STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
UNI-33-7.29
PARIS TOWNSHIP
UNION COUNTY

F-11(74)

FHWA REGION	STATE	PROJECT	
5	OHIO		

1 / 225

UNION COUNTY
UNI-33-7.29

T-3-L

DESIGN DESIGNATION

CURRENT A.D.T. 1985	= 11,900
DESIGN YEAR A.D.T. 2005	= 19,040
D.H.V.	= 1,904
D	= 0.60
T	= 14%
V	= 55 M.P.H.

KDA 3/3/98

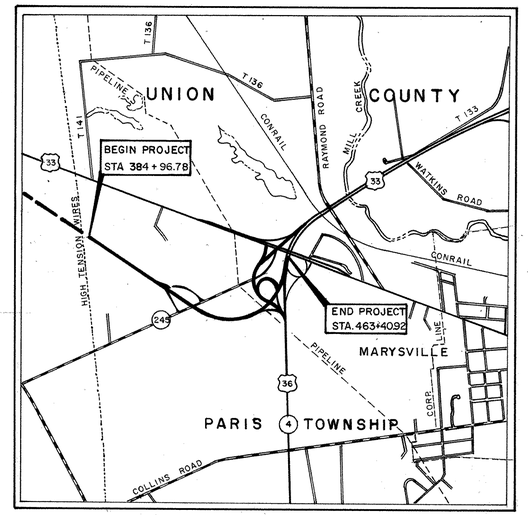
06cw89

CONVENTIONAL SIGNS

COUNTY LINE	
SECTION LINE	
TOWNSHIP LINE	
CORPORATION LINE	
CENTER LINE	
PROPERTY LINE	℄ ℄
EXISTING RIGHT-OF-WAY	R/W
PROPOSED RIGHT-OF-WAY	R/W
LIMITED ACCESS LINE	LA
LIMITED ACCESS & RIGHT-OF-WAY LINE	LA-R/W
TEMPORARY & CHANNEL EASEMENTS	
WORK LIMITS	
FENCE LINE (EXISTING, PROPOSED)	
GUARD RAIL (EXISTING, PROPOSED)	
UTILITY POLES (POWER, TELEPHONE, LIGHT)	
UNDERGROUND UTILITIES (GAS, WATER, TELE.)	2"G, 6"W, T
EXISTING TREES, STUMPS	
TREES, STUMPS REMOVED	
RAILROAD	
TILE & DRAIN PIPES	6"VSP, 12"CMP
EXISTING STORM SEWER, SANITARY	12"S, 8"SAN

INDEX OF SHEETS

WETLANDS 96A, 97A, 98A, 99A



PORTION TO BE IMPROVED
STATE HIGHWAY
FEDERAL HIGHWAY
OTHER ROADS

SCALES
PLAN 0' 50'
PROFILE HORIZONTAL 0' 50' VERTICAL 0' 10'
CROSS SECTIONS HORIZONTAL 0' 10' VERTICAL 0' 10'

UNDERGROUND UTILITIES

TWO WORKING DAYS
BEFORE YOU DIG
Call··· 800-362-2764 (Toll Free)
OHIO UTILITIES PROTECTION SERVICE

NON-MEMBERS
MUST BE CALLED DIRECTLY

SHT. NOS. 164, 166-171 INCL REVISED; SHT. NO. 171A DELETED; SHT. NOS. 170A & 171B ADDED 3-31-87 GHD

SHT. NOS. 205 and 206 REVISED 1-22-88 LMG

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

1985 SPECIFICATIONS

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

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

SUPPLEMENTAL SPECS	
824	10-8-82
836	11-12-85
847	10-17-83
849	12-24-85
853	6-26-78
947	10-17-83
956	6-26-78
846	10-3-85
848	10-2-85
932	3-25-85

APPROVED Edward L. Miller
DATE 1-24-84 DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

APPROVED Walter J. Jennings / CPD
DATE 2-18-86 ENGINEER, BUREAU OF BRIDGES AND STRUCTURAL DESIGN

APPROVED Wayne H. Kauble
DATE 4-22-86 CHIEF ENGINEER, PLANNING AND DESIGN

APPROVED Warren J. Smith
DATE 4-22-86 DIRECTOR, DEPARTMENT OF TRANSPORTATION

PREPARED AND RECOMMENDED BY
FRANKLIN CONSULTANTS, INC.
CONSULTING ENGINEERS
COLUMBUS, OHIO

FILE NO.

DATE OF LETTING

CONTRACT NO.

PROJECT LENGTH
STA. 384+96.78 TO STA. 463+40.92 = 7844.14 L.F. = 1.486 MI.

WORK LENGTH
US 33-STA. 384+96.78 TO STA. 463+40.92 = 7844.14 L.F.
(EQUA.) STA. 457+50.00 TO STA. 473+10.00 = 1560.00 L.F.
S.R. 245-STA. 19+50.00 TO STA. 28+50.00 = 900.00 L.F.
ROAD 'U'-STA. 60+52.05 TO STA. 114+04.00 = 5351.95 L.F.
EX. US-36 STA. 415+13.00 TO STA. 448+00.00 = 3287.00 L.F.
EX. US-33 STA. 31+00.00 TO STA. 56+25.00 = 2525.00 L.F.
SIGNS-SEE SHEET NO. 2 = 1200.00 L.F.
TOTAL WORK LENGTH 22,668.09 L.F. = 4.293 MI.

LINE DATA

STANDARD CONSTRUCTION DRAWINGS

DWG. NO.	DATE	DWG. NO.	DATE	DWG. NO.	DATE	DWG. NO.	DATE	DWG. NO.	DATE	DWG. NO.	DATE	DWG. NO.	DATE
BP-1	6-1-65	CB-4	11-10-83	MH-2	6-12-75	HL-11	6-1-79	GR-5	2-5-82	AS-1-81	11-27-81	TC-21.10	1-20-84
BP-2	1-11-85	CB-458A	5-1-79	MH-3	12-28-84	HL-12	12-28-84	GR-6	2-5-82	BR-1	5-29-79	TC-21.20	1-20-84
BP-5	1-11-85	CB-8	11-10-83	HL-1	12-18-84	MC-10	5-1-76	GR-6A	2-5-82	EXJ-2-81	4-2-84	TC-22.10	3-1-79
BP-6	6-1-65	HW-4A	4-1-80	HL-2	7-27-73	HL-15	12-28-84	GR-7	2-5-82	EXJ-3-82	8-1-84	TC-22.20	3-1-79
BP-7	12-6-76	HW-4B	4-1-80	HL-3	12-28-84	HL-16	12-28-84	TC-41.20	3-26-79	FB-1-82	5-10-82	TC-31.21	3-6-79
F-1	11-10-83	MC-1	6-13-69	HL-4	1-21-76	HL-19	3-22-77	TC-41.40	6-18-79	ICD-1-82	8-1-84	TC-32.10	3-8-79
F-2	5-1-76	MC-4	7-26-76	HL-5	9-6-73	GR-1	1-11-85	TC-42.20	3-26-79	PSBD-1-81	9-18-81	TC-32.11	3-21-79
F-5	5-1-76	MC-7	10-15-76	HL-7	1-21-76	GR-2B	2-5-82	TC-52.10	4-3-79	RB-1-55	2-2-59	TC-35.10	8-29-84
F-6	5-1-76	MC-8	6-12-75	HL-8	1-21-76	GR-3	1-21-85	TC-52.20	4-3-79	SD-1-69	6-12-69	TC-41.10	8-29-84
CB-2-2-A&B	5-1-79	MC-11	8-1-78	HL-9	3-22-77	GR-4	2-5-82	TC-71.10	4-9-79	TC-12.30	1-20-84	TC-41.40	6-18-79
CB-2-3&2-4	5-1-79	MH-1	12-18-84	HL-10	12-28-84	GR-4A	1-30-84	TC-71.20	3-1-79	TC-18.24	4-25-79	TC-41.50	3-26-79
												TC-72.20	2-26-82

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

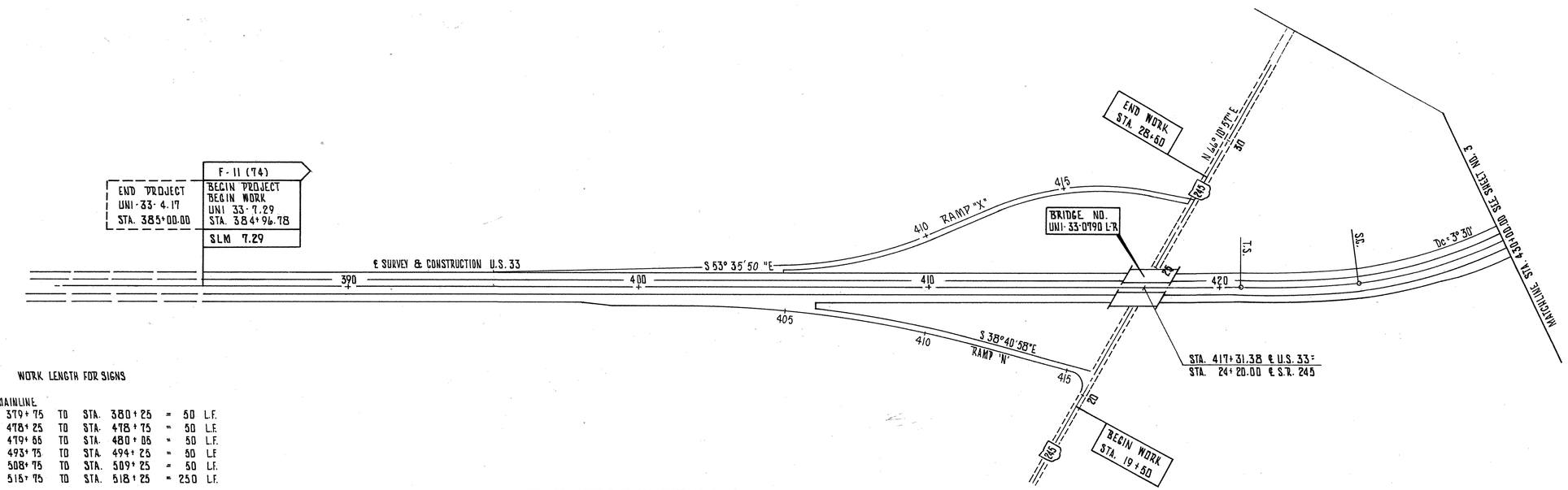
DIVISION ADMINISTRATOR — DATE

SCHEMATIC PLAN

FHWA REGION	STATE	PROJECT	
5	OHIO		

2
225

UNION COUNTY
UNI 33 7.29



NOTE: FOR CURVE DATA SEE SHEET NO. 51.

WORK LENGTH FOR SIGNS

U.S. 33 MAINLINE

STA.	379+75	TO	STA.	380+25	= 50 L.F.
STA.	478+25	TO	STA.	478+75	= 50 L.F.
STA.	479+66	TO	STA.	480+06	= 50 L.F.
STA.	493+75	TO	STA.	494+25	= 50 L.F.
STA.	508+75	TO	STA.	509+25	= 50 L.F.
STA.	515+75	TO	STA.	518+25	= 250 L.F.

EX. S.R. 245

STA.	11+75	TO	STA.	12+25	= 50 L.F.
STA.	14+75	TO	STA.	15+25	= 50 L.F.
STA.	17+25	TO	STA.	18+25	= 100 L.F.

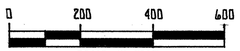
EX. U.S. 36 & S.R. 4

STA.	404+25	TO	STA.	404+75	= 50 L.F.
STA.	407+25	TO	STA.	407+75	= 50 L.F.
STA.	409+25	TO	STA.	409+75	= 50 L.F.
STA.	412+25	TO	STA.	412+75	= 50 L.F.

EX. U.S. 33

STA.	25+50	TO	STA.	26+00	= 50 L.F.
STA.	59+25	TO	STA.	59+75	= 50 L.F.
STA.	43+75	TO	STA.	44+25	= 50 L.F.
STA.	XX, YY, ZZ				= 150 L.F.

TOTAL LENGTH = 1200 L.F.



SCHEMATIC PLAN

FHWA REGION	STATE	PROJECT	
5	OHIO		

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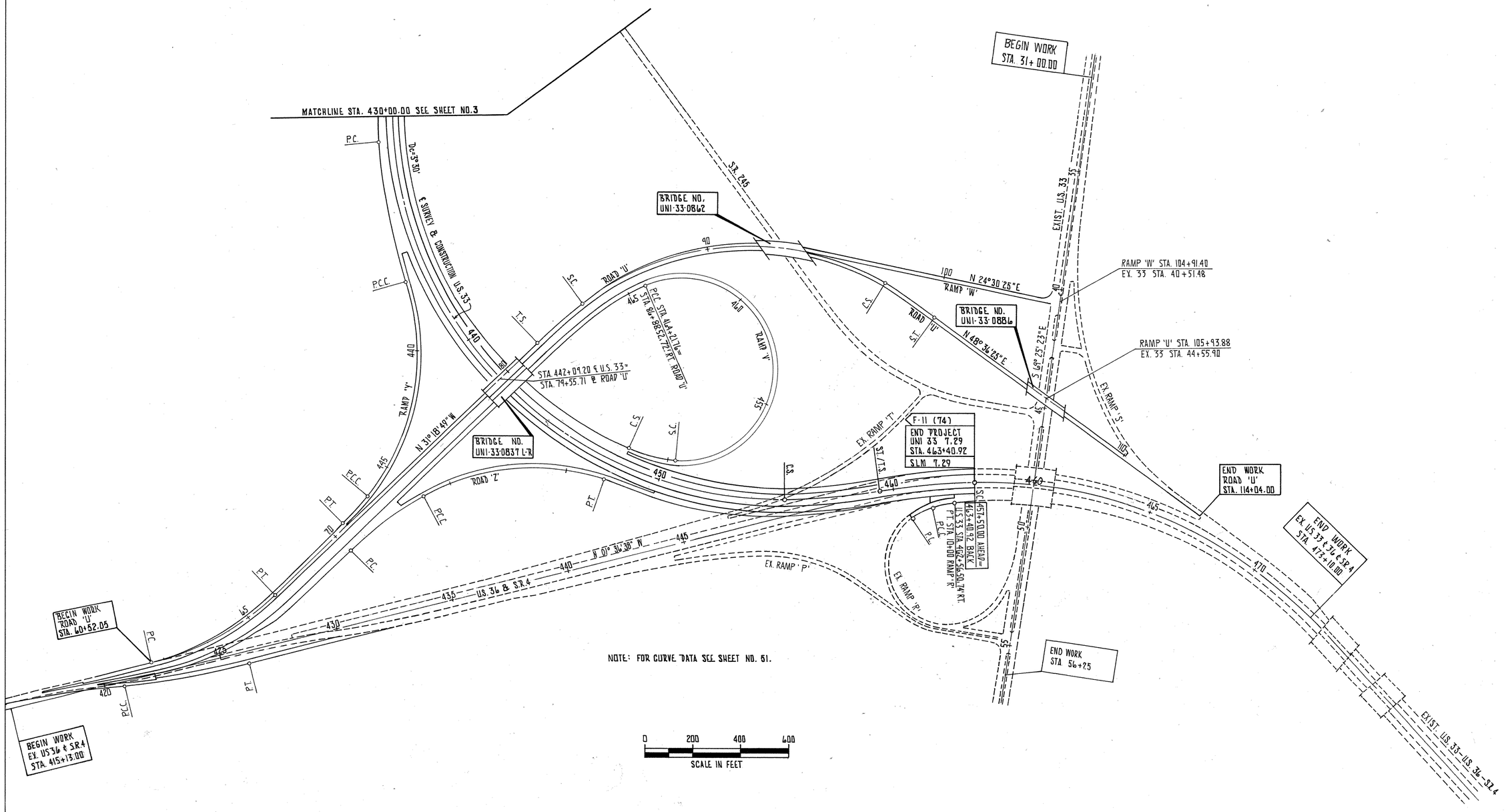
225

UNION COUNTY
UNI 33 7.29



NOTE: FOR CURVE DATA SEE SHEET NO. 61.

TYPICAL SECTIONS

846 on 301

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

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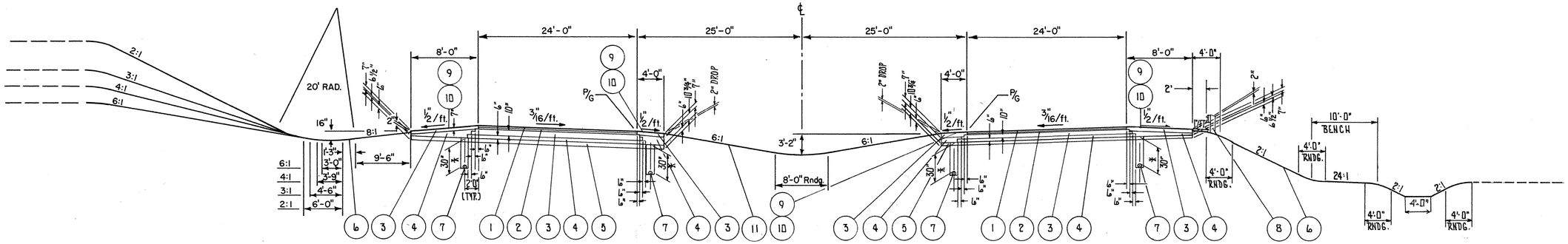
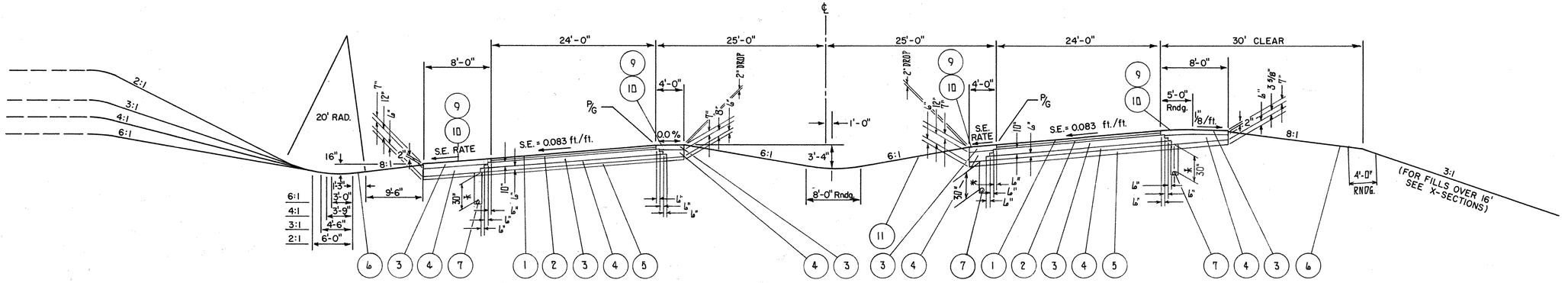
UNION COUNTY
UNI-33-7.29



LIMITING STATIONS = STA. 384+96.78 TO STA. 419+25.37 = 3428.59 LIN. FT.
PEDUCT FOR STRUCTURES = -188.28 LIN. FT.
NET TOTAL = 3240.31 LIN. FT.

NORMAL SECTION



LIMITING STATIONS STA. 419+25.37 TO STA. 463+40.92 = 4415.55 LIN. FT.

SUPERELEVATED SECTION

LEGEND

1	ITEM	846	1 1/4" ASPHALT CONCRETE SURFACE COURSE TYPE 1, AC-20
2	ITEM	846	1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
3	ITEM	301	BITUMINOUS AGGREGATE BASE AC-20, RT-11 OR RT-12
4	ITEM	304	AGGREGATE BASE
5	ITEM	SPECIAL	6" LIME AND SOIL STABILIZED SUBGRADE
6	ITEM	659	SEEDING AND MULCHING FOR WILDLIFE
7	ITEM	605	6" UNDERDRAINS
8	ITEM	606	GUARDRAIL, TYPE 5
9	ITEM	409	SEAL COAT BITUMINOUS MATERIAL
10	ITEM	409	SEAL COAT COVER AGGREGATE
11	ITEM	659	SEEDING AND MULCHING

NOTES:

1. TYPICAL SECTIONS ARE INTENDED TO SHOW GENERAL ROADWAY AND PAVEMENT FEATURES ONLY. FOR FURTHER DETAILS SEE REMAINING PLAN & PROFILES, PAVEMENT DETAILS AND CROSS SECTIONS.
2. TYPICAL SECTIONS NOT DRAWN TO SCALE.
3. * 30" UNDERDRAINS IN FILL 50" UNDERDRAINS IN CUT.

MAINLINE TYPICAL SECTIONS

TYPICAL SECTIONS

846 on 301

FHWA REGION	STATE	PROJECT	
5	OHIO		

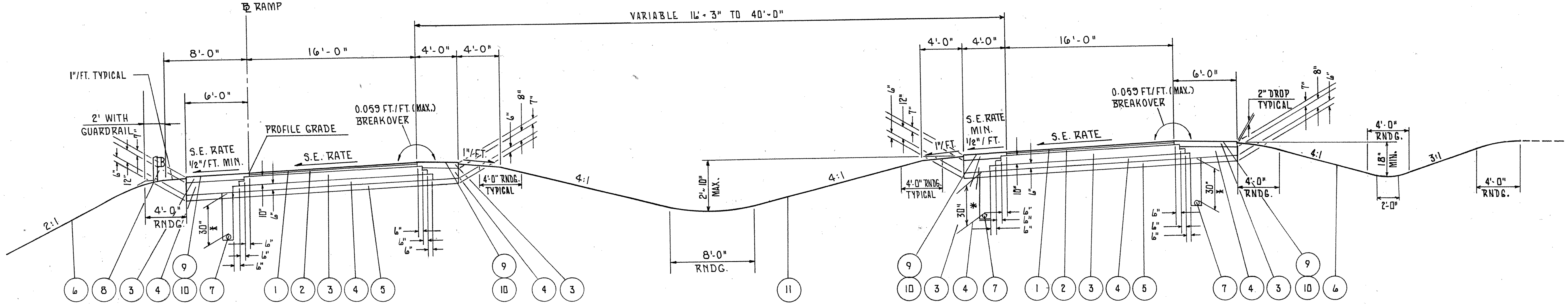
5 / 225

UNION COUNTY
UNI-33-7.29

ROAD "U"

LIMITING STATIONS STA. 66+46.11 TO STA. 81+69.95 = 1523.84 LIN. FT.
DEDUCT FOR STRUCTURES = - 275.00 LIN. FT.
NET TOTAL = 1248.84 LIN. FT.

NORMAL SECTION



ROAD "U"

LIMITING STATIONS STA. 60+52.05 TO STA. 66+46.11 = 594.06 LIN. FT.
STA. 81+69.95 TO STA. 86+88.52 = 518.57 LIN. FT.
NET TOTAL = 1112.63 LIN. FT.

SUPERELEVATED SECTION

LEGEND

1	ITEM	846	1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20
2	ITEM	846	1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
3	ITEM	301	BITUMINOUS AGGREGATE BASE AC-20, RT-11 OR RT-12
4	ITEM	304	AGGREGATE BASE
5	ITEM	SPECIAL	6" LIME AND SOIL STABILIZED SUBGRADE
6	ITEM	659	SEEDING AND MULCHING FOR WILDLIFE
7	ITEM	605	6" UNDERDRAINS
8	ITEM	606	GUARDRAIL, TYPE 5
9	ITEM	409	SEAL COAT BITUMINOUS MATERIAL
10	ITEM	409	SEAL COAT COVER AGGREGATE
11	ITEM	659	SEEDING AND MULCHING

NOTES:

1. TYPICAL SECTIONS ARE INTENDED TO SHOW GENERAL ROADWAY AND PAVEMENT FEATURES ONLY. FOR FURTHER DETAILS SEE REMAINING PLAN & PROFILES, PAVEMENT DETAILS AND CROSS SECTIONS.
2. TYPICAL SECTIONS NOT DRAWN TO SCALE.
3. * 30" UNDERDRAINS IN FILL SECTIONS, 50" UNDERDRAINS IN CUT SECTIONS.

TYPICAL SECTIONS

846 on 301

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

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UNION COUNTY
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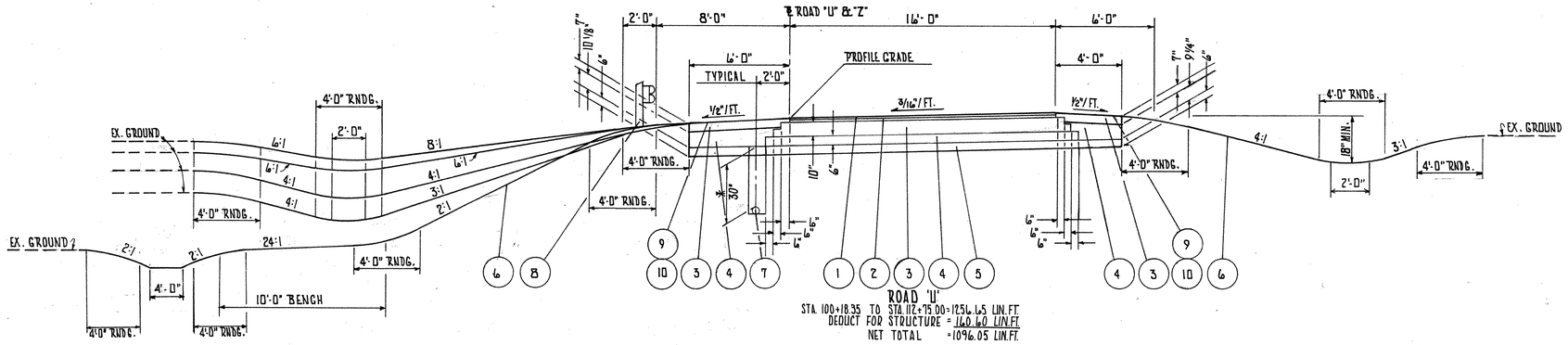
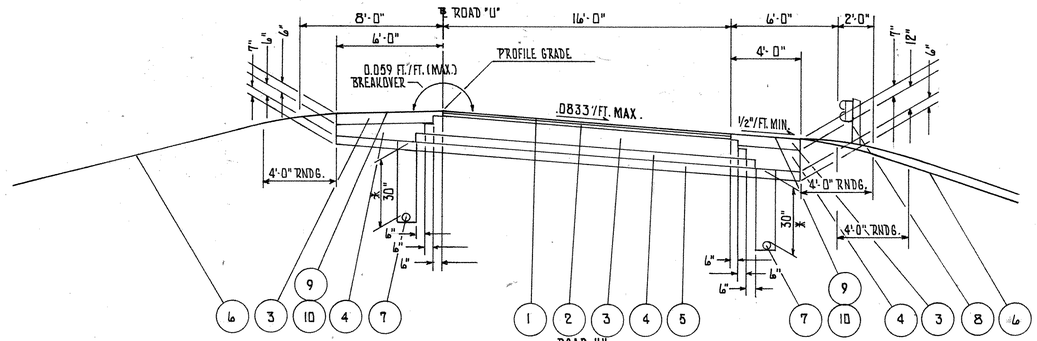
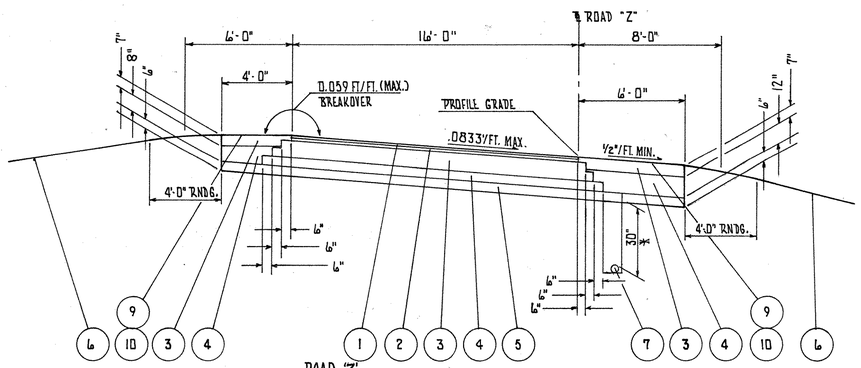


ROAD "U"
STA. 100+18.35 TO STA. 112+75.00 = 1256.65 LIN. FT.
DEDUCT FOR STRUCTURE = 160.60 LIN. FT.
NET TOTAL = 1096.05 LIN. FT.

NORMAL SECTION



ROAD "U"
STA. 86+88.52 TO STA. 100+18.35 = 1329.83 LIN. FT.
DEDUCT FOR STRUCTUR = 160.60 LIN. FT.
NET TOTAL = 1169.23 LIN. FT.



ROAD "Z"
STA. 72+86.43 TO STA. 81+79.53 = 893.10 LIN. FT.

SUPERELEVATED SECTION

LEGEND

1	ITEM	846	1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20
2	ITEM	846	1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
3	ITEM	301	BITUMINOUS AGGREGATE BASE AC-20, RT-11 OR RT-12
4	ITEM	304	AGGREGATE BASE
5	ITEM	SPECIAL	6" LIME AND SOIL STABILIZED SUBGRADE
6	ITEM	659	SEEDING AND MULCHING FOR WILDLIFE
7	ITEM	605	6" UNDERDRAINS
8	ITEM	606	GUARDRAIL, TYPE 5
9	ITEM	409	SEAL COAT BITUMINOUS
10	ITEM	409	SEAL COAT COVER AGGREGATE

NOTES:

1. TYPICAL SECTIONS ARE INTENDED TO SHOW GENERAL ROADWAY AND PAVEMENT FEATURES ONLY. FOR FURTHER DETAILS SEE REMAINING PLAN & PROFILES, PAVEMENT DETAILS AND CROSS SECTIONS.
2. TYPICAL SECTIONS NOT DRAWN TO SCALE.
3. 2" DROP AT EDGE OF ALL PAVED SHOULDERS.
4. * 30" UNDERDRAINS IN FILL, 50" UNDERDRAINS IN CUT.

ROAD "U" AND ROAD "Z" TYPICAL SECTIONS

TYPICAL SECTIONS

848 on 301

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

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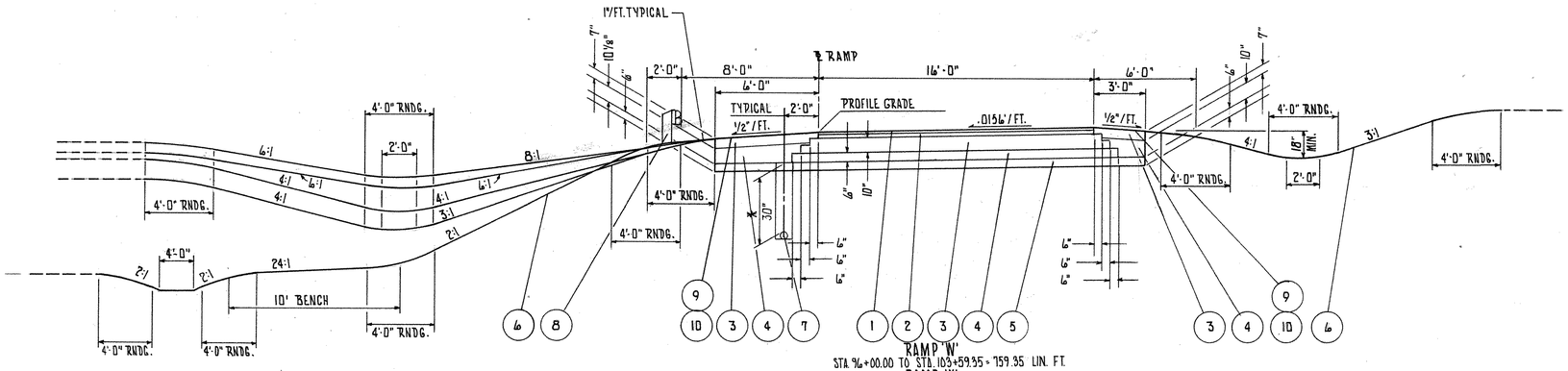
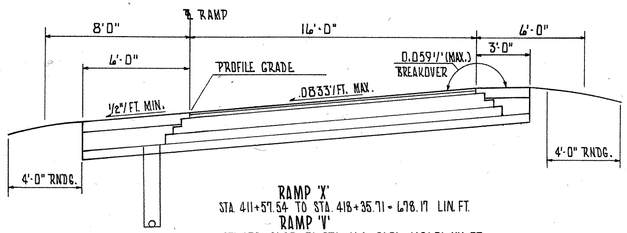
UNION COUNTY
UNI-33-7.29

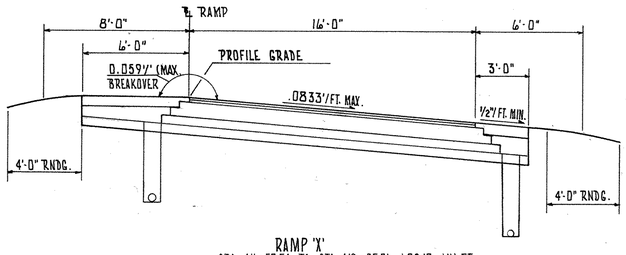


RAMP 'W'
STA. 96+00.00 TO STA. 103+59.35 = 759.35 LIN. FT.
RAMP 'Y'
STA. 410+28.47 TO STA. 111+57.54 = 129.07 LIN. FT.

NORMAL SECTION



RAMP 'X'
STA. 411+57.54 TO STA. 418+35.71 = 678.17 LIN. FT.
RAMP 'V'
STA. 450+01.05 TO STA. 464+21.76 = 1420.71 LIN. FT.



RAMP 'X'
STA. 411+57.54 TO STA. 418+35.71 = 678.17 LIN. FT.

SUPERELEVATED SECTION

LEGEND

1	ITEM	846	1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20.
2	ITEM	846	1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
3	ITEM	301	BITUMINOUS AGGREGATE BASE AC-20, RT-11 OR RT-12
4	ITEM	304	AGGREGATE BASE
5	ITEM	SPECIAL	6" LIME AND SOIL STABILIZED SUBGRADE
6	ITEM	659	SEEDING AND MULCHING FOR WILDLIFE
7	ITEM	605	6" UNDERDRAINS
8	ITEM	606	GUARDRAIL, TYPE 5
9	ITEM	409	SEAL COAT BITUMINOUS MATERIAL
10	ITEM	409	SEAL COAT COVER AGGREGATE

NOTES:

1. TYPICAL SECTIONS ARE INTENDED TO SHOW GENERAL ROADWAY AND PAVEMENT FEATURES ONLY. FOR FURTHER DETAILS SEE REMAINING PLAN & PROFILES, PAVEMENT DETAILS AND CROSS SECTIONS.
2. TYPICAL SECTIONS NOT DRAWN TO SCALE.
3. 2" DROP AT EDGE OF ALL PAVED SHOULDERS.
4. ✱ 30" UNDERDRAINS IN FILL, 50" UNDERDRAINS IN CUT.

RAMPS "V", "W" & "X" TYPICAL SECTIONS

TYPICAL SECTIONS

846 on 301

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

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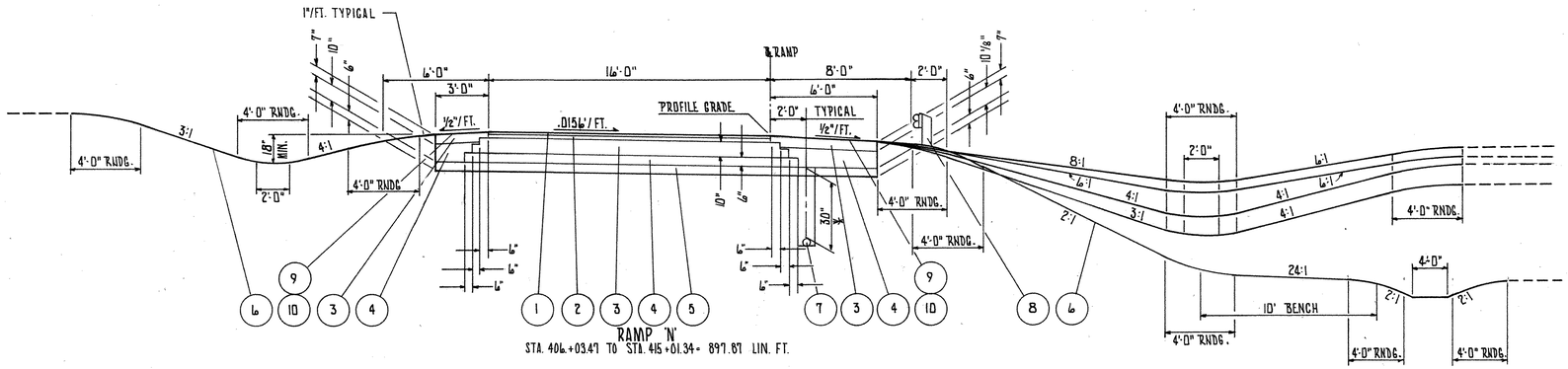
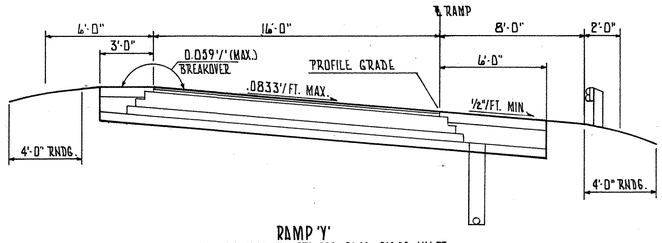
UNION COUNTY
UNI-33-7.29

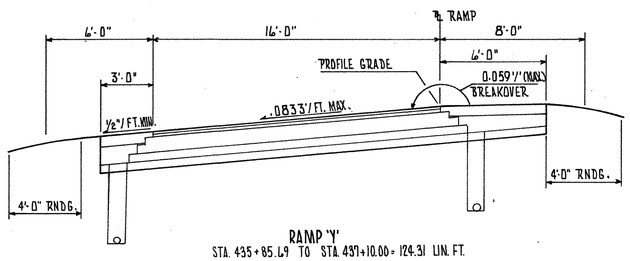


RAMP 'N'
STA. 406+03.47 TO STA. 415+01.34 = 897.87 LIN. FT.

NORMAL SECTION



RAMP 'Y'
STA. 437+10.00 TO STA. 446+20.00 = 910.00 LIN. FT.



RAMP 'Y'
STA. 435+85.69 TO STA. 437+10.00 = 124.31 LIN. FT.

SUPERELEVATED SECTION

LEGEND:

1	ITEM	846	1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20
2	ITEM	846	1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
3	ITEM	301	BITUMINOUS AGGREGATE BASE AC-20, RT-11 OR RT-12
4	ITEM	304	AGGREGATE BASE
5	ITEM	SPECIAL	6" LIME AND SOIL STABILIZED SUBGRADE
6	ITEM	659	SEEDING AND MULCHING FOR WILDLIFE
7	ITEM	606	6" UNDERDRAINS
8	ITEM	606	GUARDRAIL, TYPE 5
9	ITEM	409	SEAL COAT BITUMINOUS MATERIAL
10	ITEM	409	SEAL COAT COVER AGGREGATE

NOTES:

1. TYPICAL SECTIONS ARE INTENDED TO SHOW GENERAL ROADWAY AND PAVEMENT FEATURES ONLY. FOR FURTHER DETAILS SEE REMAINING PLAN & PROFILES, PAVEMENT DETAILS AND CROSS SECTIONS.
2. TYPICAL SECTIONS NOT DRAWN TO SCALE.
3. 2" DROP AT EDGE OF ALL PAVED SHOULDERS.
4. * 30" UNDERDRAINS IN FILL, 50" UNDERDRAINS IN CUT.

RAMPS "N" & "Y" TYPICAL SECTIONS

CALC: PCB 9/85
CHK: ROB 9/85

FHWA REGION	STATE	PROJECT	
5	OHIO		

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UNION COUNTY
UNI-33-7.29

GENERAL NOTES

FIELD OFFICE. THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 800 SQ. FT. OF FLOOR SPACE. PAYMENT SHALL BE AT THE LUMP SUM PRICE BID FOR ITEM 619, FIELD OFFICE.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS. THE ROUNDED CORNERS SHOWN ON THE TYPICAL SECTIONS, APPLY TO ALL CROSS SECTIONS EVEN THOUGH OTHERWISE SHOWN ON THESE PLANS.

UNDERGROUND UTILITIES. THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 ORC.

UTILITY OWNERSHIP. THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT:

DAYTON POWER AND LIGHT COMPANY
COURT HOUSE PLAZA S.W.
P.O. BOX 1247
DAYTON, OHIO 45401
PHONE: (513)-227-2498

UNITED TELEPHONE COMPANY OF OHIO
127 NORTH MAIN STREET
BELLEFONTAINE, OHIO 43311
PHONE: (513)-599-9373

UNION RURAL ELECTRIC COOPERATIVE, INC.
906 E. FIFTH STREET
P.O. BOX 393
MARYSVILLE, OHIO 43040
PHONE: (513)-642-1826

COLUMBIA GAS OF OHIO, INC.
942 WEST GOODALE BLVD.
COLUMBUS, OHIO 43212
PHONE: (614)-460-2097

BUCKEYE PIPE LINE COMPANY
P.O. BOX 368
EMMAUS, PENNSYLVANIA 18049
PHONE: (215)-967-3131, EXT. 399

CONTINGENCY QUANTITIES. THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEER'S DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

REMOVAL OF TREES OR STUMPS. ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT SHALL BE REMOVED UNDER THE LUMP SUM PRICE BID FOR 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	TOTAL
18"	925	182	1107
30"	175	303	478
48"	50	0	50
60"	2	0	2

THE ABOVE ESTIMATE IS APPROXIMATE AND THE STATE OF OHIO RESERVES THE RIGHT TO ORDER THE REMOVAL OF ADDITIONAL TREES OR STUMPS OUTSIDE OF THE LIMITS OF CONSTRUCTION BUT WITHIN THE RIGHT-OF-WAY AND/OR EASEMENT LINES. PAYMENT FOR THE REMOVAL OF THESE ADDITIONAL TREES OR STUMPS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

GUARDRAIL OVER CULVERTS. WHEN SUFFICIENT POST DEPTH IS NOT AVAILABLE DUE TO A CULVERT, THE GUARDRAIL POSTS DIRECTLY OVER THE CULVERT SHALL NOT BE DRIVEN, BUT SET IN HOLES. IF THE DISTANCE BETWEEN THE GROUND LINE AND THE TOP OF THE CULVERT IS LESS THAN 3 FT., THE POST SHALL BE ENCASED IN A MINIMUM OF 4" THICKNESS OF CLASS C CONCRETE FOR THE FULL DEPTH OF THE POST. PAYMENT FOR THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 606, GUARDRAIL TYPE 5.

DUST CONTROL. THE FOLLOWING QUANTITIES ARE ADDED FOR DUST CONTROL TO BE USED AS DIRECTED BY THE ENGINEER:
ITEM 616 CALCIUM CHLORIDE - - - - - - - - - - 50 TONS
ITEM 616 WATER - - - - - - - - - - - - - - - 500 M. GAL.

WILDLIFE SEEDING. ALL AREAS ON THE PLAN (DESIGNATED BELOW) TO BE SEEDED FOR WILDLIFE SHALL BE SEEDED WITH THE FOLLOWING MIXTURE AT THE RATE OF 2 POUNDS PER 1000 SQUARE FEET.
34% BROME GRASS (BROMUS INERMIS) 26% ALFALFA * WEEVIL RESISTANT STRAIN
18% RED CLOVER (TRIFOLIUM PRATENSE) (MEDICAGO SATIVA VAR. VERNAL)
22% PERENNIAL RYE (LOLIUM PERENNE)
PAYMENT FOR ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 659, SEEDING AND MULCHING FOR WILDLIFE. ALL SEEDING AREAS SHALL BE ITEM 659 SEEDING AND MULCHING FOR WILDLIFE EXCEPT FOR THE MEDIAN AREAS ON U.S. 33 MAINLINE AND ROAD 'U' WHICH SHALL BE ITEM 659 SEEDING AND MULCHING.

MONUMENTS. MONUMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAILS SHOWN ON STANDARD CONSTRUCTION DRAWING MC-1. FOR LOCATIONS, SEE SHEET NO. 209 & 210.

LOCATION OF GUARDRAIL. THE LOCATIONS OF GUARDRAIL RUNS, AS SHOWN IN THESE PLANS, ARE SUBJECT TO ADJUSTMENT PRIOR TO FINAL ACCEPTANCE. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

SEEDING. QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN THE RIGHT-OF-WAY LINES, AND TEN (10) FEET OUTSIDE THE WORK LIMITS FOR AREAS ADJACENT TO ROADSIDE CLEANUP.

ITEM SPECIAL, DRILLED WATER WELL ABANDONED. THE EXISTING CONCRETE OR STONE SLAB WELL COVER AND PUMPING EQUIPMENT SHALL BE REMOVED AND DISPOSED OF. THE CASING SHALL BE CUT OFF AT LEAST ONE FOOT BELOW THE PROPOSED FINISHED GRADE OUTSIDE PROPOSED PAVEMENT AREAS OR AT LEAST ONE FOOT BELOW THE PROPOSED SUBGRADE ELEVATION INSIDE PROPOSED PAVEMENT AREAS. THE WELL SHALL BE FILLED FROM BOTTOM TO TOP WITH CLEAN PUDDLED CLAY OR CONCRETE.
THE UNIT PRICE BID PER EACH FOR ITEM SPECIAL, DRILLED WATER WELL ABANDONED SHALL INCLUDE PAYMENT FOR ALL LABOR, TOOLS, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

WATERING AND MOWING PERMANENT SEEDED AREAS. THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH AND TO CARE FOR THE PERMANENT SEEDED AREAS, AS PER 659.09:

659	WATER	400 M GAL.
659	MOWING	800 M SQ. FT.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL. THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER, FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES:

207	TEMPORARY SEEDING AND MULCHING	67,767 SQ. YD.
207	STRAW OR HAY BALES	112 EACH
207	TEMPORARY SLOPE DRAINS	980 LIN. FT.
207	TEMPORARY BENCHES, DIKES DAMS AND SEDIMENT BASINS	4,900 CU. YD.
601	TYPE C ROCK CHANNEL PROTECTION (WITHOUT FILTER)	40 CU. YD.
659	MOWING	800 M. SQ. FT.
659	COMMERCIAL FERTILIZER	15 TON
659	REPAIR SEEDING AND MULCHING	16,942 SQ. YD.
659	WATER	200 M. GAL.

CONNECTION TO EXISTING PIPE. WHERE THE PLANS PROVIDE FOR PROPOSED CONDUIT TO BE CONNECTED TO, OR TO CROSS EITHER OVER OR UNDER AN EXISTING SEWER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE BEFORE HE STARTS TO LAY THE PROPOSED CONDUIT.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT 603 CONDUIT ITEMS.

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, ONE COMMERCIAL SIZE LARGER THAN THE EXISTING CONDUIT.

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

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

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:
ITEM 603 6 " CONDUIT, TYPE B 100 LIN. FT.
ITEM 603 6 " CONDUIT, TYPE E 100 LIN. FT.
ITEM 603 6 " CONDUIT, TYPE F 100 LIN. FT.
ITEM 601 ROCK CHANNEL PROTECTION TYPE C WITH FILTER 10 CU. YDS.
NECESSARY BENDS OR BRANCHES SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEM.
NONE OF THE ABOVE MATERIALS SHALL BE ORDERED BY THE CONTRACTOR UNTIL AUTHORIZED BY THE ENGINEER.

SPRING DRAINS. REFERENCE IS MADE TO THE DETAILED DRAWING ON STANDARD CONSTRUCTION DRAWING MC-1, 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 605 - 200 L.F. 6" UNCLASSIFIED PIPE UNDERDRAIN,
707.01 TYPE III OR 707.21 TYPE III, AS PER PLAN.
ITEM 605 - 20 L.F. AGGREGATE DRAINS FOR SPRINGS.
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.

EROSION CONTROL. ITEMS 601 AND 670 ARE PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS, AND TURF OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE 670. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES FOR THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION.

TREATED SANITARY FLOW INTO HIGHWAY DRAINAGE SYSTEMS. TREATED SANITARY FLOW MAY BE DISCHARGED INTO THE HIGHWAY DRAINAGE SYSTEM PROVIDED THE OWNER HAS SECURED THE APPROVAL OF THE LOCAL HEALTH AUTHORITIES AND HAS ACQUIRED FROM THE OHIO DEPARTMENT OF TRANSPORTATION, THE OFFICIAL PERMIT TO HAVE THE CONNECTION MADE.
IN EACH CASE WHERE A PERMIT HAS BEEN ISSUED FOR A SANITARY CONNECTION TO BE MADE INTO A HIGHWAY DRAINAGE CONDUIT, IT SHALL BE PROVIDED WITH AN INSPECTION WELL, IN ACCORDANCE WITH THE DETAIL SHOWN ON STANDARD DRAWING MC-8.
THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY, FOR USE AS DIRECTED BY THE ENGINEER, IN MAKING THE ABOVE DESCRIBED CONNECTIONS:
ITEM 603, 6 " CONDUIT, TYPE C 50 LIN. FT.
*ITEM 604, INSPECTION WELLS 1 EACH
NECESSARY BENDS OR BRANCHES SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEM.
NONE OF THE ABOVE MATERIALS SHALL BE ORDERED BY THE CONTRACTOR UNTIL AUTHORIZED BY THE ENGINEER.
*NO INSPECTION WELL IS REQUIRED IF EFFLUENT IS DISCHARGED INTO AN OPEN DITCH, CHANNEL, CATCH BASIN OR MANHOLE.

HOUSE CONNECTIONS. EXISTING ROOF DRAINS, FOOTER DRAINS OR YARD DRAINS, DISTURBED BY THE PROPOSED WORK, SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS BY CONNECTING TO A STORM SEWER, MANHOLE, CATCH BASIN, THROUGH THE CURB.
THE LOCATION, TYPE, SIZE AND GRADE OF REQUIRED REPLACEMENTS WILL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION.
THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:
ITEM 603 4" CONDUIT TYPE E, 711.29 _____ 50 L.F.
ITEM 603 6" CONDUIT TYPE E, 706.01, 706.02 OR 706.08 _____ 50 L.F.
ITEM 603 6" CONDUIT TYPE F _____ 50 L.F.
NONE OF THE ABOVE MATERIALS SHALL BE ORDERED BY THE CONTRACTOR UNTIL REQUESTED BY THE ENGINEER.

UNRECORDED SANITARY CONNECTIONS. ANY UNRECORDED ACTIVE CONNECTION TO A SANITARY SEWER ENCOUNTERED DURING CONSTRUCTION SHALL BE RECONNECTED TO THE EXISTING SEWER, AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:
ITEM 603 - LIN.FT. 6 "CONDUIT, TYPE C 706.01, 706.02,
706.08 WITH JOINTS AS PER 706.11 OR 706.12 _____ 50 LF.
ITEM 603 - LIN. FT. 6 "CONDUIT, TYPE B, 706.01 c1.3,
706.02 OR 706.08 WITH JOINTS, AS PER 706.11 OR 706.12 _____ 50 LF.
NONE OF THE ABOVE MATERIALS SHALL BE ORDERED BY THE CONTRACTOR UNTIL AUTHORIZED BY THE ENGINEER.

EROSION CONTROL PADS AND ANIMAL GUARDS. EROSION CONTROL PADS AND ANIMAL GUARDS SHALL BE PROVIDED AT THE OUTLET END OF ALL PIPE UNDERDRAINS AND FARM DRAINS, AS PER STANDARD CONSTRUCTION DRAWING MC-4, EXCEPT WHEN THEY OUTLET INTO A DRAINAGE STRUCTURE.
PAYMENT FOR THE EROSION CONTROL PADS AND THE ANIMAL GUARDS SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 603, 6 " CONDUIT, TYPE F.

CONDUIT END TREATMENT. IMMEDIATELY AFTER PLACEMENT OF ANY CONDUITS, THE CONTRACTOR SHALL CONSTRUCT THE END TREATMENTS REQUIRED BY THE PLANS AT BOTH THE OUTLET AND INLET ENDS. THIS SHALL INCLUDE HEADWALLS, CONCRETE RIPRAP, ROCK CHANNEL PROTECTION, SODDING, ETC.

CALC: PCB 9/85
CHK: ROB 9/85

FHWA REGION	STATE	PROJECT	
5	OHIO		

10
225

UNION COUNTY
UNI-33-7.29

GENERAL NOTES

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

ITEM 407 TACK COAT AND COVER AGGREGATES: THE TACK COAT AND COVER AGGREGATE OPERATION SHALL BE AS DETERMINED AT A PRE-CONSTRUCTION CONFERENCE AS PER 407.05. PLAN QUANTITIES INDICATE AVERAGE APPLICATION RATES OF 0.10 GALLONS PER SQUARE YARD OF TACK COAT AND 7 POUNDS PER SQUARE YARD OF COVER AGGREGATE, FOR ESTIMATING PURPOSES ONLY.

EARTHWORK ALONG CURVED ALIGNMENT: THE CENTROIDS OF AREAS ON THE CROSS SECTION SHEETS ARE INDICATED BY A VERTICAL LINE. THE LENGTH OF VOLUME ALONG THE CURVE IS COMPUTED BASED UPON THE AVERAGE OF THE ADJACENT CENTROIDS. INDIVIDUAL VOLUMES ALONG THE CURVED ALIGNMENT ARE COMPUTED BY AN ELECTRONIC COMPUTER, AND THEN TOTALED. THE TOTAL VOLUME OF EACH SECTION IS SHOWN ON THE CROSS SECTION SHEETS.

CATCH BASIN ELEVATION AND STATIONING: THE ELEVATION OF ALL NO. 2-2B, NO. 4, NO. 4A AND NO. 8 CATCH BASINS ARE AT THE FLOW LINE OF THE GRATE. STATIONING AND DISTANCE LEFT OR RIGHT TO THE BASIN IS TO THE CENTER OF THE BASIN.

THE ELEVATION FOR ALL 2-3 AND 2-4 CATCH BASINS ARE AT THE FLOW LINE OF THE WINDOW AND DISTANCE LEFT OF RIGHT TO THE BASIN IS TO THE CENTER OF THE BASIN.

ITEM 203 GRANULAR EMBANKMENT: AS PER PLAN AN 18 INCH THICK GRANULAR BLANKET SHALL BE PLACED AT THE BASE OF THE EMBANKMENT ADJACENT TO EACH OF THE STRUCTURES. THE GRANULAR BLANKET SHOULD DAYLIGHT TO BOTH THE FRONT AND SIDE SLOPES AND EXTEND 200 FEET PAST THE ABUTMENT. THE GRANULAR MATERIAL SHALL BE PAID FOR AS "ITEM 203 GRANULAR EMBANKMENT" WITH NOT MORE THAN 15 PERCENT BY WEIGHT PASSING THE NO. 200 SIEVE.

ITEM 616 WATER: THE FOLLOWING ESTIMATED QUANTITY OF ITEM 616 WATER HAS BEEN INCLUDED FOR USE IN LIME STABILIZATION.
ITEM 616 WATER---------330 M. GAL.

TEST ROLLING PRIOR TO LIME STABILIZATION

THE SUBGRADE IN AREAS OF LIME STABILIZATION SHALL BE TEST ROLLED AFTER ROUGH GRADING AND PRIOR TO THE ADDITION OF LIME, USING A GRADER HAVING A MINIMUM WEIGHT OF 15 TONS. AREAS LACKING SUFFICIENT STABILITY IN THE OPINION OF THE ENGINEER, SHALL BE TREATED AS SOFT SUBGRADE. THE COST OF THE TEST ROLLING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR 203 EXCAVATION AND 203 EMBANKMENT.

MAINTENANCE OF TRAFFIC: THE MAINTENANCE OF TRAFFIC SHALL BE GOVERNED BY THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" FOR STREETS AND HIGHWAYS, HEREINAFTER CALLED THE MANUAL, AND AS SUPPLEMENTED BY PERTINENT ITEMS OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS AND THE FOLLOWING REQUIREMENTS:

THE CONTRACTOR WILL BE REQUIRED TO PROVIDE, ERECT, MAINTAIN (IN PROPER POSITION, CLEAN, LEGIBLE, AND IN GOOD WORKING CONDITION) AND REMOVE ALL SIGNS, SIGN SUPPORTS, BARRICADES, DRUMS, AND ALL OTHER TRAFFIC CONTROL DEVICES NECESSARY FOR THE MAINTENANCE OF TRAFFIC.

THE COST OF PROVIDING, INSTALLING, MAINTAINING AND REMOVING ALL TRAFFIC CONTROL DEVICES REQUIRED TO MAINTAIN TRAFFIC DURING CONSTRUCTION INCLUDING SIGNS, SIGN SUPPORTS, DRUMS AND BARRICADES SHALL BE INCLUDED IN THE LUMP SUM PRICE PER ITEM 614, "MAINTAINING TRAFFIC".

ITEM 614 MAINTAINING TRAFFIC: THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIFICATION 614. TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON EXISTING U.S. 33, EXISTING S.R. 245, EXISTING U.S. 36 AND S.R. 4 AND ONE-WAY TRAFFIC ON ALL EXISTING RAMPS (P, R, S & T) SHALL BE MAINTAINED UNTIL SUCH TIME THAT EXISTING RAMP T MUST BE REMOVED. AT THIS TIME THE CONTRACTOR SHALL INSTALL A TEMPORARY MEDIAN CROSSOVER ON EX. U.S. 33, U.S. 36 & S.R. 4 AS SHOWN ON PAGE 12, PROVIDE A TEMPORARY RAMP T AND CONSTRUCT THE PROPOSED RAMP ALONG EX. U.S. 36 & S.R. 4 NORTHBOUND FROM STA. 415 + 50 TO STA. 434 + 50 AS SHOWN ON PAGE 12.

TWO-WAY TWO DIRECTIONAL TRAFFIC SHALL BE MAINTAINED ON NORTHBOUND EX. U.S. 36 AND S.R. 4, WHILE TEMPORARY RAMP T IS IN USE, AT ALL TIMES BY USE OF THE EXISTING PAVEMENT AND SHOULDERS, THE COMPLETE PAVEMENT AND SHOULDERS AND ITEM 615 TEMPORARY ROADS AND PAVEMENTS. THE LIMITS AND DURATION OF USE OF TEMPORARY ROADWAYS SHALL BE HELD TO AN ABSOLUTE MINIMUM, AND IN ALL CASES SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

ALL EXISTING TRAFFIC CONTROL SIGNS SHALL REMAIN IN PLACE UNTIL PROPOSED U.S. 33 BYPASS IS OPENED TO TRAFFIC, EXCEPT FOR THOSE SIGNS REQUIRED TO DETOUR U.S. 36 & S.R. 4 SOUTHBOUND TRAFFIC TO THE TEMPORARY RAMP 'T' AS SHOWN.

DURING THIS TIME TEMPORARY SIGNS, SIGN OVERLAYS AND COVERING OF SIGNS SHALL BE USED TO MAINTAIN TRAFFIC ON EX. U.S. 33, EX. 245, EX. U.S. 36 & EX. S.R. 4 UNTIL PROPOSED U.S. 33 BYPASS IS COMPLETED AND OPENED TO TRAFFIC. ALL TEMPORARY OR INTERIM SIGNING SHALL BE APPROVED BY THE ENGINEER. EXISTING SIGNS WHICH ARE REMOVED MAY BE REUSED FOR TEMPORARY SIGNING.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER FOR MAINTENANCE OF TRAFFIC.

ITEM 404	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC----------	100 C.Y.
ITEM 410	TRAFFIC COMPACTED SURFACE TYPE A OR B----------	100 C.Y.
ITEM 615	TEMPORARY PAVEMENT, CLASS B----------	1500 S.Y.
ITEM 615	TEMPORARY ROADS----------	LUMP
ITEM 616	CALCIUM CHLORIDE----------	5 TON
ITEM 616	WATER----------	50 M. GAL.

SEPARATE PAYMENT SHALL BE MADE FOR ITEMS 404, 410, 615 AND 616 NOTED ABOVE. ALL OTHER WORK REQUIRED FOR TRAFFIC MAINTENANCE, EXCEPT TEMPORARY REPLACEMENT DRUMS AND SIGNS, AND TEMPORARY PAVEMENT MARKINGS, SHALL BE INCLUDED WITH PAYMENT FOR ITEM 614 MAINTAINING TRAFFIC.

IF THE CONTRACTOR SO ELECTS, HE MAY SUBMIT ALTERNATIVE METHODS FOR THE MAINTENANCE OF TRAFFIC, PROVIDED THE INTENT OF THE ABOVE PROVISIONS IS FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THEREFROM. NO ALTERNATE PLAN SHALL BE PLACED INTO EFFECT UNTIL APPROVAL HAS BEEN GRANTED, IN WRITING, BY THE ENGINEER.

TRENCH FOR WIDENING: TRENCH EXCAVATION FOR BASE WIDENING SHALL BE ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS OR BARRICADES AT ALL TIMES. PLACEMENT OF PROPOSED SUBBASE AND BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND THE EXCAVATION OPERATIONS. THE LENGTH OF WIDENING TRENCH WHICH IS OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO APPROVAL OF THE ENGINEER.

THE BASE WIDENING ON THIS PROJECT WILL BE COMPLETED TO A MAXIMUM DEPTH OF EITHER THREE INCHES ABOVE OR BELOW THE EXISTING PAVEMENT BY THE END OF THE WORK DAY. EXCEPT FOR A SHORT LENGTH OF A WORK SECTION BEING 25 FEET OR LESS AT THE END OF THE TRENCH, NO TRENCH WILL BE LEFT OPEN OVERNIGHT. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED BASE WIDENING WILL BE BACKFILLED AT THE DIRECTION OF THE ENGINEER.

REPLACEMENT SIGNS: FLAT SHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS, AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE BID PRICE PER SQUARE FOOT FOR ITEM SPECIAL, REPLACEMENT SIGNS AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED SIGNS, HARDWARE AND SUPPORTS; AND PROVIDING NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC. REPLACEMENT SIGNS SHALL BE NEW BUT OTHER MATERIALS MAY BE USED SUBJECT TO APPROVAL BY THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITY OF ITEM SPECIAL, REPLACEMENT SIGNS HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL REPLACEMENT SIGNS----------50 S.F.

REPLACEMENT DRUMS: DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER AND PAID FOR UNDER ITEM SPECIAL REPLACEMENT DRUMS. PAYMENT FOR EACH DRUM SHALL INCLUDE (1) THE COST OF THE REMOVING AND DISPOSING OF THE DAMAGED DRUM, AND (2) PROVIDING, MAINTAINING AND REMOVING NEW DRUMS IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUMS.

THE FOLLOWING ESTIMATED QUANTITY OF ITEM SPECIAL REPLACEMENT DRUMS HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL REPLACEMENT DRUMS----------50 EACH

614 WORK ZONE PAVEMENT MARKINGS

GENERAL

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND WHEN NECESSARY, REMOVE WORK ZONE RETROREFLECTIVE PAVEMENT MARKINGS ON EXISTING, RECONSTRUCTED, RESURFACED OR TEMPORARY ROADS WITHIN THE WORK LIMITS, IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE MARKINGS SHALL BE MAINTAINED IN GOOD CONDITION TO PROVIDE DAY AND NIGHT VISIBILITY. THE MARKINGS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER TO MAINTAIN REQUIRED VISUAL EFFECTIVENESS AND NIGHT VISIBILITY AT NO ADDITIONAL COST TO THE STATE.

THE CONTRACTOR SHALL, IN ADVANCE OF ANY SECTION OF ROADWAY LACKING OMUTCD FULL PATTERN STANDARD DIMENSION EDGE LINE OR CENTER LINE MARKINGS, ERECT A "NO EDGE LINES" (OW-167) SIGN OR "UNMARKED NO PASSING ZONES" (OW-168) SIGN OR BOTH AS MAY BE APPROPRIATE. THESE SIGNS SHALL BE IN PLACE PRIOR TO EXPOSING THE ROADWAY TO TRAFFIC. THESE SIGNS SHALL BE REPEATED EVERY 1 TO 2 MILES AND AT OTHER LOCATIONS AS NECESSARY. THESE SIGNS SHALL BE REMOVED WHEN THEY NO LONGER APPLY. THE COST FOR FURNISHING AND ERECTING AND SUBSEQUENTLY REMOVING THESE SIGNS SHALL BE INCLUDED IN 614 MAINTAINING TRAFFIC, UNLESS SPECIFICALLY ITEMIZED.

TEMPORARY PAVEMENT MARKING MATERIALS

UNLESS OTHERWISE INDICATED ON THE PLANS, TEMPORARY PAVEMENT MARKINGS MAY BE EITHER 621.02 PAINT OR 947.03 TYPE B OR C PREFORMED MATERIAL. WHERE PAVEMENT MARKINGS ARE NOT LIABLE TO BE TRACKED, EITHER CONVENTIONAL OR FAST DRYING PAINT MAY BE USED FOR 621.02.

PAINT

PAINTED MARKINGS SHALL BE IN ACCORDANCE WITH 621 EXCEPT THAT THE INCREASE OF 25 PERCENT IN THE APPLICATION RATE FOR NEW BITUMINOUS PAVEMENT AND PARAGRAPH 621.14 SHALL NOT APPLY.

TYPE B AND TYPE C PREFORMED MATERIAL

PREFORMED MATERIAL SHALL COMPLY WITH 947.03 EXCEPT THAT NO PREFORMED MATERIAL CONTAINING METAL SHALL BE PLACED ON ANY SURFACE UNLESS IT WILL BE REMOVED LATER BY THE CONTRACTOR. TEMPORARY PAVEMENT MARKINGS OF 947.03 PREFORMED MATERIAL SHALL BE REMOVED PRIOR TO PLACEMENT OF 621 OR 847 SURFACE COURSE MARKINGS AT THAT LOCATION. PREFORMED MATERIAL SHALL BE APPLIED IN ACCORDANCE WITH 847 EXCEPT AS MODIFIED HEREIN.

PLACEMENT

TEMPORARY MARKINGS SHALL BE COMPLETE AND IN PLACE ON ALL PAVEMENT PRIOR TO EXPOSING IT TO TRAFFIC. WHEN TEMPORARY MARKINGS CONFLICT WITH THE TRAFFIC PATTERN, THEY SHALL BE REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH 621.134.

TEMPORARY MARKING CLASSES

CLASS I MARKINGS

CLASS I MARKINGS SHALL BE APPLIED TO THE FULL DIMENSIONS AS DEFINED IN 621 WITH THE FOLLOWING ADDITIONS OR EXCEPTIONS:

1) LANE LINES SHALL BE 4-INCHES IN WIDTH.
2) TRANSVERSE LINES SHALL BE 8-INCHES IN WIDTH.
3) STOP LINES SHALL BE 12-INCHES IN WIDTH.
4) CROSS WALK LINES SHALL BE 8-INCHES IN WIDTH.

CLASS II MARKINGS

CLASS II MARKINGS (ABBREVIATED) SHALL BE DEFINED AS FOLLOWS:

CENTER LINES SHALL CONSIST OF SINGLE, YELLOW 4-INCH WIDE BY A MINIMUM OF 48-INCH LONG DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

LANE LINES SHALL CONSIST OF WHITE 4-INCH WIDE BY A MINIMUM OF 48-INCH LONG DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

GORE MARKINGS SHALL BE TWO CONTINUOUS, WHITE 4-INCH LINES PLACED AT THE THEORETICAL GORE OF AN EXIT RAMP OR DIVERGING ROADWAYS.

THE PAINT APPLICATION RATE SHALL BE NOT LESS THAN 1.6 GALLONS PER MILE FOR LANE LINE AND CENTER LINE AND 16 GALLONS PER MILE FOR GORE MARKINGS.

CONFLICTING EXISTING MARKINGS

THE CONTRACTOR SHALL, PRIOR TO PLACING TEMPORARY MARKINGS, REMOVE ALL CONFLICTING EXISTING MARKINGS VISIBLE TO THE TRAVELING PUBLIC DURING DAYLIGHT OR NIGHTTIME HOURS IN ACCORDANCE WITH 621.134. THE COST FOR REMOVAL OF CONFLICTING MARKINGS SHALL BE INCLUDED IN 614 MAINTAINING TRAFFIC UNLESS SPECIFICALLY ITEMIZED.

THE CONTRACTOR SHALL ALSO REMOVE THE PRISMATIC RETRO-REFLECTOR WITHIN ANY RAISED PAVEMENT MARKER (RPM) WHICH IS IN CONFLICT WITH THE TEMPORARY PAVEMENT MARKINGS. WHEN THE TEMPORARY PAVEMENT MARKINGS ARE REMOVED AND THE RPM IS NO LONGER IN CONFLICT, THE CONTRACTOR SHALL THOROUGHLY CLEAN THE RECESSED REFLECTOR ATTACHMENT AREA OF THE CASTING AND INSTALL A NEW PRISMATIC RETRO-REFLECTOR OF THE SAME KIND AND COLOR. THE COST FOR THIS WORK SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS.

INTERIM MARKINGS

WITHIN 21 CALENDAR DAYS AFTER OPENING ANY LENGTH OF PAVEMENT TO TRAFFIC, THE 621 OR 847 PAVEMENT MARKINGS CALLED FOR IN THE PLANS OR EQUIVALENT 614 CLASS I, PAINT MARKINGS SHALL BE APPLIED. THE CONTRACTOR SHALL FURNISH ALL LABOR, EQUIPMENT, AND MATERIAL NECESSARY TO PLACE AND MAINTAIN 614 CLASS I PAINT MARKINGS AS PART OF THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC.

FOR EACH CALENDAR DAY BEYOND 21 DAYS THAT THIS WORK SHALL REMAIN UNCOMPLETED, THE PROVISIONS OF 108.07 WILL BE INVOKED, EXCEPT THAT BETWEEN NOVEMBER 15 AND APRIL 15 WEATHER CONDITIONS SHALL NOT BE AN ACCEPTABLE REASON FOR EXTENSION.

METHOD OF MEASUREMENT

TEMPORARY PAVEMENT MARKINGS WILL BE MEASURED COMPLETE IN PLACE, BY CLASS AND MATERIAL, IN THE UNITS DESIGNATED. LINE QUANTITIES WILL BE THE LENGTH OF THE COMPLETED STRIPE, INCLUDING GAPS, INTERSECTIONS, AND OTHER SECTIONS OF PAVEMENT NOT NORMALLY MARKED, IN ACCORDANCE WITH 621.15.

TEMPORARY PAVEMENT MARKINGS WILL INCLUDE THE LAYOUT, APPLICATION AND REMOVAL OF THE MARKINGS, WHEN REQUIRED.

BASIS OF PAYMENT

PAYMENT FOR ACCEPTED QUANTITIES COMPLETE IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR PLACEMENT, MAINTENANCE AND NECESSARY REMOVAL OF THE MARKINGS.

ITEM		UNIT	DESCRIPTION
614		MILES	TEMPORARY LANE LINES, CLASS _____, *
614	0.88	MILES	TEMPORARY CENTER LINES, CLASS I, *
614	260	LIN. FT.	TEMPORARY CHANNELIZING LINES, CLASS I, *
614	0.46	MILES	TEMPORARY EDGE LINES, CLASS I, *
614		LIN. FT.	TEMPORARY GORE MARKINGS, CLASS II, *
614	20	LIN. FT.	TEMPORARY STOP LINES, CLASS I, *
614		LIN. FT.	TEMPORARY CROSSWALK LINES, CLASS I, *
614		EACH	TEMPORARY LANE ARROWS, CLASS I, *
614		EACH	TEMPORARY RAILROAD SYMBOL MARKINGS, CLASS I, *
614		EACH	TEMPORARY WORD "ONLY" ON PAVEMENT, 72-INCH, CLASS I, *
614		LIN. FT.	TEMPORARY TRANSVERSE LINES, CLASS I, *
614		LIN. FT.	TEMPORARY DOTTED LINES, CLASS I, *

*621 PAINT, 947.03 TYPE B OR 947.03 TYPE C

fh4

LOCATION (EX. 4 & 36)	TEMPORARY CENTERLINE CLASS I	TEMPORARY CHANNELIZING LINES CLASS I	TEMPORARY EDGE LINES CLASS I
STA. 415+00 TO 461+50 STA. 460+80 TO 467+00 STA. 461+50 TO 466+50 STA. 467+00 TO 468+30 STA. 467+00 TO 480+00	4650 L.F. (YELLOW)	260 L.F.	620 LF (WHITE) 500 LF (YELLOW) 1300 LF (WHITE)
TOTALS	4650 LF = 0.88 MI.	260 LF	2420 LF = 0.46 MI.

NOTE: ANY MARKINGS ON PAVEMENT WHICH WILL REMAIN AS THE PERMANENT SURFACE SHOULD BE LIMITED TO 947.03 TYPE 'C'

FHWA REGION	STATE	PROJECT	
5	OHIO		

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UNION COUNTY
UNI-33-7.29

MAINTENANCE OF TRAFFIC

CALCULATIONS

CALC: PCB 9-85
CHK: ALF 9-85

FHWA REGION	STATE	PROJECT
5	OHIO	

UNION COUNTY
UNI-33-7.29

PAVEMENT CALCULATIONS

U.S. 33 MAINLINE

STA. 384 + 96.78 TO STA. 463 + 40.92 = 7844.14 L.F.
DEDUCT FOR STRUCTURE
UNI-33-0790 STA. 416 + 37.24 TO STA. 418 + 25.52= -188.28 L.F.
TOTAL LENGTH= 7655.86 L.F.
AREA = (7655.86 x 24 x 2) = 367,481.28 S.F.

RAMP N EXIT STA. 398 + 04.30 TO STA. 406 + 04.30
AREA = 1/2(0 + 12)100 + (12 x 246.31) + 1/2(12 + 18)213.69
+ (16 x 239.87) + 1/2(0 + 23) 240= 13,358.99 S.F.

RAMP X EXTRANCE STA. 395 + 00 TO STA. 405 + 00
AREA = 1/2(25 x 1000)= 12,500.00 S.F.

RAMP Y EXIT STA. 427 + 66.93 TO STA. 435 + 66.93
AREA = 1/2(0 + 12)100 + (12 x 242.75) + 1/2(12 + 18)250.91
+ (16 x 251.50) + 1/2(2 + 14)162.5
+ 1/2(14 + 23)87= 14,210.15 S.F.

RAMP V ENTRANCE STA. 438 + 32.19 TO STA. 448 + 32.19
AREA = 1/2(25 x 962.43)= 12,030.38 S.F.

ROAD Z ENTRANCE STA. 449 + 80.11 TO STA. 459 + 80.11
AREA = 1/2(25 x 1037.57)= 12,969.62 S.F.

RAMP R ENTRANCE STA. 462 + 36.5 TO STA. 463 + 40.92
AREA = 1/2(25 + 21.7)81.81= 1,910.26 S.F.
TOTAL MAINLINE PAV'T. AREA= 434,460.68 S.F.

MAINLINE SHOULDER AREA OUTSIDE
AREA = (7655.86 x 8 x 2)-8(168 + 184+180.5 + 99.5)= 117,437.76 S.F.

MAINLINE SHOULDER AREA INSIDE
AREA = (7655.86 x 4 x 2)= 61,246.88 S.F.

U.S. 33 MAINLINE

ITEM 846 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20
V = (434,460.68 x 0.1042) ÷ 27= 1,676.16 C.Y.
ITEM 846 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
V = (434,460.68 x 0.1458) ÷ 27= 2,346.62 C.Y.
ITEM 301 BITUMINOUS AGGREGATE BASE
V = [(434,460.68 + 7655.86 x 1.5 x 2)0.8333
+(117,437.76 x 0.5833)-((7655.86 x 2)-(168 + 184 + 180.5 + 995))
(0.5 x 0.3333) + (61,246.88 x 0.5833)-(7655.86 x 1 x 0.333)] ÷ 27= 17,793.49 C.Y.
ITEM 304 AGGREGATE BASE
V = [(434,460.68 + 7655.86 x 3 x 2)0.50
+[1/2(1.0 + 0.542)8-(1.5 x 0.5 + 0.5 x 0.5 + 0.5 x 0.417)] x 2
x (3240.31 - 168) + [(8 x 1)-(1.5 x 0.5 + 0.5 x 0.5 + 0.5 x 0.417)] x
(4415.55 - 184) + [(1/2(1.0 + 0.302)8 - (1.5 x 0.5 + 0.5 x 0.5
+0.5 x 0.417)](4415.5 - (180.5 + 99.5)] ÷ 27= 11,701.93 C.Y.

ITEM SPECIAL 6" LIME STABILIZED SUBGRADE
V = (434,460.68 + 117,437.76 + 61,246.88) ÷ 9= 68,127.26 S.Y.

ITEM 409 SEAL COAT BIT. MATL.
V = (117,437.76 + 61,246.88)0.3 ÷ 9= 5956.15 GAL.
ITEM 409 COVER AGGREGATE
V = (117,437.76 + 61,246.88)0.008 ÷ 9= 158.83 CU.YD.

ROAD U
STA. 60 + 52.05 TO STA. 86 + 88.52= 2,636.47 L.F.
DEDUCT FOR STRUCTURE
UNI-33-0837 L/R STA. 78 + 28.71 TO STA. 81 + 03.71= - 275.00 L.F.
LENGTH= 2,361.47 L.F.
AREA = 2361.47 x 16 x 2= 75,567.04 S.F.
STA. 86 + 88.52 TO STA. 112 + 75.00
DEDUCT FOR STRUCTURES= 2,586.48 L.F.
UNI-33-0862 STA. 92 + 05.66 TO STA. 94 + 30.18= -224.52 L.F.
UNI-33-0886 STA. 105 + 09.69 TO STA. 106 + 70.29= -160.60 L.F.
LENGTH= 2,201.36 L.F.
AREA = 2201.36 x 16= 35,221.76 S.F.

S.R. 4 & U.S. 36 STA. 418 + 00 TO STA. 422 + 15.99
AREA = 1/2(32 + 40.8)100 + 1/2(40.8 + 51.8)100
+1/2(51.8 + 67.0)113 + 1/2(38.8 + 47.6)102
+(16 x 102) + 1/2(247.3 x 6.5)= 21,824.33 S.F.

RAMP Y ENTRANCE STA. 62 + 61.42 TO STA. 70 + 61.42
AREA = 1/2(20 x 800)= 8,000.00 S.F.

ROAD 2 EXIT STA. 64 + 87.78 TO STA. 72 + 87.78
AREA = 1/2(0 + 12)100 + (421.64 x 12) + 1/2(12 + 16) 130
+(16 x 149) + 1/2(23 x 148.4)= 11,570.28 S.F.

RAMP W ENTRANCE STA. 86 + 40.00 TO 94 + 40.00
AREA = 1/2(20 x 800)= 8,000.00 S.F.

RAMP TO EX. US 33 NB. STA. 110 + 11.00 TO 112 + 75.00
AREA = 1/2(5.5 x 100) + 1/2(5.5 + 18)90 + 16(74.5)
+1/2(2 + 19)73= 3,291.00 S.F.
TOTAL ROAD U AREA= 163,474.41 S.F.

ROAD U SHOULDER AREA OUTSIDE
A = (2361.47 x 2 x 6) - (6 x 177.58) + 2201.36 x 6
-(160 x 6) + 665.99 x 6 x 2= 47,512.20 S.F.

ROAD U SHOULDER AREA INSIDE
A = (2361.47 x 2 x 4) + (2201.36 x 4) + (102 x 4 x 2)= 28,513.20 S.F.

ROAD 'U'
ITEM 846 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20
V = (163,474.41 x 0.1042) ÷ 27= 630.89 C.Y.
ITEM 846 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
V = (163,474.41 x 0.1458) ÷ 27= 882.76 C.Y.
ITEM 301 BITUMINOUS AGGREGATE BASE
V = [[(163,474.41 + (2361.47 x 1.5 x 2) +
(2201.36 x 1.5)]0.8333 + (47,512.20+
(28,513.20) 0.5833 - [(2361.47 x 2 - 177.58) +
(2201.36 - 160) + 2361.47 + 2201.36 + (102 x 2)
+(665.99 x 2 - 250](0.5 x 0.3333)] ÷ 27= 6,931.84 C.Y.

ITEM 304 AGGREGATE BASE
V = [[163,474.41 + (2361.47 x 3 x 2) + (2201.36 x 1.5 x 2)
+(665.99 x 2 - 250)(1.5) + (102 x 1.5 x 2)]0.5 +
250 x 1/2(0.844 + 1.0)6 + [(665.99 x 2 - 250)+1248.84 x 2)
+1096.05][1/2(0.844 + 1.0)6 - (1.5 x 0.5 + 0.5 x 0.5 + 0.5 x 0.417)]
+[(102 x 2) + (1248.84 x 2) + 1096.05][1/2(1.0 + 0.771)4-
(1.5 x 0.5 + 0.5 x 0.5 + 0.5 x 0.417)]+(1112.63 x 1.0) x [(6 + 4) -
(1.5 x 0.5 + 0.5 x 0.5 + 0.5 x 0.417)2] + 1112.63 x 1/2(1.0 + 0.667) x
[(6 + 4) - (1.5x 0.5 + 0.5 x 0.5 + 0.5 x 0.417)2] + 1105.31 x
[1/2(1.0 + 0.5)6 - (1.5 x 0.5 + 0.5 x 0.5 + 0.5 x 0.417)] + 1105.31
x [(1 x 4) - (1.5 x 0.5 + 0.5 x 0.5 + 0.5 x 0.417)]] ÷ 27= 5,397.89 C.Y.

ROAD U
ITEM SPECIAL - LIME STABILIZED SUBGRADE
V = (163,474.41 + 47,512.20 + 28,513.20) ÷ 9= 26,611.09 S.Y.
ITEM 409 SEAL COAT
V = (47,512.20 + 28,513.20) 0.3 ÷ 9= 2534.18 GAL.
ITEM 409 COVER AGGREGATE
V = (47,512.20 + 28,513.20)0.008 ÷ 9= 67.58 CU.YD.

ROAD 'Z' STA. 72 + 86.43 TO STA. 83 + 60.84
PAVEMENT AREA = (874.41 x 16)(962.93/954.93) + (200 x 16)= 17,307.77 S.F.
SHOULDER AREA = (974.41 x 6) + 1/2(6 + 8) 100
+(972.43/954.93)(893.1 x 4) + (181.5 x 9) + 1/2(97.5)5
+1/2(5 + 14)83= 12,850.08 S.F.

RAMP N STA. 406 + 03.47 TO STA. 415 + 76.50
PAVEMENT AREA = (973.03 x 16) + 1/2(29 x 11.5)
+1/2(33 x 11.5) + 1/2(54 x 9) + (9 x 58)
+1/2(18 x 50.5) + 1/2(18 x 52)= 17,612.48 S.F.
SHOULDER AREA = 1/2 (8 + 6) 100 + (797.87 x 6) +
(930.23 x 3) + (62.4 x 3) + (54 x 6)
+ (80.93 x 6)= 9,274.69 S.F.

RAMP X STA. 405 + 00.00 TO STA. 419 + 35.00
PAVEMENT AREA = (1435 x 16) + 1/2(4 x 40)3 +
(35 + 56 + 40)4 + 1/2(31.5 x 9.6)2
+1/2(37 x 14) + 1/2(47 x 17.5)= 24,696.65 S.F.
SHOULDER AREA = 1/2(8 + 6) 100 + (1399.87 x 6)
+(1267.78 x 3) + (9 x 168) + 1/2(4 x 75)
+1/2(4 + 14)93= 15,401.56 S.F.

RAMP Y STA. 435 + 85.69 TO STA. 447 + 93.07
PAVEMENT AREA = (1084.92 x 16)(962.93/954.93)
+(122.46 x 16)= 19,463.50 S.F.
SHOULDER AREA - 1/2(8 + 6)100 + (1107.38 x 6) +
(972.43/954.93)(1034.5 x 3) + (177.58 x 4) + 1/2(91.5 x 5)
+1/2 (5 + 15)86= 12,303.72 S.F.

RAMP V STA. 448 + 32.19 TO STA. 464 + 21.76
PAVEMENT AREA = (1589.57 (389.97/381.97) x 16)= 25,965.79 S.F.
SHOULDER AREA = [1/2(8 + 6) 100 + (1489.57 x 6)](378.97/381.97)
+(1411.26 x 3)(399.47/381.97) + (184 x 9)
+1/2(5 x 109) + 1/2(5 + 14)74.5= 16,625.73 S.F.

CALCULATIONS

CALC: PCB 9-85
CHK: ALF 9-85

F.H.W.A. REGION	STATE	PROJECT	
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RAMP W STA. 94 + 40.00 TO STA. 104 + 61.5

PAVEMENT AREA = (1021.5 x 16) + 1/2(4 x 40)3 + 1/2(4 + 7)14
+(4 x 62) + (4 x 58) + 1/2(49 x 17)2= 17,974.00 S.F.

SHOULDER AREA = (1081.43 x 6) + (861.9 x 3)
+(4 x 160) + 1/2(5 x 85) + 1/2(5 + 15)75= 10,676.78 S.F.

RAMP R STA. 7 + 94.00 TO STA. 10 + 00.00

PAVEMENT AREA = (106 x 16) (294.48/286.48) + (100 x 16)(528.87/520.87)= 3,367 .94 S.F.

SHOULDER AREA = (106 x 6)(283.48/286.48) + (100 x 6)(517.87/520.87)
+(104 x 3)(303.98/286.48) + (9 x 99.5)
+1/2(77 x 14)= 2,991.44 S.F.

RAMP @ S.R. 4 STA. 422 + 16 TO STA. 434 + 50

PAVEMENT AREA = (1234 x 16)= 19,744.00 S.F.

SHOULDER AREA = (1234 x 6) + (1234 x 4)= 12,340.00 S.F.

TOTAL RAMP PAVEMENT AREA

A = 17,307.77 (Z) + 17,612.48 (N) + 24,696.65 (X)
+19,463.50 (Y) 25,965.79 (V) + 17,974.00 (W)
+3,367.94 (R) + 19,744.00 (S.R. 4)= 146,132.13 S.F.

TOTAL RAMP SHOULDER AREA

A = 12,850.08 (Z) + 9274.69 (N) + 15,401.56 (X)
+12,303.72 (Y) + 16,625.73 (V) + 10,676.78 (W)
+2991.44 (R) + 12,340.00 (S.R. 4)= 92,464.00 S.F.

RAMPS

ITEM 846 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20
V = 146,132.13 x 0.1042 ÷ 27= 563.78 C.Y.

ITEM 846 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2-AC-20
V = 146,132.13 x 0.1458 ÷ 27= 789.29 C.Y.

ITEM 301 BITUMINOUS AGGREGATE BASE
V = [(146,132.13 x 0.8333) + (92,464.00 x 0.5833)
+[874.16(962.93/954.93) + 200 + 973.03 + 1435.00
+1084.92(962.93/954.93) + 122.46 + 1589.57(389.97/381.97)
+1021.5 + 106(294.48/286.48) + 100(528.87/520.87) + 123411.5(0.8333)
-[8794.84[(0.3333 x 0.5)2] ÷ 27= . 6,806.53 C.Y.

ITEM 304 AGGREGATE BASE
V = [(146,132.13 x 0.5) + (8794.84 x 3 x 0.5)
+(92,464.00) 1/2(1.00 + 0.833) - 8794.84 x
(1.5 x 0.5 + 0.5 x 0.5 x 0.417)2] ÷ 27= 5,546.67 C.Y.

ITEM SPECIAL 6" LIME STABILIZED SUBGRADE
V = (146,132.13 + 92,464.00) ÷ 9= 26,510.68 S.Y.

ITEM 409 SEAL COAT BIT. MATL.
V = (92,464.00)0.3 ÷ 9= 3082.13 GAL.

ITEM 409 COVER AGGREGATE
V = (92,464.00).008 ÷ 9 = 82.19 CU.YD.

S.R. 4 & U.S. 36 RESURFACING STA. 415 + 50 TO STA. 418 + 00

ITEM 846 1 1/4" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
V = (250 x 24) (0.1042) ÷ 27= 23.16 C.Y.

ITEM 409 SEAL COAT BIT. MATL.
V = (250 x 24) (0.3) ÷ 9= 200 GAL.

ITEM 409 COVER AGGREGATE
V = (250 x 24).008 ÷ 9 = 5.33 CU.YD.

EX. U.S. 33 @ RAMP W

AREA = (12 x 48.5) + (6 x 12) - $\pi/2(6)^2$
+1/2(20 x 6) + (6 x 3) - $\pi/2(3)^2$= 666.03 S.F.

ITEM 846 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20
V = 666.03 x 0.1042 ÷ 27= 2.57 C.Y.

ITEM 846 1 3/4" ASPHALT CONCRETE INTEMEDIATE COURSE, TYPE 2, AC-20
V = 666.03 x 0.1458 ÷ 27= 3.60 C.Y.

ITEM 301 BITUMINOUS AGGREGATE BASE
V = 666.03 x 0.8333 ÷ 27= 20.56 C.Y.

ITEM 304 AGGREGATE BASE
V = 666.03 x 0.5 ÷ 27= 12.33 C.Y.

ITEM SPECIAL LIME STABILIZED SUBGRADE
A = 666.03 ÷ 9= 74.00 S.Y.

ITEM 611 APPROACH SLABS
UNI-33-0790 L/R 4 x 25 x 40 ÷ 9= 444.44 S.Y.
UNI-33-0837 L/R 4 x 25 x 30 ÷ 9= 333.33 S.Y.
UNI-33-0862 (50 + 44)25 ÷ 9= 261.11 S.Y.
UNI-33-0886 2 x 25 x 30 ÷ 9= 166.67 S.Y.
TOTAL= 1,205.55 S.Y.

TOTAL ITEM 611 TO GENERAL SUMMARY= 1,206.00 S.Y.

ITEM 304 AGGREGATE BASE (UNDER APPROACH SLABS)
V = 1205.55 x 0.5 ÷ 3= 200.93 C.Y.

ITEM 203 SUBGRADE COMPACTION
MAINLINE = (434,460.68 + 117,437.76 + 61,246.88)= 613,145.32 S.F.
ROAD U = (163,474.41 + 47,512.20 + 28,513.20)= 239,499.81 S.F.
RAMPS = (146,132.13 + 92,464.00)= 238,596.13 S.F.
AREA UNDER APPROACH SLAB = 1205.55 x 9= 10,849.95 S.F.
TOTAL= 1,102,091.21 S.F.

AREA = 1,102,091.21 ÷ 9= 122,454.58 S.Y.

TOTAL ITEM 203 TO GENERAL SUMMARY= 122,455.00 S.Y.

ITEM 846 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20

MAINLINE =	1676.16 C.Y.
ROAD 'U' =	630.89 C.Y.
RAMPS & ROAD 'Z' =	563.78 C.Y.
SR 4 & US 36 =	23.16 C.Y.
EX. US 33 =	2.57 C.Y.
TOTAL=	2896.56 C.Y.

TOTAL ITEM 846 TO GENERAL SUMMARY= 2,897.00 C.Y.

ITEM 846 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20

MAINLINE =	2346.62 C.Y.
ROAD 'U' =	882.76 C.Y.
RAMPS & ROAD 'Z' =	789.29 C.Y.
EX. US 33 =	3.60 C.Y.
TOTAL=	4022.27 C.Y.

TOTAL ITEM 846 TO GENERAL SUMMARY= 4,023.00 C.Y.

ITEM 301 BITUMINOUS AGGREGATE BASE

MAINLINE =	17,793.49 C.Y.
ROAD 'U' =	6,931.84 C.Y.
RAMPS & ROAD Z =	6,806.53 C.Y.
EX. US 33 =	20.56 C.Y.
TOTAL=	31,552.42 C.Y.

TOTAL ITEM 301 TO GENERAL SUMMARY= 31,553.00 C.Y.

ITEM 304 AGGREGATE BASE

MAINLINE =	11,701.93 C.Y.
ROAD 'U' =	5,397.89 C.Y.
RAMPS & ROAD 'Z' =	5,546.67 C.Y.
EX. US 33 =	12.33 C.Y.
UNDER APPROACH SLAB =	200.93 C.Y.
TOTAL=	22,859.75 C.Y.

TOTAL ITEM 304 TO GENERAL SUMMARY= 22,860.00 C.Y.

ITEM SPECIAL LIME STABILIZED SUBGRADE

MAINLINE =	68,127.26 S.Y.
ROAD 'U' =	26,611.09 S.Y.
RAMPS & ROAD 'Z' =	26,510.68 S.Y.
EX. US 33 =	74.00 S.Y.
AREA UNDER APPROACH SLAB	1,205.55 S.Y.
TOTAL=	122,528.58 S.Y.

TOTAL ITEM SPECIAL TO GENERAL SUMMARY= 122,529.00 S.Y.

ITEM 409 SEAL COAT BIT. MATL.

MAINLINE =	5956.15 GAL.
ROAD 'U' =	2534.18 GAL.
RAMPS & ROAD 'Z' =	3082.13 GAL.
SR 4 & US 36 =	200.00 GAL.
TOTAL=	11772.46 GAL.

TOTAL ITEM 409 TO GENERAL SUMMARY= 11773 GAL.

ITEM 409 COVER AGGREGATE

MAINLINE =	158.83 CU.YD.
ROAD 'U' =	67.58 CU.YD.
RAMPS & ROAD 'Z' =	82.19 CU.YD.
SR 4 & US 36 =	5.33 CU.YD.
TOTAL-	313.93

TOTAL ITEM 409 TO GENERAL SUMMARY= 314 CU.YD.

ITEM SPECIAL - HYDRATED LIME
(36 lbs./ Sq.Yd.)
122,529 Sq.Yd. x 36 lbs = 4,411,044 lbs ÷ 2000 = 2205 TONS
to GEN. SUMMARY 2205 TONS

ITEM 616 WATER
(2.7 Gal./Sq.Yd.
122,529 Sq.Yd. x 2.7 gal. = 330,828 gal. ÷ 1000 = 330 M.GAL
To GEN. SUMMARY 330 M. GAL.

CALCULATIONS

CALC: PCB 11-85
CHK: ALF 11-85

FHWA REGION	STATE	PROJECT	
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ITEM 203 PROOF ROLLING	
V = 122,455 ÷ 3000=	40.8 HRS.
TOTAL ITEM 203 TO GENERAL SUMMARY	41.00 HRS.
ITEM 659 SEEDING AND MULCHING	
U.S. 33 MEDIAN AREA STA. 384 + 96.78 TO STA. 463 + 40.92	
A = (7844.13 - 138.28) 42 ÷ 9=	35,960.68 S.Y.
DEDUCT FOR DITCH PROTECTION	
A = 125 + 161 + 604 + 43 + 125 + 50 + 518 + 168 + 150 + 83 + 150 + 125=	2,302.00 S.Y.
ROAD 'U' MEDIAN AREA STA. 60 + 52.05 TO STA. 86 + 88.52	
A = [1/2 (8 + 32) 594.06 + (2042.41 - 225) 32] ÷ 9=	7,782.04 S.Y.
DEDUCT FOR DITCH PROTECTION	
A = 154 + 491 + 100=	-745.00 S.Y.
TOTAL ITEM 659 TO GENERAL SUMMARY=	40,696.00 S.Y.
ITEM 659 SEEDING AND MULCHING FOR WILDLIFE	
ITEM 659 SEEDING AND MULCHING FOR WILDLIFE FROM GENERAL SUMMARY=	368,490.00 S.Y.
DEDUCT FOR ITEM 659 SEEDING AND MULCHING (MEDIAN AREA)=	-40,696.00 S.Y.
DEDUCT FOR DITCH PROTECTION (15,837 + 436)=	-16,273.00 S.Y.
DEDUCT FOR ROCK C.P. & RIPRAP [(7 x 4.5)+(8 x 5) + (8 x 11) +(9 x 6) + (10 x 7) + (10 x 6) + (10 x 8) + (10.5 x 17) + (8 x 5.5) +(281 x 10) + (432 x 10) + (75 x 7) + 6 (6 x 4)] ÷ 9 + 42=	-980.00 S.Y.
TOTAL ITEM 659 TO GENERAL SUMMARY=	310541.00 S.Y.
ITEM 659 AGRICULTURAL LIMING	
V = (338,862)(9)(100) ÷ (1000 x 2000)=	152.49 TON
TOTAL ITEM 659 TO GENERAL SUMMARY=	152.49 TON
ITEM 659 COMMERCIAL FERTILIZER	
V = (338,862 + 16,273)(9)(15) ÷ (1000 x 2000)=	31.96 TON
TOTAL ITEM 659 TO GENERAL SUMMARY=	31.00 TON
ITEM 207 TEMPORARY SEEDING & MULCHING	
A = (338,862) x 0.20=	67,772.00 S.Y.
TOTAL ITEM 207 TO GENERAL NOTES=	67,772.00 S.Y.
ITEM 247 STRAW OR HAY BALES	
NO. = 8 x (14)=	112.00 EA.
TOTAL ITEM 207 TO GENERAL NOTES=	112.00 EA.
ITEM 207 TEMPORARY SLOPE DRAINS	
L.F. = 10 x (25 + 38 + 4 + 4 + 10 + 12 + 5)=	980.00 L.F.
TOTAL ITEM 207 TO GENERAL NOTES=	980.00 L.F.
ITEM 207 TEMPORARY BENCHES, DAMS, DIKES & SEDIMENT BASINS	
V = 5 x 980 = 4900 C.Y.	
TOTAL ITEM 207 TO GENERAL NOTES=	4,900.00 C.Y.
ITEM 601 TYPE C ROCK CHANNEL PROTECTION	
V = 980 ÷ 25=	39.2 C.Y.
TOTAL ITEM 601 TO GENERAL NOTES=	40.00 C.Y.
ITEM 659 MOWING	
A = (338,862 x 0.25 x 9) ÷ 1000=	762.4 M.S.F.
TOTAL ITEM 659 TO GENERAL NOTES=	800.00 M.S.F.

ITEM 659 COMMERCIAL FERTILIZER	
V = [(67,772 x 10 x 9) + (338,862 x 7.5 x 9)] ÷ 1000 x 2000=	14.49 TON
TOTAL ITEM 659 TO GENERAL NOTES=	15.00 TON
ITEM 659 REPAIR SEEDING & MULCHING	
A = 338,872 x 0.05= 16,942 S.Y.	
TOTAL ITEM 659 TO GENERAL NOTES=	16,942.00 S.Y.
ITEM 659 WATER	
V = (67,772 x 9 x 240) ÷ (1000 x 1000)=	146.4 M. GAL.
TOTAL ITEM 659 TO GENERAL NOTES=	200.00 M. GAL.
WATERING AND MOWING PERMANENT SEEDING AREAS	
ITEM 659 WATER	
V = (327,335 x 9 x 120) ÷ (1000 x 1000)=	353.5 M. GAL.
TOTAL ITEM 659 TO GENERAL NOTES	400.00 M. GAL.
ITEM 659 MOWING	
V = (327,335 x 0.25 x 9) ÷ 1000=	736.5 M.S.F.
TOTAL ITEM 659 TO GENERAL NOTES=	800.00 M.S.F.

BRUNING 44-132 30645-1

CALC: D.C.B. 9-85
CHK: R.O.B. 9-85

FHWA REGION	STATE	PROJECT	
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UNION COUNTY
UNI-33-7.29

GENERAL SUMMARY

ITEM	SHEET NUMBER: GENERAL NOTES	CALCULATION	36A	24	25	26	27	28	29	30	31	32	55	56	57	58	59	66	66	67	68	69	83	86	92	96	100	101	106	110	123	124	125	R/W	ITEM	TOTAL	UNIT	DESCRIPTION
																																							ROADWAY
201	LUMP																																		201	LUMP		CLEARING & GRUBBING
202			LUMP																																202	LUMP		PORTIONS OF STRUCTURES REMOVED
202																	LUMP			LUMP	LUMP	LUMP				LUMP	LUMP	LUMP							202	LUMP		STRUCTURES REMOVED
202							71				120										48			61		22		230							202	530	L.F.	PIPE REMOVED 24" AND UNDER
202											28																								202	50	L.F.	PIPE REMOVED OVER 24"
202											2250	2337		534	3804	4065	4745					471						1402	70						202	19,678	S.Y.	PAVEMENT REMOVED
202																					462							218	291						202	971	S.F.	WALK REMOVED
202																	137					133							57						202	329	L.F.	CURB REMOVED
202											544	654				275	275					300													202	2048	L.F.	GUARDRAIL REMOVED FOR [illegible] STORAGE
202															190	1000	425				1240			323				758	550						202	4488	L.F.	FENCE REMOVED
202											2																	1							202	3	EA.	CATCH BASIN REMOVED
202																					2						1	1	1						202	5	EA.	SEPTIC TANK REMOVED
202																											50								202	50	EA.	CONCRETE FOUNDATIONS REMOVED
202																													83						202	83	L.F.	CURB AND GUTTER REMOVED
203			58154	2001	4983	592	2569	11264	31657	3796	817	510		638	15607	227		1696	764	380	256	225	1917	2679	353	11621	6737		2147	2673	14				203	166252	C.Y.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
203			222	1874	7084	41827	91226	30964	217	54202	42371	2436		175	3583	1180		68471	92126	57078	45607	20413	5408	18399	16941	35130	47888		20936	26					203	705786	C.Y.	EMBANKMENT
203							5389											494	4419	3802	1449	946													203	16449	C.Y.	EMBANKMENT USING GRANULAR MATERIAL AS PER PLAN
404	100																																	404	100	C.Y.	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC
410	100																																	410	100	C.Y.	TRAFFIC COMPACTED SURFACE, TYPE 'A' OR 'B'
604																																	34	604	34	EA.	REFERENCE MONUMENTS, STANDARD
606						250	1537.5		275	387.5		481.25		13	237			916.62	1685.67	1760.63	1939.49	894.05		75	375	1350	130.5		483.85						606	12792.08	L.F.	GUARDRAIL TYPE 5
606							50												25															606	75	L.F.	GUARDRAIL, BARRIER DESIGN, TYPE 5
606						2	8		2			2		1	1			2		4	3	6		1	1	1	1		1						606	36	EA.	ANCHOR ASSEMBLY, STANDARD TYPE 'A'
606						2			2						2			2		1	1					2									606	12	EA	ANCHOR, ASSEMBLY, STANDARD, TYPE 'T'
606							2											2	2																606	6	EA.	ANCHOR ASSEMBLY, BARRIER DESIGN, STANDARD TYPE 'A'
606							6												6	4	4														606	20	EA.	BRIDGE TERMINAL ASSEMBLY, STANDARD TYPE 'A'
607																																	4149	607	4149	L.F.	FENCE, TYPE 47
607																																	2796	607	2796	L.F.	FENCE, TYPE CL, [illegible]
614	0.88																																	614	0.88	MI.	TEMPORARY CENTERLINES, CLASS I
614	260																																	614	260	L.F.	TEMPORARY CHANNELIZING LINES, CLASS I
614	0.46																																	614	0.46	MI.	TEMPORARY EDGE LINES, CLASS I
614	20																																	614	20	LF.	TEMPORARY STOP LINES, CLASS I
615	1500																																	615	1500	S.Y.	TEMPORARY PAVEMENT, CLASS 'B'
615	LUMP																																	615	LUMP		TEMPORARY ROADS
616	550	330																																616	880	M-GAL.	WATER
616	55																																	616	55	TONS	CALCIUM CHLORIDE
SPECIAL		2205																																SPECIAL	2205	TON	HYDRATED LIME
656																				26	177		14	82	41	16	359	313	44						656	1072	M-S.F.	ROADSIDE CLEANUP
SPECIAL																				1	2						2	1	1						SPECIAL	7	EA.	DRILLED WATER WELL ABANDONED
SPECIAL	50																																	SPECIAL	50	S.F.	REPLACEMENT SIGNS
SPECIAL	50																																	SPECIAL	50	EA.	REPLACEMENT DRUMS
																																					EROSION CONTROL
207	112												268																					207	380	EA.	STRAW OR HAY BALES
207	67772																																	207	67772	S.Y.	TEMPORARY SEEDING & MULCHING
207	980																																	207	980	L.F.	TEMPORARY SLOPE DRAINS
207	4900												6000																					207	10900	C.Y.	TEMPORARY BENCHES, DIKES, DAMS, AND SEDIMENT BASINS
601																										4					5	34		601	43	S.Y.	RIPRAP, USING 6" REINFORCED CONCRETE SLAB
601																																20		601	20	C.Y.	ROCK CHANNEL PROTECTION, TYPE 'A' WITH FILTER
601																										6				8.2				601	14	C.Y.	ROCK CHANNEL PROTECTION TYPE 'B' WITH FILTER
601	10				4.4	1.3				2.2								-242	4.3	1.3			5.7	31			156		1.3		3	44			601	467	C.Y.	ROCK CHANNEL PROTECTION TYPE 'C' WITH FILTER
601	40		36										25																					601	101	C.Y.	ROCK CHANNEL PROTECTION TYPE 'C' WITHOUT FILTER
659			12373	8146	18390	15553	22102	19411	16458	18174	18818	4544		2078	17339	11374	8833	16450	18016	14205	13173	6267	11224	19328	10261	11740	33906	2653	13643	4029	= (368,490) TO CALCULATIONS				659	310541	S.Y.	SEEDING AND MULCHING FOR WILD LIFE
659	1600																																	659	1600	M-S.F.	MOWING

GENERAL SUMMARY

CALC: QCB 9-85
CHK: R.D.B. 9-85

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UNION COUNTY
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ITEM	SHEET NUMBER: GENERAL NOTES	CALCULATIONS	24	25	26	27	28	29	30	31	32	56	57	58	59	45	66	67	68	69	83	84	92	96	100	101	106	110	123	124	125	R/W	96A	ITEM	TOTAL	UNIT	DESCRIPTION
																																					EROSION CONTROL (CONT'D)
659	600																															13	659	613	M-GAL.	WATER
659		40696																															659	40696	S.Y.	SEEDING & MULCHING
659	16942																																659	16942	S.Y.	REPAIR SEEDING & MULCHING
659	15	31.96																														1	659	47.96	TON	COMMERCIAL FERTILIZER
659		152.49																														6	659	158.49	TON	AGRICULTURAL LIMING
660						212											104	77	43														660	436	S.Y.	REINFORCED SODDING, STANDARD
670				350	926	1696	743	1982	1529	869	157	44	1694	338		855	1074	28	130	384	487	100		260	1171		673			2	8			670	15500	S.Y.	DITCH EROSION PROTECTION
																																				DRAINAGE
602				0.7	0.3				1.2	0.5						0.2	1.0	0.7		0.3	2.6	1.1		1.5			0.7		1.4	4.7	4.5			602	21.4	C.Y.	CONCRETE MASONRY
603																				86													603	86	L.F.	CONDUIT, TYPE 'A' 15" 706.02 2250 D-LOAD OR 15" 707.01 (0.109), 707.04 (0.109), 707.05 (0.109) 707.09 OR 707.21
603																		148															603	148	L.F.	CONDUIT, TYPE 'A' 15" 706.02 2500 D LOAD OR 18" 707.01 (0.109), 707.04 (0.109) 707.05 (0.109) 707.09 OR 707.21
603																					88												603	88	L.F.	CONDUIT, TYPE 'A' 18" 706.01, 706.02 OR 706.08 OR 21" 707.01, 707.04, 707.05, 707.09, OR 707.21
603																											92						603	92	L.F.	CONDUIT, TYPE 'A' 21" 706.02 OR 706.08
603																						96											603	96	L.F.	CONDUIT, TYPE 'A' 21" 706.02 OR 706.08 OR 27" 707.01, 707.04, 707.05, 707.09 OR 707.21
603										110																							603	110	L.F.	CONDUIT, TYPE 'A' 24" 706.02 1500 D-LOAD OR 706.08 OR 27" 707.01 (0.109), 707.04 (0.109) 707.05 (0.109), 707.09 OR 707.21
603									218																								603	218	L.F.	CONDUIT, TYPE 'A' 27" 706.02 1250 D-LOAD OR 706.08 OR 30" 707.01 (0.109), 707.04 (0.109) 707.05 (0.109) 707.09 OR 707.21
603																													206				603	206	L.F.	CONDUIT, TYPE 'A' 27" 706.02 OR 706.08 OR 33" 707.01 (0.109), 707.04 (0.109), 707.05 (0.109), 707.09 OR 707.21
603																								128									603	128	L.F.	CONDUIT, TYPE 'A' 33" 706.02 2000 D-LOAD OR 36" 707.01 (0.109), 707.04 (0.109) 707.05 (0.109) 707.09 OR 707.22
603																					98												603	98	L.F.	CONDUIT, TYPE 'A' 33" 706.02 OR 42" 707.01, 707.04, 707.05, 707.09 OR 707.22
603																													116				603	116	L.F.	CONDUIT, TYPE 'A' 42" 706.02 OR 48" 707.01, 707.04, 707.05, 707.09, OR 707.22
603																													258				603	258	L.F.	CONDUIT, TYPE 'A' 42" 706.02 1750 D-LOAD OR 48" 707.01 (0.109), 707.04 (0.109), 707.05 (0.109), 707.09 OR 707.22
603																														232			603	232	L.F.	CONDUIT, TYPE 'A' 54" 706.02 1750-D-LOAD OR 60" 707.02, (0.109), 707.04 (0.109), 707.05 (0.109) 707.09 (1") OR 707.22
603	50																																603	50	L.F.	6" CONDUIT, TYPE 'B' 706.01 ... , 706.02 OR 706.08 W/ JOINTS AS PER 706.11 OR 706.12
603	100			119	95		32		50	72				20		132	76					20	20									603	736	L.F.	6" CONDUIT TYPE 'B'
603																82	44															603	126	L.F.	12" CONDUIT TYPE 'B'
603					104																												603	104	L.F.	15" CONDUIT TYPE 'B'
603				88					180																								603	268	L.F.	18" CONDUIT TYPE 'B'
603				102																													603	102	L.F.	21" CONDUIT TYPE 'B'
603									206																								603	206	L.F.	30" CONDUIT TYPE 'B'
603																	238																603	238	L.F.	36" CONDUIT TYPE 'B' 706.02 2750 D-LOAD OR 707.14
603	50																																603	50	L.F.	6" CONDUIT TYPE 'C' 706.01, 706.02, 706.08 W/JOINTS AS PER 706.11 OR 706.12
603	50																																603	50	L.F.	6" CONDUIT TYPE 'C'
603																	115																603	115	L.F.	12" CONDUIT TYPE 'C'
603								100	500											96													603	696	L.F.	15" CONDUIT TYPE 'C'
603									496																								603	496	L.F.	18" CONDUIT TYPE 'C'
603																												40					603	40	L.F.	21" CONDUIT TYPE 'D'
603	50																																603	50	L.F.	4" CONDUIT TYPE 'E' 711.29
603	100																																603	100	L.F.	6" CONDUIT TYPE 'E'
603	50																																603	50	L.F.	6" CONDUIT TYPE 'E' 706.01, 706.02 OR 706.08
603	150			70	80		20		80	30	10			10		30	20		20	10	20	20		10	20		20						603	620	L.F.	6" CONDUIT TYPE 'F'
603																	65															603	65	L.F.	12" CONDUIT TYPE 'F' 707.05 TYPE 'G'
604																																1	604	1	EA.	CATCH BASIN, STANDARD NO. 2-G
604																				1													604	1	EA.	CATCH BASIN, STANDARD NO. 2-2-B
604									1																								604	1	EA.	CATCH BASIN, STANDARD NO. 2-3
604									1																								604	1	EA.	CATCH BASIN, STANDARD NO 2-4
604				2	1		1	2																									604	6	EA.	CATCH BASIN, STANDARD NO. 4
604									1	1																							604	2	EA.	CATCH BASIN, STANDARD NO. 4A
604																1	2																604	3	EA.	CATCH BASIN, STANDARD NO. 8
604																				1													604	1	EA.	MANHOLE, STANDARD NO. 3
604	1																																604	1	EA.	INSPECTION WELL, STANDARD
604								1																									604	1	EA.	MANHOLE, STANDARD NO.3 USING FLAT SLAB TOP
605				2042	4343	3240	1495		2721	3179	1133		550	761		1882	2037	1452	1248	322	728	1781	900	1011	1452		931						605	33208	L.F.	6" SHALLOW PIPE UNDERDRAINS
605			1600	2063			1361	3247	138			500	2947																				605	11856	L.F.	6" DEEP PIPE UNDERDRAINS
605			416	46			300		111				550			150					129		242										605	1944	L.F.	6" UNCLASSIFIED PIPE UNDERDRAINS

GENERAL SUMMARY

CALC: R.C.B. 9-85
CHK: R.A.B. 9-85

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ITEM	GENERAL NOTES	CALCULATIONS	SHEET NUMBER 24	25	26	27	28	29	30	31	32	56	57	58	59	65	66	67	68	69	83	86	92	96	100	101	106	110	123	124	125	R/W		ITEM	TOTAL	UNIT	DESCRIPTION
																																				DRAINAGE (CONT'D.)
605	20																																605	20	L.F.	AGGREGATE DRAINS FOR SPRINGS
605	200																																605	200	L.F.	6" UNCLASSIFIED PIPE UNDERDRAINS 707.01 TYPE III OR 707.21 TYPE III, AS PER PLAN
																																				PAVEMENT
301		31553																															301	31553	C.Y.	BITUMINOUS AGGREGATE BASE, AC-20, RT-11 OR RT-12
304		22860				3																				309							304	23172	C.Y.	AGGREGATE BASE
846		4023																															846	4023	C.Y.	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
846		2897				1																											846	2898	C.Y.	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20
409		11773																															409	11773	GAL.	SEAL COAT BITUMINOUS MATERIAL
409		314																															409	314	CU.YD.	SEAL COAT COVER AGGREGATE, No. 8
609						91											2	39	1							53							609	186	L.F.	CURB, STANDARD TYPE 6
611		1206																															611	1206	S.Y.	REINFORCED CONCRETE APPROACH SLAB (T=15")
SPECIAL		122,529																															SPECIAL	122,529	S.Y.	LIME STABILIZED SUBGRADE
																																				TRAFFIC CONTROL
																																				FOR QUANTITIES SEE SHEET NO. 141 & 142
																																				LIGHTING
																																				FOR QUANTITIES SEE SHEET NO. 129
																																				STRUCTURES 20' SPAN AND OVER
																																				FOR UNI-33-0790 L/R QUANTITIES SEE SHEET NO. 166
																																				FOR UNI-33-0837 L/R QUANTITIES SEE SHEET NO 175
																																				FOR UNI-33-0862 QUANTITIES SEE SHEET NO 185
																																				FOR UNI-33-0886 QUANTITIES SEE SHEET NO 199
																																				BUILDING REMOVALS
																																LUMP		202	LUMP	PARCEL NO. 93WL-T, REMOVAL ONE 1-STY FRAME BARN
																																LUMP		202	LUMP	PARCEL NO. 94WL, REMOVAL ONE 2-STY BRICK RES. & FULL BASEMENT, TWO FRAME & METAL SHEDS, ONE WELL, ONE CISTERN & ONE SEPTIC SYSTEM
																																LUMP		202	LUMP	PARCEL NO. 95WL REMOVAL TWO 1-STY. BLOCK, BLDG., TWO FRAME SHEDS, ONE WELL AND SEPTIC SYSTEM
																																LUMP		202	LUMP	PARCEL NO 95WL REMOVAL ONE MOVIE SCREEN WITH CONCRETE FOOTINGS
																																LUMP		202	LUMP	PARCEL NO. 98WL, REMOVEL ONE 2-STY. FRAME RES., ONE BARN WITH ATTACHED GARAGE AND CARPORT, ONE WELL, SEPTIC SYSTEM AND CISTERN
																																LUMP		202	LUMP	PARCEL NO. 99 A WL REMOVAL ONE 2-STY FRAME RES. & FULL BASEMENT AND 2 CAR FRAME GARAGE ONE FRAME PLAY HOUSE, ONE WELL, ONE CISTERN & ONE SEPTIC SYSTEM
																																LUMP		202	LUMP	PARCEL NO. 100 WL REMOVAL ONE 1-STY. FRAME RES., SEPTIC SYSTEM & CISTERN & WELL
																																LUMP		202	LUMP	PARCEL NO. 100 WL REMOVEL ONE FRAME GARAGE
614	LUMP																																614	LUMP		MAINTAINING TRAFFIC
619	LUMP																																619	LUMP		FIELD OFFICE
623	LUMP																																623	LUMP		CONSTRUCTION LAYOUT STAKES
624	LUMP																																624	LUMP		MOBILIZATION
																																				RETAINING WALLS
																																				FOR QUANTITIES SEE SHEET NO. 208

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SUPERELEVATION TABLES

U.S. 33 MAINLINE

STATION	LT. OUTSIDE EDGE PAV'T.	PROFILE GRADE	RT. OUTSIDE EDGE PAV'T.
419+ .00	1060.28	1059.91	1060.28
419+25.00	1060.18	1059.83	1060.20
419+50.00	1060.04	1059.74	1060.11
419+75.00	1059.88	1059.63	1060.01
420+ .00	1059.70	1059.52	1059.89
420+25.00	1059.51	1059.39	1059.77
420+50.00	1059.31	1059.26	1059.63
420+75.00	1059.08	1059.11	1059.48
421+ .00	1058.81	1058.95	1059.32
421+25.00	1058.51	1058.77	1059.15
421+50.00	1058.20	1058.59	1059.00
421+75.00	1057.88	1058.39	1058.90
422+ .00	1057.55	1058.18	1058.82
422+25.00	1057.20	1057.96	1058.72
422+50.00	1056.85	1057.73	1058.61
422+75.00	1056.48	1057.48	1058.49
423+ .00	1056.10	1057.23	1058.36
423+25.00	1055.70	1056.96	1058.22
423+50.00	1055.30	1056.68	1058.07
423+75.00	1054.88	1056.39	1057.90
424+ .00	1054.45	1056.09	1057.72
424+25.00	1054.01	1055.77	1057.53
424+50.00	1053.56	1055.45	1057.33
424+75.00	1053.13	1055.11	1057.08
425+ .00	1052.76	1054.76	1056.76

455+ .00	1041.51	1043.51	1045.51
455+25.00	1041.66	1043.65	1045.64
455+50.00	1041.85	1043.79	1045.73
455+75.00	1042.11	1043.93	1045.75
456+ .00	1042.37	1044.07	1045.77

U.S. 33 MAINLINE

STATION	LT. OUTSIDE EDGE PAV'T.	PROFILE GRADE	RT. OUTSIDE EDGE PAV'T.
456+25.00	1042.64	1044.21	1045.78
456+50.00	1042.90	1044.35	1045.80
456+75.00	1043.17	1044.49	1045.81
457+ .00	1043.43	1044.63	1045.83
457+25.00	1043.70	1044.77	1045.84
457+50.00	1043.96	1044.91	1045.86
457+75.00	1044.23	1045.05	1045.87
458+ .00	1044.49	1045.19	1045.89
458+25.00	1044.76	1045.33	1045.90
458+50.00	1045.02	1045.47	1045.92
458+75.00	1045.29	1045.61	1045.93
459+ .00	1045.55	1045.75	1045.95
459+25.00	1045.82	1045.89	1045.96
459+50.00	1046.08	1046.03	1045.98
459+75.00	1046.34	1046.17	1046.00
460+ .00	1046.61	1046.31	1046.01
460+25.00	1046.87	1046.45	1046.03
460+50.00	1047.14	1046.59	1046.04
460+75.00	1047.40	1046.73	1046.06
461+ .00	1047.67	1046.87	1046.07
461+25.00	1047.93	1047.01	1046.09
461+50.00	1048.20	1047.15	1046.10
461+75.00	1048.46	1047.29	1046.12
462+ .00	1048.73	1047.43	1046.13
462+25.00	1048.99	1047.57	1046.15
462+50.00	1049.26	1047.71	1046.16
462+75.00	1049.52	1047.85	1046.18
463+ .00	1049.79	1047.99	1046.19
463+25.00	1050.05	1048.13	1046.21

RAMP 'X'

STATION	LT. EDGE PAV'T.	RT. EDGE PAV'T.
407+50.00	1047.63	1048.30
407+75.00	1047.52	1048.19
408+ .00	1047.41	1048.08
408+25.00	1047.30	1047.97
408+50.00	1047.19	1047.86
408+75.00	1047.08	1047.75
409+ .00	1046.97	1047.64
409+25.00	1046.86	1047.53
409+50.00	1046.75	1047.39
409+75.00	1046.64	1047.18
410+ .00	1046.53	1046.94
410+25.00	1046.42	1046.71
410+50.00	1046.31	1046.56
410+75.00	1046.20	1046.45
411+ .00	1046.09	1046.34
411+25.00	1045.98	1046.23
411+50.00	1045.87	1046.10
411+75.00	1045.76	1045.92
412+ .00	1045.65	1045.69
412+25.00	1045.54	1045.45
412+50.00	1045.43	1045.22
412+75.00	1045.32	1044.98
413+ .00	1045.21	1044.74
413+25.00	1045.10	1044.55
413+50.00	1044.99	1044.41
413+75.00	1044.88	1044.30
414+ .00	1044.77	1044.19
414+25.00	1044.66	1044.08
414+50.00	1044.55	1043.97
414+75.00	1044.44	1043.86
415+ .00	1044.33	1043.75
415+25.00	1044.22	1043.64

RAMP 'X'

STATION	LT. EDGE PAV'T.	RT. EDGE PAV'T.
415+50.00	1044.11	1043.53
415+75.00	1044.00	1043.42
416+ .00	1043.89	1043.31
416+25.00	1043.78	1043.20
416+50.00	1043.67	1043.09
416+75.00	1043.56	1042.98
417+ .00	1043.45	1042.87
417+25.00	1043.34	1042.76
417+50.00	1043.23	1042.71
417+75.00	1043.12	1042.71
418+ .00	1043.01	1042.73

RAMP 'N'

STATION	LT. EDGE PAV'T.	RT. EDGE PAV'T.
407+25.00	1049.70	1049.45
407+50.00	1049.76	1049.51
407+75.00	1049.79	1049.54
408+ .00	1049.76	1049.51
408+25.00	1049.68	1049.43
408+50.00	1049.55	1049.30
408+75.00	1049.38	1049.13
409+ .00	1049.15	1048.90
409+25.00	1048.90	1048.65
409+50.00	1048.65	1048.40
409+75.00	1048.40	1048.15
410+ .00	1048.15	1047.90
410+25.00	1047.90	1047.65
410+50.00	1047.65	1047.40
410+75.00	1047.40	1047.15
411+ .00	1047.15	1046.90

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SUPERELEVATION TABLES

RAMP 'N'

STATION	LEFT E.P.	RIGHT E.P.
411+25.00	1046.90	1046.65
411+50.00	1046.65	1046.40
411+75.00	1046.40	1046.15
412+ .00	1046.15	1045.90
412+25.00	1045.90	1045.65
412+50.00	1045.65	1045.40
412+75.00	1045.40	1045.15
413+ .00	1045.15	1044.90
413+25.00	1044.90	1044.65
413+50.00	1044.65	1044.40
413+75.00	1044.40	1044.15
414+ .00	1044.15	1043.90
414+25.00	1043.90	1043.65
414+50.00	1043.65	1043.40
414+75.00	1043.45	1043.20

ROAD 'U'

STATION	LT. OUTSIDE E.P.	LT./RT. INSIDE E.P.	RT. OUTSIDE E.P.
73+50.00	1044.82	1045.07	1044.82
73+75.00	1045.80	1046.05	1045.80
74+ .00	1046.78	1047.03	1046.78
74+25.00	1047.74	1047.99	1047.74
74+50.00	1048.66	1048.91	1048.66
74+75.00	1049.54	1049.79	1049.54
75+ .00	1050.38	1050.63	1050.38
75+25.00	1051.17	1051.42	1051.17
75+50.00	1051.93	1052.18	1051.93
75+75.00	1052.65	1052.90	1052.65
76+ .00	1053.32	1053.57	1053.32
76+25.00	1053.96	1054.21	1053.96

ROAD 'U'

STATION	LT. OUTSIDE E.P.	LT./RT. INSIDE E.P.	RT. OUTSIDE E.P.
76+50.00	1054.55	1054.80	1054.55
76+75.00	1055.11	1055.36	1055.11
77+ .00	1055.62	1055.87	1055.62
77+25.00	1056.10	1056.35	1056.10
77+50.00	1056.53	1056.78	1056.53
77+75.00	1056.92	1057.17	1056.92
78+ .00	1057.28	1057.53	1057.28
78+25.00	1057.59	1057.84	1057.59
78+50.00	1057.86	1058.11	1057.86
78+75.00	1058.09	1058.34	1058.09
79+ .00	1058.28	1058.53	1058.28
79+25.00	1058.45	1058.70	1058.45
79+50.00	1058.62	1058.87	1058.62
79+75.00	1058.79	1059.04	1058.79
80+ .00	1058.96	1059.21	1058.96
80+25.00	1059.13	1059.38	1059.13
80+50.00	1059.30	1059.55	1059.30
80+75.00	1059.47	1059.70	1059.45
81+ .00	1059.64	1059.81	1059.56
81+25.00	1059.81	1059.92	1059.67
81+50.00	1059.98	1060.03	1059.78
81+75.00	1060.15	1060.11	1059.82
82+00.00	1060.32	1060.16	1059.78
82+25.00	1060.49	1060.20	1059.72
82+50.00	1060.66	1060.24	1059.65
82+75.00	1060.83	1060.28	1059.58
83+00.00	1061.00	1060.32	1059.52
83+25.00	1061.17	1060.36	1059.45
83+50.00	1061.34	1060.40	1059.38
83+75.00	1061.51	1060.43	1059.31
84+00.00	1061.68	1060.47	1059.25
84+25.00	1061.85	1060.56	1059.26
84+50.00	1062.02	1060.71	1059.40

ROAD 'U'

STATION	LT. E.P.	RT. E.P.
97+ .00	1062.07	1060.75
97+25.00	1061.72	1060.40
97+50.00	1061.35	1060.04

ROAD 'U'

STATION	LT. E.P.	RT. E.P.
97+75.00	1060.97	1059.70
98+ .00	1060.57	1059.39
98+25.00	1060.16	1059.09
98+50.00	1059.74	1058.77
98+75.00	1059.32	1058.46
99+ .00	1058.90	1058.15
99+25.00	1058.48	1057.83
99+50.00	1058.06	1057.52
99+75.00	1057.65	1057.22
100+ .00	1057.26	1056.94
100+25.00	1056.90	1056.69
100+50.00	1056.56	1056.47
100+75.00	1056.24	1056.27
101+ .00	1055.94	1056.10
101+25.00	1055.67	1055.90
101+50.00	1055.42	1055.67
101+75.00	1055.18	1055.43
102+ .00	1054.94	1055.19
102+25.00	1054.70	1054.95
102+50.00	1054.46	1054.71
102+75.00	1054.22	1054.47
103+ .00	1053.98	1054.23
103+25.00	1053.74	1053.99
103+50.00	1053.50	1053.75
103+75.00	1053.26	1053.51
104+ .00	1053.02	1053.27
104+25.00	1052.78	1053.03
104+50.00	1052.54	1052.79
104+75.00	1052.30	1052.55
105+ .00	1052.06	1052.31
105+25.00	1051.82	1052.07
105+50.00	1051.58	1051.83
105+75.00	1051.34	1051.59

ROAD 'U'

STATION	LT. E.P.	RT. E.P.
106+ .00	1051.10	1051.35
106+25.00	1050.86	1051.11
106+50.00	1050.62	1050.87
106+75.00	1050.38	1050.63
107+ .00	1050.14	1050.39
107+25.00	1049.90	1050.15
107+50.00	1049.66	1049.91
107+75.00	1049.42	1049.67
108+ .00	1049.18	1049.43
108+25.00	1048.94	1049.19
108+50.00	1048.70	1048.95
108+75.00	1048.46	1048.71
109+ .00	1048.22	1048.47
109+25.00	1047.98	1048.23
109+50.00	1047.78	1048.03
109+75.00	1047.65	1047.90

RAMP 'Y'

STATION	LT. E.P.	RT. E.P.
437+ .00	1040.20	1040.26
437+25.00	1040.15	1040.06
437+50.00	1040.16	1039.93
437+75.00	1040.22	1039.85
438+ .00	1040.35	1039.83
438+25.00	1040.53	1039.87
438+50.00	1040.78	1039.97
438+75.00	1041.06	1040.13
439+ .00	1041.34	1040.35
439+25.00	1041.62	1040.62
439+50.00	1041.96	1040.96
439+75.00	1042.35	1041.35
440+ .00	1042.80	1041.80

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SUPERELEVATION TABLES

RAMP 'Y'

STATION	LT. EDGE PAV'T.	RT. EDGE PAV'T.
440+25.00	1043.28	1042.28
440+50.00	1043.76	1042.76
440+75.00	1044.21	1043.21
441+ .00	1044.60	1043.60
441+25.00	1044.93	1043.93
441+50.00	1045.20	1044.20
441+75.00	1045.42	1044.42
442+ .00	1045.57	1044.57
442+25.00	1045.66	1044.66
442+50.00	1045.70	1044.70
442+75.00	1045.67	1044.67
443+ .00	1045.59	1044.59
443+25.00	1045.44	1044.44
443+50.00	1045.24	1044.24
443+75.00	1044.98	1043.98
444+ .00	1044.65	1043.65
444+25.00	1044.27	1043.27
444+50.00	1043.83	1042.83
444+75.00	1043.33	1042.33
445+ .00	1042.77	1041.77

ROAD 'Z'

STATION	LT. EDGE PAV'T	RT. EDGE PAV'T.
73+75.00	1043.11	1042.33
74+ .00	1043.66	1042.76
74+25.00	1044.12	1043.14
74+50.00	1044.47	1043.47
74+75.00	1044.76	1043.76
75+ .00	1045.01	1044.01
75+25.00	1045.21	1044.21
75+50.00	1045.37	1044.37
75+75.00	1045.48	1044.48

ROAD 'Z'

STATION	LT. EDGE PAV'T.	RT. EDGE PAV'T.
76+ .00	1045.55	1044.55
76+25.00	1045.58	1044.58
76+50.00	1045.56	1044.56
76+75.00	1045.49	1044.49
77+ .00	1045.39	1044.39
77+25.00	1045.24	1044.24
77+50.00	1045.04	1044.04
77+75.00	1044.80	1043.80
78+ .00	1044.52	1043.52
78+25.00	1044.19	1043.19
78+50.00	1043.84	1042.84
78+75.00	1043.49	1042.49
79+ .00	1043.14	1042.14
79+25.00	1042.79	1041.79
79+50.00	1042.47	1041.47
79+75.00	1042.22	1041.22
80+ .00	1042.02	1041.02
80+25.00	1041.89	1040.89
80+50.00	1041.82	1040.83
80+75.00	1041.75	1040.82

RAMP 'W'

STATION	LT. EDGE PAV'T.	RT. EDGE PAV'T.
97+ .00	1060.56	1060.81
97+25.00	1059.76	1060.01
97+50.00	1058.91	1059.16
97+75.00	1058.00	1058.25
98+ .00	1057.05	1057.30
98+25.00	1056.03	1056.28
98+50.00	1054.97	1055.22
98+75.00	1053.85	1054.10
99+ .00	1052.68	1052.93

RAMP 'W'

STATION	LT. EDGE PAV'T.	RT. EDGE PAV'T.
99+25.00	1051.46	1051.71
99+50.00	1050.21	1050.46
99+75.00	1048.96	1049.21
100+ .00	1047.71	1047.96
100+25.00	1046.46	1046.71
100+50.00	1045.21	1045.46
100+75.00	1043.96	1044.21
101+ .00	1042.71	1042.96
101+25.00	1041.46	1041.71
101+50.00	1040.21	1040.46
101+75.00	1038.96	1039.21
102+ .00	1037.71	1037.96
102+25.00	1036.46	1036.71
102+50.00	1035.21	1035.46
102+75.00	1034.03	1034.28
103+ .00	1033.01	1033.26
103+25.00	1032.13	1032.38
103+50.00	1031.40	1031.65
103+75.00	1030.82	1031.07

RAMP 'V'

STATION	LT. EDGE PAV'T.	RT. EDGE PAV'T.
450+ .00	1036.55	1037.88
450+25.00	1036.70	1038.03
450+50.00	1036.88	1038.21
450+75.00	1037.12	1038.45
451+ .00	1037.41	1038.74
451+25.00	1037.77	1039.10
451+50.00	1038.18	1039.51
451+75.00	1038.65	1039.98
452+ .00	1039.15	1040.48

RAMP 'V'

STATION	LT. EDGE PAV'T.	RT. EDGE PAV'T.
452+25.00	1039.65	1040.98
452+50.00	1040.15	1041.48
452+75.00	1040.65	1041.98
453+ .00	1041.15	1042.48
453+25.00	1041.65	1042.98
453+50.00	1042.15	1043.48
453+75.00	1042.65	1043.98
454+ .00	1043.15	1044.48
454+25.00	1043.65	1044.98
454+50.00	1044.15	1045.48
454+75.00	1044.65	1045.98
455+ .00	1045.15	1046.48
455+25.00	1045.65	1046.98
455+50.00	1046.15	1047.48
455+75.00	1046.65	1047.98
456+ .00	1047.15	1048.48
456+25.00	1047.65	1048.98
456+50.00	1048.15	1049.48
456+75.00	1048.65	1049.98
457+ .00	1049.15	1050.48
457+25.00	1049.65	1050.98
457+50.00	1050.15	1051.48
457+75.00	1050.65	1051.98
458+ .00	1051.15	1052.48
458+25.00	1051.65	1052.98
458+50.00	1052.15	1053.48
458+75.00	1052.65	1053.98
459+ .00	1053.15	1054.48
459+25.00	1053.65	1054.98
459+50.00	1054.15	1055.48
459+75.00	1054.65	1055.98
460+ .00	1055.15	1056.48
460+25.00	1055.65	1056.98

STATION	LT. EDGE PAV'T.	RT. EDGE PAV'T.
460+50.00	1056.15	1057.48
460+75.00	1056.65	1057.98
461+ .00	1057.15	1058.48
461+25.00	1057.65	1058.98
461+50.00	1058.15	1059.48
461+75.00	1058.65	1059.98
462+ .00	1059.12	1060.45
462+25.00	1059.54	1060.87
462+50.00	1059.90	1061.23
462+75.00	1060.20	1061.53
463+ .00	1060.45	1061.78
463+25.00	1060.64	1061.97
463+50.00	1060.78	1062.11
463+75.00	1060.86	1062.19
464+ .00	1060.89	1062.22
464+25.00	1060.86	1062.19
464+50.00	1060.77	1062.09

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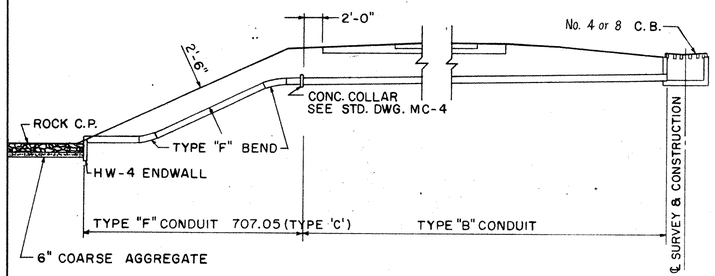
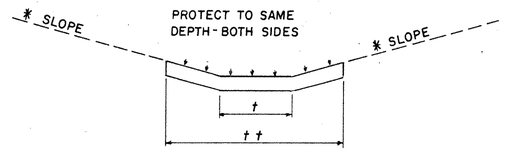
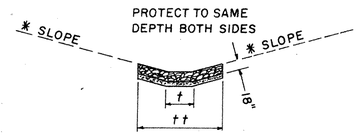


MEDIAN OUTLET DETAIL IN HIGH-FILL

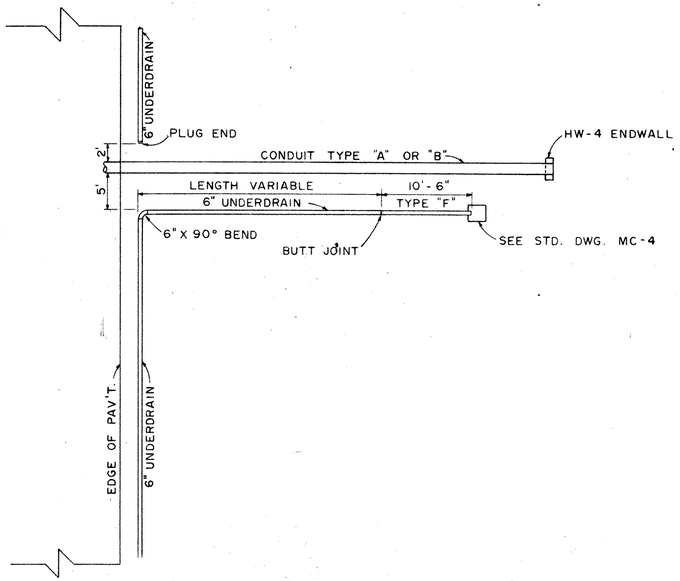


DITCH EROSION PROTECTION

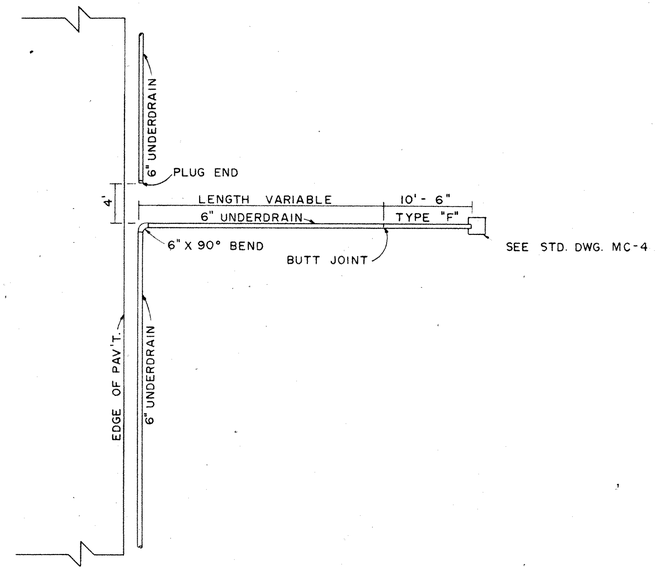
* SEE X-SECTION FOR SLOPE
t DITCH BOTTOM, SEE X-SECTION FOR WIDTH
t t SEE PLAN & PROFILE FOR WIDTH MEASURED ALONG WETTED PERIMETER



ROCK CHANNEL PROTECTION (FOR DITCHES)



UNDERDRAIN OUTLET DETAIL "A"



UNDERDRAIN OUTLET DETAIL "B"

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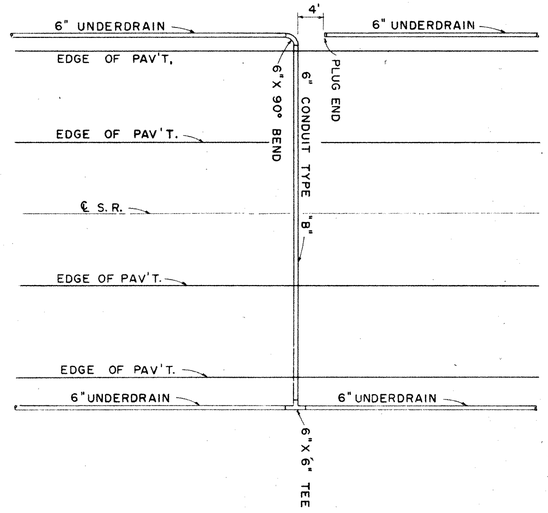
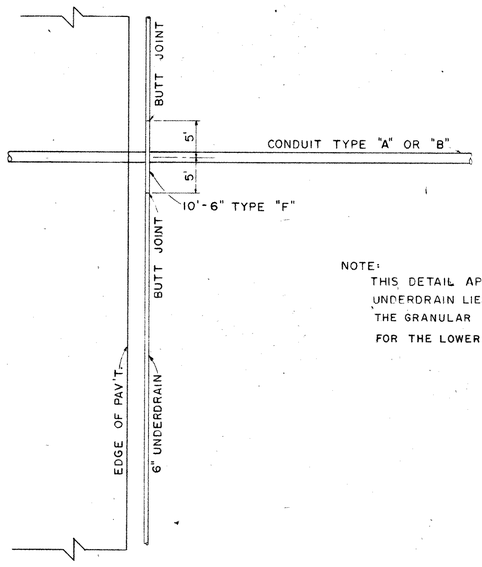
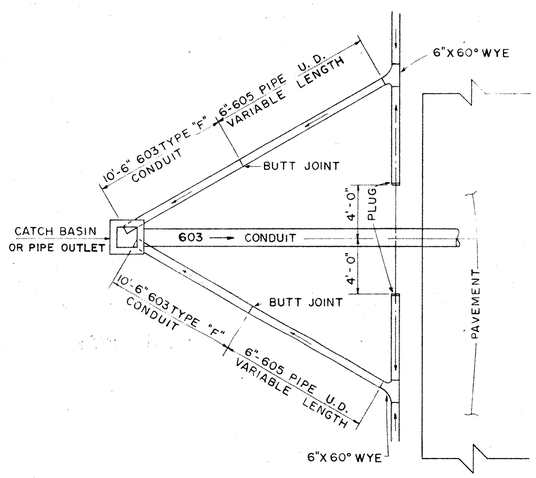


UNDERDRAIN OUTLET DETAIL "C"

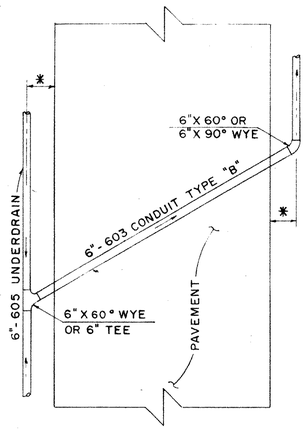


NOTE:
THIS DETAIL APPLIES ONLY IF THE UNDERDRAIN LIES LESS THAN 1' ABOVE THE GRANULAR BACKFILL MATERIAL FOR THE LOWER CONDUIT.

UNDERDRAIN OUTLET DETAIL "D"



UNDERDRAIN OUTLET DETAIL "E"



* SEE TYPICAL SECTIONS

UNDERDRAIN OUTLET DETAIL "F"

CALC: PCB 9/85
CHK: ROB 9/85

UNION COUNTY
UNI-33-7.29

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

24
225

CATHERINE ROCKENBAUGH

200' OHIO POWER EASEMENT

MATCH LINE

DIRT TRAIL

F-11 (75)	F-11 (76)
END PROJECT	BEGIN PROJECT
END WORK	BEGIN WORK
385+00.00	STA. 384+96.78
S.L.M. - 4.17	S.L.M. - 7.29

+96.78 BEGIN PAVEMENT

LA-R/W

WORK LIMITS

1-UD 2-UD 3-UD 4-UD

6"~605 (UNCL.)

6"~605 (DEEP)

+100

381 382 383 384 385 386 387 388 389

S 53°35'08" E BK.

S 53°35'50" E AH.

℄ SURVEY & CONST. U.S.R. 33

+96.78

TREES & BRUSH

W.W. FENCE

WOODS

B.M. # 28A2	ELEV. 1039.40
STA. 371+14	317' LT.
CUTS "□" IN CENTER OF 9.5' DIA. CONC. BASE, S.W. LEG OF HIGH TENSION POWER TOWER.	

B.M. # 120	ELEV. 1042.52
STA. 379+10	165' LT.
MINE SPIKE SET IN 27" OAK	

CATHERINE ROCKENBAUGH

HIGH VOLTAGE TOWER

EXCAVATION	2,001	CY.
EMBANKMENT	1,874	CY.
SEEDING	0.146	SY.

1060 1050 1040 1030

1045.58 1045.74 1045.90 1045.96 1045.32 1045.18 1045.04 1044.94 1044.82 1044.70 1044.58

1041.4 1042.6 1043.3 1043.4 1043.7 1044.2 1044.8 1044.9 1044.6 1044.5+21 1044.4 1044.6

0.28% 0.24%

PVI STA. 387+00
EL. 1045.18

+96.8 ST LT & RT
EL. 1041.78

+96.8, 25' LT & RT
EL. 1041.68

+100, 51' LT & RT
EL. 1039.78

+96.78, 73' LT & RT
EL. 1039.52

4"~605 U.D. (UNCL.)
6"~605 U.D. (UNCL.)

4"~605 U.D. (OUT LT & RT) (DEEP)
6"~605 U.D. (IN LT & RT) (DEEP)

380+00 381+00 382+00 383+00 384+00 385+00 386+00 387+00 388+00 389+00 390+00

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	605 4"DEEP PIPE U.D. L.F.	605 4"UNCL. PIPE U.D. L.F.
1-UD	384+96.78 TO 390+00	LT	400	104
2-UD	384+96.78 TO 390+00	LT	400	104
3-UD	384+96.78 TO 390+00	RT	400	104
4-UD	384+96.78 TO 390+00	RT	400	104
TOTALS			1600	416

U.S. 33 STA. 384+96.78 TO STA. 390+00

CALC: PCB 9/85
CHK: ROB 9/85

UNION COUNTY
UNI-33-7.29

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

25
225

CATHERINE ROCKENBAUGH

JOHN R. EVANS

WOODS
NATURE PRESERVE

CULTIVATED

WOODS

CULTIVATED

CATHERINE ROCKENBAUGH

JOHN R. EVANS

MATCH LINE

MATCH LINE

ROCK C.P. TYPE 'C' W/ FILTER 10'x4'x1.5'

ROCK C.P. TYPE 'C' W/ FILTER 10'x4'x1.5'

L.A.-R/W

WORK LIMITS

FIRE TRAIL

6"-DITCH PROT. L= 100'

EX. FENCE REMOVED UNDER ITEM 209

STA. 395+00.00 ℄ U.S.R. 33, 49.00 LT.
BEGIN 40:1 TAPER

℄ SURVEY & CONST. U.S.R. 33

S 53° 35' 50" E

7.5'-DITCH PROT. L= 150'

7.5'-DITCH PROT. L= 150'

7.5'-DITCH PROT.

1-UD 2-UD 3-UD 4-UD 5-UD 6-UD 7-UD 8-UD 9-UD 10-UD 11-UD 12-UD
1-D 2-D 3-D

6"-605 (DEEP)
6"-605 (SHALLOW)
6" TYPE 'B'
10" TYPE 'B'
44"
+25
+46
+54
+45
+55
+37
+63
+04.30
+50
L-43

B.M. #10 ELEV. 1045.92
STA. 393.64 156' RT.
MINE SPIKE IN 10" HICKORY IN FENCE & TREE ROW

B.M. #9 ELEV. 1029.05
STA. 393+35.6 61' RT.
R.R. SPIKE IN POWER POLE #18-1

CALCULATIONS

1-D	ITEM 670	DITCH PROT.	(150'x7.5)÷9 =	125.0 S.Y.
2-D	ITEM 670	DITCH PROT.	(193'x7.5)÷9 =	160.8 S.Y.
1-D & 2-D	ITEM 601	R.C.P.	(10'x4'x1.5)÷27 = 2.2 C.Y.	
3-D	ITEM 670	DITCH PROT.	(96'x6')÷9 =	64 S.Y.

EXCAVATION	6,983	C.Y.
EMBANKMENT	7,084	C.Y.
SEEDING	18,390	S.Y.

-0.24 %

600 V.C.

+25, 51' LT
℄ 6" 1038.20

+46, 51' LT
℄ 6" 1038.25

+00, 51' RT.
℄ 6" 1037.54

+04, 51' LT & RT.
℄ 6" 1039.20

+45, 42.13' LT.
℄ 6" 1038.39

+50, 63' RT.
℄ 6" 1037.96

+55, 62.38' LT.
℄ 6" 1038.36

6"-605 U.D. (DEEP) (OUT. LT. & RT.)
6"-605 U.D. (DEEP) (IN. LT. & RT.)

6"-605 SHALLOW (OUT. LT.)
6"-605 SHALLOW (OUT. RT.)
6"-605 SHALLOW (IN LT. & RT.)

+37, 23' LT.
℄ 6" 1037.73

+46, 23' LT.
℄ 6" 1037.95

+00, 23' RT.
℄ 6" 1037.10

+04, 23' LT. & RT.
℄ 6" 1038.76

+00, 23' LT.
℄ 6" 1036.86

+00, 51' LT.
℄ 6" 1036.71

+37, 23' LT.
℄ 6" 1037.79

+50, 23' RT.
℄ 6" 1037.78

+63, 23' LT.
℄ 6" 1037.79

STA. 392+50, ℄
№ 4 CATCH BASIN
℄ GRATE 1040.23
℄ 18" 1037.48
℄ 6" 1037.63

STA. 399+50, ℄
№ 4 CATCH BASIN (OMIT DIKE)
℄ GRATE 1038.64
℄ 21" 1035.74
℄ 6" 1036.81

1044.78 1044.46 1044.34 1044.22 1044.10 1043.98 1043.86 1043.74 1043.62 1043.50 1043.38 1043.26 1043.14 1043.02 1042.90 1042.78 1042.66 1042.54 1042.48 1042.43 1042.40 1042.39 1042.39 1042.42

1060 1050 1040 1030 1020

1044.6 1044.2 1043.7 1043.6 1043.7+80 1042.8+90 1043.7 1044.0+08 1042.7+21 1043.4+26 1043.6 1044.3 1043.9 1042.8 1041.8 1041.7+55 1041.1 1040.6 1039.8 1039.4 1039.2 1039.4 1039.2 1038.9 1038.1+71 1038.7+73 1038.5 1039.4+03 1039.4+04 1038.3 1038.5

390+00 391+00 392+00 393+00 394+00 395+00 396+00 397+00 398+00 399+00 400+00

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	601 CONCRETE MASONRY	602 ROCK C.P. TYPE 'C' W/ FILTER	603 6" CONDUIT TYPE 'B'	603 6" CONDUIT TYPE 'F'	603 10" CONDUIT TYPE 'B'	603 12" CONDUIT TYPE 'B'	604 INT. CTL. BASIN	SEE SHEET NO.	610 DITCH EROSION PROT.	605 BENDS & BRANCHES	605 8" UNCLASS PIPE LTD	605 8" DEEP PIPE LTD	605 8" SHALLOW PIPE LTD
			C.Y.	C.Y.	L.F.	L.F.	L.F.	L.F.	Ea.		S.Y.	Ea.	L.F.	L.F.	L.F.
1-D	390+93 TO 392+50	℄-LT.	2.2	0.33					1	35					
2-D	391+93 TO 400+00	℄LT.	2.2	0.99					1	36					
3-D	391+75 TO 392+75	LT.					98	102			125	1			
											161	1			
											64				
1-UD	390+00 TO 392+46	LT.								23 E					
2-UD	390+00 TO 392+50	LT.								23 E					
3-UD	390+00 TO 395+00	RT.								23 C					
4-UD	390+00 TO 395+00	LT & RT.								23 C					
5-UD	392+54 TO 395+00	LT.								23 C					
6-UD	392+58 TO 395+00	LT.								23 B					
7-UD	394+45 TO 400+00	LT.								23 E					
8-UD	394+50 TO 400+00	LT.								23 C					
9-UD	395+04 TO 400+00	RT.								23 C					
10-UD	395+04 TO 400+00	RT.								23 B					
11-UD	394+55 TO 400+00	LT.								23 E					
12-UD	394+50 TO 400+00	LT.								23 E					
TOTALS			4.4	0.72	119	70	98	102	2		350	4	2063	2042	464
															497
															496
															496
															68
															61

U.S. 33 STA. 390+00 TO STA. 400+00

CALC: PCB 9/85
CHK: ROB 9/85

UNION COUNTY
UNI-33-7.29

FED RD. DIVISION	STATE	PROJECT	
5	OHIO		

26
225

NOTES:
1. FOR RAMP 'N' PAVEMENT DETAILS SEE SHEET 112
2. FOR RAMP 'X' PAVEMENT DETAILS SEE SHEET 113

JOHN R. EVANS
MICHAEL HENDEL & HANNELORE HENDEL
CULTIVATED
WORK LIMITS
LA.-R/W
TEMP. R/W
EX. FENCE REMOVED UNDER ITEM 203
MATCHLINE STA. 409+00.00 SEE SHEET NO. 83
℄ SURVEY & CONST. RAMP 'X'
℄ SURVEY & CONST. U.S.R. 33
℄ SURVEY & CONST. RAMP 'N'
SIGN SUPPORT
9' DITCH PROT. L=75'
9' DITCH PROT. L=120'
9' DITCH PROT. L=60'
9' DITCH PROT. L=43'
7.5' DITCH PROT. L=25'
7.5' DITCH PROT. L=725'
6'x4' DITCH PROT.
ROCK C.P. TYPE 'C' W/ FILTER L=44.15'
15" TYPE B
6"TYPE B
10'-6" TYPE 'F'
6'-L05 (SHALLOW)
1-UD
2-UD
3-UD
4-UD
5-UD
6-UD
7-UD
8-UD
9-UD
10-UD
1-D
2-D
3-D
4-D
5-D
6-D
1-GR
2-GR
1
2
LINE
MATCH
STA. 401+50.00, 61.00' RT. ℄ U.S. 33 = P.C. STA. 401+50.00 ℄ RAMP 'N'
STA. 405+00.00, 74.00' LT. ℄ U.S. 33 = P.C. STA. 405+00.00 ℄ RAMP 'X'
END 40:1 TAPER
MATCHLINE STA. 409+00.00 ℄ RAMP 'N' = SEE SHEET NO. 83

CULVERT *UNI-33-0760
STA. 401+60
FOR DETAILS SEE SHEET 123

B.M. # 11 ELEV. 1038.11
STA. 406+39 185' LT.
MINE SPIKE IN ROOT OF 12" TREE IN FENCE ROW

CALCULATIONS

1-D	ITEM 601	R.C.P.	(6'x4'x1.5') ÷ 27 = 1.3	C.Y.
1-D	ITEM 670	D.P.	(43'x9') ÷ 9 = 43	S.Y.
2-D	ITEM 670	D.P.	(725'x7.5') ÷ 9 = 604.2	S.Y.
3-D	ITEM 670	D.P.	[(9'x75')+(6'x4')] ÷ 9 = 777	S.Y.
4-D	ITEM 670	D.P.	(9'x120) ÷ 9 = 120	S.Y.
5-D	ITEM 670	D.P.	(9'x60) ÷ 9 = 60	S.Y.
6-D	ITEM 670	D.P.	(7.5'x25') ÷ 9 = 20.8	S.Y.

ESTIMATED QUANTITIES

ITEM NO.	601	602	603	603	603	604	605	606	606	606	606	670	
	ROCK C.P. TYPE 'C' W/ FILTER	CONCRETE MASONRY	4" CONDUIT TYPE 'B'	4" CONDUIT TYPE 'F'	15" CONDUIT TYPE 'B'	NO. 4 CATCH BASIN	6" SHALLOW PIPE U.D.	BENDS & BRANCHES	ANCHOR ASSEMBLY TYPE 'T'	GUARD CABLE TYPE 'S'	ANCHOR ASSEMBLY TYPE 'A'	DITCH EROSION PROT.	SEE SHEET NO.
	C.Y.	C.Y.	L.F.	L.F.	L.F.	EA.	L.F.	EA.	EA.	L.F.	EA.	S.Y.	
1-D	1.3	0.27			104	1							38
1-UD							890	1				43	23 D
2-UD				10			936	1				604	23 D
3-UD				10			949	1				78	23 D
4-UD				10			690	1				120	23 D
5-UD			55				278	2		175	1	60	23 F
6-UD			40	10			342	2		175	1	21	23 A
7-UD				10			70	1	1		1		23 E
8-UD				10			41	1	1		1		23 E
9-UD				10			53	1	1		1		23 E
10-UD				10			74	1	1		1		23 B
TOTALS	1.3	0.27	95	80	104	1	4343	11	4	350	6	926	

REF. NO.	STATION TO STATION			SIDE
1-D	409+50	TO	410+00	℄-LT
2-D	400+00	TO	401+25	℄
3-D	401+50	TO	402+75	RT.
4-D	405+15	TO	401+00 (N)	RT.
5-D	409+40	TO	410+00	LT.
6-D	409+75	TO	410+00	RT.
1-UD	409+50	TO	409+00 (X)	LT.
2-UD	400+00	TO	409+46	LT.
3-UD	400+00	TO	409+58	RT.
4-UD	400+00	TO	409+91	RT.
5-UD	406+25 (X)	TO	407+00 (N)	RT.
6-UD	406+76	TO	409+44.6	LT.
7-UD	409+35	TO	410+00	RT.
8-UD	409+56	TO	410+00	LT.
9-UD	409+50	TO	410+00	RT.
10-UD	409+50	TO	410+00	RT.
1-GR	402+45	TO	404+15	RT.
2-GR	402+45	TO	404+15	RT.

EXCAVATION 592 C.Y.
EMBANKMENT 41,827 C.Y.
SEEDING 15,553 S.Y.

+30.51' RT. ℄ L=6" 1049.96
+55.51' LT. ℄ L=6" 1050.03
+63.23' LT. & RT. ℄ L=6" 1049.72
600' V.C.
PVI STA. 401+75
EL. 1041.76
+1.60 %
-0.24 %
PROFILE RAMP 'X' ℄
6'-L05 (OUT.-LT. & RT.)
6'-L05 (IN. LT. & RT.)
-0.44 %
165' V.C.
PVI 417+25
EL. 1066.56
RAMP 'X' 6'-L05 (LT. SIDE) ℄
+04.30. 51' RT. ℄ L=6" 1044.45
+16.51' LT. ℄ L=6" 1045.47
+16.23' RT. ℄ L=6" 1043.57
+50.2' LT. ℄ L=6" 1043.37
+25.2' LT. ℄ L=6" 1043.29
6'-L05 (OUT.-LT.)
6'-L05 (OUT.-RT.)
6'-L05 (IN LT. & RT.)
200' V.C.
PVI STA. 406+00
EL. 1048.29

STA. 409+50, ℄ NO. 4 CATCH BASIN
R. GRATE 1050.39
IE-15" 1044.50
IE-6" 1045.75

1042.42 1042.46 1042.53 1042.61 1042.72 1042.84 1042.98 1043.14 1043.32 1043.52 1043.74 1043.97 1044.23 1044.50 1044.80 1045.11 1045.45 1045.80 1046.17 1046.56 1046.46 1047.76 1048.56 1049.36 1050.16 1050.96 1051.76 1052.56 1053.36 1053.75 1054.14 1054.51 1054.87

1038.5 1038.2 1037.6 1037.8 1037.7+69 1036.7+72 1037.5+73 1037.5 1037.8 1038.0 1038.5 1038.9 1039.0 1039.0 1040.1 1041.4 1041.4 1042.4 1042.8 1042.0+85 1042.5+97 1042.2 1041.4+14 1036.6+41 1040.0 1041.1 1041.7 1041.7

1060 1050 1040 1030

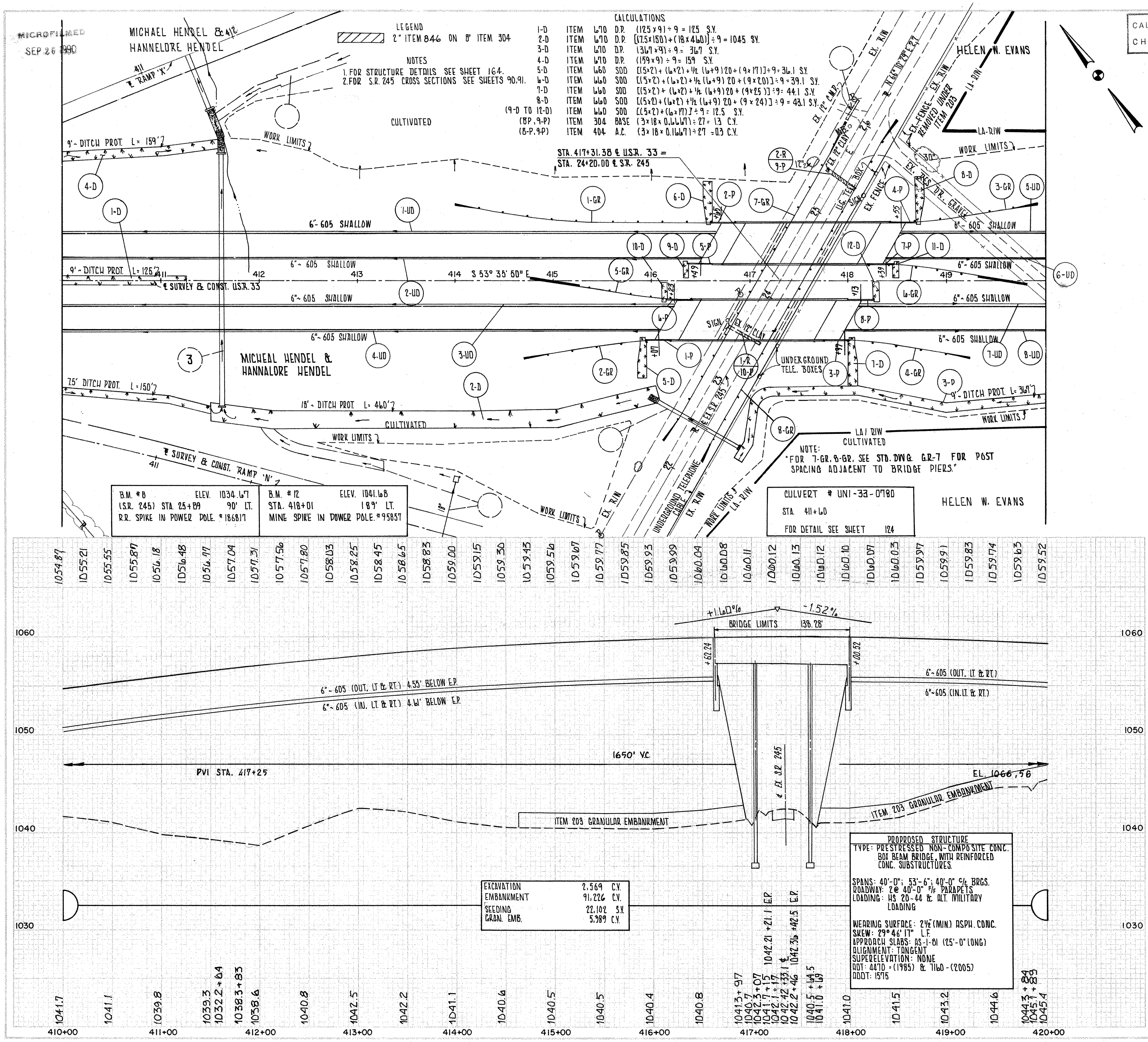
400+00 401+00 402+00 403+00 404+00 405+00 406+00 407+00 408+00 409+00 410+00

U.S. 33 STA. 400+00 TO STA. 410+00

CALC:	P.C.B	9/85
CHK:	R.O.B.	9/85

UNION COUNTY
UNI-33-7.29

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

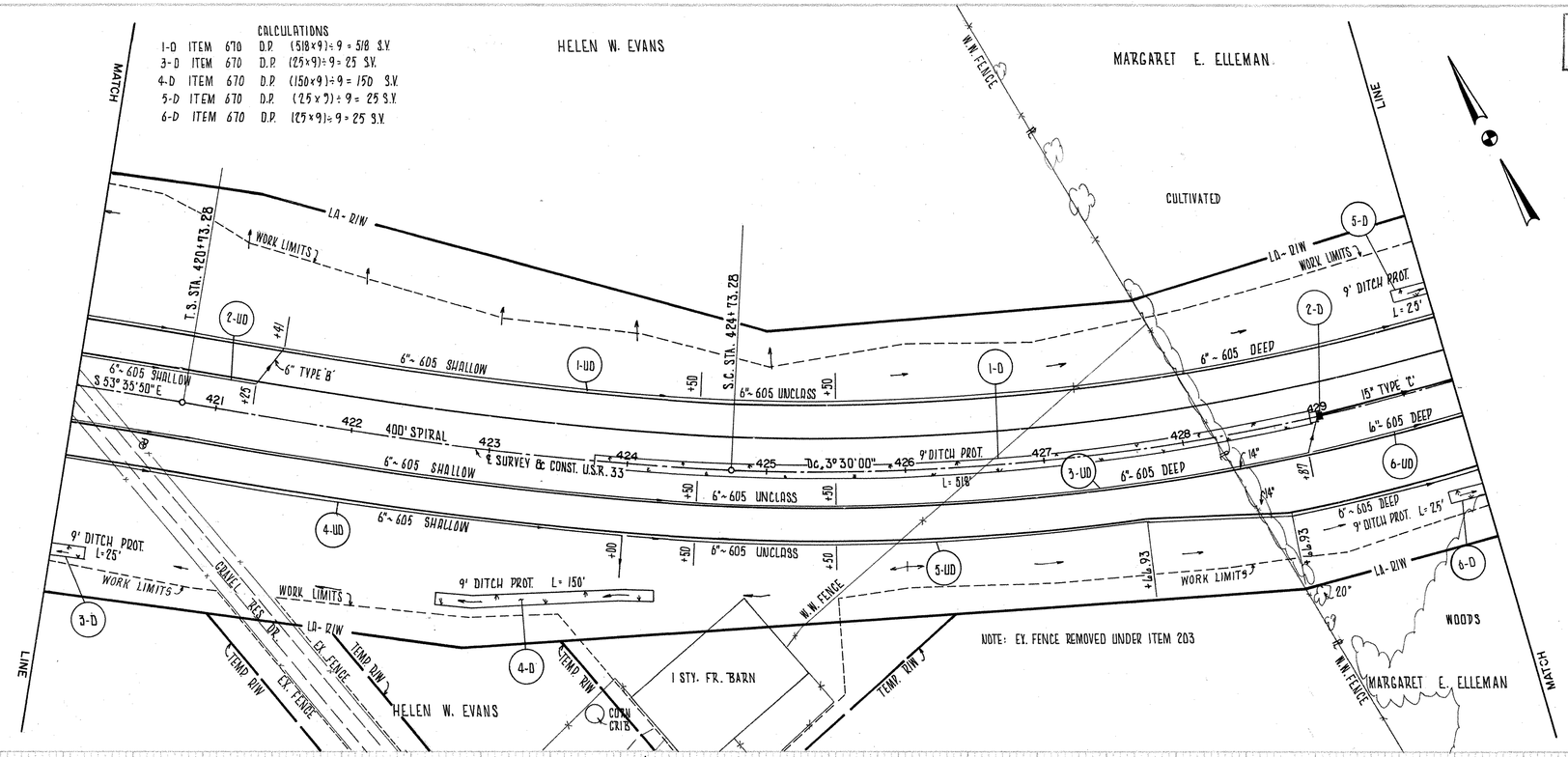


ESTIMATED QUANTITIES

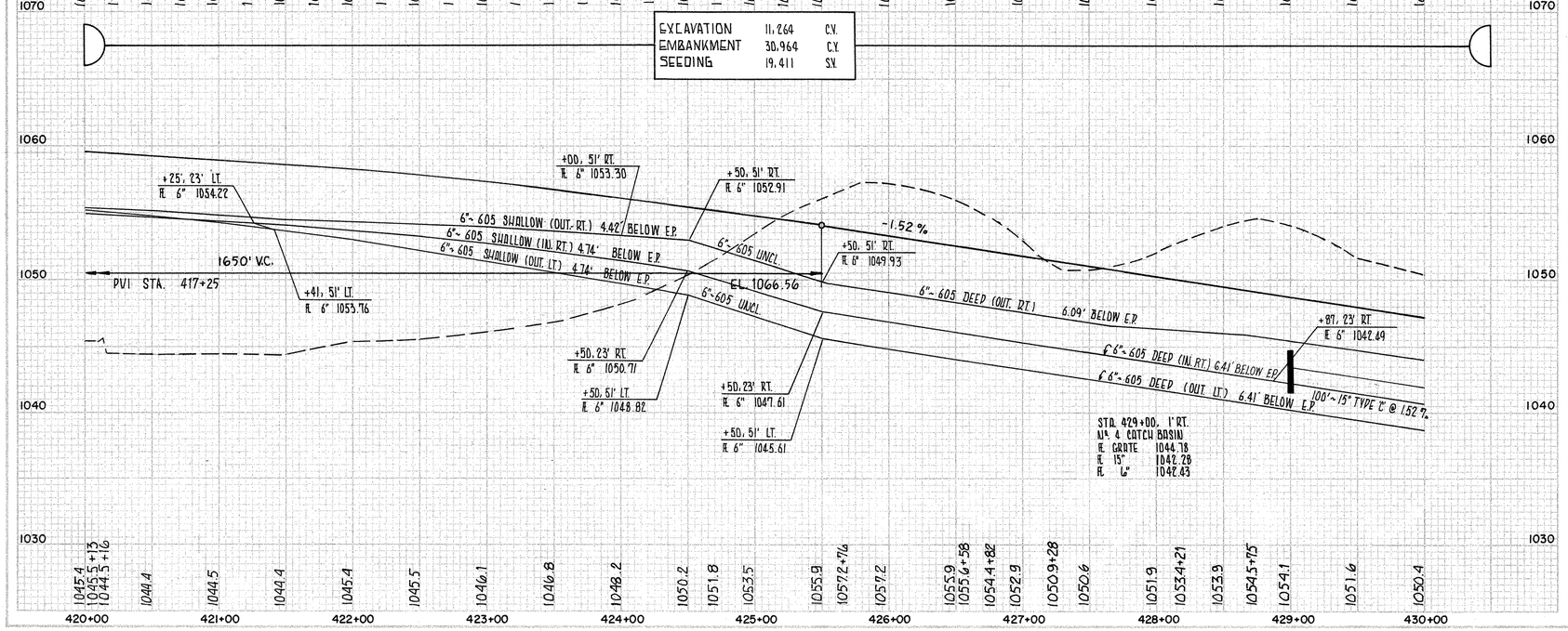
REF. NO.	STATION TO STATION	SIDE	202 PIPE REMOVED 24" & UNDER	304 AGGREGATE BASE	846 ASPHALT CONCRETE AC-20	660 REINFORCED SODDING	670 DITCH EROSION PROT.	605 6" SHALLOW PIPE U.D.	609 CURB TYPE 6	606 GUARDRAIL TYPE 5	606 GUARDRAIL BARRIER DES. TYPE 5	606 ANCHOR ASSEMBLY TYPE A	606 ANCHOR ASSEMBLY BARR. DES.	606 BRIDGE TERM. ASSEM. TYPE A	SEE SHEET NO.
			L.F.	C.Y.	C.Y.	S.Y.	S.Y.	L.F.	L.F.	L.F.	L.F.	EA.	EA.	EA.	
1-R	23+54 S.R. 245	L & R	36												
2-R	25+41 S.R. 245	L & R	35												
1-D	410+00 TO 411+25	℄					125								
2-D	410+00 TO 416+06	RT.					1045								
3-D	22+40 (S.R. 245) TO 420+00	RT.					367								
4-D	410+00 TO 411+57	LT.					159								
5-D	415+89.7	RT.				36									
6-D	416+59.2	LT.				39									
7-D	418+03.5	RT.				44									
8-D	418+73.1	LT.				43									
9-D	416+34.3	LT.				12.5									
10-D	416+14.6	RT.				12.5									
1-UD	410+00 TO 416+65	LT.						665							
2-UD	410+00 TO 416+49	LT.						649							
3-UD	410+00 TO 416+23	RT.						623							
4-UD	410+00 TO 416+07	RT.						607							
5-UD	418+55 TO 420+00	LT.						145							
6-UD	419+39 TO 420+00	LT.						161							
7-UD	418+13 TO 420+00	RT.						187							
8-UD	417+97 TO 420+00	RT.						203							
1-GR	413+99.72 TO 416+87.22	LT.								262.5		1		1	
2-GR	414+67.68 TO 416+17.68	RT.								125		1		1	
3-GR	418+45.08 TO 419+95.08	LT.								125		1		1	
4-GR	417+75.54 TO 419+25.54	RT.								125		1		1	
5-GR	414+80.11 TO 416+42.61	RT.								112.5	25		1	1	
6-GR	418+20.15 TO 419+82.65	LT.								112.5	25		1	1	
7-GR	22+18.5 TO 25+93.5 (S.R. 245)	LT.								325		2			
8-GR	22+20 TO 26+20 (S.R. 245)	RT.								350		2			
1-P	415+91.68 TO 416+17.68	RT.							11.8						
2-P	416+61.22 TO 416+87.22	LT.							10.8						
3-P	417+75.54 TO 418+01.54	RT.							10.8						
4-P	418+45.08 TO 418+71.08	LT.							11.8						
5-P	416+36.29 TO 416+62.29	LT.							11.8						
6-P	416+16.61 TO 416+42.61	RT.							10.8						
7-P	418+20.15 TO 418+46.15	LT.							10.8						
8-P	418+00.47 TO 418+26.47	RT.							11.8						
9-P	25+41 S.R. 245	L & R		1.3	0.3										
10-P	23+54 S.R. 245	L & R		1.3	0.3										
11-D	418+48.2	LT.				12.5									
12-D	418+28.5	RT.				12.5									
TOTALS			71	2.6	0.6	212	1696	3240	91	1537.5	50	8	2	6	

CALCULATIONS

1-D	ITEM	670	D.P.	(518×9)÷9 = 518 S.Y.
3-D	ITEM	670	D.P.	(25×9)÷9 = 25 S.Y.
4-D	ITEM	670	D.P.	(150×9)÷9 = 150 S.Y.
5-D	ITEM	670	D.P.	(25×9)÷9 = 25 S.Y.
6-D	ITEM	670	D.P.	(25×9)÷9 = 25 S.Y.



EXCAVATION	11,264 C.Y.
EMBANKMENT	30,964 C.Y.
SEEDING	19.411 S.Y.



CALC:	PCB	9/85
CHK:	ROB	9/85

UNION COUNTY
UNI-33-7.29

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

28
225

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	603 6" CONDUIT TYPE 'F' LF	603 6" CONDUIT TYPE 'B' LF	603 15" CONDUIT TYPE 'C' LF	604 NO. 4 CATCH BASIN EA.	605 6" SHALLOW PIPE UD. LF	605 6" UNCLASS PIPE UD. LF	605 6" DEEP PIPE UD. LF	605 BENDS & BRANCHES EA.	670 DITCH EROSION PROT. S.Y.	SEE SHEET NO.
1-D	423+15 TO 429+00	℄				1					518	42
2-D	429+00 TO 430+00	℄			100						25	
3-D	420+00 TO 420+25	RT.									150	
4-D	422+75 TO 424+25	RT.									25	
5-D	429+75 TO 430+00	LT.									25	
6-D	429+75 TO 430+00	RT.										
1-UD	420+00 TO 430+00	LT.		32			450	100	450	2		24 F
2-UD	420+00 TO 421+41	LT.					125		352	1		24 E
3-D	420+00 TO 429+00	RT.					450	100	450	1		24 B
4-UD	420+00 TO 424+00	RT.					424		109			
5-UD	424+04 TO 430+00	RT.		10			46					
6-UD	428+91 TO 430+00	RT.		10				100				
TOTALS			20	32	100	1	1495	300	1361	4	743	

U.S. 33 STA. 420+00 TO STA. 430+00

CALC: P.C.B. 9/85
CHK: R.O.B. 9/85

UNION COUNTY
UNI-33-7.29

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

29
225

MARGARET E. ELLEMAN

CULTIVATED

CALCULATIONS
1-D ITEM 670 (168×9)÷9 = 168.0 S.Y.
2-D ITEM 670 (150×9)÷9 = 150.0 S.Y.
3-D ITEM 670 [(742×9)+(144×10.5)]÷9 = 910 S.Y.
4-D ITEM 670 (624×9)÷9 = 624 S.Y.
5-D ITEM 670 (130×9)÷9 = 130 S.Y.

NOTE
FOR RAMP 'Y' PAVEMENT DETAIL SEE SHEET 114

MATCH LINE
LT.- R/W
WORK LIMITS
3-D
1-UD 9' DITCH PROT. L= 742'
WOODS
1-GR
1-D
15" TYPE 'C'
431
432
433
+25
9' DITCH PROT. L=168'
434 ℄ SURVEY & CONST. U.S.R. 33
435
436
Dc 3°30'00"
437
18" TYPE 'C'
438
+43
SIGN SUPPORT
15" TYPE 'C'
6"~605 DEEP
SMALL TREES
RT.- R/W
3.2% DESIGN GRADE
10.5'- DITCH PROT. L= 144'
2-D
365°
9' DITCH PROT. L= 150'
439
2-GR
2-UD
3-UD
+67
+86
+00
4-UD
5-D
5-UD
9' DITCH PROT. L= 130'
WOODS
WORK LIMITS
438 ℄ SURVEY & CONST.
439 'RAMP 'Y'
Dc 6°00'00"
440
4-D
9' DITCH PROT. L= 624'
Dc 2°00'00"
SIGN SUPPORT
STA. 431+09.68 ℄ 4-UD PT. = U.S. 33 ℄ RAMP 'Y'
Dc. STA. 431+09.68 ℄ RAMP 'Y' = U.S. 33 ℄
WOODS
MARGARET E. ELLEMAN
MATCHLINE STA. 437+00.00 ℄ RAMP 'Y' SEE SHEET NO. 92

B.M. # 13 ELEV. 1045.79
U.S. 33 STA. 434+00 78' RT.
MINE SPIKE IN BASE OF 18" WHITE OAK.

1047.18 1046.42 1045.66 1044.90 1044.14 1043.38 1042.62 1041.86 1041.10 1040.34 1039.58 1038.82 1038.07 1037.72 1037.46 1037.10 1036.82 1036.56 1036.32 1036.11 1035.91 1035.74 1035.60 1035.47 1035.37 1035.28 1035.22 1035.19 1035.17

EXCAVATION	31,657 C.Y.
EMBANKMENT	217 C.Y.
SEEDING	16,458 S.Y.

1060
1050
1040
1030

-1.52%
600' V.C.
PVI STA. 438+75
EL. 1033.88
+0.60%
6"~605 DEEP (OUT RT.)
300'~15" TYPE 'C' @ 1.52% ℄
6"~605 DEEP (IN RT.) 6.41' BELOW E.P.℄
6"~605 DEEP (OUT LT.) 6.41' BELOW E.P.℄
496'~18" TYPE 'C' @ 0.88% ℄
6"~605 DEEP (OUT RT.) 6.09' BELOW E.P.℄

STA. 432+00. 12' RT.
№ 3 M.H. (FLAT SLAB TOP)
COVER EL. 1041.82
IE 15" EL. 1037.32
PARTIALLY BURY TOP WITH MEDIAN SLOPE

STA. 435+00. 1' RT.
№ 4 CATCH BASIN
IE GRATE 1039.66
IE 15" 1033.16
IE 18" 1032.91

STA. 440+00. 1' RT.
№ 4 CATCH BASIN
IE GRATE 1031.25
IE 18" 1028.55
IE 16" 1026.71

1050.4 1050.4 1050.4 1050.17+28 1050.6 1049.2 1047.4 1046.3 1046.7 1046.3 1045.3 1044.3 1042.3 1040.6 1039.3 1038.5 1037.8 1037.7 1036.8 1036.0 1034.7 1034.6

430+00 431+00 432+00 433+00 434+00 435+00 436+00 437+00 438+00 439+00 440+00

U.S. 33 STA. 430+00 TO STA. 440+00

ESTIMATED QUANTITIES

* WITH FLAT SLAB TOP

REF NO.	STATION TO STATION	SIDE	603 15" CONDUIT TYPE 'C' L.F.	603 18" CONDUIT TYPE 'C' L.F.	604 № 4 CATCH BASIN EA.	604* № 3 MANHOLE EA.	605 6" DEEP PIPE U/D L.F.	606 GUARD RAIL TYPE 5 L.F.	606 BALCONY ASSEMBLY TYPE 'D' EA.	606 ANCHOR ASSEMBLY TYPE 'T' EA.
1-D	450+00 TO 455+00	℄	500							
2-D	455+00 TO 460+00	℄		496						
3-D	430+00 TO 439+25	LT			1	1				
4-D	436+15 TO 436+00	RT			1					
5-D	436+75 TO 440+00	RT								
1-UD	430+00 TO 440+00	LT					1000			
2-UD	430+00 TO 440+00	LT					1000			
3-UD	430+00 TO 439+10 (Y)	RT					700			
4-UD	435+67 TO 440+00	RT					433			
5-UD	435+86.00 TO 437+00.00 (Y)	LT					114			
1-GR	432+20 TO 433+10	RT						125	1	1
2-GR	431+95 TO 433+10	RT						150	1	1
TOTALS			500	496	2	1	3247	275	2	2

1982

CALC: PCB 9/85
CHK: ROB 9/85

UNION COUNTY
UNI-33-7.29

FED. NO. DIVISION	STATE	PROJECT		
5	OHIO			

30
225

MARGARET E. ELLEMAN

JOHN TABOR & DIANE D. TABOR

CULTIVATED FIELD

CULTIVATED

WOODS

MOWN

MATCH LINE

MOVIE SCREEN

WORK LIMITS

T.S. STA. 81+69.95 ℄ ROAD 'U'

L.A. R/W

12" DITCH PROT. L= 100'

6"~605 DEEP

7.5' DITCH PROT. L= 100'

6" TYPE 'F'

6"~605 UNCLASS.

9' DITCH PROT. L= 145'

18" TYPE 'B'

36" TYPE 'B'

STA. 442+09.20 ℄ U.S. 33 = STA. 79+55.71 ℄ RAMP 'U'

B.M.# 14 ELEV. 1025.36
STA. 447+00 180' RT.
MINE SPIKE AT BASE OF 20" PIN OAK.

N 31° 18' 49" W 79

ROCK C.P. TYPE 'C' W/FILTER 8'x 5'x 1.5'

℄ SURVEY & CONST. ROAD 'U'

℄ SURVEY & CONST. 446 U.S.R. 33

Dc 3°30'00"

9' DITCH PROT. L= 150'

6"~605 SHALLOW

POND

9' DITCH PROT. L= 265'

EX. FENCE REMOVED UNDER ITEM 203

12" DITCH PROT. L= 564'

END TAPER 40:1 ℄ U.S. 33 = STA. 448+32.19 ℄ RAMP 'V'

C.S. STA. 448+32.19 ℄ RAMP 'V'

449 ℄ RAMP 'V'

℄ SURVEY & CONST. ROAD 'T'

N 30° 13' 54" E

STA. 449+80.11 = TAPER 40:1 ℄ U.S. 33

STA. 83+68.84 ℄ ROAD 'T'

P.T. STA. 83+40.84 ℄ ROAD 'T'

MATCHING ℄ HD. 96 ℄ ROAD 'T' SEE SHEET NO. 96

EX. L.A. R/W

MARGARET E. ELLEMAN

GLENN W. IRWIN & CELIA IRWIN

CALCULATIONS

3-D	ITEM	601	R.C.P.	(8x5x1.5)÷27	=	2.2 C.Y.
3-D	ITEM	670	D.P.	(150x9)÷9	=	150 S.Y.
4-D	ITEM	670	D.P.	(100x75)÷9	=	833 S.Y.
5-D	ITEM	670	D.P.	(564x12)÷9	=	752 S.Y.
6-D	ITEM	670	D.P.	(145x9)÷9	=	145 S.Y.
7-D	ITEM	670	D.P.	(265x9)÷9	=	265 S.Y.
8-D	ITEM	670	D.P.	(100x12)÷9	=	134 S.Y.

NOTES:

FOR 'ROAD 'U' PLAN & PROFILE SEE SHEET NO. 66
FOR MAINLINE PAVEMENT DETAILS SEE SHEET NO. 115 & 116
FOR 'RAMP 'V' PLAN & PROFILE SEE SHEET NO. 100

EXCAVATION	3776	C.Y.
EMBANKMENT	54 202	C.Y.
SEEDING	18,174	S.Y.

STA. 441+25.81' LT.
NO. 2-3 CATCH BASIN W/WINDOWS
R. WINDOW 1029.90
R. 30" 1025.90
R. 6"~W 1024.22
R. 6"~E 1027.90

STA. 441+25.125' RT.
NO. 2-4 CATCH BASIN W/WINDOWS
R. WINDOW 1028.92
R. 18" 1026.17
R. 30" 1024.25
R. 36" 1023.75

STA. 443+85.1' RT.
NO. 4A CATCH BASIN
R. GRATE 1033.02
R. 27" 1024.17
R. 6" 1030.00

600' V.C.
PVI STA. 438+75 EL. 1033.88

+00.51' RT. R. 6"~: 1031.08
+00.51' RT. R. 6"~: 1032.91
+21.23' RT. R. 6"~: 1030.43
+00.23' RT. R. 6"~: 1028.76
+11.57.97' LT. R. 6"~: 1026.30
+98.23' RT. R. 6"~ 1032.28
+39.58.67' LT. R. 6"~: 1028.11
82+00 (℄) 2' RT. R. 6"~ 1037.10

PROP. PROFILE OVER 18" TYPE 'B'

6"~605 UNCLASSIFIED

180': 18" TYPE 'B' @ 1.32%

6"~605 DEEP

6"~605 SHALLOW (OUT RT.) 4.42' BELOW E.P.

6"~605 SHALLOW (IN RT.) 4.74' BELOW E.P.

6"~605 SHALLOW (OUT LT.) 4.74' BELOW E.P.

6"~605 SHALLOW (OUT RT.) ROAD 'Z'

+0.60%

1035.17 1035.18 1035.21 1035.26 1035.33 1035.42 1035.54 1035.68 1035.83 1036.13 1036.43 1036.73 1037.03 1037.33 1037.63 1037.93 1038.23 1038.53 1038.83 1039.13 1039.43 1039.73 1040.03 1040.33 1040.63

1050 1040 1030 1020

440+00 441+00 442+00 443+00 444+00 445+00 446+00 447+00 448+00 449+00 450+00

1034.6 1034.8+08 1035.5+36 1035.3 1032.4 1029.6 1027.8 1027.4+09 1026.9 1026.5 1026.0+21 1024.6 1024.7+86 1026.1 1027.2 1027.1 1026.1 1025.6 1027.1 1028.6 1030.1 1030.8+93 1031.5 1031.4 1032.0 1033.1 1034.3

U.S. 33 STA. 440+00 TO STA. 450+00

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	601 ROCK C.P. TYPE C W/FILTER C.Y.	602 CONCRETE MASONRY C.Y.	603 6" CONDUIT TYPE 'B' L.F.	603 6" CONDUIT TYPE 'F' L.F.	603 18" CONDUIT TYPE 'B' L.F.	603 30" CONDUIT TYPE 'B' L.F.	603 * CONDUIT TYPE 'A' L.F.	604 CATCH BASIN EA.	604 CATCH BASIN EA.	SEE SHEET NO.
1-D	STA. 440+00 TO 441+25	RT.					180					
2-D	STA. 441+25	LT & R						204				
3-D	STA. 443+85 TO 445+42	LT & R	2.2	1.20					218	1	1	
4-D	STA. 440+07 TO 441+07	℄										
5-D	STA. 443+65 TO 450+00	LT.										
6-D	STA. 440+00 TO 441+29	RT.										
7-D	STA. 443+81 TO 446+25	RT.										
8-D	STA. 440+18 TO 441+25	LT.										
1-GR.	STA. 441+52 TO 443+40.09	L & R.										
1-UD	STA. 440+00 TO 441+25	RT.										
2-UD	STA. 441+25	L & R										
3-UD	STA. 443+85 TO 445+42	L & R										
4-UD	STA. 440+07 TO 441+07	℄										
5-UD	STA. 443+65 TO 450+00	LT.										
6-UD	STA. 440+00 TO 441+29	RT.										
7-D	STA. 443+81 TO 446+25	RT.										
8-D	STA. 440+18 TO 441+25	LT.										
	STA. 82+00 (℄) TO 450+00	RT.										
	STA. 443+85 TO 450+00	RT.										
	TOTALS		2.2	1.20	50	80	180	204	218	1	1	

REF. NO.	STATION TO STATION	SIDE	603 6" CONDUIT TYPE 'B' L.F.	603 6" CONDUIT TYPE 'F' L.F.	603 18" CONDUIT TYPE 'B' L.F.	603 30" CONDUIT TYPE 'B' L.F.	603 * CONDUIT TYPE 'A' L.F.	604 CATCH BASIN EA.	604 CATCH BASIN EA.	605 6" UNCLASS. PIPE UND. L.F.	605 4" UNCLASS. PIPE UND. L.F.	605 4" SHALLOW PIPE UND. L.F.	605 4" REID TYPE LTD. L.F.	606 GUARDRAIL TYPE 5 L.F.	605 BENDS & BRANCHES EA.	670 DITCH EROSION PROTECTION S.Y.	SEE SHEET NO.
1-D	STA. 440+00 TO 441+25	RT.			180												
2-D	STA. 441+25	L & R				204											
3-D	STA. 443+85 TO 445+42	L & R					218	1	1								
4-D	STA. 440+07 TO 441+07	℄															
5-D	STA. 443+65 TO 450+00	LT.															
6-D	STA. 440+00 TO 441+29	RT.															
7-D	STA. 443+81 TO 446+25	RT.															
8-D	STA. 440+18 TO 441+25	LT.															
	STA. 82+00 (℄) TO 450+00	RT.	10														
	STA. 443+85 TO 450+00	RT.	20														
	TOTALS		30		180	204	218	1	1								

REF. NO.	STATION TO STATION	SIDE	605 6" UNCLASS. PIPE UND. L.F.	605 4" UNCLASS. PIPE UND. L.F.	605 4" SHALLOW PIPE UND. L.F.	605 4" REID TYPE LTD. L.F.	605 BENDS & BRANCHES EA.	606 GUARDRAIL TYPE 5 L.F.	670 DITCH EROSION PROTECTION S.Y.	SEE SHEET NO.
1-D	STA. 440+00 TO 441+25	RT.								
2-D	STA. 441+25	L & R								
3-D	STA. 443+85 TO 445+42	L & R								
4-D	STA. 440+07 TO 441+07	℄								
5-D	STA. 443+65 TO 450+00	LT.								
6-D	STA. 440+00 TO 441+29	RT.								
7-D	STA. 443+81 TO 446+25	RT.								
8-D	STA. 440+18 TO 441+25	LT.								
	STA. 82+00 (℄) TO 450+00	RT.								
	STA. 443+85 TO 450+00	RT.								
	TOTALS									

REF. NO.	STATION TO STATION	SIDE	605 6" UNCLASS. PIPE UND. L.F.	605 4" UNCLASS. PIPE UND. L.F.	605 4" SHALLOW PIPE UND. L.F.	605 4" REID TYPE LTD. L.F.	605 BENDS & BRANCHES EA.	606 GUARDRAIL TYPE 5 L.F.	670 DITCH EROSION PROTECTION S.Y.	SEE SHEET NO.
1-D	STA. 440+00 TO 441+25	RT.							150	45
2-D	STA. 441+25	L & R							83	46
3-D	STA. 443+85 TO 445+42	L & R							752	
4-D	STA. 440+07 TO 441+07	℄							145	
5-D	STA. 443+65 TO 450+00	LT.							265	
6-D	STA. 440+00 TO 441+29	RT.							134	
7-D	STA. 443+81 TO 446+25	RT.						387.5		
8-D	STA. 440+18 TO 441+25	LT.								
	STA. 82+00 (℄) TO 450+00	RT.				138	1			23 E
	STA. 443+85 TO 450+00	RT.			878	138	1			23 E
	TOTALS				878	138	1	387.5	1629	

REF. NO.	STATION TO STATION	SIDE	605 6" UNCLASS. PIPE UND. L.F.	605 4" UNCLASS. PIPE UND. L.F.	605 4" SHALLOW PIPE UND. L.F.	605 4" REID TYPE LTD. L.F.	605 BENDS & BRANCHES EA.	606 GUARDRAIL TYPE 5 L.F.	670 DITCH EROSION PROTECTION S.Y.	SEE SHEET NO.
1-D	STA. 440+00 TO 441+25	RT.								
2-D	STA. 441+25	L & R								
3-D	STA. 443+85 TO 445+42	L & R								
4-D	STA. 440+07 TO 441+07	℄								
5-D	STA. 443+65 TO 450+00	LT.								
6-D	STA. 440+00 TO 441+29	RT.								
7-D	STA. 443+81 TO 446+25	RT.								
8-D	STA. 440+18 TO 441+25	LT.								
	STA. 82+00 (℄) TO 450+00	RT.								
	STA. 443+85 TO 450+00	RT.		2.1	90					23 D1C
	TOTALS			2.1	90					111

REF. NO.	STATION TO STATION	SIDE	605 6" UNCLASS. PIPE UND. L.F.	605 4" UNCLASS. PIPE UND. L.F.	605 4" SHALLOW PIPE UND. L.F.	605 4" REID TYPE LTD. L.F.	605 BENDS & BRANCHES EA.	606 GUARDRAIL TYPE 5 L.F.	670 DITCH EROSION PROTECTION S.Y.	SEE SHEET NO.
1-D	STA. 440+00 TO 441+25	RT.								
2-D	STA. 441+25	L & R								
3-D	STA. 443+85 TO 445+42	L & R								
4-D	STA. 440+07 TO 441+07	℄								
5-D	STA. 443+65 TO 450+00	LT.								
6-D	STA. 440+00 TO 441+29	RT.								
7-D	STA. 443+81 TO 446+25	RT.								
8-D	STA. 440+18 TO 441+25	LT.								
	STA. 82+00 (℄) TO 450+00	RT.								
	STA. 443+85 TO 450+00	RT.			678					23 D1C
	TOTALS				678					111

REF. NO.	STATION TO STATION	SIDE	605 6" UNCLASS. PIPE UND. L.F.	605 4" UNCLASS. PIPE UND. L.F.	605 4" SHALLOW PIPE UND. L.F.	605 4" REID TYPE LTD. L.F.	605 BENDS & BRANCHES EA.	606 GUARDRAIL TYPE 5 L.F.	670 DITCH EROSION PROTECTION S.Y.	SEE SHEET NO.
1-D	STA. 440+00 TO 441+25	RT.								
2-D	STA. 441+25	L & R								
3-D	STA. 443+85 TO 445+42	L & R								
4-D	STA. 440+07 TO 441+07	℄								
5-D	STA. 443+65 TO 450+00	LT.								
6-D	STA. 440+00 TO 441+29	RT.								
7-D	STA. 443+81 TO 446+25	RT.								
8-D	STA. 440+18 TO 441+25	LT.								
	STA. 82+00 (℄) TO 450+00	RT.								
	STA. 443+85 TO 450+00	RT.			353					23 D1C
	TOTALS				353					111

REF. NO.	STATION TO STATION	SIDE	605 6" UNCLASS. PIPE UND. L.F.	605 4" UNCLASS. PIPE UND. L.F.	605 4" SHALLOW PIPE UND. L.F.	605 4" REID TYPE LTD. L.F.	605 BENDS & BRANCHES EA.	606 GUARDRAIL TYPE 5 L.F.	670 DITCH EROSION PROTECTION S.Y.	SEE SHEET NO.
1-D	STA. 440+00 TO 441+25	RT.								
2-D	STA. 441+25	L & R								
3-D	STA. 443+85 TO 445+42	L & R								
4-D	STA. 440+07 TO 441+07	℄								
5-D	STA. 443+65 TO 450+00	LT.								
6-D	STA. 440+00 TO 441+29	RT.								
7-D	STA. 443+81 TO 446+25	RT.								
8-D	STA. 440+18 TO 441+25	LT.								
	STA. 82+00 (℄) TO 450+00	RT.								
	STA. 443+85 TO 450+00	RT.			693					23 D1C
	TOTALS				693					111

REF. NO.	STATION TO STATION	SIDE	605 6" UNCLASS. PIPE UND. L.F.	605 4" UNCLASS. PIPE UND. L.F.	605 4" SHALLOW PIPE UND. L.F.	605 4" REID TYPE LTD. L.F.	605 BENDS & BRANCHES EA.	606 GUARDRAIL TYPE 5 L.F.	670 DITCH EROSION PROTECTION S.Y.	SEE SHEET NO.
1-D	STA. 440+00 TO 441+25	RT.								
2-D	STA. 441+25	L & R								
3-D	STA. 443+85 TO 445+42	L & R								
4-D	STA. 440+07 TO 441+07	℄								
5-D	STA. 443+65 TO 450+00	LT.								
6-D	STA. 440+00 TO 441+29	RT.								
7-D	STA. 443+81 TO 446+25	RT.								
8-D	STA. 440+18 TO 441+25	LT.								
	STA. 82+00 (℄) TO 450+00	RT.								
	STA. 443+85 TO 450+00	RT.			417					23 D1C
	TOTALS				417					111

REF. NO.	STATION TO STATION	SIDE	605 6" UNCLASS. PIPE UND. L.F.	605 4" UNCLASS. PIPE UND. L.F.	605 4" SHALLOW PIPE UND. L.F.	605 4" REID TYPE LTD. L.F.	605 BENDS & BRANCHES EA.	606 GUARDRAIL TYPE 5 L.F.	670 DITCH EROSION PROTECTION S.Y.	SEE SHEET NO.
1-D	STA. 440+00 TO 441+25	RT.								
2-D	STA. 441+25	L & R								
3-D	STA. 443+85 TO 445+42	L & R								
4-D	STA. 440+07 TO 441+07	℄								
5-D	STA. 443+65 TO 450+00	LT.								
6-D	STA. 440+00 TO 441+29	RT.								
7-D	STA. 443+81 TO 446+25	RT.								
8-D	STA. 440+18 TO 441+25	LT.								
	STA. 82+00 (℄) TO 450+00	RT.								
	STA. 443+85 TO 450+00	RT.			1810					23 D1C
	TOTALS				1810					111

REF. NO.	STATION TO STATION	SIDE	605 6" UNCLASS. PIPE UND. L.F.	605 4" UNCLASS. PIPE UND. L.F.	605 4" SHALLOW PIPE UND. L.F.	605 4" REID TYPE LTD. L.F.	605 BENDS & BRANCHES EA.	606 GUARDRAIL TYPE 5 L.F.	670 DITCH EROSION PROTECTION S.Y.	SEE SHEET NO.
1-D	STA. 440+00 TO 441+25	RT.								
2-D	STA. 441+25	L & R								
3-D	STA. 443+85 TO 445+42	L & R								
4-D	STA. 440+07 TO 441+07	℄								
5-D	STA. 443+65 TO 450+00	LT.								
6-D	STA. 440+00 TO 441+29	RT.								
7-D	STA. 443+81 TO 446+25	RT.								
8-D	STA. 440+18 TO 441+25	LT.								
	STA. 82+00 (℄) TO 450+00	RT.								
	STA. 443+85 TO 450+00	RT.			619					23 D1C
	TOTALS				619					111

REF. NO.	STATION TO STATION	SIDE	605 6" UNCLASS. PIPE UND. L.F.	605 4" UNCLASS. PIPE UND. L.F.	605 4" SHALLOW PIPE UND. L.F.	605 4" REID TYPE LTD. L.F.	605 BENDS & BRANCHES EA.	606 GUARDRAIL TYPE 5 L.F.	670 DITCH EROSION PROTECTION S.Y.	SEE SHEET NO.
1-D	STA. 440+00 TO 441+25	RT.								
2-D	STA. 441+25	L & R								
3-D	STA. 443+85 TO 445+42	L & R								
4-D	STA. 440+07 TO 441+07	℄								
5-D	STA. 443+65 TO 450+00	LT.								
6-D	STA. 440+00 TO 441+29	RT.								
7-D	STA. 443+81 TO 446+25	RT.								
8-D	STA. 440+18 TO 441+25	LT.								
	STA. 82+00 (℄) TO 450+00	RT.								
	STA. 443+85 TO 450+00	RT.			2721					23 D1C
	TOTALS				2721					111

JOHN TABOR & DIANE TABOR

MARGARET E. ELLEMAN

THE STATE OF OHIO

THE STATE OF OHIO

CALCULATIONS

CALC:	PCB	9/85	
CHK:	ROB	9/85	

1-D ITEM 670 (150x7.5)÷9 = 125 S.Y.
2-D ITEM 670 (265x9)÷9 = 265 S.Y.
3-D ITEM 670 (125x12)÷9 = 167 S.Y.
4-D ITEM 670 (172x9)÷9 = 172 S.Y.
5-D ITEM 670 [(172x6)+(25x9)]÷9 = 140 S.Y.
6-R ITEM 202 (393x24)÷9 = 941.3 S.Y.
6-R ITEM 202 [(604x24)-½(260x21)]÷9 = 13073 S.Y.

NOTES:
1. FOR EXIST. RAMP 'T' PLAN SEE SHEET NO. 101
2. FOR RAMP 'V' PLAN & PROFILE SEE SHEET NO. 100

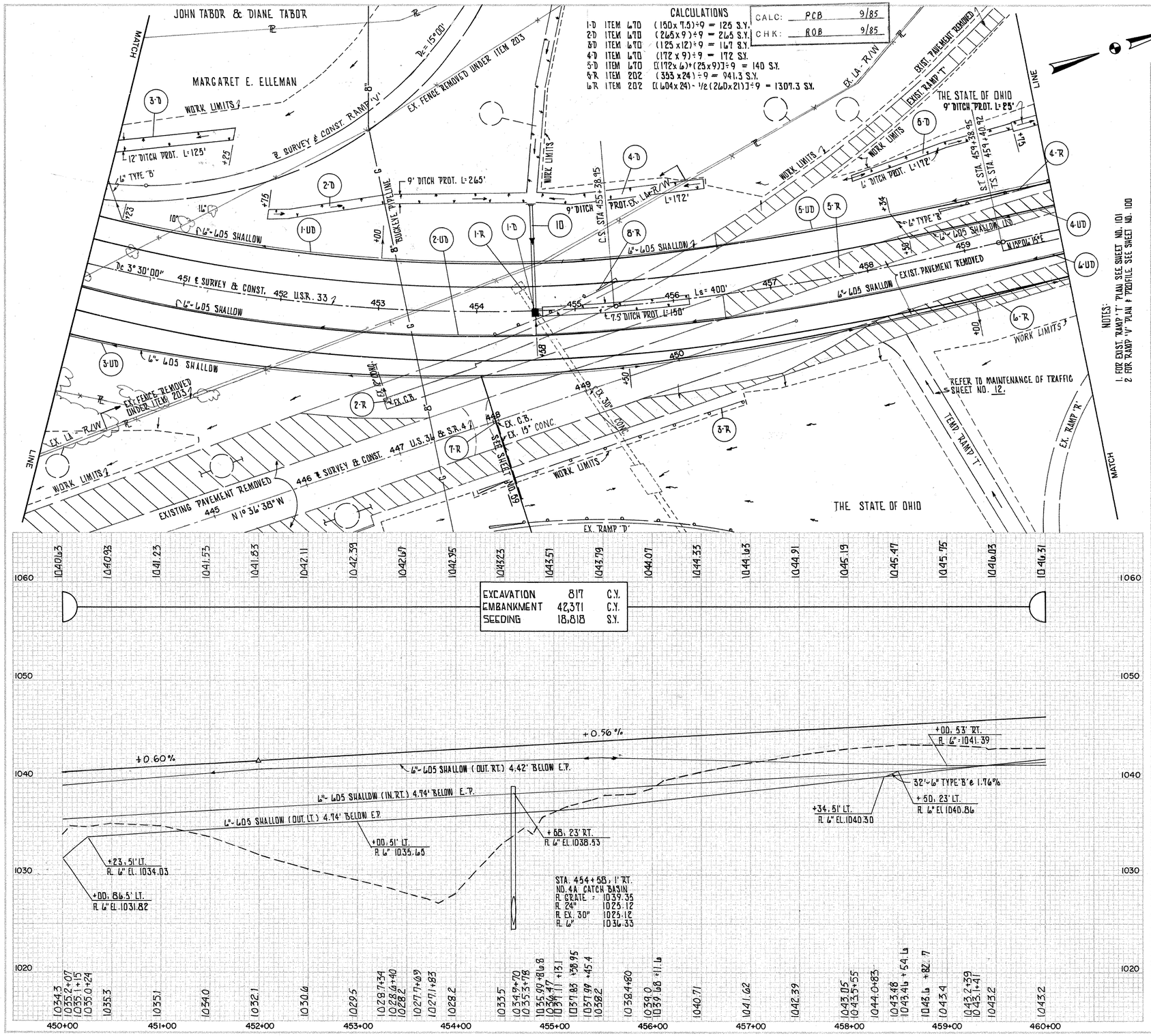
REFER TO MAINTENANCE OF TRAFFIC SHEET NO. 12.

EXCAVATION	817	C.Y.
EMBANKMENT	42,371	C.Y.
SEEDING	18.818	S.Y.

* 24" TO 42", 1500 TO 1000, 706.05 OR 27" TO 42", 707.01 (0.109), 707.04 (0.109), 707.05 (0.109), 707.09 OR 707.21 ESTIMATED QUANTITIES ⊙ FOR REUSE OR STORAGE

REF NO	STATION TO STATION	SIDE	202 PAVEMENT REMOVED S.Y.	202 PIPE REMOVED OVER 24" L.F.	202 GUARDRAIL REMOVED ⊙ L.F.	202 CATCH BASIN REMOVED EA.	202 TYPE REMOVED 24" UNDER L.F.	670 DITCH EROSION PROTECTION S.Y.	SEE SHEET NO.
1-D	STA. 454+98 TO 456+15	℄						125	48
2-D	STA. 451+75 TO 454+53	LT.						265	
3-D	STA. 450+00 TO 451+25 (V)	LT.						167	
4-D	STA. 454+43 TO 456+47	LT.						172	
5-D	STA. 458+00 TO 460+00	LT.						140	
1-R	STA. 454+35 TO 456+40	LT.		28	1		38		23 F
2-R	STA. 441+05 (STA. 4)	LT.							
3-R	STA. 441+40 TO 450+48 (STA. 8)	RT.			287.5				
4-R	STA. 458+81 TO 460+00	LT.			119				
5-R	STA. 454+50 TO 460+00	L & TR.							
6-R	STA. 448+00 (STA. 10) TO 460+00	RT.	942						
TR	STA. 448+00 (STA. 8)	℄	1308						
8-R	STA. 454+99 TO 455+45	L & TR.							
1-UD	STA. 450+00 TO 452+96	LT.							23 B&C
2-UD	STA. 450+00 TO 454+54	RT.							23 F
3-UD	STA. 450+00 TO 460+00	RT.		40					23 B
4-UD	STA. 450+00 TO 460+00	LT.							23 B&E
5-UD	STA. 453+00 TO 460+00	LT.		32					
6-UD	STA. 454+98 TO 460+00	RT.							
TOTALS			2250	25	544	2	120	869	

REF NO	STATION TO STATION	SIDE	202 CONCRETE MASONRY C.Y.	603 24" CONDUIT TYPE 'B' L.F.	603 42" CONDUIT TYPE 'F' L.F.	603 * CONDUIT TYPE 'A' L.F.	604 NO. 4A CATCH BASIN EA.	606 24" SHALLOW PIPE U.D. L.F.	606 BENDS & BRANCHES EA.
1-D	STA. 454+98 TO 456+15	℄	0.53			110	1		
2-D	STA. 451+75 TO 454+53	LT.						273	2
3-D	STA. 450+00 TO 451+25 (V)	LT.						454	
4-D	STA. 454+43 TO 456+47	LT.			10			1024	1
5-D	STA. 458+00 TO 460+00	LT.							
1-R	STA. 454+35 TO 456+40	LT.			32			150	2
2-R	STA. 441+05 (STA. 4)	RT.							
3-R	STA. 441+40 TO 450+48 (STA. 8)	RT.						724	1
4-R	STA. 458+81 TO 460+00	LT.			10				
5-R	STA. 454+50 TO 460+00	L & TR.						554	1
6-R	STA. 448+00 (STA. 10) TO 460+00	RT.							
TR	STA. 448+00 (STA. 8)	℄							
8-R	STA. 454+99 TO 455+45	L & TR.							
1-UD	STA. 450+00 TO 452+96	LT.							
2-UD	STA. 450+00 TO 454+54	RT.		40					
3-UD	STA. 450+00 TO 460+00	RT.							
4-UD	STA. 450+00 TO 460+00	LT.							
5-UD	STA. 453+00 TO 460+00	LT.		32		10			
6-UD	STA. 454+98 TO 460+00	RT.				10			
TOTALS			0.53	72	30	110	1	3179	



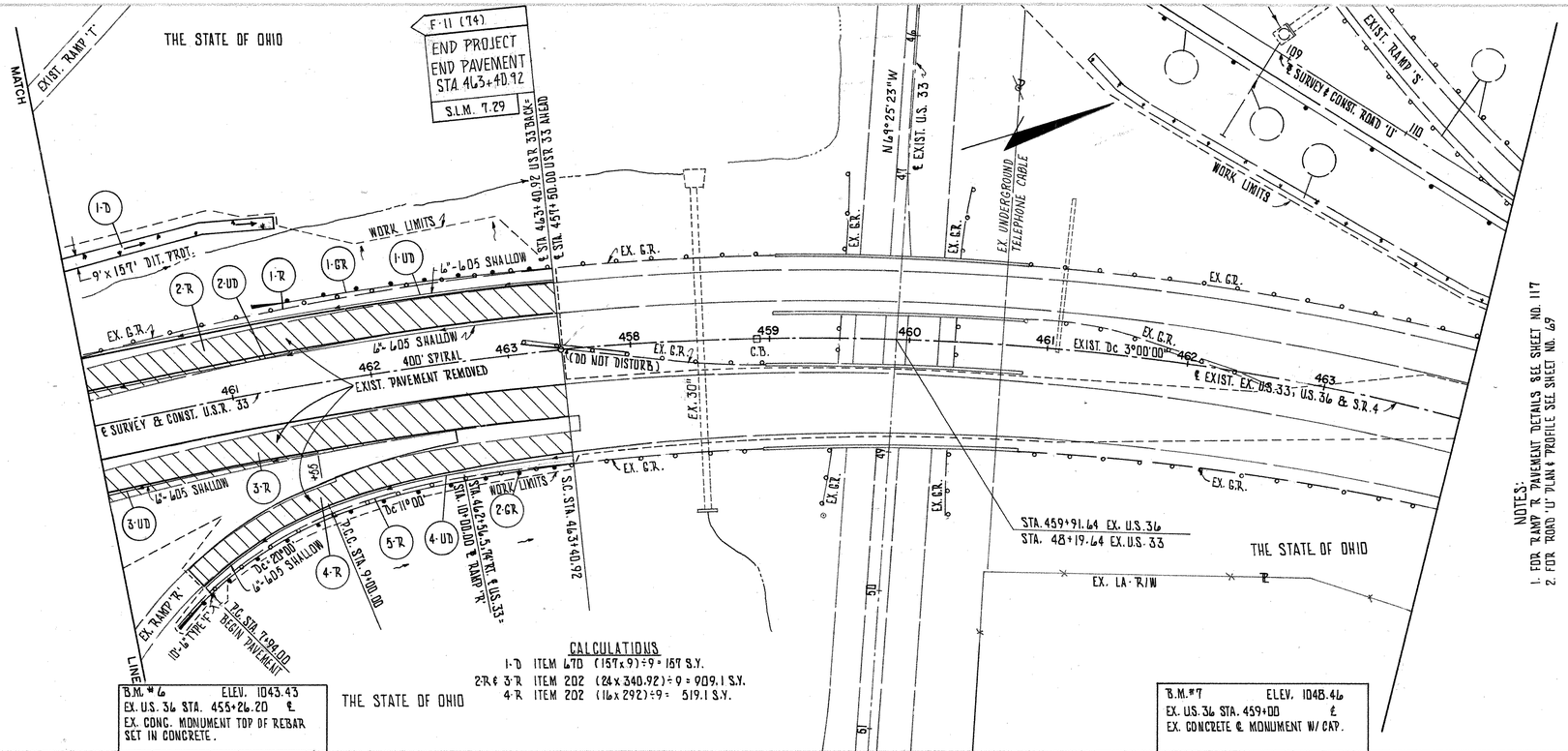
U.S. 33 STA. 450+00 TO STA. 460+00

CALC: PCB 9/85
CHK: ROB 9/85

UNION COUNTY
UNI-33-7.29

FED. NO. DIVISION	STATE	PROJECT	
5	OHIO		

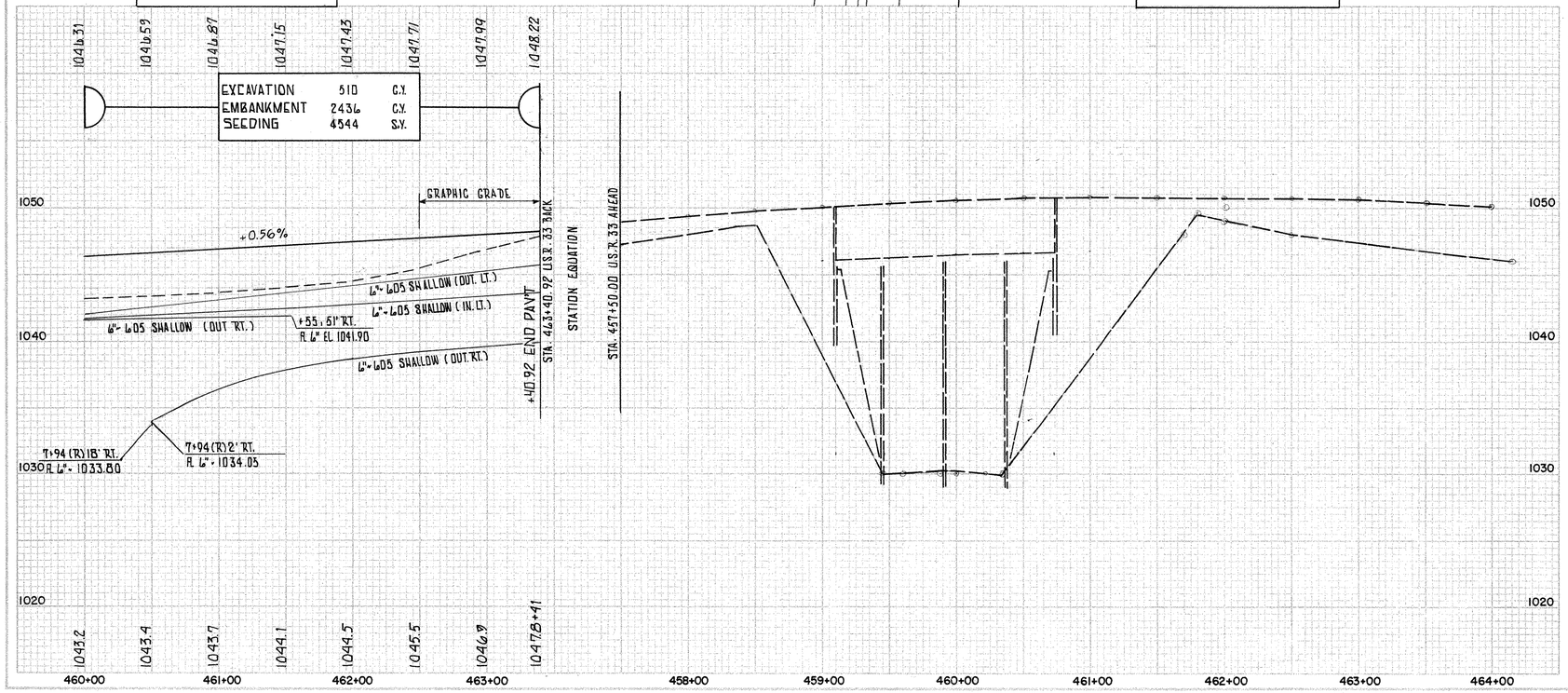
32
225



CALCULATIONS

1-D ITEM 670 (157x9)÷9 = 157 S.Y.
2-R ℄ 3-R ITEM 202 (24x340.92)÷9 = 909.1 S.Y.
4-R ITEM 202 (16x292)÷9 = 519.1 S.Y.

NOTES:
1. FOR RAMP 'R' PAVEMENT DETAILS SEE SHEET NO. 117
2. FOR ROAD 'U' PLAN & PROFILE SEE SHEET NO. 69



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 PAVEMENT REMOVED S.Y.	202 GUARDRAIL REMOVED ⊙ L.F.	603 6" TYPE "F" L.F.	605 6" SHALLOW TYPE U.D. L.F.	606 GUARDRAIL TYPE 6 L.F.	606 ANCHOR ASSEMBLY TYPE 'A' EA.	670 DITCH EROSION PROTECTION S.Y.
1-D	STA. 460+00.00 TO 461+50.00	LT.							157
1-UD	STA. 460+00.00 TO 463+40.92	LT.				341			
2-UD	STA. 460+00.00 TO 463+40.92	LT.				341			
3-UD	STA. 460+00.00 TO 461+65.00	LT.				166			
4-UD	STA. 7+94.00 (R) TO 463+40.92	RT.			10	296			
1-GR	STA. 461+28.42 TO 463+40.92	LT.					157.5	1	
2-GR	STA. 7+46.47 (R) TO 463+40.92	RT.					293.75	1	
1-R	STA. 460+00.00 TO 463+40.92	LT.	341						
2-R	STA. 460+00.00 TO 463+40.92	LT.	909.1						
3-R	STA. 460+00.00 TO 463+40.92	RT.	909.1						
4-R	STA. 460+50.00 TO 463+40.92	RT.	519						
5-R	STA. 460+82.00 TO 463+40.92	RT.	313						
TOTALS			2337	654	10	1133	481.25	2	157

⊙ FOR REUSE OR STORAGE

U.S. 33 STA. 460+00 TO STA. 464+00

SEEDING

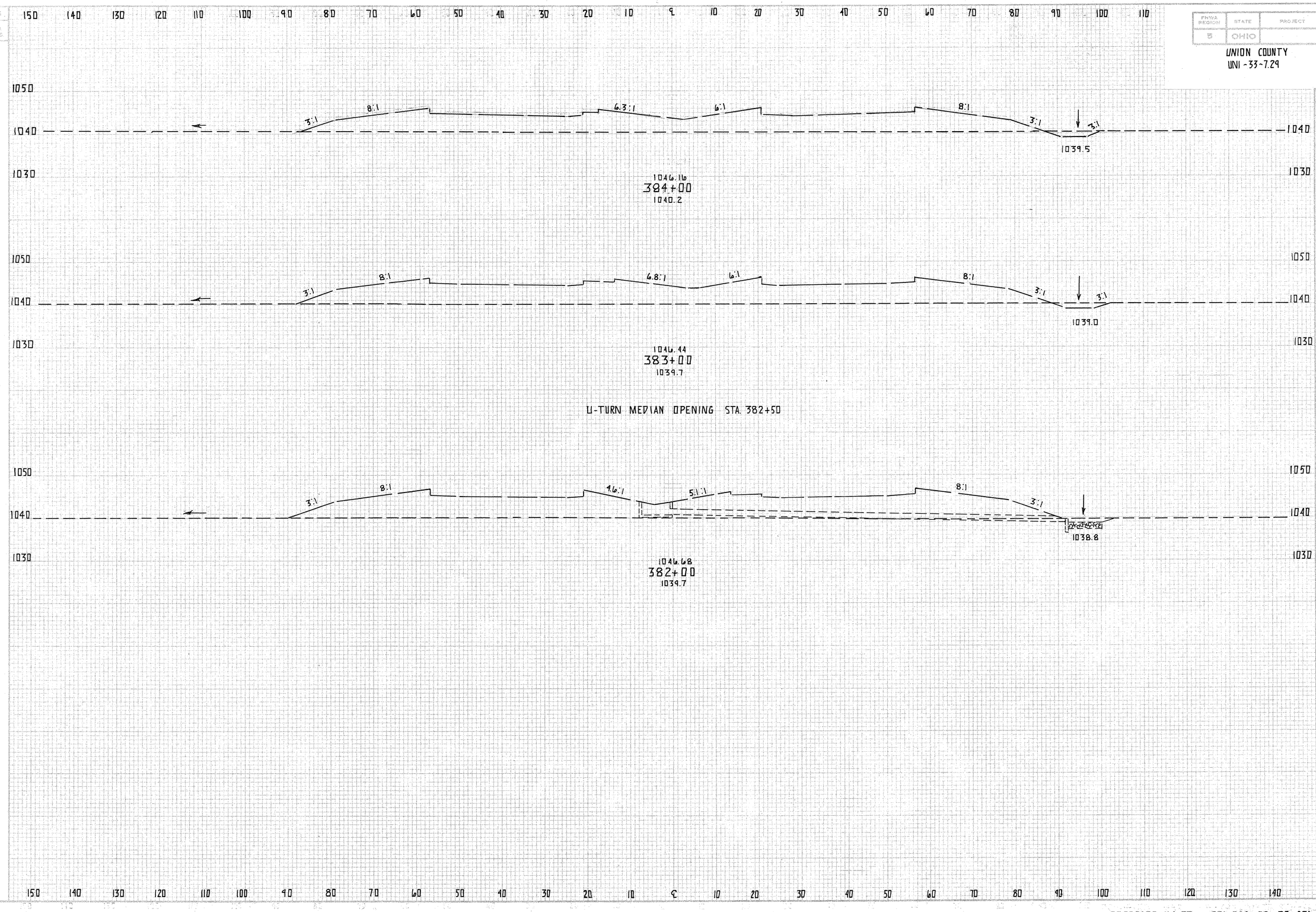
END WIDTH	SQ. YDS.

FHWA REGION	STATE	PROJECT	
5	OHIO		

33
225

UNION COUNTY
UNI-33-7.29

END AREA		VOLUME	
CUT	FILL	CUT	FILL



U-TURN MEDIAN OPENING STA. 382+50

PROPOSED U.S. 33 STA. 382+00 TO STA. 384+00

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

UNION COUNTY
UNI-33-7.29

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
		151	6		
143	1594			580	41
		162	16		
144	1606			401	178
		54	80		
145	1622			191	462
		49	170		
147	1656			176	112.5
		46	438		
151	222			5	52
		46	438		
222					

LA / R/W
6:1
8:1
1042.2
1044.82
389+00
1044.6
1042.8
1040
1050

6:1
8:1
1041.4
1045.06
388+00
1044.8
1043.6

6:1
8:1
1041.0
1045.32
387+00
1043.7
1042.6

3:1
3:1
8:1
1040.6
1045.60
386+00
1043.3
6:1
8:1
1042.0

AHEAD
BACK
LA / R/W
3:1
3:1
8:1
1040.2
OUTLET TO SWALE
1045.88
385+00
1041.4
1040.0
DITCH TO SWALE IF
ADJACENT PROJECT NOT CONSTRUCTED

BEGIN PROJECT
BEGIN WORK
STA. 384+96.78
UNI-33-7.29

384+96.78

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

US. 33 STA. 385+00 TO STA. 389+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

35
225

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

UNION COUNTY
UNI-33-7.29

SEEDING		END AREA		VOLUME	
END WIDTH	SQ YDS	CUT	FILL	CUT	FILL
166	1817	314	4	1652	7
161	1772	578	0	1629	0
158	1694	302	0	906	2
147	1611	187	1	715	6
143	1589	199	3	648	16
143		151	6		

1043.62
394+00
1042.8

1043.86
393+00
1044.3

1044.10
392+00
1043.7

1044.34
391+00
1043.9

1044.58
390+00
1044.6

1036.6 1040.6 1036.9 1041.0 1037.2 1040.0 1041.4 1042.6 1041.8 1043.2 1042.2

3:1 8:1 6:1 2:1

LA/ R/W

ROCK C.P. TYPE 'C'
W/ FILTER 10'x4'x1.5'

+45.89' LT
FL. 6" 1038.01

STA 392+50.68' LT
HEADWALL - 4
IE 18"= 1037.20

34'-6" 60S U.D. @ 0.44%
10'-6" TYPE 'F' @ 0.44%
88'-18" TYPE 'B' @ 0.32%
16'-6" 60S U.D @ 0.40%
10'-6" TYPE @ 0.40%

5.4'
6"
8"

STA 392+50. &
NO 4 CATCH BASIN
IE GRATE 1040.23
IE 18" 1037.48
IE 6" U.D. 1037.63

1050
1040

389+00 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 389+00

U.S. 33 STA. 390+00 TO STA. 394+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

CALC: P.C.B. 9/85
CHK: R.U.B. 9/85

36
225

UNION COUNTY
UNI-33-7.29

SEEDING

END WIDTH	SQ. YDS.
169	1917
176	1961
177	1956
175	1917
170	1867
166	

ROCK C.P TYPE 'C' W/FILTER
10' x 4' x 1.5'
+45.0' & +55.95' LT
RT & 1038.01
1034.8
STA. 399+50.102' LT.
HW-4 HEADWALL
IE 21" 1035.03
10'-6" TYPE 'F' @ 1.16%
8:1
23'-6" 60S UD @ 1.16%
3:1
102'-21" TYPE 'B' @ 0.52%
+45.42.13 LT & +55.42.38 LT, +37' & +63.25' LT
IE 6" 1038.39 IE 6" 1037.79
16'-6" 60S UD @ 3.76%
10'-6" TYPE 'F' @ 3.76%
23'-6" TYPE 'B' @ 4.20%
40'-6" TYPE 'B' @ 0.44%
+50.23' RT
IE 6" 1037.78
+50.63' RT
IE 6" 1037.96
STA 399+50, ℄
Nº 4 C.B. - OMIT DIKE
IE GRATE 1038.64
IE 21" 1035.56
IE 6" 1036.81

LA / R/W
1035.1
1042.43
399+00
1038.5
1036.8

1035.4
1042.66
398+00
1039.2
1037.1

1035.7
1042.90
397+00
1039.2
1038.2

1036.0
1043.14
396+00
1039.8
1039.0

1036.3
+00.90' LT.
IE 6" 1036.51
10'-6" TYPE 'F' @ 0.52%
29'-6" 60S UD @ 0.52%
+00.51' LT.
IE 6" 1036.71
90° BEND
28'-6" TYPE 'B' @ 0.52%
+00.23' LT
IE 6" 1036.86
90° BEND
46'-6" 60S UNCL. 0.52%
1043.98
395+00
1041.1
+00.23' RT.
IE 6" 1037.10
90° BEND
28'-6" TYPE 'B' @ 1.56%
+00.51' RT.
IE 6" 1037.54
1040.2

394+00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
62	472		
		208	1637
50	411		
		233	1393
76	341		
		243	1208
56	312		
		344	803
130	122		
		823	232
314	4		

U.S. 33 STA. 395+00 TO STA. 399+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

37
225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.O.B 9/85

SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
179	1972	404+00 1038.9	14	1027	52	3532
176	1961	403+00 1038.0	14	881	70	3185
177	1950	402+00 1037.5	24	840	123	2902
174	1906	401+00 1037.6	427	27	195	2268
169	1878	400+00 1038.5	63	497	230	1796
149	399+00		62	472		

CULVERT No. UNI-33-07.60
STA. 401+60
FOR DETAILS SEE SHEET 120

CULVERT OUTLET 1034.5

U.S. 33 STA. 400+00 TO STA. 404+00

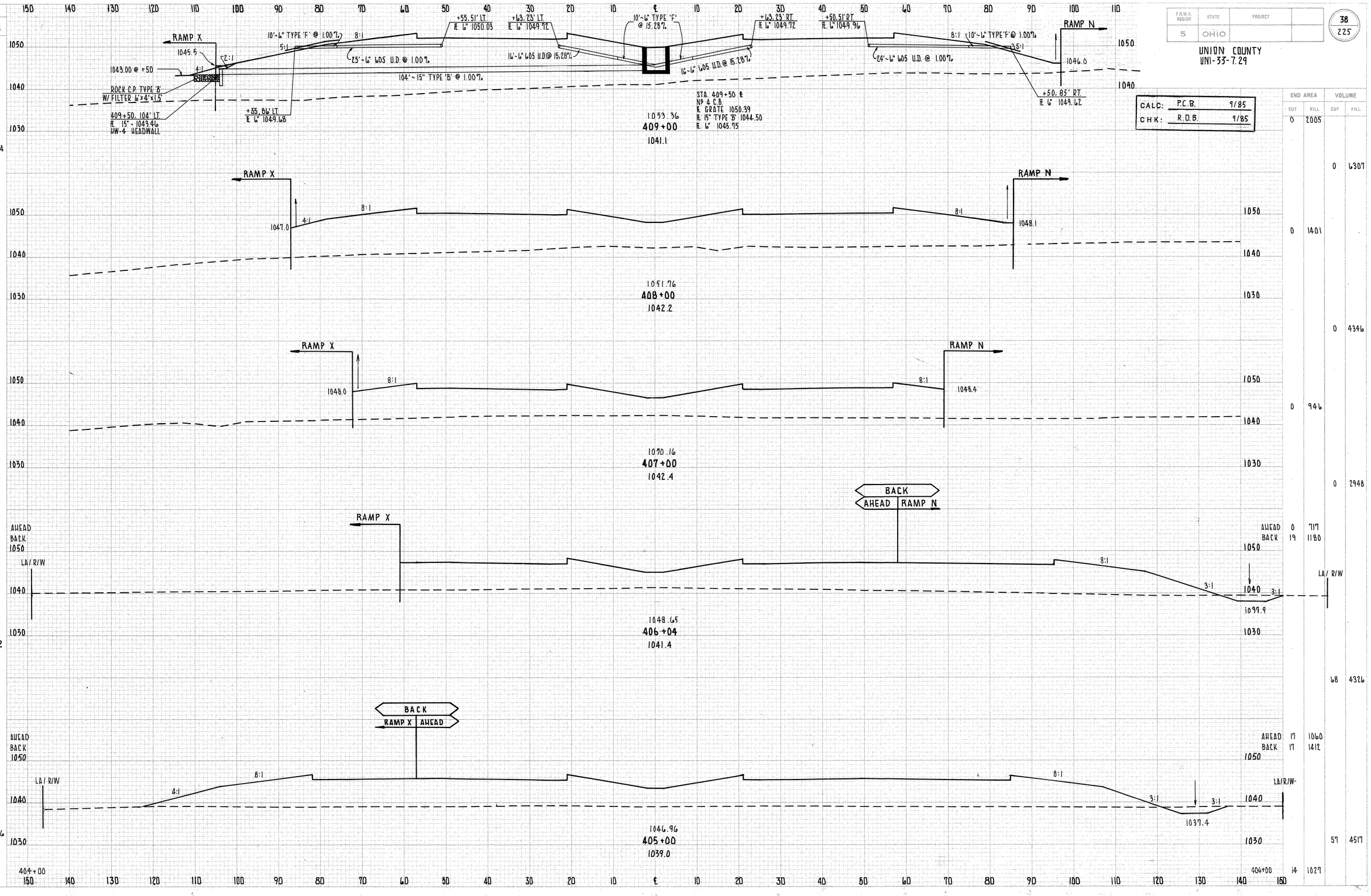
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

38
225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS	CUT	FILL	CUT	FILL
132	1294	0	2005	0	6307
101	950	0	1401	0	4346
70	595	0	946	0	2948
42	1252	AHEAD	0	717	68	4326
108		BACK	19	1180		
108	1956	AHEAD	17	1060	57	4517
173		BACK	17	1412		
179		404+00	14	1027		



U.S. 33 STA. 405+00 TO STA. 409+00

SEEDING	
END WIDTH	SQ. YDS.
242	2628
231	2700
255	2556
205	2122
171	1717
132	

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

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225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

1059.00
414+00
1041.1

1058.25
413+00
1042.5

1057.31
412+00
1038.6

1056.18
411+00
1039.8

1054.87
410+00
1041.7

FOR CULVERT DETAIL #3
STA. 411+60 FOR DETAILS
SEE SHEET NO. 124

RAMP 'N'

RAMP N

RAMP X

RAMP N

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
	119	3165		
			470	10841
	135	2690		
			564	10966
	190	3232		
			374	11301
	33	2725		
			88	8829
	15	2043		
			27	7496
	0	2005		

U.S. 33 STA. 410+00 TO STA. 414+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

40
225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.D.B 9/85

SEEDING

END WIDTH	SQ. YDS.
237	
	2378
191	
	500
59	
45	
	475
186	
	1320
191	
	2289
221	
	2517
242	

AHEAD 419+64
BACK 419+00

AHEAD 414+00

1060.10
418+00
1041.00

BRIDGE NO.
UNI-33-0790L/R
OVER
S.R.-245

1060.06
416+63
1040.09

1059.93
416+00
1040.4

1059.96
415+00
1040.5

1059.91
419+00
1043.2

1041.3

1040.4

1038.8

1037.0

1036.4

1036.1

TO S.R. 245

FROM S.R. 245

ITEM 203 GRANULAR EMBANKMENT (18" THICK.)

(* ITEM 203 GRAN. EMBK.)

BEGIN GRAN. EMBK. 417+64 AHEAD
END GRAN. EMBK. 417+00 BACK

BEGIN GRAN. EMBK. 414+62 AHEAD
BACK

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	36	2522		
		* 335		
LA/R/W				
			81	9502
				* 1163
	7	2609		
		* 293		
LA/RW				
		* 210	5	1739
	0	0		* 335
	0	0		
		* 210		
			32	1793
	46	2617		* 345
		* 293		
			124	6082
				* 680
	40	2596		
		* 290		
			304	10085
				* 1148
		* 330		
	104	2850		* 464
		* 330	150	4007
	110	2844		
	110	3174		
			262	7279
	119	3165		

U.S. 33 STA. 415+00 TO STA. 419+00

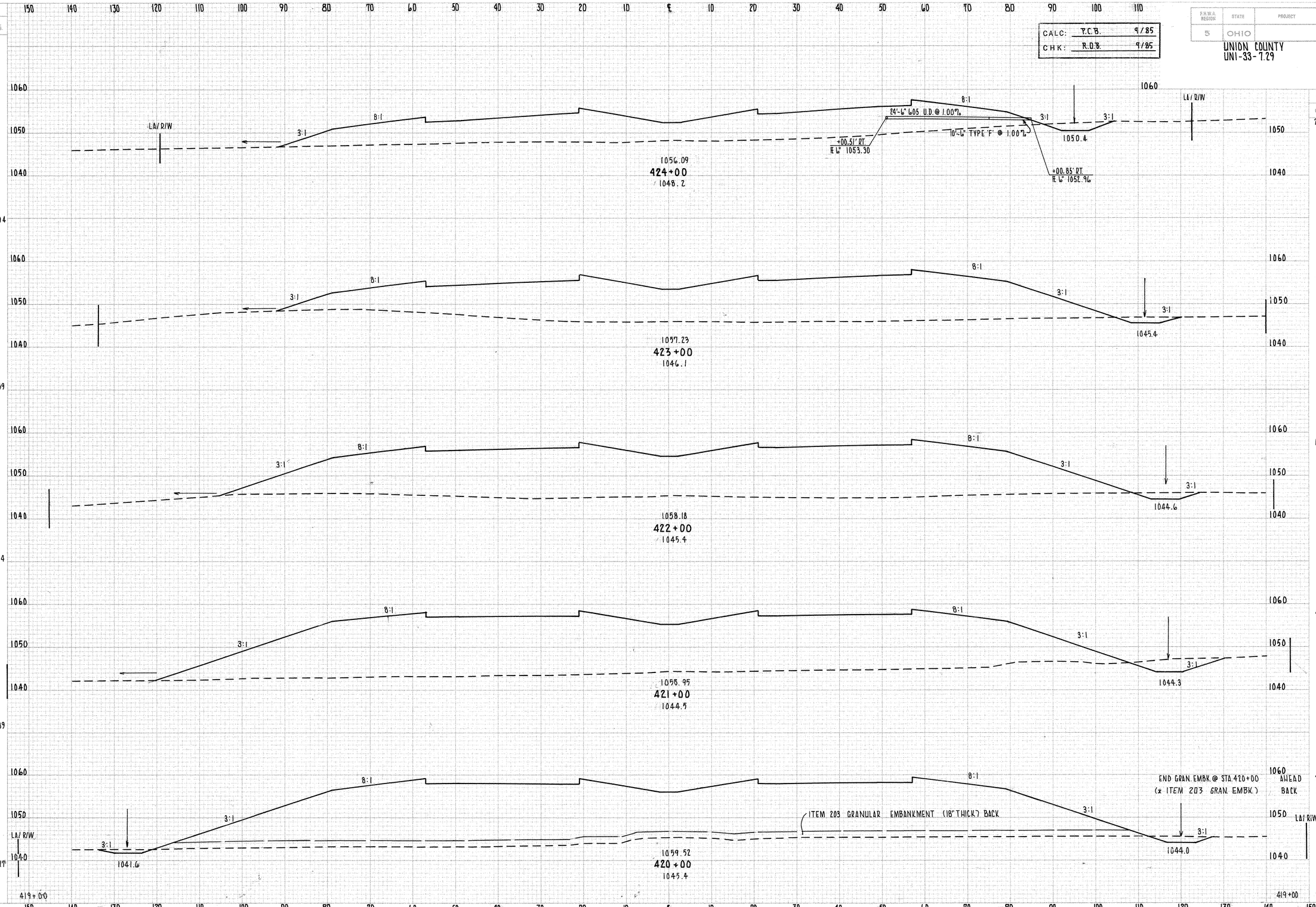
SEEDING	
END WIDTH	SQ. YDS.
173	2094
204	2339
217	2494
232	2589
234	2617
237	

CALC: T.C.B. 9/85
CHK: R.D.B. 9/85

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

41
225

UNION COUNTY
UNI-33-7.29



END AREA		VOLUME	
CUT	FILL	CUT	FILL
23	962		
		74	4403
18	1524		
		62	4590
15	2035		
		104	8917
42	2456		
		125	9315
END GRAN. EMBK. @ STA. 420+00 (* ITEM 203 GRAN. EMBK.) AHEAD	25	2574	
BACK	25	2232	*342
			*1254
*335		115	8802
419+00	36	2522	

U.S. 33 STA. 420+00 TO STA. 424+00

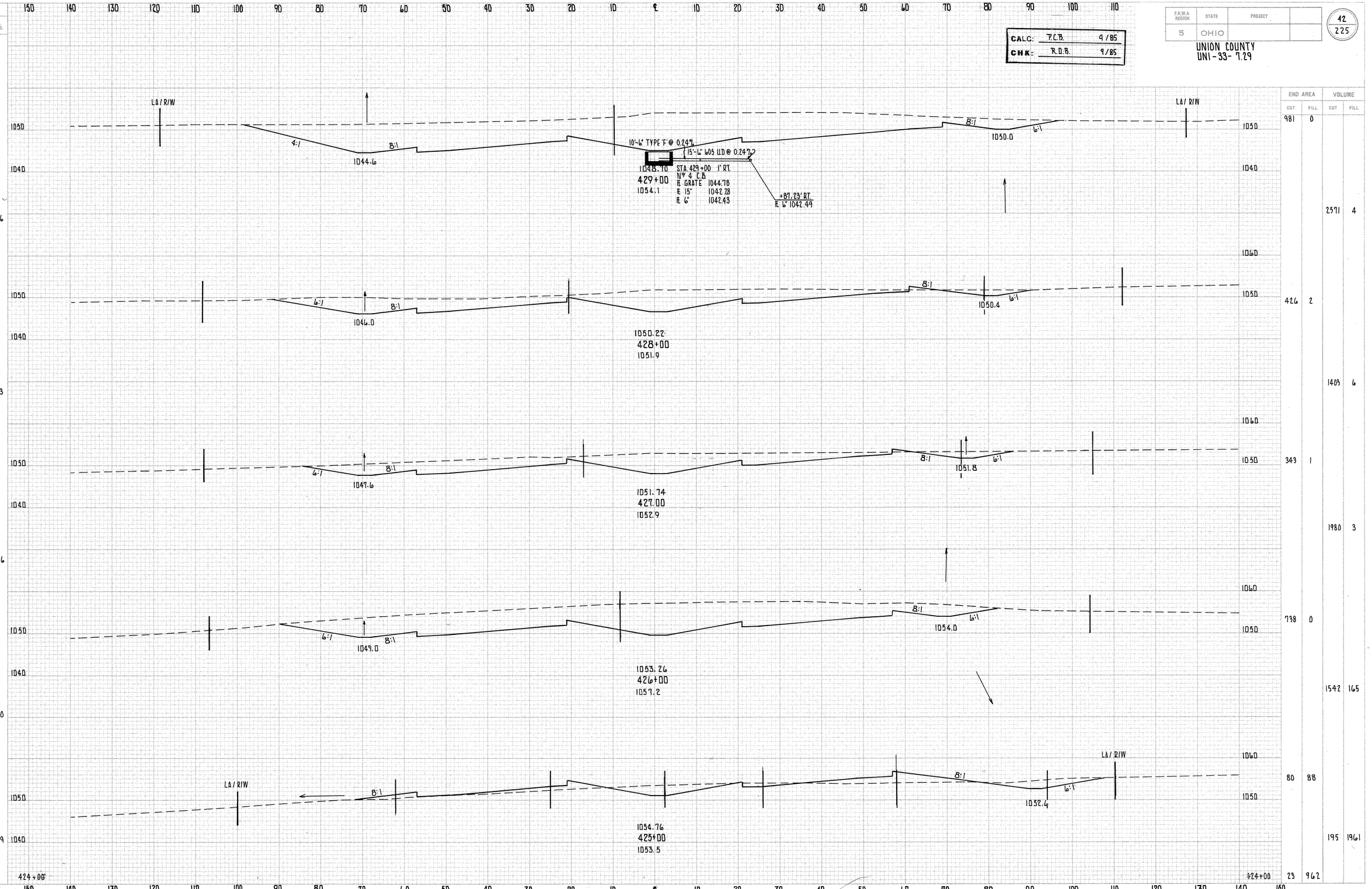
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

42
225

UNION COUNTY
UNI-33-7.29

CALC: T.C.B. 9/85
CHK: R.D.B. 9/85

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
163	1706	981	0	2571	4
144	1583	426	2	1403	6
141	1556	343	1	1980	3
139	1550	738	0	1542	165
140	1739	80	88	195	1961
173		23	962		



U.S. 33 STA. 425+00 TO STA. 429+00

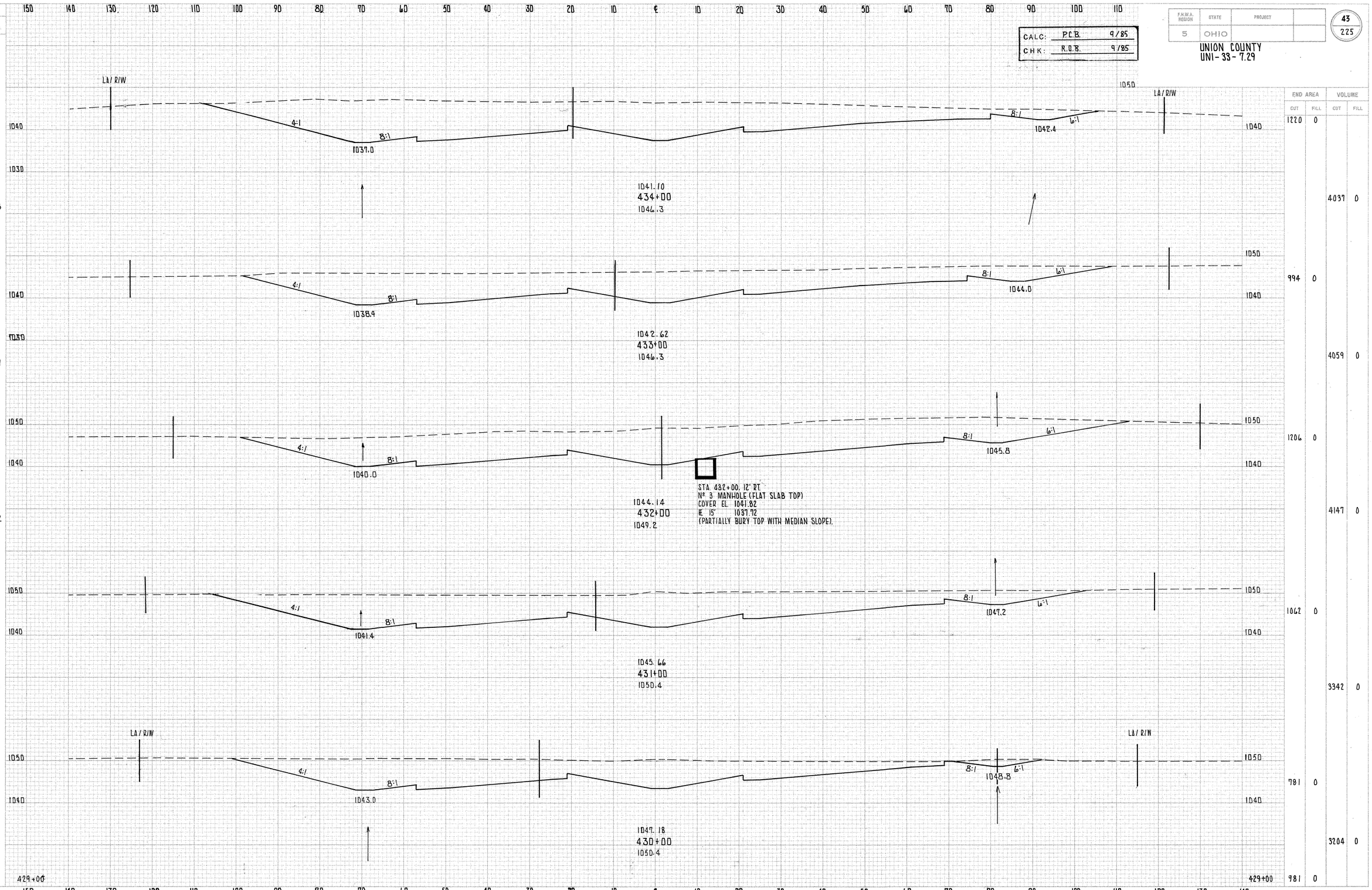
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

43
225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.O.B. 9/85

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
155	1783	1220	0	4037	0
166	1817	994	0	4059	0
161	1772	1206	0	4147	0
158	1733	1062	0	3342	0
154	1761	781	0	3204	0
163		981	0		



U.S. 33 STA. 430+00 TO STA. 434+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

44
225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

SEEDING

END WIDTH	SQ. YDS.
155	1506
116	1200
100	391
113	1117
147	
153	1711
155	

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140

LA/R/W — 1040 — 1030 — 4:1 — 8:1 — 1031.8 — 8:1 — 6:1 — 1036.5

1035.91
438+00
1037.7

RAMP 'Y' — 8:1 — 1037.6 — 1040 — 1030 — 4:1 — 8:1 — 1032.6

1036.82
437+00
1038.5

RAMP 'N' — LA/R/W — 1040 — 1030 — 4:1 — 8:1 — 1034.0 — 8:1 — 1039.3

1038.07
436+00
1040.6

BACK — AHEAD 'RAMP 'Y' — AHEAD — BACK — 1040 — 1030 — 4:1 — 8:1 — 1034.4 — 8:1 — 4:1 — 1036.8 — 4:1

1038.56
435+67
1042.6

LA/R/W — 1040 — 1030 — 4:1 — 8:1 — 1035.2 — 8:1 — 1040.0 — 6:1 — LA/R/W

1039.58
435+00
1044.3

STA. 435+00, 1' RT.
№ 4 C.B.
℄ GRATE 1035.66
℄ 15" 1033.16
℄ 18" 1032.91

434+00 — 434+00

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	640	0		
			2279	0
	616	0		
			2476	3
	763	2		
			985	1
AHEAD	908	0		
BACK	929	30		
			2540	39
	1176	0		
			4342	0
	1220	0		

U.S. 33 STA. 435+00 TO STA. 438+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

45
225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B 9/85
CHK: R.O.B 9/85

SEEDING END WIDTH	SEEDING SQ. YDS.
146	1639
	-684
149	1485
201	508
165	1806
160	1728
151	1700
155	

DEDUCT SLOPE PROT. 81 x 76 ÷ 9

ROAD 'U'

2:1 8:1

1032.1

ITEM 203 GRANULAR EMBANKMENT

1036.43
443+00
1026.5

1036.6

QUANITY FOR GRANULAR EMBANKMENT CARRIED ON 'ROAD U' - SEE SHEET 66

1031.6

1035.83
442+00
1027.8

1036.4

(16" THICK)

441+25

LA/ R/W

6:1 8:1

10'-6" TYPE 'F' @ 0.80%

1030.2

17'-6" 605 U.D. @ 0.80%

10'-6" TYPE 'F' @ 0.28%

17'-6" 605 U.D. @ 0.28%

+39.58, 6.6' LT.
FE 6" 1028.11

+11.57, 9.7' LT.
FE 6" 1024.30

STA. 441+25, 81' LT.
Nº 2-3 C.B. w/WINDOWS
FE WINDOW 1029.90
FE 30" 1025.90
FE 6" W. 1027.490
FE 6" E. 1027.90

1035.33
441+00
1032.4

206' ~ 30" TYPE 'B' @ 0.80%

3:1

1029.3

STA. 441+25, 125' RT.
Nº 2-4 C.B. w/WINDOWS
FE WINDOW 1028.92
FE 18" 1026.17
FE 30" 1024.25
FE 36" 1023.25

1030.6

1035.17
440+00
1034.6

STA. 440+00, 1' RT.
Nº 4 C.B.
FE GRATE 1031.25
FE 18" 1028.55
FE 6" 1028.71

22'-6" TYPE 'B' @ 0.28%

28'-6" TYPE 'B' @ 8.28%

+00.23' RT.
FE 6" 1028.76

+00.51' RT.
FE 6" 1031.08

1031.7

1031.0

1035.37
439+00
1036.0

1035.3

438+00

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
1030 AHEAD	0	2283		
1030 BACK	0	2175		
1020			0	7278
1040 AHEAD	0	1784		
1040 BACK	0	1895		
1030			424	3157
441+25	307	323		
1040			242	296
1030	234	281		
1040			1075	728
1030	377	90		
1040			1476	173
1030	448	1		
1040			1974	1
438+00	640	0		

U.S. 33 STA. 439+00 TO STA. 443+00

SEEDING	
END WIDTH	SQ. YDS.
117	
	1365
117	
	1450
144	
	1956
208	
	2317
209	
	1972
146	

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

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225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

AHEAD
BACK ROAD 'Z'

BACK
1040
1030
1020
3:1 3:1 8:1
1028.5
1039.48
448+05
1031.5
BACK
AHEAD
1041.0
4:1
3:1
1030
1020
MATCH-LINE STA. 448+00
MATCHLINE STA. 448+00
AHEAD
3:1 3:1
1023.5
1030
1020
150 160

ROAD 'Z'
1040
1030
1020
3:1 3:1 8:1
1028.0
1038.83
447+00
1028.6
8:1
1039.0

ROAD 'Z'
1040
1030
1020
3:1 3:1 8:1
1026.0
1038.25
446+00
1025.6
8:1
3:1
1034.0

1040
1030
1020
3:1 3:1 8:1
1025.6
1037.63
445+00
1027.1
8:1
3:1
3:1
1021.9

CULVERT Nº UNI-33-0833
DRAINAGE AREA 18.6 Ac.
Q 50 29.9 CFS

707.01 - 100 YR. H.W. = 1031.6
3:1 3:1 8:1
1025.2
2:1
443+85.105' LT.
E PIPE 1024.80
HW-4 HEADWALL
218'-TYPE 'A' 27" 706.02 1250 D-LOAD 706.08 OR 30" 707.01 (0.109), 707.04 (0.109), 707.05 (0.109), 707.09 OR 707.21 @ 0.60%
10'-6" TYPE F @ 9.12%
15'-6" 605 U.D. @ 9.12%
1033.03
444+00
1026.1
+98.23' RT.
E 6" 1032.28
8:1
3:1
ROCK C.P. TYPE 'C' W/ FILTER 8'x5'x1.5'
2:1
3:1
1022.2
443+85.113' RT.
E PIPE 1023.49
HW-4 HEADWALL

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
BACK	71	968		
			140	4729
	11	1450		
			70	6327
	32	1937		
			282	6610
	138	1547		
			445	6408
	117	1805		
			214	7655
	0	2283		

443+00 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 443+00

U.S. 33 STA. 444+00 TO STA. 448+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

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225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.O.B. 9/85

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
138		41	892		
	1157			114	2792
129		AHEAD 38	1041		
195		BACK 133	1084		
	482			110	983
199				152	1214
	2228			505	5243
202				142	1479
	2132			379	5771
202		AHEAD 448+05	91	1648	

RAMP 'V'
8:1
1036.9
1041.23
451+00
1035.1
3:1
1040
24:1
MATCHLINE STA. 451+00
1030
MATCHLINE STA. 451+00
24:1
130 140 150 160
MATCHLINE STA. 450+23
3:1
1029.4
110 120 130 150
RAMP 'V'
AHEAD
BACK
AHEAD
BACK
8:1
MATCHLINE STA. 450+72
1030.0
3:1
1040.76
450+22
1034.9
MATCHLINE STA. 450+00
1028.4
MATCHLINE STA. 450+00
110
1029.5
1040.63
450+00
1034.3
MATCHLINE STA. 449+00
1026.0
MATCHLINE STA. 449+00
1029.0
1040.03
449+00
1032.0
AHEAD 448+05

U.S. 33 STA. 449+00 TO STA. 451+00

CALC:	P.C.B.	9/85
CHK:	R.O.B.	9/85

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

48
225

UNION COUNTY
UNI-33-7.29

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
177	2211	20	927	52	4570
221	2378	8	1541	57	6605
207	2178	23	2069	57	7791
185	1900	8	2138	24	7013
157	1639	5	1649	85	4706
138		41	892		

ITEM 202 PAVEMENT REMOVED

1044.07
456+00
1039.0

1043.51
455+00
1036.5

10'-6" TYPE 'F' @ 10.00%
12'-6" 605 U.D @ 10.00%
+58.23' RT.
E 4" 1039.53
EX. 30" CONC.

CULVERT Nº UNI-33-0839
DRAINAGE AREA 134 Ac.
Q 50 25 CFS

707.01 100 YR. HW
EL = 1031.59

110-24" TYPE 'N' 706.02 1500 D-LOAD, 706.08 OR 27" 707.01 (0.109), 707.04 (0.104), 707.05 (0.104), 707.09 OR 707.21 @ 0.32%.

454+58. 109' LT.
E PIPE 1025.47
HW-4 HEADWALL

1042.95
454+00
1028.2

RAMP 'V'
10'-6" TYPE F @ 1.92%
24'-6" 605 U.D @ 1.92%
+00.85' LT
E 4" 1035.00
+00.51' LT.
E 6" 1035.65

1042.39
453+00
1029.5

RAMP 'V'

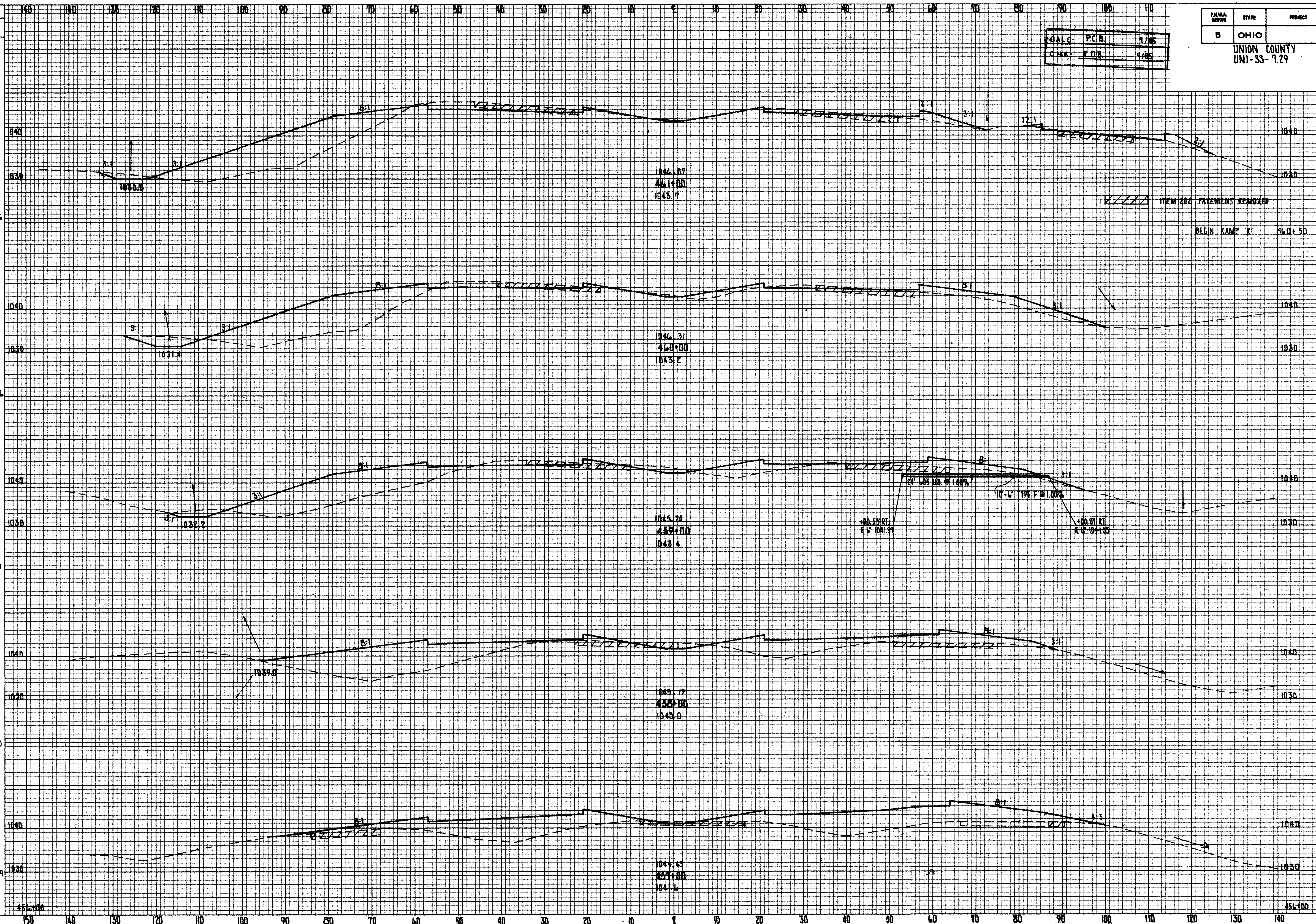
1041.83
452+00
1032.1

U.S. 33 STA. 452+00 TO STA. 456+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33- 7.29

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85



SEEDING END WIDTH	SEEDING SQ. YDS.	Station	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
186		461+00	50	368		
	2056				96	693
		460+50	54	380		
					108	728
184		460+00	62	407		
	1956				187	1498
168		459+00	39	401		
	1678				83	1672
134		458+00	6	502		
	1500				11	1937
136		457+00	0	544		
	1739				37	2724
166		456+00	20	927		

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

50
225

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

UNION COUNTY
UNI-33-7.29

END PROJECT
END PAVEMENT
UNI-33-7.29
STA. 463+40.92

SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS		CUT	FILL	CUT	FILL
78	355	1040.40 463+40.92 1047.83	BACK	43	21	
78	872	1048.04 463+00 1046.90		25	48	104	185
79	377	1047.43 462+00 1044.50		31	52	150	778
79 93	884	AHEAD BACK 461+57		50	348		
186		461+00					

ITEM 202 PAVEMENT REMOVED

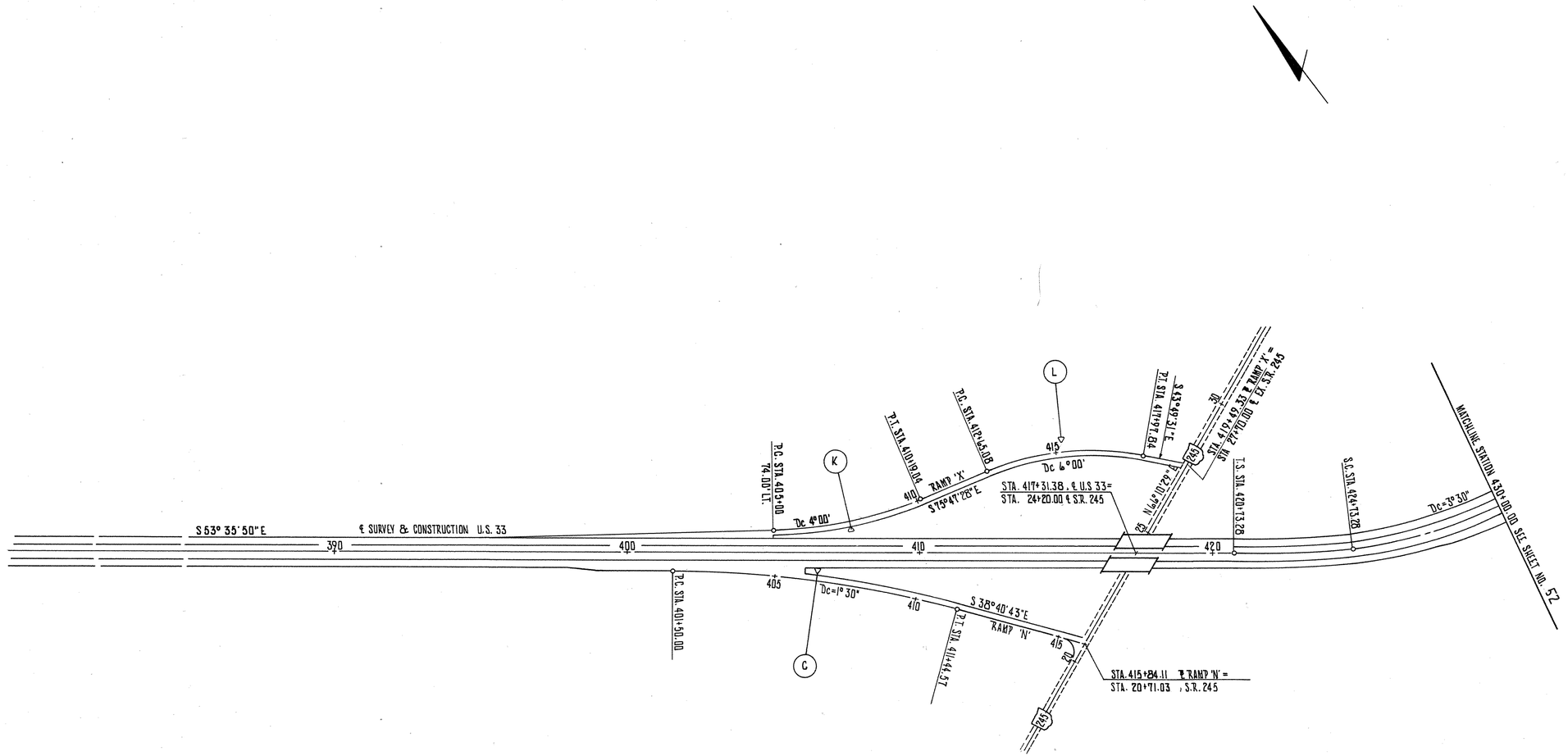
+57
BACK
AHEAD RAMP "K"
1044.2

US. 33 STA. 462+00 TO STA. 463+40.92

FHWA REGION	STATE	PROJECT	
5	OHIO		

51
225

UNION COUNTY
UNI-33-7.29



(A) U.S. 33 MAINLINE
P.I. STA. 451+91.51
△ 121° 17' 54"
Dc 3° 30'00"
R 1637.02'
Lc 3065.67'
Ls 400'
LT 2466.88'
ST 1335.52'
Ts 3118.23'
Es 1711.08'
Bs 7°00'00"

(B) U.S. 33 MAINLINE EXIST.
P.I. STA. 471+38.43
△ 55° 04' 25"
Dc 3° 00'00"
R 1909.86'
Lc 1435.78'
Ls 400'
LT 766.82'
ST 733.97'
Ts 1197.51'
Es 247.94'
Bs 6° 00'00"

(C) RAMP 'N'
P.I. STA. 406+50.12
△ 14° 55' 07"
Dc 1° 30'00"
R 3819.72'
Lc 994.57'
T 500.12'
E 32.60'

(D) RAMP 'Y'
P.I. STA. 434+10.01
△ 11° 56' 10"
Dc 2°00'00"
R 2864.79'
Lc 598.47'
T 300.33'
E 15.70'

(E) RAMP 'Y'
P.I. STA 442+16.90
△ 56° 05' 40"
Dc 6°00'00"
R 954.93'
Lc 934.91'
T 508.75'
E 127.07'

(F) RAMP 'Y'
P.I. STA. 447+18.14
△ 6° 00' 02"
Dc 4° 00'00"
R 1432.39'
Lc 150.01'
T 75.08'
E 1.97'

(G) ROAD 'U'
P.I. STA. 63+55.92
△ 29° 42' 11"
Dc 5°00'00"
R 1145.92'
Lc 594.06'
T 303.87'
L 39.60'

(H) ROAD 'U'
P.I. STA. 92+56.98
△ 79° 55' 13"
Dc 5°00'00"
R 1145.92'
Lc 1348.41'
Ls 250'
LT 766.77'
ST 733.43'
Ts 1087.03'
Es 352.06'
Bs 6° 00'00"

(I) RAMP 'V'
P.I. STA. 449+53.45
△ 18° 36' 29"
△1 3° 36' 29"
△2 15° 00' 00"
Bs 11° 23' 31"
Ls 200.00'
R1 1588.02'
R2 381.97'
T1 121.26'
T2 80.38'
P 3.31'

(I) RAMP 'V'
CURVE DATA
△ 208° 26' 09"
R 381.97'
Dc 15° 00' 00"
Lc 1389.56'

(K) RAMP 'X'
P.I STA. 407+62.40
△ 20° 45' 42"
Dc 4° 00' 00"
R 1432.39'
Lc 519.04'
T 262.40'
E 23.84'

(L) RAMP 'X'
P.I. STA 415+38.59
△ 31° 57' 57"
Dc 6° 00' 00"
R 954.93'
Lc 532.76'
T 273.51'
E 38.40'

(M) ROAD 'Z'
P.I. STA. 71+99.02
△ 19° 04' 49"
Dc 4° 00' 00"
R 1432.39'
L 377.01'
T 189.60'
E 12.49'

(N) ROAD 'Z'
PI STA 77+96.35
△ 46° 27' 53"
Dc 6° 00' 00"
R 954.93'
L 774.41'
T 409.92'
E 84.27'

(O) EXIST. U.S. 36 & S.R. 4
P.I. STA. 418+19.55, 25' LT.
△ 7° 58' 53"
Dc 1° 30' 00"
R 3819.72'
L 532.09'
T 266.47'
E 9.28'

(P) EXIST. U.S. 36 & S.R. 4
P.I. STA. 423+47.35, 49' RT.
△ 7° 58' 53"
Dc 1° 30' 00"
R 3819.72'
L 532.09'
T 266.47'
E 9.28'

(Q) RAMP 'R'
P.I. STA. 8+47.61
△ 21° 12' 00"
Dc 20°00'00"
R 286.48'
L 106.00'
T 53.61
E 4.97

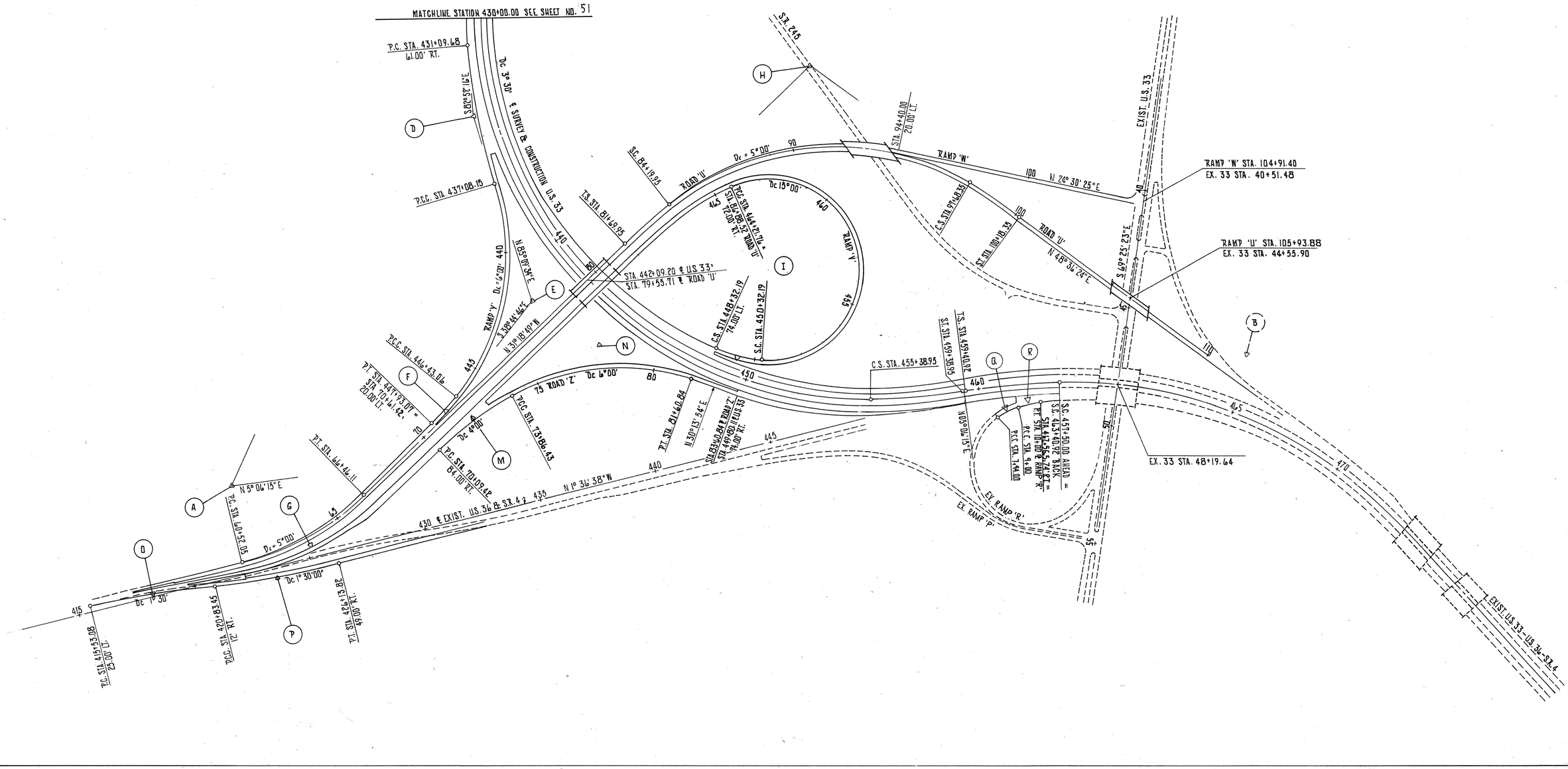
(R) RAMP 'R'
P.I. STA. 9+50.15
△ 11°00'00"
Dc 11°00'00"
R 520.87'
L 100.00'
T 50.15
E 2.41

GEOMETRIC LAYOUT

FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI 33 - 7.29

52
225

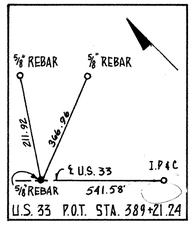


GEOMETRIC LAYOUT

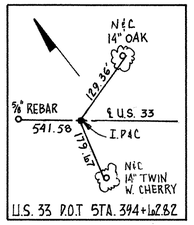
FHWA REGION	STATE	PROJECT	
5	OHIO		

53
225

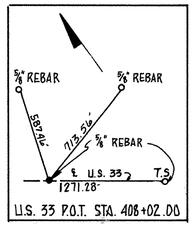
UNION COUNTY
UNI-33-7.29



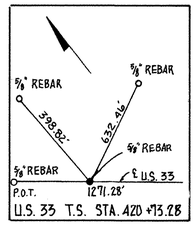
U.S. 33 P.O.T. STA. 389+21.24



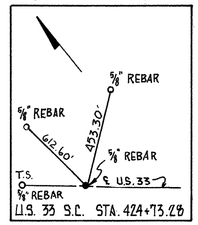
U.S. 33 P.O.T. STA. 394+42.82



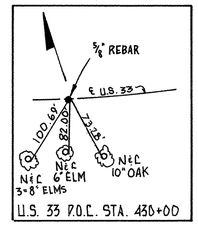
U.S. 33 P.O.T. STA. 408+02.00



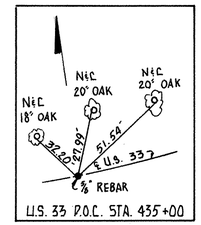
U.S. 33 T.S. STA. 420+73.28



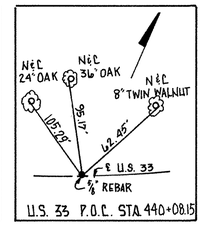
U.S. 33 S.C. STA. 424+73.28



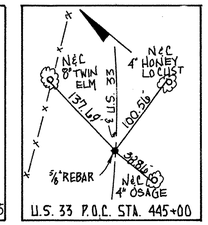
U.S. 33 P.O.C. STA. 430+00



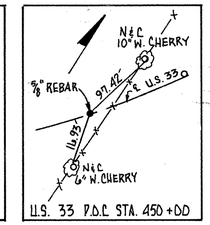
U.S. 33 P.O.C. STA. 435+00



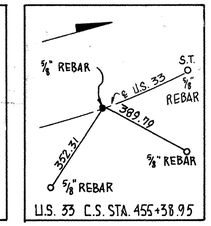
U.S. 33 P.O.C. STA. 440+08.15



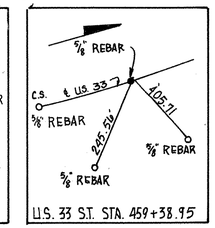
U.S. 33 P.O.C. STA. 445+00



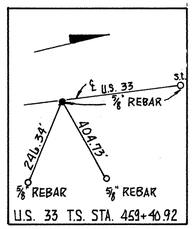
U.S. 33 P.O.C. STA. 450+00



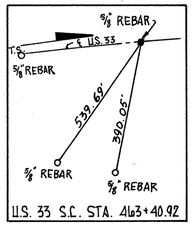
U.S. 33 C.S. STA. 455+38.95



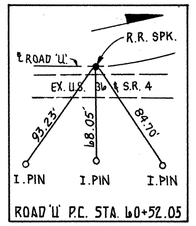
U.S. 33 S.T. STA. 459+38.95



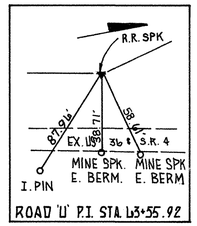
U.S. 33 T.S. STA. 459+40.92



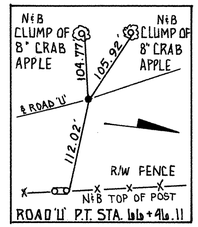
U.S. 33 S.C. STA. 463+40.92



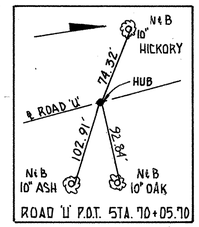
ROAD 'U' P.C. STA. 60+52.05



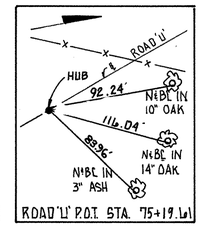
ROAD 'U' P.I. STA. 63+55.92



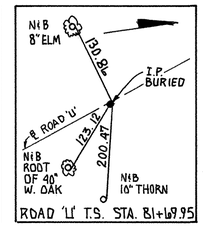
ROAD 'U' P.T. STA. 66+46.11



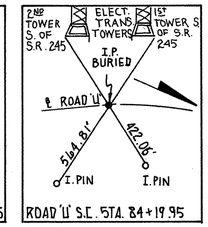
ROAD 'U' P.O.T. STA. 70+05.70



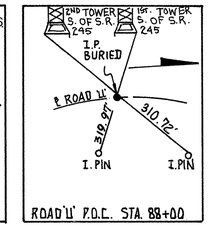
ROAD 'U' P.O.T. STA. 75+19.61



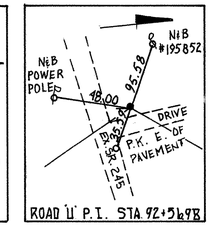
ROAD 'U' T.S. STA. 81+69.95



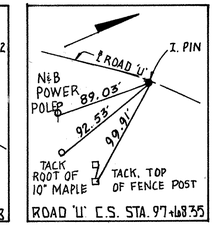
ROAD 'U' S.C. STA. 84+19.95



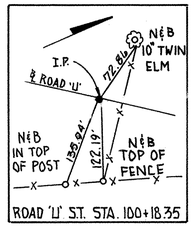
ROAD 'U' P.O.C. STA. 88+00



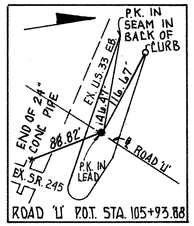
ROAD 'U' P.I. STA. 92+53.98



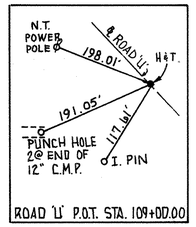
ROAD 'U' C.S. STA. 97+68.35



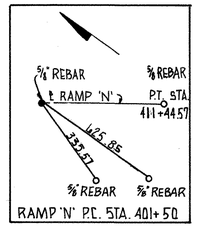
ROAD 'U' S.T. STA. 100+18.35



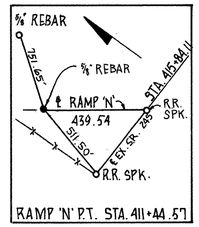
ROAD 'U' P.O.T. STA. 105+93.88



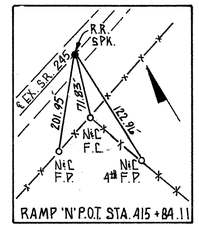
ROAD 'U' P.O.T. STA. 109+00.00



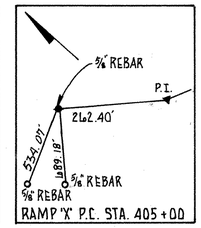
RAMP 'N' P.C. STA. 401+50



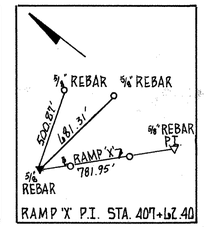
RAMP 'N' P.T. STA. 411+44.57



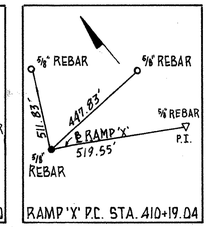
RAMP 'N' P.O.T. STA. 415+84.11



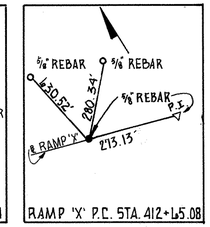
RAMP 'X' P.C. STA. 405+00



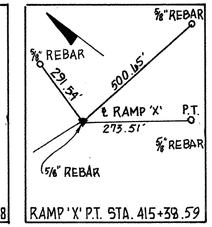
RAMP 'X' P.I. STA. 409+62.40



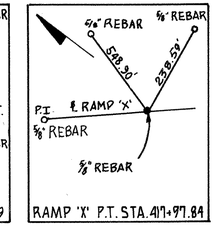
RAMP 'X' P.C. STA. 410+19.04



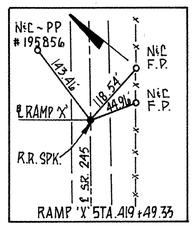
RAMP 'X' P.C. STA. 412+65.08



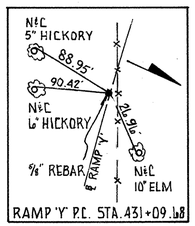
RAMP 'X' P.T. STA. 415+38.59



RAMP 'X' P.T. STA. 417+97.84



RAMP 'X' STA. 419+49.33



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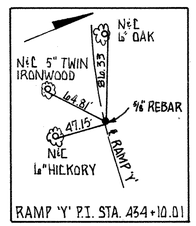
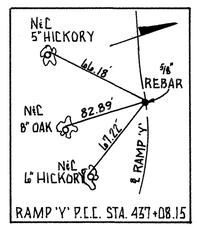


RAMP 'Y' P.I. STA. 434+10.01



RAMP 'Y' P.C.C. STA. 437+08.15

RAMP 'Y' P.C.C. STA. 441+45.00

RAMP 'Y' P.I. STA. 442+16.90

RAMP 'Y' P.I. STA. 447+93.07

ROAD 'Z' P.C. STA. 70+09.42

ROAD 'Z' P.I. STA. 71+99.02

ROAD 'Z' P.C.C. STA. 73+86.43

ROAD 'Z' P.I. STA. 77+96.35

ROAD 'Z' P.T. STA. 81+60.84

ROAD 'Z' STA. 83+60.84

RAMP 'V' C.S. STA. 448+32.19

RAMP 'V' P.I. STA. 449+53.45

RAMP 'V' S.C. STA. 450+32.19

RAMP 'V' P.C. STA. 446+21.76

CENTER CIRCLE RAMP 'V'

RAMP 'W' P.O.T. STA. 94+40

RAMP 'W' P.O.T. STA. 101+88.31

RAMP 'W' P.O.T. STA. 103+51.19

RAMP 'W' P.O.T. STA. 104+91.40

EVANS DR. P.T. STA. 18+02.77

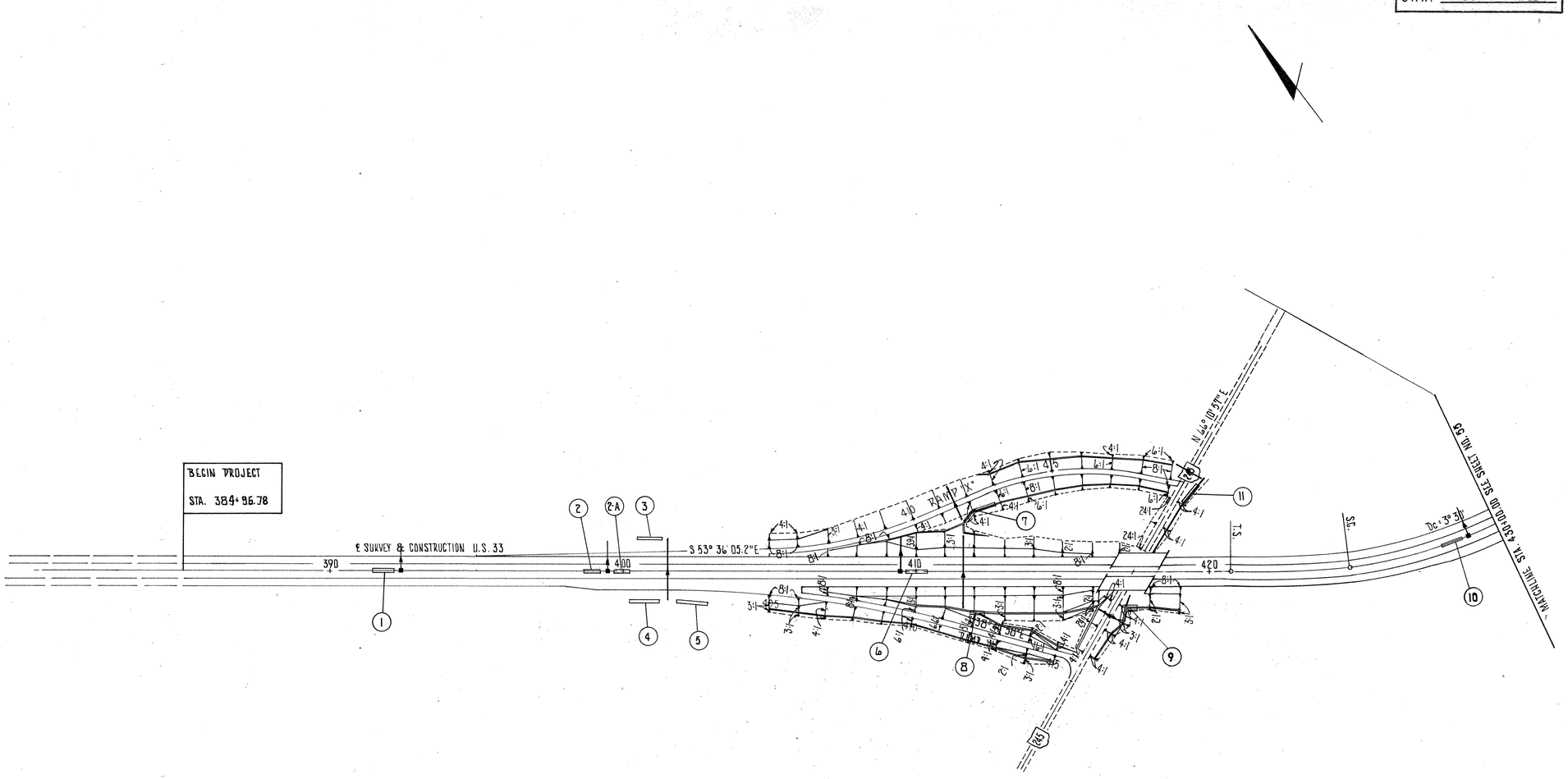
SURVEY REFERENCE POINTS

CALC:	P.C.B.	9/85
CHK:	R.O.B.	9/85

FHWA REGION	STATE	PROJECT	
5	OHIO		

54
225

UNION COUNTY
UNI 33 7.29



EROSION CONTROL QUANTITIES

ITEM 207 TEMPORARY BENCHES, DIKES, DAMS, AND SEDIMENT BASINS

SEDIMENT BASINS

1. ℄ U.S. 33	STA. 392+00, ℄	114 C.Y.	
2 ℄ U.S. 33	STA. 399+00, ℄	114 C.Y.	
2A. ℄ U.S. 33	STA. 400+00, ℄	134 C.Y.	
3 LT. U.S. 33	STA. 401+10, 115' LT.	161 C.Y.	
4. RT. U.S. 33	STA. 401+10, 105' RT.	281 C.Y.	
5. RT. U.S. 33	STA. 402+10, 105' RT.	322 C.Y.	
6 ℄ U.S. 33	STA. 410+00, ℄	107 C.Y.	
7. RT. RAMP 'X'	STA. 412+00, 59' RT.	248 C.Y.	
8. RT. U.S. 33.	STA. 412+00, 140' RT.	67 C.Y.	
9 RT. S.R. 245	STA. 22+50, 57' RT.	375 C.Y.	
10 ℄ U.S. 33	STA. 428+00, ℄	134 C.Y.	
	SUB TOTAL	2057 C.Y.	CARRIED TO SHEET NO. 55

SEDIMENT DAMS

11. RT. S.R. 245	STA. 28+00, 50' RT.	536 C.Y.	
	SUB TOTAL	536 C.Y.	CARRIED TO SHEET NO. 55

0 200 400 600
SCALE IN FEET

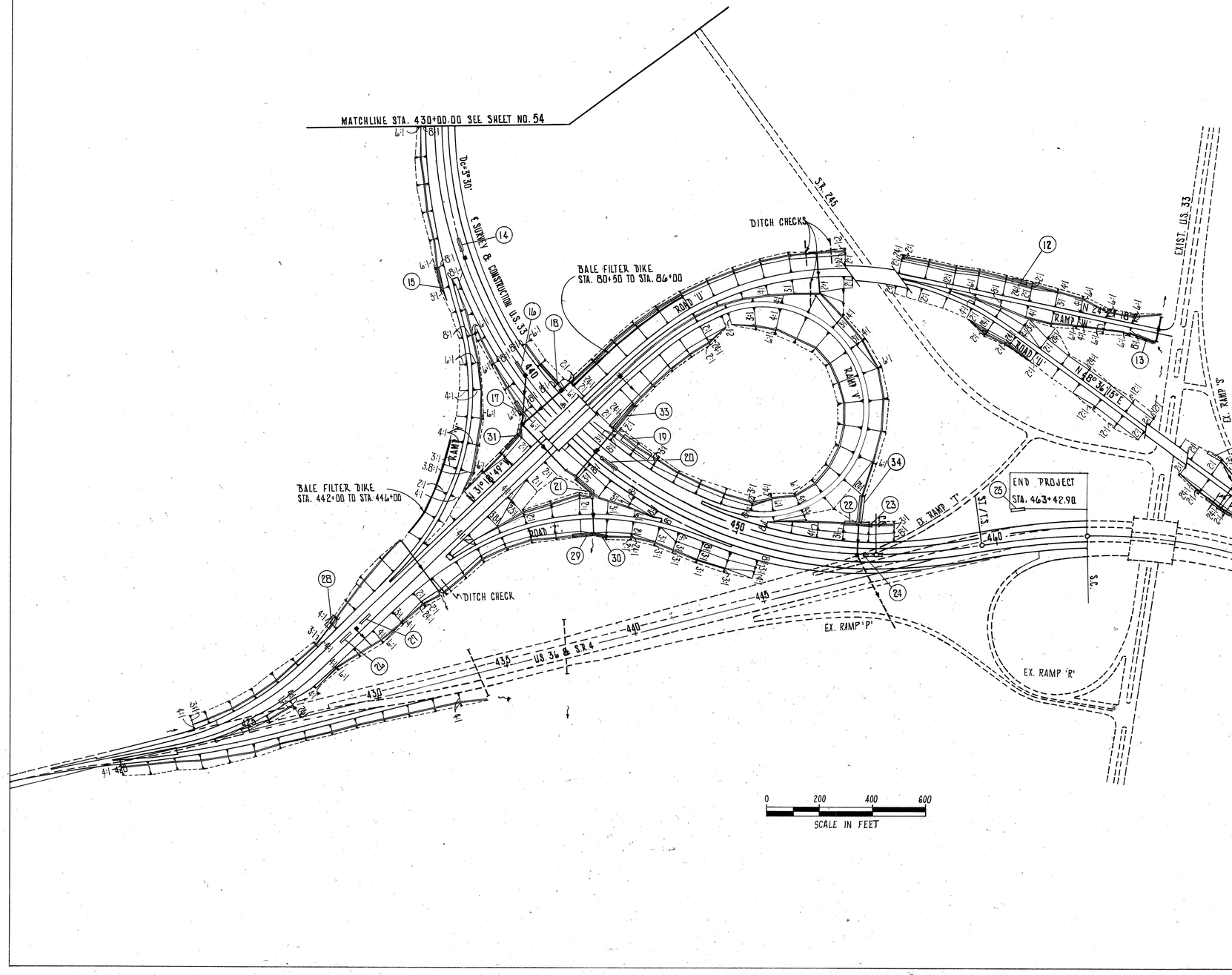
GRADING PLAN & TEMPORARY EROSION CONTROL

CALC: PCB 9/85
CHK: RDB 9/85

FHWA REGION	STATE	PROJECT	
5	OHIO		

55
225

UNION COUNTY
UNI 33 7.29



ITEM 207 TEMPORARY BENCHES, DIKES, DAMS & SEDIMENT BASINS

SEDIMENT BASINS

TOTALS CARRIED FROM SHEET NO. 54	2057 C.Y.
12. LT. RAMP 'W' STA. 98+50, 65' LT	100 C.Y.
13 RT. RAMP 'W' STA. 103+75, 55' RT.	147 C.Y.
14. ℄ U.S. 33 STA. 434+50, ℄	74 C.Y.
15. RAMP 'V' STA. 436+00, 25' RT.	121 C.Y.
16. ℄ U.S. 33 STA. 439+50, ℄	67 C.Y.
17. RT. U.S. 33 STA. 441+00, 100' RT.	194 C.Y.
18. LT. U.S. 33 STA. 441+00, 80' LT.	275 C.Y.
20 ℄ U.S. 33 STA. 444+00 ℄	121 C.Y.
21 RT. U.S. 33 STA. 445+00, 125' RT.	181 C.Y.
22. LT. U.S. 33 STA 454+00, 117' LT.	77 C.Y.
23 LT. U.S. 33 STA. 455+00 113' LT.	127 C.Y.
24 ℄, U.S. 33 STA. 455+00 ℄	121 C.Y.
25 LT. U.S. 33. STA. 461+00, 125' LT.	80 C.Y.
26. RT. ROAD 'U' STA. 68+00, 36' RT.	47 C.Y.
27 RT. ROAD 'U' STA. 69+00, 36' RT.	47 C.Y.
29. RT. ROAD 'Z' STA. 78+00, 42' RT.	107 C.Y.
30. RT. ROAD 'Z' STA. 79+00, 43' RT.	97 C.Y.
31. LT. ROAD 'U' STA. 78+00, 70' LT.	148 C.Y.
32 LT. ROAD 'U' STA. 107+75, 60' LT	67 C.Y.
33 RT. ROAD 'U' STA. 81+00, 155' RT	90 C.Y.
34 RT. RAMP 'V' STA. 454+00, 105' RT.	300 C.Y.
28 LT. ROAD 'U' STA. 69+00, 60' LT.	225 C.Y.
TOTAL	4930 C.Y.

SEDIMENT DAMS

TOTALS CARRIED FROM SHEET NO. 54	536 C.Y.
19 LT. U.S. 33, STA. 444+00, 115' LT.	523 C.Y.
TOTAL	1059 C.Y.

TOTAL SEDIMENT BASINS & DAMS	5989 C.Y.
TOTAL TO GENERAL SUMMARY	6000 C.Y.

NOTE: A SERIES OF SMALLER SEDIMENT BASINS MAY BE USED IN LIEU OF ONE LARGER SEDIMENT DAM.

ITEM 601 TYPE 'C' ROCK CHANNEL PROTECTION W/O FILTER

A. FROM ITEM 207 TEMPORARY BENCHES, DIKES, DAMS, AND SEDIMENT BASINS - VOLUME OF DAMS = 1059 C.Y., $0.1 \times (1059)^{2/3} = 10.4$ C.Y.

B. FROM ITEM 207 TEMPORARY BENCHES, DIKES, DAMS, AND SEDIMENT BASINS - VOLUME OF BASINS = 4930 C.Y., $0.05 \times (4930)^{2/3} = 14.5$ C.Y.

TOTAL TO GENERAL SUMMARY = 25.0 C.Y.

FOR AS DIRECTED QUANTITIES SEE CALCULATIONS SHEET NO. 15

ADD DITCH CHECKS
STRAW OR HAY BALES (6 × 5) = 30 EA.

ADD FOR BALE FILTER DIKE
STRAW OR HAY BALES (25 × 9.5) = 238 EA.

TOTAL TO GENERAL SUMMARY 268 EA.

GRADING PLAN & TEMPORARY EROSION CONTROL

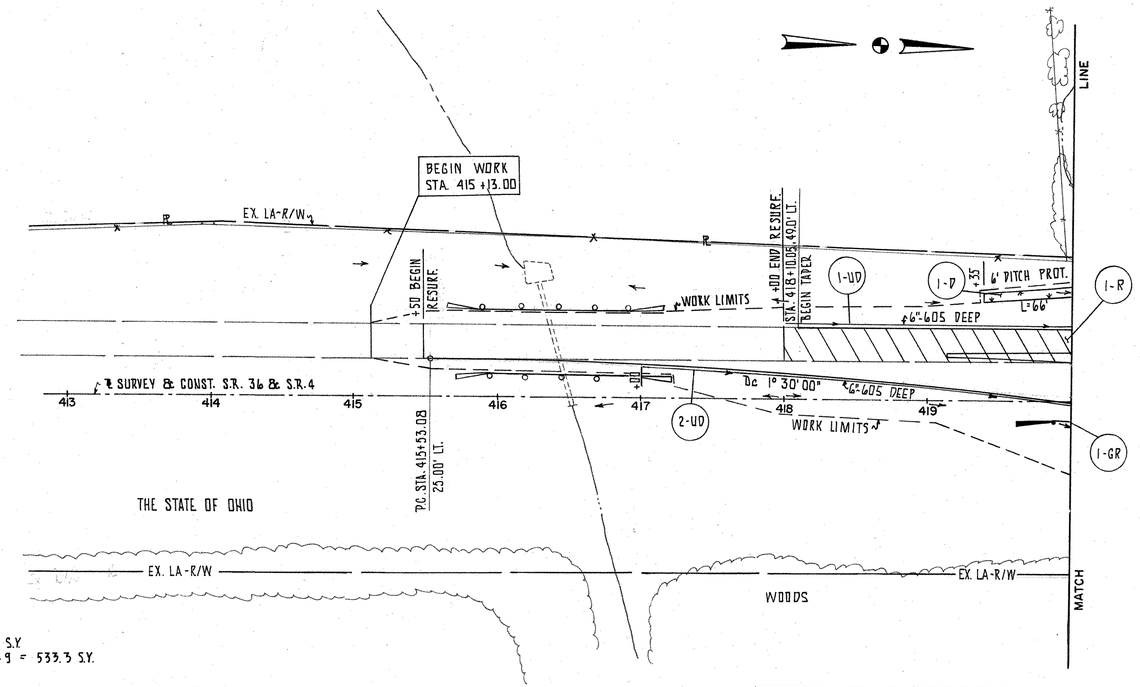
CALC: T.C.B. 9-85
CHK: R.O.B. 9-85

UNION COUNTY
UNI-33-7.29

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

56
225

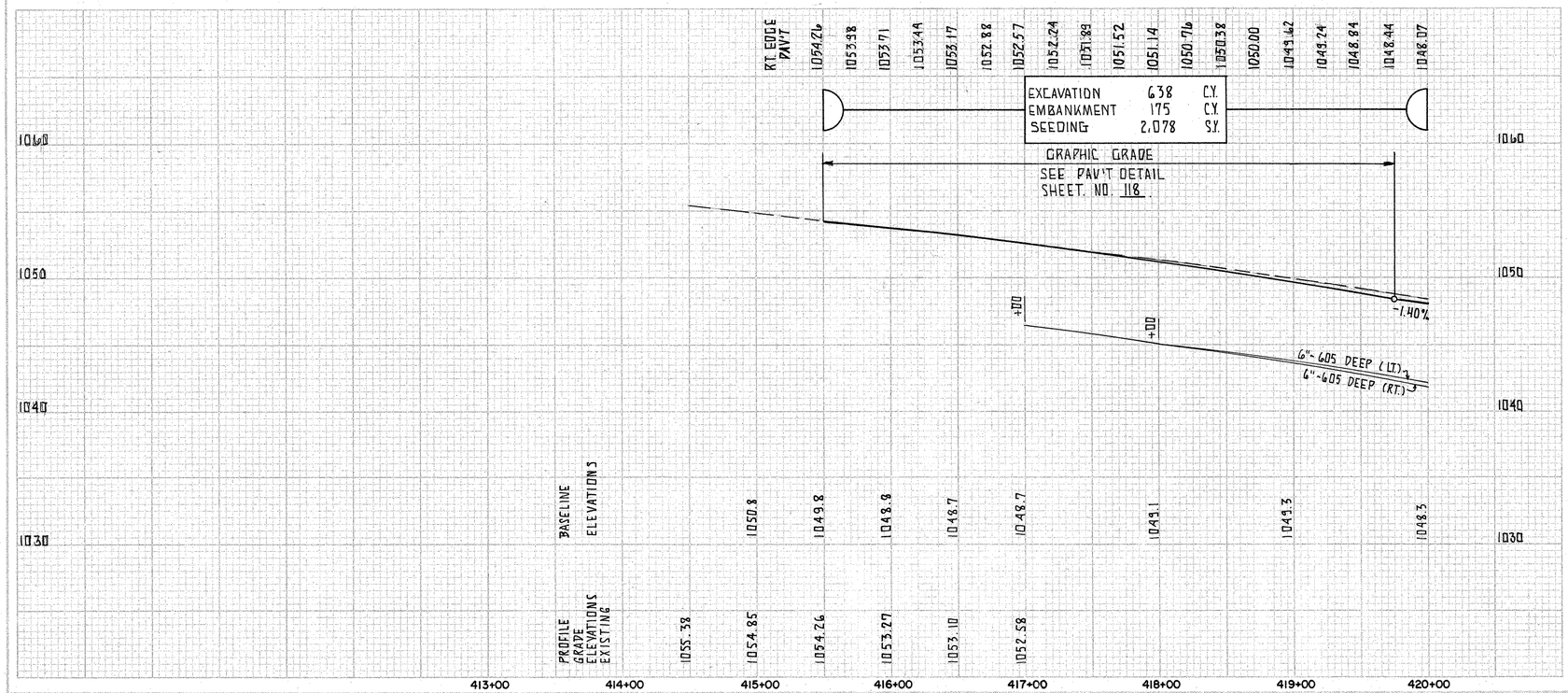
GLENN W. IRWIN & CELIA IRWIN



ITEM 202 PAVEMENT REMOVED

CALCULATIONS

1-D ITEM 670 P.P. (66 x 6) ÷ 9 = 44 S.Y.
1-R ITEM 202 PAV'T REM. (200 x 24) ÷ 9 = 533.3 S.Y.



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 PAVEMENT REMOVED S.Y.	605 6" DEEP PIPE U.D. L.F.	606 GUARD-RAIL TYPE 5 L.F.	606 ANCHOR ASSEMBLY TYPE 'A' EA.	670 DITCH EROSION PROT. S.Y.
1-D	419+35 TO 420+00	LT.					
1-R	419+62 TO 420+00	RT.			13	1	
1-R	418+00 TO 420+00	LT.	533.3				
1-UD	418+00 TO 420+00	LT.		200			
2-UD	417+00 TO 420+00	RT.		300			
TOTALS			534	500	13	1	44

U.S. 36 + S.R. 4 STA. 415+52.74 TO STA. 420+00

CALC: A.L.F. 9/85
CHK: P.C.B. 9/85

UNION COUNTY
UNI-33-7.29

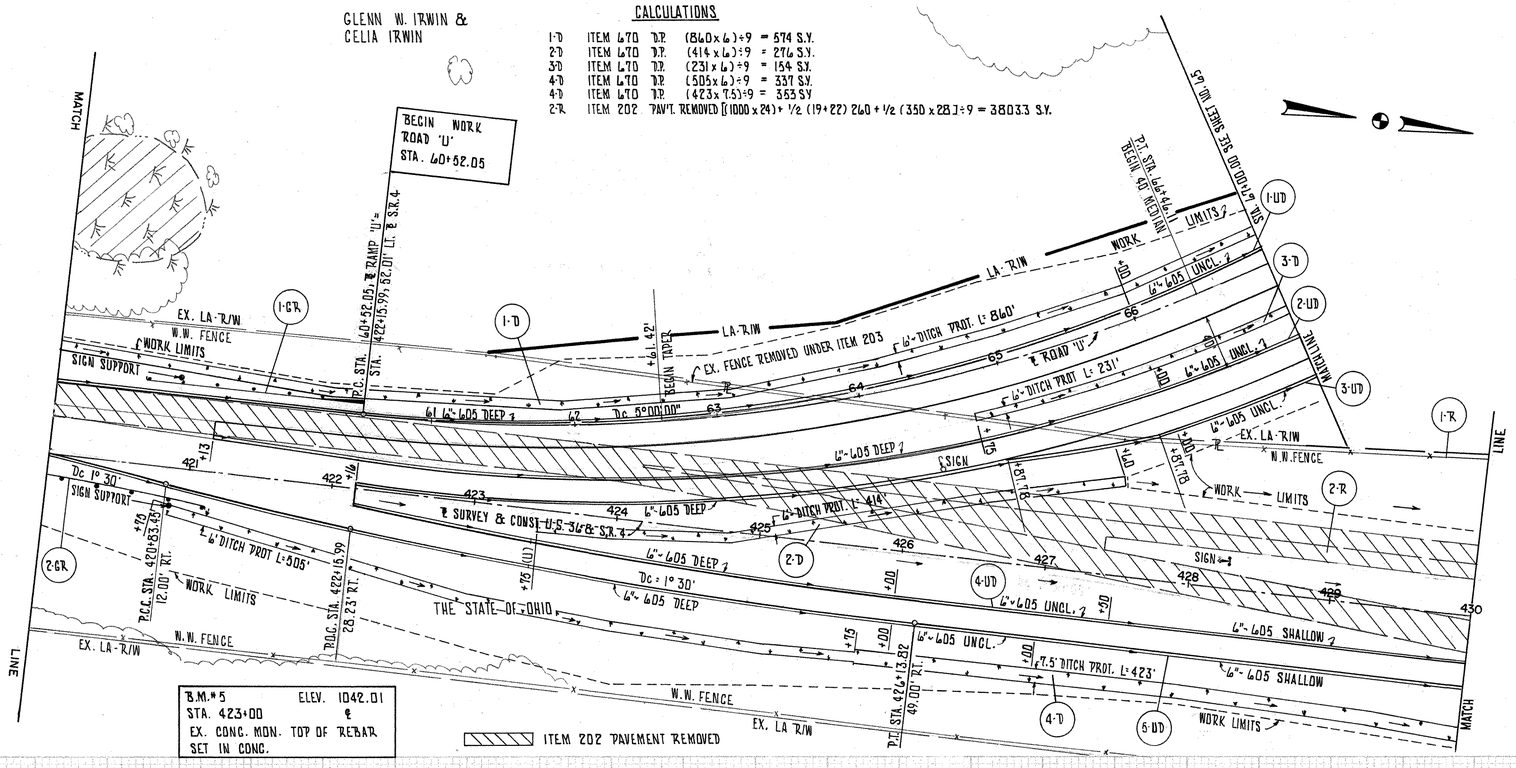
FED. NO. DIVISION	STATE	PROJECT		
5	OHIO			

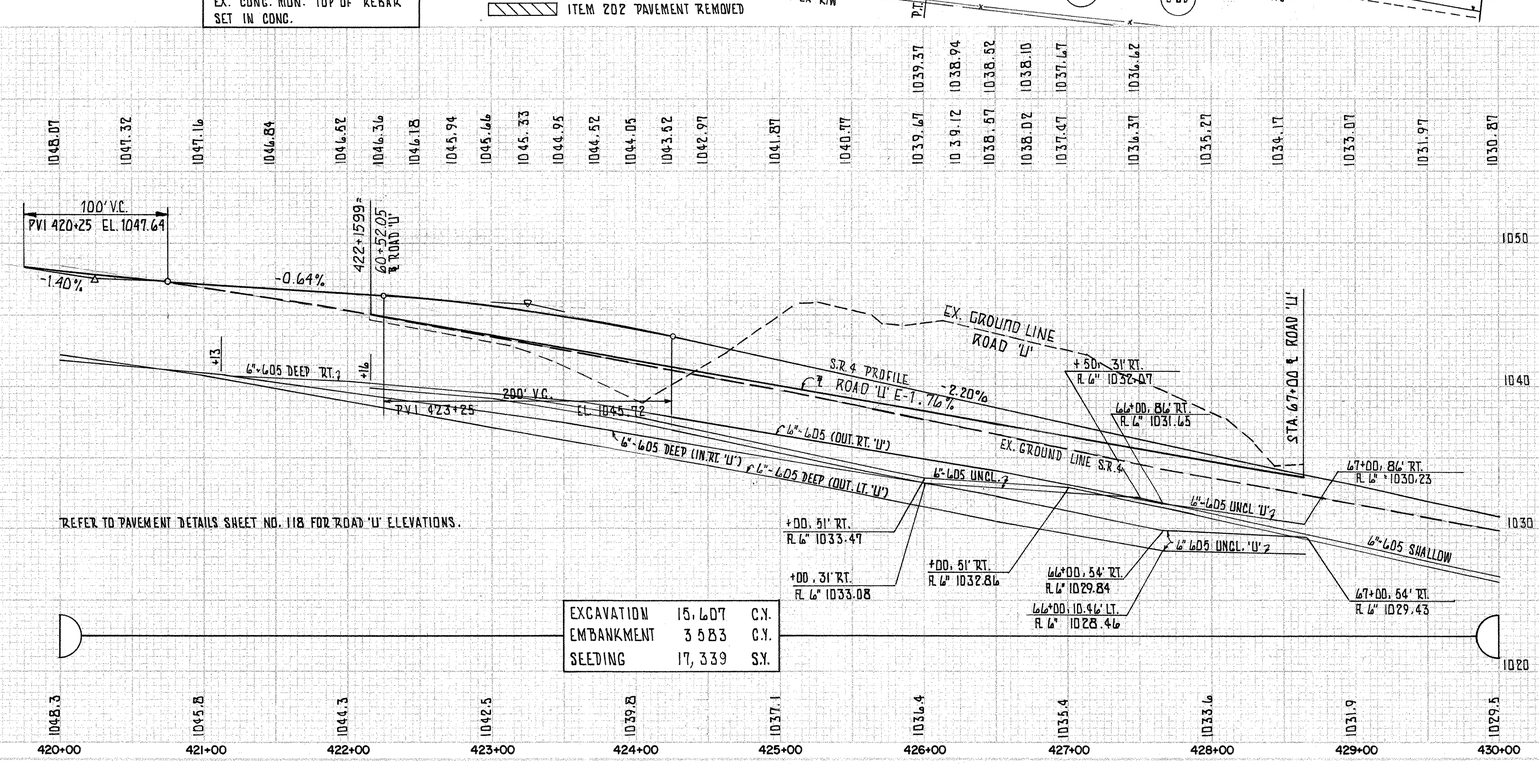
57
225

GLENN W. IRWIN &
CELIA IRWIN

CALCULATIONS

1-D	ITEM 670	TYP.	(860 x 6) ÷ 9 = 574 S.Y.
2-D	ITEM 670	TYP.	(414 x 6) ÷ 9 = 276 S.Y.
3-D	ITEM 670	TYP.	(231 x 6) ÷ 9 = 154 S.Y.
4-D	ITEM 670	TYP.	(505 x 6) ÷ 9 = 337 S.Y.
4-D	ITEM 670	TYP.	(423 x 7.5) ÷ 9 = 363 S.Y.
2-R	ITEM 202	PAVT. REMOVED	[(1000 x 24) + ½ (19+22) 260 + ½ (350 x 28)] ÷ 9 = 3803.3 S.Y.





ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	202 FENCE REMOVED L.F.	202 PAVEMENT REMOVED S.Y.	605 6" UNGLASS PIPE U.D. L.F.	605 6" SHALLOW PIPE U.D. L.F.	605 6" DEEP PIPE U.D. L.F.	606 CORRUGATE TYPE 5 L.F.	606 ANCHOR ASSEMBLY TYPE 'A' EA.
1-D	STA. 420+00 TO 427+00 (U')	LT.							
2-D	STA. 421+75 TO 425+60 (U')	RT.							
3-D	STA. 424+75 TO 427+00 (U')	RT.							
4-D	STA. 420+00 TO 430+00	RT.							
1-GR	STA. 420+12 TO 422+12	LT.						125	1
2-GR	STA. 420+00 TO 421+12	RT.						112	
1-R	STA. 428+10 TO 430+00 (US 36)	LT.	190	3804					
2-R	STA. 420+00 TO 430+00 (US 36)	LT.&RT.			100		764		
1-UD	STA. 420+00 TO 424+00 (U')	LT.			100		651		
2-UD	STA. 421+13 TO 424+00 (U')	RT.			100		948		
3-UD	STA. 424+52 TO 427+00 (U')	RT.			150	250	384		
4-UD	STA. 422+16 TO 430+00	RT.			100	300	600		
5-UD	STA. 420+00 TO 430+00	RT.							
TOTALS			190	3804	550	550	2947	237	1

ROAD 'U' STA. 60+52.05 TO STA. 67+00 + U.S. 36 STA. 420+00 TO STA. 430+0

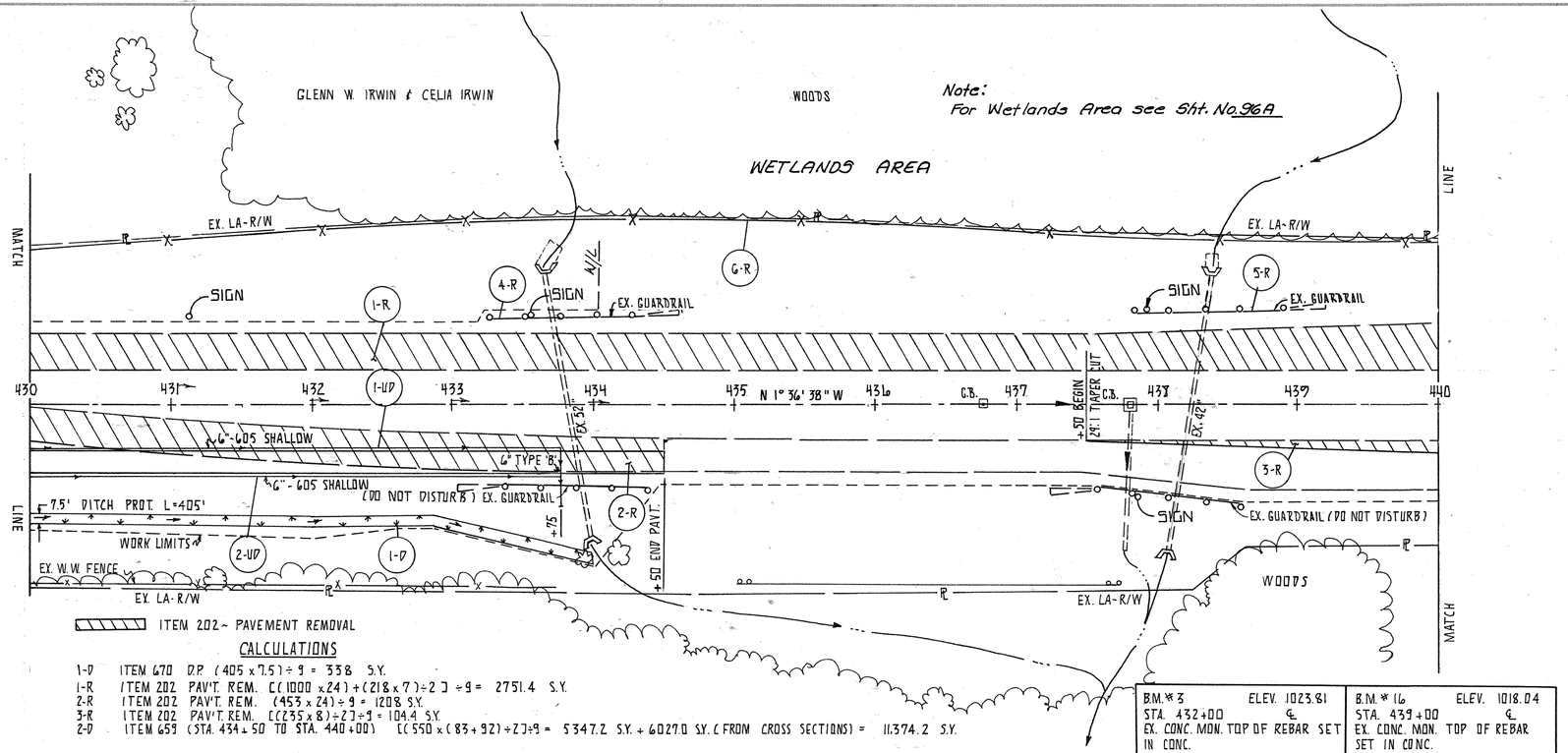
1694
2

CALC:	ALF	9-85
CHK:	PCB	9-85

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

58
225

UNION COUNTY
UNI-33-7.29

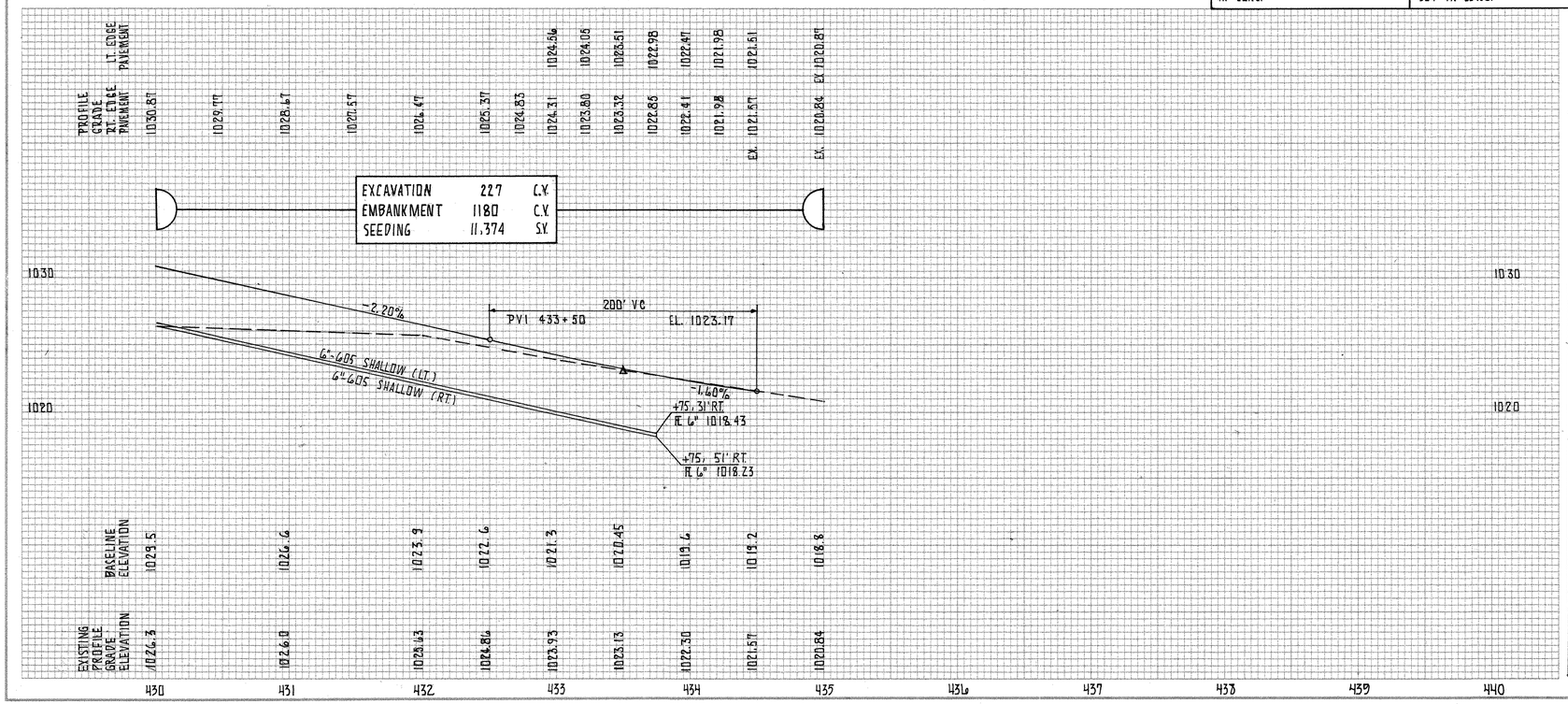


CALCULATIONS

1-D ITEM 670 D.P. (405 x 7.5) ÷ 9 = 338 S.Y.
1-R ITEM 202 PAV'T. REM. [(1000 x 24) + (218 x 7) ÷ 2] ÷ 9 = 2751.4 S.Y.
2-R ITEM 202 PAV'T. REM. (453 x 24) ÷ 9 = 1208 S.Y.
3-R ITEM 202 PAV'T. REM. [(235 x 8) ÷ 2] ÷ 9 = 104.4 S.Y.
2-D ITEM 659 (STA. 434+50 TO STA. 440+00) [(550 x (83 + 92) ÷ 2] ÷ 9 = 5347.2 S.Y. + 6027.0 S.Y. (FROM CROSS SECTIONS) = 11,374.2 S.Y.

B.M. # 3	ELEV. 1023.81
STA. 432+00	℄
EX. CONC. MON. TOP OF REBAR SET IN CONC.	

B.M. # 16	ELEV. 1018.04
STA. 439+00	℄
EX. CONC. MON. TOP OF REBAR SET IN CONC.	



○FOR REUSE OR STORAGE

REF.	STATION TO STATION	SIDE	202 PAV'T. REMOVED	202 GUARD-RAIL REMOVED ○	202 FENCE REMOVED	603 6" CONDUIT TYPE 'B'	603 6" CONDUIT TYPE 'F'	605 6" SHALLOW PIPE UD.	605 BENDS & BRANCHES	670 DITCH EROS. PROT.	SEE SHEET NO.
			S.Y.	L.F.	L.F.	L.F.	L.F.	L.F.	EA.	S.Y.	
1-D	430+00 TO 434+00	RT.								338	
1-UD	430+00 TO 433+75	RT.				20		375	1		23-C
2-UD	430+00 TO 433+75	RT.					10	386	1		23AC
1-R	430+00 TO 440+00	LT.	2752								
2-R	430+00 TO 434+50	RT.	1208								
3-R	437+65 TO 440+00	RT.	105								
4-R	433+29 TO 434+67	LT.		137.5							
5-R	437+86 TO 439+24	LT.		137.5							
6-R	430+00 TO 440+00	LT.			1000						
	TOTALS		4065	275	1000	20	10	761	—	338	

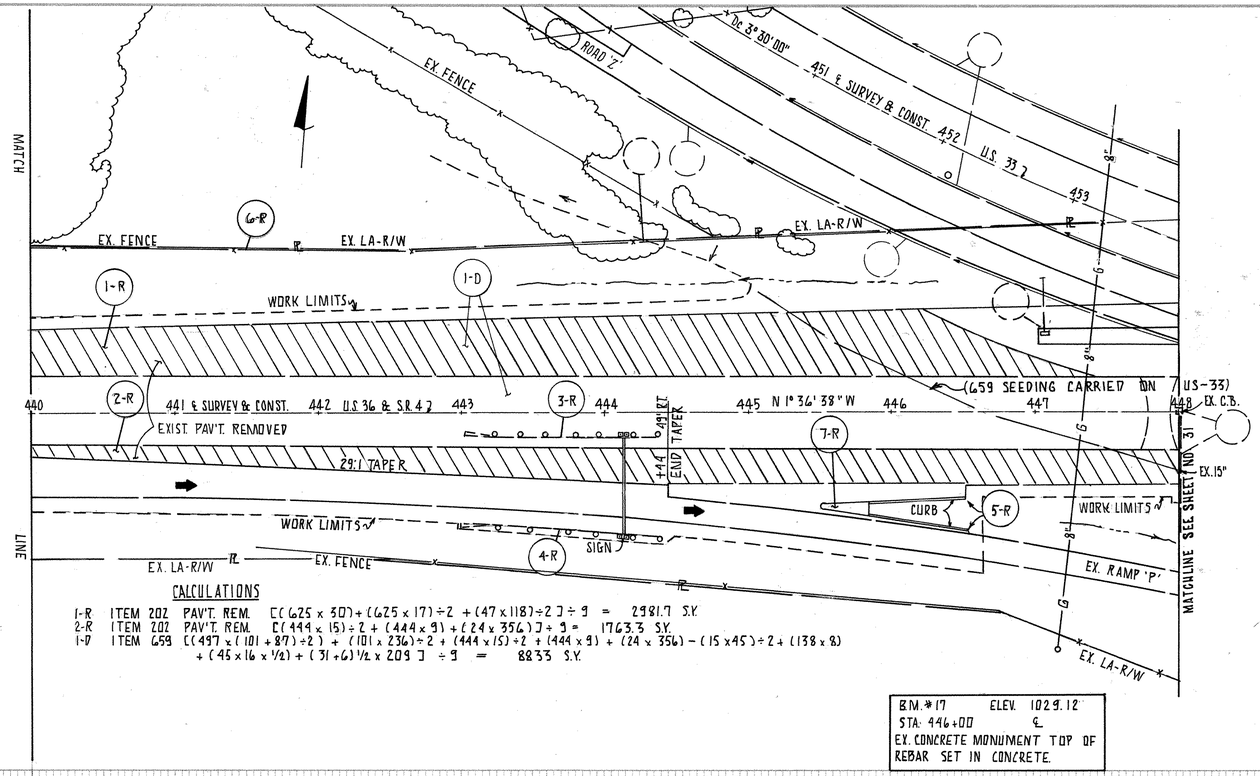
U.S. 36 & S.R. 4 STA. 430+00.00 TO STA. 440+00

CALC: ALE 9/85
CHK: P.C.B 9/85

F.H.W.A. REGION	STATE	PROJECT		
5	OHIO			

59
225

UNION COUNTY
UNI-33-7.29



CALCULATIONS

1-R ITEM 202 PAV'T. REM. [(625 x 30) + (625 x 17) ÷ 2 + (47 x 118) ÷ 2] ÷ 9 = 2981.7 S.Y.
2-R ITEM 202 PAV'T. REM. [(444 x 15) ÷ 2 + (444 x 9) + (24 x 356)] ÷ 3 = 1763.3 S.Y.
1-D ITEM 659 [(497 x (101 + 87) ÷ 2) + (101 x 236) ÷ 2 + (444 x 15) ÷ 2 + (444 x 9) + (24 x 356) − (15 x 45) ÷ 2 + (138 x 8) + (45 x 16 x ½) + (31 + 6) ½ x 209] ÷ 9 = 8833 S.Y.

B.M. # 17 ELEV. 1029.12
STA: 446+00 ℄
EX. CONCRETE MONUMENT TOP OF REBAR SET IN CONCRETE.

⊙ FOR REUSE OR STORAGE

REF.	STATION TO STATION	SIDE	202 PAV'T REMOVED	202 GUARD-RAIL REMOVED ⊙	202 CURB REMOVED	202 FENCE REMOVED	202 STRUCTURE REMOVED			659 SEEDING
			S.Y.	L.F.	L.F.	L.F.	LUMP			S.Y.
1-D	440+00 TO 448+00	LT. & RT.								8833
1-R	440+00 TO 447+43	LT.	2982							
2-R	441+02 TO 448+00	RT.	1763							
3-R	443+02 TO 444+40	RT.		137.5						
4-R	443+02 TO 444+40	RT.		137.5						
5-R	445+85 TO 446+53	RT.			137					
6-R	440+00 TO 444+25	LT.				425				
7-R	445+50 TO 445+83	RT.					LUMP			
	TOTALS		4745	275	137	425	LUMP			8833

U.S. 36 & S.R. 4 STA. 440+00 TO STA. 448+00

SEEDING	
END WIDTH	SQ. YDS.
46	467
38	444
42	367
24	133
24	

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

60
225

UNION COUNTY
UNI-33-7.29

1060
1050

P.G.
4:1
4:1
1047.4
1049.62
419+00
1049.3

ITEM 202 PAVEMENT REMOVED

1060
1050

P.G.
4:1
4:1
1048.7
1051.14
418+00
1049.1

EX. PAVEMENT RESURFACED TO STA 418+00

1060
1050

P.G.
4:1
1048.4
1052.57
417+00
1048.7

1060
1050

P.G.
1048.8
416+00
1048.8

415+50
1060
1050

P.G.
BEGIN WORK
STA. 415+13
415+00
1050.8

END AREA		VOLUME	
CUT	FILL	CUT	FILL
32	12		
		83	56
13	18		
		50	56
14	12		
		44	22
10	0		
		37	0
10	0		

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

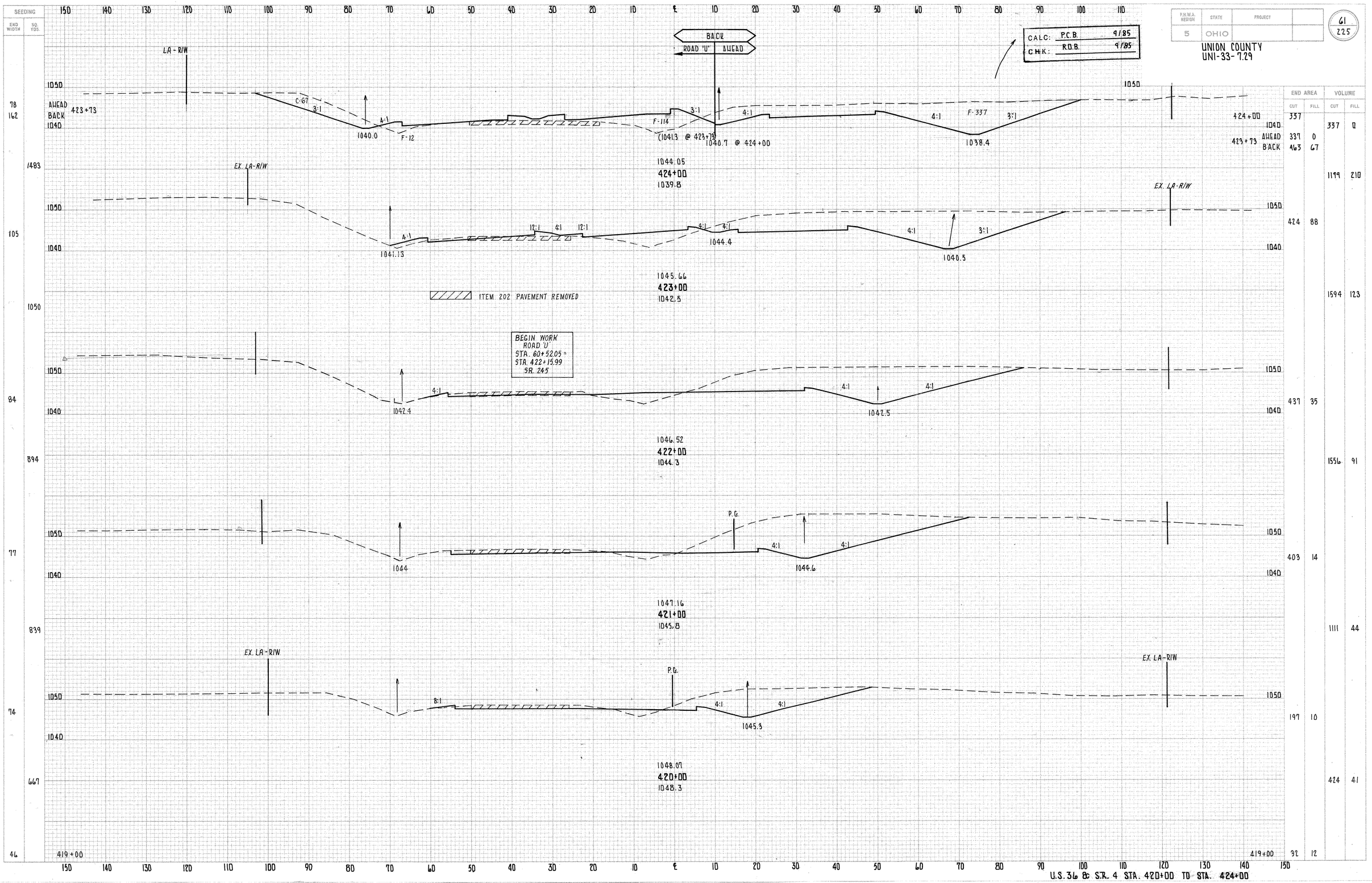
U.S. 36 & S.R. 4 STA. 415+00 TO STA. 419+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

41
225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85



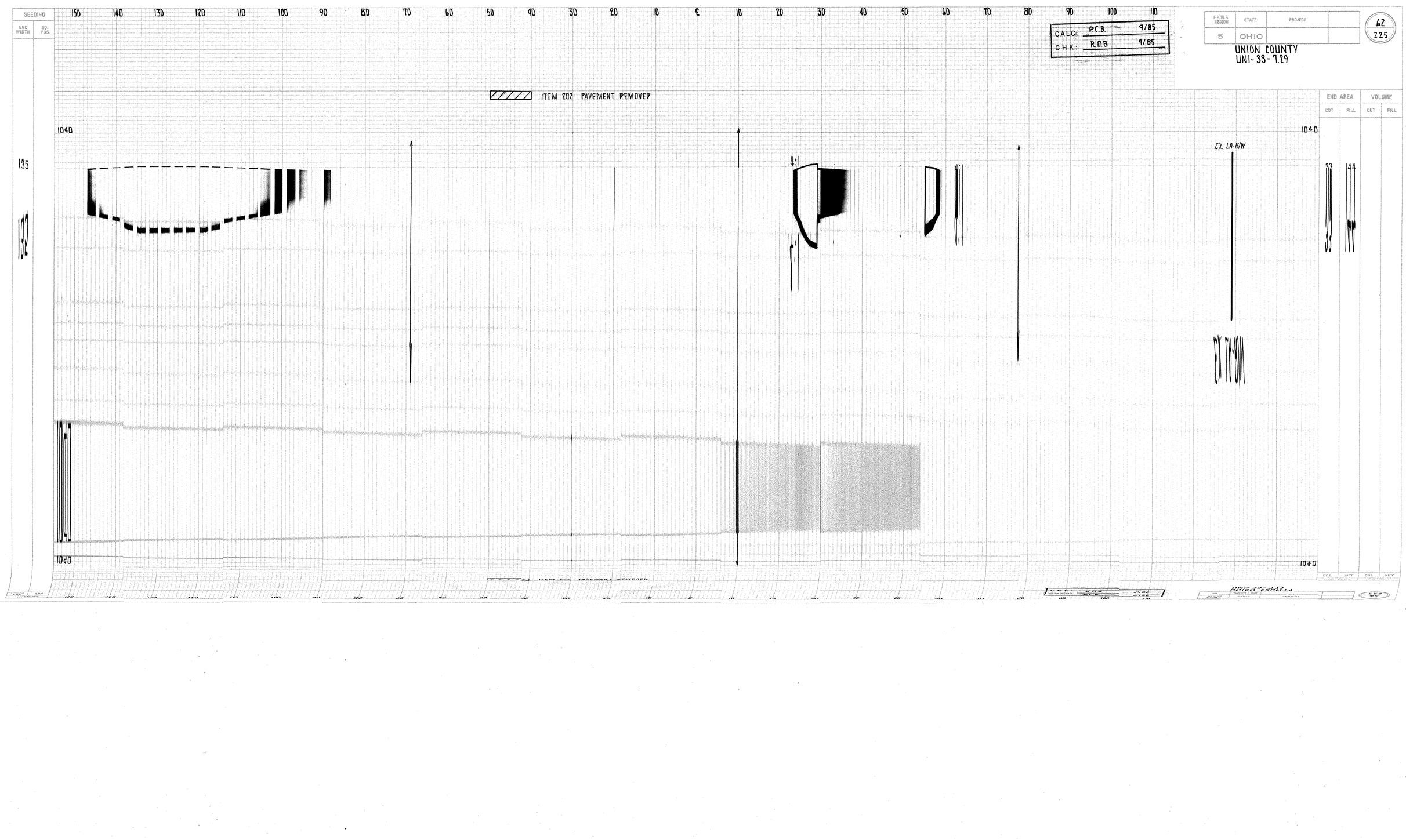
U.S. 36 & S.R. 4 STA. 420+00 TO STA. 424+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

42
225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85



F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

62
225

UNION COUNTY
UNI-33-7.29

ITEM 202 PAVEMENT REMOVED

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
135	1517	33	144	96	583
138	1217	19	171	87	509
81	917	28	104	238	202
84	950	100	5	665	11
87	917	259	1	1104	2
78		337	0		

1033.07
429+00
1031.87

1035.27
428+00
1033.57

1037.47
427+00
1035.37

1039.67
426+00
1036.4

1041.87
425+00
1037.1

1040
1030
1050
4:1
6:1
1029.0
1031.6
1034.1
1035.5
1037.0
1027.9
1030.0
1032.1
1034.2
1036.3
EX. LR-R/W
LR-R/W
ROAD "U"

424+00
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

U.S. 36 & S.R. 4 STA. 425+00 TO STA. 429+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

63
225

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

UNION COUNTY
UNI-33-7.29

ITEM 202 PAVEMENT REMOVED

SEEDING END WIDTH	SEEDING SQ. YDS.	
80	1061	
111	1233	
111	1378	
137	1511	
135	1500	
135		

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
5	11		
		26	106
9	46		
		44	261
15	95		
		74	369
25	104		
		74	428
15	127		
		89	502
33	144		

1022.41
434+00
1019.6
20'-6" TYPE 'B' @ 1.00%
11'-6" 605 U.D @ 1.00%
10'-6" TYPE 'F' @ 1.00%
3.3:1
+75.31' RT
ft 6" 1018.43
+75.51' RT
ft 6" 1018.23
+75.72' RT
ft 6" 1018.02
1007.0
EX. LA-R/W
1020
1010

1024.31
433+00
1021.3
4:1
4:1
1016.5
1020
1010

1026.47
432+00
1023.9
4:1
4:1
1019.1
1030
1020

1025.8
9:1
4:1
4:1
1022.0
1030
1020

1028.67
431+00
1026.6

1028.4
14:1
4:1
4:1
1024.5
EX. LA-R/W
1030
1020

1030.87
430+00
1029.5

429+00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

U.S. 36 & S.R. 4 STA. 430+00 TO STA. 434+00

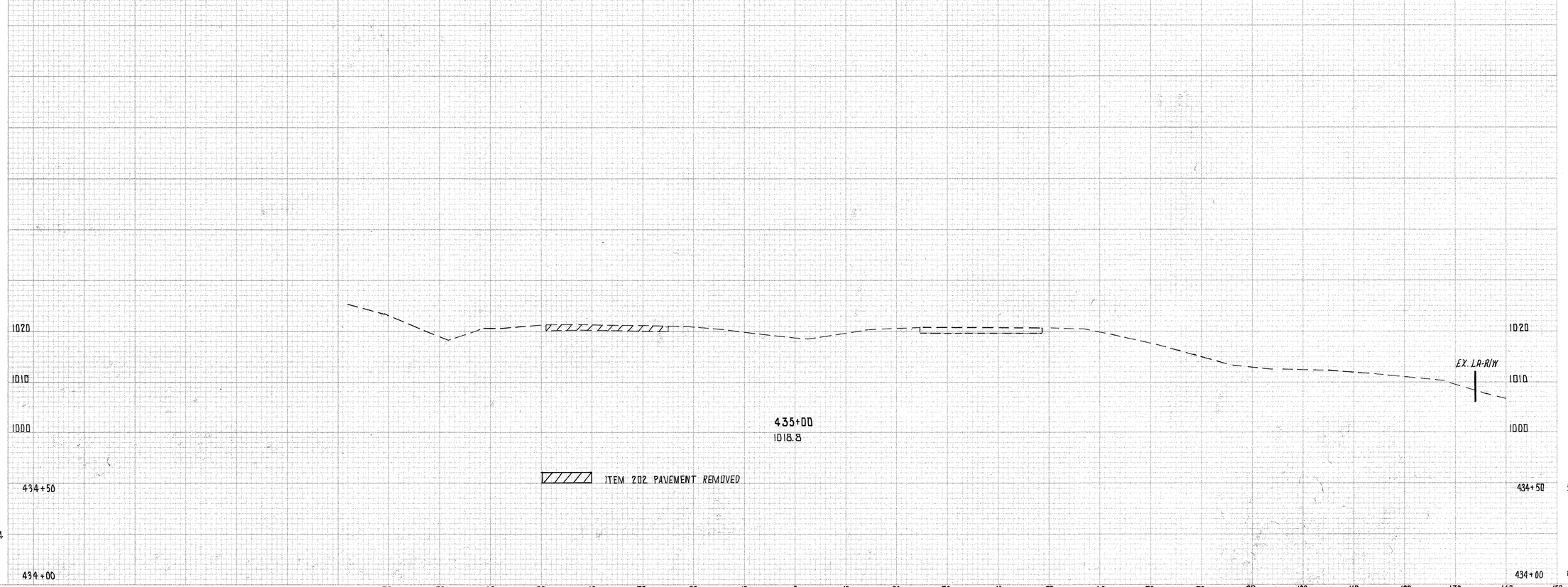
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

64
225

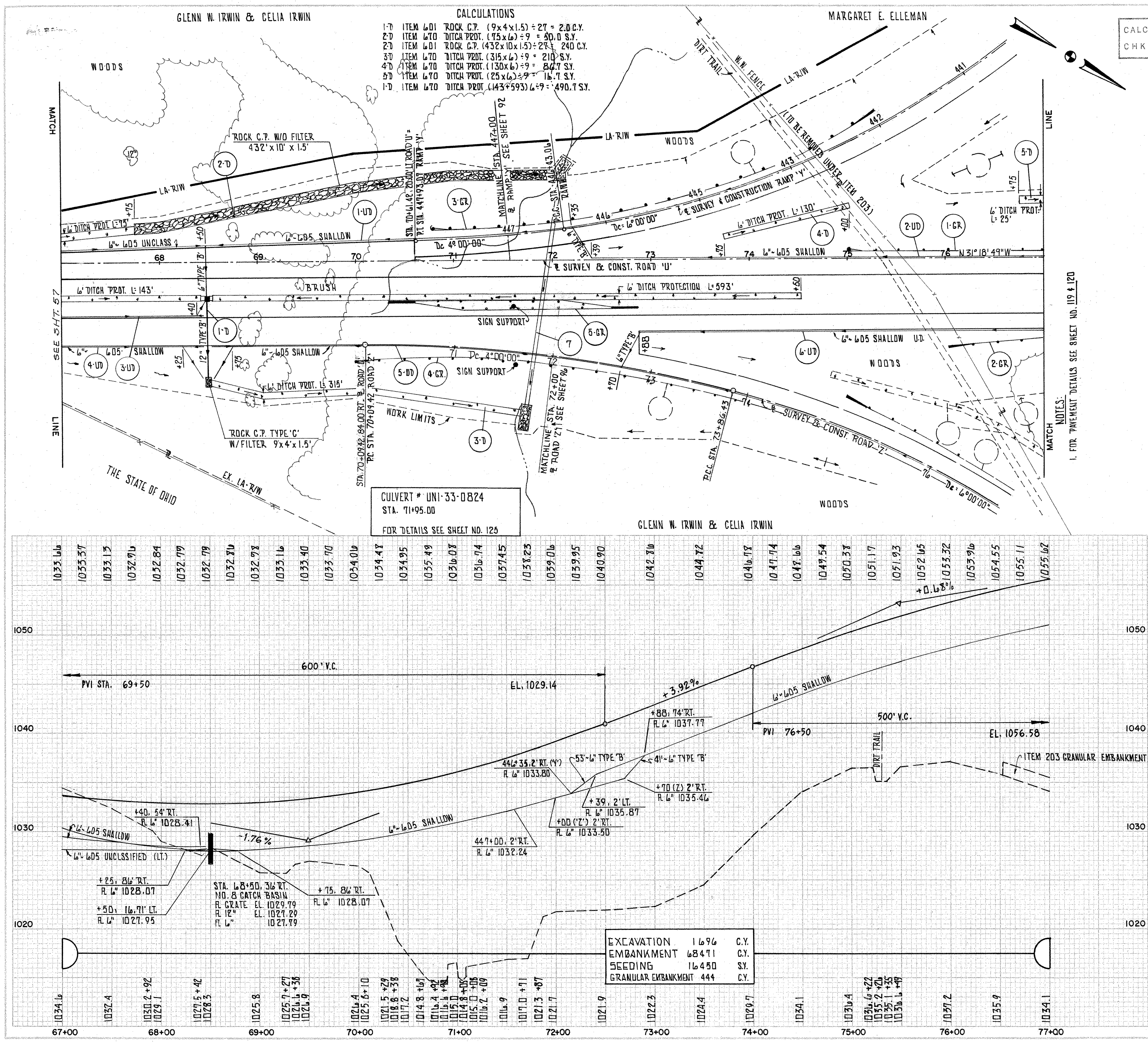
UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.O.B. 9/85

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS	CUT	FILL	CUT	FILL
72		5	6		
844				9	16
80		5	11		



U.S. 36 & S.R. 4 STA. 435+00



ESTIMATED QUANTITIES

* W/FILTER

REF. NO.	STATION TO STATION	SIDE	601* ROCK CHANNEL PROT. TYPE 'C' C.Y.	602 CONCRETE MASONRY C.Y.	603 6" CONDUIT TYPE 'B' L.F.	603 6" CONDUIT TYPE 'F' L.F.	603 12" CONDUIT TYPE 'B' L.F.	604 NO. 8 CATCH BASIN EA.	605 6" SHALLOW PIPE U.D. L.F.	605 6" UNCL. PIPE U.D. L.F.	605 BENDS & BRANCHES EA.	606 GUARDRAIL TYPE 5 L.F.	606 ANCHOR ASS'Y. BRIDGE DESIGN TYPE 'A' EA.	606 ANCHOR ASSEMBLY TYPE 'A' EA.	606 ANCHOR ASSEMBLY TYPE 'T' EA.	670 DITCH EROSION PROTECTION S.Y.	SEE SHEET NO.
1-D	STA. 67+00 TO 74+50	RT.	2.0	0.21			82	1								491	71
2-D	STA. 67+00 TO 72+02	LT.	240													50	
3-D	STA. 68+52 TO 71+65	RT.														210	
4-D	STA. 73+75 TO 75+00	LT.														87	
5-D	STA. 76+75 TO 77+00	LT.														17	
1-GR	STA. 75+03.71 TO 77+00.00	LT.										196.29			1		
2-GR	STA. 76+04.67 TO 77+00.00	RT.										70.33		1			
3-GR	STA. 70+54.49 TO 447+00 ('Y')	LT.										75.00			1		
4-GR	STA. 70+00.00 TO 72+00.00 ('Z')	RT.										175.00		1			
5-GR	STA. 70+35.00 TO 72+85.00	RT.										400.00	2				
1-UD	STA. 67+00.00 TO 447+00.00 ('Y')	LT.			53				305	150	1						23-C
2-UD	STA. 446+35.00 ('Y') TO 77+00.00	LT.			38				461		2						23-F
3-UD	STA. 67+00.00 TO 68+50.00	RT.				10			156		1						23 E,D
4-UD	STA. 67+00.00 TO 68+46.00	RT.				10			174		1						23-E
5-UD	STA. 68+54.00 TO 72+00.00 (Z)	RT.				10			374		1						23-E
6-UD	STA. 72+70.00 ('Z') TO 77+00.00	RT.			41				412		2						23-F
TOTALS			242	0.21	132	30	82	1	1882	150		916.62	2	2	2	855	

ROAD 'U' STA. 67+00 TO STA. 77+00

CALC:	R.O.B.	9-85
CHK:	R.O.B.	9-85

UNION COUNTY
UNI - 33 - 7.29

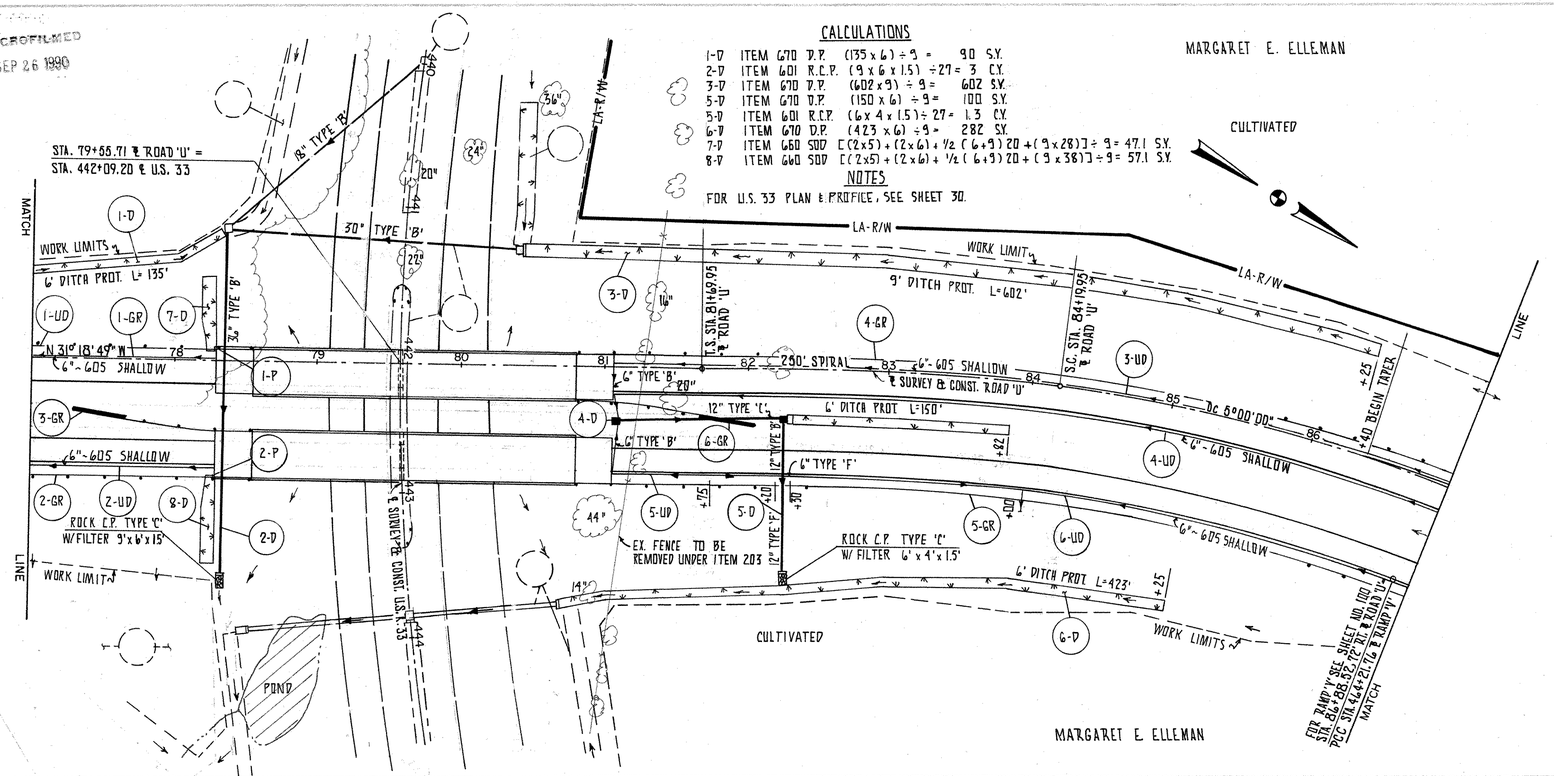
FED. ROAD DIVISION	STATE	PROJECT		66
5	OHIO			225

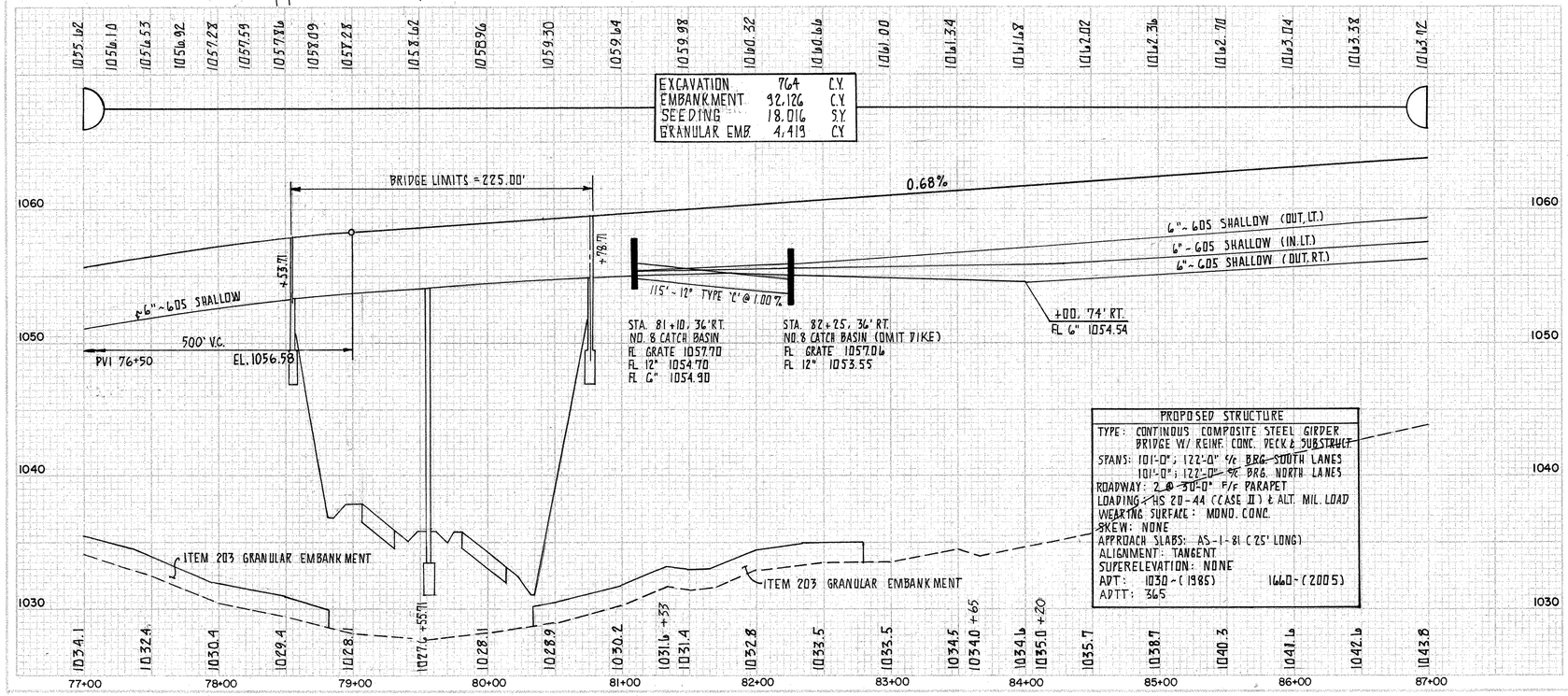
CALCULATIONS

1-D	ITEM 670	D.P.	(135 x 6) ÷ 9 =	90 S.Y.
2-D	ITEM 601	R.C.P.	(9 x 6 x 1.5) ÷ 27 =	3 C.Y.
3-D	ITEM 670	D.P.	(602 x 9) ÷ 9 =	602 S.Y.
5-D	ITEM 670	D.P.	(150 x 6) ÷ 9 =	100 S.Y.
5-D	ITEM 601	R.C.P.	(6 x 4 x 1.5) ÷ 27 =	1.3 C.Y.
6-D	ITEM 670	D.P.	(423 x 6) ÷ 9 =	282 S.Y.
7-D	ITEM 660	SOD	[(2x5) + (2x6) + ½ (6+9) 20 + (9 x 28)] ÷ 9 =	47.1 S.Y.
8-D	ITEM 660	SOD	[(2x5) + (2x6) + ½ (6+9) 20 + (9 x 38)] ÷ 9 =	57.1 S.Y.

NOTES

FOR U.S. 33 PLAN & PROFILE, SEE SHEET 30.





ESTIMATED QUANTITIES

REF NO	STATION TO STATION	SIDE	601 ROCK C.P. TYPE 'C' W/ FILTER C.Y.	602 CONCRETE MASONRY C.Y.	** 707.05 TYPE 'C' 603 6" CONDUIT TYPE 'B' L.F.	* 706.02 603 6" CONDUIT TYPE 'F' L.F.	2150 P-LOAD OR 707.14 603 12" CONDUIT TYPE 'B' L.F.	603 12" CONC. TYPE 'C' L.F.	603** 12" CONC. TYPE 'F' L.F.	603 36" CONC. TYPE 'F' L.F.	604 NO. 8 CATCH BASIN EA.	605 6" SHALLOW PIPE LINE L.F.	605 BENDS & BRANCH EA.
1-D	77+00 TO 78+33	LT. L&R											
2-D	78+35	LT.	3	0.76									
3-D	80+44 TO 86+25	LT.								238			
4-D	81+10 TO 82+25	RT.									1		
5-D	82+25 TO 83+82	RT.	1.3	0.21				115	65		1		
6-D	80+69 TO 85+25	RT.					44						
7-D	78+25.71	LT. RT.											
8-D	78+26.67	LT. RT.											
1-UD	77+00 TO 78+53.71	LT.										128	
2-UD	77+00 TO 78+54.67	RT.										128	
3-UD	77+28.67 TO 78+54.67	RT.										595	
4-UD	80+74.91 TO 87+00	LT.										595	
5-UD	80+84.67 TO 84+83.52	RT.										70	
6-UD	80+73.91 TO 82+04.71	RT.										521	
1-7	79+27.71 TO 78+24.71	LT.											
2-7	78+28.67 TO 78+24.67	RT.											
						20							
						18							
						38							
							2.0						
TOTALS			4.3	0.97	76	20	44	115	65	238	2	2037	—

ROAD 'U' STA. 77+00 TO STA. 87+00

CALCULATIONS

1-D ITEM 670 D.P. (42×4)÷9 = 28 S.Y.
1-D ITEM 601 R.C.P. (6×4×1.5)÷27 = 1.3 C.Y.
2-D ITEM 660 SOD [(5×2)+(4×2)+½(4×9) 20 + (9×21)]÷9 = 40.1 S.Y.
3-D ITEM 660 SOD [(5×2)+(4×2)+½(4×9) 20 + (9×18)]÷9 = 37.1 S.Y.
3-R ITEM 656 ROADSIDE CLEANUP ½(190×268)÷1000 = 25.5 M.S.F.

MARGARET E. ELLEMAN

DOROTHY C. REALL

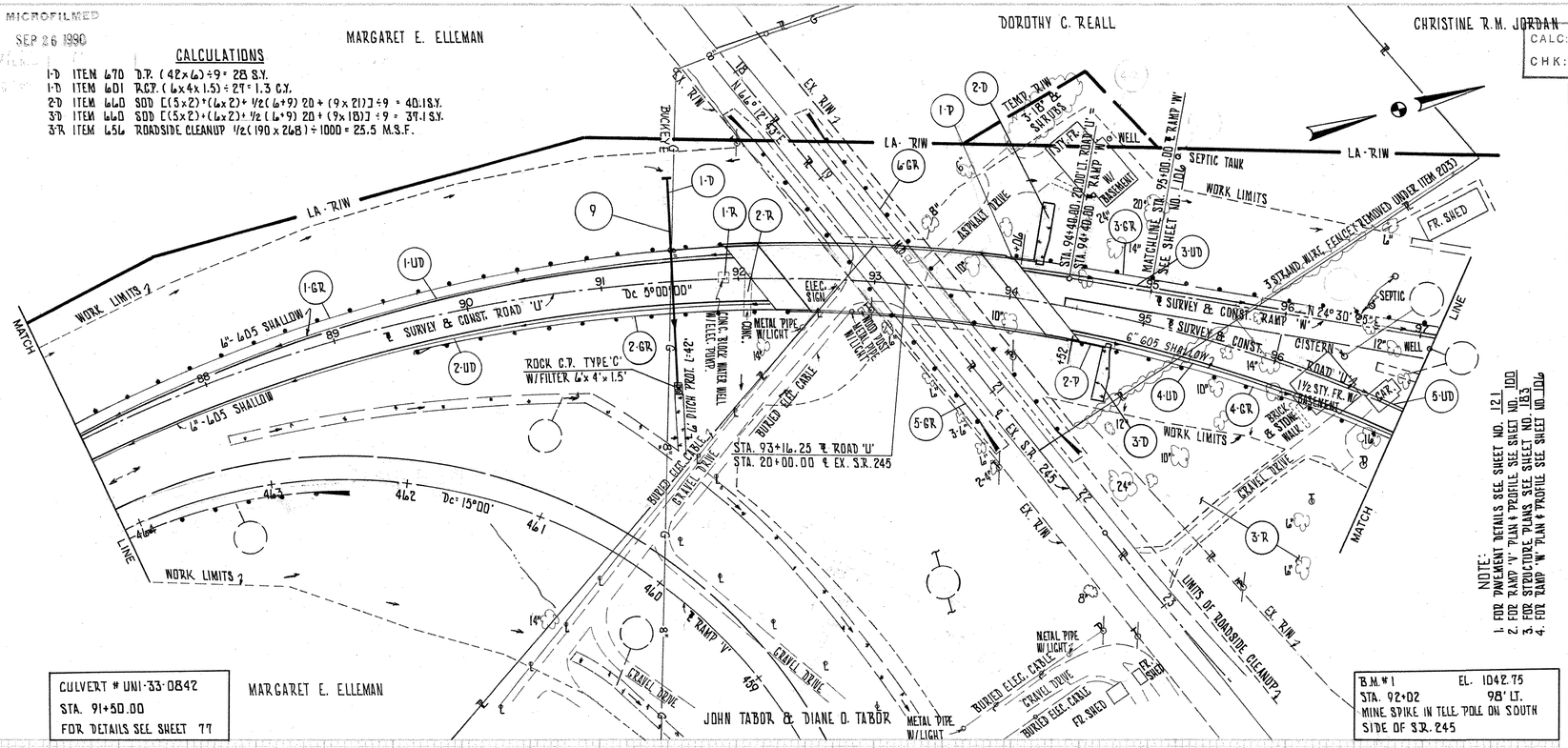
CHRISTINE R.M. JORDAN

CALC: P.C.B. 9/95
CHK: R.O.B. 9/95

UNION COUNTY
UNI-33-7.29

FED. RD. DIVISION	STATE	PROJECT		
5	OHIO			

67
225

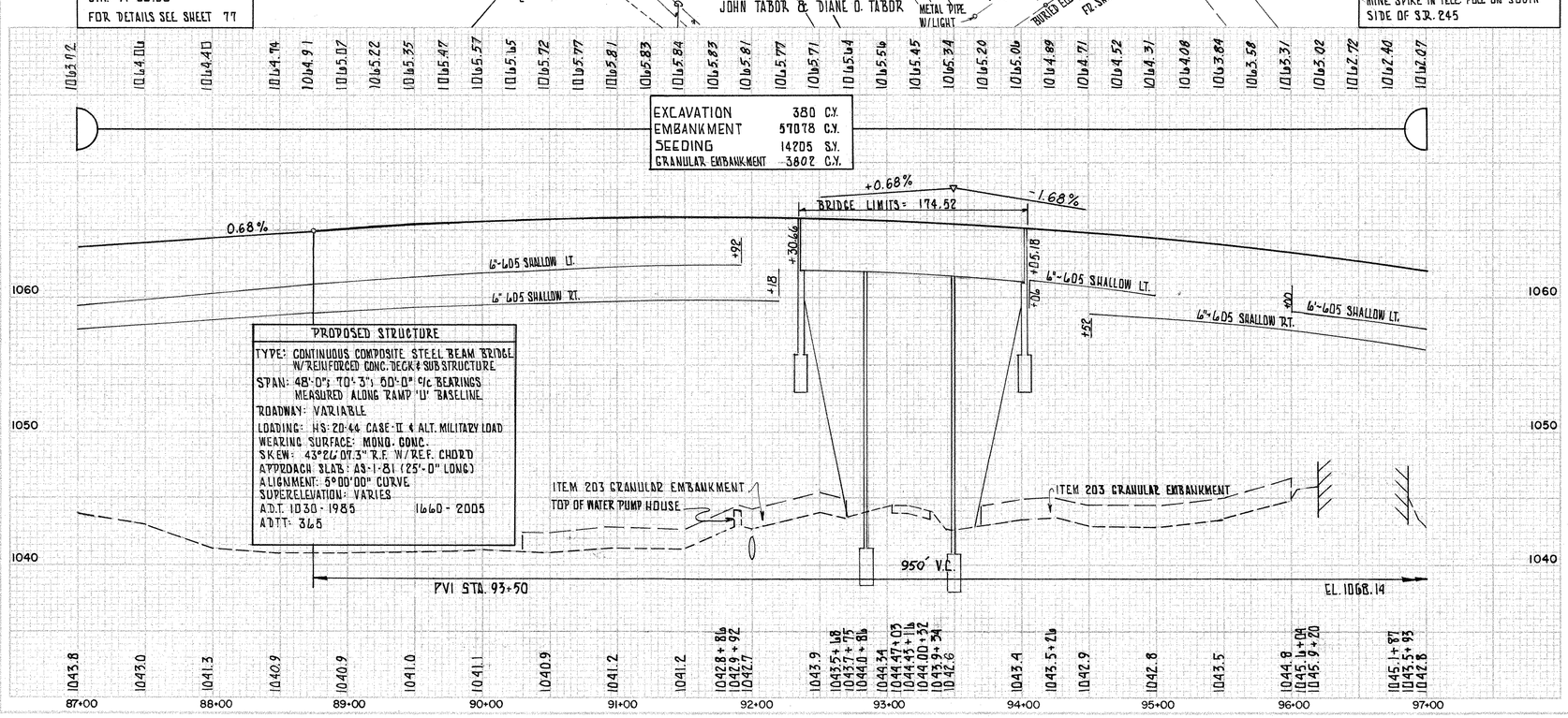


NOTE:
1. FOR PAVEMENT DETAILS SEE SHEET NO. 121
2. FOR RAMP 'V' PLAN & PROFILE SEE SHEET NO. 100
3. FOR STRUCTURE PLANS SEE SHEET NO. 193
4. FOR RAMP 'W' PLAN & PROFILE SEE SHEET NO. 106

CULVERT # UNI-33-0842
STA. 91+50.00
FOR DETAILS SEE SHEET 77

MARGARET E. ELLEMAN

B.M. # 1 EL. 1042.75
STA. 92+02 98' LT.
MINE SPIKE IN TELE. POLE ON SOUTH SIDE OF S.R. 245



ROAD 'U' STA. 87+00 TO STA. 97+00

ESTIMATED QUANTITIES

REF NO	STATION TO STATION	SIDE	202 STRUCTURE REMOVED	202 SPECIAL DRILLED WELL ABANDON	601 ROCK C.P. TYPE 'C' W/FILTER	602 CONCRETE MASONRY	603 X CONDUIT TYPE 'A'	605 4" CHANPVNL SHALLOW TYPE U.D.	606 CHANPVNL TYPE 5	
			LUMP	EA.	C.Y.	C.Y.	L.F.	L.F.	L.F.	
1-D	STA. 91+50.00	LT.			1.3	0.44	148			
2-D	STA. 94+19.5	LT.								
3-D	STA. 94+72.35	RT.								
1-GR	STA. 84+00.00 TO 91+86.00	LT.							588	
2-GR	STA. 89+62.35 TO 92+37.35	RT.							275	
3-GR	STA. 93+93.50 TO 95+00.00	LT.							106.5	
4-GR	STA. 94+44.35 TO 97+00.00	RT.							253.65	
5-GR	STA. 181+22.5 TO 21+55 (SR 245)	RT.							242.5	
6-GR	STA. 181+55 TO 21+80 (SR 245)	LT.							275	
1-P	STA. 94+00.00 TO 94+19.5	LT.								
2-P	STA. 94+35.35 TO 94+72.35	RT.								
1-R	STA. 91+90		1							
2-R	STA. 92+08		1							
3-R	STA. 94+35 TO 97+00	RT.	LUMP							
1-UD	STA. 87+00 TO 91+92	LT.							492	
2-UD	STA. 87+00 TO 92+18	RT.							518	
3-UD	STA. 94+04 TO 95+00 (W)	LT.							94	
4-UD	STA. 94+52 TO 97+00	RT.							248	
5-UD	STA. 94+00 TO 97+00	LT.							100	
			LUMP	1	1.3	0.44	148	1452	1760.65	

* 15" TOU.02 2500 D LOAD DR. 18" TOU.01 (0.109) TOT.04 (0.109) TOT.05 (0.109) TOT.09 OR TOT.21

4	1	4	38.5	28	77	28				
				26						
			19.5							
			19							
		1								
		1								
		1								
		2								
		2								
4	1	4	38.5	28	77	28				

606 ANCHOR ASS'Y TYPE 'M'	606 ANCHOR ASSEMBLY TYPE 'T'	606 BARRIER TERMINAL ASS'Y TYPE 1	609 CURB TYPE 6	656 ROADSIDE CLEAN UP	660 REINFORCED SODDING	670 DITCH EROSION PROTECTION	SEE SHEET NO.
EA.	EA.	L.F.	L.F.	M-S.F.	S.Y.	S.Y.	
					40	28	77
					37		

MICROFILMED
SEP 26 1990

CALC: PCB 9-85
CHK: ROB 9-85

UNION COUNTY
UNI-33-7.29

FED. RD. DIVISION	STATE	PROJECT		
5	OHIO			

68
225

CHRISTINE R.M. JORDAN

DENIGHT MARION SHULER & RACHEL M. SHULER

JAMES H. GOODWIN & KARLA A. GOODWIN

JAMES GOODWIN & KARLA GOODWIN

MARILYN DONNA COZAD WILLIAMS

THE STATE OF OHIO

U.G. TELEPHONE CABLE

LD-D1N

WORK LIMITS

MATCH LINE

98 ℄ RAMP 'W'

C.S. STA. 97+68.35 ℄ ROAD 'U'

S.T. STA. 100+18.35 ℄ ROAD 'U'

98 6"-605 SHALLOW 100 ℄ ROAD 'U' 101 N 48° 36' 24" E 102 103 104 105 106

STA. 105+93.88 ℄ ROAD 'U' = STA. 44+55.90 ℄ EXIST. 08.33

12" 8" 6"-605 SHALLOW

6' DITCH PROT. L= 195'

8" 6"

NOTE: ALL EX FENCE WITHIN THE WORK LIMITS TO BE REMOVED UNDER ITEM 203.

1½ STY. METAL+ FR. BLDG.

GRAVEL DRIVE

EX. R/W

M.B.

W.W. FENCE

EX. R/W

EX. L.A.

CHAIN LINK FENCE

ASPHALT DRIVE

EX. PULL BOX

DO NOT DISTURB INLET; GRADE TO DRAIN.

SCATTERED 6" TREES

LIMIT OF ROADSIDE CLEANUP

SIGN

CONC. WALL

WALL 'Y'

WALL X

SHRUBS

SMALL TREES ORNAMENTAL

CISTERN

SEPTIC

WELL

1½ STY. FR.

2 STY. FR. W/BASEMENT

CONC. DRIVE

CALCULATIONS

1-D	ITEM	670	DITCH PROT. (195 x 6) ÷ 9 =	130 S.Y.
2-D	ITEM	660	SOD [(5x2)+(6x2)+½(6+9)20+(9x24)]÷9 =	431 S.Y.
5-R	ITEM	202	(28x3)+(20x7) =	224 S.Y.
8-R	ITEM	202	(35x3)+(38x35) =	238 S.Y.
11-R	ITEM	656	(27.2"x50x50)÷1000 =	68 M.S.F.
12-R	ITEM	656	(43.4"x50x50)÷1000 =	108.5 M.S.F.

NOTES:
1. FOR RAMP 'W' PLAN & PROFILE SEE SHEET 106.
2. FOR STRUCTURE DETAILS SEE SHEET 197. & RETAINING WALLS SHEET 198 PLAN VIEW

B.M. # 4 ELEV. 1030.11
EX. U.S. 33 STA. 42+86 76' LT.
R.R. SPIKE IN NORTH SIDE OF POWER POLE.
* L 6643 ~ 259.

1062.07 1061.72 1061.35 1060.97 1060.57 1060.18 1059.78 1058.91 1058.06 1057.65 1057.26 1056.90 1056.54 1056.24 1055.94 1055.67 1055.42 1054.94 1054.46 1053.98 1053.50 1053.02 1052.54 1052.06 1051.58 1051.10 1050.62 1050.19

-1.68%

200 V.C.
PVI 100+50 EL. 1056.38

6"-605 SHALLOW (LT.)
6"-605 SHALLOW (RT.)

-0.96%

+00.18' RT. ℄ 6" 1051.46

+07.2' LT. ℄ 6" 1047.38

BRIDGE LIMITS 110.60'

+34.69 445.29 +69

6"-605 SHALLOW

1050 1040 1030

ITEM 203 GRANULAR EMBANKMENT

ITEM 203 GRANULAR EMBANKMENT

PROPOSED STRUCTURE

TYPE:	COMPOSITE STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND ABUTMENTS.
SPAN:	105'-6" ℄ BRGS.
ROADWAY:	30'-0" ℄ PARAPET
LOADING:	HS 20-44 (CASE II) & ALT. MIL. LOAD
WEARING SURFACE:	MONO. CONCRETE
SKEW:	28° 01' 47" RT. FWD.
APPROACH SLAB:	AS-1-81 (25'-0" LONG)
ALIGNMENT:	TANGENT
SUPERELEVATION:	NONE
ADT:	660 ~ 1985 1060 ~ 2005
ADTT:	235

EXCAVATION	256	C.Y.
EMBANKMENT	45,607	C.Y.
SEEDING	13,179	S.Y.
GRANULAR EMB.	1449	C.Y.

97+00 98+00 99+00 100+00 101+00 102+00 103+00 104+00 105+00 106+00 107+00

1042.8 1042.0+17 1041.1+25 1039.8 1038.7+18 1037.2 1036.6 1036.8 1036.5 1035.9 1035.6 1035.9 1036.1 1036.4+98 1036.8+44 1036.4+73 1034.4+83 1034.7+89 1034.1 1034.5+23 1034.1+11 1034.0+32 1035.6.1 1036.0+83 1036.0+25 1035.5+48 1035.8+55 1034.9+67 1034.2 1031.2 1030.44+54 E.P. 1030.89+72 ℄ 1031.13+87 E.P. 1031.44+92 1031.24 1030.93+00.2 E.P. 1031.14+16 ℄ 1030.85+32 E.P. 1030.8+34 1030.1+40 1029.0+55 1028.3+46 1029.0

STA. 97+00 TO STA. 107+00

ROAD 'U'

ESTIMATED QUANTITIES

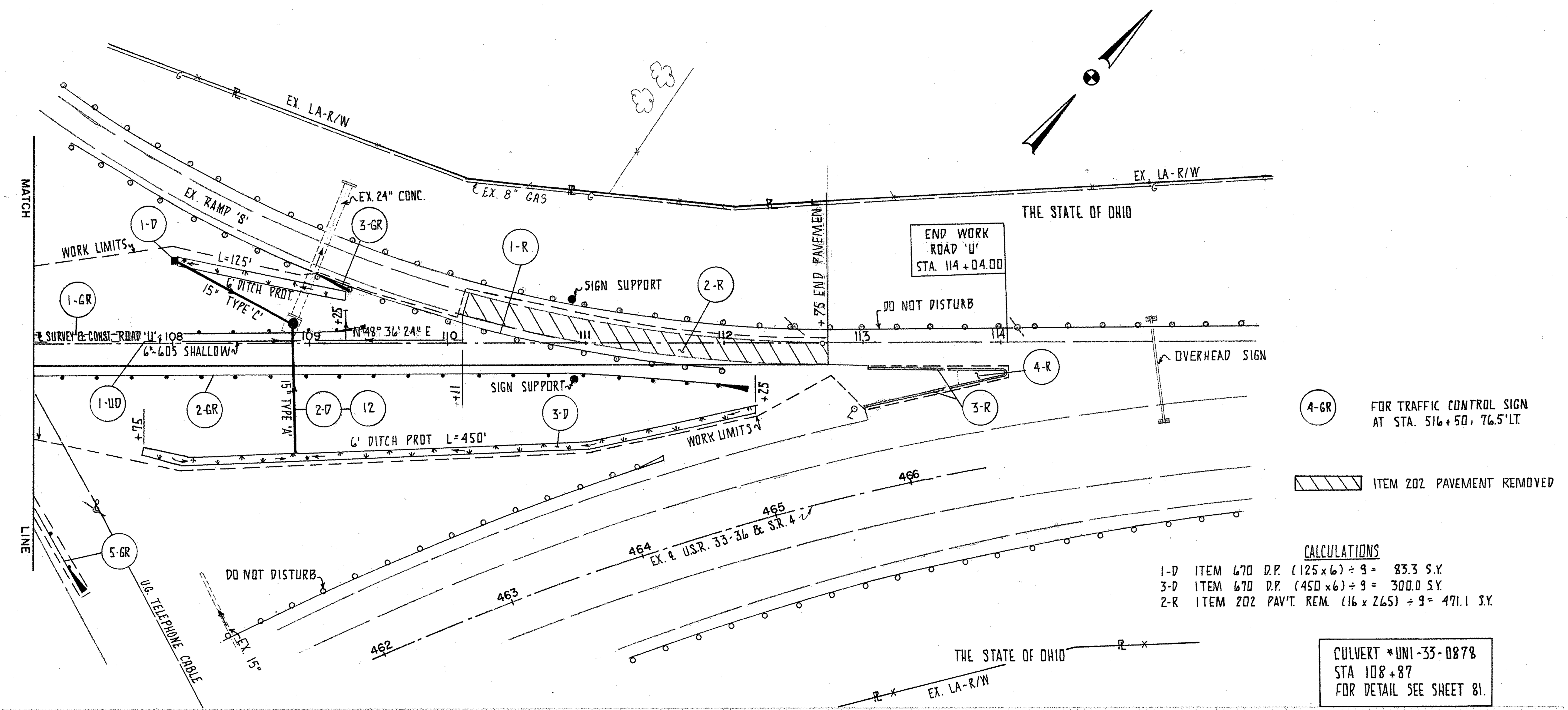
REF NO.	STATION TO STATION		SIDE	202 PIPE REMOVED 24" OR UNDER LF	202 SEPTIC TANK REMOVED EA.	202 WALK REMOVED S.F.	202 FENCE REMOVED L.F.	202 STRUCTURE REMOVED LUMP	603 6" CONDUIT TYPE 'F' L.F.	SPECIAL DRILLED WELL ABANDON EA.
1-P	106+6591	TO 106+6691	LT.							
1-D	97+25	TO 99+25	RT.							
2-D	106+69		LT.							
1-UD	97+00	TO 105+07	LT.						10	
2-UD	97+00	TO 101+00	RT.						10	
3-UD	106+69	TO 107+00	LT.							
1-GR	97+00	TO 105+46.04	RT.							
2-GR	99+44.81	TO 105+29.81	LT.							
3-GR	106+41.41	TO 107+00	LT.							
4-GR	106+57.64	TO 107+00	RT.							
5-GR	97+93	TO 99+44	RT.							
6-GR	99+26	TO 99+46	LT.							
1-R	103+45	TO 103+88	RT.	48						
2-R	103+33		LT.		1					
3-R	103+59		LT.					LUMP	1	
4-R	103+66		LT.							
5-R	103+60	TO 103+96	LT.			224				
6-R	104+16		LT.					LUMP		
7-R	103+76		LT.		1	238				
8-R	104+12	TO 104+78	LT.						1	
9-R	104+49		LT.				92			
10-R	103+98	TO 104+78	RT.							
11-R	100+00	TO 105+01	LT.							
12-R	97+00	TO 105+20	RT.				663			
13-R	99+98	TO 103+43	RT.				485			
14-R	102+43	TO 105+00	LT.							
TOTALS				48	2	462	1240	LUMP	20	2

REF NO.	STATION TO STATION		SIDE	605 PIPE LD. SHALLOW LF	605 BRANCHES EA.	606 BRIDGE TERMINAL ASSEMBLY TYPE 'S' EA.	606 BRIDGE TERMINAL ASSEMBLY TYPE 'H' EA.	606 ANCHOR ASSEMBLY TYPE 'T' EA.	609 CURB TYPE 6 L.F.	656 ROADSIDE CLEANUP W.SE.	660 REINFORCED SODDING SY.	670 DITCH EROSION PROTECTION S.Y.	SEE SHEET NO.
1-P	106+6591	TO 106+6691	LT.						1				
1-D	97+25	TO 99+25	RT.									130	
2-D	106+69		LT.								43		68,123C 123B
1-UD	97+00	TO 105+07	LT.										
2-UD	97+00	TO 101+00	RT.										
3-UD	106+69	TO 107+00	LT.										
1-GR	97+00	TO 105+46.04	RT.					1					
2-GR	99+44.81	TO 105+29.81	LT.										
3-GR	106+41.41	TO 107+00	LT.										
4-GR	106+57.64	TO 107+00	RT.										
5-GR	97+93	TO 99+44	RT.			1	1						
6-GR	99+26	TO 99+46	LT.										
1-R	103+45	TO 103+88	RT.	813	1								
2-R	103+33		LT.	404	1								
3-R	103+59		LT.	31									
4-R	103+66		LT.										
5-R	103+60	TO 103+96	LT.			2							
6-R	104+16		LT.										
7-R	103+76		LT.			1							
8-R	104+12	TO 104+78	LT.										
9-R	104+49		LT.										
10-R	103+98	TO 104+78	RT.										
11-R	100+00	TO 105+01	LT.										
12-R	97+00	TO 105+20	RT.										
13-R	99+98	TO 103+43	RT.										
14-R	102+43	TO 105+00	LT.										
TOTALS				1248	2	3	4	1	1	177	43	130	2

CALC:	P.C.B.	9-85
CHK:	R.O.B.	9-85

UNION COUNTY
UNI-33-7.29

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		



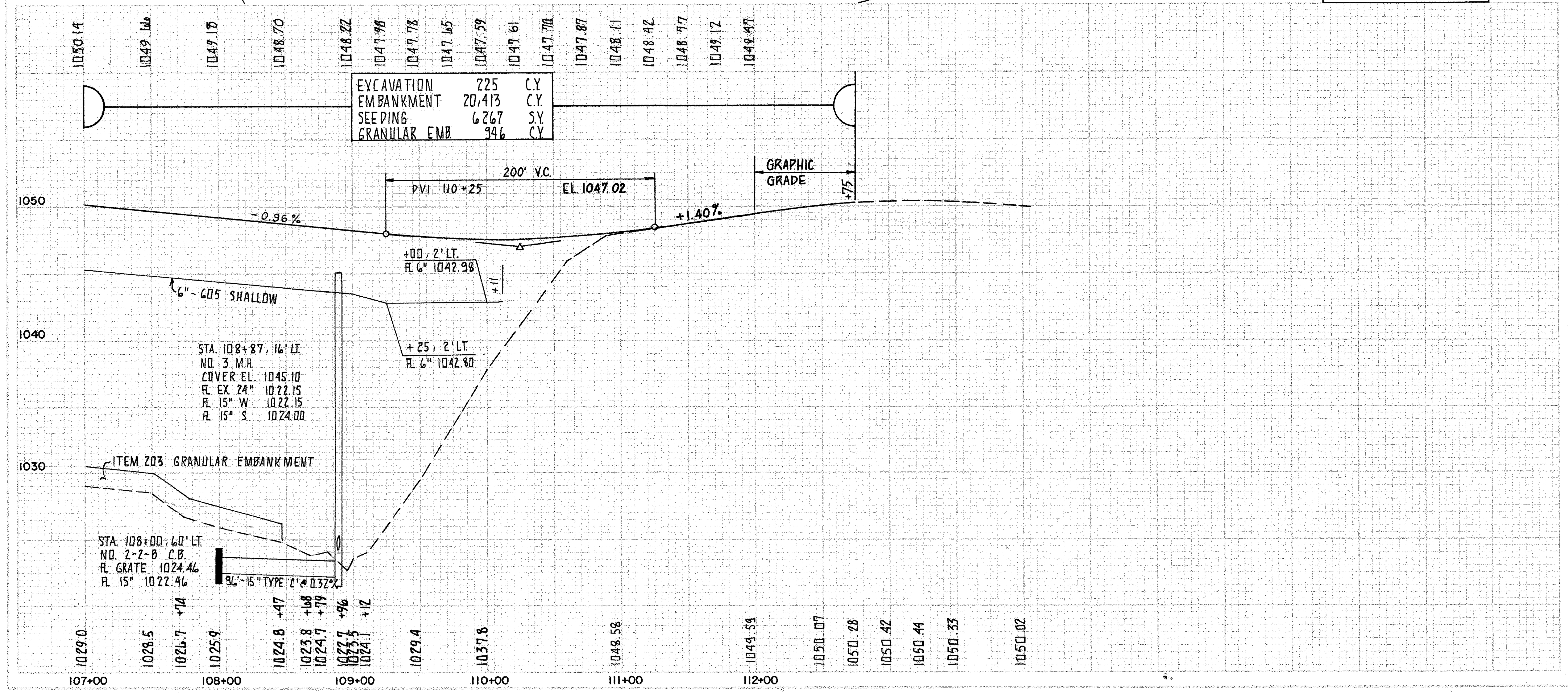
4-GR FOR TRAFFIC CONTROL SIGN AT STA. 516+50, 76.5'LT.

ITEM 202 PAVEMENT REMOVED

CALCULATIONS

1-D ITEM 670 D.P. (125 x 6) ÷ 9 = 83.3 S.Y.
3-D ITEM 670 D.P. (450 x 6) ÷ 9 = 300.0 S.Y.
2-R ITEM 202 PAV'T. REM. (16 x 265) ÷ 9 = 471.1 S.Y.

CULVERT *UNI-33-0878
STA 108+87
FOR DETAIL SEE SHEET 81.



ESTIMATED QUANTITIES

⊙ FOR REUSE OR STORAGE

* 15" 706.02 2250 D-LOAD OR 15" 701.01 (0.109), 707.04 (0.109), 707.05 (0.109), 707.09 OR 707.21

REF. NO.	STATION TO STATION	SIDE	202 STRUCTURE REMOVED	202 GUARD-RAIL REMOVED⊙	202 PAVEMENT REMOVED	202 CURB REMOVED	602 CONCRETE MASONRY	603 * CONDUIT TYPE 'A'	603 15" CONDUIT TYPE 'C'	603 6" COND. TYPE 'F'	604 NO. 2-2B CATCH BASIN	604 NO. 3 M.H.	605 6" SHALLOW PIPE U.D.	605 BENDS & BRANCHES	606 GUARD-RAIL TYPE 5	606 ANCHOR ASSEMBLY TYPE 'A'	670 DITCH EROSION PROT.	SEE SHEET NO.
			LUMP	L.F.	S.Y.	L.F.	C.Y.	L.F.	L.F.	L.F.	EA.	EA.	L.F.	EA.	L.F.	EA.	S.Y.	
1-D	108+00 TO 109+25	LT.							96		1						84	81
2-D	108+87	L&R					0.27	86				1						81
3-D	107+75 TO 112+25	RT.															300	
1-GR	107+00 TO 109+41.41	LT.													216.41	1		
2-GR	107+00 TO 112+07.64	RT.													482.64	1		
3GR	109+09 TO 109+34	LT.														1		
4-GR	516+00 TO 518+00	LT.													150	2		
5-GR	46+06 TO 46+76 (EX. 33)	LT.													45	1		
1-R	109+09 TO 112+00	L&R		300														
2-R	110+11 TO 112+75	L&R			471													
3-R	113+00 TO 113+69	RT.				135												
4-R	113+69 TO 114+04	RT.	LUMP															
1-UD	107+00 TO 110+11	LT.								10			322	1				23C
TOTALS			LUMP	300	471	135	0.27	86	96	10	1	1	322	—	894.05	6	384	

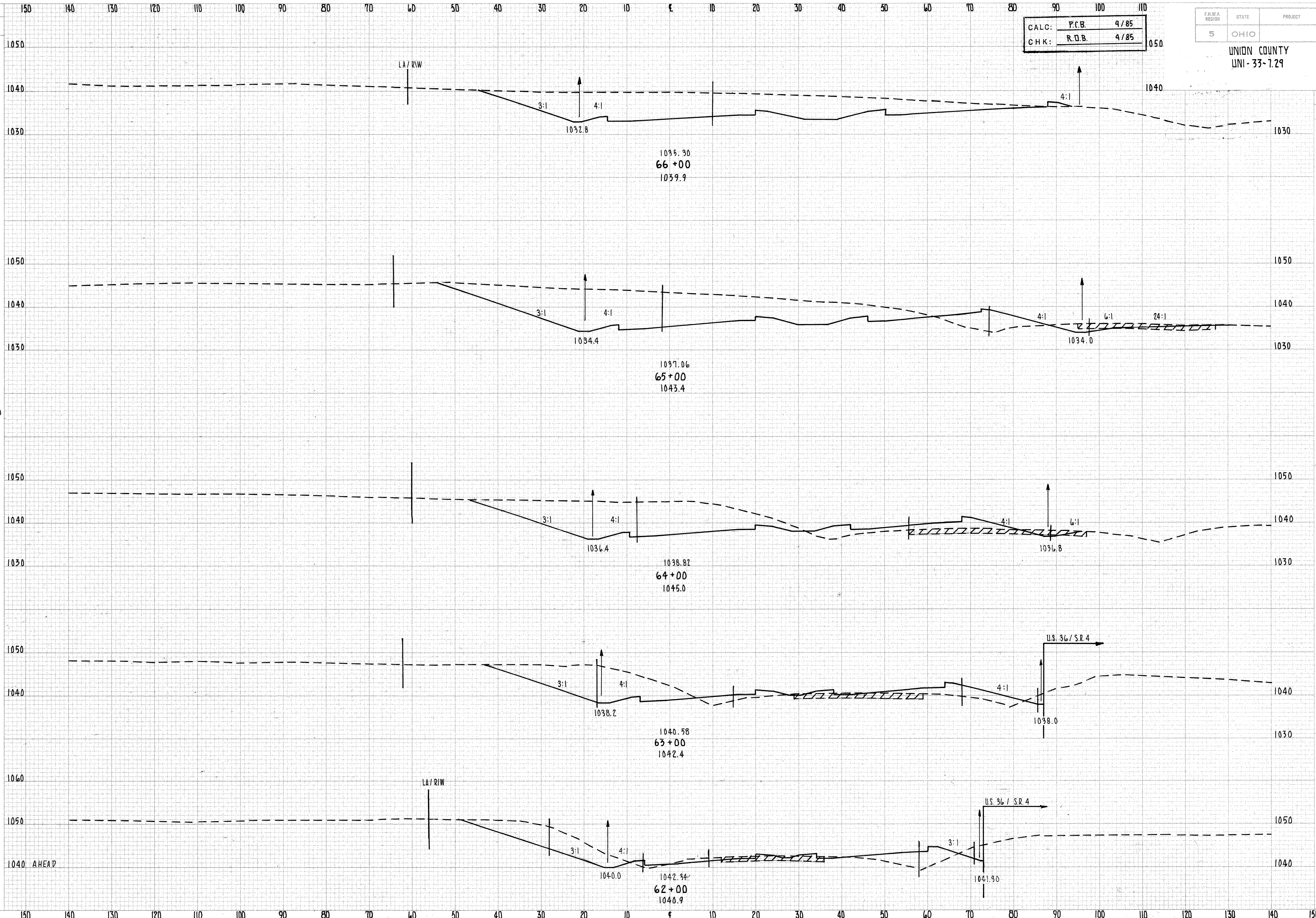
ROAD 'U' STA. 107+00 TO STA. 114+04

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

70 / 225

UNION COUNTY
UNI-33-7.29

CALC:	P.C.B.	9/85
CHK:	R.D.B.	9/85



SEEDING END WIDTH	SEEDING SQ. YDS.
96	
	1350
147	
	1450
114	
	1178
98	
	983
79	

STATION	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
66+00	540	4		
			2227	155
65+00	657	78		
			1961	349
64+00	403	101		
			1178	415
63+00	238	113		
			715	381
62+00	154	84		

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

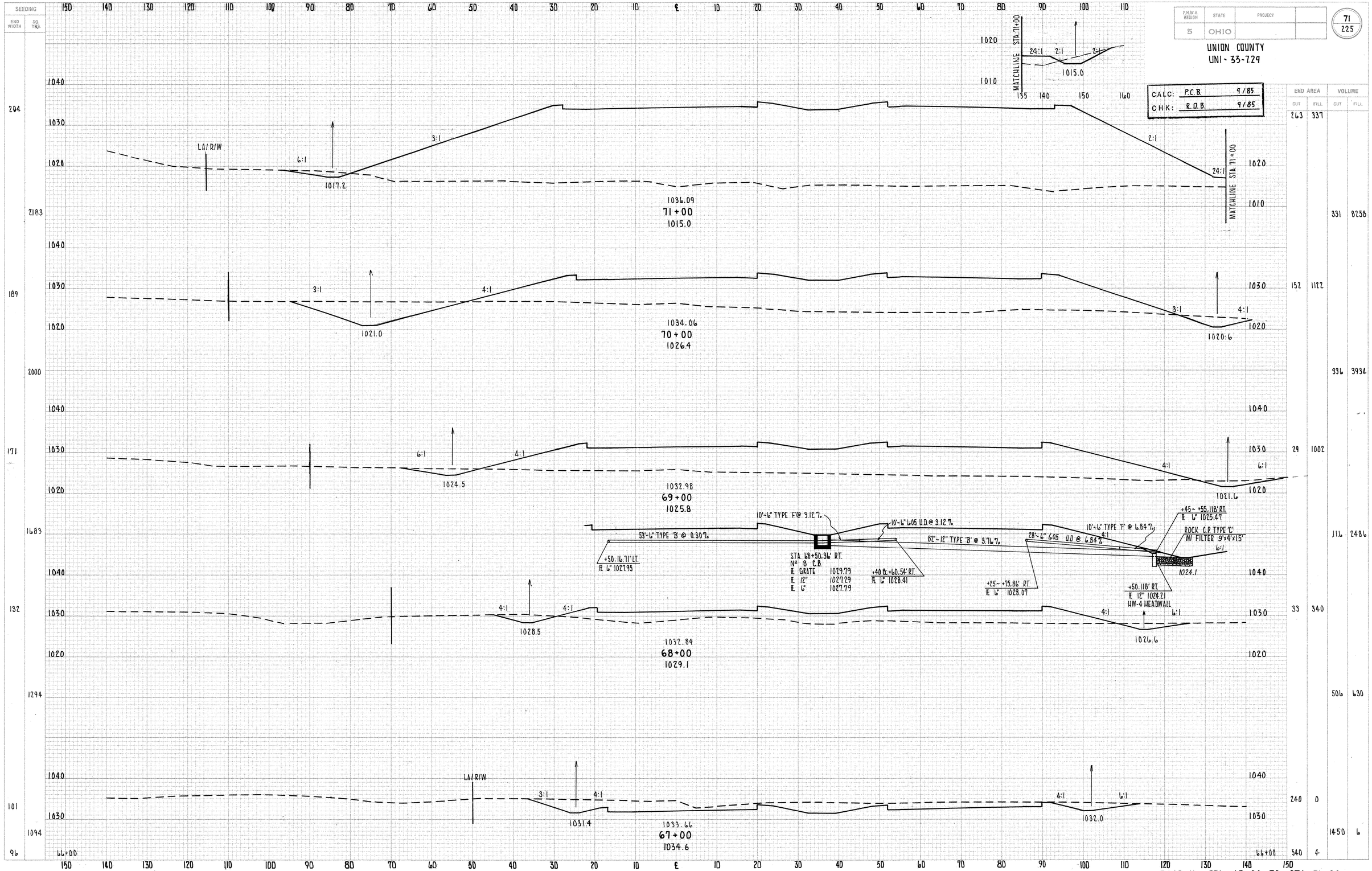
71
225

UNION COUNTY
UNI - 33-7.29

CALC: P.C.B. 9/85
CHK: R.O.B. 9/85

SEEDING END WIDTH	SEEDING SQ. YDS.
204	
	2183
189	
	2000
171	
	1683
132	
	1294
101	
96	1094

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
263	337		
		331	8258
152	1122		
		336	3934
29	1002		
		114	2486
33	340		
		506	630
240	0		
		1450	6
340	4		



ROAD U STA. 67+00 TO STA. 71+00

SEEDING	
END WIDTH	SQ. YDS
88	
	783
53	
	288
32	
206	
	897
208	
	2289
204	

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

72
225

UNION COUNTY
UNI-33-7.29

CALC: R.C.B. 9/85
CHK: R.O.B. 9/85

RAMP 'Y'
4:1
1039.5
ROAD Z
1050
4:1
1040.9
1046.78
74+00
1029.7

RAMP 'Y'
4:1
1040.0
ROAD Z
5:1
1040.7
LA/ RIW
1042.86
73+00
1022.3

BACK
RAMP Y AHEAD
BACK
AHEAD ROAD Z
AHEAD
BACK
2:1
MATCHLINE STA. 72+39
24:1
3:1
2:1
1014.3
2:1
MATCHLINE STA. 72+39
1040.47
72+39
1021.8
MATCHLINE STA. 72+00
24:1
2:1
2:1
1013.0
CULVERT
2:1
2:1
MATCHLINE STA. 72+00
LA/ RIW
1039.06
72+00
1021.7

STRUCTURE UNI-33-0824
STA 71+95
FOR DETAILS SEE SHEET 125

71+00
77+00

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	0	1912		
			0	7286
	0	2022		
			0	4156
AHEAD	0	1663		
BACK	13	3512		
			154	4988
	7	3381		
			62	12441
	24	3337		

ROAD U STA. 72+00 TO STA. 74+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

78
225

UNION COUNTY
UNI ~ 33 ~ 7.29

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
		9	3591		
			* 290		
200					
	2133			56	11443
					* 1020
184		21	2697		
			* 261		
	2039			44	4375
			* 261		* 444
			BEGIN GRAN. EMB. 76+54 AHEAD	30	2439
			BACK	30	2700
				71	5097
183		41	2397		
	1761			76	7859
134		0	1846		
	1233			0	4961
88		0	1412		

* (ITEM 203 GRANULAR EMBANKMENT)

ROCK C.P. TYPE 'C' W/ FILTER 9'x16'x1.5'

ITEM 203 GRANULAR EMBANKMENT (18" THICK)

STA. 78+35.39' LT.
N^e 2-4 C.B. w/ WINDOWS
IE WINDOW 1029.92
IE 18" 1026.17
IE 30" 1024.25
IE 36" 1023.75

1032.4
1057.28
78+00
1030.4

238'~ 36" TYPE 'B' 706.02 2750 D-LOAD OR 707.14 @ 0.56%

+35.149' RT
IE 36" 1022.42

1035.0
1055.62
77+00
1034.1

* (ITEM 203 GRANULAR EMBANKMENT)

BEGIN GRAN. EMB. 76+54

1035.5
1053.32
76+00
1037.2

ROAD 'Y'

1029.0

RAMP Y

1036.0
1050.38
75+00
1036.4

ROAD Z

1038.5

ROAD U STA. 75+00 TO STA. 78+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

74
225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B 9/85
CHK: R.D.B 9/85

SEEDING

END WIDTH	SQ. YDS.
231	
	2953
212	
200	
	1200
200	

FOR SEEDING SEE → U.S.-33 CROSS-SECTIONS

BRIDGE NO.
UNI-33-0837 L/R
ROAD U
OVER
U.S.-33

STA. 82+25.36' RT.
№ 8 C.B., OMIT DIKE
R. GRATE 1057.06
R. 12" 1053.55

44'-12" TYPE 'B' @ 1.00%

63'-12" TYPE 'F' 707.05 TYPE 'C'

ITEM 203 GRANULAR EMBANKMENT (18" THICK)

LA/RW

2:1 2:1 24:1 2:1 2:1

1032.0

1060.32
82+00
1032.8

1029.5

ROCK C.P. TYPE 'C' W/ FILTER 4'x4'x15'

+25.14' RT.
R. 12" 1029.80
HW-44 HEADWALL

AHEAD

38'-6" TYPE 'B' @ 0.40%

38'-6" TYPE 'B' @ 0.20%

8:1 8:1

+05.2' LT.
R. 6" 1055.05

+05.18' RT.
R. 6" 1054.97

+05.14' RT.
R. 6" 1054.98

2:1 2:1 24:1 2:1 2:1

1030.0

1059.47
80+75
1030.2

1027.5

BEGIN GRAN. EMB. 80+34

BACK

ITEM 203 GRANULAR EMBANKMENT (18" THICK)

*(ITEM 203 GRANULAR EMBANKMENT)

1030.0

1057.90
78+54
1029.4

78+00

END GRAN. EMB. 78+84

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	34	3620		
		*293		
			173	17437
				*1373
AHEAD	41	3913		
		*300		
				*342
		*150		
BACK	14	3591		
				*253
			23	7512
				*596
	9	3591		
		*150		

ROAD U STA. 79+00 TO STA. 82+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

75
225

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

UNION COUNTY
UNI-33-7.29

SEEDING END WIDTH	SEEDING SQ. YDS.
202	2307
213	2417
222	2478
224	2528
291	

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110

1070
1060
1050
1040
1030

LAI RIW

2:1 24:1 2:1

1037.4
1063.04
86+00
1041.6

1038.0

1036.0
1062.36
85+00
1038.7

1037.0

1035.0
1061.68
84+00
1034.6

+00.74' RT
EL 6" 1054.54

7'-6" 605 U.D.@ 3.60 %
10'-6" TYPE 'F' @ 3.60 %

+00.91' RT
EL 6" 1053.93

1034.0
1061.00
83+00
1033.5

1032.0

82+00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

ROAD U STA. 83+00 TO STA. 86+00

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	24	2573		
			82	9898
	22	2921		
			92	11167
	30	3274		
			131	12658
	43	3654		
			32	2863
END GRAN. EMB. 82+79 AHEAD	41	3708		
BACK	41	3430		
	*278			
			110	10315
			*835	
*(ITEM 203 GRANULAR EMBANKMENT)	*293			
82+00	34	3620		

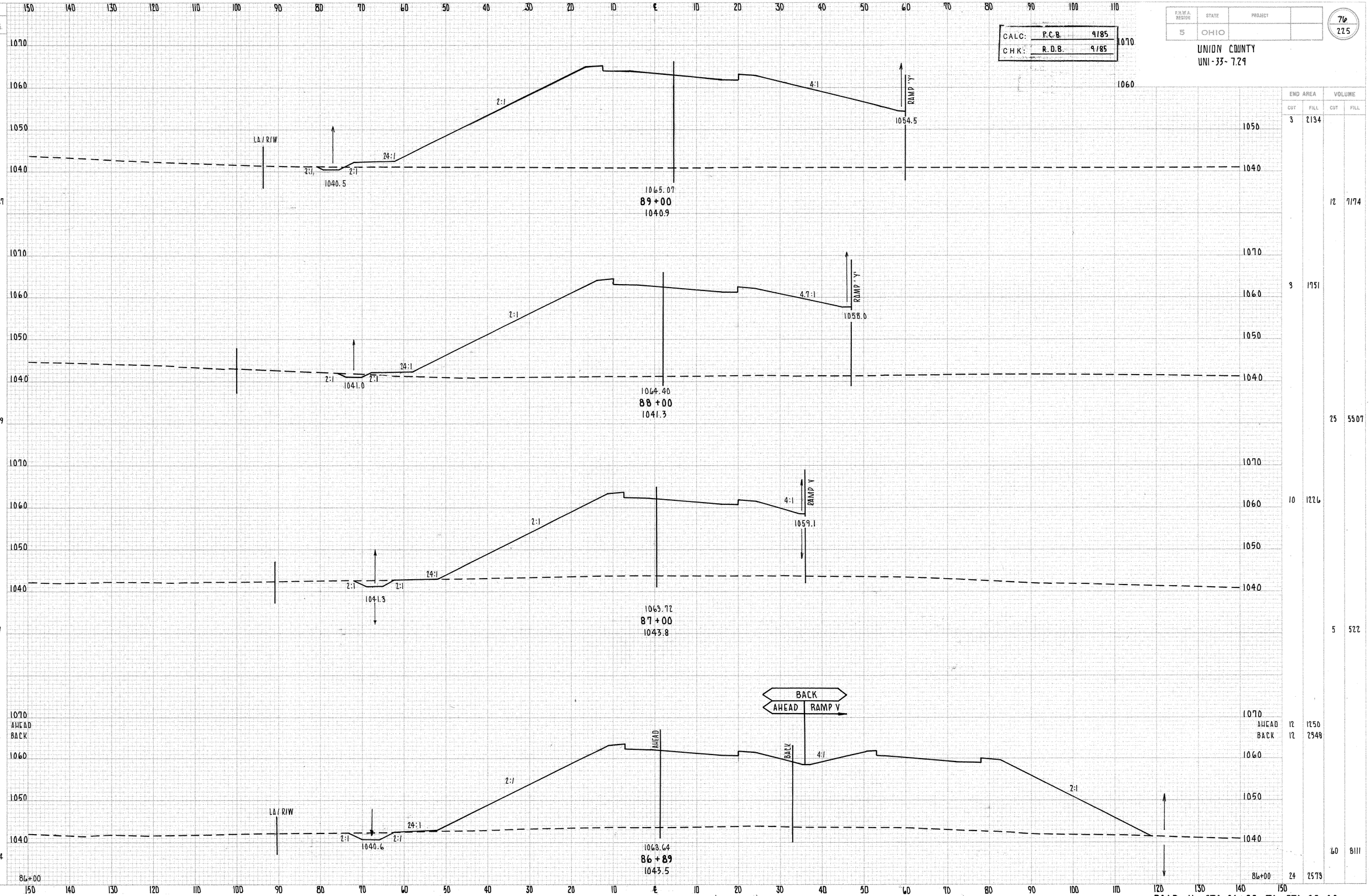
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

76
225

UNION COUNTY
UNI-33-7.29

CALC:	P.C.B.	9/85
CHK:	R.D.B.	9/85

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
126		3	2134		
	1367			12	7174
120		3	1751		
	1239			25	5507
103		10	1226		
	127			5	522
105 AHEAD		12	1250		
177 BACK		12	2348		
	1874			60	8111
202		24	2573		



ROAD U STA. 86+89 TO STA. 89+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

77
225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

BRIDGE NO.
UNI-33-0842
ROAD 'U'
OVER
S.R.-245

SEEDING

END WIDTH	SQ. YDS.
70	
151	516
	562
186	
	2200
210	
	1994
149	
	1528
127	

BACK 92+72

LA/ R/W

2:1 24:1 2:1 2:1

1041.2

ITEM 203 GRANULAR EMBANKMENT (18" THICK)

1065.76
92+30
1043.7

END GRAN. EMB. 92+72 BACK
* (ITEM 203 GRANULAR EMBANKMENT)

LA / R/W

2:1 24:1 2:1 2:1

1041.0

1065.81
92+00
1042.9

CULVERT Nº UNI-33-0842
DRAINAGE AREA 3.3 Ac
Q 50 9 CFS

1039.9

+50.75' LT
R & 1039.70
HW-4 HEADWALL

148'-TYPE A 15" 706.02 2500 D-LOAD OR 18" 709.01 (0.109), 709.04 (0.109), 709.05 (0.109), 709.09 OR 709.21 @ 0.79%

ITEM 203 GRANULAR EMBANKMENT

2:1 24:1 2:1 2:1

1065.81
91+00
1041.2

ROCK C.P. TYPE 'C'
W/ FILTER 6'+4'x1.5'

+50.79' RT
R & 1039.34
HW-4 HEADWALL

0.44%

1039.1

MATCHLINE DITCH, 82' LT
STA. 460+35 RAMP 'Y'

(* ITEM 203 GRANULAR EMBANKMENT)

LA / R/W

2:1 24:1 2:1 2:1

1040.2

1065.57
90+00
1041.1

2:1 3:1

RAMP 'Y'

1046.0

89+00

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	0	0		
		* 105	11	1448
	13	1861		* 240
		* 203		
			19	2086
				* 224
	18	1885		
		* 201		
			47	7200
				* 754
	15	2002		
		* 206		
			35	5150
		* 206		* 519
AHEAD	10	2099		
BACK	10	2305		
			12	2750
	8	2350		
			22	8268
	3	2134		

89+00

ROAD U STA. 90+00 TO STA. 92+25

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

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225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

SEEDING END WIDTH	SEEDING SQ. YDS.
73	722
57	136
	1644
	+149
140	1749
175	535
60	

RAMP W
1058.5
4:1
2:1
1062.09
97+00
1042.8

BACK
RAMP W | AHEAD

AHEAD
BACK

BACK 1062.0
2:1
2:1
24:1
2:1
2:1
ITEM 203 GRANULAR EMBANKMENT (18" THICK)
1041.5
1063.31
96+00
1044.8

ADD SEEDING FOR GRAVEL DRIVE, STA 96+00 RIGHT.
(134 x 10) ÷ 9 = 148.8 SY.

LA/R/W
2:1
2:1
24:1
2:1
2:1
1042.0
1064.31
95+00
1042.8

LA/R/W
2:1
2:1
24:1
2:1
2:1
1043.0
ITEM 203 GRANULAR EMBANKMENT (18" THICK)
1065.02
94+06
1043.4

AHEAD 93+65

ADD ITEM 203, EMBANKMENT FOR BASEMENT
STA. 96+50 ℄
[(36 x 30) + (21 x 8)] x 8 ÷ 27 = 369.8 C.Y

END GRAN. EMBK. 96+00 AHEAD

(* ITEM 203 GRANULAR EMBANKMENT)

ADD EXCAVATION FOR GRAVEL DRIVE, STA 96+00 RIGHT.
(134 x 10 x 1) ÷ 27 = 49.6 C.Y

ADD ITEM 203, EMBANKMENT FOR BASEMENT, STA. 94+40 LT.
[(47 x 30) + (26 x 7) + (30 x 14)] x 8 ÷ 27 = 596.1 C.Y

BEGIN GRAN. EMBK. 93+65 AHEAD

(* ITEM 203 GRANULAR EMBANKMENT)

		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		0	1043		
				0	32.51
					+370
	AHEAD	0	730		
	BACK	20	1546		
			* 203		
					* 765
				L4	6239
					+50
		12	1790		
			* 206		
				51	6113
					* 702
					596
		15	1704		
			* 195		
					* 228
				12	1298
		0	0		
			* 105		

ROAD U STA. 94+00 TO STA. 97+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

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225

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

UNION COUNTY
UNI-33-7.29

SEEDING END WIDTH	SEEDING SQ. YDS.
121	1589
165	1672
136	1372
111	1072
73	

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	1439		
		0	5502
0	1532		
		8	4228
5	1831		
		24	6473
10	1668		
		18	5001
0	1043		

10'-6" TYPE 'F' @ 2.00%
4'-6" 605 UD @ 2.00%
101+00, 18' RT.
IE L= 1051.46
+00.32' RT.
IE L= 1051.18
2:1
1055.94
101+00
1035.3
24:1
1057.26
100+00
1035.9
RAMP "W"
1042.0
4:1
3:1
1039.5
1058.90
99+00
1036.8
1057.8
1060.57
98+00
1037.2
1039.0
97+00

ROAD U STA. 98+00 TO STA. 101+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

80
225

UNION COUNTY
UNI ~ 33 ~ 7.29

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

SEEDING END WIDTH	SEEDING SQ. YDS.
122	1433
136	1472
129	1406 +611
124	1361
121	

TO EX. 33

10~6" TYPE 'F' @ 1.00%

6~6" 605 U.D. @ 1.00%

2:1

+07.18' LT.
E 6" 1047.22

+07.2' LT.
E 6" 1047.38

12:1

2:1

ITEM 203 GRANULAR EMBANKMENT (18" THICK)

1052.06
105+00
1034.2

ADD ITEM 203. EMBANKMENT FOR BASEMENT
LT. 70' STA 104+45.
(34x38x8) ÷ 27 = 382.8 C.Y.

2:1

12:1

ITEM 203 GRANULAR EMBANKMENT (18" THICK)

1053.02
104+00
1035.8

2:1

12:1

1053.98
103+00
1034.6

ADD SEEDING FOR DRIVES,
LT.~ STA. 102+75 AND RT.~STA.103+50

[(94x40)÷2 + (94x17)÷2 + 97x8 + 13x100
(35x32)÷2 + (24x15)÷2]÷9 = 610.6 S.Y.

ADD ITEM 203, EXCAVATION FOR DRIVES,
LT~ STA. 102+75 AND RT.~103+50

[(94x40)÷2 + (94x17)÷2 + 97x8
+13x100 + (35x32)÷2 + (24x15)÷2]x1÷27 = 203.5 C.Y.

2:1

12:1

1054.94
102+00
1036.9

101+00

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	0	1044		
(* ITEM 203 GRANULAR EMBK.)		* 147		
			0	3790
				* 543
				383
	0	1003		
		* 146		
			0	2592
				* 351
(* ITEM 203 GRANULAR EMBK.)		* 146		
BEGIN GRAN. EMBK 103+35 AHEAD	0	1150		
BACK	0	1296		
			0	1731
	0	1375		
			0	4783
				204
	0	1208		
			0	4902
	0	1439		

ROAD U STA. 102+00 TO STA. 105+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

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225

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

UNION COUNTY
UNI-33-7.29

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS	CUT	FILL	CUT	FILL
132	1644	9	1708	25	3524
164	1622	21	1609 *179	31	2658 *292
128	741	0	1370 *174	0	2707 *345
121	474	0	1288 *165	0	1515 *210
122		0	1293 *177		
			* 147		
		0	1044		

CULVERT Nº UNI-33-0878
DRAINAGE AREA 2.8 Ac.
Q 50 11 CFS

10'-6" TYPE 'F' @ 1.00%
11'-6" 60S U.D. @ 1.00%
3:1
+25, 23' LT
E 6" 1042.59
+25, 2' LT
E 6" 1042.80
2:1
1037.2
24:1
2:1
1024.5
E.X. 24" CONC.
E 24" 1019.74
8 @ 15" TYPE 'A' 706.02 2250 D-LOAD OR 15" 707.01 (0.109), 707.04 (0.109), 707.05 (0.109), 707.09, 707.21 @ 0.68%
STA. 108+87.16' LT.
Nº 3 M.H.
COVER EL 1045.10
E 15" S. 1024.00
E EX. 24" 1022.15
E 15" S. 1022.15
1048.22
109+00
1023.5
108+87.70' RT.
E 15" 1024.41
HW-4 HEADWALL
END GRAN. EMBK. 108+45 AHEAD
BACK
(* ITEM 203 GRANULAR EMBK.)
3:1
2:1
1024.7
ITEM 203 GRANULAR EMBANKMENT (18" THICK)
1026.0
STA. 108+00. 60' LT.
Nº 2-2-B.C.B.
E GRATE 1024.46
E 15" 1022.46
1049.18
108+00
1025.9
1029.9
1027.6
TO EX.-33
1050.14
107+00
1029.0
AHEAD 106+45
BEGIN GRAN. EMBK. 106+45 AHEAD
1050.67
106+45
1030.0
BRIDGE NO.
UNI-33-0886
ROAD 'U'
OVER
EX. US-33
SEE U.S. 33 FOR SEEDING
BACK 105+35
END GRAN. EMBK. 105+35 BACK
ITEM 203 GRANULAR EMBANKMENT (18" THICK)
1051.72
105+35
1032.00
(* ITEM 203 GRANULAR EMBK.)
105+00

ROAD 'U' STA. 105+35 TO STA. 109+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

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225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

END WORK STA. 114+04

END PAVEMENT STA. 112+75

ITEM 202 PAVEMENT REMOVED

SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS		CUT	FILL	CUT	FILL
20		1050				
		1040	BACK	23	0	
	300				75	44
52		1050				
		1040	31	32		
	706	1030			38	1100
75		1050				
		1040	0	562		
		1030				
	839				0	2724
76		1050				
		1040	0	909		
		1030				
	1156	1020			17	4848
132		109+00	9	1708		

1050.28
112+75
1050.28

1049.47
112+00
1049.59

1048.11
111+00
1048.58

1047.59
110+00
1037.8

LT R/W

LT R/W

4:1

1044.0

4:1

3:1

1035.5

4:1

1044.6

2:1

1025.5

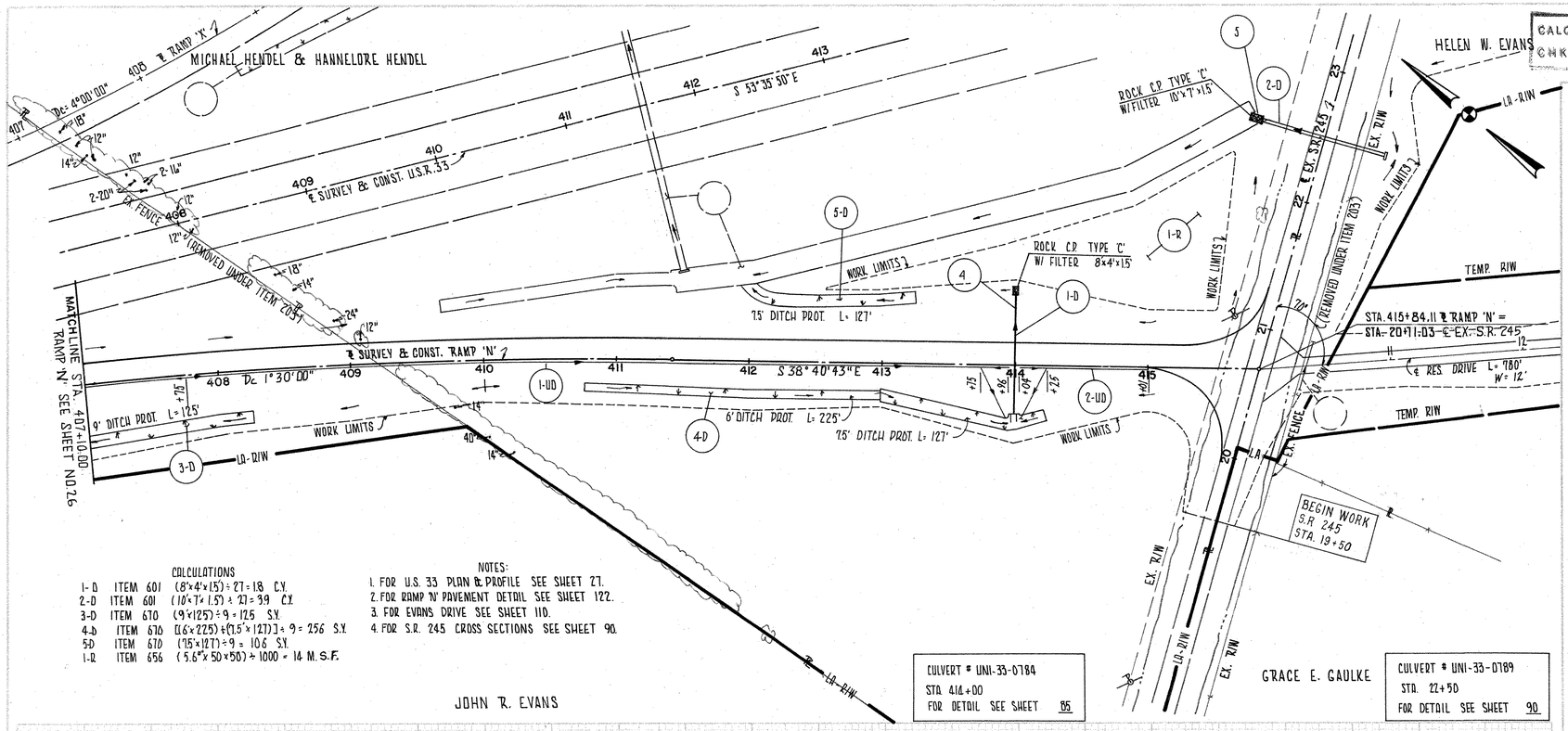
ROAD U STA. 110+00 TO STA. 112+75

CALC: PCB 9-85
CHK: R.O.B. 9-85

UNION COUNTY
UNI-33-7.29

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

83
225



CULVERT # UNI-33-0784
STA. 416+00
FOR DETAIL SEE SHEET 85

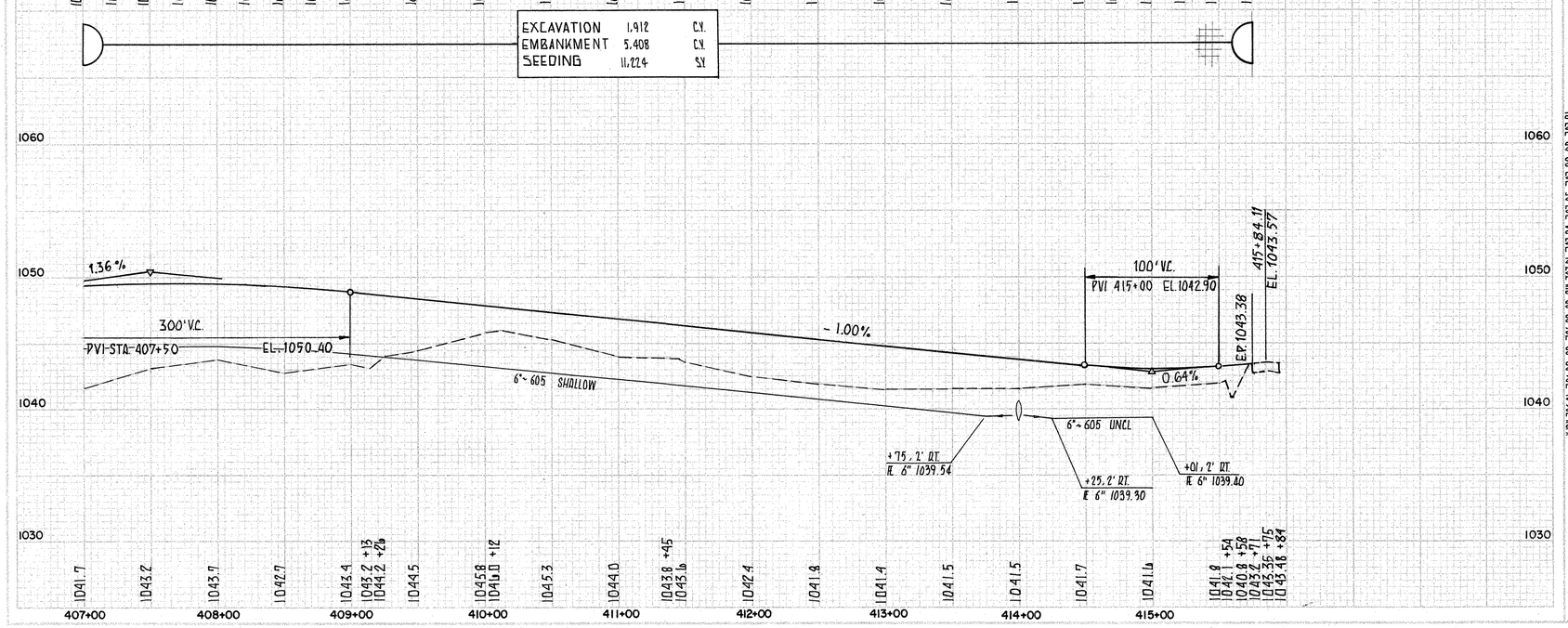
CULVERT # UNI-33-0789
STA. 22+50
FOR DETAIL SEE SHEET 90

CALCULATIONS

1-D	ITEM 601	(8'x4'x15') ÷ 27 = 1.8	C.Y.
2-D	ITEM 601	(10'x7'x1.5') ÷ 27 = 3.9	C.Y.
3-D	ITEM 670	(9'x125') ÷ 9 = 125	S.Y.
4-D	ITEM 670	[(6'x225') + (7.5'x127')] ÷ 9 = 256	S.Y.
5-D	ITEM 670	(7.5'x127') ÷ 9 = 106	S.Y.
1-R	ITEM 656	(5.6"x50'x50') ÷ 1000 = 14	M.S.F.

NOTES:
1. FOR U.S. 33 PLAN & PROFILE SEE SHEET 27.
2. FOR RAMP 'N' PAVEMENT DETAIL SEE SHEET 122.
3. FOR EVANS DRIVE SEE SHEET 110.
4. FOR S.R. 245 CROSS SECTIONS SEE SHEET 90.

EXCAVATION	1,912	C.Y.
EMBANKMENT	5,408	C.Y.
SEEDING	11,224	S.Y.



ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	SEE SHEET NO.	610 DITCH EROSION PROT. S.Y.	656 ROADSIDE CLEAN-UP M. S.F.	605 BENDS & REDUCERS EA.	605 6" UNCLASS. PIPE UD. L.F.	605 6" SUBDRAIN PIPE U.D. L.F.	601 DGLA C.P. TYPE 'C' W/ FILTER C.Y.	602 CONCRETE MASONRY C.Y.	603 * CONDUIT TYPE 'B' L.F.	603 ** CONDUIT TYPE 'B' L.F.	603 6" CONDUIT TYPE 'F' L.F.
1-R	412+58 TO 415+63	LT.			14								
1-UD	407+00 TO 413+96	RT.						129					
2-UD	414+04 TO 415+01	RT.						128					
1-D	414+00 TO 414+25	L.&R.							1.8	0.78	86		98
2-D	22+50 TO 24+50	L.&R.							3.9	1.94			
3-D	407+00 TO 408+25 (ND)	RT.		125		1	129						
4-D	410+15 TO 414+25 (ND)	RT.		256									
5-D	411+96 TO 413+25 (ND)	LT.		106									
TOTALS				487	14	1	129	128	5.7	2.62	86	98	20

* RT. 706.01, 706.02, 706.06, 706.08, 707.01, 707.04, 707.05, 707.09, 707.21
** 33 706.02, 706.06, 706.08, 707.01, 707.04, 707.05, 707.09, 707.22

RAMP 'N' STA. 407+00 TO STA. 415+84.11

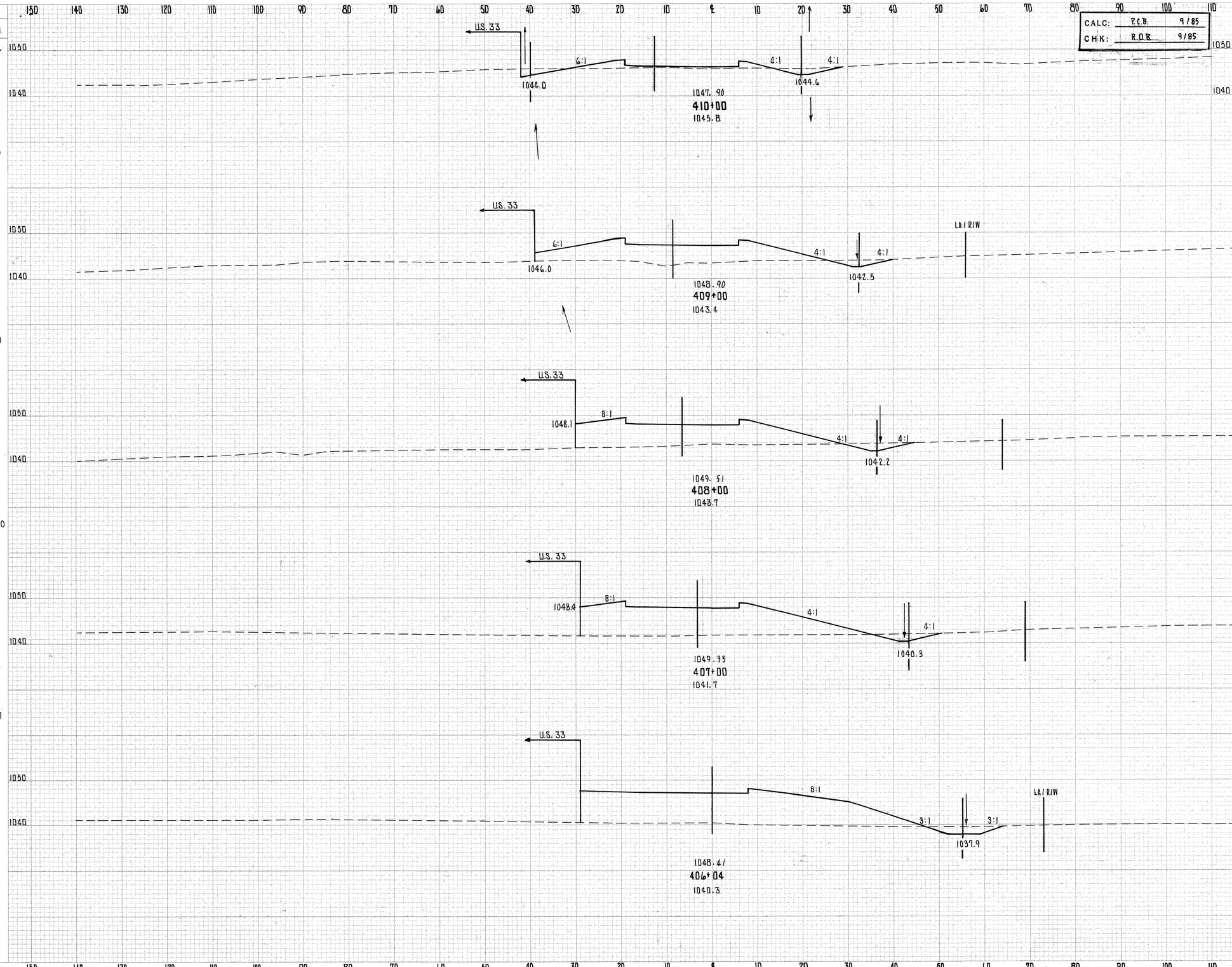
SEEDING		
END WIDTH	SQ. YDS.	
56		
	700	
70		
	778	
70		
	800	
74		
	747	
77		

CALC: P.C.B. 9/85
CHK: R.O.B. 9/85

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

84
225

UNION COUNTY
UNI-33-7.29



END AREA		VOLUME	
CUT	FILL	CUT	FILL
21	29		
		61	447
12	212		
		48	854
14	248		
		54	1083
15	336		
		48	1359
12	397		

RAMP 'N' STA. 406+04 TO STA. 410+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

85
225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

SEEDING END WIDTH	SEEDING SQ. YDS.	STATION	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
42		415+35				
	255		29	15	47	34
69		415+62	29	15		
	1094				212	188
128		415+00	86	87		
	1211				263	325
		414+00	56	89		
90					148	383
	900					
72		413+00	24	118		
	822				85	386
76		412+00	22	90		
	733				78	220
56		411+00	21	29		
		410+00				

TO S.R. 245

FROM S.R. 245

1050
1040

4:1 4:1 4:1 4:1

1039.9

1040.2

1043.11
415+00
1041.6

ROCK C.P. TYPE 'C'
W/FILTER 8'x4'x1.5'

52' 36'

+95 & +05, 40' LT
IE 6" 1039.20

32'~6" 605 U.D @ 0.80% - (+75) & 0.24% (+25)

10'~6" TYPE 'F' 0.80% (+75) & 0.24% (+25)

16:1 24:1 2:1 2:1 3:1

4:1 2:1

88'~TYPE 'A' 18" 706.01, 706.02 OR 706.08 OR 21" 707.01, 707.04, 707.05, 707.09 OR 707.21 @ 0.40%

1038.6

1039.0

1043.90
414+00
1041.5

+75 & +25, 2' RT
IE 6" 1039.54 @ 75
IE 6" 1039.30 @ +25

IE PIPE 1038.65
HW-4 HEADWALL

IE PIPE 1039.00
HW-4 HEADWALL

CULVERT Nº UNI-33-0784
DRAINAGE AREA 3.5 Ac
Q 25 10 CFS

4:1 4:1 4:1 4:1

1038.3

1040.8

1044.90
413+00
1041.4

U.S. 33

5:1 4:1 4:1

1040.2

1041.2

1045.90
412+00
1042.4

U.S. 33

6.6:1 4:1 4:1

1041.2

1043.2

1046.90
411+00
1044.0

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

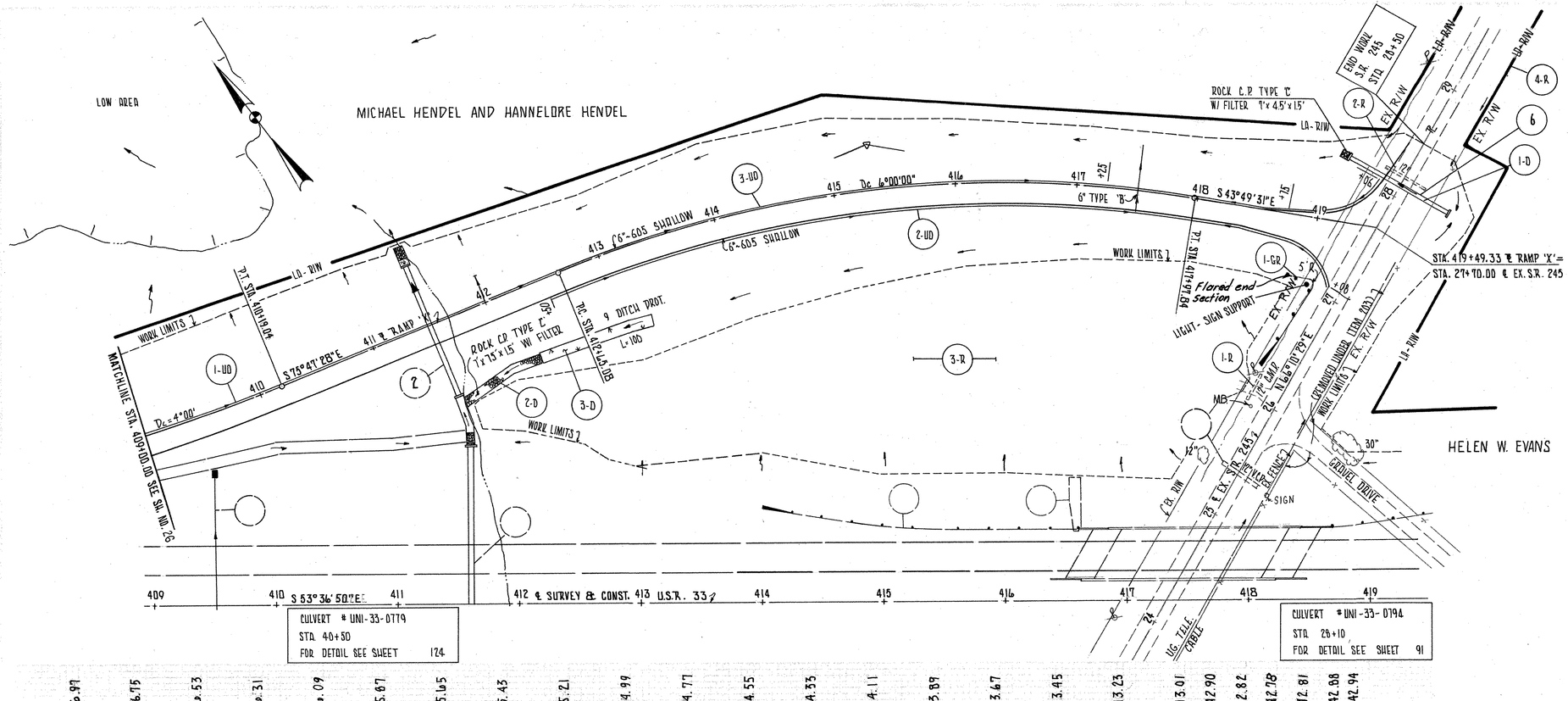
RAMP 'N' STA. 411+00 TO STA. 415+00

CALC: P.C.B. 9-85
CHK: R.O.B. 9-85

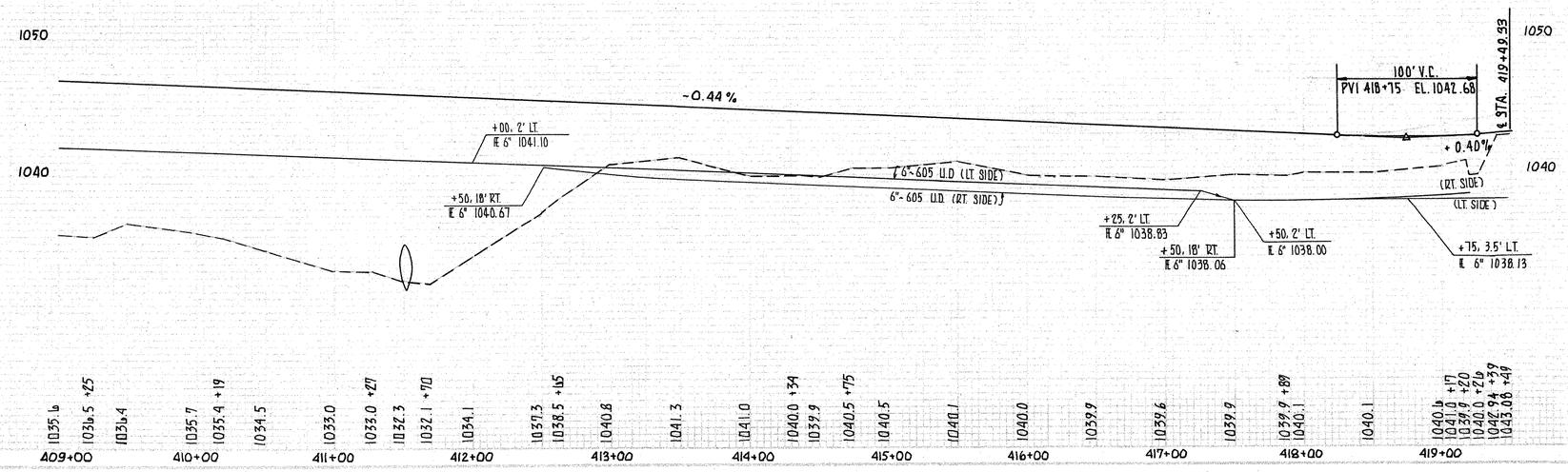
5

UNION COUNTY
UNI-33-7.29

86
225



EXCAVATION	2,679	C.Y.
EMBANKMENT	18,399	C.Y.
SEEDING	19,328	S.Y.



CALCULATIONS

1-D	ITEM	601	ROCK C.P.	(7'x4.5'x1.5') ÷ 27 =	1.8 C.Y.
2-D	ITEM	601	ROCK C.P.	(7'x7.5'x1.5') ÷ 27 =	29.2 C.Y.
3-D	ITEM	670	DITCH PROT.	(9 x 100) ÷ 9 =	100 S.Y.
3-R	ITEM	656	ROAD CLEANUP	(3258'x50'x50') ÷ 1000 =	82 M.S.F.

NOTES:

1. FOR RAMP 'X' PAVEMENT DETAILS SEE SHEET 122.
2. FOR S.R. 245 CROSS SECTIONS SEE SHEET 91.

* 21" 706.02 OR 706.08 OR 27" 707.01, 707.04, 707.05, 707.09 OR 707.21

Ref.	Station to Station	Side	202 PIPE REM'D 24" & UNDER LF	202 FENCE REMOVED LF	601 ROCK CHAN. PROT. TYPE 'C' W/ FILTER CY	602 CONCRETE MASONRY CY	603 CONDUIT * TYPE A LF	603 CONDUIT * TYPE B LF	603 CONDUIT * TYPE C LF	605 6" SUBDRAIN PIPE UD LF		605 BEND & BRANCHES EA	606 GUIDE RAIL TYPE 5 LF	606 ANCHOR ASSM. TYPE 5 EA	656 ROADSIDE CLEANUP MSF	670 DITCH & EROS. PROTECTION SY	SEE SHEET NO
1-R	25+95 TO 26+19 (S.R. 245)	LT.	24														
2-R	28+18 (S.R. 245)	L & R	37														
3-R	411+60 TO 418+84	RT.													82		
4-R	28+25 TO 31+50 (S.R. 245)	RT.		325													
1-D	28+10 (S.R. 245)	L & R			1.8	1.06	96										91
2-D	411+53 TO 412+25	RT.			29.2												
3-D	412+25 TO 413+25	RT.														100	
1-UD	409+00 TO 412+00	LT.								10	312		1				23 B
2-UD	412+50 TO 419+16	RT.						20			685		1				23 C
3-UD	412+04 TO 419+45	LT.								10	784		1				23 B
1-GR	26+25 (S.R. 245) TO 418+83 (℄)	L & R												75	1		
Totals			61	325	31	1.06	96	20	20	20	1781			75	1	82	100	

RAMP 'X' STA. 409+00 TO STA. 419+49.33

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

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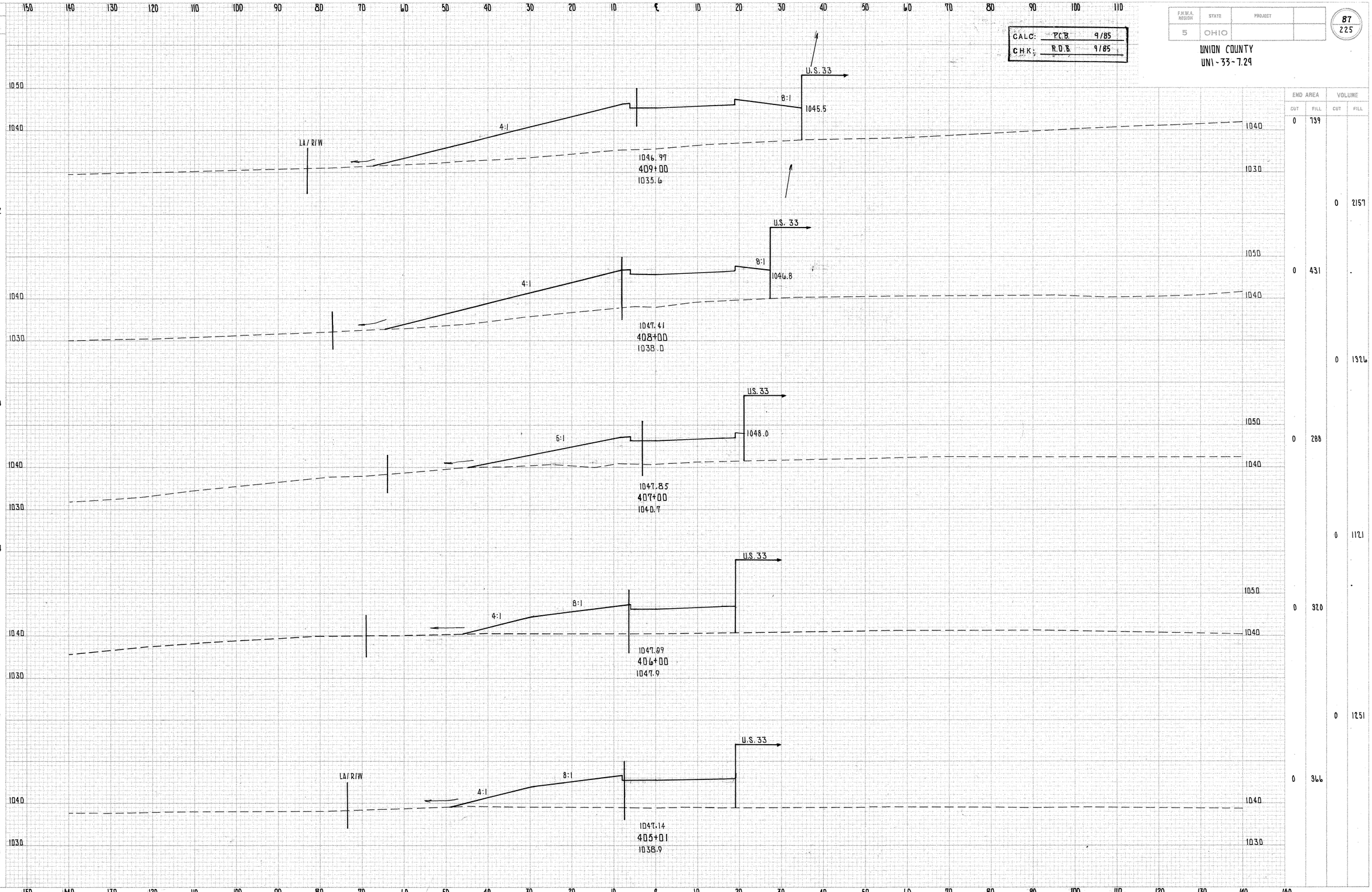
225

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

UNION COUNTY
UNI-33-7.29

SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
94	972		0	739	0	2157
81	789		0	431	0	1326
61	694		0	288	0	1121
64	721		0	320	0	1251
67			0	366		



RAMP 'X' STA. 405+01 TO STA. 409+00

SEEDING	
END WIDTH	SQ. YDS.
142	1589
144	1522
130	1389
120	1244
104	1100
94	

CALC:	P.C.B.	9/85
CHK:	R.D.B.	9/85

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

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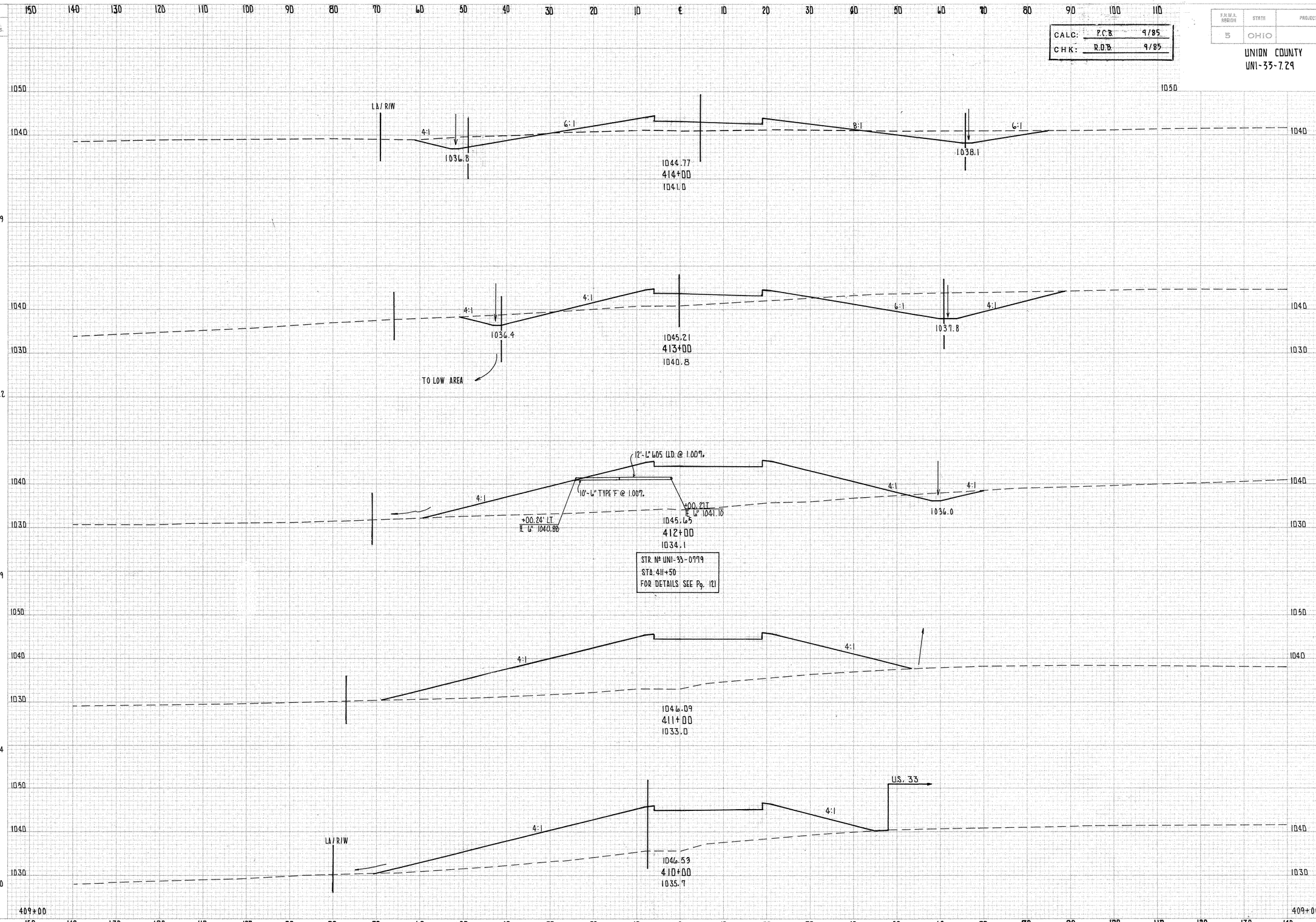
225

UNION COUNTY
UNI-33-7.29



RAMP 'X' STA. 410+00 TO STA. 414+00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
102	119		
		561	440
216	119		
		423	1545
19	715		
		35	2920
0	861		
		0	2852
0	683		
		0	2422
	739		

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

89
225

CALC: P.C.B 9/85
CHK: R.D.B. 9/85

UNION COUNTY
UNI-33-7.29

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
115	1217	48	84	171	296
104	1172	44	75	155	352
107	1250	39	116	186	440
118	1467	59	123	322	454
146	1600	111	124	390	447
142		102	119		

LA/RW
6:1 8:1 8:1 6:1
1038.3
1040.5
1042.81
419+00
1040.6

6:1 8:1 8:1 6:1
1038.0
1039.5
1043.01
418+00
1040.1

10'-6" TYPE 'F' @ 0.28%
7:1
22'-6" 605 SHALLOW @ 0.28%
20'-6" TYPE 'B' @ 0.28%
1037.85
+50.38' LT.
R L= 1037.90
+50.2' LT.
R L= 1038.00
+50.18' LT.
R L= 1038.06

4:1 6:1 8:1 6:1
1037.7
1039.0
1043.45
417+00
1039.6

4:1 6:1 8:1 6:1
1037.4
1038.7
1043.89
416+00
1040.0

LA/RW
4:1 6:1 8:1 6:1
1037.1
1038.4
1044.33
415+00
1040.5

414+00

RAMP 'X' STA. 415+00 TO STA. 419+00

CALC:	P.C.B.	9/85
CHK:	R.D.B.	9/85

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-7.29

90
225

SEEDING

END WIDTH	SQ. YDS.
100	485
94	606
124	678
120	1072
	-170
73	533
	-95
23	75
4	3,184

BACK 23+45

DEDUCT FOR RAMP 'N'
[½ (28+34) 34 + ½ (23 x 41)] ÷ 9 = 169.5 S.Y.

DEDUCT FOR DRIVE @ 20+71.03 RT
A= [½ (12+52) 20 + (12 x 18)] ÷ 9 = 95.1 S.Y.

TOTAL TO SHEET 83

24+00
1042.51

FROM U.S. 33

4:1 4:1 4:1 4:1

1040.0 1038.0

23+00
1042.83

LA/R/W

49' 49'

ROCK C.P. TYPE 'C'
W/ FILTER 10'x7'x15'

U.S. 33

100 YR. HW. FOR 706.02 = EL. 1042.43

24:1 24:1

3:1 3:1

1036.4 1036.7

98" TYPE 'A' 33° 706.02 OR 42" 707.01, 707.04, 707.05, 707.09 OR 707.22 @ 0.20%

UNI-33-0789 STA. 22+50
DRAINAGE AREA 35Ac
Q 25 46 CFS

E 1036.43
HW-4 HEADWALL

E 1036.63
HW-4 HEADWALL

22+50
1043.00

LA/R/W

4:1 4:1 4:1 4:1

1038.0 1038.0

22+00
1043.06

LA/R/W

4:1 4:1 4:1 4:1

1040.0 1039.

FOR EVANS DRIVE - SEE SHEETS 110 TO 111

21+00
1043.40

EX. R/W

12:1

20+00
1044.25

BEGIN WORK
STA. 19+50

19+00
1046.55

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
BACK 23+45	0	0		
			48	11
	58	13		
			150	35
	104	25		
			197	33
	109	11		
			320	35
	64	8		
			128	15
	5	0		
			5	0
19+50	0	0		
TOTAL TO SHEET 83			848	129

S.R. 245 STA. 19+50 TO STA. 24+00

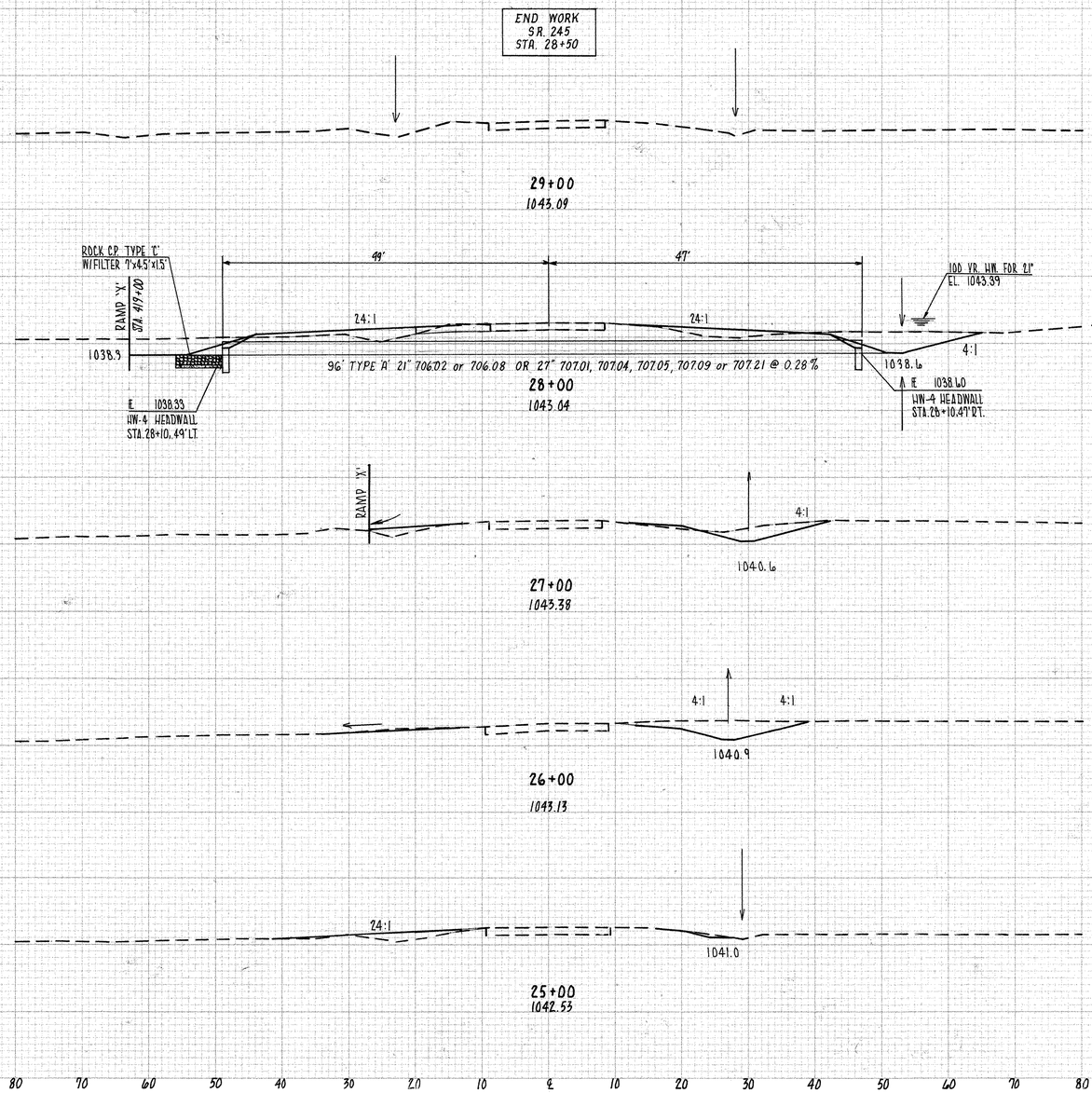
CALC:	P.C.B	9/85
CHK:	R.D.B	9/85

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

91
225

UNION COUNTY
UNI-33-7.29

SEEDING END W/DTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	2602	TOTAL TO SHEET 86				
		TOTAL TO SHEET 86			436	176
		86				
4		28+50 1040	0	0		
	250				58	35
86		28+10 1040	78	38		
	833					
	-202	DEDUCT AREA FOR RAMP 'X' A= ½(24+33.39+½(19×31)+½(17.5×47) = 9-201.9 S.Y.				
					204	98
64			22	10		
	817				104	19
83			34	0		
	850				69	22
70			3	12		
	54				1	2
70		AHEAD 24+93	0	0		



UNI-33-0794 STA. 28+10
DRAINAGE AREA 8 AC.
Q_{25} = 16 CFS.

S.R. 245 STA. 25+00 TO STA. 28+50

CALC: PCB 9-85
CHK: R.O.B 9-85

UNION COUNTY
UNI-33-7.29

FED. PJC DIVISION	STATE	PROJECT		
5	OHIO			

92
225

MARGARET E. ELLEMAN

GLENN W. IRWIN & CELIA IRWIN

1-R

WORK LIMITS

℄ SURVEY & CONST. U.S.R. 33

℄ SURVEY & CONST. RAMP 'Y'

℄ SURVEY & CONST. ROAD 'U'

(REMOVED UNDER ITEM 203)

DIRT TRAIL

1-UP

2-UP

1-GR

6"-605 SHALLOW

6"-605 UNCL.

CB TYPE 'B'

CB-605 UNCL.

LA-R/W

WOODS

MARGARET E. ELLEMAN

W.W. FENCE

MATCH LINE STA 437+00, SEE SHEET 29

PCC STA 446+23.06

MATCH LINE STA 449+00 SEE SHEET 65

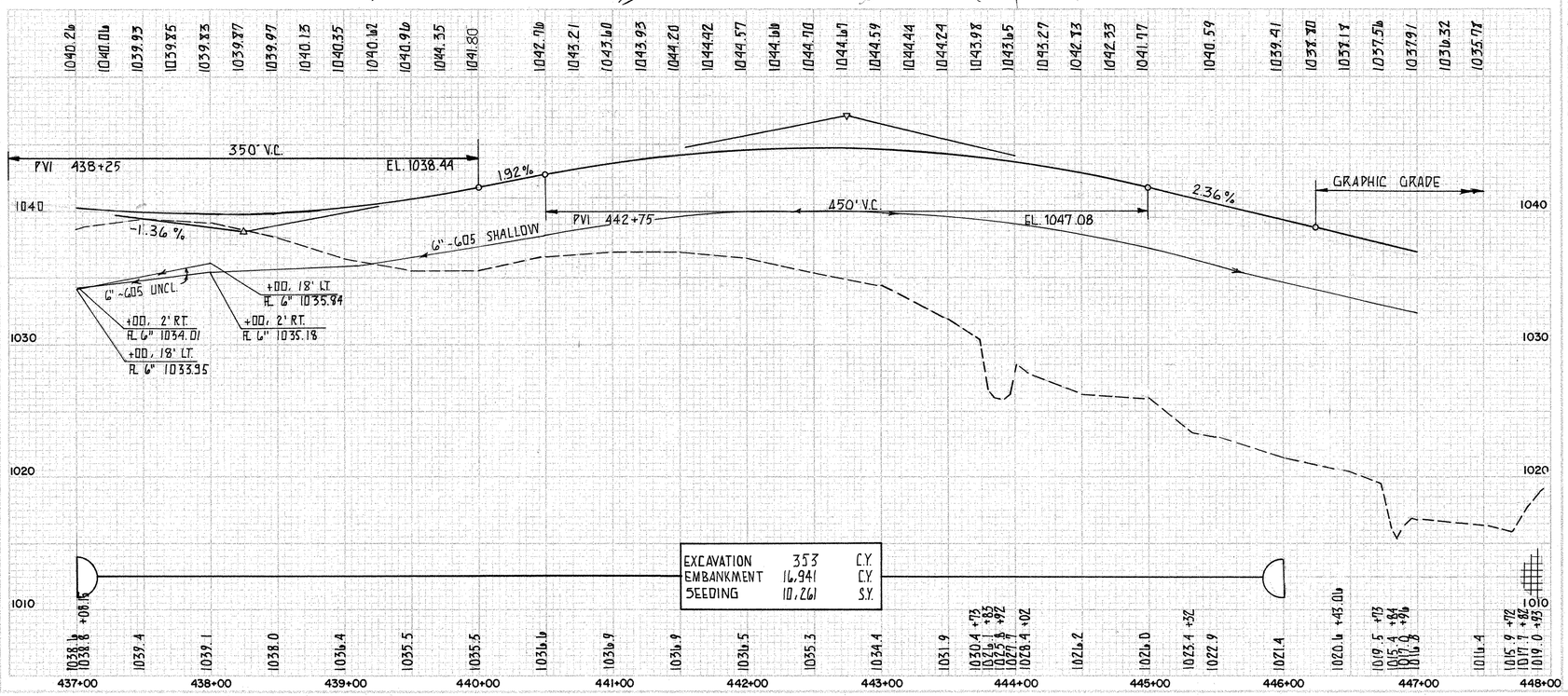
GLEN W. IRWIN & CELIA IRWIN

CALCULATIONS

1-R ITEM 656 ROADSIDE CLEANUP (16.5ft x 50 x 50) ÷ 1000 = 41.2 M.S.F.

NOTES

FOR RAMP 'Y' PAVEMENT DETAILS, SEE SHEETS 114, 119.



EXCAVATION	353	C.Y.
EMBANKMENT	16,941	C.Y.
SEEDING	10,261	S.Y.

ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	603 6" CONDUIT TYPE 'B' LF	605 6" SHALLOW PIPE U.D. LF.	605 8" UNCLASS. PIPE U.D. LF.	605 BENDS & BRANCHES EA.	606 GUARDRAIL TYPE 5 LF.	606 ANCHOR ASSEMBLY TYPE 'A' EA.	656 ROADSIDE CLEANUP M.S.F.
1-R	438+50 TO 443+00	LT.							41
1-UP	437+00 TO 438+00	LT.			142	2			
2-UP	437+00 TO 447+00	RT.	28	900	100	1			
1-GR	443+00 TO 447+00	RT.					375	1	
TOTALS			28	900	242	—	375	1	41

RAMP 'Y' STA. 437+00 TO STA. 447+93.98

CALC:	P.C.B.	9/85
CHK:	R.D.B.	9/85

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

93
225

UNION COUNTY
UNI-33-7.29

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
97	994	0	315	0	926
82	806	0	180	64	338
63	700	94	2	98	25
63	611	19	11	50	103
47		9	44		

1041.80
440+00
1035.5

1040.35
439+00
1036.4

1039.83
438+00
1039.1

1038.5
℄ DITCH

U.S.-33

1037.8
42'-6" 605 UNCL @ 2.92 %
20'-6" TYPE 'B' @ 0.30%
1040.26
437+00
1038.6
437+00 (33), 51' RT
℄ 6" 1032.73
+00, 18' LT
℄ 6" 1033.95
+00, 2' RT
℄ 6" 1034.01

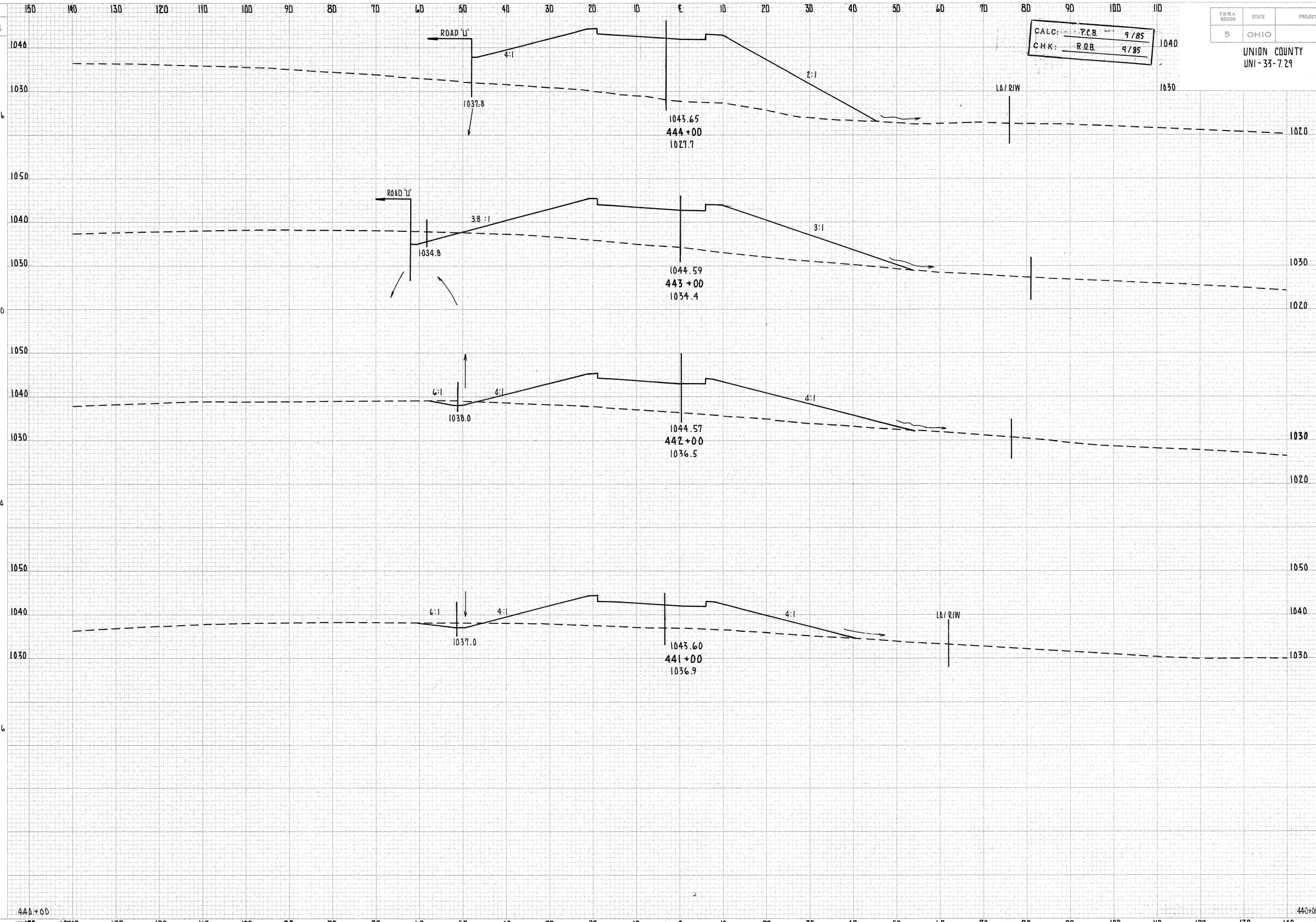
U.S.-33

1039.8
1041.50
436+00
1038.7
1036.8

4:1 6:1 8:1 LA/RIW

RAMP Y STA. 436+00 TO STA. 440+00

SEEDING	
END WIDTH	SQ. YDS.
105	
	1256
121	
	1350
122	
	1294
111	
	1156
87	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	1027		
		41	3090
21	639		
		55	2068
7	478		
		29	1542
8	353		
		16	1247
0	316		

CALC: P.C.B. 9/85
CHK: R.O.B. 9/85

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-7.29

94
225

RAMP Y STA. 440+00 TO STA. 444+00

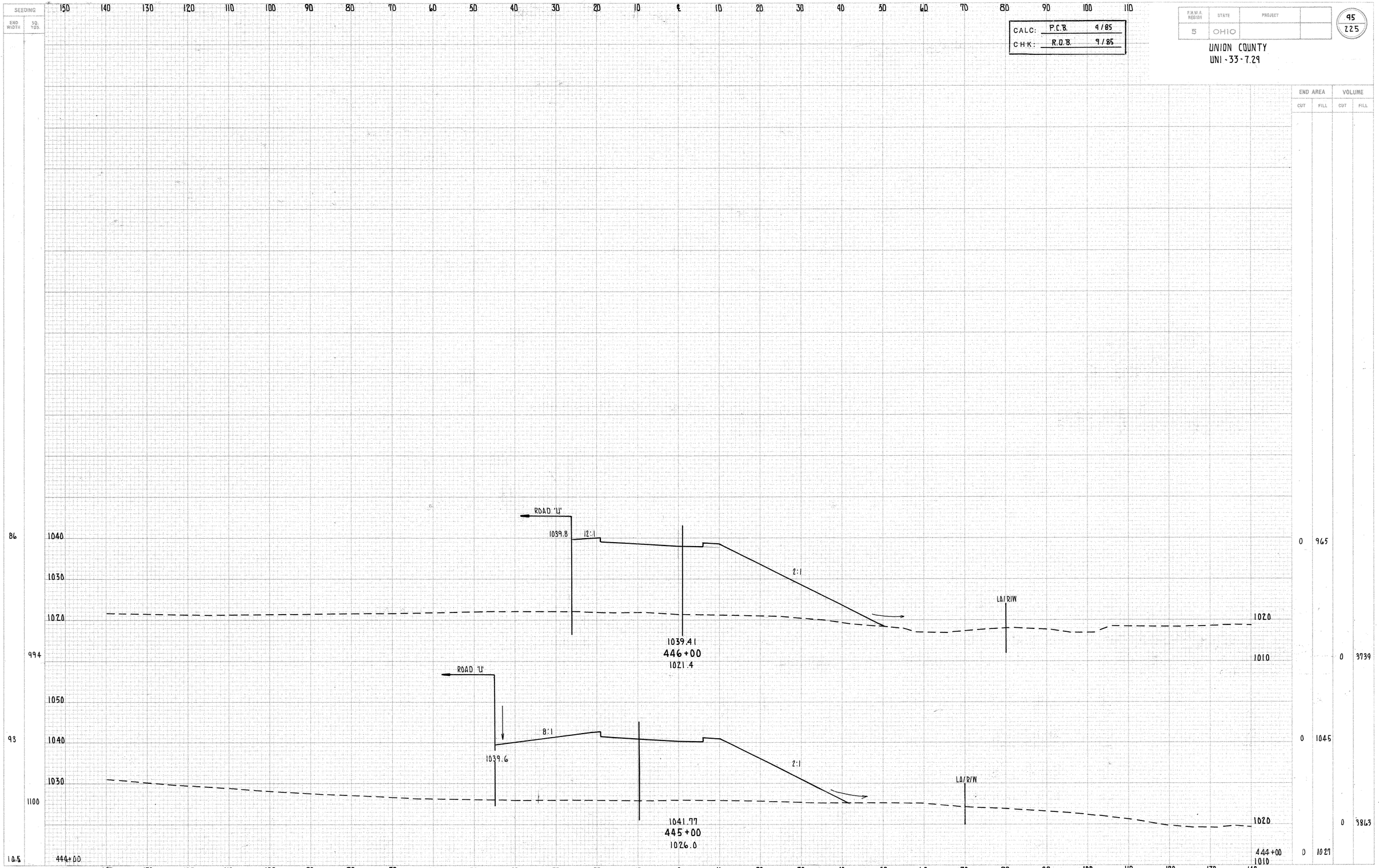
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

95
225

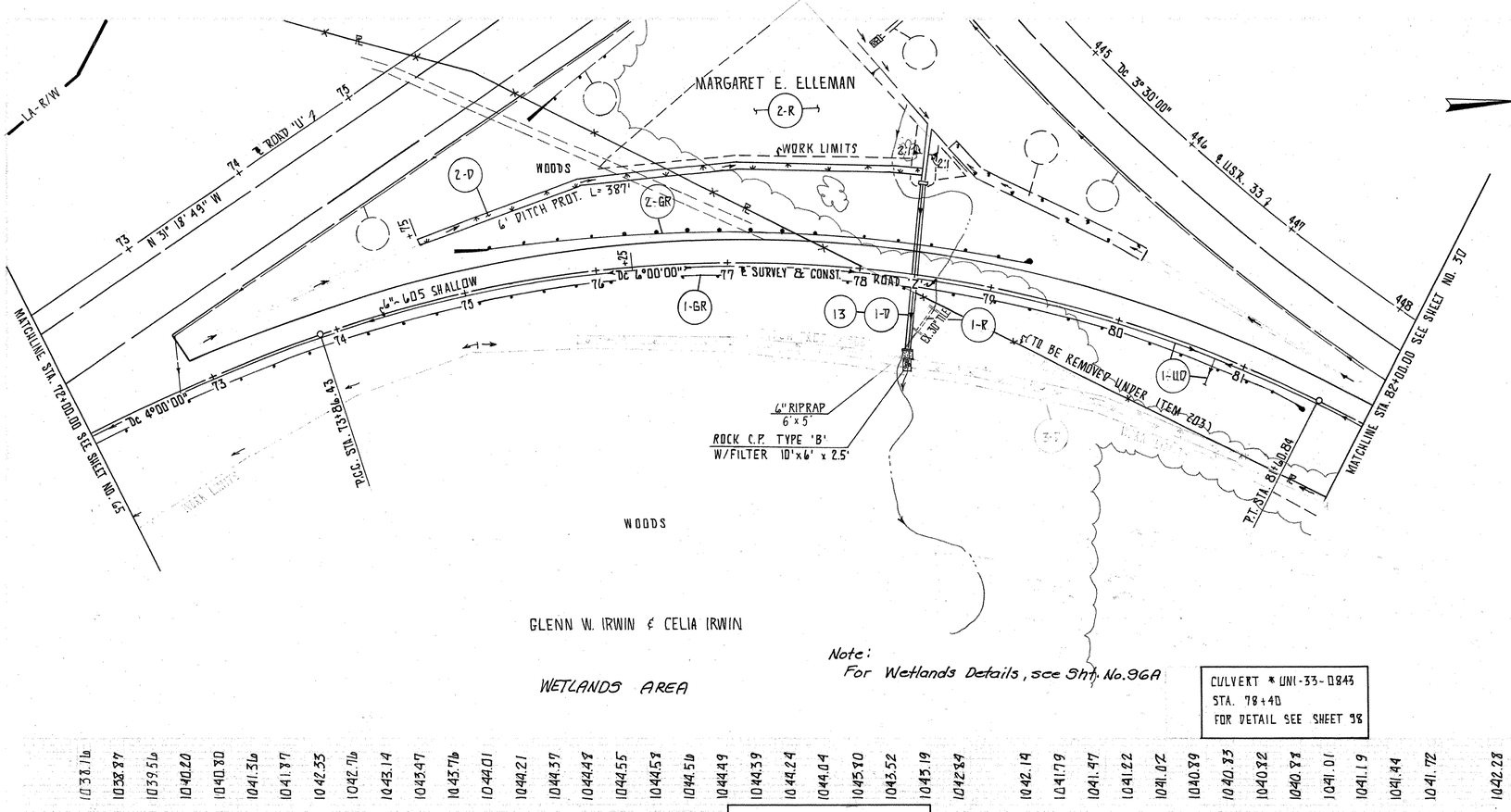
UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
86		0	965		
994				0	3739
93		0	1045		
1100				0	3863
105		0	1021		



RAMP Y STA. 445+00 TO STA. 446+00



Note:
For Wetlands Details, see Sht. No. 96A

CULVERT * UNI-33-0843
STA. 78+40
FOR DETAIL SEE SHEET 98

CALC: P.C.B. 9-85
CHK: R.O.B. 9-85

5

96
225

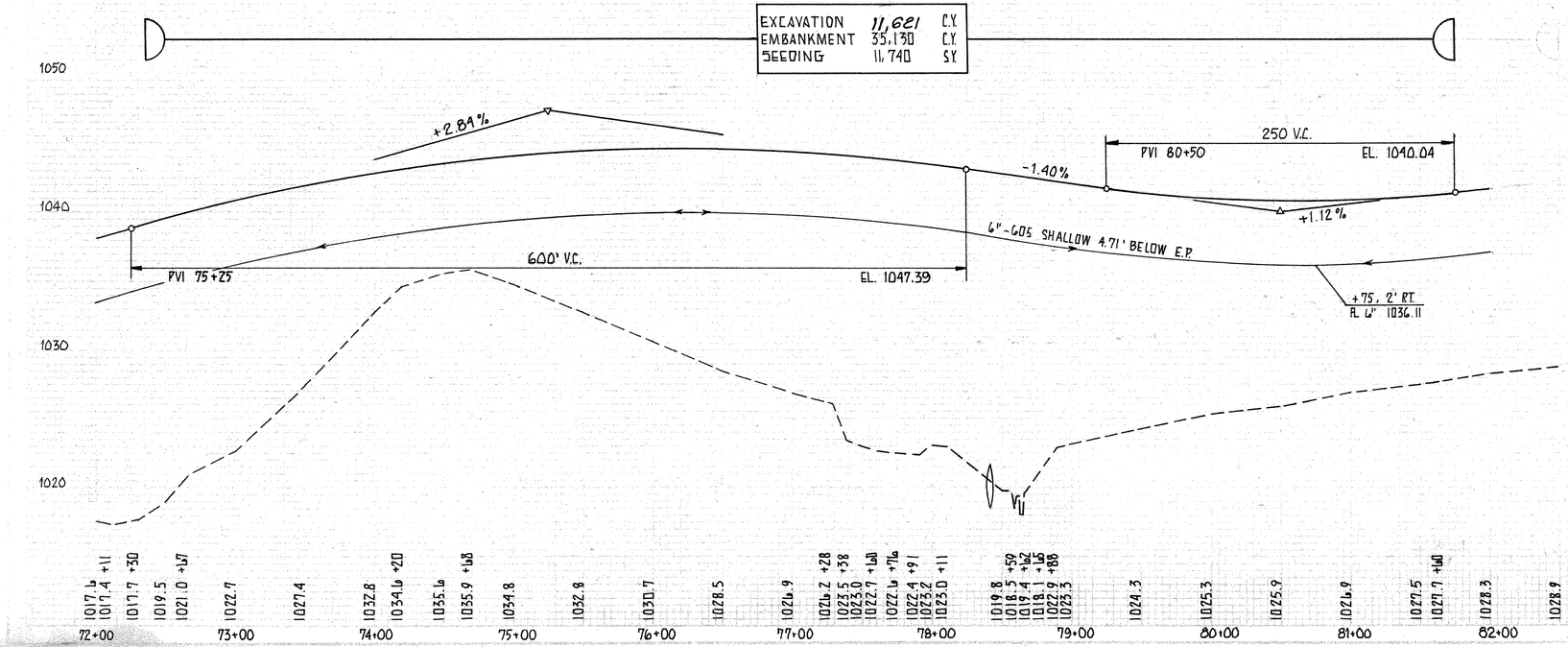
UNION COUNTY
UNI-33-7.29

CALCULATIONS

1-D ITEM 601 6"RIPRAP (6'x 5')÷ 9 = 3.3 S.Y.
1-D ITEM 601 ROCK C.P. TYPE 'B' (10 x 6 x 2.5) ÷ 27 = 5.6 C.Y.
1-D ITEM 670 DITCH PROT. (1.5 x 5)2 ÷ 9 = 1.7 S.Y.
2-R ITEM 656 ROADSIDE CLEANUP [(124 x 200)½ + (240 x 25)½]÷ 1000 = 15.4 M.S.F.
2-D ITEM 670 DITCH PROT. (387 x 6) ÷ 9 = 258.0 S.Y.

NOTES

FOR RAMP 'Z' PAVEMENT DETAILS, SEE SHEETS 113, 117.
FOR U.S.R. 33 PLAN & PROFILE SEE SHEET NO. 30
FOR ROAD 'U' PLAN & PROFILE SEE SHEET NO. 63



* 33" 706.02 2000 #-LOAD OR 36" 707.01(C.103), 707.04(C.103), 707.05 (C.103), 707.09 OR 707.22

REF.	STATION TO STATION	SIDE	202 PIPE REM. OVER 24"	601 6" RIPRAP	601 ROCK C.P. TYPE 'B' W/FIL	602 CONC. MASON	603 * CONDUIT TYPE 'A'	603 CONDUIT TYPE 'F'	605 6" SHALLOW PIPE U.D. & BRACKETS	606 GUARDRAIL ANCHOR ASSEM. TYPE 'A'	606 ANCHOR ASSEM. TYPE 'T'	656 ROADSIDE CLEANUP	670 DITCH EROSION PROTECTION	SEE SHEET NO.
			L.F.	S.Y.	C.Y.	C.Y.	L.F.	L.F.	L.F.	EA.	L.F.	EA.	EA.	M.S.F.	S.Y.	
1-D	78+40	L.&R.		4	6	1.52	128								2	98
2-D	74+75 TO 78+40	LT.													258	
1-GR	72+00 TO 81+50	RT.								950		1				
2-GR	75+00 TO 79+25	LT.								400	1	1				
1-R	78+50 TO 78+60	RT.	22													
2-R	76+06 TO 78+32	LT.											16			
1-LD	72+00 TO 82+00	RT.						10	1011	1						99,238.C
	TOTALS		22	4	6	1.52	128	10	1011	1	1350	1	2	16	260	

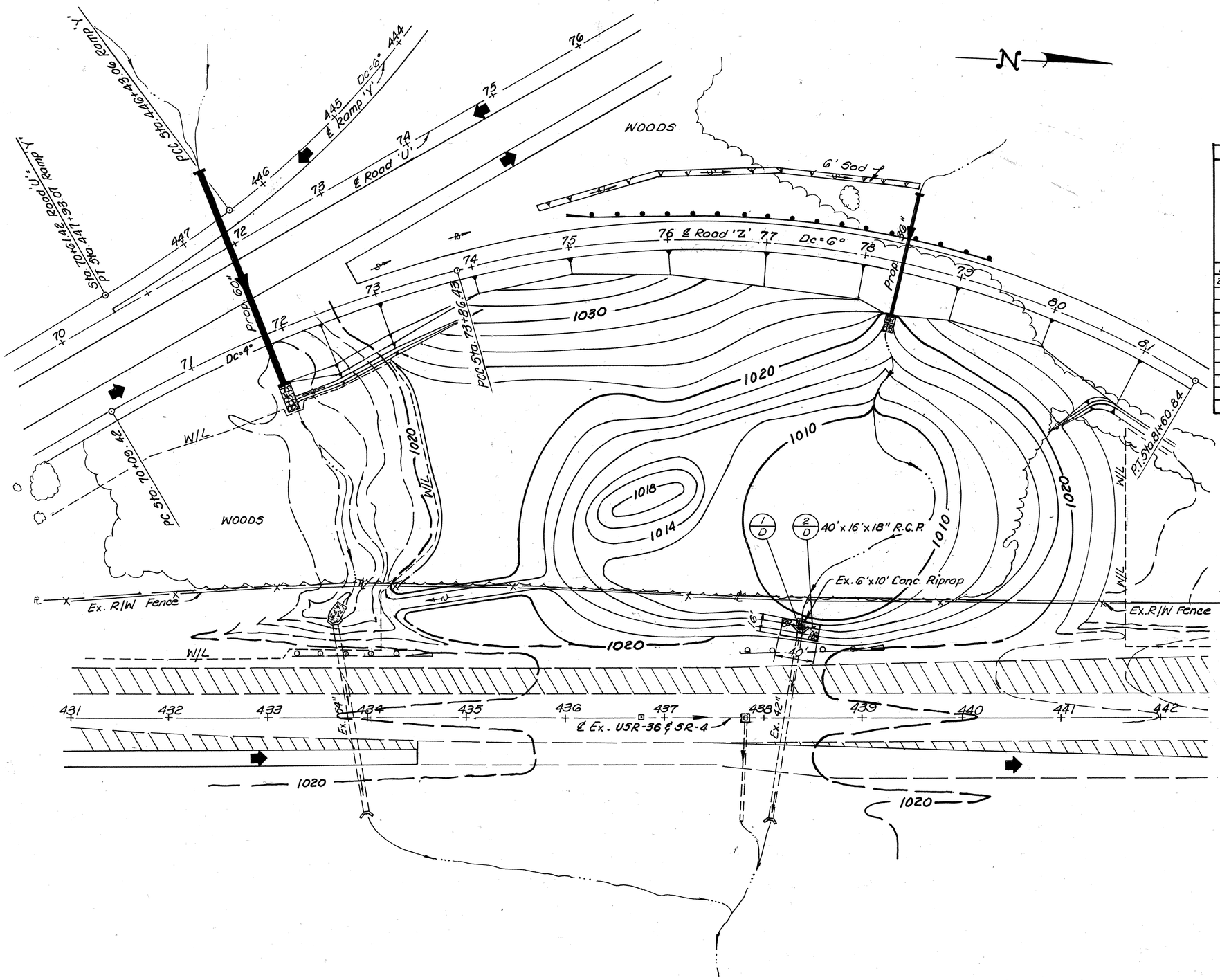
ROAD 'Z' STA. 72+00 TO STA. 82+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

96A
225

UNI-33-7.29

Calc. By: J. Graham 2/25/86
Ched. By: N.W.K 2/25/86



ESTIMATED QUANTITIES

REF NO.	STATIONS FROM	STATIONS TO	SIDE	202 Portions of Structures Removed	601 Rock Channel Protection Type C w/o Bed.	604 CB-2-6
				Lump	Cu. Yd.	
1-D	438+37.6	℄ Ex. US36	Lt.	Lump		1
2-D	438+14.8	438+57.3	Lt.		36	
		TOTALS		Lump	36	1

CALCULATIONS

Item 601 Rock Channel Protection Type C w/o Bedding
40' x 16' x 1.5 = 960 Cu. Ft. ÷ 27 = 35.56 = 36.00 C.Y. Item 601 Carried to General Summary

Item 659 Seeding and Mulching (Wild Life)
Total Area = 111,375 Sq. Ft. ÷ 9 = 12,375.00 Sq. Yds. 12,375 S.Y. Item 659 Seeding & Mulching carried to General Summary

Item 659 Commerical Fertilizer (12-12-12)
111,375 SF ÷ 1000 x 20 ÷ 2000 = 1.113 Tons = 1 Ton Item 659 Commerical Fertilizer carried to General Summary

Item 659 Agricultural Liming
111,375 SF ÷ 1000 x 100 ÷ 2000 = 5.568 Tons = 6 Tons Item 659 Agricultural Liming carried to General Summary

Item 659 Water
111,375 SF ÷ 1000 x 120 ÷ 1000 = 13.365 M. Gals = 13 M. Gals. Item 659 Water carried to General Summary

Item 203 Excavation (Sta. 71+85 to Sta 81+87 Rd "Z")
From 140' Rt of Road "Z" to Ex US R-36 & SR-4 = 58,154 C.Y. Item 203 Excavation carried to General Summary

Item 203 Embankment (Sta. 71+85 to Sta. 81+87 Rd. "Z")
From 140' Rt. of Road "Z" to Ex. US R-36 & SR-4 222.0 C.Y. Item 203 Embankment carried to General Summary

WETLANDS GRADING PLAN

SEEDING	
END WIDTH	SQ. YDS.
133	
	1192
78	
	833
72	
	839
79	
	596
86	

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

97
225

UNION COUNTY
UNI-33-7.29

END AREA		VOLUME	
CUT	FILL	CUT	FILL
539	828		
		1920	2475
622	494		
		1954	1782
559	459		
		965	2485
10	879		
		12	2746
0	1416		

1044.55
76+00
1030.7
ROAD 'U'
1038.5
1044.01
75+00
1034.8
ROAD 'U'
1040.3
1042.76
74+00
1032.8
ROAD 'U'
1040.7
1040.80
73+00
1022.7
ROAD 'U'
1039.15
72+35
1029.8

C=525
C=622
C=559
8:1
48:1
12.4
1022.6

End Ditch 44' Rt of
Sta. 74+00 ℄ Road 'Z'
℄ El. = 1031.70±

Transition Bench Slope from 8:1 to 24:1
in 50' (Back Only)

For Seeding Area Rt. of ℄ Road 'Z'
See Sht. No 96A

ROAD Z STA. 72+00 TO STA. 76+00

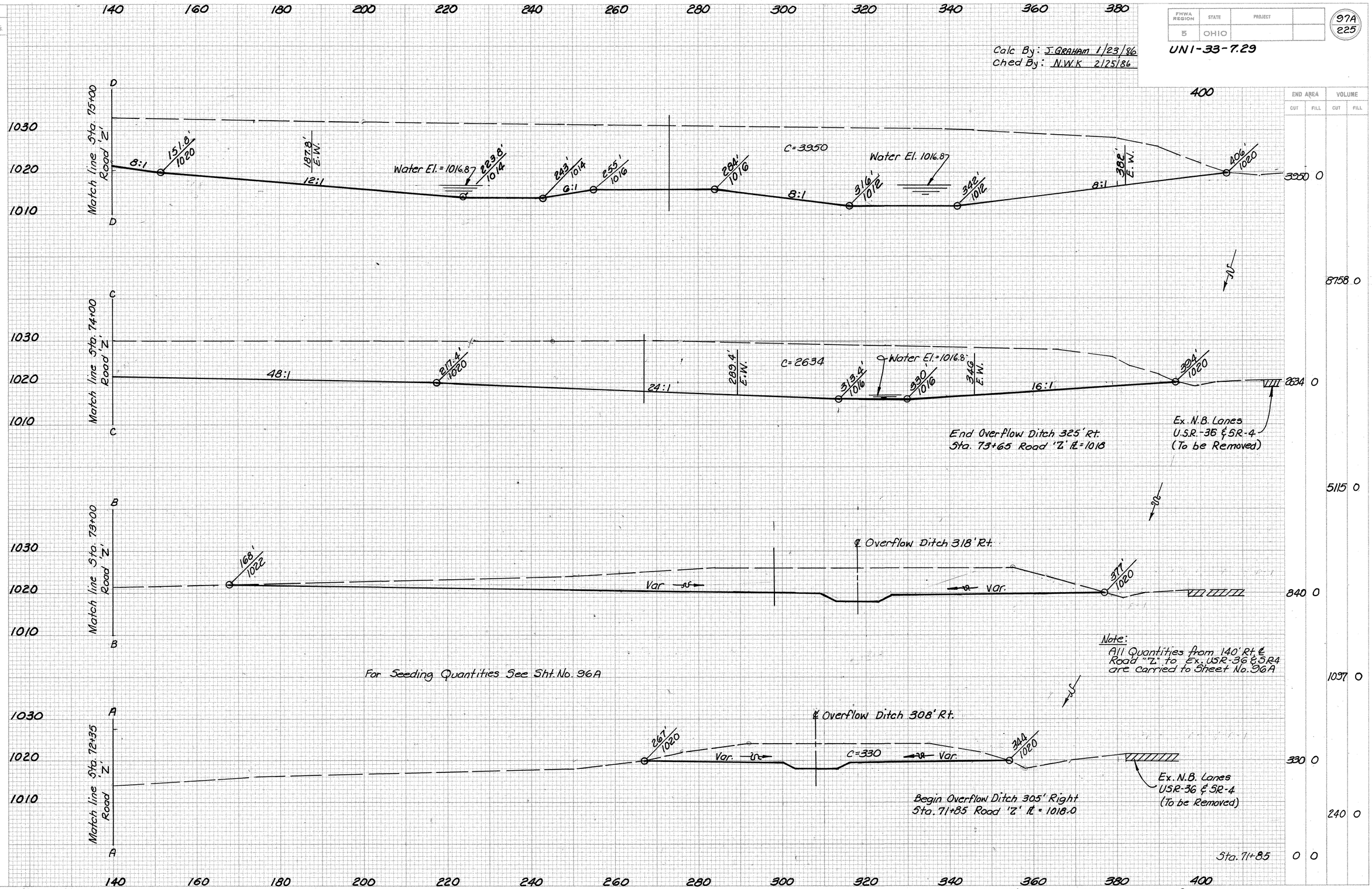
SEEDING	
END WIDTH	SQ. YDS.

FHWA REGION	STATE	PROJECT	
5	OHIO		

97A
225

UNI-33-7.29

Calc By: J. GRAHAM 1/23/86
Ched By: N.W.K 2/25/86



	END AREA		VOLUME	
	CUT	FILL	CUT	FILL

ROAD 'Z' CROSS SECTIONS EXTENSIONS STA 72+35 TO STA 75+00

CALC: P.C.B 9/85
CHK: R.D.B 9/85

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

98
225

UNION COUNTY
UNI-33-7.29

SEEDING END WIDTH	SEEDING SQ. YDS.
114	
	1433
144	
168.3	
159	
	1706
148	
156.1	
133	

Out ditch Sta. 80+50, 105' Rt.
℄ Road 'Z' Fl. El. = 1022.0±

U.S. 33
6:1
1036.6
2:1
1041.02
80+00
1025.3
8:1
C=475
J
1030
1020
1010
J

U.S. 33
3:1
1024.0
2:1
1042.14
79+00
1023.3
8:1
C=332
H
1030
1020
1010
H

CULVERT Nº UNI-33-0843
DRAINAGE AREA 43 Ac
Q 25 50 CFS

U.S. 33
2:1
707.02 100 YR H.W. EL. = 1027.96
2:1
24:1
1023.5
1021.8
78+40.71' LT
℄ 1019.78
HW-4 HEADWALL
2:1
1043.52
78+00
1023.2
128"~TYPE 'A' 33" 706.02 2000 D-LOAD OR 36"
707.01 (0.109), 707.04 (0.109), 707.05 (0.109), 707.09 OR 707.22 @ 1.00%
ROCK C.P. TYPE 'B' W/ FILTER 10'x4'x25'
6" RIPRAP
78+40.57' RT.
℄ 1018.00
HW-4 HEADWALL
℄ OUTLET 2
8:1
C=509
G
1030
1020
1010
G

2:1
2:1
24:1
1026.0
1044.39
77+00
1026.9
12:1
C=388
135
1020
6:1
F
1030
1020
1010
F

For Seeding to the Right of ℄ Road 'Z'
See Sht. No. 96A

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
475	1174		
		1324	5172
332	1579		
		1414	5682
532	1458		
		1527	4999
399	1220		
		1546	3890
539	828		

76+00

ROAD Z STA. 76+00 TO STA. 80+00

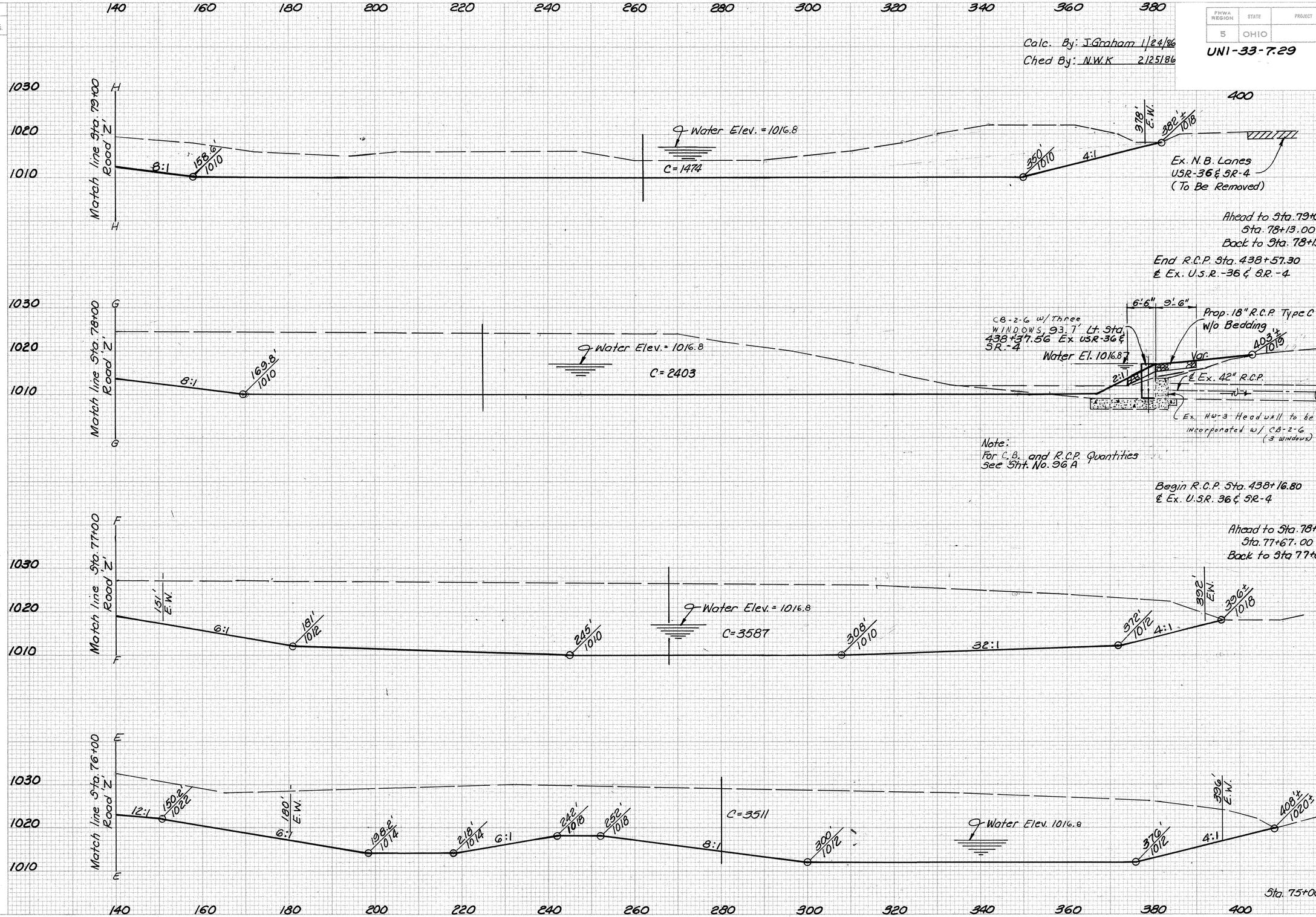
SEEDING	
END WIDTH	SQ. YDS.

FHWA REGION	STATE	PROJECT	
5	OHIO		

38A
225

UNI-33-7.29

Calc. By: J.Graham 1/24/86
Ched By: N.W.K 2/25/86



Note:
For C.B. and R.C.P. Quantities
See Sht. No. 96A

Begin R.C.P. Sta. 438+16.80
℄ Ex. U.S.R. 36 ℄ SR-4

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	1474	0		
			0	57
Ahead to Sta. 79+00	0	62		
Sta. 78+13.00				
Back to Sta. 78+13	0	115		
End R.C.P. Sta. 438+57.30 ℄ Ex. U.S.R.-36 ℄ S.R.-4			5340	0
	2403	0		
			0	119
			8230	0
Ahead to Sta. 78+13	0	115		
Sta. 77+67.00				
Back to Sta 77+00	0	62		
			0	46
	3587	0		
			9337	0
	3511	0		
			9815	0
Sta. 75+00	3950	0		

ROAD 'Z' CROSS SECTIONS EXTENSIONS STA. 76+00 TO STA 79+00

SEEDING	
END WIDTH	SQ. YDS.

CALC:	P.C.B.	9/85
CHK:	R.O.B.	9/85

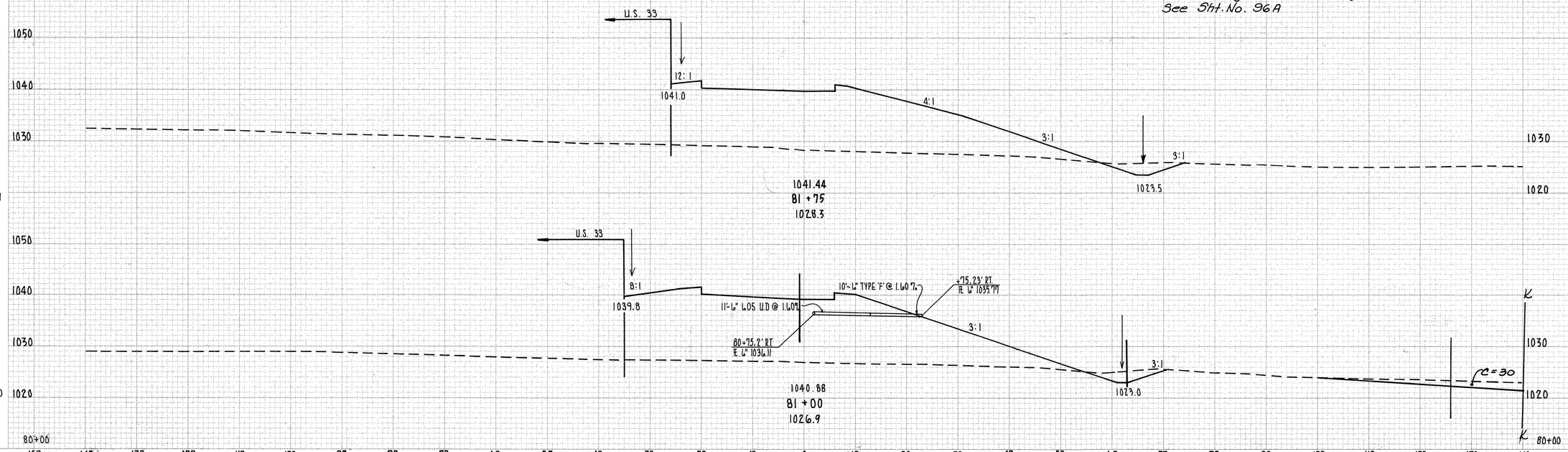
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-7.29

99
225

END AREA		VOLUME	
CUT	FILL	CUT	FILL

For Seeding Area to the Right of ℄ Road 'Z'
See Sht. No. 96A



91	767		29	725	
93			50	848	108 2186
1150			475	1174	851 3773
114					

ROAD Z STA. 81+00 TO STA. 81+75

SEEDING	
END WIDTH	SQ. YDS.

FHWA REGION	STATE	PROJECT	
5	OHIO		

99A
225

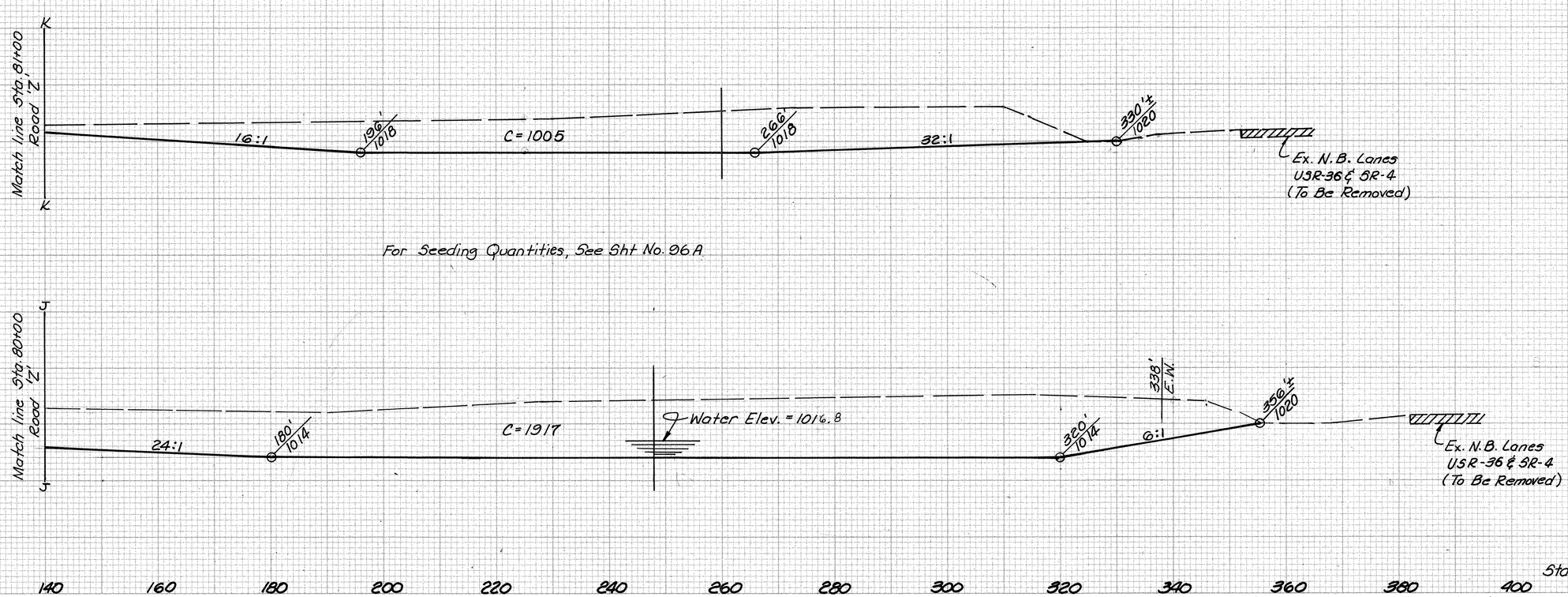
UNI-33-7.29

Calc. By: J. Graham 1/27/86
Chcd By: N.W.K. 2/25/86

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
Sta. 81+87	0	0		
			1619	0
			1005	0
			3972	0
			1917	0
			4622	0
Sta 79+00	1474	0		

Note:
All Quantities from 140' Rt ℄ Road "Z" to USR-36 & SR-4 are carried to Sheet No. 96A

End Wetlands Excavation
Right of Sta. 81+87
℄ Prop. Road 'Z'



For Seeding Quantities, See Sht No. 96A

140 160 180 200 220 240 260 280 300 320 340 360 380 400

ROAD "Z" CROSS SECTION EXTENSIONS STA 80+00 TO STA 81+00

REF.	STATION TO STATION	SIDE	601 ROCK C.P. TYPE 'C' W/ FILTER	603 CONDUIT 6" TYPE 'F'	605 6" SHALLOW PIPE U/D.	606 GUARDRAIL TYPE 5	606 ANCHOR ASSEMBLY	670 PITCH EROSION PROT.
			C.Y.	LF.	LF.	LF.	EA	S.Y.
1-D	461+00 TO 463+25	RT.						196
2-D	455+25 TO 461+00	RT.						692
3-D	453+26 TO 455+25	RT.	156					
4-D	455+75 TO 460+25	LT.						303
1-UD	457+00 TO 464+21.76	LT.		10	734			
2-UD	450+00 TO 456+96	LT.		10	718			
1-GR	462+66.26 TO 464+21.76	LT.				130.5	1	
TOTALS			156	20	1452	130.5	1	1171

*TYPE "A"

EXCAVATION	6737 C.Y.
EMBANKMENT	47,888 C.Y.
SEEDING	33,906 S.Y.

REF.	STATION TO STATION	SIDE	202 STRUCTURE REMOVED	202 CONC. FOUNDA. REMOVED	202 SEPTIC TANK REMOVED	656 ROADSIDE CLEANUP	SPECIAL DRILLED WELL ABANDON
			LUMP	EA.	EA.	M.S.F.	E.A.
1-R	449+33 TO 449+92	LT.	LUMP				
2-R	456+90	LT.					1
3-R	453+34 TO 460+40	L&R		50			
4-R	458+50	RT.					1
5-R	444+00 TO 453+00 (U.S.33)	LT.				358.5	
6-R	457+00 (LOCATION UNKNOWN)	LT.			1		
	TOTALS		LUMP	50	1	359	2

CALCULATIONS

1-D ITEM 670 D.P. (264 x 6) ÷ 9 = 176.0 S.Y.
2-D ITEM 670 D.P. (692 x 9) ÷ 9 = 692.0 S.Y.
3-D ITEM 601 R.C.P. (281 x 10 x 1.5) ÷ 27 = 156.1 C.Y.
4-D ITEM 670 D.P. (363 x 7.5) ÷ 9 = 302.5 S.Y.
5-R ITEM 656 ROADSIDE CLEANUP (143.4[0] x 50 x 50) ÷ 1000 = 358.5 M.S.F.

NOTES

FOR U.S.33 PLAN & PROFILE, SEE SHEETS 30,31.
FOR ROAD 'U' PLAN & PROFILE, SEE SHEETS 66,67.
FOR RAMP 'V' PAVEMENT DETAILS, SEE SHEET 115.

FHWA REGION	STATE	PROJECT	
5	OHIO		

100 / 225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9-85
CHK: R.O.B. 9-85

RAMP 'V' STA. 448+32 TO STA. 464+21

NOTES

1. FOR U.S. 33 PLAN & PROFILE SEE SHEETS 31 AND 32.
2. FOR RAMP 'U' PLAN & PROFILE SEE SHEET 100.

CALCULATIONS

4-R ITEM 202 (20 x 3) + (32 x 4) + (5 x 6) = 218 S.F.
6-R ITEM 202 [(625 x 16) + ½ (60 x 14) + ½ (73 x 47) + ½ (55 x 15) + ½ (28 x 5)] ÷ 9 = 1402 S.Y.
10-R ITEM 656 (125^a" x 50 x 50) ÷ 1000 = 312.5 M.S.F.
EX. RAMP 'T' ITEM 659 [(525 x 40) + (28 x 81) ½ + (25 x 96) ½ + (18 x 60) ½] ÷ 9 = 2652.7 S.Y.

* SPECIAL

REF.	STATION TO STATION	SIDE	202 PAVEMENT REMOVED	202 STRUCTURE REMOVED	202 SEPTIC TANK REMOVED	202 FENCE REMOVED	202 PIPE REMOVED 24" & UNDER	202 CATCH BASIN REMOVED	202 WALK REMOVED	DRILLED WELL ABANDONED *	656 ROADSIDE CLEANUP	659 SEEDING
			S.Y.	LUMP	EA.	L.F.	L.F.	EA.	S.F.	EA.	M.S.F.	S.Y.
1-R	458 + 28	LT.			1							
2-R	458 + 52	LT.		LUMP								
3-R	458 + 61	LT.								1		
4-R	458 + 81 TO 459 + 44	LT.							218			
5-R	456 + 30 TO 460 + 90	LT.				538						
6-R	456 + 50 TO 461 + 88	LT.	1402									
7-R	457 + 30 TO 458 + 70	LT.				220						
8-R	458 + 70 TO 459 + 71	LT.					140	1				
9-R	460 + 72 TO 461 + 41	LT.					90					
10-R	452 + 50 TO 462 + 00	LT.									313	
11-R	459 + 00	LT.		LUMP								
RAMP 'T'	457 + 20 TO 462 + 00	LT.										2653
TOTALS			1402	LUMP	1	758	230	1	218	1	313	2653

EXISTING RAMP "T"

SEEDING	
END WIDTH	SQ. YDS.

CALC: PCB 9/85
CHK: RDB 9/85

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

102
225

UNION COUNTY
UNI-33-7.29

END AREA		VOLUME	
CUT	FILL	CUT	FILL

EXCAVATION	6737 CY.
EMBANKMENT	47,888 CY.
SEEDING	33,906 CY.

QUANTITY CARRIED TO SHEET NO. 100

1036.56 1036.70 1036.89 1037.12 1037.41 1037.77 1038.18 1038.65 1039.15 1040.15 1041.15 1042.15 1043.15 1044.15 1045.15 1046.15 1047.15 1048.15 1049.15 1050.15 1051.15 1052.15 1053.15 1054.16 1055.15 1056.15 1057.15 1058.15 1058.65 1059.12 1059.54 1059.90 1060.20 1060.45 1060.64 1060.80 1060.89 1060.96 1060.97 1060.63

1060
1050
1040
1030

2.00%

-0.68%

+21.76

+00. 2' LT.
PVI E. 1056.15

300 V.C.

PVI STA. 463+25 EL. 1061.65

1.6~6.05 SHALLOW U.D. 97A BELOW E.P.

150 V.C.

PVI STA 451+00 EL. 1037.15

+0.60%

+00. 2' LT.
PVI E. 1044.41

+00. 2' LT.
PVI E. 1031.82

1034.9 1034.7 1034.7 1033.7 1032.6 1031.9 1031.2 1031.0 1030.4 1028.9 +48 1030.0 1028.1 +54 1031.3 1033.9 1035.0 +87 1035.0 1035.2 +57 1035.2 1036.9 +76 1035.4 +90 1037.0 1037.3 +43 1037.7 1038.1 1038.5 1038.8 +77 1039.4 +88 1039.7 1039.8 1040.6 1041.2 1040.9 1040.8 1040.8 +49 1041.0 1040.8 1040.6 1040.7 1041.1 1041.4 1042.5 1042.9 1042.8

450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465

RAMP 'Y' STA. 450+32.19 TO STA. 464+21.76

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

103
225

CALC: P.C.B. 9/85
CHK: R.O.B. 9/85

UNION COUNTY
UNI-33-7.29

SEEDING END WIDTH	SEEDING SQ. YDS.
189	1800
135	1322
103	1078
91	780
65	

454+00 — 1031.3 — 1043.15 — 1031.2 — 1029.00 — TO CULVERT
453+00 — 1031.0 — 1041.15 — 1030.9
452+00 — 1031.9 — 1039.15 — 1030.6 — 1032.8 — U.S. 33
451+00 — 1033.7 — 1037.41 — 1030.3 — 1036.7 — U.S. 33
450+00 — 1036.62 — 1036.61 — 1030.0 — U.S. 33
10"-6" TYPE 'E' @ 1.00% — 22'-6" 605 U.D. @ 1.00% — 8:1 — 3:1 — +00.34' LT. IE 6" 1031.50 — +00.2' LT. IE 6" 1031.62

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
41	857		
		101	3063
18	738		
		52	2384
14	500		
		142	1294
72	172		
		240	388
90	51		

RAMP Y STA. 450+00 TO STA. 454+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

104
225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

SEEDING

END WIDTH	SQ. YDS.
180	2117
	+8083
201	2217
	+640
198	2172
	+1095
193	2061
	+224
178	2039
189	

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110

1060 / 1050 / 1040 / 1030

6:1 4:1 4:1 3:1 4:1

1036.0 — 1053.15 — 459+00 — 1040.6 — 1038.5

ADD SEEDING FOR DRIVES IN DRIVE-IN THEATER
LT. STA. 454+00 TO STA. 460+60
(29.1 x 50 x 50) ÷ 9 = 8083.3 S.Y.

ADD ITEM 203, EXCAVATION FOR DRIVES IN DRIVE-IN, LT., STA. 454+00 TO STA. 460+60.
(29.1 x 50 x 50) x 1 ÷ 27 = 2694.4 C.Y.

6:1 4:1 4:1 6:1

1034.0 — 1051.15 — 458+00 — 1039.7 — 1038.0

ADD SEEDING FOR DRIVES RT. 102', STA. 457+00 TO STA. 457+90.
[(144 x 12) + (195 x 10) + (208 x 10)] ÷ 9 = 639.8 S.Y.

ADD ITEM 203, EXCAVATION FOR DRIVES RT. 102', STA. 457+00 TO STA. 457+90.
[(144 x 12) + (195 x 10) + (208 x 10)] x 1 ÷ 27 = 213.3 C.Y.

10'-6" TYPE 'F' @ 1.00% — 12'-6" L05 U.D. @ 1.00%
+00.24' LT. E. ℄ 1044.19 — +00.2' LT. E. ℄ 1044.41

6:1 4:1 4:1 6:1

1033.0 — 1049.15 — 457+00 — 1038.1 — 1036.5

ADD SEEDING FOR DRIVES RT. 220', STA. 455+50 TO STA. 457+90.
[(100 x 38) ÷ 2 + (225 x 14) + (552 x 8) + (65 x 6)] ÷ 9 = 1095.1 S.Y.

ADD ITEM 203, EXCAVATION FOR DRIVES RT. 220', STA. 455+50 TO STA. 457+90.
[(100 x 38) ÷ 2 + (225 x 14) + (552 x 8) + (65 x 6)] x 1 ÷ 27 = 365.0 C.Y.

6:1 4:1 4:1 6:1

1032.0 — 1047.15 — 456+00 — 1037.0 — 1035.0

ADD SEEDING FOR DRIVE RT. 93', STA. 455+50 TO STA. 457+00
(202 x 10) ÷ 9 = 224.4 S.Y.

ADD ITEM 203, EXCAVATION FOR DRIVE RT. 93', STA. 455+50 TO STA. 457+00.
(202 x 10) x 1 ÷ 27 = 74.8 C.Y.

6:1 4:1 4:1 6:1

1031.5 — 1045.15 — 455+00 — 1035.0 — 1033.5

ADD ITEM 203, EMBANKMENT FOR BASEMENT, 330' LT. STA. 455+80
[8 x (42 x 34)] ÷ 27 = 423 C.Y.

454+00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
82	989		
		388	3488
			+2694
140	862		
		497	3065
			+213
152	762		
		577	2709
			+365
180	671		
		548	2527
			+ 75
125	669		
			+423
		302	2901
41	857		

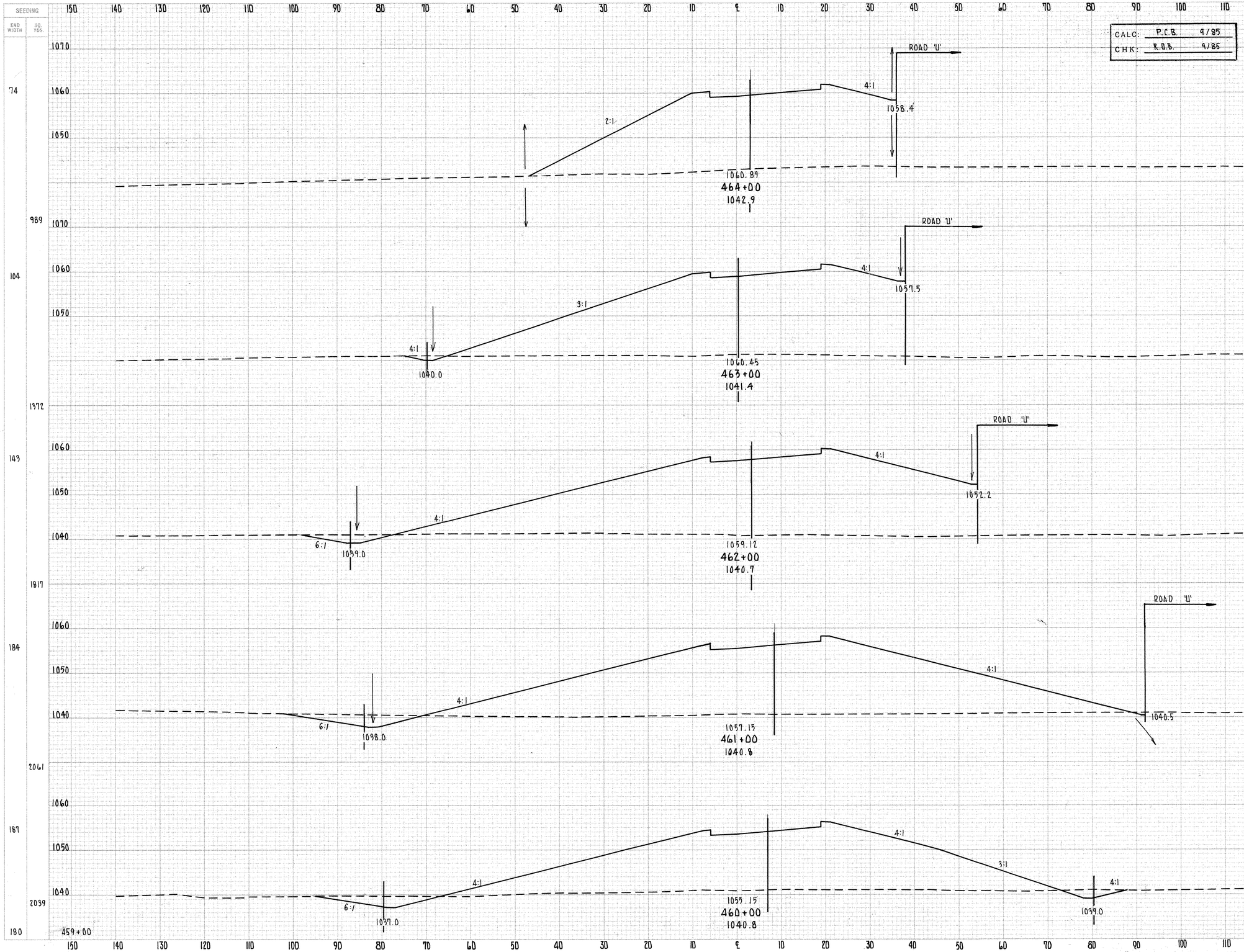
RAMP V STA. 455+00 TO STA. 459+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

105
225

UNION COUNTY
UNI-33-7.29

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85



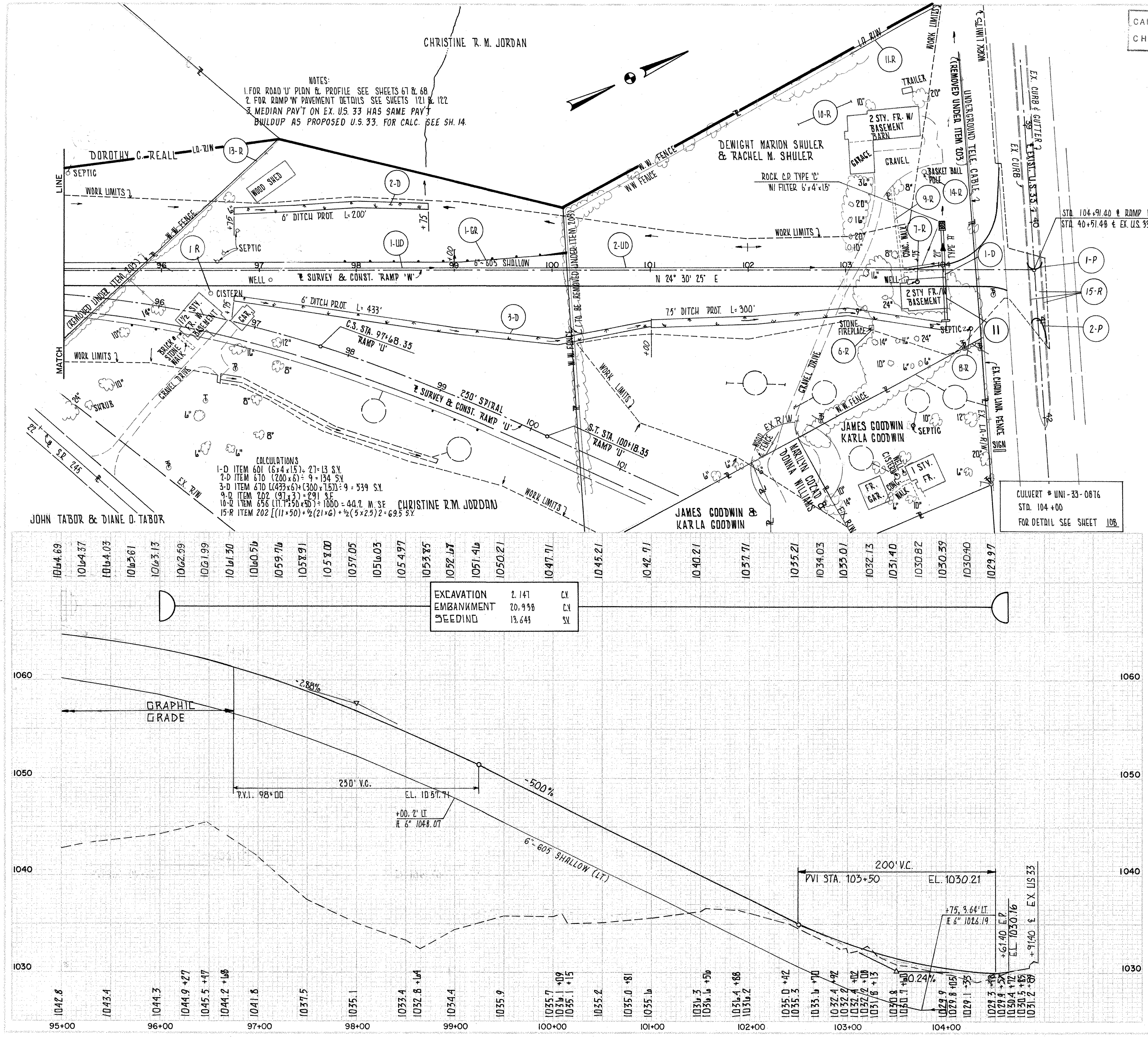
RAMP V STA. 460+00 TO STA. 464+00

CALC: P.C.B. 9-85
CHK: R.O.B. 9-85

UNION COUNTY
UNI-33-7.29

5 | OHIO

106
225



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 STRUCTURE REMOVED LUMP	202 SEPTIC TANK REMOVED EA.	202 FENCE REMOVED L.F.	202 WALK REMOVED S.F.	601 ROCK C.P. TYPE 'C' W/ FILTER C.Y.	602 CONCRETE MASONRY C.Y.	603 6" CONDUIT TYPE 'F' L.F.	603* 12" CONDUIT TYPE 'A' L.F.	SPEC. DRILL WELL ABANDON EA.	202 CURB & GUTTER REM'D L.F.	202 CURB REMOVED L.F.	202 PAVEMENT REMOVED S.Y.	609 CURB TYPE 6 L.F.	605 6" SHALLOW PIPE U.D. L.F.	605 BENDS & BRANCHES EA.	606 GUARDRAIL TYPE 5 L.F.	606 ANCHOR ASSEMBLY TYPE II EA.	656 ROADSIDE CLEANUP M.S.F.	670 DITCH EROSION PROT. S.Y.	SEE SHEET NO.
1-GR	95+00 TO 100+08.85	LT.																483.85	1			
1-UD	95+00 TO 99+00	LT.							10							407	1					23 E
2-UD	99+04 TO 103+96	LT.							10							524	1					23 E
1-D	104+00	L&R					1.3	0.74		92												108
2-D	96+75 TO 98+75	LT.																			134	
3-D	96+75 TO 104+00	RT.																			539	
1-R	96+50	RT.	LUMP																			
6-R	103+26	RT.	LUMP																			
7-R	103+73	RT.									1											
8-R	104+27	RT.		1																		
9-R	103+57	L&R.				291																
10-R	100+16 TO 104+00	LT.																		44		
11-R	100+14 TO 104+00	L&R			456																	
13-R	96+53 TO 97+21	LT.			94																	
14-R	103+86	LT.	LUMP																			
15-R	40+45 TO 41+27.7 (Ex. US 33)	L & R										83	57	70								
1-P	40+45 TO 40+51 (Ex. US 33)	L & R													19							
2-P	41+00 TO 41+27.7 (Ex. US 33)	L & R													34							
TOTALS			LUMP	1	550	291	1.3	0.74	20	92	1	83	57	70	53	931	1	483.85	1	44	673	

* 706.02 OR 706.08

RAMP 'W' STA. 95+00 TO STA. 104+91.40

SEEDING END WIDTH	SEEDING SQ. YDS.
125	1428
132	1522
142	1589
144	1489
124	

CALC: P.C.B. 9/85
CHK: R.D.B. 9/85

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-7.29

107
22.5

LA/RIW
3:1
4:1
1032.8
1047.71
100+00
1035.7
4:1
6:1
1036.5
1040
1030

10'-6" TYPE 'F' @ 1.00%
7'-6" GOS ILD @ 1.00%
2:1
+00.19' LT.
EL. 1047.90
+00.2' LT.
EL. 1048.09
4:1
ROAD 'U'
1043.0
2:1 2:1 24:1
1032.0
1052.68
99+00
1034.4
1040
1030

ROAD 'U'
5:1
1052.0
+75
2:1
2:1 2:1 24:1
1033.0
1057.05
98+00
1035.1
1040
1030

ROAD 'U'
6:1
1058.8
2:1
2:1 2:1 24:1
1040.0
1060.56
97+00
1041.7
1050
1040
1030

ROAD 'U'
12:1
1062.4
2:1
LA/RIW
2:1 2:1 24:1
1041.5
1069.22
96+00
1044.3
1050
1040

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
17	751		
		41	3851
5	1328		
		29	5288
11	1527		
		48	4562
15	937		
		58	3545
17	978		

RAMP W STA. 96+00 TO STA. 100+00

SEEDING	
END WIDTH	SQ. YDS
20	475
118	+ 448
	1078
76	
	956
96	
	1161
113	
	1322
125	

CALC:	Y.C.B.	9/85
CHK:	R.D.B.	9/85

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-7.29

108
225

104+67

CULVERT Nº UNI-33-0876
DRAINAGE AREA 4.6 Ac.
Q 25 15 CFS

TO EX.33
EX. U.S. 33
10'-6" TYPE 'F' @ 0.48 %
+95.40' LT
IE 6" 1026.00
OUTLET GRADE 0.23 %
3:1
2:1
24:1
32'-6" L.D.5 LID @ 0.44 %
92'-2" TYPE 'A' 706.02 OR 706.08 @ 0.32 %
1030.63
104+00
1029.9
24:1
3:1
6:1
1026.00
+00.52' RT., IE 21" 1025.99
HW-48 HEADWALL
+00.40' LT., IE 21" 1025.70
HW-48 HEADWALL
ROCK C.P. TYPE 'C'
W/FILTER 6'x4'x1.5'
+75, 3.64 LT
IE 6" 1026.19

APP SEEDING FOR DRIVE LT 40', STA. 103+20
TO STA. 104+02.
[(84 x 48) ÷ 9 = 448.0 S.Y.

104+62

APP ITEM 203, EXCAVATION FOR DRIVE
LT. 40' STA. 103+20 TO STA. 104+02
[(61 x 8) + (46 x 21) + ½(38 x 17)] x 1 ÷ 27 = 65.8 C.Y.

APP ITEM 203, EMBANKMENT FOR BASEMENT
LT. 8' STA. 103+55
[(40 x 32) + (8 x 26)] x 8 ÷ 27 = 440.9 C.Y.

6:1
6:1
1030.1
6:1
6:1
1031.0
1039.03
103+00
1032.2

APP ITEM 203, EMBANKMENT FOR BASEMENT
LT. 132', STA. 103+00
(52 x 30) x 8 ÷ 27 = 462.2 C.Y.

6:1
6:1
1034.8
6:1
6:1
1033.0
1037.71
102+00
1036.2

LA/RIW
6:1
4:1
1033.1
4:1
6:1
1035.0
1042.71
101+00
1035.6

100+00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
102	0			
			258	37
123	32			
			312	65
			+66	
				+441
46	3			
			226	+462 25
76	11			
			182	625
22	327			
			73	1996
17	751			

RAMP W STA. 101+00 TO STA. 104+00

CALC:	P.C.B.	9/85
CHK:	R.O.B.	9/85

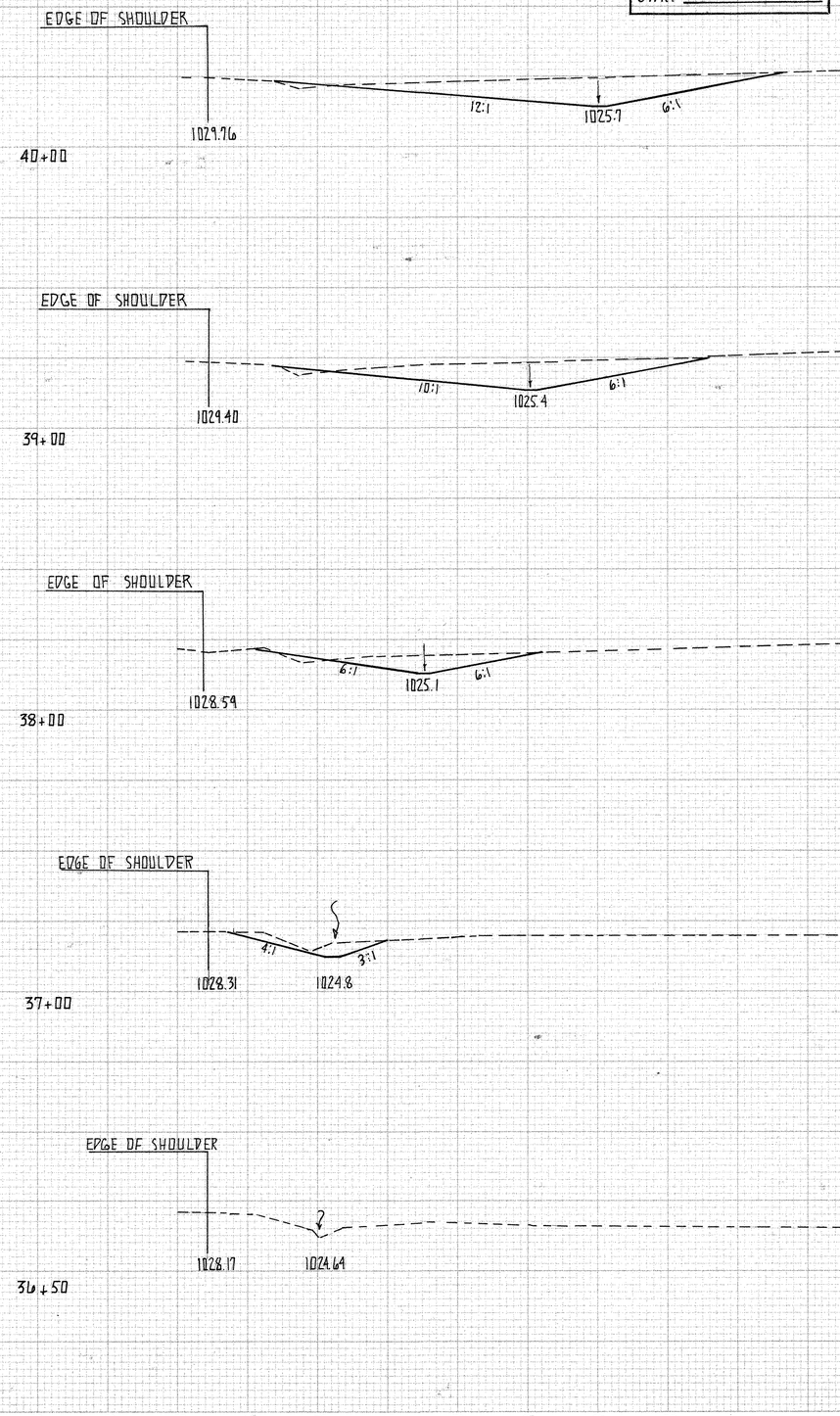
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-7.29

109
225

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	2.175				
85					
	883				
74					
	701				
53					
	489				
35					
	97				
0					

TOTAL TO SHEET 106



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
135	4		
		461	15
114	4		
		280	17
37	5		
		98	9
16	0		
		15	0
0	0		
		854	41

TOTAL TO SHEET 106

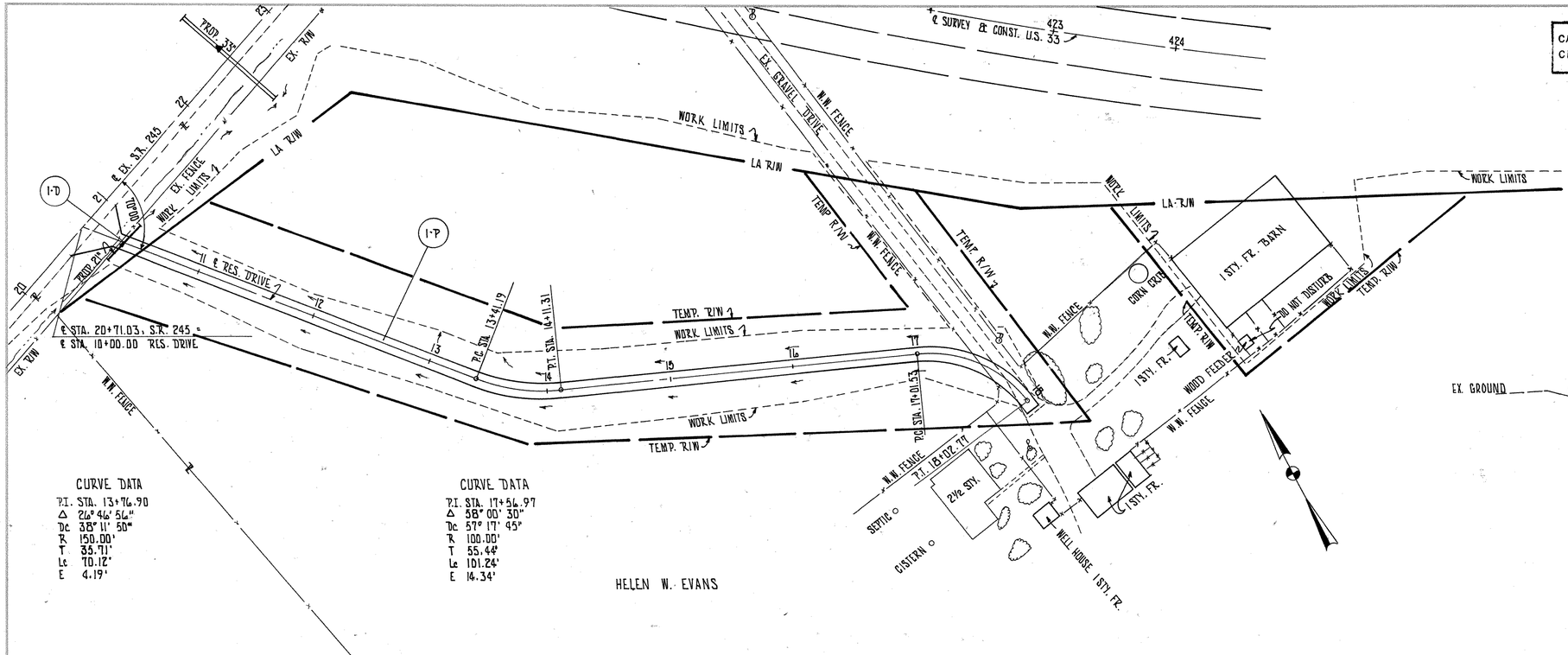
EXISTING U.S. 33 STA. 36+50 TO STA. 40+00

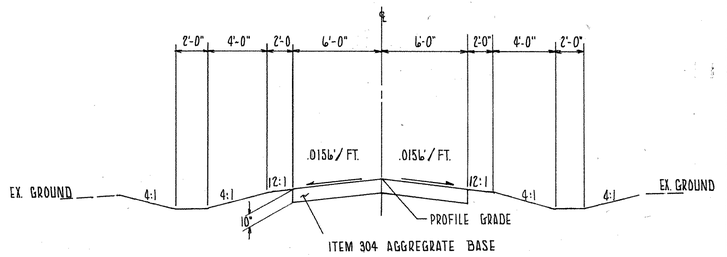
CALC:	ALF	9-85
CHK:	RG	9-85

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

110
225

UNION COUNTY
UNI -33- 7.29





TYPICAL DRIVE SECTION

CURVE DATA
P.I. STA. 13+76.90
Δ 26° 46' 56"
Dc 38° 11' 50"
R 150.00'
T 35.71'
Lc 70.12'
E 4.19'

CURVE DATA
P.I. STA. 17+54.97
Δ 58° 00' 30"
Dc 57° 17' 45"
R 100.00'
T 55.44'
Lc 101.24'
E 14.34'

CALCULATIONS

ITEM 304 AGG. BASE ((12 x 800 + 20 x 20) x 0.8333) ÷ 27 = 308.6 C.Y.

REF.	STATION TO STATION	SIDE	304 AGGREGATE BASE	603 21" CONDUIT TYPE "D"
			C.Y.	L.F.
1-D	10+28.5 TO 10+41.5	L&R		40
1-P	10+10.4 TO 18+10	L&R	309	
TOTAL			309	40

EVANS DRIVE STA. 10+10.40 TO STA. 18+10.00

CALC: RG 9-85
CHK: ALF 9-85

F.H.W.A. REGION	STATE	PROJECT		
5	OHIO			

111
225

UNION COUNTY
UNI-33-7.29

SEEDING		END AREA		VOLUME		SEEDING	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL	END WIDTH	SQ. YDS.
	403						
52		132	0				
				274	9		
	422						
						4	
24		16	5				
							244
				354	9		
	450					40	
		175	0				
57							
				400	0		
	511						
35		41	0			50	
	300			114	6		
						56	
48		54	5			51	
				44	2		
	66					57	
0		+10.4	43	0		52	

ADD SEEDING FOR EX. DRIVE
A=(145×25)÷9=402.8 S.Y.

C-132
4:1 4:1 4:1 4:1
1049.48
14+00
1052.0

4:1 F-16 C-5 4:1 4:1
1047.48
13+00
1045.7

C-175
4:1 4:1 4:1 4:1
1045.8
12+00
1047.6

C-41
4:1 4:1 4:1 4:1
1043.56
11+00
1043.4

R 1039.0
+41.5, 19' LT.
F-5 C-54
4:1 4:1 3:1
FL 1039.16
+28.5, 19' RT.
40'-21" TYPE 'D' @ 0.40% SKEWED 20° L.F.
SEE STR. 245 DITCH
1043.23
10+35
1042.0

+10.4
1043.37
10+10.4
1043.37

ADD CUT FOR EX. DRIVE
(12×200×1)÷27=88.9 C.Y.

C-12
1051.88
18+00
1051.8

C-60
4:1 4:1 4:1 4:1
1051.48
17+00
1051.9

C-130
4:1 4:1 4:1 4:1
1051.08
16+00
1052.9

C-140
4:1 4:1 4:1 4:1
1050.68
15+00
1052.7

STA. 14+00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
			89
12	0		
			133 0
60	0		
			352 0
130	0		
			500 0
140	0		
			503 0
132	0		

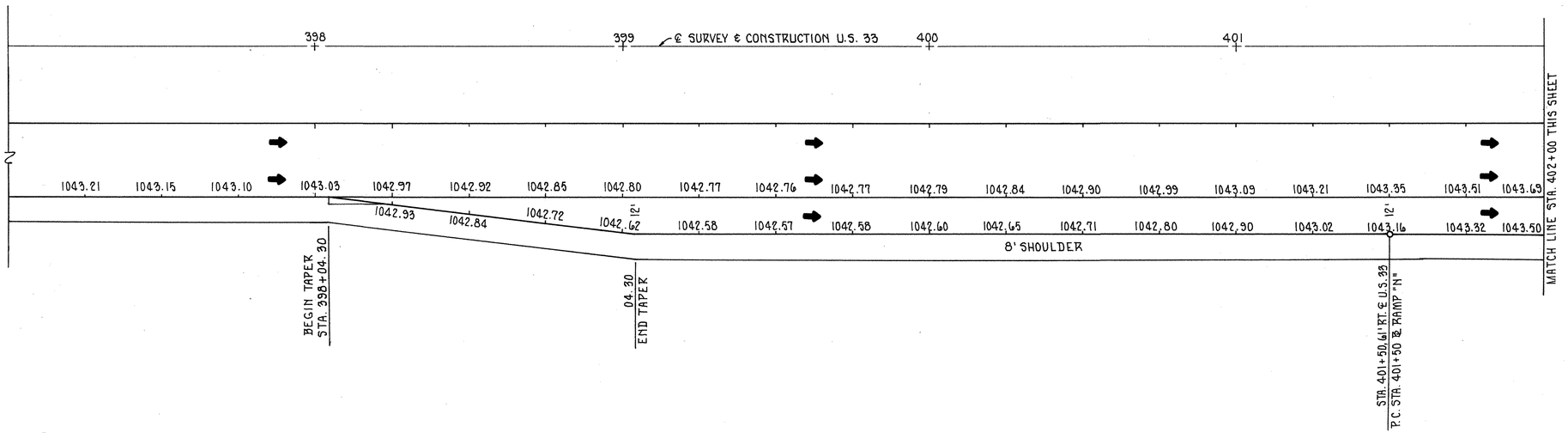
60 40 20 0 20 40 60

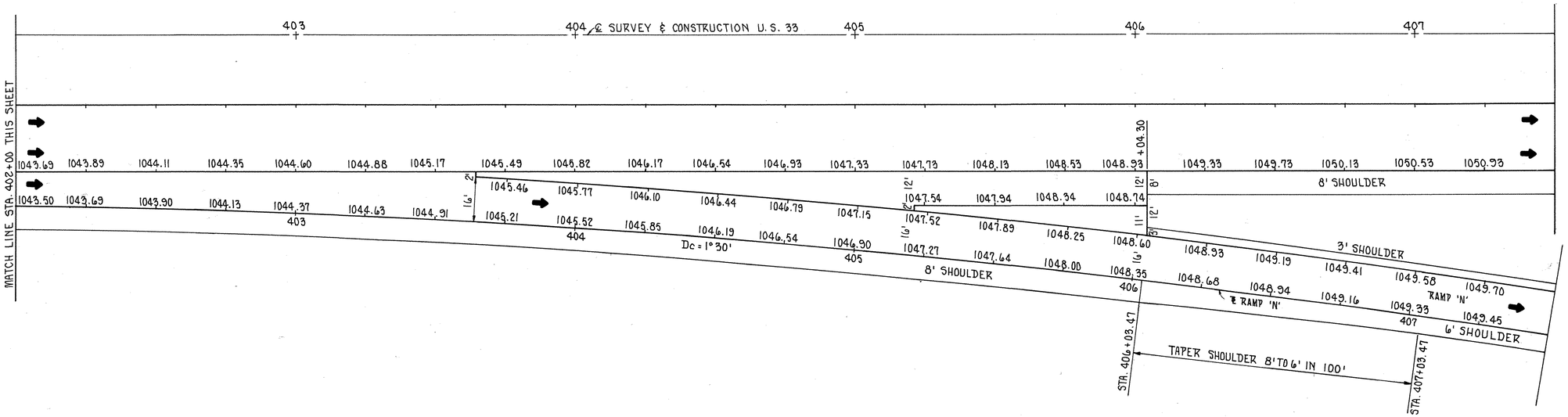
EVANS DRIVE STA. 10+10.4 TO STA. 18+00.00

FHWA REGION	STATE	PROJECT	
5	OHIO		

112
225

UNION COUNTY
UNI-33-7.29





PAVEMENT DETAIL U.S. 33 AT RAMP "N" EXIT

FHWA REGION	STATE	PROJECT	
5	OHIO		

113
225

UNION COUNTY
UNI-33-7.29

STA. 395+00 BEGIN 40:1 TAPER

1043.75 1043.68 1043.69 1043.66 1043.64 1043.60 1043.57 1043.55 1043.51 1043.51 1043.46 1043.45 1043.39 1043.40 1043.33 1043.36 1043.28 1043.30 1043.21 1043.25 1043.15 1043.21 1043.10 1043.15 1043.03 1043.10 1042.97 1043.06 1042.92 1043.00 1042.85 1042.96 1042.80 1042.94 1042.77 1042.94 1042.76 1042.96 1042.77 1042.99 1042.79 1043.04 1042.84 1043.11 1042.90 1043.21 1042.99 1043.32 1043.09 1043.45 1043.21

395 S 53° 35' 30" E 396 397 ℄ SURVEY & CONST. U.S.R. 33 398 399 400 401

MATCH LINE STA. 401+25.00 THIS SHEET

MATCH LINE STA. 401+25.00 THIS SHEET

1043.45 1043.60 1043.77 1043.96 1044.17 1043.92 1044.40 1044.15 1044.65 1044.40 1044.91 1044.66 1045.20 1044.95 1045.50 1045.25 1045.78 1045.58 1046.05 1045.92 1046.30 1046.28 1046.56 1046.66 1046.84 1047.06 1047.13 1047.47 1047.39 1047.84 1047.61 1048.17 1047.77 1048.42 1047.89 1048.56 1047.95 1048.62 1047.97 1048.64 1047.93 1048.60 1047.85 1048.52 1047.74 1048.41 1047.63 1048.30

1043.21 1043.35 1043.51 1043.69 1043.89 1044.11 1044.35 1044.60 1044.88 1045.17 1045.49 1045.82 1046.17 1046.54 1046.93 1047.33 1047.73 1048.13 1048.53 1048.93 1049.33 1049.73 1050.13 1050.53 1050.93 1051.33

END 40:1 TAPER
℄ STA. 405+00.00, 74.00' LT. ℄ U.S. 33
P.C. ℄ STA. 405+00.00 ℄ RAMP "X"

TAPER SHOULDER 8' TO 6' IN 100'

Dc 4° 00' 00"

RAMP "X"

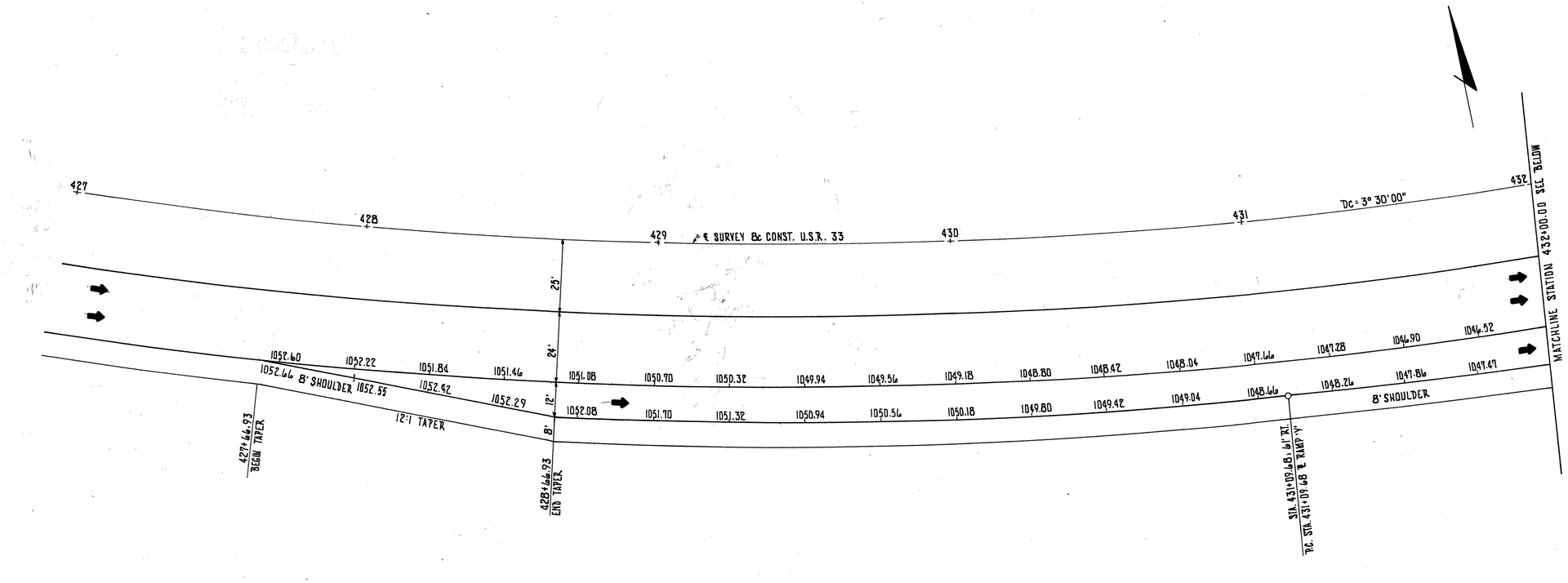
402 S 53° 35' 50" E 403 ℄ SURVEY & CONST. U.S.R. 33 404 405 406 407

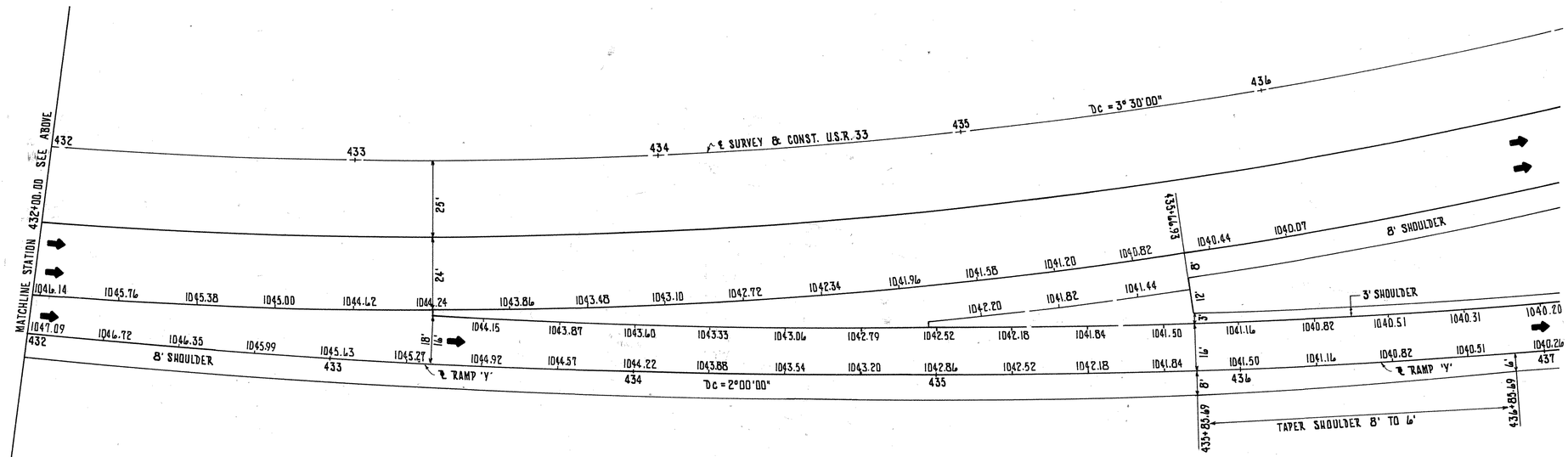
PAVEMENT DETAIL U.S. 33 AT RAMP "X" ENTRANCE

FHWA REGION	STATE	PROJECT	
5	OHIO		

114
225

UNION COUNTY
UNI-33-7.29



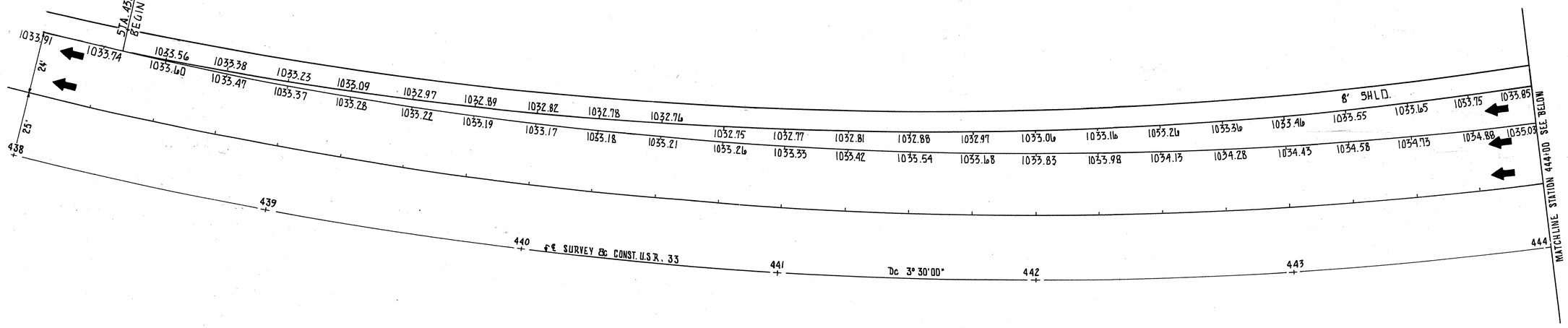


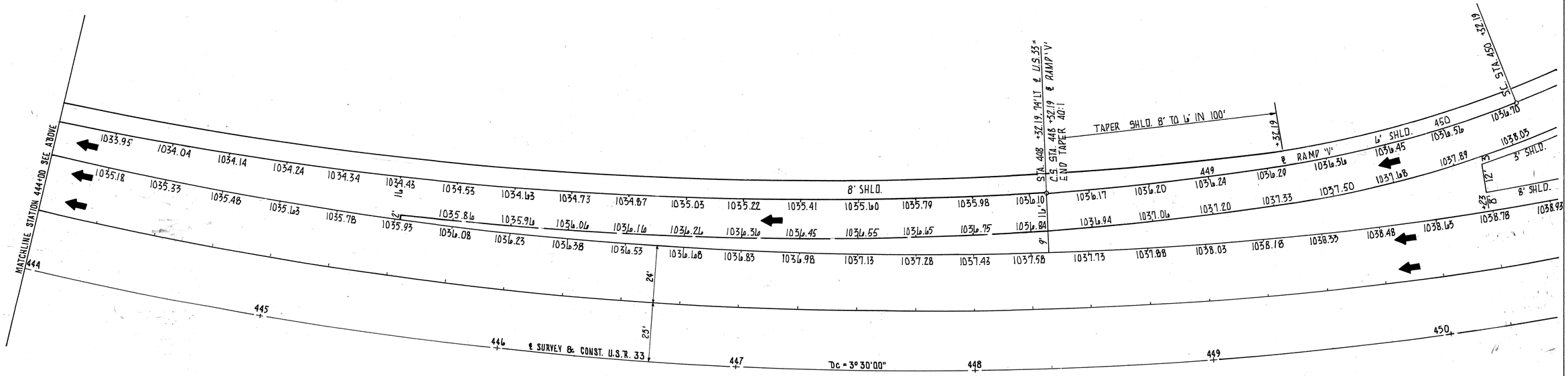
PAVEMENT DETAIL U.S. 33 @ RAMP "Y" EXIT

FHWA REGION	STATE	PROJECT	
5	OHIO		

115
225

UNION COUNTY
UNI-33-7.29



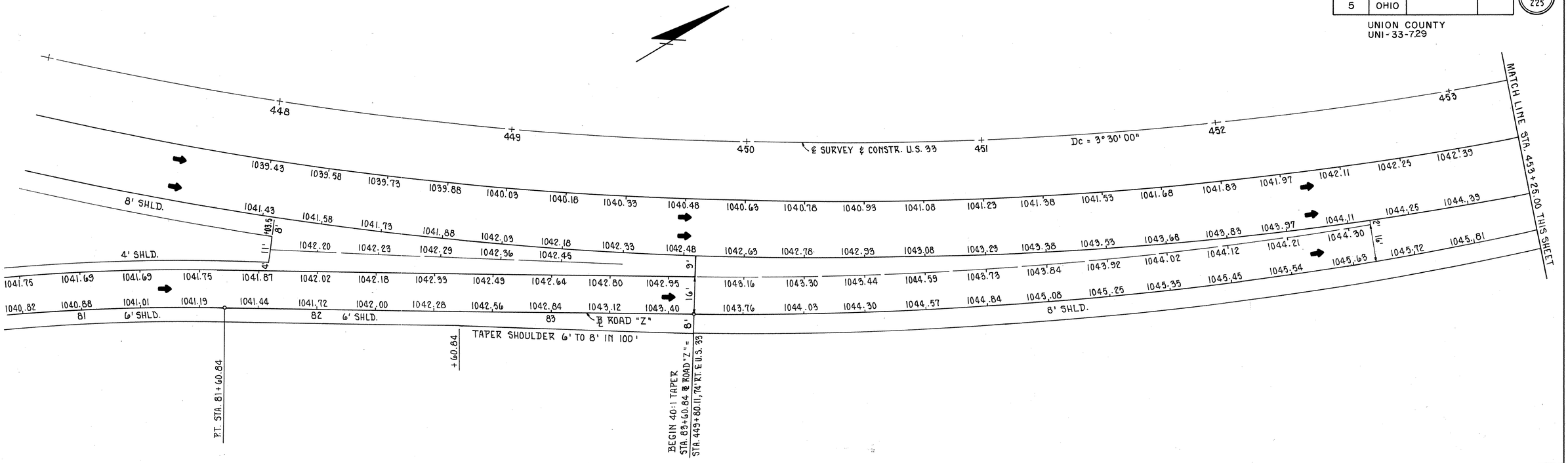


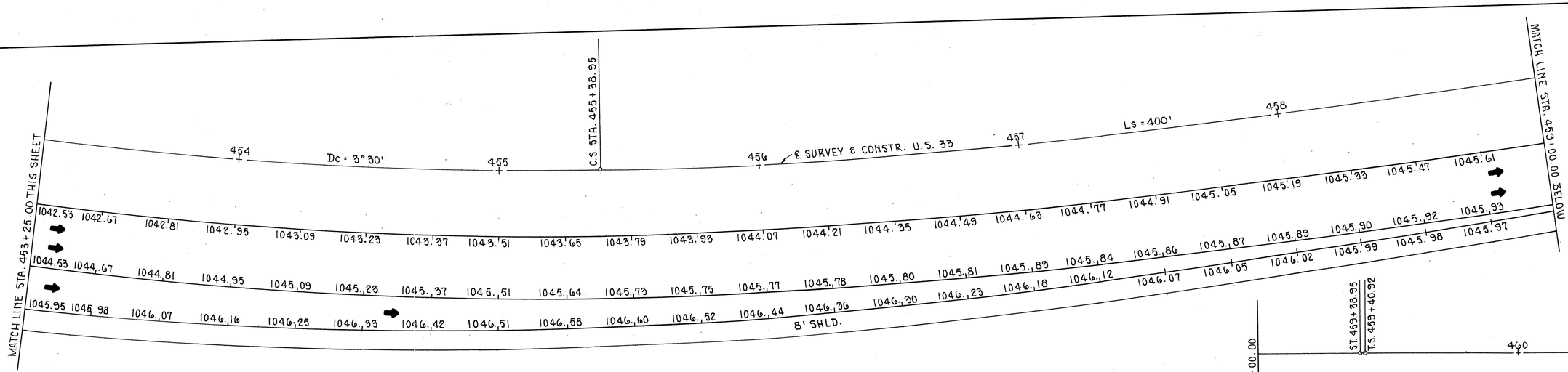
PAVEMENT DETAIL U.S. 33 @ RAMP 'V' ENTRANCE

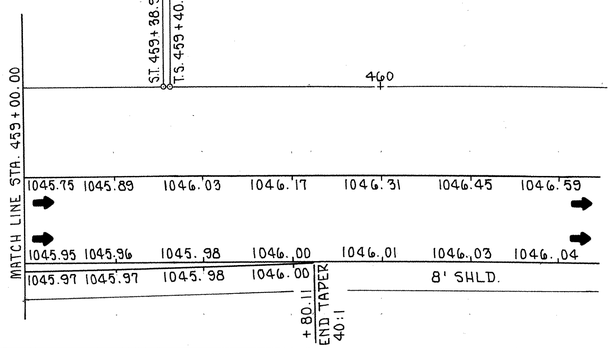
FHWA REGION	STATE	PROJECT	
5	OHIO		

116
225

UNION COUNTY
UNI-33-7.29





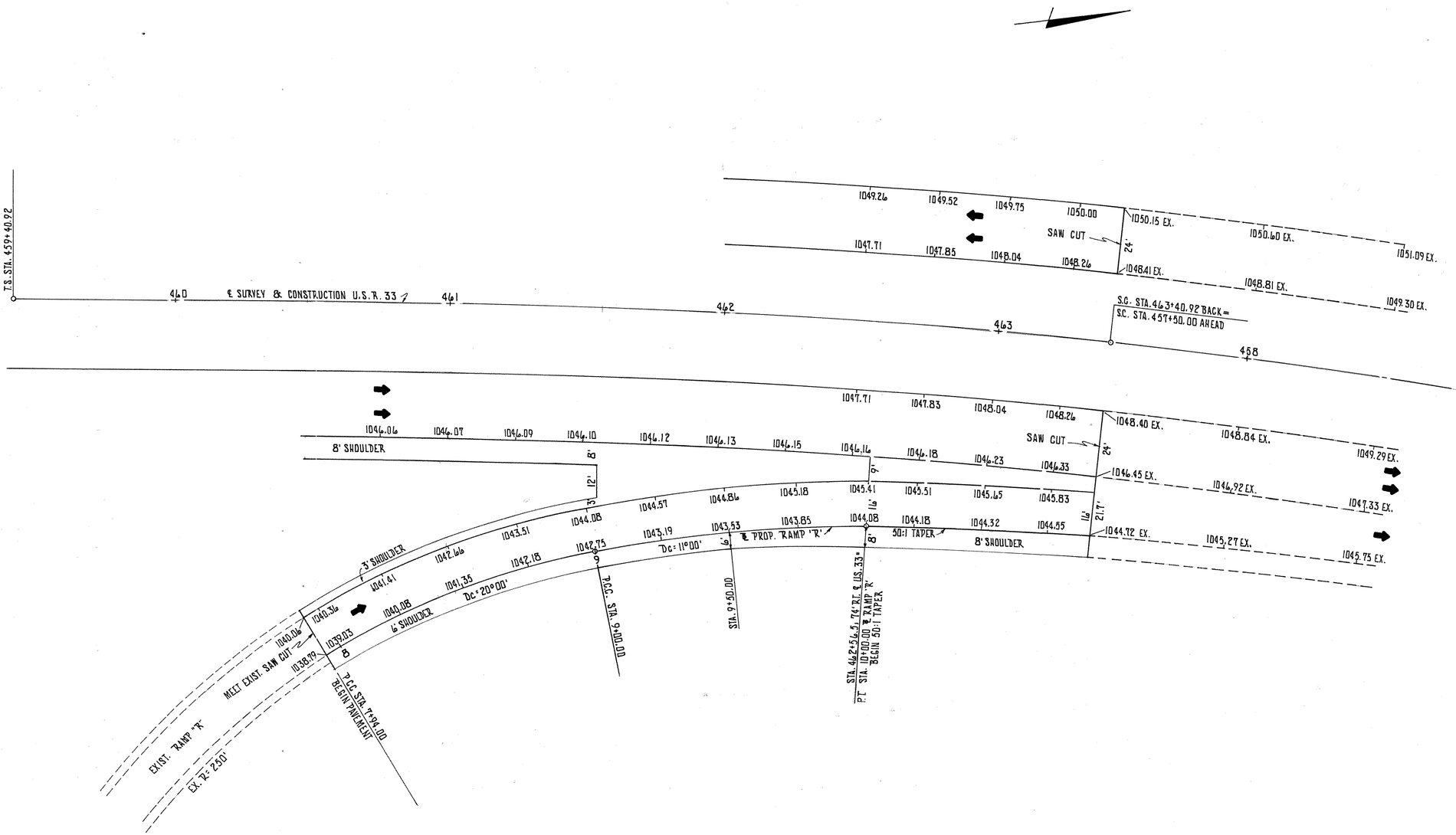


PAVEMENT DETAIL U.S. 33 AT ROAD "Z" ENTRANCE

FHWA REGION	STATE	PROJECT	
5	OHIO		

117
225

UNION COUNTY
UNI-33-7.29



PAVEMENT DETAIL "RAMP "R" STA. 7+94.00 TO U.S. 33 STA. 463+40.92

FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-7.29

PAVEMENT DETAIL "ROAD "U" STA. 60+52.05 TO STA. 65+00.00 & U.S. 36 & S.R. 4 STA. 415+00.00 TO STA. 426+00.00

FHWA REGION	STATE	PROJECT	
5	OHIO		

119
225

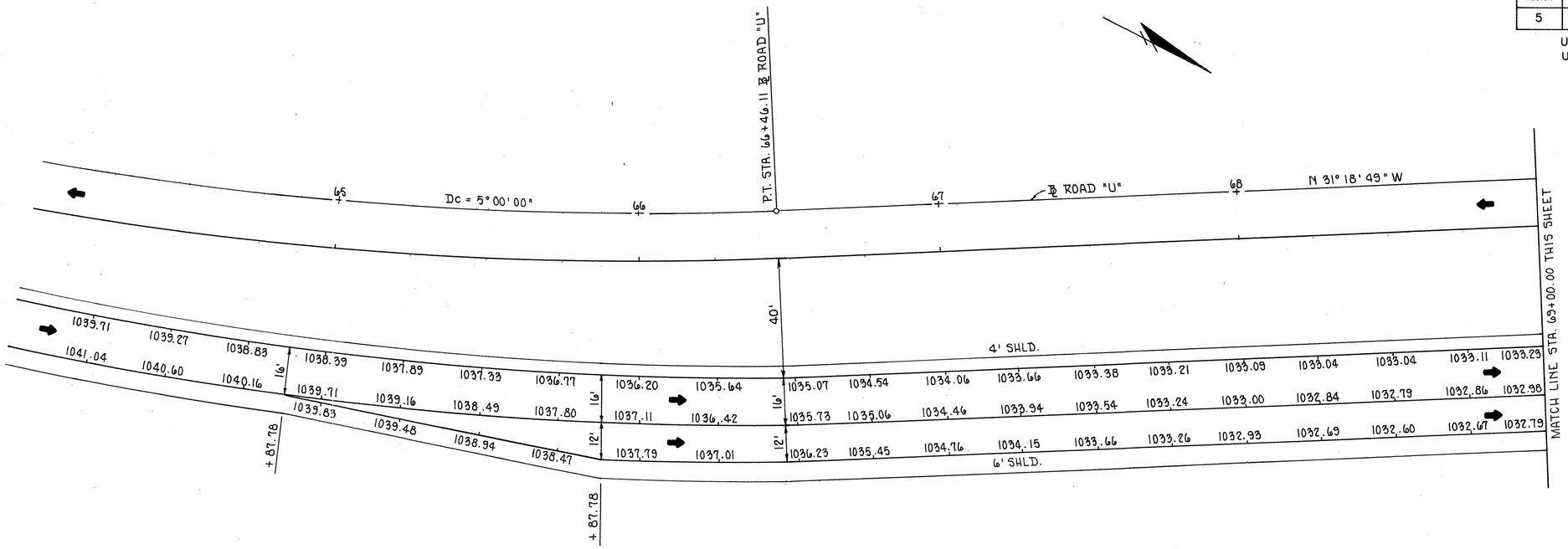
UNION COUNTY
UNI-33-7.29

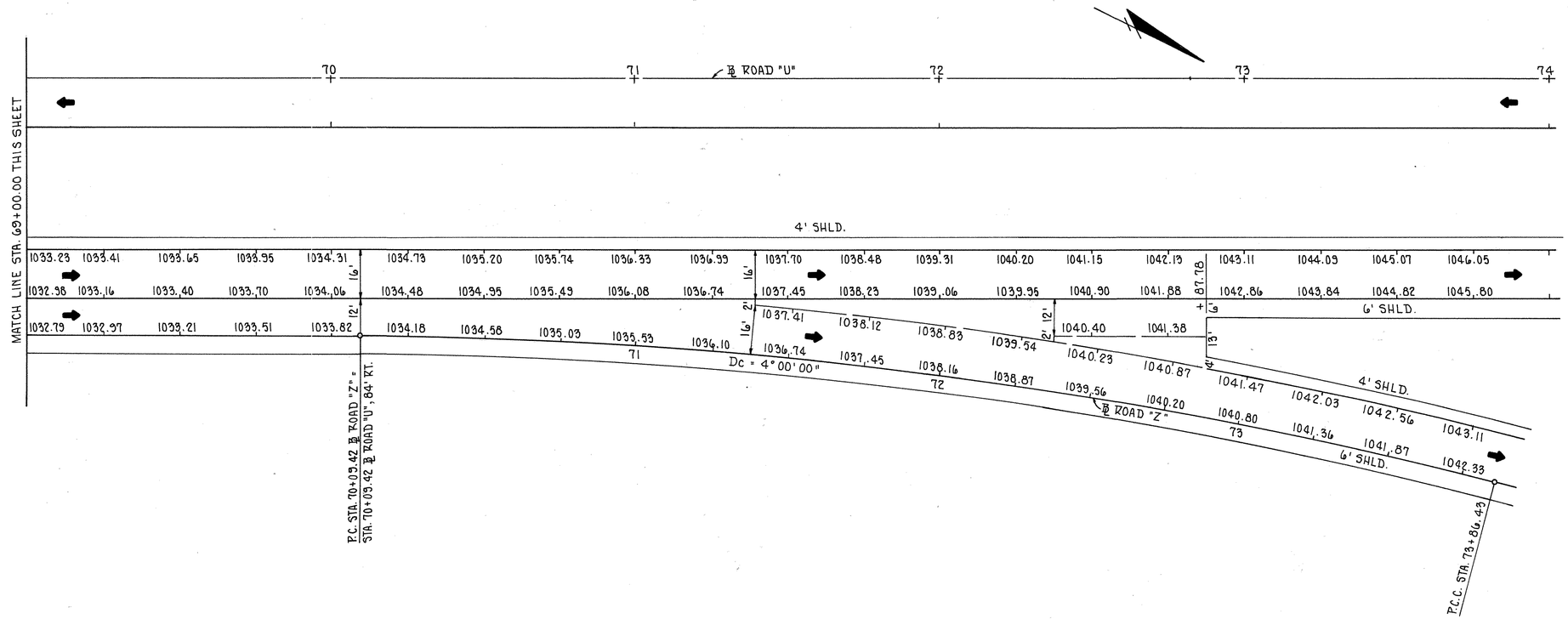
PAVEMENT DETAIL ROAD "U" & RAMP "Y" ENTRANCE

FHWA REGION	STATE	PROJECT	
5	OHIO		

120
225

UNION COUNTY
UNI-33-7.29



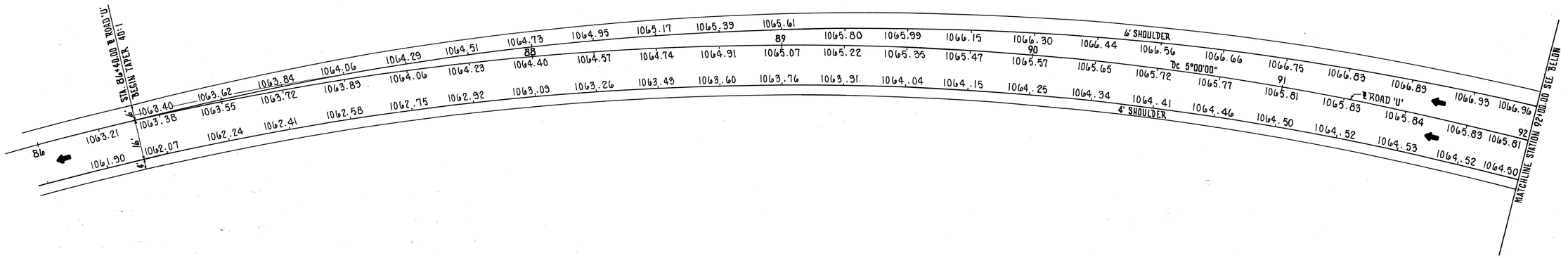


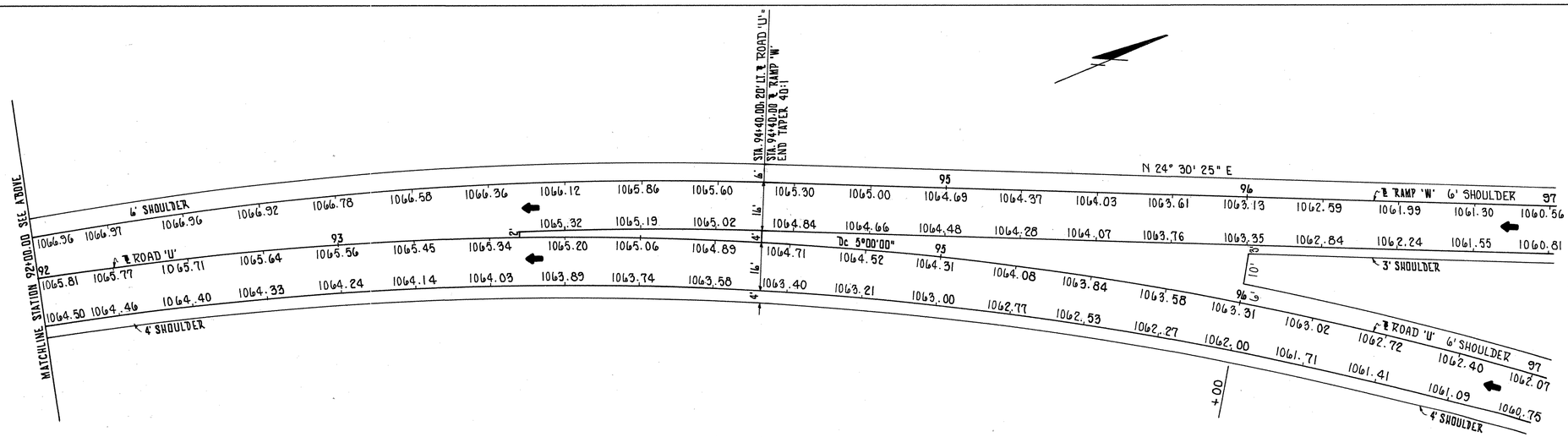
PAVEMENT DETAILS ROAD "U" AT ROAD "Z" EXIT

FHWA REGION	STATE	PROJECT	
5	OHIO		

121
225

UNION COUNTY
UNI-33-7.29



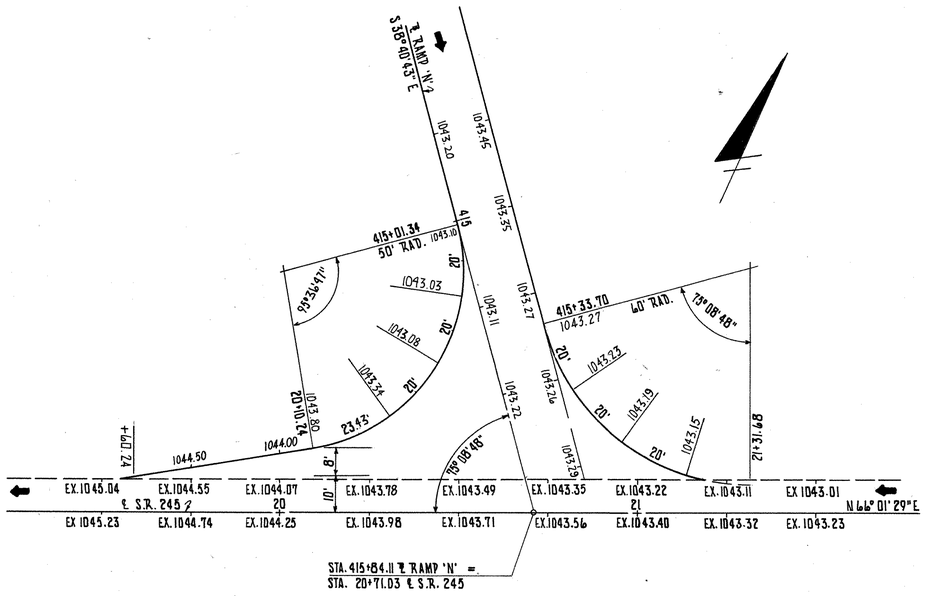


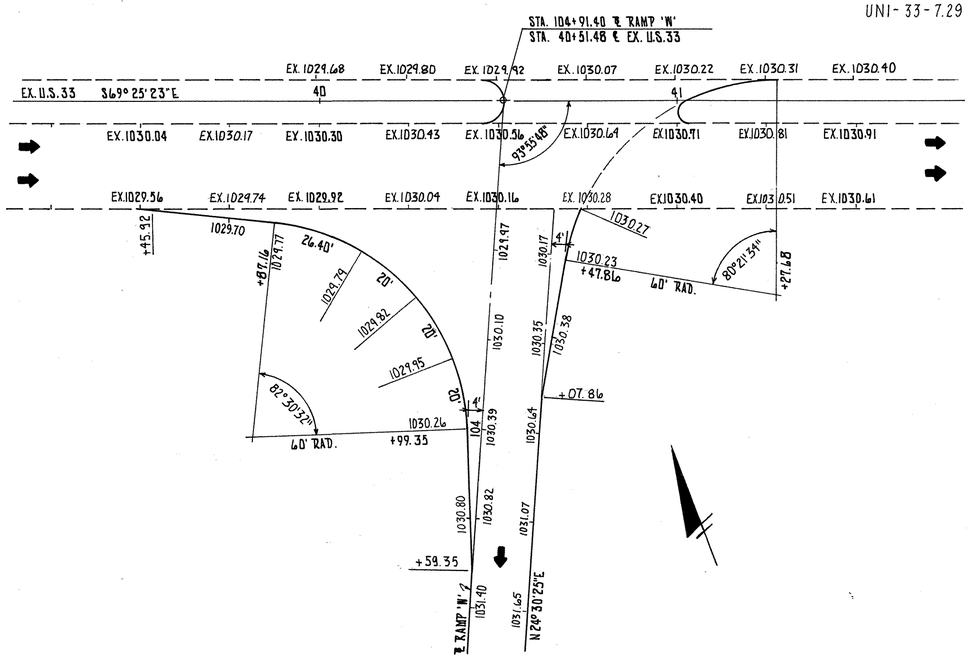
PAVEMENT DETAIL ROAD "U" AT RAMP "W" ENTRANCE

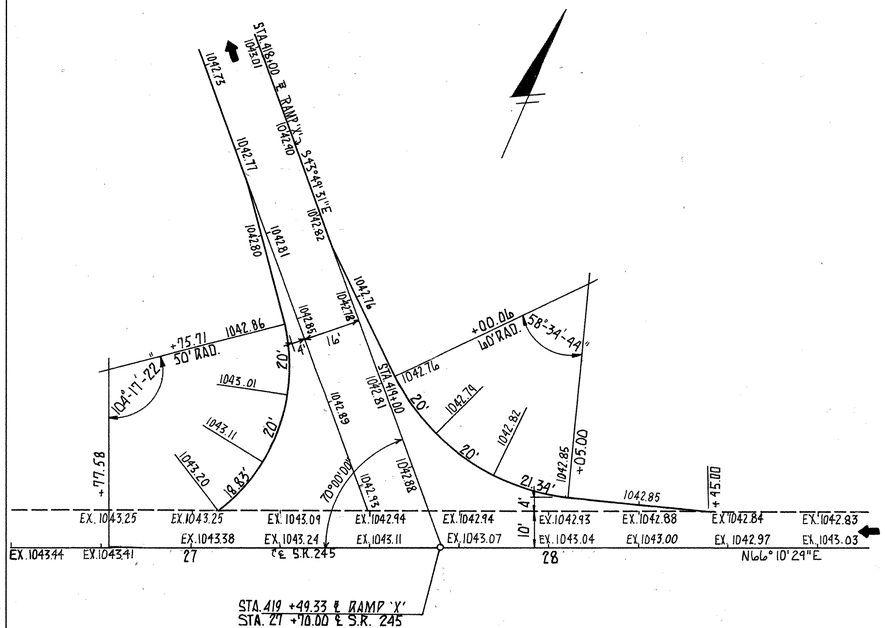
FHWA REGION	STATE	PROJECT	
5	OHIO		

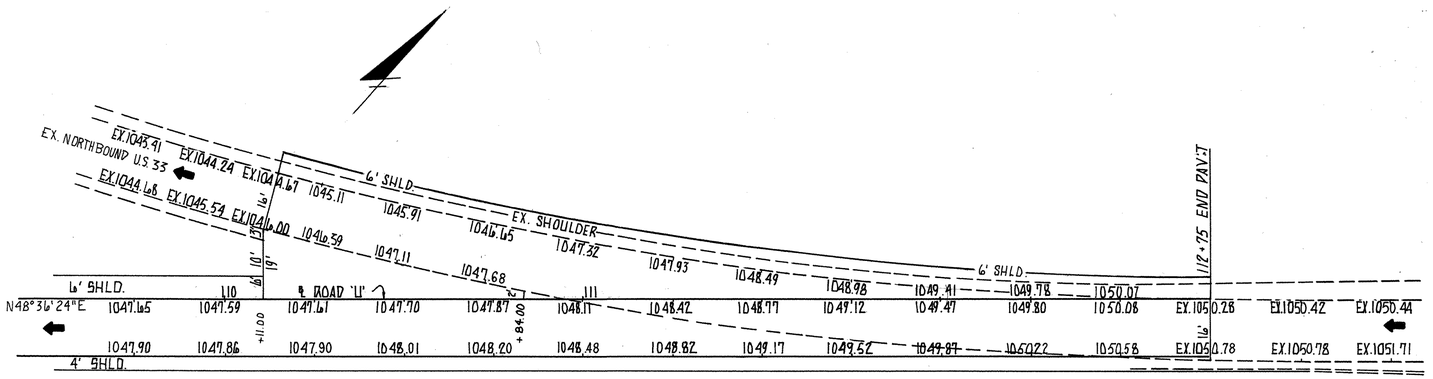
122
225

UNION COUNTY
UNI-33-7.29









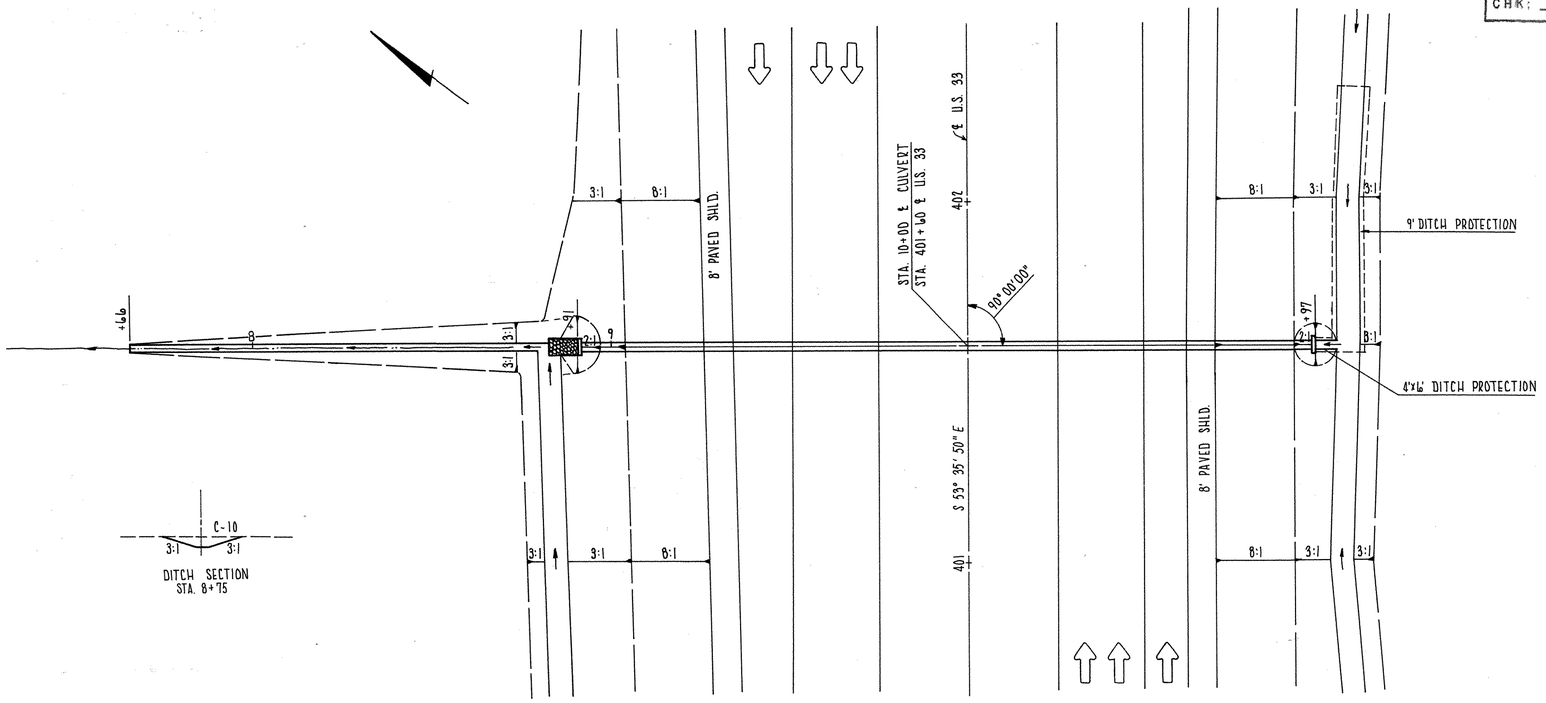
PAVEMENT DETAIL RAMP "N" AND "X" AT S.R. 245, RAMP "W" AT EX. U.S. 33 AND ROAD "U" STA. 109+75 TO STA 112+75

CALC: P.C.P. 7-85
CHK: R.D.B. 8-85

UNION COUNTY
UNI-33-7.29

OHIO
FHWA REGION 5
FEDERAL PROJECT

123
225



PLAN

ESTIMATED QUANTITIES

ITEM 601	ROCK C.P. TYPE 'C' W/FILTER	3	C.Y.
ITEM 602	CONCRETE MASONRY	1.36	C.Y.
ITEM 603	CONDUIT TYPE 'A', 27" 706.02 OR 706.08 OR 33" 707.01 (0.109), 707.04 (0.109), 707.05 (0.109), 707.09 OR 707.21	206	L.F.
ITEM 203	EXCAVATION	14	C.Y.

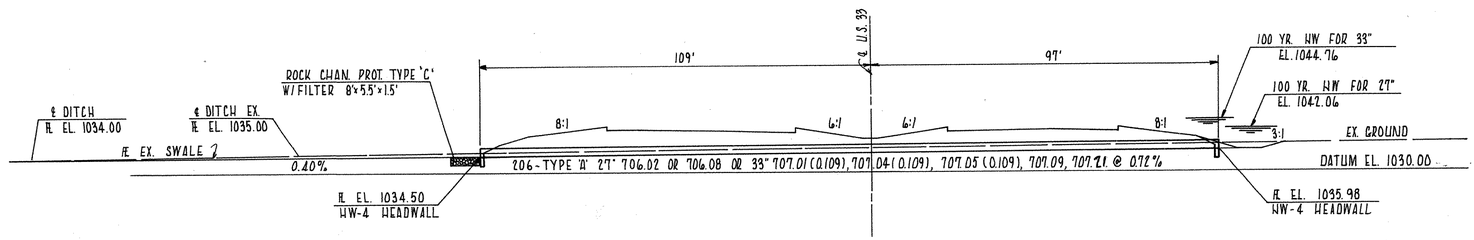
CALCULATIONS

ITEM 601 ROCK C.P. (8'x5.5'x 1.5') ÷ 27 = 2.5 C.Y.
ITEM 203 EXCAVATION (10+10) 75 ÷ 54 = 13.9 C.Y.

STANDARD DRAWINGS

MC-4 , HW-4A & HW-4B

DRAINAGE AREA	19 Ac.
Q 50	35 C.F.S.



PROFILE

0 10 20 40 60

SCALE

UNI-33-0760
CULVERT DETAIL U.S. 33 STA. 401+60

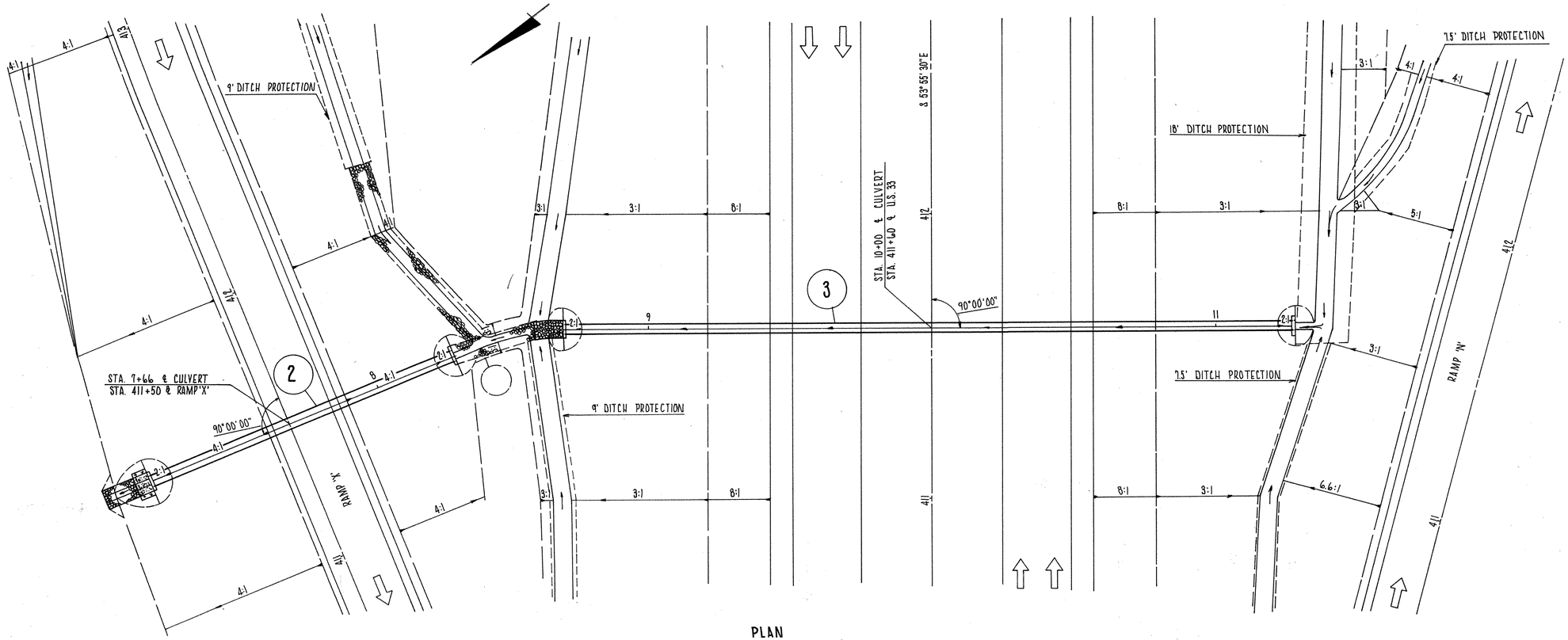
1

CALC: P.C.B. 7-85
CHK: R.D.B. 8-85

UNION COUNTY
UNI-33-7.29

OHIO
FHWA REGION 5
FEDERAL PROJECT

124
225



PLAN

CALCULATIONS

ITEM 601 6" RIPRAP (5×8)÷9 = 4.4 S.Y.
ITEM 601 ROCK C.P. TYPE C (10'×8'×1.5')÷27 = 4.4 C.Y.
ITEM 601 ROCK C.P. TYPE B (11'×8'×2.5')÷27 = 8.2 C.Y.
ITEM 670 DITCH PROT. (5×1.5)2÷9×1.7 8.Y.

STANDARD DRAWINGS

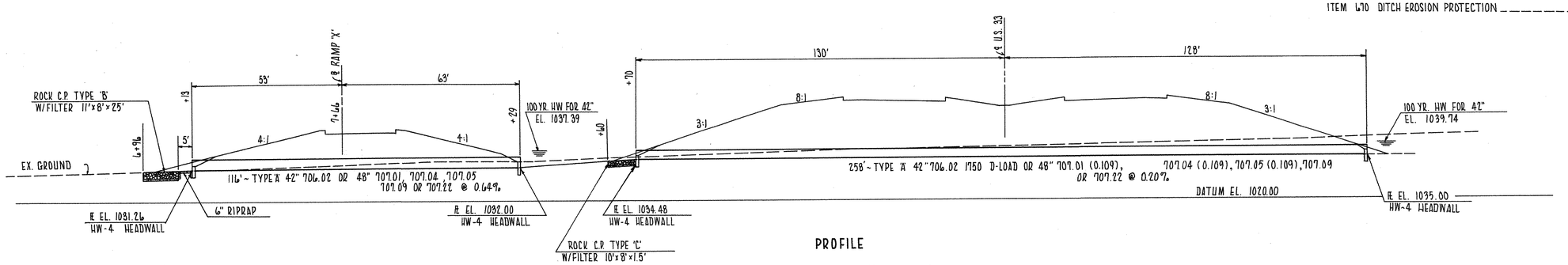
MC-4 , HW-4A & HW-48

CULVERT № UNI-33-0779
DRAINAGE AREA 4.5 Ac.
Q 50 70 C.F.S.

CULVERT № UNI-33-0780
DRAINAGE AREA 41 Ac.
Q 50 64 C.F.S.

ESTIMATED QUANTITIES

ITEM 601	6" RIPRAP	5 S.Y.
ITEM 601	ROCK C.P. TYPE B W/FILTER	8.2 C.Y.
ITEM 602	CONCRETE MASONRY	4.7 C.Y.
ITEM 603	CONDUIT TYPE 'A' 42" 706.02 1750 D-LOAD OR 48" 707.01 (0.109), 707.04 (0.109), 707.05 (0.109), 707.09 OR 707.22	258 L.F.
ITEM 603	CONDUIT TYPE 'A' 42" 706.02 OR 48" 707.01, 707.04 707.05 707.09 OR 707.22	116 L.F.
ITEM 601	ROCK C.P. TYPE 'C' WITH FILTER	4.4 C.Y.
ITEM 670	DITCH EROSION PROTECTION	2 S.Y.



PROFILE

0 10 20 40 60
SCALE

UNI-33-0779 & UNI-33-0780
CULVERT DETAILS @ RAMP 'X' STA. 411+50, & U.S. 33 STA. 411+60

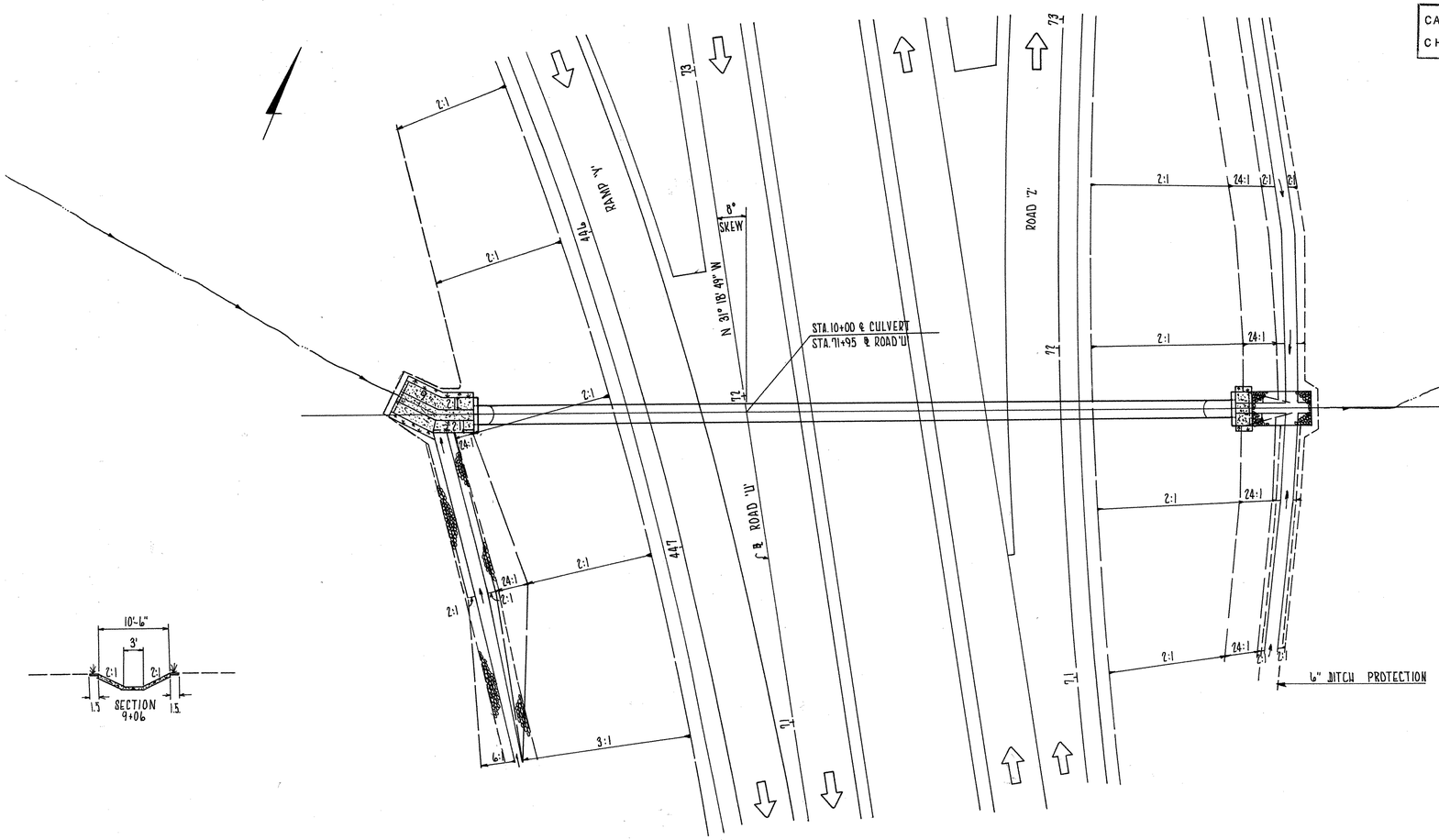
2 3

CALC: P.C.B. 7-85
CHK: R.D.B. 8-85

UNION COUNTY
UNI-33-7.29

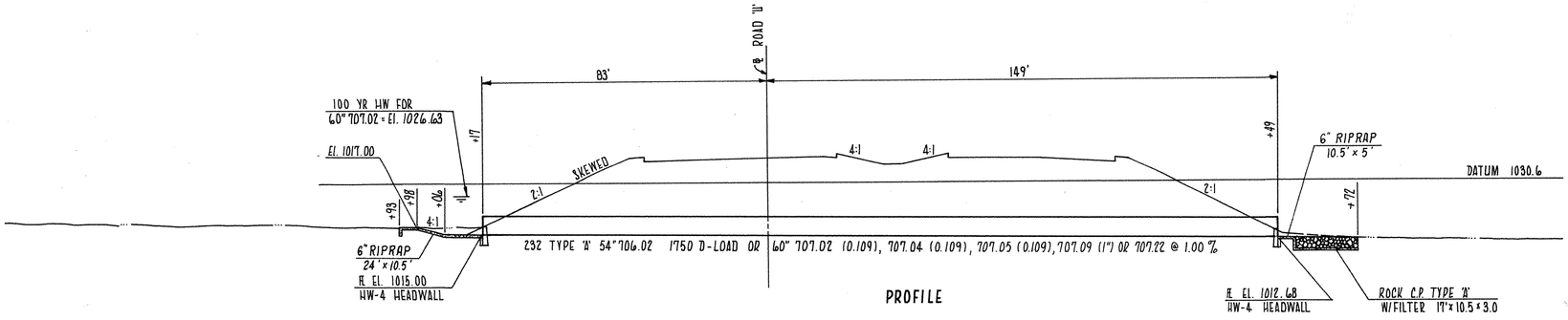
OHIO
FHWA REGION 5
FEDERAL PROJECT

125
225



PLAN

DRAINAGE AREA 180 Ac.
Q 25 155 CFS



PROFILE

0 10 20 40 60
SCALE

CALCULATIONS

ITEM 601 6" RIPRAP [(10.5 x 5) + (24 x 10.5)] ÷ 9 = 33.8 S.Y.
ITEM 601 ROCK C.P. (10.5 x 17 x 3.0) ÷ 27 = 19.9 C.Y.
ITEM 610 DITCH PROT. (21+15+10) 1.5 ÷ 9 = 9.7 S.Y.

ESTIMATED QUANTITIES

ITEM 601	6" RIPRAP	34 S.Y.
ITEM 601	ROCK C.P. TYPE 'A' W/FILTER	20 C.Y.
ITEM 602	CONCRETE MASONRY	4.53 C.Y.
ITEM 603	CONDUIT TYPE 'A' 54" 706.02 1750 D-LOAD OR 60" 707.02 (0.109), 707.04 (0.109), 707.05 (0.109), 707.09 (1"), OR 707.22	232 L.F.
ITEM 610	DITCH EROSION PROTECTION	8 S.Y.

STANDARD DRAWINGS

MC-4 HW-4A & HW-4B

UNI-33-0824
CULVERT DETAIL ROAD 'U' STA. 71+95

7

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

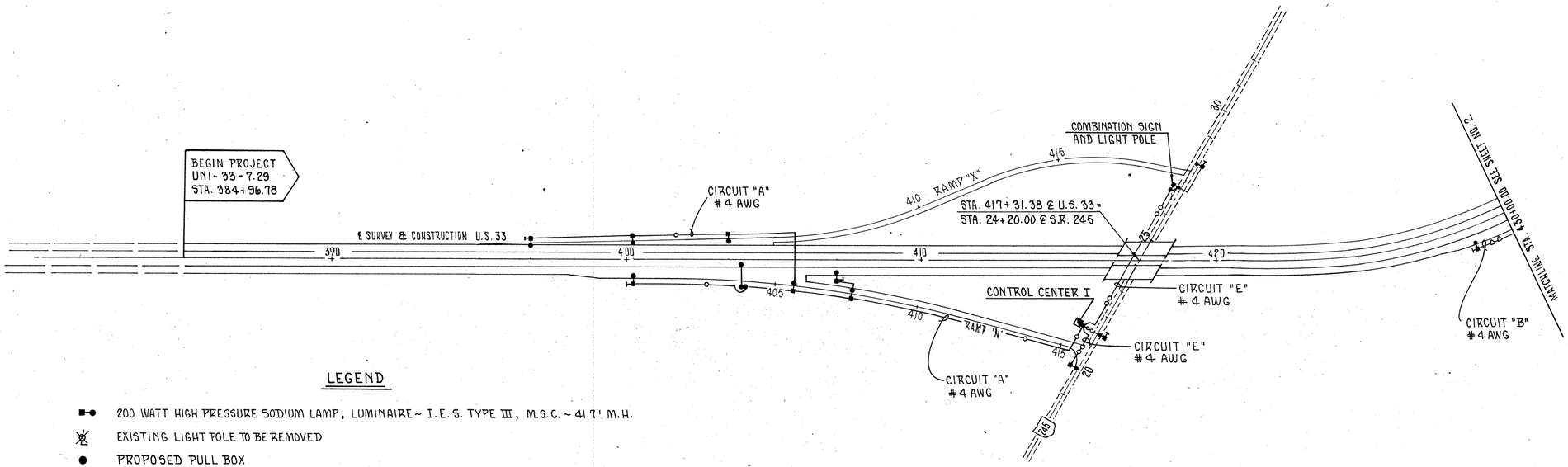
126
225

1
15

UNION COUNTY
UNI-33-7.29

SCHEMATIC PLAN
LIGHTING

0 100 200 400
SCALE IN FEET



LEGEND

- 200 WATT HIGH PRESSURE SODIUM LAMP, LUMINAIRE ~ I.E.S. TYPE III, M.S.C. ~ 41.7 ' M.H.
- EXISTING LIGHT POLE TO BE REMOVED
- PROPOSED PULL BOX
- RIGID METAL CONDUIT ~ 2" OR 3" AS INDICATED ON PLANS
- PROPOSED CONTROL CENTER
- EXISTING CONTROL CENTER
- OR OVERHEAD ILLUMINATED SIGN
- CIRCUIT "A"
- CIRCUIT "B"
- CIRCUIT "C"
- CIRCUIT "D"
- CIRCUIT "E"
- EXISTING PULL BOX
- STUB OUT FOR FUTURE USE

DESIGN CRITERIA

INTENSITY – 1.2 F.C. INITIAL; UNIFORMITY RATIO 4:1 MAXIMUM
POWER —— 1ϕ 480 V 2-WIRE WITH GROUNDED NEUTRAL (CIRCUITS B, C AND D) CONTROL CENTER II.
POWER —— 1ϕ 240 V 3-WIRE WITH GROUNDED NEUTRAL (CIRCUITS A AND E) CONTROL CENTER I.

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

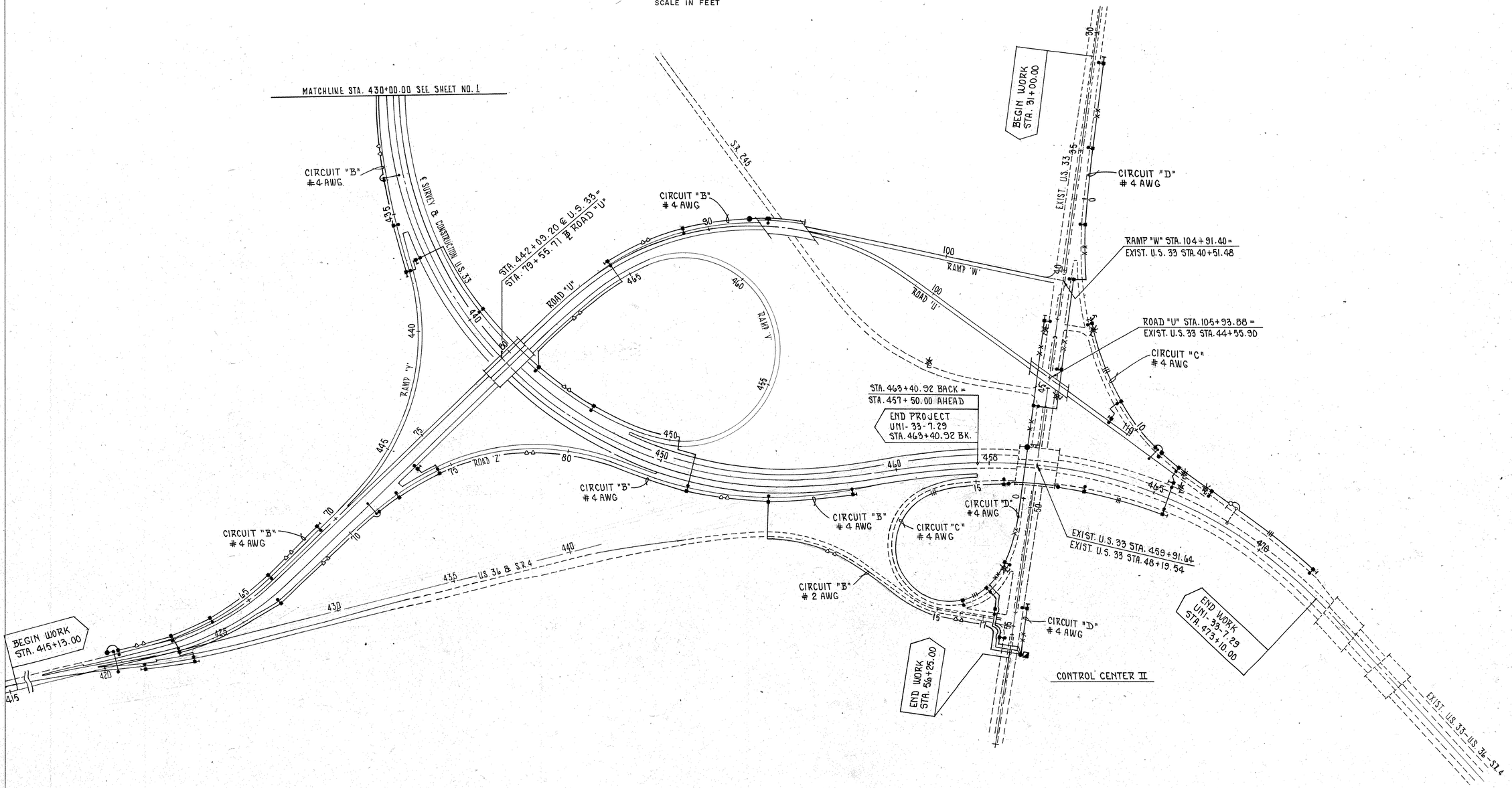
UNION COUNTY
UNI-33-7.29

129/225

2/15

SCHEMATIC PLAN
LIGHTING

0 100 200 400
SCALE IN FEET



LIGHTING SCHEMATIC

FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-7.29

128
225

3
15

GENERAL NOTES

SPECIFICATIONS

THESE NOTES ARE SUPPLEMENTAL TO ITEMS 625 AND 713 OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.

REFERENCE SHALL BE MADE TO STANDARD CONSTRUCTION DRAWINGS LISTED ON THE TITLE SHEET OF THESE PLANS.

GENERAL

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:
DAYTON POWER AND LIGHT COMPANY
COURTHOUSE PLAZA S.W.,
P.O. BOX 1247
DAYTON, OHIO 45401

THIS PROJECT HAS BEEN DESIGNED ON THE BASIS OF 5% VOLTAGE DROP WITH A MAXIMUM UNIFORMITY OF 4.0 TO 1 FOR CONVENTIONAL UNITS.

LUMINAIRES

STYLE B LUMINAIRES SHALL HAVE SINGLE RATED 480 VOLT OR 240 VOLT, 200 WATT, INTEGRAL REGULATOR BALLASTS FOR USE WITH HIGH PRESSURE SODIUM LAMPS AS CALLED FOR IN THE PLAN, AND SHALL BE GENERAL ELECTRIC M400, CROUSE-HINDS OV-25 TUDOR, ITT AMERICAN 400, OR EQUAL APPROVED BY THE ENGINEER.

LAMPS

HIGH PRESSURE SODIUM LAMPS SHALL BE GENERAL ELECTRIC "LUCALOX", CROUSE-HINDS "CERAMALUX", SYLVANIA "LUMALUX", OR EQUAL APPROVED BY THE ENGINEER. 150 WATT HPS LAMPS SHALL BE OF THE 100 VOLT DESIGN, ANSI S56.

UNDERDRAINS FOR PULL BOXES

REFERENCE IS MADE TO STANDARD DRAWING HL-10 FOR DETAILS OF DRAINING PULL BOXES. UNDERDRAINS FOR PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED APPROXIMATELY 20 FEET. AN ESTIMATED QUANTITY OF 400 LINEAR FEET OF ITEM 603, 4" CONDUIT, TYPE E IS INCLUDED IN THE LIGHTING GENERAL SUMMARY FOR THIS PURPOSE.

CONDUIT ON STRUCTURE

EXPANSION FITTINGS FOR CONDUIT ON STRUCTURES SHALL BE OZ TYPE AX, CROUSE-HINDS TYPE XJ-4, APPLETON TYPE XJ-4, OR EQUAL APPROVED BY THE ENGINEER, FOR BRIDGE(S) NO(S). UNI-33-0862 AND UNI-4-1084 RT.

ELECTRICAL SERVICE FOR ILLUMINATED SIGNS

THE PAY ITEMS IN THE LIGHTING GENERAL SUMMARY INCLUDE THE PULL BOX OR JUNCTION BOX ADJACENT TO EACH LIGHTED SIGN AND THE ELECTRICAL SERVICE CONNECTIONS LEADING INTO THE BOX, INCLUDING SPLICES OR CONNECTOR KITS IN THE PULL BOX OR JUNCTION BOX. QUANTITIES FOR ELECTRICAL SERVICE FROM THE CONNECTION IN THE PULL BOX OR JUNCTION BOX TO THE SIGN ARE INCLUDED IN THE TRAFFIC CONTROL GENERAL SUMMARY.

PADLOCKS AND KEYS

PADLOCKS FURNISHED SHALL BE EITHER BRASS OR BRONZE, EQUAL TO MASTER NO. 4BKA OR WILSON BOHANNAN 660A, AND SHALL BE KEYED IN ACCORDANCE WITH SPECIFICATION 631.08, PARAGRAPH 3. PAYMENT SHALL BE INCLUDED IN THE BID FOR THE ITEM(S) BEING LOCKED.

ITEM 202 - LIGHT POLE REMOVED FOR STORAGE

THIS ITEM SHALL CONSIST OF REMOVING EXISTING LIGHT POLES FOR STORAGE AS INDICATED ON THE PLANS. THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING LIGHT POLE, BRACKET ARM, LUMINAIRE, AND LAMP AND STORE THEM ON THE PROJECT IN A LOCATION DESIGNATED BY THE ENGINEER FOR INSPECTION. THE UNIT PRICE BID FOR ITEM 202 - "LIGHT POLE REMOVED FOR STORAGE" SHALL INCLUDE PAYMENT FOR ALL EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO REMOVE AND STORE THE LIGHT POLE AS SPECIFIED. AN ESTIMATED 8 LIGHT POLES HAVE BEEN PROVIDED FOR IN THE GENERAL SUMMARY.

ITEM SPECIAL - 2" CONDUIT ATTACHED TO EXISTING STRUCTURE

THIS ITEM SHALL CONSIST OF PROVIDING ELECTRICAL SERVICE ACROSS THE EXISTING BRIDGE NO. UNI-4-1084 RT. IN LIEU OF THE 2" CONDUIT PLACED IN THE BRIDGE PARAPET, THE 2" CONDUIT SHALL BE PLACED ON THE UNDERSIDE OF THE EXISTING CONCRETE BRIDGE DECK.
THE INSTALLATION SHALL INCLUDE 2" CONDUIT, EXPANSION FITTINGS, AND CONDUIT CONNECTIONS AT BRIDGE ABUTMENTS. THE CONDUIT SHALL BE ANCHORED IN PLACE WITH APPROVED CLAMPS AND EXPANSION ANCHORS. EXPANSION ANCHORS SHALL BE "DOUBLE" WEDGE TYPE 1,7/8" LONG FOR 3/8" DIAMETER MACHINE BOLT. USE 11/16" DIA. DRILL. OTHER METHODS OF ANCHORING THE FIXTURE MAY BE USED WITH THE APPROVAL OF THE ENGINEER.

THE LUMP SUM PRICE BID FOR "ITEM SPECIAL - 2" CONDUIT ATTACHED TO EXISTING STRUCTURE" SHALL INCLUDE PAYMENT FOR ALL EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED.

COMPONENT PARTS NOT SPECIFICALLY MENTIONED BUT REQUIRED FOR SATISFACTORY OPERATION OF THIS ITEM SHALL BE FURNISHED AND CONSIDERED PAID FOR AS PART OF THE ITEM.

ITEM 202 - EXISTING PULL BOX REMOVED, AS PER PLAN

THIS ITEM SHALL CONSIST OF REMOVING THE EXISTING PULL BOX AS INDICATED ON THE PLANS. THE EXISTING CABLES WITHIN THE PULL BOX SHALL BE CUT AT THE ENTRANCE TO THE PULL BOX. THE REMAINING CABLE SHALL BE ABANDONED. THE CAVITY LEFT BY THE REMOVAL OF THE PULL BOX SHALL BE FILLED WITH COMPACTED SOIL AND RESTORED TO MATCH THE SURROUNDING AREA. THE UNIT PRICE BID FOR ITEM 202 - "EXISTING PULL BOX REMOVED, AS PER PLAN" SHALL INCLUDE PAYMENT FOR ALL EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO REMOVE THE ITEMS AS SPECIFIED ABOVE.

ITEM 202 - EXISTING CONTROL CENTER REMOVED, AS PER PLAN

THIS ITEM SHALL CONSIST OF REMOVING THE EXISTING SERVICE POLE AND CONTROL CENTER AS INDICATED ON THE PLANS. THE UNIT PRICE BID FOR ITEM 202 - "EXISTING CONTROL CENTER REMOVED, AS PER PLAN" SHALL INCLUDE PAYMENT FOR ALL EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO REMOVE AND STORE THE ABOVE EQUIPMENT AS SPECIFIED.

UTILITIES NOTIFICATION

AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN ANY AREA WHICH MAY INVOLVE UNDERGROUND FACILITIES, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER. THE REGISTERED UNDERGROUND UTILITY PROTECTION SERVICES AND THE OWNERS OF ALL UNDERGROUND UTILITY FACILITIES SHOWN IN THE PLANS.

AFTER NOTICE IS RECEIVED, THE OWNER OF ANY UNDERGROUND UTILITY FACILITY THAT IS TO REMAIN IN SERVICE DURING AND/OR AFTER CONSTRUCTION SHALL WITHIN FORTY-EIGHT HOURS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS, STAKE, MARK OR OTHERWISE DESIGNATE THE LOCATION OF THE UNDERGROUND FACILITIES IN THE CONSTRUCTION AREA IN SUCH A MANNER AS TO INDICATE THEIR COURSE TOGETHER WITH THE APPROXIMATE DEPTH AT WHICH THEY WERE INSTALLED. THE MARKING OR LOCATING SHALL BE COORDINATED TO STAY APPROXIMATELY TWO DAYS AHEAD OF THE PLANNED CONSTRUCTION.

GENERAL SUMMARY - LIGHTING

CALC: W.O.h. 9/18/85
CHK: PDF 12/19/85

FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-7.29

129
225

4
15

SHEET #	ROADWAY 3	ROADWAY 5	ROADWAY 6	ROADWAY 7	STRUCTURES 5	STRUCTURES 6	STRUCTURES 7	ROADWAY	GRAND TOTALS	ITEM	UNIT	DESCRIPTION	REFERENCE LETTER	REFERENCE LINE
														1
														2
		18	18						58	625	EA.	LIGHT POLE DESIGN AT 15B 41.7	A	3
							1		1	625	EA.	LIGHT POLE DESIGN ST 12B 39	B	4
														5
														6
		18	18	22					58	625	EA.	LIGHT POLE FOUNDATION 24" × 8' DEEP		7
		11							11	625	EA.	LUMINAIRE STYLE "B" TYPE III 200 WATT HIGH PRESSURE SODIUM 240V, 713.11		8
		8	18	22			1		49	625	EA.	LUMINAIRE STYLE "B" TYPE III 200 WATT HIGH PRESSURE SODIUM 480V, 713.11		9
		1							1	625	EA.	BRACKET ARM, 15 FEET		10
		4	5	3					12	625	EA.	PULL BOX 18" CIRCULAR METAL 713.09		11
														12
		18	18	22					58	625	EA.	GROUND ROD 713.16		13
														14
		92	265	264					621	625	L.F.	CONDUIT JACKED UNDER PAVEMENT, 3"		15
			82						82	625	L.F.	CONDUIT JACKED UNDER PAVEMENT, 6"		16
		7463	5850	6393					19,706	625	L.F.	TRENCH 24" DEEP		17
		625	38	220					883	625	L.F.	CONDUIT 3", 713.04		18
			20	10			206		236	625	L.F.	CONDUIT 2", 713.04		19
		72							72	625	L.F.	CONDUIT 3", 713.04 ENCASED		20
		1	1						2	625	EA.	POWER SERVICE		21
														22
			1493						1493	625	L.F.	1½" DUCT CABLE W/2 Nº 2 AWG 5000 V CABLES		23
		3805	5616	6791					16,212	625	L.F.	1½" DUCT CABLE W/2 Nº 4 AWG 5000 V CABLES		24
				172		450	164		786	625	L.F.	Nº 4 AWG, 5000V DISTRIBUTION CABLE		25
		2758	2004	2376			98		7236	625	L.F.	Nº 10 AWG, POLE & BRACKET CABLE		26
		4047							4047	625	L.F.	1½" DUCT CABLE W/3 Nº 4 AWG 5000 V CABLES		27
														28
		8	10	6					24	625	EA.	CABLE SPLICING KIT		29
		30	18	22			1		71	625	EA.	CONNECTOR KIT, TYPE II		30
		19	18	22			1		60	625	EA.	CONNECTOR KIT, TYPE III		31
		10	6	8					24	625	EA.	CONNECTOR KIT, TYPE VII B		32
														33
														34
							1		1	625	EA.	STRUCTURE GROUNDING SYSTEM UNI-33-0862		35
														36
														37
	LUMP								LUMP	625	LUMP	HIGH VOLTAGE TEST		38
														39
														40
							2		2	625	EA.	LIGHT POLE ANCHOR BOLTS FOR STRUCTURES (U-BOLTS 1½" × 86½")		41
						LUMP			LUMP	SPEC.	LUMP	2" CONDUIT ATTACHED TO EXISTING STRUCTURE		42
			2						2	202	EA.	EXISTING PULL BOX REMOVED, AS PER PLAN		43
	8								8	202	EA.	LIGHT POLE REMOVED FOR STORAGE, AS PER PLAN		44
			1						1	202	EA.	EXISTING CONTROL CENTER REMOVED, AS PER PLAN		45
	400								400	603	L.F.	4" CONDUIT TYPE E		46
														47
														48
														49
														50
														51
														52
														53
														54
														55

BRUNING 44-132-30845-1

LIGHTING SUB-SUMMARY

CALC: WOR 9/12/85
CHK: fff 12/19/85

REFERENCE NO.	SIDE	STATION	STATION		LIGHT POLE DESIGN AT 15B 41.7 (A)	LIGHT POLE DESIGN AT 12B 41.7 (A)	LIGHT POLE DESIGN ST 12B 39 (B)	BRACKET ARM, 15 FT.	LIGHT POLE FOUNDATION 24" × 8' DEEP	LUMINAIRE STYLE "B" TYPE III 200 W HPS; 240 V, 713.11	LUMINAIRE STYLE "B" TYPE III 200 W HPS, 480 V, 713.11	PULL BOX 18" CIRCULAR METAL 713.09	GROUND ROD 713.16	CONDUIT JACKED UNDER PAVEMENT, 3"	TRENCH 24" DEEP	CONDUIT 3", 713.04	CONDUIT 2", 713.04	CONDUIT 3", 713.04 ENCASED	POWER SERVICE	CONDUIT JACKED UNDER PAVEMENT, 6"		Nº 4 AWG, 5000 V DISTRIBUTION CABLE	1½" DUCT CABLE W/3 Nº 4 AWG 5000 V CABLES	1½" DUCT CABLE W/2 Nº 4 AWG 5000 V CABLES	1½" DUCT CABLE W/2 Nº 2 AWG 5000 V CABLES	Nº 10 AWG POLE & BRACKET CABLE		CABLE SPLICING KIT	CONNECTOR KIT TYPE II	CONNECTOR KIT TYPE III	CONNECTOR KIT TYPE VII B		STRUCTURE GROUNDING SYSTEM; UNI-33-0862			LIGHT POLE ANCHOR BOLTS FOR STRUCTURES (U-BOLTS 1½" × 86½")			SPEC. 2" CONDUIT ATTACHED TO EXISTING STRUCTURE		202 EXISTING CONTROL CENTER REMOVED, AS PER PLAN	EXISTING PULL BOX REMOVED, AS PER PLAN
					EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA	EA.	L.F.	L.F.	L.F.	L.F.	L.F.	EA.	L.F.		L.F.	L.F.	L.F.	L.F.	L.F.		EA.	EA.	EA.	EA.		EA.			EA.			LUMP		EA.	EA.
1	RT.	399+08			1				1	1			1													170			2	1												
2	RT.	399+08	404+00												492								502																			
3	RT.	404+00										1																2														
4	RT.	404+00	405+00												100								105																			
5	LT.	396+72			1				1	1			1													170			2	1												
6	LT.	396+72	400+20												348								358																			
7	LT.	400+20			1				1	1			1													170			2	1												
8	LT.	400+20	403+45												325								335																			
9	LT.	403+45			1				1	1			1													170			2	1												
10	LT.	403+45	405+00												155								160																			
11	LT.	405+00	405+65												65								70																			
12	℄	405+65													187	155							187																			
13	RT.	405+00	405+65												65								70																			
14	RT.	405+65			1				1	1			1													170			2	1	3											
15	RT.	405+65	N-407+60												195								205																			
16	RT.	N-407+60				1			1	1			1													161			2	1	3											
17	RT.	N-407+60	407+10												101	36							111																			
18	RT.	407+10			1				1	1			1													170			2	1												
19	RT.	N-407+60	21+35 S.R.245												876	56							901																			
20	LT.	20+00 S.R.245				1			1	1			1													161			2	1												
21	LT.	20+00	21+35												157	100							182																			
22	LT.	21+35										1							1																							
23	℄	21+35												46									93																			
24	RT.	21+35			1				1	1			1													170			2	1												
25	LT.	21+35	26+90												577								602																			
26	LT.	26+90										1																4														
27	LT.	27+00						1		1																170			2	1												
28	L&R	26+90	28+00											46	110								166																			
29	RT.	28+00			1				1	1			1													170			2	1												
30	RT.	428+67			1				1		1		1													114			1	1												
31	RT.	428+67	433+55												488									498																		
32	RT.	433+55										1																2														
33	RT.	433+55	435+25												180									190																		
34	RT.	435+25			1				1		1		1													114			1	1												
35	RT.	435+25	Y-437+40												195									205																		
36	RT.	Y-437+40				1			1		1		1													108			1	1												
37	RT.	Y-437+40	436+70												100	36								110																		
38	RT.	436+70			1				1		1		1													114			1	1												
39	℄	436+70													124	92								124																		
40	LT.	436+70	440+04												334									344																		
41	LT.	440+04			1				1		1		1													114			1	1												
42	LT.	440+04	443+52												348									358																		
43	LT.	443+52			1				1		1		1													114			1	1	2											
44	RT.	443+52	U-81+25												110			72						115																		
45	LT.	443+52	446+45												293									303																		
46	LT.	446+45			1				1		1		1													114			1	1												
47	L&R	446+45	451+35												657	150								667																		
48	RT.	451+35			1				1		1		1													114			1	1	2											
49	RT.	Z-78+00	451+35												716									721																		
50	RT.	451+35	453+00												165									170																		
SUB-TOTAL CARRIED TO GEN'L SUMMARY					15	3		1	18	11	8	4	18	92	7463	625		72	1				4047	3805		2758		8	30	19	10											

BRUNING 44-132 30845-1

LIGHTING SUB – SUMMARY

CALC: AWD 9/12/85
CHK: LAP 12/19/85

FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-7.29

131 / 225

6 / 15

NOTE: * STRUCTURE QUANTITY

REFERENCE NO.	SIDE	STATION	STATION		LIGHT POLE DESIGN AT 15B 41.7 Ⓐ EA.	LIGHT POLE DESIGN AT 12B 41.7 Ⓐ EA.	LIGHT POLE DESIGN ST 12B 39 Ⓑ EA.	BRACKET ARM, 15 FT. EA.	LIGHT POLE FOUNDATION 24" × 8' DEEP EA.	LUMINAIRE, STYLE "B" TYPE III 200W HPS, 240V, 7.13.11 EA.	LUMINAIRE, STYLE "B" TYPE III 200W HPS, 480V, 7.13.11 EA.	PULL BOX 18" CIRCULAR METAL 7.13.09 EA.	GROUND ROD 7.13.16 EA.	CONDUIT JACKED UNDER PAVEMENT, 3" L.F.	TRENCH 24" DEEP L.F.	CONDUIT 3", 7.13.04 L.F.	CONDUIT 2", 7.13.04 L.F.	CONDUIT 3", 7.13.04 ENCASED L.F.	POWER SERVICE EA.	CONDUIT JACKED UNDER PAVEMENT, 6" L.F.		Nº 4 AWG, 5000 V DISTRIBUTION CABLE L.F.	1½" DUCT CABLE W/3 Nº 4 AWG 5000V CABLES L.F.	1½" DUCT CABLE W/2 Nº 4 AWG 5000V CABLES L.F.	1½" DUCT CABLE W/2 Nº 2 AWG 5000V CABLES L.F.	Nº 10 AWG POLE & BRACKET CABLE L.F.		CABLE SPLICING KIT EA.	CONNECTOR KIT TYPE II EA.	CONNECTOR KIT TYPE III EA.	CONNECTOR KIT - TYPE III B EA.		STRUCTURE GROUNDING SYSTEM; UNI-33-0862 EA.	[redacted]		LIGHT POLE ANCHOR BOLTS FOR STRUCTURES (U-BOLTS 1½"×86½") EA.	[redacted]	SPEC. 2" CONDUIT ATTACHED TO EXISTING STRUCTURE LUMP	202 EXISTING CONTROL CENTER REMOVED, AS PER PLAN EA.	EXISTING PULL BOX REMOVED, AS PER PLAN EA.
1	RT.	453+00	454+60												160									165																
2	RT.	454+60			1				1		1		1													114		1	1	2										
3	RT.	454+60	458+08												348									358																
4	RT.	458+08			1				1		1		1													114		1	1											
5	RT.	454+60	P-6+85 RT.											36	140										181															
6	R/L	P-6+85 RT.	U.S. 33 56+10± LT.												1210						82				1312															
7	LT.	56+10±										1								1																	1	2		
8	LT.	56+10±	P-17+40											57										319																
9	LT.	P-17+40				1			1		1		1													108		1	1											
10	L/R	P-17+40	R-4+20											36	64									110																
11	RT.	R-4+20				1			1		1		1													108		1	1											
12	RT.	R-4+20	R-5+43												123									133																
13	RT.	R-5+43				1			1		1		1													108		1	1											
14	RT.	R-5+43	458+68												1079									1089																
15	RT.	458+68			1				1		1		1													114		1	1											
16	RT.	458+68	458+82												14									24																
17	RT.	458+82										1																2												
18	RT.	458+82	460+97												20		20						450*															LUMP*			
19	RT.	460+97										1																2												
20	RT.	460+97	462+00												103									108																
21	L/R	56+10± LT.	55+55 RT.																					185																
22	RT.	55+55				1			1		1		1													108		1	1											
23	RT.	55+55	R-2+81												139									376																
24	RT.	R-2+81				1			1		1		1													108		1	1											
25	RT.	R-2+81	47+55												488									498																
26	RT.	47+55										1																2												
27	RT.	47+55	47+00												55									60																
28	RT.	462+00	462+15												15									20																
29	RT.	462+15			1				1		1		1													114		1	1											
30	RT.	462+15	465+65												350									360																
31	RT.	465+65			1				1		1		1													114		1	1											
32	℄	465+65												98	32									140																
33	LT.	465+65			1				1		1		1													114		1	1											
34	LT.	465+65	U-112+40												90	38								100																
35	LT.	U-112+40			1				1		1		1													114		1	1	2										
36	LT.	U-112+40	U-111+00												140									150																
37	LT.	U-111+00			1				1		1		1													114		1	1											
38	LT.	U-111+00	U-110+82												18									28																
39	LT.	U-110+82										1																2												
40	LT.	U-110+82	S-8+65												212									222																
41	LT.	S-8+65				1			1		1		1													108		1	1	2										
42	LT.	S-8+65	S-8+00												65									70																
43	L/R	S-8+65	U-109+09											38	80									128																
44	LT.	U-109+09				1			1		1		1													108		1	1											
45	LT.	U-112+40	S-14+15												175									185																
46	LT.	S-14+15			1				1		1		1													114		1	1											
47	LT.	S-14+15	467+80												87									97																
48	LT.	467+80																										2												
49	LT.	467+80	472+25												445									455																
50	LT.	472+25			1				1		1		1													114		1	1											
51	LT.	56+10	54+12												198									236																
52	LT.	54+12				1			1		1		1													108		1	1											
SUB-TOTAL CARRIED TO GEN'L SUMMARY					10	8			18		18	5	18	265	5850	38	20		1	82		450*		5616	1493	2004		10	18	18	6						LUMP*		1	2		

LIGHTING SUB – SUMMARY

CALC: WDL 9/12/85
CHK: LAP 12-19-85

FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-7.29

132 / 225

7 / 15

NOTE: * STRUCTURE QUANTITY

REFERENCE NO.	SIDE	STATION	STATION		LIGHT POLE DESIGN (A) AT 15B 41.7	LIGHT POLE DESIGN (A) AT 12B 41.7	LIGHT POLE DESIGN (B) ST 12B 39	BRACKET ARM, 15 FT.	LIGHT POLE FOUNDATION 24" × 8' DEEP	LUMINAIRE STYLE "B" TYPE III 200W HPS, 240V, 713.11	LUMINAIRE STYLE "B" TYPE III 200W HPS, 480V, 713.11	PULL BOX 18" CIRCULAR METAL 713.09	GROUND ROD 713.16	CONDUIT JACKED UNDER PAVEMENT, 3"	TRENCH 24" DEEP	CONDUIT 3", 713.04	CONDUIT 2", 713.04	CONDUIT 3", 713.04 ENCASED	POWER SERVICE	CONDUIT JACKED UNDER PAVEMENT, 6"		Nº 4 AWG, 5000 V DISTRIBUTION CABLE	1½" DUCT CABLE W/3 Nº 4 AWG 5000 V CABLES	1½" DUCT CABLE W/2 Nº 4 AWG 5000 V CABLES	1½" DUCT CABLE W/2 Nº 2 AWG 5000 V CABLES	Nº 10 AWG POLE & BRACKET CABLE		CABLE SPLICING KIT	CONNECTOR KIT TYPE II	CONNECTOR KIT TYPE III	CONNECTOR KIT TYPE III B		STRUCTURE GROUNDING SYSTEM; UNI-33-0862		LIGHT POLE ANCHOR BOLTS FOR STRUCTURES (10-BOLTS 1½"×86½")		SPEC. 2" CONDUIT ATTACHED TO EXISTING STRUCTURE	202 EXISTING CONTROL CENTER REMOVED, AS PER PLAN	EXISTING PULL BOX REMOVED, AS PER PLAN											
					EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA	EA.	L.F.	L.F.	L.F.	L.F.	L.F.	EA.	L.F.		L.F.	L.F.	L.F.	L.F.	L.F.		EA.	EA.	EA.	EA.		EA.		EA.		LUMP	EA.	EA.														
1	LT.	420+77										1																2																						
2	LT.	420+77	420+95												18									28																										
3	LT.	420+95				1			1		1		1													108			1	1																				
4	LT.	420+95	U-61+40												209									219																										
5	LT.	U-61+40				1			1		1		1													108			1	1	2																		
6	LT.	U-61+40	U-63+20												180									190																										
7	LT.	U-63+20				1			1		1		1													108			1	1																				
8	LT.	U-63+20	U-66+35												315									325																										
9	LT.	U-66+35				1			1		1		1													108			1	1																				
10	LT.	U-66+35	U-69+25												290									300																										
11	LT.	U-69+25				1			1		1		1													108			1	1																				
12	L/R	U-61+40													76	76									172																										
13	RT.	U-61+52				1			1		1		1													108			1	1	2																		
14	RT.	U-61+52	423+71												96	36								106																										
15	RT.	423+71				1			1		1		1													108			1	1																				
16	RT.	423+71	421+76												195									205																										
17	RT.	421+76				1			1		1		1													108			1	1																				
18	RT.	U-61+52	U-65+88												436									446																										
19	RT.	U-65+88				1			1		1		1													108			1	1																				
20	RT.	U-65+88	U-71+70												582									592																										
21	RT.	U-71+70										1																2																						
22	RT.	U-71+70	U-72+45												75									85																										
23	RT.	U-72+45				1			1		1		1													108			1	1																				
24	RT.	U-72+45	Z-74+43												198									208																										
25	RT.	Z-74+43				1			1		1		1													108			1	1	2																		
26	RT.	Z-74+43	Z-78+00												357									362																										
27	RT.	Z-74+43	U-73+90												122	36								132																										
28	RT.	U-73+90				1			1		1		1													108			1	1																				
29	LT.	31+20 Ex.U.S.33				1			1		1		1													108			1	1																				
30	LT.	31+20	34+85												365									375																										
31	LT.	34+85				1			1		1		1													108			1	1																				
32	LT.	34+85	S-1+05												320									330																										
33	LT.	S-1+05				1			1		1		1													108			1	1																				
34	LT.	S-1+05	U.S. 33 40+30											36	235									281																										
35	LT.	40+30				1			1		1		1													108			1	1																				
36	LT.	40+30	44+15											42	343									395																										
37	LT.	44+15				1			1		1		1													108			1	1																				
38	L/R	44+15	45+80											82	165									257																										
39	RT.	45+80				1			1		1		1													108			1	1	2																		
40	RT.	45+80	42+20											104	256									370																										
41	RT.	42+20				1			1		1		1													108			1	1																				
42	RT.	45+80	47+00												120									125																										
43	LT.	S-5+17				1			1		1		1													108			1	1																				
44	LT.	S-5+17	S-8+00												283									288																										
45	R/L	U-81+25	U-85+58												527	72								532																										
46	LT.	U-85+58				1			1		1		1													108			1	1																				
47	LT.	U-85+58	U-89+00												342									352																										
48	LT.	U-89+00				1			1		1		1													108			1	1																				
49	LT.	U-89+00	U-91+78												278									288																										
50	LT.	U-91+78										1																2																						
51	LT.	U-91+78	U-92+50												10		10/62*							164*																										
52	LT.	U-92+50					1*					1*															98*			1*	1*			1*			1*												
53	LT.	U-92+50	U-93+94														144*																																
SUB-TOTAL CARRIED TO GEN'L SUMMARY					22	1*		22		1*/22	3	22	264	6393	220	10/206*							164*/172		6791		98*/2376	6		1*/22	1*/22	8		1*			1*												

FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-7.29

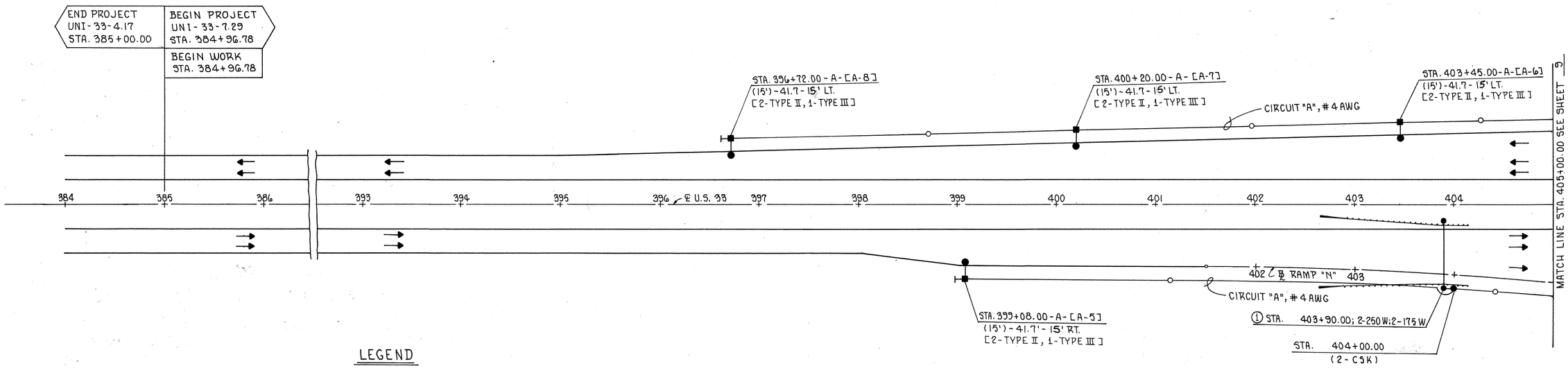
133
225

8
15

END PROJECT
UNI-33-4.17
STA. 385+00.00

BEGIN PROJECT
UNI-33-7.29
STA. 384+96.78

BEGIN WORK
STA. 384+96.78



LEGEND

- LIGHT POLE AND LUMINAIRE (STRUCTURE MOUNTED)
  STA. LOCATION, POLE TYPE, [CIRCUIT AND POLE NUMBER]
  BRACKET ARM LENGTH, MOUNTING HEIGHT, OFFSET FROM EDGE OF PAVEMENT TO ℄ OF FOUNDATION.
- 200 WATT HIGH PRESSURE SODIUM LAMP, LUMINAIRE IES TYPE III MSC, 41.7' M.H., FOUNDATION MOUNTED.
- EXISTING LIGHT POLE TO BE REMOVED
- STA. LOCATION
  NUMBER AND TYPE OF CONNECTOR KITS (TYPE AS CALLED)
- EXISTING PULL BOX
- STUB OUT FOR FUTURE USE
- DUCT CABLE (WITH CONDUIT AT CROSS-UNDERS)
- STRUCTURE GROUNDING SYSTEM

- CSK CABLE SPLICING KIT
- PROPOSED CONTROL CENTER
- EXISTING CONTROL CENTER
- PROPOSED ILLUMINATED SIGN
  Ⓝ, STA. LOCATION, NUMBER AND WATTAGE OF M.V. LUMINAIRE PER SIGN
- CIRCUIT "A", #4 AWG, 240 V
- CIRCUIT "B", #4 AWG, UNLESS OTHERWISE NOTED, 480 V
- CIRCUIT "C", #4 AWG, 480 V
- CIRCUIT "D", #4 AWG, 480 V
- CIRCUIT "E", #4 AWG, 240 V

NOTE: UNLESS NOTED OTHERWISE, STANDARD CONNECTOR KITS TYPE II AND TYPE III ARE TO BE USED.

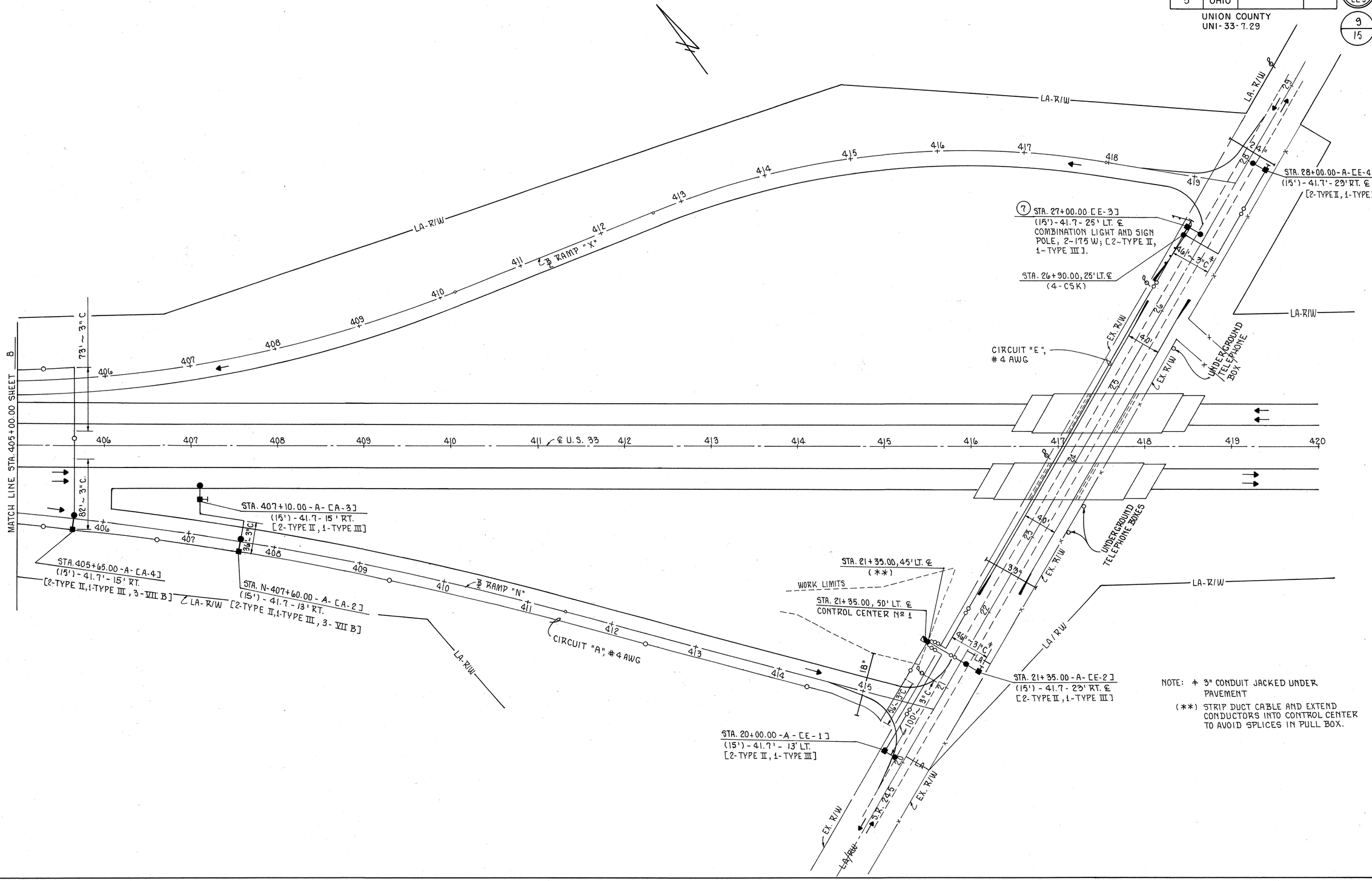
LIGHTING PLAN U.S. 33 STA. 385+00 TO STA. 405+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-7.29

134
225

9
15



NOTE: + 3" CONDUIT JACKED UNDER PAVEMENT

(**) STRIP DUCT CABLE AND EXTEND CONDUCTORS INTO CONTROL CENTER TO AVOID SPLICES IN PULL BOX.

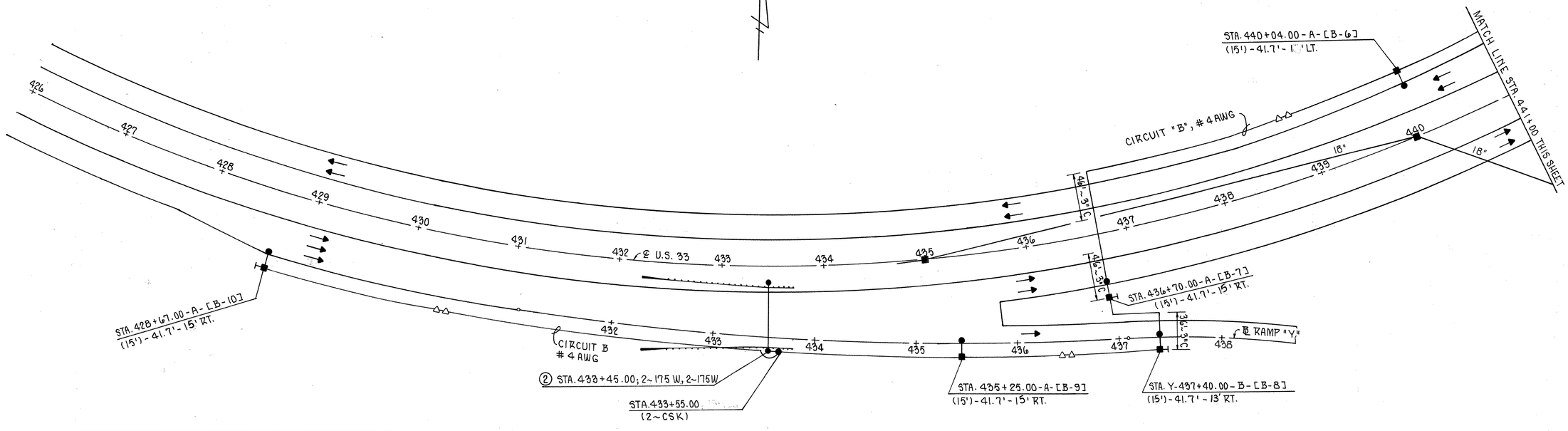
LIGHTING PLAN U.S. 33 STA. 405+00 TO STA. 420+00

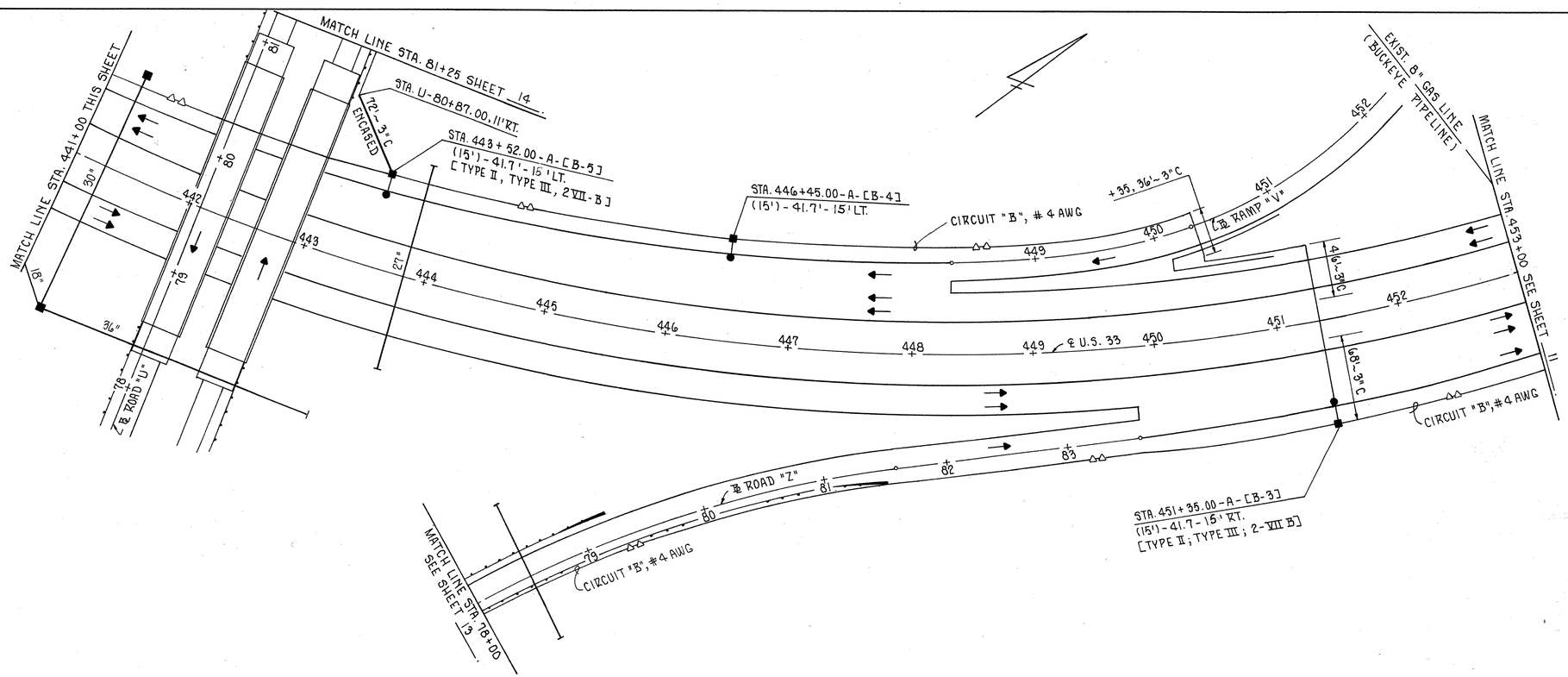
FHWA REGION	STATE	PROJECT	
5	OHIO		

135
225

10
15

UNION COUNTY
UNI-33-7.29





LIGHTING PLAN U.S. 33 STA. 426+00 TO STA. 453+00 AND ROAD "Z" STA. 78+00 TO STA. 83+60.84

FHWA REGION	STATE	PROJECT	
5	OHIO		

136 / 225

11 / 15

END PROJECT
UNI-33-7.29
STA. 463+40.92BK.

S.C. STA. 463+40.92 BK.

S.C. STA. 457+50.00 AHD.

BRIDGE Nº
UNI-4-1084 LT.
EXIST. S.R. 4 OVER
EXIST. U.S. 33

SEE SHEET 14 FOR
MATCH LINE STA. 47+00 EX. U.S. 33

UNION COUNTY
UNI-33-7.29

STA. 47+55.00
(2-C5K)

(14) PROPOSED STRUCTURE MOUNTED
ILLUMINATED SIGN~I-175 W

MATCH LINE STA. 462+00 SEE SHEET 12

℄ EXIST. U.S. 33

STA. 460+97.00
(2-C5K)

℄ EX. LA-R/W

BRIDGE Nº
UNI-4-1084 RT.
EXIST. S.R. 4 OVER
EXIST. U.S. 33

MATCH LINE STA. 453+00 SEE SHEET 10

CIRCUIT "B"
#4 AWG

STA. 454+60.00-A-EB-21
(15')-41.7'-15' RT.
[TYPE II, TYPE III, 2-WIRE]

136'~3"C ≠

CIRCUIT "B", 2 AWG

CIRCUIT "B"
#4 AWG

STA. 458+08.00-A-EB-11
(15')-41.7'-15' RT.

℄ PROP. RAMP "R"

STA. 458+68.00-A-EC-41
(15')-41.7'-15' RT.

STA. 458+82.00
(2-C5K)

STA. 462+34+50.74 RT. U.S. 33 ℄
STA. 10+00.00 ℄ RAMP "R"

STA. 7+94.00
MEET EXIST.

CIRCUIT "C"
#4 AWG

CIRCUIT "D"
#4 AWG

EXIST. U.S. 33

STA. R-2+81.00-A-ED-31
(15')-41.7'-13' RT.

EXIST. RAMP "P"

EXIST. RAMP "R"

STA. R-4+20.00-A-EC-21
(15')-41.7'-13' RT.

36'~
3"C ≠

STA. R-5+43.00-A-EC-31
(15')-41.7'-13' RT.

CIRCUIT "D"
#4 AWG

CIRCUIT "C"
#4 AWG

STA. 54+12.00-A-ED-11
(15')-41.7'-13' LT.

STA. P-17+40.00-A-EC-11
(15')-41.7'-13' RT.

CIRCUIT "D", #4 AWG

EXIST. 8" GAS LINE (BUCKEYE PIPE LINE)

℄ EX. LA-R/W

CIRCUIT "B", #2 AWG

℄ EX. LA-R/W

STA. 55+55.00-A-ED-21
(15')-41.7'-13' RT.

STA. 56+10 ±, 19' LT.
(**)

END WORK
STA. 56+25.00

℄ EX. LA-R/W

EXIST. PULL BOX TO BE REMOVED

82'~

6"C

STA. 56+10 ±, 24' LT. ±
CONTROL CENTER II

EXIST. CONTROL CENTER
EXIST. PULL BOX
TO BE REMOVED

℄ EX. LA-R/W

U.G. TELEPHONE

NOTE:
(**) STRIP DUCT CABLE AND EXTEND CONDUCTORS INTO CONTROL CENTER TO AVOID SPLICES IN PULL BOX.

NOTE: ≠ 3" CONDUIT JACKED UNDER PAVEMENT

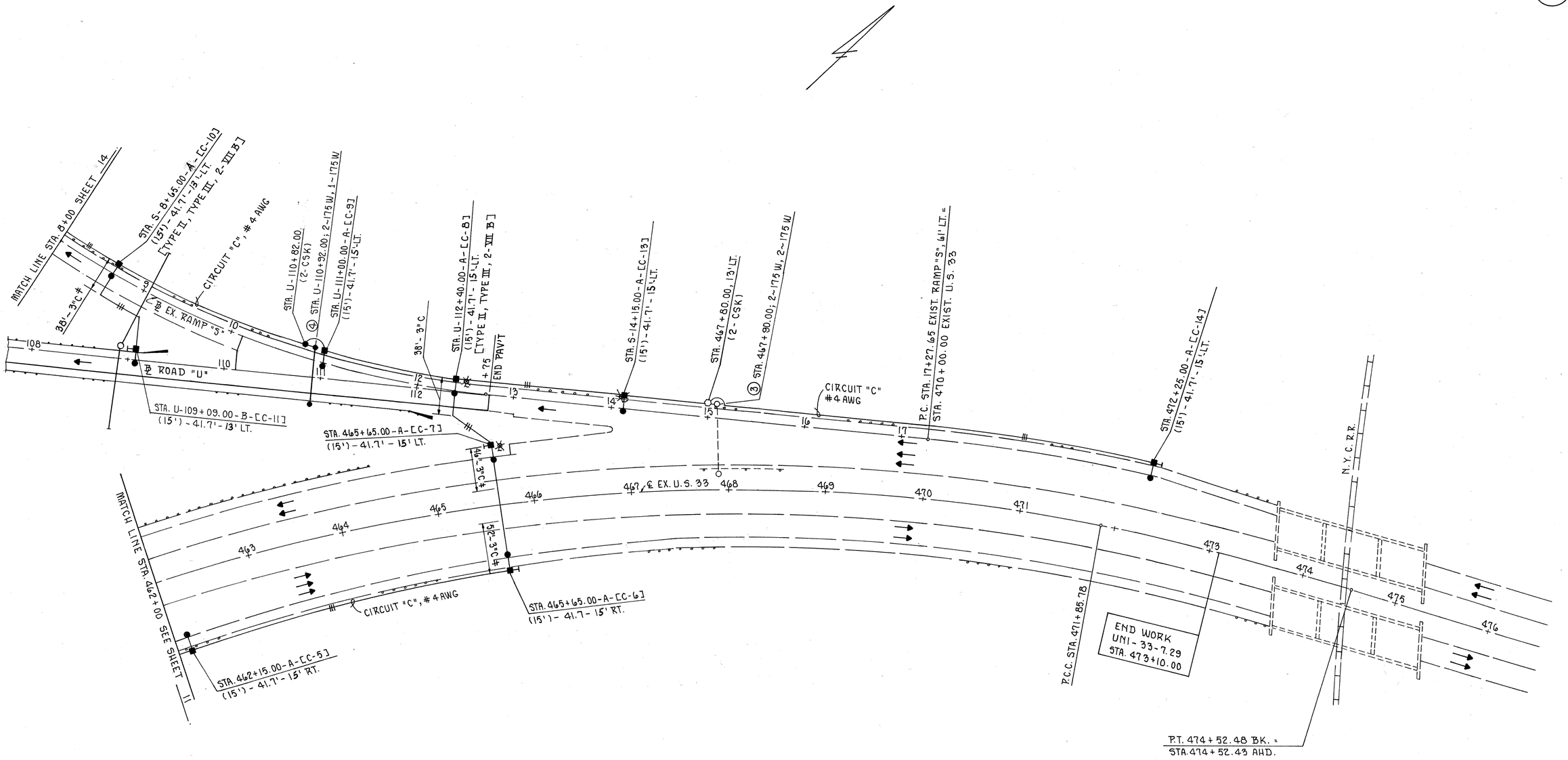
U.S. 33 STA. 453+00 TO STA. 463+40.92 BK.; EXIST. U.S. 33 STA. 457+50.00 AHD. TO STA. 462+00.00

FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-7.29

137
225

12
15



NOTE: ℄ 3" CONDUIT JACKED UNDER PAVEMENT

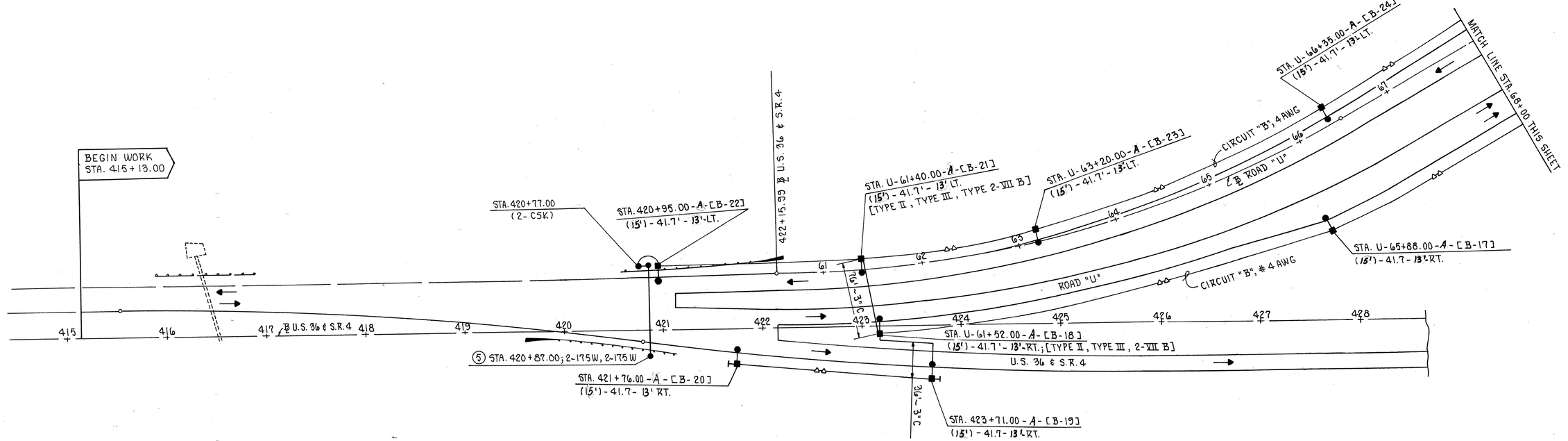
EXIST. U.S. 33 STA. 462+00 TO STA. 476+00

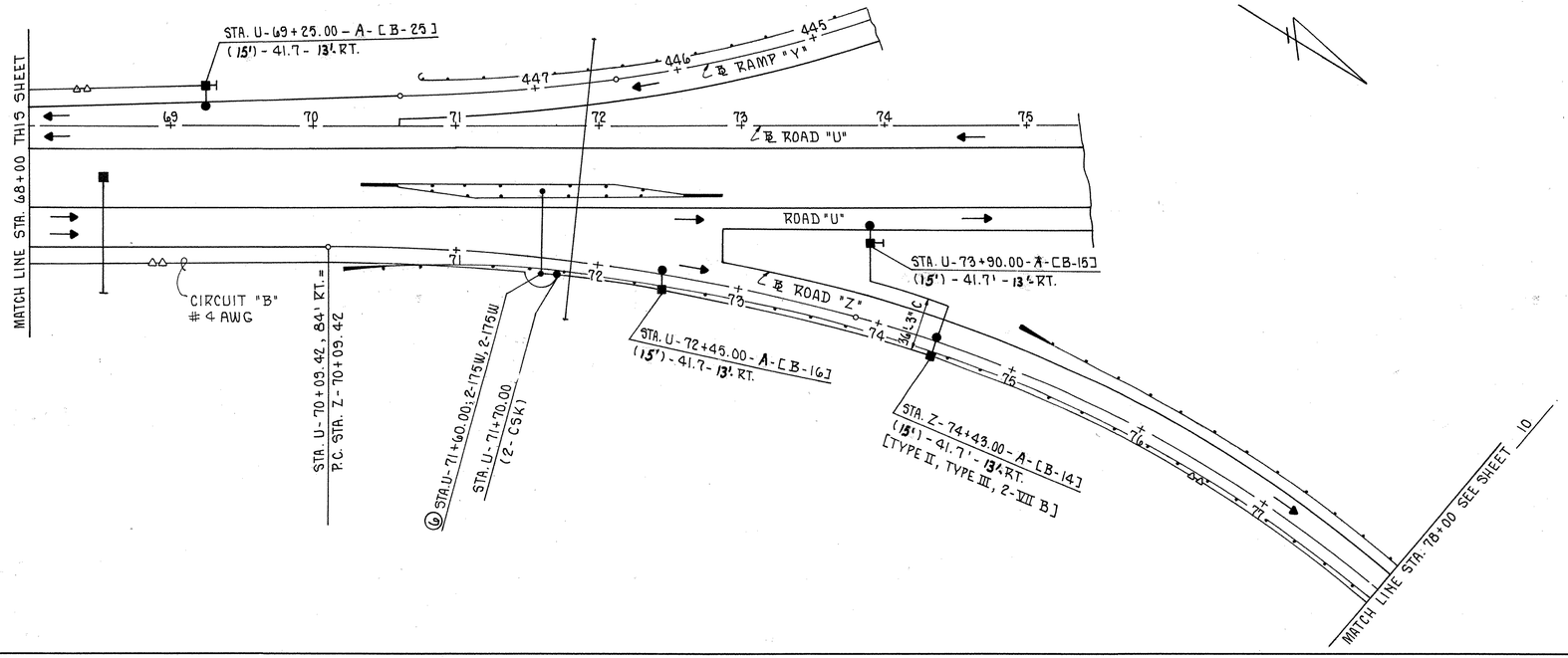
FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-7.29

138
225

13
15





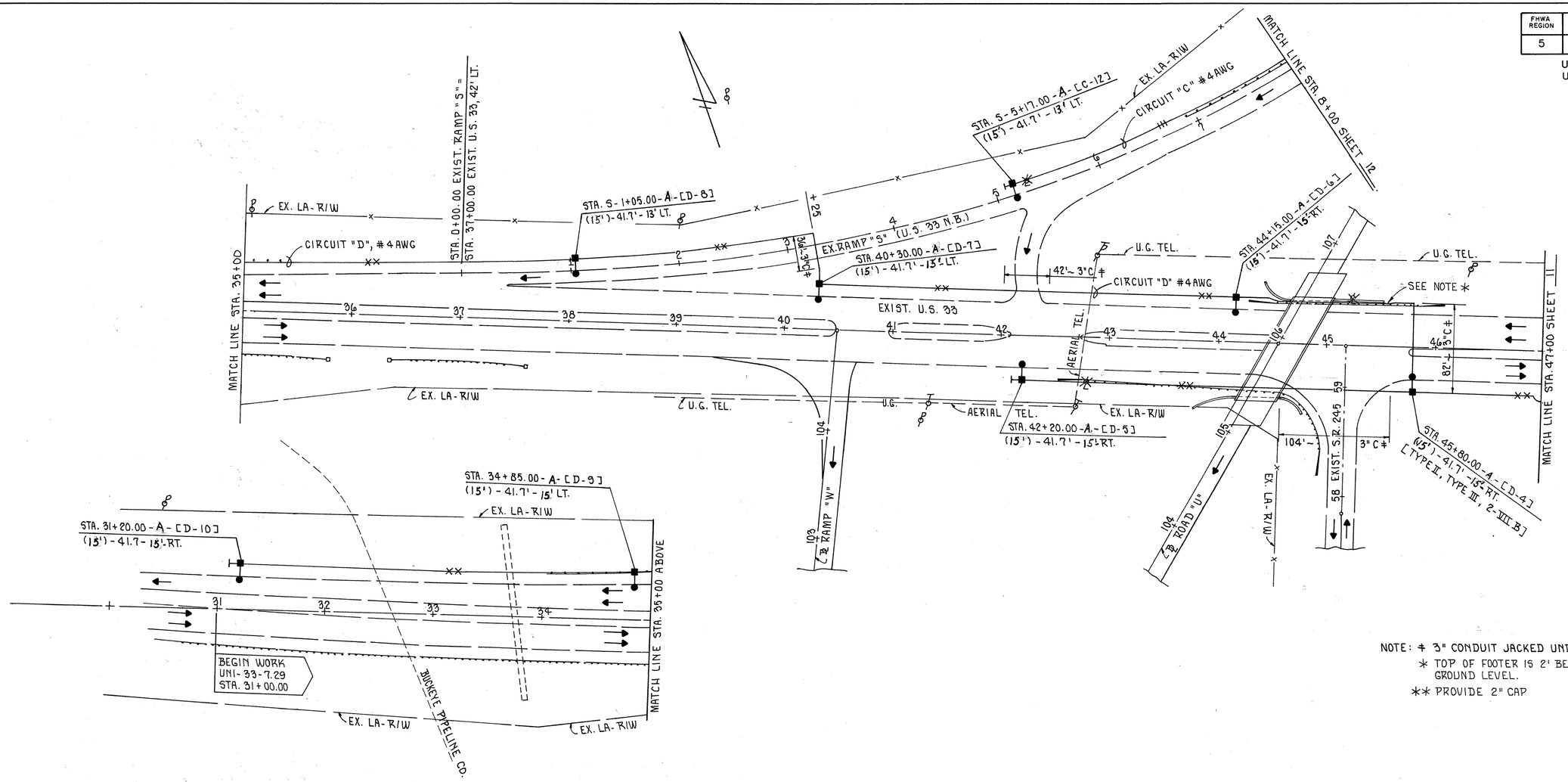
ROAD "U" STA. 60+52.05 TO STA. 78+00.00

FHWA REGION	STATE	PROJECT	
5	OHIO		

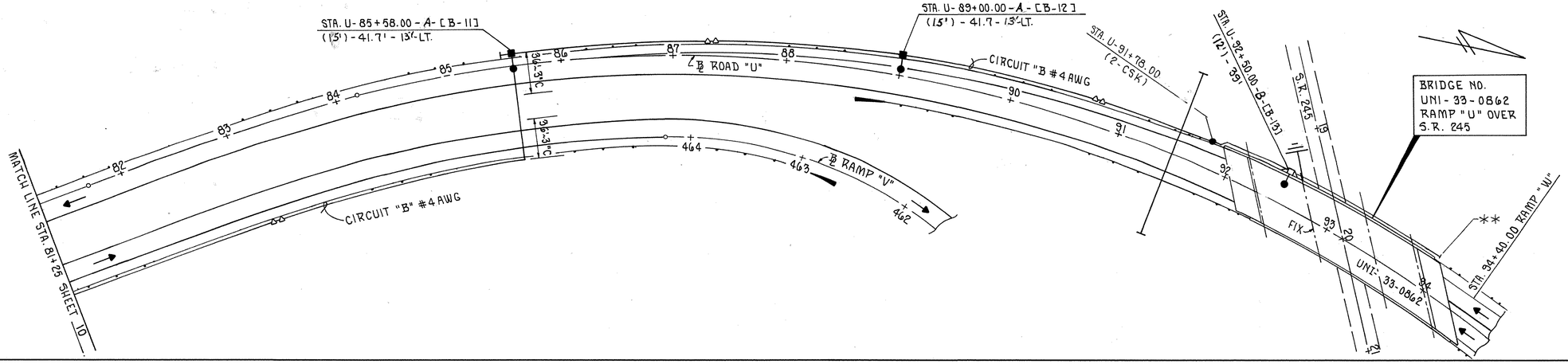
UNION COUNTY
UNI-33-7.29

139
225

14
15



NOTE: # 3" CONDUIT JACKED UNDER PAVEMENT
* TOP OF FOOTER IS 2' BELOW PROPOSED GROUND LEVEL.
** PROVIDE 2" CAP



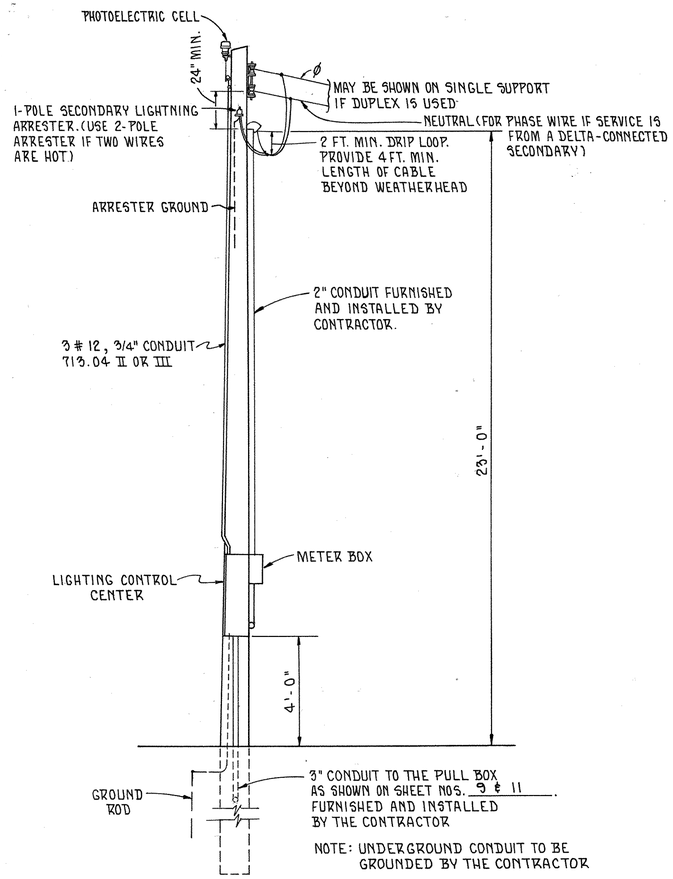
EXIST. U.S. 33 STA. 31+00 TO STA. 47+00; ROAD "U" STA. 81+25 TO STA. 94+50

FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-7.29

140
225

15
15



LIGHT POLE DATA		
Pole Ref. Letter	DESIGN NUMBER	TRANSFORMER BASE STYLE
A	AT 15B 41.7	AT-A
B	ST 12B 39	STEEL TRANS-FORMER

CONTROL CENTER DATA							
POWER SUPPLY	CONTROL CENTER	CONNECTED LOAD KVA	SERVICE ENTRANCE CONDUCTOR SIZE~AWG	ENCLOSURE RATING AMPS	CIRCUIT NUMBER	CIRCUIT LOAD AMPS	CIRCUIT FUSE SIZE AMPS
240V, 1Ø 3W, GRND.	CONTROL CENTER I	4.6 KVA	2-1/c #2AWG	Nº SC 60	"A"	12.20	60
					"E"	7.0	60
480V, 1Ø 2W, GRND.	CONTROL CENTER II	17.3 KVA	2-1/c #2 AWG	Nº SC 100	"B"	19.5	60
					"C"	11.0	60
					"D"	5.5	60

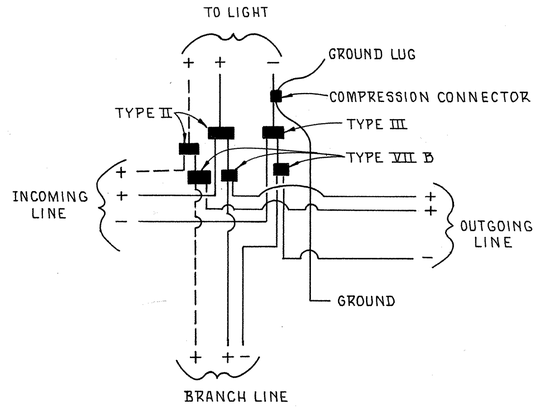
1. THE POWER COMPANY WILL PROVIDE SERVICE TO THE CONTROL CENTER AND THE METER BOX FOR INSTALLATION BY THE CONTRACTOR. THE CONTRACTOR SHALL FURNISH AND INSTALL THE SERVICE POLE AS DETAILED AND THE 3" Ø CONDUIT FROM THE PULL BOX TO THE LIGHTING ENCLOSURE INCLUDING THE 2" Ø CONDUIT TO THE WEATHERHEAD, THE WEATHERHEAD, THE LIGHT CONTROLLER, THE PHOTOELECTRIC CELL, THE GROUNDING SYSTEM AND THE LIGHTNING ARRESTER. THE CONTRACTOR SHALL FURNISH AND INSTALL THE TWO (2) 1/C # 2 AWG WIRES LEADING FROM THE ENCLOSURE TO THE WEATHERHEAD LEAVING ADEQUATE FREE CABLE ABOVE THE WEATHERHEAD FOR CONNECTION BY THE POWER COMPANY.

2. THE CONTRACT LUMP SUM PRICE BID FOR ITEM 625 CONTROL CENTER I & II SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS AND PERFORMING ALL LABOR INDICATED FOR THE CONTRACTOR IN ITEM 1 ABOVE. FOR FURNISHING ALL MATERIALS AND EQUIPMENT SHOWN ON THE DETAIL DRAWING FOR THE CONTROL CENTER, FOR FURNISHING AND INSTALLING ALL CONDUIT AND CABLE REQUIRED TO CONNECT THE CONTROL CENTER TO THE PULL BOX AS SHOWN ON SHEET Nº 9 AND Nº 11, AND FOR FURNISHING AND INSTALLING ALL INCIDENTALS NECESSARY TO MAKE A COMPLETE WORKABLE INSTALLATION.

3. ALL FUSES SHALL BE DELAYED ACTION.

4. ALL STRUCTURAL MEMBERS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.

POWER SERVICE POLE



CIRCUIT WIRING WHEN CIRCUIT BRANCHES IN POLE BASE

NOTE

1. TWO SOLID WIRES:
   480 V, 2-WIRE, GROUNDED NEUTRAL
2. ONE DASHED AND TWO SOLID WIRES:
   240 V, 3-WIRE, GROUNDED NEUTRAL

GENERAL SUMMARY — TRAFFIC CONTROL

CALC: WDR 5/22/85
CHK: [illegible] 12/18/85

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

UNION COUNTY
UNI-33-7.29

141 / 225

1 / 23

ROADWAY FROM SHEET NO.										PARTICIPATION				GRAND TOTAL	UNIT	ITEM	ITEM DESCRIPTION
10	11	12	13	14	15		23										
							139							139	EA.	620	DELINEATOR, TYPE C, FLEXIBLE POST MOUNTED
							48							48	EA.	620	DELINEATOR, TYPE D, FLEXIBLE POST MOUNTED
							2							2	EA.	620	DELINEATOR, TYPE C, BRACKET MOUNTED
							12.62							12.62	MI.	621	EDGE LINES
							3.39							3.39	MI.	621	LANE LINES
							0.15							0.15	MI.	621	CENTER LINES
							2496							2496	L.F.	621	CHANNELIZING LINES
							74							74	L.F.	621	STOP LINES
							1569							1569	L.F.	621	TRANSVERSE LINES
2	4													6	EA.	625	GROUND ROD
12.6	39.8													52.4	C.Y.	630	CONCRETE FOR ANCHOR BASE FOUNDATIONS
1.08	9.28	2.20	1.62	3.28										17.46	C.Y.	630	CONCRETE FOR EMBEDDED FOUNDATIONS
112.0	132.0	171.5		13.0	84.0									513	L.F.	630	GROUND-MOUNTED SUPPORTS, NO. 3 POST
103.5	77.5	33.0	30.3	104.5										349	L.F.	630	GROUND-MOUNTED SUPPORTS, NO. 4 POST
66.5	70.5		93.5	63.0										294	L.F.	630	GROUND-MOUNTED SUPPORTS, S4×7.7 BEAM
	43.0	52.5		35.5										131	L.F.	630	GROUND-MOUNTED SUPPORTS, W10×12 BEAM
	122.7													123	L.F.	630	GROUND-MOUNTED SUPPORTS, W12×30 BEAM
49.5														49.5	L.F.	630	ONE WAY SUPPORTS, NO. 4 POST
4	8		2	6										20	EA.	630	BREAKAWAY BEAM CONNECTION
1														1	EA.	630	OVERHEAD SIGN SUPPORT, TYPE 7.65, DESIGN 6, SPAN 74 FEET
	1													1	EA.	630	OVERHEAD SIGN SUPPORT, TYPE 7.65, DESIGN 6, MODIFIED, SPAN 74 FEET
	1													1	EA.	630	OVERHEAD SIGN SUPPORT, TYPE 7.65, DESIGN 6, MODIFIED, SPAN 57 FEET
	1													1	EA.	630	OVERHEAD SIGN SUPPORT, TYPE 7.65, DESIGN 8, SPAN 89 FEET
	1													1	EA.	630	OVERHEAD SIGN SUPPORT, TYPE 7.65, DESIGN 6, SPAN 60 FEET
1														1	EA.	630	COMBINATION OVERHEAD SIGN SUPPORT, TYPE 12.30, DESIGN 3, ARM 16 FEET
			1											1	EA.	630	OVERPASS STRUCTURE MOUNTED SIGN SUPPORT, TYPE 18.24
			2											2	EA.	630	SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED, TYPE 1
	6													6	EA.	630	SIGN ATTACHMENT ASSEMBLY
	4		1											5	EA.	630	LUMINAIRE SUPPORT ASSEMBLY, TYPE TC-31.21
1480	96.5	125.28	134.47	30.78	52.5									688	S.F.	630	SIGNS, FLAT SHEET, TYPE "G" SHEETING
436.50	1814.5	44.0	58.5	40.0										2394	S.F.	630	SIGNS, EXTRUSHEET, TYPE "G" SHEETING
	2.25													2.25	S.F.	630	SIGNS, OVERLAY
					121									121	EA.	630	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE
					6									6	EA.	630	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND STORAGE
	3		1		2									6	EA.	630	REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE
					41									41	EA.	630	REMOVAL OF GROUND MOUNTED POST SUPPORT
					12									12	EA.	630	REMOVAL OF GROUND MOUNTED BEAM SUPPORT
					1									1	EA.	630	REMOVAL OF OVERHEAD SIGN SUPPORT AND STORAGE, TYPE 7.65
			1											1	EA.	630	REMOVAL OF OVERHEAD SIGN SUPPORT AND STORAGE, TC-18.24
2	5		1											8	EA.	631	SIGN SERVICE
4	10													14	EA.	631	SIGNS WIRED
			1											1	EA.	631	SIGNS WIRED, OVERPASS STRUCTURE MOUNTED
2	5		1											8	EA.	631	DISCONNECT SWITCH WITH ENCLOSURE, TYPE X
	1		1											2	EA.	631	SWITCH ENCLOSURE MOUNTING BRACKET ASSEMBLY
4	17		1											22	EA.	631	BALLAST, TYPE CMRI-175-480
2	2													4	EA.	631	BALLAST, TYPE CMRI-250-480

BRUNING 44-132-30845-1

GENERAL SUMMARY — TRAFFIC CONTROL

CALC: WOB 8/22/85
CHK: FRF 12/18/85

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

UNION COUNTY
UNI-33-7.29

142 / 225

2 / 23

ROADWAY FROM SHEET NO.										PARTICIPATION				GRAND TOTAL	UNIT	ITEM	ITEM DESCRIPTION
10	11	12	13	14	15		23										
1	5													6	EA.	631	BALLAST WIRING ENCLOSURE, TYPE A
1			1											2	EA.	631	BALLAST WIRING ENCLOSURE, TYPE B
	1		1											2	EA.	631	BALLAST WIRING ENCLOSURE MOUNTING BRACKET
4	17		1											22	EA.	631	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21, WITH 175-WATT LAMP
2	2													4	EA.	631	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21, WITH 250-WATT LAMP
	7													7	EA.	631	REMOVAL OF LUMINAIRE AND STORAGE
	3													3	EA.	631	REMOVAL OF BALLAST AND STORAGE
	1													1	EA.	631	REMOVAL OF DISCONNECT SWITCH WITH ENCLOSURE AND STORAGE
	1													1	EA.	631	REMOVAL OF TRANSFORMER AND STORAGE

BRUNING 44-132 30845-1

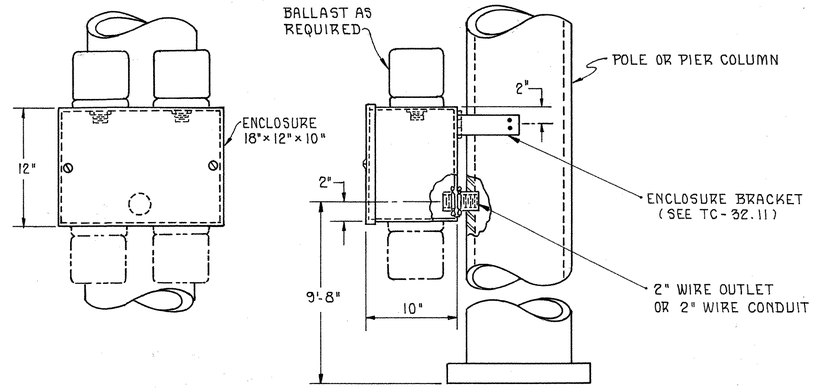
UNION COUNTY UNI-33-7.29	OHIO FHWA REGION 5	143 225
F-11(74)	FEDERAL PROJECT	3 23

TRAFFIC CONTROL

GENERAL NOTES AND MISCELLANEOUS DETAILS

TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS

REFERENCES TO SUPPLEMENTAL SPECIFICATIONS 843, 857, 858, 859, 957, 958, AND 959 ON THE TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS IN THESE PLANS SHALL BE CONSIDERED TO READ AS RESPECTIVE REFERENCES TO ITEMS 861 & 961, 630, 631, 632, 730, 731 AND 732.



BALLAST ENCLOSURE, TYPE B

BRUNING 44-132 30845-7

SIGNING PLAN

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

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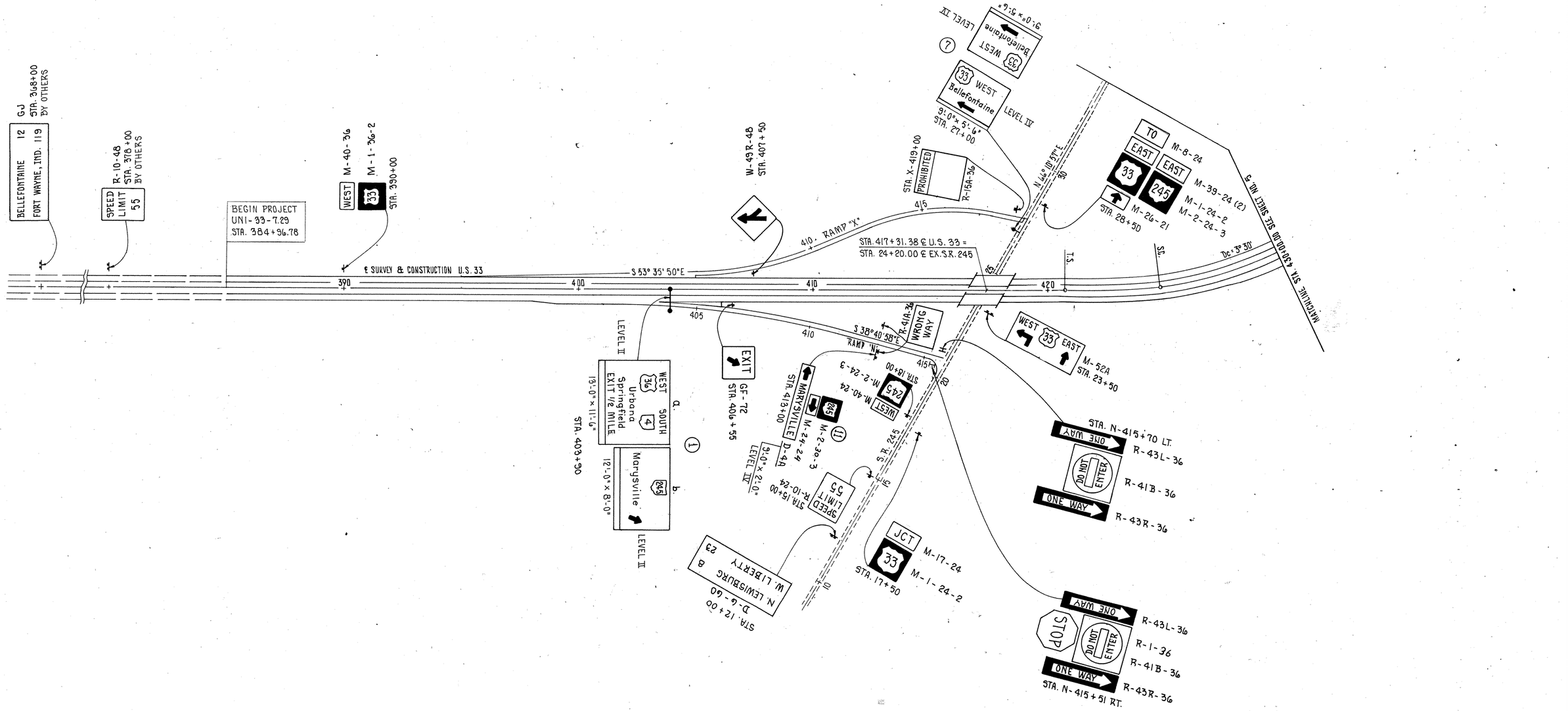
4 / 23

UNION COUNTY
UNI-33-7.29

NOTE

FOR SIGNING ONLY: EXISTING S.R. 245 STATIONING HAS BEEN EXTENDED FROM INTERSECTING STATION OF U.S. 33 (U.S. 33 STA. 417+31.38 = S.R. 245 STA. 24+20.00).



SIGN MESSAGES

SIGNING PLAN

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

UNION COUNTY
UNI-33-7.29

145 / 225

5 / 23

MATCHLINE STA. 430+00.00 SEE SHEET NO. 4

NOTE: FOR SIGNING ONLY EXISTING S.R. 245 STATIONING HAS BEEN EXTENDED FROM INTERSECTING STATION OF U.S. 33. (U.S. 33 STA. 417+31.38 = S.R. 245 STA. 24+20.00)

SURVEY & CONSTRUCTION U.S. 33

SR 245

EXIST. US 33

RAMP "W"

ROAD "U"

RAMP "V"

ROAD "Z"

EX. RAMP "P"

EX. U.S. 36 & S.R. 4

N 24° 27' 38" E

N 49° 34' 15" E

N 31° 18' 49" W

STA. 463+40.32 BK.
STA. 457+50.00 AHD

SIGN MESSAGES

SIGNING PLAN

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

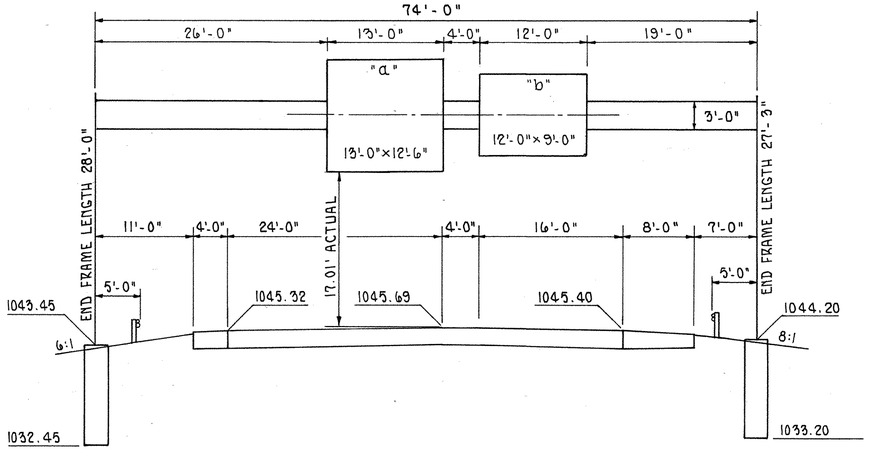
UNION COUNTY
UNI-33-7.29

146 / 225

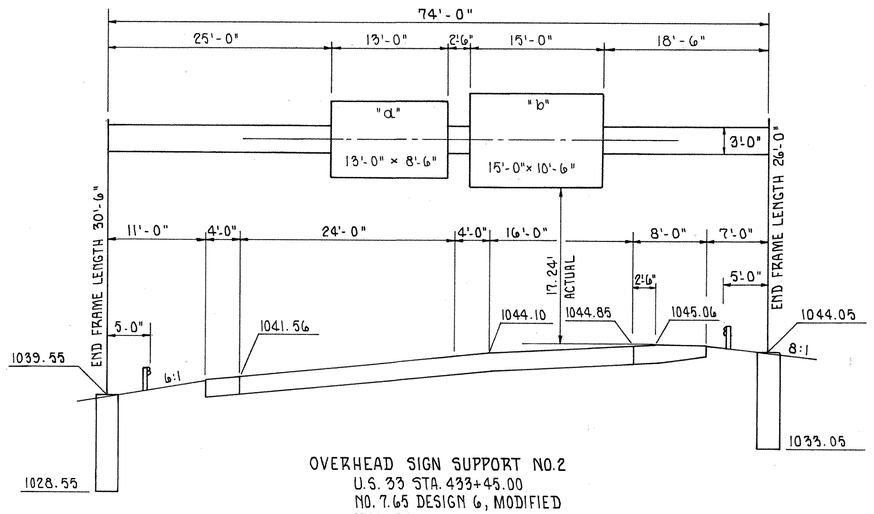
6 / 23

MATCHLINE STA. 430+00.00 SEE SHEET NO.

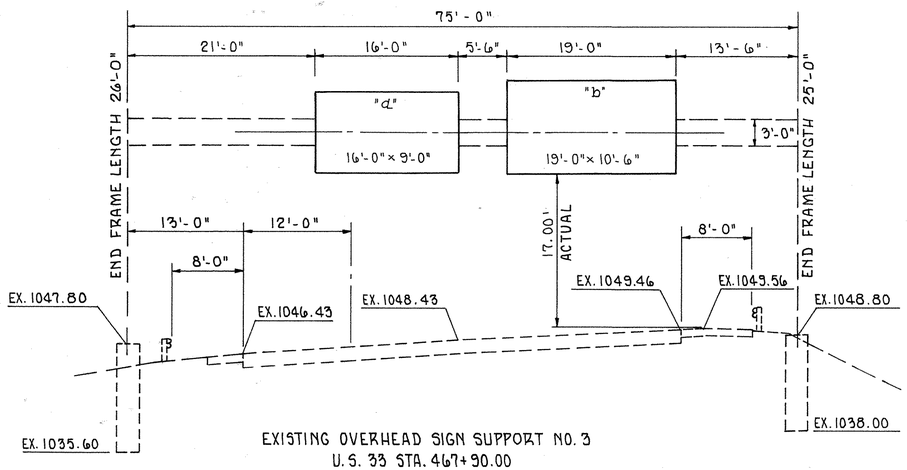
EXISTING SIGN MESSAGES



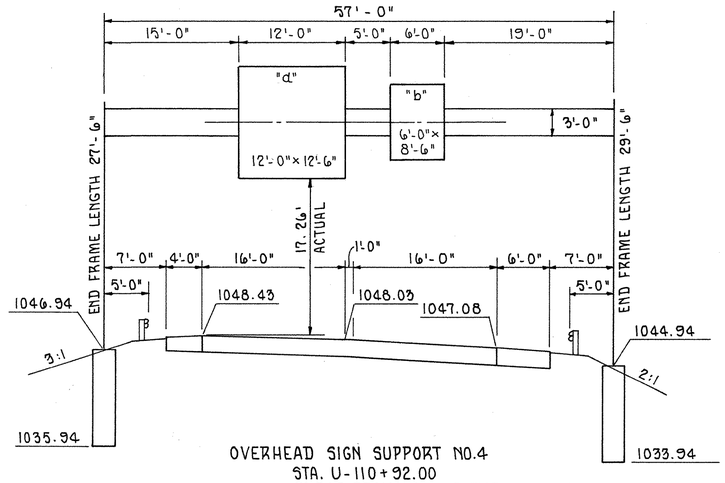
OVERHEAD SIGN SUPPORT NO.1
U.S. 33 STA. 403+90.00
NO. 7.65 DESIGN 6
SPAN 74'-0"



OVERHEAD SIGN SUPPORT NO.2
U.S. 33 STA. 433+45.00
NO. 7.65 DESIGN 6, MODIFIED
SPAN 74'-0"

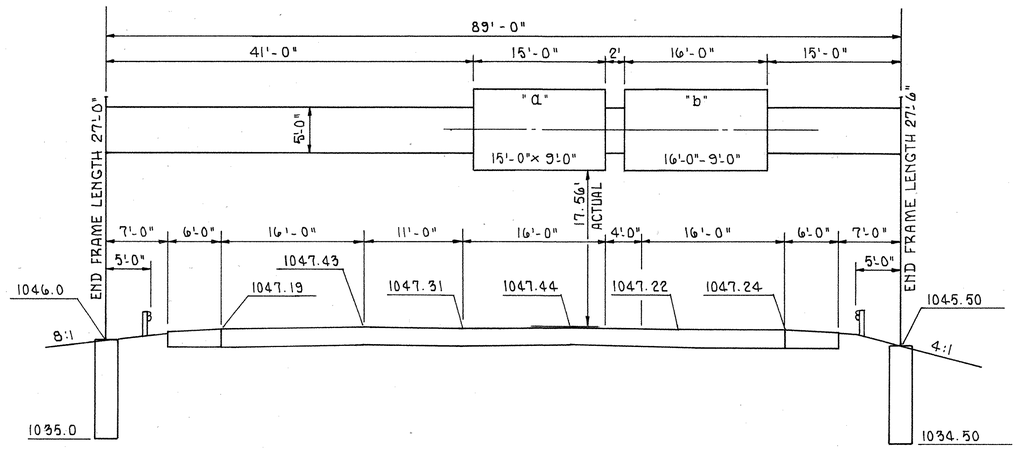


EXISTING OVERHEAD SIGN SUPPORT NO. 3
U.S. 33 STA. 467+90.00
NO. 7.65 DESIGN 6
SPAN 75'-0"

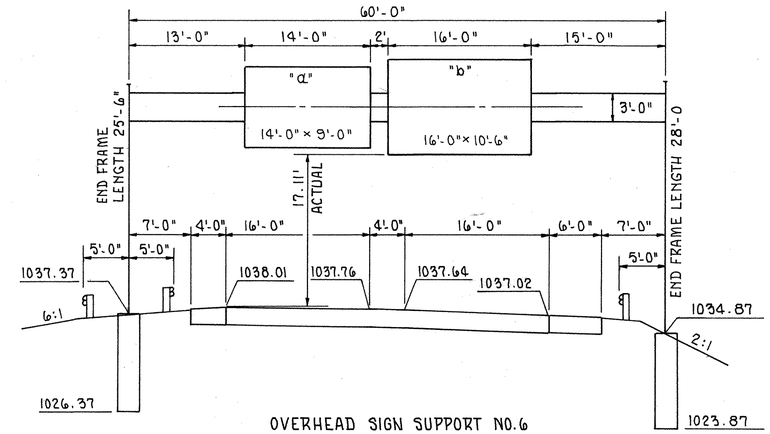


OVERHEAD SIGN SUPPORT NO.4
STA. U-110+92.00
NO.7.65 DESIGN 6, MODIFIED
SPAN 57'-0"

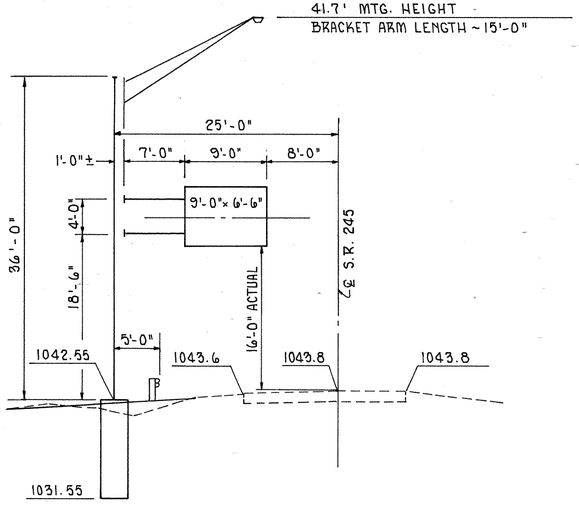
OVERHEAD SIGN DETAILS



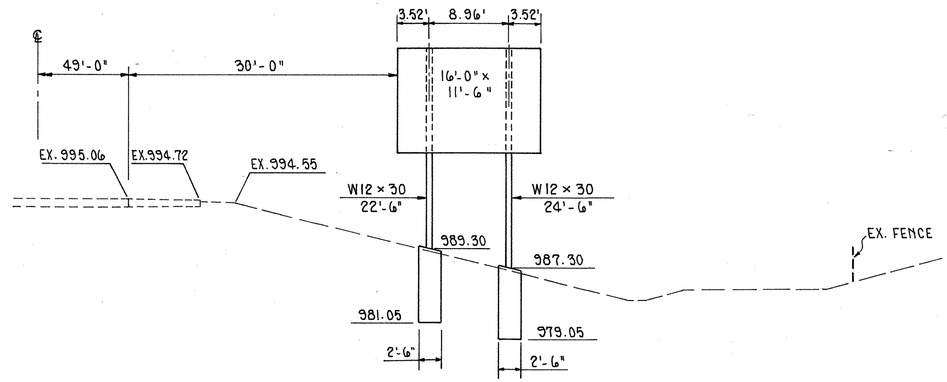
OVERHEAD SIGN SUPPORT NO.5
EXIST. U.S. 36 & S.R.4 STA. 420+87.00
NO. 7.65 DESIGN 8
SPAN 89'-0"



OVERHEAD SIGN SUPPORT NO.6
STA. U-71+60.00
NO. 7.65 DESIGN 6
SPAN 60'-0"

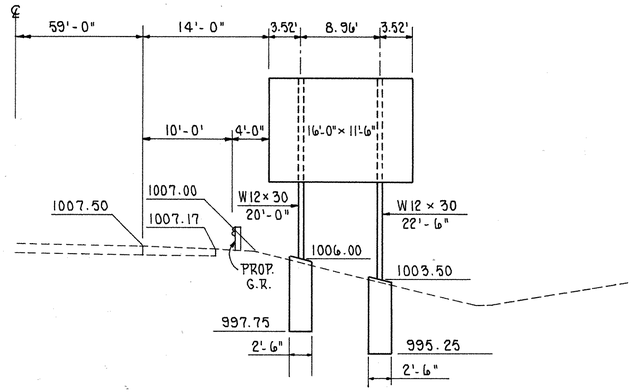


OVERHEAD SIGN SUPPORT NO.7
S.R. 245 STA. 27+00.00
COMBINATION SUPPORT NO.12.30 DESIGN 3
SIGN ARM LENGTH 16'-0"

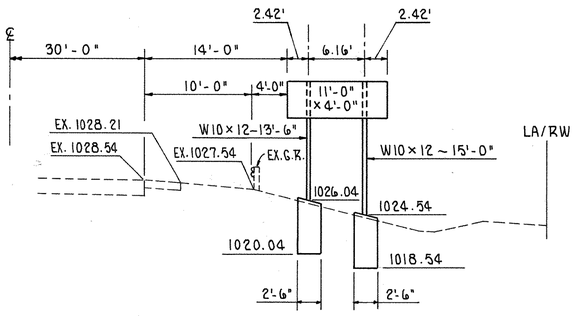


GROUND MOUNTED SIGN SUPPORT NO.8
EXIST. U.S. 33 STA. 494+00.00 LT.

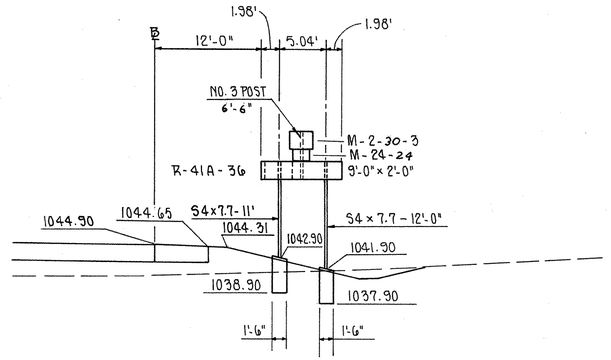
UNION COUNTY UNI-33-7.29	OHIO FHWA REGION 5	149 225
F-11(74)	FEDERAL PROJECT	9 23



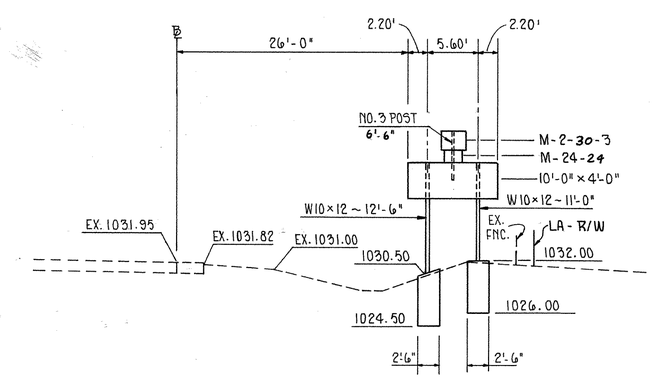
GROUND MOUNTED SIGN SUPPORT NO.9
EXIST. U.S.33 STA. 516+50.00 LT.



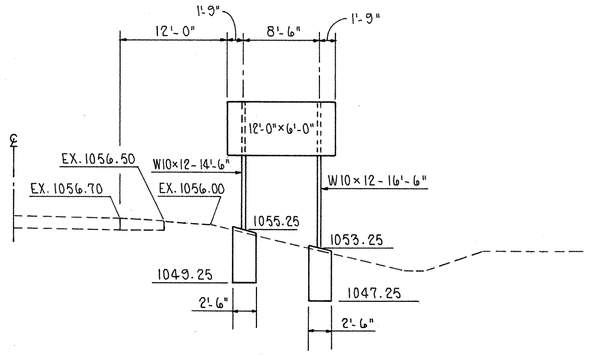
GROUND MOUNTED SIGN SUPPORT NO.10
EXIST. U.S.33 STA. 35+80.00 RT.



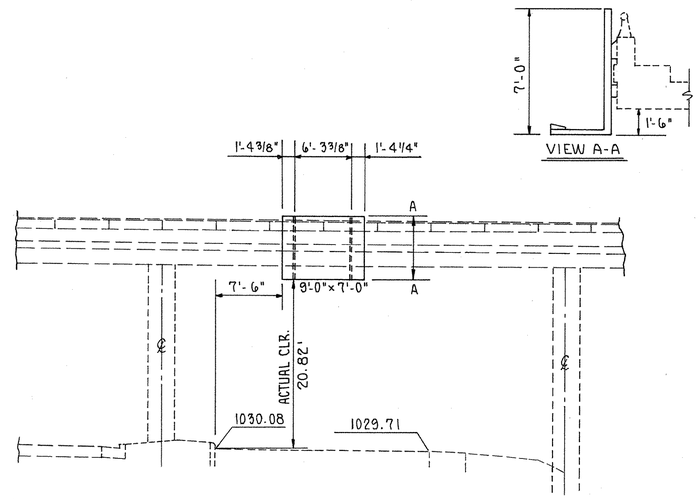
GROUND MOUNTED SIGN SUPPORT NO.11
RAMP "N" STA. 413+00 RT.



GROUND MOUNTED SIGN SUPPORT NO.12
EXIST. RAMP "P" STA. 12+68.00 LT.



GROUND MOUNTED SIGN SUPPORT NO.13
EXIST. U.S. 36 & S.R.4 STA. 412+50.00 RT.



OVERHEAD STRUCTURE MOUNTED SIGN SUPPORT NO.14
EXIST. U.S.33 STA. 47+55

GROUND MOUNTED SIGN DETAILS

BRUNING 44-132 30845-7

DIMENSION "A" = EDGE OF PAVEMENT TO ℄ FIRST SUPPORT.
DIMENSION "B" = ℄ FIRST SUPPORT TO ℄ SECOND SUPPORT.
DIMENSION "C" = ℄ SECOND SUPPORT TO ℄ THIRD SUPPORT.
DIMENSION "D" = ℄ SUPPORT TO EDGE OF SIGN.

SUB-SUMMARY — TRAFFIC CONTROL

CALC: WDL 8/21/85
CHK: PAP 12/19/85

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

UNION COUNTY
UNI-33-7.29

150/225

10/23

SIGN AND SUPPORT QUANTITIES — ITEM 630

FROM SHEET No.	SIGN SUPPORT NO.	SIGN LOCATION	SIGN DESIGNATION	EFFECTIVE SIGN SIZE "He"	DIMENSION "A" L.F.	DIMENSION "B" L.F.	DIMENSION "C" L.F.	DIMENSION "D" L.F.	SIGNS, FLAT SHEET TYPE 'G' SHEETING S.F.	SIGNS, EXTRU SHEET TYPE 'G' SHEETING S.F.	SIGNS, OVERLAY S.F.	OVERPASS STRUCTURE MOUNTED SIGN SUPPORT, TYPE 18.24 EA.	TYPE 7.65, DESIGN 6, SPAN 74 FT. EA.	TYPE 7.65, DESIGN 6 MOD., SPAN 74 FT. EA.	TYPE 7.65, DESIGN 6 MOD., SPAN 57 FT. EA.	TYPE 7.65, DESIGN 8, SPAN 89 FT. EA.	TYPE 7.65, DESIGN 6, SPAN 60 FT. EA.	COMBINATION OVERHEAD SIGN SUPPORT, TYPE 12.30, DESIGN 3, SPAN 16 FT. EA.	LUMINAIRE SUPPORT ASSEMBLY TYPE: TC-31.21 EA.	SIGN ATTACHMENT ASSEMBLY EA.	CONC. FOR ANCHOR BASE FND. C.Y.	CONC. FOR EMBEDDED FND. C.Y.	BREAKAWAY BEAM CONNECTIONS EA.	SIGN SUPPORT ASSEMBLY BRIDGE MOUNTED, TYPE 1 EA.	ONE WAY SUPPORTS, № 4 POST L.F.	STRUCTURAL SUPPORTS: GROUND MOUNTED SUPPORT, № 3 POST L.F. LT.	CT.	RT.	GROUND MOUNTED SUPPORT, № 4 POST L.F. LT.	CT.	RT.				GROUND MOUNTED SUPPORT, S4 × 7.7 L.F. LT.	CT.	RT.	GROUND MOUNTED SUPPORT, W10 × 12 L.F. LT.	CT.	RT.	GROUND MOUNTED SUPPORT, W12 × 30 L.F. LT.	CT.	RT.
		390+00 W.B.		36"×18"	16.5	2.0		0.5	4.50																		15.5		16.0													
				36"×36"					9.00																																
	1	403+90 E.B.	a.	13'-0"×12'-0"						156.00			1									9.7																				
			b.	12'-0"×8'-6"						102.00																																
		406+55 E.B.		72"×60"	13.32	3.36		1.32		30.00													0.54	2																	
	11	N-413+00 E.B.		37½"×30"					7.82																																
				24"×18"					3.00														0.54	2																	
				9'-0"×2'-0"						18.00																																
				36"×24"					6.00																																
		N-413+00 LT.		36"×24"	13.50			1.50	6.00																			15.5													
		N-415+51 RT.		36"×12"	13.50			1.50	3.00																																
				36"×36"					9.00																																
				36"×12"					3.00																																
				36"×36"					9.00																																
		N-415+70 LT.		36"×12"	13.50			1.50	3.00																																
				36"×36"					9.00																																
				36"×12"					3.00																																
		407+50 W.B.		48"×48"	17.58	2.50		1.58	16.00																																
		X-419+00		36"×36"	13.50			1.50	9.00																																
		12+00 S.B.		60"×30"	13.00	3.00		1.00	12.50																																
		15+00 S.B.		24"×30"	13.00			1.00	5.00																																
		17+50 N.B.		24"×12"					2.00																																
				24"×24"	13.00			1.00	4.00																																
		18+00 S.B.		24"×12"					2.0																																
				30"×24"	13.25			1.25	5.0																																
		23+50 N.B.		108"×30"	14.00	5.04		1.98		22.5																														
	7	27+00		9'-0"×6'-0"						54.00							1					2.9																			
				9'-0"×6'-0"						54.00																																
		28+50		24"×12"					2.00																																
				24"×12"					2.00																																
				24"×12"	13.00	2.00		1.00	2.00																																
				24"×24"					4.00																																
				30"×24"					5.00																																
				21"×15"					2.19																																
		TOTALS TO GENERAL SUMMARY							148.01	436.50			1			1						12.6	1.08	4		49.5		112.0			103.5					66.5					

REMOVALS — ITEM 630

REM. & STORAGE OF GRND. MTD. SIGN EA.	REM. & STOR. OF MAJOR GRND. MTD. SIGN EA.	REM. & STOR. OF OVERHEAD MTD. SIGN. EA.	REMOVAL OF GRND. MTD. POST SUPPORT EA.	REMOVAL OF GRND. MTD. BEAM SUPPORT EA.	REM. & STOR. OF O.H. SIGN SUPPORT, TYPE 7.65 EA.	REM. & STOR. OF O.H. SIGN SUPPORT, TC-18.24 EA.

ELECTRICAL QUANTITIES — ITEM 631

MERCURY VAPOR LUMINAIRE TYPE TC-31.21 175 WATT EA.	250 WATT EA.	SIGN SERVICE EA.	SIGNS WIRED EA.	SIGNS WIRED OVERPASS STRUCTURE MTD. EA.	DISCONNECT SWITCH W/ENCLOSURE, TYPE X EA.	BALLAST, TYPE CMRT-175-480 EA.	BALLAST, TYPE CMRT-250-480 EA.	BALLAST ENCLOSURE, TYPE A EA.	BALLAST ENCLOSURE, TYPE B EA.	SWITCH ENCL. MTG. BRKT. ASSY'M. EA.	BALLAST WIRING ENCL. MTG. BRKT. EA.
	2										
2		1	1		1	2	2	1			
	1		1								
4	2	2	4		2	4	2	1	1		2

ITEM 625

GROUND ROD EA.
1

REMOVALS — ITEM 631

REMOVAL & STORAGE OF LUMINAIRE EA.	REMOVAL & STORAGE OF BALLAST EA.	REM./STOR. DISCONNECT SWITCH ENCL. EA.	REMOVAL & STORAGE OF TRANSFORMER EA.

DIMENSION "A" = EDGE OF PAVEMENT TO ℄ FIRST SUPPORT.
DIMENSION "B" = ℄ FIRST SUPPORT TO ℄ SECOND SUPPORT.
DIMENSION "C" = ℄ SECOND SUPPORT TO ℄ THIRD SUPPORT.
DIMENSION "D" = ℄ SUPPORT TO EDGE OF SIGN.

SUB-SUMMARY — TRAFFIC CONTROL

CALC: WDG 8/21/85
CHK: [illegible] 12/19/85

FHWA REGION	STATE	PROJECT
5	OHIO	F-11(74)

UNION COUNTY
UNI-33-7.29

SIGN AND SUPPORT QUANTITIES — ITEM 630

From Sheet No.	Sign Support No.	Sign Location	Sign Designation	Effective Sign Size "He"	Dimension "A" (L.F.)	Dimension "B" (L.F.)	Dimension "C" (L.F.)	Dimension "D" (L.F.)	Signs, Flat Sheet Type "G" Sheeting (S.F.)	Signs, Extru Sheet Type "G" Sheeting (S.F.)	Signs, Overlay (S.F.)
	2	433+45 N.B.	a.	13'-0"×8'-0"						104.00	
			b.	15'-0"×10'-0"						150.00	
		436+45 N.B.		72"×60"	13.32	3.36		1.32		30.00	
		450+75 S.B.		48"×48"	17.58	2.50		1.58	16.00		
	3	467+90 S.B.	a.	16'-0"×8'-6"						136.00	
			b.	19'-0"×10'-0"						190.00	
	8	494+00 S.B.		16'-0"×11'-6"	33.52	8.96		3.52		184.00	
	9	516+50 S.B.		16'-0"×11'-6"	17.52	8.96		3.52		184.00	
		EXIST. SIGN S.B.		18"×18"							2.25
		407+50 N.B.		24"×12"					2.00		
				24"×12"	13.00	2.25		1.00	2.00		
				24"×24"					4.00		
				30"×24"					5.00		
		409+50 S.B.		60"×30"	13.00	3.00		1.00	12.50		
	13	412+50 N.B.		12'-0"×6'-0"	13.75	8.50		1.75		72.00	
		412+50 S.B.		24"×30"	13.00			1.00	5.00		
		415+50 S.B.		24"×12"					2.00		
				24"×12"	13.00	2.00		1.00	2.00		
				24"×24"					4.00		
				24"×24"					4.00		
	5	420+87 N.B.	a.	15'-0"×8'-6"						127.50	
			b.	16'-0"×8'-6"						136.00	
		61+85 N.B.		72"×60"	13.32	3.36		1.32		30.00	
		64+00 N.B.		36"×36"	13.50			1.50	9.00		
	6	U-71+60 N.B.	a.	14'-0"×8'-6"						119.00	
			b.	16'-0"×10'-0"						160.00	
		U-72+93 S.B.		48"×48"	13.58	2.50		1.58	16.00		
		U-78+00 N.B.		36"×36"	12.87	2.50		0.87	9.00		
				24"×24"					4.00		
	4	U-110+92 S.B.	a.	12'-0"×12'-0"						144.00	
			b.	6'-0"×8'-0"						48.00	
		TOTALS TO GENERAL SUMMARY							96.50	1814.50	2.25

Sign Support No.	Sign Location	Sign Designation	Effective Sign Size "He"	Overpass Structure Mounted Sign Support, Type 18.24 (EA.)	Type 7.65, Design 6, Span 74 Ft. (EA.)	Type 7.65, Design 6 Mod., Span 74 Ft. (EA.)	Type 7.65, Design 6 Mod., Span 57 Ft. (EA.)	Type 7.65, Design 8, Span 89 Ft. (EA.)	Type 7.65, Design 6, Span 60 Ft. (EA.)	Combination Overhead Sign Support, Type 12.30, Design 3, Span 16 Ft. (EA.)	Luminaire Support Assembly Type: TC-31.21 (EA)	Sign Attachment Assembly (EA)	Conc. for Anchor Base Fnd. (C.Y.)	Conc. for Embedded Fnd. (C.Y.)	Breakaway Beam Connections (EA)	Sign Support Assembly Bridge Mounted, Type 1 (EA.)	One Way Supports, № 4 Post (L.F.)
2	433+45 N.B.	a.	13'-0"×8'-0"			1							9.7				
		b.	15'-0"×10'-0"														
	436+45 N.B.		72"×60"											0.54	2		
	450+75 S.B.		48"×48"														
3	467+90 S.B.	a.	16'-0"×8'-6"								2	3					
		b.	19'-0"×10'-0"								2	3					
8	494+00 S.B.		16'-0"×11'-6"											3.0	2		
9	516+50 S.B.		16'-0"×11'-6"											3.0			
	EXIST. SIGN S.B.		18"×18"														
	407+50 N.B.		24"×12"														
			24"×12"														
			24"×24"														
			30"×24"														
	409+50 S.B.		60"×30"														
13	412+50 N.B.		12'-0"×6'-0"											2.2	2		
	412+50 S.B.		24"×30"														
	415+50 S.B.		24"×12"														
			24"×12"														
			24"×24"														
			24"×24"														
5	420+87 N.B.	a.	15'-0"×8'-6"					1					10.7				
		b.	16'-0"×8'-6"														
	61+85 N.B.		72"×60"											0.54	2		
	64+00 N.B.		36"×36"														
6	U-71+60 N.B.	a.	14'-0"×8'-6"						1				9.7				
		b.	16'-0"×10'-0"														
	U-72+93 S.B.		48"×48"														
	U-78+00 N.B.		36"×36"														
			24"×24"														
4	U-110+92 S.B.	a.	12'-0"×12'-0"				1						9.7				
		b.	6'-0"×8'-0"														
	TOTALS TO GENERAL SUMMARY					1	1	1	1		4	6	39.8	9.28	8		

STRUCTURAL SUPPORTS (ITEM 630)

Sign Support No.	Sign Location	Sign Designation	Effective Sign Size "He"	Ground Mounted Support, № 3 Post (L.F.) LT.	№ 3 Post CT.	№ 3 Post RT.	Ground Mounted Support, № 4 Post (L.F.) LT.	№ 4 Post CT.	№ 4 Post RT.	Ground Mounted Support, S4×7.7 (L.F.) LT.	S4×7.7 CT.	S4×7.7 RT.	Ground Mounted Support, W10×12 (L.F.) LT.	W10×12 CT.	W10×12 RT.	Ground Mounted Support, W12×30 (L.F.) LT.	W12×30 CT.	W12×30 RT.
2	433+45 N.B.	a.	13'-0"×8'-0"															
		b.	15'-0"×10'-0"															
	436+45 N.B.		72"×60"							17.0		17.0						
	450+75 S.B.		48"×48"				15.5		16.0									
3	467+90 S.B.	a.	16'-0"×8'-6"															
		b.	19'-0"×10'-0"															
8	494+00 S.B.		16'-0"×11'-6"													30.8		32.8
9	516+50 S.B.		16'-0"×11'-6"													28.3		30.8
	EXIST. SIGN S.B.		18"×18"															
	407+50 N.B.		24"×12"															
			24"×12"	13.5		13.5												
			24"×24"															
			30"×24"															
	409+50 S.B.		60"×30"	15.0		15.0												
13	412+50 N.B.		12'-0"×6'-0"										20.5		22.5			
	412+50 S.B.		24"×30"		13.0													
	415+50 S.B.		24"×12"															
			24"×12"	13.5		13.5												
			24"×24"															
			24"×24"															
5	420+87 N.B.	a.	15'-0"×8'-6"															
		b.	16'-0"×8'-6"															
	61+85 N.B.		72"×60"							18.0		18.5						
	64+00 N.B.		36"×36"					14.5										
6	U-71+60 N.B.	a.	14'-0"×8'-6"															
		b.	16'-0"×10'-0"															
	U-72+93 S.B.		48"×48"				15.5		16.0									
	U-78+00 N.B.		36"×36"	17.0		18.0												
			24"×24"															
4	U-110+92 S.B.	a.	12'-0"×12'-0"															
		b.	6'-0"×8'-0"															
	TOTALS TO GENERAL SUMMARY				132.0			77.5			70.5			43.0			122.7	

REMOVALS — ITEM 630

Sign Support No.	Sign Location	Sign Designation	Effective Sign Size "He"	Rem. & Storage of Grnd. Mtd. Sign (EA.)	Rem. & Stor. of Major Grnd. Mtd. Sign (EA.)	Rem. & Stor. of Overhead Mtd. Sign (EA.)	Removal of Grnd. Mtd. Post Support (EA.)	Removal of Grnd. Mtd. Beam Support (EA.)	Rem. & Stor. of O.H. Sign Support, Type 7.65 (EA.)	Rem. & Stor. of O.H. Sign Support TC-18.24 (EA.)
3	467+90 S.B.	a.	16'-0"×8'-6"			3				
		b.	19'-0"×10'-0"							
	TOTALS TO GENERAL SUMMARY					3				

ELECTRICAL QUANTITIES — ITEM 631 (Ground Rod: ITEM 625) / REMOVALS — ITEM 631

Sign Support No.	Sign Location	Sign Designation	Effective Sign Size "He"	Mercury Vapor Luminaire Type TC-31.21, 175 Watt (EA.)	Mercury Vapor Luminaire Type TC-31.21, 250 Watt (EA.)	Sign Service (EA.)	Signs Wired (EA.)	Signs Wired Overpass Structure Mtd. (EA.)	Disconnect Switch w/Enclosure, Type X (EA.)	Ballast, Type CMRI-175-480 (EA.)	Ballast, Type CMRI-250-480 (EA.)	Ballast Enclosure, Type A (EA.)	Ballast Enclosure, Type B (EA.)	Switch Encl. Mtg. Brkt. Assym. (EA.)	Ballast Wiring Encl. Mtg. Brkt. (EA.)	Ground Rod (EA.)	Removal & Storage of Luminaire (EA.)	Removal & Storage of Ballast (EA.)	Rem./Stor. Disconnect Switch Encl. (EA.)	Removal & Storage of Transformer (EA.)
2	433+45 N.B.	a.	13'-0"×8'-0"	2		1	1		1	2		1				1				
		b.	15'-0"×10'-0"	2			1			2										
3	467+90 S.B.	a.	16'-0"×8'-6"	2		1	1		1	2		1		1	1		7	3	1	1
		b.	19'-0"×10'-0"	2			1			2										
5	420+87 N.B.	a.	15'-0"×8'-6"	2		1	1		1	2		1				1				
		b.	16'-0"×8'-6"	2			1			2										
6	U-71+60 N.B.	a.	14'-0"×8'-6"	2		1	1		1	2		1				1				
		b.	16'-0"×10'-0"	2			1			2										
4	U-110+92 S.B.	a.	12'-0"×12'-0"		2	1	1		1		2	1				1				
		b.	6'-0"×8'-0"	1			1			1										
	TOTALS TO GENERAL SUMMARY			17	2	5	10		5	17	2	5		1	1	4	7	3	1	1

DIMENSION "A" = EDGE OF PAVEMENT TO ℄ FIRST SUPPORT.
DIMENSION "B" = ℄ FIRST SUPPORT TO ℄ SECOND SUPPORT.
DIMENSION "C" = ℄ SECOND SUPPORT TO ℄ THIRD SUPPORT.
DIMENSION "D" = ℄ SUPPORT TO EDGE OF SIGN.

SUB-SUMMARY — TRAFFIC CONTROL

CALC: NDZ 9/21/95
CHK: PRP 12/19/95

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

UNION COUNTY
UNI-33-7.29

152 / 225

12 / 23

SIGN AND SUPPORT QUANTITIES — ITEM 630

FROM SHEET No.	SIGN SUPPORT No.	SIGN LOCATION	SIGN DESIGNATION	EFFECTIVE SIGN SIZE "He"	DIMENSION "A"	DIMENSION "B"	DIMENSION "C"	DIMENSION "D"	SIGNS, FLAT SHEET TYPE "G" SHEETING	SIGNS, EXTRU SHEET TYPE "G" SHEETING	SIGNS, OVERLAY	OVERPASS STRUCTURE MOUNTED SIGN SUPPORT, TYPE 1B.24	TYPE 7.6S, DESIGN 6, SPAN 74 FT.	TYPE 7.6S, DESIGN 6 MOD., SPAN 74 FT.	TYPE 7.6S, DESIGN 6 MOD., SPAN 57 FT.	TYPE 7.6S, DESIGN 8, SPAN 89 FT.	TYPE 7.6S, DESIGN 10, SPAN 60 FT.	COMBINATION OVERHEAD SIGN SUPPORT, TYPE 12.30, DESIGN 3, SPAN 76 FT.	LUMINAIRE SUPPORT ASSEMBLY TYPE: TC-31.21	SIGN ATTACHMENT ASSEMBLY	CONC. FOR ANCHOR BASE FND.	CONC. FOR EMBEDDED FND.	BREAKAWAY BEAM CONNECTIONS	"SIGN SUPPORT ASSEMBLY BRIDGE MOUNTED, TYPE 1 ONE WAY SUPPORTS, N24 POST	STRUCTURAL SUPPORTS: GROUND MOUNTED SUPPORT, Nº3 POST	GROUND MOUNTED SUPPORT, Nº4 POST	GROUND MOUNTED SUPPORT, S4×7.7	GROUND MOUNTED SUPPORT, W10×12	GROUND MOUNTED SUPPORT, W12×30
					L.F.	L.F.	L.F.	L.F.	S.F.	S.F.	S.F.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	C.Y.	C.Y.	EA.	EA.	L.F.	LT. CT. RT.	LT. CT. RT.	LT. CT. RT.	LT. CT. RT.	LT. CT. RT.
		25+75 E.B.		24"×12"					2.00																				
				24"×12"					2.00																				
				24"×24"					4.00																				
				24"×24"	13.00	2.25		1.00	4.00																	16.0 17.0			
				24"×12"					2.00																				
				24"×12"					2.00																				
				24"×24"					4.00																				
				30"×24"					5.00																				
		31+00 E.B.		24"×12"					2.00																				
				24"×12"					2.00																				
				24"×24"	15.00	2.00		1.00	4.00																	15.0 16.0			
				24"×24"					4.00																				
				21"×15"					2.19																				
				21"×15"					2.19																				
	10	35+80 E.B.		11'-0"×4'-0"	16.42	6.16		2.42		44.00												2.20						25.5 27.0
		41+00 W.B.		24"×12"					2.00																				
				24"×12"					2.00																				
				24"×24"	13.00	2.00		1.00	4.00																	15.0 15.0			
				24"×24"					4.00																				
				21"×15"					2.19																				
				21"×15"					2.19																				
		40+82 E.B.		24"×12"					2.00																				
				24"×12"					2.00																				
				24"×24"	13.00	2.00		1.00	4.00																	13.0 13.0			
				24"×24"					4.00																				
				21"×15"					2.19																				
				21"×15"					2.19																				
		43+00 E.B.		24"×12"					2.00																				
				24"×12"					2.00																				
				24"×24"	13.00	2.25		1.00	4.00																	13.5 10.5			
				30"×24"					5.00																				
				21"×15"					2.19																				
				21"×15"					2.19																				
		43+50 W.B.		24"×12"					2.00																				
				24"×12"					2.00																				
				24"×24"	13.00	2.00		1.00	4.00																	15.0 16.0			
				24"×24"					4.00																				
				21"×15"					2.19																				
				21"×15"					2.19																				
		45+67 E.B.		24"×12"					2.00																				
				24"×12"					2.00																				
				24"×24"	13.00	2.25		1.00	4.00																	13.5 16.0			
				30"×24"					5.00																				
				21"×15"					2.19																				
				21"×15"					2.19																				
TOTALS TO GENERAL SUMMARY									125.28	44.00												2.20				171.5	33.0	52.5	

REMOVALS — ITEM 630

REM. & STORAGE OF GRND. MTD. SIGN	REM. & STOR. OF MAJOR GRND. MTD. SIGN	REM. & STOR. OF OVERHEAD MTD. SIGN	REMOVAL OF GRND. MTD. POST SUPPORT	REMOVAL OF GRND. MTD. BEAM SUPPORT	REM. & STOR. OF O.H. SIGN SUPPORT TYPE 7.	REM. & STOR. OF O.H. SIGN SUPPORT TC-18.24
EA.	EA.	EA.	EA.	EA.	EA.	EA.

ELECTRICAL QUANTITIES — ITEM 631

MERCURY VAPOR LUMINAIRE TYPE TC-31.21 175 WATT	MERCURY VAPOR LUMINAIRE TYPE TC-31.21 250 WATT	SIGN SERVICE	SIGNS WIRED	SIGNS WIRED OVERPASS STRUCTURE MTD.	DISCONNECT SWITCH W/ENCLOSURE, TYPE X	BALLAST, TYPE CMRT-175-480	BALLAST, TYPE CMRL-250-480	BALLAST ENCLOSURE, TYPE A	BALLAST ENCLOSURE, TYPE B	SWITCH ENCL. MTG. BRKT. ASSY'M.	BALLAST WIRING ENCL. MTG. BRKT.
EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.

REMOVALS — ITEM 631

ITEM No. 26 GROUND ROD	REMOVAL & STORAGE OF LUMINAIRE	REMOVAL & STORAGE OF BALLAST	REM./STOR. DISCONNECT SWITCH ENCL.	REMOVAL & STORAGE OF TRANSFORMER
EA.	EA.	EA.	EA.	EA.

DIMENSION "A" = EDGE OF PAVEMENT TO ℄ FIRST SUPPORT.
DIMENSION "B" = ℄ FIRST SUPPORT TO ℄ SECOND SUPPORT.
DIMENSION "C" = ℄ SECOND SUPPORT TO ℄ THIRD SUPPORT.
DIMENSION "D" = ℄ SUPPORT TO EDGE OF SIGN.

SUB-SUMMARY — TRAFFIC CONTROL

CALC: 9JDh 8/21/85
CHK: RRF 12/19/85

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

UNION COUNTY
UNI-33-7.29

SIGN AND SUPPORT QUANTITIES

FROM SHEET No.	SIGN SUPPORT No.	SIGN LOCATION	SIGN DESIGNATION	EFFECTIVE SIGN SIZE "He"		DIMENSION "A"	DIMENSION "B"	DIMENSION "C"	DIMENSION "D"	SIGNS, FLAT SHEET TYPE "G" SHEETING	SIGNS, EXTRU SHEET TYPE "G" SHEETING	SIGNS, OVERLAY	
						L.F.	L.F.	L.F.	L.F.	S.F.	S.F.	S.F.	
		45+27 W.B.		24"×12"						2.00			
				24"×24"						4.00			
				21"×15"						2.19			
				66"×24"						11.00			
				66"×24"						11.00			
		45+67 W.B.		24"×12"						2.00			
				24"×12"						2.00			
				24"×12"						2.00			
				24"×24"						4.00			
				24"×24"		13.25	2.25		1.25	4.00			
				21"×15"						2.19			
				21"×15"						2.19			
				24"×12"						2.00			
				24"×12"						2.00			
				30"×24"						5.00			
				24"×24"						4.00			
				21"×15"						2.19			
				21"×15"						2.19			
	14	47+55 E.B.		9'-0"×6'-6"							58.50		
		49+50 W.B.		24"×12"						2.00			
				24"×12"						2.00			
				24"×12"		13.00	2.25		1.00	2.00			
				24"×24"						4.00			
				30"×24"						5.00			
				21"×15"						2.19			
				21"×15"						2.19			
		53+25 E.B.		24"×12"						2.00			
				24"×24"						4.00			
				21"×15"						2.19			
				24"×12"		15.00	2.00		1.00	2.00			
				24"×12"						2.00			
				24"×24"						4.00			
				24"×24"						4.00			
				21"×15"						2.19			
				21"×15"						2.19			
		55+00 W.B.		24"×12"						2.00			
				24"×24"						4.00			
				21"×15"						2.19			
				24"×12"						2.00			
				24"×12"		13.00	2.00		1.00	2.00			
				24"×24"						4.00			
				24"×24"						4.00			
				21"×15"						2.19			
				21"×15"						2.19			
TOTALS TO GENERAL SUMMARY										134.47	58.50		

ITEM 630 (STRUCTURAL SUPPORTS)

SIGN LOCATION / SIZE	OVERPASS STRUCTURE MOUNTED SIGN SUPPORT, TYPE 18.24	TYPE 7.65, DESIGN 6, SPAN 74 FT.	TYPE 7.65, DESIGN 6 MOD., SPAN 74 FT.	TYPE 7.65, DESIGN 6 MOD., SPAN 57 FT.	TYPE 7.65, DESIGN 8, SPAN 89 FT.	TYPE 7.65, DESIGN 6, SPAN 60 FT.	COMBINATION OVERHEAD SIGN SUPPORT, TYPE 12.30, DESIGN 3, SPAN 16 FT.	LUMINAIRE SUPPORT ASSEMBLY TYPE: TC-31.21	SIGN ATTACHMENT ASSEMBLY	CONC. FOR ANCHOR BASE FND.	CONC. FOR EMBEDDED FND.	BREAKAWAY BEAM CONNECTIONS	SIGN SUPPORT ASSEMBLY BRIDGE MOUNTED, TYPE 1	ONE WAY SUPPORTS, Nº 4 POST	GROUND MOUNTED SUPPORT, Nº 3 POST L.F.			GROUND MOUNTED SUPPORT, Nº 4 POST L.F.						GROUND MOUNTED SUPPORT, 54×7.7 L.F.			GROUND MOUNTED SUPPORT, W10×12 L.F.			GROUND MOUNTED SUPPORT, W12×30 L.F.		
	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	C.Y.	C.Y.	EA.	EA.	L.F.	LT.	CT.	RT.	LT.	CT.	RT.				LT.	CT.	RT.	LT.	CT.	RT.	LT.	CT.	RT.
45+27 W.B. 24"×12"																																
24"×24"																																
21"×15"													2																			
66"×24"																																
66"×24"																																
45+67 W.B. 24"×12"																																
24"×12"																																
24"×12"																																
24"×24"																																
24"×24"											0.54													19.5		20.0						
21"×15"																																
21"×15"																																
24"×12"																																
24"×12"																																
30"×24"																																
24"×24"																																
21"×15"																																
21"×15"																																
47+55 E.B. 9'-0"×6'-6"	1							1																								
49+50 W.B. 24"×12"																																
24"×12"																																
24"×12"																		15.0		15.3												
24"×24"																																
30"×24"																																
21"×15"																																
21"×15"																																
53+25 E.B. 24"×12"																																
24"×24"																																
21"×15"																																
24"×12"											0.54													14.0		14.0						
24"×12"																																
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21"×15"																																
21"×15"																																
55+00 W.B. 24"×12"																																
24"×24"																																
21"×15"																																
24"×12"																																
24"×12"											0.54	2												13.5		12.5						
24"×24"																																
24"×24"																																
21"×15"																																
21"×15"																																
TOTALS TO GENERAL SUMMARY	1							1			1.62	2	2						30.3						93.5							

REMOVALS ITEM 630.65 / ELECTRICAL QUANTITIES ITEM 631 / ITEM 625 / REMOVALS ITEM 631

SIGN LOCATION / SIZE	REM. & STORAGE OF GRND. MTD. SIGN	REM. & STOR. OF MAJOR GRND. MTD. SIGN	REM. & STOR. OF OVERHEAD MTD. SIGN		REMOVAL OF GRND. MTD. POST SUPPORT	REMOVAL OF GRND. MTD. BEAM SUPPORT	REM. & STOR. OF O.H. SIGN SUPPORT TYPE 7.65	REM. & STOR. OF O.H. SIGN SUPPORT TC-18.24	MERCURY VAPOR LUMINAIRE TYPE TC-31.21 175 WATT	MERCURY VAPOR LUMINAIRE TYPE TC-31.21 250 WATT			SIGN SERVICE	SIGNS WIRED	SIGNS WIRED OVERPASS STRUCTURE MTD.	DISCONNECT SWITCH W/ENCLOSURE, TYPE X	BALLAST, TYPE CMRI-175-480	BALLAST, TYPE CMRI-250-480	BALLAST ENCLOSURE, TYPE A	BALLAST ENCLOSURE, TYPE B	SWITCH ENCL. MTG. BRKT. ASSYM.	BALLAST WIRING ENCL. MTG. BRKT.	GROUND ROD (ITEM 625)				REMOVAL & STORAGE OF LUMINAIRE	REMOVAL & STORAGE OF BALLAST	REM./STOR. DISCONNECT SWITCH ENCL.	REMOVAL & STORAGE OF TRANSFORMER
	EA.	EA.	EA.		EA.	EA.	EA.	EA.	EA.	EA.			EA.	EA.	EA	EA.	EA.	EA.	EA.	EA	EA.	EA.	EA.				EA.	EA.	EA.	EA.
45+27 W.B. 24"×12"																														
24"×24"																														
21"×15"																														
66"×24"																														
66"×24"																														
45+67 W.B. 24"×12"																														
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24"×12"																														
30"×24"																														
24"×24"																														
21"×15"																														
21"×15"																														
47+55 E.B. 9'-0"×6'-6"			1					1	1				1		1	1	1			1	1	1								
49+50 W.B. 24"×12"																														
24"×12"																														
24"×12"																														
24"×24"																														
30"×24"																														
21"×15"																														
21"×15"																														
53+25 E.B. 24"×12"																														
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21"×15"																														
55+00 W.B. 24"×12"																														
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21"×15"																														
24"×12"																														
24"×12"																														
24"×24"																														
24"×24"																														
21"×15"																														
21"×15"																														
TOTALS TO GENERAL SUMMARY			1					1	1				1		1	1	1			1	1	1								

DIMENSION "A" = EDGE OF PAVEMENT TO ℄ FIRST SUPPORT.
DIMENSION "B" = ℄ FIRST SUPPORT TO ℄ SECOND SUPPORT.
DIMENSION "C" = ℄ SECOND SUPPORT TO ℄ THIRD SUPPORT.
DIMENSION "D" = ℄ SUPPORT TO EDGE OF SIGN.

SUB-SUMMARY — TRAFFIC CONTROL

CALC: WDK 8/21/85
CHK: [illegible] 12/19/85

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

UNION COUNTY
UNI-33-7.29

SIGN AND SUPPORT QUANTITIES — ITEM 630 (STRUCTURAL SUPPORTS)

FROM SHEET No.	SIGN SUPPORT No.	SIGN LOCATION	SIGN DESIGNATION	EFFECTIVE SIGN SIZE "He"		DIMENSION "A"	DIMENSION "B"	DIMENSION "C"	DIMENSION "D"	SIGNS, FLAT SHEET TYPE "G" SHEETING	SIGNS, EXTRU SHEET TYPE "G" SHEETING	SIGNS, OVERLAY		OVERPASS STRUCTURE MOUNTED SIGN SUPPORT, TYPE 18.24	TYPE 7.65, DESIGN 6, SPAN 74 FT.	TYPE 7.65, DESIGN 6 MOD., SPAN 74 FT.	TYPE 7.65, DESIGN 6 MOD., SPAN 57 FT.	TYPE 7.65, DESIGN 8, SPAN 89 FT.	TYPE 7.65, DESIGN 6, SPAN 60 FT.	COMBINATION OVERHEAD SIGN SUPPORT, TYPE 12.30, DESIGN 3, SPAN 16 FT.	LUMINAIRE SUPPORT ASSEMBLY TYPE: TC-31.21	SIGN ATTACHMENT ASSEMBLY	CONC. FOR ANCHOR BASE FND.	CONC. FOR EMBEDDED FND.	BREAKAWAY BEAM CONNECTIONS	SIGN SUPPORT ASSEMBLY BRIDGE MOUNTED, TYPE 1	ONE WAY SUPPORTS, No 4 POST	GROUND MOUNTED SUPPORT, No 3 POST (L.F.) LT.	CT.	RT.	GROUND MOUNTED SUPPORT, No 4 POST (L.F.) LT.	CT.	RT.		GROUND MOUNTED SUPPORT, S4×7.7 (L.F.) LT.	CT.	RT.	GROUND MOUNTED SUPPORT, W10×12 (L.F.) LT.	CT.	RT.	GROUND MOUNTED SUPPORT, W12×30 (L.F.) LT.	CT.	RT.
						L.F.	L.F.	L.F.	L.F.	S.F.	S.F.	S.F.		EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	C.Y.	C.Y.	EA.	EA.	L.F.	LT.	CT.	RT.	LT.	CT.	RT.		LT.	CT.	RT.	LT.	CT.	RT.	LT.	CT.	RT.
		59 + 50 W.B.		24" × 12"						2.00																																	
				24" × 24"						4.00																																	
				21" × 15"						2.19																																	
				24" × 12"						2.00																																	
				24" × 12"		13.00	2.00		1.00	2.00														0.54	2										15.0		14.5						
				24" × 24"						4.00																																	
				24" × 24"						4.00																																	
				21" × 15"						2.19																																	
				21" × 15"						2.19																																	
		64 + 00 W.B.		24" × 12"						2.00																																	
				24" × 12"						2.00																																	
				24" × 24"						4.00																																	
				24" × 24"		13.00	2.25		1.00	4.00														0.54	2										17.0		16.5						
				24" × 12"						2.00																																	
				24" × 12"						2.00																																	
				24" × 24"						4.00																																	
				30" × 24"						5.00																																	
	12	P-12 + 68 N.B.		37½" × 30"		28.20	5.60		2.20	7.82														2.2	2													18.5		17.0			
				24" × 18"						3.00																																	
				10'-0" × 4'-0"							40.00																																
		35 + 00 W.B.		24" × 12"		13.00			1.00	2.00																						15.0											
				24" × 24"						4.00																																	
				21" × 15"						2.19																																	
		50 + 00 E.B.		24" × 12"						2.00																																	
				24" × 12"						2.00																																	
				24" × 24"						4.00																																	
				21" × 15"		13.00	2.00		1.00	2.19																					14.0		15.0										
				24" × 12"						2.00																																	
				24" × 12"						2.00																																	
				24" × 24"						4.00																																	
				24" × 24"						4.00																																	
		55 + 50 E.B.		72" × 12"		13.00	4.00		1.00	6.00																					14.5		15.5										
				72" × 12"						6.00																																	
		57 + 50 W.B.		24" × 12"						2.00																																	
				24" × 12"						2.00																																	
				24" × 12"		13.00	2.25		1.00	2.00																					15.5		15.0										
				24" × 24"						4.00																																	
				30" × 24"						5.00																																	
				21" × 15"						2.19																																	
		S-5 + 00 W.B.		37½" × 30"		13.25			1.25	7.82																			13.0														
				24" × 18"						3.00																																	
				TOTALS TO GENERAL SUMMARY						130.78	40.00													3.28	6				13.0			104.5				63.0			35.5				

REMOVALS — ITEM 630.65; ELECTRICAL QUANTITIES — ITEM 631; ITEM 625; REMOVALS — ITEM 631

REM. & STORAGE OF GRND. MTD. SIGN	REM. & STOR. OF MAJOR GRND. MTD. SIGN	REM. & STOR. OF OVERHEAD MTD. SIGN		REMOVAL OF GRND. MTD. POST SUPPORT	REMOVAL OF GRND. MTD. BEAM SUPPORT	REM. & STOR. OF O.H. SIGN SUPPORT TYPE 7.65	REM. & STOR. OF O.H. SIGN SUPPORT TC-18.24	MERCURY VAPOR LUMINAIRE TYPE TC-31.21	175 WATT	250 WATT			SIGN SERVICE	SIGNS WIRED	SIGNS WIRED OVERPASS STRUCTURE MTD.	DISCONNECT SWITCH W/ ENCLOSURE, TYPE X	BALLAST, TYPE CMRI-175-480	BALLAST, TYPE CMRI-250-480	BALLAST ENCLOSURE, TYPE A	BALLAST ENCLOSURE, TYPE B	SWITCH ENCL. MTG. BRKT. ASSYM.	BALLAST WIRING ENCL. MTG. BRKT.	GROUND ROD (ITEM 625)				REMOVAL & STORAGE OF LUMINAIRE	REMOVAL & STORAGE OF BALLAST	REM./STOR. DISCONNECT SWITCH ENCL.	REMOVAL & STORAGE OF TRANSFORMER
EA	EA	EA		EA.	EA.	EA.	EA.		EA.	EA.			EA.	EA.	EA	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.				EA.	EA.	EA.	EA.

DIMENSION "A" = EDGE OF PAVEMENT TO ℄ FIRST SUPPORT.
DIMENSION "B" = ℄ FIRST SUPPORT TO ℄ SECOND SUPPORT.
DIMENSION "C" = ℄ SECOND SUPPORT TO ℄ THIRD SUPPORT.
DIMENSION "D" = ℄ SUPPORT TO EDGE OF SIGN.

SUB-SUMMARY — TRAFFIC CONTROL

CALC: WOK 8/21/85
CHK: [illegible] 12/19/85

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

UNION COUNTY
UNI-33-7.29

SIGN AND SUPPORT QUANTITIES — ITEM 630

FROM SHEET No.	SIGN SUPPORT No.	SIGN LOCATION	SIGN DESIGNATION	EFFECTIVE SIGN SIZE "He"		DIMENSION "A" (L.F.)	DIMENSION "B" (L.F.)	DIMENSION "C" (L.F.)	DIMENSION "D" (L.F.)	SIGNS, FLAT SHEET TYPE "G" SHEETING (S.F.)	SIGNS, EXTRU SHEET TYPE "G" SHEETING (S.F.)	SIGNS, OVERLAY (S.F.)	STRUCTURAL SUPPORTS: GROUND MOUNTED SUPPORT, No. 3 POST (L.F.) CT.
		V-465+00		30"×36"		13.25			1.25	7.50			12.0
		V-463+00		30"×36"		13.25			1.25	7.50			12.0
		V-461+00		30"×36"		13.25			1.25	7.50			12.0
		V-459+00		30"×36"		13.25			1.25	7.50			12.0
		V-457+00		30"×36"		13.25			1.25	7.50			12.0
		V-455+00		30"×36"		13.25			1.25	7.50			12.0
		V-453+00		30"×36"		13.25			1.25	7.50			12.0
		TOTALS TO GENERAL SUMMARY								52.5			84.0

Other ITEM 630 columns (no entries): OVERPASS STRUCTURE MOUNTED SIGN SUPPORT, TYPE 18.24 (EA.) | TYPE 7.65, DESIGN 6, SPAN 74 FT. (EA.) | TYPE 7.65, DESIGN 6 MOD., SPAN 74 FT. (EA.) | TYPE 7.65, DESIGN 6 MOD., SPAN 57 FT. (EA.) | TYPE 7.65, DESIGN 8, SPAN 89 FT. (EA.) | TYPE 7.65, DESIGN 6, SPAN 60 FT. (EA.) | COMBINATION OVERHEAD SIGN SUPPORT, TYPE 12.30, DESIGN 3, SPAN 16 FT. (EA.) | LUMINAIRE SUPPORT ASSEMBLY TYPE: TC-31.21 (EA) | SIGN ATTACHMENT ASSEMBLY (EA.) | CONC. FOR ANCHOR BASE FND. (C.Y.) | CONC. FOR EMBEDDED FND. (C.Y.) | BREAKAWAY BEAM CONNECTION (EA.) | SIGN SUPPORT ASSEMBLY BRIDGE MOUNTED, TYPE 1 (EA.) | ONE WAY SUPPORTS, No. 4 POST (L.F.) | GROUND MOUNTED SUPPORT, No. 3 POST (L.F.) LT. / RT. | GROUND MOUNTED SUPPORT, No. 4 POST (L.F.) LT. / CT. / RT. | GROUND MOUNTED SUPPORT, S4×7.7 (L.F.) LT. / CT. / RT. | GROUND MOUNTED SUPPORT, W10×12 (L.F.) LT. / CT. / RT. | GROUND MOUNTED SUPPORT, W12×30 (L.F.) LT. / CT. / RT.

REMOVALS — ITEM 630.65

SIGN SUPPORT No.	SIGN LOCATION	REM. & STORAGE OF GRND. MTD. SIGN (EA.)	REM. & STOR. OF MAJOR GRND. MTD. SIGN (EA.)	REM. & STOR. OF OVERHEAD MTD. SIGN (EA.)		REMOVAL OF GRND. MTD. POST SUPPORT (EA.)	REMOVAL OF GRND. MTD. BEAM SUPPORT (EA.)	REM. & STOR. OF O.H. SIGN SUPPORT TYPE 7.65 (EA.)	REM. & STOR. OF O.H. SIGN SUPPORT TC-18.24 (EA.)
	STA. XX		1				2		
	STA. YY	2				1			
	STA. 37+00		1				2		
	STA. 42+30	2				2			
	STA. 45+20	15				2			
	STA. 45+30	11				2			
	STA. 45+81	5				2			
	STA. 47+40	3				2			
	STA. 49+30	7				2			
	STA. 53+20		1				2		
	STA. 55+50	12				2			
	STA. ZZ	8				2			
	STA. S-5+00	4				2			
	STA. 52+00	3				1			
	STA. 54+35	8				2			
	STA. 54+75	11				2			
	STA. 55+75	2				1			
	STA. 56+85	2				1			
	STA. 55+00	8				2			
	STA. 478+50	3				1			
	STA. 479+80		1				2		
	STA. 509+00		1				2		
	STA. 404+50		1				2		
	STA. 418+80	2				1			
	STA. 426+25	1				1			
	STA. 428+21	1				1			
	STA. 431+12	1				1			
	STA. 433+55	4				2			
	STA. 437+83	1				2			
	STA. 437+92	3				2			
	STA. 444+13			2				1	
L/R	STA. 447+20	2				2			
	TOTALS TO GENERAL SUMMARY	121	6	2		41	12	1	

ELECTRICAL QUANTITIES — ITEM 631 / ITEM 625; REMOVALS — ITEM 631

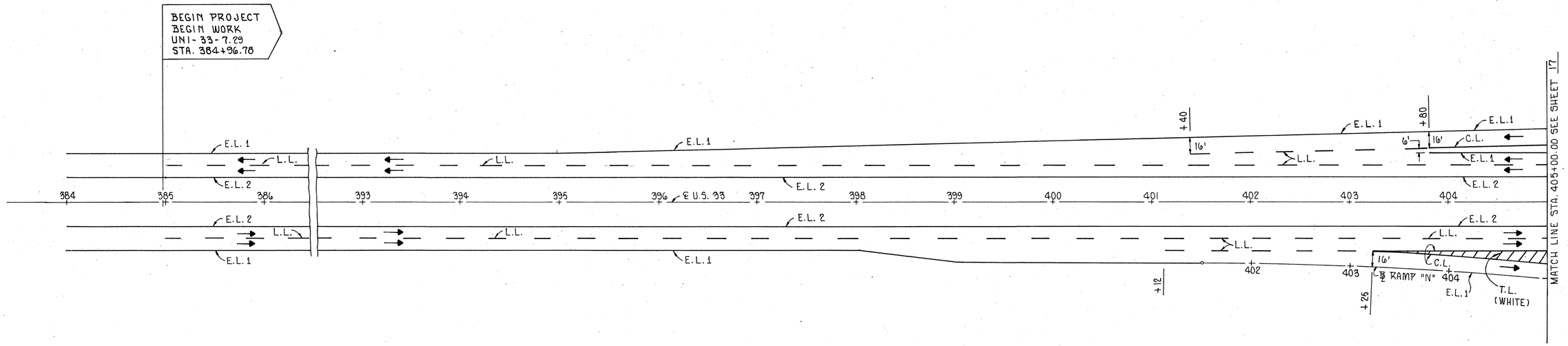
MERCURY VAPOR LUMINAIRE TYPE TC-31.21: 175 WATT (EA.)	250 WATT (EA.)	SIGN SERVICE (EA.)	SIGNS WIRED (EA.)	SIGNS WIRED OVERPASS STRUCTURE MTD. (EA.)	DISCONNECT SWITCH W/ENCLOSURE, TYPE X (EA.)	BALLAST, TYPE CMRI-175-480 (EA.)	BALLAST, TYPE CMRI-250-480 (EA.)	BALLAST ENCLOSURE, TYPE A (EA.)	BALLAST ENCLOSURE, TYPE B (EA.)	SWITCH ENCL. MTG. BRKT. ASSYM. (EA.)	BALLAST WIRING ENCL. MTG. BRKT. (EA.)	ITEM 625: GROUND ROD (EA.)	REMOVAL & STORAGE OF LUMINAIRE (EA)	REMOVAL & STORAGE OF BALLAST (EA)	REM./STOR. DISCONNECT SWITCH ENCL. (EA)	REMOVAL & STORAGE OF TRANSFORMER (EA)

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

UNION COUNTY
UNI-33-7.29

156 / 225

16 / 23



LEGEND

T.L. - TRANSVERSE LINES - 24" WHITE / 24" YELLOW
C.L. - CHANNELIZING LINE - 8" WHITE
E.L.1 - EDGE LINE - 4" WHITE
E.L.2 - EDGE LINE - 4" YELLOW
L.L. - LANE LINE - 4" WHITE - 10' LONG / 30' SPACING
S.L. - STOP LINE - 24" WHITE
℄1 - CENTER LINE - SOLID SINGLE - 4" YELLOW
℄2 - CENTER LINE - SOLID DOUBLE - 4" YELLOW
℄3 - CENTER LINE - BROKEN AND SOLID SINGLE - 4" YELLOW

PAVEMENT MARKING DETAILS U.S. 33 STA. 385+00 TO STA. 405+00

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

UNION COUNTY
UNI-33-7.29

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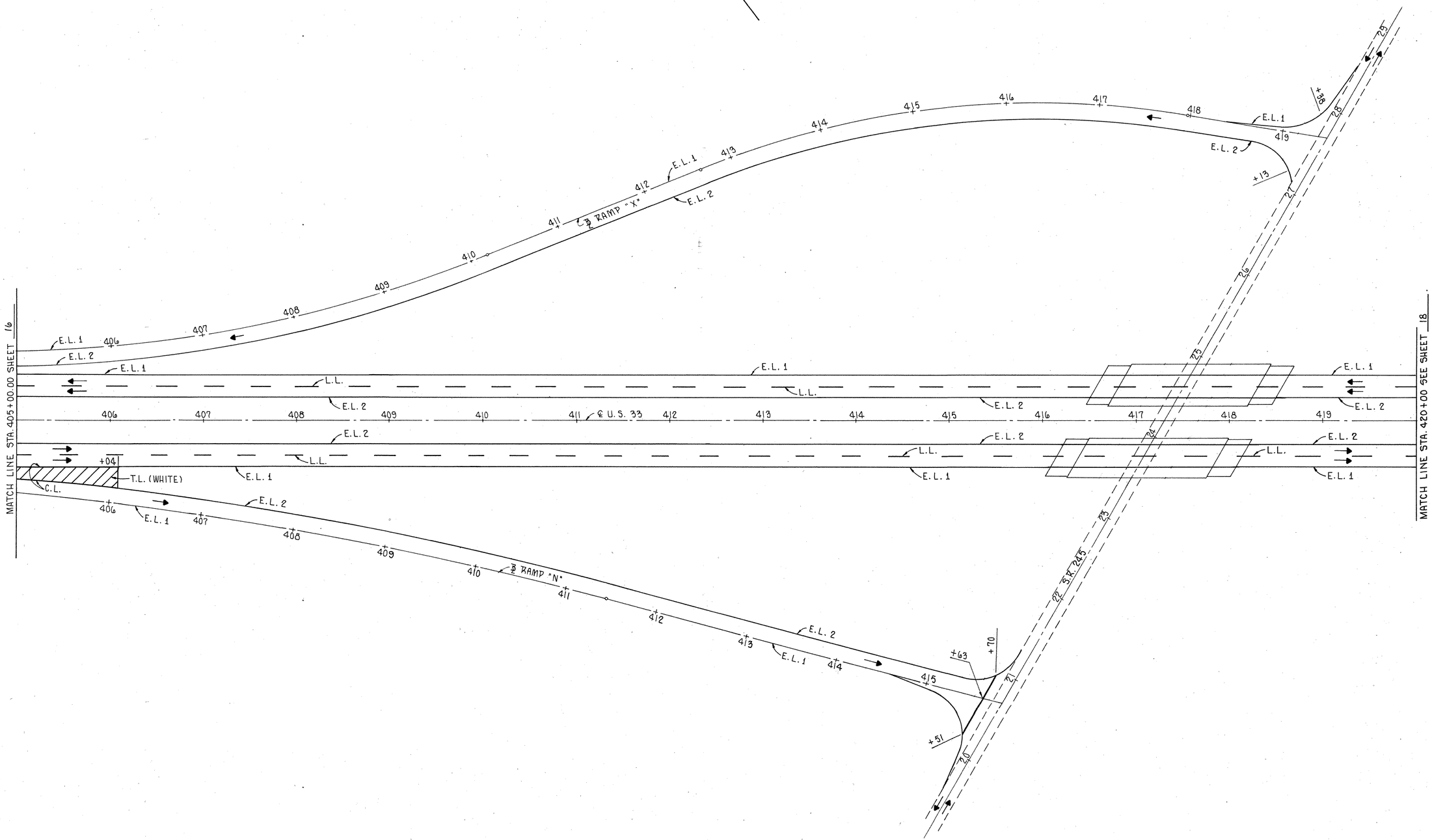
225

17
23



PAVEMENT MARKING DETAILS U.S. 33 STA. 405+00 TO STA. 420+00

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

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UNION COUNTY
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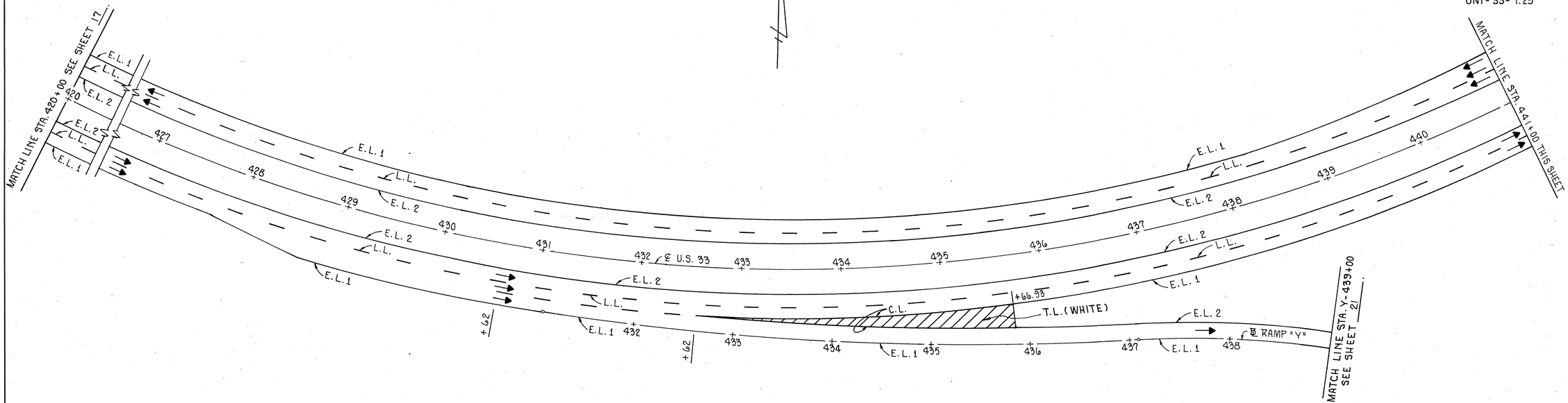
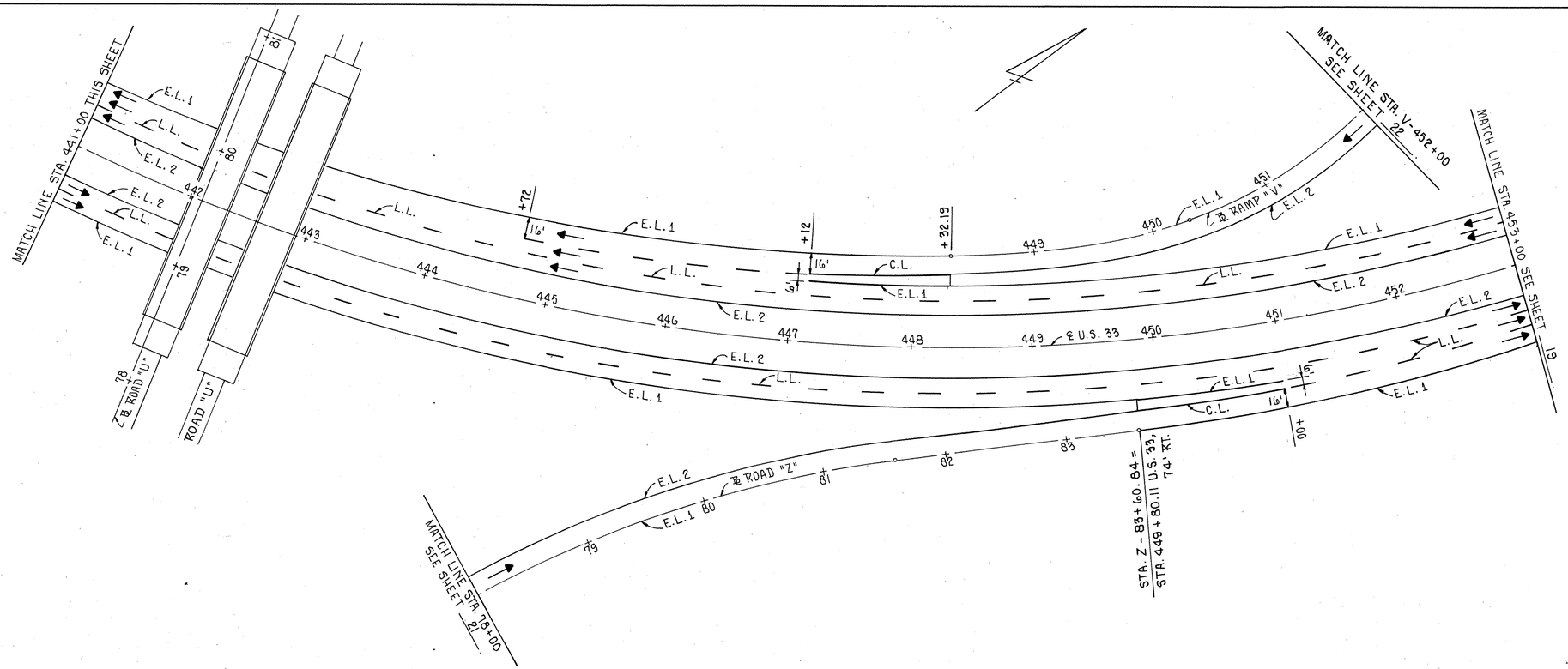
23





PAVEMENT MARKING DETAILS U.S. 33 STA. 420+00 TO STA. 453+00 AND ROAD "Z" STA. 78+00 TO STA. 83+60.84

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

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UNION COUNTY
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SEE SHEET 22 FOR MATCH LINE STA. 47+00 EX. U.S. 33

END PROJECT
UNI-33-7.29
STA. 463+40.92BK.

S.C. STA. 457+50.00 AHD.
S.C. STA. 463+40.92 BK.

MATCH LINE STA. 453+00 SEE SHEET 18

MATCH LINE STA. 462+00 SEE SHEET 20

E.L. 1
L.L.
E.L. 2
L.L.
E.L. 2
L.L.
E.L. 1

454 455 456 457 458 ℄ U.S. 33 459 460 461 462 463 458 459 460 ℄ EXIST. U.S. 33

+40

+36.5

16'
6'
16'

+65.58

+05.58

C.L.

10

STA. 462+36.50 U.S. 33 '74 RT.
STA. 10+00.00 B RAMP "R"

E.L. 2
E.L. 1

9

18 +94

EXIST. RAMP "R"

7 8 9 10 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

EXIST. RAMP "P"

5 6 7 8 9 11 12 13 14 15 16 17

0 50 51 52 53 54 55 56

EXIST. U.S. 33

PAVEMENT MARKING DETAILS U.S. 33 STA. 453+00 TO STA. 463+40.92 BACK

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

UNION COUNTY
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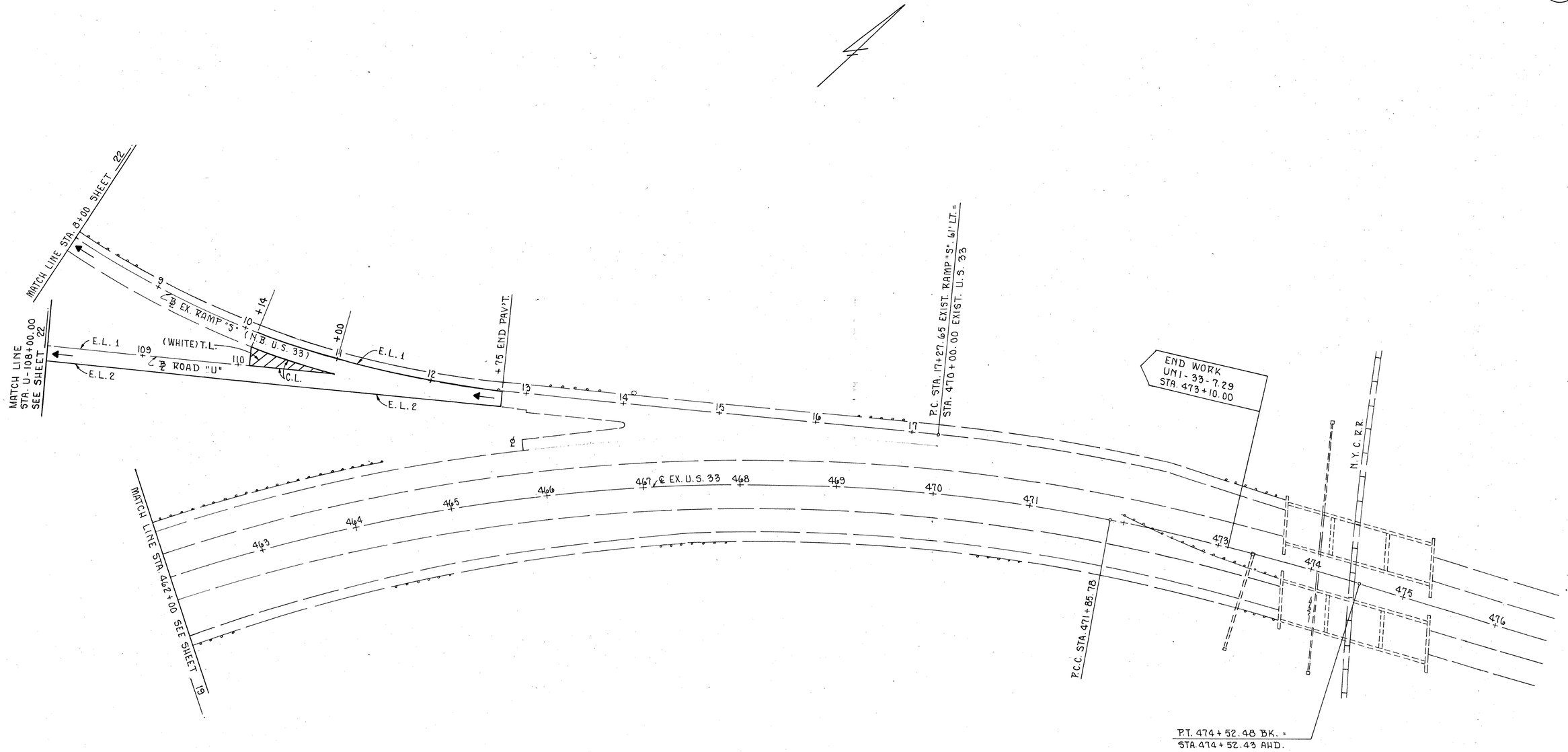
20
23



PAVEMENT MARKING DETAILS ROAD STA. U-108+00 TO STA. U-112+75

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

UNION COUNTY
UNI-33-7.29

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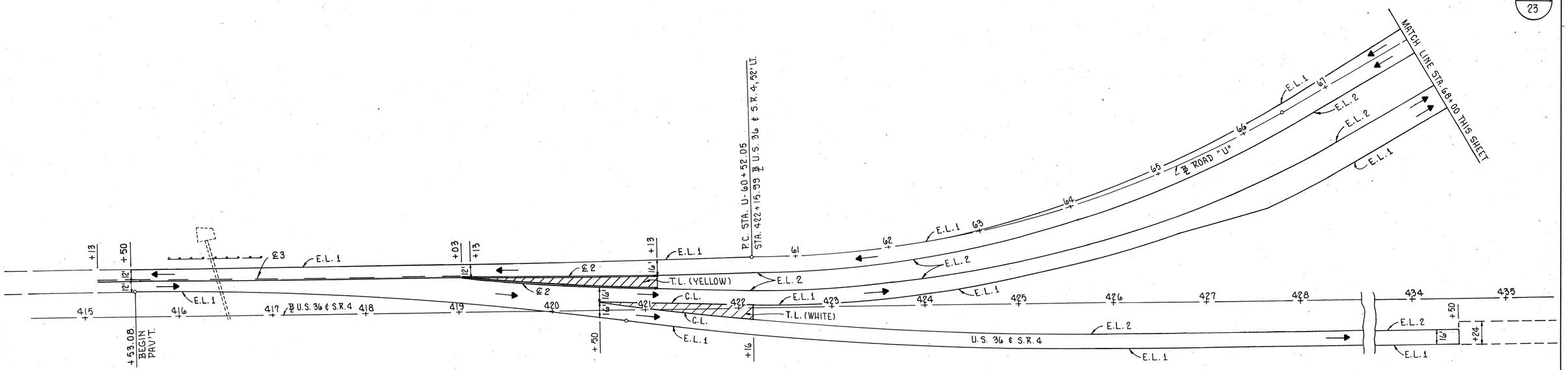

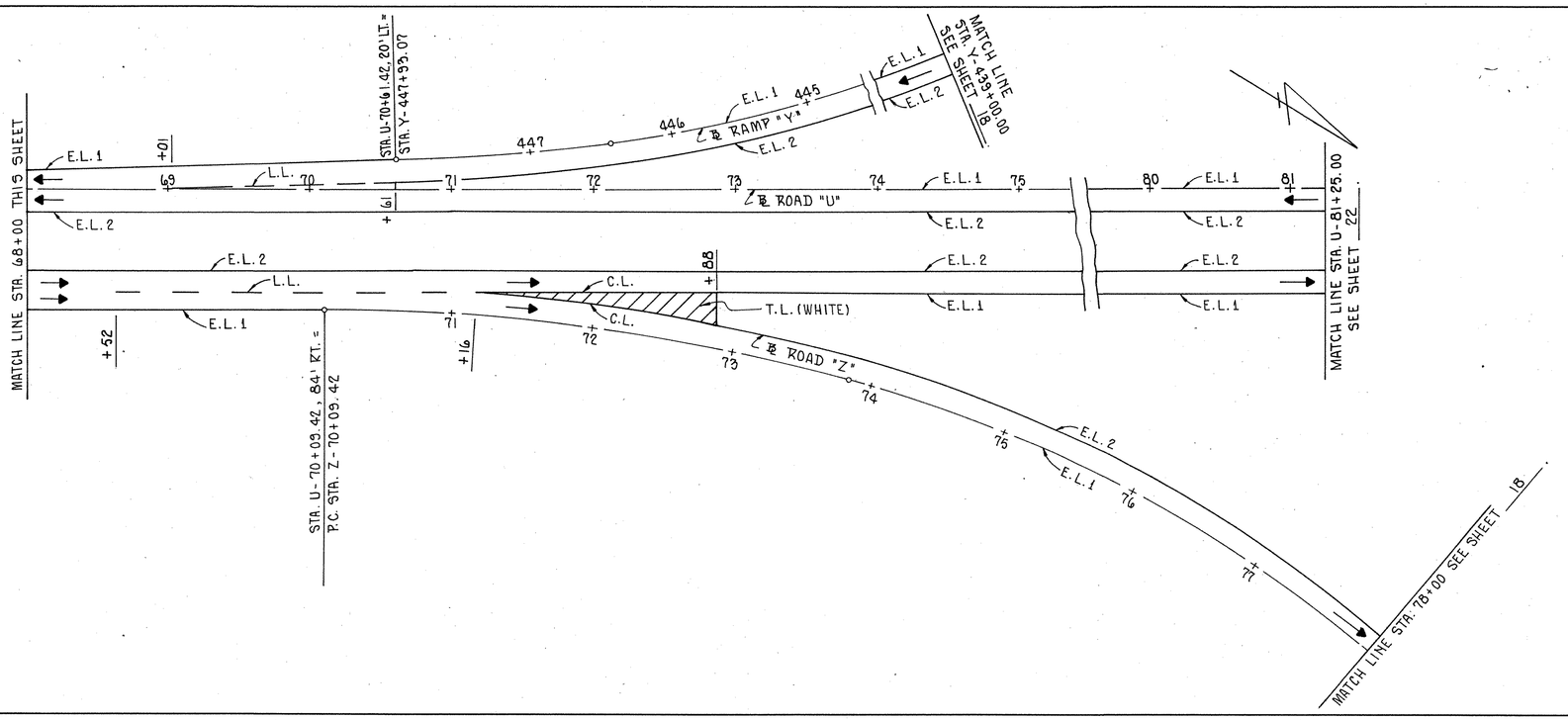

PAVEMENT MARKING DETAILS ROAD "U" STA. 60+52.05 TO STA. 81+25.00

FHWA REGION	STATE	PROJECT	
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UNION COUNTY
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22 / 23

MATCH LINE STA. 8+00 SEE SHEET 20

MATCH LINE STA. U-108+00 SEE SHEET 20

STA. 0+00.00 EXIST. RAMP "S" =
STA. 37+00.00 EXIST. U.S. 33, 42' LT.

EXIST. RAMP "S" (U.S. 33 N.B.)

EXIST. U.S. 33

MATCH LINE STA. 35+00

MATCH LINE STA. 47+00 SHEET 19

℄ RAMP "W"

℄ ROAD "U"

EXIST. S.R. 245

E.L. 1

E.L. 2

MATCH LINE STA. 35+00 ABOVE

MATCH LINE STA. W-94+75 THIS SHEET

MATCH LINE STA. U-94+75 THIS SHEET

MATCH LINE STA. 81+25 SHEET 21

STA. V-464+21.76 =
STA. U-86+88.52, 72' RT.

℄ RAMP "V"

MATCH LINE STA. V-452+00 SEE SHEET 18

STA. 94+40.00 RAMP "W"

UNI-33-0862

MATCH LINE STA. U & W-94+75 THIS SHEET

PAVEMENT MARKING DETAILS EXIST. U.S. 33 STA. 31+00 TO STA. 47+00; ROAD "U" STA. 81+25 TO STA. 108+00

621 - PAVEMENT MARKING

CALC: AJDR 8/20/85
CHK: RPP 12/19/85

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

UNION COUNTY
UNI-33-7.29

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23 / 23

RAMP OR ROADWAY	LENGTH	STATION	TO STATION	4" EDGE LINE (WHITE)	4" EDGE LINE (YELLOW)	4" LANE LINE		4" CENTER LINE SOLID DOUBLE	4" CENTER LINE BROKEN & SOLID SINGLE	8" CHANNELIZING LINES	24" STOP LINES	24" TRANSVERSE LINES (WHITE)	24" TRANSVERSE LINES (YELLOW)					
	L.F.			L.F.	L.F.	L.F.		L.F.	L.F.	L.F.	L.F.	L.F.	L.F.					
U.S. 33																		
	7844.14	384+96.78	463+40.92	15688	15688	15688												
	255.58	457+50(AHD)	460+05.58			256												
RAMP "N"																		
	213	401+12	403+25			213												
	279	403+25	406+04							558		395						
	959	406+04	415+63	964	969						74							
RAMP "X"																		
	240	401+40	403+80			240												
	120	403+80	405+00	120						120								
	1438	405+00	419+38	1446	1423													
RAMP "V"																		
	200	430+62	432+62			200												
	304.93	432+62	435+66.93							610		450						
	1226.14	435+66.93	447+93.07	1226	1226													
	160.4	69+01	70+61.42			160												
RAMP "V"																		
	240	444+72	447+12			240												
	120.19	447+12	448+32.19	120						120								
	1589.57	448+32.19	464+21.76	1590	1590													
ROAD "Z"																		
	264	68+52	71+16			264												
	172	71+16	72+88							344		243						
	1072.84	72+88	83+60.84	1073	1073													
	119.89	449+80.11	451+00	120						120								
	240	451+00	453+40			240												
RAMP "R"																		
	206	7+94	10+00	206	206													
	104.42	462+36.58	463+40.92	104						104								
	15.58	457+50	457+65.58	16						16								
	240	457+65.58	460+05.58			240												
ROAD "U"																		
	390	415+13	419+03						390									
	210	419+03	421+13					420					200					
	563	415+50	421+13	1126														
	102.99	421+13	422+15.99	206	206													
	166	420+50	422+16							332		108						
26	36.47	60+52.05	86+88.52	5273	5273													
25	86.48	86+88.52	112+75.00	2587	2587													

RAMP OR ROADWAY	LENGTH	STATION	TO STATION	4" EDGE LINE (WHITE)	4" EDGE LINE (YELLOW)	4" LANE LINE		4" CENTER LINE SOLID DOUBLE	4" CENTER LINE BROKEN & SOLID SINGLE	8" CHANNELIZING LINES	24" STOP LINES	24" TRANSVERSE LINES (WHITE)	24" TRANSVERSE LINES (YELLOW)					
	L.F.			L.F.	L.F.	L.F.		L.F.	L.F.	L.F.	L.F.	L.F.	L.F.					
EX. U.S. 36 & S.R. 4																		
	1234	422+16	434+50	1234	1234													
RAMP "W"																		
	159.9	92+81	94+40.00			159												
	1011.1	94+40.00	104+52	1029	1011													
RAMP "S"																		
	86	10+14	11+00							172		113						
TOTALS — LINEAR FEET				34128	32486	17900		420	390	2496	74	1369	200					
TOTALS — MILES				12.62	3.39			0.15										
TOTALS TO GENERAL SUMMARY				12.62	3.39			0.15		2496	74	1569						

620 - DELINEATORS

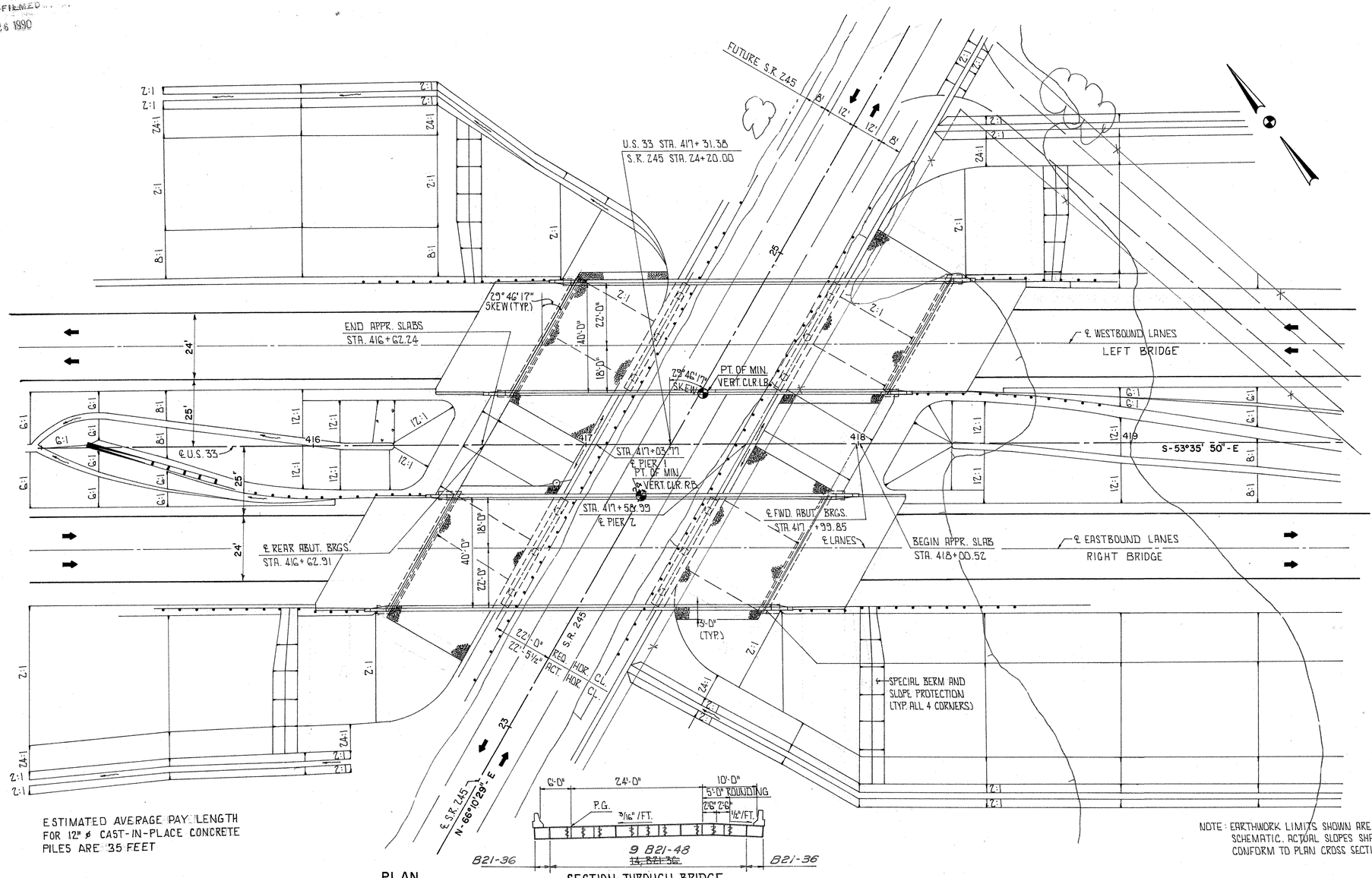
PARTICIPATION	RAMP OR ROADWAY	STATION	TO STATION	SIDE	INTERVAL	TYPE A POST	TYPE D POST	TYPE C POST	TYPE C BRACKET
					FT.	EA.	EA.	EA.	EA.
	U.S. 33	385+00	393+00	LT.	400			3	
		406+75	438+35	LT.	395			9	
		450+25	462+25	LT.	400			4	
		385+00	397+00	RT.	400			4	
		406+15	426+15	RT.	400			6	
		435+70	447+70	RT.	400			4	
	RAMP "X"	395+00	405+00	LT.	200			6	
		407+00	413+00	LT.	200			4	
		414+00	419+00	LT.	100			6	
	RAMP "N"	398+00	406+00	RT.	200			5	
		407+00	415+00	RT.	200			5	
	U.S. 36 S.R. 4	414+08	418+08	LT.	200			3	
		418+38	420+18	LT.	30			7	
		414+15	434+15	RT.	200			11	
	ROAD "U"	62+60	70+60	LT.	200			5	
		72+75	84+75	LT.	200			6	1
		97+05	109+05	LT.	200			7	
		60+85	64+85	RT.	200			3	
		73+25	85+25	RT.	200			6	1
		86+45	——	RT.	120			1	
	RAMP "V"	427+65	436+65	RT.	200			5	
		436+00	447+00	LT.	100		12		
	RAMP "V"	438+35	449+35	LT.	200			6	
		450+55	464+35	RT.	60		24		
	RAMP "W"	86+40	94+40	LT.	200			5	
		96+40	102+40	LT.	200			4	
	ROAD "Z"	64+85	73+85	RT.	200			5	
		73+85	81+85	LT.	100		9		
		449+80	459+80	LT.	200			6	
	EX. RAMP "R"	7+94	8+94	LT.	50		3		
		8+94	10+94	RT.	100			3	
TOTALS TO GENERAL SUMMARY							48	139	2

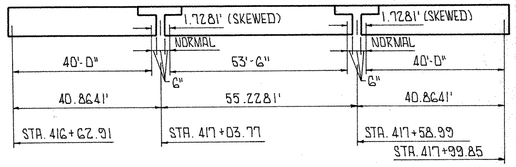
SUB - SUMMARIES - PAVEMENT MARKING & DELINEATORS

FHWA REGION	STATE	PROJECT	
5	OHIO		

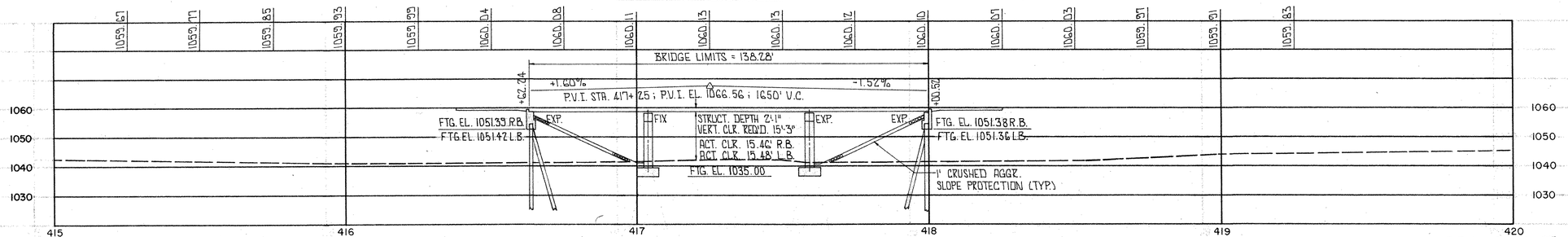
164
2.25

UNION COUNTY
UNI-33-07.29





BEAM LAYOUT



PROFILE ALONG ℄ U.S. 33

REV. 3-31-87

PROPOSED STRUCTURE

TYPE: PRESTRESSED NON-COMPOSITE CONC. BOX BEAM BRIDGE, W/REINFORCED CONC. SUBSTRUCTURES.
SPANS: 40'-0"; 53'-6"; 40'-0" C/C BRG'S.
ROADWAY: 2 @ 40'-0" F/F CONC. PARAPETS
LOADING: HS 20-44 & ALT. MILITARY LOADING
WEARING SURFACE: 2 1/2" (MIN.) ASPH. CONC.
SKEW: 29°46'17" L.F.
APPROACH SLAB: AS-1-81 (25'-0" LONG)
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
ADT: 4470-(1985) AND 7160-(2005)
ADTT: 1575-(2005)

FRANKLIN CONSULTANTS INC.
Consulting Engineers
COLUMBUS, OHIO

1 / 10

SITE PLAN

BRIDGE NO. UNI-33-0790 L/R

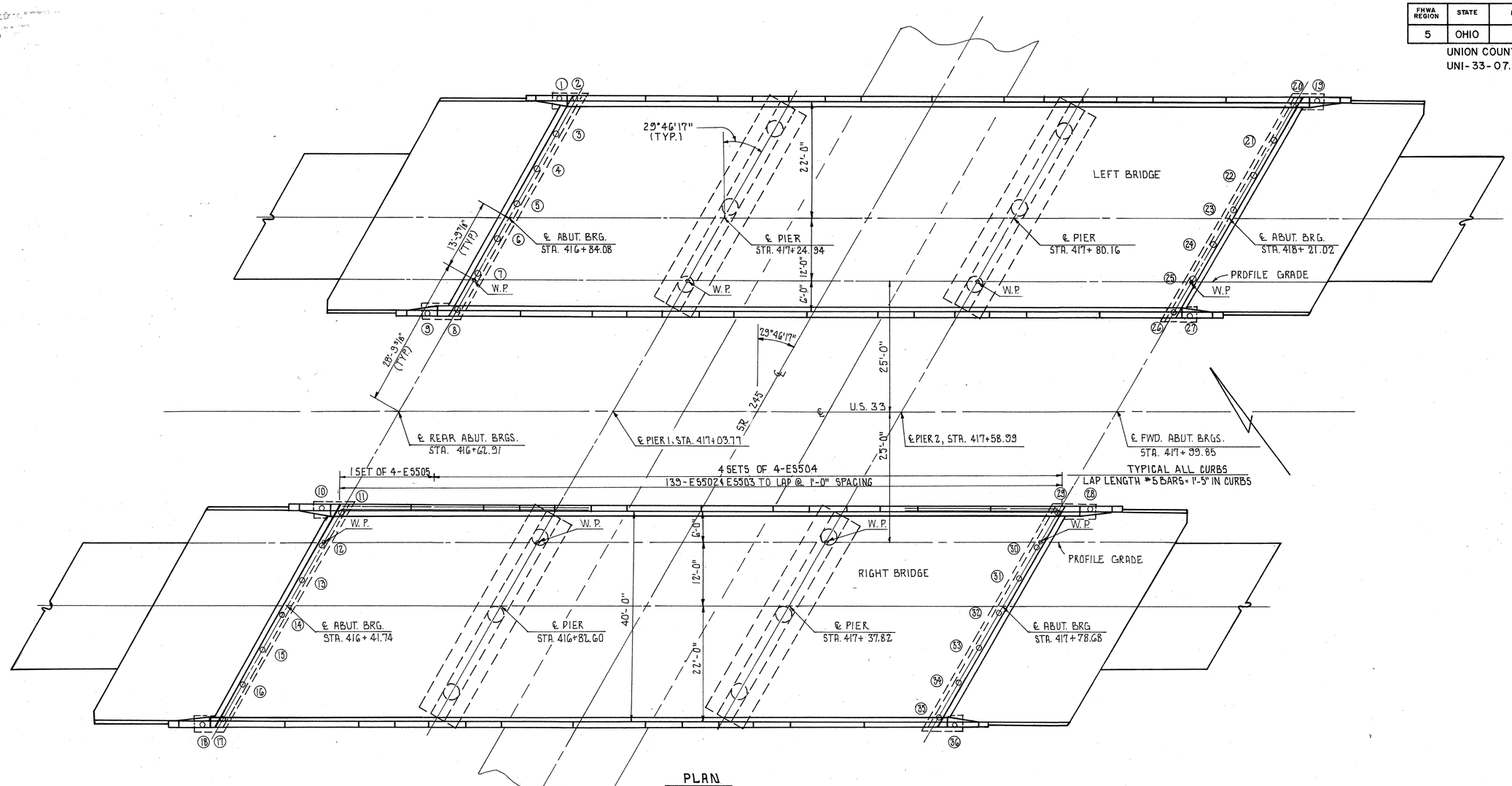
U.S. 33 OVER S.R. 245

STA. 416+62.24 TO 418+00.52

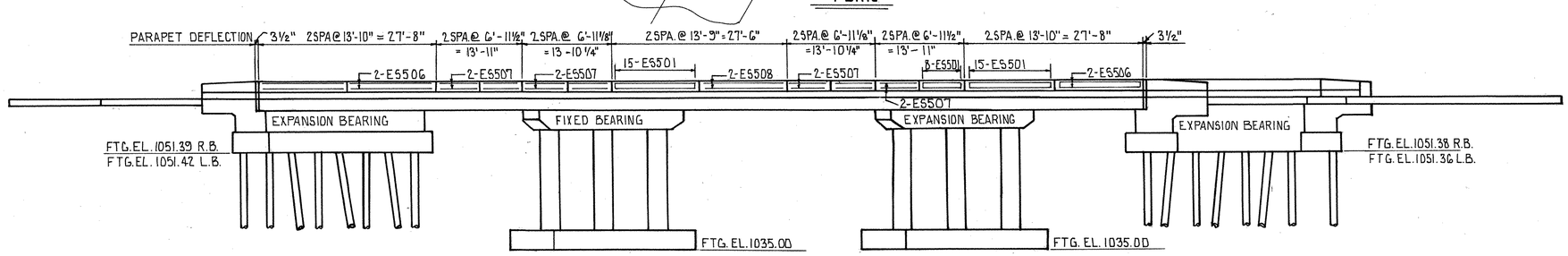
PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
		FA	MK	CA	7.4 4/19/85

FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-07.29



PLAN



ELEVATION

LEGEND
W.P.-WORK POINT
⑫ - PILE NUMBERS
L.B.-LEFT BRIDGE
R.B.-RIGHT BRIDGE

FRANKLIN CONSULTANTS INC. 2 / 10
Consulting Engineers
COLUMBUS, OHIO

GENERAL PLAN & ELEVATION

UNI-33-0790 L/R
US 33 OVER SR245
UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FA	MK	MK	CB	JF	10/17-85	

FHWA REGION	STATE	PROJECT	
5	OHIO		

IGC 225

UNION COUNTY
UNI-33-07.29

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81	DATED 11-27-81
BR-1	DATED 5-29-79
PSBD-1-81	DATED 9-18-81 SHT. 1-4
EXJ-3-82	DATED 8-1-84

AND TO SUPPLEMENTAL SPECIFICATIONS:

824	DATED 10-8-82
836	DATED 11-12-85
849	DATED 10-19-81
853	DATED 6-26-78
956	DATED 6-26-78

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1983, AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

INCLUDING THE 1984 AND 1985 INTERIM SPECIFICATIONS

DESIGN DATA:

DESIGN LOADING	HS 20-44 AND THE ALTERNATE MILITARY LOADING
CONCRETE CLASS S	UNIT STRESS 1500 P.S.I. (SUPERSTRUCTURE)
CONCRETE CLASS C	UNIT STRESS 1333 P.S.I. (SUBSTRUCTURE)
REINFORCING STEEL	ASTM A615, A616 OR A617 GRADE 60-UNIT STRESS 24,000 P.S.I. SPIRAL REINFORCEMENT MAY BE PLAIN BARS ASTM A82 OR A615
STRUCTURAL STEEL	ASTM A36-UNIT STRESS 20,000 P.S.I.
CONCRETE FOR PRESTRESSED BEAMS	UNIT STRESS 2200 P.S.I. COMPRESSION 444 P.S.I. TENSION

REINFORCING STEEL FOR PRESTRESSED BEAMS SHALL BE AS PER CMS 515, WHICH ALLOWS GRADE 40 REINFORCING STEEL, YIELD STRENGTH 40,000 P.S.I.

PRESTRESSING STRAND ASTM A416
F'S = 270,000 P.S.I.
INITIAL STRESS - 0.70 F'S

DECK PROTECTION METHOD: MEMBRANE WATERPROOFING AND ASPHALT CONCRETE OVERLAY.

FOUNDATION BEARING PRESSURE: PIER FOOTINGS ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF 2.0 TONS PER SQUARE FOOT.

EMBANKMENT CONSTRUCTION AND PILE DRIVING CONSTRAINTS: PRIOR TO DRIVING PILES AT EACH ABUTMENT AND EXCAVATING FOR THE CONSTRUCTION OF THE PIER FOOTINGS, THE SPILL-THRU SLOPE EMBANKMENT SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 200 FEET BACK OF THE ABUTMENT. AFTER THE EMBANKMENT IS COMPLETED WITHIN THE ABOVE REQUIRED LIMITS, THE EXCAVATION FOR THE ABUTMENT FOOTING MAY BE MADE AND PILES DRIVEN.

PIER FOOTING CONSTRUCTION: AFTER EXCAVATING FOR THE CONSTRUCTION OF THE PIER FOOTINGS AND PRIOR TO PLACING THE CONCRETE FOR THE PIER FOOTINGS, THE EXISTING SILTY CLAY LOCATED BELOW THE PROPOSED PIER FOOTINGS SHOULD BE REMOVED AND REPLACED WITH A WELL COMPACTED 310 SUBBASE GRANULAR MATERIAL. THE REMOVAL LIMITS SHOULD BE ONE (1) FOOT BELOW THE BOTTOM OF THE PIER FOOTING AND ONE (1) FOOT OUTSIDE THE PROPOSED FOOTING PLAN DIMENSIONS. THE 310 SUBBASE MATERIAL SHALL BE COMPACTED IN TWO SIX INCH LIFTS WITH A VIBRATORY ROLLER. THE MINIMUM ACCEPTABLE CAPABILITIES FOR THE VIBRATORY ROLLER SHALL BE SIMILAR TO THE COMPACTIVE EFFORT PRODUCED BY A SINGLE DRUM ROLLER WEIGHING 2000 POUNDS AND HAVING A 30 INCH WIDTH.

PILE DESIGN LOADS: THE DESIGN LOAD FOR THE ABUTMENT PILES IS 35 TONS.

MAINTENANCE OF TRAFFIC: TWO LANES OF TRAFFIC WITH A MINIMUM HORIZONTAL WIDTH OF 26'-0" AND A MINIMUM VERTICAL CLEARANCE OF 13'-8" SHALL BE MAINTAINED ON S.R. 245 AT ALL TIMES.

UTILITY LINES: ALL EXPENSE INVOLVED IN RELOCATING THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNERS. THE CONTRACTOR AND THE OWNERS ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

ESTIMATED QUANTITIES

ITEM	TOTAL BOTH BR.	TOTALS LT. BR.	TOTALS RT. BR.	UNIT	DESCRIPTION	SUPER. LT.BR.	SUPER. RT. BR.	ABUTMENTS LT. BR.	ABUTMENTS RT. BR.	PIERS LT. BR.	PIERS RT. BR.	GENERAL LT. BR.	GENERAL RT. BR.
310	60	30	30	C.Y.	SUBBASE, TYPE II					30	30		
846	98	49	49	C.Y.	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I AC-20	49	49						
846	42	21	21	C.Y.	ASPHALT CONCRETE SURFACE COURSE, TYPE I AC-20	21	21						
503	624	312	312	C.Y.	UNCLASSIFIED EXCAVATION			102	102	210	210		
505	LUMP		LUMP	LUMP	PILE DRIVING EQUIPMENT MOBILIZATION								LUMP
507	1260	630	630	L.F.	12"ϕ CAST-IN-PLACE REINFORCED CONC. PILES					630	630		
509	55,040	27,520	27,520	LB.	REINFORCING STEEL, GRADE 60			7423	7423	20097	20097		
511	39	20	19	C.Y.	CLASS S CONCRETE, HIGH EARLY STRENGTH	20	19						
511	66	33	33	C.Y.	CLASS S CONCRETE, SUPERSTRUCTURE PARAPETS	33	33						
511	222	111	111	C.Y.	CLASS C CONCRETE, FOOTINGS			46	46	65	65		
511	126	63	63	C.Y.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS			63	63				
511	136	68	68	C.Y.	CLASS C CONCRETE, PIERS ABOVE FOOTINGS					68	68		
512	1194	597	597	S.Y.	TYPE D WATERPROOFING	597	597						
515	~~28~~ 4	~~14~~ 2	~~14~~ 2	EA.	PRESTRESSED CONCRETE BRIDGE MEMBERS, B21-36, SPAN 2 (SPN)	~~14~~ 2	~~14~~ 2						
515	~~56~~ 8	~~28~~ 4	~~28~~ 4	EA.	PRESTRESSED CONCRETE BRIDGE MEMBERS, B21-36, SPAN 1 & 3 (SPN)	~~28~~ 4	~~28~~ 4						
516	~~56~~ 8	~~28~~ 4	~~28~~ 4	EA.	13" × 4" × 2" LAMINATED ELASTOMERIC BEARINGS	~~28~~ 4	~~28~~ 4						
516	~~280~~ 40	~~140~~ 20	~~140~~ 20	EA.	13" × 4" × 1" LAMINATED ELASTOMERIC BEARINGS	~~140~~ 20	~~140~~ 20						
516	60	30	30	S.F.	1/8" PREFORMED BEARING PADS, AS PER 711.21	30	30						
516	209	104	105	L.F.	STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC COMPRESSION SEALS (COMPRESSION SEALS 4" WIDE)	~~104~~ 104	~~105~~ 105						
516	146	73	73	S.F.	1" PREFORMED EXPANSION JOINT FILLER	73	73						
518	68	34	34	C.Y.	POROUS BACKFILL			34	34				
518	172	86	86	L.F.	6" PERFORATED, HELICAL CORRUGATED STEEL PIPE, 707.1			86	86				
518	160	80	80	L.F.	6" NON-PERFORATED, HELICAL CORRUGATED STEEL PIPE, INCLUDING SPECIALS 707.01			80	80				
601	996	498	498	S.Y.	CRUSHED AGGREGATE SLOPE PROTECTION							498	498
824	17,200	8600	8600	L.B.	EPOXY COATED REINFORCING STEEL, GRADE 60	7503	7503	1097	1097				
SPECIAL	666	333	333	S.Y.	SEALING OF CONCRETE SURFACES, SEE PROPOSAL NOTE	306	306	27	27				
515	18	9	9	EA.	PRESTRESSED CONCRETE BRIDGE MEMBERS, B21-48, SPAN 2	9	9						
515	36	18	18	EA.	PRESTRESSED CONCRETE BRIDGE MEMBERS, B21-48, SPAN 1&3	18	18						
516	36	18	18	EA.	18"×4"×2" LAMINATED ELASTOMERIC BEARINGS, 50 DUROMETER	18	18						
516	180	90	90	EA.	18"×4"×1" LAMINATED ELASTOMERIC BEARINGS, 50 DUROMETER	90	90						

REV. 3-31-87

FRANKLIN CONSULTANTS INC. 3/10
Consulting Engineers
COLUMBUS, OHIO

GENERAL NOTES & ESTIMATED QUANTITIES

UNI-33-0790 L/R
U.S. 33 OVER S.R. 245

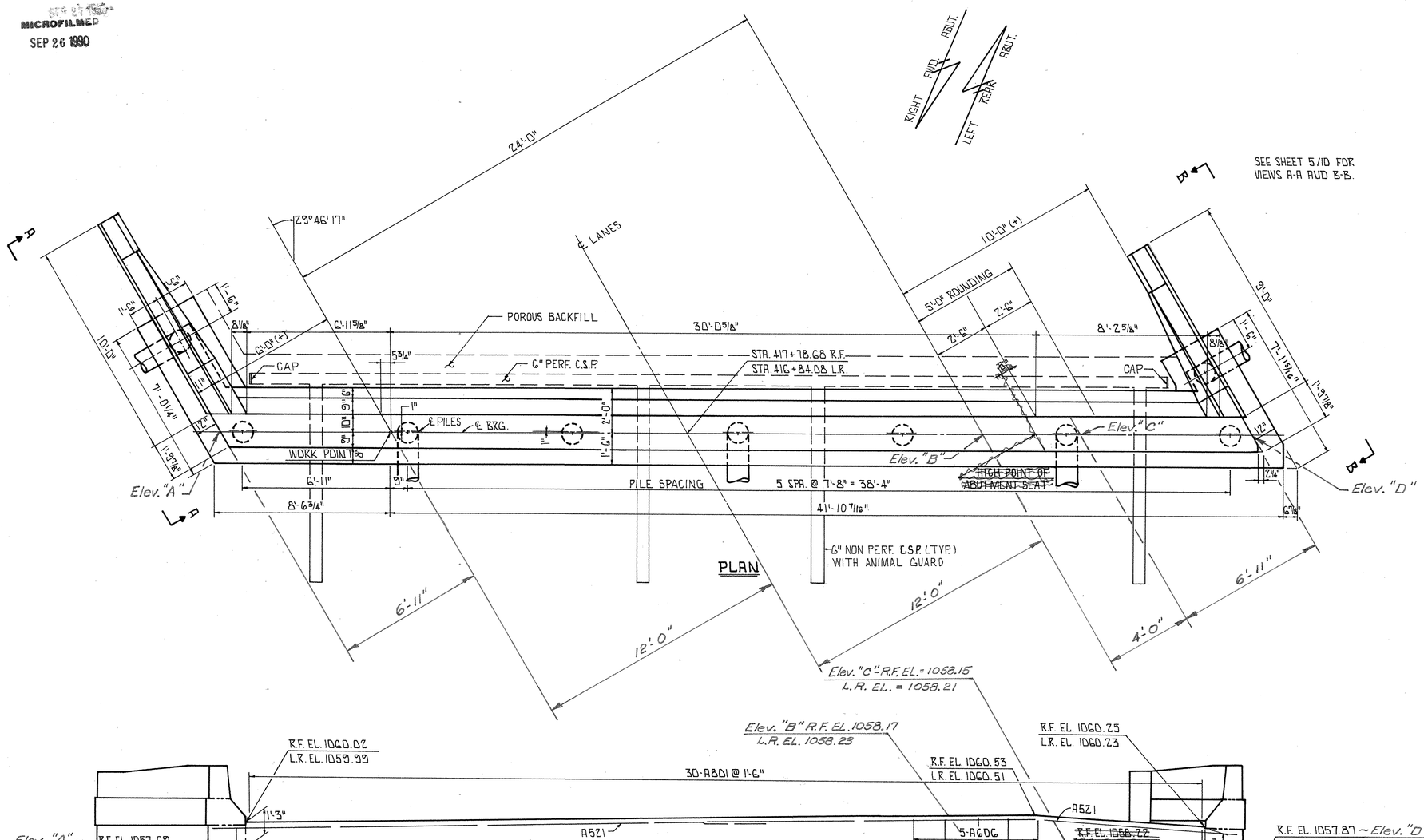
UNION COUNTY

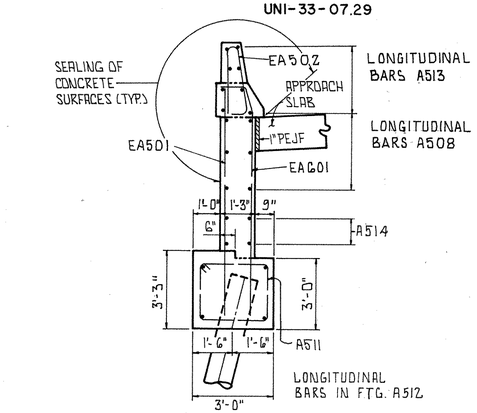
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FA	MK	MK	RMP	JH	10/17-85	

FHWA REGION	STATE	PROJECT	
5	OHIO		

167
225

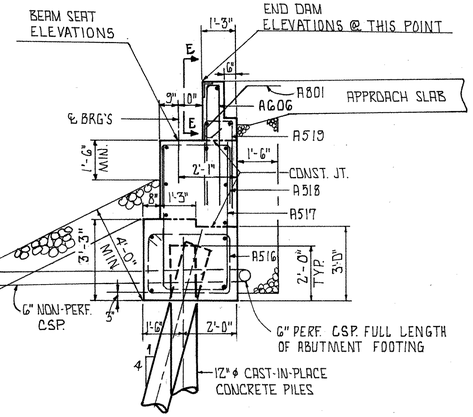
UNION COUNTY
UNI-33-07.29



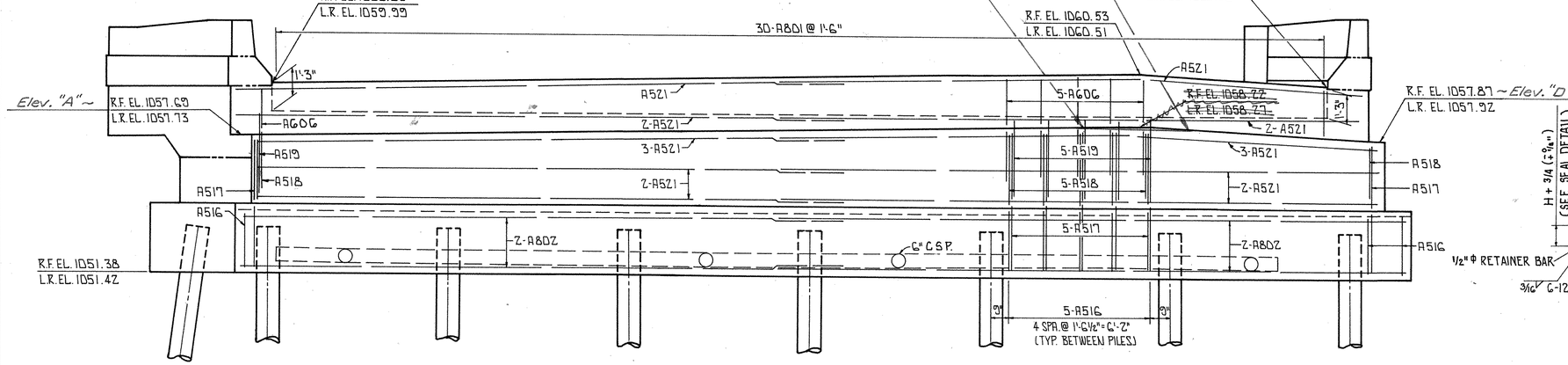


SECTION D-D

FOR APPROACH SLAB DETAILS SEE STD. DRWG. AS-1-81.



SECTION C-C

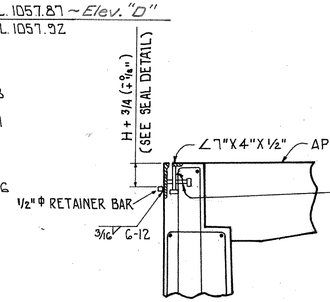


ELEVATION

NOTE: FOR PILE NUMBERS SEE "GENERAL PLAN"

MIN. BAR LAP
#5 = 1'-5"
#8 = 2'-10"

LEGEND
R.F. = RIGHT BRIDGE, FORWARD ABUT.
L.R. = LEFT BRIDGE REAR ABUT.



SECTION E-E

REV. 3-31-87

FRANKLIN CONSULTANTS INC. 4 / 10
Consulting Engineers
COLUMBUS, OHIO

ABUTMENT DETAILS

UNI-33-0790 L/R
US 33 OVER SR 245

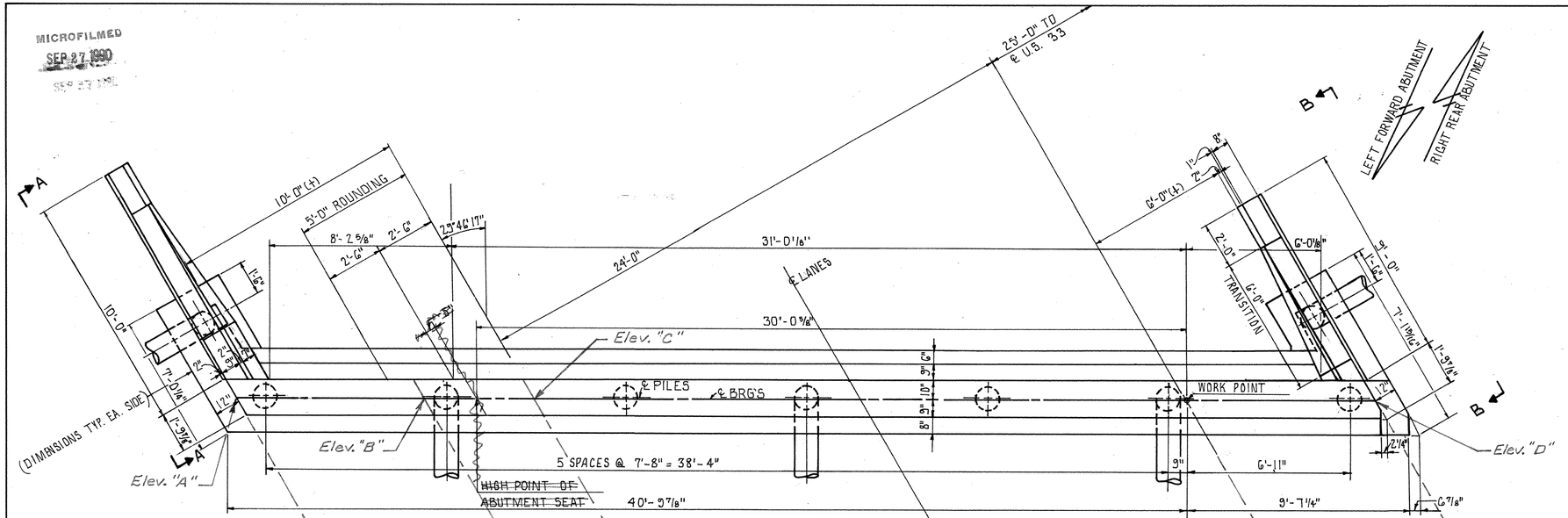
UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FA	MK	RLJ	CB	JG	10/17/85	

FHWA REGION	STATE	PROJECT	
5	OHIO		

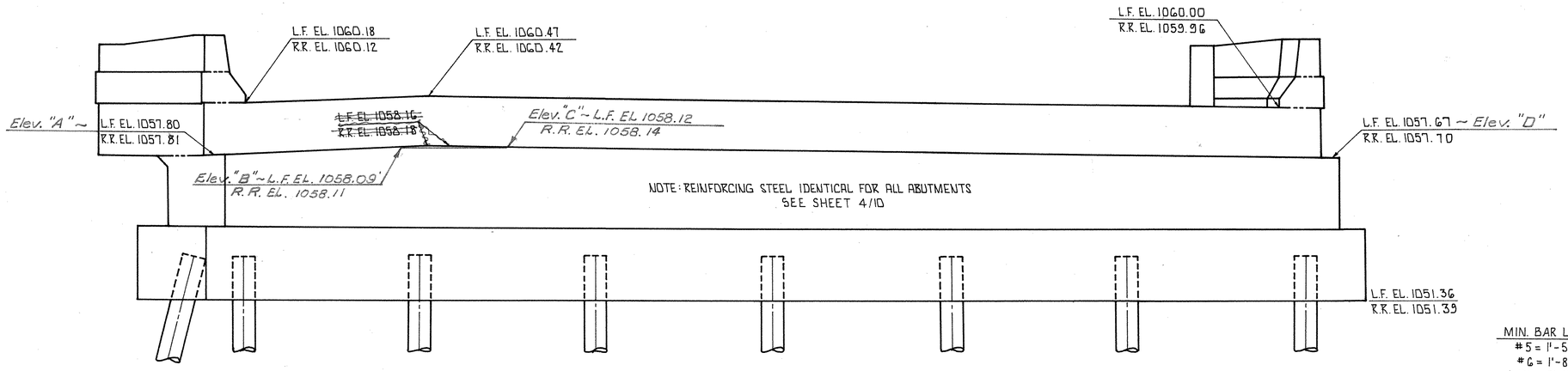
168
225

UNION COUNTY
UNI-33-07.29

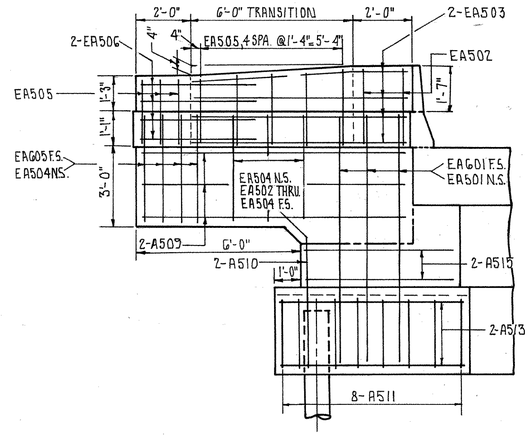


PLAN

NOTE: POROUS BACKFILL AND C.S. PIPE IDENTICAL FOR ALL ABUTMENTS. SEE SHEET 4/10

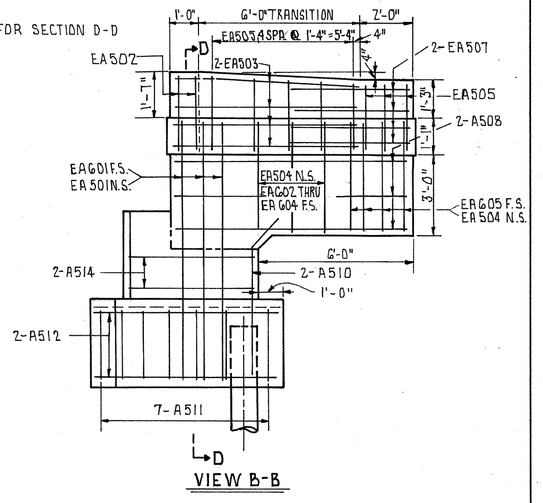


ELEVATION



VIEW A-A

SEE SHEET 4/10 FOR SECTION D-D



VIEW B-B

MIN. BAR LAP
#5 = 1'-5"
#6 = 1'-8"
#8 = 2'-10"

FRANKLIN CONSULTANTS INC.
Consulting Engineers
COLUMBUS, OHIO

5 / 10

ABUTMENT DETAILS

UNI-33-0790 L/R
US 33 OVER SR 245

UNION COUNTY

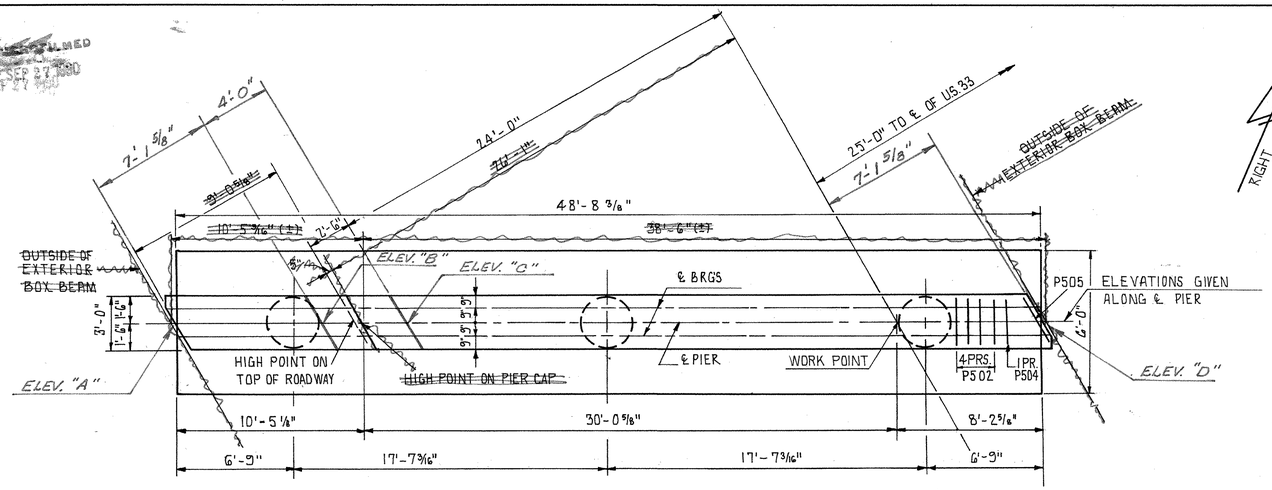
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FA	MK	MK	CB	JF	10/17/85	

REV. 3-31-87

FHWA REGION	STATE	PROJECT	
5	OHIO		

169
22.5

UNION COUNTY
UNI-33-07.29

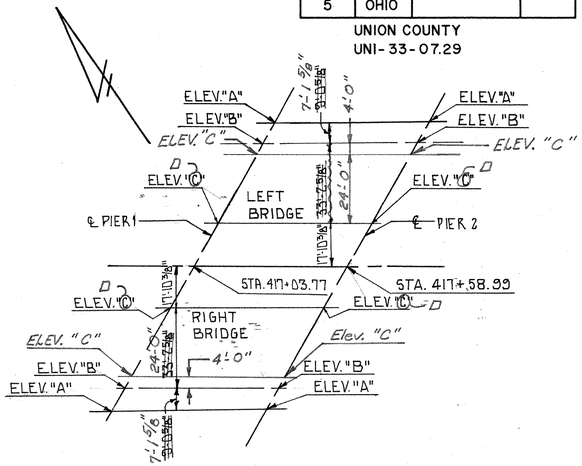


PLAN

RIGHT BRIDGE
LEFT BRIDGE

PIER	LOCATION	ELEVATION
#1 L.B.	A	1057.94
#1 L.B.	B	1058.30
#1 L.B.	C	1057.77
#1 R.B.	C	1057.75
#1 R.B.	B	1058.25
#1 R.B.	A	1057.88
#2 L.B.	A	1057.92
#2 L.B.	B	1058.28
#2 L.B.	C	1057.77
#2 R.B.	C	1057.78
#2 R.B.	B	1058.30
#2 R.B.	A	1057.93

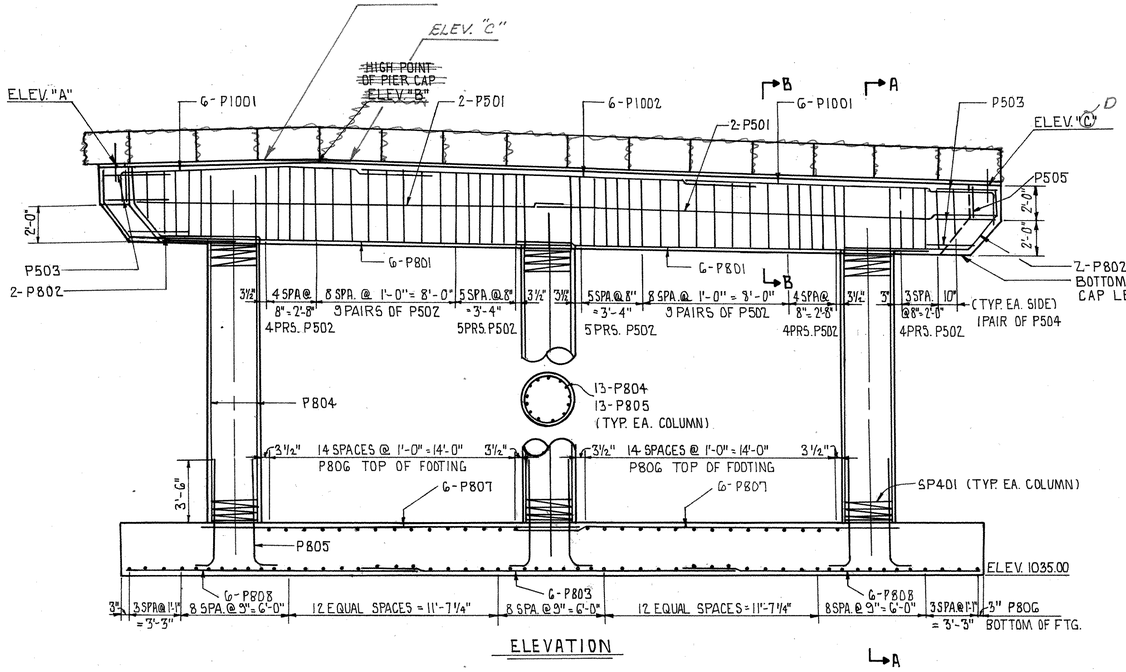
L.B. - LEFT BRIDGE
R.B. - RIGHT BRIDGE



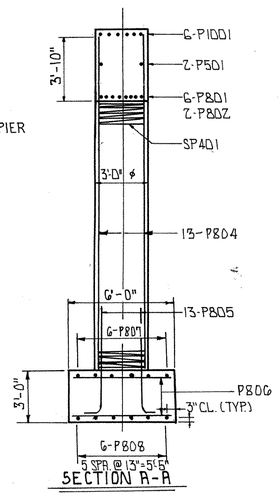
LAYOUT PIER ELEVATIONS

PIER	LOCATION	ELEVATION
#1 L.B.	A	1057.94
#1 L.B.	B	1058.24
#1 L.B.	C	1058.26
#1 L.B.	D	1057.77
#1 R.B.	D	1057.75
#1 R.B.	C	1058.21
#1 R.B.	B	1058.19
#1 R.B.	A	1057.88
#2 L.B.	A	1057.92
#2 L.B.	B	1058.22
#2 L.B.	C	1058.24
#2 L.B.	D	1057.77
#2 R.B.	D	1057.78
#2 R.B.	C	1058.26
#2 R.B.	B	1058.24
#2 R.B.	A	1057.93

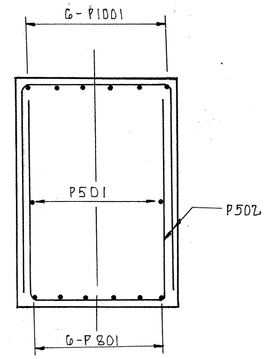
L.B. - LEFT BRIDGE
R.B. - RIGHT BRIDGE



ELEVATION



SECTION A-A



SECTION B-B

MIN BAR LAP
#5 = 1'-5"
#6 = 1'-8"
#8 = 2'-10"
#10 = 4'-6"

REV. 3-31-87

FRANKLIN CONSULTANTS INC.	6 / 10
Consulting Engineers	
COLUMBUS,	OHIO

PIER DETAILS

UNI-33-0790 L/R
US 33 OVER SR245

UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FA	MK	QJ	CB	JAF	10/11-85	

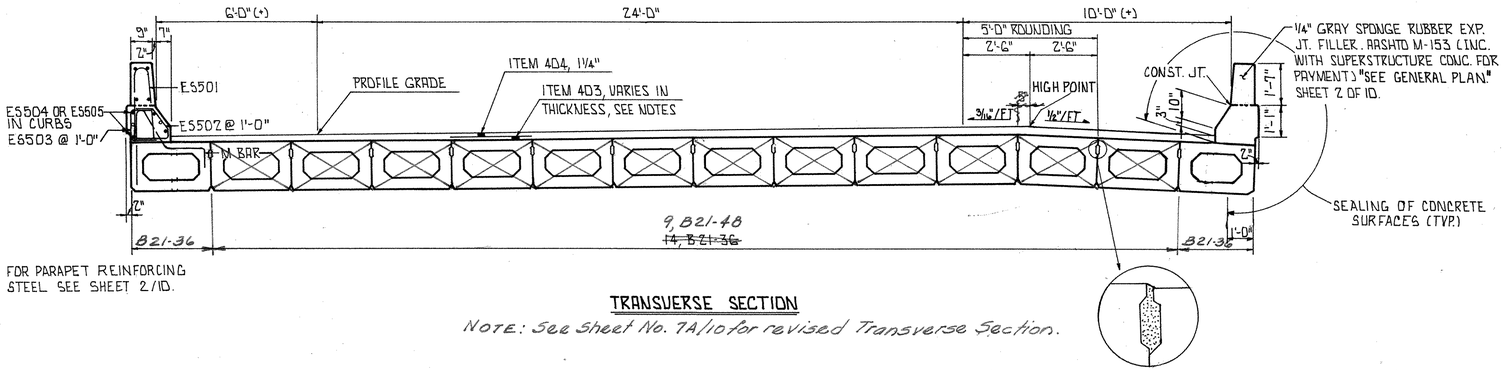
BRUNING 44-132 30845-1

FHWA REGION	STATE	PROJECT	
5	OHIO		

170
225

UNION COUNTY
UNI-33-07.29

ALL LONGITUDINAL BARS ARE ES504 OR ES505 IN CURB AND ES506, ES507 OR ES508 IN PARAPET



FOR PARAPET REINFORCING STEEL SEE SHEET 2/10.

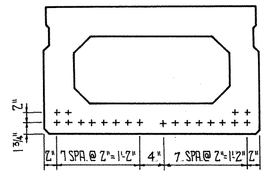
TRANSVERSE SECTION

NOTE: See Sheet No. 7A/10 for revised Transverse Section.

SHEAR KEYS SHOULD BE MORTARED TO A FINISHED PLANE BETWEEN THE TOP EDGES OF THE ADJACENT BEAMS WHERE VERTICAL OFFSET OCCURS. (WITHIN TOLERANCE)

NUMBER AND LENGTH OF STRANDS DEBONDED

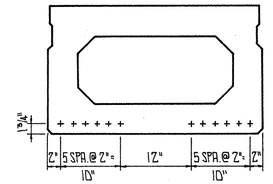
2 ~ 1'-6"
2 ~ 2'-6"
2 ~ 3'-6"
2 ~ ~~5'-6"~~ 4'-6"



B21-36 Beam
STRAND LOCATION SPAN 2

~~NUMBER AND LENGTH OF STRANDS DEBONDED~~

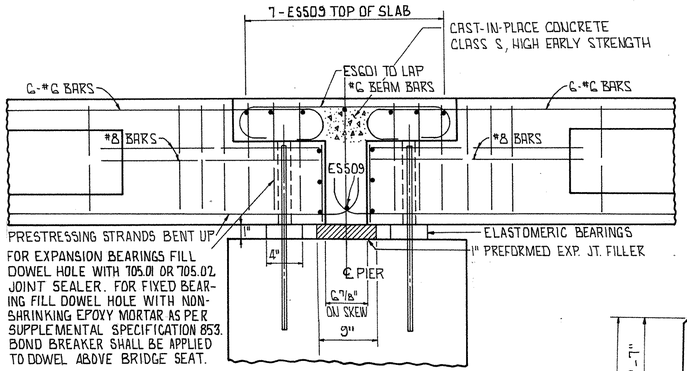
~~2 ~ 1'-6"~~



B21-36 Beam
STRAND LOCATION SPAN 1 & 3

SEE STD. DWG. PSBD-1-81 FOR SHAPES AND LOCATIONS OF REGULAR REINF. STEEL. ALL BEAMS B21-36.

NOTE: ALL STRANDS ½" DIA., 270K. SEVEN WIRE, UNCOATED STRESS RELIEVED STRANDS.

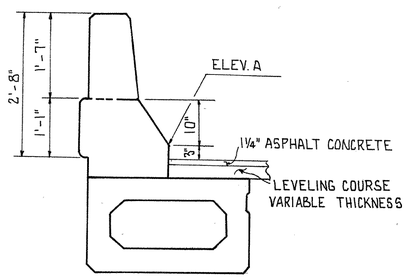


FOR EXPANSION BEARINGS FILL DOWEL HOLE WITH 705.01 OR 705.02 JOINT SEALER. FOR FIXED BEARING FILL DOWEL HOLE WITH NON-SHRINKING EPOXY MORTAR AS PER SUPPLEMENTAL SPECIFICATION 853. BOND BREAKER SHALL BE APPLIED TO DOWEL ABOVE BRIDGE SEAT.

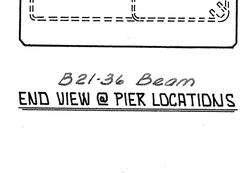
FOR LOCATION OF FIXED OR EXPANSION BEARING, SEE GENERAL PLAN SHEET 2/10.

BEAM CONNECTION OVER PIERS

NOTE: THE FABRICATOR MAY CHANGE THE BEAM WIDTH IF THERE IS SOME ADVANTAGE IN DOING SO. HOWEVER THE BRIDGE WIDTH MUST REMAIN THE SAME, AND BEARINGS MUST BE RE-DESIGNED BY A P.E., WITH NO ADDITIONAL COST TO STATE. REVISED PLANS MUST BE SUBMITTED TO THE DIRECTOR FOR APPROVAL.



ELEV. A		SPAN 1			SPAN 2		SPAN 3	
LOCATION		REAR ABUT.	CENTER SPAN	PIER 1	CENTER SPAN	PIER 2	CENTER SPAN	FWD ABUT.
LEFT BRIDGE	TOP OF LEFT CURB	1060.47	1060.49	1060.50	1060.49	1060.48	1060.45	1060.42
	TOP OF RIGHT CURB	1060.24	1060.27	1060.28	1060.29	1060.29	1060.27	1060.25
RIGHT BRIDGE	TOP OF LEFT CURB	1060.21	1060.24	1060.26	1060.28	1060.29	1060.29	1060.27
	TOP OF RIGHT CURB	1060.37	1060.41	1060.44	1060.47	1060.49	1060.50	1060.49

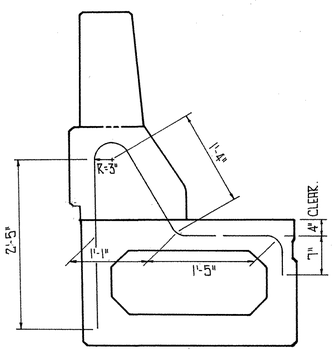


B21-36 Beam
END VIEW @ PIER LOCATIONS

NOTE: See Sheet No. 7A/10 for strand location for B21-48 & B21-36 beams.

BEARINGS: FORWARD ABUTMENT: 2-LAMINATED ELASTOMERIC BEARINGS PER BOX 2"×4"×13" (3-⅜"×4"×13" LAYERS OF ELASTOMER AND 2-14 GA. STEEL INTERNAL LAMINATES) 50 HARDNESS

PIERS & REAR ABUTMENT: 2-LAMINATED ELASTOMERIC BEARINGS PER BOX 1"×4"×13" (2-½"×4"×13" LAYERS OF ELASTOMER AND 1-14 GA. STEEL INTERNAL LAMINATES) 50 HARDNESS



M-BAR
FOR M BARS USE EPOXY COATED #5 BARS SPACED @ 1'-6"

FRANKLIN CONSULTANTS INC. 7 / 10
Consulting Engineers
COLUMBUS, OHIO

SUPERSTRUCTURE DETAILS

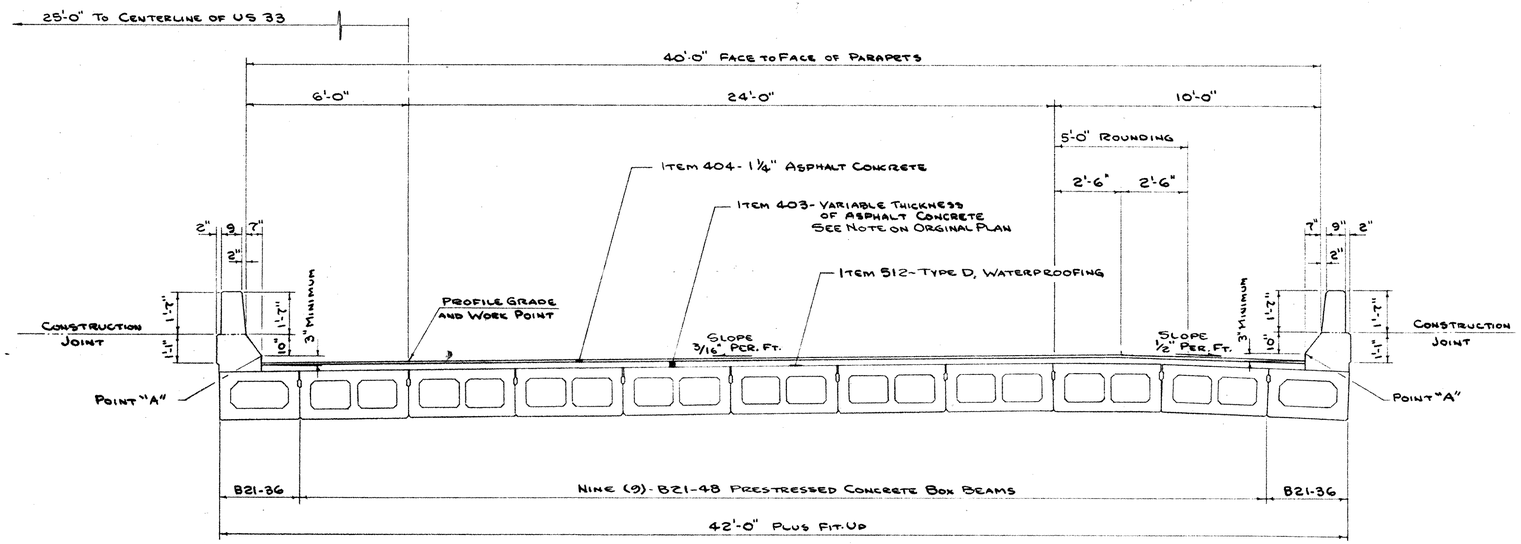
UNI-33-0790 L/R
US 33 OVER SR 245

UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FA	MK	MK	CB	JF	10/17-05	

REV. 3-31-87

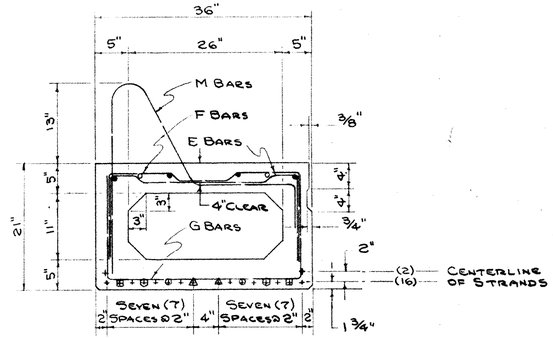
UNION COUNTY	OHIO	170A
UNI-33-07.29	FHWA REGION 5	225
	FEDERAL PROJECT	



Transverse Section

Note: For Elevations of Point "A" See Sheet No. 7/10, Superstructure Details.

Note: For Details on Reinforcing Steel in Parapet Walls See Sheet No. 2/10, General Plan & Elevation and Sheet No. 7/10, Superstructure Details.

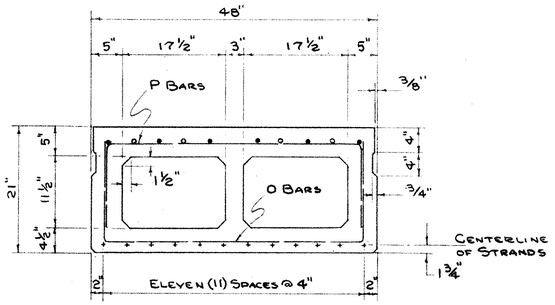


• ~ Indicates Four (4) No. 5 Bars, Full Length of Beam
○ ~ Indicates Two (2) No. 5 Bars, 11'-6" Long at Each End of Beam, Also See Sheet 8/10
E Bars and F Bars are No. 4 Bars, Spaced at 15" Centers
G Bars are No. 4 Bars, Spaced at 15" Centers and with Six (6) at 7½" Center at Each End of Beam
M Bars are Epoxy Coated No. 5 Bars, Spaced at 18" Centers

+ ~ Indicates ½" Diameter 270K PSI Prestressing Strands
53'-6" ℄ of Bearing, Use Eighteen (18) Strands
⊕ ~ Denotes Debond Strand Length of 1'-6"
⊕⊕ ~ Denotes Debond Strand Length of 2'-6"
⊕⊕⊕ ~ Denotes Debond Strand Length of 3'-6"
⊕⊕⊕⊕ ~ Denotes Debond Strand Length of 4'-6"

See Standard Drawing No. PSBD-1-81, Dated 9-18-81 For Additional Details.

Typical B21-36 Beam
Cross Section for Center Span

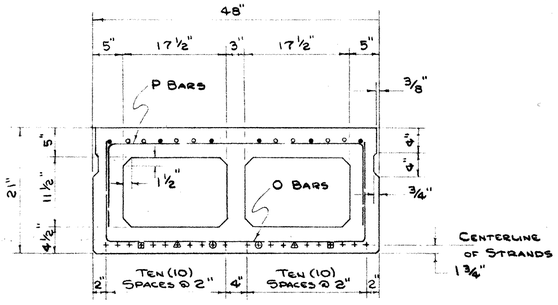


• ~ Indicates Six (6) No. 4 Bars, Full Length of Beam
○ ~ Indicates Four (4) No. 4 Bars, 6'-1" Long at Each End of Beam, Also See Sheet No. 8/10 For Note.
P Bars are No. 4 Bars Spaced at 12" Centers
O Bars are No. 4 Bars Spaced at 12" Centers and With Six (6) at 6" Centers at Each End of Beam

+ ~ Indicates ½" Diameter, 270K PSI Prestressing Strands — 40'-0" ℄ of Bearing; Use Twelve (12) Strands

See Standard Drawing No. PSBD-1-81, Dated: 9-18-81 For Additional Details

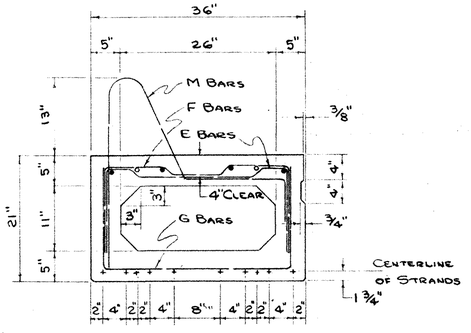
Typical B21-48 Beam
Cross-Section for End Spans



• ~ Indicates Six (6) No. 4 Bars, Full Length of Beam
○ ~ Indicates Eight (8) No. 4 Bars, 10'-4" Long at Each End of Beam, Also See Sheet 8/10 For Note.
P Bars are No. 4 Bars Spaced at 12" Centers
O Bars are No. 4 Bars Spaced at 12" Centers and With Six (6) At 6" Centers At Each End of Beam

+ ~ Indicates ½" Diameter 270K PSI Prestressing Strands
53'-6" ℄ of Bearing; Use Twenty-Two (22) Strands
⊕ ~ Denotes Debonded Strand Length of 1'-6"
⊕⊕ ~ Denotes Debonded Strand Length of 2'-6"
⊕⊕⊕ ~ *Denotes Debonded Strand Length of 3'-6"*
See Standard Drawing No. PSBD-1-81, Dated: 9-1-81 For Additional Details

Typical B21-48 Beam
Cross-Section for Center Span

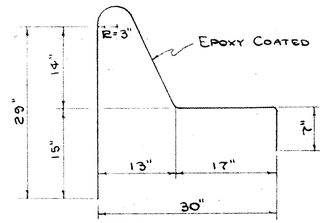


• ~ Indicates Four (4) No. 5 Bars, Full Length of Beam
○ ~ Indicates Two (2) No. 5 Bars, 7'-0" Long at Each End of Beam, Also See Sheet 8/10
E Bars and F Bars are No. 4 Bars, Spaced at 15" Centers
G Bars are No. 4 Bars, Spaced at 15" Centers and With Six (6) at 7½" Centers At Each End of Beam
M Bars are Epoxy Coated No. 5 Bars, Spaced at 18" Centers

+ ~ Indicates ½" Diameter 270K PSI Prestressing Strands
40'-0" ℄ of Bearing; Use Ten (10) Strands

See Standard Drawing No. PSBD-1-81, Dated: 9-1-81 For Additional Details

Typical B21-36 Beam
Cross-Section for End Spans



M Bar Detail

Note: For Dimensions of E, F, G, O and P Bars See Standard Drawing PSBD-1-81 Dated: 9-1-81

All Reinforcing Steel Shall Be Epoxy Coated

THIS SHEET ADDED 3-31-87

ACE ENGINEERING	7A/10
4824 WILLOW STREET ELIDA, OHIO 45807	

SUPERSTRUCTURE DETAILS

UNI-33-0790 L/R

US 33 OVER SR 245

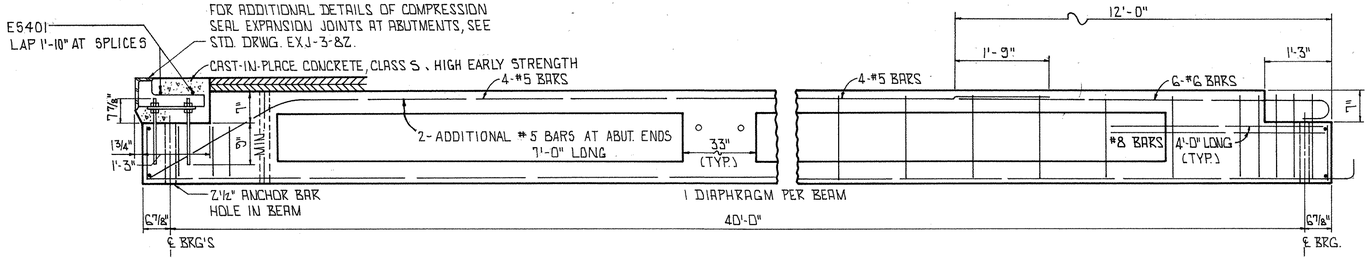
UNION COUNTY

DRAWN BY	CHECKED BY	DESIGNED	DATE	DRAWING №
WCG		WCG	11-13-86	

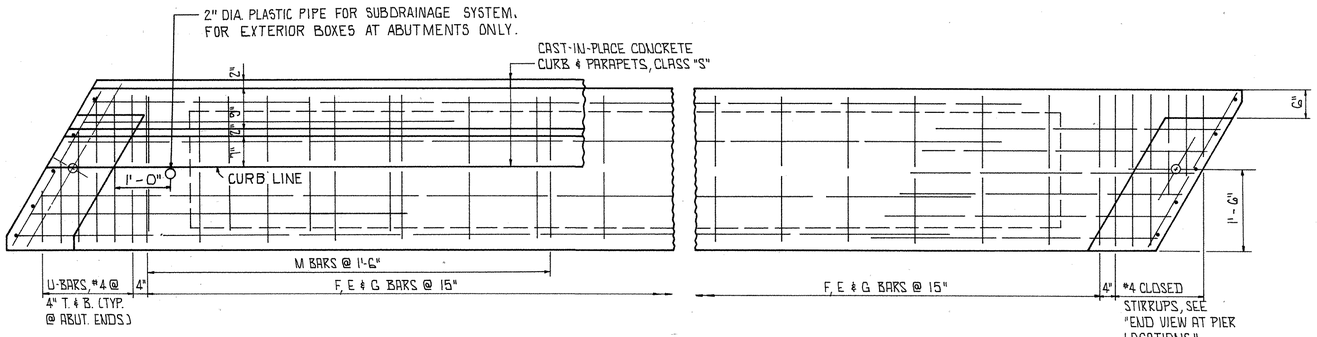
FHWA REGION	STATE	PROJECT	
5	OHIO		

171
22.5

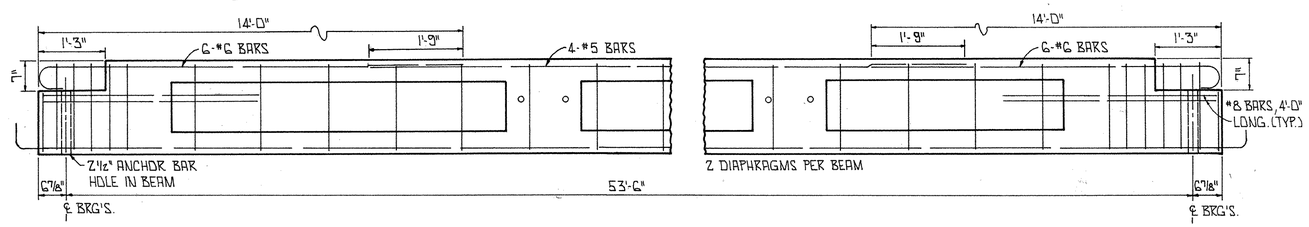
UNION COUNTY
UNI-33-07.29



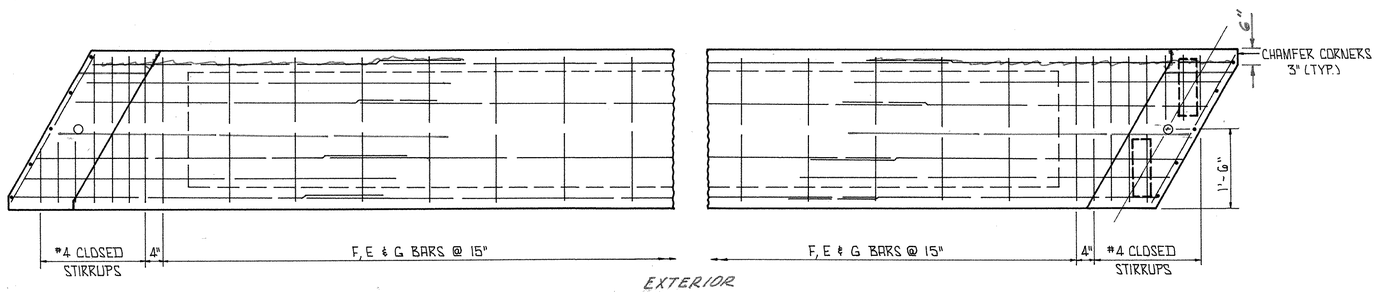
SPAN 1 & 3 ~ B21-36 Beam



PLAN VIEW, SPAN 1 & 3 EXTERIOR BOX ~ B21-36 Beam



SPAN 2 ~ B21-36 Beam



EXTERIOR
PLAN VIEW, SPAN 2 ~~INTERIOR~~ BOX

END SPANS: CALCULATED CAMBER AT TIME OF PAVING, INCLUDING ALLOWANCE FOR CAMBER GROWTH DUE TO CREEP, IS 1 3/8".

CALCULATED DEFLECTION DUE TO WEIGHT OF SURFACE COURSE AND CONCRETE PARAPET IS 1/8".

CAMBER OF 0" AT CENTER OF SPAN IS REQUIRED FOR CREST VERTICAL CURVE.

NET FINAL CAMBER OF BEAMS IS 1¼". THIS IS 1½" IN EXCESS OF THE AMOUNT REQUIRED TO PLACE THE TOP OF THE BEAM PARALLEL TO PROFILE GRADE. THIS EXCESS AMOUNT SHALL BE COMPENSATED FOR BY THICKENING THE 403 LEVELING COURSE FROM 2 3/8" AT CENTER OF SPANS TO 3 5/8" AT ENDS OF SPANS.

CENTER SPAN: CALCULATED CAMBER AT TIME OF PAVING, INCLUDING ALLOWANCE FOR CAMBER GROWTH DUE TO CREEP, IS 2 3/4".

CALCULATED DEFLECTION DUE TO WEIGHT OF SURFACE COURSE AND CONCRETE PARAPET IS 5/16".

CAMBER OF 1/16" AT CENTER OF SPANS IS REQUIRED FOR CREST VERTICAL CURVE.

NET FINAL CAMBER OF BEAMS IS 2 7/16". THIS IS 2 3/8" IN EXCESS OF THE AMOUNT REQUIRED TO PLACE THE TOP OF THE BEAM PARALLEL TO PROFILE GRADE. THIS EXCESS AMOUNT SHALL BE COMPENSATED FOR BY THICKENING THE 403 LEVELING COURSE FROM 1¼" AT CENTER OF SPANS TO 3 5/8" AT ENDS OF SPANS.

ASPHALT CONCRETE SURFACE COURSE SHALL CONSIST OF A VARIABLE THICKNESS OF 403 AND 1¼" THICKNESS OF 404. THE 403 SHALL BE PLACED IN TWO OPERATIONS. THE FIRST COURSE SHALL BE OF 1¼" UNIFORM THICKNESS. THE SECOND COURSE SHALL BE FEATHERED TO PLACE THE SURFACE PARALLEL TO AND 1¼" BELOW FINAL PAVEMENT SURFACE ELEVATIONS.

THE FABRICATORS SHOP DRAWINGS SHALL SHOW COMPLETE DETAILS OF REINFORCING STEEL FOR THE BEAMS.

ALL REINFORCING STEEL TO BE EPOXY COATED.

NOTE: Steel shown at pier end of B21-36 beams shall also be added to B21-48 beams.

REV. 3-31-87

FRANKLIN CONSULTANTS INC. 8 / 10
Consulting Engineers
COLUMBUS, OHIO

SUPERSTRUCTURE DETAILS

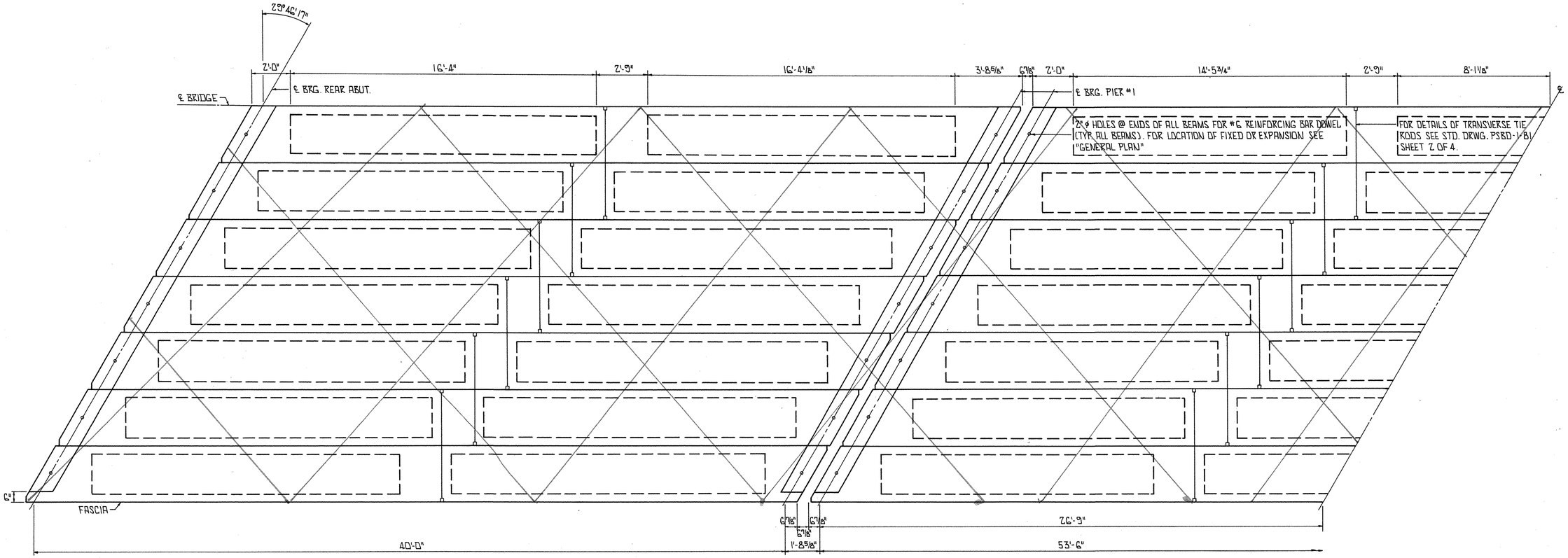
UNI-33-0790 L/R
US 33 OVER SR 245
UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FA	MK	MK	CAB	JF	10/17-85	

FHWA REGION	STATE	PROJECT	
5	OHIO		

171B
225

UNION COUNTY
UNI-33-07.29



NOTE: ONLY ONE FOURTH OF PLAN VIEW SHOWN, REMAINDER SIMILAR. FOR BEARINGS SEE SHEET 7 OF 10 FOR DETAILS.

BEAM LAYOUT PLAN

This sheet is superseded by sheet 171B/225
3-31-87

FRANKLIN CONSULTANTS INC. 9 / 10
Consulting Engineers
COLUMBUS, OHIO

BEAM LAYOUT PLAN

UNI-33-0790 L/R
U.S. 33 OVER S.R. 245

UNION COUNTY

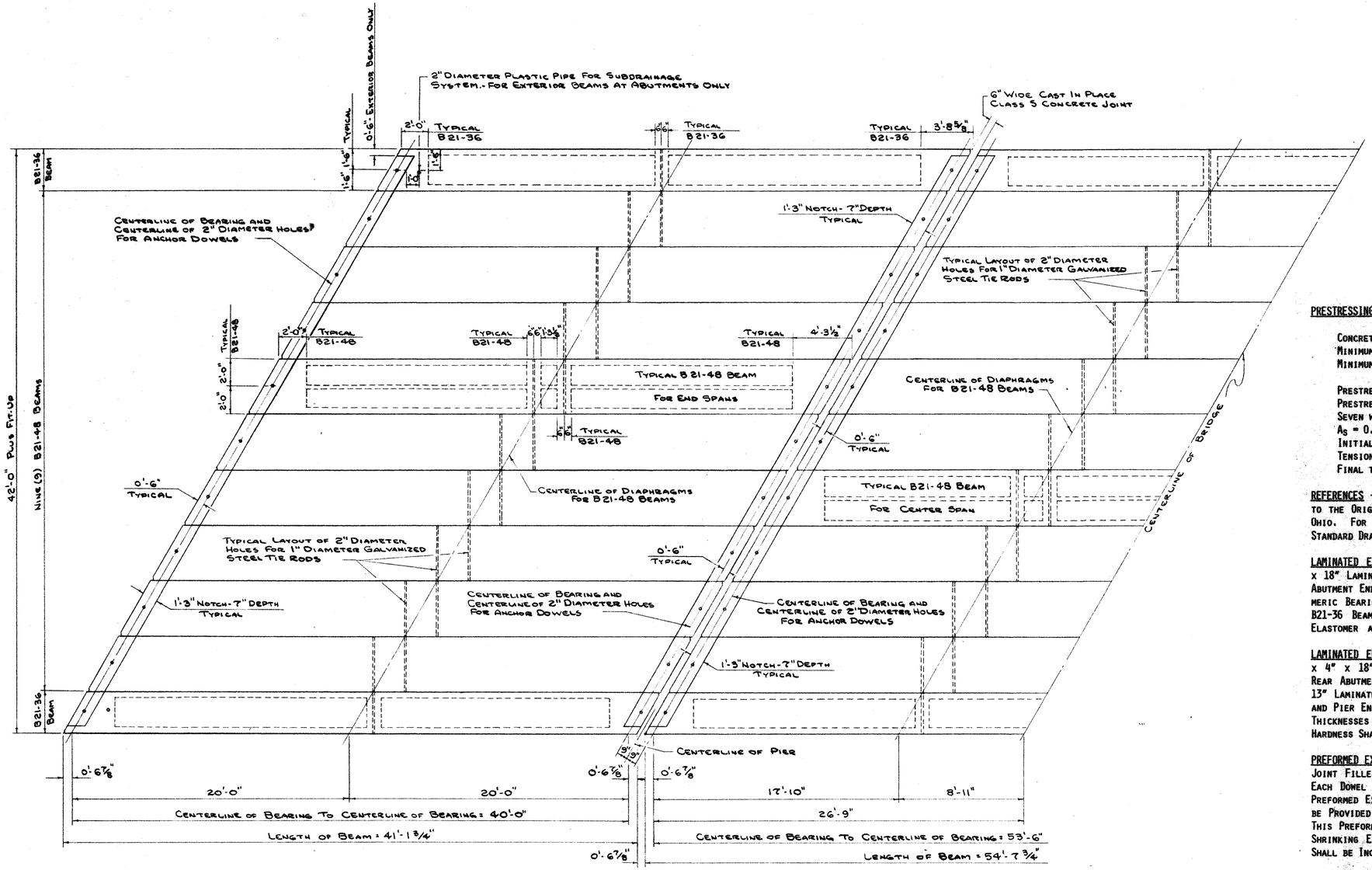
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FA	MK	MK	RMP	JH	1/6/86	

BRUNING 44-132 90845-1

MICROFILMED
SEP 27 1990

UNION COUNTY	OHIO	171B
UNI-33-07.29	FHWA REGION 5	225
	FEDERAL PROJECT	

PRESTRESSED CONCRETE BOX BEAMS



PRESTRESSED CONCRETE BOX BEAM FRAMING PLAN

PRESTRESSING DATA:

CONCRETE:
MINIMUM CONCRETE STRENGTH @ 28 DAYS = 5500 PSI.
MINIMUM CONCRETE STRENGTH @ RELEASE OF PRESTRESS = 4000 PSI.

PRESTRESSING STRANDS:
PRESTRESSING STRANDS SHALL BE ½" DIAMETER, 270 K.
SEVEN WIRE UNCOATED, STRESS-RELIEVED STRAND.
A_S = 0.153 SQ. IN.
INITIAL TENSION = 28,900 LBS. PER STRAND.
TENSION @ RELEASE = 26,600 LBS. PER STRAND.
FINAL TENSION = 21,700 LBS. PER STRAND (AFTER ALL LOSSES).

REFERENCES - FOR DETAILS AND ELEVATIONS NOT SHOWN ON THESE PLANS, REFER TO THE ORIGINAL PLAN PREPARED BY FRANKLIN CONSULTANTS, INC.; COLUMBUS, OHIO. FOR ADDITIONAL DETAILS ON PRESTRESSED CONCRETE BOX BEAMS, SEE STANDARD DRAWING NO. PSBD-1-81, DATED 9-18-81.

LAMINATED ELASTOMERIC BEARING PADS @ FORWARD ABUTMENT - TWO 2" X 4" X 18" LAMINATED ELASTOMERIC BEARING PADS SHALL BE PROVIDED AT FORWARD ABUTMENT END OF EACH B21-48 BEAM. TWO 2" X 4" X 13" LAMINATED ELASTOMERIC BEARING PADS SHALL BE PROVIDED AT FORWARD ABUTMENT END OF EACH B21-36 BEAM. EACH PAD SHALL CONSIST OF THREE EQUAL THICKNESSES OF ELASTOMER AND TWO 14 GAUGE STEEL LAMINATES. HARDNESS SHALL BE 50.

LAMINATED ELASTOMERIC BEARING PADS @ REAR ABUTMENT AND PIER - TWO 1" X 4" X 18" LAMINATED ELASTOMERIC BEARING PADS SHALL BE PROVIDED AT REAR ABUTMENT END AND PIER END OF EACH B21-48 BEAM. TWO 1" X 4" X 13" LAMINATED ELASTOMERIC PADS SHALL BE PROVIDED AT REAR ABUTMENT END AND PIER END OF EACH B21-36 BEAM. EACH PAD SHALL CONSIST OF TWO EQUAL THICKNESSES OF ELASTOMERIC AND ONE 14 GAUGE STEEL INTERNAL LAMINATE. HARDNESS SHALL BE 50.

PREFORMED EXPANSION JOINT FILLER - ONE 2" X 4" X 4" PREFORMED EXPANSION JOINT FILLER WITH A 1" DIAMETER HOLE IN CENTER SHALL BE PROVIDED AT EACH DOWEL HOLE AT FORWARD ABUTMENT END OF BEAM. ONE 1" X 4" X 4" PREFORMED EXPANSION JOINT FILLER WITH 1" DIAMETER HOLE IN CENTER SHALL BE PROVIDED AT EACH DOWEL HOLE AT REAR ABUTMENT AND PIER END OF BEAM. THIS PREFORMED EXPANSION JOINT FILLER IS TO PREVENT THE ESCAPE OF NON-SHRINKING EPOXY MORTAR OR JOINT SEALER AT THE DOWEL HOLE. THIS ITEM SHALL BE INCLUDED WITH THE BEAMS FOR PAYMENT.

PREFORMED BEARING PADS - TWO PREFORMED BEARING PADS PER BEAM, AS PER 711.21, 1/8" THICK AND OF THE SAME PLAN DIMENSIONS AS THE LAMINATED ELASTOMERIC BEARING PADS SHALL BE PROVIDED AS SHIMS TO ACCOMMODATE ANY NON-PARALLELISM BETWEEN BOTTOM OF BEAM AND BRIDGE SEAT.

PRESTRESSED CONCRETE BRIDGE MEMBERS - ITEM 515: THIS ITEM CONSISTS OF FURNISHING AND ERECTING THE PRESTRESSED BEAMS, DOWELS, TRANSVERSE TIE RODS, GROUTING OF DOWELS AND MORTARING OF SHEAR KEYS. TRANSVERSE TIE RODS SHALL BE PROVIDED THROUGH THE DIAPHRAGMS IN THE POSITIONS INDICATED. EACH TIE ROD SHALL BE EQUIVALENT TO ONE INCH DIAMETER MILD STEEL ROD, AS PER SECTION 711. TIGHTENED TO 18,000 POUNDS. TENSION MAY BE APPLIED BY A TORQUE OF APPROXIMATELY 300 FOOT POUNDS WITH THE THREADS LUBRICATED. AFTER TRANSVERSE TIE RODS HAVE BEEN PLACED AND TIGHTENED, SHEAR KEYS BETWEEN BEAMS SHALL BE FILLED WITH LOW SLUMP, NON-SHRINKING PORTLAND CEMENT MORTAR. MORTAR SHALL BE TAMPED INTO THE KEYWAYS IN A MANNER THAT INSURES COMPLETE AND SOLID FILLING.
THE CONTRACTOR SHALL FURNISH A COMPLETE SET OF FABRICATION AND ERECTION PLANS FOR THE PRECAST PRESTRESSED BEAMS. THESE PLANS SHALL INCLUDE ALL DETAILS REQUIRED IN THE MANUFACTURE, TRANSPORTATION, ERECTION AND COMPLETION OF ASSEMBLY OF THE BRIDGE MEMBERS AS A PORTION OF THE SUPERSTRUCTURE. THESE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR HIS APPROVAL PRIOR TO THE FABRICATION OF ANY PRECAST BRIDGE MEMBERS, AS PER SECTION 515.02.

NON-SHRINKING MORTAR: MORTAR OR GROUT FOR KEYWAYS BETWEEN PRESTRESSED CONCRETE BOX BEAMS, FOR TIE ROD RECESSES AND FOR ANCHOR DOWEL HOLES SHALL BE A NON-SHRINKING NON-METALLIC MORTAR HAVING A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 500 P.S.I. ACCORDING TO THE CORPS OF ENGINEERS SPECIFICATION CRD-C621-83 WHEN PREPARED TO A MODERATE FLUIDITY (124-145% FLOW TABLE FLOW). THE MORTAR OR GROUT SHALL ALSO MEET ALL OTHER REQUIREMENTS OF SPECIFICATION CRD-C621-83. THE MORTAR SHALL BE PREPARED, PLACED AND CURED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AGAINST SURFACES AS SPECIFIED.

PREPARATION OF CONCRETE SURFACES IN CONTRACT WITH NON-SHRINKING MORTAR: THE KEYWAY SURFACES SHALL BE GIVEN A MEDIUM SANDBLAST AT THE PLANT WITHIN FOUR DAYS BEFORE THE BEAMS LEAVE THE PLANT. BEFORE MORTARING, THE KEYWAYS SHALL BE THOROUGHLY CLEAN OF ALL DIRT, DUST AND OTHER FOREIGN MATTER. THE KEYWAY SURFACES SHALL BE WETTED, BUT NO FREE WATER SHALL BE ALLOWED TO REMAIN IN THE KEYWAYS.

THIS SHEET SUPERSEDES SHEET 171A. 3-31-87

ACE ENGINEERING 9A10
4824 WILLOW STREET ELIDA, OHIO 45807

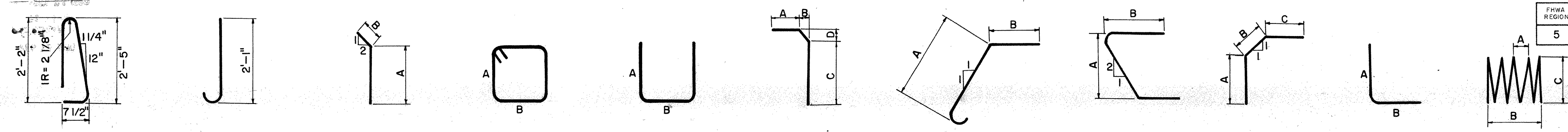
SUPERSTRUCTURE DETAILS
UNI-33-0790 L/R
US33 OVER SR 245
UNION COUNTY

DRAWN BY	CHECKED BY	DESIGNED	DATE	DRAWING NO
WCG		WCG	11-29-86	

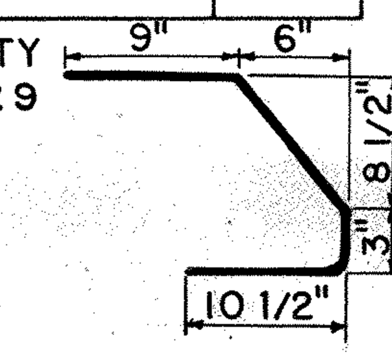
FHWA REGION	STATE	PROJECT	
5	OHIO		

172 / 225

UNION COUNTY
UNI-33-07.29



TYPE 1 TYPE 2 TYPE 3 TYPE 4 TYPE 5 TYPE 6 TYPE 7 TYPE 8 TYPE 9 TYPE 10 TYPE 11



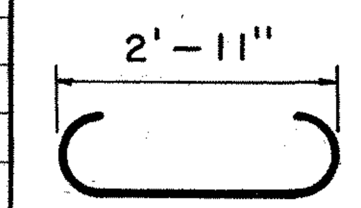
TYPE 12

ABUTMENTS

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	L.B. FWD	L.B. REAR	R.B. FWD	R.B. REAR
EA501	24	9'-1"	227	STR.					6	6	6	6
EA502	16	5'-3"	88	1					4	4	4	4
EA503	64	8'-0"	534	STR.					16	16	16	16
EA504	56	3'-10"	224	STR.					14	14	14	14
EA505	64	2'-8"	178	2					16	16	16	16
EA506	32	4'-0"	134	STR.					8	8	8	8
EA507	32	4'-3"	142	STR.					8	8	8	8
A508	24	8'-8"	217	STR.					6	6	6	6
A509	24	9'-8"	242	STR.					6	6	6	6
A510	16	7'-0"	117	3	5'-0"	2'-0"			4	4	4	4
A511	60	10'-9"	613	4	2'-7"	2'-6"			15	15	15	15
A512	16	6'-6"	108	STR.					4	4	4	4
A513	16	6'-8"	111	STR.					4	4	4	4
A514	16	4'-8"	78	STR.					4	4	4	4
A515	16	5'-6"	92	STR.					4	4	4	4
A516	132	11'-9"	1618	4	2'-7"	3'-0"			33	33	33	33
A517	128	13'-10"	1847	5	5'-10"	2'-5"			32	32	32	32
A518	128	7'-9"	1035	5	2'-9"	2'-6"			32	32	32	32
A519	124	7-8"	992	5	3'-6"	0'-11"			31	31	31	31
A521	80	24'-11"	2079	STR.					20	20	20	20
A606	124	9'-7"	1785	5	4'-9"	0'-5"			31	31	31	31
EA601	24	10'-1"	364	6	0'-11"	0'-3"	8'-3"	0'-11"	6	6	6	6
EA602	8	3'-8"	44	6	0'-8"	0'-5"	2'-5"	0'-8½"	2	2	2	2
EA603	8	3'-8"	44	6	0'-8"	0'-4"	2'-5"	0'-8½"	2	2	2	2
EA604	8	3'-7"	43	6	0'-7"	0'-3"	2'-5"	0'-8½"	2	2	2	2
EA605	32	3'-7"	172	6	0'-5"	0'-2"	2'-5"	0'-8½"	8	8	8	8
A801	120	5'-0"	1602	7	2'-7"	1'-5"			30	30	30	30
A802	32	26'-4"	2250	STR.					8	8	8	8
		TOTAL	14,846	LBS.	UNCOATED							
		TOTAL	2,194	LBS.	EPOXY	COATED						

PIERS

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	L.B.	R.B.
P501	16	24'-11"	416	STR.				8	8
P502	352	9'-9"	3580	5	3'-8"	2'-8"		176	176
P503	24	8'-8"	217	8	2'-8"	3'-0"		12	12
P504	16	8'-11"	149	5	3'-3"	2'-8"		8	8
P505	8	5'-9"	48	5	1'-6"	3'-0"		4	4
P801	48	22'-7"	2894	STR.				24	24
P802	16	11'-4"	484	9	7'-0"	2'-10"	1'-6"	8	8
P803	24	21'-0"	1346	STR.				12	12
P804	156	19'-7"	8157	STR.				78	78
P805	156	7'-9"	3228	10	6'-8"	1'-4"		78	78
P806	340	5'-6"	4993	STR.				170	170
P807	48	22'-10"	2926	STR.				24	24
P808	48	16'-7"	2125	STR.				24	24
P1001	48	19'-2"	3959	10	17'-8"	1'-10"		24	24
P1002	24	22'-2"	2289	STR.				12	12
					PITCH	TURNS	CORE DIA.		
SP401	12	15'-9"	3383	11	4½"	51	32"	6	6
		TOTAL	40,194	LBS.	UNCOATED				



TYPE 13

SUPERSTRUCTURE

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	L.B.	R.B.
ES501	616	5'-3"	3373	1				308	308
ES502	556	2'-8"	1546	12				278	278
ES503	556	2'-4"	1353	5	0'-11"	0'-9"		278	278
ES504	64	30'-0"	2003	STR.				32	32
ES505	16	24'-1"	402	STR.				8	8
ES506	64	13'-6"	901	STR.				32	32
ES507	128	6'-7"	879	STR.				64	64
ES508	32	13'-5"	448	STR.				16	16
ES509	64	25'-3"	1685	STR.				32	32
ES401	16	25'-4"	271	STR.				8	8
ES601	336	4'-3"	2145	13				168	168
		TOTAL	15,006	LBS.	EPOXY COATED				

•REINFORCING STEEL SAMPLES: Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.

FRANKLIN CONSULTANTS INC. 10 / 10
Consulting Engineers
COLUMBUS, OHIO

REINFORCING STEEL

UNI-33-0790L/R
US 33 OVER SR245

UNION COUNTY

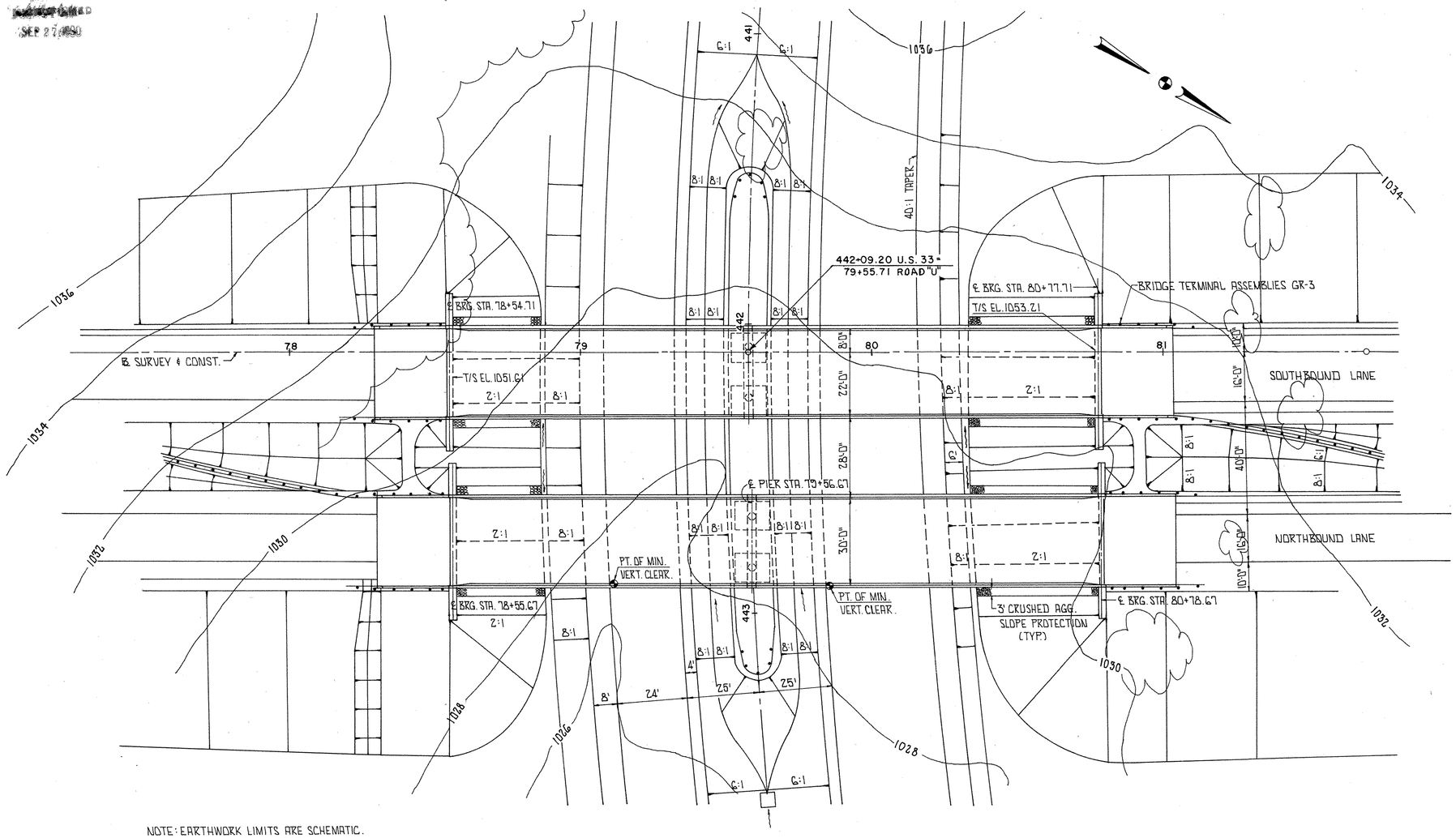
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FA	NK	RY	RMP	JJ	10/17-85	

SEP 27 1990

FHWA REGION	STATE	PROJECT	
5	OHIO		

173
225

UNION COUNTY
UNI-33-07.29

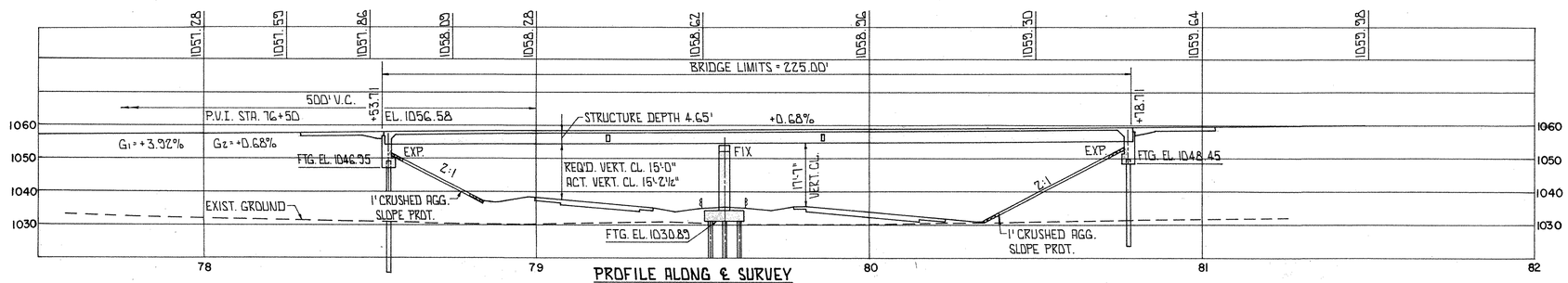


NOTE: EARTHWORK LIMITS ARE SCHEMATIC. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS-SECTIONS.

12" ϕ C.I.P. CONC. PILES, ESTIMATED AVERAGE PAY LENGTH: ABUTMENTS - 60'

14" ϕ C.I.P. CONC. PILES ESTIMATED AVERAGE PAY LENGTH: PIERS - 45'

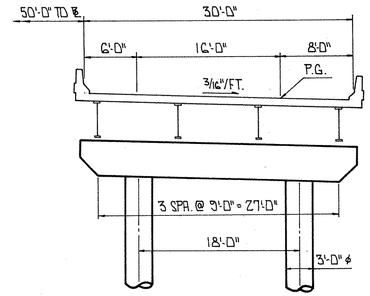
PLAN



PROFILE ALONG ℄ SURVEY

HORIZONTAL CURVE DATA U.S. 33

P.I. STA. 451+93.35
Δ = 12° 17' 39.5"
Dc = 3° 30'
R = 1637.02'
Lc = 3065.55'
Ls = 400.00'
LT = 266.88'
ST = 133.52'
Ts = 3117.98'
Es = 171.0.87'
θs = 7° 00' 00"



PIER ELEVATION
NORTH BOUND LANES

PROPOSED STRUCTURE

TYPE: CONTINUOUS COMPOSITE STEEL GIRDER BRIDGE W/ REIN. CONC. DECK AND SUBSTRUCTURE.
SPANS: 101'-0" ; 122'-0" C/C BRG. S. LANES
101'-0" ; 122'-0" C/C BRG. N. LANES
ROADWAY: 2 @ 30'-0" F/F PARAPET
LOADING: HS 20-44 (CASE II) & ALT. MIL. LOAD.
WEARING SURFACE: MONO. CONC.
SKEW: NONE
APPROACH SLAB: AS-1-81 (25' LONG)
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
ADT: 1030 -(1985) 1660 -(2005)
ADTT: 365 -(2005)

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SITE PLAN

UNI-33-0837 L/R
ROAD 'U' OVER U.S. 33
STA. S.B. 78+53.71 TO 80+78.71
N.B. 78+54.67 TO 80+79.67

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FA	MK	MK	CF	JH	4/19-85	

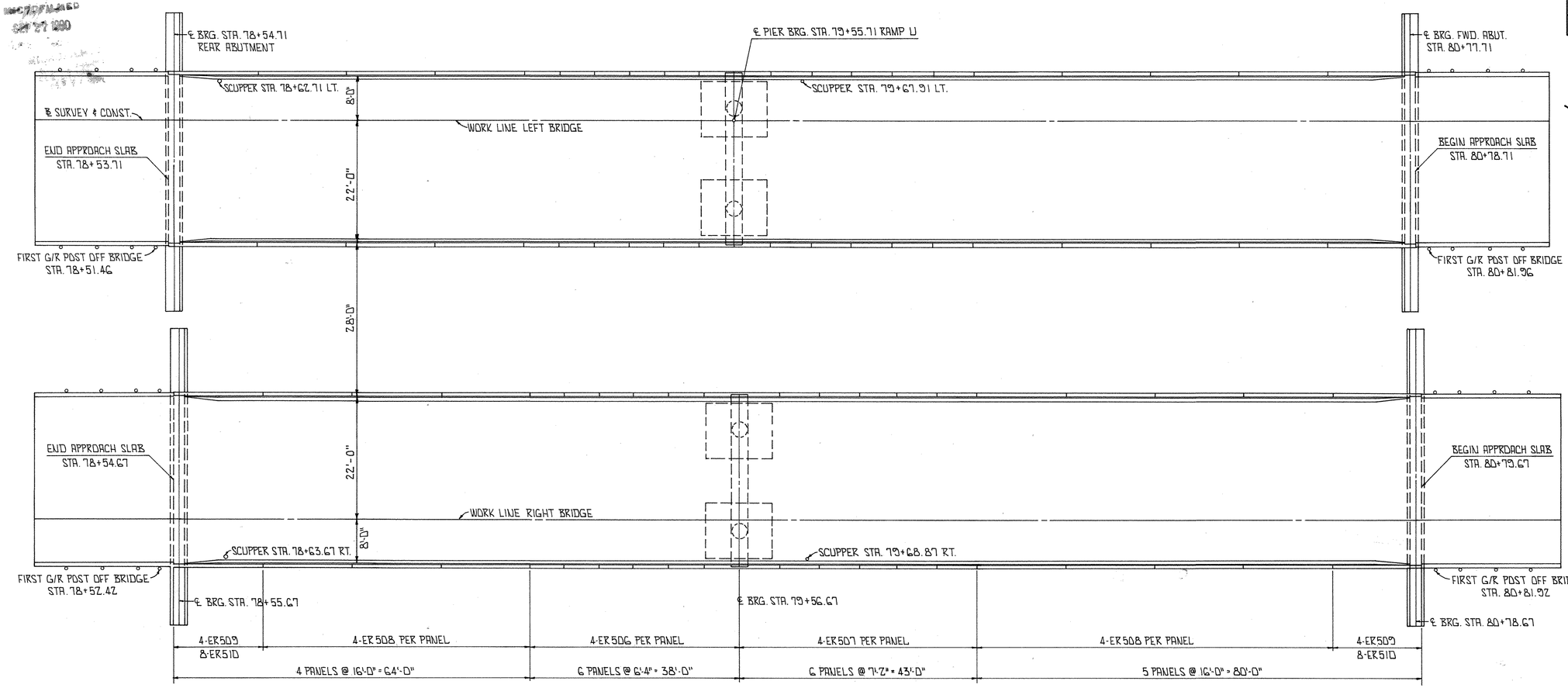
BRUNING 44-132 309845-1

RECEIVED
SEP 27 1990

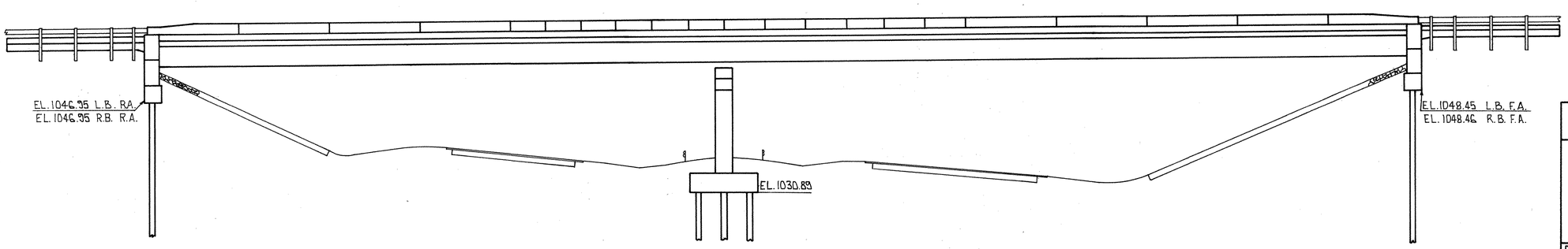
FHWA REGION	STATE	PROJECT	
5	OHIO		

174
225

UNION COUNTY
UNI-33-07.29



PLAN



ELEVATION

BRUNING 44-132 30645-1

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COLUMBUS, OHIO

GENERAL PLAN & ELEVATION

UNI-33-0 8.37 L/R
ROAD "U" OVER U.S. 33

UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CA	CA	MK	RMP	JA	10/17-85	

FHWA REGION	STATE	PROJECT		175 / 225
5	OHIO			

UNION COUNTY
UNI-33-07.29

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81	DATED	11-27-81
BR-1	DATED	5-29-79
FB-1-82	DATED	5-10-82
GR-1	DATED	1-11-85
GR-3	DATED	1-21-85
ICD-1-82	REVISED	8-1-84
SD-1-69	DATED	6-12-69

AND TO SUPPLEMENTAL SPECIFICATIONS:

824	DATED	10-8-82
836	DATED	11-12-85

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1983 AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA:

BRIDGE COMPUTATIONS ARE BASED ON SERVICE LOAD DESIGN.
DESIGN LOADING ---------- HS 20-44 CASE II AND THE ALTERNATE MILITARY LOADING.
CONCRETE CLASS S ------ UNIT STRESS 1500 P.S.I. (SUPERSTRUCTURE)
CONCRETE CLASS C ------ UNIT STRESS 1333 P.S.I. (SUBSTRUCTURE)
REINFORCING STEEL ------- ASTM A615, A616, OR A617. GRADE 60 - UNIT STRESS 24,000 P.S.I.
SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615.
STRUCTURAL STEEL ------ ASTM A588 - UNIT STRESS 27,000 P.S.I.
A36 - UNIT STRESS 20,000 P.S.I. (FOR SCUPPERS ONLY)
ABUTMENT PILING --------- ABUTMENT PILING BENDING STRESS MAY APPROACH, REACH OR EXCEED YEILD STRESS.

DECK PROTECTION METHOD: EPOXY COATED REINFORCING STEEL, TOP MAT ONLY.

MONOLITHIC WEARING SURFACE: IS ASSUMED, FOR DESIGN PURPOSES TO BE 1" THICK.

PILE DRIVING CONSTRAINTS: PRIOR TO DRIVING PILES AT THESE STRUCTURES, THE SPILL THROUGH SLOPE EMBANKMENTS SHALL BE CONSTRUCTED UP TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 200 FEET BEHIND EACH ABUTMENT AND THE EMBANKMENT WITHIN THE BRIDGE LIMITS SHALL ALSO BE CONSTRUCTED, AFTER THE EMBANKMENT IS COMPLETE WITHIN THE ABOVE REQUIRED LIMITS, THE EXCAVATION FOR THE PIER FOOTING CAN BE MADE AND THE PIER PILES CAN BE DRIVEN. THE EXCAVATION FOR THE ABUTMENT FOOTING AND THE INSTALLATION OF THE ABUTMENT PILES SHALL NOT BEGIN UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT IS COMPLETE AND THE EMBANKMENT HAS EXPERIENCED A WAITING PERIOD OF 183 DAYS. THIS WAITING PERIOD CAN BE REDUCED IF THE CONTRACTOR'S SETTLEMENT PLATFORMS PROVIDE DATA THAT CONVINCE THE DIRECTOR THAT A REDUCED WAITING PERIOD IS JUSTIFIED.

507 PREBORED HOLES (AS PER PLAN): ALL ABUTMENT PILES SHALL BE INSTALLED THROUGH 14 INCH DIA. PREBORED HOLES WHICH ARE AUGERED FROM THE FOOTING ELEVATION DOWN TO THE EXISTING GROUND SURFACE. THE VOID BETWEEN THE PILE AND THE AUGERED HOLE PERIMETER SHALL NOT BE FILLED.

PILE HAMMER: THE PILE HAMMER USED TO INSTALL THE CAST-IN-PLACE REINFORCED CONCRETE PILES SHALL HAVE A STATE'S ENERGY RATING OF NOT LESS THAN 14,500 FOOT-POUNDS. THIS REQUIREMENT DOES NOT RELIEVE THE CONTRACTOR FROM 108.05 WHICH STATES THAT THE CONTRACTOR IS TO PROVIDE SUFFICIENT EQUIPMENT FOR PROSECUTING THE REQUIRED WORK. REFER TO "ODOT'S MANUAL OF PROCEDURES FOR STRUCTURES" TO OBTAIN THE STATE'S ENERGY RATING.

PILE WALL THICKNESS: THE RESPONSIBILITY OF CHOOSING AND PROVIDING A SATISFACTORY PILE WALL THICKNESS FOR THIS PROJECT SHALL BE BORNE BY THE CONTRACTOR EXCEPT THAT THE PILE WALL THICKNESS SHALL NOT BE LESS THAN 0.200 INCHES. IF A PILE WALL THICKNESS GREATER THAN 0.200 INCHES IS NECESSARY TO RESIST THE PILE INSTALLATION DRIVING STRESSES, THE CONTRACTOR SHALL MAKE THIS DETERMINATION AND SHALL FURNISH A PILE WITH AN ACCEPTABLE WALL THICKNESS.

PILE DESIGN LOADS: THE DESIGN LOAD FOR THE ABUTMENT PILES IS 50 TONS PER PILE AND THE DESIGN LOAD FOR THE PIER PILES IS 65 TONS PER PILE.

ITEM 506 STATIC LOAD TEST: THE CONTRACTOR SHALL CONDUCT A STATIC LOAD TEST ON A 14" DIA. CAST-IN-PLACE CONC. PILE LOCATED IN OR NEAR THE PIER FOOTINGS. THE DESIGN LOAD FOR THIS TEST SHALL BE THE DESIGN LOAD OF THE PIER PILES.

UTILITY LINES: ALL EXPENSE INVOLVED IN RELOCATING AND INSTALLING THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNERS. THE CONTRACTOR AND OWNERS ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

ESTIMATED QUANTITIES

ITEM	TOTAL BOTH BR.	TOTALS LT. BR.	TOTALS RT. BR.	UNIT	DESCRIPTIONS	SUPER. LT. BR.	SUPER. RT. BR.	ABUTMENTS LT. BR.	ABUTMENTS RT. BR.	PIERS LT. BR.	PIERS RT. BR.	GENERAL LT. BR.	GENERAL RT. BR.
503	286	143	143	C.Y.	UNCLASSIFIED EXCAVATION			87	87	56	56		
505	LUMP	LUMP	LUMP	LUMP	PILE DRIVING EQUIPMENT MOBILIZATION							LUMP	LUMP
506	LUMP	LUMP		LUMP	STATIC LOAD TEST							LUMP	
507	1980	990	990	L.F.	12" CAST-IN-PLACE REINFORCED CONCRETE PILES, AS PER PLAN			990	990				
507	1130	565	565	L.F.	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, AS PER PLAN					565	565		
507	530	265	265	L.F.	PREBORED HOLES (AS PER PLAN)			265	265				
509	92,029	46,015	46,014	LB.	REINFORCING STEEL, GRADE 60	30081	30081	6758	6758	9176	9175		
511	580	290	290	C.Y.	CLASS S CONCRETE, SUPERSTRUCTURE (SEE PROPOSAL NOTE)	290	290						
511	43	21	22	C.Y.	CLASS C CONCRETE, PIER CAPS AND COLUMNS					21	22		
511	78	39	39	C.Y.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS			39	39				
511	134	67	67	C.Y.	CLASS C CONCRETE, FOOTINGS			36	36	31	31		
513	465,027	232,514	232,513	LB.	STRUCTURAL STEEL (AISC CATEGORY III) (SEE PROPOSAL NOTE)	232,514	232,513						
513	3240	1620	1620	EA.	WELDED STUD SHEAR CONNECTORS	1620	1620						
514	LUMP	LUMP	LUMP	LUMP	PARTIAL PAINTING OF A588 STEEL, SYSTEM A	LUMP	LUMP						
516	136	68	68	S.F.	1/2" PREFORMED EXPANSION JOINT FILLER	68	68						
516	226	113	113	S.F.	1" PREFORMED EXPANSION JOINT FILLER	113	113						
516	9	4	5	S.F.	2" PREFORMED EXPANSION JOINT FILLER	4	5						
516	186	93	93	L.F.	PVC WATERSTOP, AS PER PLAN	93	93						
518	78	39	39	C.Y.	POROUS BACKFILL			39	39				
518	215	107	108	L.F.	6" PERFORATED, HELICAL CORRUGATED STEEL PIPE, 707.01			107	108				
518	76	38	38	L.F.	6" NON-PERFORATED, HELICAL CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01			38	38				
518	4	2	2	EA.	SCUPPERS, INCLUDING SUPPORTS	2	2						
601	673	336	337	S.Y.	CRUSHED AGGREGATE SLOPE PROTECTION			336	337				
824	82,549	41,275	41,274	LB.	EPOXY COATED REINFORCING STEEL, GRADE 60	41,275	41,274						
SPECIAL	1196	598	598	S.Y.	SEALING OF CONCRETE SURFACES (SEE PROPOSAL NOTE)	523	523			75	75		

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COLUMBUS, OHIO

GENERAL NOTES & ESTIMATED QUANTITIES

UNI-33-0837 L/R
ROAD "U" OVER U.S. 33

UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CF	MK	MK	RMP	JF	10/17/85	

BRUNING 44-132 309645-1

SEP 27 1985

FHWA REGION	STATE	PROJECT	
5	OHIO		

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UNION COUNTY
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PLAN

SECTION C-C

SECTION D-D

LEFT BRIDGE FWD. ABUTMENT
RIGHT BRIDGE REAR ABUTMENT

SECTION A-A

LEGEND	MIN. BAR LAP
L.B. - LEFT BRIDGE	#5 = 1'-5"
R.B. - RIGHT BRIDGE	#8 = 2'-10"
F.A. - FORWARD ABUT.	
R.A. - REAR ABUT.	
T/S - TOP OF SLOPE	
EL. - ELEVATION	
N.F. - NEAR FACE	
F.F. - FAR FACE	
LB FA / RB RA - PILE NUMBERING	

FRANKLIN CONSULTANTS INC. 4 / 10
Consulting Engineers
COLUMBUS, OHIO

ABUTMENT DETAILS

UNI-33-0837 L/R
ROAD "U" OVER U.S. 33

UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CF	CF	MK	RMD	JS	10/17-85	

BRUNING 24-132 30845-1

FHWA REGION	STATE	PROJECT	
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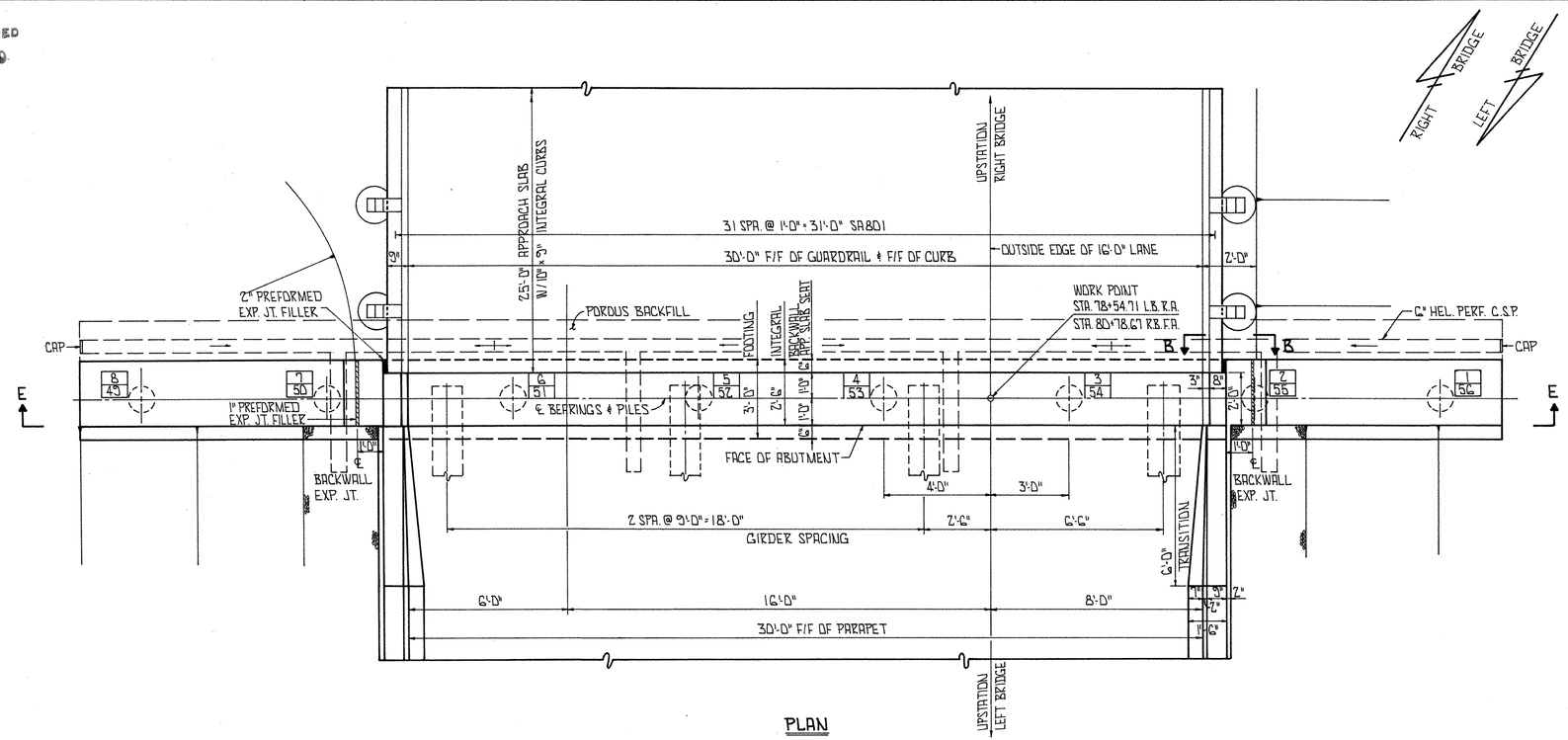
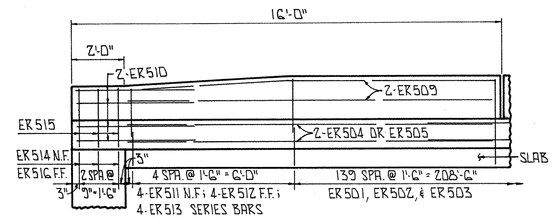
22.5

UNION COUNTY
UNI-33-07.29



PLAN

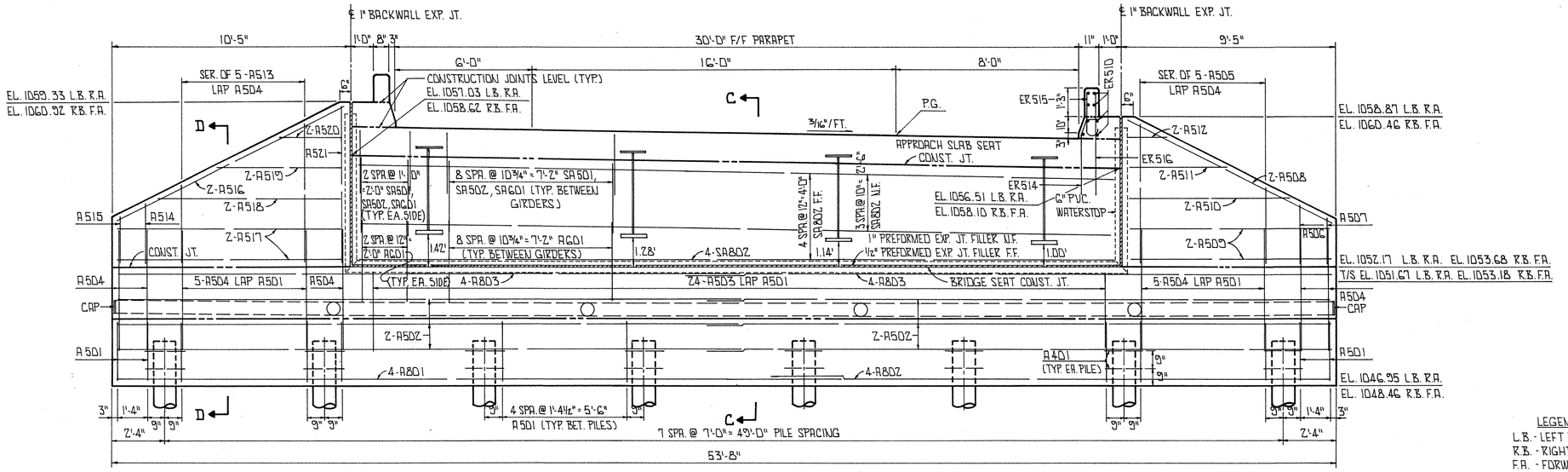
FOR PARAPET TRANSITION SECTION B-B, SEE STD. DWG. ICD-1-82 SHEET 1 OF 5.



TRANSITION SECTION OF PARAPET

HOLES FOR SPLICE BOLTS ATTACHING GUARDRAIL TO THE TERMINAL CONNECTOR AT ENDS OF PARAPETS SHALL BE SLOTTED 29/32" × 3" AND ALL BOLTS SHALL BE TIGHTENED AS SPECIFIED FOR EXPANSION JOINTS AS PER CMS 606.05 TO ALLOW FOR BRIDGE MOVEMENT.

LEFT BRIDGE REAR ABUTMENT
RIGHT BRIDGE FORWARD ABUTMENT



SECTION E-E

FOR SECTIONS C-C & D-D SEE SHEET 4/10.

MIN. BAR LAP
#5 = 1'-5"
#8 = 2'-10"

LEGEND
L.B. - LEFT BRIDGE
R.B. - RIGHT BRIDGE
F.A. - FORWARD ABUT.
R.A. - REAR ABUT.
F.F. - FAR FACE
N.F. - NEAR FACE
L.B. 2A / R.B. 1A - PILE NUMBERING

FRANKLIN CONSULTANTS INC. 5/10
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COLUMBUS, OHIO

ABUTMENT DETAILS

UNI-33-0837 L/R
ROAD "U" OVER U.S. 33

UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CF	CF	MK	RMP	JF	10/17-85	

BRUNING 44-132 30845-1

FHWA REGION	STATE	PROJECT	
5	OHIO		

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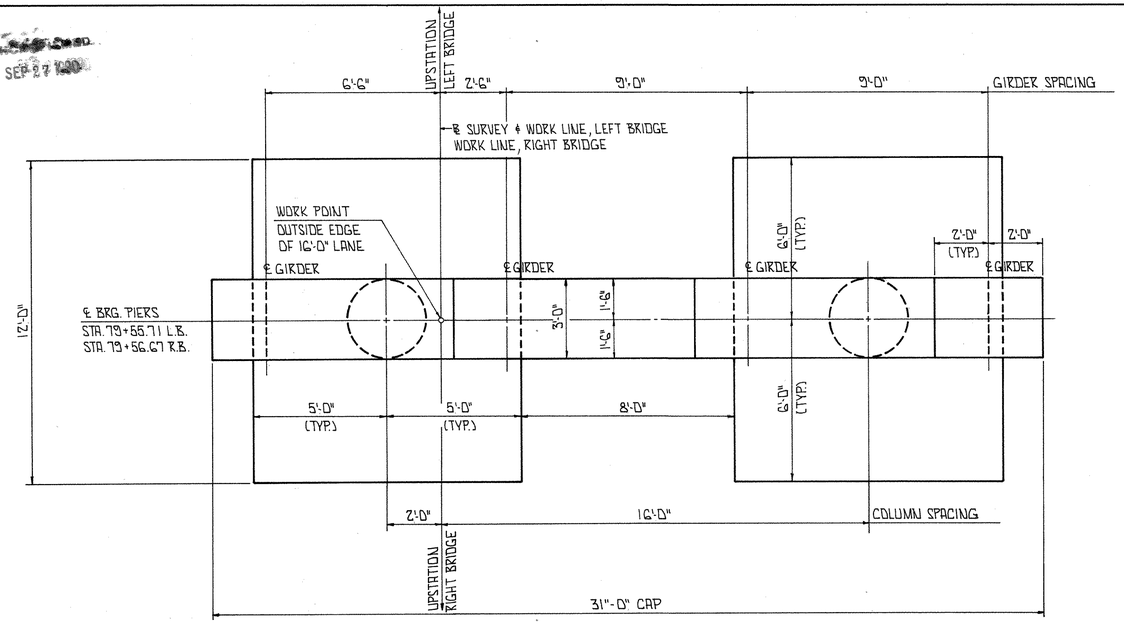
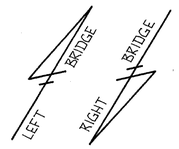
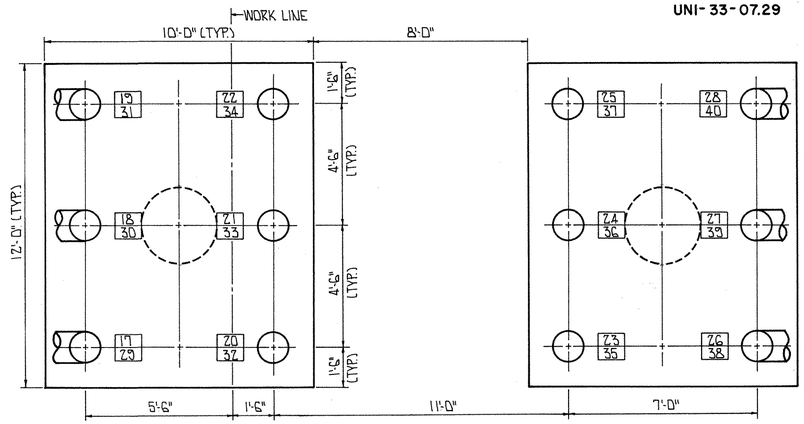
225

UNION COUNTY
UNI-33-07.29



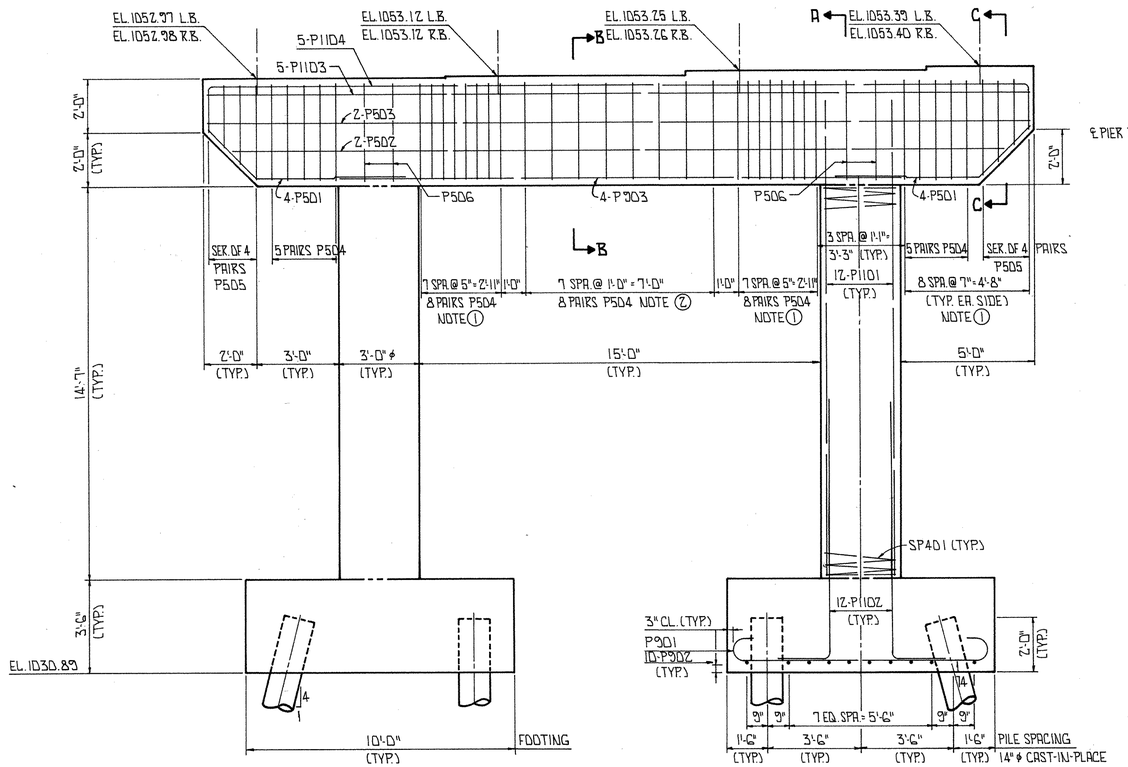
PLAN



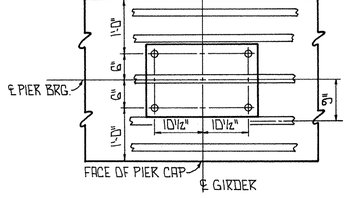


PILE NUMBERING PLAN

LEFT BRIDGE PILES ARE NUMBERED 17 THROUGH 28
RIGHT BRIDGE PILES ARE NUMBERED 29 THROUGH 40
OUTSIDE PILES ARE BATTERED



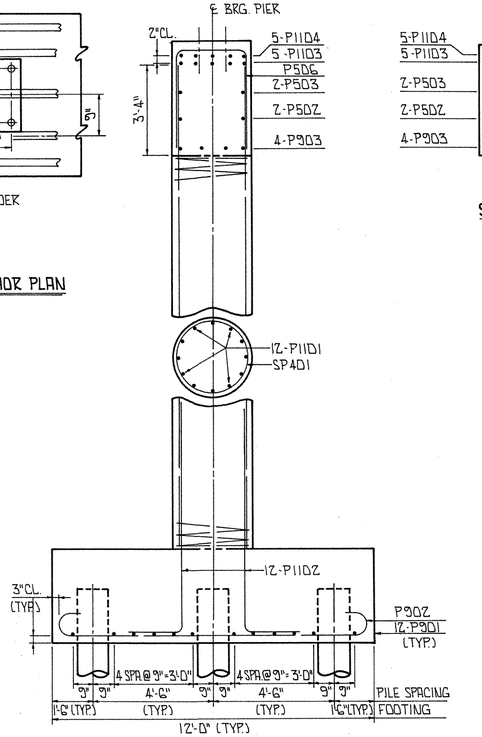
ELEVATION



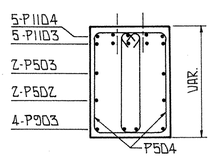
BEARING ANCHOR PLAN

LEGEND
L.B. - LEFT BRIDGE
R.B. - RIGHT BRIDGE
L.B. / R.B. - PILE NUMBERING

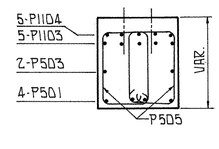
MIN. BAR LAP
#5 = 1'-5"
#11 = 7'-2"



SECTION A-A



SECTION B-B



SECTION C-C

NOTE 1 STIRRUP BARS SHALL BE PLACED SUCH THAT THE OPENING IS AT THE BOTTOM OF THE CAP.

NOTE 2 STIRRUP BARS SHALL BE PLACED SUCH THAT THE OPENING IS AT THE TOP OF THE CAP.

BRIDGE SEAT REINFORCING: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.

BEARING ANCHORS: AT THE OPTION OF THE CONTRACTOR, BEARING ANCHORS (OR FORMED HOLES), LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST IN PLACE.

PIERS SHALL BE SEALED, (USING EPOXY SEALING AGENT), ABOVE GROUND LINE, BEFORE STEEL IS ERECTED.

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PIER DETAILS

UNI-33-0837 L/R
ROAD "U" OVER U.S. 33

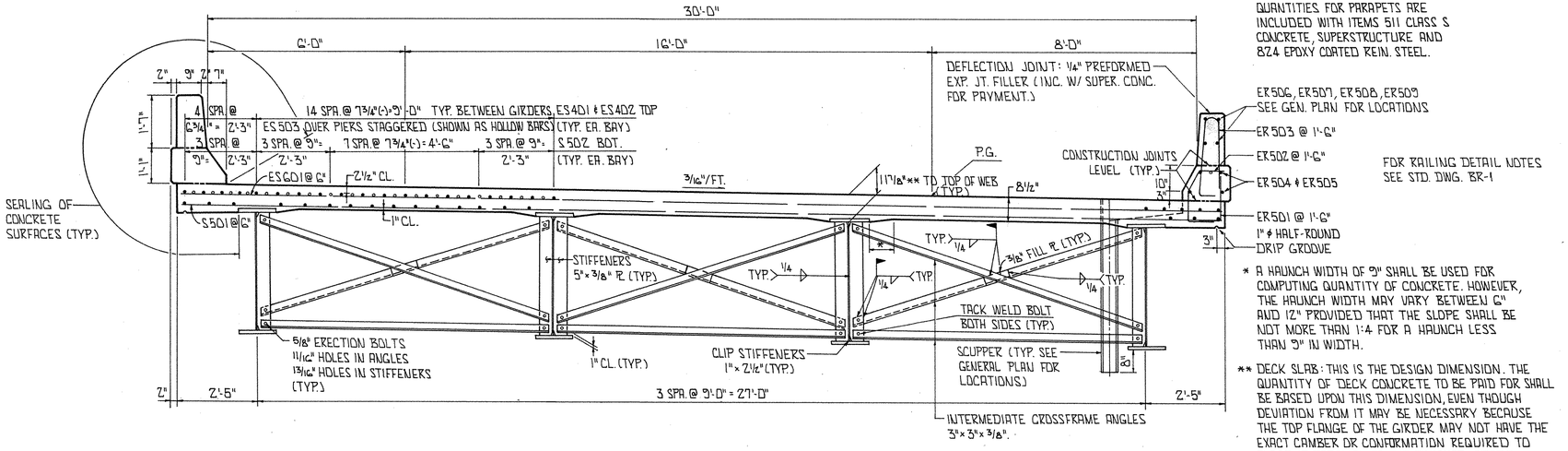
UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CA	CA	MK	RMP	JA	10/17/88	

MICROFILMED SEP 27 1990

FHWA REGION	STATE	PROJECT		179 / 225
5	OHIO			

UNION COUNTY
UNI-33-07.29



FOR RAILING DETAIL NOTES SEE STD. DWG. BR-1

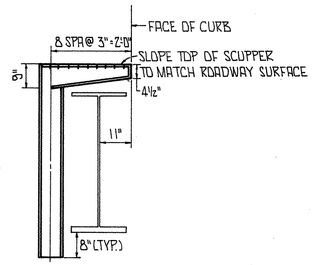
* A HAUNCH WIDTH OF 2" SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 0" AND 12" PROVIDED THAT THE SLOPE SHALL BE NOT MORE THAN 1:4 FOR A HAUNCH LESS THAN 2" IN WIDTH.

** DECK SLAB: THIS IS THE DESIGN DIMENSION. THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED UPON THIS DIMENSION, EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE GIRDER MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE. DEDUCTION SHALL BE MADE FOR VOLUME OF ENCASED STEEL PLATES AS PER 511.18.

TRANSVERSE SECTION

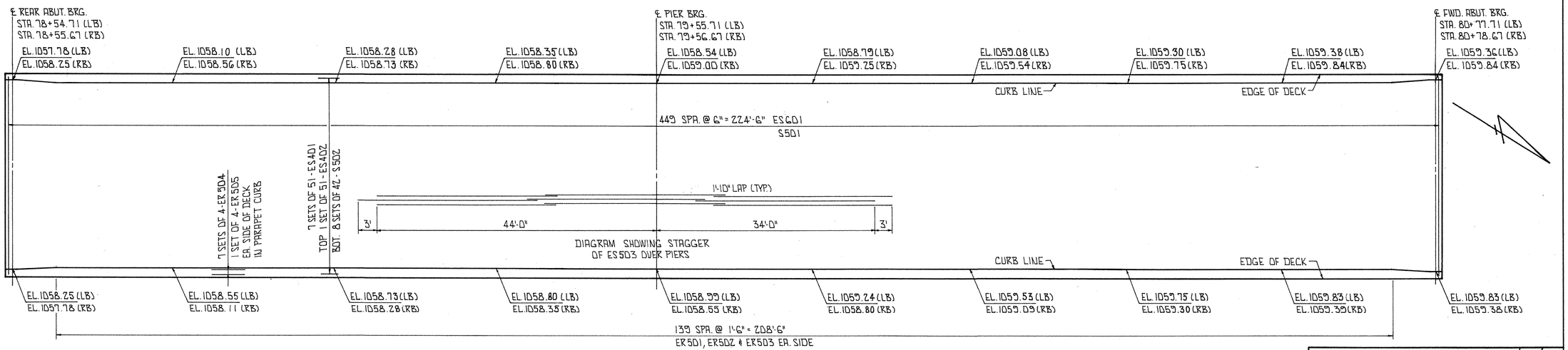
(RIGHT BRIDGE SHOWN)
(LEFT BRIDGE SIMILAR BY ROTATION)

CONCRETE & REINFORCING STEEL QUANTITIES FOR PARAPETS ARE INCLUDED WITH ITEMS 511 CLASS S CONCRETE, SUPERSTRUCTURE AND 824 EPOXY COATED REIN. STEEL.



SCUPPER DETAIL

FOR DETAILS NOT SHOWN SEE STD. DWG. SD-1-69 SHEET 3 OF 4.



SLAB REINFORCING & SCREED ELEVATIONS

SEE ABUTMENT DETAIL SHEET 5/10 FOR PARAPET TRANSITION REINF. (TYP.)

THE TOP OF CONCRETE ELEVATIONS SHOWN SHALL GOVERN THE PLACING OF FORMS OR SCREEDS PRIOR TO PLACING THE DECK CONCRETE. ALLOWANCE HAS BEEN MADE FOR THE DEFLECTION DUE TO THE WEIGHT OF CONCRETE. THE SCREEDS IN SPAN 1 ARE SHOWN AT QUARTER POINTS AND THE SCREEDS IN SPAN 2 ARE SHOWN AT FIFTH POINTS.

LEGEND
L.B. = LEFT BRIDGE
R.B. = RIGHT BRIDGE

MIN. LAP
#4 - 1'-10"
#5 - 2'-5"
#6 - 2'-10"

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COLUMBUS, OHIO

SUPERSTRUCTURE DETAILS

UNI-33-0837 L/R
ROAD "U" OVER U.S. 33

UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CF	MK	MK	RMP	JH	10/17-85	

BRUNING 44-132-30945-1

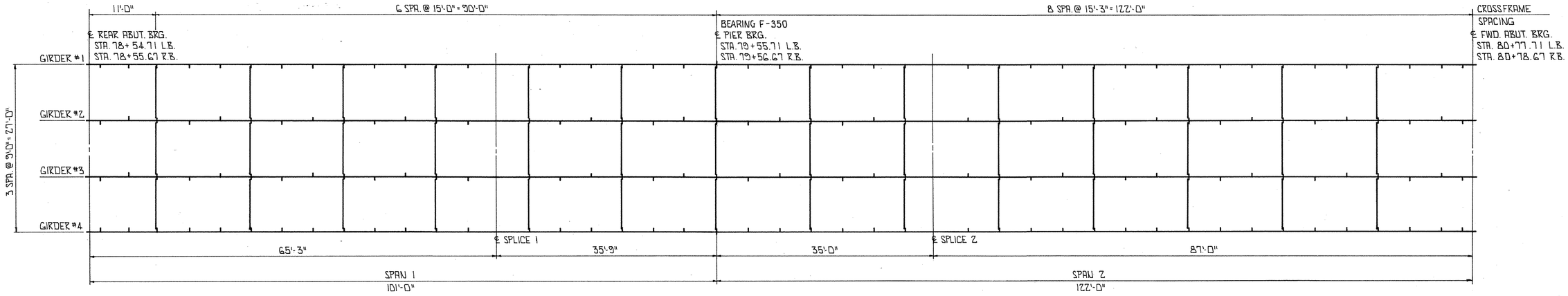
FHWA REGION	STATE	PROJECT	
5	OHIO		

180
225

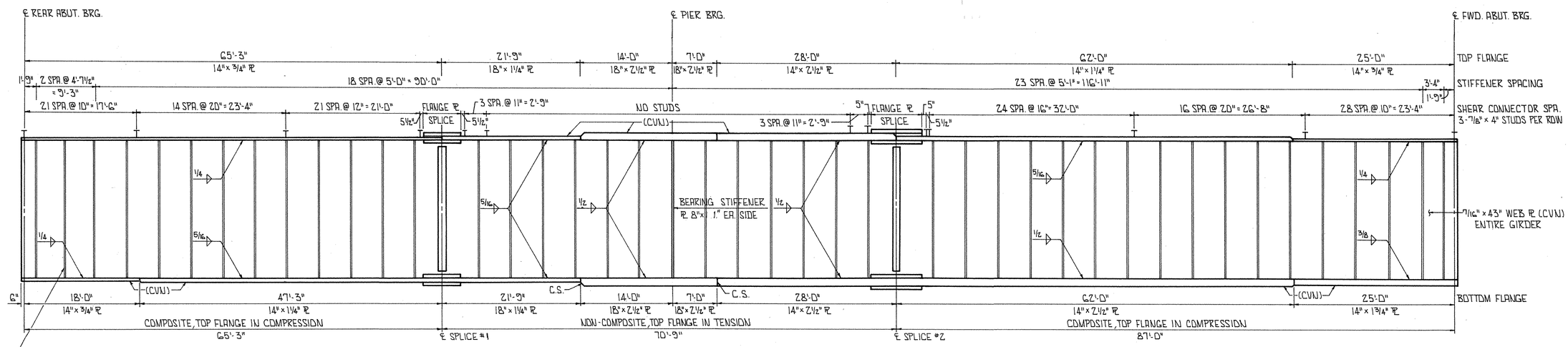
UNION COUNTY
UNI- 33-07.29

AT SPLICE LOCATIONS ELIMINATE INTERFERING STIFFENERS SINCE THE SPLICES PROVIDE ADEQUATE STIFFENING.

USE SINGLE INTERMEDIATE STIFFENERS THROUGHOUT BRIDGE EXCEPT AT CROSS-FRAME LOCATIONS.



FRAMING PLAN



GIRDER ELEVATION

WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL NOT BE CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.

PARTIAL PAINTING OF A588 STEEL: AN 8 FOOT LENGTH OF THE ENDS OF GIRDERS ADJACENT TO ABUTMENTS AND OTHER A588 STEEL WITHIN THESE LIMITS SHALL BE PAINTED. PAINT SHALL BE 514, SYSTEM A. THE PRIME COAT SHALL BE 708.17. THE TOP COAT SHALL BE 708.18 EXCEPT THAT THE COLOR SHALL CLOSELY APPROACH FEDERAL STANDARD NO. 595A-20045 OR 20059. (COLOR OF WEATHERING STEEL)

THE REMAINDER OF THE A588 STEEL IS TO BE LEFT UNPAINTED. SEE CMS 513.221 FOR CLEANING REQUIREMENTS.

ALL STRUCTURAL STEEL TO BE A588

C.S. INDICATES BUTT WELD SUBJECT TO COMPRESSIVE STRESSES ONLY.

WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01 OF CMS.

STIFFENER TO FLANGE WELD SIZE SHALL BE THE SAME AS THE WEB TO FLANGE WELDS, DUE TO THICKER PART GOVERNS IN WELDING.

FRANKLIN CONSULTANTS INC. 8 / 10
Consulting Engineers
COLUMBUS, OHIO

SUPERSTRUCTURE DETAILS

UNI-33-0837 L/R
ROAD "U" OVER U.S. 33

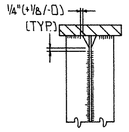
UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CA	MK	MK	RMP	JA	10/17-85	

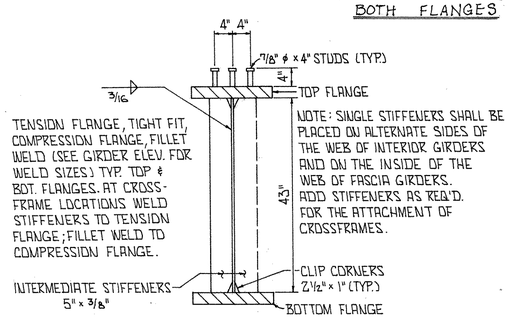
FHWA REGION	STATE	PROJECT	
5	OHIO		

181
225

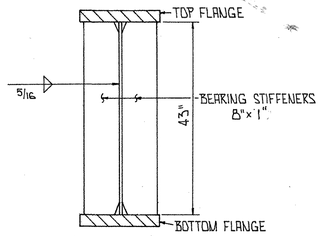
UNION COUNTY
UNI-33-07.29



TYPICAL CROSSFRAME CONNECTION PLATES BOTH FLANGES



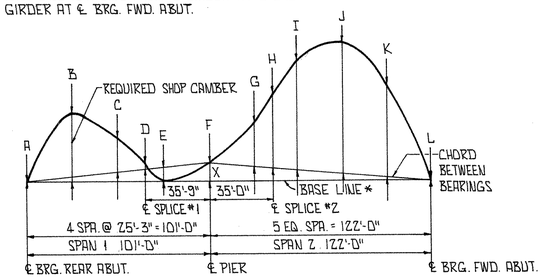
TYPICAL GIRDER SECTION AT INTERMEDIATE STIFFENERS



TYPICAL GIRDER SECTION AT PIERS

VERTICAL OFFSET DIMENSIONS	LEFT BRIDGE	X = 7/16"
	RIGHT BRIDGE	X = 1/2"

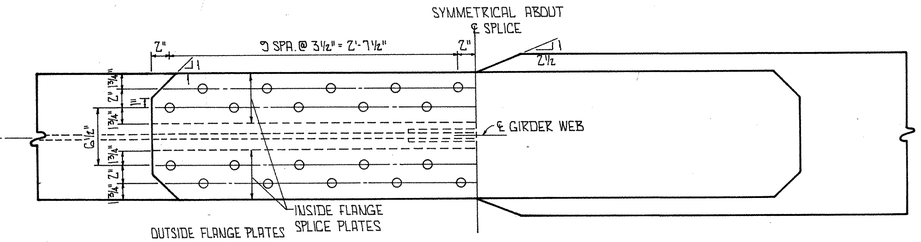
*BASE LINE IS A LINE FROM ℄ GIRDER AT ℄ BRG. REAR ABUT. TO ℄ GIRDER AT ℄ BRG. FWD. ABUT.



LAYOUT DIAGRAM

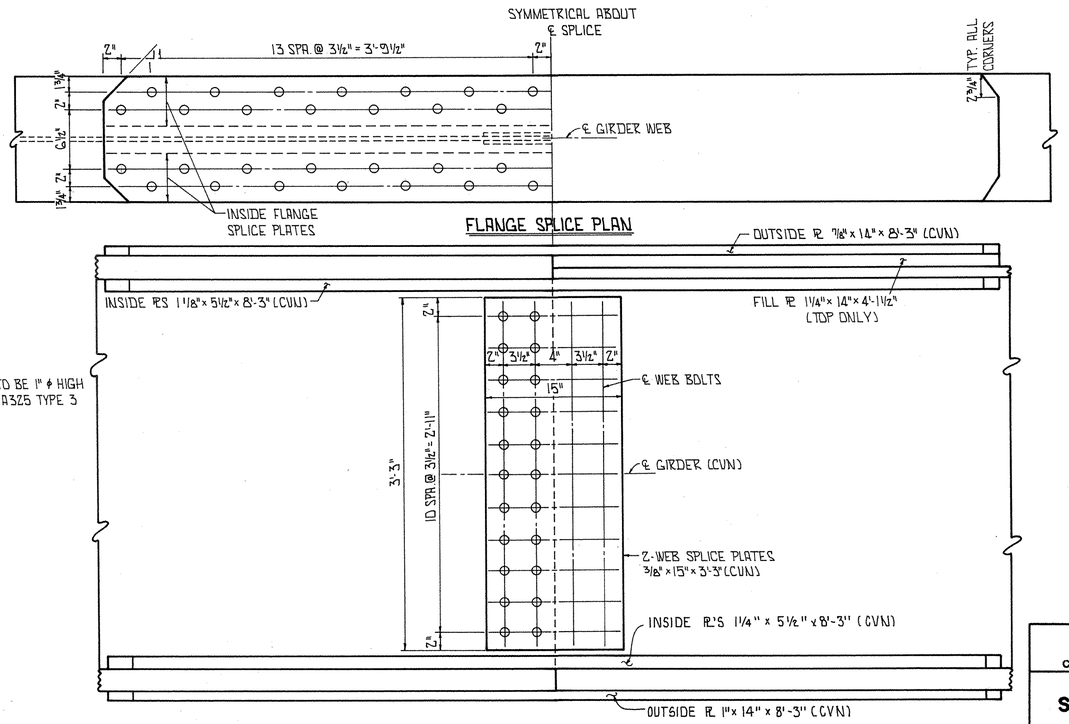
DEFLECTION AND CAMBER (IN.)

POINT	SPAN 1 R. ABUT A	1/4 B	1/2 C	SPLICE 1 D	3/4 E	PIER F	SPAN 2 1/5 G	SPLICE 2 H	2/5 I	3/5 J	4/5 K	F. ABUT. L
DEFLECTION DUE TO WEIGHT OF STEEL	0	3/16	1/8	0	-1/16	0	3/16	5/16	1/2	5/8	7/16	0
DEFLECTION DUE TO WEIGHT OF CONCRETE	0	3/4	1/2	0	-3/8	0	3/4	15/16	2	2 7/16	1 1/16	0
DEFLECTION DUE TO REMAINING DEAD LOAD	0	5/16	5/16	3/16	1/16	0	1/4	3/8	1/2	9/16	3/8	0
ADJUSTMENT REQ'D. FOR VERTICAL CURVE	0	1/2	0	0	0	0	0	0	0	0	0	0
REQUIRED SHOP CAMBER	0	1 3/4	1 5/16	3/16	-3/8	0	1 3/16	2	3	3 5/8	2 1/2	0



WEB SPLICE ELEVATION SPLICE #1

ALL FASTENERS TO BE 1" ϕ HIGH STRENGTH BOLTS, A325 TYPE 3



WEB SPLICE ELEVATION SPLICE #2

FRANKLIN CONSULTANTS INC. 9/10
Consulting Engineers
COLUMBUS, OHIO

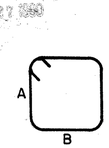
SUPERSTRUCTURE DETAILS

UNI-33-0837 L/R
ROAD "U" OVER U.S. 33

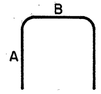
UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CF	MK	MK	RMP	CF	10/17-85	

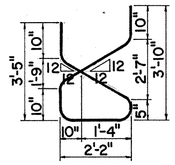
SEP 27 1985



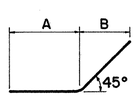
TYPE 1



TYPE 2



TYPE 3



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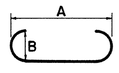
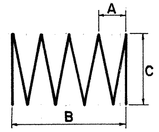


TYPE 5

TYPE 6



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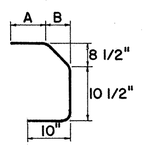
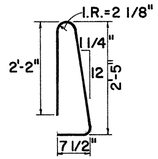


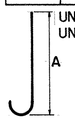
TYPE 8



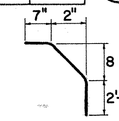
TYPE 9

FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33- 07.29



TYPE 10



TYPE 11

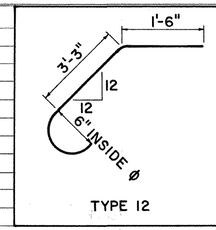
182
225

ABUTMENTS

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	LB REAR D	RB REAR E	LB FWD.	RB FWD.
A401	64	8'-10"	378	1	1'-9"	2'-4¾"		16	16	16	16
A501	156	10'-9"	1749	1	2'-7"	2'-6"		39	39	39	39
A502	48	28'-0"	1402	STR.				12	12	12	12
A503	96	8'-10"	884	2	3'-6"	2'-1"		24	24	24	24
A504	60	12'-8"	793	2	5'-5"	2'-1"		15	15	15	15
A505	4 SERIES	9'-3" TO 14'-7"	249	2	3'-8" TO 6'-4"*	2'-2"	*8" INC.	1 SER.	1 SER.	1 SER.	1 SER.
	OF 5							OF 5	OF 5	OF 5	OF 5
A506	4	7'-7"	32	2	2'-10"	2'-2"		1	1	1	1
A507	4	6'-1"	25	2	2'-1"	2'-2"		1	1	1	1
A508	8	9'-10"	82	STR.				2	2	2	2
A509	16	8'-10"	147	↕				4	4	4	4
A510	8	7'-3"	60					2	2	2	2
A511	8	4'-6"	38					2	2	2	2
A512	8	1'-10"	15	STR.				2	2	2	2
A513	4 SERIES	13'-9" TO 8'-5"	231	2	5'-11" TO 3'-3"*	2'-2"	*8" INC.	1 SER.	1 SER.	1 SER.	1 SER.
	OF 5							OF 5	OF 5	OF 5	OF 5
A514	4	6'-11"	29	2	2'-6"	2'-2"		1	1	1	1
A515	4	5'-11"	25	2	2'-0"	2'-2"		1	1	1	1
A516	8	11'-2"	93	STR.				2	2	2	2
A517	16	9'-10"	164	↕				4	4	4	4
A518	8	8'-0"	67					2	2	2	2
A519	8	5'-3"	44					2	2	2	2
A520	8	2'-6"	21	STR.				2	2	2	2
A521	4	15'-3"	64	2	6'-8"	2'-2"		1	1	1	1
A601	132	10'-9"	2131	3				33	33	33	33
A801	16	31'-6"	1346	STR.				4	4	4	4
A802	16	24'-6"	1047	↕				4	4	4	4
A803	32	28'-1"	2399	STR.				8	8	8	8
		TOTAL	13,516	LBS.							

PIERS

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	LB D	RB E
					PITCH	# OF TURNS	CORE ø		
SP401	4	14'-7"	1110	7	4½"	42	32"	2	2
P501	16	7'-11"	132	4	5'-5"	1'-10"		8	8
P502	4	28'-8"	120	STR.				2	2
P503	4	30'-8"	128	STR.				2	2
P504	136	11'-3"	1596	1	1'-8"	3'-8"		68	68
P505	8 SERIES	7'-5" TO 10'-11"	306	1	1'-8"	1'-9" TO 3'-6"*		4 SER.	4 SER.
	OF 4							OF 4	OF 4
P506	8	8'-9"	73	2	3'-8"	2'-8"		4	4
P901	48	12'-0"	1958	5	9'-6"	9½"		24	24
P902	40	14'-0"	1904	5	11'-6"	9½"		20	20
P903	8	21'-0"	571	STR.				4	4
P1101	48	17'-9"	4527	STR.				24	24
P1102	48	9'-10"	2508	6	8'-2"	2'-0"		24	24
P1103	10	30'-8"	1629	STR.				5	5
P1104	10	33'-8"	1789	2	1'-10"	30'-8"		5	5
		TOTAL	18,351	LBS.					



TYPE 12

SUPERSTRUCTURE

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	LB D	RB E
ES401	714	30'-0"	14,309	STR.				357	357
ES402	102	27'-6"	1874	↕				51	51
SS01	900	31'-6"	29,569	↕				450	450
SS02	672	30'-3"	21,202	STR.				336	336
ES503	312	28'-3"	9193	STR.				156	156
SA501	132	9'-7"	1319	2	3'-10"	2'-2"		66	66
SA502	132	3'-2"	436	6	1'-6"	1'-9"		66	66
ER501	560	2'-4"	1363	6	1'-7"	10½"		280	280
ER502	560	3'-1"	1801	8	9"	6"		280	280
ER503	560	5'-3"	3066	9				280	280
ER504	112	30'-0"	3504	STR.*			*BEND IN	56	56
ER505	16	27'-11"	466	↕			FIELD	8	8
ER506	96	5'-10"	584					48	48
ER507	96	6'-8"	668					48	48
ER508	112	15'-6"	1811					56	56
ER509	32	13'-6"	451	↓ *			*BEND IN	16	16
ER510	64	4'-4"	289	STR.			FIELD	32	32
ER511	8 SERIES	2'-8" TO 2'-11"	93	10	2'-1" TO 2'-4"*		*1" INC.	4 SER.	4 SER.
	OF 4							OF 4	OF 4
ER512	8 SERIES	3'-9" TO 4'-0"	129	6	3'-0" TO 3'-3"*	10½"	*1" INC.	4 SER.	4 SER.
	OF 4							OF 4	OF 4
ER513	8 SERIES	2'-9" TO 2'-10"	94	8	7"	2" TO 5"*	*1" INC.	4 SER.	4 SER.
	OF 4							OF 4	OF 4
ER514	24	3'-7"	90	11				12	12
ER515	24	2'-8"	67	10	2'-1"			12	12
ER516	24	4'-7"	115	STR.				12	12
ES601	900	31'-6"	42,582	STR.				450	450
SA601	132	7'-5"	1470	2	3'-0"	1'-8"		66	66
SA801	128	5'-8"	1937	12				64	64
SA802	48	33'-0"	4229	STR.				24	24
		TOTAL	60,162	LBS.	UNCOATED				
		TOTAL	82,549	LBS.	EPOXY COATED				

REINFORCING STEEL SAMPLES: Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.

FRANKLIN CONSULTANTS INC. 10 / 10
Consulting Engineers
COLUMBUS, OHIO

REINFORCING STEEL

UNI-33-0837 L/R
ROAD "U" OVER U.S.33

UNION COUNTY

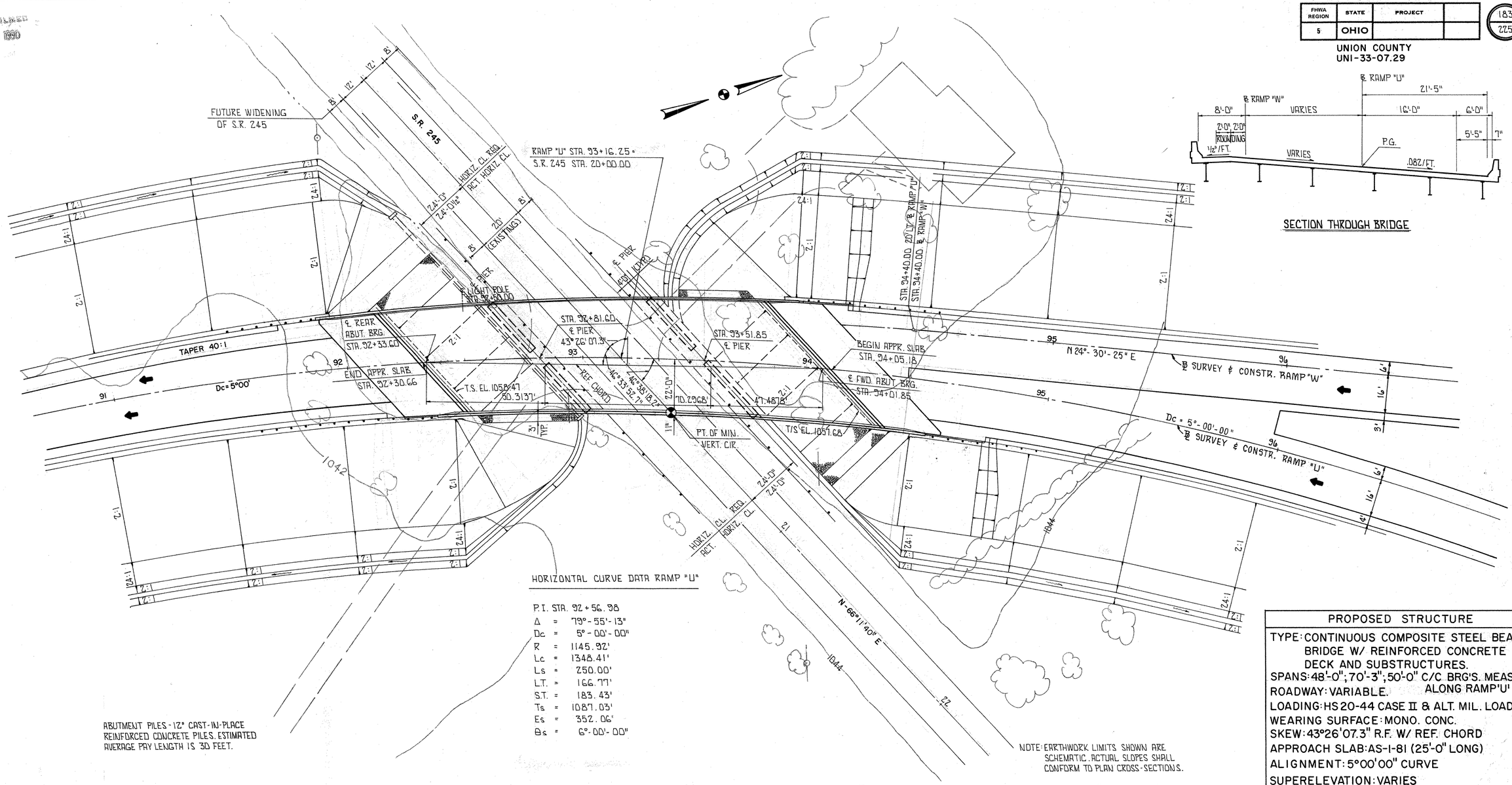
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CF	MK	MK	RMP	JF	11/17/85	

BRIINING 44-132 30845-1

FHWA REGION	STATE	PROJECT	
5	OHIO		

183
225

UNION COUNTY
UNI-33-07.29



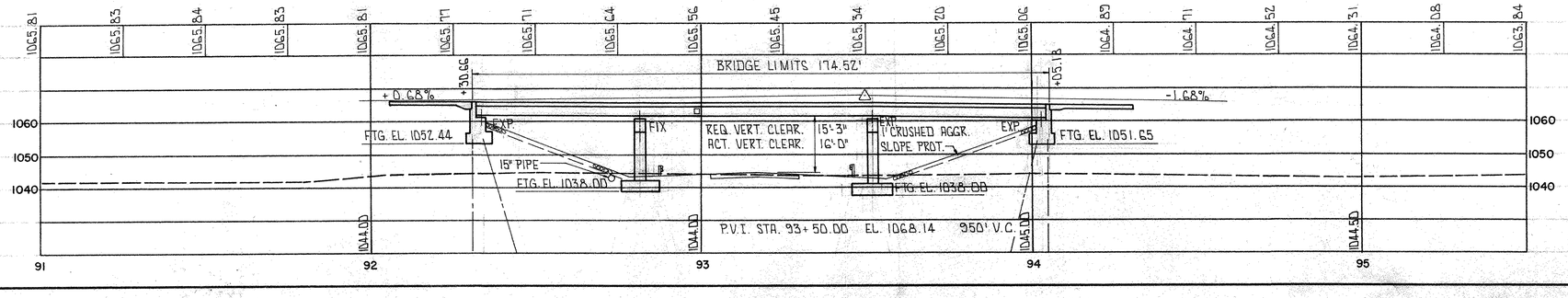
SECTION THROUGH BRIDGE

HORIZONTAL CURVE DATA RAMP "U"

P.I. STA. 92+56.98
Δ = 79°-55'-13"
Dc = 5°-00'-00"
R = 1145.92'
Lc = 1348.41'
Ls = 250.00'
L.T. = 166.77'
S.T. = 183.43'
Ts = 1087.03'
Es = 352.06'
Θs = 6°-00'-00"

ABUTMENT PILES - 12" CAST-IN-PLACE REINFORCED CONCRETE PILES. ESTIMATED AVERAGE PAY LENGTH IS 30 FEET.

NOTE: EARTHWORK LIMITS SHOWN ARE SCHEMATIC. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS-SECTIONS.



PROPOSED STRUCTURE

TYPE: CONTINUOUS COMPOSITE STEEL BEAM BRIDGE W/ REINFORCED CONCRETE DECK AND SUBSTRUCTURES.
SPANS: 48'-0"; 70'-3"; 50'-0" C/C BRG'S. MEAS. ALONG RAMP 'U' ℄
ROADWAY: VARIABLE.
LOADING: HS 20-44 CASE II & ALT. MIL. LOAD.
WEARING SURFACE: MONO. CONC.
SKEW: 43°26'07.3" R.F. W/ REF. CHORD
APPROACH SLAB: AS-1-81 (25'-0" LONG)
ALIGNMENT: 5°00'00" CURVE
SUPERELEVATION: VARIES
ADT: 1030-(1985) 1660-(2005)
ADTT: 365-(2005)

FRANKLIN CONSULTANTS INC. 1 / 14
Consulting Engineers
COLUMBUS, OHIO

SITE PLAN

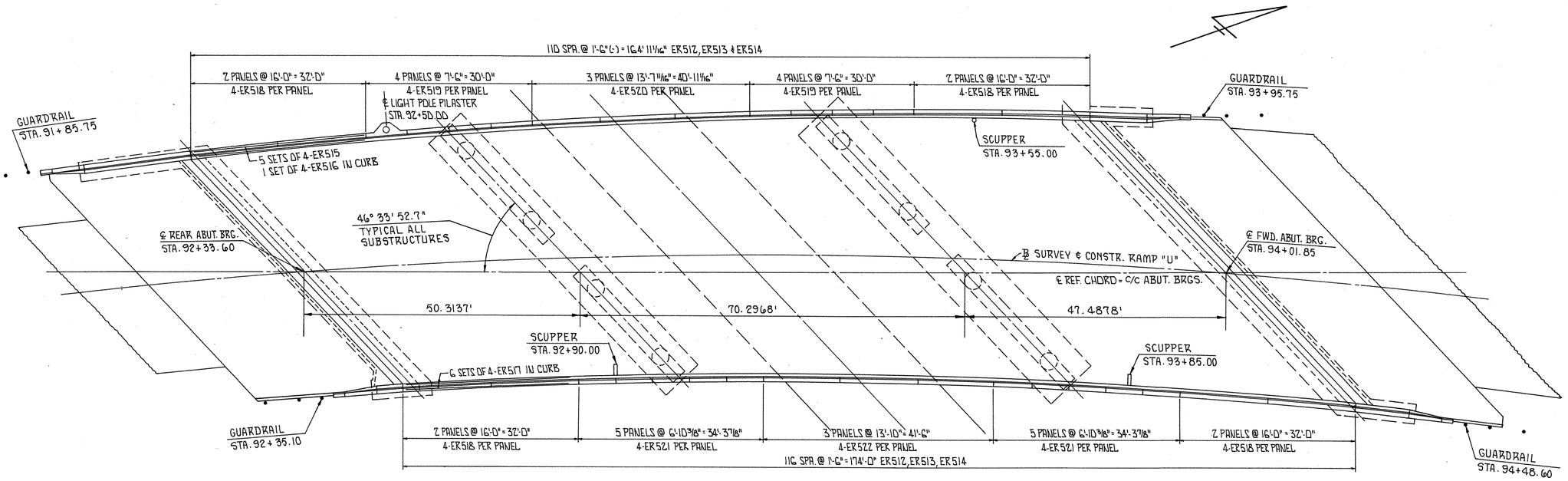
BRIDGE NO. UNI-33-0862
ROAD 'U' OVER S.R. 245
STA. 92+30.66 TO 94+05.18

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
		FA	MK	CF	JF 9/19/85

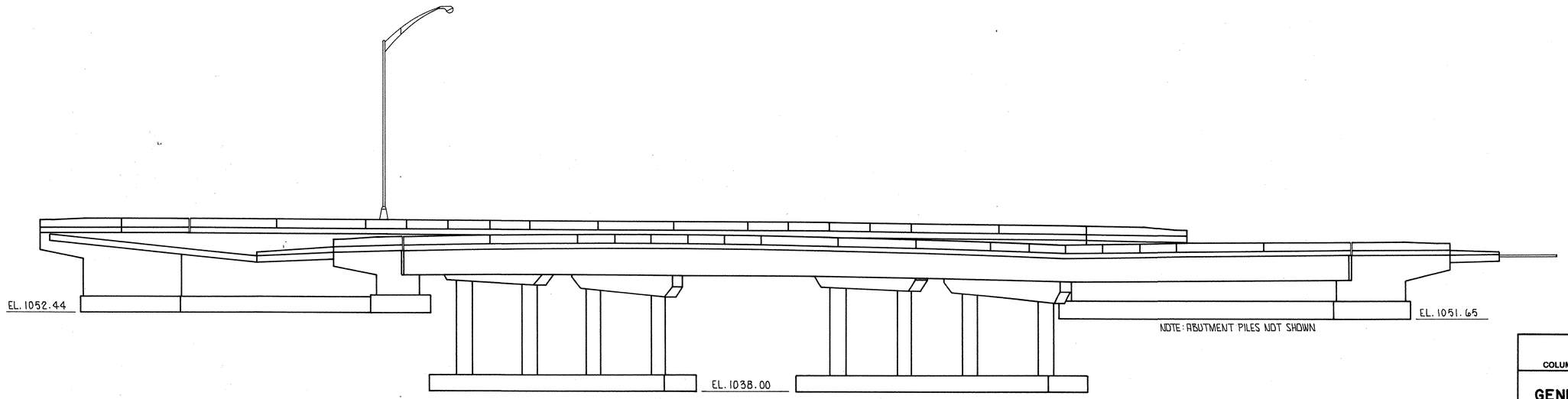
FHWA REGION	STATE	PROJECT	
5	OHIO		

184
225

UNION COUNTY
UNI-33-07.29



PLAN



ELEVATION

BRUNING 44-132-20845-1

FRANKLIN CONSULTANTS INC. 12/14
Consulting Engineers
COLUMBUS, OHIO

GENERAL PLAN & ELEVATION

UNI-33-0862
ROAD "U" OVER SR 245

UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CB	CB	MK	RMP	JF	12/5-85	

FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-07.29

185
225

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81 ____ DATED 11-27-81
BR-1 ____ DATED 5-29-79
FB-1-82 ____ DATED 5-10-82
GR-1 ____ DATED 1-11-85
GR-3 ____ DATED 1-21-85
RB-1-55 ____ REVISED 2-2-59
SD-1-69 ____ DATED 6-12-69

AND TO SUPPLEMENTAL SPECIFICATIONS:

824 ____ DATED 10-8-82
836 ____ DATED 11-12-85

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1983 AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA:

BRIDGE COMPUTATIONS ARE BASED ON SERVICE LOAD DESIGN.
DESIGN LOADING ____ HS 20-44 CASE III AND THE ALTERNATE MILITARY LOADING.
CONCRETE CLASS S ____ UNIT STRESS 1500 P.S.I. (SUPERSTRUCTURE)
CONCRETE CLASS C ____ UNIT STRESS 1333 P.S.I. (SUBSTRUCTURE)
REINFORCING STEEL ____ ASTM A615, A616, OR A617, GRADE 60 UNIT STRESS 24,000 P.S.I.
SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615
STRUCTURAL STEEL ____ ASTM A588 UNIT STRESS 27,000 P.S.I.
ASTM A36 UNIT STRESS 20,000 P.S.I. (FOR SCUPPERS ONLY)

DECK PROTECTION METHOD: EPOXY COATED REINFORCING STEEL, TOP MAT ONLY.

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

PILE DRIVING CONSTRAINTS: PRIOR TO DRIVING PILES AT EACH ABUTMENT, THE SPILL-THRU SLOPE EMBANKMENTS SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 200 FEET BACK OF THE ABUTMENTS. AFTER THE EMBANKMENT IS COMPLETED WITHIN THE ABOVE REQUIRED LIMITS, THE EXCAVATION FOR THE ABUTMENT FOOTINGS AND THE PIER FOOTINGS MAY BE MADE AND PILES CAN BE DRIVEN.

PILE DESIGN LOADS: THE DESIGN LOAD FOR THE ABUTMENT PILES IS 35 TONS PER PILE.

PIER FOOTING CONSTRUCTION: WHEN THE REQUIRED APPROACH EMBANKMENT IS COMPLETE THE PIER FOOTING EXCAVATION CAN BE MADE. AFTER EXCAVATING FOR THE CONSTRUCTION OF THE PIER FOOTINGS AND PRIOR TO PLACING THE CONCRETE FOR THE PIER FOOTINGS, THE EXISTING SILTY CLAY LOCATED BELOW THE PROPOSED PIER FOOTINGS SHOULD BE REMOVED AND REPLACED WITH A COMPACTED 310 SUBBASE GRANULAR MATERIAL. THE REMOVAL LIMITS SHOULD BE ONE (1) FOOT BELOW THE BOTTOM OF THE PIER FOOTINGS AND ONE (1) FOOT OUTSIDE THE PROPOSED FOOTING PLAN DIMENSIONS. THE 310 SUBBASE MATERIAL SHALL BE COMPACTED IN TWO SIX INCH LIFTS WITH A VIBRATORY ROLLER. THE MINIMUM ACCEPTABLE CAPABILITIES FOR THE VIBRATORY ROLLER SHALL BE SIMILAR TO THE COMPACTIVE EFFORT PRODUCED BY A SINGLE DRUM ROLLER WEIGHING 2000 POUNDS AND HAVING A 30 INCH WIDTH.

FOUNDATION BEARING PRESSURE: PIER FOOTING, AS DESIGNED, PRODUCE A MAXIMUM BEARING PRESSURE OF 2.5 TONS PER SQ. FT..

507 PREBORED HOLES (AS PER PLAN): ALL ABUTMENT PILES SHALL BE INSTALLED THROUGH 14 INCH DIAMETER PREBORED HOLES WHICH ARE AUGERED FROM THE FOOTING ELEVATION DOWN TO THE EXISTING GROUND SURFACE. THE VOID BETWEEN THE PILE AND THE AUGERED HOLE PERIMETER SHALL NOT BE FILLED.

MAINTENANCE OF TRAFFIC: TWO LANES OF TRAFFIC WITH A MINIMUM HORIZONTAL WIDTH OF 26'-0" AND A MINIMUM VERTICAL CLEARANCE OF 13'-8" SHALL MAINTAINED ON S.R. 245 AT ALL TIMES.

UTILITY LINES: ALL EXPENSE INVOLVED IN RELOCATING AND INSTALLING THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNERS. THE CONTRACTOR AND OWNERS ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

SEALING OF CONCRETE SURFACES INCLUDE ALL PIER SURFACES, ABUTMENT CURBS, PARAPETS, BEAM SEATS AND FRONT OF ABUTMENT BETWEEN BEAM SEAT AND TOP OF EMBANKMENT, SUPERSTRUCTURE CURBS, PARAPETS AND UNDERSIDE OF BRIDGE DECK AS SHOWN ON SHEET 9 OF 14. ALL SUBSTRUCTURES SHALL BE TREATED BEFORE ERECTION OF STRUCTURAL STEEL TO PREVENT RUST STAINING OF CONCRETE.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTIONS	SUPER	ABUT.	PIERS	GEN'L
310	64	C.Y.	SUBBASE, TYPE II, AS PER PLAN			64	
503	763	C.Y.	UNCLASSIFIED EXCAVATION		312	451	
505	LUMP	LUMP	PILE DRIVING EQUIPMENT MOBILIZATION		LUMP		
507	1470	L.F.	12" CAST-IN-PLACE REINFORCED CONCRETE PILES (AS PER PLAN)		1470		
507	1372	L.F.	PREBORED HOLES (AS PER PLAN)		1372		
509	85,162	LB.	REINFORCING STEEL, GRADE 60	28982	20643	35537	
511	253	C.Y.	CLASS S CONCRETE, SUPERSTRUCTURE (SEE PROPOSAL NOTE)	253			
511	81	C.Y.	CLASS C CONCRETE, PIER CAPS AND COLUMNS			81	
511	174	C.Y.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS		174		
511	272	C.Y.	CLASS C CONCRETE, FOOTINGS		113	159	
513	183,705	LB.	STRUCTURAL STEEL (AISC CATEGORY I) (SEE PROPOSAL NOTE)	183705			
513	3,045	EA.	WELDED STUD SHEAR CONNECTORS	3045			
514	LUMP	LUMP	PARTIAL PAINTING OF A588 STEEL, SYSTEM A	LUMP			
516	133	L.F.	STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEALS	133			
518	88	C.Y.	POROUS BACKFILL		88		
518	118	L.F.	6" PERFORATED, HELICAL CORRUGATED STEEL PIPE, 707.01		118		
518	90	L.F.	6" NON-PERFORATED, HELICAL CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01		90		
518	3	EA.	SCUPPERS, INCLUDING SUPPORTS	3			
601	705	S.Y.	CRUSHED AGGREGATE SLOPE PROTECTION				705
625			SEE SHEET 139 FOR LIGHTING SUMMARY				
824	49,087	LB.	EPOXY COATED REINFORCING STEEL, GRADE 60	47241	1846		
SPECIAL	697	S.Y.	SEALING OF CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)	368	53	276	

FRANKLIN CONSULTANTS INC. 3/14
Consulting Engineers
COLUMBUS, OHIO

GENERAL NOTES & ESTIMATED QUANTITIES

UNI-33-0862
ROAD "U" OVER S.R. 245

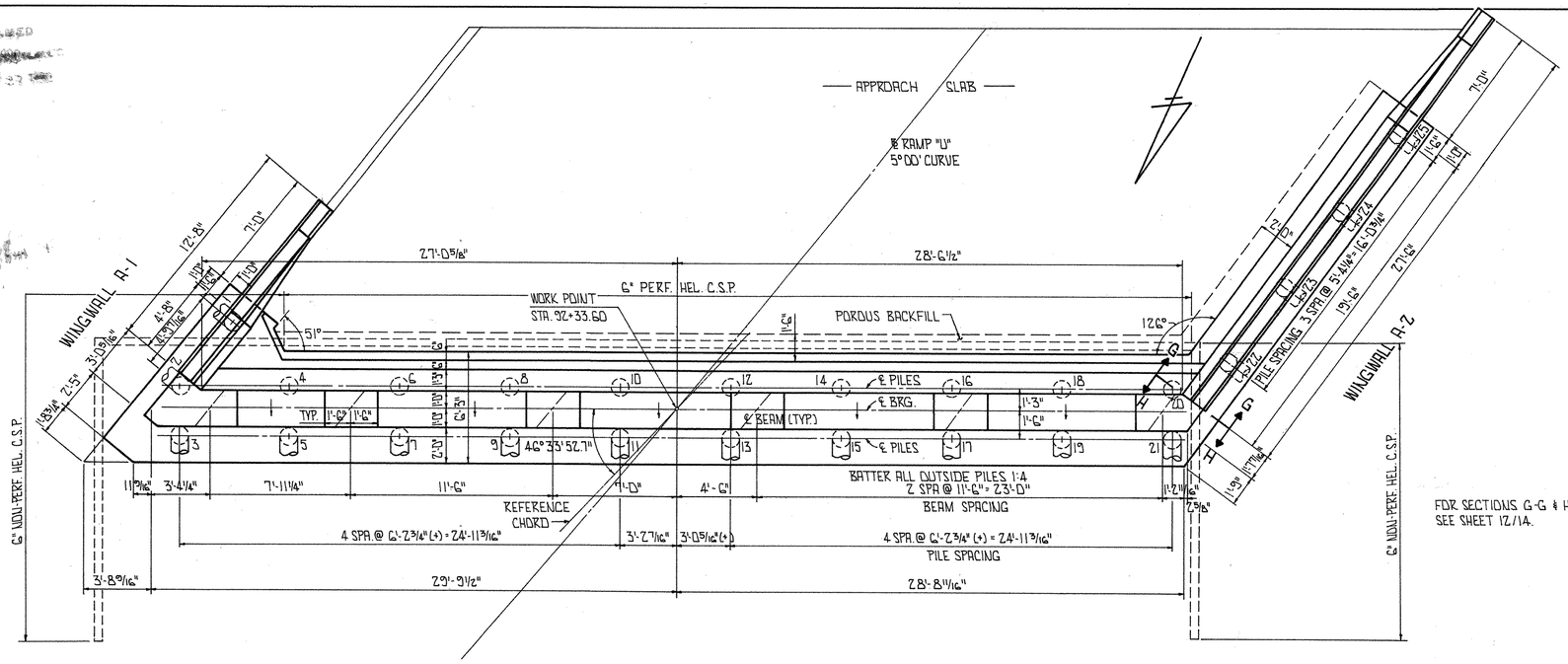
UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RMP	RLH	RLH	CB	VF	12-5-85	

BRUNING 44-132 30845-1

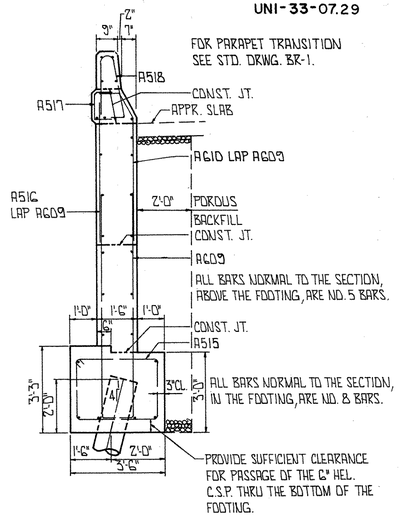
FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-07.29

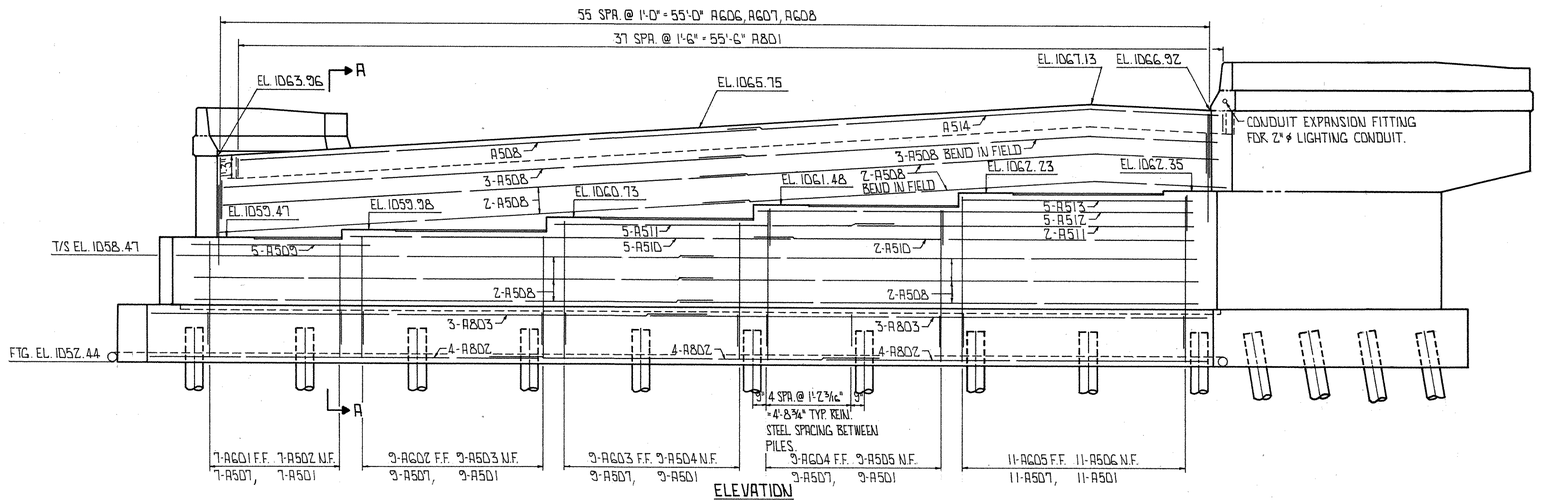


PLAN

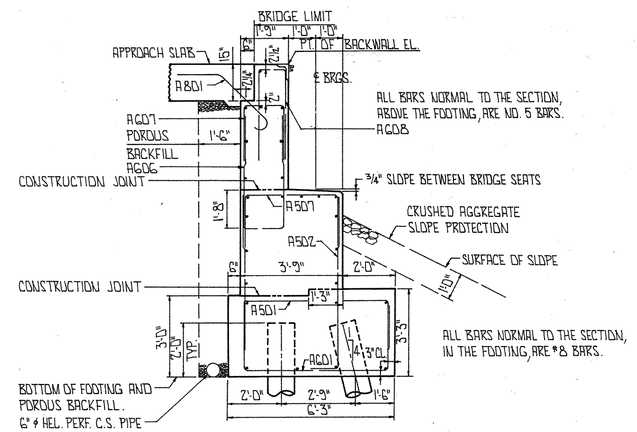
FOR SECTIONS G-G & H-H
SEE SHEET 12/14.



SECTION C-C



ELEVATION



SECTION A-A

MIN. BAR LAP
#5 = 1'-10"
#6 = 2'-2"
#8 = 2'-10"

LEGEND
F.F. = FAR FACE
N.F. = NEAR FACE

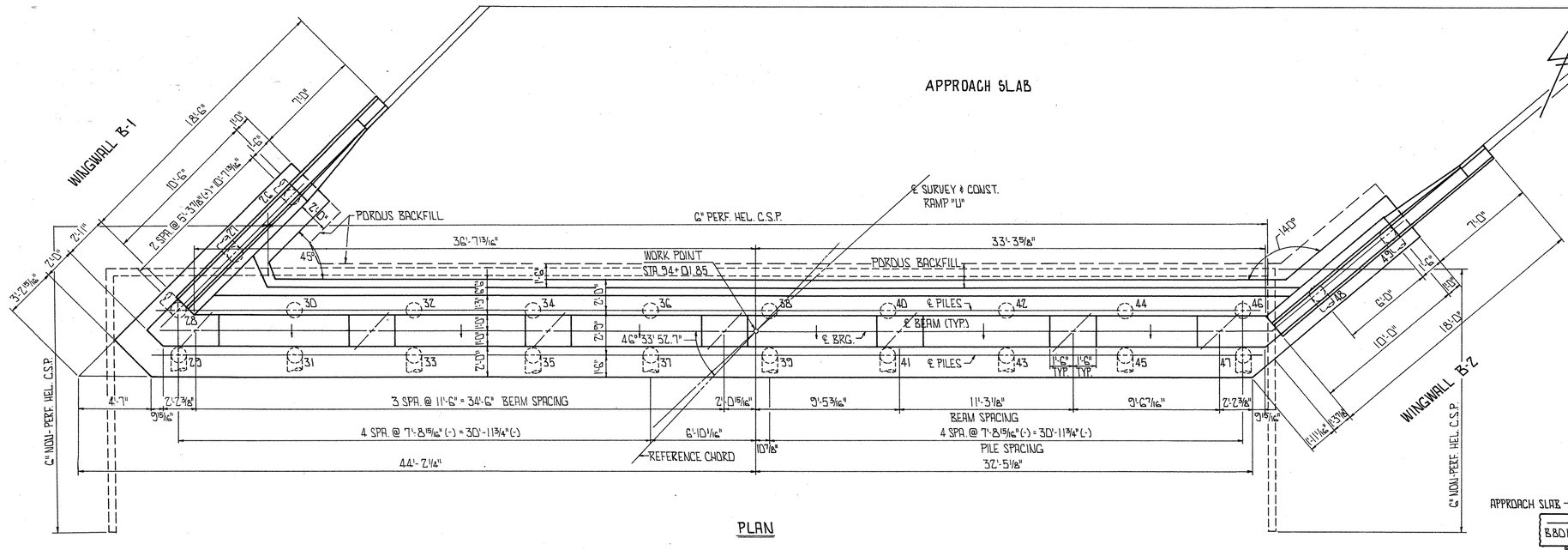
FRANKLIN CONSULTANTS INC. Consulting Engineers						4 / 14
COLUMBUS, OHIO						
REAR ABUTMENT						
UNI-33-0862 ROAD "U" OVER SR 245						
UNION COUNTY						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CB	CB	MK	RMP	JF	12/5-85	

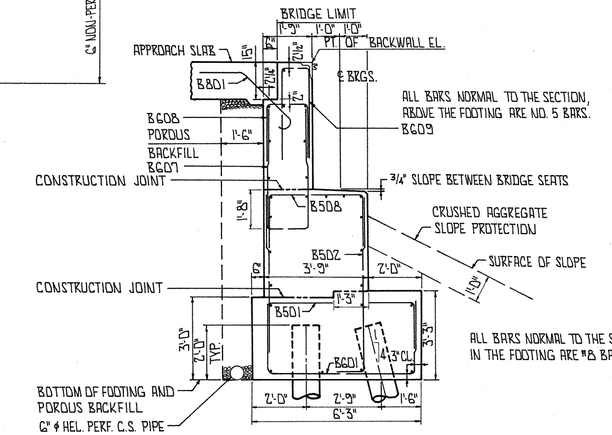
BRUNING 44-132-30845-1

FHWA REGION	STATE	PROJECT	
5	OHIO		

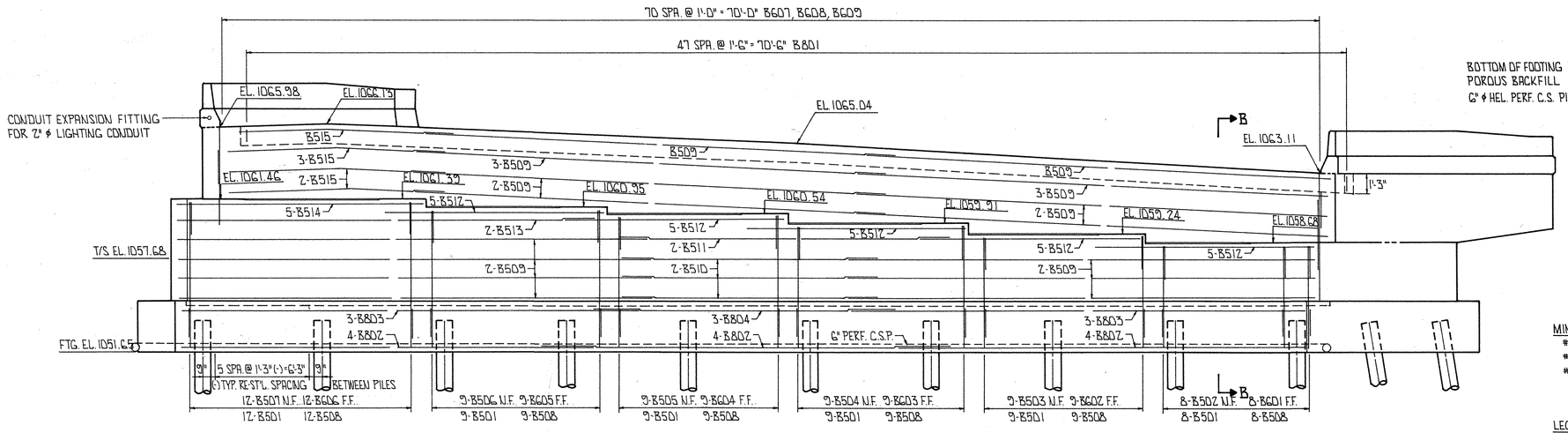
187
27.5

UNION COUNTY
UNI-33-07.29





SECTION B-B



MIN. BAR LAP
#5 = 1'-10"
#6 = 2'-2"
#8 = 2'-10"

LEGEND
F.F. = FAR FACE
N.F. = NEAR FACE

FRANKLIN CONSULTANTS INC. 5 / 14
Consulting Engineers
COLUMBUS, OHIO

FORWARD ABUTMENT

UNI-33-0862
ROAD "U" OVER SR 245

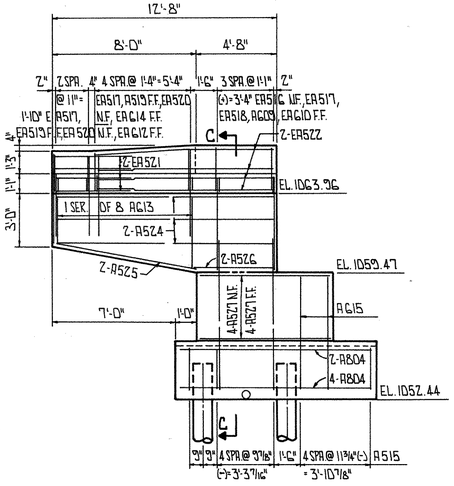
UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CB	CB	MK	RMP	JF	12/5-85	

FHWA REGION	STATE	PROJECT	
5	OHIO		

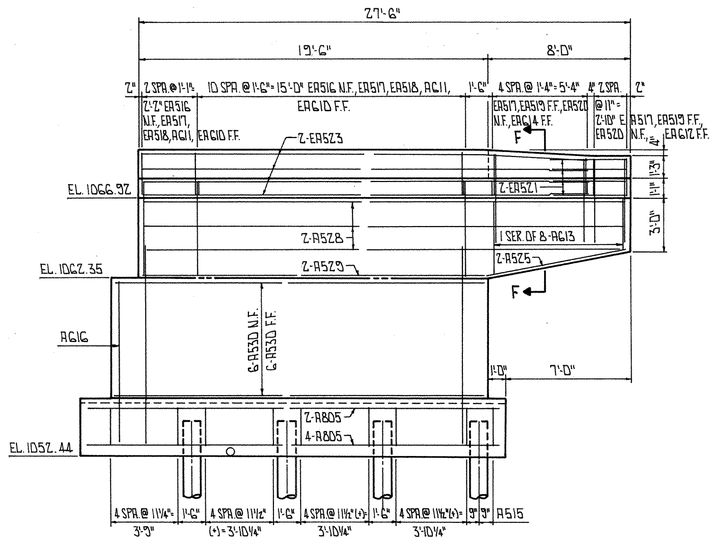
188 / 225

UNION COUNTY
UNI-33-07.29



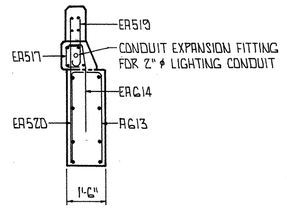
ELEVATION - WINGWALL A-1

FOR SECTION C-C SEE REAR ABUTMENT SHEET 4/14.

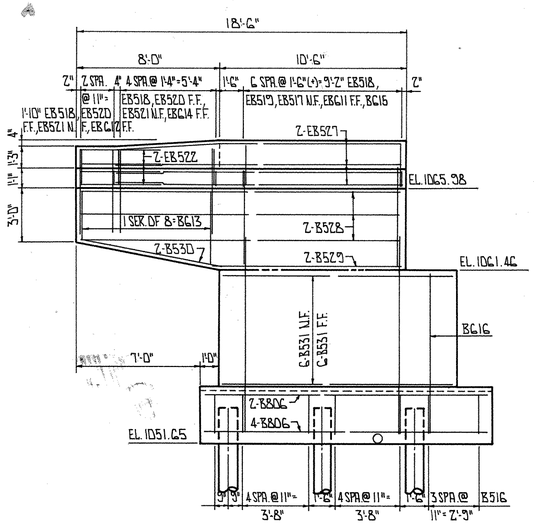


ELEVATION - WINGWALL A-2

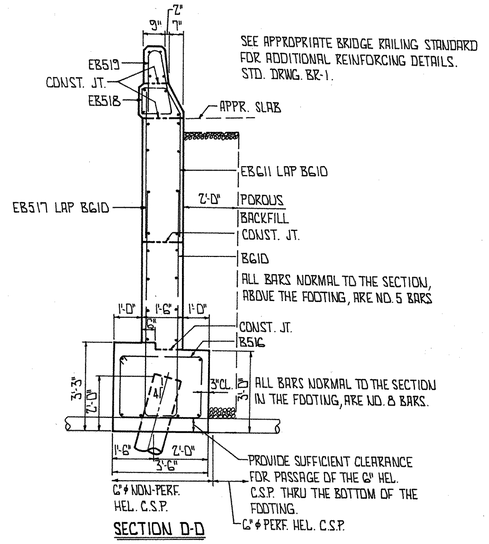
REAR ABUTMENT WINGWALLS



SECTION F-F

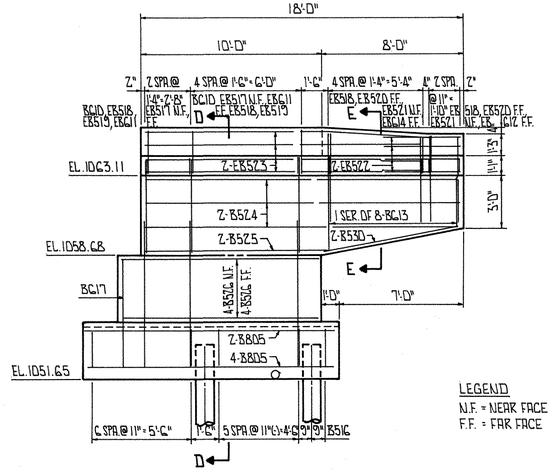


ELEVATION B-1



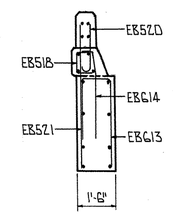
SECTION D-D

FORWARD ABUTMENT WINGWALLS



ELEVATION B-2

LEGEND
N.F. = NEAR FACE
F.F. = FAR FACE



SECTION E-E

FRANKLIN CONSULTANTS INC. 6 / 14
Consulting Engineers
COLUMBUS, OHIO

ABUTMENT DETAILS

UNI-33-0862
ROAD "U" OVER SR 245

UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CB	CB	MK	RMP	JF	12/5-85	

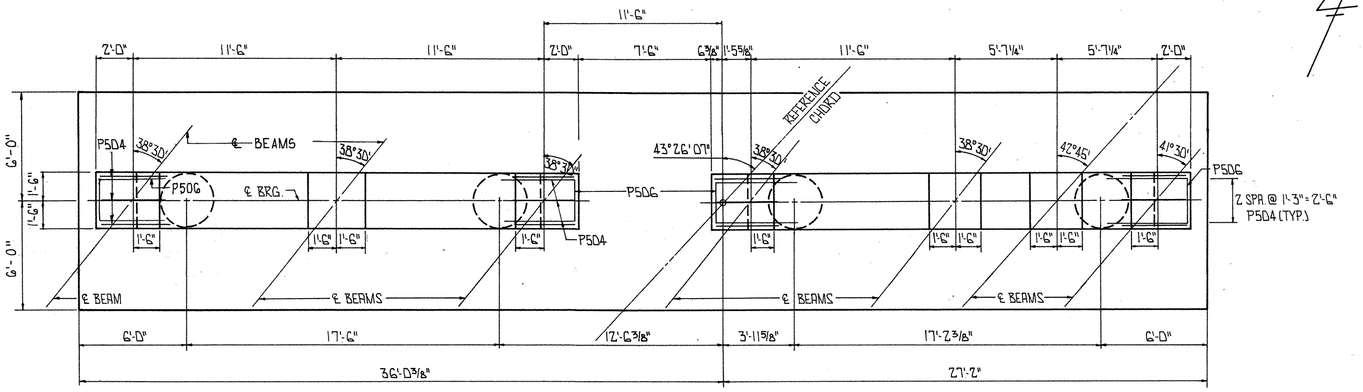
BRUNING 44-132 300845-1

BACKFILLED
SEP 1980

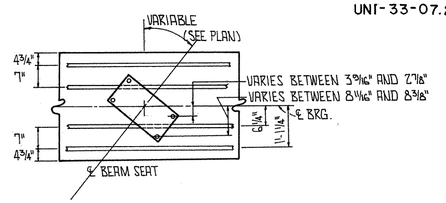
FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-07.29

189
27.5

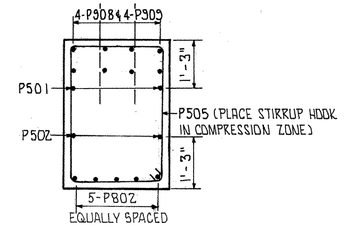


PLAN

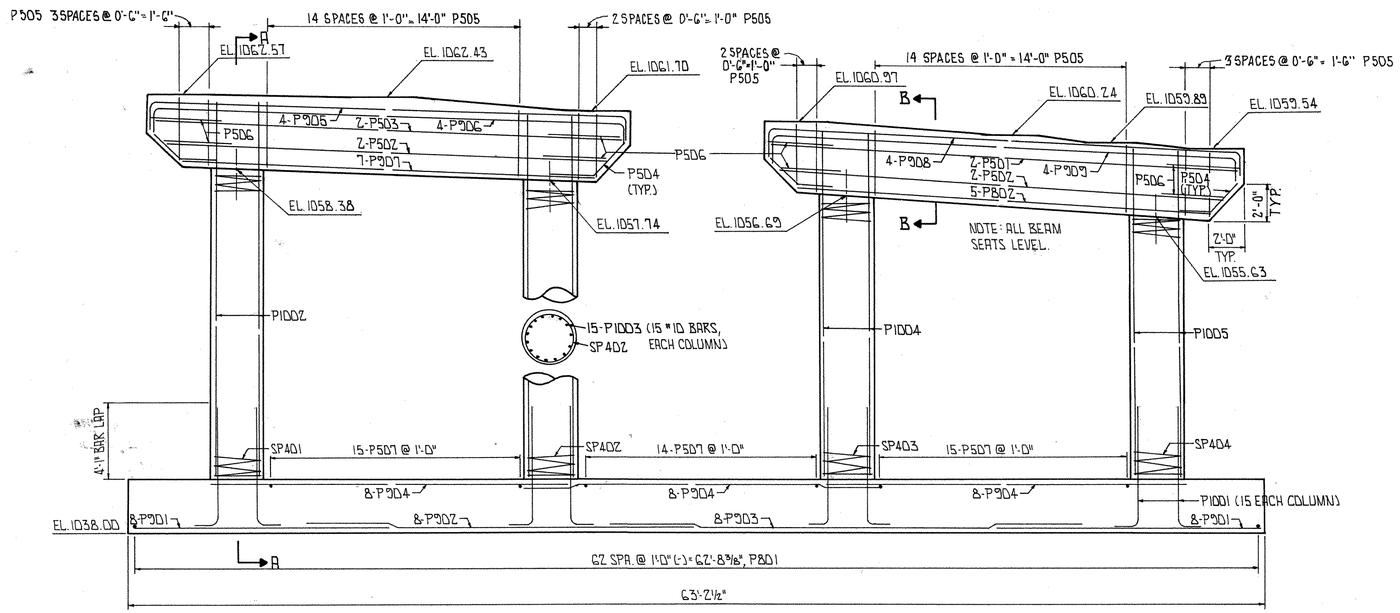


BEARING ANCHOR PLAN

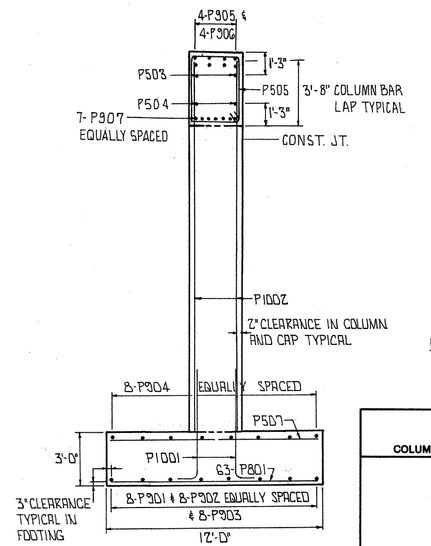
BRIDGE SEAT REINFORCING: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF ANCHOR BAR HOLES.



SECTION B-B



ELEVATION



MIN. BAR LAP
#5 = 1'-10"
#9 = 4'-8"

SECTION A-A

FRANKLIN CONSULTANTS INC. 7/14
Consulting Engineers
COLUMBUS, OHIO

PIER 1 DETAILS

UNI-33-0862
ROAD "U" OVER SR 245

UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RMP	RMP	MK	CB	JF	12/5-85	

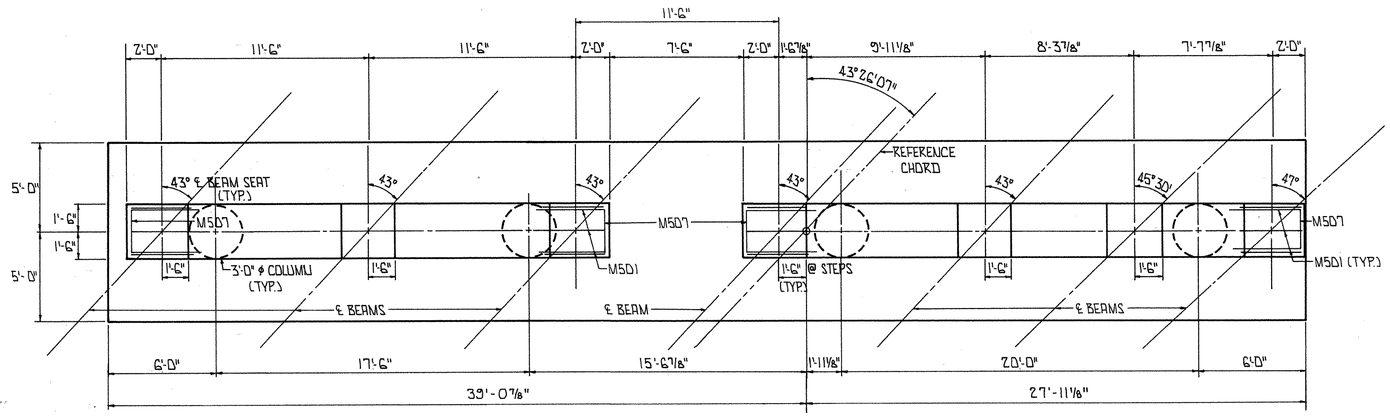
BROWNING 44-132-20845-1

APPROVED
SEP 27 1985

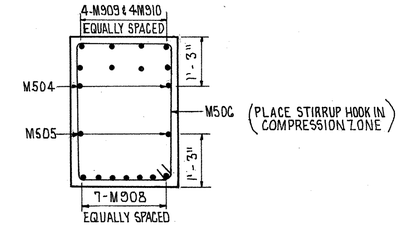
FHWA REGION	STATE	PROJECT	
5	OHIO		

190
225

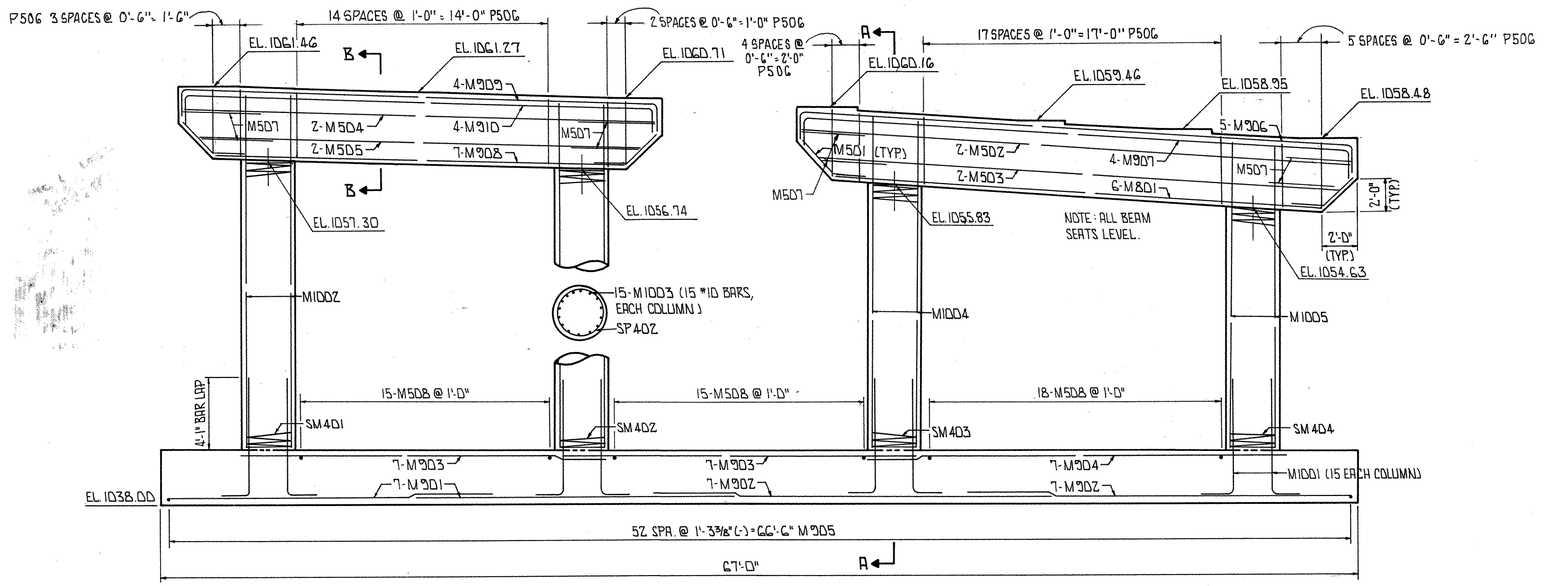
UNION COUNTY
UNI-33-07.29



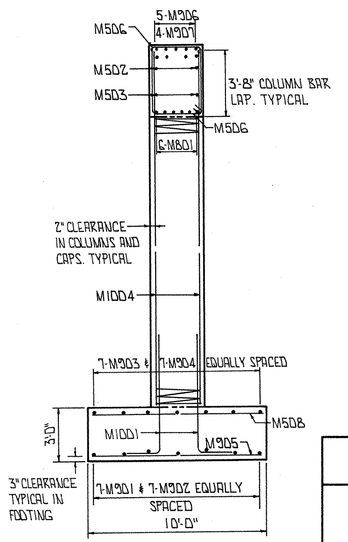
PLAN



SECTION B-B



ELEVATION



SECTION A-A

MIN. BAR LAP
#5 = 1'-10"
#9 = 4'-8"

FRANKLIN CONSULTANTS INC. 8 / 14
Consulting Engineers
COLUMBUS, OHIO

PIER 2 DETAILS

UNI-33-0862
ROAD "U" OVER SR 245

UNION COUNTY

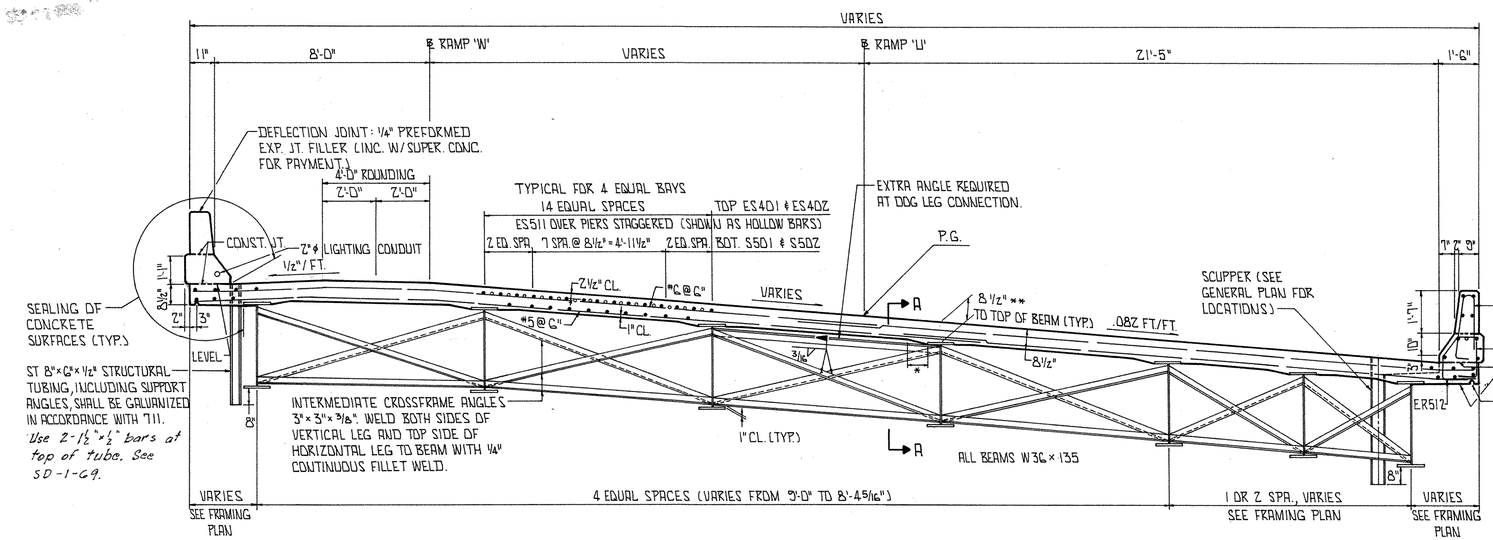
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RMP	RMP	MK	CAB	JF	12/5-85	

BRUNING 44-132-30845-1

FHWA REGION	STATE	PROJECT	
5	OHIO		

131
225

UNION COUNTY
UNI-33-07.29



TRANSVERSE SECTION

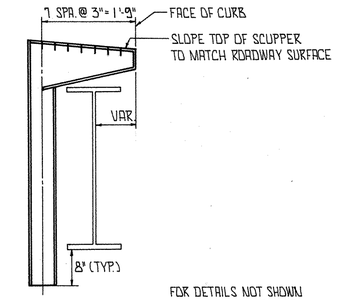
FOR RAILING DETAIL NOTES, SEE STD. DWG. BR-1

CONCRETE & REINFORCING STEEL QUANTITIES FOR PARAPETS ARE INCLUDED WITH ITEMS 511 CLASS S CONCRETE, SUPERSTRUCTURE AND 824 EPOXY COATED REINFORCING STEEL.

FOR PARAPET REINFORCING STEEL SPACING SEE GENERAL PLAN SHT. 2/14.

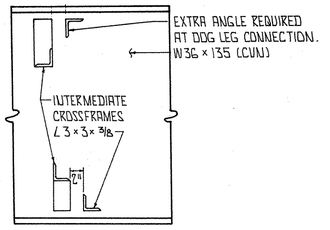
* A HAUNCH WIDTH OF 9" SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 6" AND 12" PROVIDED THAT THE SLOPE SHALL BE NOT MORE THAN 1:4 FOR A HAUNCH LESS THAN 9" IN WIDTH.

** DECK SLAB DEPTH: THE DISTANCE SHOWN FROM TOP OF DECK SLAB TO TOP OF STEEL BEAM IS THE DESIGN DIMENSION. THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED ON THIS DIMENSION, EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE BEAM MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE.



FOR DETAILS NOT SHOWN SEE STD. DWG. SD-1-69 SHEET 3 OF 4

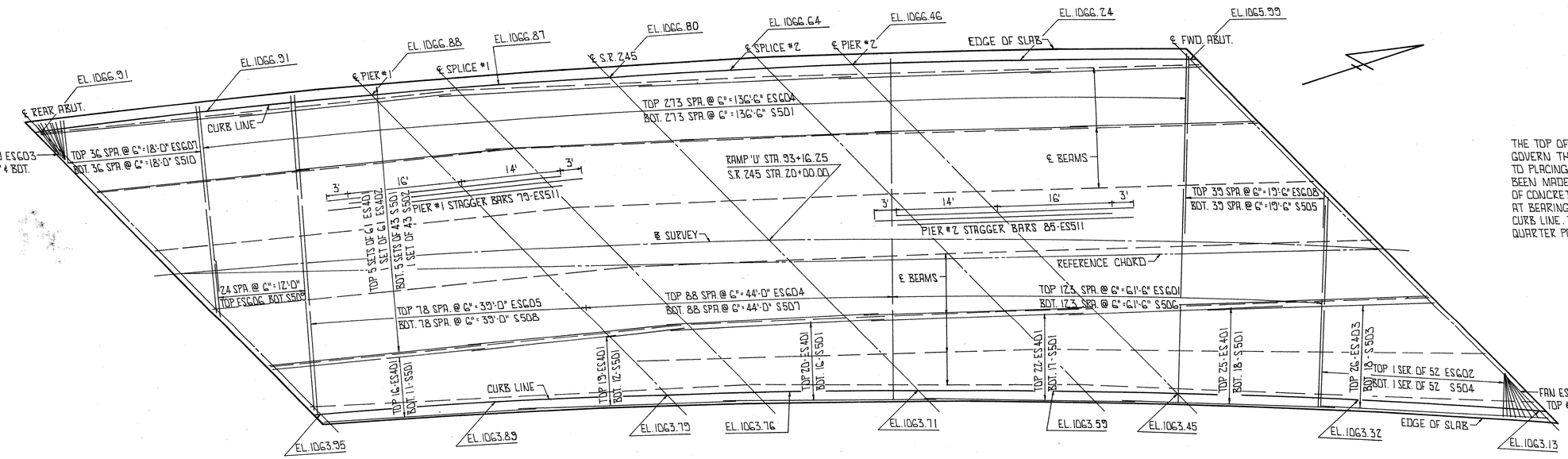
SCUPPER DETAIL



SECTION A-A

THE TOP OF CONCRETE ELEVATIONS SHOWN SHALL GOVERN THE PLACING OF FORMS OR SCREEDS PRIOR TO PLACING THE DECK CONCRETE. ALLOWANCE HAS BEEN MADE FOR THE DEFLECTION DUE TO THE WEIGHT OF CONCRETE. THE SCREEDS IN SPANS 1 & 3 ARE SHOWN AT BEARINGS AND AT HALF POINTS MEASURED ALONG CURB LINE. THE SCREEDS IN SPAN 2 ARE SHOWN AT QUARTER POINTS MEASURED ALONG CURB LINE.

MIN. LAP LENGTH
#4 - 1'-10"
#5 - 2'-5"
#6 - 2'-10"



SLAB REINFORCING & SCREED ELEVATIONS

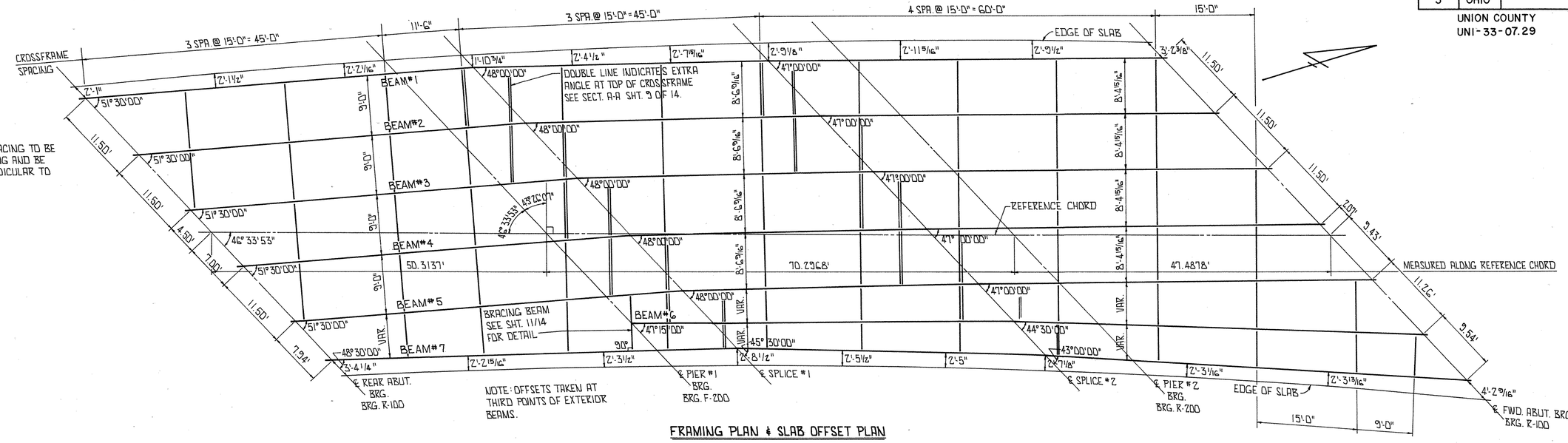
FRANKLIN CONSULTANTS INC. Consulting Engineers						9 / 14
COLUMBUS, OHIO						
SUPERSTRUCTURE DETAILS						
UNI-33-0862 ROAD "U" OVER SR 245						
UNION COUNTY						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CB	CB	MK	RMP	JF	12/5-89	

BRUNING 44-132 59845-1

FHWA REGION	STATE	PROJECT	
5	OHIO		

132
2.25

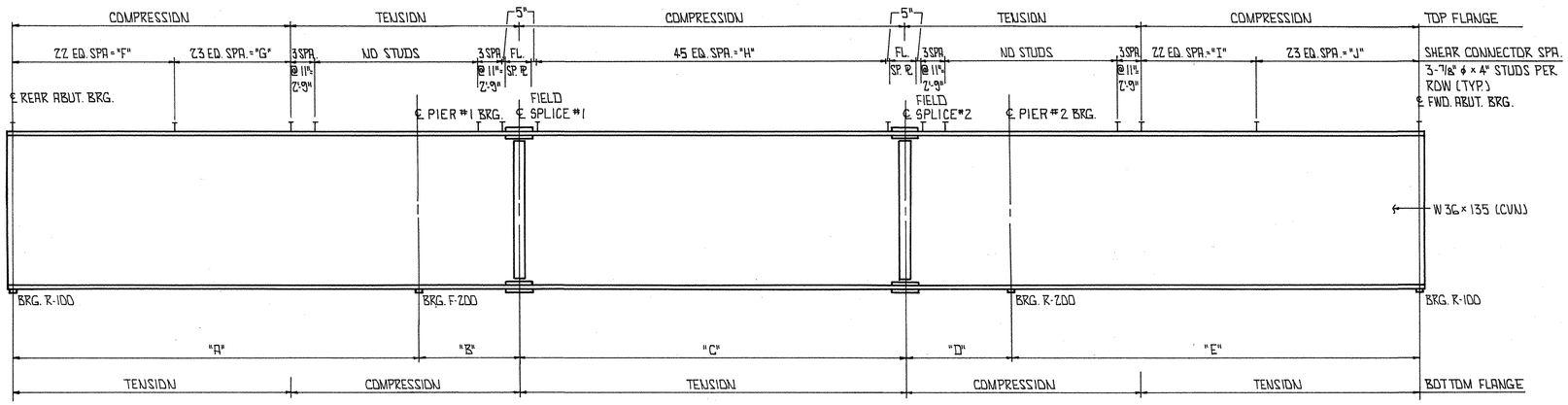
UNION COUNTY
UNI-33-07.29



CROSSFRAME SPACING TO BE MEASURED ALONG AND BE PLACED PERPENDICULAR TO BEAM 1.

NOTE: OFFSETS TAKEN AT THIRD POINTS OF EXTERIOR BEAMS.

FRAMING PLAN & SLAB OFFSET PLAN



BEAM ELEVATION

BEAM ELEVATION DIMENSION TABLE											
BEAM	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"	"J"
1 THRU 5	46'-8 3/16"	11'-8"	44'-6 3/16"	12'-0 15/16"	47'-1 13/16"	18'-8 1/16"	12'-11 3/4"	40'-8 3/16"	13'-3 11/16"	18'-10 9/16"
6	—	12'-5 3/16"	45'-0 5/8"	12'-7 3/16"	49'-2 3/8"	—	—	41'-7.5/8"	13'-10 5/8"	19'-8 1/8"
7	48'-9 3/8"	12'-7.5/16"	46'-4.5/8"	12'-11 3/8"	50'-6 3/4"	19'-6 1/8"	13'-6 3/4"	42'-6.5/8"	14'-3 1/4"	20'-7 11/16"

FOR FIXED BEARING DETAILS SEE STANDARD DRAWING FB-1-82.

FOR EXPANSION BEARING DETAILS SEE STANDARD DRAWING EB-1-55.

BEARINGS SHALL BE PAINTED WITH THE SAME PAINT SYSTEM AS USED FOR THE PARTIAL PAINTING OF ENDS OF BEAMS.

ALL STRUCTURAL STEEL TO BE A588.

WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.

PARTIAL PAINTING OF A588 STEEL: AN 8 FOOT LENGTH OF THE ENDS OF BEAMS ADJACENT TO ABUTMENTS, AND ALL CROSSFRAMES AND OTHER A588 STEEL WITHIN THESE LIMITS SHALL BE PAINTED. PAINT SHALL BE 514, SYSTEM A. THE PRIME COAT SHALL BE 708.17. THE TOP COAT SHALL BE 708.18 EXCEPT THAT THE COLOR SHALL CLOSELY APPROACH FEDERAL STANDARD NO. 595A-20045 OR 20059. (THE COLOR OF WEATHERING STEEL). THE REMAINDER OF THE A588 STEEL IS TO BE LEFT UNPAINTED. SEE CMS 513.221 FOR CLEANING REQUIREMENTS.

WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01 OF CMS.

FRANKLIN CONSULTANTS INC. 10 / 14
Consulting Engineers
COLUMBUS, OHIO

SUPERSTRUCTURE DETAILS

UNI-33-0862
ROAD "U" OVER SR 245

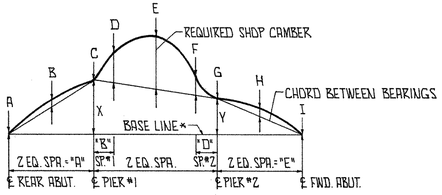
UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CB	CB	MK	RMP	JF	12/18-85	

FHWA REGION	STATE	PROJECT	
5	OHIO		

193
225

UNION COUNTY
UNI-33-07.29

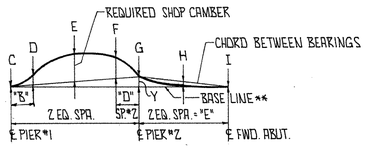


BEAMS 1 THRU 5 & BEAM 7

FOR DIMENSIONS SEE SHEET 10/14

CAMBER LAYOUT DIAGRAM

* BASE LINE IS A LINE FROM ℄ BEAM REAR ABUT. BRG. TO ℄ BEAM FWD. ABUT. BRG.



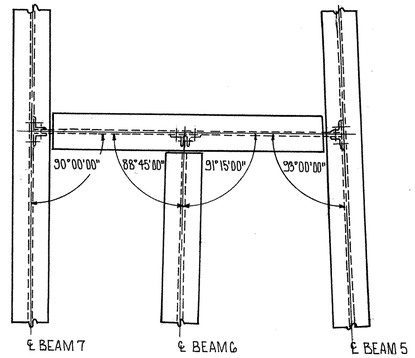
BEAM 6

** BASE LINE IS A LINE FROM ℄ BEAM PIER #1 TO ℄ BEAM FWD. ABUT. BRG.

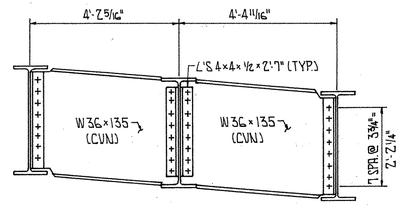
SPLICE DEFLECTION ANGLES		
BEAM	SPLICE 1	SPLICE 2
1 THRU 5	3° 30' 00"	1° 00' 00"
6	—	2° 45' 00"
7	3° 00' 00"	2° 30' 00"

VERTICAL OFFSET DIMENSIONS OF PIER BEARING POINTS FROM BASE LINE							
BEAM NUMBER	1	2	3	4	5	6	7
DIMENSION "X"	3"	2 3/8"	1 9/16"	3/4"	5/8"	—	13/16"
DIMENSION "Y"	2 5/8"	1 7/16"	1"	9/16"	0	3/16"	9/16"

DEFLECTION & CAMBER (IN.)		SPAN 1			SPAN 2				SPAN 3	
		REAR ABUT.	1/2 SPAN	PIER 1	SPLICE 1	1/2 SPAN	SPLICE 2	PIER 2	1/2 SPAN	FWD. ABUT.
		A	B	C	D	E	F	G	H	I
BEAM 1	DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	1/16	1/8	1/16	0	0	0
	DEFLECTION DUE TO WEIGHT OF CONCRETE	0	1/8	0	1/4	9/16	1/4	0	1/8	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	0	1/16	0	1/16	3/16	1/16	0	1/16	0
	ADJUSTMENT REQUIRED FOR VERT. & HORIZ. CURVES & SUPER.	0	5/16	0	1 3/8	1 5/16	1/2	0	3/16	0
	REQUIRED SHOP CAMBER	0	1/2	0	1 3/4	2 3/16	7/8	0	3/8	0
BEAM 2	DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	1/16	1/8	1/16	0	0	0
	DEFLECTION DUE TO WEIGHT OF CONCRETE	0	1/8	0	1/4	9/16	1/4	0	1/8	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	0	1/16	0	1/16	3/16	1/16	0	1/16	0
	ADJUSTMENT REQUIRED FOR VERT. & HORIZ. CURVES & SUPER.	0	0	0	1 1/16	1/2	3/16	0	0	0
	REQUIRED SHOP CAMBER	0	3/16	0	1 1/16	1 3/8	9/16	0	3/16	0
BEAM 3	DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	1/16	1/8	1/16	0	0	0
	DEFLECTION DUE TO WEIGHT OF CONCRETE	0	1/8	0	1/4	9/16	1/4	0	1/8	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	0	1/16	0	1/16	3/16	1/16	0	1/16	0
	ADJUSTMENT REQUIRED FOR VERT. & HORIZ. CURVES & SUPER.	0	-1/16	0	1/2	1/4	3/16	0	0	0
	REQUIRED SHOP CAMBER	0	-1/16	0	7/8	1 1/8	9/16	0	3/16	0
BEAM 4	DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	1/16	1/8	1/16	0	0	0
	DEFLECTION DUE TO WEIGHT OF CONCRETE	0	1/8	0	1/4	9/16	1/4	0	1/8	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	0	1/16	0	1/16	3/16	1/16	0	1/16	0
	ADJUSTMENT REQUIRED FOR VERT. & HORIZ. CURVES & SUPER.	0	-3/16	0	7/16	1/8	0	0	1/8	0
	REQUIRED SHOP CAMBER	0	0	0	13/16	1	3/8	0	5/16	0
BEAM 5	DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	1/16	1/8	1/16	0	0	0
	DEFLECTION DUE TO WEIGHT OF CONCRETE	0	1/8	0	1/4	9/16	1/4	0	1/8	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	0	1/16	0	1/16	3/16	1/16	0	1/16	0
	ADJUSTMENT REQUIRED FOR VERT. & HORIZ. CURVES & SUPER.	0	-3/16	0	5/16	1/16	1/8	0	-1/8	0
	REQUIRED SHOP CAMBER	0	0	0	11/16	15/16	1/2	0	1/16	0
BEAM 6	DEFLECTION DUE TO WEIGHT OF STEEL	—	—	0	1/16	1/8	1/16	0	0	0
	DEFLECTION DUE TO WEIGHT OF CONCRETE	—	—	0	1/4	9/16	1/4	0	1/8	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	—	—	0	1/16	3/16	1/16	0	1/16	0
	ADJUSTMENT REQUIRED FOR VERT. & HORIZ. CURVES & SUPER.	—	—	0	-1/8	-3/16	1/4	0	-5/16	0
	REQUIRED SHOP CAMBER	—	—	0	1/4	11/16	5/8	0	-1/8	0
BEAM 7	DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	1/16	1/8	1/16	0	0	0
	DEFLECTION DUE TO WEIGHT OF CONCRETE	0	1/8	0	1/4	9/16	1/4	0	1/8	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	0	1/16	0	1/16	3/16	1/16	0	1/16	0
	ADJUSTMENT REQUIRED FOR VERT. & HORIZ. CURVES & SUPER.	0	-1/4	0	3/8	3/16	3/8	0	-1/4	0
	REQUIRED SHOP CAMBER	0	-1/16	0	3/4	11/16	3/4	0	-1/16	0



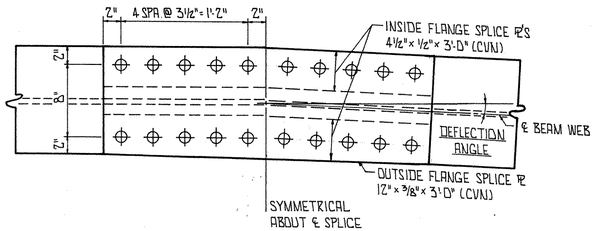
PLAN



ALL BOLTS TO BE 1" ℄ HIGH STRENGTH BOLTS A 325 TYPE 3.

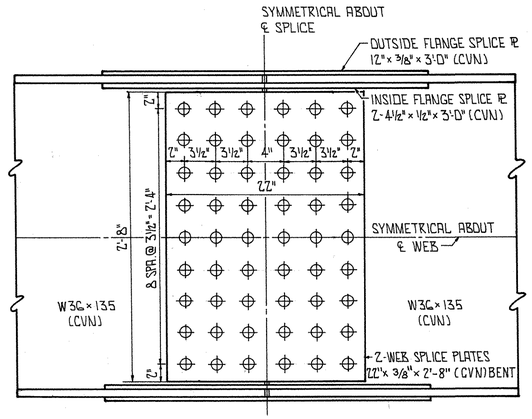
ELEVATION

BRACING BEAM DETAILS



FLANGE SPLICE PLAN

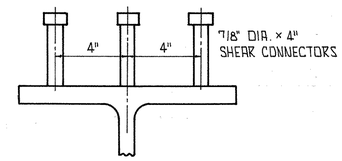
SPLICES 1 & 2



WEB SPLICE ELEVATION

SPLICES 1 & 2

ALL SPLICE PLATES ARE (CVN). ALL FASTENERS TO BE 1" ℄ HIGH STRENGTH BOLTS, A325 TYPE 3. ALL SPLICE PLATES ARE TO BE A588 STEEL.



SHEAR CONNECTORS

FRANKLIN CONSULTANTS INC. 11 / 14
Consulting Engineers
COLUMBUS, OHIO

SUPERSTRUCTURE DETAILS

UNI-33-0862
ROAD "U" OVER SR 245

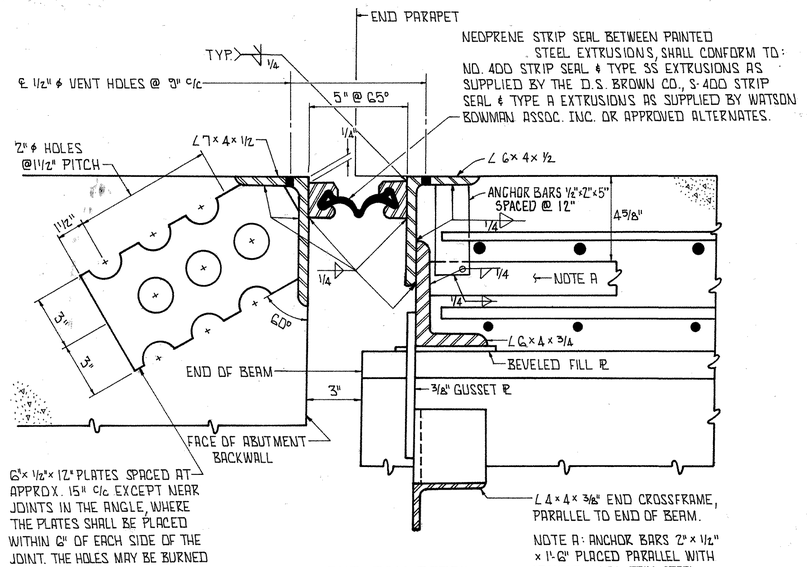
UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CB	CB	MK	RMP	JK	12/15-85	

FHWA REGION	STATE	PROJECT	
5	OHIO		

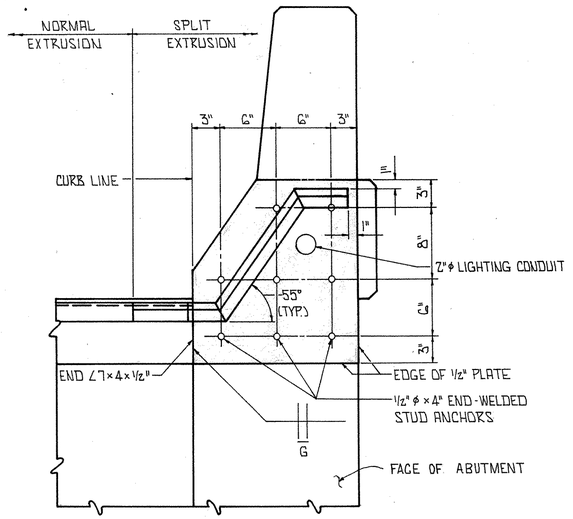
19.4
27.5

UNION COUNTY
UNI-33-07.29



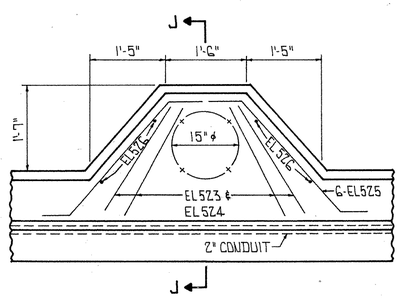
NOTE A: ANCHOR BARS 2" x 1/2" x 1'-6" PLACED PARALLEL WITH LONGITUDINAL REIN. STEEL (SPACED @ 12" C/c)

END DAM DETAIL



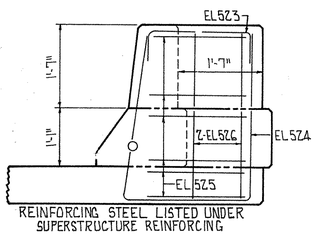
SECTION G-G

SEE SHEET 4 OF 14 FOR LOCATION OF SECTION G-G AND SECTION H-H.



PLAN

SEE GENERAL PLAN FOR LOCATION

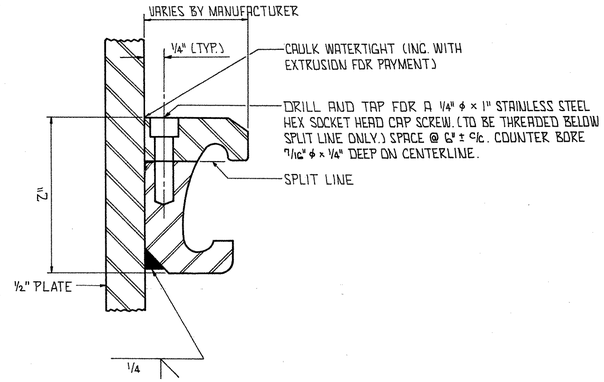


REINFORCING STEEL LISTED UNDER SUPERSTRUCTURE REINFORCING

SECTION J-J

LIGHTPOLE PILASTER

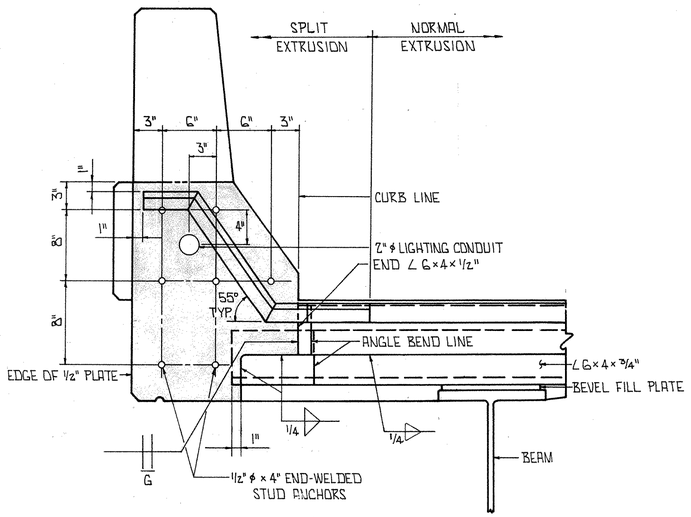
SEE STD. DRG. HL-4 FOR DETAILS



SPLIT EXTRUSION DETAIL

NORMAL EXTRUSION SIMILAR

THE SPLIT EXTRUSION SHOWN ABOVE IS A NORMAL EXTRUSION WHICH HAS BEEN MODIFIED AS INDICATED.
WHEN JOINT UPTURNS ARE GREATER THAN 45° (FROM HORIZONTAL), SPLIT EXTRUSIONS ARE REQUIRED. WHEN JOINT UPTURNS ARE 45° OR LESS, SPLIT EXTRUSIONS ARE OPTIONAL.
STEEL EXTRUSIONS SHALL BE WELDED AT ALL MITERS (BELOW THE LINE WHERE SPLIT.



SECTION H-H

NOTE: THE CONTRACTOR SHALL COORDINATE THE PREPARATION OF THE SHOP DRAWINGS FOR, AND THE FABRICATION OF THE 513 STRUCTURAL STEEL AND THE 516 NEOPRENE STRIP SEAL AND STEEL EXTRUSION TO ENSURE PROPER FIT. A COMMON REFERENCE POINT, MUTUALLY AGREED UPON BY ALL FABRICATORS, SHALL BE USED FOR DETAILING. THIS POINT MUST BE CLEARLY IDENTIFIED ON THE SHOP DRAWINGS.

THE STRIP SEAL SHALL BE CONTINUOUS (ONE PIECE) ACROSS THE DECK AND UP INTO PARAPET CURB.

MEASUREMENT FOR PAY PURPOSES SHALL BE BASED ON THE LINEAR FOOT OF SEALED JOINT SYSTEM, MEASURED HORIZONTALLY ALONG THE JOINT CENTERLINES AND BETWEEN THE OUTER LIMITS OF THE FABRICATED JOINT, FURNISHED AND PLACED, INCLUDING ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE THE JOINT IN PLACE, WHICH INCLUDES THE JOINT ARMOR, ANCHORING DEVICES, TEMPORARY SUPPORTS AND END CROSSFRAME GUSSET PLATES. PAYMENT SHALL BE MADE PER LINEAR FEET FOR ITEM 516 "STRUCTURAL EXPANSION JOINTS, INCLUDING ELASTOMERIC STRIP SEALS."

INSTALLATION OF SEAL: DURING INSTALLATION OF THE SUPPORT/ARMOR FOR THE SUPERSTRUCTURE SIDE OF THE EXPANSION JOINT SEAL, THE SEATING OF BEAMS ON BEARINGS SHALL BE CAREFULLY OBSERVED TO ASSURE THAT POSITIVE BEARING IS MAINTAINED. PROPER VERTICAL FIT OF THE SUPPORT/ARMOR ON THE BEAMS SHALL BE ACHIEVED BY POSITIONING OF THE BEVEL FILL PLATES RATHER THAN BY CLAMPING FORCE.

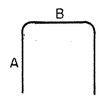
FRANKLIN CONSULTANTS INC. — Consulting Engineers — COLUMBUS, OHIO — 12 / 14

SUPERSTRUCTURE DETAILS

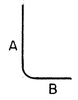
UNI-33-0862
ROAD "U" OVER SR245

UNION COUNTY

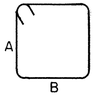
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAB	MK	MK	KMD	JAS	12/5-85	



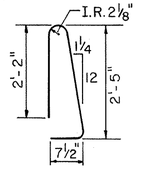
TYPE 1



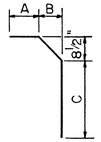
TYPE 2



TYPE 3



TYPE 4



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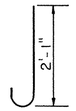
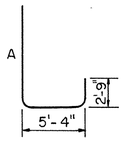
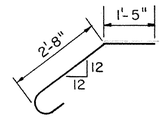


TYPE 6



TYPE 7



TYPE 8

FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-07.29

195
225

REAR ABUTMENT

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
A501	45	8'-9"	411	1	1'-10"	5'-4"			
A502	7	7'-4"	54	2	6'-5"	1'-0"			
A503	9	7'-10"	74	2	6'-11"	1'-0"			
A504	9	8'-7"	81	2	7'-8"	1'-0"			
A505	9	9'-4"	88	2	8'-5"	1'-0"			
A506	11	10'-1"	116	2	9'-2"	1'-0"			
A507	45	7'-1"	332	1	2'-0"	3'-4"			
A508	27	29'-0"	817	STR.					
A509	5	10'-0"	52	↑					
A510	7	24'-7"	179						
A511	7	19'-0"	139						
A512	5	24'-6"	128						
A513	5	13'-0"	68	↓					
A514	1	27'-6"	29	STR.					
A515	32	10'-10"	362	3	2'-2"	3'-0"			
EA516	17	5'-3"	93	STR.					
EA517	33	1'-10"	63	1	0'-7½"	0'-10"			
EA518	17	5'-3"	93	4					
EA519	16	2'-8"	45	6					
EA520	16	4'-7"	76	STR.					
EA521	16	4'-4"	72	↑					
EA522	8	10'-6"	88						
EA523	8	25'-4"	211						
A524	6	12'-4"	77						
A525	4	8'-0"	33						
A526	2	4'-6"	9						
A527	8	7'-2"	60						
A528	6	27'-2"	170						
A529	2	19'-6"	41	↓					
A530	12	20'-6"	257	STR.					
A601	7	14'-3"	150	7	6'-6"				
A602	9	14'-9"	199	7	7'-0"				
A605	9	15'-6"	210	7	7'-9"				
A604	9	16'-3"	220	7	8'-6"				
A605	11	17'-0"	281	7	9'-3"				
A606	56	10'-1"	848	1	4'-6"	1'-5"			
A607	56	5'-5"	456	1	2'-2"	1'-5"			
A608	56	7'-5"	624	1	3'-5"	0'-11"			
A609	4	17'-2"	103	1	8'-2	1'-2"			
EA610	17	5'-9"	147	5	0'-9"	0'-6"	4'-5"		
A611	13	23'-0"	449	1	11'-1"	1'-2"			
EA612	6	3'-7"	32	5	0'-7"	0'-2"	2'-5"		
A613	2SERIES	6'-2" TO 9'-1"	183	1	2'-8"TO4'-1½"	* 1'-2"		*	2½" INCR.
	OF 8								
EA614	10	3'-8"	55	5	0'-8"	0'-4"	2'-5"		
A615	2	13'-2"	40	1	6'-2"	1'-2"			
A616	1	19'-0"	29	1	9'-1"	1'-2"			
A801	38	5'-0"	507	8					
A802	12	21'-9"	697	STR.					
A803	6	31'-2"	499	↑					
A804	6	10'-7"	170	↓					
A805	6	23'-4"	374	STR.					
	TOTAL	UNCOATED	9616	LBS.					
	TOTAL	EPOXY COATED	975	LBS.					

FORWARD ABUTMENT

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
B501	56	8'-9"	511	1	1'-10"	5'-4"			
B502	8	7'-4"	61	2	6'-5"	1'-0"			
B503	9	7'-10"	74	2	6'-11"	1'-0"			
B504	9	8'-7"	81	2	7'-8"	1'-0"			
B505	9	9'-3"	87	2	8'-4"	1'-0"			
B506	9	9'-8"	91	2	8'-9"	1'-0"			
B507	12	10'-1"	126	2	9'-2"	1'-0"			
B508	56	7'-1"	414	1	2'-0"	3'-4"			
B509	30	30'-0"	939	STR.					
B510	6	16'-2"	101	↑					
B511	2	21'-0"	44						
B512	25	14'-0"	365						
B513	2	26'-6"	55						
B514	5	15'-6"	81	↓					
B515	8	13'-9" *	115	STR.		* BEND IN FIELD			
B516	29	10'-10"	328	3	2'-2"	3'-0"			
EB517	14	5'-0"	73	STR.					
EB518	30	1'-10"	57	1	0'-7½"	0'-10"			
EB519	14	5'-3"	77	4					
EB520	16	2'-8"	45	6					
EB521	16	4'-7"	76	STR.					
EB522	16	4'-4"	72	↑					
EB523	8	15'-6"	129						
B524	6	17'-8"	111						
B525	2	10'-2"	21						
B526	8	11'-0"	92						
EB527	8	16'-0"	134						
B528	6	18'-2"	114						
B529	2	10'-8"	22						
B530	4	8'-0"	33	↓					
B531	12	13'-1"	164	STR.					
B601	8	14'-3"	171	7	6'-6"				
B602	9	14'-9"	199	7	7'-0"				
B603	9	15'-6"	210	7	7'-9"				
B604	9	16'-2"	219	7	8'-5"				
B605	9	16'-7"	224	7	8'-10"				
B606	12	17'-0"	306	7	9'-3"				
B607	71	10'-1"	1075	1	4'-6"	1'-5"			
B608	71	5'-5"	578	1	2'-2"	1'-5"			
B609	71	7'-5"	791	1	3'-5"	0'-11"			
B610	7	17'-2"	180	1	8'-2"	1'-2"			
EB611	14	5'-9"	121	5	0'-9"	0'-6"	4'-5"		
EB612	6	3'-7"	32	5	0'-7"	0'-2"	2'-5"		
B613	2SERIES	8'-8" TO 6'-4"	180	1	3'-11"TO2'-9"	* 1'-2"		*	2½" INCR.
	OF 8								
EB614	10	3'-8"	55	5	0'-8"	0'-4"	2'-5"		
B615	7	22'-10"	240	1	11'-0"	1'-2"			
B616	1	18'-10"	28	1	9'-0"	1'-2"			
B617	1	13'-4"	20	1	6'-3"	1'-2"			
B801	48	5'-0"	641	8					
B802	12	26'-0"	833	STR.					
B803	6	29'-0"	465	↑					
B804	3	19'-8"	158						
B805	6	14'-0"	224	↓					
B806	6	15'-11"	255	STR.					
	TOTAL	UNCOATED	11,027	LBS.					
	TOTAL	EPOXY COATED	871	LBS.					

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E

REINFORCING STEEL SAMPLES: Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.

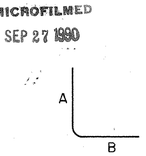
FRANKLIN CONSULTANTS INC. 13 / 14
Consulting Engineers
COLUMBUS, OHIO.

REINFORCING STEEL

UNI-33-0862
ROAD "U" OVER SR 245

UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CB	MK	MK	RMP	JF	12/5-85	



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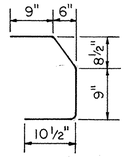

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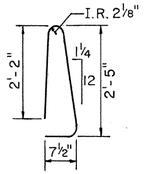

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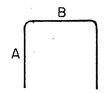

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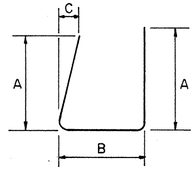

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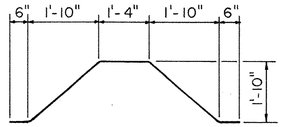

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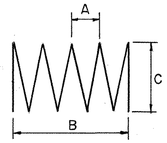

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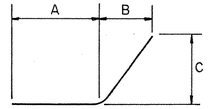


TYPE 8

TYPE 9

FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-07.29

136
225

SUPERSTRUCTURE

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
ES 401	407	30'-0"	8156	STR.					
ES 402	61	23'-0"	937	↓					
ES 403	26	32'-0"	556	STR.					
S 501	563	30'-0"	17,616	STR.					
S 502	43	26'-0"	1,166	↑					
S 503	18	35'-0"	657						
S 504	I SERIES	29'-6" TO 6'-0"*	963				* 5½"	INCR.	
	OF 52								
S 505	I SERIES	28'-6" TO 8'-6"*	772				* 6"	INCR.	
	OF 40								
S 506	124	24'-6"	3,169						
S 507	88	21'-6"	1,973						
S 508	78	21'-0"	1,708						
S 509	I SERIES	18'-0" TO 3'-0"*	263				* 7½"	INCR.	
	OF 24								
S 510	I SERIES	30'-0" TO 6'-0"*	695				* 8"	INCR.	
	OF 37								
ES 511	164	33'-0"	5645	STR.					
ER 512	228	3'-0"	713	2					
ER 513	228	5'-3"	1248	3					
ER 514	228	2'-3"	535	1	1'-6"	0'-10½"			
ER 515	20	30'-0"	626	STR.					
ER 516	4	27'-0"	113	↑					
ER 517	24	31'-1"	778						
ER 518	32	15'-7"	520						
ER 519	32	7'-1"	236						
ER 520	12	13'-2"	165						
ER 521	40	6'-5"	268						
ER 522	12	13'-5"	168	STR.					
EL 523	4	2'-10"	12	4	0'-7"	1'-10"			
EL 524	4	8'-5"	35	5	3'-2"	2'-4"	0'-6½"		
EL 525	6	7'-3"	45	6					
EL 526	4	3'-2"	13	STR.					
ES 601	124	28'-6"	5308	STR.					
ES 602	I SERIES	29'-6" TO 6'-0"*	1386	↑			* 5½"	INCR.	
	OF 52								
ES 603	36	5'-6"	297						
ES 604	362	26'-0"	14,137						
ES 605	78	25'-0"	2,929						
ES 606	I SERIES	22'-0" TO 8'-0"*	541				* 7"	INCR.	
	OF 24								
ES 607	I SERIES	6'-0" TO 29'-0"*	973				* 7½"	INCR.	
	OF 37								
ES 608	I SERIES	25'-0" TO 5'-0"*	901	STR.			* 6"	INCR.	
	OF 40								
		TOTAL UNCOATED	28,982	LBS.					
		TOTAL EPOXY COATED	47,241	LBS.					

PIER 1

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
					PITCH	# OF TURNS	CORE ø		
SP 401	1	17'-3"	325	7	4½"	49	32"		
SP 402	1	16'-6"	312	7	4½"	47	32"		
SP 403	1	15'-9"	298	7	4½"	45	32"		
SP 404	1	14'-7½"	278	7	4½"	42	32"		
P 501	2	26'-5"	55	STR.					
P 502	4	24'-5"	102	STR.					
P 503	2	26'-5"	55	STR.					
P 504	12	4'-8"	58	8	1'-10"	2'-0"	1'-10"		
P 505	44	13'-3"	608	9	3'-8"	2'-8"			
P 506	8	6'-9"	56	4	2'-2"	2'-8"			
P 507	44	11'-6"	528	STR.					
P 801	63	11'-6"	1934						
P 802	5	23'-0"	307						
P 901	16	14'-3"	775	STR.					
P 902	8	21'-8"	589	↑					
P 903	8	26'-4"	716						
P 904	24	20'-0"	1632	STR.					
P 905	4	29'-0"	394	4	1'-7"	26'-5"			
P 906	4	28'-9"	391	4	1'-7"	26'-2"			
P 907	7	23'-0"	547	STR.					
P 908	4	28'-10"	392	4	1'-7"	26'-3"			
P 909	4	28'-7"	389	4	1'-7"	26'-0"			
P 1001	60	8'-2"	2108	1	6'-8"	1'-10"			
P 1002	15	21'-0"	1355	STR.					
P 1003	15	20'-3"	1307	↑					
P 1004	15	19'-6"	1259						
P 1005	15	18'-6"	1194	STR.					
		TOTAL	17,364	LBS.					

PIER 2

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
					PITCH	# OF TURNS	CORE ø		
SM 401	1	16'-1½"	305	7	4½"	46	32"		
SM 402	1	15'-9"	298	7	4½"	45	32"		
SM 403	1	15'-0"	285	7	4½"	43	32"		
SM 404	1	13'-6"	258	7	4½"	39	32"		
M 501	12	4'-8"	58	8	1'-10"	2'-0"	1'-10"		
M 502	2	30'-9"	64	STR.					
M 503	2	29'-0"	60	↑					
M 504	2	26'-0"	54						
M 505	2	24'-6"	51	STR.					
M 506	51	13'-3"	705	9	3'-8"	2'-8"			
M 507	8	6'-9"	56	4	2'-2"	2'-8"			
M 508	48	9'-6"	476	STR.					
M 801	6	27'-3"	437	↑					
M 901	14	18'-3"	869						
M 902	14	21'-10"	1039						
M 903	14	20'-6"	976						
M 904	7	23'-0"	547	↓					
M 905	53	9'-6"	1712	STR.					
M 906	5	33'-4"	567	4	1'-7"	30'-9"			
M 907	4	33'-0"	449	4	1'-7"	30'-5"			
M 908	7	23'-0"	547	STR.					
M 909	4	29'-7"	402	4	1'-7"	26'-8"			
M 910	4	29'-4"	399	4	1'-7"	26'-5"			
M 1001	60	8'-2"	2108	1	6'-8"	1'-10"			
M 1002	15	19'-10"	1280	STR.					
M 1003	15	19'-5"	1253	↑					
M 1004	15	18'-7"	1199						
M 1005	15	17'-4"	1119	STR.					
		TOTAL	17,573	LBS.					

REINFORCING STEEL SAMPLES: Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.

FRANKLIN CONSULTANTS INC. 14/14
Consulting Engineers
COLUMBUS, OHIO

REINFORCING STEEL

UNI-33-0862
ROAD "U" OVER SR 245

UNION COUNTY

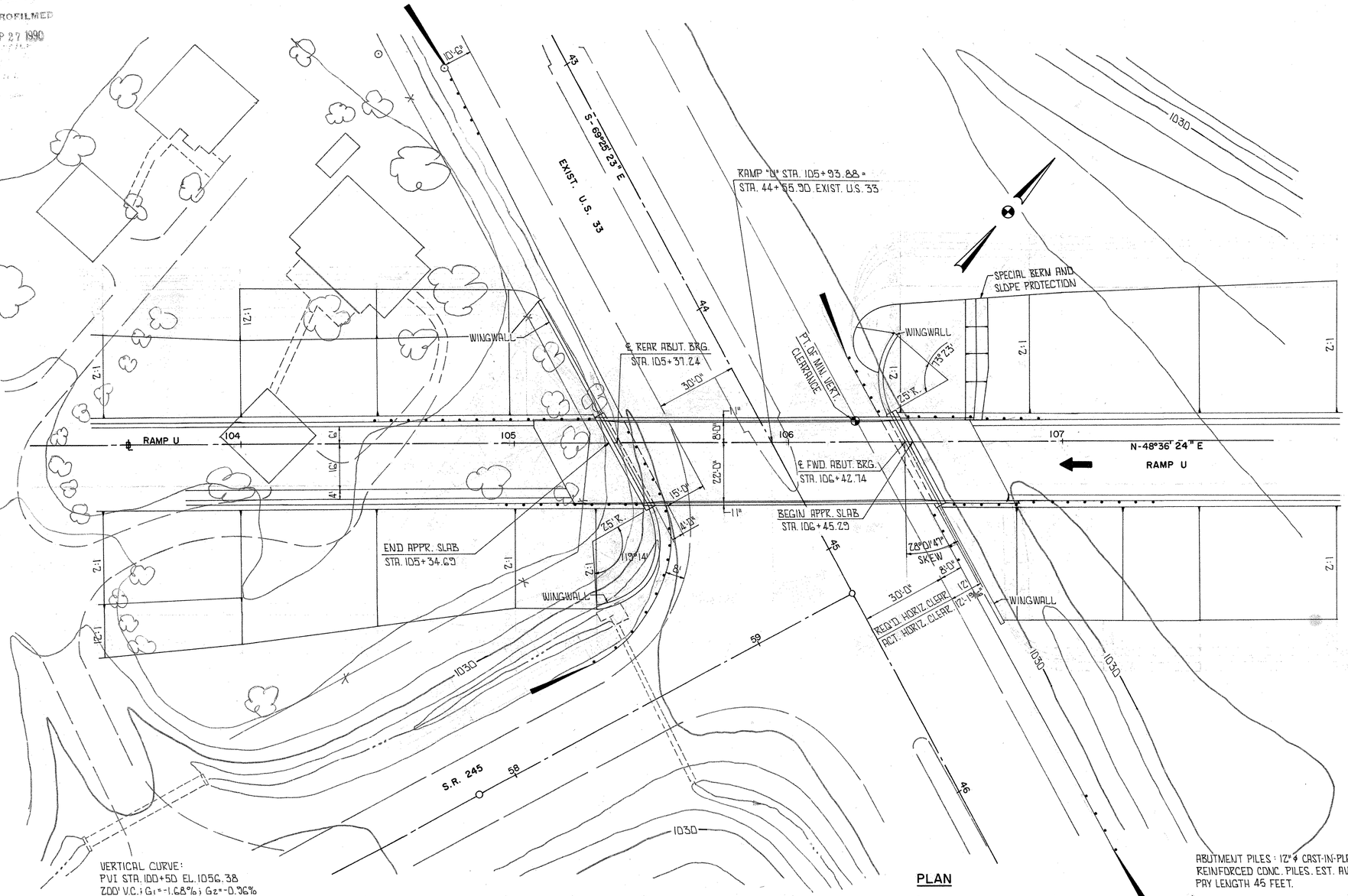
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RMP	RLH	RLH	CB	JF	12/15-85	

BRUNING 44-132 30845-1

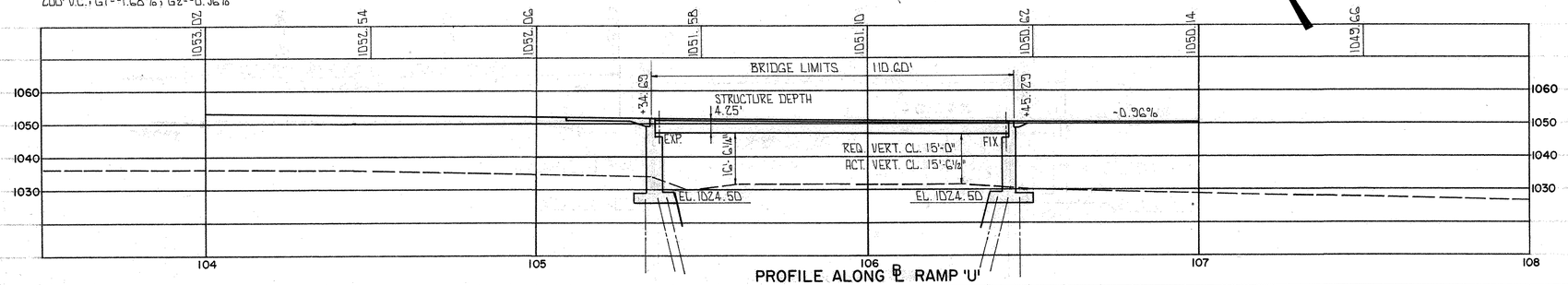
FHWA REGION	STATE	PROJECT	
5	OHIO		

197
225

UNION COUNTY
UNI-33-07.29



PLAN



PROFILE ALONG ℄ RAMP 'U'

NOTE: EARTHWORK LIMITS SHOWN ARE SCHEMATIC. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS-SECTIONS.

PROPOSED STRUCTURE

TYPE: COMPOSITE STEEL GIRDER BRIDGE W/ REINFORCED CONCRETE DECK AND ABUTMENTS.
SPAN : 105'-6" C/C BRGS.
ROADWAY: 30'-0" F/F PARAPET
LOADING: HS 20-44 (CASE II) & ALT. MIL. LO.
WEARING SURFACE: MONO. CONC.
SKEW: 28°01'47" RT. FWD.
APPROACH SLAB: AS-1-81 (25'-0" LONG)
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
ADT: 660-(1985) 1060-(2005)
ADTT: 233-(2005)

FRANKLIN CONSULTANTS INC. 1 / 8
Consulting Engineers
COLUMBUS, OHIO

SITE PLAN

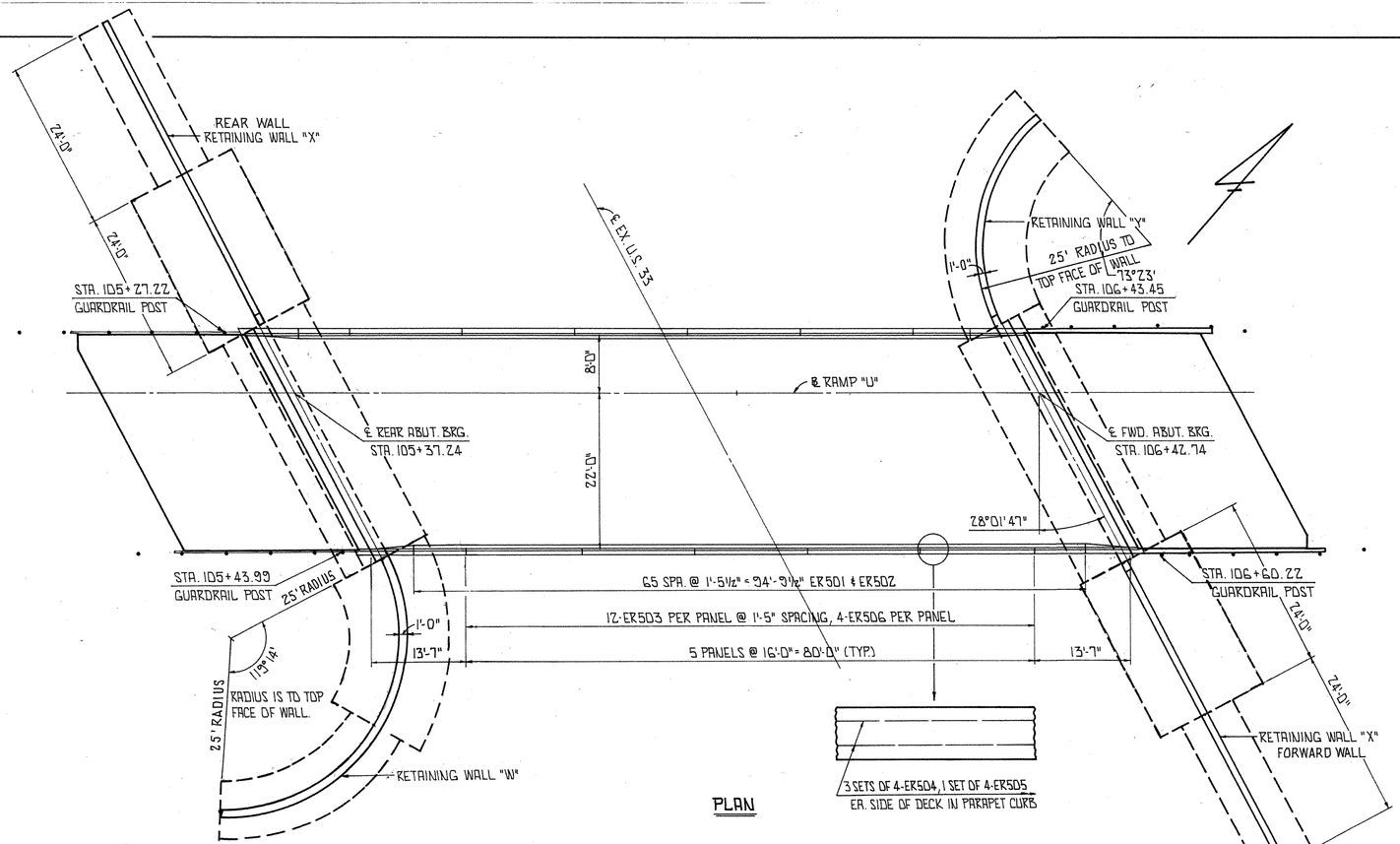
BRIDGE NO. UNI-33-0886
ROAD 'U' OVER EXIST. U.S. 33
STA. 105+34.69 TO 106+45.29

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
		FA	MK	CF	JA 9/17/89

FHWA REGION	STATE	PROJECT	
5	OHIO		

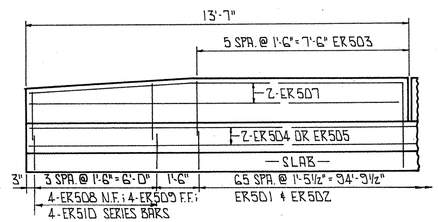
198
225

UNION COUNTY
UNI-33-07.29

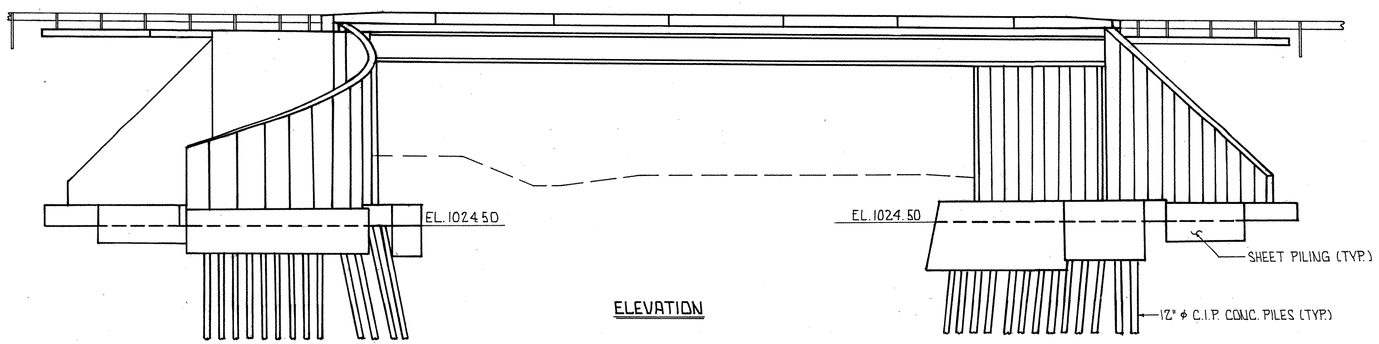


PLAN

FOR PLAN VIEW OF TRANSITION
SEE ABUTMENT SHEET 4/8.



TRANSITION SECTION OF PARAPET *
*FOR ADDITIONAL DETAILS SEE STD. DRWG. BR-1.



ELEVATION

FRANKLIN CONSULTANTS INC.
Consulting Engineers
COLUMBUS, OHIO

7/8

GENERAL PLAN & ELEVATION

UNI-33-0886
ROAD "U" OVER EXIST. U.S. 33
UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CB	MK	MK	RMP	JG	11/5/85	

BRUNING 44-132-30845-1

RECEIVED
SEP 27 1985

FHWA REGION	STATE	PROJECT	
5	OHIO		

199
225

UNION COUNTY
UNI-33-07.29

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81	DATED 11-27-81
BR-1	DATED 5-29-79
EXJ-2-81	REVISED 4-2-84
GR-1	DATED 1-11-85
GR-3	DATED 1-21-85
RB-1-55	REVISED 2-2-59
SD-1-69	DATED 6-12-69

AND TO SUPPLEMENTAL SPECIFICATIONS:

824	DATED 10-8-82
836	DATED 11-12-85
849	DATED 10-19-81

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1983 AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA:

BRIDGE COMPUTATIONS ARE BASED ON SERVICE LOAD DESIGN.
DESIGN LOADING — HS 20-44 CASE II AND ALTERNATE MILITARY LOADING.
CONCRETE CLASS S — UNIT STRESS 1500 P.S.I. (SUPERSTRUCTURE)
CONCRETE CLASS C — UNIT STRESS 1333 P.S.I. (SUBSTRUCTURE)
REINFORCING STEEL — ASTM A615, A616, OR A617, GRADE 60 UNIT STRESS 24,000 P.S.I.

STRUCTURAL STEEL — ASTM A588-UNIT STRESS 27,000 P.S.I. A36-UNIT STRESS 20,000 P.S.I.

DECK PROTECTION METHOD - EPOXY COATED REINFORCING STEEL, TOP MAT ONLY.

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

WINGWALL CONSTRUCTION AND EMBANKMENT CONSTRAINTS: PRIOR TO CONSTRUCTING THE ABUTMENTS AND WINGWALLS, THE EMBANKMENT BEHIND THE ABUTMENT SHALL BE CONSTRUCTED ON A 1.5:1 SLOPE PROJECTED FROM THE TOP OF THE HEEL OF THE ABUTMENT FOOTING UP TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 200 FEET BACK OF EACH ABUTMENT. AFTER THE EMBANKMENT IS COMPLETED WITHIN THE ABOVE REQUIRED LIMITS, THE EXCAVATION FOR THE WINGWALLS AND ABUTMENT FOOTINGS MAY BE MADE AND PILES CAN BE DRIVEN. BEFORE THE BACKWALL IS CONSTUCTED THE EMBANKMENT SHALL BE PLACED UP TO THE LEVEL OF THE SUBGRADE WITH A 1 TO 1 SLOPE FROM THE BRIDGE SEAT.

PILE DESIGN LOADS: THE DESIGN LOAD FOR THE ABUTMENT PILES IS 51 TONS PER PILE.

WINGWALL FOOTING CONSTRUCTION: AFTER EXCAVATING FOR THE CONSTRUCTION OF THE WINGWALL FOOTINGS AND PRIOR TO PLACING THE CONCRETE FOR THE FOOTINGS, THE EXISTING SILT AND CLAY LOCATED BELOW THE PROPOSED WINGWALL FOOTINGS SHOULD BE REMOVED AND REPLACED WITH A COMPACTED 310 SUBBASE GRANULAR MATERIAL. THE REMOVAL LIMITS SHOULD BE ONE (1) FOOT BELOW THE BOTTOM OF THE WINGWALL FOOTINGS AND ONE (1) FOOT OUTSIDE THE PROPOSED FOOTING PLAN DIMENSIONS. THE 310 SUBBASE MATERIAL SHALL BE COMPACTED IN TWO SIX INCH LIFTS WITH A VIBRATORY ROLLER. THE MINIMUM ACCEPTABLE CAPABILITIES FOR THE VIBRATORY ROLLER SHALL BE SIMILAR TO THE COMPACTIVE EFFORT PRODUCED BY A SINGLE DRUM WEIGHING 2000 POUNDS AND HAVING A 30 INCH WIDTH.

FOUNDATION BEARING PRESSURE: WINGWALL FOOTINGS, AS DESIGNED PRODUCE A MAXIMUM BEARING PRESSURE OF 2.5 TONS PER SQUARE FOOT.

PILE HAMMER: THE PILE HAMMER USED TO INSTALL THE CAST-IN-PLACE REINFORCED CONCRETE PILES SHALL HAVE A STATE'S ENERGY RATING OF NOT LESS THAN 15,500 FOOT-POUNDS. THIS REQUIREMENT DOES NOT RELIEVE THE CONTRACTOR FROM 108.05 WHICH STATES THAT THE CONTRACTOR IS TO PROVIDE SUFFICIENT EQUIPMENT FOR PROSECUTING THE REQUIRED WORK. REFER TO "ODOT'S MANUAL OF PROCEDURES FOR STRUCTURES" TO OBTAIN THE STATE'S ENERGY RATING.

PILE WALL THICKNESS: THE RESPONSIBILITY OF CHOOSING AND PROVIDING A SATISFACTORY PILE WALL THICKNESS FOR THIS PROJECT SHALL BE BORNE BY THE CONTRACTOR EXCEPT THAT THE PILE WALL THICKNESS SHALL NOT BE LESS THAN 0.200 INCHES. IF A PILE WALL THICKNESS GREATER THAN 0.200 INCHES IS NECESSARY TO RESIST THE PILE INSTALLATION DRIVING STRESSES, THE CONTRACTOR SHALL MAKE THIS DETERMINATION AND SHALL FURNISH A PILE WITH AN ACCEPTABLE WALL THICKNESS.

MAINTENANCE OF TRAFFIC: TWO LANES OF TRAFFIC WITH A MINIMUM HORIZONTAL WIDTH OF 26'-0" AND A MINIMUM VERTICAL CLEARANCE OF 13'-8" SHALL BE MAINTAINED ON EXISTING U.S. 33 AT ALL TIMES.

UTILITY LINES: ALL EXPENSE INVOLVED IN RELOCATING AND INSTALLING THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNERS. THE CONTRACTOR AND OWNERS ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL HELD TO A MINIMUM.

CONCRETE PROTECTION OF ABUTMENTS SHALL BE APPLIED BEFORE STRUCTURAL STEEL IS ERECTED.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTIONS	SUPER	ABUT.		GEN'L		
503	326	C.Y.	UNCLASSIFIED EXCAVATION		326				
504	769	S.F.	STEEL SHEET PILING LEFT IN PLACE (MIN. SEC. MODULUS		769				
			OF 10 IN.^{3} PER FOOT OF WALL)						
505	LUMP	LUMP	PILE DRIVING EQUIPMENT MOBILIZATION		LUMP				
507	2430	L.F.	12" CAST-IN-PLACE REINFORCED CONCRETE PILES		2430				
509	30,268	LB.	REINFORCING STEEL, GRADE 60	10,860	19,408				
511	114	C.Y.	CLASS S CONCRETE, SUPERSTRUCTURE (SEE PROP. NOTE)	114					
511	219	C.Y.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS		219				
511	122	C.Y.	CLASS C CONCRETE, ABUTMENT FOOTINGS		122				
513	124,572	LB.	STRUCTURAL STEEL, A588 (AISC CATEGORY III) (SEE PROP. NOTE)	124,572					
513	792	EA.	WELDED STUD SHEAR CONNECTORS	792					
514	LUMP	LUMP	PARTIAL PAINTING OF STRUCTURAL STEEL, SYSTEM A	LUMP					
516	72	L.F.	STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC	72					
			COMPRESSION SEALS						
516	70	L.F.	PVC WATERSTOP (AS PER PLAN)		70				
518	97	C.Y.	POROUS BACKFILL		97				
824	16,955	LB.	EPOXY COATED REINFORCING STEEL, GRADE 60	16,624	331				
SPECIAL	599	S.Y.	SEALING OF CONCRETE SURFACES (SEE PROPOSAL NOTE)	595	4				
SPECIAL	1404	S.F.	PROTECTION OF CONCRETE SURFACES (SEE PROPOSAL NOTE)		1404				

WINGWALL QUANTITIES ARE LISTED ON SHEET 208/225

FRANKLIN CONSULTANTS INC. 3/8
Consulting Engineers
COLUMBUS, OHIO

GENERAL NOTES & ESTIMATED QUANTITIES

UNI-33-0886
ROAD "U" OVER EXIST. US 33

UNION COUNTY

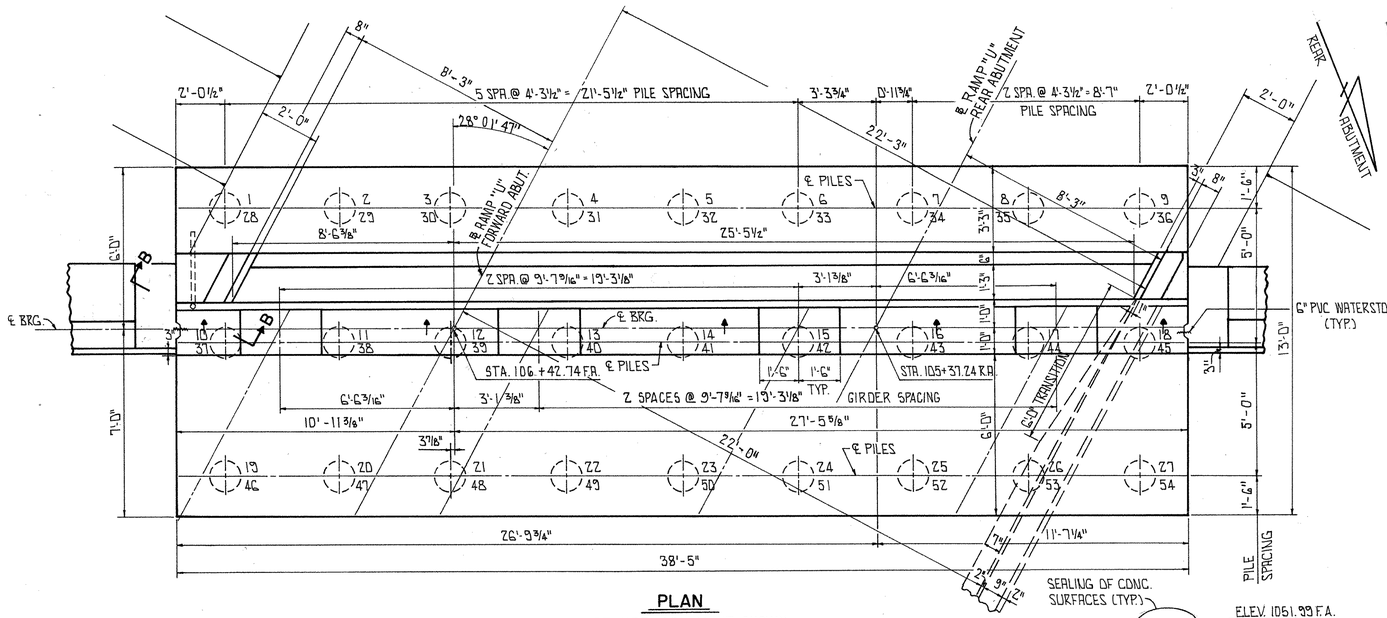
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CB	NK	NK	[illegible]	JH	11/5-85	

RECEIVED
SEP 27 1985

FHWA REGION	STATE	PROJECT	
5	OHIO		

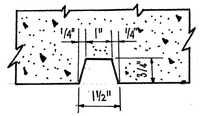
200
225

UNION COUNTY
UNI-33-07.29

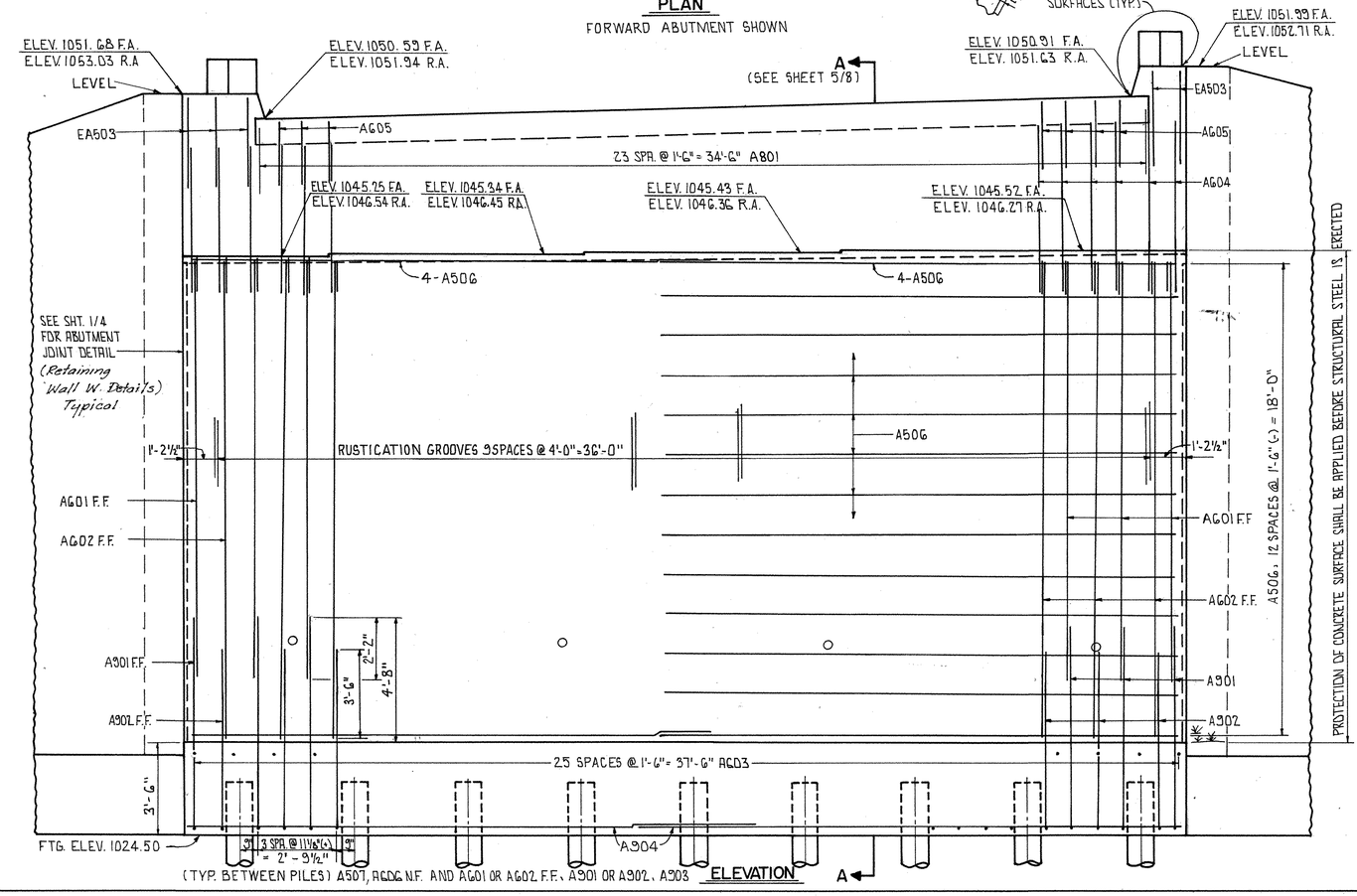


PLAN
FORWARD ABUTMENT SHOWN

PILES 10 THRU 27 ON FORWARD ABUTMENT AND PILES 37 THRU 54 ON REAR ABUTMENT ARE BATTERED PILES.



VERTICAL RUSTICATION GROOVE
SPACED 4'-0" c/c



LEGEND
F.A. = FORWARD ABUTMENT
R.A. = REAR ABUTMENT
F.F. = FAR FACE
N.F. = NEAR FACE
F.A. / R.A. = PILE NUMBERING

MIN. BAR LAP
#5 = 1'-10"
#6 = 2'-2"
#9 = 4'-8"

FOR SECTIONS SEE SHT. 5/8.

NOTE: SHEET PILING FULL LENGTH OF FOOTING. STEEL SHEET PILING LEFT IN PLACE SHALL HAVE A MINIMUM SECTION MODULUS OF 10.0 IN.³ PER FOOT OF WALL.

FRANKLIN CONSULTANTS INC. 4 / 8
Consulting Engineers
COLUMBUS, OHIO

ABUTMENT DETAILS

UNI-33-0886
ROAD "U" OVER EXIST. US 33
UNION COUNTY

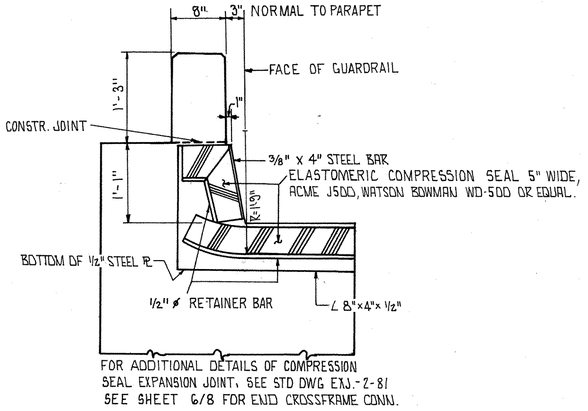
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RMP	RMP	MK	CAB	JF	11/5-85	

BRUNING 44-132-30845-1

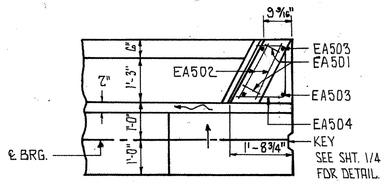
FHWA REGION	STATE	PROJECT	
5	OHIO		

201
225

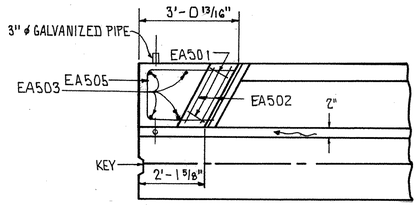
UNION COUNTY
UNI-33-07.29



SECTION B-B



PLAN



PLAN

NOTES:

BEARING ANCHORS: AT THE OPTION OF THE CONTRACTOR, BEARING ANCHORS OR FORMED HOLES, LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST IN PLACE.

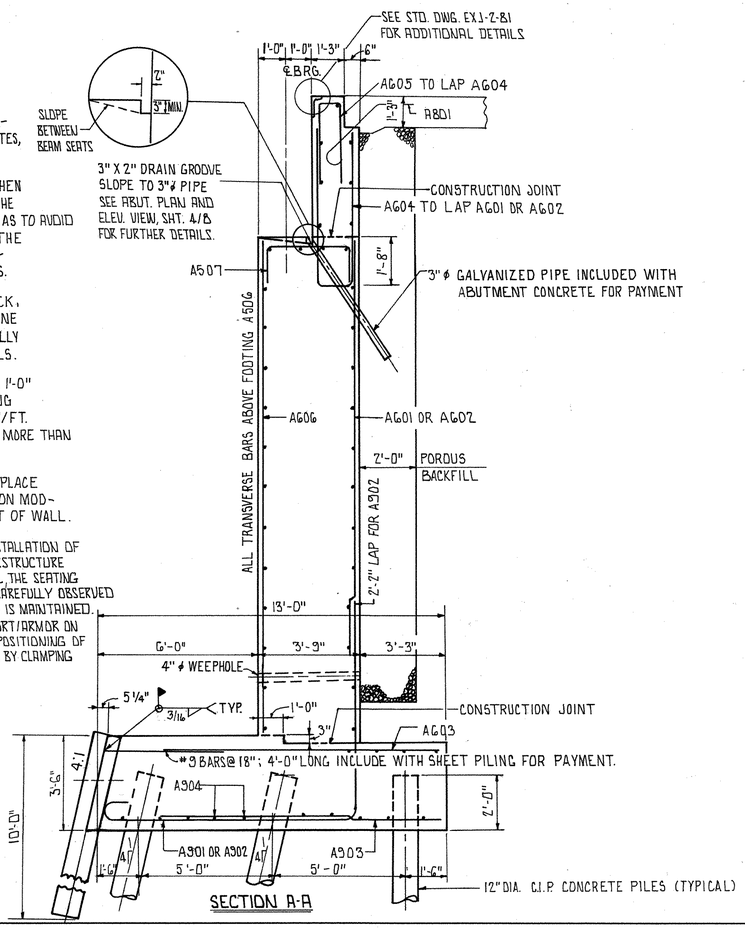
SPECIAL CARE SHALL BE TAKEN WHEN PLACING REINFORCING STEEL IN THE VICINITY OF THE BEAM SEAT SO AS TO AVOID INTERFERENCE WHEN DRILLING THE ANCHOR BAR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.

POROUS BACKFILL, 2 FEET THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE AND LATERALLY TO THE END OF THE WINGWALLS.

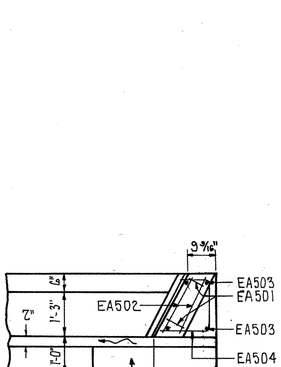
WEEPHOLES MUST MAINTAIN A 1'-0" CLEARANCE ABOVE THE EXISTING GROUND. SLOPE HOLES AT 1/8"/FT. FOR DRAINAGE AND SPACE NO MORE THAN 10'-0" C/C.

STEEL SHEET PILING LEFT IN PLACE SHALL HAVE A MINIMUM SECTION MODULUS OF 10.0 IN.³ PER FOOT OF WALL.

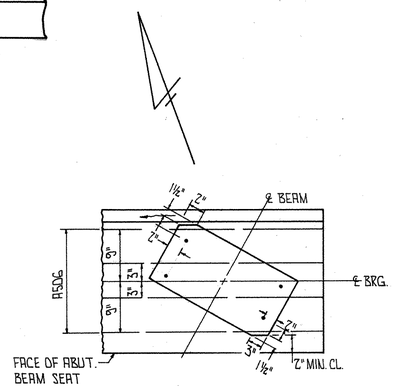
INSTALLATION OF SEAL: DURING INSTALLATION OF THE SUPPORT/ARMOR FOR THE SUPERSTRUCTURE SIDE OF THE EXPANSION JOINT SEAL, THE SEATING OF BEAMS ON BEARINGS SHALL BE CAREFULLY OBSERVED TO ASSURE THAT POSITIVE BEARING IS MAINTAINED. PROPER VERTICAL FIT OF THE SUPPORT/ARMOR ON THE BEAMS SHALL BE ACHIEVED BY POSITIONING OF THE BEVEL FILL PLATES RATHER THAN BY CLAMPING FORCE.



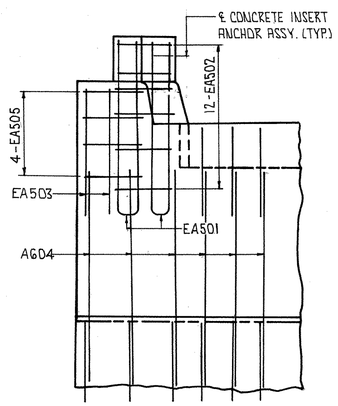
SECTION A-A



ELEVATION



BEARING ANCHOR PLAN
(FIXED BEARING SHOWN)
SHOWING MODIFICATION OF MASONRY PLATE



ELEVATION

MIN. BAR LAPS
#5 = 1'-10"
#6 = 2'-2"
#9 = 4'-8"

FRANKLIN CONSULTANTS INC. 5/8
Consulting Engineers
COLUMBUS, OHIO

ABUTMENT DETAILS
UNI-33-0886
ROAD "U" OVER EXIST. US 33

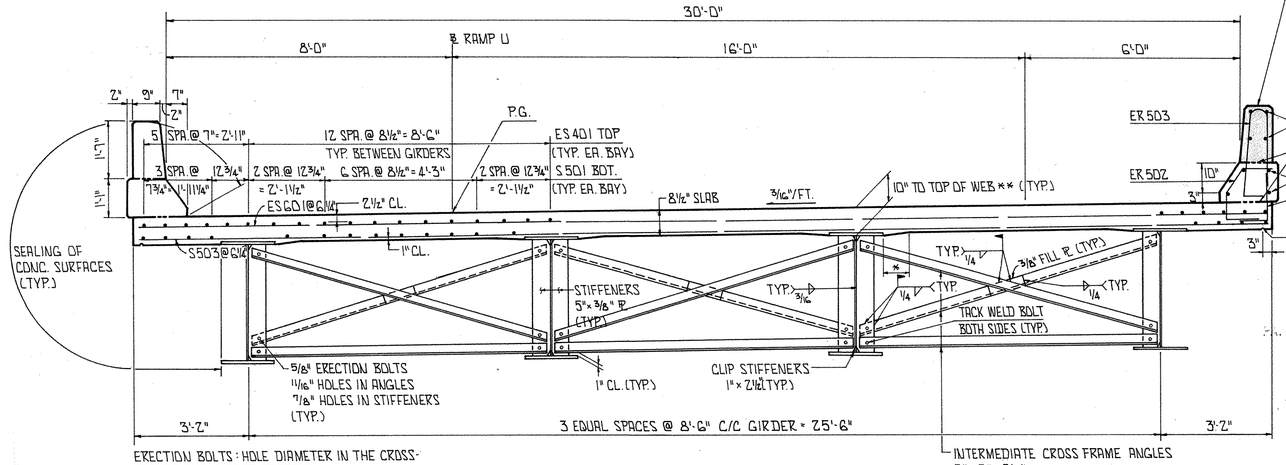
UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KMP	BMP	BWJ	CB	JF	11/5-85	

FHWA REGION	STATE	PROJECT	
5	OHIO		

7.02
22.5

UNION COUNTY
UNI-33-07.29



TRANSVERSE SECTION

DEFLECTION JOINT: ¼" PREFORMED EXP. JT. FILLER (INC. W/SUPER. CONC. FOR PAYMENT)

CONCRETE & REINFORCING STEEL QUANTITIES FOR PARAPETS ARE INCLUDED WITH ITEMS 511 CLASS S CONCRETE, SUPERSTRUCTURE AND 824 EPOXY COATED REIN. STEEL

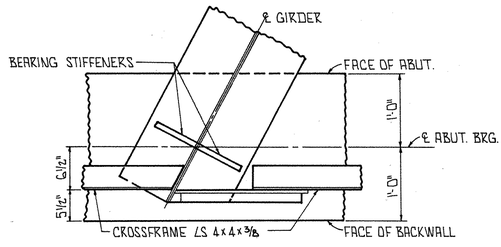
SEE GENERAL PLAN FOR PARAPET REIN. SPACING

FOR ADDITIONAL RAILING DETAILS, SEE STD. DWG. BR-1

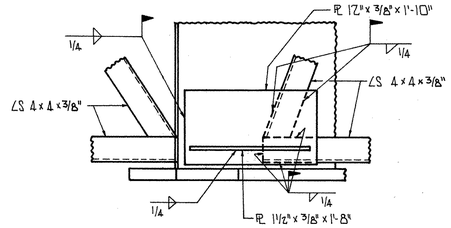
* A HAUNCH WIDTH OF 3" SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 0" AND 12" PROVIDED THAT THE SLOPE SHALL BE NOT MORE THAN 1:4 FOR A HAUNCH LESS THAN 3" IN WIDTH.

** DECK SLAB: THIS IS THE DESIGN DIMENSION. THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED UPON THIS DIMENSION EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE GIRDER MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE. DEDUCTION SHALL BE MADE FOR VOLUME OF ENCASED STEEL PLATES AS PER 511.18.

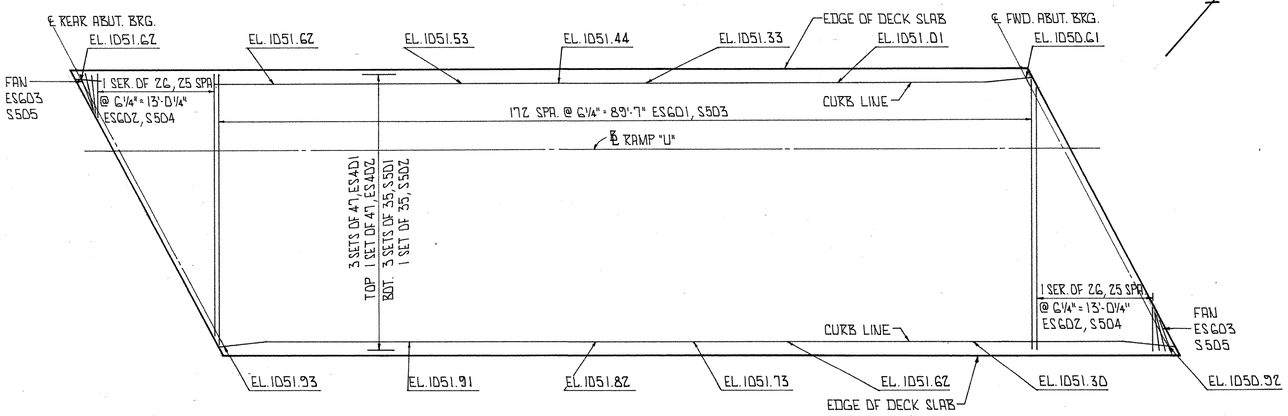
ERECTION BOLTS: HOLE DIAMETER IN THE CROSS-FRAMES AND GIRDER STIFFENERS SHALL BE RESPECTIVELY 1/16" AND 1/4" LARGER THAN THE DIAMETER OF THE ERECTION BOLTS. UNLESS REPLACED BY PERMANENT HIGH STRENGTH BOLTS, ERECTION BOLTS SHALL REMAIN IN PLACE. LOCK WASHERS SHALL BE FURNISHED FOR OTHER THAN FULLY TORQUED HIGH STRENGTH ERECTION BOLTS. BOLTS SHALL BE FURNISHED AS PART OF 513.



PLAN



ELEVATION
END CROSSFRAME CONNECTION



SLAB REINFORCING & SCREED ELEVATIONS

THE TOP OF THE CONCRETE ELEVATIONS SHOWN SHALL GOVERN THE PLACING OF FORMS OR SCREEDS PRIOR TO PLACING THE DECK CONCRETE. ALLOWANCE HAS BEEN MADE FOR THE DEFLECTION DUE TO THE WEIGHT OF CONCRETE. THE SCREEDS ARE AT FIFTH POINTS AND AT CENTERLINE OF THE SPAN.

MIN. LAP
#4 = 1'-10"
#5 = 2'-5"
#6 = 2'-10"

FRANKLIN CONSULTANTS INC. 6 / 8
Consulting Engineers
COLUMBUS, OHIO

SUPERSTRUCTURE DETAILS

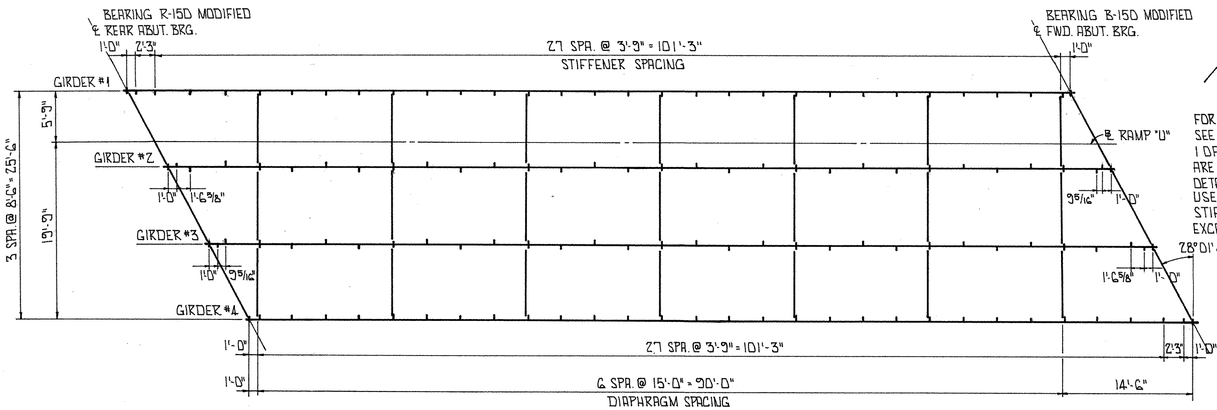
UNI-33-0886
ROAD "U" OVER EXIST. U.S. 33
UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CB	MK	MK	KMJ	JF	11/5-88	

FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-07.29

203
229



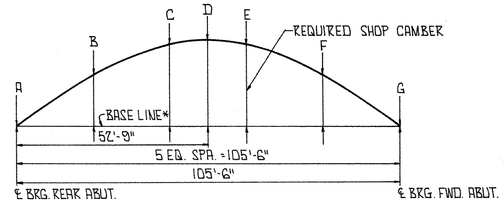
FOR BEARING DETAILS SEE STD. DWG. RB-1-55 AND SHT. 5/8 FOR ADDITIONAL PLAN DETAIL.

FOR END CROSSFRAME DETAILS SEE STD. DWG. SD-1-69 SHEET 1 OF 4. WITH THE EXCEPTION THAT 3/8" ANGLES ARE TO REPLACE 5/16" ANGLES. FOR ADDITIONAL DETAILS SEE SHT. 6/8. AND STD. DWG. EXJ-2-81. USE SINGLE INTERMEDIATE STIFFENERS THROUGHOUT BRIDGE EXCEPT AT CROSSFRAME LOCATIONS.

BEARINGS: IN LIEU OF A588 STEEL, A36 STEEL, PAINTED MAY BE FURNISHED FOR BEARINGS, EXCEPT FOR UPPER PLATE ELEMENT OF BEARINGS. THIS A36 STEEL SHALL BE INCLUDED WITH THE A588 STEEL QUANTITY FOR PAYMENT.

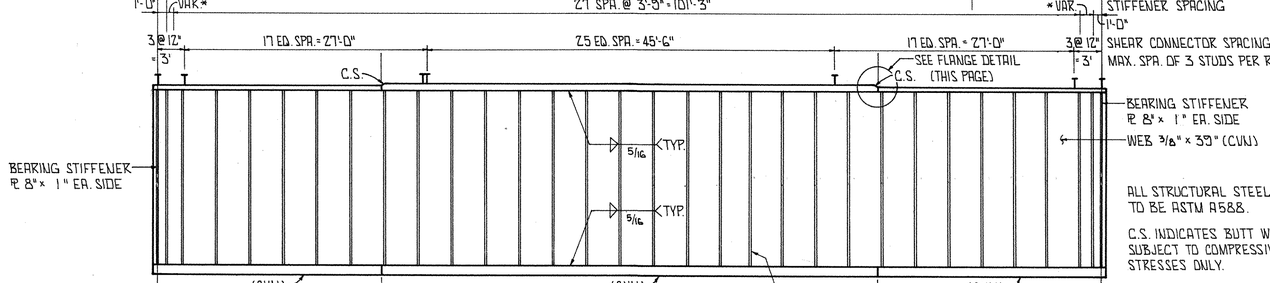
FRAMING PLAN

DEFLECTION AND CAMBER								
POINT	R ABUT.	1/5	2/5	1/2	3/5	4/5	F ABUT.
	A	B	C	D	E	F	G
DEFLECTION DUE TO WEIGHT OF STEEL	0	9/16"	1 7/8"	1 15/16"	1 7/8"	9/16"	0
DEFLECTION DUE TO WEIGHT OF CONCRETE	0	1 3/4"	2 13/16"	2 15/16"	2 13/16"	1 3/4"	0
DEFLECTION DUE TO REMAINING DEAD LOAD	0	9/16"	1 7/8"	1 15/16"	1 7/8"	9/16"	0
REQUIRED SHOP CAMBER	0	2 7/8"	4 9/16"	4 13/16"	4 9/16"	2 7/8"	0



CAMBER DIAGRAM

* BASE LINE IS A LINE FROM ℄ GIRDER AT ℄ REAR ABUT. BEARING TO ℄ GIRDER AT ℄ FORWARD ABUTMENT BEARING.



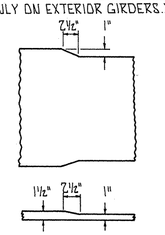
WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO THE TOP FLANGES OF THE FASCIA STRINGERS. ATTACHMENTS SHALL NOT BE MADE TO THE BOTTOM FLANGE. FILLET WELDS TO TOP FLANGES SHALL NOT BE CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG AND NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.

WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MIN. NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01 OF C.M.S.

* SEE FRAMING PLAN

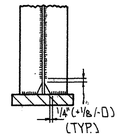
GIRDER ELEVATION

(GIRDER 3 SHOWN)

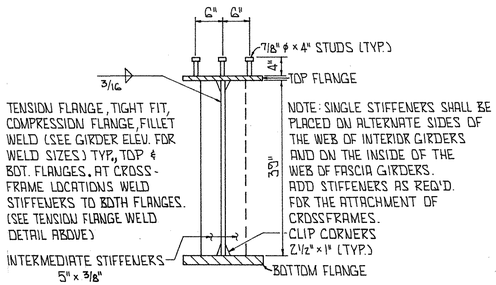


THICKNESS VARIATION DETAIL SHOWS TOP FLANGE ONLY

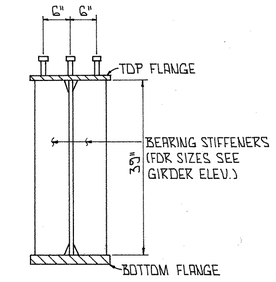
FLANGE DETAIL



TYPICAL CROSSFRAME CONNECTION OF TENSION FLANGE AND INTERMEDIATE STIFFENERS



TYPICAL GIRDER SECTION AT INTERMEDIATE STIFFENERS



TYPICAL GIRDER SECTION AT ABUTMENTS

PARTIAL PAINTING OF STRUCT. STEEL: AN 8 FOOT LENGTH OF THE END OF GIRDERS ADJACENT TO ABUTMENTS, AND ALL CROSSFRAMES, BRG'S. & OTHER STEEL WITHIN THESE LIMITS SHALL BE PAINTED. PAINT SHALL BE 514, SYSTEM A. THE PRIME COAT SHALL BE 708.17. THE TOP COAT SHALL BE 708.18 EXCEPT THAT THE COLOR SHALL CLOSELY APPROACH FEDERAL STANDARD NO. 595A-20045 OR 20059. (THE COLOR OF WEATHERING STEEL). THE REMAINDER OF THE A588 STEEL IS TO BE LEFT UNPAINTED. SEE CMS 513.221 FOR CLEANING REQUIREMENTS.

FRANKLIN CONSULTANTS INC. 7 / 8
Consulting Engineers
COLUMBUS, OHIO

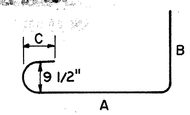
SUPERSTRUCTURE DETAILS

UNI-33-0886
ROAD "U" OVER EXIST. US. 33

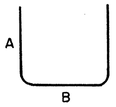
UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CB	MK	MK		JF	11/6-88	

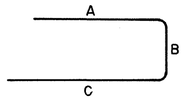
BRUNING 44-132-30845-1



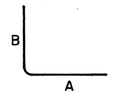
TYPE 1



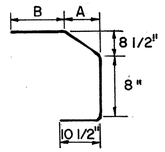
TYPE 2



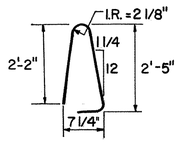
TYPE 3



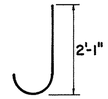
TYPE 4



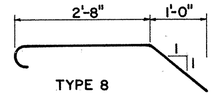
TYPE 5



TYPE 6



TYPE 7



TYPE 8

FHWA REGION	STATE	PROJECT		
5	OHIO			

UNION COUNTY
UNI-33-07.29

2.04
225

ABUTMENTS

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
EA501	8	13'-1"	109	2	6'-6"	0'-4"			
EA502	48	1'-7"	79	STR.					
EA503	18	3'-6"	66	STR.					
EA504	6	4'-3"	27	3	1'-0"	1'-9"	1'-9"		
EA505	8	6'-0"	50	3	3'-0"	1'-9"	2'-6"		
A506	112	19'-11"	2327	STR.					
A507	72	6'-8"	501	4	3'-3"	1'-10"			
A601	36	16'-4"	883	STR.					
A602	36	17'-4"	937	STR.					
A603	52	10'-3"	801	STR.					
A604	72	13'-8"	1478	2	6'-4"	1'-4"			
A605	64	8'-0"	769	2	3'-3"	0'-11"			
A606	72	17'-0"	1838	STR.					
RB01	48	5'-0"	641	8					
A901	36	17'-11"	2193	1	9'-3"	7'-8"	0'-11¾"		
A902	36	15'-3"	1867	1	9'-3"	6'-6"	0'-11¾"		
A903	72	9'-3"	2264	STR.					
A904	40	21'-5"	2913	STR.					
		TOTAL	19,412	LBS.	UNCOATED				
		TOTAL	331	LBS.	EPOXY COATED				

SUPERSTRUCTURE

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	
ES401	141	30'-0"	2826	STR.						
ES402	47	22'-2"	696	STR.						
S501	105	30'-0"	3285	STR.						
S502	35	23'-11"	873	↑						
S503	173	31'-6"	5684	↓						
S504	2 SER. OF 26	30'-6" TO 51'-6" *	976							*12" INC.
S505	8	5'-0"	42	STR.						
ER501	132	2'-1"	287	4	1'-4"	10½"				
ER502	132	2'-11"	402	5	6"	9"				
ER503	144	5'-3"	789	6						
ER504	24	30'-0"	751	STR.						
ER505	8	24'-1"	201	↑						
ER506	40	15'-8"	654	↓						
ER507	16	13'-3"	221	STR.*						*BEND IN FIELD
ER508	16	2'-8"	45	7						
ER509	4 SER. OF 4	3'-7" TO 3'-3" *	57	4	3'-0" TO 2'-7½"	9"				*1½" INC.
ER510	4 SER. OF 4	2'-7" TO 2'-8" *	44	5	2" TO 5"	7"				*1" INC.
ES601	173	31'-6"	8185	STR.						
ES602	2 SER. OF 26	30'-6" TO 51'-6" *	1406	STR.						
ES603	8	5'-0"	60	STR.						
		TOTAL	10,860	LBS.	UNCOATED					
		TOTAL	16,624	LBS.	EPOXY COATED					

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E

REINFORCING STEEL SAMPLES: Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.

BARS WITH THE PREFIX "E" ARE EPOXY COATED.

FRANKLIN CONSULTANTS INC. 8/8
Consulting Engineers
COLUMBUS, OHIO

REINFORCING STEEL

UNI-33-0886
ROAD "U" OVER EXIST. US 33

UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CB	MK	MK		JZ	11/5-85	

FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-07.29

20.5
22.5

PLAN

ABUTMENT JOINT

TYPE "B" WATERPROOFING 3'-0" WIDE FROM TOP OF FOOTING TO 1'-0" BELOW TOP OF WALL

NOTE: PVC WATERSTOP SHALL RUN FROM 6" BELOW TOP OF WALL TO TOP OF FOOTING. (TYP.)

CONTRACTION JOINT

ELEVATION

SECTION A-A

SECTION B-B

STEEL SHEET PILES LEFT IN PLACE SHALL HAVE A MIN. SECT. MODULUS OF 16.28 IN.³ PER FOOT OF WALL. (TYPICAL)

STEEL SHEET PILING LEFT IN PLACE SHALL HAVE A MIN. SECT. MODULUS OF 5.2 IN.³/FT. OF WALL.

MIN. LAP LENGTH
#5 = 1'-10"
#10 = 5'-10"
#6 = 7'-2"

LEGEND
F.F. = FAR FACE
N.F. = NEAR FACE

1. RETAINING WALL CONCRETE SHALL BE CLASS C, UNIT STRESS 1333 PSI., AND REINFORCING STEEL SHALL BE ASTM A615, A616, OR A617, GRADE 60, UNIT STRESS 24,000 PSI.
2. ALL REINFORCEMENT BAR SPACING IS MEASURED ALONG 25'-0" RADIUS.
3. WEEPHOLES MUST MAINTAIN A 1'-0" CLEARANCE ABOVE EXISTING GROUND. SLOPE HOLES AT 1/8"/FT. FOR DRAINAGE AND SPACE NO MORE THAN 10'-0" C/c.
4. POROUS BACKFILL, 2 FT. THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE TO 6" BELOW THE WEEPHOLE AND LATERALLY TO THE ENDS OF THE WALL. PROTECTION OF CONCRETE SURFACES SHALL BE APPLIED TO FRONT FACE OF RETAINING WALLS DOWN TO GROUND LINE. (TYP. ALL WALLS)

FOR LOCATION OF RETAINING WALL, SEE GENERAL PLAN SEE SHEET 19B 22.5

FOR GENERAL NOTES SEE SHEET 19 22.5

FRANKLIN CONSULTANTS INC. 1 / 4
Consulting Engineers
COLUMBUS, OHIO

RETAINING WALL "W" DETAILS

UNI-33-0886
ROAD "U" OVER EXIST. US. 33

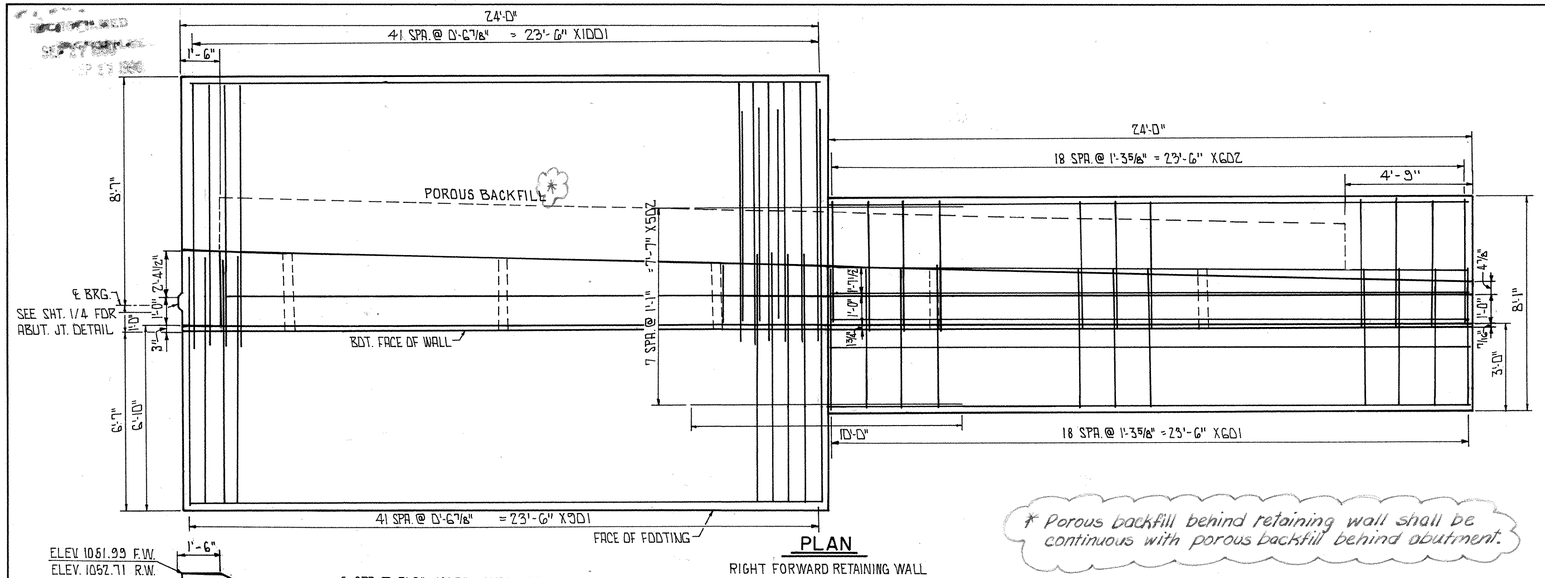
UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RMP	RMP	MK	CB	JG	11-5-85	

revised 1-22-88

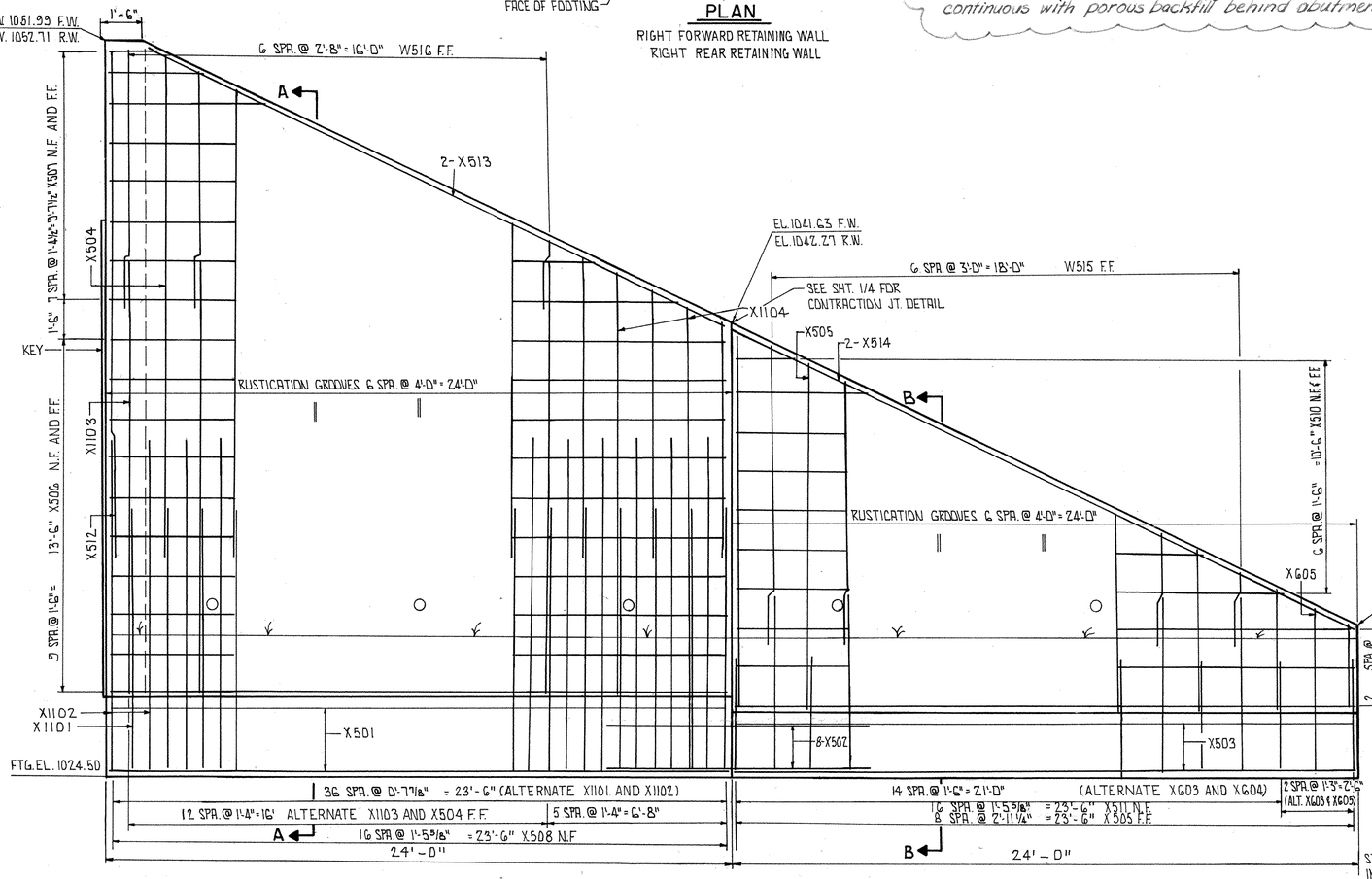
FHWA REGION	STATE	PROJECT	
5	OHIO		

UNION COUNTY
UNI-33-07.29



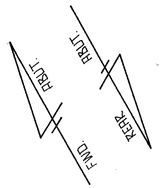
PLAN
RIGHT FORWARD RETAINING WALL
RIGHT REAR RETAINING WALL

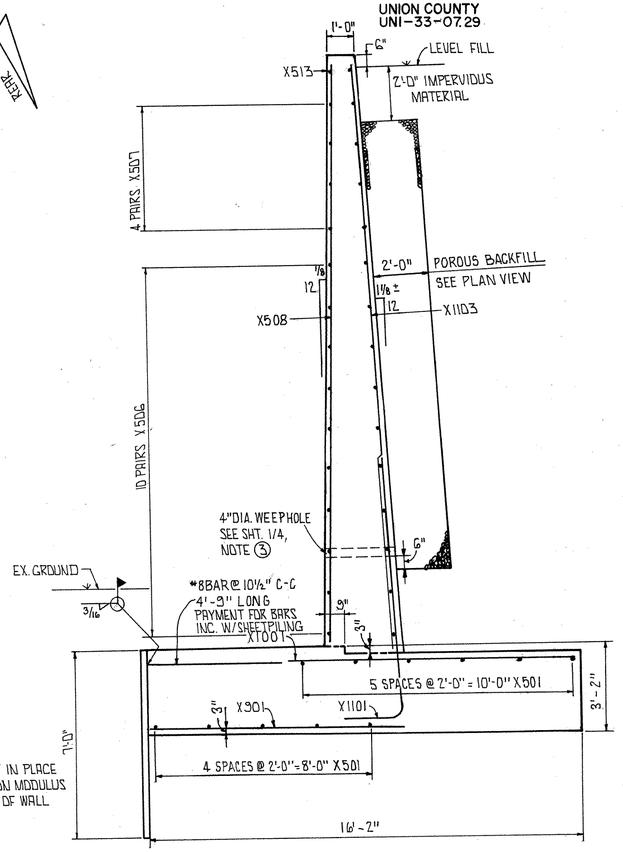
* Porous backfill behind retaining wall shall be continuous with porous backfill behind abutment.



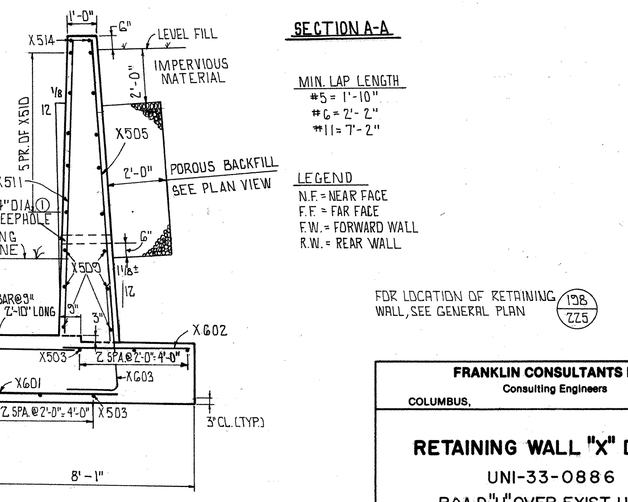
ELEVATION

STEEL SHEET PILING LEFT IN PLACE SHALL HAVE A MIN. SECTION MODULUS OF 2.4 CU. IN. PER FOOT OF WALL.





STEEL SHEET PILING LEFT IN PLACE SHALL HAVE A MIN. SECTION MODULUS OF 18.02 CU. IN. PER FOOT OF WALL



SECTION B-B

SECTION A-A

MIN. LAP LENGTH
#5 = 1'-10"
#6 = 2'-2"
#11 = 7'-2"

LEGEND
N.F. = NEAR FACE
F.F. = FAR FACE
F.W. = FORWARD WALL
R.W. = REAR WALL

FOR LOCATION OF RETAINING WALL, SEE GENERAL PLAN (138/225)

FRANKLIN CONSULTANTS INC. (2/4)
Consulting Engineers
COLUMBUS, OHIO

RETAINING WALL "X" DETAILS

UNI-33-0886
ROAD "U" OVER EXIST U.S. 33
UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RMP	RMP	RJ	CB	JK	1/3-88	

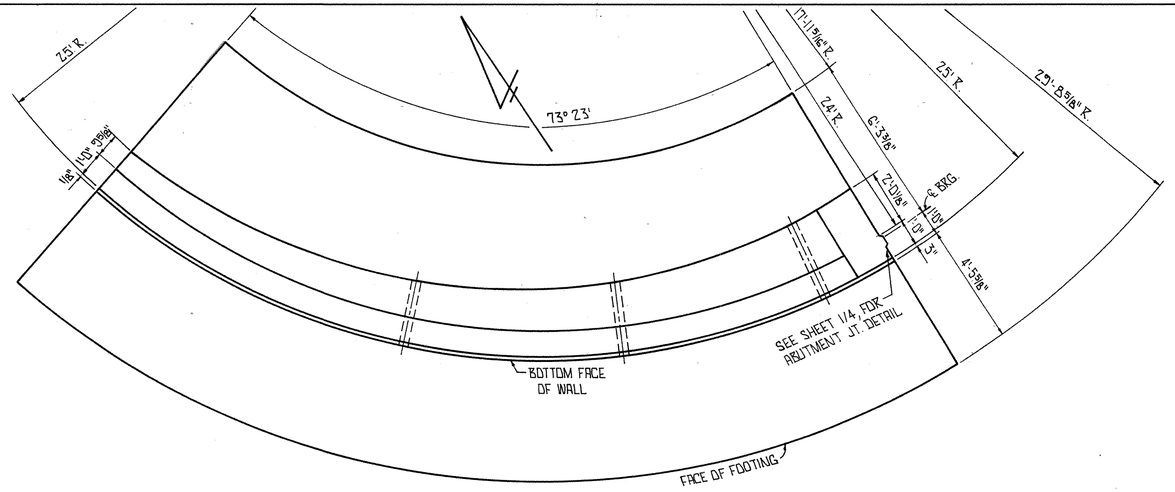
BRUNING 44.132 30845-1

revised 1-22-88

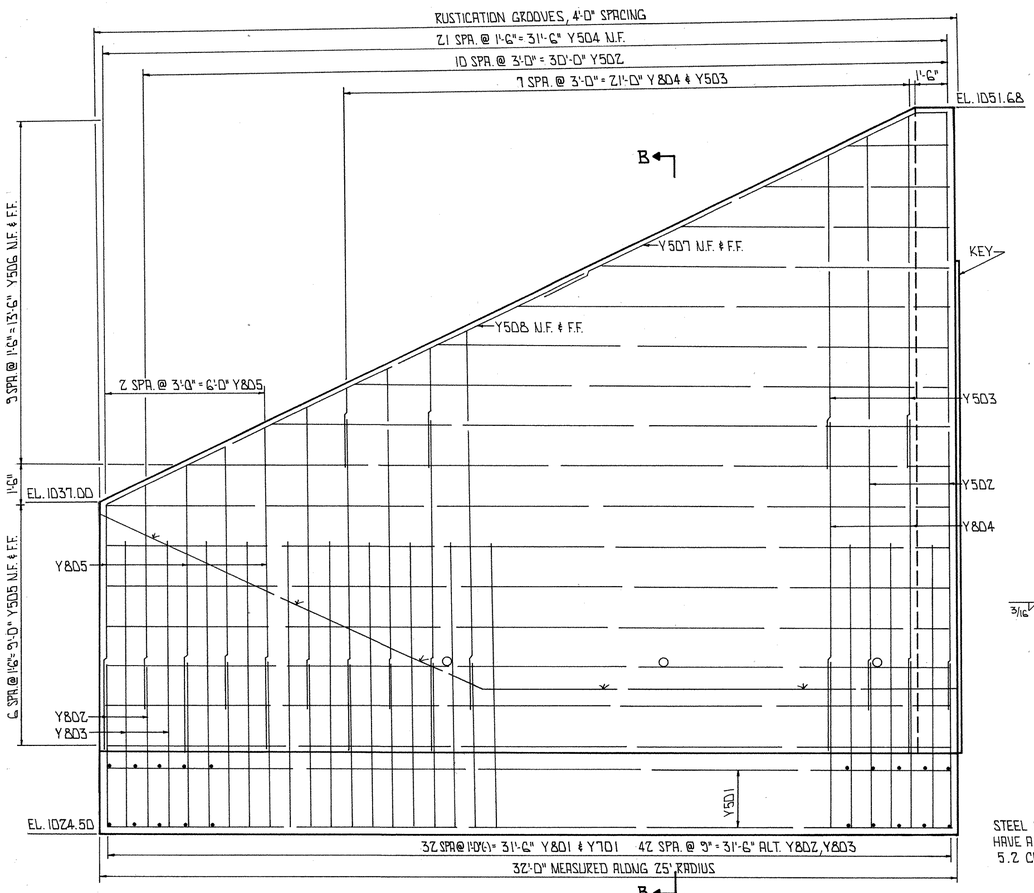
FHWA REGION	STATE	PROJECT	
5	OHIO		

207
225

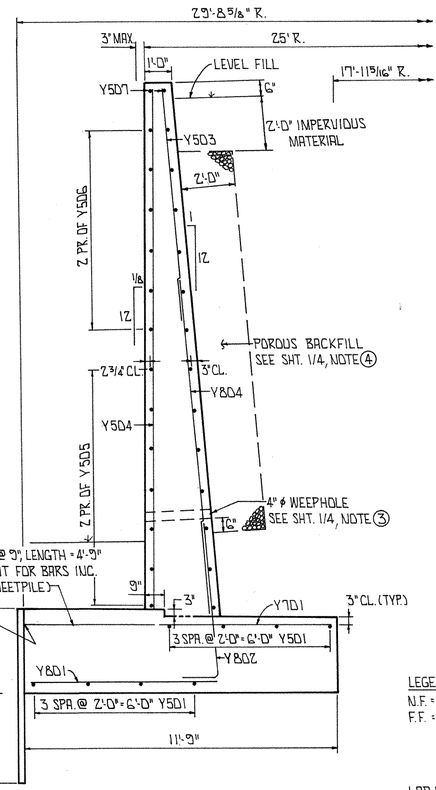
UNION COUNTY
UNI-33-07.29



PLAN



ELEVATION
(SEE SHEET 1/4, NOTE 2)



STEEL SHEET PILING LEFT IN PLACE SHALL HAVE A MINIMUM SECTION MODULUS OF 5.2 CU. IN. PER FOOT OF WALL.

SECTION B-B

LEGEND
N.F. = NEAR FACE
F.F. = FAR FACE

LAP LENGTHS
#5 = 1'-10"
#8 = 3'-8"

FOR LOCATION OF RETAINING WALL, SEE GENERAL PLAN (198 / 225)

FRANKLIN CONSULTANTS INC. 3 / 4
Consulting Engineers
COLUMBUS, OHIO

RETAINING WALL "Y" DETAILS
UNI-33-0886
ROAD "U" OVER EXIST. US 33

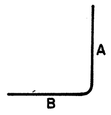
UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RMP	RMP	MK	CB	JF	11/15/85	

FHWA REGION	STATE	PROJECT	
5	OHIO		

208
225

UNION COUNTY
UNI-33-07.29



TYPE 1

RETAINING WALL "W"

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	
W501	5	23'-6"	123	STR.△						△ BEND IN FIELD
W502	5	23'-6"	123	↑ △						△ BEND IN FIELD
W503	3	27'-6"	86	△						△ BEND IN FIELD
W504	3	27'-6"	86	△						△ BEND IN FIELD
W505	1 SER.	13'-0" TO 20'-10½"*	177							* 10½" INC.
	OF 10									
W506	1 SER.	16'-9" TO 24'-9" *	368							* 6" INC.
	OF 17									
W507	24	23'-8"	592	△						△ BEND IN FIELD
W508	2 SER.	1'-3" TO 19'-0"*	106	△						* 4'- 5¼ INC.
	OF 5									△ BEND IN FIELD
W509	1 SER.	7'-9" TO 16'-9¾" *	141							* 10⅞" INC.
	OF 11									
W510	12	27'-8"	346	△						△ BEND IN FIELD
W511	2 SER.	1'-0" TO 23'-1" *	151	△						* 4'-5" INC.
	OF 6									△ BEND IN FIELD
W512	1 SER.	3'-3" TO 12'-0" *	87							* 10½" INC.
	OF 11									
W513	1 SER.	7'-6" TO 17'-0" *	256							* 6" INC.
	OF 20									
W514	2	29'-3"	61	△						△ BEND IN FIELD
W515	2	24'-0"	50	△						△ BEND IN FIELD
W516	1 SER.	4'-6" TO 11'-6" *	75							* 10½" INC.
	OF 9									
W517	1	15'-0"	16							
W518	18	10'-0"	188	△						△ BEND IN FIELD
WGD1	22	4'-11"	162	↓						
WGD2	22	4'-9"	157	STR.						
WGD3	11	5'-3"	87	1	4'-5"	12"				
WGD4	11	7'-7"	125	1	6'-9"	12"				
W9D1	33	8'-6"	954	STR.						
W10D1	37	9'-0"	1433	STR.						
W10D2	19	10'-2"	831	1	8'-8"	1'-10"				
W10D3	19	15'-10"	1294	1	14'-4"	1'-10"				
W10D4	9	14'-7"	565	STR.						
		TOTAL	8640	LBS.	UNCOATED					

RETAINING WALL "X" (2 WALLS GIVEN)

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	
X501	22	23'-6"	539	STR.						
X502	32	10'-0"	334	↑						
X503	12	23'-6"	294							
X504	2 SER.	9'-0" TO 19'-8" *	269							* 1'-4" INC.
	OF 9									
X505	2 SER.	3'-2" TO 14'-6" *	166							* 1'-5" INC.
	OF 9									
X506	40	23'-6"	980							
X507	4 SER.	1'-2" TO 21'-10" *	384							* 2'-7" INC.
	OF 8									
X508	2 SER.	14'-3" TO 24'-3" *	683							* 7½" INC.
	OF 17									
X509	12	23'-6"	294							
X510	4 SER.	2'-3" TO 20'-9" *	336							* 3'-1" INC.
	OF 7									
X511	2 SER.	3'-0" TO 14'-0" *	301							* 8 1/4 INC.
	OF 17									
X512	2	19'-8"	41							
X513	4	24'-3"	101							
X514	4	26'-2"	109							
X515	2 SER.	3'-0" TO 11'-6" *	106							* 1'-5" INC.
	OF 7									
X516	2 SER.	2'-6" TO 9'-0" *	84							* 1'-1" INC.
	OF 7									
X601	38	4'-11"	281	↓						
X602	38	4'-9"	271	STR.						
X603	18	5'-3"	142	1	4'-5"	1'-0"				
X604	14	7'-7"	159	1	6'-9"	1'-0"				
X605	2	7'-2"	22	1	6'-4"	1'-0"				
X9D1	84	9'-3"	2642	STR.						
X10D1	84	9'-10"	3554	STR.						
X11D1	36	11'-9"	2247	1	10'-1"	2'-0"				
X11D2	36	14'-7"	2789	1	12'-11"	2'-0"				
X11D3	14	16'-9"	1246	STR.						
X11D4	2 SER.	14'-7" TO 16'-0" *	325	STR.						* 1'-5" INC.
	OF 2									
		TOTAL	18,699	LBS.	UNCOATED					

RETAINING WALL "Y"

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	
Y501	8	31'-6"	263	STR.△					△	BEND IN FIELD
Y502	1 SER.	8'-3" TO 22'-5" *	176	↑						* 1'-5" INC.
	OF 11									
Y503	1 SER.	3'-0" TO 12'-11" *	66							* 1'-5" INC.
	OF 8									
Y504	1 SER.	9'-0" TO 23'-10½"*	377							* 8½" INC.
	OF 22									
Y505	14	31'-8"	462	△					△	BEND IN FIELD
Y506	2 SER.	1'-2" TO 28'-2" *	306	△						* 3'-0" INC.
	OF 10								△	BEND IN FIELD
Y507	2	15'-6"	32	△					△	BEND IN FIELD
Y508	2	20'-0"	42	△					△	BEND IN FIELD
Y701	33	6'-8"	450							
				↓						
Y801	33	7'-0"	617	STR.						
Y802	22	7'-5"	436	1	6'-3"	1'-4"				
Y803	21	11'-10"	663	1	10'-8"	1'-4"				
Y804	8	12'-6"	267	STR.						
Y805	1 SER.	9'-0" TO 12'-0" *	84	STR.						* 1'-6" INC.
	OF 3									
		TOTAL	4241	LBS.	UNCOATED					

RETAINING WALLS - ESTIMATED QUANTITIES - W-X-Y

ITEM	TOTAL	UNIT	DESCRIPTIONS
310	93	C.Y.	SUBBASE TYPE II, (AS PER PLAN)
503	599	C.Y.	UNCLASSIFIED EXCAVATION
504	207	S.F.	STEEL SHEET PILING LEFT IN PLACE (MIN. SECT. MODULUS 16.28 IN.³/FT.)
504	188	S.F.	STEEL SHEET PILING LEFT IN PLACE (MIN. SECT. MODULUS 5.2 IN³/FT.)
504	336	S.F.	STEEL SHEET PILING LEFT IN PLACE (MIN. SECT. MODULUS 18.02 IN³/FT.)
504	216	S.F.	STEEL SHEET PILING LEFT IN PLACE (MIN. SECT. MODULUS 2.4 IN³/FT.)
504	266	S.F.	STEEL SHEET PILING LEFT IN PLACE (MIN. SECT. MODULUS 5.2 IN³/FT)
509	31,580	LB.	REINFORCING STEEL, GRADE 60
511	210	C.Y.	CLASS C CONCRETE, RETAINING WALLS ABOVE FOOTINGS
511	216	C.Y.	CLASS C CONCRETE, RETAINING WALL FOOTINGS
512	48	S.Y.	TYPE B WATERPROOFING, 36" WIDE
516	42	L.F.	PVC WATERSTOP (AS PER PLAN)
518	125	C.Y.	POROUS BACKFILL
SPECIAL	2117	S.F.	PROTECTION OF CONCRETE SURFACES

REINFORCING STEEL SAMPLES: Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.

FRANKLIN CONSULTANTS INC. 4 / 4
Consulting Engineers
COLUMBUS, OHIO

RETAINING WALLS REINFORCING STEEL & ESTIMATED QUANTITIES

UNI-33-0886

ROAD "U" OVER EXIST. US. 33

UNION COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RMP	MK	MK	CB	JF	11/5-85	

BRUNING 44-132 30845-1

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

209
225

1
17

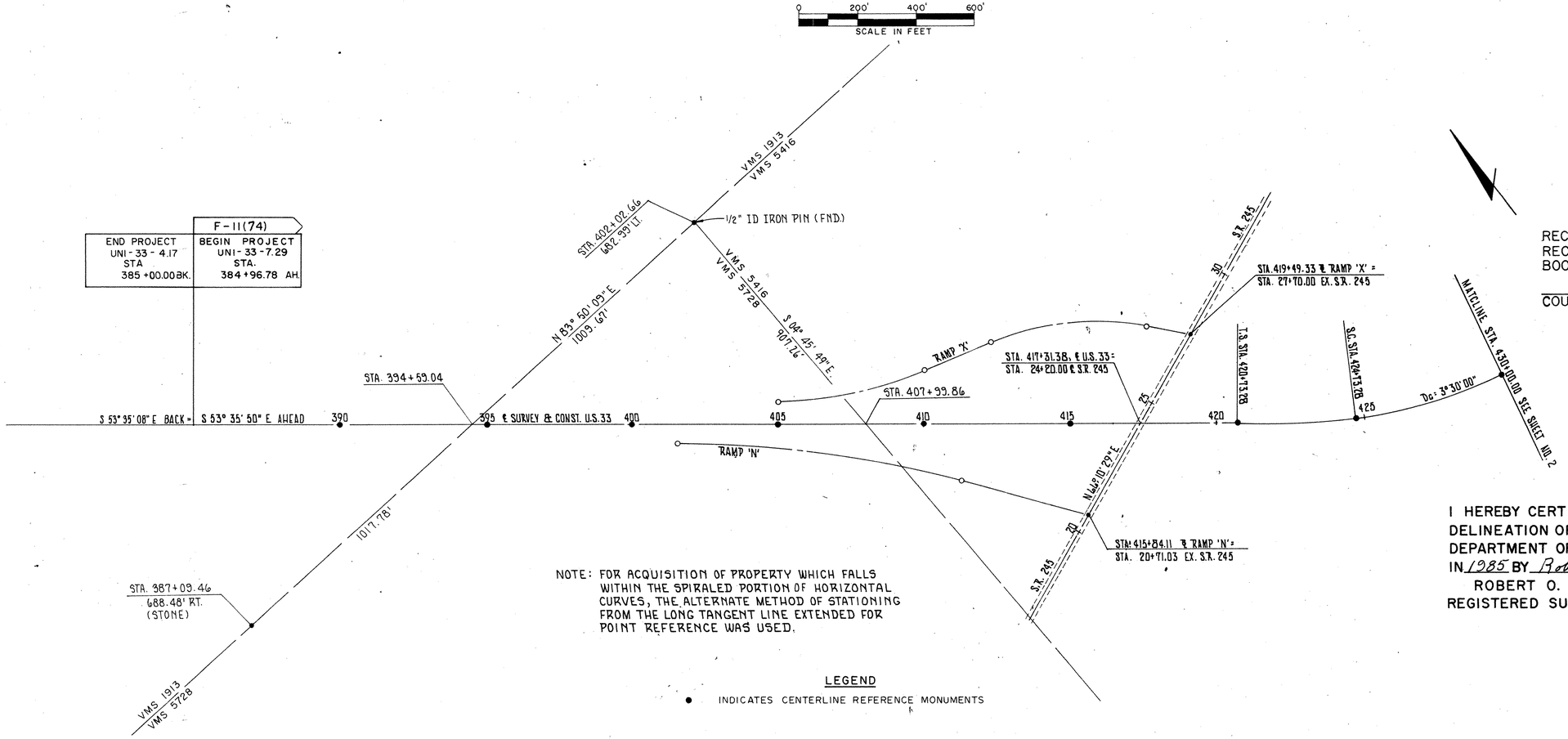
UNION COUNTY
UNI-33-7.29
RIGHT-OF-WAY PLAN

SHEET 1 OF 2

CENTERLINE SURVEY PLAT

UNI-33-7.29

UNION COUNTY
PARIS TOWNSHIP
VIRGINIA MILITARY SURVEYS 1913, 5416, 5728



NOTE: FOR ACQUISITION OF PROPERTY WHICH FALLS WITHIN THE SPIRALED PORTION OF HORIZONTAL CURVES, THE ALTERNATE METHOD OF STATIONING FROM THE LONG TANGENT LINE EXTENDED FOR POINT REFERENCE WAS USED.

LEGEND

● INDICATES CENTERLINE REFERENCE MONUMENTS

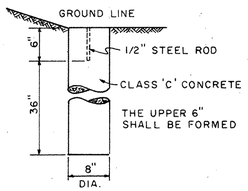
RECEIVED _____ 19 _____
RECORDED 1-9, 19 86
BOOK 4 PAGE 109

COUNTY RECORDER UNION COUNTY

I HEREBY CERTIFY THAT THIS PLAT IS A TRUE DELINEATION OF A SURVEY MADE FOR THE OHIO DEPARTMENT OF TRANSPORTATION.
IN 1985 BY Robert O. Brenner DATE July 26, 1985
ROBERT O. BRENNER
REGISTERED SURVEYOR NO. 5987

SEAL

SIGNED _____
DISTRICT DEPUTY DIRECTOR
DATE _____



℄ REFERENCE MONUMENT

CURVE DATA U.S. 33

P.I. STA.		451+91.51
Δ	=	121° 17' 54"
Dc	=	3° 30' 00"
R	=	1637.02'
Lc	=	3065.67'
Ls	=	400'
LT	=	266.88'
ST	=	133.52'
Ts	=	3118.23'
Es	=	1711.08'
θs	=	7° 00' 00"

CENTERLINE REFERENCE MONUMENTS
TO BE PLACED ON CENTERLINE OF CONSTRUCTION AT FOLLOWING LOCATIONS DURING CONSTRUCTION.

STA. 390+00.00	S.R. 245
STA. 395+00.00	STA. 20+71.03
STA. 400+00.00	STA. 27+70.00
STA. 405+00.00	
STA. 410+00.00	
STA. 415+00.00	
STA. 420+73.28	
STA. 424+73.28	
STA. 430+00.00	

REV.	DATE	DESCRIPTION
		COMPLETION DATE

CENTERLINE SURVEY PLAT

CENTERLINE SURVEY PLAT

UNI-33-7.29

UNION COUNTY
PARIS TOWNSHIP
VIRGINIA MILITARY SURVEYS 1913, 5416, 5728

0 200' 400' 600'
SCALE IN FEET

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

210/225

UNION COUNTY
UNI-33-7.29
RIGHT-OF-WAY PLAN

2/17

SHEET 2 OF 2

NOTE: ℄ PLAT FOR UNI-33-7.97, FOR ℄ EXIST. U.S. 36 & S.R.4 AND ℄ EXIST. U.S. 33 RECORDED IN VOL. 3, PAGE 314.

RECEIVED_____ 19_____
RECORDED 1-9 ,1986
BOOK 4 PAGE 110

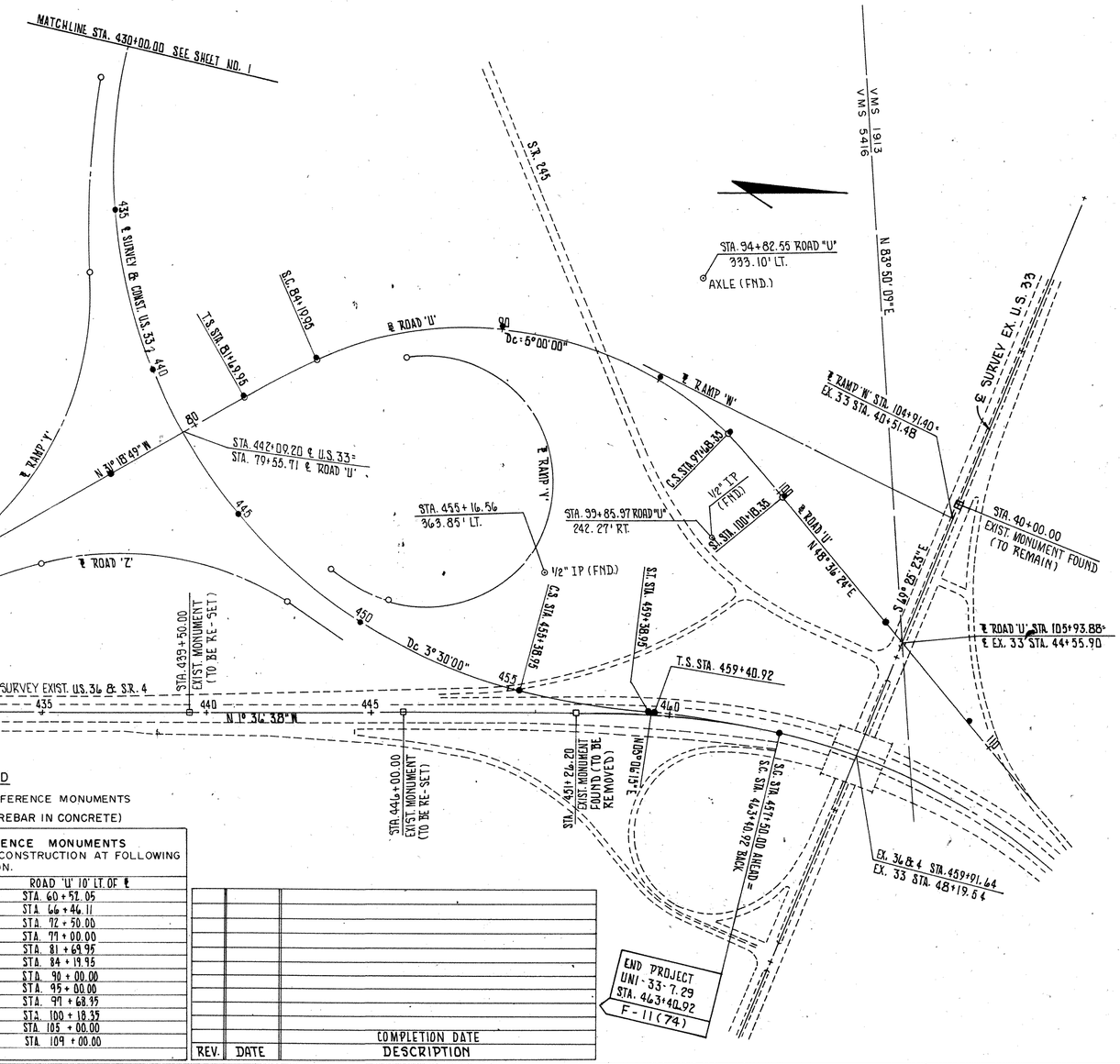
COUNTY RECORDER UNION COUNTY

SIGNED_____
DISTRICT DEPUTY DIRECTOR
DATE_____

I HEREBY CERTIFY THAT THIS PLAT IS A TRUE DELINEATION OF A SURVEY MADE FOR THE OHIO DEPARTMENT OF TRANSPORTATION.
IN 1985 BY Robert O. Brenner DATE July 26, 1985
ROBERT O. BRENNER
REGISTERED SURVEYOR NO. 5987

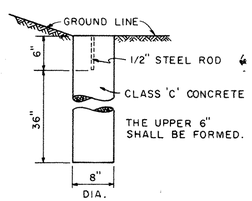
SEAL

NOTE: FOR ACQUISITION OF PROPERTY WHICH FALLS WITHIN THE SPIRALED PORTION OF HORIZONTAL CURVES, THE ALTERNATE METHOD OF STATIONING FROM THE LONG TANGENT LINE EXTENDED FOR POINT REFERENCE WAS USED.



CURVE DATA

U.S. 33		ROAD 'U'			
P.I. STA.	451+91.51	P.I. STA.	63+55.92	P.I. STA.	92+56.98
△	121°17'54"	△	29°42'11"	△	79°55'13"
Dc	3°30'00"	Dc	5°00'00"	Dc	5°00'00"
R	1637.02'	R	1145.92'	R	1145.92'
Lc	3065.67'	Lc	594.06'	Lc	1348.41'
Ls	400'	T	303.87'	Ls	250'
LT	266.88'	L	39.60'	LT	166.77'
ST	133.52'			ST	183.43'
Ts	3118.23'			Ts	1087.03'
Es	1711.08'			Es	352.06'
θs	7°00'00"			θs	6°00'00"



℄ REFERENCE MONUMENT

LEGEND

- ● INDICATES CENTERLINE REFERENCE MONUMENTS
- □ EXISTING MONUMENT (1/4" REBAR IN CONCRETE)

CENTERLINE REFERENCE MONUMENTS
TO BE PLACED ON CENTERLINE OF CONSTRUCTION AT FOLLOWING LOCATIONS DURING CONSTRUCTION.

U.S. 33	ROAD 'U' 10' LT. OF ℄
STA. 435 + 00.00	STA. 60 + 52.05
STA. 440 + 00.00	STA. 66 + 46.11
STA. 445 + 00.00	STA. 72 + 50.00
STA. 450 + 00.00	STA. 79 + 00.00
STA. 455 + 38.95	STA. 81 + 69.95
STA. 459 + 38.95	STA. 84 + 19.95
STA. 459 + 40.92	STA. 90 + 00.00
STA. 463 + 40.92	STA. 95 + 00.00
EX. U.S. 36 & S.R. 4	STA. 97 + 68.95
STA. 432 + 00.00	STA. 100 + 18.35
STA. 439 + 50.00	STA. 105 + 00.00
STA. 446 + 00.00	STA. 109 + 00.00

REV.	DATE	DESCRIPTION
		COMPLETION DATE

PROPERTY MAP

UNION COUNTY
PARIS TOWNSHIP
V.M.S. 1913, 5416, 5728

0 200' 400' 600'
SCALE IN FEET

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

211
225

3
17

UNION COUNTY
UNI 33 7.29

℄ EXIST. U.S. 33

TURNER ROAD (PRIVATE)

℄ EXIST. U.S. 33
CATHERINE ROCKENBAUGH
0 500' 1000' 2000'
SCALE IN FEET
INSERT "B"
90
STONE

CATHERINE ROCKENBAUGH
90

THOMAS A. ROTH & MARY C. ROTH (NO R/W REQ.)

V.M.S. 1913
V.M.S. 5416
V.M.S. 5728
I.P. 1/2" I.D.

MICHAEL HENDEL & HANNELORE HENDEL
92

CATHERINE ROCKENBAUGH
90

BEGIN ACQUISITION
UNI-33-7.29
STA. 380+74.62

F(11)74
BEGIN PROJECT
UNI-33-7.29
384+96.18 AH.=
STA. 385+00.00 BK.

LANDLOCKED

LA-R/W
RAMP "X"
℄ SURVEY & CONSTRUCTION U.S. 33
390
400
S 53° 35' 50" E
410
HIGH VOLTAGE TOWER
LAND LOCKED
OHIO POWER EASEMENT
STONE

CHUL Y. HONG & CHUNG A. HONG
89 SEE UNI-33-4.17

JOHN R. EVANS
91

HELEN W. EVANS
(NO R/W REQUIRED)

JOHN R. EVANS
91

TURNER ROAD (PRIVATE)

V.M.S. 1913
V.M.S. 5728

(NO R/W REQUIRED)
CLAIR E. RUSSELL & CONNIE S. RUSSELL

MATCH LINE

EX. R/W & LA. R/W
30
WILMER SHAW
(NO R/W REQUIRED)
94

℄ S.R. 245

HELEN W. EVANS
93

INSERT "A"
0 250 500 1000
SCALE IN FEET

LANDLOCKED

℄ DIV. STA. 375+00.00 AH. = 430+00.00 BK.
MARCHLINE ST.

LA-R/W
Dc = 3° 30'
TEMP. R/W
℄ DRIVE
TEMP. R/W
TEMP. R/W
RAMP "N"
V.M.S. 5416
V.M.S. 5728
LA-R/W
20
LA
245
16
EXIST. R/W
EXIST. R/W

HELEN W. EVANS
93
SEE INSERT "A"

GRACE E. GAULKE
(NO R/W REQUIRED)

UTILITY COMPANIES

DAYTON POWER AND LIGHT COMPANY
COURTHOUSE PLAZA S.W.
P.O. BOX 1247
DAYTON, OHIO 45401
PHONE: 513 / 227-2498

UNION RURAL ELECTRIC COOPERATIVE, INC.
906 E. FIFTH STREET
P.O. BOX 393
MARYSVILLE, OHIO 43040
PHONE: 513 / 642-1826

BUCKEYE PIPE LINE COMPANY
P.O. BOX 368
EMMAUS, PENNSYLVANIA 18049
PHONE: 800 / 523-9420
JAMES CHAFFY

UNITED TELEPHONE COMPANY OF OHIO
127 NORTH MAIN STREET
BELLEFONTAINE, OHIO 43311
PHONE: 513 / 599-9373

COLUMBIA GAS OF OHIO, INC.
942 W. GOODALE BLVD.
COLUMBUS, OHIO 43212
PHONE: 614/460-2097

OHIO POWER
301-315 CLEVELAND AVE., S.W.
CANTON, OHIO 44701
PHONE: 1-216-456-8173, EXT. 417

REV.	DATE	COMPLETION DATE / DESCRIPTION

PROPERTY MAP

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

212/225

UNION COUNTY
UNI. 33 7.29

4/17

PROPERTY MAP

UNION COUNTY
PARIS TOWNSHIP
V.M.S. 1913, 5416, 5728

(94) MARGARET E. ELLEMAN
(95) JOHN TABOR & DIANE O. TABOR ; TOTAL TAKE
(96) DOROTHY C. REALL
(97) CHRISTINE R.M. JORDAN
(98) DWIGHT MARION SHULER & RACHEL M. SHULER ; TOTAL TAKE
(99) (99A) JAMES H. GOODWIN & KARLA A. GOODWIN ; TOTAL TAKE
(100) JAMES GOODWIN & KARLA GOODWIN ; TOTAL TAKE
(101) JOSEPHINE E. WILLIAMS, aka EMMA J. WILLIAMS, DONALD B. WILLIAMS, DONALD BENARD WILLIAMS; TOTAL TAKE
(131) GLENN W. IRWIN & CELIA IRWIN

0 200' 400' 600'
SCALE IN FEET

V.M.S. 1913
V.M.S. 5416

MATCH LINE
EXIST. R/W
MATCHLINE STA. 430+00.00 SEE SHEET NO. 3

JOE HAMMOND & WILLIAM T. HAMMOND (NO R/W REQUIRED)
JOE HAMMOND (NO R/W REQUIRED)
GEORGE WESTLAKE & PHYLLIS WESTLAKE (NO R/W REQUIRED)
PETE B. & STELLA M. HUGHES (NO R/W REQ.)
LANDLOCKED
LANDLOCKED 17.785 AC.
SEE INSERT "A"

EXIST. L/A R/W
℄ EX. U.S. 33
EX. R/W
LA
EXIST. LA
EXIST. R/W
LA-R/W
℄ SURVEY & CONSTRUCTION U.S. 33
Dc=3°30'
℄ ROAD "U"
℄ ROAD "W"
RAMP "V"
RAMP "W"
ROAD "Z"
EX. 8" "BUCKEYE PIPE LINE"
10' UTILITY EASEMENT
N 03°48'27" W. 956.41'
S 68°54'35" W. 277.70'
S 66°33'42" E. 121.19'
S 77°23'33" E. 252.44'
S 70°14'36" E. 115.23'
S 38°30'35" W. 297.57'
S 04°01'46" E. 458.26'
99+35 26 ℄ RD. "U" TAN.
215.68' LT. PT. OF BEGIN
℄ EXIST. U.S. 36 & S.R. 4
EXIST. LA-R/W
EX. LA-R/W
EXIST. U.S. 33 - U.S. 36 - S.R. 4

F-11(74)
END PROJECT
UNI-33-7.29
STA. 463+40.92 BK.
STA. 457+50.00 AHD.

END ACQUISITION
UNI-33-7.29
STA. 459+77.14

INSERT "A"
COLLINS ROAD
℄ S.R. 4
EX. LA-R/W
0 500 1000 2000
SCALE IN FEET

REV.	DATE	COMPLETION DATE / DESCRIPTION

PROPERTY MAP

TOTAL NUMBER OF___
14 OWNERSHIPS
6 TOTAL TAKES
9 OWNERSHIPS WITH STRUCTURES INVOLVED
___ OWNERSHIPS WITH "P" ITEMS

SUMMARY OF ADDITIONAL RIGHT OF WAY

* CALCULATED

CALC. BY		UNION COUNTY UNI-33-7.29 RIGHT-OF-WAY	OHIO	213 225
CHKD. BY			FHWA REGION 5	5 17
DATE				
FEDERAL PROJECT	F-11(74)	STATE PROJECT	06142(4)	

PARCEL	OWNER	AUDITORS PARCEL NO.	SHEET NO.	OWNERS RECORD BOOK	OWNERS RECORD PAGE	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUCTURE	NET RESIDUE LEFT	NET RESIDUE RIGHT	TYPE FUND	REMARKS AND PERSONALTY	AS ACQUIRED BOOK	AS ACQUIRED PAGE
89	CHUL Y. HONG AND CHUNG A. HONG		6	271	22	88.75 Ac.								STATE	PURCHASED UNDER UNI-33-4.17		
90-WL	CATHERINE ROCKENBAUGH	10,656	6,7	280	229-230	100.25 Ac.	2.56 Ac.	7.192 Ac.	—	7.192 Ac.		82.73 Ac.	7.768 Ac.		7.768 ACRES LANDLOCKED		
90-E			6,7						—								
91-WL	JOHN R. EVANS	3692,3693	7,11,12	266	896	91.875 Ac.	1.236 Ac.	8.599 Ac.	—	8.599 Ac.	—	6.662 Ac.	75.378 Ac.		6.662 Ac. LANDLOCKED		
91-X			7					0.192 Ac.	—	0.192 Ac.					FOR CHANNEL OUTLET		
91-E			7,11						—								
92-WL	MICHAEL HENDEL AND HANNELORE HENDEL	5362	7,11,12	235	473	49.28 Ac.	1.087 Ac.	15.524 Ac.	1.010 Ac.	14.514 Ac.	—	33.679 Ac.	—				
93-WL	HELEN W. EVANS	3673	7,8,11,12	266	688-690	100.29 Ac.	0.856 Ac.	1.576 Ac.	0.783 Ac.	6.793 Ac.	YES	5.952 Ac.	86.689 Ac.				
93-T			17					1.838 Ac		1.838 Ac.					TO BUILD DRIVE		
93-T-1			8,17					0.463 Ac.		0.463 Ac.					TO REMOVE STRUCTURE		
94-WL	MARGARET E. ELLEMAN	14,587	8,10,12,15	198	785	67.487 Ac.*	0.558 Ac.	35.400Ac.	0.082 Ac.	35.318 Ac.	YES	20.719 Ac.	10.892 Ac.		10.892 ACRES LANDLOCKED		
94-E			8,9,12						—								
95-WL	JOHN TABOR AND DIANE TABOR	12,514	9,10,15	269	653	8.50 Ac.	0.394 Ac.	8.50 Ac.	0.394 Ac.	8.106 Ac.	YES	—	—		TOTAL TAKE		
96-WL	DOROTHY C. REALL	10,227	15	280	463-464	2.85 Ac.	0.260 Ac.	1.286 Ac.	0.193 Ac.	1.093 Ac.	YES	1.497 Ac.	—				
96-T			15					0.093 Ac.		0.093 Ac.					TO REMOVE STRUCTURE		
97-WL	CHRISTINE R.M. JORDAN	6431	15	271	919-921	* 12.673 Ac.	0.646 Ac.	4.888 Ac.	0.646 Ac.	4.242 Ac.	YES	7.785 Ac.			7.785 ACRES LANDLOCKED		
97-E			4,15						—								
98-WL	DWIGHT MARION SHULER AND RACHEL M. SHULER	11,555	15,16	234	399	3.35 Ac.	0.020 Ac.	3.35 Ac.	0.020 Ac.	3.33 Ac.	YES	—	—		TOTAL TAKE		
99-WL	JAMES H. GOODWIN AND KARLA A. GOODWIN	4526	15,16	277	187	1.013 Ac.	—	1.013 Ac.	—	1.013 Ac.	YES	—	—		TOTAL TAKE		
99A-WL	JAMES H. GOODWIN AND KARLA A. GOODWIN	4526	16	277	187	0.626 Ac.	—	0.626 Ac.	—	0.626 Ac.	YES	—	—		TOTAL TAKE		
100-WL	JAMES GOODWIN AND KARLA GOODWIN	10,847	16	284	439	0.546 Ac.	0.030 Ac.	0.546 Ac.	0.030 Ac.	0.516 Ac.	YES	—	—		TOTAL TAKE		
101-QC	JOSEPHINE E. WILLIAMS aka EMMA J. WILLIAMS		16	176	421	0.268 Ac.*	0.268 Ac.	0.268 Ac.	0.268 Ac.	0.00 Ac.	—	—	—		TOTAL TAKE		
	DONALD B. WILLIAMS			182	227												
	DONALD BERNARD WILLIAMS			231	259												
131-WL	GLEN W. IRWIN AND CELIA IRWIN	6082,6083 & 6084	9,10,13,14	240	332-334	150.893 Ac.	2.39 Ac.	14.067 Ac.	—	14.067 Ac.	—	—	134.44 Ac.	STATE			

REV.	DATE	COMPLETION DATE DESCRIPTION

R/W SUMMARY SHEET

LD 0305 Rev 7-16-75

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	F-11(74)	

214/225

UNION COUNTY
UNI-33-7.29

6/17

UNION COUNTY
PARIS TOWNSHIP
V.M.S. 1913

MATCH LINE

361 362 363 364 365 366 367 S 53° 35' 08" E 368 369 370 371 372 373 374

℄ SURVEY & CONST. U.S.R. 33

CHUL Y. HONG AND
CHUNG A. HONG
(89) SEE UNI-33-4.17

END ACQUISITION	BEGIN ACQUISITION
UNI-33-4.17	UNI-33-7.29
STA. 380+74.62	STA. 380+74.62

CATHERINE ROCKENBAUGH
(90)

200' EASEMENT
OHIO POWER
VOL. 241, PG. 130

F-11(74)

END PROJECT	BEGIN PROJECT
UNI-33-4.17	UNI-33-7.29
STA. 385+00.00=	STA. 384+96.78

STA. 385+00.00 BK.
110.00 LT.
S 53° 35' 08" E
527.32

STA. 384+96.78 AH.
110.00 LT.

STA. 390+00.00
110.00' LT.

S 53° 35' 50" E
505.22

STA. 379+72.68
110.00' LT.

STA. 379+72.68
BEGIN TYPE C.L.T. FENCE

W.W. FENCE

25"-15" TO 36" TREES

LA-R/W

FENCE TYPE CLT

LA-R/W

FENCE TYPE CLT

WORK LIMITS

(90 WL) CONT. 7.192 Ac.

376 377 378 379 380 381 382 383 384 S 53° 35' 08" E BK. 385 S 53° 35' 50" E AH. 386 387 388 389

℄ SURVEY & CONST. U.S.R. 33

STA. 380+74.62
℄

20"-15" TO 36" TREES

313.58'

STA. 381+85.83
BEGIN TYPE C.L.T. FENCE

STA. 381+85.83
120.00' RT.

715.07' TO STONE ℄
S 6° 24' 10" E

FENCE TYPE CLT

314.26

LA-R/W
N 54° 58' 39" W

STA. 385+00.00 BK.
112.37' RT.

STA. 384+96.78 AH.
112.37' RT.

303.31
N 54° 59' 21" W

WORK LIMITS

LA-R/W

544.73'
N 53° 35' 50" W

FENCE TYPE CLT
LA-R/W

STA. 388+00.00
105.00' RT.

WOODS

(90-E) CONT. 7.768 Ac.

(LAND LOCKED)
CATHERINE ROCKENBAUGH
(90)

200' EASEMENT
OHIO POWER

HIGH VOLTAGE
TOWER 765 K.V.

MATCH LINE SEE SHEET Nº 7

NOTE: BEARING EQUATION
S 53°-35'-08" E UNI-33-4.17 =
S 53°-35'-50" E UNI-33-7.29

ITEM 607 TYPE CLT	1848 LIN. FT.

REV.	DATE	COMPLETION DATE / DESCRIPTION

U.S. 33 STA. 360+00 TO STA. 390+00 R/W

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO	F-11 (74)	

215
225

7
17

UNION COUNTY
UNI-33-7.29

UNION COUNTY
PARIS TOWNSHIP
V.M.S. 1913, 5416, 5728

MATCH LINE SEE SHEET Nº

CATHERINE ROCKENBAUGH (90)

LANDLOCKED (91-E) CONT. 6.662 Ac.

JOHN R. EVANS (91)

STA. 390+00.00 110.00' LT.

STA. 393+00.00 130.00' LT. WOODS & NATURE PRESERVE

STA. 396+02.94 132.16 LT.

814.29' TO L.T.

CULTIVATED FIELD

STA. 400+00.00 135.00' LT.

STA. 401+00.00 137.24' LT.

STA. 401+25.00 250.00' LT.

S 53° 35' 50" E 50.00'

STA. 401+75.00 250.00' LT.

TEMP. R/W N 48° 54' 14" E 115.50'

S 23° 39' 22" W 113.35'

91 X CONT. 0.192 AC.

STA. 402+00.00 139.49' LT.

DIRT TRAIL

S 57° 24' 41" E 300.62'

S 54° 00' 24" E 302.95'

S 54° 00' 24" E 397.01'

S 54° 52' 56" E 100.05'

S 54° 52' 56" E 668.81'

I.A.P.A.

FENCE TYPE CLT

L.A.-R/W

WORK LIMITS

FENCE TYPE 47

TYPE 3 CROSSING

STA. 396+02.94 END TYPE CLT FENCE EPA

STA. 396+02.94 BEGIN TYPE 47 FENCE EPA

90 WL CONT. 7.192 AC.

91 WL CONT. 8.599 AC.

PROP. 18"

PROP. 21"

PROP. 27"

391 392 393 394 395 396 397 398 399 400 401 402 403 404

℄ SURVEY & CONST. U.S.R. 33

STA. 394+59.04, ℄

350.40'

S 53° 35' 50" E

℄ RAMP 'N' Dc = 1° 30'

544.73' FENCE TYPE CLT N 53° 35' 50" W WOODS

STA. 393+44.73 END TYPE CLT FENCE EPA

STA. 393+44.73 BEGIN TYPE 47 FENCE EPA

STA. 393+44.73' 105.00' RT.

1156.15' N 51° 22' 00" W

P.C. STA 401+50.00

CATHERINE ROCKENBAUGH (90)

90-E CONT. 7.768 AC. LANDLOCKED

642.56 TO STONE ON V.M.S. LINE N 85° 50' 09" E

CULTIVATED FIELD

JOHN R. EVANS (91)

STA. 405+00.00 150.00' RT.

MATCH LINE

I.A.P.A.

END 401 TAPER STA. 401+00.00 RT. P.C. STA. 401+50.00 ℄ RAMP 'X'

FOR RAMP 'X' SEE SHEET NO. 11

STA. 406+68.70 150.00' LT.

CULTIVATED FIELD S 54° 52' 56" E 668.81' TYPE 47 FENCE

L.A.-R/W

I.A.P.A.

WORK LIMITS

S 30° 45' 45" E

Dc = 4° 00'

MICHAEL HENDEL AND HANNELORE HENDEL (92)

CULTIVATED FIELD

92 WL CONT. 14.514 AC. P.R.O. 1.010 AC. TOTAL 15.524 AC

S 73° 47' 28" E ℄ RAMP 'X'

PROP. 42"

STA. 407+99.86

105.73'

CULTIVATED FIELD

P.T. STA. 411+44.57

FOR RAMP 'N' SEE SHEET NO. 12

RAMP "N"

CPA

JOHN R. EVANS (91)

MATCH LINE SHEET Nº 12

477.37' WORK LIMITS N 47° 35' 06" W

FENCE TYPE 47

CULTIVATED FIELD

ITEM 607 TYPE 47	2572 LIN. FT.
ITEM 607 TYPE C.L.T.	948 LIN. FT.

REV.	DATE	COMPLETION DATE DESCRIPTION

STA. 417+31.38 ℄ U.S. 33 = STA. 24+20.00 ℄ S.R. 245

EX. R/W

N 46° 07' 29" E

N. W. FENCE

WORK LIMITS

244.47'

S 43° 52' 55" W

STA. 419+00.00, 150.00' LT. STA. 26+33.93, 71.88 RT. S.R. 245

C.P.A. L.A.-R/W S 55° 01' 46" E 200.06'

FENCE TYPE 47

2-30"

WORK LIMITS

GRAVEL DRIVE

UNDERGROUND TELE. BOX

N.W. FENCE

12"

SIGN

747.93' 1539.97'

UNDERGROUND TELEPHONE CABLE

UNDERGROUND TELE. BOXES

93 WL CONT. 6.793 Ac. P.R.O. 0.783 AC. TOTAL 7.576 Ac.

EX. R/W

PROP.

UNDERGROUND TELEPHONE CABLE

N.W. FENCE

℄ EXIST. S.R. 245

C.P.A. FENCE TYPE 47

HELEN W. EVANS (93)

550.36'

N 55° 40' 48" W

STA. 417+50.00, 160.00' RT. STA. 22+90.37, 95.61' RT. S.R. 245

S 19° 11' 39" W 281.11'

CULTIVATED FIELD

L.A.-R/W

MATCH LINE SEE SHEET Nº 8

U.S. 33 STA. 390+00 TO STA. 420+00 R/W

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO	F-11-(74)	

UNION COUNTY
UNI-33-7.29

216/225

8/17

UNION COUNTY
PARIS TOWNSHIP
V.M.S. 5416

ITEM 607 TYPE 47		3011 LIN. FT.
		COMPLETION DATE
REV.	DATE	DESCRIPTION

U.S. 33 STA. 420+00 TO STA. 435+00 R/W

UNION COUNTY
PARIS TOWNSHIP
V.M.S. 5416

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO	F-11-(74)	

UNION COUNTY
UNI 33 7.29

217 / 225

9 / 17

MATCH LINE SEE SHEET No. 9

MATCH LINE SEE SHEET No. 10

MATCH LINE SEE SHEET No. 15

MATCH LINE

SEE SHEET NO. 13

MARGARET E ELLEMAN
94

CULTIVATED FIELD

SMALL TREES & BRUSH

WOODS

LAND LOCKED

94 E CONT. 10.892 AC.

MARGARET E. ELLEMAN
94

94 WL
CONT. 35.310 AC.
P.R.D. 0.082 AC.
TOTAL 35.400 AC.

MARGARET E. ELLEMAN
94

NOTE: CALLS SHOWN IN PARENTHESIS ARE FROM THE ORIGINAL DEED.

JOHN TABOR AND
DIANE O. TABOR
95

95 WL TOTAL TAKE
(8.50 Ac.)

GLENN W. IRWIN AND CELIA IRWIN
131

131 WL CONT. 14.047 AC.

FOR RAMP "Y" SEE SHEET NO. 12

FOR ROAD "Z" SEE SHEET NO. 14

ITEM 607 TYPE 47	1106 LIN. FT.

REV.	DATE	COMPLETION DATE / DESCRIPTION

U.S. 33 STA. 435+00 TO STA 450+00 R/W

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO	F-11 (74)	

218
225

UNION COUNTY
PARIS TOWNSHIP
V.M.S. 5416

UNION COUNTY
UNI-33-7.29

10
17

F-11(74)
END PROJECT
UNI-33-7.29
STA. 463+40.92

MATCH LINE SEE SHEET No 9

MATCH LINE SEE SHEET No 15

JOHN TABOR &
DIANE O. TABOR

95
95 WL TOTAL TAKE (8.50 Ac.)

MARGARET E. ELLEMAN

94
94 WL CONT. 35.318 AC.
PRO 0.082 AC.
TOTAL 35.400 AC.

NOTE: CALLS SHOWN IN PARENTHESIS ARE FROM THE ORIGINAL DEED.

GRAVEL DRIVE

STY BRICK BLDG.

8 SPKR. POLES EVENLY SPACED

GRAVEL

1½ STY. WOOD & METAL BLDG.

1 STY. WOOD & METAL BLDG.

I.P. (FND)

STA. 455+16.56 ℄ US 33, 343.85' LT. = 94+015.37 ℄ ROAD "D" 672.36' RT.

(S 19° 15' 00" E 415.00')
℄ N 19° 04' 41" W 415.00'

(S 05° 45' 00" E 1806.00')
℄ N 05° 50' 56" W 1806.00'

(S 11° 56' 00" W 292.00')
℄ N 11° 29' 34" E 292.00'

STA. 453+01.48
292.51' LT.

℄ RAMP "V"

STA. 458+26.42 (TAN)
187.68' LT.

℄ S 33° 28' 40" E 283.18'

EX. LA R/W

WORK LIMITS

BLANKET PIPELINE EASEMENT RECORDED VOL. 189, PAGE 295, 353

S.C. STA. 450+32.19

℄ Dc=15°00'

℄ Dc=3°00'

℄ SURVEY & CONSTR. 453 U.S. 33

℄ EXISTING 445 U.S. 36 & S.R. 4

STA. 454+67.94
50.36' LT.

PROP. 24"

C.S. STA. 455+38.95

366.29'
S 12° 31' 45" E

S.T. STA. 457+38.95
I.S. STA. 457+40.92

N 05° 06' 15" E

S.C. STA. 463+40.92 BACK
S.C. STA. 457+40.92 AHEAD

EX. 30" CONC.

EX. 30" CONC.

EX. U.S. 33

C.B.

STA. 450+91.70, 132.23' RT. ℄ U.S. 33
STA. 444+74.99, 121.78' LT. ℄ U.S. 36 & S.R. 4

1024.98'
S 29° 14' 18" W

S 04° 03' 52" E

N 1° 34' 38" W

425.40'

SIGN

REV.	DATE	COMPLETION DATE / DESCRIPTION

U.S. 33 STA. 450+00 TO STA. 460+00 R/W

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11(74)	

UNION COUNTY
UNI-33-7.29

219/225

11/17

UNION COUNTY
PARIS TOWNSHIP
V.M.S.. 5416,5728

MICHAEL HENDEL AND
HANNELORE HENDEL
92

STA. 32+60.42

STA. 31+50.00 ℄

STA. 31+50.00
30.00' LT.

STA. 31+50.00
30.00' RT.

N 46° 10' 29" E
LA-R/W
309.31'
FENCE TYPE 47
30' ± EX. S.R. 245
137.39'
1135.37'
FENCE TYPE 47
LA-R/W
S 46° 10' 29" W
240.00

MATCH LINE THIS SHEET

TO PROPERTY CORNER
708.01'

91 E
CONT. 6.662 Ac.
LANDLOCKED

STA. 406+68.70
150.00' LT.

S 54° 52' 56" E
668.84'
LA-R/W
TAPA
WORK LIMITS
FENCE TYPE 47

91 WL
CONT. 8.599 Ac.

P.C. STA. 405+00 SHEET No. 7

MATCH LINE STA. 405+00

406 407 408 409 410 ℄ SURVEY & CONST. 411 U.S. 33 412 413 414 S 53° 35' 50" E 415 416 417 418 419 480

STA. 407+99.86

STA. 409+74.74
200.00' RT.

N 43° 49' 49" W
444.93'

℄ RAMP "N"

FOR RAMP "N" SEE SHEET 12

FENCE TYPE 47
477.37'
N 47° 35' 06" W
LA-R/W
WORK LIMITS

JOHN R. EVANS
91

℄ SURVEY & CONST. RAMP N-7

N 04° 45' 49" W
1054.73'
FENCE TYPE 47
LA-R/W

S 72° 20' 00" E
TYPE 3 CROSSING
LA-R/W
823.02'
TRUP. 42"
P.T. STA. 410+19.04
411 S 75° 47' 28" E
412
℄ RAMP "X"
413
414
415
416
Dc 6°00'
417
418
S 43° 49' 31" E
419
P.T. STA. 417+97.84
P.C. STA. 414+46.08
PROP. 42"

STA. 414+50.00
415' LT.

S 49° - 17' - 08" E
LA-R/W
466.62'
FENCE TYPE 47
WORK LIMITS
TAPA

92 WL
CONT. 14.514 Ac.
PRO. 1.010 Ac.
TOTAL 15.524 Ac.

WORK LIMITS

STA. 417+31.38 ℄ U.S.R. 33 =
STA. 24+20.00 ℄ S.R. 245

CULTIVATED FIELD

WORK LIMITS

STA. 419+14.20, 380+00' LT. U.S. 33
STA. 28+40.63 30.00' LT. S.R. 245

MATCH LINE THIS SHEET

N 46° 10' 29" E
309.31'
FENCE TYPE 47
LA-R/W
S 46° 10' 29" W
110.00'

STA. 28+60.00
30.00' RT.

C.T.A.
S 29° 49' 31" E
40.00'

C.T.A.
STA. 28+60.00
70.00' RT.

FENCE TYPE 47
S 43° 49' 55" W

STA. 419+49.33 ℄ RAMP 'X'
STA. 27+70.00 ℄ S.R. 245

EX. R/W
EX. FENCE
℄ WORK LIMITS
UNDERGROUND TELEPHONE CABLE
EX. TELE. BOX
1135.37'
M.B.
℄ EX. R/W
EX. FENCE
EX. TELE. BOX
EX. SIGN
EX. FENCE
EX. R/W
EX. FENCE
EX. TELE. BOX
EX. SIGN
EX. FENCE
EX. BES. DR. GRAVEL

STA. 419+00.00, 150.00' LT. U.S. 33
STA. 26+33.93, 71.88' RT. S.R. 245

S 55° 01' 46" E
200.06'
LA-R/W
C.R.A.
FENCE TYPE 47
WORK LIMITS

HELEN W. EVANS
93

SEE SHEET NO. 8

93 WL
CONT. 6.793 Ac.
PRO 0.783 Ac.
TOTAL 7.576 Ac.

UNDERGROUND
TELE. BOXES

EX. R/W
PROP. 24" S.S.
EX. EX. S.R. 245
℄ EX. R/W
WORK LIMITS
FENCE TYPE 47
550.36'
N 55° 40' - 48" W
C.R.A.
STA. 417+50.00, 160.00' RT. U.S. 33
STA. 22+90.37, 95.61' RT. S.R. 245
CULTIVATED FIELD

FENCE TYPE 47
283.11'
S 79° 11' 39" W

ITEM 607 TYPE 47		2634 LIN. FT.
REV.	DATE	COMPLETION DATE DESCRIPTION

RAMP 'X' STA. 405+00 TO STA. 419+49.33 R/W

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

220
225

12
17

UNION COUNTY
PARIS TOWNSHIP
V.M.S. 5416,5728

UNION COUNTY
UNI-33-7.29

SEE SHEET NO. 11

MICHAEL HENDEL &
HANNELORE HENDEL
(92) (92 WL) CONT. 14.514 AC.
PRO 1.010 AC.
TOTAL 15.524 AC.

NOTE: STA. 20+87.49' RT.
POINT OF ACCESS (EVANS DRIVE)
SEE SHEET 17

HELEN W. EVANS
(93) (93 WL) CONT. 6.793 AC.
PRO 0.783 AC.
TOTAL 7.576 AC.

JOHN R. EVANS
(91)

GRACE E. GAULKE

CULTIVATED FIELD

(94 WL) CONT. 35.318 AC.
PRO .082 AC.
TOTAL 35.400 AC.

LAND LOCKED
(94-E) CONT. 10.892 AC.
MARGARET E. ELLEMAN
(94)

GLENN W. IRWIN &
CELIA IRWIN
(131)

(131 WL) CONT. 14.047 AC.

ITEM 607 TYPE 47	1952 LIN. FT.

REV.	DATE	COMPLETION DATE / DESCRIPTION

RAMP "N" & RAMP "Y" R/N

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO	F-11 (74)	

221
225

13
17

UNION COUNTY
UNI-33-7.29

UNION COUNTY
PARIS TOWNSHIP
V.M.S. 5416

GLENN W. IRWIN & CELIA IRWIN

131

N 84° 35' 06" E

STA. 61+39.96, 49.76' LT. & ROAD 'U'
STA. 423+00.00, 105.00' LT. & SR.4+US.36

P.C. STA. 60+52.05, 52.00' LT.
STA. 422+15.99 & US. 36 & S.R.4

N 14° 51' 51" W
24.27'

FENCE TYPE 47

EX. LA R/W

EX. FENCE

WORK LIMITS

EX.

450.09' EX. LA R/W

S 00° 27' 54" E

63

61 Dc=5° 00' 62

℄ ROAD "U"

MATCH LINE THIS SHEET

413 414 415 416 & SURVEY EXIST. 417 U.S. 36 & S.R. 4 418 Dc=1° 30' 419 420 421 422 423 424 425

P.C. STA. 415+03.08
25.00' LT.

WORK LIMITS

Dc=1° 30'

U.S. 36 & S.R. 4

R/W PURCHASED ON UNI-4-8.38
& PLAT RECORDED ON VOL. 13, PAGE 317

P.C.C. STA. 420+83.45
12.00' RT.

R/W PURCHASED ON UNI-33-7.97
& PLAT RECORDED ON VOL. 3, PAGE 314

WORK LIMITS

EX. FENCE

EX. LA R/W

EX. LA R/W

P.T. STA. 426+13.82
49.00' RT.

GLENN W. IRWIN & CELIA IRWIN

131

STA. 425+40.68, 161.69' LT. & U.S. 36 & S.R. 4
STA. 64+00.00, 40.00' LT. & ROAD 'U'

STA. 70+00.00
110.00' LT.

STA. 67+00.00
50.00' LT.

12"

N 42° 37' 25" W
305.94'

N 34° 35' 03" W
350.51'

STA. 73+50.00
130' LT.

N 59° 18' 04" W
110.92'

EX. LA R/W

STA. 440+84.53, 549.11' PT. & US 33

STA. 74+12.14, 143.78' LT. & ROAD 'U'

FOR RAMP 'Y' SEE SHEET 12

IAPA

WORK LIMITS

LA R/W

N 24° 19' 49" W
287.46'

P.T. STA. 68+46.11

IAPA

LA R/W
FENCE TYPE 47

IAPA

TD=61.42
447+93.07

WORK LIMITS

443

444

445

446

℄ RAMP 'Y'

447

MARGARET E. ELLEMAN

WORK LIMITS

94

94 WL

CONT. 35.318 AC.
P.R.D. 0.082 AC.
TOTAL 35.400 AC.

P.39.02'
S 11° 08' 35" W

EX. LA R/W

S 00° 27' 54" E 450.09'

STA. 75+57.30
℄

STA. 45+69.11, 78.59' RT. & ROAD 'U'
STA 427+50.00, 96.00' LT. & U.S. 36 & S.R. 4

63 Dc=5° 00' 66 67 68 69 70 71 72 73 74 75 76 N 31° 18' 49" W 77

℄ ROAD "U"

131 WL CONT. 14.067 AC.

STA. 75+71.14
15.61' RT.

MATCH LINE THIS SHEET

WORK LIMITS

PROP. 60'

71 72 73 ℄ ROAD "Z" 74 75 76 77

U.S. 36 & S.R. 4
427
EXISTING & SURVEY

428

WORK LIMITS

EX. FENCE

EX. LA R/W

MATCHLINE SEE SHEET NO. 14

EX. FENCE

TO PROPERTY CORNER
431.21'
S 05° 09' 10" E

EX. LA R/W

ITEM 607 TYPE 47 943 LIN. FT.

REV.	DATE	DESCRIPTION
		COMPLETION DATE

P.C.C. STA. 73+86.43

FOR 'ROAD 'Z' SEE SHEET 14

WORK LIMITS

5 DEPTH R/W

DIRT TRAIL

TO PROPERTY CORNER
1124.98'

MATCH LINE SEE SHEET Nº 9

ROAD 'U' STA. 60+52.05 TO STA. 78+00.00 & U.S. 36 & S.R. 4 STA. 415+03.08 TO STA. 429+00.00 R/W

FHWA REGION	STATE	PROJECT	
5	OHIO	F-11 ([illegible])	

222
225

14
17

UNION COUNTY
UNI-33-7.29

UNION COUNTY
PARIS TOWNSHIP
V.M.S. 5416

GLENN W. IRWIN & CELIA IRWIN (131)

MARGARET E. ELLEMAN (94)

MARGARET E. ELLEMAN (94)

SEE SHEET NO. 13

SEE SHEET NO. 9

MATCH LINE STA. 429+00 SEE SHEET Nº 13

STA. 445+00 SEE SHEET Nº 10

STA. 73+50.00, 130.00' LT.

STA. 70+00.00, 110.00' LT.

N 42° 37' 25" W, 805.94'

N 34° 35' 03" W, 350.51'

L.A. R/W

FENCE, TYPE 4M

N 39° 18' 04" W, 110.92'

239.02'

S 42° 08' 35" W

DIRT TRAIL

W.W. FENCE

STA. 75+71.14, 15.61' RT.

94 WL CONT. 35.318, P.R.O. 0.082, TOTAL 35.400

℄ ROAD "Z"

Dc = 6°00'00"

℄ RAMP "V"

℄ ROAD "U"

Dc = 4°00'00"

P.C. STA. 70+09.42 ℄ ROAD "Z"
STA. 70+09.42 ℄ ROAD "U" 84' RT.

P.C.C. STA. 73+86.43

PROP 36"

1024.98'

P.I. STA. 81+40.84

S 29° 14' 18" W

STA. 83+40.84 ℄ ROAD "Z"
STA. 449+80.11 ℄ U.S. 36
74.00' RT.

448 ℄ SURVEY & CONST. U.S. 33

Dc = 3°30'

W/L

STA. 433+80, 135.00' LT.

131 WL CONT. 14.047 AC.

STA. 442+00.00, 110.00' LT.

EX. LA. R/W

W.W. FENCE

631.21'

S 05° 09' 10" E

820.38'

S 00° 08' 08" W

S 04° 03' 53" E

275.24'

RIW PURCHASED UNDER UNI-33-7.97
& PLAT RECORDED ON VOL. 3, PAGE 314

STA. 450+91.90, 132.23' RT. ℄ U.S. 33
STA. 444+74.99, 121.78' LT. ℄ S.R. 4 & U.S. 36

SIGN

WORK LIMITS

431 ℄ SURVEY EXISTING 432 U.S. 36 & S.R. 4 433

C.B. 437

C.B. 438

REV.	DATE	COMPLETION DATE / DESCRIPTION

ROAD 'Z' STA. 70+09.42 TO STA. 83+40.84 & U.S. 36 & S.R. 4 STA. 429+00.00 TO STA. 445+00.00 R/W

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO	F-11(74)	

223
225

15
17

UNION COUNTY
UNI-33-7.29

UNION COUNTY
PARIS TOWNSHIP
V.M.S. 5416

GEORGE WESTLAKE &
PHYLLIS WESTLAKE
(NO R/W REQUIRED)

PETE B. & STELLA M. HUGHES
(NO R/W REQUIRED)

RES.

AXLE (FND.)
STA. 94+82.55 ℄ ROAD "U"
333.10'

10' PIPELINE EASEMENT
RECORDED IN VOL. 189, PG. 315

DOROTHY C. REALL
96

CHRISTINE R.M. JORDAN
97
LANDLOCKED
97E CONT. 7.785 Ac.

EX. R/W

℄ S.R. 245

GRAVEL DRIVE

BUCKEYE PIPELINE

MARGARET E. ELLEMAN
94

STA. 91+85.42 ℄ ROAD "U"
165.54' LT.

STA. 94+25.00 ℄ ROAD "U"
170.00' LT.

STA. 96+76.63 ℄ ROAD "U"
189.60' LT.

STA. 92+32.22 ℄ ROAD "U"
99.15' LT.
STA. 93+50.00 ℄ ROAD "U"
109.53' LT

96 T
CONT. 0.093

N 15° 01' 55" W
TEMP. NOTCH
3/4" IRON PIPE

N 62° 06' 05" E
144.29'

STA. 94+80.00 ℄ ROAD "U"
174.01' LT.

STA. 91+00.00 ℄ ROAD "U"
110.00' LT.

N 16° 32' 26" E
144.62'

LA-R/W

LA-P.A.

C.P.A.

STA. 94+50.00 ℄ RAMP "W"

N 16° 32' 26" E
505.12'

SEPTIC

WORK LIMITS

FR. SHED

FENCE TYPE 47

N 38° 30' 35" E
297.57'

STA. 99+35.28 ℄ ROAD "U" (TAN.)
215.68' LT.

STA. 88+00.00 ℄ ROAD "U"
100.00' LT.

N 0° 18' 00" W
326.11'

STA. 92+92.75 ℄ ROAD "U"
25.38' LT.

STA. 92+73.54 ℄ ROAD "U"

E.P.A.

CONC. + BLOCK WATER WELL W/ELEC. PUMP

ELEC. SIGN

15" TYPE "A"

Dc = 5° 00'

METAL PIPE W/LIGHT

BURIED ELEC. CABLE

CENTRAL DRIVE

ASPHALT DRIVE

20"

24"

14"

8"

96 WL
CONT. 1.093 Ac.
P.R.O. 0.193 Ac.
TOTAL 1.286 Ac.

STA. 94+40.00 ℄ RAMP "W"

386.44' ± SEWARD ALVES FENCE

S 18° 25' 55" E

95 96 97 N 24° 30' 25" E 98 99 100 101

℄ RAMP "W"

CISTERN

WELL

98 WL
TOTAL TAKE

CONT. (3.61 Ac)

MATCH LINE

STA. 95+44.50 ℄ ROAD "U"

1½ STY. F.B. RES. W/BSMT.

1½ STY. F.B.

12"

10"

BRICK & STONE WALK

CONC. DRIVE

C.S. STA. 97+68.35 ℄ ROAD "U"

DWIGHT MARION SHULER &
RACHEL M. SHULER
98

94 WL
CONT. 35.318 Ac.
P.R.O. 0.082 Ac.
TOTAL 35.400 Ac.

℄ BURIED ELEC. CABLE

STA. 93+16.13 ℄ R/W =
STA. 93+16.25 ℄ ROAD "U" =
STA. 20+00.00 ℄ EX. S.R. 245

231.03'

STA. 94+37.33 ℄ ROAD "U"
109.32' RT.

EX. R/W

℄ RAMP "V"

463 462 Dc = 15° 00' 461

P.C.C. STA. 464+21.76 ℄ RAMP "V"
STA. 87+38.57 ℄ ROAD "U"
72.00' RT.

BLANKET PIPELINE EASEMENT
RECORDED VOL. 189 PG. 295, 353

WELL

JOHN TABOR &
DIANE O. TABOR
95

METAL PIPE W/LIGHT

BURIED ELEC. & CABLE

FR. SHED

METAL FENCE

GRAVEL DRIVE

C.B.

449.50'

95 WL
TOTAL TAKE
(CONT. 8.50 Ac.)

STA. 98+87.56 ℄ ROAD "U" (TAN.)
318.08' RT.

STA. 99+20.17 ℄ ROAD "U" (TAN.)
328.42' RT.

STA. 99+85.97 ℄ ROAD "U" (TAN.)
242.27' RT.

295.88'
S 86° 05' 52" E
(5 SCATTERED 6" TREES)

N.A. FENCE

JAMES H. GOODWIN &
KARLA A. GOODWIN
99

99 WL
TOTAL TAKE

I.P. (FND)
S 04° 01' 28" E

EX. R/W
(S 38° 15' 37" W 246.92')

NOTE: ALL CALLS FOR PARCELS 95, 98 AND 99 ARE FROM EXISTING DEEDS AND ARE SHOWN IN PARENTHESIS.

STA. 100+50.11 ℄ ROAD "U"

STA. 100+99.76 ℄ ROAD "U"
93.27' RT.

MATCH LINE SEE SHEET NO. 16

MATCH LINE

S.L. STA. 100+18.34 ℄ ROAD "U"
(350.00')
S 40° 28' 22" E

N 48° 15' 04" E

STA. 100+91.81 ℄ ROAD "U"
382.82' RT.

N 66° 11' 40" E
214.76'

EX. R/W

283.15'
S 35° 28' 40" E

MATCH LINE SEE SHEET NO. 9

STA. 87+39.80 ℄ ROAD "U"
366.48' RT.

MARGARET E. ELLEMAN
94

(N 47° 58' 10" W 256.60')
S 49° 58' 52" E
256.60'

296.60'

(N 34° 30' 00" W 601.10')
S 34° 28' 28" E
601.10'

12 SPKR POLES EVENLY SPACED
11 SPKR POLES EVENLY SPACED
10 SPKR POLES EVENLY SPACED
9 SPKR POLES EVENLY SPACED
7 SPKR POLES EVENLY SPACED
GRAVEL

1 STY. BLOCK BLDG.

(BUCKEYE PIPELINE)

MATCH LINE SEE SHEET NO. 10

STA. 455+16.56 ℄ U.S. 33. 363.85' LT.
STA. 94+95.37 ℄ ROAD "U" 672.36' RT.

I.P. (FND)
(S 05° 45' 00" E 186.00')
N 19° 30' 58" W
186.00'

415.00'
N 19° 28' 41" W

(S 20° 14' 00" E 415.00')
415.00'

1½ STY. WOOD & METAL BLDG.

1 STY. WOOD & METAL BLDG.

MARGARET E. ELLEMAN
94

2 STY. BRICK RES W/BASEMENT

CISTERN

WELL

GRAVEL DRIVE

CONC. WALK

CONC. BLOCK PATIO

ITEM 607 TYPE 47 — 1576 LIN. FT.

REV.	DATE	COMPLETION DATE / DESCRIPTION

ROAD "U" STA. 86+00.00 TO STA. 101+00.00 R/W

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO	F-11(74)	

224
225

16
17

UNION COUNTY
UNI-33-7.29

UNION COUNTY
PARIS TOWNSHIP
V.M.S. 1913, 5416

(99) AND (99A) JAMES H. GOODWIN & KARLA A. GOODWIN

DWIGHT MARION SHULER &
RACHEL M. SHULER
(98)

JAMES GOODWIN
KARLA GOODWIN
(100)

98 WL TOTAL TAKE (CONT. 3.61 Ac.)

101 QC TOTAL TAKE 0.268Ac.

99 WL TOTAL TAKE (1.013 Ac.)

99A WL TOTAL TAKE (0.626 Ac.)

100 WL TOTAL TAKE

98 WL TOTAL TAKE

STA. 104+91.40 ℄ RAMP "W" =
STA. 101+51.48 ℄ EX. U.S. 33

STA. 102+13.39 ℄ "ROAD 'U'"
579.90' LT.

STA. 105+93.88 ℄ ROAD "U" =
STA. 44+55.90 ℄ EX. U.S. 33

℄ WORK LIMITS

℄ RAMP "W"

℄ ROAD "U"

℄ EXIST. U.S. 33

℄ SURVEY 462 EX. U.S. 33

EX. LA-R/W

EX. LA R/W

EX. LA R/W (131.97' ℄ S 89° 39' 45" E)

(246.92' S 38° 15' 37" W)

MATCH LINE

MATCHLINE STA. 39+00.00 SEE THIS SHEET

SEE SHEET NO. 15

THE STATE OF OHIO

END ACQUISITION
UNI-33-7.29
STA. 459+77.14

NOTE: ALL CALLS FOR PARCELS 98, 99A, 99, AND 100 ARE FROM EXISTING DEEDS AND ARE SHOWN IN PARENTHESIS.

[A] ARC LENGTH - 53.35'
RADIUS - 45'
CHORD - S 89° 53' 04" E 50.28'

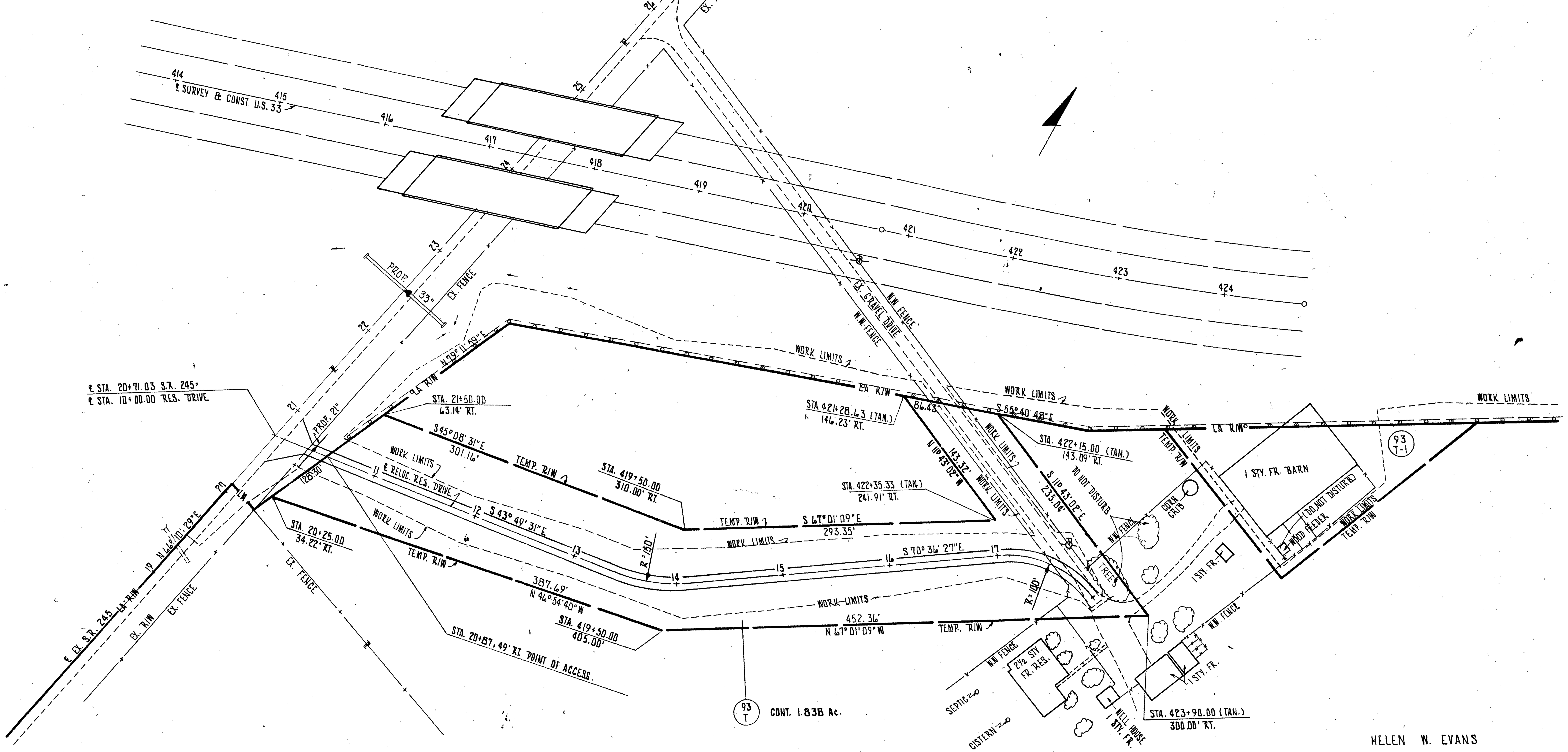
ITEM 607 TYPE 47 — 355 LIN. FT.

REV.	DATE	COMPLETION DATE / DESCRIPTION

RAMP "W" STA. 101+00.00 TO STA. 104+91.40 & ROAD "U" STA. 101+00.00 TO STA. 112+75.00 R/W

UNION COUNTY UNI-33-7.29	OHIO	225/225
	FHWA REGION 5	
F-11 (74)	FEDERAL PROJECT	17/17

UNION COUNTY
PARIS TOWNSHIP
V.M.S. 5416



HELEN W. EVANS

93

NOTE:
1. FOR 93-WL AND 93-T SEE SHEETS 7, 8, 11, & 12.

REV.	DATE	DESCRIPTION
		COMPLETION DATE

HELEN W. EVANS DRIVEWAY

BRUNING 44-132 30845-7

GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE GENTLY ROLLING GLACIATED PORTION OF THE MISSISSIPPI VALLEY PLAIN REGION, IN AN AREA WHERE EXTREMELY DEEP GLACIAL-DERIVED MATERIAL OVERLIES BEDROCK, OF THE MONROE FORMATION.

EXPLORATION

THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE BORINGS MADE BY MEANS OF A MECHANICALLY-POWERED HOLLOW STEM AUGER MOUNTED ON A MOBILE PLATFORM, PERFORMED ON SEPTEMBER 19 AND 20, 1984.

INVESTIGATIONAL FINDINGS AND OBSERVATIONS

THE BORINGS ENCOUNTERED INTERVALS OF LOOSE TO EXTREMELY DENSE UNSTRATIFIED BASIC SILTS AND CLAYS MODIFIED WITH SAND, GRAVEL AND VARYING AMOUNTS OF EACH OTHER THAT GRADUALLY INCREASE (ERRATIC AT TIMES) IN DENSITY WITH INCREASE IN DEPTH. BORING B-1 (IN THE GENERAL VICINITY OF THE REAR PIER) PENETRATED TO A DEPTH OF 41.5 FEET, ELEVATION 998.7 FEET AND WAS TERMINATED AFTER PENETRATING IN EXCESS OF 6.5 FEET OF MATERIAL REQUIRING 19 OR MORE BLOWS PER FOOT IN THE STANDARD PENETRATION TEST. BORING B-2 (IN THE GENERAL VICINITY OF THE FORWARD PIER) PENETRATED TO A DEPTH OF 41.5 FEET, ELEVATION 1000.0 FEET AND WAS TERMINATED AFTER PENETRATING IN EXCESS OF 6.5 FEET OF MATERIAL REQUIRING 17 OR MORE BLOWS PER FOOT IN THE STANDARD PENETRATION TEST.

BEDROCK SURFACE WAS NOT ENCOUNTERED IN EITHER OF THE TEST BORINGS PERFORMED.

NO FREE WATER OBSERVATIONS WERE MADE IN EITHER OF THE TEST BORINGS PERFORMED, DURING OR AT THE CONCLUSION OF DRILLING OPERATIONS.

LEGEND

- Auger Boring Location - Plan View.
- Press and / or Drive Sample and / or Core Boring Location - Plan View.
- Drive Rod Penetration Resistance Sounding Location - Plan View.
- Capped Pile
- Footing
- Footing on Pile
- TR — Top of Rock
- Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- X/Y/Z — Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test.
  - X = Number of Blows for First 6 inches.
  - Y = Number of Blows for Second 6 inches.
  - Z = Number of Blows for Third 6 inches.
- Drive Rod Penetration Resistance Sounding Log - Profile
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Z — Indicates Final Measurement of Penetration, in Inches.
- W — Indicates Free Water Elevation.
- Indicates Static Water Elevation.

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Mudstone or Claystone
- Mudstone or Claystone
- Weathered Shale
- Shale
- Weathered Siltstone
- Siltstone
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone
- Boulders or Cobbles

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and / or 5-foot depth intervals, driven by means of a 140 - pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 18 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in three 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system - and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions

Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt	Clay
12"	3"	2.0mm (No. 10 sieve)	0.42mm (No. 40 sieve)	0.074mm (No. 200 sieve)	0.005mm	

LOG OF BORING

Date Started 9/19/84 — Sampler Type SS — Dia. 1 3/8" — Water Elev. —
Date Completed 9/20/84 — Casing: Length — Dia. —
Boring No. B-1 — Station & Offset 416+93 40' RT. (REAR ABUTMENT) — Surface Elev. 1040.2'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1040.2	0														
1039.9					SOD AND TOPSOIL										FSOIAE
1037.7	2														
	4	3/3/6			BROWN CLAY	13	7	1	3	20	69	46	25	24	A-7-6
1035.2	6	6/10/13			BROWN SANDY SILTY CLAY	14	9	7	12	25	47	38	18	15	A-6b
1032.7	8	9/15/23			BROWN SILT AND CLAY	15	13	1	2	18	66	39	13	18	A-6a
1030.2	10	9/15/22			BROWN SILTY CLAY	16	0	1	1	24	74	39	19	19	A-6b
1027.7	12	14/25/31			BROWN AND GRAY SILTY CLAY	17	0	0	1	24	75	39	18	19	A-6b
1025.2	16	6/9/19			GRAY SILT AND CLAY	18	2	4	13	28	53	28	11	16	A-6a
1022.7	18	8/13/21			GRAY SILT AND CLAY	19	3	6	9	28	54	29	12	16	A-6a
1020.2	20	6/12/19			GRAY SILT AND CLAY	20	4	2	9	30	55	28	12	16	A-6a
1015.2	22														
	24														
	26	2/6/10			GRAY SILT AND CLAY	21	3	1	12	30	55	29	12	21	A-6a
1010.2	28														
	30														
	32	4/6/11			GRAY SANDY CLAY	22	13	6	10	26	45	28	11	19	A-6a
1000.2	34														
	36	4/7/12			GRAY SANDY SILT	23	11	8	12	32	37	26	10	14	A-4a
1000.2	38														
998.7	40	4/10/12			GRAY SANDY CLAY	24	11	7	11	32	39	33	17	13	A-6b

BOTTOM OF BORING

LOG OF BORING

Date Started 9/19/84 — Sampler Type SS — Dia. 1 3/8" — Water Elev. —
Date Completed 9/19/84 — Casing: Length — Dia. —
Boring No. B-2 — Station & Offset 417+77 37' LT. (FORWARD ABUTMENT) — Surface Elev. 1041.5'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1041.5	0														
1041.3					SOD AND TOPSOIL										FSOIAE
1039.0	2														
	4	2/4/6			BROWN SILTY CLAY	1	0	0	2	26	72	40	20	22	A-6b
1036.5	6	2/3/4			BROWN SILTY CLAY	2	0	1	3	36	60	40	19	22	A-6b
1034.0	8	5/10/16			BROWN CLAY	3	5	3	5	35	52	40	21	16	A-6b
1031.5	10	6/14/20			GRAY SILT AND CLAY	4	9	4	7	27	53	34	15	15	A-6a
1029.0	12	12/12/19			GRAY SILTY CLAY	5	0	2	5	29	64	35	17	17	A-6b
1026.5	16	6/7/16			GRAY GRAVELLY CLAY	6	13	5	7	23	52	32	15	16	A-6a
1024.0	18	5/7/13			GRAY SILT AND CLAY	7	4	6	8	27	55	31	14	17	A-6a
1021.5	20	5/7/9			GRAY SILT AND CLAY	8	6	4	8	31	51	31	13	18	A-6a
1016.5	22														
	24														
	26	3/6/10			GRAY SILT AND CLAY	9	7	3	8	32	50	30	12	17	A-6a
1011.5	28														
	30														
	32	3/5/9			GRAY SANDY SILT	10	12	5	8	27	48	30	10	18	A-4a
1006.5	34														
	36	3/6/11			GRAY SILT AND CLAY	11	7	4	6	29	54	31	13	14	A-6a
1001.5	38														
1000.0	40	5/7/11			GRAY CLAY	12	6	4	7	29	54	45	23	17	A-7-6

BOTTOM OF BORING

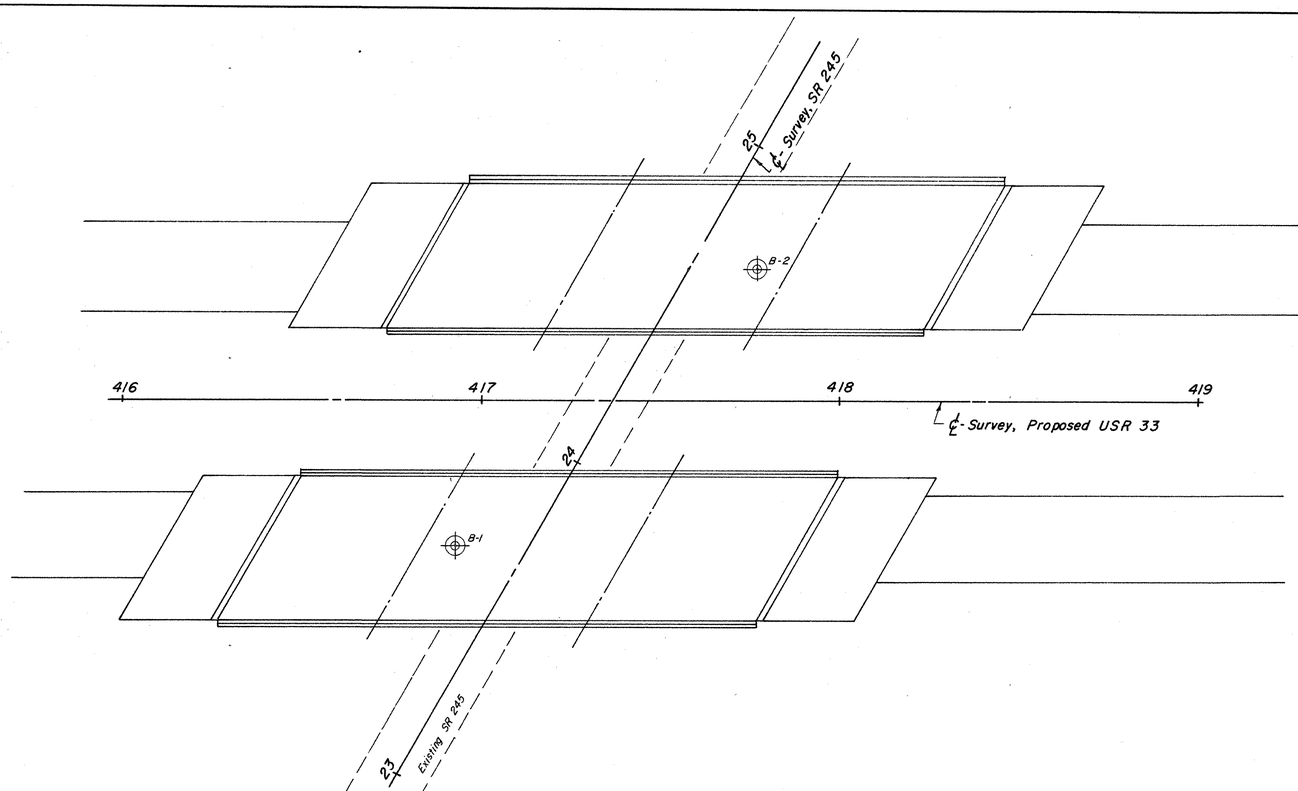
NOTE - ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE BUREAU OF TESTS AT 1600 WEST BROAD STREET, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

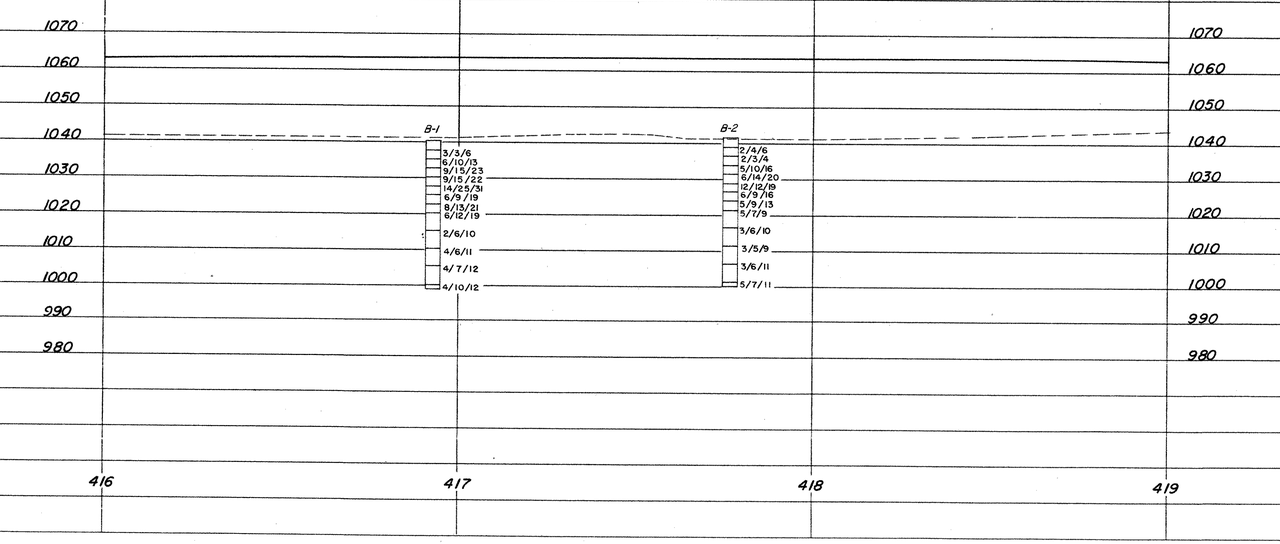
OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS — TESTING LABORATORY
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION

BRIDGE NO. UNI-33-0790 L/R
US 33 OVER SR 245

CHECKED BY	REVIEWED BY	DATE
L.N.L.	R.D.R.	10/10/84





SCALE: 1" = 20'

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-TESTING LABORATORY
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. UNI-33-0790 L/R
US 33 OVER SR 245

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
A. F.	L. N. L.	R. D. R.	10/10/84

GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE GENTLY ROLLING GLACIATED PORTION OF THE MISSISSIPPI VALLEY PLAIN REGION, IN AN AREA WHERE EXTREMELY DEEP GLACIAL-DERIVED MATERIAL OVERLIES BEDROCK, OF THE MONROE FORMATION.

EXPLORATION

THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE BORINGS MADE BY MEANS OF A MECHANICALLY-POWERED HOLLOW STEM AUGER MOUNTED ON A MOBILE PLATFORM, PERFORMED ON SEPTEMBER 10 AND 11, 1984.

INVESTIGATIONAL FINDINGS AND OBSERVATIONS

THE BORINGS ENCOUNTERED INTERVALS OF MEDIUM-DENSE TO DENSE UNSTRATIFIED BASIC SILTS AND CLAYS MODIFIED WITH SAND, GRAVEL AND VARYING AMOUNTS OF EACH OTHER THAT GRADUALLY INCREASE (ERRATIC AT TIMES) IN DENSITY WITH INCREASE IN DEPTH. BORING B-1 (IN THE GENERAL VICINITY OF THE REAR ABUTMENT) PENETRATED TO A DEPTH OF 41.5 FEET, ELEVATION 988.5 FEET AND WAS TERMINATED AFTER PENETRATING IN EXCESS OF 11.5 FEET OF MATERIAL REQUIRING 28 OR MORE BLOWS PER FOOT IN THE STANDARD PENETRATION TEST. BORING B-2 (IN THE GENERAL VICINITY OF THE FORWARD ABUTMENT) PENETRATED TO A DEPTH OF 56.5 FEET, ELEVATION 973.5 FEET AND WAS TERMINATED AFTER PENETRATING IN EXCESS OF 21.5 FEET OF MATERIAL REQUIRING IN EXCESS OF 30 BLOWS PER FOOT IN THE STANDARD PENETRATION TEST.

BEDROCK SURFACE WAS NOT ENCOUNTERED IN EITHER OF THE TEST BORINGS PERFORMED.

NO FREE WATER OBSERVATIONS WERE MADE IN EITHER OF THE TEST BORINGS PERFORMED, DURING OR AT THE CONCLUSION OF DRILLING OPERATIONS.

LEGEND

- Auger Boring Location - Plan View.
- Press and / or Drive Sample and / or Core Boring Location - Plan View.
- Drive Rod Penetration Resistance Sounding Location - Plan View.
- Capped Pile
- Footing
- Footing on Pile
- TR — Top of Rock
- Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- X/Y/Z — Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test.
  - X = Number of Blows for First 6 inches.
  - Y = Number of Blows for Second 6 inches.
  - Z = Number of Blows for Third 6 inches.
- Drive Rod Penetration Resistance Sounding Log - Profile
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Z — Indicates Final Measurement of Penetration, in Inches.
- W — Indicates Free Water Elevation.
- Indicates Static Water Elevation.

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Mudstone or Claystone
- Mudstone or Claystone
- Weathered Shale
- Shale
- Weathered Siltstone
- Siltstone
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone
- Boulders or Cobbles

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and / or 5-foot depth intervals, driven by means of a 140 - pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 18 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in three 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system-and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions

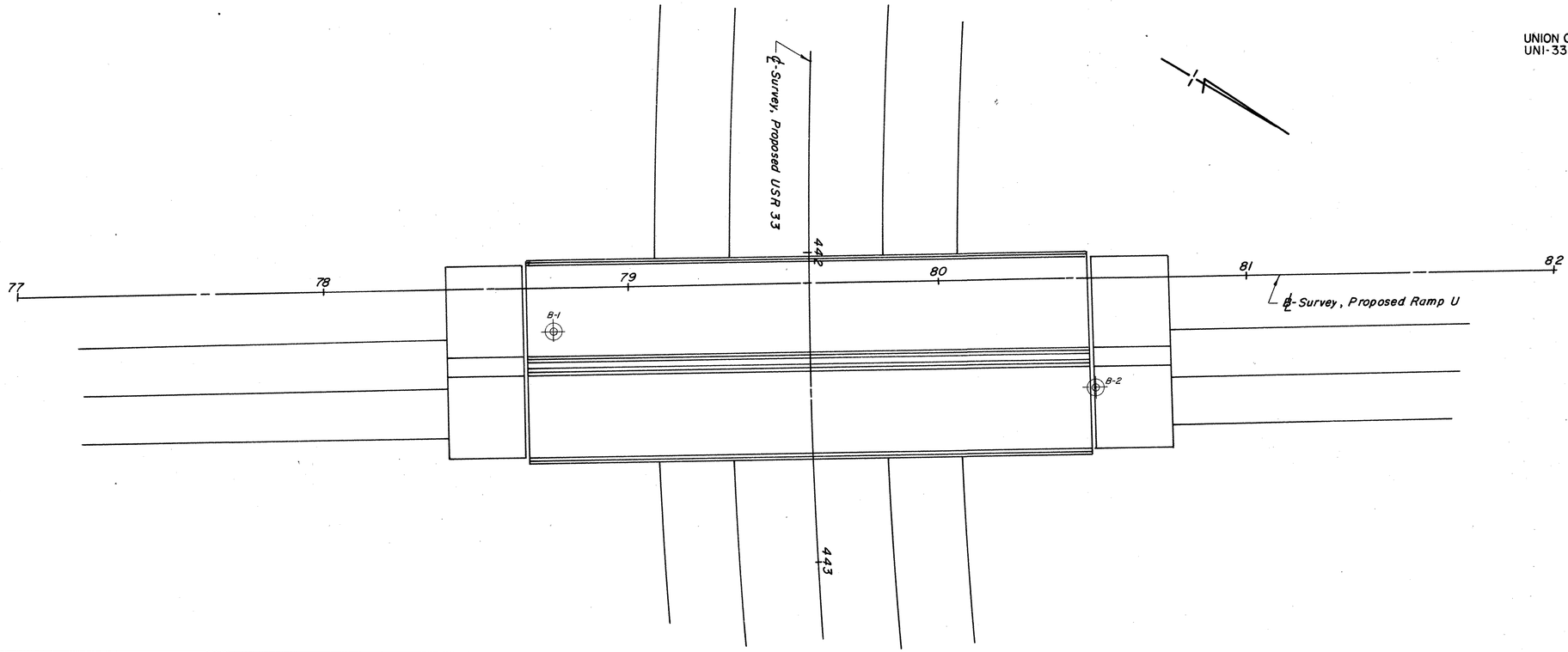
Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt	Clay
12"	3"	2.0mm (No. 10 sieve)	0.42mm (No. 40 sieve)	0.074mm (No. 200 sieve)	0.005mm	

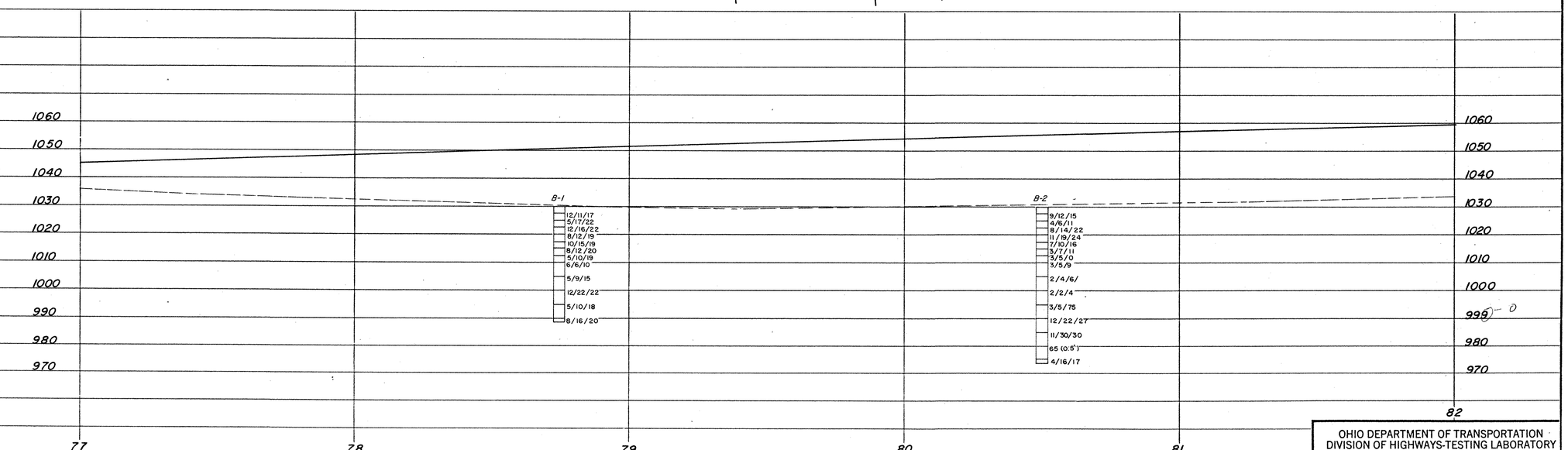
NOTE - ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE BUREAU OF TESTS AT 1600 WEST BROAD STREET, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS — TESTING LABORATORY
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. UNI-33-0837 L/R
RAMP "U" OVER US 33

CHECKED BY	REVIEWED BY	DATE
L. N. L.	R. D. R.	10/11/84





SCALE: 1" = 20'

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-TESTING LABORATORY
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. UNI-33-0837 L/R
RAMP "U" OVER US 33

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
A. F.	L. N. L.	R.D.R.	10/11/84

LOG OF BORING

Date Started 9/10/84 | Sampler Type SS | Dia. 1 3/8" | Water Elev.
Date Completed 9/10/84 | Casing: Length | Dia.
Boring No. B-1 | Station & Offset 78+75 14' RT. REAR ABUTMENT | Surface Elev 1030.0'

Elev.	Depth	Std. Pen. (N)	Rec. Ft.	Loss Ft.	Description	Sample No.	Physical Characteristics: % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1030.0	0														
1027.5	2														
	4	12/11/17			BROWN SILTY CLAY	1	5	3	7	28	57	34	18	14	A-6b
1025.0	6	5/17/22			BROWN SILTY CLAY	2	4	3	7	31	55	34	18	17	A-6b
1022.5	8	12/16/22			BROWN SILT AND CLAY	3	4	3	5	32	56	32	13	16	A-6a
1020.0	10	8/12/19			BROWN SANDY CLAY	4	4	17	8	15	56	32	15	18	A-6a
1017.5	12	10/15/19			BROWN SILTY CLAY	5	5	5	8	30	52	34	16	19	A-6b
1015.0	14	8/12/20			BROWN SILTY CLAY	6	5	4	7	31	53	34	16	17	A-6b
1012.5	16	5/10/19			GRAY SILT AND CLAY	7	6	4	8	31	51	29	12	16	A-6a
1010.0	18	6/6/10			GRAY SANDY SILT	8	10	4	8	31	47	29	8	17	A-4a
	20														
	22														
1005.0	24														
	26	6/9/15			GRAY SANDY SILT	9	13	5	9	32	41	27	9	15	A-4a
	28														
1000.0	30														
	32	12/22/22			GRAY SANDY SILT	10	13	8	10	32	37	25	9	14	A-4a
995.0	34														
	36	5/10/18			BROWN SANDY SILT	11	9	9	14	35	33	23	8	33	A-4a
	38														
990.0	40														
988.5		8/16/20			GRAY SANDY SILT	12	13	9	12	32	34	23	8	11	A-4a

BOTTOM OF BORING

LOG OF BORING

Date Started 9/11/84 | Sampler Type SS | Dia. 1 3/8" | Water Elev.
Date Completed 9/11/84 | Casing: Length | Dia.
Boring No. B-2 | Station & Offset 80+50 35' RT. FORWARD ABUTMENT | Surface Elev. 1030.0'

Elev.	Depth	Std. Pen. (N)	Rec. Ft.	Loss Ft.	Description	Sample No.	Physical Characteristics: % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1030.0	0														
1027.5	2														
	4	9/12/15			BROWN SANDY CLAY	13	4	4	14	28	50	41	20	18	A-7-6
1025.0	6	4/6/11			BROWN SILTY CLAY	14	0	1	2	15	82	45	20	24	A-7-6
1022.5	8	8/14/22			BROWN CLAY	15	4	3	5	23	65	44	23	18	A-7-6
1020.0	10	11/19/24			GRAY SILT AND CLAY	16	5	4	8	33	50	31	13	16	A-6a
1017.5	12	7/10/16			GRAY SILT AND CLAY	17	5	4	8	32	51	28	11	16	A-6a
1015.0	14	3/7/11			GRAY SILT AND CLAY	18	5	5	7	33	50	29	12	18	A-6a
1012.5	16	3/5/0*			GRAY SILT AND CLAY	19	4	5	8	32	51	31	13	19	A-6a
1010.0	18	3/5/9			GRAY SILT AND CLAY	20	7	4	8	29	52	31	13	18	A-6a
	20														
	22														
1005.0	24														
	26	2/4/6			GRAY SILT AND CLAY	21	0	0	0	37	63	31	14	25	A-6a
	28														
1000.0	30														
	32	2/2/4			GRAY SILT AND CLAY	22	0	1	1	30	68	31	13	27	A-6a
995.0	34														
	36	3/5/75			GRAY SANDY CLAY	23	7	5	9	31	48	31	13	19	A-6a
	38														
990.0	40														
	42	12/22/27			GRAY SANDY SILT	24	11	12	13	32	32	23	9	13	A-4a
	44														
985.0	46	11/30/30			GRAY GRAVELLY SANDY CLAY	25	19	12	14	31	24	27	12	13	A-6a
	48														
980.0	50	65(0.5')			GRAY GRAVELLY SANDY CLAY	26	22	13	15	29	21	26	12	7	A-6a
	52														
	54														
975.0	56														
973.5		4/16/17			GRAY SILTY GRAVELLY SAND	27	26	41	22	6	5	0	0	13	A-1-b
	58														
	60														

BOTTOM OF BORING

* INTERVAL PENETRATED BY WEIGHT OF TOOL

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - TESTING LABORATORY
1600 WEST BROAD STREET COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. UNI-33-0837 L/R
RAMP "U" OVER US 33
SEC.

BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
S.M.G.	L.N.L.	R.D.R	10/11/84

GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE GENTLY ROLLING GLACIATED PORTION OF THE MISSISSIPPI VALLEY PLAIN REGION, IN AN AREA WHERE EXTREMELY DEEP GLACIAL-DERIVED MATERIAL OVERLIES BEDROCK, OF THE MONROE FORMATION.

EXPLORATION

THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE BORINGS MADE BY MEANS OF A MECHANICALLY-POWERED HOLLOW STEM AUGER MOUNTED ON A MOBILE PLATFORM, PERFORMED ON SEPTEMBER 11 AND 12, 1984.

INVESTIGATIONAL FINDINGS AND OBSERVATIONS

THE BORINGS ENCOUNTERED INTERVALS OF MEDIUM-DENSE TO EXTREMELY DENSE UNSTRATIFIED BASIC SILTS AND CLAYS MODIFIED WITH SAND, GRAVEL AND VARYING AMOUNTS OF EACH OTHER THAT GRADUALLY INCREASE (ERRATIC AT TIMES) IN DENSITY WITH INCREASE IN DEPTH. BORING B-1 (IN THE GENERAL VICINITY OF THE REAR ABUTMENT) PENETRATED TO A DEPTH OF 41.5 FEET, ELEVATION 1002.5 FEET AND WAS TERMINATED AFTER PENETRATING IN EXCESS OF 36.5 FEET OF MATERIAL REQUIRING 15 OR MORE BLOWS PER FOOT IN THE STANDARD PENETRATION TEST. BORING B-2 (IN THE GENERAL VICINITY OF THE FORWARD ABUTMENT) PENETRATED TO A DEPTH OF 61.5 FEET, ELEVATION 973.0 FEET AND WAS TERMINATED AFTER PENETRATING IN EXCESS OF 6.5 FEET OF MATERIAL REQUIRING 24 OR MORE BLOWS PER FOOT IN THE STANDARD PENETRATION TEST.

BEDROCK SURFACE WAS NOT ENCOUNTERED IN EITHER OF THE TEST BORINGS PERFORMED.

NO FREE WATER OBSERVATIONS WERE MADE IN EITHER OF THE TEST BORINGS PERFORMED, DURING OR AT THE CONCLUSION OF DRILLING OPERATIONS.

LEGEND

- Auger Boring Location - Plan View.
- Press and / or Drive Sample and / or Core Boring Location - Plan View.
- Drive Rod Penetration Resistance Sounding Location - Plan View.
- Capped Pile
- Footing
- Footing on Pile
- TR — Top of Rock
- Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- X/Y/Z — Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test.
  - X = Number of Blows for First 6 inches.
  - Y = Number of Blows for Second 6 inches.
  - Z = Number of Blows for Third 6 inches.
- Drive Rod Penetration Resistance Sounding Log - Profile
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Z — Indicates Final Measurement of Penetration, in Inches.
- W — Indicates Free Water Elevation.
- Indicates Static Water Elevation.

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Mudstone or Claystone
- Mudstone or Claystone
- Weathered Shale
- Shale
- Weathered Siltstone
- Siltstone
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone
- Boulders or Cobbles

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and / or 5-foot depth intervals, driven by means of a 140 - pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 18 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in three 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system-and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions

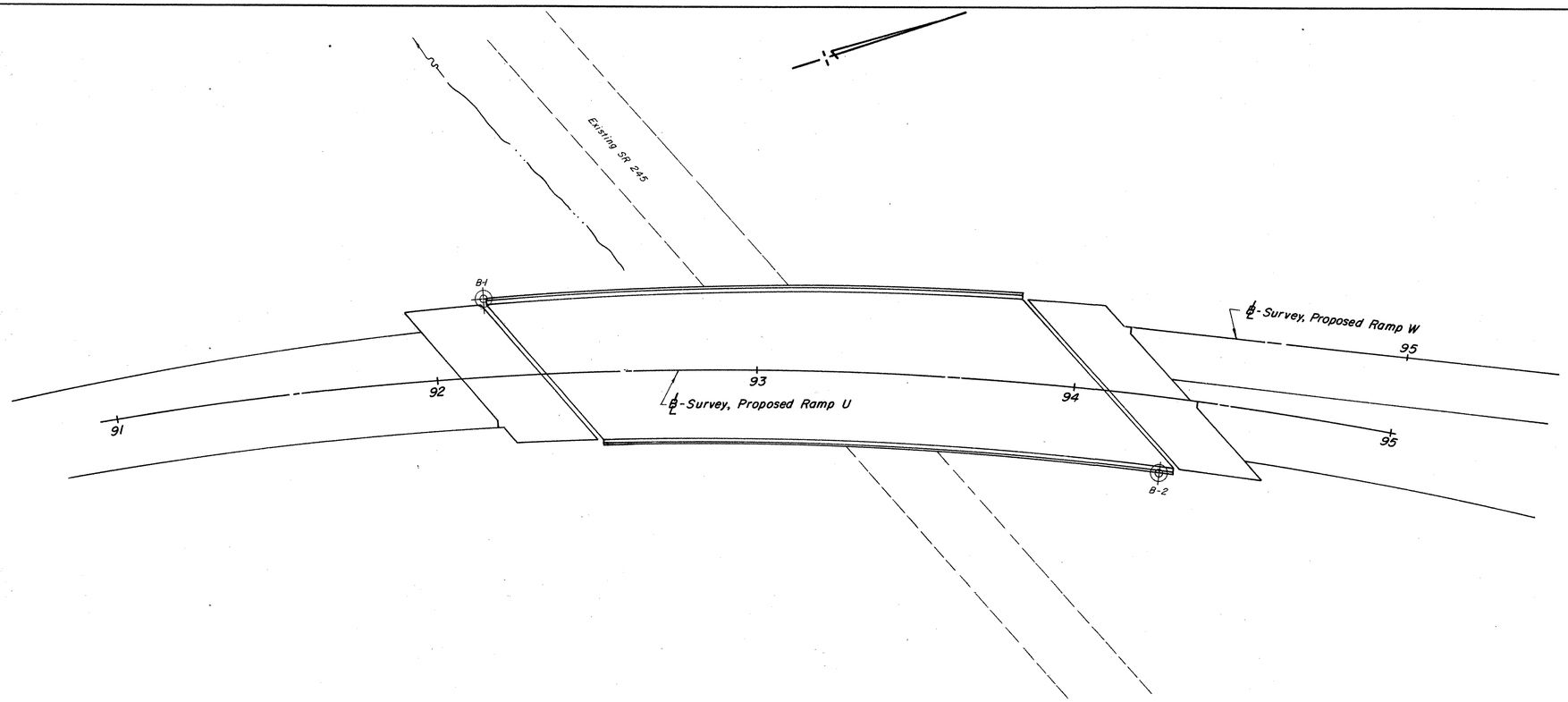
Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt	Clay
12"	3"	2.0mm (No. 10 sieve)	0.42mm (No. 40 sieve)	0.074mm (No. 200 sieve)	0.005mm	

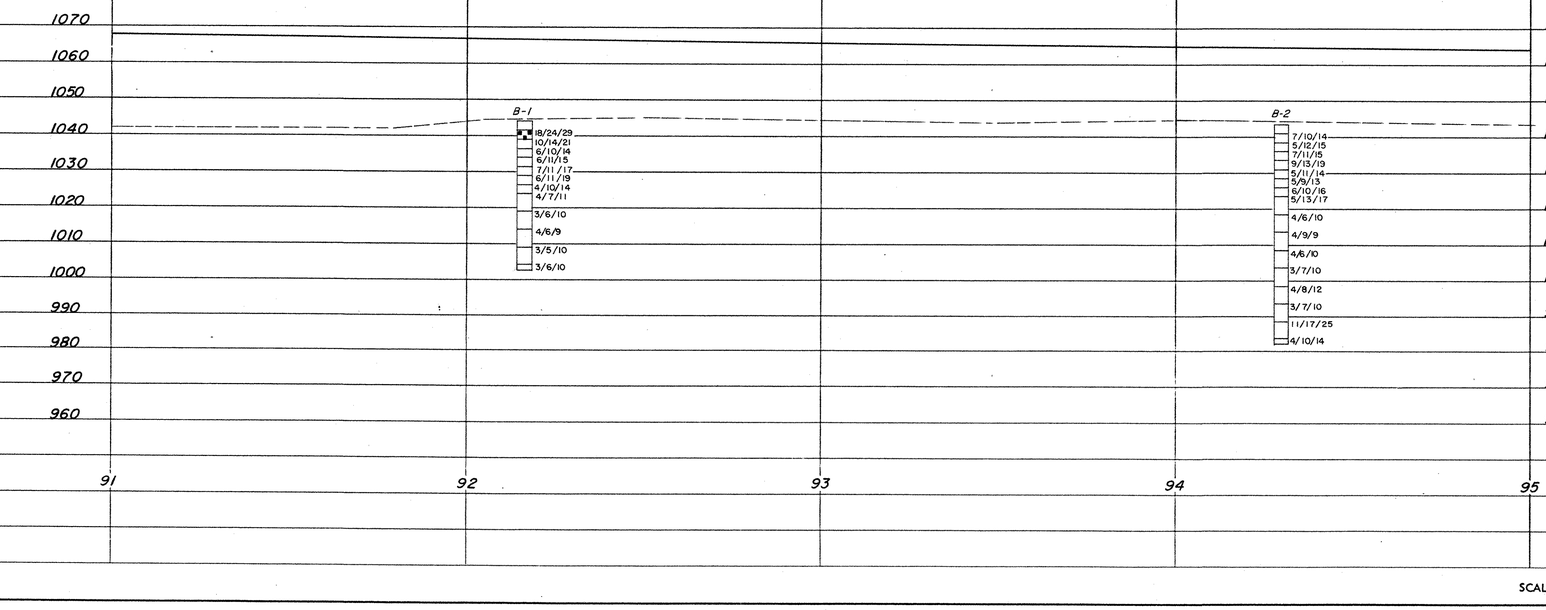
NOTE - ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE BUREAU OF TESTS AT 1600 WEST BROAD STREET, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS — TESTING LABORATORY
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. UNI-33-0862
RAMP "U" OVER SR 245

CHECKED BY	REVIEWED BY	DATE
L. N. L.	R. D. R.	10/11/10





SCALE: 1" = 20'

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-TESTING LABORATORY
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION

BRIDGE NO. UNI-33-0862

RAMP "U" OVER SR 245

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
A.F	L.N.L.	R.D.R	10/11/84

LOG OF BORING

Date Started 9/12/84 | Sampler Type SS | Dia. 1 3/8" | Water Elev. ———
Date Completed 9/12/84 | Casing: Length ——— | Dia. ———
Boring No. B-1 | Station & Offset 92+16 BL REAR ABUTMENT | Surface Elev. 1044.0'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics: % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1044.0	0														
1041.5	2														
1039.0	4	18/24/29			BROWN CLAY WITH BOULDERS	17	0	1	2	24	73	42	22	16	A-7-6
1036.5	6	10/14/21			BROWN SILTY CLAY	18	0	1	2	24	73	41	20	20	A-7-6
1034.0	8	6/10/14			BROWN CLAY	19	3	6	8	32	51	42	21	17	A-7-6
1031.5	10	6/11/15			BROWN SILT AND CLAY	20	4	4	6	34	52	32	13	18	A-6a
1029.0	12	7/11/17			BROWN SILT AND CLAY.	21	4	4	8	34	50	33	14	19	A-6a
1026.5	14	6/11/19			BROWN SILT AND CLAY	22	4	5	8	31	52	32	13	18	A-6a
1024.0	16	4/10/14			GRAY SILT AND CLAY	23	6	5	8	29	52	30	13	17	A-6a
	18	4/7/11			GRAY SILT AND CLAY	24	7	4	8	29	52	30	12	17	A-6a
1019.0	20														
	22	3/6/10			GRAY SANDY CLAY	25	9	5	8	29	49	30	13	17	A-6a
1014.0	24														
	26	4/6/9			GRAY SILT AND CLAY	26	4	4	8	32	52	30	13	17	A-6a
1009.0	28														
	30	3/5/0			GRAY SILT AND CLAY	27	7	5	8	30	50	32	15	18	A-6a
1004.0	32														
1002.5	34	3/6/10			GRAY GRAVELLY CLAY	28	11	4	7	28	50	32	15	18	A-6a

BOTTOM OF BORING

LOG OF BORING

Date Started 9/11/84 | Sampler Type SS | Dia. 1 3/8" | Water Elev. ———
Date Completed 9/12/84 | Casing: Length ——— | Dia. ———
Boring No. B-2 | Station & Offset 94+30 24' RT. FORWARD ABUTMENT | Surface Elev. 1043.5'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics: % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1043.5	0														
1043.0	2				TOPSOIL										
1041.0	4	7/10/14			BROWN SILT AND CLAY	1	0	2	5	35	58	32	11	20	A-6a
1038.5	6	5/12/15			BROWN SILT AND CLAY	2	3	3	6	36	52	32	12	18	A-6a
1036.0	8	7/11/15			BROWN SILT AND CLAY	3	0	1	6	38	55	32	13	20	A-6a
1033.5	10	9/13/19			BROWN SILT AND CLAY	4	5	3	6	27	59	33	12	18	A-6a
1031.0	12	5/11/14			BROWN CLAYEY SILT	5	0	3	11	48	38	26	8	18	A-4a
1028.5	14	5/9/13			BROWN CLAYEY SILT	6	4	9	7	29	51	25	8	20	A-4a
1026.0	16	6/10/16			BROWN SILT AND CLAY	7	4	2	5	31	58	34	14	20	A-6a
1023.5	18	5/13/17			GRAY SANDY SILT	8	3	12	17	26	42	27	10	14	A-4a
1018.5	20														
	22	4/6/10			GRAY SANDY SILT	9	6	9	10	29	46	26	9	16	A-4a
1014.0	24														
	26	4/9/9			GRAY GRAVELLY SANDY SILT	10	17	8	10	21	39	26	9	12	A-4a
1009.0	28														
	30	4/6/10			GRAY SILT AND CLAY	11	5	4	8	29	54	29	11	18	A-6a
1004.0	32														
	34	3/7/10			GRAY SILT AND CLAY	12	6	2	4	37	51	29	11	18	A-6a
999.0	36														
	38	4/8/12			GRAY SANDY SILT	13	9	5	7	32	47	28	10	16	A4a
994.0	40														
	42	3/7/10			GRAY SANDY SILT	14	9	10	13	34	34	22	6	13	A-4a
989.0	44														
	46	11/17/25			GRAY SANDY SILT	15	12	10	12	31	35	23	8	12	A-4a
984.0	48														
982.5	50	4/10/14			GRAY GRAVELLY SANDY SILT	16	22	13	11	25	29	23	8	11	A-4a

BOTTOM OF BORING

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - TESTING LABORATORY
1600 WEST BROAD STREET COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. UNI-33-08.62
RAMP "U" OVER SR 245

BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
S. M. G.	L. N. L.	R. D. R	10/11/84

TE - 118
600 - 6 - 73

UNION COUNTY
UNI-33-07.29

GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE GENTLY ROLLING GLACIATED PORTION OF THE MISSISSIPPI VALLEY PLAIN REGION, IN AN AREA WHERE EXTREMELY DEEP GLACIAL-DERIVED MATERIAL OVERLIES BEDROCK, OF THE MONROE FORMATION.

EXPLORATION

THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE BORINGS MADE BY MEANS OF A MECHANICALLY-POWERED HOLLOW STEM AUGER MOUNTED ON A MOBILE PLATFORM, PERFORMED ON SEPTEMBER 12, 13 AND 27, 1984.

INVESTIGATIONAL FINDINGS AND OBSERVATIONS

THE BORINGS ENCOUNTERED INTERVALS OF MEDIUM-DENSE TO EXTREMELY DENSE UNSTRATIFIED BASIC CLAYS AND SAND MODIFIED WITH SILTS, GRAVEL AND VARYING AMOUNTS OF EACH OTHER THAT GRADUALLY INCREASE (ERRATIC AT TIMES) IN DENSITY WITH INCREASE IN DEPTH. BORING B-1 (IN THE GENERAL VICINITY OF THE REAR ABUTMENT) PENETRATED TO A DEPTH OF 41.5 FEET, ELEVATION 993.0 FEET AND WAS TERMINATED AFTER PENETRATING IN EXCESS OF 11.5 FEET OF MATERIAL REQUIRING 30 OR MORE BLOWS PER FOOT IN THE STANDARD PENETRATION TEST. BORING B-2 (IN THE GENERAL VICINITY OF THE FORWARD ABUTMENT) PENETRATED TO A DEPTH OF 41.5 FEET, ELEVATION 987.2 FEET AND WAS TERMINATED AFTER PENETRATING IN EXCESS OF 6.5 FEET OF MATERIAL REQUIRING 23 OR MORE BLOWS PER FOOT IN THE STANDARD PENETRATION TEST.

BEDROCK SURFACE WAS NOT ENCOUNTERED IN EITHER OF THE TEST BORINGS PERFORMED.

FREE WATER WAS OBSERVED AND MEASURED IN BORING B-1 AT 10.0-FOOT DEPTH, ELEVATION 1024.5 FEET. NO FREE WATER OBSERVATIONS WERE MADE IN BORING B-2, DURING OR AT THE CONCLUSION OF DRILLING OPERATIONS.

LEGEND

- Auger Boring Location - Plan View.
- Press and / or Drive Sample and / or Core Boring Location - Plan View.
- Drive Rod Penetration Resistance Sounding Location - Plan View.
- Capped Pile
- Footing
- Footing on Pile
- *TR* Top of Rock
- Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- X/Y/Z Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test.
  - X = Number of Blows for First 6 inches.
  - Y = Number of Blows for Second 6 inches.
  - Z = Number of Blows for Third 6 inches.
- Drive Rod Penetration Resistance Sounding Log - Profile
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Z Indicates Final Measurement of Penetration, in Inches.
- W— Indicates Free Water Elevation.
- Indicates Static Water Elevation.

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Mudstone or Claystone
- Mudstone or Claystone
- Weathered Shale
- Shale
- Weathered Siltstone
- Siltstone
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone
- Boulders or Cobbles

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and / or 5-foot depth intervals, driven by means of a 140 - pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 18 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in three 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system-and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions

Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt	Clay
	12"	3"	2.0mm (No. 10 sieve)	0.42mm (No. 40 sieve)	0.074mm (No. 200 sieve)	0.005mm

LOG OF BORING

Date Started 9/12/84 — Sampler Type SS — Dia. 1 3/8" — Water Elev. 1024.5'
Date Completed 9/13/84 — Casing: Length — Dia. — Surface Elev. 1034.5'
Boring No. B-1 — Station & Offset 105+12 10' LT. (RAMP U)

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1034.5	0														
1032.0	2														
	4	12/20/27			BROWN SILT AND CLAY	1	6	4	8	30	52	34	15	12	A-6a
1029.5	6	14/20/25			BROWN SILT AND CLAY	2	0	4	8	30	58	34	15	15	A-6a
1027.0	8	8/14/21			BROWN SILT AND CLAY WITH ROOTS	3	3	4	7	27	59	34	15	18	A-6a
1024.5	10	7/13/17			BROWN SILT AND CLAY WITH ROOTS	4	4	4	7	30	55	34	15	14	A-6a
1022.0	12	7/13/17			BROWN SILT AND CLAY WITH ROOTS	5	2	5	8	32	53	33	13	18	A-6a
1019.5	14	5/10/14			BROWN SILTY CLAY	6	3	2	4	29	62	37	17	20	A-6b
1017.0	16	1/3/8			BROWN SILTY SAND	7	0	0	75	15	10	0	0	21	A-3a
1014.5	18	6/12/16			BROWN SILTY SAND	8	0	0	79	13	8	0	0	20	A-3a
	20														
1007.5	22														
	24	4/9/12			GRAY SILTY CLAY	9	0	0	4	23	73	38	16	23	A-6b
1004.5	26														
	28	7/14/16			GRAY SILTY CLAY	10	0	0	2	24	74	38	18	25	A-6b
999.5	30														
	32	12/30/42			GRAY SILT AND CLAY	11	3	2	3	26	66	37	15	18	A-6a
994.5	34														
993.0	36	8/14/25			GRAY SILTY SAND	12	8	45	25	11	11	0	0	14	A-1-b
	38														
	40														
	—				BOTTOM OF BORING										

LOG OF BORING

Date Started 9/27/84 — Sampler Type SS — Dia. 1 3/8" — Water Elev. —
Date Completed 9/27/84 — Casing: Length — Dia. — Surface Elev. 1028.7'
Boring No. B-2 — Station & Offset 107+20 CL (RAMP U)

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1028.7	0														
1026.7	2														
	4	8/12/15			BROWN SILT AND CLAY	1	5	4	8	28	55	33	15	15	A-6a
1023.7	6	4/9/11			BROWN SILT AND CLAY	2	4	5	9	29	53	33	15	15	A-6a
1021.2	8	11/15/20			BROWN WITH GRAY	3	5	5	8	27	55	35	13	17	A-6a
1018.7	10	10/17/25			BROWN SILT AND CLAY	4	6	5	9	26	54	35	13	18	A-6a
1016.2	12	11/10/18			BROWN SANDY CLAY	5	5	7	10	26	52	34	13	19	A-6a
1013.7	14	4/5/10			BROWN SANDY CLAY	6	6	5	9	26	54	34	12	17	A-6a
1011.2	16	5/8/13			BROWN SILT AND CLAY	7	6	5	8	26	55	32	12	17	A-6a
1008.7	18	4/4/8			GRAY SILT AND CLAY	8	8	4	7	28	53	31	11	18	A-6a
	20														
1003.7	22														
	24	3/5/7			GRAY SILT AND CLAY	9	6	4	8	28	54	30	12	18	A-6a
998.7	26														
	28	3/7/12			GRAY WITH BROWN SILT AND CLAY	10	6	4	8	28	54	30	12	18	A-6a
993.7	30														
	32	7/9/14			GRAY GRAVELLY SILT	11	11	4	7	28	50	26	9	9	A-4a
988.7	34														
987.2	36	5/10/14			GRAY SILT AND CLAY	12	6	4	6	29	55	31	13	17	A-6a
	38														
	40														
	—				BOTTOM OF BORING										

NOTE - ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE BUREAU OF TESTS AT 1600 WEST BROAD STREET, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS — TESTING LABORATORY
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

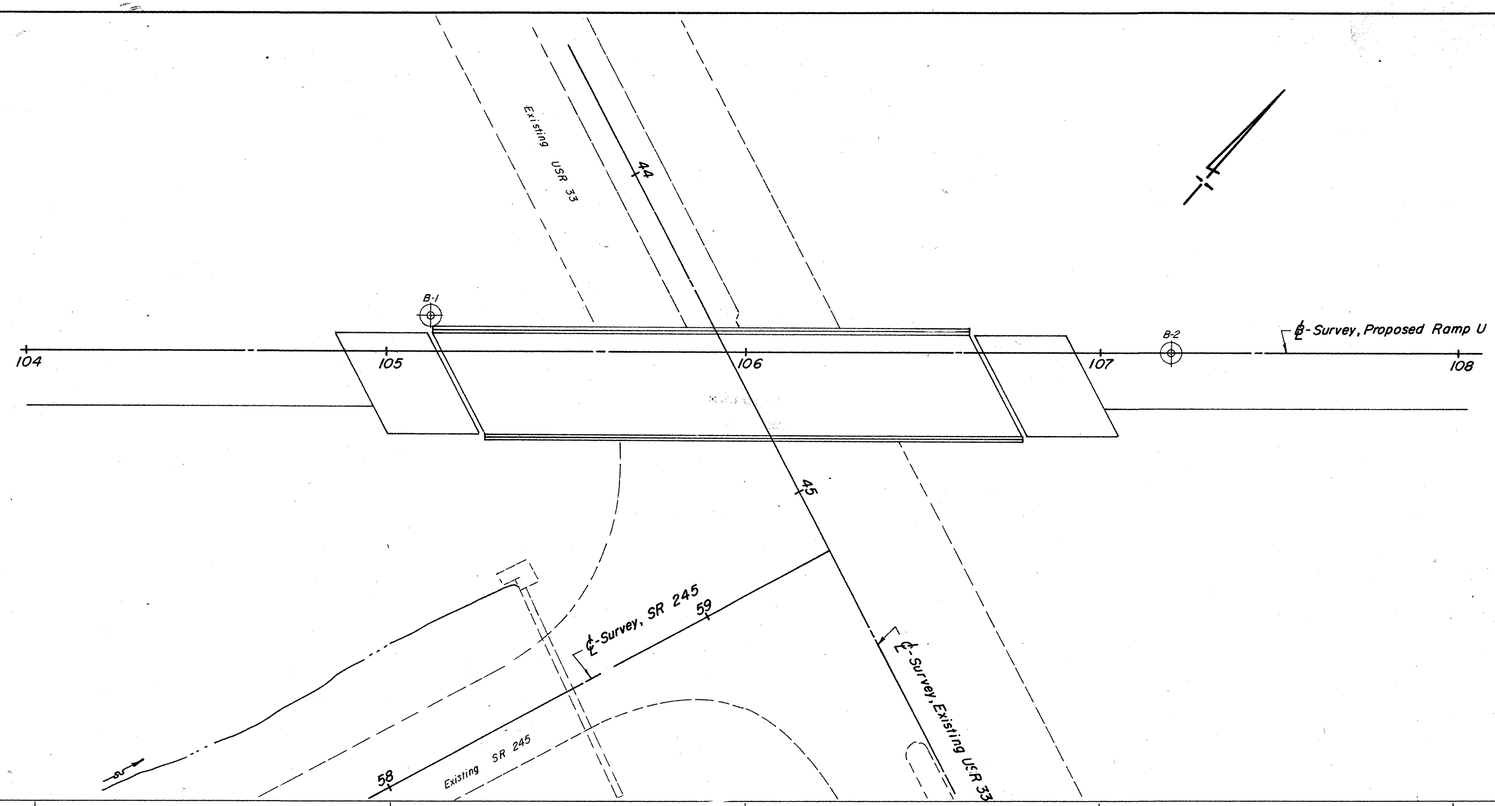
STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. UNI-33-0886
RAMP "U" OVER EXISTING US 33

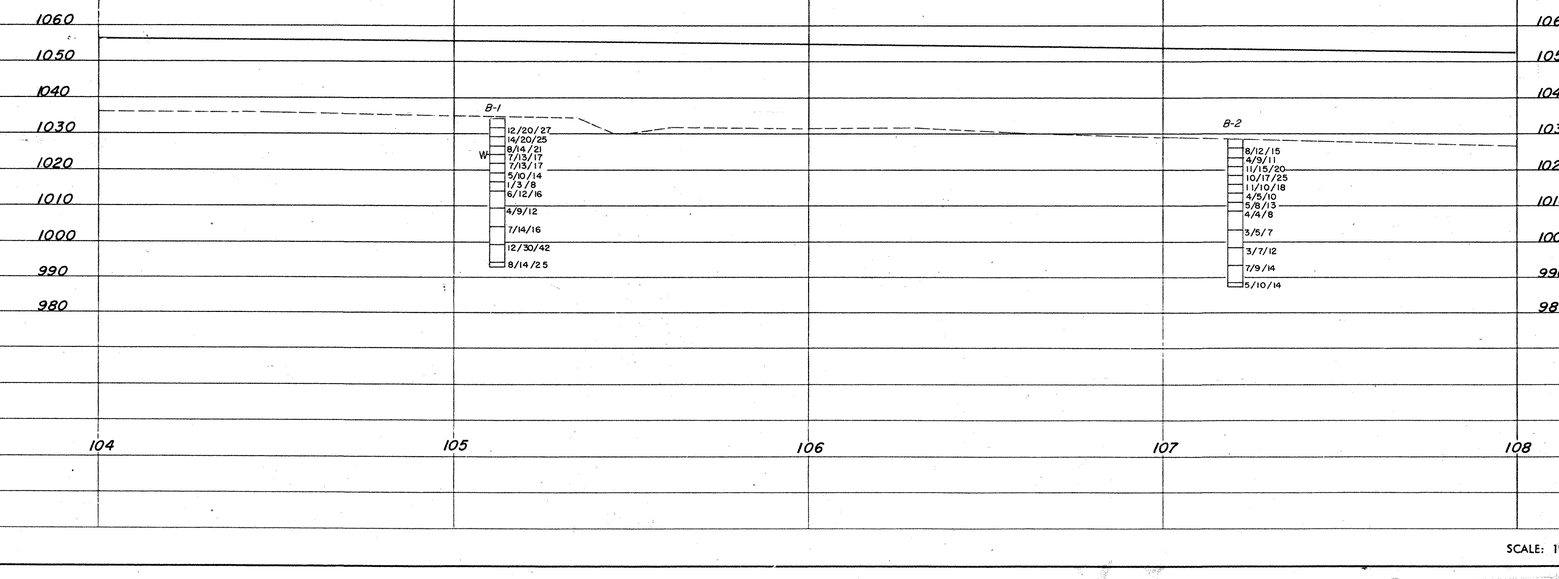
CHECKED BY	REVIEWED BY	DATE
L.N.L.	R. D. R.	10/10/84

OPH - INU - 33

10
10
2
2

UNION COUNTY
UNI-33-07.29





SCALE: 1" = 20'

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-TESTING LABORATORY
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. UNI-33-0886
RAMP "U" OVER EXISTING US 33

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
A. F.	L.N.L.	R. D. R.	10/10/84