STATE OF OHIO
DEPARTMENT OF HIGHWAYS

MAH-80-3.37

MAHONING COUNTY

JACKSON & AUSTINTOWN TOWNSHIPS

GRADE SEPARATION WITH THE ERIE-LACKAWANNA RAILROAD

FED. RD.	STATE	PROJECT	
2	OHIO	I-IG-80-5(4)229	

1 / 294

MAH-80-3.37

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 THE PROVISIONS OF SECTION 5511.02 OF THE REVISED CODE OF OHIO.

I-IG-80-5(4)229

PROJECT DESIGNATION MAH.-18-9.89 APPEARING THROUGHOUT THIS PLAN SHALL BE CONSIDERED TO READ MAH.-80-3.37

CONVENTIONAL SIGNS

TOWNSHIP LINE
TRACT LINE
EXISTING RIGHT OF WAY
PROPERTY LINES — PR —
CENTER LINE
FENCE LINE — x — x —
GUARD RAIL
RAILROAD
PROPOSED LIMITED ACCESS LINE — L/A R/W —
PROPOSED RIGHT OF WAY — R/W —
PROPOSED EASEMENTS
POWER POLES
TELEPHONE POLES
TREES

INDEX OF SHEETS

Sheet No. 201 Omitted

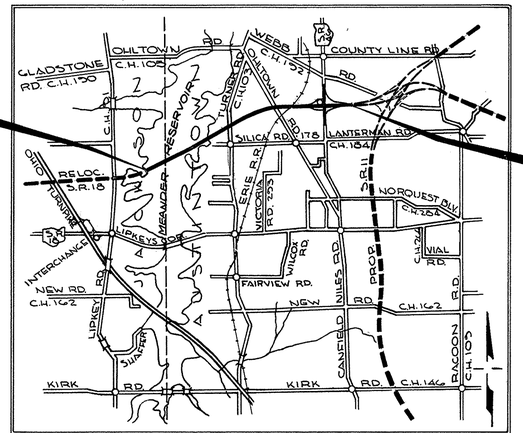
LINE DATA

BEGIN PROJECT	STA 520+80.75
END PROJECT	STA 675+74.89
NET LENGTH OF PROJECT (SEE SHEET No 11) I	12,490.94 LIN. FT. OR 2.365 MILES
NET LENGTH OF PROJECT (SEE SHEET No 11) IG	3,000.00 LIN. FT. OR 0.568 MILES
TOTAL LENGTH OF PROJECT	15,490.94 LIN. FT. OR 2.933 MILES
NET LENGTH OF WORK (SEE SHEET No 11) I	17,507.26 LIN. FT. OR 3.315 MILES
NET LENGTH OF WORK (SEE SHEET No 11) IG	3,000.00 LIN. FT. OR 0.568 MILES
TOTAL LENGTH OF WORK	20,507.26 LIN. FT. OR 3.884 MILES

STA. 520+80.75
BEGIN PROJECT
MAH-80-3.37

Sheets No. 188, 188 A & 189 Revised 3-17-66 C.E.H
Sheet No. 217, 242, & 252 revised 3-30-66
Sheet No. 261 revised 3-31-66

STA. 675+74.89 BK.=
STA. 376+15.43 AH.
END PROJECT
MAH-80-3.37



Delivery Point ERIE-LACKAWANNA R.R., Mineral Ridge, Ohio
Average haul from siding 2 Miles

LOCATION MAP

SCALE OF MILES
0 1 2 3 4 5 6

Portion to be improved
Future Construction

SCALE

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

DESIGN DESIGNATION

ADT 1962 (S.R.18)	18,690
ADT 1975	42,430
DHV	4,240
DIR. DISTRIBUTION	52%
TRUCK TRAFFIC	6%
DESIGN SPEED	70 MPH

1965 SPECIFICATIONS

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

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 TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THESE PLANS AND ESTIMATES

Approved Clifton McClintock
Date 11-26-64 Division Deputy Director

Approved C. H. Altwater
Date 1-12-66 Engineer of Bridges

Approved R. D. Ricketts
Date 1-12-66 Engineer of Location and Design

Approved R. E. Shultz
Date 1-12-66 Deputy Director of Design and Construction

Approved T. H. Bovard
Date 1-18-66 Deputy Director of Right of Way

OK HBV 1-14-66

Approved F. W. Wilson
Date 1-18-66 Deputy Director of Planning and Programming

Approved
Date First Assistant Director

Approved P. E. Masheter
Date 1-18-66 Director of Highways

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

File No. MAHONING COUNTY MAH-80-3.37
Date of Letting _____ 196_
Contract No. _____

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS							
BP-1	6-1-65	MC-4	6-1-65	HW-E	6-1-65	GR-6	6-1-65
BP-2	6-1-65	MC-5	6-1-65	CB-2-2-A&B	6-1-65	BR-1-65 SH.1	2-1-65
BP-3	6-1-65	MC-6	6-1-65	CB-3A	6-1-65	SD-1-63	11-12-63
BP-4	6-1-65	F-2	6-1-65	CB-4	6-1-65	FSB-1-62	1-15-63
BP-5	6-1-65	F-3	6-1-65	CB-5	6-1-65	RB-1-55	2-2-55
BP-6	6-1-65	FAC1-1	6-1-65	CB-6	6-1-65	AS-1-54	8-10-65
BP-7	1-1-66	FAC1-2	6-1-65	MH-1	6-1-65	F-1	6-1-65
MC-1	6-1-65	HW-1	6-1-65	GR-1	6-1-65	I-1	6-1-65
MC-2	6-1-65	HW-2	6-1-65	GR-2A	9-1-65	I-2	6-1-65
MC-3	6-1-65	HW-3	6-1-65	GR-5B	6-1-65	MH-1A	6-1-65

SUPPLEMENTAL SPECIFICATIONS	
801	9-2-65
808	7-14-65
811	3-9-65
814	8-24-65
816	8-6-65
806	9-2-65
815	8-6-65
[illegible]	4-22-65

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED

Division Engineer _____ Date _____

FED. RD.	STATE	PROJECT	
2	OHIO		

2/254

MAH 18- 9.89

APR 7

STA. 520+80.75
BEGIN PROJECT
MAH.80-3.37

BEGIN WORK
STA.520+00

BR. Nº
MAH.18-1013

N. 68° 57' 35" E

JACKSON
AUSTINTOWN TWP.

RESERVOIR

P.C. STA.
551+64.80

P.I. STA.
551+64.80 AHEAD

BEGIN FIRE TRAIL
125' LT. STA. 545+80

PROP. FIRE TRAIL
N. 62° 01' 45" E

BR. Nº
MAH.18-1112

PROP. FIRE TRAIL
7° 48' 30"

BEGIN FIRE TRAIL
110' LT. STA. 43+84
I-80-5(4) 229 Funds

BEGIN FIRE TRAIL
125' RT. STA. 556+00

EXIST. FIRE TRAILS

END FIRE TRAIL
LT. STA. 53+00

END WORK
STA.53+83
END PAVT
STA.53+00

STA.585+61.96

N. 3° 15' 30" E

ROAD C.H.103

P.C. STA.
560+46.25

BEGIN PAVT
STA.48+00
BEGIN WORK
STA.46+32
I-80-5(4) 229 Funds

BR. Nº
MAH.18-1178

I-80, S.R. 18

610
℄ CROSSOVER
STA.610+00

620

STA.616+00

N. 30° 22' 47" W.

OHLTOWN

I-80-5(4) 229 Funds
END WORK
STA.53+25
END PAVT
STA.53+25

Limit of IG on Ramp A

STA.620+81.08
I.G. LIMITS

BR. Nº
MAH.18-1197

6° 16' 45"

STA.626+30.24

47° 49' 30"

RAMP "A"

P.T. STA.
625+78.05

N. 85° 25' 02" E

RAMP "C"

STA.630+82.42

EAST BR.

SILICA

TRACT 5

TRACT 6

TRACT 4

TRACT 16

WEBB ROAD

END WORK
STA.663+75
END PAVT.
STA.661+55.30

FACI. SIGN.

STA.675+74.89 (BACK)
STA.376+15.43 (AHEAD)
END PROJECT
MAH. 80-3.37

END WORK
STA.377+00

BR. Nº
MAH.18-1246

RAMP "B"

RAMP "D"

RAMP "E"

STA. 634+88.23
88° 38' 00"

TEMPORARY RUNAROUND

N. 1° 52' - 58" W.

CANFIELD-NILES ROAD

FACI SIGN

BEGIN PAV'T.
STA. 36+50
BEGIN WORK
STA. 34+50

LANTERMAN ROAD C.H. 184

CURVE DATA Nº 1
P.I. STA. 555+86.81
Δ = 3° 56' 14"
D = 0° 28'
R = 12,277.67'
T = 422.01
E = 7.25'
L = 843.69
P.C. STA. 551+64.80
P.T. STA. 560+08.49 (BACK)
STA. 560+11.69 (AHEAD)

CURVE DATA Nº 2
P.I. STA. 612+95.77
Δ = 27° 27' 17"
D = 0° 48'
R = 7161.97'
T = 1749.52
E = 210.55
L = 3431.84
P.C. STA. 595+46.25
P.T. STA. 629+78.09

GRAPHIC SCALE
0 500 1000 2000 3000

LOCATION PLAN

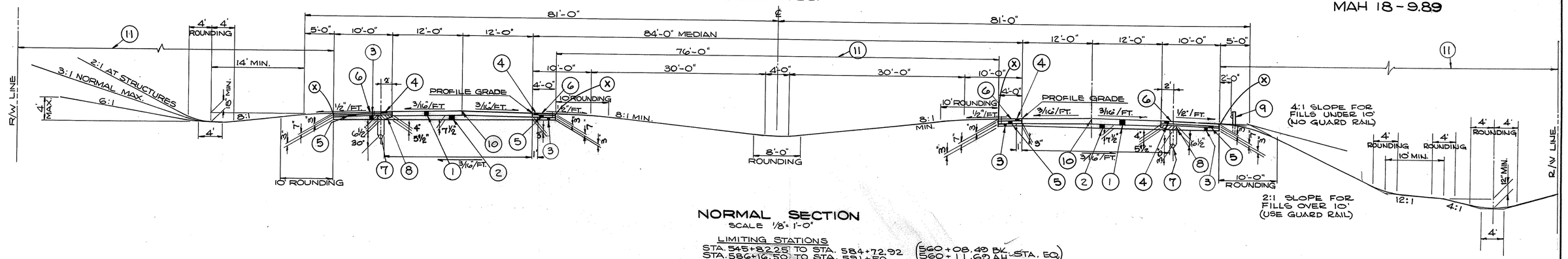
TYPICAL SECTIONS

TYPE T-71
CODE 7221

FED. RD.	STATE	PROJECT	
2	OHIO		

3
294

MAHONING COUNTY
MAH 18-9.89



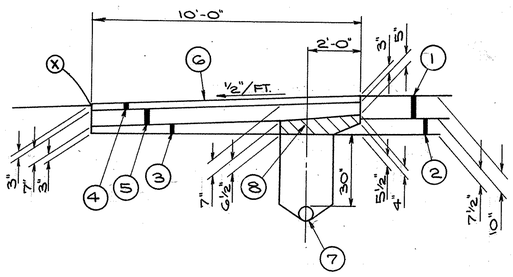
NORMAL SECTION

SCALE 1/8" = 1'-0"

LIMITING STATIONS
STA. 545+82.25 TO STA. 584+72.92
STA. 586+16.50 TO STA. 591+50
STA. 654+50 TO STA. 675+74.89

(560+08.49 BK. - STA. EQ.
560+11.69 AH. - STA. EQ.)

BRIDGE LIMITS
STA. 521+05.75 TO STA. 545+82.25
STA. 584+72.92 TO STA. 586+16.50



SHOULDER DETAIL
SCALE: 3/8" = 1'-0"

(1) T-71 10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT.
+(2) I-22 SUBBASE (DEPTH AS SHOWN) GRADING "A" OR "B" AS PER PLAN (MODIFIED AS PER GENERAL NOTE.)
+(3) I-22 SUBBASE (DEPTH AS SHOWN) REGULAR GRADING
*(4) B-21 3" WATERPROOFED AGGREGATE BASE COURSE (SEE NOTE IN PROPOSAL)
(5) B-19 7" AGGREGATE BASE COURSE (VARIABLE DEPTH) - SEE NOTE.
(6) T-31 BITUMINOUS SURFACE TREATMENT USING 0.008 CU. YDS. Nº6 AGGREGATE PER SQ. YD. AND 0.25 GAL. BITUMINOUS MATERIAL PER SQ. YD. (SEE NOTE IN PROPOSAL)
(7) I-1 6" PIPE CLASS I-3 [M-6.4(h) PIPE SHALL BE USED IN ROCK CUT] SEE GENERAL NOTES.
(8) SPECIAL DRAINAGE CONNECTION, USING Nº6 AGGREGATE (SEE NOTE IN PROPOSAL)
(9) I-15 GUARD RAIL, STEEL BEAM STANDARD TYPE (DEEP)
(10) STANDARD LONGITUDINAL JOINT.
(11) L-9 SEEDING AND PROTECTING.

NOTES:
ADJACENT TO RAMPS AND SPEED CHANGE LANES, THE THICKNESS OF THE B-21 WATERPROOF AGGREGATE BASE COURSE SHALL BE INCREASED TO 6" WITH A COMPENSATING REDUCTION IN THE THICKNESS OF THE B-19 AGGREGATE BASE COURSE. (2-COURSES).

SLOPES TYPICAL UNLESS OTHERWISE SHOWN ON CROSS SECTIONS.

IN ROCK CUT ALL LINES OF UNDERDRAIN PIPE SHALL HAVE A DEPTH OF COVER OF 12 INCHES BETWEEN CROWN OF PIPE AND SUBGRADE.

ROCK MAY BE ENCOUNTERED BETWEEN THE FOLLOWING APPROX. STATIONS. STA. 653+00 TO STA. 669+00

+ IN ROCK CUT THE DEPTH OF I-22 SHOWN ABOVE SHOULD BE INCREASED BY 2"

SEQUENCE OF OPERATIONS: (1) INSTALL PIPE UNDERDRAIN ON OUTSIDE SHOULDER. INSTALLATION OF SHALLOW UNDERDRAIN IN MEDIAN MAY BE DEFERRED UNTIL T-71 IS PLACED, (2) PLACE SUBBASE OUT TO OUTSIDE EDGE OF UNDERDRAIN OR TO ONE FOOT BEYOND EDGE OF PAVEMENT WHERE NO UNDERDRAIN IS PRESENT, (3) CONSTRUCT T-71, (4) REMOVE SUBBASE AND ANY CONTAMINATED BACKFILL OVER DRAIN AND REPLACE WITH Nº6 AGGREGATE AS SHOWN BY (8), (5) COMPLETE SHOULDER CONSTRUCTION.

* THICKNESS SHOWN IS THE DESIGNED THICKNESS AS DESCRIBED IN SECTION B-21.01 OF THE SPECIFICATIONS.

(X) DROP EARTH BERM 1" BELOW PAVED SHOULDER

TYPICAL SECTIONS

TYPICAL SECTIONS

TYPE T-71
CODE 7221

FED. RD.	STATE	PROJECT	
2	OHIO		

4
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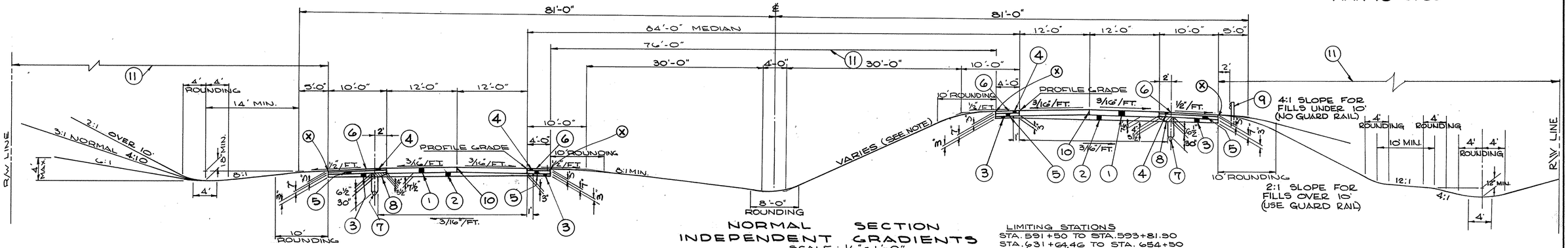
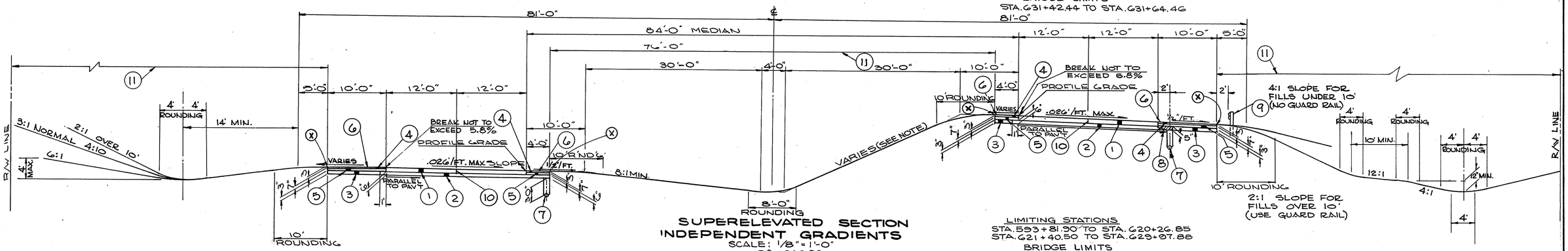
MAHONING COUNTY
MAH 18-9.89



NORMAL SECTION
INDEPENDENT GRADIENTS
SCALE: 1/8" = 1'-0"

LIMITING STATIONS
STA. 591+50 TO STA. 593+81.90
STA. 631+64.46 TO STA. 654+50
BRIDGE LIMITS
STA. 631+42.44 TO STA. 631+64.46



SUPERELEVATED SECTION
INDEPENDENT GRADIENTS
SCALE: 1/8" = 1'-0"
$D_C = 0° 48' 00"$

LIMITING STATIONS
STA. 593+81.90 TO STA. 620+26.85
STA. 621+40.50 TO STA. 629+97.88
BRIDGE LIMITS
STA. 620+26.85 TO STA. 621+40.50
STA. 629+97.88 TO STA. 631+42.44

SEE SHEET Nº 3 FOR SHOULDER DETAIL

(1)	T-71	10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT.
+ (2)	I-22	SUBBASE (DEPTH AS SHOWN) GRADING "A" OR "B" AS PER PLAN (MODIFIED AS PER GENERAL NOTE.)
+ (3)	I-22	SUBBASE (DEPTH AS SHOWN) REGULAR GRADING
* (4)	B-21	3" WATERPROOFED AGGREGATE BASE COURSE (SEE NOTE IN PROPOSAL)
(5)	B-19	7" AGGREGATE BASE COURSE.-SEE NOTE
(6)	T-31	BITUMINOUS SURFACE TREATMENT USING 0.008 CU. YDS. Nº6. AGGREGATE PER SQ YD. AND 0.25 GAL. BITUMINOUS MATERIAL PER SQ. YD. (SEE NOTE IN PROPOSAL)
(7)	I-1	6" PIPE CLASS I-3(M-6.4(n) PIPE SHALL BE USED IN ROCK CUT) SEE GENERAL NOTES.
(8)	SPECIAL	DRAINAGE CONNECTION, USING Nº6 AGGREGATE (SEE NOTE IN PROPOSAL)
(9)	I-15	GUARD RAIL, STEEL BEAM STANDARD TYPE (DEEP)
(10)		STANDARD LONGITUDINAL JOINT.
(11)	L-9	SEEDING AND PROTECTING.

NOTES:

ADJACENT TO RAMPS AND SPEED CHANGE LANES, THE THICKNESS OF THE B-21 WATERPROOF AGGREGATE BASE COURSE SHALL BE INCREASED TO 6" WITH A COMPENSATING REDUCTION IN THE THICKNESS OF THE B-19 AGGREGATE BASE COURSE. (2-COURSES).

SLOPES TYPICAL UNLESS OTHERWISE SHOWN ON CROSS SECTIONS.

IN ROCK CUT ALL LINES OF UNDERDRAIN PIPE SHALL HAVE A DEPTH OF COVER OF 12 INCHES BETWEEN CROWN OF PIPE AND SUBGRADE.

ROCK MAY BE ENCOUNTERED BETWEEN THE FOLLOWING APPROX. STATIONS. STA. 595+00 TO STA. 601+00

\+ IN ROCK CUT THE DEPTH OF I-22 SHOWN ABOVE SHOULD BE INCREASED BY 2"

SEQUENCE OF OPERATIONS: (1) INSTALL PIPE UNDERDRAIN ON OUTSIDE SHOULDER. INSTALLATION OF SHALLOW UNDERDRAIN IN MEDIAN MAY BE DEFERRED UNTIL T-71 IS PLACED, (2) PLACE SUBBASE OUT TO OUTSIDE EDGE OF UNDERDRAIN OR TO ONE FOOT BEYOND EDGE OF PAVEMENT WHERE NO UNDERDRAIN IS PRESENT, (3) CONSTRUCT T-71, (4) REMOVE SUBBASE AND ANY CONTAMINATED BACKFILL OVER DRAIN AND REPLACE WITH Nº6 AGGREGATE AS SHOWN BY (8), (5) COMPLETE SHOULDER CONSTRUCTION.

* THICKNESS SHOWN IS THE DESIGNED THICKNESS AS DESCRIBED IN SECTION B-21.01 OF THE SPECIFICATIONS.

(X) DROP EARTH BERM 1" BELOW PAVED SHOULDER

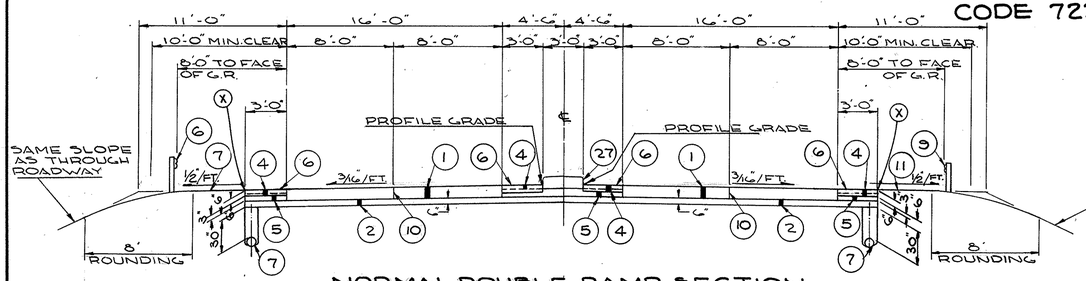
TYPICAL SECTIONS

FED. RD.	STATE	PROJECT	

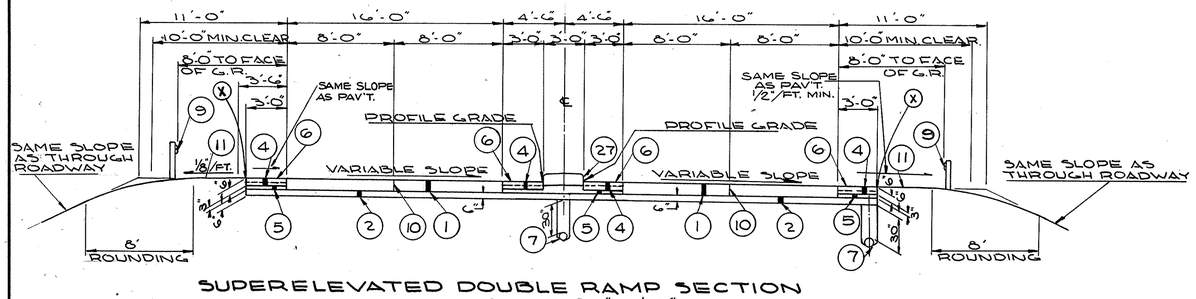
5
294

MAHONING COUNTY
MAH 18- 9.89

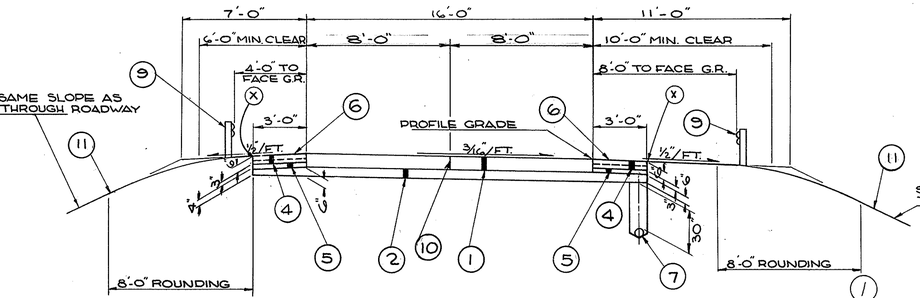
TYPE T-71
CODE 7221



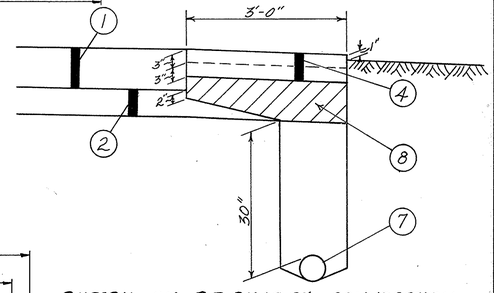
NORMAL DOUBLE RAMP SECTION
SCALE - 3/16" = 1'-0"



SUPERELEVATED DOUBLE RAMP SECTION
SCALE - 3/16" = 1'-0"

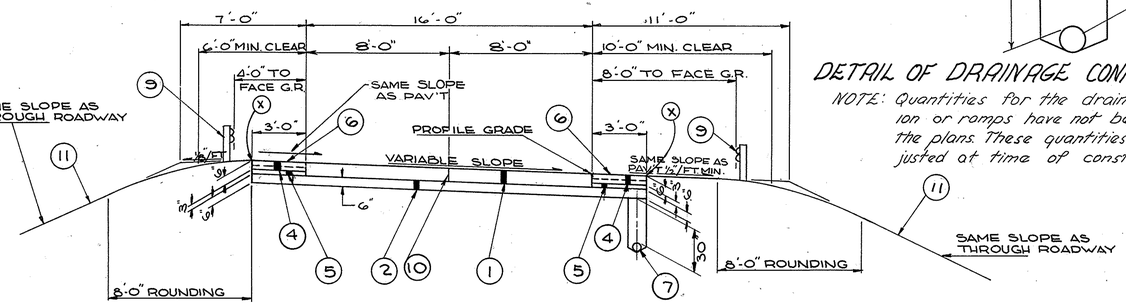


NORMAL RAMP SECTION
SCALE - 1/4" = 1'-0"



DETAIL OF DRAINAGE CONNECTION

NOTE: Quantities for the drainage connection or ramps have not been included in the plans. These quantities will be adjusted at time of construction.



SUPERELEVATED RAMP SECTION
SCALE - 1/4" = 1'-0"

(1)	T-71	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT.
(2)	I-22	SUBBASE (6" DEPTH) GRADING "A" OR "B" AS PER PLAN (MODIFIED AS PER GENERAL NOTE)
* (4)	B-21	6" WATERPROOFED AGGREGATE BASE COURSE PLACED IN TWO 3" COURSES (SEE NOTE IN PROPOSAL)
(5)	B-19	3" AGGREGATE BASE COURSE (6¾" UNDER I-21 CONCRETE MEDIAN)
(6)	T-31	BITUMINOUS SURFACE TREATMENT USING 0.008 CU.YDS. Nº 6 AGGREGATE PER SQ.YD. AND 0.25 GAL. BITUMINOUS MATERIAL. PER SQ.YD. (SEE NOTE IN PROPOSAL)
(7)	I-1	6" PIPE CLASS I-3 [M-6.4(h) PIPE SHALL BE USED IN ROCK CUT] SEE GENERAL NOTES.
(8)		SPECIAL DRAINAGE CONNECTION, USING Nº6 AGGREGATE (SEE NOTE IN PROPOSAL)
(9)	I-15	GUARD RAIL, STEEL BEAM STANDARD TYPE (DEEP)
(10)		STANDARD LONGITUDINAL JOINT
(11)	L-9	SEEDING & PROTECTING.
(27)	I-21	PORTLAND CEMENT CONCRETE MEDIAN.

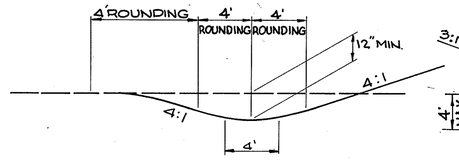
NOTES:
SLOPES TYPICAL UNLESS OTHERWISE SHOWN ON CROSS SECTIONS.

IN ROCK CUT ALL LINES OF UNDERDRAIN PIPE SHALL HAVE A DEPTH OF COVER OF 12 INCHES BETWEEN CROWN OF PIPE AND SUBGRADE.

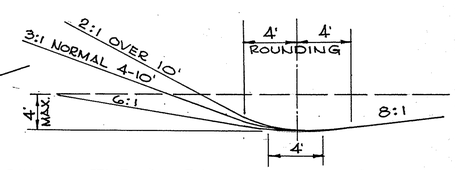
(X) DROP EARTH BERM 1' BELOW PAVED SHOULDER

SEQUENCE OF OPERATIONS:
1. INSTALL PIPE UNDERDRAINS.
2. PLACE SUBBASE
3. CONSTRUCT T-71
4. REMOVE SUBBASE AND ANY CONTAMINATED BACKFILL OVER DRAIN AND REPLACE WITH Nº6 AGGREGATE AS SHOWN BY (8)
5. COMPLETE SHOULDER CONSTRUCTION.

* THICKNESS SHOWN IS THE DESIGNED THICKNESS AS DESCRIBED IN SECTION B-21.01 OF THE SPECIFICATIONS.



TYPICAL SIDE DITCH - FILL SECTION
SCALE - 3/16" = 1'-0"



TYPICAL SIDE DITCH - CUT SECTION
SCALE 3/16" = 1'-0"

TYPICAL SECTIONS

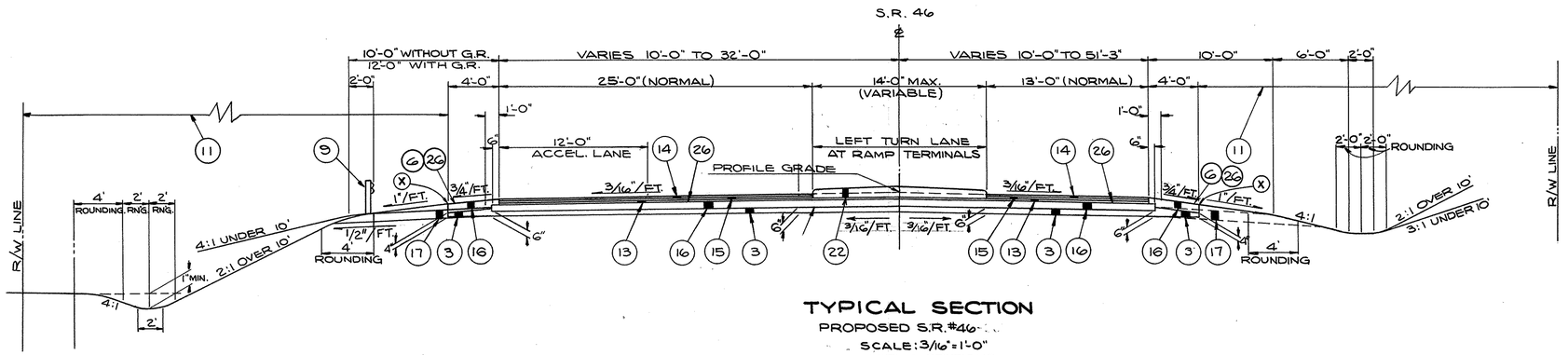
FED. RD.	STATE	PROJECT	
2	OHIO		

6
294

MAHONING COUNTY
MAH-18-9.89

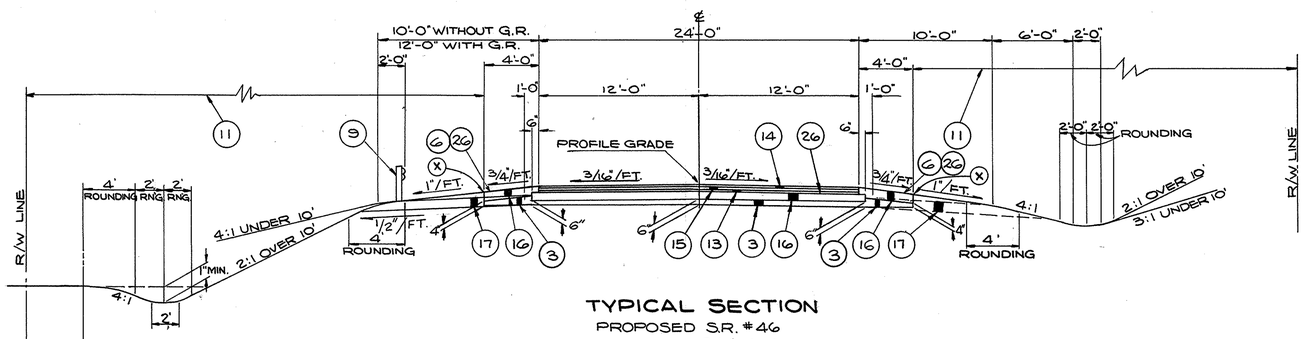
TYPICAL SECTIONS

TYPE T-35

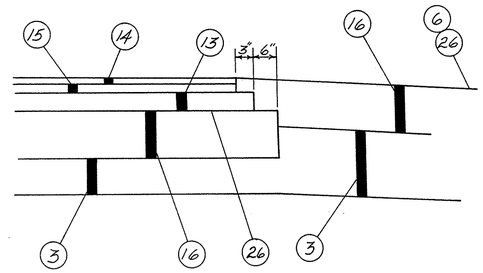


TYPICAL SECTION
PROPOSED S.R. #46
SCALE: 3/16" = 1'-0"
LIMITING STATIONS
STA. 41+86.30 TO STA. 48+63.25
STA. 51+58.50 TO STA. 61+95.90

BRIDGE LIMITS
STA. 48+63.25 TO STA. 51+58.50



TYPICAL SECTION
PROPOSED S.R. #46
SCALE: 3/16" = 1'-0"
LIMITING STATIONS
STA. 36+50 TO STA. 41+86.30



EDGE COURSE DETAIL

NOTE: Quantities for the steps in the courses have not been included in the plans. These quantities will be adjusted at the time of construction.

(3) I-22 SUBASE (DEPTH AS SHOWN) REGULAR GRADING

(6) T-31 BITUMINOUS SURFACE TREATMENT USING 0.008 CU. YDS. Nº 6 AGGREGATE PER SQ. YD. AND 0.30 GAL. BITUMINOUS MATERIAL PER SQ. YD. SEC. 5.7 RT. 8 or 9 OR SEC. 5.3 MC. 4 OR 5

(9) I-15 GUARD RAIL STEEL BEAM STD. TYPE (DEEP)

(11) L-9 SEEDING & PROTECTING

(13) B-35 3" ASPHALTIC CONCRETE BASE COURSE (70-85) SEE NOTE "C"

(14) T-35 1" ASPHALTIC CONCRETE SURFACE COURSE TYPE C (70-85) SEE NOTE "A"

(15) B-35 1½" ASPHALTIC CONCRETE LEVELING COURSE (70-85) SEE NOTE "C"

(16) B-19 8" AGGREGATE BASE COURSE

(17) I-9 STONE UNDERDRAIN Nº 2 *(This item shall be constructed prior to construction of the paved shoulders.)*

(22) I-21 PORTLAND CEMENT CONCRETE MEDIAN

(26) T-30 BITUMINOUS PRIME COAT SEC. M-5.7, RT.-2 OR RT.-3 APPLIED @ RATE OF 0.40 GAL./SQ. YD.

NOTE-"A" THE THICKNESS SHOWN IS THE DESIGN THICKNESS AS PER SECTION T-35.01

NOTE-"C" THE THICKNESS SHOWN IS THE DESIGN THICKNESS AS PER SECTION B-35.01

SLOPES TYPICAL UNLESS OTHERWISE SHOWN ON THE CROSS SECTIONS

(X) DROP EARTH BERM 1" BELOW TREATED SHOULDER

FED. RD.	STATE	PROJECT	
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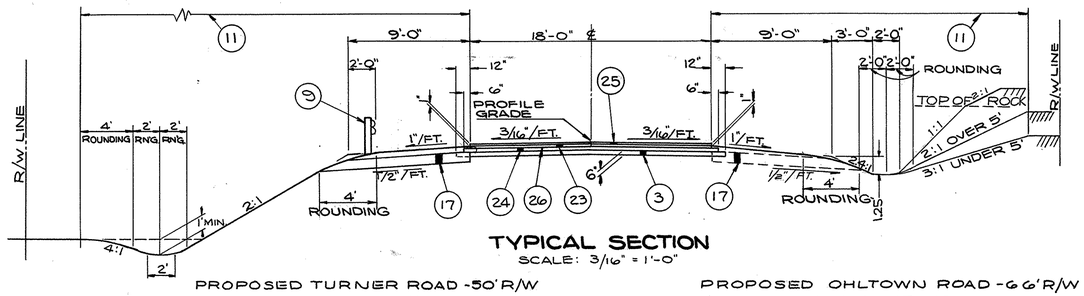
TYPICAL SECTIONS

TYPE T-35

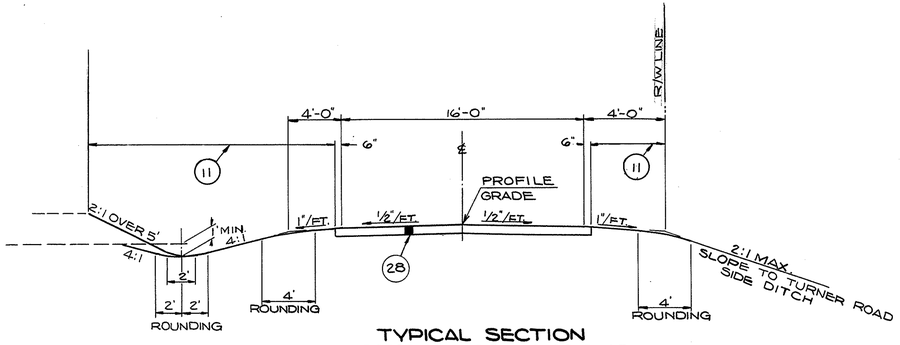


TYPICAL SECTION
SCALE: 3/16" = 1'-0"

PROPOSED TURNER ROAD -50' R/W
LIMITING STATIONS
STA. 42+00 To STA. 49+69.70

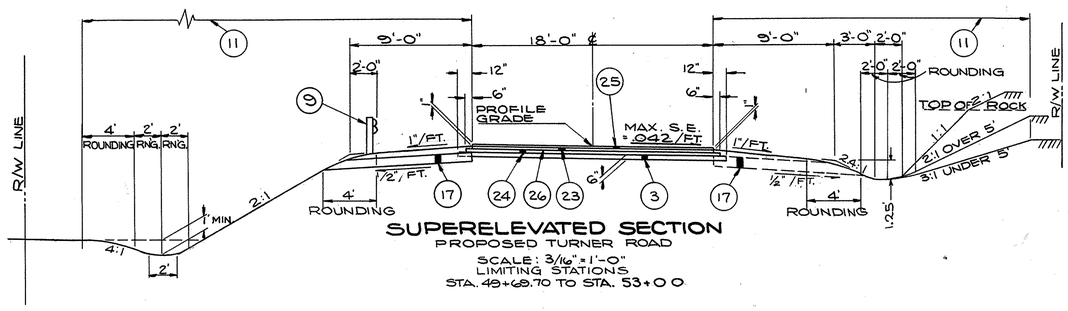
(ROCK SLOPE LIMITS STA. 44+50 To STA. 49+69.70)

PROPOSED OHLTOWN ROAD -66' R/W
LIMITING STATIONS
STA. 48+00 To STA. 53+25

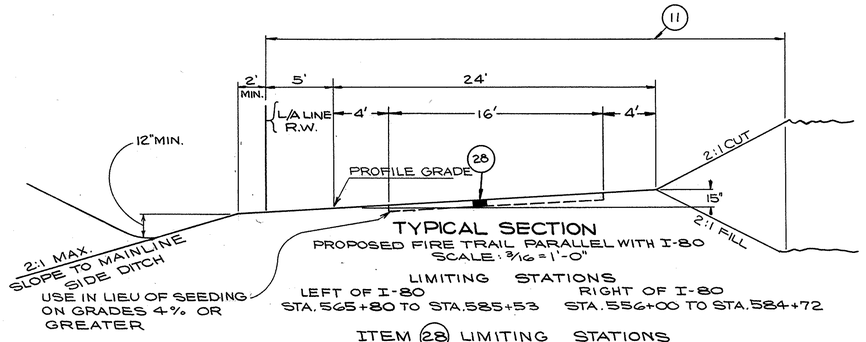


TYPICAL SECTION
PROPOSED M.V.S.D. ACCESS ROAD
& FIRE TRAIL PARALLEL TO TURNER ROAD
SCALE: 3/16" = 1'-0"

LIMITING STATIONS
110' LT. STA. 43+84 TO STA. 53+00



SUPERELEVATED SECTION
PROPOSED TURNER ROAD
SCALE: 3/16" = 1'-0"
LIMITING STATIONS
STA. 49+69.70 TO STA. 53+00



TYPICAL SECTION
PROPOSED FIRE TRAIL PARALLEL WITH I-80
SCALE: 3/16" = 1'-0"

LIMITING STATIONS

LEFT OF I-80	RIGHT OF I-80
STA. 565+80 TO STA. 585+53	STA. 556+00 TO STA. 584+72

ITEM (28) LIMITING STATIONS

LEFT OF I-80	RIGHT OF I-80
STA. 568+00 TO STA. 570+00	STA. 565+50 TO STA. 566+50
STA. 580+50 TO STA. 581+50	STA. 568+00 TO STA. 571+50
STA. 584+00 TO STA. 585+53	STA. 573+00 TO STA. 573+50
	STA. 576+00 TO STA. 577+50
	STA. 581+00 TO STA. 581+50
	STA. 583+25 TO STA. 584+72

(3) I-22 SUBBASE (DEPTH AS SHOWN) REGULAR GRADING
(9) I-15 GUARD RAIL STEEL BEAM STD. TYPE (DEEP)
(11) L-9 SEEDING & PROTECTING
(17) I-9 STONE UNDERDRAIN Nº 2
(23) B-35 1 3/4" ASPHALTIC CONCRETE BASE COURSE (70-85) SEE NOTE "C"
(24) B-19 5" AGGREGATE BASE COURSE
(25) T-35 1 1/4" ASPHALTIC CONCRETE SURFACE COURSE TYPE C(70-85) SEE NOTE "A"
(26) T-30 BITUMINOUS PRIME COAT SEC. M-5.7, RT.-2 OR RT.-3 APPLIED @ RATE OF 0.40 GAL./SQ.YD.
(28) B-19 6" AGGREGATE BASE COURSE, AS PER PLAN

NOTE - "A" THE THICKNESS SHOWN IS THE DESIGN THICKNESS AS PER SECTION T-35.01

NOTE - "C" THE THICKNESS SHOWN IS THE DESIGN THICKNESS AS PER SECTION B-35.01

SLOPES TYPICAL UNLESS OTHERWISE SHOWN ON THE CROSS SECTIONS

TYPICAL SECTIONS

GENERAL NOTES

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GENERAL

FIELD OFFICE

THE CONTRACTOR SHALL, IN ADDITION TO THE REQUIREMENTS OF 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 107.06. ALL THE ABOVE IS INCLUDED IN THE LUMP SUM PRICE BID FOR FIELD OFFICE.

DESIGN SPEED

THE GEOMETRICS FOR THIS PROJECT HAVE BEEN PLANNED FOR A DESIGN SPEED OF 70 MILES PER HOUR.

UNDERGROUND UTILITIES

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN OBTAINED BY DILIGENT FIELD CHECKS AND SEARCHES OF AVAILABLE RECORDS. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT THE STATE OF OHIO DOES NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS.

ESTIMATED QUANTITIES (FEDERAL PROJECTS)

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 COMPLETION OF THIS PROJECT.

CONSTRUCTION LAYOUT STAKES

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

FEDERAL AID CONSTRUCTION IDENTIFICATION SIGNS

THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE FEDERAL AID CONSTRUCTION IDENTIFICATION SIGNS AT EACH OF THE FOLLOWING APPROXIMATE LOCATIONS:

1. RIGHT OF STATION 34 + 00 ON S.R. 46.
2. LEFT OF STATION 64 + 00 ON S. R. 46.

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.

R/W MONUMENTS, FEDERAL PROJECT 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 107.12 UNTIL THEY CAN BE WITNESSES, REFERENCED AND RESET BY THE CONTRACTOR.

ELEVATION DATUM

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

REPLACEMENT

THE CONTRACTOR SHALL REPLACE AT HIS OWN EXPENSE ANY ITEM NOT SPECIFICALLY LISTED FOR REMOVAL THAT IS DAMAGED OR DESTROYED BY HIS OPERATIONS.

COAL MINES

THE GENERAL AREA THIS PROJECT IS IN HAS A HISTORY OF ABANDONED COAL MINES. THE MAJORITY OF THESE MINES ARE MORE THAN 100' BELOW GROUND AND ARE NOT ANTICIPATED TO REQUIRE SPECIAL ATTENTION. HOWEVER, ONE OR MORE OF THE ABANDONED ENTRANCE AND /OR AIR SHAFTS TO THESE MINES AS WELL AS SMALL SHALLOW MINES COULD BE ENCOUNTERED DURING CONSTRUCTION. IF ANY OF THESE OPENINGS ARE ENCOUNTERED DURING CONSTRUCTION THE CONTRACTOR SHALL FILL ANY REMAINING VOIDS WITH SUITABLE MATERIAL TO A POINT TO ASSURE SOLID FOUNDATION FOR COMPACTION OF EMBANKMENT AND/OR ROADWAY SUBBASE. ANY MATERIAL REQUIRED FOR THE ABOVE SHALL BE INCLUDED UNDER ITEM 203 GRANULAR BORROW.

ADDRESSES OF UTILITY OWNERS

W. H. RAGETTE
AMERICAN TELEPHONE & TELEGRAPH
DIVISION PLANT SUPERINTENDENT
LONG LINES DEPARTMENT
1538 UNION COMMERCE BLDG.
CLEVELAND 14, OHIO

R. L. HUTCHISON
OHIO BELL TELEPHONE CO.
2405 MARKET STREET
YOUNGSTOWN, OHIO

F. S. BAILES
OHIO EDISON COMPANY
47 NORTH MAIN STREET
AKRON, OHIO 44308

DONALD D. HEFFELFINGER
MAHONING VALLEY SANITARY DISTRICT
BOX 298
YOUNGSTOWN,1,OHIO

WATER LINES

SAMUEL GOULD, JR.
MAHONING COUNTY ENGINEER
940 BEARS DEN ROAD
YOUNGSTOWN 1, OHIO

BERK LYDEN
CHIEF ENGINEER, WATER DEPT.
CITY OF YOUNGSTOWN
CITY HALL
YOUNGSTOWN, OHIO

THE FOLLOWING GENERAL NOTES SHALL APPLY TO THE PORTION OF CONSTRUCTION WITHIN AND ADJACENT TO THE MAHONING VALLEY SANITARY DISTRICT.

THE M.V.S.D. IS IN A STATE FIRE DISTRICT AND THE CONTRACTOR SHALL OBTAIN A "BURNING PERMIT" FROM THE FIRE WARDEN AT AUSTINTOWN BEFORE COMMENCING ANY BURNING. ALL BURNING OPERATIONS WITHIN AND ADJACENT TOTHE M.V.S.D. SHALL BE UNDER COMPLETE CONTROL AT ALL TIMES.

THE CONTRACTOR SHALL KEEP ALL I-80 RIGHT-OF-WAY AND WORK AREAS FENCED OR GUARDED NIGHT AND DAY WITHIN THE M.V.S.D. TO PREVENT TRESPASSING BEYOND THESE LIMITS.

THE CONTRACTOR, HIS AGENTS OR REPRESENTATIVES AND THE STATE OF OHIO ITS AGENTS OR REPRESENTATIVES SHALL BE PROHIBITED FROM HUNTING OR FISHING WITHIN THE M.V.S.D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENFORCING THIS PROVISION.

MATERIAL USED FOR FILL WHICH MAY COME INTO CONTACT WITH RESERVOIR WATER SHALL BE SUCH AS NOT TO AFFECT THE QUALITY OF THE WATER OR CAUSE SILTING. THIS INCLUDES DUMP ROCK FILL AND CHANNEL PROTECTION USED BELOW ELEVATION 913.

THE CONTRACTOR SHALL REMOVE ONLY THOSE TREES WHICH ARE NECESSARY IN AREAS COVERED BY EASEMENTS, WORK AGREEMENT AND/OR TEMPORARY RIGHT-OF-WAY.

BEFORE CLEARING BEGINS THE CONTRACTOR SHALL ERECT A SINGLE 10 GAUGE STRAND OF GALVANIZED WIRE FENCE ON THE LINE OF THE LIMITS OF CONSTRUCTION ON BOTH SIDES OF THE PROPOSED HIGHWAY THROUGH ALL AREAS ABOVE WATER. FENCE SHALL BE SUPPORTED ON POSTS OR TREES AT NOT MORE THAN 20 FOOT INTERVALS. THE WIRE SHALL BE 5 FEET ABOVE GROUND. THESE FENCES WILL MARK THE LIMITS OUTSIDE OF WHICH NO TREES ARE TO BE CUT, NO EQUIPMENT OPERATED, AND NO TRESPASSING PERMITTED. THE CONTRACTOR SHALL REMOVE THE FENCES AFTER THE CONSTRUCTION IS COMPLETED.

THE SPILLWAY ELEVATION OF MEANDER RESERVOIR IS 906.33. THE WATER LEVEL IN THE RESERVOIR CAN BE ANTICIPATED TO BE UP TO THE SPILLWAY LEVEL AT ONE OR MORE TIMES DURING ANY YEAR. THE WATER LEVEL OF THE RESERVOIR IS CONTROLLED BY THE AMOUNT OF RAINFALL AND THE WATER SUPPLY REQUIREMENTS OF THE M.V.S.D. THE CONTRACTOR WILL BE EXPECTED TO PERFORM THE REQUIRED WORK AT THE PREVAILING WATER LEVEL AND THE M.V.S.D. WILL NOT RAISE OR LOWER THE WATER LEVEL OTHER THAN THROUGH NORMAL SUPPLY AND USAGE.

ALL NEW SLOPES OR SURFACES ARE TO BE PROTECTED FROM EROSION BY EITHER DUMP ROCK FILL TYPE A, DUMP ROCK CHANNEL PROTECTION, 304 AGGREGATE BASE, AS PER PLAN OR SEEDING AS SHOWN ON THE PLAN. THE ABOVE MATERIAL SHOULD BE PLACED AS SOON AS POSSIBLE AFTER EXCAVATION TO PREVENT SILTING OF THE RESERVOIR.

FENCING USED WITHIN THE M.V.S.D. SHALL BE STANDARD CHAIN LINK FENCE MODIFIED WITH A VERTICAL EXTENSION ARM AND 3 STRANDS OF BARBED WIRE. THE BARBED WIRE SHALL MEET THE REQUIREMENTS OF 710.01. THE VERTICAL EXTENSION ARM SHALL MEET THE REQUIREMENTS OF U.S.S. CYCLONE FENCE STYLE T-22 OR T-4 AS SHOWN ON THEIR DRAWING CBX-27 DET OR PAGE FENCE STYLE 3 TRV OR AN APPROVED EQUAL. THE END, CORNER AND GATE POSTS SHALL BE EXTENDED TO PROVIDE FOR THE BARBED WIRE. THE COST OF THE VERTICAL EXTENSION AND BARBED WIRE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 607, FENCE TYPE CL , AS PER PLAN. FOR LOCATION OF FENCE SEE RIGHT-OF-WAY PLANS

THE COST OF GUARDING, FENCING WITH 10 GAUGE WIRE AND ANY OTHER ITEM ABOVE NOT INCLUDED IN OTHER PAY ITEMS SHOULD BE A PART OF LUMP SUM PAY ITEM -SPECIAL -GUARDING AND PROTECTING M.V.S.D.

ROADWAY

ITEM 203 , BORROW, USING GRANULAR MATERIAL, AS PER PLAN

MATERIAL FOR THIS ITEM SHALL BE AS DEFINED IN 203.02 GRANULAR MATERIAL, EXCEPT THAT AT LEAST 85% BY WEIGHT OF THE GRAINS OR PARTICLES SHALL BE RETAINED ON A No. 200 SIEVE. CINDERS WILL NOT BE ACCEPTABLE FOR THIS ITEM. IF SLAG IS FURNISHED, IT SHALL BE OBTAINED FROM STOCKPILES OF WEATHERED MATERIAL WHICH WILL NOT AFFECT THE QUALITY OF THE WATER. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FROM THE MAHONING VALLEY SANITARY DISTRICT AT YOUNGSTOWN OF THE SLAG SOURCE PRIOR TO THE USE OF THE MATERIAL FOR THIS ITEM. IN THE AREA BETWEEN STATION 545 + 60 AND 567 + 00, THIS MATERIAL MAY BE PLACED BY END DUMPING IF SURFACE WATER IS PRESENT. END DUMPING MAY BE USED UP TO 2 FT. ABOVE THE WATER LEVEL. ABOVE THIS ELEVATION, EMBANKMENT CONSTRUCTION SHALL BE IN ACCORDANCE WITH 203.07 TO 203.12 INCLUSIVE. WHERE END DUMPING IS PERMITTED, CLEARING AND GRUBBING SHALL BE PERFORMED, BUT THE REQUIREMENTS OF 201.04 FOR SCALPING SHALL BE WAIVED. THE ABOVE MATERIAL SHALL NOT BE ORDERED WITHOUT APPROVAL OF THE PROJECT ENGINEER.

REMOVAL OF EXISTING PIPE

THE REMOVAL OF ALL EXISTING PIPE DRAINS WHICH WOULD NORMALLY BE REMOVED IN VARIOUS EXCAVATION ITEMS SHALL BE INCLUDED FOR PAYMENT IN THE UNIT PRICES BID FOR THE RESPECTIVE EXCAVATION ITEMS, UNLESS OTHERWISE ITEMIZED IN THE PLANS.

REMOVAL OF TREES AND STUMPS

ALL TREES AND STUMPS LYING WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT SHALL BE REMOVED UNDER THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING, EXCEPT THAT THOSE TREES FOR WHICH PROTECTION AND PRESERVATION WORK IS INDICATED ELSEWHERE IN THESE PLANS SHALL NOT BE REMOVED.

THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED.

SIZES	No. TREES		No. STUMPS	
	(I. FUNDS)	(I.G. FUNDS)	(I. FUNDS)	(I.G. FUNDS)
12"-24"	431	111	14	0
24"-36"	41	3	7	0
36"-60"	17	0	3	0
Over 60"	0	0	0	0

THE ABOVE ESTIMATE IS APPROXIMATE AND THE STATE OF OHIO RESERVES THE RIGHT TO ORDER THE REMOVAL OF ADDITIONAL TREES OR STUMPS OUTSIDE 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.

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.

FOR LOCATIONS, SEE SHEET No. 267-269.

THE TOTAL QUANTITY OF ITEM I-8, CENTERLINE REFERENCE MONUMENTS CARRIED TO THE GENERAL SUMMARY IS 16(I) & 4 (I.G.)

ITEM 203 PROOF ROLLING

An estimated quantity for this item has been provided in the general summary for use in proof rolling of subgrade for the mainline and ramp pavements, and for paved shoulders, in accordance with Supplemental Specification 801.

GENERAL NOTES

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2	OHIO		

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GENERAL NOTES

SEEDING (I-80)

QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN THE RIGHT-OF-WAY FENCE LINES, BETWEEN THE RIGHT-OF-WAY LINES IN UNFENCED AREAS, AND WITH THE WORK LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT.

SEEDING (S.R.46)

QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN LINES TEN (10) FEET OUTSIDE THE WORK LIMITS, AS SHOWN ON THE CROSS SECTIONS, OR TO THE RIGHT-OF-WAY LINE IF SUCH LINE IS LESS THAN TEN (10) FEET FROM THE WORK LIMITS.

SEEDING (C.H. 103 & 105)

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

SEEDING FORMULA

THE FOLLOWING SEED MIXTURE SHALL, IN LIEU OF THE MIXTURES LISTED IN 659.09, BE USED THROUGHOUT THE LIMITS OF THIS PROJECT.

70% KENTUCKY 31 FESCUE	5% RED TOP
20% KENTUCKY BLUEGRASS	5% ALSIKE CLOVER

SPECIAL SEEDING PREPARATION AREAS

THE REFERENCES IN THE FIRST PARAGRAPH OF 659.09 TO PREPARATION OF THE SEED BED IN FRONT OF RESIDENCES, ETC., SHALL, ON THIS PROJECT, BE CONSIDERED TO BE PARTICULARLY APPLICABLE IN THE FOLLOWING AREAS:

TURNER ROAD	42 + 00 TO 43 + 00 LEFT
	52 + 50 TO 58 + 00 RIGHT
OHLTOWN ROAD	51 + 00 TO 52 + 00 RIGHT
	52 + 00 TO 53 + 00 LEFT
	36 + 50 TO 37 + 50 LEFT
	37 + 30 TO 37 + 90 RIGHT
S. R. 46	39 + 00 TO 40 + 00 RIGHT
	41 + 50 TO 42 + 00 LEFT
	57 + 60 TO 58 + 30 LEFT

ITEM SPECIAL, DRILLED WELL ABANDONED

THE EXISTING CONCRETE OR STONE SLAB WELL COVER AND PUMPING EQUIPMENT SHALL BE REMOVED AND DISPOSED OF. THE CASTING SHALL BE CUT OFF AT LEAST TWO (2) FEET BELOW THE PROPOSED FINISHED GRADE OUTSIDE PROPOSED PAVEMENT AREAS OR AT LEAST TWO (2) 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.

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 "IT 560 , SODDING FOR SPECIAL BERM AND SLOPE PROTECTION."

BORROW USING No. 1 AGGREGATE

THE MATERIAL USED FOR THIS ITEM SHALL CONFORM TO 703 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS. THE MATERIAL SHOULD BE PLACED IN 12 INCH LAYERS AT THE LOCATION SHOWN ON THE PLANS AND COMPACTED TO A DENSITY ESTABLISHED AS SATISFACTORY BY THE PROJECT ENGINEER.

RIGHT-OF-WAY FENCE

FOR LOCATION OF RIGHT-OF-WAY FENCE SEE RIGHT-OF-WAY SHEETS.

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.

	I. FUNDS	I.G. FUNDS
ITEM I-4 CALCIUM CHLORIDE FOR DUST CONTROL	9 TONS	3 TONS
ITEM I-4 WATER FOR DUST CONTROL	400 M. GALS.	100 M. GALS.

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 203.05.

WHEN THE SEPTIC 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 203.08.

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

REMOVAL OF TEMPORARY RUNAROUND

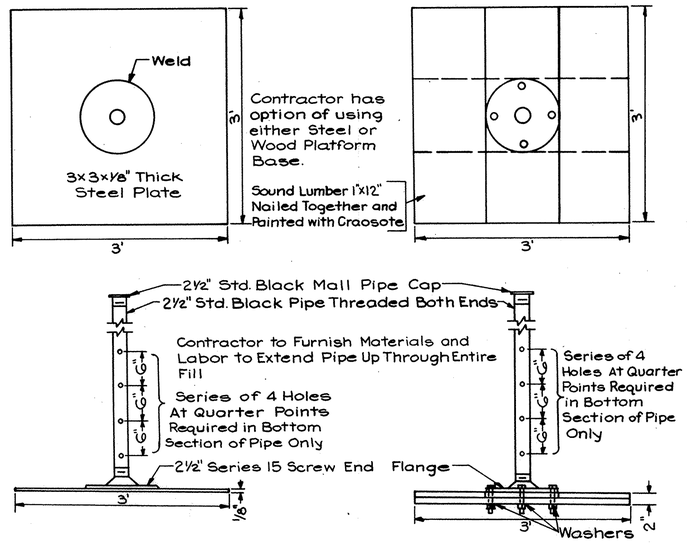
AFTER THE REMOVAL OF THE TEMPORARY RUNAROUND THE AREA SHALL BE RESTORED TO ORIGINAL CONDITIONS *IN ACCORDANCE WITH 615.05 EXCEPT THE PORTIONS OF THE TEMPORARY RUNAROUND THAT ARE INDICATED TO REMAIN IN PLACE AS SHOWN ON SHEET NO. 121.*

SETTLEMENT PERIOD

BETWEEN STATIONS 552 + 00 AND 562 + 00, A WAITING PERIOD OF ONE (1) YEAR SHALL BE ALLOWED AFTER THE CONSTRUCTION OF THE FILL AND BEFORE THE CONSTRUCTION OF THE PAVEMENT AND PAVED SHOULDERS.

SETTLEMENT PLATFORM

THE CONTRACTOR SHALL PROVIDE A SETTLEMENT PLATFORM 37' *LEFT* OF STATION 555 + 00 IN ACCORDANCE WITH THE NOTE IN THE PROPOSAL AND THE DETAIL BELOW.



The settlement platform shall be placed at the top of the 203 Borrow Using Granular Material, As Per Plan immediately after the granular borrow has been placed.

DETAILS OF SETTLEMENT PLATFORMS

DRAINAGE

PLACING SOD

A TWO (2) FOOT SOD COLLAR SHALL BE PLACED AROUND THE EXPOSED ENDS OF ALL CONDUIT BETWEEN TWELVE (12) INCH AND TWENTY-SEVEN (27) INCH DIAMETERS INCLUSIVE, AND A THREE (3) FOOT SOD COLLAR SHALL BE PLACED AROUND THE EXPOSED ENDS OF ALL CONDUIT OVER TWENTY-SEVEN (27) INCH DIAMETER.

FARM DRAINS

ALL FARM DRAINS WHICH ARE ENCOUNTERED DURING CONSTRUCTION SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS UNDER THE DIRECTION OF 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 603 TYPE "F" CONDUIT. THE OPTIMUM OUTLET ELEVATION SHALL BE, IF POSSIBLE, ONE-FOOT ABOVE THE FLOWLINE ELEVATION OF THE DITCH. LATERAL TILE FIELDS WHICH CROSS THE ROADWAY SHALL BE INTERCEPTED BY 603 TYPE "E" CONDUIT AND CARRIED ON 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:

ITEM I-1	6" PIPE, CLASS J-1	200 LIN.FT.
ITEM I-1	8" PIPE, CLASS J-1	200 LIN.FT.
ITEM I-1	6" PIPE, CLASS H-2	200 LIN.FT.
ITEM I-1	8" PIPE, CLASS H-2	200 LIN.FT.
ITEM I-1	6" PIPE, CLASS F-4	50 LIN.FT.
ITEM I-1	8" PIPE, CLASS F-4	50 LIN.FT.
ITEM I-5	6" PIPE, SPECIAL, CLASS H-2	4 EACH
ITEM I-5	8" PIPE, SPECIAL, CLASS H-2	4 EACH
ITEM I-10	DUMPED ROCK CHANNEL PROTECTION	2 CU.YD.

THE ESTIMATED QUANTITIES ABOVE ARE NOT TO BE ORDERED UNLESS DIRECTED BY THE ENGINEER.

PRIVATE SANITARY SEWER TAPS

WITHIN THE INTERSTATE LIMITED ACCESS RIGHT-OF-WAY.

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

PRIVATE SANITARY SEWER MAY OUTLET AT OPEN DITCH PORTIONS OF THE PROPOSED HIGHWAY DRAINAGE SYSTEM IF THE PROPERTY OWNER OBTAINS WRITTEN APPROVAL OF THE EFFLUENT FROM THE LOCAL BOARD OF HEALTH. IF THE PROPERTY OWNER FAILS TO SHOW PROOF OF SATISFACTORY EFFLUENT FROM THE HEALTH BOARD, 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.

SIDE ROADS NOT WITHIN LIMITED ACCESS RIGHT OF WAY

ALL EXISTING SANITARY DRAINS 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 OF THE EFFLUENT FROM THE LOCAL BOARD OF HEALTH. IF THE PROPERTY OWNER FAILS TO SHOW PROOF OF SATISFACTORY EFFLUENT FROM THE HEALTH BOARD, 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.

SPECIAL DITCHES

FOR SPECIAL DITCH GRADES, SEE CROSS SECTIONS.

ITEM 605 AGGREGATE DRAINS

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

THE TOTAL QUANTITY OF ITEM I-9 STONE UNDERDRAINS, No. 2 CARRIED TO THE GENERAL SUMMARY IS 2406 LIN. FT. (2164 I & 242 I.G.)

GENERAL NOTES

GENERAL NOTES

FED. RD.	STATE	PROJECT	
2	OHIO		

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MAH. 18-9.89

SPRING DRAINS

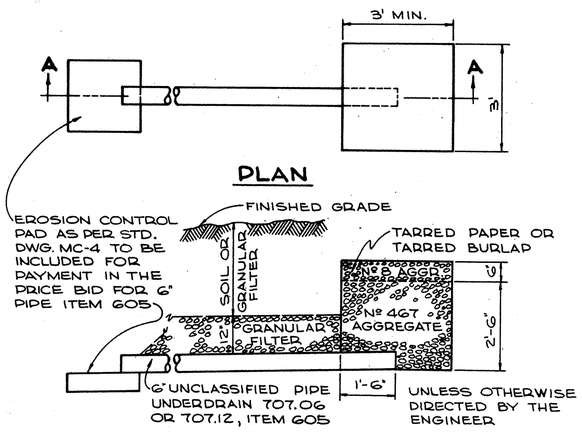
REFERENCE IS MADE TO THE DETAILED DRAWING BELOW SHOWING THE METHOD OF DRAINING ANY SPRING THAT MAY BE SHOWN ON THE PLAN OR ENCOUNTERED DURING CONSTRUCTION AS DETERMINED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THIS PURPOSE:

ITEM 1-9 STONE UNDERDRAINS No.1 6 LIN.FT.

ITEM 1-1 6" PIPE CLASS I-3 as per plan 148 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 ITEM SHALL BE NON-PERFORMED.

SPRING DRAIN DETAIL



SECTION A-A

AGGREGATES, TARRED PAPER OR TARRED BURLAP, AND NECESSARY EXCAVATION FOR SPRING DRAINS SHALL BE INCLUDED FOR PAYMENT IN THE UNIT PRICE BID PER LIN.FT. FOR "ITEM 605, AGGREGATE DRAINS FOR SPRINGS, AS PER PLAN."

THE 6" PIPE 707.06 OR 707.12 SHALL BE COVERED WITH GRANULAR FILTER MATERIAL 605.03 (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 ABOVE. THE LENGTHS AND EXACT LOCATIONS OF THE DRAINS SHALL BE DETERMINED BY THE ENGINEER.

PAVEMENT

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

310 UNDER APPROACH SLABS

THE AREA BETWEEN THE BOTTOM SURFACE OF THE APPROACH SLAB AND THE SUBGRADE SHALL BE FILLED WITH ITEM 310 SUBBASE, GRADING "A" OR "B", AS PER PLAN.

ITEM 304 AGGREGATE BASE, AS PER PLAN

THE MATERIAL REQUIREMENT FOR THIS ITEM WILL BE MODIFIED TO PROHIBIT THE USE OF SLACKER AGGREGATE, 703.09.

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.

SPECIFICATIONS

All items appearing throughout the plans referring to the 1963 Construction and Material Specifications are to be used for reference purposes only. This project shall be constructed in accordance with the requirements of the 1965 Construction and Material Specifications. The cross references to the 1965 specifications are shown on the general summary sheets.

STANDARD CONSTRUCTION DRAWINGS & SUPPLEMENTAL SPECIFICATIONS

1963 No.	1965 No.	1963 No.	1965 No.
~~B-T-70-71~~	~~BP-1~~	I-8C.B.-3A	CB-3A
B-T-71-R	BP-2	I-8C.B.-4	CB-4
L.J. No.1	BP-3	I-8C.B.-5	CB-5
T.J.	BP-4	I-8C.B.-6	CB-6
T-35	BP-5	I-8M.H. No. 1	MH-1
DR-1	BP-6	I-15 No. 1	GR-1
I-12	BP-7	I-15 No. 2A	GR-2A
RI-1	MC-1	I-15 No. 5B	GR-5B
RI-2	MC-2	I-15 No. 6	GR-6
G-7.07	MC-3	BR-1-65	
I-1	MC-4	SP-1-63	
I-14G	MC-5	FSB-1-62	
I-21-23	MC-6	RB-1-55	
F-2	F-2	AS-1-54	
F-3	F-3	CE-101.04	801
FACI-1	FACI-1	T-335	807
FACI-2	FACI-2	S-101	808
HW No. 1	HW-1	S-307	811
HW No. 2	HW-2	I-124	814
HW No. 3	HW-3	I-129	816
HW-E	HW-E	M-109.28	909
I-8C.B.2-2-A&B	CB2-2-A&B		

UTILITIES

WATER MAIN RELOCATION

ALL CAST IRON PIPE AND APPURTENANCES USED IN WATER MAIN CONSTRUCTION WILL CONFORM TO OHIO SUPPLEMENTAL SPECIFICATION 814 AND SHALL BE OF MECHANICAL JOINT TYPE AND FITTED WITH LUGS FOR TIED OR HARNESSED JOINTS AT ALL BENDS WITH DEFLECTION GREATER THAN 5°.

GATE VALVES TO CONFORM TO AWWA SPECIFICATION C-500 WITH THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

VALVE WILL BE OF MECHANICAL JOINT, DOUBLE DISC, PARALLEL SEATS, NON-RISING STEM, CAST IRON STUFFING BOX AND SOLID BRASS G.I., AND DISC TO BE CAST IRON WITH BRASS FACES. VALVES ARE TO BE ARRANGED TO OPEN BY TURNING TO RIGHT, CLOCKWISE, AND AN ARROW ON WRENCH NUT WILL SHOW DIRECTION OF TURN TO OPEN. THE VALVE STEMS WILL BE OF HIGH-GRADE MANGANESE BRONZE. VALVE BOXES WILL BE SIZE "B" WITH No. 6 ROUND BASE, ADJUSTABLE SCREW TYPE SHAFT NOT LESS THAN 5-1/4 INCH DIAMETER. DROP COVER TO HAVE "WATER" CAST THEREON AND RECESSED FOR EASE OF REMOVAL.

REACTION BACKING

REACTION BACKING AS PROVIDED UNDER SECTION 814.03 SHALL BE AMENDED AS FOLLOWS:

REACTION BACKING SHALL BE PROVIDED FOR ALL TEES AND BENDS DEFLECTING 22-1/2° OR MORE ON WATER MAINS 8 INCHES OR LARGER IN DIAMETER AND FOR ALL PLUGS, CAPS AND FOR THE BOWL OF EACH FIRE HYDRANT. THE COST OF THE ABOVE WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 814 NEW WATER MAINS.

WATER MAINS ABANDONED

ALL WATER MAINS ABANDONED SHALL BE PLUGGED WITH CLASS "E" CONCRETE ON THE UPSTREAM END. PAYMENT WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203 , ROADWAY EXCAVATION.

EXISTING WATER MAINS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING THE EXISTING WATER MAINS AND CONNECTING THE RELOCATED MAINS TO THE EXISTING MAIN. THE CONTRACTOR SHALL SUPPLY ANY ADAPTERS REQUIRED TO MAKE THE CONNECTION. PAYMENT FOR THE ADAPTER WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 814 NEW WATER MAINS.

SERVICE CONNECTIONS

THE CITY OF YOUNGSTOWN WATER WORKS DEPARTMENT WILL RESTORE ALL WATER SERVICE CONNECTIONS TO EXISTING HOUSE SERVICE LINES, DISRUPTED IN THE CONSTRUCTION OF THE CONTRACT.

INSPECTION AND APPROVAL

THE CONSTRUCTION OF RELOCATED WATER MAINS OWNED BY THE COUNTY OF MAHONING AND OPERATED AND MAINTAINED BY THE CITY OF YOUNGSTOWN WILL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE COUNTY OF MAHONING AND CITY OF YOUNGSTOWN. THE CONTRACTOR SHALL NOTIFY THE WATER DEPARTMENT OF THE CITY OF YOUNGSTOWN AND COUNTY OF MAHONING 48 HOURS IN ADVANCE OF BREAKING GROUND ON EACH WATER MAIN RELOCATION. THE CONTRACTOR WILL OBTAIN PERMISSION BEFORE TAKING ANY WATER MAIN OUT OF SERVICE AND ARRANGE HIS WORK AND MATERIAL IN ADVANCE SO THAT ANY WATER MAIN WILL BE OUT OF SERVICE A MINIMUM OF TIME.

SANITARY SEWERS

THE PROPOSED SANITARY SEWERS SHOWN IN THESE PLANS SHALL BE ENCASED THEIR ENTIRE LENGTH WITH 5" OF CLASS "E" CONCRETE MEETING THE REQUIREMENTS OF ITEM 511 AND SHALL BE PLUGGED AT THE RIGHT-OF-WAY LINE WITH CLASS "E" CONCRETE. PAYMENT FOR THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 603 CONDUIT.

MAINTENANCE OF TRAFFIC

FED. RD.	STATE	PROJECT	
2	OHIO		

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MAHONING COUNTY
MAH 18-9.89

TURNER ROAD (C.H. 103)

TURNER ROAD (C.H.103) SHALL BE CLOSED TO ALL THROUGH TRAFFIC DURING THE CONSTRUCTION ON TURNER ROAD (C.H. 103). THROUGH TRAFFIC SHALL BE DETOURED OVER OHLTOWN ROAD (C.H. 105) VIA SILICA ROAD (C.H. 178). THE CONTRACTOR SHOULD HOLD TO AN ABSOLUTE MINIMUM THE LENGTH OF TIME TURNER ROAD (C.H. 103) IS CLOSED.

TWO WAY TRAFFIC SHALL BE MAINTAINED ON TURNER ROAD (C.H. 103) DURING THE CLOSING OF OHLTOWN ROAD (C.H. 105) BY USE OF EITHER THE EXISTING PAVEMENT OR THE PROPOSED PAVEMENT.

OHLTOWN ROAD (C.H. 105)

OHLTOWN ROAD (C.H. 105) SHALL BE CLOSED TO ALL THROUGH TRAFFIC DURING THE CONSTRUCTION ON OHLTOWN ROAD (C.H. 105). THROUGH TRAFFIC SHALL BE DETOURED OVER TURNER ROAD (C.H. 103) VIA SILICA ROAD (C.H. 178). THE CONTRACTOR SHOULD HOLD TO AN ABSOLUTE MINIMUM THE LENGTH OF TIME OHLTOWN ROAD (C.H. 105) IS CLOSED.

TWO WAY TRAFFIC SHALL BE MAINTAINED ON OHLTOWN ROAD (C.H. 105) DURING THE CLOSING OF TURNER ROAD (C.H. 103) BY USE OF EITHER THE EXISTING PAVEMENT OR THE PROPOSED PAVEMENT.

S.R. 46

TWO WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON S.R. 46 BY USE OF EITHER THE EXISTING PAVEMENT, THE PROPOSED PAVEMENT AND BRIDGE OR A TEMPORARY RUNAROUND USING CLASS A PAVEMENT. THE TEMPORARY RUNAROUND SHALL BE BUILT TO THE LINE , GRADE AND SURFACE WIDTH SHOWN ON THE PLANS (SHEET NO. 141-145). THE CONSTRUCTION AND REMOVAL OF THE PROPOSED RUNAROUND SHALL BE COVERED BY AND PAID FOR UNDER ITEM 615 TEMPORARY ROADS EXCEPT THE PAVING SHALL BE COVERED BY AND PAID FOR UNDER ITEM 615 CLASS A TEMPORARY PAVEMENT. THE REMOVAL SHALL INCLUDE RESTORING ALL AREAS as per 615.08 INCLUDING LAWN AND DRIVEWAY SECTIONS TO THEIR ORIGINAL CONDITION. THE LIMITS AND DURATION OF USE OF TEMPORARY RUNAROUND SHALL BE HELD TO AN ABSOLUTE MINIMUM AND IN ALL CASES SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. A PORTION OF THE TEMPORARY RUNAROUND SHALL BE LEFT IN PLACE AS PERMANENT PRIVATE ACCESS AS SHOWN ON SHEET Nº 121

LIGHTS, SIGNS AND BARRICADES

THE CONTRACTOR SHALL, IN ADDITION TO THE GENERAL REQUIREMENTS OF ITEM 614 ON THIS PROJECT, PERFORM THE FOLLOWING:

A. PROVIDE, ERECT AND MAINTAIN LIGHTS, SIGNS AND BARRICADES ON INTERSECTING ROADS CLOSED TO TRAFFIC AT ALL POINTS WHERE LOCAL MOVEMENT TERMINATES.

1. TURNER ROAD (C.H. 103 STA. 41 + 50 AND 58 + 00.
2. OHLTOWN ROAD (C.H. 105) STA. 48 + 00 AND 53 + 25
3. CANFIELD-NILES ROAD (S.R. 46) STA. 36 + 50 AND 62 + 00

B. PROVIDE, ERECT AND MAINTAIN LIGHTS, SIGNS AND BARRICADES AT THE WORK LIMITS ON ALL INTERSECTING ROADS WHICH REMAIN OPEN TO TRAFFIC.

C. PROVIDE , ERECT AND MAINTAIN STANDARD 48" x 30" SIZE "ROAD CLOSED" SIGNS, SIGN SUPPORTS AND LIGHTS AT THE FOLLOWING LOCATIONS DURING THE PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC.

1. TURNER ROAD (C.H. 103) JUST NORTH OF SILICA ROAD (C.H. 178).
2. TURNER ROAD (C.H. 103) JUST SOUTH OF OHLTOWN ROAD (C.H.105).
3. OHLTOWN ROAD (C.H. 105) JUST NORTH OF SILICA ROAD (C.H.178).
4. OHLTOWN ROAD (C.H.105) JUST SOUTH OF TURNER ROAD (C.H.103).

SIGN SUPPORTS AND LIGHTS FOR "ROAD CLOSED" SIGNS SHALL BE AS DETAILED IN THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".

PAYMENT FOR PROVIDING, ERECTING, MAINTAINING AND REMOVING LIGHTS, SIGNS, SIGN SUPPORTS, AND BARRICADES SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

MAINTAINING LOCAL TRAFFIC

THE FOLLOWING QUANTITIES ARE INCLUDED IN THIS PROJECT FOR MAINTAINING LOCAL TRAFFIC AND ARE TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM S-15	FURNISHING AND PLACING AGGREGATE FOR TRAFFIC BOUND SURFACE COURSE	200 CU. YDS. (150 I & 50 I.G.)
ITEM 1-4	CALCIUM CHLORIDE FOR DUST CONTROL	4 TONS (3 I & 1 I.G.)

LEGEND

PROPOSED STORM SEWER
EXISTING STORM SEWER
PROPOSED UNDERDRAIN
PROPOSED WATER LINES
EXISTING WATER LINES
PROPOSED INLET OR CATCH BASIN
PROPOSED MANHOLE
EXISTING INLET OR CATCH BASIN
EXISTING MANHOLE
PROPOSED SOD
PROPOSED PAVED DITCH
PROPOSED BARRIER DESIGN GUARD RAIL
PROPOSED STANDARD DESIGN GUARD RAIL
PROPOSED JUTE MATTING
DUMPED ROCK CHANNEL PROTECTION
DITCH OR CHANNEL FLOW ARROW
PIPE FLOW ARROW
DUMPED ROCK FOR M.V.S.D. BELOW ELEVATION 913.0 OR 910.0

CODE LETTERS

A	PROPOSED STORM SEWER APPURTENANCE
B	REMOVAL AND DISPOSAL OF EXISTING SIDEWALK CURB AND PAVEMENT
C	PROPOSED PIPE CULVERT
D	EXISTING INLET ABANDONED
E	PROPOSED EROSION CONTROL
F	FIRE HYDRANTS REMOVED AND RESET
G	PROPOSED GUARD RAIL
H	PROPOSED HEADWALL
L	PROPOSED PRECAST CONCRETE TRAFFIC DIVIDERS
N	PROPOSED CONCRETE MEDIAN PAVEMENT
P	PROPOSED STORM SEWER PIPE
R	PROPOSED CONCRETE CURB, SIDEWALKS AND STEPS
S	SEPTIC TANK REMOVAL AND DRILLED WELL ABANDONED
U	PROPOSED UNDERDRAINS
W	PROPOSED WATER LINES
X	EXISTING PIPE OR STRUCTURE REMOVAL

LINE DATA CALCULATIONS FOR APPROACHES

MAIN LINE

BEGIN WORK STA. 520 + 00
BEGIN PROJECT STA. 520 + 80.75
LENGTH 80.75 LIN.FT.

END PROJECT STA. 376 + 15.43 (EQUATION) AH
END WORK STA. 377 + 00
LENGTH 84.57 LIN.FT.

TURNER ROAD (C.H. 103)

BEGIN WORK STA. 41 + 50
END WORK STA. 53 + 83
LENGTH 1,233 LIN.FT.

CANFIELD-NILES ROAD (S.R. 46)

BEGIN WORK STA. 34 + 50
END WORK STA. 63 + 75
LENGTH 2,925 LIN.FT.

OHLTOWN ROAD (C.H. 105)

BEGIN WORK STA. 46 + 32
END WORK STA. 53 + 25
693 LIN. FT.

NET LENGTH OF APPROACHES I 5,016.32 LIN.FT.

PROJECT LIMITS

I LIMITS

STA. 520 + 80.75
STA. 560 + 08.40 (EQUATION) BK
LENGTH 3,927.74 LIN.FT.

STA. 560 + 11.60 (EQUATION) AH
STA. 616 + 00
LENGTH 5,588.31 LIN.FT.

STA 646 + 00
STA 675 + 74.89 (EQUATION) BK
LENGTH 2,974.89 LIN.FT.

NET LENGTH OF PROJECT (I) 12,490.94 LIN.FT.

I.G. LIMITS

STA. 616 + 00
STA. 646 + 00
NET LENGTH OF PROJECT (IG) 3,000 LIN.FT.

LENGTH OF WORK

I LIMITS

NET LENGTH OF APPROACHES	5,016.32 LIN.FT.
NET LENGTH OF PROJECT	12,490.94 LIN.FT.
NET LENGTH OF WORK	17,507.26 LIN.FT.

IG LIMITS

NET LENGTH OF APPROACHES	0.00 LIN.FT.
NET LENGTH OF PROJECT	3,000.00 LIN.FT.
NET LENGTH OF WORK	3,000.00 LIN.FT.

COMPUTATION SHEET

FED. RD.	STATE	PROJECT	
2	OHIO		

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MAH. 18-9.89

I-22 SUBBASE, GRADING "A" OR "B" AS PER PLAN

STATION 545+82.25 TO STATION 584+72.92 (3.20 STA EQ)

$2\left(\frac{3}{12}\times 1+12\times\frac{10.5}{2\times 12}+12\ \frac{7.5}{12}+1.3\times\frac{5.5}{2\times 12}\right)/_9\times 3887.47/_3$ = 3825 CU.YDS.

STATION 586+16.50 TO STATION 591+50

$2\times 1.47755\times 533.50/_3$ = 526 CU.YDS.

STATION 591+50 TO STATION 593+81.90

$2\times 1.47755\times 231.90/_3$ = 228 CU.YDS.

STATION 593+81.90 TO STATION 616+00 (SUPERELEVATED)

$\left(\frac{5.25\times 1+6\times 24+1.3\times 2.75}{3\times 36}\ \frac{28\times 6+5.7\times 1}{3\times 36}\right)\frac{2218.10}{3}+41$ (ROCK)① = 2276 CU.YDS.

STATION 646+00 TO STATION 654+50

Ramp "C" Ramp "E"

$2\times 1.47755\times 850/_3+96+79+58$ (ROCK) ② = 1070 CU.YDS.

STATION 654+50 TO STATION 675+74.89

Ramp "B" Ramp "D" Ramp "E"

$2\times 1.47755\times 2124.89/_3+326+237+247+383$ (ROCK) ③ = 3286 CU.YDS.

RAMP "A" STATION 0+32 TO STATION 17+12.68

$1680.68\left(19\times\frac{6}{12}+3\times\frac{5}{12}\right)/_{27}+95$ = 764 CU.YDS.

RAMP "B" STATION 4+53.07 TO STATION 16+17.43

$1164.36\left(19\times\frac{6}{12}+3\times\frac{5}{12}\right)/_{27}+24+102$ (ROCK) ④ = 589 CU.YDS.

RAMP "C" STATION 4+53.07 TO STATION 14+52.28

$999.21\left(19\times\frac{6}{12}+3\times\frac{5}{12}\right)/_{27}+53$ = 451 CU.YDS.

RAMP "D" STATION 3+53.03 TO STATION 17+63.07

$1410.04\left(19\times\frac{6}{12}+3\times\frac{5}{12}\right)/_{27}+37$ = 599 CU.YDS.

RAMP "D" STATION 0+20 TO STATION 1+44.64

$124.64\left(19\times\frac{6}{12}+3\times\frac{5}{12}\right)/_{27}+7$ = 56 CU.YDS.

RAMP "E" STATION 4+53.07 TO STATION 17+90.85

$1337.78\left(19\times\frac{6}{12}+3\times\frac{5}{12}\right)/_{27}+47+27$ (ROCK) ⑤ = 606 CU.YDS.

TO SUMMARY SHEET = 14,280 CU.YDS.

STATION 616+00 TO STATION 620+26.85 (SUPERELEVATED) (I.G.)

$(1.60833+1.41505)426.85/_3$ = 430 CU.YDS.

STATION 621+40.50 TO STATION 629+97.88 (SUPERELEVATED (I.G.)

$(1.60833+1.41505)\ 857.38/_3$ = 864 CU.YDS.

STATION 631+64.46 TO STATION 646+00 (I.G.)

Ramp "A" Ramp "C"

$2\times 1.47755\times 1435.54/_3+347+230$ = 1951 CU.YDS.

TO SUMMARY SHEET (I.G.) = 3285 CU.YDS.

① STA. 595+00 - 597+50 RT. LANE

② STA. 653+00 - 654+50 LT. LANE
STA. 654+00 - 654+50 RT. LANE

③ STA. 654+50 - 666+00 LT LANE
STA. 654+50 - 661+00 RT LANE

④ STA 4+53 - 12+00

⑤ STA 4+53 - 6+50

I-22 SUBBASE REGULAR GRADING

STATION 545+82.25 TO STATION 584+72.92 (3.20 STA. EQ)

$2\left(7.3\times\frac{9.5}{2\times 12}+3\times\frac{3}{12}\right)/_9\times 3887.47/_3$ = 1048 CU.YDS.

STATION 586+16.50 TO STATION 591+50

$2\times .40440\times 533.50/_3$ = 144 CU.YDS.

STATION 591+50 TO STATION 593+81.90

$2\times .40440\times 231.90/_3$ = 63 CU.YDS.

STATION 593+81.90 TO STATION 616+00 (SUPERELEVATED)

$\left(\frac{4.125\times 3+7.3\times 4}{3\times 36}+\frac{9\times 4.35}{3\times 36}\right)$ Crossover 2218.10/3 + 42 + 18 (ROCK)① = 611 CU.YDS.

STATION 646+00 TO STATION 654+50

Ramp "A" Ramp"C" Ramp "E"

$2\times .391214\times 850/_3+3-12-10+10$ (ROCK) ② = 220 CU.YDS.

STATION 654+50 TO STATION 675+74.89

Ramp "B" Ramp"D" Ramp "E"

$2\times .391214\times 2124.89/_3-23+6-14+113$ (ROCK) ③ = 655 CU.YDS.

TURNER ROAD STATION 42+00 TO STATION 53+00

$\left(20\times\frac{6}{12}\right)/_9\times 1100/_3$ = 407 CU.YDS.

S. R. 46 STATION 36+50 TO STATION 41+86.30

$\left(25\times\frac{6}{12}+7\times\frac{4+11.5}{2\times 12}\right)/_9\times 536.30/_3$ = 338 CU.YDS.

S.R. 46 STATION 41+86.30 TO STATION 48+63.25

$\frac{25\times 1\times 5.5}{27\times 12}+\left(\frac{25\times 52}{9}+3623\right)\frac{6}{3\times 12}+\left(\frac{15.5\times 3.5}{2\times 12}+\frac{6\times .5}{12}\right)/_9\times 1064.95/_3$ = 727 CU.YDS.

S. R. 46 STATION 51+58.50 TO STATION 61+95.90

$\frac{25\times 1\times 5.5}{27\times 12}+\left(\frac{25\times 52}{9}+5452\right)\frac{6}{3\times 12}+\left(\frac{15.5\times 3.5}{2\times 12}+\frac{6\times .5}{12}\right)/_9\times 1888.96/_3$ = 1099 CU.YDS.

TO SUMMARY SHEET = 5506 CU.YDS.

STATION 616+00 TO STATION 620+26.85 (SUPERELEVATED) (I.G.)

$(.36250+.38405)\ 426.85/_3$ = 106 CU.YDS.

STATION 621+40.50 TO STATION 629+97.88 (SUPERELEVATED) (I.G.)

$(.36250+.38405)\ 857.38/_3$ = 214 CU.YDS.

STATION 631+64.46 TO STATION 646+00 (I.G.)

Ramp "A" Ramp "C"

$2\times .40440\times 1435.54/_3-12-11$ = 364 CU.YDS.

OHLTOWN ROAD STATION 48+00 TO STATION 53+25

$(20\times\frac{6}{12})/_9\times 525/_3$ = 194 CU.YDS.

TO SUMMARY SHEET (I.G.) = 684 CU.YDS.

I-7 REINFORCED CONCRETE APPROACH SLABS (T-13)

BRIDGE NO. MAH 18 - 1013

$4\times\frac{24\times 25}{9}$ = 267 SQ.YDS.

BRIDGE NO. MAH 18 - 1112

$4\times\frac{24\times 25}{9}$ = 267 SQ.YDS.

BRIDGE NO. MAH 18 - 1244

$2\times\frac{52\times 25}{9}$ = 289 SQ.YDS.

TO SUMMARY SHEET = 823 SQ.YDS.

BRIDGE NO. MAH 18 - 1178 (I.G.)

$4\times\frac{24\times 25}{9}$ = 267 SQ.YDS.

BRIDGE NO. MAH 18 - 1197 (I.G.)

$4\times\frac{24\times 25}{9}$ = 267 SQ.YDS.

TO SUMMARY SHEET (I.G.) = 534 SQ.YDS.

B-19 AGGREGATE BASE COURSE

STATION 545+82.25 TO STATION 584+72.92 (3.20 STA. EQ.)

$2\left(2.7\times\frac{12}{2\times 12}+7.3\times\frac{7}{12}+4\times\frac{7}{12}\right)/_9\times 3887.47/_3$ = 2284 CU.YDS.

STATION 586+16.50 TO STATION 591+50

$2\times .88130\times 533.50/_3$ = 313 CU.YDS.

STATION 591+50 TO STATION 593+81.90

$2\times .88180\times 231.90/_3$ = 136 CU.YDS.

STATION 593+81.90 TO STATION 616+00 (SUPERELEVATED)

$\left(\frac{7\times 4+6\times 2.7+7\times 7.3}{3\times 36}+\frac{7\times 10+7\times 4}{3\times 36}\right)$ Crossover 2218.10/3 + 98 = 1421 CU.YDS.

STATION 646+00 TO STATION 654+50

Ramp "C" Ramp "E"

$2\times .88130\times 850/_3-33-30$ = 436 CU.YDS.

STATION 654+50 TO STATION 675+74.89

Ramp "B" Ramp "D" Ramp "E"

$2\times .88130\times 2124.89/_3-114-86-83$ = 965 CU.YDS.

RAMP "A" STATION 0+32 TO STATION 17+12.68

$1680.68\times\frac{6\times 3}{27\times 12}+29$ = 123 CU.YDS.

RAMP "B" STATION 4+53.07 TO STATION 16+17.43

$1164.36\times\frac{6\times 3}{27\times 12}-3$ = 62 CU.YDS.

RAMP "C" STATION 4+53.07 TO STATION 14+52.28

$999.21\times\frac{6\times 3}{27\times 12}+2$ = 58 CU.YDS.

RAMP "D" STATION 3+53.03 TO STATION 17+63.07

$1410.04\times\frac{6\times 3}{27\times 12}+1$ = 80 CU.YDS.

RAMP "D" STATION 0+20 TO STATION 1+44.64

$124.64\times\frac{6\times 3}{27\times 12}-3$ = 4 CU.YDS.

RAMP "E" STATION 4+53.07 TO STATION 17+90.85

$1337.78\times\frac{6\times 3}{27\times 12}+14$ = 88 CU.YDS.

TURNER ROAD STATION 42+00 TO STATION 53+00

$1100\times\frac{5\times 19}{12\times 27}$ = 322 CU.YDS.

S.R. 46 STATION 36+50 TO STATION 41+86.30

$(32\times\frac{8}{12}+\frac{5.5}{12})\ 536.30/_{27}$ = 433 CU.YDS.

S.R. 46 STATION 41+86.30 TO STATION 48+63.25

$\frac{(50+1014.95)}{9}+3623\ \frac{8}{3\times 12}+\frac{5.5}{3\times 12}\times\frac{1014.95}{2\times 9}$ = 919 CU.YDS.

S.R. 46 STATION 51+58.50 TO STATION 61+95.90

$\frac{(50+1838.96)}{9}+5452\ \frac{8}{3\times 12}+\frac{5.5}{3\times 12}\times\frac{1838.96}{2\times 9}$ ACCESS RD. +51 = 1465 CU.YDS.

TO SUMMARY SHEET = 9263 CU.YDS.

STATION 616+00 TO STATION 620+26.85 (SUPERELEVATED) (I.G.)

$(.88130+.907407)\ 426.85/_3$ = 255 CU.YDS.

STATION 621+40.50 TO STATION 629+97.88 (SUPERELEVATED) (I.G.)

$(.88130+.907407)\ 857.38/_3$ = 511 CU.YDS.

STATION 631+64.46 TO STATION 646+00 (I.G.)

Ramp "A" Ramp "C"

$2\ (.88130+1435.54/_3-161-81$ = 601 CU.YDS.

OHLTOWN ROAD STATION 48+00 TO STATION 53+25 (I.G.)

$525\times\frac{5\times 19}{12\times 27}$ = 154 CU.YDS.

TO SUMMARY SHEET (I.G.) = 1367 CU.YDS.

B-21 WATERPROOF AGGREGATE BASE COURSE

STATION 545+82.25 TO STATION 584+72.92 (3.20 STA.EQ.)

$2\times\frac{14\times 3}{12\times 9}\times 3887.47/_3$ = 1008 CU.YDS.

STATION 586+16.50 TO STATION 591+50

$2\times .388889\times 533.50/_3$ = 138 CU.YDS.

STATION 591+50 TO STATION 593+81.90

$2\times .388889\times 231.90/_3$ = 60 CU.YDS.

STATION 593+81.90 TO STATION 616+00 (SUPERELEVATED)

$2\times .388889\times 2218.10/_3$ Crossover +42 = 617 CU.YDS.

STATION 646+00 TO STATION 654+50

Ramp "A" Ramp "C" Ramp "E"

$2\times .388889\times 850/_3+8-3-5$ = 219 CU.YDS.

STATION 654+50 TO STATION 675+74.89

Ramp"B" Ramp"D" Ramp "E"

$2\times .388889\times 2124.89/_3+40+109+45$ = 744 CU.YDS.

RAMP "A" STATION 0+32 TO STATION 17+12.68

$1680.68\times\frac{6\times 6}{27\times 12}+29$ = 216 CU.YDS.

RAMP "B" STATION 4+53.07 TO STATION 16+17.43

$1164.36\times\frac{6\times 6}{27\times 12}-5$ = 124 CU.YDS.

RAMP "C" STATION 4+53.07 TO STATION 14+52.28

$999.21\times\frac{6\times 6}{27\times 12}+5$ = 116 CU.YDS.

RAMP "D" STATION 3+53.03 TO STATION 17+63.07

$1410.04\times\frac{6\times 6}{27\times 12}+3$ = 159 CU.YDS.

RAMP "D" STATION 0+20 TO STATION 1+44.64

$124.64\times\frac{6\times 6}{27\times 12}-7$ = 7 CU.YDS.

RAMP "E" STATION 4+53.07 TO STATION 17+90.85

$1337.78\times\frac{6\times 6}{27\times 12}-2$ = 146 CU.YDS.

TO SUMMARY SHEET = 3554 CU.YDS.

STATION 616+00 TO STATION 620+26.85 (SUPERELEVATED) (I.G.)

$2\times .38889\times 426.85/_3$ = 111 CU.YDS.

STATION 621+40.50 TO STATION 629+97.88 (SUPERELEVATED) (I.G.)

$2\times .388889\times 857.38/_3$ = 222 CU.YDS.

STATION 631+64.46 TO STATION 646+00 (I.G.)

Ramp "A" Ramp "C"

$2\times .38889\times 1435.54/_3+133+43$ = 548 CU.YDS.

TO SUMMARY SHEET (I.G.) = 881 CU.YDS.

B-19 AGGREGATE BASE COURSE, AS PER PLAN

FIRE TRAIL RIGHT OF I-80

$\frac{16\times 6}{9\times 12}\times 972/_3$ = 288 CU.YDS.

FIRE TRAIL LEFT OF I-80

$\frac{16\times 6}{9\times 12}\times 328/_3$ = 97 CU.YDS.

FIRE TRAIL PARALLEL TO TURNER ROAD

$\frac{16\times 6}{9\times 12}\times 990/_3$ = 294 CU.YDS.

TO SUMMARY SHEET = 679 CU.YDS.

COMPUTATION SHEET

COMPUTATION SHEET

FED. RD.	STATE	PROJECT	
2	OHIO		

13/254

MAH.18-9.89

B-35 ASPHALTIC CONCRETE LEVELING COURSE

S.R. 46 STATION 36 + 50 TO STATION 41 + 86.30

$\frac{1.5 \times 24 \times 536.30}{12 \times 27}$ — 60 CU.YDS.

S.R. 46 STATION 41 + 86.30 TO STATION 48 + 38.25

$(3623 - 140)\ \frac{1.5}{3 \times 12}$ — 145 CU.YDS.

S.R. 46 STATION 51 + 83.50 TO STATION 61 + 95.90

$(5452 - 393)\ \frac{1.5}{3 \times 12}$ — 211 CU.YDS.

TO SUMMARY SHEET — 416 CU.YDS.

B-35 ASPHALTIC CONCRETE BASE COURSE

TURNER ROAD STATION 42 + 00 TO STATION 53 + 00

$\frac{1.75 \times 18 \times 1100}{12 \times 27}$ — 107 CU.YDS.

S.R. 46 STATION 36 + 50 TO STATION 41 + 86.30

$\frac{3 \times 24 \times 536.30}{12 \times 27}$ — 119 CU.YDS.

S.R. 46 STATION 41 + 86.30 TO STATION 48 + 38.25

$3623 \times \frac{3}{3x12}$ — 302 CU.YDS.

S.R. 46 STATION 51 + 83.50 TO STATION 61 + 95.90

$5452 \times \frac{3}{3x12}$ — 454 CU.YDS.

OHLTOWN ROAD STATION 48 + 00 TO STATION 53 + 25 (I.G.)

$\frac{1.75 \times 18 \times 525}{12 \times 27}$ — 51 CU.YDS.

TO SUMMARY — 1033 C.Y.

T-30 BITUMINOUS PRIME COAT

TURNER ROAD STATION 42 + 00 TO STATION 53 + 00

$\frac{18 \times 1100}{9} \times 40$ — 880 GAL.

S.R.46 STATION 36 + 50 TO STATION 41 + 86.30

$\frac{24 \times 536.30}{9} \times .40$ — 572 GAL.

S.R. 46 STATION 41 + 86.30 TO STATION 48 + 38.25

$3623 \times .40$ — 1449 GAL.

S.R. 46 STATION 51 + 83.50 TO STATION 61 + 95.90

$5452 \times .40 + 91$ ACCESS RD. — 2272 GAL.

OHLTOWN ROAD STATION 48 + 00 TO STATION 53 + 25

$\frac{18 \times 525}{9} \times .40$ — 420 GAL.

S.R. 46 Shoulders
Sta. 36+50 to Sta. 48+63.25 &
Sta. 51+58.50 to Sta. 61+95.90
$2,250.65 \times 8 \times 0.40 \div 9 =$ — 800 Gal.

To Summary Sheet — 6393 Gal.

(carry to Summary)

T-31 BITUMINOUS MATERIAL

STATION 545 + 82.25 TO STATION 584 + 72.92 (-3.20 STA. EQ.)

$(2 \times \frac{14}{3} \times 3887.47/3)\ 0.25$ — 3024 GALS.

STATION 586 + 16.50 TO STATION 591 + 50

$(2 \times \frac{14}{3} \times 533.50/3)\ 0.25$ — 415 GALS.

STATION 591 + 50 TO STATION 593 + 81.90

$(2 \times \frac{14}{3} \times 231.90/3)\ 0.25$ — 180 GALS.

STATION 593 + 81.90 TO STATION 616 + 00

$(2 \times \frac{14}{3} \times 2218.10/3)\ 0.25 + 126$ Crossover — 1851 GALS.

STATION 646 + 00 TO STATION 654 + 50

$(2 \times \frac{14}{3} \times 850/3)\ 0.25 + 7 - 32 - 30$ Ramp "A" Ramp "C" Ramp "E" — 606 GALS.

STATION 654 + 50 TO STATION 675 + 74.89

$(2 \times \frac{14}{3} \times 2124.89/3)\ 0.25 - 64 + 21 - 34$ Ramp "B" Ramp "D" Ramp "E" — 1576 GALS.

RAMP "A" STATION 0 + 32 TO STATION 17 + 12.68

$(1680.68 \times 6/9)\ 0.25 + 44$ — 324 GALS.

RAMP "B" STATION 4 + 53.07 TO STATION 16 + 17.43

$(1164.36 \times 6/9)\ 0.25 - 8$ — 186 GALS.

RAMP "C" STATION 4 + 53.07 TO STATION 14 + 52.28

$(999.21 \times 6/9)\ 0.25 + 7$ — 174 GALS.

RAMP "D" STATION 3 + 53.03 TO STATION 17 + 63.07

$(1410.04 \times 6/9)\ 0.25 + 4$ — 239 GALS.

RAMP "D" STATION 0 + 20 TO STATION 1 + 44.64

$(124.64 \times 6/9)\ 0.25 - 10$ — 11 GALS.

RAMP "E" STATION 4 + 53.07 TO STATION 17 + 90.85

$(1337.78 \times 6/9)\ 0.25 - 4$ — 219 GALS.

TO SUMMARY SHEET — 8805 GALS.

STATION 616 + 00 TO STATION 620 + 26.85 (I.G.)

$(2 \times \frac{14}{3} \times 426.85/3)\ 0.25$ — 332 GALS.

STATION 621 + 40.50 TO STATION 629 + 97.88 (I.G.)

$(2 \times \frac{14}{3} \times 857.38/3)\ 0.25$ — 667 GALS.

STATION 631 + 64.46 TO STATION 646 + 00 (I.G.)

$(2 \times \frac{14}{3} \times 1435.54/3)\ 0.25 - 24 - 33$ Ramp "A" Ramp "C" — 1059 GALS.

TO SUMMARY SHEET (I.G.) — 2058 GALS.

T-31 BIT. MAT. - M-5.7, RT-8 or 9; OR M-5.3, MC-4 or 5

S.R. 46 Shoulders
Sta. 36+50.00 to Sta. 48+63.25 &
Sta. 51+58.50 to Sta. 61+95.90
$2,250.65 \times 8 \times 0.30 \div 9$ — 600 Gal.

T-31 NO.6 AGGREGATE

STATION 545 + 82.25 TO STATION 584 + 72.92 (-3.20 STA. EQ.)

$(2 \times \frac{14}{3} \times 3887.47/3)\ 0.008$ — 97 CU.YDS.

STATION 586 + 16.50 TO STATION 591 + 50

$(2 \times \frac{14}{3} \times 533.50/3)\ 0.008$ — 13 CU.YDS.

STATION 591 + 50 TO STATION 593 + 81.90

$(2 \times \frac{14}{3} \times 231.90/3)\ 0.008$ — 6 CU.YDS.

STATION 593 + 81.90 TO STATION 616 + 00

$(2 \times \frac{14}{3} \times 2218.10/3)\ 0.008 + 4$ Crossover — 59 CU.YDS.

STATION 646 + 00 TO STATION 654 + 50

$(2 \times \frac{14}{3} \times 850/3)\ 0.008 - 1 - 1$ Ramp "C" Ramp "E" — 19 CU.YDS.

STATION 654 + 50 TO STATION 675 + 74.89

$(2 \times \frac{14}{3} \times 2124.89/3)\ 0.008 - 2 + 1 - 1$ Ramp "B" Ramp "D" Ramp "E" — 51 CU.YDS.

RAMP "A" STATION 0 + 32 TO STATION 17 + 12.68

$(1680.68 \times 6/9)\ 0.008 + 1$ — 10 CU.YDS.

RAMP "B" STATION 4 + 53.07 TO STATION 16 + 17.43

$(1164.36 \times 6/9)\ 0.008$ — 6 CU.YDS.

RAMP "C" STATION 4 + 53.07 TO STATION 14 + 52.28

$(999.21 \times 6/9)\ 0.008 + 1$ — 6 CU.YDS.

RAMP "D" STATION 3 + 53.03 TO STATION 17 + 63.07

$(1410.04 \times 6/9)\ 0.008$ — 8 CU.YDS.

RAMP "E" STATION 4 + 53.07 TO STATION 17 + 90.85

$(1337.78 \times 6/9)\ 0.008$ — 7 CU.YDS.

TO SUMMARY SHEET — 298 CU.YDS.

STATION 616 + 00 TO STATION 620 + 26.85 (I.G.)

$(2 \times \frac{14}{3} \times 426.85/3)\ 0.008$ — 11 CU.YDS.

STATION 621 + 40.50 TO STATION 629 + 97.88 (I.G.)

$(2 \times \frac{14}{3} \times 857.38/3)\ 0.008$ — 21 CU.YDS.

STATION 631 + 64.46 TO STATION 646 + 00 (I.G.)

$(2 \times \frac{14}{3} \times 1435.54/3)\ 0.008 - 1 - 1$ Ramp "A" Ramp "C" — 34 CU.YDS.

TO SUMMARY SHEET (I.G.) — 66 CU.YDS.

S.R. 46 Shoulders
Sta. 36+50.00 to Sta. 48+63.25
Sta. 51+58.50 to Sta. 61+95.90
$2,250.65 \times 8 \times 0.008 \div 9 =$ — 16 Cu. Yds.

T-35 ASPHALTIC CONCRETE SURFACE COURSE

TURNER ROAD STATION 42 + 00 TO STATION 53 + 00

$\frac{1.25 \times 18 \times 1100}{12 \times 27}$ — 76 CU.YDS.

S.R. 46 STATION 36 + 50 TO STATION 41 + 86.30

$\frac{1 \times 24 \times 536.30}{12 \times 27}$ — 40 CU.YDS.

S.R. 46 STATION 41 + 86.30 TO STATION 48 + 38.25

$(3623 - 140)\ \frac{1}{3x12}$ — 97 CU.YDS.

S.R. 46 STATION 51 + 83.50 TO STATION 61 + 95.90

$(5452 - 393)\ \frac{1}{3x12} + 13$ ACCESS DR. — 154 CU.YDS.

OHLTOWN ROAD STATION 48 + 00 TO STATION 53 + 25 (I.G.)

$\frac{1.25 \times 18 \times 525}{12 \times 27}$ — 36 CU.YDS.

TO SUMMARY SHEET — 403 CU.YDS.

SPECIAL - DRAINAGE CONNECTION

STATION 545 + 82.25 TO STATION 584 + 72.92 (-3.20 STA.EQ.)

$2\left[\frac{(9.5+6.5)\times 2.7}{2 \times 3 \times 36} - \frac{5.5 \times 1.3}{2 \times 3 \times 36}\right] 3887.47/3$ — 433 CU.YDS.

STATION 586 + 16.50 TO STATION 591 + 50

$2 \times .16690 \times 533.50/3$ — 59 CU.YDS.

STATION 591 + 50 TO STATION 593 + 81.90

$2 \times .16690 \times 231.90/3$ — 26 CU.YDS.

STATION 593 + 81.90 TO STATION 616 + 00 (SUPERELEVATED)

$\left[\frac{(5+8)2.7}{2 \times 3 \times 36} - \frac{4 \times 1.3}{2 \times 3 \times 36}\right] 2218.10/3$ — 102 CU.YDS.

STATION 646 + 00 TO STATION 654 + 50

$2 \times .16690 \times 850/3$ — 95 CU.YDS.

STATION 654 + 50 TO STATION 675 + 74.89

$2 \times .16690 \times 2124.89$ — 236 CU.YDS.

TO SUMMARY SHEET — 951 CU.YDS.

STATION 616 + 00 TO STATION 620 + 26.85 (SUPERELEVATED) (I.G.)

$.13843 \times 426.85/3$ — 20 CU.YDS.

STATION 621 + 40.50 TO STATION 629 + 97.88 (SUPERELEVATED) (I.G.)

$.13843 \times 857.38/3$ — 40 CU.YDS.

STATION 631 + 64.46 TO STATION 646 + 00 (I.G.)

$2 \times .16690 \times 1435.54/3$ — 160 CU.YDS.

TO SUMMARY SHEET (I.G.) — 220 CU.YDS.

COMPUTATION SHEET

COMPUTATION SHEET

FED. RD.	STATE	PROJECT	
2	OHIO		

MAH-18-9.89

14
254

E-1 COMPACTED SUBGRADE

STATION 545 + 82.25 TO STATION 584 + 72.92 (-3.20 STA. EQ)

$\frac{3887.47 \times 76}{9}$ — 32,828 SQ.YDS.

STATION 586 + 16.50 TO STATION 591 + 50

$\frac{533.5 \times 76}{9}$ — 4,505 SQ.YDS.

STATION 591 + 50 TO STATION 593 + 81.90

$\frac{231.9 \times 76}{9}$ — 1,958 SQ.YDS.

STATION 593 + 81.90 TO STATION 616 + 00 (SUPERELEVATED)

$\frac{2218.1 \times 76}{9}$ — 18,731 SQ.YDS.

STATION 646 + 00 TO STATION 654 + 50

$\frac{850.0 \times 76}{9}$ + Ramp "A" 27 + Ramp "C" 359 + Ramp "E" 291 — 7,855 SQ.YDS.

STATION 654 + 50 TO STATION 675 + 74.89

$\frac{2124.89 \times 76}{9}$ + Ramp "B" 1389 + Ramp "D" 1255 + Ramp "E" 1062 — 21,649 SQ.YDS.

RAMP "A" STATION 0 + 32 TO STATION 17 + 12.68

$\frac{1680.68 \times 22}{9}$ + 358 — 4,466 SQ.YDS.

RAMP "B" STATION 4 + 53.07 TO STATION 16 + 17.43

$\frac{1164.4 \times 22}{9}$ - 41 — 2,805 SQ.YDS.

RAMP "C" STATION 4 + 53.07 TO STATION 14 + 52.28

$\frac{999.2 \times 22}{9}$ + 187 — 2,629 SQ.YDS.

RAMP "D" STATION 3 + 53.03 TO STATION 17 + 63.07

$\frac{1410.0 \times 22}{9}$ + 82 — 3,529 SQ.YDS.

RAMP "D" STATION 0 + 20 TO STATION 1 + 44.64

$\frac{120.6 \times 22}{9}$ - 42 — 253 SQ.YDS.

RAMP "E" STATION 4 + 53.07 TO STATION 17 + 90.85

$\frac{1337.8 \times 22}{9}$ - 23 — 3,270 SQ.YDS.

TURNER ROAD STATION 42 + 00 TO STATION 53 + 00

$\frac{1100 \times 20}{9}$ — 2,444 SQ.YDS.

S.R. 46 STATION 36 + 50 TO STATION 41 + 86.30

$\frac{32 \times 536.30}{9}$ — 1,906 SQ.YDS.

S.R. 46 STATION 41 + 86.30 TO STATION 48 + 63.25

$\frac{(50 + 1014.95)\ 4}{9}$ + 3623 — 4,096 SQ.YDS.

S.R. 46 STATION 51 + 58.50 TO STATION 61 + 95.90

$\frac{(50 + 1838.96)\ 4}{9}$ + 5452 — 6,292 SQ.YDS.

TO SUMMARY SHEET — 120,383 SQ.YDS.

STATION 616 + 00 TO STATION 620 + 26.85 (SUPERELEVATED)(I.G.)

$\frac{426.85 \times 76}{9}$ — 3,604 SQ.YDS.

STATION 621 + 40.50 TO STATION 629 + 97.88 (SUPERELEVATED) (I.G.)

$\frac{857.38 \times 76}{9}$ — 7,240 SQ.YDS.

STATION 631 + 64.46 TO STATION 646 + 00 (I.G.)

$\frac{1435.54 \times 76}{9}$ + Ramp "A" 1680 + Ramp "C" 994 — 14,796 SQ.YDS.

OHLTOWN ROAD STATION 48 + 00 TO STATION 53 + 25

$\frac{525 \times 20}{9}$ — 1,167 SQ.YDS.

TO SUMMARY SHEET (I.G.) — 25,640 SQ.YDS.

T-71 10" R.P.C.C.P

STATION 546 + 07.25 TO STATION 584 + 47.92 (-3.20 STA. EQ.)

$2 \times 24/3 \times 3837.47/3$

STATION 586 + 41.50 TO STATION 591 + 50

$2 \times 8 \times 508.50/3$

STATION 591 + 50 TO STATION 593 + 81.90

$2 \times 8 \times 231.90/3$

STATION 593 + 81.90 TO STATION 616 + 00

$2 \times 8 \times 2218.10/3$

STATION 646 + 00 TO STATION 654 + 50

$2 \times 8 \times 850/3$ + Ramp "C" 491 + Ramp "E" 411

STATION 654 + 50 TO STATION 675 + 74.89

$2 \times 8 \times 2124.89/3$ + Ramp "B" 1596 + Ramp "D" 1140 + Ramp "E" 1185

TO SUMMARY SHEET

STATION 616 + 00 TO STATION 620 + 01.85(I.G.)

$2 \times 8 \times 401.85/3$

STATION 621 + 65.50 TO STATION 629 + 72.88(I.G.)

$2 \times 8 \times 807.38/3$

STATION 631 + 89.46 TO STATION 646 + 00 (I.G.)

$2 \times 8 \times 1410.54/3$ + Ramp "A" 1667 + Ramp "C" 1105

TO SUMMARY SHEET (I.G.)

T-71 9"R.P.C.C.P.

RAMP "A" STATION 0 + 32 TO STATION 17 + 12.68

$1680.68 \times 16/9 + 188$ — 3,176 SQ.YDS.

RAMP "B" STATION 4 + 53.07 TO STATION 16 + 17.43

$1164.36 \times 16/9 - 11$ — 2,059 SQ.YDS.

RAMP "C" STATION 4 + 53.07 TO STATION 14 + 52.28

$999.21 \times 16/9 + 157$ — 1,933 SQ.YDS.

RAMP "D" STATION 3 + 53.03 TO STATION 17 + 63.07

$1410.04 \times 16/9 + 64$ — 2,571 SQ.YDS.

RAMP "D" STATION 0 + 20 TO STATION 1 + 44.64

$124.64 \times 16/9 + 70$ — 292 SQ.YDS.

RAMP "E" STATION 4 + 53.07 TO STATION 17 + 90.85

$1337.78 \times 16/9 - 11$ — 2,367 SQ.YDS.

TO SUMMARY SHEET — 12,398 SQ.YDS.

DRIVEWAY QUANTITIES

ROAD	STATION	TYPE OF DRIVE	EARTH WORK EMB. + 20%	EARTH WORK EXC. C.Y.	SURFACE TREATMENT T-55 C.Y.	SURFACE TREATMENT B-19 C.Y.	
TURNER	42 + 27	RESIDENT	—	80	6	17	20,466 SQ.YDS.
TURNER	42 + 96	RESIDENT	—	147	7	18	2,712 SQ.YDS.
TURNER	43 + 70	FIELD	—	148	—	13	1,237 SQ.YDS.
TURNER	44 + 80	FIELD	—	1310	—	36	11,830 SQ.YDS.
OHLTOWN	46+42	RESURFACE EXISTING DRIVE				2	5,435 SQ.YDS.
OHLTOWN	51 + 21	RESIDENT	—	174	4	22	15,254 SQ.YDS.
OHLTOWN	52 + 06	RESIDENT	—	41	4	15	56,934 SQ.YDS. (I.G.)
OHLTOWN	52 + 25	MAIL BOX APPROACH	—	—	2	5	(I.G.)
							2,143 SQ.YDS.
S. R. 46	37 + 20	MAIL BOX APPROACH	—	—	2	5	(I.G.)
S. R. 46	37 + 94	RESIDENT	—	15	7	19	4,306 SQ.YDS.
S. R. 46	38 + 60	RESIDENT	16	9	6	17	
S. R. 46	38 + 87	RESIDENT	11	—	4	13	10,295 SQ.YDS.
S. R. 46	39 + 40	MAIL BOX APPROACH	—	—	2	5	16,744 SQ.YDS.
S. R. 46	40 + 03	RESIDENT	79	—	6	17	
S. R 46	42 + 07	RESIDENT	200	—	7	19	
S. R. 46	42 + 50	FIELD	370	—	—	26	
S. R. 46	58 + 35	RESIDENT	—	4	6	15	
							3,176 SQ.YDS.
TO SUMMARY SHEET			676	1928	63	264	2,059 SQ.YDS.
TO SUMMARY SHEET (I.G.)			—	—	—	—	1,933 SQ.YDS.

EARTHWORK

LOCATION	EXCAV. C.Y.	EMB. C.Y.	EMB. +20% C.Y.	E-4 BORROW C.Y.	E-4 GRANULAR MATERIAL - C.Y.
MAIN LINE					
STA. 520 + 00 - 616 + 00	68,961	269,067	322,880		41,006
STA. 646 + 00 - 676 + 00	110,388	72,043	86,452		
TURNER ROAD	45,405	226	271		
S. R. 46	7,443	61,163	73,396		
RAMP "A"	7,680	10,982	13,178		
RAMP "B"	28,218	614	737		
RAMP "C"	3,415	33,123	39,748		
RAMP "D"	9,215	5,115	6,138		
RAMP "E"	17,813	1,486	1,783		
I-FUNDS TOTAL TO SUMMARY	302,424	453,819	544,583	246,045	41,006
MAIN LINE					
STA. 616 + 00 - 646 + 00	5,785	360,834	433,001		
OHLTOWN ROAD	3,886	- 0 -	- 0 -		
I.G. FUNDS TOTAL TO SUMMARY	5,785	360,834	433,001	423,330	-

SUMMARY EARTHWORK

EMBANKMENT + 20%	545,250(I) + 433,001(IG) =	978,260
E-1 EXCAVATION	304,352(I) + 5,785(IG) =	310,137
E-4 BORROW	240,907(I) 427,216(IG)	668,123
E-4 GRANULAR	41,006(I)	

SUMMARY R/W FENCE

I-25 WOVEN WIRE FENCE, TYPE 47	13,502	L.F.(I)
	6,798	L.F.(I.G.)
I-26 CHAIN LINK FENCE AS PER PLAN	9,002	L.F.
I-26 12' CHAIN LINK FENCE GATE	1	EA.

FOR LOCATION OF FENCE SEE RIGHT OF WAY PLANS

COMPUTATION SHEET

COMPUTATION SHEET

FED. RD.	STATE	PROJECT	
2	OHIO		

15
294

MAH. 18-9.89

E-11 WATER

$\frac{5}{1000}$ × (EMB + 20%) + (I-22) + (B-19)

I-FUNDS

EMBANKMENT + 20% (SEE EARTHWORK COMP.)	544,583 C.Y.
I-22 (A OR B) (SEE I-22 COMP.)	14,583 C.Y.
I-22 (REGULAR) (SEE I-22 COMP.)	5,097 C.Y.
B-19 (SEE B-19 COMP.)	9,050 C.Y.
FIRE TRAILS	679 C.Y.
	573,992 C.Y.

$\frac{5}{1000}$ × 573,992 = 2,869.96 M.GALS.

TO SUMMARY SHEET I - FUNDS 2,869.96 M. GALS.

I - G FUNDS

EMBANKMENT + 20% (SEE EARTHWORK COMP.)	433,001 C.Y.
I-22 (A OR B) (SEE I-22 COMP.)	3,491 C.Y.
I-22 (REGULAR) (SEE I-22 COMP.)	861 C.Y.
B-19 (SEE B-19 COMP.)	1,519 C.Y.
	438,872 C.Y.

$\frac{5}{1000}$ × 438,872 = 2,194.36 M. GALS.

TO SUMMARY SHEET I - G FUNDS 2,194.36 M. GALS.

L-9 AGRICULTURAL LIMING MATERIAL

STATION 545 + 60 TO STATION 616 + 00

148,422 × $\frac{100}{1000}$ × $\frac{9}{2000}$ 66.79 TONS

STATION 646 + 00 TO STATION 675 + 74.89

66,530 × .00045 29.94 TONS

RAMP "A"

23,291 × .00045 10.48 TONS

RAMP "B"

14,994 × .00045 6.75 TONS

RAMP "C"

16,572 × .00045 7.46 TONS

RAMP D & D_1

12,738 × .00045 5.73 TONS

RAMP "E"

23,211 × .00045 10.43 TONS

TURNER ROAD

7,311 × .00045 3.29 TONS

S.R. 46

24,681 × .00045 11.11 TONS

TO SUMMARY SHEET *153.38* TONS

STATION 616 + 00 TO STATION 646 + 00 (I.G.)

79,382 × $\frac{100}{1000}$ × $\frac{9}{2000}$ 35.72 TONS

OHLTOWN ROAD

3,116 × .00045 1.40 TONS

TO SUMMARY SHEET (I.G.) *35.72* TONS

L-9 COMMERCIAL FERTILIZER

STATION 545 + 60 TO STATION 616 + 00

148,422 × $\frac{20}{1000}$ × $\frac{9}{2000}$ 13.36 TONS

STATION 646 + 00 TO STATION 675 + 74.89

66,530 × .00009 5.99 TONS

RAMP "A"

23,291 × .00009 2.10 TONS

RAMP "B"

14,994 × .00009 1.35 TONS

RAMP "C"

16,572 × .00009 1.49

RAMP "D" & "D_1"

12,738 × .00009 1.15 TONS

RAMP "E"

23,211 × .00009 2.09 TONS

TURNER ROAD

7,311 × .00009 .66 TONS

S.R. 46

24,681 × .00009 2.22 TONS

TO SUMMARY SHEET *30.69* TONS

STATION 616 + 00 TO STATION 646 + 00 (I.G.)

79,382 × $\frac{20}{1000}$ × $\frac{9}{2000}$ 7.14 TONS

OHLTOWN ROAD

3,116 × .00009 .28 TONS

TO SUMMARY SHEET (I.G.) *7.14* TONS

L-9 SEEDING

STATION 545 + 60 TO STATION 616 + 00	148,422 S.Y.
STATION 646 + 00 TO STATION 675 + 74.89	66,530 S.Y.
RAMP "A"	23,291 S.Y.
RAMP "B"	14,994 S.Y.
RAMP "C"	16,572 S.Y.
RAMP "D" & "D_1"	12,738 S.Y.
RAMP "E"	23,211 S.Y.
TURNER ROAD	7,311 S.Y.
S. R. 46	24,681 S.Y.
TO SUMMARY SHEET	*340,866* S.Y.
STATION 616 + 00 TO STATION 646 + 00 (I.G.)	79,382 S.Y.
OHLTOWN	3,116 S.Y.
TO SUMMARY SHEET (I.G.)	*79,382* S.Y.

QUANTITY SUMMARY
ROADWAY

FED.RD.	STATE	PROJECT	
	OHIO		

16
234

MAH.18-9.89

I-FUNDS

CODE 7221

SHEET NUMBERS

ITEM	8	9	10	11	14	15	27	28	29	30	31	32	33	37	38	39	40	102	113	119	120	121	122	141	143	144	145
E-1					304,352																						
E-1					120,383																						
E-4					240,907																						
E-4					41,006																						
E-9	LUMP																										
E-11						2873																					
I-4		400																									
I-4		9		3																							
I-8	16																										
I-13																				23.8							
I-15																		380									
I-15							1985.4	1791.6	485.5	800.0	1012.5	600.0	800.0	382.5	300.0	328.0	159.5	412.5			1259.2	300.0		1076.8	1456.2	561.1	162.5
I-15							150.0			150.0	150.0																
I-25					13,502																						
I-26					900Z																						
I-26					1																						
L-9						340,866																					
L-9						153.38																					
L-9						30.69																					
L-10									994	249	200		253		111	329	134			25	467	64	13		191		655
L-10							24			25	48										103	65					
L-120							140	390	390	250	140	140	140	530	140	140								125			
SS.CE-101.04		59																									
S-15				LUMP																							
S-15				150																							
SPECIAL																			1			3					
SPECIAL																			2		2	8					
SPECIAL																											
S-24																				LUMP							
SPECIAL			LUMP																								
SPECIAL		1																									

ITEM	QUANTITY	UNIT	DESCRIPTION
E-1	304,352	C.Y.	ROADWAY EXCAVATION METHOD "B" AS PER PLAN
E-1	120,383	S.Y.	COMPACTED SUBGRADE
E-4	240,907	C.Y.	BORROW
E-4	41,006	C.Y.	GRANULAR BORROW, AS PER PLAN
E-9	LUMP	LUMP	REMOVAL OF TREES & STUMPS
E-11	2873	M.GAL	WATER
I-4	400	M.GAL	WATER FOR DUST CONTROL
I-4	12	TONS	CALCIUM CHLORIDE FOR DUST CONTROL
I-8	16	EACH	CENTERLINE REFERENCE MONUMENTS, AS PER PLAN
I-13	23.8	L.F.	CONCRETE STEPS
I-15	380	L.F.	GUARD RAIL - REMOVED & DISPOSED OF
I-15	13,333.3	L.F.	GUARD RAIL - STEEL BEAM STANDARD TYPE (DEEP)
I-15	450.0	L.F.	GUARD RAIL - STEEL BEAM BARRIER TYPE (DEEP)
I-25	13,502	L.F.	WOVEN WIRE FENCE, TYPE 47
I-26	900Z	L.F.	CHAIN LINK FENCE, AS PER PLAN
I-26	1	EACH	12' CHAIN LINK FENCE GATE AS PER PLAN (W/ BARBED WIRE)

FOR QUANTITY SUMMARY OF LIGHTING ITEMS SEE SHEET Nº 202.

FOR QUANTITY SUMMARY OF TRAFFIC CONTROL ITEMS SEE SHEET Nº 188.

ITEM	QUANTITY	UNIT	DESCRIPTION
L-9	340,866	S.Y.	SEEDING & PROTECTING, AS PER PLAN
L-9	153.38	TONS	AGRICULTURAL LIMING MATERIAL
L-9	30.69	TONS	COMMERCIAL FERTILIZER (12-12-12)
L-10	3,689	S.Y.	SODDING
L-10	265	S.Y.	SODDING FOR SPECIAL BERM & SLOPE PROTECTION, AS PER PLAN
L-120	2,525	S.Y.	JUTE MATTING
SS.CE-101.04	59	HOURS	COMPACTION USING HEAVY PNEUMATIC-TIRED ROLLER
S-15	LUMP	LUMP	TEMPORARY RUNAROUND, CLASS "A" PAVEMENT
S-15	150	C.Y.	FURNISHING & PLACING AGGREGATE FOR TRAFFIC BOUND SURFACE COURSE
SPECIAL	4	EACH	DRILLED WELL ABANDONED
SPECIAL	12	EACH	CLEANING & DISPOSAL OF EXISTING SEPTIC TANKS
SPECIAL	——	C.Y.	Nº 12 AGGREGATE
S-24	LUMP	LUMP	STRUCTURE REMOVAL
SPECIAL	LUMP	LUMP	GUARDING AND PROTECTING MVSD.
SPECIAL	1	EACH	Settlement Platform

SUB-SUMMARY-ROADWAY

QUANTITY SUMMARY
ROADWAY

FED.RD.	STATE	PROJECT	
2	OHIO		

17/254

MAH-18-9.89

CODE 7221 (EXCEPT * TYPE Y005)

I-FUNDS | IG-FUNDS (G FACTOR 51.4%)

ITEM	SUB TOTALS SHT. Nº 16	169	173	174	175	178	180	181	182	184	185	TOTALS	8	9	11	14	15	34	35	36	113	176	177	183	TOTALS	GRAND TOTALS ITEM	QUANTITY	UNITS	LINE NUMBER	DESCRIPTION
E-1	304,352											304,352				5,785									5,785	E-1	310,137	C.Y.	1	ROADWAY EXCAVATION METHOD "B" AS PER PLAN
E-1	120,383											120,383				25,640									25,640	E-1	146,023	S.Y.	2	COMPACTED SUBGRADE
E-4	240,907											240,907				427,216									427,216	E-4	668,123	C.Y.	3	BORROW
E-4	41,006											41,006													——	E-4	41,006	C.Y.	4	GRANULAR BORROW, AS PER PLAN
E-9	LUMP											LUMP	LUMP												LUMP	E-9	LUMP	LUMP	5	REMOVAL OF TREES & STUMPS
E-11	2873											2873					2,194								2,194	E-11	5067	M.GAL.	6	WATER
I-4	400											400		100											100	I-4	500	M.GAL.	7	WATER FOR DUST CONTROL
I-4	12											12		3	1										4	I-4	16	TONS	8	CALCIUM CHLORIDE FOR DUST CONTROL
I-8	16											16	4												4	I-8	20	EA.	9	CENTERLINE REFERENCE MONUMENTS, AS PER PLAN
I-13	23.8											23.8													——	I-13	23.8	L.F.	10	CONCRETE STEPS
I-15	380											380													——	I-15	380	L.F.	11	GUARD RAIL - REMOVED & DISPOSED OF
I-15	13,933.3											13933.3						1337.2	1962.0	1630.2					4,389.4	I-15	18,322.7	L.F.	12	GUARD RAIL - STEEL BEAM STANDARD TYPE (DEEP)
I-15	450.0											450.0						300.0	300.0						600.0	I-15	1050.0	L.F.	13	GUARD RAIL - STEEL BEAM BARRIER TYPE (DEEP)
I-25	13,502											13,502				6,798									6,798	I-25	20,300	L.F.	14	WOVEN WIRE FENCE, TYPE 47
I-26	9,002											9002													——	I-26	9002	L.F.	15	CHAIN LINK FENCE, AS PER PLAN
I-26	1											1													——	I-26	1	EA.	16	12' CHAIN LINK FENCE GATE, AS PER PLAN (W/BARBED WIRE)

FOR QUANTITY SUMMARY OF LIGHTING ITEMS SEE SHEET Nº 202.

FOR QUANTITY SUMMARY OF TRAFFIC CONTROL ITEMS SEE SHEET Nº 188.

ITEM	SUB TOTALS SHT. Nº 16	169	173	174	175	178	180	181	182	184	185	TOTALS	8	9	11	14	15	34	35	36	113	176	177	183	TOTALS	GRAND TOTALS ITEM	QUANTITY	UNITS	LINE NUMBER	DESCRIPTION
L-9	340,866											340,866				79,382									79,382	*L-9	420,248	S.Y.	17	SEEDING & PROTECTING, AS PER PLAN
L-9	153.38											153.38				35.72									35.72	*L-9	189.10	TONS	18	AGRICULTURAL LIMING MATERIAL
L-9	30.69											30.69				7.14									7.14	*L-9	37.83	TONS	19	COMMERCIAL FERTILIZER (12-12-12)
L-10	3,689		112	2	9	6	26	10	14	11	8	5	3,892									8	7	12	27	*L-10	3,919	S.Y.	20	SODDING
L-10	265											265						126	235						361	*L-10	626	S.Y.	21	SODDING FOR SPECIAL BERM & SLOPE PROTECTION, AS PER PLAN.
L-120	2,525											2,525						508	892	140					280	*L-120	2,805	S.Y.	22	JUTE MATTING
S.S.CE-101.04	59											59		14											14	S.S.CE-101.04	73	M2S	23	COMPACTION USING HEAVY PNEUMATIC-TIRED ROLLER
S-15	LUMP											LUMP													——	S-15	LUMP	LUMP	24	TEMPORARY RUNAROUND, CLASS "A" PAVEMENT
S-15	150											150			50										50	S-15	200	CY	25	FURNISHING & PLACING AGGREGATE FOR TRAFFIC BOUND SURFACE COURSE
SPECIAL	4											4														SPECIAL	4	EA	26	DRILLED WELL ABANDONED
SPECIAL	12											12														SPECIAL	12	EA	27	CLEANING & DISPOSAL OF EXISTING SEPTIC TANKS
SPECIAL	——			1600								1600													——	SPECIAL	1600	C.Y.	28	Nº 12 AGGREGATE
S-24	LUMP											LUMP													——	S-24	LUMP	LUMP	29	STRUCTURE REMOVAL
SPECIAL	LUMP											LUMP													—	SPECIAL	LUMP	LUMP	29A	GUARDING AND PROTECTING M.V.S.D.
SPECIAL	1											1													—	SPECIAL	1	Each	29B	Settlement Platform

QUANTITY SUMMARY

BUILDING REMOVAL

FED.RD.	STATE	PROJECT	
	OHIO		

18
294

MAH-18-9.89

CODE 7221

ITEM	I. FUNDS	I.G. FUNDS	LINE NUMBER	GRAND TOTALS ITEM	GRAND TOTALS QUANTITY	GRAND TOTALS UNIT	DESCRIPTION
E-10		LUMP	30	E-10	LUMP	LUMP	PARCEL 10WL 1½ STY. FR. HSE.
E-10		LUMP	31	E-10	LUMP	LUMP	PARCEL 11WL 2 STY. FR. HSE. & 2 CAR CONC. BK. GAR.
E-10		LUMP	32	E-10	LUMP	LUMP	PARCEL 12WL 2 STY. FR. HSE & 1 CAR FR. GAR.
E-10	LUMP		33	E-10	LUMP	LUMP	PARCEL 19WL 2½ STY. BRK. HSE & BRK GAR., FR. SHED, FR. CHICKEN COOP
E-10	LUMP		34	E-10	LUMP	LUMP	PARCEL 21WL 2 STY. BRK. HSE., 2 CAR BRK. GAR. & METAL STORAGE BLDG.
E-10	LUMP		35	E-10	LUMP	LUMP	PARCEL 22WL 2 STY. FR. HSE. & FR. SHED
			36				
E-10	LUMP		37	E-10	LUMP	LUMP	PARCEL 24WL 2½ STY. FR. HSE. & FR. SHED
			38				
			39				
E-10	LUMP		40	E-10	LUMP	LUMP	PARCEL 31WL 2 STY. BRK. HSE. & BRK. GAR.
			41				
E-10	LUMP		43	E-10	LUMP	LUMP	PARCEL 36WL 2½ STY. FR. HSE. & FR. GAR.
E-10	LUMP		44	E-10	LUMP	LUMP	PARCEL 37WL 1½ STY. FR. HSE.
			45				

QUANTITY SUMMARY

DRAINAGE

FED.RD.	STATE	PROJECT	
2	OHIO		

19
294

MAH-18-9.89

CODE 7221

I FUNDS

ITEM	SHEET NUMBERS																																SUB TOTALS			DESCRIPTION
	9	10	24	26	27	28	29	30	31	32	33	34	37	38	39	40	101	102	113	119	120	121	122			141	142	143	144	145			ITEM	QUANTITY	UNIT	
E-3																																	E-3	—	C.Y.	CHANNEL EXCAVATION
S-24																		LUMP			LUMP												S-24	LUMP	LUMP	STRUCTURE REMOVAL
E-12															30	244	153		120	591			46										E-12	1184	L.F.	PIPE REMOVAL 15" & UNDER
I-1																																	I-1	—	L.F.	15" PIPE CLASS A-1 SEC. M-6.6(a), M-6.8(b)
I-1																																	I-1	—	L.F.	21" PIPE CLASS A-1 SEC. M-6.6(c)
I-1																																	I-1	—	L.F.	21" PIPE CLASS A-1 SEC. M-6.6(a), M-6.8(b)
I-1																																	I-1	—	L.F.	30" PIPE CLASS A-1 SEC. M-6.6(a), M-6.8(b)
I-1																																	I-1	—	L.F.	30" PIPE CLASS A-1 SEC. M-6.4(d)
I-1																																	I-1	—	L.F	30" PIPE CLASS A-1 SEC. M-6.6(d)
I-1																																	I-1	—	L.F.	36" PIPE CLASS A-1 SEC. M-6.6(b), M-6.8(b)
I-1																																	I-1	—	L.F.	42" PIPE CLASS A-1 SEC. M-6.6(a)
I-1																																	I-1	—	L.F.	48" PIPE CLASS A-1 SEC. M-6.6(d)
I-1																																	I-1	—	L.F.	48" PIPE CLASS A-1 SEC. M-6.4(d) AS PER PLAN 8 Ga.
I-1																																	I-1	—	L.F.	54" PIPE CLASS A-1 SEC. M-6.6(d)
I-1																																	I-1	—	L.F.	54" PIPE CLASS A-1 SEC. M-6.6(d) AS PER PLAN
I-1																																	I-1	—	L.F.	60" PIPE CLASS A-1 SEC. M-6.6(a)
I-1																																	I-1	—	L.F.	60" PIPE CLASS A-1 SEC. M-6.6(b)
I-1																																	I-1	—	L.F.	66" PIPE CLASS A-1 SEC. M-6.4(d)
I-1						52											53																I-1	105	L.F.	12" PIPE CLASS B-1
I-1																				105													I-1	105	L.F.	15" PIPE CLASS B-1
I-1																																	I-1	—	L.F.	21" PIPE CLASS B-1
I-1					44															49									189				I-1	282	L.F.	12" PIPE CLASS E-1
I-1							55													403	84												I-1	542	L.F.	15" PIPE CLASS C-4
I-1													200	450						110	26												I-1	786	L.F.	18" PIPE CLASS E-1
I-1													200																				I-1	200	L.F.	21" PIPE CLASS E-1
I-1																																	I-1	—	L.F.	24" PIPE CLASS E-1
I-1																							36										I-1	36	L.F.	4" PIPE CLASS E-1 SEC. M-6.8(a)
I-1	50								20	10	20		30		70											10							I-1	210	L.F.	6" PIPE CLASS F-4
I-1	50				20	20	20	10	30	10	10		20													10	10	20	20	10			I-1	260	L.F.	8" PIPE CLASS F-4
I-1						46											184	76	90														I-1	396	L.F.	12" PIPE CLASS C-4
I-1					10	10			49																		41		80				I-1	190	L.F.	15" PIPE CLASS F-4
I-1																				200	46												I-1	246	L.F.	18" PIPE CLASS C-4
I-1																			140														I-1	140	L.F.	18" PIPE CLASS B-1
I-1																																	I-1	—	L.F.	76"x48" ELLIPTICAL PIPE CLASS G-1 SEC. M-6.7(a)
I-1					10																												I-1	10	L.F.	12" PIPE CLASS F-4
I-1	200																																I-1	200	L.F.	6" PIPE CLASS H-2
I-1	200																																I-1	200	L.F.	8" PIPE CLASS H-2
I-1					1878	2032	2084	1953	1794	1449	2043	200	1435		1313	300										1681		1015	1433	841			I-1	21,451	L.F.	6" PIPE CLASS I-3
I-1										596			325	2000	516												1179			508			I-1	5,124	L.F.	6" PIPE CLASS I-3 SEC. M-6.4(h)
I-1		148																															I-1	148	L.F.	6" PIPE CLASS I-3 SEC. M-6.4(h), as per plan
I-1	200																													23			I-1	223	L.F.	6" PIPE CLASS J-1
I-1	200																																I-1	200	L.F.	8" PIPE CLASS J-1
I-1					90	92	186		187	111	105															181	104		56				I-1	1112	L.F.	15" PIPE CLASS J-1
I-1													97		112																		I-1	209	L.F.	18" PIPE CLASS J-1
I-1																																	I-1	—	L.F.	21" PIPE CLASS J-1
I-1													107																				I-1	107	L.F.	27" PIPE CLASS J-1
I-2						0.2	0.3		0.6	0.3	0.3		0.5		0.3						0.6					0.9	0.6		0.6				I-2	5.2	C.Y.	MASONRY
I-5									2																		2		4				I-5	8	EACH	15 PIPE SPECIAL CLASS F-4
I-5	4																																I-5	4	EACH	6" PIPE SPECIAL CLASS H-2
I-5	4																																I-5	4	EACH	8" PIPE SPECIAL CLASS H-2
I-5																				2													I-5	2	EACH	12" PIPE SPECIAL CLASS B-1
I-5					2	2	4	1	3	2	2		5		2											2	1	2	2	1			I-5	31	EACH	6" PIPE SPECIAL CLASS I-3
I-5																										1				1			I-5	2	EACH	6" PIPE SPECIAL CLASS J-1
I-8																				1													I-8	1	EACH	STANDARD Nº 1 MANHOLE
I-8					1				1					1			1			7									1				I-8	12	EACH	STANDARD Nº 2-2-B CATCH BASIN
I-8					1	1	1		1	1	1		2	1	1																		I-8	10	EACH	STANDARD Nº 4 CATCH BASIN
I-8						1	1						1													1							I-8	4	EACH	STANDARD Nº 5 CATCH BASIN
I-8																										1	2		1				I-8	4	EACH	STANDARD Nº 6 CATCH BASIN
I-8																													2				I-8	2	EACH	STANDARD Nº 3-A CATCH BASIN
I-8																										1							I-8	1	EACH	STANDARD Nº 2-6 MEDIAN INLET
I-9		2164																															I-9	2,164	L.F.	STONE UNDERDRAINS, Nº 2
I-9		6																															I-9	6	L.F.	STONE UNDERDRAINS, Nº 1
I-10	2		68	96	632	134	84		1	1	2			1	3						7					5	2		4				I-10	1,042	C.Y.	DUMPED ROCK CHANNEL PROTECTION
I-10			374		2643	1510	74																										I-10	4,601	C.Y.	DUMPED ROCK FILL, TYPE A
I-10																					275												I-10	275	L.F.	STANDARD PAVED GUTTER TYPE 1
I-14									23																								I-14	23	L.F.	STANDARD PAVED GUTTER TYPE 3 MODIFIED
I-16																				3	3	4											I-16	10	EACH	CATCH BASINS ABANDONED
I-16																	1					1											I-16	2	EACH	JUNCTION BOX ABANDONED

SUB-SUMMARY-DRAINAGE

QUANTITY SUMMARY
DRAINAGE

FED.RD.	STATE	PROJECT	
2	OHIO		

20 / 254

MAH-18-9.89

CODE 7221 UNLESS OTHERWISE SHOWN * (CODE Y005)

I FUNDS — I.G. FUNDS (G FACTOR 51.4%)

SHEET NUMBERS

ITEM	SUB TOTALS SEE SHT. N°10	168	169	172	173	174	175	178	180	181	182	184	185	TOTALS	10	34	35	36	37	113	176	177	183	TOTALS	GRAND TOTALS ITEM	QUANTITY	UNIT	LINE NUMBER	DESCRIPTION
E-3	——				1	254	26	148	16			2	28	475							6	209		215	E-3	690	CY.	46	CHANNEL EXCAVATION
S-24	LUMP													LUMP										——	S-24	LUMP	LUMP	47	STRUCTURE REMOVAL
E-12	1184													1184										——	E-12	1184	L.F.	48	PIPE REMOVAL - 15" & UNDER
I-1	——												80	80										——	I-1	80	L.F.	49	15" PIPE CLASS A-1 SEC. M6.6(a), M6.8(b), M-6.5(b)
I-1	——				422									422										——	I-1	422	L.F.	50	21" PIPE CLASS A-1 SEC. M 6.6(c)
I-1	——									68				68										——	I-1	68	L.F.	51	21" PIPE CLASS A-1 SEC. M 6.6(a), M6.8(b)
I-1	——							60						60										——	I-1	60	L.F.	52	30" PIPE CLASS A-1 SEC. M 6.6(a), M6.8(b)
I-1	——		302											302										——	I-1	302	L.F.	53	30" PIPE CLASS A-1 SEC. M 6.4(d)
I-1	——													——							268			268	I 1	268	L.F.	54	30" PIPE CLASS A-1 SEC. M 6.6(d)
I-1	——			316										316										——	I-1	316	L.F.	55	36" PIPE CLASS A-1 SEC. M 6.6(b), M6.8(b)
I-1	——						222							222										——	I-1	222	L.F.	56	42" PIPE CLASS A-1 SEC. M 6.6(a)
I-1	——													——								270		270	I-1	270	L.F.	57	48" PIPE CLASS A-1 SEC. M 6.6(a)
I-1	——	286												286										——	I-1	286	L.F.	58	48" PIPE CLASS A-1 SEC. M 6.4(a) AS PER PLAN - 8 Gage
I-1	——											202		202										——	I-1	202	L.F.	59	54" PIPE CLASS A-1 SEC. M 6.6(a)
I-1	——					452								452										——	I-1	452	L.F.	60	54" PIPE CLASS A-1 SEC. M 6.6(a) AS PER PLAN
I-1	——							64						64										——	I-1	64	L.F.	61	60" PIPE CLASS A-1 SEC. M 6.6(a)
I-1	——							250						250										——	I-1	250	L.F.	62	60" PIPE CLASS A-1 SEC. M 6.6(b)
I-1	——									62				62										——	I-1	62	L.F.	63	66" PIPE CLASS A-1 SEC. M 6.6(a)
I-1	105													105										——	I-1	105	L.F.	64	12" PIPE CLASS B-1
I-1	105													105										——	I-1	105	L.F.	65	15" PIPE CLASS B-1
I-1	——										50			50										——	I-1	50	L.F.	66	21" PIPE CLASS B-1
I-1	282													282										——	I-1	282	L.F.	67	12" PIPE CLASS E-1
I-1	542													542										——	I-1	542	L.F.	68	15" PIPE CLASS C-4
I-1	786													786										——	I-1	786	L.F.	69	18" PIPE CLASS E-1
I-1	200										69			269										——	I-1	269	L.F.	70	21" PIPE CLASS E-1
I-1	——										106			106										——	I-1	106	L.F.	71	24" PIPE CLASS E-1
I-1	36													36										——	I-1	36	L.F.	72	4" PIPE CLASS E-1 SEC. M-6.8(a)
I-1	210													270		30	10							40	I-1	250	L.F.	73	6" PIPE CLASS F-4
I-1	220													220		10		10						20	I-1	230	L.F.	74	8" PIPE CLASS F-4
I-1	396													396										——	I-1	396	L.F.	75	12" PIPE CLASS C-4
I-1	190													190		76	58	31						607	I-1	355	L.F.	76	15" PIPE CLASS F-4
I-1	246													246										——	I-1	246	L.F.	77	18" PIPE CLASS C-4
I-1	140													140										——	I-1	140	L.F.	78	18" PIPE CLASS B-1
I-1	——								208					208										——	I-1	208	L.F.	79	76" x 48" ELLIPTICAL PIPE CLASS G-1 SEC. M 6.7(a)
I-1	10													10										—	I-1	10	L.F.	79A	12" PIPE CLASS F-4
I-1	200													200										——	I-1	200	L.F.	80	6" PIPE CLASS H-2
I-1	200													200										——	I-1	200	L.F.	81	8" PIPE CLASS H-2
I-1	——													——									442	442	I-1	442	L.F.	81A	15" PIPE CLASS E-1
I-1	21451													21,451		1583	1604	1688	100					4975	I-1	26426	L.F.	82	6" PIPE CLASS I-3
I-1	5124													5,124										——	I-1	5,124	L.F.	83	6" PIPE CLASS I-3 SEC. M 6.4(h)
I-1	148													148										——	I-1	148	L.F.	83A	6" PIPE CLASS I-3 SEC. M 6.4(h), AS PER PLAN
I-1	223													223										——	I-1	223	L.F.	84	6" PIPE CLASS J-1
I-1	200													200										——	I-1	200	L.F.	85	8" PIPE CLASS J-1
I-1	1112													1112		163	76	105						344	I-1	1,456	L.F.	86	15" PIPE CLASS J-1
I-1	209													209										——	I-1	209	L.F.	87	18" PIPE CLASS J-1
I-1	——										53			53										——	I-1	53	L.F.	88	21" PIPE CLASS J-1
I-1	107													107										——	I-1	107	L.F.	89	27" PIPE CLASS J-1
I-2	5.2				2.6	28.8	15.0	57.2	24.4	36.0	1.5	21.0	0.5	192.2		0.6	0.3	0.3			7.6	17.0	1.0	26.8	I-2	219.0	C.Y	90	MASONRY
I-5	8													8		4	2	2						8	I-5	16	EA.	91	15" PIPE SPECIAL CLASS F-4
I-5	4													4										——	I-5	4	EA.	92	6" PIPE SPECIAL CLASS H-2
I-5	4													4										——	I-5	4	EA.	93	8" PIPE SPECIAL CLASS H-2
I-5	2													2										——	I-5	2	EA.	94	12" PIPE SPECIAL CLASS B-1
I-5	31													31		2		1						3	I-5	34	EA.	95	6" PIPE SPECIAL CLASS I-3
I-5	2													2										——	I-5	2	EA.	96	6" PIPE SPECIAL CLASS J-1
I-8	1													1										——	I-8	1	EA.	97	STANDARD N°1 MANHOLE
I-8	12										2			14		1	1							2	I-8	16	EA.	98	STANDARD N°2-2.B CATCH BASIN
I-8	10													10		1		1						2	I-8	12	EA.	99	STANDARD N°4 CATCH BASINS
I-8	4													4										——	I-8	4	EA.	100	STANDARD N°5 CATCH BASINS
I-8	4													4										——	I-8	4	EA.	101	STANDARD N°6 CATCH BASINS
I-8	2													2										——	I-8	2	EA.	102	STANDARD N°3-A CATCH BASIN
I-8	1													1										——	I-8	1	EA.	103	STANDARD N°2-6 MEDIAN INLET
I-9	2164													2164	242									242	I-9	2406	L.F.	104	STONE UNDERDRAIN, N°2
I-9	6													6										——	I-9	6	L.F.	105	STONE UNDERDRAIN, N°1
I-10	1042		19	19	14		19	103				148		1364		5	1	2				10		18	* I-10	1382	C.Y	106	DUMPED ROCK CHANNEL PROTECTION
I-10	4601													4601										——	* I-10	4601	C.Y	107	DUMPED ROCK FILL, TYPE A
I-14	275													275										——	* I-14	275	L.F.	108	STANDARD PAVED GUTTER TYPE 1
I-14	23													23										——	* I-14	23	L.F.	109	STANDARD PAVED GUTTER TYPE 3 MODIFIED
I-16	10													10										——	I-16	10	EA.	110	CATCH BASINS ABANDONED
I-16	2													2										——	I-16	2	EA.	111	JUNCTION BOX ABANDONED

QUANTITY SUMMARY
PAVEMENT

FED.RD.	STATE	PROJECT	
2	OHIO		

21
234

MAH-18-9.89

CODE 7221

I-FUNDS | IG-FUNDS (G FACTOR 51.4%)

ITEM	SHEET NUMBERS 12	13	14	141	142	143	144	145	152	153	154	TOTALS	12	13	14	TOTALS	GRAND TOTALS ITEM	QUANTITY	UNIT	LINE NUMBER	DESCRIPTION
I-7	823											823	534			534	I-7	1,357	SY.	112	REINFORCED CONCRETE APPROACH SLABS (T-13)
I-12				54	136	136	403	185				914				—	I-12	914	L.F.	113	CONCRETE CURB TYPE 6
I-12				100	225		125	375				825				—	I-12	825	L.F.	114	CONCRETE CURB TYPE 7
I-12				450	25		500	25				1000				—	I-12	1,000	L.F.	115	CONCRETE CURB TYPE 8
I-21				159	25	25	13	25	122	347	76	792				—	I-21	792	SY.	116	PORTLAND CEMENT CONCRETE MEDIAN
I-22	14280											14,280	3285			3285	I-22	17,565	C.Y.	117	SUBBASE-GRADING A OR B AS PER PLAN
I-22	5506											5506	684			684	I-22	6190	C.Y.	118	SUBBASE-REGULAR GRADING
I-23									28		25	53				—	I-23	53	EA.	119	PRECAST WHITE PORTLAND CEMENT CONCRETE TRAFFIC DIVIDERS
B-19	9263		264									9527	1367			1367	B-19	10,894	C.Y.	120	AGGREGATE BASE COURSE
B-19	679											679				—	B-19	679	C.Y.	121	AGGREGATE BASE COURSE, AS PER PLAN
B-21	3,554											3,554	881			881	B-21	4,435	C.Y.	122	WATERPROOF AGGREGATE BASE COURSE
B-35		416										416				—	B-35	416	C.Y.	123	ASPHALTIC CONCRETE LEVELING COURSE
B-35		1033										1033				—	B-35	1,033	C.Y.	124	ASPHALTIC CONCRETE BASE COURSE
T-30		6393										6393				—	T-30	6393	GAL.	125	BITUMINOUS PRIME COAT
T-31		8,805										8,805		2,058		2,058	T-31	10,863	GAL.	126	BITUMINOUS SURFACE TREATMENT- BITUMINOUS MATERIAL
T-31		600										600				—	T-31	600	GAL.	126A	BITUMINOUS SURFACE TREATMENT-BIT./MATERIAL; M-5.7, RT-8 or 9; or M-5.3, MC-4 or 5
T-31		298										298		66		66	T-31	364	C.Y.	127	BITUMINOUS SURFACE TREATMENT- AGGREGATE
T-35		403	63									466				—	T-35	466	C.Y.	128	ASPHALTIC CONCRETE SURFACE COURSE
T-71			12,398									12,398				—	T-71	12,398	SY.	129	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
T-71			56,934									56,934			16,744	16,744	T-71	73,678	SY.	130	10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
SPECIAL		951										951		220		220	SPECIAL	1171	CY.	131	DRAINAGE CONNECTION

UTILITIES CODE Y-060

	100% STATE 37	PROJECT COST 101	PROJECT COST 102	PROJECT COST 113	100% STATE 120	100% COUNTY 123	SUB TOTALS PROJ. COST	100% COUNTY	100% STATE	ITEM	QUANTITY	UNIT	LINE NUMBER	
	SHEET NUMBERS													
I-1	353				210				563	I-1	563	L.F.	132	8" SANITARY PIPE CL. J-1 SEC. M.-6.8 (b) w/ 5" CONC. ENCASEMENT & COMPRESSION JOINTS
I-124		6				19	6	19		I-124	25	L.F.	133	NEW WATER MAIN 6" C.I.P. CL. 200
I-124		800	300	512			1612			I-124	1612	L.F.	134	NEW WATER MAIN 8" C.I.P. CL. 200
I-124						2511		2511		I-124	2511	L.F.	135	NEW WATER MAIN 16" C.I.P. CL. 200
I-124		2				4	2	4		I-124	6	EA.	136	6" VALVES CL. 200
I-124		1	1	1			3			I-124	3	EA.	137	8" VALVES CL. 200
I-124						6		6		I-124	6	EA.	138	16" VALVES CL. 200
I-124				4			4			I-124	4	EA.	139	8" 22½° BENDS CL. 200
I-124						4		4		I-124	4	EA.	140	16" 22½° BENDS CL. 200
I-124		2					2			I-124	2	EA.	141	8"x8"x 6" TEES CL. 200
I-124						4		4		I-124	4	EA.	142	16"x16"x 6" TEES CL. 200
I-124						1		1		I-124	1	EA.	143	16"x16"x 8" TEES CL. 200
I-124		2				4	2	4		I-124	6	EA.	144	FIRE HYDRANTS REMOVED & RESET

STRUCTURES OVER 20 FT. SPAN
FOR ESTIMATED QUANTITIES
MAH 18 - 1013 L&R SEE SHEET Nº 212
MAH 18 - 1112 L&R SEE SHEET Nº 223
MAH 18 - 1178 L&R SEE SHEET Nº 232
MAH 18 - 1197 L&R SEE SHEET Nº 242
MAH 18 - 1246 L&R SEE SHEET Nº 256

	LUMP	LUMP	145	CONSTRUCTION LAYOUT STAKES	
	LUMP	LUMP	146	FIELD OFFICE	
I-3	LUMP	LUMP	147	MAINTAINING TRAFFIC	

QUANTITY SUMMARY

1965 SPECIFICATIONS

FED. RD.	STATE	PROJECT	
	OHIO		

21A 294

MAH-80-3.37

ROADWAY — TYPE CODE 7221 (EXCEPT * TYPE CODE Y005)

FROM SHT. Nº 17, 18 & 20

LINE NUMBER	I FUNDS	IG FUNDS (@ 51.4%)	GRAND TOTALS ITEM	GRAND TOTALS QUANTITY	GRAND TOTALS UNIT	DESCRIPTION
5	LUMP	LUMP	201	LUMP	LUMP	CLEARING AND GRUBBING
20	LUMP	—	202	LUMP	LUMP	EXISTING STRUCTURES REMOVED
30	—	LUMP	202	LUMP	LUMP	PARCEL 10 WL 1½ STY. FRAME HOUSE
31	—	LUMP	202	LUMP	LUMP	PARCEL 11 WL 2 STY. FRAME HOUSE & 2 CAR Conc. Block Garage
32	—	LUMP	202	LUMP	LUMP	PARCEL 12 WL 2 STY. FRAME HOUSE & 1 CAR FRAME GARAGE
33	LUMP	—	202	LUMP	LUMP	PARCEL 19 WL 2½ STY. BRK. HSE., 2 CAR BRK. GAR., FR. SHED, FR. CHICKEN COOP
34	LUMP	—	202	LUMP	LUMP	PARCEL 21 WL 2 STY. BRK. HSE., 2 CAR BRK. GAR. & METAL STORAGE BLDG
35	LUMP	—	202	LUMP	LUMP	PARCEL 22 WL 2 STY. FRAME HOUSE & FRAME SHED
36						
37	LUMP	—	202	LUMP	LUMP	PARCEL 24 WL 2½ STY. FRAME HOUSE & FRAME SHED
38						
39						
40	LUMP	—	202	LUMP	LUMP	PARCEL 31 WL 2 STY. BRICK HOUSE & BRICK GARAGE
41						
42						
43	LUMP	—	202	LUMP	LUMP	PARCEL 36 WL 2½ STY. FRAME HOUSE & FRAME GARAGE
44	LUMP	—	202	LUMP	LUMP	PARCEL 37 WL 1½ STY. FRAME HOUSE
45						
1, 11 & 46	304,827	6,000	203	310,827	CU.YD.	EXCAVATION INCLUDING EMBANKMENT CONTRUCTION, AS PER PLAN
3	240,907	427,216	203	668,123	CU.YD.	BORROW
4	41,006	—	203	41,006	CU.YD.	GRANULAR BORROW, AS PER PLAN
2	120,383	25,640	203	146,023	SQ.YD.	SUBGRADE PREPARATION
6	2824	2187	203	5011	M.GAL.	WATER
23	58	14	203	73	HRS	PROOF ROLLING
25	150	50	410	200	CU.YD.	TRAFFIC COMPACTED SURFACE, TYPE A OR B
9	16	4	604	20	EACH	CENTERLINE REFERENCE MONUMENT, AS PER PLAN
12	13,0333	4089.4	606	18,022.7	LIN.FT.	GUARD RAIL, TYPE 4
13	450.0	600.0	606	1050.0	LIN.FT.	GUARD RAIL, TYPE 4, BARRIER DESIGN
14	13502	6798	607	20300	LIN.FT.	FENCE, TYPE 47
15	9002	—	607	9002	LIN.FT.	FENCE, TYPE CL., AS PER PLAN
16	1	—	607	1	EACH	12' Gate, TYPE CL., AS PER PLAN
10	24	—	608	24	LIN.FT.	CONCRETE STEPS, Std. Type B
24	7501	—	615	7501	SQ.YD.	CLASS A, TEMPORARY PAVEMENT
24	LUMP	—	615	LUMP	LUMP	TEMPORARY ROADS, as per plan
7	400	100	616	500	M.GAL.	WATER
8	12	4	616	16	TONS	CALCIUM CHLORIDE
17	340,866	79,382	* 650	420,248	SQ.YD.	SEEDING AND MULCHING, AS PER PLAN
18	153.38	35.72	* 650	189.10	TONS	AGRICULTURAL LIMING
19	30.69	7.14	* 650	37.83	TONS	COMMERCIAL FERTILIZER (12-12-12)
20	3892	27	* 660	3919	SQ.YD.	SODDING
21	265	361	* 660	626	SQ.YD.	SODDING FOR SPECIAL BERM & SLOPE PROTECTION, AS PER PLAN
22	2525	280	* 667	2805	SQ.YD.	JUTE MATTING
26	4		SPECIAL	4	EACH	DRILL WELL ABANDONED
27	12		SPECIAL	12	EACH	CLEANING & DISPOSAL OF EXISTING SEPTIC TANK
28	1600	—	203	1600	CU. YDS.	BORROW USING No. 1 AGGREGATE, AS PER PLAN
29A	LUMP	—	SPECIAL	LUMP	LUMP	GUARDING AND PROTECTING M.V.S.D.
29B	1	—	SPECIAL	1	EACH	SETTLEMENT PLATFORM

FOR QUANTITY SUMMARY OF LIGHTING ITEMS SEE SHEET Nº 202

FOR QUANTITY SUMMARY OF TRAFFIC CONTROL ITEMS SEE SHEET Nº 188A

DRAINAGE — TYPE CODE 7221 (EXCEPT * TYPE CODE Y005)

FROM SHT. Nº 20 & 21

LINE NUMBER	I FUNDS	IG FUNDS (@ 51.4%)	GRAND TOTALS ITEM	GRAND TOTALS QUANTITY	GRAND TOTALS UNIT	DESCRIPTION
47	LUMP	—	202	LUMP	LUMP	EXISTING STRUCTURES REMOVED
48	1184	—	202	1184	LIN.FT.	PIPE REMOVED - 15" & UNDER
110	10	—	202	10	EACH	CATCH BASIN REMOVED
111	2	—	202	2	EACH	JUNCTION BOX REMOVED
106	1364	18	* 601	1382	CU.YD.	DUMPED ROCK CHANNEL PROTECTION
107	4601	—	* 601	4601	CU.YD.	DUMPED ROCK FILL, TYPE A
108	275	—	* 601	275	LIN.FT.	PAVED GUTTER, STANDARD TYPE 1-2
109	23	—	* 601	23	LIN.FT.	PAVED GUTTER, STANDARD TYPE 3 MODIFIED AS PER PLAN
90	192.2	26.8	602	219.0	CU.YD.	CONCRETE MASONRY
49	80	—	603	80	LIN.FT.	15" CONDUIT, TYPE A, 706.02 OR 706.08 or 706.01 W/CL "B" BEDDING
50	422	—	603	422	LIN.FT.	21" CONDUIT, TYPE A, 706.02 CL.IV W/CL. "B" BEDDING
51	68	—	603	68	LIN.FT.	21" CONDUIT, TYPE A, 706.02 OR 706.08 W/CL "B" BEDDING
52	60	—	603	60	LIN.FT.	30" CONDUIT, TYPE A, 706.02 OR 706.08 W/CL "B" BEDDING
53	302	—	603	302	LIN.FT.	30" CONDUIT, TYPE A, 707.05 W/CL. "B" BEDDING
54	—	268	603	268	LIN.FT.	30" CONDUIT, TYPE A, 706.02 CL V W/CL. "B" BEDDING
55	316	—	603	316	LIN.FT.	36" CONDUIT, TYPE A, 706.02 CL. III OR 706.08 W/CL "B" BEDDING
56	222	—	603	222	LIN.FT.	42" CONDUIT, TYPE A, 706.02 W/CL "B" BEDDING
57	—	270	603	270	LIN.FT.	48" CONDUIT, TYPE A, 706.02 CL V W/CL "B" BEDDING
58	286	—	603	286	LIN.FT.	48" CONDUIT, TYPE A, 707.05, 8 Gage W/CL. "B" BEDDING, as per plan
59	202	—	603	202	LIN.FT.	54" CONDUIT, TYPE A, 706.02 CL. V W/CL. "B" BEDDING
60	452	—	603	452	LIN.FT.	54" CONDUIT, TYPE A, 706.02 CL. V AS PER PLAN, W/CL "B" BEDDING
61	64	—	603	64	LIN.FT.	60" CONDUIT, TYPE A, 706.02 W/CL. "B" BEDDING
62	290	—	603	290	LIN.FT.	60" CONDUIT, TYPE A, 706.02 CL. III W/CL "B" BEDDING
63	62	—	603	62	LIN.FT.	66" CONDUIT, TYPE A, 706.02 W/CL "B" BEDDING
79	208	—	603	208	LIN.FT.	76" × 48" CONDUIT, TYPE "A", 706.04 CLASS HE II W/CL. "B" BEDDING
84, 86	223	—	603	223	LIN.FT.	6" CONDUIT, TYPE B W/CL. "B" BEDDING
85	200	—	603	200	LIN.FT.	8" CONDUIT, TYPE B W/CL. "B" BEDDING
84, 94	105	—	603	105	LIN.FT.	12" CONDUIT, TYPE B W/CL. "B" BEDDING
85, 86	1217	344	603	1561	LIN.FT.	15" CONDUIT, TYPE B W/CL. "B" BEDDING
76, 87	349	—	603	349	LIN.FT.	18" CONDUIT, TYPE B W/CL. "B" BEDDING
66, 88	103	—	603	103	LIN.FT.	21" CONDUIT, TYPE B W/CL. "B" BEDDING
89	107	—	603	107	LIN.FT.	27" CONDUIT, TYPE B W/CL. "B" BEDDING
81A	—	442	603	442	LIN.FT.	15" CONDUIT, TYPE C W/CL. B BEDDING
72	36	—	603	36	LIN.FT.	4" CONDUIT, TYPE C 706.08 W/CL. "B" BEDDING
67	282	—	603	282	LIN.FT.	12" CONDUIT, TYPE C W/CL. "B" BEDDING
68	542	—	603	542	LIN.FT.	15" CONDUIT, TYPE D
69	786	—	603	786	LIN.FT.	18" CONDUIT, TYPE C W/CL. "B" BEDDING
70	269	—	603	269	LIN.FT.	21" CONDUIT, TYPE C W/CL. "B" BEDDING
71	106	—	603	106	LIN.FT.	24" CONDUIT, TYPE C W/CL. "B" BEDDING
80, 82	200	—	603	200	LIN.FT.	6" CONDUIT, TYPE E
81, 83	200	—	603	200	LIN.FT.	8" CONDUIT, TYPE E
73	2.10	40	603	250	LIN.FT.	6" CONDUIT, TYPE F
74	260	20	603	280	LIN.FT.	8" CONDUIT, TYPE F
75	396	—	603	396	LIN.FT.	12" CONDUIT, TYPE D
76, 91	190	165	603	355	LIN.FT.	15" CONDUIT, TYPE F
77	246	—	603	246	LIN.FT.	18" CONDUIT, TYPE D
79A	10	—	603	10	LIN.FT.	12" CONDUIT, TYPE F
97	1	—	604	1	EACH	STANDARD Nº 1 MANHOLE
98	14	2	604	16	EACH	STANDARD Nº 2-2-B CATCH BASIN
99	10	2	604	12	EACH	STANDARD Nº 4 CATCH BASIN
100	4	—	604	4	EACH	STANDARD Nº 5 CATCH BASIN
101	4	—	604	4	EACH	STANDARD Nº 6 CATCH BASIN
102	2	—	604	2	EACH	STANDARD Nº 3-A CATCH BASIN
103	1	—	604	1	EACH	STANDARD Nº 2-G MEDIAN INLET
83A	148	—	605	148	LIN.FT.	6" Unclassified Pipe Underdrains, 707.06 or 707.12, as per plan
82, 85	21,451	4975	605	26,426	LIN.FT.	SHALLOW PIPE UNDERDRAINS, 6"
83	5124	—	605	5124	LIN.FT.	PIPE UNDERDRAINS, 707.06 OR 707.12, 6" Shallow
104	2164	242	605	2406	LIN.FT.	AGGREGATE DRAINS
105	6	—	605	6	LIN.FT.	AGGREGATE DRAINS FOR SPRINGS, AS PER PLAN

GENERAL SUMMARY

QUANTITY SUMMARY

1965 SPECIFICATIONS

FED. RD.	STATE	PROJECT	
	OHIO		

MAH-80-3.37

21B / 294

FROM SHT. Nº 17 & 21	PAVEMENT TYPE CODE 7221						FROM SHT. Nº 21	I FUNDS UTILITIES TYPE CODE Y-060						
LINE NUMBER	I FUNDS	IG FUNDS (G 51.4%)	GRAND TOTALS ITEM	GRAND TOTALS QUANTITY	GRAND TOTALS UNIT	DESCRIPTION	LINE NUMBER	PROJECT COST	100% COUNTY	100% STATE	GRAND TOTALS ITEM	GRAND TOTALS QUANTITY	GRAND TOTALS UNIT	DESCRIPTION
122	3554	881	301	4435	CU.YD.	BITUMINOUS AGGREGATE BASE: 702.01,(85-100); or 702.09, RT-12, as per plan	132			563	603	563	LIN. FT.	8" SAN. CONDUIT, TYPE "B" CONC. ENCASED, COMP. JOINTS, 706.08
124	1033	—	302	1033	CU.YD.	ASPHALT CONCRETE (70-85)	133	6	19		814	25	LIN. FT	NEW WATER MAIN 6" C.I.P. CL 200
120	9527	1367	304	10,894	CU.YD.	AGGREGATE BASE	134	1612			814	1612	LIN. FT	NEW WATER MAIN 8" C.I.P CL 200
121	679	—	304	679	CU.YD.	AGGREGATE BASE, AS PER PLAN	135		2511		814	2511	LIN. FT.	NEW WATER MAIN 16" C.I.P CL 200
6	49	7	304	56	M.GAL	WATER	136	2	4		814	6	EACH	6" VALVES CL.200
117	14,280	3285	310	17,565	CU.YD.	SUBBASE, GRADING A OR B, AS PER PLAN	137	3			814	3	EACH	8" VALVES CL.200
118	5506	684	310	6190	CU.YD.	SUBBASE	138		6		814	6	EACH	16" VALVES CL.200
123	416	—	402	416	CU.YD.	ASPHALT CONCRETE (70-85)	139	4			814	4	EACH	8" 22½° BEND CL.200
128	466	—	404	466	CU.YD	ASPHALT CONCRETE (70-85)	140		4		814	4	EACH	16" 22½° BEND CL.200
125	6393	—	408	6393	GAL.	BITUMINOUS PRIME COAT, 702.09 RT-2 OR RT-3	141	2			814	2	EACH	8"×8"×6" TEE CL.200
126	8805	2058	409	10,863	GAL.	SEAL COAT BITUMINOUS MATERIAL, as per plan	142		4		814	4	EACH	16"×16"×6" TEE CL.200
126A	600	—	409	600	GAL.	SEAL COAT BIT. MATERIAL: 702.09, RT-8 or RT-9; or 702.02, MC-800 or MC-3000								
127	298	66	409	364	CU.YD.	SEAL COAT COVER AGGREGATE, Nº 8	143		1		814	1	EACH	16"×16"×8" TEE CL.200
129	12,398	—	451	12,398	SQ.YD.	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	144	2	4		814	6	EACH	FIRE HYDRANTS REMOVED & RESET
130	56,934	16744	451	73,678	SQ.YD.	10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT								
113	914	—	609	914	LIN. FT.	CONCRETE CURB Std. Type 6								
114	825	—	609	825	LIN. FT.	CONCRETE CURB Std. Type 7								
115	1000	—	609	1000	LIN. FT.	CONCRETE CURB Std. Type 8								
112	823	534	611	1357	SQ.YD.	REINFORCED CONCRETE APPROACH SLAB (T=13")								
116	792	—	612	792	SQ.YD.	Standard Concrete Median								
119	53	—	613	53	EACH	TRAFFIC DIVIDERS, Standard								
131	951	220	SPECIAL	1171	CU.YD.	DRAINAGE CONNECTION, USING Nº8 AGGREGATE								
														STRUCTURES OVER 20FT. SPAN FOR ESTIMATED QUANTITIES
														MAH-18-1013 L&R SEE SHEET Nº 212
														MAH-18-1112 L&R SEE SHEET Nº 223
														MAH-18-1178 L&R SEE SHEET Nº 232
														MAH-18-1197 L&R SEE SHEET Nº 242
														MAH-18-1246 L&R SEE SHEET Nº 256
							145					LUMP	LUMP	CONSTRUCTION LAYOUT STAKES
							146					LUMP	LUMP	FIELD OFFICE
							147				614	LUMP	LUMP	MAINTAINING TRAFFIC

GENERAL SUMMARY

SUPERELEVATION DIAGRAMS & TABLES

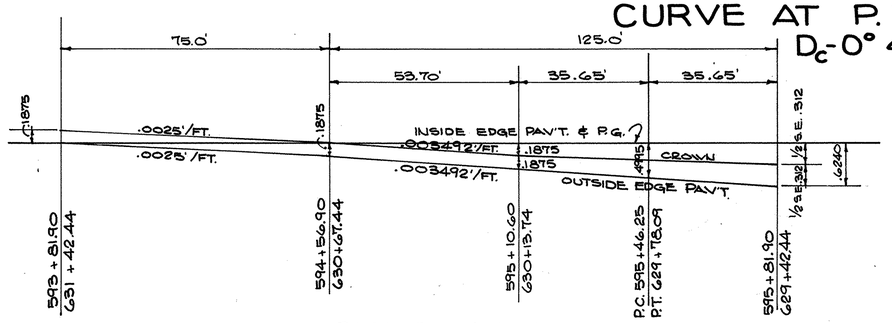
CURVE AT P.I. STA. 612 + 95.77

D_c - 0° 48' RT.

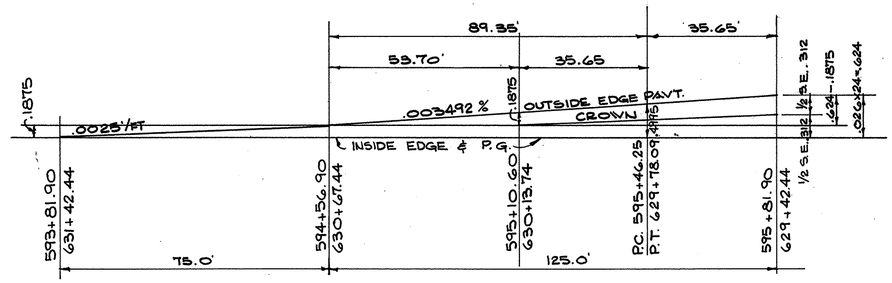
FED. RD.	STATE	PROJECT	
2	OHIO		

22
254

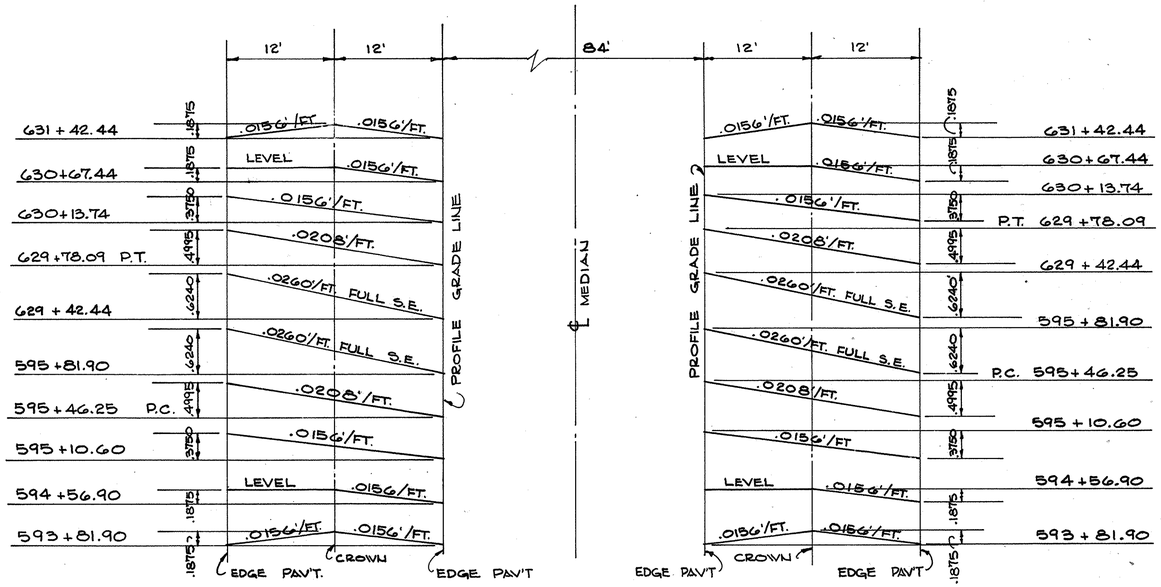
MAHONING COUNTY
MAH.-18-9.89



RIGHT LANE
(EAST BOUND)



LEFT LANE
(WEST BOUND)



LEFT LANES
(WEST BOUND)

RIGHT LANES
(EAST BOUND)

STATION	LEFT LANE O.E.	LEFT LANE ℄	LEFT LANE PROFILE	RIGHT LANE PROFILE	RIGHT LANE ℄	RIGHT LANE O.E.
593+81.90	964.26	964.45	964.26	964.22	964.41	964.22
594+00	964.70	964.84	964.65	964.60	964.74	964.25
+25	965.30	965.38	965.19	965.13	965.21	965.02
+50	965.91	965.93	965.74	965.67	965.69	965.50
+56.90	966.08	966.08	965.89	965.82	965.82	965.63
+75	966.55	966.49	966.30	966.22	966.16	965.97
595+00	967.21	967.06	966.87	966.78	966.63	966.44
+10.60	967.50	967.31	967.12	967.02	966.85	966.64
+25	967.89	967.67	967.46	967.35	967.14	966.92
(P.C.)+46.25	968.46	968.21	967.96	967.84	967.59	967.34
+50	968.56	968.31	968.05	967.93	967.67	967.42
+75	969.26	968.96	968.66	968.52	968.22	967.92
+81.90	969.44	969.13	968.82	968.68	968.37	968.06
596+00	969.89	969.58	969.27	969.11	968.80	968.49
+25	970.52	970.21	969.90	970.32	970.01	969.70
+50	971.15	970.84	970.53	970.34	970.03	969.72
+75	971.80	971.49	971.18	970.95	970.64	970.33
597+00	972.45	972.14	971.83	971.59	971.28	970.97
+25	973.12	972.81	972.50	972.24	971.93	971.62
+50	973.79	973.48	973.17	972.90	972.59	972.28
+75	974.49	974.18	973.87	973.55	973.24	972.93
598+00	975.18	974.87	974.56	974.23	973.92	973.61
+25	975.90	975.59	975.28	974.92	974.61	974.30
+50	976.61	976.30	975.99	975.61	975.30	974.99
+75	977.34	977.03	976.72	976.30	975.99	975.68
599+00	978.06	977.75	977.44	977.00	976.69	976.38
+25	978.79	978.48	978.17	977.70	977.39	977.08
+50	979.51	979.20	978.89	978.40	978.09	977.78
+75	980.24	979.93	979.62	979.09	978.38	978.47
600+00	980.96	980.65	980.34	979.79	979.48	979.17
+25	981.69	981.38	981.07	980.49	980.18	979.87
+50	982.41	982.10	981.79	981.10	980.79	980.48
+75	983.14	982.83	982.52	981.88	981.57	981.26
601+00	983.86	983.55	983.24	982.58	982.27	981.96
+25	984.59	984.28	983.97	983.28	982.97	982.66
+50	985.31	985.00	984.69	983.98	983.67	983.36
+75	986.04	985.73	985.42	984.67	984.36	984.05
602+00	986.76	986.45	986.14	985.37	985.02	984.75
+25	987.49	987.18	986.87	986.07	985.76	985.45
+50	988.21	987.90	987.59	986.77	986.46	986.15
+75	988.94	988.63	988.32	987.46	987.15	986.84
603+00	989.66	989.35	989.04	988.16	987.85	987.54
+25	990.39	990.08	989.77	988.86	988.55	988.24
+50	991.11	990.80	990.49	989.56	989.25	988.94
+75	991.84	991.53	991.22	990.25	989.94	989.63
604+00	992.56	992.25	991.94	990.95	990.64	990.33
+25	993.29	992.98	992.67	991.65	991.34	991.03
+50	994.01	993.70	993.39	992.35	994.04	991.73
+75	994.74	994.43	994.12	993.04	992.73	992.42
605+00	995.46	995.15	994.84	993.74	993.43	993.12
+25	996.19	995.88	995.57	994.44	994.13	993.82
+50	996.91	996.60	996.29	995.14	994.83	994.52
+75	997.64	997.33	997.02	995.83	995.52	995.21
606+00	998.36	998.05	997.74	996.53	996.22	995.91
+25	999.09	998.78	998.47	997.23	996.92	996.61
+50	999.81	999.50	999.19	997.93	997.62	997.31
+75	1000.54	1000.23	999.92	998.62	998.31	998.00
607+00	1001.26	1000.95	1000.64	999.32	999.01	998.70
+25	1001.99	1001.68	1001.37	1000.02	999.71	999.40
+50	1002.71	1002.40	1002.09	1000.72	1000.41	1000.10
+75	1003.44	1003.13	1002.82	1001.41	1001.10	1000.79
608+00	1004.16	1003.85	1003.54	1002.11	1001.80	1001.49
+25	1004.89	1004.58	1004.27	1002.81	1002.50	1002.19
+50	1005.61	1005.30	1004.99	1003.51	1003.20	1002.89
+75	1006.34	1006.03	1005.72	1004.20	1003.89	1003.58
609+00	1007.06	1006.75	1006.44	1004.90	1004.69	1004.28
+25	1007.79	1007.48	1007.17	1005.60	1005.29	1004.98
+50	1008.51	1008.20	1007.89	1006.30	1005.99	1005.68
+75	1009.24	1008.93	1008.62	1006.99	1006.68	1006.37
610+00	1009.96	1009.65	1009.34	1007.69	1007.38	1007.07
+25	1010.69	1010.38	1010.07	1008.39	1008.08	1007.77
+50	1011.41	1011.10	1010.79	1009.09	1008.78	1008.47
+75	1012.14	1011.83	1011.52	1009.78	1009.47	1009.16
611+00	1012.86	1012.55	1012.24	1010.48	1010.17	1009.86
+25	1013.59	1013.28	1012.97	1011.18	1010.87	1010.56
+50	1014.31	1014.00	1013.69	1011.88	1011.57	1011.26
+75	1015.04	1014.73	1014.42	1012.57	1012.26	1011.95
612+00	1015.76	1015.45	1015.14	1013.27	1012.96	1012.65
+25	1016.49	1016.18	1015.87	1013.97	1013.66	1013.35
+50	1017.21	1016.90	1016.59	1014.67	1014.36	1014.05
+75	1017.94	1017.63	1017.32	1015.36	1015.05	1014.74
613+00	1018.66	1018.35	1018.04	1016.06	1015.75	1015.44
+25	1019.39	1019.08	1018.77	1016.76	1016.45	1016.14
+50	1020.11	1019.80	1019.49	1017.46	1017.15	1016.84
+75	1020.84	1020.53	1020.22	1018.15	1017.84	1017.55

STATION	LEFT LANE O.E.	LEFT LANE ℄	LEFT LANE PROFILE	RIGHT LANE PROFILE	RIGHT LANE ℄	RIGHT LANE O.E.
614+00	1021.56	1021.25	1020.94	1018.85	1018.54	1018.23
+25	1022.29	1021.98	1021.67	1019.55	1019.24	1018.93
+50	1023.01	1022.70	1022.39	1020.25	1019.94	1019.63
+75	1023.74	1023.43	1023.12	1020.94	1020.63	1020.32
615+00	1024.46	1024.15	1023.84	1021.64	1021.33	1021.02
+25	1025.19	1024.88	1024.57	1022.34	1022.03	1021.72
+50	1025.91	1025.60	1025.29	1023.04	1022.73	1022.42
+75	1026.64	1026.33	1026.02	1023.73	1023.42	1023.11
616+00	1027.36	1027.05	1026.74	1024.43	1024.12	1023.81
+25	1028.09	1027.78	1027.47	1025.13	1024.82	1024.51
+50	1028.81	1028.50	1028.19	1025.85	1025.52	1025.21
+75	1029.54	1029.23	1028.92	1026.52	1026.21	1025.90
617+00 PVI	1030.26	1029.95	1029.64	1027.22	1026.91	1026.60
+25	1030.98	1030.67	1030.36	1027.92	1027.61	1027.30
+50	1031.68	1031.37	1031.06	1028.62	1028.31	1028.00
+75	1032.38	1032.07	1031.76	1029.31	1029.00	1028.69
618+00	1033.06	1032.74	1032.43	1030.01	1029.70	1029.39
+25	1033.73	1033.42	1033.11	1030.71	1030.40	1030.09
+50	1034.37	1034.06	1033.75	1031.41	1031.10	1030.79
+75	1035.02	1034.71	1034.40	1032.09	1031.78	1031.47
619+00	1035.64	1035.33	1035.02	1032.79	1032.48	1032.17
+25	1036.26	1035.95	1035.64	1033.47	1033.16	1032.85
+50	1036.85	1036.54	1036.23	1034.14	1033.83	1033.52
+75	1037.44	1037.13	1036.82	1034.80	1034.49	1034.18
620+00	1038.01	1037.70	1037.39	1035.43	1035.12	1034.81
+25	1038.58	1038.27	1037.96	1036.06	1035.75	1035.34
+50	1039.12	1038.81	1038.50	1036.68	1036.37	1036.06
+75	1039.66	1039.35	1039.04	1037.28	1036.97	1036.66
621+00	1040.17	1039.86	1039.55	1037.87	1037.56	1037.25
+25	1040.68	1040.37	1040.06	1038.45	1038.14	1037.83
+50	1041.17	1040.86	1040.55	1039.01	1038.70	1038.39
+75	1041.66	1041.35	1041.04	1039.57	1039.26	1038.95
622+00	1042.12	1041.81	1041.50	1040.10	1039.79	1039.48
+25	1042.58	1042.27	1041.96	1040.63	1040.32	1040.01
+50	1043.02	1042.71	1042.40	1041.15	1040.84	1040.53
+75	1043.45	1043.14	1042.83	1041.65	1041.34	1041.03
623+00	1043.86	1043.55	1043.24	1042.13	1041.82	1041.51
+25	1044.27	1043.96	1043.65	1042.61	1042.30	1041.99
+50	1044.65	1044.34	1044.03	1043.07	1042.76	1042.45
+75	1045.03	1044.72	1044.41	1043.53	1043.22	1042.91
624+00	1045.39	1045.08	1044.77	1043.96	1043.65	1043.34
+25	1045.74	1045.43	1045.12	1044.39	1044.08	1043.77
+50	1046.08	1045.77	1045.46	1044.80	1044.49	1044.18
+75	1046.40	1046.09	1045.78	1045.20	1044.89	1044.58
625+00	1046.71	1046.40	1046.09	1045.58	1045.27	1044.96
+25	1047.01	1046.70	1046.39	1045.96	1045.65	1045.34
+50	1047.29	1046.98	1046.67	1046.32	1046.01	1045.70
+75	1047.56	1047.25	1046.94	1046.68	1046.37	1046.06
626+00	1047.81	1047.50	1047.19	1047.01	1046.70	1046.39
+25	1048.16	1047.85	1047.54	1047.33	1047.02	1046.71
+50	1048.29	1047.98	1047.67	1047.65	1047.34	1047.03
+75	1048.53	1048.22	1047.91	1047.95	1047.64	1047.33
627+00	1048.66	1048.35	1048.04	1048.23	1047.92	1047.61
+25	1048.92	1048.61	1048.30	1048.50	1048.19	1047.88
+50	1049.08	1048.77	1048.46	1048.66	1048.35	1048.04
+75	1049.24	1048.93	1048.62	1049.01	1048.70	1048.39
628+00	1049.39	1049.08	1048.77	1049.24	1048.93	1048.62
+25	1049.53	1049.22	1048.91	1049.47	1049.16	1048.85
+50	1049.66	1049.35	1049.04	1049.68	1049.37	1049.06
+75	1049.77	1049.46	1049.15	1049.88	1049.57	1049.26
629+00	1049.87	1049.56	1049.25	1050.06	1049.75	1049.44
+25	1049.95	1049.64	1049.33	1050.23	1049.92	1049.61
+42.44	1050.01	1049.70	1049.39	1050.33	1050.02	1049.71
+50	1050.01	1049.71	1049.41	1050.39	1050.09	1049.79
+75	1049.97	1049.72	1049.46	1050.53	1050.27	1050.02
(PT)+78.09	1049.97	1049.72	1049.47	1050.54	1050.29	1050.04
630+00	1049.94	1049.73	1049.52	1050.66	1050.45	1050.24
+13.74	1049.92	1049.73	1049.54	1050.72	1050.53	1050.34
+25	1049.89	1049.74	1049.58	1050.78	1050.63	1050.44
+50	1049.82	1049.76	1049.57	1050.89	1050.83	1050.64
+67.44	1049.77	1049.77	1049.58	1050.94	1050.94	1050.75
+75	1049.75	1049.77	1049.58	1050.98	1051.00	1050.81
631+00	1049.68	1049.76	1049.57	1051.07	1051.15	1050.96
+25	1049.59	1049.74	1049.55	1051.29	1051.10	
+42.44	1049.53	1049.72	1049.53	1051.16	1051.35	1051.16

SUPERELEVATION
DIAGRAMS & TABLES

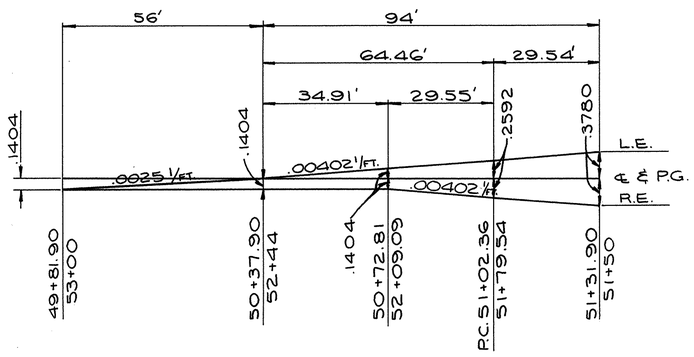
SUPERELEVATION DIAGRAMS & TABLES

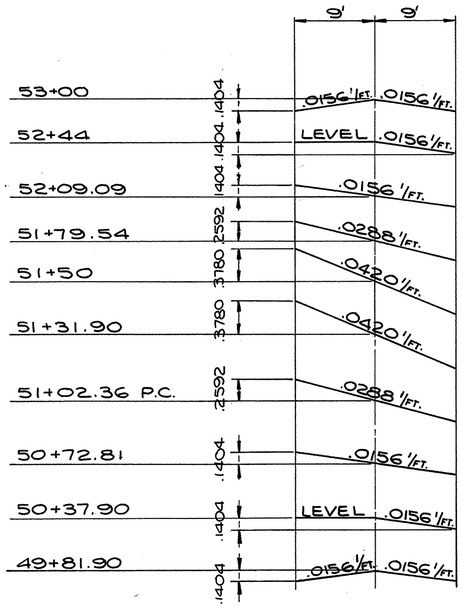
CURVE AT P.I. 52 +66.04 (TURNER RD.)
D_c - 4° RT.

FED. RD.	STATE	PROJECT	
2	OHIO		

MAHONING COUNTY
MAH.-18-9.89

23
254





STATION	LEFT EDGE	℄ & PROFILE	RIGHT EDGE
49+81.90	932.49	932.63	932.49
50+00	932.48	932.57	932.43
+25	932.47	932.50	932.36
+37.90	932.46	932.46	932.32
+50	932.47	932.42	932.28
+72.81	932.49	932.35	932.21
+75	932.49	932.34	932.19
51+00	932.52	932.27	932.02
+02.36	932.52	932.26	932.00
+25	932.55	932.20	931.85
+31.90	932.55	932.17	931.79
+50	932.50	932.12	931.74
+75	932.32	932.04	931.76
+79.54	932.29	932.03	931.77
52+00	932.15	931.97	931.79
+09.09	932.08	931.94	931.80
+25.	931.97	931.89	931.75
+44	931.84	931.84	931.70
+50	931.81	931.82	931.68
+75	931.66	931.74	931.60
53+00	931.53	931.67	931.53

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

24/294

MICROFILMED BR 7-85

MAHONING COUNTY
MAH-18-9.89

CURVE DATA
P.I. STA. 513 + 25.78
Δ = 17°08' 31"
D_c = 1°28' 00"
R = 3,906.53'
T = 588.78'
L_c = 1,168.77'
E = 44.12'

TACK IN TREE
I. PIN
I-80
I. PINS
3300'
75.00'
75.00'
75.00'
50°

END PROJECT
MAH. 18-7.01
STA. 520+80.75
I-IG-80-5(3)228

BEGIN PROJECT
MAH. 80-3.37
STA. 520+80.75
I-IG-80-5(4)229
SLM-5.89

BEGIN SHEET STA. 515+00
END SHEET STA. 525+00
FUTURE FIRE TRAIL
LA RW
P.T. STA. 519+05.77
P.T. STA. 519+05.77
AERIAL LINE
RW
520 N 65° 57' 59" E
E-1
E-2
E-3
BEGIN WORK STA. 520+00
P.O.T. 521+19.91
PINE TREES
MEANDER RESERVOIR
SPILLWAY ELEV. 906.33

EROSION CONTROL					
CODE	LOCATION FROM	LOCATION TO	SIDE &	I-10 DUMPED ROCK FILL TYPE A CU.YDS.	I-10 DUMPED ROCK PROT. CU.YDS.
* E-1	520+50	521+13	LT.	116	16
E-2	521+10	UNDER BR.	LT. & RT.	181	
* E-3	520+50	521+13	RT.	77	52
SHEET TOTAL				374	68

PROPOSED STRUCTURE Nº MAH. 18-1013

TYPE: CONTINUOUS STEEL GIRDERS WITH HINGES AND REINFORCED CONCRETE DECK
SUBST: REINFORCED CONCRETE PIER. CAP ON 18"ϕ CAST-IN-PLACE CONCRETE PILES.
SPANS: 96'-0".15 SPANS @ 120'-0"-96'-0" = 2472'-0"
SKEW: 0°-00'-00"
ROADWAY: 30'-0" F/F OF 2'-0" SAFETY CURBS
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: I-10 DUMPED ROCK

PORTIONS OR ALL OF THE WORK BACK OF STA. 520+80.75 MAY BE NON-PERFORMED AT THE DIRECTION OF THE ENGINEER, PROVIDED WORK HAS PROGRESSED TO A STAGE SUCH AS TO MAKE THIS WORK UNNECESSARY.

TYPICAL SECTION OF THE ADJOINING PROJECT WILL BE SIMILAR TO THE PROPOSED TYPICAL SECTION FOR THE MAIN PAVEMENT ON THIS PROJECT.

* DUMPED ROCK SLOPE PROTECTION ON NEW SLOPES. FOR DETAILS SEE CROSS SECTIONS.

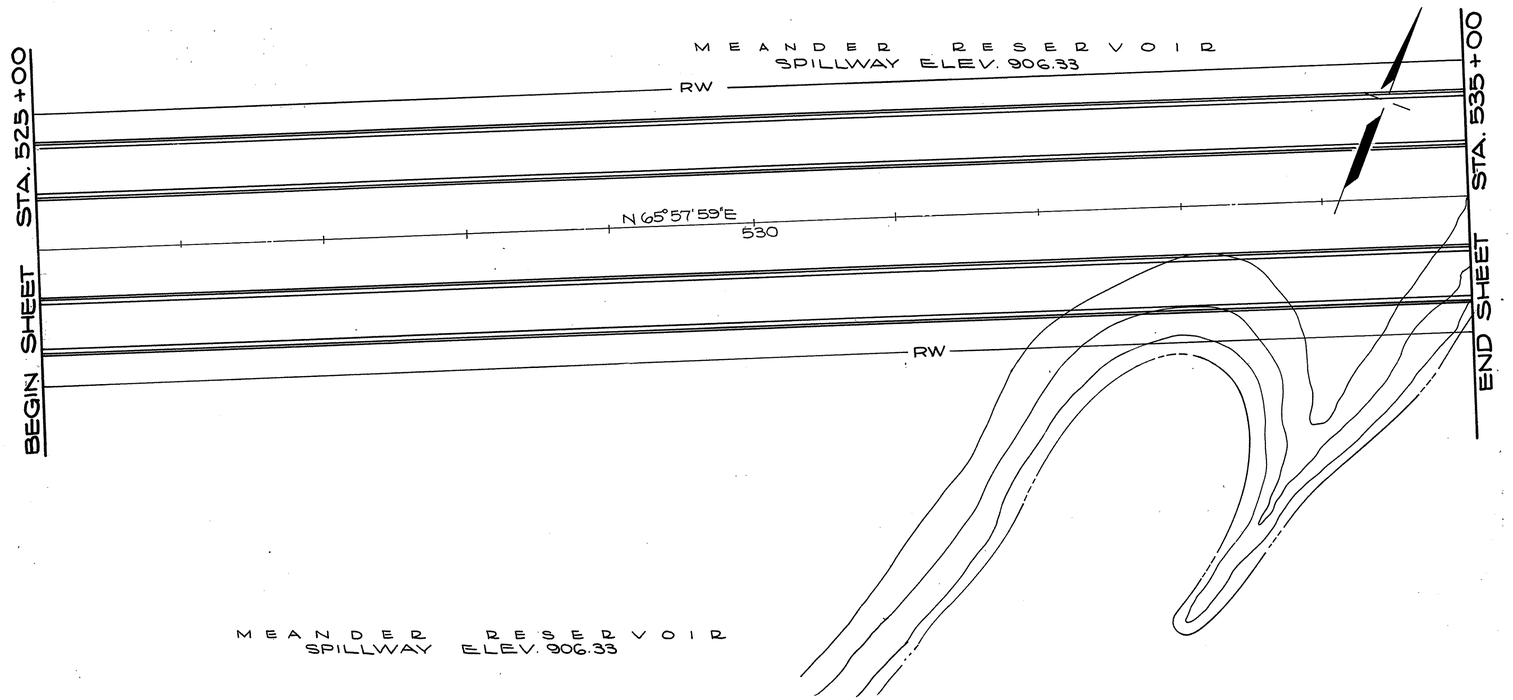
600' V.C.
B.M. 10 - R.R. SPIKE IN 12" PINE 250' RT. STA. 521+50
ELEV. 909.101
P.V.I. STA. 515+50
ELEV. 919.14
P.V.T.
919.14
919.14
1.59%
0.00%
4:1
ELEV. 911.26 UNDER BR.
BRIDGE LIMITS 2476.50'
ELEV. 913.00 MEDIAN DUMPED ROCK 30" THK SLOPE PROTECTION
SPILLWAY ELEV. 906.33
920
910
900
890
880
922.1
(+80) 918.9
918.6
919.1
(+50) 917.4
920.0
(+00) 920.4
(+57) 917.8
919.6
(+74) 909.6
910.5
909.2
(+25) 908.4
(+27) 906.2
(+55) 902.2
(+69) 898.2
(+85) 892.2
888.2
883.8
883.6
880.4
515+00
516
517
518
519
520+00
521
522
523
524
525+00

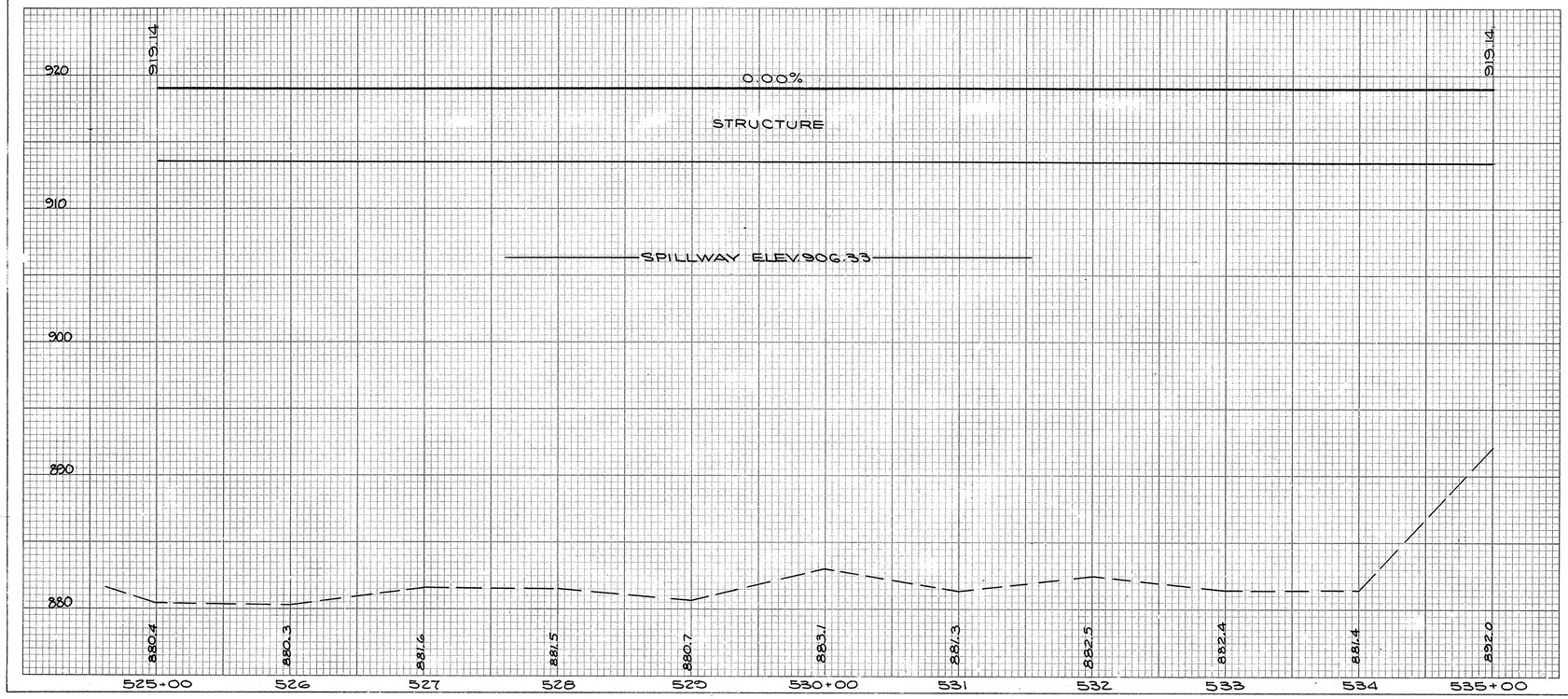
STA. 515+00 TO STA. 525+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

25/294

MAHONING COUNTY
MAH-18-9.89





PROPOSED STRUCTURE Nº MAH. 18-1013

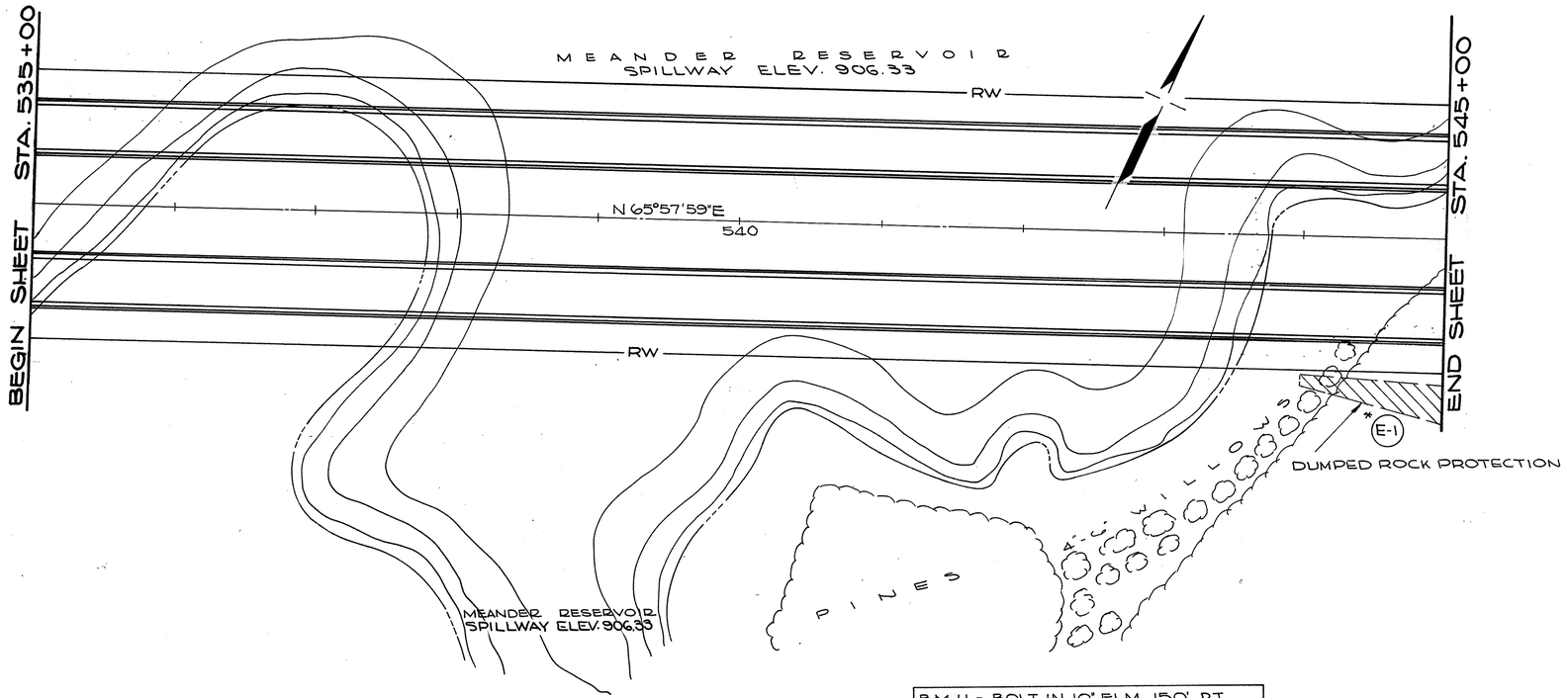
TYPE: CONTINUOUS STEEL GIRDERS WITH HINGES AND REINFORCED CONCRETE DECK
SUBSTR.: REINFORCED CONC. PIER CAP ON 18" ϕ CAST-IN-PLACE CONCRETE PILES.
SPANS: 36'-0", 19 SPANS @ 120'-0" - 36'-0" = 2472'-0"
SKEW: 0°-00'-00"
ROADWAY: 30'-0" F/F OF 2'-0" SAFETY CURBS
LOAD FREQUENCY: CF-2,000 ADEQUATE FOR AASHO. ALTERNATE LOADING.
WEARING SURFACE: 1" MONOLITHIC
APPROACH SLABS: 25' LONG (AS-1-54)
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
SLOPE PROTECTION: I-10 DUMPED ROCK

STA. 525+00 TO STA. 535+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

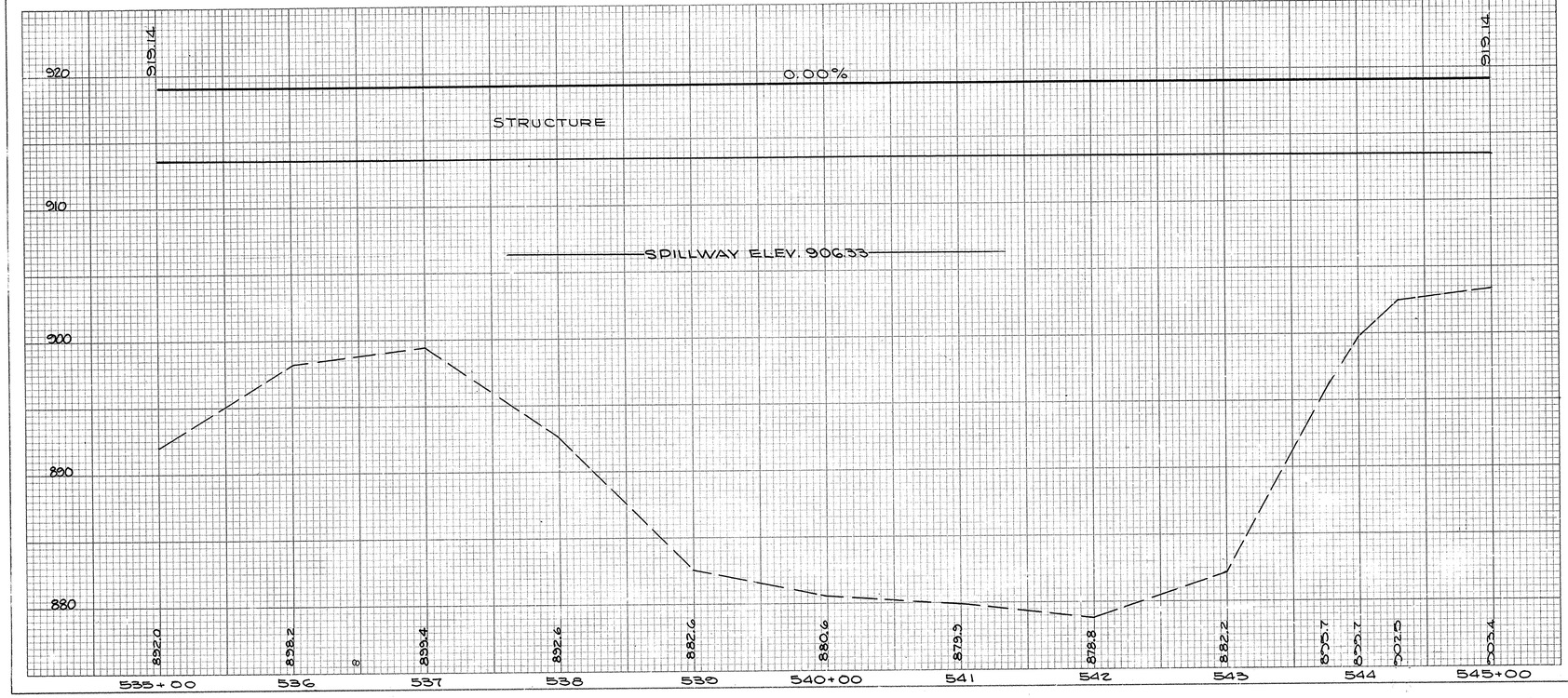
26/294

MAHONING COUNTY
MAH-18-9.89



EROSION CONTROL				
CODE	LOCATION FROM	LOCATION TO	SIDE &	I-10 DUMPED ROCK CHANNEL PROT. CU.YDS.
* E-1	544+00	555+00	RT.	56
SHEET TOTAL				56

B.M.11 - BOLT IN 10" ELM 150' RT.
STA. 543+50
ELEV. 906.200



PROPOSED STRUCTURE Nº MAH. 18-1013

TYPE: CONTINUOUS STEEL GIRDERS WITH HINGES AND REINFORCED CONCRETE DECK
SUBSTR: REINFORCED CONC. PIER CAP ON 18" ϕ CAST-IN-PLACE CONCRETE PILES.
SPANS: 3'-0" @ 3 SPANS @ 120'-0" = 96'-0" = 2472'-0"
SKEW: 0°-00'-00"
ROADWAY: 30'-0" F/F OF 2'-0" SAFETY CURBS
LOAD FREQUENCY: CF-2,000 ADEQUATE FOR AASHO ALTERNATE LOADING.
WEARING SURFACE: 1" MONOLITHIC
APPROACH SLABS: 25' LONG (AS-1-54)
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
SLOPE PROTECTION: I-10 DUMPED ROCK

* DUMPED ROCK PROTECTION ON NEW SLOPES. FOR DETAILS SEE CROSS SECTIONS.

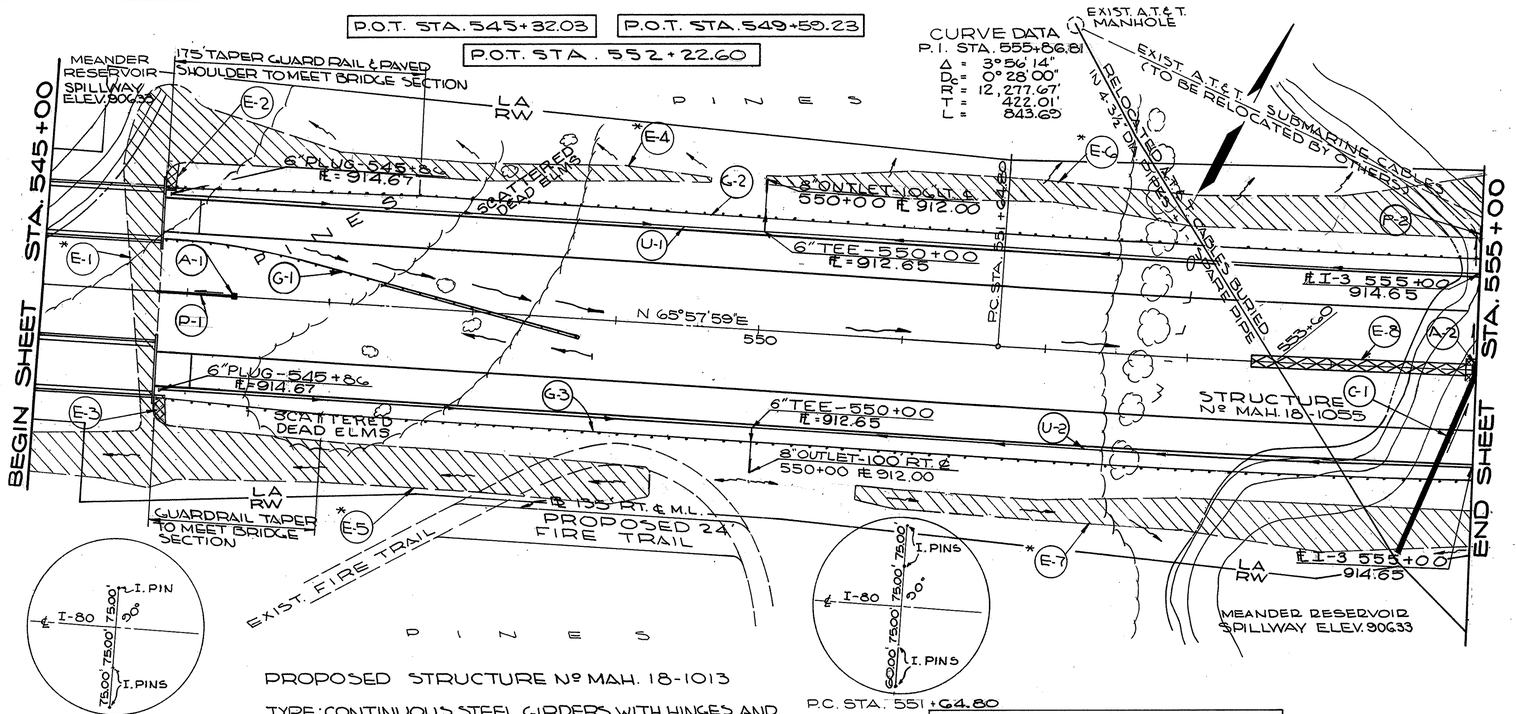
STA. 535+00 TO STA. 545+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

27
254

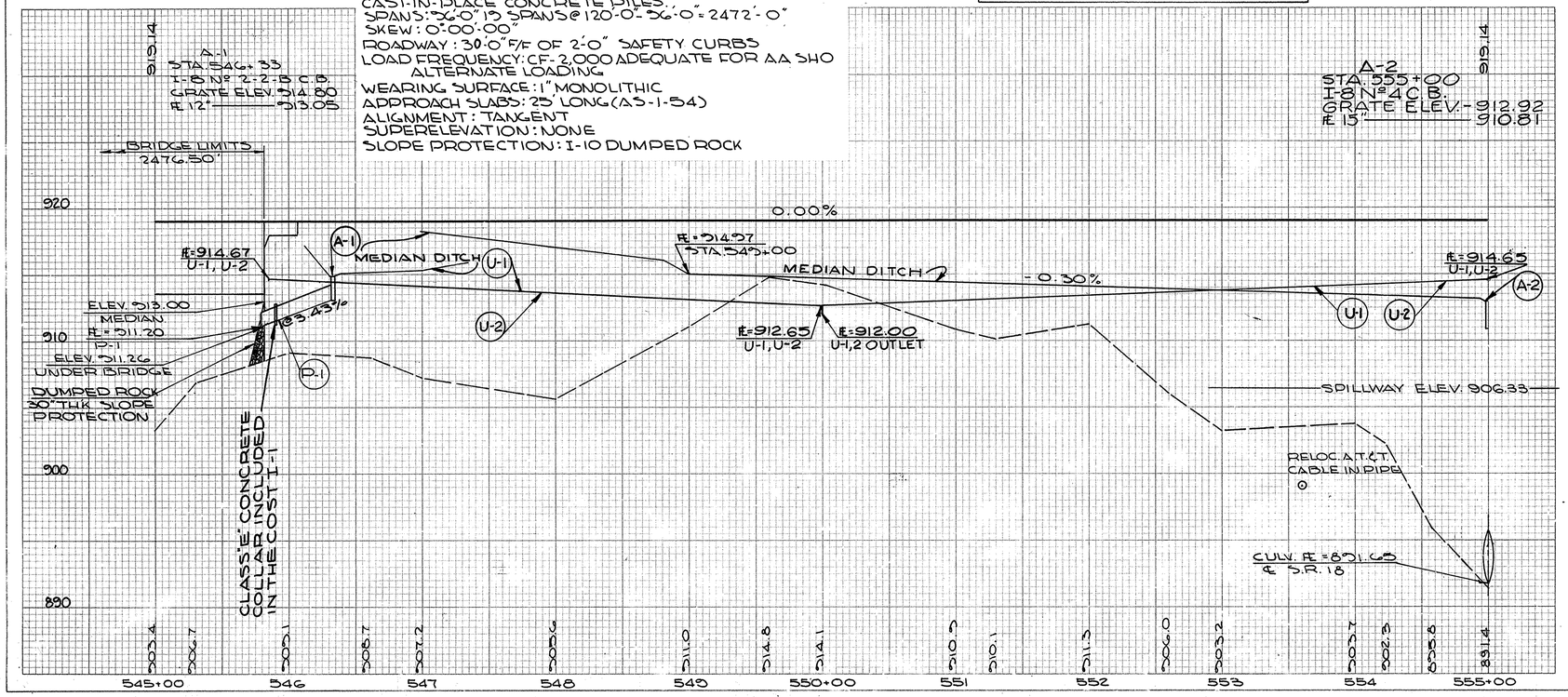
MICROFILMED
APR 7 1980

MAHONING COUNTY
MAH-18-9.89



PROPOSED STRUCTURE Nº MAH. 18-1013

TYPE: CONTINUOUS STEEL GIRDERS WITH HINGES AND REINFORCED CONCRETE DECK
SUBSTR: REINFORCED CONC. PIER CAP ON 18"ϕ CAST-IN-PLACE CONCRETE PILES
SPANS: 36'-0" 13 SPANS @ 120'-0" = 36'-0" = 2472'-0"
SKEW: 0°00'00"
ROADWAY: 30'-0" F/F OF 2'-0" SAFETY CURBS
LOAD FREQUENCY: CF-2,000 ADEQUATE FOR AA SHO ALTERNATE LOADING
WEARING SURFACE: 1" MONOLITHIC
APPROACH SLABS: 25' LONG (AS-1-54)
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
SLOPE PROTECTION: I-10 DUMPED ROCK



I-1 PIPE (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS I-3 'C' SHALLOW	CLASS F-4 OUTLET PIPE 8"	I-5 PIPE SPECIALS (EA) CL. I-3 6" TEE	
U-1	545+86	555+00	LT.	942	10	1	
U-2	545+86	555+00	RT.	936	10	1	
SHEET TOTAL				1878	20	2	

EROSION CONTROL

	CODE	LOCATION FROM	LOCATION TO	SIDE ℄	L-120 JUTE MATTING SQ.YDS.	L-10 SOD SPLBERM PROT. SQ.YDS.	I-10 DUMPED ROCK PROT. CU.YDS.	I-10 DUMPED ROCK FILL TYPE "A" CU.YDS.
*	E-1	545+70	UNDER BR.	RT & LT.				270
	E-2	545+85	——	LT.		12		
	E-3	545+85	——	RT.		12		
*	E-4	545+50	545+60	LT.				519
*	E-5	545+00	549+30	RT.			522	269
*	E-6	550+00	555+00	LT.				877
*	E-7	550+75	555+00	RT.			110	708
	E-8	553+43	554+53	—	140			
	SHEET TOTAL				140	24	632	2643

I-8 CATCH BASINS (EACH)

CODE	LOCATION	Nº 4 CATCH BASIN EACH	Nº 2-2-B CATCH BASIN EACH
A-1	546+33		1
A-2	555+00	1	
SHEET TOTAL		1	1

I-1 PIPE SEWER LIN. FT.

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS J-1 15"	CLASS F-4 15"	CLASS E-1 12"	CLASS F-4 12"
D-1	545+79	546+33	℄			44	10
D-2	555+00		LT.	90	10		
SHEET TOTAL				90	10	44	10

I-15 GUARDRAIL (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYPE DEEP	STD. TYPE BARRIER
G-1	545+82.3	548+77.4		150	150
G-2	545+82.3	555+00.0	LT.	917.7	
G-3	545+82.3	555+00.0	RT.	917.7	
SHEET TOTAL				1585.4	150

STRUCTURES 20' SPAN & UNDER

CODE	LOCATION	TYPE	SIZE	DETAIL SHEET Nº
C-1	555+00	28'-CL.A-1, SEC. M-6.4(d)	48"	168

FOR PIPE PROFILES SEE SHEET Nº 96.

* DUMPED ROCK PROTECTION ON NEW SLOPES. FOR DETAILS SEE CROSS SECTIONS.

STA. 545+00 TO STA. 555+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

28/294

MAHONING COUNTY
MAH-18-9.89

CURVE DATA
P.I. STA. 555 + 86.81
Δ = 3°56'14"
D = 0°28'00"
R = 12,277.67'
T = 422.01'
L = 843.69'

MEANDER RESERVOIR
SPILLWAY ELEV. 906.33

EXIST. A.T.&T. SUBMARINE CABLES (TO BE RELOCATED BY OTHERS)

BEGIN SHEET STA. 555+00

END SHEET STA. 565+00

STRUCTURE Nº MAH-18-1055

P.I. STA. 555+86.81

P.O.T. STA. 562+00
STREAM

P.T. STA. 560+11.69 AHEAD
STA. 560+08.43 BACK

P.T. STA. 560+08.43 BACK
STA. 560+11.69 AHEAD

8" OUTLET 83' LT. ℄
560+00 Ft. 912.54

6" TEE - 560+00
Ft. 912.79

6" PLUG - 564+96
Ft. 914.78

I-3 - 555+00
Ft. 914.65

I-3 - 565+00
914.79

ABANDONED CONC. POWER TOWER FOUND

16' FIRE TRAIL

STRUCTURE Nº MAH-18-1064

N 62° 01' 45" E

6" EXIST. A.T.&T. CABLES

DUMPED ROCK PROTECTION

8" OUTLET 93' RT. ℄
560+00 Ft. 912.48

PROPOSED 24' FIRE TRAIL

8" 12% RT. STA. 561+12
= STA. 0+00 FIRE TRAIL

P.O.T. STA. 561+60.68

P.O.T. STA. 564+92.78

MEET EXIST. FIRE TRAIL

SPLICE PIT

BEGIN FIRE TRAIL CULVERT
8" 12.5% RT. ℄
STA. 561+60.68

RELOCATED A.T.&T. BURIED CABLES (3)

ABAND. CONC. POWER TOWER FOUND

B.M. 13 - BOLT SPIKE N.W. SIDE 12" PINE
200' RT. STA. 564+00
ELEV. - 913.219

MEET EXIST. FIRE TRAIL STA 1+45.50
FILL TO EL. 909.0
SEE NOTE

FILL TO EL. 909.0

A-1
STA. 557+00
I-8 Nº 4 C.B.
GRATE ELEV. - 912.46
Ft 15" ——— 910.35

A-2
STA. 562+00 (110.5' RT ℄)
I-8 Nº 5 C.B.
GRATE ELEV. - 909.00
Ft 12" ——— 907.17

P.V.C. STA. 563+84.88
EL. 919.14
800' V.C.

0.00%

+0.30%

MEDIAN DITCH

FIRE TRAIL DITCH

Ft = 913.57
STA. 556+00

Ft = 915.11
STA. 565+00

Ft = 914.65
U-1, U-2

Ft = 912.79
U-1, U-2

Ft = 912.54
U-1 OUTLET

Ft = 912.48
U-2 OUTLET

560+11.04 AHEAD

Ft = 914.78
U-1

Ft = 914.79
U-2

Ft = 903.48
℄ S.R. 18

CULV. Ft = 899.65
℄ S.R. 18

919.14 919.16 919.18 919.23 919.28

919.14 892.2 895.6 893.3 906.6 905.2 904.5 908.3 911.5 905.4 904.3 903.3 904.4 902.0 895.3 895.73 900.9 906.3 909.2 913.5 912.2 914.8 915.6 912.5 912.1 916.5 915.8 913.3

555+00 556 557 558 559 560+00 561 562 563 564 565+00

I-1 PIPE (LIN. FT.)								I-5 PIPE SPECIALS (EA)
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS I-3 6" SHAL-LOW	CLASS F-4 OUTLET PIPE 8"	6" TEE		CL. I-3
U-1	555+00	564+96	LT.	1011	10	1		
U-2	555+00	565+00	RT.	1021	10	1		
SHEET TOTAL				2032	20	2		

EROSION CONTROL								
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	L-120 JUTE MATTING SQ YDS	I-2 MASONRY HW-E HEADWALL CU. YDS.	I-10 DUMPED ROCK PROT. CU. YDS.	I-10 DUMPED ROCK FILL TYPE "A" CU. YDS.	
E-1	557+07	558+57	-	140				
E-2	562+00	162' RT. ℄	RT.			3		
E-3	560+43	561+93	RT.	125				
E-4	562+07	563+57	RT.	125				
* E-5	555+00	563+00	LT.				1320	
* E-6	555+00	557+50	RT.			107	128	
* E-7	564+00	565+00	LT.			24	62	
H-1	562+00	162' RT. ℄	RT.		0.2			
SHEET TOTAL				390	0.2	134	1510	

I-8 CATCH BASINS (EACH)			
CODE	LOCATION	Nº 4 CATCH BASIN EACH	Nº 5 CATCH BASIN EACH
A-1	557+00		1
A-2	562+00	1	
SHEET TOTAL		1	1

I-15 GUARDRAIL (LIN. FT.)				
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYDE DEEP
G-1	555+00.0	565+00.0	LT.	996.8
G-2	555+00.0	562+98.0	RT	794.8
SHEET TOTAL				1791.6

I-1 PIPE SEWER (LIN. FT.)							
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS J-1 15"	CLASS B-1 12"	CLASS F-4 15"	CLASS C-4 12"
P-1	557+00	——	LT.	52		10	
P-2	562+00	——	RT.		52		
C-3	560+55	561+04	RT.				46
	561+81 RT ℄	162.0 RT ℄					
SHEET TOTAL				52	52	10	46

STRUCTURES 20' SPAN & UNDER				
CODE	LOCATION	TYPE	SIZE	DETAIL SHEET Nº
C-1	555+00	286-CL.A-1, SEC. M-6.4(d)	48"	168
C-2	560+77.2	302-CL.A-1, SEC. M-6.4(d)	30"	169

FOR PIPE PROFILES
SEE SHEET Nº 96.

* DUMPED ROCK PROTECTION ON NEW SLOPES. FOR DETAILS SEE CROSS SECTIONS.

FOR PROFILE FIRE TRAIL & P-3
SEE SHEET Nº 41.

FOR DETAILS FILL AREA & CHANNELS SEE SHEET Nº 169-171.

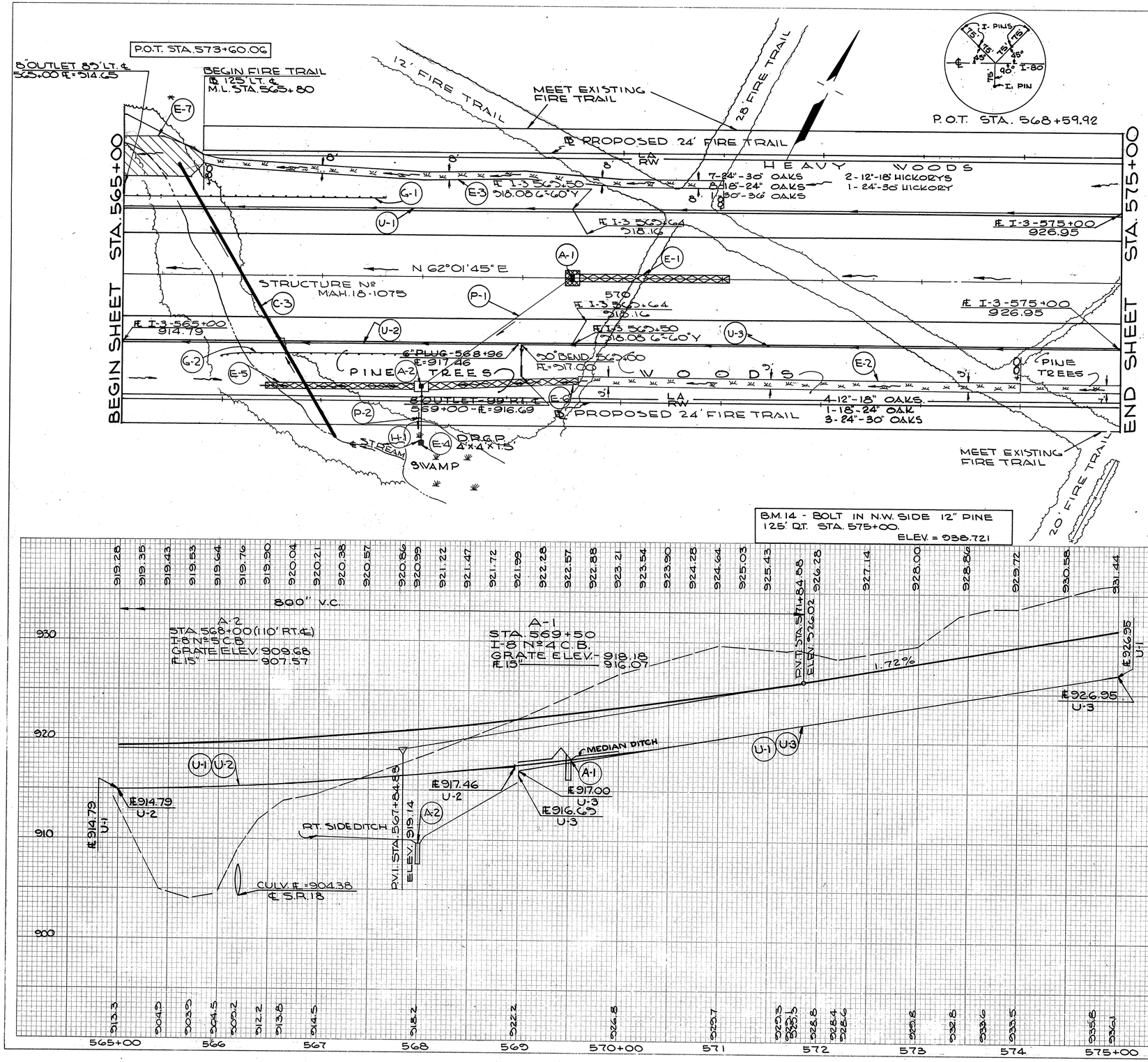
FOR LIMITS OF B-15 ON FIRE TRAILS SEE SHEET Nº 7.

STA. 555+00 TO STA. 565+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

29/234

MAHONING COUNTY
MAH-18-9.89



B.M.14 - BOLT IN N.W. SIDE 12" PINE 125' RT. STA. 575+00. ELEV. = 938.721

I-1 PIPE (LIN.FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS I-3 SHALLOW	CLASS F-4 OUTLET PIPE 6"	CLASS F-4 OUTLET PIPE 8"	I-5 PIPE SPECIALS(EA.) CLASS I-3 90°-60° BEND	I-5 PIPE SPECIALS(EA.) CLASS I-3 WYE
U-1	565+00	575+00	LT.	1039		10	1	1
U-2	565+00	568+96	RT.	396				
U-3	569+00	575+00	RT.	649		10	1	1
SHEET TOTAL				2084		20	2	2

EROSION CONTROL

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	L-120 JUTE MATTING SQ.YDS.	L-10 SOD SQ.YDS.	I-2 MASONRY H.W.-E HEADWALL CU.YDS.	I-10 DUMPED ROCK PROT. CU.YDS.	I-10 DUMPED ROCK FILL TYPE "A" CU.YDS.
E-1	569+57	571+07	-	140				
E-2	569+57	575+00	RT.		528			
E-3	565+80	571+00	LT.		466			
E-4	567+98	568+02	RT.				1	
E-5	566+43	567+93	RT.	125				
E-6	568+07	569+57	RT.	125				
* E-7	565+00	565+80	LT.				84	74
H-1	568+00	——	RT.			0.3		
SHEET TOTAL				390	994	0.3	84	74

I-15 GUARDRAIL (LIN.FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYPE DEEP
G-1	565+00.0	567+60.5	LT.	260.5
G-2	566+00.0	568+25.0	RT.	225.0
SHEET TOTAL				485.5

I-8 CATCH BASINS (EACH)

CODE	LOCATION	Nº 4 CATCH BASIN	Nº 5 CATCH BASIN
A-1	569+50 ℄	1	
A-2	568+00 (110' RT.)		1
SHEET TOTAL		1	1

I-1 PIPE SEWER (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS J-1 15"	CLASS E-1 15"	
P-1	568+00	569+50	RT.	186		
P-2	568+00		RT.		55	
SHEET TOTAL				186	55	

STRUCTURES 20' SPAN & UNDER

CODE	LOCATION	TYPE	SIZE	DETAIL SHEET Nº
C-3	566+20	316'-CL. A-1, SEC. M-6.6(B) M-6.8(B)	36"	172

* DUMPED ROCK PROTECTION ON NEW SLOPES. FOR DETAILS SEE CROSS SECTIONS.

FOR PROFILE FIRE TRAIL SEE SHEET Nº 41 & 42.

FOR PIPE PROFILE OF P-1 & P-2 SEE SHEET Nº 96.

FOR LIMITS OF B-19 ON FIRE TRAIL SEE SHEET Nº 7.

STA. 565+00 TO STA. 575+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

30
294

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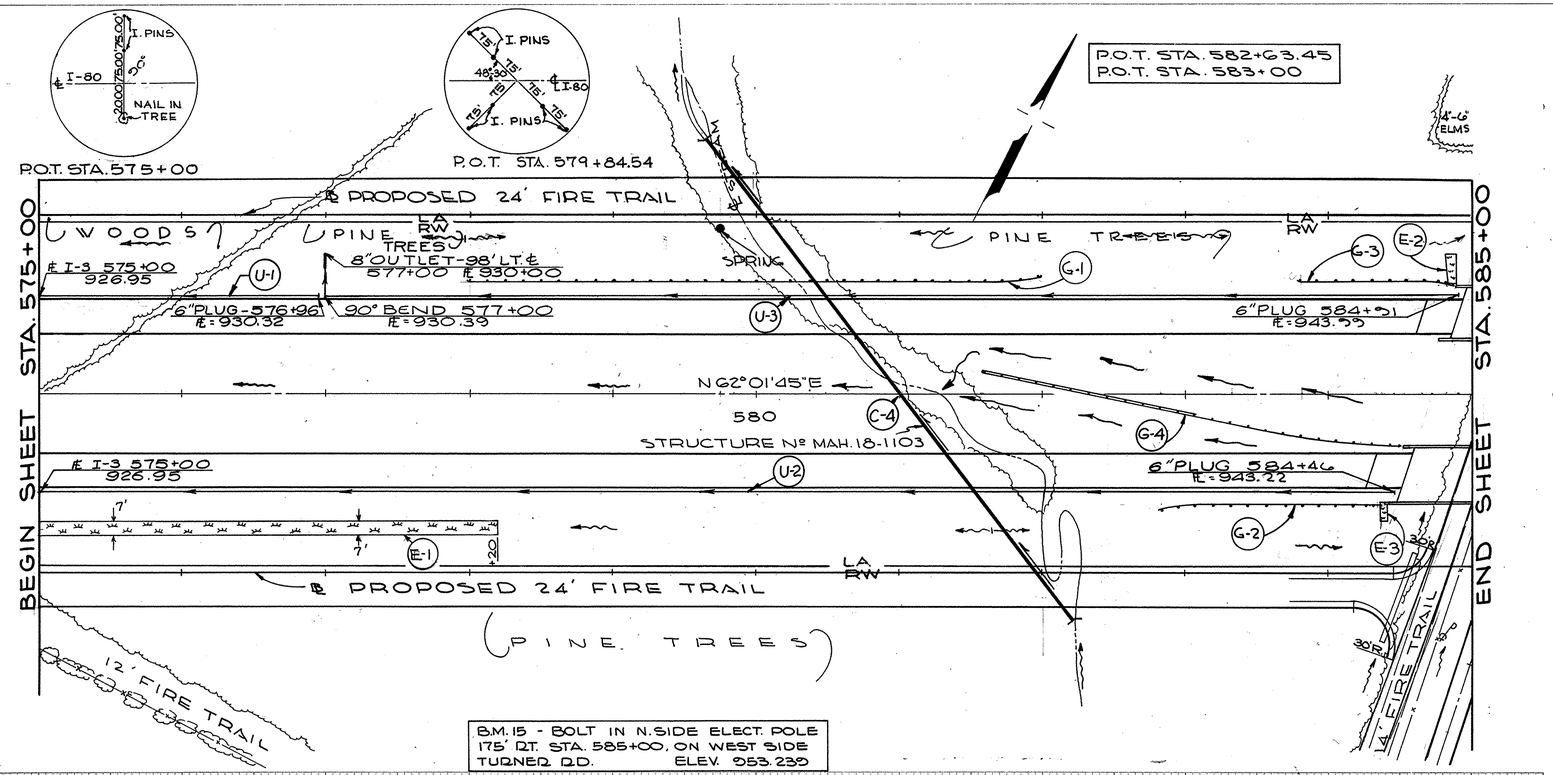
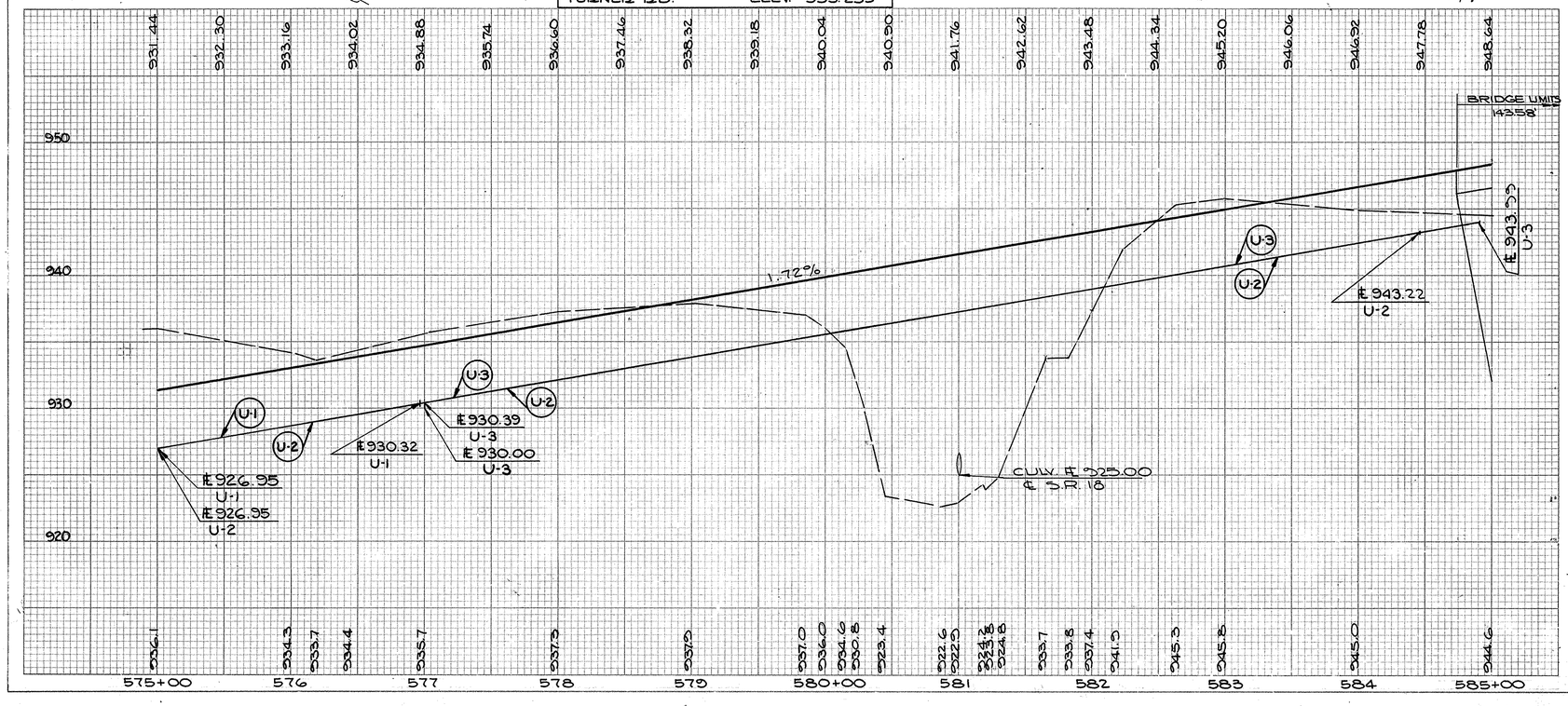
APR 7 1980

MAHONING COUNTY
MAH 18 - 9.89



B.M. 15 - BOLT IN N. SIDE ELECT. POLE
175' RT. STA. 585+00, ON WEST SIDE
TURNER R.D. ELEV. 953.239



I-1 PIPE (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS I-3 C" SHAL-LOW	CLASS I-3 C" DEEP	CLASS I-3 C" M-C4(H)	CLASS F-4 OUTLET PIPE 8"	I-5 PIPE SPECIALS CL. I-3 (EACH) 6"-90° BEND	I-5 PIPE SPECIALS CL. I-3 (EACH)
U-1	575+00	576+96	LT.	196					
U-2	575+00	584+46	RT.	346					
U-3	577+00	584+51	LT.	811			10	1	
SHEET TOTAL				1953			10	1	

EROSION CONTROL

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	I-10 SOD SQ. YDS.	I-10 SOD. SPL. BERM. PROT. SQ. YDS.
E-1	575+00	578+20	RT.	249	
E-2	584+83	———	LT.		18
E-3	584+37	———	RT.		7
SHEET TOTAL				249	25

I-15 GUARDRAIL (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYPE DEEP	STD. TYPE BARRIER
G-1	578+00.0	582+00.0	LT.	400.0	
G-2	582+50.0	584+40.0	RT.	150.0	
G-3	583+89.0	584+89.0	LT.	100.0	
G-4	581+57.0	584+52.0	—	150.0	150.0
SHEET TOTAL				800.0	150.0

STRUCTURES 20' SPAN & UNDER

CODE	LOCATION	TYPE	SIZE	DETAIL SHEET Nº
C-4	581+00.50	42'2" CL. A-1, SEC. M-6.6(b) M-6.8(b)	21"	173

FOR PROFILE FIRE TRAIL SEE SHEET Nº. 41 & 42

FOR LIMITS OF B-19 ON FIRE TRAILS SEE SHEET Nº. 7

FOR DETAILS TURNER RD. SEE SHEET Nº. 101 & 102

STA. 575+00 TO STA. 585+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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MICROFILMED APR 7 1980

MAHONING COUNTY
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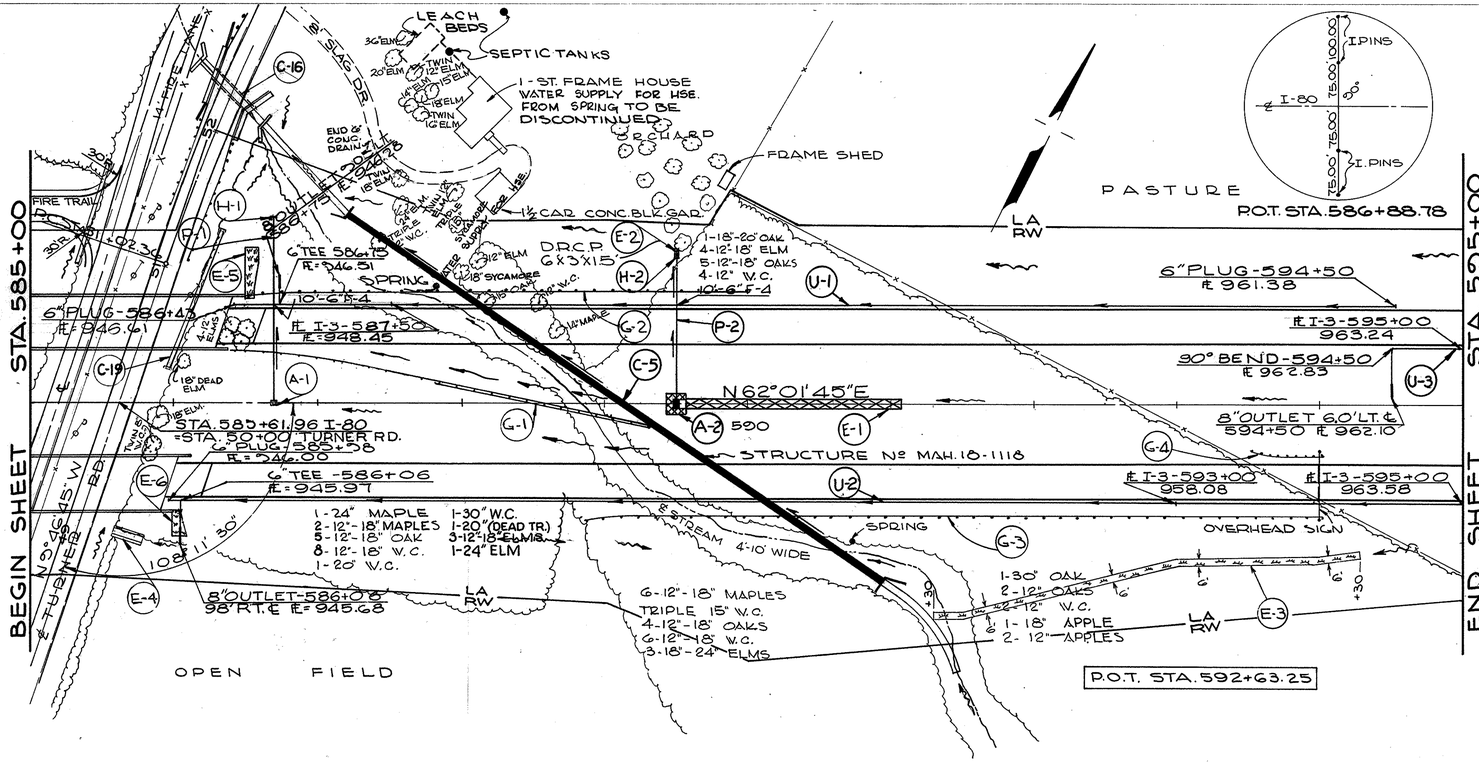

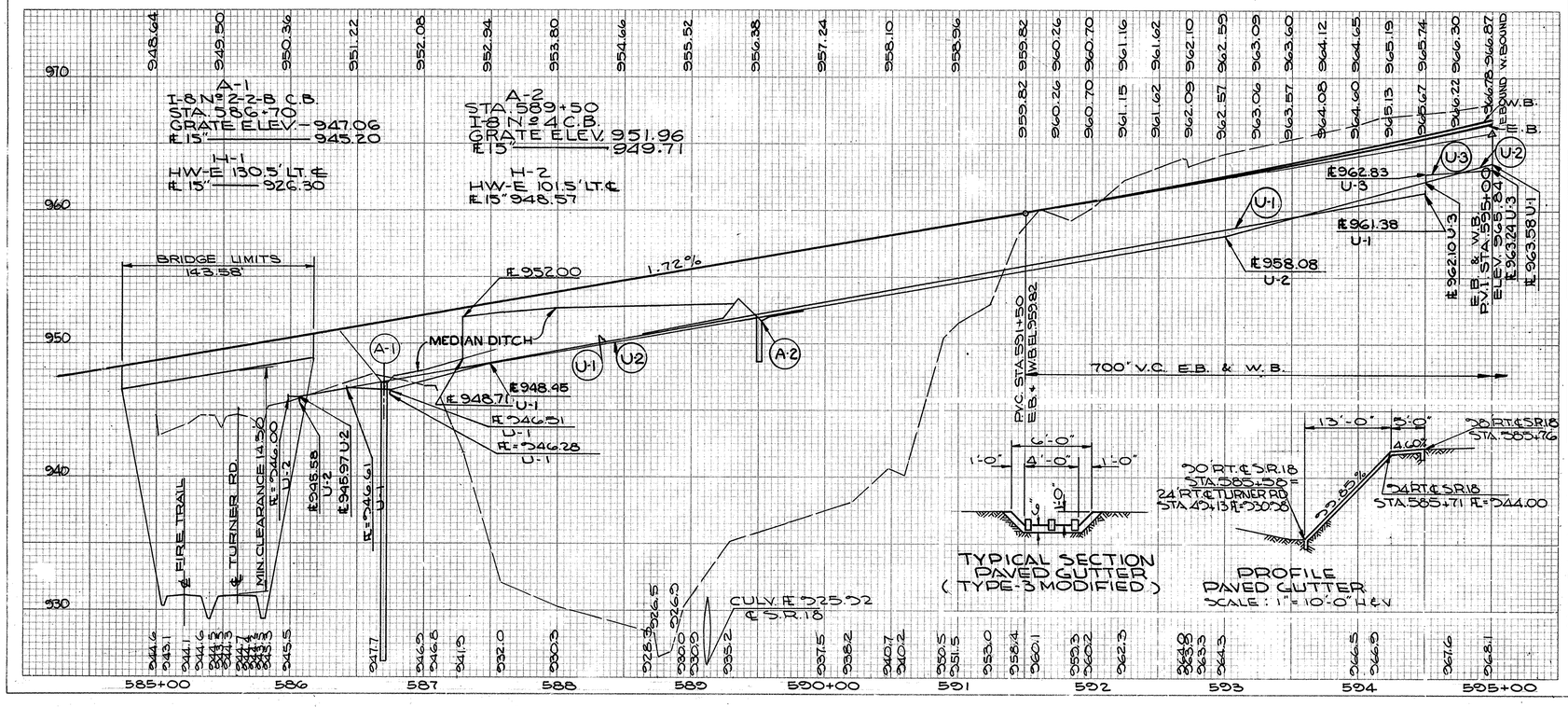

I-1 PIPE (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS I-3 6" SHALLOW			CLASS F-4 OUTLET PIPE 6"	CLASS F-4 OUTLET PIPE 8"		I-5 PIPE SPECIALS (EACH) CLASS I-3 6" TEE	6"-90° BEND		
U-1	586+51	594+50	LT.	799			20	10		1			
U-2	586+06	595+00	RT.	921				10		1			
U-3	594+50	595+00	LT.	74				10			1		
SHEET TOTAL				1794			20	30		2	1		

I-8 CATCH BASIN

CODE	LOCATION	Nº. 4 CATCH BASIN EACH	Nº 2-2-B CATCH BASIN EACH
A-1	586+70		1
A-2	589+50	1	
SHEET TOTAL		1	1

I-15 GUARDRAIL (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYPE DEEP	STD. TYPE BARRIER
G-1	586+38.0	589+33.0	—	150.0	150.0
G-2	586+50.0	590+00.0	LT.	350.0	
G-3	588+70.5	594+03.0	RT.	512.5	
G-4	593+53.0	594+03.0	SEE SHEET Nº 186		
SHEET TOTAL				1012.5	150.0

EROSION CONTROL

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	L-120 JUTE MATTING SQ. YDS.	L-10 SOD SQ. YDS.	I-2 MASONRY HW-E HEADWALL CU. YDS.	I-10 DUMPED ROCK PROT. CU. YDS.	I-14 PAVED GUTTER TYPE-3 MOD. L.F.	L-10 SOD SPLBERM PROT. SQ. YDS.
E-1	589+57	591+07	—	140					
E-2	589+48.5	589+51.5	LT.				1		
E-3	591+30	594+30	RT.		200				
E-4	585+58	585+71	RT.					23	
E-5	586+53	———	LT.						30
E-6	586+03	———	RT.						18
H-1	586+56	———	LT.			0.3			
H-2	589+50	———	LT.			0.3			
SHEET TOTAL				140	200	0.6	1	23	48

I-1 PIPE SEWER (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS J-1 15"	CLASS F-4 15"	I-5 PIPE SPECIALS EACH CLASS F-4 22°-30' BEND 15"
P-1	586+70	———	LT.	85	49	2
P-2	589+50		LT.	102		
SHEET TOTAL				187	49	2

FOR PIPE PROFILE SEE SHEET Nº 96 & 97

FOR DETAILS TURNER RD. SEE SHEET Nº 101 & 102

FOR DETAILS & QUANT. OF SIGN AT STA. 594+00 SEE SHEET Nº 185.

STRUCTURES 20' SPAN & UNDER

CODE	LOCATION	TYPE	SIZE	DETAIL SHEET Nº.
C-5	589+12.5	452'-CL. A-1, SEC. M-6.6 (d)	54"	174
C-19	TURNER RD.	106'-CL. E-1	24"	181
C-16	TURNER RD.	62'-CL. A-1 SEC. M-6.4 (d)	66"	182

PROPOSED STRUCTURE Nº MAH-18-1112 LT. & RT.

TYPE: CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE.
SKEW: 18°-11'-30" L.F.
SPAN: 30'-0", 37'-6", 41'-6", 33'-0" ℄/℄ ASSUMED BEARING
ROADWAY: 40'-0" F/F PARAPETS
WEARING SURFACE: 1" MONOLITHIC
LOAD FREQUENCY: CF 2,000 (57) ADEQUATE FOR AASHO. ALTERNATE LOADING.
APPROACH SLABS: 25' LONG (AS-1-54)
ALIGNMENT: STRAIGHT
SUPERELEVATION: NONE
SLOP PROTECTION: I-10 CRUSHED AGGREGATE.

STA. 585+00 TO STA. 595+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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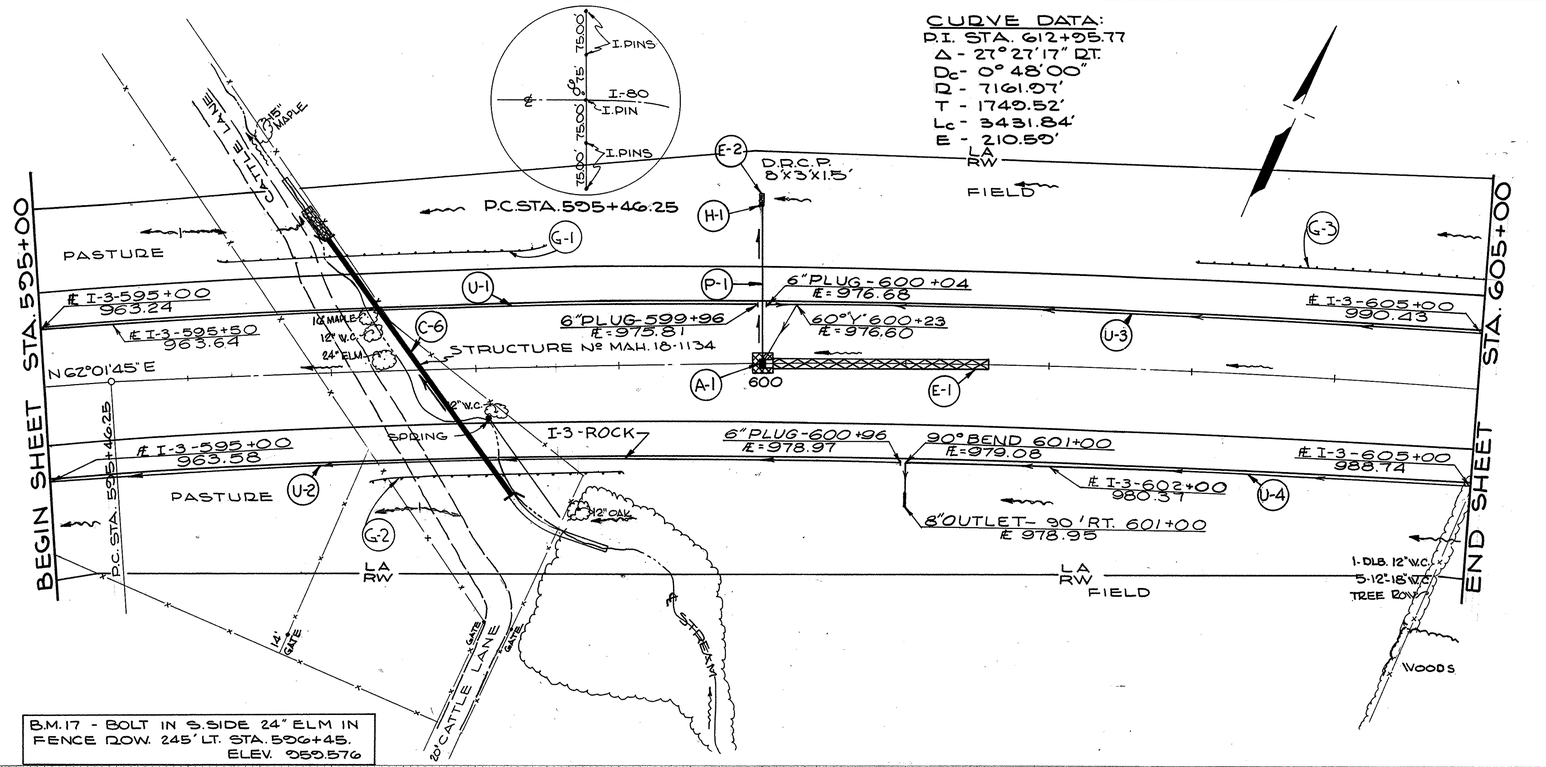
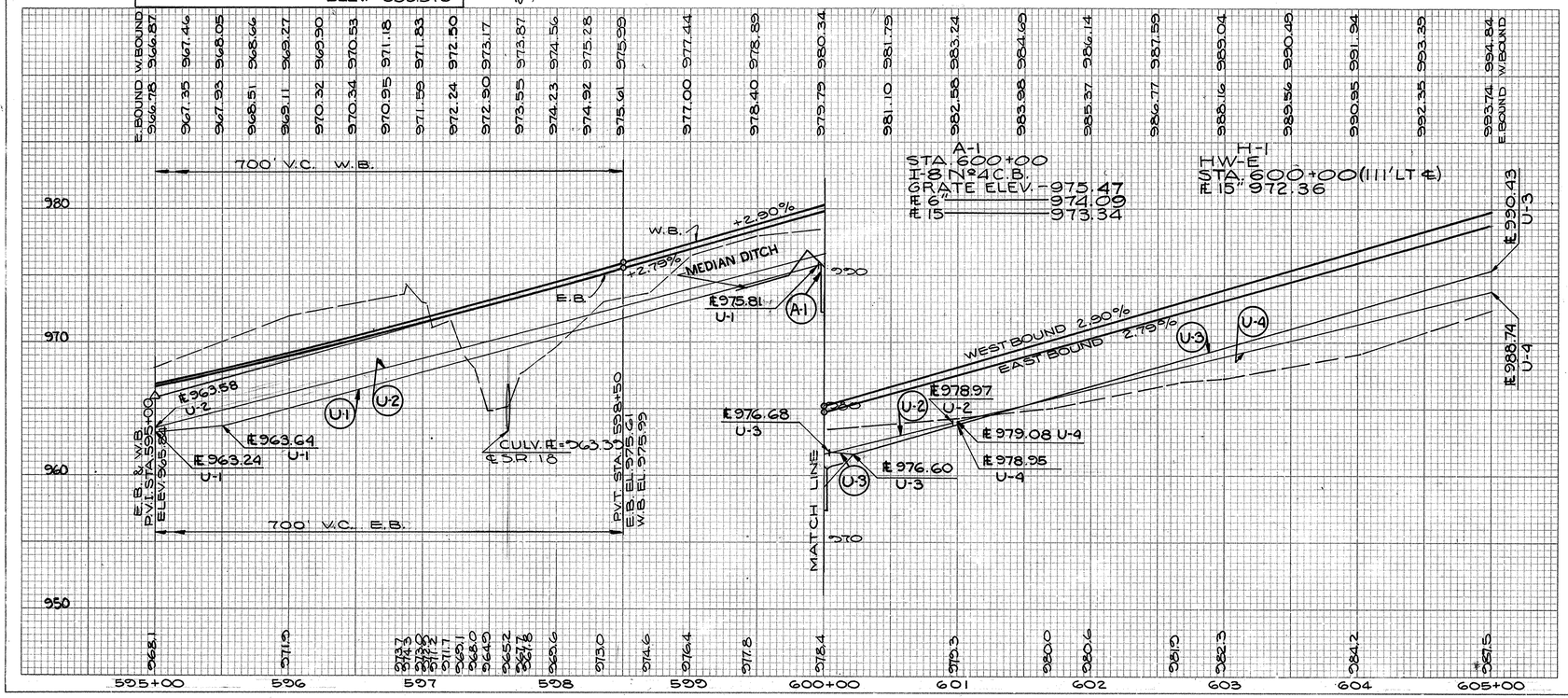
MAHONING COUNTY
MAH-18-9.89



B.M.17 - BOLT IN S. SIDE 24" ELM IN FENCE ROW. 245' LT. STA. 596+45. ELEV. 959.576



I-1 PIPE (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS I-3 6" SHALLOW	CLASS I-3 6" DEEP	CLASS I-3 6" M-64-(h)	CLASS F-4 OUTLET PIPE 6"	CLASS F-4 OUTLET PIPE 8"	CLASS J-1 6"	I-5 PIPE SPECIALS (EACH) CLASS I-3 60°-6" WYE	90°-6" BEND	
U-1	595+00	599+96	LT.	496								
U-2	595+00	600+96	RT.			596						
U-3	600+04	605+00	LT.	531			10			1		
U-4	601+00	605+00	RT.	422				10			1	
SHEET TOTAL				1449		596	10	10		1	1	

I-1 PIPE SEWER (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS J-1 15"		
P-1	600+00	——	LT.	111		
SHEET TOTAL				111		

EROSION CONTROL

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	L-120 JUTE MATTING SQ. YDS.	L-10 SOD SQ. YDS.	I-2 MASONRY NW-E HEADWALL CU. YDS.	I-10 DUMPED ROCK PROT. CU. YDS.
E-1	600+07	601+57	—	140			
E-2	599+98.5	600+01.5	LT.				1
H-1	600+00	——	LT.			0.3	
SHEET TOTAL				140		0.3	1

I-8 CATCH BASIN

CODE	LOCATION	Nº 4 CATCH BASIN EACH	
A-1	600+00	1	
SHEET TOTAL		1	

I-15 GUARDRAIL (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYPE DEEP
G-1	596+25.0	598+50.0	LT.	225.0
G-2	597+25.0	599+00.0	RT.	175.0
G-3	603+00.0	605+00.0	LT.	200.0
SHEET TOTAL				600.0

STRUCTURES 20' SPAN & UNDER

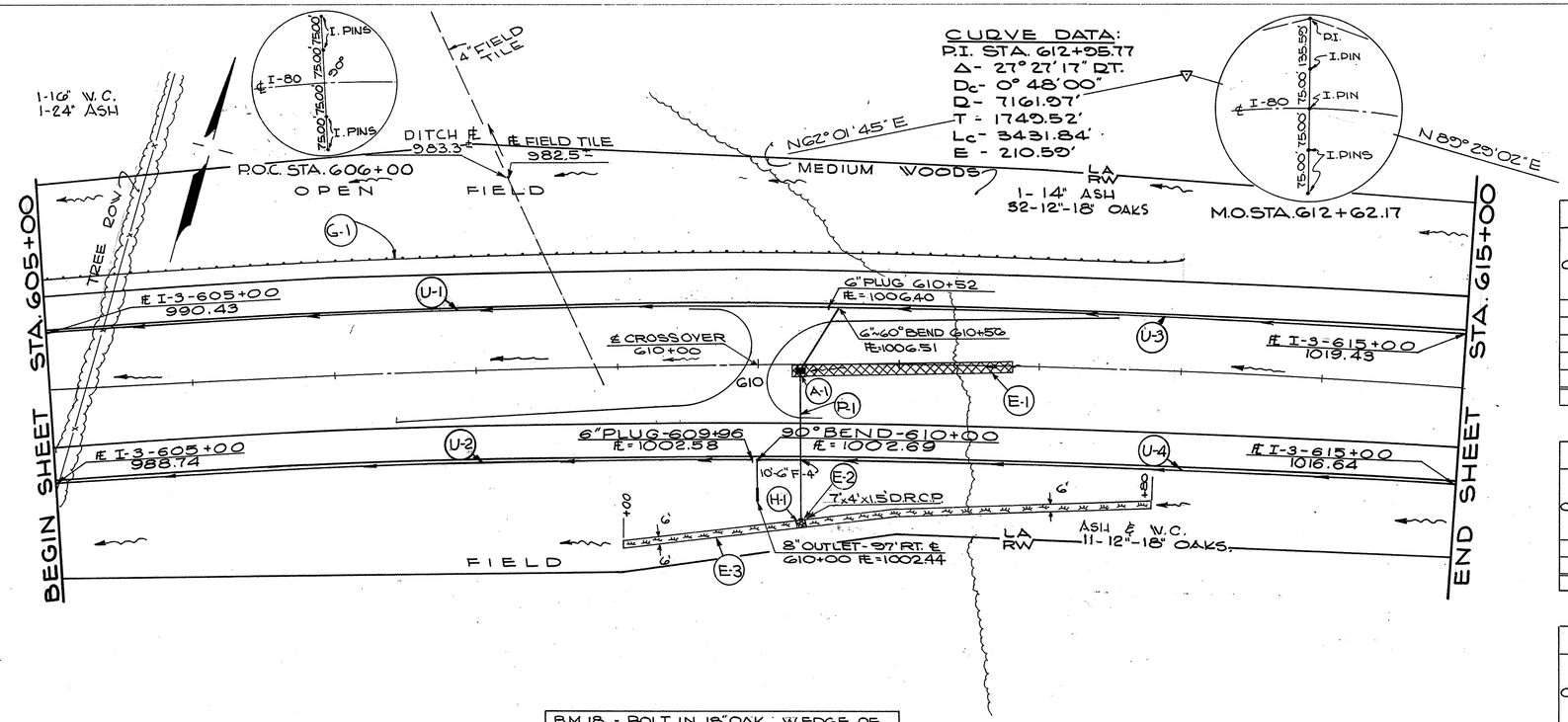
CODE	LOCATION	TYPE	SIZE	DETAIL SHEET Nº.
C-6	597+64	22.2'~CL. A-1 SEC. M-6.6(a)	42"	175

FOR PIPE PROFILE SEE SHEET Nº 97

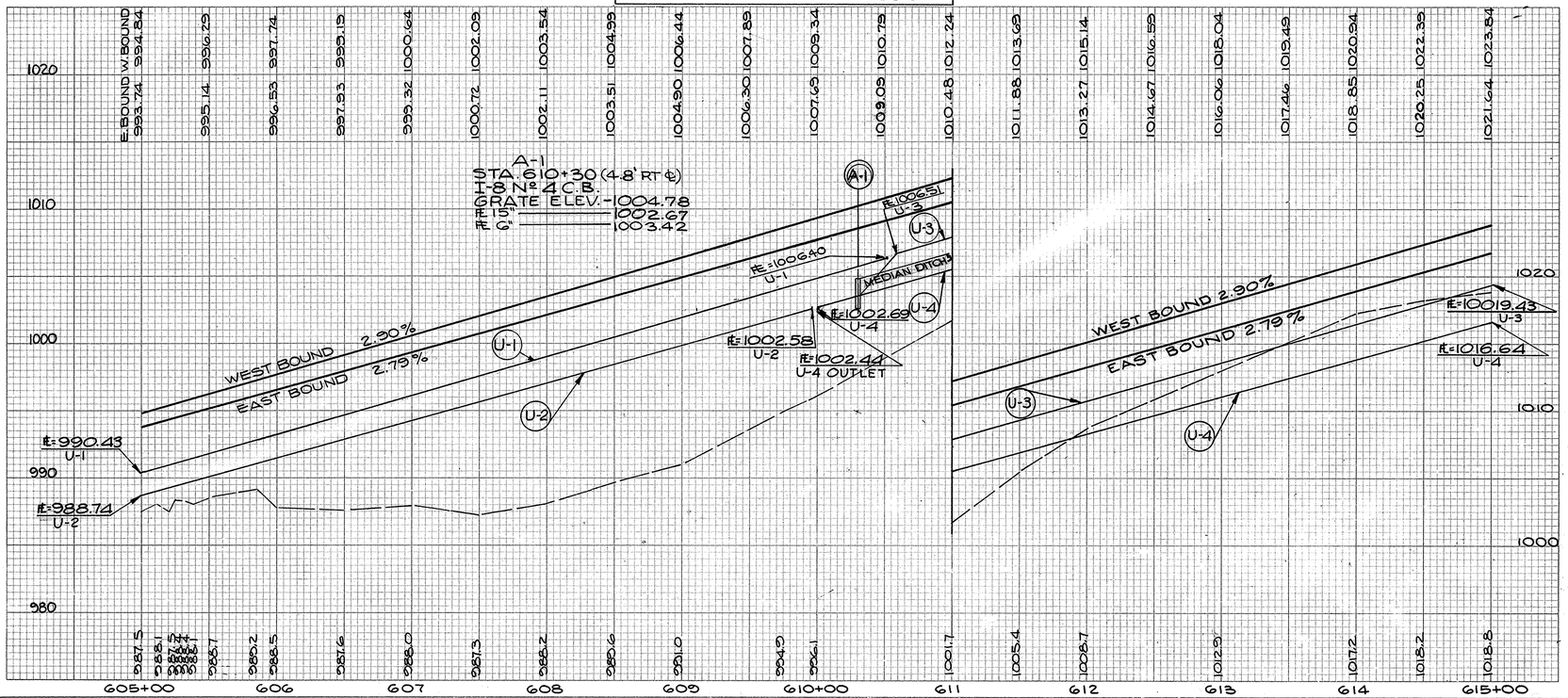
STA. 595+00 TO STA. 605+00

FED. RD. DIVISION	STATE	PROJECT		33 / 294
2	OHIO			

MAHONING COUNTY
MAH-18-9.89



B.M. 18 - BOLT IN 18" OAK W. EDGE OF WOODS 200' LT. STA. 609+20.
ELEV. 988.344



I-1 PIPE (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS I-3 6" SHAL LOW	CLASS I-3 6" DEEP	CLASS I-3 6" M-64(H)	CLASS F-4 OUTLET PIPE 6"	CLASS F-4 OUTLET PIPE 8"	CLASS J-1 6"	I-5 PIPE SPECIALS(EACH) CLASS I-3 60°-6" BEND	I-5 PIPE SPECIALS(EACH) CLASS I-3 90°-6" BEND	
U-1	605+00	609+96	LT.	552								
U-2	605+00	609+96	RT.	496								
U-3	610+04	615+00	LT.	486			10			1		
U-4	610+00	615+00	RT.	509			10	10			1	
SHEET TOTAL				2043			20	10		1	1	

I-1 PIPE (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS J-1 15"	
P-1	610+30	——		105	
SHEET TOTAL				105	

EROSION CONTROL

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	L-120 JUTE MATTING SQ. YDS	L-10 SOD SQ. YDS.	I-2 MASONRY HW-E HEADWALL CU. YDS.	I-10 DUMPED ROCK PROT. CU. YDS.
E-1	610+37	611+87	RT.	140			
E-2	610+28	610+32	RT.				2
E-3	609+00	612+80	RT.		253		
H-1	610+30	——	RT.			0.3	
SHEET TOTAL				140	253	0.3	2

I-8 CATCH BASIN (EACH)

CODE	LOCATION	Nº 4 CATCH BASIN	
A-1	610+30 (4.8' RT. ℄)	1	
SHEET TOTAL		1	

I-15 GUARDRAIL (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYPE DEEP
G-1	605+00	613+00.0	LT.	800.0
SHEET TOTAL				800.0

FOR PIPE PROFILE
SEE SHEET Nº 97

FOR CROSSOVER DETAIL
SEE SHEET Nº 163

STA. 605+00 TO STA. 615+00

PROPOSED STRUCTURE Nº MAH.-18-1178 L&R

TYPE: CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE.
SKEW: 22° 41' 15" RF (TO LOCAL TAN)
SPANS: 31'-0"-45'-0"-36'-0" ℄/℄ BEARINGS
ROADWAY: 40'-0" F/F PARAPETS.
LOAD FREQUENCY: CF 2,000 (57) ADEQUATE FOR ASSHO ALTERNATE LOADING.
WEARING SURFACE: 1" MONOLITHIC.
APPROACH SLABS: 25' LONG (AS-1-54)
ALIGNMENT: 0°-48' CURVE RT.
SUPERELEVATION: .02G/FT.
SLOPE PROTECTION: I-10 CRUSHED AGGREGATE.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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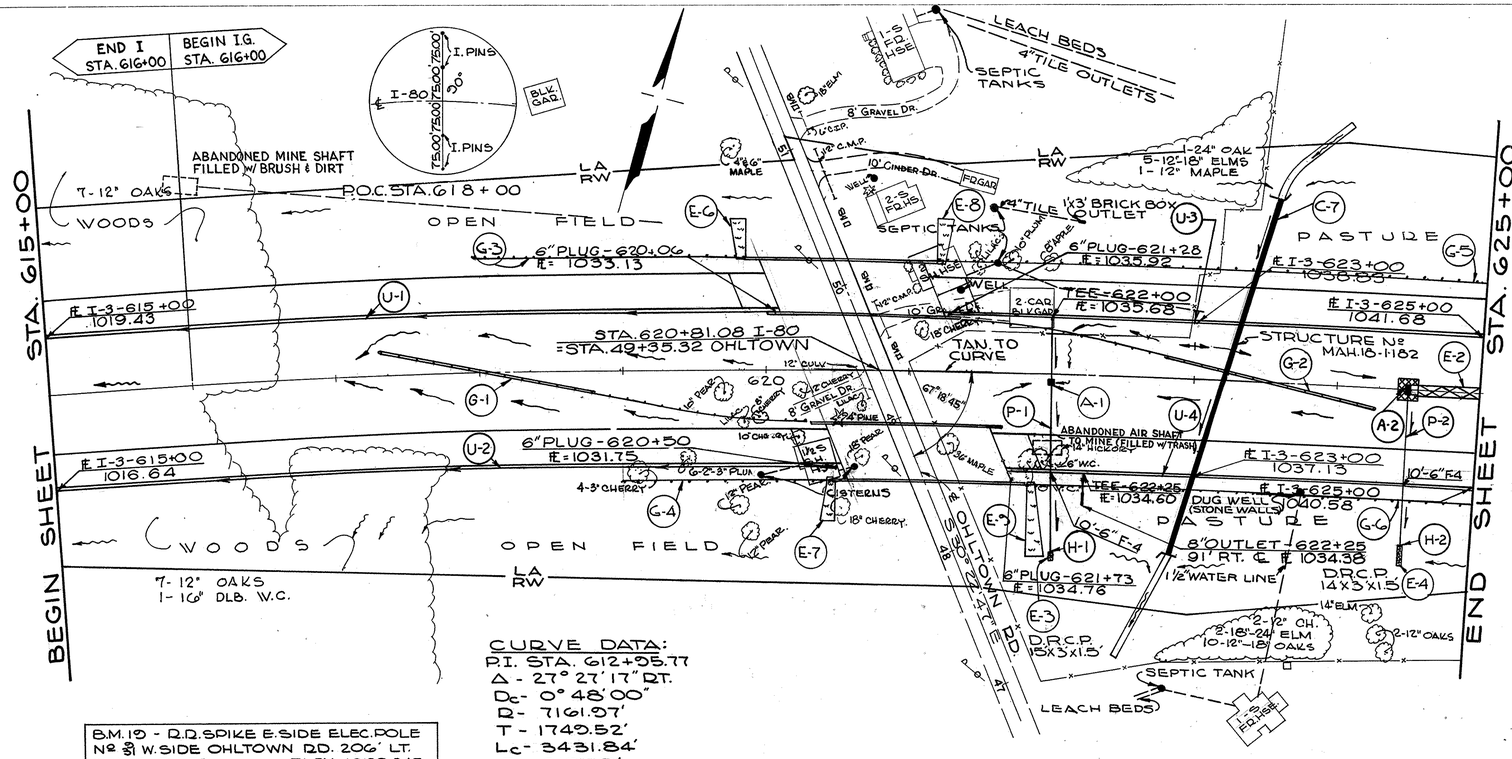


CURVE DATA:
P.I. STA. 612+95.77
Δ - 27° 27' 17" RT.
D_c - 0° 48' 00"
R - 7161.97'
T - 1749.52'
L_c - 3431.84'
E - 210.59'

B.M. 19 - R.R. SPIKE E. SIDE ELEC. POLE Nº 3 W. SIDE OHLTOWN RD. 206' LT. STA. 619+78. ELEV. 1029.245

I-1 PIPE (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS I-3 6" SHALLOW	CLASS I-3 6" DEEP	CLASS I-3 6" M-6.4(h)	CLASS F-4 OUTLET PIPE 6"	CLASS F-4 OUTLET PIPE 8"	I-5 PIPE SPECIALS (EACH) CLASS I-3 6" TEE	I-5 PIPE SPECIALS (EACH) CLASS I-3
U-1	615+00	620+06	LT.	506						
U-2	615+00	620+50	RT.	550						
U-3	621+28	625+00	LT.	407			10		1	
U-4	621+73	625+00	RT.	320			20	10	1	
SHEET TOTAL				1783			30	10	2	

EROSION CONTROL

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	L-120 JUTE MATTING SQ. YDS.	L-10 SOD SPL. BERM PROT. SQ. YDS.	I-2 MASONRY HW-E HEADWALL CU. YDS.	I-10 DUMPED ROCK PROT. CU. YDS.
E-2	624+57	625+00	-	50.8			
E-3	621+98.5	622+01.5	RT.				3
E-4	624+48.5	624+51.5	RT.				2
E-6	619+82	-	LT.		26		
E-7	620+46	-	RT.		26		
E-8	621+21	-	LT.		30		
E-9	621+85	-	RT.		44		
H-1	622+00	-	RT.			0.3	
H-2	624+50	-	RT.			0.3	
SHEET TOTAL				50.8	126	0.6	5

I-8 CATCH BASIN & MANHOLE (EACH)

CODE	LOCATION	Nº 4 CATCH BASIN EACH	Nº 2-2-B CATCH BASIN EACH
A-1	622+00 (5.5' RT. ℄)		1
A-2	624+50	1	
SHEET TOTAL		1	1

I-1 PIPE (LIN. FT.)

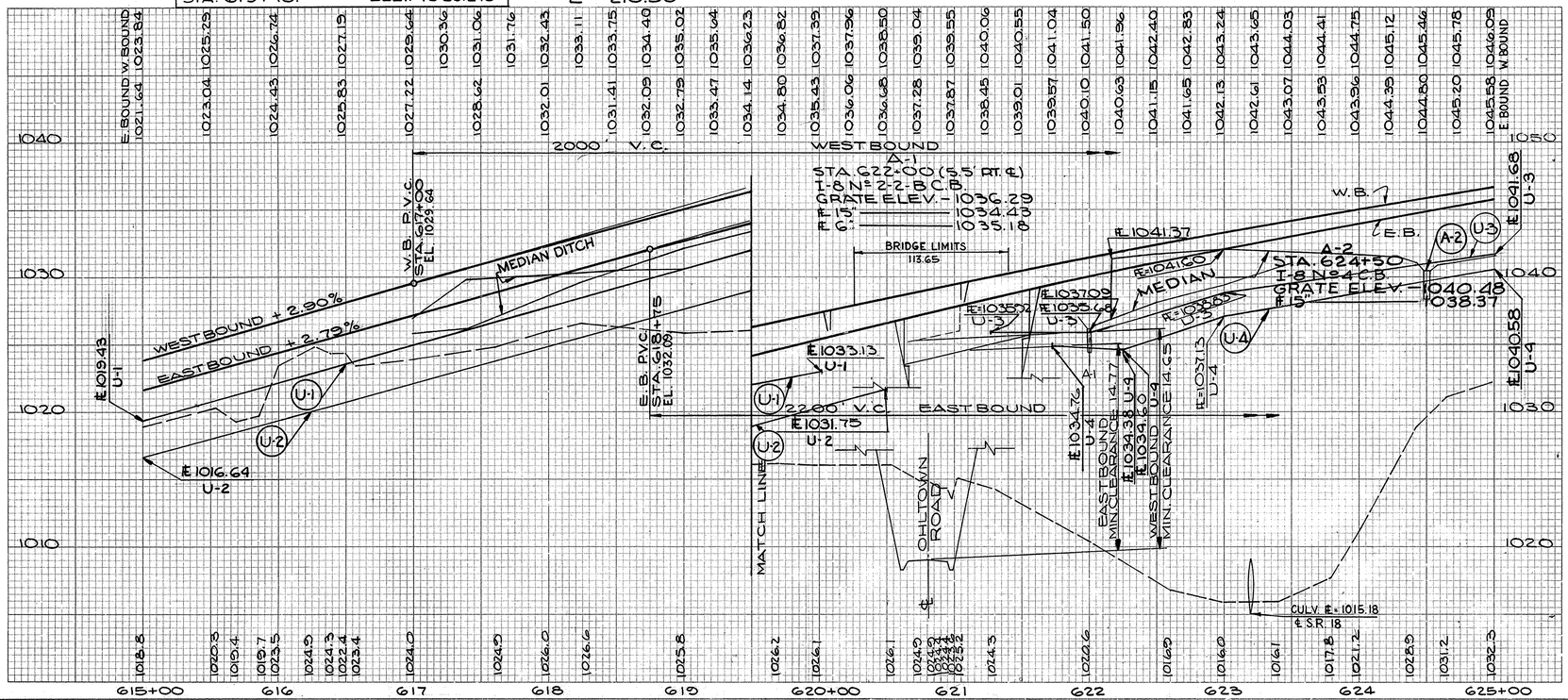
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS J-1 15"	CLASS F-4 15"	I-5 PIPE SPECIAL EACH CLASS F-4 22°30 BEND 15"
P-1	622+00	-	RT.	79	48	2
P-2	624+50	-	RT.	84	28	2
SHEET TOTAL				163	76	4

STRUCTURES 20' SPAN & UNDER

CODE	LOCATION	TYPE	SIZE	DETAIL SHEET Nº
C-7	623+20	26'8"-CL. A-1, SEC. M-6.6 (d)	30"	176

I-15 GUARD RAIL (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYPE DEEP	STD. TYPE BARRIER
G-1	617+37.0	620+32.0	-	150.0	150.0
G-2	621+35.0	624+30.0	-	150.0	150.0
G-3	617+97.8	619+85.3	LT.	187.5	
G-4	618+98.8	620+48.8	RT.	150.0	
G-5	621+18.4	625+00.0	LT.	381.6	
G-6	621+81.9	625+00.0	RT.	318.1	
SHEET TOTAL				1337.2	300.0

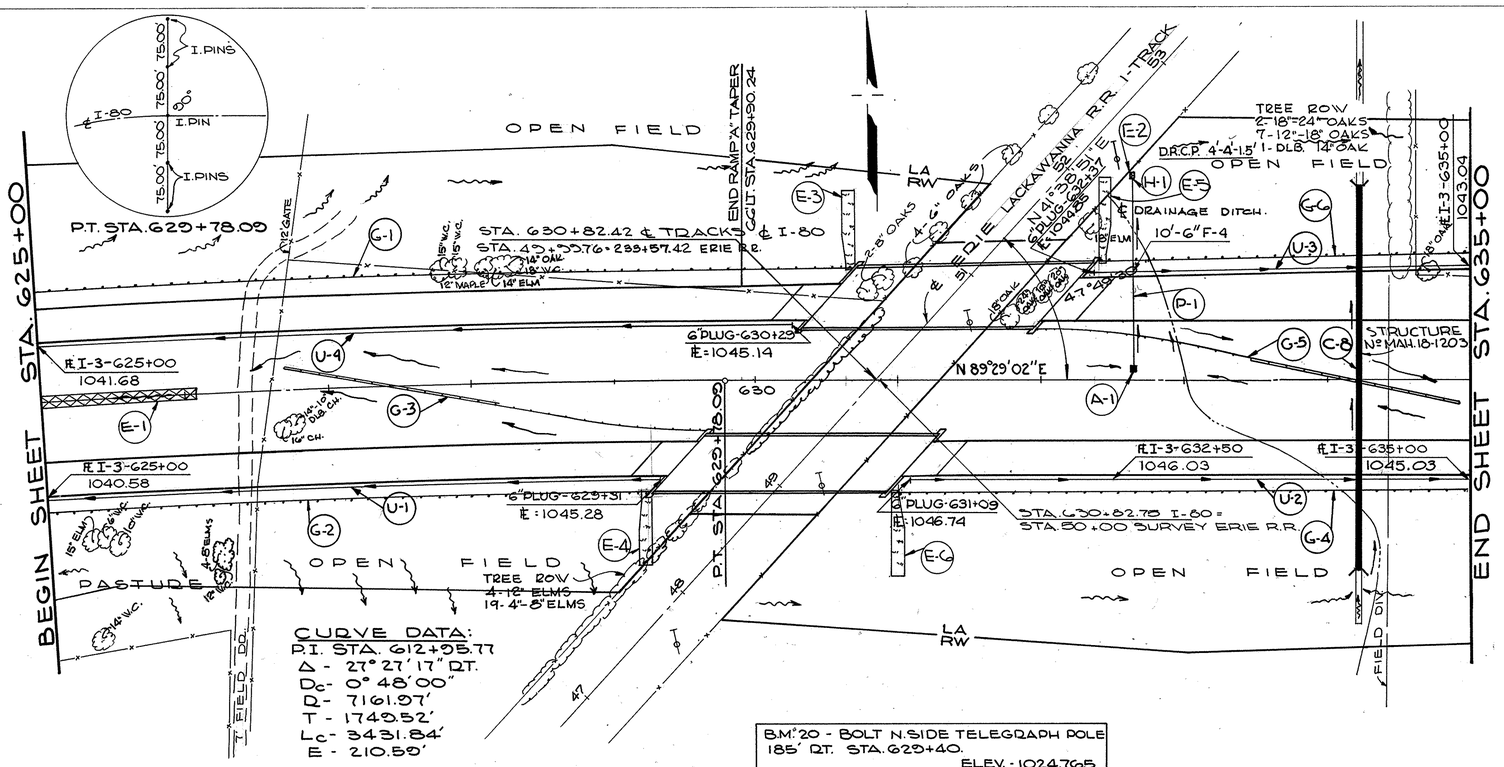


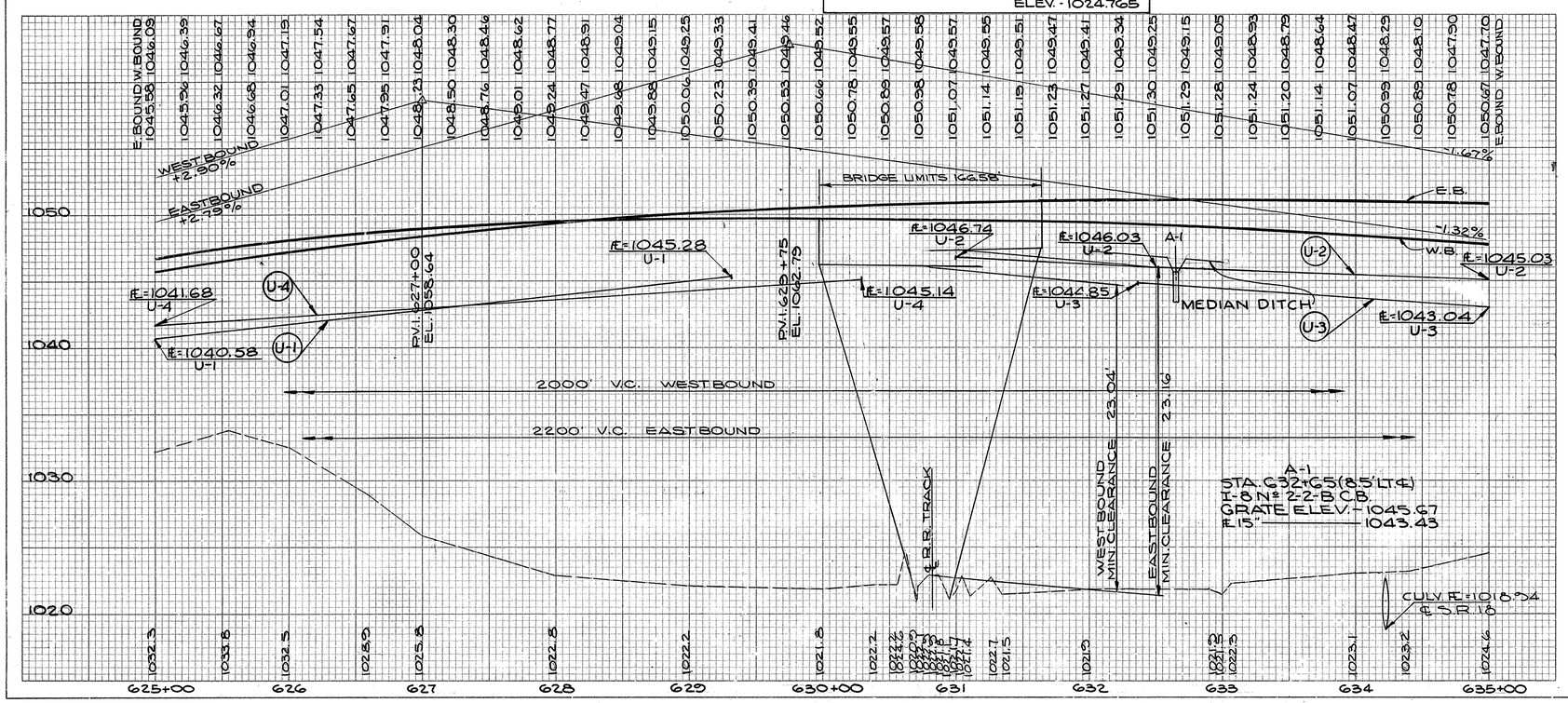
FOR PIPE PROFILE SEE SHEET Nº 27.

FOR DETAILS OHLTOWN RD. SEE SHEET Nº 113.

FOR SEPTIC TANK AND DRILLED WELL REMOVAL ITEMS SEE SHEET Nº 113.

STA. 615+00 TO STA. 625+00





PROP. STRUCTURE - MAH.-18-1197

TYPE: CONTINUOUS STEEL BEAM WITH REIN-FORCED CONC. DECK AND SUBSTRUCTURE.
SPANS: 49'-6", 61'-6", 49'-6" ℄ TO ℄ BEARINGS
ROADWAY: 40'-0" E.B. STRUCT. & VARIES W.B. STRUCT. F/F PARAPET'S.
LOAD FREQUENCY: C.F. - 2000(57) ADEQUATE FOR AASHO, ALT. LOADING
SKEW: 42°-10'-30" L.F.
WEARING SURFACE: 1" MONOLITHIC
APPROACH SLAB: 25'-0" LONG - (AS-1-54)
SUPERELEVATION: VARIES .02 ft/FT. MAX.
ALIGNMENT: RT. STR. 0°48' CURVE RT. TO STA. 629+78.09 LT. STR. STRAIGHT.
SLOPE PROTECTION: I-10 CRUSHED AGGREGATE
TRAFFIC: 24,830 ADT. (1975)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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MAHONING COUNTY
MAH-18-9.89

I-1 PIPE (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS I-3 "C" SHAL LOW	CLASS I-3 "C" DEEP	CLASS I-3 "C" M-6.4(1)	CLASS F-4 OUTLET PIPE 6"		CLASS I-1 6"
U-1	625+00	629+31	RT.	431					
U-2	631+09	635+00	RT.	391					
U-3	632+37	635+00	LT.	253			10		
U-4	625+00	630+29	LT.	529					
SHEET TOTAL				1604			10		

I-1 PIPE SEWER (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS J-1~15"	CLASS F-4~15"	I-5 PIPE SPECIAL CLASS F-4~15" 22°~30° BEND (EA)
P-1	625+65	A-1 to H-1	LT.	76	58	2
SHEET TOTAL				76	58	2

EROSION CONTROL

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	L-120 JUTE MATTING SQ. YDS.	L-10 SOD SQ. YDS.	I-2 MASONRY HW-E HEADWALL CU. YDS.	I-10 DUMPED ROCK PROT. CU. YDS.	L-10 SPECIAL BERM PROT. SQ. YDS.
E-1	625+00	626+07	℄	85.2				
E-2	632+35	632+65	LT.				1	
E-3	630+65	———	LT.					55
E-4	629+23	———	RT.					54
E-5	632+40	———	LT.					61
E-6	630+98	———	RT.					61
H-1	632+65	———	LT.			0.3		
SHEET TOTAL				85.2		0.3	1	235

I-8 CATCH BASIN (EACH)

CODE	LOCATION	Nº. 2-2-B CATCH BASIN
A-1	632+65 (8.5' LT.)	1
SHEET TOTAL		1

I-15 GUARDRAIL (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYPE DEEP	STD. TYPE, BARRIER
G-1	625+00.0	630+68.0	LT.	568.0	
G-2	625+00.0	629+26.0	RT.	426.0	
G-3	626+65.0	629+65.0	—	150.0	150.0
G-4	630+95.0	635+00.0	RT.	405.0	
G-5	631+97.0	634+97.0	—	150.0	150.0
G-6	632+37.0	635+00.0	LT.	263.0	
SHEET TOTAL				1962.0	300.0

STRUCTURES 20' SPAN & UNDER

CODE	LOCATION	TYPE	SIZE	DETAIL SHEET Nº
C-8	634+22.5	270°~CL. A-1, SEC. M-6.6(d)	48"	177

FOR PIPE PROFILE SEE SHEET Nº. 38

FOR DRAINAGE PLAN AND CROSS SECTIONS OF RAILROAD AREA SEE SHEET Nº. 117 & 118

STA 625+00 TO STA. 635+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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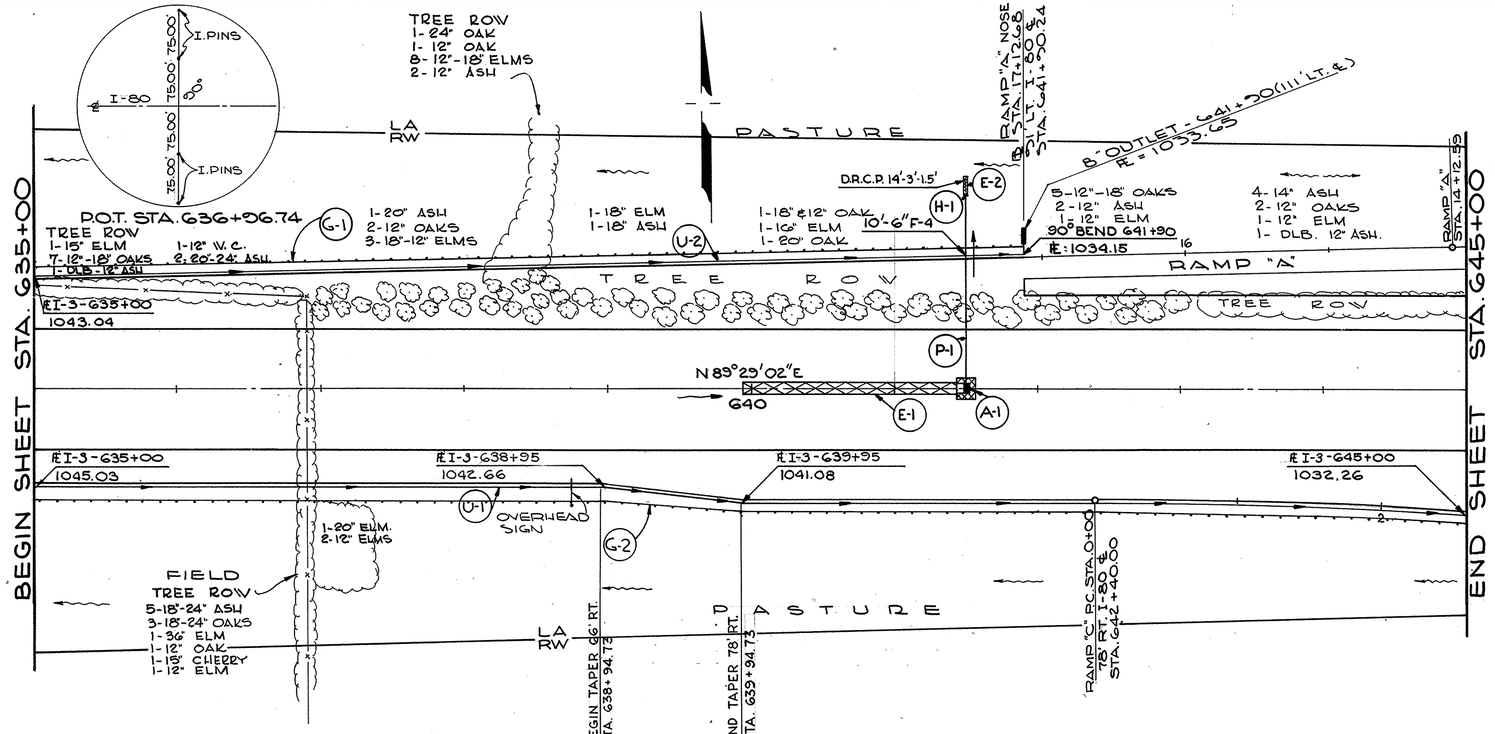
MAHONING COUNTY
MAH-18-9.89



I-1 PIPE (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS I-3 6" SHALLOW	CLASS I-3 6" DEEP	CLASS I-3 6" M-6.4(h)	CLASS F-4 OUTLET PIPE 8"	CLASS I-1 6"	I-5 PIPE SPECIALS (EA.) CL. I-3 6"-90° BEND	
U-1	635+00	645+00	RT.	1000						
U-2	635+00	641+90	LT.	688					1	
SHEET TOTAL				1688					1	

EROSION CONTROL

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	L-120 JUTE MATTING SQ. YDS.	L-10 SOD SQ. YDS.	I-2 MASONRY HW-E HEADWALL CU. YDS.	I-10 DUMPED ROCK PROT. CU. YDS.
E-1	639+93	641+43	℄	140			
E-2	641+50		LT.				2
H-1	641+50		LT.			0.3	
SHEET TOTAL				140		0.3	2

I-8 CATCH BASIN & MANHOLE (EACH)

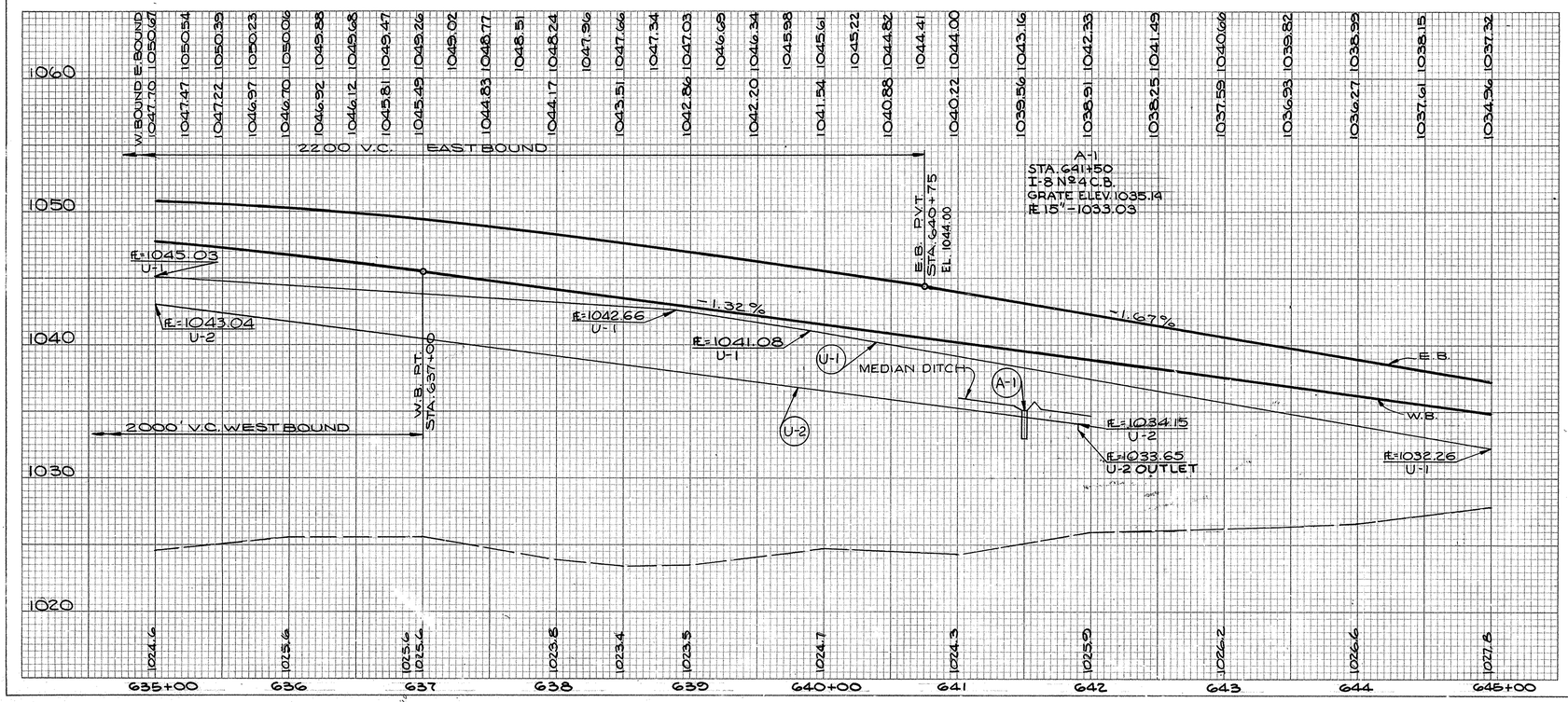
CODE	LOCATION	№4 CATCH BASIN EACH	
A-1	641+50	1	
SHEET TOTAL		1	

I-15 GUARDRAIL (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYPE DEEP
G-1	635+00.0	641+90.2 17+12.7 "A"	LT.	690.2
G-2	635+00.0	645+00	RT.	1000.0
SHEET TOTAL				1690.2

I-1 PIPE SEWER

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS J-1-15" LIN. FT.	CLASS F-4-15" LIN. FT.	I-5 PIPE SPECIAL CL. F-4 15"-22°30' BEND EACH
P-1	641+50	A-1 TO H-1	LT.	105	31	2
SHEET TOTAL				105	31	2



FOR PIPE PROFILE SEE SHEET Nº 98.

FOR DETAILS RAMP "A" SEE SHEET Nº 141.

FOR DETAILS RAMP "C" SEE SHEET Nº 143.

FOR DETAILS & QUANTITIES OF SIGN STA. 638+75 SEE SHEET Nº 189.

STA. 635+00 TO STA. 645+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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MAHONING COUNTY
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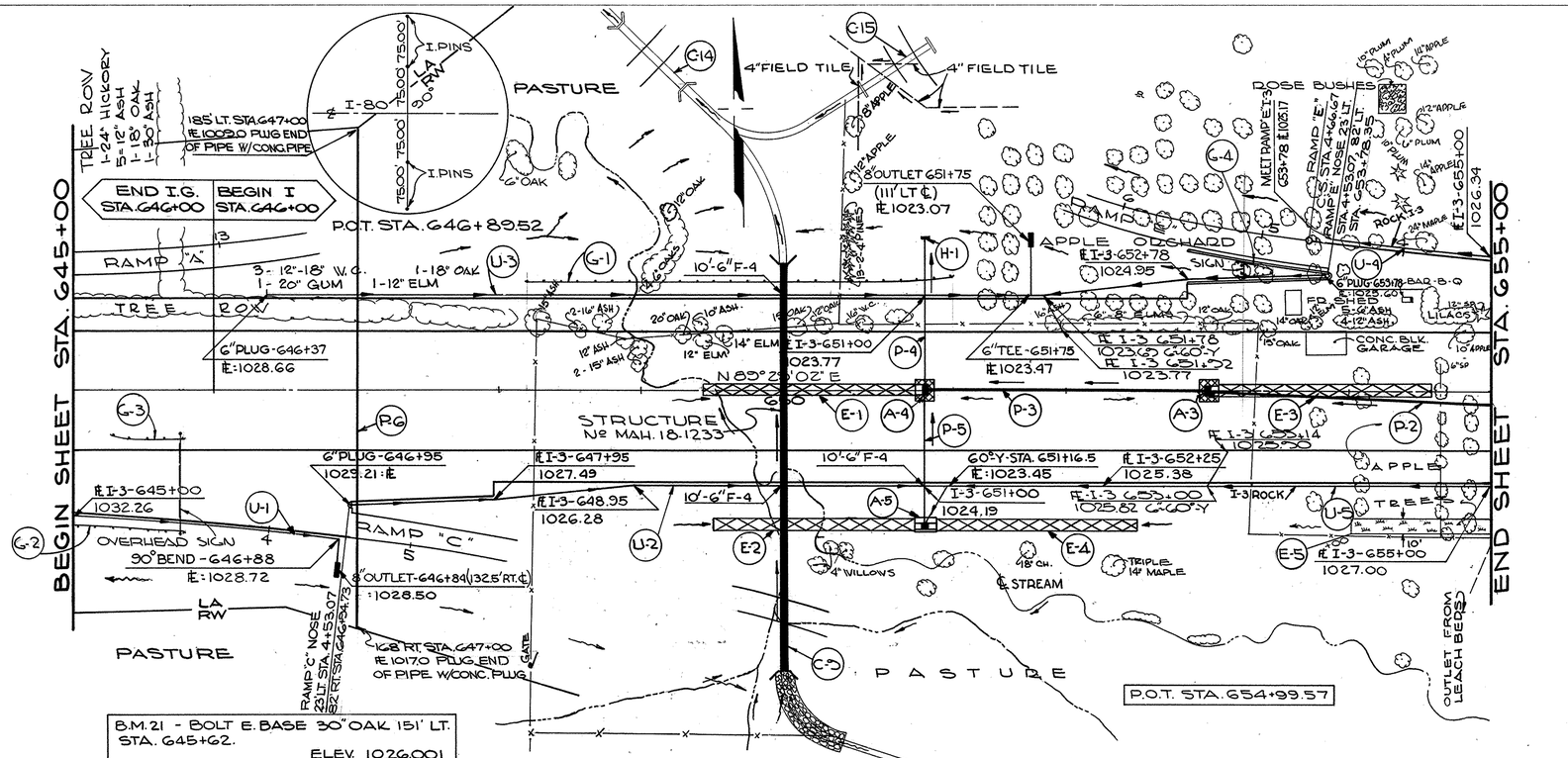

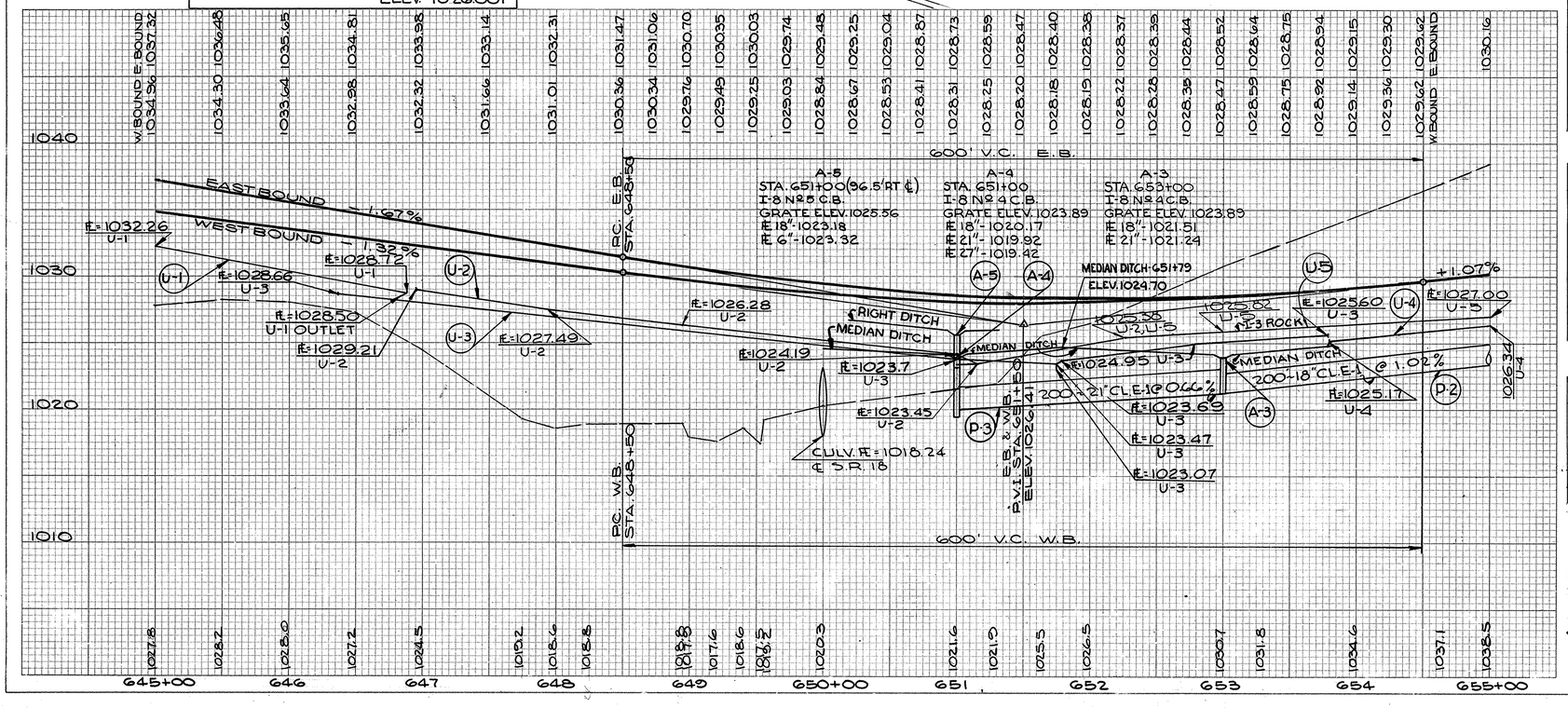

I-1 PIPE (LIN.FT)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS I-3 C" SHAL-LOW	CLASS I-3 C" DEEP	CLASS I-3 C" M-G4(h)	CLASS F-4 OUTLET PIPE 6"	CLASS F-4 OUTLET PIPE 8"	CLASS I-1 6"	I-5 PIPE SPECIALS(EACH) CLASS I-3 6"-60 WYE	6" TEE	6"-90 BEND
U-1	645+00	646+84	RT.	201				10				1
U-2	646+95	652+25	RT.	542			20			1		
U-3	646+37	653+78	LT.	792			10	10		1	1	
U-4	653+78	655+00	LT.			122						
U-5	652+25	655+00	RT.			303				1		
SHEET TOTAL				1535		325	30	20	-	3	1	1

I-1 PIPE SEWER (LIN.FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS E-1 18"	CLASS E-1 21"	CLASS J-1 18"	CLASS J-1 27"	CLASS J-1 M-68(b) 8" SAN. W/ 5' CONC. & COMP. JOINTS LIN. FT.
P-2	653+00	655+00	℄	200				
P-3	651+00	653+00	℄		200			
P-4	651+00	A-4 to H-1	LT.				107	
P-5	651+00	A-5 to A-4	RT.			97		
P-6	647+00	——	LT & RT.					353
SHEET TOTAL				200	200	97	107	353

EROSION CONTROL

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	L-120 JUTE MATTING SQ. YDS.	L-10 SOD SQ. YDS.	I-2 MASONRY HW-E HEADWALL CU. YDS.
E-1	649+43	650+93	℄	140		
E-2	649+43	650+93	RT.	125		
E-3	653+07	654+57	℄	140		
E-4	651+07	652+57	RT.	125		
E-5	654+00	655+00	RT.		111	
H-1	651+00	——	LT.			0.5
SHEET TOTAL				530	111	0.5

I-8 CATCH BASIN & MANHOLE

CODE	LOCATION	Nº. 4 CATCH BASIN (EACH)	Nº. 5 CATCH BASIN (EACH)
A-3	653+00	1	
A-4	651+00	1	
A-5	651+00 (96.5 RT)		1
SHEET TOTAL		2	1

I-15 GUARDRAIL (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYPE. DEEP
G-1	648+20.0	651+20.0	LT.	300.0
G-2	645+00	645+82.5	RT.	82.5
G-3	645+28	645+78	SEE SHEET 186.	
G-4	653+22	653+47	SEE SHEET 186.	
SHEET TOTAL				382.5

STRUCTURES 20' SPAN & UNDER

CODE	LOCATION	TYPE	SIZE	DETAIL SHEET Nº.
C-9	650+00	290' CL. A-1, SEC. M-6.6(b)	60"	178
C-14	RAMP "A"	64' CL. A-1, SEC. M-6.6(b)	60"	178
C-15	RAMP "E"	60' CL. A-1, SEC. M-6.6(b), M-6.8(b)	30"	178

FOR PIPE PROFILE SEE SHEET Nº 98

FOR DETAILS RAMP "A" SEE SHEET Nº 141

FOR DETAILS RAMP "C" SEE SHEET Nº 143

FOR DETAILS RAMP "E" SEE SHEET Nº. 145

FOR PROFILE OF 8" SANITARY LINE (P-6) SEE SHEET Nº. 98

FOR DETAILS & QUANTITIES OF SIGNS STA. 645+75 & 653+25 SEE SHEET Nº 189

STA. 645+00 TO STA. 655+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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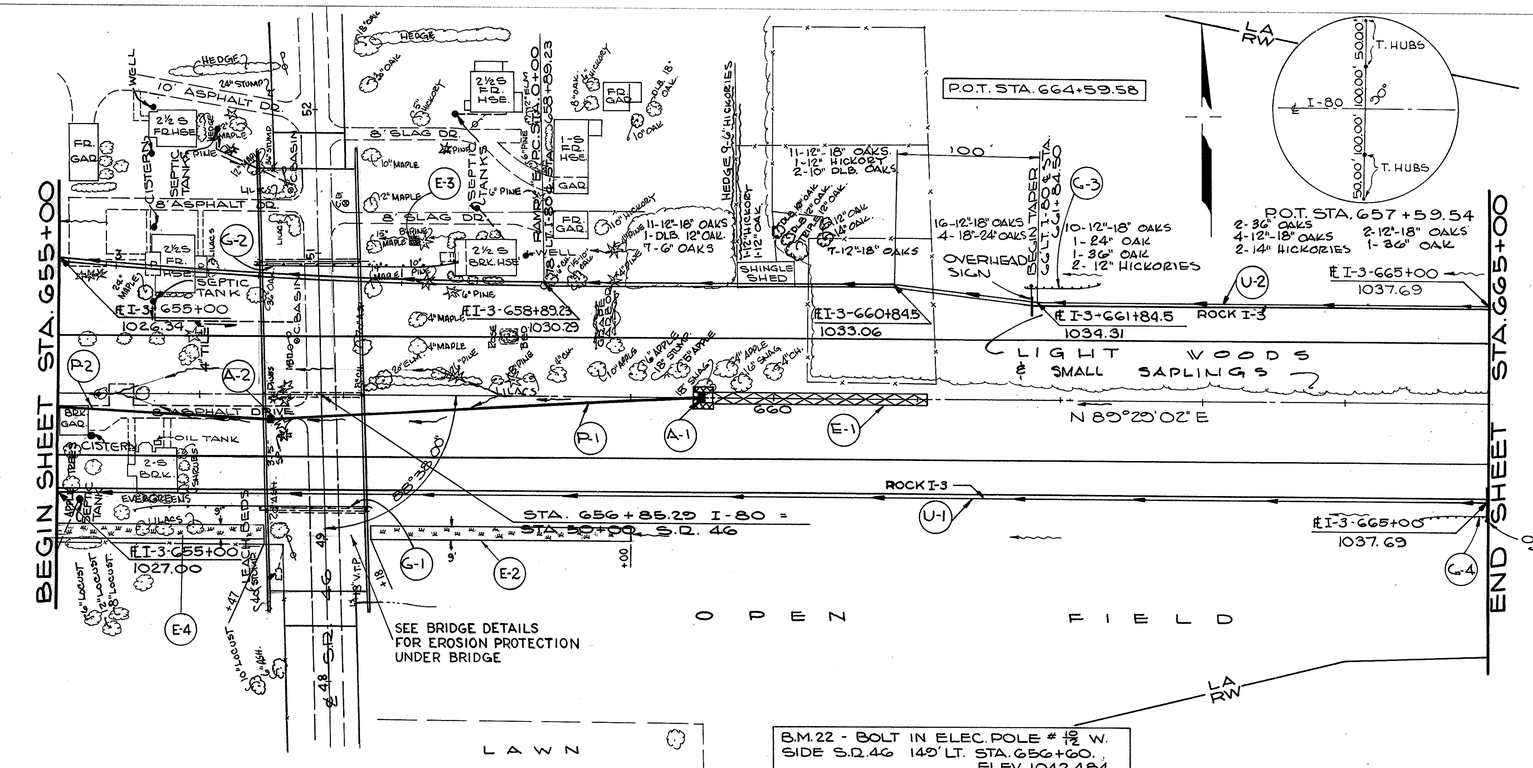
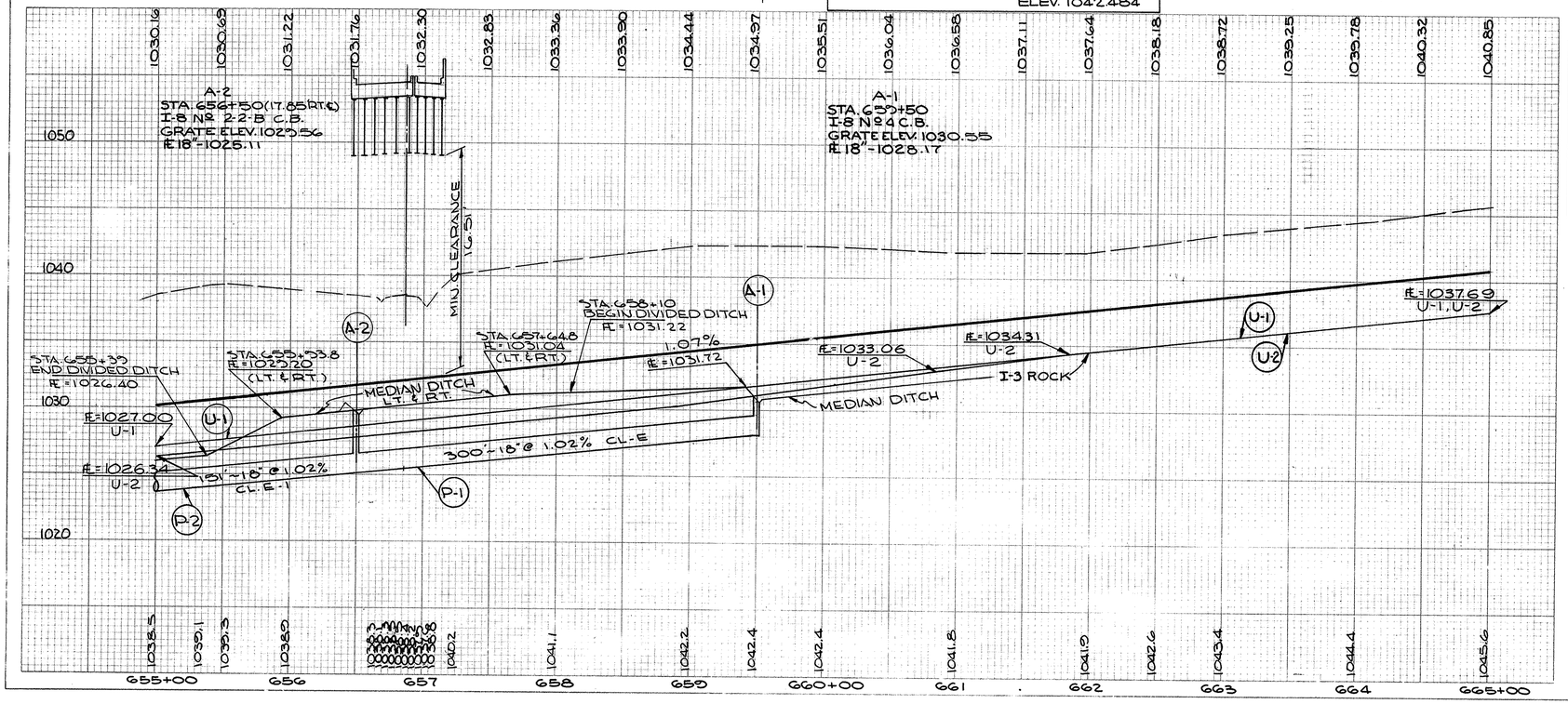
294

MAHONING COUNTY
MAH-18-9.89



B.M. 22 - BOLT IN ELEC. POLE # 19/12 W. SIDE S.R. 46 149' LT. STA. 656+60. ELEV. 1042.484



I-1 PIPE (LIN. FT.)						
CODE	LOCATION		SIDE ℄	CLASS I-3 6"		
	FROM	TO		SHAL-LOW	DEEP	M-6.4(h)
U-1	655+00	665+00	RT.			1000
U-2	655+00	665+00	LT.			1000
SHEET TOTAL						2000

EROSION CONTROL						
CODE	LOCATION		SIDE ℄	L-120 JUTE MATING SQ. YDS.	L-10 SOD SQ. YDS.	I-10 DUMP ROCK PROT. CU. YDS.
	FROM	TO				
E-1	659+57	661+07		140		
E-2	657+18	659+00	RT.		182	
E-3	657+47	657+53	LT.			1
E-4	655+00	656+47	RT.		147	
SHEET TOTAL				140	329	1

I-1 PIPE SEWER (LIN. FT.)				
CODE	LOCATION		SIDE ℄	CLASS E-1 18"
	FROM	TO		
P-1	656+50	659+50	℄	300
P-2	655+00	656+50	℄	150
SHEET TOTAL				450

I-15 GUARD RAIL (LIN. FT.)				
CODE	LOCATION		SIDE ℄	STD. TYPE DEEP
	FROM	TO		
G-1	655+54.0	657+16.5	RT.	162.5
G-2	656+41.5	657+79.0	LT.	137.5
G-3	661+77	662+27	SEE SHEET 186.	
G-4	664+53	665+03	SEE SHEET 186.	
SHEET TOTAL				300.0

I-8 CATCH BASIN & MANHOLE (EACH)				
CODE	LOCATION	№ 4 CATCH BASIN	№ 2-2-B CATCH BASIN	
A-1	659+50	1		
A-2	656+50 (17.85' RT. ℄)		1	
SHEET TOTAL		1	1	

FOR DETAILS S.R. 46 SEE SHEET № 119-122
FOR SEPTIC TANK AND DRILLED WELL REMOVAL ITEMS SEE SHEET № 120 & 121
FOR DETAILS & QUANTITIES OF SIGNS STA. 661+80 & 665+00 SEE SHEET № 189.

STA. 655+00 TO STA. 665+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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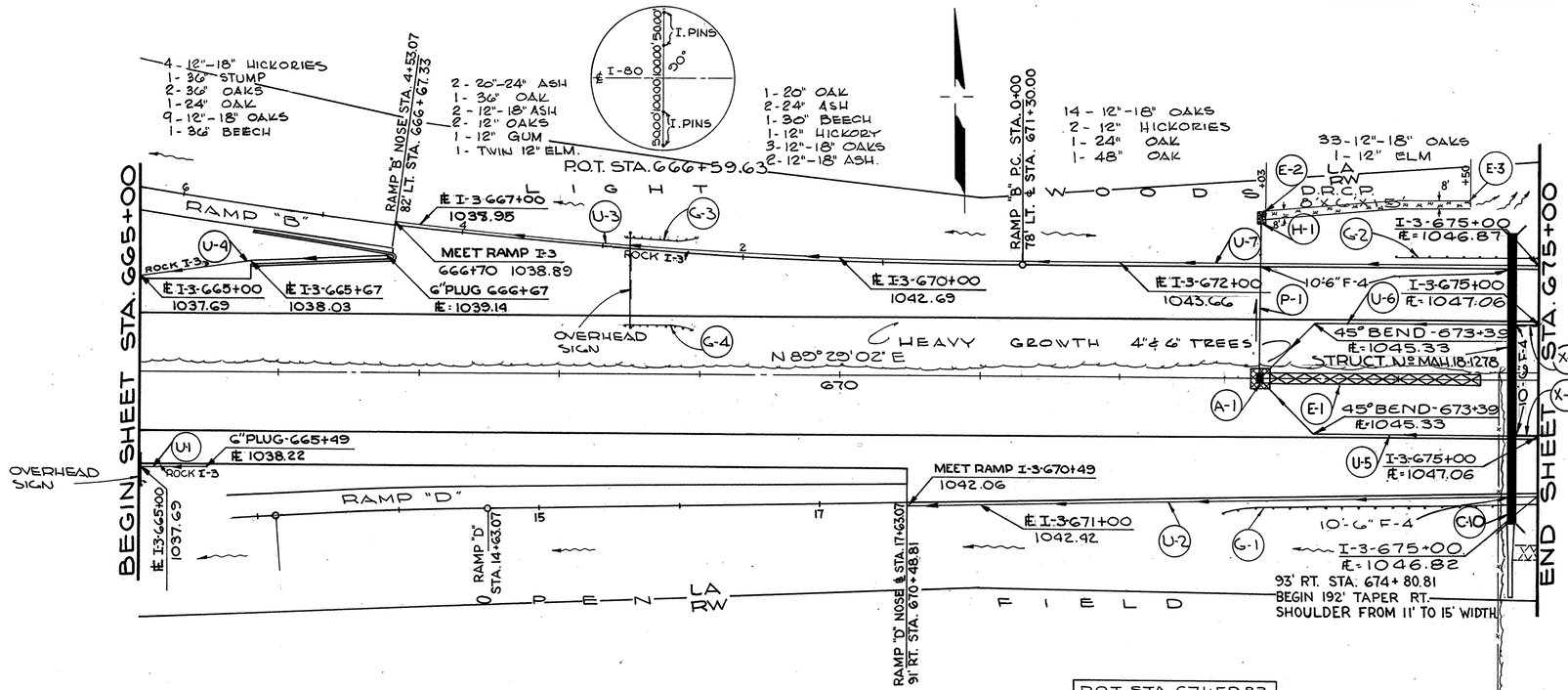
MAHONING COUNTY
MAH 18 - 9.89



I-1 PIPE (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS I 3 6" SHALLOW	CLASS I 3 6" DEEP	CLASS I 3 6" M·64(h)	CLASS F4 OUTLET PIPE 6"	CLASS F4 OUTLET PIPE	CLASS I-1 6	I-5 PIPE SPECIALS (EA.) CL. I-3 6"×45° BEND	
U-1	665+00	665+49	RT.			49					
U-2	670+49	675+00	RT.	441			10				
U-3	667+00	670+00	LT.			300					
U-4	665+00	666+67	LT.			167					
U-5	673+00	675+00	RT.	196			20			1	
U-6	673+00	675+00	LT.	196			20			1	
U-7	670+00	675+00	LT.	480			20				
SHEET	TOTAL			1313		516	70			2	

EROSION CONTROL

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	L-120 JUTE MATING SQ. YDS.	L-10 SOD SQ. YDS.	I-2 MASONRY HW-E HEADWALL CU. YDS.	I-10 DUMPED ROCK PROT. CU. YDS.	
E-1	673+07	674+57	LT.	140				
E-2	672+97	673+03	LT.				3	
E-3	673+00	674+50	LT.		134			
H-1	673+00	-	LT.			0.3		
SHEET	TOTAL			140	134	0.3	3	

I-1 PIPE SEWER (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS J-1 18
P-1	678+00	A-1 TO H-1	LT.	112
SHEET TOTAL				112

E-12 PIPE REMOVAL (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	15" & UNDER
X-1	674+85	675+00	LT.	15
X-2	674+85	675+00	RT.	15
SHEET TOTAL				30

I-8 CATCH BASIN & MANHOLE (EA)

CODE	LOCATION	Nº 4 CATCH BASIN	
A-1	673+00	1	
SHEET TOTAL		1	

I-15 GUARDRAIL (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYPE DEEP
G-1	672+75.0	675+00.0	RT.	225.0
G-2	673+97.0	675+00.0	LT.	103.0
G-3 & G-4	668+47	668+57 SEE SHEET 186		
SHEET TOTAL				328.0

STRUCTURES 20' SPAN & UNDER

CODE	LOCATION	TYPE	SIZE	DETAIL SHEET Nº
C-10	674+81.00	208 CL. G-1 SEC. M-6.7 (a)	76"×48" ELLIPT.	180

FOR PIPE PROFILE SEE SHEET Nº 99.

FOR DETAILS RAMP "B" SEE SHEET Nº 142.

FOR DETAILS RAMP "D" SEE SHEET Nº 144.

FOR DETAILS & QUANTITIES OF SIGNS STA. 665+00 & 668+50 SEE SHEET Nº 189.

STA. 665+00 TO STA. 675+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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294

MAHONING COUNTY
MAH 18 - 9.89

END PROJECT
MAH 80-3.37
STA. 675+74.89 (BK)
I-IG-80-5(4) 229
SLM = 12.82

BEGIN PROJECT
MAH 80-12.82
STA. 376+1543 (AH)
I-80-5(5) 233

I-80
NAIL IN TREE
I. PINS
NAIL IN TREE
2300' (700.54 m)
90°

LIGHT WOODS
P.O.T. STA. 675 + 74.89
LA RW
1-DLB 1-OAK
2-18"-24" OAKS
18"-12"-18" OAKS
15-12" OAKS
G-1
END WORK STA. 377+00
X-1 I-3 675 + 74.89 ℄ = 1047.48
U-1
I-3-675+00 ℄=1046.87
U-2
I-3 675+00 ℄=1047.06
I-3 675+74.89 ℄=1047.86
X-2
X-3
I-3 675+00 ℄=1047.06
U-3
U-4
I-3 675+00 ℄=1046.82
I-3 675+74.89 ℄=1047.67
G-2
1-24" MAPLE
X-4
675+74.89 BK
376+15.43 AH
80.04' RT ℄
HALF PAVED
LA RW
MEDIUM WOOD
377+18.55 AH
50' TAPER 8' TO 10' PAVED SHOULDER
192' TAPER 11' TO 15' SHOULDER
BEGIN SHEET STA. 675+00
END SHEET STA. 385+42
STA. 385.21.02 E.B. 0+00.00 RAMP E.

BEARING EQUATION
N-89°-29'-02"-E(BK.) - STA. 675+74.89 (BK)
N-88°-39'-15"-E(AH.) - STA. 376+15.43 (AH)

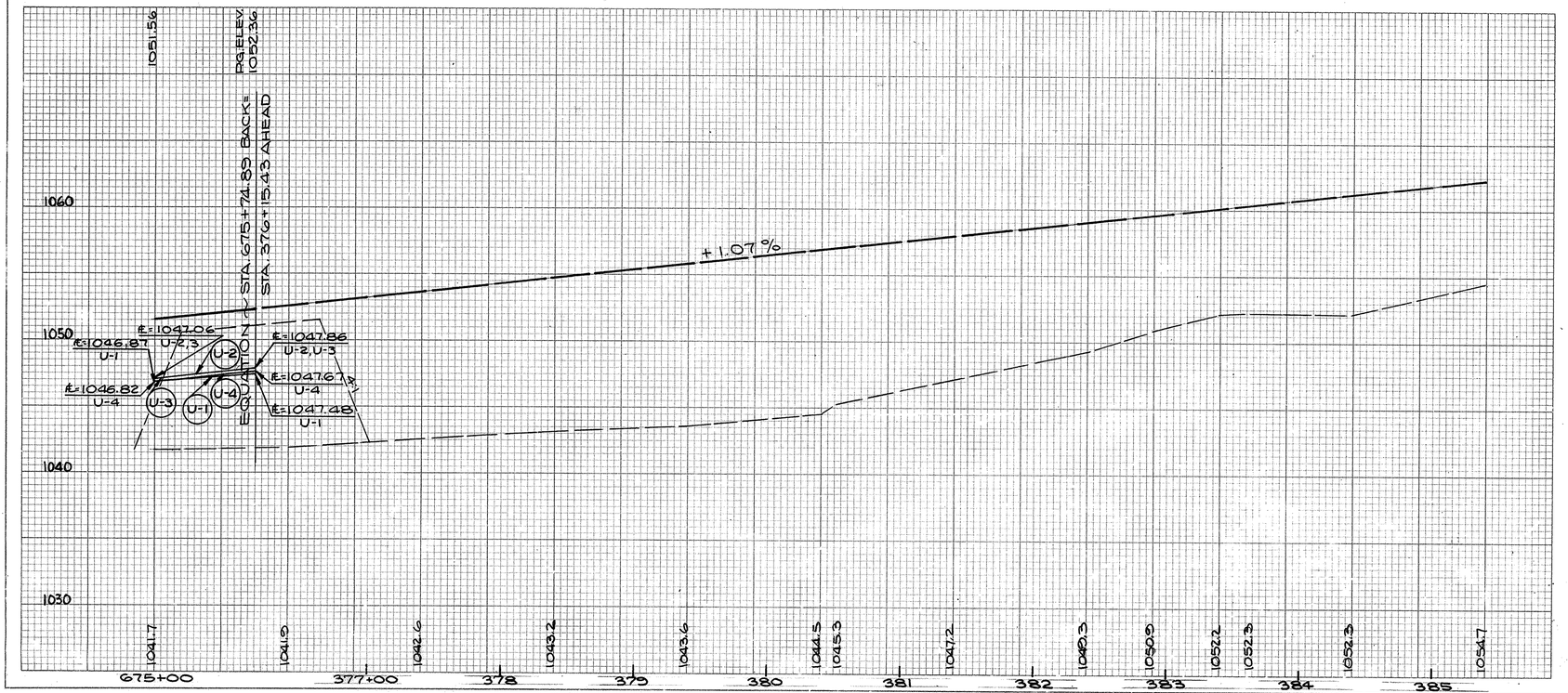
I-1 PIPE (LIN. FT.)					
CODE	LOCATION		SIDE	CLASS I-3 G	
	FROM	TO	℄	SHAL-LOW	M-64(h)
U-1	675+00	675+74.89	LT.	75	
U-2	675+00	675+74.89	LT.	75	
U-3	675+00	675+74.89	RT.	75	
U-4	675+00	675+74.89	RT.	75	
SHEET TOTAL				300	

E-12 PIPE REMOVAL (LIN. FT.)				
CODE	LOCATION		SIDE	15" & UNDER
	FROM	TO	℄	
X-1	675+59.38	675+74.89	LT.	36
X-2	675+00	675+74.89	LT.	75
X-3	675+00	675+74.89	RT.	75
X-4	675+00	675+74.89	RT.	48
SHEET TOTAL				244

I-15 GUARDRAIL (LIN. FT.)				
CODE	LOCATION		SIDE	STD. TYPE DEEP
	FROM	TO	℄	
G-1	675+00.0	376+50	LT.	109.5
G-2	675+00.0	675+50.0	RT.	50.0
SHEET TOTAL				159.5

TYPICAL SECTION OF THE ADJOINING PROJECT WILL BE SIMILAR TO THE PROPOSED TYPICAL SECTION FOR MAIN PAVEMENT ON THIS PROJECT.

PORTIONS OR ALL OF THE WORK AHEAD OF STA. 376+15.43 MAY BE NON-PERFORMED AT THE DIRECTION OF THE ENGINEER, PROVIDED WORK ON THE ADJOINING PROJECT HAS PROGRESSED TO A STAGE SUCH AS TO MAKE THIS WORK UNNECESSARY.



STA 675+00 TO STA. 385+42

FED.RD.	STATE	PROJECT	
2	OHIO		

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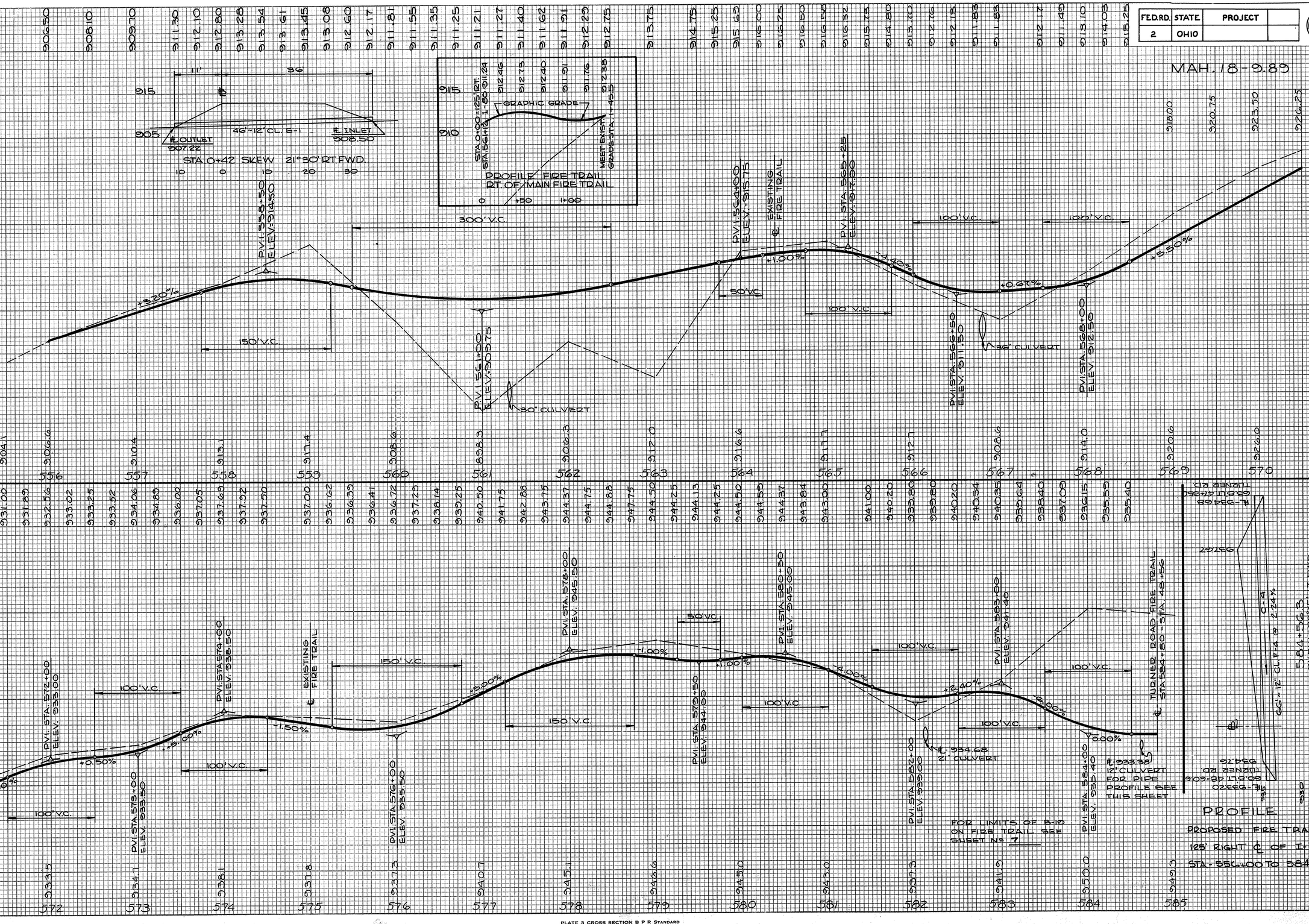
234

MAH. 18-9.89

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

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



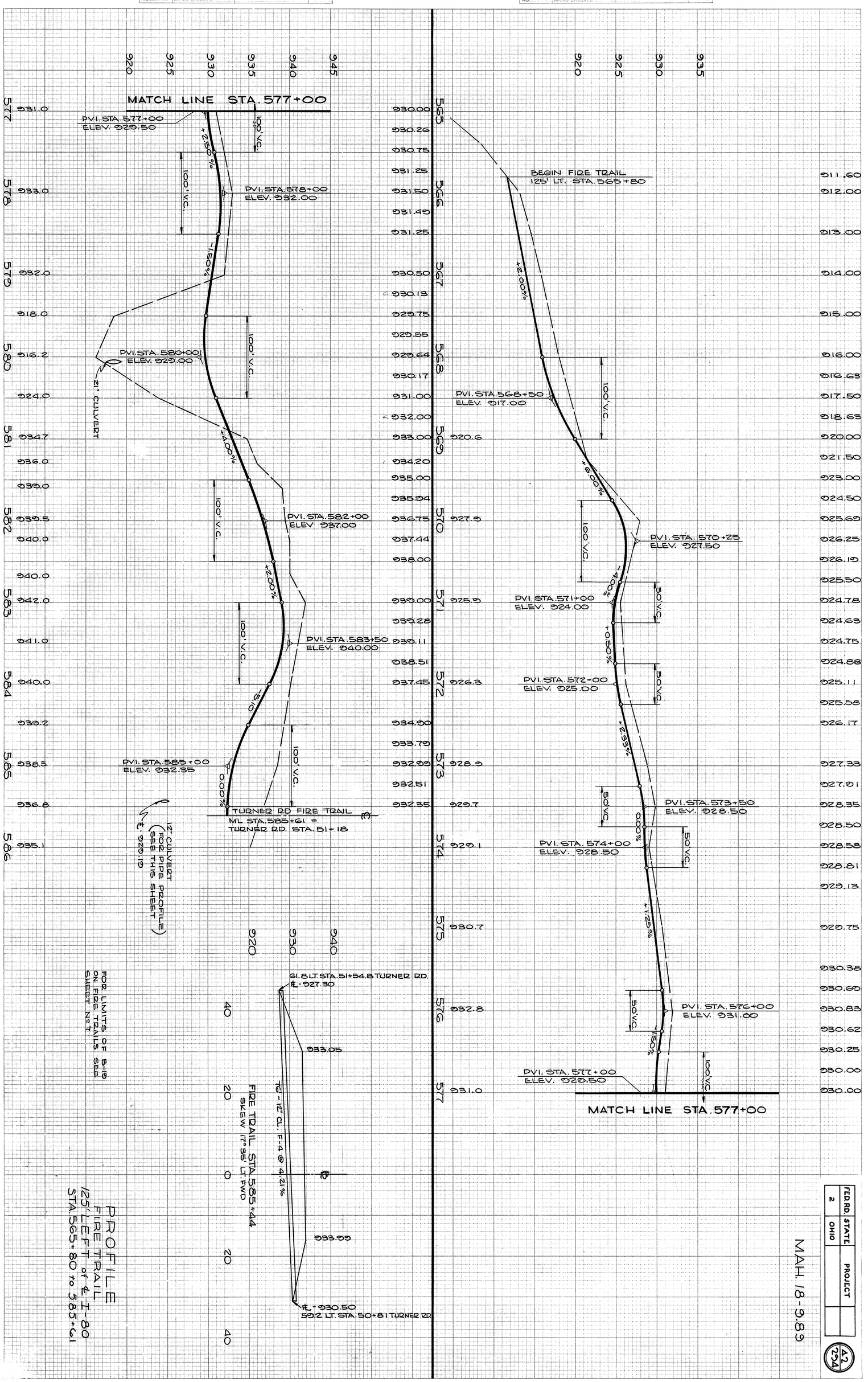
PROFILE
PROPOSED FIRE TRAIL
125' RIGHT ℄ OF I-80
STA. 556+00 TO 584+80

FOR LIMITS OF P-9 ON FIRE TRAIL SEE SHEET No. 7

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

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

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



PROFILE
FIRE TRAIL
125' LEFT of ℄ I-80
STA. 565+80 to 585+61

FED. RD.	STATE	PROJECT
2	OHIO	

MAH-18-9.89

A2
294

PLATE 3 CROSS SECTIONS OF P. & R. C. STANDARD
NORWELL & OSTER Co. NEW YORK

MAH-18-9.89

43
294

920
910

520+00
9102

BEGIN WORK 520+00

℄ 0
F. 0

920
910

519+00
916.6

920
910

518+17
920.2

920
910

518+00
920.0

STA 518+00 TO STA 520+00

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

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

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

FED. RD.	STATE	PROJECT	
2	OHIO		

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294

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END AREA VOLUME
SQ FT CU YDS.

SEEDING
ENDWIDTH SQ YDS.

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

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

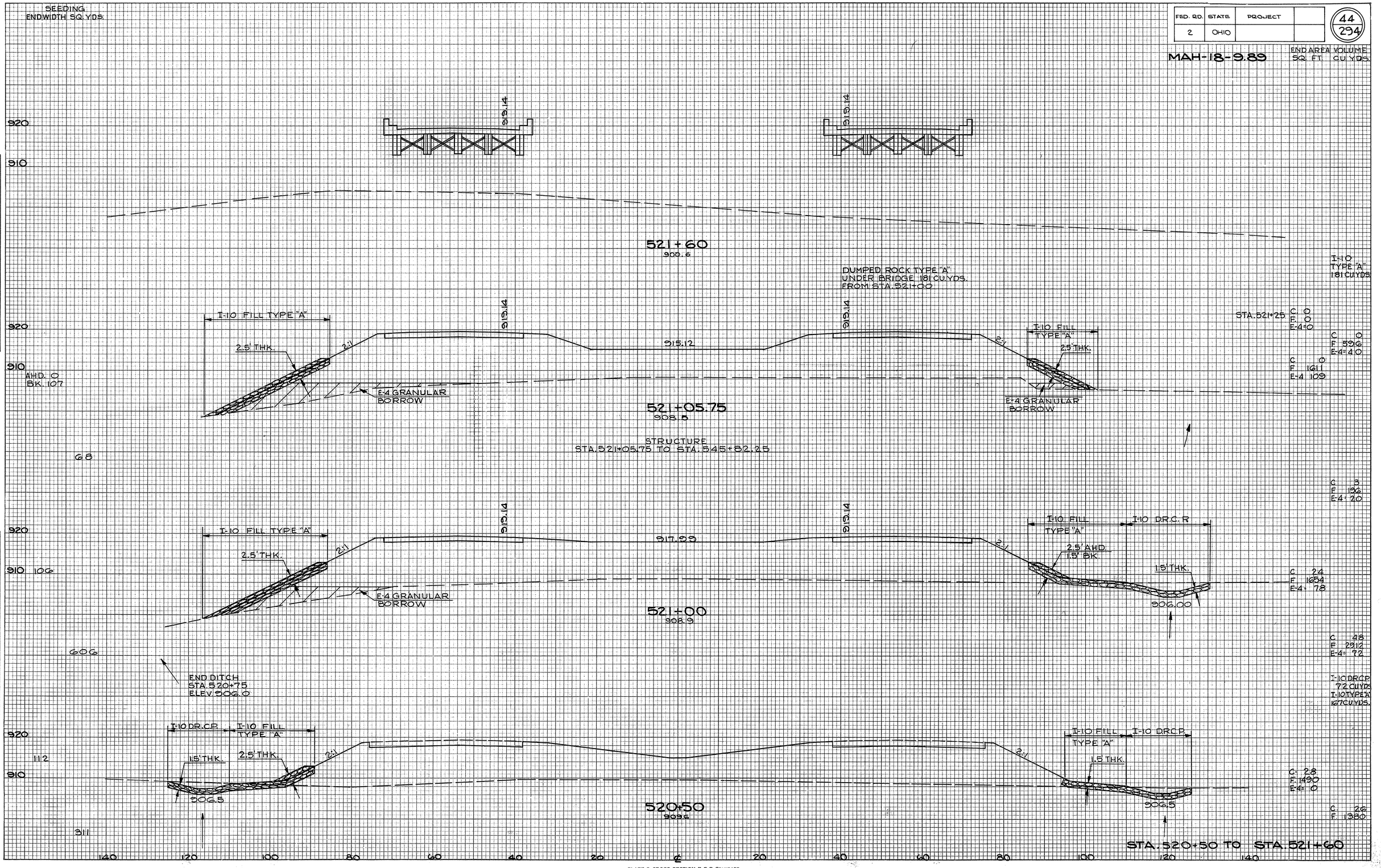

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

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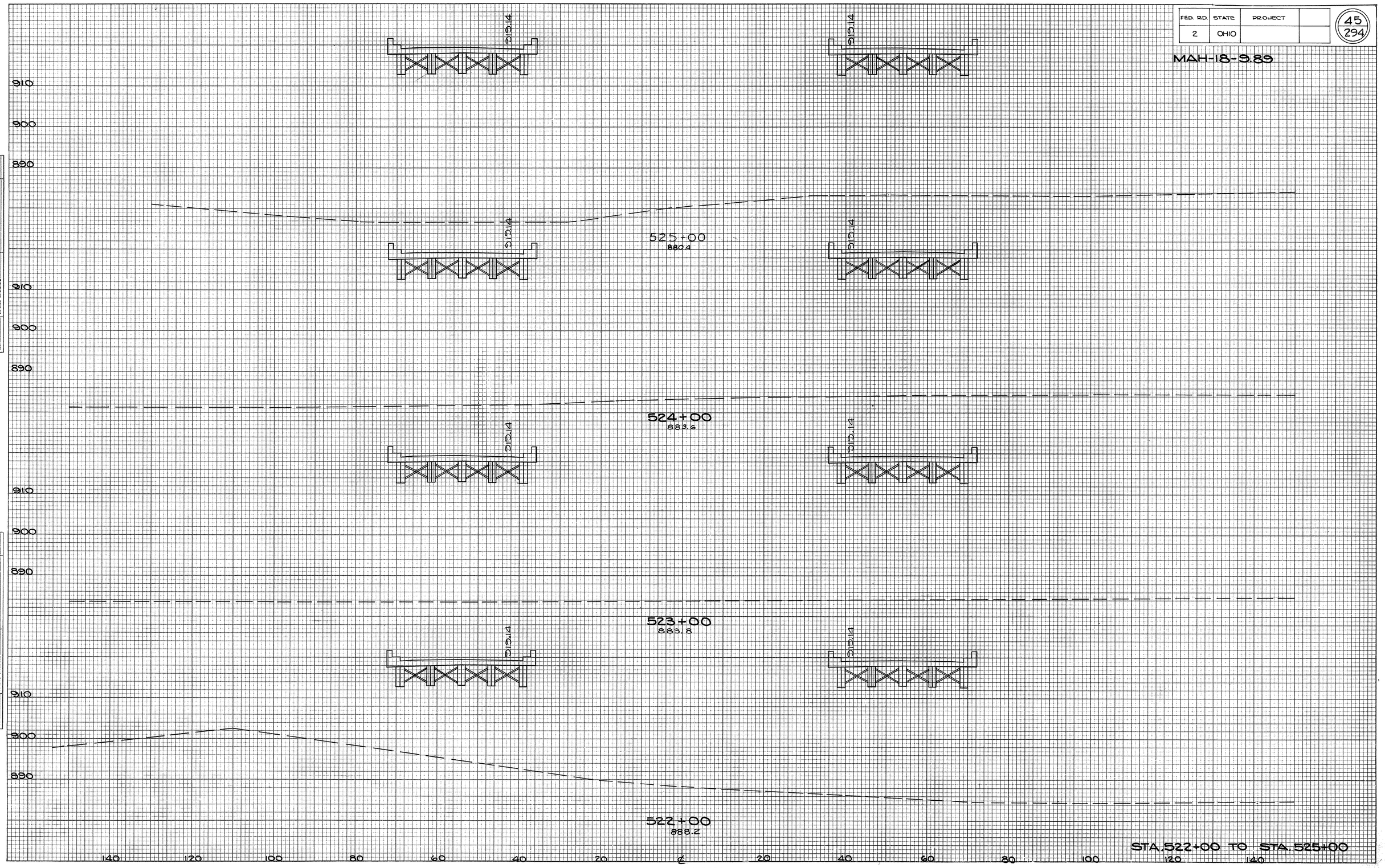
MAH-18-9.89



STA. 522+00 TO STA. 525+00

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

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

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

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294

MAH-18-9.89

FINAL SURVEY
NOTE BOOK
NO.

SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

BY

DATE

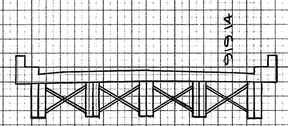
ORIGINAL SURVEY
NOTE BOOK
NO.

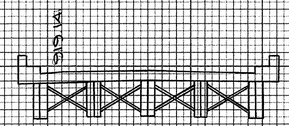
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

BY

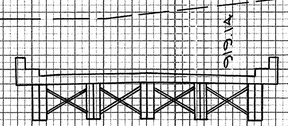
DATE

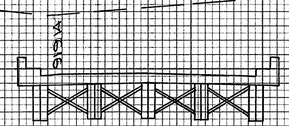
910
900
890
880



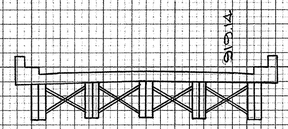


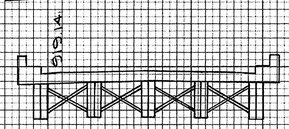
528+00
881.7





527+00
881.6





526+00
880.3

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

STA. 526+00 TO STA. 528+00

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

47
294

MAH-18-9.89

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

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

910
900
890

SIS1A

531+00
881.3

910
900
890

SIS1A

530+00
883.1

910
900
890

SIS1A

529+00
880.7

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

STA. 529+00 TO STA. 531+00

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO. CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

48
294

MAH-18-9.89

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

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

STA 534

STA 534

900
890
880

534+00
881.4

STA 534

STA 534

910
900
890

STA 533

STA 533

533+00
882.4

HALT

532+00
882.5

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

STA. 532+00 TO STA. 534+00

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

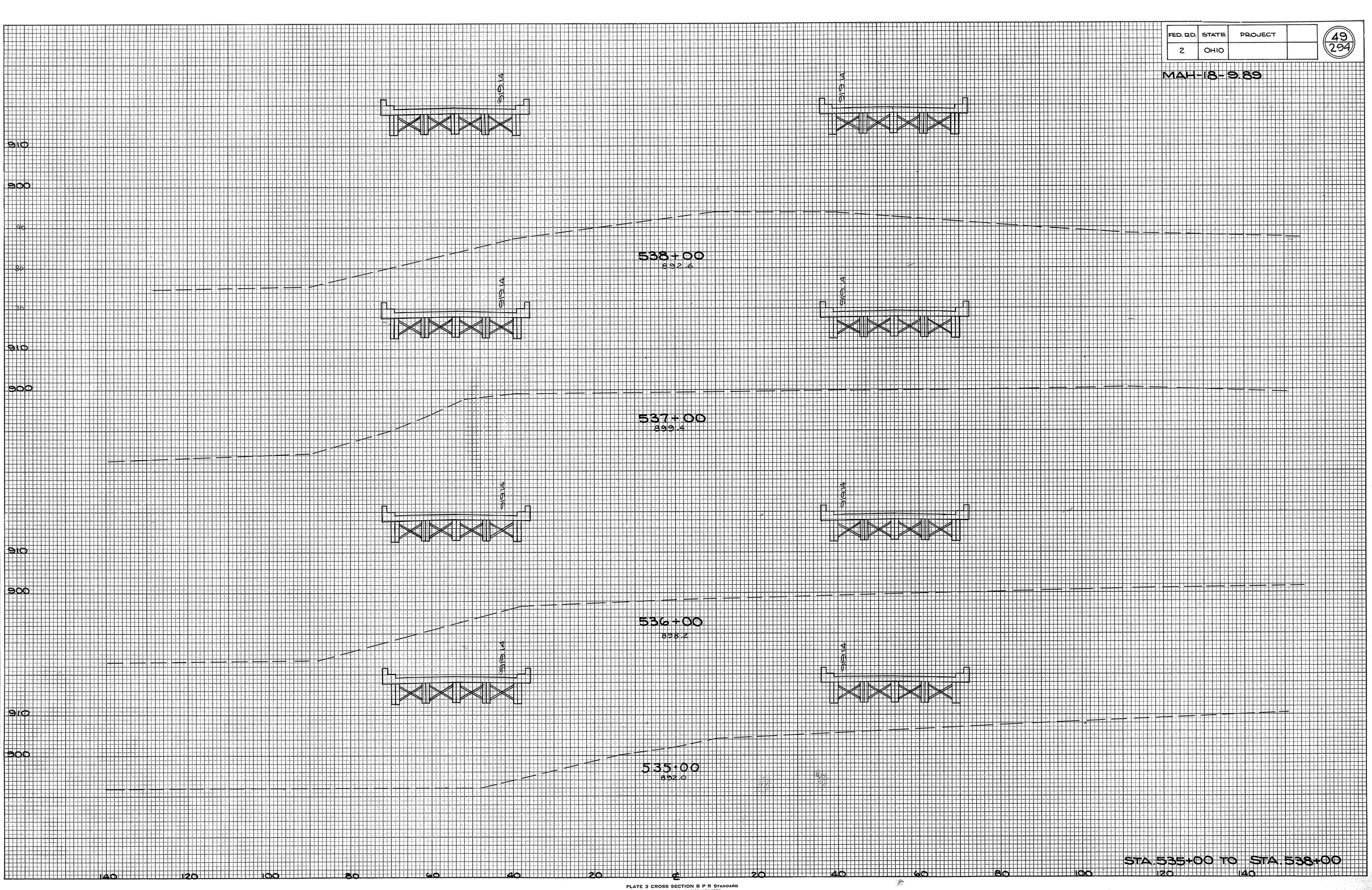
FED. RD.	STATE	PROJECT	
2	OHIO		

49
294

MAH-18-9.89

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

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



STA. 535+00 TO STA. 538+00

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

50
294

MAH-18-9.89

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

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

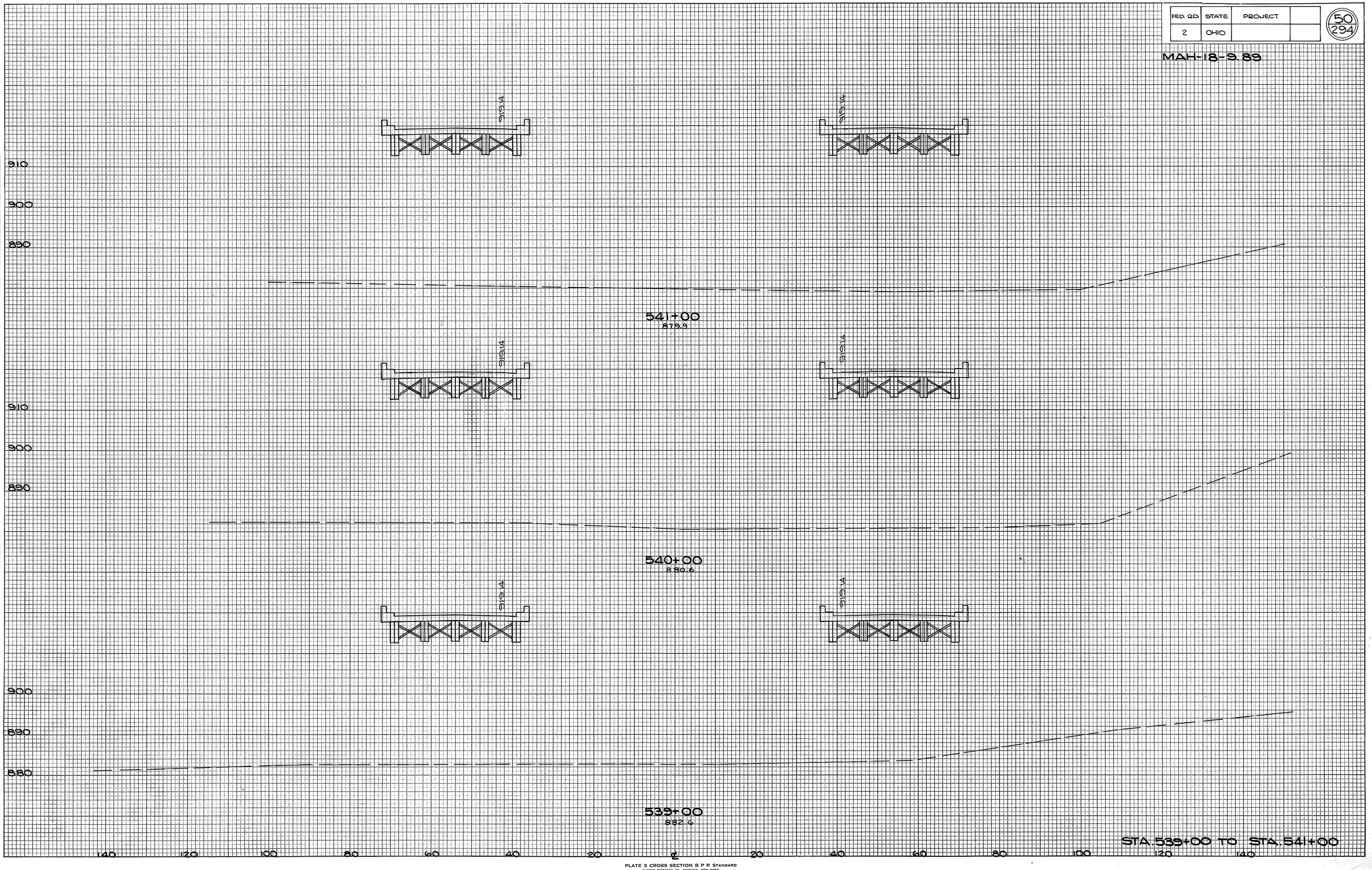


PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

51
294

MAH-18-9.89

FINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TYPED & TRACED
AREAS
AREAS CHECKED
BY
DATE

ORIGINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TYPED & TRACED
AREAS
AREAS CHECKED
BY
DATE

920
910
900

STA 544+00

STA 543+00

STA 542+00

T-10 D.R.C.P.

END DITCH STA. 544+00
ELEV. 905.0

544+00
889.7

543+00
882.2

542+00
878.8

STA. 542+00 TO STA. 544+00

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

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

52
294

MAH-18-9.89

SEEDING
ENDWIDTH SQ. YDS.

END AREA VOLUME
SQ. FT. CU. YDS.

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

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

AHD. 13.11
BK. 0
PG. 258

BEGIN T-10 TYPE "A" STA. 545+60

ELEV. 913.00
T-10 FILL TYPE "A"

2.5' THK.

E-4 GRANULAR BORROW

2:1

13.11

T-10 FILL TYPE "A"
ELEV. 913.00

BEGIN GUARDRAIL
STA. 545+82.3

T-10 FILL
TYPE "A"

T-10 DR.C.P.

1.5' THK.

913.14

920
910
900

546+00
909.1

518.72

C 83
F 1488
E-4: 255

C 78
F 358
E-4: 280

T-10 DRCP 22

T-10 TYPE"A" 66

545+82.25
908.4

515.12

906.53

C 155
F 1425
E-4

C 125
F 587
E-4: 257

T-10 D.R.C.P. 37

T-10 TYPE "A" 270

545+60
907.5

T-10 FILL TYPE "A"
ACROSS UNDER
BRIDGE 270 CU YDS.

906.30

C 150
F 0

C 278
F 0

T-10 D.R.C.P. 100

545+00
903.4

906.0

C 185
F 0

T-10 D.R.C.P. 96

140 120 100 80 60 40 20 0 20 40 60 80 100 120 140

STA. 545+00 TO STA. 546+00

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

53
294

MAH-18-9.89

SEEDING
END WIDTH SQ. YDS.

END AREA VOLUME
SQ. FT. CU. YDS.

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

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

673
920
163
910

I-10 TYPE "A" ZERO SECTION BACK

A:1 VAR. VAR. 3:1

915.14 915.14

514.79

910.50 VAR.

MEET EXISTING FIRE TRAIL

C. 10
F. 682

549+60
514.7

1086

C. 90
F. 1361

END I-10 D.R.C.P. STA. 545+30

I-10 D.R.C.P. 18
I-10 TYPE "A" 23

920
163
910

I-10 FILL TYPE "A"

3:1 8:1 5:1 2:1

915.14 915.14

514.37

I-10 FILL TYPE "A" I-10 D.R.C.P.

1.5' THK. VAR.

908.6

PROPOSED FIRE TRAIL

C. 71
F. 1083

549+00
511.0

END GUARDRAIL
STA. 548+77.4

1750

C. 206
F. 5745

I-10 D.R.C.P. 54
I-10 TYPE "A" 115

920
152
910

I-10 FILL TYPE "A"

2:1 8:1 6:1 8:1 2:1

915.14 915.14

517.05 516.57

I-10 FILL TYPE "A" I-10 D.R.C.P.

1.5' THK. 1.5' THK.

907.5

MEET EXISTING FIRE TRAIL

C. 40
F. 2019

548+00
505.6

C. 114
F. 7285

1450

I-10 D.R.C.P. 70
I-10 TYPE "A" 156

920
131
910

I-10 FILL TYPE "A"

2:1

915.14 915.14

518.34 515.42

I-10 FILL TYPE "A" I-10 D. R. C. R.

2:1

1.5' THK. AHD.
2.5 THK. BK.

1.5' THK.

907.2

C. 22
F. 1915

547+00
907.2

C. 206
F. 6304
F-4-472

1456

I-10 D.R.C.P. 85
I-10 TYPE "A" 376

STA. 547+00 TO STA. 543+60

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

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO. CHICAGO - NEW YORK

FED RD.	STATE	PROJECT	
2	OHIO		

54
294

MAH-18-9.89

END AREA VOLUME
SQ. FT. CU. YDS.

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

BY	DATE

1244

920

910

1112

I-10 FILL
TYPE "A"
2.5' THK.

2:1

914.14

914.14

VAR.

VAR.

913.77

2:1

I-10 FILL
TYPE "A"
2.5' THK. AHD.
1.5' THK. BK.

E-4 GRANULAR BORROW

C. 0
F. 1825
E-4 960

553+00
903.2

1522

END DITCH
STA. 552+25
EL. 906.170

C. 135
F. 6157
E-4 1778

I-10 DRC.P. 10

I-10 TYPE "A" 250

920

910

162

I-10 FILL
TYPE "A"
2.5' THK.

4:1

914.14

914.14

VAR.

VAR.

914.07

3:1

I-10 DRC.P.

3:1

908.52

C. 73
F. 1430

552+00
911.3

1772

C. 135
F. 5185

I-10 DRC.P. 74

I-10 TYPE "A" 120

920

910

157

I-10 FILL
TYPE "A"
2.5' THK. AHD.
1.5' THK. BK.

2:1

914.14

914.14

VAR.

VAR.

914.37

3:1

I-10 DRC.P.

4:1

908.86

C. 0
F. 1370

551+00
910.3

1772

BEGIN D.R.C.P.
STA. 550+75

C. 228
F. 4126

I-10 DRC.P. 26

I-10 TYPE "A" 74

920

910

162

I-10 TYPE "A"
ZERO SECTION
AHEAD

4:1

914.14

914.14

VAR.

VAR.

914.67

3:1

VAR.

910.90

C. 161
F. 858

550+00
914.1

673

C. 210
F. 127

STA. 550+00 TO STA. 553+00

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

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

55/294

MAH-18-9.89

END AREA VOLUME
SQ. FT. CU. YDS.

SEEDING
ENDWIDTH SQ. YDS.

42" CULVERT
STA. 555+50.3
OUTLET ELEV. 889.74

920
910
900

128

1-1:0 FILL TYPE "A"
2.5' THK.

2:1

VAR

313.37

F-4 GRANULAR BORROW

1-1:0 FILL TYPE "A"
2.5' THK. AHD
2.5' THK. BK.

C. G
F. 1835
F-4-3000

555+50
892.2

622

920
910
900

112

1-1:0 FILL TYPE "A"
2.5' THK.

2:1

VAR.

FOR PIPE PROFILE
SEE SHEET N° 96

F-4 GRANULAR BORROW

1-1:0 FILL TYPE "A"
2.5' THK.

C. G
F. 3572
F-4-5888

1-1:0 TYPE "A" 334

C. O
F. 2023
F-4-3360

555+00
891.5

42" CULVERT
STA. 554+52.5
INLET ELEV. 853.46

C. O
F. 5070
F-4-6772

871

920
910
900

112

1-1:0 FILL TYPE "A"
2.5' THK.

2:1

VAR.

313.38

F-4 GRANULAR BORROW

1-1:0 FILL TYPE "A"
2.5' THK.

1-1:0 TYPE "A" 464

C. O
F. 1885
F-4-1865

554+30
900.8

373

920
910
900

112

1-1:0 FILL TYPE "A"
2.5' THK.

2:1

VAR.

313.47

F-4 GRANULAR BORROW

1-1:0 FILL TYPE "A"
2.5' THK.

C. O
F. 2160
F-4-1925

1-1:0 TYPE "A" 181

C. O
F. 1999
F-4-1600

554+00
903.7

1244

1-1:0 TYPE "A" 496

C. O
F. 7211
F-4-4740

STA. 554+00 TO STA. 555+50

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

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

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

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO. CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

MAH-18-9.89

STA.556+00 TO STA.558+00

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

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

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO. CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

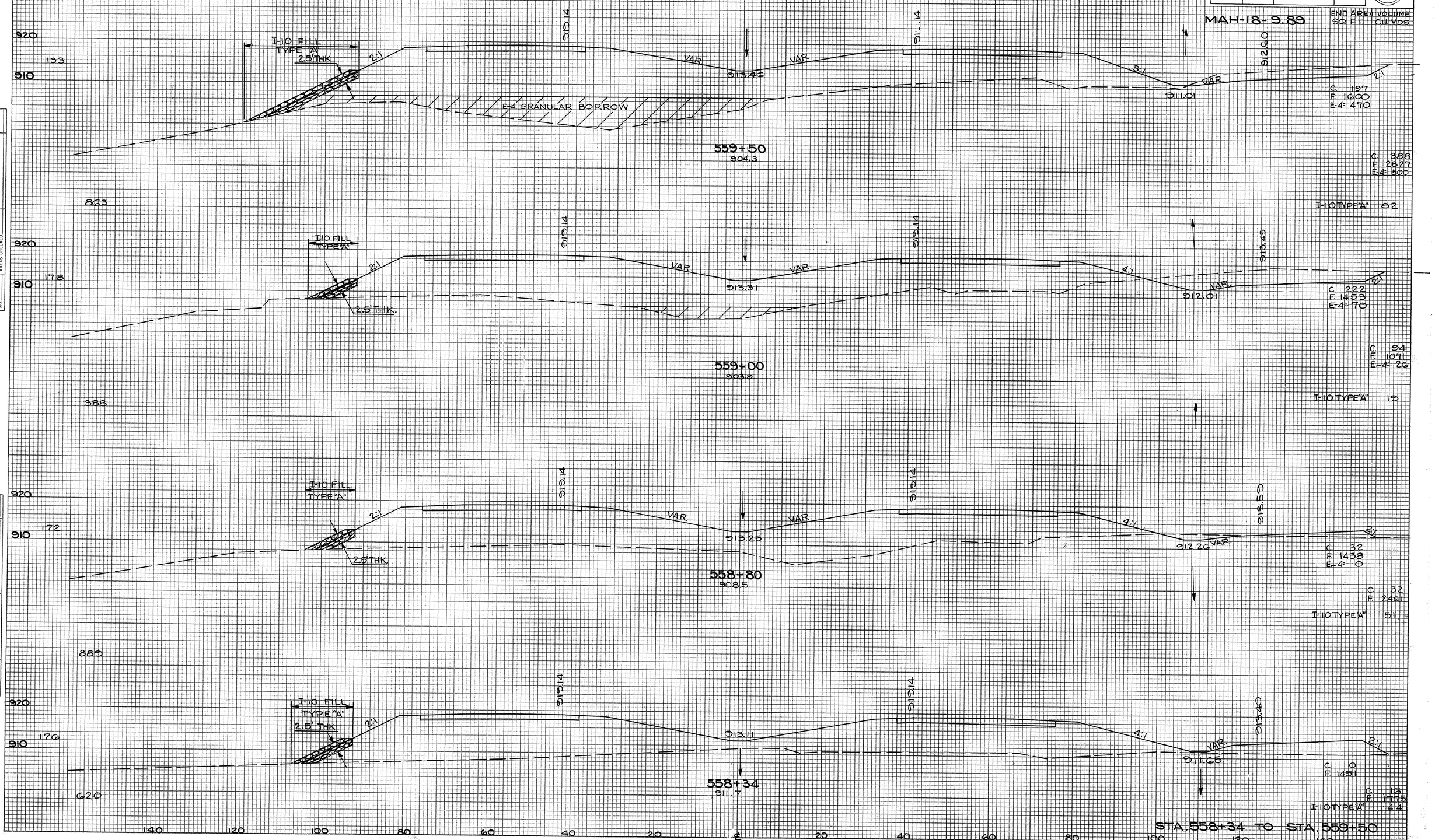
57
294

MAH-18-9.89

END AREA VOLUME
SQ. FT. CU.YDS.

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

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



STA. 558+34 TO STA. 559+50

PLATE 3 CROSS SECTION B ! R STANDARD
EUGENE PIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

58
294

MAH-18-9.89

SEEDING
END WIDTH SQ YDS

END AREA VOLUME
SQ. FT. CU. YDS.

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

561+40
909.6

920
910
148
613
I-10 FILL TYPE "A"
1.5 THK
2:1
VAR.
913.14
913.14
914.03
3:1
905.49
911.94
C. 0
F. 1526
E-4=360
C
C. 0
F. 2569
E-4=1280
SEE CULV. DETAIL SHEET N° 171-173
906.13
C
C

561+00
900.9

920
910
128
711
I-10 FILL TYPE "A"
1.5 THK AHD
2.5 THK BK.
2:1
VAR.
913.14
913.14
913.51
3:1
905.65
911.21
B
B
E 907.39
E-4 GRANULAR BORROW
I-10 TYPE "A" 28
C. 0
F. 1872
E-4=1370

560+50
895.8

920
910
128
725
I-10 FILL TYPE "A"
2.5' THK.
2:1
VAR.
913.14
913.14
913.76
3:1
903.86
911.35
D
D
SEE CULV. DETAIL SHEET N° 171-173
A
A
A
A
SEE CULV. DETAIL SHEET N°
C. 0
F. 1831
E-4=2430
E-4 GRANULAR BORROW
I-10 TYPE "A" 110
C. 33
F. 2130
E-4=3444

STA. EQUATION 561+11.69 AHEAD
560+08.49 BACK

I-10 TYPE "A" 176

560+00
902.0

920
910
133
735
I-10 FILL TYPE "A"
2.5' THK.
2:1
VAR.
913.14
913.14
913.61
3:1
910.18
911.81
2:1
BEGIN 2' DITCH RT SIDE FIRE TRAIL, 157' RT. & STA. 560+11.04
C. 42
F. 1550
E-4=1230
C. 221
F. 2317
E-4=1630
I-10 TYPE "A" 160

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

STA. 560+00 TO STA. 561+40

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

59
294

MAH-18-9.89

ENDAREA VOLUME
SQ. FT. CU. YDS.

SEEDING
END WIDTH | SQ. YDS.

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

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

60
294

MAH-18-9.89

SEEDING
END WIDTH 50 YDS

36" CULVERT @ 565+55
(111.72' LT.℄) INV=303.21

ENDAREA SQ. FT. | VOLUME CU. YDS.

565+40
905.1

920
910
798
AHD 175
BK. 191
I-10 D.R.C.P.
I-10 FILL TYPE "A"
1.5' THK.
2:1
8:1
4:1
VAR.
302.55
315.23
914.38
916.40
916.01

C. 322
F. 1424
E-4: 300

C. 321
F. 1853
E-4: 356

I-10 D.R.C.P. 53
I-10 TYPE "A" 46

565+00
913.2

920
910
168
I-10 D.R.C.P.
I-10 FILL TYPE "A"
1.5' THK.
2:1
8:1
4:1
VAR.
302.50
315.11
915.15
913.28
916.58

C. 112
F. 1008
E-4: 180

C. 124
F. 660
E-4: 76

I-10 D.R.C.P. 30
I-10 TYPE "A" 25

387

564+79
916.8

920
910
164
I-10 D.R.C.P.
I-10 FILL TYPE A
1.5' THK.
2:1
VAR.
4:1
302.27
315.05
314.60
913.68
913.25
916.54

MEET EXIST. SWALE
136.5' LT.℄ 564+77 EL=302.27

C. 207
F. 690
E-4: 15

C. 86
F. 575
E-4: 26

I-10 D.R.C.P. 36
I-10 TYPE "A" 19

350

564+60
912.3

920
910
168
I-10
TYPE "A"
1.5' THK.
2:1
VAR.
4:1
314.99
314.32
913.20
916.30

C. 36
F. 350
E-4: 60

C. 13
F. 577
E-4: 17

I-10 TYPE "A" 8

280

STA. 564+60 TO STA. 565+40

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

FINAL SURVEY
ORIGINAL SURVEY
NOTE BOOK
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AREAS
AREAS CHECKED
BY
DATE

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

61
294

MAH-18-9.89

END AREA VOLUME
SQ.FT. CU.YDS.

SEEDING
ENDWIDTH SQ.YDS.

END GUARD RAIL
STA. 568+25

BEGIN B-13
STA. 568+00

AHD 15
BK. 172

920
910

316.00
920.93
920.93
8:1
8:1
4:1
4:1
314.24
316.82
VAR.
309.33
313.10

568+00
318.1

C 123
F 285

FOR PIPE PROFILE
SEE SHEET Nº 96

1845

END GUARD RAIL
STA. 567+60.5

160
180
A
910
A
304.47
C 274
F 2506

920
910

314.00
920.21
920.21
8:1
8:1
4:1
4:1
312.55
316.04
VAR.
310.33
311.83

567+00
314.4

C 25
F 1068

983

C 33
F 2531
E-4: 74

920
910

313.00
920.66
920.66
8:1
8:1
4:1
4:1
311.27
315.73
VAR.
310.61
316.13

END B-13
STA. 566+50

566+50
312.7

C 17
F 1666
E-4: 80

861

C 60
F 3068
E-4: 250

920
910

312.00
919.54
919.54
8:1
8:1
VAR.
VAR.
310.65
315.47
VAR.
312.00
313.70

C 48
F 1647
E-4: 130

BEGIN GUARD RAIL
STA. 566+00

C 411
F 3490
E-4: 545

BEGIN FIRE TRAIL
1077 ℄ END D.R.C. P.
STA. 565+80

566+00
305.2

BEGIN B-13
STA. 565+50

T-10 D.R.C.P. 48
T-10 TYPE A 35

STA. 566+00 TO STA. 568+00

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

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO. CHICAGO - NEW YORK

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

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

SEEDING
END WIDTH 9Q. YDS.

FED. R.D.	STATE	PROJECT	
2	OHIO		

62
294

MAH-18-9.89

END AREA VOLUME
SQ. F.T. CU. YDS.

STA. 569+00 TO STA. 572+00

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

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

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

63
294

MAH-18-9.89

SEEDING
END WIDTH SQ YDS.

END AREA VOLUME
SQ. FT. CU. YDS.

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

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

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

64
294

SEEDING
END WIDTH SQ YDS

END AREA VOLUME
SQ FT CU YDS

MAH-18-9.89

1394

R/W 938.32 938.32 R/W

930 236 930.50 927.85 936.19 944.50

C 709
F 165

579+00
937.9

920

2561

C 2687
F 402

940 225 933.50 R/W 936.60 936.60 R/W 944.37

930 927.35 934.40

C 746
F 52

BEGIN GUARDRAIL
STA. 578+00

578+00
937.0

END B-19
STA. 577+50

C 2404
F 213

2186

AH. 228
BK. 212 STA. 577+50

R/W 934.88 934.88 R/W

930 212 930.00 927.25 932.75 940.50

C 552
F 63

920

577+00
935.3

2552

C 2011
F 126

AH. 210
BK. 226

R/W 933.16 933.16 R/W

930 930.83 926.95 931.03 936.72

C 534
F 5

920

2527

BEGIN B-19
STA. 576+00

C 3306
F 35

576+00
934.3

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

STA. 576+00 TO STA. 579+00

PLATE 3 CROSS SECTION B P R STANDARD
EIGHT BETTER TO REPAIR AND USE

FINAL SURVEY
NOTE BOOK
NO
SURVEYED
PLOTTED
TRACED
AREAS
AREAS CHECKED
BY
DATE

ORIGINAL SURVEY
NOTE BOOK
NO
SURVEYED
PLOTTED
TRACED
AREAS
AREAS CHECKED
BY
DATE

FED. RD.	STATE	PROJECT	
2	OHIO		

65
294

MAH-18-9.89

SEEDING
ENDWIDTH SQ.YDS.

ENDAREA VOLUME
SQ.FT. CU.YDS.

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

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

AH.224
BK. 240

BEGIN B-19
STA. 580+50

580+50
923.0

580+00
935.9

579+50
936.9

STA. 579+50 TO STA. 580+50

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

66
294

MAH-18-9.89

SEEDING
END WIDTH SQ.YDS

ENDAREA VOLUME
SQ.FT. CU.YDS.

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

ORIGINAL SURVEY — NOTE BOOK — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

CULV. INLET
STA. 582+20.86
E 934.68

C 164
F 1241

C 246
F 1872

C 185
F 1348

C 223
F 1845

C 191
F 1765

C 159
F 2065

C 35
F 1951

C 131
F 4432

END B-19
STA. 581+50

BEGIN B-19
STA. 581+00

END GUARDRAIL
STA. 582+00.0

BEGIN GUARDRAIL
STA. 581+57.0

AH. 230
BK. 198
STA. 581+50

AH. 195
BK. 211

582+00
937.3

581+62
933.4

581+30
923.9

581+00
922.3

STA. 581+00 TO STA. 582+00

FED. RD.	STATE	PROJECT	
2	OHIO		

67
294

MAH-18-9.89

END AREA VOLUME
SQ. FT. CU. YDS.

SEEDING
END WIDTH SQ. YDS.

END GUARDRAIL
STA. 584+40.0

MEET TURNER RD
FIRE TRAIL STA 584+72

AHD. 175
BK. 155

940

337.45 — 4:1 — 935.56

BEGIN GUARDRAIL
STA. 583+89.0

946.32 — 8:1 — 942.69 — VAR. — 946.32

9:1 — 12:1 — 1:1 — VAR. — 934.80 — 1:1 — 2:1 — 933.16

940

C. 1063
F. 200

160

BEGIN B-19
STA. 584+00

584+00
944.8

213.8

C. 3153
F. 376

BEGIN B-19
STA. 583+25

AHD. 204 } STA 583+25
BK. 230 }

236

940

945.20 — 8:1 — 941.78 — VAR. — 6:1 — 943.30 — 8:1 — 945.20

337.07 — 4:1 — 4:1 — 335.00

4:1 — VAR. — 335.00 — 2:1 — 340.35

BEGIN GUARDRAIL
STA. 582+90.0

583+00
945.5

C. 934
F. 3

107.0

C. 568
F. 59

944.86 — 8:1 — 941.60 — VAR. — 6:1 — 943.06 — 8:1 — 944.86

338.30 — 4:1 — VAR. — 936.50

4:1 — VAR. — 938.23 — 940.47

582+65
945.3

C. 243
F. 87

C. 258
F. 983

1026

943.31 — 8:1 — 941.58 — 6:1 — 6:1 — 941.80 — 8:1 — 943.31

337.44 — 5:1 — 4:1 — 936.03

4:1 — VAR. — 938.03 — 939.80

C. 153
F. 1240

582+25
941.9

647

C. 150
F. 1149

STA. 582+25 TO STA. 584+00

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

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

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

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

68
294

MAH-18-9.89

SEEDING
END WIDTH SQ. YDS.

	END AREA SQ. FT.	VOLUME CU. YDS.
		C. 162 F. 2624
		C. 322 F. 5104
		C. 128 F. 1970
		C. 315 F. 3648
		C. 42 F. 0 AHD
		C. 259 F. 0 BK.
		C. 2459 F. 370

940

244

2:1 2:1 12' 2:1

952.48 953.11 952.38 949.56 953.11 950.98

8:1 8:1 8:1 3:1

320.30

#12 AGGREGATE

587+60
931.7

1620

NOTE: FOR QUANTITIES OF #12 AGGREGATE SEE SHEET Nº 174

STA. 587+23.21
OUTLET 54" CULV.

940

242

952.08 952.08

8:1 8:1 3:1 3:1

947.21 948.38

587+00
946.8

2:1 2:1

#12 AGGREGATE

320.50

BEGIN GUARDRAIL
STA. 586+50.0

1661

950.36 950.36

BEGIN GUARDRAIL
STA. 586+38.0

940

4:1 3:1

945.48

586+00
945.4

57 AHD.
0 BK.

SEEDING CARRIED WITH
TURNER ROAD QUANTITIES

948.64 948.64

STRUCTURE
TURNER RD.

MEET TURNER\ RD
FIRE TRAIL STA. 585+53

940 0 AHD.
60 BK.

2:1 VAR.

END GUARDRAIL
STA. 584+89.0

END GUARDRAIL
STA. 584+52.0

585+00
944.4

1328

140 120 100 80 60 40 20 0 20 40 60 80 100 120 140

STA. 585+00 TO STA. 587+60

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

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

ORIGINAL SURVEY — NOTE BOOK — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

SEEDING
ENDWIDTH SQ.YDS.

FED. RD.	STATE	PROJECT	
2	OHIO		

69
294

MAH-18-9.89

END AREA VOLUME
SQ.FT. CU.YDS.

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

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

END GUARDRAIL
STA. 589+33.0

955.52 955.52

952.82 953.97 953.90

8:1 6:1 8:1 6:1 4:1

2:1 2:1 2:1

212 940 942.07

1124

#12 AGGREGATE

589+00
930.7

C. 83
F. 2645

C. 239
F. 5328

BEGIN GUARDRAIL
STA. 588+87.5

954.66 954.66

952.74 952.46 952.50

8:1 6:1 6:1 8:1 8:1 2:1

218 940 941.71

1252

588+50
929.4

C. 175
F. 3110

C. 331
F. 5738

953.80 953.80

952.60 950.88 951.10

8:1 8:1 8:1 2:1

247 940 934.18

#12 AGGREGATE

1091

588+00
930.2

C. 247
F. 3085

C. 303
F. 4225

STA. 588+00 TO STA. 589+00

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

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. R.D.	STATE	PROJECT	
2	OHIO		

70
294

MAH-18-9.89

SEEDING
ENDWIDTH SQ. YDS.

END AREA VOLUME
SQ.FT. CU.YDS.

STA. 590+99.83
INLET 54" CULVERT.

232
950
1653
4:1
954.62
6:1
8:1
954.10
8:1
2:1
4:1
Spring
#12 AGGREGATE
4:1
933.30
C 119
F 2907
590+60
940.1
C 590
F 6610
957.24
957.24

264
950
1400
3:1
952.10
4:1
8:1
953.07
8:1
2:1
2:1
941.25
END GUARDRAIL
STA. 590+00.0
590+00
937.6
C 412
F 3056
C 588
F 6024

240
950
1256
2:1
3:1
948.55
8:1
952.22
8:1
3:1
948.00
2:1
FOR PIPE PROFILE
SEE SHEET Nº 37
#12 AGGREGATE
589+50
936.1
C 284
F 5606
C 223
F 3410
956.38
956.38

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

STA. 589+50 TO STA. 590+60

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

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

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

SEEDING
END WIDTH SQ. YDS.

FED. RD.	STATE	PROJECT	
2	OHIO		

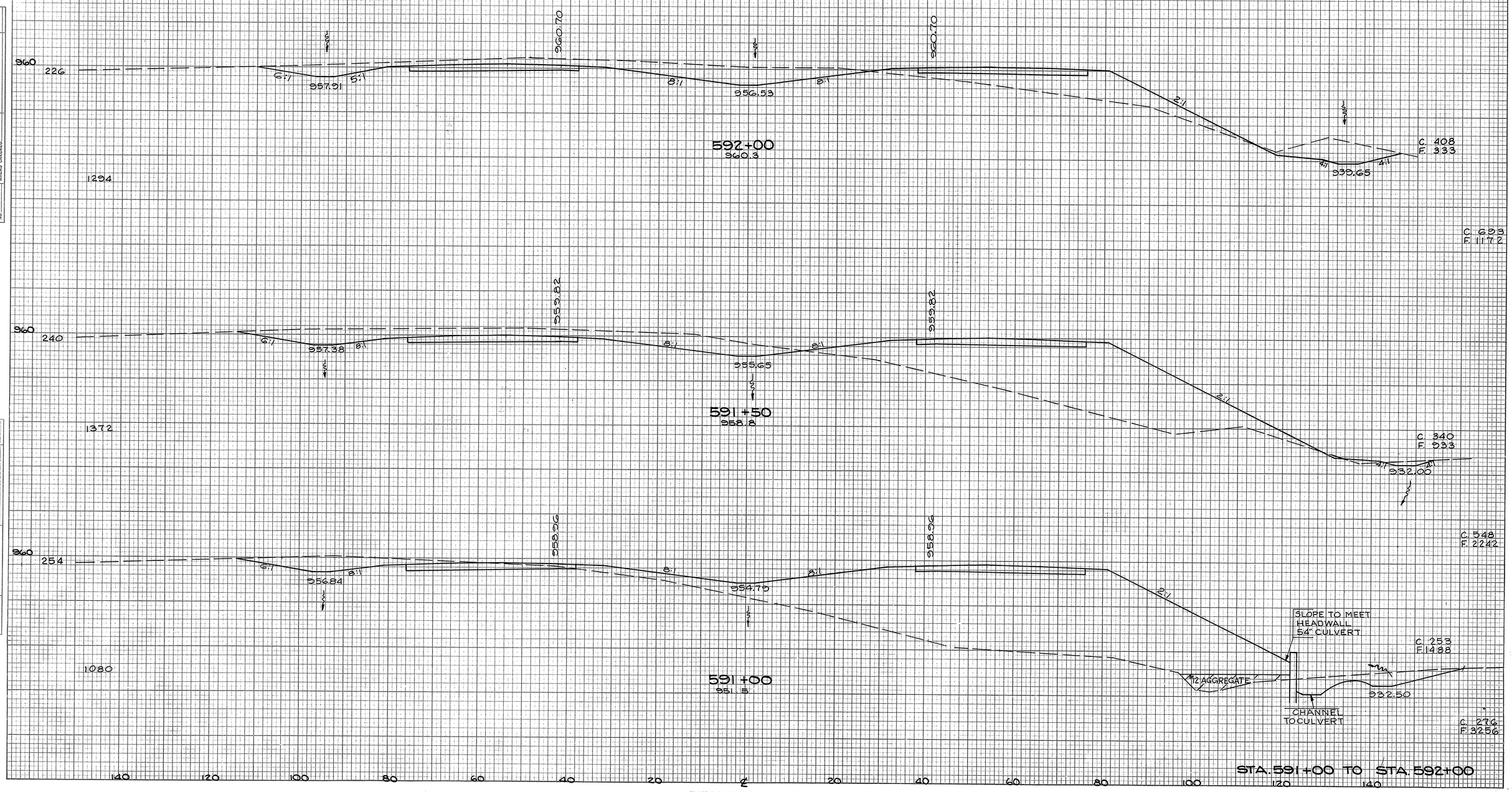
71
294

MAH-18-9.89

END AREA VOLUME
SQ. FT. CU. YDS.

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

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



STA. 591+00 TO STA. 592+00

PLATE 3 CROSS SECTION Ø P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

72
294

MAH-18-9.89

STA. 593+00 TO STA. 596+00

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

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

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO • NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

73
294

MAH-18-9.89

END AREA VOLUME
SQ. FT. CU. YDS.

SEEDING
ENDWIDTH SQ. YDS.

WEST BOUND

EAST BOUND

42" CULVERT
598+74.33
℄ 345.45

970

212

4:1 4:1 12:1 2:1 3:1

975.18 974.34 VAR 8:1 974.23 973.44 2:1 2:1

970.70 970.14 967.14

C. 120
F. 570

1045

598+00
968.6

C. 330
F. 1071

970

206

4:1 4:1 12:1 2:1

975.94 973.32 VAR 8:1 970.03 971.49 8:1 3:1

966.16 969.96 970.29

C. 276
F. 715

1277

597+55
965.3

C. 1167
F. 1117

BEGIN GUARDRAIL
STA. 597+25.0

970

212

2:1 4:1 8:1 12:1 2:1

975.45 973.83 VAR 8:1 971.53 970.97 8:1 3:1

967.52 968.90

CHANNEL OUT

42° CULVERT
SKEW UP STA.

C. 870
F. 381

C. 833
F. 239

585

597+00
973.0

970

212

4:1 4:1 8:1 12:1 2:1

971.80 971.18 VAR 8:1 970.34 971.24 8:1 3:1

969.93 966.89 968.27

C. 520
F. 136

1692

596+75
973.8

C. 2330
F. 2062

WEST BOUND

EAST BOUND

STA. 596+75 TO STA. 598+00

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

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

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

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

FED. RD.	STATE	PROJECT	
2	OHIO		

74
294

MAH-18-9.89

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

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

STA. 598+50 TO STA. 601+00

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

75
294

MAH-18-9.89

END AREA VOLUME
SQ.FT CU.YDS.

SEEDING
END WIDTH SQ.YDS.

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

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

980
218
4.1
4.1
979.57
2.1
999.46
999.84
VAR
989.67
8.1
999.14
999.46
4.1
986.49
C. 42
F. 1084

605+00
987.4

2385
980
212
4.7
4.1
978.33
2.1
997.54
997.84
VAR
986.88
8.1
997.05
997.32
4.1
984.70
C. 130
F. 3980
C. 28
F. 1065

604+00
984.1

2361
980
213
4.1
4.1
977.72
BEGIN GUARDRAIL
STA. 603+00.0
3.1
995.44
995.84
VAR
984.05
8.1
995.14
995.74
4.1
982.91
C. 20
F. 891
C. 74
F. 3072

603+00
982.2

2,272
980
196
4.7
4.1
976.03
2.1
986.74
986.14
VAR
981.30
8.1
985.37
985.15
4.1
981.12
C. 20
F. 768
C. 381
F. 2050

602+00
980.6

2300

WEST BOUND

EAST BOUND

STA. 602+00 TO STA. 605+00

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

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

76
294

MAH-18-9.89

END AREA VOLUME
SQ.FT CU.YDS.

SEEDING
END WIDTH 50 YDS

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

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

609+00
991.0

990
244
4:1
4:1
383.35
2739
1007.08
1004.44
VAR
100.85
8:1
1002.90
1002.28
4:1
4:1
939.40
C 22
F 2616
C 107
F 9583

608+00
988.1

990
249
4:1
4:1
382.30
2694
1004.16
1003.54
VAR
997.91
8:1
1002.11
1001.49
4:1
4:1
990.20
C 36
F 2559
C 113
F 8763

607+00
988.0

990
236
4:1
4:1
381.55
2556
1001.26
1000.64
VAR
995.25
8:1
999.32
998.70
4:1
4:1
989.69
C 25
F 2173
C 109
F 6539

606+00
988.5

990
224
4:1
4:1
380.75
2456
998.36
997.74
VAR
992.46
8:1
996.53
995.91
4:1
4:1
988.78
C 34
F 1358
C 141
F 4523

WEST BOUND

EAST BOUND

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

STA. 606+00 TO STA. 609+00

PLATE 3 CROSS SECTION B P R STANDARD
EUGENE DIETZGEN CO., CHICAGO - NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

77
294

MAH-18-9.89

SEEDING
END WIDTH SQ YDS.

			ENDAREA SQ. FT.	VOLUME CU. YDS.
1010	196	2239	C 32 F 581	
1010	207	2361	C 119 F 2548	C 32 F 795
1010	218	2511	C 96 F 4324	C 20 F 1540
1010	234	2656	C 87 F 6334	C 27 F 2204
			C 91 F 8926	

END GUARDRAIL
STA. 613+00.0

613+00
1012.8

612+00
1008.6

611+00
1001.6

610+00
996.1

FOR DETAIL OF CROSSOVER
SEE SHEET Nº163

WESTBOUND

EASTBOUND

STA. 610+00 TO STA. 613+00

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

PLATE 3 - CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

FED. RD.	STATE	PROJECT	
2	OHIO		

78
294

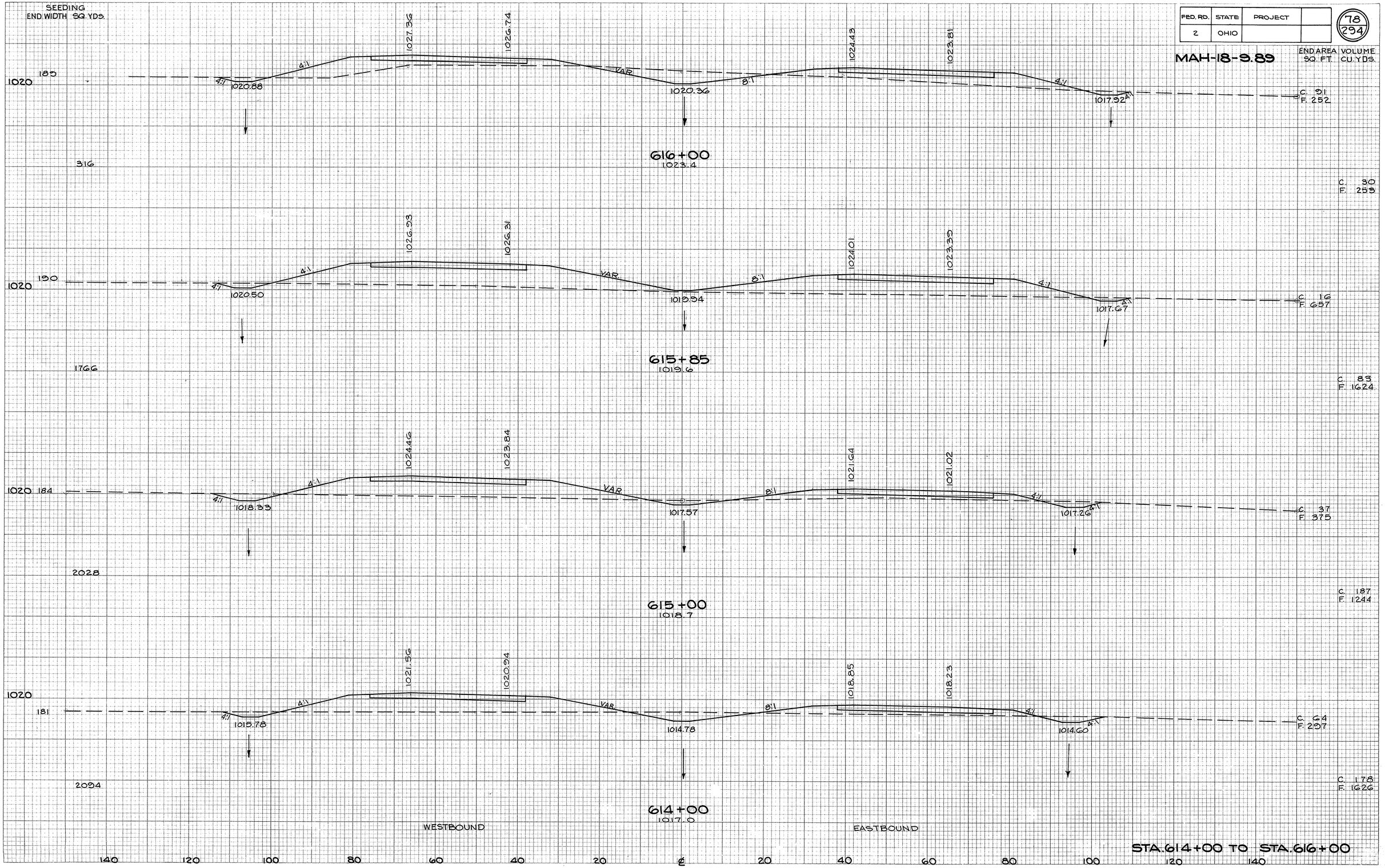
MAH-18-9.89

END AREA VOLUME
SQ. FT. CU. YDS.

SEEDING
END WIDTH SQ. YDS.

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

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



STA. 614+00 TO STA. 616+00

PLATE 3 - CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

FED.RD.	STATE	PROJECT	
2	OHIO		

79
294

MAH-18-9.89

END AREA SQ.FT. | VOLUME CU.YDS.

SEEDING
END WIDTH SQ.YDS.

END GUARDRAIL
STA. 620+32.0

END GUARDRAIL
STA. 620+48.8

1038.01 | 1037.35 | 1035.43 | 1034.81

1030
228

END DITCH
STA. 619+94
EL 1027.90

OHLTOWN
SIDE DITCH
SLOPE

END GUARDRAIL
STA. 619+85.3

2:1 | 8:1 | 8:1 | 2:1 | 4:1 | 4:1 | 1022.50

C. 33
F. 1583

2517

620+00
1026.2

C. 100
F. 5413

1035.64 | 1035.02 | 1032.79 | 1032.17

1030
225

8:1 | VAR | 6:1 | 6:1 | 3:1 | 4:1 | 4:1 | 2:1 | 4:1 | 1024.87 | 1030.66 | 1032.12 | 1022.00

C. 21
F. 1340

BEGIN GUARDRAIL
STA. 618+98.8

2428

619+00
1025.8

C. 89
F. 4189

1033.05 | 1032.43 | 1030.01 | 1029.39

1030
212

8:1 | VAR | 6:1 | 8:1 | 4:1 | 8:1 | 4:1 | 3:1 | 4:1 | 1023.54 | 1030.13 | 1028.53 | 1021.50

C. 27
F. 922

BEGIN GUARDRAIL
STA. 617+97.8

2278

618+00
1025.9

C. 38
F. 2920

BEGIN GUARDRAIL
STA. 617+37.0

1030.26 | 1029.64 | 1027.22 | 1026.60

1030
198

8:1 | 8:1 | 8:1 | 8:1 | 4:1 | 4:1 | 4:1 | 4:1 | 1022.21 | 1026.98 | 1025.84 | 1019.30

C. 26
F. 655

2150

617+00
1024.0

C. 217
F. 1680

WESTBOUND | EASTBOUND

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

STA. 617+00 TO STA. 620+00

PLATE 3 - CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

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

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

FED.RD.	STATE	PROJECT	
2	OHIO		

80
294

MAH-18-9.89

	ENDAREA SQ.FT.	VOLUME CU.YDS.
C	27	
F	4211	
C	80	
F	17,521	
C	16	
F	5250	
C	113	
F	16,352	
C	45	
F	3580	
C	83	
F	6630	
C	0	
F	0	
C	61	
F	2932	

SEEDING
ENDWIDTH SQYDS

1453

1030

266

1045.39 1044.77 1043.96 1043.34

8:1 6:1 6:1 8:1

1041.60 1042.66

2:1 2:1

4:1 12:1 4:1 4:1

1015.80 1023.90

30" CULVERT
HW @ STA. 623+55.46
INLET INV. 1015.50
(SKEW DOWN STA.)

624+00
1021.1

3056

1030

284

1043.86 1043.24 1042.13 1041.51

var. 1042.00 6:1 7:1 8:1 2:1 2:1

1039.46

4:1 4:1 4:1 4:1

1016.50 1015.0

623+00
1015.9

3044

1030

264

1042.12 1041.50 1040.10 1039.48

8:1 2:1 8:1 2:1

1036.62

4:1 8:1

1023.80

30" CULVERT
HW @ STA. 622+86.09
OUTLET INV. 1014.86
(SKEW UP STA.)

FOR PIPE PROFILE
SEE SHEET Nº 97

622+00
1020.5

1467

BEGIN GUARDRAIL
STA. 621+81.9

BEGIN DITCH
STA. 621+90

1015.00

0

BEGIN SEEDING
STA. 621+40

BEGIN GUARDRAIL
STA. 621+18.4

1040.17 1039.55

BEGIN GUARDRAIL
STA. 621+35.0

1037.87 1037.25

STRUCTURE
OHLTOWN RD.

1030

4:1 4:1 4:1 12:1

1026.30

0

END SEEDING
STA. 620+50

1267

WESTBOUND

621+00
1024.3

EASTBOUND

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

STA. 621+00 TO STA. 624+00

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

PLATE 3 - CROSS SECTION C. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK

FED. RD.	STATE	PROJECT	
2	OHIO		

81
294

MAH-18-9.89

END AREA VOLUME
SQ.FT. CU.YDS.

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

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

SEEDING
END WIDTH SQ.YDS.

2,744

1040

240

1024.0

2:1

1047.61 1047.18 VAR. 1043.50 1043.50 VAR. 1047.01 1046.39 2:1

C 0
F 2941

626+00
1032.5

C 0
F 4848

1272

1040

218

1027.50

2:1

1047.29 1046.67 VAR. 1042.25 8:1 1046.32 1045.70 2:1

C 0
F 2296

BEGIN DITCH
625+25
ELEV 1031.00

1,200

625+50
1033.7

1040

21A

BEGIN DITCH
625 +00
ELEV. 1028.50

2:1

1046.71 1046.09 VAR. 1041.51 8:1 1045.58 1044.96 2:1 1030.5

C 11
F 4263

C 12
F 2308

625+00
1032.3

C 30
F 4724

1,308

1040

257

1018.00

2:1

1046.08 1045.46 VAR. 1040.73 8:1 1044.80 1044.18 2:1 1029.10

C 20
F 2794

FOR PIPE PROFILE
SEE SHEET Nº 97

C 44
F 6486

624+50
1030.5
END GUARDRAIL
STA. 624+30.0

WEST BOUND

EAST BOUND

STA. 624+50 TO STA. 626+00

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

PLATE 3 CROSS SECTION O. P. F. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

FED. RD.	STATE	PROJECT	
2	OHIO		

82
294

MAH-18-9.89

END AREA VOLUME
SQ.FT. CU.YDS.

SEEDING
ENDWIDTH SQYDS.

1040

END DITCH
630+50
ELEV. 1022.00
AH-178
BK-116

1049.94 1049.73 1049.52 1050.66 1050.45 1050.24

1022.20 1022.04

AHD. C 30 F 3657
BK. C 6 F 3637

630+00
1021.8

END GUARDRAIL
STA. 629+65.0

END GUARDRAIL
STA. 629+26.0

2,118

1049.87 1049.25 1050.06 1049.44

VAR. 1046.90 VAR.

2:1 2:1 2:1

265

1022.50

C 30 F 17100

C 10 F 5597

629+00
1022.3

2,972

1049.39 1048.77 1049.24 1048.62

VAR. 1046.55 VAR. VAR. 1047.24 VAR.

2:1 2:1

270

1023.40

C 35 F 15,502

C 9 F 5150

628+00
1022.8

2,911

1048.66 1048.04 1048.23 1047.61

VAR. VAR. 1046.19 VAR. VAR. 1045.28 VAR.

2:1 2:1

254

1023.70

C 17 F 16,991

C 0 F 4025

C 0 F 12,900

WEST BOUND

627+00
1025.8
BEGIN GUARDRAIL
STA. 626+65.0

EAST BOUND

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

STA. 627+00 TO STA. 630+00

PLATE 3 - CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO. NEW YORK

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

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

FED. RD.	STATE	PROJECT	
2	OHIO		

83/294

MAH-18-9.89

END AREA VOLUME
SQ.FT. CU.YDS.

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

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

SEEDING
ENDWIDTH SQ.YDS.

1040

312

1018.33

4:1

1048.47

1047.04

1041.97

1051.07

2:1

CULV.
634+23
ELEV. 1020.00

C 134
F 5220

1020.12

634+00
1023.1

3,511

1040

1049.05

1048.47

7:1

8:1

1046.38

1051.28

C 498
F 20,756

320

4:1

1018.63

C 135
F 5988

1020.60

633+00
1021.2

BEGIN GUARDRAIL
STA. 632+37.0

2,878

1040

1049.41

VAR.

VAR.

1051.27

C 385
F 21,164

BEGIN DITCH
STA. 632+46
145' LT. & NL

198

C 73
F 5440

1021.08

632+00
1021.8

1,728

1040

1049.68

1049.76

1049.57

1051.07

1051.15

1050.96

BEGIN GUARDRAIL
STA. 631+97.0

C 108
F 13,348

AH-113
BK-176

AHD. C 34
F 1768

BK. C 14
F 235

1021.56

1,968

631+00
1021.6

END GUARDRAIL
STA. 630+68.0

BEGIN GUARDRAIL
STA. 630+95.0

C 81
F 7208

WEST BOUND

EAST BOUND

STA. 631+00 TO STA. 634+00

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

PLATE 3 - CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

FED. RD.	STATE	PROJECT	
2	OHIO		

84
294

MAH-18-9.89

END AREA VOLUME
SQ. FT. CU. YDS.

SEEDING
END WIDTH SQ. YDS.

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

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

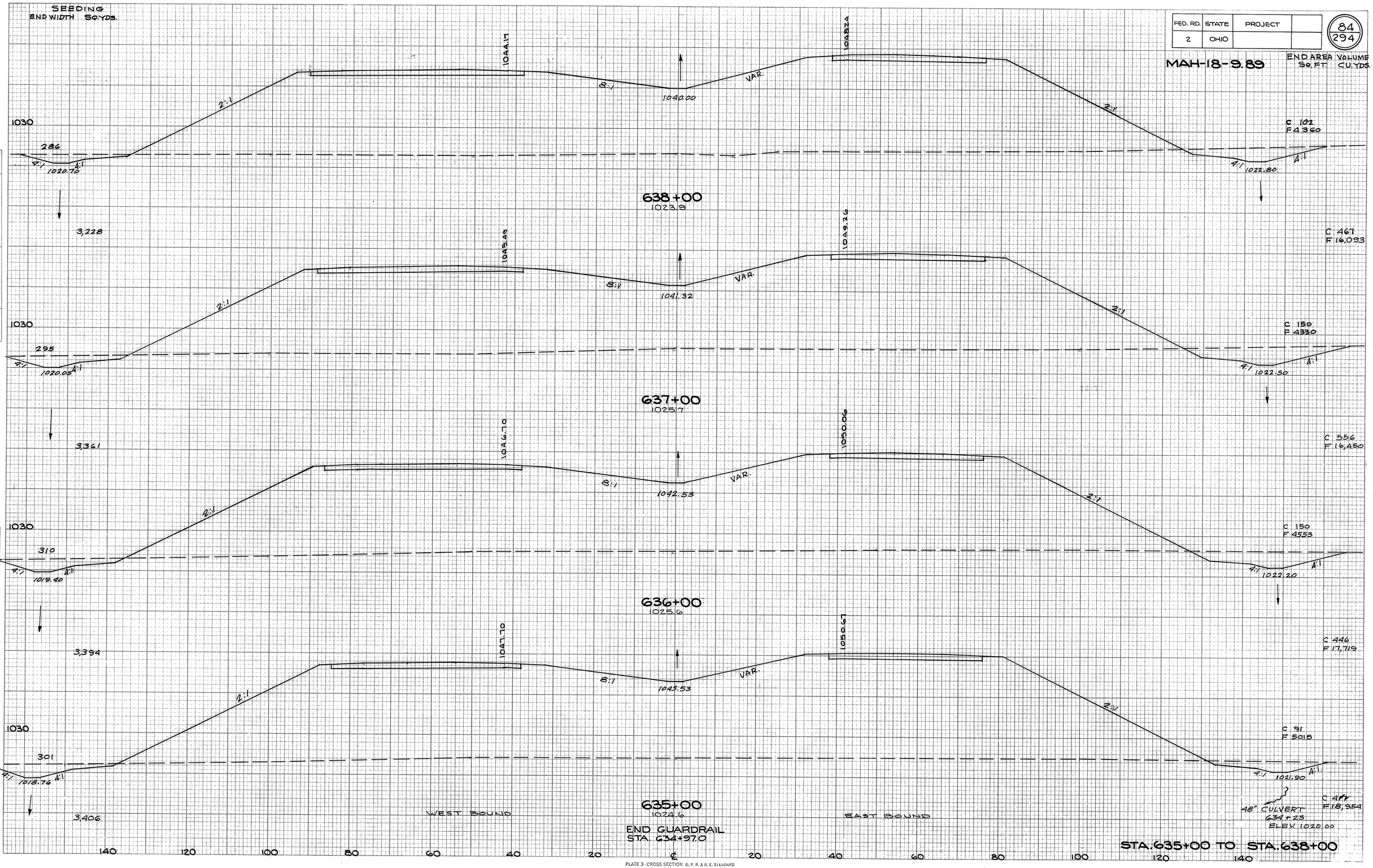


PLATE 3 - CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

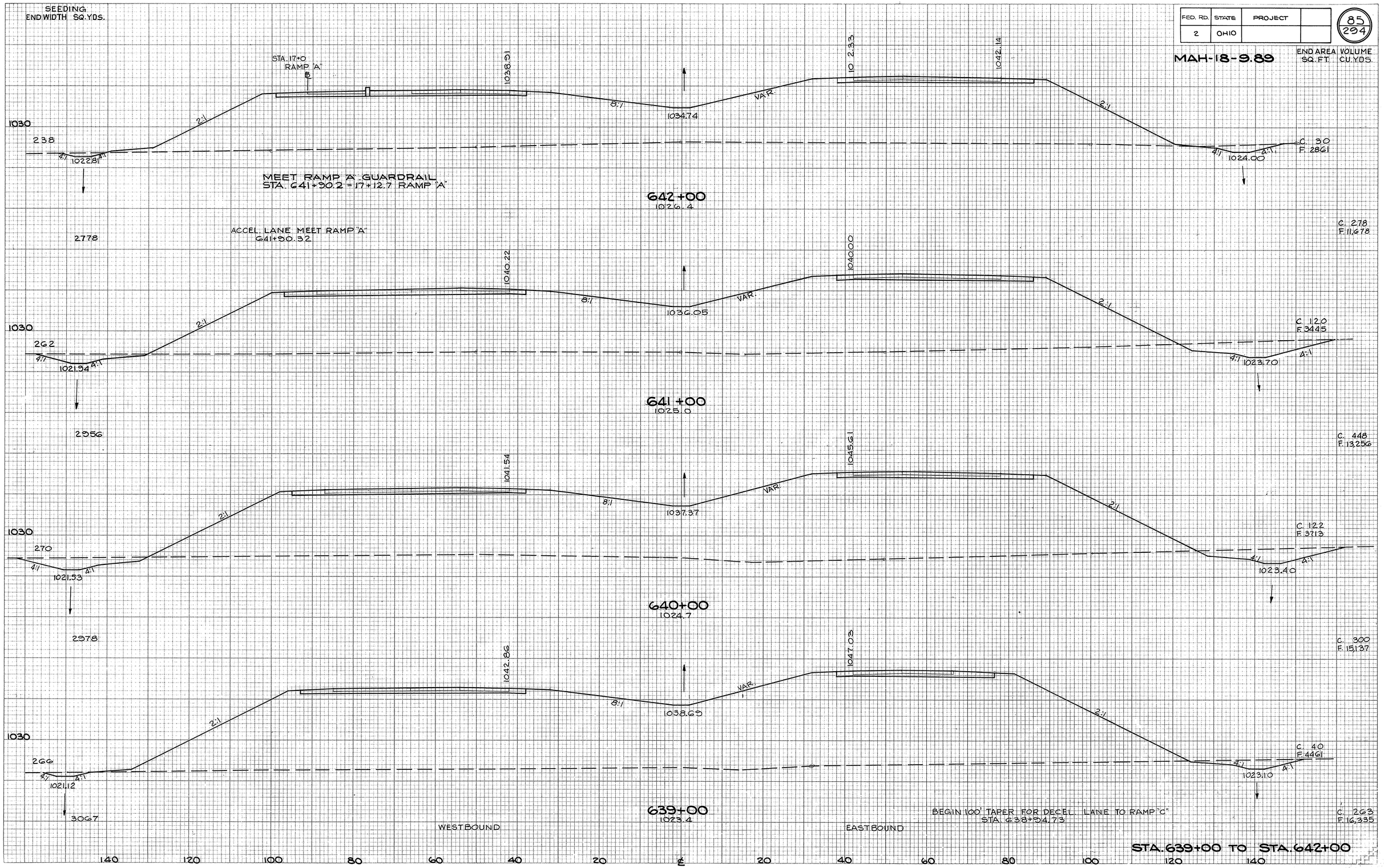
FED. RD.	STATE	PROJECT	
2	OHIO		

85
294

MAH-18-9.89

END AREA SQ.FT. | VOLUME CU.YDS.

SEEDING
END WIDTH SQ.YDS.



STA. 639+00 TO STA. 642+00

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

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

PLATE 3 - CROSS SECTION C. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

FED. RD.	STATE	PROJECT	
2	OHIO		

86
294

MAH-18-9.89

SEEDING
END WIDTH SQ. YDS.

END RAMP "A" GUARDRAIL
STA. 12+50.0

RAMP "A"
STA. 13+04
℄

1030

208

4:1

4:1

1022.40

1031.93

1032.79

1033.64

8:1

VAR.

1029.47

1035.65

1034.92

4:1

END AREA SQ. FT. | VOLUME CU. YDS.

STA. 646+50
BEGIN DITCH Rt.

C. 21
F. 1113

646+00
1028.6

STA. 645+50
END DITCH Rt.

C. 83
F. 4587

2367

RAMP "A"
STA. 14+03
℄

1030

218

4:1

4:1

1025.09

1034.05

1034.37

1034.56

8:1

VAR.

1030.79

1037.32

1036.75

END GUARDRAIL
STA. 645+78

4:1

4:1

1028.12

C. 24
F. 1364

BEGIN RAMP "A" GUARDRAIL
STA. 14+03.4

645+00
1028.5

C. 131
F. 5987

2511

RAMP "A"
STA. 15+03
℄

1030

234

4:1

4:1

1025.45

1035.78

1036.03

1036.27

8:1

VAR.

1032.10

1038.55

1038.60

3:1

4:1

4:1

1027.37

C. 47
F. 1869

644+00
1027.2

C. 124
F. 7737

2522

RAMP "A"
STA. 16+03
℄

1030

220

4:1

4:1

1024.15

1037.13

1037.37

1037.59

8:1

VAR.

1033.42

1040.66

1040.35

2:1

4:1

4:1

1026.61

C. 20
F. 2303

2544

C. 93
F. 5574

643+00
1026.8

WESTBOUND

EASTBOUND

STA. 643+00 TO STA. 646+00

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

PLATE 3 - CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

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

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

FED. RD.	STATE	PROJECT	
2	OHIO		

87
294

MAH-18-9.89

END AREA SQ. FT. | VOLUME CU. YDS.

AHD. C. 947 F. 1015

BK. C. 969 F. 1830

C. 1820 F. 9581

C. 14 F. 3560

C. 63 F. 12,641

C. 20 F. 3266

C. 35 F. 3960

C. 115 F. 11,148

C. 89 F. 5876

C. 27 F. 2060

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

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

SEEDING
END WIDTH SQ. YDS.

AHD. 238
BK. 351

1020

C

1028.84

2:1

8:1

1024.67

VAR.

1029.48

1028.36

4:1

1026.85

250'-60' @ 0.51%

1017.38

OUTLET INV. 1017.78

SEE RAMP "E"
STA. 8+00

1017.20

200 180 160

3617

650+00
1020.2

1029.76

3:1

1025.59

1030.70

1032.68

RAMP "C"
STA. 6+50

1032.17

1027.90

1020

B

300

B

SEE RAMP "A"
STA. 10+00

1019.45

180 160

2783

649+00
1017.9

BEGIN GUARDRAIL
STA. 648+20.0

1031.01

1032.31

1032.48

RAMP "C"
STA. 5+55

1031.93

1030.60

AHD. 201
BK. 257

1020

SEE RAMP "A"
STA. 11+12

1021.38

1026.84

1024.68

2983

648+00
1018.5

1020

A

1016.50

180

1029.02

RAMP "A"
STA. 12+05

1031.25

1029.83

1032.32

1033.58

1033.55

RAMP "C"
STA. 4+55

1033.05

1028.15

1026.88

2:1

240

1020

A

1010

8" SAN. SEWER ENCASED IN 5' OF CONCRETE

FOR PIPE PROFILE
SEE SHEET No. 98

WESTBOUND

647+00
1024.4

EASTBOUND

2480

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

STA. 647+00 TO STA. 650+00

BEGIN RAMP "C" GUARDRAIL
STA. 5+98.1

1030 C

4:1

1023.01

1020 C

160 180

PLATE 3 CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

FED. RD.	STATE	PROJECT	
2	OHIO		

88
294

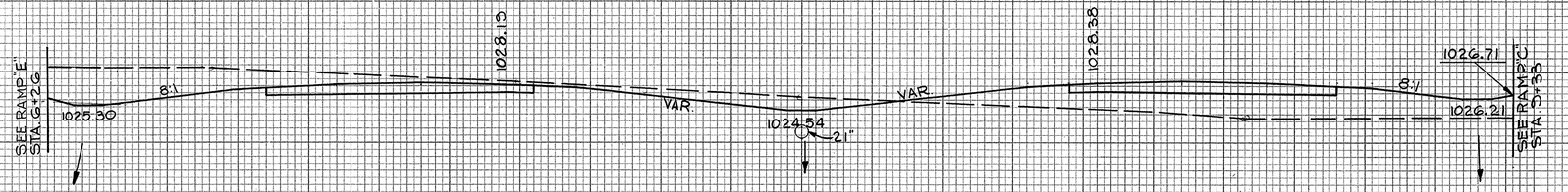
MAH-18-9.89

END AREA VOLUME
SQ FT CU YDS

SEEDING
END WIDTH SQ YDS

1030
132

561



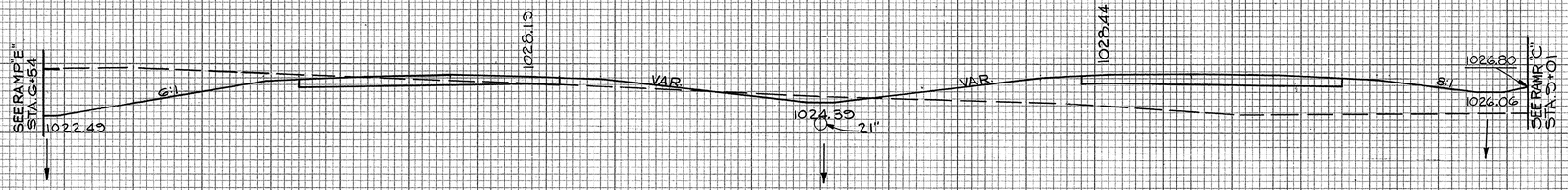
C. 283
F. 173

652+00
1026.5

C. 339
F. 280

1030
141

484



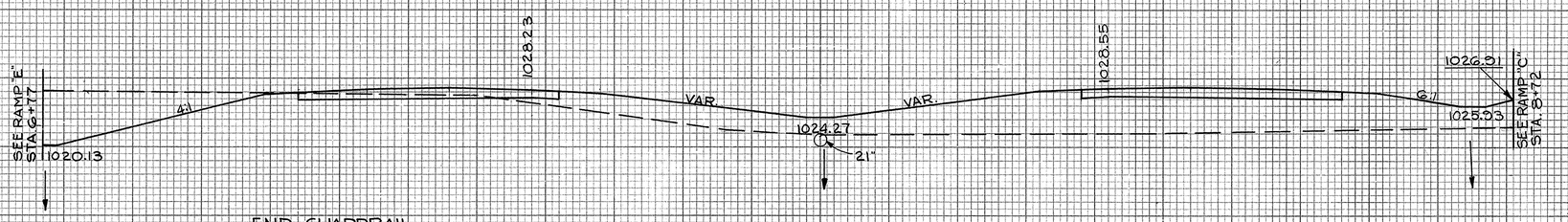
C. 212
F. 235

651+63
1025.4

C. 201
F. 385

1030
140

508



END GUARDRAIL
STA. 651+200

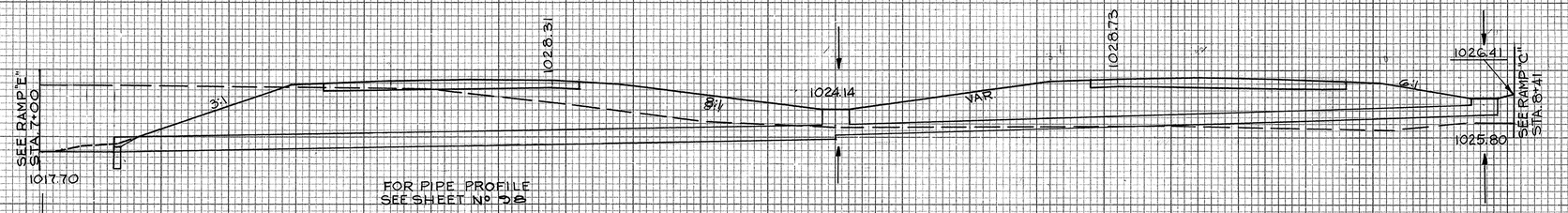
C. 133
F. 436

651+32
1021.8

C. 213
F. 654

1030
146

2133



FOR PIPE PROFILE
SEE SHEET No 58

C. 220
F. 735

651+00
1021.5

C. 2161
F. 3241

WESTBOUND

EASTBOUND

STA. 651+00 TO STA. 652+00

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

PLATE 3 - CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

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

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

FED. RD.	STATE	PROJECT	
2	OHIO		

89
294

MAH-18-9.89

SEEDING
END WIDTH SQ. YDS.

END AREA SQ. FT. | VOLUME CU. YDS.

AHD. C. 1093 F. 0
BK. C. 2383 F. 0

BEGIN GUARDRAIL
STA. 656+41.5

SEE S.R. 46 SITE PLAN

144
1030
2,206

1030.76 | 1031.22 | 1031.22 | 1030.09

1028.73 | 1025.27 | 1025.27 | 1025.13

8:1 | 8:1 | 4:1 | 4:1 | 8:1 | 8:1 | 4:1

18"

SEE RAMP "C" STA. 13+57

BEGIN GUARDRAIL
STA. 655+54.0

656+00
1038.9

C. 9232
F. 0

B — B

253
1030

1029.50 | 1030.16 | 1030.16 | 1029.03

1027.49 | 1025.99 | 1028.08

2:1 | 8:1 | 8:1 | 8:1 | 4:1

18"

SEE RAMP "C" STA. 12+60

C. 2556
F. 0

SEE S.R. 46 GRADING PLAN

1030

655+00
1038.4

C. 7502
F. 0

240 | 220 | 200 | 180 | 160

END SPLIT GRADE STA. 654+50

A — A

300
1030
3072

1028.21 | 1029.14 | 1029.15 | 1028.02

1026.25 | 1024.97 | 1027.03

2:1 | 8:1 | 8:1 | 8:1 | 4:1

VAR. | 18"

SEE RAMP "C" STA. 11+21

C. 1455
F. 0

654+00
1034.6

SEE S.R. 46 GRADING PLAN

1030

C. 6047
F. 4

300 | 280 | 260 | 240 | 220 | 200 | 180 | 160

AHD. 358
BK. 1114
1030

SEE RAMP "E" STA. 5+25

1028.47 | 1028.53 | 1027.41

1024.14 | 1026.51

VAR. | VAR. | 8:1 | 4:1

21" & 18"

SEE RAMP "C" STA. 10+27

AHD. C. 1810 F. 2
BK. C. 638 F. 2

GUARDRAIL FOR SIGN PROTECTION
STA. 653+22 TO STA. 653+47

1367

653+00
1030.6

C. 1705
F. 324

STA. 653+00 TO STA. 656+00

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

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

ORIGINAL SURVEY — SURVEYED, PLOTTED, TRACED, NOTE BOOK, AREAS, AREAS CHECKED

PLATE 3 - CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

FED. RD.	STATE	PROJECT	
2	OHIO		

MAH-18-9.89

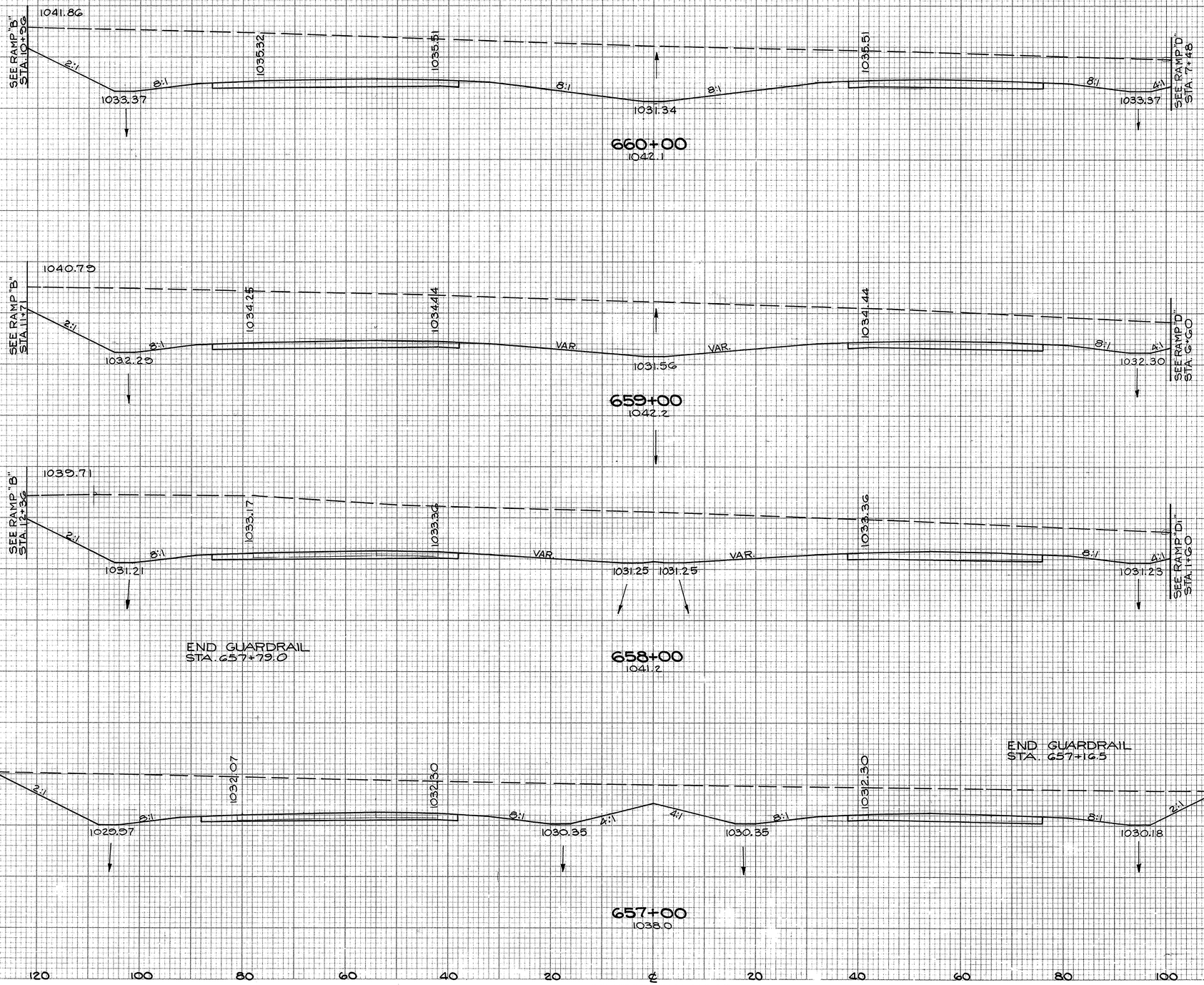
30
294

SEEDING
END WIDTH SQ.YDS.

ENDAREA SQ.FT. | VOLUME CU.YDS.

FINAL SURVEY — SURVEYED, PLOTTED, TYPED, NOTE BOOK, AREAS, AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — SURVEYED, PLOTTED, TYPED, NOTE BOOK, AREAS, AREAS CHECKED — BY — DATE



STA. 657+00 TO STA. 660+00

PLATE 3 CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

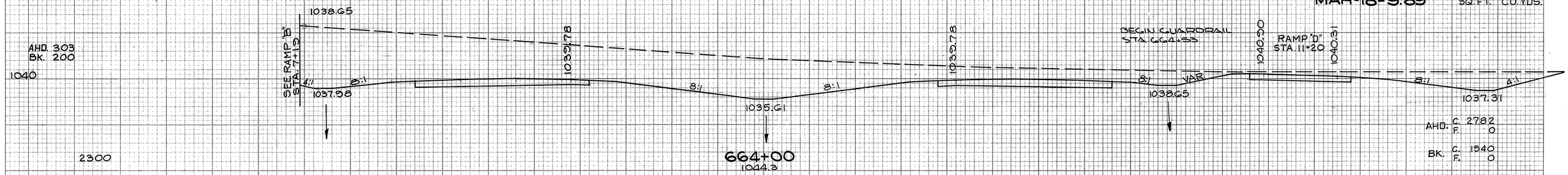
FED. RD.	STATE	PROJECT	
2	OHIO		

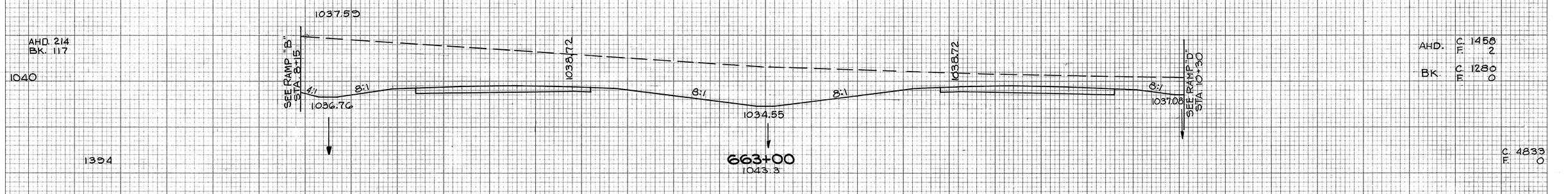
91
294

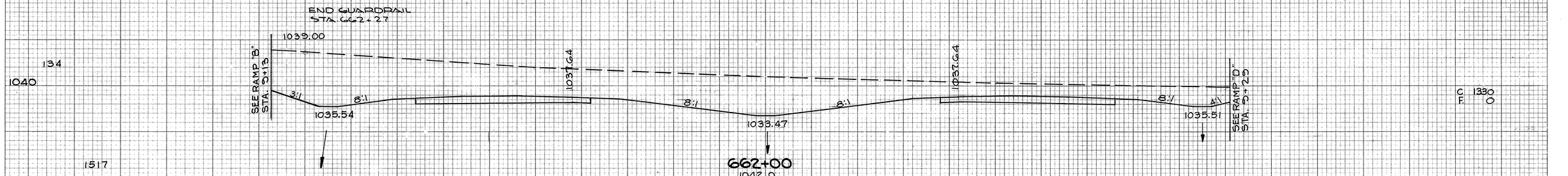
MAH-18-9.89

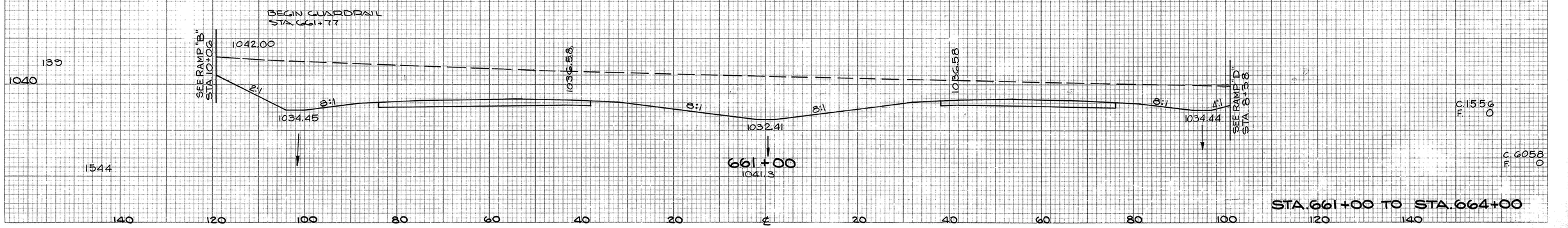
SEEDING
END WIDTH SQ.YDS.

END AREA SQ.FT. | VOLUME CU.YDS.









STA. 661+00 TO STA. 664+00

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

PLATE 3 - CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

FED. RD.	STATE	PROJECT	
2	OHIO		

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SEEDING
END WIDTH SQ.YDS.

GUARDRAIL
BEGIN STA. 666+47
END STA. 668+47

END AREA SQ.FT. | VOLUME CU.YDS.

208
1040
3:1
1041.24
8:1
1043.30
1044.06
8:1
1039.85
8:1
1044.06
1043.65
RAMP "D"
STA. 15+14
1043.60
8:1
6:1
1040.53
C. 860
F. 0
2344
668+00
1045.4
C. 4196
F. 0

214
1040
2:1
1040.12
8:1
1042.08
1043.00
8:1
1038.83
8:1
1043.00
1042.88
RAMP "D"
STA. 14+14
1042.50
8:1
6:1
1039.98
C. 1406
F. 0
2500
667+00
1045.7

B
2:1
B
150
236
B
2:1
B
1040
8:1
1039.19
1040.83
RAMP "B"
STA. 5+20
1041.20
1041.32
8:1
1037.75
8:1
1041.32
1041.93
RAMP "D"
STA. 13+14
1041.40
8:1
6:1
1039.43
C. 1867
F. 0
2667
666+00
1046.8
C. 6061
F. 0

A
2:1
A
160
244
1040
A
6:1
1038.31
1040.47
RAMP "B"
STA. 6+18
1040.78
8:1
1039.20
1040.85
8:1
1036.68
8:1
1040.85
1041.20
RAMP "D"
STA. 12+16
1040.61
8:1
6:1
1038.36
C. 2329
F. 0
3039
665+00
1045.6
C. 7771
F. 0
C. 9465
F. 0

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

STA. 665+00 TO STA. 668+00

PLATE 3 - CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO. NEW YORK.

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

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

FED. RD.	STATE	PROJECT	
2	OHIO		

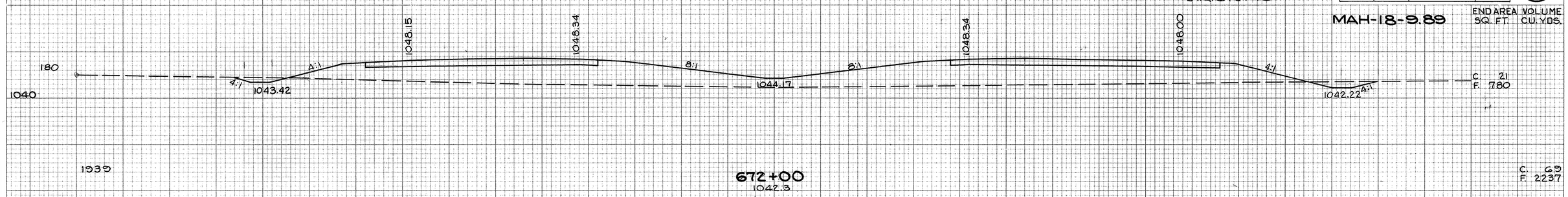
93
294

MAH-18-9.89

SEEDING
END WIDTH SQ. YDS.

END AREA SQ. FT. | VOLUME CU. YDS.

BEGIN GUARDRAIL
STA. 672+15

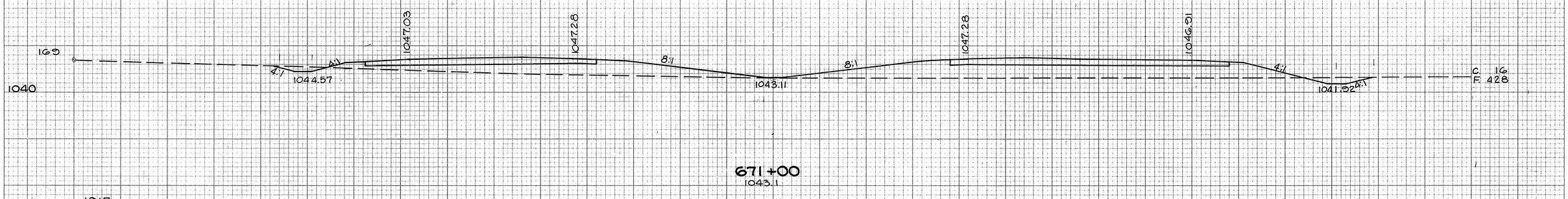


C. 21
F. 780

1939

672+00
1042.3

C. 69
F. 2237

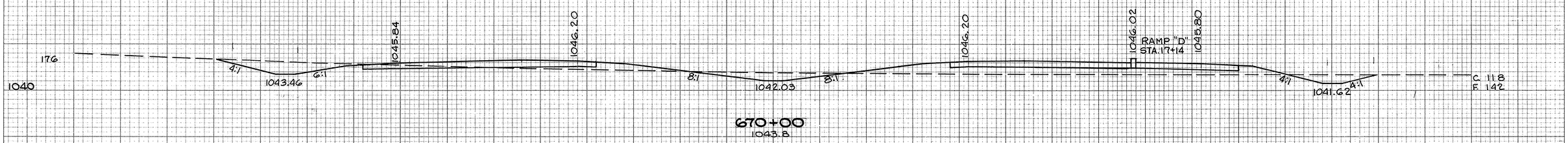


C. 16
F. 428

671+00
1043.1

1917

C. 248
F. 1056

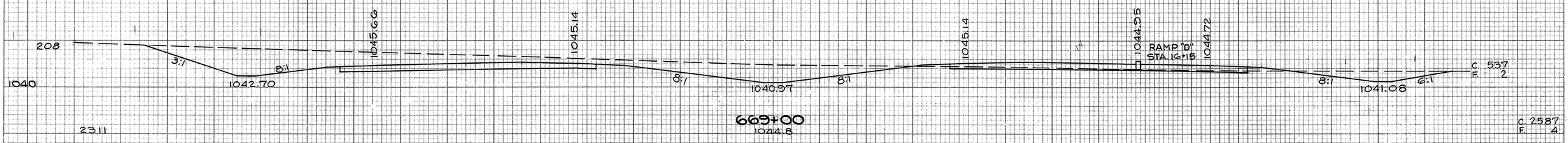


C. 118
F. 142

670+00
1043.8

2133

C. 1213
F. 267



C. 537
F. 2

669+00
1044.8

2311

C. 2587
F. 4

STA. 669+00 TO STA. 672+00

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

PLATE 3 · CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

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

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

FED. RD.	STATE	PROJECT	
2	OHIO		

94
294

MAH-18-9.89

END AREA VOLUME
SQ. FT. CU. YDS.

SEEDING
END WIDTH SQ. YDS.

188

1040

1051.75 1052.17 1052.36 1052.36 1052.12

2:1 8:1 8:1 4:1

1048.15 1043.50

C 1.4
F 1775

376+15.43 (AHD)
675+74.89 (BACK)
1042.0

END GUARDRAIL
STA. 675+50.0

C 5.8
F 4627

1572

130

1040

1051.17 1051.55 1051.56 1051.56 1051.31

2:1 8:1 8:1 2:1 12:1 4:1

1047.35 1042.52

C 2.8
F 1561

CULV. STA. 674+81 (INLET) E. 1041.64

BEGIN CROWN REMOVAL WESTBOUND LANE
STA. 674+25

2078

CULV. STA. 674+81 (OUTLET) E. 1040.52

675+00
1041.8

C 8.0
F 5528

BEGIN DITCH
STA. 674+05
EL. 1043.00

1050.29 1050.48 1050.48 1050.20

3:1 8:1 8:1 3:1

1046.31

DIKE EL.
1044.50

C 15
F 1424

184

1040

3:1 1041.00

END DITCH
STA. 673+95
EL. 1042.81

BEGIN GUARDRAIL
STA. 673+97.0

674+00
1041.7

2061

C 57
F 4656

1049.23 1049.42 1049.42 1049.11

4:1 8:1 8:1 4:1

1045.25

187

1040

1042.27 1042.52

C 16
F 1090

FOR PIPE PROFILE
SEE SHEET Nº 33

2039

673+00
1042.1

C 69
F 3463

STA. 673+00 TO STA. 675+74.89

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

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

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

PLATE 3 - CROSS SECTION O. P. R. & R. E STANDARD
KEUFFEL & ESSER CO. NEW YORK.

FED. RD.	STATE	PROJECT	
2	OHIO		

95
294

MAH-18-3.89

SEEDING
END WIDTH SQ. YDS.

END AREA VOLUME
SQ. FT. CU. YDS.

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

1050

378+00

1050

0

377+00

END WORK
STA. 377+00

C. 00
F. 00

756

C. 50
F. 3337

1050

215

END GUARDRAIL
STA. 376+50.0

2:1

1051.31

1052.45

1052.73

8:1

1048.55

8:1

1052.73

1052.52

4:1

1043.75

4:1

C. 28
F. 1802

376+50
1042.1

516

C. 27
F. 2250

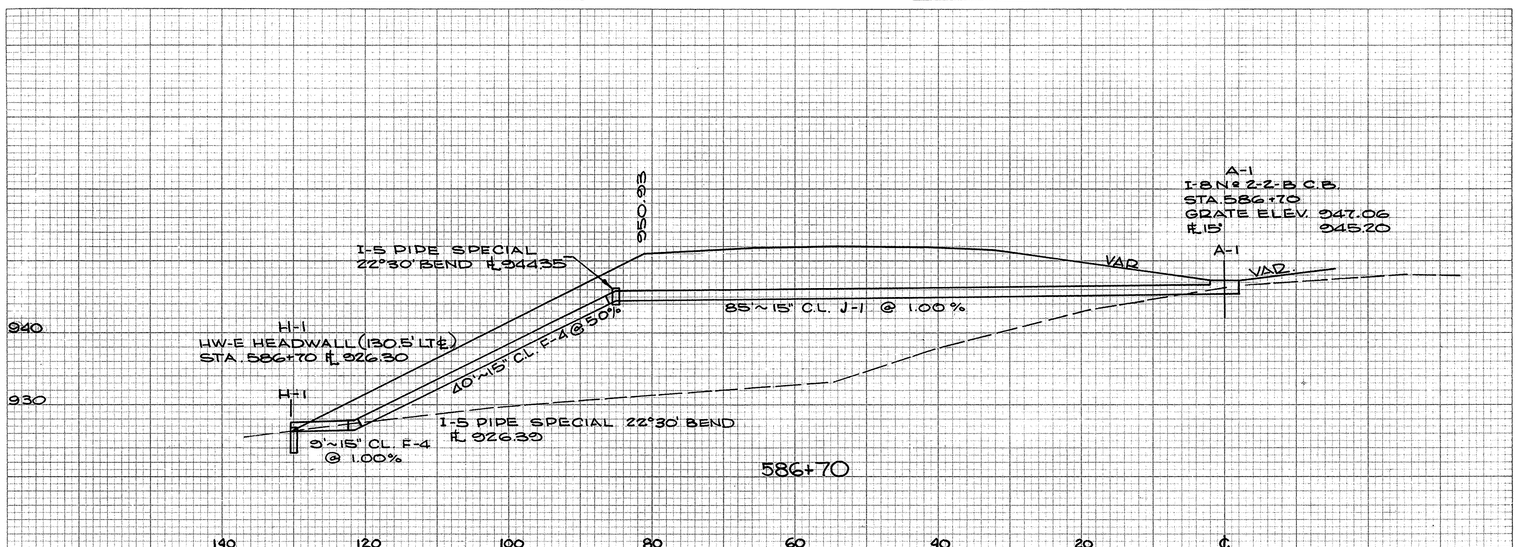
140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

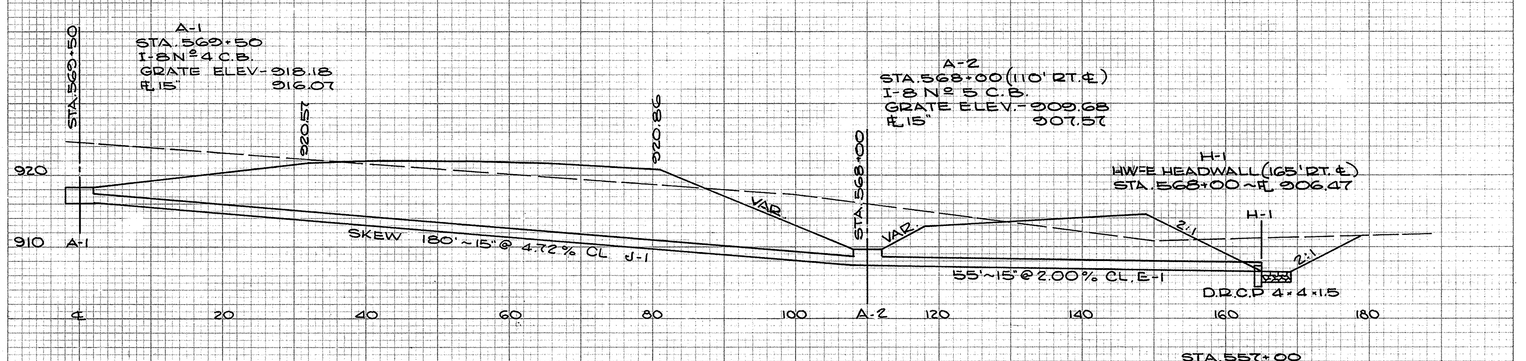
STA. 376+50 to STA. 378+00

PLATE 3 · CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

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

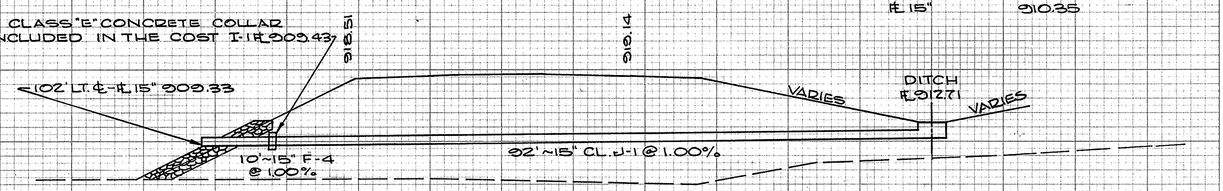
FINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		



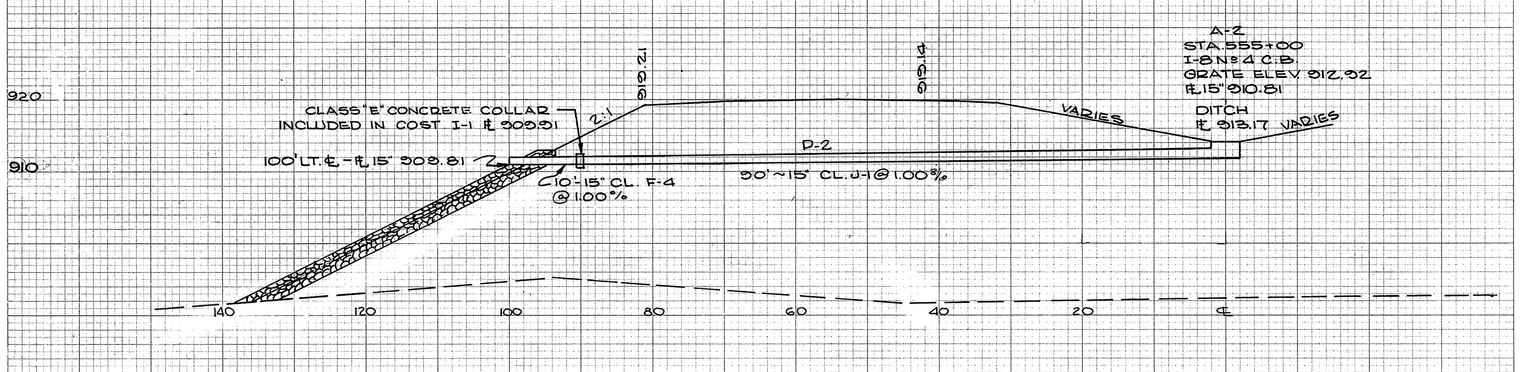


STA. 562+00
(SEE BELOW)

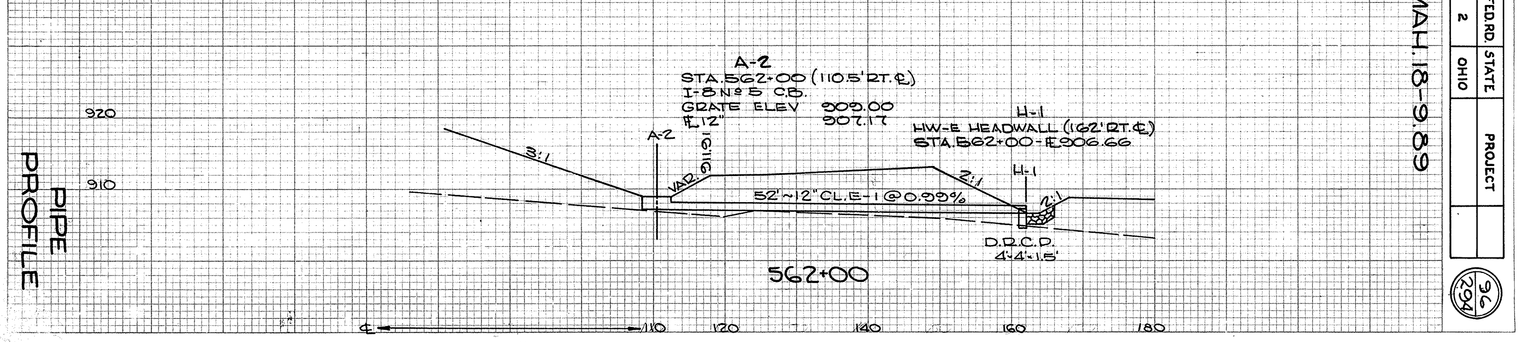
569+50 TO 568+00



557+00



555+00



562+00

PIPE PROFILE

PLATE 2: CROSS SECTION, P. P. & E. STANDARD
KUEFFEL & ESSER CO., NEW YORK.

FED. RD.	STATE	PROJECT
2	OHIO	

MAH-18-9.89

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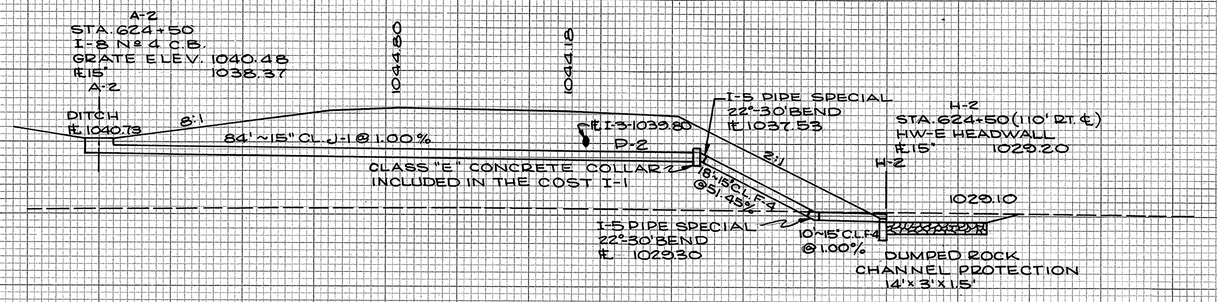
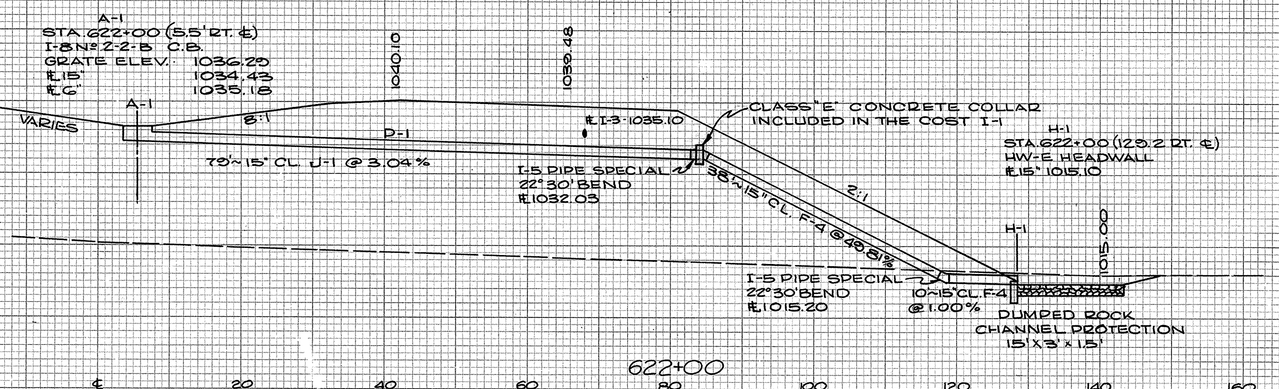
294

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

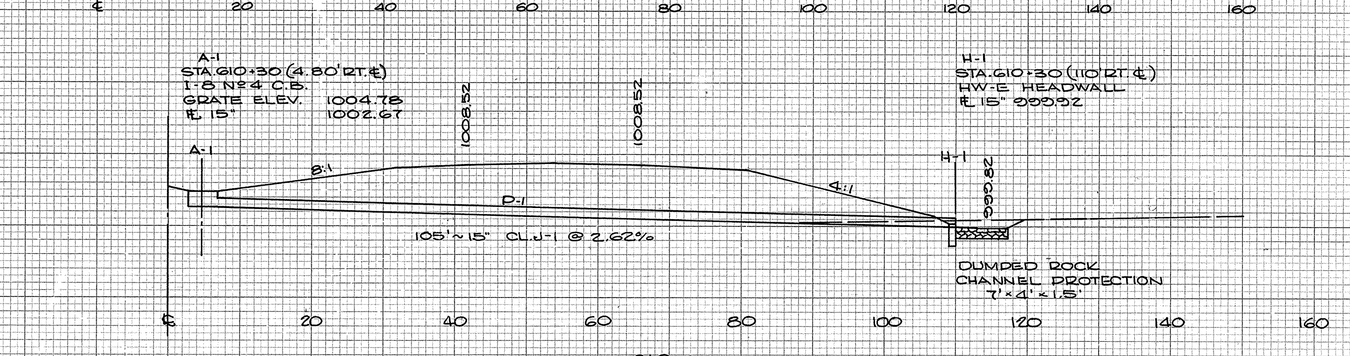
FINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		



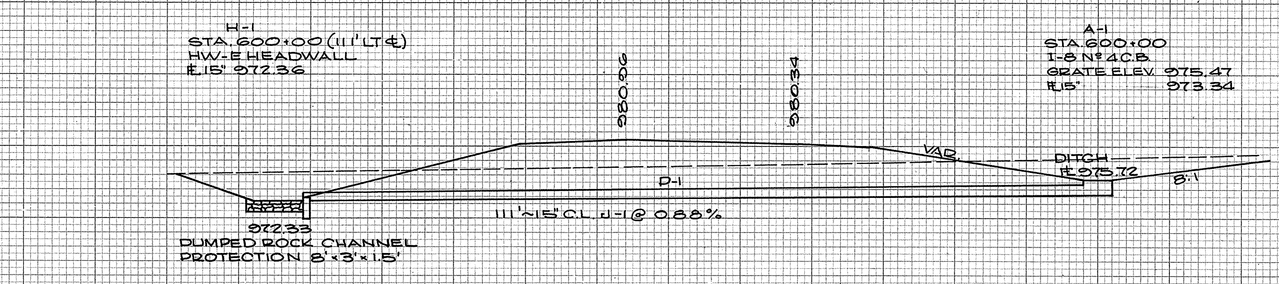
624+50



622+00



610+30



600+00

589+50

PIPE PROFILE

FED. RD.	STATE
2	OHIO
PROJECT	

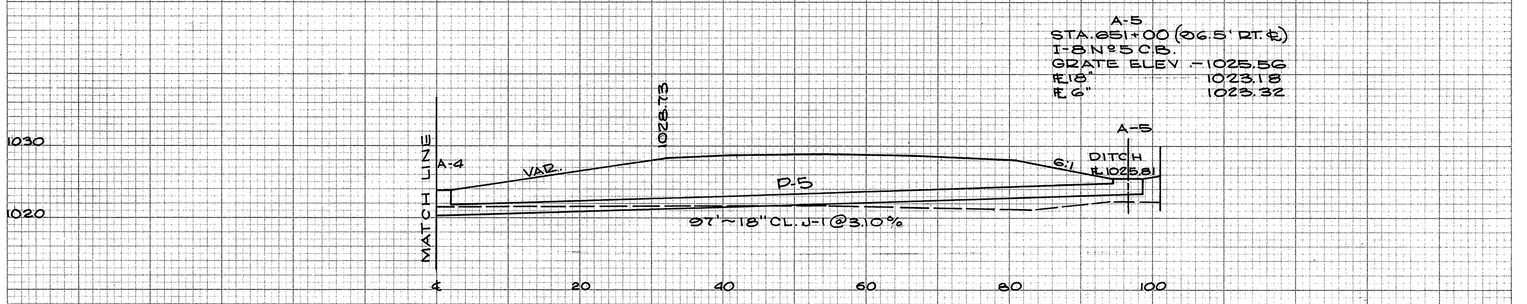
MAH-18-9.89

ST 294

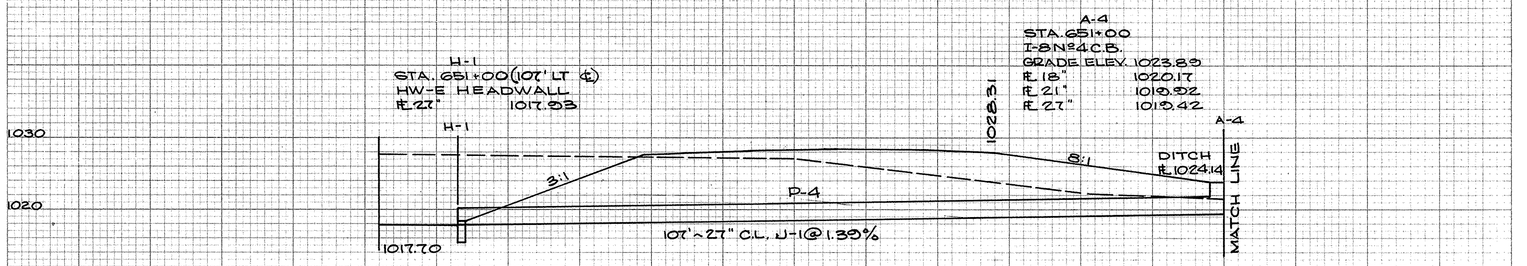
PLATE 3 - CROSS SECTION O. P. R. & E. STANDARD
FEDFTIL & ESSER CO., NEW YORK.

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

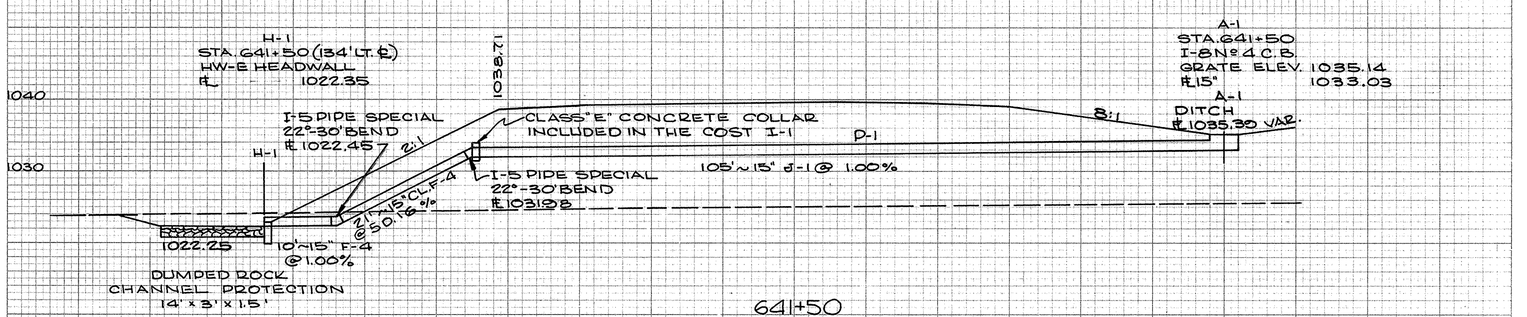
FINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		



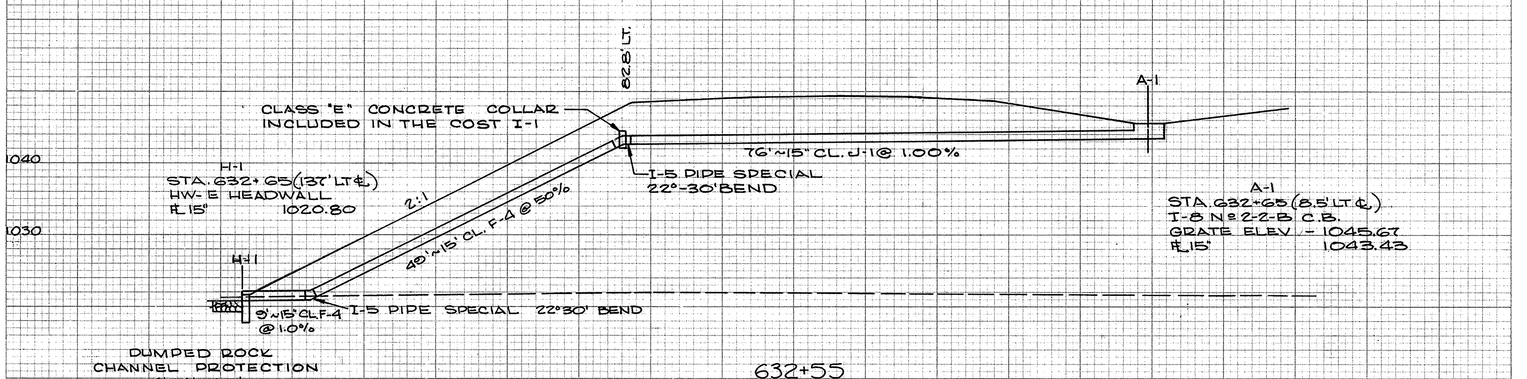
651+00



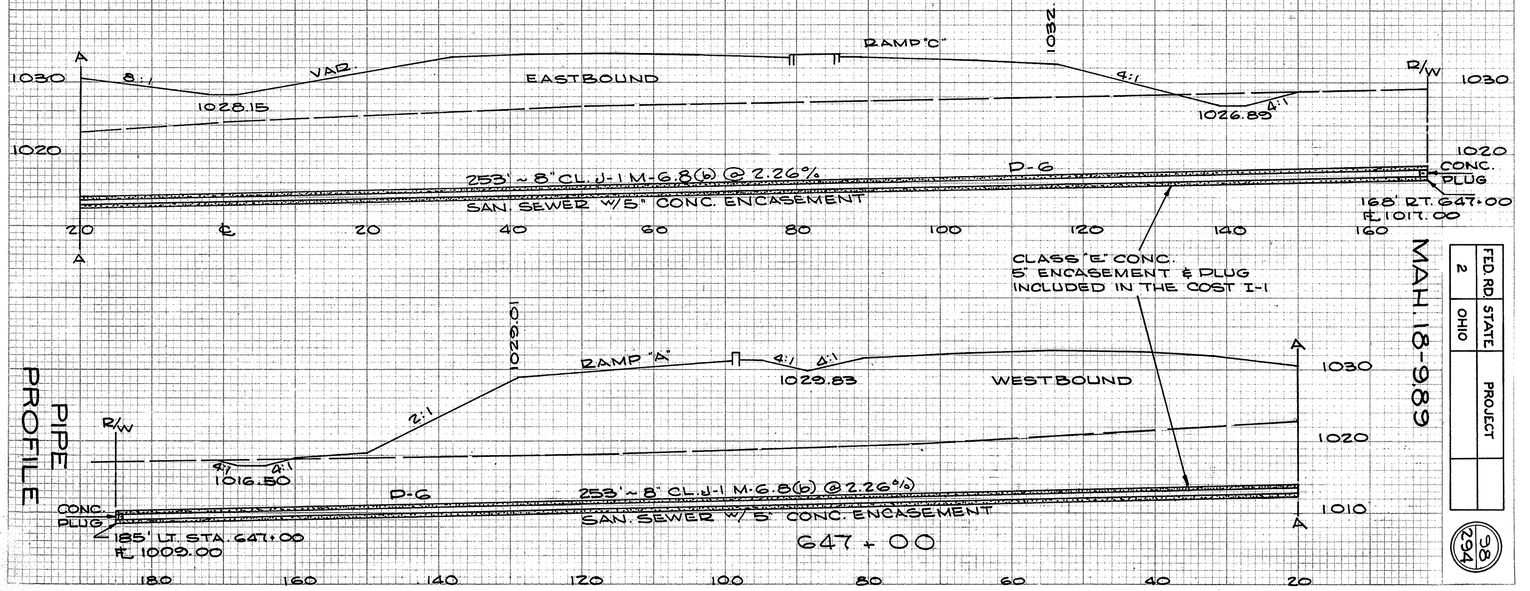
651+00



641+50



632+55



647+00

PIPE PROFILE

2	FED. RD.	MAH-18-9.89
	STATE	
	OHIO	
	PROJECT	

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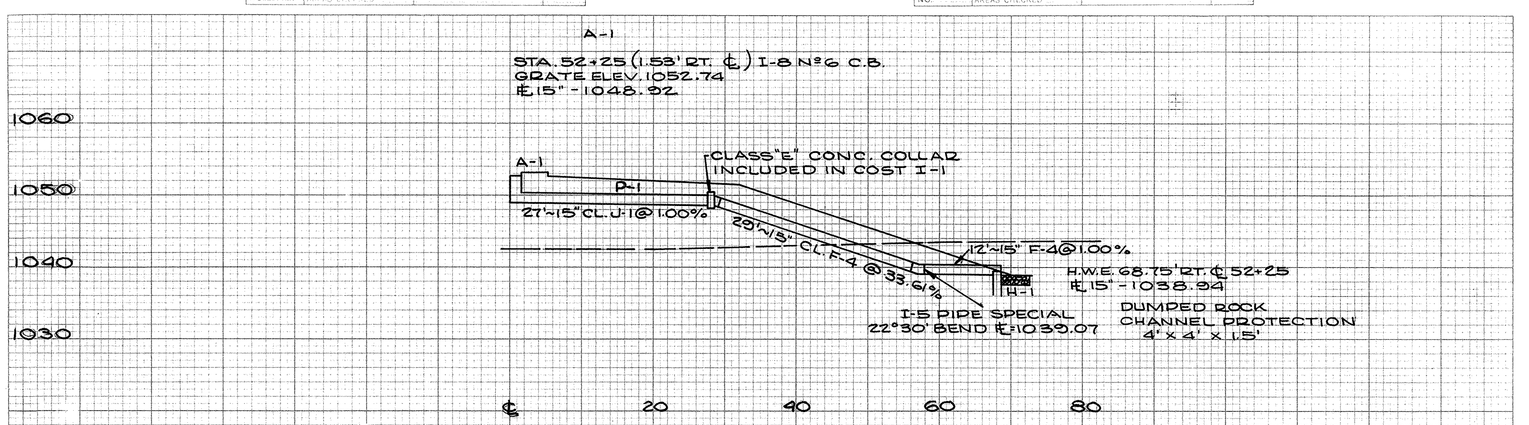
294

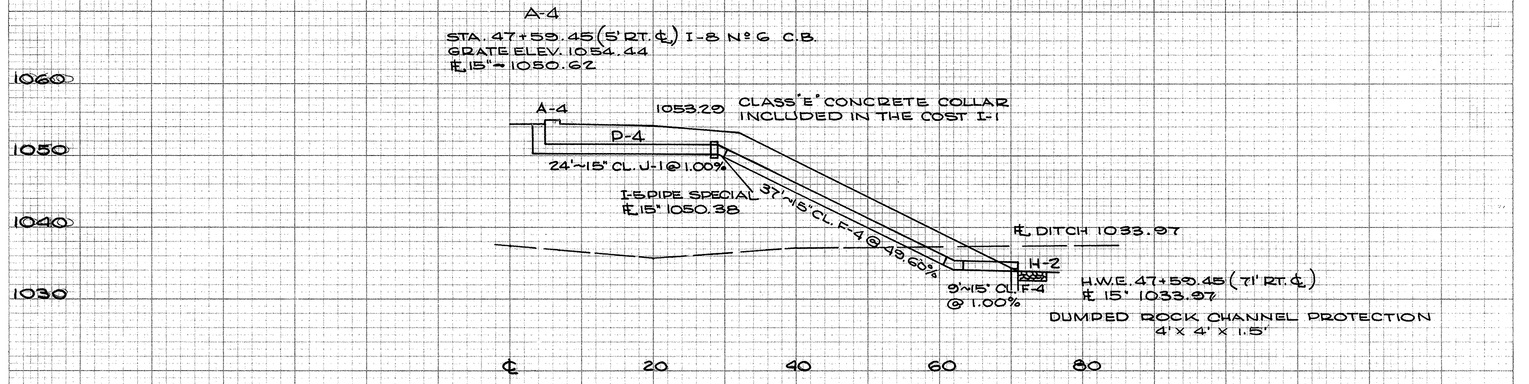
PLATE 3 CROSS SECTION C. P. & E. C. STANDARD
KAUFFEL & ESSER CO., NEW YORK.

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

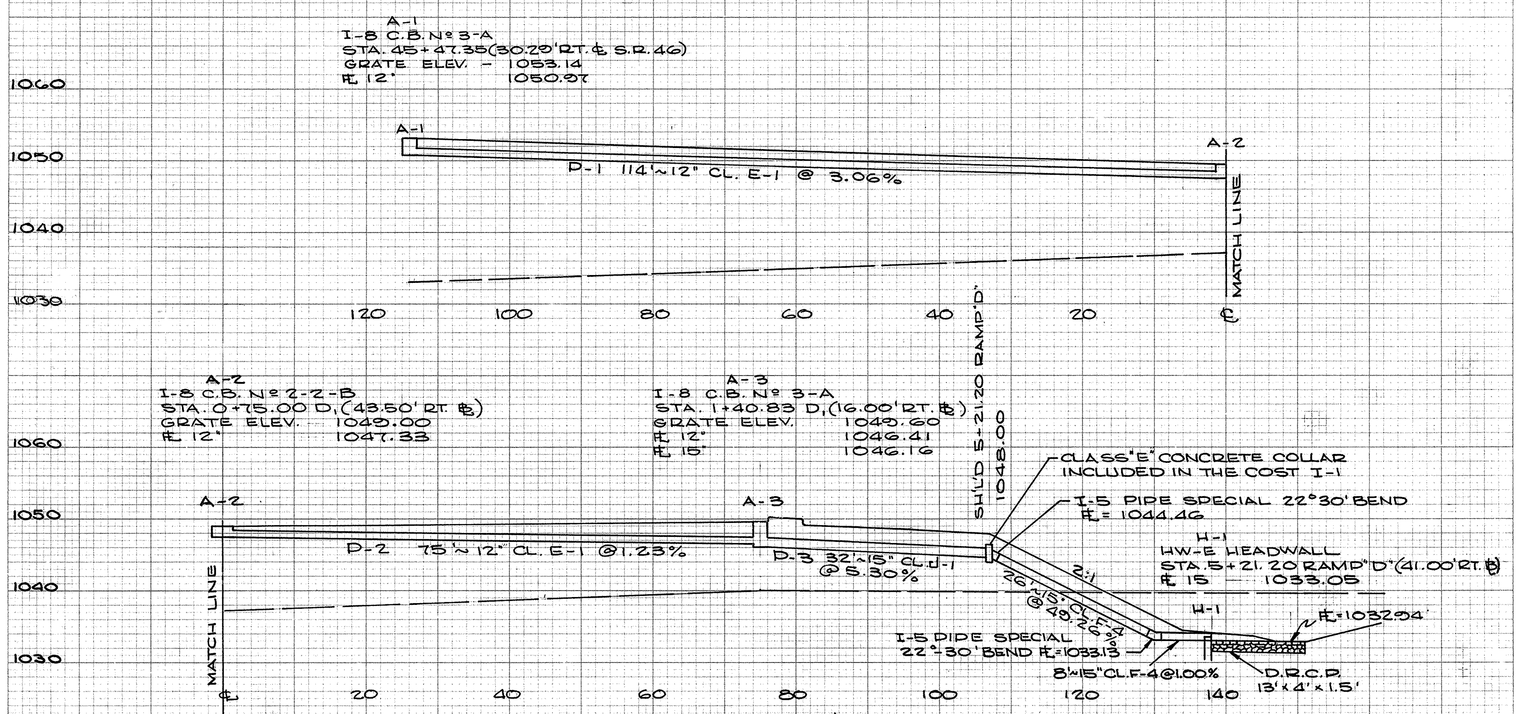
FINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMP. ATE		
NO.	AREAS		
	AREAS CHECKED		



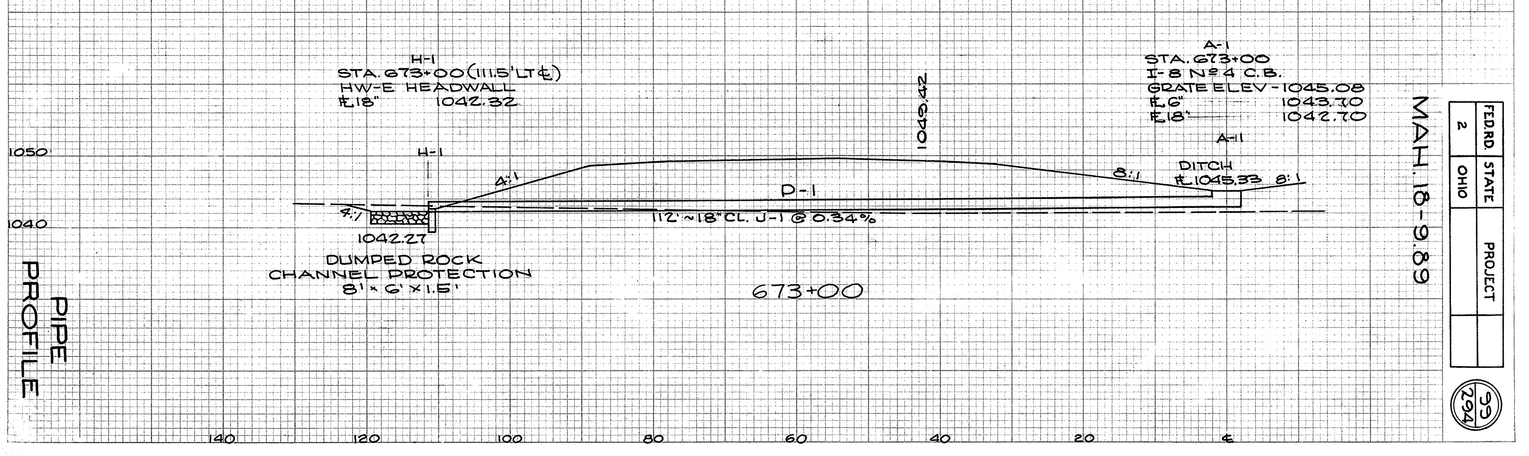
52+25 S.R.46



47+59.45 S.R.46



0+75 "D"1



673+00

PIPE PROFILE

PLATE 2 CROSS SECTION & PIPE PROFILE STANDARD
KLAUTOL & EDDY CO., INC. NEW YORK

FED.RD.	STATE	PROJECT
2	OHIO	

MAH.18-9.89

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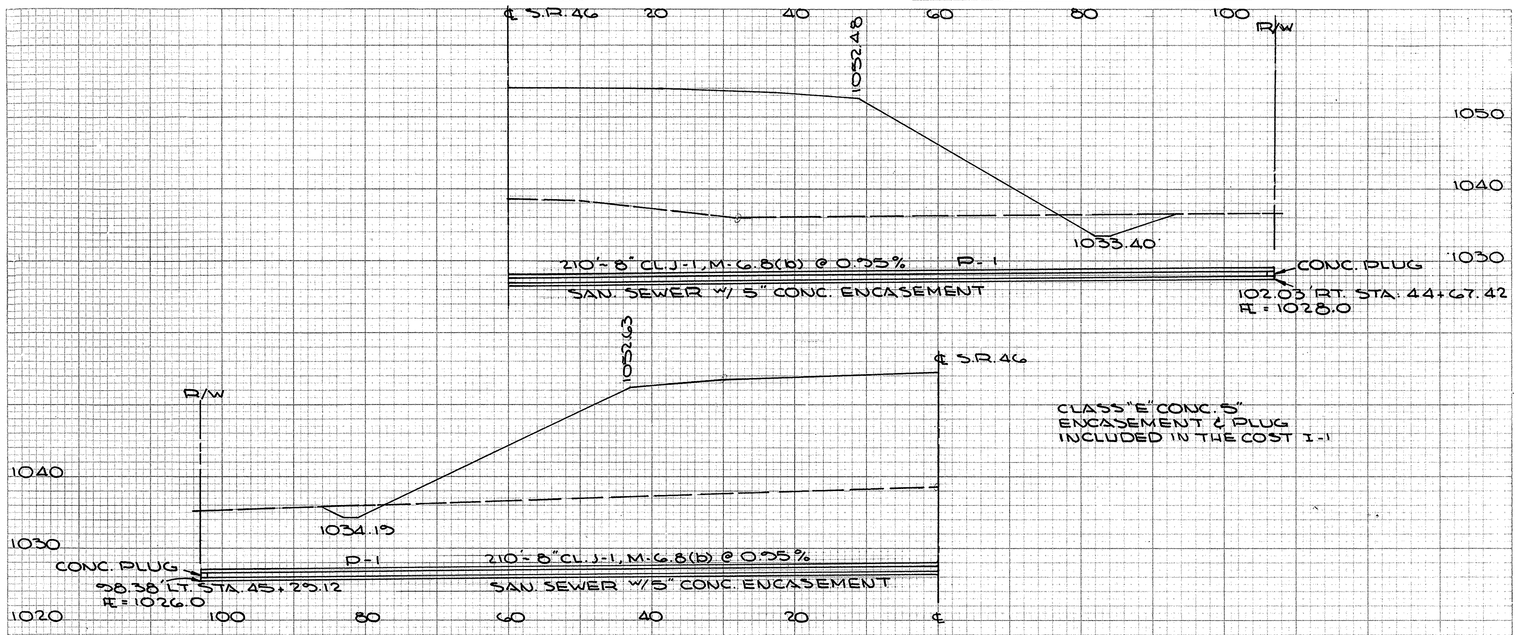
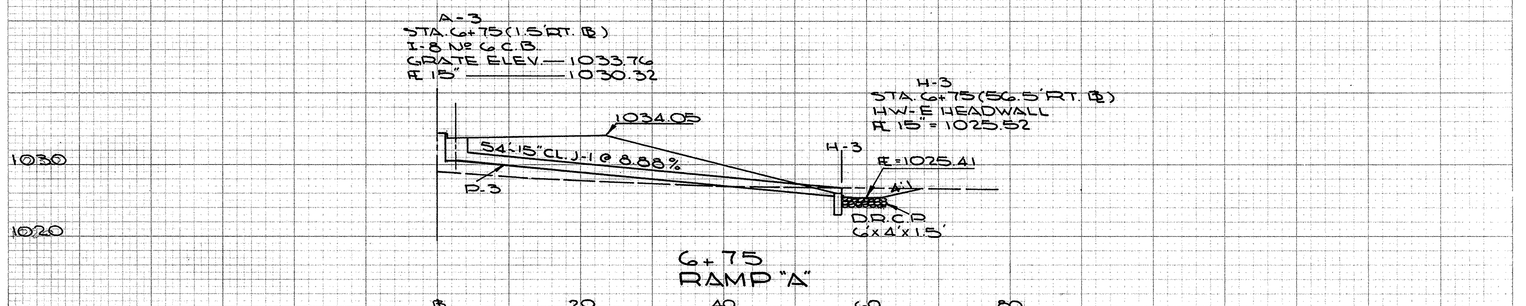
294

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

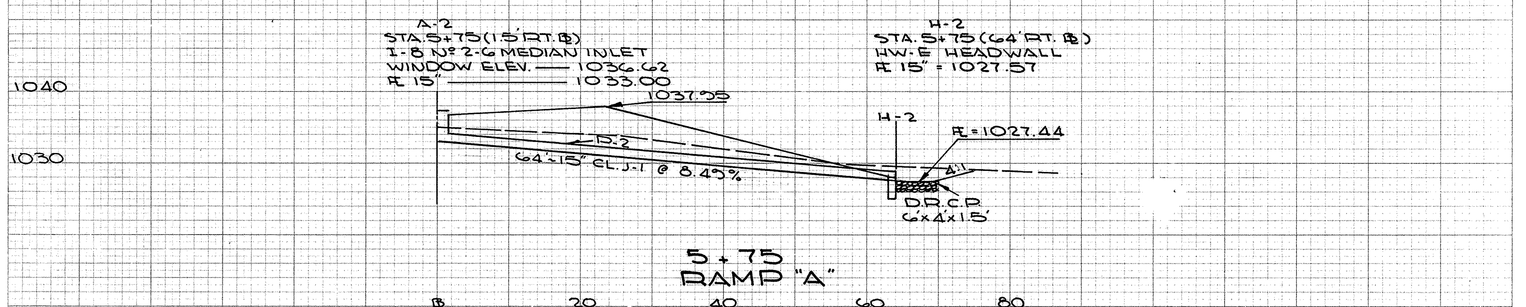
FINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		



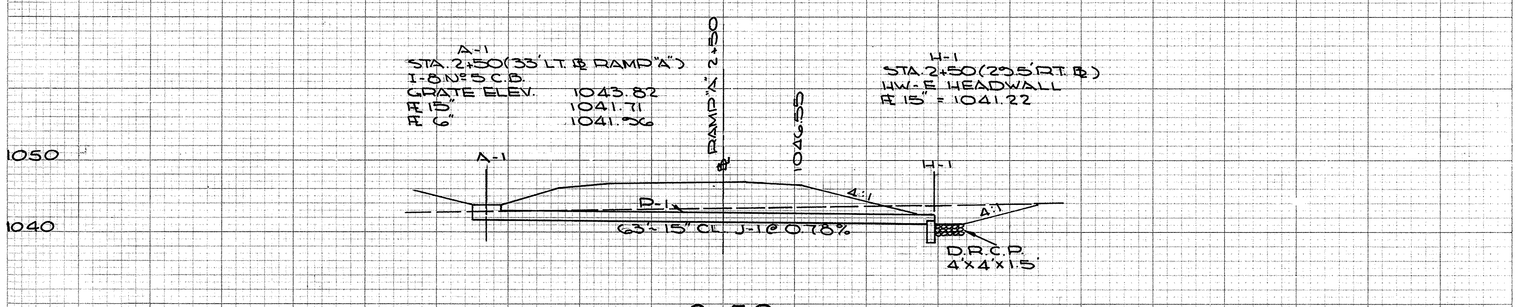
44+98.83
S.R. 46



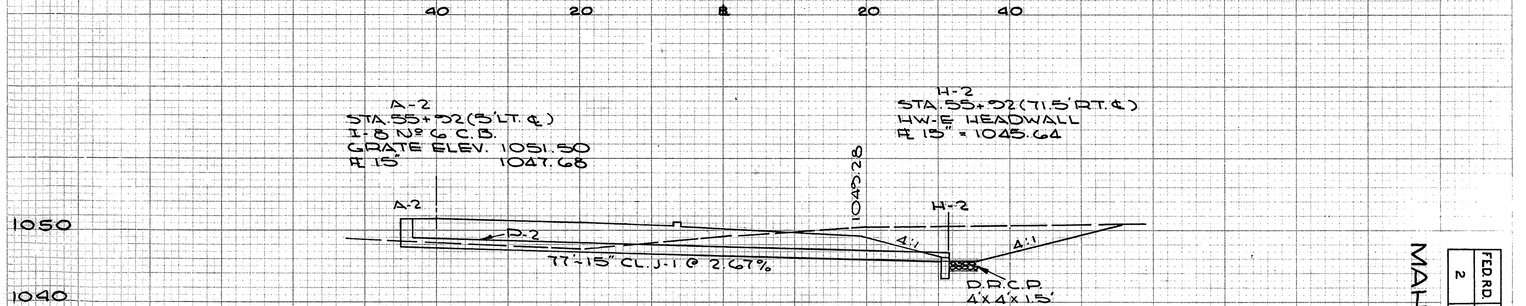
6+75
RAMP "A"



5+75
RAMP "A"



2+50
RAMP "A"



55+92
S.R. 46

DIDE PROFILE

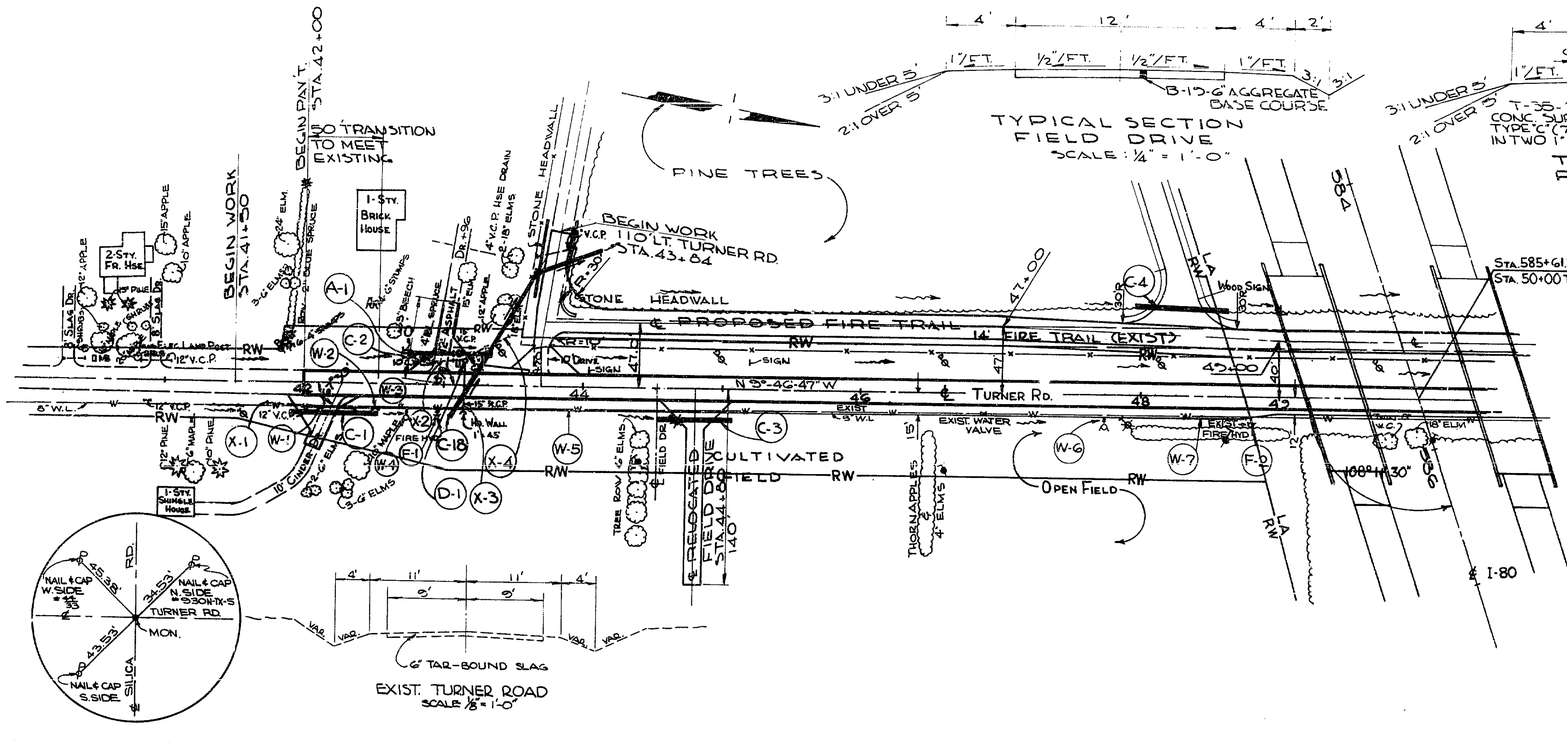
PLATE 3 CROSS SECTION & P & R STANDARD
KRUPP & ESSER CO. NEW YORK

MAR. 18-989

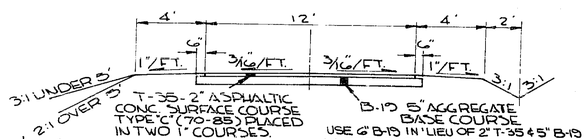
FED. RD.	STATE	PROJECT
2	OHIO	

100
294

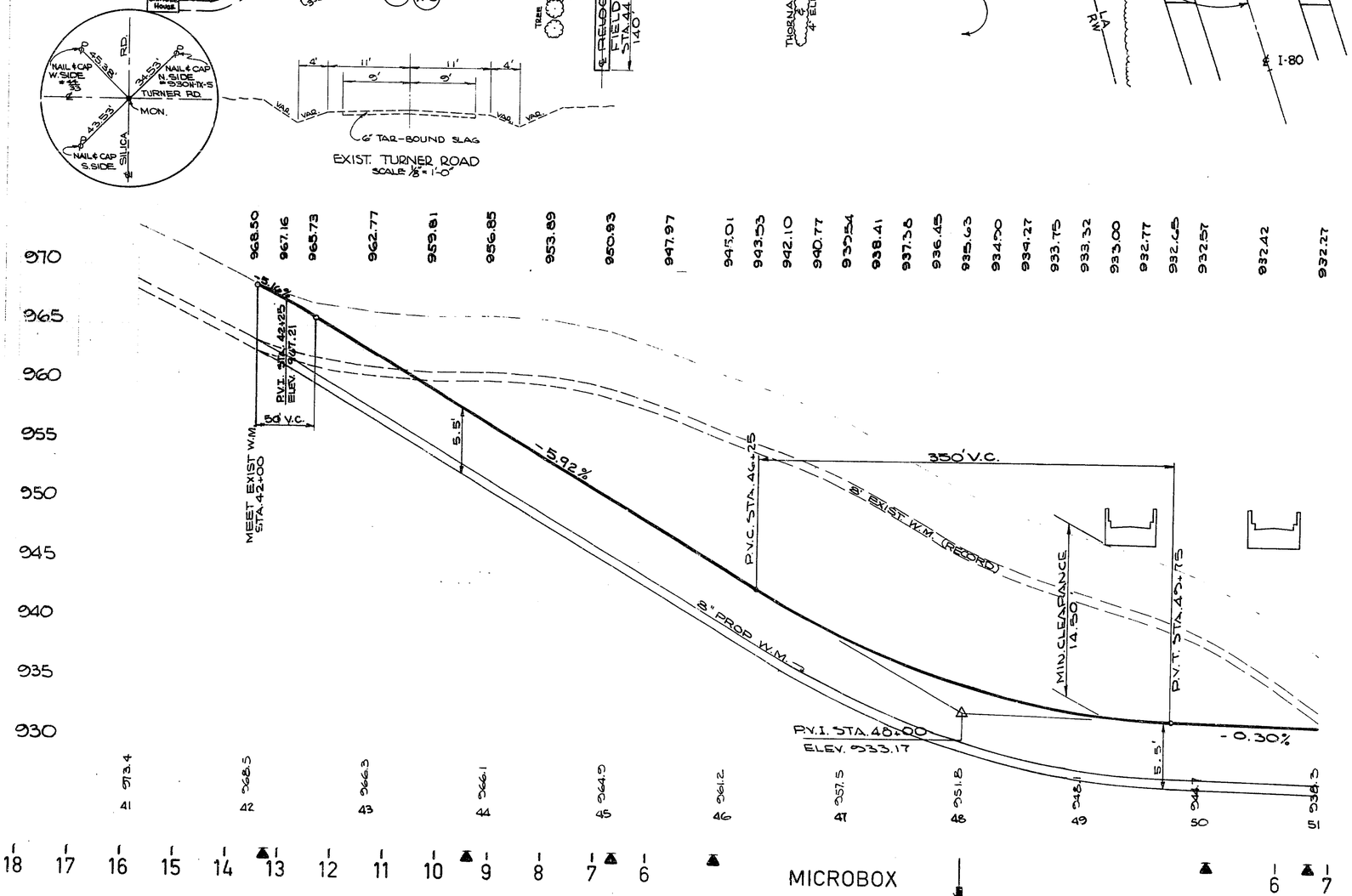
MAHONING COUNTY
MAH 18 - 9.89



TYPICAL SECTION
FIELD DRIVE
SCALE: 1/4" = 1'-0"



TYPICAL SECTION
RESIDENCE DRIVE
SCALE: 1/4" = 1'-0"



I-1 PIPE (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS C-4 12"	CLASS B-1 12"
C-1	41+89	42+53	RT.	64	
C-2	42+75	43+28	LT.		53
C-3	44+53	45+07	RT.	54	
C-4	48+60.5	48+10	LT.	66	
SHEET TOTAL				184	53

E-12 PIPE REMOVAL (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	15" & UNDER	OVER 15"
X-1	41+74	42+37	RT.	63	
X-2	42+92	43+07	LT.	15	
X-3	43+15	43+15	℄	39	
X-4	43+15	43+46	LT.	36	
SHEET TOTAL				153	

I-124 NEW WATER MAIN

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	C.I.P. 8" CL-200 LIN. FT.	VALVES 8" CL-200 EACH	TEES 8"x8"x6" CL-200 EACH	C.I.P. 6" CL-200 LIN. FT.	VALVES 6" CL-200 EACH
W-1	42+00	W-2		50				
W-2	42+50				1			
W-3	W-2	W-4		25				
W-4	42+75					1	3	1
W-5	W-4	W-6		500				
W-6	47+75					1	3	1
W-7	W-6	50+00		225				
SHEET TOTAL				800	1	2	6	2

I-124 FIRE HYDRANT REMOVE & RESET

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	EACH
F-1	42+97	18' RT. STA 42+75		1
F-2	48+86	18' RT. STA 47+75		1
SHEET TOTAL				2

I-8 CATCH BASIN

CODE	LOCATION	No. 2-2-B CATCH BASIN EACH
A-1	21' LT. STA 42+75	1
SHEET TOTAL		1

I-16 JUNCTION BOX ABANDONED

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	EACH
D-1	43+15	——	LT	1
SHEET TOTAL				1

STRUCTURES 20' SPAN & UNDER

CODE	LOCATION	TYPE	SIZE	DETAIL SHEET No.
C-18	43+15.88	172' - CL. J-1, B-1, E-1	21"	182

FOR DRIVEWAY PIPE PROFILES
SEE SHEET No. 111 & 112

FOR PROFILE OF FIRE TRAIL
SEE SHEET No. 103

FOR DRIVEWAY QUANTITIES
SEE SHEET No. 14

TURNER ROAD

MICROBOX

MAH. 18-9.89

103
294

960.60 960.78 960.74 960.24 959.31 958.82 958.02 956.70 954.05 951.40 948.75 946.10 943.45 940.80 938.15 936.84 935.64 934.73 934.15 933.84 933.68 933.33 933.02 932.86 932.41 931.41 929.86 927.75 925.08 921.86 918.86

960
950
940
930
920

P.V.I. 43+60
ELEV. 961.47
+1.75%
100' V.C.
MEET EXISTING
FIRE TRAIL
110'LT. STA. 43+84
TURNER ROAD
-3.30%
100' V.C.
P.V.I. 48+75
ELEV. 954.17
-0.66%
P.V.I. 51+50
ELEV. 932.36
-4.00%
GRAPHIC GRADE
DITCH
150' V.C.
MEET EXISTING
FIRE TRAIL
STA. 53+00
47'LT. STA. 43+73

960.2 960.4 961.5 962.7 962.8 962.2 962.0 961.0 959.1 958.0 958.0 955.3 953.2 949.8 947.3 945.0 943.2 942.0 939.0 934.0 927.0 919.5 920.4 922.6 926.3 929.0 932.0 935.8

44 45 46 47 48 49 50 51 52 53 54 55 56

20 19 18 17 16 15 14 13 12 11 10 9 8 7 6

MICROBOX

6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

PROFILE
FIRE TRAIL LEFT OF
TURNER ROAD

SEEDING
END WIDTH SQ.YDS.

FED. RD.	STATE	PROJECT	
2	OHIO		

104
294

MAH-18-9.59

END AREA VOLUME
SQ.FT. CU.YDS.

970

970 46

965.73
4:1
964.47
2:1
4:1
962.17
2:1

42+50
966.93

C 113
F 0

236

970

C. 205
F. 0

970 AHEAD-39
970 BACK - 19

968.50
966.51
0
965.11

C 108
F 0

42+00
968.52
BEGIN PAV'T. STA. 42+00

55

C 100
F 0

970 0

BEGIN RT. DITCH
STA. 41+50

C. 0
F. 0

41+50
971.03

100 80 60 40 20 ℄ 20 40 60 80 100

TURNER RD. STA. 41+50 TO STA. 42+50

SEEDING
END WIDTH 50.YDS.

FED. RD	STATE	PROJECT	
2	OHIO		

105
294

MAH-18-9.89

END AREA VOLUME
SQ.FT. CU.YDS.
C 372
F 0

C 1686
F 0

C 849
F 0

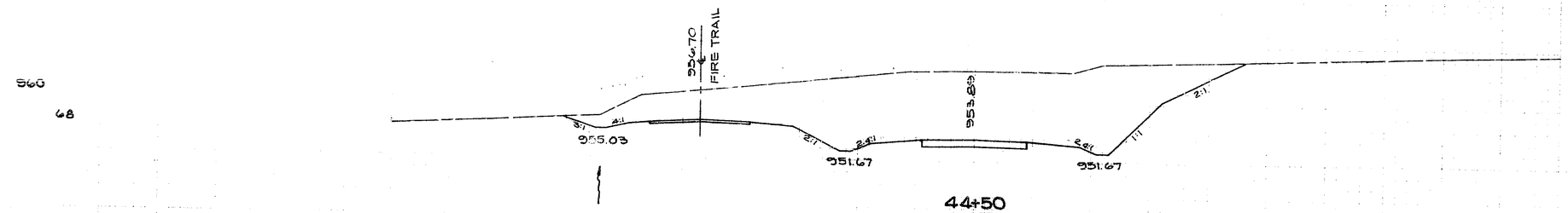
C 1167
F 0

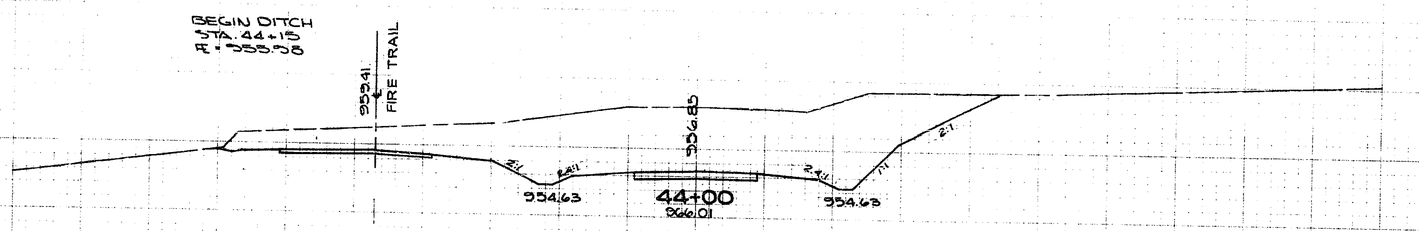
C 432
F 0

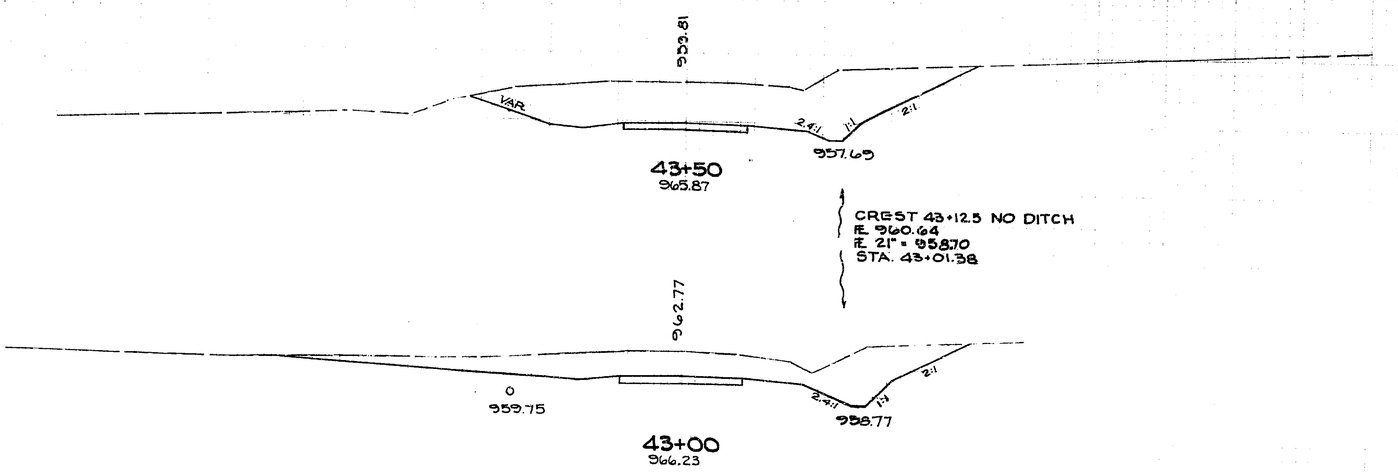
C 666
F 0

C 286
F 0

C 370
F 0







TURNER RD. STA. 43+00 TO STA. 44+50

MICROBOX

SEEDING
END WIDTH SQ.YDS.

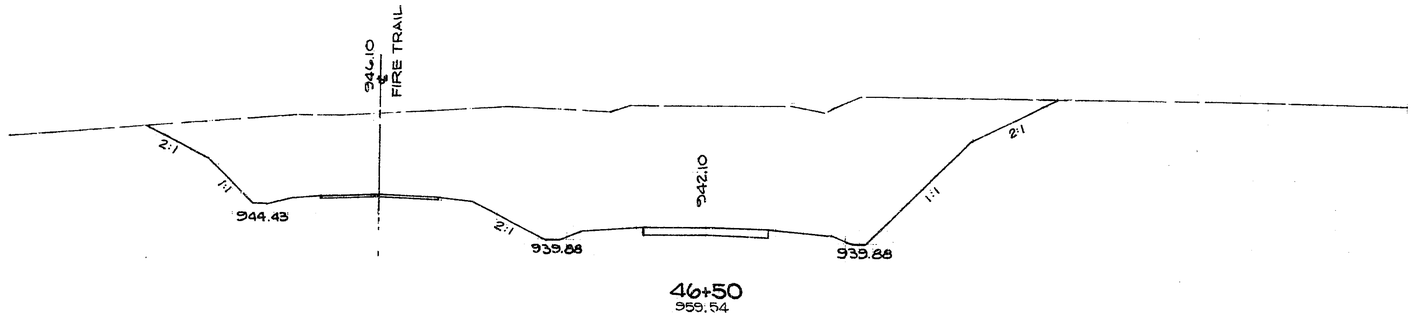
FED. RD.	STATE	PROJECT	
2	OHIO		

106
294

MAH-18-9.89

END AREA VOLUME
SQ.FT. CU.YDS.

960
66



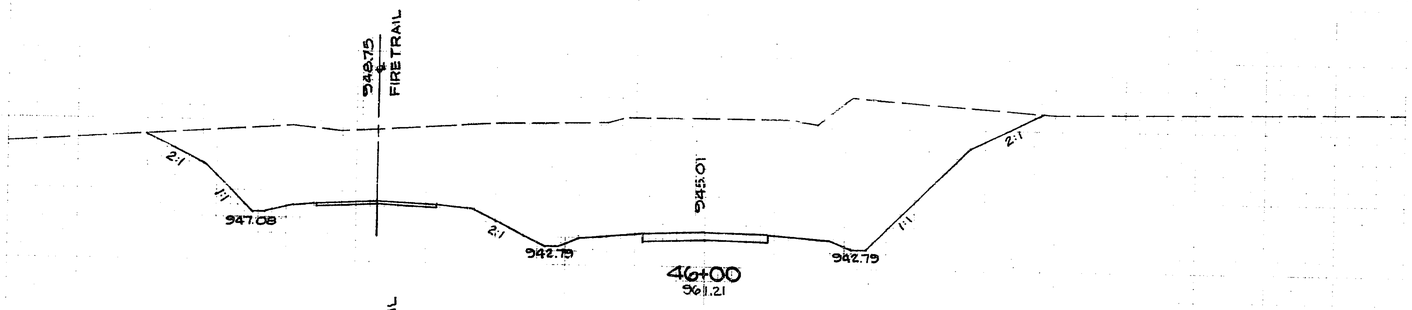
46+50
959.54

356

C 1645
F O

C 2586
F O

960
62



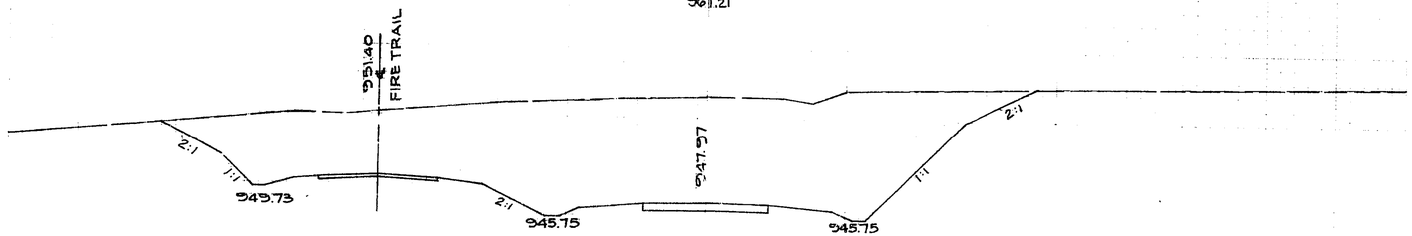
46+00
961.21

345

C 1580
F O

C 2793
F O

960
62



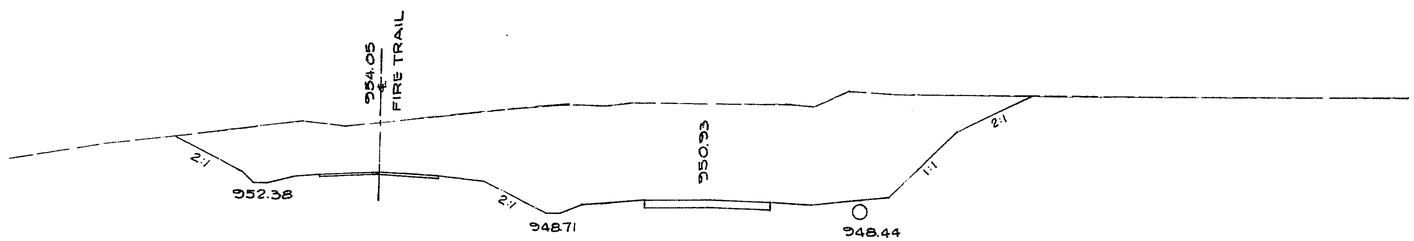
45+50
963.21

341

C 1457
F O

C 3425
F O

960
61



45+00
964.85

357

C 2262
F O

C 2594
F O

100 80 60 40 20 ℄ 20 40 60 80 100

TURNER RD. STA. 45+00 TO STA. 46+50

20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 MICROBOX 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

SEEDING
END WIDTH SQ.YDS.

FED.RD.	STATE	PROJECT	
2	OHIO		

107
294

MAH-18-9.89

ENDAREA VOLUME
SQ.FT. CU.YDS.

940
54
308

SEE M.
584+00

0
933.44

935.64
FIRETRAIL

VAR.
932.05

934.27

1:1
2:1

332.05

C 1547
F 0

C 4782
F 0

48+50
949.64

940
57
330

SEE M.
584+00

0
934.57

938.15
FIRETRAIL

VAR.
933.41

935.63

1:1
2:1

933.41

C 1618
F 0

C 3201
F 0

48+00
951.74

940
62
341

2:1
1:1
2:1

938.13

940.80
FIRETRAIL

VAR.
935.16

937.38

1:1
2:1

935.16

C 1839
F 0

C 3384
F 0

47+50
954.57

940
61
352

2:1
1:1

941.78

943.45
FIRETRAIL

2:1
937.32

939.54

1:1
2:1

937.32

C 1816
F 0

C 3205
F 0

47+00
957.49

100 80 60 40 20 ℄ 20 40 60 80 100

TURNER RD. STA. 47+00 TO STA. 48+50

20 19 18 17 16 15 14 13 12 11 10 9 8 7 6

MICROBOX

6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

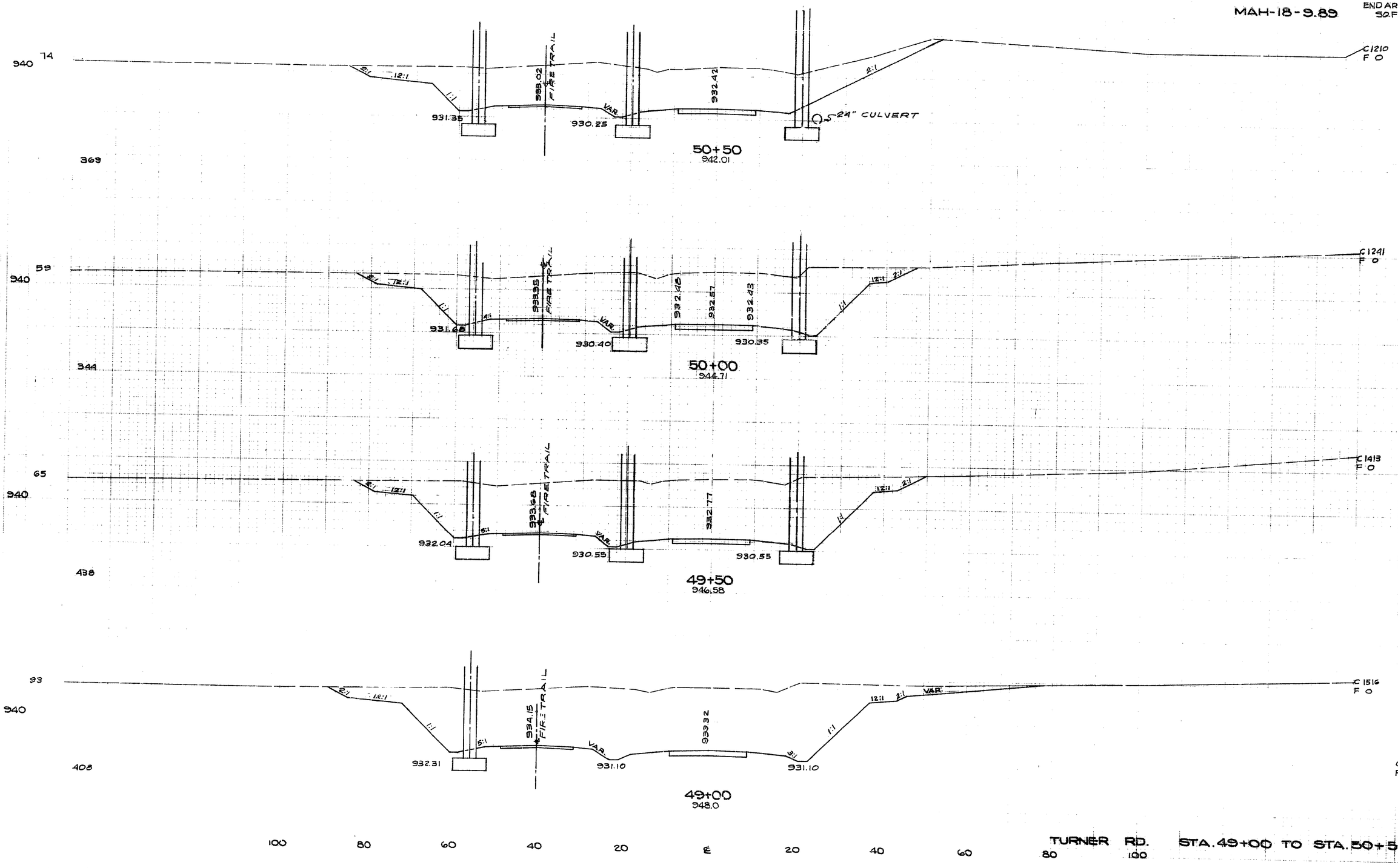
SEEDING
ENDWIDTH SQ.YDS.

FED. RD.	STATE	PROJECT	
2	OHIO		

108
294

MAH-18-9.89

END AREA VOLUME
SQ.FT. CU.YDS



ORIGINAL BY DATE

20 19 18 17 16 15 14 13 12 11 10 9 8 7 6

MICROBOX

SEEDING
ENDWIDTH SQYDS.

FED. RD.	STATE	PROJECT	
2	OHIO		

103
294

MAH-18-9.89

END AREA VOLUME
SQ.FT. SQ.YDS

END GUARDRAIL
STA. 52+55.2

DITCH TO MEET
EXIST. 10" CMP
INV. 930.2
39' RT. STA 52+82

930
80
394

FIRETRAIL
918.86
951.82
2:1
VAR
4:1
928.50
918.20
52+50
932.34

C 127
F 97

66" CULVERT
STA. 52+19.6

C 443
F 113

62
930

925.09
951.97
2:1
4:1
923.40
923.40
52+00
933.47
920.17

C 351
F 25

350

64
930

FIRETRAIL
929.86
932.12
927.31
928.02
928.00
51+50
935.49

C 777
F 23

BEGIN GUARDRAIL
STA. 51+55.0

319

C 488
F 0

SEE ML
STA. 585+00

51
930

932.41
932.27
929.70
930.00
24" CULV.

C 1070
F 0

347

BEGIN GUARDRAIL
STA. 50+92.7

C 667
F 0

51+00
936.33

C 1738
F 0

TURNER RD. STA. 51+00 TO STA. 52+50

MICROBOX

SEEDING
END WIDTH SQ.YDS.

FED. RD.	STATE	PROJECT	
2	OHIO		

110
294

MAH-18-9.89

ENDAREA VOLUME
SQ.FT. SQ.YDS.

930

54+00
932.54

BEGIN GUARDRAIL
STA. 53+83

930

53+50
931.80

930

930

413

51

MEET EXISTING
FIRE TRAIL

MEET EXISTING PAVEMENT

53+00
931.72

C 118
F 90

100 80 60 40 20 ℄ 20 40 60 80 100

TURNER RD. STA. 53+00 TO STA. 54+00

21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6

FED.RD.	STATE	PROJECT		111 294
2	OHIO			

MAH.18-9.89

END AREA C.U. YDS.

C 6 F 0

C 80 F 0

C 147 F 0

C 225 F 0

T C 160 0

C 10 F 0

C 148 F 0

C 462 F 0

D-D (00+50)
968.7

23.1' RT. ℄ 42+41.2
IE 962.78

17.8' RT. ℄ 41+83.5
IE 962.85

25'

35'

5E-12" CL. F&E 7.02%

C-C (0+22.6) SKEW 17°-05' RT. FWD
966.80

B-B (0+15.3)
966.56

A-A (0+09.8)
967.13

TURNER RD.

T-35

B-19

967.02

964.39

+6.97%

D-D (0+60)
964.82

21' LT. ℄ 42.75
IE 960.39

21' LT. ℄ 43.28
IE 957.00

24.5'

28.5'

53'-12" CL. B-1 @ 6.28%

C-C (0+21.2) SKEW 9°-07' RT. FWD
962.15

D-D (00+39)
960.05

MEET EDGE OF PROP. FIRE TRAIL

C-C (0+30)
957.94

B-B (0+15.3)
962.37

B-B (00+15)
957.99

A-A (0+09.2)
962.87

A-A (0+09)
958.49

T-35

TURNER RD.

+5.44%

958.79

963.01

B-19

PROPOSED FIRE TRAIL

+8.40%

958.62

12' DRIVEWAY RT. ℄ 42+27 (67°-30')

12' DRIVEWAY LT. ℄ 42+96 (81°)

12' DRIVEWAY LT. ℄ 43+70

DRIVEWAY CROSS SECTIONS TURNER RD.

21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6

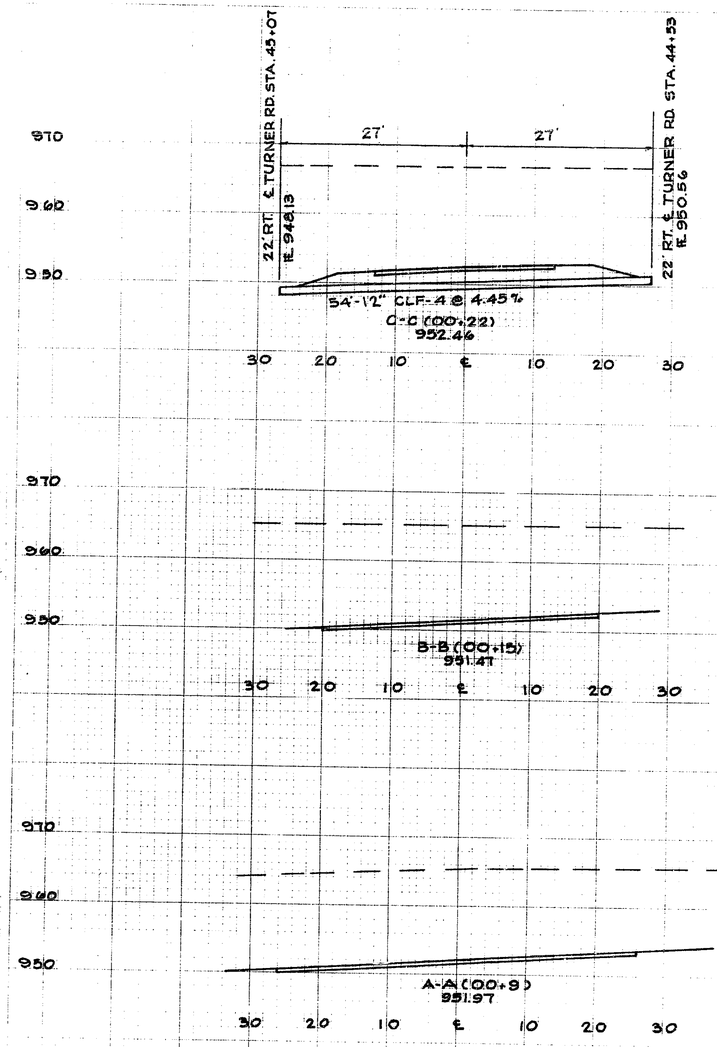
MICROBOX

6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

FED.RD.	STATE	PROJECT	
2	OHIO		

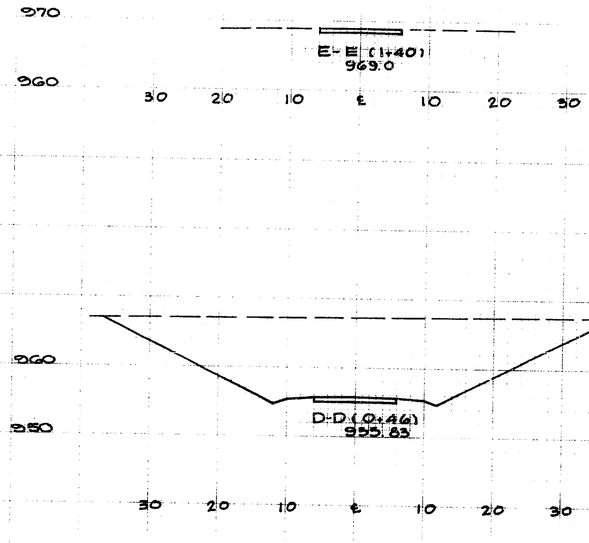
112
294

MAH.18-9.89



END AREA

C 0
F 0



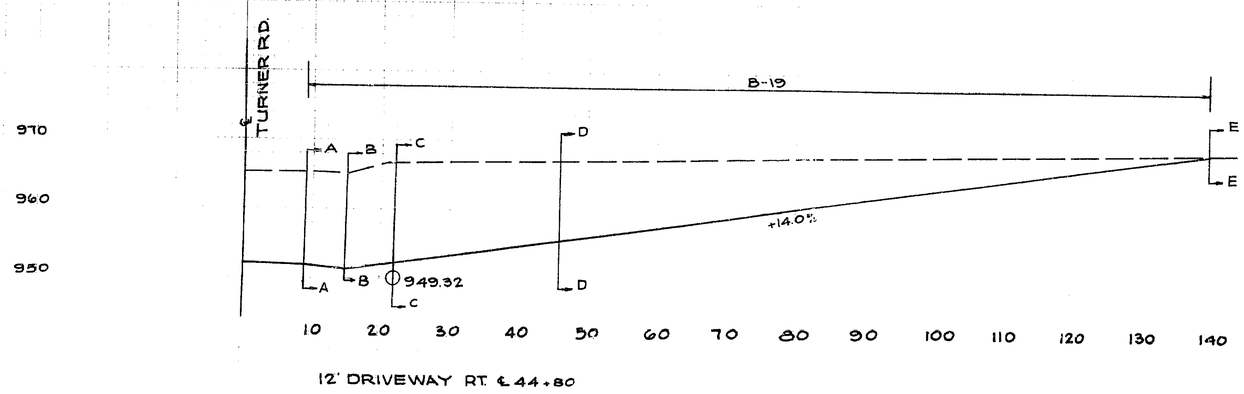
END AREA

C 6
F 0

C 1046
F 0

C 595
F 0

C 264
F 0



12' DRIVEWAY RT. ℄ 44+80

DRIVEWAY CROSS SECTIONS TURNER ROAD

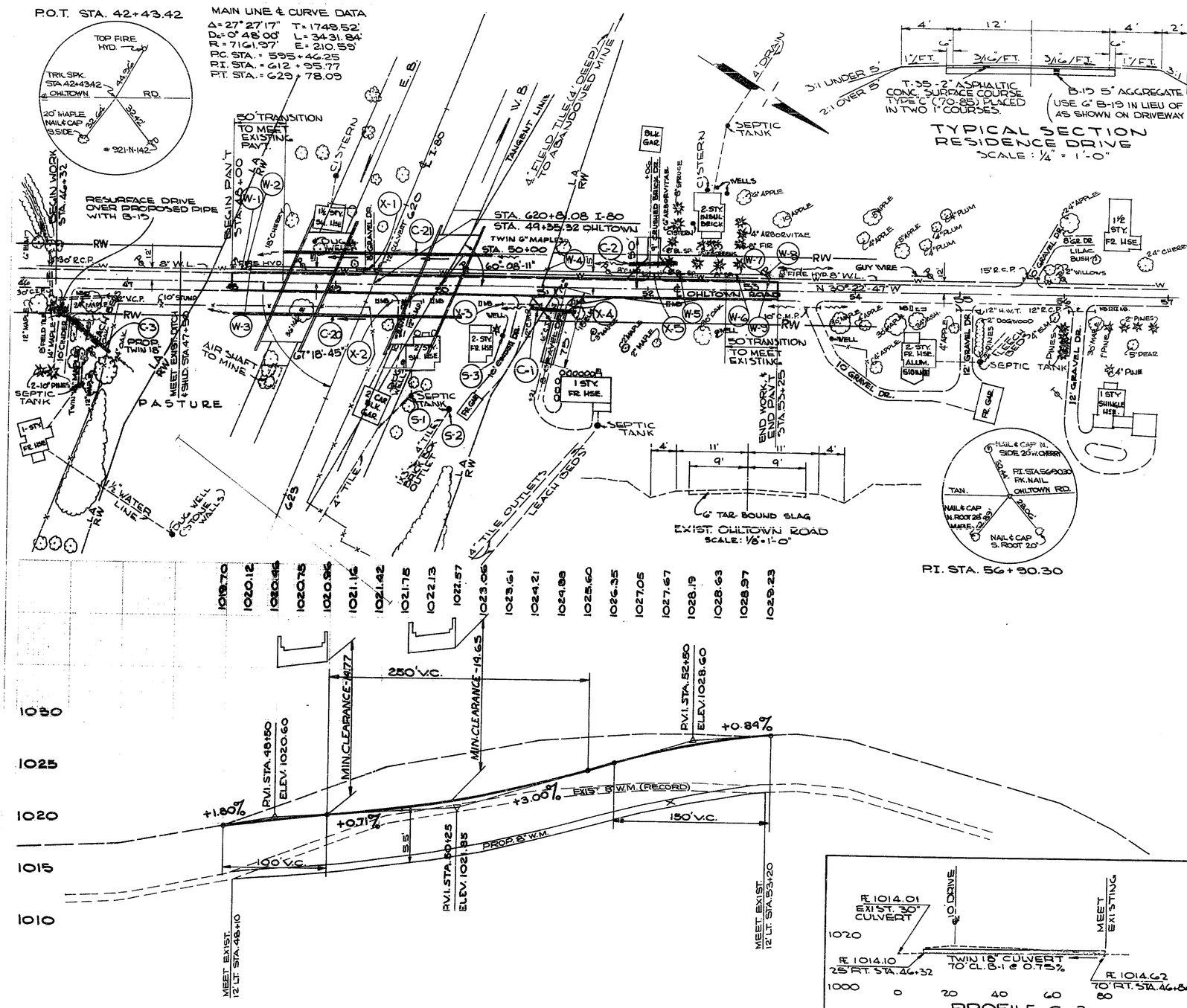
20 19 18 17 16 15 14 13 12 11 10 9 8 7 6

MICROBOX

6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

MAHONING COUNTY

MAH.- 18 - 9.89



I-1 PIPE (LIN. FT.)					
CODE	LOCATION		SIDE	CLASS C-4 PIPE 12"	CLASS B-1 PIPE 18"
	FROM	TO	℄		
C-1	50+88	51+32	RT.	44	
C-2	51+82	52+28	LT.	46	
C-3	46+32	46+84	RT.		140
SHEET TOTAL				90	140

E-12 PIPE REMOVED (LIN. FT.)				
CODE	LOCATION		SIDE	15" & UNDER
	FROM	TO	℄	
X-1	49+26	49+49	LT.	23
X-2	49+55	49+84	RT.	29
X-3	50+60	50+98	RT.	38
X-4	51+08	51+25	RT.	17
X-5	51+99	52+12	LT.	13
SHEET TOTAL				120

I-124 NEW WATER MAIN					
CODE	LOCATION		C.I.P. 8" CL. 200	VALVES 8" CL. 200	BENDS 8"~22½° CL. 200
	FROM	TO	LIN. FT.	EACH	EACH
W-1	12' LT. 48+10				* 1
W-2	W-1	W-3	8		
W-3	15' LT. 48+17				* 1
W-4	W-3	W-5	414		
W-5	15' LT. 52+31			1	
W-6	W-5	W-7	82		
W-7	15' LT. 53+13				* 1
W-8	W-7	W-9	8		
W-9	12' LT. 53+20				* 1
SHEET TOTAL			512	1	4

* PROVIDE MINIMUM SIZE THRUST BLOCKS BEHIND 22½° BENDS

SPECIALS EACH				
CODE	LOCATION	SIDE ℄	CLEAN & DISP. OF EXIST. SEPTIC TANKS	DRILLED WELLS ABAND.
S-1	49+64	106' RT.	1	
S-2	50+11	118' RT.	1	
S-3	50+61	48' RT.		1
SHEET TOTAL			2	1

FOR DRIVEWAY PIPE PROFILES SEE SHEET No. 116

FOR DRIVEWAY QUANTITIES SEE SHEET No. 14

STRUCTURES 20' SPAN & UNDER				
CODE	LOCATION	TYPE	SIZE	DETAIL SHEET No.
C-20	30' RT. 47+50.5 30' RT. 50+26.5	236' ~ CL. F-4	15"	183
C-21	30' LT. 48+45.0 30' LT. 50+55.0	206' ~ CL. F-4	15"	183

OHLTOWN ROAD

FED. RD.	STATE	PROJECT	
2	OHIO		

114
294

MAH-18-9.89

ENDAREA VOLUME
SQFT. CU.YDS.

C 250
F 0

C 522
F 0

C 314
F 0

C 572
F 0

C 305
F 0

C 564
F 0

C 304
F 0

C 494
F 0

C 230
F 0

C 331
F 0

C 128
F 0

C 165
F 0

C 50
F 0

C 46
F 0

C 0
F 0

BEGIN PAVT.
48+00

STA 47+50
MEET EXIST. DITCH

1021.93

1021.74

1022.21

1023.06

1020.59

1022.13

1020.450

1021.42

1019.88

1020.96

1019.31

1020.46

1018.74

1018.26

1017.66

1017.70

1017.10

1017.1

1017.5

BRIDGE SLOPE

SEEDING
END WIDTH SQ.YDS.

311

333

336

328

308

258

114

OHLTOWN ROAD STA. 47+50 TO STA. 51+00

MICROBOX

FINAL SURVEY

FED. RD.	STATE	PROJECT	
2	OHIO		

115
294

MAH-18-9.89

ENDAREA VOLUME
SQFT. CUYDS.

C 9
F 0

C 20
F 0

C 130
F 0

C 120
F 0

C 275
F 0

C 177
F 0

C 367
F 0

C 219
F 0

C 434
F 0

MEET EXISTING PAVEMENT 53+25

1026.50

1025.72

1028.97

1028.13

1026.50

1025.74

1027.05

1025.69

1024.58

1024.83

1023.13

1023.13

54+50

54+00

53+50

53+00

52+50

52+00

51+50

SEEDING
END WIDTH 5CYDS.

31 TO 53+25

97

39

231

44

253

47

264

45

283

1020

OHLTOWN ROAD STA. 51+17 TO STA. 54+50

MICROBOX

21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6

6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

100 80 60 40 20 0

FINAL SURVEY

ORIGINAL

FED. RD.	STATE	PROJECT	
2	OHIO		

116
294

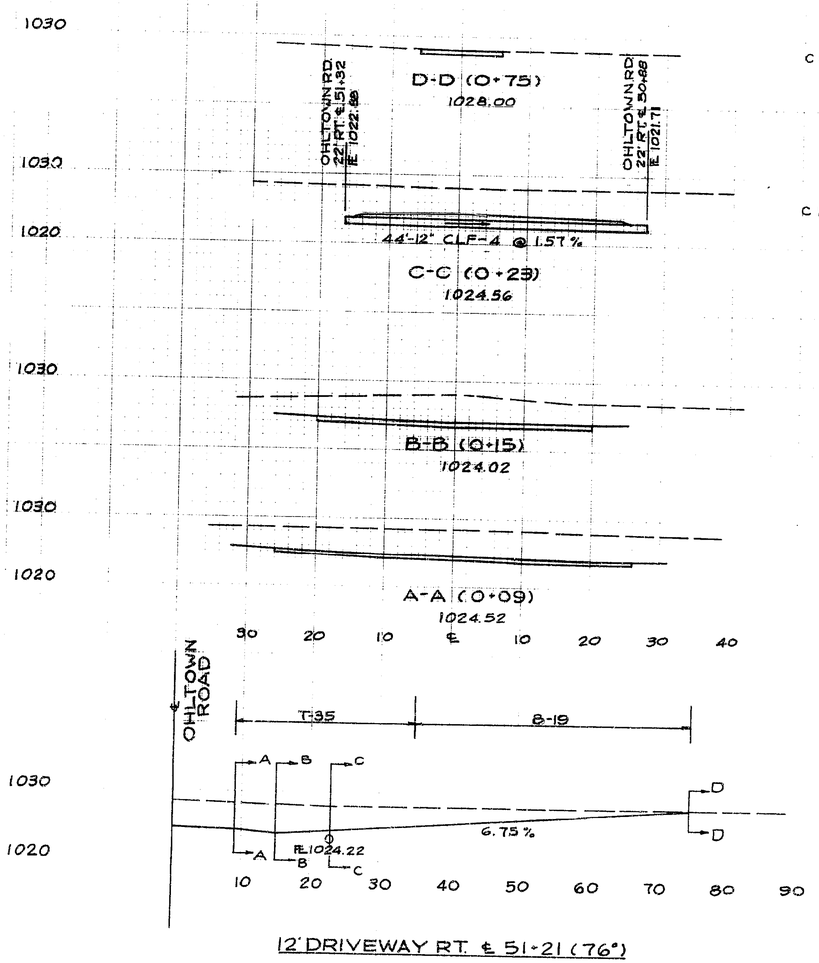
MAH. 18-9.89

END CU.
AREA YDS.

C 6

C 174

C 175



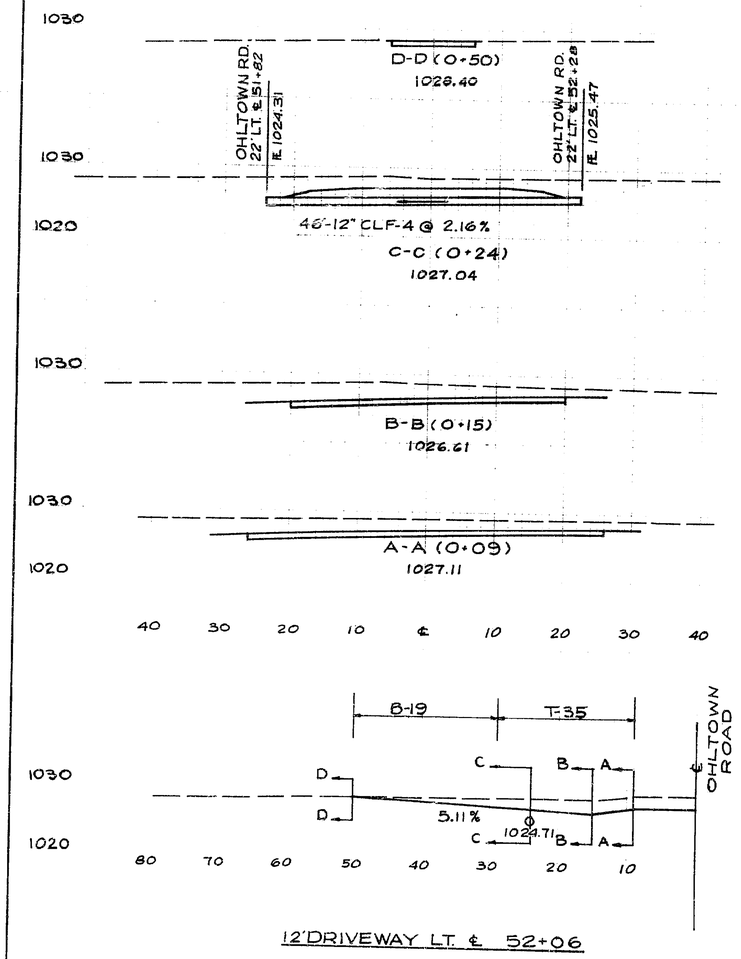
12' DRIVEWAY RT. ℄ 51+21 (76°)

END CU.
AREA YDS.

C 6

C 41

C 80



12' DRIVEWAY LT. ℄ 52+06

DRIVEWAY CROSS SECTIONS - OHLTOWN RD.

21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6

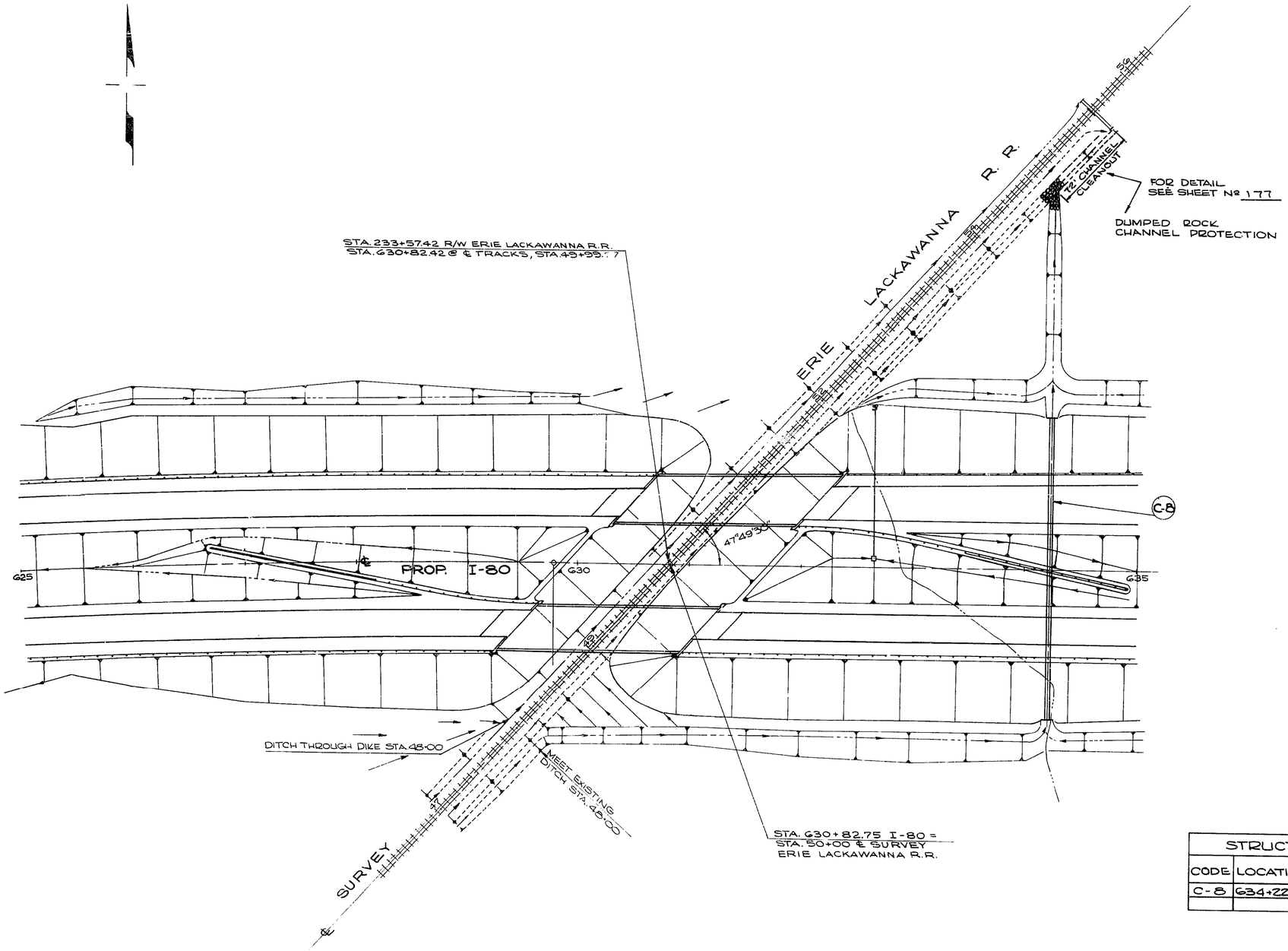
MICROBOX

6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

FED. RD.	STATE	PROJECT	
2	OHIO		

117
294

MAHONING COUNTY
MAH.-18-9.89



STRUCTURES 20' SPAN & UNDER				
CODE	LOCATION	TYPE	SIZE	DETAIL SHEET Nº
C-8	634+22.5	270-CL.A-1, SEC. M-6-6(d)	48"	177

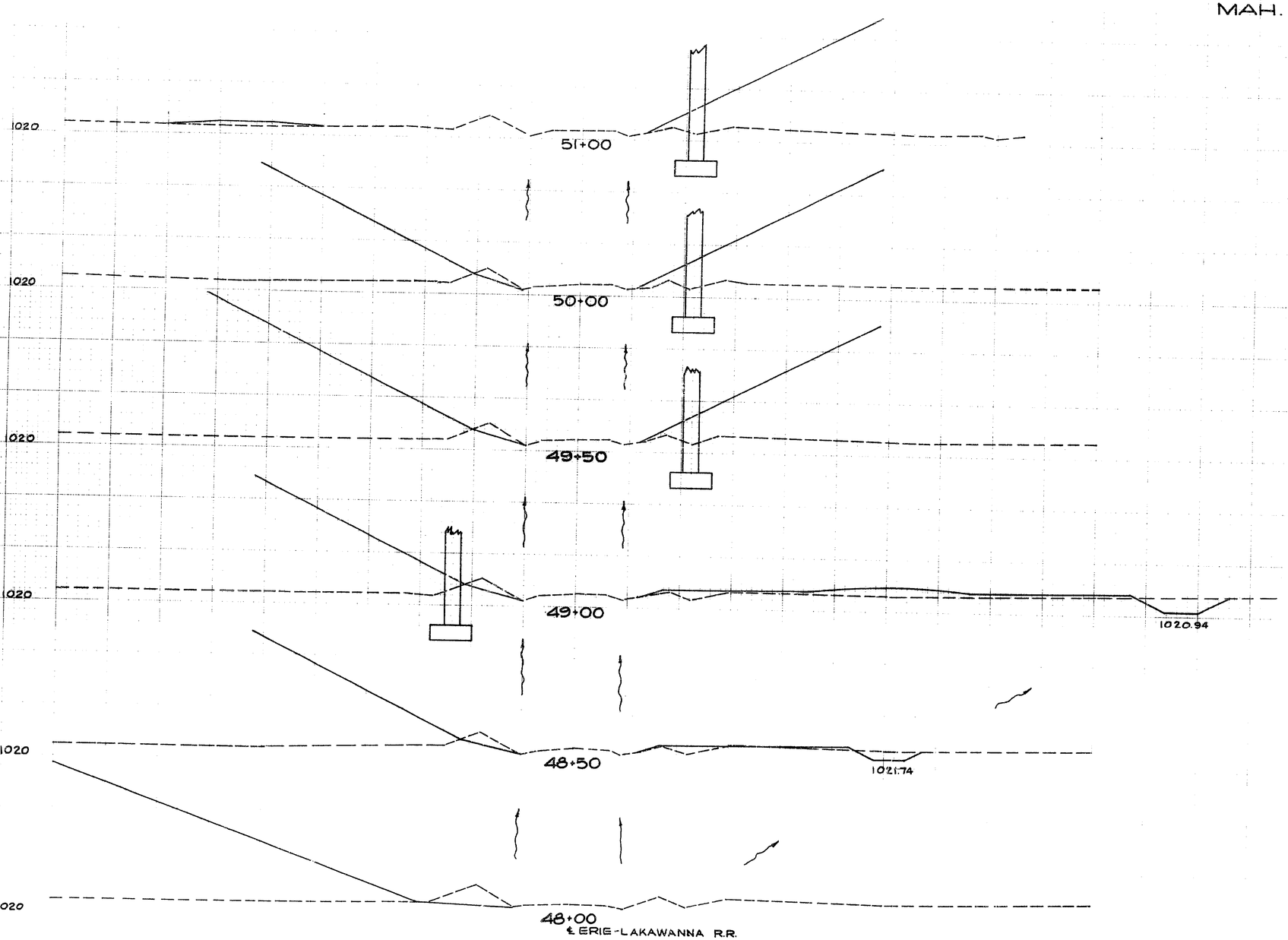
FOR ROADWAY DETAILS & QUANTITIES
SEE PLAN & PROFILE SHEET Nº 35

DRAINAGE PLAN
ERIE - LACKAWANNA R. R.

FED.RD.	STATE	PROJECT	
2	OHIO		

118
294

MAH. 18-9.89

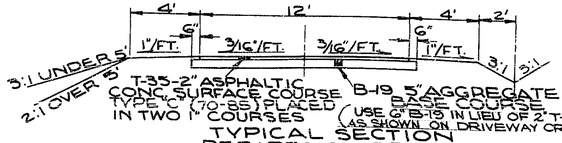


CROSS SECTIONS
ERIE-LAKAWANNA RAILROAD
100 © MAINLINE STA. 630+82.42

100 80 60 40 20 ℄ 20 40 60 80

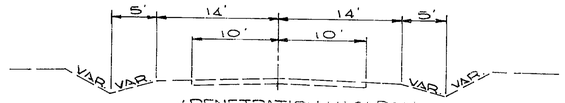
21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 MICROBOX 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

MAHONING COUNTY
MAH 18 - 9.89



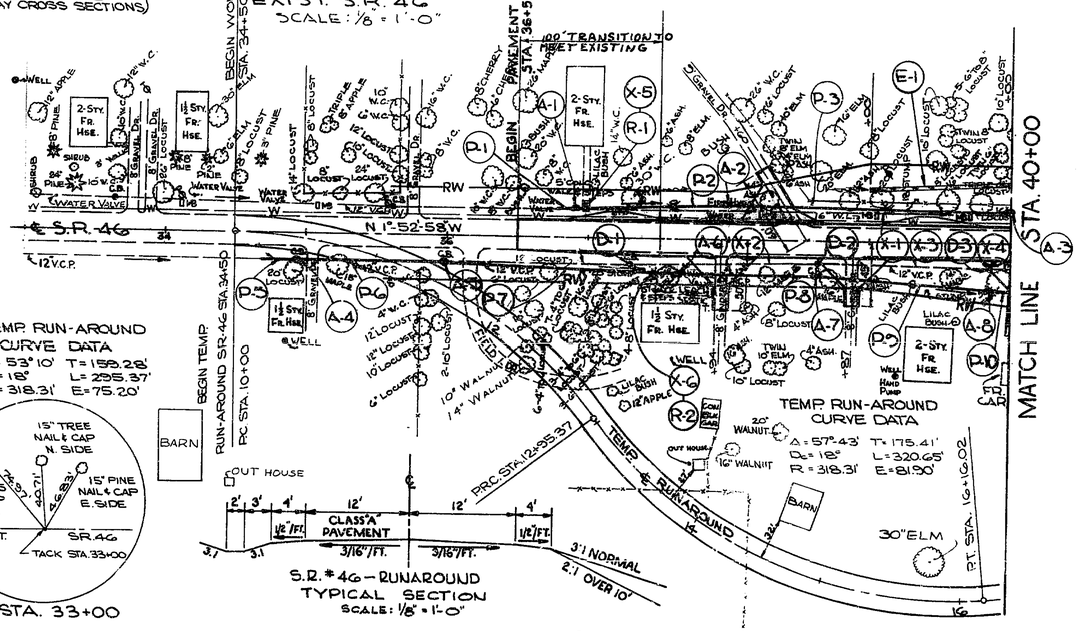
T-35-2" ASPHALTIC CONC. SURFACE COURSE TYPE "C" (70-85) PLACED IN TWO 1" COURSES
B-19 5" AGGREGATE BASE COURSE (USE 6" B-19 IN LIEU OF 2" T-35 & 5" B-19 AS SHOWN ON DRIVEWAY CROSS SECTIONS)

TYPICAL SECTION
RESIDENCE DRIVE
SCALE: 1/4" = 1'-0"



PENETRATION MACADAM

EXIST. S.R. 46
SCALE: 1/8" = 1'-0"



S.R. #46 — RUNAROUND
TYPICAL SECTION
SCALE: 1/8" = 1'-0"

A-1
STA. 36+30 (20' LT. ℄)
I-8 Nº 2-2-B C.B.
GRATE ELEV. 1083.02
R 12" —— 1078.38
R 15" —— 1077.88

A-2
STA. 38+00 (24' LT ℄)
I-8 Nº 2-2-B C.B.
GRATE ELEV. 1076.25
R 18" —— 1071.65

A-3
STA. 40+00 (22' LT. ℄)
I-8 Nº 1 M.H.
COVER ELEV. 1066.93
R 18" —— 1059.43

H-1
STA. 40+20.5 (38.5' LT. ℄)
HW-E HEADWALL
R 18" —— 1059.18

A-4
STA. 34+92 (20' RT.)
I-8 Nº 2-2-B
GRATE ELEV. 1090.54
R 12" 1088.45
R 15" 1088.20

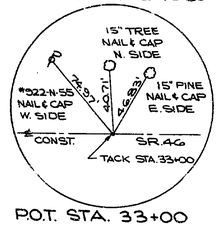
A-5
STA. 35+97 (20' RT. ℄)
I-8 Nº 2-2-B C.B.
GRATE ELEV. 1086.35
R 15" 1085.01

A-6
STA. 37+64 (24' RT ℄)
I-8 Nº 2-2-B C.B.
GRATE ELEV. 1078.06
R 15" —— 1074.74

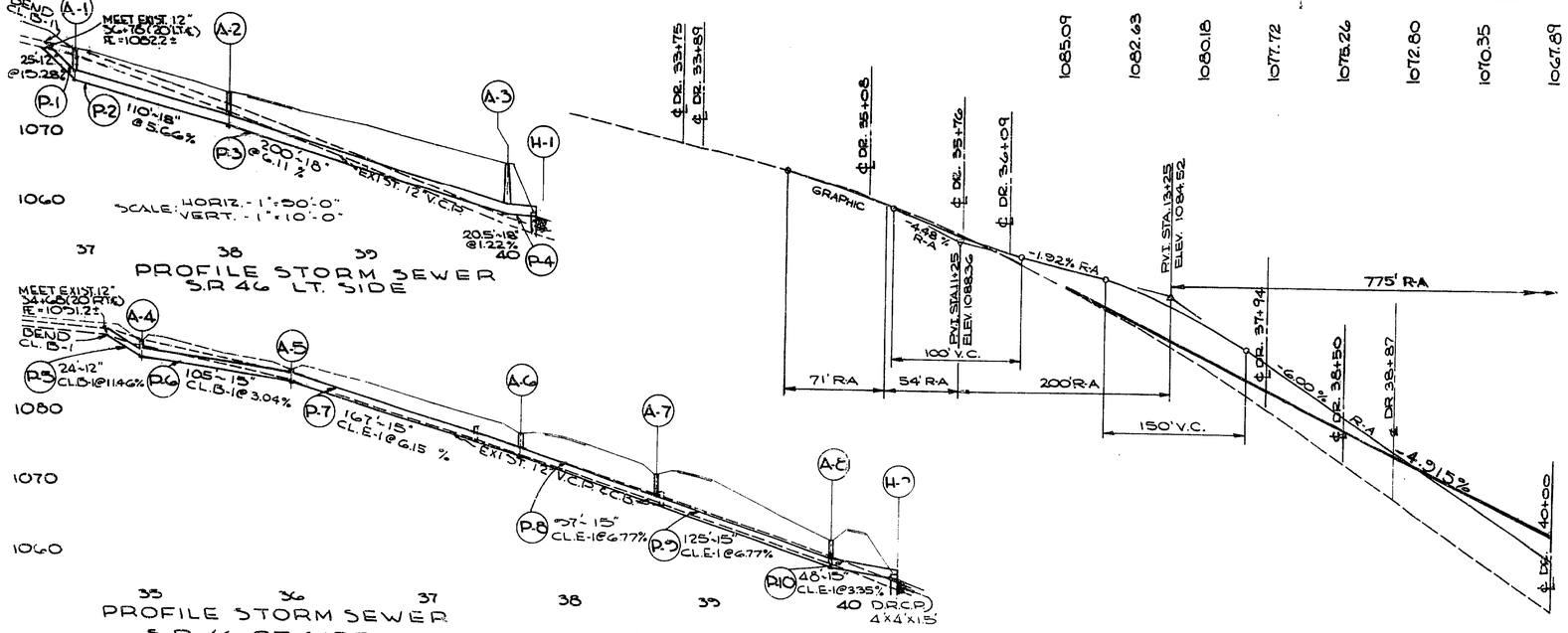
A-7
STA. 38+61 (24.8' RT. ℄)
I-8 Nº 2-2-B C.B.
GRATE ELEV. 1072.50
R 15" —— 1068.17

A-8
STA. 39+86 (33.6' RT ℄)
I-8 Nº 2-2-B C.B.
GRATE ELEV. 1063.50
R 15" —— 1059.71

H-2
STA. 40+34 (38.4' RT. ℄)
HW-E HEADWALL
R 15" —— 1056.09



P.O.T. STA. 33+00



I-1 PIPE SEWER (LIN. FT.)									I-5 PIPE SPECIALS
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS E-1 12"	CLASS B-1 15"	CLASS C-4 18"	CLASS C-4 15"	CLASS E-1 18"	CLASS B-1 BEND 12"
P-1	36+65	36+90	LT.	25					1
P-2	36+90	38+00	LT.					110	
P-3	38+00	40+00	LT.			200			
P-5	34+68	34+92	RT.	24					1
P-6	34+92	35+97	RT.		105				
P-7	35+97	37+64	RT.				167		
P-8	37+64	38+61	RT.				97		
P-9	38+61	39+86	RT.				125		
P-10	39+86	40+00	RT.				14		
SHEET TOTAL				49	105	200	403	110	2

I-8 CATCH BASIN & MANHOLES					
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	I-8 C.B. Nº 2-2-B EACH	I-8 M.H. Nº 1 EACH
A-1	36+90	——	LT.	1	
A-2	38+00	——	LT.	1	
A-3	40+00	——	LT.		1
A-4	34+92	——	RT.	1	
A-5	35+97	——	RT.	1	
A-6	37+64	——	RT.	1	
A-7	38+61	——	RT.	1	
A-8	39+86	——	RT.	1	
SHEET TOTAL				7	1

I-16 CATCH BASIN (ABAND.)			
CODE	LOCATION	SIDE ℄	I-8 C.B. Nº 7 EACH
D-1	37+31	RT.	1
D-2	38+64	RT.	1
D-3	39+86	RT.	1
SHEET TOTAL			3

EROSION CONTROL				
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	L-10 SOD. SQ. YDS.
E-1	39+00	40+00	LT.	29
SHEET TOTAL				29

I-13 CONCRETE STEPS			
CODE	LOCATION	SIDE ℄	TYPE "B" LIN. FT.
*R-1	20' LT. STA. 36+98	LT.	11.3
*R-2	24' RT. STA. 37+47	RT.	12.5
SHEET TOTAL			23.8

* R-7; T-14"; WIDTH -6"+4'-0"+6" = 5'-0"

E-12 PIPE REMOVAL (LIN. FT.)				
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	15" & UNDER
X-1	36+78	40+00	LT.	322
X-2	37+31	38+64	RT.	133
X-3	38+64	39+86	RT.	122
X-4	39+86	40+00	RT.	14
SHEET TOTAL				591

S-24 STRUCTURE REMOVAL				
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CONC. STEPS
X-5	36+98	——	LT.	LUMP
X-6	37+47	——	RT.	LUMP
SHEET TOTAL				LUMP

FOR DRIVEWAY QUANTITIES SEE SHEET Nº 14

FOR DETAILS OF EXIST. & PROPOSED WATER LINES SEE SHEET Nº 123

S.R. #46
SHEET 1 OF 4

20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 MICROBOX 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

MAHONING COUNTY
MAH 18 - 9.89

PROPOSED STRUCTURE Nº MAH-18-1246

TYPE: CONTINUOUS STEEL GIRDERS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
SKEW: 19°22'00" L.F.
SPAN: 53'-0", 81'-6", 94'-9", 61'-6" ℄/℄ BEARINGS
ROADWAY: 65'-0" ℄/℄ PARAPETS - 2'-0" MEDIAN
LOAD FREQUENCY: C.F. 2000(57) ADEQUATE FOR AASHO ALTERNATE LOADING.
WEARING SURFACE: 1" MONOLITHIC.
APPROACH SLAB: 25' LONG (AS-1-54)
ALIGNMENT: STRAIGHT
SUPERELEVATION: NONE
SLOPE PROTECTION: I-10 CRUSHED AGGREGATE.

I-1 PIPE SEWER & DRIVE (LIN. FT)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS C-4 15"	CLASS E-1 18"	CLASS F-4 18"	CL. H M-6.8(b) 8" SANITARY V/S CONC. & COMP. JOINTS LIN. FT.
P-4	40+00	40+20.5	LT.		26		
P-10	40+00	40+34	RT.	34			
C-1	41+85	42+30	LT.			46	
C-2	42+28.6	42+76.3	RT.	50			
P-1	44+98.83		LT. & RT.				210
SHEET TOTAL				84	26	46	210

I-16 CATCH BASINS (ABAND.)

CODE	LOCATION	SIDE ℄	EACH
D-1	41+96	21' LT.	1
D-2	44+46	21' LT.	1
D-3	47+15	23' RT.	1
SHEET TOTAL			3

S-24 STRUCTURE REMOVAL

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CONC. BOX CULV.
X-1	46+09	46+41	—	LUMP
SHEET TOTAL				LUMP

SPECIALS EACH

CODE	LOCATION	SIDE ℄	CLEAN & DISP. OF EXIST. SEPTIC TANKS
S-1	46+30	104' RT.	1
S-2	49+32	172' LT.	1
SHEET TOTAL			2.

EROSION CONTROL

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	I-14 PAVED GUTTER TYPE 1 LIN. FT.	I-10 DUMPED ROCK PROT. CU. YDS	L-10 SOD SQ. YDS.	I-2 MASONRY HW-E CU. YDS.	L-10 SOD. SPL. BERM PROT. SQ. YDS.
E-1	40+00	40+19	LT.			5		
E-2	40+19	40+30	LT.		4			
E-3	40+34	40+38	RT.		1			
E-4	40+30	41+85	LT.	155				
E-5	40+38	42+29	RT.			106		
E-6	42+30	43+50	LT.	120				
E-7	42+76	42+80	RT.		1			
E-8	42+80	45+03	RT.			154		
E-9	43+50	43+54	LT.		1			
E-10	43+54	46+08	LT.			202		
E-11	48+47	——	RT.					59
E-12	48+48	——	LT.					44
H-1	40+20.5	(38.5' LT. ℄)	LT.				0.3	
H-2	40+34	(38.4 RT. ℄)	RT.				0.3	
SHEET TOTAL				275	7	467	0.6	103

STRUCTURES 20' SPAN & UNDER

CODE	LOCATION	TYPE	SIZE	DETAIL SHEET Nº.
C-12	45+60	202' CLA-1 SEC. M-6.6 (d)	54"	184

I-15 GUARDRAIL (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYPE DEEP
G-1	40+00.0	41+87.5	LT.	187.5
G-2	40+25.0	42+25.0	RT.	200.0
G-3	42+26.0	45+86.3	LT.	360.3
G-4	47+15.0	48+48.0	RT.	133.0
G-5	47+00.5	48+50.5	LT.	150.0
G-6	42+75.0	45+43.4	RT.	268.4
SHEET TOTAL				1299.2

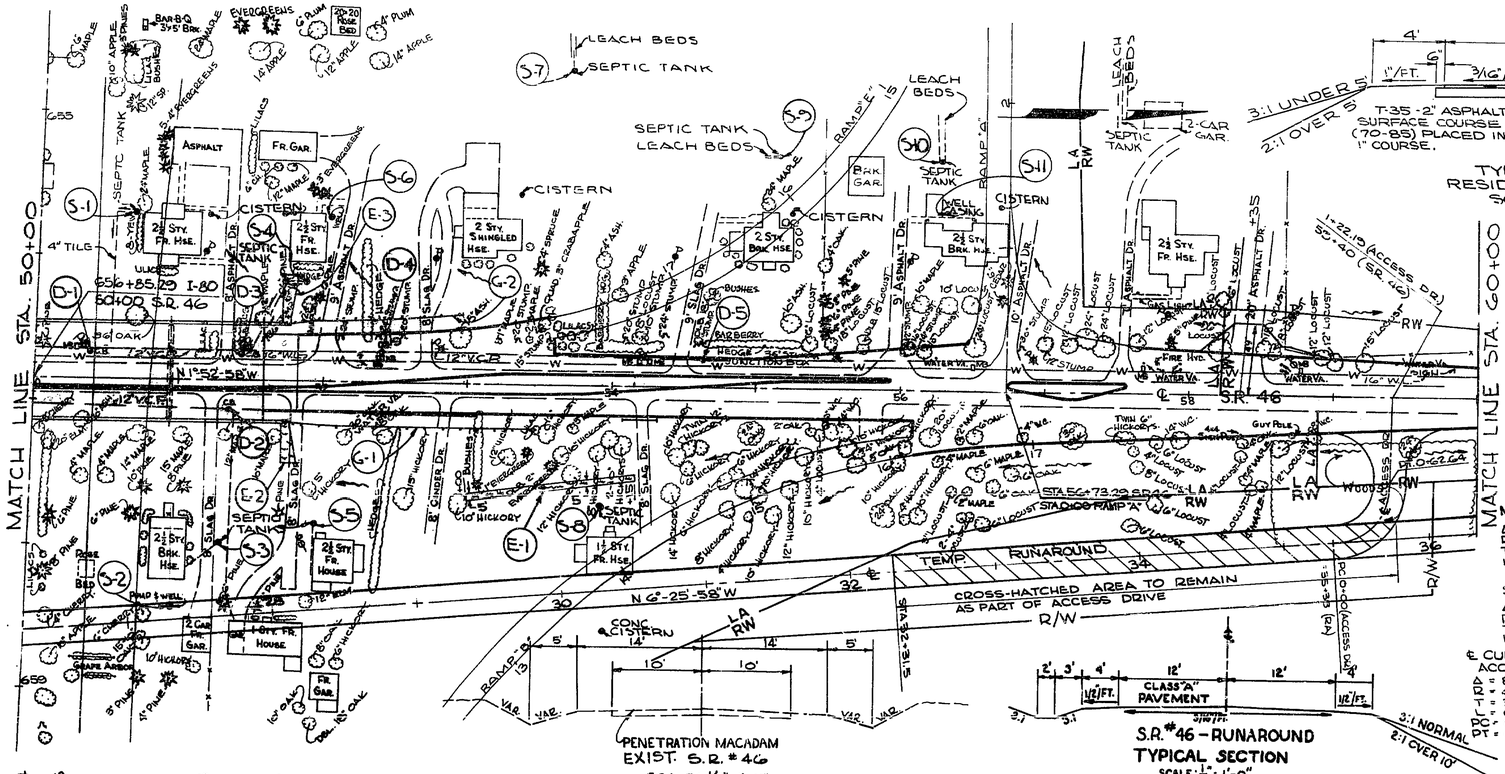
FOR DRIVEWAY PIPE PROFILES SEE SHEET Nº 134 & 135
FOR DETAILS S.R. 46 SEE SHEET Nº. 152 & 153
FOR DETAILS RAMP "C" SEE SHEET Nº. 143
FOR DETAILS RAMP "D" & "D," SEE SHEET Nº. 144
FOR PROFILES P-10 & P-4. SEE SHEET Nº. 115
FOR DRIVEWAY QUANTITIES SEE SHEET Nº. 14
FOR DETAILS OF EXIST. & PROPOSED WATER LINES SEE SHEET Nº. 123
FOR PROFILE OF SANITARY SEWER P-1 SEE SHEET Nº. 100

S.R. #46

SHEET 2 OF 4

MICROBOX

MAHONING COUNTY
MAH 18-9.89



SPECIALS (EACH)				
CODE	LOCATION	SIDE ℄	CLEAN & DISP OF EXIST. SEPTIC TANKS	DRILLED WELL ABAND.
S-1	50+70	116' LT.	1	
S-2	50+96	156' RT.		1
S-3	51+30	112' RT.	1	
S-4	51+88	68' LT.	1	
S-5	51+95	98' RT.	1	
S-6	52+05	114' LT.		1
S-7	53+71	218' LT.	1	
S-8	53+93	83' RT.	1	
S-9	55+15	161' LT.	1	
S-10	56+27	160' LT.	1	
S-11	56+31	123' LT.		1
SHEET TOTAL			8	3

EROSION CONTROL					
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	L-10 SOD SQ.YDS.	L-10 SOD SPLBERM PROT. SQ.YDS.
E-1	53+00	54+15	RT.	64	
E-2	51+74	———	RT.		29
E-3	51+75	———	LT.		36
SHEET TOTAL				64	65

I-16 CATCH BASINS & JUNCTION BOXES (ABAND)					
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CATCH BASINS EACH	JUNCTION BOX EACH
D-1	50+38	———	LT.	1	
D-2	51+35	———	RT.	1	
D-3	51+47	———	LT.	1	
D-4	52+40	———	LT.	1	
D-5	54+62	———	LT.		1
SHEET TOTAL				4	1

I-15 GUARDRAIL (LIN. FT.)				
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYPE DEEP
G-1	51+71.0	53+46.0	RT.	175.0
G-2	51+73.0	52+98.0	LT.	125.0
SHEET TOTAL				300.0

TYPICAL SECTION FOR ACCESS DR. WILL BE THE SAME AS THE TEMPORARY RUNAROUND EXCEPT THE FOLLOWING PAVEMENT WILL BE USED IN LIEU OF CLASS "A" PAVEMENT
T-35 - 2" ASPHALTIC CONC. COURSE
B-19 - 8" AGGREGATE BASE COURSE
T-30 - PRIME COAT SEC M-57 RT2 OR RT3 APPLIED 0.40/GAL/SQ.YD.

FOR DETAILS S.R.46 SEE SHEET Nº. 153 & 154
FOR DETAILS RAMP "A" SEE SHEET Nº. 141
FOR DETAILS RAMP "B" SEE SHEET Nº. 142
FOR DETAILS RAMP "E" SEE SHEET Nº. 145
FOR DRIVEWAY QUANTITIES SEE SHEET Nº. 14
FOR DETAILS OF EXISTING & PROPOSED WATER LINES SEE SHEET Nº. 123

PROPOSED STRUCTURE Nº. MAH-18-1246

TYPE: CONTINUOUS STEEL GIRDERS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SKEW: 1° 22' 00" L.F.
SPAN: 53'-0", 81'-6", 94'-9", 61'-6" ℄/℄ BEARINGS
ROADWAY: 65'-0" ℄/℄ PARAPETS - 2'-0" MEDIAN
LOAD FREQUENCY: C.F. 2.000 (57) ADEQUATE FOR AASHO ALTERNATE LOADING
WEARING SURFACE: 1" MONOLITHIC
APPROACH SLABS: 25' LONG (AS-1-54)
ALIGNMENT: STRAIGHT
SUPERELEVATION: NONE
SLOPE PROTECTION: I-10 CRUSHED AGGREGATE

S. R. #46
SHEET 3 OF 4

19 18 17 16 15 14 13 12 11 10 9 8 7 6 MICROBOX 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

2	OHIO			

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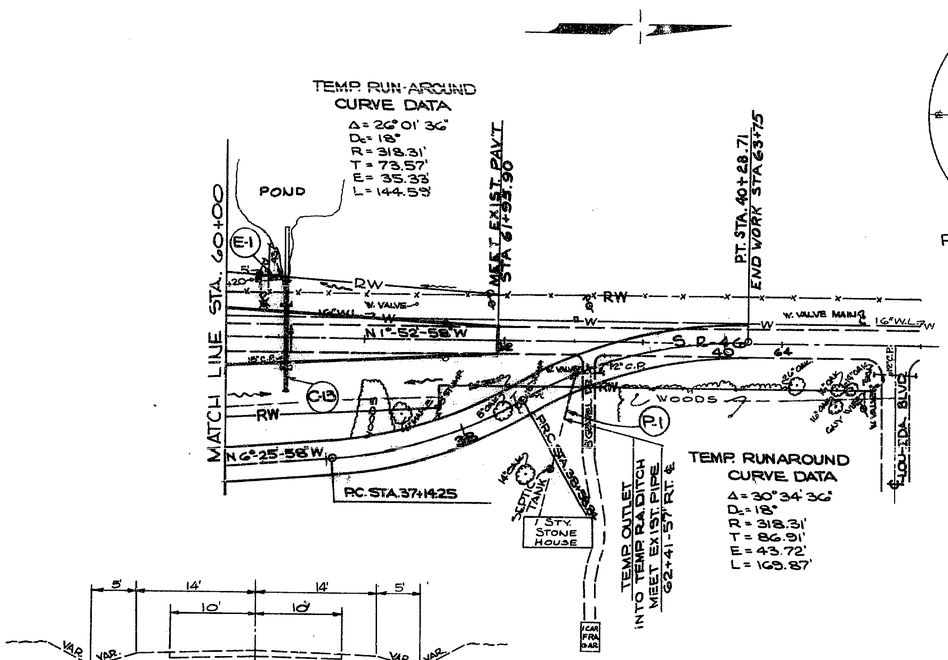
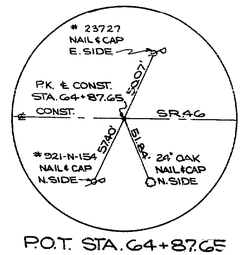
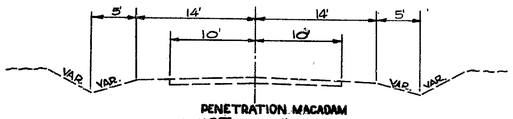
294

MAHONING COUNTY
MAH. 18-9.89

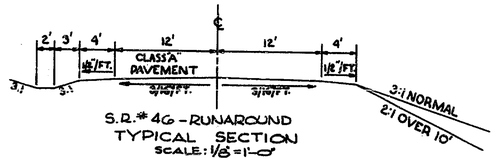




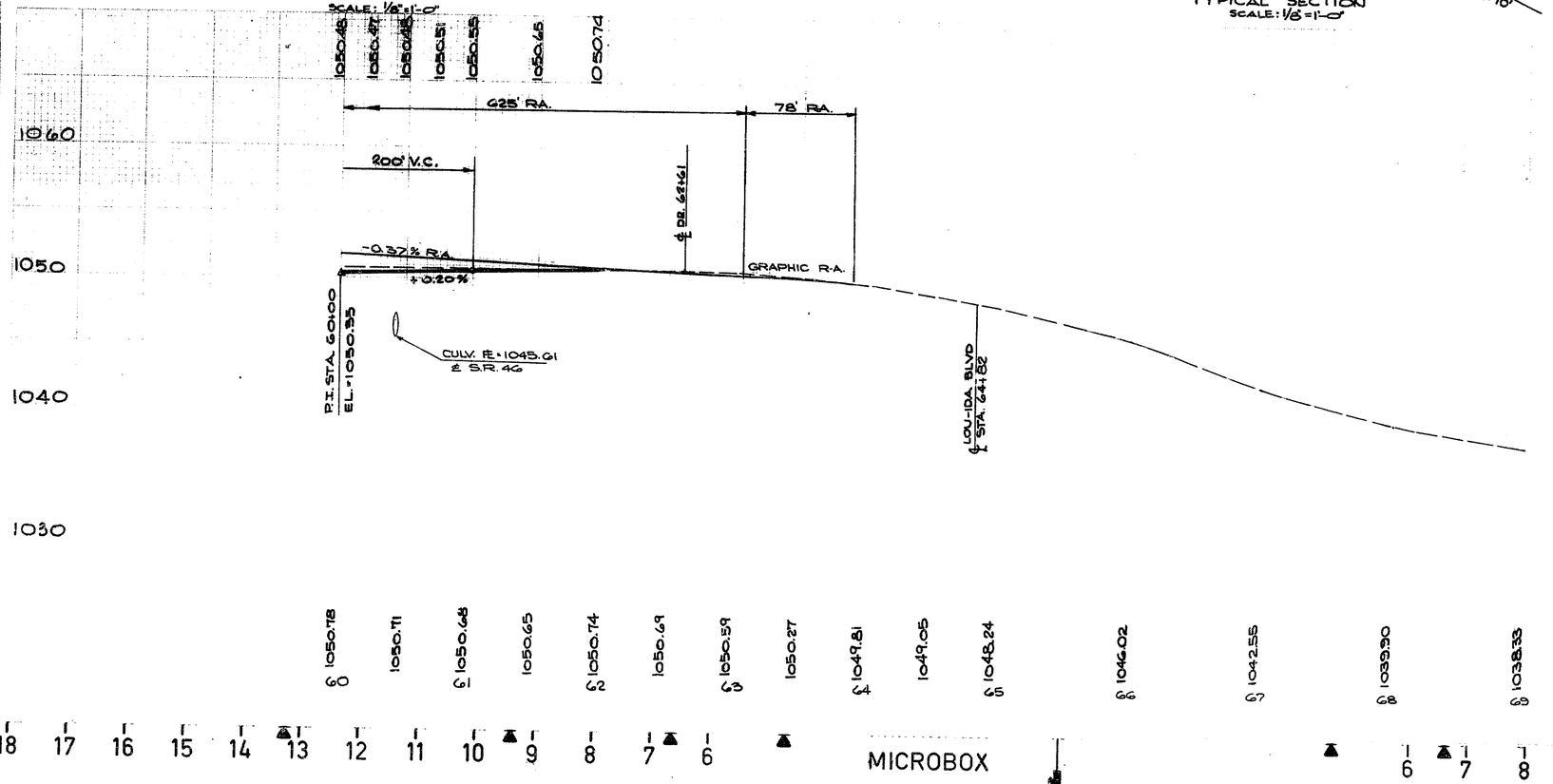
P.O.T. STA. 64+87.65



PENETRATION MACADAM
EXIST. S.R. #46
SCALE: 1/8"=1'-0"



S.R. #46 - RUNAROUND
TYPICAL SECTION
SCALE: 1/8"=1'-0"



I-1 PIPE SEWER (LIN. FT.)				
CODE	LOCATION		SIDE ℄	CLASS E-1 M-G.8(a) 4"
	FROM	TO		
P-1	62+41	——	RT.	36
SHEET TOTAL				36

E-12 PIPE REMOVAL (LIN. FT.)				
CODE	LOCATION		SIDE ℄	15" & UNDER
	FROM	TO		
X-1	60+43	——	LT. & RT.	46
SHEET TOTAL				46

EROSION CONTROL				
CODE	LOCATION		SIDE ℄	L-10 SOD SQ. YDS.
	FROM	TO		
E-1	60+20	60+43	LT.	13
SHEET TOTAL				13

STRUCTURES 20' SPAN & UNDER				
CODE	LOCATION	TYPE	SIZE	DETAIL SHEET
C-13	60+43	80' CLA-1 SEC. M-6.6(a) M-6.8(b)	15"	185

FOR DETAILS S.R. 46
SEE SHEET No. 154

FOR DETAILS OF EXISTING & PROPOSED
WATER LINES SEE SHEET No. 123

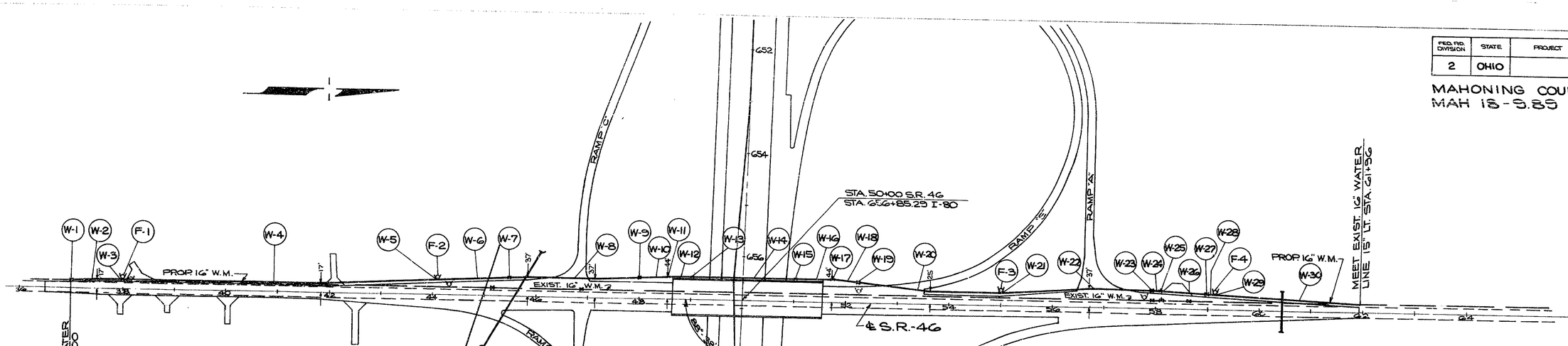
S.R. #46
SHEET 4 OF 4

MICROBOX

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

123
294

MAHONING COUNTY
MAH 18-9.85



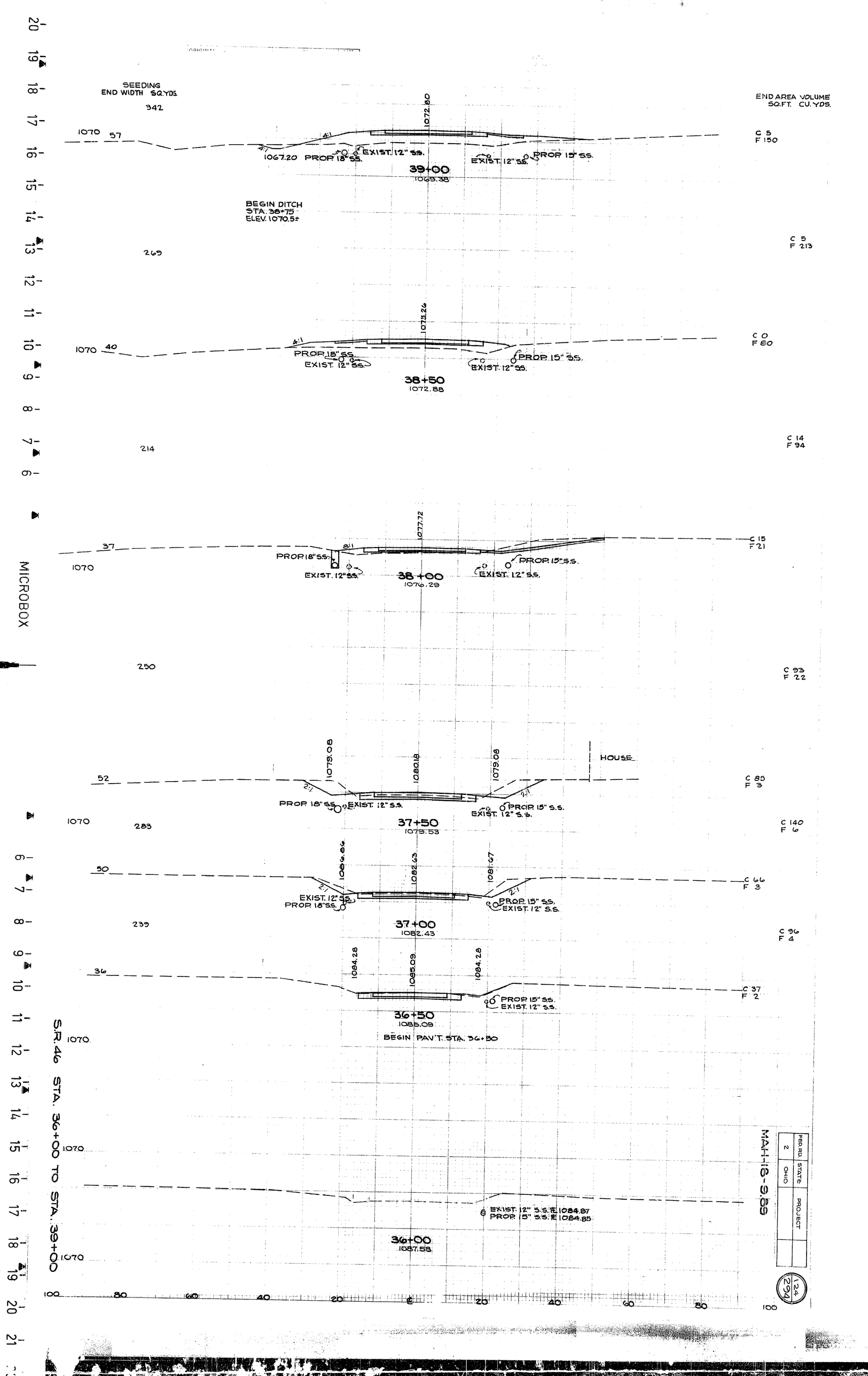
I-124 FIRE HYDRANTS REMOVED & RESET

CODE	LOCATION FROM	LOCATION TO	EACH
F-1	STA. 38+15	22' LT. STA. 38+00	1
F-2	STA. 44+32	322' LT. STA. 44+10	1
F-3	STA. 52+26	30' LT. STA. 55+00	1
F-4	STA. 57+78	34' LT. STA. 59+15	1
SHEET TOTAL			4

I-124 NEW WATER MAINS

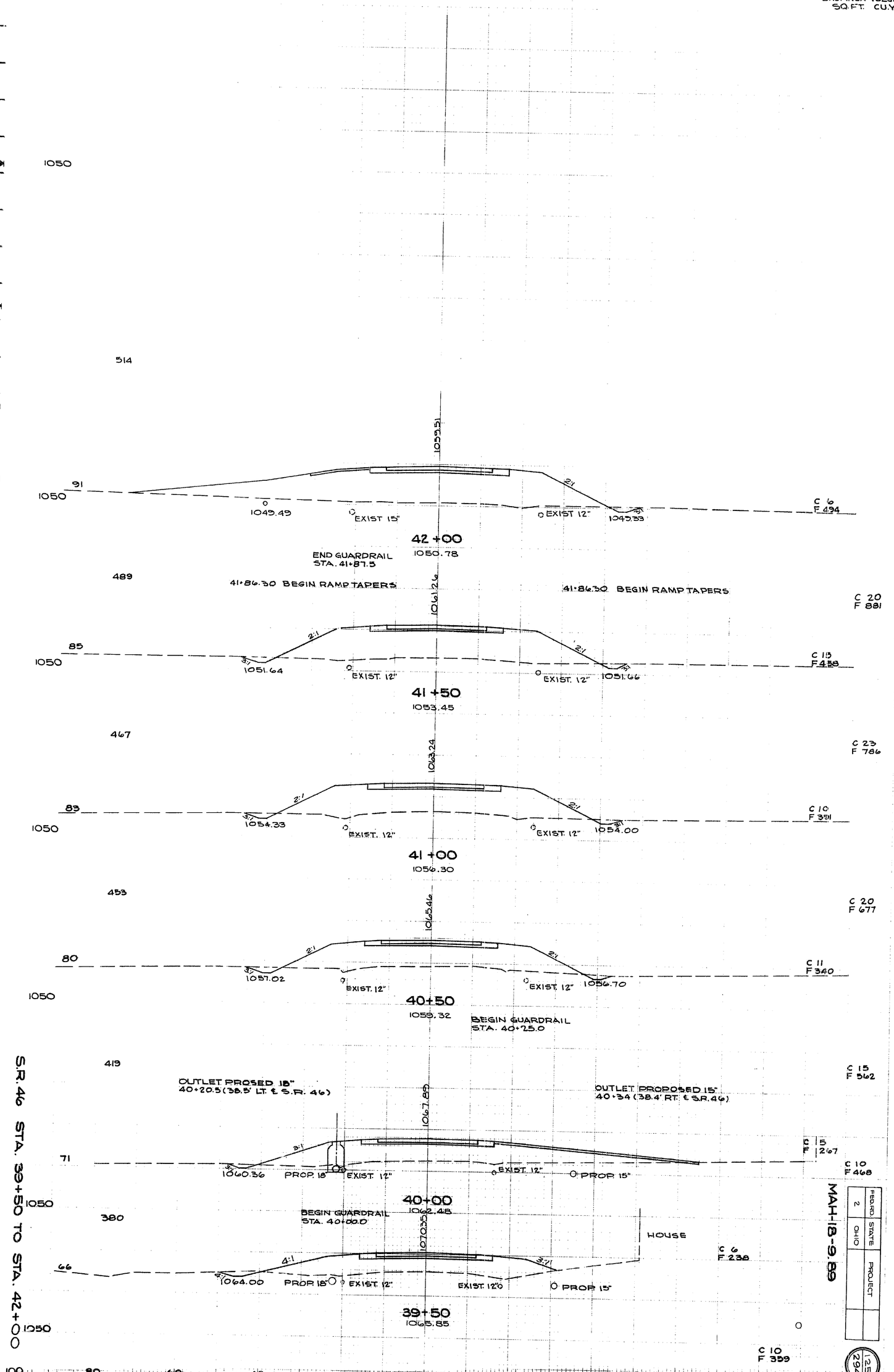
CODE	LOCATION	16" C.I.P. CL. 200 LIN. FT.	16" VALVE CL. 200 EACH	22½° BEND CL. 200 EACH	16"x16"x8" TEE CL. 200 EACH	16"x16"x6" TEE CL. 200 EACH	6" C.I.P. CL. 200 LIN. FT.	6" VALVE CL. 200 EACH
W-1	15' LT. STA. 37+00		1					
W-2	W-1 TO W-3	100						
W-3	17' TO 22' LT. STA. 38+00					1	5	1
W-4	W-3 TO W-5	610						
W-5	22' TO 322' LT. STA. 44+10					1	4	1
W-6	W-5 TO W-7	140						
W-7	35.2 LT. STA. 45+50		1					
W-8	W-7 TO W-9	250						
W-9	40' LT. STA. 48+00		1					
W-10	W-9 TO W-11	56						
W-11	44' LT. STA. 48+56			1				
W-12	W-11 TO W-13	53						
W-13	44' LT. STA. 49+03			1				
W-14	W-13 TO W-15	209						
W-15	44' LT. STA. 51+02			1				
W-16	W-15 TO W-17	69						
W-17	44' LT. STA. 51+72			1				
W-18	W-17 TO W-19	53						
W-19	40' LT. STA. 52+25		1					
W-20	W-19 TO W-21	275						
W-21	25' TO 30' LT. STA. 55+00					1	5	1
W-22	W-21 TO W-23	294						
W-23	35' LT. STA. 57+34		1					
W-24	W-23 TO W-25	16						
W-25	34.3 LT. STA. 58+10			1				
W-26	W-25 TO W-27	90						
W-27	29.8' LT. STA. 59+00		1					
W-28	W-27 TO W-29	15						
W-29	29' TO 34' LT. STA. 59+15							
W-30	W-29 TO STA. 61+96	281				1	5	1
SHEET TOTAL		2511	6	4	1	4	15	4

S.R. 46 RELOCATED WATER MAINS


SEEDING
END WIDTH SQ.YDS.
342
END AREA VOLUME
SQ.FT. CU.YDS.
1070
57
1072.80
4:1
4:1
1067.20 PROP. 18" SS.
EXIST. 12" SS.
EXIST. 12" SS.
PROP. 15" SS.
39+00
1069.38
C 5
F 150
BEGIN DITCH
STA. 38+75
ELEV. 1070.5±
269
C 5
F 213
1073.26
1070
40
4:1
PROP. 18" SS.
EXIST. 12" SS.
EXIST. 12" SS.
PROP. 15" SS.
38+50
1072.88
C 0
F 80
214
C 14
F 94
1077.72
37
8:1
PROP. 18" SS.
EXIST. 12" SS.
38+00
1076.29
EXIST. 12" SS.
PROP. 15" SS.
C 15
F 21
1070
MICROBOX
250
C 93
F 22
1078.08
1080.18
1079.08
HOUSE
52
2:1
4:1
PROP. 18" SS.
EXIST. 12" S.S.
EXIST. 12" S.S.
PROP. 15" S.S.
C 85
F 3
1070
283
37+50
1079.53
C 140
F 6
1080.63
1082.43
1081.67
50
2:1
2:1
EXIST. 12" SS.
PROP. 18" SS.
PROP. 15" SS.
EXIST. 12" S.S.
C 66
F 3
37+00
1082.43
239
C 96
F 4
1084.28
1085.09
1084.28
36
PROP. 15" SS.
EXIST. 12" S.S.
C 37
F 2
36+50
1085.09
BEGIN PAV'T. STA. 36+50
1070
S.R. 46 STA. 36+00 TO STA. 39+00
1070
EXIST. 12" S.S.E. 1084.87
PROP. 15" S.S.E. 1084.85
36+00
1087.58
1070
100
80
60
40
20
0
20
40
60
80
100
MAH-18-9.59
FED. RD. | STATE | PROJECT
2 | OHIO
124
294

SEEDING
END WIDTH SQ.YDS.

END AREA VOLUME
SQ.FT. CU.YDS.



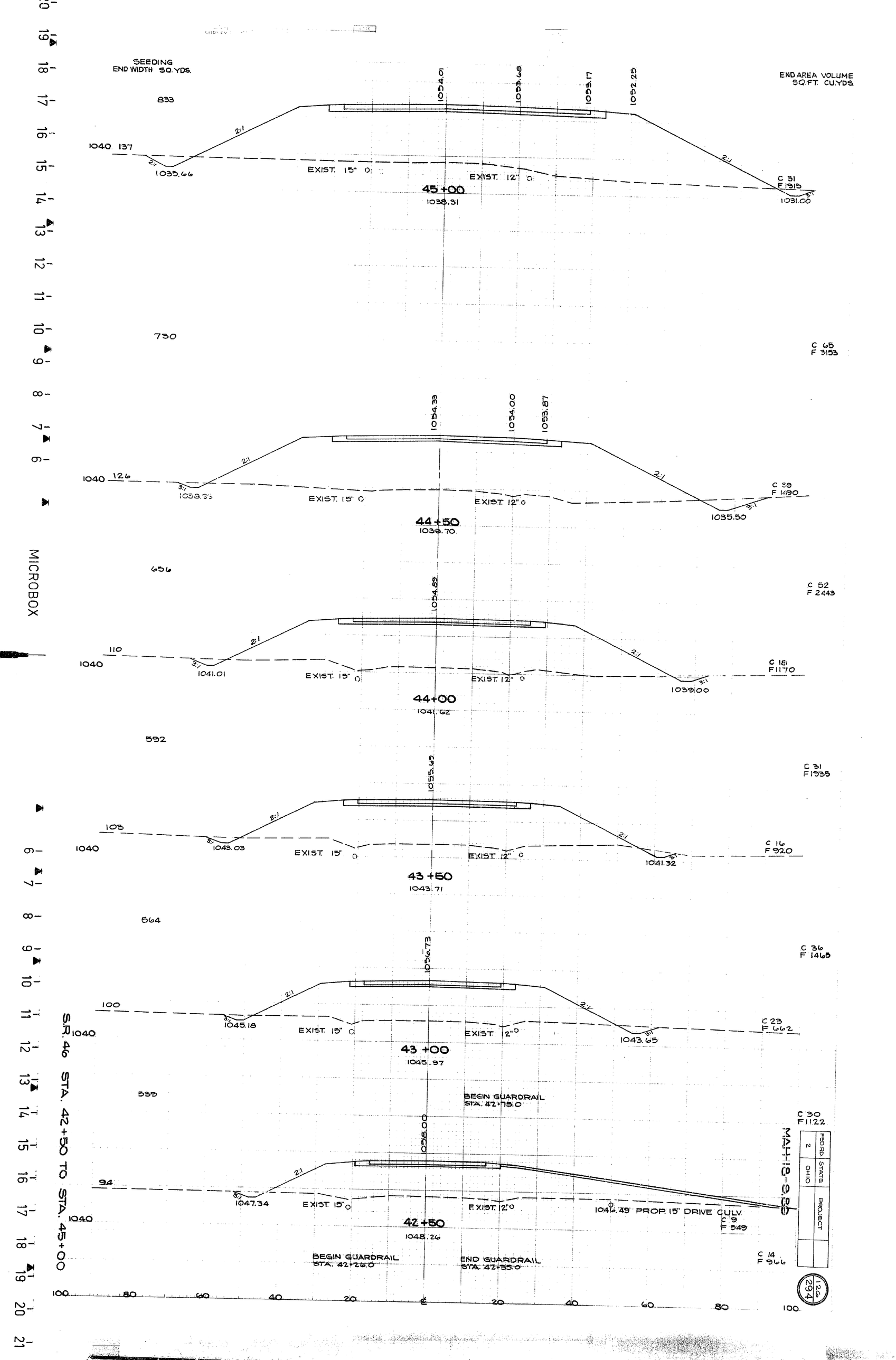
MICROBOX

S.R. 46 STA. 39+50 TO STA. 42+00

MAH-18-9.89

FED.RD.	STATE	PROJECT
2	OHIO	

125
294


SEEDING
END WIDTH SQ.YDS.
833
END AREA VOLUME
SQ.FT. CU.YDS.
1054.01
1053.68
1053.17
1052.25
1040 137
2:1
1035.66
EXIST. 15" ○
EXIST. 12" ○
C 31
F 1915
1031.00
45+00
1038.31
730
C 65
F 3153
1054.33
1054.00
1053.87
1040 126
1039.93
EXIST. 15" ○
EXIST. 12" ○
C 39
F 1490
1035.50
44+50
1039.70
656
C 52
F 2443
1054.82
110
1040
1041.01
EXIST. 15" ○
EXIST. 12" ○
C 18
F 1170
1039.00
44+00
1041.62
592
C 31
F 1935
1055.62
105
1040
1043.03
EXIST. 15" ○
EXIST. 12" ○
C 16
F 920
1041.32
43+50
1043.71
564
C 36
F 1465
1056.73
100
1040
1045.18
EXIST. 15" ○
EXIST. 12" ○
C 23
F 662
1043.65
43+00
1045.97
539
BEGIN GUARDRAIL
STA. 42+75.0
C 30
F 1122
1050.20
94
1040
1047.34
EXIST. 15" ○
EXIST. 12" ○
1046.49 PROP. 15" DRIVE CULV.
C 9
F 549
42+50
1048.26
BEGIN GUARDRAIL
STA. 42+26.0
END GUARDRAIL
STA. 42+55.0
C 14
F 966
MICROBOX
S.R. 46 STA. 42+50 TO STA. 45+00
MAH-18-9.86
FED.RD. 2
STATE OHIO
PROJECT
126
294
100 80 60 40 20 ℄ 20 40 60 80 100

FED.RD.	STATE	PROJECT	
2	OHIO		

127
294

MAH-18-9.89

END AREA VOLUME
SQ.FT. CU.YDS.

SEEDING
END WIDTH SQ.YDS.

C 69
F 1657
SEE RAMP "D"
4+60

C 139
F 3159

C 81
F 1755
SEE RAMP "D"
4+60

C 75
F 4595

C 0
F 3207
SEE RAMP "D"
4+60

C 0
F 6104

AH. C 0
F 3385
SEE RAMP "D"
4+60
BK. C 120
F 4059

C 194
F 6874

C 90
F 3364

C 117
F 5096

C 36
F 2788

C 42
F 4355

INLET 54" CULVERT
STA. 45+08.50

RAMP "D"
4+05

RAMP "D"
3+60

STREAM

STREAM "A"

MEET RAMP "D" GUARDRAIL
STA. 45+43.4 = STA. 3+53.0

MEET RAMP "C" GUARDRAIL
STA. 47+00.5

MEET RAMP "C" GUARDRAIL
STA. 45+86.3

OUTLET 54" CULVERT
STA. 46+09.50

SEE RAMP "C"
13+88

AH. 109
BK. 435 VAR

EXIST. 24"

EXIST. 12"

EXIST. 15"

EXIST 12"

730

725

528

469

1,728

978

48+00
1036.86

47+50
1036.62

47+00
1036.38

46+50
1036.30

46+00
1034.52

45+50
1037.18

1053.41
1054.33
1054.64
1054.14
1053.22
1053.26
1054.18
1054.49
1053.99
1053.07
1054.01
1053.84
1053.84
1054.34
1054.19
1053.84
1053.46
1052.26
1053.62
1054.04
1053.50
1053.54
1053.15
1052.35
1052.29
1053.59
1053.92
1053.45
1053.20
1052.53

1033.80
1034.00
1031.36

131
130
60
189
163

1030
1029.00
1032.32

S.R. 46 STA. 45+50 TO STA. 48+54

MICROBOX

19 18 17 16 15 14 13 12 11 10 9 8 7 6 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

100 80 60 40 20 0 20 40 60 80 100

ORIGINAL | DATE

FINAL | BY | DATE

SEEDING
ENDWIDTH SQ.YDS.

ENDAREA VOLUME
SQ.FT. CU.YDS.

353

1052.54 1053.04 1052.73

SEE GRADING PLAN

28

VAR.

END STRUCTURE
STA. 51+63.25

3V

SEE RAMP "B"
STA. 13+02

C 104
F 1077

EXIST. 12"

1035.6

1030

51+77
1041.08

1038.58
DUMP INTO M. SIDE DITCH
STA. 657+50
R. 1030.66

C 94
F 977

64

BEGIN GUARDRAIL
STA. 51+73.0

1053.08

BEGIN GUARDRAIL
STA. 51+77.0

STA. 51+28 S.R. 46

℄ 00

F/HSE

0

EXIST. 12"

51+00
1040.23

1030

1054.15

EXIST. 12"

50+50
1038.38

1030

MICROBOX

1054.54

EXIST. 12"

50+00
1038.57

1030

1054.78

102.5
F/HSE.

EXIST. 12"

49+50
1037.82

1030

1054.86

0

EXIST. 12"

49+00
1037.45

1030

STA. 48+90 S.R. 46 ℄ 00

C 61
F 2063

1053.01 1054.29 1054.73 1054.48 1053.56

MAH-18-9.89

367

BEGIN STRUCTURE
STA. 48+39.25

DUMP INTO M. DITCH
STA. 657+62.5
R. 1030.83

FED.RD. | STATE | 2 | OHIO | PROJECT

2:1

132

1030

EXIST. 12"

EXIST. 2.4"

END GUARDRAIL
STA. 48+50.5

END GUARDRAIL
STA. 48+48.0

1033.60

SEE RAMP "D"
4+60

C 29
F 1685

48+54
1037.06

SEE RAMP "C"
13+88

C 96
F 3343

128
294

S.R. 46 STA. 48+54 TO STA. 51+77

100 80 60 40 20 0 20 40 60 80 100

FED.RD.	STATE	PROJECT	
2	OHIO		

129
294

MAH-18-9.89

ENDAREA VOLUME
SQ.FT. CU.YDS.

SEEDING
END WIDTH SQ.YDS.

FINAL SURVEY

C 1119
F 1142

C 972
F 1351

C 705
F 1605

C 27
F 398
A.H. F 1369
BK. F 587

C 540
F 246

C 510
F 813

C 256
F 520

C 310
F 1737

C 79
F 956

C 88
F 864

SEE RAMP "B"
14+40

SEE RAMP "B"
14+00

SEE RAMP "B"
13+65

SEE RAMP "B"
13+40

SEE RAMP "B"
13+18

1042.84

1040.00

1039.39

1039.00

1038.85

END GUARDRAIL
STA. 53+46.0

END GUARDRAIL
STA. 52+98.0

EXIST. 12" ϕ

54+00
1045.25

53+50
1044.40

53+00
1043.55

52+50
1042.73

52+00
1041.90

SEE RAMP "E"
17+54

SEE GRADING PLAN

SEE GRADING PLAN

SEE GRADING PLAN

A.H. 47
BK. 285

1530

1511

1216

733

1040

266

278

1037.50

1037.00

160

104

MICROBOX

S.R. 46 STA. 52+00 TO STA. 54+00

FED. RD.	STATE	PROJECT	
2	OHIO		

130
294

MAH-18-9.89

END AREA VOLUME
SQ FT CU YDS

C 123
F 2

C 286
F 85

C 86
F 90

C 324
F 278

AH C 164
F 210
BK C 10
BK F 199

C 0
F 402

C 0
F 235

C 3
F 580

C 3
F 392

C 28
F 731

1045.99

1047.51

1049.59
1050.07
1050.34
1051.09
1051.40

1049.39
1050.09
1051.24
1051.29

1051.39
1051.70

1048.79
1051.34
1051.89

1045.94
1050.34
1051.69
1052.00

56+50
1050.08

56+00
1045.14

55+50
1048.12

55+00
1047.11

54+50
1046.16

1050.90
1050.51

1050.34

1051.32
1050.55

1050.77

1050.83

SEE RAMP "A"
1+00

SEE RAMP "B"
15+42

SEE RAMP "B"
15+30

SEE RAMP "B"
14+82

SEE RAMP "E"
16+18

SEE RAMP "E"
16+60

SEE RAMP "E"
17+10

EXIST. 12"

VAR.

1047.85

1048.72

1046.37

1046.10

F/HSE.

AH 42
BK 197

AH 142
BK 229

SEEDING
END WIDTH SQ.YDS.

206

650

797

300

278

269

1050

50

S.R. 46 STA. 54+50 TO STA. 56+50

MICROBOX

20 19 18 17 16 15 14 13 12 11 10 9 8 7 6

6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

FED.RD.	STATE	PROJECT	
2	OHIO		

131
294

MAH-18-9.89

FINAL SURVEY
HOT ROD
NO

END AREA VOLUME
SQ.FT. CU.YDS.

C 99 F 10
C 77 F 5
C 154 F 7
C 92 F 3
C 204 F 3
C 130 F 0
C 242 F 0
C 153 F 0
C 285 F 0
C 185 F 0
C 289 F 0
C 154 F 0
C 209 F 0
C 178 F 2
C 39 F 0

EXIST. CULV. #60+43
ELEV. 1048.20

PROP. 15" CULV.
INV. 1045.74
STA. 60+43

MEET TEMPORARY RUNAROUND

ACCESS DRIVE

TO CULV. CHANNEL
STA. 60+43
EL. 1045.47

20' BLK. TOP DRIVE LT.

F/HSE.

SEEDING
ENDWIDTH SQYDS.

322 322 314 330 339 322 300 311

1050 62 | 1050 54 | 1050 59 | 1050 60 | 1050 62 | 1050 54 | 1050 54 | 1050 54

1046.05 1048.35 1048.15 1048.30 1048.45 1048.60 1048.45 1049.74 1049.07 1048.34 1048.15 1048.35

AH 58
BK 52

60+50 1050.71
60+00 1050.78
59+50 1050.93
59+00 1051.13
58+50 1051.39
58+00 1051.44
57+50 1051.28
57+00 1050.76

S.R. 46 STA. 57+00 TO STA. 60+50

MICROBOX

21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6

6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

FED.RD.	STATE	PROJECT	
2	OHIO		

132
294

MAH-18-9.89

FINAL SURVEY

END AREA VOLUME
SQ. FT. CU. YDS.

SEEDING
ENDWIDTH SQ.YDS.

65+00 1048.24
64+50 1049.05
64+00 1049.81
63+50 1050.27
63+00 1050.59
62+50 1050.69
62+00 1050.74
61+50 1050.65
61+00 1050.66

C 61 F 3
C 72 F 4
C 125 F 15
C 68 F 2
C 153 F 20

MEET EXISTING PAVEMENT & DITCHES

145 TO STA. 61+95.90

311

1048.88
1048.56
1048.21
1048.10

TO POND

MICROBOX

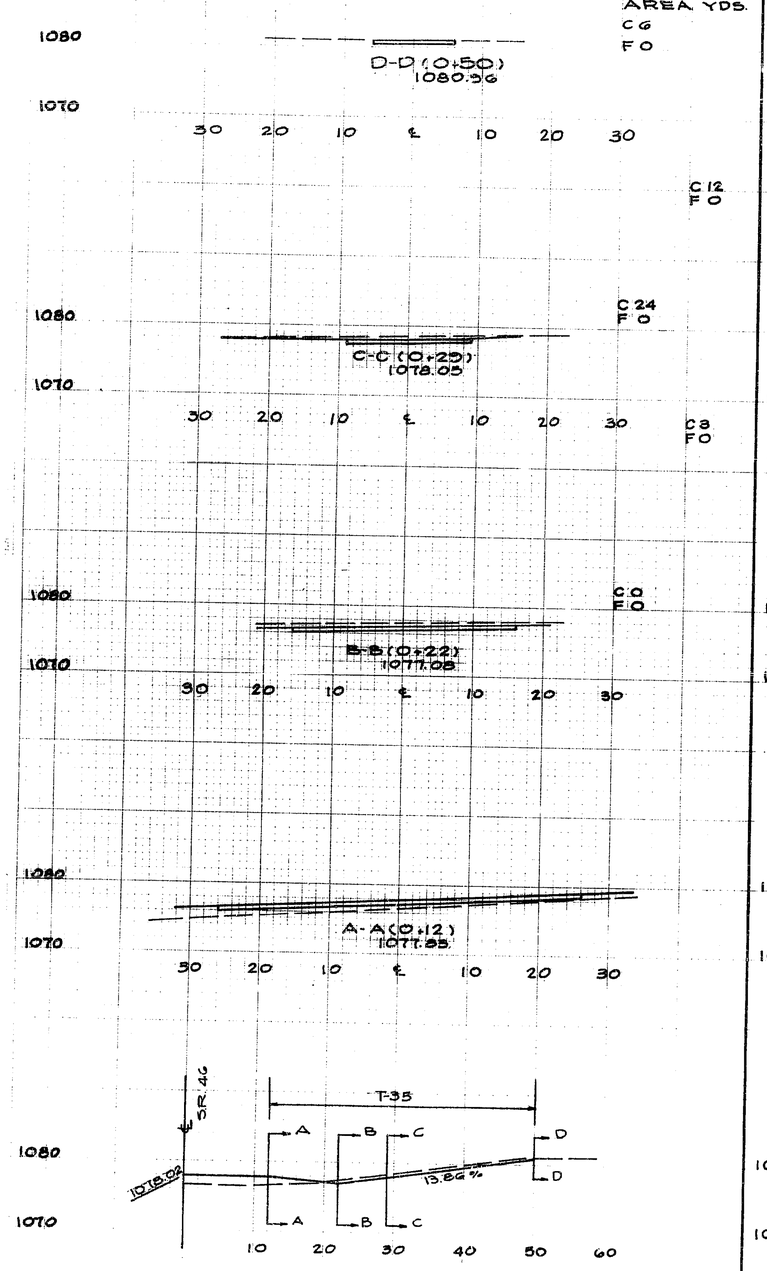
S.R.46 STA. 61+00 TO STA. 65+00

FED.RD.	STATE	PROJECT	
2	OHIO		

133/294

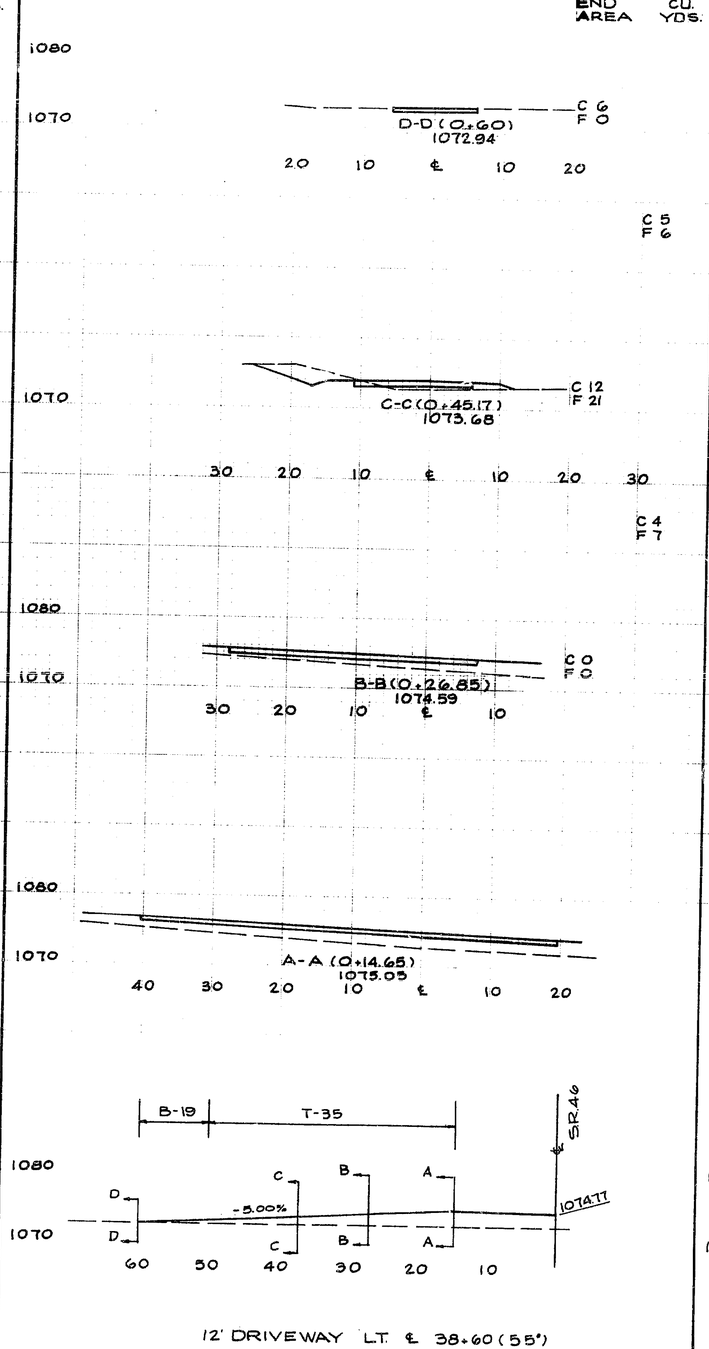
MAH. 18-9.89

END AREA CU. YDS.



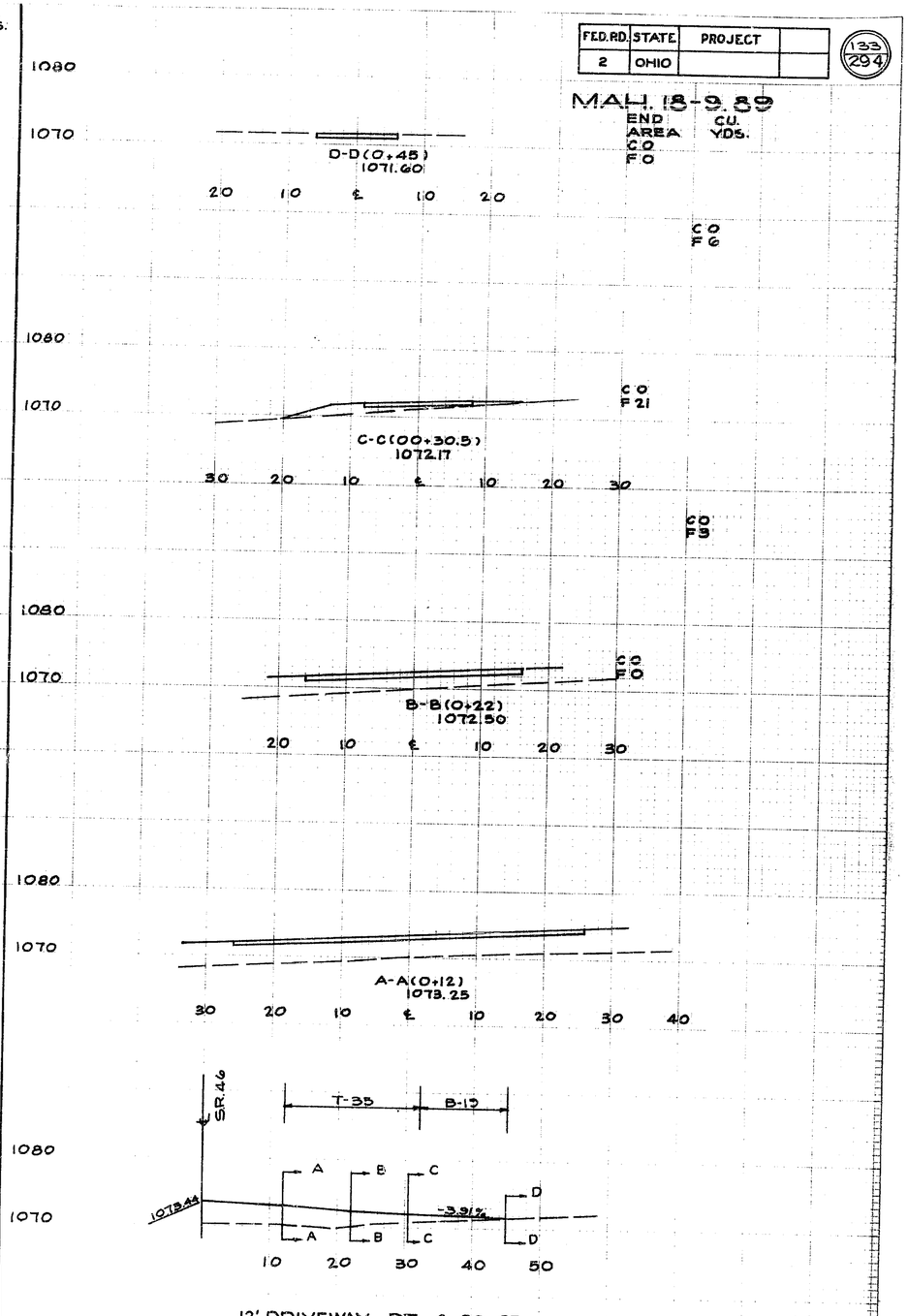
12' DRIVEWAY RT. ℄ 37+94

END AREA CU. YDS.



12' DRIVEWAY LT. ℄ 38+60 (55')

END AREA CU. YDS.



12' DRIVEWAY RT. ℄ 38+87

DRIVEWAY CROSS SECTIONS - S.R. 46

MICROBOX

FED.RD.	STATE	PROJECT	
2	OHIO		

134
294

MAH 15-9.89

FINAL SURVEY | SURVEY PLOTTED | TRAVEL BOOK | AREAS | NO.

ORIGINAL SURVEY | BY | DATE

END AREA C.U. YDS.

F 0

D-D (00+62)
1063.30
20 10 ℄ 10 20

F 40

F 83

C-C (0+39.1)
1065.31
30 20 10 ℄ 10 20 30

F 26

F 0

B-B (0+22)
1066.80
30 20 10 ℄ 10 20 30

A-A (00+12)
1067.55
30 20 10 ℄ 10 20 30

℄ S.R. 46

T-35

1067.74

A B C D

-8.25%

F/ GARAGE

10 20 30 40 50 60 70 80

12' DRIVEWAY RT. ℄ 40+03

END AREA C.U. YDS.

F-0

D-D (0+75)
1051.90
20 10 ℄ 10 20

F-97

438' LT. 41+85 S.R. 46

20.5' 24.5'

460' LT. 42+30 S.R. 46

E 1050.00

46-18" CL. F-4 @ 44½°

E 1048.00

C-C (0+44.8) SKEWED 1'-00" RT. FWD

F 173

20 10 ℄ 10 20 30

F-70

F-0

B-B (0+23)
1058.20
20 10 ℄ 10 20

A-A (0+13)
1059.09
50 40 30 20 10 ℄ 10 20 30

T-35

℄ S.R. 46

1059.29

A B C D

-12.60%

℄ 1049.19

80 70 60 50 40 30 20 10

12' DRIVEWAY LT. ℄ 42+07

DRIVEWAY CROSS SECTIONS - S.R. 46

20 19 18 17 16 15 14 13 12 11 10 9 8 7 6

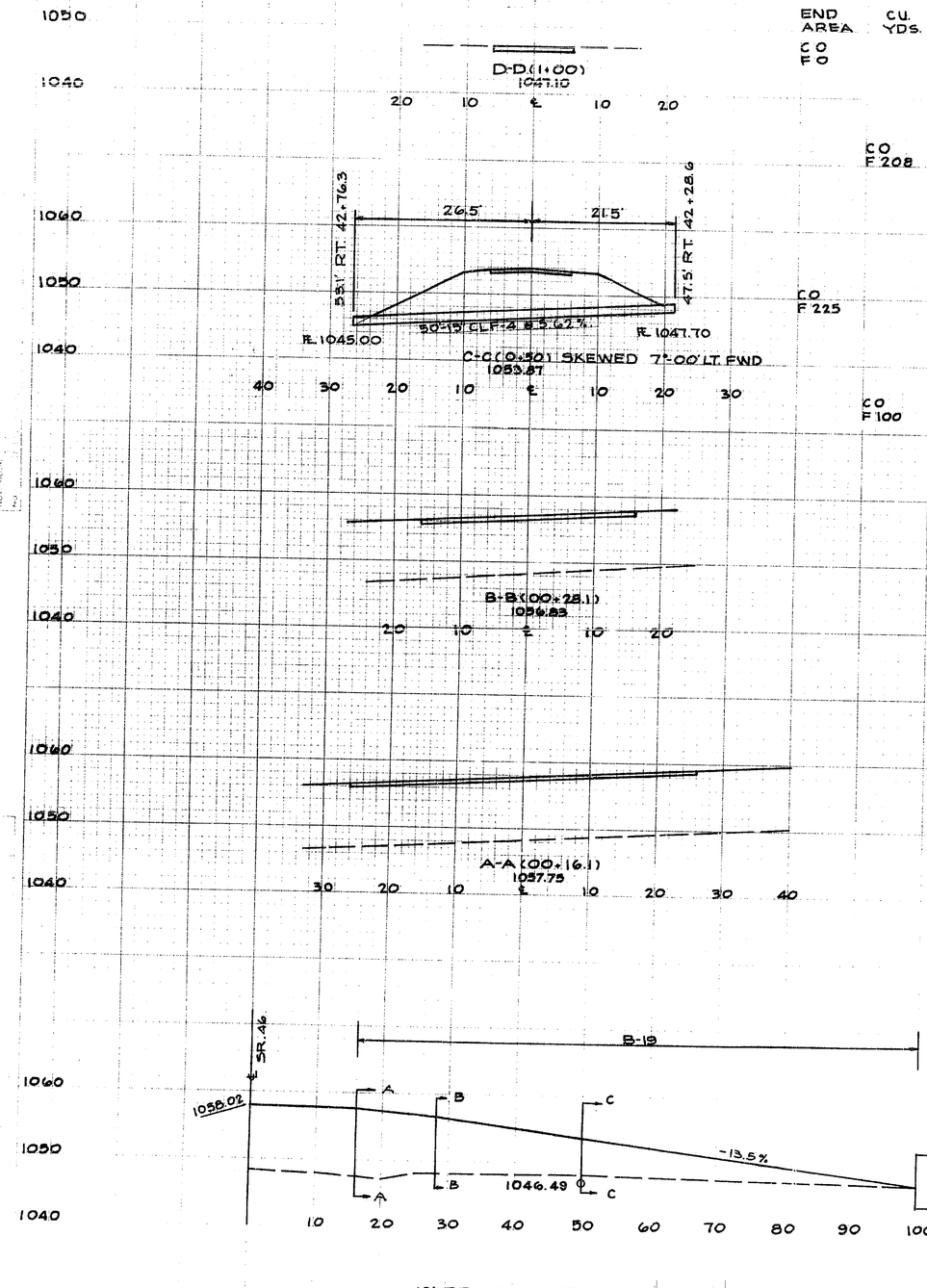
MICROBOX

6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

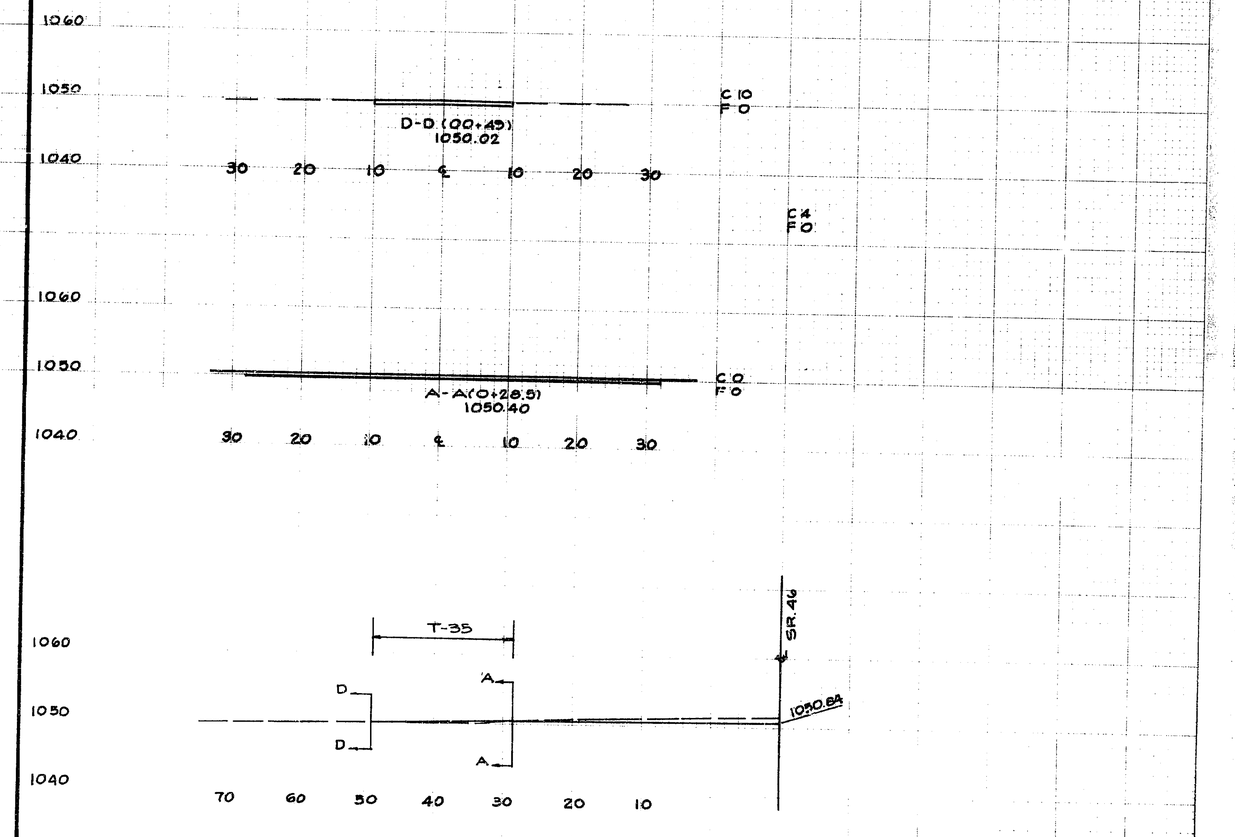
FED. RD.	STATE	PROJECT	
2	OHIO		

135
294

MAH. 18-9.89



12' DRIVEWAY RT. ℄ 42+50 (FIELD)



20' DRIVEWAY LT. ℄ 58+35

DRIVEWAY CROSS SECTIONS - S.R. 46

21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6

MICROBOX

6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

FED. RD.	STATE	PROJECT	
2	OHIO		

136
294

MAH-18-9.89

FINAL SURFACE

18+00 1056.02 1054.66 1054.16

17+00 1060.2 1062.02 1059.8 1059.10

16+00 1065.1 1068.02 1064.4 1065.7

15+00 1073.5 1074.02 1071.5 1071.85

14+00 1080.2 1080.02 1078.8 1078.13

13+00 1084.9 1084.66 1082.52 1083.46

12+00 1088.0 1088.32 1085.11 1086.39

11+00 1089.1 1089.56 1088.03

10+00 1093.1 1093.21

1060 1050 1060 1050 1070 1060 1080 1070 1080 1070 1090 1080 1090 1080 1080 1080 1100 1090

20 19 18 17 16 15 14 13 12 11 10 9 8 7 6

MICROBOX

6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

S.R. 46 RUNAROUND STA. 10+00 TO STA. 18+00

FED.RD.	STATE	PROJECT	
2	OHIO		

137
294

MAH-18-9.89

27+00
1043.6
1042.5
1040.03
1041.47

26+00
1040.6
1038.7
1040.01

25+00
1036.8
1035.5
1036.0

24" CULVERT
@ STA. 24+75

24+00
1039.6
1037.86
1039.22

23+00
1039.9
1037.46
1038.82

22+00
1036.4
1034.7
1037.16
1038.69

21+00
1031.5
1032.7
1033.2
1040.42

60" CULVERT

20+00
1042.3
1041.8
1038.7
1044.29

19+00
1049.2
1042.2
1048.66
1050.02

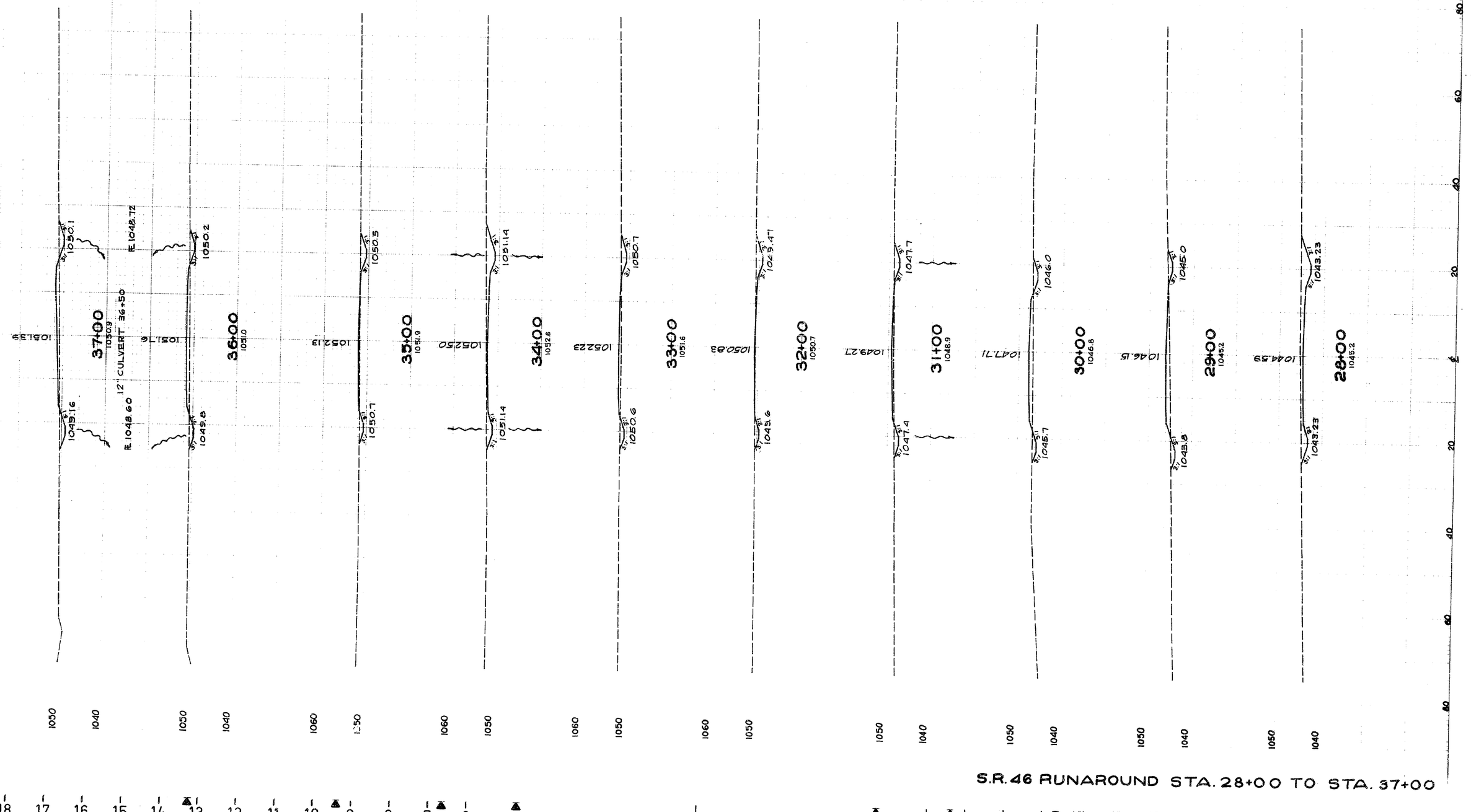
S.R. 46 RUNAROUND STA. 19+00 TO STA. 27+00

MICROBOX

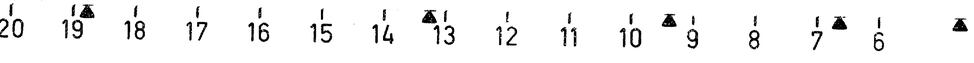
FED.RD.	STATE	PROJECT	
2	OHIO		

(138) (294)

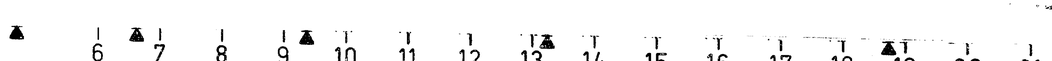
MAH-18-9.89



S.R. 46 RUNAROUND STA. 28+00 TO STA. 37+00



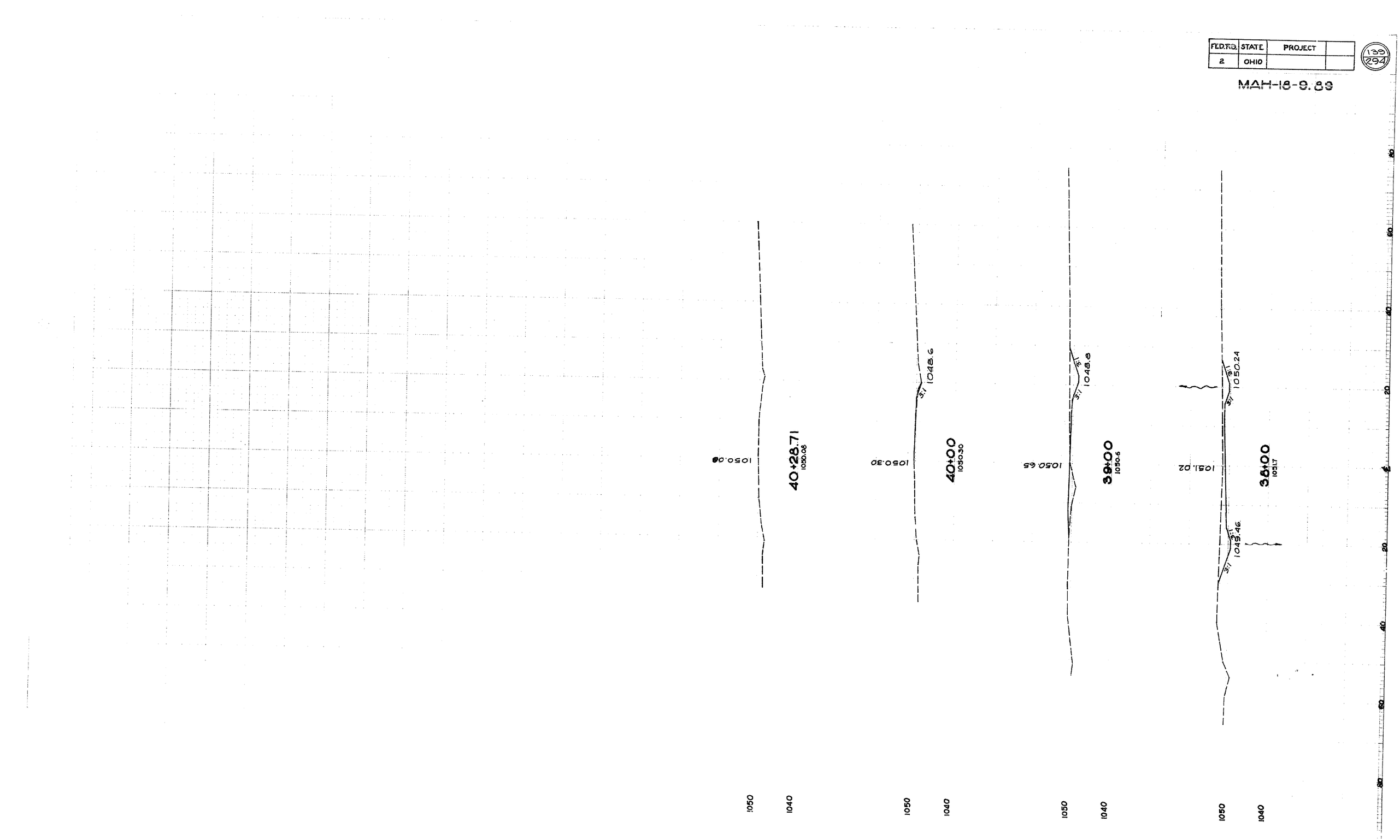
MICROBOX



FED.RD.	STATE	PROJECT	
2	OHIO		

139/294

MAH-18-9.89

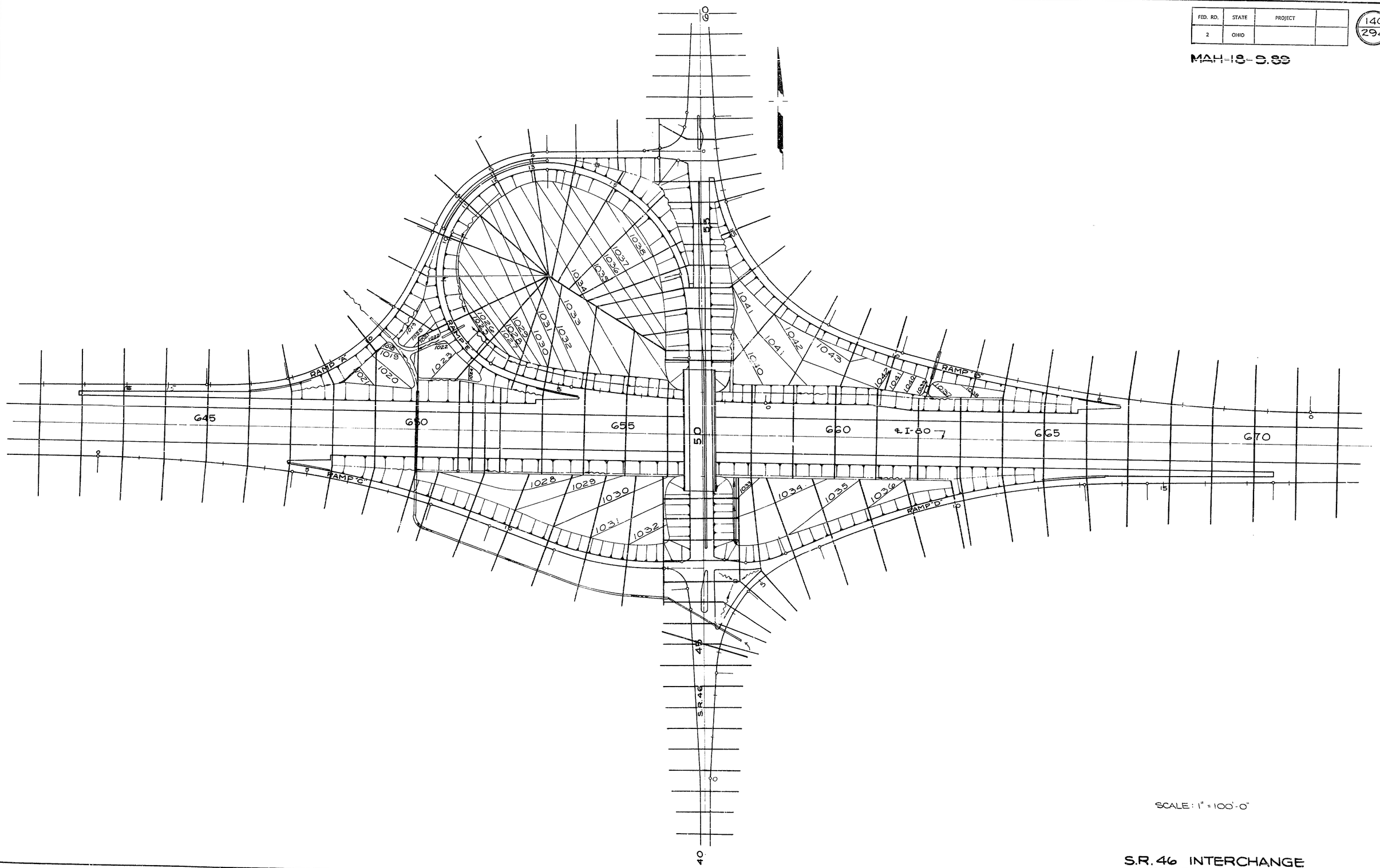


S.R. 46 RUNAROUND STA. 38+00 TO STA. 40+28.71

FED. RD.	STATE	PROJECT	
2	OHIO		

140
294

MAH-18-9.88



SCALE: 1" = 100'-0"

S.R. 46 INTERCHANGE
GRADING PLAN

MICROBOX

FED. RD.	STATE	PROJECT	
2	OHIO		

141
294

I-1 PIPE (LIN.FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS I-3 SHALLOW		CLASS F-4 OUTLET PIPE 6"	8"		I-5 PIPE SPECIALS(EACH) CL.I-3 6" TEE	CL.J-1 6"-90° BEND	CL.I-3 6"-60° WYE	
U-1	7+00	17+08	RT.	1017			10		1			
U-2	2+54	7+00	LT.	446						1		
U-3	0+34.5	2+50	LT.	218		10					1	
SHEET TOTAL				1681		10	10		1	1	1	

I-1 PIPE SEWER (LIN.FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS J-1 15"	
P-1	2+50	A-1 TO H-1	LT.&RT.	63	
P-2	A-2	H-2	RT.	64	
P-3	A-3	H-3	RT.	54	
SHEET TOTAL				181	

EROSION CONTROL

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	L-120 JUTE MATTING SQ.YDS.	L-10 SOD SQ.YDS.	I-2 MASONRY I-W.E HEADWALL CU.YDS.	I-10 DUMPED ROCK PROT. CU.YDS.
E-1	0+93	2+43	RT.	125			
E-2	2+50	——	RT.				1
E-3	5+75	12+00	LT.		191		
E-4	5+75	——	RT.				2
E-5	6+75	——	RT.				2
H-1	2+50	——	RT.			0.3	
H-2	5+75	——	RT.			0.3	
H-3	6+75	——	RT.			0.3	
SHEET TOTAL				125	191	0.9	5

I-8 CATCH BASINS (EACH)

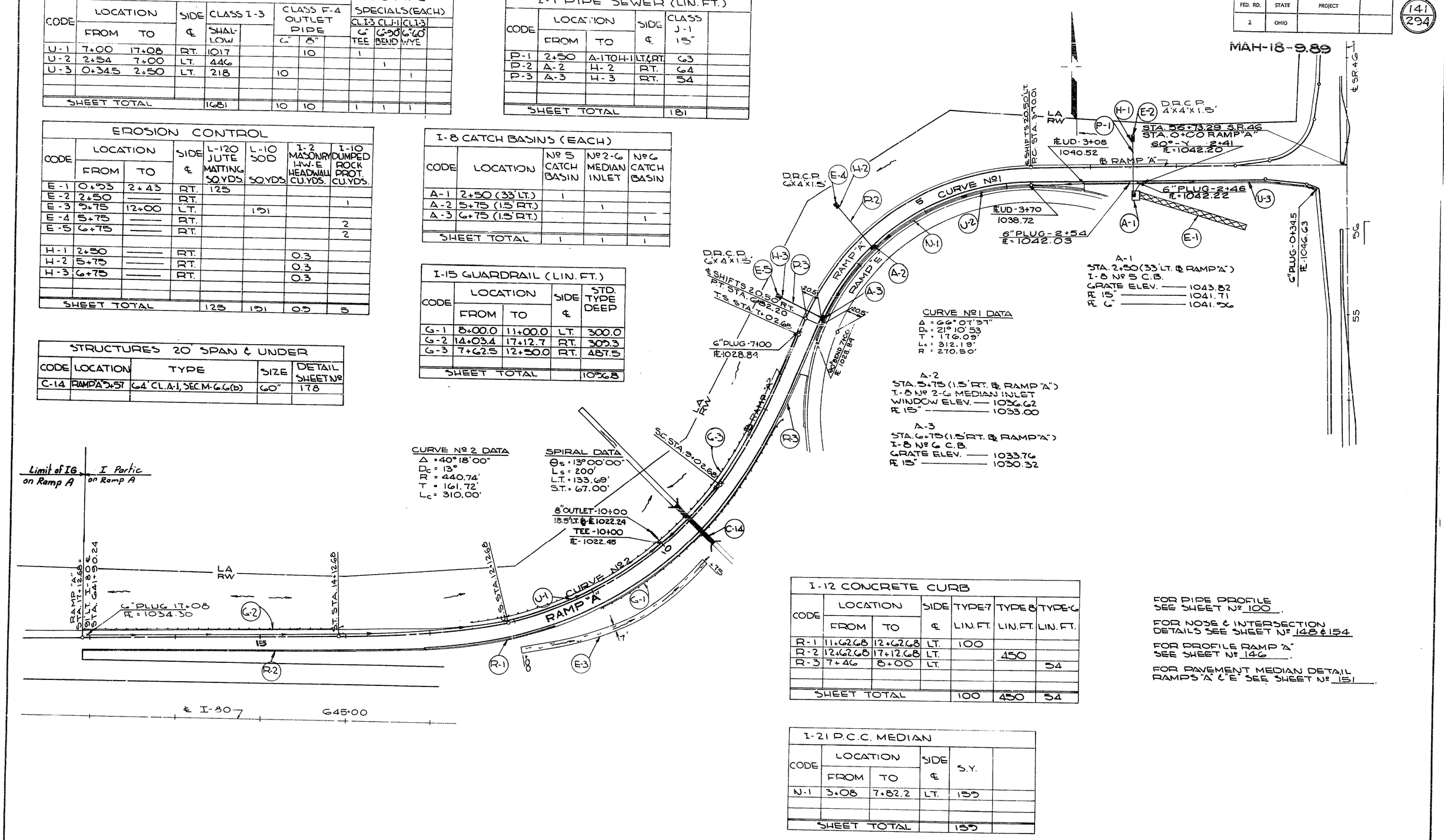
CODE	LOCATION	Nº 5 CATCH BASIN	Nº 2-6 MEDIAN INLET	Nº 6 CATCH BASIN
A-1	2+50 (33' LT.)	1		
A-2	5+75 (1.5' RT.)		1	
A-3	6+75 (1.5' RT.)			1
SHEET TOTAL		1	1	1

I-15 GUARDRAIL (LIN. FT.)

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYPE DEEP
G-1	8+00.0	11+00.0	LT.	300.0
G-2	14+03.4	17+12.7	RT.	309.3
G-3	7+62.5	12+50.0	RT.	487.5
SHEET TOTAL				1056.8

STRUCTURES 20' SPAN & UNDER

CODE	LOCATION	TYPE	SIZE	DETAIL SHEET Nº
C-14	RAMP "A" 5+57	64' CL.A-1, SEC.M-6.6(b)	60"	178



I-12 CONCRETE CURB

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	TYPE-7 LIN.FT.	TYPE-8 LIN.FT.	TYPE-6 LIN.FT.
R-1	11+62.68	12+62.68	LT.	100		
R-2	12+62.68	17+12.68	LT.		450	
R-3	7+46	8+00	LT.			54
SHEET TOTAL				100	450	54

I-21 P.C.C. MEDIAN

CODE	LOCATION FROM	LOCATION TO	SIDE ℄	S.Y.	
N-1	3+08	7+82.2	LT.	159	
SHEET TOTAL				159	

FOR PIPE PROFILE SEE SHEET Nº 100.

FOR NOSE & INTERSECTION DETAILS SEE SHEET Nº 148 & 154

FOR PROFILE RAMP "A" SEE SHEET Nº 146.

FOR PAVEMENT MEDIAN DETAIL RAMPS "A" & "E" SEE SHEET Nº 151

S.R.46 INTERCHANGE
GEOMETRIC PLAN - RAMP "A"

19 18 17 16 15 14 13 12 11 10 9 8 7 6

MICROBOX

FED. RD.	STATE	PROJECT	
2	OHIO		

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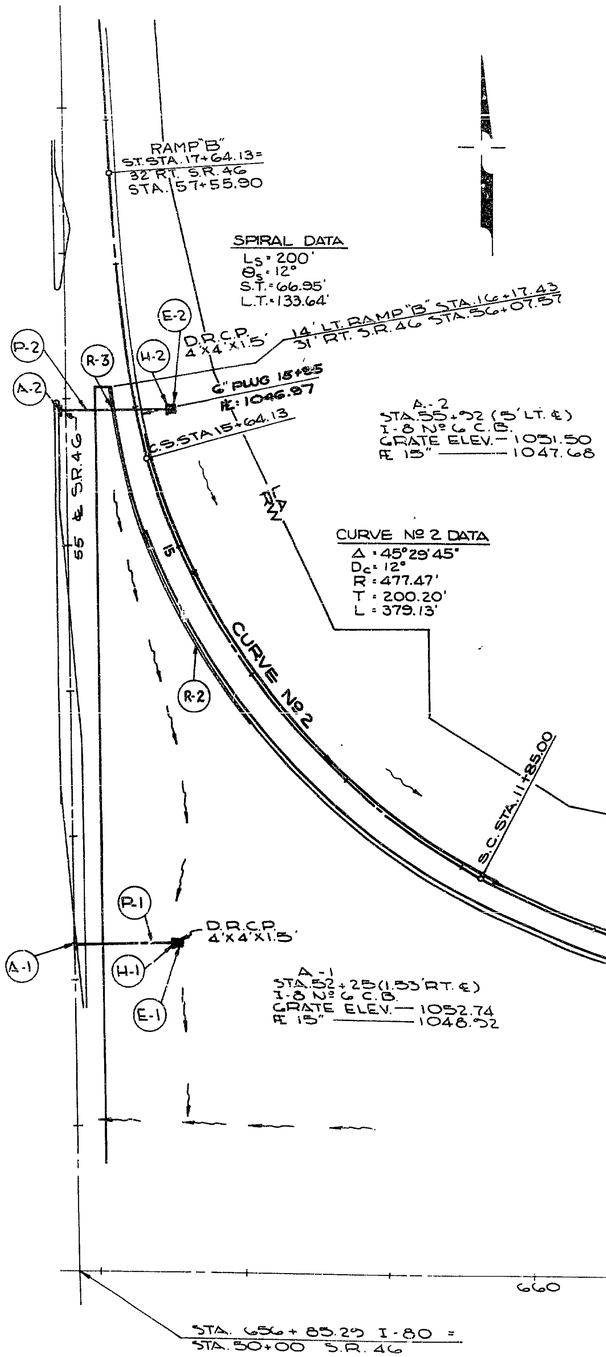
MAH-18-9.89



I-12 CONCRETE CURB						
CODE	LOCATION		SIDE	TYPE 6	TYPE 7	TYPE 8
	FROM	TO	℄	LIN. FT.	LIN. FT.	LIN. FT.
R-1	4+85.07	5+53.07	LT.	136		
R-2	13+67.43	15+92.43	LT.		225	
R-3	15+92.43	16+17.43	LT.			25
SHEET TOTAL				136	225	25

I-21 P.C.C. MEDIAN				
CODE	LOCATION		SIDE	S.Y.
	FROM	TO	℄	
N-1	4+53.07	4+85.07	LT.	25
SHEET TOTAL				25

I-1 PIPE SEWER (LIN. FT.)						
CODE	LOCATION		SIDE	CLASS J-1 15"	CLASS F-4 15"	I-5 PIPE SPECIALS EACH 15" 22°30' BEND CLASS F4
	FROM	TO	℄			
P-1	52+25.0	H-1	RT.	27	41	2
P-2	55+92.0	H-2	RT.	77		
SHEET TOTAL				104	41	2

I-1 PIPE (LIN. FT.)									I-5 PIPE SPECIALS (EACH) CL. I-3	
CODE	LOCATION		SIDE	CLASS I-3 6"			CLASS F-4 OUTLET PIPE			
	FROM	TO	℄	SHALLOW	DEEP	M-6.4(h)		8"	6" TEE	
U-1	4+53	16+17	RT.			1179		10	1	
SHEET TOTAL						1179		10	1	

EROSION CONTROL					
CODE	LOCATION		SIDE	I-10 DUMPED ROCK PROT. CU. YDS.	I-2 MASONRY HW-E HEADWALL CU. YDS.
	FROM	TO	℄		
E-1	52+25		RT.	1	
E-2	55+92		RT.	1	
H-1	52+25	68.75'	RT.		0.3
H-2	55+92	71.5'	RT.		0.3
SHEET TOTAL				2	0.6

STRUCTURES 20' SPAN ℄ UNDER				
CODE	LOCATION	TYPE	SIZE	DETAIL SHEET Nº
C-11	RAMP "B" 9+00	68° CL. A-1, SEC. M-6.8 (a)	21"	181

I-8 CATCH BASIN ℄ MANHOLE (EACH)				
CODE	LOCATION	Nº6 CATCH BASIN		
A-1	52+25.0 (1.53' RT.)	1		
A-2	55+92.0 (5.00' LT.)	1		
SHEET TOTAL		2		

FOR PROFILE RAMP "B" SEE SHEET Nº 146

FOR NOSE ℄ INTERSECTION DETAILS SEE SHEET Nº 149 ℄ 154

FOR PIPE PROFILES SEE SHEET Nº 99 ℄ 100

S.R. 46 INTERCHANGE
GEOMETRIC PLAN - RAMP "B"

19 18 17 16 15 14 13 12 11 10 9 8 7 6 MICROBOX 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

FED. RD.	STATE	PROJECT	
2	OHIO		

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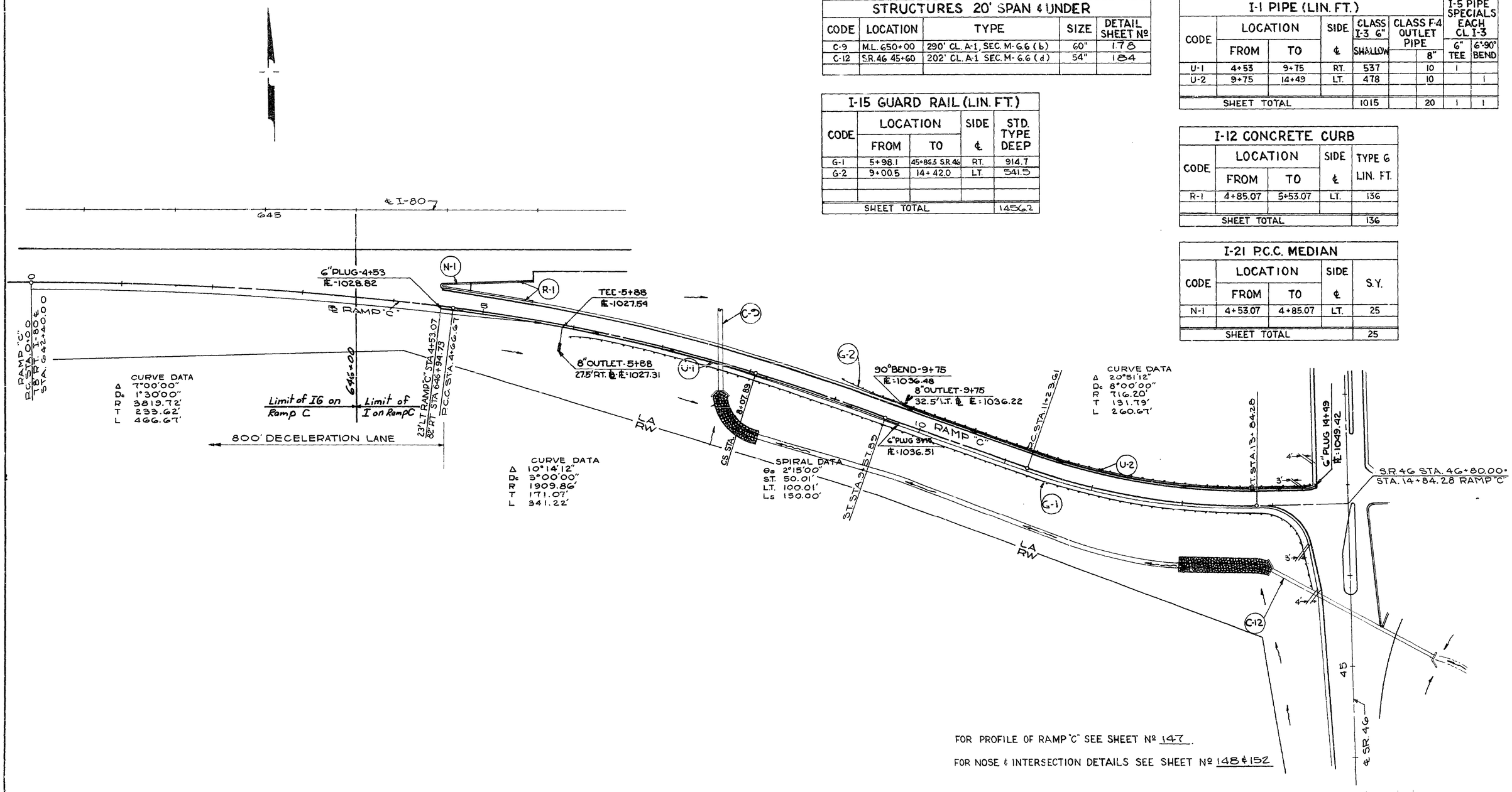
STRUCTURES 20' SPAN & UNDER				
CODE	LOCATION	TYPE	SIZE	DETAIL SHEET Nº
C-9	M.L. 650+00	290' CL. A-1, SEC. M-6.6 (b)	60"	178
C-12	S.R. 46 45+60	202' CL. A-1 SEC. M-6.6 (d)	54"	184

I-15 GUARD RAIL (LIN. FT.)				
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYPE DEEP
G-1	5+98.1	45+86.5 S.R. 46	RT.	914.7
G-2	9+00.5	14+42.0	LT.	541.5
SHEET TOTAL				1456.2

I-1 PIPE (LIN. FT.)							I-5 PIPE SPECIALS EACH CL. I-3	
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS I-3 6" SHALLOW	CLASS F-4 OUTLET PIPE	8"	6" TEE	6"-90° BEND
U-1	4+53	9+75	RT.	537		10	1	
U-2	9+75	14+49	LT.	478		10		1
SHEET TOTAL				1015		20	1	1

I-12 CONCRETE CURB				
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	TYPE G LIN. FT.
R-1	4+85.07	5+53.07	LT.	136
SHEET TOTAL				136

I-21 P.C.C. MEDIAN				
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	S.Y.
N-1	4+53.07	4+85.07	LT.	25
SHEET TOTAL				25



FOR PROFILE OF RAMP "C" SEE SHEET Nº 147.

FOR NOSE & INTERSECTION DETAILS SEE SHEET Nº 148 & 152

S.R. 46 INTERCHANGE
GEOMETRIC PLAN - RAMP "C"

19 18 17 16 15 4 13 12 11 10 9 8 7 6 MICROBOX 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

FED. RD.	STATE	PROJECT	
2	OHIO		

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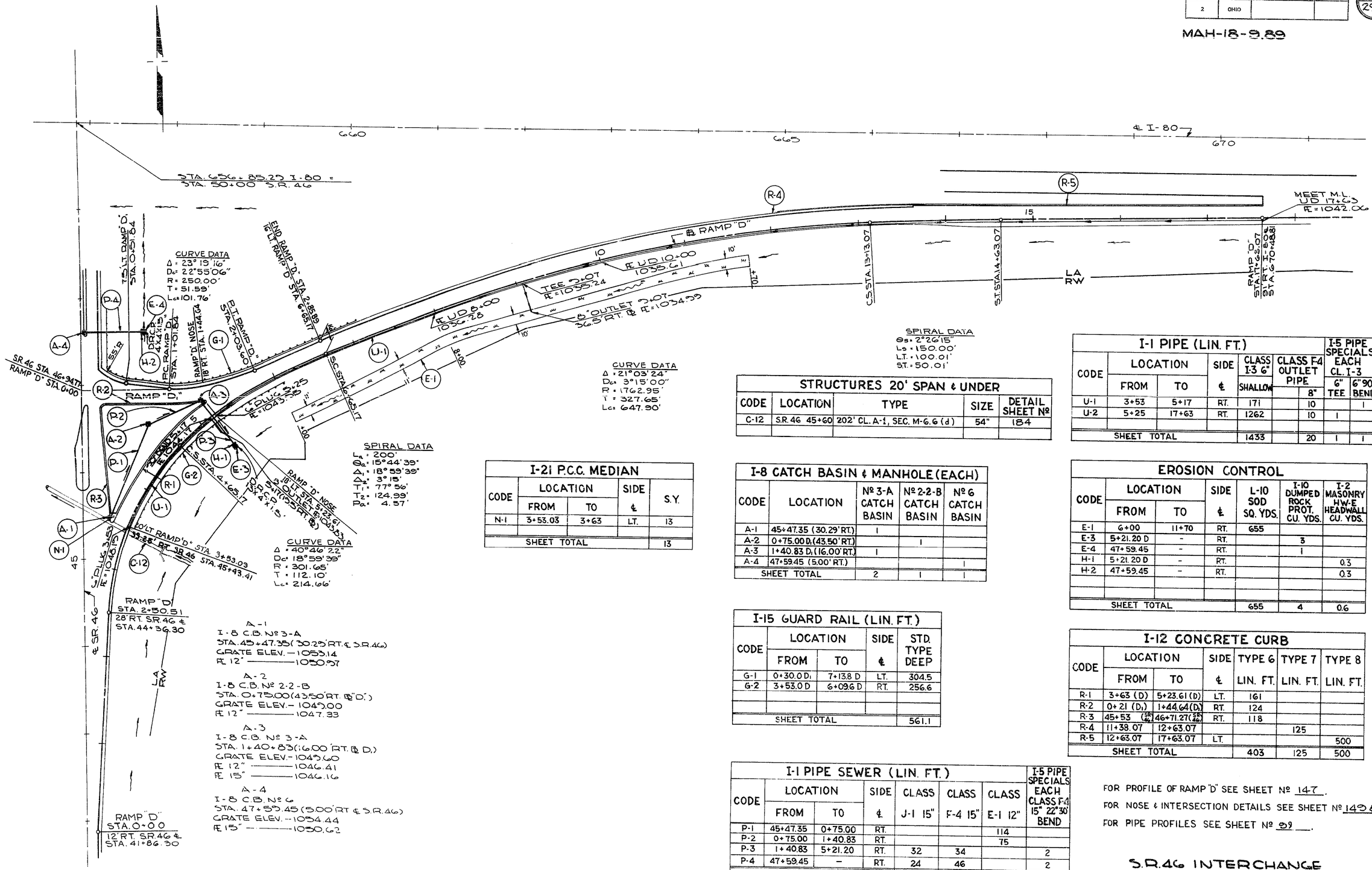
294

MAH-18-9.89



STRUCTURES 20' SPAN & UNDER				
CODE	LOCATION	TYPE	SIZE	DETAIL SHEET Nº
C-12	S.R. 46 45+60	202' CL. A-1, SEC. M-6.6 (d)	54"	184

I-1 PIPE (LIN. FT.)							I-5 PIPE SPECIALS EACH CL. I-3	
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS I-3 6" SHALLOW	CLASS F-4 OUTLET PIPE	8"	6" 90° TEE	6" 90° BEND
U-1	3+53	5+17	RT.	171		10		1
U-2	5+25	17+63	RT.	1262		10	1	
SHEET TOTAL				1433		20	1	1

I-2i P.C.C. MEDIAN				
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	S.Y.
N-1	3+53.03	3+63	LT.	13
SHEET TOTAL				13

I-8 CATCH BASIN & MANHOLE (EACH)				
CODE	LOCATION	Nº 3-A CATCH BASIN	Nº 2-2-B CATCH BASIN	Nº 6 CATCH BASIN
A-1	45+47.35 (30.29' RT.)	1		
A-2	0+75.00 D, (43.50' RT.)		1	
A-3	1+40.83 D, (16.00' RT.)	1		
A-4	47+59.45 (5.00' RT.)			1
SHEET TOTAL		2	1	1

EROSION CONTROL						
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	L-10 SOD SQ. YDS.	I-10 DUMPED ROCK PROT. CU. YDS.	I-2 MASONRY HW-E HEADWALL CU. YDS.
E-1	6+00	11+70	RT.	655		
E-3	5+21.20 D	-	RT.		3	
E-4	47+59.45	-	RT.		1	
H-1	5+21.20 D	-	RT.			0.3
H-2	47+59.45	-	RT.			0.3
SHEET TOTAL				655	4	0.6

I-15 GUARD RAIL (LIN. FT.)				
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYPE DEEP
G-1	0+30.0 D,	7+13.8 D	LT.	304.5
G-2	3+53.0 D	6+09.6 D	RT.	256.6
SHEET TOTAL				561.1

I-12 CONCRETE CURB						
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	TYPE 6 LIN. FT.	TYPE 7 LIN. FT.	TYPE 8 LIN. FT.
R-1	3+63 (D)	5+23.61 (D)	LT.	161		
R-2	0+21 (D,)	1+44.64 (D,)	RT.	124		
R-3	45+53 (SR 46)	46+71.27 (SR 46)	RT.	118		
R-4	11+38.07	12+63.07			125	
R-5	12+63.07	17+63.07	LT.			500
SHEET TOTAL				403	125	500

I-1 PIPE SEWER (LIN. FT.)							I-5 PIPE SPECIALS EACH CLASS F-4 15" 22°30' BEND
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS J-1 15"	CLASS F-4 15"	CLASS E-1 12"	
P-1	45+47.35	0+75.00	RT.			114	
P-2	0+75.00	1+40.83	RT.			75	
P-3	1+40.83	5+21.20	RT.	32	34		2
P-4	47+59.45	-	RT.	24	46		2
SHEET TOTAL				56	80	189	4

FOR PROFILE OF RAMP "D" SEE SHEET Nº 147.

FOR NOSE & INTERSECTION DETAILS SEE SHEET Nº 149 & 152

FOR PIPE PROFILES SEE SHEET Nº 59.

S.R. 46 INTERCHANGE GEOMETRIC PLAN-RAMPS "D" & "T"

19 18 17 16 15 14 13 12 11 10 9 8 7 6

FED. RD.	STATE	PROJECT	
2	OHIO		

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294

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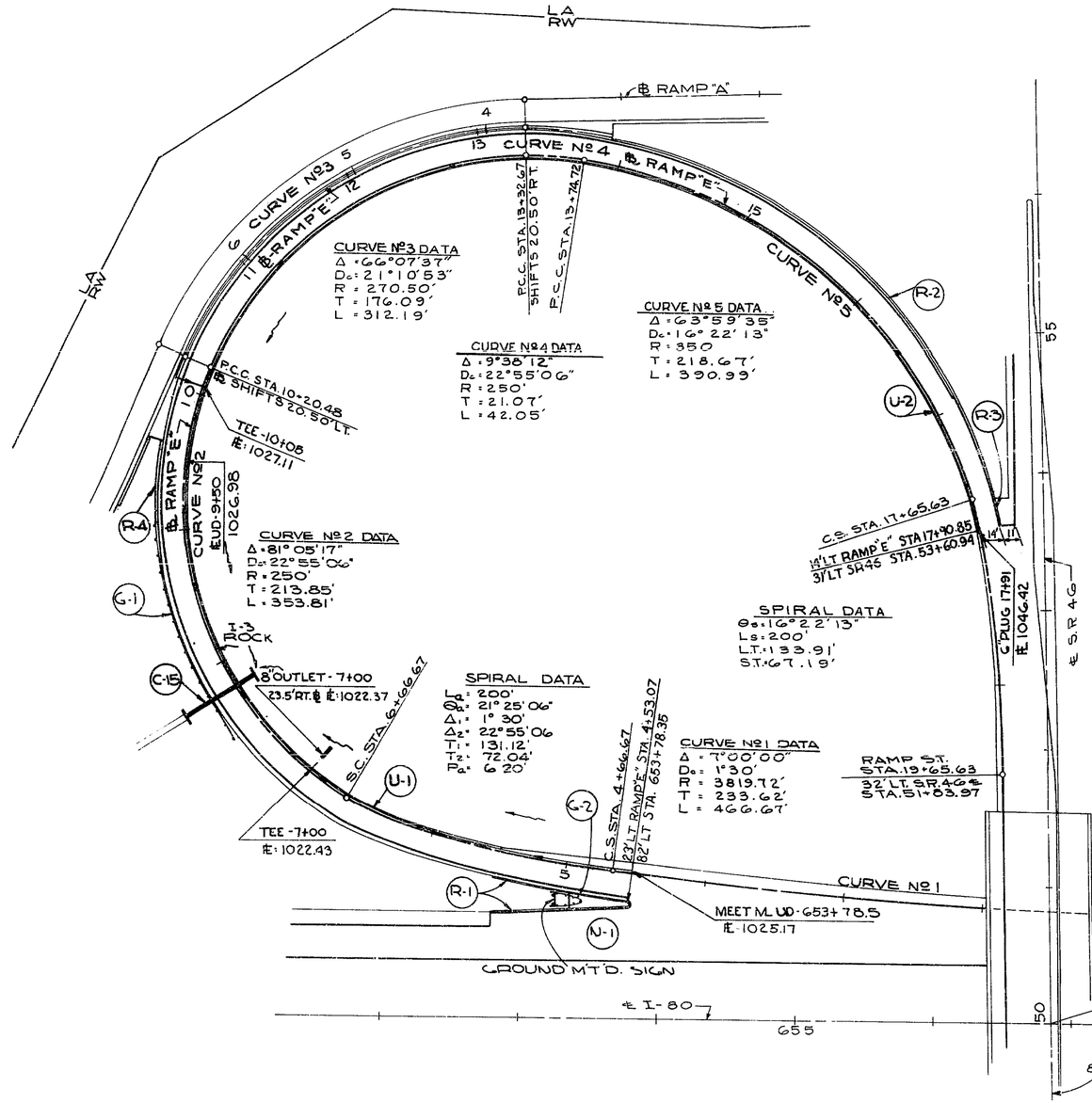


I-1 PIPE (LIN.FT.)										I-5 PIPE SPECIALS (EA.)		
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	CLASS I-3 6" SHAL-LOW		CLASS I-3 6" M-6.04	CLASS F-4 OUTLET PIPE 8"	CLASS J-1 6"		CL.I-3 6" TEE	CL.J-1 6" TEE	
U-1	4+53	5+50	RT.			508	10			1		
U-2	5+50	17+91	RT.	841				23			1	
SHEET TOTAL				841		508	10	23		1	1	

I-12 CONCRETE CURB						
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	TYPE-6 LIN.FT.	TYPE-7 LIN.FT.	TYPE-8 LIN.FT.
R-1	4+85.07	5+53.07	LT.	136		
R-2	13+90.72	17+65.85	LT.		375	
R-3	17+65.85	17+90.85	LT.			25
R-4	5+12.0	5+61.0	LT.	49		
SHEET TOTAL				185	375	25

I-21 P.C.C. MEDIAN					
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	S.Y.	
M-1	4+53.07	4+85.07	LT.	25	
SHEET TOTAL				25	

I-15 GUARDRAIL (LIN.FT.)				
CODE	LOCATION FROM	LOCATION TO	SIDE ℄	STD. TYPE DEEP
G-1	7+50.0	5+12.5	LT.	162.5
G-2	4+82.0	5+07	SEE SHEET 186	
SHEET TOTAL				162.5

STRUCTURES 20' SPAN & UNDER				
CODE	LOCATION	TYPE	SIZE	DETAIL SHEET Nº
C-15	RAMP E 7+80	60° CL A-1, SEC M-6.66 @ M-6.8N	30"	178

FOR PROFILE RAMP "E" SEE SHEET Nº 147.

FOR NOSE & INTERSECTION DETAILS SEE SHEET Nº 150 & 153.

FOR PAVEMENT MEDIAN DETAIL RAMPS "A" & "E" SEE SHEET Nº 151.

FOR DETAILS & QUANTITIES OF SIGN M.L. STA. 653+25 SEE SHEET Nº 189.

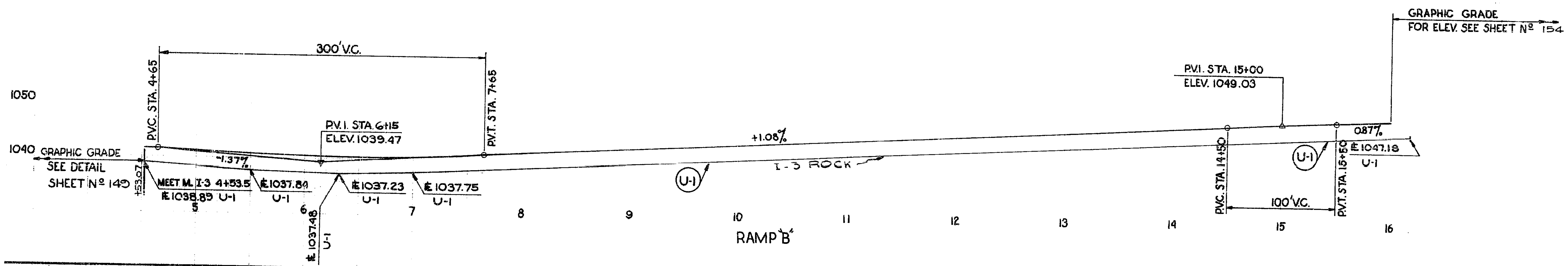
S.R. 46 INTERCHANGE
GEOMETRIC PLAN - RAMP "E"

19 18 17 16 15 14 13 12 11 10 9 8 7 6 MICROBOX 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

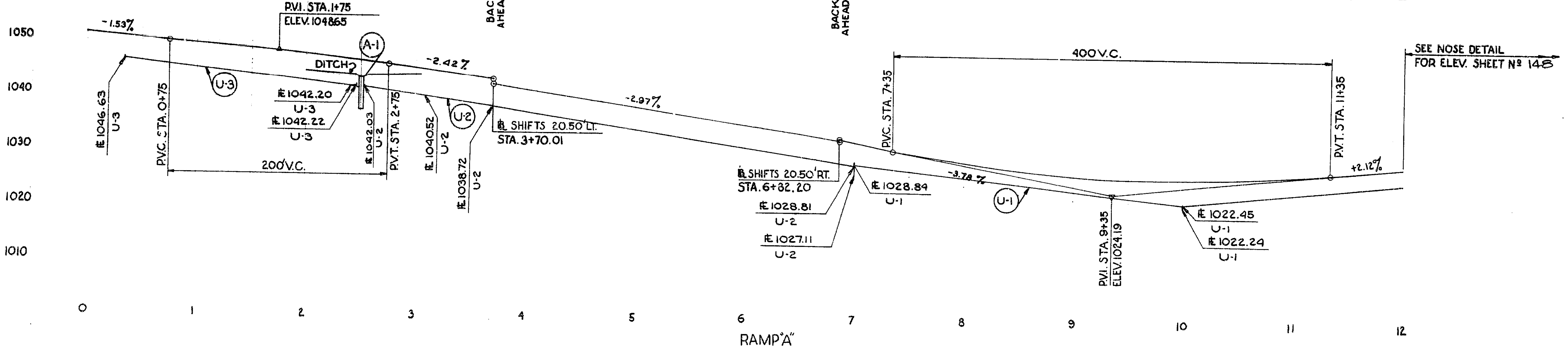
FED.RD.	STATE	PROJECT		
2	OHIO			

MAH.18-989

LEFT EDGE	RIGHT EDGE & PROFILE
1042.14	1041.69
1041.99 1041.85	1041.54 1041.40
1041.54	1041.10
1041.28	1040.85
1041.08	1040.66
1040.93	1040.52
1040.82	1040.42
1040.79 1040.78	1040.39 1040.38
1040.79	1040.39
1040.85	1040.45
1040.96	1040.56
1041.13	1040.73
1041.34	1040.94
1040.49 1041.60	1040.09 1041.20
1041.87	1041.47
1042.41	1042.01
1042.95	1042.55
1043.49	1043.09
1044.10	1043.63
1044.87	1044.17
1045.64	1044.71
1046.42	1045.25
1047.12	1045.79
1047.66	1046.33
1048.20	1046.87
1048.74	1047.41
1049.28	1047.95
1049.77	1048.49
1049.99	1048.75
1050.19	1049.00
1050.56	1049.24
1050.60	1049.47
1050.63	1049.68
1050.67	1049.90



LEFT EDGE	RIGHT EDGE	PROFILE	
SEE DETAIL SHEET Nº 149	SEE DETAIL SHEET Nº 154	1051.33	
		1050.56	
		1050.18	
1049.54		1049.79	
1049.10	1049.35	1049.35	
1048.65	1048.90	1048.90	
1048.18	1048.43	1048.43	
1047.66	1047.91	1047.91	
1047.13	1047.38	1047.38	
1046.56	1046.82	1046.82	
1045.83	1046.22	1046.22	
1045.10	1045.62	1045.62	
1043.62	1044.41	1044.41	
1043.04	1043.94	1043.94 1042.88	BACK AHEAD
1042.19	1043.24	1041.99	
1040.75	1042.08	1040.50	
1039.27	1040.60	1039.02	
1037.72	1038.73	1037.53	
1036.18	1036.85	1036.05	
1034.63	1034.96	1034.56	
1033.63	1033.74	1033.61 1033.74	BACK AHEAD
1033.06	1033.07	1033.07	
1031.96	1031.74	1031.74	
1031.52	1031.20	1031.20	
1030.84	1030.36	1030.36	
1030.25	1029.60	1029.60	
1029.75	1028.94	1028.94	
1029.36	1028.38	1028.38	
1029.05	1027.91	1027.91	
1028.83	1027.52	1027.52	
1028.55 1028.47	1027.22 1027.14	1027.22 1027.14	
1028.36	1027.03	1027.03	
1028.26	1026.93	1026.93	
1028.24	1026.91	1026.91	
1028.32	1026.99	1026.99	
1028.49	1027.16	1027.16	
1028.76	1027.43	1027.43	
1029.11	1027.78	1027.78	
1029.56 1029.76	1028.23 1028.43	1028.23 1028.43	
1030.08	1028.75	1028.75	
1030.61	1029.28	1029.28	
1031.14	1029.81	1029.81	



PROFILE
RAMPS "A" & "B"
S.R. 46 INTERCHANGE

FED. RD.	STATE	PROJECT	

147
294

MAHONING COUNTY
MAH. 18 - 9.89

RAMP "E"

STA. 0+00 - 4+53.07
GRAPHIC GRADE
SEE DETAIL
SHEET Nº 150

300' V.C.

P.V.C. STA. 4+00

P.V.T. STA. 5+00

-1.34%

+2.97%

℄ SHIFTS 20.50' LT.
STA. 10+20.48

℄ SHIFTS 20.50' RT.
STA. 13+32.67

P.V.I. STA. 14+75
EL. 1045.52

1.67%

GRAPHIC GRADE
SEE DETAIL SHEET Nº 153

P.V.C. STA. 13+75

200' V.C.

P.V.T. STA. 15+75

17+90.35

℄ 1046.42
U-1

MEET M.L. I-3 STA. 653+80.5
℄ 1026.17 U-1

℄ 1022.43
U-1

℄ 1022.37
U-1

P.V.I. STA. 7+50
EL. 1024.00

℄ 1026.98
U-1

FOR ELEVATIONS
SEE DETAIL SHEET Nº 149

FOR ELEVATIONS
SEE DETAIL SHEET Nº 152

RAMP "D"

GRAPHIC GRADE
SEE DETAIL SHEET Nº 149

+53.07

-2.00%

P.V.I. STA. 4+50
ELEV. 1050.59

℄ 1048.19
U-1

P.V.C. STA. 3+75

150' V.C.

P.V.T. STA. 5+25

-2.98%

P.V.C. STA. 7+25

200' V.C.

P.V.T. STA. 9+25

℄ 1036.28
U-1

P.V.I. STA. 8+25
ELEV. 1039.42

℄ 1035.24
U-1

℄ 1034.99

℄ 1035.61
U-1

+0.30%

P.V.C. STA. 12+00

100' V.C.

P.V.T. STA. 13+00

+1.10%

+63.07

P.V.I. STA. 12+50
ELEV. 1040.70

MEET M.L. U.D
℄ = 1042.06

RAMP "C"

GRAPHIC GRADE
SEE DETAIL
SHEET Nº 148

350' V.C.

P.V.C. STA. 4+55

P.V.T. STA. 8+05

+3.18%

℄ 1027.54
U-1

℄ 1036.51
U-1

℄ 1036.48
U-2

℄ 1036.22
U-2

P.V.C. STA. 12+45

150' V.C.

P.V.I. STA. 13+20
EL. 1051.74

+1.56%

℄ 1049.42
U-2

+84.28

+53.07

℄ 1028.82
U-1

℄ 1027.31
U-1

P.V.I. STA. 6+30
EL. 1029.80

SEE DETAIL
SHEET Nº 152

PROFILES - RAMPS C, D & E
S.R. 46 INTERCHANGE

MICROBOX

FED. RD.	STATE	PROJECT	
2	OHIO		

148
294

MAH-18-9.89

INTERSECTION DETAIL
I-80 ~ RAMPS "A" & "C"

RAMP "A"

JOINT LEGEND
① STD. LONGITUDINAL JOINT
② STD. EXPANSION JOINT
③ STD. CONTRACTION JOINT (TO BE PLACED AT 60' INTERVALS) OR AS SHOWN

NOSE 91' LT. I-80 ℄ STA. 641+90.24
STA. 17+12.68

S.T. STA. 14+12.68

SPIRAL DATA
θ_s = 13°
L_s = 200'
L.T. = 133.694'
S.T. = 66.996

CURVE DATA
Δ = 40°18'00"
D_c = 13°
R = 440.737'
T = 161.732'
L_c = 310.00

C.S. STA. 12+12.68

RAMP "A"

RAMP "C"

P.C. 78' RT. I-80 STA. 642+40
RAMP STA. 0+00

CURVE DATA
Δ = 7°
D_c = 1°30'
R = 3819.72
T = 233.62
L_c = 466.67

NOSE 23' LT. STA. 9+53.07
82' RT. I-80 ℄ STA. 6+96
P.C.C. STA. 9+66.67

CURVE DATA
Δ = 10°14'12"
D_c = 3°
R = 1909.86'
T = 171.07'
L_c = 341.22

642+00 643+00 644+00 645+00 646+00 647+00 648+00

19 18 17 16 15 14 13 12 11 10 9 8 7 6

MICROBOX

FED. RD.	STATE	PROJECT	
2	OHIO		

143
294

MAH-18-9.89

CURVE DATA
Δ = 19°46'30"
D_c = 1°30'
R = 3819.72
T = 496.25
L = 985.00

JOINT LEGEND
① STD. LONGITUDINAL JOINT
② STD. EXPANSION JOINT
③ STD. CONTRACTION JOINT
(TO BE PLACED AT 60' INTERVALS OR AS SHOWN)

NOSE 23' LT. STA. 4+53.07
82' LT. STA. 666+67.33

P.C. STA. 0+00
78' LT. STA. 671+22.06

RAMP "B"

RAMP "D"

CURVE DATA
Δ = 21°03'24"
D_c = 3°15'
R = 1762.95
T = 327.65
L = 647.90

C.S. STA. 13+13.07

SPIRAL DATA
L_s = 150'
Θ_s = 2°26'15"
L.T. = 100.01'
S.T. = 50.01'

S.C. STA. 14+63.07

NOSE 14' LT. STA. 17+45.07
91' RT. STA. 670+48.81

INTERSECTION DETAIL
I-80 ~ RAMPS "B" & "D"

MICROBOX

FED. RD.	STATE	PROJECT	
2	OHIO		

150
294

MAH-18-9.89

JOINT LEGEND

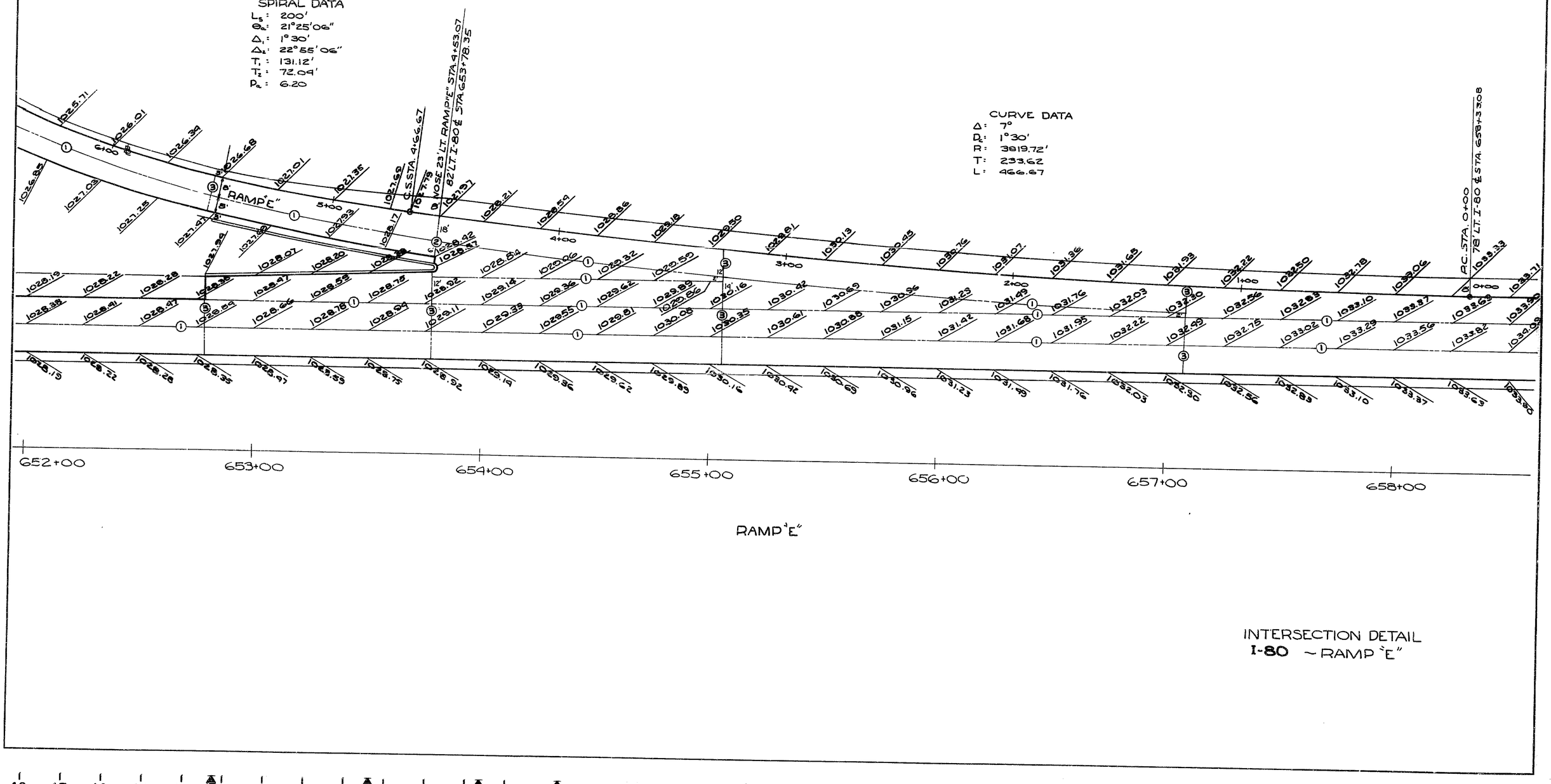
① STD. LONGITUDINAL JOINT
② STD. EXPANSION JOINT
③ STD. CONTRACTION JOINT
(TO BE PLACED AT 60' INTERVALS)
OR AS SHOWN

SPIRAL DATA

L_s : 200'
θ_s : 21°25'06"
Δ_1 : 1°30'
Δ_2 : 22°55'06"
T_1 : 131.12'
T_2 : 72.09'
P_s : 6.20

CURVE DATA

Δ : 7°
D_c : 1°30'
R : 3819.72'
T : 233.62
L : 466.67



INTERSECTION DETAIL
I-80 ~ RAMP "E"

19 18 17 16 15 14 13 12 11 10 9 8 7 6

MICROBOX

FED. RD.	STATE	PROJECT	
2	OHIO		

152
294

MAH-18-9.89

JOINT LEGEND

① STD. LONGITUDINAL JOINT

CROSS HATCHED AREA SHALL BE CONSTRUCTED TO AN ELEVATION 1/2' LOWER THAN THE ADJACENT PAVEMENT AND SURFACED WITH T-31 USING Nº 6 AGGREGATE AS THE MAXIUM SIZE. THE CROSS HATCHED AREA SHALL BE PAID FOR AS FULL DEPTH T-71 AND THE SURFACE TREATMENT SHALL BE PAID FOR AS T-31

CURVE DATA
Δ 78° 36' 24"
R 55'
T 45.02'
L 75.46'

CURVE DATA
Δ 22°20'01"
R 50'
L 19.49'

CURVE DATA
Δ 38° 07' 39"
R 55'
L 36.60'

CURVE DATA
Δ 40°46'22"
D_c 18°59'39"
R 301.65
T 112.10
L 214.66

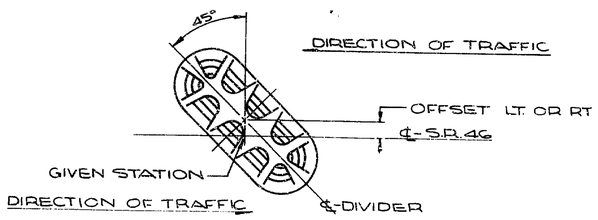
CURVE DATA
Δ 23°19'16"
D_c 22°55'06"
R 250'
T 51.59
L 101.76

SPIRAL DATA
L_s = 200'
θ_s = 15°44'39"
Δ_1 = 18°59'39"
Δ_2 = 3°15'
T_1 = 77.56'
T_2 = 124.99'
R_c = 4.57

I-23 TRAFFIC DIVIDERS		
STATION	LEFT	RIGHT
42+46.80	0.00	
42+58.80		0.21
42+70.80	0.42	
42+82.80		0.64
42+94.80	0.85	
43+06.80		1.06
43+18.80	1.27	
43+30.80		1.48
43+42.80	1.70	
43+54.80		1.91
43+66.80	2.12	
43+78.80		2.33
43+90.80	2.54	
44+02.80		2.76
44+14.80	2.97	
44+26.80		3.18
44+38.80	3.39	
44+50.80		3.61
44+62.80	3.82	
44+74.80		4.03
44+86.80	4.20	
44+98.80		4.45
45+10.80	4.66	
45+22.80		4.88

I-23 TRAFFIC DIVIDERS		
STATION	LEFT	RIGHT
45+34.80	5.09	
45+46.80		5.30
45+58.80	5.51	
45+70.80		5.73
TOTAL I-23	28	

I-21 P.C.C. MEDIAN						
CODE	LOCATION		SIDE	S.Y.		
	FROM	TO	℄			
N-1	45+79.30	46+78.77	℄	122		
SHEET TOTAL				122		



I-23 LOCATION DETAIL

FOR DETAILS & QUANTITIES OF CATCH BASINS SEE SHEET Nº 144

INTERSECTION DETAIL
S.R.46 ~ RAMPS "C", "D" & "D,"

MICROBOX

FED. RD.	STATE	PROJECT	
2	OHIO		

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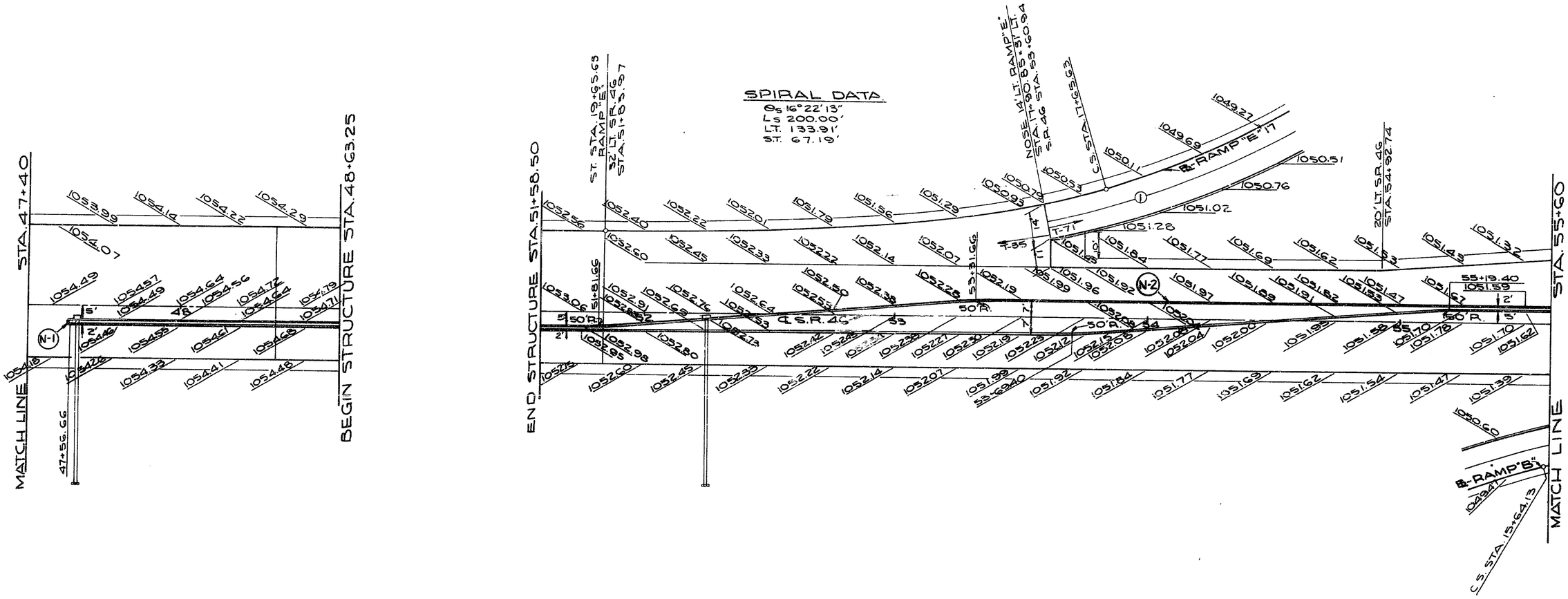
MAH-18-9.89

JOINT LEGEND

① STD. LONGITUDINAL JOINT



I-21 P.C.C. MEDIAN							
CODE	LOCATION		SIDE	S.Y.		
	FROM	TO	℄			
N-1	47+55.66	48+63.25	BT.	24		
N-2	51+58.50	55+60	℄	323		
SHEET TOTAL				347		

FOR DETAILS & QUANTITIES
CATCH BASIN STA. 47+59.45
SEE SHEET № 144

FOR DETAILS & QUANTITIES
CATCH BASIN STA. 52+25
SEE SHEET № 142

INTERSECTION DETAIL
S.R. 46 ~ RAMP "E"

19 18 17 16 15 14 13 12 11 10 9 8 7 6 MICROBOX

FED. RD.	STATE	PROJECT	
2	OHIO		

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294

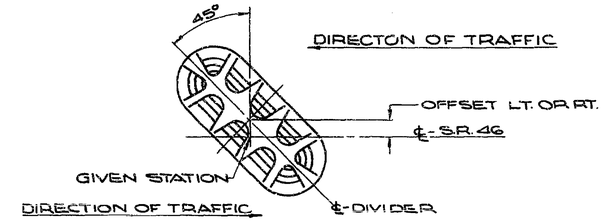
MAH-18-9.89

JOINT LEGEND

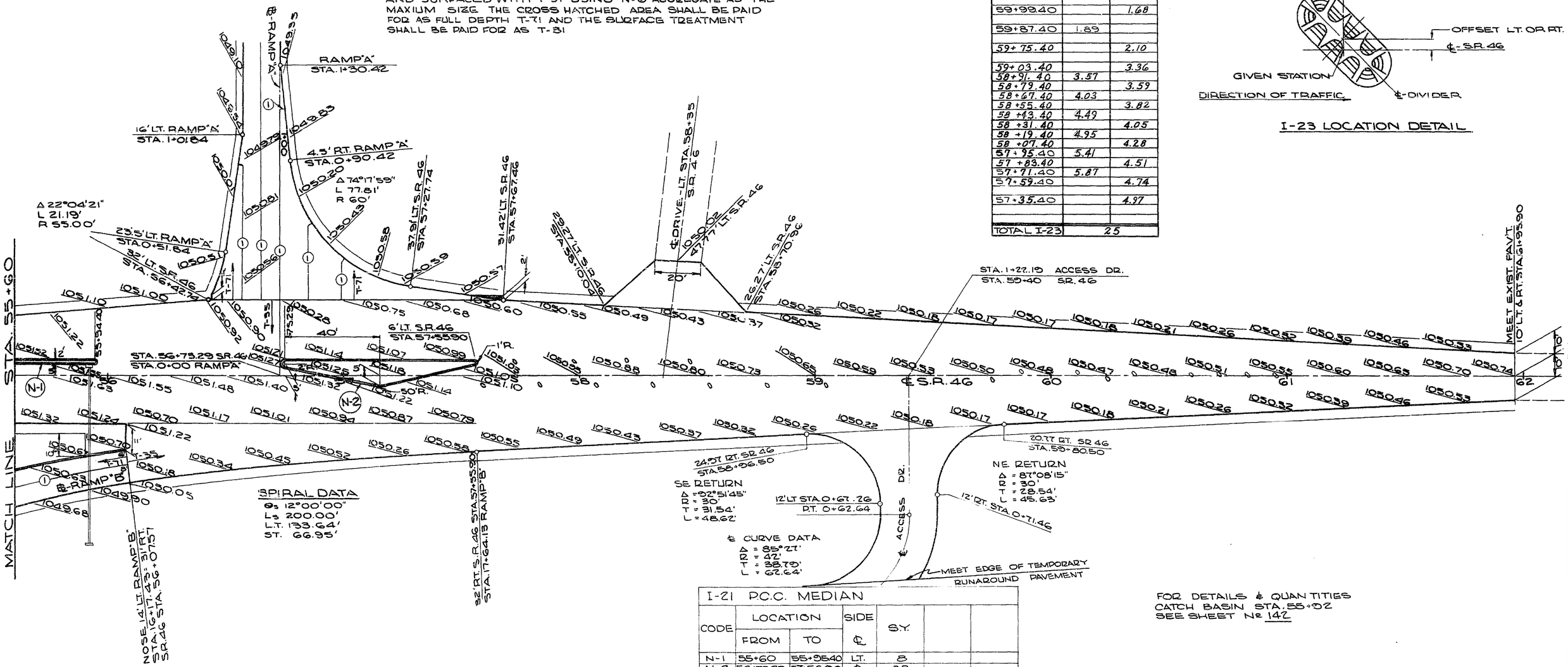
① STD. LONGITUDAL JOINT

CROSS HATCHED AREA SHALL BE CONSTRUCTED TO AN ELEVATION 1/2" LOWER THAN THE ADJACENT PAVEMENT AND SURFACED WITH T-31 USING Nº 6 AGGREGATE AS THE MAXIUM SIZE. THE CROSS HATCHED AREA SHALL BE PAID FOR AS FULL DEPTH T-71 AND THE SURFACE TREATMENT SHALL BE PAID FOR AS T-31

I-23 TRAFFIC DIVIDERS		
STATION	LEFT	RIGHT
60+95.40	0	
60+83.40	0.21	
60+71.40		0.42
60+59.40	0.63	
60+47.40		0.84
60+35.40	1.05	
60+23.40		1.26
60+11.40	1.47	
59+99.40		1.68
59+87.40	1.89	
59+75.40		2.10
59+03.40		3.36
58+91.40	3.57	
58+79.40		3.59
58+67.40	4.03	
58+55.40		3.82
58+43.40	4.49	
58+31.40		4.05
58+19.40	4.95	
58+07.40		4.28
57+95.40	5.41	
57+83.40		4.51
57+71.40	5.87	
57+59.40		4.74
57+35.40		4.97
TOTAL I-23	25	



I-23 LOCATION DETAIL



I-21 P.C.C. MEDIAN						
CODE	LOCATION		SIDE	S.Y.		
	FROM	TO	℄			
N-1	55+60	55+95.40	LT.	8		
N-2	56+73.29	57+56.90	℄	68		
SHEET TOTAL				76		

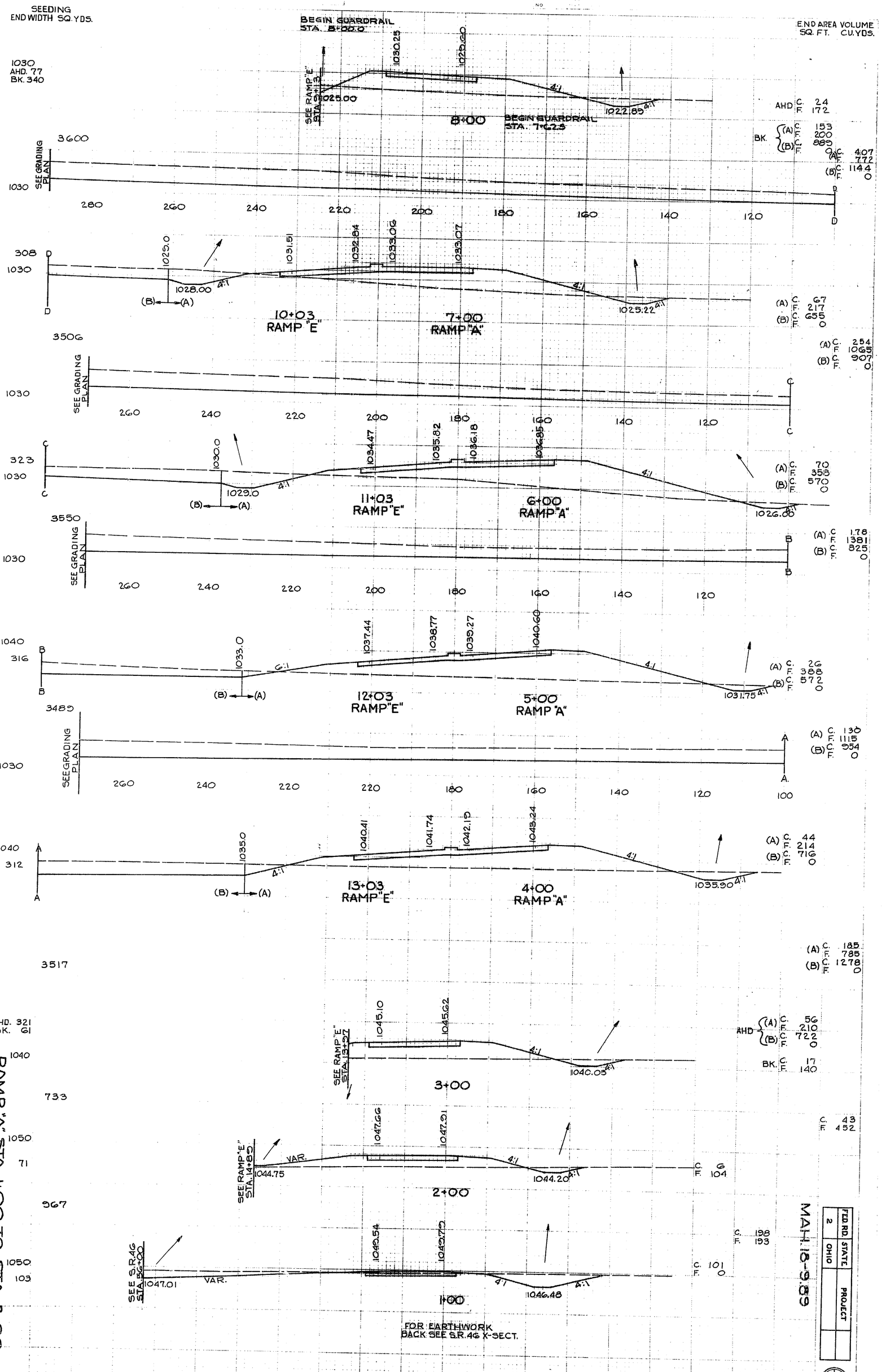
FOR DETAILS & QUANTITIES CATCH BASIN STA. 55+92 SEE SHEET Nº 142

INTERSECTION DETAIL
S.R.46~RAMPS "A" & "B"

FINAL SURVEY NOTE BOOK NO.

SEEDING
END WIDTH SQ. YDS.

END AREA VOLUME
SQ. FT. CU. YDS.



MAH-18-9.89

FED. RD.	STATE
2	OHIO
PROJECT	

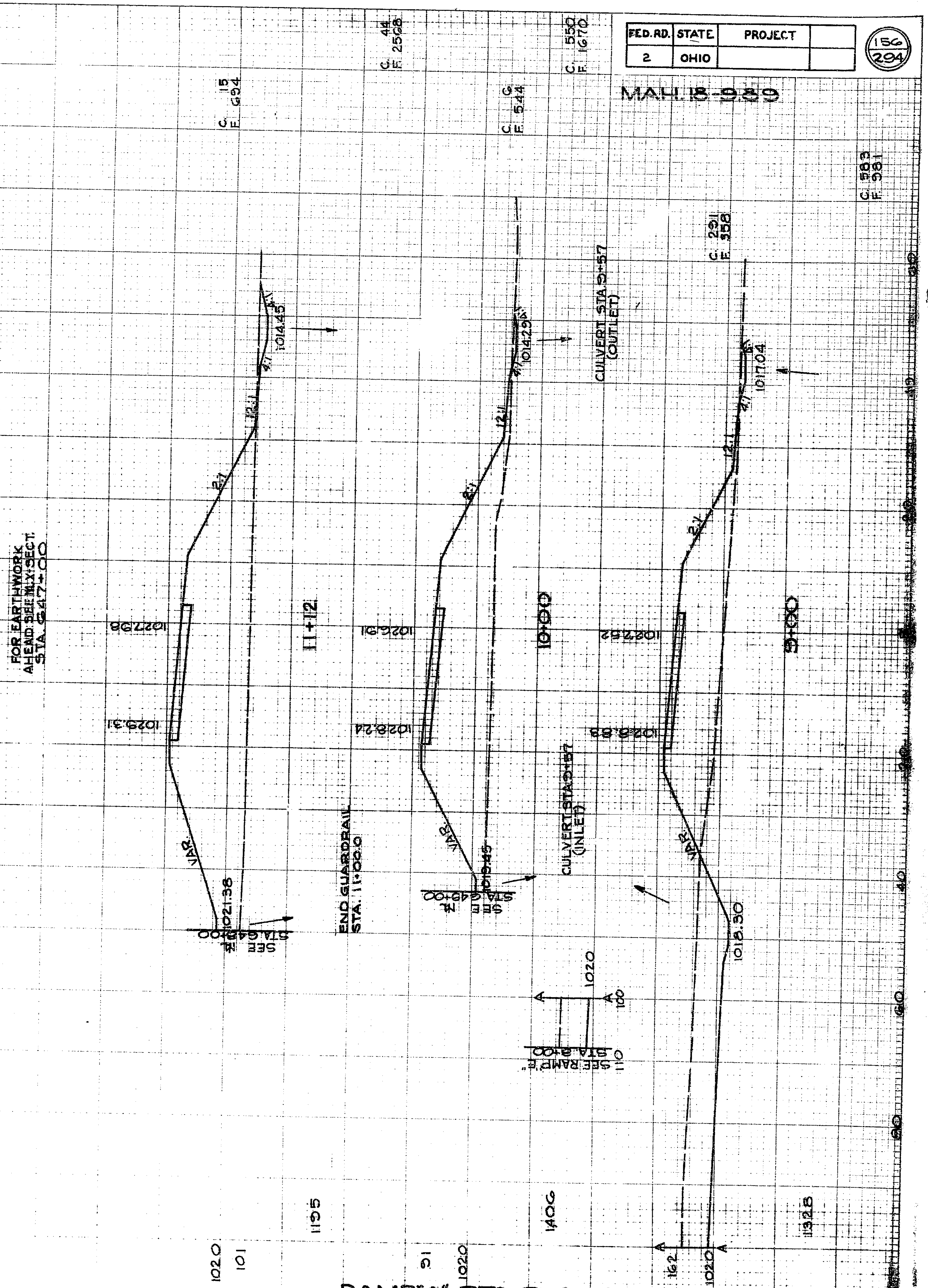
294

FED. RD.	STATE	PROJECT	
2	OHIO		

156
294

MAH. 18-989

END AREA SQ. FT.
VOLUME CU. YDS.



RAMP "A" STA. 9+00 TO STA. 11+12

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

SEEDING
ENDWIDTH SQ. YDS

FED.RD.	STATE	PROJECT	
2	OHIO		

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MAH-18-9.89

ENDAREA VOLUME
SQ.FT. CU.YDS.

C 525
F 30

C 2250
F 56

C 733
F 0

C 2893
F 0

C 823
F 0

C 3845
F 0

C 1247
F 0

C 5321
F 0

C 1950
F 0

C 6335
F 0

C 1579
F 0

C 3657
F 0

C 1242
F 0

FINAL SURVEY
FIELD BOOK
NO.

SEEDING
END WIDTH SQ. YDS

2,511

2194

1872

1367

926

RAMP "B" STA. 7+30 TO STA. 13+00

MICROBOX

FED.RD.	STATE	PROJECT	
2	OHIO		

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294

MAH-18-9.89

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

ORIGINAL SURVEY
DATE

END AREA VOLUME
SQ. FT. CU.YDS.

SEEDING
END WIDTH SQ. YDS.

FOR EARTHWORK AND AS SEE S.R.46 X-SECT. STA. 55+50

RAMP "B" STA. 14+00 TO STA. 15+62

FED.RD.	STATE	PROJECT	
2	OHIO		

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MAH-18-9.89

RAMP "C" STA. 7+50 TO STA. 13+88

FINAL SURVEY | NOTE BOOK | NO.

SEEDING
END WIDTH SQ. YDS.

END AREA VOLUME
SQ. FT. CU. YDS.

SEE M. STA. 6+58+39

C 1040

180 160 140 120 100

6+00 EXTENDED

SEE M. STA. 6+58+00

B 1040 B

220 200 180 160 140 120 100

5+23 EXTENDED

SEE M. STA. 6+57+70

A 1040 A

1034.6

260 240 220 200 180 160 140 120 100

4+60 EXTENDED

FOR EARTHWORK AHEAD SEE M. X-SECT. STA. 6+53+00

1040
102

SEE M. STA. 6+53+00

1040.63 1040.04

1037.09 8:1 10+20 1040.2 8:1 1036.83 2:1

C. 178
F. 2

340

C. 192
F. 4

1040
102

SEE M. STA. 6+42+20

1040.54 1039.95

1037.20 VAR. 8:1 1036.00 2:1

10+00 1039.9

C. 168
F. 5

1261

C. 691
F. 37

1040
125

SEE M. STA. 6+31+60

1036.53 1040.25 1039.70

1036.00 6:1 4:1 1034.80 2:1

9+00 1038.3

C. 205
F. 15

1683

C. 1074
F. 172

1040
178

1036.00 1041.21 1040.62

4:1 8+00 1038.3 4:1 1034.50 2:1

END GUARDRAIL STA. 7+15.8

C. 375
F. 78

SEE M. STA. 6+20+60

1035.00

2235

C. 1661
F. 422

1040
224

1035.5 1043.73 1043.14

3:1 7+00 1039.6 3:1 1034.20 2:1

END GUARDRAIL STA. 6+09.6

C. 522
F. 150

SEE M. STA. 6+02+48

2706

C. 2006
F. 754

1040
263

SEE EXT. ABOVE C

1035.0 1044.24 1046.12

3:1 6+00 1040.4 2:1 1034.00 2:1

12:1 4:1

C. 561
F. 275

2366

C. 1825
F. 1265

1050
250

SEE EXT. ABOVE B

1034.6 1050.05 1049.60 1049.35 1048.91

2:1 1+44 RAMP "D" 5+23 RAMP "D" 1040.1 2:1 12:1 4:1 1032.56 2:1

C. 719
F. 608

B 2145

1052.57 1052.32 1050.02 1051.23 1050.18

C. 1766
F. 2421

SEE EXT. ABOVE A

324

VAR. 12:1 1043.04 2:1 1:1

4+60 RAMP "D" 1035.5 FOR EARTHWORK BACK SEE S.R. 46 X-SECT.

12:1 4:1 3:1 1032.11

C. 715
F. 1467

1020

A 0+85 RAMP "D" MEET S.R. 46 GUARDRAIL STA. 0+50.0

1030

1040

1050

RAMP "D" STA. 4+60 TO STA. 10+30

MAH-18-9.29

FED. RD.	STATE	PROJECT
2	OHIO	

IGO 294

FED.RD.	STATE	PROJECT
2	OHIO	

MAH-18-9.89

NOTE: SEE RAMP "A" X-SECTIONS STA. 4+00 TO STA. 7+00 FOR RAMP "E" X-SECTIONS STA. 10+03 TO STA. 13+03

RAMP 'E' STA. 5+29 TO STA. 13+97

FED. RD.	STATE	PROJECT	
2	OHIO		

162
294

MAH-15-0.89

END AREA: VOLUME
SQ. FT. CU. YDS.

FINAL SURVEY
NOTE BOOK
NO

ORIGINAL

SEEDING
END WIDTH SQ. YDS.

FOR EARTHWORK
AHEAD SEE S.R. 46
x-SECT. STA. 54+00

SEE S.R. 46 GRADING PLAN

SEE S.R. 46 STA. 54+00

SEE S.R. 46 STA. 56+70

SEE RAMP A STA. 1+88

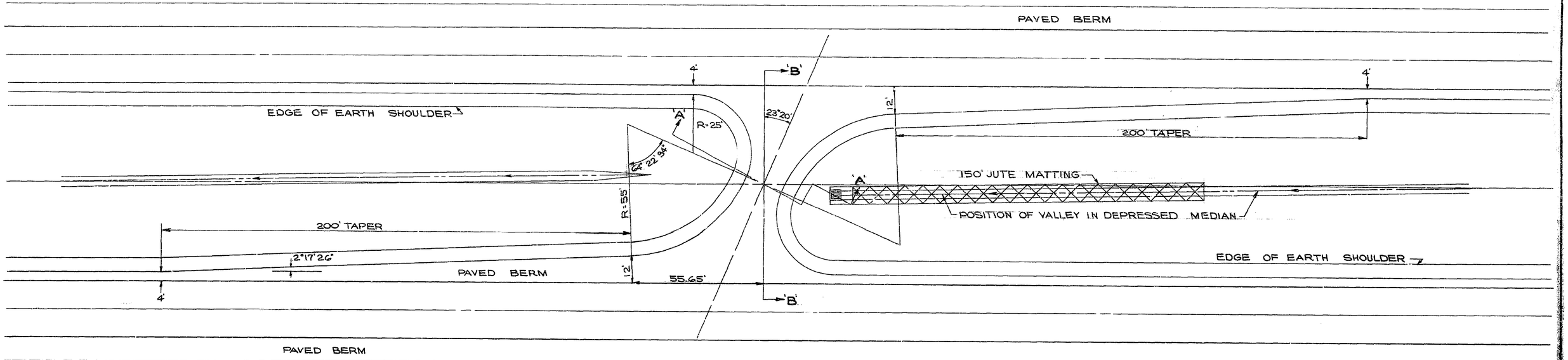
VAR.

RAMP "E" STA. 15+00 TO STA 17+54

FED. RD.	STATE	PROJECT	
2	OHIO		

163
294

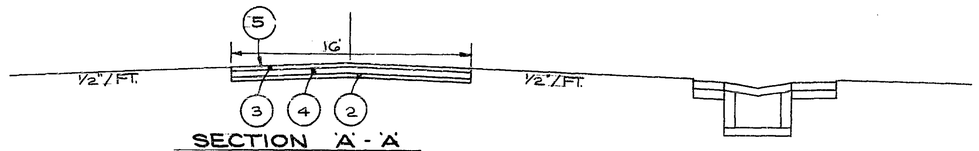
MAH. 18-9.89



TYPICAL CROSSOVER

SCALE: 1"=20'

NOTE:
FOR CATCH BASIN DETAILS
SEE SHEET Nº 32.

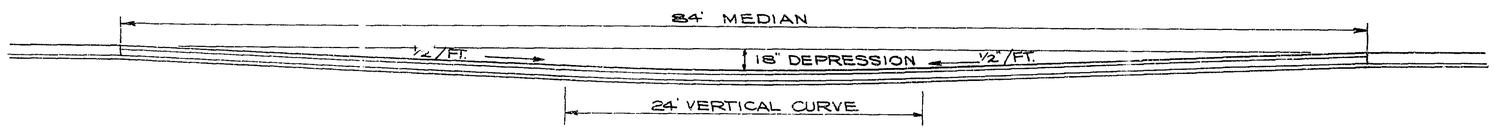


SECTION 'A'-'A'

SCALE: 1"=5'

(2) I-22 3" SUBBASE REGULAR GRADING
(3) B-21 3" WATERPROOF AGGREGATE
(4) B-19 7" AGGREGATE BASE COURSE
(5) T-31 BITUMINOUS SURFACE TREATMENT USING:
0.008 CU.YDS. Nº 6 AGGREGATE PER. SQ.YD.
& 0.25 GAL. BITUMINOUS MATERIAL PER. SQ.YD.

NOTE:
SECTION 'B'-'B' SHOULD BE MODIFIED
FOR THE CROSSOVER AT STA. 610+00
AS SHOWN ON CROSS SECTION SHEET
Nº. 17.



SECTION 'B'-'B'

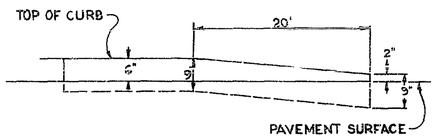
SCALE: 1"=5'

CROSSOVER DETAIL

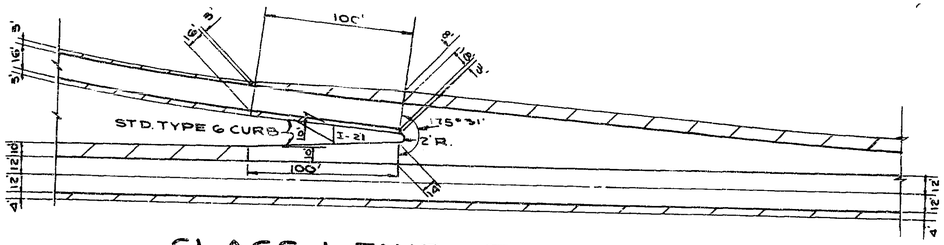
FEDRD	STATE	PROJECT	
2	OHIO		

164
254

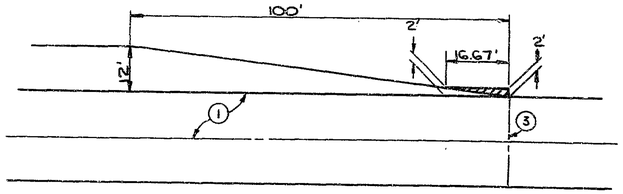
MAH-18-9.89



EXIT NOSE DETAIL

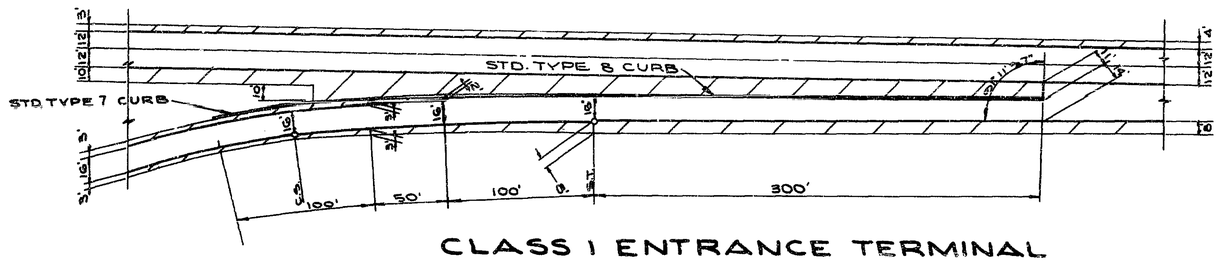


CLASS I EXIT TERMINAL

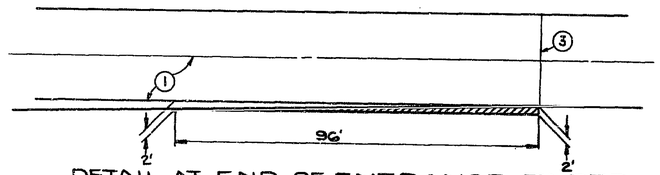


DETAIL AT BEGINNING OF EXIT TAPER

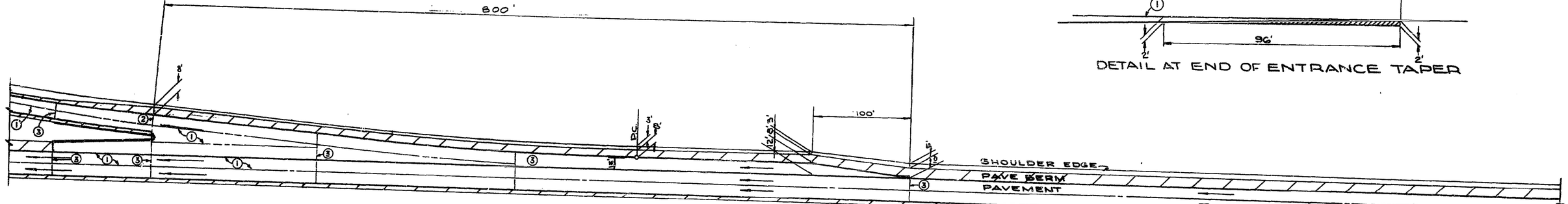
CROSS HATCHED AREA SHALL BE CONSTRUCTED TO AN ELEVATION ½" LOWER THAN THE ADJACENT PAVEMENT AND SURFACED WITH T-31 USING Nº 6 AGGREGATE AS THE MAXIMUM SIZE. THE CROSS HATCHED AREA SHALL BE PAID FOR AS FULL DEPTH T-71 AND THE SURFACE TREATMENT SHALL BE PAID FOR AS T-31.



CLASS I ENTRANCE TERMINAL

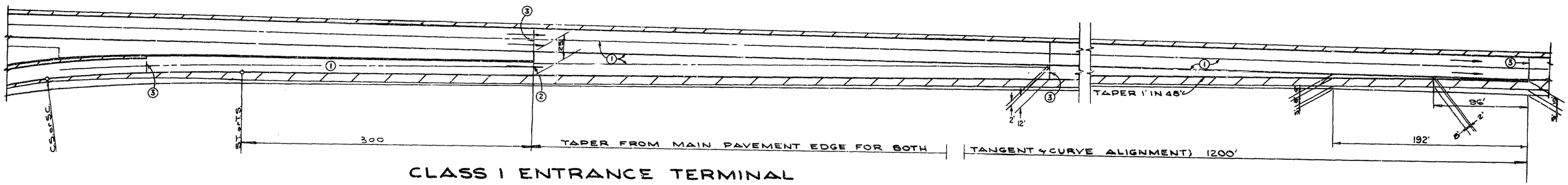


DETAIL AT END OF ENTRANCE TAPER



CLASS I EXIT TERMINAL

① STANDARD LONGITUDINAL JOINT.
② STANDARD EXPANSION JOINT.
③ STANDARD CONTRACTION JOINT.
(TO BE PLACED AT 60' INTERVALS OR AS SHOWN.)



CLASS I ENTRANCE TERMINAL

SPEED CHANGE LANES
& RAMP NOSE DETAILS

FED. RD.	STATE	PROJECT	
2	OHIO		

165
294

MAH-18-9.89

SPECIAL BERM AND SLOPE PROTECTION

PRIOR TO PLACEMENT OF SOD IN THE BERM & 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 PREPENDICULAR TO THE GROUND & FLUSH WITH THE FINISHED GRADE

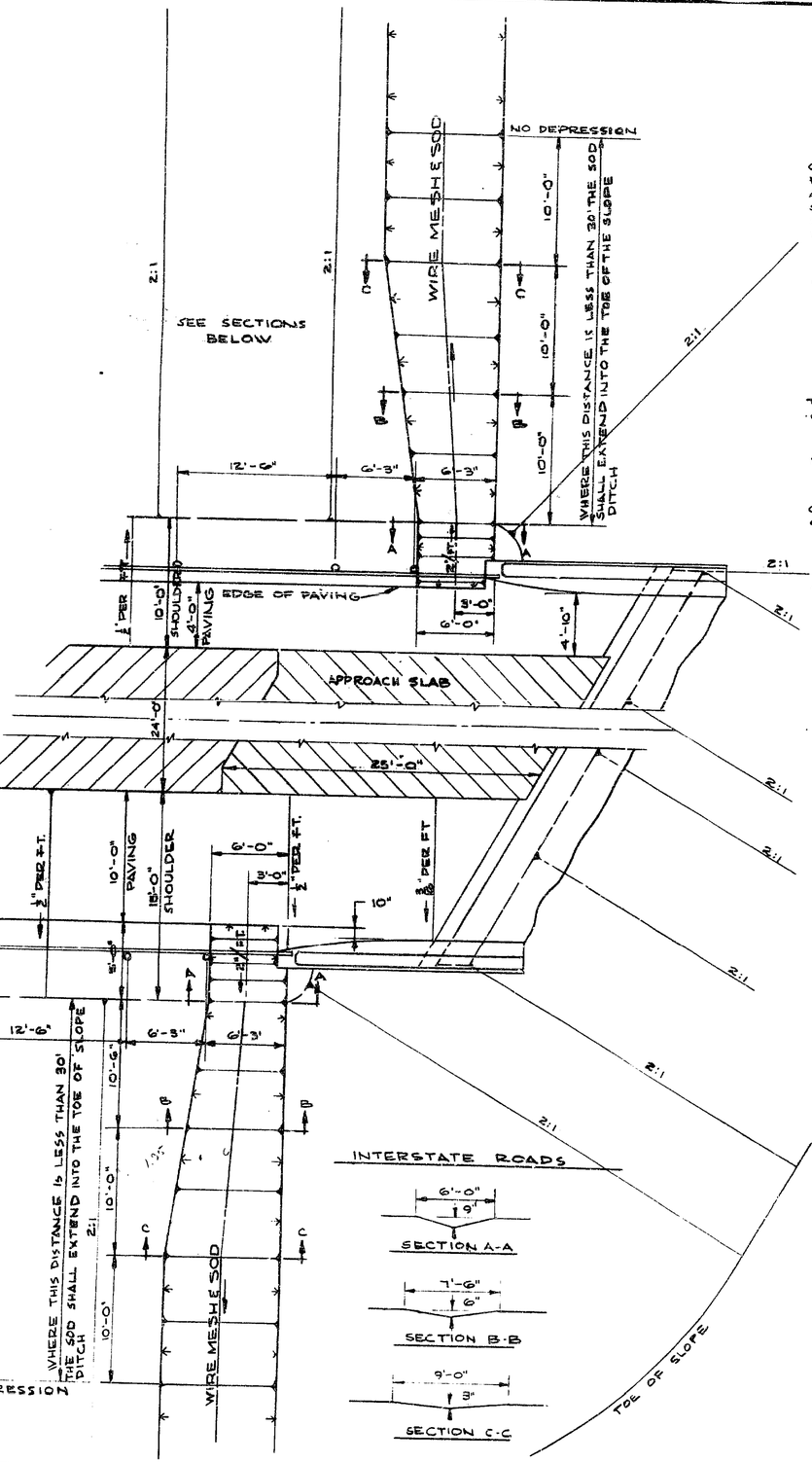
THE FENCE SHALL BE STRAIGHT LINE POULTRY FENCE OR EQUIVALENT WITH STRAND WIDTH OF FOUR FEET, HAVING A TWO INCH MESH AND ALL WIRES No.20 GAUGE.

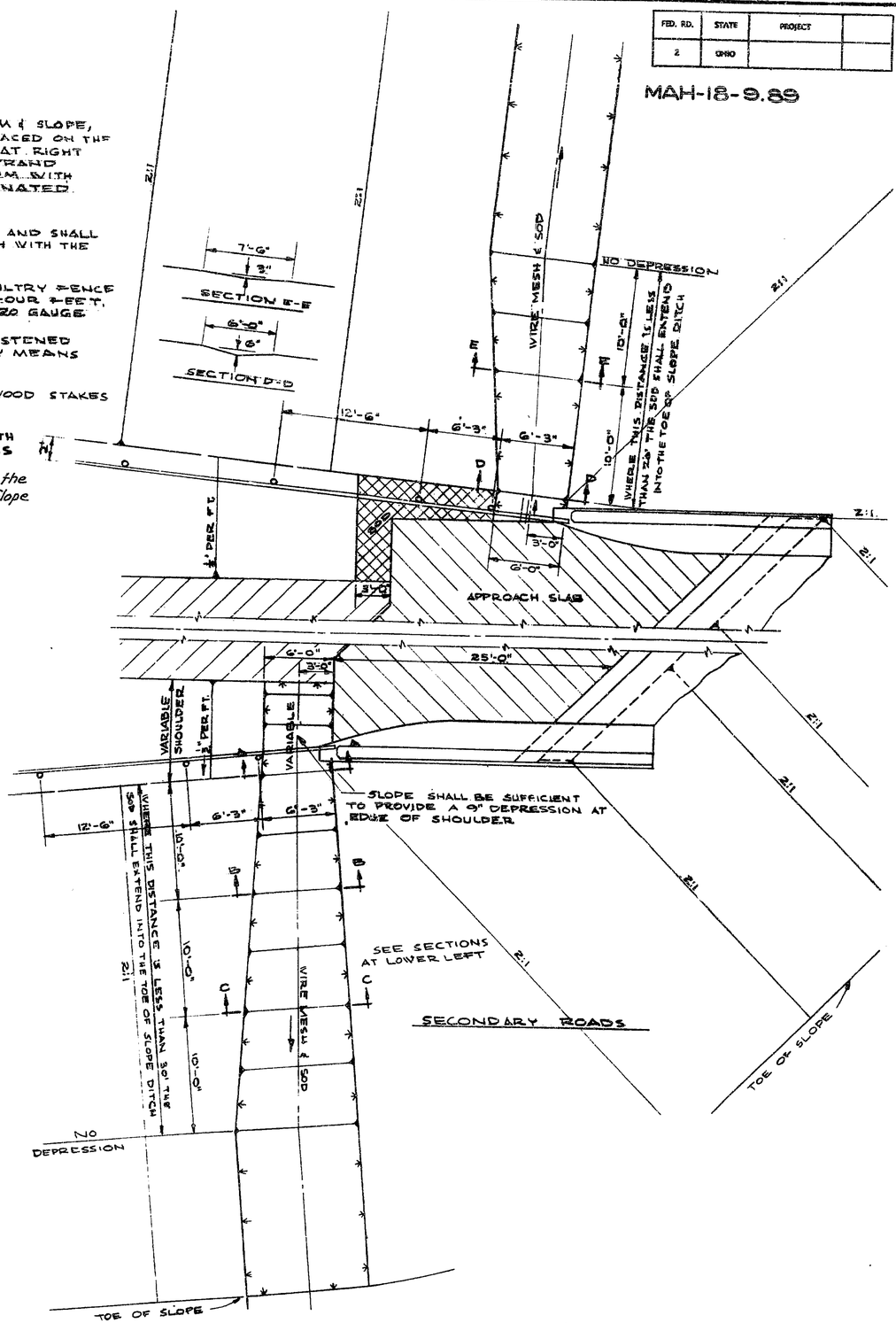
EACH STRAND OF FENCING SHALL BE FASTENED TOGETHER AT TWELVE INCH INTERVALS BY MEANS OF HOG RINGS

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

SOD SHALL BE LAID IN ACCORDANCE WITH CONSTRUCTION & MATERIALS SPECIFICATIONS SECTION L-10.07

Payment for all the above shall be included in the unit bid price for Sodding for Special Berm and Slope Protection, as per plan.





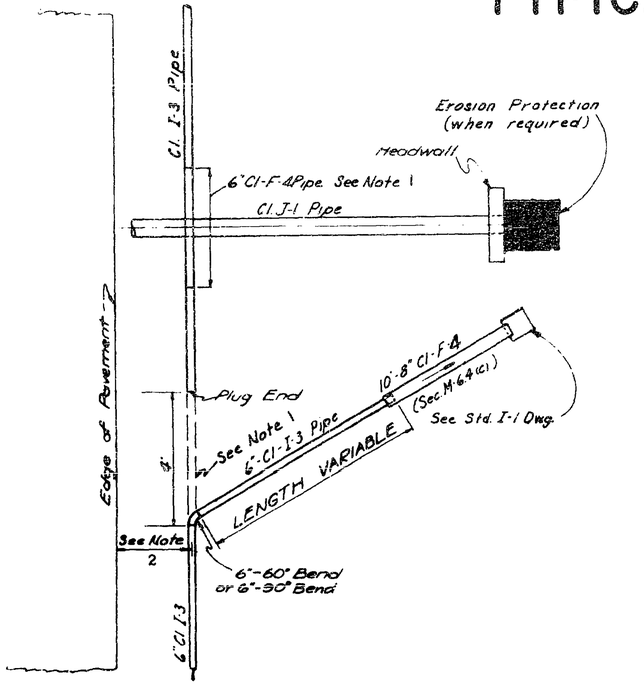
BERM PROTECTION

TYPICAL DETAILS OF UNDERDRAIN OUTLETS

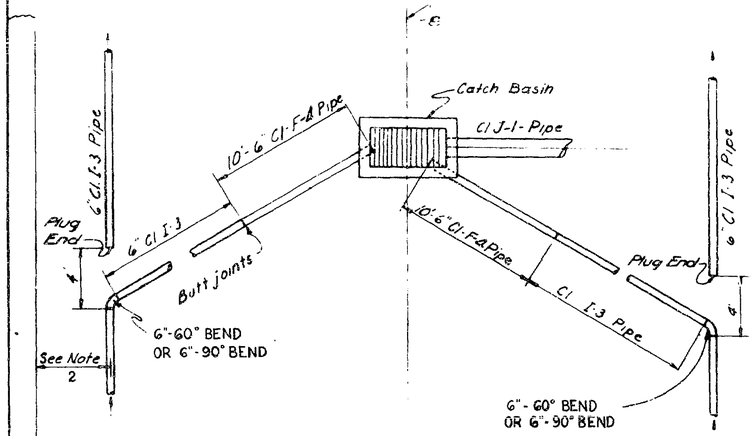
FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

166
294

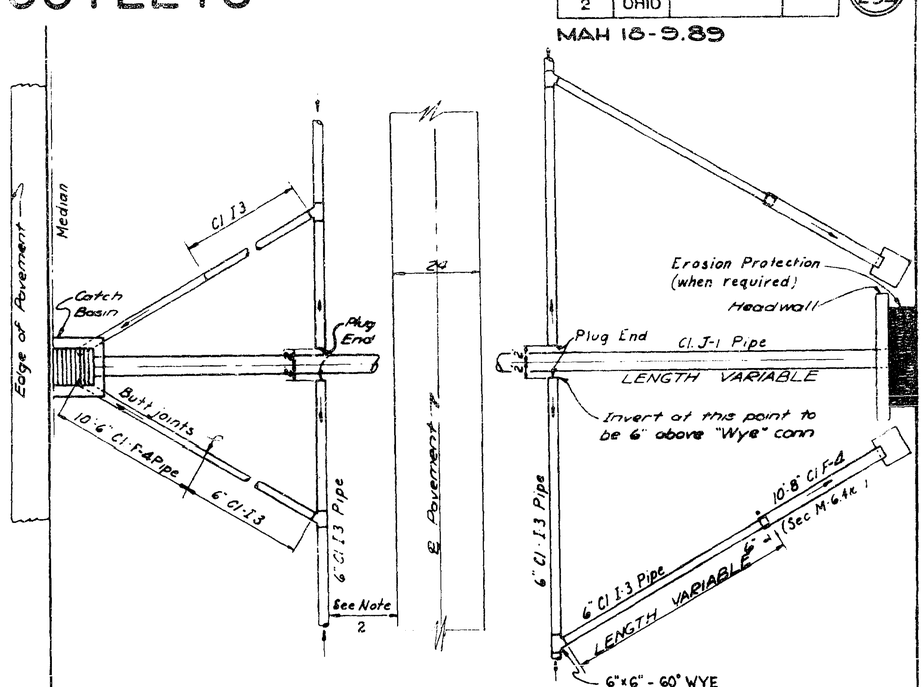
MAH 18-9.89



UNDERDRAIN OUTLET DETAIL "A"



UNDERDRAIN OUTLET DETAIL "B"

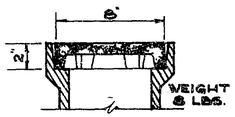


UNDERDRAIN OUTLET DETAIL "C"

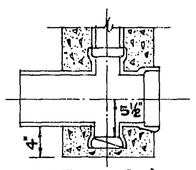
NOTES

1. When it is desirable to continue the underdrain across a transverse line such as in detail "A" a 10' length of 6" class F-4 pipe should be used to span the trench unless such crossing is above the area of granular backfill.
2. Details shall be modified as median width and shape will require
3. Where 8" Cl. F-4 pipe (Sec. M-6.4 (c)) is shown it shall be furnished with one rolled end.

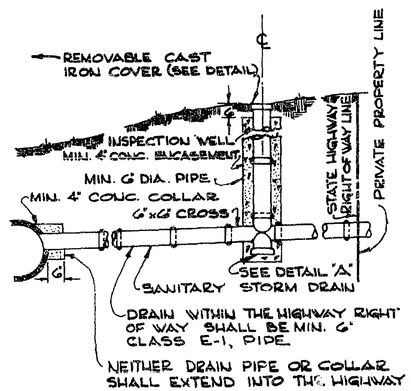
INSPECTION WELL FOR PRIVATE DRAINAGE TAPS

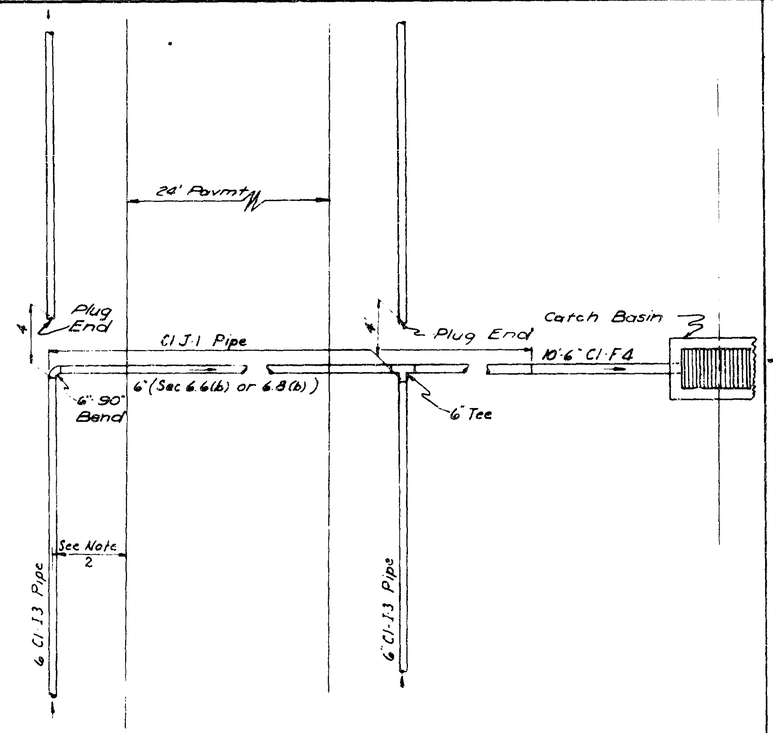


CAST IRON COVER

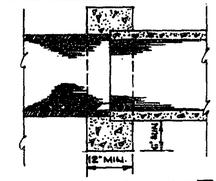


DETAIL "A"



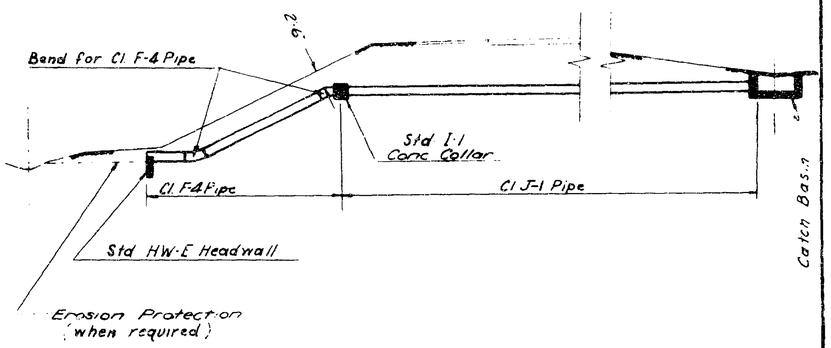


UNDERDRAIN OUTLET DETAIL "D"



ST'D. COLLAR DETAIL

COST OF STANDARD I-1 CONCRETE COLLAR SHALL BE INCLUDED IN THE COST OF I-1 PIPE

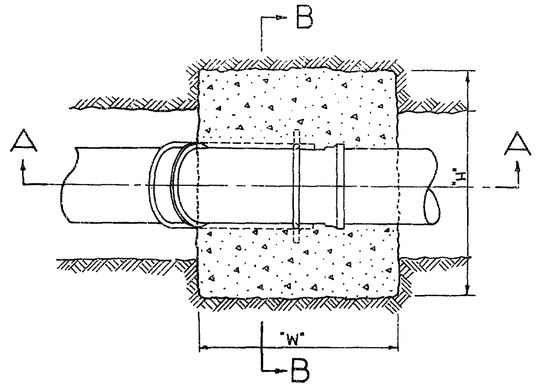


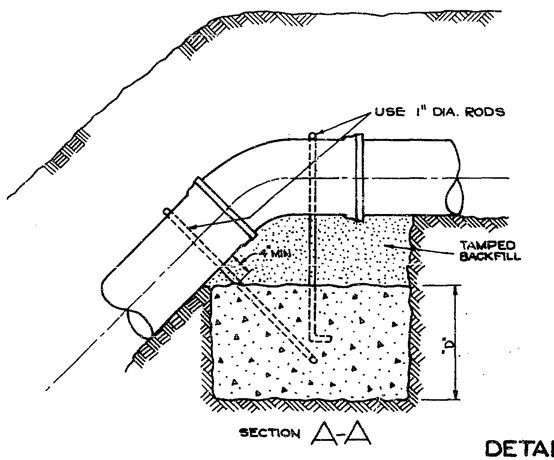
MEDIAN OUTLET DETAIL IN HIGH FILL

FED. RD.	STATE	PROJECT	
2	OH:0		

MAH-18-9.89

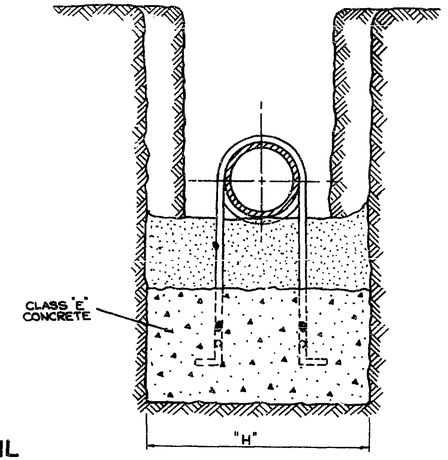
REACTION ANCHORAGE			
SIZE	22½° BEND		
	W	H	D
16"	4.8'	5.0'	4.5'





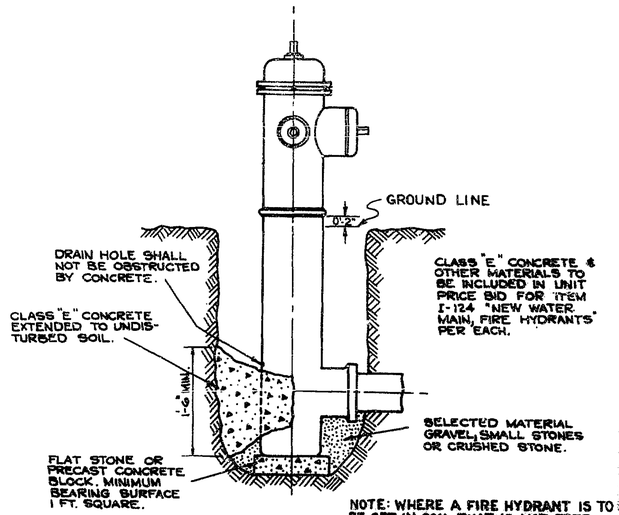
SECTION A-A

CLASS "E" CONCRETE, 1" DIA. RODS, AND OTHER MATERIALS TO BE INCLUDED IN UNIT PRICE BID FOR ITEM I-124 "NEW WATER MAIN" PER LINEAR FT.



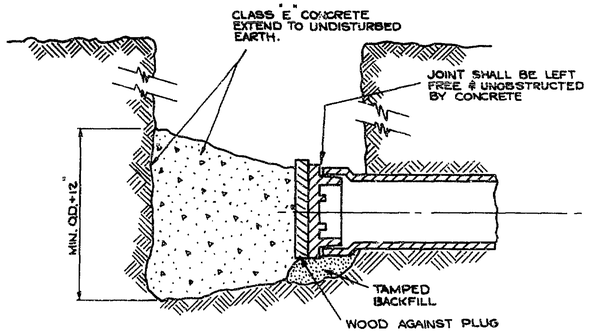
SECTION B-B

DETAIL
REACTION ANCHORAGE
TO BE USED WHERE REACTION BACKING IS REQUIRED FOR VERTICAL BENDS.



DETAIL
FIRE HYDRANT SETTING

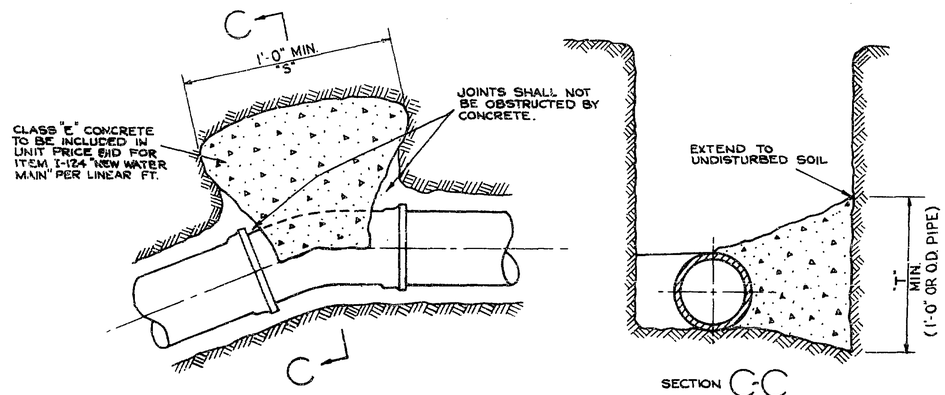
NOTE: WHERE A FIRE HYDRANT IS TO BE SET IN SOIL THAT IS NOT FREE DRAINING, A DRAINAGE PIT 2 FEET IN DIAMETER AND 3 FEET DEEP SHALL BE EXCAVATED BELOW THE HYDRANT AND BACKFILLED TO GRADE WITH GRAVEL STONE OR SLAG, MEETING THE GRADE REQUIREMENTS OF Nº 46, Nº 6 OR Nº 68 SIZE COARSE AGGREGATE.



DETAIL
REACTION BACKING AT PLUG OR CAP

CLASS "E" CONCRETE TO BE INCLUDED IN UNIT PRICE BID FOR ITEM I-124 "NEW WATER MAIN, CUT & PLUG" PER EACH.

CLASS "E" CONCRETE 1" DIA. RODS AND OTHER MATERIALS TO BE INCLUDED IN UNIT PRICE BID FOR ITEM I-124 "NEW WATER MAIN" PER LINEAR FT.



SECTION C-C

DETAIL
CONCRETE THRUST BLOCK
TO BE USED WHERE REACTION BACKING IS REQUIRED FOR HORIZONTAL BENDS.

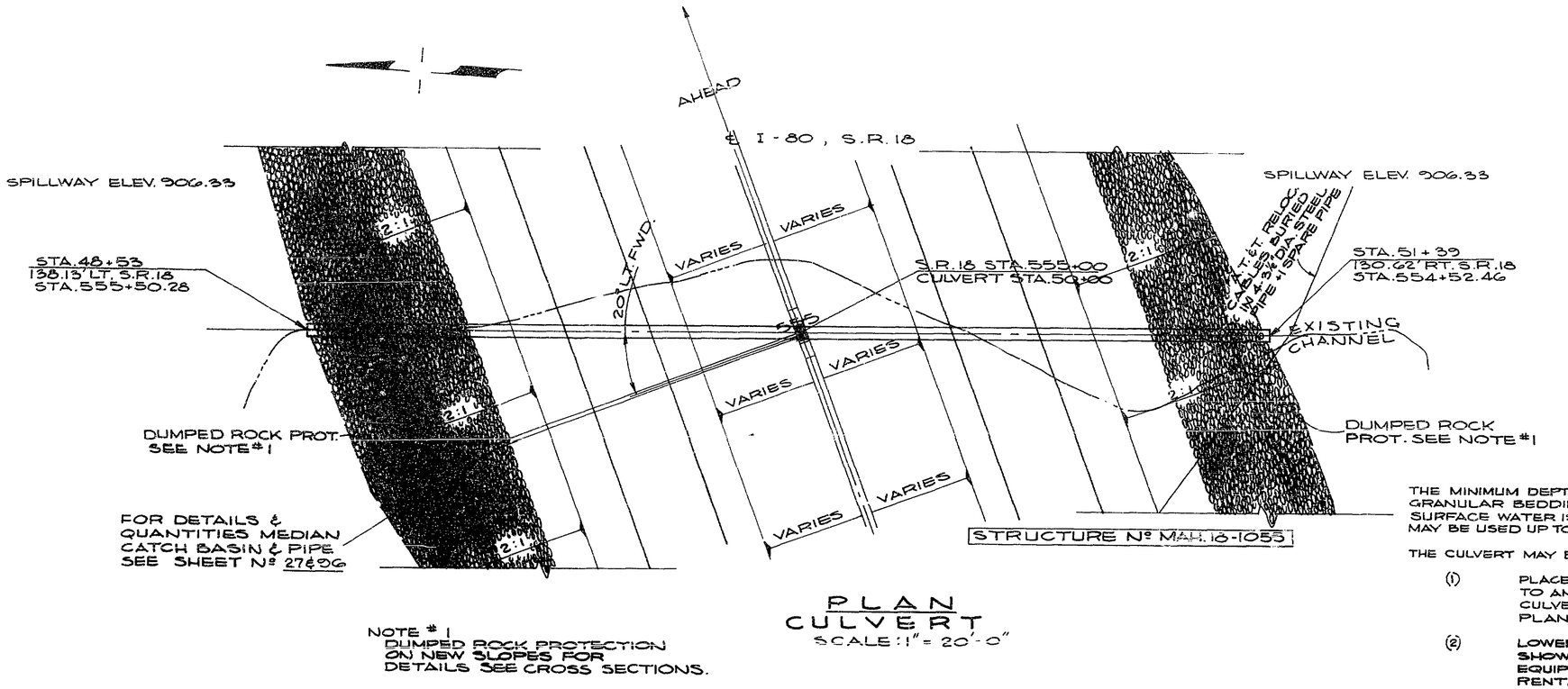
CONCRETE THRUST BLOCKS		
SIZE PIPE	BEND 22½°	
	T	S
8"	1'0"	1'-0"
16"	2'0"	1'-6"

DETAILS
UTILITIES AND WATER MAIN RELOCATION

FED.RD.	STATE	PROJECT	
2	OHIO		

168
294

MAH. 18 - 9.89



PLAN
CULVERT
SCALE: 1" = 20'-0"

NOTE #1
DUMPED ROCK PROTECTION ON NEW SLOPES FOR DETAILS SEE CROSS SECTIONS.

AREA	= 80 ACRES
Q 50	= 47 c.f.s.

ESTIMATED QUANTITIES

I-1 48" PIPE CULVERT, SEC. M-6.4(d)
8 Gage CLASS A-1 = 286 LIN.FT.
AS PER PLAN

CULVERT DATA

TYPE I-1 PIPE CULVERT M-6.4(d) CLASS A-1
SIZE - 48" x 286'
SKEW - 20° LT. FWD.
WORK REQ'D - BUILD NEW 48" DIA. I-1 PIPE CULVERT AS SHOWN.

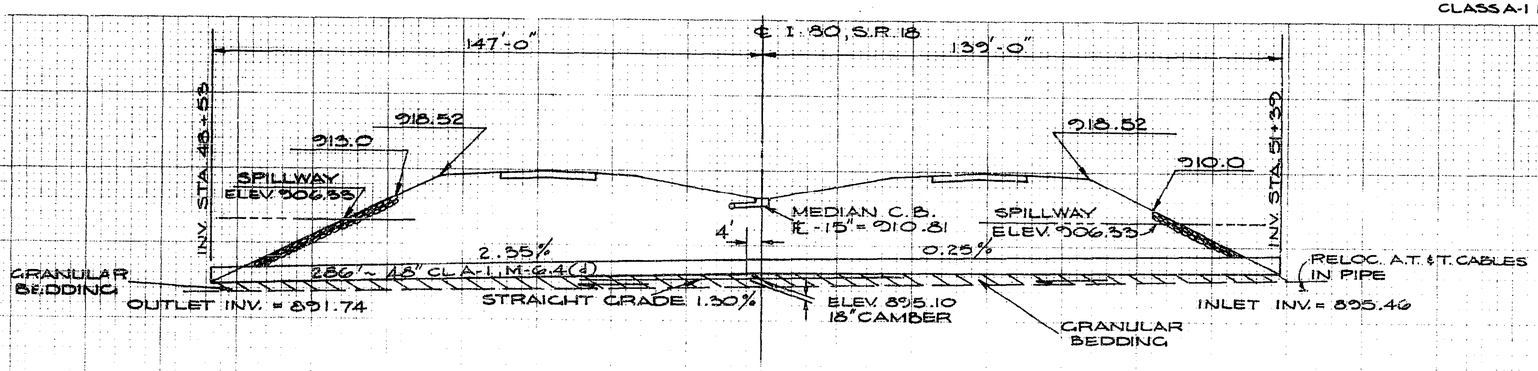
THE MINIMUM DEPTH OF GRANULAR BEDDING SHALL BE INCREASED TO TWO (2) FEET. THE GRANULAR BEDDING AND BACKFILL MAY BE PLACED BY THE METHOD OF END DUMPING IF SURFACE WATER IS PRESENT AT THE TIME OF CONSTRUCTION. END DUMPING METHODS MAY BE USED UP TO AN ELEVATION TWO (2) FEET ABOVE THE WATER LEVEL.

THE CULVERT MAY BE PLACED ON THE BEDDING BY EITHER OF THE FOLLOWING METHODS:

(1) PLACE THE GRANULAR BORROW ON EITHER SIDE OF THE CULVERT LOCATION TO AN ELEVATION TWO (2) FEET ABOVE THE WATER LEVEL. LOWER THE CULVERT AS ONE UNIT INTO THE DESIGNATED POSITION SHOWN ON THE PLANS BY THE PROPER EQUIPMENT SITTING ON THE GRANULAR EMBANKMENT.

(2) LOWER THE CULVERT AS ONE UNIT INTO THE DESIGNATED POSITION SHOWN ON THE PLANS FROM BARGES OR OTHER SIMILAR FLOATING EQUIPMENT. BARGES CAN BE OBTAINED FROM THE M.V.S.D. ON A RENTAL BASIS.

PAYMENT FOR THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM I-1 48" PIPE CLASS A-1 M-6.4(d), AS PER PLAN.



CROSS SECTION
SCALE: 1" = 20'-0"

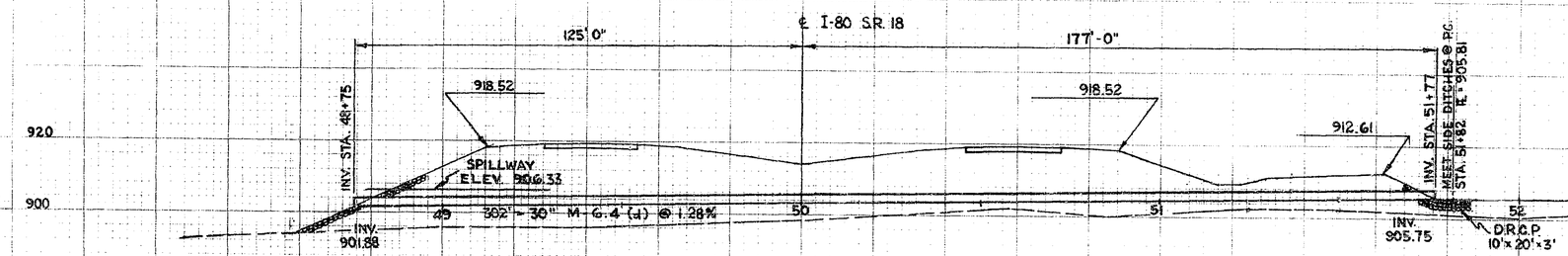
CULVERT DETAILS
STA. 555+00 STRUCTURE Nº MAH.18-1055

18 17 16 15 14 13 12 11 10 9 8 7 6 MICROBOX 6 7 8 9 10 11 12 13 14 15 16 17 18

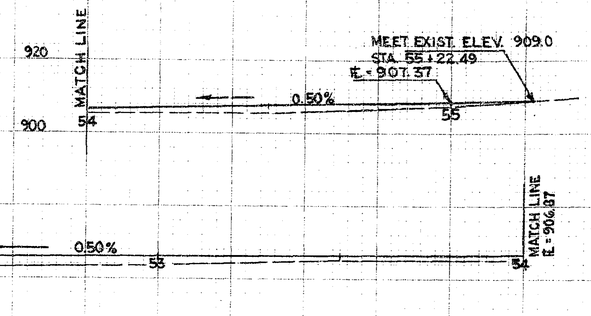
FED.RD.	STATE	PROJECT	
2	OHIO		

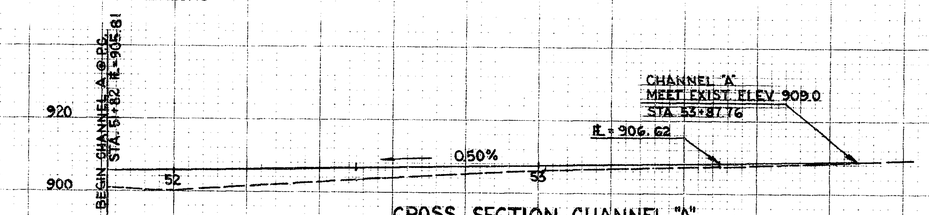
170
254

MAH-18-9.89



CROSS SECTION
CULVERT & CHANNEL
SCALE 1" = 20'-0"





CROSS SECTION CHANNEL "A"

FOR CULVERT & CHANNEL PLAN VIEW
& QUANTITIES SEE SHEET Nº 169

FOR CHANNEL CROSS SECTIONS
SEE SHEET Nº 171

CULVERT CROSS SECTIONS
STA. 560+77.20

19 18 17 16 15 14 13 12 11 10 9 8 7 6

MICROBOX

6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

FED.RD.	STATE	PROJECT	
2	OHIO		

171
294

MAH-18-9.89

55+22.49
909.00
F-0
C-1

55+00
907.37
C-3 S.F.
F-0
F-81 C.Y.
C-3 C.Y.

54+50
907.12
F-85 S.F.
F-304 C.Y.
C-0

54+00
906.87
F-243 S.F.
F-481 C.Y.
C-0

53+50
906.62
F-277 S.F.
F-590 C.Y.
C-0

53+00
906.37
F-360 S.F.

53+87.76 "A"
909.00
F-0
C-0
F-9 C.Y.
C-2 C.Y.

53+50 "A"
906.12
F-27 S.F.
C-3 S.F.

53+00 "A"
906.37
F-250 C.Y.
C-0
F-216 S.F.

52+50
906.12
F-960 S.F.

52+50 "A"
906.12
F-1422 C.Y.
C-0

51+97
905.88
F-1023 S.F.
F-1948 C.Y.
C-0

FOR PLAN VIEW SEE SHEET Nº 169.

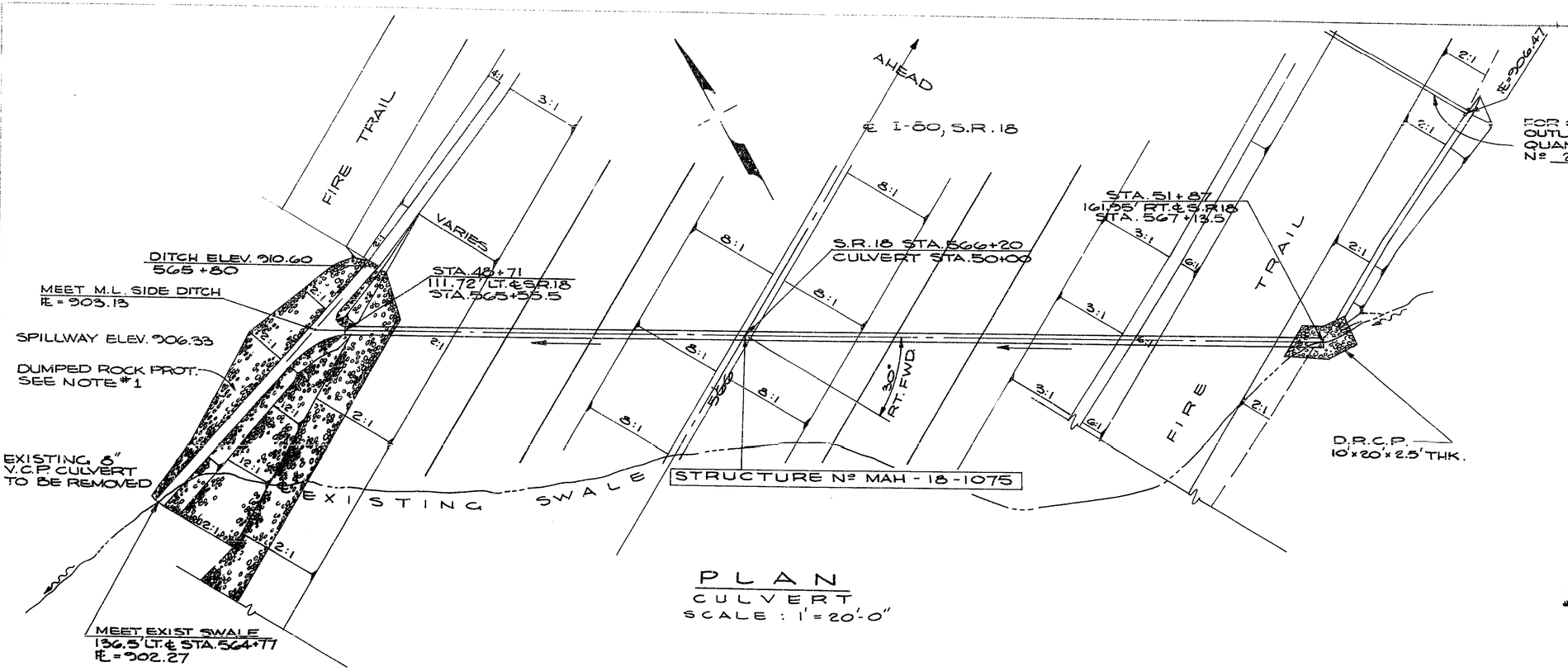
CHANNEL & FIRE TRAIL X-SECTIONS

STA. 560+77.20 (RIGHT OF M.L. ℄)

FED.RD.	STATE	PROJECT	
2	OHIO		

172 / 294

MAH. 18 - 9.89



PLAN
CULVERT
SCALE : 1" = 20'-0"

AREA	= 53.9 ACRES
Q-50	= 36.3 c.f.s.

ESTIMATED QUANTITIES

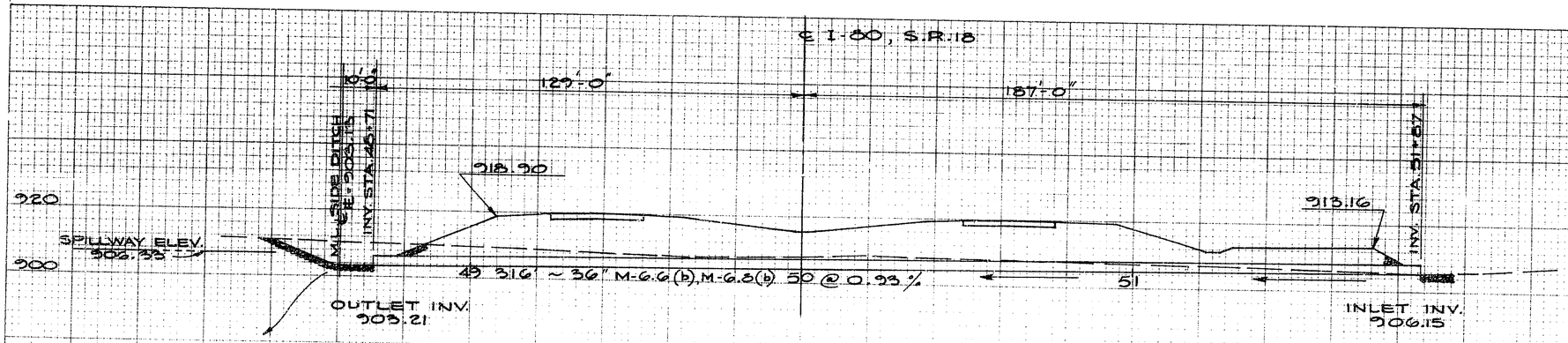
I-1 36" PIPE CULVERT SEC. M-6.6(b), M-6.8(b) CLASS A-1 = 316 LIN. FT.

I-10 DUMPED ROCK CHANNEL PROT. = 19 C.Y.

CULVERT DATA

TYPE - I-1 PIPE CULVERT M-6.6(b) CLASS A-1
SIZE - 36" x 316'-0" M-6.8(b)
SKEW - 30° RT. FWD.
WORK REQ'D - BUILD NEW 36" DIA. I-1 PIPE CULVERT AS SHOWN
REMOVE - V.C.P. CULVERT 8" x 20'-0"

NOTE:
#1 DUMPED ROCK PROTECTION ON NEW SLOPES FOR DETAILS SEE CROSS SECTIONS.



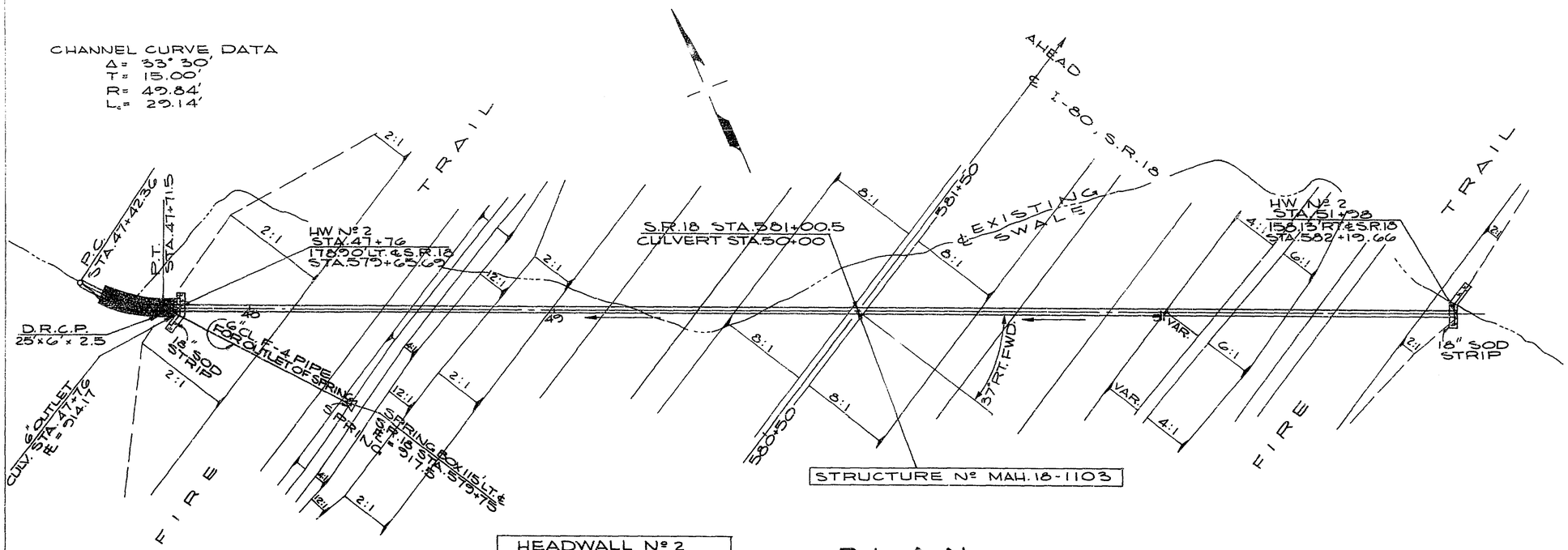
CROSS SECTION
SCALE : 1" = 20'-0"

CULVERT DETAILS
STA. 566 + 20 STRUCTURE Nº MAH-18-1075

FED.RD.	STATE	PROJECT		173 / 294
2	OHIO			

MAHONING COUNTY
MAH-18-9.89

CHANNEL CURVE DATA
Δ = 33° 30'
T = 15.00'
R = 49.84'
L = 29.14'



PLAN
CULVERT
SCALE : 1" = 20'-0"

FOR SPRING DRAIN DETAILS & QUANTITIES SEE SHEET Nº 10.

HEADWALL Nº 2
Ø 37° (SKEW NON-STD.)

PIPE DIA.	W	C.Y. CONC. R.C.P.	STEEL LBS.
21"	4'-8"	2.6	56
ALL OTHER DIM'S SAME AS Nº 2 H'DWALL (30° SKEW) STD. CONST. DWG.			

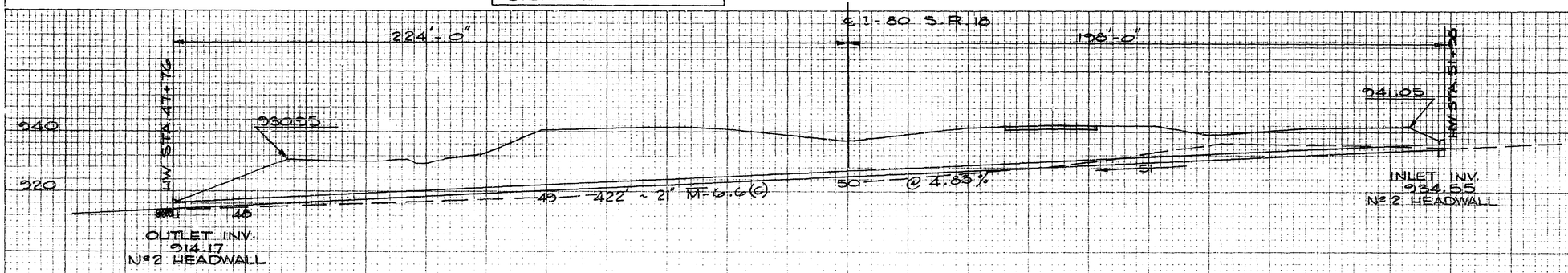
AREA	= 235 ACRES
Q-50	= 20.3 c.f.s.

ESTIMATED QUANTITIES

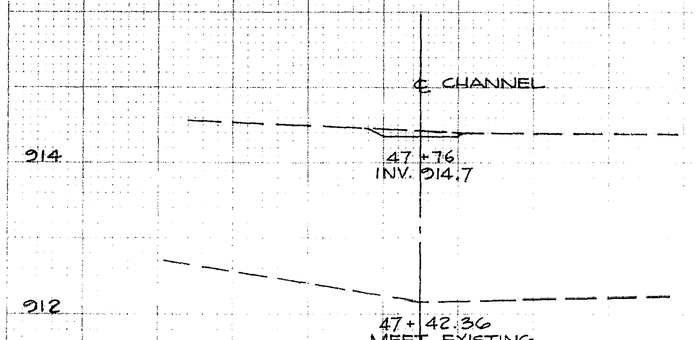
I-1 21" PIPE CULVERT SEC.M-6.6(c) CLASS A-1	= 422	LIN.FT.
I-2 MASONRY	= 2.6	CU.YDS
L-10 SODDING	= 2	SQ.YDS
E-3 CHANNEL EXCAVATION	= 1	CU.YDS
I-10 DUMPED ROCK CHANNEL PROT.	= 14	CU.YDS

CULVERT DATA

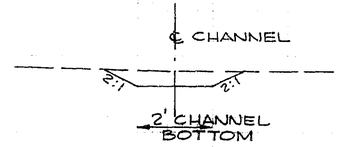
TYPE I-1 PIPE CULVERT M-6.6(c) CLASS A-1
SIZE - 21" x 422'
SKEW - 37° RT. FWD
WORK REQ'D - BUILD NEW 21" DIA. I-1 PIPE CULVERT AS SHOWN



CROSS SECTION
SCALE : 1" = 20'-0"



STA.	END AREA	CU. YDS.
47+42.36	0	
		1
47+67	5	
		1
TOTAL		1



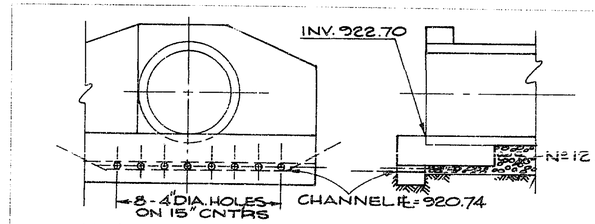
TYPICAL SECTION
SCALE : 1" = 2'-0" CHANNEL

CULVERT DETAILS
STA.581+00.5 STRUCTURE Nº MAH-18-1103

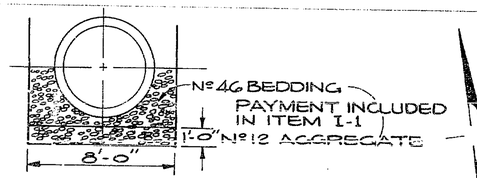
FED RD	STATE	PROJECT	
2	OHIO		

174/294

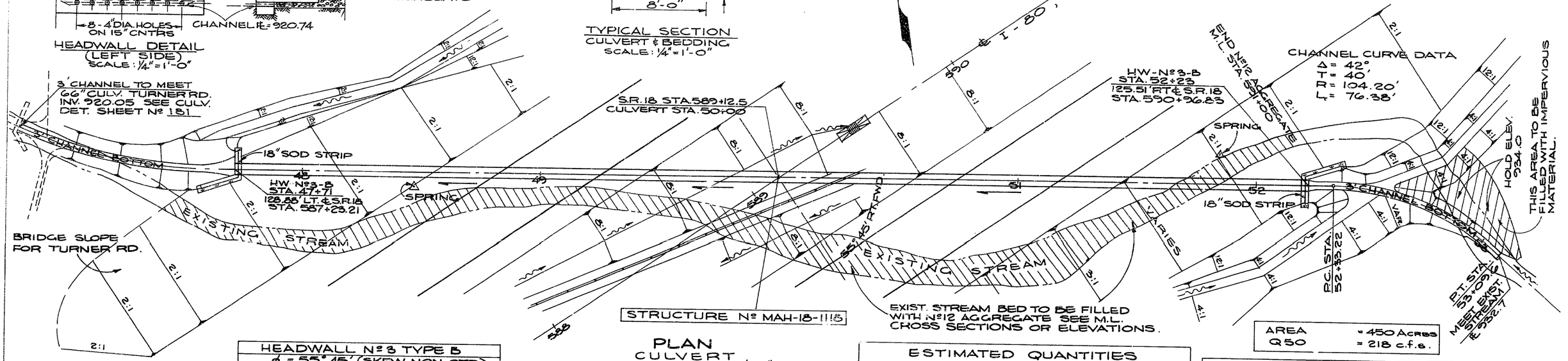
MAH. 18 - 9.89



HEADWALL DETAIL
(LEFT SIDE)
SCALE: 1/4" = 1'-0"



TYPICAL SECTION
CULVERT & BEDDING
SCALE: 1/4" = 1'-0"



PLAN
CULVERT
SCALE: 1" = 20'-0"

AREA	= 450 ACRES
Q50	= 218 c.f.s.

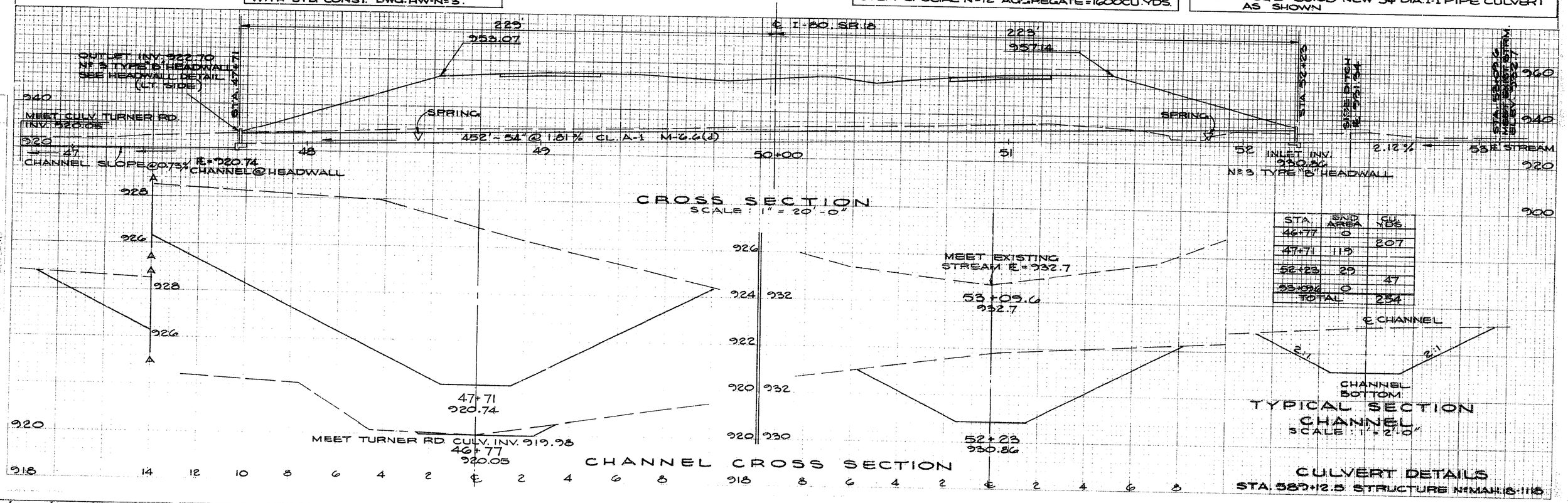
HEADWALL № 3 TYPE B ϕ = 55°45' (SKEW NON-STD.)						
PIPE DIA.	L_1	L_2	h_1	h_2	C.Y. CONC. R.C.P.	STEEL LBS.
54"	9'-8"	15'-0"	3'-8"	3'-13"	14.4	1352
THE ABOVE INFORMATION TO BE USED WITH STD CONST. DWG. HW-№3.						

ESTIMATED QUANTITIES

I-1 54" PIPE CULVERT SEC M-6.6(d) (AS PER PLAN) CLASS A-1	= 452 LIN. FT.
I-2 MASONRY	= 28.8 CU. YDS
L-10 SODDING	= 9 SQ. YDS.
E-3 CHANNEL EXCAVATION	= 254 CU. YDS.
ITEM SPECIAL №12 AGGREGATE	= 1600 CU. YDS.

CULVERT DATA

TYPE-I-1 PIPE CULVERT-M-6.6(d), CLASS A-1 (AS PER PLAN)
SIZE - 54" x 452'
SKEW - 55° 45'
WORK REQ'D - BUILD NEW 54" DIA. I-1 PIPE CULVERT AS SHOWN



STA.	SND AREA	CU. YDS.
46+77	0	
		207
47+71	119	
		47
52+23	29	
53+09.6	0	
TOTAL		254

CULVERT DETAILS
STA. 589+12.5 STRUCTURE № MAH-18-1118

MICROBOX

FED.RD.	STATE	PROJECT	
2	OHIO		

175 / 254

MAH. 18 - 9.89

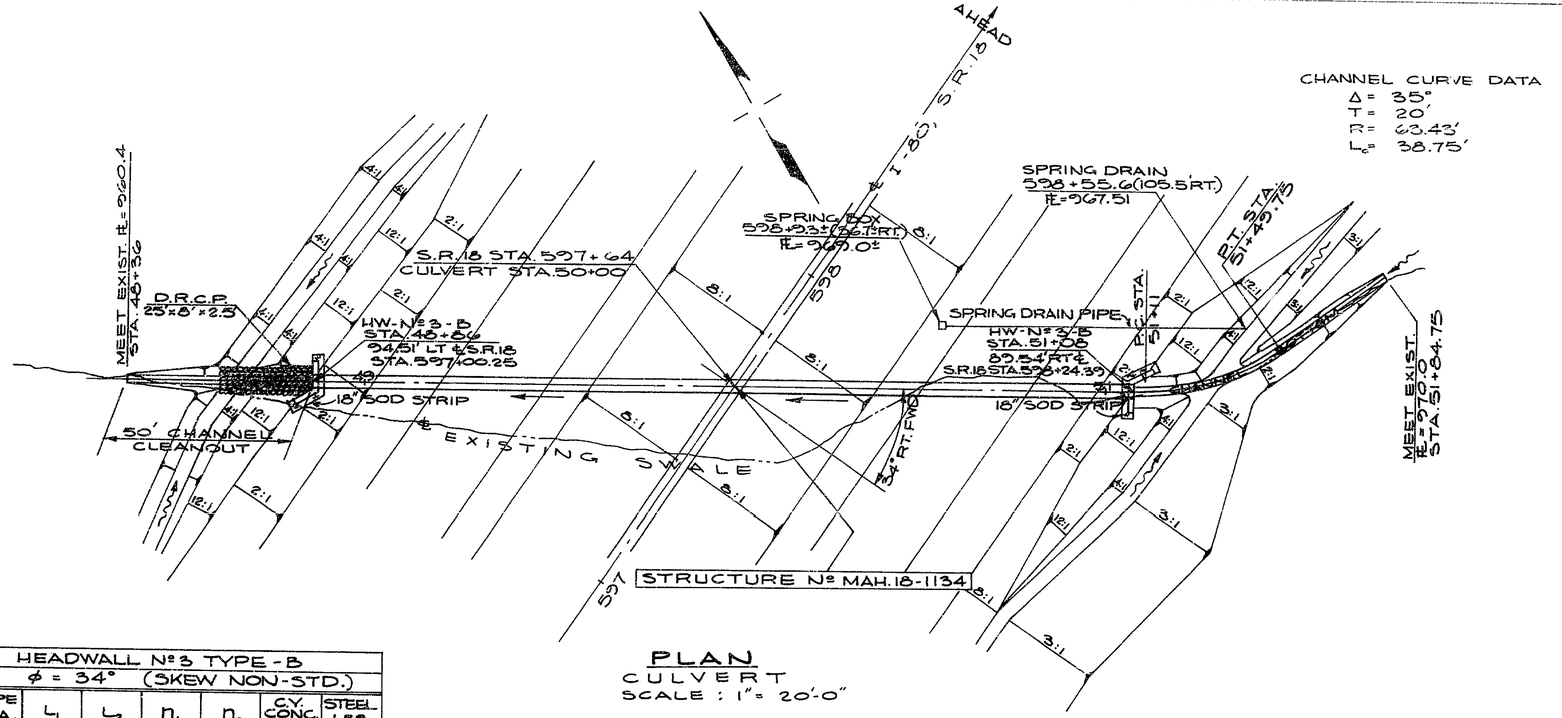
AREA	= 105 ACRES
Q50	= 78 c.f.s.

ESTIMATED QUANTITIES

I-1 42" PIPE CULVERT SEC. M-6.6(a) CLASS A-1	= 222 LIN.FT.
I-2 MASONRY	= 15.0 CU.YDS.
L-10 SODDING	= 6 SQ.YDS.
E-3 CHANNEL EXCAVATION	= 26 CU.YDS.
I-10 DUMPED ROCK CHANNEL PROT.	= 19 CU.YDS.

CULVERT DATA

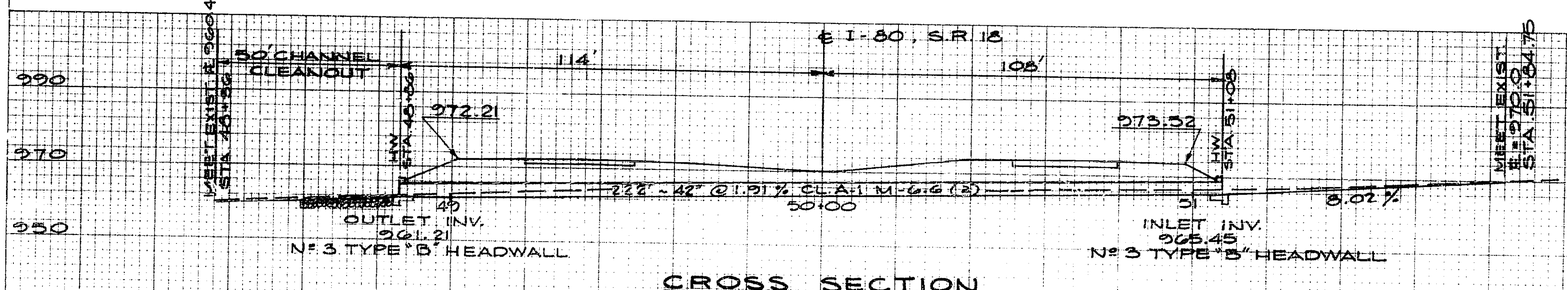
TYPE-I-1 PIPE CULVERT M-6.6(a) CLASS A-1
SIZE - 42" x 222'
SKEW - 34° RT. FWD.
WORK REQ'D - BUILD NEW 42" DIA. I-1 PIPE CULVERT AS SHOWN



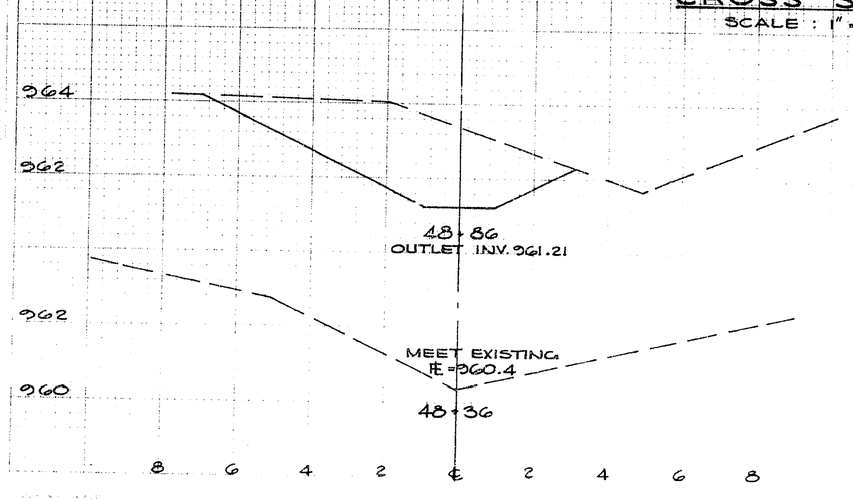
PLAN
CULVERT
SCALE : 1" = 20'-0"

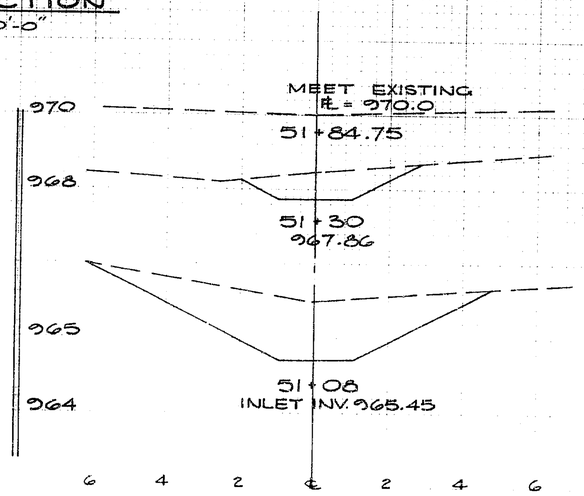
HEADWALL №3 TYPE-B ϕ = 34° (SKEW NON-STD.)						
PIPE DIA.	L_1	L_2	n_1	n_2	C.Y. CONC. R.C.P.	STEEL LBS.
42"	7'-10"	6'-3"	3'-2"	3'-3"	7.5	656
THE ABOVE INFORMATION TO BE USED WITH STD CONST. DWG. HW-№3						

FOR SPRING DRAIN DETAILS & QUANTITIES SEE GEN. NOTES SHEET № 10.

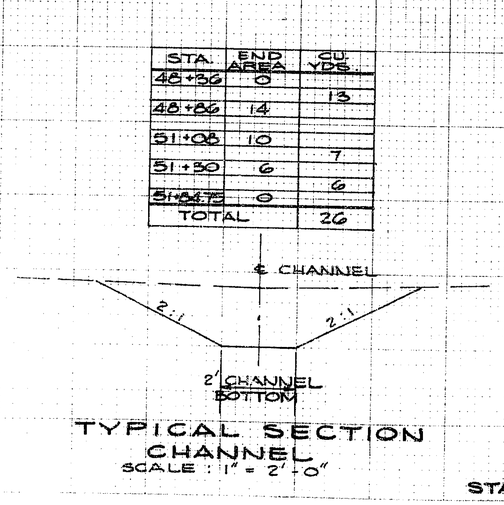


CROSS SECTION
SCALE : 1" = 20'-0"





STA.	END AREA	CU. YDS.
48+36	0	
		13
48+86	14	
		7
51+08	10	
		6
51+30	6	
		6
51+84.75	0	
TOTAL		26



TYPICAL SECTION
CHANNEL
SCALE : 1" = 2'-0"

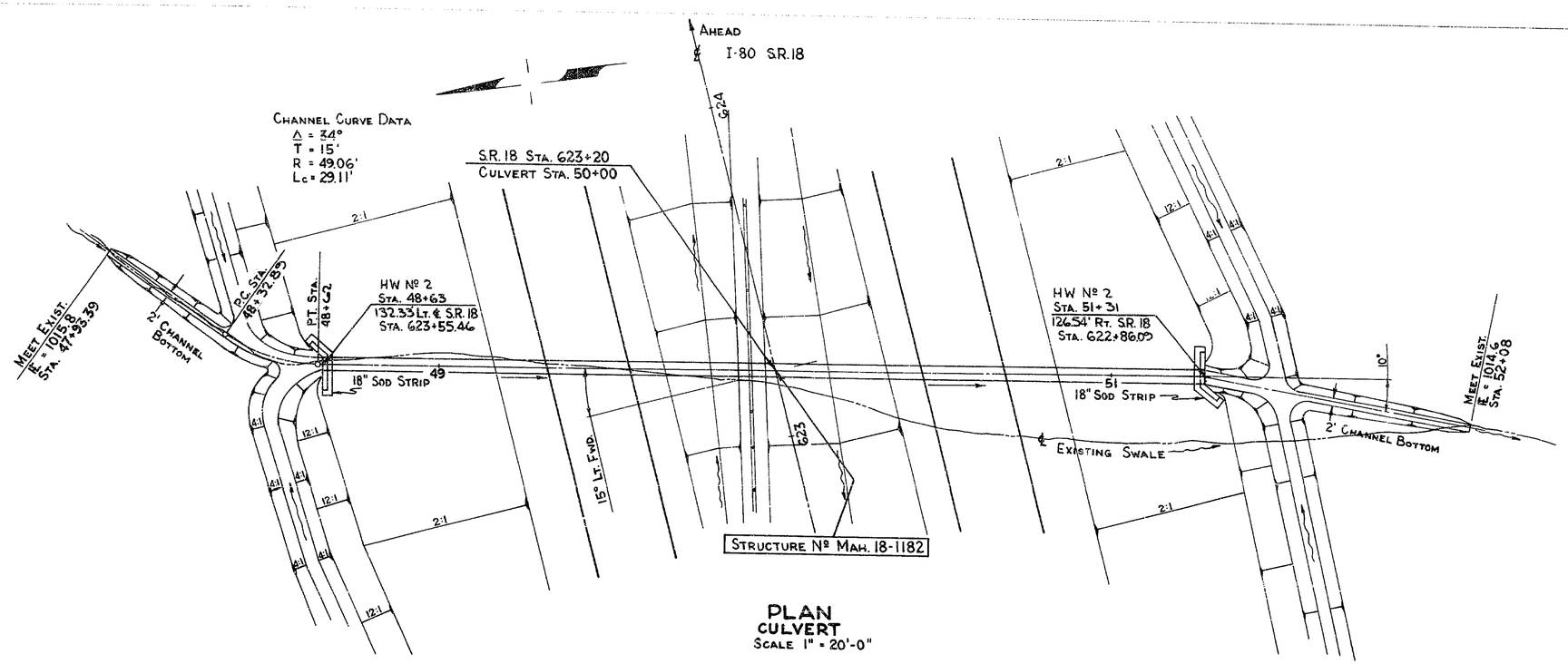
CULVERT DETAILS
STA 537+64 STRUCTURE № MAH 18-1134

9 18 17 16 15 14 13 12 11 10 9 8 7 6 MICROBOX 6 7 8 9 10 11 12 13 14 15

FED. RD.	STATE	PROJECT	
2	OH10		

176
294

MAH. 18 - 9.89



PLAN
CULVERT
SCALE 1" = 20'-0"

AREA	= 1.8 ACRES
Q 50	= 2.6 c.f.s.

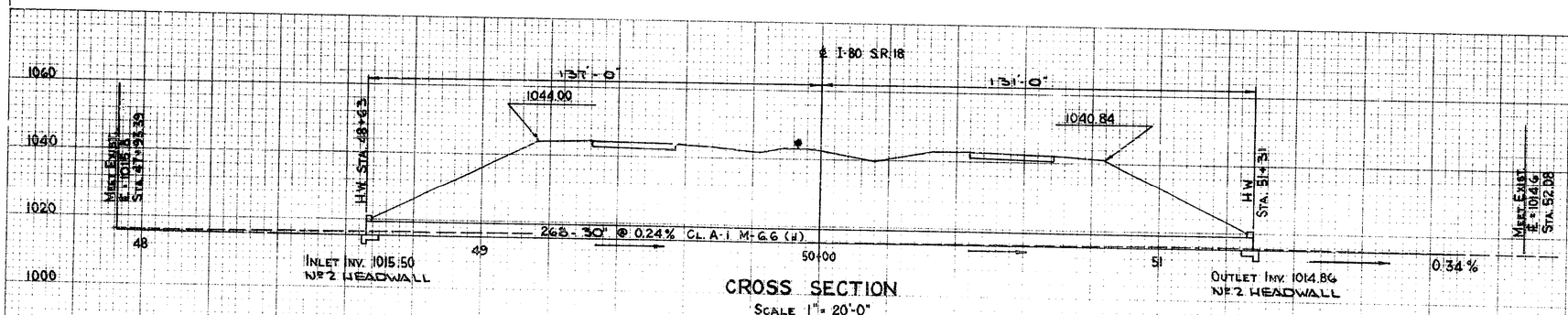
ESTIMATED QUANTITIES

I-1 30" PIPE CULVERT SEC. M-6.6 (d)
CLASS A-1 = 268 LIN. FT.

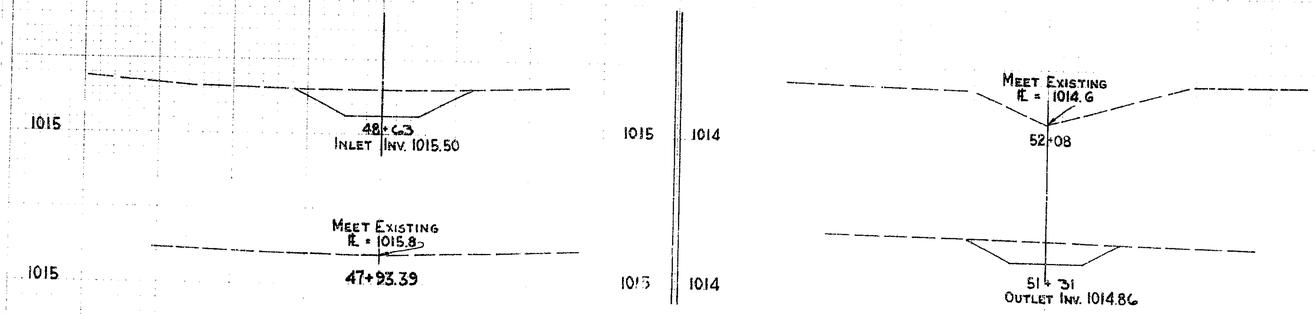
I-2 MASONRY	= 7.6	CU. YDS.
L-10 SODDING	= 8	SQ. YDS.
E-3 CHANNEL EXCAVATION	= 6	CU. YDS.

CULVERT DATA

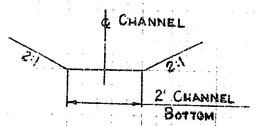
TYPE I-1 PIPE CULVERT - M-6.6 (d) CLASS A-1
SIZE - 30" X 268
SKEW - 15° LT. FWD.
WORK REQ'D. BUILD NEW 30" DIA. I-1 PIPE CULVERT AS SHOWN.



CROSS SECTION
SCALE 1" = 20'-0"



STA.	END AREA	CU. YDS.
47+93.39	0	
		3
48+63	2	
		3
51+31	2	
		3
52+08	0	
TOTAL		6



TYPICAL SECTION
CHANNEL
SCALE 1" = 20'-0"

CULVERT DETAILS
STA. 623+20 STRUCTURE Nº MAH. 18-1182

9 18 17 16 15 14 13 12 11 10 9 8 7 6 MICROBOX 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

FEDRD	STATE	PROJECT	
2	OHIO		

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294

MAH. 18 - 9.89

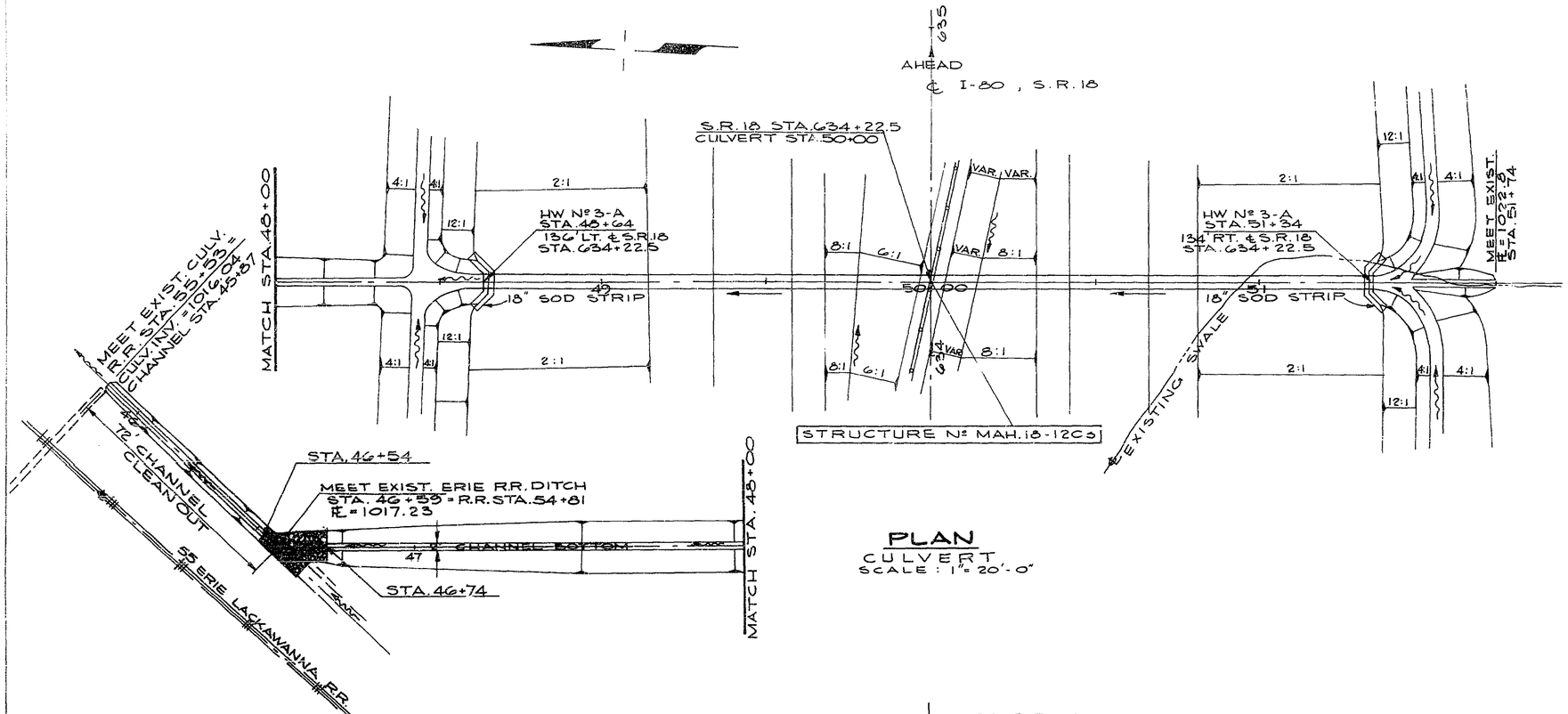
AREA	= 135 ACRES
Q-50	= 83.5 c.f.s.

ESTIMATED QUANTITIES

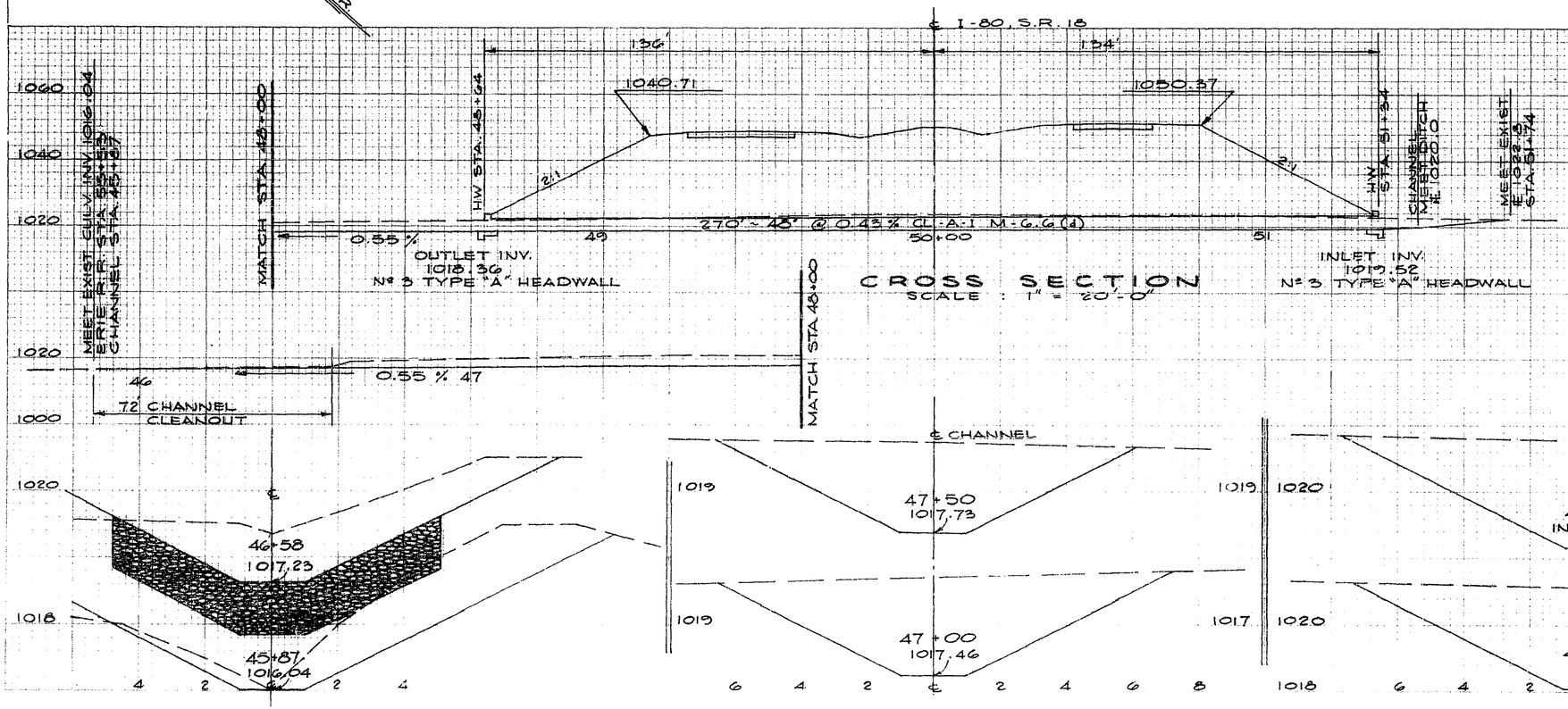
I-1 48" PIPE CULVERT - SEC. M-6.6 (d) CLASS A-1	= 270	LIN. FT.
I-2 MASONRY	= 17.0	CU. YDS.
L-10 SODDING	= 7	SQ. YDS.
E-3 CHANNEL EXCAVATION	= 209	CU. YDS.
I-10 DUMPED ROCK CHANNEL PROT.	= 10	CU. YDS.

CULVERT DATA

TYPE - I-1 PIPE CULVERT - M-6.6 (d) CLASS A-1
SIZE - 48" x 270'
SKEW - NONE
WORK REQ'D BUILD NEW 48" DIA. I-1 PIPE CULVERT AS SHOWN



PLAN
CULVERT
SCALE : 1" = 20'-0"

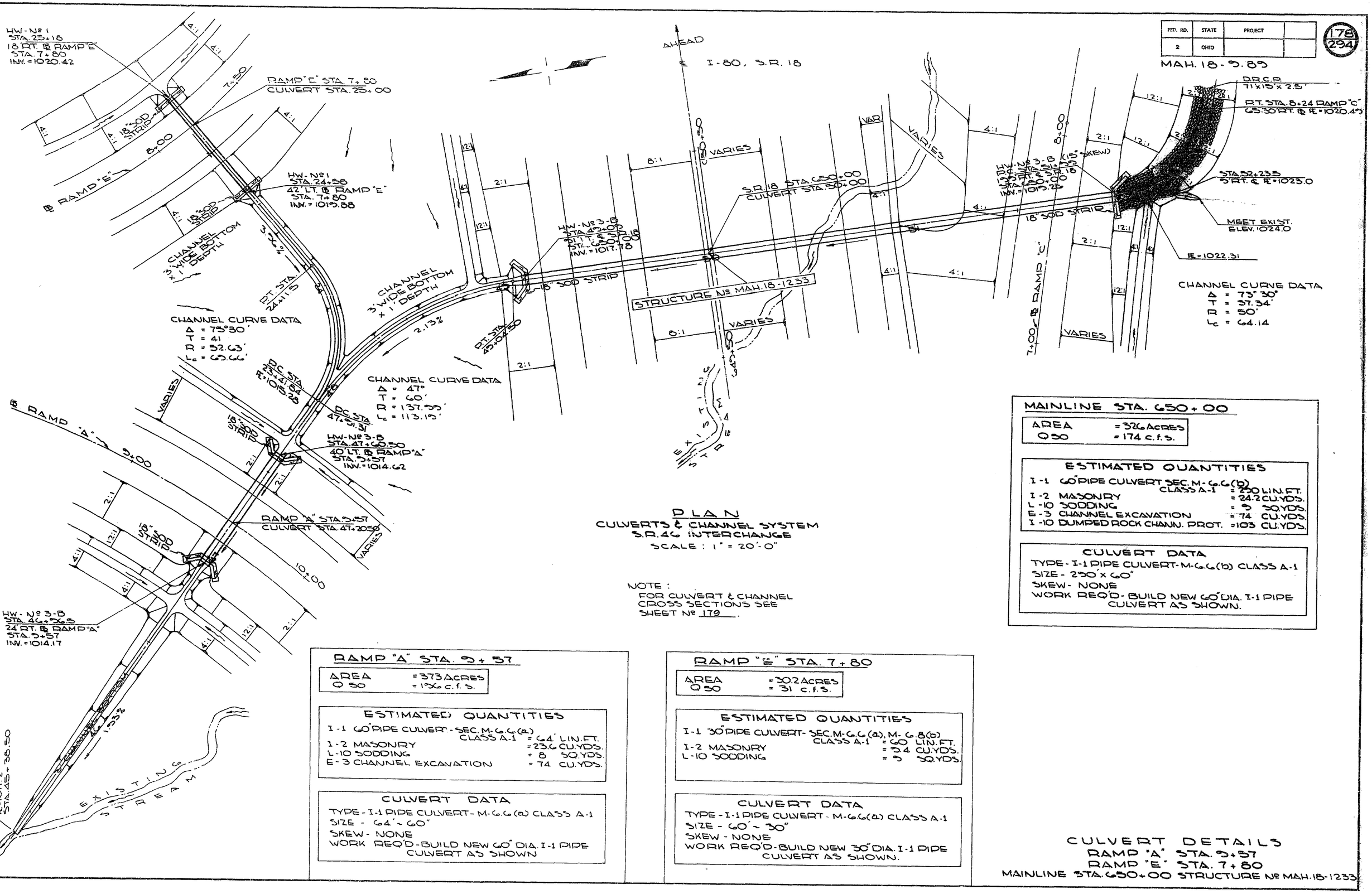


STA.	END AREA	CU. YDS.
45+67	15	
		40
46+58	15	
		30
47+00	22	
		36
47+50	13	
		41
48+00	25	
		60
48+64	26	
TOTAL		209

FED. RD.	STATE	PROJECT	
2	OHIO		

178
294

MAH. 18 - 9.89



PLAN
CULVERTS & CHANNEL SYSTEM
S.R. 46 INTERCHANGE
SCALE : 1" = 20'-0"

NOTE :
FOR CULVERT & CHANNEL CROSS SECTIONS SEE SHEET Nº 179 .

MAINLINE STA. 650+00

AREA	= 326 ACRES
Q 50	= 174 c.f.s.

ESTIMATED QUANTITIES

I-1	60" PIPE CULVERT SEC. M-6.6(b) CLASS A-1	= 250 LIN. FT.
I-2	MASONRY	= 24.2 CU. YDS.
L-10	SODDING	= 9 SQ. YDS.
E-3	CHANNEL EXCAVATION	= 74 CU. YDS.
I-10	DUMPED ROCK CHANN. PROT.	= 103 CU. YDS.

CULVERT DATA

TYPE - I-1 PIPE CULVERT - M-6.6(b) CLASS A-1
SIZE - 250' x 60"
SKEW - NONE
WORK REQ'D - BUILD NEW 60" DIA. I-1 PIPE CULVERT AS SHOWN.

RAMP "A" STA. 5+57

AREA	= 37.3 ACRES
Q 50	= 19.6 c.f.s.

ESTIMATED QUANTITIES

I-1	60" PIPE CULVERT - SEC. M-6.6(a) CLASS A-1	= 64' LIN. FT.
I-2	MASONRY	= 23.6 CU. YDS.
L-10	SODDING	= 8 SQ. YDS.
E-3	CHANNEL EXCAVATION	= 74 CU. YDS.

CULVERT DATA

TYPE - I-1 PIPE CULVERT - M-6.6(a) CLASS A-1
SIZE - 64' - 60"
SKEW - NONE
WORK REQ'D - BUILD NEW 60" DIA. I-1 PIPE CULVERT AS SHOWN

RAMP "E" STA. 7+80

AREA	= 30.2 ACRES
Q 50	= 31 c.f.s.

ESTIMATED QUANTITIES

I-1	30" PIPE CULVERT - SEC. M-6.6(a), M-6.8(b) CLASS A-1	= 60 LIN. FT.
I-2	MASONRY	= 2.4 CU. YDS.
L-10	SODDING	= 9 SQ. YDS.

CULVERT DATA

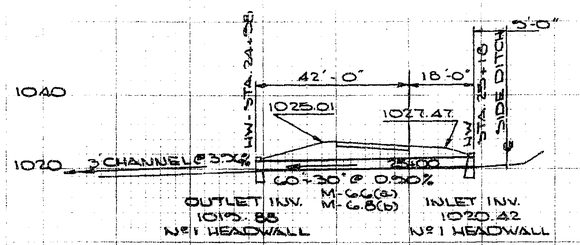
TYPE - I-1 PIPE CULVERT - M-6.6(a) CLASS A-1
SIZE - 60' - 30"
SKEW - NONE
WORK REQ'D - BUILD NEW 30" DIA. I-1 PIPE CULVERT AS SHOWN.

CULVERT DETAILS
RAMP "A" STA. 5+57
RAMP "E" STA. 7+80
MAINLINE STA. 650+00 STRUCTURE Nº MAH. 18-1233

FED. RD.	STATE	PROJECT	
2	OHIO		

(179) 294

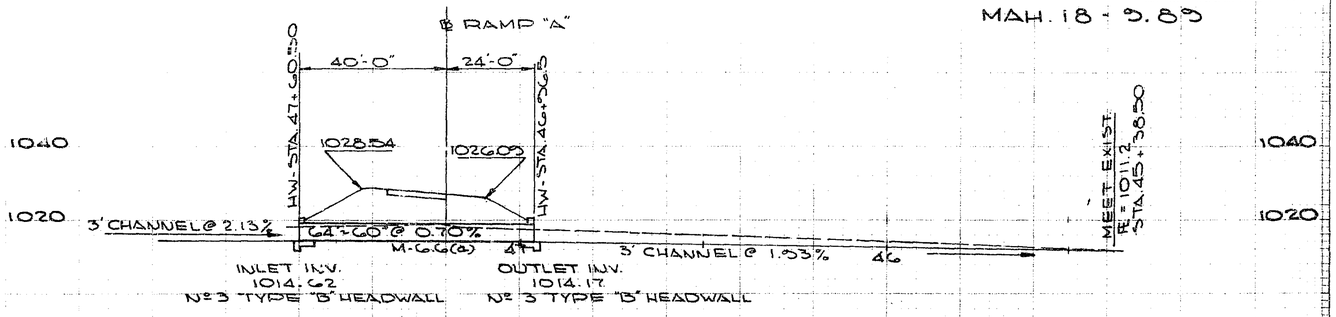
MAH. 18 - 9.89



OUTLET INV. 1019.88 Nº 1 HEADWALL

INLET INV. 1020.42 Nº 1 HEADWALL

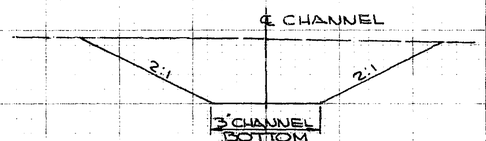
CROSS SECTION
RAMP "E" STA. 7+80
SCALE : 1" = 20'-0"



INLET INV. 1014.62 Nº 3 TYPE "B" HEADWALL

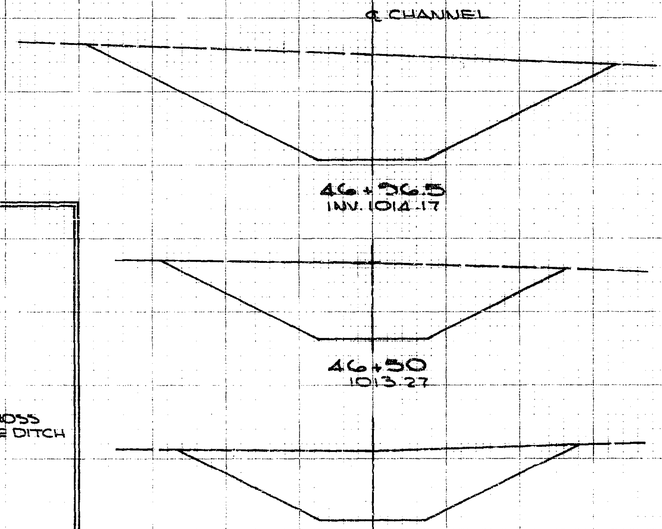
OUTLET INV. 1014.17 Nº 3 TYPE "B" HEADWALL

CROSS SECTION
RAMP "A" STA. 9+57
SCALE : 1" = 20'-0"

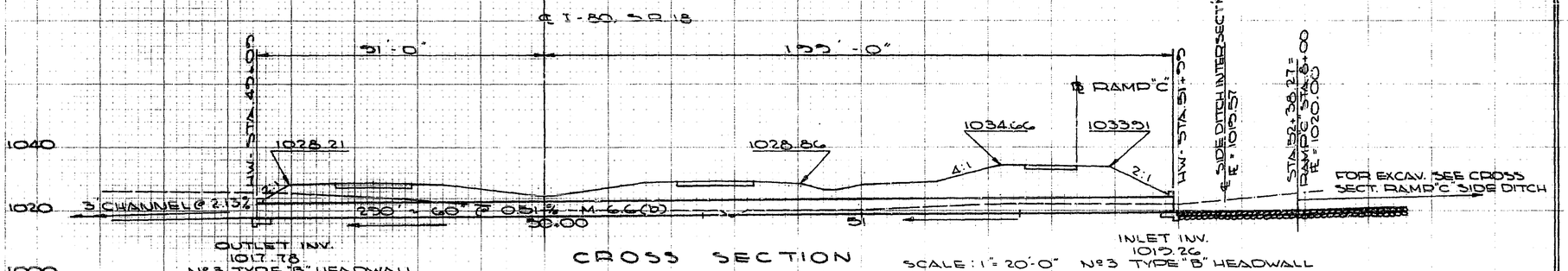


STA.	END AREA	CU. YDS.
45+38.50	0	15
46+00	13	25
46+50	14	34
46+96.5	25	
TOTAL		74

TYPICAL SECTION
CHANNEL



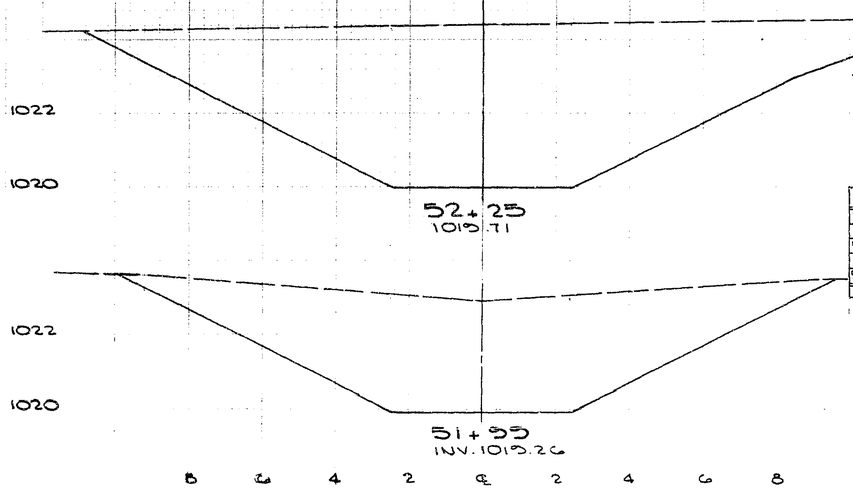
CROSS SECTIONS
CHANNEL RAMP "A" STA. 9+57
SCALE : 1" = 2'-0"



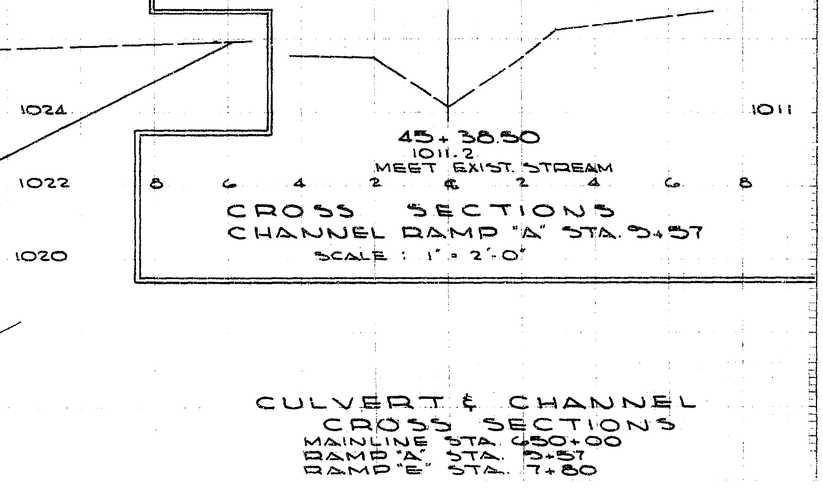
OUTLET INV. 1017.78 Nº 3 TYPE "B" HEADWALL

INLET INV. 1019.26 Nº 3 TYPE "B" HEADWALL

CROSS SECTION
MAINLINE STA. 650+00
SCALE : 1" = 20'-0"



STA.	END AREA	CU. YDS.
51+99	39	
		30
52+25	65	
		37
52+38.3	87	
TOTAL		67



SCALE : 1" = 2'-0"

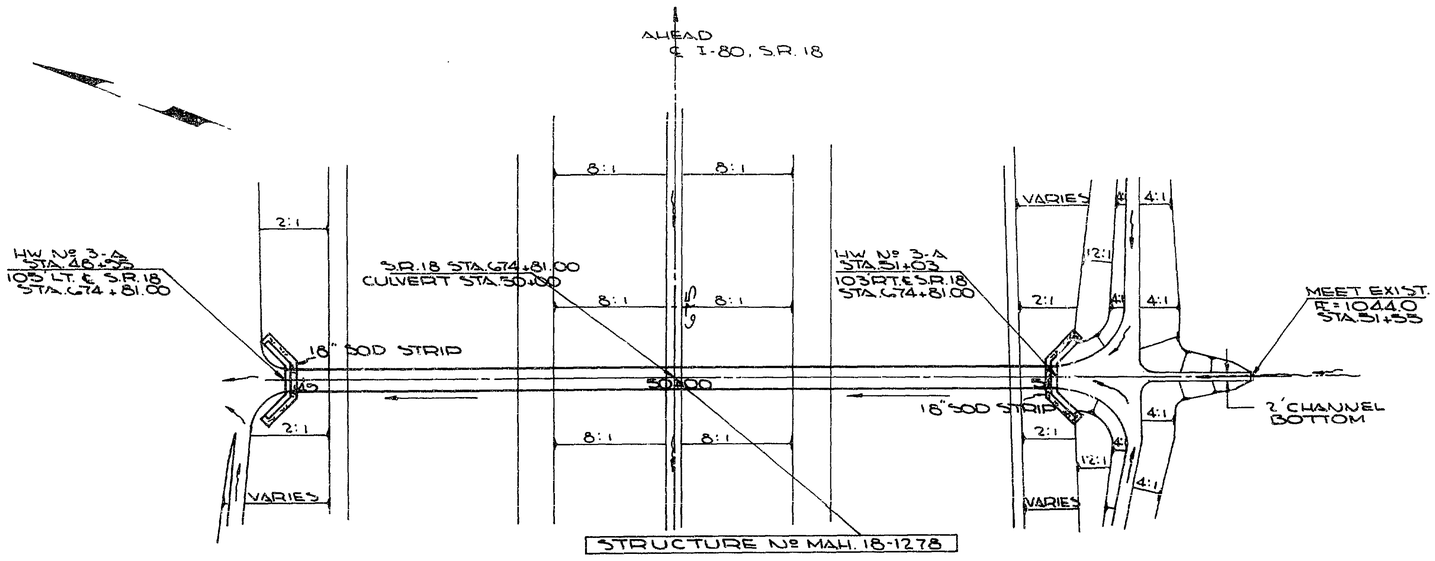
TYPICAL SECTION
CHANNEL

CULVERT & CHANNEL
CROSS SECTIONS
MAINLINE STA. 650+00
RAMP "A" STA. 9+57
RAMP "E" STA. 7+80

FEDRD	STATE	PROJECT	
2	OHIO		

180
294

MAH. 18 - 9.89



PLAN
CULVERT
SCALE: 1" = 20'-0"

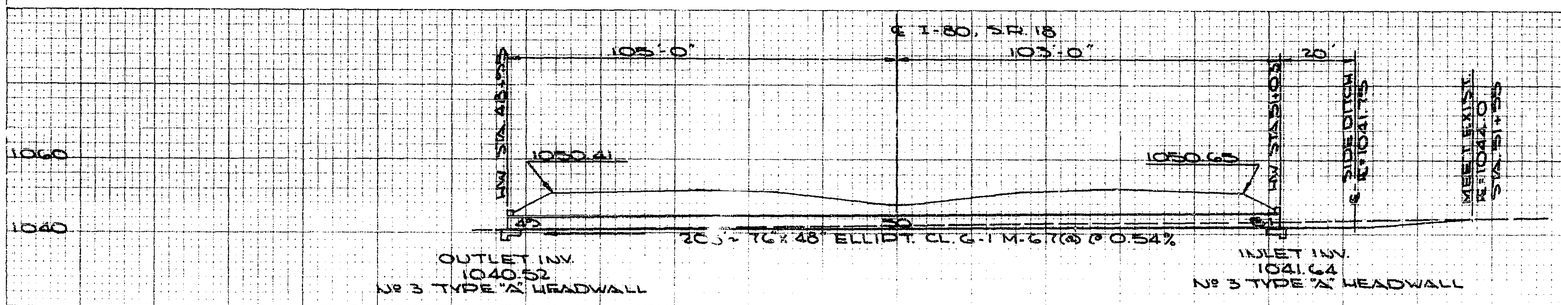
AREA	= 7.9 ACRES
Q 50	= 81 c.f.s.

ESTIMATED QUANTITIES

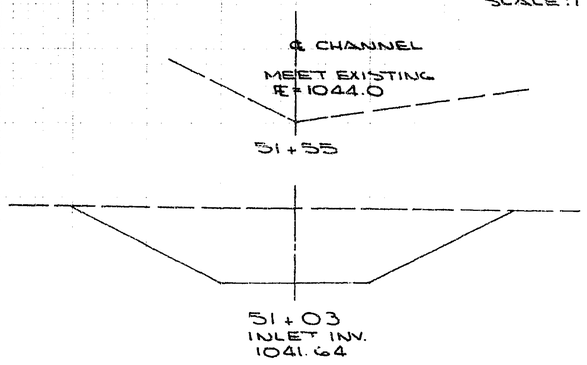
I-1 76"x48" ELLIPTICAL PIPE CULV. M-6.7(8) CLASS G-1	= 208 LIN.FT.
I-2 MASONRY	= 24.4 CU.YDS.
L-10 SODDING	= 10 SQ.YDS.
E-3 CHANNEL EXCAVATION	= 16 CU.YDS.

CULVERT DATA

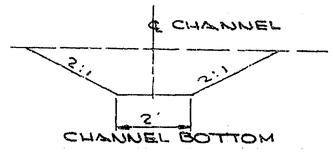
TYPE - 76"x48" ELLIPTICAL PIPE CULVERT
SEC. M-6.7(8) CLASS G-1
SIZE - 76"x48"x 208'
SKEW - NONE
WORK REQ'D - BUILD NEW 76"x48" ELLIPT. PIPE CULVERT AS SHOWN



CROSS SECTION
SCALE: 1" = 20'-0"



STA.	END AREA	CU.YDS.
51+03	0	
		16
51+55	16.4	
TOTAL		16



TYPICAL SECTION
CHANNEL
SCALE: 1" = 2'-0"

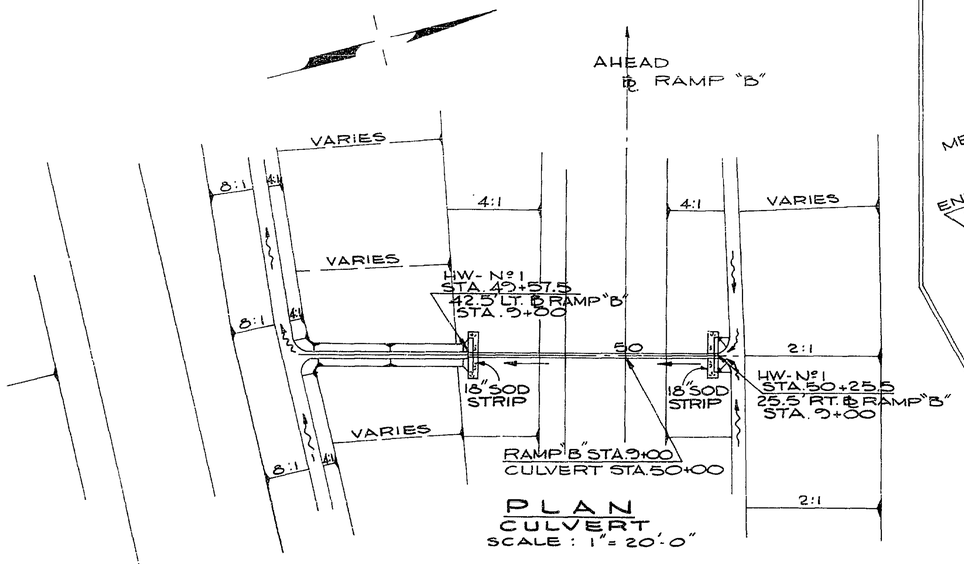
CULVERT DETAILS
STA. 674+81.00 STRUCTURE No MAH. 18-1278

FINAL SURVEY
NOTE BY
AREAS
INCL.

FED.RD.	STATE	PROJECT	
2	OHIO		

181
294

MAH. 18 - 9.89



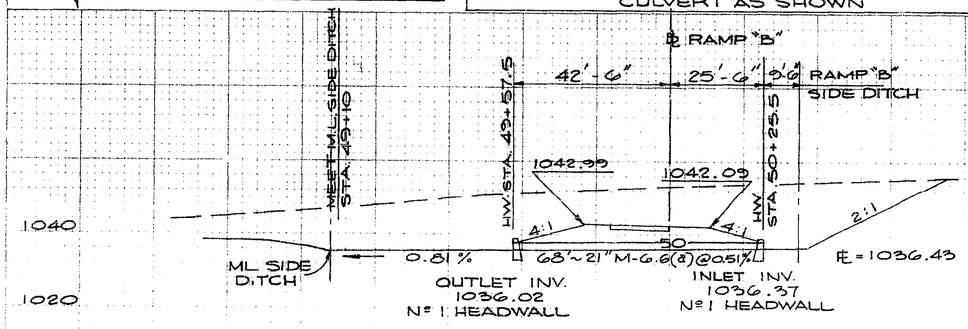
PLAN
CULVERT
SCALE : 1" = 20'-0"

ESTIMATED QUANTITIES	
I-1 21" PIPE CULVERT SEC. M-6.6(a), M-6.8(b) CLASS A-1	= 68 LIN. FT.
I-2 MASONRY	= 5.6 CU. YDS.
L-10 SODDING	= 5 SQ. YDS.

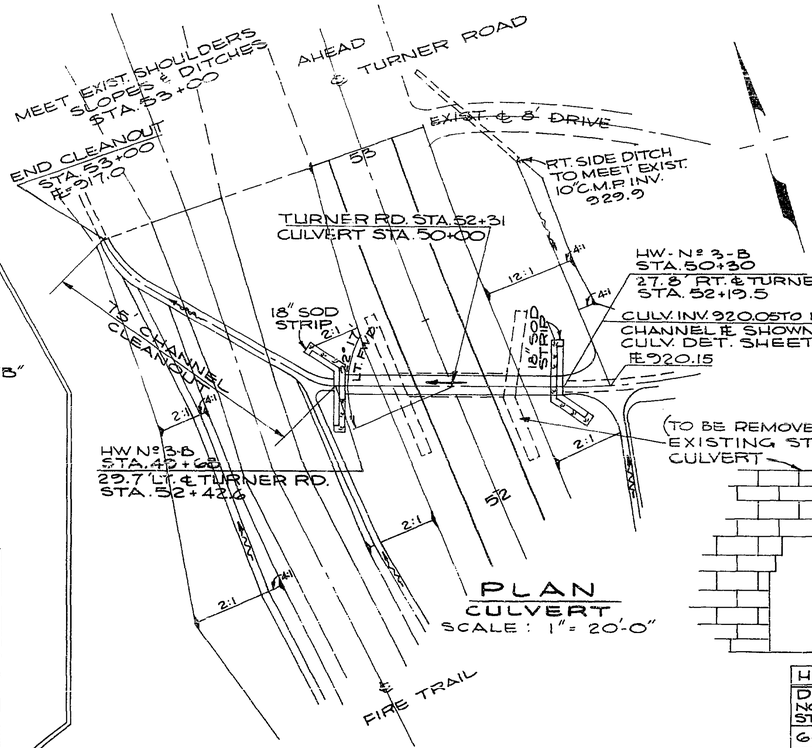
CULVERT DATA	
TYPE I-1 PIPE CULVERT M-6.6(a) CLASS A-1 M-6.8(b)	
SIZE - 21" x 68'	
SKEW - NONE	
WORK REQ'D - BUILD NEW 21" DIA. I-1 PIPE CULVERT AS SHOWN	

℄ MAINLINE
I-80, S.R. 18

AREA	= 18.2 Acres
Q-50	= 13.5 c.f.s



CROSS SECTION
SCALE : 1" = 20'-0"



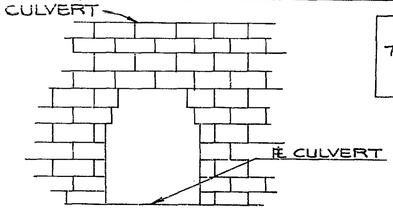
PLAN
CULVERT
SCALE : 1" = 20'-0"

AREA	= 4.95 Acres
Q-50	= 24.0 c.f.s.

ESTIMATED QUANTITIES	
I-1 66" PIPE CULVERT - SEC. M-6.6(a) CLASS A-1	= 62' LIN. FT.
I-2 MASONRY	= 30.4 CU. YDS.
L-10 SODDING	= 9 SQ. YDS.

CULVERT DATA
TYPE - I-1 PIPE CULVERT - SEC. M-6.6(a)
SIZE - 66" x 62'
SKEW - 22° 17' LT. FWD.
WORK REQ'D - BUILD NEW 66" DIA. I-1 PIPE CULVERT.

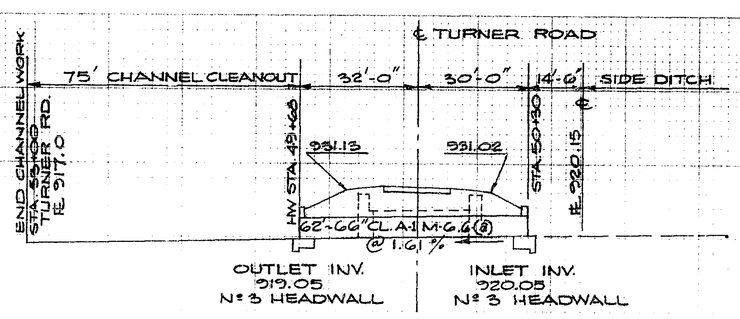
EXISTING CULVERT DATA	
7.5' x 6.5' x 34' STONE BOX CULVERT	
OUTLET INV.	= 919.28
INLET INV.	= 919.88



HEADWALL N° 3 TYPE-B ϕ = 22° 17' (SKEW NON-STD.)

DIA. NON-STD.	H	a	b	c	L_1	L_2	h_1	h_2	C.Y. CONC. C.M.P.	STEEL LBS.
66"	7'-1"	4'-3"	1'-7"	3'-6"	12'-10"	9'-0"	4'-8"	4'-4"	15.2	1,483

THE ABOVE INFORMATION TO BE USED WITH STD CONST. DWG. HWN°3B



CROSS SECTION
SCALE : 1" = 20'-0"

CULVERT DETAILS
RAMP "B" STA. 9+00
TURNER ROAD STA. 52+31

FED. RD.	STATE	PROJECT	
2	OHIO		

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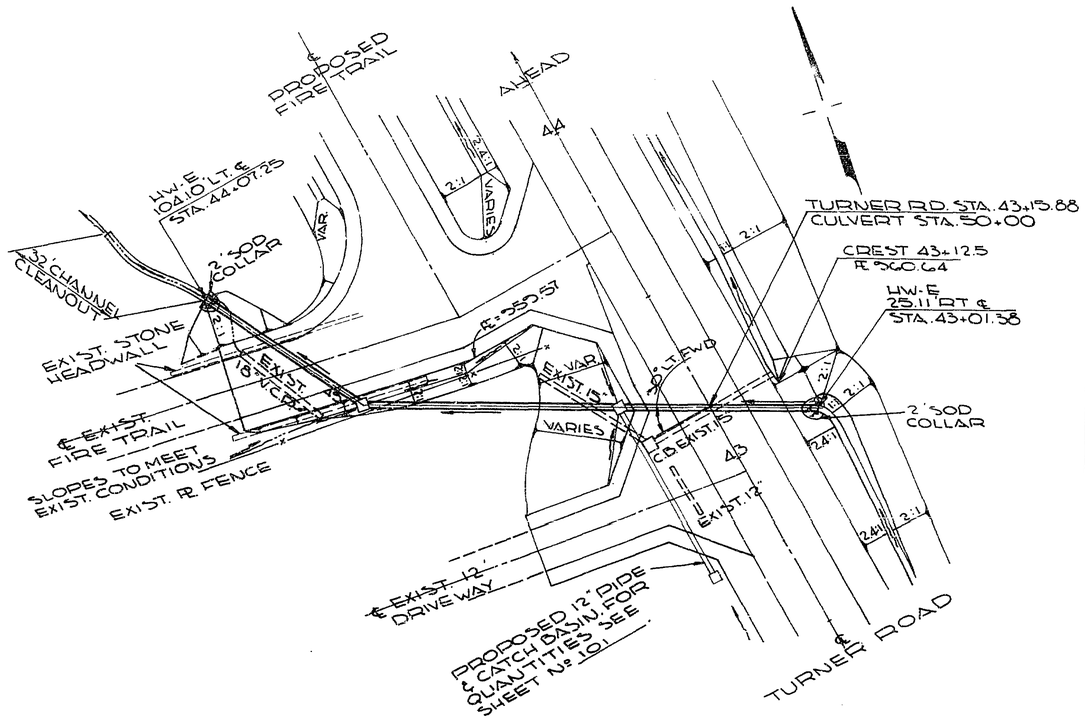
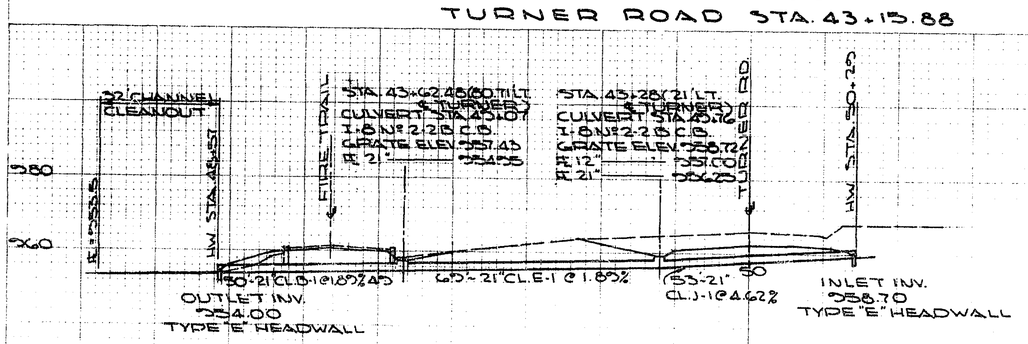
MAH. 18 - 9.89



PLAN
SCALE: 1" = 20'-0"

TURNER ROAD STA. 43+15.88



CROSS SECTION
SCALE: 1" = 20'-0"

AREA	= 12.9 ACRES
Q 10	= 11.1 c.f.s.

ESTIMATED QUANTITIES

I - 1 21" CL. J-1 PIPE	= 53 LIN. FT.
I - 1 21" CL. E-1 PIPE	= 65 LIN. FT.
I - 1 21" CL. B-1 PIPE	= 50 LIN. FT.
I - 8 TYPE 2-2B CATCH BASIN	= 2 EACH
I - 2 MASONRY	= 0.7 CU. YDS.
L - 10 SODDING	= 4 SQ. YDS.

EXISTING CULVERT DATA

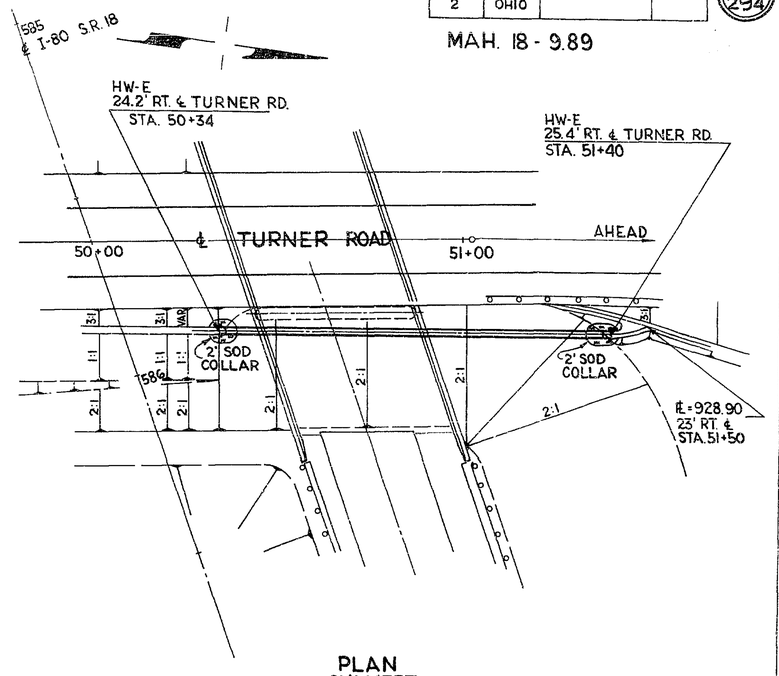
15"x 36" R.C.P. - INLET INV.	= 962.45
OUTLET INV.	= 961.11
15"x 34" V.C.P. - INLET INV.	= 960.93
OUTLET INV.	= 960.21
18"x 28" V.C.P. - INLET INV.	= 957.10
OUTLET INV.	= 955.41
4'x 4' JUNCTION BOX TOP ELEV.	= 963.41
OUTLET INV.	= 960.33

AREA	= 8.4 ACRES
Q 10	= 11.5 c.f.s.

ESTIMATED QUANTITIES

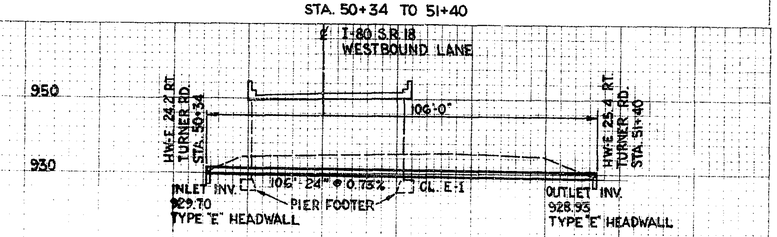
I-1 24" PIPE CULVERT CLASS E-1	= 106 LIN. FT.
I-2 MASONRY	= 0.8 CU. YDS.
L-10 SODDING	= 7 SQ. YDS.

CULVERT DATA
TYPE - I-1 PIPE CULVERT CLASS E-1
SIZE - 24" x 106'
SKEW - PARALLEL TO ℄ TURNER RD.
WORK REQ'D. - BUILD NEW 24" DIA. I-1 PIPE CULVERT AS SHOWN.



PLAN
CULVERT
SCALE: 1" = 20'-0"

TURNER ROAD
PARALLEL RT. OF ℄
STA. 50+34 TO 51+40



CROSS SECTION
SCALE: 1" = 20'-0"

CULVERT DETAILS
TURNER ROAD STA. 43+15.88
TURNER ROAD STA. 50+34 TO 51+40 RT

FINAL SURVEY

19 18 17 16 15 14 13 12 11 10 9 8 7 6 MICROBOX 6 7 8 9 10 11 12 13 14 15 16 17 18 19 2

FED.RD	STATE	PROJECT	
2	OHIO		

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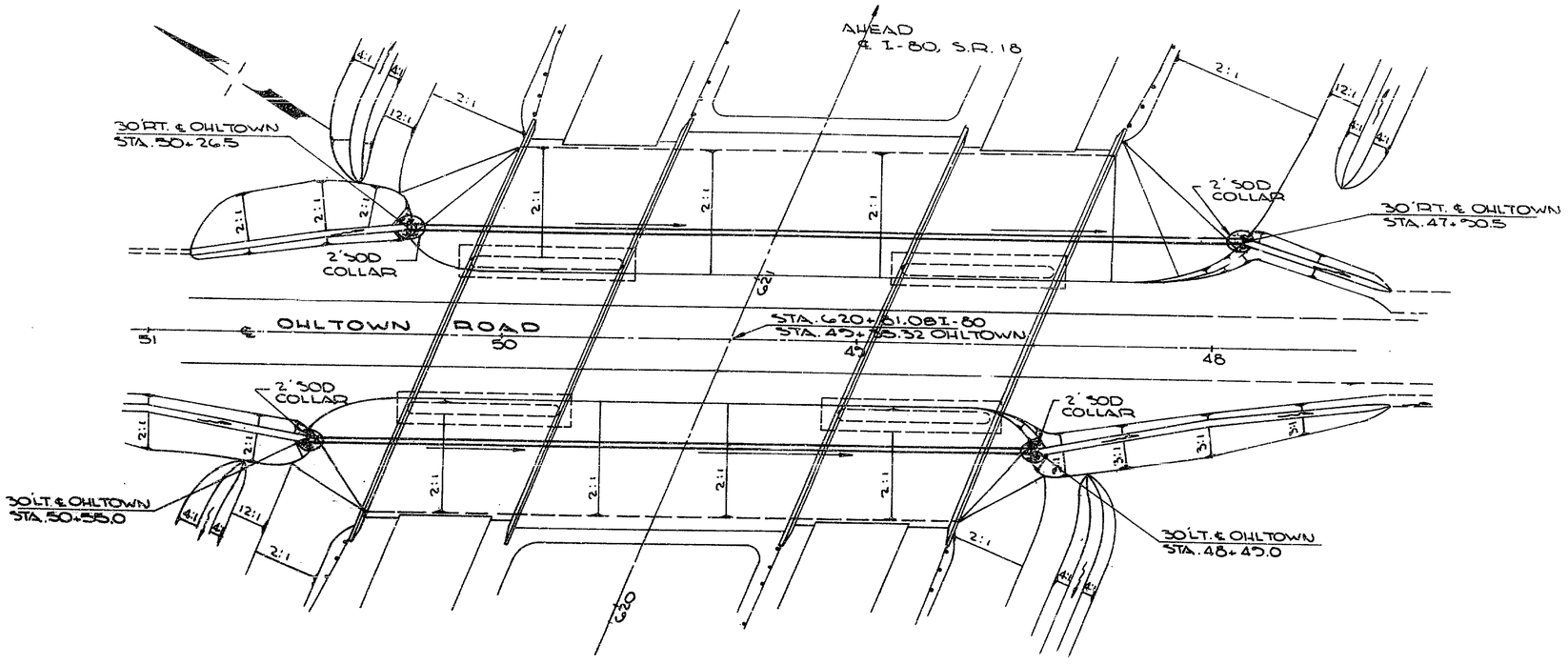
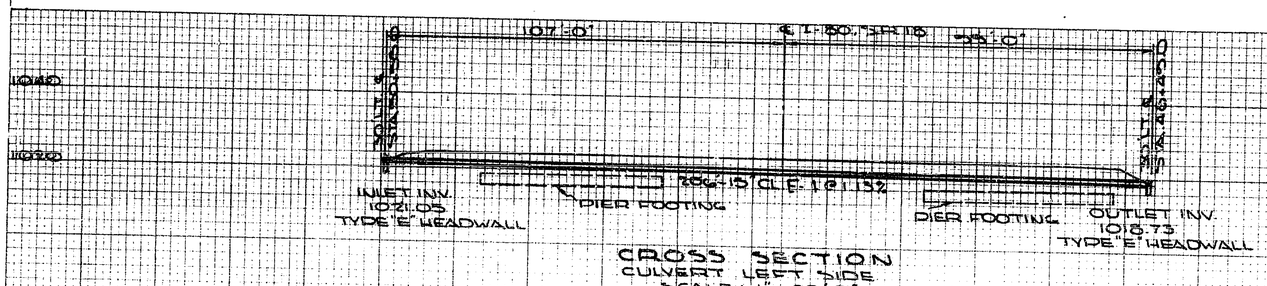
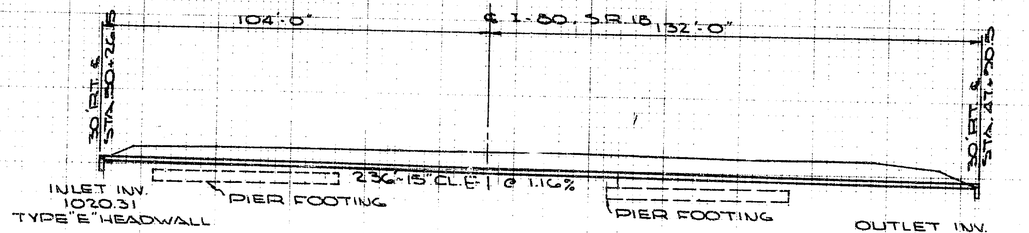


PLAN
CULVERTS PARALLEL TO ℄ OHLTOWN RD.
SCALE : 1" = 20'-0"



CROSS SECTION
CULVERT LEFT SIDE
SCALE : 1" = 20'-0"



CROSS SECTION
CULVERT RIGHT SIDE
SCALE : 1" = 20'-0"

CULVERT RIGHT SIDE

AREA	= 0.6 ACRES
Q_{10}	= 1.2 c.f.s.

ESTIMATED QUANTITIES

I-1 15" PIPE CULVERT CL. E-4	= 236 LIN. FT.
I-2 MASONRY	= 0.5 CU. YDS.
L-10 SODDING	= 6 SQ. YDS.

CULVERT DATA

TYPE - I-1 PIPE CULVERT CLASS E-1
SIZE - 15" x 236'-0"
SKEW - PAR'L TO OHLTOWN RD.
WORK REQ'D - BUILD NEW 15" DIA. I-1 PIPE CULVERT AS SHOWN

CULVERT LEFT SIDE

AREA	= 0.3 ACRES
Q_{10}	= 0.6 c.f.s.

ESTIMATED QUANTITIES

I-1 15" PIPE CULVERT CL. E-1	= 206 LIN. FT.
I-2 MASONRY	= 0.5 CU. YDS.
L-10 SODDING	= 6 CU. YDS.

CULVERT DATA

TYPE - I-1 PIPE CULVERT CLASS E-4
SIZE - 15" x 206'-0"
SKEW - PAR'L TO OHLTOWN RD.
WORK REQ'D - BUILD NEW 15" DIA. I-1 PIPE CULVERT AS SHOWN

CULVERT DETAILS
OHLTOWN ROAD
STA. 46+42.0 TO STA. 50+55.0 LT. ℄
STA. 47+30.5 TO STA. 50+26.5 RT. ℄

SURVEY SURVEYED / PLOTTED / TRACED / AREAS / AREAS CHECKED
NOTE BOOK
NO.

18 17 16 15 14 13 12 11 10 9 8 7 6

MICROPOX

FED.RD.	STATE	PROJECT	
2	OHIO		

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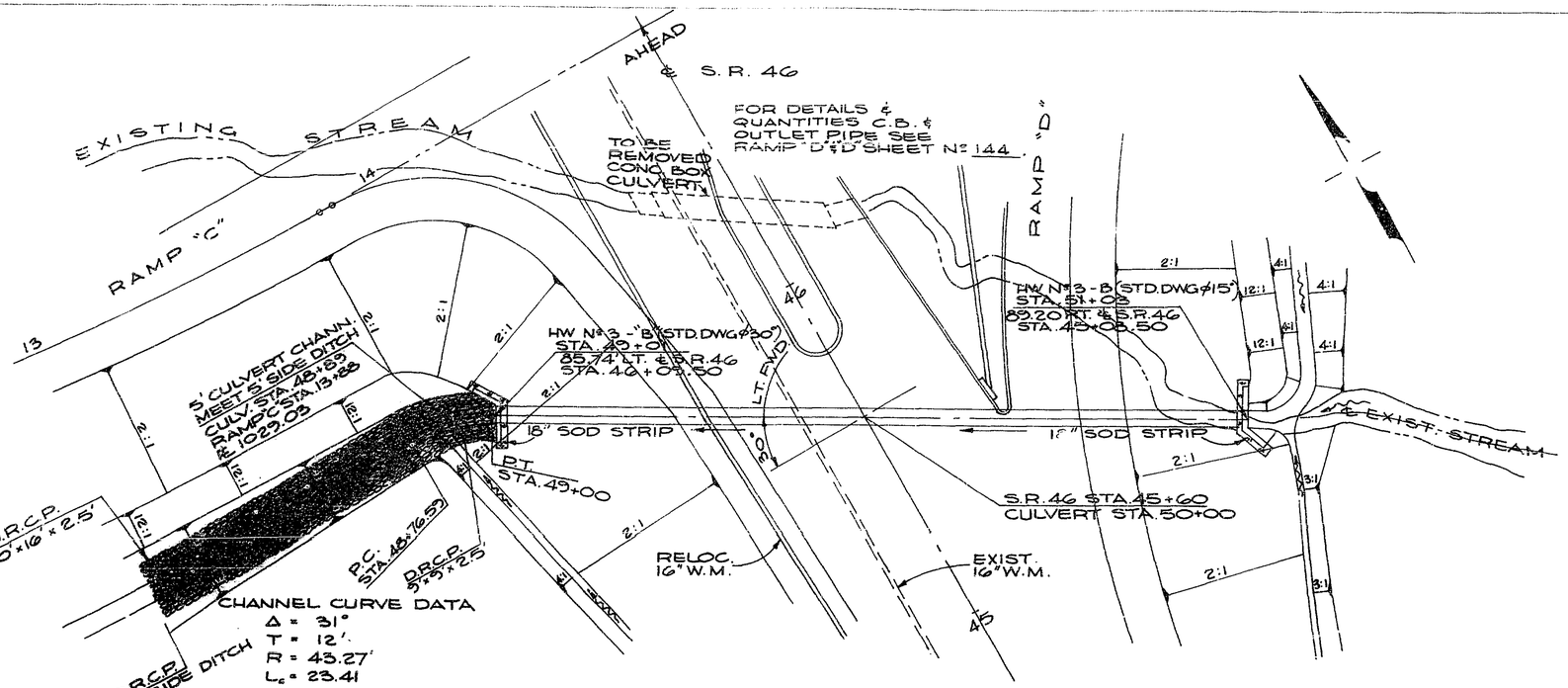


PLAN
CULVERT
SCALE : 1" = 20'-0"

AREA	= 2.49 ACRES
Q50	= 148 c.f.s.

ESTIMATED QUANTITIES

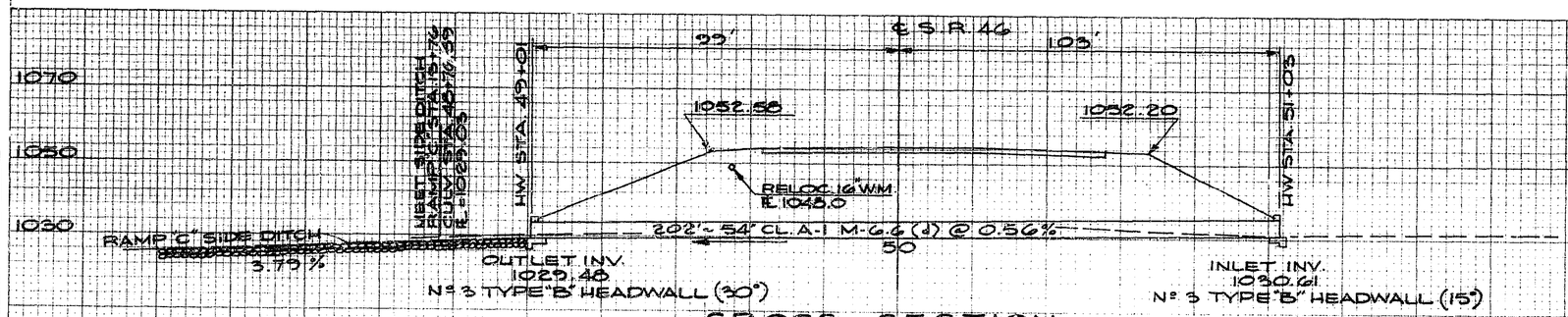
I-1 54" PIPE CULVERT SEC. M-6.6(d) CLASS A-1	= 202 LIN. FT.
I-2 MASONRY	= 21.0 CU. YDS.
L-10 SODDING	= 8 SQ. YDS.
E-3 CHANNEL EXCAVATION	= 2 CU. YDS.
I-10 DUMPED ROCK CHANNEL PROT.	= 148 CU. YDS.

CULVERT DATA

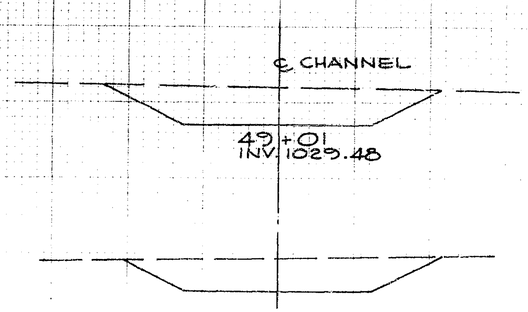
TYPE - I-1 PIPE CULVERT - M-6.6(d) CLASS A-1
SIZE - 54" × 202'
SKEW - 30° LT. FWD.
WORK REQ'D - BUILD NEW 54" DIA. I-1 PIPE CULVERT AS SHOWN
REMOVE - CONC. BOX CULVERT.

EXISTING CULVERT DATA

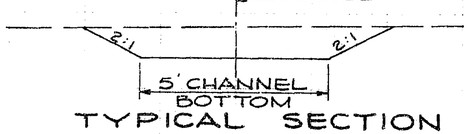
CONC. BOX CULV. 6'-0" × 6'-10" WIDE × 46' LONG. W/ 72" C.M.P. EXTENSIONS EACH END
OUTLET INV. = 1027.9
INLET INV. = 1028.7



CROSS SECTION
SCALE : 1" = 20'-0"



STA.	END AREA	CU. YDS.
48+89	4	
		2
49+01	5	
TOTAL		2



TYPICAL SECTION
CHANNEL
SCALE: 1" = 2'-0"

CULVERT DETAILS
S.R. 46 STA. 45+60

FED.RD.	STATE	PROJECT	
2	OHIO		

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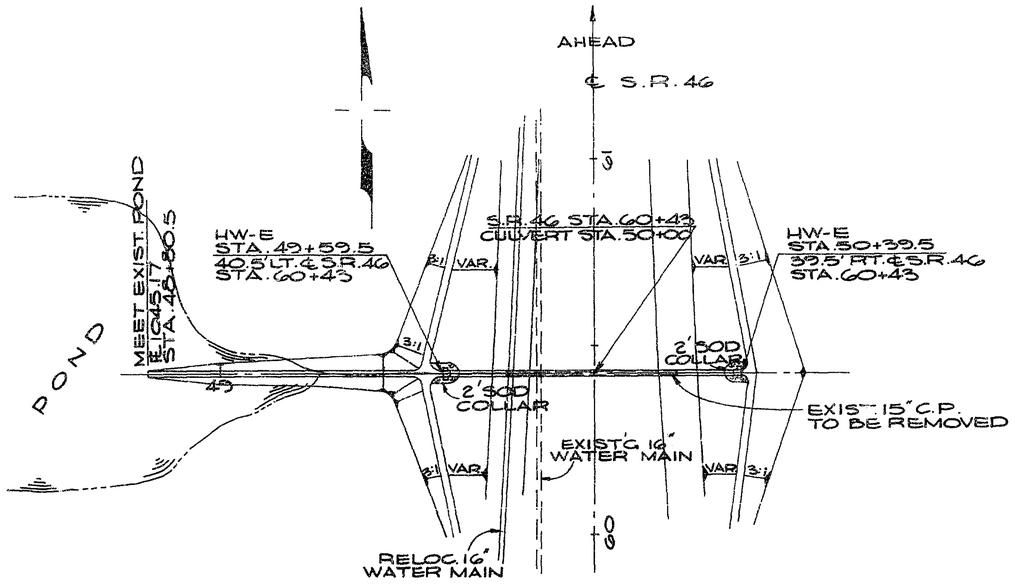


PLAN
CULVERT
SCALE : 1" = 20'-0"

AREA	= 6.3 ACRES
Q 50	= 5.4 c.f.s.

ESTIMATED QUANTITIES

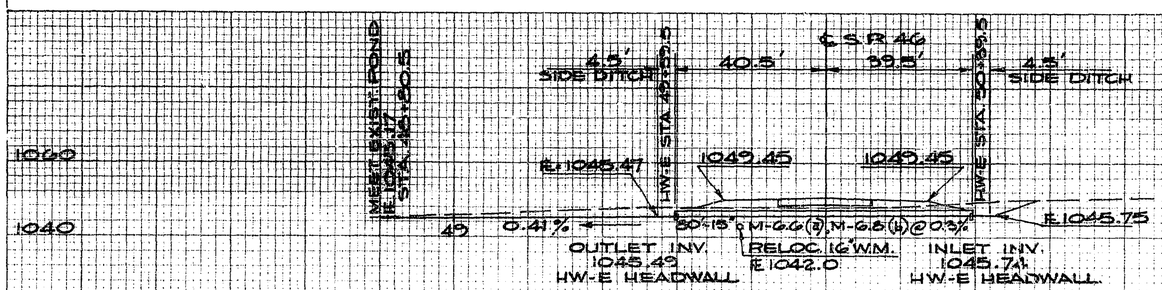
I-1 15" PIPE CULVERT- SEC. M-6.5(b) M-6.6(a) M-6.8(b) CLASS A-1	= 80 LIN. FT.
I-2 MASONRY	= .5 CU. YDS
L-10 SODDING	= 5 SQ. YDS
E-3 CHANNEL EXCAVATION	= 28 CU. YDS

CULVERT DATA

TYPE-I-1 PIPE CULVERT- M-6.5(b) M-6.6(a) CLASS A-1 M-6.8(b)
SIZE-15" x 80'
SKEW-NONE
WORK REQ'D-BUILD NEW 15" DIA. I-1 PIPE CULVERT AS SHOWN
REMOVE-EXIST. 15" x 80' C.P. CULVERT.

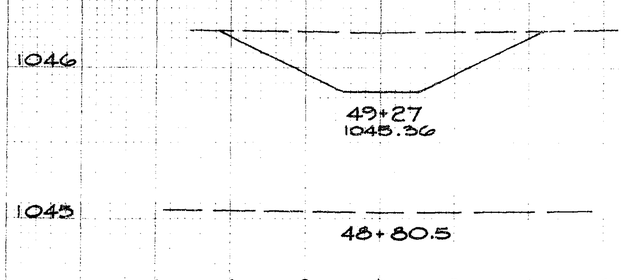
EXISTING CULVERT DATA

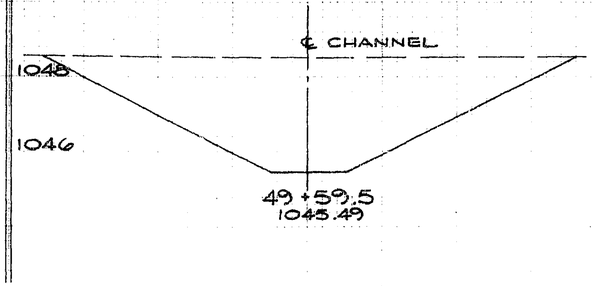
15" x 46' CONC. PIPE CULVERT
OUTLET INV. = 1048.31
INLET INV. = 1048.49

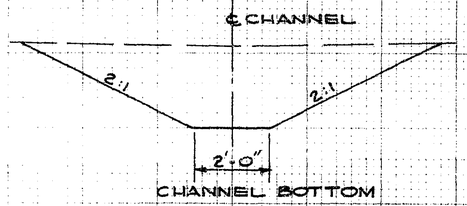


CROSS SECTION
SCALE : 1" = 20'-0"

STA.	END AREA	CU. YDS
48+80.5	0	
		8
49+27	8	
		20
49+59.5	25	
TOTAL		28







TYPICAL SECTION
SCALE : 1" = 2'-0"

CULVERT DETAILS
S.R. 46 STA. 60+43

SURVEY SURVEYED / DRAWN / TRACED / NOTE BOOK / TEMPLATE / AREAS / AREAS CHECKED / NO.

FED. RD.	STATE	PROJECT	
2	OHIO		

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MAH. 18-9.85

TURNER RD.

533+53

534+03

I-80

MATCH LINE STA. 620+00

(1) 534+00 E.B.

A — YOUNGSTOWN JCT 2 MILES — 15'x 9'

B — NILES EXIT 1 MILE — 10'x 9'

(5) 653+25 W.B.

SOUTH — 11'x 7'

(6) 661+80 W.B.

SOUTH — 12'x 7'

(8)

A — SOUTH EXIT 1/4 MI — 13'x 7.5'

B — NORTH NILES EXIT ONLY — 13'x 9.5'

668+50 W.B.

668+47

668+37

END PROJECT STA. 675+74.85

RAMP "A"

RAMP "E"

653+22
653+47

RAMP "B"

661+77

662+27

RAMP "D"

664+55

665+03

RAMP "C"

645+82.5

MATCH LINE STA. 620+00

OHLTOWN RD.

ERIE LACKAWANNA R.R.

(3) 638+75 E.B.

NILES — 8'x 9'

(4) 645+75 E.B.

A — EAST NORTH 80 62 11 SHARON PA. — 14'x 11.5'

B — EAST 80 YOUNGSTOWN — 15'x 9.5'

C — 46 NILES — 12'x 7'

(7) 665+00 E.B.

SOUTH 80 62 11 CANFIELD RIGHT LANE — 16'x 8.5'

S.R. 7

NOTE:
SIGNS TO BE FURNISHED BY OTHERS.

SCALE: 1" = 200'

SIGN LOCATION PLAN

GENERAL NOTES

FED. RD.	STATE	PROJECT	
2	OHIO		

187
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MAH-18-9.89

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.

TRAFFIC SIGN ERECTION

THE CONTRACTOR SHALL ERECT SIGN PANELS FURNISHED BY OTHERS AS NOTED ON THE SCHEMATIC SIGNING LAYOUT SHEET NO. 186. 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.

FIXTURE SUPPORT ARM "G"

COST OF FURNISHING AND INSTALLING THE FIXTURE SUPPORT ARM "G", WITH MOUNTING HOLES AND HARDWARE (SEE SHEET 194) SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS.

816 SWITCH ENCLOSURE MOUNTING BRACKET

MODIFYING 816 SWITCH ENCLOSURE MOUNTING BRACKETS INCLUDING MOUNTING BOLTS AND DRILLED HOLES SHALL BE FURNISHED AND INSTALLED UNDER PAYMENT FOR ITEM ~~SS~~816 OVERHEAD SIGN SUPPORT STRUCTURES AT THE CONTRACT PRICE PER SUPPORT STRUCTURE TYPE.

816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS

THE QUANTITY FOR CONCRETE TO BE PAID FOR SHALL BE PER CUBIC YARD BASED ON THE PLAN DIMENSIONS RATHER THAN THE PLAN QUANTITY.

606 GUARDRAIL, TYPE 4 AS PER PLAN

GUARDRAIL SHOWN AT SIGN SUPPORTS SHALL BE TYPE 4 , WITH POST SPACING OF 6'-3" DETAILS ARE SHOWN ON SHEET NO. 186 & 189.

816 OVERHEAD SIGN SUPPORT MATERIAL

ALL COMPONENTS OF THE OVERHEAD SIGN SUPPORTS, 816 SHALL BE STEEL, EXCEPT THE TRUSS SPAN AND ACCESSORIES TO THE SS816 NO. 7 SERIES WHICH SHALL BE ALUMINUM.
FOR SPECIFIC DETAILS AND MATERIALS SEE SHEET NO. 189.

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.

GROUND MOUNTED SIGN SUPPORTS

THE STRUCTURAL STEEL BEAM SUPPORTS SHALL BE GALVANIZED (AFTER PUNCHING) IN ACCORDANCE WITH ASTM A-123.

QUANTITIES FOR ITEM 816 STRUCTURAL BEAM SUPPORTS APPEARING IN THE QUANTITY TABLES ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT SUPPORT LENGTHS PRIOR TO FABRICATION AND GALVANIZING OF SUPPORTS. PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE BID, WHICH PRICE AND PAYMENT SHALL INCLUDE EMBEDMENT OF THE SUPPORTS.

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 AND WIRE CONNECTION

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING GROUND ROD AND WIRE WIYH CONDUIT AS DETAILED AND SPECIFIED ON SHEET 196.

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 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 189 & 195.

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 189 & 195.

BASIS OF PAYMENT FOR THIS ITEM SHALL BE AT THE CONTRACT UNIT PRICE PER EACH FURNISHED TO THE JOB.

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 189 & 194.

BASIS OF PAYMENT FOR THIS ITEM SHALL BE AT THE CONTRACT UNIT PRICE PER EACH FURNISHED TO THE JOB.

SIGN WIRING COMPLETE BY TYPE, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING AN ACCEPTED ENERGIZED ELECTRICAL SYSTEM FROM THE PULL BOX THROUGH THE DISCONNECT SWITCH AND TRANSFORMER TO THE BALLASTS AND LIGHT FIXTURES. THIS SHALL INCLUDE ALL WIRE RIGID AND FLEXIBLE CONDUIT, CABLE, CONDULETS, JUNCTION BOXES, AND OTHER NECESSARY HARDWARE TO COMPLETE THE ENTIRE ITEM OF WORK. FOR DETAILS SEE SHEETS 194 & 196 (EI-2 AND ES-3A)

SIGN WIRING SHALL BE TYPE 1 FOR WIRING ONE (1) SIGN, TYPE 2 FOR TWO (2) SIGNS, TYPE 3 FOR THREE (3) SIGNS, ETC. EXCEPTION TO THIS WILL BE THAT SIGNS OVER 19'-0" IN LENGTH (REQUIRING TWO BALLASTS) WILL BE CONSIDERED EFFECTIVELY AS TWO (2) SIGNS IN DETERMINING THE TYPE OF SIGN WIRING.

BASIS OF PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE PER EACH INSTALLATION BY TYPE, INCLUDING ALL MATERIAL, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM OF WORK.

WIRE AND CABLE 625

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, (3/64"), INSULATION AND 3/64" JACKET), 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.

GENERAL NOTES

QUANTITY SUMMARY
SIGNING

FED.RD.	STATE	PROJECT	
	OHIO		

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MAH. 18 - 9.89

I FUNDS — IG FUNDS (G FACTOR 51.4%)

ITEM	SIGN REFERENCE NUMBERS 1	4	5	6	7	8	SHT.No 190	212	223	TOTAL	+	232	3	242	SHT.No 190	TOTAL	GRAND TOTAL ITEM	GRAND TOTAL QUANTITY		LINE NUMBER	TYPE CODE 7221 DESCRIPTION
I-125	225	387	77.0	84.0	136.0	221.0				~~905~~ 1130	~~225.8~~		72.0			~~297.0~~ 72	I-125	1202.	SQ.FT.	1	SIGN ERECTION, AS PER PLAN
I-125	1									~~1~~	+					+	I-125	1	EA.	2	OVERHEAD SIGN SUPPORTS No 7.3 DESIGN No 1 45' SPAN
I-125						1				1						—	I-125	1	EA.	3	OVERHEAD SIGN SUPPORTS No 7.3 DESIGN No 2 68' SPAN
I-125		1								1						—	I-125	1	EA.	4	OVERHEAD SIGN SUPPORTS No 7.6 DESIGN No 2 MODIFIED 72' SPAN
I-125										—			1			1	I-125	1	EA.	5	OVERHEAD SIGN SUPPORTS No 12.24 DESIGN No 3 MODIFIED 18' ARMS
I-125				1						1						—	I-125	1	EA.	6	OVERHEAD SIGN SUPPORTS No 12.24 DESIGN No 4 20' ARMS
I-125					1					1						—	I-125	1	EA.	7	OVERHEAD SIGN SUPPORTS No 12.24 DESIGN No 5 22' ARMS
I-125			38							38						—	I-125	38	L.F.	8	STRUCTURAL SUPPORT, STEEL BEAM TYPE 10B11.5, AS PER PLAN
I-125	10.6	12.2	1.5	3.1	3.7	8.9				~~29.8~~ 40.4	~~10.6~~		4.0			~~4.0 14.6~~	I-125	44.4	C.Y.	9	CONCRETE FOR SIGN SUPPORT FOUNDATION, AS PER PLAN
I-15	50	50	50	50	50	100				~~300~~ 350	~~50~~					~~50~~	I-15	350	L.F.	10	GUARD RAIL STEEL BEAM STD. TYPE DEEP, AS PER PLAN
S-25		6		2	1	4				13			1			1	S-25	14	EA.	11	72' LIGHT FIXTURES WITH SHO LAMPS, AS PER PLAN
S-25					1					1						—	S-25	1	EA.	12	96' LIGHT FIXTURES WITH SHO LAMPS, AS PER PLAN
S-25										—			1			1	S-25	1	EA.	13	SIGN BALLASTS TYPE "C", AS PER PLAN
S-25		3		1	1	2				7						—	S-25	7	EA.	14	SIGN BALLASTS TYPE "D" AS PER PLAN
S-25										—			1			1	S-25	1	EA.	15	0.50 KVA 480/120 VOLT TRANSFORMER
S-25				1	1					2						—	S-25	2	EA.	16	0.75 KVA 480/120 VOLT TRANSFORMER
S-25						1				1						—	S-25	1	EA.	17	1.50 KVA 480/120 VOLT TRANSFORMER
S-25	1									1						—	S-25	1	EA.	18	2.00 KVA 480/120 VOLT TRANSFORMER
S-25				1	1					2			1			1	S-25	3	EA.	19	30 AMPERE FUSIBLE DISCONNECT SWITCH WITH TYPE "Y" ENCLOSURE
S-25	1					1				2						—	S-25	2	EA.	20	30 AMPERE FUSIBLE DISCONNECT SWITCH WITH TYPE "Z" ENCLOSURE
S-25	1			1	1	1				4			1			1	S-25	5	EA.	21	SIGN SUPPORT GROUND ROD AND WIRE CONNECTION, AS PER PLAN
S-25				1	1					2			1			1	S-25	3	EA.	22	SIGN WIRING COMPLETE, AS PER PLAN TYPE I
S-25						1				1						—	S-25	1	EA.	23	SIGN WIRING COMPLETE, AS PER PLAN TYPE II
S-25	1									1						—	S-25	1	EA.	24	SIGN WIRING COMPLETE, AS PER PLAN TYPE III
I-125							0.38			0.38					0.14	0.14	I-125	0.52	MILES	25	4" LANE LINES
I-125							13.23			13.23					2.38	2.38	I-125	15.61	MILES	26	4" EDGE LINES
I-125							0.41			0.41					—	—	I-125	0.41	MILES	27	4" BARRIER LINES
I-125							0.08			0.08					0.04	0.04	I-125	0.12	MILES	28	4" CENTER LINES
I-125							0.05			0.05					—	—	I-125	0.05	MILES	29	6" CENTER LINES
I-125							.77			1.77					0.43	0.43	I-125	2.20	MILES	30	6" LANE LINES
I-125							054			0.54					0.12	0.12	I-125	0.66	MILES	31	8" CHANNELIZING LINES
I-125							0.01			0.01					—	—	I-125	0.01	MILES	32	24" CHANNELIZING LINES (STOP BAR)
I-125							LUMP			LUMP					—	—	I-125	LUMP	LUMP	33	CURB AND ISLAND MARKING
I-125							LUMP			LUMP					LUMP	LUMP	I-125	LUMP	LUMP	34	DIAGONAL STRIPES
I-127							85			85					17	17	I-127	102	EA.	35	DELINEATORS, TYPE A-1 AS PER PLAN *Post Mounted*
I-127								26	2	28		2		1		3	I-127	31	EA.	35A	*Delineators, Type A-1 Bracket Mounted*
I-127							156			156					18	18	I-127	174	EA.	36	DELINEATORS, TYPE C-2 AS PER PLAN *Post Mounted*
I-127										—				2		2	I-127	2	EA.	36A	*Delineators, Type C-2 Bracket Mounted*
I-127										—					1	1	I-127	1	EA.	37	DELINEATORS, TYPE C-3 AS PER PLAN *Post Mounted*

Revised 3-17-66 O.E.H.

GENERAL SUMMARY - TRAFFIC CONTROL

QUANTITY SUMMARY

1965 SPECIFICATIONS

FED. RD.	STATE	PROJECT	
	OHIO		

188A / 294

MAH-80-3.37

FROM SHT. Nº 188	TRAFFIC CONTROL				TYPE CODE 7221	
LINE NUMBER	I FUNDS	IG FUNDS (G 51.4%)	GRAND TOTALS ITEM	QUANTITY	UNIT	DESCRIPTION
1	~~905~~ 1130	~~887.6~~ 72	815	1202	SQ. FT.	SIGN ERECTION, AS PER PLAN
2	1 ~~two~~	+	816	1	EACH	OVERHEAD SIGN SUPPORTS Nº7.3 DESIGN 1, 49' SPAN
3	1	—	816	1	EACH	OVERHEAD SIGN SUPPORTS Nº7.3 DESIGN 2, 68' SPAN
4	1	—	816	1	EACH	OVERHEAD SIGN SUPPORTS Nº7.6 DESIGN 2, MODIFIED 72' SPAN
5	—	1	816	1	EACH	OVERHEAD SIGN SUPPORTS Nº12.24 DESIGN 3, MODIFIED 18' ARMS
6	1	—	816	1	EACH	OVERHEAD SIGN SUPPORTS Nº12.24 DESIGN 4, 20' ARMS
7	1	—	816	1	EACH	OVERHEAD SIGN SUPPORTS Nº12.24 DESIGN 5, 22' ARMS
8	38	—	816	38	LIN. FT.	STRUCTURAL SUPPORT, STEEL BEAM TYPE 10B11.5 AS PER PLAN
9	~~85.0~~ 40.4	~~4.0 two~~	816	44.4	CU. YD	CONCRETE FOR SIGN SUPPORT FOUNDATION, AS PER PLAN
10	~~300~~ 350	~~59~~	606	350	LIN. FT.	GUARD RAIL TYPE 4, AS PER PLAN
11	13	1	625	14	EACH	72" LIGHT FIXTURES WITH SHO LAMPS, AS PER PLAN
12	1	—	625	1	EACH	36" LIGHT FIXTURES WITH SHO LAMPS, AS PER PLAN
13	—	1	625	1	EACH	SIGN BALLASTS TYPE "C", AS PER PLAN
14	7	—	625	7	EACH	SIGN BALLASTS TYPE "D", AS PER PLAN
15	—	1	625	1	EACH	0.50 KVA 480/120 VOLT TRANSFORMER
16	2	—	625	2	EACH	0.75 KVA 480/120 VOLT TRANSFORMER
17	1	—	625	1	EACH	1.50 KVA 480/120 VOLT TRANSFORMER
18	1	—	625	1	EACH	2.00 KVA 480/120 VOLT TRANSFORMER
19	2	1	625	3	EACH	30 AMPERE FUSIBLE DISCONNECT SWITCH WITH TYPE "Y" ENCLOSURE
20	2	—	625	2	EACH	30 AMPERE FUSIBLE DISCONNECT SWITCH WITH TYPE "Z" ENCLOSURE
21	4	1	625	5	EACH	SIGN SUPPORT GROUND ROD AND WIRE CONNECTION, AS PER PLAN
22	2	1	625	3	EACH	SIGN WIRING COMPLETE, AS PER PLAN TYPE I
23	1	—	625	1	EACH	SIGN WIRING COMPLETE, AS PER PLAN TYPE II
24	1	—	625	1	EACH	SIGN WIRING COMPLETE, AS PER PLAN TYPE III
25	0.38	0.14	621	0.52	MILES	4" LANE LINES
26	13.23	2.38	621	15.61	MILES	4" EDGE LINES
27	2186	—	621	2186.	LIN. FT.	4" BARRIER LINES
28	0.08	0.04	621	0.12	MILES	4" CENTER LINES
29	0.05		621	0.05	MILES	6" CENTER LINES
30	1.77	0.43	621	2.20	MILES	6" LANE LINES
31	2870	634	621	3504	LIN. FT.	8" CHANNELIZING LINES
32	Lump	—	621	Lump	Lump	Stop Lines
33	LUMP	—	621	LUMP	LUMP	CURB AND ISLAND MARKING
34	LUMP	—	621	LUMP	LUMP	BROAD TRANSVERSE STRIPES
35	85	17	620	102	EACH	DELINEATORS, TYPE A-1, Mono-directional, Post Mounted
35A	28	3	620	31	Each	Delineators, Type A-1, Mon-directional, Bracket Mounted
36	156	18	620	174	EACH	DELINEATORS, TYPE C-2, Mono-directional, Post Mounted
36A	—	2	620	2	Each	Delineators, Type C-2, Mon-directional, Bracket Mounted
37	—	1	620	1	EACH	DELINEATORS, TYPE C-3, Mono-directional, Post Mounted

Revised 3-17-66 C.E.H.

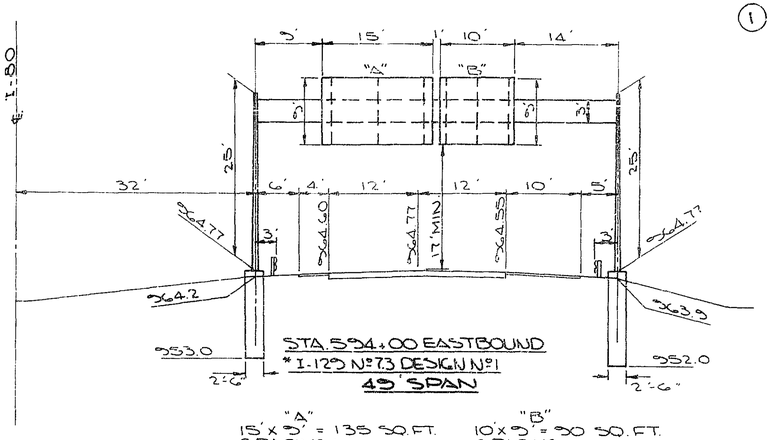
GENERAL SUMMARY

FED. RD.	STATE	PROJECT	
2	OHIO		

183
254

MAH. 18 - 5.89

① STA. 534+00 EASTBOUND
* I-129 Nº 7.3 DESIGN Nº 1
45' SPAN



* NO LIGHTING

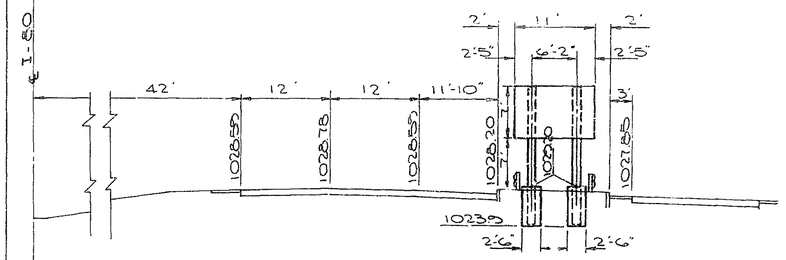
"A"
15' x 9' = 135 SQ. FT.
SPACING:
14⅜", 6'-3⅜", 6'-3⅜", 14⅝"
Nº BRK = 3 TYPE Ya
HEIGHT = 9'

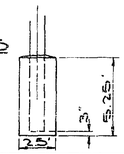
"B"
10' x 9' = 90 SQ. FT.
SPACING:
10⅜", 4'-1⅝", 4'-1¾", 10¼"
Nº BRK = 3 TYPE Ya
HEIGHT = 9'

⑤ STA. 653+25 WESTBOUND
* GROUND MOUNTED SIGN
19' STEEL BEAMS TYPE 10 B 11.5

11' X 7' = 77 SQ. FT.

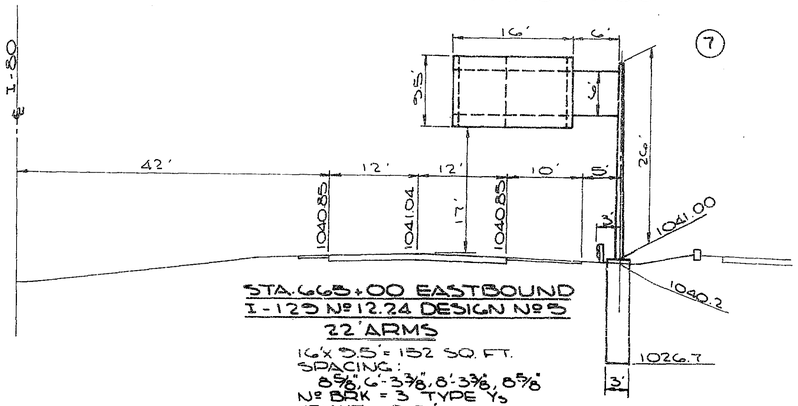
* NO LIGHTING



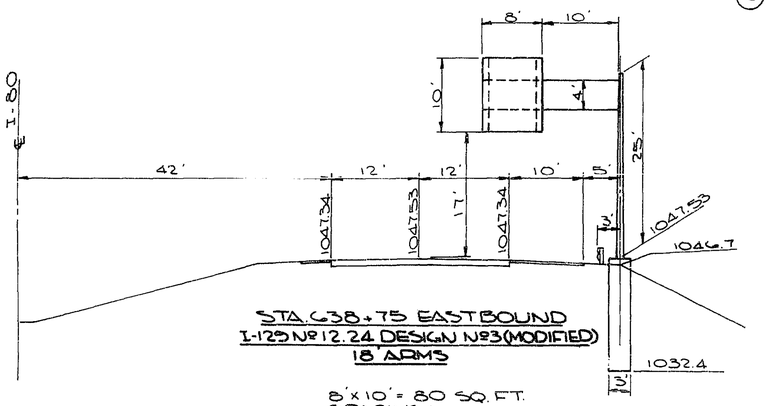


⑦ STA. 665+00 EASTBOUND
I-129 Nº 12.24 DESIGN Nº 5
22' ARMS

16' X 5.5' = 152 SQ. FT.
SPACING:
8⅝", 6'-3⅜", 8'-3⅜", 8⅝"
Nº BRK = 3 TYPE Ys
HEIGHT = 5.5'

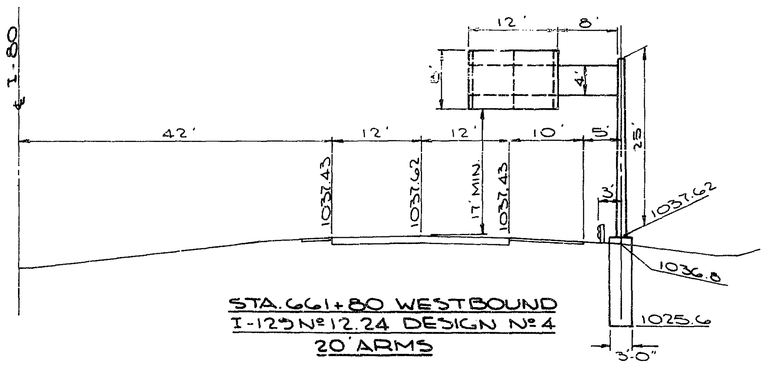


③ STA. 638+75 EASTBOUND
I-129 Nº 12.24 DESIGN Nº 3 (MODIFIED)
18' ARMS



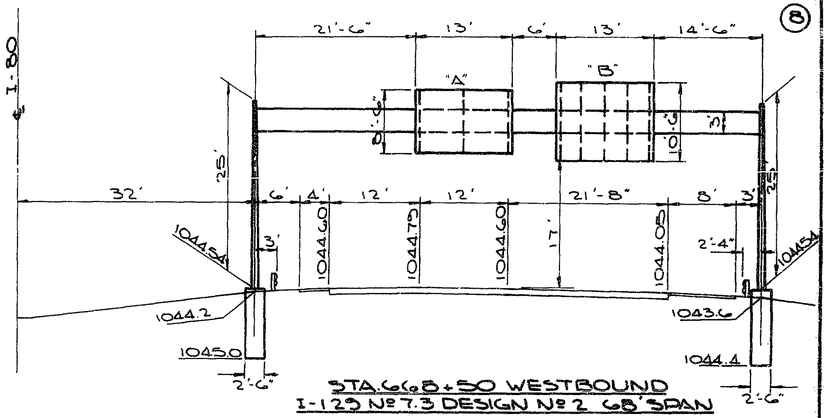
8' x 10' = 80 SQ. FT.
SPACING:
10⅜", 6'-3⅜", 10¼"
Nº BRK. = 2 TYPE Ys
HEIGHT = 10'

⑥ STA. 661+80 WESTBOUND
I-129 Nº 12.24 DESIGN Nº 4
20' ARMS



8' X 12' = 96 SQ. FT.
SPACING:
6', 5'-6", 5'-6", 6"
Nº BRK. = 3 TYPE Xs
HEIGHT = 8'

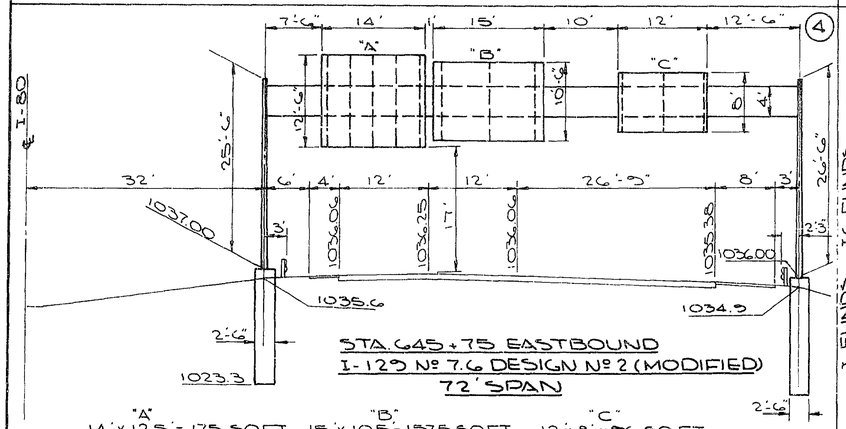
⑧ STA. 668+50 WESTBOUND
I-129 Nº 7.3 DESIGN Nº 2 68' SPAN



"A"
13' x 8.5' = 110 SQ. FT.
SPACING:
6', 6', 6'-0", 6'-0", 6"
Nº BRK = 3 TYPE Ya
HEIGHT = 8'-6"

"B"
13' x 10.5' = 136.5 SQ. FT.
SPACING:
6', 3'-0", 3'-0", 3'-0", 6"
Nº BRK = 5 TYPE Ya
HEIGHT = 10'-6"

④ STA. 645+75 EASTBOUND
I-129 Nº 7.6 DESIGN Nº 2 (MODIFIED)
72' SPAN



"A"
14' x 12.5' = 175 SQ. FT.
SPACING:
8⅝", 3'-1¾",
3'-1⅝", 3'-1¾", 3'-1⅝", 8⅝"
Nº BRK. = 6 TYPE Ya
HEIGHT = 12'-6"

"B"
15' x 10.5' = 157.5 SQ. FT.
SPACING:
14⅜", 6'-3⅜", 6'-3⅜", 14⅝"
Nº BRK. = 3 TYPE Ya
HEIGHT = 10'-6"

"C"
12' x 8' = 96 SQ. FT.
SPACING:
6", 5'-6", 5'-6", 6"
Nº BRK = 3 TYPE Xa
HEIGHT = 8'

SIGN REFERENCE Nº	LOCATION	EFFECTIVE SIGN SIZE	I-129										I-15	S-25																	
			SIGN ERECTION AS PER PLAN EFFECTIVE SITE SQ. FT.	Nº 7.3 DESIGN Nº 1 45' SPAN	Nº 7.3 DESIGN Nº 2 68' SPAN	Nº 7.6 DESIGN Nº 2 72' SPAN, 25'-6"x26'-6" POLES	Nº 12.24 DESIGN Nº 3 18' ARMS	Nº 12.24 DESIGN Nº 4 20' ARMS	Nº 12.24 DESIGN Nº 5 22' ARMS	STRUCTURAL STEEL SUPPORT TYPE BEAM TYPE (OSIS AS PER PLAN	CONC. FOR SIGN SUPPORT FOUNDATION AS PER PLAN	GUARD RAIL STEEL BEAM STD. TYPE DEEP AS PER PLAN	FIXTURE LAMP 72" SHO	FIXTURE LAMP 96" SHO	BALLAST RATING WATTS	BALLAST TYPE C	BALLAST TYPE D	TRANSFORMER KVA	TRANSFORMER II	TRANSFORMER III	TRANSFORMER V	TRANSFORMER VII	30 AMP DISCONNECT SWITCH IN ENCLOSURE TYPE Y	30 AMP DISCONNECT SWITCH IN ENCLOSURE TYPE Z	GROUND ROD & WIRE CONNECT AS PER PLAN	SIGN WIRING COMPLETE AS PER PLAN TYPE I	SIGN WIRING COMPLETE AS PER PLAN TYPE II	SIGN WIRING COMPLETE AS PER PLAN TYPE III
			SQ. FT.	EA.	EA.	EA.	EA.	EA.	EA.	L.F.	C.Y.	L.F.	EA.	EA.		EA.	EA.		EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.
1A*	534+00 EB	15'x9'	135.0	1							10.6	50																	
1B*	534+00 EB	10'x9'	90.0																										
3	638+75 EB	8'x9'	72.0				1				4.0			1	250	1		0.50	1				1		1	1		
4A	645+75 EB	14'x11.5	161.0			1					12.2	50		2	425		1	2.00				1		1			1
4B	645+75 EB	15'x9.5	142.5											2	425		1										
4C	645+75 EB	12'x7'	84.0											2	425		1										
5	653+25 WB	11'x7'	77.0							38	1.9	50															
6	661+80 WB	12'x7'	84.0					1			3.1	50		2	425		1	0.75		1		1		1	1		
7	665+00 EB	16'x8.5'	136.0						1		3.7	50		1	425		1	0.75		1		1		1	1		
8A	668+50 WB	13'x7.5'	97.5		1						8.9	100		2	425		1	1.50			1		1	1		1	
8B	668+50 WB	13'x9.5'	123.5											2	425		1										
GRAND TOTAL			1202.5	1	1	1	1	1	1	38	44.4	350	14	1		1	7		1	2	1	1	3	2	5	3	1	1

1 FUNDS IG
2 FUNDS I

* Participation change from IG to I (3-17-66)

Revised 3-17-66 C.E.H.

SIGN DETAILS

FED. RD.	STATE	PROJECT	
2	OHIO		

150
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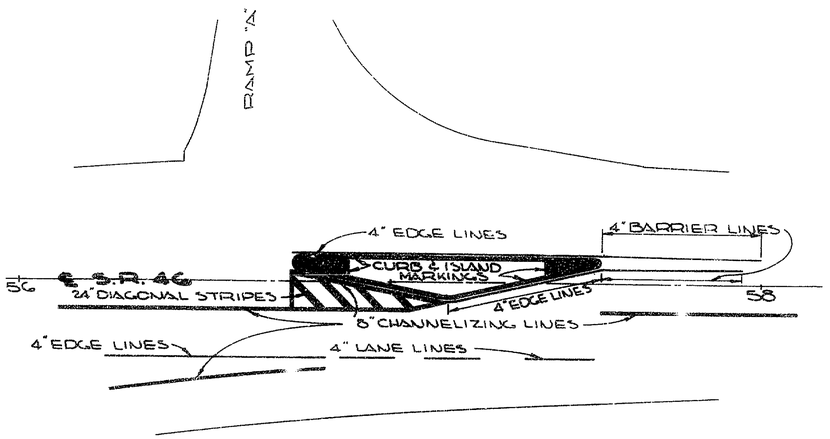
MAH - 18 - 9.89

S.R. 46 PAVEMENT MARKINGS

STATION FROM	STATION TO	SIDE	4" LANE LINES (L.F.)	4" EDGE LINES (L.F.)	4" BARRIER LINES (L.F.)	6" CENTER LINES (L.F.)	8" CHANNELIZING LINES (L.F.)	24" CHANNELIZING LINES (L.F.)	CURB & ISLAND MARKING (LUMP)	DIAGONAL STRIPES (LUMP)
36+50	42+25	℄				225				
36+50	45+67	10.5 LT. TO 31.5 LT.		537						
36+50	45+35	8.5 RT. TO 31.0 RT.		885						
36+50	45+34	8' LT. TO 7.5' LT.			344					
40+85	45+34	8' RT. TO 7.5' RT.			509					
45+00	45+43	20.0' RT. TO 34.0' RT.					44			
45+00	46+68	20.0' RT.					168			
45+00	46+75	SEE DETAIL "A"								LUMP
45+41	46+75	SEE DETAIL "A"							LUMP	
45+43	46+68	34.0' RT. TO 20.0' RT.					130			
45+85	46+75	20.0' LT.	54							
45+54	46+27	7.5' LT.		33						
45+54	46+75	7.5' RT.		85						
46+27	46+75	7.5' LT.					52			
46+27	46+75	7.5' LT. TO 25' RT.					53			
46+36	46+36	42.0' LT.						60		
46+73.5	46+73.5	7.5' LT. TO 25' RT.					10			
46+73.5	46+75	25' RT. TO 7.5' RT.		5						
47+00	53+55	31.5' LT. TO 44.0' LT.		659						
47+15	52+75	20.0' LT.	560							
47+19	56+82	19.5' RT.		963						
47+30	51+75	8.0' LT.					425			
47+55	47+70	5.0' TO 7.0' RT.							LUMP	
47+55	55+96	4.5' RT. TO 7.5' LT.		841						
47+56	55+96	7.5' RT. TO 4.5' LT.		841						
52+75	53+61	20.0' LT. TO 31.5' LT.					86			
52+75	56+43	19.5' LT. TO 31.5' LT.		368						
55+25	57+05	8.0' RT.					180			
55+81	55+86	5.0' TO 7.0' RT.							LUMP	
56+07.5	56+82	30.5' RT. TO 20' RT.					74.5			
56+10	61+96	44.0' RT. TO 35' RT.		586						
56+12.5	56+12.5	25' LT. TO 60.0' RT.					10.5			
56+73	57+57	7.5' LT.		84						
56+73	57+96	20.0' LT.	83							
56+73	57+15	25' LT. TO 55' RT.					43			
56+73	57+57	SEE DETAIL "B"								LUMP
56+73	57+57	SEE DETAIL "B"							LUMP	
56+82	57+96	13.5' RT.	74							
57+05	57+15	8.0' RT. TO 55' RT.					10			
57+15	57+57	55' RT. TO 45' LT.		42						
57+57	58+00	7.5' LT. TO 6.5' LT.			43					
57+57	57+58	4.5' LT.			38					
57+67	61+96	31.5' LT. TO 25' LT.		425						
58+71	58+58	55' LT. TO 50' RT.			26					
58+71	61+96	55' LT. TO 8' LT.			325					
58+58	61+96	50' RT. TO 8' RT.			301					
61+25	61+96	℄				30				
TOTALS	(L.F.)		811	6758	2186	255	1286	60	LUMP	LUMP
TOTALS	(MILES)		0.15	1.28	0.41	0.05	0.24	0.01	LUMP	LUMP



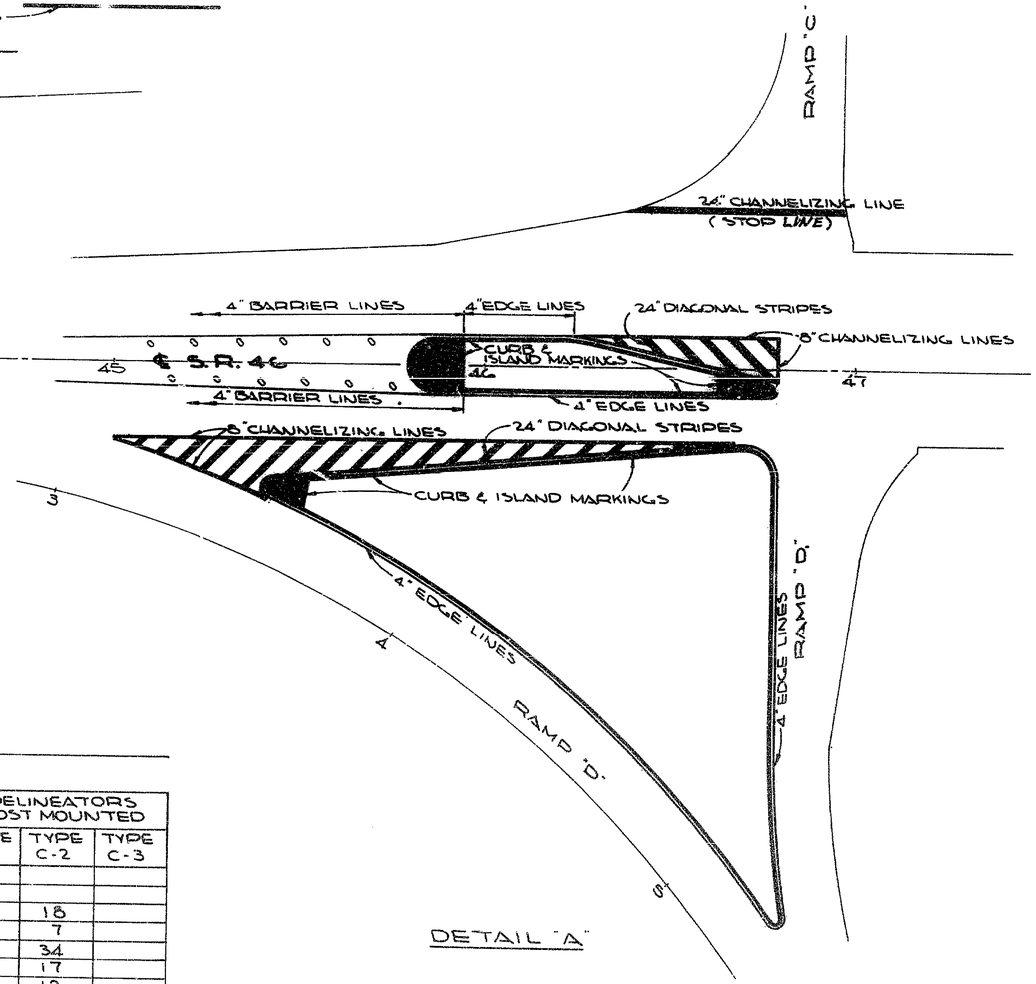
DETAIL "B"

FOR LOCATION AND DETAILS OF DELINEATORS SEE SHEET Nº 199. SUPPLEMENT SPECIFICATIONS I-127 SHALL APPLY TO ALL DELINEATORS.

PAVEMENT MARKINGS FOR INTERSTATE ROADWAY AND RAMPS SHALL BE LOCATED AS SHOWN ON SHEET Nº 198.

PAVEMENT MARKINGS FOR ALL SIDE ROADS SHALL BE LOCATED AS SHOWN ON THIS SHEET.

SUPPLEMENTAL SPECIFICATIONS I-125 SHALL APPLY TO ALL PAVEMENT MARKINGS.



DETAIL "A"

I-125

LOCATION	FROM	TO	4" LANE LINES (MILES)	4" EDGE LINES (MILES)	4" BARRIER LINES (MILES)	4" CENTER LINES (MILES)	6" CENTER LINES (MILES)	6" LANE LINES (MILES)	8" CHANNELIZING LINES (MILES)	24" CHANNELIZING LINES (MILES)	CURB & ISLAND MARKING (LUMP)	DIAGONAL STRIPES (LUMP)
M.L.	520+80.75	616+00		7.20				1.35				
M.L.	646+00	675+74.85	0.23	2.36				0.42	0.30			LUMP
RAMP "A"	0+32	17+12.68		0.56							LUMP	
RAMP "B"	4+58.07	16+17.43		0.44							LUMP	
RAMP "C"	4+58.07	14+52.26		0.38							LUMP	
RAMP "D"	3+58.03	17+63.07		0.45							LUMP	
RAMP "D."	0+20	1+44.64		0.05							LUMP	
RAMP "E"	4+58.07	17+20.85		0.51							LUMP	
TURNER RD.	42+00	53+00				0.08						
S.R. 46	36+50	61+96	0.15	1.28	0.41		0.05		0.24	0.01	LUMP	LUMP
TO SUMMARY SHEET Nº 188 (I)			0.38	13.23	0.41	0.08	0.05	1.77	0.54	0.01	LUMP	LUMP
M.L.	616+00	646+00	0.14	2.38				0.43	0.12			LUMP
OHLTOW	48+00	53+25				0.04						
TO SUMMARY SHEET Nº 188 (IG)			0.14	2.38	——	0.04	——	0.43	0.12	——	——	LUMP

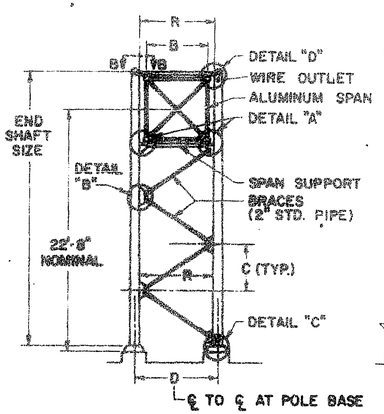
I-127

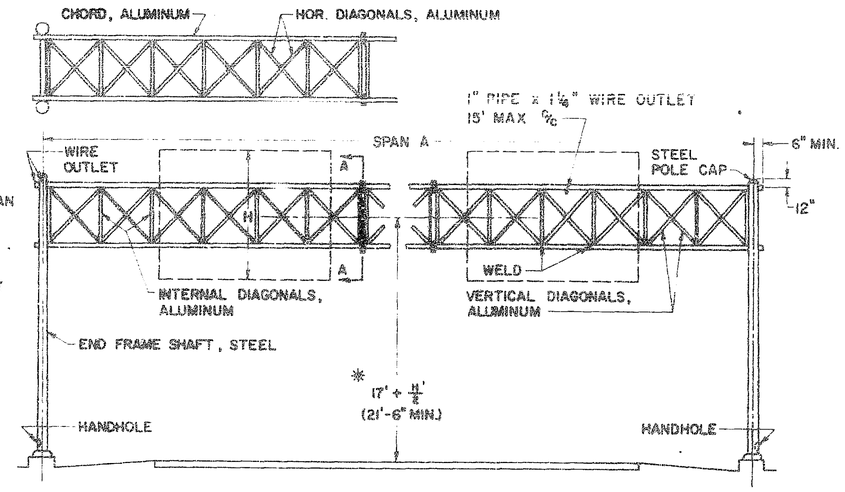
SIDE	LOCATION FROM	LOCATION TO	DELINEATORS POST MOUNTED TYPE A-1	TYPE C-2	TYPE C-3
LT.	520+80.75	616+00	34		
RT.	520+80.75	616+00	34		
LT.	646+00	675+74.85	6	18	
RT.	646+00	675+74.85	11	7	
	RAMP "A"			34	
	RAMP "B"			17	
	RAMP "C"			12	
	RAMP "D"			21	
	RAMP "D."			4	
	RAMP "E"			43	
TO SUMMARY SHT. Nº 188 (I)			85	156	
LT.	616+00	646+00	8	10	1
RT.	616+00	646+00	9	8	
TO SUMMARY SHT. Nº 188 (IG)			17	18	1

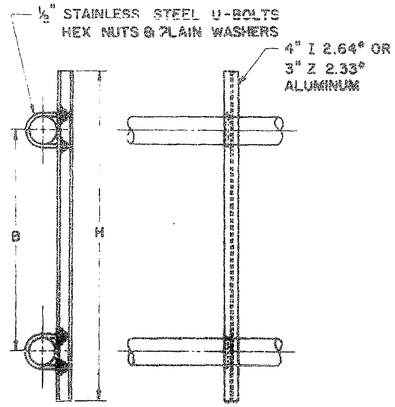
DELINEATORS & PAVEMENT MARKINGS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

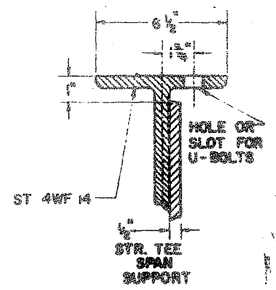
MAU-18-9.89







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 1-129 UNLESS OTHERWISE NOTED.

STEEL POLE SHAFTS 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 SUPPLEMENTAL SPECIFICATION 1-129. MAXIMUM LENGTH OF SPAN SECTIONS SHALL BE 45 FT.

ERECTION

USE A MINIMUM OF 1" DIAMETER GALVANIZED STEEL TENSION MEMBER FOR A 90' SPAN, ADD 1" DIAMETER FOR EACH 5' OF INCREASE IN SPAN OVER 90'.

PAYMENT

PAYMENT FOR THE GALVANIZED OVERHEAD SIGN SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORT.

SOILS

THE FOUNDATION DESIGN SHOWN ARE FOR AVERAGE SOIL CONDITIONS CONSISTING OF SAND AND GRAVEL, DENSE CLAY, ETC. WITH A SAFE BEARING CAPACITY OF 3000 PSF.

FOR POOR SOIL CONDITIONS CONSISTING OF SOFT CLAY, WITH 50 % OR MORE PASSING THE #200 SIEVE, HAVING A LIQUID LIMIT OF 50 % TO 150 % IN WET OR DRY CONDITIONS, THE FOUNDATIONS SHALL BE DESIGNED BY A REGISTERED ENGINEER.

REINFORCING STEEL

COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 1-129 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.

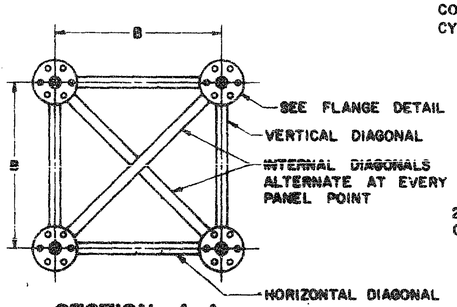
BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR DIGITS ARE USED, INDICATE THE BAR SIZE NUMBER.

FOUNDATION ELEVATION

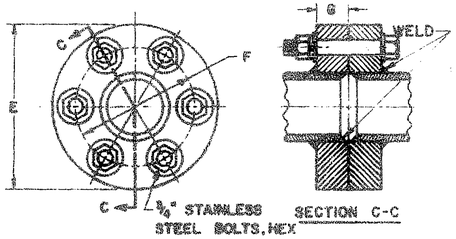
ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17' CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF THE PAVEMENT AND SHOULDERS.

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, 1985.

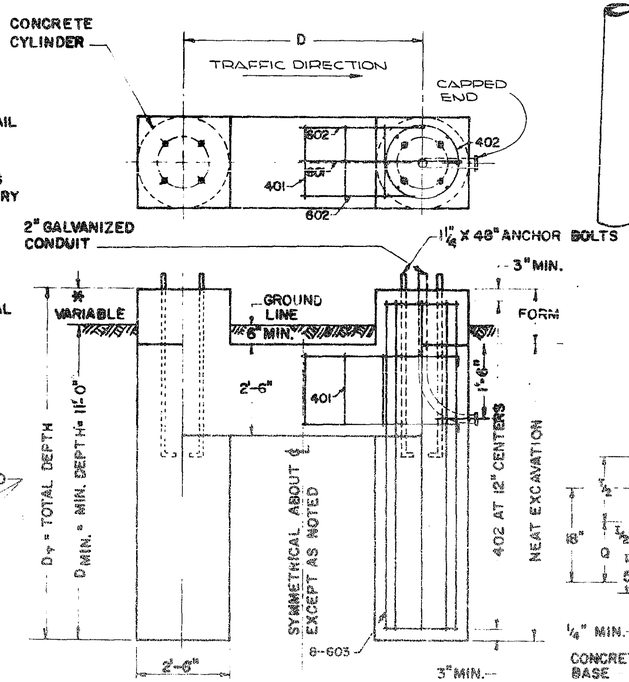


SECTION A-A



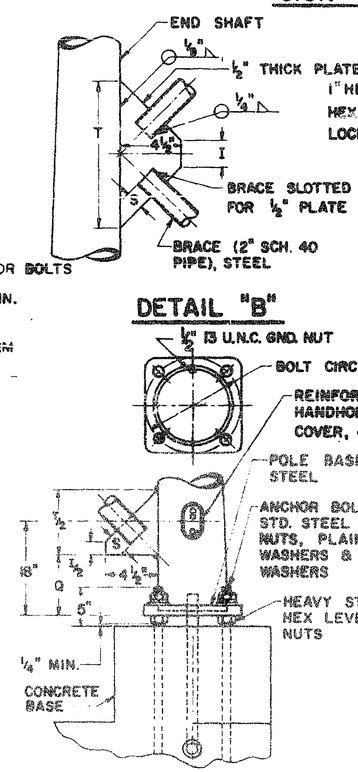
CAST FLANGE, B-26 ALLOY 356 T6A-T7 (356-T7)

FLANGE DETAIL



FOUNDATION DETAIL

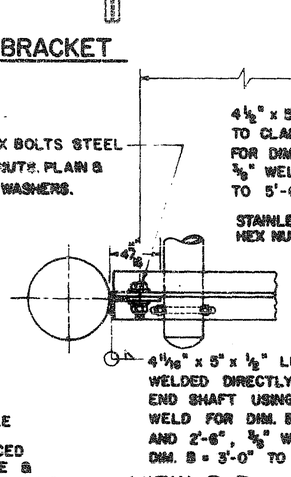
(RIGHT HAND SHOWN — LEFT HAND OPPOSITE)



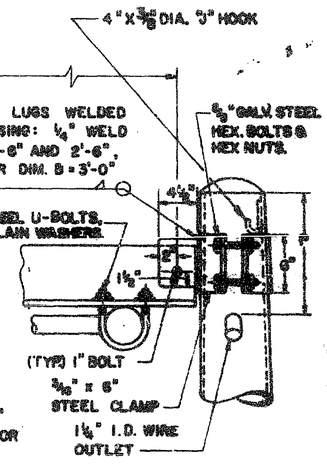
DETAIL "B"

DETAIL "C"

POLE BASE DETAIL

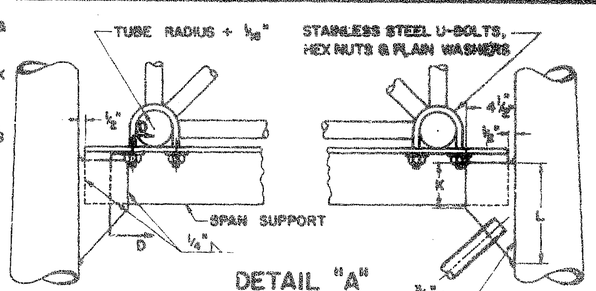


VIEW B-B



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 65'	3'-0"	4'-11¾"	4'-5"	9¼"	8"X4.5 X25'-0",3GA	5'-10⅜"	7⅞"	1⅜"	3½"	4¾"	8"	12"	6⅝"	3'-9"	1½"	10"	⅝"	3'-5⅝"	11"	Split Tee 3'-6"	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"	7⅞"	⅞"	⅝"	4¾"	7¾"	12"	6¼"	4'-11"	1½"	9½"	⅝"	4'-5⅝"	11"	Split Tee 4'-10"	4⅜"x .188"	2" X .188"	1.900"X.145"
3.	76' thru 85'	4'-0"	4'-10¼"	6'-7"	11"	8"X6.22X25'-6",3GA	6'-7⅛"	8½"	1½"	⅝"	4¾"	7¾"	12"	6¼"	4'-11"	1½"	9½"	⅝"	4'-8⅝"	11"	Split Tee 4'-10"	5½"x .250	2½"X .188"	1.900"X.188"
4.	81' thru 150'	5'-0"	4'-8½"	8'-7"	11"	8"X6.18 X26'-0",3GA	7'-3¾"	8½"	1½"	—	5½"	7¾"	12"	7¼"	5'-11"	1¾"	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
501	4	D+4'-0"	101
602	8	D+2'-0"	101
603	32	D_T - 6"	STR.

101 — 2'-0" + 2'-0" = 4'-0"

102

103

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORTS

I-129 No.7.6

DATE

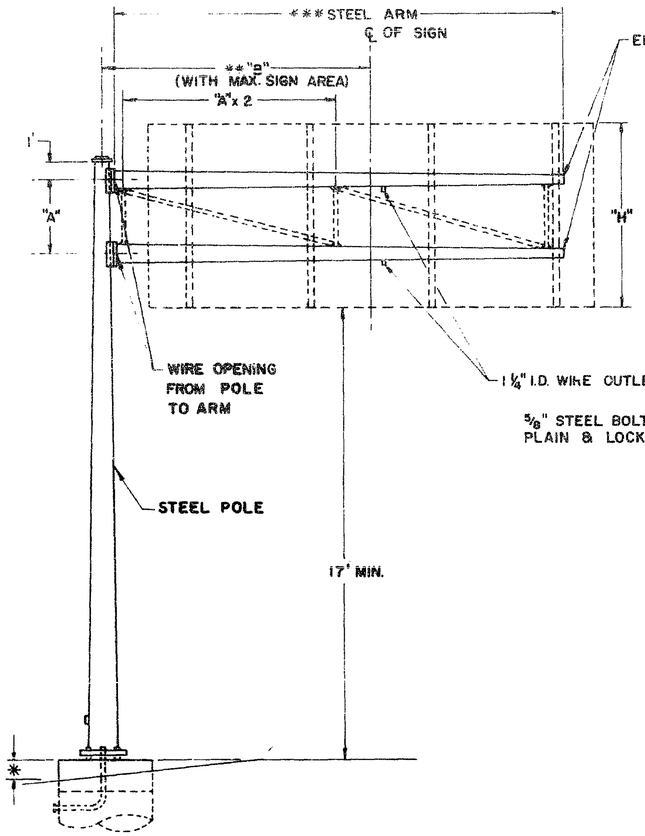
APPROVED _____ ENGINEER OF TRAFFIC

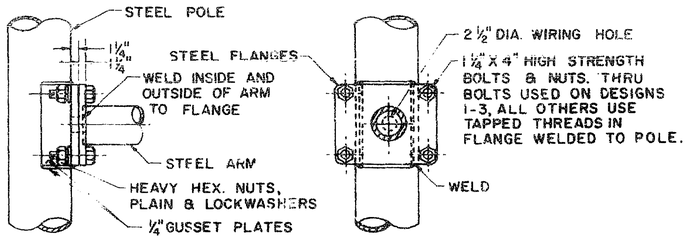
600 SQ. FT. SIGN AREA

OVERHEAD SIGN SUPPORT, I-129 NO.7.6

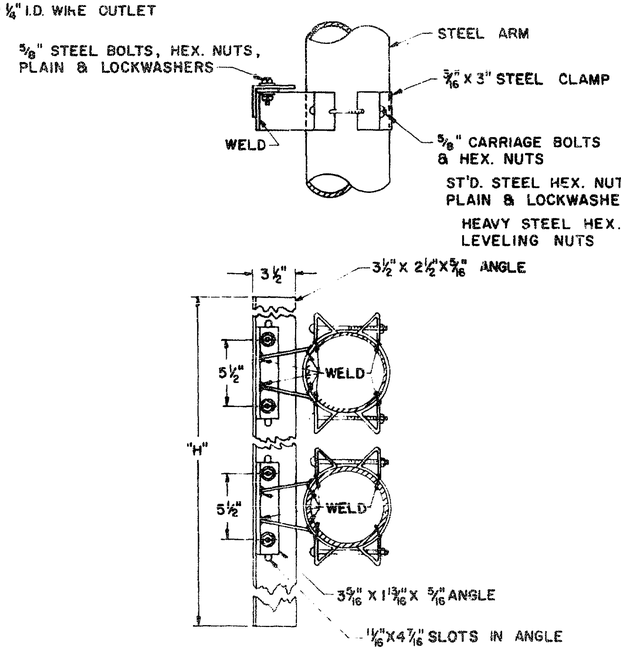
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

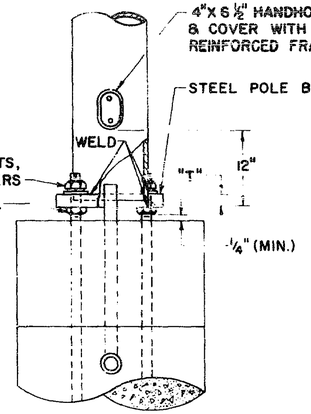
193
2-51

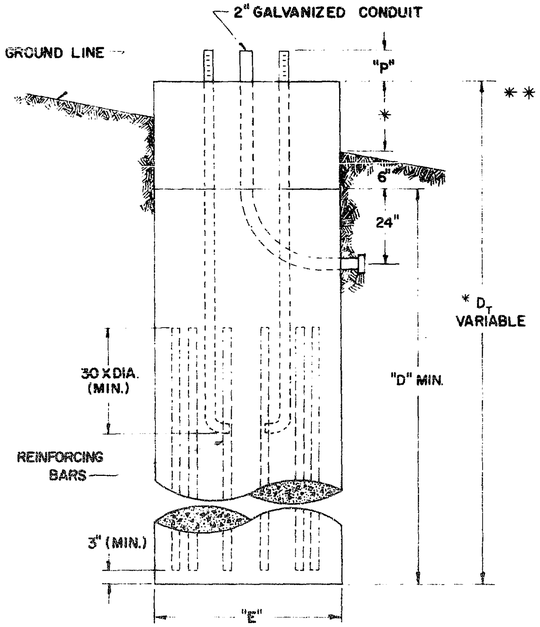




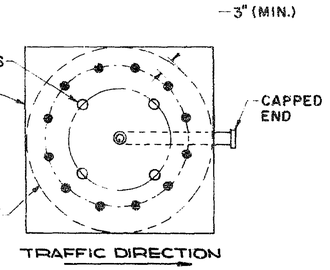
ARM ATTACHMENT







FOUNDATION DETAIL



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_T" 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 I-129 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.

SIGN ATTACHMENT DETAIL

POLE 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"X16'-0"	4'	12'	11'	3'-0"	15½"	8⅜"	22"	2"	22"	2"X 96"	120	1"	12
4	3 Ga, 16" X 12.5" X 25'-0"	3Ga, 9.2"X 6.40"X20'-0"	4'	16'	11'	3'-0"	16⅝"	8⅜"	24½"	2"	23½"	2"X96"	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"X120"	180	1⅛"	12
6	0 Ga, 18" X 14.36" X 26'-0"	7 Ga, 12.5"X 8.86"X26'-0"	6'	18'	13'	3'-0"	18"	9⅜"	26½"	2½"	25½"	2¼"X120"	180	1⅛"	12
7	2 PLY 7 Ga, 18"X14.36"X26'-0"	7 Ga, 12.5"X9.14"X24'-0"	6'	14'	13'	3'-0"	18"	9¾"	26½"	2½"	25½"	2½"X144"	240	1¼"	12
8	2 PLY ¼", 18"X14.36"X26'-0"	3 Ga, 12.5"X8.58"X26'-0"	6'	18'	15'	3'-0"	18"	11¼"	26½"	3"	25½"	3"X144"	240	1¼"	12

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORT

I-129 No.12.24

DATE 8-18-61, 4-11-62, 3-5-65

APPROVED Robert E. Cowan
ENGINEER OF TRAFFIC

OVERHEAD SIGN SUPPORT I-129 No. 12.24

MICROBOX

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

MAU-18-9.89

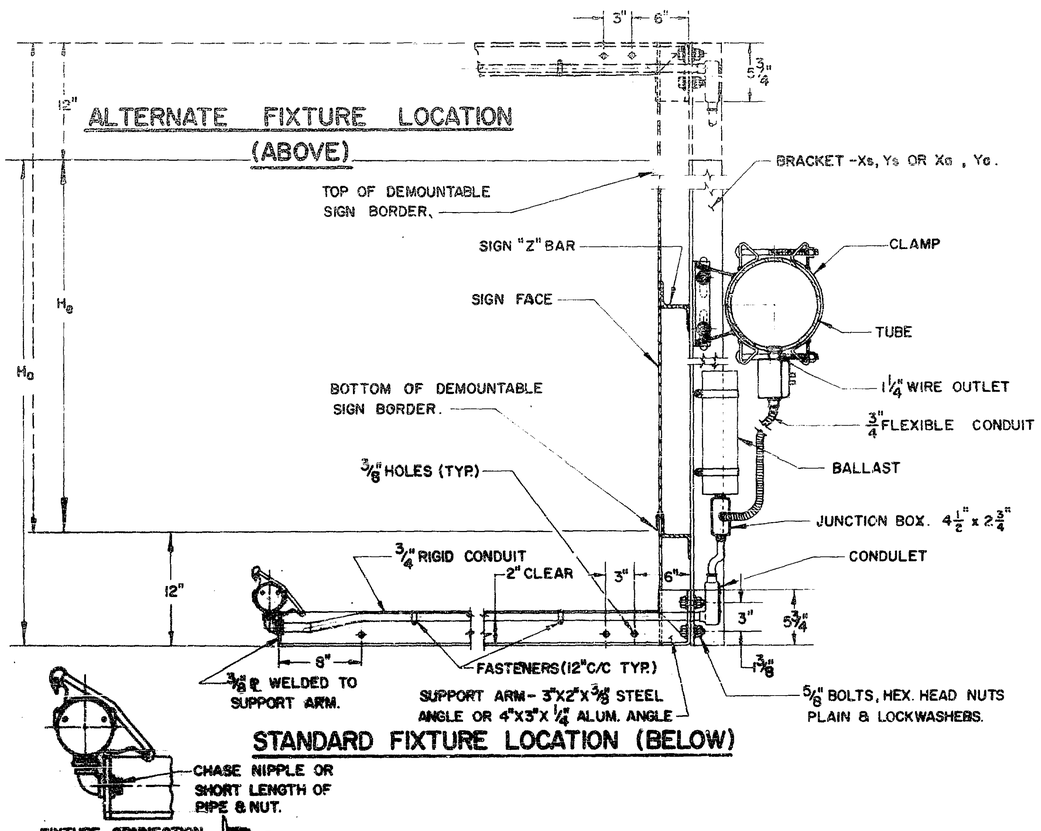
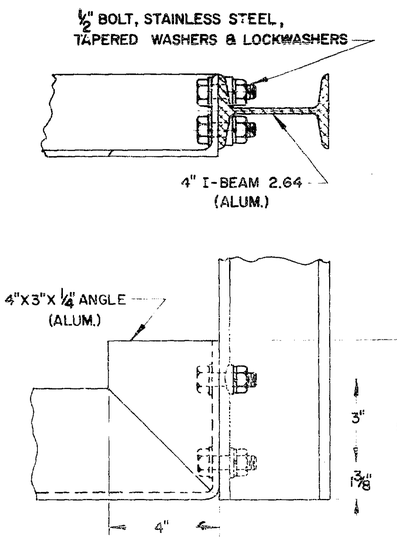


TABLE III.	
L	K
6'-0"	7 11/16"
7'-0"	1 7/16"
12'-0"	9 3/16"
13'-0"	3 3/16"



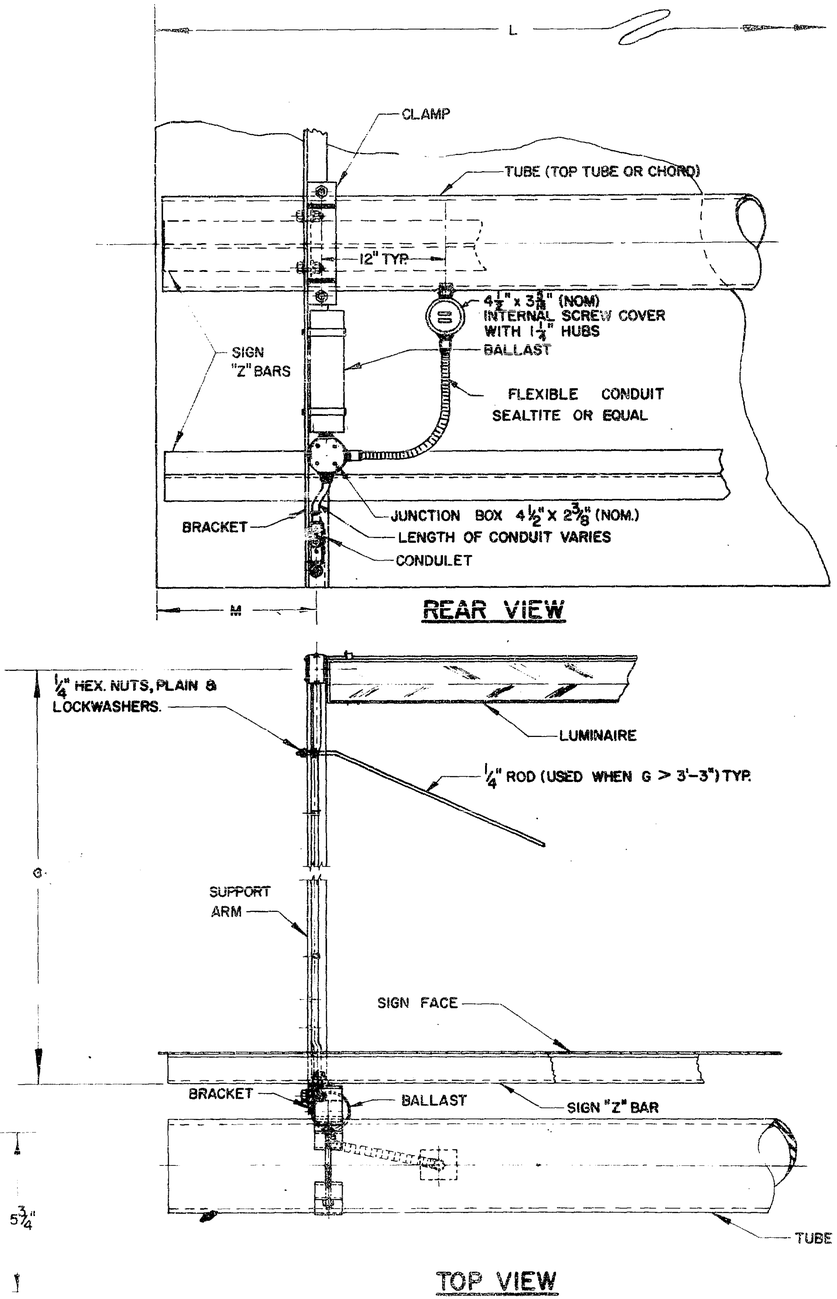


TABLE I.

"L" SIGN LENGTH		NUMBER OF FIXTURES		"M" EDGE DISTANCE				NO. BALLAST
				A		B		
A	B	75	99	LT.	RT.	LT.	RT.	
6'-0"	7'-0"	1		6"	6"	6"	6"	1
8'-0"	9'-0"	1		10½"	10½"	16½"	16½"	1
10'-0"	11'-0"		1	10½"	10½"	16½"	15½"	1
12'-0"	13'-0"	2		6"	6"	6"	6"	1
14'-0"	15'-0"	2		8½"	8½"	14½"	14½"	1
16'-0"	17'-0"	1	1	8½"	8½"	14½"	14½"	1
18'-0"	19'-0"		2	8½"	8½"	14½"	14½"	1
20'-0"	21'-0"	3		7"	8½"	15"	12½"	2
22'-0"	23'-0"	2	1	7"	8½"	15"	12½"	2
24'-0"	25'-0"	1	2	7"	8½"	15"	12½"	2
26'-0"	27'-0"		3	7"	8½"	15"	12½"	2

TABLE II

MAX. BRACKET SPACING FOR EXTERNALLY

ACTUAL SIGN HEIGHT "Ha"	SUPPORT 1
	9.12, 11.08, 13.2, 7.6 — SINGLE TUBE, DOUBLE TUBE LESS 36" C/C
to 5'-0"	6'-4" with X, 5'-4" with Y
5'-6" to 8'-0"	6'-4" with Y
8'-6" to 10'-0"	3'-2" with X, 4'-2" with Y
10'-6" to 12'-0"	———
12'-6" to 14'-0"	———

Ha= ACTUAL SIGN HEIGHT
He= EFFECTIVE SIGN HEIGHT
BRACKET SIZE: Xa = 3½" X 2½" X ⅜" — L @ 6.1 LB. STEEL
Ya = 4" X 3½" X ⅜" — Z @ 4.8 LB. STEEL
Xa = 3" X 2½" X ¼" — Z @ 2.33 LB. ALUM.
Ya = 4" X 2½" X 3/16" — Z @ 2.64 LB. ALUM.

WHEN MAX. ALLOWABLE SPACING IS LESS THAN ACTUAL POSTING 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.

FABRICATION — ALL STRUCTURAL COMPONENTS SHOWN ON THIS SHEET SHALL CONFORM TO SUPPLEMENT SPECIFICATIONS I-129.

MATERIALS — THE MATERIALS USED IN THE COMPONENTS SHOWN ON THIS SHEET SHALL BE IN CONFORMANCE WITH THE MATERIALS USED IN THE SIGN SUPPORT.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

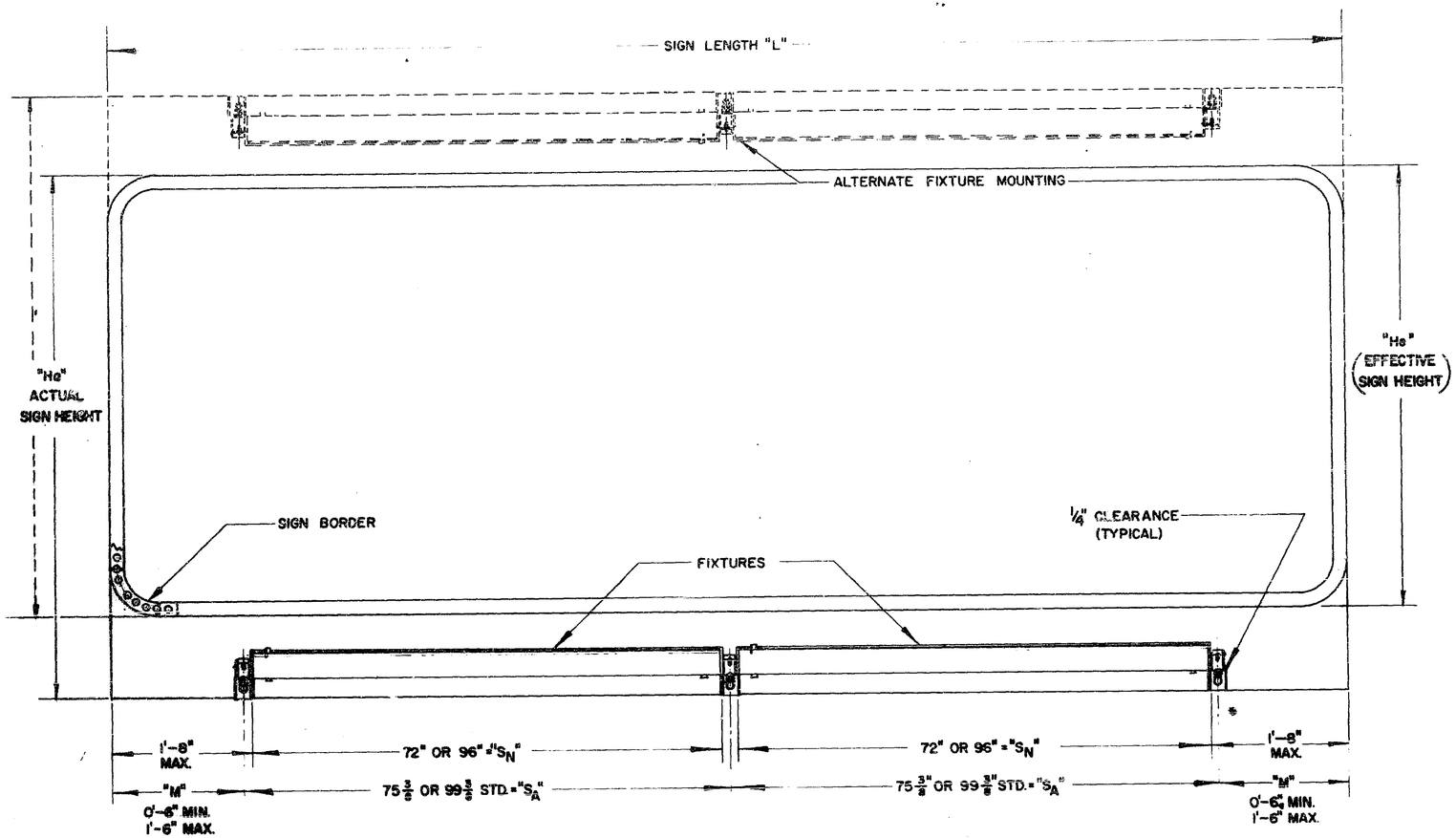
STRUCTURAL DETAILS FOR EXTERNALLY ILLUMINATED SIGNS

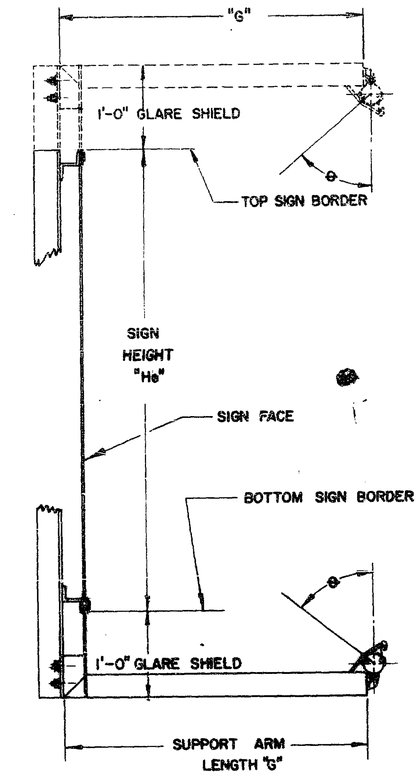
APPROVED Fred C Tasker
ENGINEER OF TRAFFIC

STRUCTURAL DETAILS FOR EXTERNALLY ILLUMINATED SIGNS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

MAH-18-5.89





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 [illegible] OR F96-T12/CW/HO AS MANUFACTURED BY WESTINGHOUSE, GE[illegible] ELECTRIC OR APPROVED EQUAL FOR SIGNS TO A MAXIMUM HEIGHT OF 6'-6". LAMP TYPE SHALL BE FT6 OR F96-T12/CW/SHO AS MANUFACTURED BY WESTINGHOUSE, FT8 OR F96-P617/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 [illegible] LIGHTING SERVICE. MAJOR COMPONENTS SHALL INCLUDE [illegible] CAST ALUMINUM MOUNTING HUBS DESIGNED TO [illegible] TURES AT ANY ANGLE THROUGH 360 DEGREES. INDICATIONS OF [illegible] INCREMENTS SHALL BE STAMPED OR CAST INTO THE HUB TO FACI[illegible] PROPER AIMING OF THE FIXTURE. FINAL ADJUSTMENT OF FI[illegible] SHALL BE DONE AT NIGHT UNDER THE PROJECT ENGINEER'S D[illegible]

THE BODY DESIGN OF THE FIXTURE SHALL PROVIDE AN ADEQUATE SPECULAR ALZAK REFLECTOR TO GIVE A HIGH LEVEL OF UNIFORM ILLUMINATION AND SHALL PROVIDE A WEATHER PROOF END TO WHEN ADJACENT FIXTURES ARE WIRED TOGETHER THROUGH THE WIREWAY, WIRE BETWEEN FIXTURES SHALL BE ENTIRELY EXCLUS[illegible]

EXTERIOR FINISH OF THE FIXTURE BODY SHALL BE REFRIGERATOR WHITE COLOR, HEAT RESISTANT BAKED ENAMEL AS BY GOOD UNIVERSAL PAINT AND VARNISH INC., OR APPROVED EQUAL. REFLECTORS, 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, HIGH POWER FACTOR LAMP STARTING AT AN AMBIENT TEMPERATURE OF 20°F. BALLASTS SHALL BE MOUNTED ON [illegible] WIRING SHALL BE ACCOMPLISHED IN SUCH A MANNER THAT THE [illegible] MAY BE REMOVED WITHOUT DISTURBING THE ELECTRICAL WIRING.

EFFECTIVE SIGN HEIGHT "H"	SUPPORT ARM LENGTH "G"	APPROX. AIMING ANGLE ⊖
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		WATTAGE
	G.E.	JEFFERSON	
A	GG 3583	257-151	190
B	GG 3535	257-171	250
C	GG 3585	257-231	250
D	GG 3588	257-181	425

BALLASTS SHALL BE GENERAL ELECTRIC, JEFFERSON AS SPECIFIED ABOVE OR EQUAL.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

ELECTRICAL DETAILS FOR EXTERNALLY ILLUMINATED SIGNS

EI-2

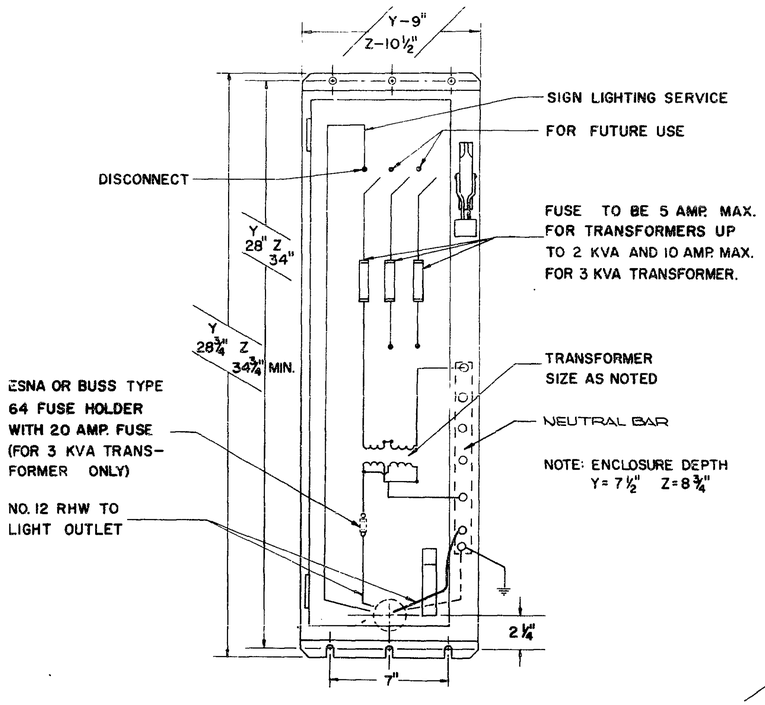
DATE

APPROVED [signature]
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

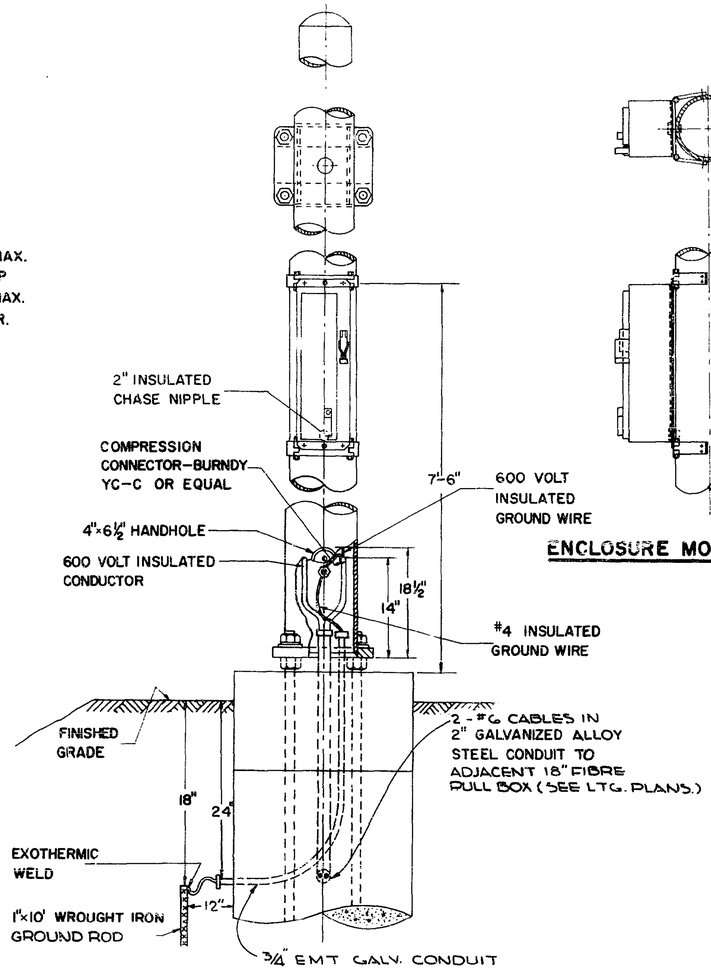
136/234

MAH. 18 - 9.89

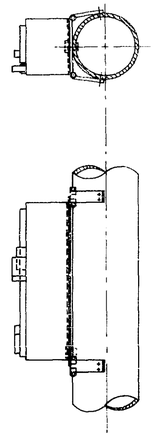


TYPICAL ENCLOSURE DETAIL

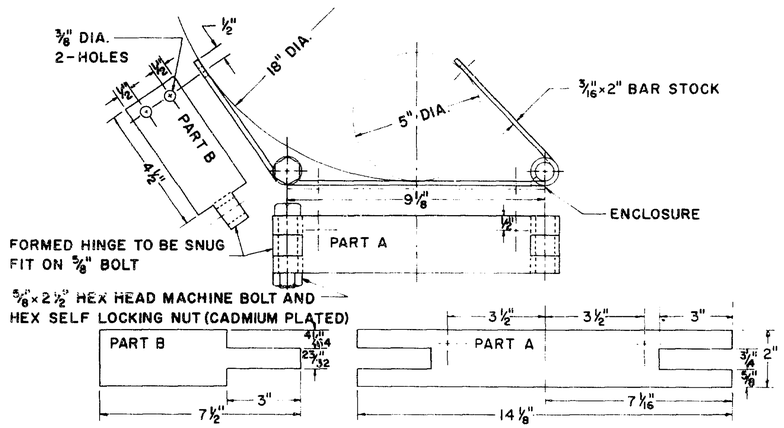
480 VOLT SIGN LIGHTING SERVICE



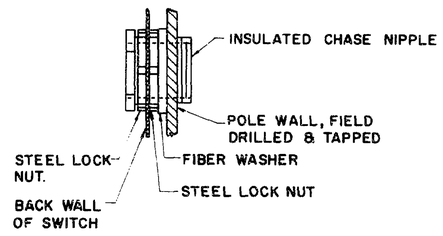
SIGN SUPPORT DETAIL FOR ILLUMINATED SIGNS



ENCLOSURE MOUNTING DETAIL



ENCLOSURE MOUNTING BRACKET



CHASE NIPPLE ASSEMBLY DETAIL

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 AND ON SHEET Nº _____.)

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 PHASE 240/480 VOLT PRIMARY 120/240 VOLT SECONDARY, THE TYPE AND CAPACITY AS SPECIFIED IN DETAILED SCHEDULE ON THIS SHEET AND ON SHEET Nº 139.

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 2¼" 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 5/16-18×¾" 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"×10' 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 GLYPTAL 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

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

ELECTRICAL SIGN SERVICE DETAILS 480 VOLT SYSTEM

ES-3A

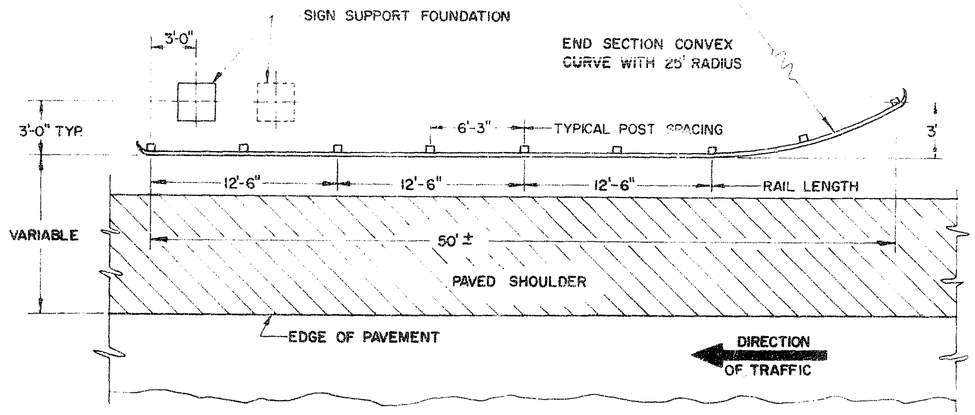
DATE 6-18-64 3-5-65

APPROVED _____
ENGINEER OF TRAFFIC

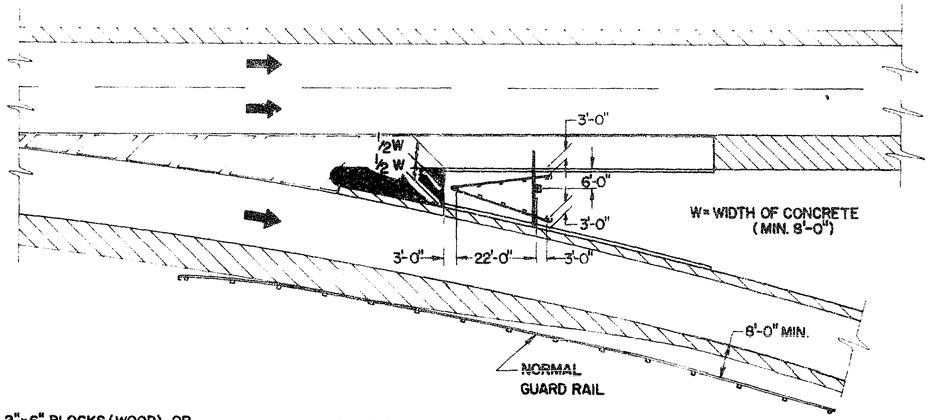
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

MAH-80-3.37

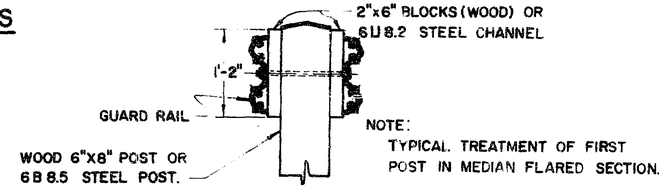
197
294



GUARD RAIL DETAILS



GORE INSTALLATION (TYPICAL)



SECTION B-B

NOTES

GENERAL

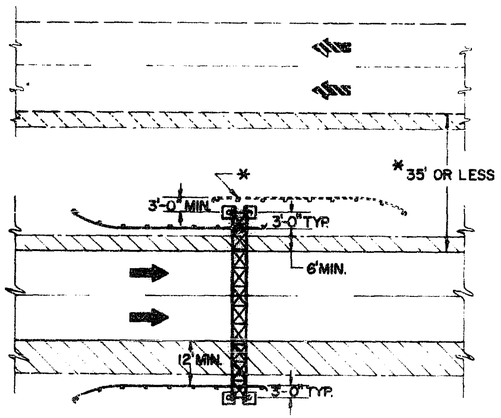
PROTECTIVE GUARD RAIL FOR OVERHEAD SIGN STRUCTURES SHALL CONFORM TO ITEM 606 AND STANDARD CONSTRUCTION DRAWING GR. 1 AND 2A.

A MIN. OF 50' OF GUARDRAIL IS REQUIRED USING 6'-3" POST SPACING. WHEN 12'-6" POST SPACING IS SPECIFIED, THE MINIMUM GUARD RAIL LENGTH SHALL BE 75'.

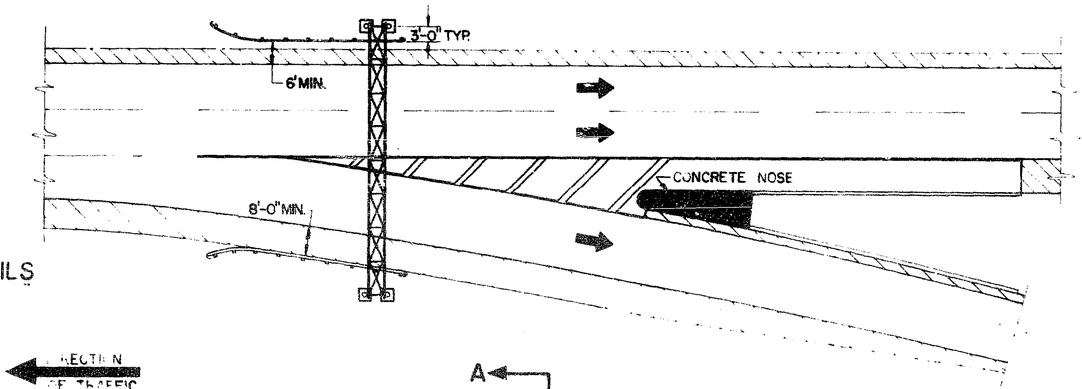
WHERE THE PROPOSED GUARD RAIL FLARES, IT SHALL BE CONSTRUCTED OF GUARD RAIL ELEMENTS WHICH HAVE BEEN FABRICATED TO FIT.

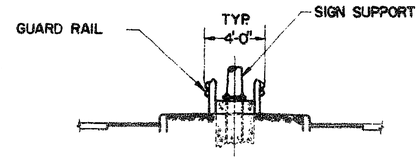
IN CASES WHERE NO RADII HAS BEEN SPECIFIED OR THE FABRICATED ELEMENTS DO NOT FIT THE CONDITIONS, THE TWO END POSTS OF THE FLARED SECTION SHALL BE ENCASED IN A MINIMUM THICKNESS OF 4" OF CLASS "E" CONCRETE FOR THE FULL DEPTH OF OF THE POST BELOW THE GROUND LINE. PAYMENT FOR ENCASEMENT, IF REQUIRED, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE GUARD RAIL.

ALL GUARD RAIL SHALL HAVE APPROPRIATE TERMINAL SECTIONS. FOR DETAILS SEE GR. 2A THE GORE INSTALLATIONS NOSE SECTION SHALL BE A BARRIER TERMINAL TYPE MOUNTED ON A SINGLE POST.

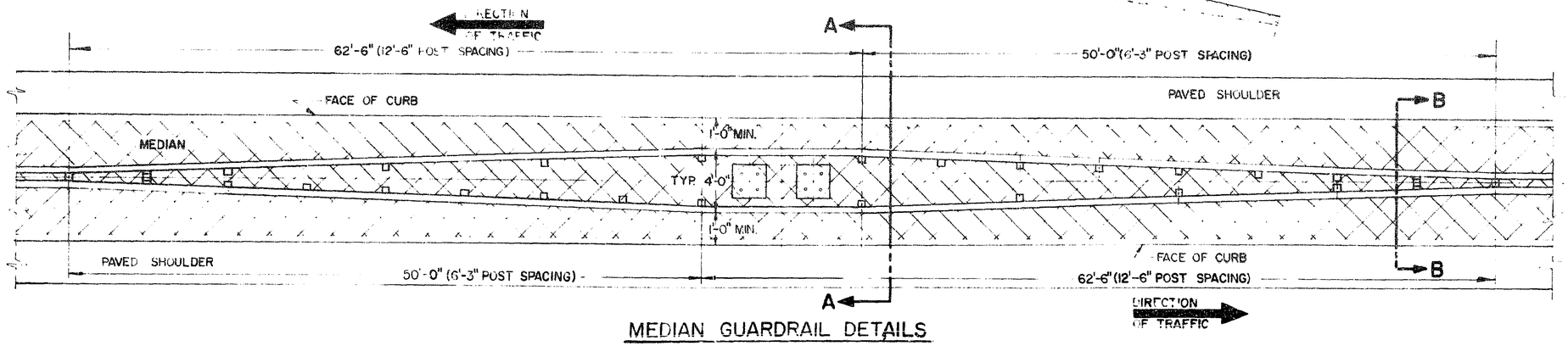


GUARD RAIL DETAILS (SPAN TYPE)





SECTION A-A



MEDIAN GUARDRAIL DETAILS

DESIGN

THE DESIGN OF GUARD RAIL 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.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

GUARD RAIL DETAILS FOR OVERHEAD SIGN SUPPORTS	GR-7	DATE: 3-10-65, 6-1-65, 9-10-65, 11-8-65

APPROVED Fred C. Taylor
ENGINEER OF TRAFFIC

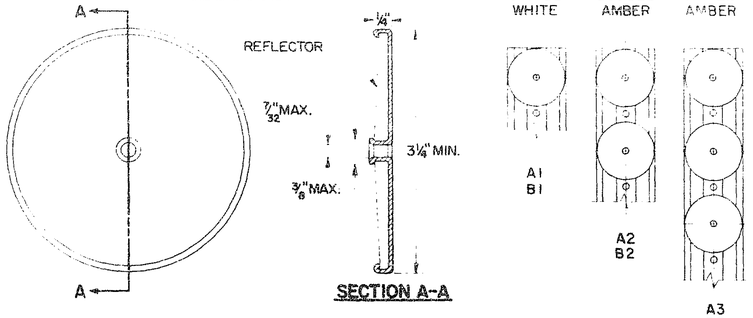
GUARD RAIL DETAILS FOR OVERHEAD SIGN SUPPORTS, GR.-7

FED. RD. DESIGN	STATE	PROJECT	
2	OHIO		

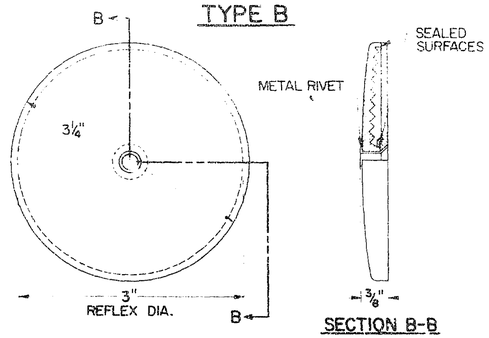
199
294

MAHONING COUNTY
MAH 18-9.89

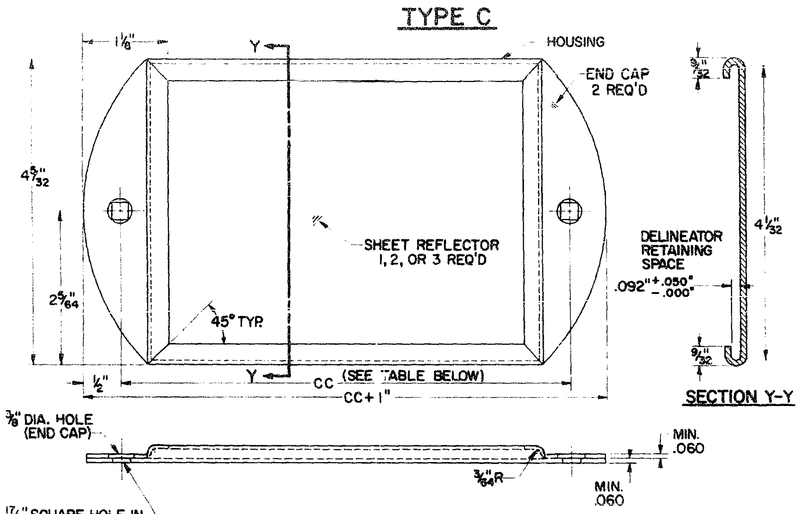
TYPE A



TYPE B

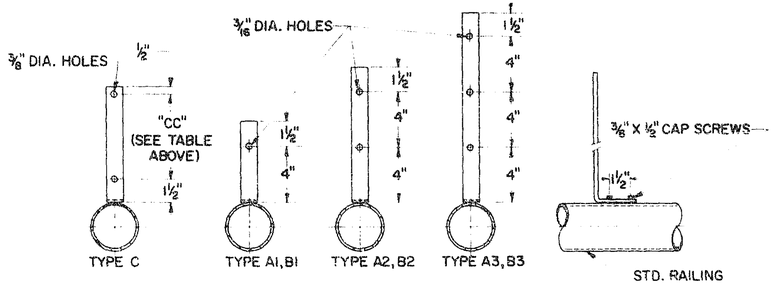


TYPE C

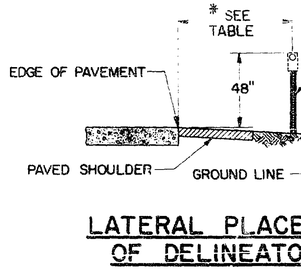


TYPE	DIM. CC
C1- SINGLE WHITE	6"
C2- DOUBLE AMBER	11"
C3- TRIPLE AMBER	16"

ALL BRACKETS 1/4" X 1 1/4" STAINLESS STEEL



BRIDGE RAIL BRACKET

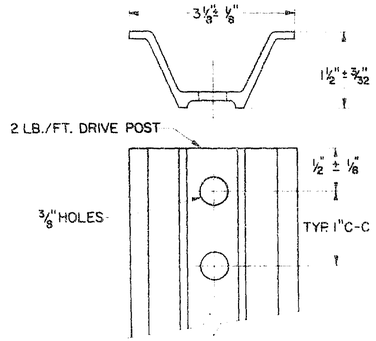


LATERAL PLACEMENT OF DELINEATORS

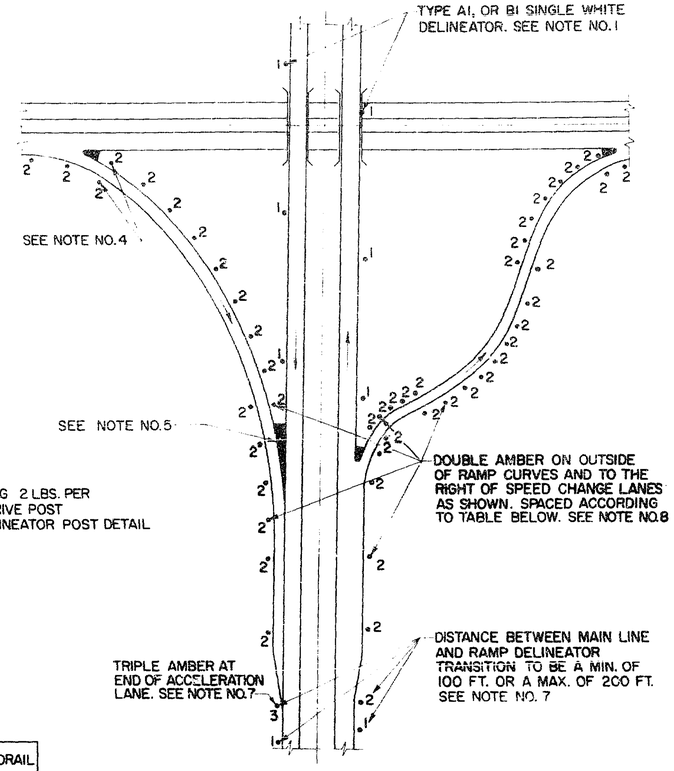
* TABLE

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. I-127, (1-15-62).
3. PAYMENT FOR SUPPORTS (DRIVEPOST OR BRACKET) SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH FOR "ITEM I-127 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	I-127	DATE 9-25-62 10-2-63

APPROVED Robert Elsner
ENGINEER OF TRAFFIC

DELINEATOR DETAILS I-127

A-104

FED. RD.	STATE	PROJECT	
2	OHIO		

200
294

MAH. 80-3.37

LIGHTING NOTES

GENERAL

THIS SPECIFICATION SUPPLEMENTS THE STATE OF OHIO CONSTRUCTION AND MATERIAL SPECIFICATIONS DATED JANUARY 1, 1965, FOR THE MATERIALS USED, AND FOR THE INSTALLATION OF LIGHTING UNITS ON FREEWAY INTERCHANGE.

THE LOCATION OF LIGHTING UNITS, SERVICE POLE, CONDUIT, CIRCUIT CABLES, PULL BOXES AND GROUNDS SHALL BE AS INDICATED ON THE PLANS.

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.

MATERIALS AND EQUIPMENT

ALL BOLTS, NUTS, STUDS, SHIMS, WASHERS, SCREWS, CONDUIT STRAPS, AND SIMILAR FASTENINGS AND FITTINGS SHALL BE OF AN APPROVED CORROSION RESISTING MATERIAL SUCH AS SILCONE-BRONZE, OR SHALL BE IRON OR STEEL TREATED IN AN APPROVED MANNER SUCH AS HOT DIP GALVANIZING TO MAKE IT CORROSION-RESISTANT.

ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW, SHALL BE OF THE BEST QUALITY AND WORKMANSHIP, SHALL BE THE BEST STANDARD PRODUCT OF A MANUFACTURER REGULARLY ENGAGED IN PRODUCING THIS TYPE OF MATERIAL OR EQUIPMENT, AND OF THE LATEST APPROVED DESIGN.

LIGHTING DESIGN

THE LIGHTING DESIGN IS BASED ON 0.8 TO 1.1 FOOT-CANDLE AVERAGE INITIAL VALUE ON THE ROADWAY, BRIDGE, AND RAMPS.

THE LIGHTING WILL BE MERCURY VAPOR, USING A MULTIPLE SYSTEM, SINGLE PHASE 480 VOLT CIRCUIT WITH ONE SIDE GROUNDED.

TESTS

TESTS SHALL BE PERFORMED AS SPECIFIED IN SECTION 625.22.

SERVICE POLE

CONTRACTOR SHALL FURNISH AND INSTALL AT THE LOCATION 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" AND 3" CONDUIT, AND 18" 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 THIS 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" FIBRE PULL BOX, LOCATED 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.

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.

SUPER-STRUCTURE GROUNDING

GROUND CABLE SHALL BE 1/0 , 7- STRAND, SOFT ANNEALED BARE COPPER CABLE ENCASED IN OUTSIDE COLUMN OF STRUCTURE AT A FIXED PIER (THE FIXED PIER FOR THE BRIDGE STRUCTURE IS LISTED IN THE TABLE ON DRAWING "LIGHTING DETAILS-STRUCTURES." SPIRAL COIL 25 FEET OF THE CABLE UNDER THE PIER FOOTING FLAT TO THE EARTH, AND COVERED WITH TWO (2) LAYERS OF TAR PAPER TO SEPARATE FROM THE CONCRETE WHEN POURED. SINCE STRUCTURE IS IN TWO PARTS NOT ELECTRICALLY CONNECTED, PROVIDE A GROUND FOR EACH HALF.

EXTEND TOP END OF CABLE (IN ONE CONTINUOUS LENGTH) THROUGH PIER CAP WITH SUFFICIENT LENGTH, AND EXOTHERMIC WELD TO OUTSIDE STEEL GIRDER OR BEAM OF THE SUPER-STRUCTURE.

EACH LIGHT POLE STANDARD, AND THE 2" GALVANIZED STEEL CONDUIT SECTIONS SHALL BE GROUNDED TO THE STEEL SUPER-STRUCTURE. AT EACH LIGHT POLE, EXOTHERMIC WELD A 1/0, 7-STRAND BARE COPPER CABLE TO THE TOP OF THE OUTSIDE STEEL GIRDER, AND CONNECT IT TO THE GROUND HOLE INSIDE THE POLE WITH BRONZE SCREW AND WASHERS.

CONDUIT (METAL)

CONDUIT AND FITTINGS SHALL BE 2" AND 3" RIGID STEEL, HOT DIPPED GALVANIZED AFTER THREADING, FEDERAL SPECIFICATIONS WW-C 581C. FOR ALL CONDUIT EXPOSED ON THE BRIDGE, SUCH AS THE 2" CONDUIT AT THE BRIDGE ABUTMENTS, WITH RUNS INTO THE NEAREST FIBRE PULL BOX OR LIGHT POLE FOUNDATION, THE CONTRACTOR SHALL USE CORROSION RESISTING ALLOY STEEL CONDUIT, HOT DIPPED GALVANIZED, AND ENAMEL COATED. THIS CONDUIT SHALL BE SIMILAR AND EQUAL TO STATE SPECIFICATION 713.04, TYPE III. GALVANIZED WROUGHT IRON CONDUIT CONFORMING TO SPECIFICATION 713.04, TYPE II MAY ALSO BE USED FOR THESE EXPOSED RUNS, AT OPTION OF THE CONTRACTOR.

CROSSOVER CONDUIT SHALL BE 3" DIRECT BURIAL ALLOY STEEL OR W.I. (WROUGHT IRON) HOT DIPPED GALVANIZED. USE 2" ALLOY STEEL OR W. I. HOT DIPPED GALVANIZED CONDUIT DIRECT BURIAL AT BRIDGE TO ENCASED CKT. CABLE UP SLOPES, WHERE "WASHOUT" COULD OCCUR, AND DUCT CABLE ALONE IS NOT ADEQUATE.

PULL BOXES

18" DIAMETER FIBRE PULL BOXES SHALL BE FABRICATED FROM A FIBRE TUBE INPREGNATED WITH A BLACK BITUMINOUS COMPOUND TO MAKE IT WATERPROOF. TUBE SHALL MEET THE FEDERAL SPEC. No. WC 581 FOR CONSTRUCTION AND CHEMICAL TESTS. THE PULL BOX SHALL HAVE A TOP OF 1/4" THICK CAST IRON, WITH THE WORD "ELECTRIC" IMPRINTED, AND A BOLT FASTENING AS INDICATED.

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 CROSSOVER CONDUIT, AS DETERMINED FOR EACH LOCATION; TOP OF BOX PROJECTION AND LOCATIONS ARE AS DETAILED ON THE PLANS.

DUCT-CABLE, CABLE AND WIRE

DUCT-CABLE SHALL BE FURNISHED IN 1-1/2" NOMINAL SIZE WITH TWO (2) No. 6 GAUGE 7-STRAND 600 VOLT COPPER CONDUCTORS, CROSS-LINKED FILLED POLYETHYLENE INSULATED TYPE GENERAL ELECTRIC CABLE No. SI-580 63 OR APPROVED EQUIVALENTS AS MANUFACTURED BY ROME, SIMPLEX, PHELPS-DODGE, KAISER, OR OTHER MANUFACTURERS APPROVED PRODUCT. DUCT SHALL BE BLACK POLYETHYLENE PLASTIC CONFORMING TO THE OVERALL DIAMETER OF IPS SCHEDULE CONDUIT, SHALL BE FLEXIBLE ENOUGH FOR EASY COILING AND UNCOILING AT 14° F. AND SHALL CONFORM TO ASTM SPECS. D-2104 SCHEDULE 40, TYPE II GRADE 3, OR TYPE III.

CONTRACTOR SHALL LAY, NOT PULL, THE DUCT-CABLE IN THE TRENCH.

CABLE USED IN BRIDGE STRUCTURE, AND IN CROSSOVER CONDUIT SHALL BE THE SAME SIZE AND SPECIFICATION AS FURNISHED IN THE DUCT-CABLE. POLE AND BRACKET CABLE SHALL BE SINGLE CONDUCTOR, No. 10 GAUGE, 600 VOLT, 7-STRAND CROSS-LINKED FILLED POLYETHYLENE.

CABLE INSTALLATION AND TERMINATIONS

THE DIRECT BURIAL DUCT-CABLE, AND THE CABLES PULLED THRU THE BRIDGE CONDUIT OR IN CONDUIT CROSSOVERS AT RAMPS, SHALL BE CONTINUOUS FROM BASE TO BASE OF STANDARDS, OR FROM PULL BOX TO PULL BOX. NO SPLICES IN CABLES WILL BE PERMITTED, EXCEPT IN LIGHTING STANDARD BASES, AND IN PULL BOXES. THE DETAILS ON DRAWINGS SHOW METHODS AND CONNECTIONS THAT ARE REQUIRED.

THE CABLE TERMINATIONS AND SPLICES SHALL BE MADE IN THE POLE BASES AND PULL BOXES, USING FACTORY MANUFACTURED INSULATED DISCONNECTING TYPE KITS. CONTRACTOR SHALL SIZE THE KITS TO MAKE A SNUG FIT ON THE CABLE HE FURNISHES. THE KITS SHALL BE SEPARATE PAY ITEMS IN QUANTITY TABLES.

LIGHT POLES — UNFUSED "Y" TYPE III; FUSED "Y" TYPE II WITH - 6 AMP. FUSE GRD'G. -COMPRESSION TYPE CONNECTOR

FIBRE PULL BOX — UNFUSED "Y" TYPE IV; STRAIGHT TYPE I

TRENCHING AND BACKFILLING

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, AS SHOWN IN PLAN-1 ON DRAWING DETAIL.

WHERE GUARD RAIL IS ENCOUNTERED THE TRENCHING IN GENERAL SHOULD BE DONE IN FRONT OF RAIL, EXCEPT THAT AT THE OPTION OF THE CONTRACTOR HE MAY USE THE METHOD SHOWN IN PLAN-2 AND RUN TRENCHES BEHIND THE RAIL. WALLS OF TRENCHES SHALL BE ESSENTIALLY VERTICAL, AND BOTTOMS SMOOTH, AND FREE FROM LARGE AGGREGATES.

CAREFUL BACKFILLING OF TRENCHES IS ESSENTIAL TO PREVENT DAMAGE TO THE DUCT CABLE. BACKFILL AND TAMP MATERIAL IN TRENCH BY LAYERS, IN ACCORDANCE WITH SEC. 625.12. LEAVE TOP OF BACKFILL LEVEL WITH AND IN SAME CONDITION AS SPECIFIED FOR CONDITION OF THE PAVING SHOULDER CONSTRUCTION, AND SATISFACTORY TO THE ENGINEER.

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 TYPE 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 TCD RATED FOR 16,000 HOUR LIFE. THEY SHALL BE GENERAL ELECTRIC COMPANY "BONUS LINE", WESTINGHOUSE "LIFEGUARD", SYLVANIA "BANNER LINE", OR AN APPROVED EQUAL.

LIGHTING POLES

THE POLES SHALL BE OF SUCH DESIGN AS TO MAKE A COMPLETE WIRING RACEWAY AFTER THEY HAVE BEEN ASSEMBLED AND ERECTED. THEY SHALL BE EQUIPPED WITH A "J" HOOK PLACED INSIDE AND ABOVE THE ARM ATTACHMENT TO HOLD A BRONZE CABLE GRIP WHICH SHALL KEEP THE POLE AND BRACKET WIRE FROM BEARING AND CHAFING ON THE ATTACHMENT WHERE THEY TURN OUT THE ARM.
THE BRIDGE POLE THAT IS SHOWN TO BE INSTALLED, SHALL BE MOUNTED ON THE BRIDGE PARAPET WALL PROJECTION, WITH THE 2" GALVANIZED STEEL CONDUITS RUN DIRECTLY INTO THE POLE BASE. AT FUTURE BRIDGE POLE LOCATION 48+87.25 THERE SHALL BE A 24"x10"x8" GALVANIZED CAST IRON BOX INSTALLED IN PARAPET CONCRETE WALL AS SHOWN. SUPPLY KITS FOR CIRCUIT, CABLES AND SLUSH 1" BOLT THREADS AND NUTS WITH ASPHATLUM PAINT FOR PROTECTION.
ALL POLES SHALL BE PLACED SO THEIR BRACKET ARMS ARE NORMALLY AT RIGHT ANGLES TO THE CENTERLINE OF THE ROADWAY OR SET NORMAL TO THE RADIUS ON RAMPS, AND CARFULLY 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 CAST STEEL ANCHOR BASES.
3. SHAFTS SHALL HAVE A 4"x10" 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:

USE	SIZE	GA.	ARM LENGTH	ANCHOR BOLT CIRCLE	PROJ. 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.
ROADWAY	9"x4.87"x29'-6"	11	15'	12.5"	3"	2.16	659	14.73	.50	989	24	2.64
RAMP	8"x3.87"x29'-6"	11	10'	11.0"	2⅝"	3.32	517	17.66	.50	776	28.84	3.08
BRIDGE	8"x4.22 x27'-0"	11	10'	11.0"	2⅝"	2.37	568	13.96	.50	852	22.71	2.52

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 AND THEIR SHAFT ATTACHMENTS SHALL CONFORM TO SECTION 713.01, 6 AND BE SUPPLIED WITH 2" FITTER.

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-107, GRADE 1035 SPECIAL QUALITY, AND SHALL HAVE A MINIMUM YIELD STRENGTH OF 46,000 p.s.i. AND AN ULTIMATE YIELD STRENGTH OF 67,000 p.s.i. BOLT STOCK SHALL CONFORM WITH ASTM SPEC. A-29 AND NOMINAL BAR SIZE SHALL EQUAL NOMINAL BOLT SIZE.
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.