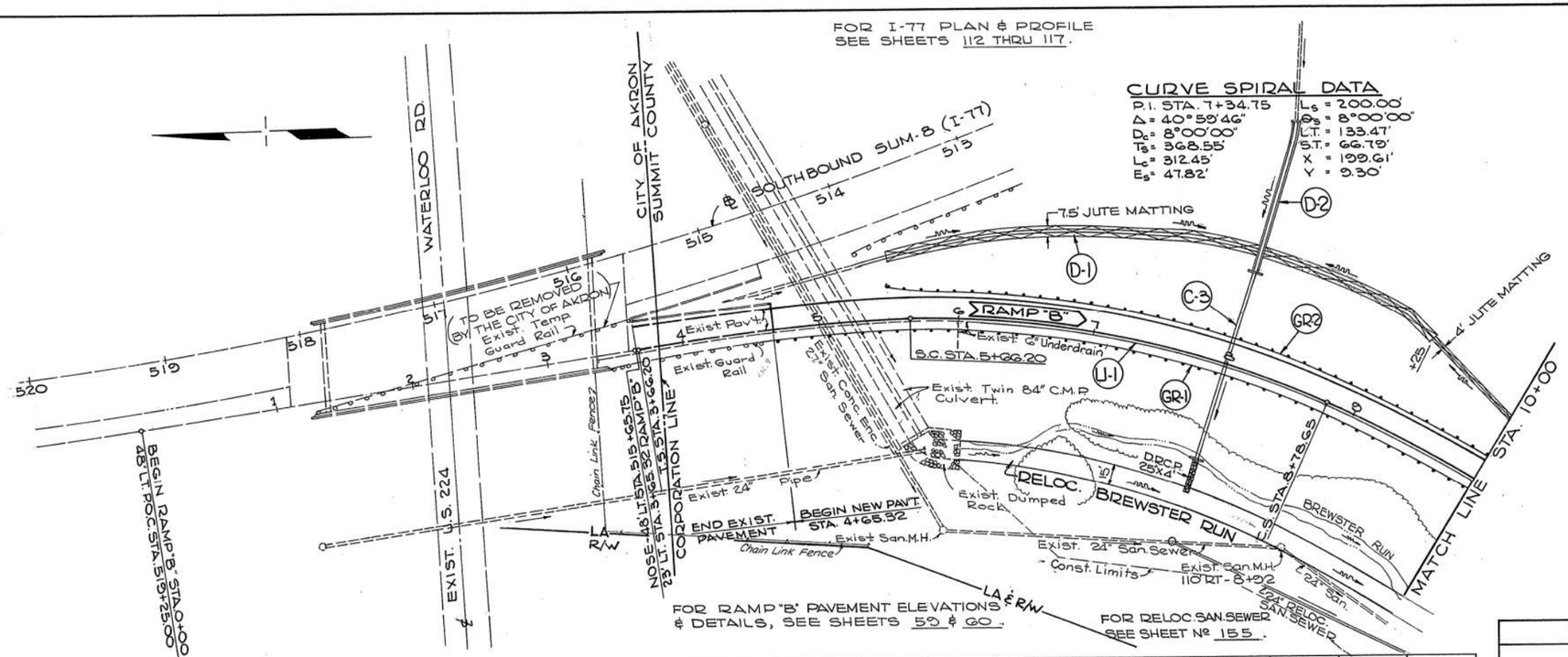
L_s = 150'
Θ_s = 3°00'
L.T. = 100.01'
S.T. = 50.01'

RAMP "A"
PAVEMENT ELEVATIONS & JOINT DETAILS
STA. 10+00 TO STA. 17+90.67

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(8)123	

50
234

SUMMIT COUNTY
SUM-277-0.00



DRAINAGE QUANTITIES

REF Nº	STATION FROM	STATION TO	SIDE	601 STD. TYPE 1-2 PAVED GUTTER	605 6" UNDERDRAIN SHALLOW	660 SODDING	667 JUTE MATTING
				LIN. FT.	LIN. FT.	SQ. YD.	SQ. YD.
U-1	6+10	10+00	RT.		390		
D-1	5+50	10+00	LT.				386
D-2	8+00		LT.	113		38	
SHEET TOTAL				113	390	38	386

STRUCTURES ~ 20' SPAN & UNDER

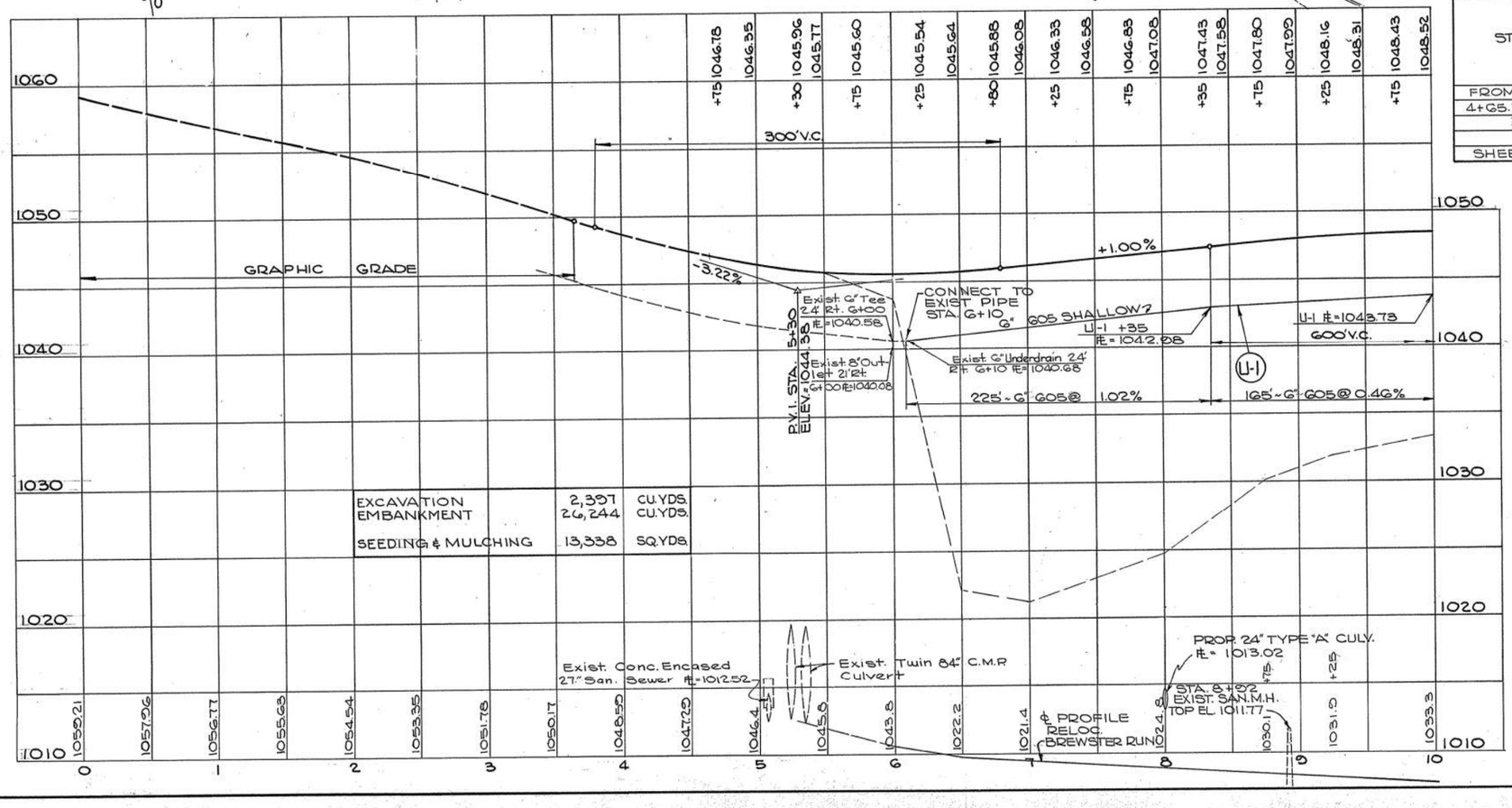
REF. Nº	STATION	TYPE	SIZE	SHEET Nº
C-3	8+00	TYPE A 706.02 CL. V	24" X 144'	152

PAVEMENT & ROADWAY QUANTITIES

STATION FROM	STATION TO	SIDE	451 9" REINF. P.C.C. PAV'T	310 SUB-BASE GRAD'G 'A' OR 'B'	310 SUB-BASE	409 SEAL COAT BIT. MAT'L	409 SEAL COAT COVER AGG. Nº 8	203 SUB-GRADE PREP. ARAT'N	301 3" BIT. AGG. BASE	304 AGG. BASE	SPECL DRAIN. CONN. USING Nº 8 AGG.	
			S.Y.	CU. YD.		GAL.	C.Y.	S.Y.	C.Y.	C.Y.	C.Y.	
4+65.32	22+77.60	LT. & RT.	3764.26	834.1	7.5	2965	9.5	4950	197.7	48.5	131.2	
SHEET TOTAL			3764.26	834.1	7.5	2965	9.5	4950	197.7	48.5	131.2	

PAVEMENT & ROADWAY QUANTITIES

REF Nº	STATION FROM	STATION TO	SIDE	606 GUARD RAIL TYPE 4	609 CONCRETE CURB STD. TYPE 7	609 CONCRETE CURB STD. TYPE 8
				LIN. FT.	LIN. FT.	
GR-1	4+56.8	15+56.8	RT.	1100		
GR-2	5+50	10+75	LT.	525		
GR-3	13+41.79	19+0	LT.	562.5		
GR-4	21+97	22+77.6	RT.	80.6		
P-1	11+00	13+41.79	LT.		125	116.8
P-2	19+45	22+77.60	LT.		100	238
SHEET TOTAL				2268.1	225	354.8



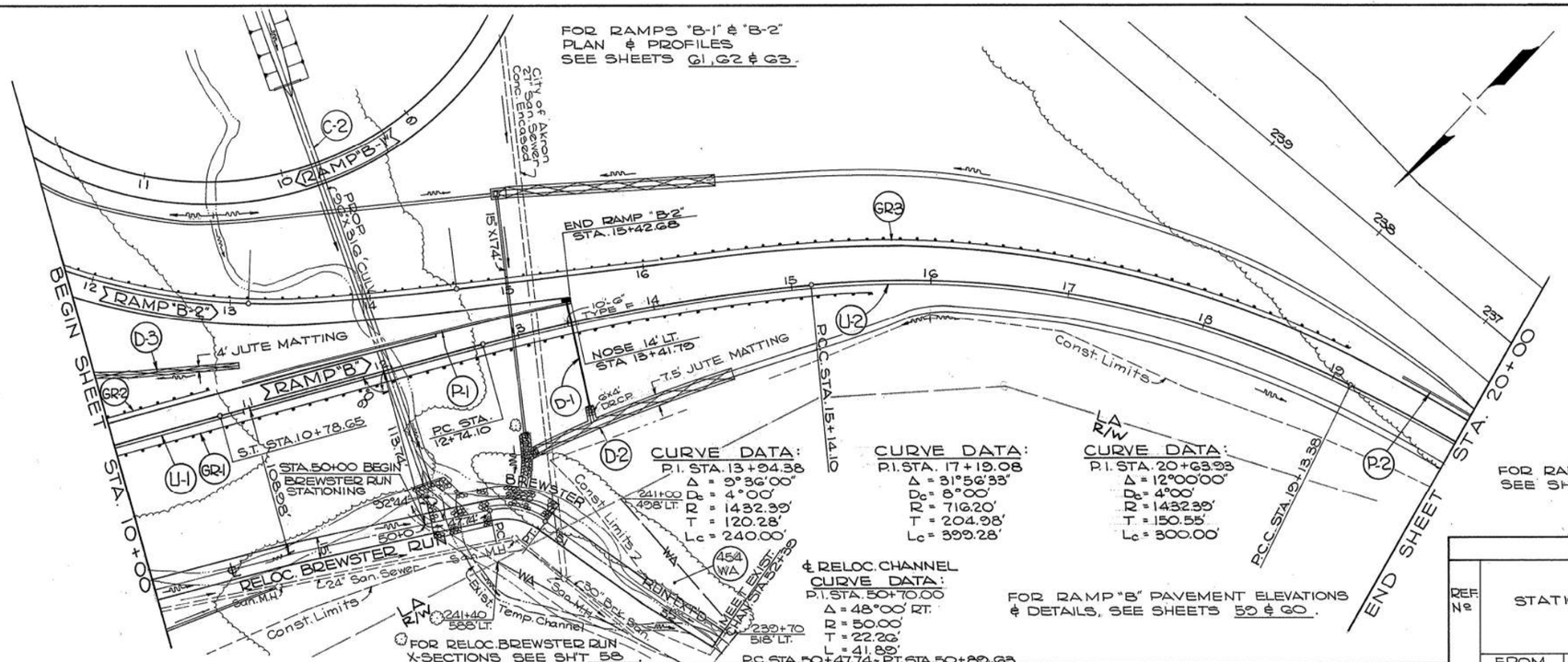
RAMP "B"
PLAN & PROFILE
STA. 0+00 TO STA. 10+00

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

51
234

SUMMIT COUNTY
SUM-277-0.00

FOR RAMPS "B-1" & "B-2"
PLAN & PROFILES
SEE SHEETS G1, G2 & G3.

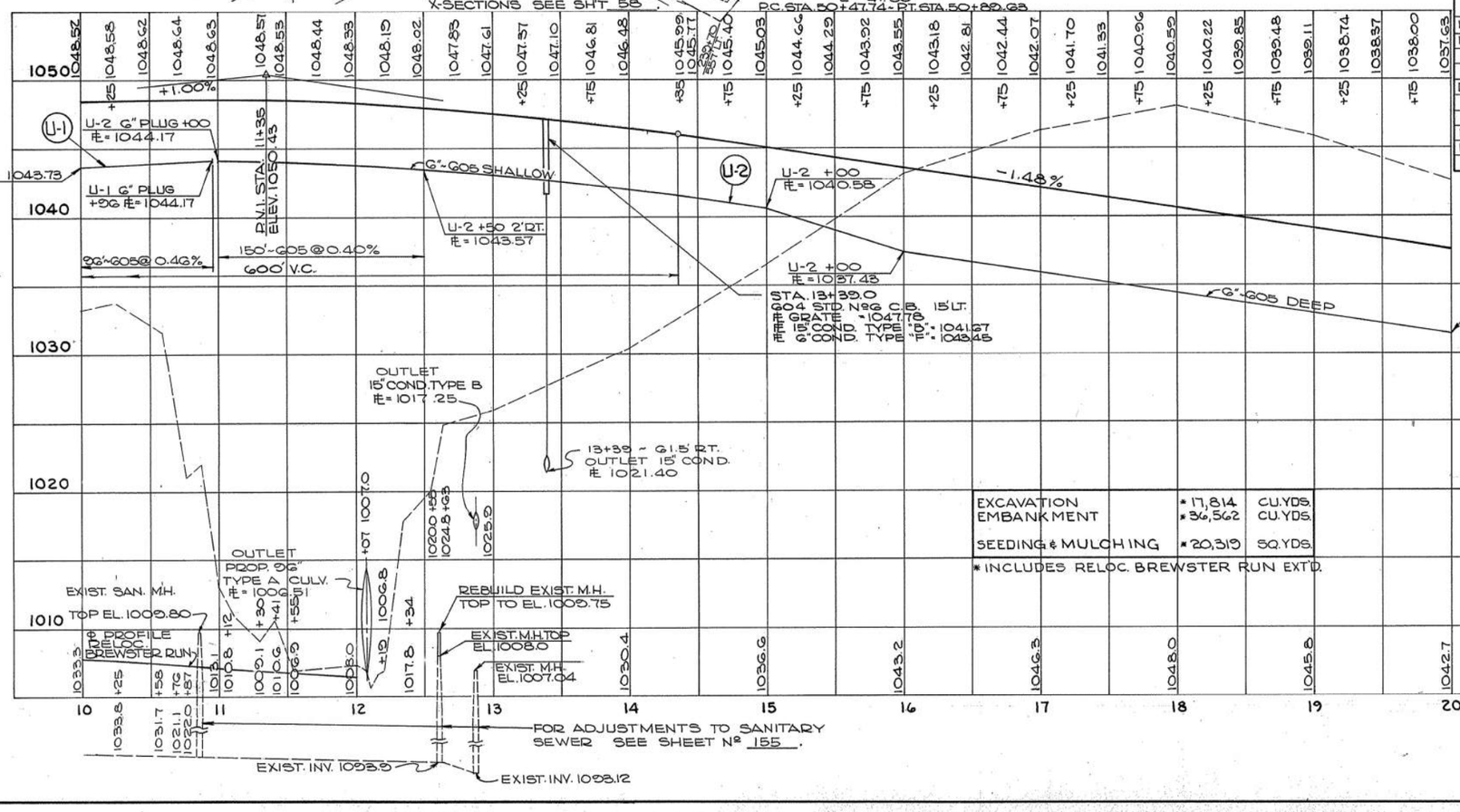


FOR RAMP "B" PAVEMENT & ROADWAY QUANTITIES SEE SHEET Nº 50.

FOR RAMP "B" PAVEMENT ELEVATIONS & DETAILS, SEE SHEETS 59 & 60.

DRAINAGE QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	G01 DUMPED ROCK CHANNEL PROTECTION C.Y.	G02 CONCRETE MASONRY C.Y.	G03 CONDUIT 15" TYPE B WITH CL. B BEDDING LIN. FT.	G03 CONDUIT PIPE SPEC'L TYPE F 6" LIN. FT.	G03 CONDUIT PIPE SPEC'L TYPE F 15" LIN. FT.	PIPE SPEC'L 15"-25" BEND EACH	G04 Nº G STD. C.B. EACH	G05 UNDERDRAIN 6" SHALLOW LIN. FT.	G05 UNDERDRAIN 6" DEEP LIN. FT.	G07 JUTE MATTING S.Y.
U-1	10+00	10+96	RT.								96		
U-2	11+00	20+00	RT.				10				490	400	
D-1	13+39.0		LT. & RT.	1.3	0.41	30		50	2	1			
D-2	12+92	14+50	RT.										128
D-3	10+00	11+00	LT.										47
SHEET TOTAL				1.3	0.41	30	10	50	2	1	586	400	175



EXCAVATION	* 17,814	CU. YDS.
EMBANKMENT	* 36,562	CU. YDS.
SEEDING & MULCHING	* 20,319	SQ. YDS.

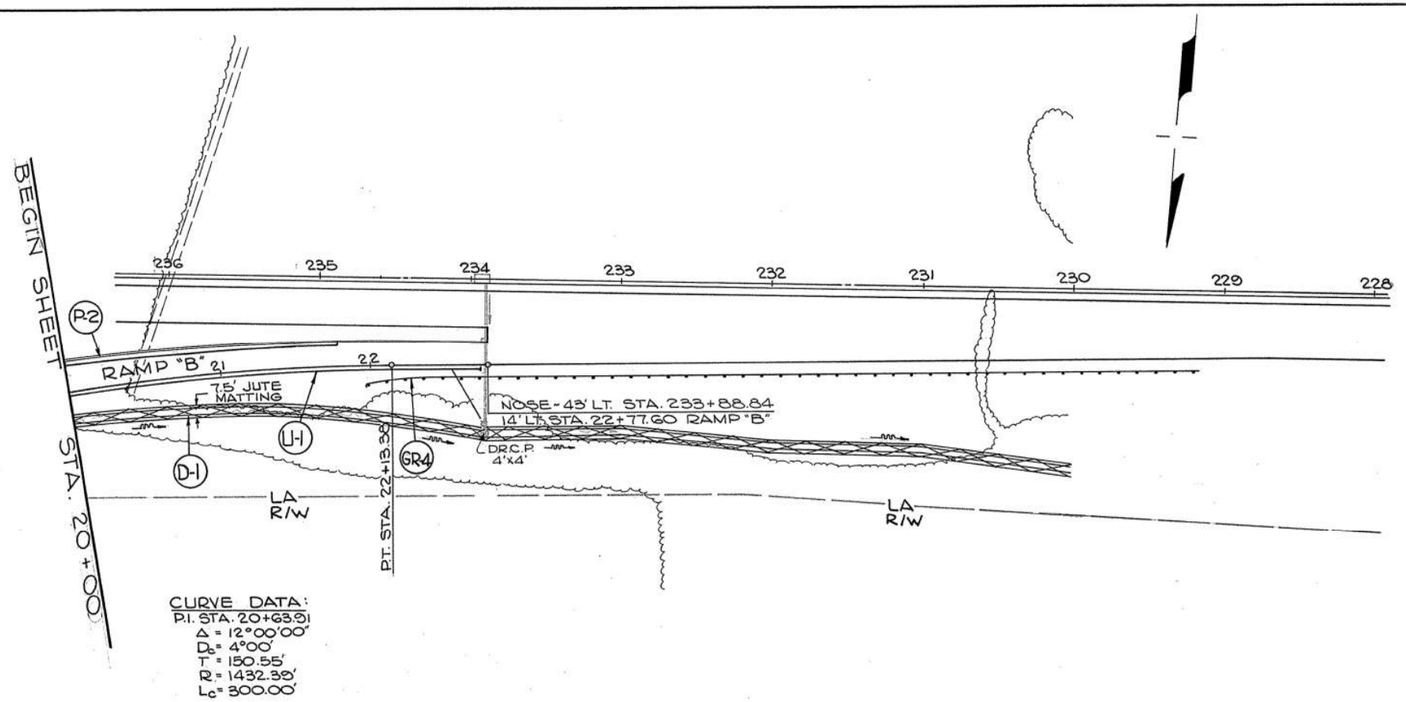
* INCLUDES RELOC. BREWSTER RUN EXT'D.

RAMP "B"
PLAN & PROFILE
STA. 10+00 TO STA. 20+00

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

52
234

SUMMIT COUNTY
SUM-277-0.00



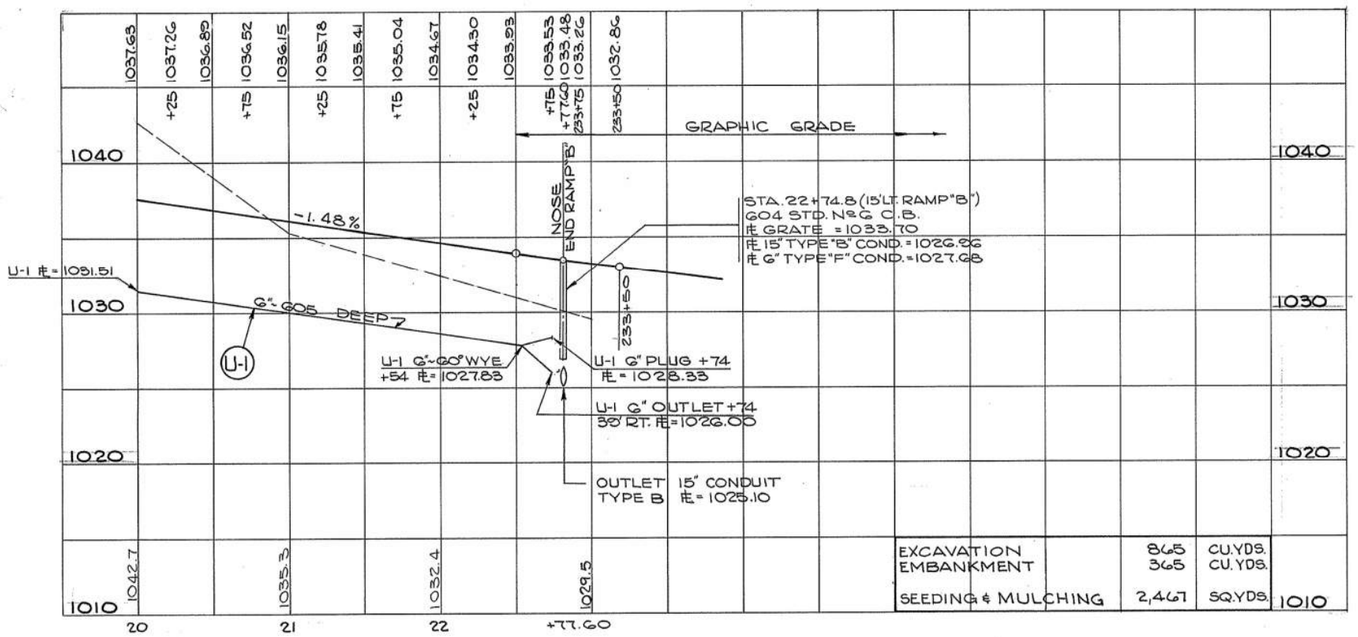
CURVE DATA:
P.I. STA. 20+63.91
Δ = 12°00'00"
D_c = 4°00'
T = 150.55'
R = 1432.39'
L_c = 300.00'

FOR RAMP "B" PAVEMENT ELEVATIONS & DETAILS SEE SHEETS 59 & 60.

DRAINAGE QUANTITIES

REF Nº	STATION FROM	STATION TO	SIDE	PIPE SPECIAL 6"~60° WYE EACH	603 6" CONDUIT TYPE F LIN. FT.	667 JUTE MATTING SQ. YD.	605 6" UNDER-DRAIN DEEP LIN. FT.
U-1	20+00	22+74	RT.	1	10		304
D-1	20+00	22+77.60	RT.			232	
SHEET TOTAL				1	10	232	304

FOR PAVEMENT & ROADWAY QUANTITIES SEE SHEET Nº 50.



RAMP "B"
PLAN & PROFILE
STA. 20+00 TO STA. 22+77.60

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-C(3)123	

53
234

SUMMIT COUNTY
SUM-277- 0.00

AHD BK.	24 0 0

END AREA VOLUME CUT	80
END AREA VOLUME FILL	100
CUT	52
FILL	1930
CUT	111
FILL	2146
CUT	28
FILL	327
CUT	56
FILL	606
CUT	24
FILL	0
CUT	15
FILL	0

1045.64
6+50
1020.0

1045.53
6+00
1018.4
END EMBANKMENT

BEGIN CHANNEL RELOCATION

1045.35
5+00
1019.3

END EXIST. PAV'T.
1046.98
4+65.32
1019.5

END SQ YDS	100
END WIDTH	247
	1030
	1020
	1478
	105
	1040
	1030
	624
	20
	1040
	1030
	78
AHD BK.	20 0
	1040
	1030

RAMP B STA. 4+65.32 to STA. 6+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

54
234

SUMMIT COUNTY
SUM-277-0.00

END WIDTH	SQ. YDS.
290	
1692	
319	
2571	
298	
3188	
276	
1453	

80 60 40 20 ℄ 20 40 60 80 100 120 140 160

M.L. 1027.00 — 1020

1048.16
9+25
1031.8

2:1 2:1 12:1 2:1 2:1 1/4"/FT.

1008.15

M.L. 1025.12 — 1020

1047.80
8+75
1030.1

2:1 2:1 12:1 2:1 2:1 1/4"/FT.

EXIST. 24" SAN. SEWER

1008.35

8+92

EXIST. M.H. TO BE REMOVED
INLET & OUTLET TO BE SEALED

1008.45

EXIST. 24" SAN. SEWER

M.L. 1023.00 — 1020

H.W. No. 1
INV.-1022.61

144'-24" TYPE "A" CONDUIT 706.02 C-3
CLASS V @ 6.66% W/CL. "B" BEDDING

1047.08
8+00
1024.8

FOR CULVERT DETAIL
SEE SHEET No. 121

H.W. No. 1
OUTLET-1013.02

2:1 2:1 12:1 2:1 2:1 1/4"/FT.

1008.90

EXIST.
24" SAN. SEWER

M.L. 1026.1 — 1020

2.3:1 2:1 12:1 2:1 2:1 1/4"/FT.

1046.08
7+00
1021.4

1008.50

EXIST. 24" SAN. SEWER
TO BE LEFT IN PLACE

80 60 40 20 ℄ 20 40 60 80 100 120 140 160 180 200

END AREA		VOLUME	
CUT	FILL	CUT	FILL
92	1506		
		251	27
179	1440		
452	47		
175	2008		
846	78		
282	2254		
347	39		

RAMP "B" STA. 7+00 to STA. 9+25

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

55
234

SUMMIT COUNTY
SUM-277-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
148	1428
109	1887
	2184
208	1842
234	2911

END AREA CUT	END AREA FILL	CU. YDS CUT	CU. YDS FIL
112	1054		
		207	722
AHD 0	2883		
BK 16	2951		
		85	102
		30	2964
		153	61
60	1491		
		313	55

STA. 15+00 "B-2" (64' LT. ℄)
604 STD. Nº 5 CATCH BASIN
GRATE ELEV. = 1032.51
℄ 15" COND. TYPE B = 1020.43

174'~15" COND. TYPE B 706.02
CLASS V @ 7.00% WITH CL. B BEDDING

1020

1047.61
13+00
1025.9

M.L.

2:1

4:1

1018.0

174'~15" COND. TYPE B
706.02 CL. V @ 7.00%
WITH CL. B BEDDING

HW-E HEADWALL
71' RT. STA. 12+88
℄ = 1017.25

8' X 41' X 1.5' DEEP
D.R.C.P.

1006.15
STA. 50+70
RELOC. CHANNEL

AHD.
BK.

1020

C-2

316'~36" TYPE A COND. 707.03 GAGE B-5 @ 0.98% W/CL. B BEDDING

SP-53 ENDWALL

M.L. AHD

FOR X-SECT. RELOC. CHANNEL AH'D
OF STA. 12+00 SEE SH'T # 57

1010.5

1006.50

1048.33
12+00
1008.0

CULVERT C-2
OUTLET 88' RT. STA. 12+14±
EL. 1006.51
SEE DETAIL SHEET Nº 117.

EXIST. 24" SAN. SEWER

1047.3

1020

1048.63
11+00
1013.1

12:1

1007.10

1/4"/FT.

EXIST. 24" SAN. SEWER

1038.0

1020

1048.58
10+25
1033.8

1007.70

80 60 40 20 ℄ 20 40 60 80 100 120 140 160 180 200

RAMP B STA. 10+25 to STA. 13+00

FED. RD DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

SUMMIT COUNTY
SUM-277-0.00

SEEDING E.W.	SEEDING S.Y.
159	1817
168	1494
201	2449
208	1910
281	137
	662

END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
1323	0		
		4198	
END EMB.+20	0		
944	3		
		2343	10
321	574		
		723	9
90	1482		
		316	4
AHD. BK. 90	2240		
90	308		
		156	15

M.L. 1042.07 17+00 1046.3 — 4:1 — 1035.80 — 4:1 — 1038.65 — 4:1 — 4:1

M.L. 1043.55 16+00 1048.2 — 4:1 — 1035.40 — 4:1 — 1040.68

M.L. 1045.08 15+00 1036.6 — 3:1 — 1034.85 — 3:1 — 1033.00

M.L. 1047.19 13+41.79 1027.8 — 3:1 — 1033.92 — 2:1 — 4:1 — 4:1 — 1026.21

STA. 13+39.0
604 STD. Nº G C.B. 15' LT.
℄ GRATE = 1047.78
℄ 15" COND. TYPE "B" = 1041.67
℄ 6" COND. TYPE "F" = 1043.45

1046.42 14+05 1031.0

AHEAD — 3:1 — 1033.22 — BACK

7' U.D.

30'-15" COND. TYPE "B" @ 4.00%

15"-25° BEND ℄ = 1040.47

40'-15" COND. TYPE "F" — 2:1

10'-15" COND. TYPE "F" @ 4.00%

HW-E HEADWALL ℄ = 1021.00 — 4:1 — 4:1 — 1021.00

15"-25° BEND ℄ = 1021.84

6'X4'X1.5" D.R.C.P.

AHD. BK.

RAMP B STA. 13+41.79 to STA. 17+00

FED. REG. DIVISION	STATE	PROJECT	
2	OHIO	I-277-2(3)123	

SUMMIT COUNTY
SUM-277-0.00

ENDAREA	CU. YDS.
CUT / FILL	CUT / FILL
0 / 21	0 / 116
0 / 50	55 / 280
0 / 30	93 / 109
0 / 355	713 / 17
0 / 418	429 / 0
0 / 602	1322 / 0
0 / 578	2226 / 429

AHD
BK.

4'x4'x15' D.R.C.P.
1024.97

54'-15" CONDUIT TYPE "B" w/CLASS "B" BEDDING @ 3.39 %
1033.48
1029.45

HWE HEADWALL
FE - 1025.10

22+77.60

STA. 233+90 (42' LT. ℄)
604 NO. 6 STD. C.B.
GRATE ELEV. = 1033.70
FE 15" COND. TYPE "B" = 1026.93
FE 6" COND. TYPE "F" = 1027.68

1034.67
22+00
1032.43

1036.15
21+00
1035.33

1037.63
20+00
1042.6

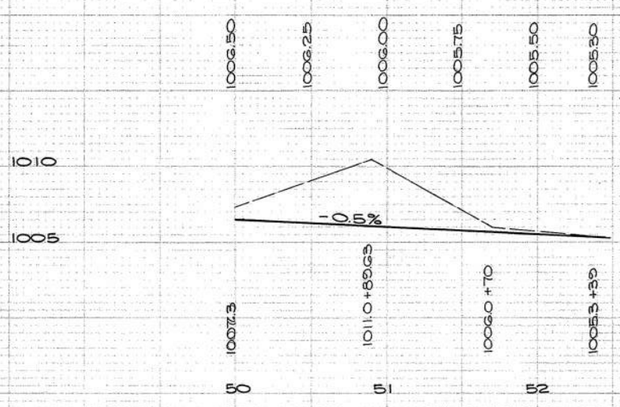
1038.07
19+70
1043.6

1039.11
19+00
1045.82

1040.59
18+00
1048.02

SEEDING	
E.W.	S.Y.
0	711
84	889
81	867
79	77
2160	79
681	96
1217	125

RAMP B STA. 18+00 to STA. 22+77.60



PROFILE

SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
		40 30 20 10 ℄ 10 20 30 40				
		1010 — 1005.3				
15		**52+39** MEET EXIST. CHANNEL	0	0		
	230				0	27
		END DIKE STA. 51+80				
45		1010 — 1008.65 — 1005.65	7	21		
		51+70 1006.0				
	527				278	40
		M.L. — 1009.55 — 1006.05	180	6		
		50+89.63 1011.0 END D.R.C.P.			327	113
	632					
		BEGIN D.R.C.P. 50+00				
54 0	AH'D BACK	1010 — M.L. — 1010.50 — 1006.50				
		50+00 = RAMP "B" Sta. 12+00 1007.3				

AHD BK. 17 0 62 0

RELOC. BREWSTER RUN EXT'D.

SUMMIT COUNTY
SUM-277-000

FED. ROAD DIVISION	STATE	PROJECT
2	OHIO	I-277-4(5)123

58
23

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

59
234

SUMMIT COUNTY
SUM-277-0.00

SPIRAL DATA
L_s = 200'
θ_s = 8°00'00"
L.T. = 133.47'
S.T. = 66.79'

CURVE DATA
P.I. STA. 7+24.95
Δ = 24°59'46"
D_c = 8°00'00"
R = 716.20'
T = 158.75'
L = 312.45'

SOUTHBOUND SUM-8 (I-77)
CORP. LINE
COVENTRY TWP.
CITY OF AKRON
FOR CONTINUATION OF RAMP "B" NORTH OF CORP LINE SEE SUM-8-10.00
EXIST. PAVEMENT ENDS
BEGIN NEW PAVEMENT STA. 4+65.32
TYPE 2-A CURB
TYPE 6 CURB TAPER HEIGHT 6" TO 2" IN LAST 10'
TYPE 1 MEDIAN PAV'T. HEIGHT 2" TOG" IN 20'
BERM
3' PAVED SHOULDER
RAMP "B"
S.C. STA. 5+66.80
RAMP "B-2"
SPIRAL DATA
L_s = 150'
θ_s = 9°00'00"
L.T. = 100.13'
S.T. = 50.12'
C.S. STA. 13+12.68
S.T. STA. 14+62.68
RAMP "B-2" ℄ TANGENT EXTENDED 96.78'
NOSE ~ 14' LT STA. 15+41.75
STA. 14+38.12 RAMP "B"
P.C.C.S. STA. 15+14.10
MATCH LINE STA. 15+25
FOR CONTINUATION SEE SHEET Nº 60
TYPE 7 CURB
P.C. STA. 12+74.10
STA. 12+41.79
STA. 11+41.79
ST. STA. 10+78.25
100'

SPIRAL DATA
L_s = 200'
θ_s = 8°00'00"
L.T. = 133.47'
S.T. = 66.79'

CURVE DATA
P.I. STA. 13+94.38
Δ = 9°36'00"
D_c = 4°00'00"
R = 1432.39'
T = 120.28'
L = 240.00'
E = 5.04'

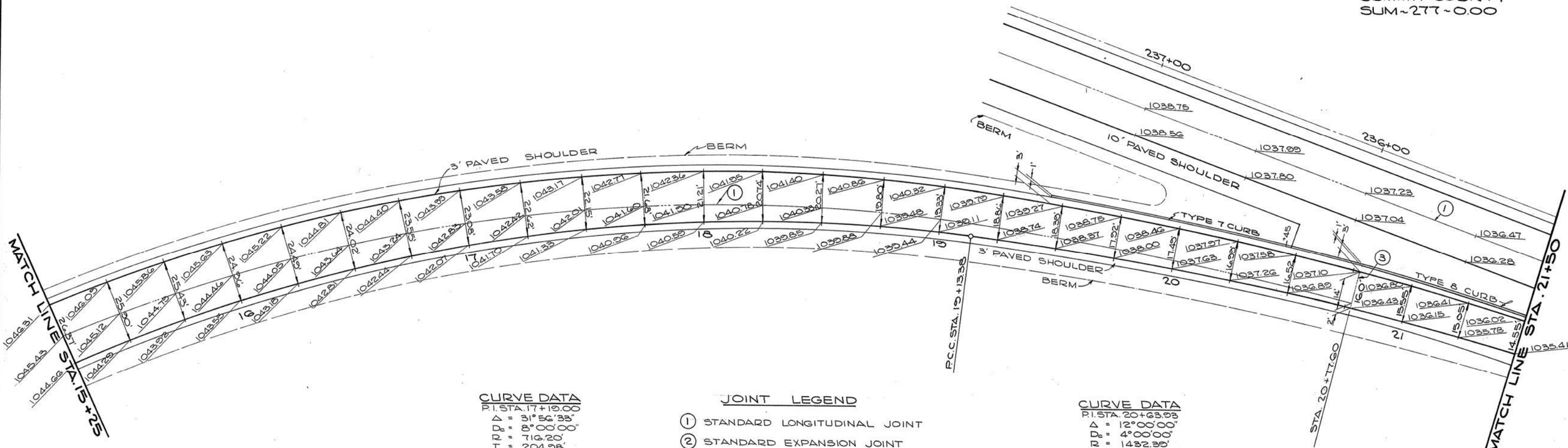
JOINT LEGEND
(1) STANDARD LONGITUDINAL JOINT
(2) STANDARD EXPANSION JOINT
(3) STANDARD CONTRACTION JOINT

RAMP "B"
PAVEMENT ELEVATIONS & JOINT DETAILS
STA. 3+00 TO STA. 15+25

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

60
234

SUMMIT COUNTY
SUM-277-0.00

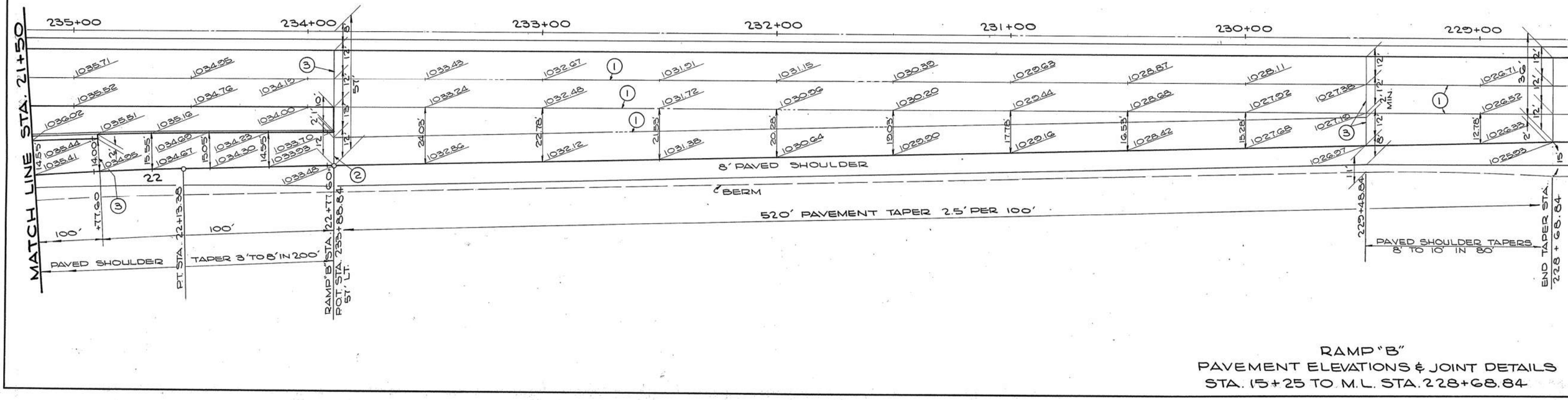


CURVE DATA
P.I. STA. 17+19.00
Δ = 31°56'33"
D_c = 8°00'00"
R = 716.20'
T = 204.98'
L = 399.28'
E = 28.76'

JOINT LEGEND

① STANDARD LONGITUDINAL JOINT
② STANDARD EXPANSION JOINT
③ STANDARD CONTRACTION JOINT

CURVE DATA
P.I. STA. 20+63.93
Δ = 12°00'00"
D_c = 4°00'00"
R = 1432.39'
T = 150.55'
L = 300.00'
E = 7.89'



RAMP "B"
PAVEMENT ELEVATIONS & JOINT DETAILS
STA. 15+25 TO M.L. STA. 228+68.84

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

G1
234

SUMMIT COUNTY
SUM-277-0.00

BRIDGE Nº SUM-8-0932

TYPE: CONTINUOUS STEEL BEAM WITH REINF. CONCRETE DECK & SUBSTRUCTURE
SKEW: 49° 04' 52" R.F. TO LOCAL TANGENT
SPANS: 61'-6", 88'-0", 61'-6" c/c BEARINGS
ROADWAY: 28'-0" F/F PARAPETS
LOAD FREQUENCY: CF 2000 ADEQUATE FOR AASHO ALTERNATE LOADING
WEARING SURFACE: 1" MONOLITHIC
APPROACH SLABS: 25' LONG (AS-1-54)
ALIGNMENT: 12°00' CURVE LT.
SUPERELEVATION: .08333'/FT.
SLOPE PROTECTION: GO1 CRUSHED AGGREGATE

CURVE DATA

NORTHBOUND I-77	SOUTHBOUND I-77
P.I. STA. 517+45.80	P.I. STA. 515+03.13
Δ = 41°58'00"	Δ = 41°58'00"
D_c = 2°30'	D_c = 2°00'
T_s = 1080.05'	T_s = 1292.59'
R = 2291.83'	R = 2864.79'
L_c = 1678.67'	L_c = 1698.33'
E_s = 165.89'	E_s = 205.96'
L_s = 400'	L_s = 400'
θ_s = 5°00'	θ_s = 4°00'
L.T. = 266.77'	L.T. = 266.73'
S.T. = 133.43'	S.T. = 133.40'

FOR RAMP "D" PLAN & PROFILE SEE SHEETS 104 & 105.

FOR I-77 PLAN & PROFILE SEE SHEETS 112 THRU 117.

FOR RAMP "B-1" & "B-2" PROFILES SEE SHEETS G2 & G3.

FOR RAMP "B-1" & "B-2" QUANTITIES SEE SHEET G2.

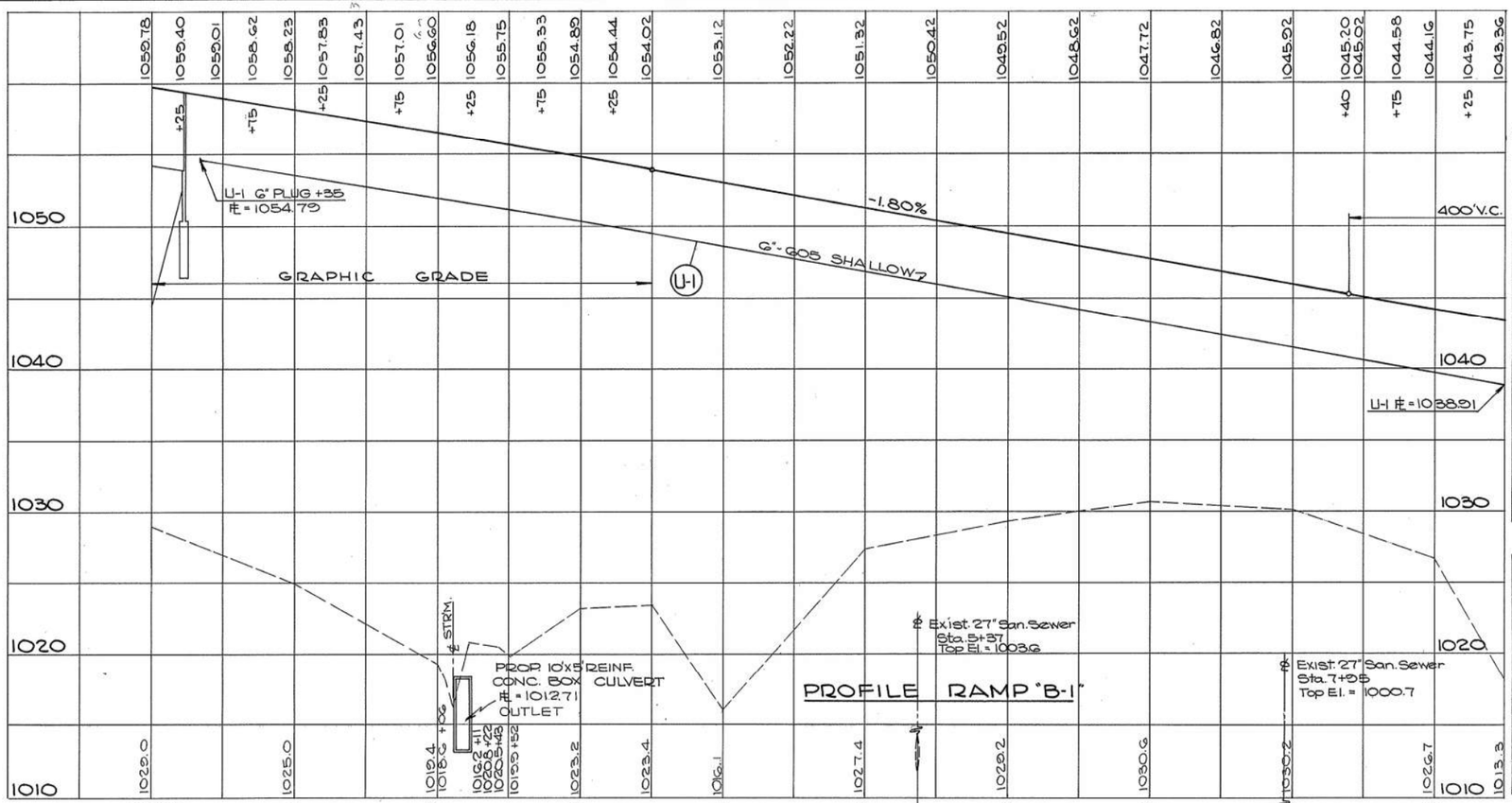
FOR RAMP "B-1" & "B-2" PAVEMENT ELEVATIONS & DETAILS SEE SHEETS 74,75 & 76,77.

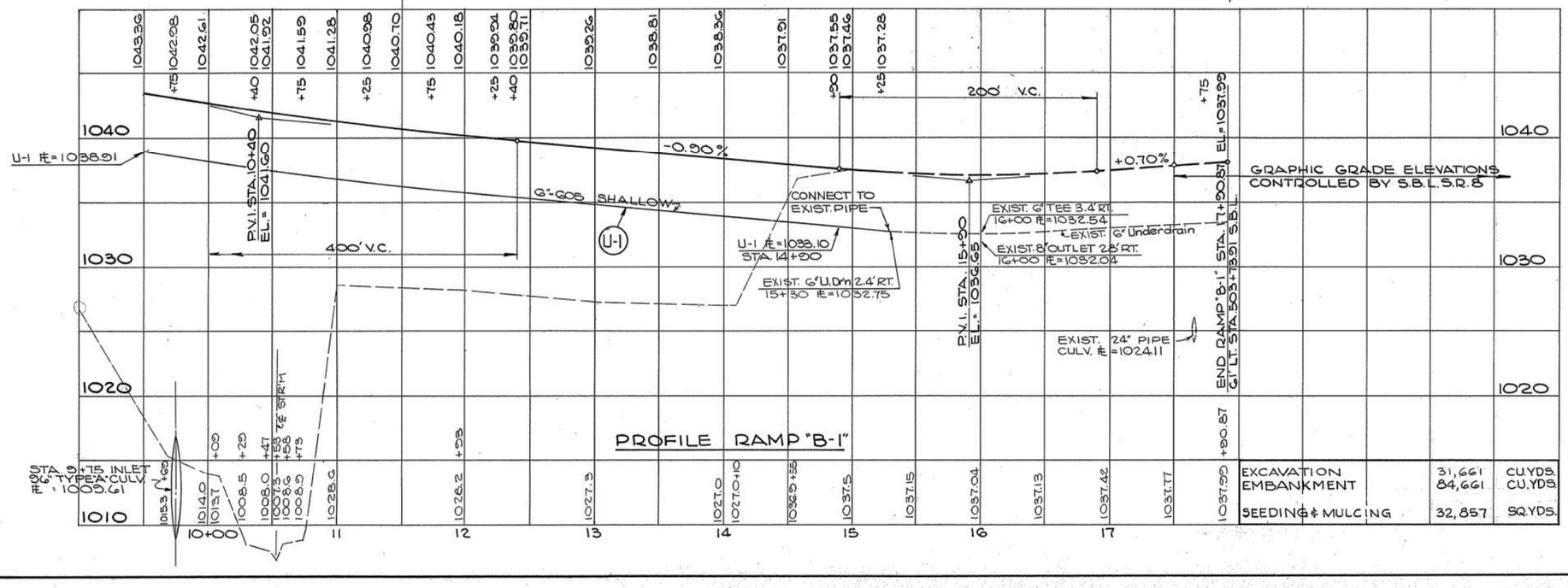
FOR RAMP "B" PLAN & PROFILE SEE SHEETS 50,51 & 52.

STRUCTURES 20' SPAN & UNDER

REF. Nº	STATION	TYPE	SIZE	SHEET Nº
C-2	9+75 "B-1"	TYPE A 707.03 GAGE 8-5	9'6" x 31'6"	148

PLAN
RAMP "B-1" & RAMP "B-2"





EXCAVATION	31,661	CU.YDS.
EMBANKMENT	84,661	CU.YDS.
SEEDING & MULCING	32,857	SQ.YDS.

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

G2
234

SUMMIT COUNTY
SUM-277-0.00

DRAINAGE QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	601 DUMPED ROCK CHANNEL PROT'N	602 CONCRETE MASONRY	603 CONDUIT TYPE B 15" 706.02 CL. V WITH CL. B BEDDING	603 CONDUIT TYPE B 6" WITH CL. B BEDDING	604 PIPE SPEC'L STD. Nº 5 C.B.	604 PIPE SPEC'L 6" CO° BEND	605 6" UNDER DRAIN SHALLOW	660 BERM & SLOPE PROT'N	66 JUT MA TIN
				C.Y.	C.Y.	LIN. FT.		EACH	EACH	L.F.	SQ.YD.	
	RAMP "B-1"											
U-1	0+35	15+30	RT.							1495		
D-3	0+20	1+56	RT.									12
D-4	1+28	2+35	RT.	33								8
	RAMP "B-2"											
U-2	4+70	7+25	LT.							255		
U-3	9+70	15+39	LT&RT.				24		T	557		
D-1	15+00		LT&RT.	18.2	0.26	174		1				12
D-2	7+12		LT.								45	
D-5	9+60	10+20	RT.									9
SHEET TOTAL				21.5	0.26	174	24	1	T	2307	45	42

PAVEMENT & ROADWAY QUANTITIES

STATION FROM	STATION TO	SIDE	451 10" REINF. P.C.C. PAV'T	451 9" REINF. P.C.C. PAV'T	310 SUB-BASE GRAD'G "A" OR "B"	310 SUB-BASE	409 SEAL COAT BIT. MAT'L	409 SEAL COAT COVER AGG Nº 8	203 SUB-GRADE PREP-ARAT'N	301 3" BIT. AGG. BASE	304 AGG. BASE	SPEC'L DRAIN. CONNECT'N USING Nº 8 AGG.
			SQ. YD.		CU. YD.		GAL.	C.Y.	S.Y.	C.Y.	C.Y.	C.Y.
RAMP "B-1"												
0+51.23	15+40.27	LT&RT.	901.86*	2127.54	646.81	27.75	276.2	8.84	4190	184.1	64.2	101.3
RAMP "B-2"												
4+61.81	16+13.00	LT&RT.		1458.38	367.3		158.4	5.06	2181	105.7	29.1	60.3
SHEET TOTAL			901.86	3585.92	1012.1	27.75	434.6	13.90	6371	289.8	93.3	161.6

* - STA. 0+51.2 TO STA. 3+50.38

PAVEMENT & ROADWAY QUANTITIES

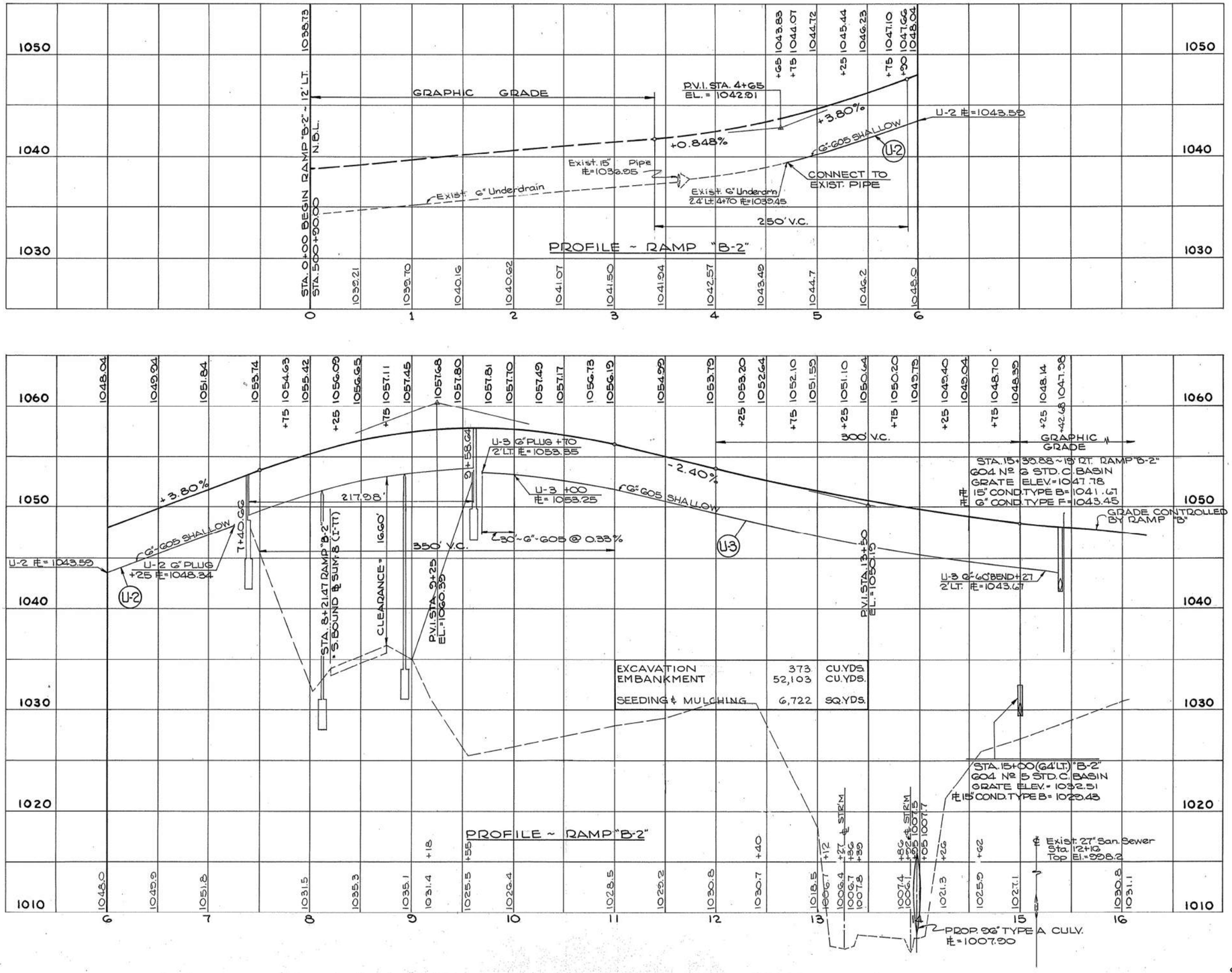
REF. Nº	STATION FROM	STATION TO	SIDE	606 GUARD RAIL TYPE 4	611 REINF. CONCRETE APPROACH SLAB T=18"	612 CONCRETE TRAFFIC ISLAND	609 CONCRETE CURB STD. TYPE 7	609 CONCRETE CURB STD TYPE G	20 EX CO CU RE MO
				LIN. FT.	SQ.YD.	SQ.YD.	LIN. FT.		L.
	RAMP "B-1"								
GR-1	0+50.6	17+90.87	RT.	1740.3					
GR-2	5+00	12+25	LT.	725					
P-1	0+26.2	0+51.2	LT.		33.33				
P-2	3+50.38	4+50.38	LT.			22.45		144	
P-3	15+00	15+64	LT.				64		2
	RAMP "B-2"								
GR4	1+50	7+12.5	LT.	562.5					
GR-5	5+51.5	7+64	RT.	212.5					
GR-6	9+69.9	15+42.7	LT.	572.8					
GR-7	9+80.9	13+28.4	RT.	337.5					
P-4	7+15.66	7+40.66	RT.		44.44				
P-5	9+58.64	9+83.64	RT.		44.44				
SHEET TOTAL				4150.6	122.21	22.45	64	144	2

RAMP "B-1" ~ PROFILE
STA. 0+00 TO STA. 17+90.87

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

G3
234

SUMMIT COUNTY
SUM-277-000



RAMP "B-2" ~ PROFILE
STA. 0+00 TO STA. 15+42.68

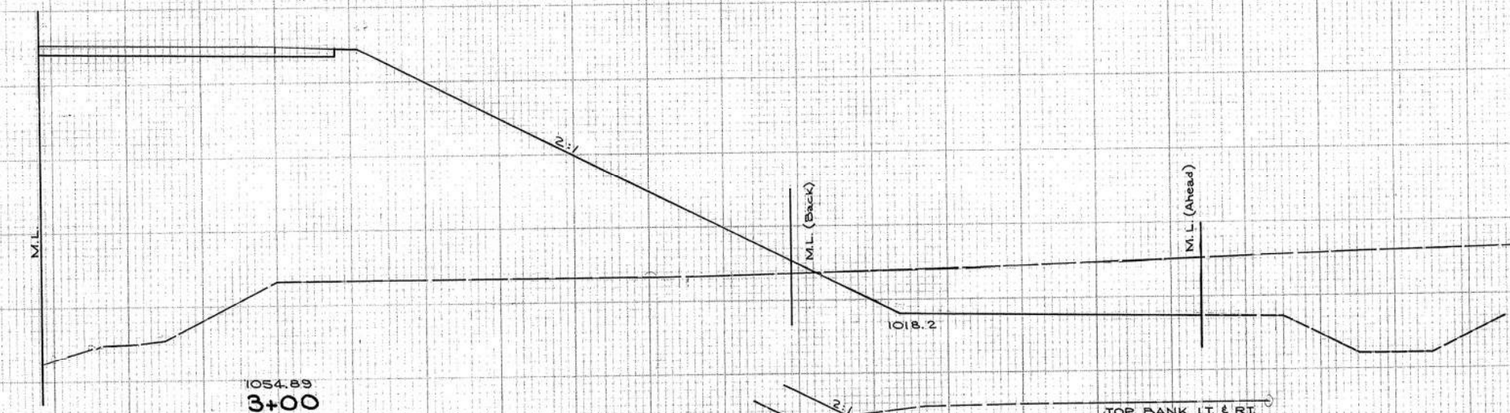
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

G4
234

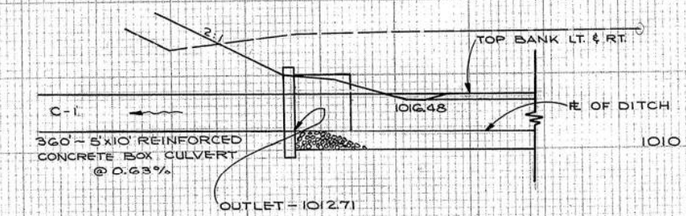
SUMMIT COUNTY
SUM-277-0.00

END WIDTH	SQ. YDS.	
125		AHD.
68		BK.
		1040
		1030
	822	
98		AHD.
176		BK.
		1040
		1030
	1537	
		1040
128		AHD.
0		BK.
		1030

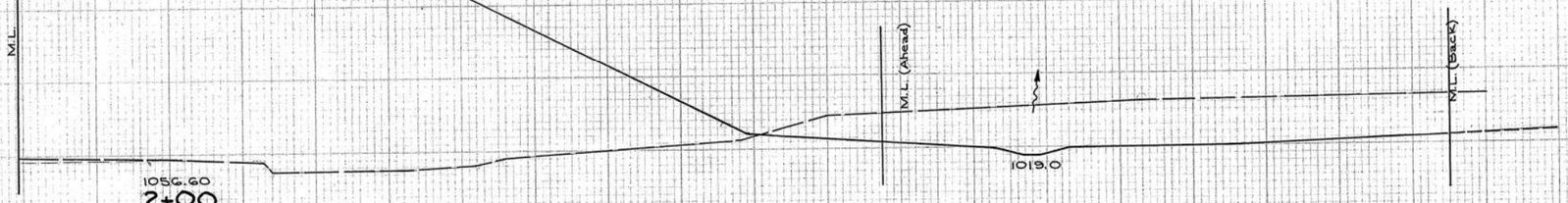
60 40 20 ℄ 20 40 60 80 100 120 140 160 180 200



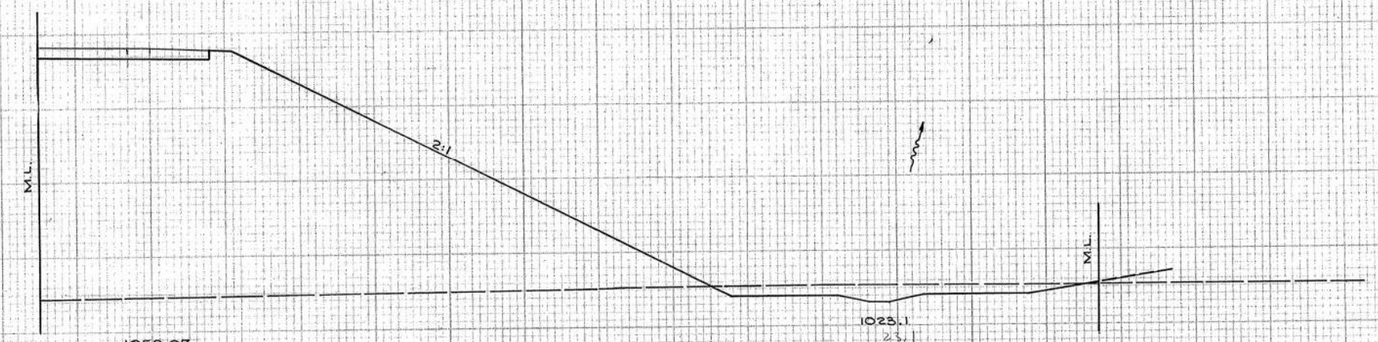
1054.89
3+00
1015.7



STA. 2+52
CULVERT
SEE SHEET No. 145



1056.60
2+00
1019.4



1058.07
1+09
1024.4

END AREA		VOLUME	
CUT	FILL	CUT	FILL
AHD. 808	2507		
BK. 0	2438		
		53	53
AHD. 50	2535		
BK. 518	2535		
			1003.74
AHD. 77	1905		
BK. 0	0		

RAMP B-1 STA. 1+09 to STA. 3+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

SUMMIT COUNTY
SUM-277-000

END WIDTH	SQ YDS.
203	2021
168	860
144	753

60 40 20 ℄ 20 40 60 80 100 120 140 160 180 200 220

1040
1030

M.L.

4:1

2:1

1051.32
5+00
1025.7

1018.5

M.L.

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME F
345	1766		
495	2388	1556	7
AHD. 375	2074	735	4
BK. 375	2732	422	4

1040
1030

M.L.

2:1

1053.12
4+00
1016.3

1018.3

M.L.

1040
1030

M.L. (BACK)

M.L. (AHEAD)

2:1

1054.02
3+50.38
1016.0

1018.3

M.L.

60 40 20 ℄ 20 40 60 80 100 120 140 160 180 200 220

RAMP B-1 STA. 3+50.38 to STA. 5+00

PFD. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

SUMMIT COUNTY
SUM-277-0.00

END WIDTH	SQ. YDS
257	1040
	1030
	1571
248	1040
	1030
	2512
233	1040
	1030
	2422

END AREA CUT	FILL	VOLU CUT
686	1374	
		1305
659	1447	
		1814
383	1607	
		1348

60 40 20 ℄ 20 40 60 80 100 120 140 160 180 200 220

70 60 50 A 1040 M.L. A

A 2:1 1038.0 2:1 M.L. A

1046.82
7+50
1030.4

1017.2

1040 2:1 M.L. 1039.00 2:1

1047.83
6+94
1030.4

1017.7

FOR CONTINUATION SEE RELOC. BREWSTER RUN. X-SECTIONS

1040 M.L. 2:1

1049.51
6+00
1028.5

1018.2

M.L.

60 40 20 ℄ 20 40 60 80 100 120 140 160 180 200 220

RAMP B-1 STA. 6+00 to STA. 7+50

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

G7
234

SUMMIT COUNTY
SUM-277-0.00

END WIDTH	SQ. YDS.
M.L.	
126	
	1266
204	
	1239
242	
	1450
280	
	1492

60 40 20 ℄ 20 40 60 80 100 120 140 160 180 200

1050
1040
1030
1020
1010

4:1
2.7:1
2:1
1039.42
M.L.
C-2
316'~96" CONDUIT TYPE "A" 707.03 G-8-5 @ .98% w/CLASS "B" BEDDING
SP53
INV. - 1009.61
STA. 9+75 (61.5' RT ℄)
SEE DETAIL SHEET No. 146
1043.07
9+69
1015.0
CULVERT
9+75

1050
1040
1030
1020
2:1
M.L.
1035.00
1044.16
9+00
1026.7
1015.3
M.L.

1050
1040
1030
B
2:1
1036.00
B
M.L.
B
1030
B
80 70 60
1045.02
8+50
1028.5
1016.0
M.L.

1050
1040
1030
A
2:1
1037.00
A
M.L.
A
1030
A
100 80 60
1045.82
8+00
1030.2
1016.8
M.L.

END AREA		VOLUME	
CUT	FILL	CUT	FI
0	3398		
		381	60
238	1332		
		740	24
501	1320		
		1046	24
620	1363		
		1218	24

RAMP B-1 STA. 8+00 to STA. 9+69

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

G8
234

SUMMIT COUNTY
SUM-277-0.00

END WIDTH	SQ. YDS.
240	2717
217	2005
171	1578
113	413

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
1316	1080		
			5548
1484	1060		
			2556
0	1516		
0	3187		

1039.26
13+00
1025.9

1040.24
11+93
1023.5

1041.28
11+00
1019.1

1042.61
10+00
1014.1

DRAINAGE DIVIDE
STA. 10+50
1041.96

RAMP B-1 STA. 10+00 to STA. 13+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

GD 234

SUMMIT COUNTY
SUM-277-0.00

END WIDTH	SQ. YDS
182	965
204	1070
224	249
224	2578

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
958	24		
		1681	78
1059	70		
		1787	70
1085	776		
		403	2
1093	828		
		3709	3

1037.46
15+00
1027.8

1034.64

1037.86
14+55
1027.6

(TOP OF SLOPE EXIST. EMBANKMENT)

1034.48

1038.27
14+10
1027.3

(TOE OF SLOPE EXIST. EMBANKMENT)

1034.45

1038.36
14+00
1027.2

1018.6

1018.6

1018.3

1018.2

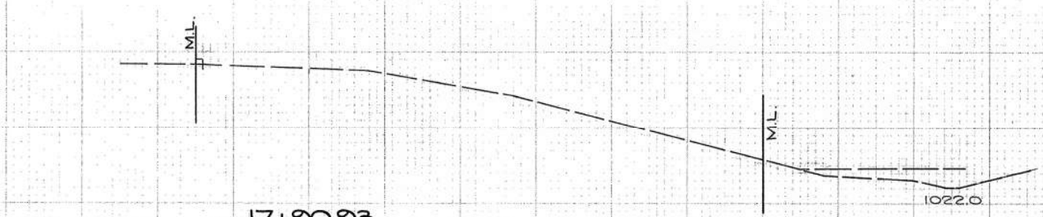
RAMP B-1 STA. 14+00 to STA. 15+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(B)123	

SUMMIT COUNTY
SUM-277-0.00

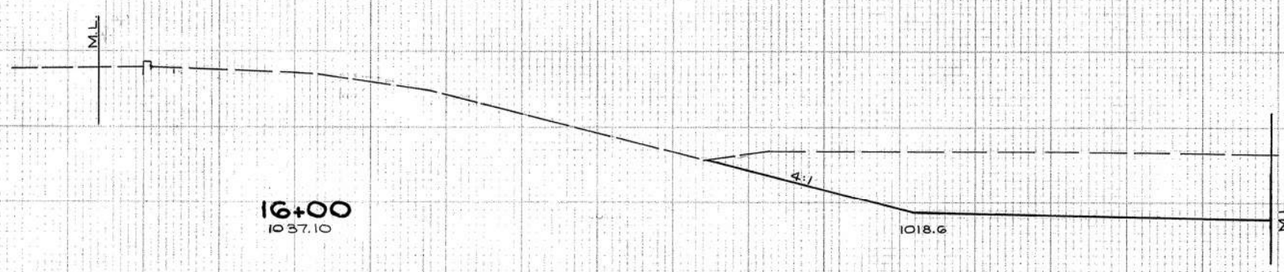
END WIDTH	SQ. YDS.
1	
	207
40	
	700
86	
	632
107	
	658

END AREA CUT	END AREA FILL	VOLU CUT
0	0	
		164
97	0	
		1161
530	0	
		1431
AHD. 780 BK. 808	0 0	
		1406

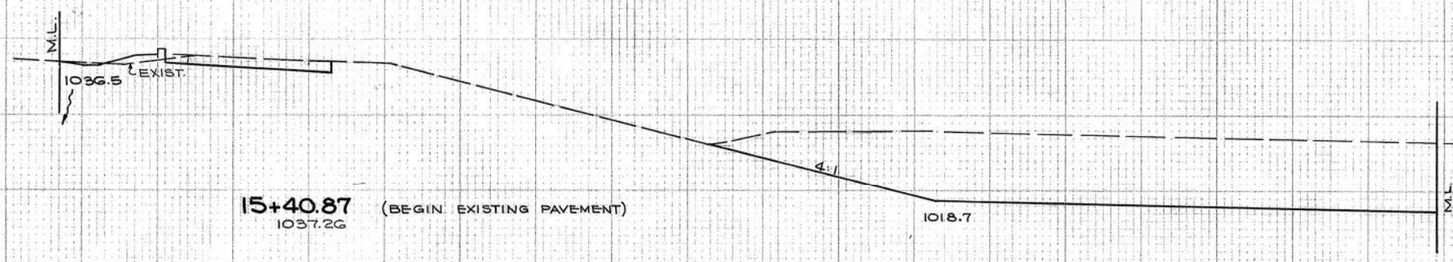


17+90.93
1037.87
END RAMP "B-1"

17+00
1037.44



16+00
1037.10



15+40.87 (BEGIN EXISTING PAVEMENT)
1037.26

RAMP B-1 STA. 15+40.87 to STA. 17+90.93

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

71
234

SUMMIT COUNTY
SUM-277-0.00

	7+00	6+00	5+00	4+61.81 (END OF EXIST. PAVEMENT)	3+61.81	2+50	2+00	1+00	0+00
END AREA CUT	28	28	28	28					
END AREA FILL	0	0	0	0					
VOLUME CUT		104	104	64					
VOLUME FILL		0	0	0					
AHD. BK.				28 0					
N.B.L.									
M.L. (BACK)									
M.L. (AHEAD)									
M.L.									
2:1									
1051.84	1048.04	1044.72	1043.59	1042.04	1041.07	1040.62	1039.70	1038.17	
1029.5	1029.0	1028.7	1029.5						
1028.0		1026.5	1026.0	1026.0					
AHD. BK.									
END SQ.									
WIDTH YDS.	20	20	20	20					
	222	222	85	0					

INLET EXIST. 24" CULVERT

RAMP B-2 STA. 0+00 to STA. 7+00

FHWA RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(8)123	

72
234

SUMMIT COUNTY
SUM-277-0.00

END AREA VOLUME CUT	FILL	CUT	FILL
23	2248	1022.0	
22	4433	0	10,185
0	2540	0	2960
0	1966	0	1457
0	160	0	0

		0
		57
	00	
	02	28

AHD BK.

END EARTHWORK STA. 7+55

BEGIN EARTHWORK STA. 9+18

AHD BK.

1054.99
11+50
1029.2

2:1

2:1

1040.7

M.L.

1056.19
11+00
1028.5

2:1

2:1

1040.2

M.L.

1030

1020

1057.70
10+00
1026.4

2:1

2:1

1037.0

M.L.

1057.81
9+55
1025.5
BRIDGE

2:1

2:1

1034.98

M.L.

1032.0

1062.63
9+18
1031.4
BRIDGE

M.L.

1055.42
8+00
1028.0
BRIDGE

M.L.

| END SQ. WIDTH YDS | | |

FED. ROAD DIVISION	STATE	PROJECT
2	OHIO	I-277-6(3)123

SUMMIT COUNTY
SUM-277-0.00

END AREA VOLUME												
CUT	0	1259	0	1353	0	2476	0	3083	0	1947	0	2016
FILL	0		0		0		0		0		0	
		2065		7091		10,234		5589		2936		3948

AHD. BK.

STA. 13+41.79
RAMP "B"
M.L.
30'-15" COND. TYPE 'B' @ 4.00%
15"-25° BEND ℄ = 1040.47
40'-15" COND. TYPE 'B'
15"-25° BEND ℄ = 1021.84
STA. 13+38.0 (15' LT. ℄)
604 STD. Nº 6 C.B.
GRATE ELEV. = 1047.78
℄ 15" COND. TYPE B = 1041.67
℄ 6" COND. TYPE F = 1043.45
1047.98
15+42.68
1028.5
END RAMP "B-2"
1033.92
1040
1030
80
100
RAMP B
M.L.
3:1
1048.35
15+00
1027.1
1032.76
STA. 15+00 (64' LT. ℄)
604 STD. Nº 6 CATCH BASIN
GRATE ELEV. = 1032.51
℄ 15" COND. TYPE B = 1029.43
174'-15" COND. TYPE B 706.02 CLASS 'A' CONCRETE WITH CL. B BEDDING @ 7.00%
RAMP B
M.L.
CULVERT C-2
STA. 14+04
SEE DETAIL SHEET Nº 148
1045.79
14+00
1008.0
4:1
1039.04
C-2
1046.4
M.L.
4:1
1041.85
1051.59
13+00
1018.5
M.L.
2:1
DRAINAGE DIVIDE
STA. 12+85
1041.96
1052.83
12+40
1030.7
4.2:1
1041.5
M.L.
1037.6
2:1
1053.79
12+00
1030.8
3.5:1
1041.0
M.L.
1031.6
2:1

END WIDTH	SQ. YDS.
0	
10G	
83	448
40	G88
72	G22
95	557
105	444
	G16

RAMP B-2 STA. 12+00 to STA. 15+42.68

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

74
234

SUMMIT COUNTY
SUM-277-0.00

SUM-277

* - FOR NOSE DETAIL SEE SHEET Nº 141.

FOR PAVEMENT TAPER ELEV. & DISTANCES SEE TABLE BELOW

PC STA. 0+00 RAMP "B-1"
=44' LT. STA. 251+08.77

CURVE DATA
P.I. STA. 2+10.91
Δ = 10°30'58"
D_c = 2°30'00"
R = 2291.83'
T = 210.91'
L = 420.64'
E = 9.68'

NOSE-48' LT. STA. 247+56.25 =
23' LT. ℄ STA. 3+50.38 "B-1"

TAPER PAVED SHOULDER 8' TO 3' WIDTH IN 100'

PT STA. 4+20.64

TS STA. 4+36.67

SPIRAL DATA
L_s = 200'
θ_s = 25°00'
L.T. = 134.29'
S.T. = 67.00'

SC STA. 6+36.67
MATCH LINE STA. 6+36.67

CURVE DATA
Δ = 159°05'53"
D_c = 25°00'
R = 229.18'
L = 636.39'

STATION	MAINLINE PAVEMENT ELEV. 32' LT. OF ℄	DIST. TO OUTSIDE EDGE OF TAPER	PAV'T EL OUTSIDE EDGE OF TAPER
245+00	1050.72	6.88'	1050.61
244+50	1049.96	5.88'	1049.87
244+00	1049.20	4.88'	1049.12
243+50	1048.44	3.88'	1048.38
243+00	1047.68	2.88'	1047.64
242+50	1046.92	1.88'	1046.89
242+00	1046.16	0.88'	1046.15
241+56.25	1045.50	0.00'	1045.50

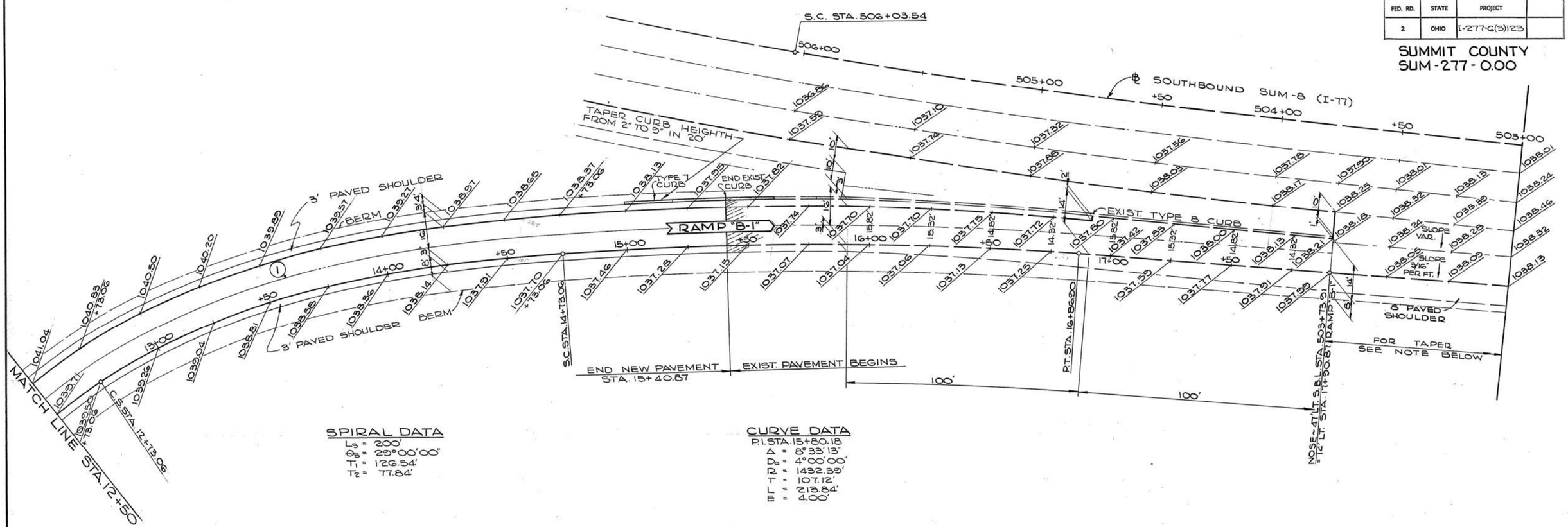
JOINT LEGEND
① STANDARD LONGITUDINAL JOINT
② STANDARD EXPANSION JOINT
③ STANDARD CONTRACTION JOINT

MATCH LINE STA. 12+50
FOR CONTINUATION SEE SHEET Nº 75.

RAMP "B-1"
PAVEMENT ELEVATIONS & JOINT DETAILS
STA. 0+00 TO STA. 12+50

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

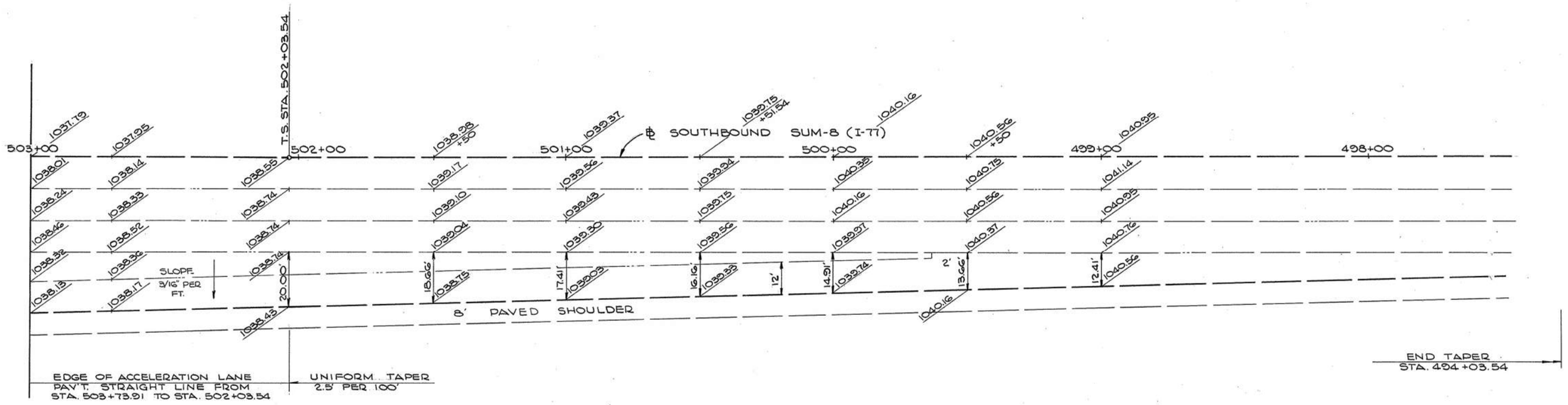
SUMMIT COUNTY
SUM-277-0.00



SPIRAL DATA
L_s = 200'
Θ_s = 29°00'00"
T_1 = 126.54'
T_2 = 77.84'

CURVE DATA
P.I. STA. 15+80.18
Δ = 8°33'13"
D_c = 4°00'00"
R = 1432.39'
T = 107.12'
L = 213.84'
E = 4.00'

JOINT LEGEND
① STANDARD LONGITUDINAL JOINT



RAMP "B-1"
PAVEMENT ELEVATIONS & JOINT DETAILS
STA. 12+50 TO STA. 17+90.87

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

76
234

SUMMIT COUNTY
SUM-277-0.00

SHOULDER TAPER 8' TO 3'
461.81'

12' LT. STA. 500+90.00 N.B.L. =
P.C. STA. 0+00 RAMP "B-2"

RAMP "B-2"

BEGIN TAPER
STA. 496+53.74

END TAPER
STA. 497+53.74

100'

16.67

NORTHBOUND SUM-8 (I-77)

MATCH LINE STA. 502+50

FOR CONTINUATION
MATCH LINE STA. 7+75
SEE SHEET № 7I

P.C. STA. 7+36.18

CURVE DATA

P.I. STA. 2+94.12
Δ = 11°43' 25"
D_c = 2°00'00"
R = 2864.79'
T = 294.12'
L = 586.18'
E = 15.06'

SPIRAL DATA

L_s = 150'
Θ_s = 10° 30' 00"
T_1 = 93.06'
T_2 = 57.36'

NOSE 12' LT. STA. 504+53.74 N.B.
"23 LT. STA. 3+61.81 RAMP "B-2"

100'

EXIST. PAVEMENT ENDS

BEGIN NEW PAVEMENT
STA. 4+61.81

C.S. STA. 5+86.18

3' PAVED SHOULDER

3' PAVED SHOULDERS

BERM

RAMP "B-2"

STD. TYPE 1 MEDIAN PAVT.
TAPER HEIGHT 2" TO 6" IN FIRST 20'

TYPE G CURB
TYPE 2A CURB TAPER
HEIGHT 6" TO 2" IN LAST 10'

NORTHBOUND SUM-8

MATCH LINE STA. 502+50

JOINT LEGEND

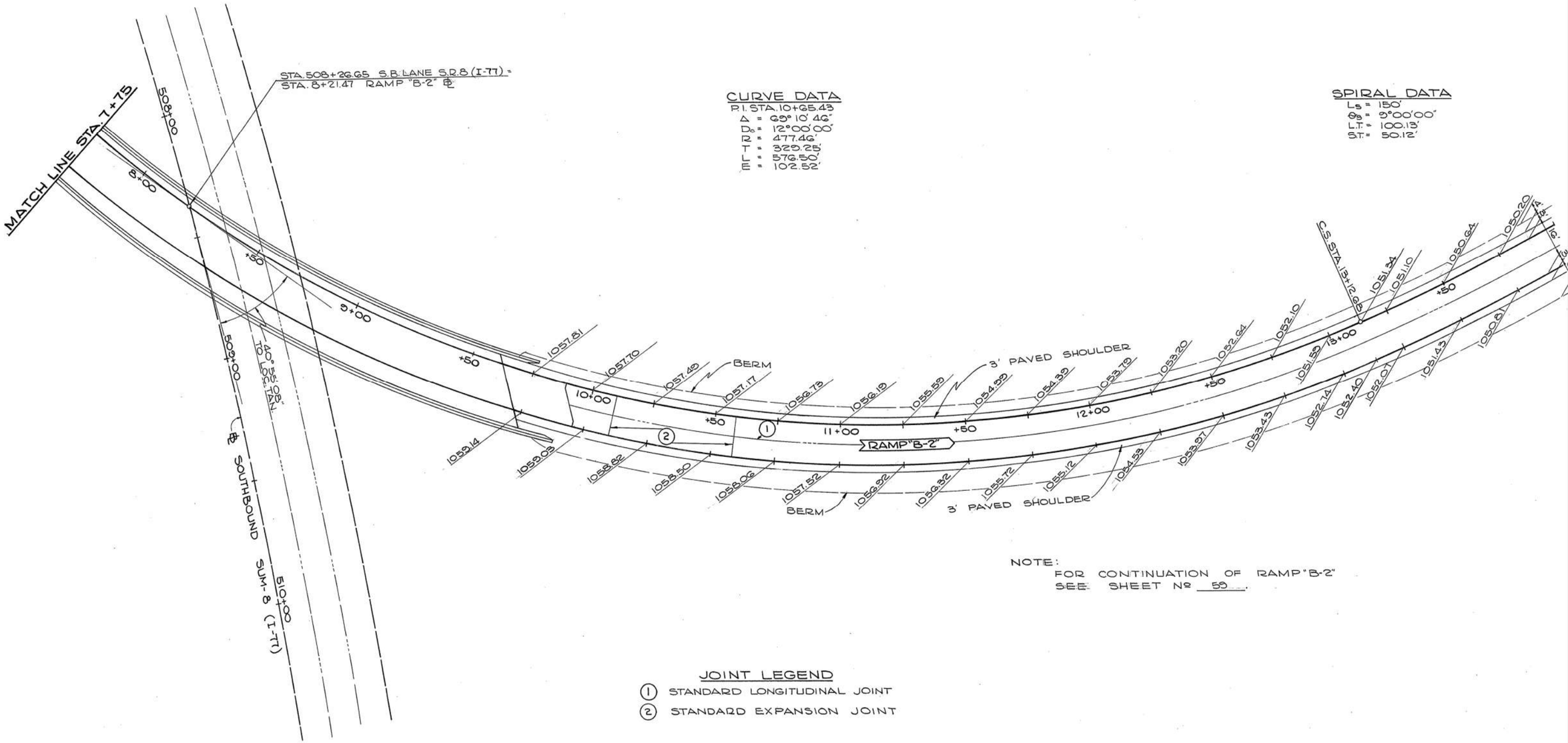
① STANDARD LONGITUDINAL JOINT
② STANDARD EXPANSION JOINT

RAMP "B-2"
PAVEMENT ELEVATIONS & JOINT DETAILS
STA. 0+00 TO STA. 7+75

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

77
234

SUMMIT COUNTY
SUM-277-0.00



CURVE DATA

P.I. STA. 10+65.43
Δ = 65° 10' 46"
D_s = 12°00'00"
R = 477.46'
T = 329.25'
L = 576.50'
E = 102.52'

SPIRAL DATA

L_s = 150'
θ_s = 9°00'00"
L.T. = 100.13'
S.T. = 50.12'

NOTE:
FOR CONTINUATION OF RAMP "B-2"
SEE SHEET Nº 59.

JOINT LEGEND

(1) STANDARD LONGITUDINAL JOINT
(2) STANDARD EXPANSION JOINT

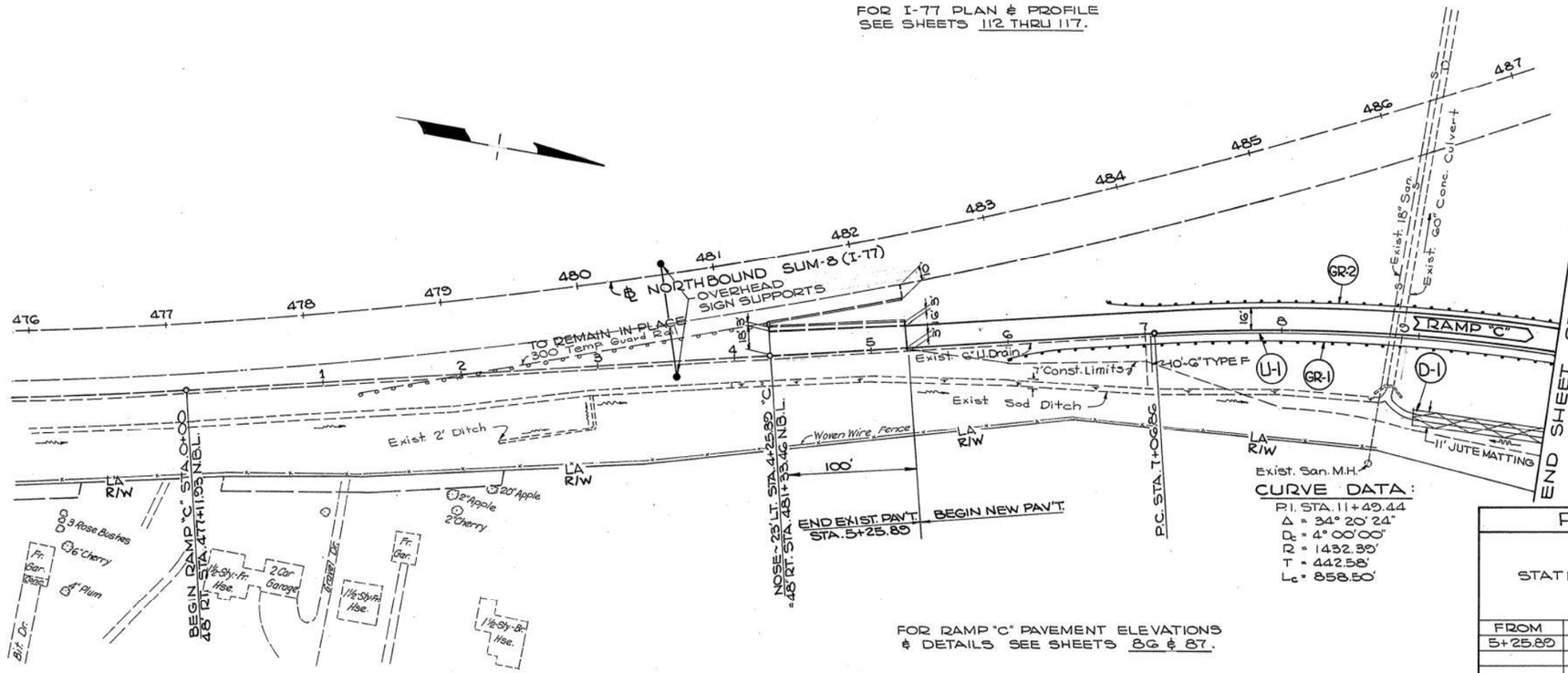
RAMP "B-2"
PAVEMENT ELEVATIONS & JOINT DETAILS
STA. 7+75 TO STA. 13+75

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

78
234

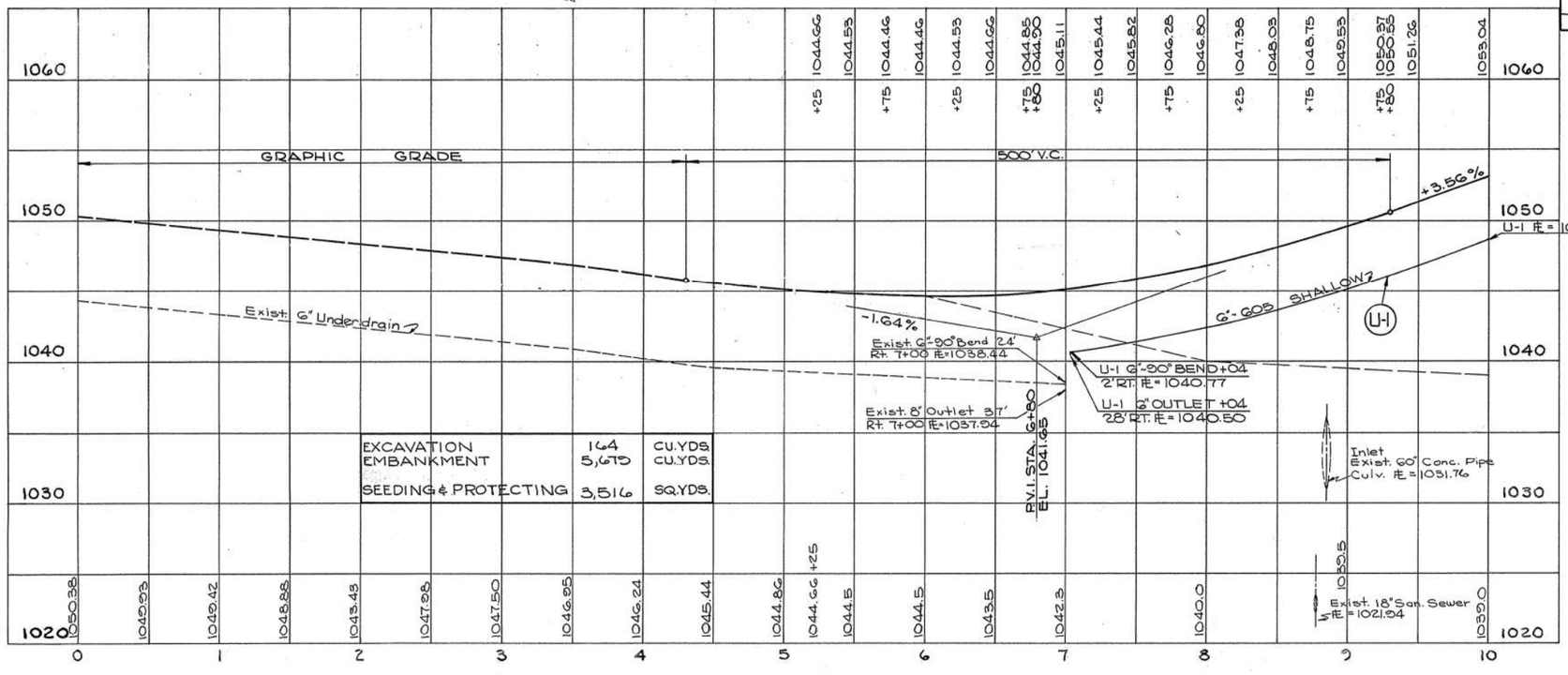
SUMMIT COUNTY
SUM-277-0.00

FOR I-77 PLAN & PROFILE
SEE SHEETS 112 THRU 117.



CURVE DATA:
P.I. STA. 11+49.44
Δ = 34° 20' 24"
D_c = 4° 00' 00"
R = 1432.39'
T = 442.58'
L_c = 858.50'

FOR RAMP "C" PAVEMENT ELEVATIONS & DETAILS SEE SHEETS 86 & 87.



DRAINAGE QUANTITIES

REF Nº	STATION FROM	STATION TO	SIDE	603 CONDUIT TYPE F 6"		PIPE SPECIAL 6"~90° BEND	605 6" UNDERDRAIN SHALLOW	607 JUTE MATTING
				LIN. FT.		EACH	LIN. FT.	SQ.YDS.
U-1	7+04	10+00	RT.	10		1	312	
D-1	9+00	10+00	RT.					122
SHEET TOTAL				10		1	312	122

PAVEMENT & ROADWAY QUANTITIES

STATION FROM	STATION TO	SIDE	451 9" REINF P.C.C. PAV'T	310 SUB-BASE GRAD'G 'A' OR 'B'	310 SUB-BASE	409 SEAL COAT BIT. MAT'L	409 SEAL COAT COVER AGG. Nº 8	203 SUB-GRADE PREP-ARAT'N	301 3" BIT. AGG. BASE	304 AGG. BASE		SPEC'L DRAIN. CONN'N USING Nº 8 AGG.
			S.Y.	CU.YD.		GAL.	C.Y.	S.Y.	C.Y.	C.Y.		C.Y.
5+25.85	25+86.97	LT&RT.	4293.77	922.8	7.4	338.0	10.8	5646	225.3	55.4		149.5
SHEET TOTAL			4293.77	922.8	7.4	338.0	10.8	5646	225.3	55.4		149.5

PAVEMENT & ROADWAY QUANTITIES

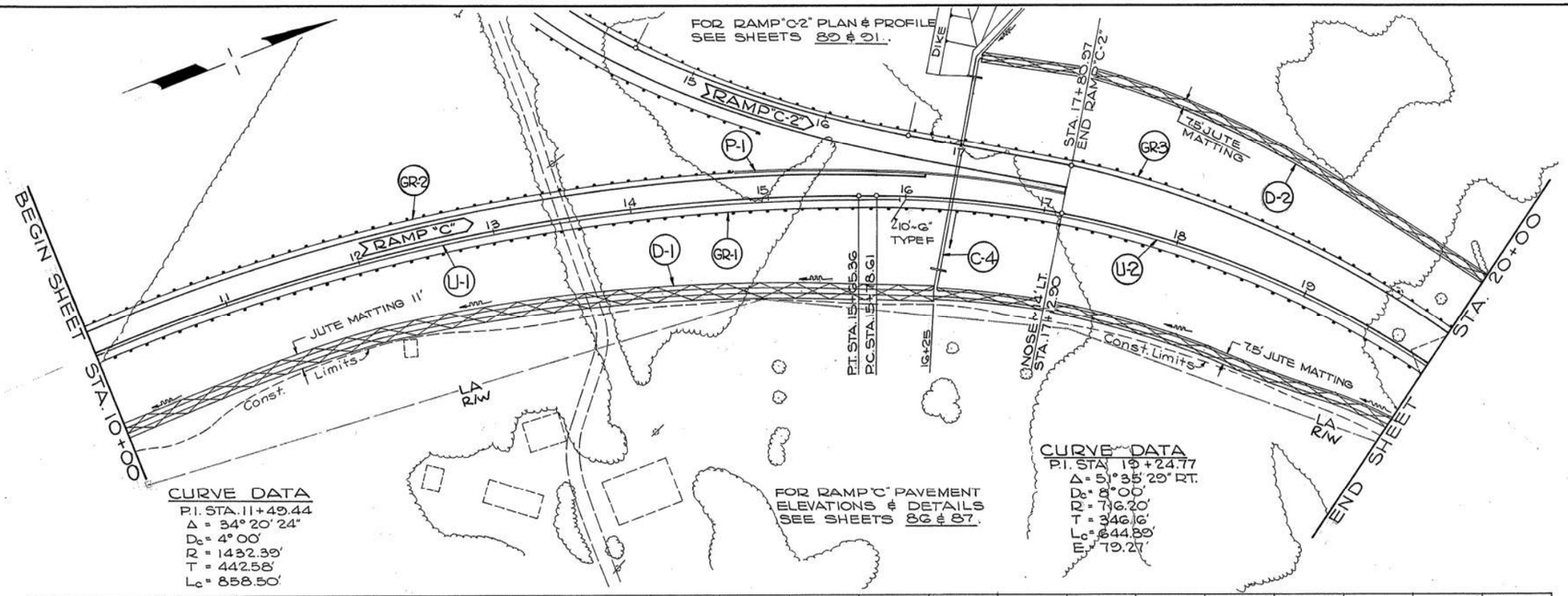
REF Nº	STATION FROM	STATION TO	SIDE	606 GUARD RAIL TYPE 4		609 CONCRETE CURB STD. TYPE 7	609 CONCRETE CURB STD. TYPE 8
				LIN. FT.		LIN. FT.	
GR-1	6+00	25+86.97	RT.	1987			
GR-2	6+75	14+75	LT.	800			
GR-3	17+12.90	21+54	LT.	441			
P-1	14+86	17+12.90	LT.			82	150
P-2	22+47	25+86.97	LT.			100	245
SHEET TOTAL				3228		182	395

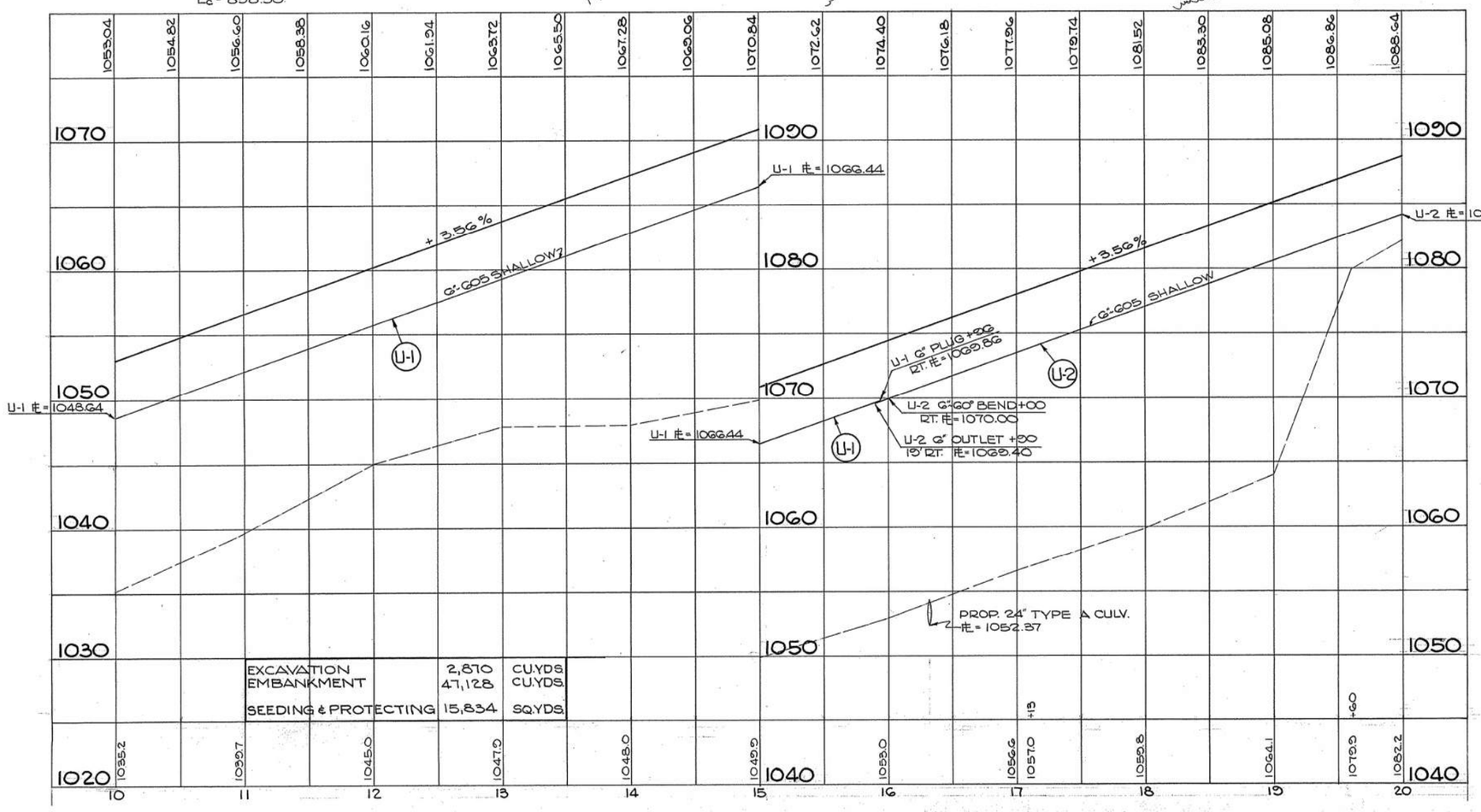
RAMP "C".
PLAN & PROFILE
STA. 0+00 TO STA. 10+00

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-4(3)123	

79
234

SUMMIT COUNTY
SUM-277-0.00





FOR PAVEMENT & ROADWAY QUANTITIES SEE SHEET Nº 78.

DRAINAGE QUANTITIES

REF Nº	STATION FROM	STATION TO	SIDE		6" G03 CONDUIT TYPE F	PIPE SPECIAL 6"~60° BEND	6" G05 UNDERDRAIN SHALLOW	G67 JUTE MATTING
					LIN. FT.	EACH	LIN. FT.	SQ. YD.
U-1	10+00	15+96	RT.				596	
U-2	16+00	20+00	RT.		10	1	410	
D-1	10+00	20+00	RT.					1018
D-2	16+45	20+00	LT.					333
SHEET TOTAL					10	1	1006	1351

STRUCTURES ~ 20' SPAN & UNDER

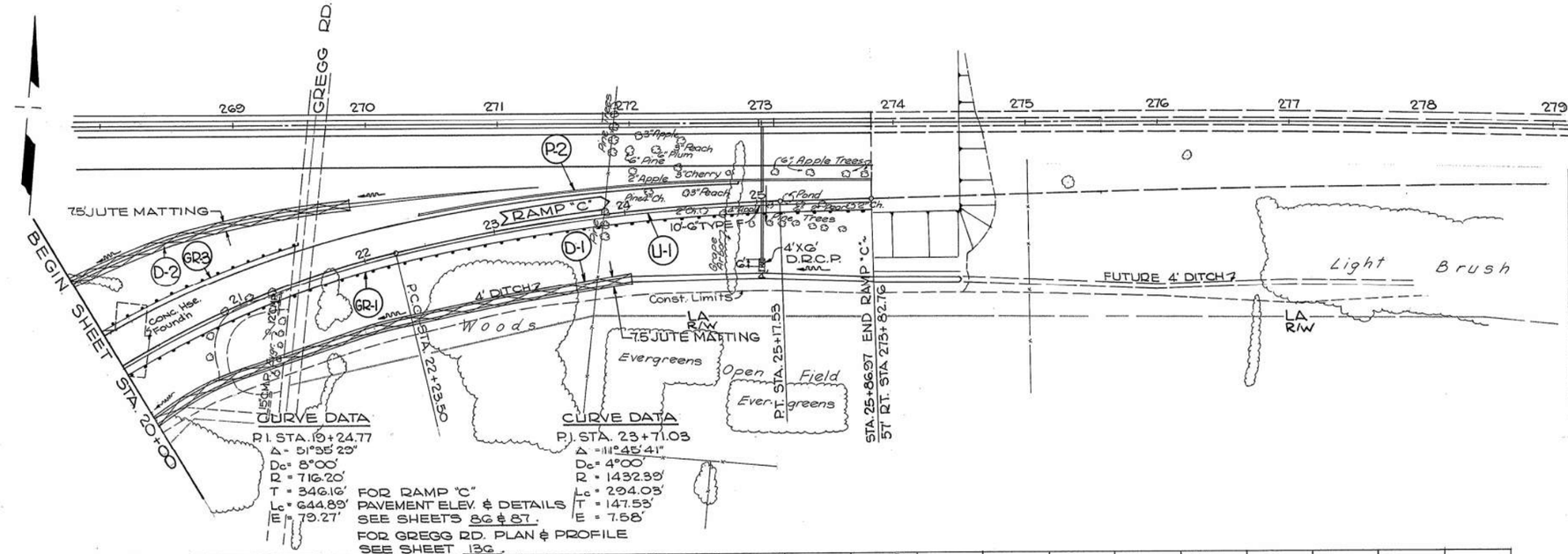
REF Nº	STATION	TYPE	SIZE	SHEET Nº
C-4	17+00 "C-2"	TYPE A 7060.2 CL. V	24" X 142'	153

RAMP "C"
PLAN & PROFILE
STA. 10+00 TO STA. 20+00

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

80
234

SUMMIT COUNTY
SUM-277-0.00



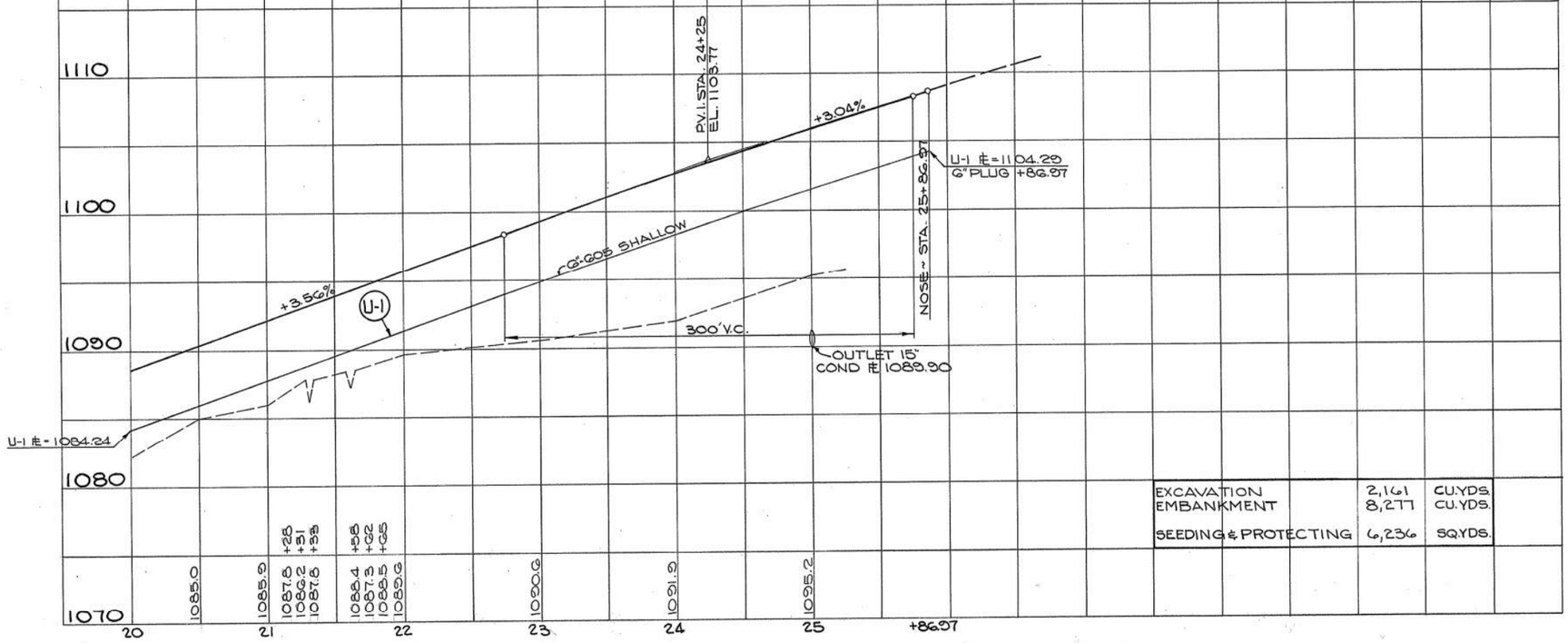
FOR RAMP "C" PAVEMENT ELEV. & DETAILS SEE SHEETS 86 & 87.

FOR GREGG RD. PLAN & PROFILE SEE SHEET 136.

DRAINAGE QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE		603 6" CONDUIT TYPE F		605 6" UNDERDRAIN SHALLOW	667 JUTE MATTING
					LIN. FT.		LIN. FT.	SQ. YDS.
U-1	20+00	25+86.97	RT.		10		577	
D-1	20+00	24+00	RT.					317
D-2	20+00	22+00	LT.					181
SHEET TOTAL					10		577	498

FOR RAMP "C" PAVEMENT & ROADWAY QUANTITIES SEE SHEET Nº 78.



EXCAVATION	2,161	CU.YDS.
EMBANKMENT	8,277	CU.YDS.
SEEDING & PROTECTING	6,236	SQ.YDS.

RAMP "C"
PLAN & PROFILE
STA. 20+00 TO STA. 25+86.97

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

81
234

SUMMIT COUNTY
SUM -277 - 0.00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL

1044.86
5+00
1042.5
2:1
M.L.

1045.81
4+25.89
1043.85
2:1
M.L. (AHEAD)
M.L. (BACK)

1046.24
4+00
1044.28
2:1
M.L.

1047.50
3+00
1045.54
4:1
2:1
M.L.

1048.43
2+00
1046.47
8:1
2:1
M.L.

1049.42
1+00
1047.57
8:1
M.L.

1050.38
0+00
M.L.

SEEDING END AREA SQ. YDS.	SEEDING END AREA WIDTH YDS.

RAMP C STA. 0+00 to STA. 5+00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
25	1178	45	1043
11	1075		
50	580		
102	1014		
174	3150		
55	857		
135	2633		
17	565		
31	1135		
0	1000		
0	313		
0	0		

SEEDING	
END WIDTH	SQ. YDS
154	428
152	252
150	570
141	1485
126	1044
62	635
53	350
AHD. DK. 10 0	

1056.60
11+00
1039.7

1055.71
10+75
1039.7

1055.18
10+60
1039.7

1053.04
10+00
1039.2

1049.53
9+00

EXIST. 60" CULVERT
STA. 8+80

1046.80
8+00 (TOP OF EMBANKMENT)

1045.11
7+00

BEGIN SEEDING
STA. 6+00

BEGIN EARTHWORK
STA. 6+00

1044.46
6+00 (TOP OF EMBANKMENT)

1044.26
5+25.89
BEGIN NEW PAVT.

FED. ROAD DIVISION	STATE	PROJECT
2	OHIO	I-277-6(3)123

SUMMIT COUNTY
SUM-277-0.00

82
234

RAMP C STA. 5+25.89 to STA. 11+00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
15	554		
36	1852	50	3612
20	1045		
50	3612	50	4465
12	1042		
50	4465	50	2377
15	1340		
50	2377	175	1804
45	1138		
140	848	415	3402
84	289	209	4015

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	I-277-6(3)123

SUMMIT COUNTY
SUM-277-0.00

83
234

SEEDING END WIDTH	SEEDING SQ YDS
88	1070
86	483
86	1070
76	894
125	1111
155	772
145	883
172	1812
172	1822

RAMP C STA. 12+00 to STA. 16+50

| END AREA VOLUME | | |

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	I-277-6(3)123

SUMMIT COUNTY
SUM-277-0.00

85
234

END AREA	VOLUME
CUT	FILL

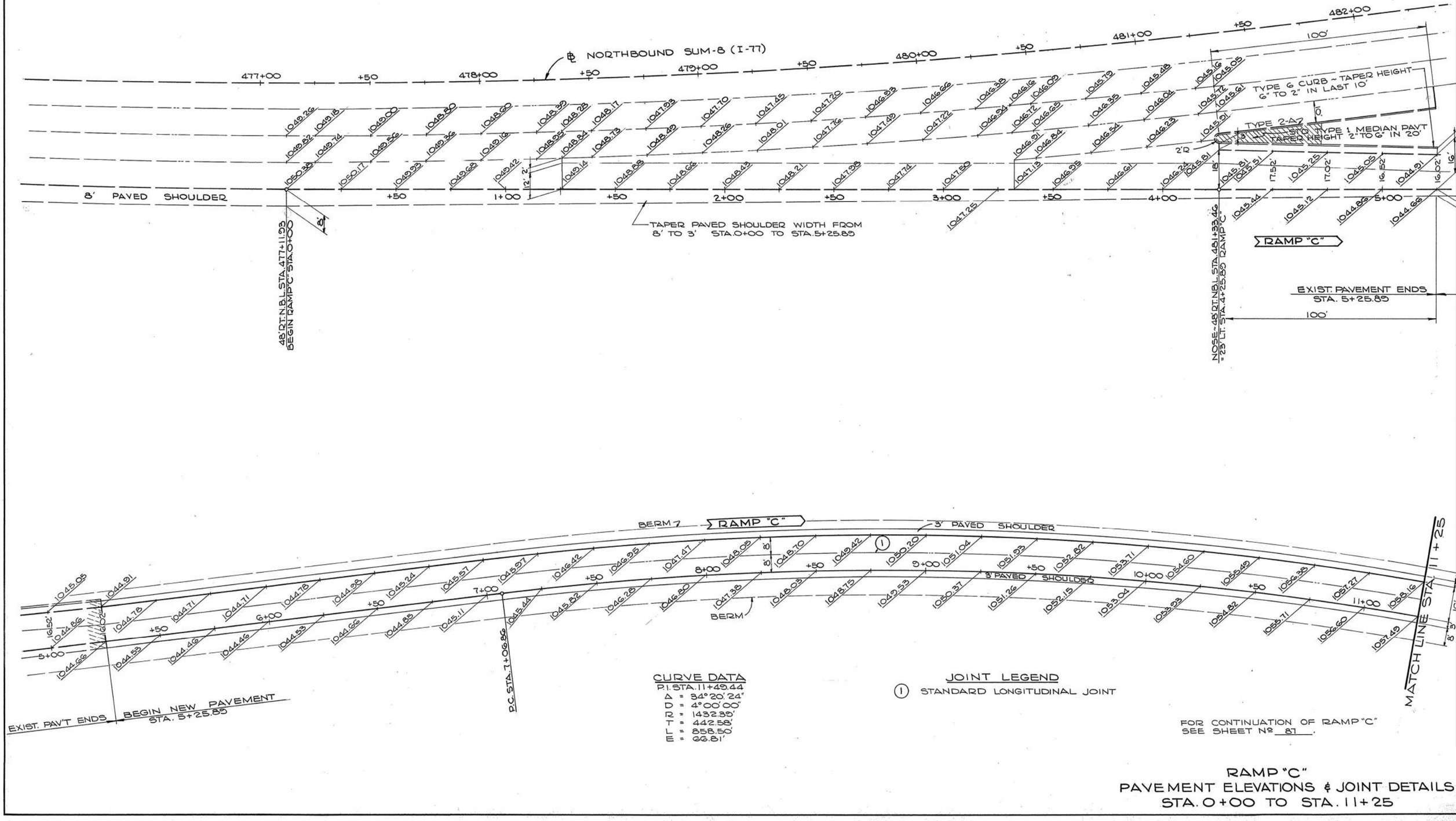
SEEDING	
END SQ.	
WIDTH YDS.	

RAMP "C" STA. 23+00 TO 25+86.97

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

86
234

SUMMIT COUNTY
SUM-277-0.00



CURVE DATA
P.I. STA. 11+49.44
Δ = 34° 20' 24"
D = 4° 00' 00"
R = 1432.39'
T = 442.58'
L = 858.50'
E = 66.81'

JOINT LEGEND
(1) STANDARD LONGITUDINAL JOINT

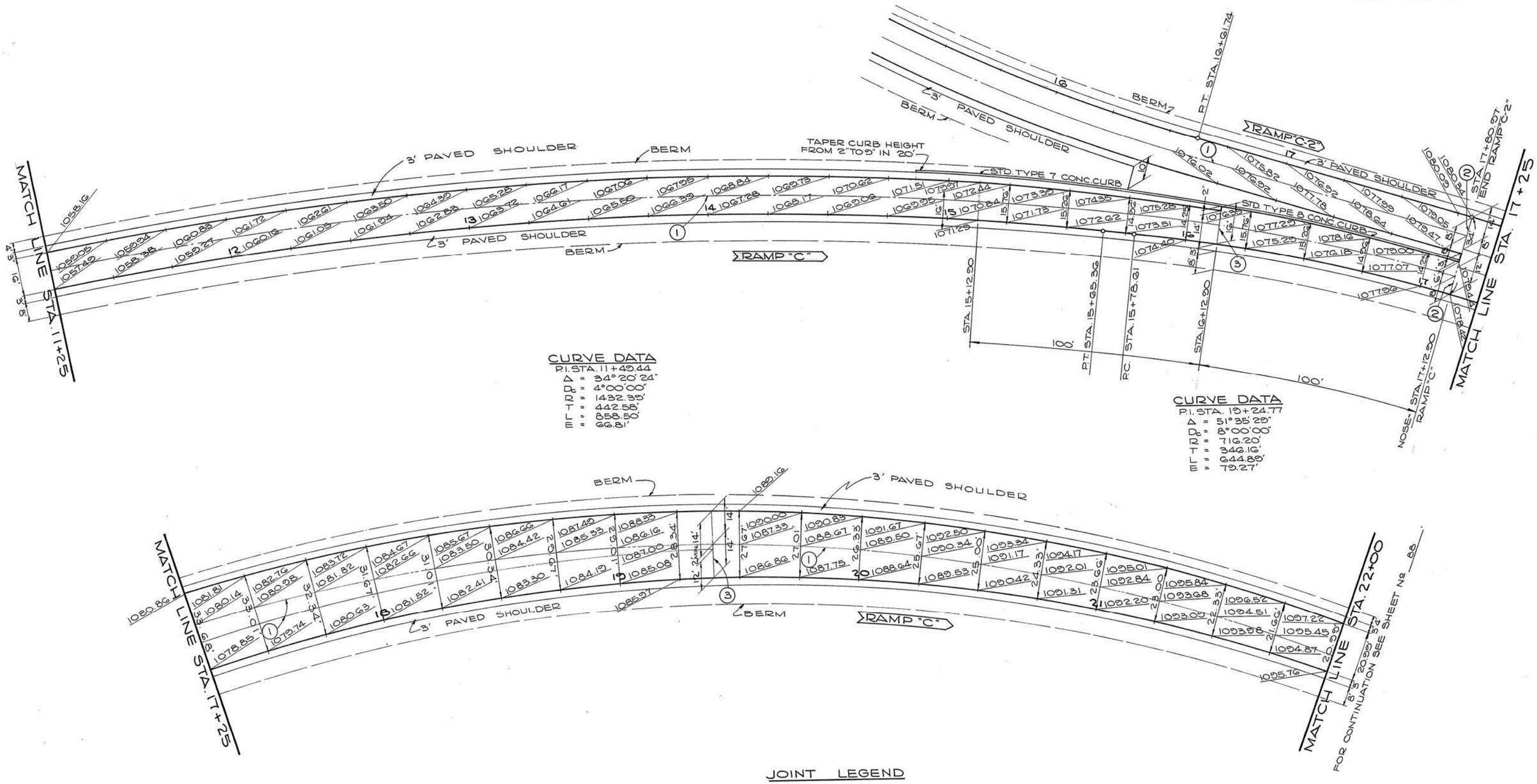
FOR CONTINUATION OF RAMP "C" SEE SHEET Nº 87.

RAMP "C"
PAVEMENT ELEVATIONS & JOINT DETAILS
STA. 0+00 TO STA. 11+25

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(8)12.8	

87
234

SUMMIT COUNTY
SUM-277-0.00



JOINT LEGEND

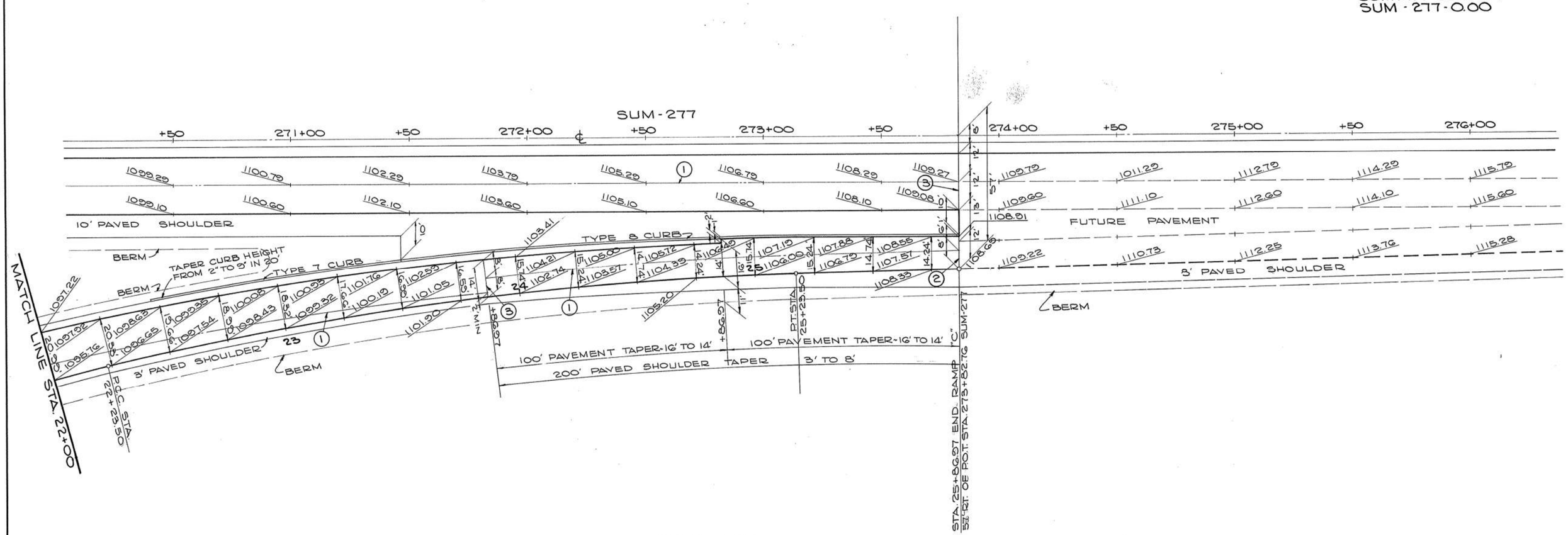
(1) STANDARD LONGITUDINAL JOINT
(2) STANDARD EXPANSION JOINT
(3) STANDARD CONTRACTION JOINT

RAMP "C"
PAVEMENT ELEVATIONS & JOINT DETAILS
STA. 11+25 TO STA. 22+00

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

88
234

SUMMIT COUNTY
SUM-277-0.00



CURVE DATA
P.I. STA. 19+24.77
Δ = 51° 35' 25"
D_c = 8° 00' 00"
R = 716.20'
T = 346.19'
L = 644.89'
E = 79.27'

JOINT LEGEND

(1) STANDARD LONGITUDINAL JOINT
(2) STANDARD EXPANSION JOINT
(3) STANDARD CONTRACTION JOINT

CURVE DATA
P.I. STA. 23+71.03
Δ = 11° 45' 41"
D_c = 4° 00' 00"
R = 1432.39'
T = 147.53'
L = 294.03'
E = 7.58'

RAMP "C"
PAVEMENT ELEVATIONS & JOINT DETAILS
STA. 22+00 TO STA. 25+86.97

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(5)123	

89
234

SUMMIT COUNTY
SUM-277-0.00

CURVE DATA SUM-8 (I-77)

S. BOUND LANE	N. BOUND LANE
P.I. STA. 482+93.20	P.I. STA. 485+55.51
Δ = 30°33'00"	Δ = 30°33'00"
D_c = 1°28'00"	D_c = 1°28'00"
R = 3906.53'	R = 3906.53'
L_c = 2082.95'	L_c = 2082.95'
T = 1066.87'	T = 1066.87'
E = 143.06'	E = 143.06'

STA. 255+11.69 U.S. 224 = STA. 499+89.60 SUM-8

CURVE DATA RAMP "C-1"

18-B	18	18-A
L_s = 200.00'	Δ = 173°35'27"	L_s = 200.00'
θ_s = 24°00'00"	D_c = 24°00'00"	θ_s = 24°00'00"
L.T. = 134.58'	R = 238.73'	L.T. = 134.58'
S.T. = 67.80'	L_c = 723.30'	S.T. = 67.80'

CURVE DATA RAMP "C-2"

16-A	16	16-A
L_s = 150.00'	Δ = 68°01'46"	Δ = 14°27'48"
θ_s = 12°22'30"	D_c = 15°00'00"	D_c = 7°00'00"
T_1 = 95.79'	R = 381.97'	R = 818.51'
T_2 = 54.80'	T = 257.78'	T = 103.85'
	L_c = 453.53'	L_c = 206.62'

19	15
Δ = 10°34'37"	Δ = 12°46'26"
D_c = 2°30'00"	D_c = 1°30'00"
R = 2291.83'	R = 3819.72'
T = 212.14'	T = 427.57'
L_c = 423.08'	L_c = 851.59'

BRIDGE Nº SUM-8-0930

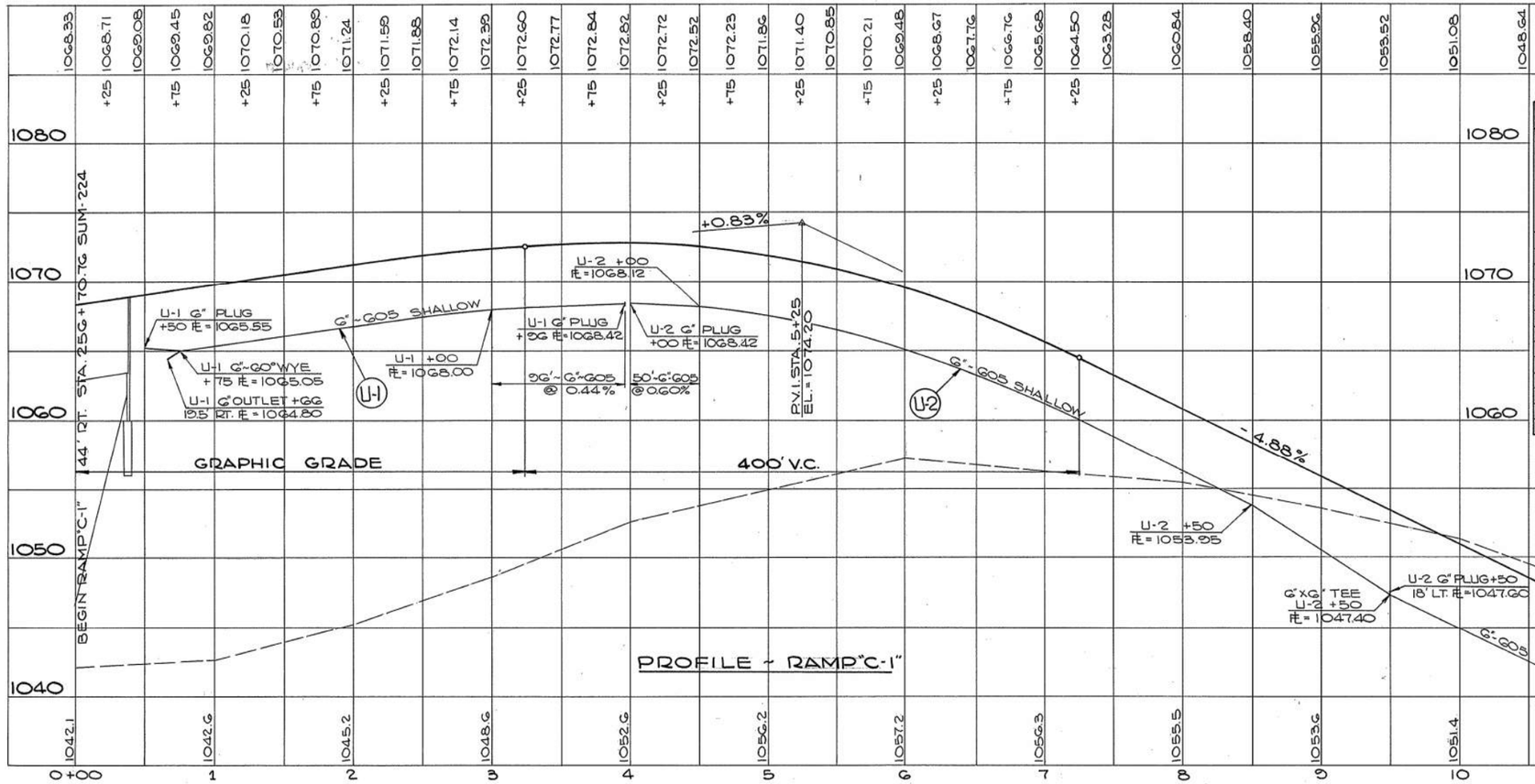
TYPE: CONTINUOUS WELDED PLATE GIRDERS WITH REINF. CONCRETE DECK & SUBSTRUCTURE
SKEW: 54°10'51" R.F. TO LOCAL TANGENT
SPANS: 65'-1 ½" - 94'-3" - 66'-1 ½" C/C BEARINGS
ROADWAY: 28'-0" F/F PARAPETS
LOAD FREQUENCY: C.F. 2000 ADEQUATE FOR AASHO ALTERNATE LOADING
WEARING SURFACE: 1" MONOLITHIC
APPROACH SLABS: 25' LONG (AS-1-54)
ALIGNMENT: 15°00' CURVE LT.
SUPERELEVATION: .0833'/FT.
SLOPE PROTECTION: GO1 CRUSHED AGGREGATE

STA. 252+81.85 SUM-224 = STA. 500+69.05 SUM-8
12' RT. STA. 501+48.92 S.B. ℄ BEGIN RAMP "C-2" PC STA. 0+00
53°36'00"
NORTHBOUND I-77
SOUTHBOUND I-77
Exist. Temp. Guard Rail
Exist. 6" Underdrain
Exist. NP CCB
NOSE 12' RT. STA. 497+29.11 RAMP "C-2"
PT STA. 4+18.13 RAMP "C-2"
EXIST. PAVT. ENDS
BEGIN NEW PAVT. STA. 5+18.13
Exist. 18" CMP
Exist. 6" Underdrain
PT STA. N.B. L. 495+71.55
Exist. Std. No. 8 C.B.
24" Pipe
Exist. 15" Pavt.
SC STA. 15+62.37
CS STA. 15+75.50
SC STA. 10+61.59
Exist. 30" Pipe
Exist. 18" Pipe
Exist. Std. No. 8 C.B.
Exist. Std. No. 8 C.B.
Exist. Std. No. 8 C.B.

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-0(5)123	

90
234

SUMMIT COUNTY
SUM-277-0.00

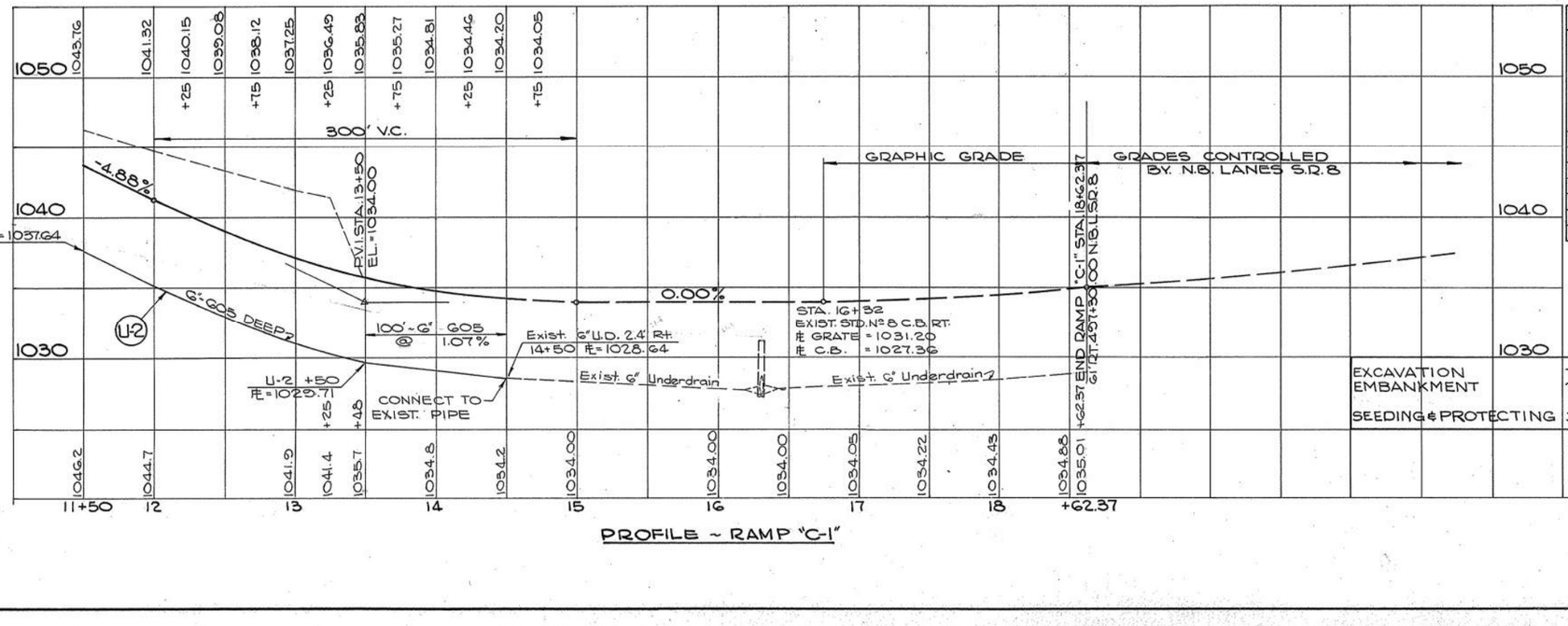


DRAINAGE QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	G07 JUTE MATTING	PIPE SPECIAL 6"-60° WYE	PIPE SPECIAL 6"x6"x6" TEE	PIPE SPECIAL 6" END BEND	G03 CONDUIT 6" TYPE F	G03 CONDUIT 6" TYPE B WITH CL. B BEDDING	G05 UNDERDRAIN 6" SHALLOW	G05 UNDERDRAIN 6" DEEP	660 BERM & SLOPE PROTECTION
	RAMP "C-1"			SQ.YDS.	EACH			LIN. FT.		LIN. FT.		S.Y.
U-1	0+50	3+96	RT.		1			10		354		
U-2	4+00	14+50	RT.			1				550	520	
D-1	6+00	9+00	LT.	317								
D-2	10+00	13+70	LT.	342								
D-3	10+00	13+50	RT.	263								
	RAMP "C-2"											
U-3	5+28	9+30	LT.							402		
U-4	11+88	17+80.97	LT&RT.		1		2	10	20	600		
D-4	9+26		LT.									28
SHEET TOTAL				922	2	1	2	20	20	1906	520	28

PAVEMENT & ROADWAY QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	G06 GUARD RAIL TYPE 4	G11 REINF. CONCRETE APPROACH SLAB T=13"	G12 CONCRETE TRAFFIC ISLAND	G09 CONC. CURB STD. TYPE 6	G09 CONC. CURB STD. TYPE 7	20 EXIS CON CUR REM
	RAMP "C-1"			LIN.FT.	SQ.YD.	SQ.YD.	LIN. FT.		
GR-1	0+67.3	8+05	RT.	737.5					
GR-2	6+00	12+22.8	LT.	675					
P-1	0+42.5	0+67.5	LT.		33.33				
P-2	3+50.38	4+50.38	LT.			22.45	144		
P-3	14+17.37	15+81.87	LT.					164.5	20
	RAMP "C-2"								
GR-3	0+00	1+62.5	LT.	162.5					
GR-4	6+03.5	9+28.5	LT.	325					
GR-5	7+94.5	9+82	RT.	187.5					
GR-6	12+07	15+57	RT.	350					
GR-7	11+91.5	17+80.97	LT.	589.5					
P-4	9+23.33	9+48.33	RT.		44.44				
P-5	11+81.93	12+06.93	RT.		44.44				
SHEET TOTAL				3027.0	122.21	22.45	144	164.5	20



PROFILE ~ RAMP "C-1"

PAVEMENT & ROADWAY QUANTITIES

STATION FROM	STATION TO	SIDE	451 10" REINF. P.C.C. PAV'T	451 8" REINF. P.C.C. PAV'T	310 SUB-BASE GRAD'G "A" OR "B"	310 SUB-BASE	409 SEAL COAT BIT. MAT'L	409 SEAL COAT COVER AGG. Nº 8	203 SUB-GRADE PREP-ARAT'N	301 3" BIT. AGG. BASE	304 AGG. BASE	SPEC'L DRAIN. CONN. USING Nº 8 AGG.
			SQ.YD.		CU.YD.		GAL.	C.Y.	S.Y.	C.Y.	C.Y.	C.Y.
RAMP "C-1"												
0+42.5	14+62.37	LT.&RT.	878.92*	1987.08	610.5	26.78	250.4	8.3	3960	172.9	60.52	95.3
RAMP "C-2"												
5+18.13	17+80.97	LT&RT.		1761.85	425.1		188.4	6.0	2604	125.6	34.23	72.9
SHEET TOTAL			878.92	3749.83	1035.6	26.8	447.8	14.3	6564	298.5	94.75	168.2

* - STA. 0+67.5 TO STA. 3+50.38

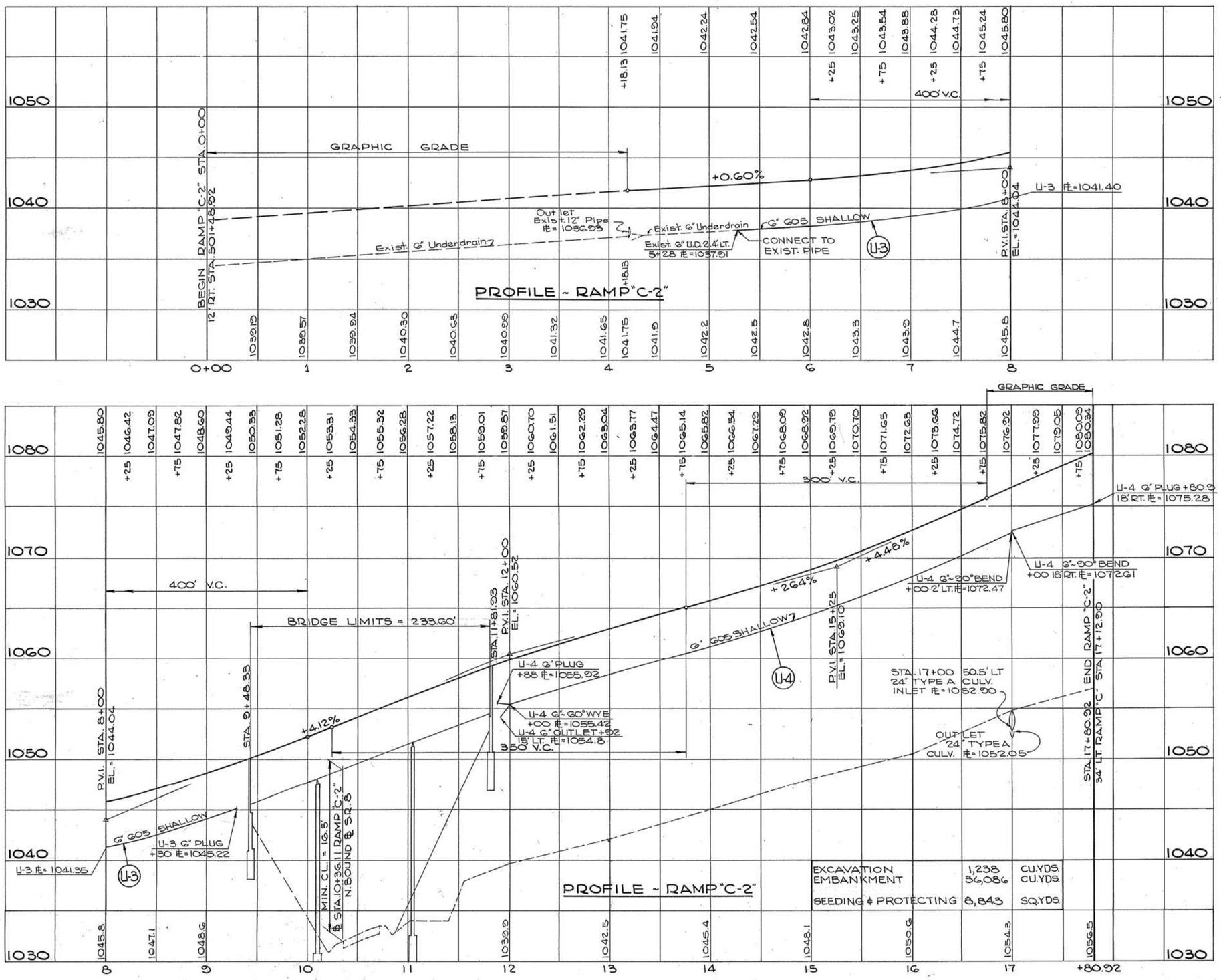
EXCAVATION EMBANKMENT	70,961 28,210	CU.YDS. CU.YDS.
SEEDING & PROTECTING	31,838	SQ.YDS.

RAMP "C-1" ~ PROFILE
STA. 0+00 TO STA. 18+62.37

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

91
234

SUMMIT COUNTY
SUM-277-000



EXCAVATION	1,238	CU.YDS.
EMBANKMENT	34,086	CU.YDS.
SEEDING & PROTECTING	8,843	SQ.YDS.

RAMP "C-2" - PROFILE
STA. 0+00 TO STA. 17+80.92

FED. AID DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

92
234

SUMMIT COUNTY
SUM-277-0.00

SEEDING	
END WIDTH	SQ. YDS.
178	938
157	1444
103	706
76	AHD.
0	BK.

	END AREA		VOLUM	
	CUT	FILL	CUT	FI
AHD.	1075	1252		
BK.	1075	1611		
			1872	28
	946	1451		
			2208	55
	246	1484		
			350	38
AHD.	27	1408		
BK.	0	0		

RAMP "C-1" STA. 1+29 TO 3+50.38

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

93
234

SUMMIT COUNTY
SUM-277-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
72	938
97	7,157
66	806
271	2830
240	2456
202	1048

ADD FOR GRADED AREA STA. 6+00 TO STA. 13+50 RT.

BL. LENGTH — LENGTH ~ AVG DIST. BETWEEN C.G.s

NOTE: From Sta. 6+00 Ahd. to Sta. 13+50 the earthwork within the loop is based on an average length between Center of Gravities of the individual interior end areas.

AVG. LENGTH = 13.35'

AVG. LENGTH = 38.41'

AVG. LENGTH = 37.35'

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FIL
	2473 C.G.	340 BL.		
			3475 C.G.	213 BL.
	2466 C.G.	815 BL.		
			3824 C.G.	317 BL.
	2384 C.G.	900 BL.		
			4586	32
	2462	868		
			7407	36
	1685	1106		
			2559	2

RAMP "C-1" STA. 4+00 TO STA. 8+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

SUMMIT COUNTY
SUM-277-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
55	643
67	744
67	264
74	548
78	678
107	AHD.
56	BK.
	242

AVG. LENGTH = 31.34'

B.L. C.G. — C.G. — M.L.
2.5:1 — 4:1
1040 — 1041.6 — 1041.66 — 11+95 — 1044.7 — 1037.2

AVG. LENGTH = 36.77'

B.L. C.G. — C.G. — M.L.
2.0:1 — 4:1
1050 — 1040 — 1046.24 — 1046.20 — 11+00 — 1047.8 — 1039.5

AVG. LENGTH = 30.14'

B.L. C.G. — C.G. — M.L.
1060 — 1050 — 1040 — 1051.12 — 1051.08 — 10+00 — 1051.4 — 1042.1
4:1
Begin Ditch Sta. 10+00

AVG. LENGTH = 13.86'

B.L. C.G. — C.G. — M.L.
1060 — 1050 — 1052.85 — 1052.81 — 9+65 — 1052.2
4:1

AVG. LENGTH = 26.07'

B.L. C.G. — C.G. — M.L.
DIKE ELEV. 1056.07
1060 — 1050 — 1055.96 — 9+00 — 1053.6
4:1 — 4:1

AVG. LENGTH = 26.34'

M.L. AHD. — A
B.L. LENGTH | LENGTH ~ AVG. DIST. BETWEEN C.G.'S
B.L. C.G. — C.G. — M.L.
AHD. 1060 — 100 — 80 — 60
4:1
1055.0 — 1059.18 — 8+34 — 1055.2
M.L. BK.

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
313 B.L.	0 B.L.		
2008 C.G.		1033 B.L.	6 B.L.
		2811 C.G.	
276 B.L.	35 B.L.		
2085 C.G.		1067 B.L.	13 B.L.
		3182 C.G.	
300 B.L.	38 B.L.		
2242 C.G.		321 B.L.	8 B.L.
		1174 C.G.	
195 B.L.	86 B.L.		
2286 C.G.		288 B.L.	8 B.L.
		2279 C.G.	
44 B.L.	205 B.L.		
2426 C.G.		55 B.L.	6 B.L.
		2360 C.G.	
AHD. 2494	288 B.L.		
BK. 2494 C.G.	228 B.L.	1196 C.G.	

RAMP "C-1" STA. 8+34 to STA. 11+95

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

SUMMIT COUNTY
SUM-277-0.00

SEEDING: END WIDTH | SQ. YDS.

40 20 ℄ 20 40 60 80 100 120 140 160 180 200

1050 / 1040 / 1030

218 AHD. 238 B.K.

AHD. B.K.

1032.15

4:1

1034.12
14+62.37 (END EXISTING PAVT.)

A A A A

1050

200 220

MATCH LINE

1597

1050 / 1040 / 1030

223

65 Rt. S.B. Sta. 492+50

Sta. 13+88 ~ 41.7' Lt. Exist. N° 8 C.B. Grate 1031.5. ft. C.B. 1028.26

1032.53

4:1

1034.81
14+00
1030.0

1458

13+88

EXIST. 18" @ .55%

302 AHD. 77 B.K.

1040 / 1030

12:1

1032.9

1035.88
13+50
1040.8
TOE OF EXISTING SLOPE

1035.51

4:1

B.L. End C.G.

C.G.

AVG. Length = 9.18'

197

1050 / 1040 / 1030

65

12:1 4:1

1034.4

1036.45
13+25
1041.5
TOP OF EXISTING SLOPE

1034.0

4:1 4:1

B.L. C.G.

C.G.

AVG. LENGTH = 18.16

312

1050 / 1040 / 1030

52

4:1

1037.2

1038.04
12+77
1042.3

1035.2

4:1 4:1

BL. Length Length ~ Avg. Dist. Between C.G.'s

C.G.

MATCH LINE

AVG. LENGTH = 31.34

451

60 40 20 ℄ 20 40 60 80 100 120 140 160 180 200 220 240

	END AREA CUT	END AREA FILL	VOLUM CUT	VOLUM F
AHD.	1805	0		
BK.	1933	0		
			4458	
	1980	0		
			3514	
AHD.	1534	0		
BK.	96	0		
BL.	BL.			
	1852			
C.G.			262	
BL.			BL.	
			643	
C.G.				
	469	0		
BL.	BL.			
	1966			
C.G.				
			727	
BL.				
			1303	
C.G.				
	345	0		
BL.	BL.			
	1943			
C.G.				
			1005	
BL.				
			2268	
C.G.				

RAMP "C-1" STA. 12+77 TO STA. 14+62.37

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

96
234

SUMMIT COUNTY
SUM-277-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
0	AHD.
64	BK.
	513
84	
	1150
123	
	1650
174	
	2083
201	
	876

End Earthwork Ramp "C-1"

1035.01
18+62.37
1040.9

1034.43
18+00
1039.1

17+00
1034.05

Sta 16+30 Rt.
Exist. N° 8 C.B.
℄ Grate 1031.20
℄ C.B. 1027.36

Exist 18" @ 0.40%

16+30
1034.00

1034.00
16+00

1034.00
15+00

	END AREA CUT	END AREA FILL	VOLUM CUT	VOLUM FIL
AHD.	0	0		
BK.	322	0		
			835	0
	405	0		
			1995	0
	672	0		
			3693	0
	1322	0		
			6018	0
	1926	0		
			2686	0

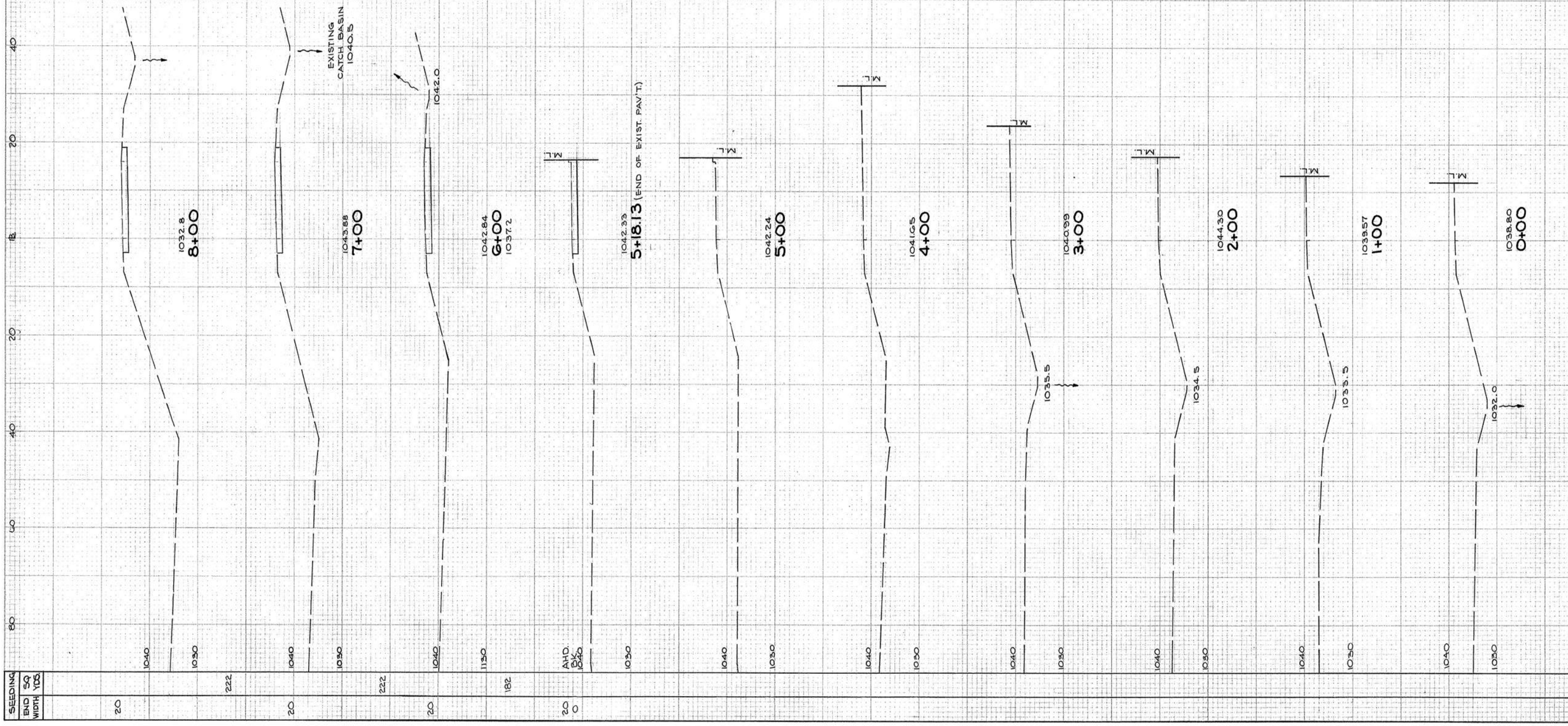
RAMP "C-1" STA. 15+00 TO 18+62.37

FED. AID DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(9)123	

SUMMIT COUNTY
SUM - 277 - 0.00

	ENDS AREA CUT	ENDS AREA FILL	VOLUME CUT	VOLUME FILL
8+00	28	0	104	0
7+00	28	0	104	0
6+00	28	0	80	0
AHD. BK.	25	0		

	SEEDING END WIDTH	SEEDING SQ YDS.
8+00	20	222
7+00	20	222
6+00	20	182
AHD. BK.	20	0



RAMP C-2 STA. 0+00 to STA. 8+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

98
234

SUMMIT COUNTY
SUM-277-0.00

END AREA	CUT	1637	1706	1680	1645	1573	1301	0
	FILL	10	115	62	74	112	151	18
VOLUME	CUT		2206	5445	3082	2685	905	1156
	FILL		80	292	126	155	51	61

AHD BK.

0 | 73 | 104

0 | 28 | 28

END EARTHWORK STA. 9+70

2:1

2:1

2:1

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	I-277-6(3)123

SUMMIT COUNTY
SUM-277-0.00

98
234

BND AREA CUT	BND AREA FILL	VOLUME CUT	VOLUME FILL
0	0	0	0
0	1225	3405	0
0	1175	5252	0
0	1457	1322	0
0	1802	4208	0
0	1830	2513	0
0	1735	2409	0

SEEDING END WIDTH	SEEDING SQ. YDS.
0	85
AHD BK.	
86	760
82	933
91	288
103	754
111	404
	528

1080.34
17+80.97
1054.5

1076.92
17+00
1054.3

1072.63
16+00
1050.6

1071.45
15+70
1049.9

1068.92
15+00
1048.1

1067.83
14+66
1047.2

C-4
TYPE "A" CONDUIT 706.02
CLASS "B" BEDDING @ 0.60%
142 – 24" TYPE "A"
1053.30

TOP DIKE - 1056.02
DIKE LT.
STA. 16+65 to 16+75

1055.7
1060
1050
100

1051.3
1051.2
1049.95
1051.6
1049.0
1047.6

2:1
4:1
3:1
2.71:1
2.15:1
2.2:1

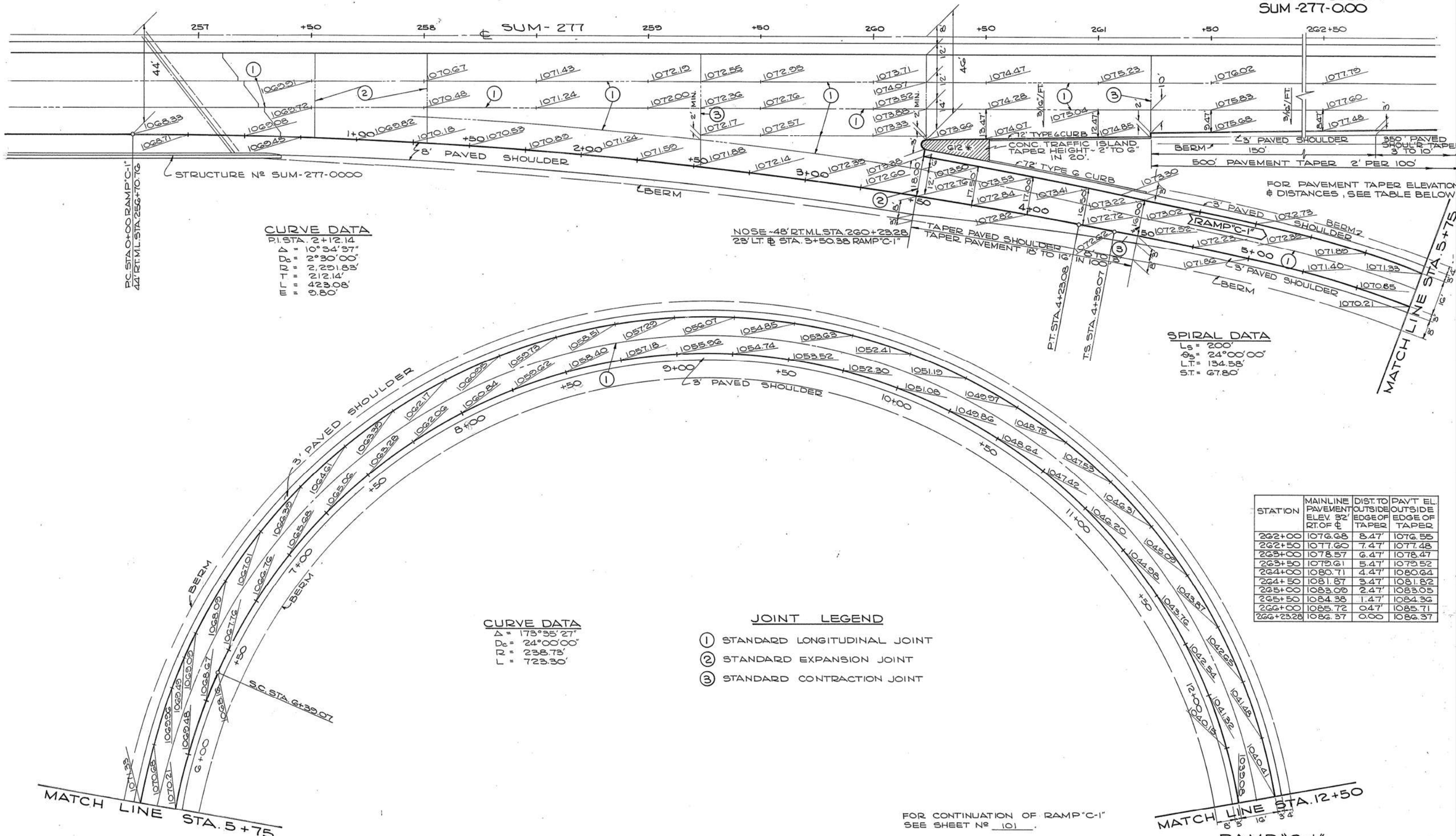
RAMP C-2 STA. 14+66 to STA. 17+80.97

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(8)128	

100
234

SUMMIT COUNTY
SUM-277-0.00

* - FOR NOSE DETAIL
SEE SHEET Nº 141.



CURVE DATA
P.I. STA. 2+12.14
Δ = 10° 34' 37"
D_c = 2° 30' 00"
R = 2,291.83'
T = 212.14'
L = 423.08'
E = 9.80'

SPIRAL DATA
L_s = 200'
θ_s = 24° 00' 00"
L.T. = 134.58'
S.T. = 67.80'

CURVE DATA
Δ = 173° 35' 27"
D_c = 24° 00' 00"
R = 238.73'
L = 723.30'

JOINT LEGEND
① STANDARD LONGITUDINAL JOINT
② STANDARD EXPANSION JOINT
③ STANDARD CONTRACTION JOINT

STATION	MAINLINE PAVEMENT ELEV. 32' RT. OF ℄	DIST. TO OUTSIDE EDGE OF TAPER	PAV'T EL. OUTSIDE EDGE OF TAPER
262+00	1076.68	8.47'	1076.55
262+50	1077.60	7.47'	1077.48
263+00	1078.57	6.47'	1078.47
263+50	1079.61	5.47'	1079.52
264+00	1080.71	4.47'	1080.64
264+50	1081.87	3.47'	1081.82
265+00	1083.08	2.47'	1083.05
265+50	1084.38	1.47'	1084.36
266+00	1085.72	0.47'	1085.71
266+23.28	1086.37	0.00	1086.37

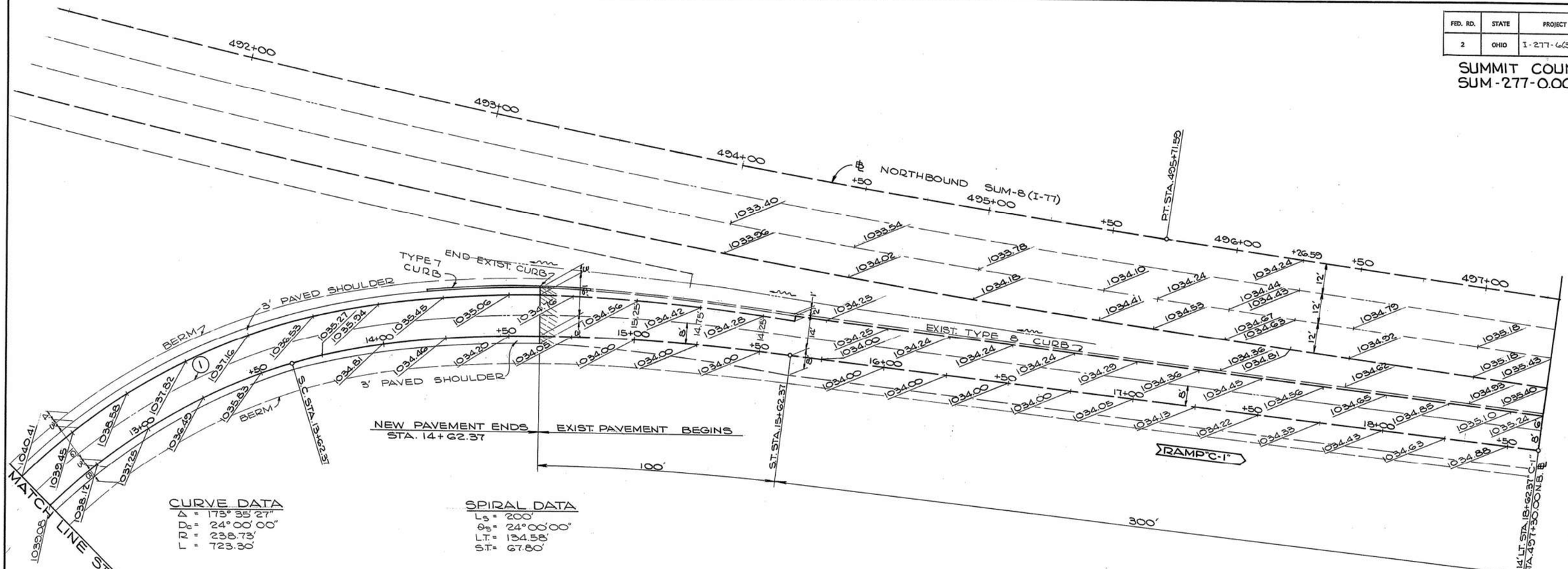
FOR CONTINUATION OF RAMP "C-1"
SEE SHEET Nº 101.

RAMP "C-1"
PAVEMENT ELEVATIONS & JOINT DETAILS
STA. 0+00 TO STA. 12+50

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

101
234

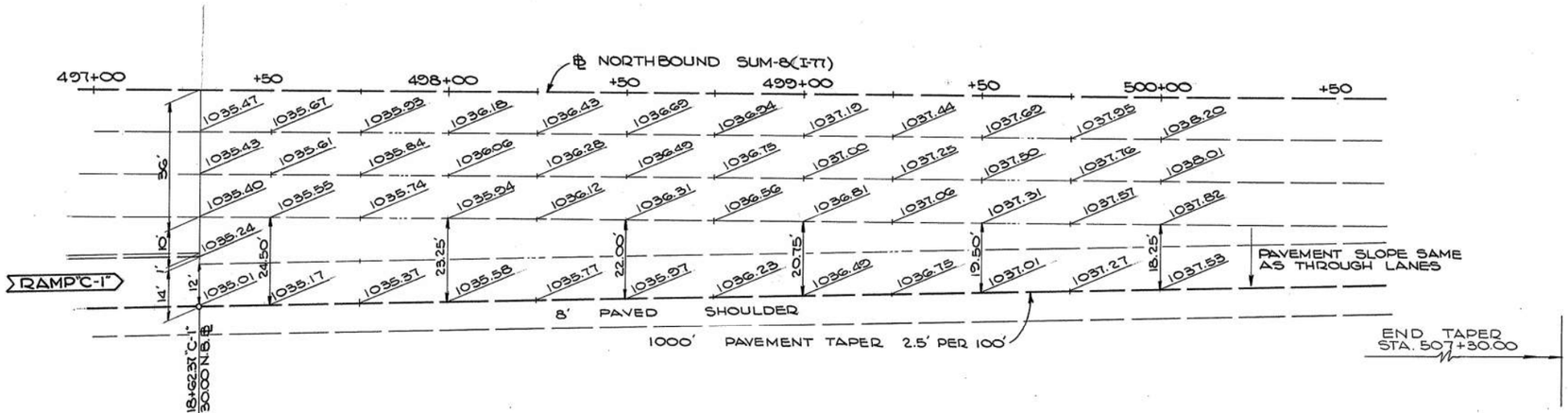
SUMMIT COUNTY
SUM-277-0.00



CURVE DATA
Δ = 173° 35' 27"
D_c = 24° 00' 00"
R = 238.73'
L = 723.30'

SPIRAL DATA
L_s = 200'
θ_s = 24° 00' 00"
L.T. = 134.58'
S.T. = 67.80'

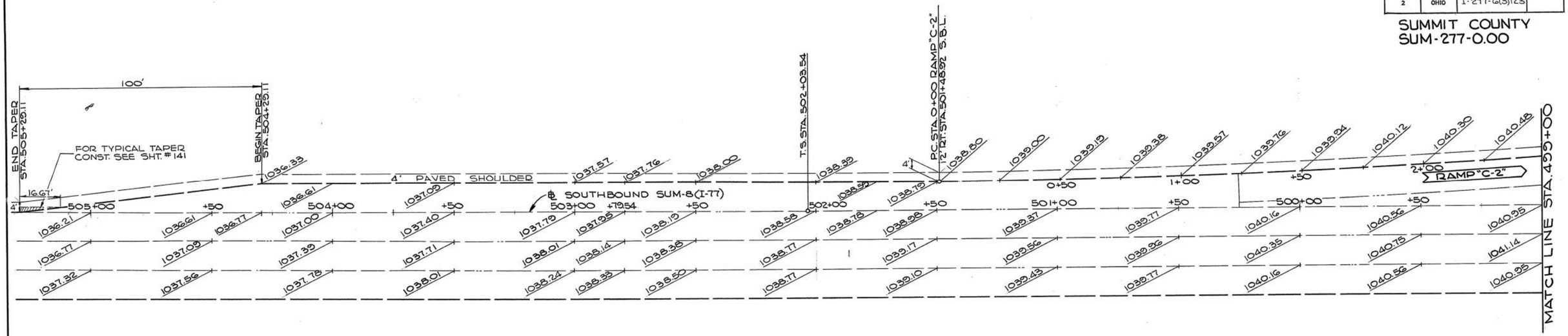
JOINT LEGEND
① STANDARD LONGITUDINAL JOINT



RAMP "C-1"
PAVEMENT ELEVATIONS & JOINT DETAILS
STA. 12+50 TO STA. 18+62.37

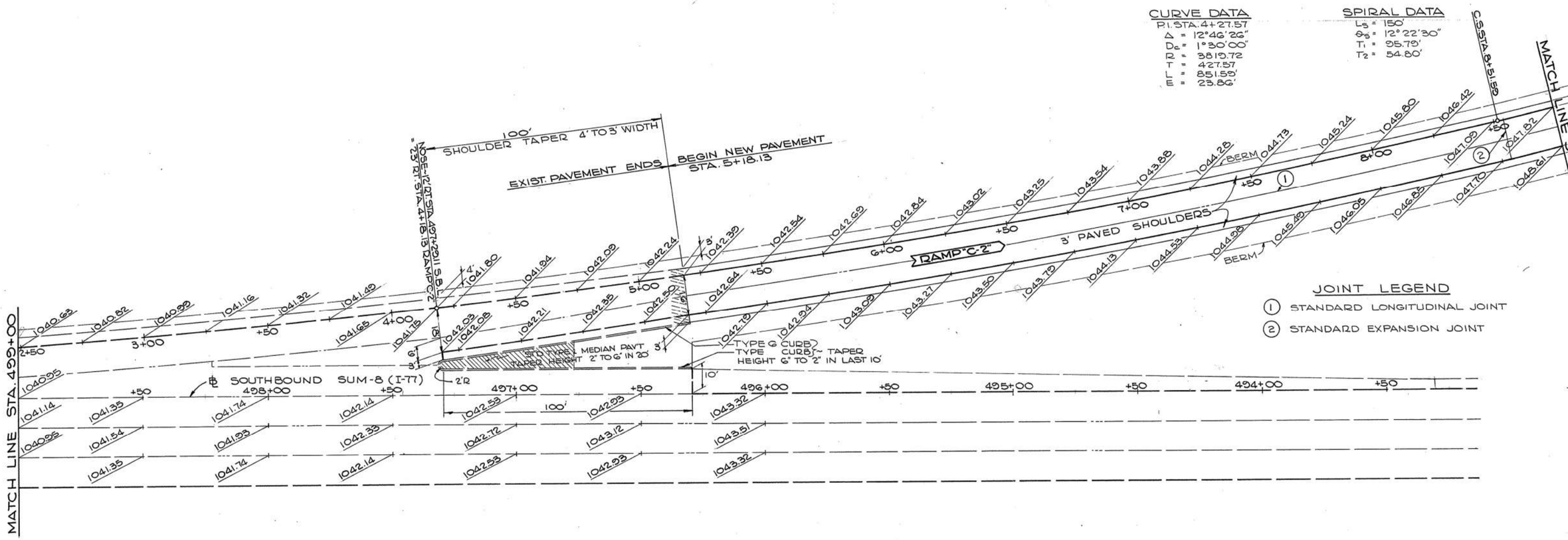
FED. RD.	STATE	PROJECT	
2	OHIO	I-277-(3)123	

SUMMIT COUNTY
SUM-277-0.00



CURVE DATA	
P.I. STA.	4+27.57
Δ	12°46'26"
D_a	1°30'00"
R	3819.72
T	427.57
L	851.59'
E	23.86'

SPIRAL DATA	
L_s	150'
θ_s	12°22'30"
T_1	95.79'
T_2	54.80'



JOINT LEGEND

① STANDARD LONGITUDINAL JOINT

② STANDARD EXPANSION JOINT

RAMP "C-2"
PAVEMENT ELEVATIONS & JOINT DETAILS
STA. 0+00 TO STA. 8+75

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-4(3)123	

103
234

SUMMIT COUNTY
SUM-277-0.00

MATCH LINE STA. 8+75

8' 3' 16' 3.4'

3' PAVED SHOULDER
BERM
1047.82
1048.61
1048.60
1049.57
1049.44
1050.59
1050.33
1051.66
1051.28
1052.61

8+00
+50
9+00
10+00
11+00
+50
12+00

493+00

S.C. STA. 10+01.59

STA. 491+97.12 N.B.L. SUM-8 (I-77) =
STA. 10+36.11 ℄ RAMP "C-2"

STRUCTURE Nº SUM-8-0530

℄ NORTHBOUND SUM-8 (I-77)

491+00

SPIRAL DATA
L_s = 150'
θ_s = 12°22'30"
T_1 = 95.79'
T_2 = 54.80'

CURVE DATA
P.I. STA. 15+58.97
Δ = 14° 27' 48"
D_c = 7°00' 00"
R = 818.51'
T = 103.85'
L = 206.62'
E = 6.56'

CURVE DATA
P.I. STA. 12+64.17
Δ = 68° 01' 46"
D_c = 15°00'00"
R = 381.97'
T = 257.78'
L = 453.53'
E = 78.85'

1059.87
1060.70
BERM
1061.51
1062.29
3' PAVED SHOULDER
1063.04
1063.77
1064.47
1065.14
1065.82
1066.54
1067.29
1068.62
1067.87
1067.15
BERM
1066.47
1065.80
1065.10
1064.31
1063.62
1062.84
1062.03
1061.20
+50
13+00
14+00
MATCH LINE STA. 14+50

RAMP "C-2"

FOR RAMP "C" DETAILS
SEE SHEET Nº 86, 87, 88

MATCH LINE STA. 14+50
P.C.C. STA. 14+55.12

8' 3' 16' 3.4'

1068.09
BERM
1068.92
3' PAVED SHOULDER
1069.79
1070.70
1071.65
1072.63
1073.66
1074.72
1075.82
1076.92
1077.99
1079.05
1080.34
1069.27
1070.10
1070.97
1071.88
1072.64
1073.42
1074.72
1076.02
1076.92
1077.78
1080.05
1078.64
1079.47
1078.67
15+00
16+00
17+00
+50
3' PAVED SHOULDER
BERM
1074.25
1075.11
10
P.T. STA. 16+61.74
STA. 17+80.97
END RAMP "C-2"
NOSE-14' LT. STA. 17+12.90
P.T. STA. 15+65.36
P.C. STA. 15+78.61
RAMP "C"
14
15
16
17
18+00
19+00
+50

JOINT LEGEND
① STANDARD LONGITUDINAL JOINT
② STANDARD EXPANSION JOINT

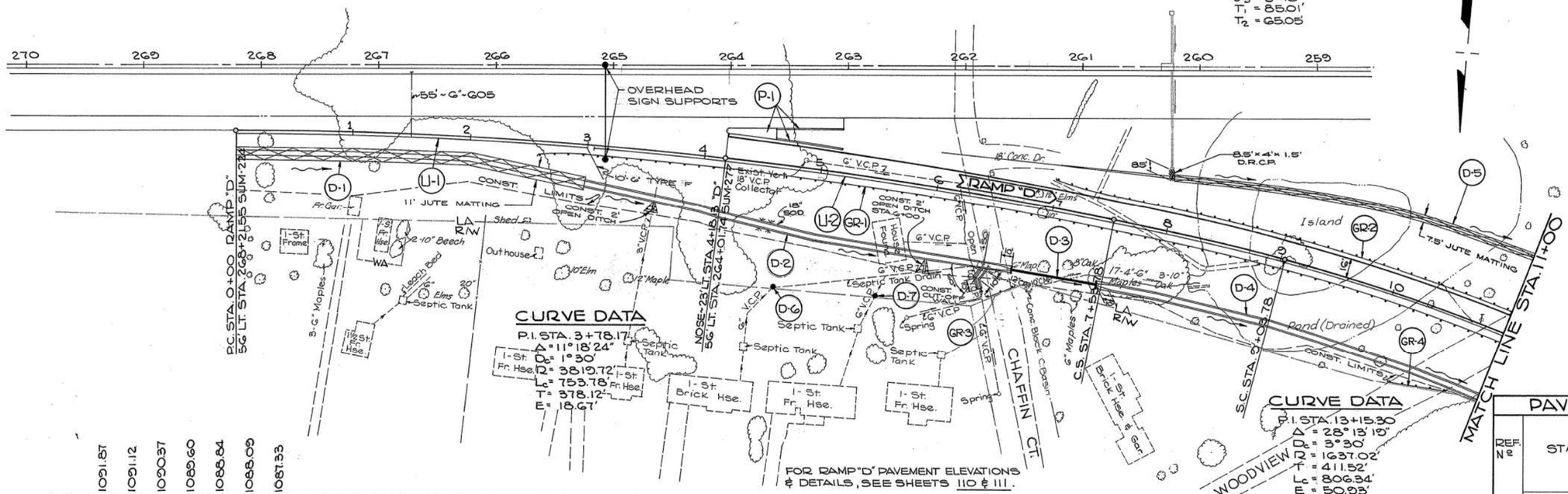
RAMP "C-2"
PAVEMENT ELEVATIONS & JOINT DETAILS
STA. 8+75 TO STA. 17+80.97

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

104
234

SUMMIT COUNTY
SUM-277-0.00

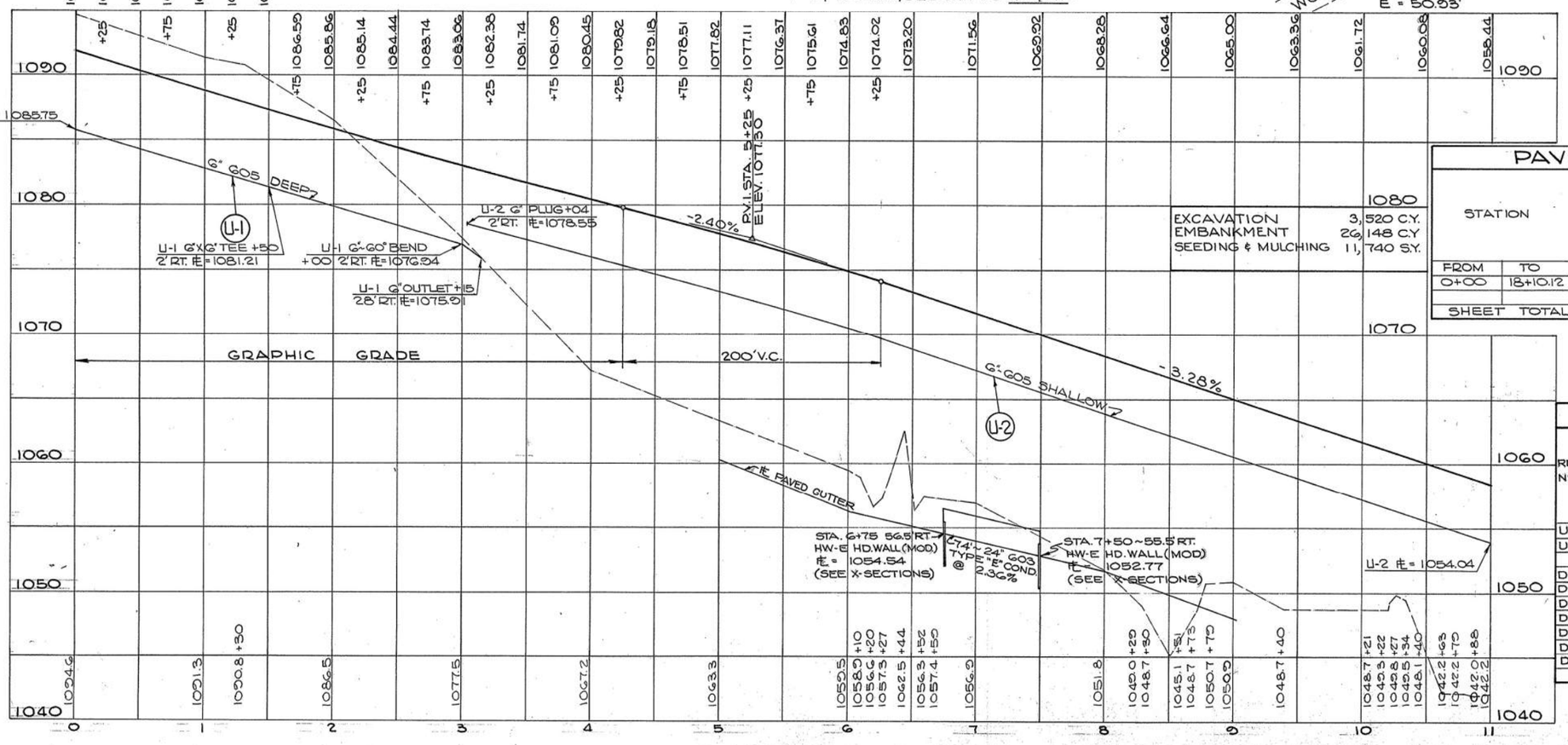
RAMP "D"
SPIRAL DATA
$L_s = 150'$
$\theta_s = 3°45'$
$T_1 = 85.01'$
$T_2 = 65.05'$



CURVE DATA
P.I. STA. 3+78.17
$\Delta = 11°18'24"$
$D_c = 1°30'$
$R = 3819.72'$
$L_c = 753.78'$
$T = 378.12'$
$E = 18.67'$

CURVE DATA
P.I. STA. 13+15.30
$\Delta = 28°13'19"$
$D_c = 3°30'$
$R = 1637.02'$
$T = 411.52'$
$L_c = 806.34'$
$E = 50.93'$

FOR RAMP "D" PAVEMENT ELEVATIONS & DETAILS, SEE SHEETS 110 & 111.



EXCAVATION	3,520 C.Y.
EMBANKMENT	26,148 C.Y.
SEEDING & MULCHING	11,740 S.Y.

PAVEMENT & ROADWAY QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	606 GUARD RAIL TYPE 4	612 CONCRETE TRAFFIC ISLAND	609 CONC. CURB STD. TYPE 6	609 CONC. CURB STD. TYPE 7	202 EXIST. CONC. CURB REMOVED
				LIN. FT.	SQ. YD.	LIN. FT.		
GR-1	2+59.5	18+22	RT.	1562.5				
GR-2	7+00	16+00	LT.	300				
GR-3	6+58	6+78	RT.	25				
GR-4	10+20	10+70	RT.	50				
P-1	4+18.13	5+18.13	LT.		34.12	114		
P-2	17+50	18+28.5	LT.				78.5	20
SHEET TOTAL				2537.5	34.12	114	78.5	20

PAVEMENT & ROADWAY QUANTITIES

STATION FROM	STATION TO	SIDE	451 10" REINF. P.C.C. PAV'T	451 9" REINF. P.C.C. PAV'T	310 SUB-BASE GRAD'G "A" OR "B"	310 SUB-BASE	409 SEAL COAT BIT. MAT'L	409 SEAL COAT COVER AGG. Nº 8	203 SUB-GRADE PREP-ARAT'N	301 3" BIT. AGG. BASE	304 AGG. BASE	SPEC'L DRAIN. CONN. USING Nº 8 AGG.
			SQ. YD.		CU. YD.		GAL.	C.Y.	S.Y.	C.Y.	C.Y.	C.Y.
0+00	18+10.12	LT & RT.	1026.74*	2485.76	733.8	35.4	331.9	10.6	4874	221.3	78.8	119.2
SHEET TOTAL			1026.74	2485.76	733.8	35.4	331.9	10.6	4874	221.3	78.8	119.2

* - STA. 0+00 TO STA. 4+18.13

DRAINAGE QUANTITIES

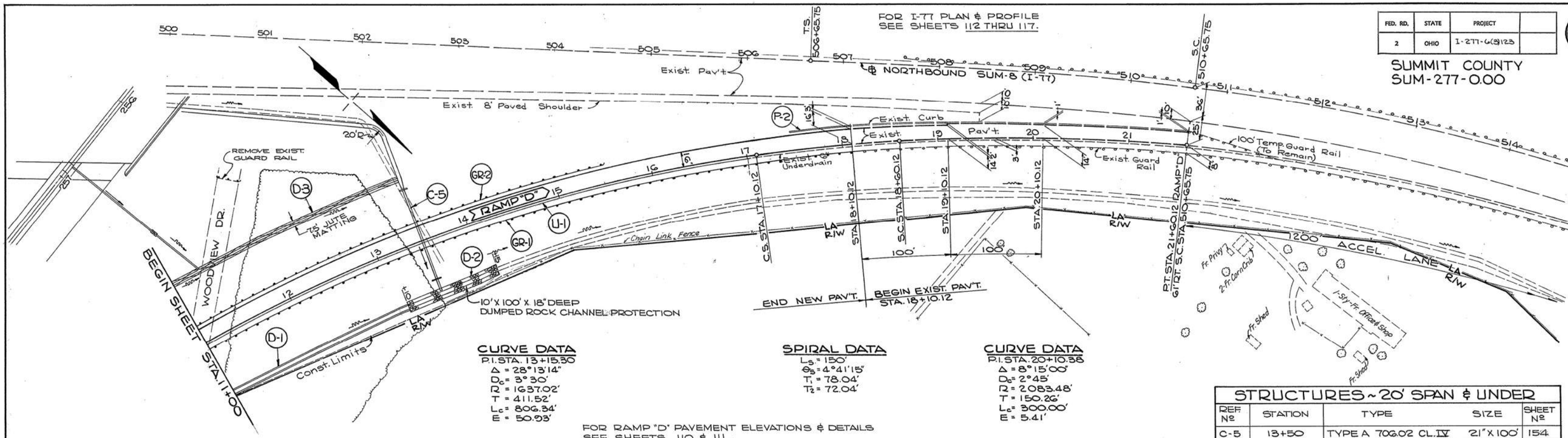
REF. Nº	STATION FROM	STATION TO	SIDE	INSPECTION WELL AS PER PLAN	601 PAVED GUTTER STD. TYPE 1-4	602 CONCRETE MASONRY	603 CONDUIT 6" TYPE F	603 CONDUIT 24" TYPE E	PIPE SPEC'L 6" 60° BEND	605 UNDERDRAINS 6" SHALLOW	605 UNDERDRAINS 6" DEEP	660 SODDING	661 JUTE MATTING
				EA.	L.F.	C.Y.	LIN. FT.		EA.	LIN. FT.		SQ. YDS.	SQ. YDS.
U-1	0+00	3+15	RT.				10		1		320		
U-2	3+04	11+00	RT.							796			
D-1	0+00	3+00	RT.										36
D-2	3+00	6+75	RT.		374							125	
D-3	6+75	7+50	RT.			1.38		74					
D-4	7+50	11+00	RT.		340							113	
D-5	8+00	11+00	LT.										20
D-6	4+70	104'	RT.	1									
D-7	5+60	100'	RT.	1									
SHEET TOTAL				2	714	1.38	10	74	1	796	320	238	56

RAMP "D"
PLAN & PROFILE
STA. 0+00 TO STA. 11+00

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

105
234

SUMMIT COUNTY
SUM-277-0.00



CURVE DATA
P.I. STA. 13+15.30
$\Delta = 28°13'14"$
$D_c = 3°30'$
$R = 1637.02'$
$T = 411.52'$
$L_c = 806.34'$
$E = 50.93'$

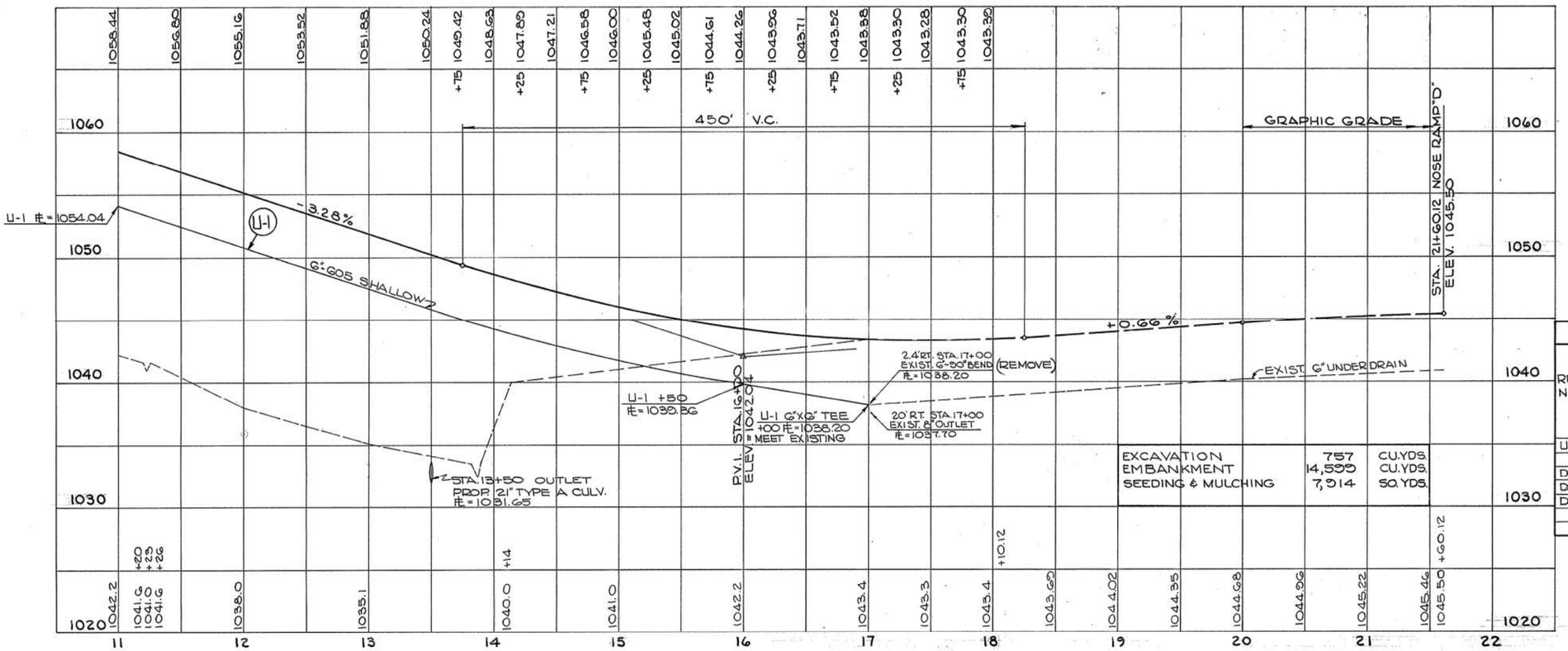
SPIRAL DATA
$L_s = 150'$
$\theta_s = 4°41'15"$
$T_1 = 78.04'$
$T_2 = 72.04'$

CURVE DATA
P.I. STA. 20+10.38
$\Delta = 8°15'00"$
$D_c = 2°45'$
$R = 2083.48'$
$T = 150.26'$
$L_c = 300.00'$
$E = 5.41'$

FOR RAMP "D" PAVEMENT ELEVATIONS & DETAILS SEE SHEETS 110 & 111.

STRUCTURES ~ 20' SPAN & UNDER

REF. Nº	STATION	TYPE	SIZE	SHEET Nº
C-5	13+50	TYPE A 706.02 CL. IV	21"X 100'	154



FOR PAVEMENT & ROADWAY QUANTITIES SEE SHEET Nº 104.

DRAINAGE QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	601 PAVED GUTTER STD. TYPE 1-4 LIN. FT.	601 DUMPED ROCK CHANNEL PROT'N C.Y.	660 SODDING S.Y.	PIPE SPEC'L 6"X6" TEE EACH	605 6" UNDERDRAIN SHALLOW LIN. FT.	GG? JUTE MATTING SQ.YI
U-1	11+00	17+00	RT.				1	600	
D-1	11+00	13+10	RT.	203		67			
D-2	13+10	14+15	RT.		556				
D-3	11+00	13+50	LT.						217
SHEET TOTAL				203	556	67	1	600	217

EXCAVATION 757 CU.YDS.
EMBANKMENT 14,539 CU.YDS.
SEEDING & MULCHING 7,914 SQ.YDS.

RAMP "D"
PLAN & PROFILE
STA. 11+00 TO STA. 21+60.12

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

SUMMIT COUNTY
SUM-277-0.00

| | | |

FED. AY. DIVISION	STATE	PROJECT
2	OHIO	I-277-4(3)123

SUMMIT COUNTY
SUM-277-0.00

STA	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
80	12	1185	64	2106
60	59	1090	159	1425
40	172	989	79	865
20	14	1042	81	4024
00	30	1131	22	1689
80	0	1149	4	4170
60	2	1109	5	3600

PHW-E HEADWALL (NOD)
3 @ 84 L
END PIPE STA. 7+50 RT. 1052.77

EXIST STREAM

10' TRANS. PAVED GUTTER BOTTOM FROM 2' to 4'

BEGIN 10' WIDE BENCH & 4:1 DITCH SLOPES

10+00

STA. 6+75

RAMP D STA. 7+00 to STA. 11+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

108
234

SUMMIT COUNTY
SUM - 277 - 0.00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
28	0		0
28	0	103	
0	73	52	135
8	217	15	537
56	408	101	984
23	1156	37	724
0	13	150	3803
67	1126	13	
		174	4170
		27	1126
		36	2140

1043.39
18+00
1043.4

1043.88
17+00
1043.4
(TOP OF EXISTING EMBANKMENT)

1044.26
16+00
1042.0

1046.00
15+00
1041.0

1048.19
14+15
1040.0

1048.93
13+90
1033.0
(TOE OF EXISTING EMBANKMENT)

CULVERT STA. 13+50
100'-21" TYPE "A" CONDUIT 706.02
CL. III WITH CL. B BEDDING
INV.-1032.33
OUTLET-1031.95

AHD. 0 7
BK. 67 1126

1031.95

1032.44
END PAVED GUTTER
STA. 13+00

1051.88
13+00
1035.1

℄ STREAM

1038.37

1055.16
12+00
1038.0

END DITCH LT.
STA. 13+50

1034.60

1038.13

END AREA SQ.	WIDTH YDS.
0	317
57	828
92	1133
148	422
156	1575
185	1806
146	936

RAMP D STA. 12+00 to STA. 18+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	1-277-4(3)123	

105
23

SUMMIT COUNTY
SUM - 277-0.00

AHD BK 28

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL

END RAMP
21+60.12
1045.50

21+00
1045.22

20+00
1044.68

19+00
1044.02

18+10.12 (BEGIN EXIST. PAVEMENT)
1043.44

2:1

M.L.

80 40 20 0 0 10 0 0

80 40 20 40 60 80 100

1050 1040 1030 1050 1040 1030 1050 1040 1030 1050 1040 1030 1050 1040 1030

END WIDTH	SQ. YDS.

RAMP D STA. 18+10.12 to STA. 21+60.12

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(8)123	

110
234

SUMMIT COUNTY
SUM-277-0.00

℄ SUM-277

MATCH LINE STA. 2+50

271 270 269 268 267 266

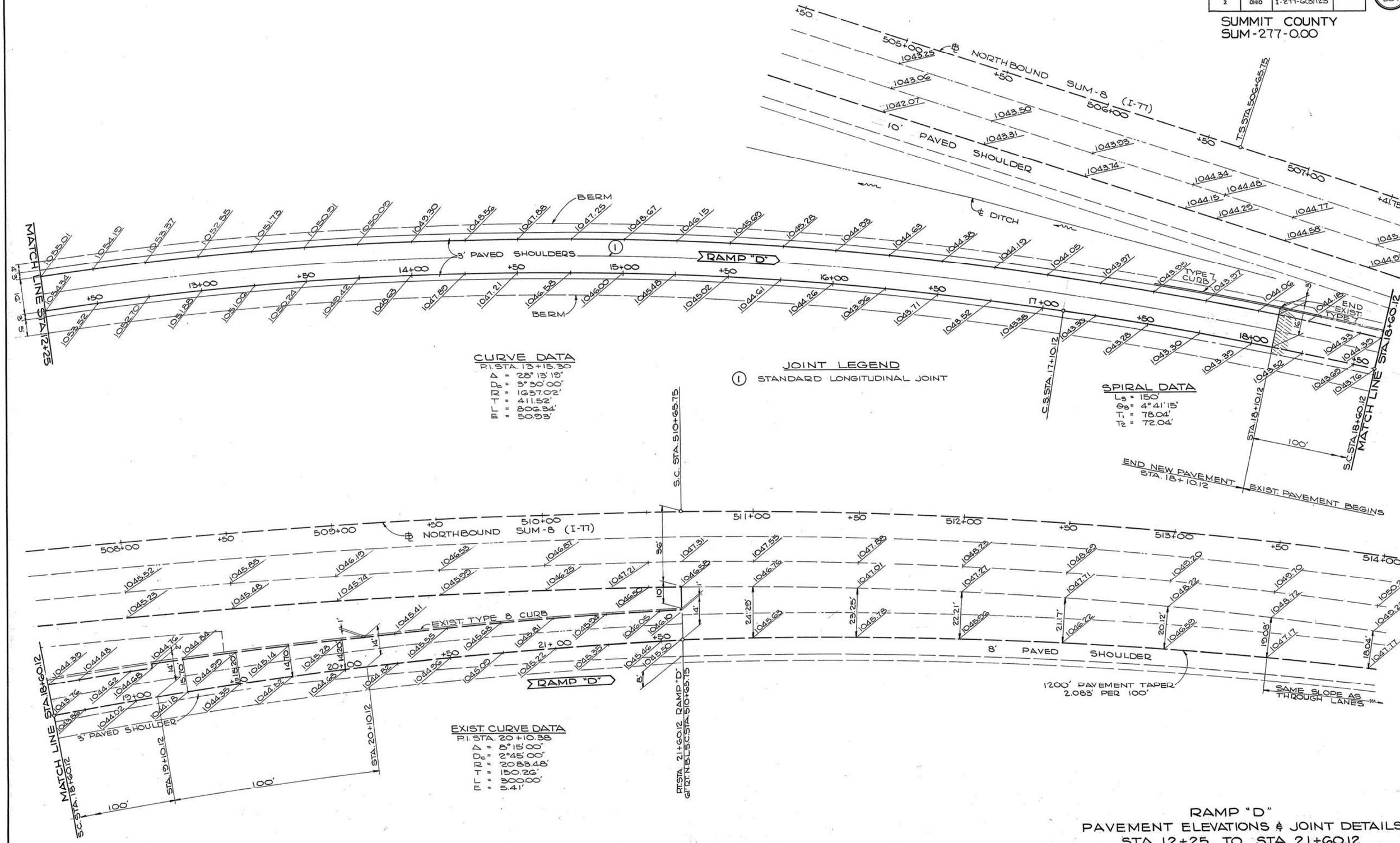
1003.46 1003.65 1102.10 1101.91 1101.81 1160.65 1100.46 1100.27 1099.10 1098.91 1098.72 1097.60 1097.41 1097.22 1096.10 1095.91 1095.72 1094.60 1094.41 1094.22 1093.10 1092.91 1092.72 1092.25 1092.06 1091.87 1091.60 1091.40 1091.12 1090.10 1089.91 1090.37 1089.60 1089.84 1088.82 1088.63 1088.09 1087.13 1087.33 1086.24 1086.59 1085.72 1085.53 1085.86 1085.14 1084.44

12' 12' 12' 36' 44' 12' 12' 12

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-4(3)123	

111
234

SUMMIT COUNTY
SUM-277-0.00



CURVE DATA
P.I. STA. 13+15.30
Δ = 28° 13' 19"
D_c = 3° 30' 00"
R = 1637.02'
T = 411.52'
L = 806.34'
E = 50.93'

JOINT LEGEND
① STANDARD LONGITUDINAL JOINT

SPIRAL DATA
L_s = 150'
θ_s = 4° 41' 15"
T_1 = 78.04'
T_2 = 72.04'

EXIST. CURVE DATA
P.I. STA. 20+10.38
Δ = 8° 15' 00"
D_c = 2° 45' 00"
R = 2083.48'
T = 150.26'
L = 300.00'
E = 5.41'

RAMP "D"
PAVEMENT ELEVATIONS & JOINT DETAILS
STA. 12+25 TO STA. 21+60.12

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

112
234

SUMMIT COUNTY
SUM-277-0.00

FOR RAMP "A" PLAN & PROFILE
SEE SHEETS 43 & 44

PLAZA DR.

WOODLEY

BLVD.

18" San. Sewer

San. M.H.

24" CMP

S.T. STA. 174+29.67 RAMP "A" ℄
℄ LT. STA. 492+00.00 S.B.

San. M.H.

R/W

4' Ditch

8' Ditch

℄ 2' Ditch

Guard Rail

℄ 6" Underdrain

Temp. Guard Rail

RAMP "A"

Conc. Curb

15" Pipe

EXIST. MONUMENT ASSEMBLY

STA. 495+00

END SHEET

SOUTH BOUND

I-77 (R-1)

℄ 6" Underdrain

2' Ditch

№8 C.B.

15" Pipe

2' Ditch

№8 C.B.

S.B. P.T. STA. 493+00.28

RAMP "C-2"

BEGIN SHEET STA. 485+00

City of Akron 18" San. Sewer

60" Pipe Culv.

30" Pipe Culv.

BRIDGE № SUM-8-0930
℄ STA. 10+36.11 RAMP "C-2"
= STA. 491+97.12 N.B. ℄ I-77

OVERHEAD SIGN

№8 C.B.

24" Pipe

℄ 6" Underdrain

NORTH BOUND

I-77

GR-1

GR-2

18" Pipe

℄ 6" Underdrain

Conc. Curb

Conc. Pav't

6" I-3 Pipe

4' Ditch

2' Ditch

№8 C.B.

S.B. I-77 CURVE DATA
P.I. STA. 482+93.20
Δ = 30°38'00"
Dc = 1°28'
R = 3906.53'
T = 1066.87'
Lc = 2082.95'

N.B. I-77 CURVE DATA
P.I. STA. 485+55.51
Δ = 30°33'00"
Dc = 1°28'
R = 3906.53'
T = 1066.87'
Lc = 2082.95'

RAMP "C"

RAMP "C-1"

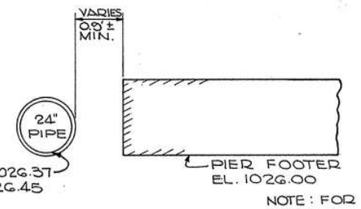
San. M.H.

R/W

FOR RAMP "C" PLAN & PROFILE
SEE SHEETS 78, 79 & 80

FOR RAMP C-1 & C-2 PLAN & PROFILE
SEE SHEETS 89, 90, & 91

A PORTION OF THE STORM SEWER MAY BE REMOVED, TO FACILITATE THE PLACEMENT OF THE BRIDGE PIER FOOTER. IF REMOVED IT SHALL BE REPLACED AT THE SAME GRADE & LOCATION AS SOON AS POSSIBLE. FLOW IS TO BE MAINTAINED ALL TIMES.
ALL COSTS INVOLVED FOR PERFORMING THE ABOVE SHALL BE INCLUDED IN ITEM 203, EXCAVATION FOR PAYMENT.



SECTION A-A

NOTE: FOR PILING DETAIL SEE SHEET № 206

ESTIMATED QUANTITIES

REF. №	STATION FROM	STATION TO	SIDE	202 TEMPORARY GUARD RAIL REMOVED FOR REUSE LIN. FT.	606 GUARD RAIL TYPE 4 LIN. FT.
S.B.L. R-1	491+00	492+00		100	
N.B.L. GR-1	490+44.5	491+44.5	RT.		100
N.B.L. GR-2	490+25.5	492+17	LT.		187.5
SHEET TOTAL				100*	287.5

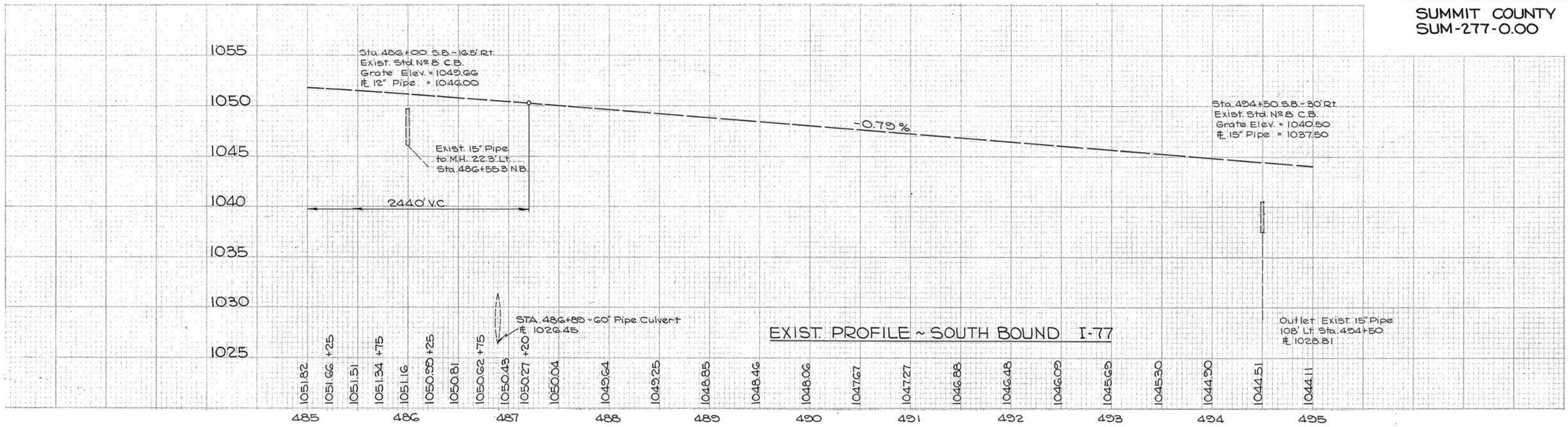
* TO BE REBUILT STA. 250+00 to STA. 260+00 SEE SHT. 18

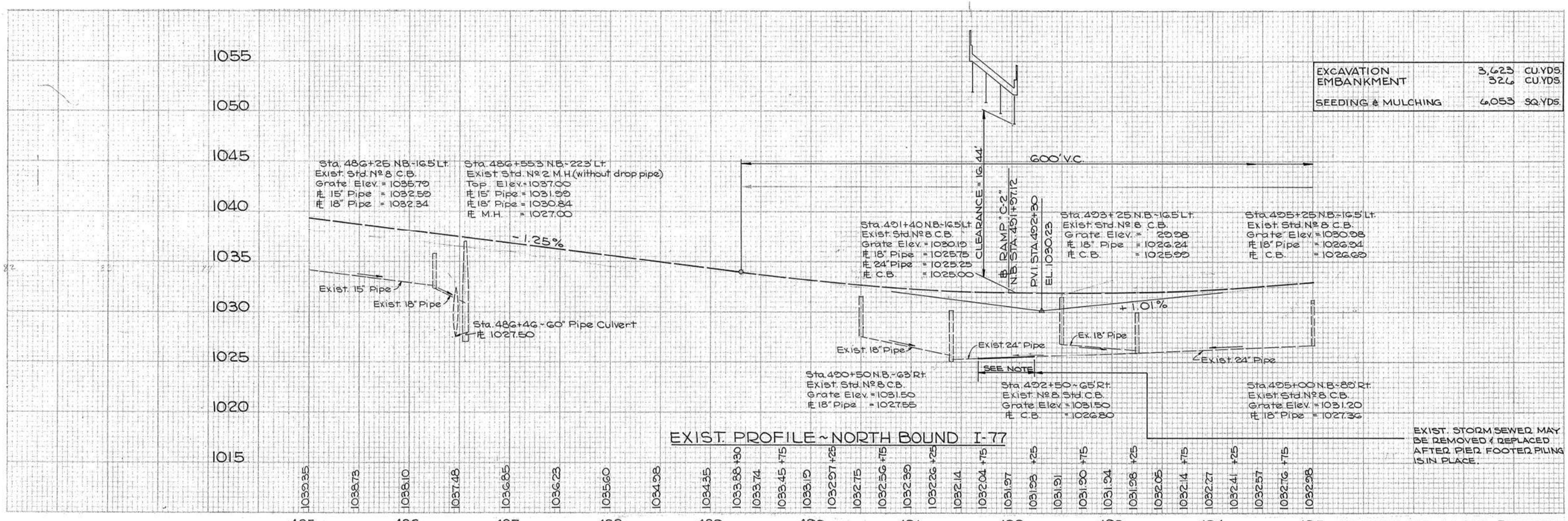
PLAN
NORTH BOUND & SOUTH BOUND I-77
STA. 485+00 TO STA. 495+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

115
234

SUMMIT COUNTY
SUM-277-0.00



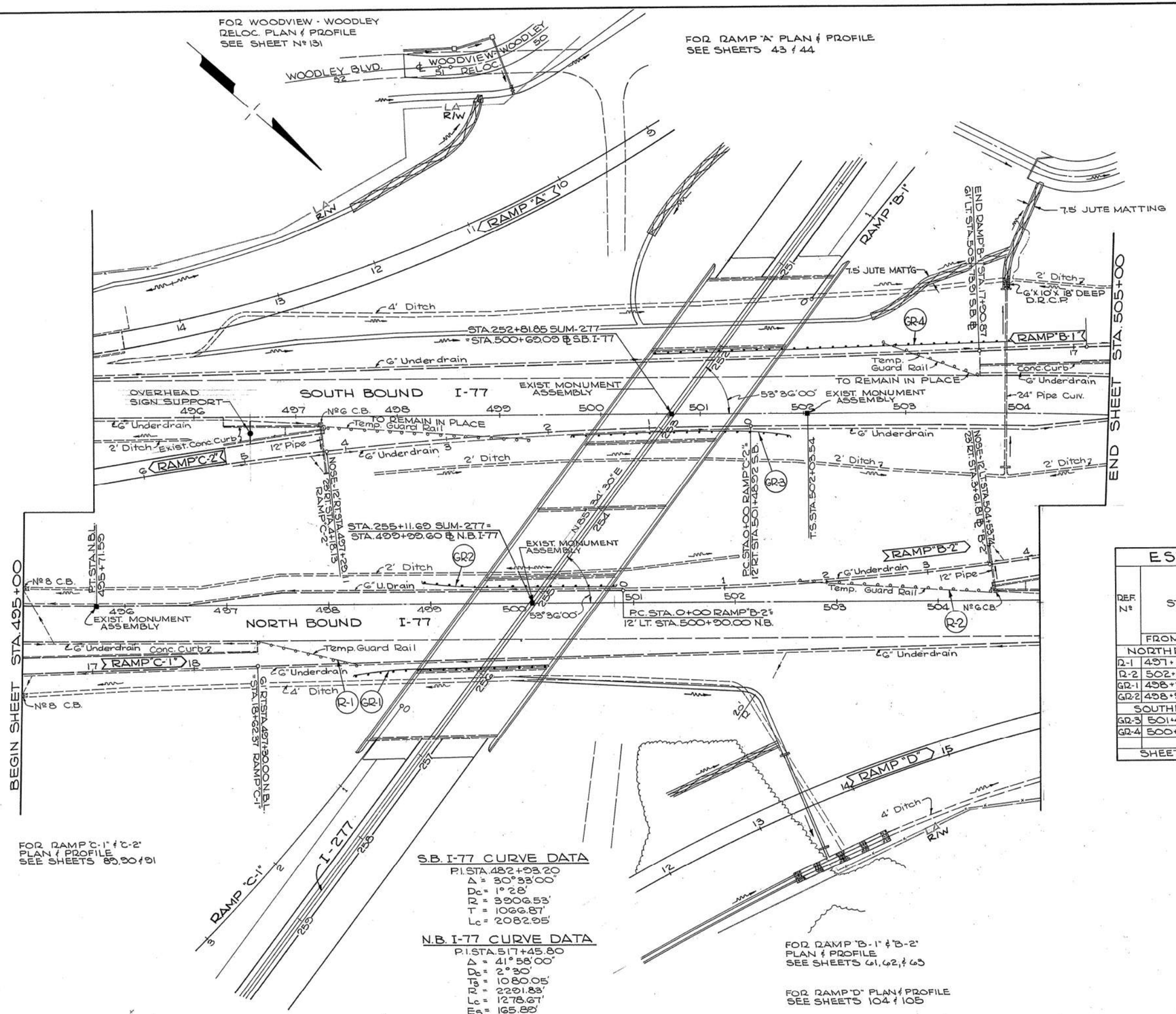


EXCAVATION	3,623	CU.YDS.
EMBANKMENT	324	CU.YDS.
SEEDING & MULCHING	6,053	SQ.YDS.

PROFILES ~ N. & S. BOUND I-77
STA. 485+00 TO STA. 495+00

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

SUMMIT COUNTY
SUM-277-0.00



S.B. I-77 CURVE DATA
P.I. STA. 482+93.20
Δ = 30° 33' 00"
D_c = 1° 28'
R = 3906.53'
T = 1066.87'
L_c = 2082.95'

N.B. I-77 CURVE DATA
P.I. STA. 517+45.80
Δ = 41° 58' 00"
D_c = 2° 30'
T_s = 1080.05'
R = 2291.83'
L_c = 1678.67'
E_s = 165.88'
L_s = 400'
θ_s = 5° 00'
L.T. = 266.77'
S.T. = 133.43'

ESTIMATED QUANTITIES

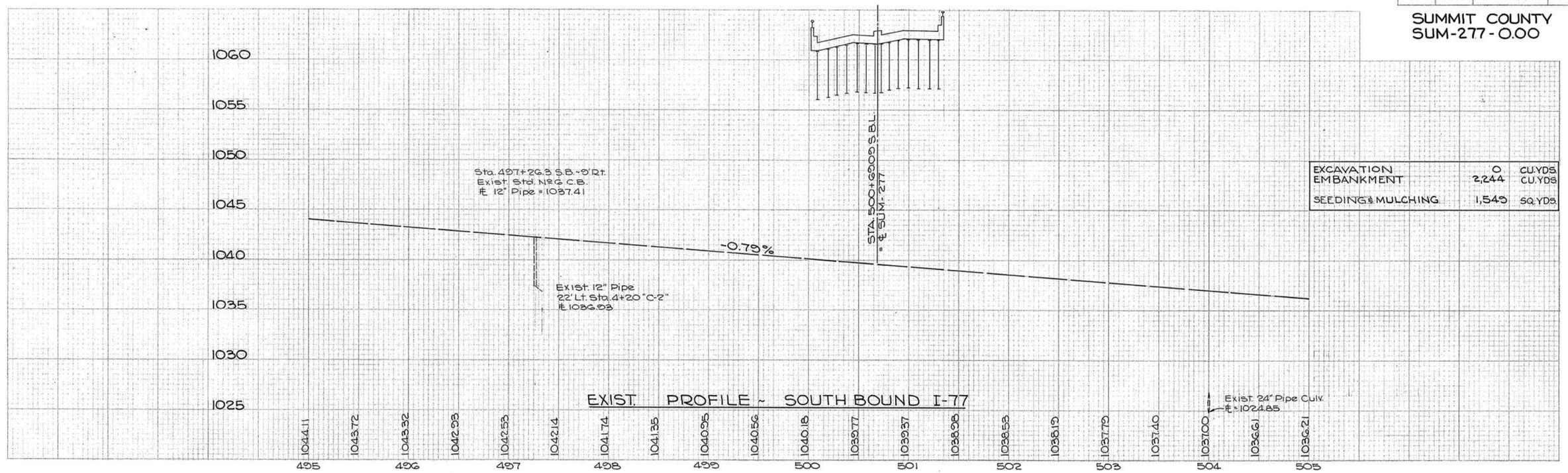
REF. Nº	STATION FROM	STATION TO	SIDE	202 TEMPORARY GUARD RAIL REMOVED FOR REUSE LIN. FT.		606 GUARD RAIL TYPE 4 LIN. FT.
NORTHBOUND I-77						
R-1	497+30	498+30	RT.	100		
R-2	502+54	504+54	LT.	200		
GR-1	498+24.5	500+12	RT.			187.5
GR-2	498+93.5	500+81	LT.			187.5
SOUTHBOUND I-77						
GR-3	501+48.92	501+86	RT.			37.5
GR-4	500+55	503+73.91	LT.			313
SHEET TOTAL				300		731.5

PLAN
NORTH BOUND & SOUTH BOUND I-77
STA. 495+00 TO STA. 505+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

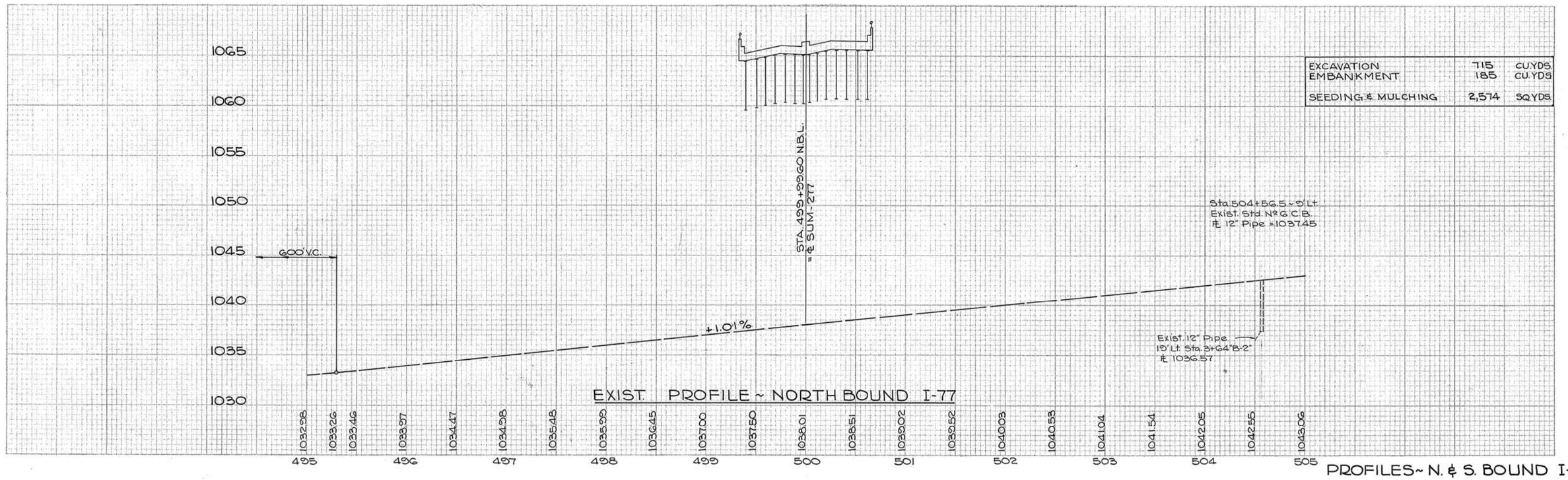
115
234

SUMMIT COUNTY
SUM-277-0.00



EXIST. PROFILE ~ SOUTH BOUND I-77

EXCAVATION	0	CU.YDS.
EMBANKMENT	2,244	CU.YDS.
SEEDING & MULCHING	1,545	SQ.YDS.



EXIST. PROFILE ~ NORTH BOUND I-77

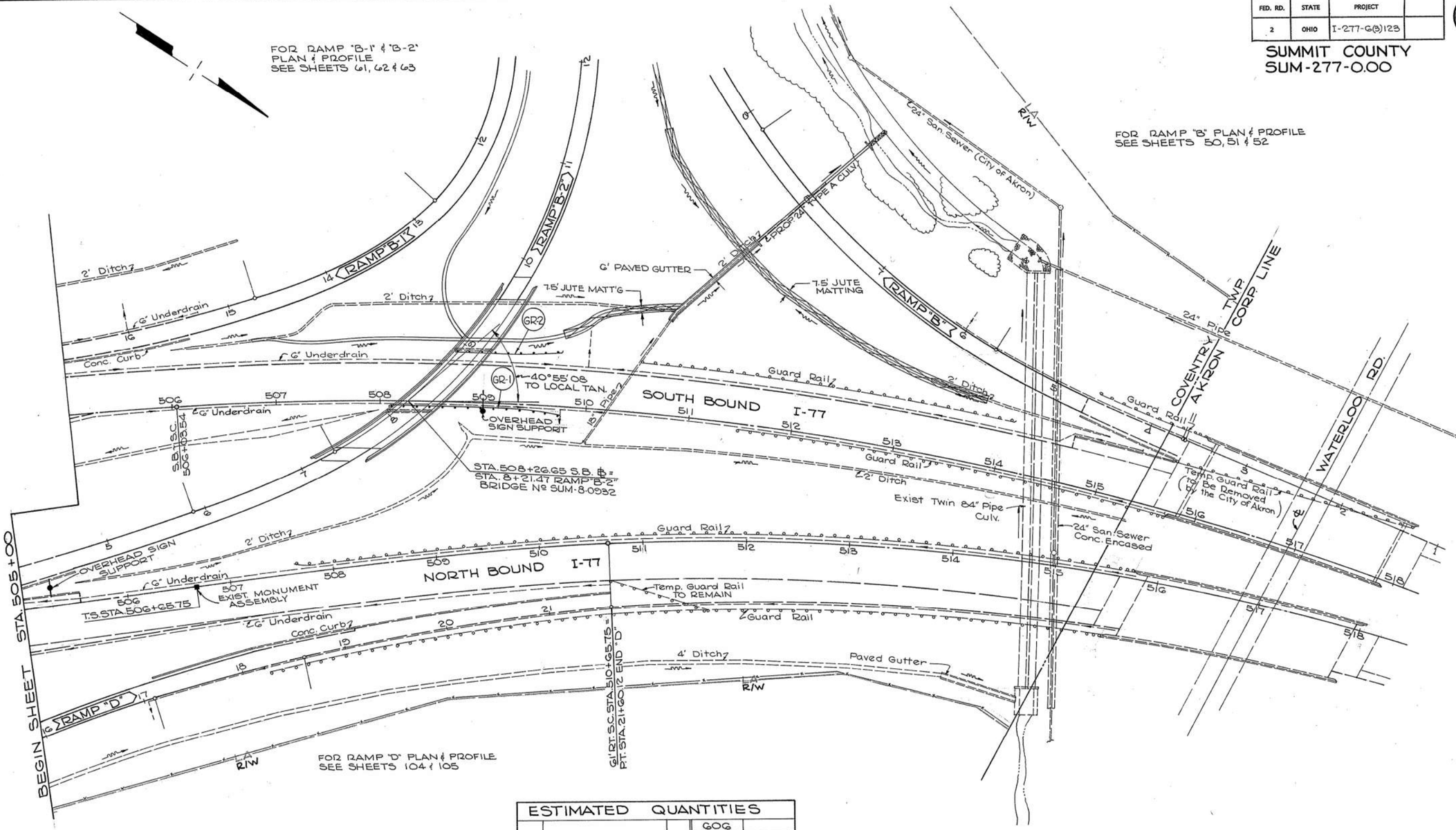
EXCAVATION	715	CU.YDS.
EMBANKMENT	185	CU.YDS.
SEEDING & MULCHING	2,574	SQ.YDS.

PROFILES ~ N. & S. BOUND I-77
STA. 495+00 TO STA. 505+00

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(8)123	

116
234

SUMMIT COUNTY
SUM-277-0.00



CURVE DATA

NORTHBOUND I-77	SOUTHBOUND I-77
P.I. STA. 517+45.80	P.I. STA. 515+03.13
Δ = 41°58'00"	Δ = 41°58'00"
D_c = 2°30'	D_c = 2°00'
T_s = 1080.05'	T_s = 1299.59'
R = 2291.83'	R = 2864.79'
L_c = 1678.67'	L_c = 1698.33'
E_s = 165.88'	E_s = 205.96'
L_s = 400'	L_s = 400'
θ_s = 5°00'	θ_s = 4°00'
L.T. = 266.77'	L.T. = 266.73'
S.T. = 133.43'	S.T. = 133.40'

ESTIMATED QUANTITIES

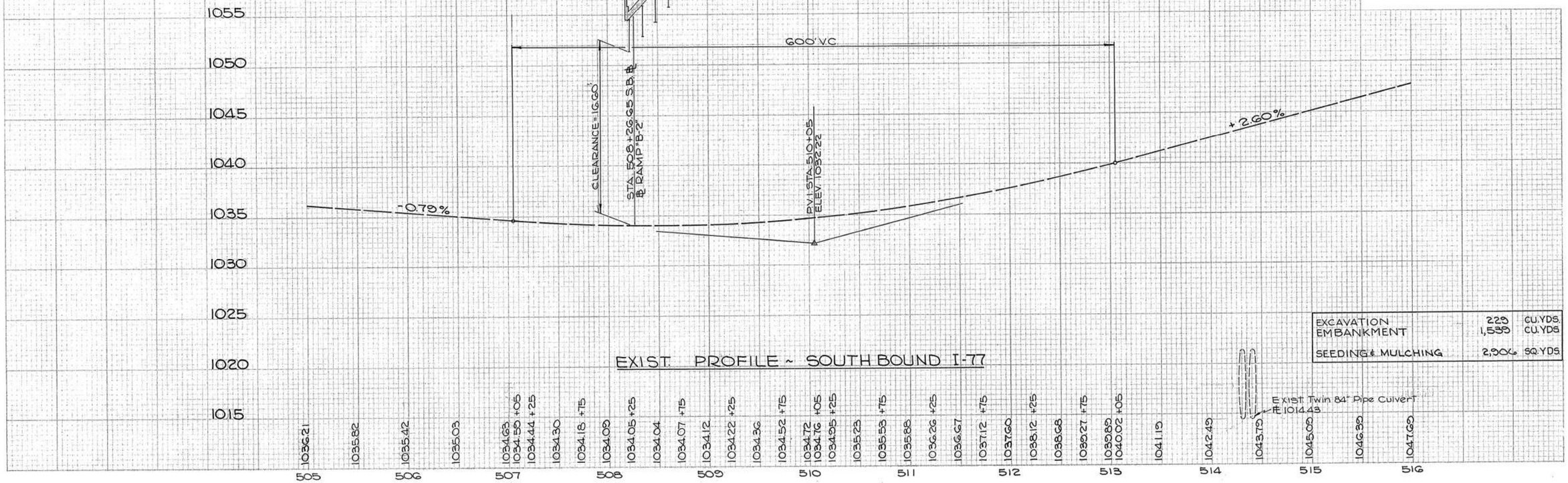
REF. Nº	STATION FROM	STATION TO	SIDE	606 GUARD RAIL TYPE 4 LIN. FT.
GR-1	508+10.5	509+73	RT.	162.5
GR-2	509+73	510+73	LT.	100
SHEET TOTAL				262.5

PLAN
NORTHBOUND & SOUTHBOUND I-77
STA. 505+00 TO STA. 516+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

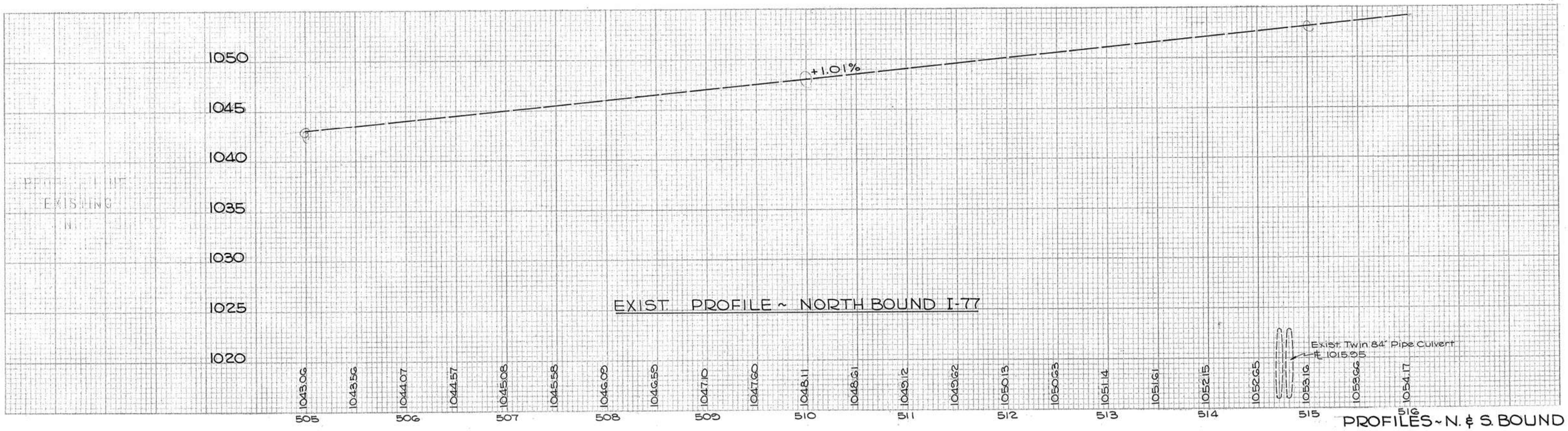
117
234

SUMMIT COUNTY
SUM-277-0.00



EXIST. PROFILE ~ SOUTH BOUND I-77

EXCAVATION	228	CU.YDS.
EMBANKMENT	1,538	CU.YDS.
SEEDING & MULCHING	2,906	SQ.YDS.



EXIST. PROFILE ~ NORTH BOUND I-77

PROFILES ~ N. & S. BOUND I-77
STA. 505+00 TO STA. 516+00

SEEDING	
E.W.	S.Y.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(8)123	

118
234

SUMMIT COUNTY
SUM- 277- 0.00

END AREA		CU. YD	
CUT	FILL	CUT	F

40 20 ℄ 20 40 60 80 100 120 140 160 180 200

1040

M.L.

RAMP C

1039.5

1037.5

484+00
1040.6

1040

M.L.

RAMP C

1042.0

1040.0

483+00
1041.9

1040

1042.5

482+00
1043.1

1040

481+00
1044.4

40 20 ℄ 20 40 60 80 100 120 140 160 180 200

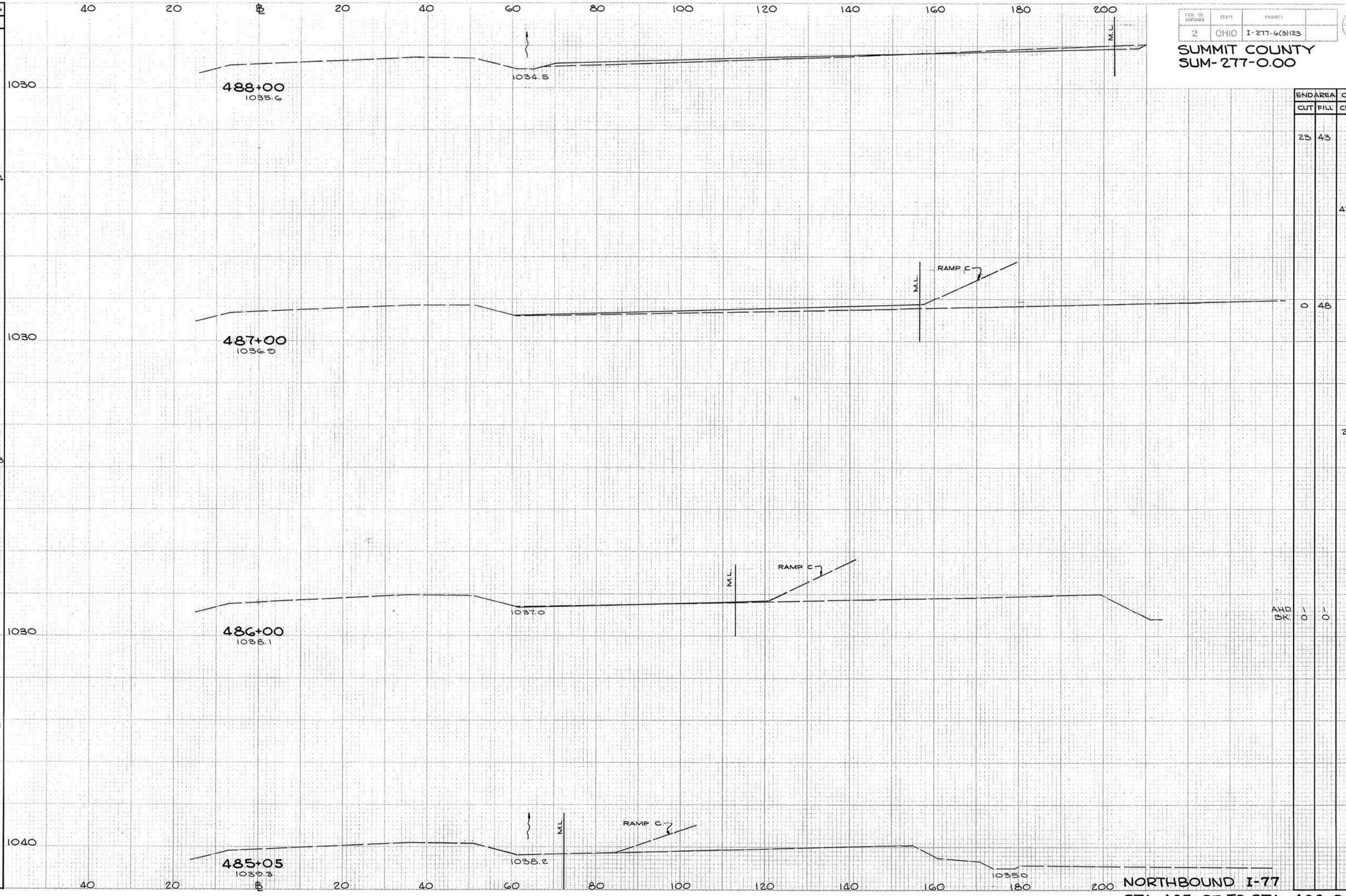
NORTHBOUND I-77
STA. 481+00 TO STA. 484+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(8)123	

SUMMIT COUNTY
SUM-277-0.00

SEEDING E.W.	SEEDING S.Y.
141	
	1344
101	
	878
57	
	301
0	

END AREA CUT	END AREA FILL	CU. Y. CUT
23	43	
		43
0	48	
		2
AHD	1	1
BK	0	0



NORTHBOUND I-77
STA. 485+05 TO STA. 488+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

120
234

SUMMIT COUNTY
SUM-277-0.00

SEEDING E.W.	SEEDING S.Y.		END AREA CUT	END AREA FILL	CU. YD CUT	CU. YD FI
		492+00 1032.0				
5		1030				
	258	M.L. 1032.2 4:1	0	0		
		M.L. (BACK) M.L. (AHEAD) 1032.6 3:1			45	
		491+50 1032.14				
86	AHD.	1030	AHD.	49	0	
84	BK.		BK.	28	0	
	117	M.L. 1033.0			26	
		491+00 1032.39				
8		1030	0	2		
		STA. 490+50 ~ 63' RT. EXIST. STD. No. 8 C.B. GRATE - 1031.50 ℄ C.B. - 1027.91				
		M.L.			48	
	138	490+50 1032.75				
		M.L. 1032.5			26	0
17		1030				
		490+00 1033.19				906
	731	A 240 260 280 300 A M.L. A			953	0
246		1030				1922
		489+50 1033.74				
	1350	M.L. 1033.82			431	0
78		1030				631
		488+75 1034.67				
	913					

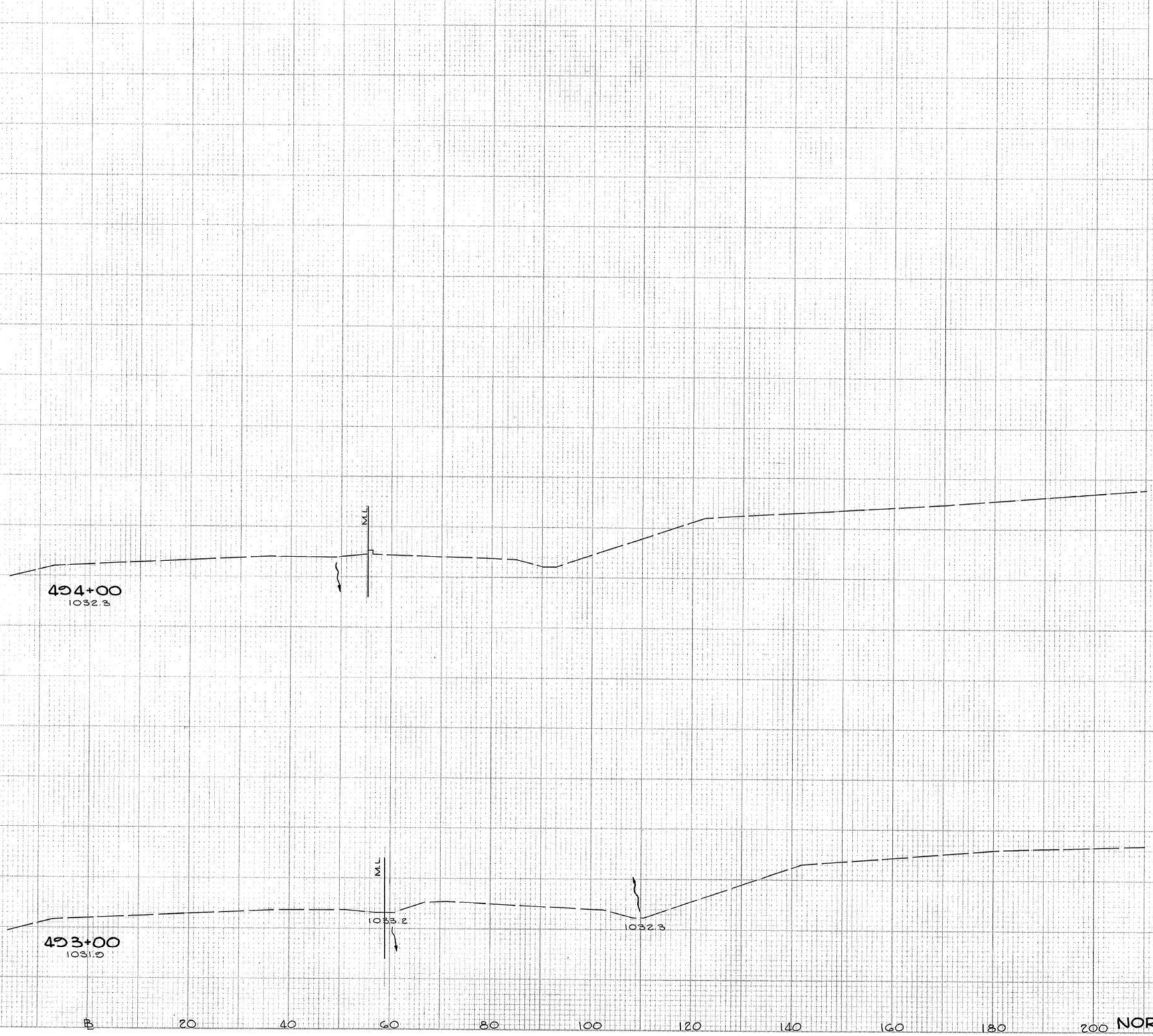
NORTHBOUND I-77
STA. 488+75 TO STA. 492+00

SEEDING	
E.W.	S.Y.

FED. AID DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

SUMMIT COUNTY
SUM-277-0.00

END AREA	
CUT	FILL



NORTHBOUND I-77
STA. 493+00 TO STA. 494+00

SEEDING E.W.	SEEDING S.Y.
29	
	58
3	
	58
9	
	38
0	
	7
5	
	288
69	
	115
0	

40 20 ℄ 20 40 60 80 100 120 140 160 180 200

1030 1040 1030 1030 1080 1030 1030

500+00 1038.0
1035.5 EXIST; 1034.8 PROP.

499+70 1037.7
1035.2 EXIST. 1035.0 PROP

499+00 1037.0
1035.5 1034.5

498+25 1036.25
1034.20 1033.9

498+00 1036.0
1033.7

497+30 1035.3
1033.05

497+00 1035.0
1032.6

M.L. PROP EXIST M.L. (BACK) M.L. (AHEAD)

PROJECT	STATE	PROJECT
2	OHIO	I-277-4(3)123

SUMMIT COUNTY
SUM-277-0.00

END AREA CUT	END AREA FILL	CU. Y. CUT
22	0	
		12
0	1	
		0
0	3	
		4
0	0	
0	0	
		47
AHD 322		
BK 0	0	0

NORTHBOUND I-77

SEEDING	
E.W.	S.Y.
0	167
45	750
90	883
122	210

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

SUMMIT COUNTY
SUM-277-0.00

END AREA		CU. Y
CUT	FILL	CUT
0	0	
25		
20	6	
109		
38	0	
117		
45	87	
31		

40 20 ℄ 20 40 60 80 100 120 140 160 180 200

1040

504+00
1042.1

M.L.

1038.0

1031.0

1040

503+00
1041.0

M.L.

1036.0

1040

502+67
1040.7

M.L.

1040

502+00
1040.0

1034.0

1032.9

M.L.

1040

501+00
1039.0

1035.0

1033.8

M.L.

1030

500+25
1038.8

1035.5

1034.48

M.L.

40 20 ℄ 20 40 60 80 100 120 140 160 180 200

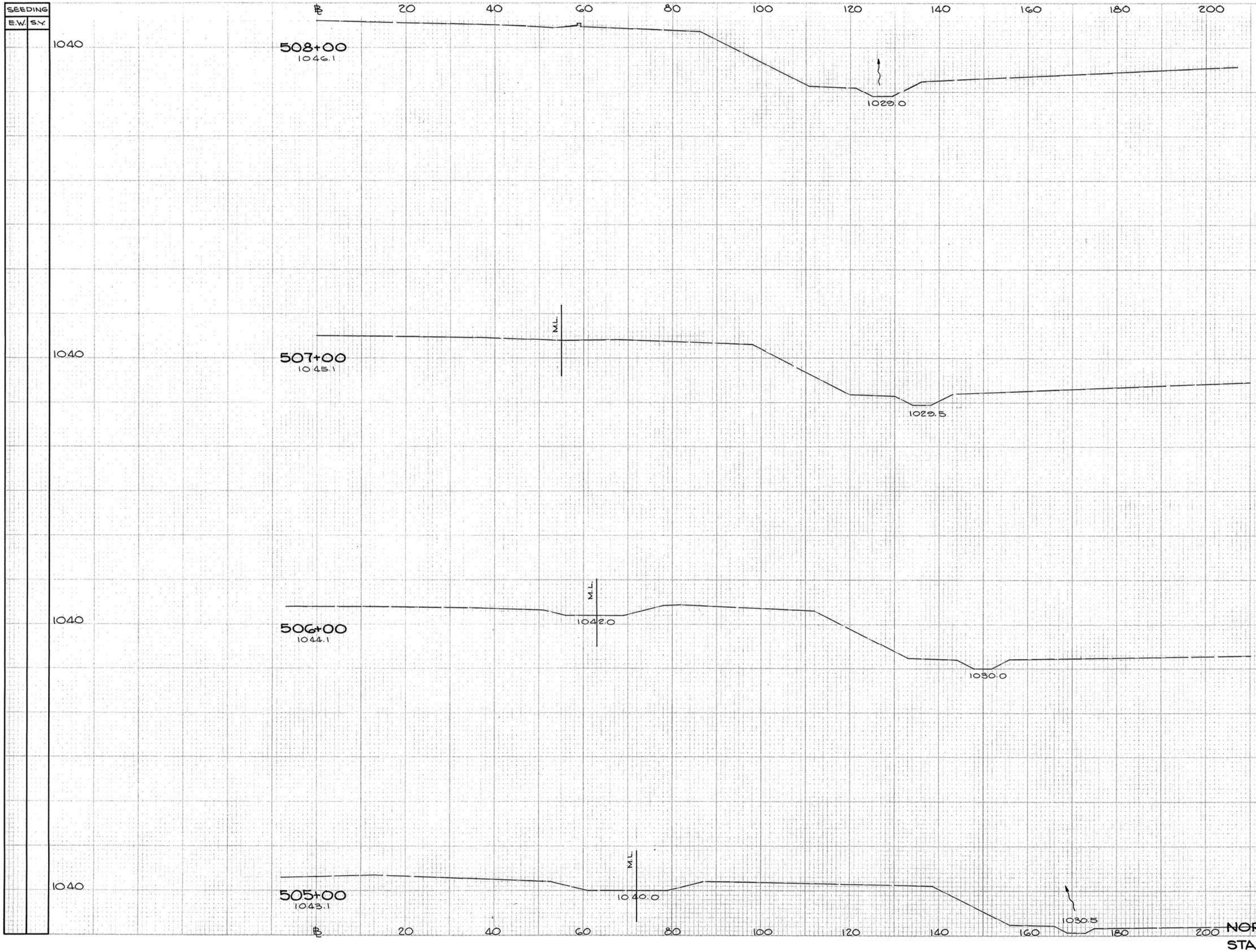
NORTHBOUND I-77
STA. 500+25 to STA. 504+00

SEEDING	
E.W.	S.Y.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

SUMMIT COUNTY
SUM-277-0.00

END AREA		CU. Y.	
CUT	FILL	CUT	



NORTHBOUND I-77
STA. 505+00 TO STA. 508+00

SEEDING	
E.W.	S.Y.
0	

FED. RTE. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(5)123	

SUMMIT COUNTY
SUM- 277-0.00

125
234

END AREA		CU. YDS	
CUT	FILL	CUT	FILL

240 220 200 180 160 140 120 100 80 60 40 20 ℄

1040

PROP
EXIST.
1037.6
1031.0
M.L.
497+00
1042.5

RAMP A
M.L.
1040.5
496+00
1043.3

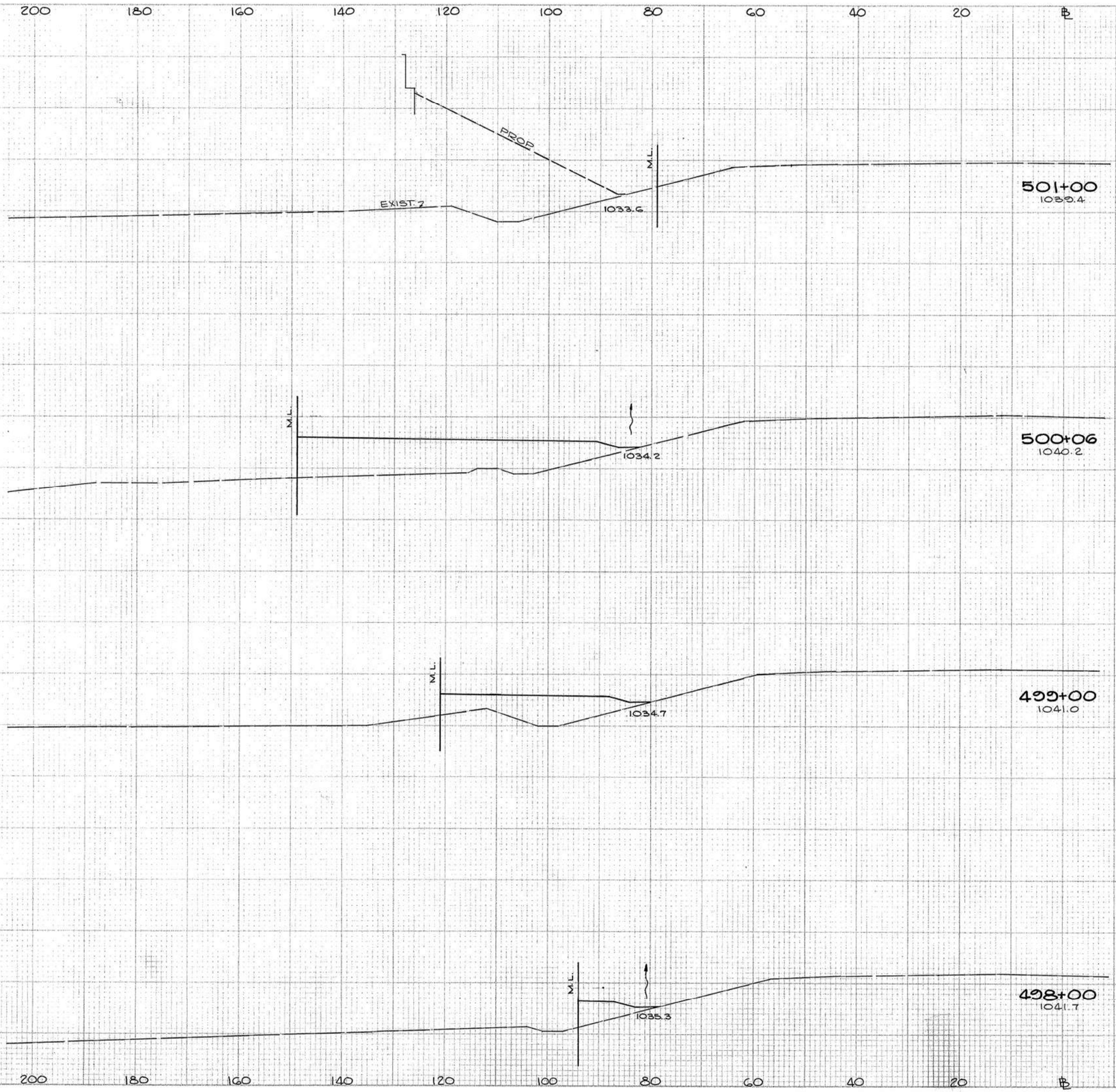
RAMP A
495+35
1044.1
1029.0

494+00
1044.9
1028.5

240 220 200 180 160 140 120 100 80 60 40 20 ℄

SOUTHBOUND I-77
STA. 494+00 TO STA. 497+00

SEEDING	
E.W.	S.Y.
	1040
0	
	376
	1040
72	
	695
	1040
46	
	367
	1040
20	
	111



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

12
23

SUMMIT COUNTY
SUM-277-0.00

END AREA	
CUT	FILL
0	0
0	305
0	163
0	43

CU.Y

SOUTHBOUND I-77
STA. 498+00 TO STA. 501+00

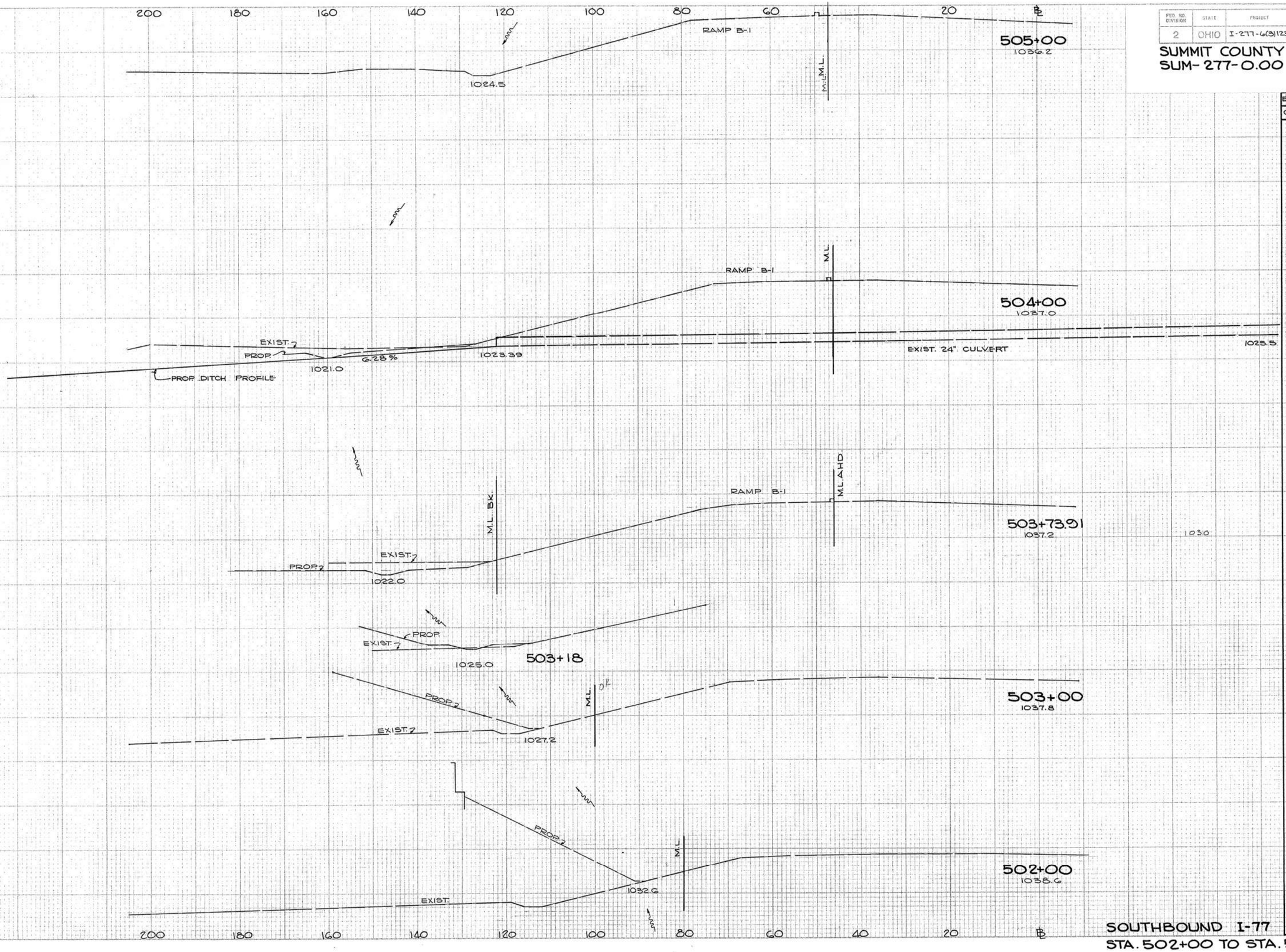
SEEDING	
E.W.	S.Y.

FED. NO. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

127
234

SUMMIT COUNTY
SUM-277-0.00

END AREA		CU. YD	
CUT	FILL	CUT	F



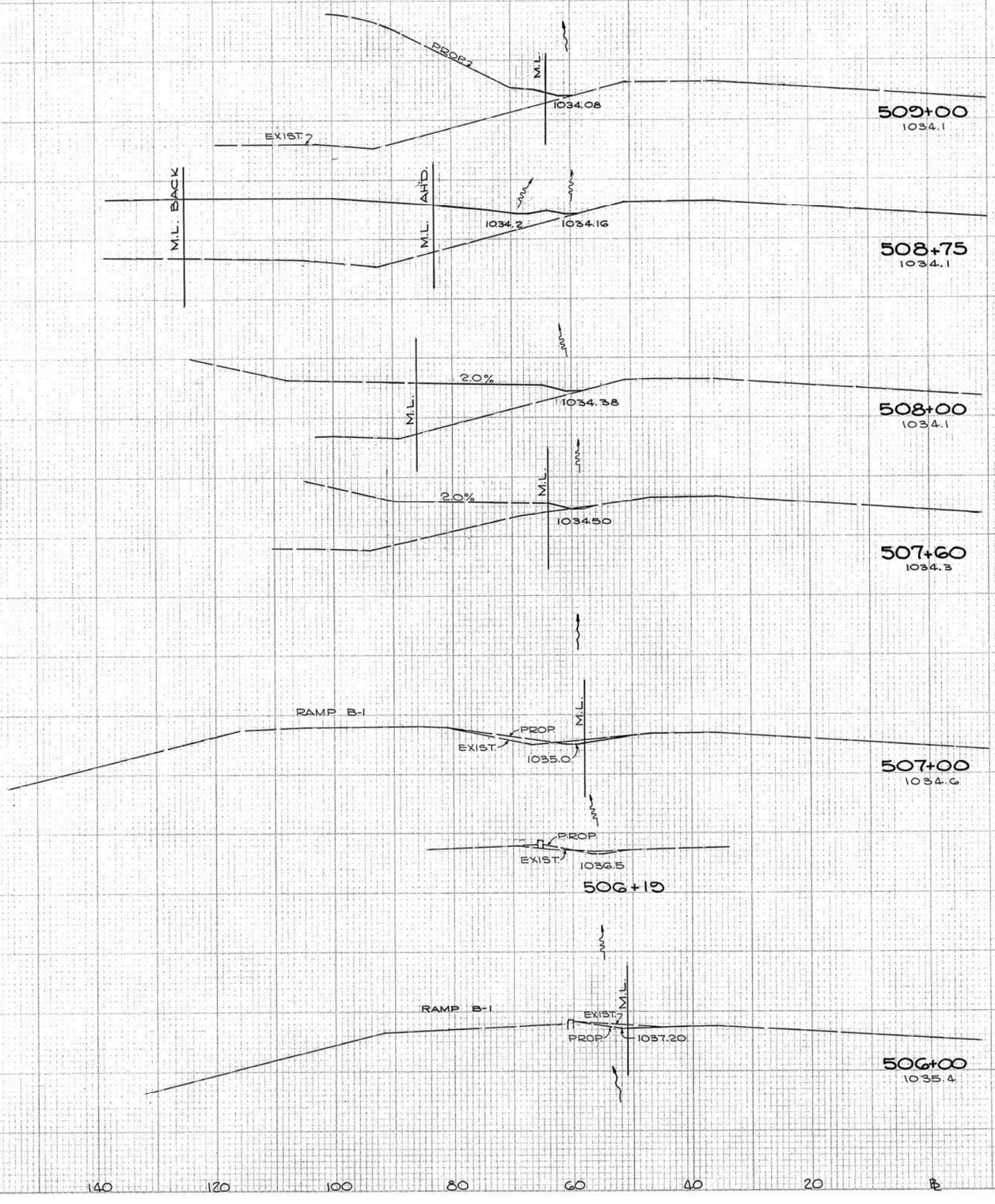
SOUTHBOUND I-77
STA. 502+00 TO STA. 505+00

FED. NO. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

128
234

SUMMIT COUNTY
SUM-277-0.00

SEEDING E.W.	SEEDING S.Y.	
10	60	1030
33 75		AHD. BK. 1030
	458	
35		1030
	107	
15		1030
	90	
12		1030
	122	
10		1030
	56	



END AREA CUT	END AREA FILL	CU. YD. CUT	CU. YD. FILL
0	4		
		0	4
AHD. 0	56		
BK. 0	530		
		0	5
0	135		
		1	1
1	4		
		4	0
		19	
		6	0
		11	

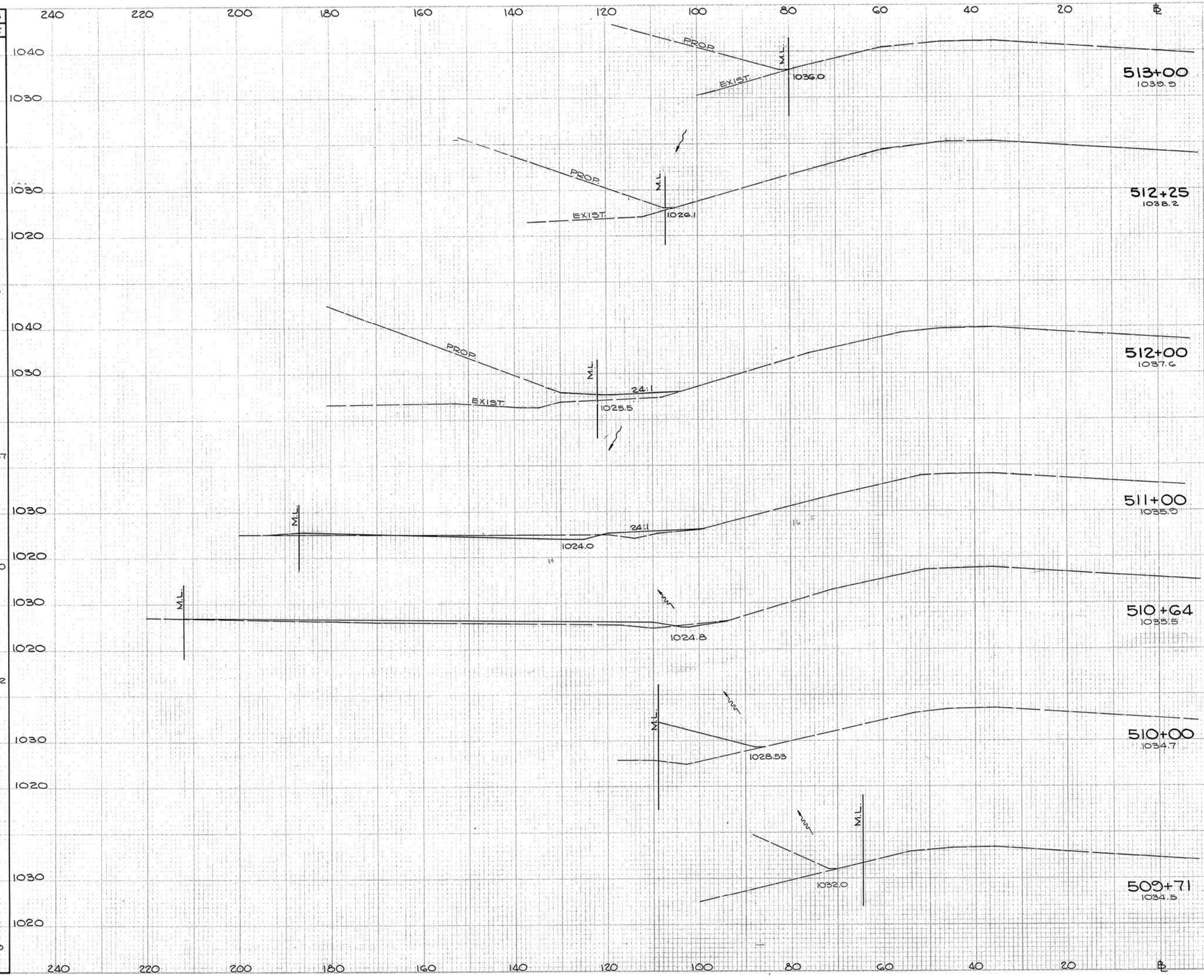
SOUTHBOUND I-77
STA. 506+00 TO STA. 509+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(8)123	

125
234

SUMMIT COUNTY
SUM- 277-0.00

SEEDING E.W.	SEEDING S.Y.
0	
	21
5	
	39
23	
	GG7
97	
	450
128	
	572
38	
	61
5	
	59



END AREA CUT	END AREA FILL	CU. YD. CUT	CU. YD. FILL
0	0		
		2	0
1	0		
		1	
0	24		
		63	8
34	23		
			28
8	75		
			10
0	121		
		0	0
0	0		
		0	0

SOUTHBOUND I-77
STA. 509+71 TO STA. 513+00

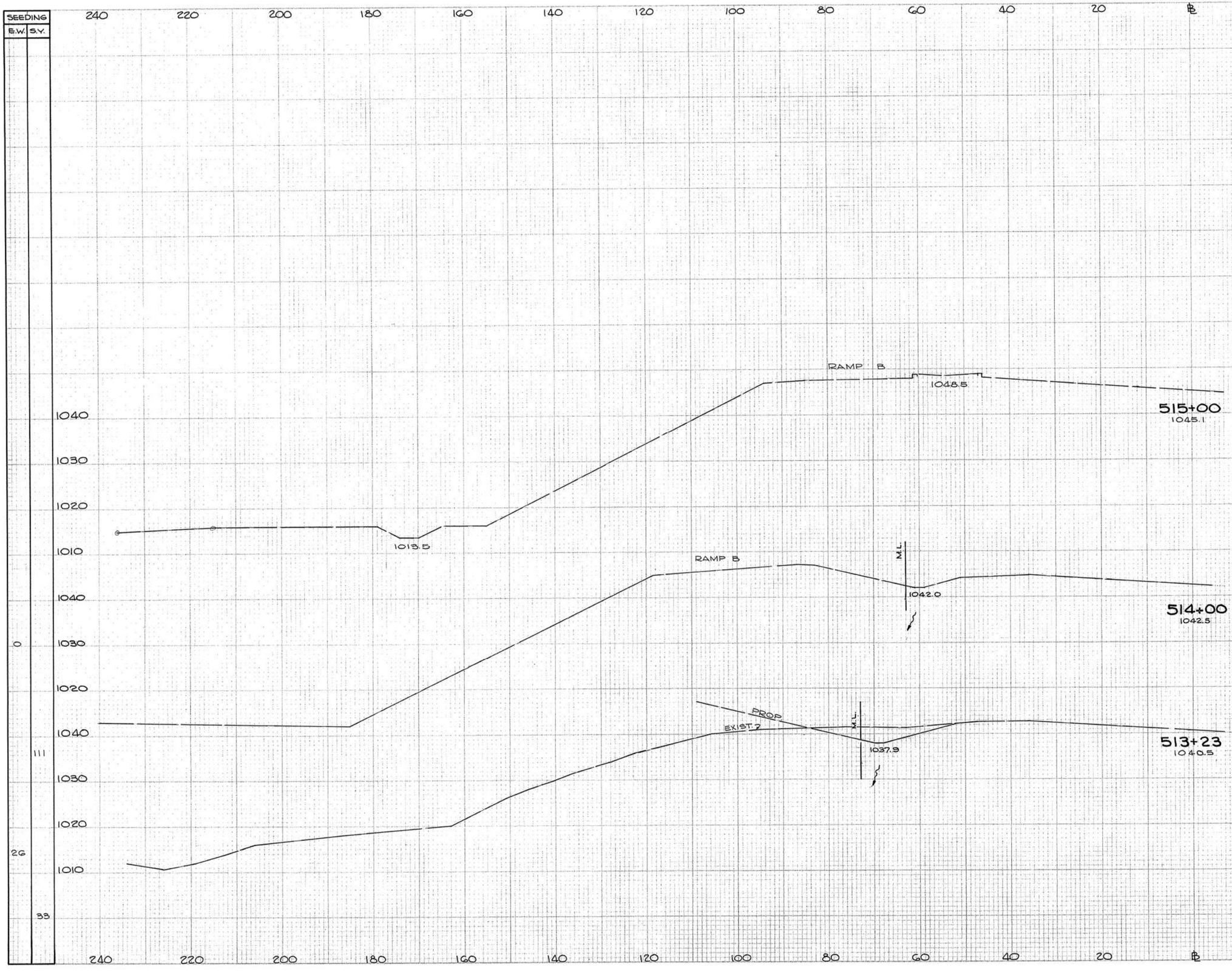
SEEDING	
E.W.	S.Y.
0	26
111	
33	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(8)123	

130
234

SUMMIT COUNTY
SUM-277-0.00

END AREA		CU. YD	
CUT	FILL	CUT	FI
0	0		
		63	
48	0		
		20	



SOUTHBOUND I-77
STA. 513+23 TO STA. 515+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

131
234

SUMMIT COUNTY
SUM-277-0.00

PROP. 10'x5' REINF CONC. BOX CULV.
CHANNEL STA 16+23.09 = EQUATION STA. 50+00.00
RAMP "A"
21" San Sewer
WOODVIEW DR.
WOODLEY BLVD.
2" Gas Line
Septic Tank
2-St. Brick & Frame
1-St. Brick Hse. @ Gar.
1-St. Fr. Hse. @ Gar.
MEET EXIST. PAVT STA. 48+10
MEET EXIST. PAVT STA. 51+35
P.T. STA. 50+85.53
Const. Limits
RW Limits
75' JUTE MATTING
15' JUTE MATTING
Exist. 15" St. Sew.
Exist. 2'x2' Brick C.B.
Exist. 24" C.M.P. Lt. of ℄
P.T. STA. 54+97.33
2'x3' C.B.
End Work Sta. 58+50

"+" On E. Side Rim San. M.H.
Tan. 76.12' P.I. Tan. 52.86' ℄ Valve N. Side Gas Meter. PK Nail E. Side Pole
P.I. REF. STA. 50+17.67

50' R/W, 18', 2" PEN'T'D GRAVEL SURFACE, 3" GRAVEL BASE
EXIST. TYPICAL SECTION WOODVIEW AVE.

80' R/W, 22', 2" PEN'T'D GRAVEL SURFACE, 3" GRAVEL BASE
EXIST. TYPICAL SECTION WOODLEY BLVD.

SUPERELEVATION TABLE			
STATION	ELEV. 11' LT. ℄	℄ PROFILE GRADE	ELEV. 11' RT. ℄
45+00	1022.33	1022.56	1022.33
45+25	1022.10	1022.10	1021.87
45+50	1021.95	1021.72	1021.49
45+75	1021.66	1021.43	1021.20
50+00	1021.45	1021.22	1020.99
50+25	1021.32	1021.09	1020.86
50+50	1021.27	1021.04	1020.81
50+65	1021.28	1021.05	1020.82
50+75	1021.22	1021.08	1020.85
50+90	1021.13	1021.13	1020.90
51+00	1021.03	1021.17	1020.54
51+15	1020.98	1021.22	1020.95

CURVE Nº1 DATA
P.I. STA. 48+33.95
Δ = 14°32'21"
R = 127.17'
T = 16.22'
L = 32.27'
D_c = 45°03'27"

CURVE Nº2 DATA
P.I. STA. 50+17.67
Δ = 61°36'42"
R = 150.00'
T = 89.44'
L = 161.30'
E = 24.64'
D_c = 38°11'50"

CURVE Nº3 DATA
P.I. STA. 53+00.72
Δ = 18°15'21"
R = 1244.76'
T = 200.00'
L = 396.61'

DRAINAGE QUANTITIES

REF. Nº	STATION FROM	STATION TO		G01 DUMPED ROCK CHANNEL PROTECTION C.Y.	G02 CONCRETE MASONRY C.Y.	G67 JUTE MATTING S.Y.	G03 CONDUIT 12" TYPE D 707.01 OR 707.02 LIN. FT.	G03 CONDUIT 15" TYPE D 706.01; 706.02 * 706.08 LIN. FT.	G03 CONDUIT TYPE B WITH CL B BEDDING 24" LIN. FT.	G04 CATCH BASIN STD 2-2A EACH	G04 CATCH BASIN STD 2-2B EACH	G04 CATCH BASIN STD 2-3 EACH	G05 M.H. ADJUST TO GRADE EACH	G05 AGGREGATE DRAINS LIN. FT.
D-1	50+41		LT. & RT.		0.41				52	1				
D-2	50+41	51+35	RT.					90			1			
D-3	50+65		LT.	2.7										
D-4	53+17		LT. & RT.		0.51				44			1		
D-5	49+45		LT.										1	
D-6	48+46		RT.					22						
D-7	50+00	53+25	LT.			542								
	48+10	51+35	LT. & RT.											78
SHEET TOTAL				2.7	0.92	542	22	90	52	44	1	1	1	78

★ CL. HE-II

GR-1 STA. 49+32.9 to STA. 50+90 LT. ~ 175' TYPE 4 GUARD RAIL

PAVEMENT & ROADWAY QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	202 PIPE REMOVED 24" & UNDER LIN. FT.	402 1¼" ASPHALT CONCRETE CU. YDS.	404 1¼" ASPHALT CONCRETE CU. YDS.	408 BIT. PRIME COAT GAL.	310 SUB-BASE C.Y.	304 AGG-BASE C.Y.	203 SUB-GRADE PREPARATION S.Y.
R-1	48+36	48+54	RT.	18						
R-2	49+72	51+35	LT. & RT.	175						
	48+10	51+35	LT. & RT.		27.28	27.28	314.22	119.1	137.0	858
	48+46	(DRIVE APP.)	RT.		0.92	0.92	10.56	–	4.4	–
	50+70	(DRIVE APP.)	RT.		0.92	0.92	10.56	–	4.4	–
	53+17		LT. & RT.		0.52	0.52	5.38	1.9	2.2	13
SHEET TOTAL				193	29.64	29.64	340.72	121.0	148.0	871

P.K. Nail S.E. Side Pole # 5365; WOODVIEW DR.; ℄ Valve W/S Gas Meter; P.K. Nail S.W. Pole # 89222
P.O.T. REF. STA. 46+00

P.K. S.W. Side 12" Oak; Iron Pipe P.C. Curve On R/W; P.I.; P.K. Nail N.W. Side Pole # 89224
P.I. REF. STA. 48+33.95

Punch Mark with "V" On M.H. Rim; Tan. 0.70; 0.63; Tan. 2; 1.09; M.H. Rim; P.K. Nail S.W. Side Pole # 89235
P.I. REF. STA. 53+00.72

P.K. Nail E. Side Pole # 89235; R.R. Spk.; Curve; Tan.; 0.86; 40.70; 60 32' 10"; Top Bent Iron Mon.; P.K. Nail E/S Pole # 89234
P.T. REF. STA. 54+97.33

MEET EXIST. PAV'T STA. 48+10	+10	+40	+75	+25	+60	+75	+25	+25	+80	+35	STA. 49+60	+09	+12	+64	+76	+80	+27	+86	+35	+85	STA. 51+35
Elev.	1024.84	1024.00	1023.10	1022.56	1022.10	1021.72	1021.55	1021.43	1021.22	1021.09	1021.04	1021.10	1021.17	1021.31	1020.9	1020.8	1019.7	1020.1	1021.0	1021.3	1021.6	1021.7	1022.0	1022.6	1023.0	1023.6	1024.1	1024.5	1024.7
		1023.73				1021.50																							
		47		48		49		50		51		52		53		54		55											

240' V.C.
P.V.I. STA. 49+60 ELEV. = 1020.64
MEET EXIST. PAV'T STA. 48+10
MEET EXIST. PAV'T STA. 51+35
-2.80%
+0.38%
D-2
30"x15" COND. @ 2.22%
Exist. 24" C.M.P. Lt. of ℄
Exist. 15" R.C.P.
MEET EXIST. COND. ℄ = 1019.28
STA. 50+41 32' LT. 24" OUTLET ℄ = 1016.22
℄ EXIST. 18" SAN. SEWER
℄ EXIST. 27" SAN. SEWER
1030
1025
1020
1015
1010

STA. 53+17 22' RT.
604 Nº 2-3 C. BASIN
GRATE EL. = 1022.50
℄ 15" N.W. = 1020.26
℄ 15" S.E. = 1020.58
℄ 15" S.W. = 1020.43
℄ 30"x15" = 1019.35

STA. 50+41 (21' RT.)
604 Nº 2-2A STD. C.B.
GRATE ELEV. = 1019.50
WINDOW ELEV. = 1019.00
℄ 15" TYPE D = 1017.28
℄ 24" TYPE B = 1016.53

STA. 50+85 (18' RT.)
604 Nº 2-2B STD. C.B.
GRATE ELEV. = 1020.00
℄ 15" COND. N. = 1018.17
℄ 15" COND. S. = 1018.17

EXCAVATION	2,275	CU. YDS.
EMBANKMENT	303	CU. YDS.
SEEDING & MULCHING	4,556	CU. YDS.

5'-6" MAX. TRENCH WIDTH
FINISH ¼" ABOVE EXIST. EXIST. PAV'T
FINISH ¼" ABOVE EXIST. EXIST. PAV'T
USE SAME PAVEMENT BUILD UP AS WOODVIEW-WOODLEY RELOCATION
BACK FILL WITH GRANULAR MATERIAL
PROP. 30"x19" ELLIPTICAL CONDUIT

SECTION A-A
STA. 53+17 WOODLEY BLVD.
SCALE: ½" = 1'-0"

PLAN & PROFILE
WOODVIEW - WOODLEY RELOCATION
STA. 47+00 TO STA. 52+00

END AREA	CU YDS.
CUT	FILL	CUT	FILL
		54	27
38	20	30	21
28	26	27	14
31	3	61	6
95	3	26	2
0			
0			

SEEDING	
E.W.	S.Y.
46	
146	
59	
138	
40	
194	
67	
0	

FED. HWY. DIVISION	STATE	PROJECT	
2	OHIO	I-277-4(3)123	

SUMMIT COUNTY
SUM-277-0.00

132
234

STA. 49+45-24' LT.
SAN. M.H. TO BE ADJUSTED
EX'ST. TOP EL.= 1020.44
NEW TOP EL.= 1021.41

1021.72
49+50
1021.2

1022.10
49+25
1020.9

1022.56
49+00
1021.7

1020.25

1020.15

1023.73
48+50
1023.8

12" TYPE D CONDUIT ℄= 1022.02

1023.83
48+46
1023.9

10' DIA. 12T.

START DITCH 48+10

48+10
1024.8
MEET EXIST. PAV'T.

48+00
1025.1

47+50
1026.5

47+33
1026.9
18' DIA. 2T.

47+00
1028.0

WOODVIEW - WOODLEY RELOC. ~ STA. 47+00 TO STA. 49+

END AREA		CU.YDS	
CUT	FILL	CUT	FILL
78	12	52	8
108	15	170	23
155	20	334	27
136	4	155	15
84	17	AHD	
20	6	BK.	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(5)123	

133
234

SUMMIT COUNTY
SUM-277-0.00

51+50
1021.4
1017.8
2:1
6:1
Exist. 15" Cond.
51+35
1021.3
1017.6
MEET EXIST. PAV'T.
STA.50+85
604 №2-2-B STD.C.B.
GRATE ELEV.= 1020.00
IE 15" COND. N = 1018.17
IE 15" COND. S = 1018.17
51+00
1021.2
1021.17
1017.1
25'
50+70
1020.9
10' DIA. R.T.
1021.03
IE DITCH FROM RAMP "A"
12'
4'X12'X1.5' D.R.C.P.
1016.6
STA.50+65
STA.50+41 (21" R.T.)
604 "2-2 A STD. C.B.
GRATE ELEV.= 1019.50
IE 15" TYPE D = 1017.28
IE 24" TYPE B = 1016.53
1019.56
52'-24" TYPE B COND@0.6%
WITH CL B BEDDING 1021.05
4'X8'X1.5' DEEP D.R.C.P.
1016.19
50+38
HW-E HEADWALL 1020.4
IE= 1016.22
M.L.BK
M.L.AHD.
50+00
1020.5
1021.22
1015.92
1019.69

SEEDING
EW. SY.

WOODVIEW - WOODLEY RELOC.~ STA.50+00 TO STA.51+5

FED.RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-4(3)123	

134
234

SUMMIT COUNTY
SUM-277-0.00

ENDAREA CUT	ENDAREA FILL	CU.YDS. CUT	CU.YDS. FILL
52	0		
		103	1
60	1		
		28	9
46	8		
		80	12
40	15		
		81	10
47	6		
		99	15
58	10		
		114	18
65	9		
		128	20
73	12		
		135	21
76	10		
131	26		
		135	28
65	18		

SEEDING END SQ.	SEEDING WIDTH YDS.
31	172
31	172
31	170
30	170
31	175
32	180
35	200
37	206
37	203
36	200

56+50
1025.6

56+00
1025.2

55+50
1024.7

55+00
1024.5

54+50
1024.1

54+41
1024.0 Dr. Rt.

54+00
1023.6

53+50
1023.0

53+00
1022.6

52+50
1022.0

52+10
1021.6 Dr. Rt.

52+00
1021.7

STA. 53+17 (22' RT.)
604 STD. No 2-3 C.B.
GRATE EL. = 1022.50
@ 15' N. = 1020.26
@ 15' S. = 1020.58
@ 15' W. = 1020.43
@ 30' E = 1019.35

CL HE-II
42"- 30' x 15' TOG. C4A TYPE 'B' COND.
WITH CL 'B' BEDDING

TAPER DITCH FROM 6' WIDTH @ 53+00
TO 4' WIDTH @ 55+50

OUTLET EL.
1018.80

1016.7
H.W.E.
HEADWALL

1018.4

1018.1

2:1

1020

1019.0

1019.6

1020.2

1020.6

1021.0

1021.4

1021.8

K&E PLATE 3, CROSS SECTION
KEUFFEL & ESSER CO.

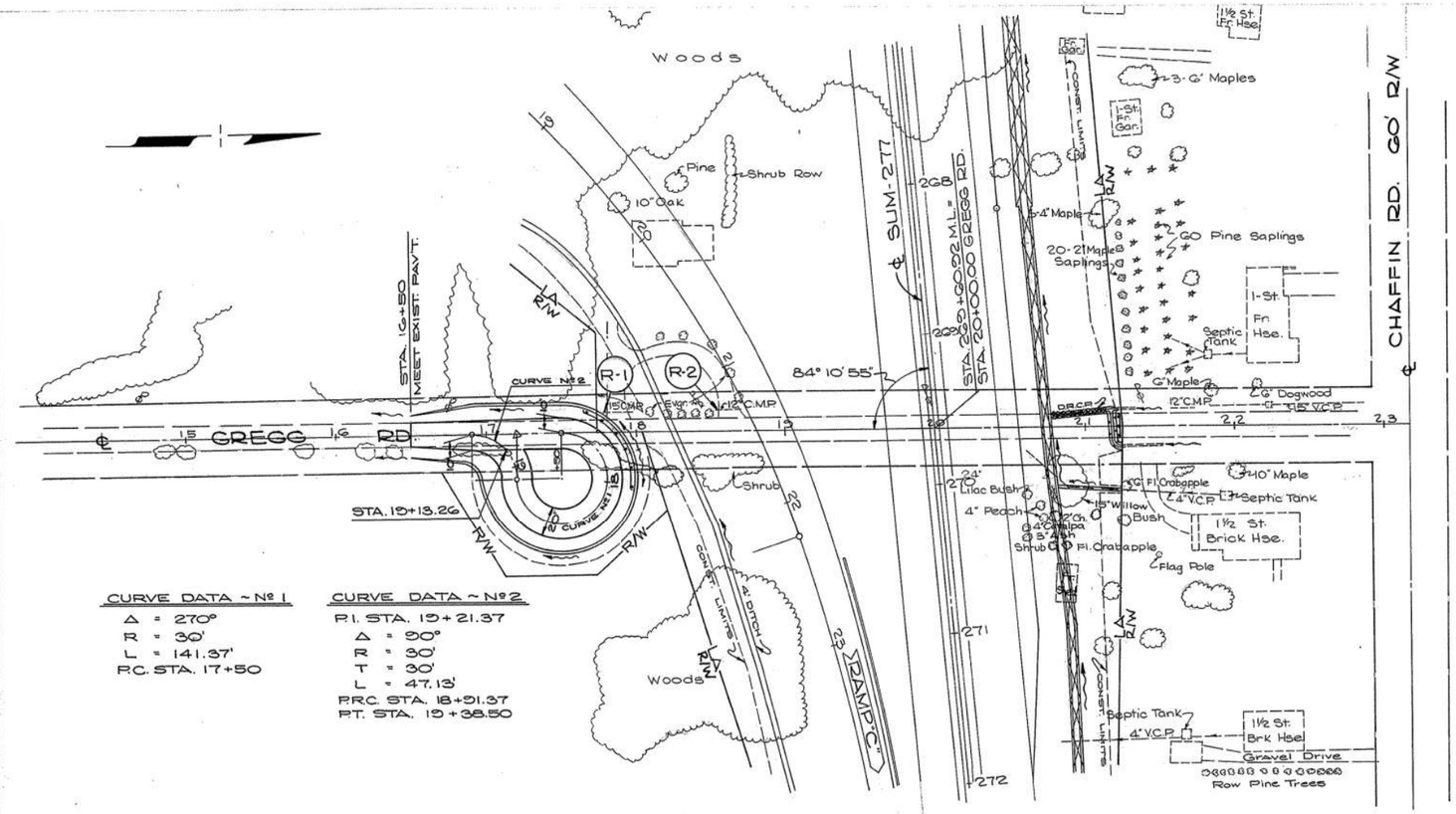
WOODVIEW - WOODLEY RELOC.- STA.52+00 TO STA.56+5

| | | |

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

136
234

SUMMIT COUNTY
SUM-277-0.00

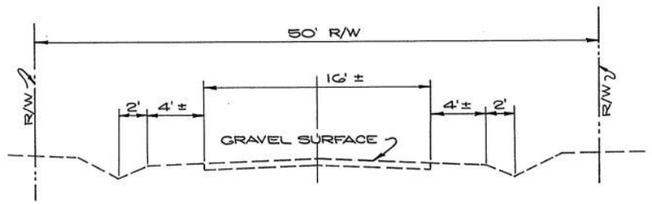


CURVE DATA ~ Nº 1
Δ = 270°
R = 30'
L = 141.37'
P.C. STA. 17+50

CURVE DATA ~ Nº 2
P.I. STA. 19+21.37
Δ = 90°
R = 30'
T = 30'
L = 47.13'
P.R.C. STA. 18+91.37
P.T. STA. 19+38.50

PAVEMENT & ROADWAY QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	202 PIPE REMOVED 24" & UNDER	402 1¼" ASPHALT CONCRETE	404 1¼" ASPHALT CONCRETE	408 BIT. PRIME COAT	310 SUB-BASE	304 AGG. BASE	203 SUB-GRADE PREP-ARATION	606 GUARD RAIL TYPE 4
				LIN. FT.	CU.YD.	CU.YD.	GAL.	CU.YD.	CU.YD.	SQ.YD.	
R-1	17+77	17+97	LT.	20							
R-2	18+55	18+70	LT.	15							
	16+50	19+13.26	LT&RT.		19.77	19.77	227.78	87.22	99.75	G28	
GR-1	17+65	18+05.8	LT.								G2.5
SHEET TOTAL				35	19.77	19.77	227.78	87.22	99.75	G28	G2.5

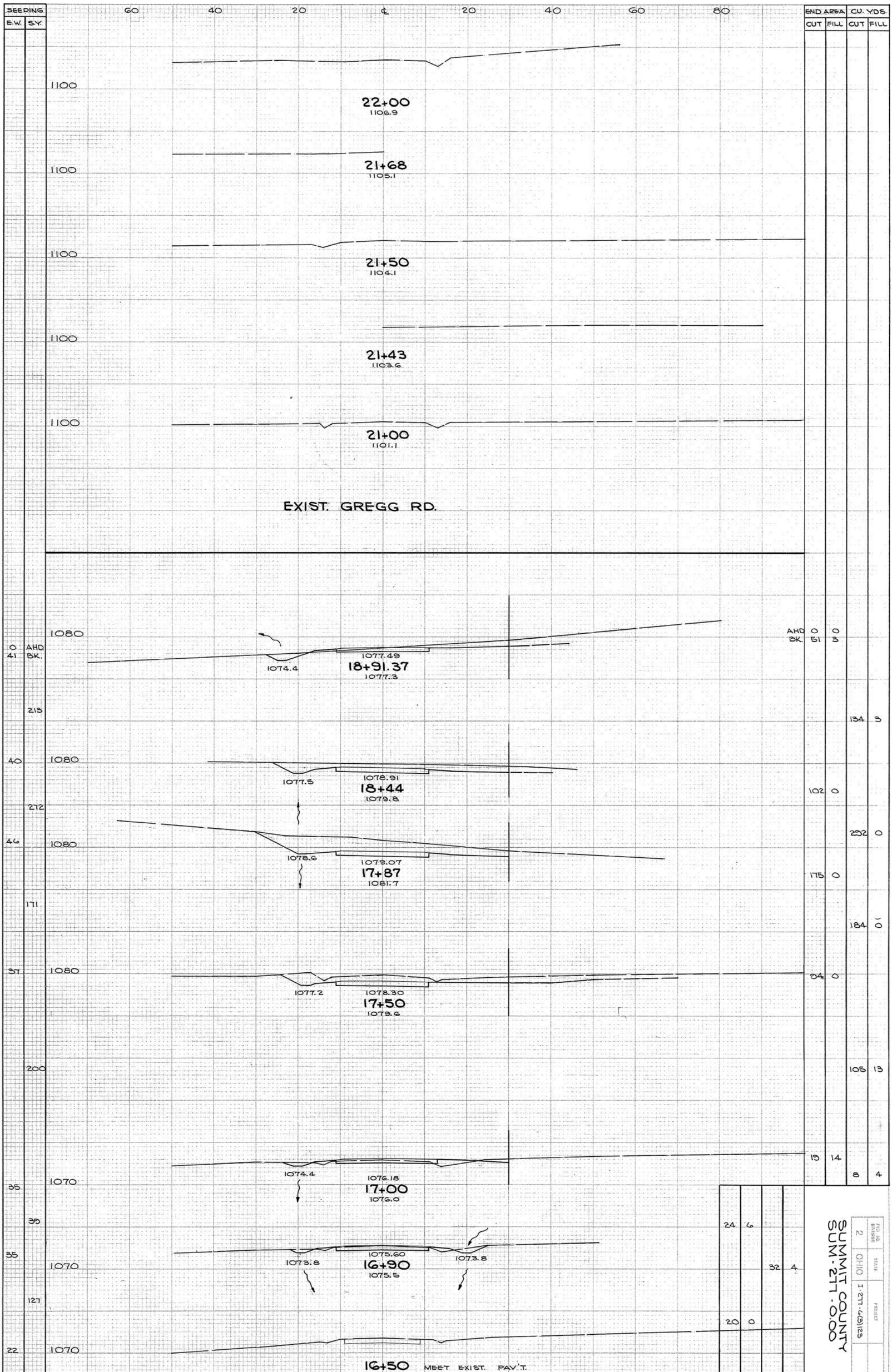


EXISTING TYPICAL SECTION
GREGG ROAD

EXCAVATION	755	CU.YDS.
EMBANKMENT	24	CU.YDS.
SEEDING & MULCHING	1022	SQ.YDS.

PLATE 4-CROSS SECTION C. P. R. & R. E. STANDARD
EUGENE DIETZGEN CO. -- CHICAGO

GREGG RD. CUL-DE-SAC ~ PLAN & PRO


SEEDING
E.W. S.Y.
60 40 20 ℄ 20 40 60 80
END AREA CUT FILL
CU. YDS CUT FILL
1100
22+00
1106.9
21+68
1105.1
21+50
1104.1
21+43
1103.6
21+00
1101.1
EXIST. GREGG RD.
1080
0 AHD
41 BK.
1074.4
1077.49
18+91.37
1077.3
AHD 0 0
BK. 51 3
213
134 3
40
1080
1077.5
1078.91
18+44
1079.8
102 0
212
46
1080
1078.6
1079.07
17+87
1081.7
175 0
232 0
171
184 10
37
1080
1077.2
1078.30
17+50
1079.6
94 0
200
105 13
1074.4
1076.18
17+00
1076.0
19 14
8 4
35
1070
39
35
1070
1073.8
1075.60
16+90
1075.5
1073.8
24 6
32 4
127
20 0
22
1070
16+50 MEET EXIST. PAV'T.
1073.6
GREGG RD. CUL DE SAC
SUMMIT COUNTY
SUM-277-0.00
PID NO. 87519
DIVISION 2
STATE OHIO
PROJECT I-277-6.08/12.23
15
23

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-Q(3)123	

138
234

SUMMIT COUNTY
SUM - 277 - 0.00

PROPOSED "CANFIELD" ** SIGN

LEFT LANE ENDS
KEEP RIGHT

** FOR DETAILS, SEE SHEET Nº 47 OF 147 IN SUM -77-9.74 PLANS.

SUM - 224 (I-277)

RAMP "A"

RAMP "B"

RAMP "B-1"

RAMP "B-2"

RAMP "D"

W-54-144 LEFT LANE ENDS KEEP RIGHT

S1-6-15

R-36-48 KEEP RIGHT OR LEFT

YELLOW FLASHERS

W-123-48 LEFT LANE CLOSED AHEAD

YELLOW FLASHERS

W-123-48 ROAD CONSTRUCTION AHEAD

EXIST. TEMR GUARDRAIL

FACE OF YELLOW PAINTED DRUMS WITHOUT GUARDRAIL

SOUTHBOUND I-77

NORTHBOUND I-77

* CONSTRUCTION ARROWS

DELINEATORS @ 100' INTERVALS AMBER (C-1)

EXIST. TEMR GUARDRAIL

EXIST. TEMR GUARDRAIL

FACE OF YELLOW PAINTED DRUMS WITHOUT GUARDRAIL

*-ERECT ON FIRST BARREL THEN EVERY 100' FOR 300' THEN EVERY 200' THEREAFTER.

C-8-48 END CONSTRUCTION

BEGIN S1-6-30

WATERLOO ROAD

522+00

527+44.42 N.B.
527+36.83 S.B.
=325+00.64 AHEAD

330+00

335+00

NOTE:
FOR WATERLOO RD. INTERCHANGE DETAILS SEE SUM -77-9.74 PLANS.

NOTE:
THE CONTRACTOR MAY CLOSE EITHER THE RIGHT OR LEFT LANE OF THE THREE THROUGH LANES ON N.B. I-77 OR S.B. I-77. ONLY ONE OF THE THREE THROUGH LANES MAY BE CLOSED AT ONE TIME. THE PLAN ABOVE INDICATES THE METHOD TO BE USED IN CLOSING ONLY THE LEFT LANES. WHEN CLOSING THE RIGHT LANES, THE LENGTHS OF TAPER, OFFSET DISTANCES AND OTHER INFORMATION GIVEN FOR THE LOCATION OF THE PAINTED DRUMS SHOULD BE POSITIONED OPPOSITE HAND TO THOSE SHOWN ABOVE.
TRAFFIC MAINTENANCE SIGNS INDICATED AS "RIGHT" OR "LEFT" MUST BE CHANGED TO BE CONSISTENT WITH THE TRAFFIC MOVEMENTS DESIRED.

FOR ADDITIONAL NOTES SEE SHEET Nº 139 & 8.

I-77 TRAFFIC MAINTENANCE

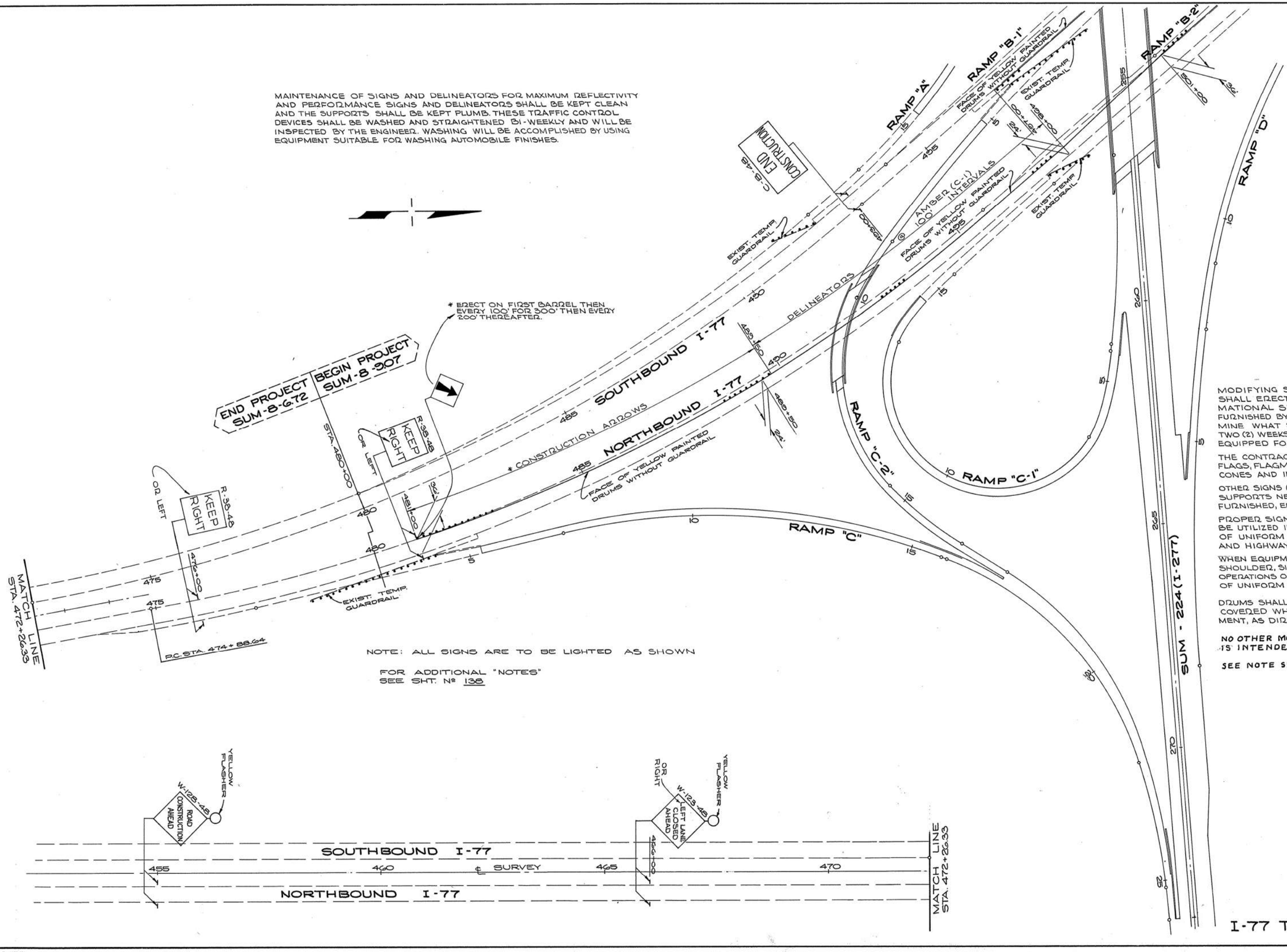
K & E - AKRON

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

139
234

SUMMIT COUNTY
SUM -277-0.00

MAINTENANCE OF SIGNS AND DELINEATORS FOR MAXIMUM REFLECTIVITY AND PERFORMANCE SIGNS AND DELINEATORS SHALL BE KEPT CLEAN AND THE SUPPORTS SHALL BE KEPT PLUMB. THESE TRAFFIC CONTROL DEVICES SHALL BE WASHED AND STRAIGHTENED BI-WEEKLY AND WILL BE INSPECTED BY THE ENGINEER. WASHING WILL BE ACCOMPLISHED BY USING EQUIPMENT SUITABLE FOR WASHING AUTOMOBILE FINISHES.



NOTE: ALL SIGNS ARE TO BE LIGHTED AS SHOWN

FOR ADDITIONAL "NOTES"
SEE SHT. Nº 138

MODIFYING SPECIFICATION 614.03 (C)-THE CONTRACTOR SHALL ERECT AND MAINTAIN ALL WARNING AND INFORMATIONAL SIGNS, AS PER PLAN THESE SIGNS WILL BE FURNISHED BY THE STATE. THE CONTRACTOR SHALL DETERMINE WHAT SIGNS ARE NEEDED AND ADVISE THE ENGINEER TWO (2) WEEKS IN ADVANCE OF THE TIME THEY WILL BE EQUIPPED FOR TRAFFIC MAINTENANCE.

THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL FLAGS, FLAGMEN, WATCHMEN, BARRICADES, SIGN SUPPORTS, CONES AND INCIDENTALS RELATED THERETO.

OTHER SIGNS (REGULATORY AND ROUTE GUIDE TYPE) AND SUPPORTS NEEDED TO MAINTAIN TRAFFIC WILL BE FURNISHED, ERECTED AND MAINTAINED BY OTHERS.

PROPER SIGNS, CONES, BARRICADES AND FLAGMEN SHALL BE UTILIZED IN CONFORMANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, 1963 EDITION.

WHEN EQUIPMENT IS WORKING FROM THE OUTSIDE SHOULDER, SIGNING SHALL BE ACCORDING TO "STATIONARY OPERATIONS ON THE SHOULDER" FROM THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

DRUMS SHALL BE REMOVED AND SIGNS EFFECTIVELY COVERED WHEN NO WORK OCCURS NEAR THE PAVEMENT, AS DIRECTED BY THE DIVISION TRAFFIC ENGINEER.

NO OTHER MODIFICATION OR WAIVER OF ITEM 614 IS INTENDED OR PERMITTED.

SEE NOTE SHEET 8

I-77 TRAFFIC MAINTENANCE

K & E - AKRON

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(8)123	

140
234

SUMMIT COUNTY
SUM-277-0.00

ITEM 660 - SOD FOR SPECIAL BERM AND SLOPE PROTECTION

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

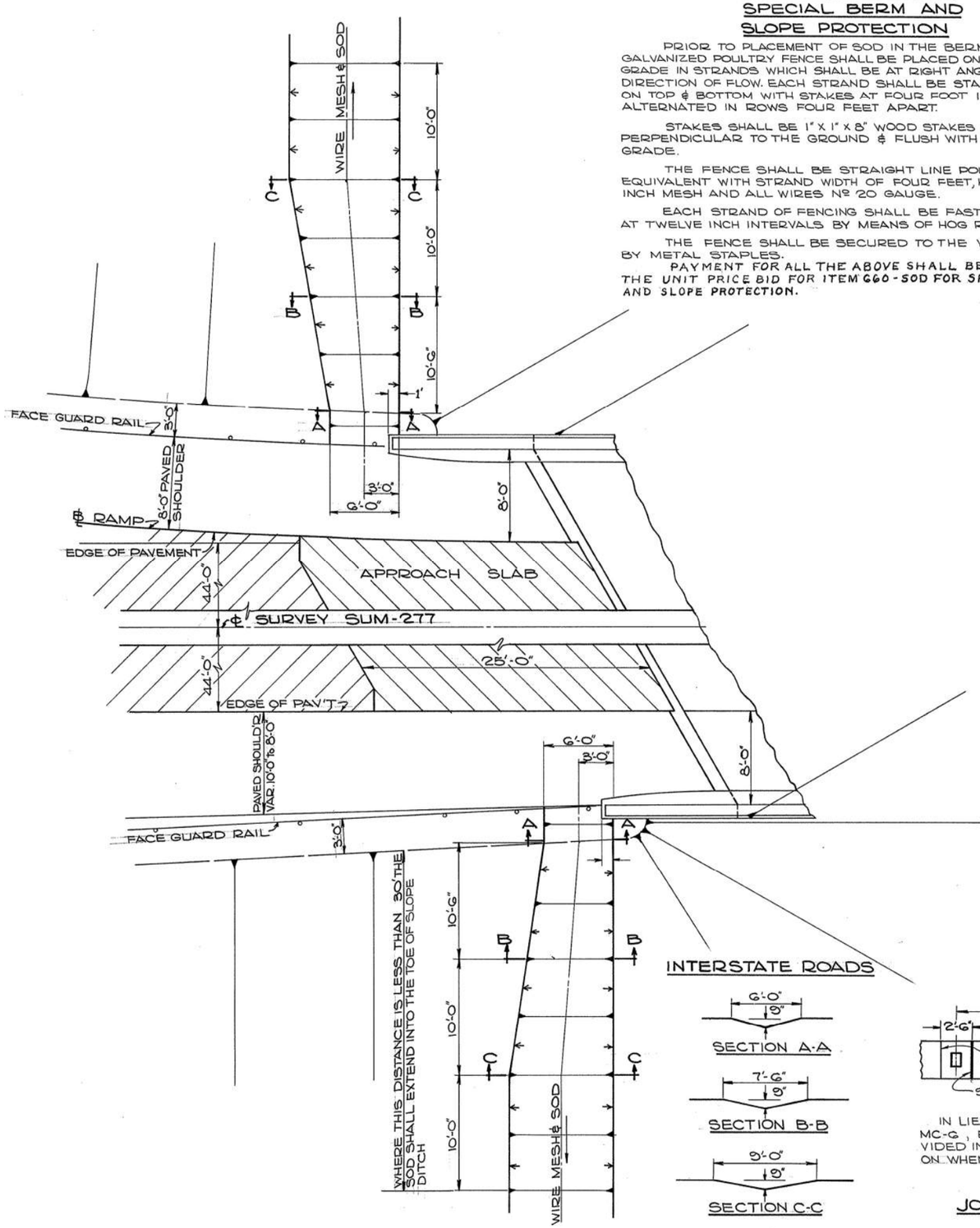
STAKES SHALL BE 1" X 1" X 8" WOOD STAKES AND SHALL BE PERPENDICULAR TO THE GROUND & FLUSH WITH THE FINISHED GRADE.

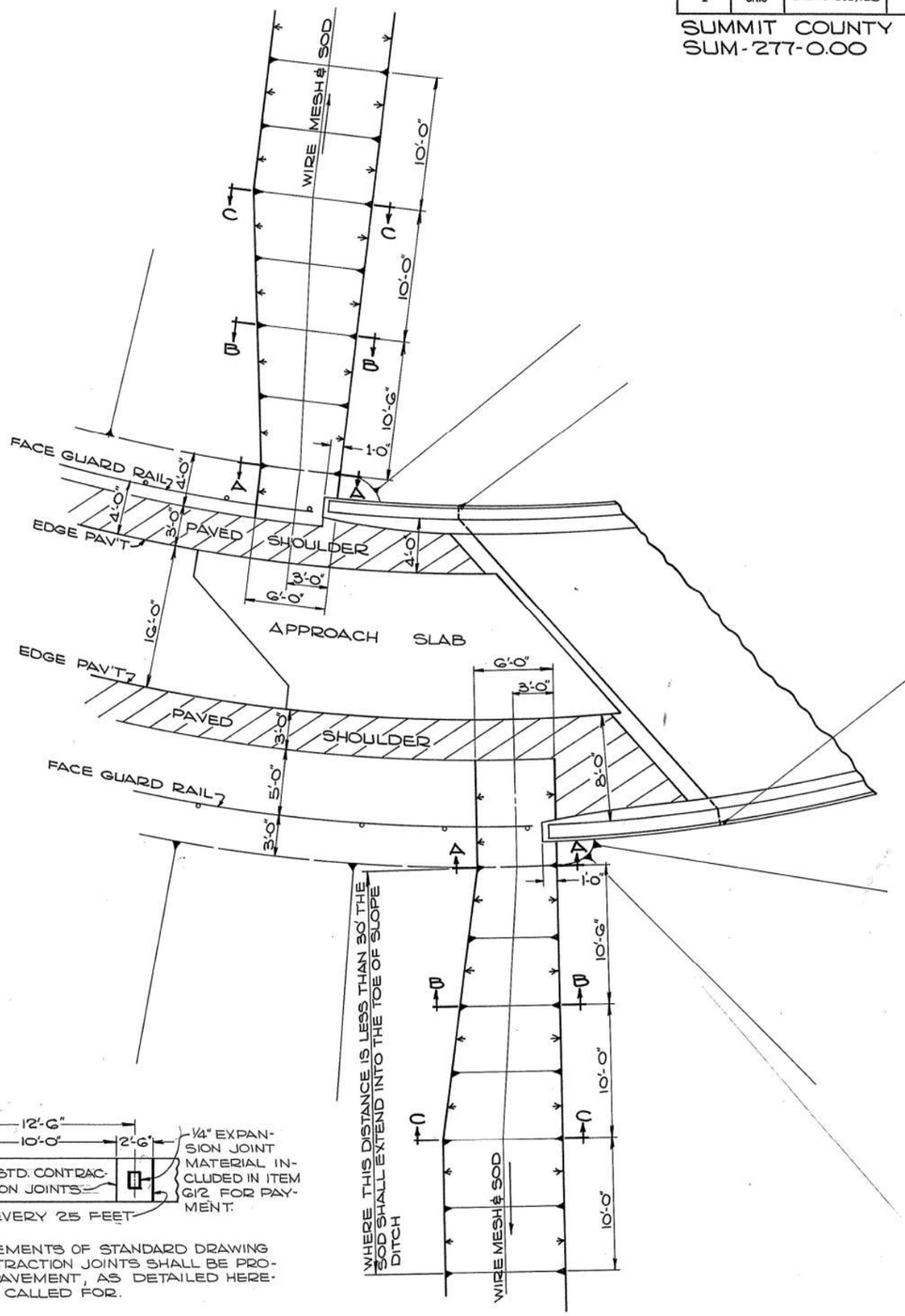
THE FENCE SHALL BE STRAIGHT LINE POULTRY FENCE OR EQUIVALENT WITH STRAND WIDTH OF FOUR FEET, HAVING A TWO INCH MESH AND ALL WIRES Nº 20 GAUGE.

EACH STRAND OF FENCING SHALL BE FASTENED TOGETHER AT TWELVE INCH INTERVALS BY MEANS OF HOG RINGS.

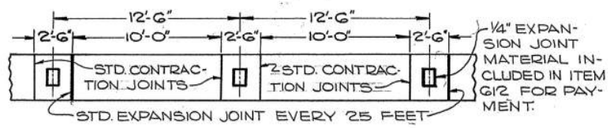
THE FENCE SHALL BE SECURED TO THE WOOD STAKES BY METAL STAPLES.

PAYMENT FOR ALL THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 660 - SOD FOR SPECIAL BERM AND SLOPE PROTECTION.





INTERSTATE ROADS



IN LIEU OF SPACING REQUIREMENTS OF STANDARD DRAWING MC-6, EXPANSION AND CONTRACTION JOINTS SHALL BE PROVIDED IN ITEM 612 MEDIAN PAVEMENT, AS DETAILED HEREON WHENEVER GUARD RAIL IS CALLED FOR.

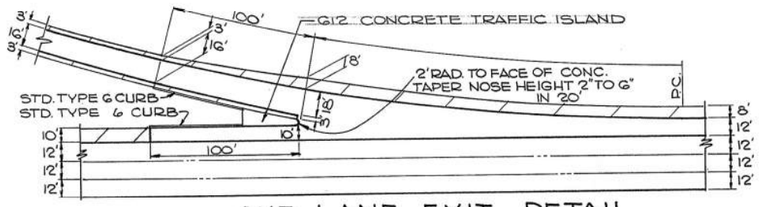
MEDIAN PAVEMENT
JOINT DETAIL AT GUARD RAIL POST

ROADWAY DETAILS

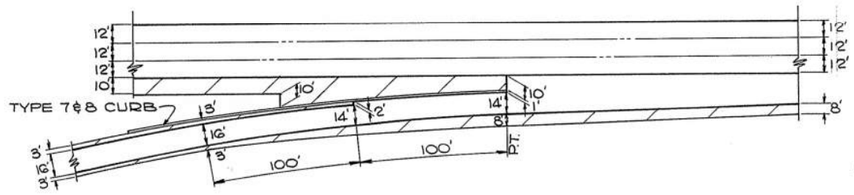
FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

141
234

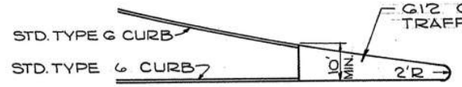
SUMMIT COUNTY
SUM-277-0.00

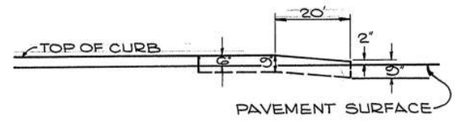


ONE LANE EXIT DETAIL

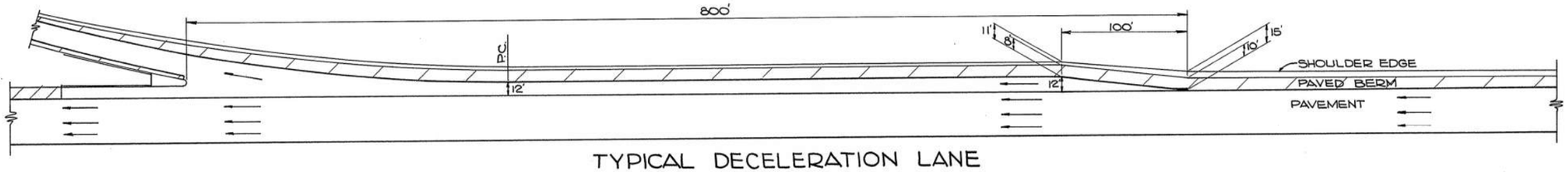


ONE LANE ENTRANCE DETAIL

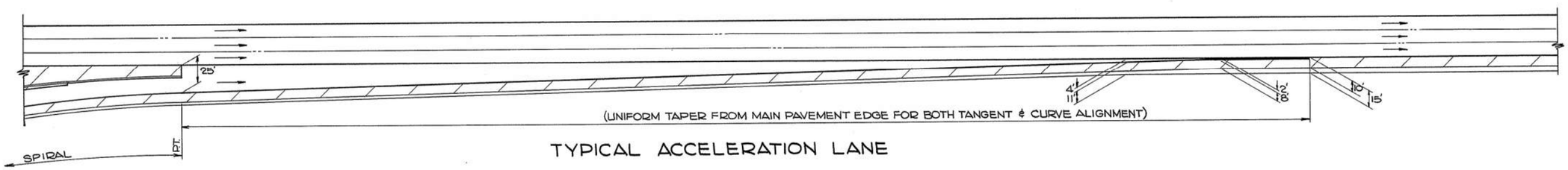




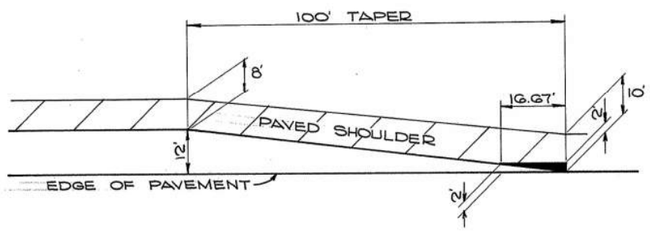
EXIT NOSE DETAIL



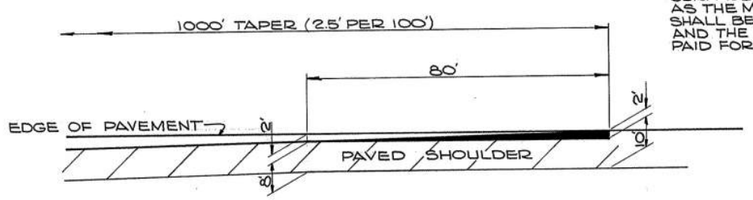
TYPICAL DECELERATION LANE



TYPICAL ACCELERATION LANE



TYPICAL DECELERATION LANE TAPER



TYPICAL ACCELERATION LANE TAPER
(USING NORMAL 1000')

NOTE:
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.

SPEED CHANGE LANES
& RAMP NOSE DETAILS

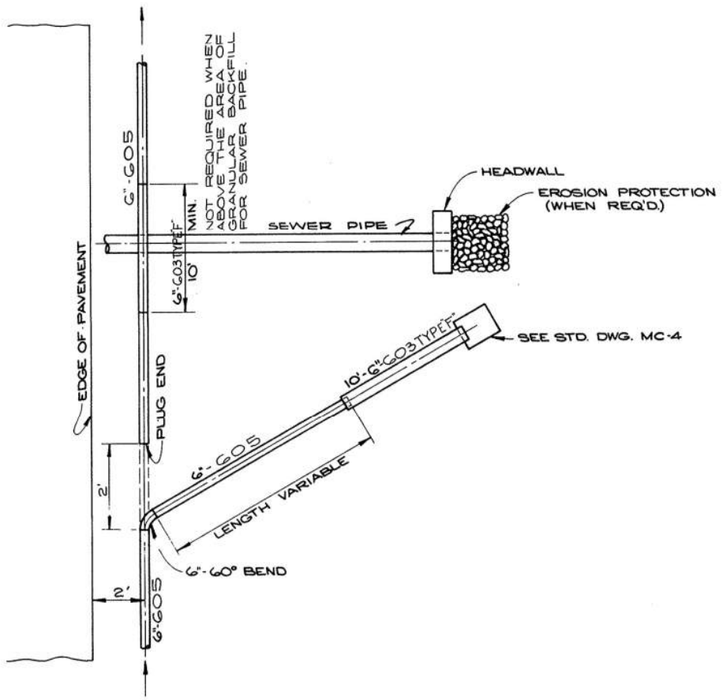
K&E

TYPICAL DETAILS OF UNDERDRAIN OUTLETS

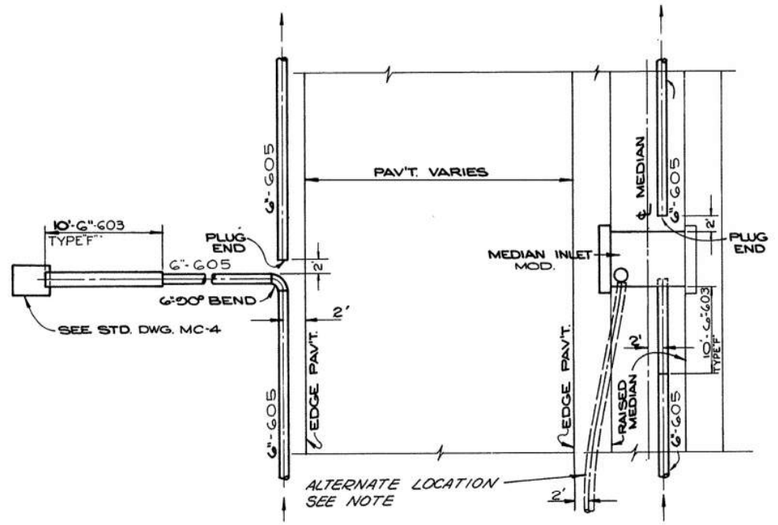
FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

142
234

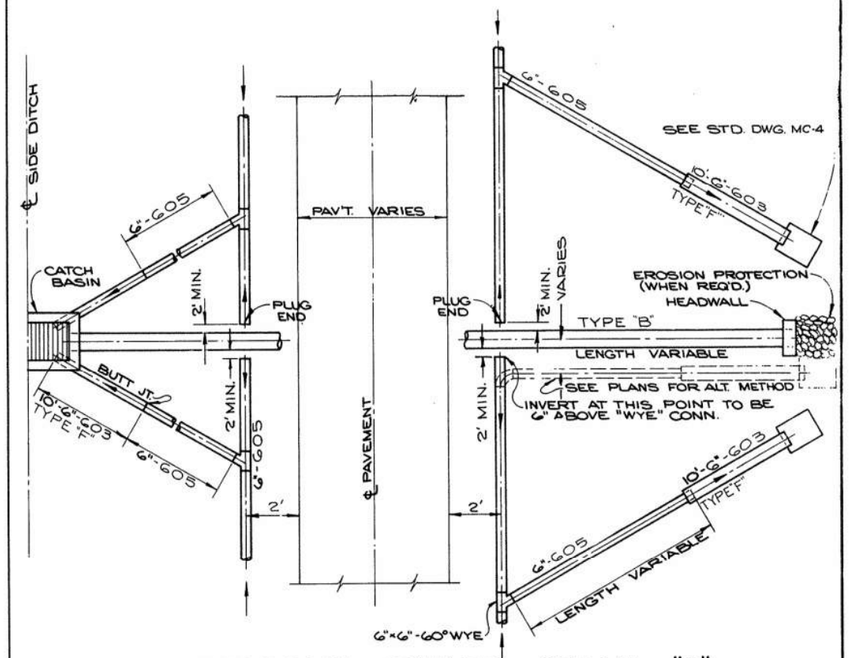
SUMMIT COUNTY
SUM-277-0.00



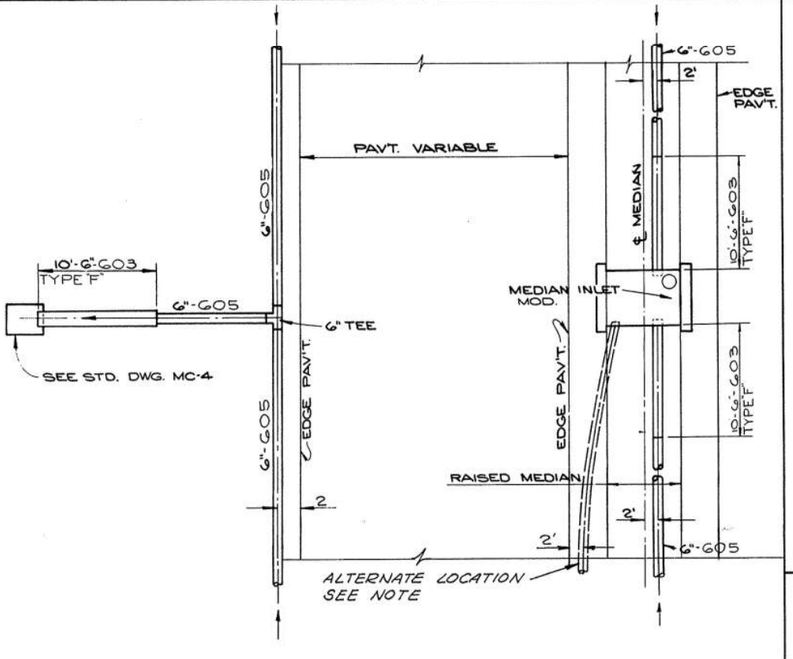
UNDERDRAIN OUTLET DETAIL "A"



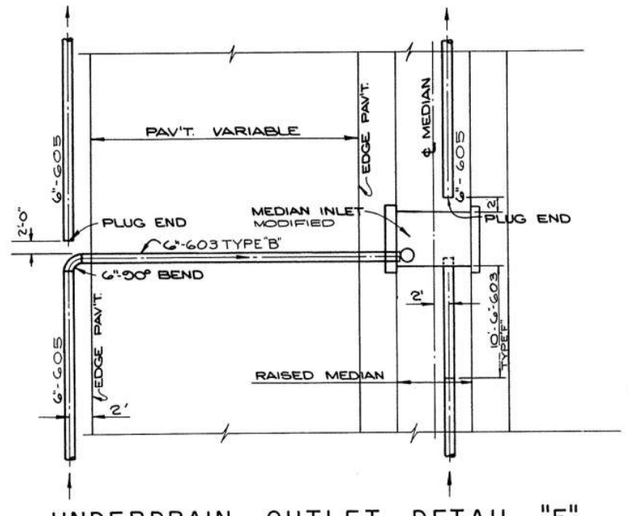
UNDERDRAIN OUTLET DETAIL "B"



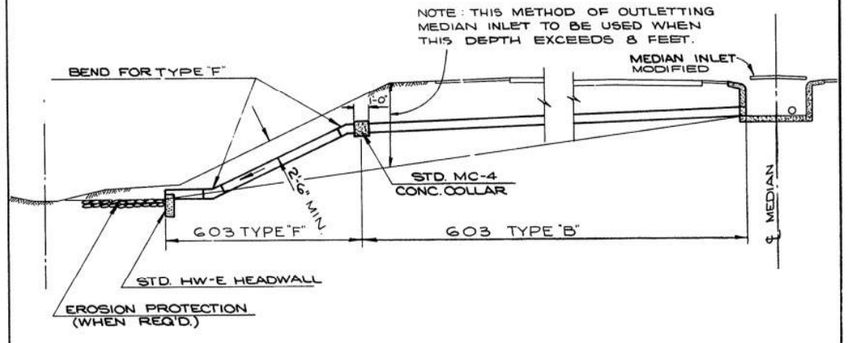
UNDERDRAIN OUTLET DETAIL "C"



UNDERDRAIN OUTLET DETAIL "D"



UNDERDRAIN OUTLET DETAIL "E"



MEDIAN OUTLET DETAIL IN HIGH FILL

NOTES

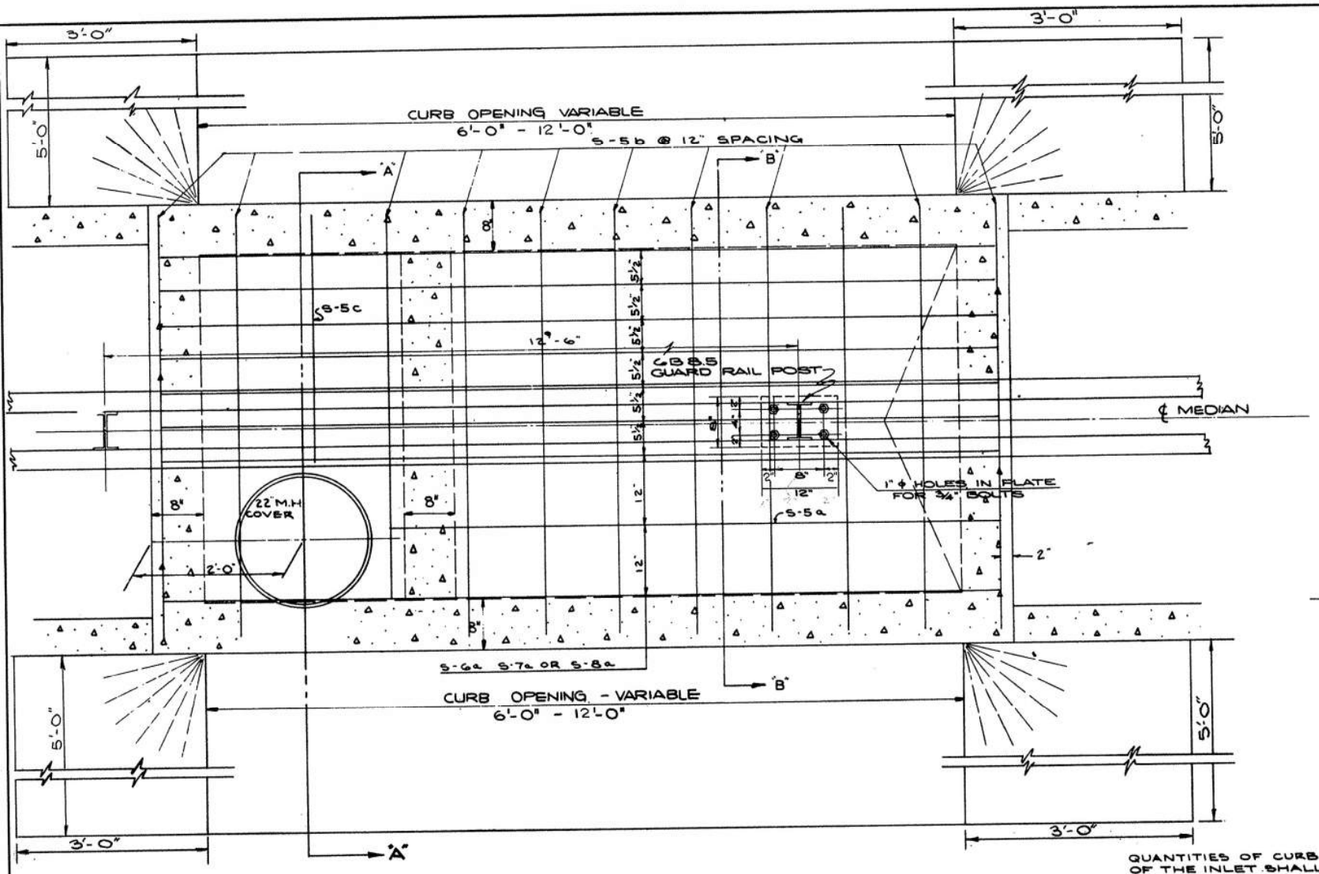
ALTERNATE LOCATION USED WHEN UNDERDRAIN IS AJACENT TO LONGITUDINAL STORM SEWER. TO BE LOCATED ON HIGH SIDE WHEN ABOVE CONDITION OCCURS IN SUPERELEVATED SECTIONS.

TYPICAL UNDERDRAIN OUTLETS

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

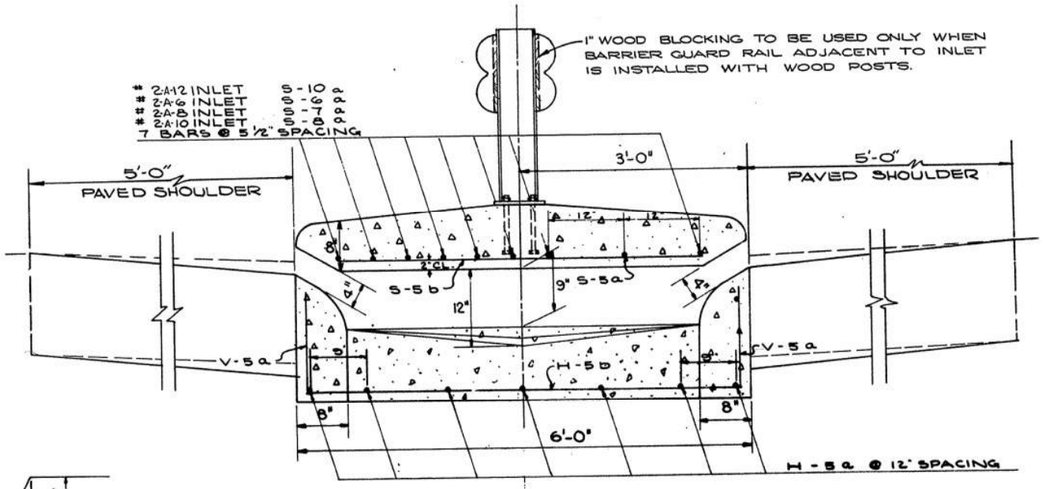
143
234

SUMMIT COUNTY
SUM-277-0.00

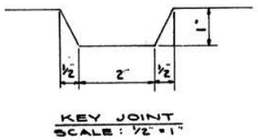


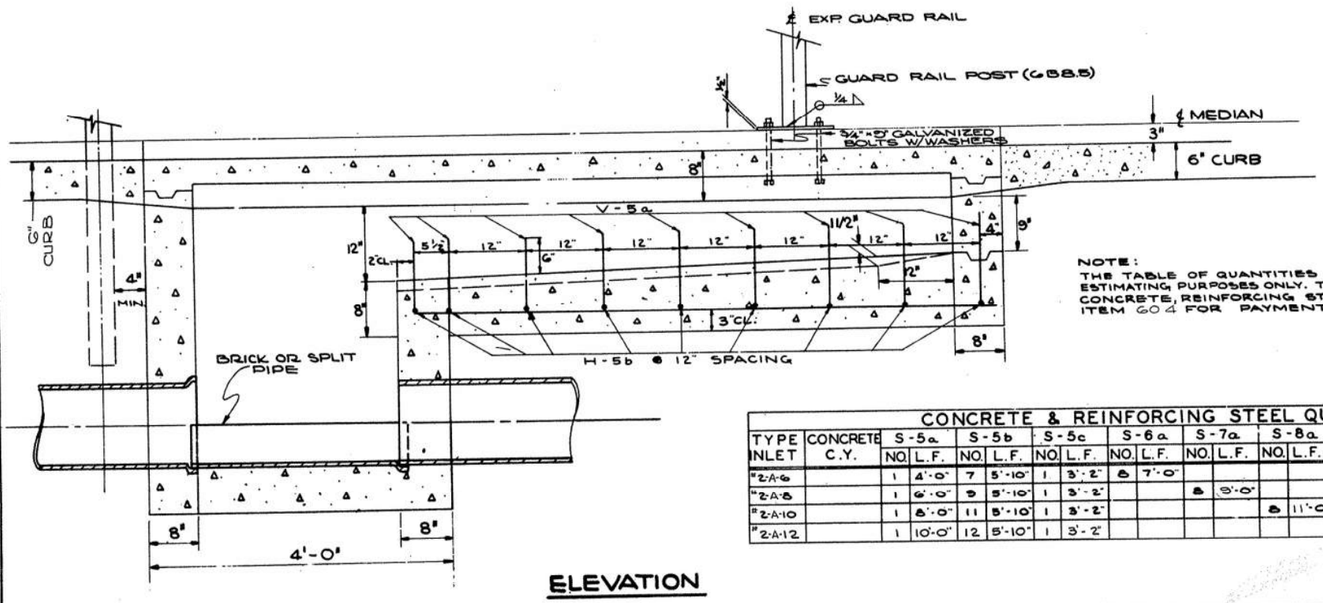
PLAN

QUANTITIES OF CURB WITHIN THE LIMITS OF THE INLET SHALL BE DEDUCTED FROM THE PROJECT QUANTITIES



SECTION B-B





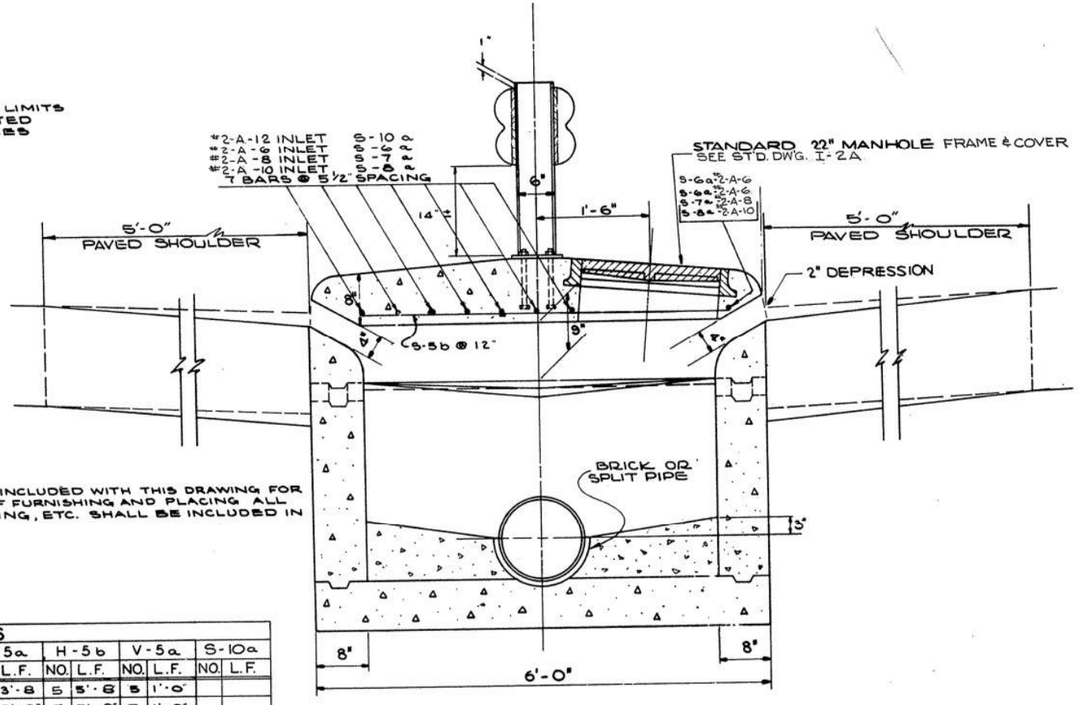
ELEVATION

NOTE:
THE TABLE OF QUANTITIES BELOW IS INCLUDED WITH THIS DRAWING FOR ESTIMATING PURPOSES ONLY. THE COST OF FURNISHING AND PLACING ALL CONCRETE, REINFORCING STEEL, CASTING, ETC. SHALL BE INCLUDED IN ITEM 604 FOR PAYMENT.

CONCRETE & REINFORCING STEEL QUANTITIES

TYPE INLET	CONCRETE C.Y.	S-5a NO.	S-5a L.F.	S-5b NO.	S-5b L.F.	S-5c NO.	S-5c L.F.	S-6a NO.	S-6a L.F.	S-7a NO.	S-7a L.F.	S-8a NO.	S-8a L.F.
#2-A-6		1	4'-0"	7	5'-10"	1	3'-2"	5	7'-0"				
#2-A-8		1	6'-0"	9	5'-10"	1	3'-2"			5	9'-0"		
#2-A-10		1	8'-0"	11	5'-10"	1	3'-2"					5	11'-0"
#2-A-12		1	10'-0"	12	5'-10"	1	3'-2"						

TYPE	H-5a NO.	H-5a L.F.	H-5b NO.	H-5b L.F.	V-5a NO.	V-5a L.F.	S-10a NO.	S-10a L.F.
#2-A-6	7	3'-8	5	5'-8	5	1'-0"		
#2-A-8	7	5'-8"	7	5'-8"	7	1'-0"		
#2-A-10	7	7'-8"	9	5'-8"	9	1'-0"		
#2-A-12	7	9'-8"	11	5'-8"	11	1'-0"	8	13'-0"



SECTION A-A

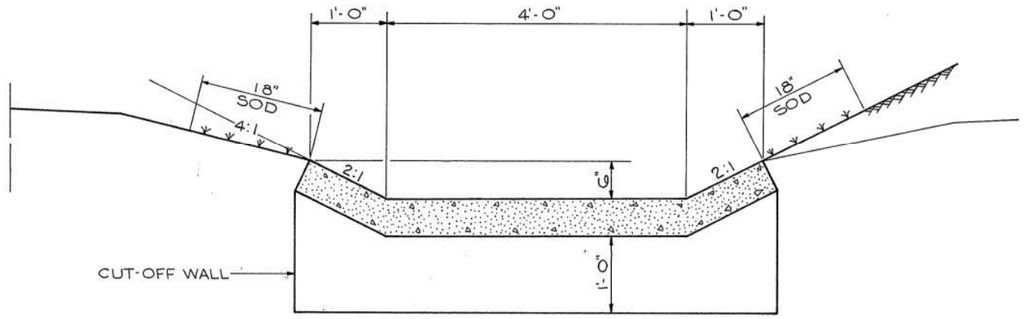
DRAINAGE DETAILS

STANDARD Nº 2-A-6 THRU 2-A-12 INLETS - MODIFIED

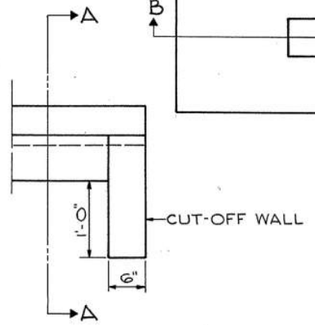
FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

144
234

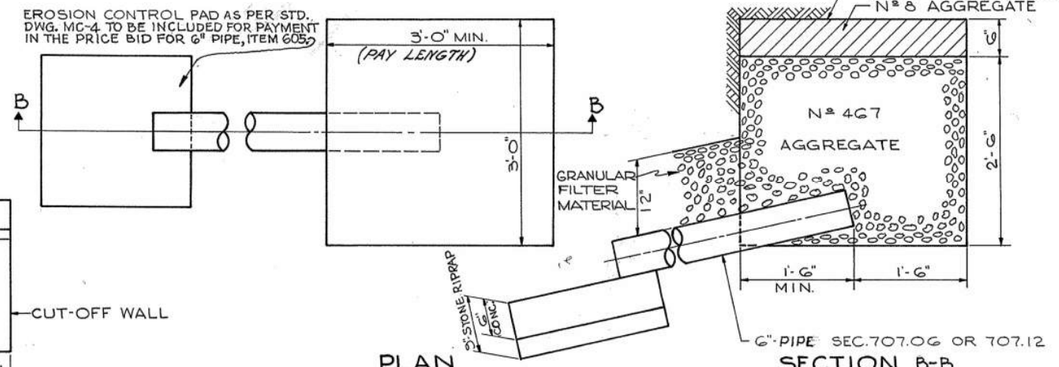
SUMMIT COUNTY
SUM-277-0.00



SECTION A-A



SIDE VIEW



PLAN

SECTION B-B

STANDARD PAVED GUTTER TYPE 1-4

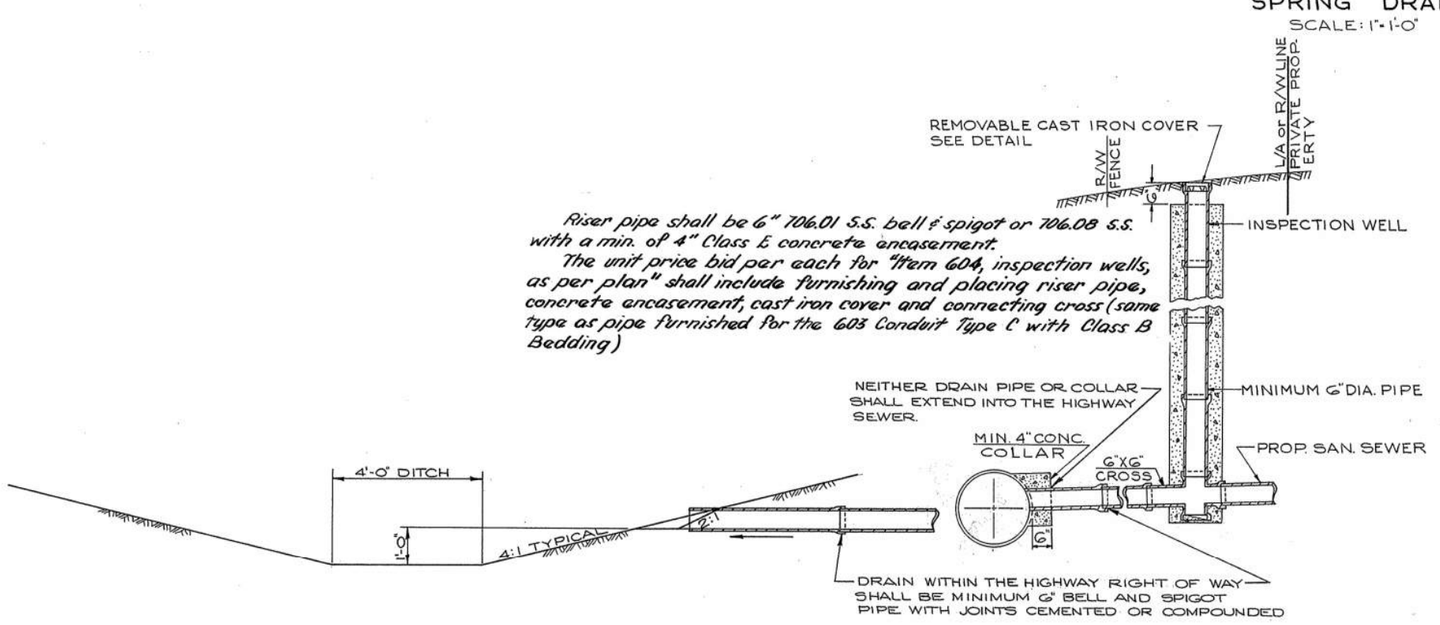
NOTE: Aggregates, tarred paper or tarred burlap, and necessary excavation for sprin drains shall be included for payment in the unit price bid per Lin. Ft. for "Item 605, Ag- gregate Drains for Springs, as per plan."

The 6" pipe 707.06 or 707.12 shall be covered with granular filter material [603.03(C)] to a height of one (1) foot above the top of the pipe. The remainder of the backfill for this item shall be soil or granular filter backfill placed in accordance with 603.08.

Spring drains shall be built in reasonably close conformity with the detail shown abov The lengths and exact locations of the drains shall be determined by the Engineer.

See note on Sheet No. 7.

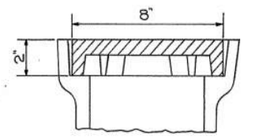
SPRING DRAIN
SCALE: 1"=1'-0"



Riser pipe shall be 6" 706.01 S.S. bell & spigot or 706.08 S.S. with a min. of 4" Class E concrete encasement.

The unit price bid per each for "Item 604, inspection wells, as per plan" shall include furnishing and placing riser pipe, concrete encasement, cast iron cover and connecting cross (same type as pipe furnished for the 603 Conduit Type C with Class B Bedding)

REMOVABLE CAST IRON COVER, NEENAH R-4055 SERIES, OR KRAMER BROS. K-861 (SOLID), OR APPROVED EQUAL.



CAST IRON COVER
WEIGHT 8 LBS.

OUTLET TO SIDE DITCH

SANITARY INSPECTION WELL

The cost of the tap into the carrying line and the concrete collar shall be included in the unit price bid per Lin. Ft. for the 603 Conduit Type C with Class B Bedding.

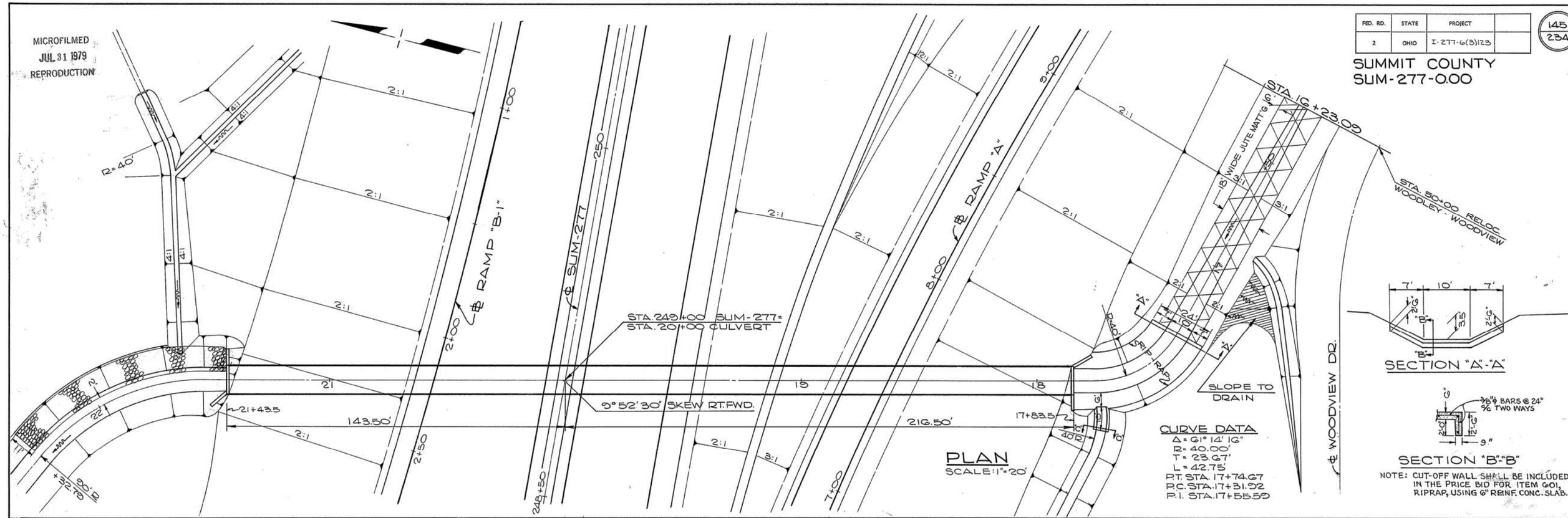
DRAINAGE DETAILS

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

145
234

SUMMIT COUNTY
SUM-277-0.00



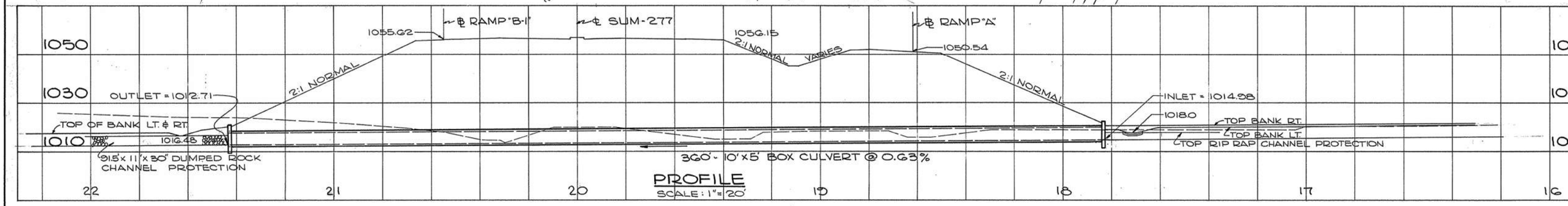
PLAN
SCALE: 1" = 20'

CURVE DATA
Δ = 61° 14' 16"
R = 40.00'
T = 23.67'
L = 42.75'
P.T. STA. 17+74.67
P.C. STA. 17+31.92
P.I. STA. 17+55.59

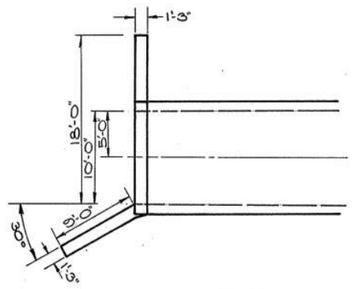
SECTION "A"-"A"

SECTION "B"-"B"

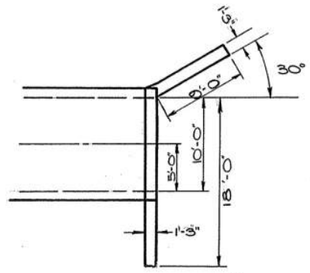
NOTE: CUT-OFF WALL SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 601, RIPRAP, USING 6" REINF. CONC. SLAB.



PROFILE
SCALE: 1" = 20'



DETAIL OUTLET



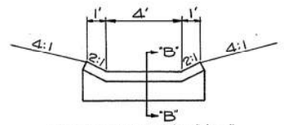
DETAIL INLET

CULVERT DATA
TYPE: BOX CULVERT
SIZE: 10' x 5' X 360'
SKEW: 9° 52' 30" RT. FORWARD
WORK REQUIRED:
BUILD NEW BOX CULVERT, PLACE REINFORCED CONCRETE RIP RAP, DUMPED ROCK & JUTE MATTING AS SHOWN ON PLAN.

ESTIMATED QUANTITIES

511 -	CONCRETE, CLASS C	728 CU.YD.
509 -	REINFORCING STEEL	127,957 LBS.
601 -	6" REINF. CONC. RIP RAP	145 SQ.YD
601 -	DUMPED ROCK CHANNEL PROT'T'N	101.7 CU.YD.
667 -	JUTE MATTING	218 SQ.YD
503 -	EXCAVATION FOR STRUCTURES	1,146 CU.YD.

AREA = 409 Ac.
Q_{50} = 352 C.F.S.



SECTION "C"-"C"
CUT OFF WALL

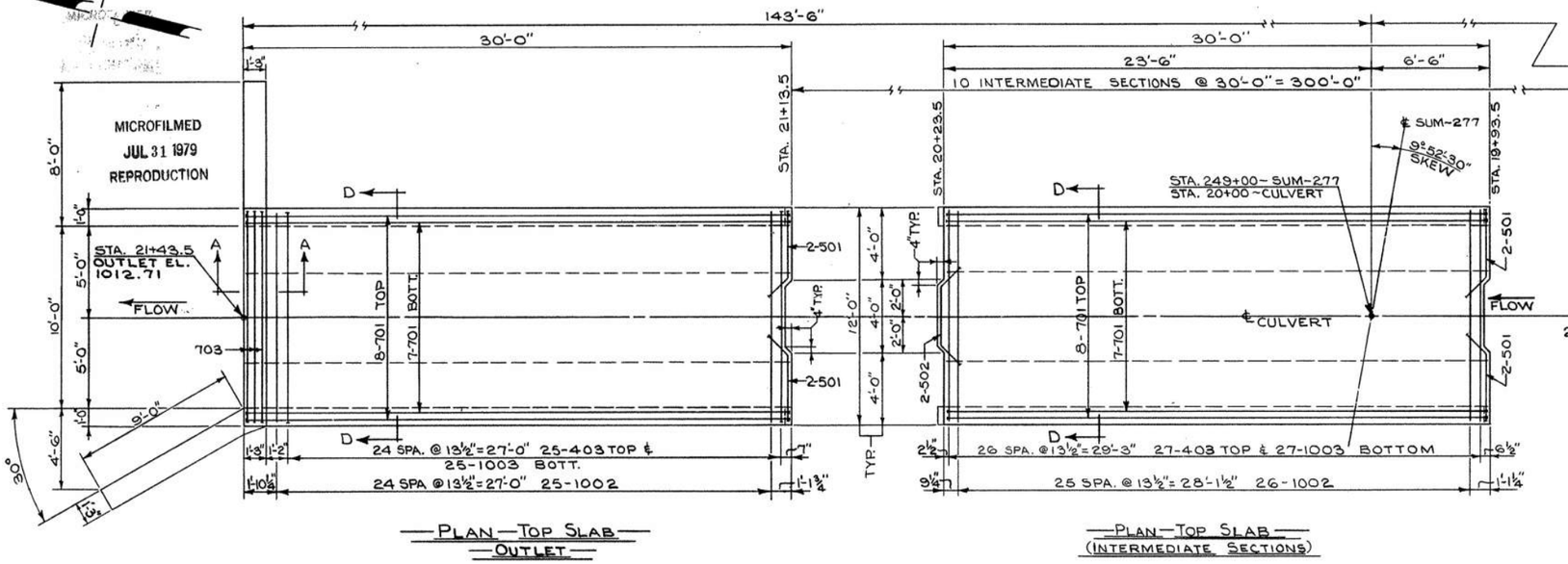
C-1
BOX CULVERT
SUM-277 STA. 249+00
STRUCTURE Nº SUM-277-0008

FED. RD.	STATE	PROJECT	
2	OHIO		

SUM 277-0.00

146
234

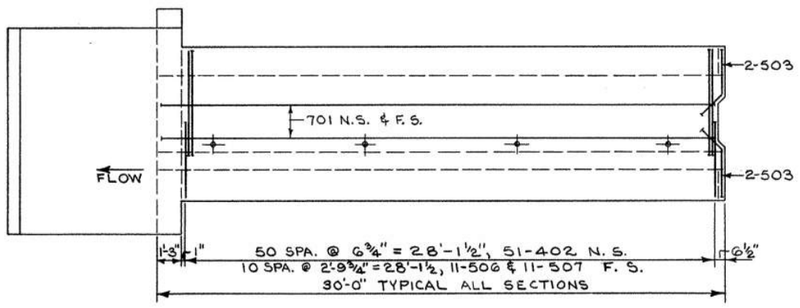
MICROFILMED
JUL 31 1979
REPRODUCTION



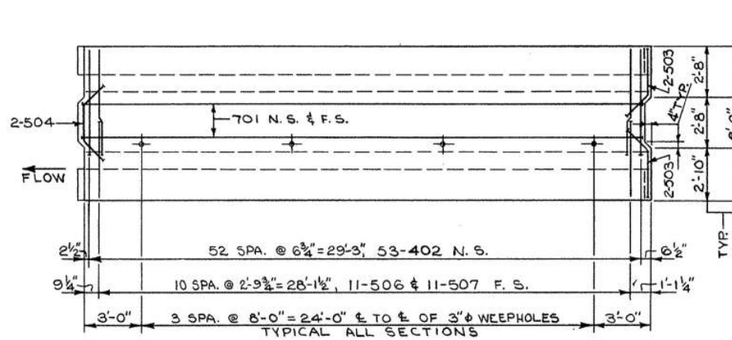
PLAN — TOP SLAB — OUTLET

PLAN — TOP SLAB — (INTERMEDIATE SECTIONS)

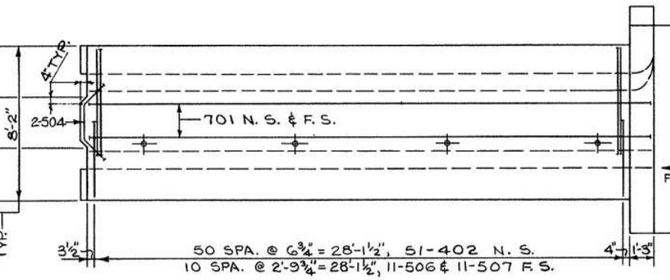
PLAN — TOP SLAB — INLET



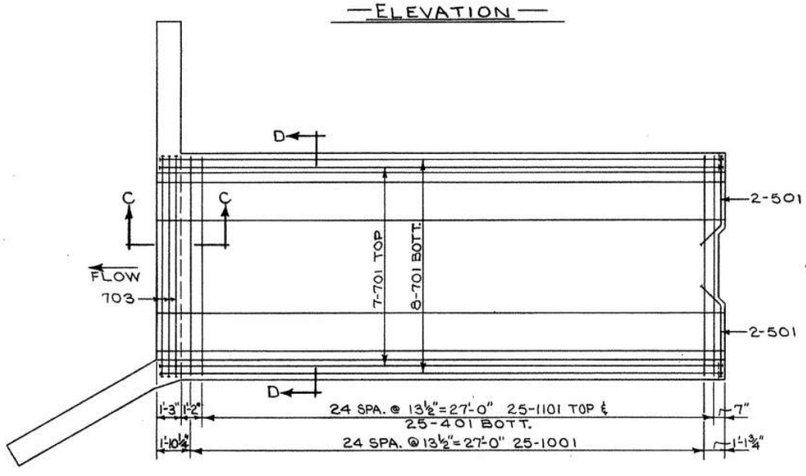
ELEVATION



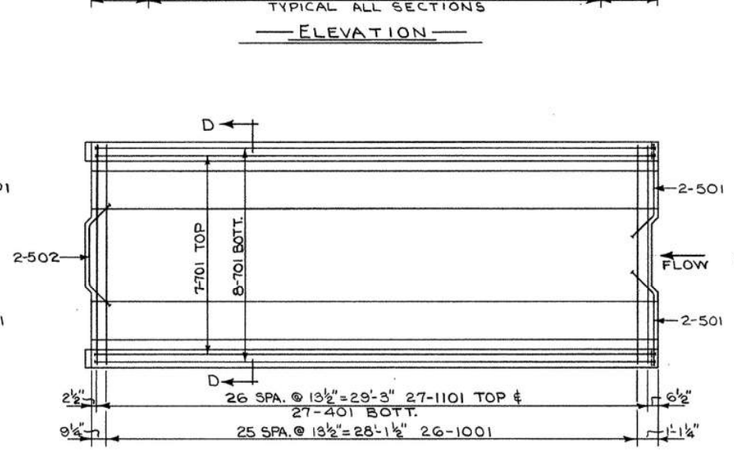
ELEVATION



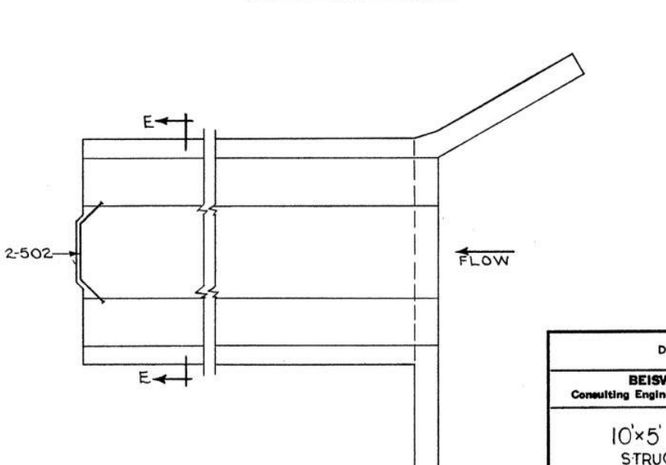
ELEVATION



PLAN BOTTOM SLAB — OUTLET



PLAN BOTTOM SLAB — (INTERMEDIATE SECTIONS)



PLAN BOTTOM SLAB — INLET

FOR DETAILS NOT SHOWN SEE OUTLET

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

10'×5' CONC. BOX CULVERT

STRUCTURE Nº SUM – 277 – 0008
UNDER I-277
SUMMIT COUNTY
STA 249+00.00

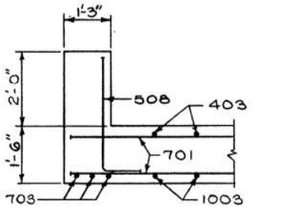
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFP	BMR		H.G.H.	RDH	2-4-66	

MICROFILMED
JUL 31 1979
REPRODUCTION

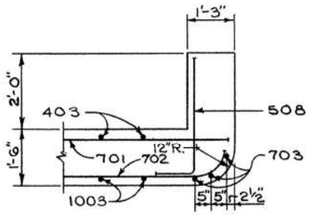
FED. RD.	STATE	PROJECT	
2	OHIO		

147
234

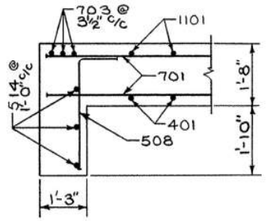
SUM - 277-0.00



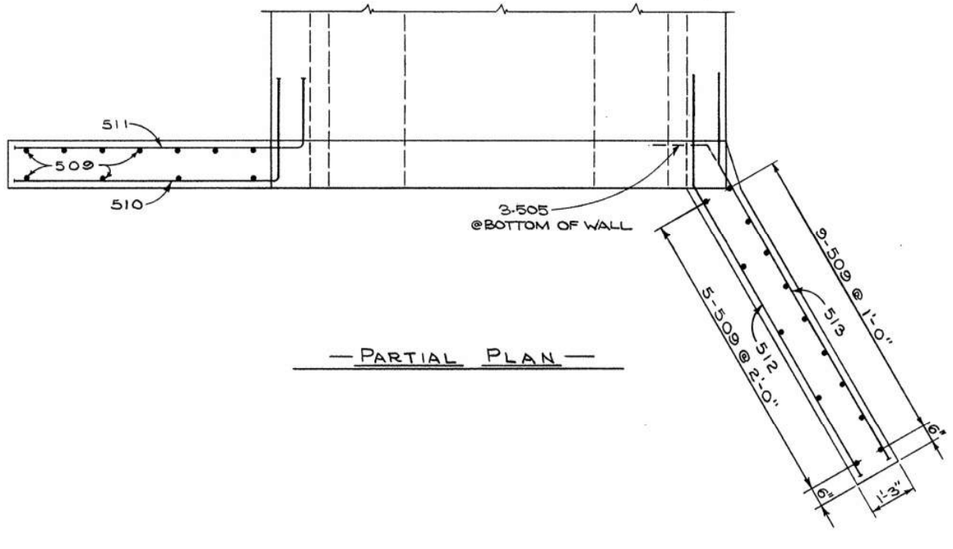
— SECTION "A-A" —



— SECTION "B-B" —



— SECTION "C-C" —

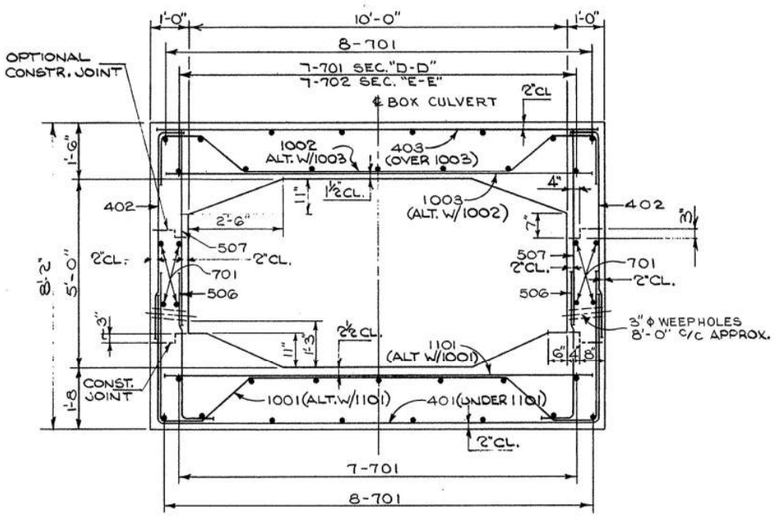


— PARTIAL PLAN —

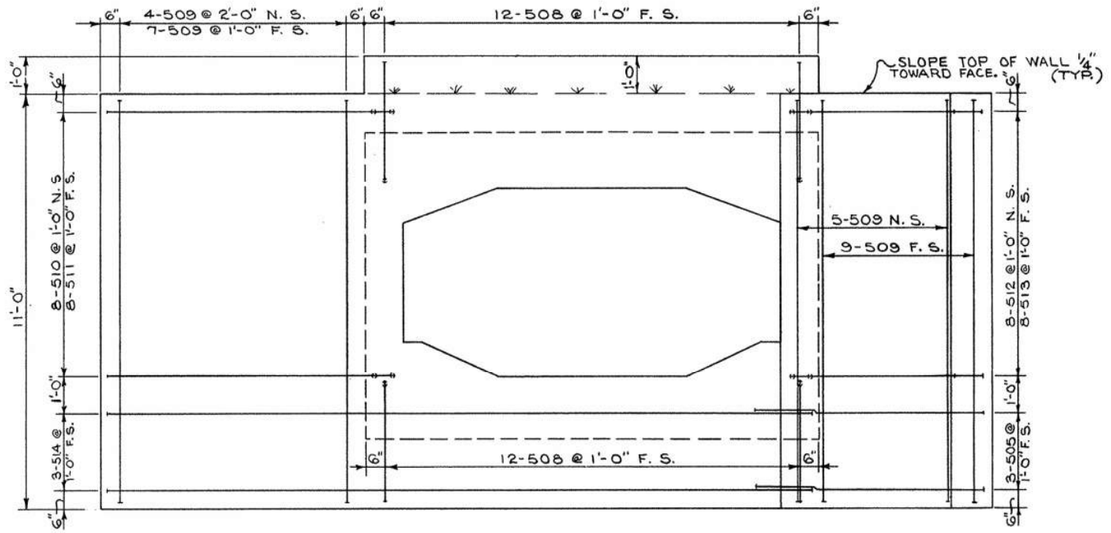
REINFORCING STEEL SCHEDULE

MARK	No. REQ'D.	LENGTH	TYPE	DIMENSIONS A	B	C	D	E	F	WEIGHT LBS
401	320	19'-5"	2	11'-8"	4'-0"					4,15
402	1264	6'-3"	1	8"	5'-8"					5,27
403	320	11'-6"	ST.							2,45
501	88	5'-2"	3	3'-9"	1'-6"	1'-1"				47
502	44	6'-1"	4	3'-2½"	1'-6"	1'-1"				27
503	88	3'-10"	3	2'-5"	1'-6"	1'-1"				35
504	44	4'-9"	4	1'-10½"	1'-6"	1'-1"				21
505	6	11'-0"	7	9'-6"	1'-7"	9½				6
506	264	4'-9"	1	10"	4'-0"					1,30
507	264	5'-3"	ST							1,44
508	48	4'-1"	1	12"	3'-2"					20
509	50	10'-8"	ST.							55
510	16	9'-8"	1	2'-9"	7'-0"					16
511	16	9'-5"	1	1'-10"	7'-8"					15
512	16	11'-7"	3	8'-10"	2'-10"	1'-5"				19
513	16	11'-2"	3	9'-0"	2'-3"	1'-1½"				18
514	6	18'-8"	ST							11
701	449	29'-8"	ST.							27,22
702	7	30'-0 3/8"	5	28'-10"	1'-2 3/8"					43
703	12	11'-8"	ST.							28
1001	310	20'-2"	6	11'-8"	1'-2½"	1'-2 3/8"	6'-10¼"	1'-8 3/8"	4'-0"	26,90
1002	310	15'-1"	6	11'-8"	1'-2½"	1'-1 3/8"	7'-0¼"	1'-6 7/8"	1'-6"	20,12
1003	320	11'-6"	ST.							15,82
1101	320	11'-6"	ST.							19,55

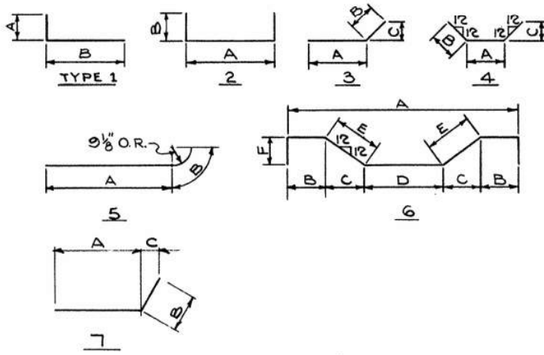
TOTAL WEIGHT = 127,957 LBS.



— SECTION "D-D" SHOWN —
— SECTION "E-E" SIMILAR —
— EXCEPT WHERE SHOWN OR NOTED —



— END VIEW —



STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

10'×5' CONC. BOX CULVERT

STRUCTURE Nº SUM — 277-0008
UNDER I-277
SUMMIT COUNTY
STA 249+00.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVIS
JFP	BMR		H.G.H.	RBA	2-4-66	

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(5)123	

148
234

SUMMIT COUNTY
SUM-277-0.00

CULVERT DATA

TYPE : 603 TYPE A CONDUIT 707.03 GAGE 8-5 WITH CLASS B BEDDING.
SIZE : 96" x 316"
SKEW : 0°00' TO LOCAL TANGENT
WORK REQUIRED: BUILD NEW 96" X 316" 603 TYPE A PIPE CULVERT & PLACE DUMPED ROCK AS SHOWN.

ESTIMATED QUANTITIES

603 - 96" TYPE A CONDUIT 707.03 GAGE 8-5 WITH CLASS B BEDDING	316 LIN.FT.
601 - DUMPED ROCK CHANNEL PROTECTION	178.9 CU.YD.
602 - CONCRETE MASONRY	14.8 CU.YD.
660 - SODDING	54.8 SQ.YD.

AREA : 4.15 Ac.
Q_{50} : 356 C.F.S.

MATCH LINE STA. 50+89.63

Exist. 30" Brick San. Sewer

Exist. 24" San. Sewer

Brewster Run

San. M.H.

STA. 51+70 BEGIN TRANS.

Exist. Temp. Channel

RELOC. BREWSTER RUN

Exist. 24" San. Sewer

VAR.

SOD.

P.C. STA. 50+47.74

P.T. STA. 50+88.63

MATCH LINE STA. 50+89.63

Orion M.H.

MEET EXIST. CHANNEL STA. 52+39

VARIES

℄ RAMP "B"

℄ RAMP "B-2"

℄ RAMP "B-1"

RAMP "B-1" STA. 9+75 = CULVERT STA. 27+04.52

246.00'

70.00'

2-0°00' SKEW TO LOCAL TANGENT

25' TAPER

10' 2G.

8'

℄ RELOC. CHANNEL CURVE DATA:
P.I. STA. 50+70.00
Δ = 48°00'
R = 50.00'
T = 22.26'
L = 41.89'

END DUMPED ROCK STA. 50+89.63

PROP. 15" COND.

Exist. 27" San. Sewer Concrete Encased

PLAN
SCALE: 1" = 20'

30 29 28 27 26

1060
1040
1020
1000

1048.27'
1046.92'
1044.31'
1042.98'

3:1 NORMAL VAR. VAR.

1040.53

2:1 NORMAL

2:1

℄ RELOC. BREWSTER RUN

TOP BANK LT & RT.

316" x 96" TYPE A CONDUIT 707.03 GAGE 8-5 @ 0.98% WITH CL. B BEDDING

SP. 53 END WALL OUTLET = 1006.51

30" DEEP D.R.C.P.

SP. 53 END WALL INLET = 1009.01

8'
7'
8'
20'

PROFILE
SCALE: 1" = 20'

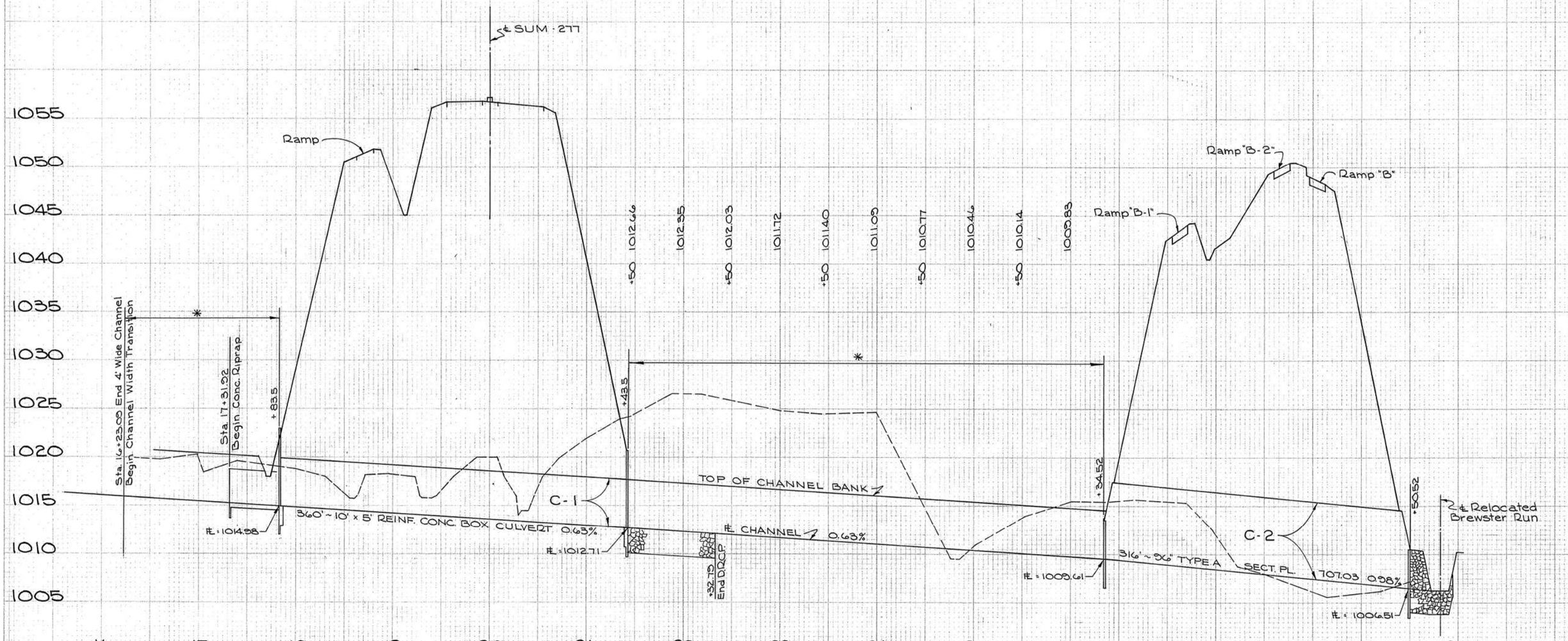
C-2
PIPE CULVERT
RAMP "B-1" STA. 9+75

PLATE 4-CROSS SECTION D, P. R. & R. E. STANDARD
EUGENE DIETZGEN CO. – CHICAGO

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(8)123	

14
23

SUMMIT COUNTY
SUM - 277 - 0.00



* Limits of earthwork tabulated below
For Plan of relocated channel See Sht Nº____

EXCAVATION	7,933	CU.YDS.
EMBANKMENT	864	CU.YDS.
SEEDING & MULCHING	4,683	SQ.YDS.

PROFILE ~ RELOCATED
CHANNEL OFF BREWSTER RUN

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	I-277-6(3)123

150
234

SUMMIT COUNTY
SUM-277-0.00

	23+00	22+17	21+20	21+4350	17+83.5	17+15.5	16+55.5	16+23.09
END AREA CUT	0	730	858	1055	1425	1677	1115	55
END AREA FILL	0	0	0	0	0	0	0	0
CU.YDS. CUT	0	2441	957	600	78	50	45	39
CU.YDS. FILL				AHD BK.	AHD BK.			

							110	21
10								17.0
65								75 0
								AHD BK.

END D.R.C.P.
STA. 22+32.75

INV. ELEV. = 1012.71

INV. STA. 17+83.50 = 1014.98

℄	1011.72	1012.24	1012.41	1012.71	1014.98	1015.37	1015.67	1015.92
	1024.7	1026.5	1026.5	1024.5	1019.0	1018.5	1018.6	1022.2
80								
60								
40								
20								
℄								
20								
40								
60								
80								
	1020	1020	1020	1020 AHD BK.	AHD BK. 1020	1020	1020	AHD BK. 1020

SEEDING END WIDTH	80	89	126	104 0	0 105	45	38	30 0
SQ. YDS.	775	323	549		533	231	174	

CULVERT SECTIONS
STA. 16+23.09 to STA. 23+00

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	I-277-6(3)123

151
234

SUMMIT COUNTY
SUM-277-0.00

| | | |

FED.RD.	STATE	PROJECT	
2	OHIO	I-277-4(3)123	

152
234

SUMMIT COUNTY
SUM-277 - 0.00

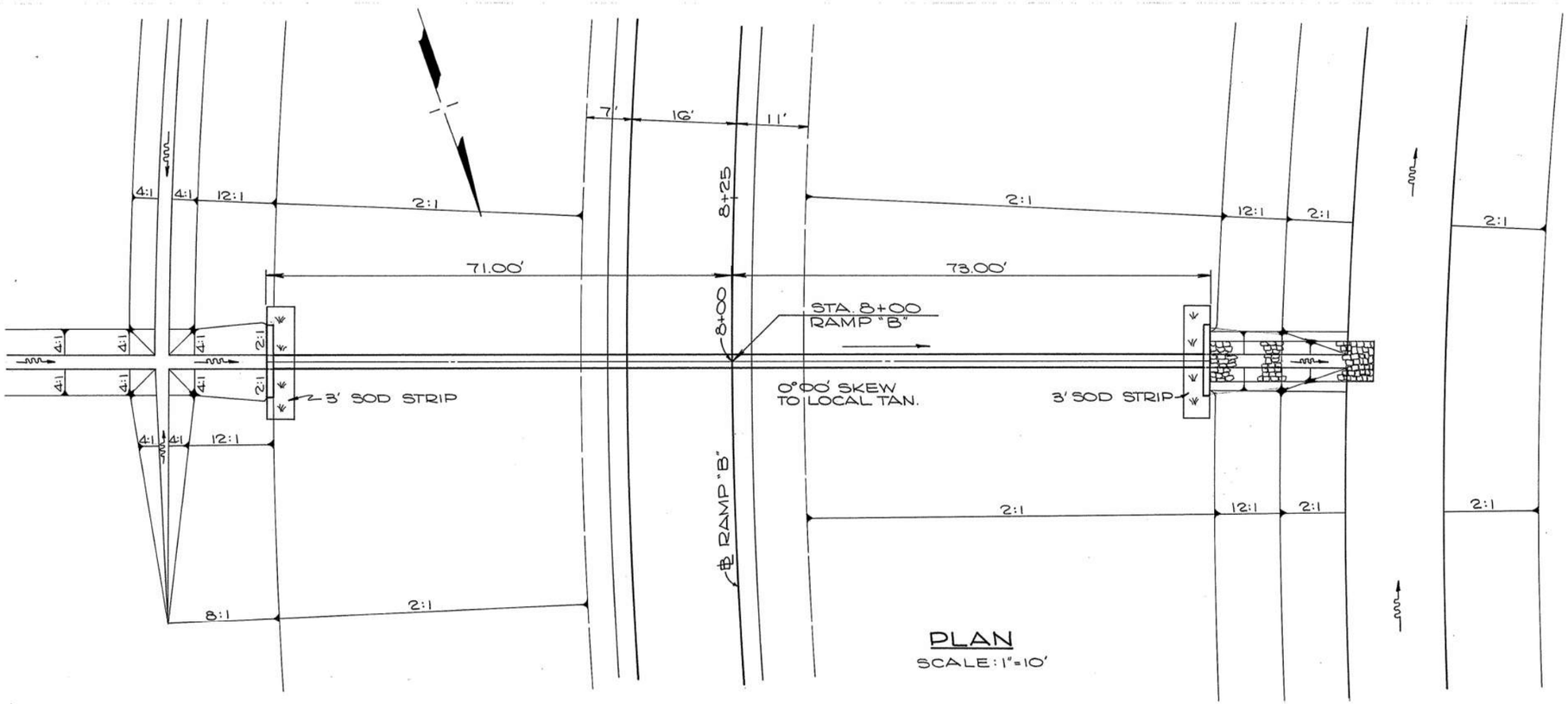
CULVERT DATA

TYPE: 603 TYPE A CONDUIT 706.02 CLASS V WITH CLASS B BEDDING
SIZE: 24" X 144'
SKEW: 0°00' TO LOCAL TANGENT
WORK REQUIRED: BUILD NEW 24" X 144' 603 TYPE A PIPE CULVERT & PLACE DUMPED ROCK AS SHOWN.

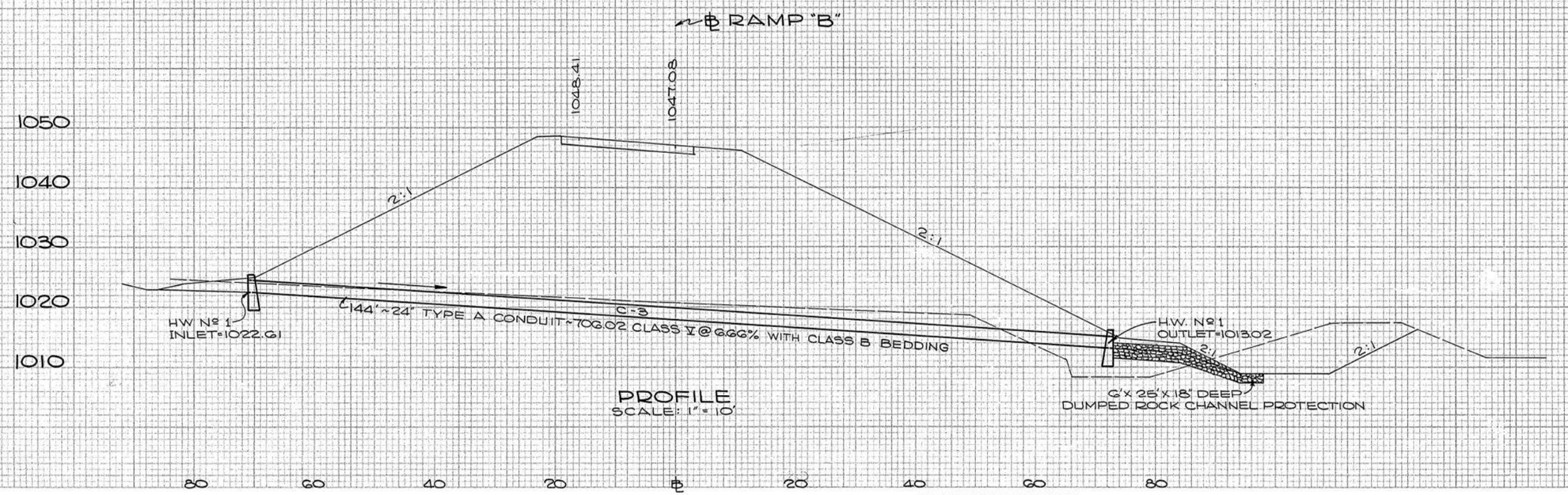
ESTIMATED QUANTITIES

603 - 24" TYPE A CONDUIT 706.02 CLASS V WITH CLASS B BEDDING	144 LIN.FT.
601 - DUMPED ROCK CHANNEL PROTECTION	8.3 CU.YD.
602 - CONCRETE MASONRY	6.6 CU.YD.
660 - SODDING	12.7 SQ.YD.

AREA = 7 Ac.
Q_{50} = 22 C.F.S.



PLAN
SCALE: 1"=10'



PROFILE
SCALE: 1"=10'

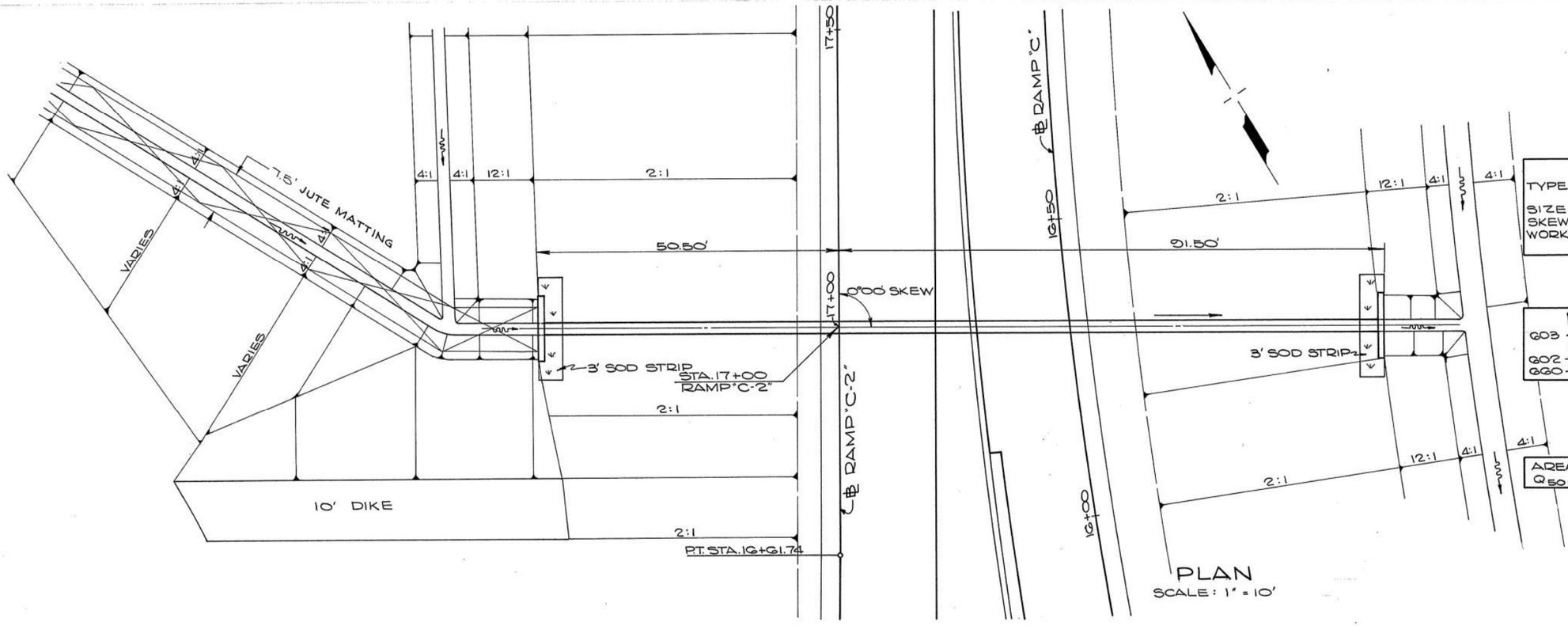
C-3
PIPE CULVERT
RAMP "B" STA. 8+00

PLATE 4-CROSS SECTION D. P. & A. R. E. STANDARD
EUGENE DIETZGEN CO. - CHICAGO

FED.RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

153
234

SUMMIT COUNTY
SUM-277-0.00



PLAN
SCALE: 1" = 10'

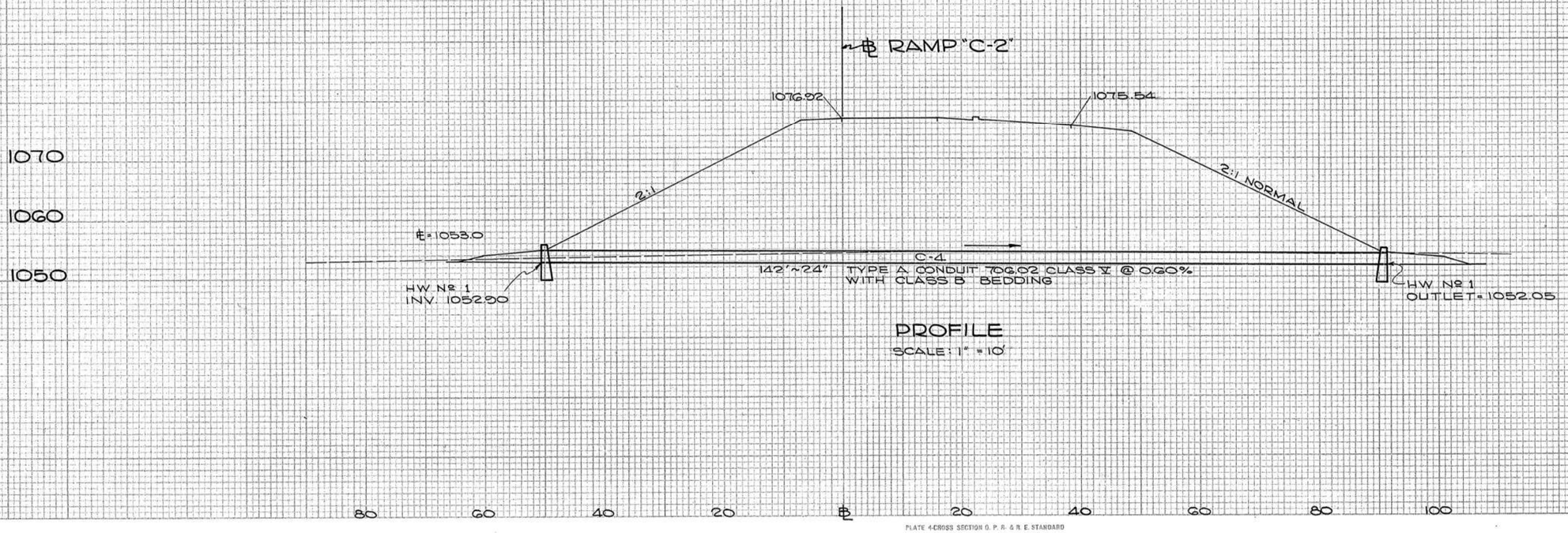
CULVERT DATA

TYPE: 603 TYPE A CONDUIT 706.02 CLASS V WITH CLASS B BEDDING
SIZE: 24" X 142'
SKEW: 0°00'
WORK REQUIRED: BUILD NEW 24" X 142' 603 TYPE A PIPE CULVERT

ESTIMATED QUANTITIES

603 -	24" TYPE A CONDUIT 706.02 CLASS V WITH CLASS B BEDDING	142 LIN. FT.
602 -	CONCRETE MASONRY	6.6 CU.YD.
660 -	SODDING	12.7 SQ.YD.

AREA = 5 Ac.
Q_{50} = 17 C.F.S.



PROFILE
SCALE: 1" = 10'

C-4
PIPE CULVERT
RAMP "C-2" STA. 17+00

PLATE 4-CROSS SECTION O. P. R. & R. E. STANDARD
EUGENE DIETZGEN CO. – CHICAGO

FED.RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)125	

154
234

SUMMIT COUNTY
SUM-277-0.00

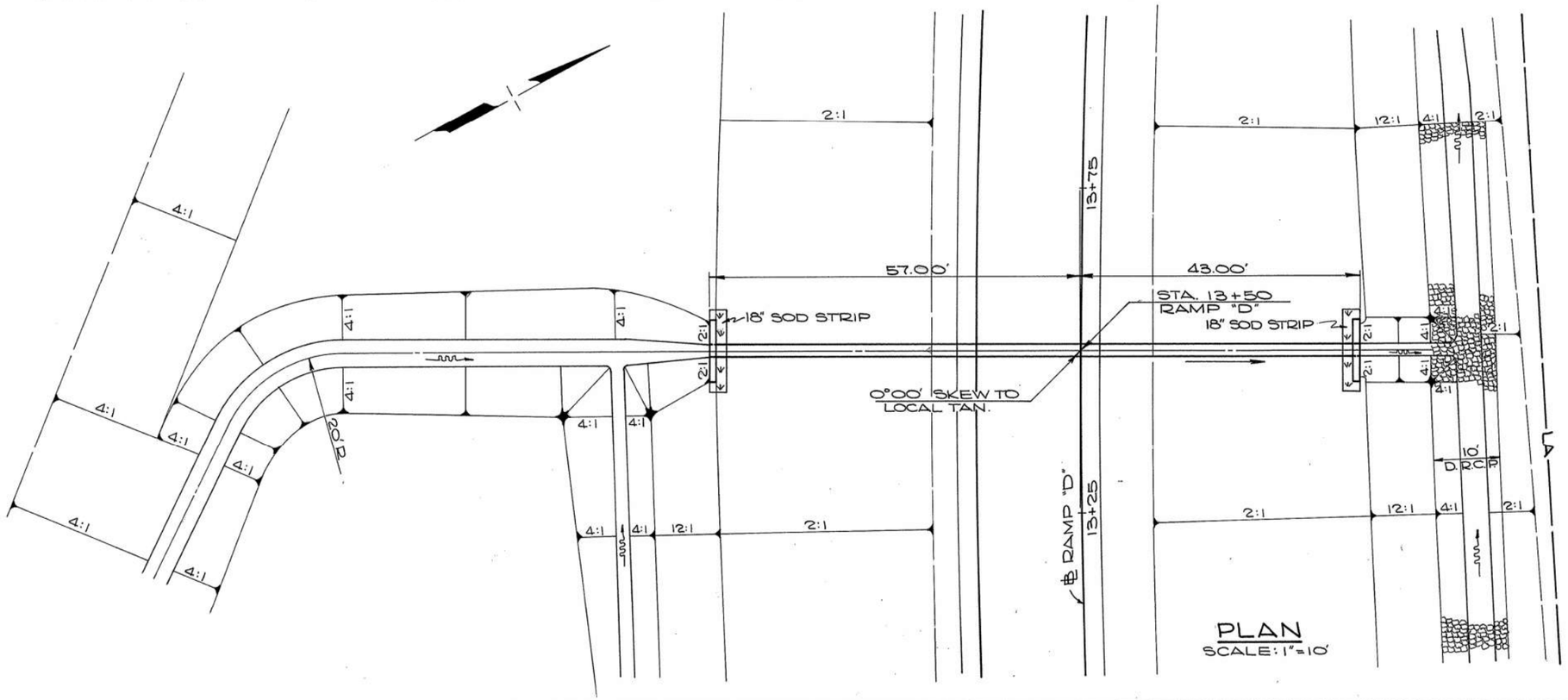
CULVERT DATA

TYPE: 603 TYPE A CONDUIT 706.02 CLASS IV WITH CLASS B BEDDING
SIZE: 21" X 100'
SKEW: 0°00' TO LOCAL TAN.
WORK REQUIRED: BUILD NEW 21"X100' 603 TYPE A PIPE CULVERT AS SHOWN

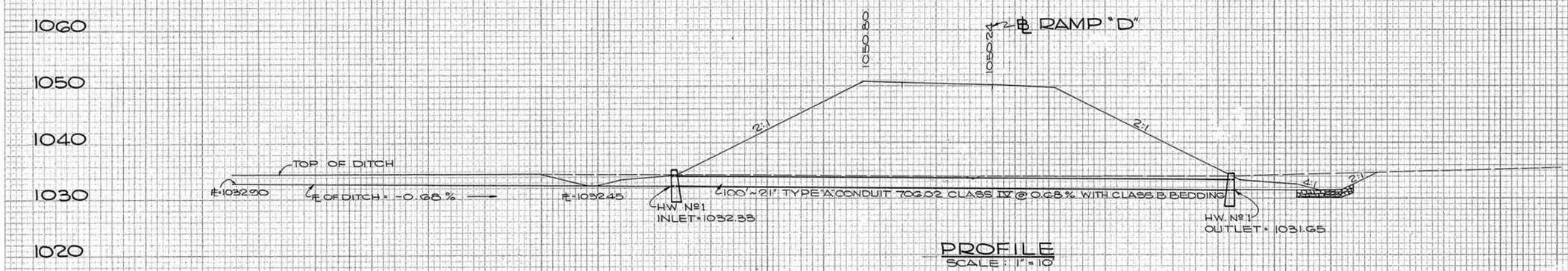
ESTIMATED QUANTITIES

603- 21" TYPE A CONDUIT 706.02 CLASS IV WITH CLASS B BEDDING	100 LIN.FT.
602- CONCRETE MASONRY	5 CU.YD.
660- SODDING	4.9 SQ.YD.

AREA: 5 Ac.
Q 50 : 15 C.F.S.



PLAN
SCALE: 1"=10'



PROFILE
SCALE: 1"=10'

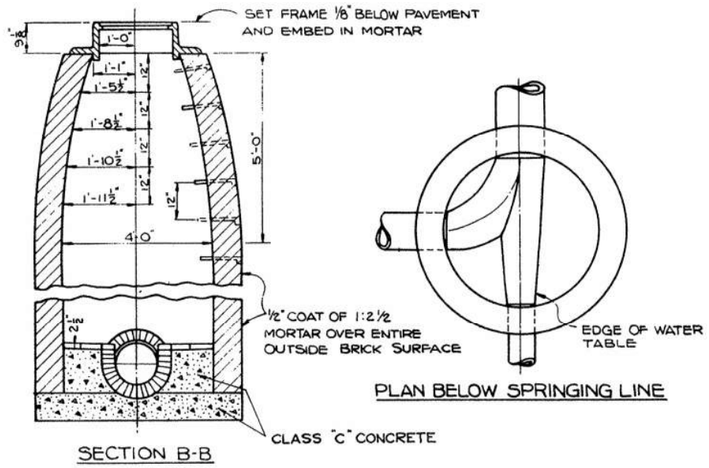
C-5
PIPE CULVERT
RAMP "D" STA. 13+50

PLATE 4-CROSS SECTION O. P. R. & R. E. STANDARD
EUGENE DIETZGEN CO. - CHICAGO

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(5)123	

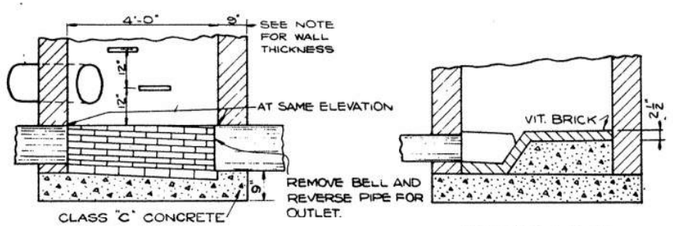
155
234

SUMMIT COUNTY
SUM-277-0.00



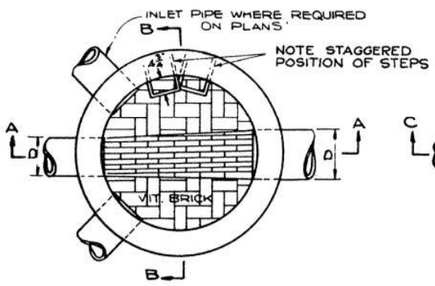
SECTION B-B

PLAN BELOW SPRINGING LINE

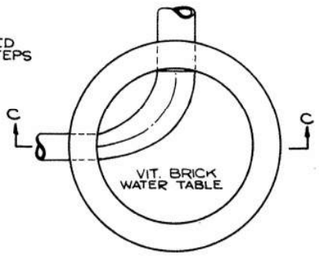


SECTION A-A

SECTION C-C



PLAN BELOW SPRINGING LINE



PLAN BELOW SPRINGING LINE

MANHOLE

NOTES:

BOTTOM OF MANHOLES SHALL BE CLASS "C" CONCRETE.

MANHOLES TO BE BUILT OF BRICK LAID UP IN PORTLAND CEMENT MORTAR. EVERY SEVENTH COURSE TO BE A "STRETCHER" COURSE.

CROWN OF OUTLET PIPE TO BE OF SAME OR LOWER ELEVATION THAN INLET PIPE.

CHANNELS AND WATER TABLES OF ALL MANHOLES TO BE OF VITRIFIED BRICK.

OUTSIDE OF BRICK MANHOLES TO BE PLASTERED WITH 1/2" COAT OF 1:2½ PORTLAND CEMENT MORTAR. INTERIOR JOINTS TO BE POINTED.

WHERE MANHOLE DEPTH IS 15 FEET OR MORE, WALLS AT THE BOTTOM SHALL BE 13 1/2 INCHES THICK AND CARRIED AT THIS THICKNESS TO WITHIN 12 FEET OF THE TOP.

FINISHED CASTINGS SHALL NOT VARY MORE THAN ONE SIXTEENTH (1/16) INCH PER FOOT IN ANY DIMENSION OR MORE THAN FIVE PERCENT (5%) IN WEIGHT FROM THOSE CALLED FOR ON THE DRAWING.

BEARING PARTS OF FRAME AND COVER SHALL BE MACHINED TO PROVIDE A FIRM AND EVEN SEAT FOR ANY POSITION OF THE COVER.

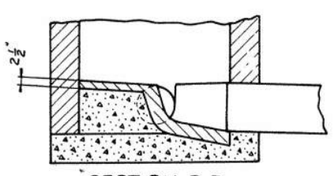
MATERIAL FOR FRAME AND COVER TO BE CAST IRON OF GOOD QUALITY.

CASTINGS ARE TO BE FREE FROM BLOWHOLES OR OTHER DEFECTS.

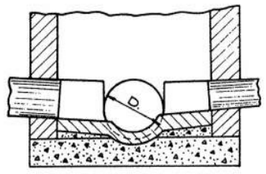
THEY SHALL BE CLEANED OF ALL SCALE AND GREASE AND RECEIVE TWO (2) COATS OF BITUMINOUS PAINT.

EACH CASTING WHEN DELIVERED SHALL BE MARKED WITH ITS ACTUAL SHOP WEIGHT, CONSPICUOUSLY PAINTED IN WHITE.

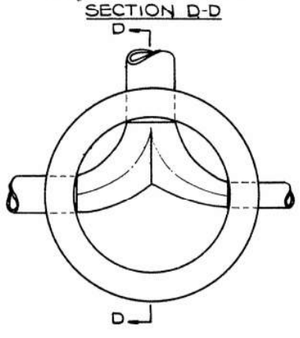
CASTING MATERIAL FOR FRAME AND COVER SHALL CONFORM TO STATE OF OHIO SPEC. 711.12 OR 711.13.



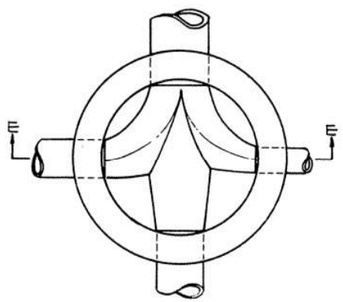
SECTION D-D



SECTION E-E

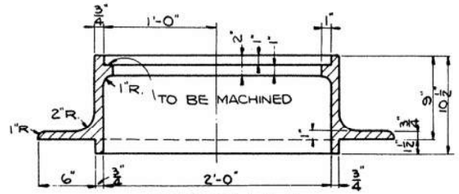


PLAN BELOW SPRINGING LINE

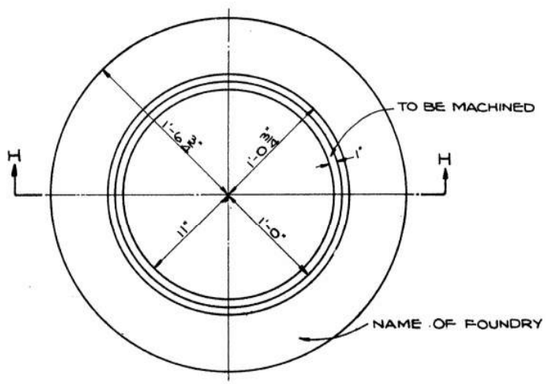


PLAN BELOW SPRINGING LINE

ALL MANHOLES SHALL BE THOROUGHLY BONDED TO THE BARREL OF THE SEWER, ALL CONNECTIONS SHALL BE NEATLY MADE WITHOUT PROJECTIONS OR VOIDS.



SECTION H-H

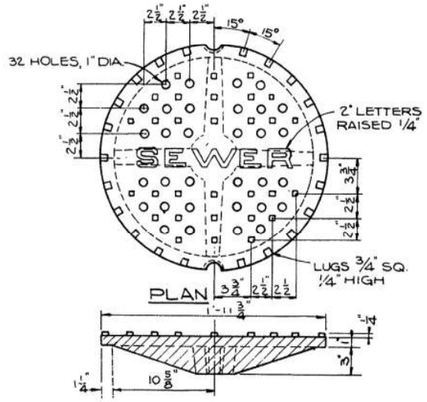


PLAN

FRAME

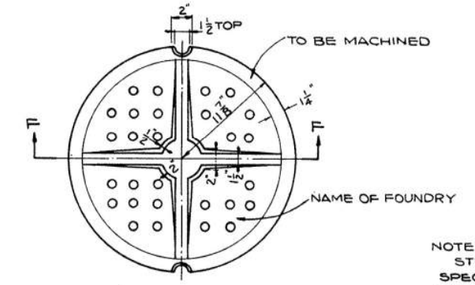
MATERIAL: GRAY IRON ASTM A-48-48 OR DUCTILE IRON ASTM A-339

SCALE 1½"=1"



PLAN

SECTION F-F



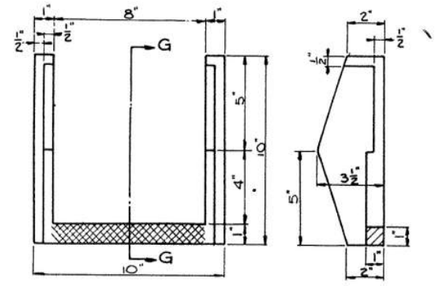
INVERTED PLAN

COVER

SCALE 1½"=1"

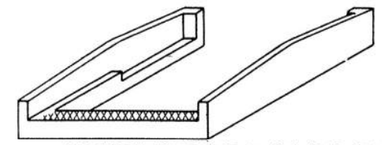
WEIGHTS

MANHOLE FRAME	325#
MANHOLE COVER	142 #
MANHOLE STEP	11½ #



STEP

SCALE 3"=1"



FOUNDRY NAME AND ALLOY USED SHALL BE CAST OR STAMPED ON EACH STEP.

ALLOY SPECIFICATIONS FOR STEP:
MINIMUM 1% NICKEL
A.S.T.M. A-339
GRADE 60-45-10
DUCTILE IRON CASTINGS

NOTE:
STEPS SHALL BE OF GOOD QUALITY ALLOY CASTING AS PER SPECIFICATIONS; SHALL BE FREE OF BLOWHOLES, CRACKS OR OTHER DEFECTS.

THEY SHALL BE CLEAN OF ALL SCALE AND GREASE AND RECEIVE TWO (2) COATS OF BITUMINOUS PAINT.

TREADS SHALL HAVE SHARP, WELL DEFINED CHECKS.

ALL CORNERS SHALL BE ROUNDED.

STEPS SHALL CONFORM TO STATE OF OHIO SPEC. 711.13 DUCTILE IRON CASTINGS.

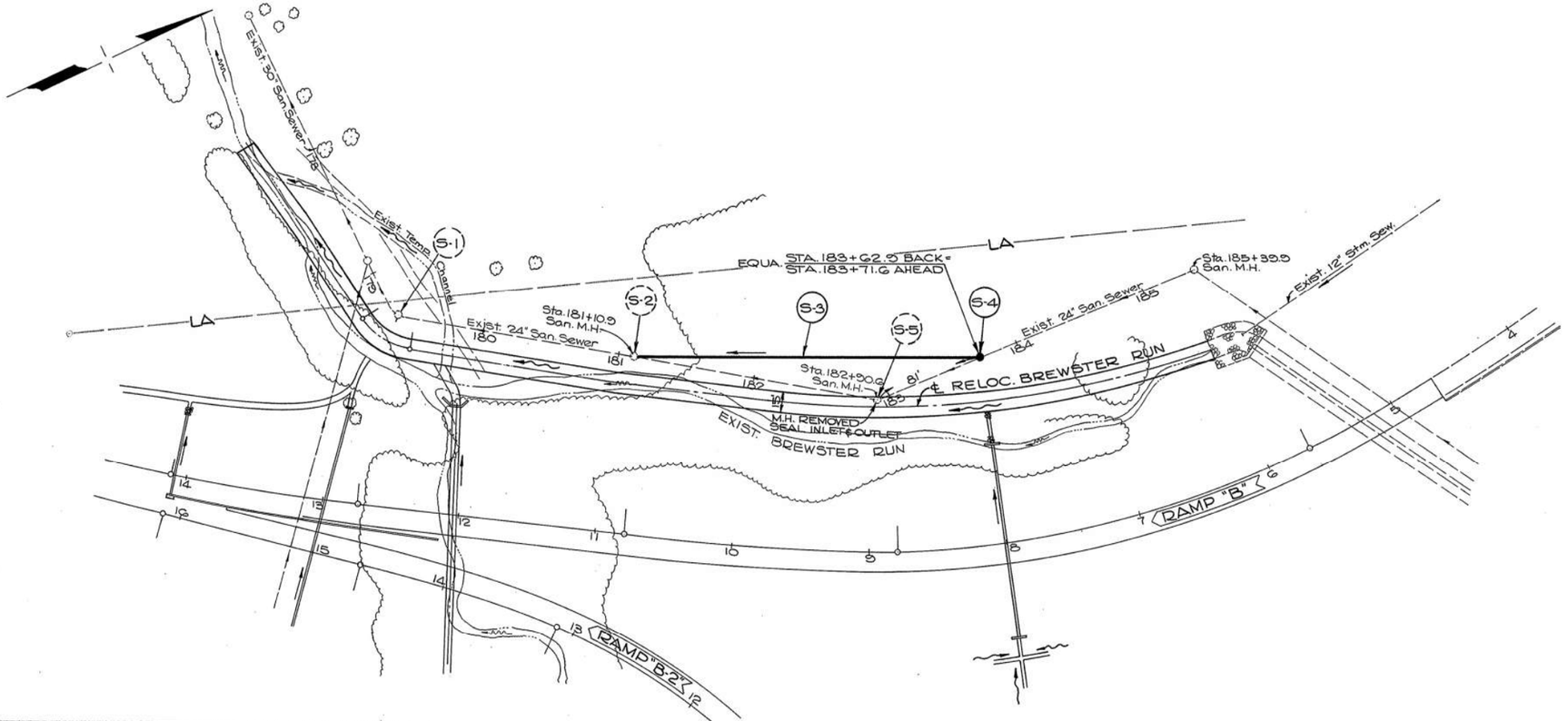
I-8 M.H. TYPE 3 (SEE GENERAL NOTES)

THIS AKRON CITY STANDARD MANHOLE TO BE USED IN ALL PIPE SEWERS 42" DIA. AND UNDER

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(9)123	

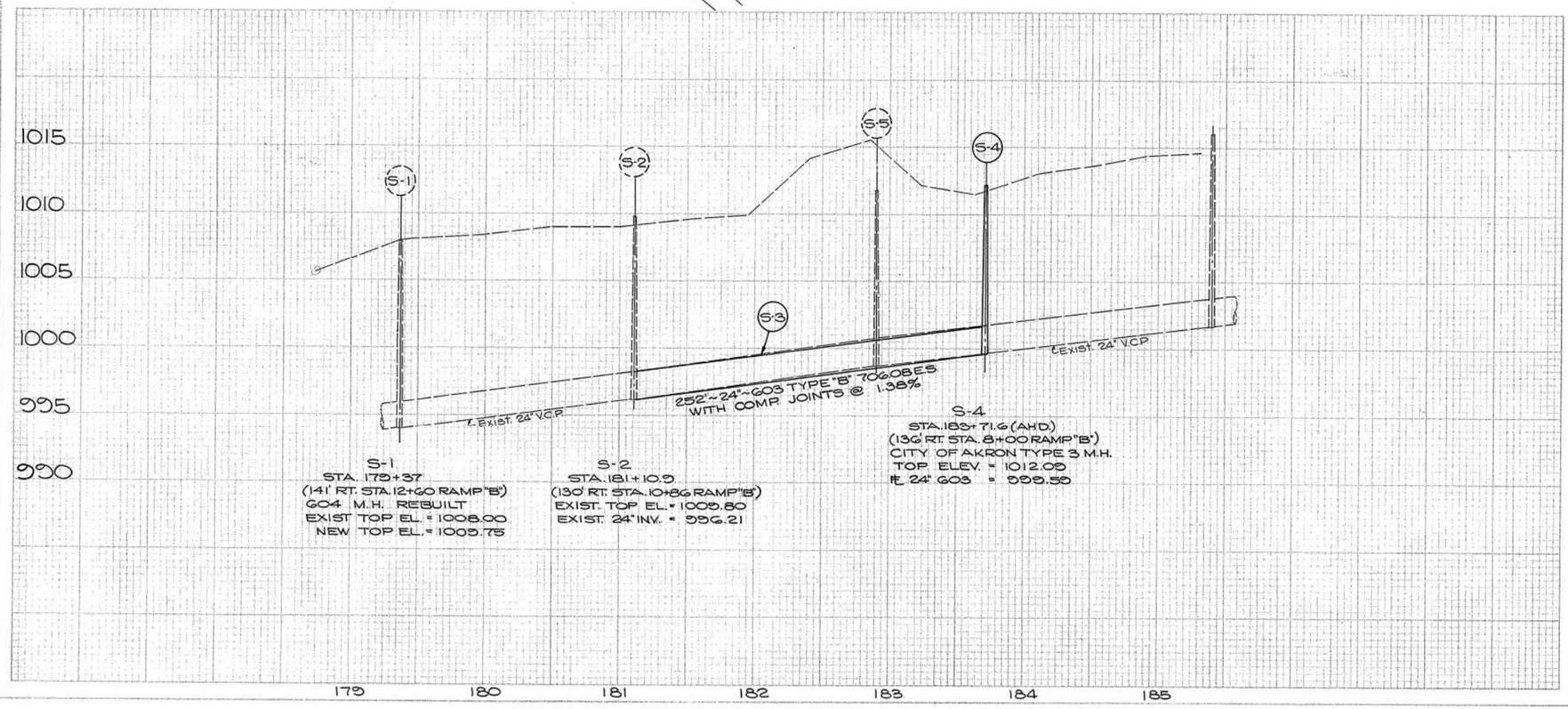
154
234

SUMMIT COUNTY
SUM - 277 - 0.00



SANITARY SEWER QUANTITIES

REF. Nº	STATION		202	603	604		
			MANHOLE REMOVED	24" TYPE "B" 706.08ES WITH C.L.B. BEDDING & COMP. JOINTS	CITY OF AKRON STD. TYPE 3 MANHOLE	MANHOLE REBUILT	
	FROM	TO	EACH	LIN. FT.	EACH	EACH	
S-1	179 + 3.7					1	
S-3	181 + 10.9	183+62.9 BK.		252			
S-4	183+62.9 BK.				1		
S-5	182+30.6		1				
SHEET TOTAL			1	252	1	1	



S-1
STA. 179+37
(141' RT. STA. 12+60 RAMP "B")
604 M.H. REBUILT
EXIST TOP EL. = 1008.00
NEW TOP EL. = 1005.75

S-2
STA. 181+10.9
(130' RT. STA. 10+86 RAMP "B")
EXIST. TOP EL. = 1009.80
EXIST. 24" INV. = 996.21

S-4
STA. 183+71.6 (AHD.)
(136' RT. STA. 8+00 RAMP "B")
CITY OF AKRON TYPE 3 M.H.
TOP ELEV. = 1012.05
℄ 24" 603 = 999.55

SANITARY SEWER RELOCATIO
RELOC. BREWSTER RUN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

15
23

SUM-277-0.00

GENERAL NOTES

MATERIALS-GENERAL

MATERIALS TO BE FURNISHED MAY BE SPECIFIED IN THE PLANS BY A GIVEN MANUFACTURER'S CATALOG NUMBER OR TYPE. THIS IS FOR DESCRIPTIVE PURPOSES ONLY AND THE CONTRACTOR MAY ASSUME THAT APPROVED EQUAL MATERIALS MAY BE FURNISHED.

815 TRAFFIC SIGN ERECTION

THE CONTRACTOR SHALL ERECT SIGN PANELS FURNISHED BY OTHERS AS NOTED ON THE SCHEMATIC SIGNING LAYOUT SHEET No's. 157 & 158. THE PANELS SHALL BE MOUNTED ON THE BRACKETS OR BEAM SUPPORTS PROVIDED IN THE PLANS.

A SCHEDULE FOR SIGN ERECTION SHALL BE SUBMITTED TO THE ENGINEER, BUREAU OF TRAFFIC, 450 EAST TOWN STREET, COLUMBUS, OHIO, 60 CALENDAR DAYS PRIOR TO THE START OF ANY SCHEDULED ERECTION WORK. THE SCHEDULE SHALL INCLUDE PROPOSED DATES, TIME, SIGN NUMBERS AND DELIVERY POINT.

THE PRICE BID PER SQUARE FOOT FOR "ITEM 815, SIGN ERECTION BY TYPE, AS PER PLAN," SHALL INCLUDE ALL NECESSARY EQUIPMENT, MANPOWER, AND TOOLS TO ERECT THE SIGNS NOTED. ALL SIGN MATERIAL AND ACCESSORIES WILL BE FURNISHED AND TRANSPORTED TO A DESIGNATED DELIVERY POINT, ON OR NEAR THE SUBJECT PROJECT, BY OTHERS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE HANDLING AND STORAGE OF THE SIGN PANELS AND ACCESSORIES FROM THE TIME OF ARRIVAL AT THE DELIVERY POINT.

606 GUARD RAIL, TYPE 4, AS PER PLAN

GUARD RAIL SHOWN AT SIGN SUPPORTS SHALL BE TYPE 4 , WITH POST SPACING OF 6'-3". DETAILS ARE SHOWN ON SHEET No. 161.

816 OVERHEAD SIGN SUPPORT, BY TYPE.

ALL COMPONENT PARTS OF THE OVERHEAD SIGN SUPPORTS SHALL BE STEEL, EXCEPT FOR THE TRUSS AND COMPONENTS FOR THE NUMBER 7 SERIES WHICH SHALL BE ALUMINUM. FOR SPECIFIC DETAILS AND MATERIALS SEE SHEET NUMBERS 165 THROUGH 170.

COST OF FURNISHING AND INSTALLING THE FIXTURE SUPPORT ARM, LENGTH "G", WITH MOUNTING HOLES AND HARDWARE (SEE SHEETS EI-1 AND EI-2) SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS.

MODIFYING SUPPLEMENTAL SPECIFICATION 816 SWITCH ENCLOSURE MOUNTING BRACKETS INCLUDING MOUNTING BOLTS AND DRILLED HOLES SHALL BE FURNISHED AND INSTALLED UNDER PAYMENT FOR ITEM 816 OVERHEAD SIGN SUPPORT STRUCTURES AT THE CONTRACT PRICE PER "OVERHEAD SIGN SUPPORT, BY TYPE, AS PER PLAN".

PAYMENT FOR THIS ITEM SHALL BE MADE AT THE CONTRACT UNIT PIRCE BID FOR EACH "OVERHEAD SIGN SUPPORT, BY TYPE, AS PER PLAN" INSTALLED IN PLACE AND ACCEPTED, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL ANCHOR BOLTS (FOR INSTALLATION UNDER ITEM 816 "CONCRETE FOR OVERHEAD SIGN SUPPORT FOUNDATIONS"), AND FOR FURNISHING AND INSTALLING EACH OVERHEAD SIGN SUPPORT STRUCTURE SHOWN ON SHEET NUMBERS) 161 AND 162 INCLUDING FIXTURE SUPPORT ARMS, SWITCH ENCLOSURE MOUNTING BRACKET, SIGN BRACKETS AND ALL COMPONENT PARTS NECESSARY TO MAKE A COMPLETE WORKABLE INSTALLATION READY FOR SIGN ERECTION, INSTALLATION OF DISCONNECT SWITCH AND ENCLOSURE, GROUND ROD AND WIRE CONNECTIONS AND SIGN WIRING.

ERECTION OF THESE SUPPORTS SHALL BE ACCOMPLISHED IN A MANNER MEETING THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION NUMBER 816.

816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS, BY TYPE.

PAYMENT FOR THIS ITEM SHALL BE PER CUBIC YARD BASED ON APPROVED PLAN DIMENSIONS OR DIMENSIONS AS MODIFIED BY THE ENGINEER IN LIEU OF PLAN QUANTITIES AS SPECIFIED IN SUPPLEMENTAL SPECIFICATION 816.

PAYMENT FOR INSTALLATION ONLY OF THE 2 INCH GALVANIZED STEEL CONDUIT ELLS AND THE 1/2 INCH EMT GROUND WIRE CONDUIT WILL BE INCLUDED IN THIS ITEM. PAYMENT FOR FURNISHING THIS CONDUIT IS INCLUDED UNDER "SIGN SERVICE, AS PER PLAN" AND "GROUND ROD AND WIRE CONNECTION AS PER PLAN".

FOUNDATIONS SHALL BE CONSTRUCTED IN THE MANNER CALLED FOR UNDER SUPPLEMENTAL SPECIFICATION 816. CONCRETE SHALL BE CLASS "C".

CERTIFICATION AND APPROVAL OF SIGN SUPPORTS AND LIGHTING ITEMS

THE CONTRACTOR SHALL SUBMIT THROUGH PROPER CHANNELS THE DRAWINGS, INFORMATION OR SAMPLES AS REQUIRED BELOW:

(A) SIX (6) COPIES OF THE FOLLOWING:

SHOP DRAWINGS AND MATERIAL LISTS FOR APPROVAL

1. OVERHEAD SIGN SUPPORTS
2. SIGN LIGHTING DETAILS
3. CATALOG CUTS, DESCRIPTIONS OR SAMPLES OF FABRICATOR'S STANDARD ITEMS AS SHOWN IN THE PLANS OR THEIR EQUAL FOR APPROVAL.

(B) CERTIFICATIONS OR SAMPLES FOR ALL MATERIALS WHICH HAVE BEEN APPROVED ABOVE UNDER ITEM (A) SHALL BE IN POSSESSION OF THE CONTRACTOR PRIOR TO ANY PURCHASE OR INSTALLATION.

625 ELECTRICAL - GENERAL

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY MATERIAL, LABOR AND FACILITIES REQUIRED TO COMPLETE THE ELECTRICAL INSTALLATION IN ACCORDANCE WITH THE DESIGNS, DIMENSIONS AND DETAILS SHOWN IN THE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

ALL MATERIAL, WORKMANSHIP AND CONSTRUCTION METHODS, EXCEPT AS MODIFIED HEREIN, SHALL CONFORM TO THE GENERAL REQUIREMENTS OF THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS, CONSTRUCTION AND MATERIALS SPECIFICATIONS, JANUARY 1, 1965.

625 GROUND ROD UNITS

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING GROUND ROD AND WIRE AS DETAILED AND SPECIFIED ON SHEET 173. ALSO INCLUDED WILL BE THE COST FURNISHING THE 1/2 EMT GROUND WIRE CONDUIT FOR INSTALLATION UNDER ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.

BASIS OF PAYMENT FOR THIS ITEM SHALL BE AT CONTRACT UNIT PRICE PER EACH, WHICH SHALL INCLUDE ALL LABOR, TOOLS, MATERIALS AND EQUIPMENT REQUIRED FOR THE COMPLETE ITEM OF WORK.

625 DISCONNECT SWITCH WITH TYPE "Y" OR "Z" ENCLOSURE

THE BASIS FOR PAYMENT FOR THIS ITEM SHALL BE ON A UNIT BID BASIS, COMPLETE AND ACCEPTED.

THE ITEM SHALL INCLUDE FURNISHING OF A 30 AMP. 600 VOLT FUSED DISCONNECT SWITCH OF TYPE AND MAKE AS INDICATED ON SHEET 171 AND SHALL BE MOUNTED IN A NEMA (4) STAINLESS STEEL ENCLOSURE TYPE "Y" OR "Z" AND ATTACHED TO EACH SIGN SUPPORT BY MEANS OF A MOUNTING BRACKET AS DESCRIBED ON THIS SHEET.

625 TRANSFORMER TYPE

THIS TYPE OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING TRANSFORMERS AS DETAILED AND SPECIFIED ON SHEET 171.

BASIS OF PAYMENT FOR THIS ITEM SHALL BE AT CONTRACT UNIT PRICE PER EACH, WHICH SHALL INCLUDE ALL LABOR, TOOLS, MATERIAL AND EQUIPMENT REQUIRED FOR THIS COMPLETE ITEM OF WORK.

625 BALLAST TYPE

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING ALL BALLAST TYPES A THROUGH D AS DETAILED AND SPECIFIED ON SHEET 170.

BASIS OF PAYMENT FOR THIS ITEM SHALL BE AT THE CONTRACT UNIT PRICE PER EACH FURNISHED TO THE JOB FOR INSTALLATION UNDER ITEM 625 "SIGNS WIRED COMPLETE."

625 FIXTURES WITH LAMP TYPE

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING ALL LIGHT FIXTURES AND LAMPS, TYPES AND SIZES AS SPECIFIED ON SHEET 170.

BASIS OF PAYMENT FOR THIS ITEM SHALL BE AT THE CONTRACT UNIT PRICE PER EACH FURNISHED TO THE JOB FOR INSTALLATION UNDER ITEM 625 "SIGNS WIRED COMPLETE."

625 SIGN SERVICE,

THIS ITEM WILL CONSIST OF THE COMPLETION OF THE ELECTRICAL SYSTEM AND COMPONENTS CONNECTING FROM THE ESNA CONNECTORS IN THE PULL BOX (INCLUDED WITHIN THE ROADWAY LIGHTING QUANTITIES) TO THE PRIMARY SIDE OF THE DISCONNECT SWITCH.

WORK WILL INCLUDE THE FURNISHING OF THE 2 INCH GALVANIZED STEEL CONDUIT ELLS TO BE INSTALLED UNDER ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS, BY TYPE, AS PER PLAN" AND THE FURNISHING AND INSTALLING (INCLUDING TRENCHING AND BACKFILLING) OF THE 2 INCH GALVANIZED STEEL CONDUIT AND COUPLINGS FROM THE PULL BOX TO THE SIGN SUPPORT FOUNDATION.

THIS ITEM WILL ALSO INCLUDE THE FURNISHING AND INSTALLING OF THE 1/C 600 VOLT SERVICE WIRE FROM THE ESNA CONNECTORS TO THE DISCONNECT SWITCH.

BASIS OF PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE PER EACH INSTALLATION. WHICH PRICE SHALL INCLUDE ALL MATERIAL, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO FINISH THE COMPLETE ITEM OF WORK.

625 SIGNS WIRED, COMPLETE

THIS ITEM SHALL CONSIST OF THE FURNISHING AND/OR INSTALLATION OF THE ELECTRICAL SIGN LIGHTING SYSTEM COMPONENTS FOR EACH ILLUMINATED SIGN.

WORK SHALL INCLUDE INSTALLATION OF LIGHT FIXTURES AND BALLASTS, AND FURNISHING AND INSTALLATION OF ALL RIGID AND FLEXIBLE CONDUIT, CONDULETS, JUNCTION BOXES, WIRE, FASTENERS, HARDWARE, AND ALL OTHER ITEMS REQUIRED TO ENERGIZE THE SIGN LIGHTING SYSTEM. SEE DETAILS ON SHEETS (EI-1 & 2, ES-3A).

BASIS OF PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE PER EACH SIGN WIRED WHICH PRICE SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND OTHER INCIDENTALS TO PROVIDE A COMPLETE AND ACCEPTED ITEM OF WORK.

THE COST OF FURNISHING AND INSTALLING WIRE AND NECESSARY FASTENERS FROM THE DISCONNECT SWITCH TO THE SIGNS (OR BETWEEN SIGNS) WITHIN SIGN SUPPORT MEMBERS SHALL BE INCIDENTAL TO THE COST OF VARIOUS ITEMS INCLUDED IN THIS ITEM OF WORK.

ILLUMINATED SIGNS REQUIRING TWO (2) BALLASTS SHALL BE CONSIDERED AS AN EQUIVALENT OF TWO (2) SEPARATE SIGNS FOR DETERMINATION OF PAYMENT QUANTITIES.

WIRE AND CABLE 625.14

WIRE AND CABLE INSTALLATION SHALL CONFORM TO THE ABOVE SPECIFICATIONS AND SHALL BE OF THE SIZES AND TYPES SHOWN ON THE PLANS.

WIRE OR CABLE INSTALLED IN CONDUIT ON SIGN STRUCTURES SHALL BE #12 RHW, 600 VOLT, STANDARD COPPER WIRE.

WIRE IN CONDUIT FROM PULL BOXES TO DISCONNECT SWITCHES SHALL BE #6 RHW AND SHALL COMPLY WITH FAA TYPE A SPECIFICATIONS.

INSPECTION AND TESTING OF SIGN LIGHTING

THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT NECESSARY TO DEMONSTRATE TO THE ENGINEER THAT ALL CIRCUITS ARE FREE FROM SHORT CIRCUITS AND UNSPECIFIED GROUNDS, AND ARE PROPERLY CONNECTED AND OPERABLE BEFORE ACCEPTANCE. THIS DEMONSTRATION SHALL INCLUDE A MEGGARING TEST TO SHOW THAT ALL CONDUCTORS ARE CLEAR OF GROUNDS AND THAT THE RESISTANCE AT THE GROUND IS NOT MORE THAN 25 OHMS. VOLTAGE AND AMPERAGE TESTS SHALL BE MADE AT THE SIGN SUPPORT SWITCH.

PAYMENT FOR THESE TESTS SHALL BE CONSIDERED A SUBSIDIARY WORK ITEM, INCLUDED IN THE UNIT PRICE BID FOR THE RESPECTIVE ITEMS TESTED.

AFTER THE SIGN LIGHTING SYSTEM IS COMPLETED, THE ENTIRE SYSTEM SHALL BE OPERATED CONTINUOUSLY EACH NIGHT UNTIL SEVEN (7) CONSECUTIVE DAYS ELAPSE WITHOUT FAILURE OR DEFECT. THE CONTRACTOR SHALL CORRECT ANY DEFECTS WHICH MAY DEVELOP AT NO EXTRA COST TO THE STATE.

DURING THE TEST PERIOD, ADJUSTMENTS TO FIXTURE AIMING ANGLES SHALL BE MADE AS DIRECTED BY THE ENGINEER TO OBTAIN MAXIMUM UNIFORMITY IN SIGN ILLUMINATION.

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6-(1)12.4	

158
234

SUMMIT COUNTY
SUM - 277 - 0.00

GENERAL SUMMARY

TRAFFIC CONTROL

GRAND TOTAL	ITEM	UNIT	TYPE CODE 7221 DESCRIPTION	SHEET NO.
18	620	EACH	DELINEATORS, TYPE A-1, POST MOUNTED, MONO-DIRECTIONAL	164
298	620	EACH	DELINEATORS, TYPE C-2, POST MOUNTED, MONO-DIRECTIONAL	164
4	620	EACH	DELINEATORS, TYPE C-3, POST MOUNTED, MONO-DIRECTIONAL	164
5	620	EACH	DELINEATORS, TYPE A-1, BRACKET MOUNTED, MONO-DIRECTIONAL	164
14	620	EACH	DELINEATORS, TYPE C-2, BRACKET MOUNTED, MONO-DIRECTIONAL	164
9.1	621	MILES	4" EDGE LINES	164
.94	621	MILE	6" LANE LINES	164
.18	621	MILE	4" LANE LINES	164
7243	621	LIN. FT	8" CHANNELIZING LINES	164
LUMP	621	LUMP	CURB AND ISLAND MARKING	164
LUMP	621	LUMP	BROAD TRANSVERSE STRIPES	164
1	816	EACH	OVERHEAD SIGN SUPPORT NO. 7.4 DESIGN No. 2 MODIFIED 70' SPAN	164
1	816	EACH	OVERHEAD SIGN SUPPORT No. 7.3 DESIGN No. 2 59' SPAN	164
1	816	EACH	OVERHEAD SIGN SUPPORT No. 7.4 DESIGN No. 1 70' SPAN	164
1	816	EACH	OVERHEAD SIGN SUPPORT No. 7.5 DESIGN No. 2 80' SPAN	164
1	816	EACH	OVERHEAD SIGN SUPPORT No. 7.6 DESIGN No. 3 80' SPAN	164
1	816	EACH	OVERHEAD SIGN SUPPORT No. 7.6 DESIGN No. 4 83' SPAN	164
1	816	EACH	OVERHEAD SIGN SUPPORT No. 9.24 DESIGN No. 1 9'8.6' ARMS	164
1	816	EACH	OVERHEAD SIGN SUPPORT No. 9.24 DESIGN No. 3. 9'8.8' ARMS	164
2	816	EACH	OVERHEAD SIGN SUPPORT No. 12.24 DESIGN No. 5, 20' ARM	164
1	816	EACH	OVERHEAD SIGN SUPPORT No. 12.24 DESIGN No. 4, MODIFIED 16' ARMS	164
1	816	EACH	OVERHEAD SIGN SUPPORT No. 12.24 DESIGN No. 5 MODIFIED 17' ARM	164
3003	815	SQ.FT.	SIGN ERECTION,	164
81.3	816	CU.YD.	CONCRETE FOUNDATIONS FOR OVERHEAD SIGN SUPPORTS,	164
400	606	LIN.FT.	GUARD RAIL TYPE 4 AS PER PLAN	164
12	625	EACH	SIGN SUPPORT GROUND ROD UNITS	164
1	625	EACH	SIGN BALLASTS TYPE "B",	164
20	625	EACH	SIGN BALLASTS TYPE "D",	164
2	625	EACH	72" LIGHT FIXTURES WITH H.O. LAMPS,	164
34	625	EACH	72" LIGHT FIXTURES WITH S.H.O. LAMPS,	164
6	625	EACH	96" LIGHT FIXTURES WITH S.H.O. LAMPS,	164
6	625	EACH	.75 KVA 480/120 VOLT TRANSFORMER	164
2	625	EACH	1.50 KVA 480/120 VOLT TRANSFORMER	164
2	625	EACH	2.00 KVA 480/120 VOLT TRANSFORMER	164
1	625	EACH	1.00 KVA 480/120 VOLT TRANSFORMER WITH TAPS	164
1	625	EACH	2.00 KVA 480/120 VOLT TRANSFORMER WITH TAPS	164
6	625	EACH	30 AMPERE FUSIBLE DISCONNECT SWITCH WITH TYPE "Y" ENCLOSURE	164
6	625	EACH	30 AMPERE FUSIBLE DISCONNECT SWITCH WITH TYPE "Z" ENCLOSURE	164
21	625	EACH	SIGNS WIRED COMPLETE	164
12	625	EACH	SIGN SERVICE	164

C.&E.

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-4(3)123	

159
234

SUMMIT COUNTY
SUM-277-0.00

237+40

12' x 9'

(13) SOUTH 77 Canton

244+33

17' x 9.5'

EAST 224 Canfield

13' x 9.5'

NORTH 77 Akron EXIT ONLY

(14)

14' x 7'

SOUTH 77 Canton

(15)

NORTH 277 WEST 224 Barberton

17' x 11.5'

77 SOUTH Canton EXIT ONLY

12' x 9.5'

248+47.6

505+28

NORTH 277 WEST 224 Cleveland

17' x 9'

503+00

(26) EAST 224 Canfield

12' x 9'

COVENTRY TWP.
CORPORATION LINE
CITY OF AKRON

WATERLOO RD.

SOUTHBOUND SUM-8(I-77)

NORTHBOUND SUM-8(I-77)

US-224(I-277)

RAMP "A"

RAMP "B"

RAMP "B-2"

RAMP "B-1"

SIGNING PLAN

KAS

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

160
234

SUMMIT COUNTY
SUM-277-0.00

END PROJECT SUM-8-6.72

BEGIN PROJECT SUM-8-3.07

STA. 450+00

SOUTHBOUND SUM-8

NORTHBOUND SUM-8

RAMP "A"

RAMP "B1"

RAMP "B2"

RAMP "C"

RAMP "C-1"

RAMP "C-2"

RAMP "D"

U.S. 224 (I-271)

(24) East Canfield 15' x 7' — 496+53

(13) North West Cleveland 8' x 11' — 491+00

(9) (a) East Canfield 17' x 9.5' — (b) North Akron 12' x 9.5' — 259+31.9

(17) (a) North West 271 224 Barberton 17' x 11.5' — (b) 77 South Canton EXIT ONLY 13' x 9.5' — (c) 77 North Akron 14' x 7' — 265+07

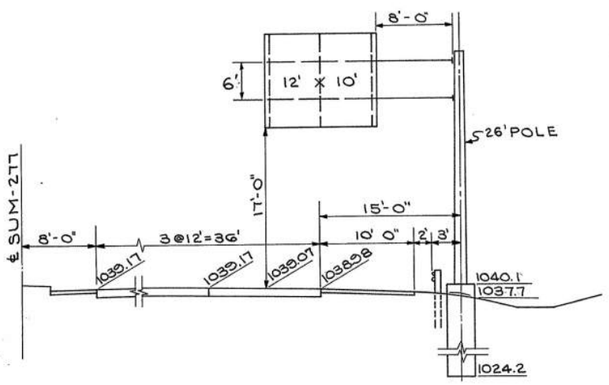
(21) (a) Barberton NEXT LEFT 13' x 5.5' — (b) East Canfield 12' x 9' — 473+40

(22) (a) North West Cleveland 15' x 11.5' — (b) 77 North Akron 17' x 9.5' — (c) East Canfield 15' x 7' — 480+62

(18) 77 North Akron 12' x 9' — 272+60

SIGNING PLAN

13

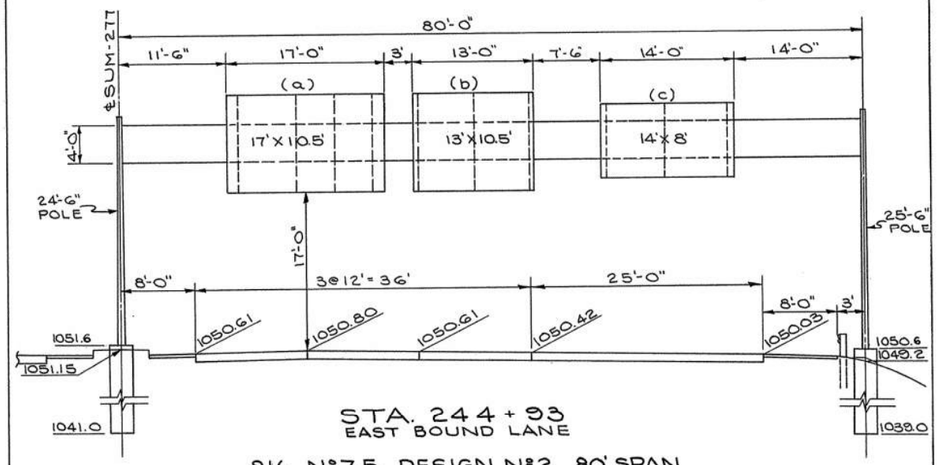


STA. 237+40
EAST BOUND LANE

816 Nº12.24 DESIGN Nº 5 20' ARM

Area = 12'X10' = 120 Sq. Ft.
Spacing = 6", 2@5'-6", 6"
Nº of Brackets 3 Type Ys Height - 10'

14



STA. 244+93
EAST BOUND LANE

816 Nº7.5 DESIGN Nº2 80' SPAN
MODIFIED 25'-6" & 26'-6" POLES

(a)
Area = 17'X10.5' = 178.5 Sq. Ft.
SPACING
1'-2 5/8", 6'-3 3/8", 4'-1 5/8", 4'-1 3/4", 1'-2 5/8"
Nº of Brackets 4
Height - 10'-6" Type Ya

(b)
Area = 13'X10.5' = 136.5 Sq. Ft.
Spacing = 6", 2@6'-0", 6"
Nº of Brackets 3
Height - 10'-6" Type Ya

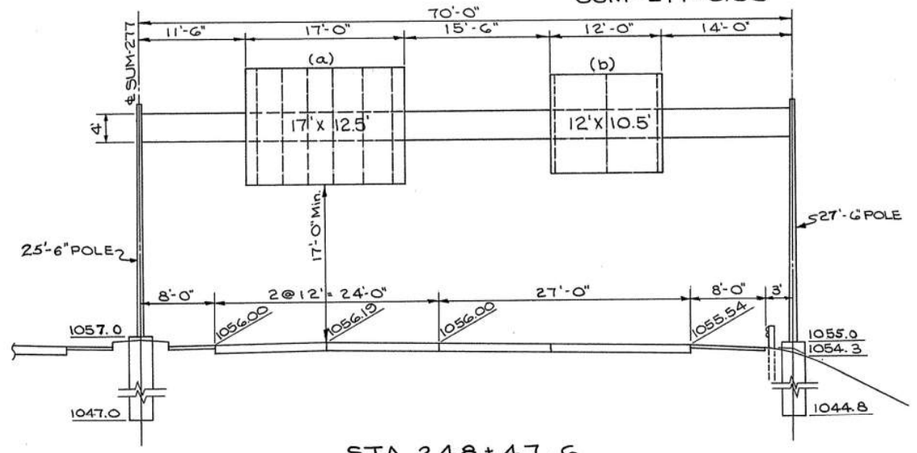
(c)
Area = 14'X8' = 112 Sq. Ft.
Spacing = 8 5/8", 2@6'-3 3/8", 8 5/8"
Nº of Brackets 3
Height - 8'-0" Type Ya

15

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

161
234

SUMMIT COUNTY
SUM-277-0.00



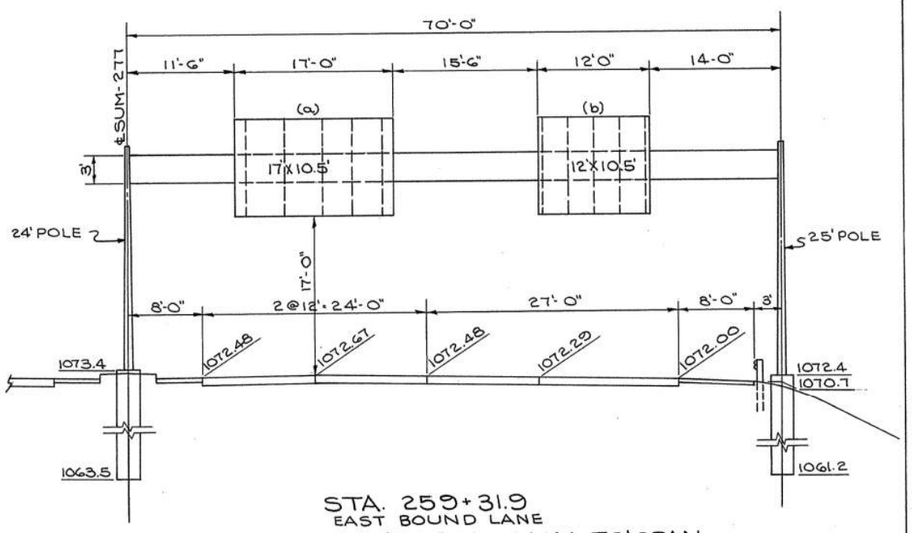
STA. 248+47.6
WEST BOUND LANE

816 Nº 7.4 DESIGN Nº2 MODIFIED 70' SPAN
25'-6" & 27'-6" POLES

(a)
Area = 17'X12.5' = 212.5 Sq. Ft.
Spacing
1'-2 5/8", 3 @ 2'-9 1/8", 3'-1 5/8", 3'-1 3/4", 1'-2 5/8"
Nº of Brackets - 6 Height 12'-6" Type - Ya

(b)
Area = 12'X10.5' = 126.0 Sq. Ft.
Spacing 6", 2@5'-6", 6"
Nº of Brackets - 5
Height - 10'-6" Type Ya

16



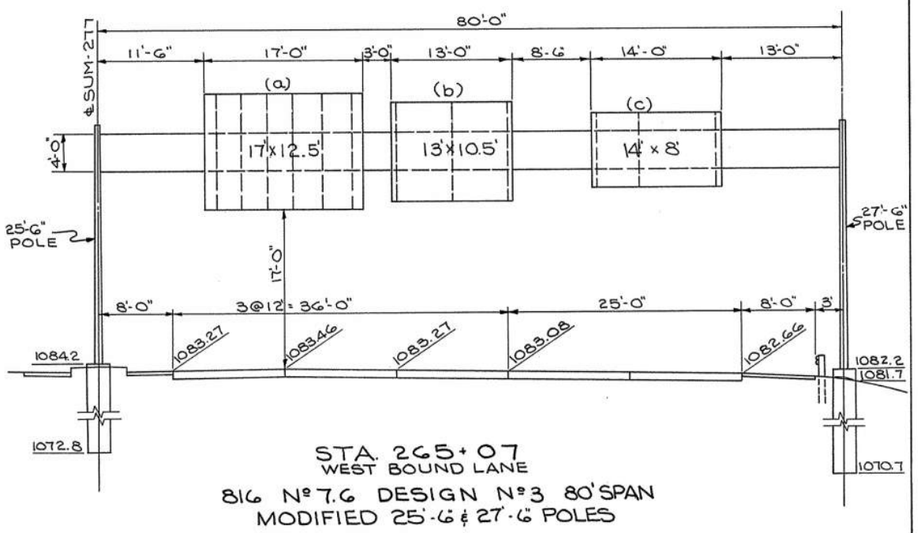
STA. 259+31.9
EAST BOUND LANE

816 Nº7.4 DESIGN Nº1 70' SPAN
MODIFIED 24'-0" & 25'-0" POLES

(a)
Area = 17'X10.5' = 178.5 Sq. Ft.
Spacing
1'-2 5/8", 4'-1 5/8", 4'-1 3/4", 3'-1 5/8", 3'-1 3/4", 1'-2 5/8"
Nº of Brackets 5 Height 10'-6" Type Ya

(b)
Area = 12'X 10.5' = 126.0 Sq. Ft.
Spacing = 6", 4@2'-5", 6"
Nº of Brackets 5 Height 10'-6" Type Ya

17



STA. 265+07
WEST BOUND LANE

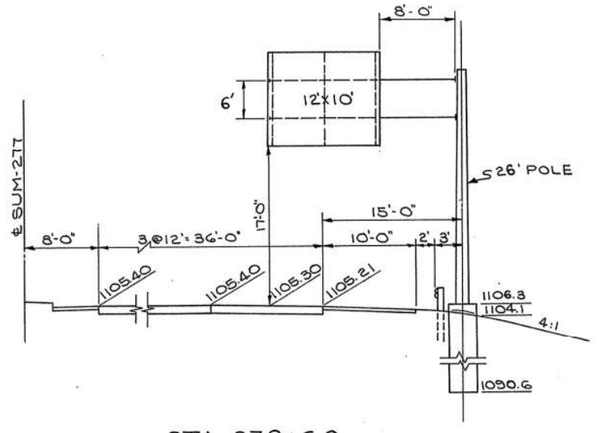
816 Nº 7.6 DESIGN Nº 3 80' SPAN
MODIFIED 25'-6" & 27'-6" POLES

(a)
Area - 17'X12.5' = 212.5 Sq. Ft.
Spacing - 1'-2 5/8", 3@2'-9 1/8", 3'-1 5/8", 3'-1 3/4", 1'-2 5/8"
Nº of Brackets 6
Height - 12'-6" Type Ya

(b)
Area - 13'X10.5' = 136.5 Sq. Ft.
Spacing - 6", 2@6'-0", 6"
Nº of Brackets 3
Height - 10'-6" Type Ya

(c)
Area - 14'X8' = 112 Sq. Ft.
Spacing - 8 5/8", 2@6'-3 3/8", 8 5/8"
Nº of Brackets 3
Height 8'-0" Type Ya

18



STA. 272+60
WEST BOUND LANE

816 Nº12.24 DESIGN Nº 5 20' ARM

Area = 12'X10' = 120 Sq. Ft.
Spacing = 6", 2@5'-6", 6"
Nº of Brackets 3
Height 10'-0" Type Ys

OVERHEAD SIGN
SUPPORT DETAILS

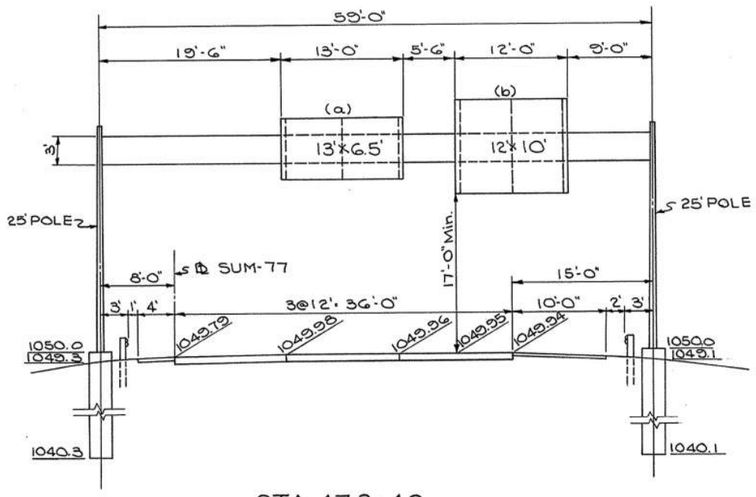
K&E

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

162
234

SUMMIT COUNTY
SUM-277-0.00

21

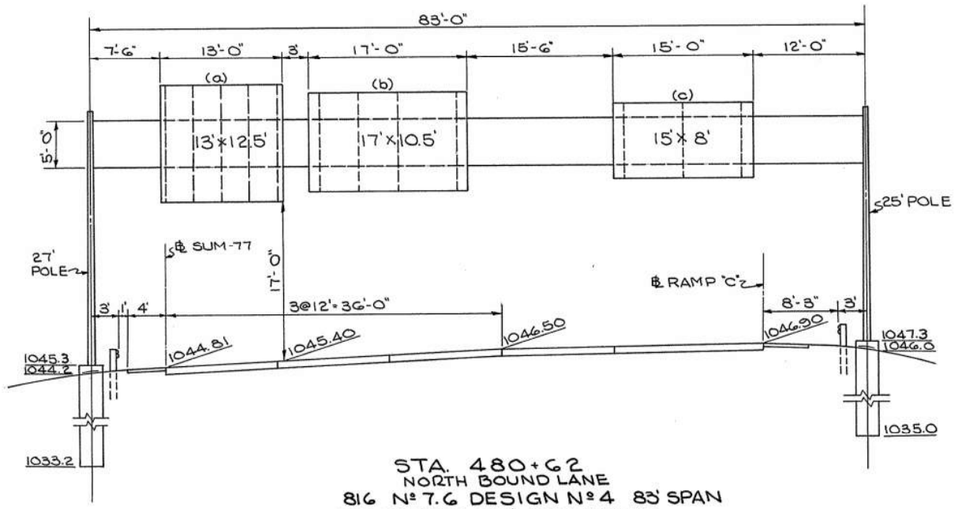


STA. 473+40
NORTH BOUND LANE
816 Nº7.3 DESIGN Nº2 59' SPAN

(a)
Area = 13'X6.5' = 84.5 Sq.Ft.
Spacing = 6", 2@6'-0", 6"
Nº of Brackets 3
Height = 6'-6" Type Ya

(b)
Area = 12'X10' = 120 Sq.Ft.
Spacing = 6", 2@5'-6", 6"
Nº of Brackets 3
Height = 10'-0" Type Ya

22



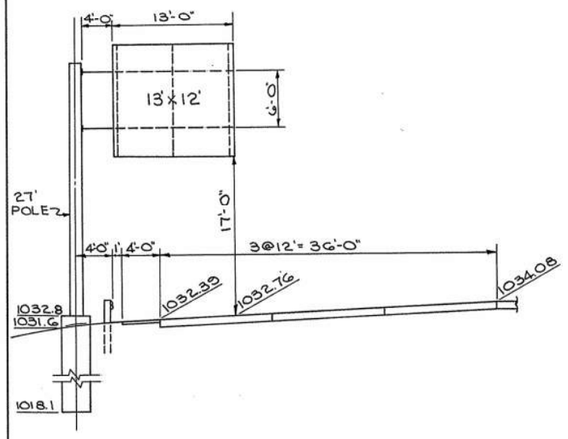
STA. 480+62
NORTH BOUND LANE
816 Nº7.6 DESIGN Nº4 85' SPAN
MODIFIED 25' & 27' POLES

(a)
Area = 13'X12.5' = 162.5 Sq.Ft.
Spacing = 6", 4@3'-0", 6"
Nº of Brackets 5
Height 12'-6" Type Ya

(b)
Area = 17'X10.5' = 178.5 Sq.Ft.
Spacing
1'-2 5/8", 4'-1 5/8" 4'-1 3/4", 6'-3 3/8", 1'-2 5/8"
Nº of Brackets 4
Height 10'-6" Type Ya

(c)
Area = 15'X8' = 120 Sq.Ft.
Spacing = 1'-2 5/8", 2@6'-3 3/8", 1'-2 5/8"
Nº of Brackets 3
Height 8'-0" Type Xa

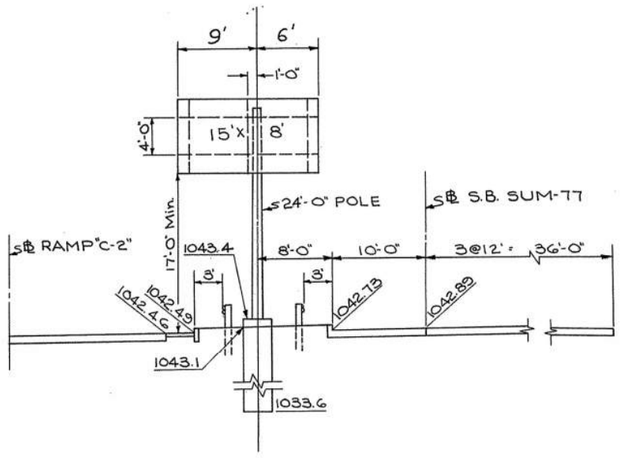
23



STA. 491+00
NORTH BOUND LANE
816 Nº12.24 DESIGN Nº5
MODIFIED 17' ARM & 27' POLE

Area = 13'X12' = 156 Sq.Ft.
Spacing = 6", 2@6'-0", 6"
Nº of Brackets 3
Height 12'-0" Type Ys

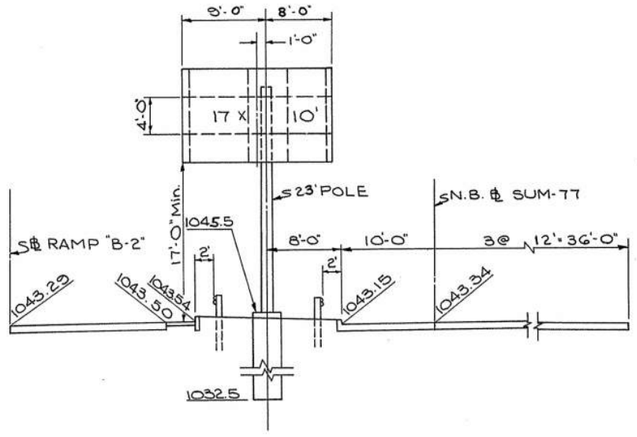
24



STA. 496+55
SOUTH BOUND LANE
816 Nº9.24 DESIGN Nº2 MODIFIED 9' & 6' ARMS & 24' POLE

Area = 15'X8' = 120 Sq.Ft.
Spacing = 1'-2 5/8", 2@6'-3 3/8", 1'-2 5/8"
Nº of Brackets 5
Height = 8'-0" Type Xs

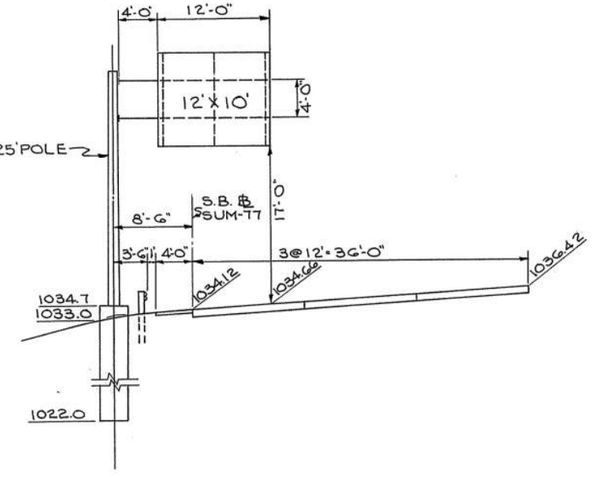
25



STA. 505+28
NORTH BOUND LANE
816 Nº9.24 DESIGN Nº3
MODIFIED 9' & 8' ARMS

Area = 17' x 10' = 170 Sq. Ft.
Spacing = 1'-2 5/8", 6'-3 3/8", 4'-1 3/4", 4'-1 3/4", 1'-2 5/8"
Nº of Brackets 4 Height = 10'-0" Type Ys

26



STA. 509+00
SOUTH BOUND LANE
816 Nº12.24 DESIGN Nº 4
MODIFIED 16' ARM

Area = 12'X10' = 120 Sq.Ft.
Spacing = 6", 2@5'-6", 6"
Nº of Brackets 3
Height = 10'-0" Type Ys

OVERHEAD SIGN
SUPPORT DETAILS

K&E

FED. RD.	STATE	PROJECT	
2	OHIO		

16
23

SUMMIT COUNTY
SUM-277-0.00

SUMMARY 621 PAVEMENT MARKING

LOCATION FROM	LOCATION TO	DISTANCE FROM CENTERLINE OR BASELINE	4" EDGE LINE	4" LANE LINE	6" LANE LINE	8" CHANNEL LINE	BROAD TRANSVERSE STRIPES	CURB & ISLAND MARKING
			Lin.Ft.	Lin.Ft.	Lin. Ft.	Lin.Ft.	Lump	Lump
EASTBOUND	SUM 277							
228 + 68.84	273 + 82.76	8' R	4514					
228 + 68.84	241 + 78.72	44' & 56' R	1310					
246 + 98.53	256 + 70.76	44' R	973					
267 + 53	273 + 82.76	32' R						
228 + 68.84	273 + 82.76	20' R			1693			
228 + 68.84	252 + 23.28	32' R			883			
252 + 23.28	267 + 52	32' R				1530	Lump	
241 + 50	244 + 00	44' R		94				
244 + 00	244 + 98.53	R				298		
WESTBOUND	SUM 277							
228 + 68.84	273 + 82.76	8' L	4514					
228 + 68.84	233 + 88.84	44' To 57' L	520					
231 + 98	246 + 56.25	Var. 32' & 42' L	1458					
251 + 08.27	263 + 01.74	44' L	1380					
268 + 21.55	273 + 82.76	56' & 44' L	561					
228 + 68.84	273 + 82.76	20' L			1693			
255 + 56.25	273 + 82.76	32' L			685			
246 + 56.25	255 + 56.25	32' L				900		
266 + 00	268 + 50	44' L		94				
263 + 01.74	266 + 00	44' L				298		
231 + 98	233 + 88.84	38' To 42' L				191		
228 + 68.84	229 + 48.84	32' L			30			
229 + 48.84	231 + 98	32' To 38' L		93				
RAMP "A"								
0 + 00	17 + 90.67	Baseline	1791					
2 + 14	4 + 18.13	18' L				204	Lump	
4 + 18	5 + 18	L						Lump
5 + 18	16 + 90.67	L.E.P.	1273					
14 + 60.67	17 + 90.67	L						Lump
RAMP "B"								
3 + 82	4 + 65.32	L						Lump
3 + 82	22 + 77.60	Baseline	1896					
3 + 82	13 + 11.52	L. E. P.	930					
11 + 25	14 + 11.52	L						Lump
14 + 11.52	21 + 77.60	Var. 29' to 14' L	766					
19 + 45	22 + 77.60	L						Lump
14 + 11.52	15 + 65	14' L				153		
RAMP "B-1"								
0 + 00	17 + 90.87	Baseline	1791					
1 + 65	3 + 50.38	18' L				185	Lump	
3 + 50.38	4 + 50.38	L						Lump
3 + 50.38	16 + 90.87	L.E.P.	1340					
15 + 40.87	17 + 90.87	L						Lump
RAMP "B - 2"								
0 + 00	16 + 13	Baseline	1613					
1 + 92	3 + 61.81	18' R				170	Lump	
3 + 61.81	4 + 61.81	R						Lump
3 + 61.81	15 + 67	R.E.P.	1205					
RAMP "C"								
0 + 00	25 + 86.97	Baseline	2587					
2 + 18	4 + 25.89	18' L				208	Lump	
4 + 25.89	5 + 25.89	L						Lump
4 + 25.89	16 + 12.90	L.E.P.	1187					
14 + 86	17 + 12.90	L						Lump
17 + 12.90	24 + 86.97	L.E.P.	774					
22 + 48	25 + 86.97	L						Lump
17 + 12.90	19 + 29	14' L				216		
RAMP "C - 1"								
0 + 00	18 + 62.37	Baseline	1862					
1 + 65	3 + 50.38	18' L				185	Lump	
3 + 50.38	4 + 50.38	L						Lump
3 + 50.38	15 + 62.37	L.E.P.	1212					
14 + 62.37	18 + 62.37	L						Lump
RAMP "C - 2"								
0 + 00	17 + 80.97	Baseline	1781					
2 + 14	4 + 18.13	18' R				204	Lump	
4 + 18.13	5 + 18.13	R						Lump
4 + 18.13	17 + 80.97	R.E.P.	1363					
RAMP "D"								
0 + 00	21 + 60.12	Baseline	2160					
2 + 14	4 + 18.13	18' L				204	Lump	
4 + 18.13	5 + 18.13	L						Lump
4 + 18.13	19 + 10.12	L.E.P.	1492					
17 + 50	21 + 60.12	L						Lump
SUB-TOTAL (A)			12,879	281	4984	4946	Lump	Lump

CONT.

LOCATION FROM	LOCATION TO	DISTANCE FROM CENTERLINE OR BASELINE	4" EDGE	4" LANE	6" LANE	8" CHANNEL LINE	BROAD TRANSVERSE STRIPES	CURB & ISLAND MARKING	REMOVE EXIST. 4" EDGE LINE
		LIN. FT.	LIN. FT.	LIN. FT	LIN.FT.	LIN.FT.	LUMP		LIN. FT.
NORTHBOUND	SUM 77								
473 + 33.46	447 + 11.93	48' R	378						
476 + 30	479 + 30	36' R		112					
479 + 30	482 + 33.46	36' R				506			
473 + 33.46	482 + 33.46	36' R							900
497 + 30.00	507 + 30.00	Var. 61' To 36' R	1000						
497 + 30.00	499 + 25	Var. 46' To 42' R				195			
499 + 25	501 + 65	Var. 42' To 36' R		90					
501 + 65	507 + 30	36' R							565
496 + 53.74	500 + 90	12' L	436						
499 + 67	502 + 81	Baseline		118					
502 + 81	505 + 53.74	Baseline				446			
496 + 53.74	505 + 53.74	Baseline							900
510 + 65.75	515 + 19.45	Var. 61' To 51.5' R	454						
510 + 65.75	513 + 15.75	Var. 46' To 42' R				240			
513 + 15.75	515 + 37.10	Var. 42' To 37.5' R		83					
SOUTHBOUND	SUM 77								
489 + 60	492 + 00	Var. 42' L to 46' L				240			
486 + 72	489 + 60	Var. 30' To 42' L		108					
480 + 00	492 + 00	Var. 36' To 61' L	1200						
480 + 00	486 + 72	36' L							672
494 + 03.54	503 + 73.91	Var. 36' To 61' L	970						
502 + 03.54	503 + 73.91	Var. 42' To 46' L				170			
499 + 63.54	502 + 03.54	Var. 36' To 42' L		90					
494 + 03.54	499 + 63.54	36' L							560
499 + 30	501 + 80	Baseline		94					
501 + 48.92	505 + 29.11	12' R	380						
496 + 29.11	499 + 30	Baseline				500			
496 + 29.11	505 + 29.11								900
SUB-TOTAL (B)			4818	695		2297			
+ SUB-TOTAL (A)			42,879	281	4984	4946	Lump	Lump	
TOTAL			47,697	976		7243			4497
MILES			.1	.184	.944		Lump	Lump	.851

SUMMARY 620 DELINEATORS

LOCATION FROM	LOCATION TO	Side	Interval	A – 1 Post	A – 1 Bracket	C – 2 Post	C – 2 Bracket	C – 3 Post	C – 3
			LIN.FT.	EACH	EACH	EACH	EACH	EACH	EACH
NORTHBOUND	SUM 77								
473 + 30		R	-			1			
474 + 30	476 + 30	R	100			3			
498 + 30	506 + 30	R	100			9			
507 + 30		R	-					1	
496 + 50		L	-			1			
497 + 50	500 + 50	L	100			4			
511 + 65	514 + 65	R	100			4			
SOUTHBOUND	SUM 77								
480 + 00		L	-					1	
481 + 00	491 + 00	L	100			11			
494 + 00		L	-					1	
495 + 00	503 + 00	L	100			9			
502 + 30	504 + 30	R	100			3			
505 + 30		R	-			1			
SUB-TOTAL(A)						46		3	

CONT.

LOCATION FROM	LOCATION TO	Side	Interval	A – 1 Post	A – 1 Bracket	C – 2 Post	C – 2 Bracket	C – 3 Post	C – 3
			.IN. FT.	EACH	EACH	EACH	EACH	EACH	
EASTBOUND	SUM 277								
238 + 00		R	-			1			
239 + 00	241 + 00	R	100			3			
247 + 00	255 + 00	R	200	3	2				
261 + 00	271 + 00	R	200	6					
WESTBOUND	SUM 277								
228 + 70		L	-					1	
229 + 70	233 + 70	L	100			5			
237 + 00	247 + 00	L	200	6					
253 + 00	263 + 00	L	200	3	3				
269 + 00	271 + 00	L	100			3			
272 + 00		L	-			1			
RAMP "A"									
0 + 20	6 + 20	R	100			7			
6 + 20	15 + 00	L	80			12			
15 + 00		R	-			1			
15 + 90	17 + 90	R	100			3			
RAMP "B"									
4 + 80	5 + 60	L	80			2			
6 + 10	8 + 60	L	50			6			
9 + 40	11 + 40	L	100			3			
11 + 40	12 + 40	R	100			2			
13 + 20	14 + 80	R	80			3			
14 + 80	18 + 80	L	50			9			
19 + 40		L	-			1			
19 + 40	21 + 00	R	80			3			
22 + 00		R	-			1			
RAMP "B - 1"									
0 + 00		R	-					1	
1 + 00	5 + 00	R	100			5			
5 + 00	5 + 60	L	60			2			
5 + 90	12 + 20	L	30			22			
12 + 80	14 + 00	L	60			3			
15 + 00		L	-			1			
15 + 00	16 + 60	R	80			3			
17 + 60		R	-			1			
RAMP "B - 2"									
0 + 60	4 + 60	L	100			5			
4 + 60	6 + 60	R	100			3			
7 + 30		R				1			
7 + 70	13 + 30	R	40			9	6		
13 + 30		L	-			1			
14 + 00	16 + 00	L	100			3			
RAMP "C"									
0 + 20	6 + 20	R	100			7			
6 + 20	7 + 20	L	100			2			
8 + 00	15 + 20	L	80			10			
15 + 20	16 + 20	R	100			2			
17 + 00	17 + 50	R	50			2			
17 + 50	21 + 50	L	50			9			
22 + 30	23 + 10	L	80			2			
23 + 10	23 + 90	R	80			2			
24 + 90	25 + 90	R	100			2			
RAMP "C - 1"									
0 + 00	4 + 00	R	100			4	1		
4 + 80		R	-			1			
4 + 80	6 + 00	L	60			3			
6 + 30	13 + 50	L	30			25			
14 + 00		L	-			1			
14 + 60		L & R	-			2			
15 + 60	18 + 60	R	100			4			
RAMP "C - 2"									
0 + 20	5 + 20	L	100			6			
5 + 20	9 + 20	R	100			5			
9 + 90	14 + 30	R	40			6	6		
14 + 90	16 + 10	R	60			3			
16 + 10	17 + 10	L	100			2			
RAMP "D"									
0 + 20	9 + 20	R	100			10			
9 + 20	15 + 60	L	80			9			
16 + 60		L	-			1			
16 + 60	21 + 60	R	100			6			
SUB-TOTAL (B)				18	5	252	14	1	
+ SUB-TOTAL (A)				-	-	46	-	3	
TOTAL				18	5	298	14	4	

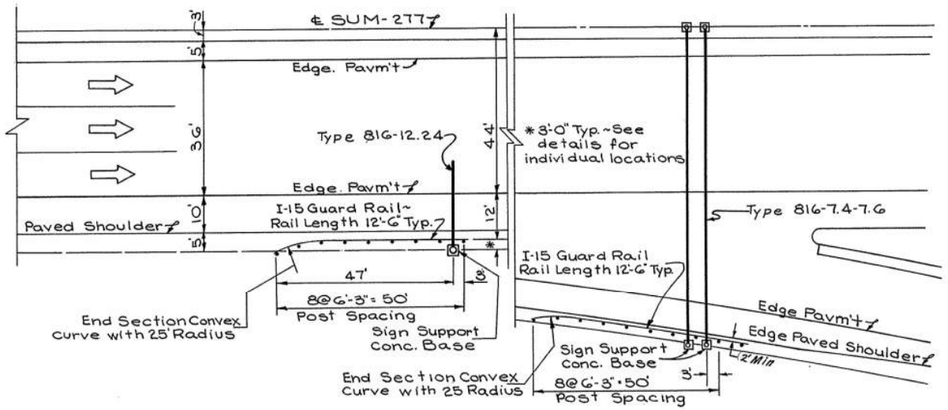
KAE

SUMMARY OF PAVEMENT MARKING & DELINEATORS

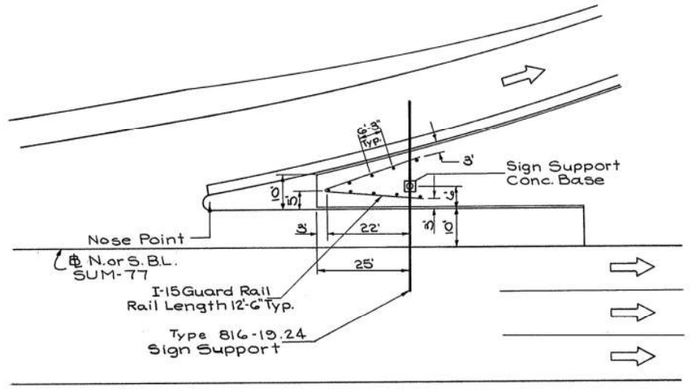
FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

164
234

SUMMIT COUNTY
SUM-2.77-0.00



GUARD RAIL PROTECTION FOR
816-12.24 & 816-7.4-7.6



GUARD RAIL PROTECTION FOR
816-9.24

GENERAL

Protective Guardrail for Overhead Sign Supports shall Conform to GOG, Guard Rail Type 4 & Guard Rail Type 4 Barrier Design.

At Locations where Guardrail is in Place, All Sign Support Foundations shall be Placed Behind Existing Guardrail.

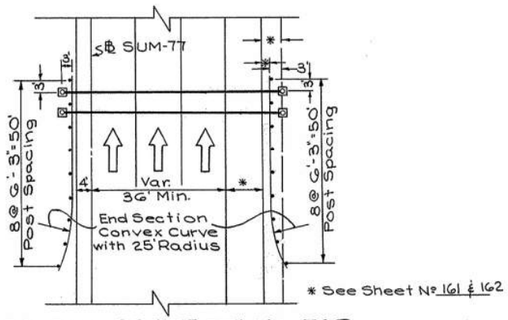
A Minimum of Six Guardrail is Required in Advance of Any Sign Support.

All Proposed Flared Guardrail Sections with 25' Radius Shall be Prefabricated to Correct Curvature.

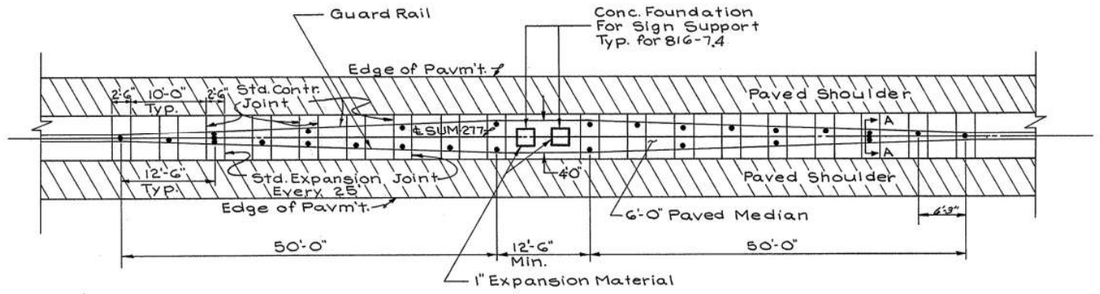
Other Proposed Guardrail Flares May be Constructed of Rail Elements which Have Not Been Fabricated Exactly to Fit the Curvature Shown on the Plans. The Two End Post of Each Flared Section Shall Then be Encased in a Minimum 4" Thickness of Class 'E' Concrete For The Full Depth of the Post Below the Ground Line. Payment For Encasement, where Required, Shall be Included in the Unit Price Bid for Guardrail.

DESIGN

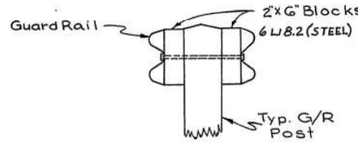
The Design of Guardrail Protection For Overhead Supports is in Accordance with A.A.S.H.O. Specifications for the Design and Construction of Structural Supports for Highway Signs, Adopted June 12, 1961.



GUARD RAIL PROTECTION FOR
816-7.3 & 816-7.6



GUARD RAIL PROTECTION FOR 816-7.4-7.6

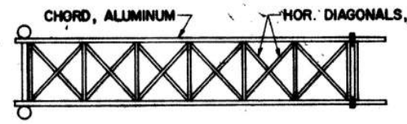


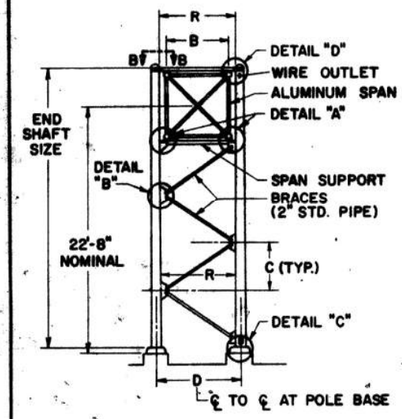
SECTION A-A
Typical Treatment of First Post in Flared G/R Section

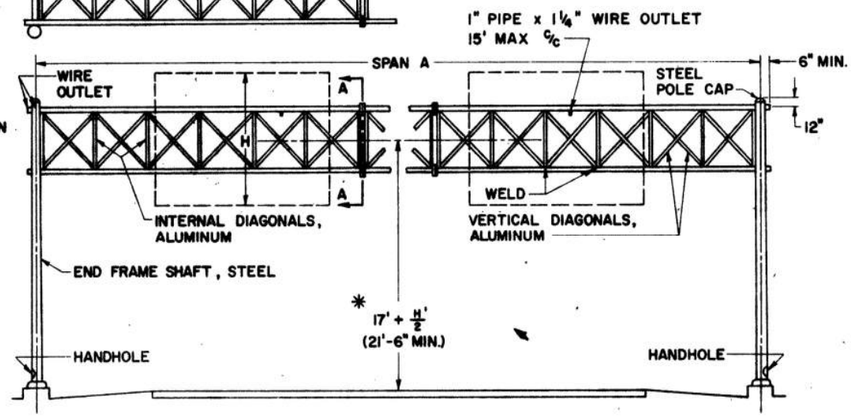
| Ref. No. | Location | Sign Size & Area | 816 Design № | | | | | | | | | | | | | | | | | | | | | | | | 606 | 625 | | | | | | | | | | | | | | | | | | |

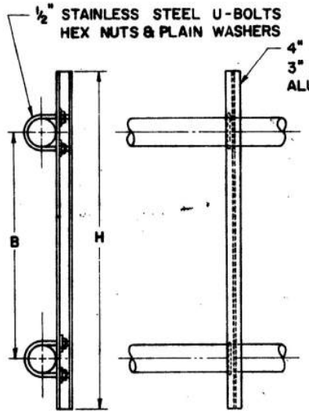
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

SUMMIT COUNTY
SUM-277-0.00

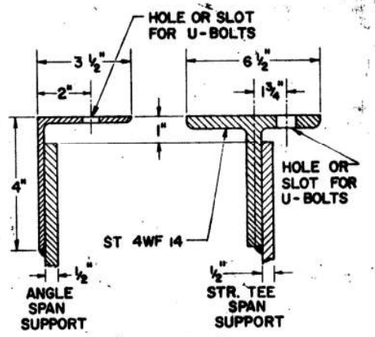








SIGN BRACKET



SECTION D-D

NOTES

MATERIALS

THE OVERHEAD SPAN TRUSS SHALL BE ALUMINUM AND THE END FRAMES SHALL BE STEEL.

SPAN TRUSS AND END FRAMES, INCLUDING HARDWARE, SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 816 UNLESS OTHERWISE NOTED.

STEEL POLE BASES AND GUSSETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A-373.

AFTER FABRICATION THE TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

FABRICATION

THE ENTIRE STEEL END FRAME SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH 711.02

MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

ERECTION

USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD ¼" OF CAMBER FOR EACH 5' OF INCREASE IN SPAN OVER 50'.

S 11.3

THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY).

FOR POOR SOIL CONDITIONS, INCREASE "D" MIN BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL

COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.

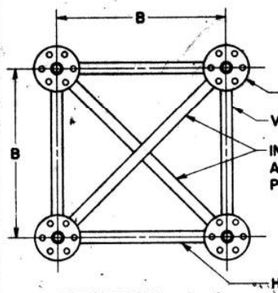
BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER.

***FOUNDATION ELEVATION**

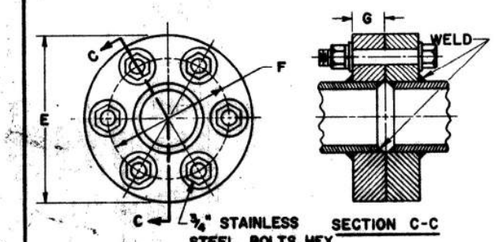
ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17' CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF THE PAVEMENT AND SHOULDERS.

DESIGN

THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

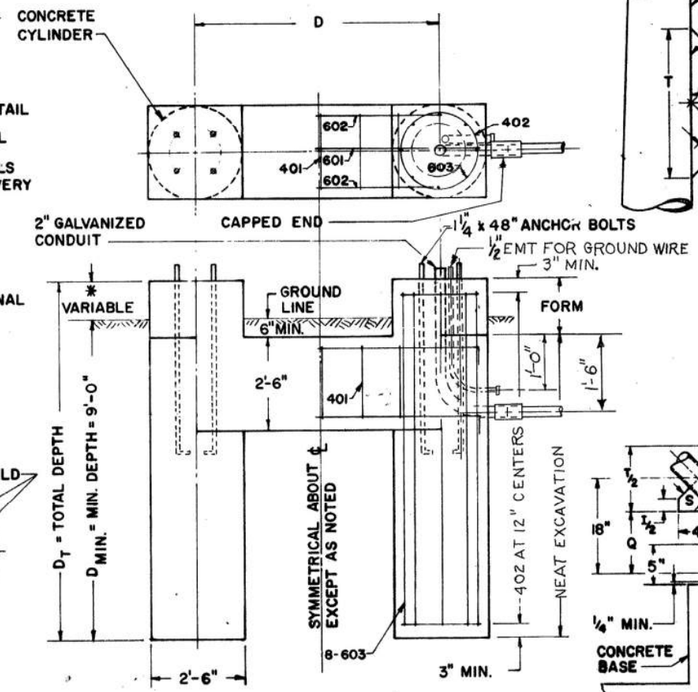


SECTION A-A



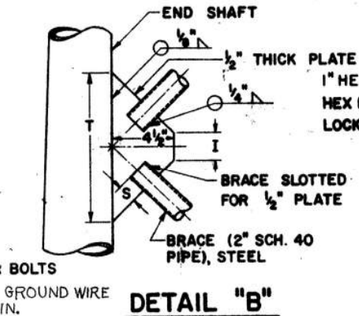
CAST FLANGE, B-26 ALLOY SG 70A-T7 (356-T7)

FLANGE DETAIL

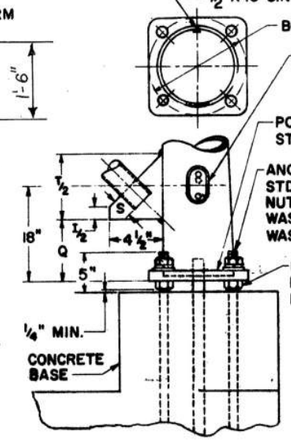


FOUNDATION DETAIL

(RIGHT HAND SHOWN - LEFT HAND OPPOSITE)

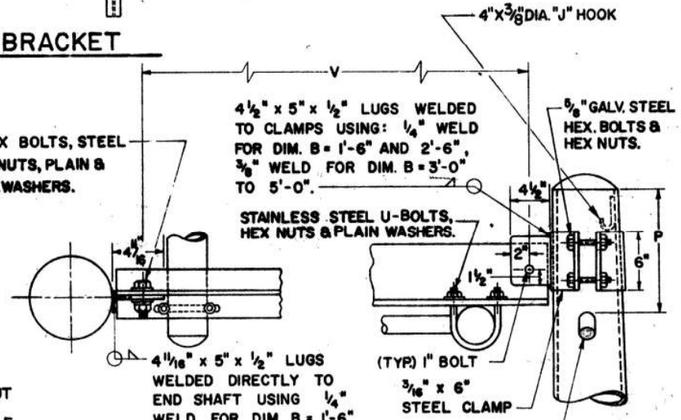


DETAIL "B"



DETAIL "C"

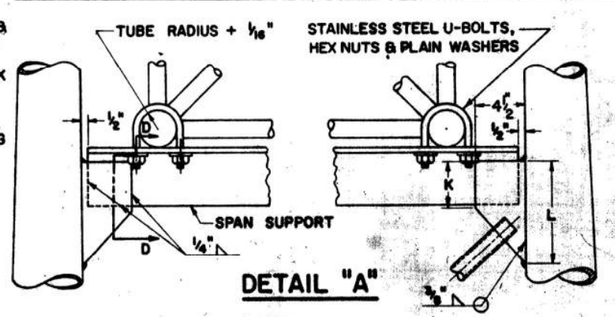
POLE BASE DETAIL



VIEW B-B

DETAIL "D"

UPPER SPAN SUPPORT (ALTERNATE METHODS)



DETAIL "A"

LOWER SPAN SUPPORT

DESIGN NO.	SPAN A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U BOLTS	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL
1	50'Thru 55'	3'-0"	4'-11¾"	4'-5"	7"	8"x4.5"x25'-0" 36A	5'-10 13/16"	5½"	1¼"	3½"	4¾"	8"	12"	6⅝"	3'-9"	1½"	10"	⅝"	3'-3⅝"	11"	SPLIT TEE 3'-8"	3½" x .188"	1.660"x .140"	1.660"x .140"
2	56'Thru 80'	3'-0"	4'-11¾"	4'-5"	9¼"	8"x4.5"x25'-0" 36A	5'-10 13/16"	7 7/16"	1⅜"	3½"	4¾"	8"	12"	6⅝"	3'-9"	1½"	10"	⅝"	3'-3⅝"	11"	SPLIT TEE 3'-8"	4¾" x .188"	1.900"x .145"	1.660"x .140"
3	81'Thru 90'	4'-0"	4'-10¼"	5'-7"	9¼"	8"x6.22"x25'-6" 36A	6'-7⅛"	7 7/16"	1⅜"	⅝"	4⅜"	7¾"	12"	6¼"	4'-1"	1½"	9½"	⅝"	4'-5⅝"	11"	SPLIT TEE 4'-10"	4¾" x .188"	1.900"x .145"	1.900"x .145"
4	91'Thru 105'	4'-0"	4'-10¼"	5'-7"	9¼"	8"x6.22"x25'-6" 36A	6'-7⅛"	7 7/16"	1⅜"	⅝"	4⅜"	7¾"	12"	6¼"	4'-1"	1½"	9½"	⅝"	4'-5⅝"	11"	SPLIT TEE 4'-10"	4¾" x .188"	2" x .186"	1.900"x .145"

REINFORCEMENT SCHEDULE			
MARK	NO.	LENGTH	TYPE
401	12"C/C	8'-6"	102
402	12"C/C	7'-6"	103
601	4	D+4'-0"	101
602	8	D+2'-0"	101
603	32	D_T-6"	STR.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

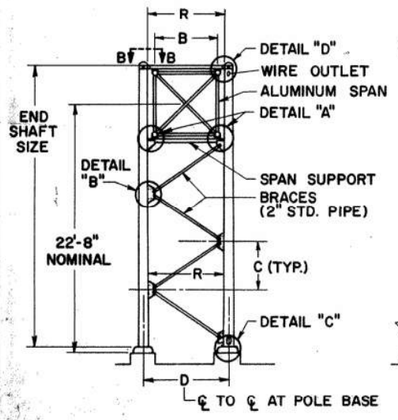
OVERHEAD SIGN SUPPORTS — 816 No. 7.3 — DATE 7-25-61 5-8-63

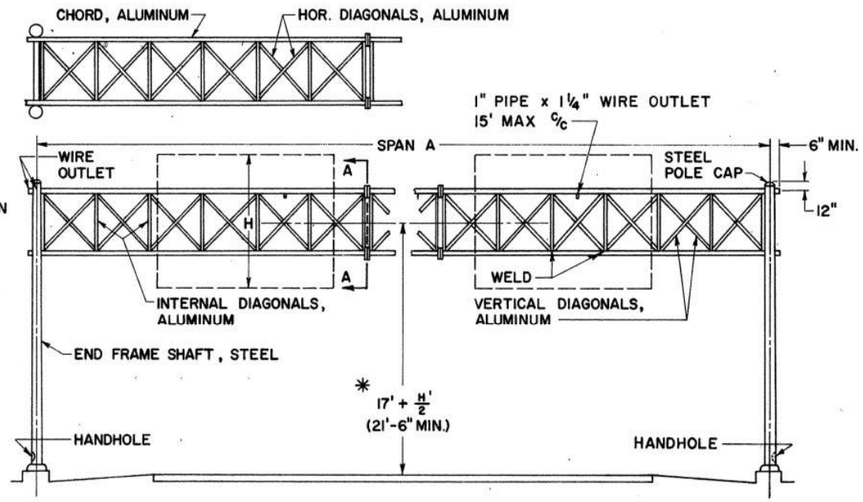
APPROVED Robert L. Cooley
ENGINEER OF TRAFFIC

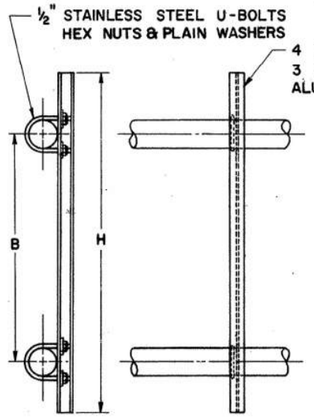
300 SQ. FT. SIGN AREA — OVERHEAD SIGN SUPPORT, 816 NO 7.3

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

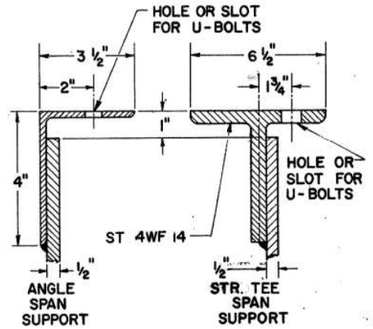
SUMMIT COUNTY
SUM-277-0.00







SIGN BRACKET



SECTION D-D

NOTES

MATERIALS

THE OVERHEAD SPAN TRUSS SHALL BE ALUMINUM AND THE END FRAMES SHALL BE STEEL.

SPAN TRUSS AND END FRAMES, INCLUDING HARDWARE, SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 816 UNLESS OTHERWISE NOTED.

STEEL POLE BASES AND GUSSETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A-373.

AFTER FABRICATION THE TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

FABRICATION

THE ENTIRE STEEL END FRAME SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SEC. 711.02. MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

ERECTION

USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD ¼" OF CAMBER FOR EACH 5' OF INCREASE IN SPAN OVER 50'.

SOILS

THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENT SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY).

FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL

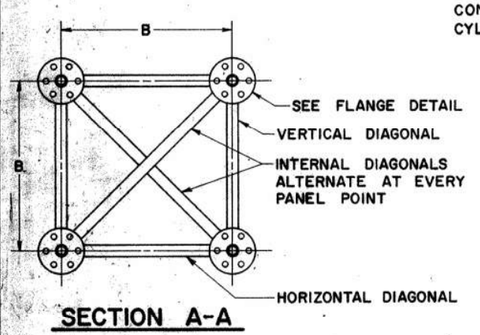
COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS. BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER.

***FOUNDATION ELEVATION**

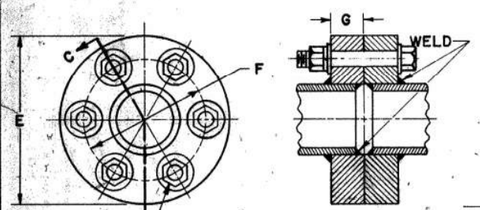
ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17' CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF THE PAVEMENT AND SHOULDERS.

DESIGN

THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

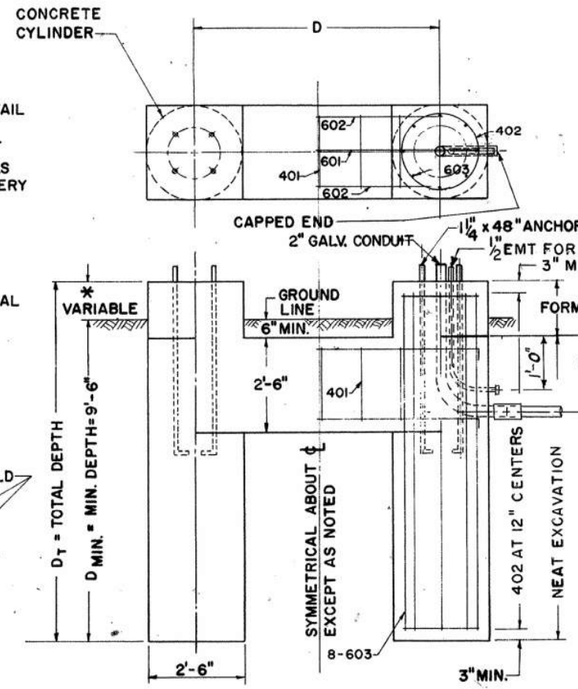


SECTION A-A

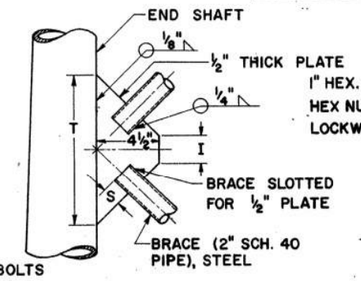


CAST FLANGE, B-26 ALLOY SG 70A-T7 (356-T7)

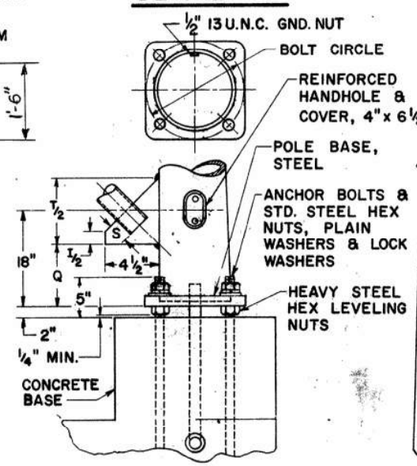
FLANGE DETAIL



FOUNDATION DETAIL
(RIGHT HAND SHOWN — LEFT HAND OPPOSITE)

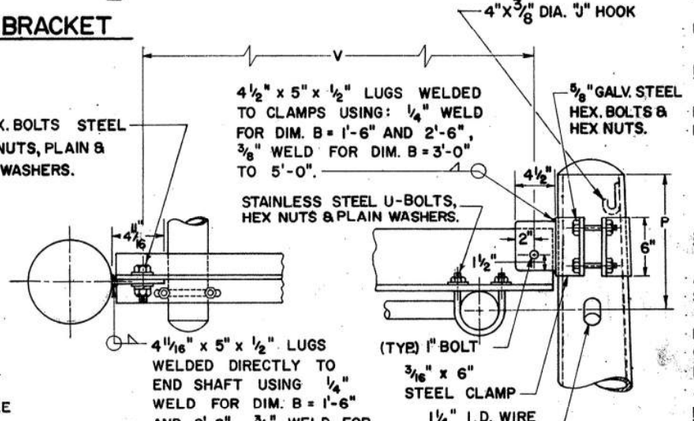


DETAIL "B"



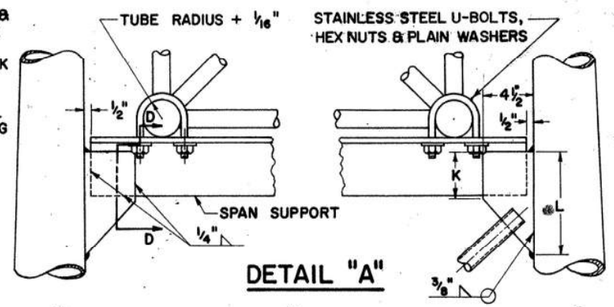
DETAIL "C"

POLE BASE DETAIL



VIEW B-B

DETAIL "D"



DETAIL "A"

LOWER SPAN SUPPORT

UPPER SPAN SUPPORT (ALTERNATE METHODS)

DESIGN NO.	SPAN A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U BOLTS	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL
1	50' thru 75'	3'-0"	4'-11¾"	4'-5"	9¼"	8"x4.5"x25'-0", 3 GA.	5'-10 13/16"	7 7/16"	1⅜"	3½"	4¾"	8"	12"	6 5/8"	3'-9"	1½"	10"	⅝"	3'-3 5/8"	11"	SPLIT TEE 3'-8"	4¾" x .188"	1.900" x .145"	1.660" x .140"
2	76' thru 85'	4'-0"	4'-10¼"	5'-7"	9¼"	8"X6.22"x25'-6" 3GA.	6'-7⅛"	7 7/16"	1⅜"	⅝"	4⅜"	7¾"	12"	6¼"	4'-10"	1½"	9½"	⅝"	4'-4⅝"	11"	SPLIT TEE 4'-10"	4¾" x .188"	2" x .188"	1.900" x .145"
3	86' thru 90'	4'-0"	4'-10½"	5'-7"	11"	8"X6.22"x25'-6" 3GA.	6'-7⅛"	8½"	1½"	⅝"	4⅜"	7¾"	12"	6¼"	4'-10"	1½"	9½"	⅝"	4'-4⅜"	11"	SPLIT TEE 4'-10"	5½" x .250"	2" x .188"	1.900" x .145"
4	91' thru 110'	5'-0"	4'-8½"	6'-7"	11"	8"X6.18"x26'-0", 3GA.	7'-3¼"	8½"	1½"	—	3½"	7¾"	12"	7¼"	5'-10"	1¾"	11¼"	¾"	5'-4⅝"	11"	SPLIT TEE 5'-10"	5½" x .250"	2½" x .188"	2½" x .188"

REINFORCEMENT SCHEDULE			
MARK	NO.	LENGTH	TYPE
401	12"C/C	8'-6"	102
402	12"C/C	7'-6"	103
601	4	D+ 4'-0"	101
602	8	D+ 2'-0"	101
603	32	D_T - 6"	STR.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

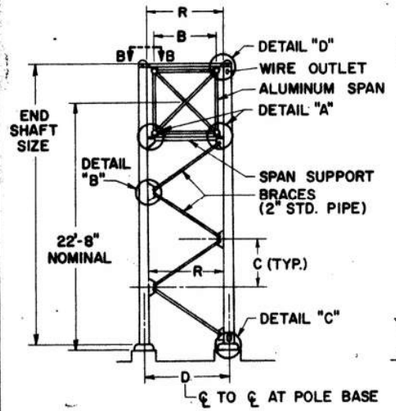
OVERHEAD SIGN SUPPORTS | 816 No. 7.4 | DATE 5-2-64 7-25-63 5-6-

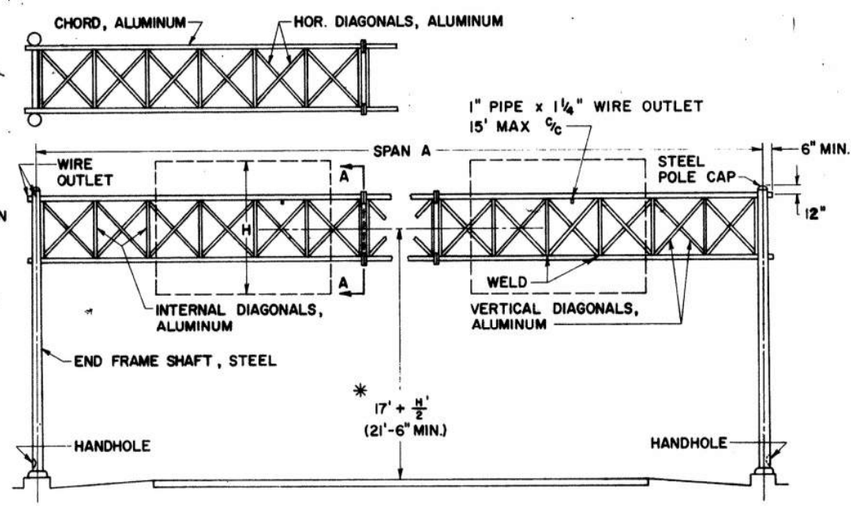
APPROVED Robert E. Comer
ENGINEER OF TRAFFIC

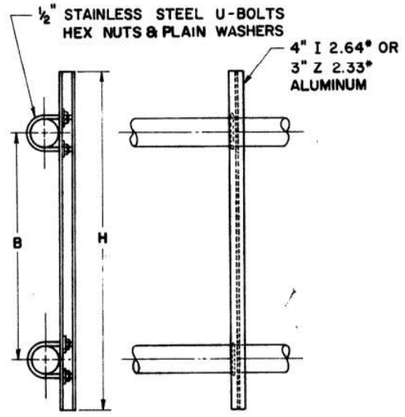
400 SQ. FT. SIGN AREA OVERHEAD SIGN SUPPORT, 816 NO. 7.4

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(9)23	

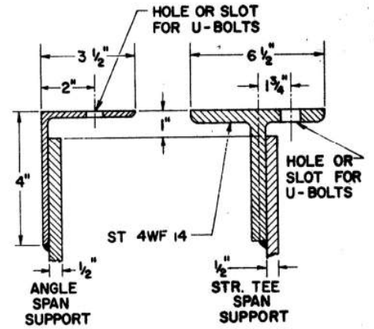
SUMMIT COUNTY
SUM-2.77-0.00







SIGN BRACKET



SECTION D-D

NOTES

MATERIALS

THE OVERHEAD SPAN TRUSS SHALL BE ALUMINUM AND THE END FRAMES SHALL BE STEEL.

SPAN TRUSS AND END FRAMES, INCLUDING HARDWARE, SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 816 UNLESS OTHERWISE NOTED.

STEEL POLE BASES AND GUSSETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A-373.

AFTER FABRICATION THE TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

FABRICATION

THE ENTIRE STEEL END FRAME SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SEC. 711.02.

MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

ERECTION

USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD ¼" OF CAMBER FOR EACH 5' OF INCREASE IN SPAN OVER 50'.

SOILS

THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY).

FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL

COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.

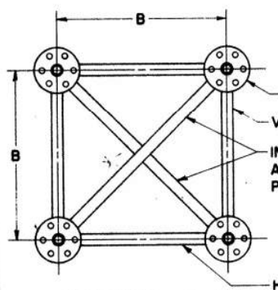
BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER.

*FOUNDATION ELEVATION

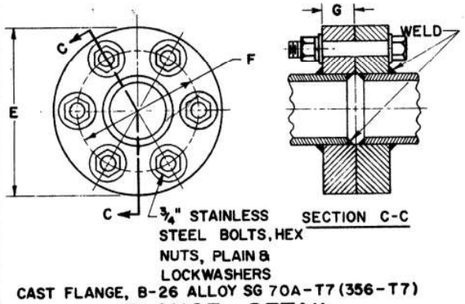
ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17' CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF PAVEMENT AND SHOULDERS.

DESIGN

THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORT FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

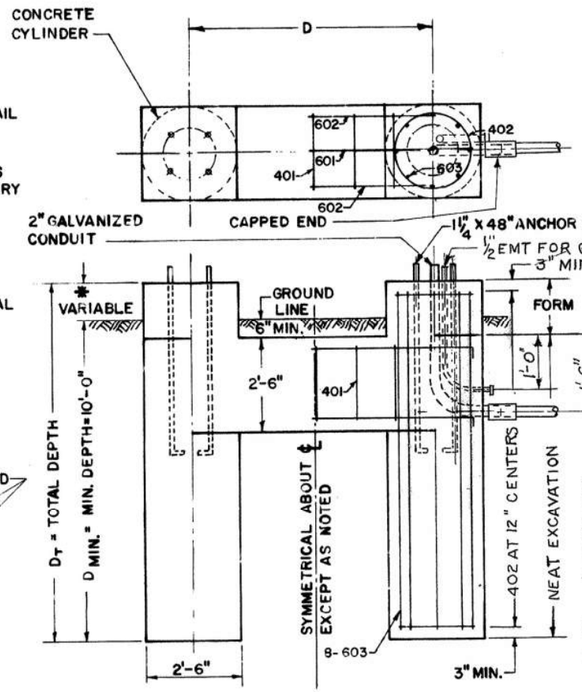


SECTION A-A

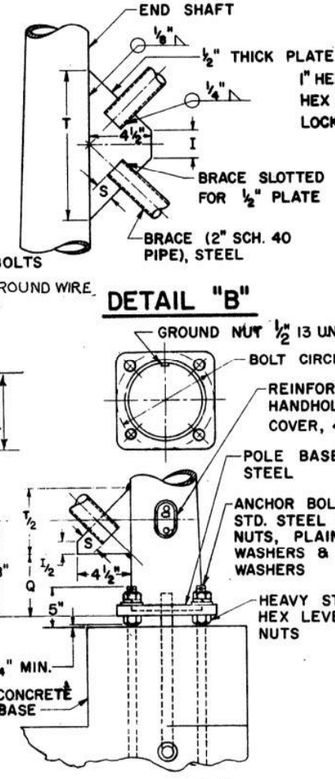


CAST FLANGE, B-26 ALLOY SG 70A-T7 (356-T7)

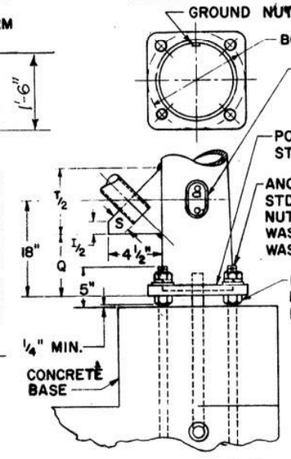
FLANGE DETAIL



FOUNDATION DETAIL
(RIGHT HAND SHOWN — LEFT HAND OPPOSITE)

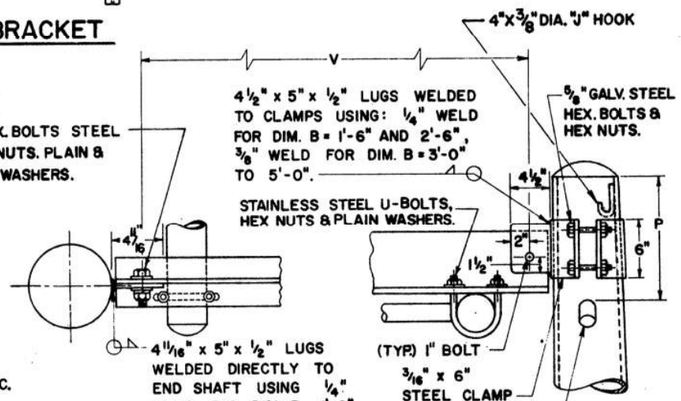


DETAIL "B"



DETAIL "C"

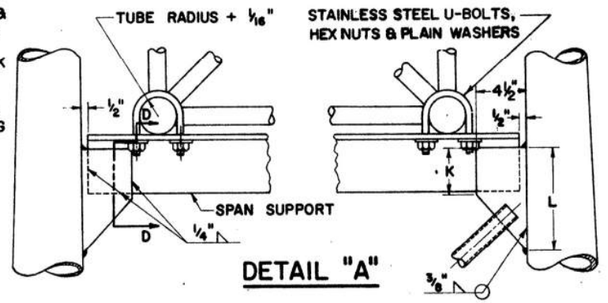
POLE BASE DETAIL



VIEW B-B

DETAIL "D"

UPPER SPAN SUPPORT (ALTERNATE METHODS)



DETAIL "A"

LOWER SPAN SUPPORT

DESIGN NO.	SPAN A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U BOLTS	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL
1	50' THRU 70'	3'-0"	4'-1 3/4"	4'-5"	9¼"	8"X 4.5"X 25'-0", 3GA	5'-10 3/16"	7 7/16"	1⅜"	3½"	4¾"	8"	12"	6 5/8"	3'-9"	1½"	10"	⅝"	3'-3 5/8"	11"	SPLIT TEE 3'-8"	4¾"X .188"	1.900"X .145"	1.660"X .140"
2	71' THRU 80'	4'-0"	4'-10¼"	5'-7"	9¼"	8"X 6.22"X 25'-6", 3GA	6'-7⅞"	7 7/16"	1 3/8"	⅝"	4⅜"	7¾"	12"	6¼"	4'-11"	1½"	9½"	⅝"	4'-5⅝"	11"	SPLIT TEE 4'-10"	4¾"X .188"	2" X .188"	1.900"X .145"
3	81' THRU 86'	4'-0"	4'-10¼"	5'-7"	11"	8"X 6.22"X 25'-6", 3GA	6'-7⅛"	8½"	1½"	⅝"	4⅜"	7¾"	12"	6¼"	4'-11"	1½"	9½"	⅝"	4'-5⅝"	11"	SPLIT TEE 4'-10"	5½"X .250"	2" X .188"	1.900"X .145"
4	86' THRU 110'	5'-0"	4'-8½"	6'-7"	11"	8"X 6.18"X 26'-0", 3GA	7'-3¼"	8½"	1½"	—	3½"	7¾"	12"	7¼"	5'-11"	1 3/4"	11¼"	¾"	5'-5⅝"	11"	SPLIT TEE 5'-10"	5½"X .250"	2½"X .188"	2½"X .188"

REINFORCEMENT SCHEDULE			
MARK	NO.	LENGTH	TYPE
401	12"C/C	8'-6"	102
402	12"C/C	7'-6"	103
601	4	D+4'-0"	101
602	8	D+2'-0"	101
603	32	DT-6"	STR.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORTS

816 No. 7.5

DATE
5-2-66
7-25-66
4-20-67

APPROVED Robert E. Comer
ENGINEER OF TRAFFIC

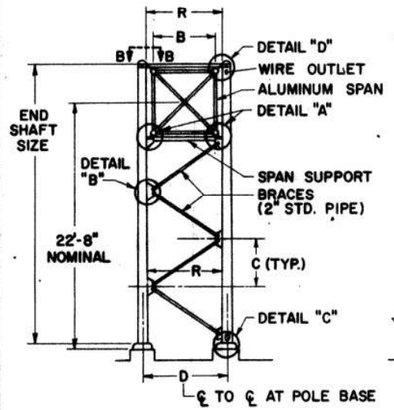
500 SQ. FT. SIGN AREA

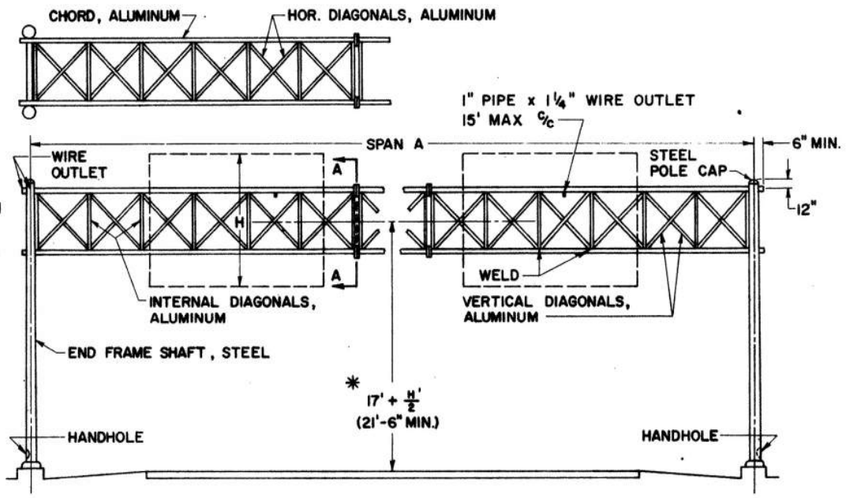
OVERHEAD SIGN SUPPORT, 816 NO. 7.5

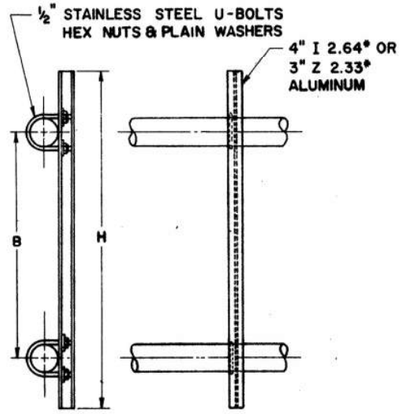
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(8)128	

168
234

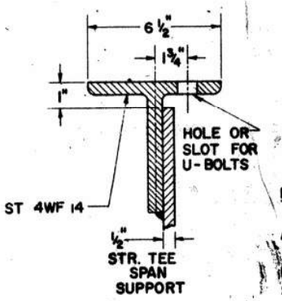
SUMMIT COUNTY
SUM-277-0.00







SIGN BRACKET



SECTION D-D

NOTES

MATERIALS

THE OVERHEAD SPAN TRUSS SHALL BE ALUMINUM AND THE END FRAMES SHALL BE STEEL.

SPAN TRUSS AND END FRAMES, INCLUDING HARDWARE, SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 816 UNLESS OTHERWISE NOTED.

STEEL POLE BASES AND GUSSETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A-373.

AFTER FABRICATION THE TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

FABRICATION

THE ENTIRE STEEL END FRAME SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SEC. 711.02

MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

ERECTION

USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD ¼" OF CAMBER FOR EACH 5' OF INCREASE IN SPAN OVER 50'.

SOILS

THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY).

FOR POOR SOIL CONDITIONS, INCREASE "D" MIN BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL

COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.

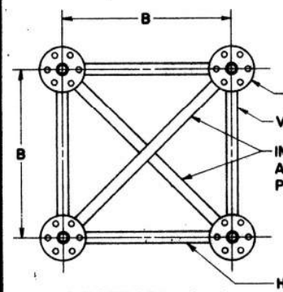
BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR DIGITS ARE USED, INDICATE THE BAR SIZE NUMBER.

***FOUNDATION ELEVATION**

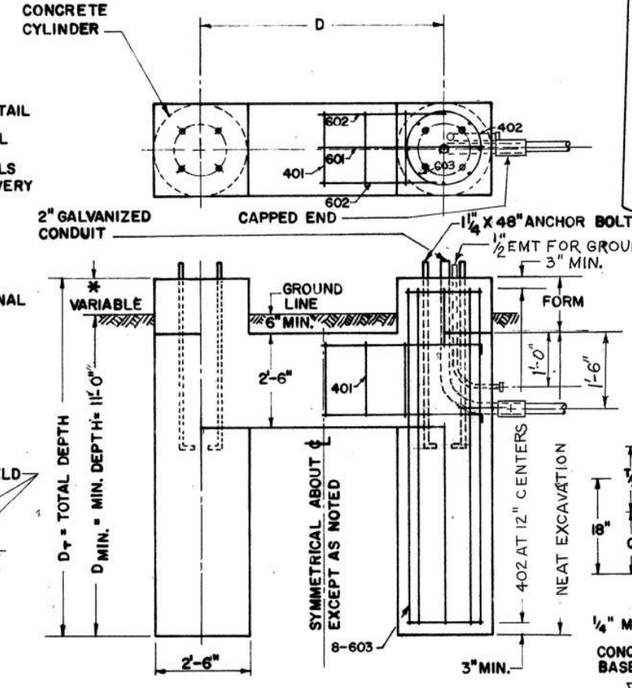
ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17' CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF THE PAVEMENT AND SHOULDERS.

DESIGN

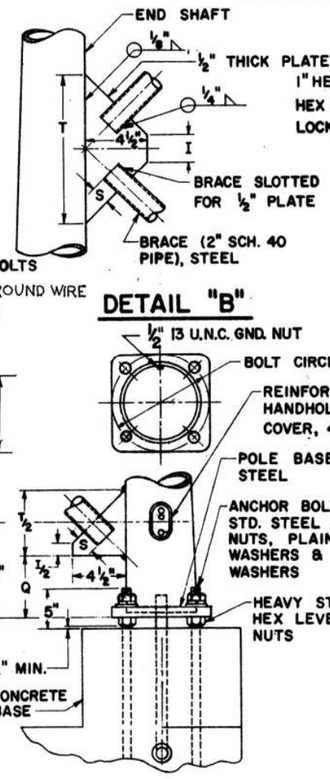
THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.



SECTION A-A

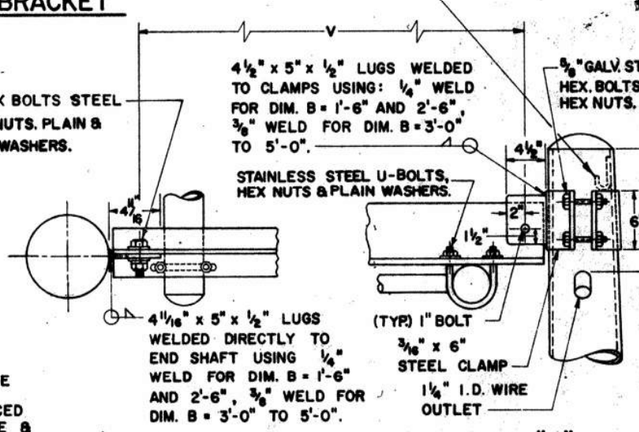


FOUNDATION DETAIL
(RIGHT HAND SHOWN — LEFT HAND OPPOSITE)



DETAIL "B"

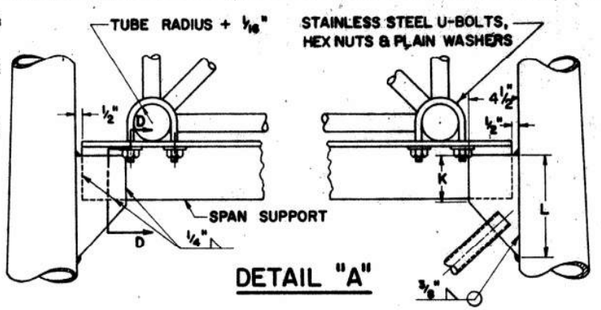
DETAIL "C"
POLE BASE DETAIL



VIEW B-B

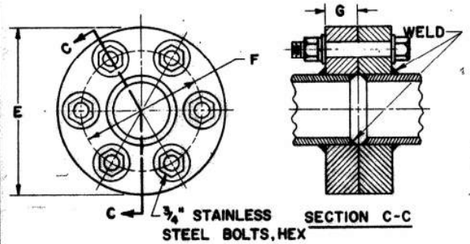
DETAIL "D"

UPPER SPAN SUPPORT (ALTERNATE METHODS)



DETAIL "A"

LOWER SPAN SUPPORT

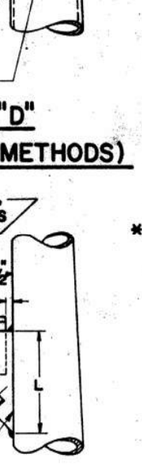


CAST FLANGE, B-26 ALLOY SG 70A-T7 (356-T7)

FLANGE DETAIL

DESIGN NO.	SPAN A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U BOLTS	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL
1.	50' thru 65'	3'-0"	4'-11¾"	4'-5"	9¼"	8"X4.5 X25'-0", 3GA	5'-10 13/16"	7 7/16"	1⅜"	3½"	4¾"	8"	12"	6 5/8"	3'-9"	1½"	10"	⅝"	3'-3 5/8"	11"	Split Tee 3'-8"	4¾" X .188"	2" X .188"	1.660" X .140"
2.	70' thru 75'	4'-0"	4'-10¼"	5'-7"	9¼"	8"X6.22X25'-6", 3GA	6'-7⅛"	7 7/16"	1⅜"	5⅛"	4¾"	7¾"	12"	6¼"	4'-11"	1½"	9½"	⅝"	4'-5 5/8"	11"	Split Tee 4'-10"	4¾" X .188"	2' X .188"	1.900" X .145"
3.	76' thru 85'	4'-0"	4'-10¼"	5'-7"	11"	8"X6.22X25'-6", 3GA	6'-7⅛"	8½"	1½"	5⅛"	4¾"	7¾"	12"	6¼"	4'-11"	1½"	9½"	⅝"	4'-5 5/8"	11"	Split Tee 4'-10"	5½" X .250	2½" X .188"	1.900" X .145"
4.	91' thru 110'	5'-0"	4'-6½"	5'-7"	11"	8"X6.18 X26'-0", 3GA	7'-3¼"	8½"	1½"	—	3 1/16"	7¾"	12"	7¼"	5'-11"	1¾"	11¼"	¾"	5'-5 5/8"	11"	Split Tee 5'-10"	5½" X .250	2½" X .188	2½" X .188

REINFORCEMENT SCHEDULE			
MARK	NO.	LENGTH	TYPE
401	12"C/C	8'-6"	102
402	12"C/C	7'-6"	103
601	4	D+4'-0"	101
602	8	D+2'-0"	101
603	32	D+ — 6"	STR.



BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORTS — 816. No. 7.6

DATE 6-6-6 5-6-6

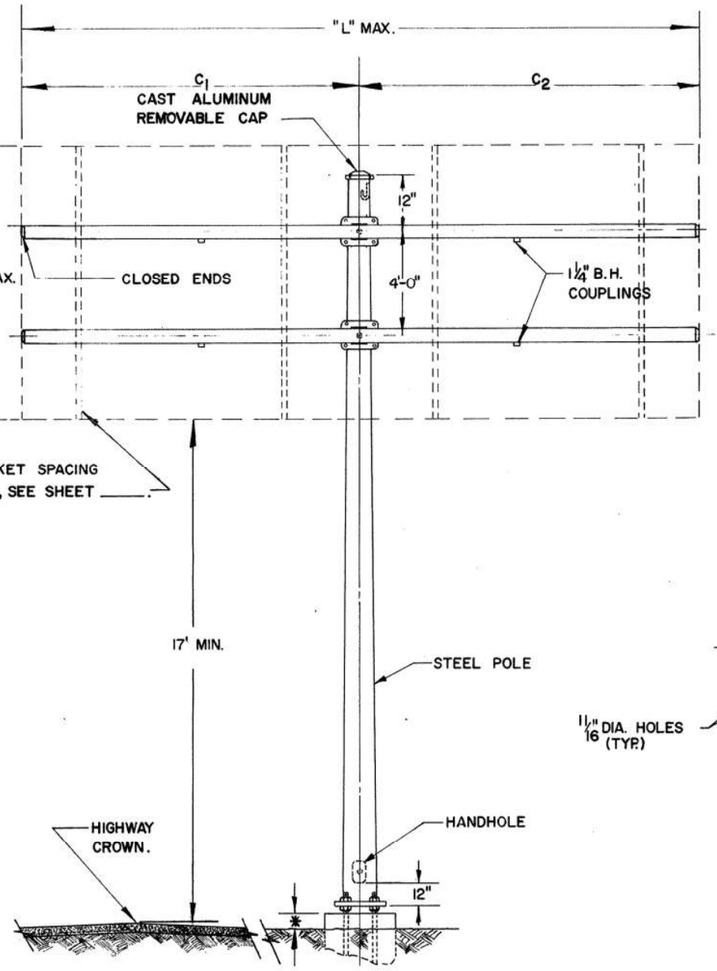
APPROVED _____ ENGINEER OF TRAFFIC

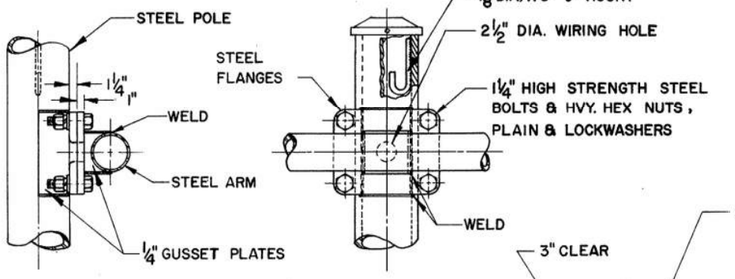
600 SQ. FT. SIGN AREA — OVERHEAD SIGN SUPPORT, 816 NO. 7.6

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

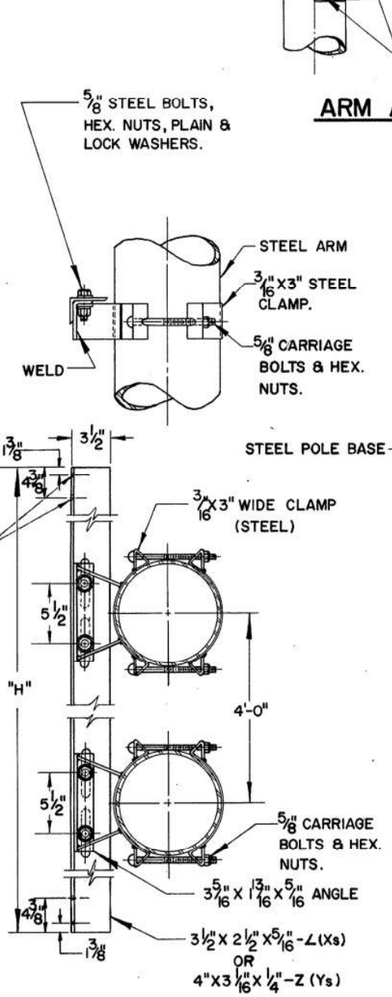
163
234

SUMMIT COUNTY
SUM-277-0.00

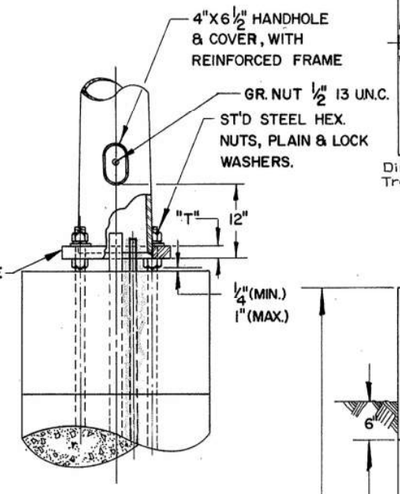


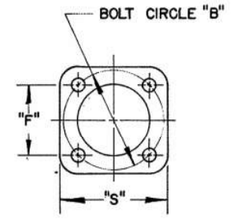


ARM ATTACHMENT DETAIL

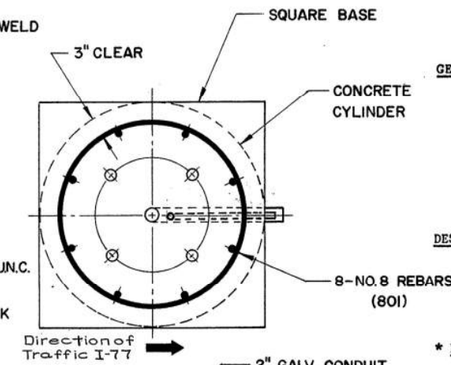


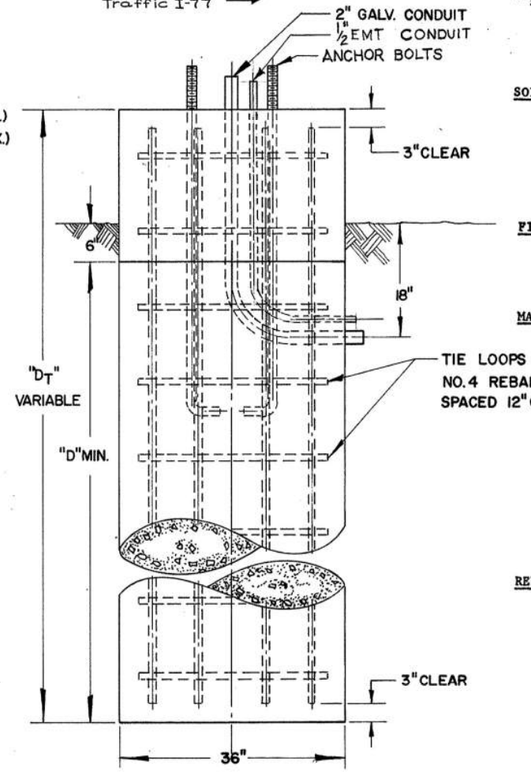
SIGN ATTACHMENT DETAIL





POLE DETAIL





FOUNDATION DETAIL

DESIGN	POLE SIZE (STD.)	MAX. ARM SIZE	MAX. SIGN LENGTH "L"	MAX. SIGN AREA	B	F	P	S	T	ANCHOR BOLTS	"D" MIN.
1.	3GA. 14"X10.78"X23'	4" SCH.40 12'-0"	24'-0"	120 SQ FT	20"	14⅛"	7"	20½"	2"	1¾" X 90"	9'
2.	3GA. 16.5"X13" X 25'	4"SCH. 40 9"-0"	18'-0"	180 SQ FT	23½"	16⅝"	8"	24½"	2"	2"X 96"	11'
3.	3GA. 16.5" X13.28"X25'	6"SCH.40 12'-0"	24'-0"	180 SQ FT	23½"	16⅝"	8"	24½"	2"	2"X 96"	11'
4.	0GA.18" X 14.5"X25'	6"SCH. 40 12'-0"	24'-0"	240 SQ FT	25½"	18"	9"	26½"	2½"	2¼"X96"	13'

REINFORCEMENT SCHEDULE

MARK	NO.	LEN.	TYPE	
402	12"c/c	8'-6"	103	2'-6"
801	8	D_T-6"	STR.	103

NOTES

GENERAL

MAXIMUM SIGN AREAS AND ARM LENGTHS SHOWN IN TABLE, ARE FOR BALANCED DESIGN ($C_1 = C_2$).

FOR UNBALANCED DESIGN ($C_1 \neq C_2$), THE PRODUCT OF THE ACTUAL SIGN AREA (C_1 H or C_2 H) TIMES 1/2 OF ACTUAL ARM (1/2 C_1 or 1/2 C_2) SHALL BE LESS THAN THE PRODUCT OF 45% OF MAXIMUM SIGN AREA TIMES 1/2 MAX ARM FOR BALANCED DESIGN. (0.45 H 2C_1 1/2C_1 or 0.45 H 2C_2 1/2C_2)

DESIGN

THE DESIGN OF OVERHEAD SUPPORTS SHALL BE IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTI OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 13, 1961.

* FOUNDATION

THE TOP ELEVATION OF FOUNDATIONS SHALL BE VARIED SO AS TO MAINTAIN A MINIMUM CLEARANCE OF 17' BETWEEN THE BOTTOM OF THE SIGN AND THE HIGHWAY CROWN.

SOILS

THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITION (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY). FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

FINISH

ALL STRUCTURAL PORTIONS OF THE SIGN SUPPORTS, SIGN BRACKETS HARDWARE AND CONDUIT SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH SEC.711-02 (EXCEPT AS OTHER WISE SHOWN).

MATERIALS

ALL MATERIALS TO BE FURNISHED SHALL BE IN ACCORDANCE WITH 816 WITH THE FOLLOWING ADDITIONS:

TAPERED TUBES SHALL BE STEEL, SAE 1015 AND COLD ROLLED TO OBTAIN A MINIMUM YIELD STRENGTH OF 48,000PSI.
STEEL PIPE: 4" DIAMETER AND UNDER SHALL BE STEEL-ASTM-A120 OVER 4" DIAMETER SHALL BE ASTM-A53, GRADE B
ANCHOR BOLTS SHALL BE HIGH STRENGTH STEEL ASTM-A107, GRADE C-1035
HIGH STRENGTH CLAMPS SHALL BE STEEL-ASTM-A242

REINFORCING STEEL

COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INCIDATE THE BAR SIZE NUMBER.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

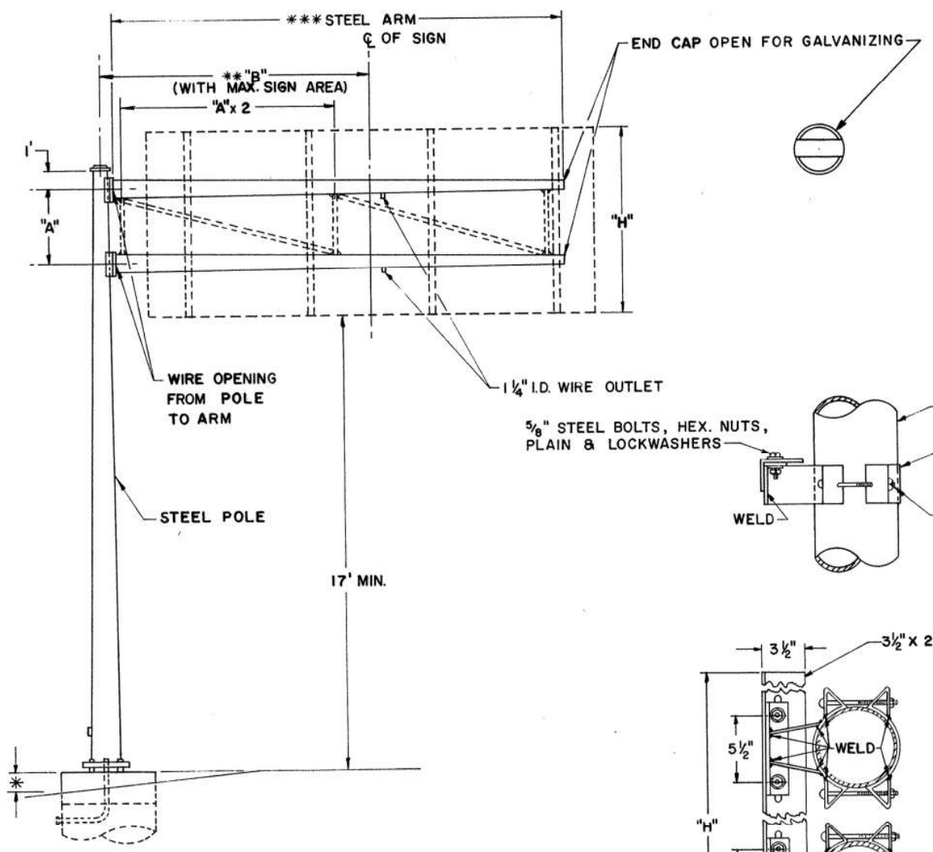
OVERHEAD SIGN SUPPORT	816 No.9.24	DATE 6-17-6

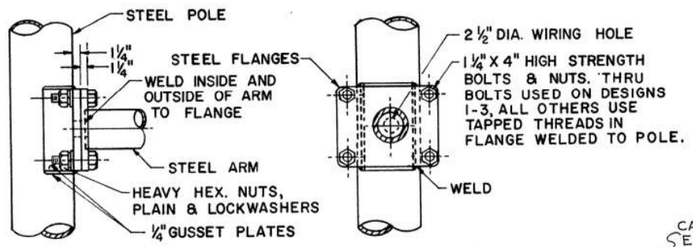
APPROVED _____ ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-4(3)123	

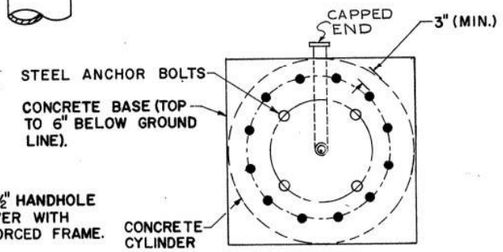
179
234

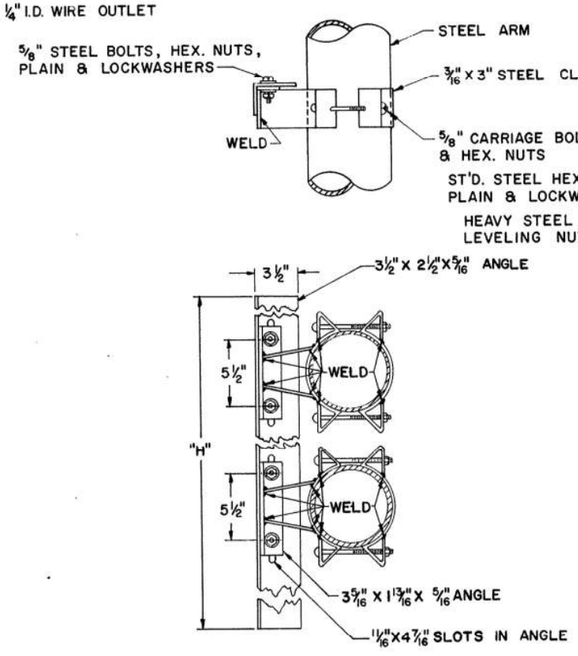
SUMMIT COUNTY
SUM-277-0.00



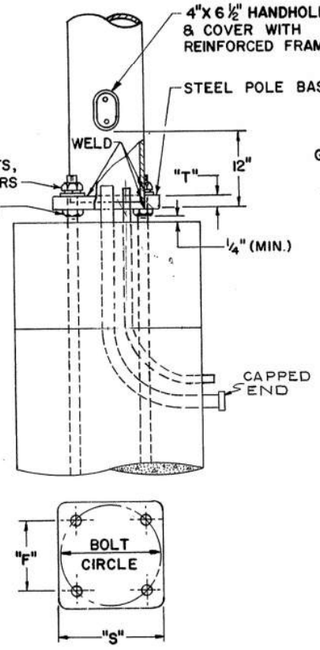


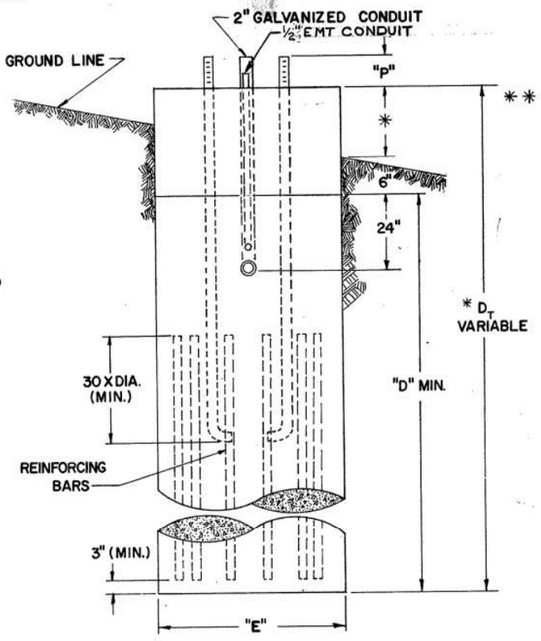
ARM ATTACHMENT





POLE DETAIL





FOUNDATION DETAIL

SIGN ATTACHMENT DETAIL

DESIGN NO.	POLE SIZE	*** ARM SIZE	DIM A	DIM ** B	DIM "D" MIN.	DIM F	DIM F	DIM P	DIM S	DIM T	BOLT CIRCLE	ANCHOR BOLT SIZE	MAX SIGN AREA	REINF. BARS SIZE	REINF. BARS NO.
1	3 Ga, 12" X 8.78" X 23'-0"	7Ga, 6.9" X 4.66" X16'-0"	4'	12'	9'	3'-0"	11 5/16"	7¾"	17"	2"	16"	1¾" X 90"	80	¾"	12
2	3 Ga, 12" X 8.78" X 23'-0"	7 Ga, 8" X 5.2" X 20'-0"	4'	16'	9'	3'-0"	11 5/16"	7¾"	17"	2"	16"	1¾" X 90"	80	¾"	12
3	3 Ga, 15" X 11.5" X 25'-0"	7 Ga, 8.3" X 6.06" X 16'-0"	4'	12'	11'	3'-0"	15½"	8⅜"	23"	2"	22"	2" X 96"	120	1"	12
4	3 Ga, 16" X 12.5" X 25'-0"	3 Ga, 9.2" X 6.40" X 20'-0"	4'	16'	11'	3'-0"	16 5/16"	8⅜"	24½"	2"	23½"	2" X 96"	120	1"	12
5	0 Ga, 18" X 14.36" X 26'-0"	7 Ga, 11" X 7.92" X 22'-0"	6'	14'	13'	3'-0"	18"	9⅜"	26½"	2½"	25½"	2¼" X 120"	180	1⅛"	12
6	0 Ga, 18" X 14.36" X 26'-0"	7 Ga, 12.5" X 8.86" X 26'-0"	6'	18'	13'	3'-0"	18"	9⅜"	26½"	2½"	25½"	2¼" X 120"	180	1⅛"	12
7	2 PLY 7 Ga, 18" X 14.36" X 26'-0"	7 Ga, 12.5" X 9.14" X 24'-0"	6'	14'	15'	3'-0"	18"	9¾"	26½"	2½"	25½"	2½" X 144"	240	1¼"	12
8	2 PLY ¼", 18" X 14.36" X 26'-0"	3 Ga, 12.5" X 8.58" X 28'-0"	6'	18'	15'	3'-0"	18"	11¼"	26½"	3"	25½"	3" X 144"	240	1¼"	12

NOTES

FABRICATION - ALL PORTIONS OF THE SIGN SUPPORT, INCLUDING SIGN ATTACHMENTS, SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF A.S.T.M. DESIGNATIONS A-123 AND A-153. THE CONDUIT SHALL BE GALVANIZED IN ACCORDANCE WITH SEC. S-25.08 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS FOR PAYMENT.

* FOUNDATION - THE TOP ELEVATION OF FOUNDATIONS SHALL BE VARIED SO AS TO MAINTAIN A MINIMUM CLEARANCE OF 17' BETWEEN THE BOTTOM OF THE SIGN AND THE HIGHWAY CROWN.

** ERECTION - VALUES OF "B" MAY BE EXCEEDED PROVIDED THE PRODUCT OF ACTUAL SIGN AREA TIMES THE DISTANCE FROM ℄ OF POLE TO ℄ OF SIGN DOES NOT EXCEED THE MAX. SIGN AREA TIMES "B".

*** ARMS 20' LONG OR LONGER ARE TO BE TRUSS TYPE WITH 3" X 3" X ⅜" ANGLES WELDED TO GUSSET PLATES.

MATERIAL - STEEL POLE BASES, FLANGES, AND END CAPS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 30. GRADE B.
HIGH STRENGTH STEEL BOLTS SHALL CONFORM TO ASTM SPECIFICATION A 193 GRADE B7.
AFTER FABRICATION TAPERED POLES AND ARMS SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

SOILS - THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY). FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL - REINFORCING STEEL AS SHOWN IN TABLE SHALL BE INSTALLED WHEN "D" EXCEEDS THE ANCHOR BOLT LENGTH BY MORE THAN 3 FT. THE COST AND PLACEMENT OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.

DESIGN

THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORT

816 No. 12.24

DATE 6-18-62 4-11-63

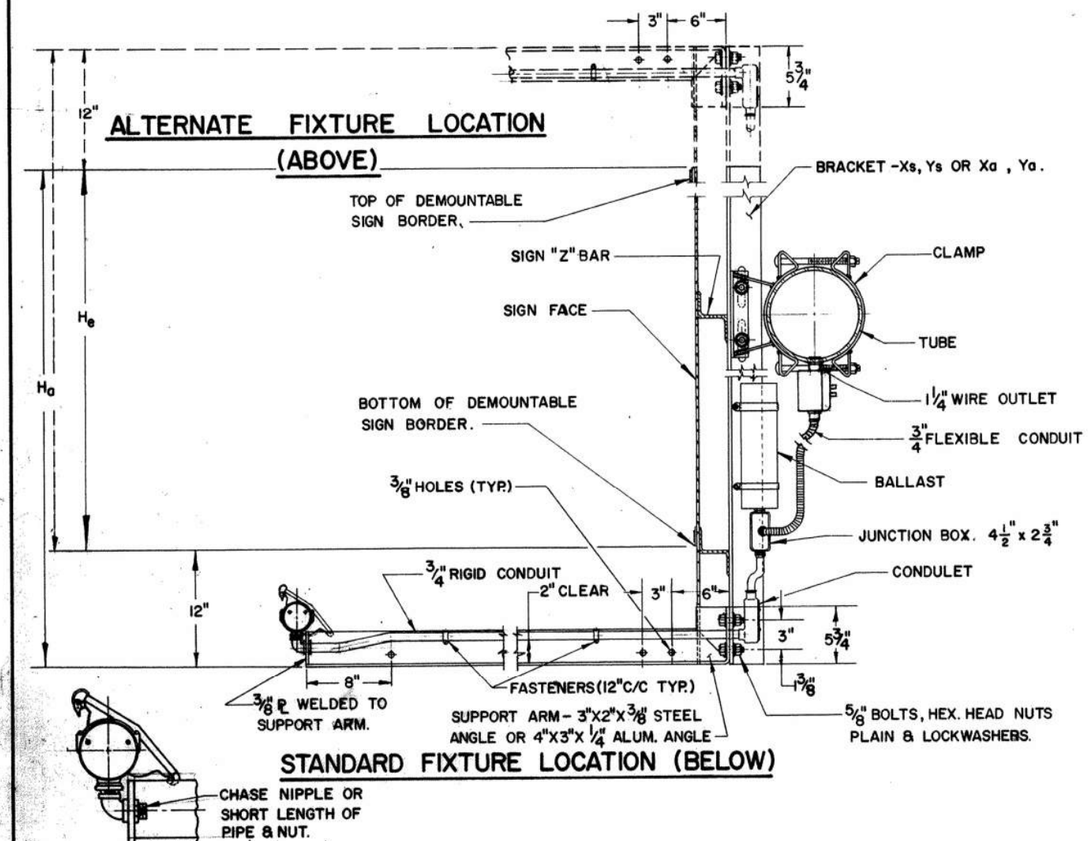
APPROVED Robert E. Comer
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-4(3)123	

171
234

SUMMIT COUNTY
SUM-277-0.00

ALTERNATE FIXTURE LOCATION (ABOVE)



STANDARD FIXTURE LOCATION (BELOW)

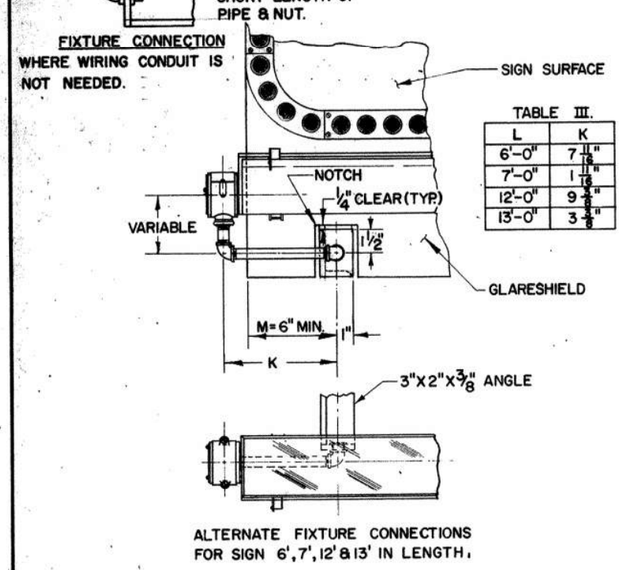
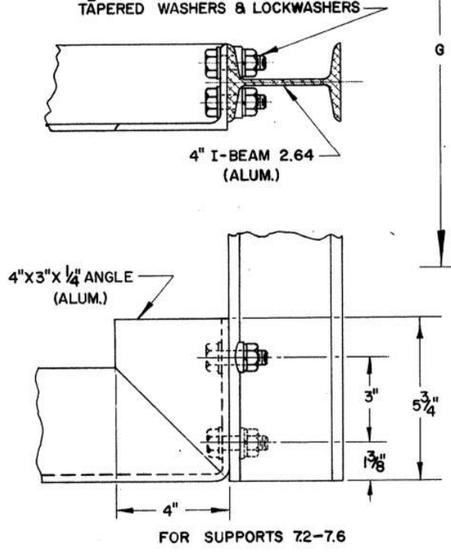


TABLE III.	
L	K
6'-0"	7 11/16"
7'-0"	1 1/16"
12'-0"	9 3/16"
13'-0"	3 5/16"

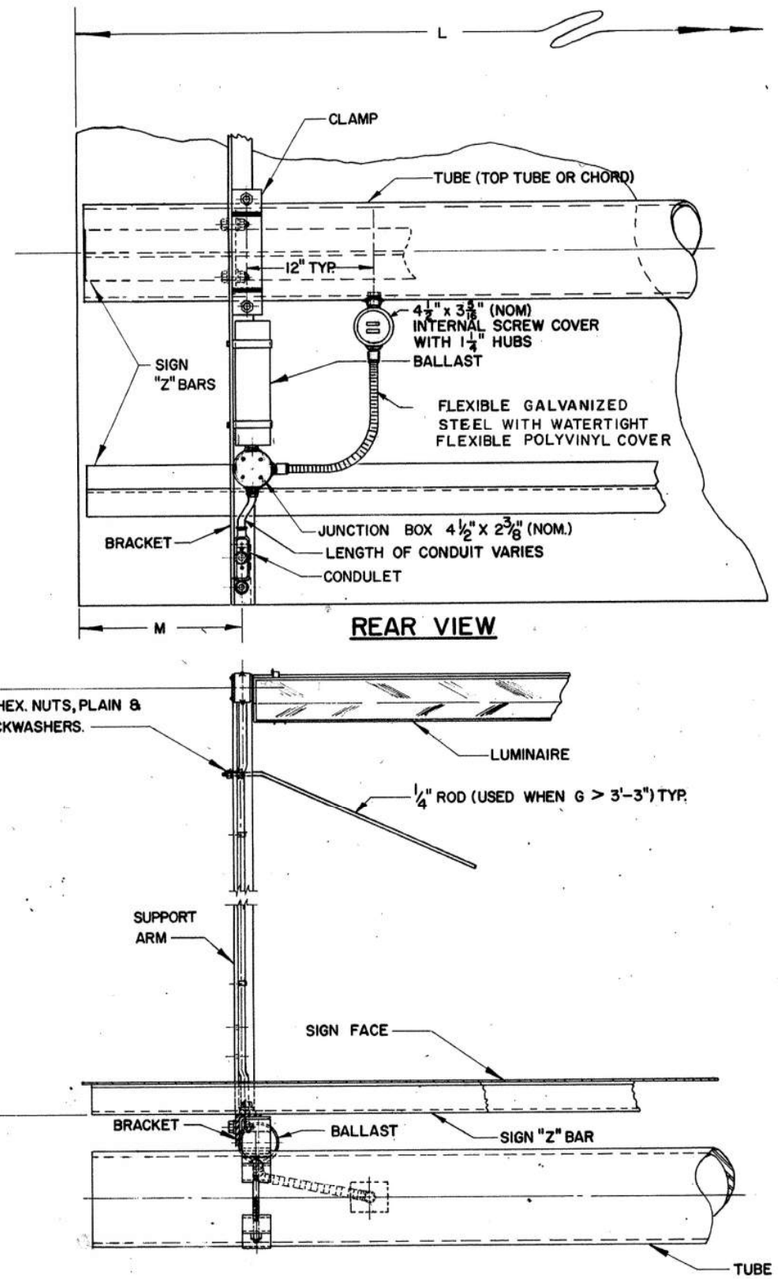
ALTERNATE FIXTURE CONNECTIONS FOR SIGN 6', 7', 12' & 13' IN LENGTH.

DETAIL A.



FOR SUPPORTS 7.2-7.6

DETAIL B.



REAR VIEW

TOP VIEW

FABRICATION — ALL STRUCTURAL COMPONENTS SHOWN ON THIS SHEET SHALL CONFORM TO SUPPLEMENT SPECIFICATIONS I-129.

MATERIALS — THE MATERIALS USED IN THE COMPONENTS SHOWN ON THIS SHEET SHALL BE IN CONFORMANCE WITH THE MATERIALS USED IN THE SIGN SUPPORT.

TABLE I

"L" SIGN LENGTH		NUMBER OF FIXTURES		"M" EDGE DISTANCE				NO. BALLAST
				A		B		
A	B	75 5/8"	99 5/8"	LT.	RT.	LT.	RT.	
6'-0"	7'-0"	1		6"	6"	6"	6"	1
8'-0"	9'-0"	1		10 5/8"	10 1/4"	16 3/8"	16 1/4"	1
10'-0"	11'-0"		1	10 5/8"	10 1/4"	16 3/8"	16 1/4"	1
12'-0"	13'-0"	2		6"	6"	6"	6"	1
14'-0"	15'-0"	2		8 5/8"	8 3/8"	14 5/8"	14 3/8"	1
16'-0"	17'-0"	1	1	8 5/8"	8 3/8"	14 5/8"	14 3/8"	1
18'-0"	19'-0"		2	8 5/8"	8 3/8"	14 5/8"	14 3/8"	1
20'-0"	21'-0"	3		7"	6 7/8"	13	12 7/8"	2
22'-0"	23'-0"	2	1	7"	6 7/8"	13	12 7/8"	2
24'-0"	25'-0"	1	2	7"	6 7/8"	13	12 7/8"	2
26'-0"	27'-0"		3	7"	6 7/8"	13	12 7/8"	2

Sn= Nominal Fixture Length 72" & 96" respectively.
Sa= Actual Fixture Length for mounting purposes 75 5/8" and 99 5/8" respectively. (Slight variation for different manufacturers.)
M= Distance from edge of sign to ℄ of notch, min. 6". When the length of the sign minus 1'-0" is less than the sum of the actual fixture lengths, an offset "K" is used. For additional details see detail A & table III.

TABLE II

MAX. BRACKET SPACING FOR EXTERNALLY ILLUMINATED SIGNS

ACTUAL SIGN HEIGHT "Ha"	SUPPORT TYPES			
	9.12, 11.08, 13.2, 7.2 SINGLE TUBE DOUBLE TUBE LESS 36" C/C	9.24, 10.48, 12.24, 14.5, 15.8, 7.2 to 7.6 DOUBLE TUBE		
		C/C 36"-42"	C/C 48"-54"	C/C 60"-7
	MAXIMUM BRACKET SPACING			
to 5'-0"	6'-4" with X 8'-4" with Y	8'-4" with X	8'-4" with X	8'-4" wit
5'-6" to 8'-0"	6'-4" with Y	4'-2" with X 6'-4" with Y	6'-4" with X 8'-4" with Y	8'-4" wit
8'-6" to 10'-0"	3'-2" with X 4'-2" with Y	6'-4" with Y	6'-4" with Y	6'-4" wit
10'-6" to 12'-0"	—	4'-2" with Y	6'-4" with Y	6'-4" wit
12'-6" to 14'-0"	—	3'-2" with Y	3'-2" with Y	4'-2" wit

Ha= ACTUAL SIGN HEIGHT
He= EFFECTIVE SIGN HEIGHT
BRACKET SIZE: Xs = 3½" X 2½" X 5/16" — L @ 6.1 LB. STEEL; Ys = 4" X 3 1/16" X ¼" — Z @ 8.2 LB. STEEL } 9.12, 10.48, 11.08, 12.24, 14.5 & 15.8
Xa = 3" X 2 1/16" X ¼" — Z @ 2.33 LB. ALUM.; Ya = 4" X 2 21/32" X 3/16" — I @ 2.64 LB. ALUM. } 7.2 Thru 7.6

WHEN MAX. ALLOWABLE SPACING IS LESS THAN ACTUAL FIXTURE LENGTHS, Sa, ADDITIONAL STANDARD BRACKETS MUST BE FURNISHED EQUAL IN HEIGHT TO "Ha".

SUPPORTS 7.2 THROUGH 7.6 SHALL HAVE AN ALUMINUM FIXTURE ARM, 4"X3"X¼" ANGLE. SEE DETAIL B. BOLTS AND ACCESSORIES SHALL BE STAINLESS STEEL.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

STRUCTURAL DETAILS FOR EXTERNALLY ILLUMINATED SIGNS

ET-1

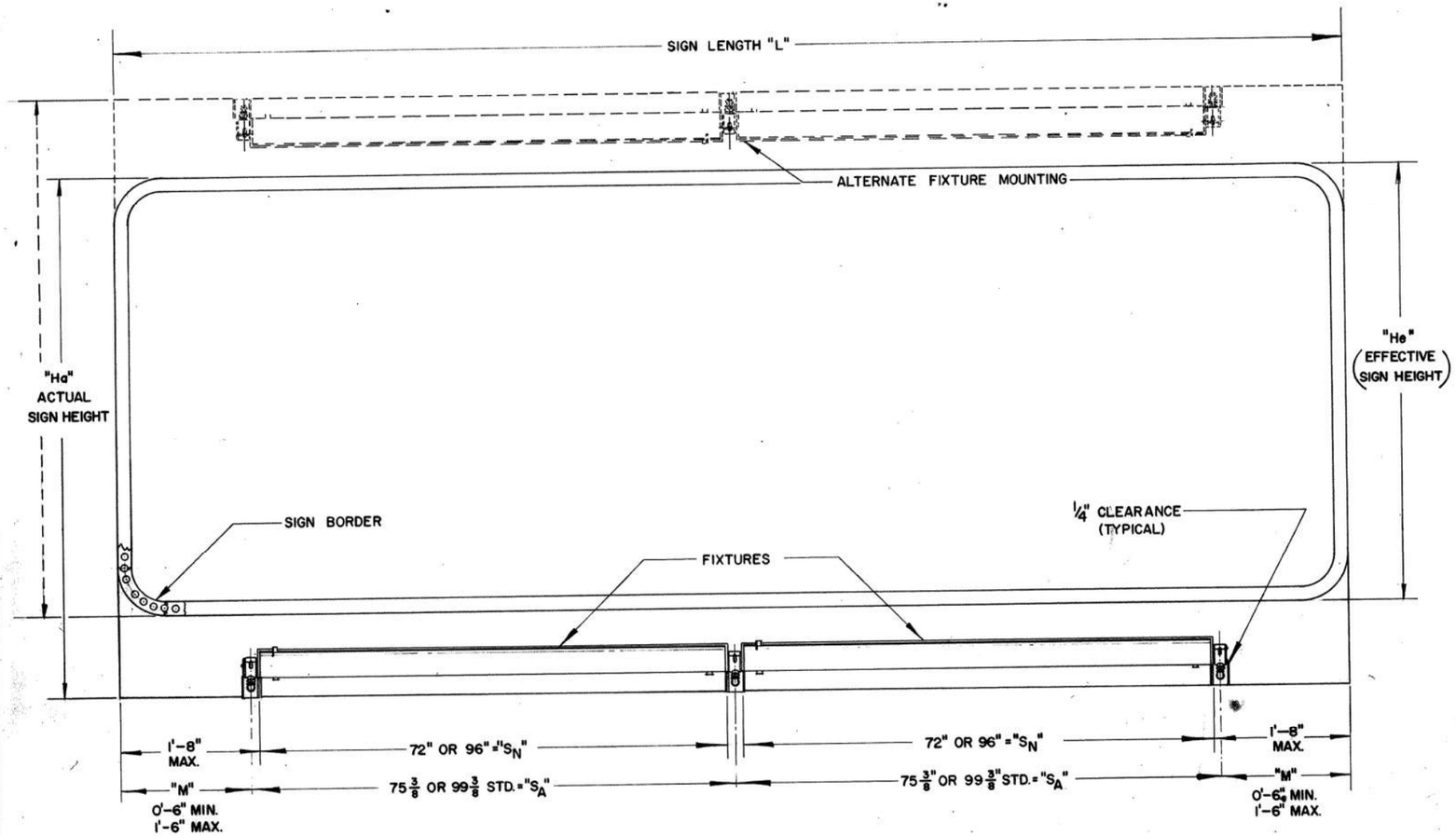
APPROVED Fred C. Taubo
ENGINEER OF TRAFFIC

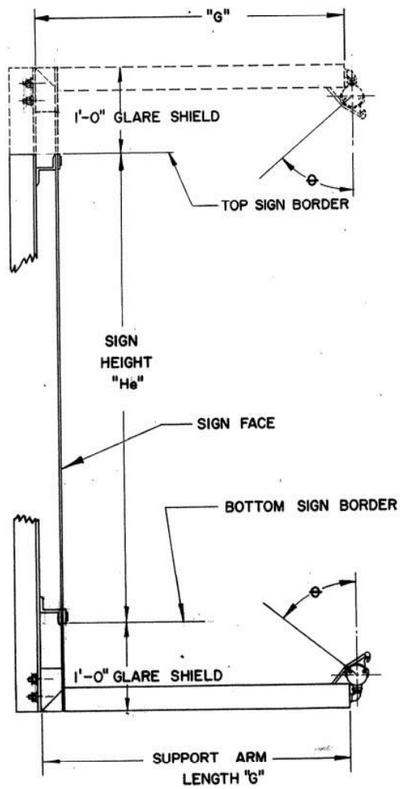
STRUCTURAL DETAILS FOR EXTERNALLY ILLUMINATED SIGNS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(5)123	

172
234

SUMMIT COUNTY
SUM-277-0.00





SIGN LIGHTING NOTES

SIGN ILLUMINATION

SIGN ILLUMINATION SHALL BE BY ATTACHED FLUORESCENT FIXTURES AS SHOWN ON ILLUMINATED SIGN DETAIL SHEETS.

LAMPS

LAMPS SHALL BE TYPE F72 OR F96-T12/CW/HO AS MANUFACTURED BY WESTINGHOUSE, GENERAL ELECTRIC OR APPROVED EQUAL FOR SIGNS TO A MAXIMUM HEIGHT OF 6'-6". LAMP TYPE SHALL BE F72 OR F96-T12/CW/SHO AS MANUFACTURED BY WESTINGHOUSE, F72 OR F96-PG17/CW AS MANUFACTURED BY GENERAL ELECTRIC, OR APPROVED EQUAL FOR SIGNS THAT ARE 7'-0" OR GREATER IN HEIGHT.

LAMP FIXTURES

LIGHTING FIXTURES SHALL BE CONSTRUCTED OF CORROSION RESISTANT MATERIALS OR WITH HIGH QUALITY CORROSION RESISTANT FINISH. ALL FIXTURES SHALL BE SPECIFICALLY DESIGNED FOR OUTDOOR SIGN LIGHTING SERVICE. MAJOR COMPONENTS SHALL INCLUDE WEATHERPROOF CAST ALUMINUM MOUNTING HUBS DESIGNED TO SECURELY LOCK THE FIXTURES AT ANY ANGLE THROUGH 360 DEGREES. INDICATORS IN 10 DEGREE INCREMENTS SHALL BE STAMPED OR CAST INTO THE HUB TO FACILITATE PROPER AIMING OF THE FIXTURE. FINAL ADJUSTMENT OF FIXTURE SHALL BE DONE AT NIGHT UNDER THE PROJECT ENGINEER'S DIRECTION.

THE BODY DESIGN OF THE FIXTURE SHALL PROVIDE AN ASYMMETRIC SPECULAR ALZAK REFLECTOR TO GIVE A HIGH LEVEL OF UNIFORM ILLUMINATION AND SHALL PROVIDE A WIREWAY FROM END TO END. WHEN ADJACENT FIXTURES ARE WIRED TOGETHER THROUGH THE WIREWAY, WIRE BETWEEN FIXTURES SHALL BE ENTIRELY ENCLOSED.

EXTERIOR FINISH OF THE FIXTURE BODY SHALL BE INTERSTATE GREEN COLOR, HEAT RESISTANT BAKED ENAMEL AS #8950 UNIVERSAL PAINT AND VARNISH INC. #8950 OR EQUIVALENT BY MIDWESTERN COLOR WORKS OR APPROVED EQUAL. REFLECTOR, LAMP AND SOCKETS SHALL BE PROTECTED BY A HINGED DOOR OF CLEAR ACRYLIC PLASTIC WITH ALUMINUM OR STAINLESS STEEL FRAME AND NEOPRENE GASKETING.

BALLASTS

BALLASTS FOR FIXTURES SHALL BE WEATHER-PROOF OUTDOOR TYPE FOR A 120 VOLT 60 CYCLE SYSTEM AND SHALL PROVIDE LAMP STARTING AT AN AMBIENT TEMPERATURE OF -20°F. BALLASTS SHALL BE MOUNTED ON SIGN BRACKET ONLY. WIRING SHALL BE ACCOMPLISHED IN SUCH A MANNER THAT THE SIGN MAY BE REMOVED WITHOUT DISTURBING THE ELECTRICAL WIRING.

EFFECTIVE SIGN HEIGHT "H"	SUPPORT ARM LENGTH "G"	APPROX. AIMING ANGLE -θ-
3'-0" to 5'-0"	2'-9"	25°
5'-0" to 6'-6"	3'-3"	25°
7'-0" to 10'-0"	4'-3"	17°
10'-6" to 13'-0"	5'-9"	23°

"L" SIGN LENGTH	NO. OF FIXTURES			He=3'-0" to 6'-6" LAMP=T12/cw/ho			He=7'-0" to 13'-0" LAMP=T12/cw/sho		
	72	96		BALLAST NO.	BALLAST TYPE	WATTAGE PER SIGN	BALLAST NO.	BALLAST TYPE	WATTAGE PER SIGN
6'-0" to 7'-0"	1			1	A	190	1	C	250
8'-0" to 9'-0"	1			1	A	190	1	C	250
10'-0" to 11'-0"		1		1	A	190	1	C	250
12'-0" to 13'-0"	2			1	B	250	1	D	425
14'-0" to 15'-0"	2			1	B	250	1	D	425
16'-0" to 17'-0"	1	1		1	B	250	1	D	425
18'-0" to 19'-0"		2		1	B	250	1	D	425
20'-0" to 21'-0"	3			2	A&B	440	2	C&D	675
22'-0" to 23'-0"	2	1		2	A&B	440	2	C&D	675
24'-0" to 25'-0"	1	2		2	A&B	440	2	C&D	675
26'-0" to 27'-0"		3		2	A&B	440	2	C&D	675

BALLASTS

TYPE	MANUFACTURERS G.E.	MANUFACTURERS JEFFERSON	WATTAGE
A	GG 3583	257-151	190
B	GG 3535	257-171	250
C	GG 3585	257-231	250
D	GG 3588	257-181	425

BALLASTS SHALL BE GENERAL ELECTRIC, JEFFERSON AS SPECIFIED ABOVE OR EQUAL.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

ELECTRICAL DETAILS FOR EXTERNALLY ILLUMINATED SIGNS

EI-2

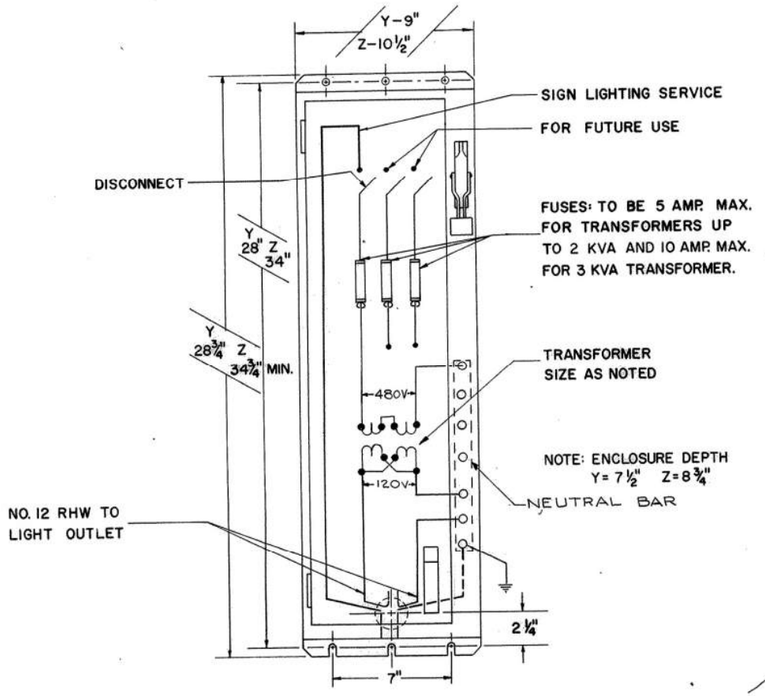
DATE 10-31-63 5-6-64 10-29-64

APPROVED Fred C Talbot
ENGINEER OF TRAFFIC

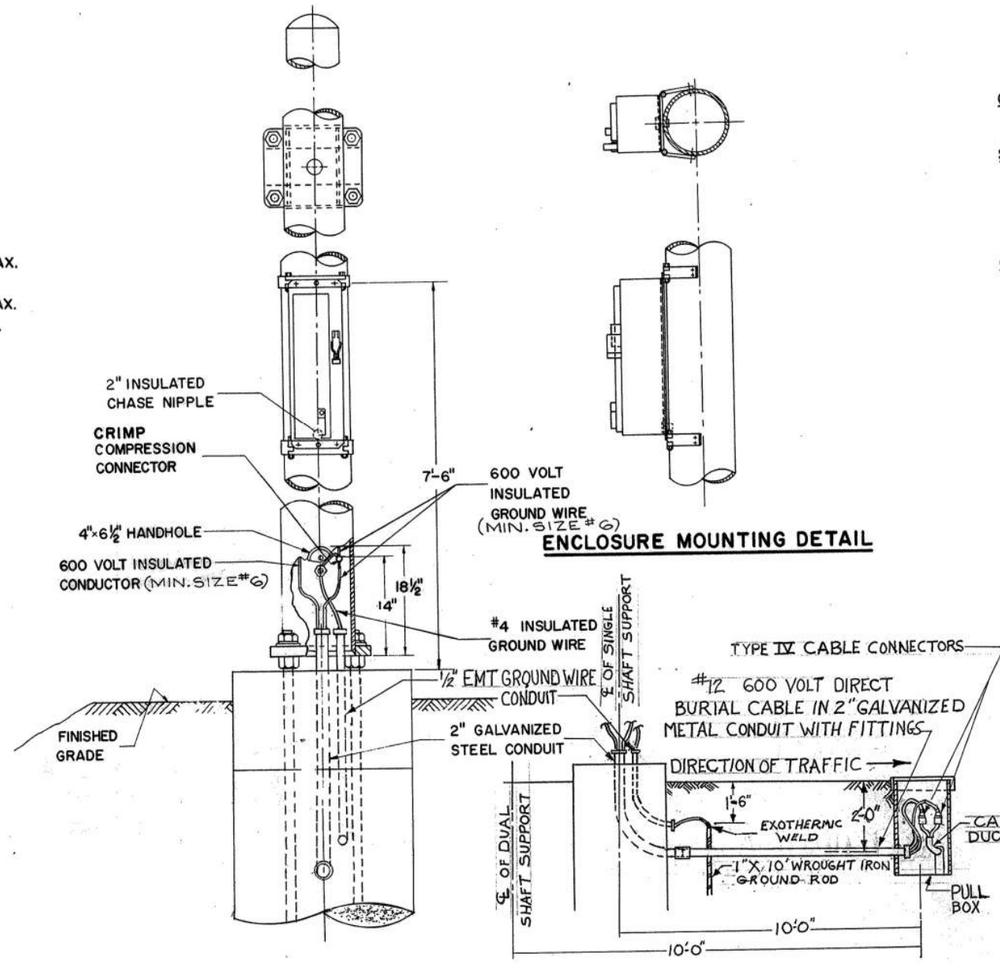
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

173
234

SUMMIT COUNTY
SUM-277-0.00

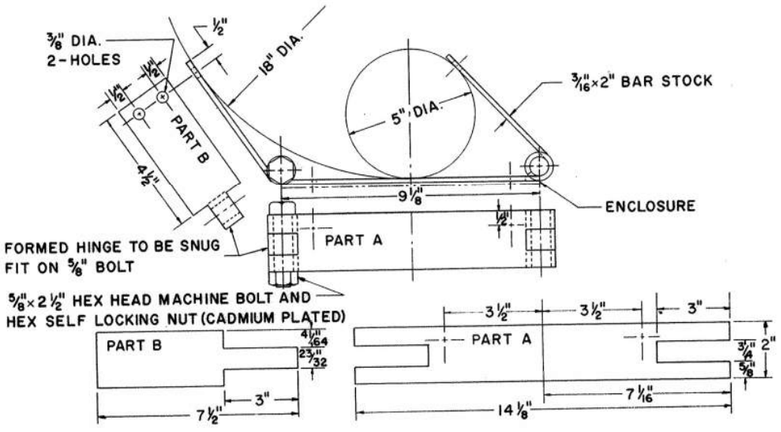


TYPICAL ENCLOSURE DETAIL
480 VOLT SIGN LIGHTING SERVICE

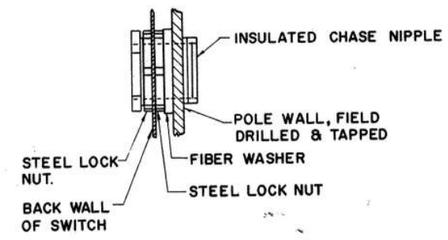


ENCLOSURE MOUNTING DETAIL

SIGN SUPPORT DETAIL FOR ILLUMINATED SIGNS



ENCLOSURE MOUNTING BRACKET



CHASE NIPPLE ASSEMBLY DETAIL
INSULATED CHASE NIPPLE AS MANUFACTURED BY THOMAS BETTS, APPLETON, STEEL CITY OR EQUAL

NOTES

GENERAL
DETAILS OF THIS SHEET SHALL APPLY TO EACH OVERHEAD SIGN STRUCTURE TO SUPPORT EXTERNALLY ILLUMINATED SIGNS.

SERVICE
ELECTRIC SERVICE SHALL ENTER THROUGH A 2" GALVANIZED RIGID STEEL CONDUIT INSTALLED IN STRUCTURE FOUNDATION AS PER DETAIL. SIGN SERVICE OR CIRCUITRY SHALL BE CONTROLLED AS REQUIRED BY THE SYSTEM DESIGN AT THE PRIMARY SOURCE.

SERVICE CONDUCTORS SHALL BE THE SIZE AND TYPE AS SPECIFIED.

COMBINATION SWITCH AND TRANSFORMER
(TYPE Y OR Z ENCLOSURE REQUIRED AS PER SCHEDULE ON THIS SHEET)

THIS COMBINATION SHALL BE A 30 OR 60 AMPERE 600 VOLT SWITCH WITH A .25 TO 3.0 KVA TRANSFORMER. THE COMBINATION AND ENCLOSURE SHALL BE AS SQUARE D CLASS 9421, COLUMBUS ELECTRIC WORKS CLASS 101, PANALS INCORPORATED—CLASS 9400, OR APPROVED EQUAL.

TRANSFORMER
THE TRANSFORMER SHALL BE DRY TYPE SINGLE FACE 240/480 VOLT PRIMARY 120/240 VOLT SECONDARY, THE TYPE AND CAPACITY AS SPECIFIED IN DETAILED SCHEDULE ON THIS SHEET.

ENCLOSURE
THE ENCLOSURE SHALL BE NEMA #4 WATER TIGHT .063 GAGE STAINLESS STEEL ASTA 302—303. A DISCONNECT HANDLE SHALL BE FLANGE MOUNTED AND CAPABLE OF BEING LOCKED IN EITHER POSITION. THE ENCLOSURE SHALL BE EQUIPPED WITH A DOOR LOCKING MECHANISM WITH A DEFEATER THAT NECESSITATES TWO HANDS TO OPERATE MECHANISM WITH THE SWITCH IN OFF POSITION. SPACE FOR A 2" INSULATED CHASE NIPPLE SHALL BE PROVIDED APPROXIMATELY 2 ¼" ABOVE THE CENTER LINE OF THE LOWER MOUNTING SLOT. THIS ENCLOSURE AND STRUCTURE SHALL BE FIELD DRILLED AND TAPPED FOR THE REQUIRED NIPPLE AS SHOWN ON THE DETAIL ON THIS SHEET.

THIS ENCLOSURE SHALL BE FLANGE MOUNTED ON BRACKETS WITH 5/16—18x¾" HEX HEAD CADMIUM PLATED MACHINE BOLTS. ENCLOSURES SHALL BE TYPE Y OR Z AS SPECIFIED AND DIMENSIONED ON THIS SHEET.

ENCLOSURE MOUNTING BRACKET
THE ENCLOSURE MOUNTING BRACKET SHALL BE FABRICATED THEN GALVANIZED BEFORE ASSEMBLY. THE BRACKET SHALL BE FIELD MOUNTED WITH 5/16 HEX HEAD SELF TAPPING CADMIUM PLATED SCREWS. THE SIGN SUPPORT SHALL BE FIELD DRILLED, AS PER DETAIL.

WIRE AND CABLE
ALL WIRE AND CABLE UP TO AND INCLUDING #4 SHALL COMPLY WITH FAA TYPE A SPECIFICATIONS. #2 OR LARGER WIRE OR CABLE SHALL BE G.E. 58006 OR ANACONDA AP-10711, OR EQUAL. ALL WIRE AND CABLE SHALL BE 600 VOLT.

GROUNDING
EACH SIGN SUPPORT OR STRUCTURE SHALL BE GROUNDED WITH A #4 RUBBER INSULATION AND NEOPRENE JACKETED CONDUCTOR. THE GROUNDING CONDUCTOR SHALL BE CONNECTED TO THE SWITCH THEN TO THE COMPRESSION CONNECTOR IN THE SIGN SUPPORT THEN TO A 1"x10' GALVANIZED WROUGHT IRON GROUND ROD. GROUND CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO GROUND ROD AND THEN TAPED WITH PLASTIC ELECTRICAL TAPE AT EACH EXPOSED PORTION OF CONDUCTOR. THE WELDED CONNECTION AND TAPED PORTION SHALL BE PAINTED 2 COATS OF INSULATING ENAMEL.

TRANSFORMERS

TYPE	MANUFACTURERS G.E.	MANUFACTURERS JEFFERSON	OUTPUT K.V.A.	SWITCH TRANSFORMER ENCLOSURE
I	9T51Y7	244—241	.25	Y
II	9T51Y8	244—251	.50	Y
III	9T51Y9	244—261	.75	Y
IV	9T51Y10	244—401	1.00	Z
V	9T51Y11	244—411	1.50	Z
VI	9T51Y12	244—421	2.00	Z
VII	9T51Y13	244—431	3.00	Z
* IV(T)	9T51Y50	244-401-100	1.00	Z
* VI(T)	9T51Y52	244-421-100	2.00	Z

* Transformer with 2-5% Taps F.C.B.N. (Used at Signs Where Voltage Drop is over 5% Below Normal). Location & Voltage Tap to Use is Indicated on Sign Location Plan.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

ELECTRICAL SIGN SERVICE DETAILS 480 VOLT SYSTEM

ES-3A

DATE 6-18-6

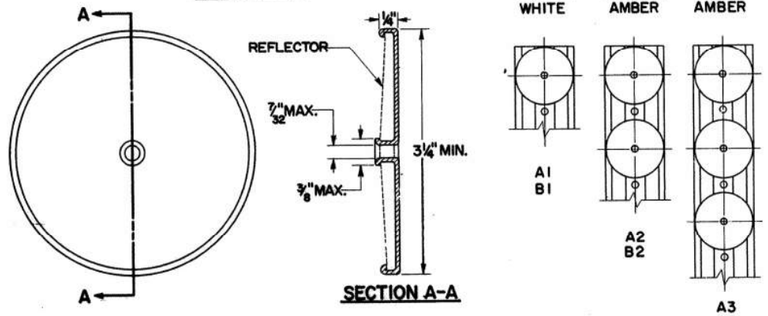
APPROVED _____
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

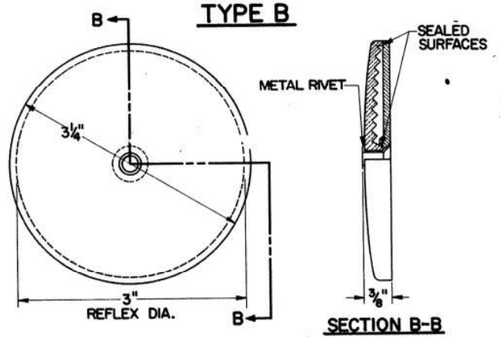
174
234

SUMMIT COUNTY
SUM-277-0.00

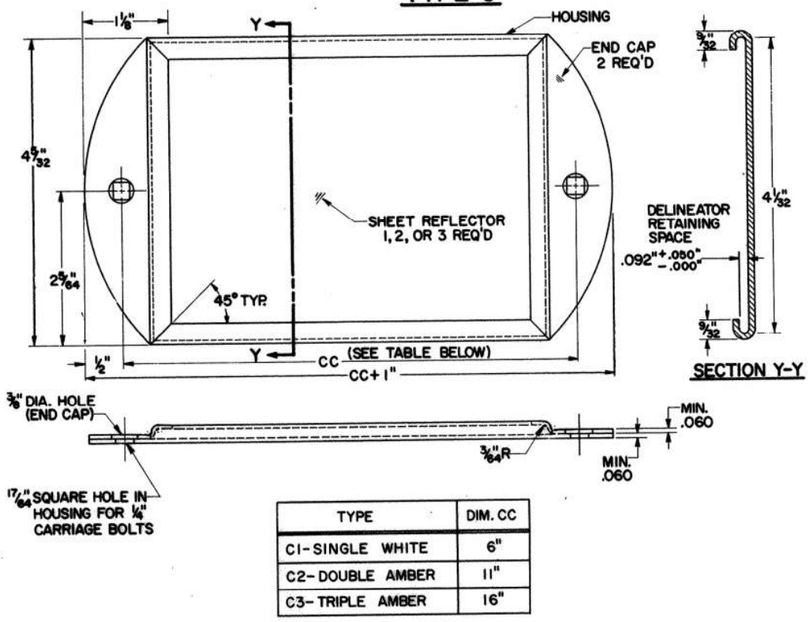
TYPE A



TYPE B

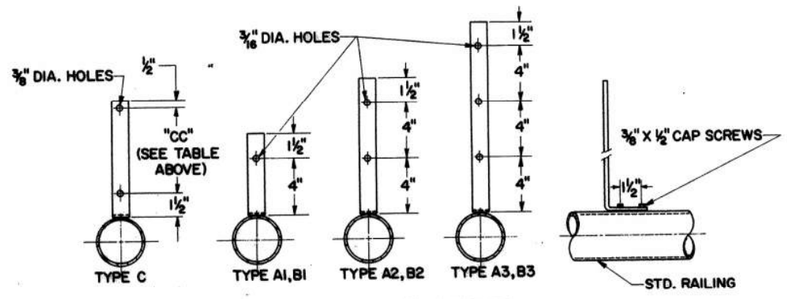


TYPE C

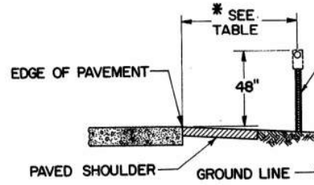


TYPE	DIM. CC
C1- SINGLE WHITE	6"
C2- DOUBLE AMBER	11"
C3- TRIPLE AMBER	16"

ALL BRACKETS 1/4" X 1 1/4" STAINLESS STEEL



BRIDGE RAIL BRACKET

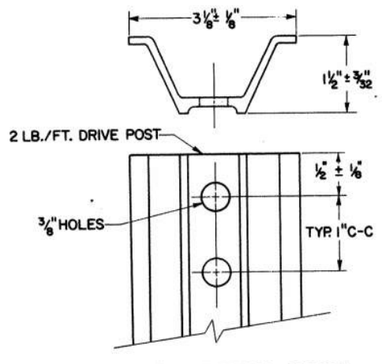


LATERAL PLACEMENT OF DELINEATORS

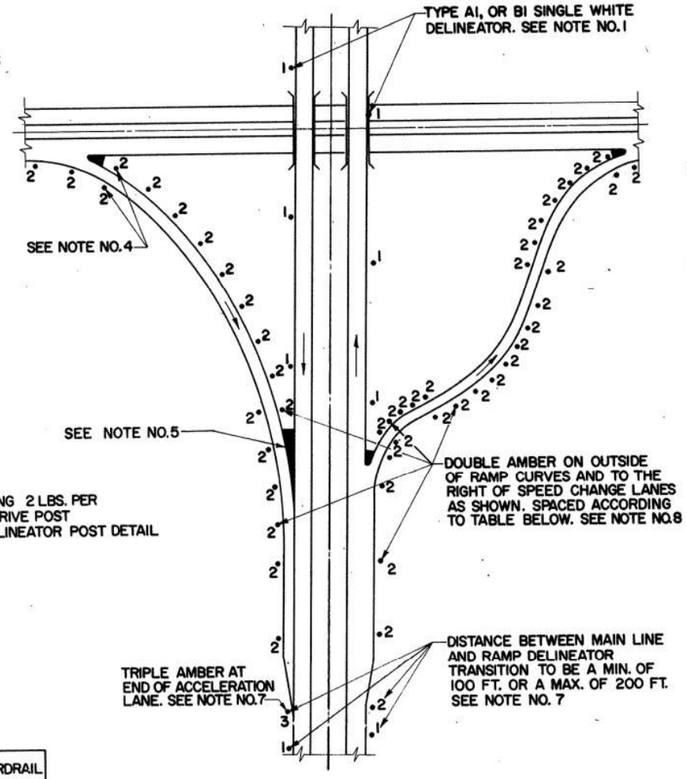
* TABLE

TYPE DELINEATOR	NO GUARDRAIL	GUARDRAIL
SINGLE WHITE	12'-6"	6" OUTSIDE
DOUBLE AMBER RIGHT SIDE	** 8'-6"	6" OUTSIDE
DOUBLE AMBER LEFT SIDE	4'-6"	6" OUTSIDE
TRIPLE AMBER	12'-6"	6" OUTSIDE

** THIS DIMENSION SHALL VARY ON SPEED CHANGE LANES TO MAINTAIN MINIMUM DISTANCE OF 2'-6" FROM EDGE OF PAVED SHOULDER.



DELINEATOR POST



TYPICAL DELINEATOR PLACEMENT

DELINEATOR SPACING ON RAMP HORIZONTAL CURVES

RADII, FT. FROM	RADII, FT. TO	SPACING ON CURVE	* TRANSITION SPACING	
TANGENT	1,801	100'	100'	100'
1,800	1,401	80'	100'	100'
1,400	1,001	70'	100'	100'
1,000	751	60'	100'	100'
750	551	50'	80'	100'
550	326	40'	70'	100'
325	——	30'	60'	100'

* SUCH AS 40' TO 70' TO 100' OR 100' TO 80' TO 50' OR ANY OTHER COMBINATION SHOWN ABOVE.

NOTES

1. TYPE A1 OR B1 DELINEATORS ON THE RIGHT OF THE THROUGH ROADWAY ARE TO BE SPACED AT 200 FT. INTERVALS THROUGHOUT, REGARDLESS OF CURVES, BEGINNING AT STA. +00, +25, +50, OR + 75.
2. DELINEATORS SHALL BE FURNISHED AND ERECTED IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION NO. 620, (1-15-62).
3. PAYMENT FOR SUPPORTS (DRIVEPOST OR BRACKET) SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH FOR "ITEM 620 DELINEATORS".
4. WHEN CROSSING FROM LEFT TO RIGHT OR FROM RIGHT TO LEFT ON THE RAMPS THE DELINEATORS AT THE POINT OF CROSSOVER ARE TO BE AT THE SAME STATION ON EACH SIDE.
5. NO DELINEATORS ARE TO BE PLACED IN PAVED BERM.
6. WHEN RADII OF CURVE ON RAMPS REQUIRE 100' SPACING THE DELINEATORS SHALL BE PLACED ON THE RIGHT IN RELATION TO THE FLOW OF TRAFFIC.
7. RAMP DELINEATOR AT END OF ACCELERATION & BEGINNING OF DECELERATION LANES TO BE A MAXIMUM OF 5' FROM POINT OF TANGENCY AT MAIN LINE.
8. ALL RAMP DELINEATORS SHALL BE PLACED TO THE NEAREST 5' INCREMENTS, SUCH AS +05, +10, +15, +20 AND SO ON.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

DELINEATOR DETAILS	620	DATE 9-25-62 10-2-63

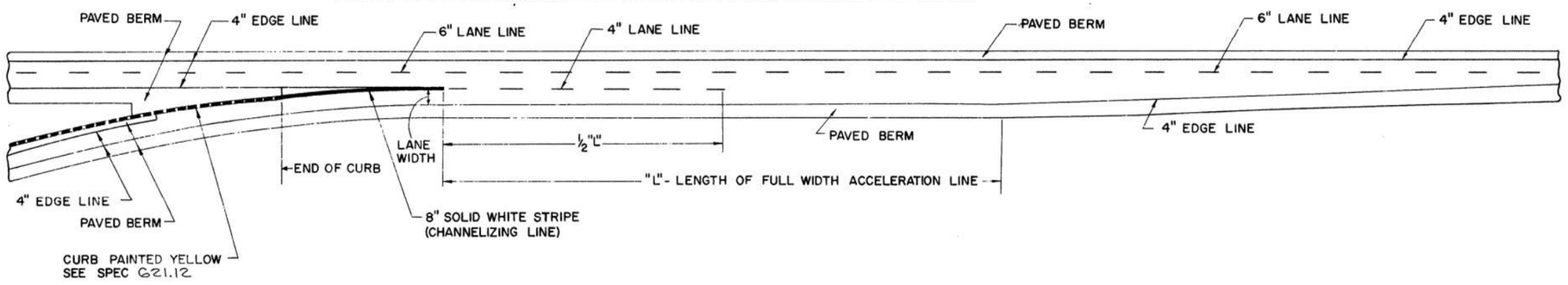
APPROVED Robert L. Clamer
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-277-6(8)123	

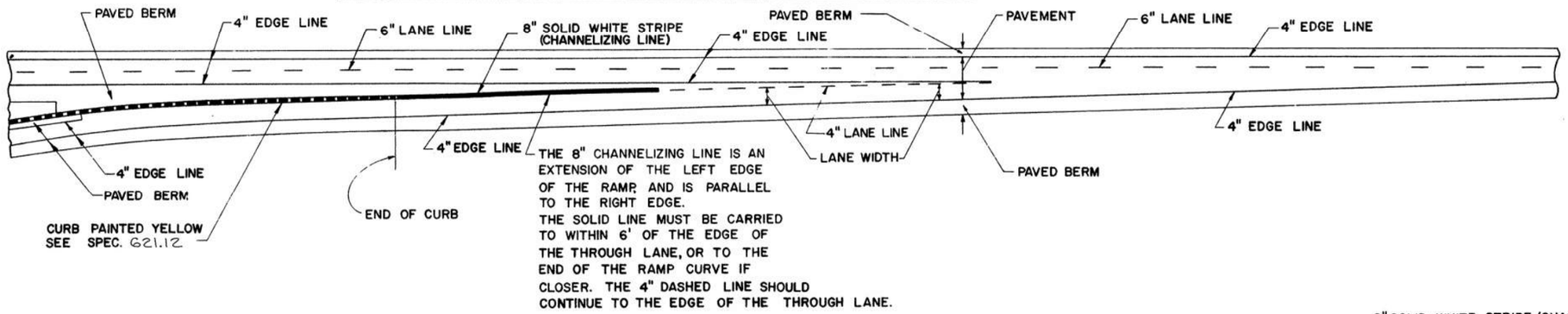
175
234

SUMMIT COUNTY
SUM-277-0.00

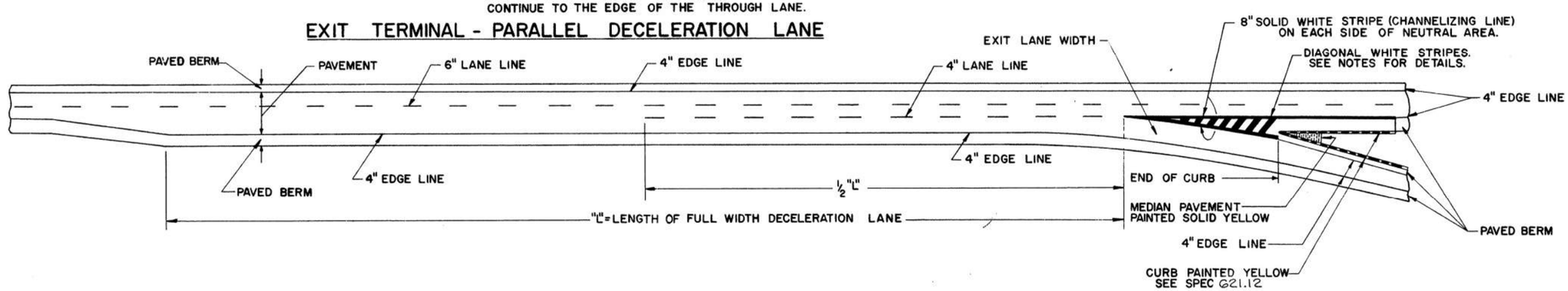
ENTRANCE TERMINAL - PARALLEL ACCELERATION LANE



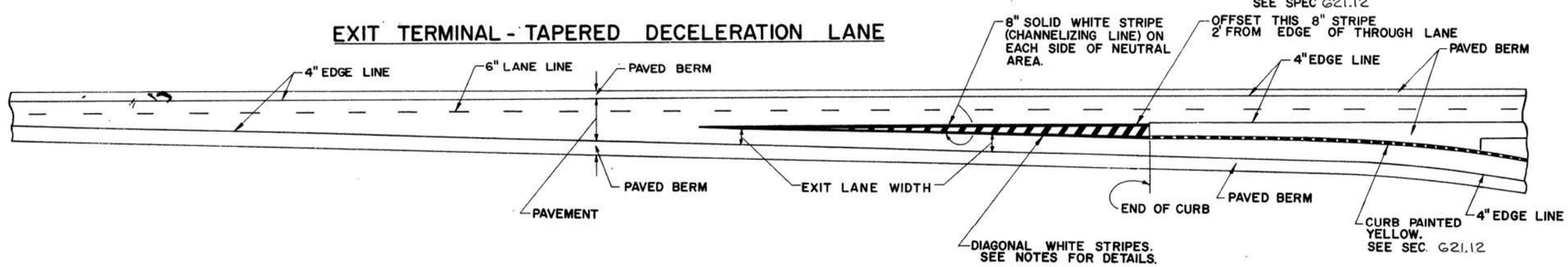
ENTRANCE TERMINAL - TAPERED ACCELERATION LANE



EXIT TERMINAL - PARALLEL DECELERATION LANE



EXIT TERMINAL - TAPERED DECELERATION LANE



NOTES

EDGE LINES SHALL BE PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO SUPPLEMENTAL SPECIFICATION No. G21 AND DEFINED IN SECTION G21.06

LANE LINES SHALL BE PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO SUPPLEMENTAL SPECIFICATION No. G21 AND DEFINED IN SECTION G21.07

CHANNELIZING LINES SHALL BE CONTINUOUS WHITE BEADED STRIPES 8" IN WIDTH PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO SUPPLEMENTAL SPECIFICATION No. G21 AND DEFINED IN SECTION G21.09

DIAGONAL STRIPES IN EXIT RAMP MARKINGS SHALL BE 2' WIDE WHITE BEADED STRIPES SET AT A 45° ANGLE TO THE CENTER LINE OF THE THROUGH PAVEMENT AND SLANTED IN THE DIRECTION OF THE FLOW OF TRAFFIC ON SAID PAVEMENT. SPACE BETWEEN THE 2' DIAGONAL STRIPES SHALL BE 6' AS MEASURED PARALLEL TO THE CENTER LINE OF THE THROUGH PAVEMENT. PAINT ON THE DIAGONAL STRIPES SHALL BE APPLIED AT THE RATE OF ONE GALLON TO EACH 100 SQUARE FEET AND GLASS BEADS SHALL BE APPLIED AT THE RATE OF SIX POUNDS PER GALLON OF PAINT. DIAGONAL WHITE STRIPES SHALL BE PLACED BETWEEN THE TWO 8" WHITE CHANNELIZING LINES AT EXIT RAMPS AS SHOWN TO CONFORM TO SUPPLEMENTAL SPECIFICATION No. G21 AND DEFINED IN SECTION G21.11

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

PAVEMENT MARKING

G21

DATE 7-17-61 4-6-62

APPROVED Robert E. Lower
ENGINEER OF TRAFFIC

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

SUMMIT COUNTY
SUM-277-0.00

LIGHTING NOTES

GENERAL

THIS SPECIFICATION SUPPLEMENTS THE STATE OF OHIO CONSTRUCTION AND MATERIAL SPECIFICATIONS DATED JANUARY 1, 1965, SEC. #713, #625, FOR MATERIALS USED AND FOR THE INSTALLATION OF LIGHTING ON THE FREEWAY INTERCHANGE. THE WORDS "LIGHTING STANDARD" IN THE STATE OF OHIO SPECIFICATION MEANS "LIGHTING POLE".

THE LOCATION OF LIGHTING POLES, SERVICE POLES, CONDUIT, CIRCUIT CABLES, PULL BOXES, ETC., SHALL BE AS INDICATED ON THE PLANS. DETAILS APPLICABLE TO THIS PROJECT, AND NOT SHOWN ON STANDARD PLANS HL-1, HL-2, HL-3 & HL-4 ARE A PART OF THIS SET OF PLANS. THE UTILITY COMPANY FOR THIS AREA IS THE OHIO EDISON COMPANY, AKRON, OHIO.

THROUGHOUT THESE PLANS THE USE OF TRADE NAMES FOR ELECTRICAL LIGHTING EQUIPMENT IS MEANT TO BE DESCRIPTIVE ONLY. COMPARABLE PRODUCTS OF OTHER ELECTRICAL FIRMS ARE ACCEPTABLE IF ACCESSORIES AND MAIN MEMBERS ARE COMPATIBLE WITH ONE ANOTHER AND SERVE THE INTENDED PURPOSE.

WORKING PLANS

CONTRACTOR SHALL CONFORM TO SEC. 625.04 IN REGARD TO SUBMITTING WORKING PLANS, AND APPROVAL OF MATERIALS BY THE DIRECTOR.

LIGHTING DESIGN

THE LIGHTING DESIGN IS BASED ON 0.8 TO 1.2 FOOT CANDLE AVERAGE INITIAL ~~DESIGN INTENSITY~~.

THE LIGHTING WILL BE MERCURY VAPOR, USING A MULTIPLE SYSTEM, SINGLE PHASE 480 VOLT CIRCUITS WITH ONE LEG GROUNDED.

TESTS

TESTS SHALL BE PERFORMED AS SPECIFIED IN SECTION 625.22.

LIGHTING POLES

THE LIGHTING POLES FOR THIS PROJECT SHALL BE STYLE A SHOWN ON HL-2.

ALL POLES SHALL BE PLACED SO THEIR BRACKET ARMS ARE NORMALLY AT RIGHT ANGLES TO THE CENTERLINE OF THE ROADWAY, AND CAREFULLY PLUMBED TO BE IN VERTICAL ALIGNMENT. EACH LIGHT POLE, AND THE CIRCUIT GROUND CABLE SHALL BE GROUNDED AT EACH LOCATION. ALL POLE HARDWARE SHALL BE EITHER STAINLESS STEEL, GALVANIZED STEEL, OR EVERDUR.

THE FOLLOWING SPECIFICATIONS FOR THE LIGHTING POLES ARE SUPPLEMENTARY TO SECTION 625.05 AND 713.01, INDICATING THE SPECIFIC ITEMS PERTAINING TO THIS PROJECT:

A. SHAFTS

1. SHAFTS SHALL BE 11 GAUGE TAPERED STEEL TUBES.
2. SHAFTS SHALL BE FITTED WITH ANCHOR BASES.
3. SHAFTS SHALL HAVE A 4" x 10" HANDHOLE WITH BOLT ON COVER AND CAPTIVE CHAIN.
4. SHAFTS SHALL CONFORM TO THE MINIMUM REQUIREMENTS FOR DEFLECTION AND PERMANENT SET AS TABULATED FOR THE RESPECTIVE POLE SIZES IN THE FOLLOWING TABLE:

DESIGN Nº	SIZE	GA.	ARM LENGTH	ANCHOR BOLT CIRCLE	PROJ. "P" ABOVE BASE	ELASTIC DEFL. RATE IN. PER 100 LB.	AT 2/3 YIELD STR. LOAD 18" DOWN LB.	AT 2/3 YIELD STR. TOTAL DEFL. IN.	AT 2/3 YIELD STR. PERM. SET IN.	AT YIELD STRENGTH LOAD 18" DOWN LB.	AT YIELD STRENGTH TOTAL DEFL. IN.	AT YIELD STRENGTH PERM. SET IN.	MOUNTING HEIGHT
11A15B32.5	9"x4.87"x29'-6"	11	15'	12.5	3"	2.16	659	14.73	.50	989	24.00	2.64	32'-6"
11A10B32.5	8"x3.87"x29'-6"	11	10'	11.0	2-5/8"	3.32	517	17.66	.50	776	28.84	3.08	32'-6"
11A15B30	8.5"x4.72"x27'-0"	11	15'	11.5	2-3/4"	1.89	643	12.65	.50	965	20.56	2.32	30'-0"
11A10B30	8"x4.22"x27'-0"	11	10'	11.0	2-5/8"	2.37	568	13.96	.50	852	22.71	2.52	30'-0"

B. SHAFT TRANSVERSE SECTION CONFIGURATION

1. BID ITEMS AS SHOWN AND DETAILED ARE FOR SHAFTS OF ROUND CIRCULAR TRANSVERSE SECTION.
2. ALTERNATE BID ITEMS ARE FOR SHAFTS OF TRANSVERSE SECTION OTHER THAN CIRCULAR. SPECIFY CONFIGURATION IN BID.
3. ALL SHAFTS THROUGHOUT THE PROJECT SHALL HAVE THE SAME TRANSVERSE SECTIONAL CONFIGURATION.

C. BRACKET ARMS

BRACKET ARMS SHALL CONFORM TO SECTION 713.01-6 USING 2" ASTM A53 SCHEDULE 40 PIPE. AN ALTERNATE SPECIFICATION WILL PERMIT THE USE OF ASTM A-36 PIPE.

D. ANCHOR BOLTS AND SHIMS

1. FOUR HIGH-GRADE STEEL ANCHOR BOLTS FITTED WITH HEX NUTS SHALL BE FURNISHED FOR EACH POLE. EACH ANCHOR BOLT SHALL HAVE AN "L" BEND AT THE BOTTOM AND BE THREADED AT THE TOP END. THREADED ENDS AND NUT SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153 WITH THE BOLT GALVANIZING EXTENDING 1" TO 4" BEYOND THREADS. ANCHOR BOLTS SHALL CONFORM TO ASTM A-307.

2. SHIMS FOR PLUMBING POLE SHALL BE OF GALVANIZED STEEL.

E. GALVANIZING

THE STEEL POLES AND ARMS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 713.01,8.

LUMINAIRES AND LAMPS

LUMINAIRES SHALL BE FURNISHED WITH 2" SLIPFITTER, ALL COMPLETELY ASSEMBLED, AND SOCKET IN POSITION TO EFFECT EITHER IES-ASA TYPE II OR III DISTRIBUTION. BALLAST SHALL BE A HIGH-POWER FACTOR REGULATING, OR CONSTANT WATTAGE TYPE RATED FOR USE WITH 400 WATT MERCURY LAMP, 240/480 VOLTS ± 13% REGULATION. CONNECT BALLAST FOR 480 VOLTS. LUMINAIRES SHALL BE GENERAL ELECTRIC COMPANY FORM M-400, WESTINGHOUSE TYPE OV-25, LINE MATERIAL COMPANY UNISTYLE 400, OR AN APPROVED EQUAL.
MERCURY LAMPS SHALL BE CLEAR TYPE ASA CODE H33 1 CD RATED FOR 16,000 HOUR LIFE. THEY SHALL BE GENERAL ELECTRIC COMPANY "BONUS LINE", WESTINGHOUSE "LIFEGUARD", SYLVANIA "BANNER LINE", OR AN APPROVED EQUAL.

GROUND ROD UNITS

GROUND ROD UNITS SHALL BE FURNISHED AND INSTALLED AT EACH LIGHTING POLE FOUNDATION. THE TOP OF THE ROD SHALL BE 18" TO 20" BELOW TOP OF TRENCH REGARDLESS OF THE DEPTH OF TRENCH.

PULL BOXES

18" AND 24" DIAMETER FIBER PULL BOXES SHALL BE FABRICATED FROM A FIBER TUBE IMPREGNATED WITH A BLACK BITUMINOUS COMPOUND TO MAKE IT WATERPROOF. THE 18" PULL BOX SHALL HAVE A TYPE II COVER OF 1/4" THICK CAST IRON PAINTED WITH ASPHALTUM, WITH THE WORD "ELECTRIC" IMPRINTED AND A BOLT FASTENING AS INDICATED. THE 24" PULL BOX SHALL HAVE A TYPE I COVER. BOTTOM OF THE TUBE SHALL BE LEFT OPEN, SET OVER A 6 INCH BED OF AGGREGATE TO ALLOW FOR DRAINING. CONTRACTOR SHALL CUT ONLY NECESSARY SIZE AND LENGTH OF SLOTS FOR DUCT-CABLE, OR HOLE FOR CROSS OVER CONDUIT, AS DETERMINED FOR EACH LOCATION. **MINIMUM THICKNESS SHALL BE 0.37 INCHES.**

TRENCH

CONTRACTOR SHALL DO ALL EXCAVATION OF EVERY DESCRIPTION TO THE DIMENSIONS AND LEVELS SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER. EXCAVATION MAY BE ACCOMPLISHED WITH MECHANICAL TRENCHING AND BORING EQUIPMENT, EXCEPT THAT CONTRACTOR MAY NOT USE A TRENCHER THAT PRODUCES SUCH LIFTING FORCE AS TO DESTROY THE EDGE, OR UNDER-MINE THE PAVED BERM, WHEN TRENCHES ARE IN FRONT OF GUARD RAIL.

WHERE GUARD RAIL IS ENCOUNTERED, THE TRENCHING IN GENERAL SHOULD BE DONE IN FRONT OF RAIL, EXCEPT WHEN GUARD RAIL IS 1 FOOT OR LESS FROM EDGE OF PAVED BERM. HE MAY USE THE ALTERNATE METHOD SHOWN ON HL-1 AND RUN TRENCHES BEHIND THE RAIL.

CONDUIT

RIGID FERROUS METAL CONDUITS CONFORMING TO SEC. 713.04 AND 625.13 SHALL BE USED FOR THE CONDUIT RUNS.

USE 3" TYPE II OR III FOR ALL CROSSOVER CONDUITS, AND THE CONDUIT AT LOWER PART OF SERVICE POLE. ALSO USE DOUBLE 3" TYPE II AND III FOR CONDUITS USED TO PROTECT CIRCUIT CABLES UP SLOPE FROM 24" PULL BOX AT FOOT OF SERVICE POLE TO THE 24" PULL BOX ADJACENT TO THE ROADWAY, AND ACROSS TO THE OTHER SIDE OF FREEWAY.

USE TYPE I CONDUIT FOR ALL RUNS IN BRIDGES WHERE CONDUIT IS ENCASED IN CONCRETE. AT ENDS OF BRIDGE, WHERE CONDUIT HAS TO BE EXPOSED AND RUN UNDER GROUND TO NEAREST FIBER PULL BOX OR AN ADJACENT LIGHT POLE FOUNDATION, CONVERT TO 2" TYPE II OR III NEAR END OF STRUCTURE TO MAKE THE EXPOSED RUN. PROVIDE CONDUIT EXPANSION FITTINGS FOR ALL JOINTS IN STRUCTURES.

CONDUIT FOR LIGHTING POLE FOUNDATIONS SHALL EITHER BE 2 1/2" FERROUS METAL ELLS, OR 3" CEMENT-ASBESTOS, OR 3" BITUMINOUS FIBER ELLS, AT OPTION OF CONTRACTOR.

DUCT-CABLE, CABLE

DUCT-CABLE SHALL BE FURNISHED IN 1-1/2" NOMINAL SIZE WITH TWO (2) No. 4 GAUGE CODED, 7-STRAND 600 VOLT COPPER CONDUCTORS, CROSS LINKED FILLED POLYETHYLENE INSULATED TYPE, GENERAL ELECTRIC CABLE No. S1-**58073** OR APPROVED EQUIVALENTS AS MANUFACTURED BY ROME, SIMPLEX, PHELP-DODGE, KAISER, OR OTHER MANUFACTURERS APPROVED PRODUCT. DUCT SHALL BE BLACK POLYETHYLENE PLASTIC CONFORMING TO SEC. 713.03-3. CABLE USED IN BRIDGE STRUCTURES, IN CROSS OVER CONDUIT AND THE 3" CONDUIT UP SLOPES AT SERVICE POLE, SHALL BE THE SAME SIZE AND SPECIFICATION AS FURNISHED IN THE DUCT-CABLE. POLE AND BRACKET CABLE SHALL BE SINGLE CONDUCTOR, No. 10 GAUGE, CODED, 600 VOLT, 7-STRAND FAA SPECIFICATION L-824 TYPE A OR B OR CROSS LINKED FILLED POLYETHYLENE.

CONNECTIONS

CONNECTORS SHALL BE USED FOR ALL CABLE CONNECTIONS CONFORMING TO SEC. 715 AND 625.17 AND AS FOLLOWS:

IN LIGHTING POLE BASES: 1 - TYPE II FUSED KIT W/6 AMP. FUSE IN HOT LEG
1 - TYPE III UNFUSED KIT IN GROUND LEG

IN FIBER PULL BOX: TYPE IV UNFUSED KIT FOR BOTH CIRCUIT CABLES WHERE TAP IS REQUIRED.
TYPE I UNFUSED KIT FOR BOTH CIRCUIT CABLES WHEN STRAIGHT THROUGH.

STRUCTURE GROUNDS

GROUNDING IN GENERAL SHALL FOLLOW SPECIFICATION 625.20.

BRIDGE SUM - 277-.0000

THIS BRIDGE IS OF STEEL BEAM SUPER STRUCTURE AND CONSISTS OF TWO SEPARATE STRUCTURES DIVIDED LENGTHWISE, WITH NO STEEL MECHANICAL OR ELECTRICAL CONNECTION BETWEEN. PROVIDE TWO SEPARATE GROUNDING SYSTEMS, ONE FOR EACH HALF OF STRUCTURE. EACH GROUND SHALL CONSIST OF 30 FEET OF COILED CABLE IN A SPIRAL UNDER SPREAD-FOOTER AT PIER No. 3. COVER COIL WITH 2 LAYERS OF TAR PAPER TO PROTECT IT WHEN CONCRETE IS POURED. EXTEND CABLE IN ONE CONTINUOUS LENGTH UP THROUGH PIER AND PIER-CAP AND EXOTHERMIC WELD TO OUTSIDE STEEL GIRDER.

BRIDGE SUM - 8-0930 & BRIDGE SUM - 8-0932

THESE BRIDGES HAVE STEEL BEAM SUPER STRUCTURES. EACH SHALL BE GROUNDED BY EXOTHERMIC WELDING THE CABLE TO A STEEL H-BEAM BEARING PILE AT PIER No. 1. EXTEND CABLE IN ONE CONTINUOUS LENGTH UP THROUGH PIER AND PIER-CAP AND EXOTHERMIC WELD TO OUTSIDE STEEL GIRDER.

SERVICE POLE

CONTRACTOR SHALL FURNISH AND INSTALL AT THE LOCATIONS SHOWN, A POLE MTD. LIGHTING TRANSFORMER STATION AS DETAILED ON THE DRAWINGS, COMPLETE WITH PROTECTIVE DEVICES, SECONDARY CIRCUIT CONTACTORS, WITH PHOTO-CELL CONTROL, GROUNDING, THE 2 3" CONDUIT, AND 24" PULL BOX FOR TERMINATION OF THE DUCT-CABLE LIGHT FEEDERS. PRIMARY SERVICE TO THE POLE WILL BE FURNISHED BY THE OHIO EDISON COMPANY. CONTRACTOR SHALL VERIFY THE PRIMARY VOLTAGE TO BE FURNISHED AT EACH LOCATION, AND ORDER THE PROPER TRANSFORMER. PRIMARY FUSE SIZE SHALL BE ACCORDING TO THE STANDARDS OF THE OHIO EDISON COMPANY.

ELECTRIC SIGN SERVICES

AT EACH LOCATION ON PLANS WHERE AN ELECTRICALLY LIGHTED SIGN IS INDICATED, THE ROADWAY LIGHTING CONTRACTOR SHALL FURNISH AND INSTALL A 18" FIBER PULL BOX, LOCATED GENERALLY TEN (10) FEET BEYOND THE SIGN SUPPORT IN THE DIRECTION OF TRAFFIC. THE ROADWAY LIGHTING CKT. CABLES SHALL BE SPLICED IN THIS PULL BOX EACH WITH AN UNFUSED "Y" TYPE IV KIT. TAPE SEAL UNUSED TAP CONNECTION, UNTIL IT CAN BE USED. WHERE A "Y" CONNECTION IS NOT REQUIRED, USE STRAIGHT TYPE I KITS.

THE SIGN LIGHTING CONTRACTOR WILL FURNISH CONDUIT AND #6 WIRE FROM PULL BOX TO AND INTO SIGN FOUNDATION, AND CONNECT SIGN INTO THE CIRCUIT, AS PART OF SIGN LIGHTING CONTRACT. AT EXISTING SIGN REF. No. 12 AT 228 + 5 CENTER LINE 277 JUST OUTSIDE START OF PROJECT, ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL 3" CROSS OVER CONDUIT, 18" PULL BOXES, CABLE, CONNECTOR KITS, AND CONNECTION INTO THIS SIGN DISCONNECT SWITCH, AS PART OF THIS CONTRACT.

~~CODING~~

~~ALL CABLE & DUCT CABLE SHALL BE IDENTIFIED BY CODING (COLOR CODING OR MARKING THE SURFACE OF CABLE) OR BANDING. WHERE TWO (2) OR MORE DUCT CABLES ARE IN A COMMON PULL BOX OR OTHER ENCLOSURE & CABLE IS NOT EXPOSED, THE DUCT SHALL BE CODED~~

WIRE—CABLE & DUCT-CABLE IDENTIFICATION

ALL CIRCUIT AND GROUND CABLES AND DUCT-CABLE SHALL BE IDENTIFIED IN EACH PULL BOX, MANHOLE, BRIDGE JUNCTION BOX (TYPE A OR B) CONTROL HOUSING, ETC. TAGS SHALL BE CIRCULAR, 1 3/8" MINIMUM DIA. AND NOT LESS THAN 0.031" THICK COPPER, BRASS OR PLASTIC. USE STEEL LETTERING DIES, 1/4" MINIMUM, OR THE EQUIVALENT ENGRAVING PROCESS TO MARK THE TAG. IT SHALL BE SECURELY ATTACHED WITH AN AWG #16 OR LARGER BARE COPPER WIRE. MARKING OF TAGS SHALL CONSIST OF AN ABBREVIATION FOR THE GROUND WIRES "GR'D" AND CIRCUIT WITH NUMBER OR LETTER "CKT. A", ETC.

GENERAL LIGHTING QUANTITIES

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

177
234

SUM-277-0.00

LINE Nº	ITEM	STRUCTURES SUM-277- 00.00	00.00	00.00 TOTAL	SUM-8- 0932	0930	ROADWAY TYPE CODE 7221		ROADWAY TOTAL	ITEM	UNIT	DESCRIPTION
SHEET Nº		178	179		178	179	178	179		SHEET Nº		
1	625						42	51	93	625	EA.	LIGHT POLE W/15'BRACKET ARM - DESIGN#11A15B32.5 (CIRCULAR CROSS SECTION)
2							30	30	60		EA.	LIGHT POLE W/10'BRACKET ARM - DESIGN#11A10B32.5(CIRCULAR CROSS SECTION)
3		5	1	6							EA.	LIGHT POLE W/15' BRACKET ARM - DESIGN#11A15B30 (CIRCULAR CROSS SECTION)
4					1	2					EA.	LIGHT POLE W/10' BRACKET ARM - DESIGN#11A10B30 (CIRCULAR CROSS SECTION)
5												
6							72	81	153		EA.	LIGHT POLE FOUNDATION 24"x24"x 6' DEEP
7		5	1	6			42	51	93		EA.	LUMINAIRE TYPE III W/400 W. INTEGRAL BALLAST
8					1	2	30	30	60		EA.	LUMINAIRE TYPE II W/400 W. INTEGRAL BALLAST
9		5	1	6	1	2	72	81	153		EA.	MERCURY VAPOR LAMP 400 WATT
10												
11							72	81	153		EA.	GROUND ROD UNIT
12							22	19	41		EA.	PULL BOX, ROUND FIBER 18"I.D.
13							3	5	8		EA.	PULL BOX, ROUND FIBER 24"I.D.
14												
15							8180	7475	15655		L.F.	TRENCH 24" DEEP
16							3305	5205	8510		L.F.	TRENCH 4'-6" DEEP
17		1010	320	1330	200	250					L.F.	CONDUIT 2" RIGID FERROUS METAL TYPE I
18		60	85	145	20	60	20	30	50		L.F.	CONDUIT 2" RIGID FERROUS METAL TYPE II OR III
19							950	840	1790		L.F.	CONDUIT 3" RIGID FERROUS METAL TYPE II OR III
20												
21		2220	780	3000	480	580	3500	3400	6900		L.F.	CIRCUIT CABLE 600 V. 1/C Nº4
22		450	90	540	80	160	6540	7310	13850		L.F.	POLE & BRACKET CABLE 600 V. 1/C Nº10
23							14,505	15,170	29,675		L.F.	DUCT-CABLE 600 V. TWO INSULATED 1/C Nº4
24												
25							38	32	70		EA.	CONNECTOR KIT TYPE I
26		5	1	6	1	2	72	81	153		EA.	CONNECTOR KIT TYPE II
27		5	1	6	1	2	72	81	153		EA.	CONNECTOR KIT TYPE III
28							16	26	42		EA.	CONNECTOR KIT TYPE IV
29							Lump		Lump		LUMP	TRANSFORMER and PROTECTIVE EQUIPMENT, 50 KVA DISTRIBUTION WOODVIEW DRIVE
30							Lump		Lump		LUMP	SERVICE POLE and CONTROL CENTER WOODVIEW DRIVE
31								Lump	Lump		LUMP	50 KVA DISTR'N TRANSFORMER & PROTECTIVE EQUIPMENT CHAFFIN COURT
32								Lump	Lump		LUMP	SERVICE POLE and CONTROL CENTER CHAFFIN COURT
33		2		2	1	1					EA.	STRUCTURE GROUNDING SYSTEM
34		5	1	6	1	2					SET	STRUCTURE LIGHT POLE ANCHOR BOLTS "L" TYPE
35												
36									Lump		LUMP	CIRCUIT & LIGHT POLE IDENTIFICATION
37												
38												
												-ALTERNATE BIDS-
39							42	51	93		EA.	LIGHT POLE W/15' BRACKET ARM - DESIGN#11A15B32.5 (OTHER THAN CIRCULAR CROSS SECTION)
40							30	30	60		EA.	LIGHT POLE W/10' BRACKET ARM - DESIGN#11A10B32.5(OTHER THAN CIRCULAR CROSS SECTION)
41		5	1	6							EA.	LIGHT POLE W/15' BRACKET ARM - DESIGN#11A15B30 (OTHER THAN CIRCULAR CROSS SECTION)
42					1	2					EA.	LIGHT POLE W/10' BRACKET ARM - DESIGN#11A10B30 (OTHER THAN CIRCULAR CROSS SECTION)

LIGHTING SUMMARY

REV. 3-28-66 EWH

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

178
234

SUMMIT COUNTY
SUM-277-0.00

LEGEND

- 400 WATT TYPE III 15' BRACKET
- 400 WATT TYPE II 10' BRACKET
- 400 WATT TYPE III 15' BRACKET (MAINLINE BRIDGE)
- 400 WATT TYPE II 10' BRACKET (RAMP BRIDGE)
- EXISTING LIGHT, OR LIGHT INSTALLED ON ANOTHER CONTRACT
- MULTIPLE 1 ϕ 480 V. LIGHTING CKT.; 2-1/c Nº4 600 V. CABLES IN "CABLE DUCT" DIRECT BURIAL ALONG ROADWAY & RAMPS; 2-1/c Nº 4 600 V. CABLES IN CONDUIT THRU BRIDGES.
- LIGHTING CKT. CABLES IN 3" GALV. ALLOY OR W.I. CONDUIT UP SLOPE TO PULL BOX FROM LIGHTING TRSF. STATION.
- 247+80 ℄ 277 9.5' — STATIONING DESIGNATION OF LIGHT ALIGNED @ 90° NORMAL TO ℄ OF ROADWAY OR RAMP. 9.5' IS OFFSET OF LIGHT FROM EDGE OF PAVEMENT
- CKT. F-1, Y-2 (6) — LIGHTING CIRCUIT Nº'S. SHOWN AT VARIOUS LIGHTS TO INDICATE CONNECTING OF CIRCUITS. (6) IS POLE Nº
- 18" FIBRE PULL BOX
- 24 FIBRE PULL BOX
- 3" GALV. ALLOY STEEL OR W.I. CROSSOVER CONDUIT
- GUARD RAIL
- SERVICE POLE
- SIGNS (ELECTRICALLY LIGHTED)
- 18" FIBRE PULL BOX (AT SIGNS)

(This Sheet) MATCH LINE

234+90 ℄ 277, 9.5' CKT. F-1 (7)
20+20"B", 9.5' CKT. F-1 (12)
237+00 ℄ 277, 13.5' CKT. F-1 (6)
18+40"B", 9.5' (13)
16+60"B", 9.5' CKT. F-1 (14)
14+90"B", 9.5' (15)
12+50"B", 9.5' CKT. F-1 (16)
13+70"B-2", 5.5' CKT. F-2 (2)
10+50"B", 9.5' CKT. F-1 (17)
8+60"B", 9.5' CKT. F-1 (18)
6+70"B", 9.5' (19)
4+90"B", 9.5' CKT. F-1 (20)
3+28"B", 9.5'
SIGN REF#13 237+70 ℄
238+10 ℄ 277, 13.5' CKT. G-1 (5)
239+10 ℄ 277, 13.5' (5)
240+20 ℄ 277, 9.5' (4)
241+20 ℄ 277, 13.5' CKT. F-1 (4)
242+30 ℄ 277, 9.5' CKT. G-1 (3)
243+20 ℄ 277, 13.5' (3)
245+00 ℄ 277, 11.5' CKT. F-1 (2)
244+30 ℄ 277, 9.5' (2)
SIGN REF#14 244+95 ℄
245+75 ℄ 277, 9.5' CKT. G-1 (1)
2-3" COND.
228+80 ℄ 277, 13.5' CKT. F-1 (11)
230+90 ℄, 9.5' (10)
232+50 ℄ 277, 9.5' (9)
233+70 ℄ 277, 9.5' CKT. F-1 (8)
9+80"A", 9.5' (3)
11+80"A", 9.5' CKT. G-2 (4)
7+80"A", 9.5' (2)
5+80"A", 9.5' CKT. G-2 (1)
WOODVIEW DR.
I.R. #277
RAMP "B"
15+70"B-2", 5.5' CKT. F-2 (1)
RAMP "B-1"
CKT. F-2
12+05"B-2", 9.5' CKT. F-2 (3)
7+80"B-1", 5.5' (2)
9+25"B-1", 5.5' CKT. F-3 (3)
10+70"B-1", 5.5' (4)
12+10"B-1", 5.5' CKT. F-3 (5)
6+35"B-1", 5.5' CKT. F-3 (1)
RAMP "B-2"
10+40"B-2", 9.5' CKT. F-2 (4)
8+82"B-2", 9.5' (5)
13+60"B-1", 9.5' CKT. F-3 (6)
9.5' 4+90"B-1" CKT. Y-3 (16)
246+50 ℄ 277, 9.5' CKT. F-1 (1)
EMPTY CONDUIT CKT'S F-1, F-2, F-3 ACROSS IN 2-3" TYPE II OR III COND.
247+80 ℄ 277, 11.5' CKT. Y-3 (15)
SIGN REF#15 248+47.6 ℄
249+10 ℄, 11.5' CKT. Y-3 (14)
247+80 ℄ 277, 13.5' CKT. G-3 (1)
249+90 ℄ 277, 13.5' (2)
252+13 ℄ 277, CKT. G-3 (3)
MATCH LINE (This Sheet)
RAMP "A"
BRIDGE SUM-277-0000
254+30 ℄ 277, CKT. G-3 (4)
Match Line for Sh. #179 (STA. 13+00)
EXISTING SIGN REF.#12 @ 228+50 ℄ 277. PROVIDE 3" CROSSOVER CONDUIT, CABLE & P. B's. CONNECT FEEDER TO SIGN. (THIS SIGN FURNISHED ON PREVIOUS PROJECT)
15+10"B-1", 9.5' CKT. F-3 (7)
506+00 ℄ 77 S.B., 6.5' CKT. X-2 (14)
9.5' 50+90 ℄ 77 S.B. (8)
9.5' CKT. F-3
502+35 ℄ 77 S.B., 6.5' (9)
504+50 ℄ 77 S.B., 6.5' CKT. Y-3 (13)
503+10 ℄ 77 S.B., 6.5' (12)
501+70 ℄ 77 S.B., 6.5' CKT. X-2 (11)
252+98 ℄ 277, CKT. Y-3 (12)
590+75 ℄ 77 N.B., 9.5' (15)
255+23, CKT. Y-3 (11)
FOR CONTINUATION OF CKT.'S SEE INTERCHANGE LIGHTING PLAN Nº 2
COVENTRY TWP. LINE
CORPORATION OF AKRON
CITY
WATERLOO RD.
EXPRESSWAY
AKRON
(EXISTING) I.R. #77
13.5' 511+10 ℄ 77 S.B. (15)
13.5' 507+60 ℄ 77 S.B. (13)
510
509+35 ℄ 77 S.B. (14)
SIGN REF#26 509+00 ℄ 77 CKT. X-2
504+40 ℄ 77 N.B., 6.5' (6)
7+10"B-2", 6.5' CKT. F-2 (4)
5+45"B-2", 9.5' (7)
505
BRIDGE SUM-8-0932
18+80"D", 9.5' CKT. Y-2 (6)
508+00 ℄ 77 N.B., 11.5' CKT. Y-2 (11)
506+00 ℄ 77 N.B., 9.5' CKT. Y-2 (12)
16+65"D", 9.5' CKT. Y-2 (5)
504+10 ℄ 77 N.B., 9.5' CKT. Y-2 (13)
SIGN REF#25 505+28 ℄ CKT. F-2
RAMP "D"
14+50"D", 9.5' CKT. Y-2 (4)
502+35 ℄ 77 N.B., 9.5' (14)
501+50 ℄ 77 N.B., 6.5' CKT. F-2 (3)
Match Line for Sh. #179 (STA. 13+00)
5/4+05 ℄ 77 N.B., 9.5' CKT. Y-2 (10)
512+55 ℄ 77 N.B., 9.5' (9)
511+15 ℄ 77 N.B., 9.5' CKT. Y-2 (8)
509+75 ℄ 77 N.B., 9.5' (7)
EXIST'G 15"ϕ 55 ℄ N.B.

INTERCHANGE LIGHTING PLAN Nº 1

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

179
234

SUMMIT COUNTY
SUM-277-0.00

END PROJECT SUM-8-6.72 | BEGIN PROJECT SUM-8-9.07

(EXISTING) I.R. #77

BRIDGE SUM-8-0930

BRIDGE SUM-277-0000

FOR CONTINUATION OF CKT.'S SEE INTERCHANGE LIGHTING PLAN Nº 1

RAMP "A"

RAMP "C"

RAMP "C-1"

RAMP "C-2"

RAMP "D"

Match Line Sh. #178 (STA. 15+00)

CHAFFIN CT.

O.E.C.² PRIMARY LINE

CKT'S X-1, X-2, X-3 - Y-1, Y-3 ACROSS IN 2-TYPE II OR III COND.

CKT'S X-1, X-2, X-3 & K-1 ACROSS IN 2-TYPE II OR III COND.

2-3 COND.

SIGN REF. #21 473+40 ℄ 77 9.5' CKT. X-1 (12)

474+00 ℄ 77 N.B. 9.5' CKT. X-1 (11)

475+70 ℄ 77 N.B. 9.5' (10)

477+25 ℄ 77 N.B. 9.5' CKT. X-1 (9)

478+90 ℄ 77 N.B. 9.5' (8)

480+20 ℄ 77 N.B. 9.5' CKT. X-1 (8)

SIGN REF. #22 480+62 ℄ 277

481+30 ℄ 77 N.B. 9.5' (7)

6+20 "C" 9.5' CKT. X-1 (6)

8+10 "C" 9.5' (5)

10+00 "C" 9.5' CKT. X-1 (4)

11+90 "C" 9.5' (3)

14+30 "C-2" 9.5' CKT. X-2 (3)

12+90 "C-2" 9.5' (4)

11+44 C-2 CKT. X-2 (5)

13+80 "C" 9.5' CKT. X-1 (4)

15+70 "C-2" 5.5' CKT. X-2 (2)

15+70 "C" 9.5' CKT. X-1 (1)

17+50 C-2 5.5' CKT. X-2 (1)

480+00 ℄ 77 S.B. 13.5' CKT. G-2 (15)

482+00 ℄ 77 S.B. 9.5' (14)

483+90 ℄ 77 S.B. 9.5' CKT. G-2 (13)

485+70 ℄ 77 S.B. 9.5' (12)

487+40 ℄ 77 S.B. 9.5' (11)

489+00 ℄ 77 S.B. 9.5' CKT. G-2 (10)

490+40 ℄ 77 S.B. 9.5' (9)

491+65 ℄ 77 S.B. 9.5' (8)

492+85 ℄ 77 S.B. 9.5' CKT. G-2 (7)

494+20 ℄ 77 S.B. 9.5' CKT. F-3 (6)

495+60 ℄ 77 S.B. 9.5' CKT. F-3 (12)

497+75 ℄ 77 S.B. 9.5' (11)

499+90 ℄ 77 S.B. 9.5' CKT. F-3 (10)

482+50 ℄ 77 N.B. 13.5' CKT. X-3 (14)

484+50 ℄ 77 N.B. 13.5' (15)

486+50 ℄ 77 N.B. 13.5' (14)

488+50 ℄ 77 N.B. 13.5' CKT. X-3 (13)

490+50 ℄ 77 N.B. 13.5' (12)

SIGN REF. #23 491+00 ℄ 77 CKT. F-2

6+50 "C-2" 9.5' CKT. X-2 (8)

8+45 "C-2" 9.5' (7)

10+20 "C" CKT. X-2 (6)

SIGN REF. #24 496+55 ℄ 77

496+90 ℄ 77 N.B. 6.5' CKT. F-2 (12)

497+45 ℄ 6.5' 77 N.B. (11)

498+95 ℄ 6.5' 77 N.B. CKT. F-2 (10)

499+00 ℄ 77 S.B. 6.5' CKT. X-2 (10)

496+85 ℄ 77 S.B. (9)

13+40 "C-1" 9.5' (5)

14+80 "C-1" 9.5' CKT. X-3 (4)

494+20 ℄ 77 N.B. 6.5' (13)

16+25 "C-1" 9.5' (3)

496+45 ℄ 77 N.B. 9.5' CKT. X-3 (2)

498+45 ℄ 77 N.B. 9.5' CKT. X-3 (10)

10+60 "C-1" 5.5' (4)

9+20 "C-1" 5.5' CKT. X-3 (3)

7+80 "C-1" 5.5' (2)

4+90 "C-1" 9.5' CKT. G-3 (8)

4+40 "C-1" 9.5' (1)

250+55 ℄ 277 9.5' CKT. G-3 (2)

SIGN REF. #16 253+31 ℄

256+94 ℄ 277 CKT. G-3 (5)

257+20 ℄ 277 13.5' (10)

259+20 ℄ 277 13.5' (9)

260+05 ℄ 277 9.5' (7)

261+60 ℄ 277 CKT. G-3 (9)

260+85 ℄ 277 13.5' CKT. Y-3 (6)

12+35 "D" 9.5' CKT. Y-2 (3)

10+20 "D" 9.5' CKT. Y-2 (2)

8+05 "D" 9.5' CKT. Y-2 (1)

5+90 "D" 9.5' CKT. Y-3 (1)

262+60 ℄ 277 13.5' CKT. Y-3 (7)

264+30 ℄ 277 9.5' CKT. Y-3 (2)

263+30 ℄ 277 11.5' CKT. Y-1 (1)

265+10 ℄ 277 13.5' (2)

SIGN REF. #17 265+07 ℄

265+80 ℄ 277 9.5' (3)

266+90 ℄ 277 13.5' CKT. Y-1 (3)

267+70 ℄ 277 9.5' CKT. Y-3 (4)

269+80 ℄ 277 9.5' (5)

271+90 ℄ 277 13.5' CKT. Y-3 (6)

SIGN REF. #18 272+60 ℄

19+10 "C" 9.5' CKT. Y-1 (10)

19+70 "C" 9.5' (9)

21+40 "C" 9.5' CKT. Y-1 (8)

270+90 ℄ 277 13.5' CKT. Y-1 (5)

23+20 "C" 9.5' (7)

272+70 ℄ 277 9.5' CKT. Y-1 (6)

269+90 ℄ 277 13.5' (4)

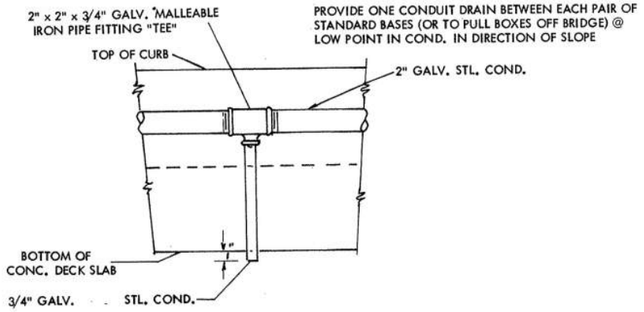
STA. 273+82.76

INTERCHANGE LIGHTING PLAN Nº 2

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(3)123	

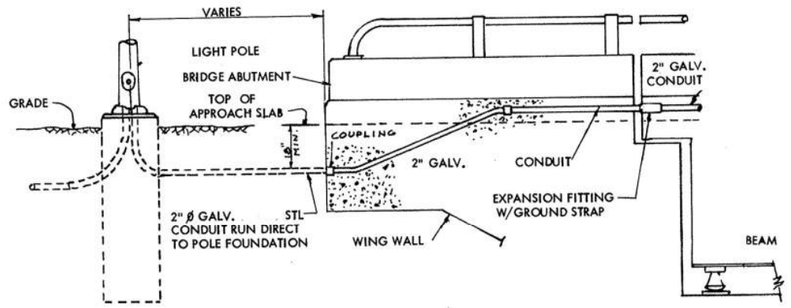
180
234

SUMMIT COUNTY
SUM-277-0.00



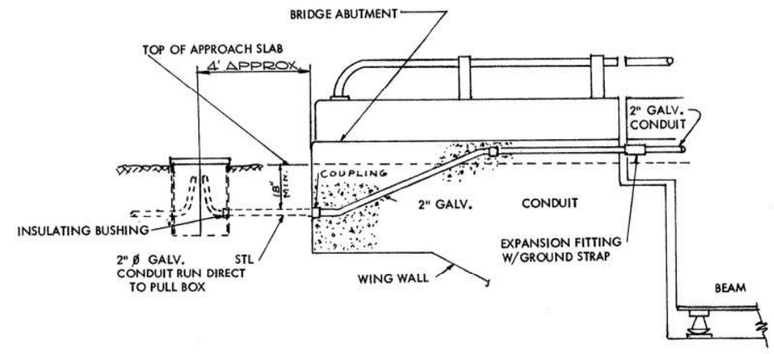
STRUCTURE
CONDUIT DRAIN

TABLE - STRUCTURE GROUNDING		
BRIDGE NO.	TYPE STRUCTURE	GROUNDING DETAILS
SUM-8-0930	STEEL BEAM	WELD TO H-BEAM STEEL BEARING PILE @ PIER NO. 1
SUM-277-0000	STEEL BEAM	30' COILED SPIRAL CABLE UNDER SPREAD FOOTER @ PIER NO.3. TWO GRD'G SYSTEMS.
SUM-8-0932	STEEL BEAM	WELD TO H-BEAM STEEL BEARING PILE @ PIER NO. 1



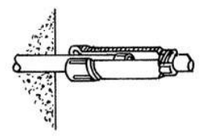
TO POLE

SECTIONAL ELEVATION
CONDUIT RUN THRU BRIDGE ABUTMENT

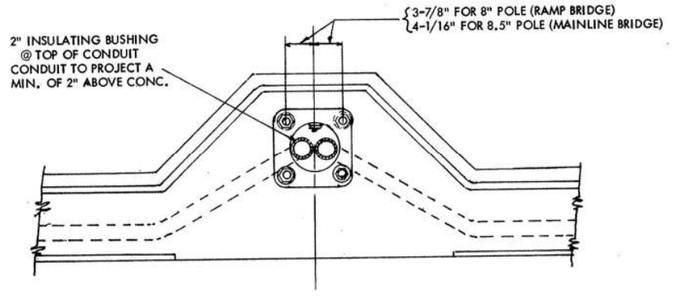


TO PULL BOX

SECTIONAL ELEVATION
CONDUIT RUN THRU BRIDGE ABUTMENT



EXPANSION FITTING W/GROUND STRAP
4" TOTAL EXPANSION 2" EITHER WAY
O.Z. Co. TYPE "AX-200" & "AJ-200",
APPLETON "XJ-200-4" & "XJB4-125-20",
SPRING CITY OR APPROVED EQUAL.



DETAIL - MTG. OF LIGHT STANDARD
WITH 2" CONDUIT RUN DIRECTLY INTO POLE BASE

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-G(B)123	

181
234

SUMMIT COUNTY
SUM-277-0.00

SERVICE POLE & CONTROL CENTER

1. COMBINATION FUSED SWITCH AND LIGHTING CONTACTOR SHALL BE 60 AMP, 600 VOLT, 3 POLE W/H.O.A. SELECTOR SWITCH, FUSED CONTROL TRSF 120 V. COIL, NEMA IV ENCLOSURE OF STAINLESS STEEL (AISI NO. 302 OR 303) MOUNT TO POLE ON 1/4" x 2" GALV. STL STRAPS USING ALL CORROSION-PROOF HARDWARE & SEAL ALL CONDUITS TO PREVENT INGRESS OF WATER. COMB. SWITCH & CONTACTOR SHALL BE SQUARE D CLASS #8903 TYPE W 939 FA 610A, G.E. COMPANY, COLUMBUS ELECTRIC WORKS, OR AN APPROVED EQUAL.

2. THE DUAL-MTD. LT'G CONTACTORS SHALL HAVE A SEPARATE MOUNTED PHOTOELECTRIC CONTROLLER FOR ITS AUTOMATIC OPERATION. CONTROLLER SHALL BE NORMALLY CLOSED, CLOSED AT NIGHT, W/FACTORY SET TURN-ON FOR 3 FOOT CANDLES, BE FAIL SAFE AND HAVE BUILT-IN TIME DELAY TO AVOID ERRONEOUS OPERATION. PHOTOELECTRIC CONTROLLER SHALL BE FISHER PIERCE SERIES 6600 A, G.E. COMPANY CAT. 402 G 200 SERIES, TORK NO. 2000 SERIES OR APPROVED EQUAL. A HAND-OFF-AUTO (H.O.A.) SELECTOR SWITCH IN MAIN CONTACTOR ENCLOSURE WILL PROVIDE MANUAL OPERATION OF LIGHTING AS WELL.

3. ALL POLE HARDWARE SHALL BE HOT DIPPED GALVANIZED, CONSTRUCTION PRACTICES AND ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE STANDARDS OF THE OHIO EDISON COMPANY (O.E. COMPANY). THE CONTRACTOR SHALL PREPARE A LAYOUT DRAWING WITH DIMENSIONS, TYPICAL FOR THE LIGHTING TRSF STATION HE INTENDS TO INSTALL, AND SUBMIT SAME TO THE DIRECTOR AND THE O.E. COMPANY. APPROVAL OF THE DRAWING(S) SHALL BE OBTAINED FROM THE DIRECTOR, BEFORE ANY MATERIALS ARE PROCURED, OR THE FABRICATION IS BEGUN.

4. THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS FOR POWER WITH THE OHIO EDISON COMPANY.

5. PAYMENT FOR ITEM 625,50 KVA LIGHTING - SERVICE POLE & CONTROL CENTER WILL BE MADE AT A LUMP SUM PRICE; INCLUDED IS POLE, FURNISHED AND SET IN PLACE, WITH EQUIPMENT AS FOLLOWS: WEATHERHEAD AND 2" GALV. CONDUIT AND WIRE TO CONTACTORS, TWO (2) COMBINATION SWITCH AND LIGHTING CONTACTORS WITH ACCESSORIES. PHOTO-CONTROLLER W/MTG. BRACKET AND CONDUIT, ONE (1) 24" FIBRE PULL BOX, WITH ALL W1 RING, CONNECTORS, HARDWARE & 3" GALV. ALLOY CONDUITS TO BASE OF POLE & GROUNDINGS.

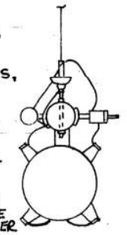
TRANSFORMER & PROTECTIVE EQUIPMENT

1. TRANSFORMER SHALL BE CONVENTIONAL TYPE SINGLE PHASE, O.I.S.C. POLE MTD. TYPE W/PRIMARY TAPS 2-1/2 %-2 ABOVE, 2 BELOW NORMAL. TRANSFORMER SHALL BE A SEPARATE PAY ITEM IN QUANTITY TABLE. WESTINGHOUSE TYPE S, GE TYPE HS, LINE MATERIAL CO. TYPE R.W. OR APPROVED EQUAL.

2. SAME AS PARAGRAPH 3 UNDER SERVICE POLE & CONTROL CENTER.

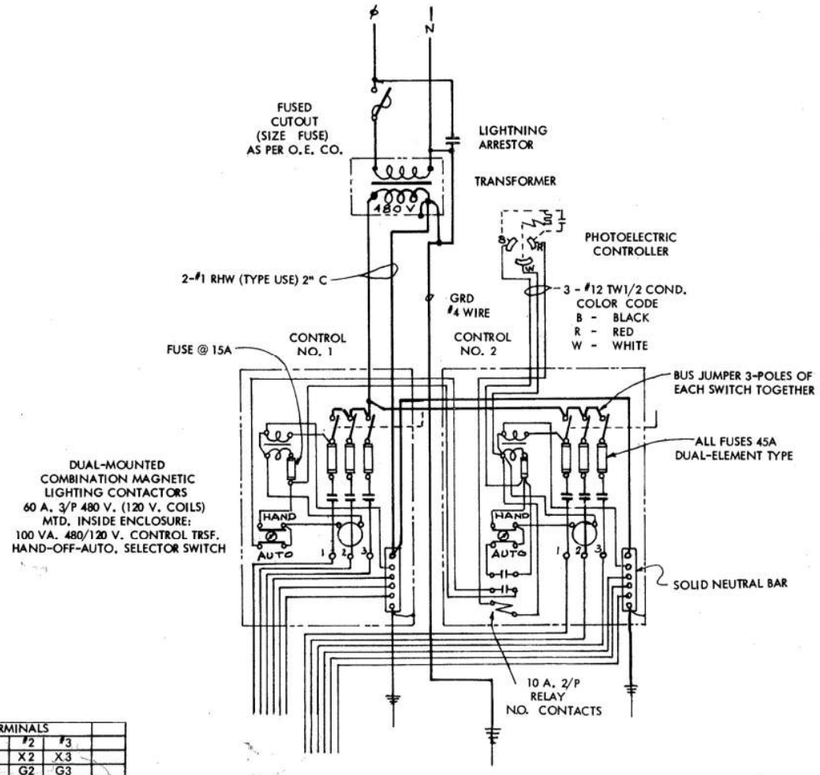
3. SAME AS PARAGRAPH 4 UNDER SERVICE POLE & CONTROL CENTER.

4. PAYMENT FOR ITEM 625, TRANSFORMER & PROTECTIVE EQUIPMENT WILL BE MADE AT A LUMP SUM PRICE COMPLETE IN PLACE. INCLUDED IS 50 KVA DISTRIBUTION TRANSFORMER, LIGHTNING ARRESTOR, FUSED CUTOUT, FUSE & INCIDENTALS.



TOP VIEW

CONTRACTOR SHALL FIELD DETERMINE THE BEST ORIENTATION FOR MOUNTING THE EQUIPMENT ON THE POLE TO SUIT THE PARTICULAR LOCATION AND FACILITATE THE CONNECTION OF SUPPLY SERVICE BY THE OHIO EDISON COMPANY.
AT LOCATIONS WHERE THERE IS A R/W FENCE, THE POLE MUST BE AT LEAST 3 FT. BUT NOT MORE THAN 5 FT. INSIDE THE FENCE. IF NECESSARY AND/OR REQUESTED BY O.E. COMPANY, A 3/8" 7-STRAND GALV. DOWN GUY, INSULATOR, GUARD, AND ANCHOR MUST BE FURNISHED AND INSTALLED.

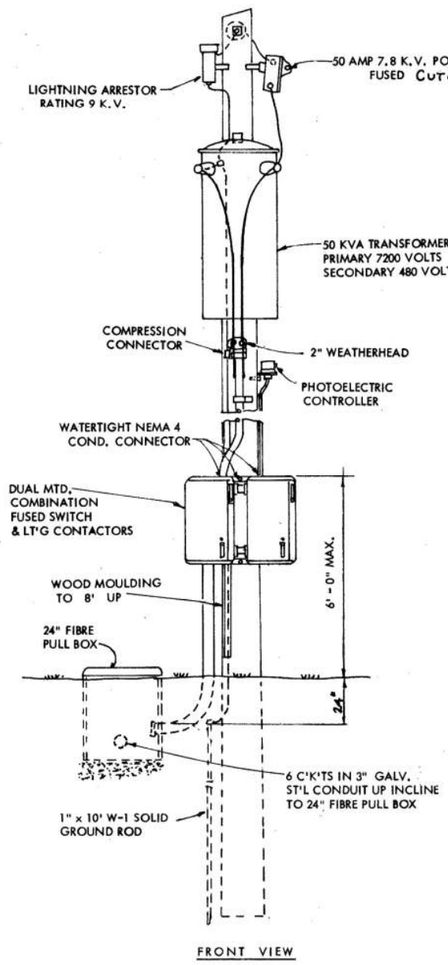


DUAL-MOUNTED COMBINATION MAGNETIC LIGHTING CONTACTORS 60 A. 3/P 480 V. (120 V. COILS) MTD. INSIDE ENCLOSURE: 100 VA. 480/120 V. CONTROL TRSF. HAND-OFF-AUTO. SELECTOR SWITCH

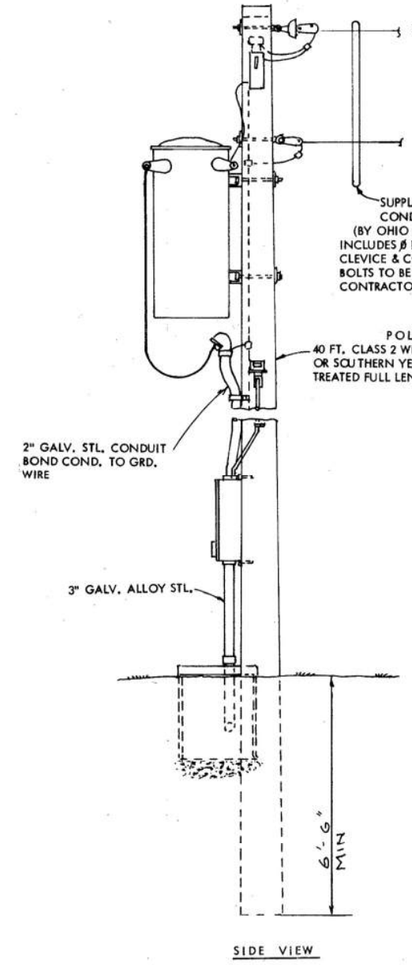
	TERMINALS			
CONTROL No. 1	#1	#2	#3	
CHAFFIN CT.	X1	X2	X3	
WOODVIEW DR.	G1	G2	G3	

	TERMINALS			
CONTROL No. 2	#1	#2	#3	
CHAFFIN CT.	Y1	Y2	Y3	
WOODVIEW DR.	F1	F2	F3	

WIRING DIAGRAM
1 ϕ 480 V. MULTIPLE LIGHTING CIRCUITS



FRONT VIEW



SIDE VIEW

POLE MT'D LIGHTING TRANSFORMER STATION
SCALE 1/2" = 1'-0"

LIGHTING - SERVICE POLE

- AKRON

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

182
234

SUMMIT COUNTY
SUM-277-0.00

CKT. F-2

RAMP "B"

RAMP "B-1"

RAMP "B-2"

CKT. F-3

WOODVIEW DRIVE

I.R. 277

CKT. F-2

SOUTH BOUND I-77

NORTH BOUND I-77

CKT. G-2

RAMP "A"

RAMP "B"

CKT. F-1

CKT. G-1

I & I-77

WOODVIEW DRIVE

Note: b = Alternate Trench, 4'-6". For location of trench, See Sheets No. 178 & 178.

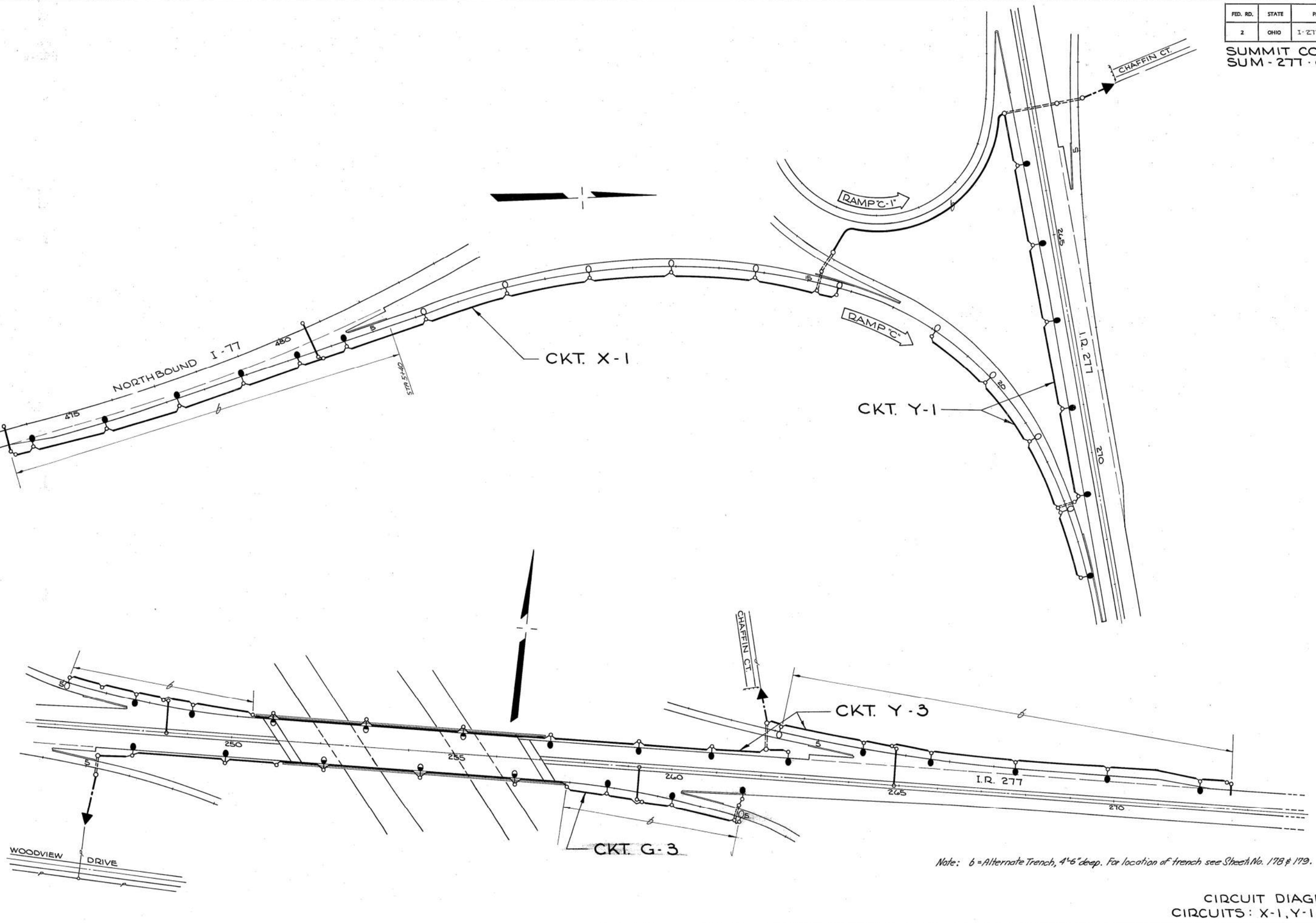
CIRCUIT DIAGRAM
CIRCUITS: F-1, F-2, F-3, G-1 & G-2

K & E - AKRON

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

183
234

SUMMIT COUNTY
SUM-277-0.00



Note: 6 = Alternate Trench, 4'-6" deep. For location of trench see Sheet No. 178 & 179.

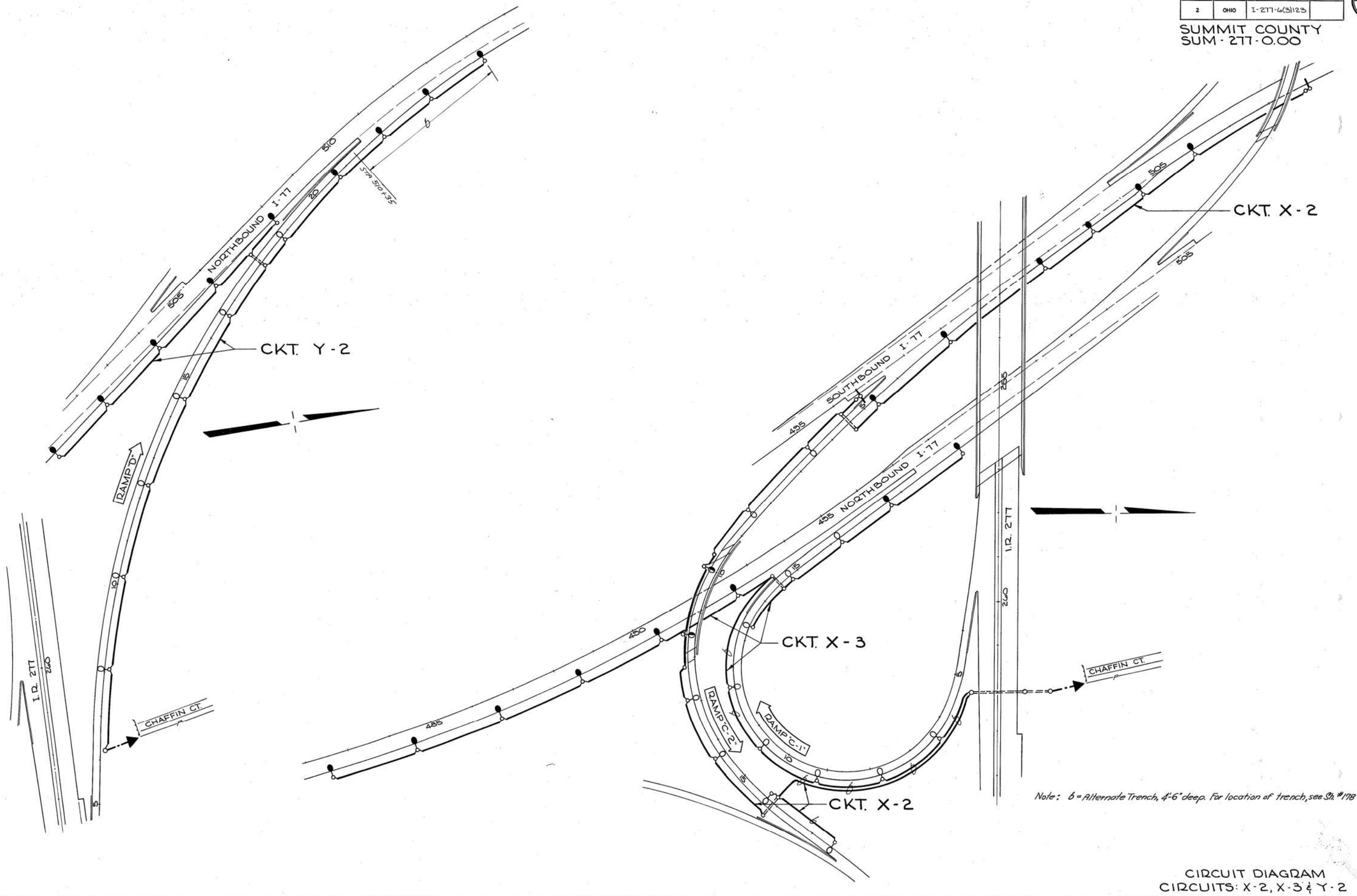
CIRCUIT DIAGRAM
CIRCUITS: X-1, Y-1, G-3, & Y-3

K & E - AKRON

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

184
234

SUMMIT COUNTY
SUM-277-0.00



Note: 6 = Alternate Trench, 4'-6" deep. For location of trench, see Sh. #178 & 179.

CIRCUIT DIAGRAM
CIRCUITS: X-2, X-3 & Y-2

K & E-AKRON

MICROFILMED
JUL 31 1979
REPRODUCTION

STRUCTURAL GENERAL NOTES

FED. RD.	STATE	PROJECT	
2	OHIO		

SUM 277-0.00

185
234

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE REQUIREMENTS OF " DESIGN SPECIFICATIONS FOR HIGHWAY STRUCTURES " OF THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS, DATED 9/1/57, TOGETHER WITH CURRENT REVISIONS THEREOE.

2. **DESIGN LOADING** - SEE SITE PLANS

CONCRETE CLASS C - BASIC UNIT STRESS 1,833 p.s.i.
CONCRETE CLASS E - BASIC UNIT STRESS 1,133 p.s.i.

STRUCTURAL STEEL - ALL STRUCTURAL STEEL SHALL BE A S T M A 36
ASTM A36 - BASIC UNIT STRESS 20,000 p.s.i.

REINFORCING STEEL- ASTM A15, A16, A160, DEFORMED, INTERMEDIATE OR HARD GRADE. BASIC UNIT STRESS 20,000p.s.i. EXCEPT, SPIRAL REINFORCEMENT MAY BE PLAIN, STRUCTURAL GRADE WITH BASIC UNIT STRESS OF 18,000 p.s.i.

3. **REFERENCE**

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

BR-1-65, DATED 2-1-65
SD-1-63, SHEETS No. 1 : DATED 11 12 63
SD-1-65, DATED 11/8/65
FSB-1-62, REVISED 1/15/65
AS-1-54, REVISED 8/10/65
808 - SUPPLEMENTAL SPEC. DATED 7/14/65
811 - SUPPLEMENTAL SPEC. DATED 3/29/65
826 - SUPPLEMENTAL SPEC. DATED 4/22/65
828 - SUPPLEMENTAL SPEC. DATED 7/21/65

4. **EXCAVATION QUANTITY**

EXCAVATION QUANTITY INCLUDES THE REMOVAL OF FILL MATERIAL REQUIRED FOR THE CONSTRUCTION OF THE ABUTMENTS AND PIERS.

5 **PROCEDURE**

THE EMBANKMENT SHALL BE PLACED AND COMPACTED UP TO THE FINISHED SPILL-THRU SLOPE AND TO THE LEVEL OF THE SUBGRADE FOR A DISTANCE OF 200 FEET BACK OF THE ABUTMENTS, AFTER WHICH EXCAVATION SHALL BE MADE FOR THE ABUTMENTS AND FOR PIERS THAT ARE SET IN THE FILLED AREA, AND PILES DRIVEN.

6 **FOOTINGS INTO ROCK**

FOOTINGS SHALL EXTEND A MINIMUM OF 3" INTO UNDISTURBED ROCK OR TO THE ELEVATION SHOWN, WHICHEVER IS LOWER.

7 **PILES**

PILES SHALL BE DRIVEN TO FIRM CONTACT WITH ROCK. IF THE LENGTH OF PENETRATIONS IS APPROXIMATELY EQUAL TO THE DEPTH TO ROCK ACCORDING TO THE BRIDGE FOUNDATION INVESTIGATION REPORT. THE FIRM CONTACT SHALL BE CONSIDERED AS ATTAINED WHEN THE CAPACITY ACCORDING TO THE FORMULA IN ITEM 507.05 IS NOT LESS THAN THE FOLLOWING VALUE FOR A PILE HAMMER OF THE INDICATED ENERGY RATING.

"A" TONS PER PILE USING A 7,000 FT. LB. HAMMER
"B" TONS PER PILE USING A11,000 FT. LB. HAMMER
"C" TONS PER PILE USING A15,000 FT. LB. HAMMER

IF THE ENERGY RATING OF THE HAMMER IS BETWEEN THE RATINGS AS SHOWN ABOVE, THE REQUIRED FORMULA CAPACITY SHALL BE DETERMINED BY INTERPOLATION.
THE DESIGN LOAD IS "D" TONS PER PILE

BRIDGE No.	SUM 8 - 0930		SUM 8 - 0932		SUM 277 - 0000	
SUBSTR. UNIT	ABUTS	PIERS	ABUTS	PIERS	ABUTS	PIERS
"A"	-	-	-	-	-	-
"B"	45	54	43	54	45	-
"C"	37	47	39	47	37	-
"D"	35	35	35	35	35	-

8. **FOUNDATION BEARING PRESSURE**

FOOTINGS ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF "A" TONS PER SQ. FT.

BRIDGE No.	SUBSTR. UNIT	"A"
SUM 277 - 0000	PIERS	5.5

10. **INTERMEDIATE CROSSFRAME ANGLES**

INTERMEDIATE CROSS FRAME ANGLES, 3 x 3 x 5/16 WELD BOTH SIDES OF VERTICAL LEG AND TOP SIDE OF HORIZONTAL LEG TO BEAM WITH 1/4" CONTINUOUS FILLET WELD.

11. **DECK SLAB HAUNCH**

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.

12. **SLAB DEPTH OVER BEAMS OR GIRDERS**

THE DIMENSION SHOWN FROM THE TOP OF THE DECK SLAB TO THE TOP FLANGE OF THE BEAMS OR TOP OF THE GIRDER WEBS IS THE NOMINAL DIMENSION. THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED UPON THIS DIMENSION, EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE GIRDER OR BEAM 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 ITEM 511.19 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS

13. **MACHINE FINISH**

THE CONCRETE DECK SHALL BE FINISHED BY THE USE OF A FINISHING MACHINE.

14. **ABUTMENT BACKWALL**

THE CONCRETE IN THE ABUTMENT BACKWALL SHALL NOT BE PLACED UNTIL AFTER THE STEEL WORK IS ERECTED, BUT SHALL BE PLACED BEFORE THE DECK SLAB IS POURED.

15. **POROUS BACKFILL**

POROUS BACKFILL 1'-6" THICK, FULL LENGTH OF ABUTMENTS, SHALL EXTEND UP TO THE UNDERSIDE OF THE APPROACH SLAB, OR TO THE FINISHED GROUND SURFACE UNLESS OTHERWISE SHOWN. EXCAVATION THEREFORE, IN EXCESS OF THAT REQUIRED FOR CONSTRUCTION OF THE ABUTMENT, SHALL BE CONSIDERED AS PAID FOR IN THE BID PRICE PER CU. YD PAID FOR POROUS BACKFILL

16. **BRIDGE SEAT REINFORCING**

SPECIAL CARE SHALL BE TAKEN IN PLACING REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SO AS TO AVOID INTERFERENCE WITH THE DRILLING OF ANCHOR BAR HOLES.

17 **PLATE GIRDER DETAILS**

FIELD SPLICES IN GIRDERS WILL BE ALLOWED ONLY WHEN SHOWN ON THE DESIGN DRAWINGS OR WITH THE WRITTEN PERMISSION OF THE DIRECTOR.

INTERMEDIATE STIFFENERS OF WELDED, BUILT-UP GIRDERS SHALL HAVE CONTACT BEARING WITH THE COMPRESSION FLANGE, BUT MAY HAVE A CLEARANCE OF NOT MORE THAN 1/8 INCH FROM THE TENSION FLANGE, AT THE LOCATIONS SHOWN ON THE DESIGN DRAWINGS AND ON THE SHOP DETAILS. IN SHOP PAINTING, CARE SHALL BE TAKEN TO MAKE CERTAIN THAT PAINT IS FORCED THROUGH FROM ONE SIDE TO THE OTHER OF THE 1/8" OPENING.

ALL INTERMEDIATE STIFFENERS SHALL BE IN PAIRS.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER & HOCH, Consulting Engineers
AKRON, OHIO

STRUCTURAL GENERAL NOTES

PROJECT SUM-277-0.00

SUMMIT COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
				RDH	6-30-65	

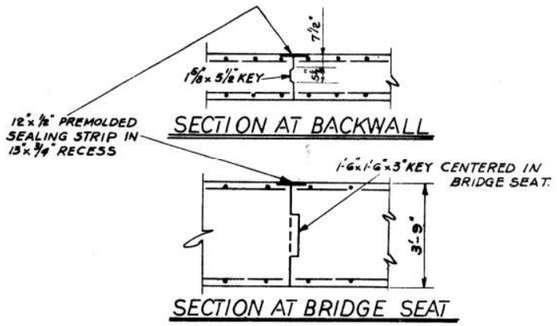
MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

SUM 277-0.00

186
234

STRUCTURAL DETAILS

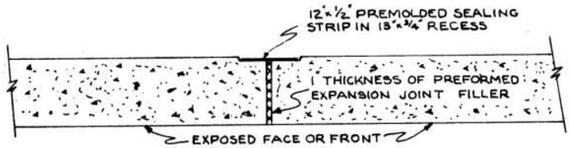


SECTION AT BACKWALL

SECTION AT BRIDGE SEAT

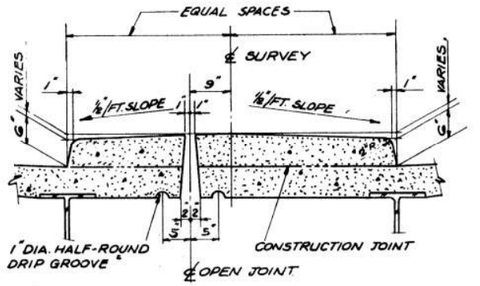
ABUTMENT CONTRACTION JOINT DETAIL

DETAIL - "1"



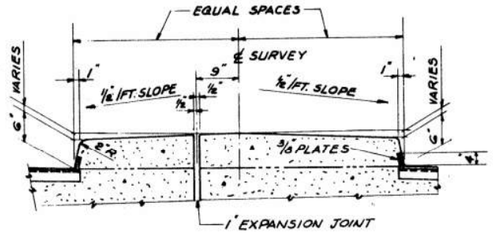
EXPANSION JOINT DETAIL

DETAIL - "2"



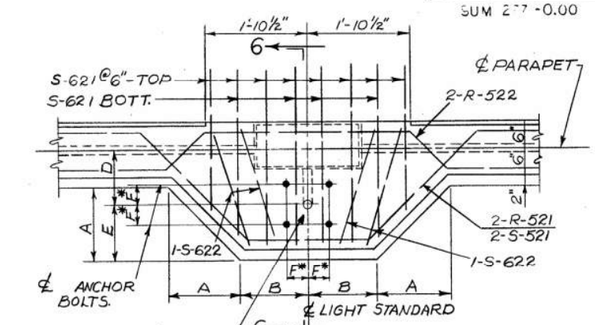
MEDIAN DETAIL ON SUPERSTRUCTURE

DETAIL - "4"

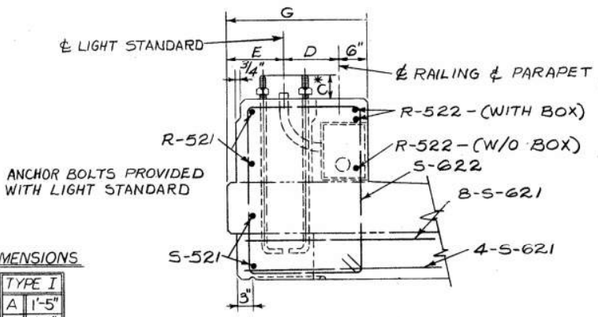


MEDIAN DETAIL AT ABUTMENT

DETAIL - "5"



PLAN-TYPE-I



SECTION 6-6

USE JUNCTION BOX UNLESS NOTED AS OMITTED

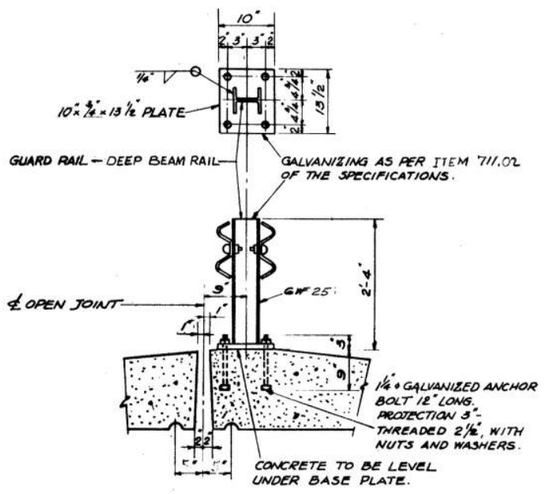
DIMENSIONS

TYPE I	
A	1'-5"
B	1'-3"
C	*
D	11 3/4"
E	1'-1¼"
F	*
G	2'-7"

* TO SUIT LIGHT STANDARD USED

LIGHT STANDARDS

DETAIL - "6"



GUARD RAIL DETAIL

DETAIL - "3"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

STRUCTURAL DETAILS

PROJECT SUM-277-0.00

SUMMIT COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
				RJH	6-30-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

187
234

SUM-277-0.00

CURVE DATA

RAMP "B-1"

D = 2°-30'-00"
R = 2291.83'
Δ = 10°30'-58" RT.
T = 210.91'
L = 420.64'
P.C. STA. 0+00 RAMP "B-1"

RAMP "C-1"

D = 2°-30'-00"
R = 2291.83'
Δ = 10°34'-37" LT.
T = 212.14'
L = 423.08'
P.C. STA. 0+00 RAMP "C-1"

RAMP "C-2"

D = 1°-30'
R = 3819.72'
Δ = 12°46'-26" LT.
T = 427.57'
E = 23.86'
L = 851.59'
P.C. STA. 0+00 RAMP "C-2"

PROPOSED STRUCTURE

TYPE: CONTINUOUS WELDED STEEL GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
SKEW: 37°-49'-56" R.F.
SPANS: 80'-6"-115'-0"-82'-3"-82'-3"-115'-0"-80'-6"
ROADWAY: 104'-0" W. PARAPETS WITH 6' RAISED MEDIAN.
LOAD FREQUENCY: CF-2000 ADEQUATE FOR A.A.S.H.O. ALTERNATE LOADING.
WEARING SURFACE: 1" MONOLITHIC.
APPROACH SLABS: 25' LONG (AS-1-54)
ALIGNMENT: TANGENT.
SUPERELEVATION: NONE
SLOPE PROTECTION: 601 CRUSHED AGGREGATE.

TRAFFIC: 32,480 -1975- A.D.T.

VERTICAL CLEARANCE:
DESIGN = 16.50'
ACTUAL = 16.74'

AVERAGE ESTIMATED PAY LENGTH FOR PILES:
ABUTMENTS = 30 FT.
PIERS = NONE

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

SITE PLAN

BRIDGE NO. SUM.-277-0000
OVER RELOCATED SR.-8
I:277 SUMMIT COUNTY
STA. 251-17.15 To STA. 256-78.35

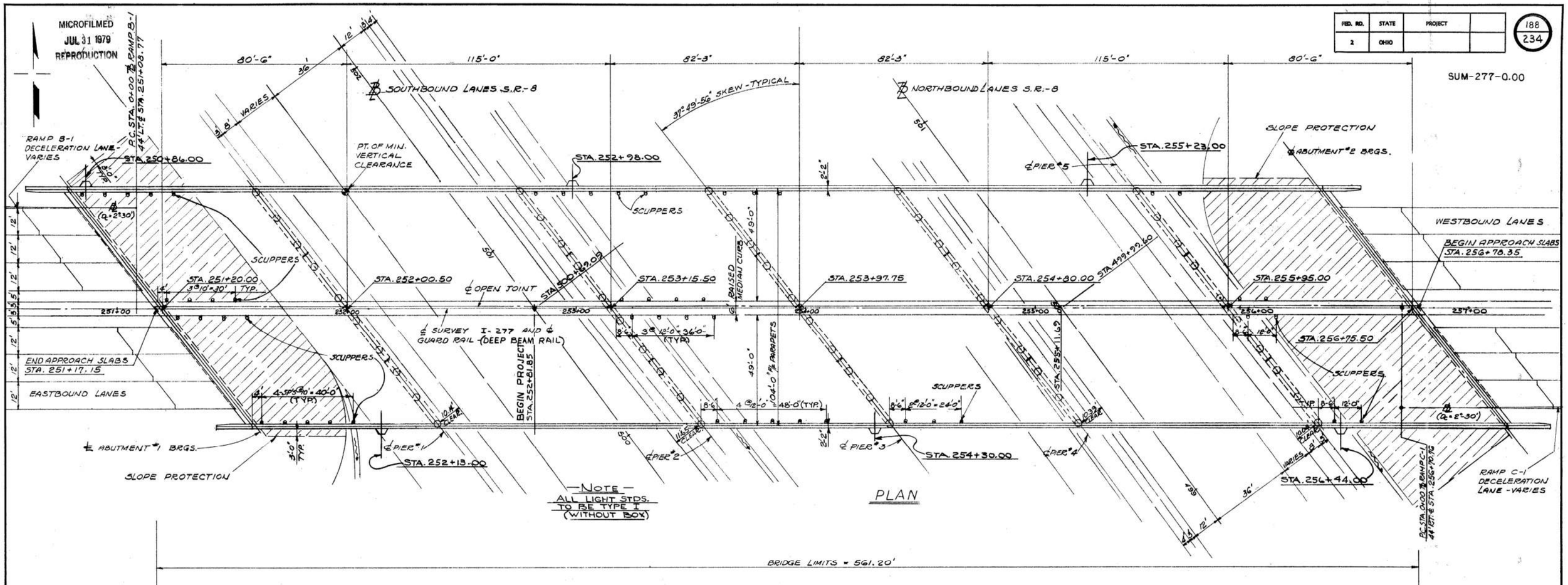
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KJ	JK.		CWS	EDH	6-30-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

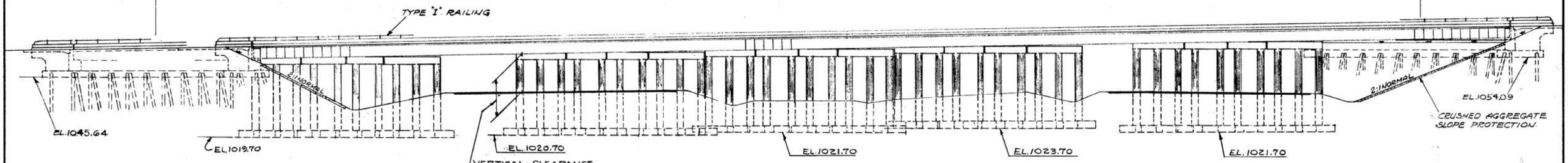
188
234

SUM-277-0.00



PLAN

—NOTE—
ALL LIGHT STDS. TO BE TYPE I (WITHOUT BOX)



ELEVATION

SEE SHEET Nº 185 FOR STRUCTURAL GENERAL NOTES #1-8, 11-17
SEE SHEET Nº 186 FOR STRUCTURAL DETAILS #1, 2, 3, 4, 5 & 6

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT'S.	PIERS	GEN.
503	LUMP		COFFERDAMS, CRIBS AND SHEETING				LUMP
503	4228	CU.YDS.	UNCLASSIFIED EXCAVATION		730	3498	
508	33	CU.YDS.	ROCK EXCAVATION			33	
505	LUMP	SUM	FIRST TEST PILE				LUMP
507	2550	LIN.FT.	10BP42 STEEL 'H' PILES		2550		
509	821,963	LBS.	REINFORCING STEEL	528,915	36,903	257,145	
511	1831	CU.YDS.	CLASS 'C' CONC. SUPERSTRUCTURE	1831			
511	324	CU.YDS.	CLASS 'E' CONC. ABUT.S. ABOVE FOOTINGS		324		

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT'S	PIERS	GEN.
511	649	CU.YDS.	CLASS 'C' CONC. PIERS ABOVE FTG'S.			649	
511	613	CU.YDS.	CLASS 'E' CONC. PIER & ABUT. FTG'S.		213	400	
512	70	LIN.FT.	WATERPROOFING PREMOLDED SEALING STRIP		70		
513	1,856,483	LBS.	STRUCTURAL STEEL	1,856,483			
514	1,856,483	LBS.	FIELD PAINTING OF STRUCTURAL STEEL	1,856,483			
516	98	SQ. FT.	EXPANSION JOINT FILLER (1" PREFORMED) (AASHO SPEC. M-153)		98		
517	1182.58	LIN.FT.	BRIDGE RAILING TYPE I	1114.90	67.68		
517	561.20	LIN.FT.	RAILING (DEEP BEAM RAIL, DOUBLE-FACED WITH GALVANIZED STEEL POST & BOLTS)	561.20			

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT'S	PIERS	GEN.
518	137	CU.YDS.	POROUS BACKFILL		137		
518	50	EACH	SCUPPERS (INCLUDING SUPPORTS)	50			
518	258	LIN.FT.	6" PERFORATED HELICAL C.M.P. 707.06 INCLUDING SPECIALS		258		
518	180	LIN.FT.	6" HELICAL C.M.P. 707.06 NON-PERFORATED		180		
601	1826	SQ.YDS.	CRUSHED AGGREGATE SLOPE PROTECTION		1826		
825	7000	SQ.YDS.	CONCRETE SURFACE TREATMENT				7000
828	243	LIN.FT.	JOINT SEALER	243			
625			SEE ELECTRICAL DWGS.				
808	1831	EACH	WATER-REDUCING SET RETARDING ADMIXTURE	1831			

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

GENERAL PLAN & ELEVATION

BRIDGE NO. SUM-277-0000
OVER RELOCATED S.R.-8.
I-277 — SUMMIT COUNTY
STA. 251+17.15 TO STA. 256+78.35.

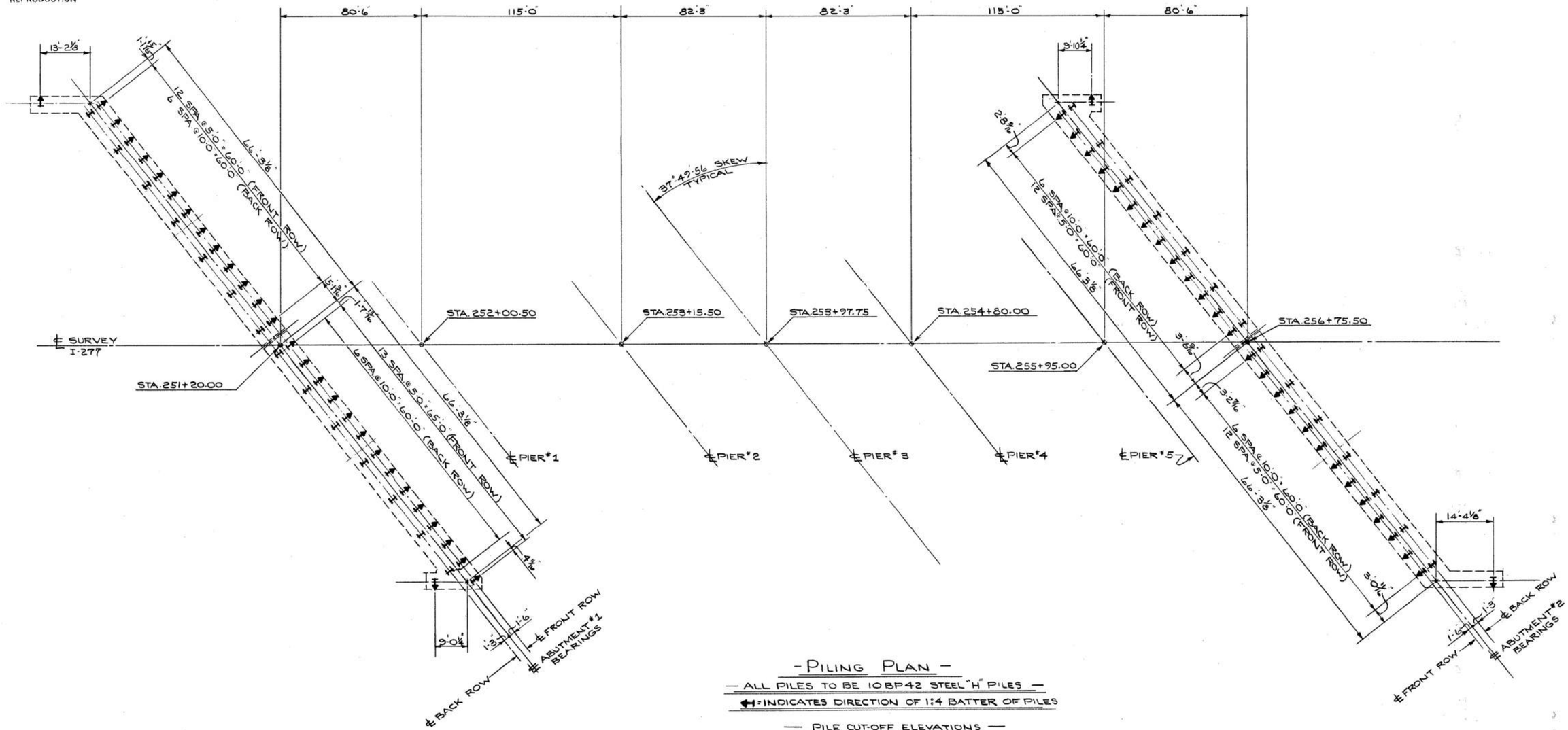
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KJ	JK		CBA	EDH	6-30-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

SUM-277-0.00

189
234



- PILING PLAN -

— ALL PILES TO BE 10BP42 STEEL "H" PILES —

⟵ : INDICATES DIRECTION OF 1:4 BATTER OF PILES

— PILE CUT-OFF ELEVATIONS —

ABUTMENT #1	EL. 1047.64
ABUTMENT #2	EL. 1056.09

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

PILING PLAN

BRIDGE NO. SUM-277-0000
OVER RELOCATED S. R. 8
I 277 SUMMIT COUNTY
STA. 251-17.15 TO 256-78.35

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KJ	JM		CLS	PSH	6-30-65	

FED. RD.	STATE	PROJECT	
2	OHIO		

190
234

SUM-277-0.00

MICROFILMED
JUL 31 1979
REPRODUCTION

CONCRETE ABOVE THIS LINE TO BE PAID FOR AS PART OF ITEM 517 (RAILING)

VARIES 1'-0" MAX.

2 NORMAL

CONST. JOINT

R-501

A-528

A-527

A-524

2" ϕ CONDUIT

A-525

A-526

A-519 N.S.
A-520 F.S.

A-517

A-518

A-522

A-532

A-556

CONST. JT.

A-514 N.S.
A-515 F.S.

A-605

A-808

A-809

A-810

A-513

— SECTION "A-A" —

APPROACH SLAB

1" MIN.

A-512

A-502

℄ BEARINGS

A-602

POROUS BACKFILL

A-506

6" PERFORATED C.M.P.

A-508

A-507

A-504

A-505

2:1 NORMAL

CONST. JTS.

6" C.M.P.

A-804

A-802

A-803

A-503

A-502

A-601

SER. A-801

A-501 TYP. CENTER UNDER CONTR. JT.

CRUSHED AGGREGATE SLOPE PROTECTION

— SECTION B-B —

VARIES 1'-0" MAX.

R-507

R-508

R-501

A-528

— SECTION E-E —

A-501

A-603

— SECTION C-C —

SEE SECTION B-B FOR BAR Nos., DIMENSIONS, & DETAILS NOT SHOWN.

A-515

A-513

A-808

A-514

A-604

A-510

A-605

A-809

A-810

A-511

A-807

A-804 OR A-506

A-503

A-803 OR A-505

A-502

SER. A-801 BOTT.

A-805

A-601

A-802

— SECTION D-D —

STA 251+20.00

6" PERFORATED C.M.P.

℄ BEARINGS

℄ PILES

℄ GIRDER

℄ 6" C.M.P. (TYP.)

3'-0 LEVEL TYP.

SLOPE ¾ TO FACE OF ABUTMENT (TYP BETWEEN BEAM SEATS)

℄ SURVEY I-277

39°49'56" SKEW

7 SPA @ 5'-0" = 35'-0" ℄ TO ℄ 10BP42 STEEL PILES (FRONT ROW)

3 SPA @ 10'-1⅞" = 30'-4⅞" ℄ TO ℄ GIRDERS

38'-6¼"

1:4 BATTER THIS ROW ONLY

℄ CONTRACTION JOINT

— PARTIAL PLAN — ABUTMENT # 1 —

4'-0" 1'-0" 5'-1" 5'-1" 1'-0"

16'-2"

2 R-507

3 R-508

EL. 1060.20

11-A-528 @ 1'-6

9-A-526 NS @ 2'-0" - 9-A-527 FS @ 2'-0"

EL. 1060.44

A-524 NS
A-525 FS

5-A-523 NS & FS

A-519 NS
A-520 FS

2-A-534 N.S. & F.S.

A-517 NS
A-518 FS.

A-521 NS & FS

A-511 FS

A-604

10-A-522 NS & FS

A-532 N.S.
A-556 F.S.

EL. 1052.86

A-510

6-A-514 NS
6-A-515 FS.

11'-0⅜"

7-A-605 @ 1'-0"

2'-0

A-808 NS.
A-810 FS

2-A-808
1-A-809
1-A-810

A-805

EL. 1045.64

13-A-513

14'-0⅜"

— ELEVATION — SOUTH WINGWALL — ABUT. "1" —

EL. 1060.35 *

10 A-603 @ 1'-0"

A-501 FS

EL. 1059.10

25 A-602 @ 1'-0"

A-512 F.S.

℄ CONTRACTION JOINT

EL. 1060.45 *

EL. 1059.17

EL. 1053.86

A-511 N.S.

10 A-511 FS IN FILLET.

EL. 1053.89

EL. 1053.92

5 A-509 NS
5 A-506 FS

A-505, A-507, A-508, A-509, & A-504

EL. 1053.95

EL. 1052.53

EL. 1052.86

5-A-510 CORNER BARS

30 A-504

30 A-503 NS

28 A-601 FS

4 A-505 NS & 4 A-506 FS.

A-805 CORNER BARS

A-802, A-803, A-804

28 A-502 LAP W/ A-601

A-807 FS. (IN FILLET) 3 SPA @ 1'-3" TYPICAL

SER. A-801

3-A-501 TOP & BOTT. CENTER UNDER CONTR. JOINT

A-806

EL. 1045.64

— ELEVATION —

* INDICATES ELEVATIONS GIVEN TO HEEL OF L

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

ABUTMENT NO. 1 DETAILS

BRIDGE NO. SUM-277-0000
OVER RELOCATED S.R. 8
I-277 — SUMMIT COUNTY
STA. 251+17.15 TO STA. 256+78.35

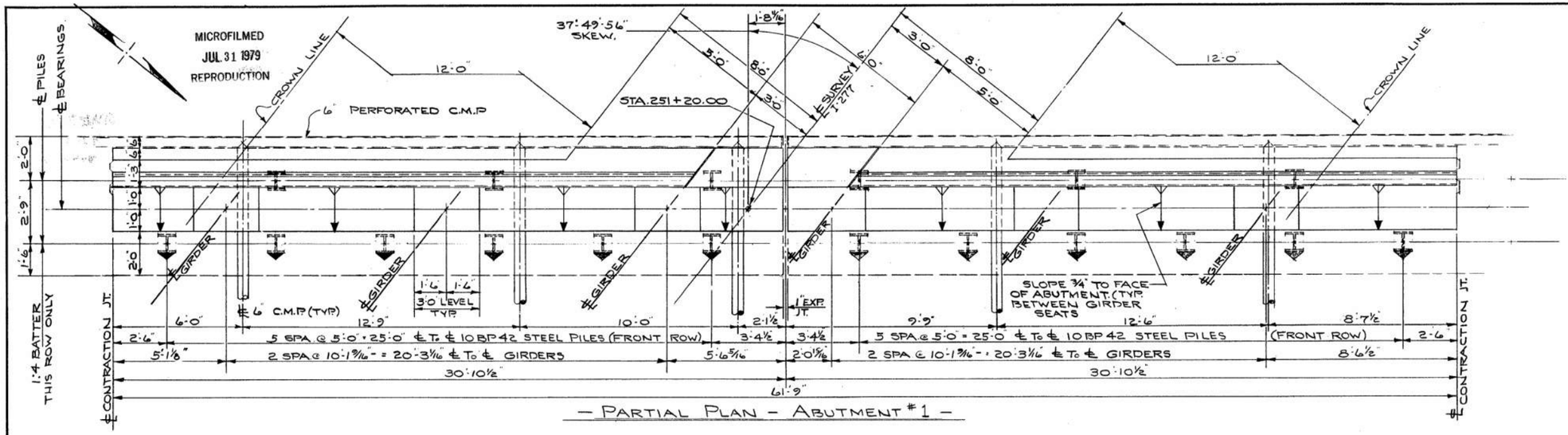
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KJ	AP		CLS	RDH	6-30-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

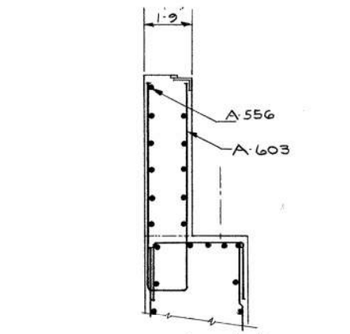
FED. RD.	STATE	PROJECT	
2	OHIO		

SUM-277-0.00

191
234

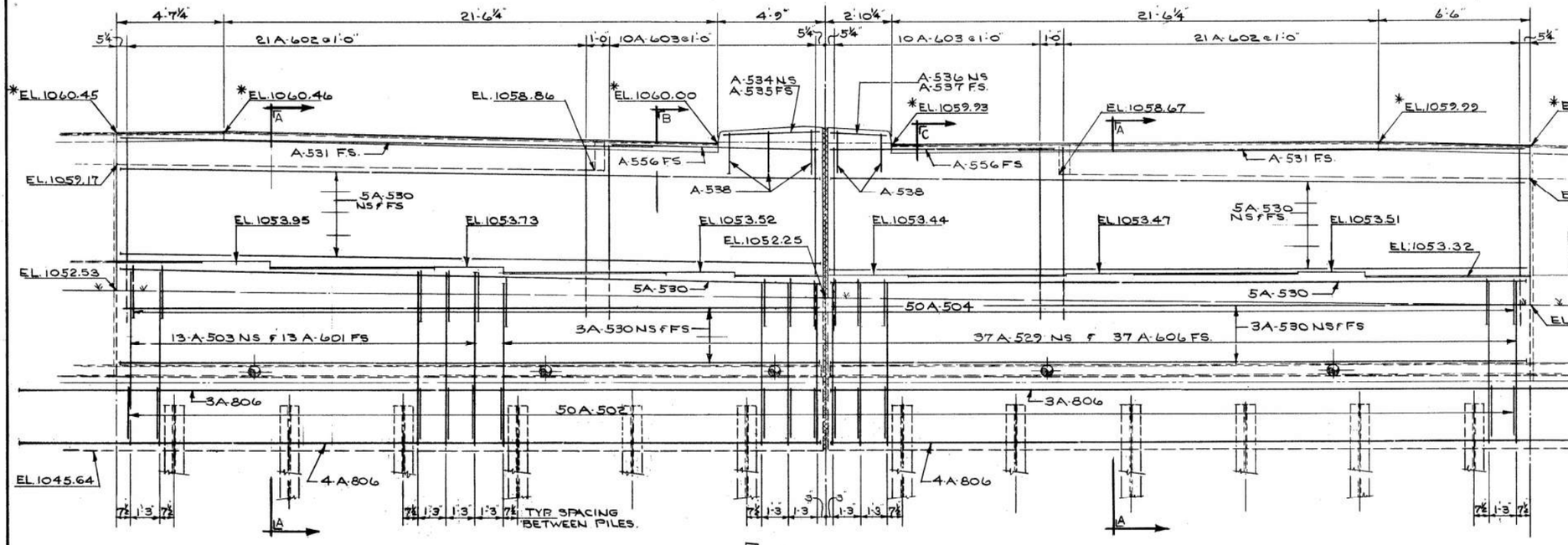


— PARTIAL PLAN - ABUTMENT #1 —



— SECTION "B-B" & "C-C" —

SEE SECTION A-A FOR BAR NOS
DIMENSIONS & DETAIL NOT SHOWN



— ELEVATION —

— SECTION "A-A" —

* INDICATES ELEVATIONS GIVEN TO HEEL OF L

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

ABUTMENT NO. 1 DETAILS

BRIDGE NO. SUM-277-0000
OVER RELOCATED S.R. 8
I-277 SUMMIT COUNTY
STA. 251+17.15 TO STA. 256+78.35

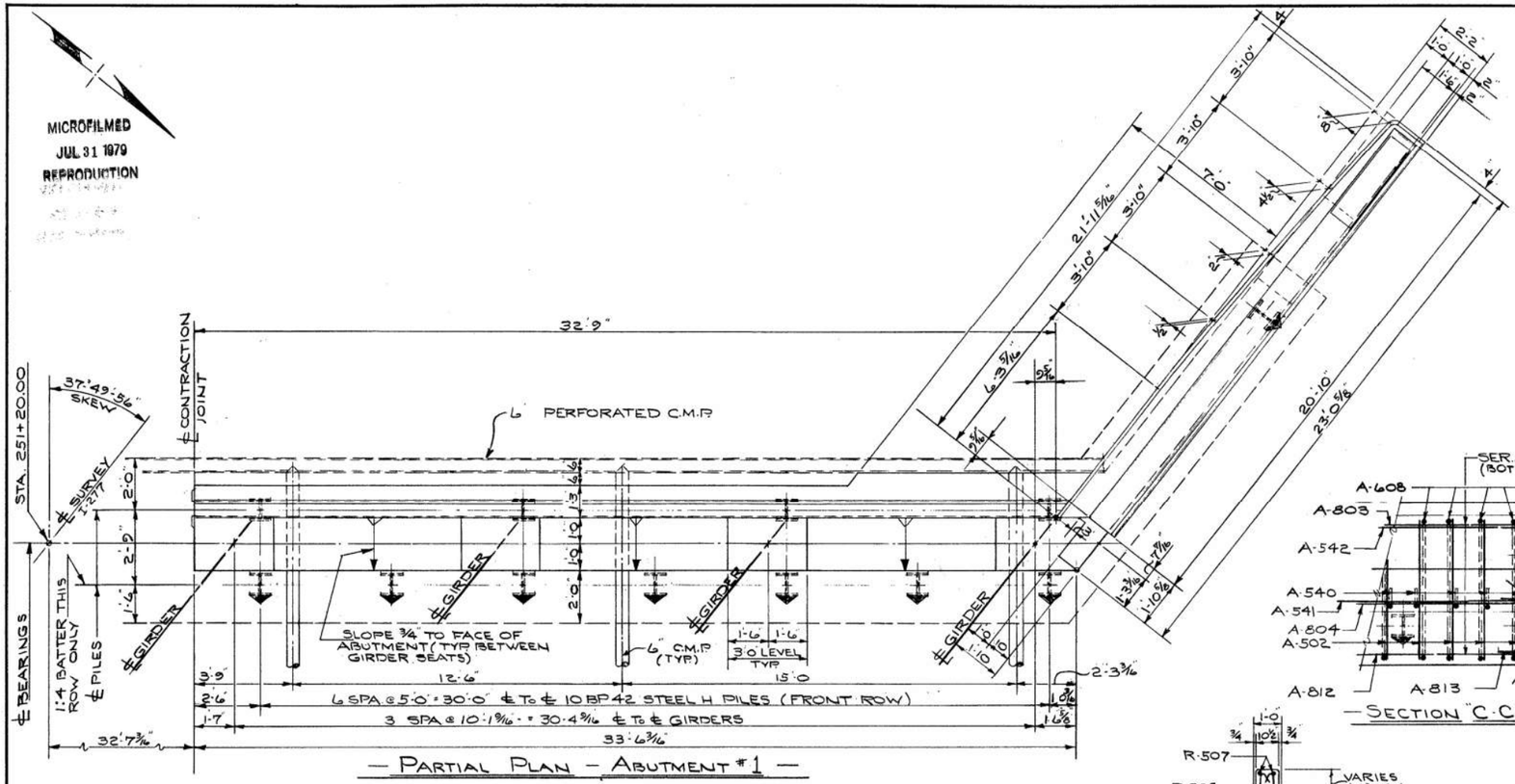
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KJ	JP		CLS	RBH	6-30-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

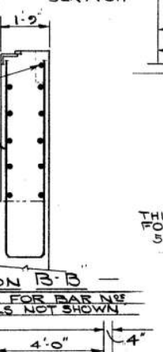
FED. RD.	STATE	PROJECT	
2	OHIO		

192
234

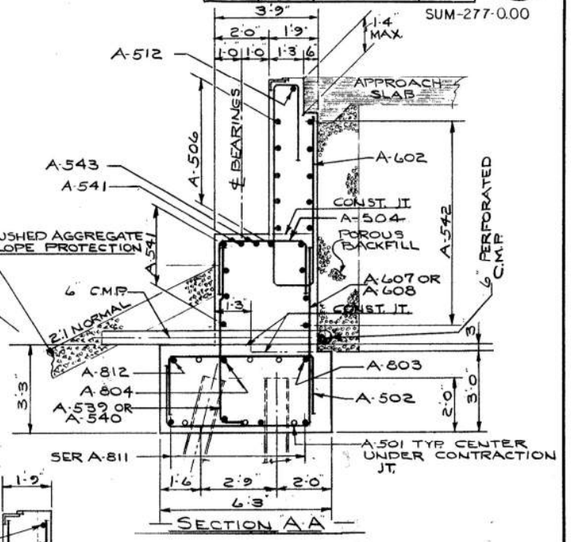
SUM-277-0.00

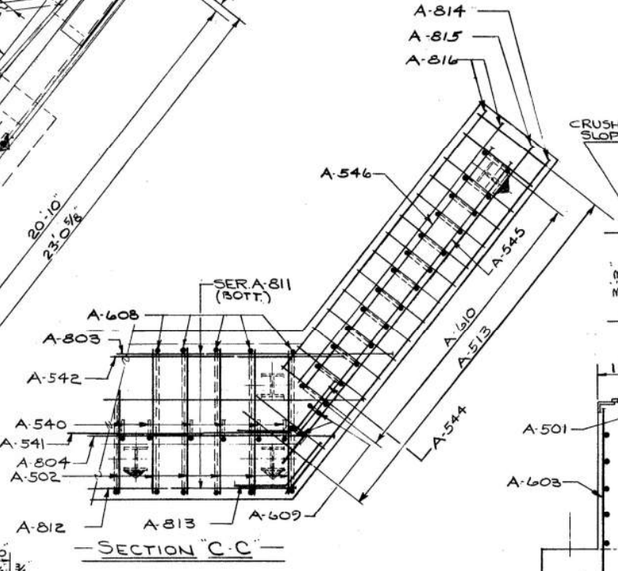


— PARTIAL PLAN — ABUTMENT #1 —

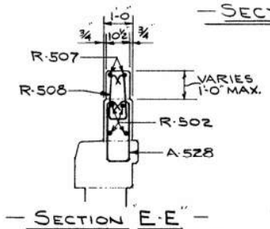


— SECTION B-B —

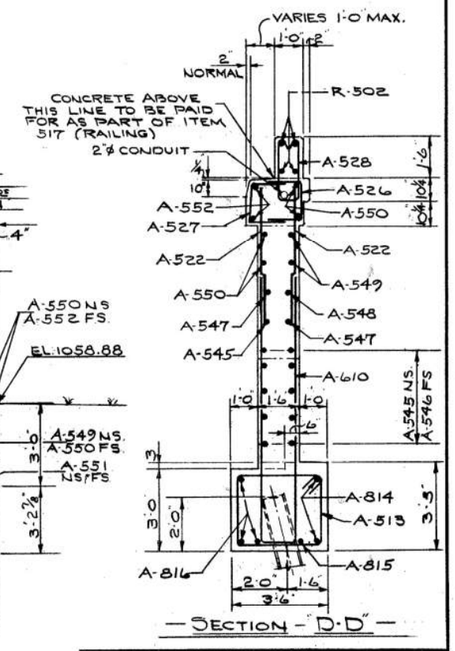


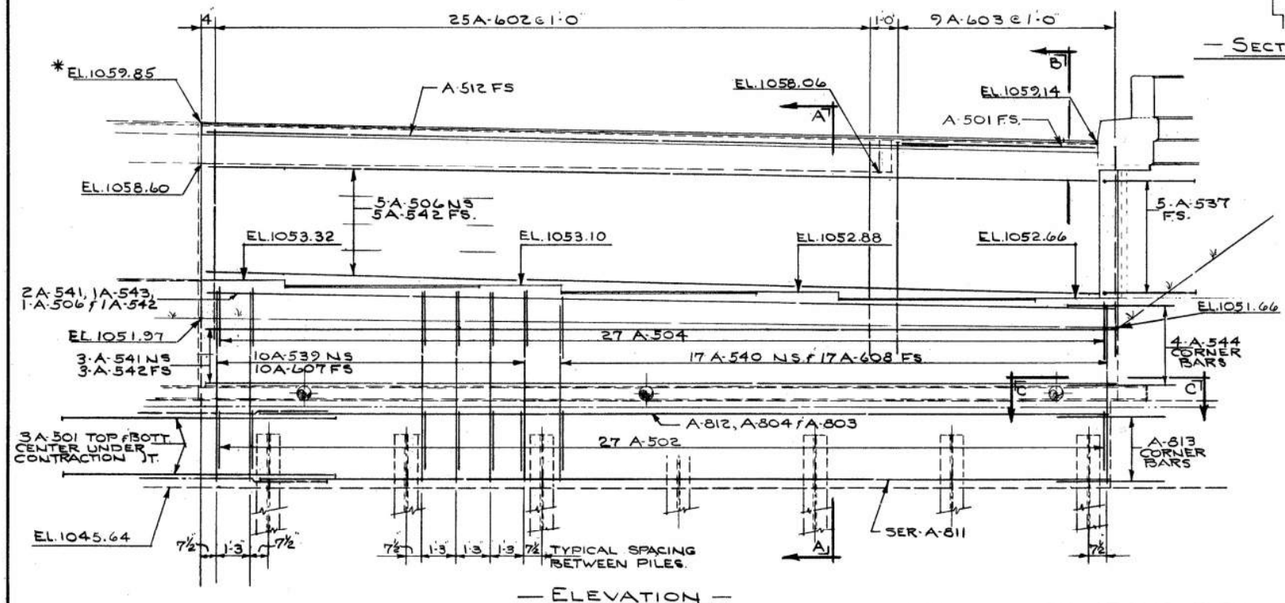


— SECTION C-C —



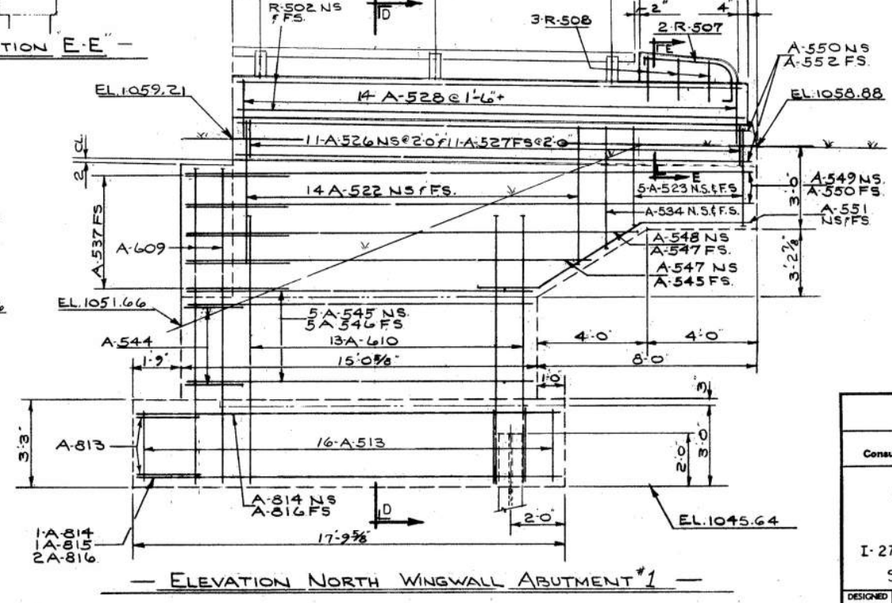
— SECTION E-E —





— ELEVATION —

* INDICATES ELEVATIONS GIVEN TO HEEL OF L



— ELEVATION NORTH WINGWALL ABUTMENT #1 —

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

ABUTMENT NO. 1 DETAILS

BRIDGE NO. SUM-277-0000
OVER RELOCATED S.R. 8
I-277 — SUMMIT COUNTY
STA. 251+17.15 TO STA. 256+78.35

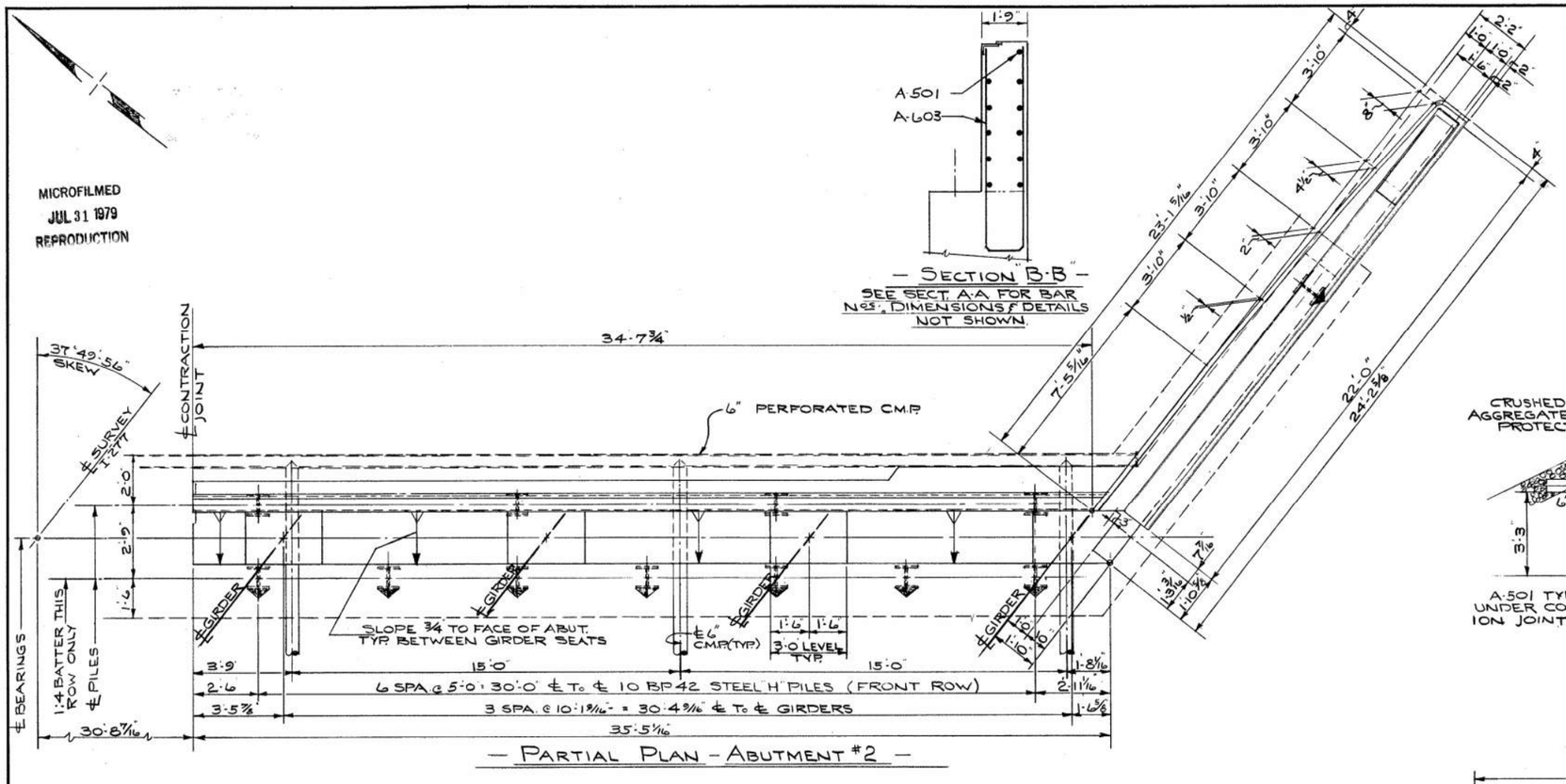
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KJ	JP		CDS	RBH	6-30-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

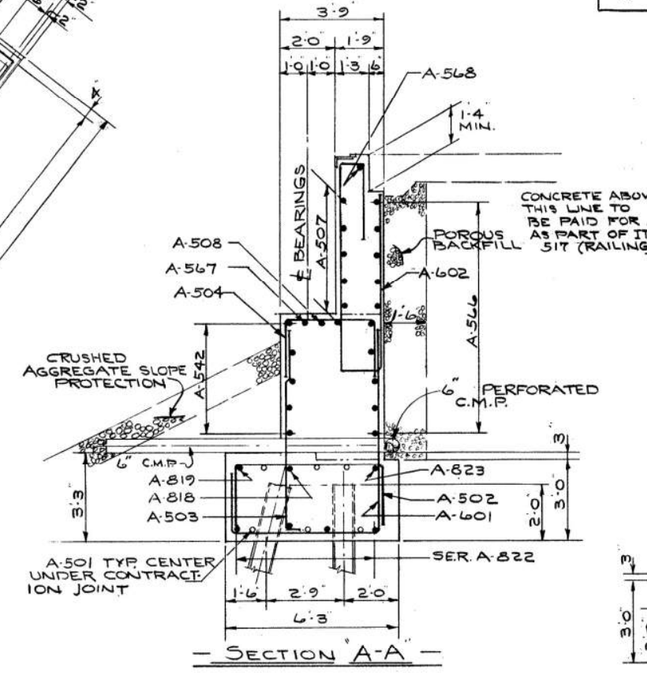
193
234

SUM-277-0.00

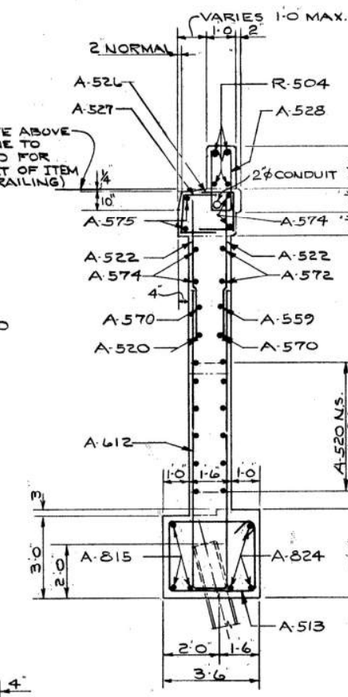


— PARTIAL PLAN - ABUTMENT #2 —

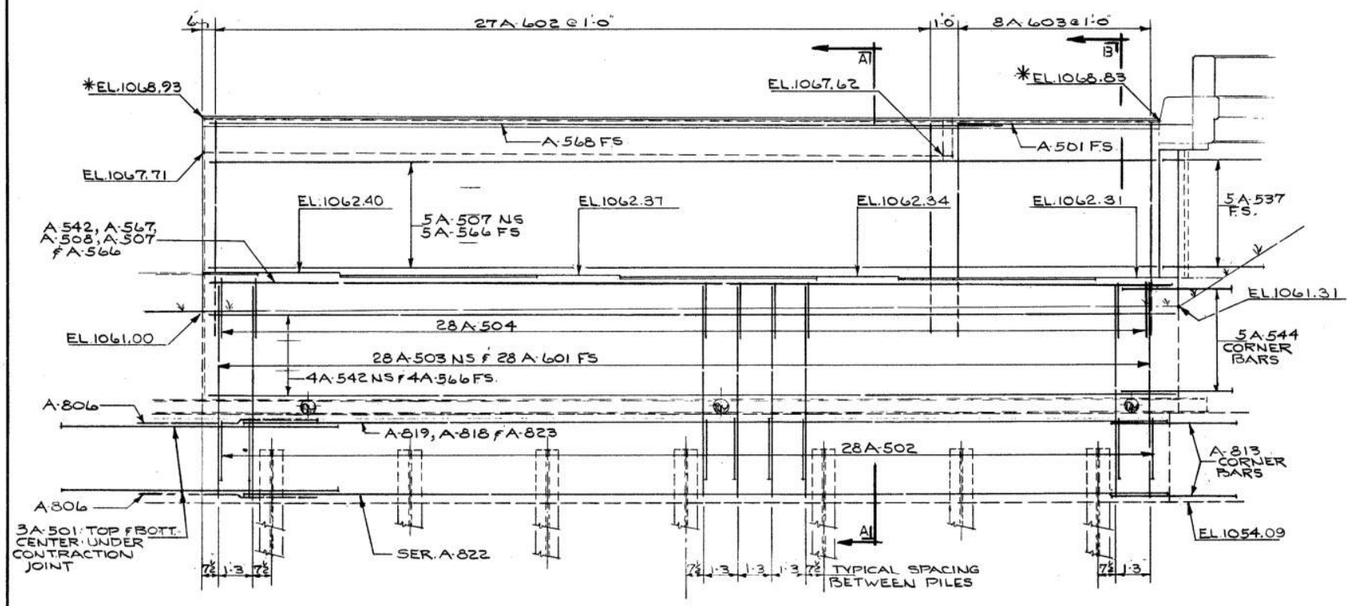
— SECTION B-B —



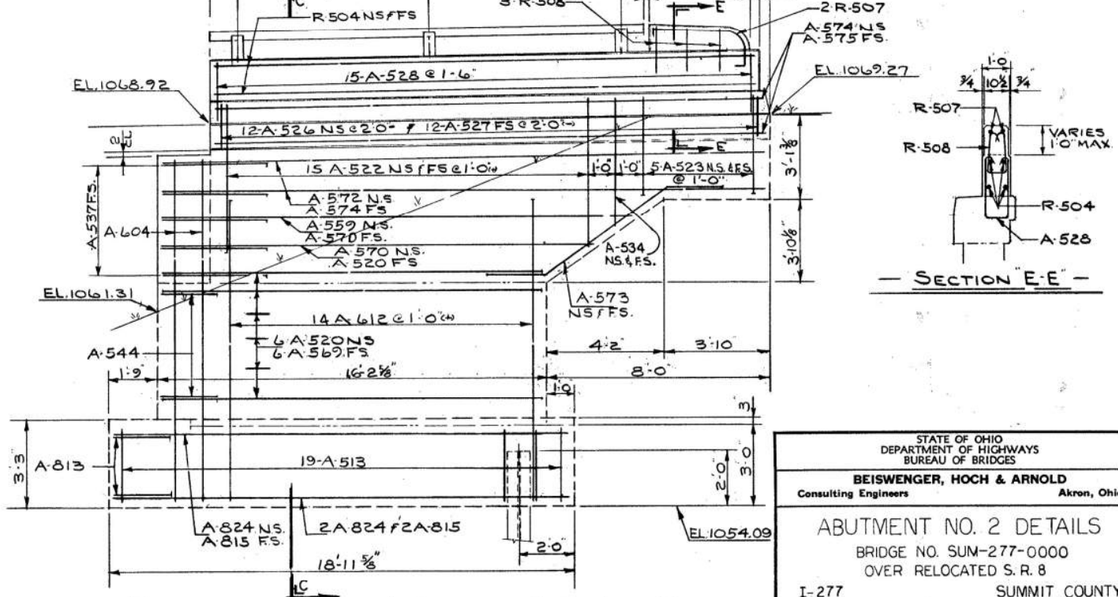
— SECTION A-A —



— SECTION C-C —



— ELEVATION —



— ELEVATION - SOUTH WINGWALL ABUTMENT #2 —

* INDICATES ELEVATIONS GIVEN TO HEEL OF L

— SECTION E-E —

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

ABUTMENT NO. 2 DETAILS

BRIDGE NO. SUM-277-0000
OVER RELOCATED S.R. 8
I-277 — SUMMIT COUNTY
STA. 251-17.15 TO STA. 256-78.35

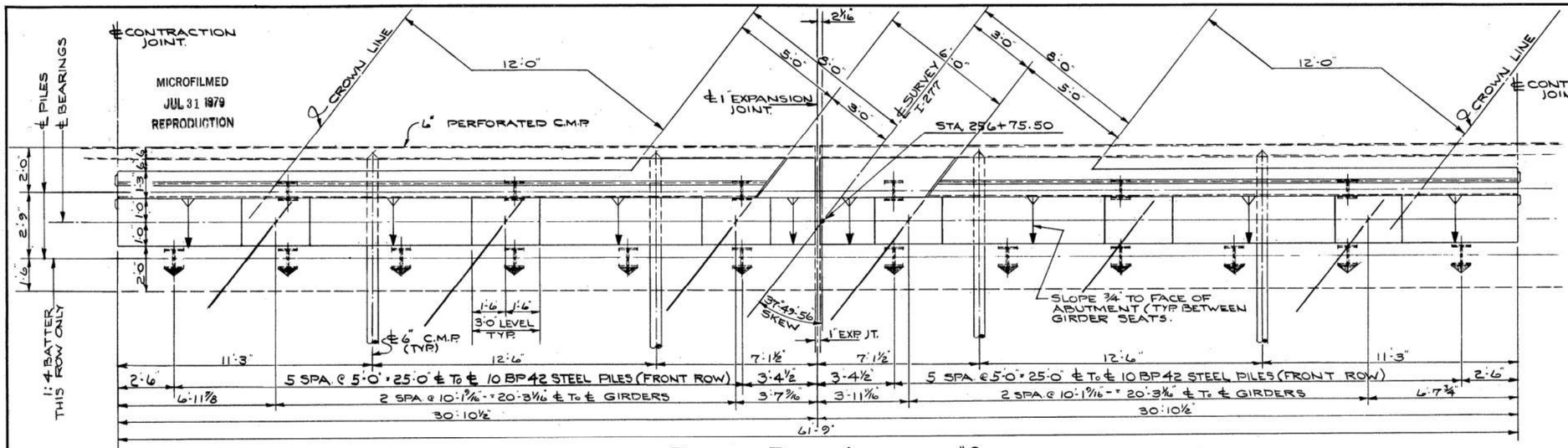
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KJ	JP		CAS	RBH	6-30-65	

FED. RD.	STATE	PROJECT	
2	OHIO		

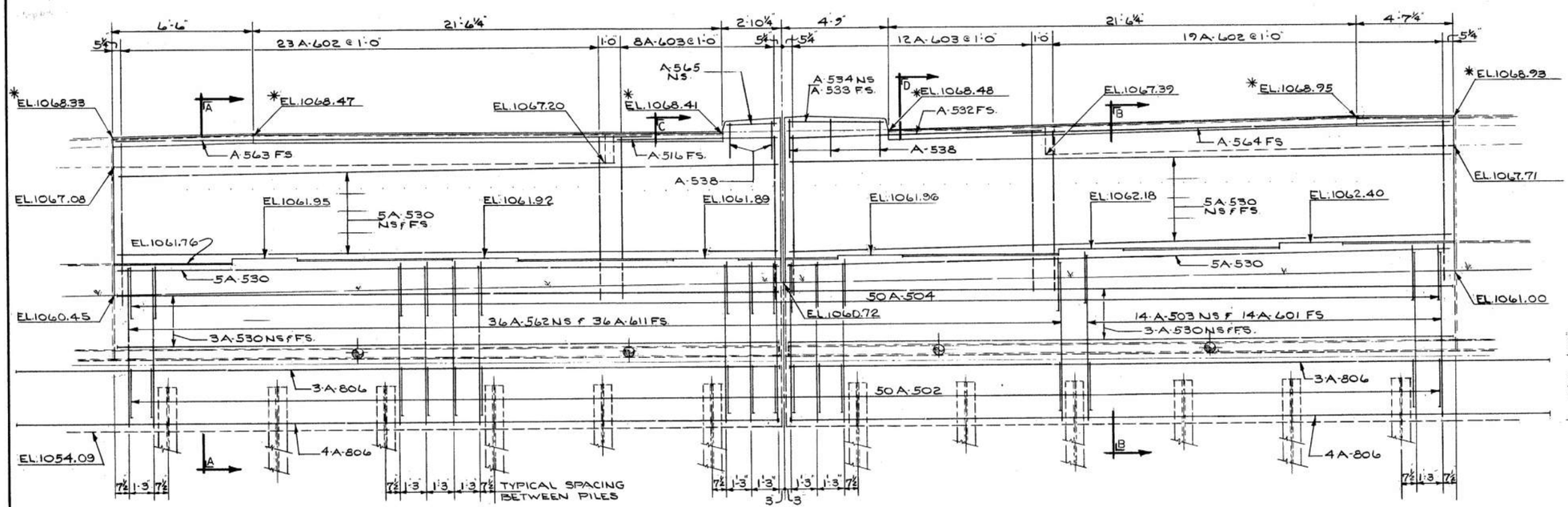
SUM-277-0.00

194
234

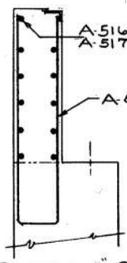
MICROFILMED
JUL 31 1979
REPRODUCTION



— PARTIAL PLAN — ABUTMENT #2 —

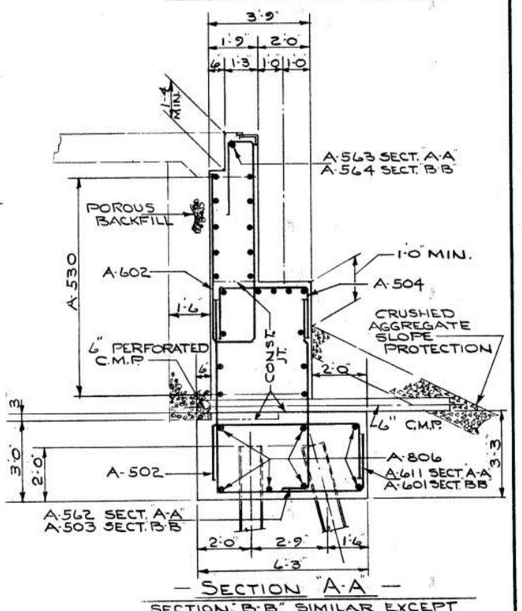


— ELEVATION —



— SECTION "C-C" —

SECTION "D-D" SIMILAR EXCEPT AS NOTED
SEE SECTION A-A FOR BAR NOS., DETAILS & DIMENSIONS NOT SHOWN.



— SECTION "A-A" —

SECTION "B-B" SIMILAR EXCEPT AS NOTED

*INDICATES ELEVATIONS GIVEN TO HEEL OF ℄

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

ABUTMENT NO. 2 DETAILS

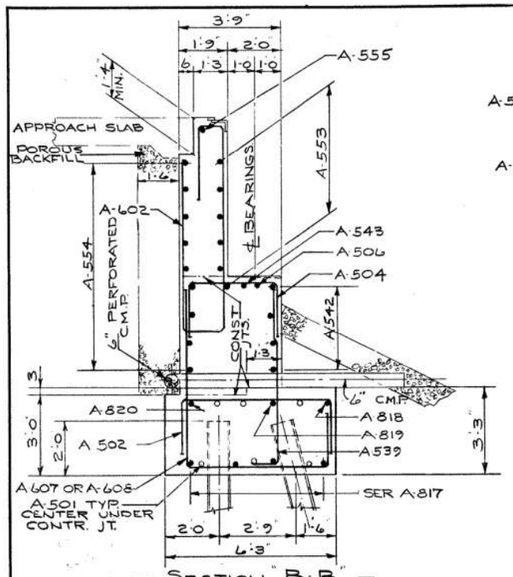
BRIDGE NO. SUM-277-0000
OVER RELOCATED S.R. 8
I-277 SUMMIT COUNTY
STA. 251+17.15 TO STA. 256+78.35

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KJ	JF		CM	RSH	6-30-65	

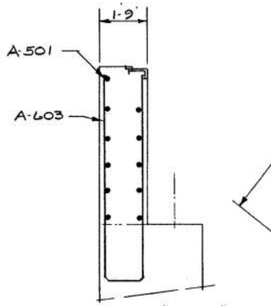
FED. RD.	STATE	PROJECT	
2	OHIO		

SUM-277-0.00

195
234

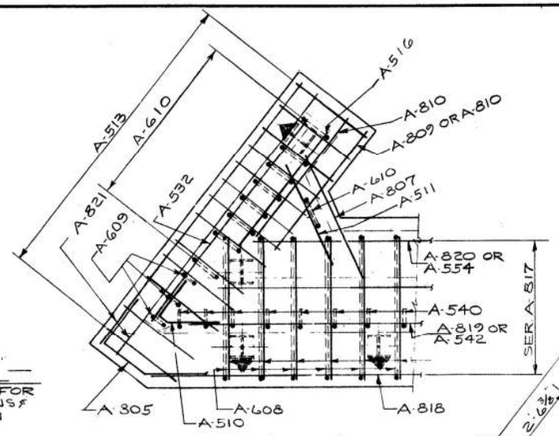


— SECTION B-B —

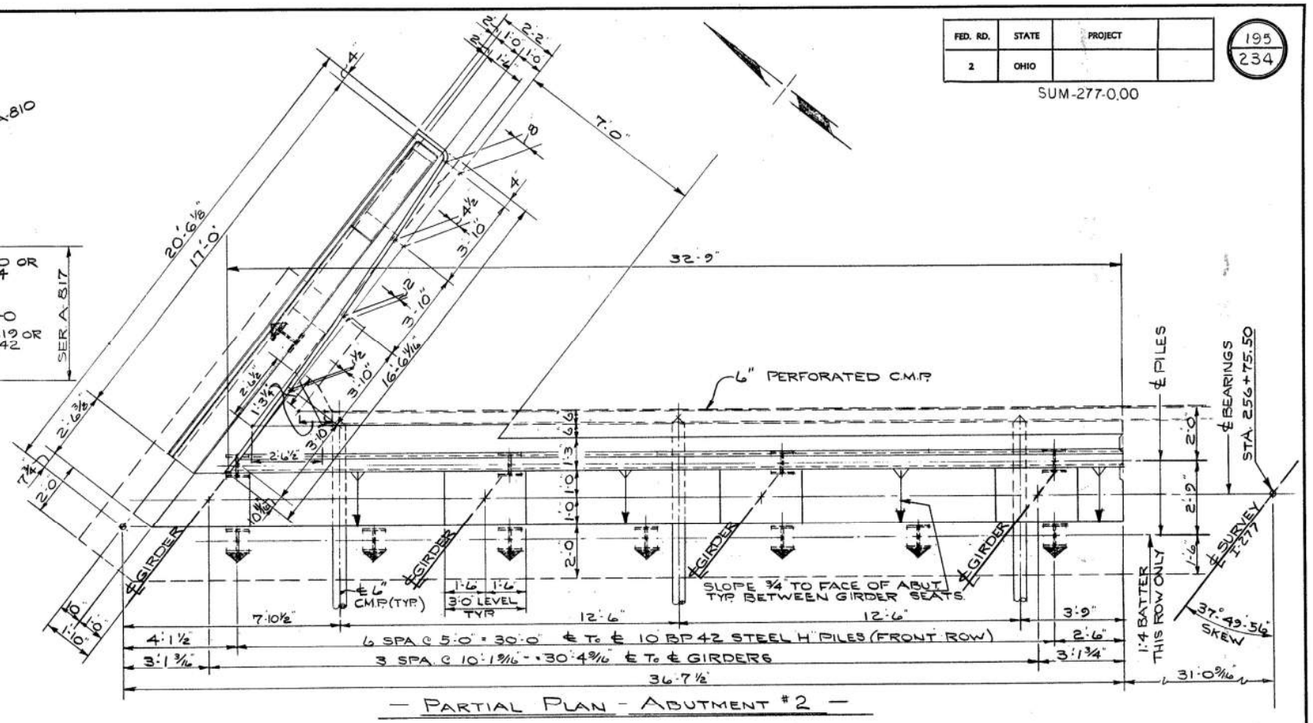


— SECTION C-C —

SEE SECTION 'B-B' FOR BAR Nos., DIMENSIONS & DETAILS NOT SHOWN

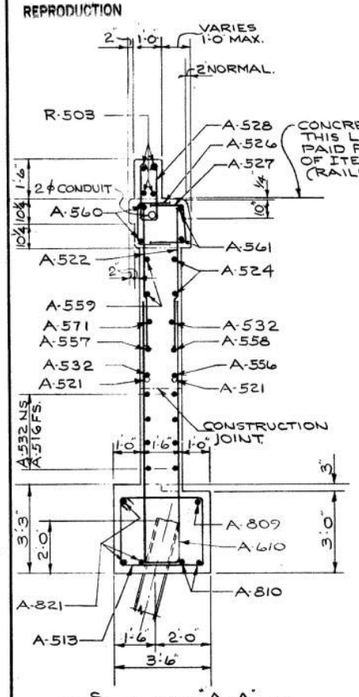


— SECTION D-D —

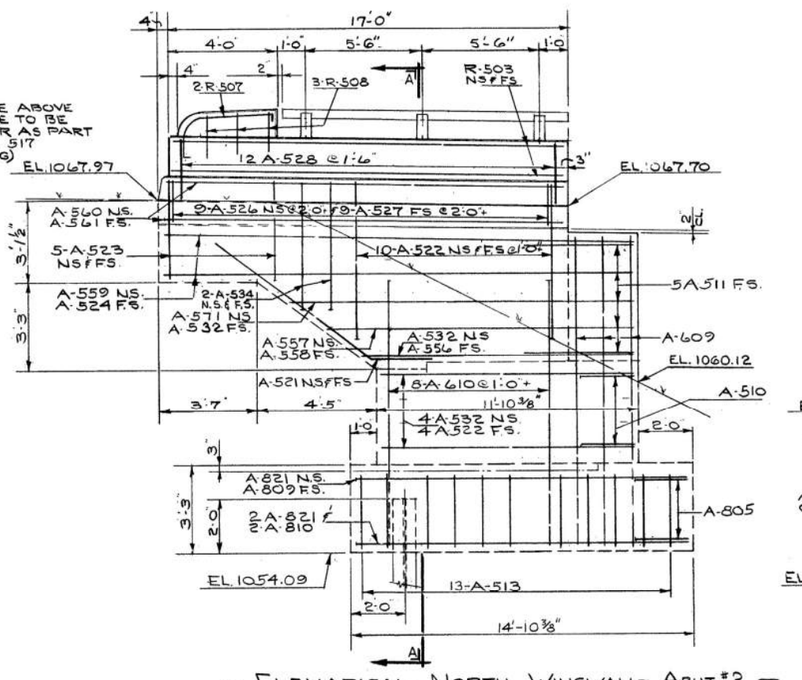


— PARTIAL PLAN - ABUTMENT #2 —

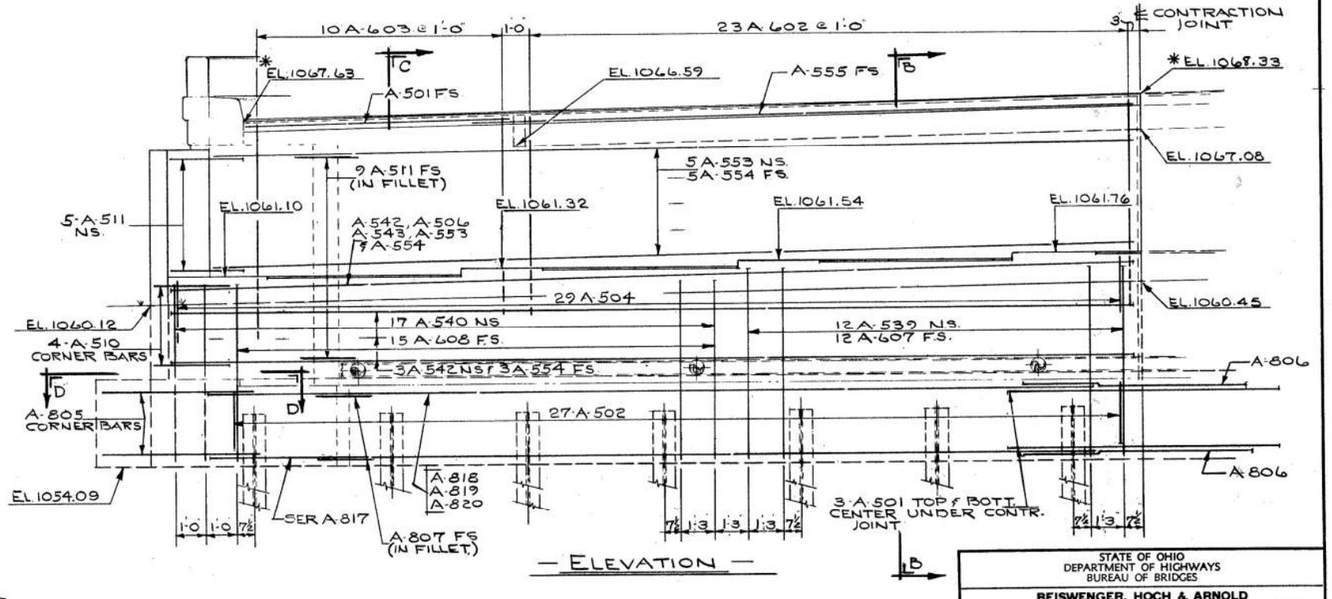
MICROFILMED
JUL 31 1979
REPRODUCTION



— SECTION A-A —



— ELEVATION - NORTH WINGWALL - ABUT. #2 —



— ELEVATION —

* INDICATES ELEVATIONS GIVEN TO HEEL OF L

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

ABUTMENT NO. 2 DETAILS

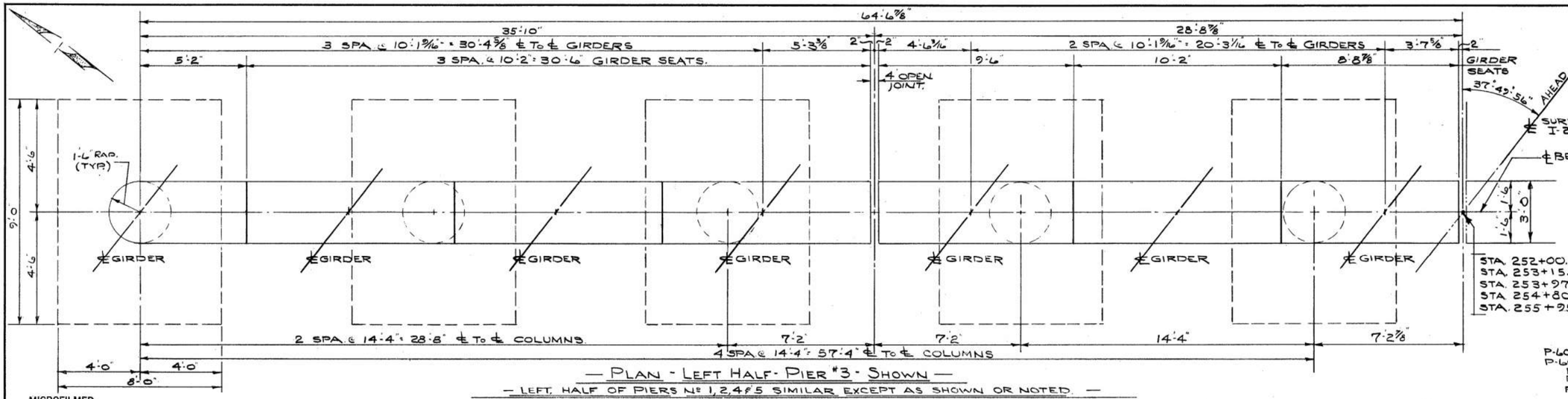
BRIDGE NO. SUM-277-0000
OVER RELOCATED S.R. 8
I-277 SUMMIT COUNTY
STA. 251-17.15 TO 256-78.35

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KJ	JP		CLS	RDH	6-30-65	

FED. RD.	STATE	PROJECT	
2	OHIO		

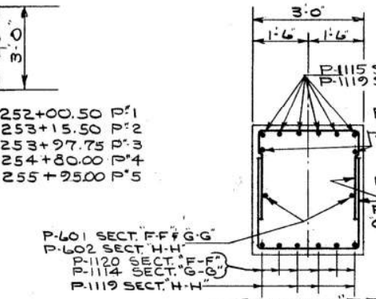
SUM 277-0.00

196
234



— PLAN - LEFT HALF - PIER #3 - SHOWN —

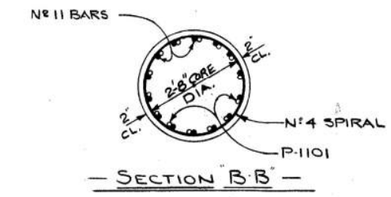
— LEFT HALF OF PIERS Nº 1, 2, 4 & 5 SIMILAR EXCEPT AS SHOWN OR NOTED —



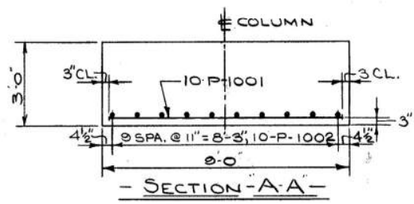
— SECTION "F-F" —

SECTION G-G & H-H SIMILAR EXCEPT AS NOTED

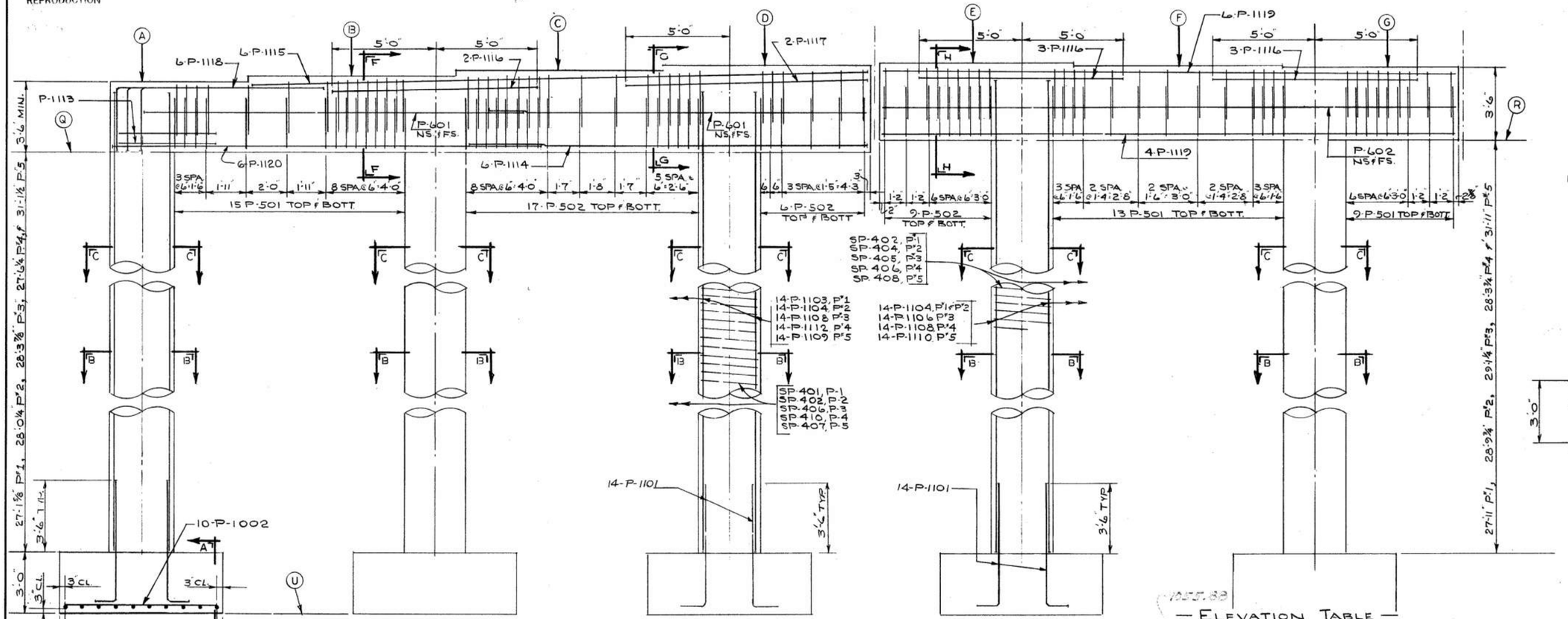
— SECTION "C-C" —



— SECTION "B-B" —



— SECTION "A-A" —



— ELEVATION — LEFT HALF — PIER #3 - SHOWN —

LEFT HALF OF PIER #1, 2, 4 & 5 SIMILAR EXCEPT AS SHOWN OR NOTED

— ELEVATION TABLE —

PIER Nº	A	B	C	D	E	F	G	Q	R	U
1	1053.33	1053.55	1053.77	1053.99	1054.17	1054.14	1054.11	1049.83	1050.61	1019.70
2	1055.22	1055.44	1055.66	1055.82	1056.07	1056.04	1056.01	1051.72	1052.51	1020.70
3	1056.52	1056.74	1056.96	1057.18	1057.36	1057.33	1057.30	1053.02	1053.80	1021.70
4	1057.72	1057.94	1058.16	1058.38	1058.57	1058.54	1058.51	1054.22	1055.01	1023.70
5	1059.32	1059.54	1059.76	1059.98	1060.17	1060.14	1060.11	1055.82	1056.61	1021.70

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

PIER DETAILS LEFT HALF

BRIDGE Nº SUM-277-00.00
OVER RELOCATED S R 8
I-277 SUMMIT COUNTY
STA 251+17.15 To STA. 256+78.35

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KJ	JP		RBH	RBH	6-30-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

SUM-277-0.00

197
234

64'-6⅞"

28'-8⅞" | 35'-10"

2' | 3'-7⅝" | 8'-8⅞" | 2 SPA. @ 10'-1⅜" = 20'-3⅛" ℄ To ℄ GIRDERS | 4'-6⅜" | 2" | 2" | 5'-3⅜" | 3 SPA. @ 10'-1⅜" = 30'-4⅝" ℄ To ℄ GIRDERS

10'-2" | 9'-6" | 4" OPEN JOINT | 3 SPA. @ 10'-2" = 30'-6" | 5'-2" | GIRDER SEATS

37°-49'-56" SKEW AHEAD

4" OPEN JOINT

℄ SURVEY I-277

℄ GIRDER ℄ GIRDER ℄ GIRDER ℄ GIRDER ℄ GIRDER ℄ GIRDER ℄ GIRDER

4'-6" | 9'-0" | 4'-6" | ℄ BEARINGS

1'-6" | 3'-0" | 1'-6"

1½" R TYP

7'-2⅜" | 14'-4" | 7'-2" | 7'-2" | 2 SPA. @ 14'-4" = 28'-8" ℄ To ℄ COLUMNS

4 SPA. @ 14'-4" = 57'-4" ℄ To ℄ COLUMNS

4'-0" | 4'-0"

8'-0"

STA. 252+00.50 P#1
STA. 253+15.50 P#2
STA. 253+97.75 P#3
STA. 254+80.00 P#4
STA. 255+95.00 P#5

— PLAN RIGHT HALF PIER #3 SHOWN —

RIGHT HALF OF PIER Nº 1, 2, 4 & 5 SIMILAR EXCEPT AS SHOWN OR NOTED

MICROFILMED
JUL 31 1979
REPRODUCTION

H | J | K | L | M | N | P | S | T | U

2-P-1117
P.601 NS#FS

6-P-1115

2-P-1116

6-P-1118
P.601 NS#FS

P-1113

6-P-1114

6-P-1120

5'-0" | 5'-0" | 5'-0"

3'-6" MIN.

3 | 3 SPA @ 1'-5'-4⅜" | 6 | 6

6 P.501 TOP & BOTT.

5 SPA @ 6'-2'-6" | 1'-7" | 1'-8" | 1'-7" | 8 SPA @ 6'-4'-0"

17 P.501 TOP & BOTT.

8 SPA @ 6'-4'-0" | 1'-11" | 2'-0" | 1'-11" | 3 SPA @ 6'-1'-4"

15 P.501 TOP & BOTT.

5 P.406 P#1
5 P.405 P#2
6 P.403 P#3
5 P.404 P#4
5 P.409 P#5

14-P-1108 P#1
14-P-1106 P#2
14-P-1107 P#3
14-P-1105 P#4
14-P-1111 P#5

5 P.402 P#1
5 P.404 P#2
5 P.405 P#3
5 P.406 P#4
5 P.408 P#5

14-P-1104 P#1
14-P-1105 P#2
14-P-1106 P#3
14-P-1108 P#4
14-P-1110 P#5

27'-11" P#1, 28'-3¾" P#2, 29'-1¼" P#3, 28'-3¾" P#4, 31'-11" P#5

28'-4" P#1, 29'-2¾" P#2, 29'-4¾" P#3, 28'-8¾" P#4, 32'-4" P#5

3'-0"

— ELEVATION — RIGHT HALF — PIER #3 SHOWN —

RIGHT HALF OF PIERS #1, 2, 4 & 5 SIMILAR EXCEPT AS SHOWN OR NOTED.

— ELEVATION TABLE —

ELEV.	PIER #1	PIER #2	PIER #3	PIER #4	PIER #5
H	1054.18	1056.08	1057.37	1058.58	1060.18
J	1054.40	1056.30	1057.59	1058.80	1060.40
K	1054.62	1056.52	1057.81	1059.02	1060.62
L	1054.62	1056.52	1057.81	1059.02	1060.62
M	1054.59	1056.49	1057.78	1058.99	1060.59
N	1054.56	1056.46	1057.75	1058.96	1060.56
P	1054.53	1056.43	1057.72	1058.93	1060.53
S	1050.61	1052.51	1053.80	1055.01	1056.61
T	1051.03	1052.93	1054.22	1055.43	1057.03
U	1019.70	1020.70	1021.70	1023.70	1021.70

SEE PIER DETAILS LEFT HALF FOR DETAILS NOT SHOWN

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

PIER DETAILS RIGHT HALF

BRIDGE Nº SUM-277-0000
OVER RELOCATED S.R.-8
I-277 SUMMIT COUNTY
STA. 251+17.15 To STA. 256+78.35

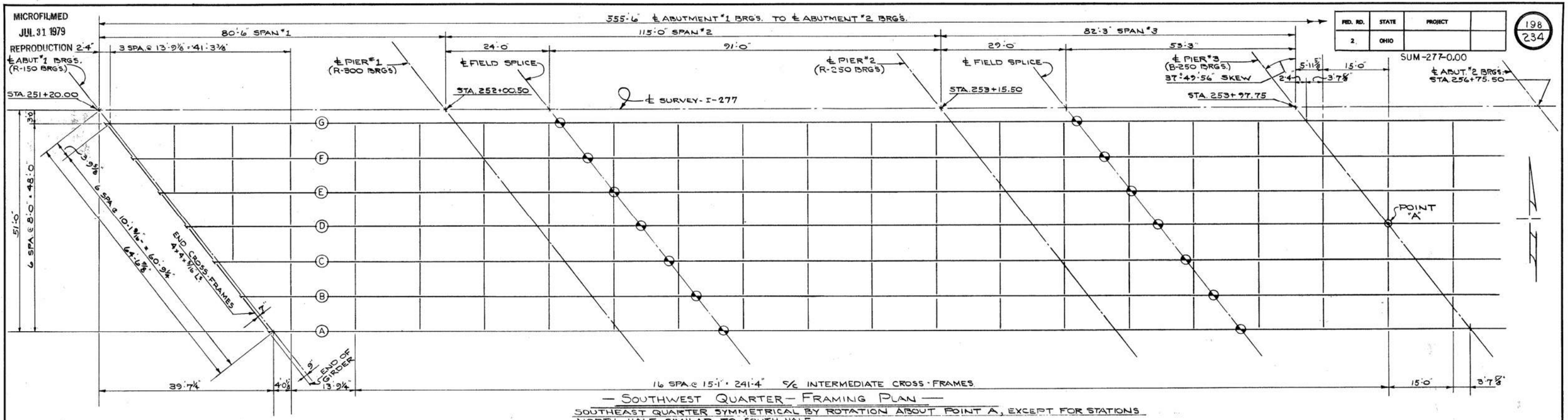
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KJ	WP		CRL	RBH	6-30-65	

MICROFILMED
JUL 31 1979
REPRODUCTION 2:4

FED. RD.	STATE	PROJECT	
2	OHIO		

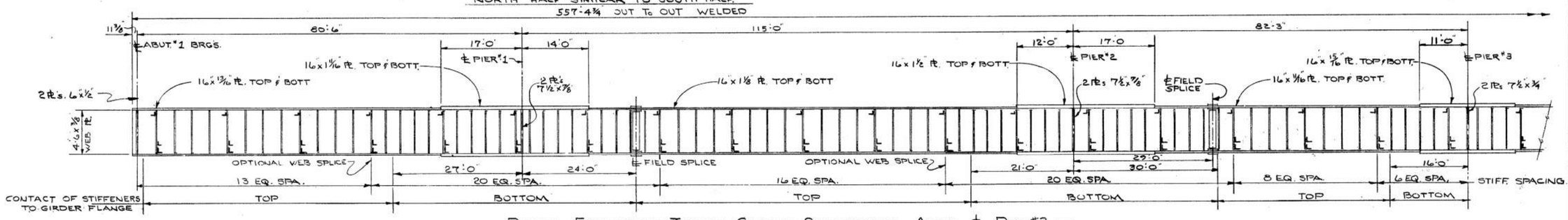
198
234

SUM-277-0.00



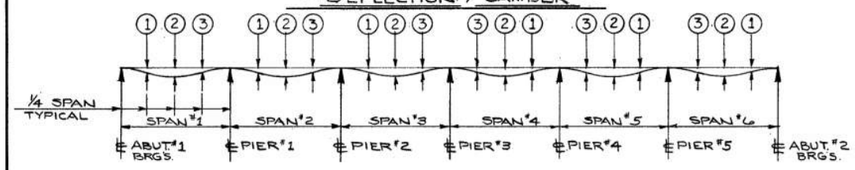
— SOUTHWEST QUARTER — FRAMING PLAN —

SOUTHEAST QUARTER SYMMETRICAL BY ROTATION ABOUT POINT A, EXCEPT FOR STATIONS
NORTH HALF SIMILAR TO SOUTH HALF.
557'-4¾ OUT TO OUT WELDED

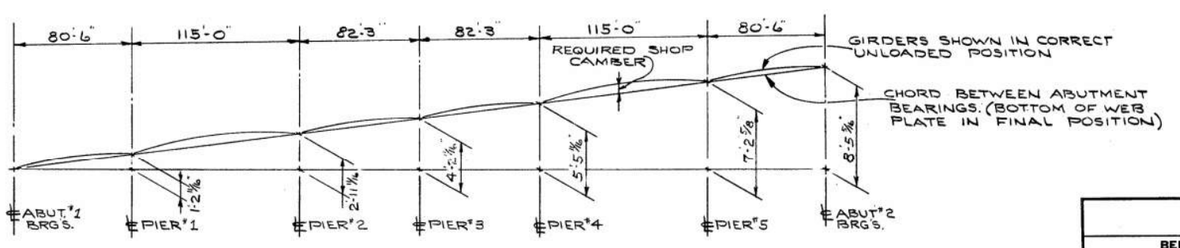


— PARTIAL ELEVATION — TYPICAL GIRDER — SYMMETRICAL ABOUT ℄ PIER #3 —

— DEFLECTION & CAMBER —



LOCATION	SPAN #1 & 6						SPAN #2 & 5						SPAN #3 & 4					
	GIRDER A			GIRDER B THRU G			GIRDER A			GIRDER B THRU G			GIRDER A			GIRDER B THRU G		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
DEFLECTION DUE TO WEIGHT OF STEEL	.08"	.07"	0	.08"	.07"	0	.15"	.26"	.16"	.16"	.28"	.18"	-.03"	.02"	.02"	-.03"	.02"	.02"
DEFLECTION DUE TO REMAINING DEAD LOAD	.29"	.25"	0	.27"	.23"	0	.55"	.94"	.60"	.50"	.75"	.53"	-.09"	.07"	.07"	-.07"	.06"	.06"
CONVEXITY REQUIRED FOR VERTICAL CURVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM OF DEFLECTION AND CONVEXITY	.37"	.32"	0	.35"	.30"	.01"	.70"	1.20"	.76"	.66"	1.13"	.71"	-.12"	.09"	.09"	-.10"	.08"	.08"
REQUIRED CAMBER	⅜"	5/16"	0	⅜"	5/16"	0	¾"	1¼"	¾"	¾"	1¼"	¾"	⅛"	⅛"	⅛"	⅛"	⅛"	⅛"



— LAYOUT DIAGRAM —

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

FRAMING PLAN

BRIDGE NO. SUM-277-0000
OVER RELOCATED S.R. 8
I-277 SUMMIT COUNTY
STA. 251+17.15 TO STA. 256+78.35

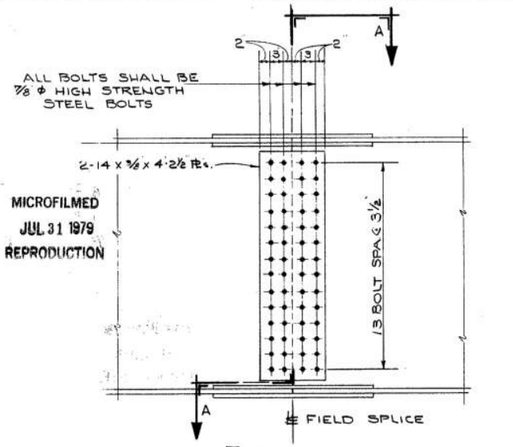
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KJ	JP		CLS	RBH	6-30-65	

FED. RD.	STATE	PROJECT	
2	OHIO		

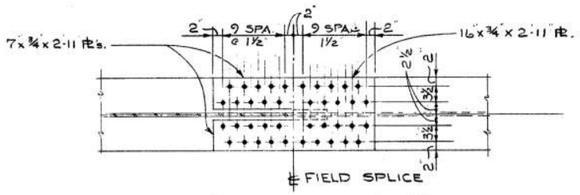
199
234

SUM-277-0.00

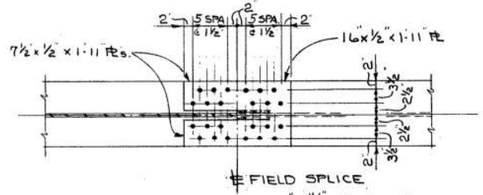
MICROFILMED
JUL 31 1979
REPRODUCTION



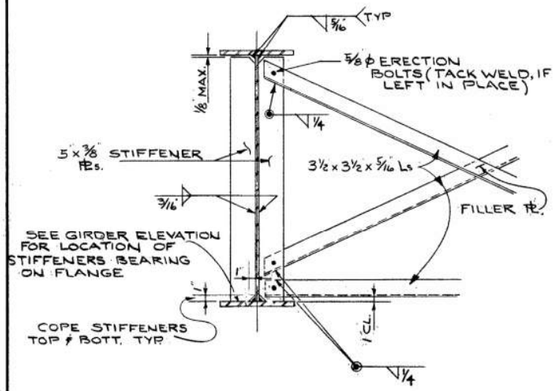
— ELEVATION —
— TYPICAL WEB SPLICE FOR ALL GIRDERS —



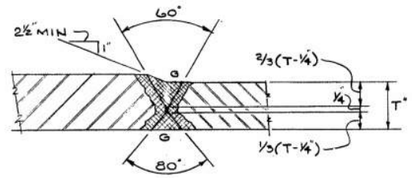
— SECTION A-A — FOR 16 x 1⅛ FLANGE —



— SECTION A-A — FOR 16 x 1 11/16 FLANGE —

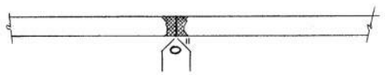


— INTERMEDIATE CROSS FRAME AND —
— STIFFENER DETAIL —

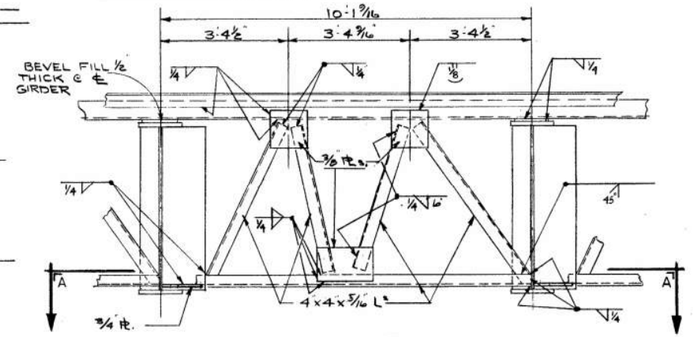


— FLANGE WELD DETAIL —

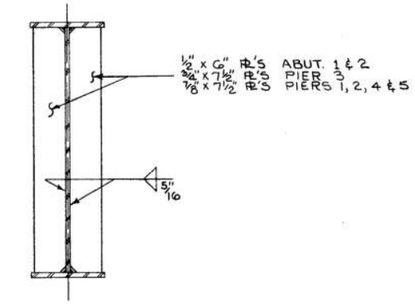
NOTE:
ALL FULL PENETRATION WELDS SHALL BE BACK-GOUGED AND WELDED AFTER WELDING FAR SIDE. BUTT WELDS ON BEAM AND GIRDER FLANGE PLATES SHALL BE GROUND FLUSH, THE FINISH GRINDING BEING PARALLEL TO THE DIRECTION OF STRESS.



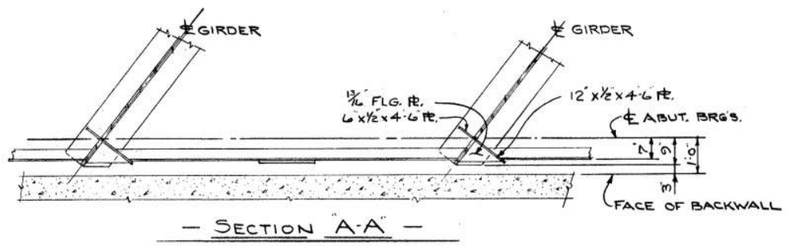
— ALTERNATE WEB SHOP WELD —



— TYPICAL END CROSS FRAME DETAIL —



— BEARING STIFFNER DETAIL —



— SECTION A-A —

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

FRAMING DETAILS

BRIDGE NO. SUM-277-0000
OVER RELOCATED S.R. 8
I-277 SUMMIT COUNTY
STA. 251+17.15 TO STA. 256+78.36

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KJ	JP		CLS	RDH	6-30-65	

SUM-277-0.00

FED. RD.	STATE	PROJECT		
2	OHIO			

200
234

— ELEVATION TABLE —

STATION	PROFILE*	ELEV. A	ELEV. B	ELEV. C	ELEV. D	ELEV. E	ELEV. F
251+00	1059.84	1059.57	—	—	—	—	—
+25	1060.22	1059.94	1060.43	1060.15	1060.15	—	—
+50	1060.60	1060.31	1060.80	1060.55	1060.55	1060.81	—
+75	1060.98	1060.70	1061.16	1060.91	1060.91	1061.19	1060.70
252+00	1061.36	1061.13	1061.56	1061.28	1061.28	1061.54	1061.08
+25	1061.74	1061.52	1061.99	1061.70	1061.69	1061.94	1061.45
+50	1062.12	1061.87	1062.39	1062.11	1062.10	1062.36	1061.83
+75	1062.50	1062.20	1062.73	1062.48	1062.48	1062.77	1062.26
253+00	1062.88	1062.59	1063.07	1062.82	1062.83	1063.12	1062.66
+25	1063.26	1062.97	1063.44	1063.19	1063.19	1063.45	1063.02
+50	1063.64	1063.34	1063.83	1063.57	1063.56	1063.82	1063.35
+75	1064.02	1063.73	1064.21	1063.95	1063.95	1064.21	1063.73
254+00	1064.40	1064.11	1064.58	1064.32	1064.32	1064.58	1064.11
+25	1064.78	1064.49	1064.97	1064.71	1064.71	1064.96	1064.49
+50	1065.16	1064.88	1065.34	1065.09	1065.08	1065.35	1064.86
+75	1065.54	1065.30	1065.74	1065.46	1065.47	1065.72	1065.25
255+00	1065.92	1065.70	1066.17	1065.88	1065.87	1066.12	1065.63
+25	1066.30	1066.05	1066.57	1066.28	1066.28	1066.54	1066.01
+50	1066.68	1066.39	1066.92	1066.66	1066.66	1066.94	1066.44
+75	1067.06	1066.76	1067.25	1067.00	1067.01	1067.31	1066.84
256+00	1067.44	1067.17	1067.63	1067.36	1067.36	1067.64	1067.20
+25	1067.82	1067.54	1068.03	1067.75	1067.75	1068.00	1067.54
+50	1068.20	—	1068.40	1068.15	1068.15	1068.41	1067.91
+75	1068.58	—	—	—	1068.51	1068.79	1068.30
257+00	1068.96	—	—	—	—	—	1068.69

*ELEVATIONS SHOWN ARE ELEVATIONS BEFORE DECK CONCRETE HAS BEEN PLACED. PROFILE ELEVATIONS ARE ACTUAL FINISHED PROFILE GRADE ELEVATIONS.

MICROFILMED
JUL 31 1979
REPRODUCTION

— PARTIAL SLAB REINFORCING PLAN —

— PARTIAL TRANSVERSE SECTION —

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

SLAB DETAILS

BRIDGE NO. SUM-277-0000
OVER RELOCATED S.R. 8
I-277 — SUMMIT COUNTY
STA. 251+17.15 TO STA. 256+78.35

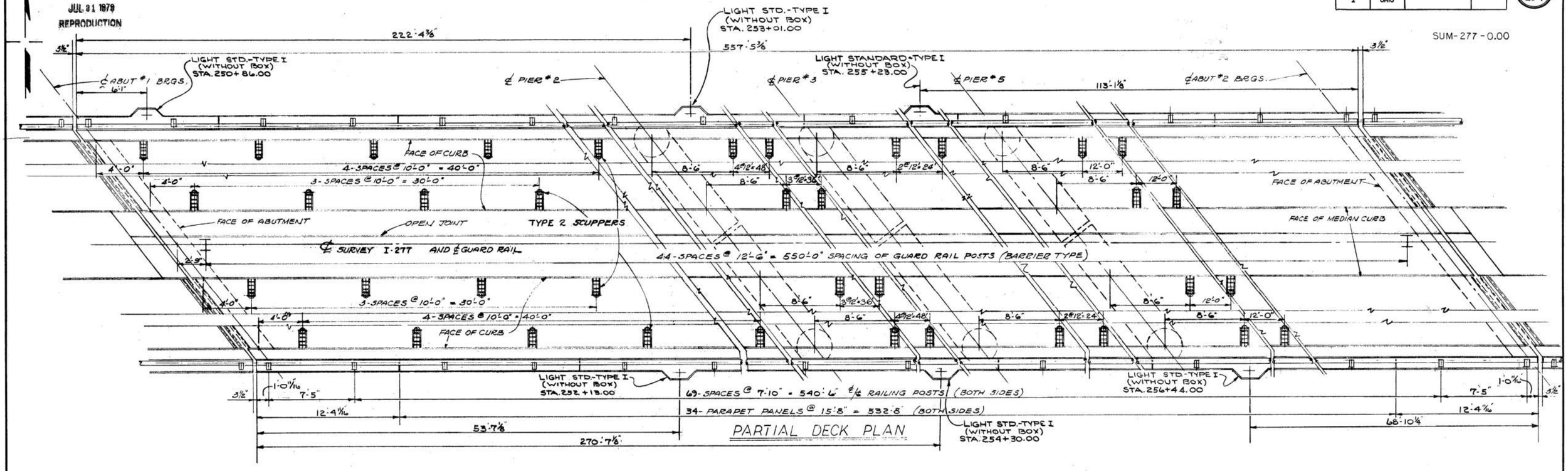
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KJ	JP		CLS	RBH	6-30-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

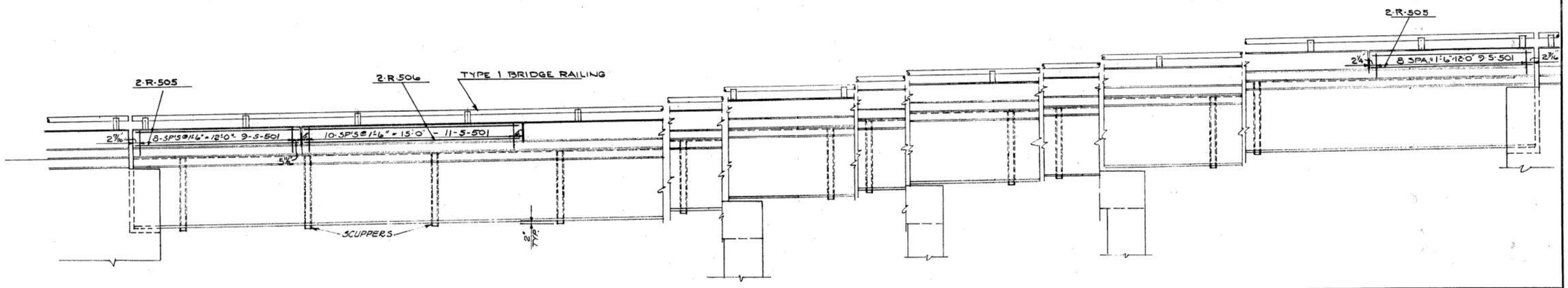
FED. RD.	STATE	PROJECT	
2	OHIO		

201
234

SUM-277-0.00



PARTIAL DECK PLAN



SOUTH ELEVATION SHOWN - NORTH ELEVATION SIMILAR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

RAILING & DRAINAGE DETAILS
BRIDGE NO. SUM-277-0000
OVER RELOCATED S.R.-8.
I-277 SUMMIT COUNTY
STA. 251+17.15, TO STA 256+78.35.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KJ	JK		CLS	RDH	6-30-65	

MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCRE-MENTS	WEIGHT LBS.
ABUTMENT #1 & #2									
A-501	28	10'-0"	ST.						292
A-502	210	9'-6"	3	5'-5"	2'-2"				2081
A-503	65	8'-1"	1	6"	7'-8"				717
A-504	214	7'-2"	3	3'-5"	2'-0"				1600
A-505	5	37'-0"	ST.						193
A-506	17	34'-6"	ST.						612
A-507	7	36'-6"	ST.						266
A-508	2	36'-0"	ST.						75
A-509	6	35'-6"	ST.						222
A-510	9	4'-5"	15	2'-0"	7"	2'-0"	1'-3"		42
A-511	29	4'-0"	ST.						121
A-512	2	26'-6"	ST.						55
A-513	61	11'-8"	14	2'-7"	3'-2"	4"			742
A-514	6	10'-8"	ST.						67
A-515	6	8'-0"	ST.						50
A-516	5	7'-0"	ST.						37
A-517	1	13'-6"	ST.						14
A-518	1	10'-6"	ST.						11
A-519	2	18'-8"	ST.						39
A-520	9	15'-8"	ST.						147
A-521	4	10'-11"	12	8'-0"	3'-0"	1'-2"			46
A-522	98	6'-0"	ST.						613
A-523	40	3'-6"	ST.						146
A-524	4	16'-0"	ST.						67
A-525	2	15'-4"	16	15'-4"	3'-10"	0"			32
A-526	41	3'-3"	3	1'-4"	1'-1"				139
A-527	41	3'-3"	17	1'-4"	1'-1"	2"			139
A-528	52	5'-7"	5	8"	2'-2"	5"			303
A-529	37	7'-7"	1	6"	7'-2"				293
A-530	84	30'-6"	ST.						2672
A-531	2	22'-6"	ST.						47
A-532	9	11'-5"	9						107
A-533	1	5'-3"	ST.						5
A-534	14	4'-3"	ST.						62
A-535	1	3'-0"	ST.						3
A-536	1	2'-6"	ST.						3
A-537	12	3'-9"	ST.						47
A-538	10	4'-2"	3	1'-5"	1'-6"				43
A-539	22	7'-5"	1	6"	7'-0"				170
A-540	34	7'-0"	1	6"	6'-7"				248
A-541	5	33'-3"	ST.						173
A-542	18	35'-0"	ST.						457
A-543	2	34'-0"	ST.						71
A-544	9	3'-11"	18	2'-0"	2'-0"	1'-3"			37
A-545	6	14'-8"	ST.						92
A-546	5	13'-0"	ST.						68
A-547	2	16'-8"	ST.						35
A-548	1	18'-8"	ST.						19
A-549	2	22'-8"	ST.						47
A-550	4	20'-8"	ST.						86
A-551	2	11'-2"	11	4'-0"	5'-3"	2'-0"	2'-6"		23
A-552	2	20'-10"	16	20'-10"	3'-10"	5'-6"			43
A-553	6	33'-6"	ST.						210
A-554	9	32'-6"	ST.						305
A-555	1	24'-6"	ST.						26
A-556	4	9'-9"	ST.						40
A-557	1	13'-6"	ST.						14
A-558	1	10'-3"	ST.						11
A-559	3	19'-3"	ST.						60
A-560	2	16'-9"	ST.						35
A-561	2	16'-0"	16	16'-0"	3'-10"	8"			33
A-562	36	7'-8"	1	6	7'-3"				288
A-563	1	24'-6"	ST.						24
A-564	1	21'-3"	ST.						22
A-565	1	2'-0"	ST.						2
A-566	10	37'-8"	ST.						393
A-567	1	35'-6"	ST.						37
A-568	1	28'-6"	ST.						30
A-569	6	14'-0"	ST.						88
A-570	2	17'-3"	ST.						36
A-571	1	15'-0"	ST.						16
A-572	2	23'-9"	ST.						50
A-573	2	9'-11"	11	2'-0"	6'-0"	2'-0"	3'-1"		21
A-574	4	21'-6"	ST.						90
A-575	2	22'-0"	16	22'-0"	3'-10"	6'-8"			46

MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCRE-MENTS	WEIGHT LBS.
ABUTMENT #1 & #2 CONTINUED									
A-601	83	15'-0"	4	7'-8"	5'-5"	2'-2"			1870
A-602	184	19'-8"	7	6'-11"	1'-5"	8'-3"	11"		5435
A-603	77	17'-8"	3	1'-5"	8'-3"				2,043
A-604	5	21'-2"	7	6'-6"	1'-2"	13'-3"	6"		159
A-605	8	22'-5"	3	1'-2"	10'-9"				269
A-606	37	14'-9"	4	7'-5"	5'-5"	2'-2"			820
A-607	22	14'-4"	4	7'-0"	5'-5"	2'-2"			474
A-608	32	13'-11"	4	6"	5'-5"	2'-2"			669
A-609	5	26'-0"	7	6'-6"	1'-2"	12'-1"	6"		195
A-610	22	20'-5"	3	1'-2"	9'-9"				675
A-611	36	14'-7"	4	7'-3"	5'-5"	2'-2"			789
A-612	14	22'-11"	3	1'-2"	11'-0"				482
SERIES OF A-801	1 SET OF 4	32'-6" TO 36'-6"	ST.					1'-4"	368
A-802	1	36'-6"	ST.						97
A-803	2	35'-2"	ST.						188
A-804	2	32'-6"	ST.						174
A-805	4	7'-0"	15	2'-6"	2'-2"	2'-6"	1'-6"		75
A-806	28	35'-0"	ST.						2617
A-807	4	5'-0"	ST.						53
A-808	3	13'-8"	ST.						109
A-809	2	12'-1"	ST.						65
A-810	4	7'-7"	ST.						81
SERIES OF A-811	1 SET OF 4	31'-3 TO 35'-3	ST.					1'-4"	355
A-812	1	31'-3"	ST.						83
A-813	4	4'-10"	18	2'-6"	2'-6"	1'-6"			52
A-814	2	17'-4"	ST.						93
A-815	4	16'-6"	ST.						176
A-816	3	14'-0"	ST.						112
SERIES OF A-817	1 SET OF 4	30'-10 TO 34'-10	ST.					1'-4"	351
A-818	2	34'-10"	ST.						186
A-819	2	33'-6"	ST.						179
A-820	1	30'-10"	ST.						82
A-821	3	13'-6"	ST.						108
SERIES OF A-822	1 SET OF 4	33'-4 TO 37'-4	ST.					1'-4"	377
A-823	1	37'-3"	ST.						99
A-824	3	18'-4"	ST.						147

ABUTMENT #1 & #2 TOTAL = 35,903 LBS.

MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCRE-MENTS	WEIGHT LBS.
SLAB									
S-501	784	5'-7"	5	8"	2'-2"	5"			4546
S-502	744	4'-10"	17	1'-6"	1'-4"	6"			3751
S-503	744	2'-3"	3	1'-6"	6"				1746
S-504	371	4'-4"	19	1'-8"	1'-0"	6"			1677
S-505	371	2'-1"	3	1'-8"	4"				806
S-506	371	5'-10"	19	3'-2"	1'-0"	6"			2257
S-507	371	3'-7"	3	3'-2"	4"				1387
S-521	12	11'-8"	20	2'-0"	2'-0"	2'-3"	2'-10"		147
S-601	4	4'-9"	ST.						29
SERIES OF S-602	1 SET OF 27 BARS	4'-9 TO 27'-6"	ST.					10½	654
S-603	OPEN								
SERIES OF S-604	2 SET OF 27 BARS	5'-3 TO 28'-0"	ST.					10½	1348
S-605	1633	22'-10"	ST.						56,005
S-606	777	31'-0"	ST.						36,179
SERIES OF S-607	1 SET OF 27 BARS	6'-3" TO 29'-0"	ST.					10½	715
S-608	3	3'-6"	ST.						16
S-609	4	5'-3"	ST.						32
SERIES OF S-610	OPEN								
S-611	27	25'-1"	ST.						1017
S-612	775	32'-5"	ST.						37,735
S-613	OPEN								
S-614	4	6'-0"	ST.						36
S-615	3515	31'-2"	ST.						164,545
S-616	405	40'-0"	ST.						24,332
SERIES OF S-617	1 SET OF 27 BARS	3'-9" TO 26'-6"	ST.					10½"	613
SERIES OF S-618	1 SET OF 27 BARS	7'-6" TO 30'-3"	ST.					10½"	765
SERIES OF S-619	1 SET OF 27 BARS	9'-11" TO 32'-8"	ST.					10½"	863
S-621	72	5'-6"	ST.						594
S-622	24	9'-11"	14	2'-10"	2'-0"	4"			357
S-701	4	4'-9"	ST.						39
SERIES OF S-702	2 SETS OF 27 + 54 BARS	4'-9 TO 27'-6"	ST.					10½	1819
S-703	27	25'-9"	ST.						1421
SERIES OF S-704	2 SETS OF 27 + 54 BARS	5'-3 TO 28'-0"	ST.					10½	1835
S-705	1554	27'-0"	ST.						85,766
S-706	27	25'-6"	ST.						1407
SERIES OF S-707	2 SETS OF 27 + 54 BARS	3'-9" TO 26'-6"	ST.					10½	1670
S-708	3	3'-6"	ST.						21
S-709	4	5'-3"	ST.						43
SERIES OF S-710	2 SETS OF 27 + 54 BARS	6'-3" TO 29'-0"	ST.					10½	1946
S-711	27	25'-3"	ST.						1394
S-712	1550	27'-9"	ST.						87,916
S-713	27	25'-8"	ST.						1417
S-714	4	6'-0"	ST.						49

SLAB TOTAL 528,915 LBS.

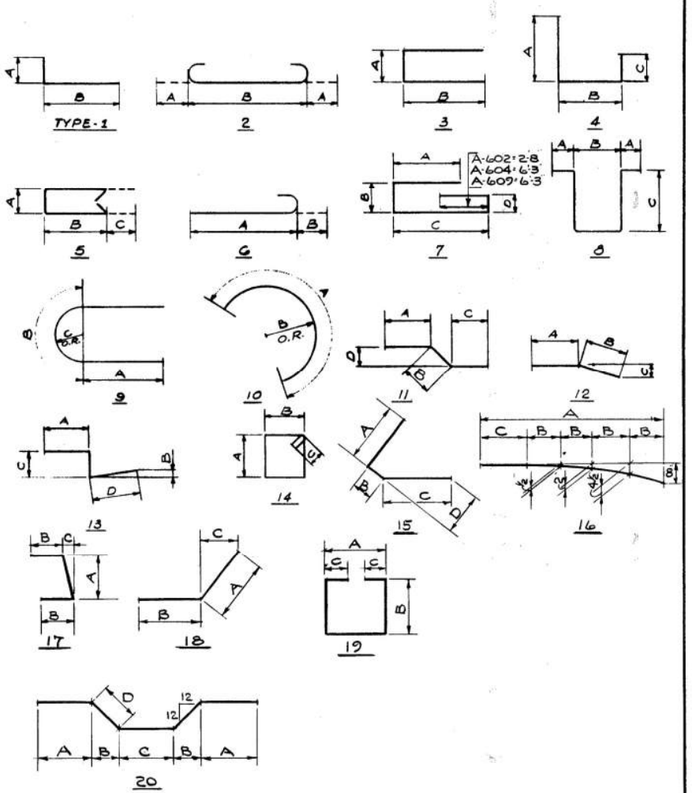
TOTAL THIS SHEET = 564,818 LBS.

MICROFILMED
JUL 81 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

202
234

SUM-277-0.00



STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

REINFORCING SCHEDULE

BRIDGE NO. SUM-277-0000
OVER RELOCATED S.R. 8
I-277 SUMMIT COUNTY
STA. 251+17.15 TO STA. 256+78.35

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KJ	NP		CES	DBH	6-30-65	

MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENT	WEIGHT LBS.
PIER #1 THRU #5									
P-501	970	7'-5"	3	2'-8"	2'-6"				7504
P-502	410	7'-11"	3	2'-8"	2'-9"				3385
P-601	40	18'-9"	ST.						1127
P-602	20	28'-0"	ST.						841
P-1001	500	8'-6"	ST.						18,288
P-1002	500	7'-6"	ST.						16,136
P-1101	700	7'-0"	1	1'-0"	6'-3"				26034
P-1102	OPEN								—
P-1103	42	30'-4"	ST.						6,769
P-1104	70	31'-1"	ST.						11,560
P-1105	98	31'-11"	ST.						16,618
P-1106	98	32'-3"	ST.						16,792
P-1107	42	32'-8"	ST.						7,289
P-1108	140	31'-6"	ST.						23,430
P-1109	42	34'-3"	ST.						7,643
P-1110	56	35'-1"	ST.						10,438
P-1111	42	35'-6"	ST.						7,922
P-1112	42	30'-8"	ST.						6843
P-1113	20	10'-5"	9	3'-6"	3'-5"	1'-2"			1,107
P-1114	60	20'-11"	ST.						6,668
P-1115	60	30'-2"	ST.						9616
P-1116	80	10'-0"	ST.						4250
P-1117	20	11'-10"	ST.						1257
P-1118	60	13'-3"	1	3'-4"	10'-2"				4224
P-1119	60	28'-0"	ST.						8926
P-1120	60	19'-5"	ST.						6,190
								SPIRALS =	26,288
								PIER #1 THRU #5 TOTAL =	257,145 LBS.

MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENTS	WEIGHT LBS.

MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENTS	WEIGHT LBS.
RAILING ⊗									
R-501	4	15'-10"	ST.						
R-502	4	20'-4"	ST.						
R-503	4	16'-8"	ST.						
R-504	4	21'-8"	ST.						
R-505	16	12'-0"	ST.						
R-506	272	15'-4"	ST.						
R-507	8	5'-4"	23						
R-508	12	4'-2"	24						
R-521	12	11'-8"	22	2'-0"	2'-0"	2'-3"	2'-10"		
R-522	12	11'-4 5/8"	22	3'-0"	8"	3'-9"	11 3/16"		
REPLACEMENT BARS									
RE-401	2	5'-3"	10	5'-3"	1'-4"				
RE-501	3	5'-6"	ST.						
RE-601	18	6'-0"	ST.						
RE-701	10	6'-3"	ST.						
RE-801	1	6'-6"	ST.						
RE-1001	2	7'-3"	ST.						
RE-1101	14	7'-9"	ST.						

SPIRAL REINFORCING SCHEDULE

MARK	NO. REQ'D.	CORE DIA	LENGTH	PITCH	Nº OF TURNS	WEIGHT
SP-401	3	2'-8"	27'-1 5/8"	4 1/2"	76	1259
SP-402	7	2'-8"	28'-0"	4 1/2"	78	3016
SP-403	3	2'-8"	29'-6 1/4"	4 1/2"	82	1359
SP-404	7	2'-8"	28'-9 3/4"	4 1/2"	80	3093
SP-405	7	2'-8"	29'-2 3/4"	4 1/2"	81	3132
SP-406	10	2'-8"	28'-4"	4 1/2"	79	4364
SP-407	3	2'-8"	31'-1 1/2"	4 1/2"	86	1425
SP-408	4	2'-8"	31'-11"	4 1/2"	88	1944
SP-409	3	2'-8"	32'-4"	4 1/2"	89	1475
SP-410	3	2'-8"	27'-6 1/4"	4 1/2"	76	1259
SPACERS	5827 LIN FT.					3962
					TOTAL SPIRALS ---- =	26,288

TOTAL THIS SHEET = 257145 LBS.

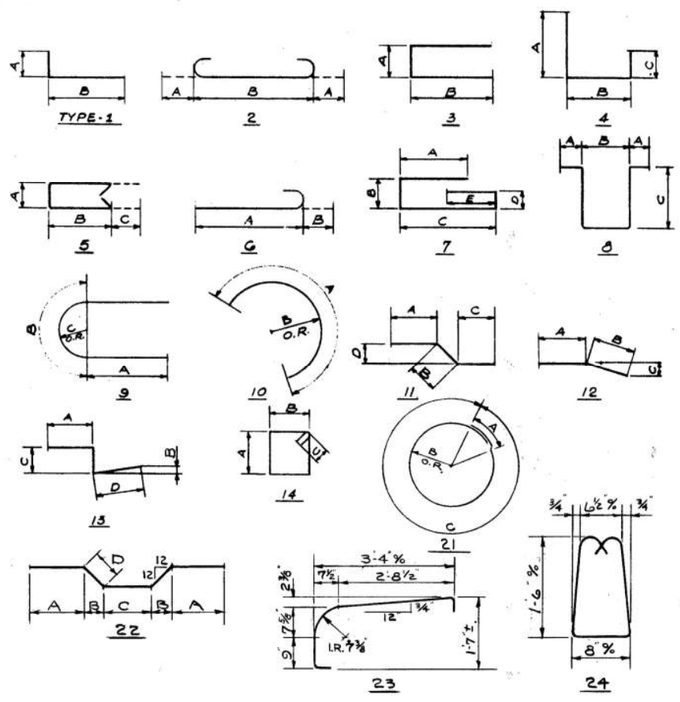
GRAND TOTAL 821,963 LBS.

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

SUM-277-0.00

203
234



REINFORCING NOTES

THE LENGTH SHOWN IN THE STEEL SCHEDULE FOR THE SPIRAL BARS IS THE DISTANCE FROM THE TOP OF THE FOOTING TO THE BOTTOM OF THE PIER CAP. THE NUMBER OF TURNS SHOWN IN THE STEEL SCHEDULE FOR SPIRAL BARS IS THE LENGTH DIVIDED BY THE PITCH PLUS THREE TURNS (TOTAL NUMBER OF CLOSED COILS) EXPRESSED AS THE NEAREST WHOLE NUMBER. SPIRAL REINFORCING BARS SHALL NOT HAVE DEFORMATIONS; BUT SHALL IN OTHER RESPECTS CONFORM TO ITEM 509

ONE AND ONE HALF CLOSED COILS SHALL BE PROVIDED AT THE ENDS OF EACH SPIRAL UNIT. FOUR (4) STEEL CHANNEL, TEE OR ANGLE SPACERS WEIGHING APPOX. 0.90 LBS. PER LINEAL FT. OF SPACERS SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG THE PERIPHERY OF EACH COIL. THE NUMBER OF POUNDS OF THESE SPACERS BASED ON 0.90 LBS. PER LINEAL FT. WILL BE PAID FOR AS REINFORCING STEEL AND IS INCLUDED IN THE TABULATED QUANTITY OF SPIRAL BARS.

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE A-601 IS A NO. 6 SIZE BAR AND P-1001 IS A NO. 10 SIZE BAR.

⊗ RAILING REINFORCEMENT BARS WILL BE INCLUDED AS PART OF ITEM 517 FOR PAYMENT.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

REINFORCING SCHEDULE

BRIDGE NO. SUM-277-0000
OVER RELOCATED S.R. 8
I-277 SUMMIT COUNTY
STA. 251+17.15 TO STA. 256+78.35

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KJ	JNP		CLS	RBW	6-30-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

204
234

SUM-277-0.00

CURVE DATA

S.R.-8 NORTHBOUND LANES

P.I. STA. 485+55.51
Δ = 30°-33'-00"
D = 1°-28'-00"
R = 3,906.53'
T = 1,066.87'
L = 2,082.95'

RAMP - C-2

C.S. STA. 8+51.59
S.C. STA. 10+01.59
L_S = 150'
LT = 95.79'
ST = 54.80'
Θ_S = 12°22'-30"

S.C. STA. 10+01.59
P.C.C. STA. 14+55.12
Δ = 68°-01'-46" LT.
D = 15°-00'-00"
R = 381.97'
T = 257.78'
L = 453.53'

AVERAGE ESTIMATED PAY LENGTH FOR
10BP42 STEEL H PILES
ABUTMENTS = 30 FT
PIERS = 15 FT

VERTICAL CLEARANCE:
DESIGN = 16.50'
ACTUAL = 16.72'

PROPOSED STRUCTURE

TYPE: CONTINUOUS WELDED PLATE GIRDERS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
SKEW: 54°10'51" RF. TO LOC. TAN.
SPANS: 65'-1" - 94'-3" - 66'-1" c/c BRGS.
ROADWAY: 28'-0" F/F PARAPETS
LOAD FREQUENCY: CF 2000 ADEQUATE FOR A.A.S.H.O. ALTERNATE LOADING.
WEARING SURFACE: 1" MONOLITHIC
APPROACH SLABS: 25' LONG (AS-1-54)
ALIGNMENT: 15°00'00" LT.
SUPERELEVATION: .0833 FT/FT.
SLOPE PROTECTION: 601 CRUSHED AGG.
TRAFFIC: 10,360 - 1975 - A.D.T.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER & HOCH, Consulting Engineers
AKRON, OHIO

SITE PLAN

BRIDGE NO. SUM-8-.0930.
RAMP C-2 OVER RELOCATED S.R.-8-N.B.
I.-277 SUMMIT COUNTY
STA. 491+97.12.

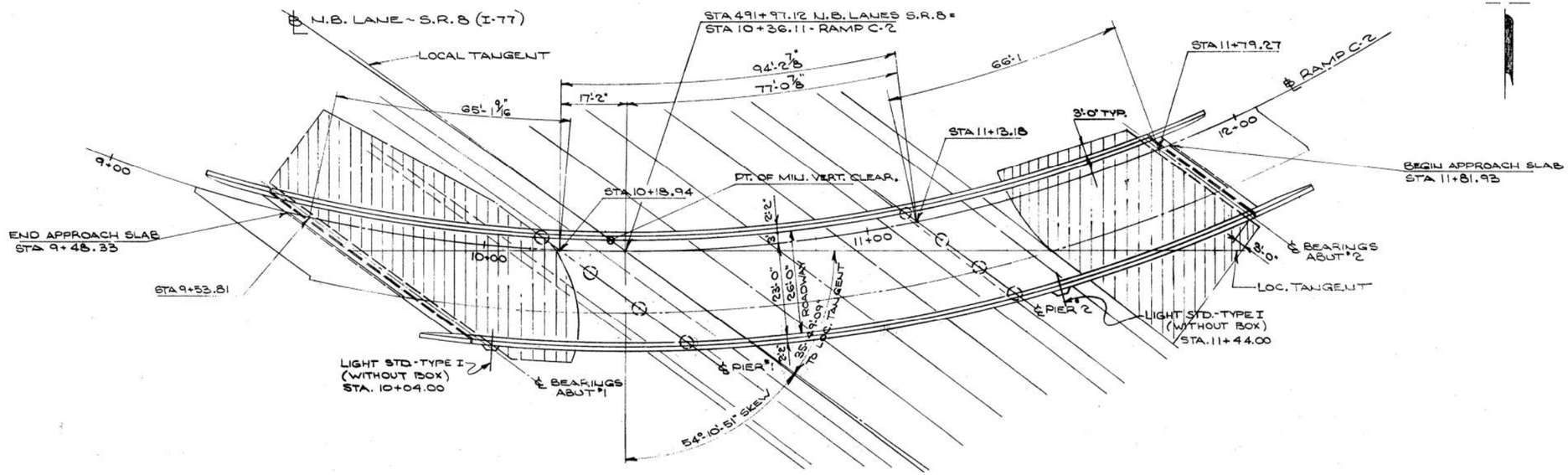
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CLS	MHC	JK	H.G.H.	EBH	6-29-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

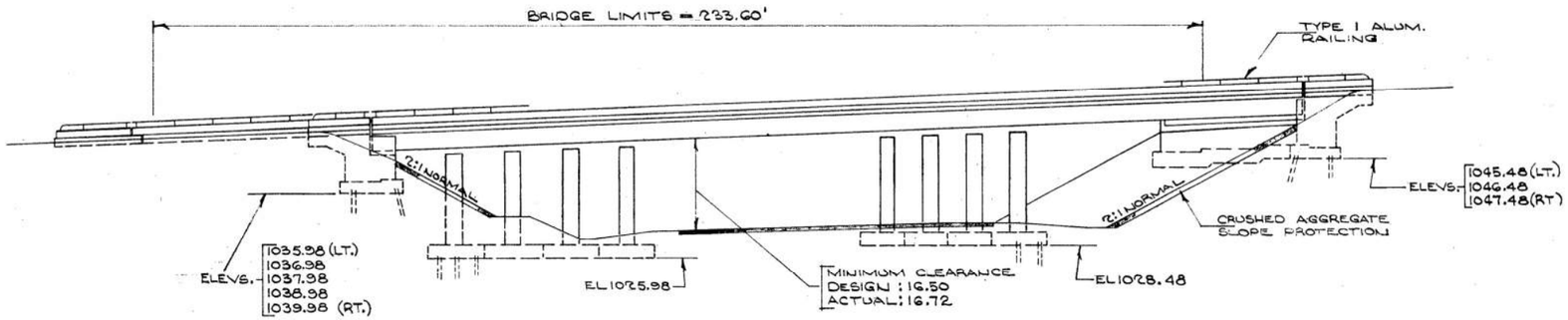
FED. RD.	STATE	PROJECT	
2	OHIO		

SUM-277-0.00

205
234



PLAN



ELEVATION

SEE SHEET Nº 185
FOR GENERAL NOTES #1-5, 7, 10-17
SEE SHEET Nº 186 FOR DETAILS #1 AND 6

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUT'S	PIERS	GEN
503	490	CU.YDS.	UNCLASSIFIED EXCAVATION		327	163	
505	LUMP	SUM	FIRST TEST PILE				
507	1710	LIN.FT.	10 BP 42 STEEL PILES		990	720	
509	97208	LBS.	REINFORCING STEEL	67,412	15,706	14,090	
511	226	CU.YDS.	CLASS "C" CONC. SUPERSTRUCTURE	226			
511	137	CU.YDS.	CLASS "E" CONC. ABUTS. ABOVE FOOTINGS.		137		
511	42	CU.YDS.	CLASS "C" CONC. PIERS ABOVE FOOTINGS.			42	
511	133	CU.YDS.	CLASS "E" CONC. PIER & ABUT. FOOTINGS.		85	48	

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS	PIERS	GEN
512	11	LIN.FT.	WATERPROOF PREMOLDED SEALING STRIP		11		
513	179,315	LBS.	STRUCTURAL STEEL	179,315	[illegible]		
514	179,315	LBS.	FIELD PAINTING STRUCTURAL STEEL	179,315	[illegible]		
517	503.98	LIN.FT.	BRIDGE RAILING TYPE I	441.84	62.14		

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS.	PIERS	GEN
825	930	SQ.YDS.	CONCRETE SURFACE TREATMENT				930
828	89	LIN.FT.	JOINT SEALER	89			
518	48	CU.YDS.	POROUS BACKFILL		48		
518	88	LIN.FT.	6" PERFORATED HELICAL C.M.P. 707.06 INCLUDING SPECIALS		88		
518	72	LIN.FT.	6 HELICAL C.M.P. 707.06 NON-PERFORATED		72		
518	6	EACH	SCUPPERS INCLUDING SUPPORTS	6			
601	559	SQ.YDS.	CRUSHED AGGREGATE SLOPE PROTECTION		559		
625			SEE ELECTRICAL DWGS.				
808	226	EACH	WATER REDUCING SET RETARD. ADMIXT.	226			

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

GENERAL PLAN & ELEVATION

BRIDGE Nº SUM-8-0930
RAMP C-2 OVER RELOCATED S.R.-8-N.B.
I-277 SUMMIT COUNTY
STA 491+97.12

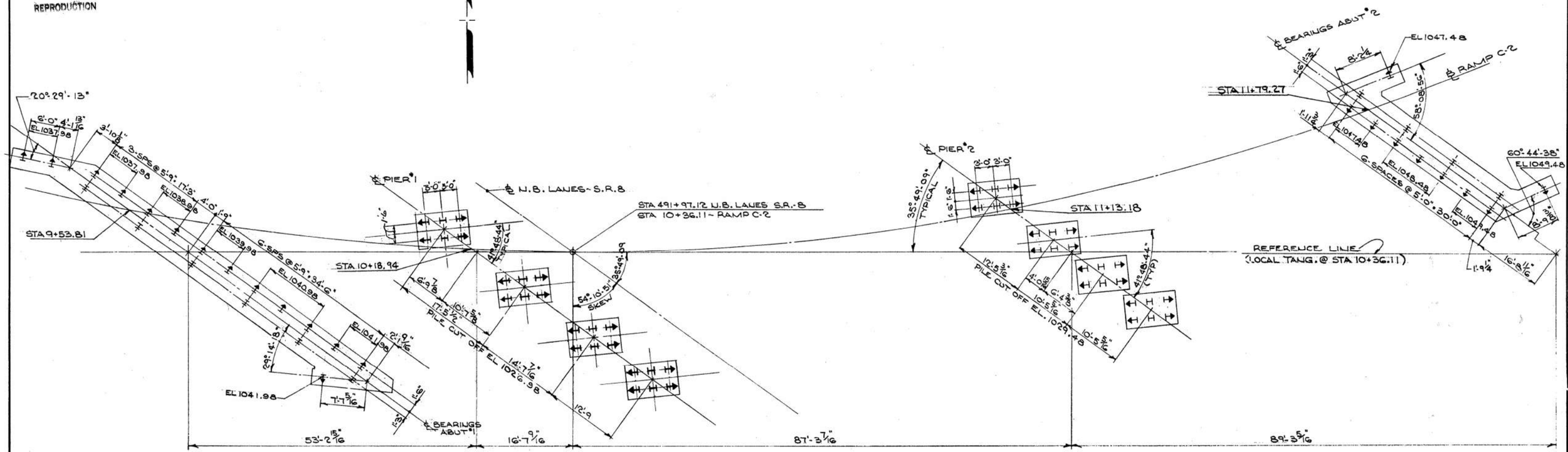
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CLS	JWW		H.G.H.	RDH	6-29-65	8-24-66

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

206
234

SUM-277-0.00



PILING PLAN

ELEV. GIVEN - PILE CUT OFF ELEV.

ALL PILES 10BP42

▶ INDICATES DIRECTION OF 1:4 PILE BATTER

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

PILING PLAN

BRIDGE Nº SUM-8-0930
RAMP C-2 OVER RELOCATED S.R.-8-N.B.
I-277 SUMMIT COUNTY
STA 491+97.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CRS	JWW		H.G.H.	EDH	6-29-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

207
234

SUM-277-0.00

CONCRETE ABOVE THIS LINE TO BE PAID FOR AS PART OF ITEM 517 (RAILING)

— SECTION "A-A" —

— SECTION "B-B" —

— SECTION "C-C" —

— SECTION "D-D" —

— PARTIAL PLAN — ABUTMENT #1 —

— PARTIAL ELEVATION — ABUTMENT #1 —

— ELEVATION — SOUTH WINGWALL — ABUT. #1 —

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

ABUTMENT #1 DETAILS

BRIDGE Nº SUM-8-0930
RAMP C-2 OVER RELOCATED S R-8-N.B.
I-277 SUMMIT COUNTY
STA 491+97.12

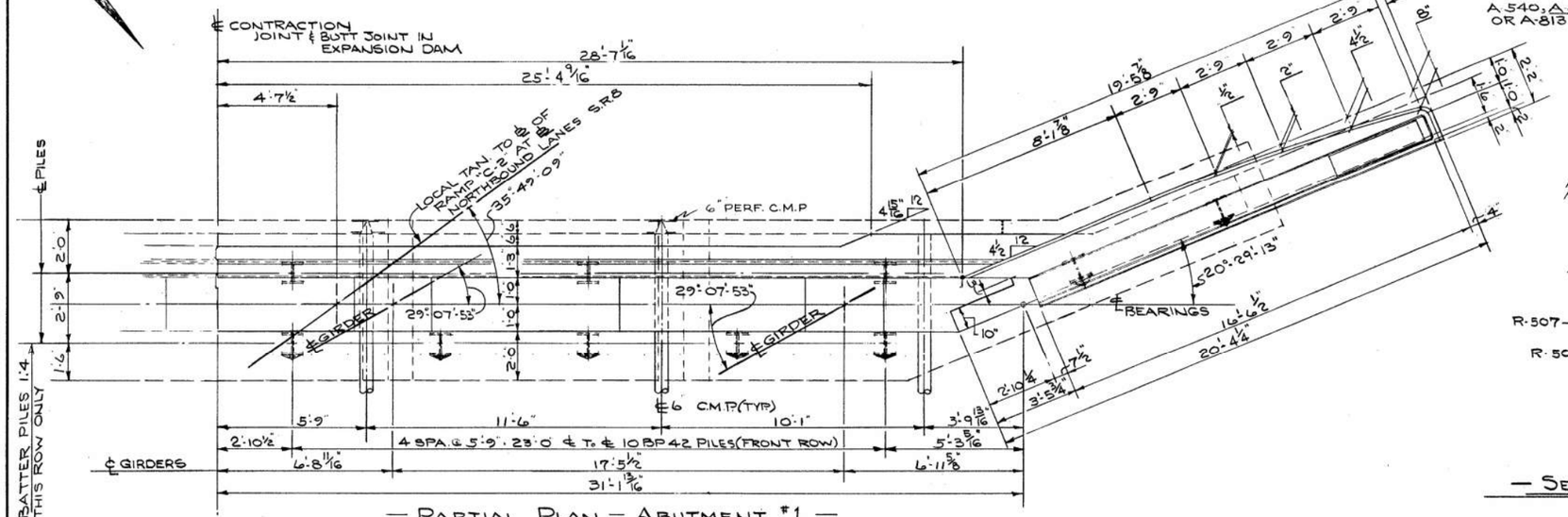
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAS	JNP		H.G.H.	EBH	6-29-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

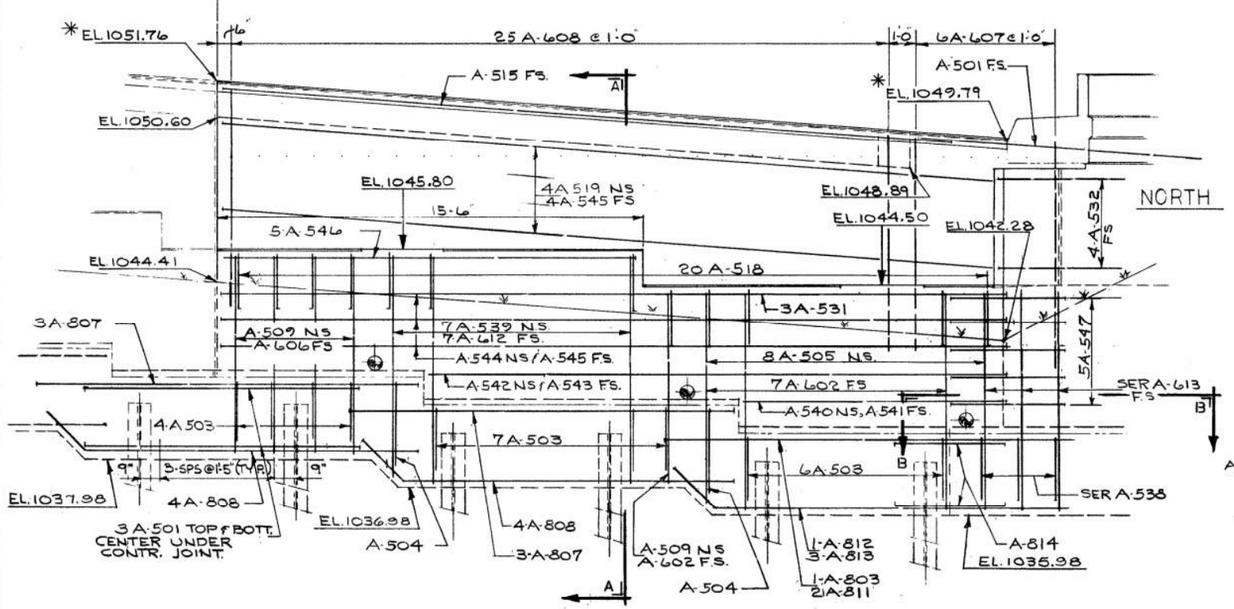
FED. RD.	STATE	PROJECT	
2	OHIO		

208
234

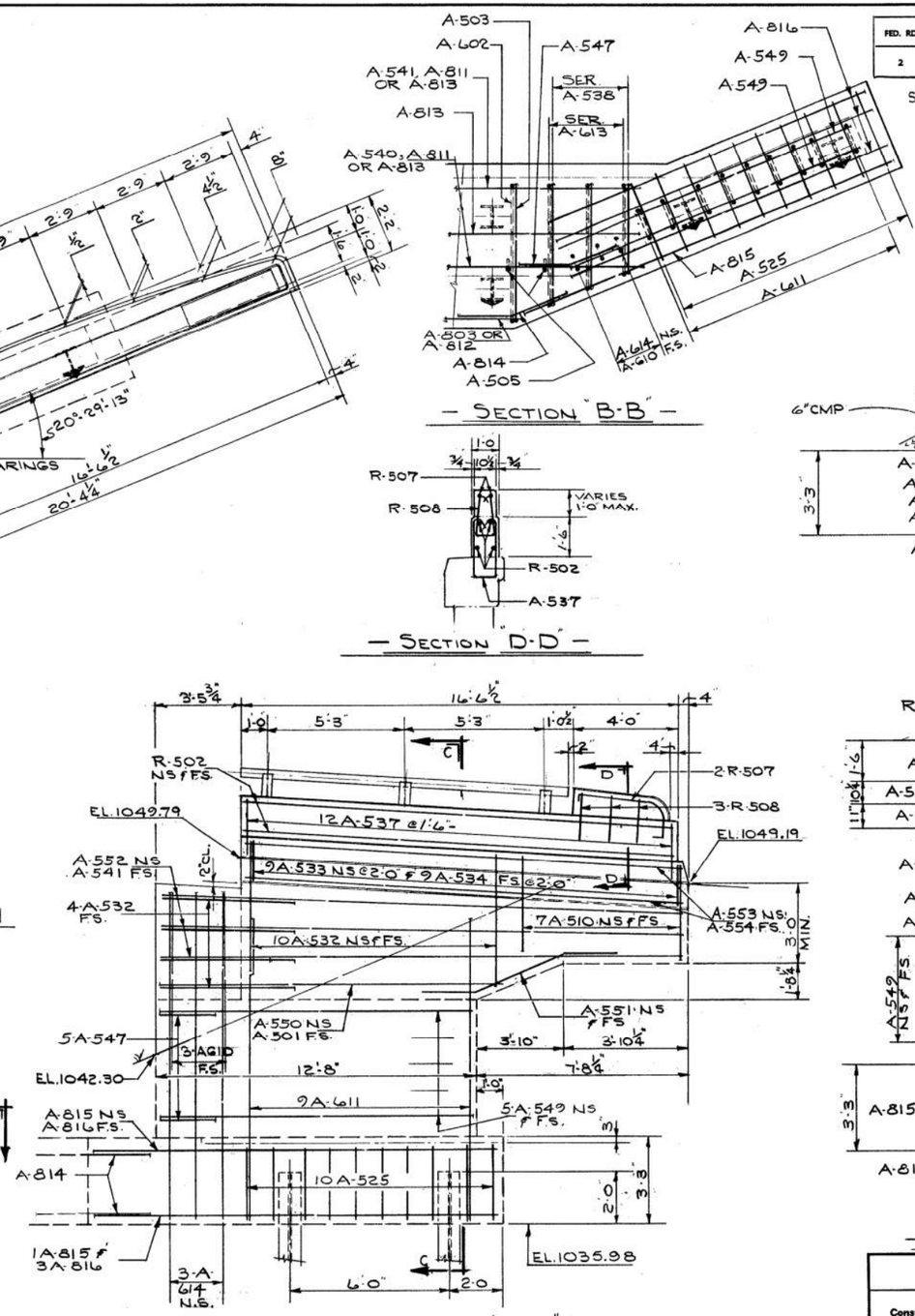
SUM-277-0.00



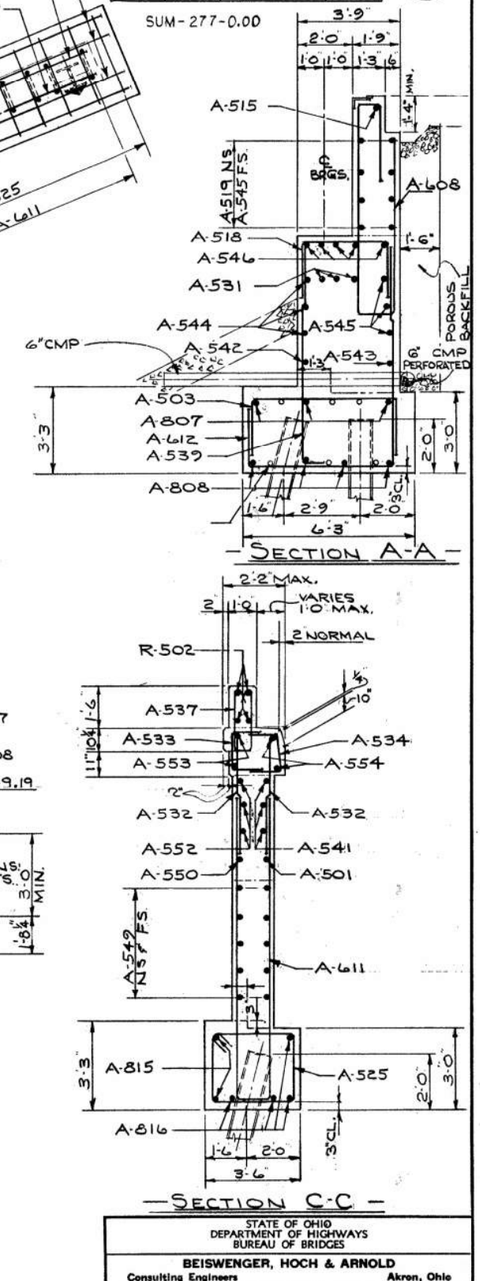
— PARTIAL PLAN — ABUTMENT #1 —



— PARTIAL ELEVATION — ABUTMENT #1 —



— ELEVATION — NORTH WINGWALL — ABUT. #1 —



STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

ABUTMENT 1 DETAILS

BRIDGE N° SUM-8-0930
RAMP C-2 OVER RELOCATED S.R.-8-N.B.
I-277 SUMMIT COUNTY
STA 491+97.12

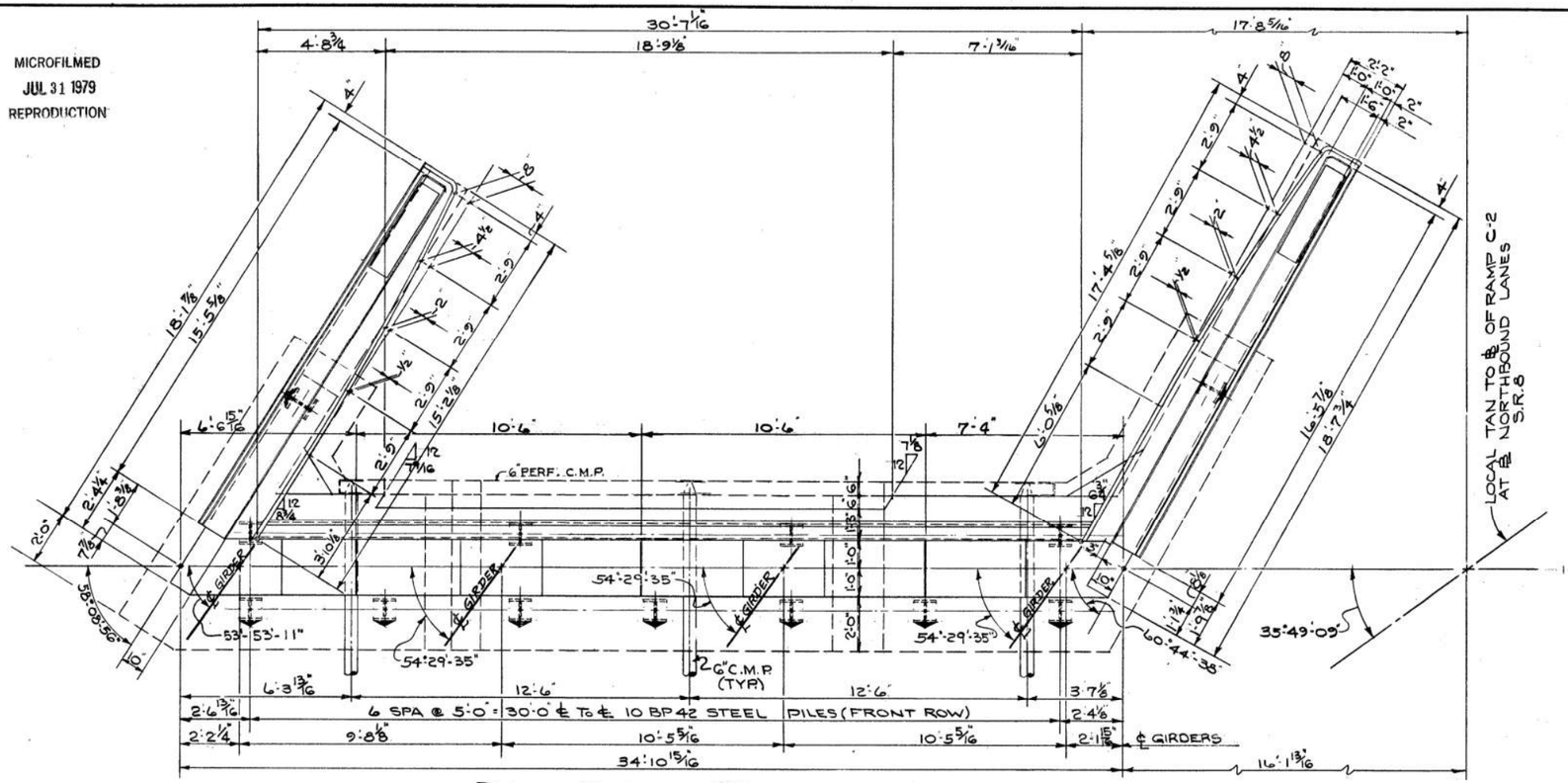
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CES	JNP		H.G.H.	RDH	6-29-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

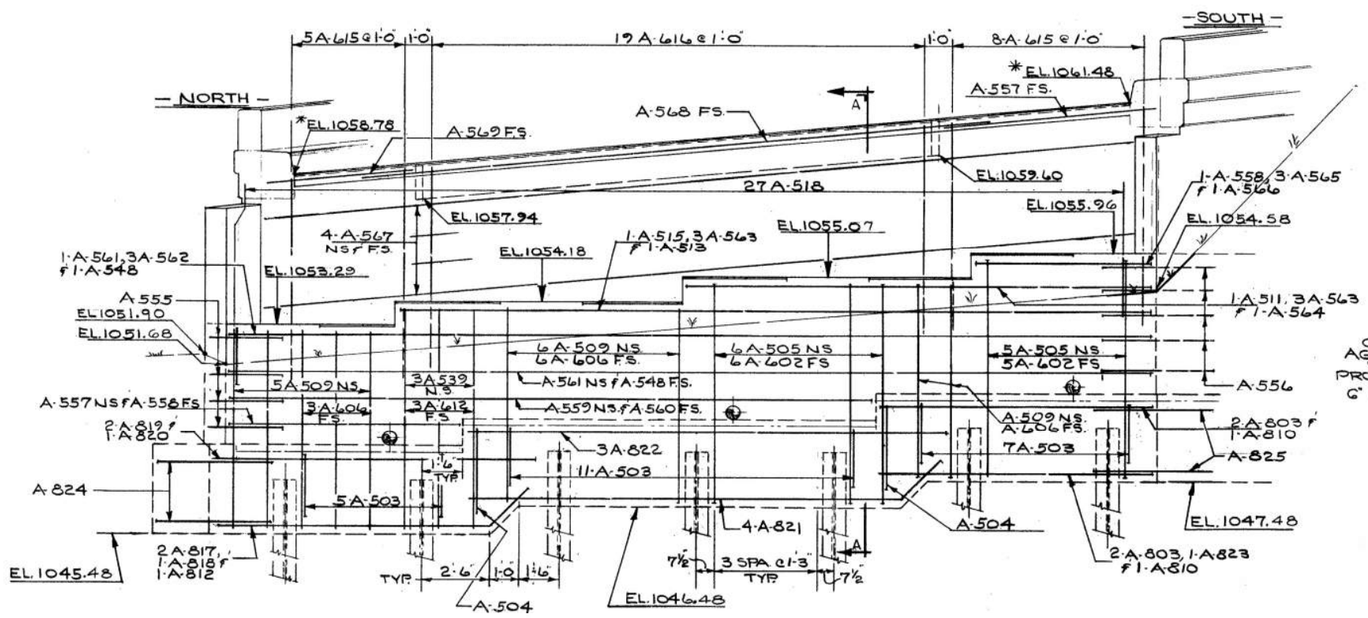
FED. RD.	STATE	PROJECT	
2	OHIO		

SUM 277-0.00

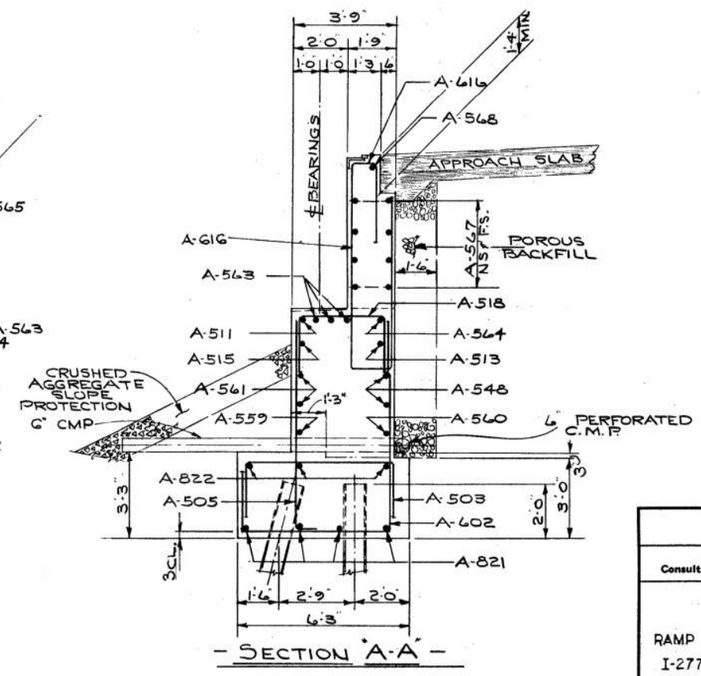
2.09
2.34



— PLAN - ABUTMENT *2 —



— ELEVATION —



— SECTION "A-A" —

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

ABUTMENT 2 DETAILS

BRIDGE N° SUM-8-0930
RAMP C-2 OVER RELOCATED SR-8-NB.
I-277 — SUMMIT COUNTY
STA 491+97.12

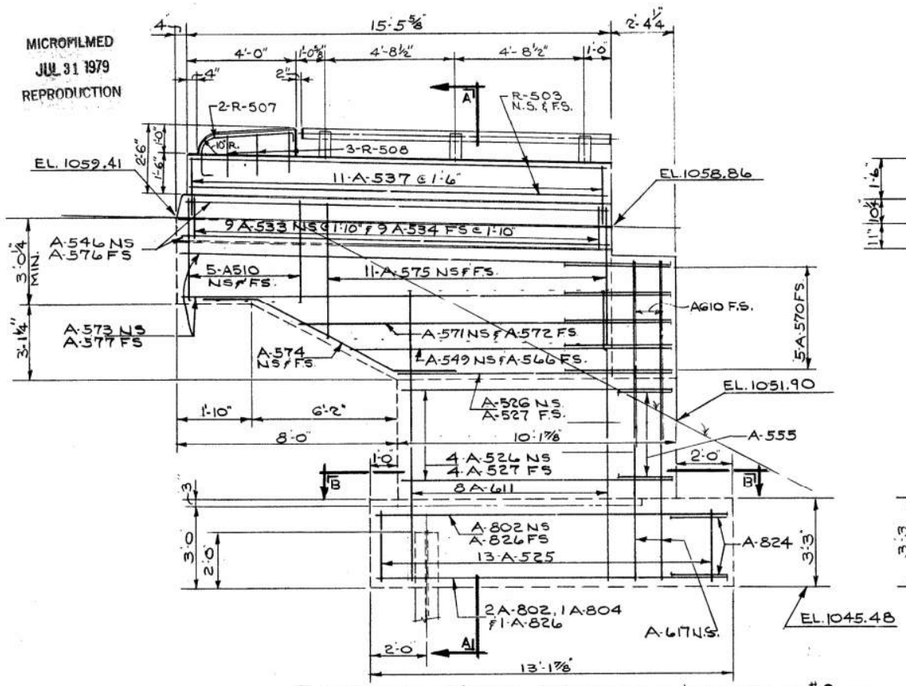
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CRA	J.N.P.		H.G.H.	EBH	6-29-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

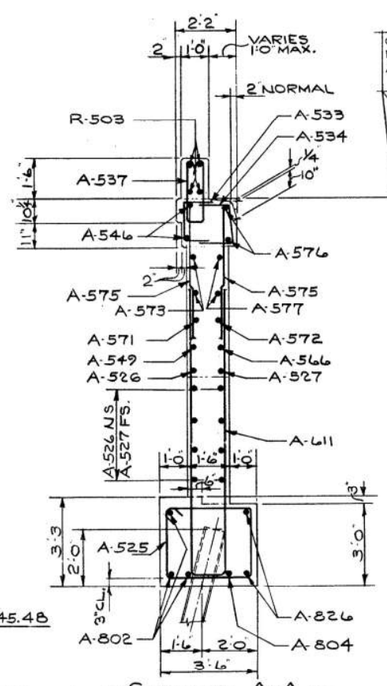
FED. RD.	STATE	PROJECT	
2	OHIO		

210
234

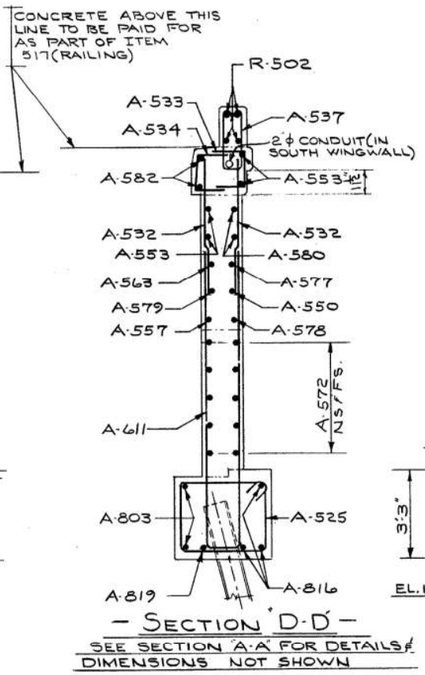
SUM-277-0.00



— ELEVATION — NORTH WINGWALL — ABUTMENT #2 —

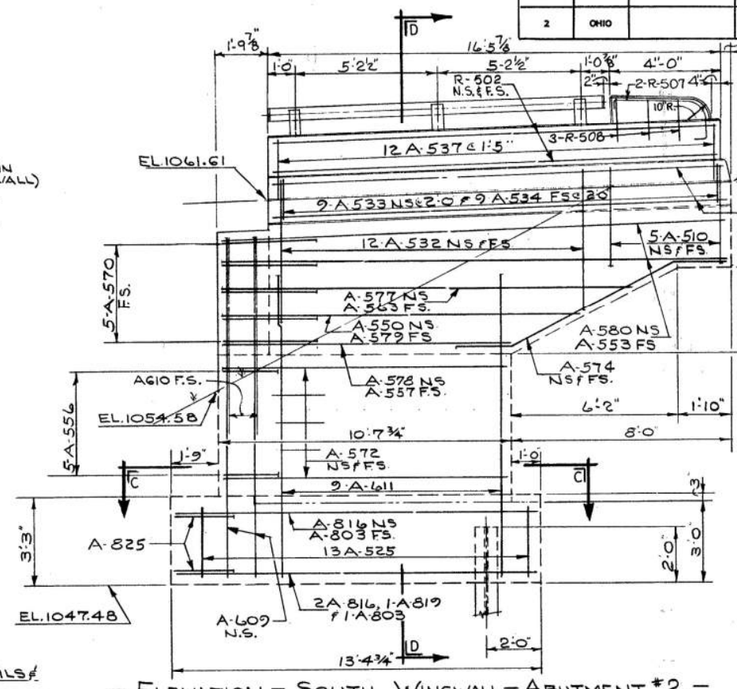


— SECTION A-A —

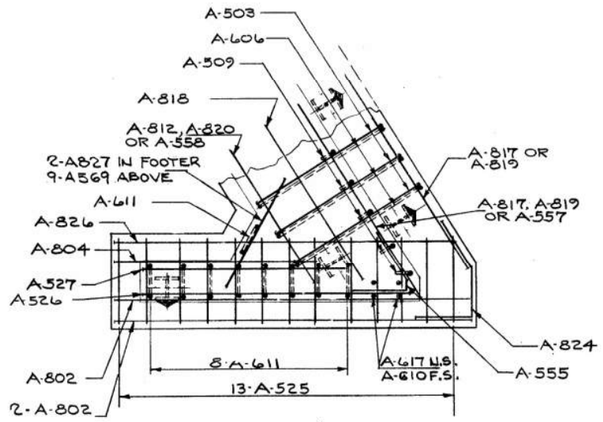


— SECTION D-D —

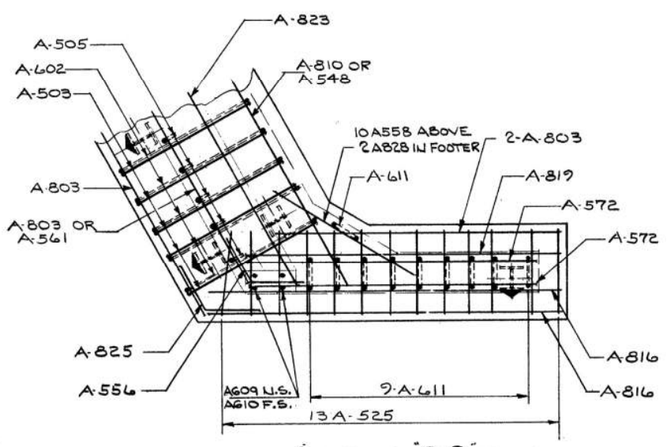
SEE SECTION A-A FOR DETAILS & DIMENSIONS NOT SHOWN



— ELEVATION — SOUTH WINGWALL — ABUTMENT #2 —



— SECTION "B-B" —



— SECTION "C-C" —

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

ABUTMENT #2 DETAILS

BRIDGE N° SUM-8-0930
RAMP C-2 OVER RELOCATED SR-8-N.B.
I-277 SUMMIT COUNTY
STA 491+97.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CLS	J.N.P.		H.G.H.	RDH	6-29-65	

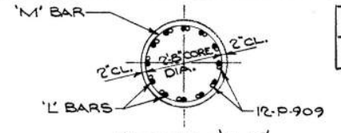
MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

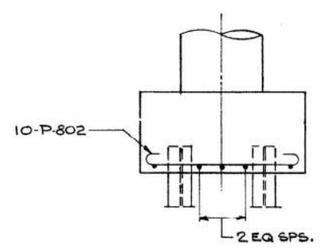
SUM-277-0.00

211
234

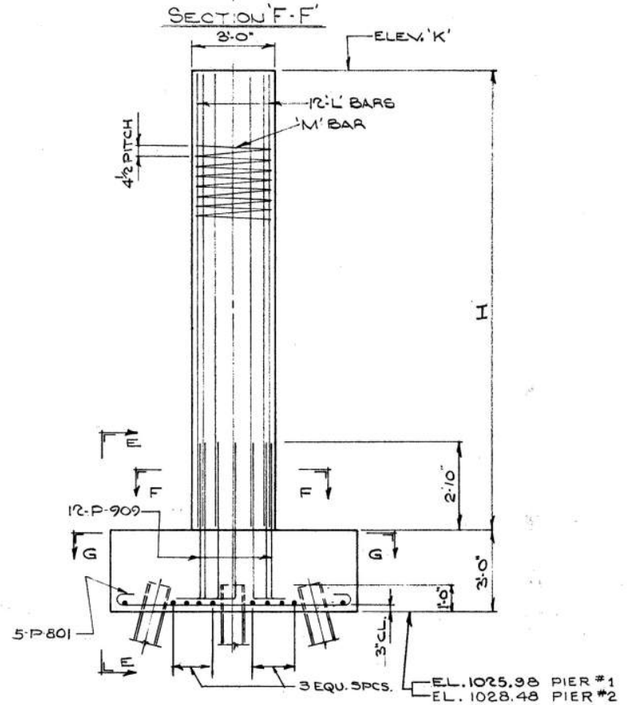
PIER Nº 1				
COL. MARK	ELEV. 'K'	H	'L' BARS	'M' BARS
A	1046.40	17'-5"	12-P901	SP-401
B	1047.70	18'-8 5/8"	12-P902	SP-402
C	1048.88	19'-10 3/4"	12-P903	SP-403
D	1049.98	21'-0"	12-P904	SP-404
PIER Nº 2				
A	1050.25	18'-9 1/4"	12-P905	SP-405
B	1051.27	19'-9 1/2"	12-P906	SP-406
C	1052.22	20'-8 7/8"	12-P907	SP-407
D	1053.17	21'-8 1/4"	12-P908	SP-408



SECTION 'F-F'

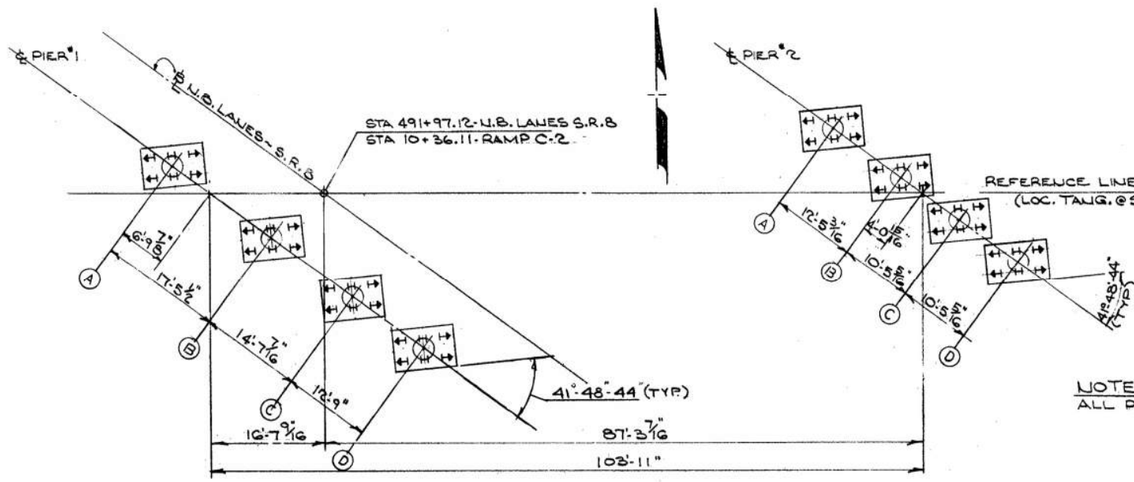


VIEW E-E



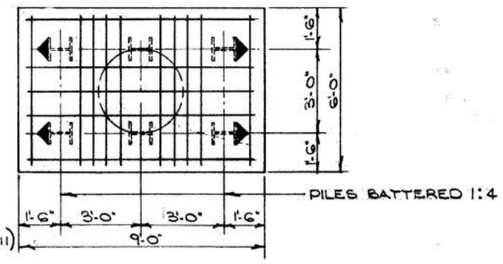
ELEVATION

—TYPICAL COLUMN DETAIL—



KEY PLAN

NOTE
ALL PILES 10BP42



SECTION 'G-G'

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

PIERS 1 & 2 DETAILS

BRIDGE Nº SUM-8-0930
RAMP C-2 OVER RELOCATED S.R.-8-N.B.
I-277 SUMMIT COUNTY
STA 491+97.12

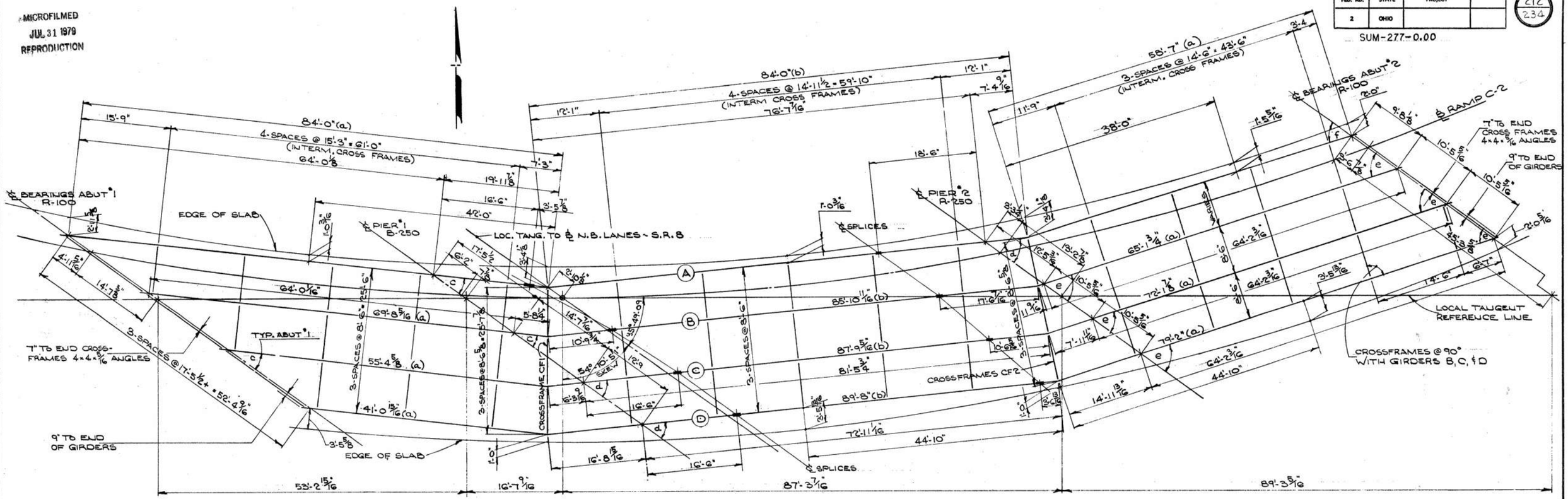
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CLS	JWJ		H.G.H.	BDH	6-29-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

212
234

SUM-277-0.00

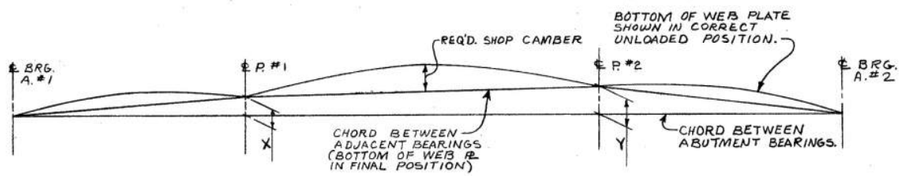


FRAMING PLAN

(a) INDICATES GIRDER LENGTH BETWEEN ABUT. BEARINGS AND BEND POINTS
(b) INDICATES GIRDER LENGTH BETWEEN BEND POINTS

DEFLECTION & CAMBER

	SPAN N° 1												SPAN N° 2												SPAN N° 3											
GIRDER LINE	A			B			C			D			A			B			C			D			A			B			C			D		
LOCATION	¼PT.	℄	¾PT.	¼PT.	℄	¾PT.	¼PT.	℄	¾PT.	¼PT.	℄	¾PT.	¼PT.	℄	¾PT.	¼PT.	℄	¾PT.	¼PT	℄	¾PT.	¼PT.	℄	¾PT.	¼PT.	℄	¾PT.	¼PT	℄	¾PT.	¼PT.	℄	¾PT.	¼PT.	C	¾PT.
DEFLECTION DUE TO WEIGHT OF STEEL	.043	.043	.007	.048	.050	.013	.041	.044	.012	.027	.027	.004	.122	.194	.122	.100	.162	.100	.084	.134	.082	.085	.133	.080	.007	.043	.043	.013	.050	.048	.018	.054	.051	.018	.056	.051
DEFLECTION DUE TO REMAINING DEAD LOAD	.185	.185	.030	.220	.231	.061	.190	.204	.054	.122	.118	.017	.506	.810	.506	.475	.754	.475	.389	.617	.380	.376	.591	.356	.030	.185	.185	.061	.231	.220	.081	.252	.234	.081	.250	.230
CONVEXITY REQUIRED FOR VERTICAL CURVE	—	—	—	—	—	—	.036	.072	.048	.036	.080	.084	.390	.540	.390	.393	.525	.393	.354	.472	.354	.327	.436	.327	.207	.276	.207	.191	.255	.191	.183	.244	.183	.175	.233	.175
SUM OF DEFLECTION AND CONVEXITY	.228	.228	.037	.268	.281	.074	.267	.320	.114	.185	.225	.105	1.018	1.544	1.018	.968	1.441	.968	.827	1.223	.816	.788	1.160	.763	.244	.504	.435	.265	.536	.459	.282	.550	.468	.274	.539	.456
REQUIRED CAMBER	¼"	¼"	5/16"	¼"	¼"	5/16"	¼"	5/16"	⅛"	3/16"	¼"	⅛"	1"	1 3/16"	1"	1"	1 1/16"	1"	13/16"	1¼"	13/16"	13/16"	1 3/16"	¾"	¼	½	7/16	¼	9/16	7/16	5/16	9/16	7/16	¼	9/16	7/16



LAYOUT DIAGRAM

BEAM	X	Y
A	5 3/16"	9 3/16"
B	7"	10 7/16"
C	6 3/16"	9 5/16"
D	5 7/16"	8 5/16"

GIRDER ANGLES

LOC.	ANGLE
c	29° 07'-53"
d	41°-48'-44"
e	54°-29'-35"
f	53°-53'-11"

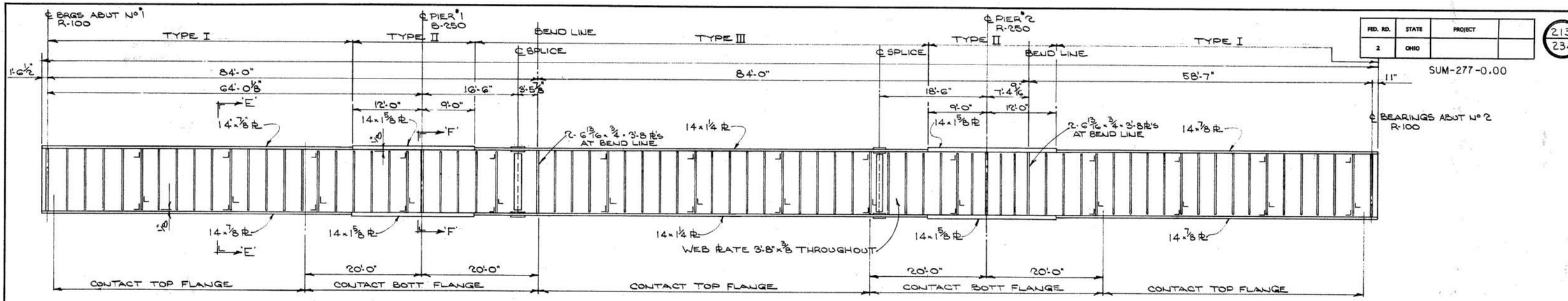
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

FRAMING PLAN

BRIDGE N° SUM-8-0930
RAMP C-2 OVER RELOCATED S R-8-N.B.
I-277 SUMMIT COUNTY
STA 491+97.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CDS	JWW		H.G.H.	EDH	6-29-65	



FED. RD.	STATE	PROJECT	
2	OHIO		

213
234

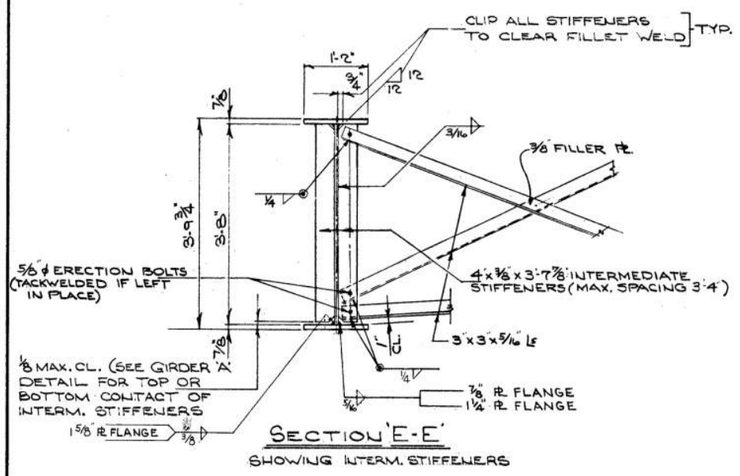
SUM-277-0.00

MICROFILMED
JUL 31 1979
REPRODUCTION

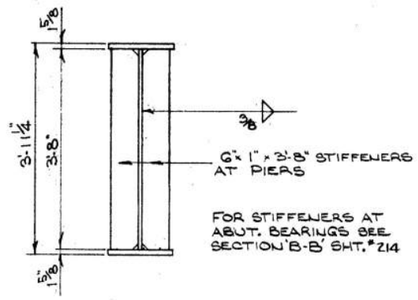
Detail Of Girder 'A' (As Shown)

GIRDERS B, C, & D SIMILAR EXCEPT AS SHOWN ON FRAMING PLAN

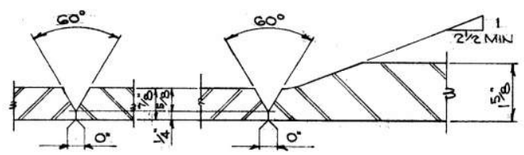
MAX. SPACING FOR INTERMEDIATE STIFF. = 3'-4"

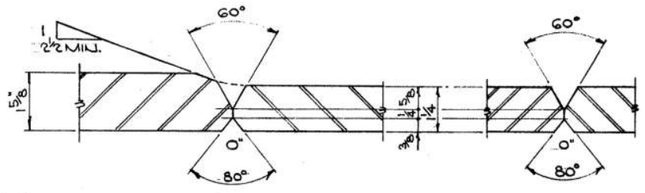


Section 'E-E'
SHOWING INTERM. STIFFENERS

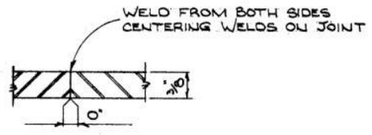


Section 'F-F'
SHOWING BEARING STIFFENERS





Flange Weld



Web Weld

ALL FULL PENETRATION WELDS SHALL BE BACK-GOUGED AND WELDED AFTER WELDING FAR SIDE.

BUTT WELDS ON BEAM AND GIRDER FLANGE PLATES SHALL BE GROUND FLUSH, THE FINISH GRINDING BEING PARALLEL TO THE DIRECTION OF STRESS.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

FRAMING DETAILS

BRIDGE Nº SUM-8-0930
RAMP C-2 OVER RELOCATED S.R.-8-N.B.
I-277 — SUMMIT COUNTY
STA 491+97.12

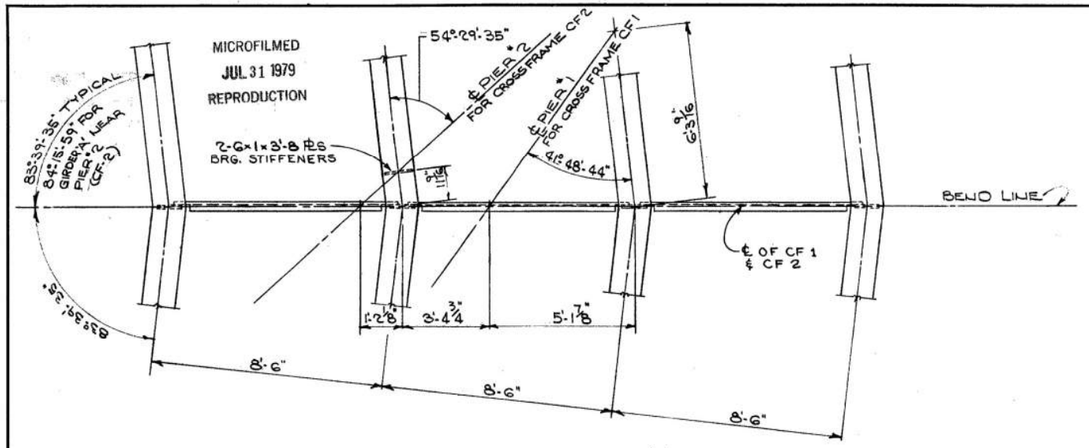
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AS	JWW		H.G.H.	EBN	6-29-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

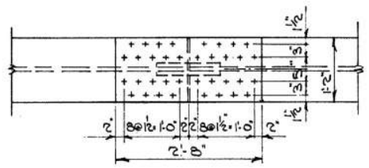
FED. RD.	STATE	PROJECT	
2	OHIO		

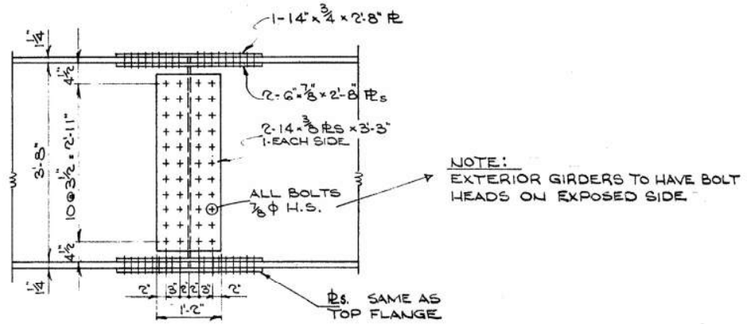
214
234

SUM-277-0.00



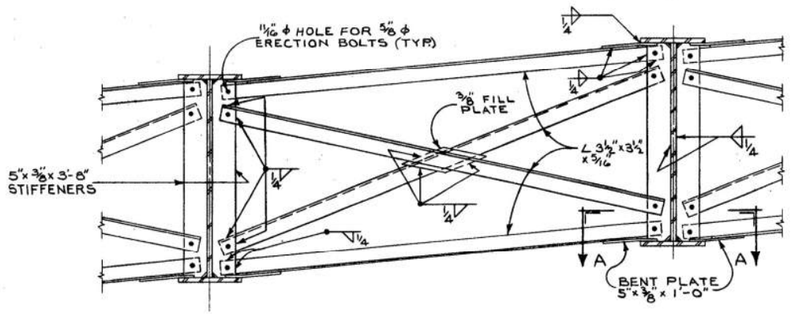
PLAN OF CROSS FRAMES CF1 & CF2



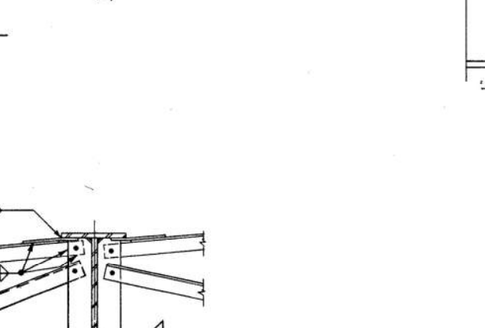


NOTE:
EXTERIOR GIRDERS TO HAVE BOLT HEADS ON EXPOSED SIDE

FIELD SPLICE DETAIL (TYP.)

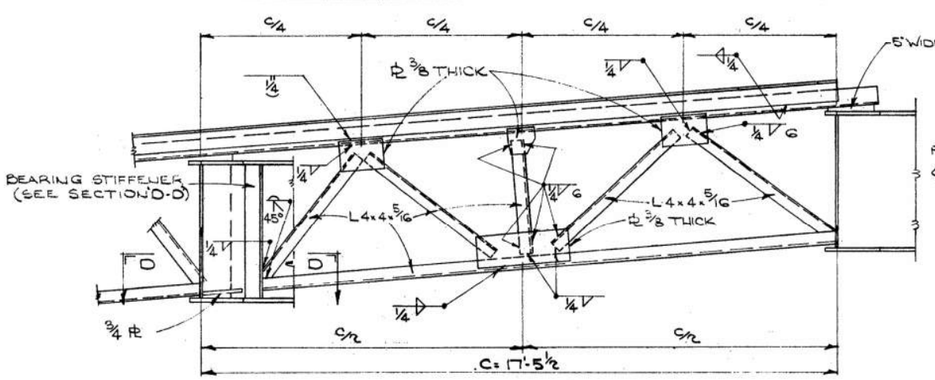


—TYPICAL ELEVATION CROSS FRAMES CF1 & CF2—



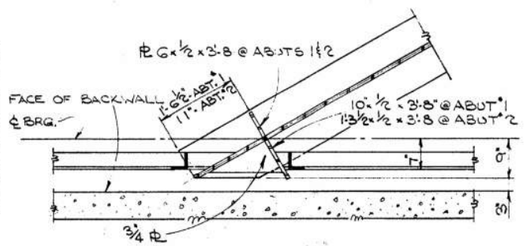
—SECTION 'A-A'—

DETAIL 'A'



END CROSS FRAME DETAIL @ ABUT #1

FOR END CROSS FRAME DETAIL @ ABUT 2 SEE STANDARD DWGS.



SECTION 'B-B'

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

FRAMING DETAILS

BRIDGE Nº SUM-8-0930
RAMP C-2 OVER RELOCATED S.R. 8 - N.B.
I-277 — SUMMIT COUNTY
STA 491+97.12

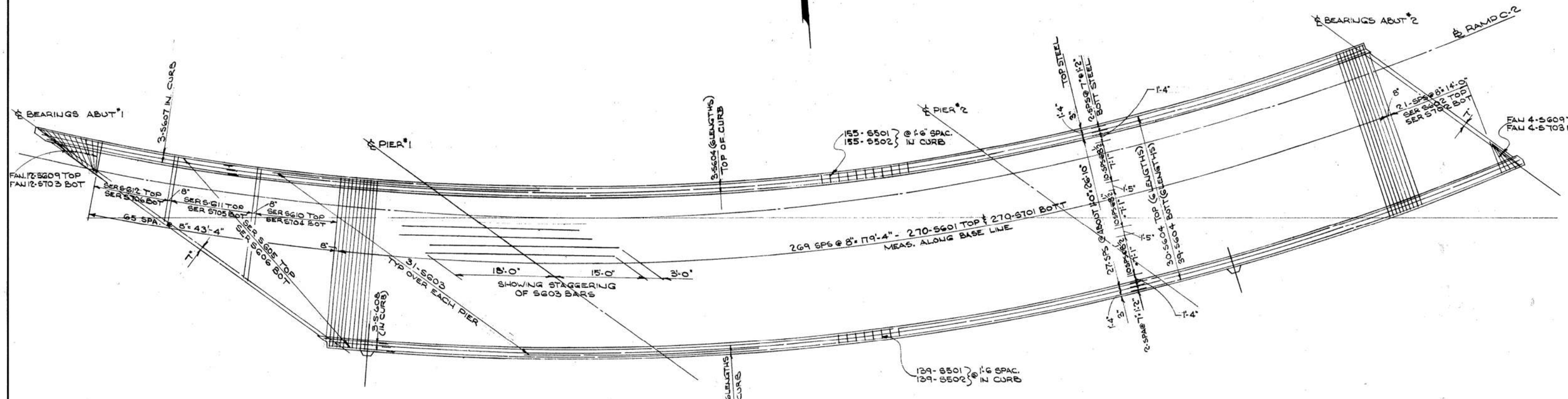
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CLS	WWW		H.G.H.	RDH	6-29-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

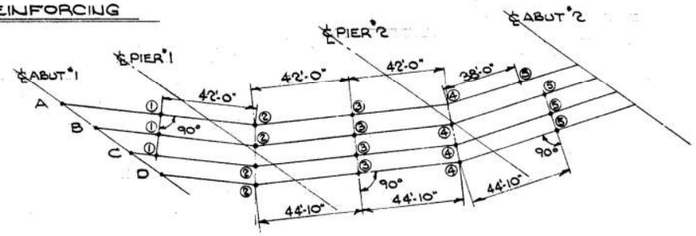
FED. RD.	STATE	PROJECT	
2	OHIO		

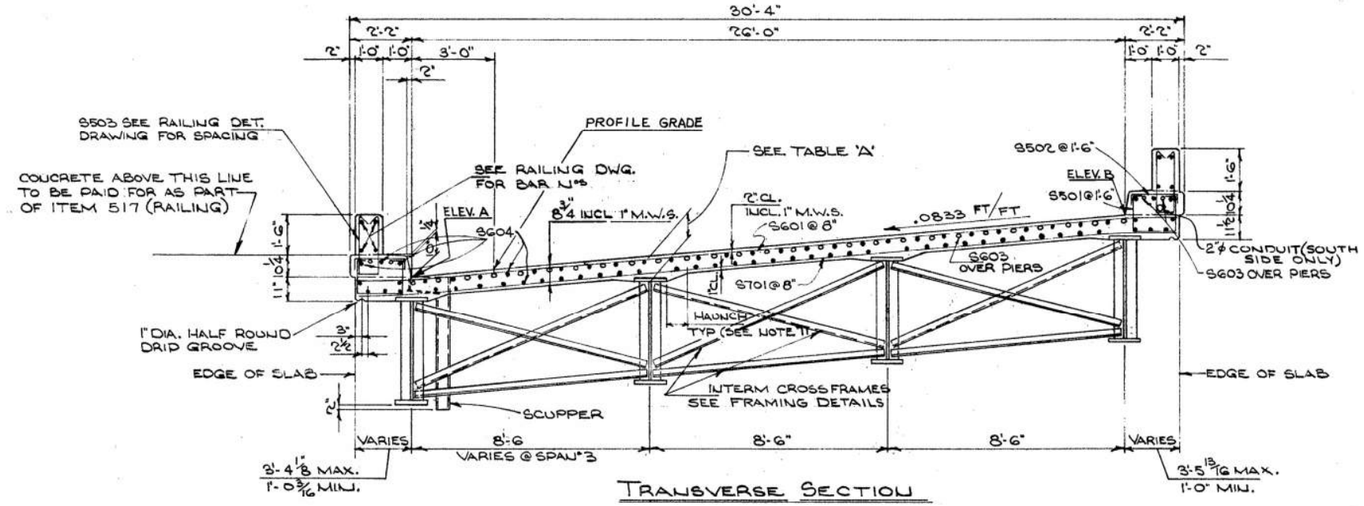
SUM-277-0.00

215
234



SLAB REINFORCING





TRANSVERSE SECTION

TABLE "A"

DIMENSIONS FROM TOP OF SLAB TO TOP EDGE OF WEB ℄ ON ℄ GIRDERS

GIRDER LINE	℄ BRGS ABUT 1	①	②	℄ PIER 1	②	③	④	℄ PIER°2	④	⑤	℄ BRGS ABUT°2
A	11 15/16"	10 3/16"	—	10 5/8"	12 5/16"	10"	—	11 9/16"	12 5/16"	10 7/16"	11"
B	10 13/16"	10 3/16"	—	11 13/16"	12 3/8"	10"	12 3/8"	12 1/4"	—	10"	10 5/8"
C	10 1/8"	10 3/16"	12 1/2"	11 13/16"	—	10"	12 1/2"	11 5/8"	—	10"	11"
D	10"	—	12 1/2"	11"	—	10"	12 1/2"	11 1/8"	—	10"	11 7/16"

ELEVATION TABLE

STATION	PROFILE GRADE	ELEV. A	ELEV. B
9+50	1050.33	1050.08	—
9+75	1051.28	1051.05	—
10+00	1052.28	1052.03	1054.20
10+25	1053.31	1053.08	1055.24
10+50	1054.33	1054.14	1056.25
10+75	1055.32	1055.12	1057.28
11+00	1056.28	1056.05	1058.24
11+25	1057.22	1056.97	1059.15
11+50	1058.13	1057.90	1060.06
11+75	1059.01	1058.76	1060.95

ELEVATIONS A & B ARE ELEVATIONS BEFORE DECK CONCRETE HAS BEEN PLACED. PROFILE GRADE ELEVATIONS ARE ACTUAL FINISHED PROFILE ELEVATIONS.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

SLAB DETAILS

BRIDGE N° SUM-8-0930
RAMP C-2 OVER RELOCATED SR-8-N.B.
I-277 SUMMIT COUNTY
STA 491+97.12

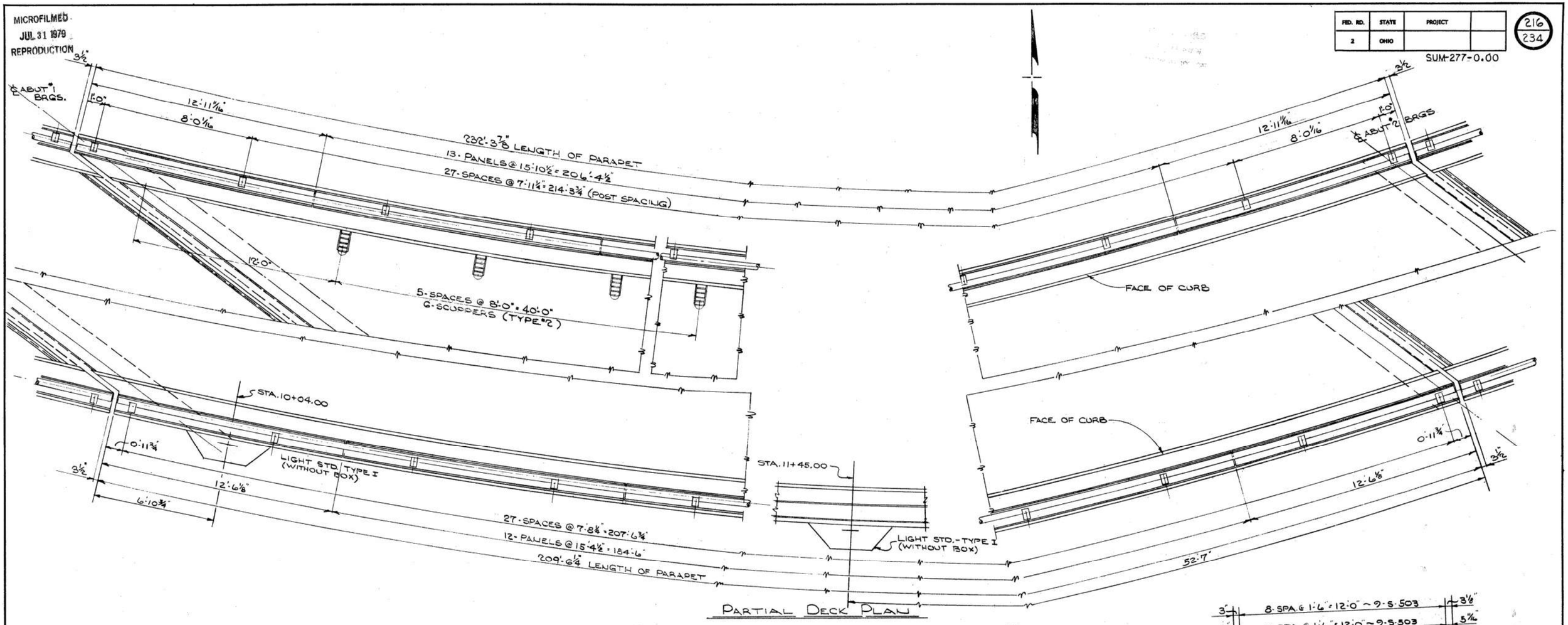
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAS	JWW		H.G.H.	RDH	6-29-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

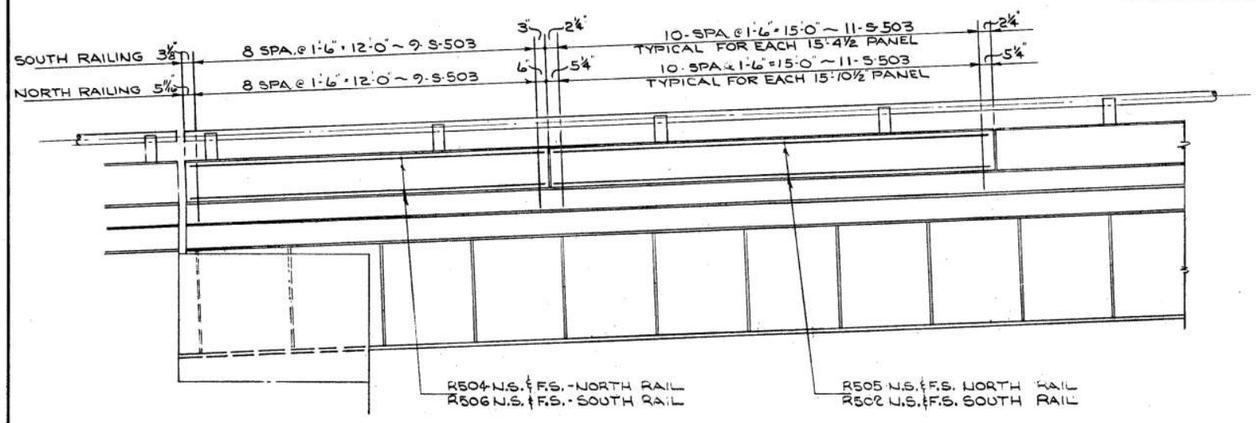
FED. RD.	STATE	PROJECT	
2	OHIO		

216
234

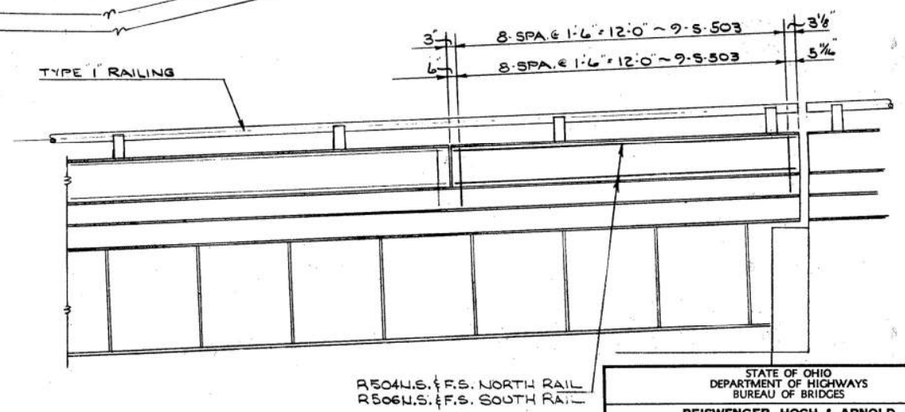
SUM-277-0.00



PARTIAL DECK PLAN



ELEVATION



STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

RAILING & DRAINAGE

BRIDGE Nº SUM-8-0930
RAMP C-2 OVER RELOCATED S.R.-8-N.B.
I-277 SUMMIT COUNTY
STA 491+97.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CLS	[illegible]		H.G.H.	RDH	6-29-65	

MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS A	B	C	D	E	WEIGHT LBS.
ABUTMENTS 1 & 2									
A501	8	10'-0"	ST						84
SERIES A-502	1-SET OF 5 BARS	VARIES 4'-9" TO 8'-1" @ INCR 10"	1	2'-2"	VARIES 2'-8 TO 6'-0" @ INCR 10"				33
A-503	57	9'-6"	3	5'-5"	2'-2"				565
A-504	6	11'-6"	3	5'-5"	3'-2"				72
A-505	27	8'-3"	1	6"	7'-10"				232
A-506	2	9'-3"	1	6"	8'-10"				19
A-507	10	7'-11"	1	6"	7'-6"				83
A-508	3	8'-11"	1	6"	8'-6"				28
A-509	19	7'-6"	1	6"	7'-1"				149
A-510	48	3'-6"	ST						175
A-511	1	16'-11"	ST						18
A-512	2	36'-2"	ST						71
A-513	7	29'-2"	ST						213
A-514	2	32'-2"	ST						67
A-515	4	27'-2"	ST						113
A-516	3	19'-3"	ST						60
SERIES A-517	1-SET OF 5 BARS	VARIES 9'-9" TO 14'-9" INCR 1'-3"	ST						64
A-518	66	7'-2"	3	3'-5"	2'-0"				493
A-519	8	31'-0"	ST						259
A-520	1	14'-0"	ST						15
A-521	1	16'-0"	ST						17
A-522	5	5'-9"	ST						30
A-523	5	4'-3"	16	2'-0"	8"	2'-0"	1'-0"		22
SERIES A-524	1-SET OF 5 BARS	VARIES 2'-11 TO 5'-3" @ INCR 7"	1	2'-0"	VARIES 1'-0 TO 3'-4" @ INCR 7"				21
A-525	49	11'-8"	14	2'-7"	3'-2"	4			596
A-526	11	9'-8"	ST						111
A-527	11	7'-0"	ST						80
A-528	4	12'-0"	ST						50
A-529	1	6'-6"	ST						7
A-530	2	8'-11"	11	2'-0"	5'-1"	2'-0"	2'-2"		19
A-531	6	17'-8	ST						111
A-532	63	5'-2"	ST						339
A-533	35	3'-1"	3	1'-4"	1'-0"				113
A-534	35	3'-3"	17	1'-0"	1'-4"	2	1'-2"		119
A-535	2	13'-4"	ST						28
A-536	2	11'-10"	18	11'-10"	10"	2'-9"			25
A-537	45	5'-7"	5	8"	2'-2"	5"			262
SERIES A-538	1-SET OF 3 BARS	VARIES 7'-5 TO 8'-7" INCR 7"	3	VARIES 3'-4 TO 4'-6 INCR 7"	2'-2"				25
A-539	10	8'-6"	1	6"	8'-1"				89
A-540	1	9'-6"	ST						10
A-541	4	16'-9"	ST						70
A-542	1	21'-0"	ST						22
A-543	1	28'-3"	ST						29
A-544	3	28'-7"	ST						89
A-545	7	35'-8	ST						260
A-546	7	15'-2"	ST						111
A-547	5	4'-0"	12	2'-0"	2'-0	9"			21
A-548	2	33'-0"	ST						69
A-549	11	12'-0"	ST						138
A-550	2	13'-0"	ST						27
A-551	2	8'-0"	11	2'-0	4'-2"	2'-0"	1'-8"		17
A-552	3	19'-8"	ST						62
A-553	6	16'-3"	ST						102
A-554	2	17'-10"	18	17'-10	6'-10"	2'-9"			37
A-555	4	4'-4"	19	2'-0"	6"	2'-0"	1'-8"		18
A-556	5	3'-11"	20	2'-0"	2'-0"	1'-0"			20
A-557	3	8'-4	ST						26
A-558	12	6'-4	ST						79
A-559	1	23'-4	ST						24
A-560	1	21'-4	ST						22
A-561	2	33'-8"	ST						70
A-562	3	7'-6"	ST						23
A-563	7	12'-3"	ST						89
A-564	1	19'-2"	ST						20
A-565	3	6'-10"	ST						21
A-566	2	8'-8"	ST						18
A-567	8	32'-9"	ST						273
A-568	1	22'-0"	ST						23
A-569	10	4'-6"	ST						47
A-570	10	3'-9"	ST						39
A-571	1	13'-4"	ST						11
A-572	11	10'-3"	ST						118
A-573	2	17'-8	ST						37
A-574	4	10'-9"	11	2'-0"	6'-11"	2'-0"	3'-1"		45
A-575	22	5'-0"	ST						115
A-576	2	14'-8"	18	14'-8	3'-8"	2'-9"			31
A-577	3	14'-8"	ST						46
A-578	1	10'-5"	ST						11
A-579	1	11'-0"	ST						11
A-580	2	18'-3"	ST						38
A-581	2	20'-9"	ST						43
A-582	2	16'-8"	18	16'-8"	5'-8"	2'-9"			35
SERIES A-601	1-SET OF 5 BARS	VARIES 4'-9" TO 8'-1" @ INCR 10"	1	2'-2"	VARIES 2'-8 TO 6'-0" @ INCR 10"				48
A-602	22	15'-2"	4	7'-10"	5'-5"	2'-2"			501
A-603	2	16'-2"	4	8'-10"	5'-5"	2'-2"			49
A-604	10	14'-10"	4	7'-6"	5'-5"	2'-2"			223
A-605	3	15'-10"	4	8'-6"	5'-5"	2'-2"			71
A-606	16	14'-5"	4	7'-1"	5'-5"	2'-2"			346
A-607	23	17'-2"	3	1'-5"	8'-0"				593
A-608	81	19'-6"	7	6'-8"	1'-5"	8'-0"	11"		1084
A-609	7	12'-11"	1	6"	12'-6"				136
A-610	11	7'-0"	ST						116
A-611	33	23'-3"	3	1'-2"	11'-2"				1152
A-612	10	15'-5"	4	8'-1"	5'-5"	2'-2"			232
SERIES A-613	1-SET OF 5 BARS	VARIES 14'-1 TO 15'-5" @ INCR 7"	4	8'-10"	VARIES 3'-4 TO 4'-6" @ INCR 7"	2'-2"			66
A-614	3	12'-5"	1	6"	12'-0"				56
A-615	13	16'-8"	3	1'-5"	7'-9"				325
A-616	19	18'-8"	7	6'-5"	1'-5"	7'-9"	11		533
A-617	2	11'-11"	1	6"	11'-6"				36
A-801	2	14'-6"	ST						78
A-802	5	12'-8	ST						169
A-803	8	10'-4	ST						221
A-804	3	7'-4"	ST						59
A-805	3	19'-9"	ST						158
A-806	4	20'-0"	12	18'-0"	2'-0"	1'-5"			214
A-807	6	14'-0"	ST						224
A-808	8	14'-2"	12	12'-2"	2'-0"	1'-5			303
A-809	2	6'-4"	16	2'-0"	2'-6"	2'-0"	1'-0"		34
A-810	8	12'-6"	ST						267
A-811	2	14'-6"	ST						77
A-812	2	10'-4"	12	8'-4	2'-0"	1'-5"			55
A-813	3	14'-8	12	12'-8"	2'-0"	1'-5"			117
A-814	2	4'-0"	12	2'-0"	2'-0"	9"			21
A-815	2	15'-9"	ST						84
A-816	7	13'-0"	ST						243
A-817	2	12'-2"	12	10'-2"	2'-0"	1'-5"			65
A-818	1	11'-6"	12	9'-6"	2'-0"	1'-5"			31
A-819	3	11'-6"	ST						92
A-820	1	9'-8"	ST						26
A-821	4	17'-10"	12	15'-10"	2'-0"	1'-5"			190
A-822	3	17'-6"	ST						140
A-823	1	10'-10"	ST						29
A-824	2	5'-10"	19	2'-0"	2'-0"	2'-0"	1'-0"		31
A-825	2	3'-11	20	2'-0"	2'-0"	1'-0"			21
A-826	2	12'-3"	ST						66
A-827	2	4'-6"	ST						24
A-828	2	6'-4"	ST						34

TOTAL ABUTMENTS 15,706

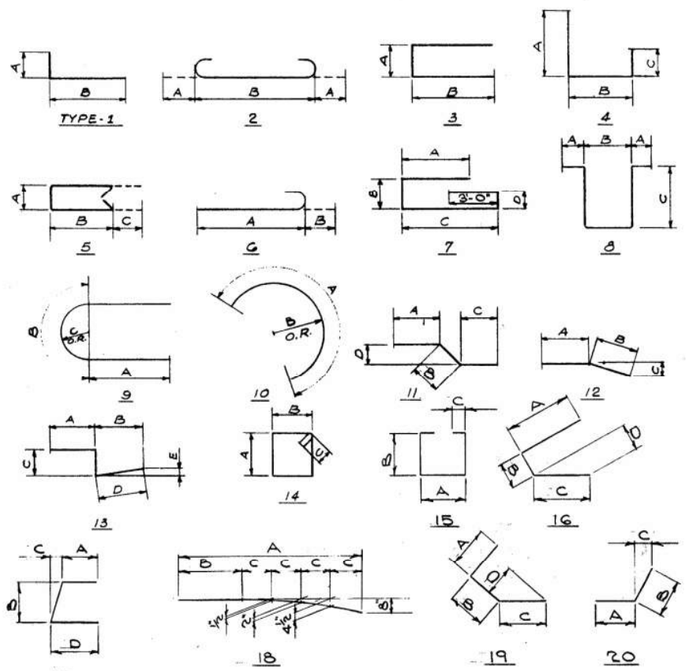
GRAND TOTAL SEE NEXT SHT. LBS

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

SUM-277-0.00

217
234



BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE A-601 IS A NO. 6 SIZE BAR AND P-1001 IS A NO 10 SIZE BAR.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

REINFORCING SCHEDULE

BRIDGE Nº SUM-8-0930
RAMP C-2 OVER RELOCATED S.R.-8-N B
I-277 SUMMIT COUNTY
STA 491+97.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CBS	JWW		H.G.H.	ROH	6-29-65	

MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS A	B	C	D	E	WEIGHT LBS.
SUPERSTRUCTURE									
S-501	294	4'-2"	15	1'-6"	1'-4"	3"			1278
S-502	294	2'-3"	3	1'-6"	6"				690
S-503	311	5'-7"	5	8"	2'-2"	8"			1811
S-521	4	11'-8"	16	2'-0"	2'-0"	2'-3"	2'-10		49
S-601	270	29'-8"	ST						12031
SERIES S-602	1-SET OF 22 BARS	VARIES 6'-0 TO 28'-0 @ INCR. 1'-0"	ST						562
S-603	62	33'-0"	ST						3073
S-604	450	35'-0"	ST						23,657
SERIES S-605	1-SET OF 30 BARS	VARIES 10'-8" TO 33'-8" @ INCR. 9½+	ST						999
SERIES S-606	1-SET OF 39 BARS	VARIES 10'-8" TO 33'-8" @ INCR. 7½+	ST						1299
S-607	3	33'-8	ST						152
S-608	3	10'-8"	ST						48
S-609	16	5'-0"	ST						120
SERIES S-610	1-SET OF 22 BARS	VARIES 19'-9" TO 28'-6" @ INCR. 5"	ST						797
SERIES S-611	1-SET OF 22 BARS	VARIES 12'-4" TO 19'-6" @ INCR. 4⅛"	ST						526
SERIES S-612	1-SET OF 22 BARS	VARIES 5'-4" TO 12'-0" @ INCR. 3⅜"	ST						286
S-621	24	5'-6"	ST						198
S-622	8	9'-11"	14	2'-10"	2'-0"	4"			119
S-701	270	29'-8"	ST						16373
SERIES S-702	1-SET OF 22 BARS	VARIES 6'-0 TO 28'-0 @ INCR. 1'-0"	ST						764
S-703	16	5'-0"	ST						164
SERIES S-704	1-SET OF 22 BARS	VARIES 19'-9" TO 28'-6" @ INCR. 5"	ST						1085
SERIES S-705	1-SET OF 22 BARS	VARIES 12'-4" TO 19'-6" @ INCR. 4⅛"	ST						716
SERIES S-706	1-SET OF 22 BARS	VARIES 5'-4" TO 12'-0" @ INCR. 3⅜"	ST						615
TOTAL SUPERSTRUCTURE = 67,412 LBS									
PIERS 1 & 2									
P-801	40	10'-8"	2	1'-1"	8'-6"				1139
P-802	80	7'-8"	2	1'-1"	5'-6"				1638
P-901	12	17'-3"	ST						704
P-902	12	18'-6"	ST						755
P-903	12	19'-8"	ST						803
P-904	12	20'-10"	ST						850
P-905	12	18'-7"	ST						758
P-906	12	19'-7"	ST						799
P-907	12	20'-6"	ST						837
P-908	12	21'-6"	ST						877
P-909	96	6'-4"	1	1'-0"	5'-7"				2067
TOTAL SPIRALS									2863
TOTAL PIERS 14,090									

MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS A	B	C	D	E	WEIGHT LBS.

MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS A	B	C	D	E	WEIGHT LBS.
RAILING ⊗									
R-501	4	13'-2"	ST						
R-502	52	15'-0"	ST						
R-503	4	15'-1"	ST						
R-504	8	12'-7"	ST						
R-505	48	15'-6"	ST						
R-506	8	12'-2"	ST						
R-507	8	5'-4"	21						
R-508	12	4'-2"	22						
R-521	4	11'-8"	16	2'-0"	2'-0"	2'-3"	2'-10		
R-522	4	11'-4⅜"	16	3'-0"	8"	3'-9"	11⅝16		
REPLACEMENT BARS									
RE-401	1	5'-3"							
RE-501	1	5'-6"							
RE-601	3	6'-0"							
RE-701	2	6'-3"							
RE-801	1	6'-6"							
RE-901	1	6'-10"							
RE-1001	—	7'-3"							

SPIRAL REINFORCING SCHEDULE

MARK	NO. REQ'D	CORE DIA. OF SPIRAL	LENGTH OF SPIRAL	PITCH	NO. OF TURNS	WEIGHT LBS.
SP401	1	2'-8"	17'-3"	4½	49	270
SP402	1	2'-8"	18'-6"	4½	52	287
SP403	1	2'-8"	19'-8"	4½	56	309
SP404	1	2'-8"	20'-10"	4½	59	325
SP405	1	2'-8"	18'-7"	4½	53	292
SP406	1	2'-8"	19'-7"	4½	55	303
SP407	1	2'-8"	20'-6"	4½	58	320
SP408	1	2'-8"	21'-6"	4½	60	331
32-SPACERS						426
TOTAL SPIRALS						2,863

GRAND TOTAL 97,208 LBS

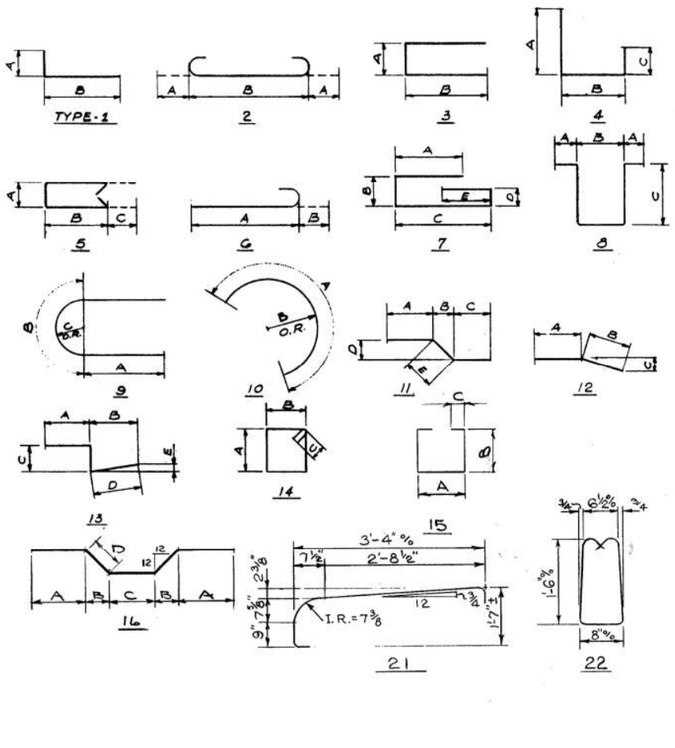
⊗ RAILING REINFORCEMENT BARS WILL BE INCLUDED AS PART OF ITEM 517 FOR PAYMENT.

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

SUM-277-0.00

218
234



REINFORCING NOTES

THE LENGTH SHOWN IN THE STEEL SCHEDULE FOR THE SPIRAL BARS IS THE DISTANCE FROM THE TOP OF THE FOOTING TO THE BOTTOM OF THE PIER CAP. THE NUMBER OF TURNS SHOWN IN THE STEEL SCHEDULE FOR SPIRAL BARS IS THE LENGTH DIVIDED BY THE PITCH PLUS THREE TURNS (TOTAL NUMBER OF CLOSED COILS) EXPRESSED AS THE NEAREST WHOLE NUMBER. SPIRAL REINFORCING BARS SHALL NOT HAVE DEFORMATIONS, BUT SHALL IN OTHER RESPECTS CONFORM TO ITEM 509. ONE AND ONE HALF CLOSED COILS SHALL BE PROVIDED AT THE ENDS OF EACH SPIRAL UNIT. FOUR (4) STEEL CHANNEL, TEE OR ANGLE SPACERS WEIGHING APPROX. 0.98 LBS. PER LINEAL FT. OF SPACERS, SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG THE PERIPHERY OF EACH COIL. THE NUMBER OF POUNDS OF THESE SPACERS BASED ON 0.98 LBS. PER LINEAL FT. WILL BE PAID FOR AS REINFORCING STEEL AND IS INCLUDED IN THE TABULATED QUANTITY OF SPIRAL BARS.

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE A-601 IS A NO. 6 SIZE BAR AND P-1001 IS A NO. 10 SIZE BAR.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

REINFORCING SCHEDULE

BRIDGE Nº SUM-8-0930
RAMP C-2 OVER RELOCATED S R-8-N B
I-277 SUMMIT COUNTY
STA 491+97.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CLS	JWW		H.G.H.	RBH	6-29-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

219
234

SUM- 277-0.00

CURVE DATA

SOUTHBOUND S.R.-8

S.C. STA. 506+03.54
L_S = 400'
LT. = 266.73'
ST. = 133.40'
θ_S = 4°-00'
D = 2°-00'
R = 2,864.79'

RAMP B-2

C.S. STA. 5+86.18
S.C. STA. 7+36.18
L_S = 150'
LT. = 93.06'
ST. = 57.36'
θ_S = 10°-30'

S.C. STA. 7+36.18
C.S. STA. 13+12.68
Δ = 69°-10'-46" LT.
D = 12°-00'-00"
T = 329.25'
L = 576.50'
R = 477.46'

AVERAGE ESTIMATED PAY LENGTH FOR 10 BP 42 STEEL H PILES
ABUTMENTS = 30 FT.
PIERS = 15 FT.

VERTICAL CLEARANCE:
DESIGN = 16.50'
ACTUAL = 16.55'

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
SKEW: 49°-04'-52" RF. TO LOCAL TAN.
SPANS: 61'-6"-88'-0"-61'-6" ℄ BEARINGS.
ROADWAY: 28'-0" F/F PARAPETS.
LOAD FREQUENCY: CF 2000 ADEQUATE FOR A.R.S.H.O. ALTERNATE LOADING
WEARING SURFACE: 1" MONOLITHIC.
APPROACH SLABS: 25' LONG (AS-1-54)
ALIGNMENT: 12°00'-00" CURVE LT.
SUPERELEVATION: .0833 FT./FT.
SLOPE PROTECTION: 6" CRUSHED AGGREGATE.
TRAFFIC: 7,160 - 1975 - A.D.T.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER & HOCH, Consulting Engineers
AKRON, OHIO

SITE PLAN

BRIDGE NO. SUM- 8 - 0932.
RAMP B2 OVER RELOCATED S.R.-8 S.B.
I-277 SUMMIT COUNTY
STA. 508+26.65.

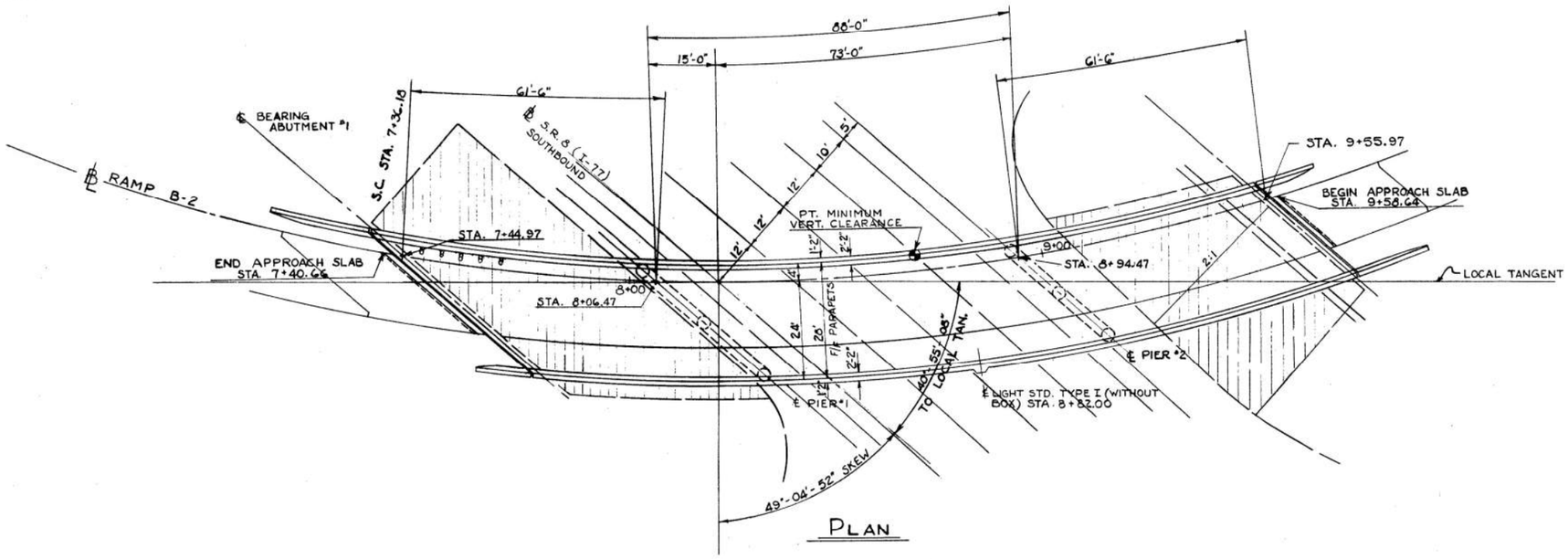
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFP	KENESSY		CBS	RDH - 6-11-68		

MICROFILMED
JUL 31 1979
REPRODUCTION

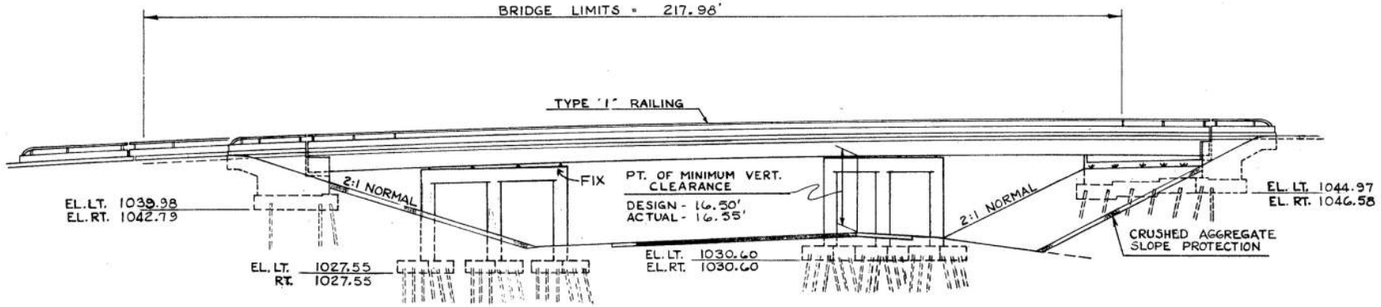
FED. RD.	STATE	PROJECT	
2	OHIO		

SUM 277-0.00

220
234



PLAN



ELEVATION

SEE SHEET No. 185 FOR STRUCTURAL GENERAL NOTES 1-5, 7, 10-16.
SEE SHEET No. 186 FOR STRUCTURAL DETAILS 1 & 6

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS.	PIERS	GEN.
503	478	CU.YDS.	UNCLASSIFIED EXCAVATION		335	143	
505	LUMP	SUM.	FIRST TEST PILE				LUMP
507	1560	LIN.FT.	10 BP 42 H-PILES		900	660	
509	106,726	LBS	REINFORCING STEEL	68,058	15,151	23,517	
511	215	CU.YDS.	CLASS "C" CONC. SUPERSTRUCTURE	215			
511	125	CU.YDS.	CLASS "E" CONC. ABUTS. ABOVE FTG'S.		125		
511	59	CU.YDS.	CLASS "C" CONC. PIERS ABOVE FTG'S.			59	
511	141	CU.YDS.	CLASS "E" CONC. PIER & ABUT. FTG'S.		87	54	

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS.	PIERS	GEN.
512	20	LIN.FT.	WATERPROOFING PREMOLDED SEALING STRIP		20		
513	241,770	LBS.	STRUCTURAL STEEL	241770			
514	241,770	LBS	FIELD PAINTING OF STRUCTURAL STEEL	241770			
517	489.00	LIN.FT.	BRIDGE RAILING TYPE 1	418.33	70.67		

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS.	PIERS	GEN.
518	44	CU.YDS.	POROUS BACKFILL		44		
518	5	EACH	SCUPPERS INCLUDING SUPPORTS	5			
518	66	LIN.FT.	6" PERFORATED HELICAL C.M.P. (707.06) INCLUDING SPECIALS	66			
518	70	LIN.FT.	6" HELICAL C.M.P. (707.06) NON-PERFORATED	70			
825	866	SQ.YDS.	CONCRETE SURFACE TREATMENT				866
601	630	SQ.YDS.	CRUSHED AGGREGATE SLOPE PROTECTION				630
625			SEE ELECTRICAL DWG'S.				
828	78	LIN.FT.	JOINT SEALER	78			
808	215	EACH	WATER-REDUCING SET RETARDING ADMIXTURE	215			

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

GENERAL PLAN & ELEVATION

BRIDGE NO. SUM- 8 -0932
RAMP B-2 OVER RELOCATED S.R.8 S.B.
I-277 SUMMIT COUNTY
STA. 508+26.65

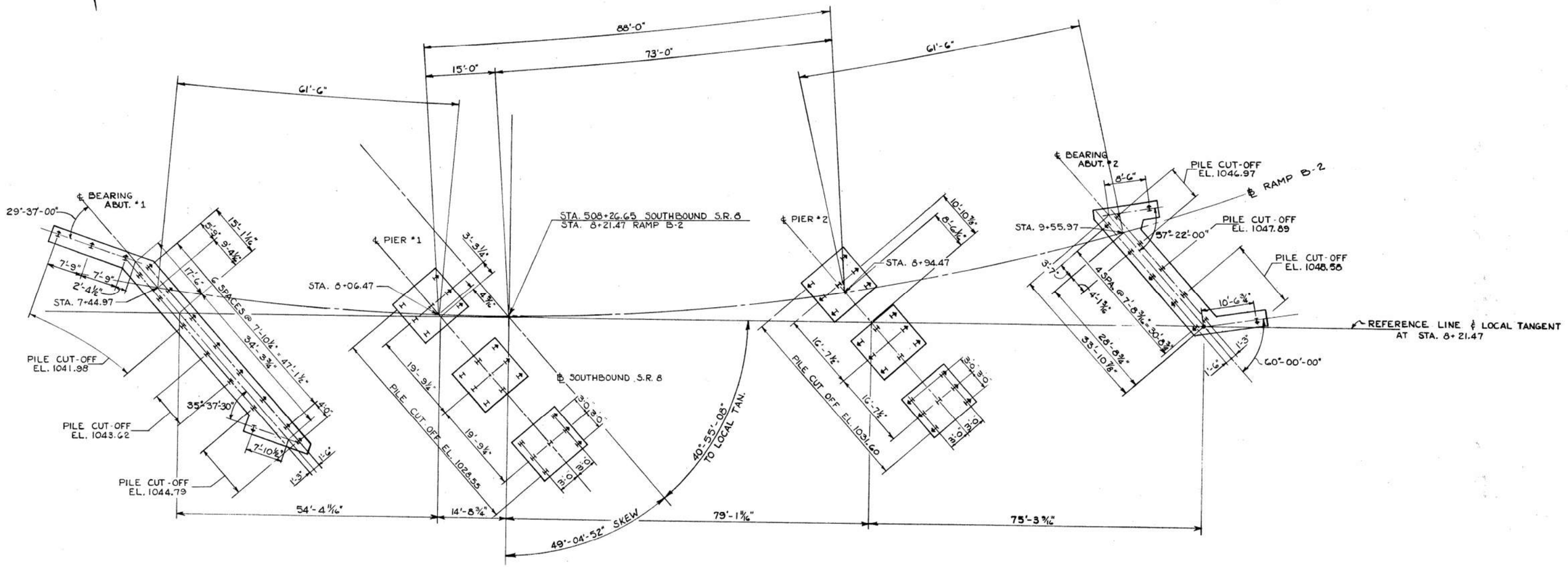
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFP	JFP		CBA	RDH	6-11-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

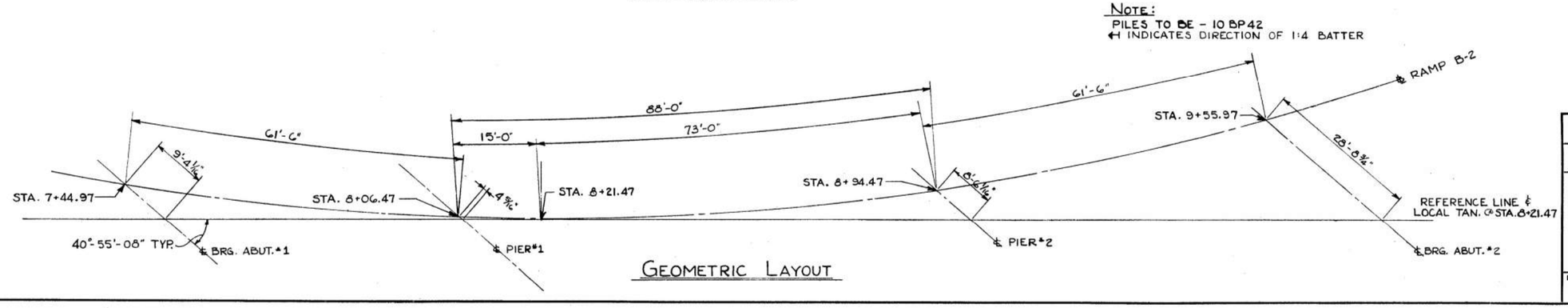
221
234

SUM-277-0.00



PILING PLAN

NOTE:
PILES TO BE - 10 BP 42
← H INDICATES DIRECTION OF 1:4 BATTER



GEOMETRIC LAYOUT

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

PILING PLAN & GEOMETRICS

BRIDGE NO. SUM- 8 -0932
RAMP B-2 OVER RELOCATED S.R.8 S.B.
I-277 SUMMIT COUNTY
STA. 508+26.65

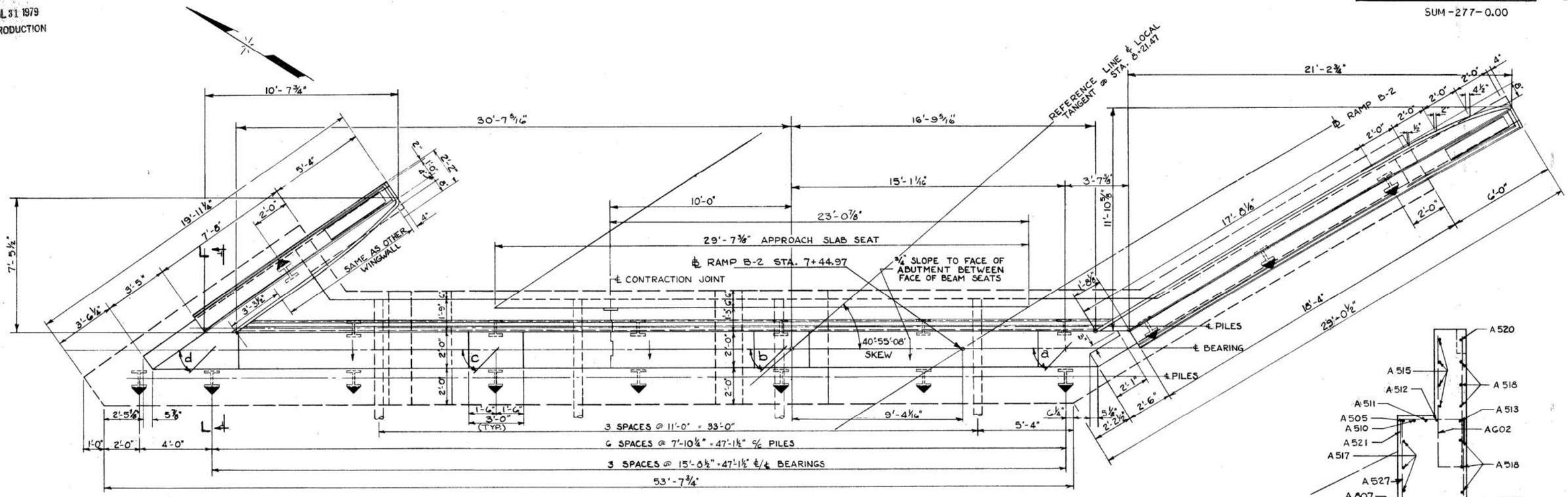
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFP	JFP		CLS	RDH	6-11-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

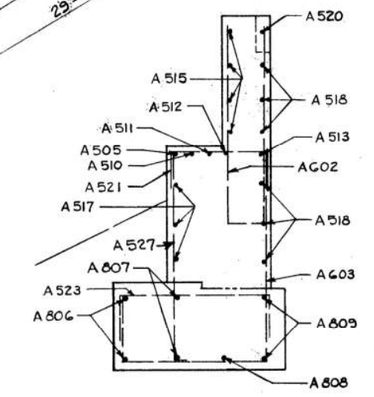
FED. RD.	STATE	PROJECT	
2	OHIO		

222
234

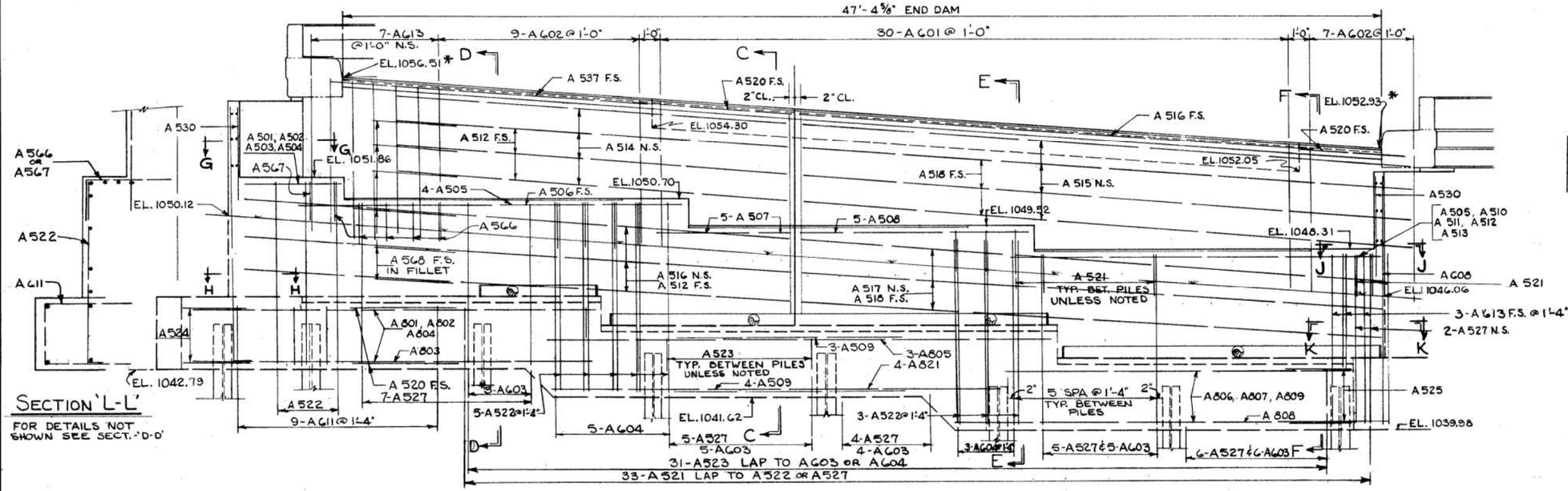
SUM-277-0.00



PLAN ABUTMENT # 1



SECTION 'F-F'



SECTION 'L-L'

FOR DETAILS NOT SHOWN SEE SECT. 'D-D'

ELEVATION ABUTMENT # 1

ANGLE OF BEARINGS				
	a	b	c	d
ABUT. # 1	33°-56'-58"	35°-15'-31"	36°-39'-30"	38°-09'-23"

* ELEV. GIVEN TO HEEL OF ANGLE

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

ABUTMENT No. 1 DETAILS

BRIDGE NO. SUM-277-0932
RAMP B-2 OVER RELOCATED S.R. 8 S.B.
I-277 SUMMIT COUNTY
STA. 508+26.65

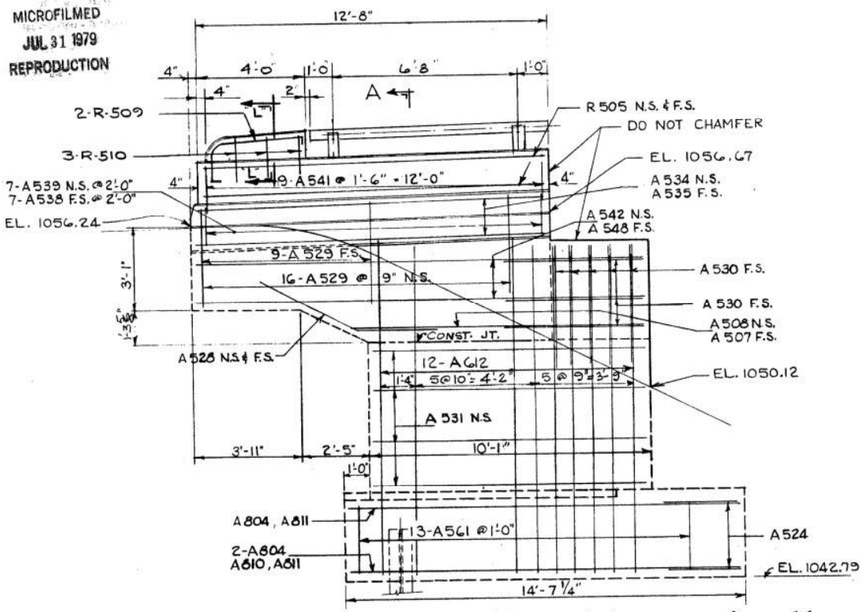
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFP	JFP		CES	RDH	6-11-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

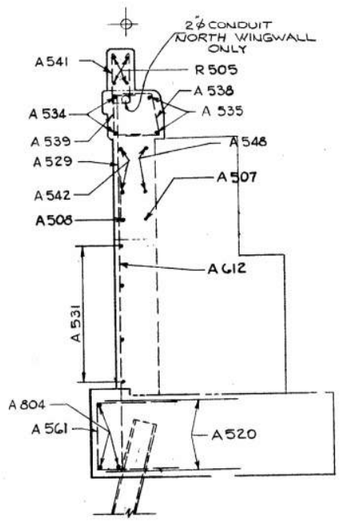
SUM 277 0.00

223
234

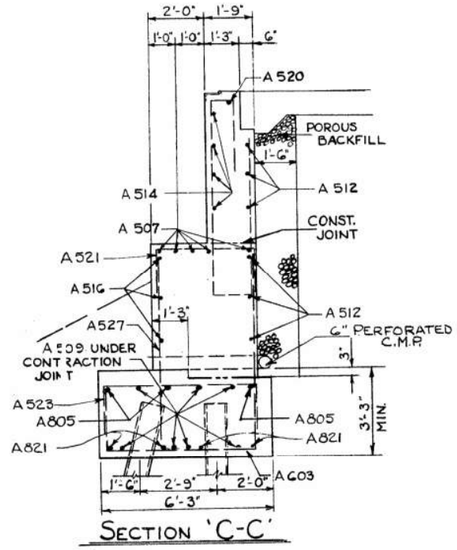


ELEVATION NORTH WINGWALL ~ ABUT. #1

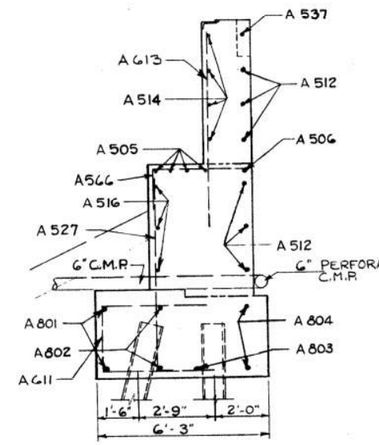
A



SECTION 'A-A'

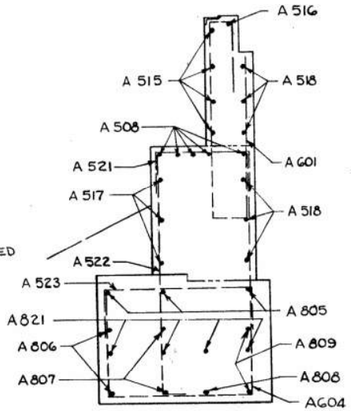


SECTION 'C-C'

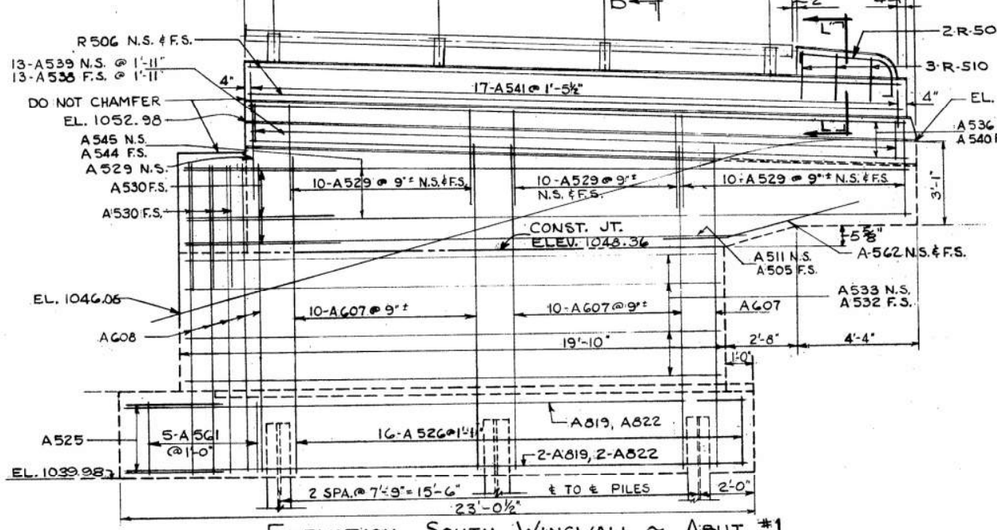


SECTION 'D-D'

FOR DIMENSIONS NOT SHOWN SEE SECT. C-C'

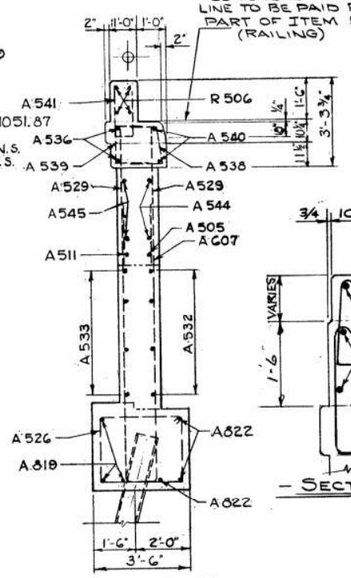


SECTION 'E-E'

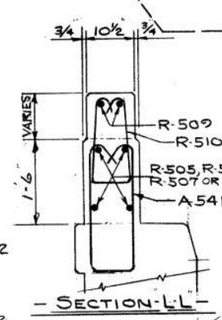


ELEVATION SOUTH WINGWALL ~ ABUT. #1

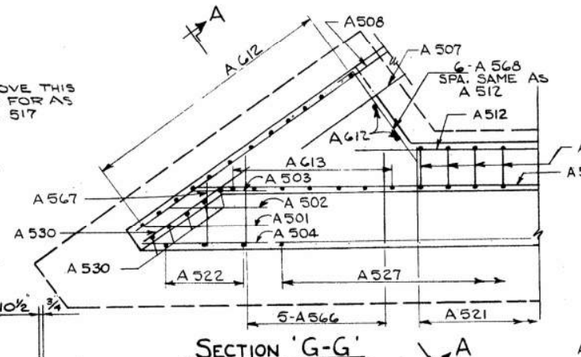
B



SECTION 'B-B'

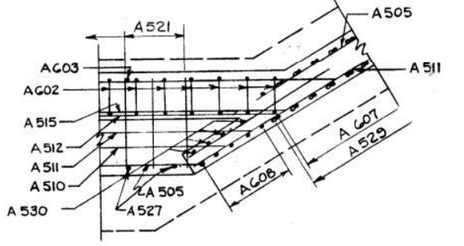


SECTION 'L-L'

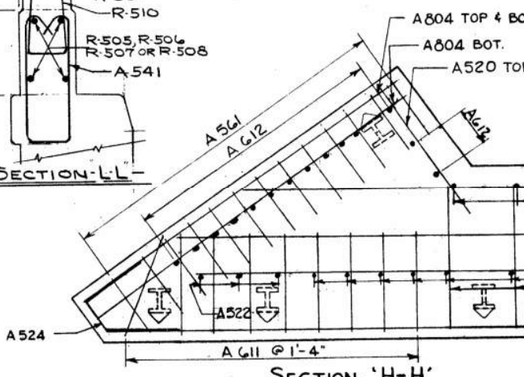


SECTION 'G-G'

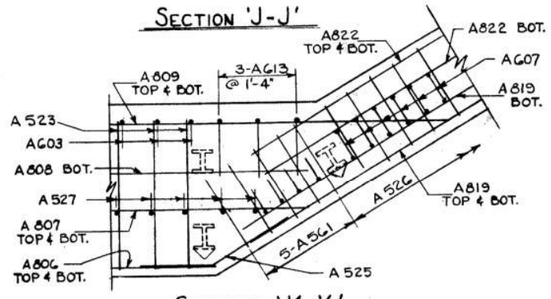
A



SECTION 'J-J'



SECTION 'H-H'



SECTION 'K-K'

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

ABUTMENT Nº1 DETAILS

BRIDGE NO. SUM-8-0932
RAMP B-2 OVER RELOCATED S.R.8 S.B.
I-277 SUMMIT COUNTY
STA. 508+26.65

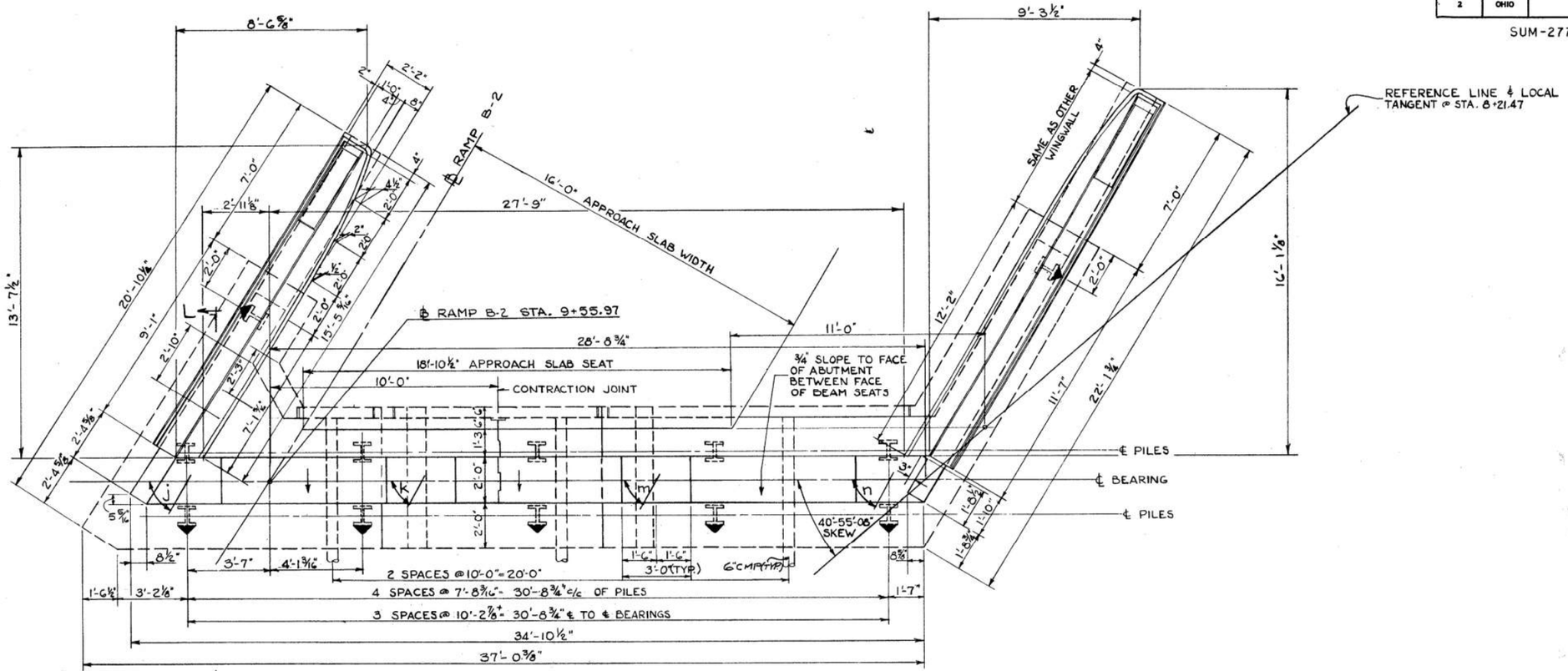
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFP	JFP		CBS	RDH	6-11-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

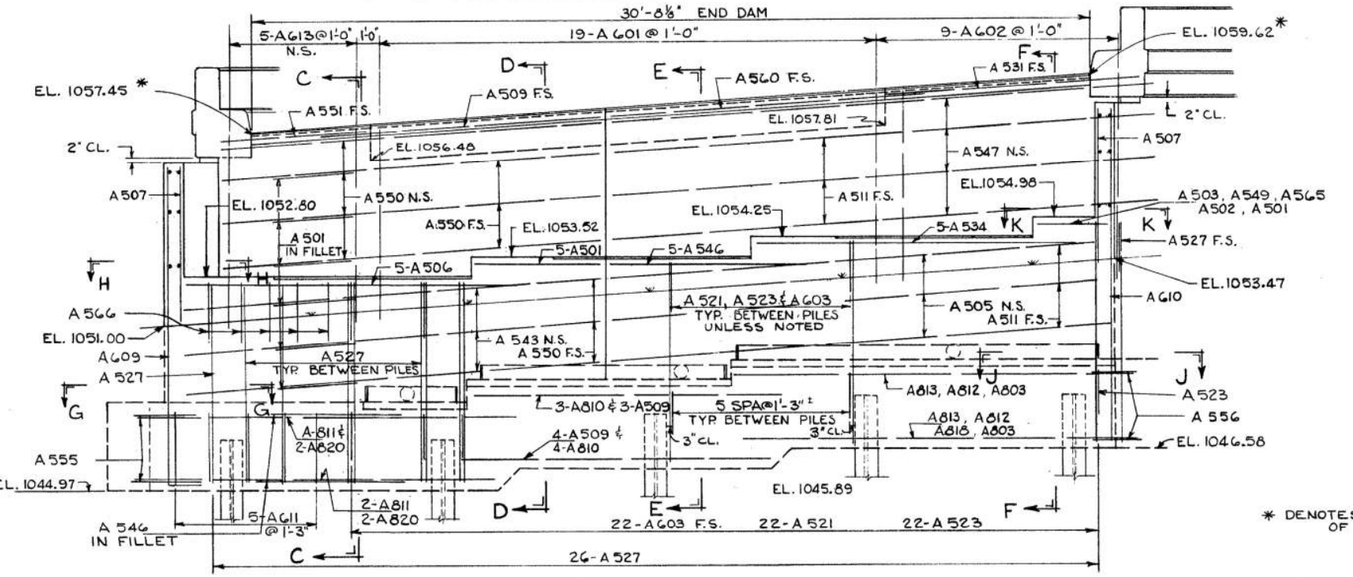
FED. RD.	STATE	PROJECT	
2	OHIO		

224
234

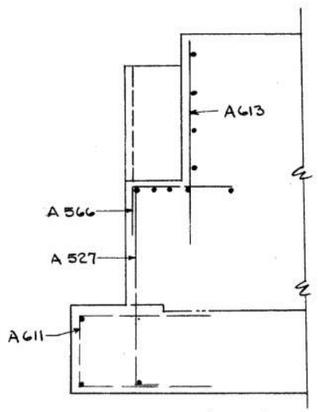
SUM-277-0.00



PLAN ABUTMENT #2



ELEVATION ABUTMENT #2



SECTION 'L-L'

FOR DETAILS NOT SHOWN SEE SECT. 'C-C'

* DENOTES ELEV. GIVEN TO HEEL OF ANGLE

— ANGLE OF BEARINGS —				
	j	k	m	n
ABUT. #2	54°-15'-32"	54°-54'-34"	55°-34'-13"	56°-14'-32"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

ABUTMENT No. 2 DETAILS

BRIDGE NO. SUM-8-0932
RAMP B-2 OVER RELOCATED S.R.8 S.B.
I-277 SUMMIT COUNTY
STA. 508+26.65

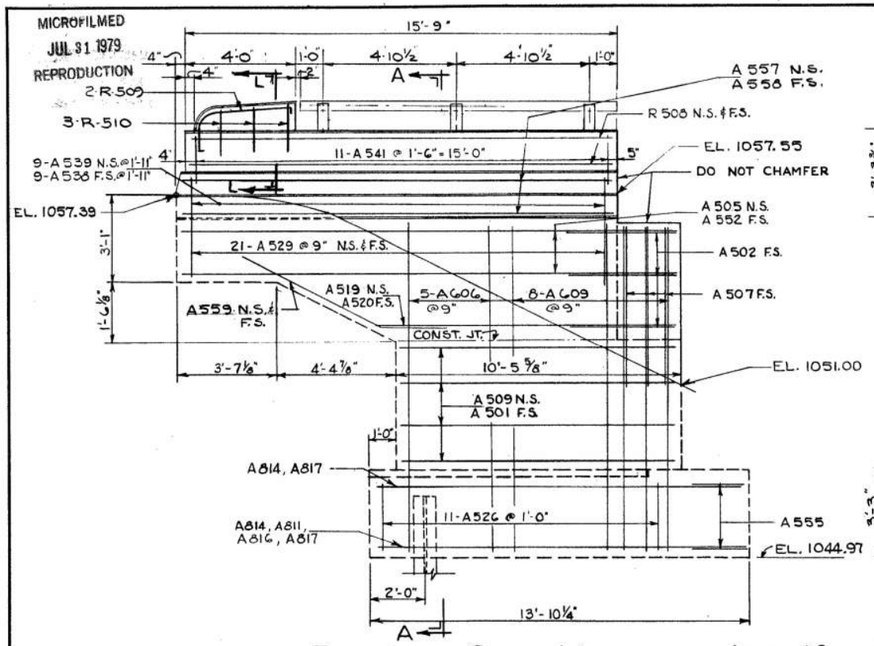
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFP	JFP		CLS	RDH	6-11-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

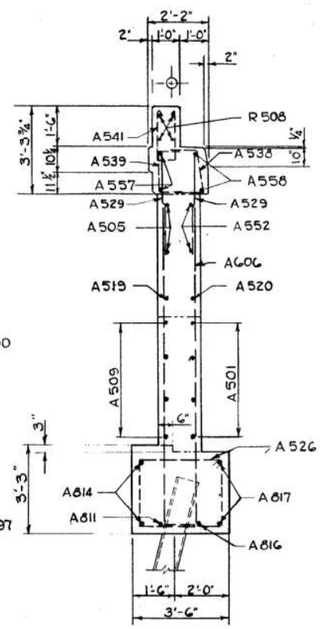
FED. RD.	STATE	PROJECT	
2	OHIO		

225
234

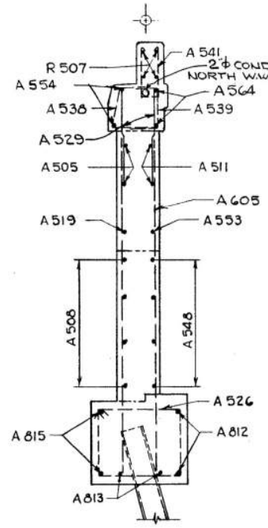
SUM-277-0.00



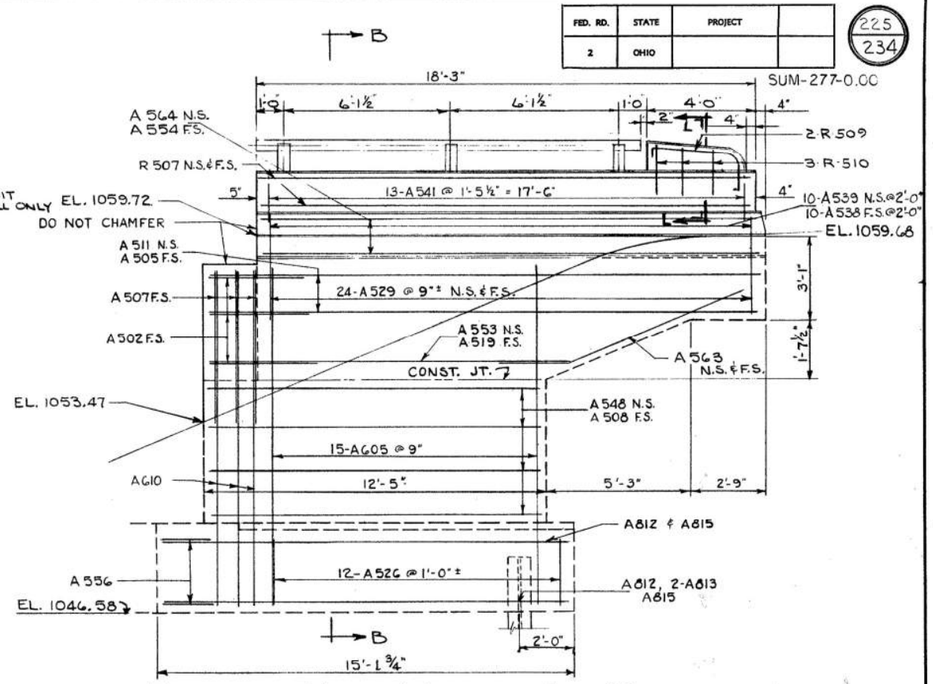
ELEVATION SOUTH WINGWALL ~ ABUT. #2



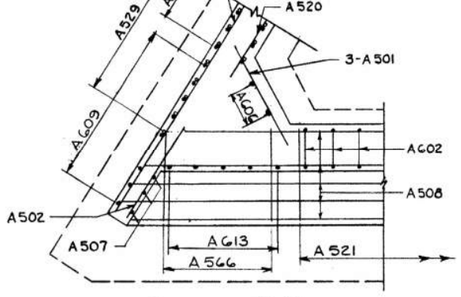
SECTION 'A-A'



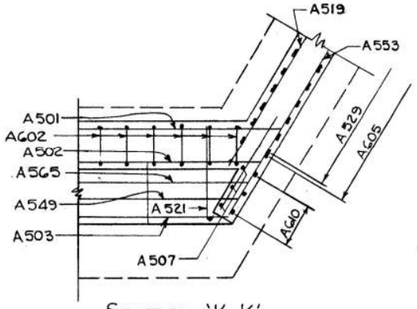
SECTION 'B-B'



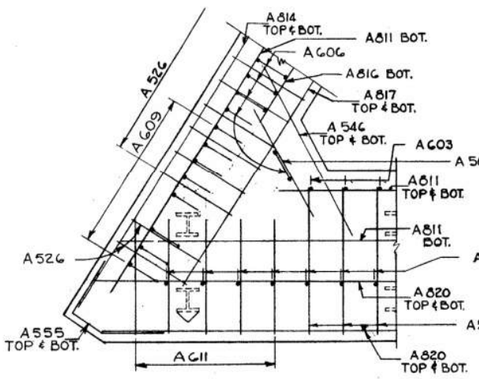
ELEVATION NORTH WINGWALL ~ ABUT. #2



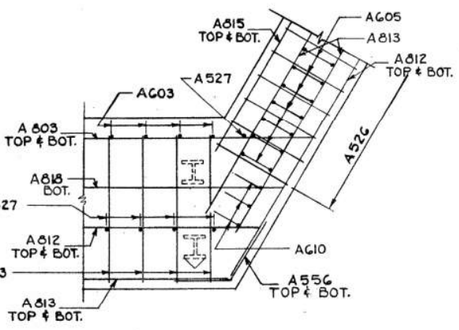
SECTION 'H-H'



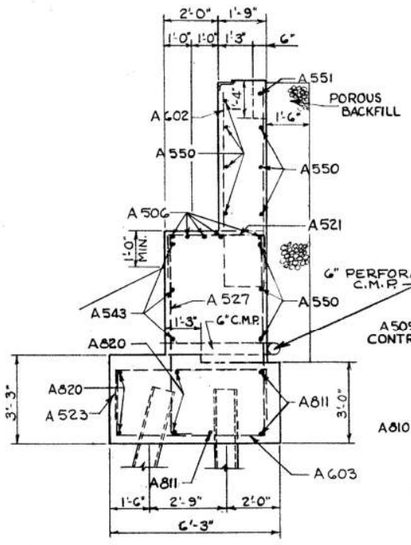
SECTION 'K-K'



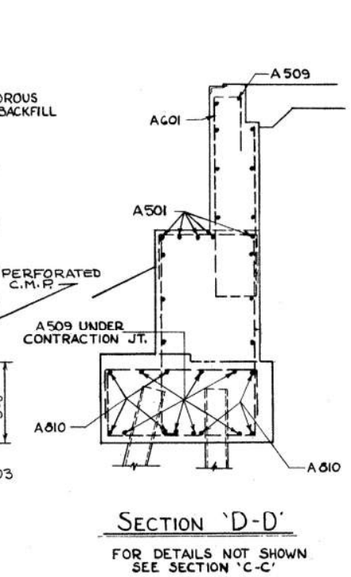
SECTION 'G-G'



SECTION 'J-J'

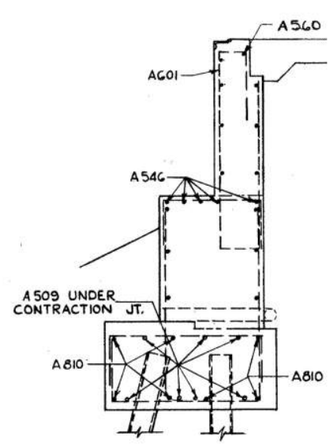


SECTION 'C-C'



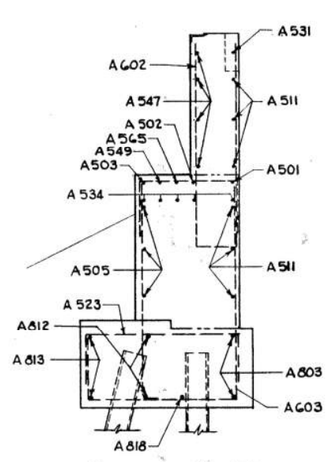
SECTION 'D-D'

FOR DETAILS NOT SHOWN SEE SECTION 'C-C'



SECTION 'E-E'

FOR DETAILS NOT SHOWN SEE SECTION 'F-F'



SECTION 'F-F'

FOR DETAILS NOT SHOWN SEE SECTION 'C-C'

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

ABUTMENT No. 2 DETAILS

BRIDGE NO. SUM- 8-0932
RAMP B-2 OVER RELOCATED S.R. 8 S.B.
I-277 SUMMIT COUNTY
STA. 508+26.65

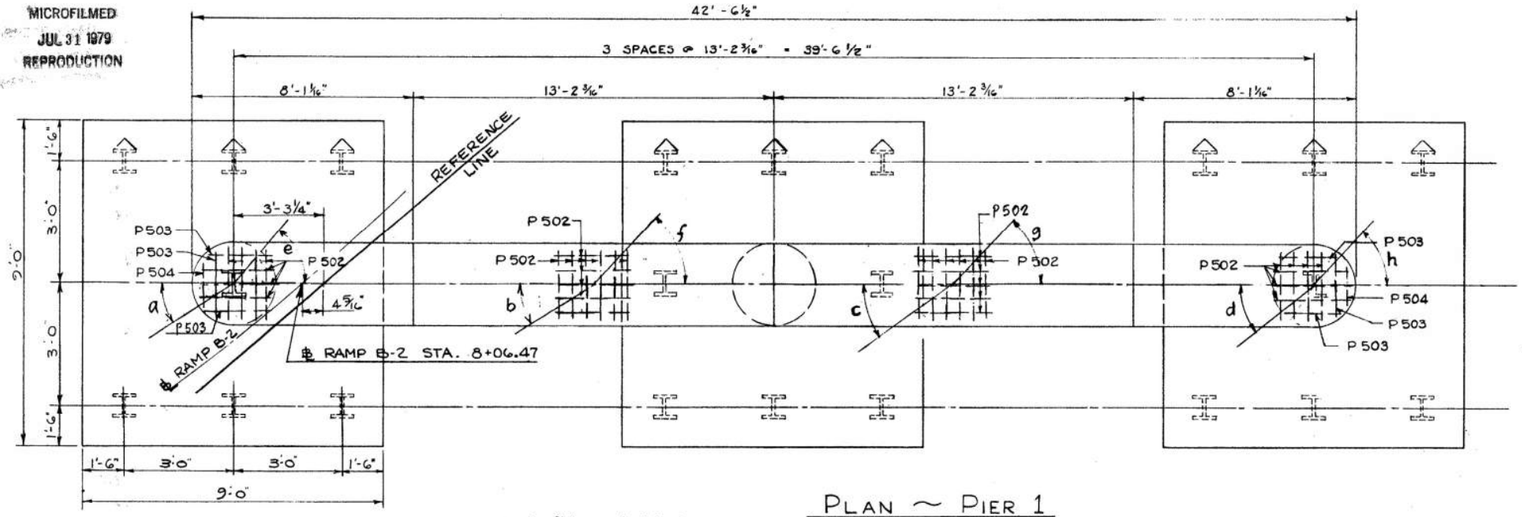
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFP	JFP		CBA	RDH	6-11-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

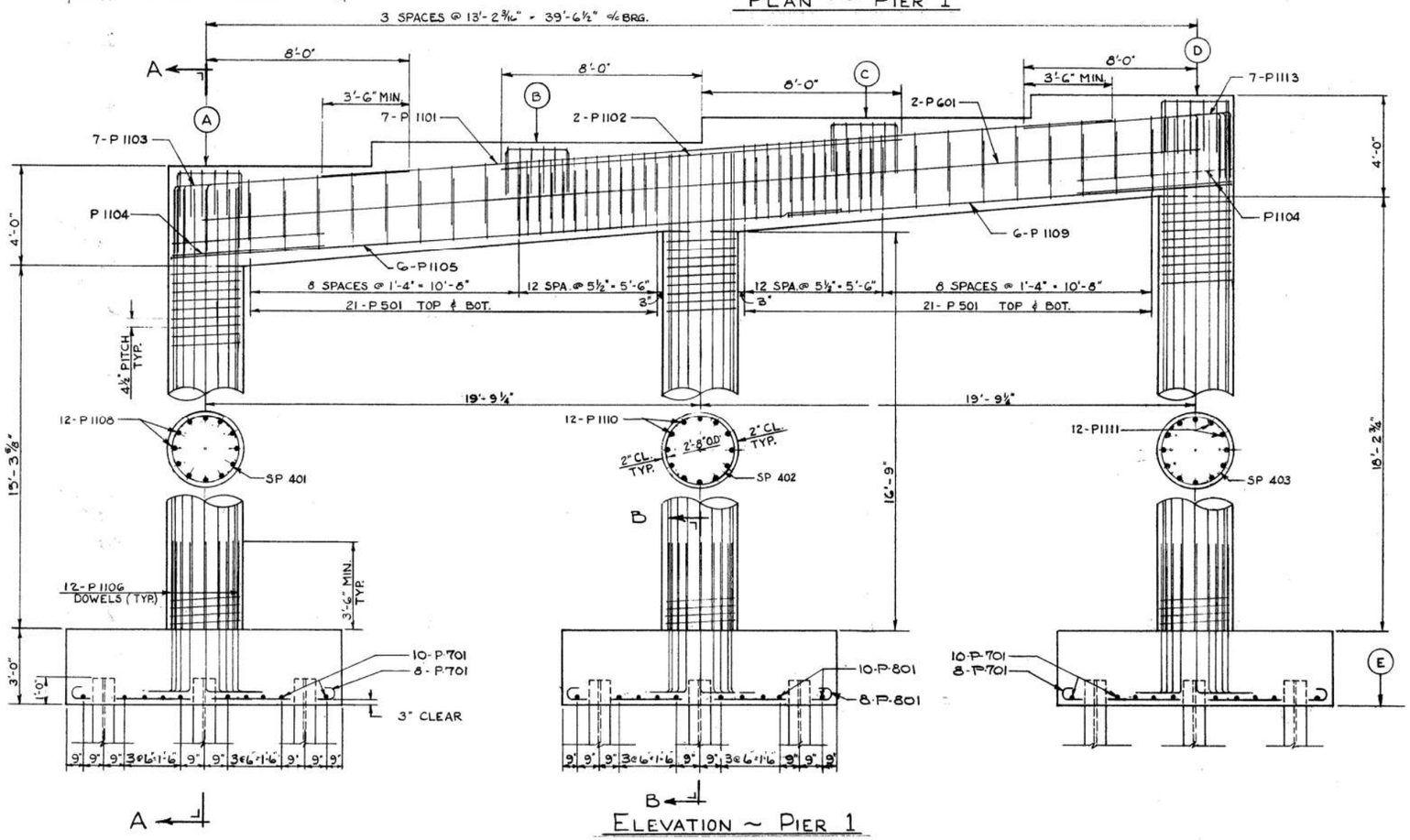
FED. RD.	STATE	PROJECT	
2	OHIO		

226
234

SUM-277-0.00



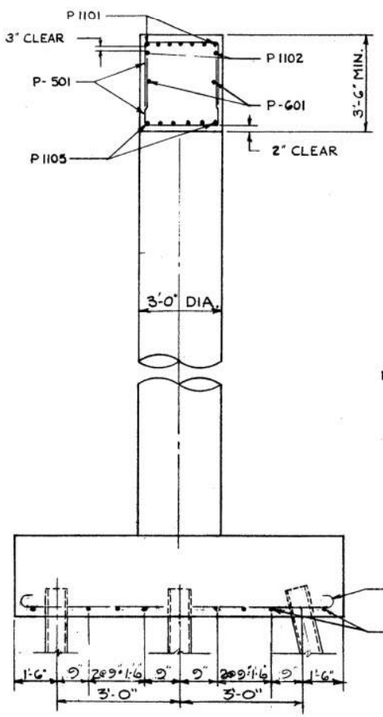
PLAN ~ PIER 1



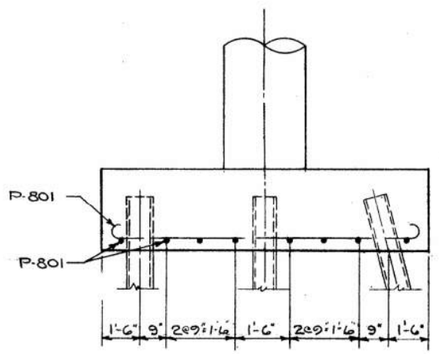
A ←┘

B ←┘

ELEVATION ~ PIER 1



SECTION 'A-A'



SECTION ~ 'B-B'

NOTES:
PILES TO BE 10 BP 42
▽ INDICATES DIRECTION OF 1:4 BATTER

ELEVATION TABLE					
	A	B	C	D	E
PIER 1	1049.85	1050.84	1051.81	1052.98	1027.55

ANGLE OF BEARINGS								
	a	b	c	d	e	f	g	h
PIER1	33°-56'-38"	35°-15'-31"	36°-39'-30"	38°-09'-23"	44°-10'-10"	45°-08'-02"	46°-07'-55"	47°-09'-53"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

PIER No. 1 DETAILS

BRIDGE NO. SUM- 8 -0932
RAMP B-2 OVER RELOCATED S.R.8 S.B.
I-277 SUMMIT COUNTY
STA. 508+26.65

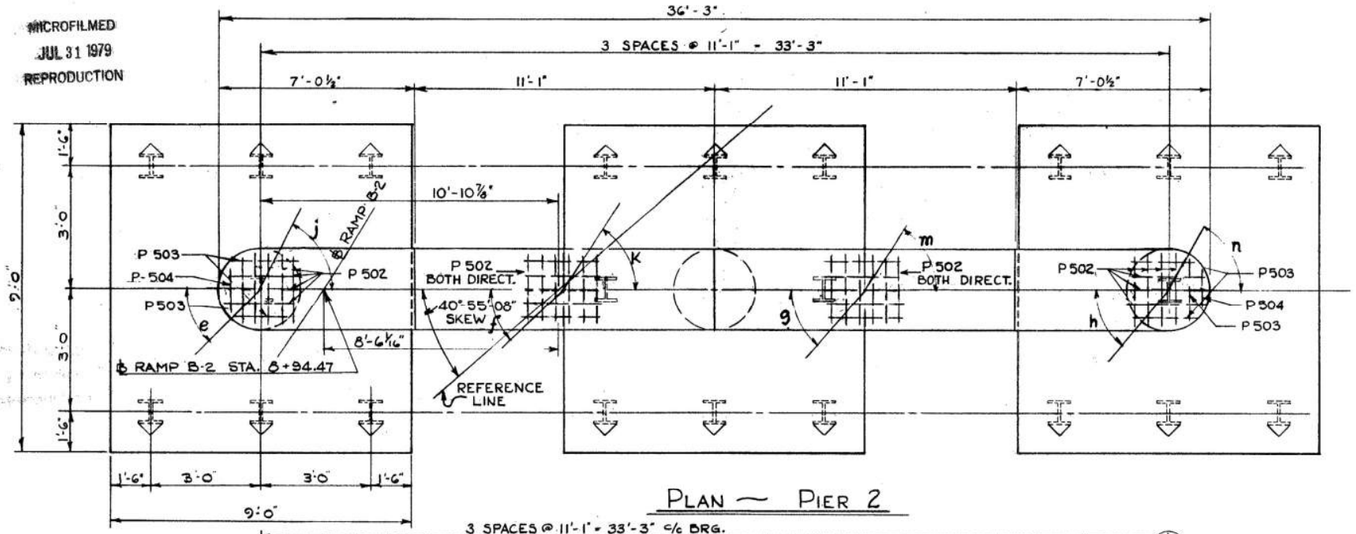
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFP	JFP		CLS	RDH	6-11-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

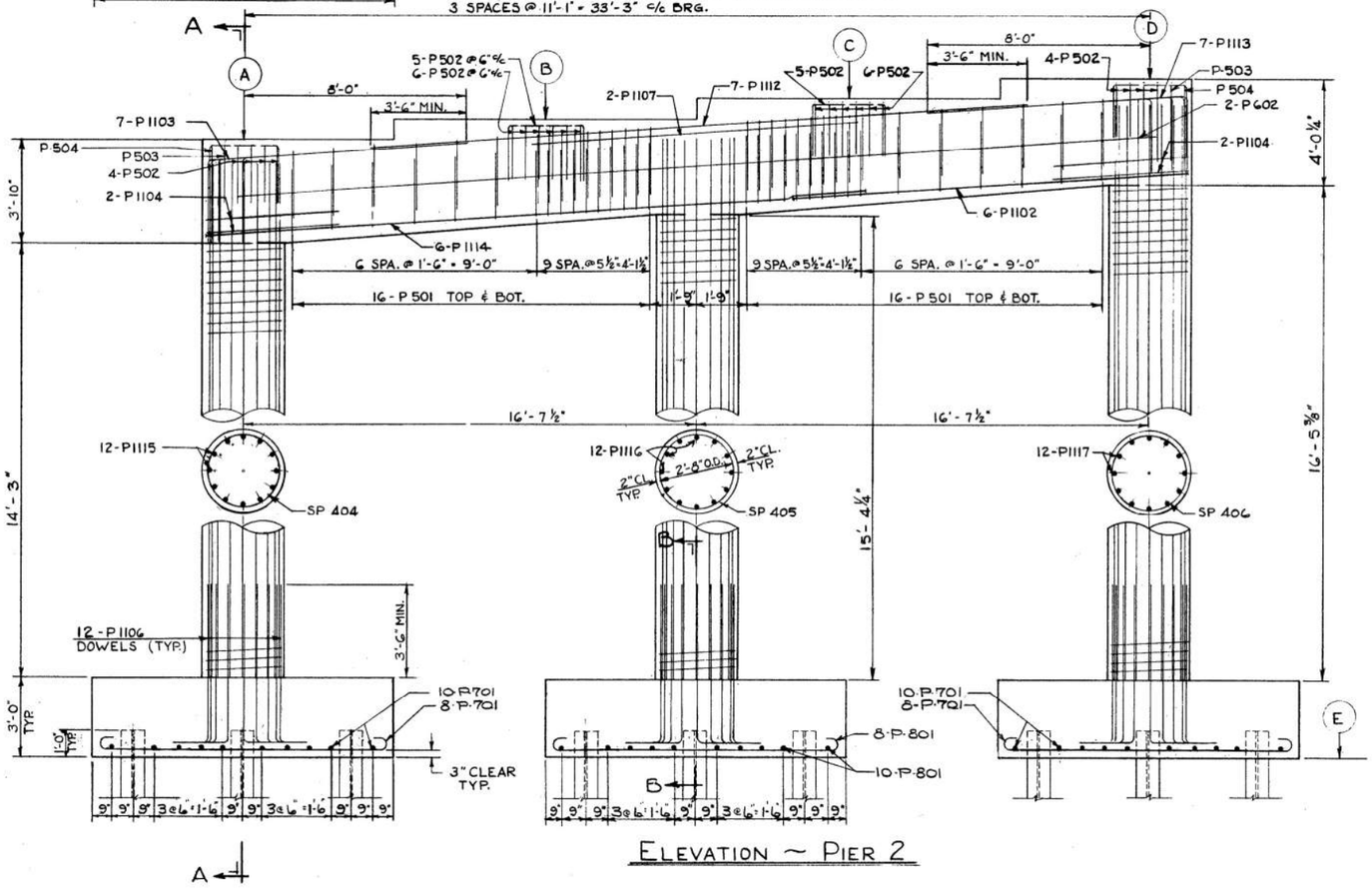
FED. RD.	STATE	PROJECT	
2	OHIO		

227
234

SUM-277-0.00

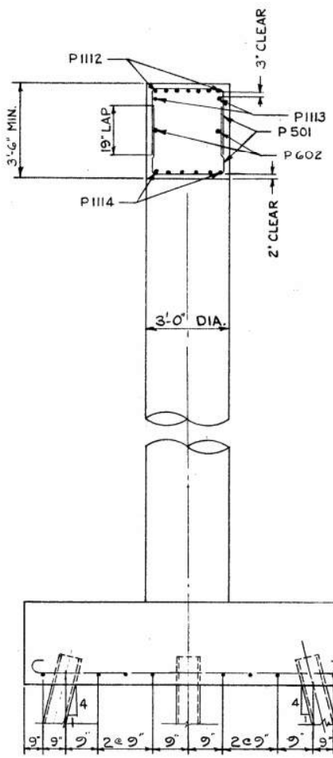


PLAN ~ PIER 2

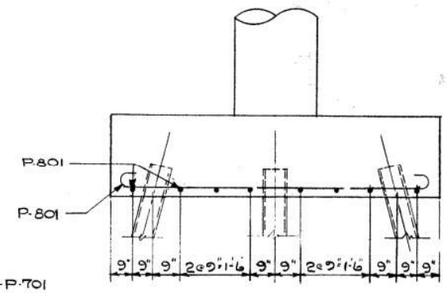


ELEVATION ~ PIER 2

NOTES: PILES TO BE 10 BP 42
▽ INDICATES DIRECTION OF 1:4 BATTER



SECTION ~ 'A-A'



SECTION ~ 'B-B'

— ELEVATION TABLE —					
	A	B	C	D	E
PIER 2	1051.66	1052.48	1053.27	1054.07	1030.60

— ANGLE OF BEARINGS —								
	e	f	g	h	j	k	m	n
PIER 2	44°-10'-10"	45°-08'-02"	46°-07'-55"	47°-09'-53"	54°-15'-32"	54°-54'-34"	55°-34'-13"	56°-14'-32"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

PIER No. 2 DETAILS

BRIDGE NO. SUM- 8 -0932
RAMP B-2 OVER RELOCATED S.R. 8 S.B.
I-277 SUMMIT COUNTY
STA. 508+26.65

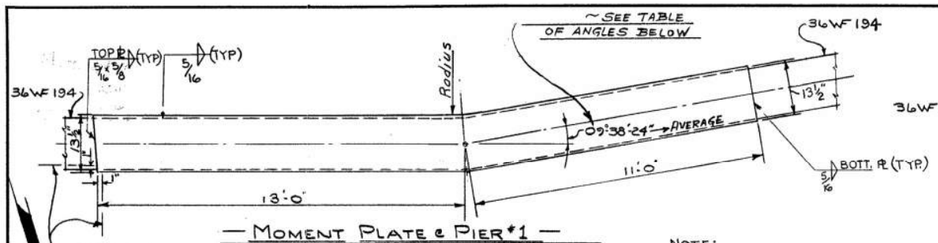
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFP	JFP		CLS	RDH	6-11 65	

FED. RD.	STATE	PROJECT	
2	OHIO		

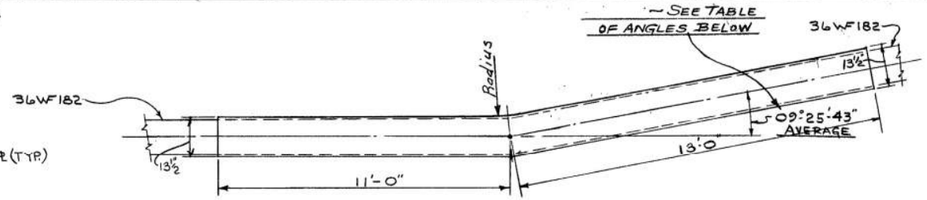
228
234

SUM-277-0.00

MICROFILMED
JUL 31 1979
REPRODUCTION

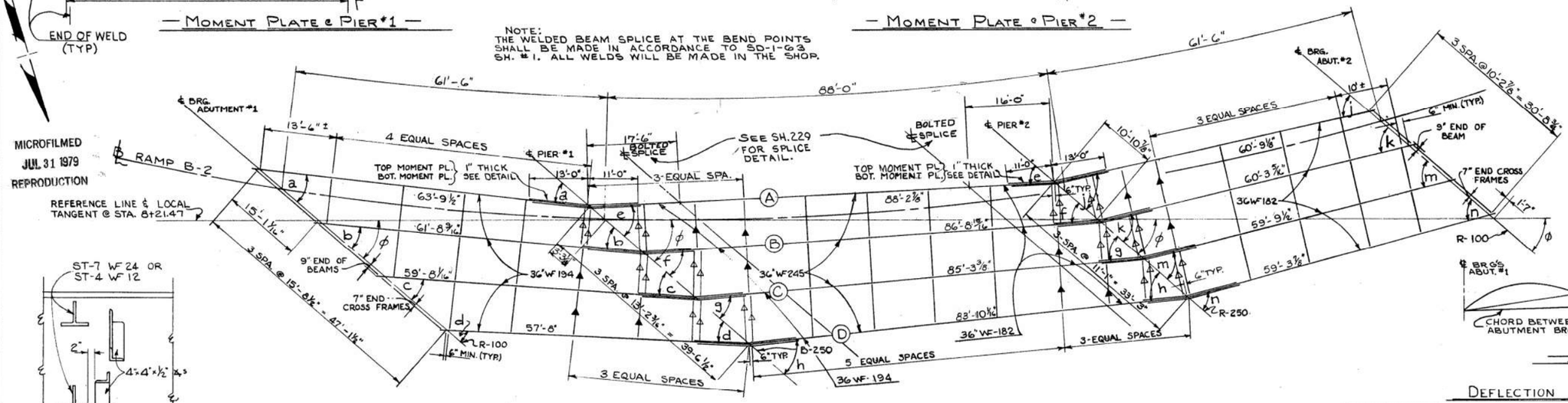


— MOMENT PLATE @ PIER #1 —

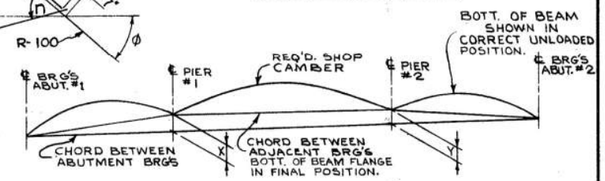


— MOMENT PLATE @ PIER #2 —

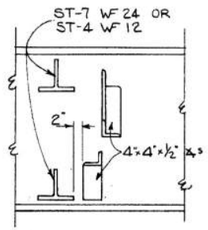
NOTE:
THE WELDED BEAM SPLICE AT THE BEND POINTS SHALL BE MADE IN ACCORDANCE TO SD-1-63 SH. #1. ALL WELDS WILL BE MADE IN THE SHOP.



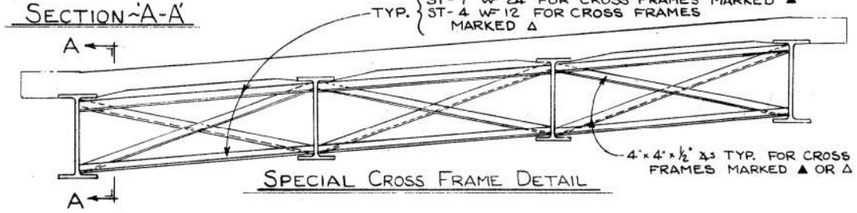
BEAM	X	Y
A	10 3/16"	9 7/8"
B	9 5/8"	9 1/4"
C	8 7/8"	8 5/8"
D	8 5/16"	8 3/16"



— LAYOUT DIAGRAM —



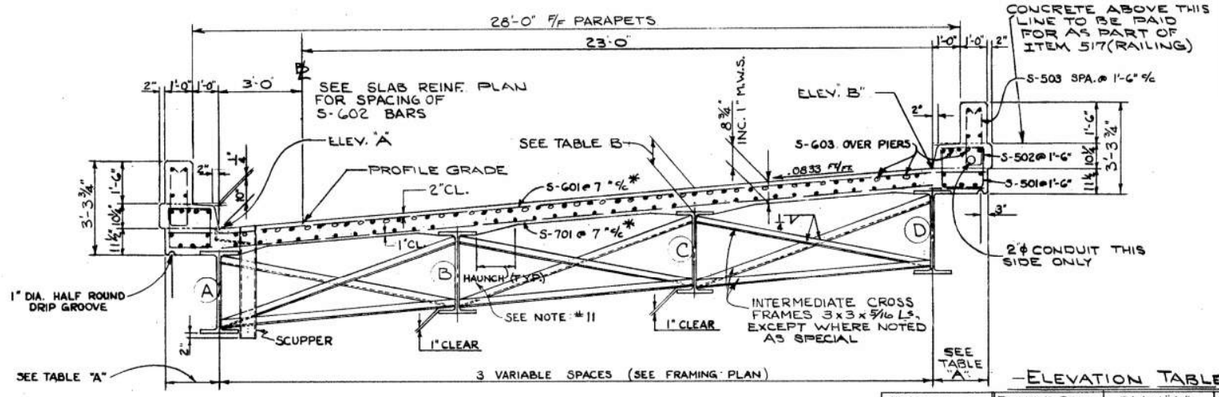
SECTION "A-A"



SPECIAL CROSS FRAME DETAIL

FRAMING PLAN

$\phi = 40°-55'-08"$



TRANSVERSE SECTION

* MEASURED ALONG BASE LINE

— ELEVATION TABLE —

STATION	PROFILE GRADE	ELEV. "A"	ELEV. "B"
7+50	1053.74	1053.51	——
7+75	1054.63	1054.40	——
8+00	1055.42	1055.17	1057.37
8+25	1056.09	1055.88	1058.01
8+50	1056.65	1056.47	1058.60
8+75	1057.11	1056.90	1059.10
9+00	1057.45	1057.20	1059.40
9+25	1057.68	1057.45	1059.60
9+50	1057.80	1057.56	1059.74

TABLE B

DISTANCE TOP OF SLAB TO TOP OF BEAM @ ℄ BEAM							
BEAM	ABUT.#1	MID PT. SPAN #1	PIER #1	MID PT. SPAN #2	PIER #2	MID PT. SPAN #3	ABUT #2
A	9 13/16"	9 5/16"	11"	9 7/16"	11 1/8"	9 9/16"	9 15/16"
B	9 5/8"	9 1/4"	10 7/8"	9 7/16"	11 1/16"	9 5/8"	10 1/16"
C	9 7/8"	9 1/4"	10 3/4"	9 7/16"	10 15/16"	9 9/16"	10"
D	9 3/4"	9 7/16"	10 11/16"	9 7/16"	10 13/16"	9½"	9 7/8"

ANGLE OF BEARINGS

LOCATION					
a	33°-56'-58"	e	44°-10'-10"	j	54°-15'-32"
b	35°-15'-31"	f	45°-08'-02"	k	54°-54'-34"
c	36°-39'-30"	g	46°-07'-55"	m	55°-34'-13"
d	38°-09'-23"	h	47°-09'-53"	n	56°-14'-32"

ELEVATIONS A & B ARE ELEVATIONS BEFORE DECK CONCRETE HAS BEEN PLACED. PROFILE GRADE ELEVATIONS ARE ACTUAL FINISHED PROFILE ELEVATIONS

DEFLECTION & CAMBER

BEAM LOCATION	SPAN #1			SPAN #2					SPAN #3		
	¼	½	¾	SPLICE	¼	½	¾	SPLICE	¼	½	¾
DEFLECTION DUE TO WEIGHT OF STEEL	.07	.07	.02	.13	.12	.20	.13	.11	.02	.06	.06
DEFLECTION DUE TO REMAINING DEAD LOAD	.23	.23	.06	.47	.43	.70	.45	.41	.05	.23	.23
CONVEXITY REQ'D FOR VERTICAL CURVE	.21	1.13	.21	.34	.40	2.10	.40	.34	.18	.96	.18
SUM OF CONVEXITY AND DEFLECTION	.51	1.43	.29	.94	.95	3.00	.98	.86	.25	1.25	.47
REQUIRED CAMBER	½"	1 7/16"	5/16"	15/16"	15/16"	3"	1"	7/8"	¼"	1¼"	½"

TABLE A

SLAB OVERHANG FROM FASCIA BEAM

	℄ BRG. ABUT. NO. 1	MIDPOINT SPAN 1	℄ BRG PIER NO. 1	MIDPOINT SPAN 2	℄ BRG PIER NO. 2	MIDPOINT SPAN 3	℄ BRG. ABUT. NO. 2
NORTH SIDE	2'-0"	2'-4 3/8"	1'-1"	2'-10"	1'-1"	2'-5 1/16"	2'-0"
SOUTH SIDE	2'-0"	1'-6 3/16"	3'-2"	1'-1½"	3'-2"	1'-7 5/16"	2'-0"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

FRAMING & SLAB DETAILS

BRIDGE NO. SUM-8-0932
RAMP B-2 OVER RELOCATED S.R.8 S.B.
I-277 SUMMIT COUNTY
STA. 508+26.65

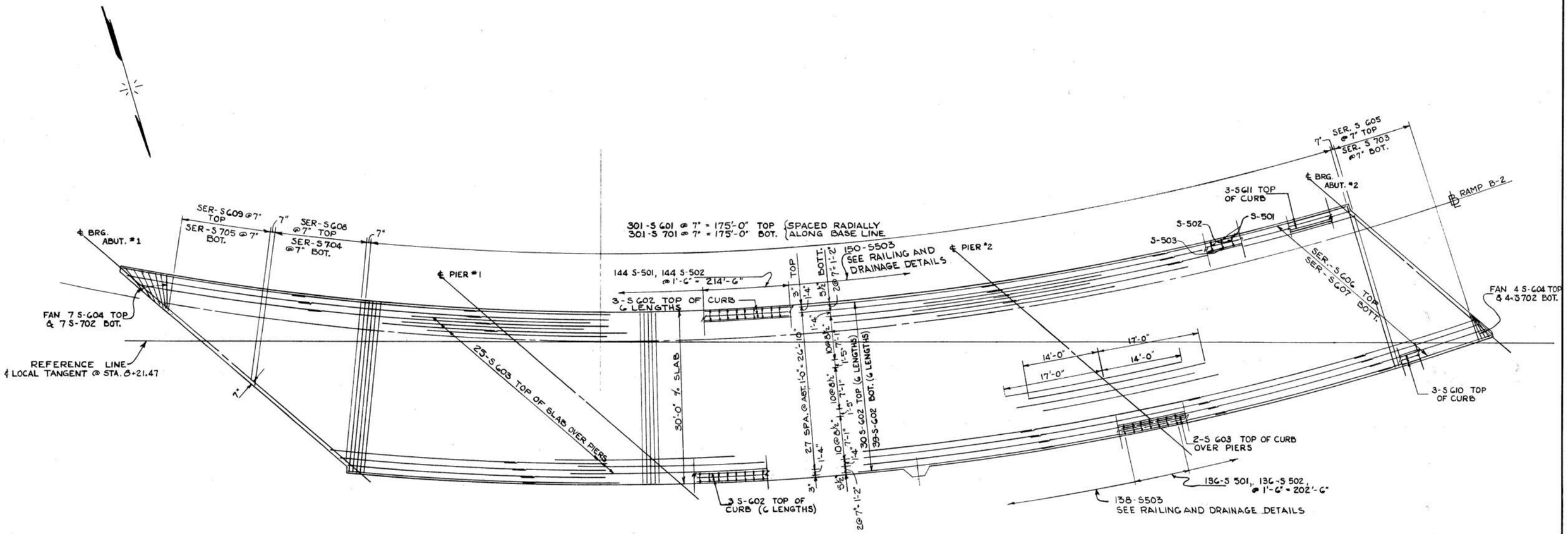
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFP	JFP		CBA	RDH	6-11-65	

MICROFILMED
JUL 31 1979
REPRODUCTION

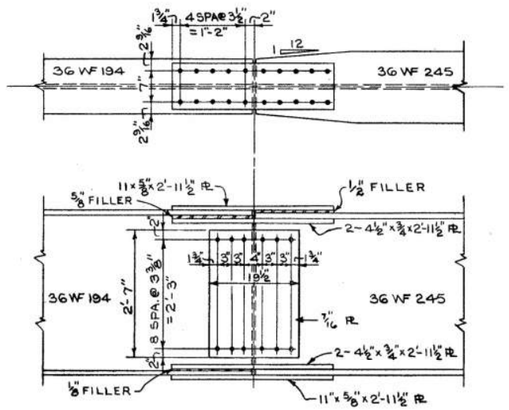
FED. RD.	STATE	PROJECT	
2	OHIO		

SUM-277-0.00

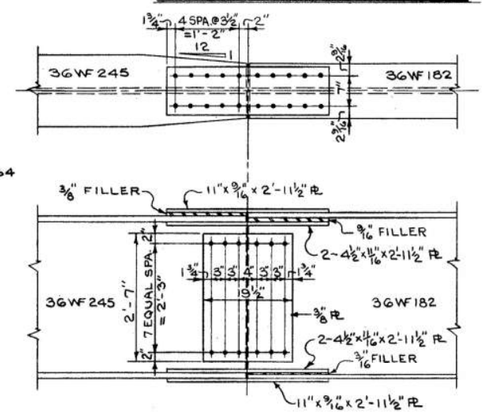
229
234



-SLAB REINFORCING PLAN-



NOTE:
ALL BOLTS 1" ℄ H.S.
REFER TO DWG. SD-2-64



-SPLICE DETAILS-

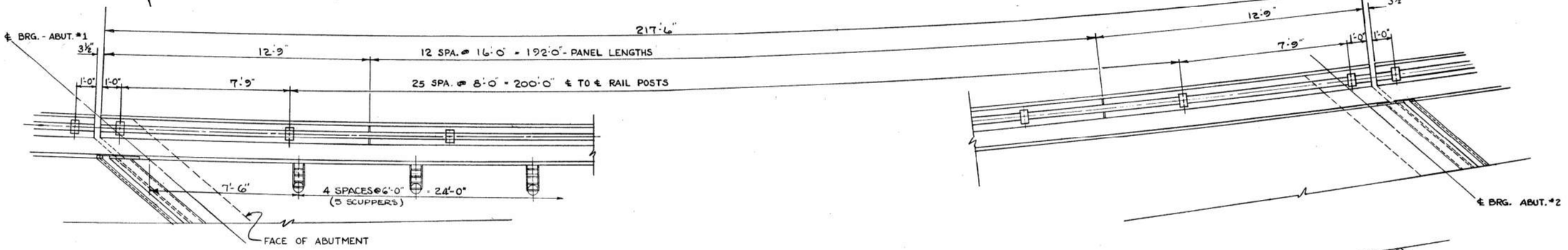
STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES						
BEISWENGER, HOCH & ARNOLD Consulting Engineers Akron, Ohio						
FRAMING DETAILS & SLAB REINFORCING BRIDGE NO. SUM-8-0932 RAMP B-2 OVER RELOCATED S.R.8 S.B. I-277 SUMMIT COUNTY STA. 508+26.65						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFP	JFP		CBS	RDH - 6-11-65		

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

SUM-277-0.00

230
234



— ELEVATION —

N.R. DENOTES NORTH RAIL.
S.R. DENOTES SOUTH RAIL.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers — Akron, Ohio

RAILING & DRAINAGE

BRIDGE NO. SUM- 8 -0932
RAMP B-2 OVER RELOCATED S.R.8 S.B.
I-277 SUMMIT COUNTY
STA. 508+26.65

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFP	JFP		CEA	RDH	6-11-65	

MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENTS	WEIGHT LBS.
ABUTMENTS 1 & 2									
A 501	16	4'-7"	ST						76
A 502	8	3'-9"	ST						31
A 503	2	2'-9"	ST						6
A 504	1	4'-0"	12	3'-0"	7"	5"			4
A 505	13	18'-2"	ST						246
A 506	6	12'-6"	ST						78
A 507	12	6'-0"	ST						75
A 508	10	10'-6"	ST						110
A 509	19	10'-0"	ST						198
A 510	1	19'-0"	ST						20
A 511	10	20'-0"	ST						209
A 512	7	17'-6"	ST						128
A 513	1	22'-0"	ST						23
A 514	4	23'-2"	ST						97
A 515	4	29'-9"	ST						124
A 516	4	25'-1"	ST						105
A 517	3	26'-9"	ST						84
A 518	6	32'-1"	ST						201
A 519	2	11'-0"	ST						23
A 520	5	8'-9"	ST						46
A 521	55	7'-2"	3	3'-5"	2'-0"				411
A 522	11	9'-0"	1	6"	8'-7"				103
A 523	53	9'-1"	3	5'-4"	2'-0"				502
A 524	2	7'-4"	16	1'-3"	11"				15
A 525	2	6'-0"	12	3'-0"	3'-0"	1'-6"			13
A 526	39	11'-4"	14	2'-7"	3'-0"	4"			461
A 527	56	7'-8"	1	6"	7'-3"				448
A 528	2	7'-0"	12	4'-0"	3'-0"	1'-7"			15
A 529	176	4'-8"	ST						856
A 530	14	5'-0"	ST						73
A 531	5	9'-10"	ST						51
A 532	4	17'-3"	ST						72
A 533	4	19'-6"	ST						81
A 534	7	12'-8"	ST						93
A 535	2	11'-3"	15	3'-3"	8'-0"	2'-0"			24
A 536	2	23'-10"	ST						50
A 537	1	11'-0"	ST						12
A 538	39	2'-11"	17	1'-4"	1'-0"	10"			119
A 539	39	3'-1"	3	1'-4"	1'-0"				125
A 540	2	25'-0"	15	17'-0"	8'-0"	2'-0"			52
A 541	50	5'-7"	5	8"	2'-2"	5"			291
A 542	2	16'-2"	ST						34
A 543	3	15'-1"	ST						47
A 544	2	24'-3"	ST						51
A 545	2	26'-5"	ST						55
A 546	7	7'-6"	ST						55
A 547	4	19'-3"	ST						80
A 548	6	12'-1"	ST						76
A 549	1	3'-0"	ST						3
A 550	10	13'-9"	ST						143
A 551	1	5'-4"	ST						6
A 552	2	15'-6"	ST						32
A 553	1	13'-3"	ST						14
A 554	2	19'-8"	15	11'-8"	8'-0"	2'-0"			41
A 555	2	7'-4"	16	10"	1'-3"				15
A 556	2	5'-10"	12	3'-0"	3'-0"	2'-7"			12
A 557	2	15'-9"	ST						33
A 558	2	15'-0"	15	7'-0"	8'-0"	2'-0"			32
A 559	2	9'-0"	12	6'-0"	3'-0"	1'-11"			19
A 560	1	11'-6"	ST						12
A 561	18	7'-6"	3	2'-9"	2'-6"				141
A 562	2	8'-0"	12	3'-0"	3'-0"	9"			17
A 563	2	10'-0"	12	7'-0"	3'-0"	2'-0"			21
A 564	2	18'-3"	ST.						38
A 565	1	3'-4"	ST.						3
A 566	10	5'-8"	1	3'-9"	2'-0"				59
A 567	1	4'-2"	1	2'-3"	2'-0"				4
A 568	6	4'-11"	1	4'-6"	0'-6"				31
A 601	49	17'-5"	7	5'-9"	1'-5"	7'-2"	11"		1282
A 602	25	15'-5"	3	1'-5"	7'-2"				579
A 603	45	15'-0"	4	7'-2"	5'-4"	2'-9"			1014
A 604	8	16'-5"	4	8'-7"	5'-4"	2'-9"			197
A 605	15	25'-11"	3	1'-2"	12'-6"				584
A 606	6	22'-11"	3	1'-2"	11'-0"				206

MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENTS	WEIGHT LBS.
A 607	21	24'-11"	3	1'-2"	12'-0"				786
A 608	5	12'-6"	1	11'-1"	1'-6"				94
A 609	8	13'-1"	1	11'-10"	1'-6"				157
A 610	3	12'-11"	1	11'-6"	1'-6"				58
A 611	14	10'-6"	3	2'-9"	4'-0"				221
A 612	14	13'-10"	1	12'-5"	1'-6"				290
A 613	15	7'-0"	ST						158
A 801	2	18'-9"	ST						100
A 802	2	18'-5"	ST						98
A 803	3	16'-7"	ST						133
A 804	5	14'-2"	ST						189
A 805	3	23'-0"	ST						184
A 806	2	18'-0"	ST						96
A 807	2	21'-6"	ST						115
A 808	1	23'-9"	ST						63
A 809	2	26'-9"	ST						143
A 810	7	11'-6"	ST						215
A 811	4	12'-2"	ST						130
A 812	4	14'-7"	ST						156
A 813	4	14'-0"	ST						150
A 814	2	13'-4"	ST						71
A 815	2	11'-3"	ST						60
A 816	1	7'-6"	ST						20
A 817	2	10'-3"	ST						55
A 818	1	16'-3"	ST						43
A 819	3	19'-0"	ST						152
A 820	4	12'-10"	ST						137
A 821	4	20'-3"	ST						216
A 822	3	21'-9"	ST						174
ABUTMENT 1 & 2 TOTAL									15,151
SUPERSTRUCTURE									
S 501	280	4'-10"	18	1'-6"	1'-5"	6"			1411
S 502	280	2'-3"	3	1'-6"	6"				657
S 503	288	5'-7"	5	8"	2'-2"	5"			1677
S 521	2	11'-8"	22	2'-0	2'-0	2'-3	2'-10		25
S 601	301	29'-8"	ST						13,412
S 602	450	32'-0"	ST						21,629
S 603	58	31'-0"	ST						2701
S 604	11	5'-0"	ST						83
SERIES OF S 605	1 SET OF 24 BARS	VARIES 28'-0" TO 6'-0" @ INCR. 11½"	ST						613
SERIES OF S 606	1 SET OF 30 BARS	VARIES 34'-9" TO 21'-9" @ INCR. 5½"	ST						1265
SERIES OF S 607	1 SET OF 39 BARS	VARIES 34'-9" TO 21'-3" @ INCR. 4⅛"	ST						1640
SERIES OF S 608	1 SET OF 29 BARS	VARIES 28'-0" TO 16'-4" @ INCR. 5"	ST						966
SERIES OF S 609	1 SET OF 28 BARS	VARIES 16'-0" TO 5'-2" @ INCR. 4¾"	ST						445
S 610	3	22'-6"	ST						101
S 611	3	34'-6"	ST						156
S 621	12	5'-6"	ST.						99
S 622	4	9'-11"	14	2'-10"	2'-0"	4"			60
S 701	301	29'-8"	ST						18,252
S 702	11	5'-0"	ST						112
SERIES OF S 703	1 SET OF 24 BARS	VARIES 28'-0" TO 6'-0" @ INCR. 11½"	ST						834
SERIES OF S 704	1 SET OF 29 BARS	VARIES 28'-0" TO 16'-4" @ INCR. 5"	ST						1314
SERIES OF S 705	1 SET OF 28 BARS	VARIES 16'-0" TO 5'-2" @ INCR. 4¾"	ST						606
TOTAL SUPERSTRUCTURE									68,058

MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS A	B	C	D	SERIES INCREMENTS	WEIGHT LBS.
PIERS 1 & 2									
P 501	148	7'-3"	3	2'-8"	2'-5"				1119
P 502	72	6'-5"	3	2'-8"	2'-0"				482
P 503	12	5'-11"	3	2'-2"	2'-0"				74
P 504	4	5'-1"	3	1'-4"	2'-0"				21
P 601	2	40'-0"	ST						120
P 602	2	33'-6"	ST						101
P-701	72	10'-2"	2	10"	8'-6"				1496
P-801	36	10'-8"	2	1'-1"	8'-6"				1025
P 1101	7	31'-0"	ST						1153
P 1102	8	16'-0"	ST.						680
P 1103	14	12'-1"	19	9'-4"	3'-0"	8"			899
P 1104	8	10'-8"	9	3'-6"	3'-8"	1'-2"			453
P 1105	6	26'-3"	ST						837
P 1106	72	6'-9"	1	1'-0"	6'-0"				2582
P 1107	2	12'-0"	ST						128
P 1108	12	18'-6"	ST						1180
P 1109	6	19'-5"	ST						619
P 1110	12	20'-0"	ST						1275
P 1111	12	21'-6"	ST						1371
P 1112	7	24'-6"	ST						911
P 1113	14	12'-1"	20	9'-4"	3'-0"	8"			899
P 1114	6	23'-3"	ST						741
P 1115	12	17'-6"	ST						1116
P 1116	12	18'-9"	ST						1195
P 1117	12	19'-9"	ST						1259
SPIRALS									1781
TOTAL PIERS 1 & 2									23,517
RAILING ⊛									
R-501	4	12'-1"	ST.						
R 502	4	12'-5	ST						
R 503	40	14'-6	ST						
R 504	44	15'-8	ST						
R-505	4	12'-4"	ST.						
R-506	4	23'-8"	ST.						
R-507	4	17'-10"	ST.						
R-508	4	15'-4"	ST.						
R 509	8	5'-4"	21	SEE DIAGRAMS					
R-510	12	4'-2"	23	SEE DIAGRAMS					
R-521	2	11'-8"	22	2'-0"	2'-0"	2'-3"	2'-10		
R-522	2	11'-4⅝"	22	3'-0"	8"	3'-9"	11⅝"		

REPLACEMENT BARS

RE-401	1	5'-3"
RE-501	1	5'-6"
RE-601	1	6'-0"
RE-701	1	6'-3"
RE-801	1	6'-6"
RE-901	1	6'-10"
RE-1101	2	7'-9"

SPIRAL REINFORCING SCHEDULE

MARK	NO. REQ'D	CORE DIA. OF SPIRAL	LENGTH OF SPIRAL	PITCH	NO. OF TURNS	WEIGHT LBS.
SP 401	1	2'-8"	15'-3⅜"	4½"	44	242
SP 402	1	2'-8"	16'-9"	4½"	48	264
SP 403	1	2'-8"	18'-2¾"	4½"	52	286
SP 404	1	2'-8"	14'-3"	4½"	41	226
SP 405	1	2'-8"	15'-4½"	4½"	44	242
SP 406	1	2'-8"	16'-5⅜"	4½"	47	259
SPACERS			385 L.F.			262
TOTAL SPIRALS						1781

GRAND TOTAL 106,726 LBS

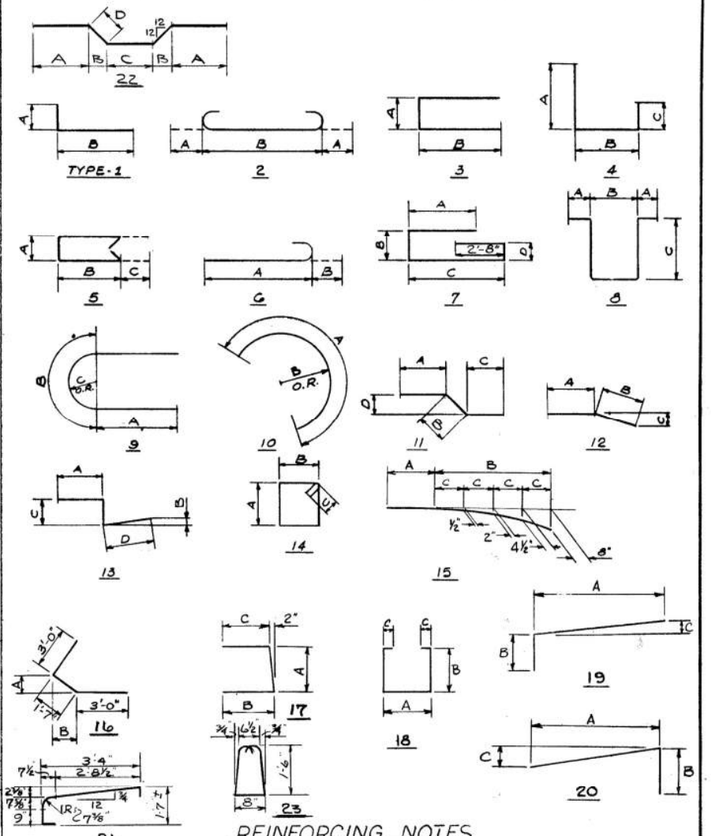
⊛ RAILING REINFORCEMENT BARS WILL BE INCLUDED AS PART OF ITEM 511 FOR PAYMENT.

MICROFILMED
JUL 31 1979
REPRODUCTION

FED. RD.	STATE	PROJECT	
2	OHIO		

SUM-277-0.00

231
234



REINFORCING NOTES

THE LENGTH SHOWN IN THE STEEL SCHEDULE FOR THE SPIRAL BARS IS THE DISTANCE FROM THE TOP OF THE FOOTING TO THE BOTTOM OF THE PIER CAP. THE NUMBER OF TURNS SHOWN IN THE STEEL SCHEDULE FOR SPIRAL BARS IS THE LENGTH DIVIDED BY THE PITCH PLUS THREE TURNS (TOTAL NUMBER OF CLOSED COILS) EXPRESSED AS THE NEAREST WHOLE NUMBER. SPIRAL REINFORCING BARS SHALL NOT HAVE DEFORMATIONS, BUT SHALL IN OTHER RESPECTS CONFORM TO ITEM 509. ONE AND ONE HALF CLOSED COILS SHALL BE PROVIDED AT THE ENDS OF EACH SPIRAL UNIT. FOUR (4) STEEL CHANNEL, TEE OR ANGLE SPACERS WEIGHING APPROX. 0.66 LBS. PER LINEAL FT. OF SPACERS SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG THE PERIPHERY OF EACH COIL. THE NUMBER OF POUNDS OF THESE SPACERS BASED ON 0.66 LBS. PER LINEAL FT. WILL BE PAID FOR AS REINFORCING STEEL AND IS INCLUDED IN THE TABULATED QUANTITY OF SPIRAL BARS.

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE A-601 IS A NO. 6 SIZE BAR AND P-1001 IS A NO. 10 SIZE BAR.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER & HOCH, Consulting Engineers
AKRON, OHIO

REINFORCING SCHEDULE

BRIDGE NO. SUM- 8 -0932
RAMP B-2 OVER RELOCATED S.R.8 S.B.
I-277 SUMMIT COUNTY
STA. 508+26.65

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFP	JFP		CBS	RDH	6-11-65	

LOCATION PLAN
CANTON TO AKRON EXPRESSWAY
INTERSTATE 277, SUM-277-0.00
SUMMIT COUNTY, OHIO
GREEN TWP. R-9, T-12 SECTIONS 4&5
COVENTRY TWP. R-11, T-1, TRACT'S 11,12&13
CITY OF AKRON

I 77-4(12)105
I 277-6(1)123
LIMITED ACCESS HIGHWAY

This Improvement has been declared a Limited Access Highway from Canton, Ohio to Akron, Ohio, by action of the Director of Highways and recorded in Volume_____ Page_____ of the Director's Journal persuant to law.

NOTE: True Bearings Established from Observation on Polaris

I hereby certify that this plat is a true delineation of a survey made for the Ohio Department of Highways in 1961 by Michael Baker, Jr. Date Nov. 29, 1961
Registered Land Surveyor, S-3424

CERTIFICATE OF APPROVAL
Approved Earl E. Campbell
Date 2-19-62 Division Deputy Director

Received _____ 19__
Re-Recorded _____ 19__
Book _____ Page _____
Summit County Recorder

394703
RECEIVED FOR RECORD
MAR 17 1962
8:53 A.M.
67 1-2
Roy R. Ruff
By [illegible] Dep.

NOTE:
THIS PLAT SUPERSEDES CENTERLINE PLAT RECORDED IN PLAT VOL. 61 PGS. 42 & 43, AND VOL. 61 PGS. 69 & 70 SUMMIT COUNTY RECORD OF PLATS, AND IS RE-RECORDED FOR THE PURPOSE OF CORRECTING THE CENTERLINE DATA.

Scale in Feet
400 0 400 800

GREEN TWP.
Arlington St. & W. Line Sec. 4
44°38'05" 1069.27'
92°09'50"
91°50'35"
COVENTRY TWP.
SPRINGFIELD TWP.
CHENOWETH RD
87°46'40"
TWP. LINE
INSERT (Not To Scale)
P.C. Sta. 345+29.85
Sta. 358+46.53
Sta. 361+39.83
Sta. 360+67.42 Rt 189.35
795.37'
300.00'
Arlington St. & Twp. Line
N 42°05'30" W
BEGIN PROJECT Sta. 355+00
Arlington Street C.H. 15
RELOC. JARVIS ROAD
RAMP B
RAMP A
RAMP C
RAMP C-C
RAMP D
SEE INSERT
S.E. ¼ Sec. 5 T 12 N GREEN TWP. R 9 W
T 11 N COVENTRY TWP. R 9 W Jarvis Rd.
SOUTH BOUNDARY CONNECTICUT WESTERN RESERVE
Tan. To Curve 71°05'01"
(Col) 795.37'
(Col) 244.35'
N 1°08'30" E
℄ Interstate 77
P.C. Sta. 391+30.44
Killian Road C.H. 135
Chenoweth Dr. Relocated
Daughtery Road T.R. 369
P.T. Sta. 404+36.69
P.O.C. Sta. 394+09.00
P.O.C. Sta. 400+67.10
Chenoweth Drive T.R. 376
473.71'
400.00'
87°53'02"
90°35'45" Tan. To Curve
N 2°20'30" W
Sta. 410+17.67
410
90°25'28"
91°42'49" Tan. To Curve
90°51'58"
180°01'12"
(Col) 655.29'
(Col) 970.76'
COVENTRY TWP.
SPRINGFIELD TWP.
179°56'16"
84°79'12"
180°17'35"
(Col) 598.96'
Match Line
NORTH LINE OF SOUTH PLAZA ESTATES
END PROJECT SUM-277-0.46 Sta. 228+63.84
END PROJECT SUM-277-0.00 Sta. 228+63.84
P.T. 227-78.07
Sta. 222+59.18 Rt.
Sta. 222+00 Bk.
END PROJECT Sta. 515+37.10 N.B.
Sta. 244+24.66 (Col.) 39.5' Lt. (Exist. Mon.)
239+00
240
230
220

I.R. 77
P.I. Sta. 397+83.77
Δ = 3°29'00" Lt.
D = 0°16'00"
R = 21,485.92'
T = 653.33'
L = 1306.25'
E = 9.93'

I.R. 77
P.I. Sta. 360+76.55
Δ = 43°12'00" Rt.
D = 1°28'00"
R = 3906.53'
T = 1546.71'
L = 2945.45'
E = 295.05'

I.R. 77
P.I. Sta. 438+32.23
Δ = 7°56'00" Lt.
D = 0°24'00"
R = 14,323.94'
T = 993.25'
L = 1983.33'
E = 34.40'

I.R. 77 SOUTHBOUND
P.I. Sta. 515+03.13
Δ = 41°58'00" Rt.
D = 2°00'00"
Ls = 400'
R = 2864.79'
θs = 4°00' T.S. = 1299.59'
P = 2.32' Es = 205.96'
K = 199.97' Lc = 1698.33'
LT. = 266.73' Xc = 399.80'
ST. = 133.40' Yc = 9.30'
LC. = 399.91' Δc = 33°58'00"

I.R. 77 SOUTHBOUND
P.I. Sta. 462+93.20
Δ = 30°33'00" Lt.
D = 1°28'00"
R = 3906.53'
T = 1066.87'
L = 2082.95'
E = 143.06'

I.R. 77 NORTHBOUND
P.I. Sta. 485+55.51
Δ = 30°33'00" Lt.
D = 1°28'00"
R = 3906.53'
T = 1066.87'
L = 2082.95'
E = 143.06'

I.R. 77 NORTHBOUND
P.I. Sta. 517+45.80
Δ = 41°58'00" Rt.
D = 2°30'00"
Ls = 400'
R = 2291.83'
θs = 5°00' T.S. = 1080.05'
P = 2.91' Es = 165.89'
K = 199.95' Lc = 1278.67'
LT. = 266.77' Xc = 399.70'
ST. = 133.43' Yc = 11.63'
LC. = 399.86' Δc = 31°58'00"

BEGIN PROJECT SUM-277-0.00 STA. 252+81.85
BEGIN PROJECT SUM-224-10.48 Sta. 213+82.76
Sta. 252+81.85 I.R. 77 Sta. 252+81.85 U.S. 224
Sta. 224+56.78 (Col.) 374.2' Lt. (Exist. Mon.)
Sta. 260+76.64 (Col.) 374.2' Rt. (Exist. Mon.)
Sta. 269+66.92 (Col.) 374.25' Rt. (Exist. Mon.)
Sta. 282+35.59 (Col.) 374.25' Rt. (Exist. Mon.)
Sta. 289+98.80 I.R. 77 Sta. 289+98.80 U.S. 224
Sta. 282+35.59 U.S. 224
Sta. 267+00
Sta. 252+81.85 U.S. 224
Sta. 289+98.80 I.R. 77
Sta. 282+35.59 U.S. 224
Sta. 267+00
Sta. 260+76.64 (Col.)
Sta. 269+66.92 (Col.)
Sta. 282+35.59
Sta. 289+98.80 I.R. 77

FED. RD.	STATE	PROJECT	
2	OHIO	I-277-6(3)123	

SUMMIT COUNTY
SUM-277-0.00

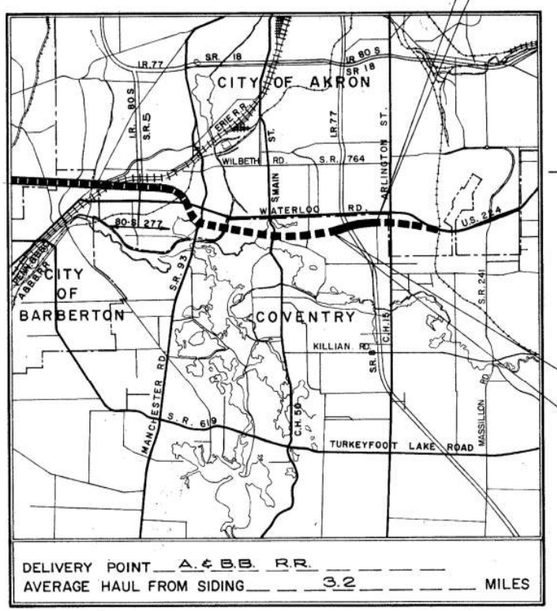
CONVENTIONAL SIGNS

Township Line
Center Line
Corporation Line
Fence Line
Guard Rail (existing)
Guard Rail (proposed)
Railroad
Power Poles
Telephone Poles
Power or Telephone Poles with guys
Limited Access & Right of Way — L/A & R/W
Right of Way — R/W
Trees or Stumps (existing)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
SUM-277-0.00

COVENTRY TOWNSHIP
SUMMIT COUNTY

END PROJECT
STA. 273+82.76



BEGIN PROJECT
STA. 228+68.84

DELIVERY POINT A. & B.B. R.R.
AVERAGE HAUL FROM SIDING 3.2 MILES

LOCATION MAP
SCALE OF MILES 0 1 2

OTHER EXPRESSWAYS
STATE & MAJOR ROADS
OTHER ROADS
COMPLETED PORTION INTERSTATE ROUTE

PLAN 1" = 50'
PROFILE HORIZONTAL 1" = 50'
PROFILE VERTICAL 1" = 5'
CROSS SECTIONS: HORIZONTAL & VERTICAL 1" = 10'

INDEX

TITLE SHEET 1
SCHEMATIC PLAN & DESIGN DESIGNATION 2
TYPICAL SECTIONS 3-6
GENERAL NOTES 7-8
SUMMARY OF TABLES 9-10
PAVEMENT CALCULATIONS & EARTHWORK SUMMARY 11-12
GENERAL SUMMARY 13-14
PLAN AND PROFILE 15-20
CROSS SECTION LAYOUT AND CROSS SECTIONS 21-38
GEOMETRIC INTERCHANGE PLAN 39-40
GRADING AND FENCE PLAN 41-42
RAMP "A" PLAN, PROFILE AND CROSS SECTIONS 43-47
RAMP "A" PAVEMENT ELEVATIONS & JOINT DETAILS 48-49
RAMP "B" PLAN, PROFILE AND CROSS SECTIONS 50-58
RAMP "B" PAVEMENT ELEVATIONS AND JOINT DETAILS 59-60
RAMPS "B-1" AND "B-2" PLAN, PROFILE AND CROSS SECTIONS 61-73
RAMPS "B-1" AND "B-2" PAVEMENT ELEVATIONS & JOINT DETAILS 74-77
RAMP "C" PLAN, PROFILE AND CROSS SECTIONS 78-85
RAMP "C" PAVEMENT ELEVATIONS & JOINT DETAILS 86-88
RAMPS "C-1" AND "C-2" PLAN, PROFILE AND CROSS SECTIONS 89-99
RAMPS "C-1" AND "C-2" PAVEMENT ELEVATIONS & JOINT DETAILS 100-103
RAMP "D" PLAN, PROFILE AND CROSS SECTIONS 104-109
RAMP "D" PAVEMENT ELEVATIONS & JOINT DETAILS 110-111
I-77 PLAN, PROFILE AND CROSS SECTIONS 112-130
WOODLEY BLVD. AND WOODVIEW DRIVE RELOCATION 131-135
GREGG ROAD CUL-DE-SAC 136-137
I-77 TRAFFIC MAINTENANCE 138-139
ROADWAY AND DRAINAGE DETAILS 140-144
STRUCTURES UNDER 20' SPAN 145-154
UTILITY WORK AND UTILITY DETAILS 155-156
TRAFFIC CONTROL PLAN AND DETAILS 157-175
LIGHTING PLAN 176-184
STRUCTURES OVER 20' SPAN 185-231
RIGHT-OF-WAY PLAN 232-234
SOIL PROFILE

LINE DATA

		PROJECT LENGTH	WORK LENGTH
BEGIN WORK	STATION 225 + 50.00		
BEGIN PROJECT	STATION 228 + 68.84		
END PROJECT	STATION 273 + 82.76		
LENGTH		4,513.92 FT	
END WORK	STATION 274 + 87.00		
LENGTH			4,937.00 FT.
I-77	STATION 455 + 00.00 TO 527 + 44.42 BACK		7,244.42 FT.
	STATION 325 + 00.64 TO 339+00.00		1,359.36 FT.
WOODVIEW & WOODLEY	STATION 48 + 10 TO STATION 58 + 50		1,040.00 FT.
		4,513.92 FT. = .855 MILES	14,620.78 FT. = 2.769 MILES

FILE NO.	SUMMIT COUNTY SUM-277-0.00
	DATE OF LETTING _____ 196
	CONTRACT NO. _____

I-277-6-(3)123
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 HIGHWAYS IN ACCORDANCE WITH PROVISIONS OF SECTION 5511.02 REVISED CODE OF OHIO.

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

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

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

APPROVED _____
DATE _____ DIVISION DEPUTY DIRECTOR

APPROVED _____
DATE _____ ENGINEER OF BRIDGES

APPROVED _____
DATE _____ ENGINEER OF LOCATION AND DESIGN

APPROVED _____
DATE _____ DEPUTY DIRECTOR OF DESIGN AND CONSTRUCTION

APPROVED _____
DATE _____ DEPUTY DIRECTOR OF RIGHT OF WAY

APPROVED _____
DATE _____ DEPUTY DIRECTOR OF PLANNING AND PROGRAMMING

APPROVED _____
DATE _____ FIRST ASSISTANT DIRECTOR

APPROVED _____
DATE _____ DIRECTOR OF HIGHWAYS

PREPARED AND RECOMMENDED BY
BEISWENGER, HOCH & ARNOLD, CONSULTING ENGINEERS
AKRON OHIO CLEVELA

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED:

_____ DIVISION ENGINEER _____ DATE

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

AS-1-54	7-5-62	C.B.-6	G-1-65	HW-E	G-1-65
				HW-I	G-1-65
B.P.-1	G-1-65	F-1	G-1-65		
B.P.-2	G-1-65	F-2	G-1-65	I-2A	G-1-65
B.P.-3	G-1-65	F-3	G-1-65		
B.P.-4	G-1-65			L-1	G-1-65
B.P.-5	G-1-65	F.A.C.I.-1	G-1-65		
B.P.-6	G-1-65	F.A.C.I.-2	G-1-65	M.C. 1	G-1-65
B.P.-7	G-1-65			M.C. 3	G-1-65
		G.R.-1	G-1-65	M.C. 4	G-1-65
C.B.-2-2-A&B	G-1-65	G.R.-2-A	G-1-65	M.C. 5	G-1-65
C.B.-2-3&2-4	G-1-65	G.R.-6	G-1-65		
C.B. 5	G-1-65			SP-53	6-30-61

SUPPLEMENTAL SPECIFICATIONS

801	9-2-65
807	9-2-65
808	7-14-65
811	3-25-65
816	8-6-65

SUMMARY OF RIGHT-OF-WAY REQUIRED

FED. RD.	STATE	PROJECT	
2	OHIO		

SUMMIT COUNTY
SUM-277-0.00

2/3 RW

TOTAL Nº OF OWNERS WITH STRUCTURES TO BE TAKEN 3 . TOTAL OWNERSHIPS 6

PARCEL Nº	OWNER	DEED RECORD BOOK	DEED RECORD PAGE	DEED AREA TOTAL ACRES	DEED AREA PORTION ROAD OCCUPIES	DEED AREA CORRECTION (ACRES)	TO BE ACQUIRED LAND (ACRES)	TO BE ACQUIRED BLDGS.	RESIDUE LEFT	RESIDUE RIGHT	LAND ISOLATED (ACRES)	SHEET Nº	TYPE FUNDS	REMARKS
140WL	RUSSELL I. REIGLE & IDA E. REIGLE	1879	460	2.81*		2.53	1.41	YES	0.77	0.28			I	P.R.O. = 0.18 ACRES *-INCLUDES 0.28 ACRE PARCEL SOLD TO D. & A. BESKITT
140WD		1995	688				0.07	NO					I	
141WL	DAN & ANNA BESKITT	4155	173	0.28			0.06	NO	0.22				I	
142WL	STEVE WYHOWANEC & KATHERINE WYHOWANEC	3156	652	1.25			0.56	NO	0.45	0.24	0.24		I	
143WL	RUDOLF J. STEIN & PHYLLIS STEIN	3254	373	1.25			0.55	NO	0.44	0.26	0.26		I	
143WA								YES					I	SHED REMOVAL
144WL	CHARLES H. SNYDER & CORA SNYDER	4010	278	1.25			0.55	YES	0.41	0.29	0.29		I	
145WD	PETER AMHAUSER & ANNA AMHAUSER	4164	134			1.63	0.19	NO		1.44			I	P.R.O. = 0.06 ACRES

DATE OF PREPARATION

REV.	DATE	DESCRIPTION

Right of Way Dept. File 4
U.S. & ADMIN. DIST.
OHIO
1 3 1956
LOGGED
Bill Bk.

FED. RD.	STATE	PROJECT	
2	OHIO		

SUMMIT COUNTY
SUM-277-0.00

COVENTRY TOWNSHIP
T-1-N R-11-W
SCALE: 1" = 50'

CHAFFIN RD. 50' ℄ T.R. 358

S. ARLINGTON ST. 60' ℄ WATERLOO RD.

℄ SURVEY I-277

℄ GREGG RD. 50'

RIGHT OF WAY WEST OF STA. 269+60.92 ACQUIRED UNDER SUM-6-3.07

STA. 269+60.92 ~ 277
STA. 20+00 GREGG RD.

BEGIN ACQUISITION SUM-277-0.00 STA. 269+60.92

END PROJECT SUM-277-0.00 STA. 273+82.76

END ACQUISITION SUM-277-0.00 STA. 274+88.34 I-277-6(4)

RIGHT OF WAY EAST OF STA. 274+88.34 WILL BE ACQUIRED UNDER SUM-224-10.48

RAMP "C"

FUTURE 4' DITCH

ARLINGTON-WATERLOO ACRES (UNRECORDED)

℄ CURVE DATA
P.I. STA. 280+92.11
Δ: 2°45'04" RT.
Dc: 0°26'
R: 12,277.67'
Lc: 589.52'
T: 294.82'
E: 3.54'

AKRON CORPORATION LINE

● = IRON PIN FOUND (I.P.F.)

RUSSELL I. REIGLE & IDA E. REIGLE
(140 WL) T.B.A. = 1.23 Ac (53,583 S.F.)
P.R.O. = 0.18 Ac (7,997 S.F.)
TOTAL = 1.41 Ac (61,580 S.F.)
(140 WD) T.B.A. = 0.05 Ac (2,320 S.F.)
P.R.O. = 0.02 Ac (841 S.F.)
TOTAL = 0.07 Ac (3,161 S.F.)

DAN & ANNA BESKITT
(141 WL) T.B.A. = 0.06 Ac (2,511 S.F.)

PETER AMHAUSER & ANNA AMHAUSER
(145 WD) T.B.A. = 0.13 Ac (5,786 S.F.)
P.R.O. = 0.06 Ac (2,629 S.F.)
TOTAL = 0.19 Ac (8,415 S.F.)

STEVE WYHOWANEC & KATHERINE WYHOWANEC
(142 WL) T.B.A. = 0.56 Ac (24,517 S.F.)

RUDOLF J. STEIN & PHYLLIS STEIN
(143 WL) T.B.A. = 0.55 Ac (24,025 S.F.)

(143 WA) SHED REMOVAL

(144 WL) T.B.A. = 0.55 Ac (23,778 S.F.)

Nº	REVISIONS	MADE BY	DATE
1	ADDED FEDERAL PROJ. NO.	J.R.B.	4/28/68

Highway Dept. Div. 4
Plan & Admin SECT.
AKRON, OHIO
JUN 13 1966
CHECKED
Bill Bk.

C&E