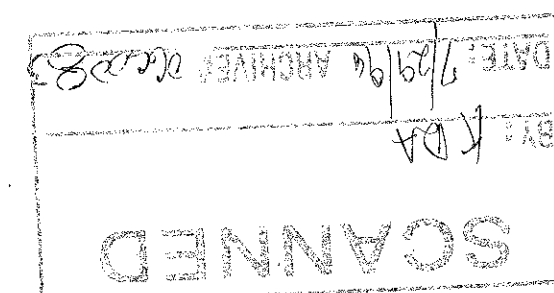


DESIGN DESIGNATION
CURRENT A.D.T. (1985 - ESTIMATE) = 7,190
DESIGN YEAR A.D.T. (2005) = 11,510
D.H.V. = 1,151
D = 60%
T = 14%
V = 60 mph

MICROFILMED
JAN 3 1989



STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
UNI - 33 - 0.28
ALLEN TOWNSHIP
UNION COUNTY

F-11(75)

CALCULATED BY RJH DATE 10-4-85
CHECKED BY GHG DATE 10-5-85

UNI - 33 - 0.28

F-11(75)

OHIO
FHWA
REGION 5
FEDERAL
PROJECT

1
224

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.

MICROFILM
DEC 26 1991

CONVENTIONAL SIGNS

County Line _____
Township Line _____
Section Line _____
Corporation Line _____ or _____
Fence Line (existing) - x - x (proposed) - x - x
Center Line _____ 352 (proposed) 353
Trees (to be removed) (to be removed)
Utility Poles: Telephone ϕ , Power ϕ , Light ϕ .

Limited Access (only) _____ LA
Right of Way (only) _____ RW
Limited Access & Right of Way _____ LA & RW
Existing Right of Way _____
Property Line _____ (in existing fence) - x - x
Railroad _____ or _____
Guardrail (existing) - a - a (proposed) - a - a

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* Sheets 39 & 40 not used

LINE DATA

BEGIN PROJECT STA. 15+00.00
END PROJECT STA. 105+01.34
LENGTH OF PROJECT 9,001.34 L.F. OR 1,705 MILES
ADD FOR WORK TEMPORARY CONNECTION STA. 3+00 TO STA. 15+00 1,200.00 L.F.
STOKES ROAD STA. 40+00 TO STA. 71+75 3,175.00 L.F.
STATE ROUTE #739 STA. 10+18.33 TO STA. 13+50 331.67 L.F.
LENGTH OF WORK 13,708.01 L.F. OR 2,596 MILES

Plan Prepared By:

R.D. ZANDE & ASSOCIATES, LTD.
1237 DUBLIN ROAD
COLUMBUS, OHIO 43215

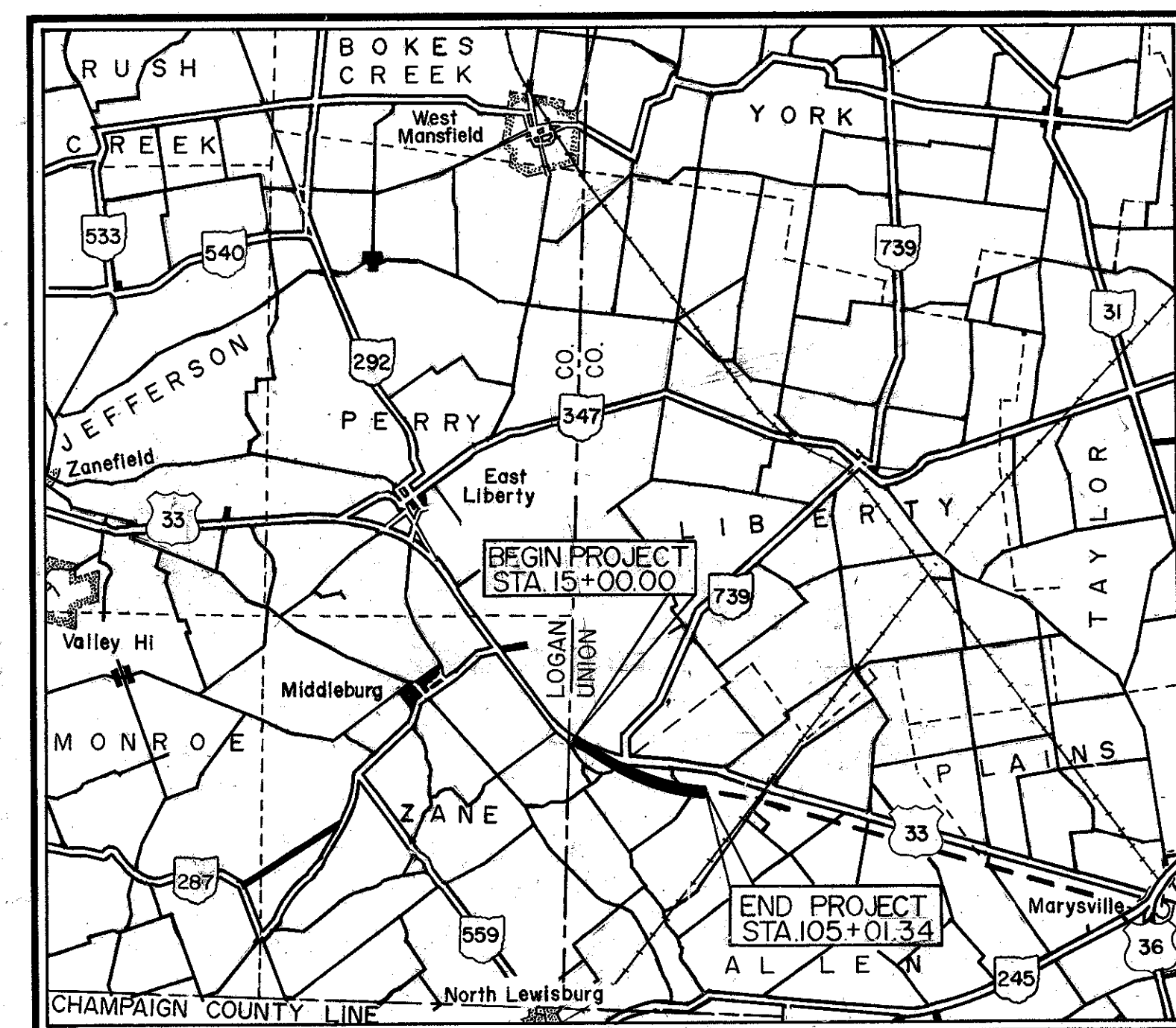
Therese L. Wallace 12-23-85
REGISTERED ENGINEER DATE

UNDERGROUND UTILITIES
TWO WORK DAYS
BEFORE YOU DIG
Call...800-362-2764 (Toll free)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

Portion to be improved
State & Federal Routes
Other Roads

SCALES

Plan _____
Profile: _____ Horizontal _____, Vertical _____
Cross Section: Horizontal _____, Vertical _____



LOCATION MAP

SCALE IN MILES
0 1 2 3 4 5 6 7 8

SUPPLEMENTAL SPECIFICATIONS	
824	10-8-82
836	11-12-85
847	10-17-83
846	10-3-85
947	10-17-83
848	10-2-85
932	3-25-85

Approved Edmund Z. Siler
Date 1-2-86 District Deputy Director of Transportation

Approved Walter J. Jettig
Date 3-4-86 Engineer, Bureau of Bridges and Structural Design

Approved Wayne H. Kaulle
Date 4-15-86 Chief Engineer, Planning and Design

Approved Warren Smith
Date 4-15-86 Director, Department of Transportation

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

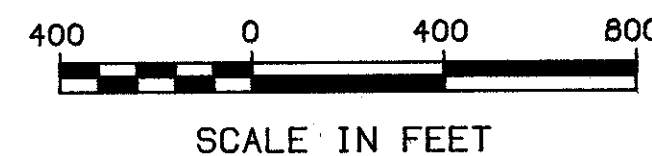
DIVISION ADMINISTRATOR DATE

Project: _____
Date of Letting _____ 19____, Contract No. _____
LD0300 Rev. 1-1-81

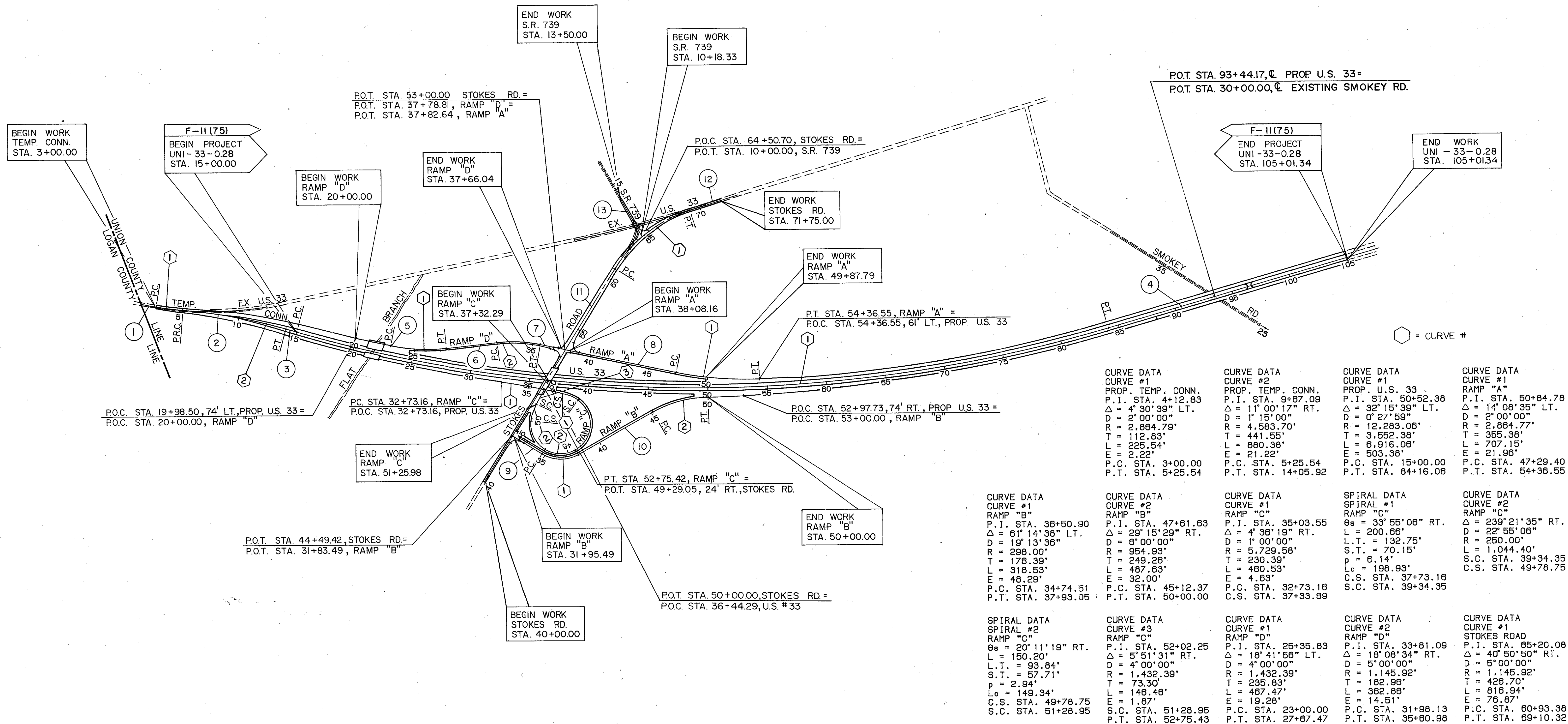
SEAL

REVISED 10/2/86

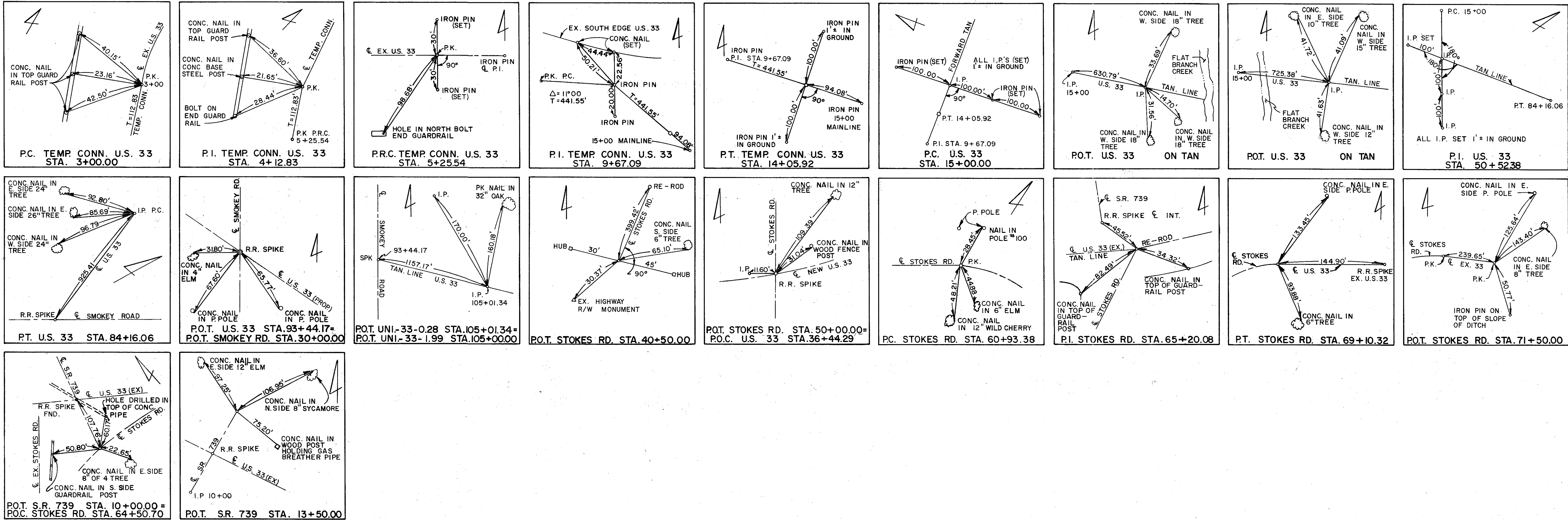
SCHEMATIC PLAN



TEMP. CONN.	RAMP "A"
1 S 54° 09' 02" E (TAN.)	8 S 51° 52' 34" E
2 S 58° 39' 41" E (TAN.)	RAMP "B"
3 S 47° 39' 24" E	9 S 31° 59' 50" E
PROP. U.S. 33	10 N 86° 45' 33" E
4 S 79° 55' 03" E	STOKES RD.
RAMP "D"	11 N 58° 00' 10" E
5 S 51° 23' 18" E (TAN.)	12 S 81° 09' 00" E
6 S 70° 05' 15" E	S.R. 739
7 S 51° 56' 40" E	13 N 03° 11' 30" W



REFERENCE POINTS



TEMPORARY EROSION CONTROL PLAN



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

SEDIMENT BASINS				
1) MAINLINE	STA. 102+20,	C/L =	163	CU. YD.
2) MAINLINE	STA. 95+80,	C/L =	133	CU. YD.
3) MAINLINE	STA. 86+80,	C/L =	108	CU. YD.
4) MAINLINE	STA. 69+20,	C/L =	101	CU. YD.
5) MAINLINE	STA. 60+35,	C/L =	108	CU. YD.
6) MAINLINE	STA. 51+20,	C/L =	122	CU. YD.
7) MAINLINE	STA. 42+20,	C/L =	103	CU. YD.
8) MAINLINE	STA. 33+20,	C/L =	107	CU. YD.
9) MAINLINE	STA. 25+35,	C/L =	130	CU. YD.
10) STOKES RD.	STA. 64+00,	70' RT. =	244	CU. YD.
11) STOKES RD.	STA. 65+00,	62' LT. =	81	CU. YD.
12) MAINLINE	STA. 20+80,	C/L =	123	CU. YD.
13) MAINLINE	STA. 69+20,	100' RT. =	130	CU. YD.
14) MAINLINE	STA. 91+65,	230' LT. =	91	CU. YD.
15) MAINLINE	STA. 95+50,	180' RT. =	67	CU. YD.
SUB - TOTAL				= 1811 CU. YD.

SEDIMENT DAMS				
1) RAMP "A"	STA. 39+20, 70' LT. =	399	CU. YD.	
2) RAMP "B"	STA. 41+00, 67' LT. =	378	CU. YD.	
3) RAMP "D"	STA. 28+20, 65' RT. =	622	CU. YD.	
4) STOKES RD.	STA. 48+00, 95' RT. =	396	CU. YD.	
SUB - TOTAL				= 1795 CU. YD.

TOTAL SEDIMENT BASINS AND DAMS = 3606 CU. YD.
TOTAL TO GENERAL SUMMARY = 4000 CU. YD.

ITEM 207 STRAW OR HAY BALES

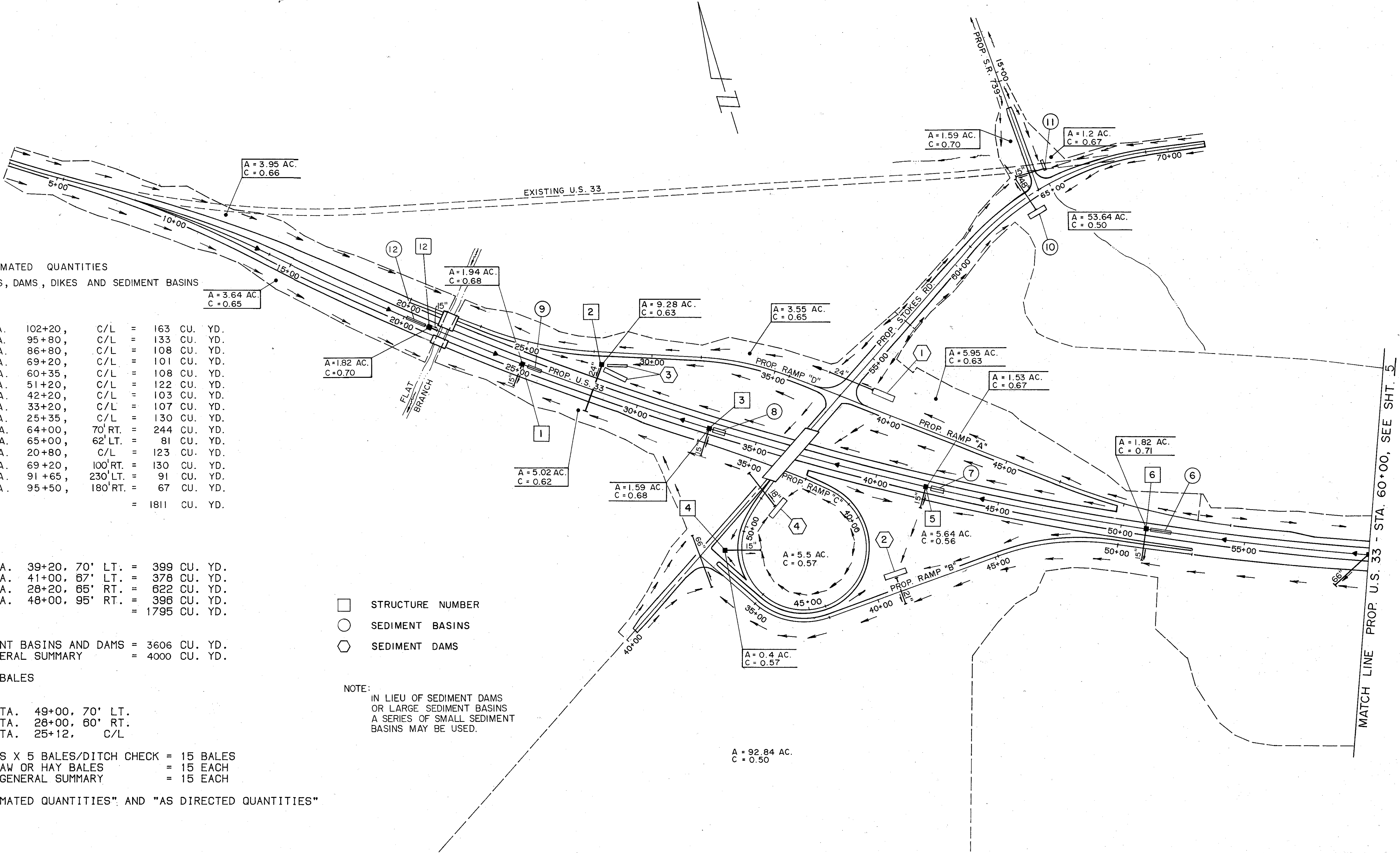
DITCH CHECKS			
1) RAMP "C"	STA. 49+00, 70' LT.		
2) RAMP "D"	STA. 28+00, 60' RT.		
3) MAINLINE	STA. 25+12, C/L		

3 DITCH CHECKS X 5 BALES/DITCH CHECK = 15 BALES
TOTAL STRAW OR HAY BALES = 15 EACH
TOTAL TO GENERAL SUMMARY = 15 EACH

FOR THE REMAINING "ESTIMATED QUANTITIES" AND "AS DIRECTED QUANTITIES"
SEE SHT. NO. 5

- STRUCTURE NUMBER
○ SEDIMENT BASINS
⬡ SEDIMENT DAMS

NOTE:
IN LIEU OF SEDIMENT DAMS
OR LARGE SEDIMENT BASINS
A SERIES OF SMALL SEDIMENT
BASINS MAY BE USED.



TEMPORARY EROSION CONTROL PLAN

ESTIMATED QUANTITIES (CON'T)

ITEM 601 TYPE C ROCK CHANNEL PROTECTION,WO/FILTER

- A) 1 CU. YD. PER SLOPE DRAIN (N/A)
- B) VOLUME OF SEDIMENT DAMS = 1795 CU. YD.
 $0.1 \times (1795)^{2/3} = 15.14 = 16 \text{ CU. YD.}$
- C) VOLUME OF SEDIMENT BASINS = 1811 CU. YD.
 $0.05 \times (1811)^{2/3} = 7.43 = 8 \text{ CU. YD.}$
- TOTAL OF (A), (B) AND (C) = 24 CU. YD.
- TOTAL TO GENERAL SUMMARY = 24 CU. YD.

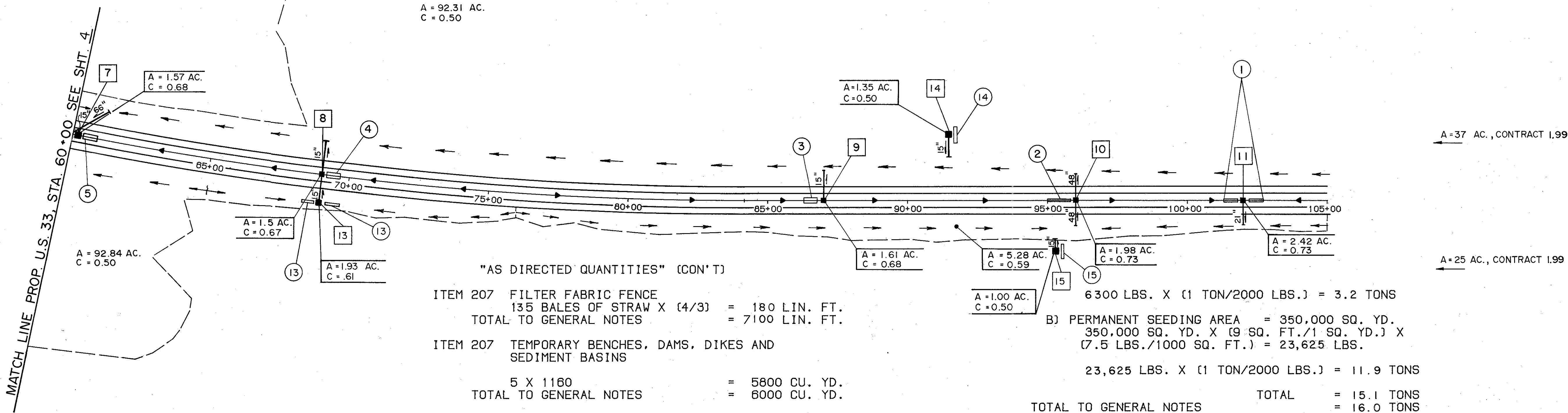
"AS DIRECTED QUANTITIES"

ITEM 207 TEMPORARY SEEDING AND MULCHING
 PERMANENT SEEDING AREA = 350,000 SQ. YD.
 20% OF 350,000 SQ. YD.
 $.2 \times 350,000 \text{ SQ. YD.} = 70,000 \text{ SQ. YD.}$
 TOTAL TO GENERAL NOTES = 70,000 SQ. YD.

ITEM 207 STRAW OR HAY BALES
 8 X (NO. OF CATCH BASINS)
 $8 \times (15 \text{ C.B.}) = 120 \text{ EACH}$
 TOTAL TO GENERAL NOTES = 120 EACH

ITEM 207 TEMPORARY SLOPE DRAINS
 $11,600 \text{ FT./}100 \times 10 = 1160 \text{ LIN. FT.}$
 TOTAL TO GENERAL NOTES = 1160 LIN. FT.

- STRUCTURE NUMBER
- SEDIMENT BASINS



"AS DIRECTED QUANTITIES" (CON'T)

ITEM 207 FILTER FABRIC FENCE
 135 BALES OF STRAW X (4/3) = 180 LIN. FT.
 TOTAL TO GENERAL NOTES = 7100 LIN. FT.

ITEM 207 TEMPORARY BENCHES, DAMS, DIKES AND SEDIMENT BASINS
 $5 \times 1160 = 5800 \text{ CU. YD.}$
 TOTAL TO GENERAL NOTES = 6000 CU. YD.

ITEM 601 TYPE C ROCK CHANNEL PROTECTION,WO/FILTER
 $1160/25 = 46.4 \text{ CU. YD.} = 47 \text{ CU. YD.}$
 TOTAL TO GENERAL NOTES = 47 CU. YD.

ITEM 659 MOWING
 25% OF PERMANENT SEEDING AREA
 $0.25 \times 350,000 = 87,500 \text{ SQ. YD.} \times 9 \text{ SQ. FT./SQ. YD.} = 787,500 \text{ SQ. FT.}$
 $787,500 \text{ SQ. FT./}1000 = 788 \text{ M. SQ. FT.}$
 TOTAL TO GENERAL NOTES = 788 M. SQ. FT.

ITEM 659 COMMERCIAL FERTILIZER (12-12-12)
 A) TEMPORARY SEEDING AREA = 70,000 SQ. YD.
 $70,000 \text{ SQ. YD.} \times (9 \text{ SQ. FT./}1 \text{ SQ. YD.}) \times (10 \text{ LBS./}1000 \text{ SQ. FT.}) = 6300 \text{ LBS.}$

6300 LBS. X (1 TON/2000 LBS.) = 3.2 TONS
 B) PERMANENT SEEDING AREA = 350,000 SQ. YD.
 $350,000 \text{ SQ. YD.} \times (9 \text{ SQ. FT./}1 \text{ SQ. YD.}) \times (7.5 \text{ LBS./}1000 \text{ SQ. FT.}) = 23,625 \text{ LBS.}$
 $23,625 \text{ LBS.} \times (1 \text{ TON/}2000 \text{ LBS.}) = 11.9 \text{ TONS}$

TOTAL TO GENERAL NOTES TOTAL = 15.1 TONS
 = 16.0 TONS

ITEM 659 REPAIR SEEDING AND MULCHING
 5% OF THE PERMANENT SEEDING AREA
 $.05 \times 350,000 \text{ SQ. YD.} = 17,500 \text{ SQ. YD.}$

TOTAL TO GENERAL NOTES = 17,500 SQ. YD.

ITEM 659 WATER
 $70,000 \text{ SQ. YD.} \times (9 \text{ SQ. FT./}1 \text{ SQ. YD.}) \times (240 \text{ GAL./}1000 \text{ SQ. FT.}) = 151,200 \text{ GAL.}$
 = 152 M. GAL.

TOTAL TO GENERAL NOTES = 152 M. GAL.

TYPICAL SECTIONS

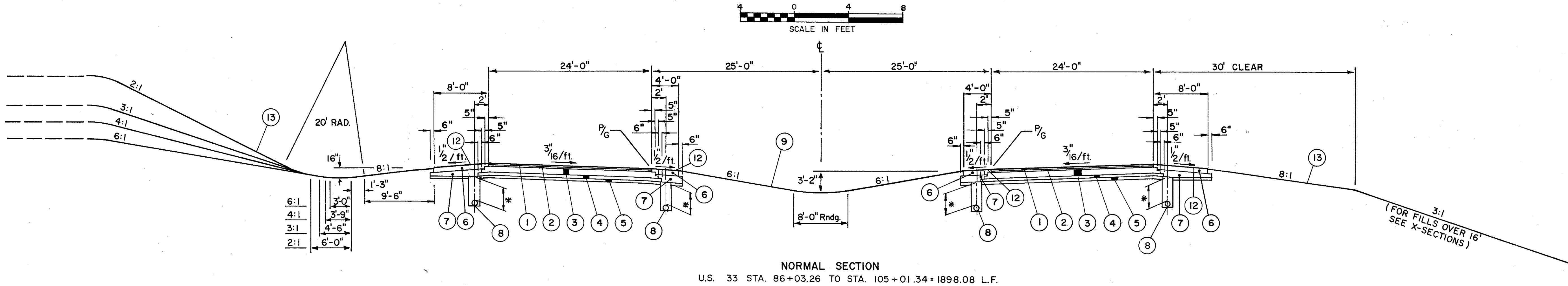
TYPE 846 ON 304

CALCULATED BY MRD DATE 5-13-85

CHECKED BY GTH DATE 7-16-85

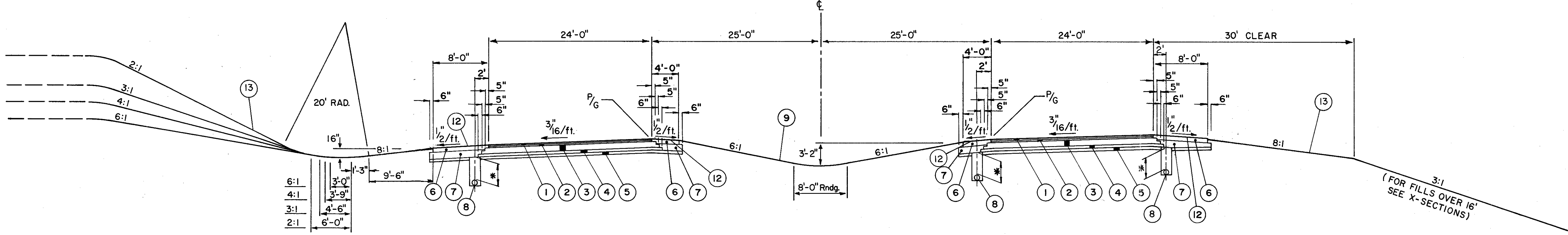
FED. RD. DIVISION	STATE	PROJECT
5	OHIO	UNI-33-0.28

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NORMAL SECTION

U.S. 33 STA. 86+03.26 TO STA. 105+01.34 = 1898.08 L.F.



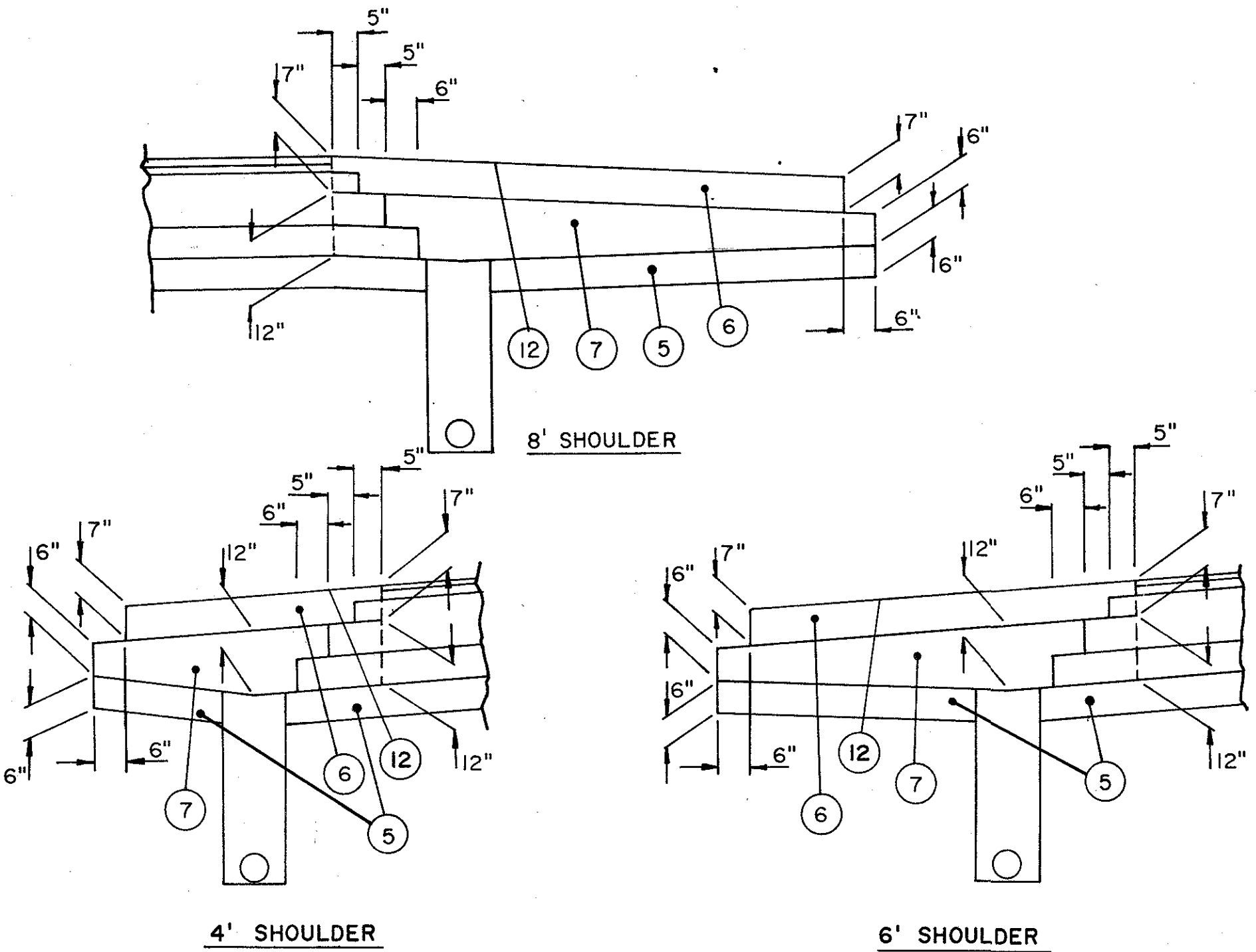
SUPERELEVATION SECTION

U.S. 33 STA. 15+00 TO STA. 21+16.19 = 616.19 L.F.
U.S. 33 STA. 22+09.81 TO STA. 86+03.26 = 6393.45 L.F.
STA. 21+16.19 TO STA. 22+09.81 = 93.62 L.F. (STRUCTURE)
703.26 L.F.

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 - 10" BITUMINOUS AGGREGATE BASE: AC-20, RT-11 or RT-12
- ④ ITEM 304 - 6" AGGREGATE BASE
- ⑤ ITEM SPECIAL - 6" LIME / SOIL STABILIZED SUBGRADE (*See Note in Proposal*)
- ⑥ ITEM 301 - 7" BITUMINOUS AGGREGATE BASE: AC-20, RT-11 or RT-12
- ⑦ ITEM 304 - VARIABLE AGGREGATE BASE, DIMENSION AS SHOWN
- ⑧ ITEM 605 - 6" PIPE UNDERDRAINS
- ⑨ ITEM 659 - SEEDING & MULCHING
- ⑩ ITEM 606 - GUARDRAIL TYPE 5
- ⑪ ITEM 301 - 4" BITUMINOUS AGGREGATE BASE: AC-20, RT-11 or RT-12
- ⑫ ITEM 409 - SEAL COAT, USING 0.008 CU.YD. OF NO.8 COVER AGGREGATE PER SQ.YD. & 0.30 GAL. OF BITUMINOUS MATERIAL.
- ⑬ ITEM 659 - SEEDING & MULCHING FOR WILDLIFE.

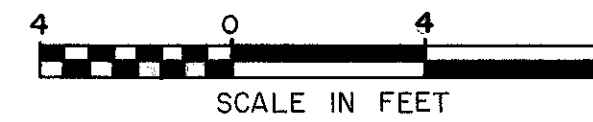
*PLACE UNDERDRAINS 50" DEEP IN CUTS, 30" IN FILL.
FOR DETAIL OF SHOULDER TREATMENT, SEE THIS SHEET.



SHOULDER DETAILS

TYPICAL SECTIONS

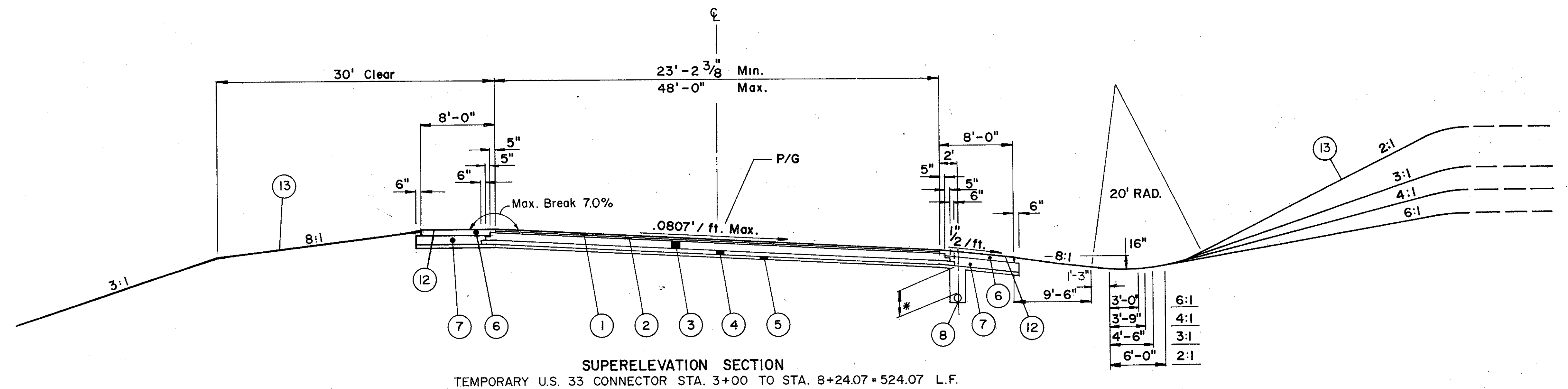
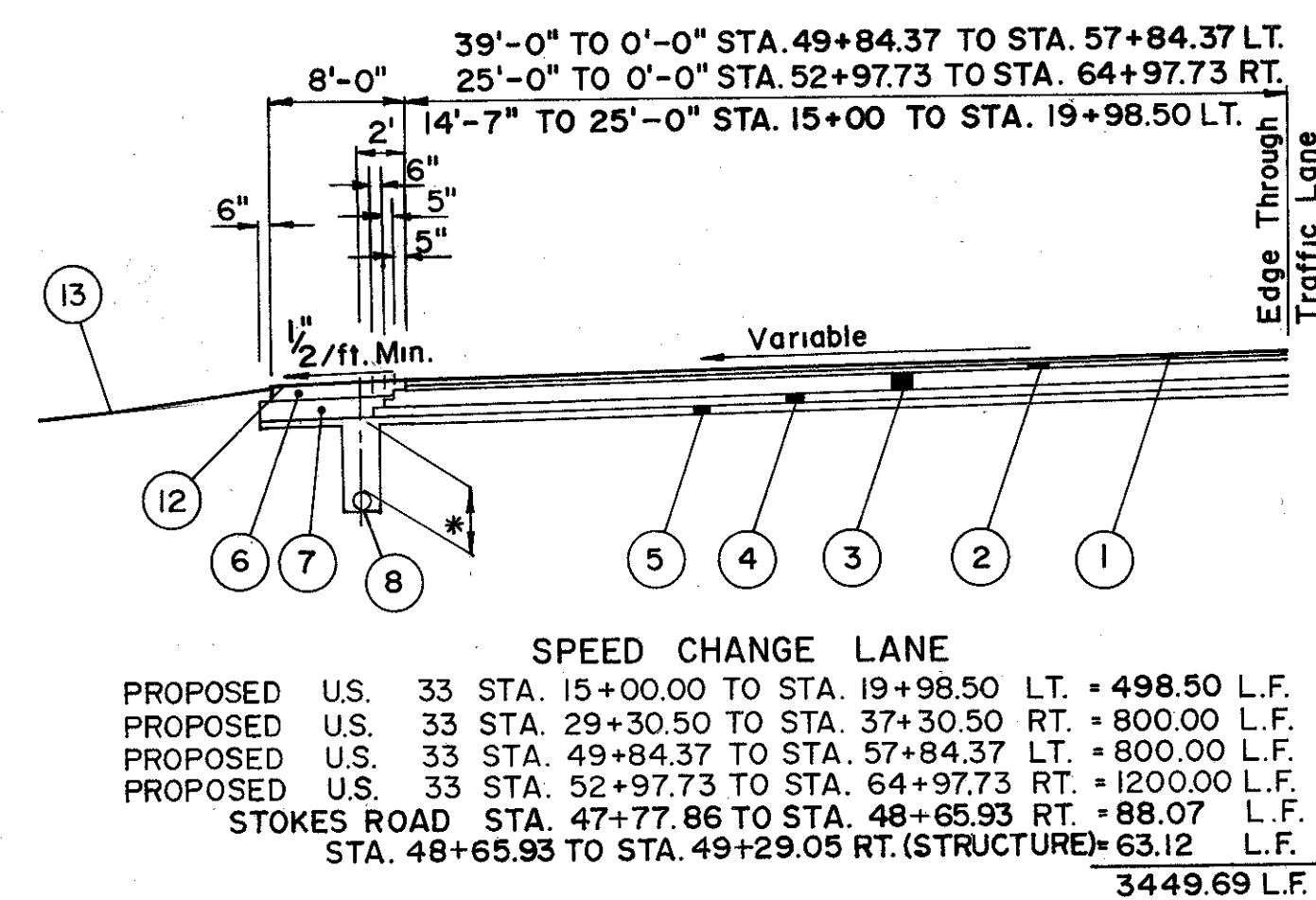
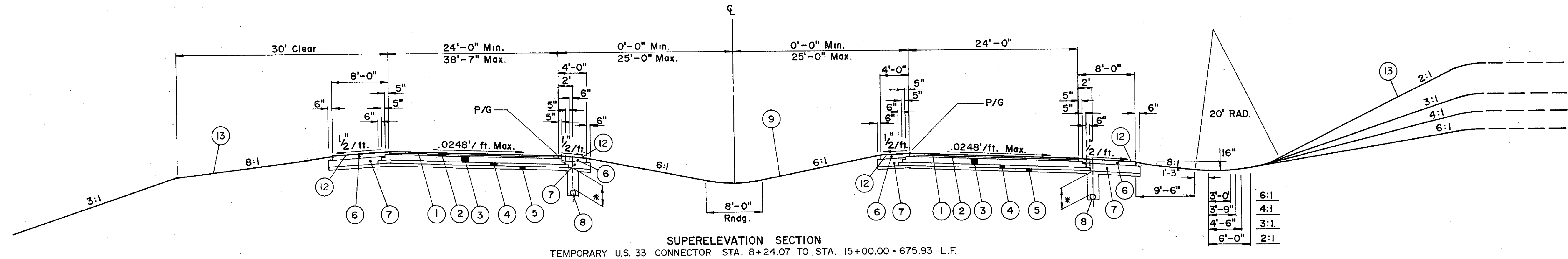
TYPE 846 ON 304



CALCULATED BY MRD DATE 5-9-85
 CHECKED BY G.H.G. DATE 7-15-85

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	UNI-33-0.28

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FOR LEGEND SEE SHEET 6.
 * PLACE UNDERDRAINS 50" DEEP IN CUTS, 30" IN FILLS.
 FOR DETAIL OF SHOULDER TREATMENT, SEE SHEET 6.

TYPICAL SECTIONS

TYPE 846 ON 304

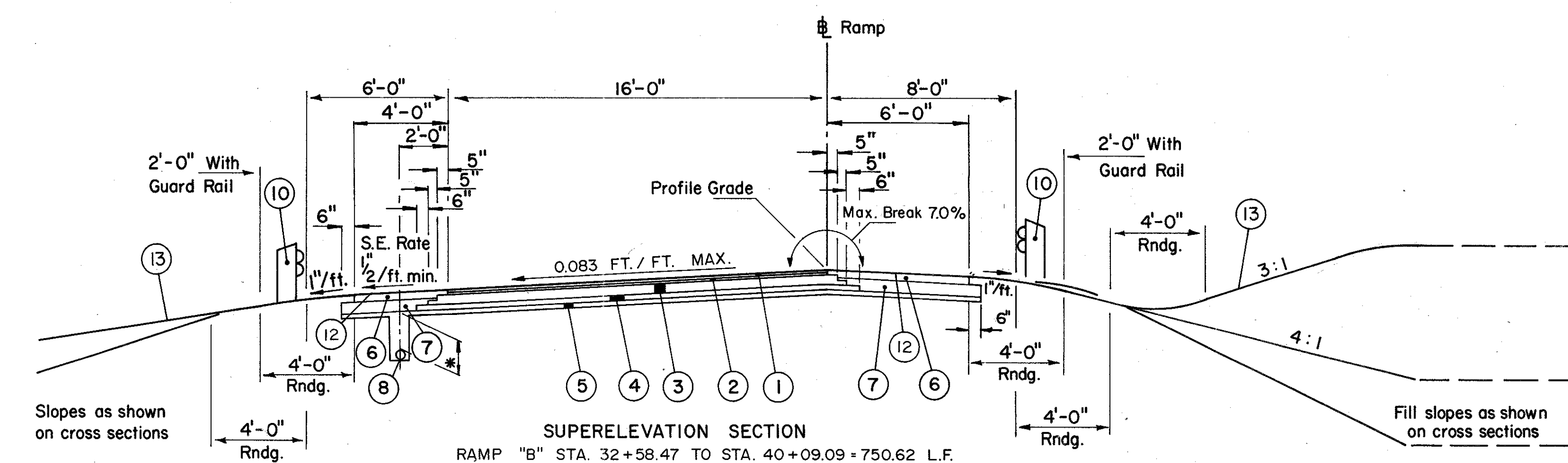
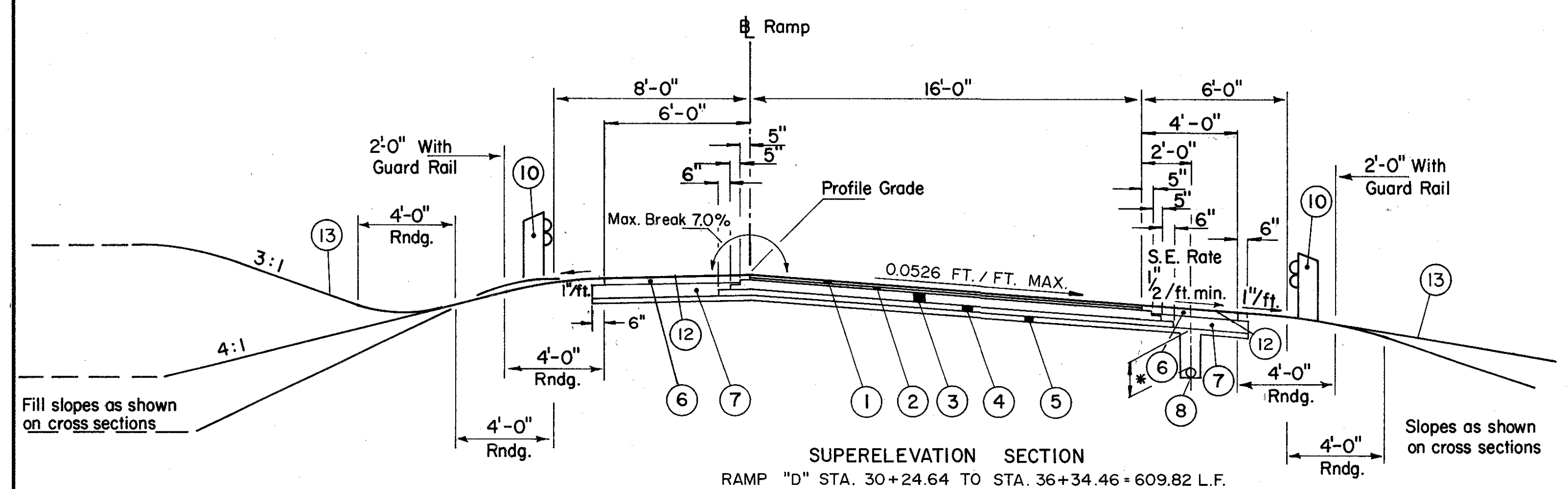
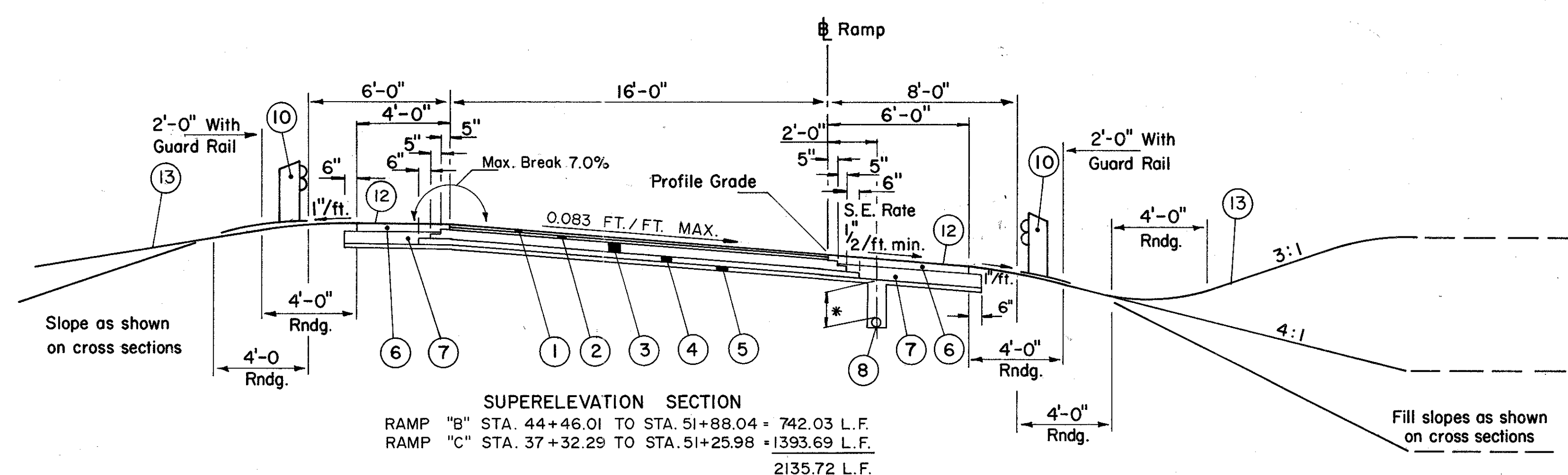
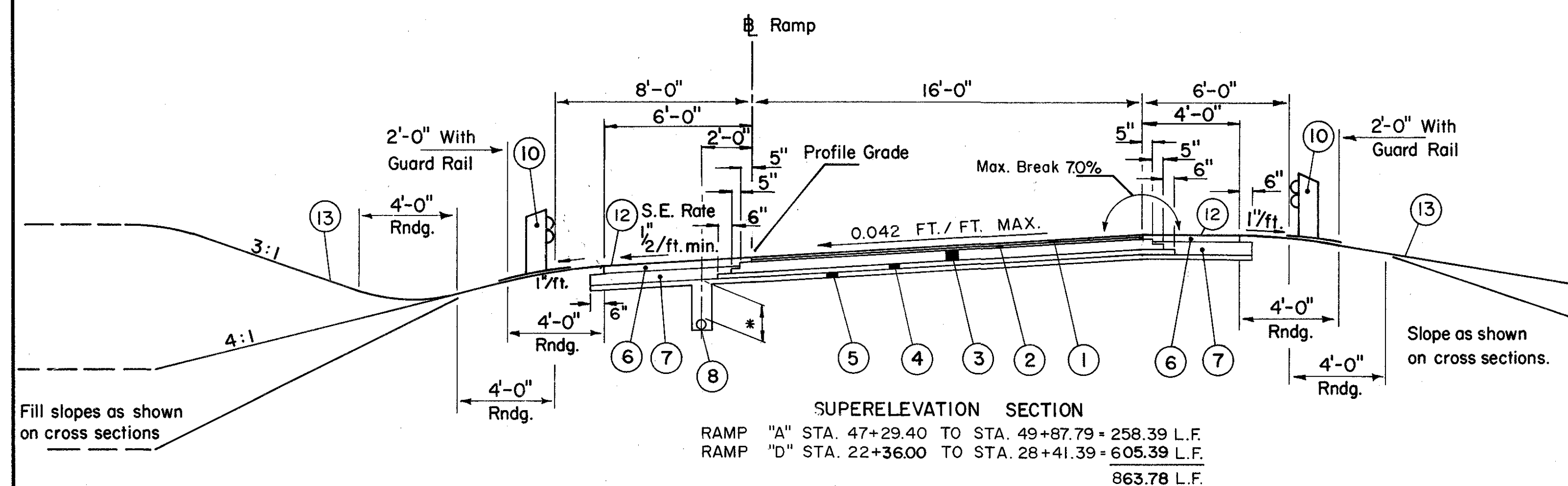
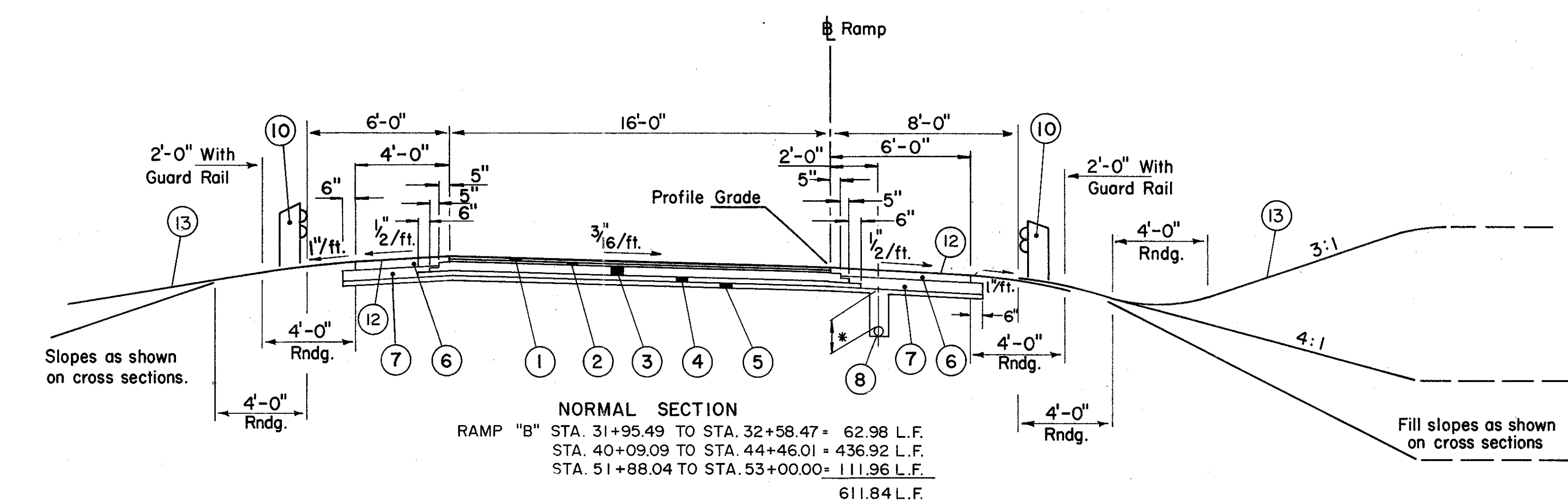
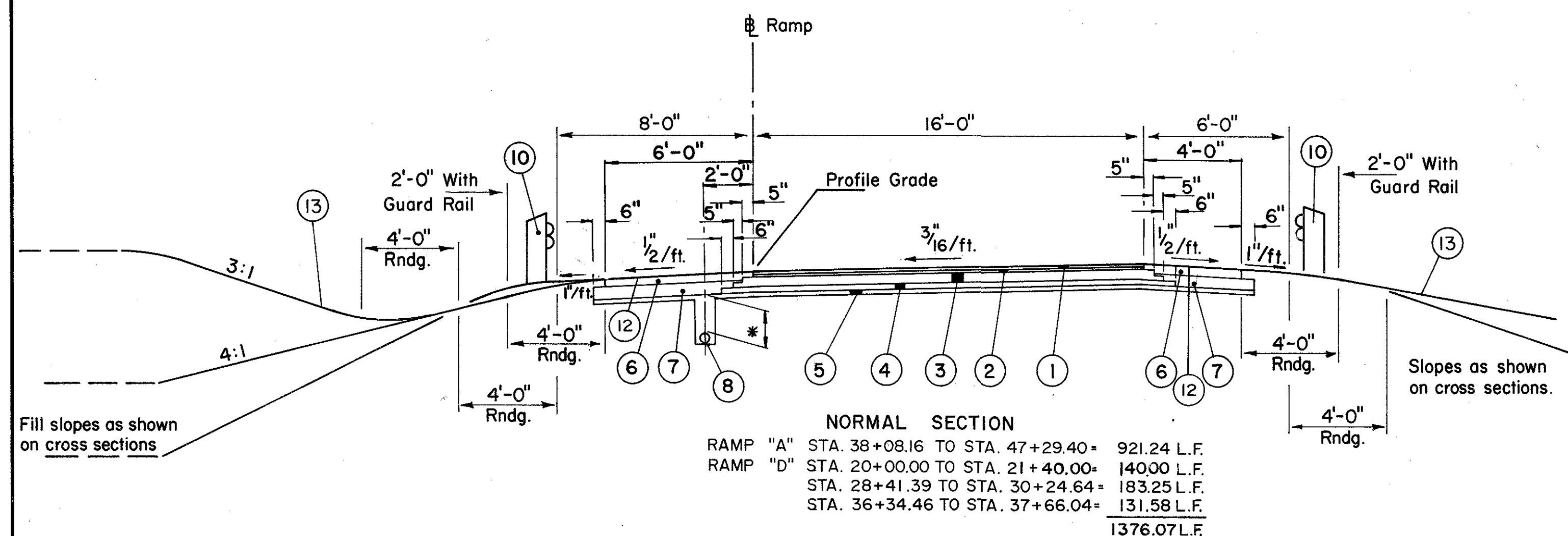


CALCULATED BY MRD DATE 5-10-85

CHECKED BY GKG DATE 7-16-85

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	UNI-33-0.28

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224



FOR LEGEND SEE SHEET 6.
 * PLACE UNDERDRAINS 50" DEEP IN CUTS, 30" IN FILLS.
 FOR DETAIL OF SHOULDER TREATMENT, SEE SHEET 6.

TYPICAL SECTIONS

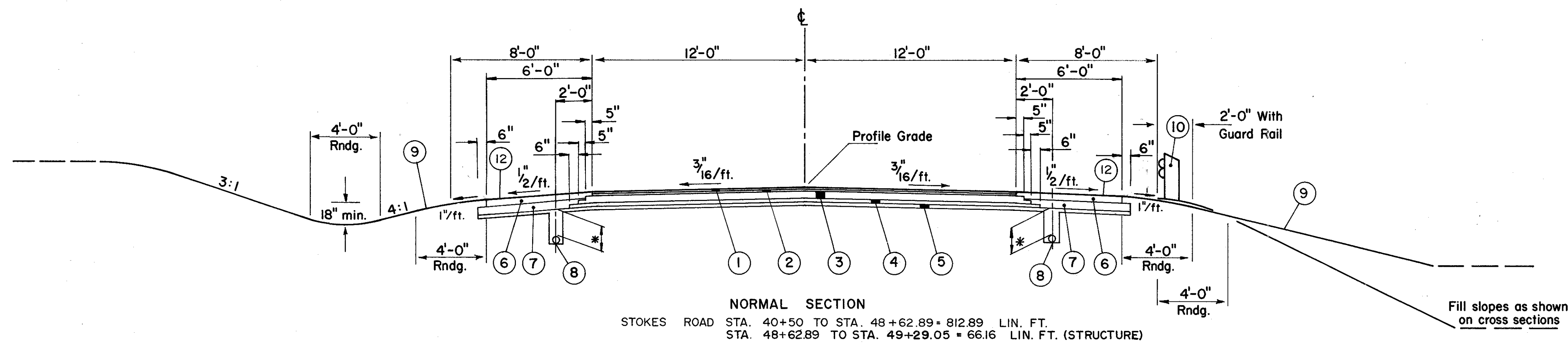
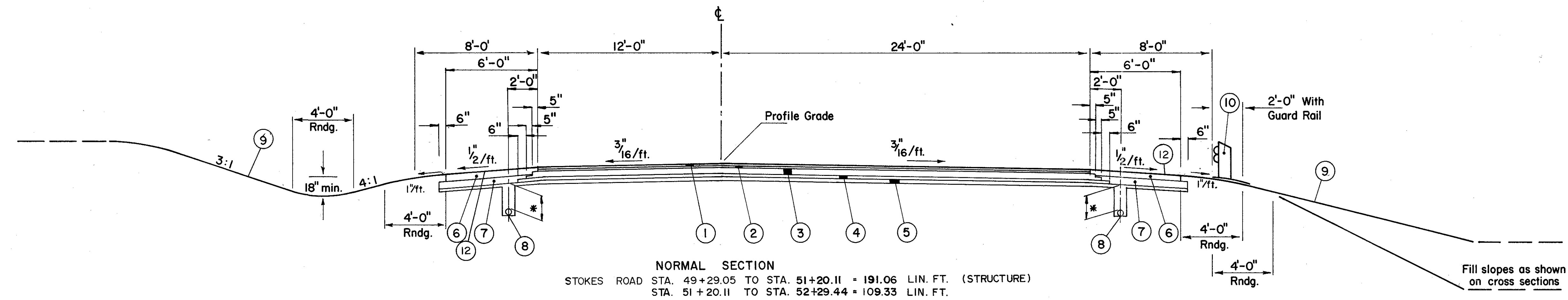
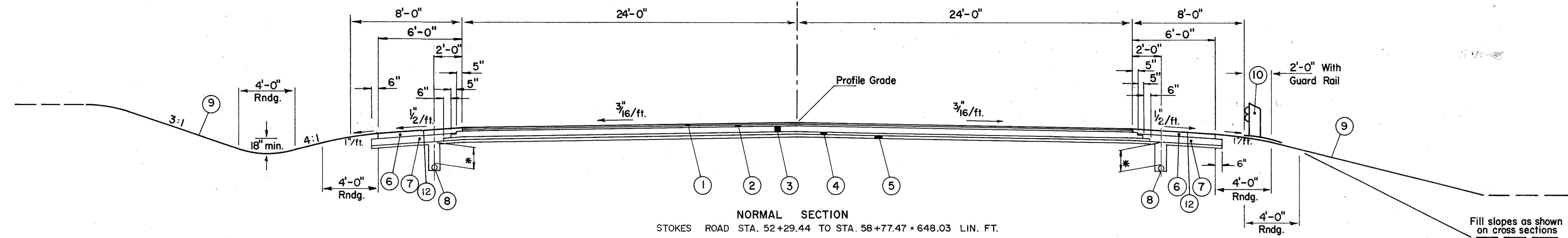
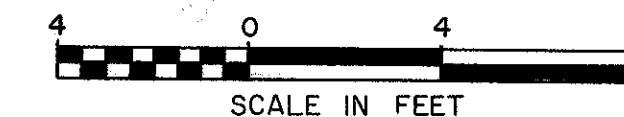
TYPE 846 ON 304

CALCULATED BY MIRD DATE 5-14-85

CHECKED BY GHG DATE 7-15-85

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	UNI-33-0.28

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224



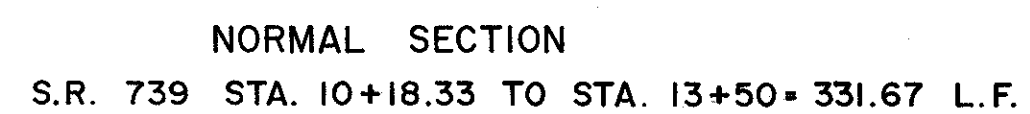
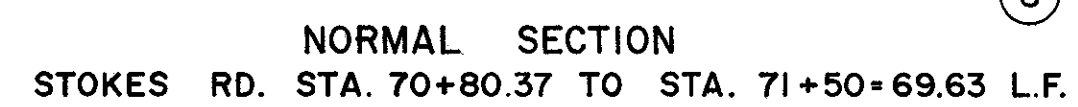
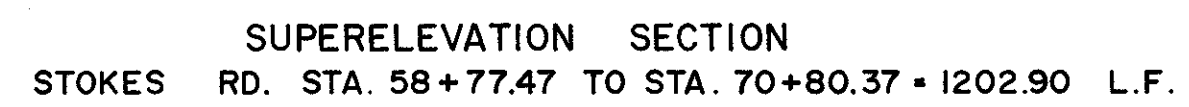
FOR LEGEND SEE SHEET 6.
* PLACE UNDERDRAINS 50" DEEP IN CUTS, 30" IN FILLS.
FOR DETAIL OF SHOULDER TREATMENT, SEE SHEET 6.

TYPE **846** ON 304

CHECKED BY GHG DATE 7-15-85

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO	UNI-33-0.28	

10
224



FOR LEGEND SEE SHEET 6 .

* PLACE UNDERDRAINS 50" DEEP IN CUTS, 30" IN FILLS.

FOR DETAIL OF SHOULDER TREATMENT, SEE SHEET 6 .

GENERAL NOTES

ITEMS 404 AND 402

Here-in-after and thru out this plan, Item 404 Asphalt Concrete AC-20 shall be considered to read as Item 846 Asphalt Concrete Surface Course, Type 1 AC-20 and Item 402 Asphalt Concrete AC-20 shall be considered to read as Item 846 Asphalt Concrete Intermediate Course, Type 2, AC-20.

CALC. BY DATE	OHIO	FHWA REGION 5	11 224
CHKD BY DATE	UNI-33-0.28		

FIELD OFFICE

THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 400 SQ. FT. OF FLOOR SPACE. PAYMENT SHALL BE AT THE LUMP SUM PRICE BID FOR ITEM 619. FIELD OFFICE.

SEEDING

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

WATERING AND MOWING PERMANENT SEEDING AREAS

THE FOLLOEING 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	675 M. SQ. FT.

UNDERGROUND UTILITIES

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

UTILITY OWNERSHIP

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

TELEPHONE:	UNITED TELEPHONE COMPANY OF OHIO 127 NORTH MAIN STREET BELLEFONTAINE, OHIO 43311 PHONE: (513) 599-9378
ELECTRIC:	UNION RURAL ELECTRIC COOPERATIVE, INC. P.O. BOX 393 MARYSVILLE, OHIO 43040 PHONE: (513) 642-1826
GAS:	COLUMBIA GAS OF OHIO 942 W. GOODALE BOULEVARD COLUMBUS, OHIO 43212 PHONE: (614) 460-2097

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"	175		175
30"	34		34
48"	4		4
60"	1		1

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

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	70,000 SQ. YD.
207	STRAW OR HAY BALES	120 EACH
207	TEMPORARY SLOPE DRAINS	1,160 LIN. FT.
207	TEMPORARY BENCHES, DIKES, DAMS AND SEDIMENT BASINS	6,000 CU. YD.
207	FILTER FABRIC FENCE	7,100 LIN. FT.
601	TYPE "C" ROCK CHANNEL PROTECTION (W/O FILTER)	47 CU. YD.
659	MOWING	788 M. SQ. FT.
659	COMMERCIAL FERTILIZER	16 TON
659	REPAIR SEEDING AND MULCHING	17,500 SQ. YD.
659	WATER	152 M. GAL.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIAL 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.

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 CONSTRUCTION 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. LATERAL 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	50 LIN. FT.
ITEM 603	8" CONDUIT, TYPE B	50 LIN. FT.
ITEM 603	10" CONDUIT, TYPE B	50 LIN. FT.
ITEM 603	12" CONDUIT, TYPE B	50 LIN. FT.
ITEM 603	6" CONDUIT, TYPE E	50 LIN. FT.
ITEM 603	8" CONDUIT, TYPE E	50 LIN. FT.
ITEM 603	10" CONDUIT, TYPE E	50 LIN. FT.
ITEM 603	12" CONDUIT, TYPE E	50 LIN. FT.
ITEM 603	6" CONDUIT, TYPE F	50 LIN. FT.
ITEM 603	8" CONDUIT, TYPE F	50 LIN. FT.
ITEM 603	10" CONDUIT, TYPE F	50 LIN. FT.
ITEM 603	12" CONDUIT, TYPE F	50 LIN. FT.
ITEM 601	ROCK CHANNEL PROTECTION, TYPE C W/ FILTER	20 CU. YD.

NECESSARY BENDS OR BRANCHES SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEMS.

NONE OF THE ABOVE MATERIALS SHALL BE ORDERED BY THE CONTRACTOR UNTIL AUTHORIZED BY THE ENGINEER.

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.

SPRING DRAINS

REFERENCE IS MADE TO THE DETAILED DRAWING ON STANDARD CONSTRUCTION DRAWING MC-1, SHOWING THE METHOD OF DRAINING ANY SPRING DRAIN 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	100 LIN. FT. 6" UNCLASSIFIED PIPE UNDERDRAIN, 707.01 TYPE III OR 707.21 TYPE III, AS PER PLAN.
ITEM 605	500 LIN. FT. 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, 660, 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 660, OR 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	8" CONDUIT, TYPE C	100 LIN. FT.
ITEM 604	INSPECTION WELLS	10 EACH

NECESSARY BENDS OR BRANCHES SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEMS.

NONE OF THE ABOVE MATERIAL SHALL BE ORDERED BY THE CONTRACTOR UNTIL AUTHORIZED BY THE ENGINEER.

MONUMENTS

MONUMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAILS SHOWN ON STANDARD CONSTRUCTION DRAWING MC-1. FOR LOCATIONS, SEE SHEET NO. 211- 212.

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.

CONNECTIONS 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.

GENERAL NOTES

CALC. BY DATE 11-25-84	UNI-33-0.28	OHIO	12 224
CHKD. BY DATE 12-12-85		FHWA REGION 5	

MANHOLES, CATCH BASINS AND INLETS REMOVED OR ABANDONED

THE CASTINGS SHALL BE CAREFULLY REMOVED AND STORED WITHIN THE RIGHT-OF-WAY FOR SALVAGE BY STATE OF OHIO FORCES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT 202 ITEM.

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 THE PERTINENT 603 CONDUIT ITEM.

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.

PIPE CONNECTIONS TO CORRUGATED METAL STRUCTURES

CONNECTIONS OF PROPOSED LONGITUDINAL DRAINAGE TO CORRUGATED METAL STRUCTURES SHALL BE BY MEANS OF A SHOP FABRICATED OR FIELD WELDED STUB ON THE STRUCTURE. THE STUB SHALL MEET THE REQUIREMENTS OF 707 AND HAVE A MINIMUM LENGTH OF TWO FEET AND A MINIMUM THICKNESS OF 0.064 INCHES.

LOCATION AND ELEVATION OF THE STUB ARE TO BE CONSIDERED APPROXIMATE AND MAY BE ADJUSTED BY THE ENGINEER TO AVOID CUTTING THROUGH JOINTS IN THE STRUCTURE.

THE FIELD WELDED JOINT, IF USED, SHALL BE THOROUGHLY CLEANED AND RECOATED OR OTHERWISE SUITABLY REPAIRED. WELDING SHALL MEET THE REQUIREMENTS OF 513.17.

A CONCRETE COLLAR, AS PER STANDARD CONSTRUCTION DRAWING MC-4, WILL BE REQUIRED TO CONNECT THE LONGITUDINAL DRAINAGE TO THE STUB, WHEN PIPE OTHER THAN CORRUGATED STEEL IS PROVIDED FOR THE LONGITUDINAL DRAINAGE.

PAYMENT FOR CUTTING INTO THE STRUCTURE AND PROVIDING THE CONNECTION DESCRIBED, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 603 OR 522.

ITEM 207 FILTER FABRIC FENCE

MATERIALS:

FILTER FABRIC SHALL MEET THE REQUIREMENT OF ITEM 207.02

CONSTRUCTION:

THE BOTTOM OF THE FENCE SHALL BE BURIED 6" BELOW THE GROUND. THE FENCE SHALL BE HIGH ENOUGH TO RETAIN SEDIMENT LADEN WATER AND ADEQUATELY SUPPORTED TO PREVENT COLLAPSE OR BURSTING.

MAINTENANCE:

THE FILTER FABRIC FENCE SHALL, AT THE DIRECTION OF THE ENGINEER, BE MAINTAINED TO BE FUNCTIONAL. THIS SHALL INCLUDE REMOVAL OF TRAPPED SEDIMENT AND REQUIRED CLEANING, REPAIR AND/OR REPLACEMENT OF THE FILTER FABRIC.

PAYMENT:

THE COST OF ALL MATERIALS, CONSTRUCTION, MAINTENANCE AND REMOVAL REQUIRED SHALL BE PAID FOR UNDER ITEM 207 LIN. FT. FILTER FABRIC FENCE.

ITEM 605 - 6" SHALLOW PIPE UNDERDRAIN

UNDERDRAIN SHALL BE PROVIDED 1' IN DEPTH ALONG THE MAINLINE DITCH ON THE LEFT FROM STA. 60+00 TO STA. 105+00. IT SHALL ALSO BE PROVIDED ALONG THE MAINLINE DITCH ON THE RIGHT FROM STA. 60+00 TO STA. 33+00 RAMP "B" AND STA. 25+00 TO STA. 35+00 MAINLINE.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY, FOR THE WORK NOTED ABOVE.

ITEM 605 - 6" <i>Shallow</i> PIPE UNDERDRAIN	8200 LIN. FT.
ITEM 603 - 6" TYPE F CONDUIT	10 LIN. FT.

ITEM 203 - GRANULAR EMBANKMENT, AS PER PLAN

AN 18 INCH THICK BLANKET OF GRANULAR MATERIAL, WITH NOT MORE THAN 15 PERCENT BY WEIGHT PASSING THE NO. 200 SIEVE, SHALL BE PLACED AT THE BASE OF THE EMBANKMENTS ADJACENT TO THE FLAT BRANCH & STOKES ROAD STRUCTURES.

THE GRANULAR BLANKET SHALL DAYLIGHT AT THE SIDE SLOPES AND EXTEND FROM STA. 19+16.19 U.S. 33 TO FLAT BRANCH CREEK AND FROM FLAT BRANCH CREEK TO STA. 24+09.81 U.S. 33, AND ON STOKES ROAD FROM STA. 46+62.89 TO STA. 49+01.00 AND STA. 50+88.00 TO STA. 53+20.11.

ALL LABOR AND MATERIAL NECESSARY TO COMPLETE THE ABOVE DESCRIBED WORK TO THE APPROVAL OF THE ENGINEER SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203 GRANULAR EMBANKMENT, AS PER PLAN.

ITEM 659 - SEEDING AND MULCHING FOR WILDLIFE

STANDARD SEEDING MIX SHALL BE USED IN U.S. #33 MEDIAN AREA BETWEEN PAVED SHOULDERS AND ON ALL LOCAL ROADS. WILDLIFE SEEDING MIX SHALL BE USED FOR ALL REMAINING AREAS TO BE SEEDED ON THIS PROJECT.

ALL AREAS ON THE PLAN WHICH ARE DESIGNATED TO BE SEEDED FOR WILDLIFE SHALL BE SEEDED WITH THE FOLLOWING MIXTURE AT THE RATE OF 2 POUNDS PER 1000 SQ. FT.

34%	BROME GRASS (BROMUS INERMIS)
26%	ALFALFA, WEEVIL RESISTANT STRAIN (MEDICAGO SATIVA VAR. VERNAL)
18%	RED CLOVER (TRIFOLIUM PRATENSE)
22%	PERENNIAL RYE (LOLIUM PERENNE)

PAYMENT FOR ACCEPTED QUANTITIES SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR:

ITEM 659	SQ. YD.	SEEDING AND MULCHING FOR WILDLIFE
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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 ITEM 203 EXCAVATION AND ITEM 203 EMBANKMENT. (*Approx. 30 to 40 hrs. rolling time*)

MAINTENANCE OF TRAFFIC - GENERAL NOTES

CALC. BY DATE CHKD BY DATE	UNI-33-0.28	OHIO FHWA REGION 5	13 224 1 16
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MAINTAINING TRAFFIC

IN ADDITION TO THE REQUIREMENTS FOR MAINTAINING TRAFFIC AS INDICATED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, AND ITEM 614, THE FOLLOWING REQUIREMENTS SHALL APPLY.

THE LIMITS AND DURATION OF USE OF TEMPORARY ROADWAYS SHALL BE HELD TO AN ABSOLUTE MINIMUM, AND IN ALL CASES, BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

UNLESS OTHERWISE INDICATED IN THESE PLANS, ALL WORK REQUIRED FOR TRAFFIC MAINTENANCE SHALL BE INCLUDED WITH PAYMENT FOR ITEM 614 MAINTAINING TRAFFIC.

TRAFFIC CONTROL

DRUMS OR TYPE II BARRICADES SHALL BE USED ON ALL TAPERS AND CHANNELIZING DEVICES. IN ADDITION, TYPE "C" STEADY BURNING LIGHTS SHALL BE USED AT NIGHT.

SIGNS NOT IN USE SHALL BE ADEQUATELY COVERED OR REMOVED. THE LEAD SIGN IN ANY SEQUENCE SHALL BE EQUIPPED WITH TYPE "B" HIGH INTENSITY FLASHERS AT NIGHT.

FOR DETAILS OF SIGNING FOR TEMPORARY ROADS, SEE SHEETS 6 TO 15 .

THE CONTRACTOR SHALL FURNISH ALL TRAFFIC CONTROL DEVICES, INCLUDING REGULATORY SIGNS.

PLACEMENT OF DRUMS

DRUMS SHALL BE PLACED AT FIFTY (50) FOOT INTERVALS CENTER TO CENTER EXCEPT ON TAPERS AND AROUND RETURNS. WHERE DRUMS ARE PLACED ON RETURNS OR TAPERS THE CENTER TO CENTER SPACING SHALL BE TWELVE AND ONE-HALF (12.5) FEET UNLESS OTHERWISE NOTED ON THE PLANS.

DRUMS USED AS BARRICADES SHALL BE PLACED ON THE ADJACENT TRAFFIC SURFACE PROVIDED THAT A MINIMUM LANE WIDTH OF ELEVEN (11) FEET IS MAINTAINED IN THE ADJACENT TRAFFIC SURFACE, OTHERWISE DRUMS SHALL BE PLACED OFF OF BUT ADJACENT TO THE EDGE OF PAVEMENT. ALL DRUMS SHALL HAVE THE REQUIRED TYPE "C" LIGHTS MOUNTED IN SUCH A MANNER THAT A MINIMUM HEIGHT OF FOUR (4) FEET IS MAINTAINED FROM THE ADJACENT ROADWAY SURFACE TO THE CENTER OF THE LENS OF THE LIGHT WHEN THE DRUM IS PLACED OFF THE ROADWAY AND INSIDE THE WORK AREA. ALL DRUMS SHALL HAVE LIDS AND SHALL BE PLACED ON PLYWOOD.

DETOUR LIMITATION

TWO WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, EXCEPT DURING PHASE IV CONSTRUCTION. THROUGH TRAFFIC MAY BE DETOURED AS SHOWN ON SHEETS 10 THRU 15.

DETOUR OF EXISTING U.S.#33 AND STOKES ROAD

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PAYMENT, FURNISHING, INSTALLING, MAINTAINING, AND REMOVING OF ALL DETOUR ROUTE MARKING SIGNS USED DURING THIS CONSTRUCTION PROJECT, EXCEPT FOR THE SIGNS PERTINENT TO THE CLOSING OF S.R. # 739. (SEE PHASE IV-C SEQUENCE OF CONSTRUCTION).

CONTRACTOR'S MAINTENANCE RESPONSIBILITY

ON THIS PROJECT, THE CONTRACTOR'S RESPONSIBILITY FOR MAINTENANCE OF THE EXISTING PAVEMENT, PER ITEM 614, SHALL BE LIMITED TO THOSE PORTIONS OF THE EXISTING HIGHWAY LYING WITHIN THE PROPOSED WORK LIMITS. NECESSARY UPKEEP OF THE ADJOINING PAVEMENTS WHICH ARE USED FOR TRAFFIC MAINTENANCE BUT ARE OUTSIDE OF THE RIGHT OF WAY FOR THE PROPOSED HIGHWAY RELOCATION WILL BE PROVIDED BY OTHERS.

SCHEDULE OF OPERATIONS

BEFORE WORK IS STARTED ON THIS PROJECT THE CONTRACTOR SHALL SUBMIT A SCHEDULE OF OPERATIONS, IN WRITING, TO THE ENGINEER FOR APPROVAL. THE SCHEDULE OF OPERATIONS SHALL BE IN ACCORDANCE WITH THE APPROVED CONSTRUCTION SEQUENCE.

LAW ENFORCEMENT OFFICER

THE CONTRACTOR SHALL PROVIDE THE SERVICES OF A LAW ENFORCEMENT OFFICER WITH OR WITHOUT PATROL CAR PER WORK AREA AS REQUIRED ON ROADWAYS CARRYING U.S. # 33 TRAFFIC. THE AREA WHERE THESE SERVICES ARE REQUIRED SHALL BE AN AFFECTED AREA DURING INSTALLATION AND REMOVAL OF BARRICADES AND DETOUR SIGNS. IF THE CONTRACTOR DESIRES TO USE A LAW ENFORCEMENT OFFICER OUTSIDE OF THE AREAS DESCRIBED ABOVE, IN LIEU OF A FLAGMAN, THIS SHALL BE PERMITTED; HOWEVER, THE COST OF THE OFFICER SHALL BE BORNE BY THE CONTRACTOR. ALL PATROL CARS SHALL BE EQUIPPED WITH STANDARD TOP MOUNTED FLASHING LIGHTS. THE LAW ENFORCEMENT OFFICERS ARE CONSIDERED TO BE EMPLOYED BY THE CONTRACTOR AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR ACTIONS. ALTHOUGH THEY ARE EMPLOYED BY THE CONTRACTOR, THE PROJECT ENGINEER SHALL HAVE CONTROL OVER THEIR PLACEMENT.

PAYMENT FOR THE LAW ENFORCEMENT OFFICERS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

ITEM 615 TEMPORARY ROADS AND PAVEMENTS

THE ALIGNMENT AND PAVEMENT TYPICAL SECTIONS FOR ALL TEMPORARY PAVEMENT, CLASS "A" AND ALL TRAFFIC COMPACTED SURFACE, TYPE A OR B SHALL BE AS SHOWN ON SHEETS 11 THRU 13.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED IN CONSTRUCTING THE TEMPORARY CLASS "A" PAVEMENT AND THE TRAFFIC COMPACTED SURFACE TYPE A OR B.

ITEM 615 TEMPORARY ROADS	LUMP SUM
ITEM 615 TEMPORARY PAVEMENT, CLASS "A"	761 SQ.YD.
ITEM 410 TRAFFIC COMPACTED SURFACE,	
TYPE A OR B	400 CU.YD.
ITEM 616 CALCIUM CHLORIDE	8 TONS
ITEM 616 WATER	50 M.GAL.

ALTERNATE METHODS

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

RED LIGHTS FOR REGULATORY SIGNS

RED LIGHTS SHALL MARK THE POINT WHERE TRAFFIC MUST LEAVE THE CLOSED HIGHWAY.

SUGGESTED SEQUENCE OF CONSTRUCTION

PHASE 1

THE CONTRACTOR SHALL CONSTRUCT STOKES ROAD FROM STATION 40+50 TO STATION 57+50 AND THE RETURNS FOR ALL RAMP FULL WIDTH. CONTRACTOR SHALL NOT APPLY THE SURFACE COURSE AND PERMANENT PAVEMENT MARKINGS DURING THIS PHASE. NORTHBOUND AND SOUTHBOUND TRAFFIC SHALL BE MAINTAINED DURING THIS PHASE BY DETOUR ON EXISTING U.S. # 33, EXISTING 150-A, AND EXISTING SMOKEY ROAD AS SHOWN ON SHEET 6 OF 16.

PHASE 2

THE CONTRACTOR SHALL CONSTRUCT THE EASTBOUND AND WESTBOUND LANES OF PROPOSED U.S. # 33 FULL WIDTH FROM STATION 15+00 TO STATION 40+00. THE CONTRACTOR SHALL CONSTRUCT RAMP "D" FULL WIDTH FROM STATION 20+00 TO THE RETURN AT STOKES ROAD. THE CONTRACTOR SHALL CONSTRUCT RAMP "C" FULL WIDTH FROM STATION 37+32.29 TO THE NOSE AT STOKES ROAD. THE CONTRACTOR SHALL CONSTRUCT RAMP "B" FULL WIDTH FROM THE RETURN AT STOKES ROAD TO STATION 40+00. CONTRACTOR SHALL APPLY THE SURFACE COURSE AND PERMANENT PAVEMENT MARKINGS TO ALL CONSTRUCTION DURING THIS PHASE. DURING THIS PHASE TRAFFIC SHALL BE MAINTAINED ON THE COMPLETED PORTION OF STOKES ROAD AND ALL EXISTING ROADS AS SHOWN ON SHEETS 7 & 8 OF 16.

PHASE 3

THE CONTRACTOR SHALL CONSTRUCT THE EASTBOUND AND WESTBOUND LANES OF THE TEMPORARY CONNECTION FULL WIDTH FROM STATION 3+00 TO STATION 15+00. CONTRACTOR SHALL APPLY THE SURFACE COURSE AND PERMANENT PAVEMENT MARKINGS TO ALL CONSTRUCTION DURING THIS PHASE. DURING THIS PHASE TRAFFIC SHALL BE MAINTAINED BY DETOUR ON EXISTING 150-A, THE COMPLETED PORTION OF STOKES ROAD, EXISTING STOKES ROAD, AND EXISTING U.S. # 33 AS SHOWN ON SHEET 9 OF 16.

PHASE 4

CONTRACTOR SHALL CONSTRUCT TEMPORARY ROAD # 1 AS SHOWN ON SHEET 11 OF 16. (DIAGRAM A) CONTRACTOR SHALL CONSTRUCT STOKES ROAD FROM STATION 57+50 TO STATION 67+50 HALF-WIDTH ON THE RIGHT, AND TEMPORARY ROAD # 2. TRAFFIC SHALL BE MAINTAINED ON TEMPORARY ROAD # 1 AND EXISTING U.S. # 33 AS SHOWN ON SHEET 12 OF 16. (DIAGRAM B) CONTRACTOR SHALL CONSTRUCT S.R. # 739 HALF-WIDTH FROM STATION 10+18.33 TO STATION 13+50. CONTRACTOR SHALL CONSTRUCT STOKES ROAD FROM STATION 57+50 TO STATION 71+75 HALF-WIDTH ON THE LEFT. S.R. # 739 SHALL BE CLOSED TO ALL TRAFFIC DURING PHASE IV-C. THE CONTRACTOR SHALL NOTIFY ODOT (DISTRICT 6) TRAFFIC ENGINEER 5 WORKING DAYS IN ADVANCE OF THE CLOSING OF S.R. # 739. UPON COMPLETION OF PHASE IV-C, S.R. # 739 SHALL BE REOPENED FOR THE REMAINDER OF THE CONSTRUCTION PERIOD. TRAFFIC SHALL BE MAINTAINED ON THE COMPLETED PORTION OF STOKES ROAD AND TEMPORARY ROAD # 2 AS SHOWN ON SHEET 13 OF 16. (DIAGRAM C) CONTRACTOR SHALL CONSTRUCT THE REMAINING HALF-WIDTH OF STOKES ROAD ON THE RIGHT FROM STATION 67+50 TO STATION 71+75. CONTRACTOR SHALL APPLY THE SURFACE COURSE AND PERMANENT PAVEMENT MARKINGS TO ALL CONSTRUCTION EXCEPT STOKES ROAD DURING THIS PHASE. TRAFFIC SHALL BE MAINTAINED ON THE COMPLETED PORTIONS OF STOKES ROAD AND TEMPORARY ROAD # 2 AS SHOWN ON SHEET 14 OF 16. (DIAGRAM D) ALL TEMPORARY ROADS SHALL BE REMOVED.

PHASE 5

CONTRACTOR SHALL CONSTRUCT CUL-DE-SACS ON SMOKEY ROAD. CONTRACTOR SHALL CONSTRUCT EASTBOUND AND WESTBOUND LANES OF U.S. # 33 FULL WIDTH FROM STATION 40+00 TO END OF PROJECT. CONTRACTOR SHALL CONSTRUCT RAMP "A" FULL WIDTH FROM RETURN AT STOKES ROAD TO STATION 49+87.79. CONTRACTOR SHALL CONSTRUCT REMAINING PORTION OF RAMP "B" FROM STATION 40+00 TO STATION 50+00. CONTRACTOR SHALL APPLY THE SURFACE COURSE AND PERMANENT PAVEMENT MARKINGS TO ALL CONSTRUCTION DURING THIS PHASE, INCLUDING STOKES ROAD. DURING THIS PHASE TRAFFIC SHALL BE MAINTAINED ON THE COMPLETED PORTIONS OF CONSTRUCTION AS SHOWN ON SHEET 16 OF 16.

614 WORK ZONE PAVEMENT MARKINGS

CALC. BY: <u>ETH</u>	OHIO	14
DATE <u>9-18-85</u>		224
CHKD BY: <u>GHG</u>	FHWA REGION 5	2
DATE <u>12-2-85</u>		16

UNI - 33 - 0.28

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.

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 <u>I</u> , <u>*</u> = 0.05
614	MILES	TEMPORARY CENTER LINES, CLASS <u>I</u> , <u>*</u> = 0.79
614	LIN. FT.	TEMPORARY CHANNELIZING LINES, CLASS I, <u>*</u> = 2.35
614	MILES	TEMPORARY EDGE LINES, CLASS I, <u>94703 TYPE C</u> = 2.38
614	LIN. FT.	TEMPORARY GORE MARKINGS, CLASS II, <u>*</u>
614	LIN. FT.	TEMPORARY STOP LINES, CLASS I, <u>*</u>
614	LIN. FT.	TEMPORARY CROSSWALK LINES, CLASS I, <u>*</u>
614	EACH	TEMPORARY LANE ARROWS, CLASS I, <u>*</u>
614	EACH	TEMPORARY RAILROAD SYMBOL MARKINGS, CLASS I, <u>*</u>
614	EACH	TEMPORARY WORD "ONLY" ON PAVEMENT, 72-INCH, CLASS I, <u>*</u>
614	LIN. FT.	TEMPORARY TRANSVERSE LINES, CLASS I, <u>*</u>
614	LIN. FT.	TEMPORARY DOTTED LINES, CLASS I, <u>*</u>
*621 PAINT, 947.03 TYPE B OR 947.03 TYPE C		
fh4	QUANTITIES	CARRIED TO TRAFFIC CONTROL GENERAL SUMMARY
	SEE SHEET NO.	<u>181</u>

NOTE: TEMPORARY CENTER LINES THROUGH INTERSECTIONS MAY NEED TO BE REMOVED PRIOR TO APPLYING PERMANENT MARKINGS.

MAINTENANCE OF TRAFFIC SUB-SUMMARY

(FOR INFORMATION ONLY)

TEMPORARY SIGNING (PAYMENT UNDER ITEM 614)

[illegible]

MAINTENANCE OF TRAFFIC SUB-SUMMARY

(FOR INFORMATION ONLY)

TEMPORARY SIGNING (PAYMENT UNDER ITEM 614)

CALC. BY DATE	UNI-33-0.28	OHIO	16
		FHWA REGION	224
CHKD BY DATE			4
			16

[illegible]

MAINTENANCE OF TRAFFIC PAVEMENT MARKING SUB-SUMMARY

* TOTALS TO TRAFFIC CONTROL GENERAL SUMMARY SEE SHEET NO. 181.
TOTALS TO MAINTENANCE OF TRAFFIC GENERAL NOTES SEE SHEET NO. 2 OF 16

STATION		TEMPORARY 4" YELLOW EDGE LINE, 947.03 TYPE C	TEMPORARY 4" WHITE EDGE LINE, 947.03 TYPE C	TEMPORARY 4" WHITE LANE LINE	TEMPORARY 4" SOLID DOUBLE YELLOW CENTER LINE	TEMPORARY CHANNELIZING LINE, CLASS I	REMOVAL OF EDGE LINES	REMOVAL OF CENTER LINES						
FROM	TO								L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
STOKES RD.														
43+37	45+12		175											
47+75	50+50			275										
47+75	57+50		975											
52+20	57+50				530									
52+25	57+50		525											
52+30	57+50		520											
52+30	64+30		1920		1220									
52+84	54+34		150											
53+10	57+50				440									
57+50	60+93		343		343									
60+93	77+10		3234		1617									
65+00	77+10	2420	1210											
53+00	55+35					235								
U.S. # 33														
23+24	34+50	1126												
EX-STOKES RD.														
57+50	63+50						600							
57+50	63+50						600							
57+50	63+50							600						
EX. U.S. 33														
66+50	77+10						1060							
66+50	77+10						1060							
66+50	77+10							1060						
TOTAL	LIN. FT. MILES EACH	3546 2.38 #	9052 #	275 0.05	4150 #	235 #	3320 •	1660 •						

[illegible]

MAINTENANCE OF TRAFFIC - PHASE # 1

CALC
BY DATE
CHKD R.J.H.
BY DATE 10-16-85

UNI-33-0.28

OHIO

FHWA
REGION 5

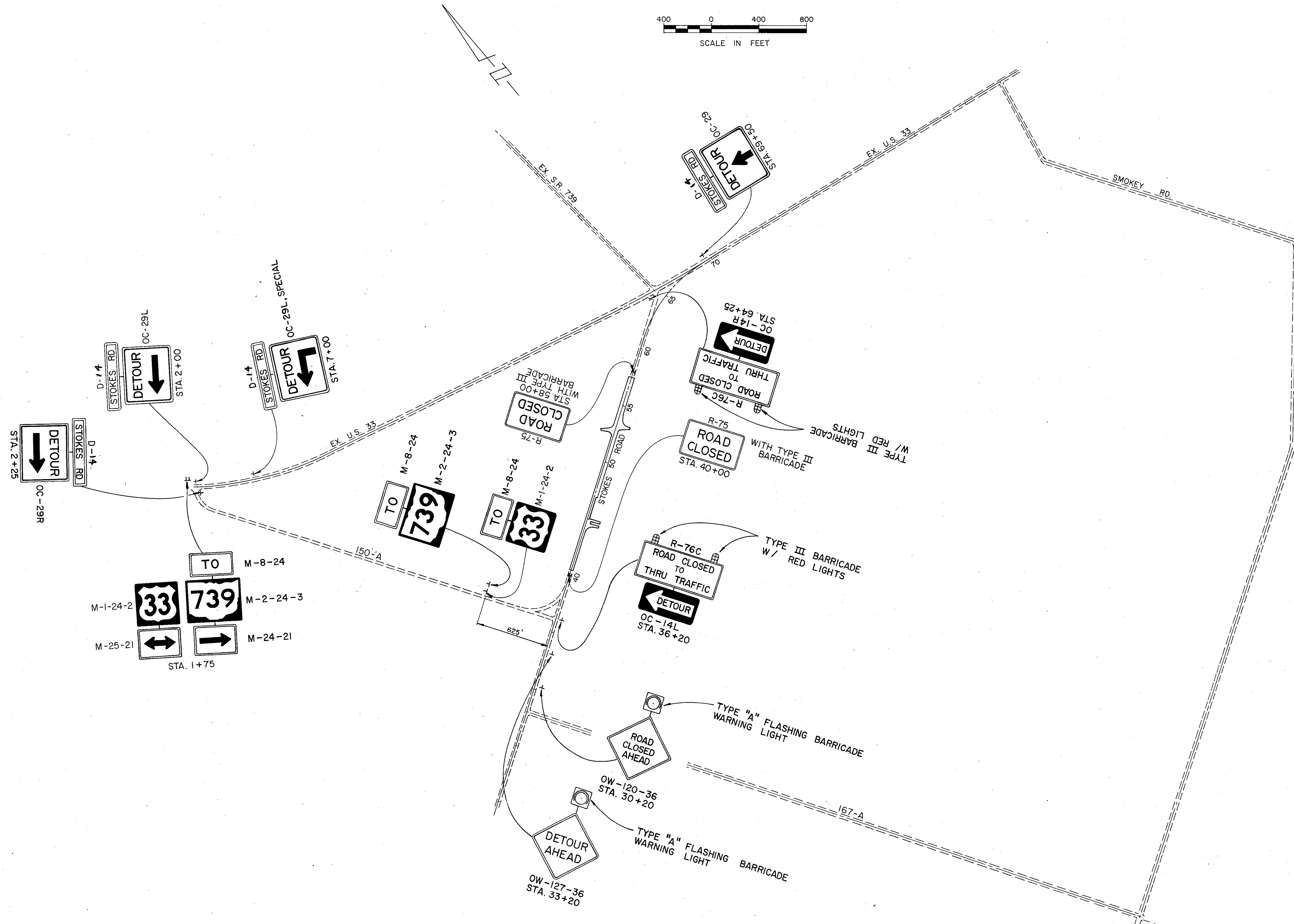
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SCALE IN FEET



MAINTENANCE OF TRAFFIC - PHASE # 2

CALC.
BY: *RTH*
DATE: *8-10-85*
CHKD.
BY: *RTH*
DATE: *9-17-85*

UNI-33-0.28

OHIO

FHWA
REGION 5

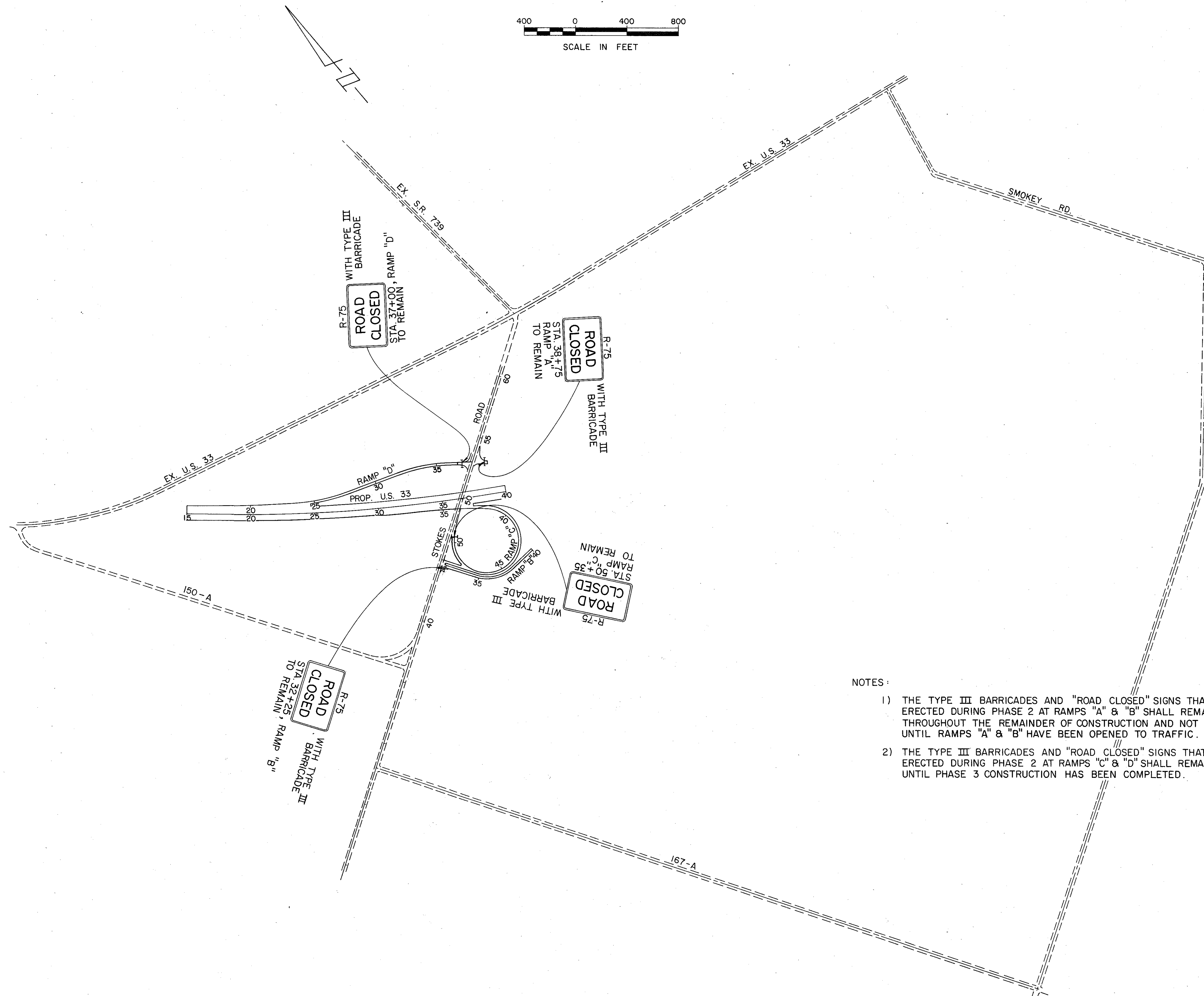
19

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400 0 400 800
SCALE IN FEET



NOTES:

- 1) THE TYPE III BARRICADES AND "ROAD CLOSED" SIGNS THAT ARE TO BE ERECTED DURING PHASE 2 AT RAMPS "A" & "B" SHALL REMAIN IN PLACE THROUGHOUT THE REMAINDER OF CONSTRUCTION AND NOT BE REMOVED UNTIL RAMPS "A" & "B" HAVE BEEN OPENED TO TRAFFIC.
- 2) THE TYPE III BARRICADES AND "ROAD CLOSED" SIGNS THAT ARE TO BE ERECTED DURING PHASE 2 AT RAMPS "C" & "D" SHALL REMAIN IN PLACE UNTIL PHASE 3 CONSTRUCTION HAS BEEN COMPLETED.

MAINTENANCE OF TRAFFIC - PHASE # 2

DIAGRAM A

CALC.
BY *CH*
DATE *8-2-85*
CHKD
BY *RTH*
DATE *9-17-85*

UNI-33-0.28

OHIO

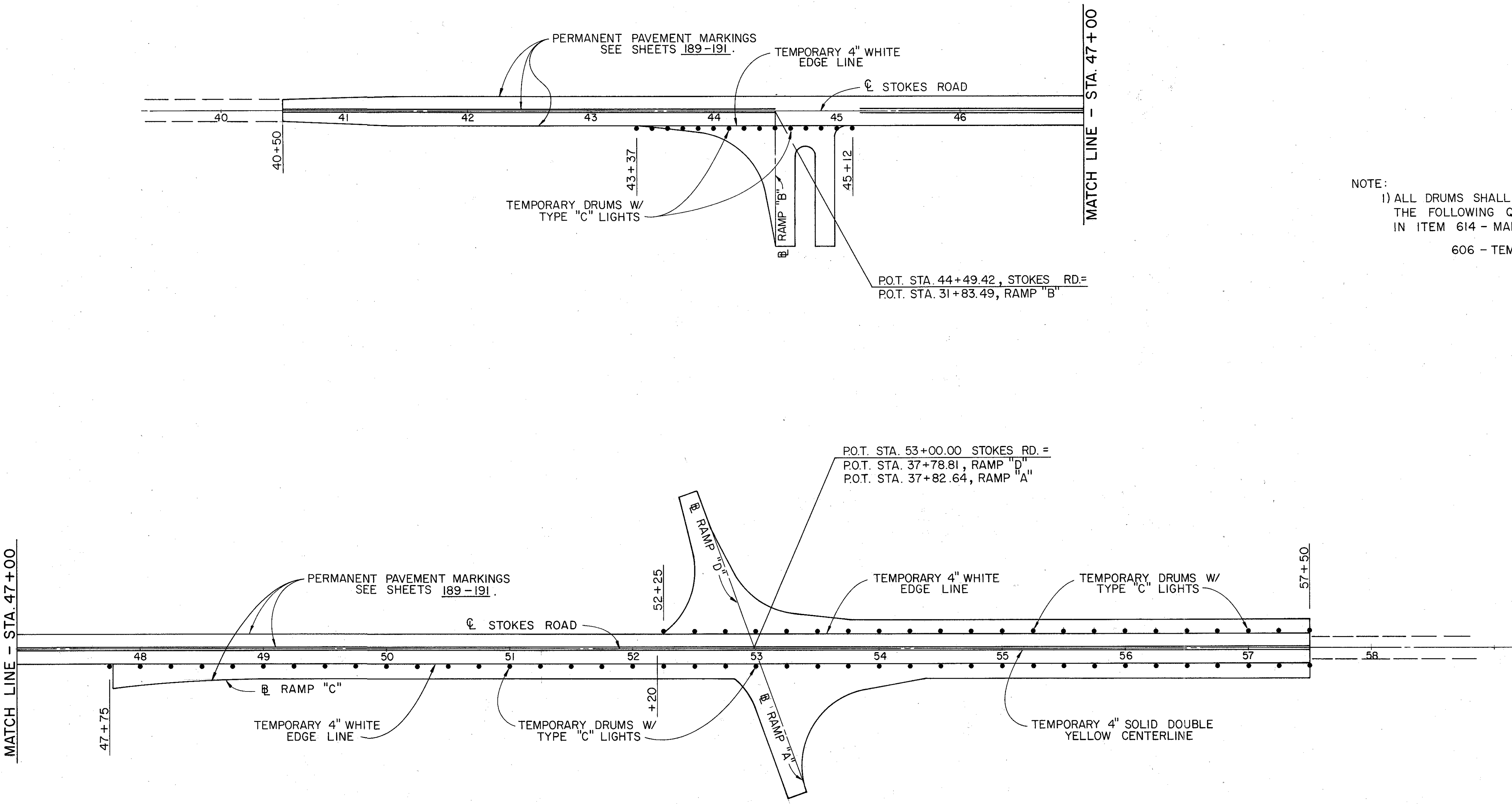
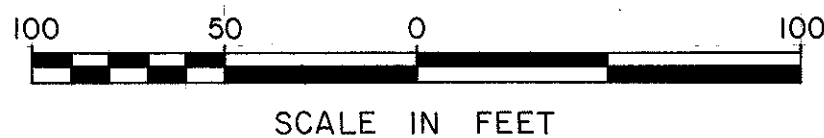
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REGION 5

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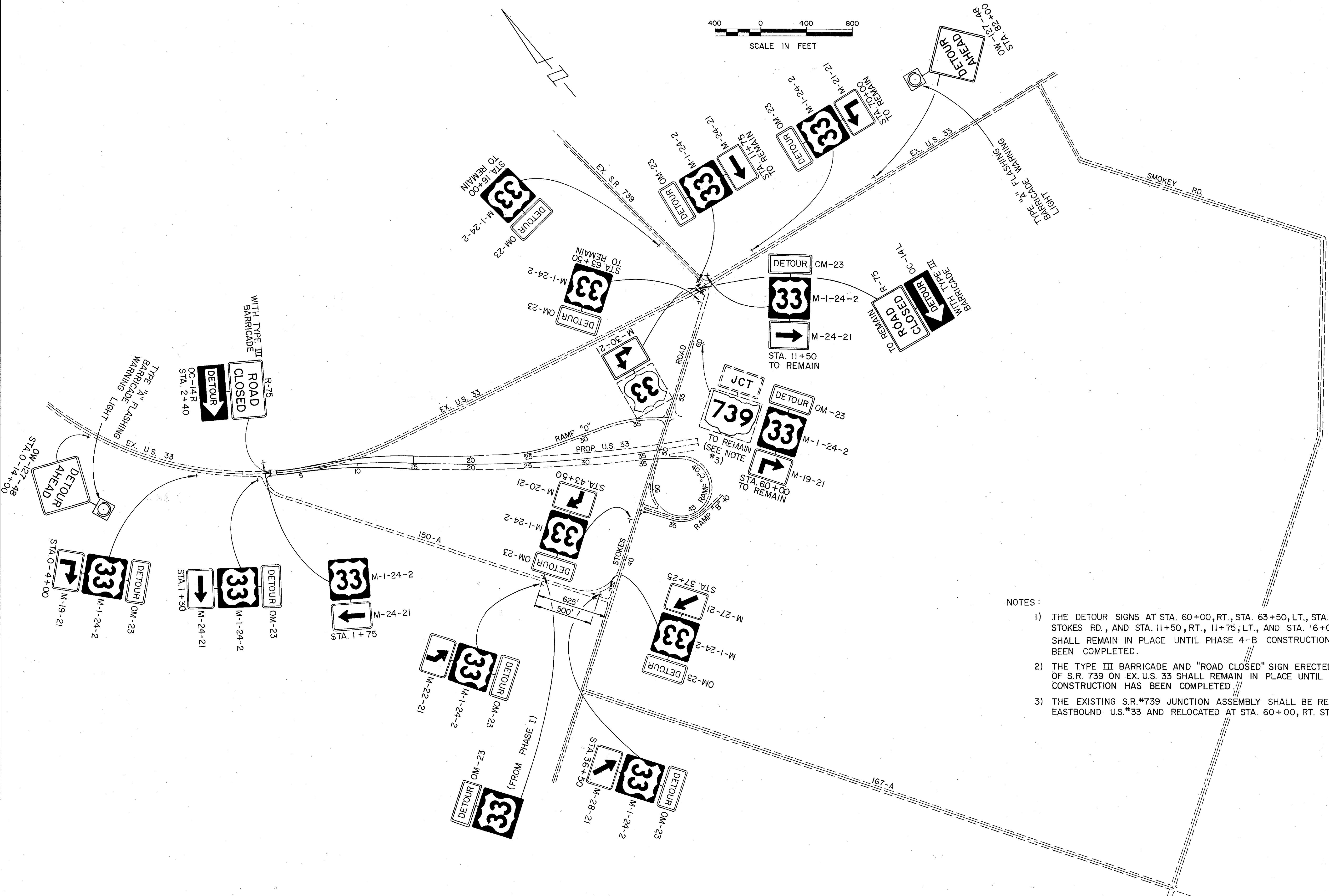
16



NOTE:
1) ALL DRUMS SHALL BE PLACED ON PLYWOOD.
THE FOLLOWING QUANTITY SHALL BE INCLUDED
IN ITEM 614 - MAINTAINING TRAFFIC.

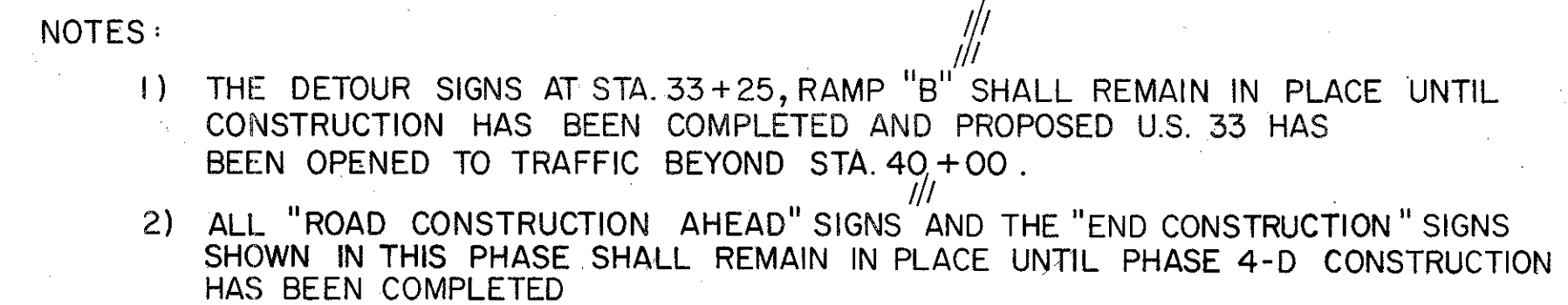
606 - TEMPORARY DRUMS 77 EACH

MAINTENANCE OF TRAFFIC - PHASE # 3

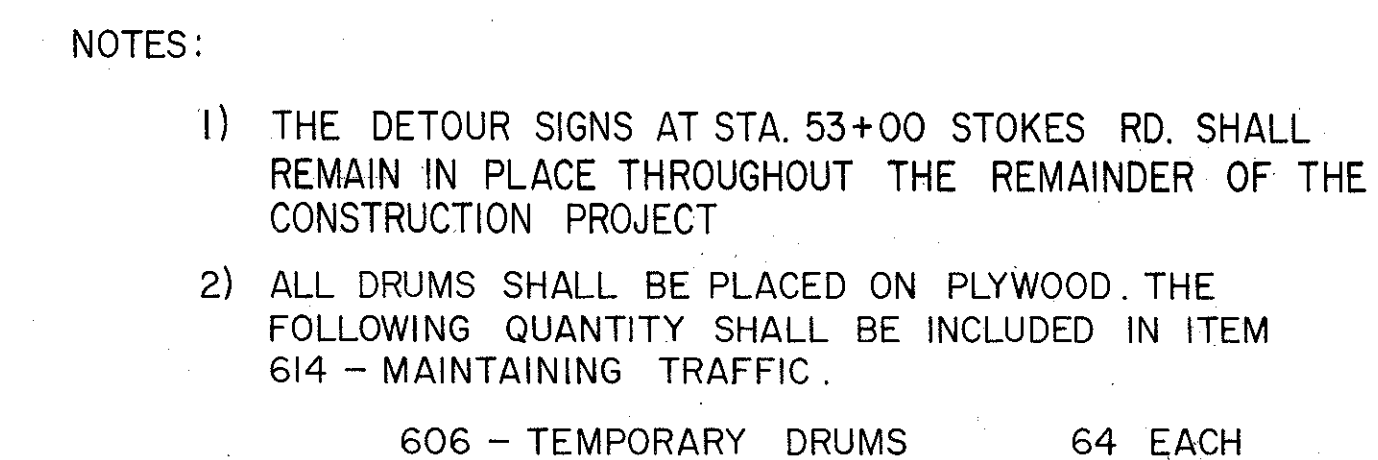


- NOTES:
- 1) THE DETOUR SIGNS AT STA. 60+00, RT., STA. 63+50, LT., STA. 70+00, LT., STOKES RD., AND STA. 11+50, RT., 11+75, LT., AND STA. 16+00, LT. S.R.#739 SHALL REMAIN IN PLACE UNTIL PHASE 4-B CONSTRUCTION HAS BEEN COMPLETED.
 - 2) THE TYPE III BARRICADE AND "ROAD CLOSED" SIGN ERECTED 50' WEST OF S.R. 739 ON EX. U.S. 33 SHALL REMAIN IN PLACE UNTIL CONSTRUCTION HAS BEEN COMPLETED.
 - 3) THE EXISTING S.R.#739 JUNCTION ASSEMBLY SHALL BE REMOVED FROM EASTBOUND U.S.#33 AND RELOCATED AT STA. 60+00, RT. STOKES RD.

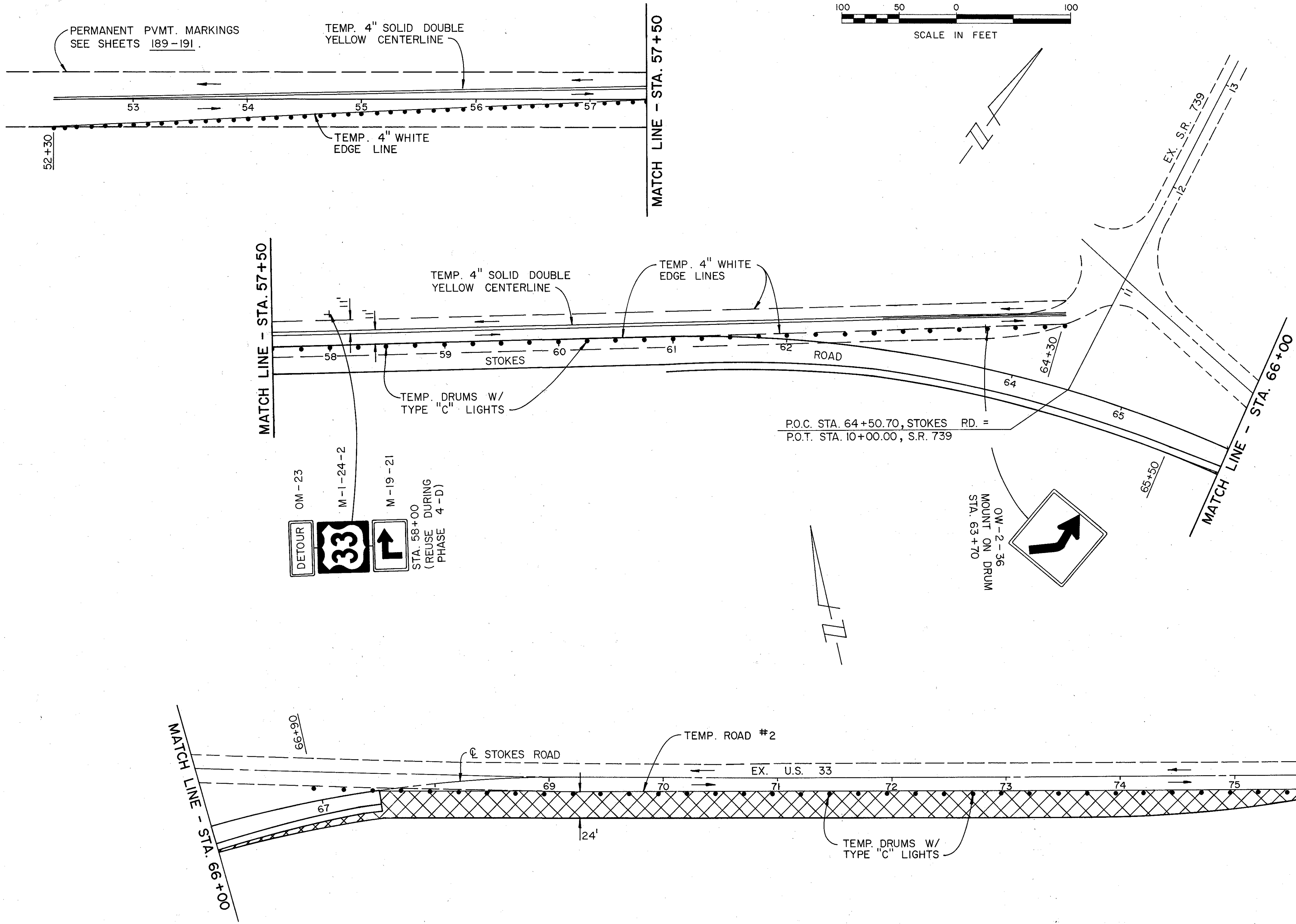
CALC. BY DATE <i>GMG</i> <i>8-12-85</i>	UNI-33-0.28	OH10	22
		CHVD BY DATE <i>RTH</i> <i>9-18-85</i>	FWAH REGION 5
			10
			16



CALC BY <i>GING</i> DATE <i>8-15-85</i>	UNI-33-0.28	OHIO	23
CHKD <i>RJH</i> BY DATE <i>9-18-85</i>		FHWA REGION 5	22

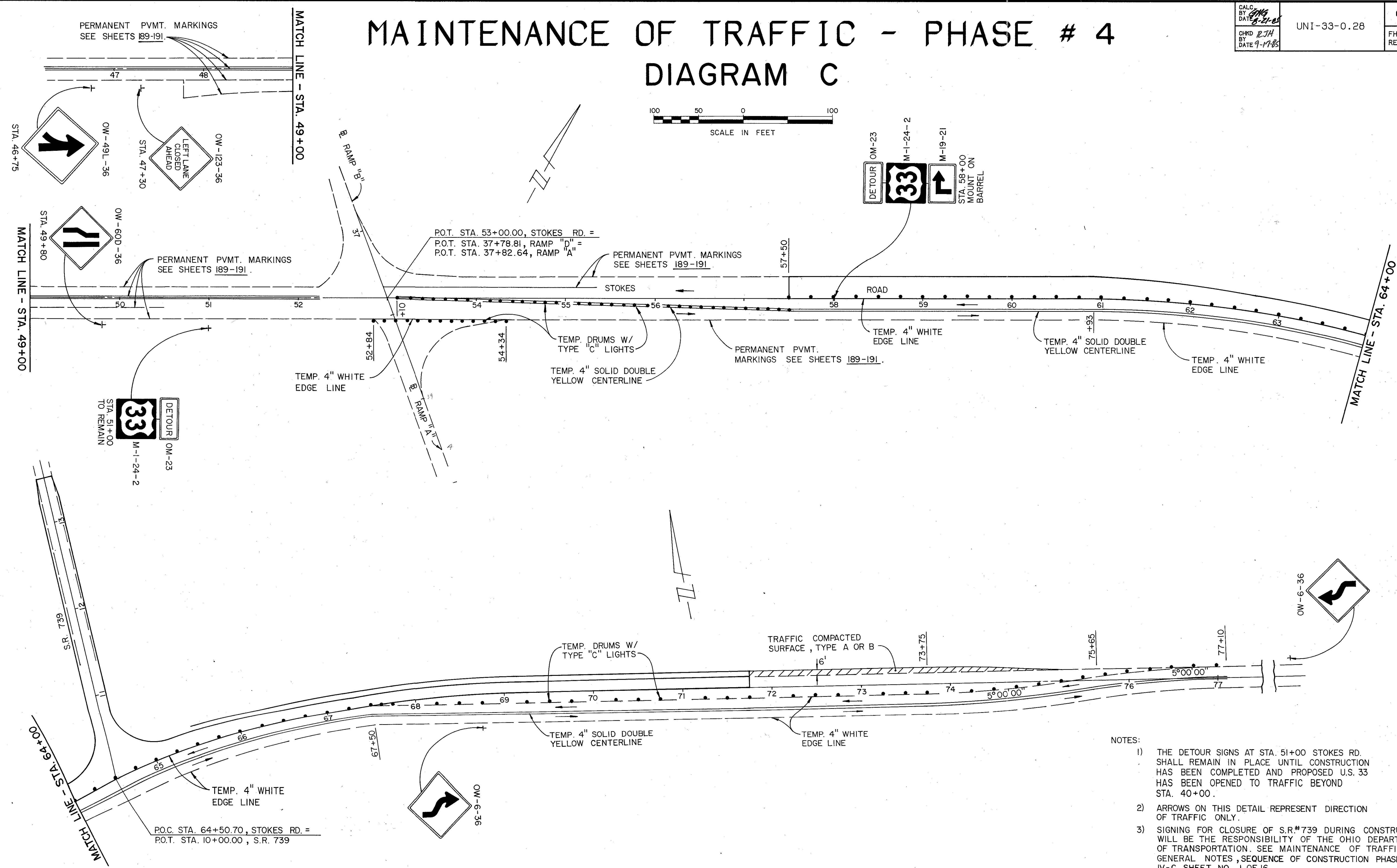
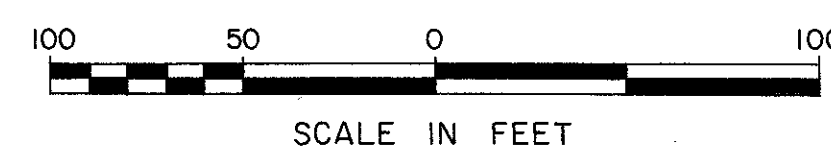


MAINTENANCE OF TRAFFIC - PHASE # 4
DIAGRAM B



- NOTES:
- 1) ARROWS ON THIS DETAIL REPRESENT DIRECTION OF TRAFFIC ONLY.
 - 2) ALL DRUMS SHALL BE PLACED ON PLYWOOD. THE FOLLOWING QUANTITY SHALL BE INCLUDED IN ITEM 614 - MAINTAINING TRAFFIC.
606 - TEMPORARY DRUMS 113 EACH

MAINTENANCE OF TRAFFIC - PHASE # 4 DIAGRAM C

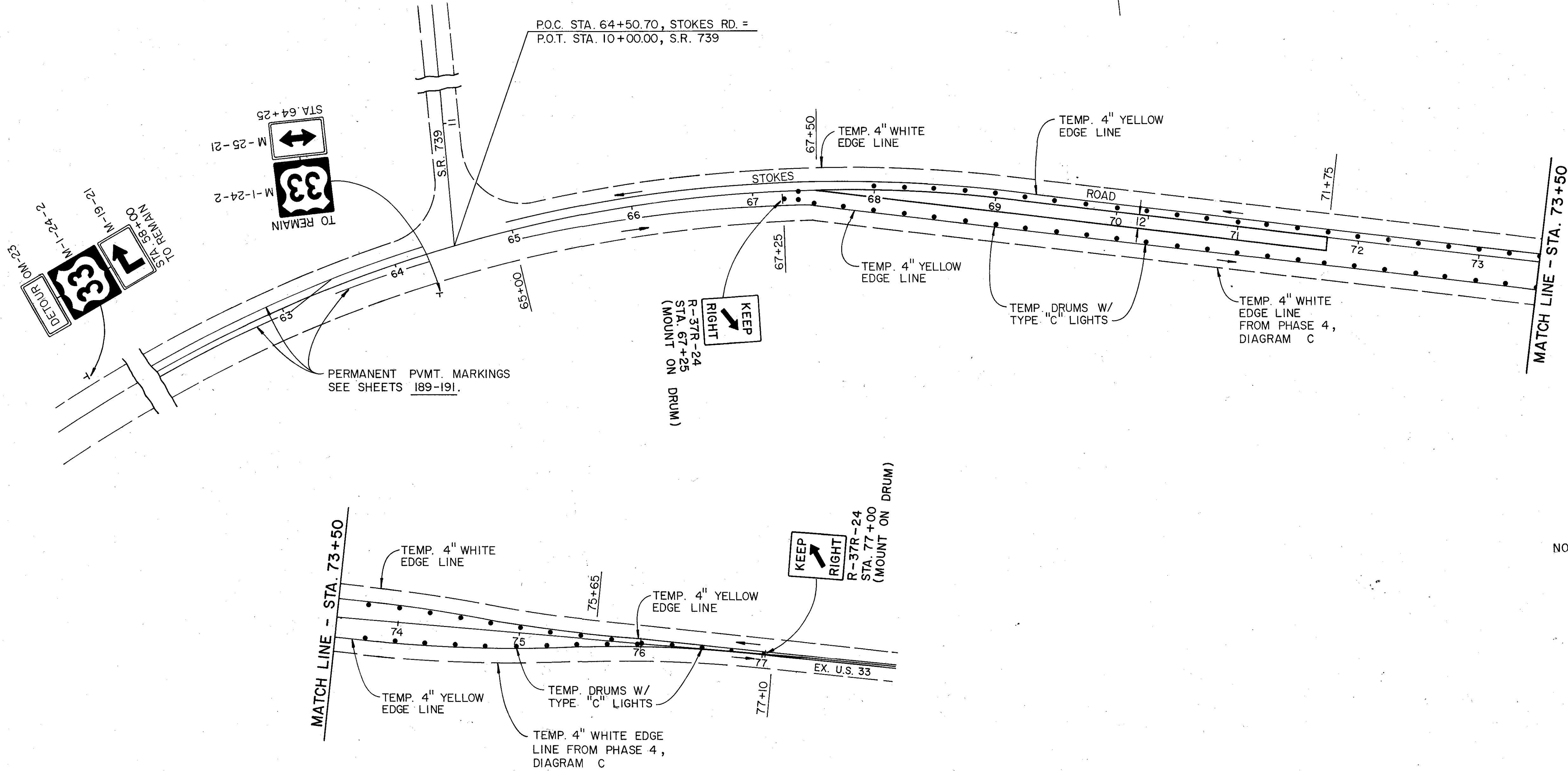
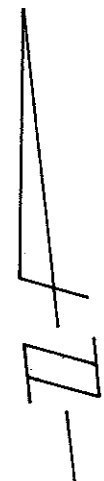
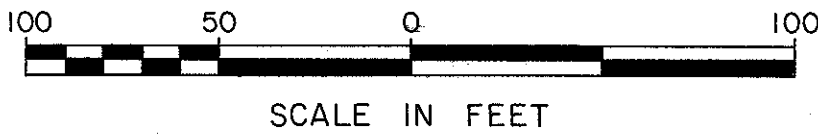


- NOTES:
- 1) THE DETOUR SIGNS AT STA. 51+00 STOKES RD. SHALL REMAIN IN PLACE UNTIL CONSTRUCTION HAS BEEN COMPLETED AND PROPOSED U.S. 33 HAS BEEN OPENED TO TRAFFIC BEYOND STA. 40+00.
 - 2) ARROWS ON THIS DETAIL REPRESENT DIRECTION OF TRAFFIC ONLY.
 - 3) SIGNING FOR CLOSURE OF S.R.#739 DURING CONSTRUCTION WILL BE THE RESPONSIBILITY OF THE OHIO DEPARTMENT OF TRANSPORTATION. SEE MAINTENANCE OF TRAFFIC GENERAL NOTES, SEQUENCE OF CONSTRUCTION PHASE IV-C, SHEET NO. 1 OF 16.
 - 4) ALL DRUMS SHALL BE PLACED ON PLYWOOD. THE FOLLOWING QUANTITY SHALL BE INCLUDED IN ITEM 614 - MAINTAINING TRAFFIC.

606 - TEMPORARY DRUMS 129 EACH

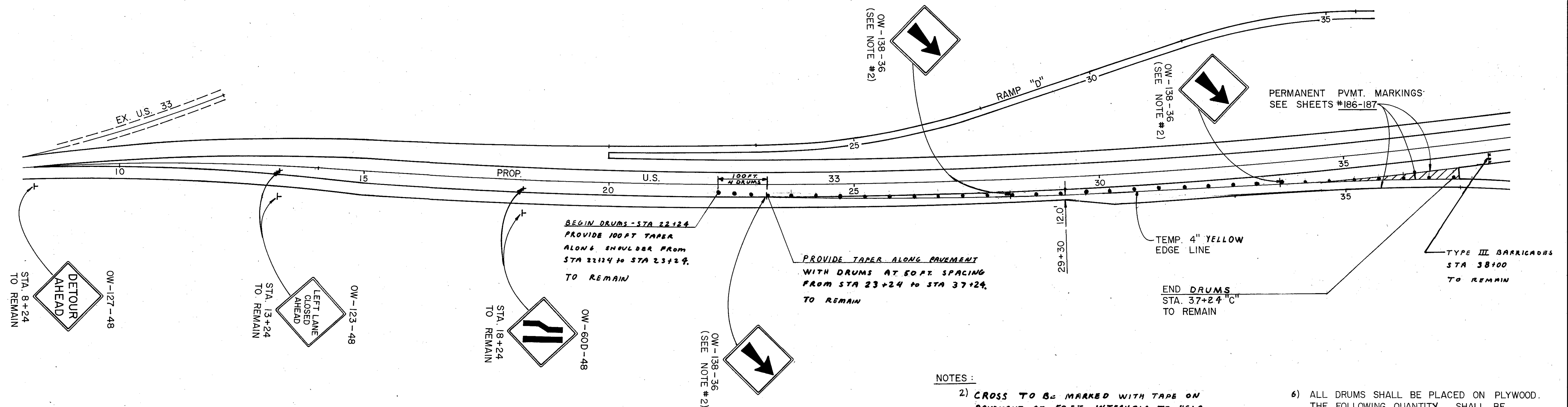
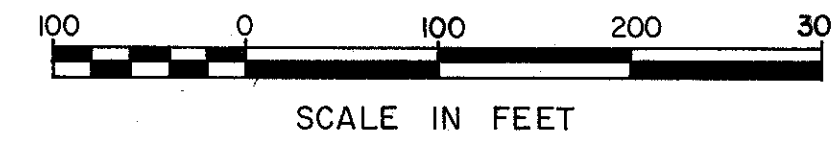
MAINTENANCE OF TRAFFIC - PHASE # 4

DIAGRAM D



- NOTES:
- 1) THE DETOUR SIGN AT STA. 58+00 STOKES RD. SHALL REMAIN IN PLACE UNTIL CONSTRUCTION HAS BEEN COMPLETED.
 - 2) ARROWS ON THIS DETAIL REPRESENT DIRECTION OF TRAFFIC ONLY.
 - 3) ALL DRUMS SHALL BE PLACED ON PLYWOOD. THE FOLLOWING QUANTITY SHALL BE INCLUDED IN ITEM 614 - MAINTAINING TRAFFIC.
606 - TEMPORARY DRUMS 77 EACH
 - 4) THE U.S. #33 ROUTE MARKING SIGN AT STA. 64+25 STOKES RD. SHALL REMAIN IN PLACE UNTIL PHASE 5 CONSTRUCTION HAS BEEN COMPLETED.

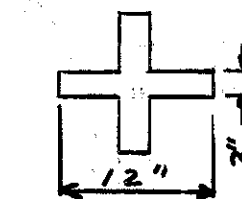
MAINTENANCE OF TRAFFIC - PHASE # 4 DIAGRAM E



NOTES:

1) PRIOR TO PROJECT ACCEPTANCE THE CONTRACTOR SHALL INSPECT THE CLOSURE DEVICES (SIGNS, SUPPORTS, TEMPORARY DRUMS, TCMs, REFLECTORS, PAVEMENT MARKINGS, TEMPORARY RPM'S, ETC.) AT LEAST EVERY SEVEN DAYS IN COMPANY WITH THE PROJECT ENGINEER AND AT OTHER TIMES WHEN REQUESTED BY THE ENGINEER. ALL DAMAGED DEVICES SHALL BE IMMEDIATELY REPAIRED AND ALL DISLOCATED DEVICES SHALL BE PLACED IN THEIR PROPER POSITION AND ORIENTATION. NON-OPERATING LIGHTS OR DEVICES WITH POOR REFLECTIVITY SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

2) CROSS TO BE MARKED WITH TAPE ON PAVEMENT AT 50 FT. INTERVALS TO HELP RELOCATE DRUMS.



3) OW-138 SIGNS TO BE LOCATED ON DRUMS AT THE FOLLOWING SPACING: ERECT ON FOURTH DRUM, THEN EVERY 100' FOR 300', THEN EVERY 200' THEREAFTER TO STA. 37+24. ALSO ERECT AMBER DELINEATORS APPROXIMATELY MIDWAY BETWEEN SIGNS ON DRUMS.

4) THE TEMPORARY EDGE LINE PROVIDED SHALL BE 947.03 TYPE C WHICH IS EASILY REMOVABLE. THIS MATERIAL MUST BE PUT DOWN ON WARM DRY DAYS, SO THE CONTRACTOR SHOULD SCHEDULE ITS INSTALLATION ACCORDINGLY.

5) THE TYPE III BARRICADES USED BEHIND TEMPORARY DRUMS SHALL BE REFLECTORIZED AND BALLISTED WITH SAND BAGS ON THE SUPPORT FRAME. (NOT MORE THAN 1'-0" ABOVE GROUND)

6) ALL DRUMS SHALL BE PLACED ON PLYWOOD. THE FOLLOWING QUANTITY SHALL BE INCLUDED IN ITEM 614 - MAINTAINING TRAFFIC

606 - TEMPORARY DRUMS 32 EACH

7) THE FOLLOWING QUANTITIES ARE PROVIDED FOR REPLACEMENT OF DAMAGED DEVICES WHEN AUTHORIZED BY THE ENGINEER, WHEN SUCH DAMAGE IS DUE TO ACCIDENT OR OTHER INCIDENT BEYOND THE CONTROL OF THE CONTRACTOR.

614	4 EACH	REPLACEMENT DRUMS
614	180 SQ FT	REPLACEMENT SIGNS
614	4 EACH	REPLACEMENT SIGN SUPPORTS

MAINTENANCE OF TRAFFIC - PHASE # 5

CALC.
BY
DATE
CHKD
BY
DATE

6-14-94
8-16-98
R.J.H.
2-18-95

UNI-33-0.28

OHIO

FRWA
REGION 5

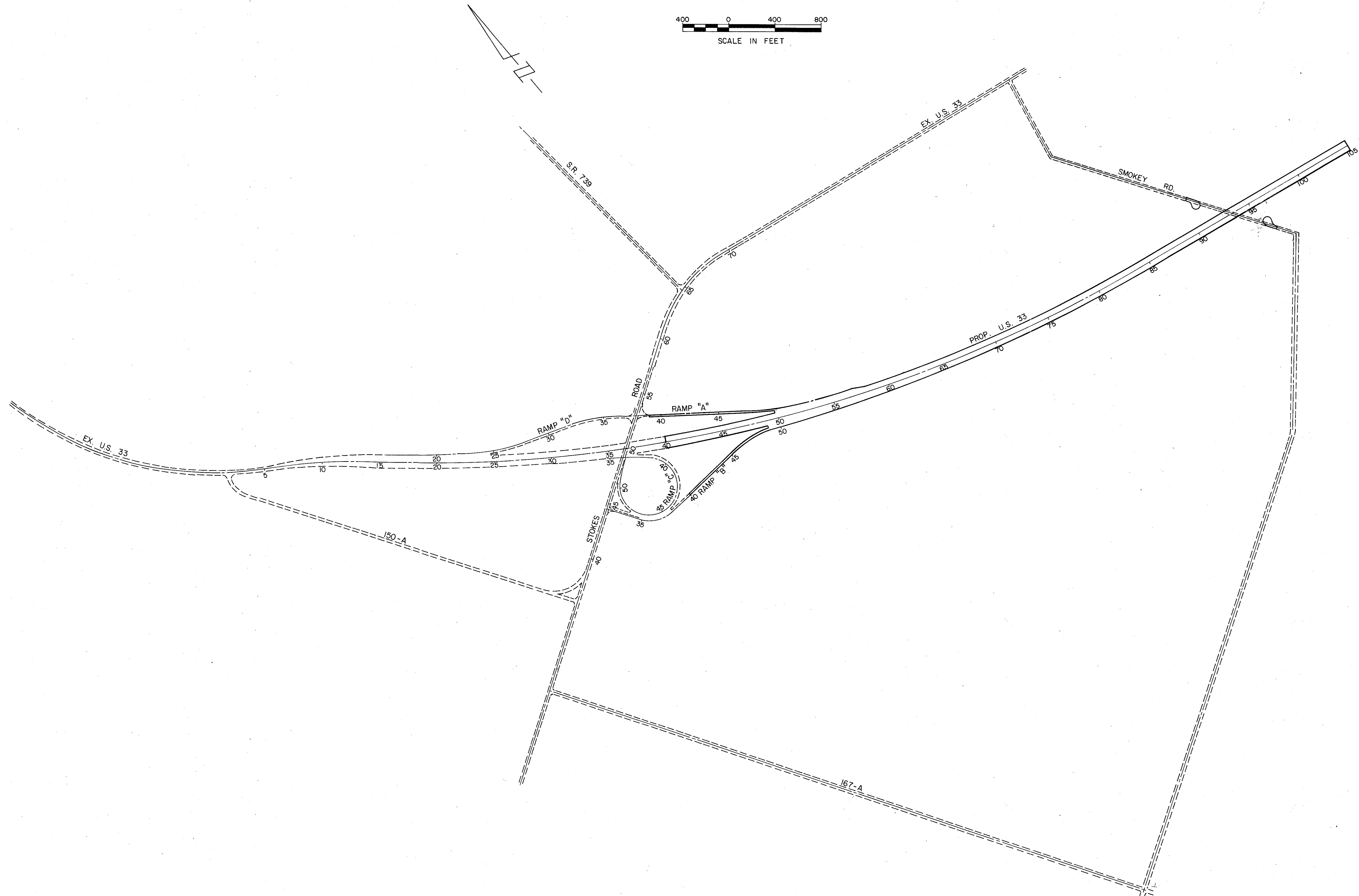
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SCALE IN FEET



PAVEMENT CALCULATIONS

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 404 - ASPHALT CONCRETE AC-20	CU. YD.	CU. YD.
U.S. # 33		
STA.15+00.00 TO STA.84+16.06, LT. 6.916.06 L.F. X (12,246.06' / 12,283.06') X 24.0' = 165,485.4 S.F.		
STA.15+00.00 TO STA.84+16.06, RT. 6.916.06 L.F. X (12,320.06' / 12,283.06') X 24.0' = 166,485.4 S.F.		
STA.84+16.06 TO STA.105+01.34, LT. & RT. 2.085.28 L.F. X 48.0' = 100,093.4 S.F.		
DEDUCT FOR BRIDGE 133.62 L.F. X 48.0' = - 6,413.8 S.F.		
TOTAL 425,650.4 S.F.		
TOTAL C.Y. 425,650.4 S.F. X 0.104' / 27	1,639.54	
TEMPORARY CONNECTION		
STA.3+00.00 TO STA.8+24.07, LT. 524.07 L.F. X (12.7' + 24.0' / 2) = 9,616.7 S.F.		
STA.3+00.00 TO STA.8+24.07, RT. 524.07 L.F. X (10.5' + 24.0' / 2) = 9,040.2 S.F.		
STA.8+24.07 TO STA.15+00.00, RT. 675.93 L.F. X 24.0' = 16,222.3 S.F.		
STA.8+24.07 TO STA.8+51.11, LT. 27.04 L.F. X (24.0' + 25.0' / 2) = 662.5 S.F.		
STA.8+51.11 TO STA.15+00.00, LT. 648.89 L.F. X (24.0' + 38.58' / 2) = 20,303.8 S.F.		
TOTAL 55,845.5 S.F.		
TOTAL C.Y. 55,845.5 S.F. X 0.104' / 27	215.11	
STATE ROUTE # 739		
STA.10+18.33 TO STA.13+25.00, LT. & RT. 306.67 L.F. X 24.0' = 7,360.1 S.F.		
STA.13+25.00 TO STA.13+50.00, LT. 25.00 L.F. X (12.0' + 11.0' / 2) = 287.5 S.F.		
STA.13+25.00 TO STA.13+50.00, RT. 25.00 L.F. X (12.0' + 9.0' / 2) = 262.5 S.F.		
TOTAL 7,910.1 S.F.		
TOTAL C.Y. 7,910.1 S.F. X 0.104' / 27	30.47	
SPEED CHANGE LANES		
STA.29+30.50 TO STA.30+30.50, RT. U.S. # 33 100.00 L.F. X 12.0' / 2 = 600.0 S.F.		
STA.30+30.50 TO STA.32+73.16, RT. U.S. # 33 242.66 L.F. X 12.0' = 2,911.9 S.F.		
STA.32+73.16 TO STA.37+30.50, RT. U.S. # 33 457.34 L.F. X (12.0' + 39.0' / 2) = 11,662.2 S.F.		
STA.15+00.00 TO STA.19+98.50, LT. U.S. # 33 498.50 L.F. X (14.58' + 25.0' / 2) = 9,865.3 S.F.		
STA.49+84.37 TO STA.54+36.55, LT. U.S. # 33 452.18 L.F. X (39.0' + 12.0' / 2) = 11,530.6 S.F.		

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 404 - ASPHALT CONCRETE AC-20 (CONTINUED)	CU. YD.	CU. YD.
SPEED CHANGE LANES (CON'T.)		
STA.54+36.55 TO STA.56+84.37, LT. U.S. # 33 247.82 L.F. X 12.0' = 2,973.8 S.F.		
STA.56+84.37 TO STA.57+84.37, LT. U.S. # 33 100.00 L.F. X 12.0' / 2 = 600.0 S.F.		
STA.52+97.73 TO STA.64+97.73, RT. U.S. # 33 1,200.00 L.F. X 12.0' / 2 = 7,200.0 S.F.		
STA.47+77.86 TO STA.49+29.05, RT. STOKES ROAD 151.19 L.F. X (20.0' + 12.0' / 2) = 2,419.0 S.F.		
DEDUCT FOR BRIDGE 80.39 L.F. X (12.0' + 16.25' / 2) = - 1,135.5 S.F.		
TOTAL 48,627.3 S.F.		
TOTAL C.Y. 48,627.3 S.F. X 0.104' / 27	187.31	
RAMP "A"		
STA.38+08.16 TO STA.47+29.40 (921.24 L.F. X 16.0') + (16.0' X 5.77' / 2) = 14,786.0 S.F.		
STA.47+29.40 TO STA.49+87.79 258.39 L.F. X (2,872.77' / 2,864.77') X 16.0' = 4,145.8 S.F.		
S.E. RADIUS RETURN @ STOKES ROAD (3.93' X 2.51' / 2) + (6.95' X 2.51' / 2) + (9.71' X 7.39' / 2) + (50.0' ² X [0.3371 - 0.3252]) = 79.3 S.F.		
N.E. RADIUS RETURN @ STOKES ROAD (121.59' X 19.48' / 2) + (19.48' X 7.03' / 2) + (60.0' ² X [1.2084 - 0.8795]) = 2,436.8 S.F.		
TOTAL 21,447.9 S.F.		
TOTAL C.Y. 21,447.9 S.F. X 0.104' / 27	82.61	
RAMP "B"		
STA.31+95.49 TO STA.34+74.51 279.02 L.F. X 16.0' = 4,464.3 S.F.		
STA.34+74.51 TO STA.37+93.05 318.53 L.F. X (290.0' / 298.0') X 16.0' = 4,959.7 S.F.		
STA.37+93.05 TO STA.45+12.37 719.32 L.F. X 16.0' = 11,509.1 S.F.		
STA.45+12.37 TO STA.50+00.00 487.63 L.F. X (962.93' / 954.93') X 16.0' = 7,867.4 S.F.		
STA.50+00.00 TO STA.53+00.00 300.00 L.F. X (12,349.70' / 12,357.70') X 16.0' = 4,796.9 S.F.		
S.E. RADIUS RETURN @ STOKES ROAD [(88.85' X 8.88' / 2) X 2] + [8.88' X 8.88'] + [60.0' ² X (0.8182 - 0.6853)] = 1,346.3 S.F.		
STA.31+95.49 TO STA.32+21.49, LT. (18.0' X 16.0') + [(8.0' ² X 0.2146] X 2) = 315.5 S.F.		
N.E. RADIUS RETURN @ STOKES ROAD (10.0' ² X 0.2146) = 21.5 S.F.		

CALC BY <i>GRB</i> DATE <i>5-20-81</i>	UNI-33-0.28	OHIO	30
CHKD <i>RJA</i> BY <i>10-48</i> DATE		FHWA REGION 5	

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 404 - ASPHALT CONCRETE AC-20 (CONTINUED)	CU.YD.	CU. YD.
STOKES ROAD		
STA.40+50.00 TO STA.49+29.05, RT.		
879.05 L.F. X 12.0' = 10,548.6 S.F.		
STA.40+50.00 TO STA.52+00.00, LT.		
1,150.00 L.F. X 12.0' = 13,800.0 S.F.		
STA.49+29.05 TO STA.59+13.38, RT.		
984.33 L.F. X 24.0' = 23,623.9 S.F.		
STA.52+00.00 TO STA.59+13.38, LT.		
713.38 L.F. X 24.0' = 17,121.1 S.F.		
STA.59+13.38 TO STA.60+93.38, RT.		
180.00 L.F. X (24.0' + 18.0' / 2) = 3,780.0 S.F.		
STA.59+13.38 TO STA.60+93.38, LT.		
180.00 L.F. X (24.0' + 18.0' / 2) = 3,780.0 S.F.		
STA.60+93.38 TO STA.65+50.00, RT.		
456.62 L.F. X (1,136.92 / 1,145.92) X 18.0' = 8,154.6 S.F.		
STA.60+93.38 TO STA.65+50.00, LT.		
456.62 L.F. X (1,154.92 / 1,145.92') X 18.0' = 8,283.7 S.F.		
STA.65+50.00 TO STA.67+30.00, RT.		
180.00 L.F. X (18.0' + 12.0' / 2) = 2,700.0 S.F.		
STA.65+50.00 TO STA.67+30.00, LT.		
180.00 L.F. X (18.0' + 12.0' / 2) = 2,700.0 S.F.		
STA.67+30.00 TO STA.69+10.32, RT.		
180.32 L.F. X (1,139.92' / 1,145.92') X 12.0' = 2,152.5 S.F.		
STA.67+30.00 TO STA.69+10.32, LT.		
180.32 L.F. X (1,151.92' / 1,145.92') X 12.0' = 2,175.2 S.F.		
STA.69+10.32 TO STA.71+25.00, LT. & RT.		
214.68 L.F. X 24.0' = 5,152.3 S.F.		
STA.71+25.00 TO STA.71+50.00, LT.		
25.00 L.F. X (12.0' + 11.7' / 2) = 296.2 S.F.		
STA.71+25.00 TO STA.71+50.00, RT.		
25.00 L.F. X (12.0' + 12.5' / 2) = 306.2 S.F.		
N.W. RADIUS RETURN@S.R. # 739		
50.0' ² X (0.7911 - 0.6693) = 304.5 S.F.		
N.E. RADIUS RETURN@S.R. # 739		
50.0' ² X (1.1374 - 0.8496) = 719.5 S.F.		
DEDUCT FOR BRIDGE		
(297.31 L.F. X 24.0') + (216.92 L.F. X 12.0') = - 9,738.5 S.F.		
TOTAL 95,859.8 S.F.		
TOTAL C.Y. 95,859.8 S.F. X 0.104' / 27	369.24	
FEATHERING		
STOKES ROAD		
STA.71+50.00 TO STA.71+75.00, LT. & RT.		
25.00 L.F. X 24.2' X (0.09' / 2) / 27	1.01	
GRAND TOTAL - ITEM 404		2,866.11
TOTAL TO GENERAL SUMMARY		2,867

PAVEMENT CALCULATIONS

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 402 - ASPHALT CONCRETE AC-20	CU.YD.	CU.YD.
U.S. # 33		
TOTAL S.F. (FROM ITEM 404) = 425,650.4 S.F.		
TOTAL C.Y. 425,650.4 S.F. X 0.146' / 27	2,301.67	
TEMPORARY CONNECTION		
TOTAL S.F. (FROM ITEM 404) = 55,845.5 S.F.		
TOTAL C.Y. 55,845.5 S.F. X 0.146' / 27	301.98	
STATE ROUTE # 739		
TOTAL S.F. (FROM ITEM 404) = 7,910.1 S.F.		
TOTAL C.Y. 7,910.1 S.F. X 0.146' / 27	42.77	
SPEED CHANGE LANES		
TOTAL S.F. (FROM ITEM 404) = 48,627.3 S.F.		
TOTAL C.Y. 48,627.3 S.F. X 0.146' / 27	262.95	
RAMP "A"		
TOTAL S.F. (FROM ITEM 404) = 21,447.9 S.F.		
TOTAL C.Y. 21,447.9 S.F. X 0.146' / 27	115.98	
RAMP "B"		
TOTAL S.F. (FROM ITEM 404) = 38,714.3 S.F.		
TOTAL C.Y. 38,714.3 S.F. X 0.146' / 27	209.34	
RAMP "C"		
TOTAL S.F. (FROM ITEM 404) = 22,833.8 S.F.		
TOTAL C.Y. 22,833.8 S.F. X 0.146' / 27	123.47	
RAMP "D"		
TOTAL S.F. (FROM ITEM 404) = 26,935.3 S.F.		
TOTAL C.Y. 26,935.3 S.F. X 0.146' / 27	145.65	
STOKES ROAD		
TOTAL S.F. (FROM ITEM 404) = 95,859.8 S.F.		
TOTAL C.Y. 95,859.8 S.F. X 0.146' / 27	518.35	
GRAND TOTAL - ITEM 402		4,022.16
TOTAL TO GENERAL SUMMARY		4,023

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 301 - BITUMINOUS AGGREGATE BASE	CU.YD.	CU.YD.
PAVEMENT		
U.S. # 33		
TOTAL S.F. (FROM ITEM 404) = 425,650.4 S.F.		
STA.15+00.00 TO STA.19+98.50, LT.		
498.50 L.F. X 0.833' = 415.3 S.F.		
STA.19+98.50 TO STA.52+63.89, LT.		
3,265.39 L.F. X 1.666' = 5,440.1 S.F.		
STA.52+63.89 TO STA.57+84.37, LT.		
520.49 L.F. X 0.833' = 443.6 S.F.		
STA.57+84.37 TO STA.105+02.70, LT.		
4,718.33 L.F. X 1.666' = 7,860.7 S.F.		
STA.15+00.00 TO STA.29+30.50, RT.		
1,430.50 L.F. X 1.666' = 2,383.2 S.F.		
STA.29+30.50 TO STA.34+49.75, RT.		
519.25 L.F. X 0.833' = 432.5 S.F.		
STA.34+49.75 TO STA.52+97.73, RT.		
1,847.98 L.F. X 1.666' = 3,078.7 S.F.		
STA.52+97.73 TO STA.64+97.73, RT.		
1,200.00 L.F. X 0.833' = 999.6 S.F.		
STA.64+97.73 TO STA.105+01.34, RT.		
4,003.61 L.F. X 1.666' = 6,670.0 S.F.		
DEDUCT FOR BRIDGE		
133.62 L.F. X 3.332' = - 445.2 S.F.		
TOTAL 452,928.9 S.F.		
TOTAL C.Y. 452,928.9 S.F. X 0.833' / 27	13,973.70	
TEMPORARY CONNECTION		
TOTAL S.F. (FROM ITEM 404) = 55,845.5 S.F.		
STA.3+00.00 TO STA.8+51.11, LT. & RT.		
551.11 L.F. X 1.666' = 918.1 S.F.		
STA.8+51.11 TO STA.15+00.00, LT. & RT.		
648.89 L.F. X 3.332' = 2,162.1 S.F.		
TOTAL 58,925.7 S.F.		
TOTAL C.Y. 58,925.7 S.F. X 0.833' / 27	1,817.97	
SPEED CHANGE LANES		
TOTAL S.F. (FROM ITEM 404) = 48,627.3 S.F.		
STA.29+30.50 TO STA.34+49.75, RT. U.S. # 33		
519.25 L.F. X 0.833' = 432.5 S.F.		

PAVEMENT CALCULATIONS

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 301 - BITUMINOUS AGGREGATE BASE (CONTINUED)	CU.YD.	CU.YD.
PAVEMENT (CON'T.)		
SPEED CHANGE LANES (CON'T.)		
STA.34+49.75 TO STA.37+30.50, RT. U.S. # 33		
280.75 L.F. X 1.666'	=	467.7 S.F.
STA.15+00.00 TO STA.19+98.50, LT. U.S. # 33		
498.50 L.F. X 0.833'	=	415.3 S.F.
STA.49+84.37 TO STA.52+63.89, LT. U.S. # 33		
279.52 L.F. X 1.666'	=	465.7 S.F.
STA.52+63.89 TO STA.57+84.37, LT. U.S. # 33		
520.48 L.F. X 0.833'	=	433.6 S.F.
STA.52+97.73 TO STA.64+97.73, RT. U.S. # 33		
1,200.00 L.F. X 0.833'	=	999.6 S.F.
STA.47+77.86 TO STA.49+29.05, RT. STOKES RD.		
151.19 L.F. X 0.833'	=	125.9 S.F.
DEDUCT FOR BRIDGE		
80.39 L.F. X 0.833'	= -	67.0 S.F.
TOTAL		51,900.6 S.F.
TOTAL C.Y.	51,900.6 S.F. X 0.833' / 27	1,601.23
RAMP "A"		
TOTAL S.F. (FROM ITEM 404)	=	21,447.9 S.F.
STA.39+01.36 TO STA.49+87.79, LT.		
1,086.43 L.F. X 0.833'	=	905.0 S.F.
STA.38+28.96 TO STA.49+87.79, RT.		
1,158.83 L.F. X 0.833'	=	965.3 S.F.
N.E. RADIUS RETURN @ STOKES ROAD		
156.18 L.F. X 0.833'	=	130.1 S.F.
S.E. RADIUS RETURN @ STOKES ROAD		
32.52 L.F. X 0.833'	=	27.1 S.F.
TOTAL		23,475.4 S.F.
TOTAL C.Y.	23,475.4 S.F. X 0.833' / 27	724.26
RAMP "B"		
TOTAL S.F. (FROM ITEM 404)	=	38,714.3 S.F.
STA.32+93.22 TO STA.48+83.74, RT.		
1,590.52 L.F. X 0.833'	=	1,324.9 S.F.
STA.32+13.49 TO STA.48+83.74, LT.		
1,670.25 L.F. X 0.833'	=	1,391.3 S.F.
STA.32+13.49 TO STA.34+74.51, LT.		
361.02 L.F. X 0.833'	=	217.4 S.F.
STA.32+05.94 TO STA.33+72.53, LT.		
166.59 L.F. X 0.833'	=	138.8 S.F.
S.E. RADIUS RETURN @ STOKES ROAD		
162.69 L.F. X 0.833'	=	135.5 S.F.
N.E. RADIUS RETURN @ STOKES ROAD		
15.71 L.F. X 0.833'	=	13.1 S.F.
TOTAL		41,935.3 S.F.
TOTAL C.Y.	41,935.3 S.F. X 0.833' / 27	1,293.78

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 301 - BITUMINOUS AGGREGATE BASE (CONTINUED)	CU.YD.	CU.YD.
PAVEMENT (CON'T.)		
RAMP "C"		
TOTAL S.F. (FROM ITEM 404)	=	22,833.8 S.F.
STA.37+32.29 TO STA.51+28.95, LT. & RT.		
1,396.66 S.F. X 1.666'	=	2,326.8 S.F.
TOTAL		25,160.6 S.F.
TOTAL C.Y.	25,160.6 S.F. X 0.833' / 27	776.25
RAMP "D"		
TOTAL S.F. (FROM ITEM 404)	=	26,935.3 S.F.
STA.20+00.00 TO STA.36+80.60, LT.		
1,680.60 L.F. X 0.833'	=	1,399.9 S.F.
STA.20+00.00 TO STA.36+52.03, LT.		
1,652.03 L.F. X 0.833'	=	1,376.1 S.F.
N.W. RADIUS RETURN @ STOKES ROAD		
131.53 L.F. X 0.833'	=	109.6 S.F.
S.W. RADIUS RETURN @ STOKES ROAD		
110.74 L.F. X 0.833'	=	92.2 S.F.
DEDUCT FOR BRIDGE		
133.62 L.F. X 1.666'	= -	222.6 S.F.
TOTAL		29,690.5 S.F.
TOTAL C.Y.	29,690.5 S.F. X 0.833' / 27	916.01
STOKES ROAD		
TOTAL S.F. (FROM ITEM 404)	=	95,859.8 S.F.
STA.40+50.00 TO STA.43+51.69, RT.		
301.69 L.F. X 0.833'	=	251.3 S.F.
STA.45+07.42 TO STA.47+77.86, RT.		
270.44 L.F. X 0.833'	=	225.3 S.F.
STA.49+29.05 TO STA.52+80.81, RT.		
351.76 L.F. X 0.833'	=	293.0 S.F.
STA.54+37.31 TO STA.71+50.00, RT.		
1,712.69 L.F. X 0.833'	=	1,426.7 S.F.
STA.40+50.00 TO STA.52+29.44, LT.		
1,179.44 L.F. X 0.833'	=	982.5 S.F.
STA.53+63.97 TO STA.64+03.29, LT.		
1,039.32 L.F. X 0.833'	=	865.8 S.F.
STA.65+22.33 TO STA.71+50.00, LT.		
627.67 L.F. X 0.833'	=	522.8 S.F.
N.W. RADIUS RETURN @ S.R. # 739		
66.92 L.F. X 0.833'	=	55.7 S.F.
N.E. RADIUS RETURN @ S.R. # 739		
84.96 L.F. X 0.833'	=	70.8 S.F.
DEDUCT FOR BRIDGE		
(297.31 L.F. + 216.92 L.F. / 2) X 1.666'	= -	428.4 S.F.
TOTAL		100,125.3 S.F.
TOTAL C.Y.	100,125.3 S.F. X 0.833' / 27	3,089.05

PAVEMENT CALCULATIONS

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 301 - BITUMINOUS AGGREGATE BASE (CONTINUED)	CU.YD.	CU.YD.
SHOULDERS		
U.S. # 33		
STA.15+00.00 TO STA.29+30.50, RT.		
1,430.50 L.F. X 8.0'	= 11,444.0 S.F.	
1,430.50 L.F. X 4.0'	= 5,722.0 S.F.	
STA.29+30.50 TO STA.37+30.50, RT.		
800.00 L.F. X 4.0'	= 3,200.0 S.F.	
STA.37+30.50 TO STA.48+82.77, RT.		
1,152.27 L.F. X 8.0'	= 9,218.2 S.F.	
1,152.27 L.F. X 4.0'	= 4,609.1 S.F.	
STA.48+82.77 TO STA.52+97.73, RT.		
414.96 L.F. X (23.0' + 9.0' / 2)	= 6,639.4 S.F.	
414.96 L.F. X 4.0'	= 1,659.8 S.F.	
STA.52+97.73 TO STA.64+97.73, RT.		
1,200.0 L.F. X 4.0'	= 4,800.0 S.F.	
STA.64+97.73 TO STA.94+18.68, RT.		
2,920.95 L.F. X 8.0'	= 23,367.7 S.F.	
2,920.95 L.F. X 4.0'	= 11,683.8 S.F.	
STA.94+18.68 TO STA.96+18.68, RT.		
200.0 L.F. X 8.0'	= 1,600.0 S.F.	
200.0 L.F. X (4.0' + 12.0' / 2)	= 1,600.0 S.F.	
STA.96+18.68 TO STA.96+68.66, RT.		
49.98 L.F. X 8.0'	= 399.8 S.F.	
STA.96+68.66 TO STA.105+02.70, RT.		
834.04 L.F. X 8.0'	= 6,672.3 S.F.	
834.04 L.F. X 4.0'	= 3,336.2 S.F.	
STA.15+00.00 TO STA.19+98.50, LT.		
498.50 L.F. X 4.0'	= 1,994.0 S.F.	
STA.19+98.50 TO STA.24+60.27, LT.		
461.77 L.F. X (9.0' + 23.0' / 2)	= 7,388.3 S.F.	
461.77 L.F. X 4.0'	= 1,847.1 S.F.	
STA.24+60.27 TO STA.49+84.37, LT.		
2,524.10 L.F. X 8.0'	= 20,192.8 S.F.	
2,524.10 L.F. X 4.0'	= 10,096.4 S.F.	
STA.49+84.37 TO STA.57+84.37, LT.		
800.0 L.F. X 4.0'	= 3,200.0 S.F.	
STA.57+84.37 TO STA.96+31.34, LT.		
3,846.97 L.F. X 8.0'	= 30,775.8 S.F.	
3,846.97 L.F. X 4.0'	= 15,387.9 S.F.	
STA.96+31.34 TO STA.96+81.32, LT.		
49.98 L.F. X 8.0'	= 399.8 S.F.	
STA.96+81.32 TO STA.98+81.32, LT.		
200.0 L.F. X 8.0'	= 1,600.0 S.F.	
200.0 L.F. X (4.0' + 12.0' / 2)	= 1,600.0 S.F.	
STA.98+81.32 TO STA.105+01.34, LT.		
620.02 L.F. X 8.0'	= 4,960.2 S.F.	
620.02 L.F. X 4.0'	= 2,480.1 S.F.	
DEDUCT FOR BRIDGE		
(133.62 L.F. X 12.0') + (133.62 L.F. X 4.0') + (133.62 L.F. X [11.0' + 14.0' / 2])	= - 3,808.2 S.F.	
TOTAL	= 194,066.5 S.F.	
TOTAL C.Y. 194,066.5 S.F. X 0.583' / 27	4,190.40	

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 301 - BITUMINOUS AGGREGATE BASE (CONTINUED)	CU.YD.	CU.YD.
SHOULDERS (CON'T.)		
TEMPORARY CONNECTION		
STA.3+00.00 TO STA.8+51.11, LT. & RT.		
551.11 L.F. X 8.0' X 2	= 8,817.8 S.F.	
STA.8+51.11 TO STA.11+35.00, LT. & RT.		
283.89 L.F. X 8.0' X 2	= 4,542.2 S.F.	
283.89 L.F. X (2.0' + 24.0' / 2)	= 3,690.6 S.F.	
STA.11+35.00 TO STA.15+00.00, LT. & RT.		
365.0 L.F. X 8.0' X 2	= 5,840.0 S.F.	
365.0 L.F. X 4.0' X 2	= 2,920.0 S.F.	
TOTAL	25,810.6 S.F.	
TOTAL C.Y. 25,810.6 S.F. X 0.583' / 27	557.32	
STATE ROUTE # 739		
STA.10+56.22 TO STA.13+50.00, LT.		
293.78 L.F. X 6.0'	= 1,762.7 S.F.	
STA.10+78.83 TO STA.13+50.00, RT.		
271.17 L.F. X 6.0'	= 1,627.0 S.F.	
TOTAL	3,389.7 S.F.	
TOTAL C.Y. 3,389.7 S.F. X 0.583' / 27	73.19	
SPEED CHANGE LANES		
STA.29+30.50 TO STA.32+73.16, RT., U.S. # 33		
342.66 L.F. X 8.0'	= 2,741.3 S.F.	
STA.32+73.16, U.S. # 33 TO STA.37+32.29, RT. RAMP "B"		
459.13 L.F. X 8.0'	= 3,673.0 S.F.	
STA.15+00.00 TO STA.19+98.50, LT., U.S. # 33		
498.50 L.F. X 8.0'	= 3,988.0 S.F.	
STA.49+87.79, RAMP "A" TO STA.54+36.55, LT., U.S. # 33		
448.76 L.F. X 8.0'	= 3,590.1 S.F.	
STA.54+36.55 TO STA.57+84.37, LT., U.S. # 33		
347.82 L.F. X 8.0'	= 2,782.6 S.F.	
STA.52+97.73 TO STA.64+97.73, RT., U.S. # 33		
1,200.0 L.F. X 8.0'	= 9,600.0 S.F.	
STA.47+77.86 TO STA.49+29.05, RT., STOKES ROAD		
151.19 L.F. X 6.0'	= 907.1 S.F.	
DEDUCT FOR BRIDGE		
80.39 L.F. X 6.0'	= - 482.3 S.F.	
TOTAL	26,799.8 S.F.	
TOTAL C.Y. 26,799.8 S.F. X 0.583' / 27	578.68	

PAVEMENT CALCULATIONS

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 301 - BITUMINOUS AGGREGATE BASE (CONTINUED)	CU.YD.	CU.YD.
SHOULDERS (CON'T.)		
RAMP "A"		
STA.39+01.36 TO STA.49+37.79, LT. 1,036.43 L.F. X 6.0' = 6,218.6 S.F.		
STA.49+37.79 TO STA.49+87.79, LT. 50.0 L.F. X (6.0' + 8.0' / 2) = 350.0 S.F.		
STA.38+28.96 TO STA.49+87.79, RT. 1,158.83 L.F. X 4.0' = 4,635.3 S.F.		
N.E. RADIUS RETURN @ STOKES ROAD 156.18 L.F. X 6.0' = 937.1 S.F.		
S.E. RADIUS RETURN @ STOKES ROAD 32.52 L.F. X 4.0' = 130.1 S.F.		
TOTAL 12,271.1 S.F.		
TOTAL C.Y. 12,271.1 S.F. X 0.583' / 27	264.96	
RAMP "B"		
STA.32+93.22 TO STA.49+50.00, RT. 1,656.78 S.F. X 6.0' = 9,940.7 S.F.		
STA.49+50.00 TO STA.50+00.00, RT. 50.0 L.F. X (6.0' + 8.0' / 2) = 350.0 S.F.		
STA.50+00.00 TO STA.53+00.00, RT. 300.00 L.F. X 8.0' = 2,400.0 S.F.		
STA.32+13.49 TO STA.48+83.74, LT. 1,670.25 L.F. X 4.0' = 6,681.0 S.F.		
STA.32+13.49 TO STA.34+74.51, LT. 261.02 L.F. X 4.0' = 1,044.1 S.F.		
STA.32+05.94 TO STA.33+29.53, LT. 123.59 L.F. X 6.0' = 741.5 S.F.		
N.E. RADIUS RETURN @ STOKES ROAD 15.71 L.F. X 6.0' = 94.3 S.F.		
S.E. RADIUS RETURN @ STOKES ROAD 162.69 L.F. X 6.0' = 976.1 S.F.		
TOTAL 22,227.7 S.F.		
TOTAL C.Y. 22,227.7 S.F. X 0.583' / 27	479.95	
RAMP "C"		
STA.37+32.29 TO STA.37+82.29, RT. 50.0 L.F. X (8.0' + 6.0' / 2) = 350.0 S.F.		
STA.37+82.29 TO STA.47+25.98, RT. 943.69 L.F. X 6.0' = 5,662.1 S.F.		
STA.37+32.29 TO STA.46+99.71, LT. 967.42 L.F. X 4.0' = 3,869.7 S.F.		
STA.47+96.54 TO STA.48+31.09, LT. 34.55 L.F. X (4.0' + 23.0' / 2) = 466.4 S.F.		
STA.48+31.09 TO STA.50+35.68, LT. 204.59 L.F. X 4.0' = 818.4 S.F.		
TOTAL 11,166.6 S.F.		
TOTAL C.Y. 11,166.6 S.F. X 0.583' / 27	241.12	

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 301 - BITUMINOUS AGGREGATE BASE (CONTINUED)	CU.YD.	CU.YD.
SHOULDERS (CON'T.)		
RAMP "D"		
STA.20+00.00 TO STA.23+00.00, LT. 300.0 L.F. X 8.0' = 2,400.0 S.F.		
STA.23+00.00 TO STA.23+50.00, LT. 50.0 L.F. X (8.0' + 6.0' / 2) = 350.0 S.F.		
STA.23+50.00 TO STA.36+80.60, LT. 1,330.60 L.F. X 6.0' = 7,983.6 S.F.		
STA.24+57.88 TO STA.36+52.03, RT. 1,194.15 LF. X 4.0' = 4,776.6 S.F.		
N.W. RADIUS RETURN @ STOKES ROAD 131.53 L.F. X 6.0' = 789.2 S.F.		
S.W. RADIUS RETURN @ STOKES ROAD 110.74 L.F. X 4.0' = 443.0 S.F.		
DEDUCT FOR BRIDGE 133.62 L.F. X 8.0' = - 1,069.0 S.F.		
TOTAL 15,673.4 S.F.		
TOTAL C.Y. 15,673.4 S.F. X 0.583' / 27	338.43	
STOKES ROAD		
STA.40+50.00 TO STA.43+51.69, RT. 301.69 L.F. X 6.0' = 1,810.1 S.F.		
STA.45+07.42 TO STA.46+86.63, RT. 179.21 L.F. X 6.0' = 1,075.3 S.F.		
STA.46+86.63 TO STA.47+77.86, RT. 91.23 L.F. X (19.0' + 4.0' / 2) = 1,049.1 S.F.		
STA.49+29.05 TO STA.52+80.81, RT. 351.76 L.F. X 6.0' = 2,110.6 S.F.		
STA.54+37.31 TO STA.71+50.00, RT. 1,712.69 L.F. X 6.0' = 10,276.1 S.F.		
STA.40+50.00 TO STA.52+29.44, LT. 1,179.44 L.F. X 6.0' = 7,076.6 S.F.		
STA.53+63.97 TO STA.64+03.29, LT. 1,039.32 L.F. X 6.0' = 6,235.9 S.F.		
STA.65+22.33 TO STA.71+50.00, LT. 627.67 L.F. X 6.0' = 3,766.0 S.F.		
N.W. RADIUS RETURN @ STATE ROUTE # 739 66.92 L.F. X 6.0' = 401.5 S.F.		
N.E. RADIUS RETURN @ STATE ROUTE # 739 84.96 L.F. X 6.0' = 509.8 S.F.		
DEDUCT FOR BRIDGE (297.31 L.F. + 216.92 L.F. / 2) X 12.0' = - 3,085.4 S.F.		
TOTAL 31,225.6 S.F.		
TOTAL C.Y. 31,225.6 S.F. X 0.583' / 27	674.24	
GRAND TOTAL - ITEM 301		31,590.54
TOTAL TO GENERAL SUMMARY		31,591

PAVEMENT CALCULATIONS

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 304 - AGGREGATE BASE	CU.YD.	CU.YD.
PAVEMENT		
U.S. # 33		
TOTAL S.F. (FROM ITEM 404) = 425,650.4 S.F.		
TOTAL C.Y. 425,650.4 S.F. X 0.50' / 27	7,882.41	
TEMPORARY CONNECTION		
TOTAL S.F. (FROM ITEM 404) = 55,845.5 S.F.		
TOTAL C.Y. 55,845.5 S.F. X 0.50' / 27	1,034.18	
STATE ROUTE # 739		
TOTAL S.F. (FROM ITEM 404) = 7,910.1 S.F.		
TOTAL C.Y. 7,910.1 S.F. X 0.33' / 27	96.68	
SPEED CHANGE LANES		
TOTAL S.F. (FROM ITEM 404) = 48,627.3 S.F.		
TOTAL C.Y. 48,627.3 S.F. X 0.50' / 27	900.51	
RAMP "A"		
TOTAL S.F. (FROM ITEM 404) = 21,447.9 S.F.		
TOTAL C.Y. 21,447.9 S.F. X 0.50' / 27	397.18	
RAMP "B"		
TOTAL S.F. (FROM ITEM 404) = 38,714.3 S.F.		
TOTAL C.Y. 38,714.3 S.F. X 0.50' / 27	716.93	
RAMP "C"		
TOTAL S.F. (FROM ITEM 404) = 22,833.8 S.F.		
TOTAL C.Y. 22,833.8 S.F. X 0.50' / 27	422.85	
RAMP "D"		
TOTAL S.F. (FROM ITEM 404) = 26,935.3 S.F.		
TOTAL C.Y. 26,935.3 S.F. X 0.50' / 27	498.80	
STOKES ROAD		
TOTAL S.F. (FROM ITEM 404) = 95,859.8 S.F.		
TOTAL C.Y. 95,859.8 S.F. X 0.50' / 27	1,775.18	

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 304 - AGGREGATE BASE (CONTINUED)	CU.YD.	CU.YD.
SHOULDERS		
U.S. # 33		
STA.15+00.00 TO STA.29+30.50, RT.		
1,430.50 L.F. X 8.5' = 12,159.2 S.F.		
1,430.50 L.F. X 4.5' = 6,437.2 S.F.		
STA.29+30.50 TO STA.37+30.50, RT.		
800.00 L.F. X 4.5' = 3,600.0 S.F.		
STA.37+30.50 TO STA.48+82.77, RT.		
1,152.27 L.F. X 8.5' = 9,794.3 S.F.		
1,152.27 L.F. X 4.5' = 5,185.2 S.F.		
STA.48+82.77 TO STA.52+97.73, RT.		
414.96 L.F. X (23.0' + 9.0' / 2) = 6,639.4 S.F.		
414.96 L.F. X 4.5' = 1,867.3 S.F.		
STA.52+97.73 TO STA.64+97.73, RT.		
1,200.00 L.F. X 4.5' = 5,400.0 S.F.		
STA.64+97.73 TO STA.94+18.68, RT.		
2,920.95 L.F. X 8.5' = 24,828.1 S.F.		
2,920.95 L.F. X 4.5' = 13,144.3 S.F.		
STA.94+18.68 TO STA.96+18.68, RT.		
200.00 L.F. X 8.5' = 1,700.0 S.F.		
200.00 L.F. X (4.5' + 12.5' / 2) = 1,700.0 S.F.		
STA.96+18.68 TO STA.96+68.66, RT.		
49.98 L.F. X 8.5' = 424.8 S.F.		
STA.96+68.66 TO STA.105+02.70, RT.		
834.04 L.F. X 8.5' = 7,089.3 S.F.		
834.04 L.F. X 4.5' = 3,753.2 S.F.		
STA.15+00.00 TO STA.19+98.50, LT.		
498.50 L.F. X 4.5' = 2,243.2 S.F.		
STA.19+98.50 TO STA.24+60.27, LT.		
461.77 L.F. X (9.0' + 23.0' / 2) = 7,388.3 S.F.		
461.77 L.F. X 4.5' = 2,078.0 S.F.		
STA.24+60.27 TO STA.49+84.37, LT.		
2,524.10 L.F. X 8.5' = 21,454.8 S.F.		
2,524.10 L.F. X 4.5' = 11,358.4 S.F.		
STA.49+84.37 TO STA.57+84.37, LT.		
800.00 L.F. X 4.5' = 3,600.0 S.F.		
STA.57+84.37 TO STA.96+31.34, LT.		
3,846.97 L.F. X 8.5' = 32,699.2 S.F.		
3,846.97 L.F. X 4.5' = 17,311.4 S.F.		
STA.96+31.34 TO STA.96+81.32, LT.		
49.98 L.F. X 8.5' = 424.8 S.F.		
STA.96+81.32 TO STA.98+81.32, LT.		
200.00 L.F. X 8.5' = 1,700.0 S.F.		
200.00 L.F. X (4.5' + 12.5' / 2) = 1,700.0 S.F.		
STA.98+81.32 TO STA.105+10.34, LT.		
620.02 L.F. X 8.5' = 5,270.2 S.F.		
620.02 L.F. X 4.5' = 2,790.1 S.F.		
DEDUCT FOR BRIDGE		
(133.62 L.F. X 12.5') + (133.62 L.F. X 4.5') + (133.62 L.F. X [11.0' + 14.0' / 2]) = - 3,941.8 S.F.		
TOTAL 209,798.9 S.F.		
TOTAL C.Y. 209,798.9 S.F. X 0.75' / 27	5,827.75	

PAVEMENT CALCULATIONS

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 304 - AGGREGATE BASE (CONTINUED)	CU. YD.	CU. YD.
SHOULDERS (CON'T.)		
TEMPORARY CONNECTION		
STA.3+00.00 TO STA.8+51.11, LT. & RT.		
551.11 L.F. X 8.5' X 2 = 9,368.9 S.F.		
STA.8+51.11 TO STA.11+35.00, LT. & RT.		
283.89 L.F. X 8.5' X 2 = 4,826.1 S.F.		
283.89 L.F. X (2.0' + 24.0' / 2) = 3,690.6 S.F.		
STA.11+35.00 TO STA.15+00.00, LT. & RT.		
365.0 L.F. X 8.5' X 2 = 6,205.0 S.F.		
365.0 L.F. X 4.5' X 2 = 3,285.0 S.F.		
TOTAL 27,375.6 S.F.		
TOTAL C.Y. 27,375.6 S.F. X 0.75' / 27	760.43	
SPEED CHANGE LANES		
STA.29+30.50 TO STA.32+73.16, RT., U.S. # 33		
342.66 L.F. X 8.5' = 2,912.6 S.F.		
STA.32+73.16, U.S. # 33 TO STA.37+32.29, RT. RAMP "B"		
459.13 L.F. X 8.5' = 3,902.6 S.F.		
STA.15+00.00 TO STA.19+98.50, LT., U.S. # 33		
498.50 L.F. X 8.5' = 4,237.2 S.F.		
STA.49+87.79, RAMP "A" TO STA.54+36.55, LT., U.S. # 33		
448.76 L.F. X 8.5' = 3,814.5 S.F.		
STA.54+36.55 TO STA.57+84.37, LT., U.S. # 33		
347.82 L.F. X 8.5' = 2,956.5 S.F.		
STA.52+97.73 TO STA.64+97.73, RT., U.S. # 33		
1,200.00 L.F. X 8.5' = 10,200.0 S.F.		
STA.47+77.86 TO STA.49+29.05, RT., STOKES ROAD		
151.19 L.F. X 6.5' = 982.7 S.F.		
DEDUCT FOR BRIDGE		
80.39 L.F. X 6.5' = - 522.5 S.F.		
TOTAL 28,483.6 S.F.		
TOTAL C.Y. 28,483.6 S.F. X 0.75' / 27	791.21	

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 304 - AGGREGATE BASE (CONTINUED)	CU. YD.	CU. YD.
SHOULDERS (CON'T.)		
RAMP "A"		
STA.39+01.36 TO STA.49+37.79, LT.		
1,036.43 L.F. X 6.5' = 6,736.8 S.F.		
STA.49+37.79 TO STA.49+87.79, LT.		
50.00 L.F. X (6.5' + 8.5' / 2) = 375.0 S.F.		
STA.38+28.96 TO STA.49+87.79, RT.		
1,158.83 L.F. X 4.5' = 5,214.7 S.F.		
N.E. RADIUS RETURN @ STOKES ROAD		
156.18 L.F. X 6.5' = 1,015.2 S.F.		
S.E. RADIUS RETURN @ STOKES ROAD		
32.52 L.F. X 4.5' = 146.3 S.F.		
TOTAL 13,488.0 S.F.		
TOTAL C.Y. 13,488.0 S.F. X 0.75' / 27	374.67	
RAMP "B"		
STA.32+93.22 TO STA.49+50.00, RT.		
1,656.78 L.F. X 6.5' = 10,769.1 S.F.		
STA.49+50.00 TO STA.50+00.00, RT.		
50.00 L.F. X (6.5' + 8.5' / 2) = 375.0 S.F.		
STA.50+00.00 TO STA.53+00.00, RT.		
300.00 L.F. X 8.5' = 2,550.0 S.F.		
STA.32+13.49 TO STA.48+83.74, LT.		
1,670.25 L.F. X 4.5' = 7,516.1 S.F.		
STA.32+13.49 TO STA.34+74.51, LT.		
261.02 L.F. X 4.5' = 1,174.6 S.F.		
STA.32+05.94 TO STA.33+29.53, LT.		
123.59 L.F. X 6.5' = 803.3 S.F.		
N.E. RADIUS RETURN @ STOKES ROAD		
15.71 L.F. X 6.5' = 102.1 S.F.		
S.E. RADIUS RETURN @ STOKES ROAD		
162.69 L.F. X 6.5' = 1,057.5 S.F.		
TOTAL 24,347.7 S.F.		
TOTAL C.Y. 24,347.7 S.F. X 0.75' / 27	676.32	
RAMP "C"		
STA.37+32.29 TO STA.37+82.29, RT.		
50.00 L.F. X (8.5' + 6.5' / 2) = 375.0 S.F.		
STA.37+82.29 TO STA.47+25.98, RT.		
943.69 L.F. X 6.5' = 6,134.0 S.F.		
STA.37+32.29 TO STA.46+99.71, LT.		
967.42 L.F. X 4.5' = 4,353.4 S.F.		
STA.47+96.54 TO STA.48+31.09, LT.		
34.55 L.F. X (4.0' + 23.0' / 2) = 466.4 S.F.		
STA.48+31.09 TO STA.50+35.68, LT.		
204.59 L.F. X 4.5' = 920.7 S.F.		
TOTAL 12,249.5 S.F.		
TOTAL C.Y. 12,249.5 S.F. X 0.75' / 27	340.26	

PAVEMENT CALCULATIONS

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 304 - AGGREGATE BASE (CONTINUED)	CU. YD.	CU. YD.
SHOULDERS (CON'T.)		
RAMP "D"		
STA.20+00.00 TO STA.23+00.00, LT. 300.00 L.F. X 8.5' = 2,550.0 S.F.		
STA.23+00.00 TO STA.23+50.00, LT. 50.00 L.F. X (8.5' + 6.5' / 2) = 375.0 S.F.		
STA.23+50.00 TO STA.36+80.60, LT. 1,330.60 L.F. X 6.5' = 8,648.9 S.F.		
STA.24+57.88 TO STA.36+52.03, RT. 1,194.15 L.F. X 4.5' = 5,373.7 S.F.		
N.W. RADIUS RETURN @ STOKES ROAD 131.53 L.F. X 6.5' = 854.9 S.F.		
S.W. RADIUS RETURN @ STOKES ROAD 110.74 L.F. X 4.5' = 498.3 S.F.		
DEDUCT FOR BRIDGE 133.62 L.F. X 8.5' = - 1,135.8 S.F.		
TOTAL 17,165.0 S.F.		
TOTAL C.Y. 17,165.0 S.F. X 0.75' / 27	476.81	
STOKES ROAD		
STA.40+50.00 TO STA.43+51.69, RT. 301.69 L.F. X 6.5' = 1,961.0 S.F.		
STA.45+07.42 TO STA.46+86.63, RT. 179.21 L.F. X 6.5' = 1,164.9 S.F.		
STA.46+86.63 TO STA.47+77.86, RT. 91.23 L.F. X (19.0' + 4.0' / 2) = 1,049.1 S.F.		
STA.49+29.05 TO STA.52+80.81, RT. 351.76 L.F. X 6.5' = 2,286.4 S.F.		
STA.54+37.31 TO STA.71+50.00, RT. 1,712.69 L.F. X 6.5' = 11,132.5 S.F.		
STA.40+50.00 TO STA.52+29.44, LT. 1,179.44 L.F. X 6.5' = 7,666.4 S.F.		
STA.53+63.97 TO STA.64+03.29, LT. 1,039.32 L.F. X 6.5' = 6,755.6 S.F.		
STA.65+22.33 TO STA.71+50.00, LT. 627.67 L.F. X 6.5' = 4,079.9 S.F.		
N.W. RADIUS RETURN @ STATE ROUTE # 739 66.92 L.F. X 6.5' = 435.0 S.F.		
N.E. RADIUS RETURN @ STATE ROUTE # 739 84.96 L.F. X 6.5' = 552.2 S.F.		
DEDUCT FOR BRIDGE (297.31 L.F. + 216.92 L.F. / 2) X 13.0' = - 3,342.5 S.F.		
TOTAL 33,740.5 S.F.		
TOTAL C.Y. 33,740.5 S.F. X 0.75' / 27	937.24	
GRAND TOTAL - ITEM 304 AGGR. BASE		23,909.41
TOTAL TO GENERAL SUMMARY		23,910

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM SPECIAL - LIME / SOIL STABILIZED SUBGRAGE	SQ.YD.	
U.S. # 33		
TOTAL S.F. (FROM ITEM 404) = 425,650.4 S.F.		
TOTAL S.F. (FROM ITEM 304 - SHOULDERS) = 209,798.9 S.F.		
TOTAL 635,449.3 S.F.		
TOTAL 635,449.3 S.F. ÷ 9	70,605.48	
TEMPORARY CONNECTION		
TOTAL S.F. (FROM ITEM 404) = 55,845.5 S.F.		
TOTAL S.F. (FROM ITEM 304 - SHOULDERS) = 27,375.6 S.F.		
TOTAL 83,221.1 S.F.		
TOTAL 83,221.1 S.F. ÷ 9	9246.79	
STATE ROUTE # 739		
TOTAL S.F. (FROM ITEM 404) = 7,910.1 S.F.		
TOTAL S.F. (FROM ITEM 301 - SHOULDERS) = 3,389.7 S.F.		
293.78 L.F. + 271.17 L.F. X 0.417' = 235.6 S.F.		
TOTAL 11,535.4 S.F.		
TOTAL 11,535.4 S.F. ÷ 9	1281.72	
SPEED CHANGE LANES		
TOTAL S.F. (FROM ITEM 404) = 48,627.3 S.F.		
TOTAL S.F. (FROM ITEM 304 - SHOULDERS) = 28,483.6 S.F.		
TOTAL 77,110.9 S.F.		
TOTAL 77,110.9 S.F. ÷ 9	8567.88	
RAMP "A"		
TOTAL S.F. (FROM ITEM 404) = 21,447.9 S.F.		
TOTAL S.F. (FROM ITEM 304 - SHOULDERS) = 13,488.0 S.F.		
TOTAL 34,935.9 S.F.		
TOTAL 34,935.9 S.F. ÷ 9	3881.77	
RAMP "B"		
TOTAL S.F. (FROM ITEM 404) = 38,714.3 S.F.		
TOTAL S.F. (FROM ITEM 304 - SHOULDERS) = 24,347.7 S.F.		
TOTAL 63,062.0 S.F.		
TOTAL 63,062.0 S.F. ÷ 9	7006.89	

PAVEMENT CALCULATIONS

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM SPECIAL - LIME / SOIL STABILIZED SUBGRADE (CONTINUED)	SQ.YD.	SQ. YD.
RAMP "C"		
TOTAL S.F. (FROM ITEM 404) = 22,833.8 S.F.		
TOTAL S.F. (FROM ITEM 304 - SHOULDERS) = 12,249.5 S.F.		
TOTAL 35,083.3 S.F.		
TOTAL 35,083.3 S.F. ÷ 9	3898.15	
RAMP "D"		
TOTAL S.F. (FROM ITEM 404) = 26,935.3 S.F.		
TOTAL S.F. (FROM ITEM 304 - SHOULDERS) = 17,165.0 S.F.		
TOTAL 44,100.3 S.F.		
TOTAL 44,100.3 S.F. ÷ 9	4900.04	
STOKES ROAD		
TOTAL S.F. (FROM ITEM 404) = 95,859.8 S.F.		
TOTAL S.F. (FROM ITEM 304 - SHOULDERS) = 33,740.5 S.F.		
TOTAL 129,600.3 S.F.		
TOTAL 129,600.3 S.F. ÷ 9	14,400.04	
GRAND TOTAL - ITEM SPECIAL	123,788.76	
TOTAL TO GENERAL SUMMARY		123,789
ITEM SPECIAL - HYDRATED LIME (Say 36 lbs. / Sq.Yd.) 123,789 Sq.Yd. × 36/lbs = 4,456,404 lbs ÷ 2000 = 2,228.2 Tons Use 2,230 Tons Total to Gen. Sum.		
ITEM 616 - WATER (Say 2.7 gal. / Sq.Yd.) 123,789 Sq.Yd. × 2.7 gal. = 334,230.3 gal. ÷ 1000 = 334.2 M Gal. Use 335 M Gal. Total to Gen. Sum.		

DESCRIPTION		
U.S. # 33		
TOTAL S.F. (FROM ITEM 404) = 425,650.4 S.F.		
STA.15+00.00 TO STA.29+30.50, RT. 1,430.50 L.F. X 10.0' = 14,305.0 S.F. 1,430.50 L.F. X 6.0' = 8,583.0 S.F.		
STA.29+30.50 TO STA.37+30.50, RT. 800.00 L.F. X 6.0' = 4,800.0 S.F.		
STA.37+30.50 TO STA.48+82.77, RT. 1,152.27 L.F. X 10.0' = 11,522.7 S.F. 1,152.27 L.F. X 6.0' = 6,913.6 S.F.		
STA.48+82.77 TO STA.52+97.73, RT. 414.96 L.F. X (23.0' + 9.0' / 2) = 6,639.4 S.F. 414.96 L.F. X 6.0' = 2,489.8 S.F.		
STA.52+97.73 TO STA.64+97.73, RT. 1,200.00 L.F. X 6.0' = 7,200.0 S.F.		
STA.64+97.73 TO STA.94+18.68, RT. 2,920.95 L.F. X 10.0' = 29,209.5 S.F. 2,920.95 L.F. X 6.0' = 17,525.7 S.F.		
STA.94+18.68 TO STA.96+18.68, RT. 200.00 L.F. X 10.0' = 2,000.0 S.F. 200.00 L.F. X (4.5' + 12.5' / 2) = 1,700.0 S.F.		
STA.96+18.68 TO STA.96+68.66, RT. 49.98 L.F. X 10.0' = 499.8 S.F.		
STA.96+68.66 TO STA.105+02.70, RT. 834.04 L.F. X 10.0' = 8,340.4 S.F. 834.04 L.F. X 6.0' = 5,004.2 S.F.		
STA.15+00.00 TO STA.19+98.50, LT. 498.50 L.F. X 6.0' = 2,991.0 S.F.		
STA.19+98.50 TO STA.24+60.27, LT. 461.77 L.F. X (9.0' + 23.0' / 2) = 7,388.3 S.F. 461.77 L.F. X 6.0' = 2,770.6 S.F.		
STA.24+60.27 TO STA.49+84.37, LT. 2,524.10 L.F. X 10.0' = 25,241.0 S.F. 2,524.10 L.F. X 6.0' = 15,144.6 S.F.		
STA.49+84.37 TO STA.57+84.37, LT. 800.00 L.F. X 6.0' = 4,800.0 S.F.		
STA.57+84.37 TO STA.96+31.34, LT. 3,846.97 L.F. X 10.0' = 38,469.7 S.F. 3,846.97 L.F. X 6.0' = 23,081.8 S.F.		
STA.96+31.34 TO STA.96+81.32, LT. 49.98 L.F. X 10.0' = 499.8 S.F.		
STA.96+81.32 TO STA.98+81.32, LT. 200.00 L.F. X 10.0' = 2,000.0 S.F. 200.00 L.F. X (4.5' + 12.5' / 2) = 1,700.0 S.F.		
STA.98+81.32 TO STA.105+01.34, LT. 620.02 L.F. X 10.0' = 6,200.2 S.F. 620.02 L.F. X 6.0' = 3,720.1 S.F.		
DEDUCT FOR BRIDGE (133.62 L.F. X 14.0') + (133.62 L.F. X 6.0' + (133.62 L.F. X [12.5' + 15.5' / 2]) = 4,543.1 S.F.		
TOTAL 681,847.5 S.F.		
TOTAL C.Y. 681,847.2 S.F. ÷ 9		

CALC. BY <i>AK</i> DATE <i>5-20-85</i>	UNI-33-0.28	OHIO	
CHKD BY <i>RTH</i> DATE <i>10-4-85</i>		FHWA REGION 5	

[illegible]

MISCELLANEOUS CALCULATIONS

ITEM 670 - DITCH EROSION PROTECTION

SHEET # 53

1-EC STA. 9+00 TO STA. 10+00, LT.
(100.0 L.F. X 7.5')/9 = 84 S.Y.

2-EC STA. 13+00 TO 15+00, RT.
(200.0 L.F. X 7.5')/9 = 167 S.Y.

SHEET # 58

1-EC STA. 16+00 TO STA. 18+00, LT.
(200.0 L.F. X 7.5')/9 = 167 S.Y.

2-EC STA. 15+00 TO STA. 20+00, RT.
(408.0 L.F. X 7.5') + (101.0 L.F. X 11.0')/9 = 464 S.Y.

SHEET # 59

1-EC STA. 21+00 TO STA. 22+05, LT.
(84.0 L.F. X 7.5')/9 = 70 S.Y.

2-EC STA. 20+00 TO STA. 21+14, RT.
(96.0 L.F. X 7.5')/9 = 80 S.Y.

3-EC STA. 22+32 TO STA. 27+00, RAMP "D", LT.
(243.0 L.F. X 11.0') + (100.0 L.F. X 14.5')
+ (100.0 L.F. X 18.0')/9 = 658 S.Y.

4-EC STA. 21+30 TO STA. 25+12, RT.
(215.0 L.F. X 35.5')/9 = 849 S.Y.

5-EC STA. 23+55 TO STA. 25+05, C/L
(150.0 L.F. X 7.5')/9 = 125 S.Y.

6-EC STA. 25+19 TO STA. 26+69, C/L
(150.0 L.F. X 7.5')/9 = 125 S.Y.

7-EC STA. 25+12 TO STA. 30+00, RT.
(90.0 L.F. X 35.5') + (101.0 L.F. X 32.0')
+ (203.0 L.F. X 25.0')/9 = 1278 S.Y.

8-EC STA. 26+48 TO STA. 27+00, RAMP "D", RT.
(54.0 L.F. X 7.5')/9 = 45 S.Y.

9-EC STA. 28+12 TO STA. 30+00, LT.
(185.0 L.F. X 14.5')/9 = 299 S.Y.

SHEET # 60

1-EC STA. 30+00 TO STA. 31+00, LT.
(100.0 L.F. X 14.5')/9 = 162 S.Y.

2-EC STA. 30+00 TO STA. 33+00, RT.
(100.0 L.F. X 11.0') + (205.0 L.F. X 25.0')/9 = 692 S.Y.

3-EC STA. 33+00 TO STA. 38+00, LT.
(500.0 L.F. X 14.5')/9 = 806 S.Y.

4-EC STA. 33+07 TO STA. 34+57, C/L
(150.0 L.F. X 7.5')/9 = 125 S.Y.

SHEET # 61

1-EC STA. 42+07 TO STA. 43+57, C/L
(150.0 L.F. X 7.5')/9 = 125 S.Y.

2-EC STA. 42+00 TO STA. 43+00, RT.
(103.0 L.F. X 7.5')/9 = 86 S.Y.

3-EC STA. 45+00 TO STA. 50+00, RAMP "B", RT.
(470.0 L.F. X 25.0')/9 = 1306 S.Y.

DITCH EROSION PROTECTION (CON'T)

SHEET # 62

1-EC STA. 50+00 TO STA. 51+00, RT.
(100.0 L.F. X 25.0')/9 = 278 S.Y.

2-EC STA. 51+07 TO STA. 52+57, C/L
(150.0 L.F. X 7.5')/9 = 125 S.Y.

3-EC STA. 51+00 TO STA. 60+00, RT.
(815.0 L.F. X 25.0') + (101.0 L.F. X 14.5')/9 = 2427 S.Y.

4-EC STA. 56+00 TO STA. 60+00, LT.
(400.0 L.F. X 7.5')/9 = 334 S.Y.

SHEET # 63

1-EC STA. 60+00 TO STA. 70+00, LT.
(109.0 L.F. X 7.5') + (892.0 L.F. X 28.5')/9 = 2915 S.Y.

2-EC STA. 60+22 TO STA. 61+72, C/L
(150.0 L.F. X 7.5')/9 = 125 S.Y.

3-EC STA. 60+00 TO STA. 64+00, RT.
(205.0 L.F. X 11.0') + (102.0 L.F. X 7.5')/9 = 336 S.Y.

4-EC STA. 69+07 TO STA. 70+00, C/L
(93.0 L.F. X 7.5')/9 = 78 S.Y.

5-EC STA. 69+07 TO STA. 70+00, RT.
(93.0 L.F. X 7.5')/9 = 78 S.Y.

6-EC STA. 67+43 TO STA. 68+93, RT.
(100.0 L.F. X 7.5')/9 = 125 S.Y.

SHEET # 64

1-EC STA. 70+00 TO STA. 70+57, C/L
(57.0 L.F. X 7.5')/9 = 48 S.Y.

2-EC STA. 70+00 TO STA. 80+00, LT.
(897.0 L.F. X 25.0') + (99.0 L.F. X 28.5')/9 = 2806 S.Y.

3-EC STA. 74+00 TO STA. 75+00, RT.
(102.0 L.F. X 7.5')/9 = 85 S.Y.

4-EC STA. 78+00 TO STA. 79+00, RT.
(102.0 L.F. X 7.5')/9 = 85 S.Y.

5-EC STA. 70+00 TO STA. 70+57, RT.
(57.0 L.F. X 7.5')/9 = 48 S.Y.

SHEET # 65

1-EC STA. 80+00 TO STA. 90+00, LT.
(1002.0 L.F. X 25.0')/9 = 2784 S.Y.

2-EC STA. 85+43 TO STA. 86+93, C/L
(150.0 L.F. X 7.5')/9 = 125 S.Y.

SHEET # 66

1-EC STA. 90+00 TO STA. 100+00, LT.
(603.0 L.F. X 25.0') + (403.0 L.F. X 21.5')/9 = 2638 S.Y.

2-EC STA. 94+43 TO STA. 95+93, C/L
(150.0 L.F. X 7.5')/9 = 125 S.Y.

3-EC STA. 96+00 TO STA. 100+00, RT.
(404.0 L.F. X 18.0')/9 = 808 S.Y.

SHEET # 67

1-EC STA. 100+43 TO STA. 101+93, C/L
(150.0 L.F. X 7.5')/9 = 125 S.Y.

2-EC STA. 102+07 TO STA. 103+57, C/L
(150.0 L.F. X 7.5')/9 = 125 S.Y.

DITCH EROSION PROTECTION (CON'T)

3-EC STA. 100+00 TO STA. 105+02, LT.
(502.0 L.F. X 21.5')/9 = 1200 S.Y.

4-EC STA. 100+00 TO STA. 105+02, RT.
(502.0 L.F. X 18.0')/9 = 1004 S.Y.

SHEET # 99

1-EC STA. 40+00 TO STA. 32+88, RAMP "B", RT.
(180.0 L.F. X 7.5') + (205.0 L.F. X 11.0')/9 = 401 S.Y.

2-EC STA. 42+00 TO STA. 44+94, LT.
(296.0 L.F. X 7.5')/9 = 247 S.Y.

3-EC STA. 49+00, RAMP "C", LT. TO STA. 46+00, RT.
(74.0 L.F. X 7.5')/9 = 62 S.Y.

4-EC STA. 32+88 TO STA. 35+00, RAMP "B", RT.
(114.0 L.F. X 32.0') + (106.0 L.F. X 35.5')/9 = 824 S.Y.

SHEET # 100

1-EC STA. 48+00 TO STA. 37+00, RAMP "C", RT.
(110.0 L.F. X 7.5')/9 = 92 S.Y.

2-EC STA. 50+58 TO STA. 51+80, LT.
(122.0 L.F. X 7.5')/9 = 102 S.Y.

3-EC STA. 52+00 TO STA. 39+00, RAMP "A", RT.
(63.0 L.F. X 7.5')/9 = 53 S.Y.

4-EC STA. 37+00, RAMP "D" TO STA. 55+00, LT.
(160.0 L.F. X 7.5')/9 = 134 S.Y.

5-EC STA. 36+00, RAMP "A", LT. TO STA. 55+00, RT.
(96.0 L.F. X 7.5')/9 = 80 S.Y.

SHEET # 101

1-EC STA. 58+00 TO STA. 59+00, RT.
(102.0 L.F. X 7.5')/9 = 85 S.Y.

2-EC STA. 61+00 TO STA. 63+00, LT.
(215.0 L.F. X 7.5')/9 = 180 S.Y.

3-EC STA. 62+00 TO STA. 63+00, RT.
(98.0 L.F. X 7.5')/9 = 82 S.Y.

SHEET # 102

1-EC STA. 63+00 TO STA. 64+00, LT.
(107.0 L.F. X 7.5')/9 = 90 S.Y.

2-EC STA. 63+00 TO STA. 64+00, RT.
(97.0 L.F. X 7.5')/9 = 81 S.Y.

3-EC STA. 64+00 TO STA. 67+00, RT.
(196.0 L.F. X 7.5') + (94.0 L.F. X 21.5')/9 = 388 S.Y.

SHEET # 114

1-EC STA. 10+64 TO STA. 11+89, LT.
(128.0 L.F. X 14.5')/9 = 207 S.Y.

SHEET # 120

2-EC STA. 1+00 TO STA. 3+63, LT. & RT.
(263.0 L.F. X 25.0')/9 = 731 S.Y.

SHEET # 149

1-EC STA. 27+00 TO STA. 32+00, LT.
(405.0 L.F. X 14.5') + (99.0 L.F. X 11.0')/9 = 774 S.Y.

2-EC STA. 27+00 TO STA. 27+93, RT.
(96.0 L.F. X 7.5')/9 = 80 S.Y.

3-EC STA. 28+07 TO STA. 32+00, RT.
(96.0 L.F. X 7.5') + (302.0 L.F. X 11.0')/9 = 450 S.Y.

MISCELLANEOUS CALCULATIONS

DITCH EROSION PROTECTION (CON'T)

SHEET # 134	
1-EC	STA. 35+00 TO STA. 41+00, RT. (664.0 L.F. X 32.0')/9 = 2361 S.Y.
2-EC	STA. 39+00 TO STA. 40+00, LT. (103.0 L.F. X 7.5')/9 = 86 S.Y.
4-EC	STA. 41+00 TO STA. 45+00, RT. (303.0 L.F. X 28.5')+(100.0 L.F. X 25.0')/9 = 1238 S.Y.

ITEM 601- ROCK CHANNEL PROTECTION,TYPE A, W/FILTER

SHEET # 168	
1-D	STA. 43+80 TO STA. 45+03, LT. & RT. (19.0 L.F. X 11.75' X 3.0')/27 = 24.8 C.Y.

ITEM 601- ROCK CHANNEL PROTECTION,TYPE B, W/FILTER

SHEET # 166	
2-D	STA. 58+76 TO STA. 60+00, RT. (20.0 L.F. X 12.5') + (25.0 L.F. X 11.75') X 2.5'/27 = 51 C.Y.

SHEET # 170	
1-D	STA. 64+00, LT. (12.0 L.F. X 8.0' X 2.5')/27 = 8.9 C.Y.

ITEM 601- ROCK CHANNEL PROTECTION,TYPE C, W/FILTER

SHEET # 59	
1-EC	STA. 21+00 TO STA. 22+05, LT. (20.0 L.F. X 7.5' X 1.5')/27 = 8.4 C.Y.
2-EC	STA. 20+00 TO STA. 21+14, RT. (20.0 L.F. X 7.5' X 1.5')/27 = 8.4 C.Y.
3-EC	STA. 22+32 TO STA. 27+00, RAMP "D", LT. (20.0 L.F. X 11.0' X 1.5')/27 = 12.2 C.Y.
4-EC	STA. 21+30 TO STA. 25+12, RT. (70.0 L.F. X 22.0') + (103.0 L.F. X 32.0') X 1.5'/27 = 268.7 C.Y.
7-EC	STA. 25+12 TO STA. 30+00, RT. (100.0 L.F. X 22.0' X 1.5')/27 = 122.3 C.Y.
1-D	STA. 25+12, RT. (6.0 L.F. X 4.0' X 1.5')/27 = 1.4 C.Y.

SHEET # 60	
1-D	STA. 33+00, RT. (8.0 L.F. X 4.0' X 1.5')/27 = 1.8 C.Y.

SHEET # 62	
1-D	STA. 51+00, RT. (10.0 L.F. X 4.0' X 1.5')/27 = 2.3 C.Y.

SHEET # 63	
1-D	STA. 69+00, LT. (6.0 L.F. X 4.0' X 1.5')/27 = 1.4 C.Y.
3-EC	STA. 60+00 TO STA. 64+00, RT. (102.0 L.F. X 10.0' X 1.5')/27 = 56.7 C.Y.

SHEET # 65	
1-D	STA. 87+00, LT. (11.0 L.F. X 4.0' X 1.5')/27 = 2.5 C.Y.

ROCK CHANNEL PROTECTION, TYPE C, W/FILTER (CON'T)

SHEET # 99	
2-D	STA. 49+00, RAMP "C", RT. (6.0 L.F. X 4.0' X 1.5')/27 = 1.4 C.Y.

SHEET # 102	
3-EC	STA. 64+00 TO STA. 67+00, RT. (15.0 L.F. X 10.0' X 1.5')/27 = 8.4 C.Y.

SHEET # 117	
1-D	STA. 32+13 TO STA. 33+01 (10.0 L.F. X 4.0' X 1.5')/27 = 2.3 C.Y.

SHEET # 120	
1-EC	STA. 0+00 TO STA. 1+00,LT. & RT. (100.0 L.F. X 20.0 X 1.5')/27 = 111.1 C.Y.

SHEET # 134	
3-EC	STA. 41+00 TO STA. 42+00, LT. (105.0 L.F. X 10.0' X 1.5')/27 = 58.3 C.Y.

5-EC	STA. 38+70,RT. (28.0 L.F. X 10.0' X 1.5')/27 = 15.6 C.Y.
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SHEET # 167	
1-D	STA. 96+00, LT. (11.0 L.F. X 8.0' X 1.5')/27 = 4.9 C.Y.

SHEET # 168	
2-D	STA. 53+45 TO STA. 54+04, LT. & RT. (7.0 L.F. X 4.0' X 1.5')/27 = 1.6 C.Y.

SHEET # 169	
1-D	STA. 41+00, RT. (7.0 L.F. X 4.0' X 1.5')/27 = 1.6 C.Y.

SHEET # 169	
1-D	STA. 48+00 TO STA. 48+30, LT. & RT. (6.0 L.F. X 4.0' X 1.5')/27 = 1.4 C.Y.

SHEET # 170	
1-D	STA. 10+70 TO STA. 10+80, LT. & RT. (6.0 L.F. X 4.0' X 1.5')/27 = 1.4 C.Y.

ITEM 611 - REINF. CONCRETE APPROACH SLABS (T=13")

SHEET # 59	
1-P	STA. 20+96.19 TO STA. 21+16.19, U.S. # 33, LT. & RT. (42.06' X 20.0') + ([71.07' + 71.50']/2] X 20.0')/9 = 252 S.Y.

2-P	STA. 22+09.81 TO STA. 22+29.81, U.S. #33, LT. & RT. (42.06' X 20.0') + ([73.58' X 74.03']/2] X 20.0')/9 = 258 S.Y.
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SHEET # 100	
1-P	STA. 48+42.89 TO STA. 48+62.89,STOKES ROAD, LT. & RT. (59.29' + 58.18'/2) X 20.0'/9 = 131 S.Y.

2-P	STA. 51+20.11 TO STA. 51+40.11,STOKES ROAD, LT. & RT. (57.69' X 20.0')/9 = 129 S.Y.
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ITEM 301 - 7" BITUMINOUS AGGREGATE BASE

SHEET # 66	
1-P	STA. 96+50, LT. & RT. (1692 S.F. X 7/12')/27 = 37 C.Y.

ITEM 304 - VAR. AGGREGATE BASE

SHEET # 66	
1-P	STA. 96+50, LT. & RT. (1692 S.F. X 9/12')/27 = 47 C.Y.

ITEM 304 - 6" AGGREGATE BASE

SHEET # 99	
1-P	STA. 41+14, LT. (920 S.F. X 6/12')/27 = 18 C.Y.

SHEET # 101	
1-P	STA. 61+50, RT. (944 S.F. X 6/12')/27 = 18 C.Y.

SHEET # 102	
1-P	STA. 70+87, LT. (800 S.F. X 6/12')/27 = 15 C.Y.

SHEET # 117	
1-P	STA. 33+00 TO STA. 34+20, LT. & RT. (6296 S.F. X 8/12')/27 = 156 C.Y.
2-P	STA. 25+75 TO STA. 27+17, LT. & RT. (6968 S.F. X 8/12')/27 = 173 C.Y.
3-P	STA. 26+29, LT. (440.0 S.F. X 8/12')/27 = 11 C.Y.

ITEM 404 - 2" ASPHALT CONCRETE

SHEET # 99	
1-P	STA. 41+14, LT. (920 S.F. X 2/12')/27 = 6 C.Y.

SHEET # 117	
1-P	STA. 33+00 TO STA. 34+20, LT. & RT. (6296 S.F. X 2/12')/27 = 39 C.Y.
2-P	STA. 25+75 TO STA. 27+17, LT. & RT. (6968 S.F. X 2/12')/27 = 44 C.Y.
3-P	STA. 26+29, LT. (440.0 S.F. X 2/12')/27 = 3 C.Y.

ITEM 409 - BITUMINOUS MATERIAL

SHEET # 66	
1-P	STA. 96+50, LT. & RT. (1692 S.F. /9 X 0.30) = 57 GAL.

ITEM 409 - COVER AGGREGATE

SHEET # 66	
1-P	STA. 96+50, LT. & RT. (1692 S.F. /9 X 0.008)/27 = 1 C.Y.

MISCELLANEOUS CALCULATIONS

ITEM 408 - PRIME COAT

SHEET # 99

1-P STA. 41+14, LT.
(920 S.F./9) X (0.4 GAL./S.Y.) = 41 GAL.

SHEET # 117

1-P STA. 33+00 TO STA. 34+20, LT. & RT.
(6296 S.F./9) X (0.4 GAL./S.Y.) = 280 GAL.

2-P STA. 25+75 TO STA. 27+17, LT. & RT.
(6968 S.F./9) X (0.4 GAL./S.Y.) = 310 GAL.

3-P STA. 26+29, LT.
(440 S.F./9) X (0.4 GAL./S.Y.) = 20 GAL.

ITEM 660 - SODDING

SHEET # 100

6-EC STA. 48+33, LT.
[(6.0 L.F. X 5.5') + (10.0 L.F. X 6.75') +
(10.0 L.F. X 8.25') + (34.0 L.F. X 9.0')] / 9 = 55 S.Y.

7-EC STA. 48+58, RT.
[(6.0 L.F. X 5.5') + (10.0 L.F. X 6.75') +
(10.0 L.F. X 8.25') + (38.0 L.F. X 9.0')] / 9 = 59 S.Y.

8-EC STA. 51+31, LT.
[(6.0 L.F. X 5.5') + (10.0 L.F. X 6.75') +
(10.0 L.F. X 8.25') + (24.0 L.F. X 9.0')] / 9 = 45 S.Y.

9-EC STA. 51+56, RT.
[(6.0 L.F. X 5.5') + (10.0 L.F. X 6.75') +
(10.0 L.F. X 8.25') + (44.0 L.F. X 9.0')] / 9 = 65 S.Y.

CALC. BY DATE 10-1-85	UNI-33-0.28	OHIO	
CHKD BY DATE 12-2-85		FHWA REGION 5	

GENERAL SUMMARY

CALC. BY <i>RTH</i> DATE <i>10-1-85</i>	UNI-33-0.28	OHIO	
CHKD BY <i>SHG</i> DATE <i>12-7-85</i>		FHWA REGION 5	

GENERAL SUMMARY

CALC. BY DATE	UNI-33-0.28	OHIO	47 224
		FHWA REGION 5	
CHKD BY DATE			

GENERAL SUMMARY

CALC. <i>RJH</i> BY DATE <i>10-1-85</i>	UNI-33-0.28	OHIO	48 22
CHKD. BY <i>ENC</i> DATE <i>10-2-85</i>		FHWA REGION 5	

GENERAL SUMMARY

SUPERELEVATION TABLES

CALC BY
DATE
CHKD BY
DATE

UNI-33-0.28

OHIO

FHWA
REGION 5

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PROPOSED U.S. # 33

STATION	LT. E/P	49.0' LT.	P.G. 25.0' LT.	P.G. 25.0' RT.	49.0' RT.
15+00	1072.92	1073.03	1073.22	1073.22	1073.41
15+25	1072.53	1072.73	1073.04	1073.04	1073.35
15+37.44	1072.34	1072.58	1072.95	1072.95	1073.32
15+50	1072.24	1072.49	1072.86	1072.86	1073.23
15+75	1072.05	1072.31	1072.68	1072.68	1073.05
16+00	1071.87	1072.13	1072.50	1072.50	1072.87
16+25	1071.68	1071.95	1072.32	1072.32	1072.69
16+50	1071.49	1071.77	1072.14	1072.14	1072.51
16+75	1071.30	1071.59	1071.96	1071.96	1072.33
17+00	1071.11	1071.41	1071.78	1071.78	1072.15
17+25	1070.92	1071.23	1071.60	1071.60	1071.97
17+50	1070.74	1071.05	1071.42	1071.42	1071.79
17+75	1070.55	1070.87	1071.24	1071.24	1071.61
18+00	1070.36	1070.69	1071.06	1071.06	1071.43
18+25	1070.17	1070.51	1070.88	1070.88	1071.25
18+50	1069.98	1070.33	1070.70	1070.70	1071.07
18+75	1069.80	1070.15	1070.52	1070.52	1070.89
19+00	1069.61	1069.97	1070.34	1070.34	1070.71
19+25	1069.42	1069.79	1070.16	1070.16	1070.53
19+50	1069.23	1069.61	1069.98	1069.98	1070.35
19+75	1069.04	1069.43	1069.80	1069.80	1070.17
20+00	1068.86	1069.25	1069.62	1069.62	1069.99
20+25			1069.44	1069.44	1069.81
20+50			1069.26	1069.26	1069.63
20+75			1069.08	1069.08	1069.45
21+00			1068.90	1068.90	1069.27
21+25			1068.72	1068.72	1069.09
21+50			1068.54	1068.54	1068.91
21+75			1068.36	1068.36	1068.73
22+00			1068.18	1068.18	1068.55
22+25			1068.00	1068.00	1068.37
22+50			1067.82	1067.82	1068.19
22+75			1067.64	1067.64	1068.01
23+00			1067.46	1067.46	1067.83
23+25			1067.29	1067.29	1067.66
23+50			1067.14	1067.14	1067.51
23+75			1067.02	1067.02	1067.39
24+00			1066.91	1066.91	1067.28
24+25			1066.83	1066.83	1067.20
24+50			1066.76	1066.76	1067.13
24+75			1066.72	1066.72	1067.09
25+00		1066.33	1066.70	1066.70	1067.07
25+25		1066.33	1066.70	1066.70	1067.07
25+50		1066.35	1066.72	1066.72	1067.09
25+75		1066.40	1066.77	1066.77	1067.14
26+00		1066.46	1066.83	1066.83	1067.20
26+25		1066.55	1066.92	1066.92	1067.29
26+50		1066.65	1067.02	1067.02	1067.39
26+75		1066.78	1067.15	1067.15	1067.52
27+00		1066.93	1067.30	1067.30	1067.67
27+25		1067.09	1067.46	1067.46	1067.83
27+50		1067.25	1067.62	1067.62	1067.99
27+75		1067.41	1067.78	1067.78	1068.15
28+00		1067.57	1067.94	1067.94	1068.31
28+25		1067.73	1068.10	1068.10	1068.47
28+50		1067.89	1068.26	1068.26	1068.63
28+75		1068.05	1068.42	1068.42	1068.79
29+00		1068.21	1068.58	1068.58	1068.95
29+25		1068.37	1068.74		
29+50		1068.61	1068.98		
29+75		1068.69	1069.06		
30+00		1068.85	1069.22		
30+25		1069.02	1069.39		
30+50		1069.17	1069.54		
30+75		1069.33	1069.70		
31+00		1069.49	1069.86		
31+25		1069.65	1070.02		
31+50		1069.81	1070.18		
31+75		1069.97	1070.34		
32+00		1070.13	1070.50		
32+25		1070.29	1070.66		
32+50		1070.45	1070.82		
32+75		1070.61	1070.98		
33+00		1070.77	1071.14		
33+25		1070.93	1071.30		
33+50		1071.09	1071.46		
33+75		1071.25	1071.62		

PROPOSED U.S. # 33 (CONTINUED)

STATION	49.0' LT.	P.G. 25.0' LT.	P.G. 25.0' RT.	49.0' RT.	RT. E/P
34+00	1071.41	1071.78			
34+25	1071.57	1071.94			
34+50	1071.73	1072.10			
34+75	1071.89	1072.26			
35+00	1072.05	1072.42			
35+25	1072.21	1072.58			
35+50	1072.37	1072.74			
35+75	1072.53	1072.90			
36+00	1072.69	1073.06			
36+25	1072.85	1073.22			
36+50	1073.01	1073.38			
36+75	1073.17	1073.54			
37+00	1073.33	1073.70			
37+25	1073.49	1073.86			
37+50	1073.65	1074.02			
37+75	1073.81	1074.18			
38+00	1073.97	1074.34			
38+25	1074.13	1074.50			
38+50	1074.29	1074.66			
38+75	1074.45	1074.82			
39+00	1074.61	1074.98	1074.98	1075.37	
39+25	1074.77	1075.14	1075.14	1075.51	
39+50	1074.93	1075.30	1075.30	1075.67	
39+75	1075.09	1075.46	1075.46	1075.83	
40+00	1075.25	1075.62	1075.62	1075.99	
40+25	1075.41	1075.78	1075.78	1076.15	
40+50	1075.57	1075.94	1075.94	1076.31	
40+75	1075.73	1076.10	1076.10	1076.47	
41+00	1075.89	1076.26	1076.26	1076.63	
41+25	1076.05	1076.42	1076.42	1076.79	
41+50	1076.21	1076.58	1076.58	1076.95	
41+75	1076.37	1076.74	1076.74	1077.11	
42+00	1076.53	1076.90	1076.90	1077.27	
42+25	1076.69	1077.06	1077.06	1077.43	
42+50	1076.85	1077.22	1077.22	1077.59	
42+75	1077.01	1077.38	1077.38	1077.75	
43+00	1077.17	1077.54	1077.54	1077.91	
43+25	1077.33	1077.70	1077.70	1078.07	
43+50	1077.49	1077.86	1077.86	1078.23	
43+75	1077.65	1078.02	1078.02	1078.39	
44+00	1077.81	1078.18	1078.18	1078.55	
44+25	1077.97	1078.34	1078.34	1078.71	
44+50	1078.13	1078.50	1078.50	1078.87	
44+75	1078.29	1078.66	1078.66	1079.03	
45+00	1078.45	1078.82	1078.82	1079.19	
45+25	1078.61	1078.98	1078.98	1079.35	
45+50	1078.77	1079.14	1079.14	1079.51	
45+75	1078.93	1079.30	1079.30	1079.67	
46+00	1079.09	1079.46	1079.46	1079.83	
46+25	1079.25	1079.62	1079.62	1079.99	
46+50	1079.41	1079.78	1079.78	1080.15	
46+75	1079.57	1079.94	1079.94	1080.31	
47+00	1079.73	1080.10	1080.10	1080.47	
47+25	1079.89	1080.26	1080.26	1080.63	
47+50	1080.05	1080.42	1080.42	1080.79	
47+75	1080.21	1080.58	1080.58	1080.95	
48+00	1080.37	1080.74	1080.74	1081.11	
48+25	1080.53	1080.90			
48+50	1080.69	1081.06			
48+75	1080.85	1081.22			
49+00	1081.01	1081.38			
53+00		1083.94	1084.31	1084.70	
53+25		1084.10	1084.47	1084.86	
53+50		1084.26	1084.63	1085.01	
53+75		1084.42	1084.79	1085.16	
54+00		1084.58	1084.95	1085.31	
54+25		1084.74	1085.11	1085.46	
54+50		1084.90	1085.27	1085.62	
54+75		1085.06	1085.43	1085.77	
55+00		1085.22	1085.59	1085.92	
55+25		1085.38	1085.75	1086.07	
55+50		1085.54	1085.91	1086.22	
55+75		1085.70	1086.07	1086.38	

NOTE: FOR ELEVATIONS NOT SHOWN,
SEE PAVEMENT DETAILS.

PROPOSED U.S. # 33 (CONTINUED)

STATION	49.0' LT.	P.G. 25.0' LT.	P.G. 25.0' RT.	49.0' RT.	RT. E/P
56+00			1085.86	1086.23	1086.53
56+25			1086.02	1086.39	1086.68
56+50			1086.18	1086.55	1086.83
56+75			1086.34	1086.71	1086.98
57+00			1086.50	1086.87	1087.13
57+25			1086.66	1087.03	1087.29
57+50			1086.82	1087.19	1087.44
57+75			1086.98	1087.35	1087.59
58+00	1086.77	1087.14	1087.14	1087.51	1087.74
58+25	1086.93	1087.30	1087.30	1087.67	1087.89
58+50	1087.09	1087.46	1087.46	1087.83	1088.05
58+75	1087.25	1087.62	1087.62	1087.99	1088.20
59+00	1087.41	1087.78	1087.78	1088.15	1088.35
59+25	1087.57	1087.94	1087.94	1088.31	1088.50
59+50	1087.73	1088.10	1088.10	1088.47	1088.65
59+75	1087.89	1088.26	1088.26	1088.63	1088.81
60+00	1088.05	1088.42	1088.42	1088.79	1088.96
60+25	1088.21	1088.58	1088.58	1088.95	1089.11
60+50	1088.37	1088.74	1088.74	1089.11	1089.26
60+75	1088.54	1088.90	1088.90	1089.27	1089.41
61+00	1088.69	1089.06	1089.06	1089.43	1089.56
61+25	1088.85	1089.22	1089.22	1089.59	1089.72
61+50	1089.01	1089.38	1089.38	1089.75	1089.87
61+75	1089.17	1089.54	1089.54	1089.91	1090.02
62+00	1089.33	1089.70	1089.70	1090.07	1090.17
62+25	1089.49	1089.86	1089.86	1090.23	1090.32
62+50	1089.65	1090.02	1090.02	1090.39	1090.48
62+75	1089.81	1090.18	1090.18	1090.55	1090.63
63+00	1089.97	1090.34	1090.34	1090.71	1090.78
63+25	1090.13	1090.50	1090.50	1090.87	1090.93
63+50	1090.29	1090.66	1090.66	1091.03	1091.08
63+75	1090.45	1090.82	1090.82	1091.19	1091.23
64+00	1090.61	1090.98	1090.98	1091.35	1091.39
64+25	1090.77	1091.14	1091.14	1091.51	1091.54
64+50	1090.93	1091.30	1091.30	1091.67	1091.69
64+75	1091.09	1091.46	1091.46	1091.83	1091.84
65+00	1091.25	1091.62	1091.62	1091.99	
65+25	1091.41	1091.78	1091.78	1092.15	
65+50	1091.57	1091.94	1091.94	1092.31	
65+75	1091.73	1092.10	1092.10	1092.47	
66+00	1091.89	1092.26	1092.26	1092.63	
66+25	1092.05	1092.42	1092.42	1092.79	
66+50	1092.21	1092.58	1092.58	1092.95	
66+75	1092.37	1092.74	1092.74	1093.11	
67+00	1092.53	1092.90	1092.90	1093.27	
67+25	1092.69	1093.06	1093.06	1093.43	
67+50	1092.85	1093.22	1093.22	1093.59	
67+75	1093.01	1093.38	1093.38	1093.75	
68+00	1093.17	1093.54	1093.54	1093.91	
68+25	1093.33	1093.70	1093.70	1094.07	
68+50	1093.49	1093.86	1093.86	1094.23	
68+75	1093.65	1094.02	1094.02	1094.39	
69+00	1093.81	1094.18	1094.18	1094.55	
69+25	1093.97	1094.34	1094.34	1094.71	
69+50	1094.13	1094.50	1094.50	1094.87	
69+75	1094.29	1094.66	1094.66	1095.03	
70+00	1094.45	1094.82	1094.82	1095.19	
70+25	1094.61	1094.98	1094.98	1095.35	
70+50	1094.77	1095.14	1095.14	1095.51	
70+75	1094.93	1095.30	1095.30	1095.67	
71+00	1095.09	1095.46	1095.46	1095.83	
71+25	1095.25	1095.62	1095.62	1095.99	
71+50	1095.41	1095.78	1095.78	1096.15	
71+75	1095.57	1095.94	1095.94	1096.31	
72+00	1095.73	1096.10	1096.10	1096.47	
72+25	1095.89	1096.26	1096.26	1096.63	
72+50	1096.05	1096.42	1096.42	1096.79	
72+75	1096.21	1096.58	1096.58	1096.95	
73+00	1096.37	1096.74	1096.74	1097.11	
73+25	1096.53	1096.90	1096.90	1097.27	
73+50	1096.69	1097.06	1097.06	1097.43	
73+75	1096.85	1097.22	1097.22	1097.59	
74+00	1097.01	1097.38	1097.38	1097.75	
74+25	1097.16	1097.53	1097.53	1097.90	
74+50	1097.31	1097.68	1097.68	1098.05	
74+75	1097.44	1097.81	1097.81	1098.18	

SUPERELEVATION TABLES

PROPOSED U.S. # 33 (CONTINUED)				
STATION	49.0' LT.	P.G. 25.0' LT.	P.G. 25.0' RT.	49.0' RT.
75+00	1097.57	1097.94	1097.94	1098.31
75+25	1097.68	1098.05	1098.05	1098.42
75+50	1097.78	1098.15	1098.15	1098.52
75+75	1097.87	1098.24	1098.24	1098.61
76+00	1097.96	1098.33	1098.33	1098.70
76+25	1098.03	1098.40	1098.40	1098.77
76+50	1098.09	1098.46	1098.46	1098.83
76+75	1098.14	1098.51	1098.51	1098.88
77+00	1098.18	1098.55	1098.55	1098.92
77+25	1098.21	1098.58	1098.58	1098.95
77+50	1098.23	1098.60	1098.60	1098.97
77+75	1098.24	1098.61	1098.61	1098.98
78+00	1098.24	1098.61	1098.61	1098.98
78+25	1098.22	1098.59	1098.59	1098.96
78+50	1098.20	1098.57	1098.57	1098.94
78+75	1098.17	1098.54	1098.54	1098.91
79+00	1098.13	1098.50	1098.50	1098.87
79+25	1098.07	1098.44	1098.44	1098.81
79+50	1098.01	1098.38	1098.38	1098.75
79+75	1097.93	1098.30	1098.30	1098.67
80+00	1097.85	1098.22	1098.22	1098.59
80+25	1097.76	1098.13	1098.13	1098.50
80+50	1097.67	1098.04	1098.04	1098.41
80+75	1097.58	1097.95	1097.95	1098.32
81+00	1097.49	1097.86	1097.86	1098.23
81+25	1097.40	1097.77	1097.77	1098.14
81+50	1097.31	1097.68	1097.68	1098.05
81+75	1097.22	1097.59	1097.59	1097.96
82+00	1097.13	1097.50	1097.50	1097.87
82+25	1097.04	1097.41	1097.41	1097.78
82+50	1096.95	1097.32	1097.32	1097.69
82+75	1096.86	1097.23	1097.23	1097.60
83+00	1096.77	1097.14	1097.14	1097.51
83+25	1096.68	1097.05	1097.05	1097.42
83+50	1096.59	1096.96	1096.96	1097.33
83+75	1096.50	1096.87	1096.87	1097.24
83+78.62	1096.49	1096.86	1096.86	1097.23
84+00	1096.51	1096.78	1096.78	1097.15
84+16.06	1096.53	1096.72	1096.72	1097.09
84+25	1096.55	1096.69	1096.69	1097.06
84+50	1096.58	1096.60	1096.60	1096.97
84+53.50	1096.59	1096.59	1096.59	1096.96
84+75	1096.56	1096.51	1096.51	1096.88
85+00	1096.54	1096.42	1096.42	1096.79
85+25	1096.51	1096.33	1096.33	1096.70
85+50	1096.48	1096.24	1096.24	1096.61
85+75	1096.45	1096.15	1096.15	1096.52
86+00	1096.43	1096.06	1096.06	1096.43
86+03.26	1096.42	1096.05	1096.05	1096.42

STOKES ROAD					
STATION	LT. E/P	12.0' LT.	P.G. ℄	12.0' RT.	RT. E/P
58+77.47	1087.20	1087.38	1087.57		
59+00	1087.00	1087.16	1087.32		
59+25	1086.79	1086.91	1087.04		
59+50	1086.58	1086.66	1086.76		
59+75	1086.36	1086.42	1086.48		
60+00	1086.14	1086.17	1086.20		
60+25	1085.92	1085.92	1085.92		
60+27.23	1085.90	1085.90	1085.90		
60+50	1085.78	1085.73	1085.64		
60+75	1085.64	1085.54	1085.36		
60+76.37			1085.34	1084.15	1085.05
61+00	1085.50	1085.36	1085.08	1084.81	1084.66
61+25	1085.36	1085.17	1084.80	1084.43	1084.24
61+50	1085.22	1084.99	1084.52	1084.05	1083.82
61+59.53	1085.17	1084.91	1084.41	1083.91	1083.65
61+75	1085.00	1084.74	1084.24	1083.74	1083.48
62+00	1084.72	1084.46	1083.96	1083.46	1083.20
62+25	1084.44	1084.18	1083.68	1083.18	1082.92
62+50	1084.16	1083.90	1083.40	1082.90	1082.64
62+75	1083.88	1083.62	1083.12	1082.62	1082.36
63+00	1083.60	1083.34	1082.84	1082.34	1082.08
63+25			1082.56	1082.06	1081.80
63+50			1082.28	1081.78	1081.52
63+75			1082.00	1081.50	1081.24
64+00			1081.72	1081.22	1080.96
64+25			1081.47	1080.97	1080.71
64+50			1081.27	1080.77	1080.51
64+75			1081.13	1080.63	1080.37
65+00			1081.04	1080.54	1080.28
65+25			1081.01	1080.51	1080.25
65+50	1081.79	1081.53	1081.03	1080.53	1080.27
65+75	1081.83	1081.61	1081.11	1080.61	1080.39
66+00	1081.93	1081.74	1081.24	1080.74	1080.55
66+25	1082.05	1081.91	1081.40	1080.90	1080.75
66+50	1082.18	1082.06	1081.56	1081.06	1080.94
66+75	1082.30	1082.22	1081.72	1081.22	1081.14
67+00	1082.43	1082.38	1081.88	1081.38	1081.33
67+25	1082.55	1082.54	1082.04	1081.54	1081.53
67+50		1082.70	1082.20	1081.70	
67+75		1082.86	1082.36	1081.86	
68+00		1083.02	1082.52	1082.02	
68+25		1083.18	1082.68	1082.18	
68+44.17		1083.30	1082.80	1082.30	
68+50		1083.32	1082.84	1082.36	
68+55.51			1082.88	1082.42	
68+75		1083.39	1083.00		
69+00		1083.45	1083.16		
69+25		1083.52	1083.32		
69+50		1083.58	1083.48		
69+75		1083.65	1083.64		
69+76.47		1083.65	1083.65		
70+00		1083.74	1083.80		
70+25		1083.84	1083.96		
70+50		1083.94	1084.12		
70+75		1084.03	1084.28		
70+80.37		1084.04	1084.31		

NOTE: FOR ELEVATIONS NOT SHOWN,
SEE INTERSECTION DETAILS.

SUPERELEVATION TABLES

RAMP "A"		
STATION	PG. E	16.0' RT.
47+29.40	1080.19	1080.44
47+50	1080.09	1080.43
47+75	1080.01	1080.35
48+00	1079.98	1080.32
48+25	1080.00	1080.34
48+50	1080.06	1080.40
48+75	1080.17	1080.51
49+00	1080.33	1080.67

RAMP "B"		
STATION	PG. E	16.0' LT.
35+00	1082.20	1081.39
35+25	1082.02	1081.07
35+50	1081.84	1080.74
35+75	1081.66	1080.42
36+00	1081.48	1080.15
36+25	1081.30	1079.97
36+50	1081.12	1079.79
36+75	1080.94	1079.61
37+00	1080.76	1079.56
37+25	1080.58	1079.53
37+50	1080.40	1079.49
37+75	1080.22	1079.45
38+00	1080.04	1079.42
38+25	1079.86	1079.38
38+50	1079.68	1079.34
38+75	1079.50	1079.30
39+00	1079.32	1079.27
39+09.25	1079.25	1079.25
39+25	1079.14	1079.18
39+50	1078.96	1079.06
39+75	1078.78	1078.94
40+00	1078.60	1078.83
40+09.09	1078.53	1078.78
44+46.01	1078.57	1078.82
44+50	1078.60	1078.87
44+75	1078.78	1079.19
45+00	1078.96	1079.52
45+25	1079.14	1079.84
45+50	1079.32	1080.16
45+75	1079.50	1080.49
46+00	1079.68	1080.69
46+25	1079.86	1080.87
46+50	1080.04	1081.05
46+75	1080.22	1081.23
47+00	1080.40	1081.41
47+25	1080.58	1081.59
47+50	1080.76	1081.77
47+75	1080.94	1081.95
48+00	1081.12	1082.13

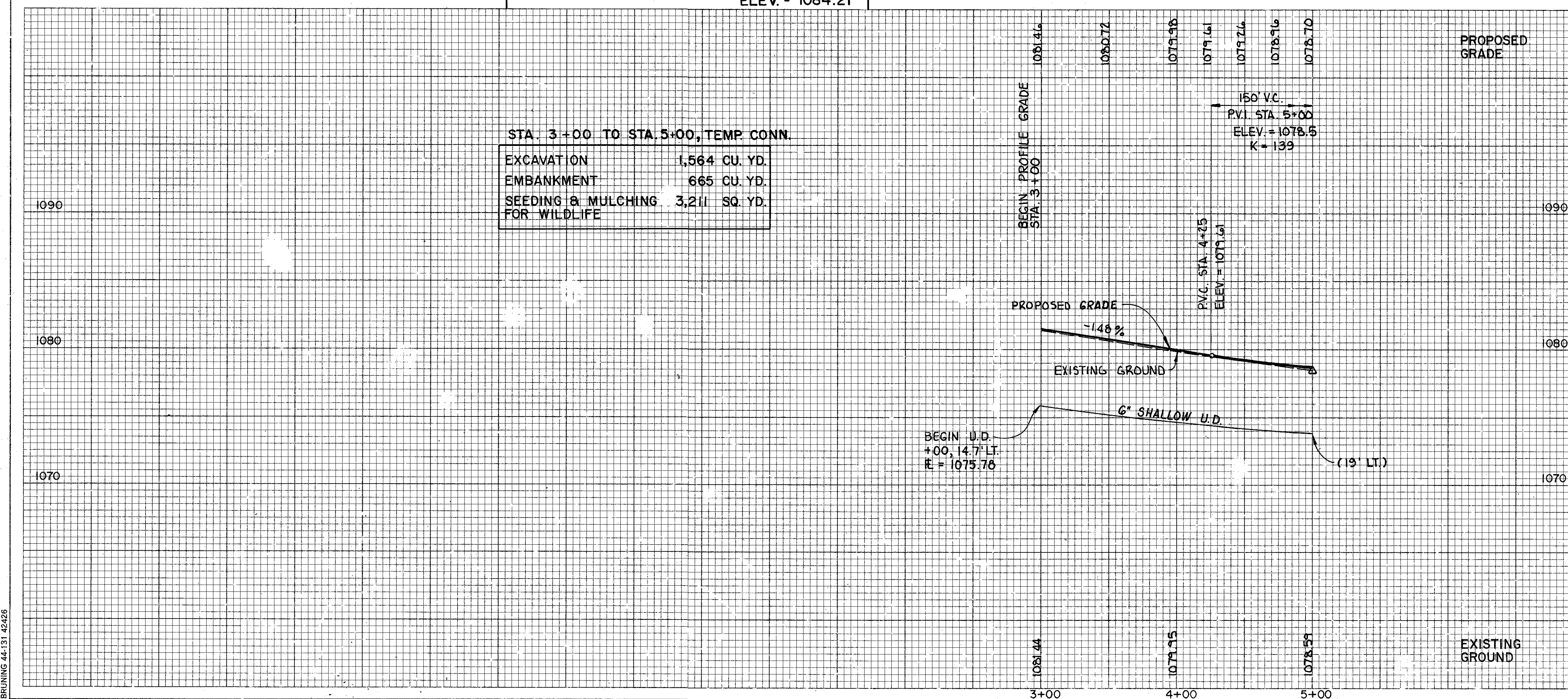
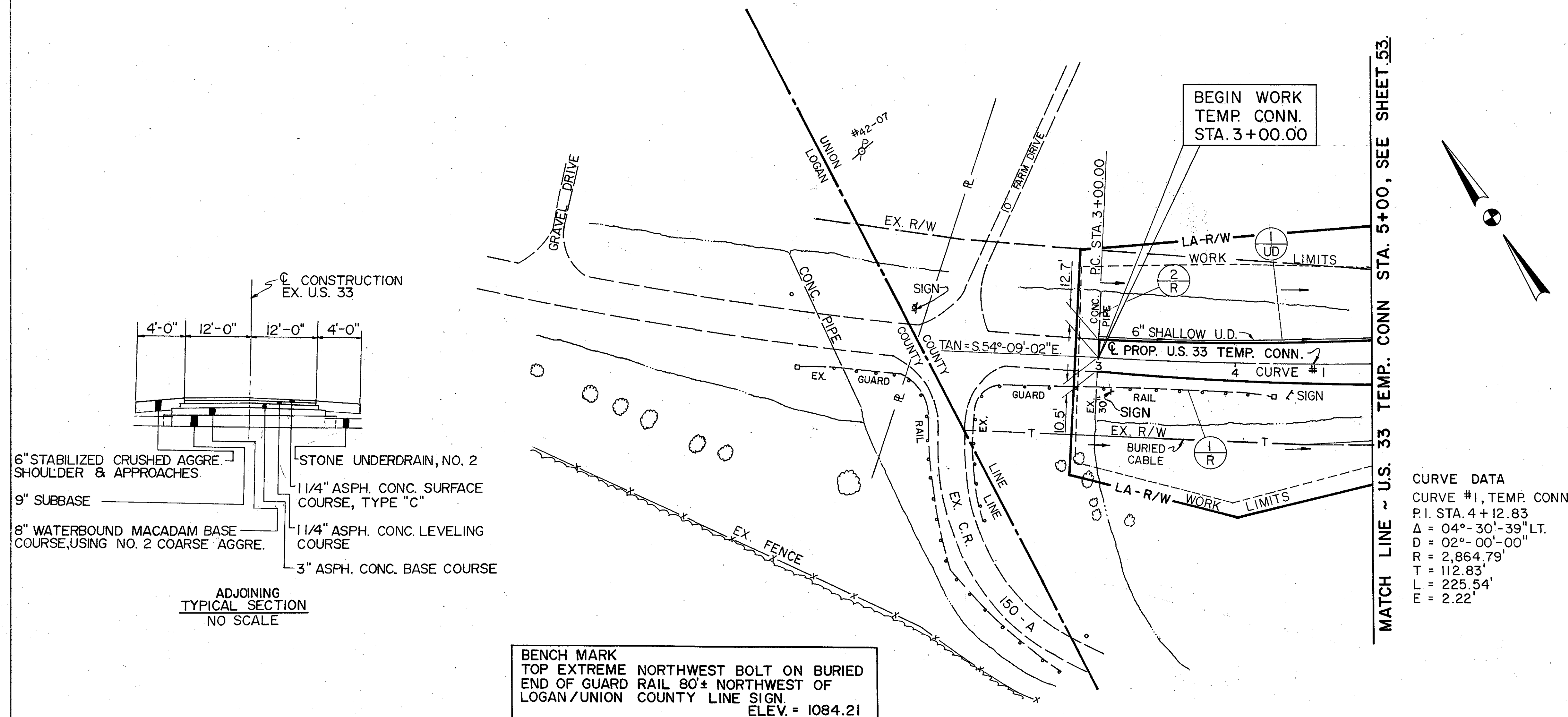
RAMP "C"		
STATION	PG. E	16.0' LT.
38+00	1074.04	1074.65
38+25	1074.17	1074.91
38+50	1074.30	1075.18
38+75	1074.43	1075.44
39+00	1074.56	1075.70
39+25	1074.69	1075.97
39+50	1074.82	1076.15
39+75	1074.95	1076.28
40+00	1075.08	1076.41
40+25	1075.21	1076.54
40+50	1075.34	1076.67
40+75	1075.47	1076.80
41+00	1075.60	1076.93
41+25	1075.73	1077.06
41+50	1075.86	1077.19
41+75	1075.99	1077.32
42+00	1076.12	1077.45
42+25	1076.25	1077.58
42+50	1076.38	1077.71
42+75	1076.51	1077.84
43+00	1076.64	1077.97
43+25	1076.77	1078.10
43+50	1076.90	1078.23
43+75	1077.03	1078.36
44+00	1077.16	1078.49
44+25	1077.29	1078.62
44+50	1077.42	1078.75
44+75	1077.57	1078.90
45+00	1077.76	1079.09
45+25	1077.98	1079.31
45+50	1078.25	1079.58
45+75	1078.55	1079.88
46+00	1078.89	1080.22
46+25	1079.25	1080.58
46+50	1079.61	1080.94
46+75	1079.97	1081.30
47+00	1080.33	1081.66

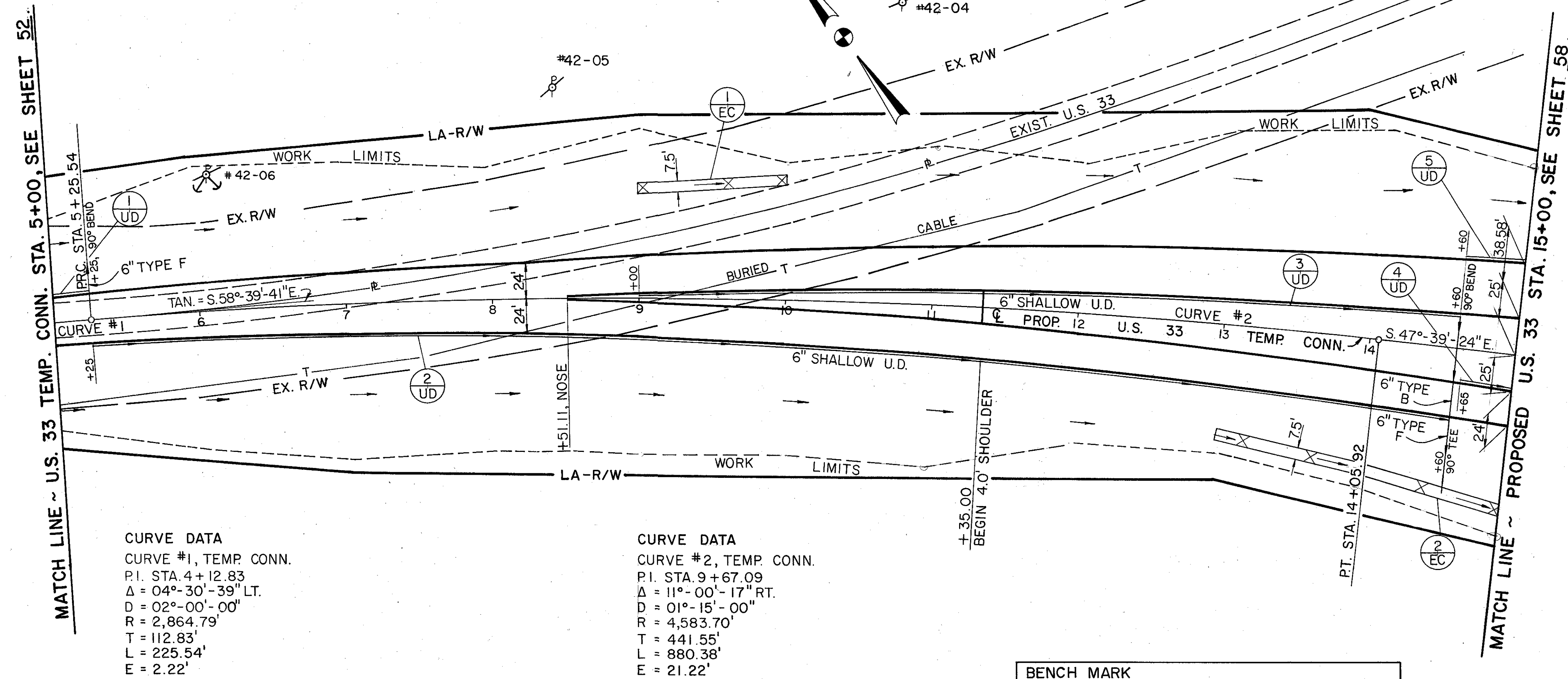
RAMP "D"		
STATION	PG. E	16.0' RT.
25+00	1064.83	1065.50
25+25	1064.63	1065.30
25+50	1064.43	1065.10
25+75	1064.26	1064.93
26+00	1064.16	1064.83
26+25	1064.12	1064.79
26+50	1064.14	1064.81
26+75	1064.23	1064.90
27+00	1064.38	1065.03
27+25	1064.59	1065.17
27+50	1064.87	1065.38
27+75	1065.21	1065.65
28+00	1065.62	1065.99
28+25	1066.09	1066.39
28+41.39	1066.43	1066.68

RAMP "D" (CONTINUED)		
STATION	PG. E	16.0' RT.
30+24.64	1071.84	1072.09
30+25	1071.85	1072.10
30+50	1072.67	1072.86
30+75	1073.49	1073.61
31+00	1074.31	1074.37
31+24.48	1075.11	1075.11
31+25	1075.13	1075.13
31+50	1075.95	1075.80
31+75	1076.77	1076.48
32+00	1077.59	1077.16
32+25	1078.41	1077.84
32+50	1079.23	1078.51
32+75	1080.05	1079.21
33+00	1080.87	1080.03
33+25	1081.69	1080.85
33+50	1082.51	1081.67
33+75	1083.33	1082.49
34+00	1084.15	1083.31
34+25	1084.97	1084.13
34+50	1085.79	1084.95
34+75	1086.61	1085.77
35+00	1087.43	1086.66
35+25	1088.23	1087.60
35+50	1088.99	1088.51
35+75	1089.70	1089.36
36+00	1090.37	1090.17
36+25	1091.00	1090.95
36+34.62	1091.23	1091.23
36+50	1091.59	1091.63
36+75	1092.13	1092.23
37+00	1092.63	1092.79
37+25	1093.11	1093.34
37+34.46	1093.29	1093.54

TEMPORARY CONNECTION U.S. # 33					
STATION	LT. E/P	12.0' LT	PG. E	12.0' RT.	RT. E/P
3+00	1080.44	1080.49	1081.46		
3+20.56	1080.10	1080.19	1081.16		
3+25	1080.04	1080.14	1081.09		
3+50	1079.77	1079.89	1080.72		
3+58.07			1080.60		1081.36
3+75	1079.50	1079.64	1080.35	1081.11	1081.14
3+91.98	1079.33	1079.47	1080.10	1080.86	1080.92
4+00	1079.24	1079.39	1079.98	1080.70	1080.76
4+25	1079.00	1079.13	1079.61	1080.18	1080.27
4+50	1078.78	1078.90	1079.26	1079.69	1079.78
4+75	1078.63	1078.72	1078.96	1079.25	1079.32
5+00	1078.53	1078.58	1078.70	1078.85	1078.89
5+25	1078.49	1078.49	1078.49	1078.49	1078.49
5+50	1078.41	1078.38	1078.32	1078.26	1078.23
5+75	1078.39	1078.32	1078.20	1078.08	1078.02
6+00	1078.40	1078.29	1078.10	1077.91	1077.82
6+25	1078.41	1078.25	1078.00	1077.75	1077.61
6+44.58	1078.42	1078.22	1077.92	1077.62	1077.44
6+50	1078.40	1078.20	1077.90	1077.60	1077.42
6+75	1078.32	1078.10	1077.80	1077.50	1077.30
7+00	1078.23	1078.00	1077.70	1077.40	1077.18
7+25	1078.14	1077.90	1077.60	1077.30	1077.07
7+50	1078.06	1077.80	1077.50	1077.20	1076.95
7+75	1077.97	1077.70	1077.40	1077.10	1076.84
8+00	1077.88	1077.60	1077.30	1077.00	1076.72
8+24.07	1077.80	1077.50	1077.20	1076.90	1076.60
	LT. E/P	PG. LT. INSIDE E/P		PG. RT. INSIDE E/P	RT. E/P
8+25	1077.80	1077.20		1077.20	1076.60
8+50	1077.71	1077.10		1077.10	1076.50
8+75	1077.62	1077.00		1077.00	1076.40
9+00	1077.54	1076.90		1076.90	1076.30
9+25	1077.45	1076.80		1076.80	1076.20
9+50	1077.36	1076.70		1076.70	1076.10
9+75	1077.28	1076.60		1076.60	1076.00
10+00	1077.19	1076.50		1076.50	1075.90
10+25	1077.10	1076.40		1076.40	1075.80
10+50	1077.02	1076.30		1076.30	1075.70
10+75	1076.92	1076.19		1076.19	1075.59
11+00	1076.80	1076.06		1076.06	1075.46
11+25	1076.67	1075.91		1075.91	1075.31
11+50	1076.51	1075.74		1075.74	1075.14
11+75	1076.34	1075.56		1075.56	1074.96
12+00	1076.18	1075.38		1075.38	1074.78
12+25	1076.01	1075.20		1075.20	1074.60
12+50	1075.84	1075.02		1075.02	1074.42
12+75	1075.68	1074.84		1074.84	1074.28
13+00	1075.51	1074.66		1074.66	1074.06
13+25	1075.34	1074.48		1074.48	1073.88
13+46.40	1075.20	1074.33		1074.33	1073.73
13+50	1075.15	1074.30		1074.30	1073.72
13+75	1074.79	1074.12		1074.12	1073.67
14+00	1074.44	1073.94		1073.94	1073.61
14+05.92	1074.35	1073.90		1073.90	1073.60
14+25	1074.07	1073.76		1073.76	1073.56
14+50	1073.69	1073.58		1073.58	1073.51
14+63.67	1073.48	1073.48		1073.48	1073.48
14+75	1073.30	1073.40		1073.40	1073.46
15+00	1072.92	1073.22		1073.22	1073.41

NOTE: FOR ELEVATIONS NOT SHOWN,
SEE PAVEMENT DETAILS.

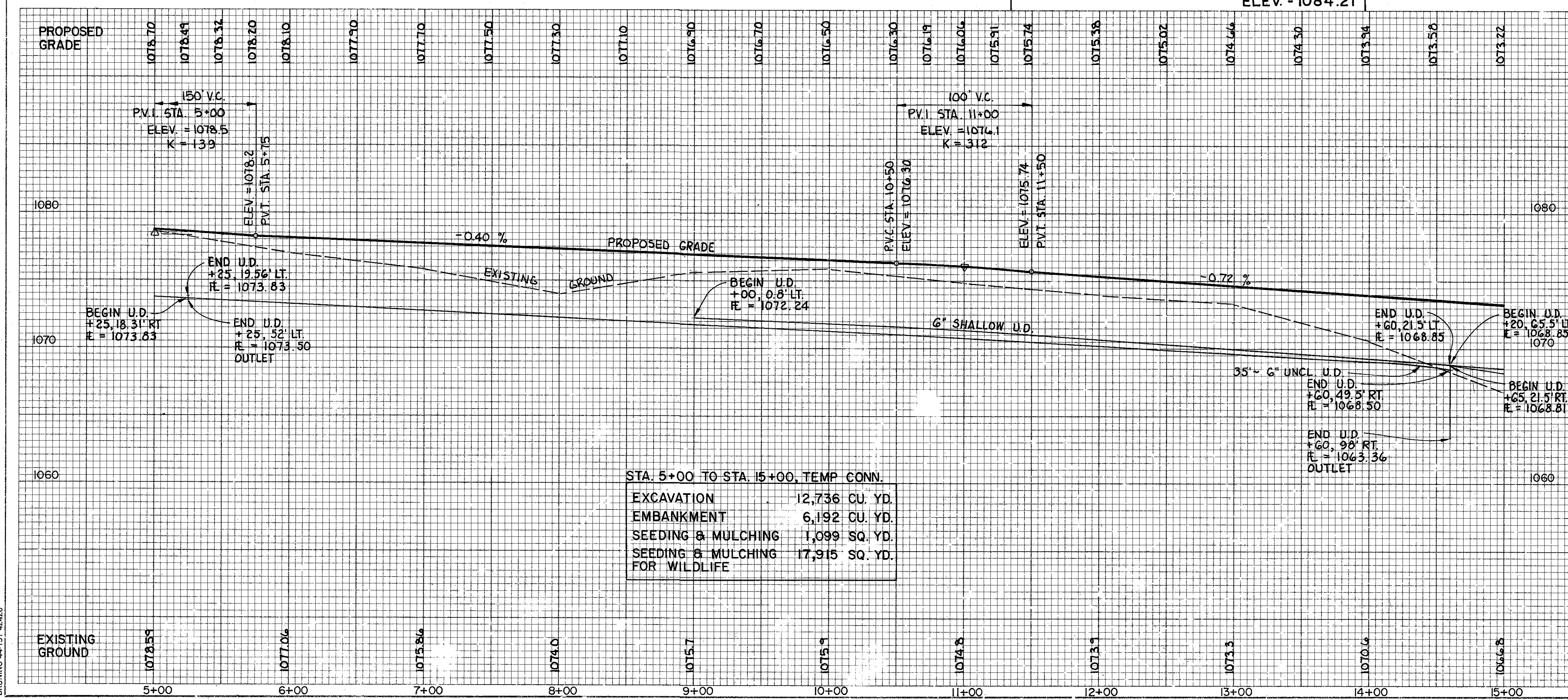
[illegible]



CURVE DATA
CURVE #1, TEMP. CONN.
P.I. STA. 4+12.83
Δ = 04°-30'-39\"/>

CURVE DATA
CURVE #2, TEMP. CONN.
P.I. STA. 9+67.09
Δ = 11°-00'-17\"/>

BENCH MARK
TOP EXTREME NORTHWEST BOLT ON BURIED
END OF GUARD RAIL 80'± NORTHWEST OF
LOGAN / UNION COUNTY LINE SIGN.
ELEV. = 1084.21



STA. 5+00 TO STA. 15+00, TEMP. CONN.
EXCAVATION 12,736 CU. YD.
EMBANKMENT 6,192 CU. YD.
SEEDING & MULCHING 1,099 SQ. YD.
SEEDING & MULCHING 17,915 SQ. YD.
FOR WILDLIFE

ESTIMATED QUANTITIES

ESTIMATED QUANTITIES																														PROJECT
REF. NO.	STATION TO STATION	SIDE	603 6" TYPE L.F.	603 6" TYPE L.F.	605 SHALL L.F.	605 UNCL. L.F.	605 BENDS L.F.	605 UNCL. L.F.	605 BENDS L.F.	670 DITCH EROSION PROT. S.Y.	SEE SHEET NO.																			
1-UD	5+00 - 5+25	LT.																												
2-UD	5+25 - 14+60	RT.		32	25																									
3-UD	9+00 - 14+60	LT.	26	49	605	35																								
4-UD	14+65 - 15+00	RT.			35																									
5-UD	14+60 - 15+00	LT.			40																									
1-EC	9+00 - 10+00	LT.								84	42																			
2-EC	13+00 - 15+00	RT.								167	42																			

SEEDING
END
WIDTH
SQ.
YDS.

CALC.
BY
DATE
CHKD.
BY
DATE

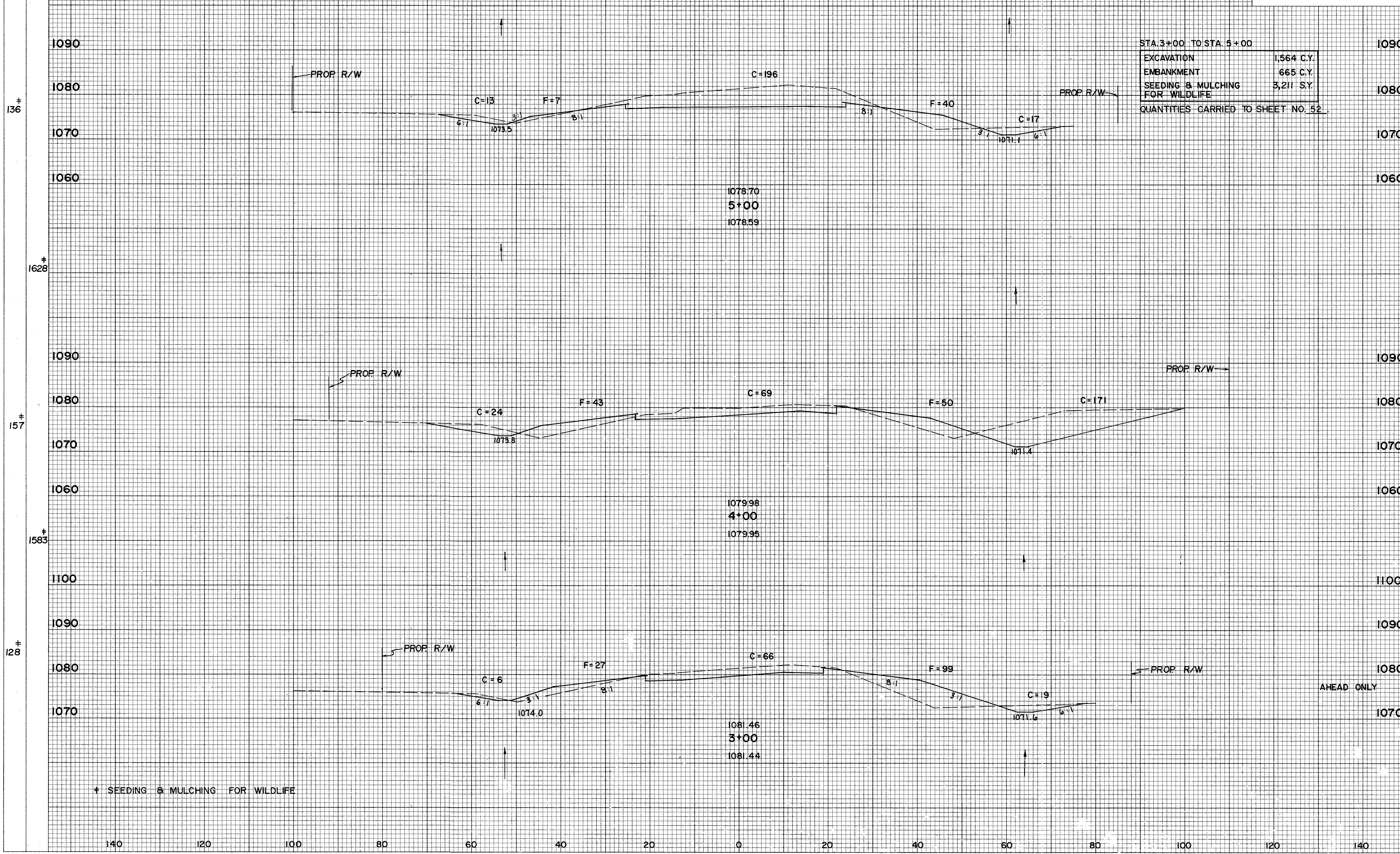
UNI - 33 - 0.28

OHIO
FHW
REGION 5

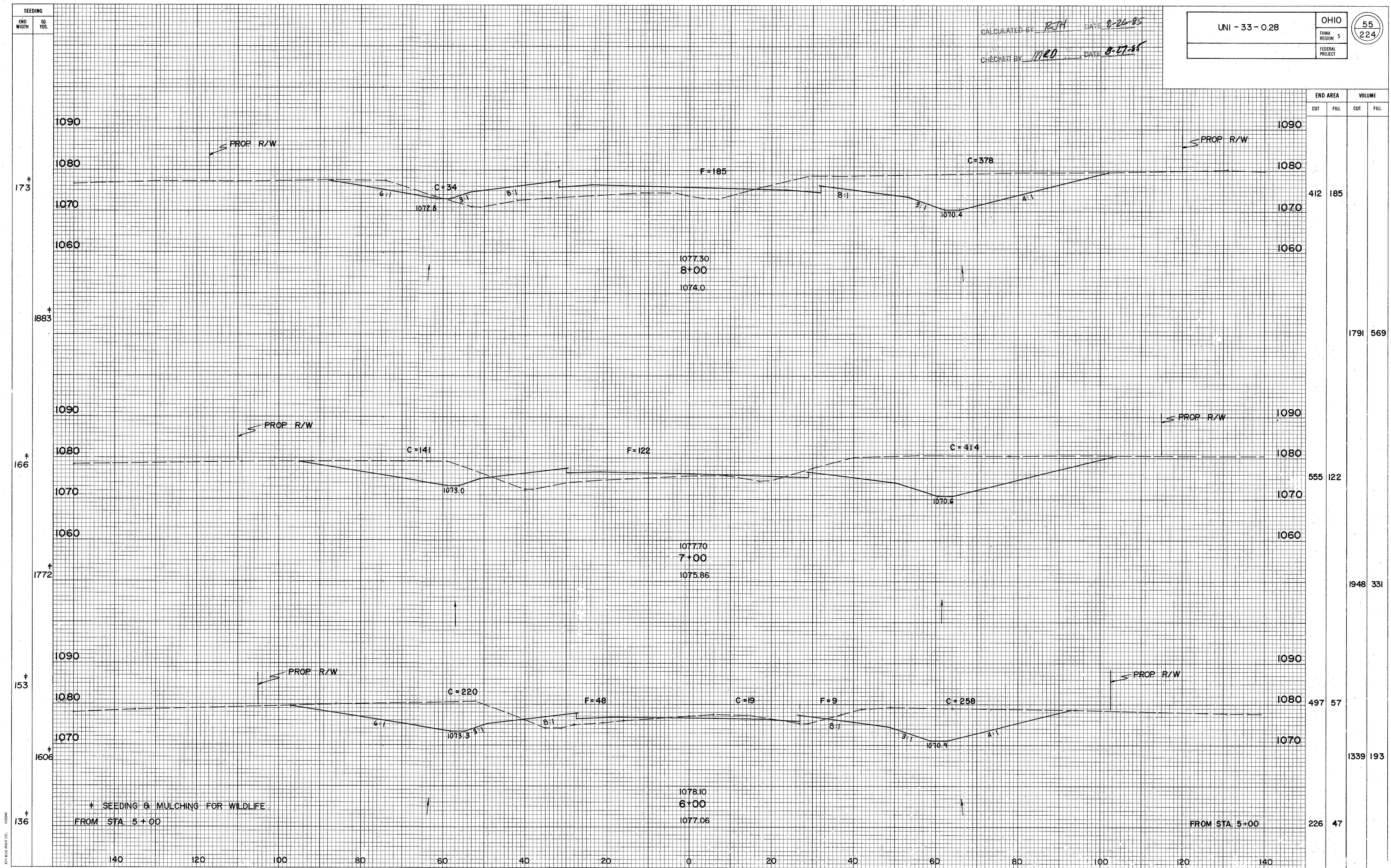
54
224

STA. 3+00 TO STA. 5+00
EXCAVATION 1,564 C.Y.
EMBANKMENT 665 C.Y.
SEEDING & MULCHING 3,211 S.Y.
FOR WILDLIFE
QUANTITIES CARRIED TO SHEET NO. 52

END AREA		VOLUME	
CUT	FILL	CUT	FILL
226	47		
		907	259
264	93		
		657	406
91	126		

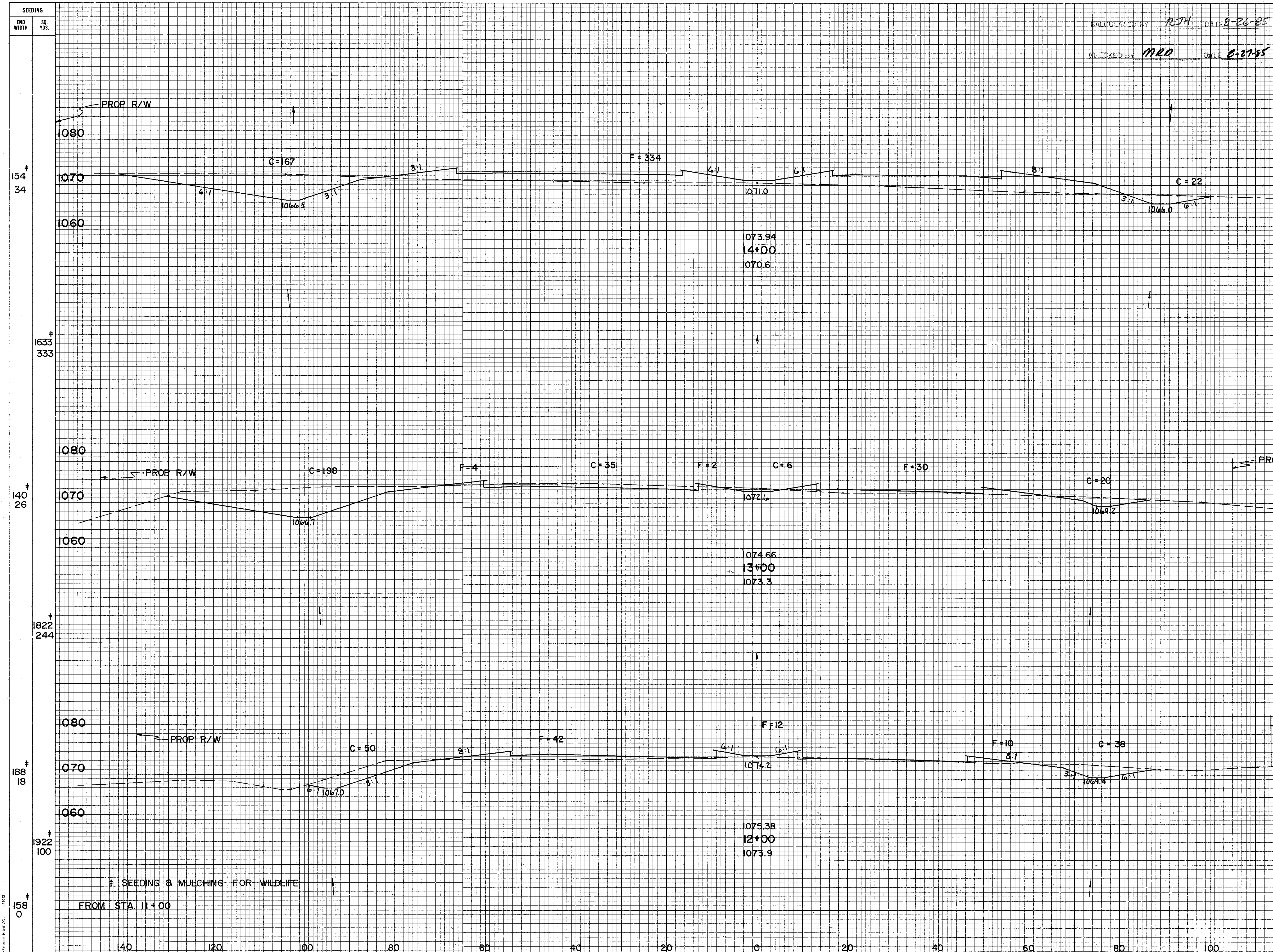


X - SECTIONS U.S. 33 TEMP. CONN. STA. 3+00 TO STA. 5+00



X-SECTIONS U.S. 33 TEMP. CONN. STA. 6+00 TO STA. 8+00





CALCULATED BY RJH DATE 8-26-85
CHECKED BY MRO DATE 8-27-85

END AREA		VOLUME	
CUT	FILL	CUT	FILL
189	334		
		830	685
259	36		
		644	185
89	64		
		719	359
299	130		

X - SECTIONS U.S. 33 TEMP. CONN. STA. 12+00 TO STA. 14+00

FOR STORM SEWER PROFILE
SEE SHEET NO. 165.

FOR PAVEMENT DETAILS
SEE SHEET NO. 159.

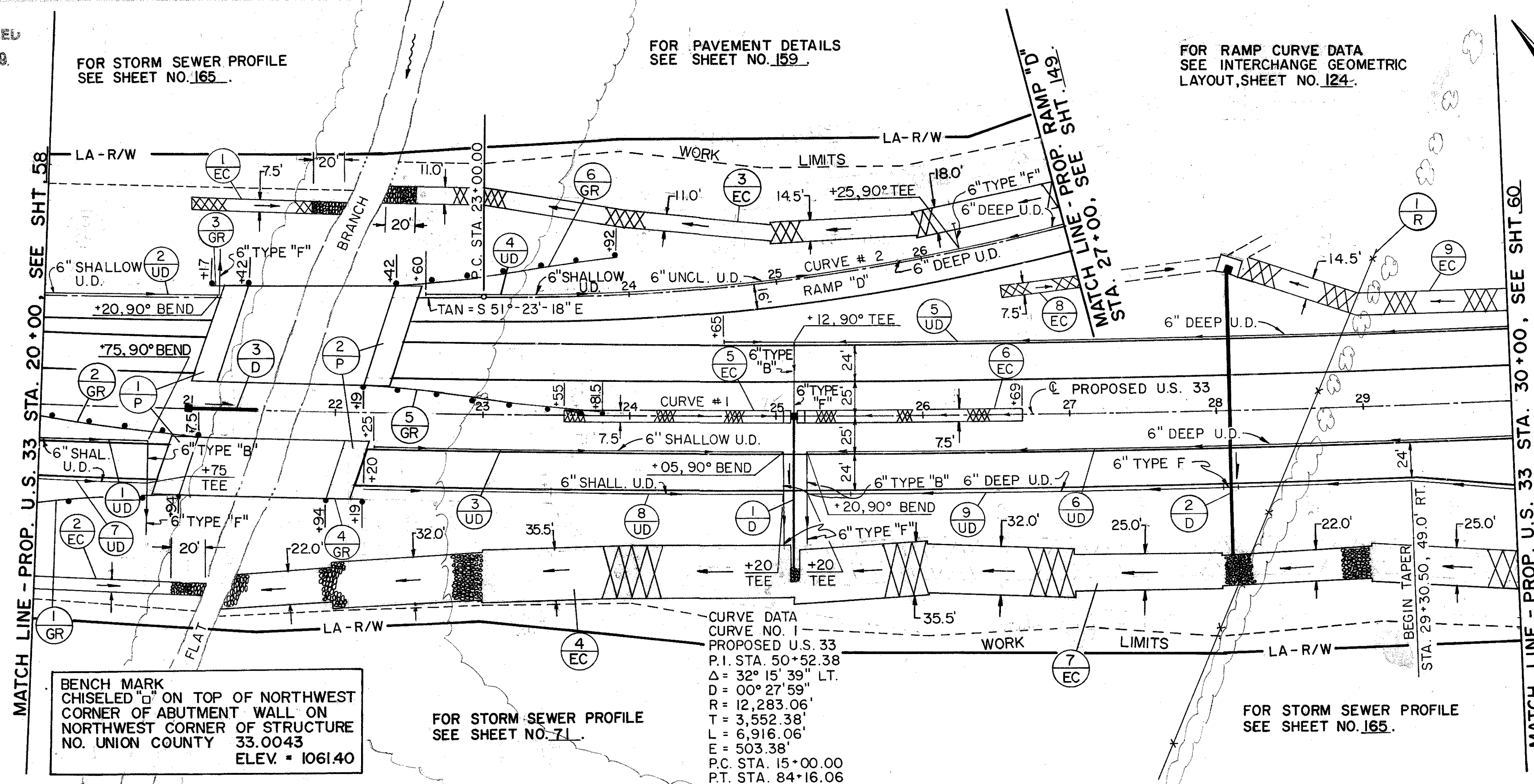
FOR RAMP CURVE DATA
SEE INTERCHANGE GEOMETRIC
LAYOUT, SHEET NO. 124.

CALCULATED BY R.J.H. DATE 10-11-85

CHECKED BY G.H.G. DATE 12-2-85

PROJECT
UNI-33-0.28

59
224

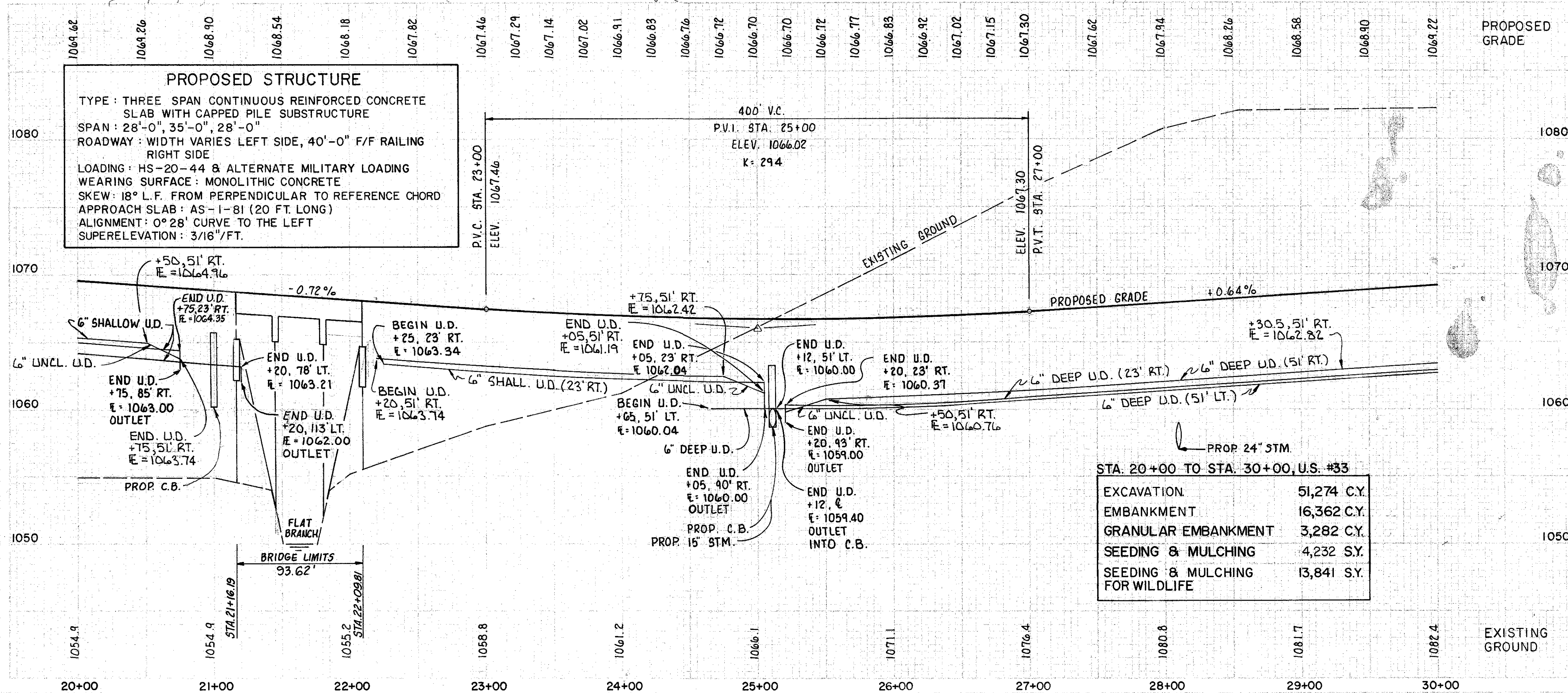


BENCH MARK
CHISELED "D" ON TOP OF NORTHWEST
CORNER OF ABUTMENT WALL ON
NORTHWEST CORNER OF STRUCTURE
NO. UNION COUNTY 33.0043
ELEV. = 1061.40

FOR STORM SEWER PROFILE
SEE SHEET NO. 71.

FOR STORM SEWER PROFILE
SEE SHEET NO. 165.

CURVE DATA
CURVE NO. 1
PROPOSED U.S. 33
P.I. STA. 50+52.38
Δ = 32° 15' 39" LT.
D = 00° 27' 59" LT.
R = 12,283.06'
T = 3,552.38'
L = 6,916.06'
E = 503.38'
P.C. STA. 15+00.00
P.T. STA. 84+16.06



PROPOSED STRUCTURE
TYPE: THREE SPAN CONTINUOUS REINFORCED CONCRETE
SLAB WITH CAPPED PILE SUBSTRUCTURE
SPAN: 28'-0", 35'-0", 28'-0"
ROADWAY: WIDTH VARIES LEFT SIDE, 40'-0" F/F RAILING
RIGHT SIDE
LOADING: HS-20-44 & ALTERNATE MILITARY LOADING
WEARING SURFACE: MONOLITHIC CONCRETE
SKEW: 18° L.F. FROM PERPENDICULAR TO REFERENCE CHORD
APPROACH SLAB: AS-1-81 (20 FT. LONG)
ALIGNMENT: 0° 28' CURVE TO THE LEFT
SUPERELEVATION: 3/16"/FT.

STA. 20+00 TO STA. 30+00, U.S. #33
EXCAVATION 51,274 C.Y.
EMBANKMENT 16,362 C.Y.
GRANULAR EMBANKMENT 3,282 C.Y.
SEEDING & MULCHING 4,232 S.Y.
SEEDING & MULCHING FOR WILDLIFE 13,841 S.Y.

ITEM	QUANTITY	UNIT	ESTIMATED QUANTITIES	UNIT PRICE	TOTAL
1-UD	20+00 - 20+75	RT.	1		
2-UD	20+00 - 21+20	LT.	1		
3-UD	22+25 - 25+05	RT.	1		
4-UD	22+60 - 27+00	LT.	1		
5-UD	24+65 - 30+00	LT.	1		
6-UD	25+20 - 30+00	RT.	1		
7-UD	20+00 - 20+75	RT.	1		
8-UD	22+20 - 25+05	RT.	1		
9-UD	25+20 - 30+00	RT.	1		
1-EC	21+00 - 22+05	LT.	1		
2-EC	20+00 - 21+14	RT.	1		
3-EC	22+32 - 27+00	LT.	1		
4-EC	21+30 - 25+12	RT.	1		
5-EC	23+55 - 25+05	RT.	1		
6-EC	25+19 - 26+69	RT.	1		
7-EC	25+12 - 30+00	RT.	1		
8-EC	26+48, 10'-27+00, 10'	RT.	1		
9-EC	28+12 - 30+00	LT.	1		
1-P	20+96 - 21+16	LT. RT.	1		
2-P	22+10 - 22+30	LT. RT.	1		
1-D	25+12	Q. RT.	1		
2-D	28+10	LT. RT.	1		
3-D	21+00 - 21+45	LT. RT.	1		
1-GR	20+00 - 20+94	RT.	1		
2-GR	20+00 - 21+075	LT.	1		
3-GR	21+17 - 21+42	LT.	1		
4-GR	21+94 - 22+19	RT.	1		
5-GR	22+19 - 23+815	LT.	1		
6-GR	22+42 - 23+92	LT.	1		
1-R	27+97 - 29+10	LT. RT.	1		

PLAN & PROFILE PROPOSED U.S. 33 STA. 20+00 TO STA. 30+00

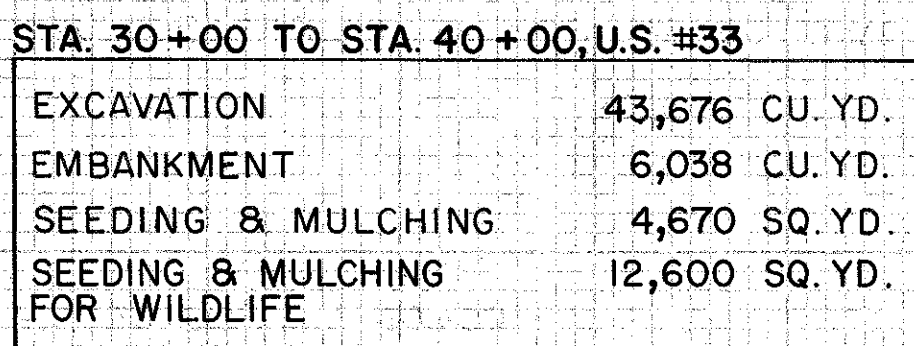
ELEV. = 1061.40

CURVE DATA
- CURVE NO. 1
P.I. STA. 50 + 52.38
 $\Delta = 32^\circ 15' 39''$ LT.
D = $00^\circ 27' 59''$
R = 12,283.06'
T = 3,552.38'
L = 6,916.06'
E = 503.38'
P.C. STA. 15 + 00.00
P.T. STA. 84 + 16.06

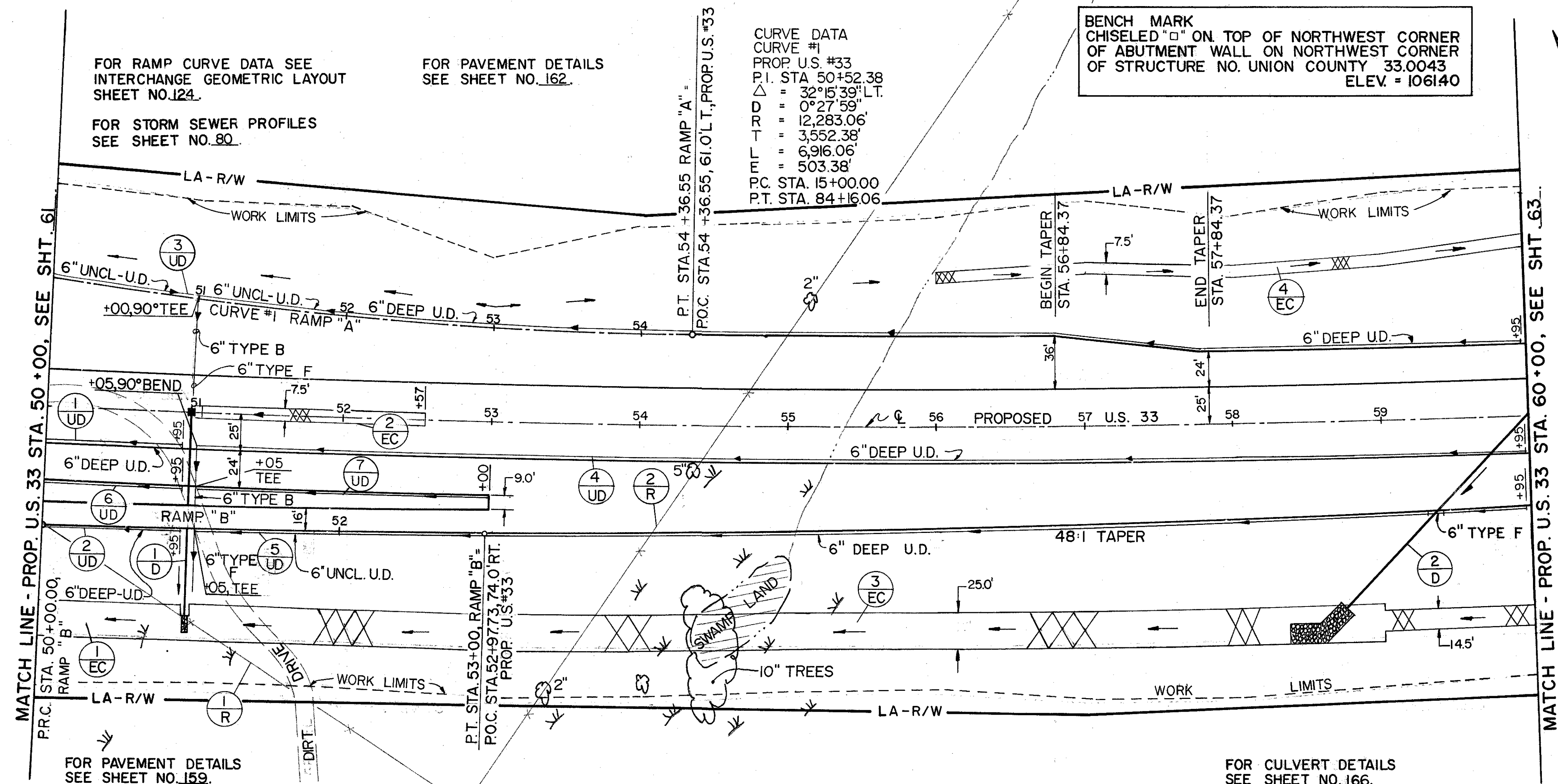
P.O.T. STA. 50+00, STOKES RD -
P.O.C. STA. 36+44.29, U.S. #33

CHECKED BY G.H.G. DATE 12-4-8

FED. RES. SYSTEM	STATE	PROJECT
2	OHIO	UNI-33-0.28

60
224[illegible]

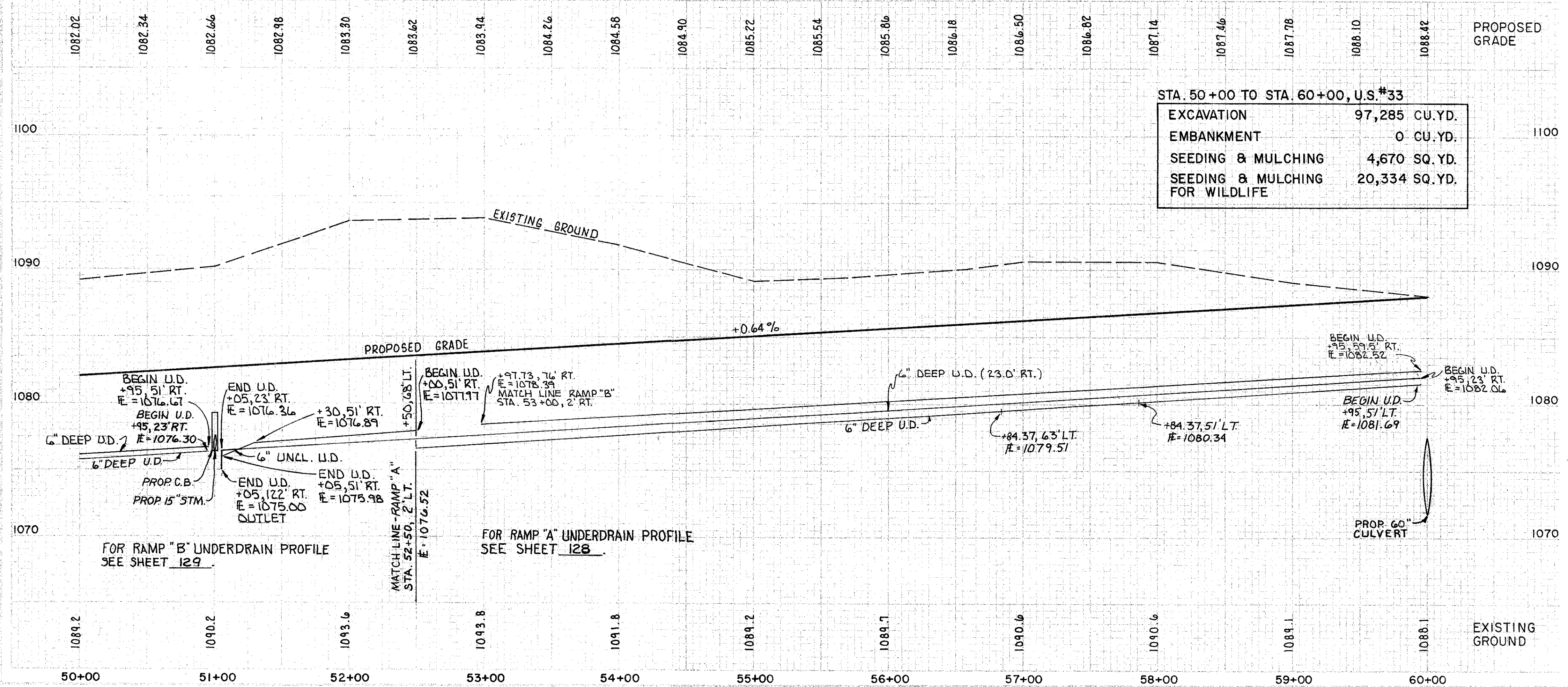
PLAN & PROFILE PROPOSED U.S. 33 STA. 30+00 TO STA. 40+00



BENCH MARK
CHISELED "O" ON TOP OF NORTHWEST CORNER
OF ABUTMENT WALL ON NORTHWEST CORNER
OF STRUCTURE NO. UNION COUNTY 33.0043
ELEV. = 1061.40

CURVE DATA
CURVE #33
PROP. U.S. #33
P.I. STA. 50+52.38
Δ = 32°15'39" LT.
R = 12,283.06'
E = 3,552.38'
M = 6,916.06'
E = 503.38'
P.C. STA. 15+00.00
P.T. STA. 84+1606

CALCULATED BY RJH DATE 10-14-85
CHECKED BY [Signature] DATE 10-22-85



ESTIMATED QUANTITIES																						
OR 78" 707.02 (0.009), 707.09 (1"), 707.22																						
602	601	601	601	601	601	602	603	603	603	603	604	605	605	605	605	605	605	605	605	605	605	605
202	601	601	601	601	601	602	603	603	603	603	604	605	605	605	605	605	605	605	605	605	605	605
FENCE REMOVED FOR STORAGE	CP	CP	CP	CP	CP	CONCRETE MASONRY	IS	IS	IS	IS	STD. C.B.	DEEP PIPE U.L.F.	UNCL. PIPE U.L.F.	BENDS BRANCH	PIPE U.L.F.	PIPE U.L.F.	PIPE U.L.F.	PIPE U.L.F.	PIPE U.L.F.	PIPE U.L.F.	PIPE U.L.F.	PIPE U.L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	NO. 4	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	C.Y.	TYPE	TYPE	TYPE	TYPE	C.B.	L.F.	L.F.	L.F.</								

PLAN & PROFILE PROPOSED U.S. 33 STA. 50+00 TO STA. 60+00

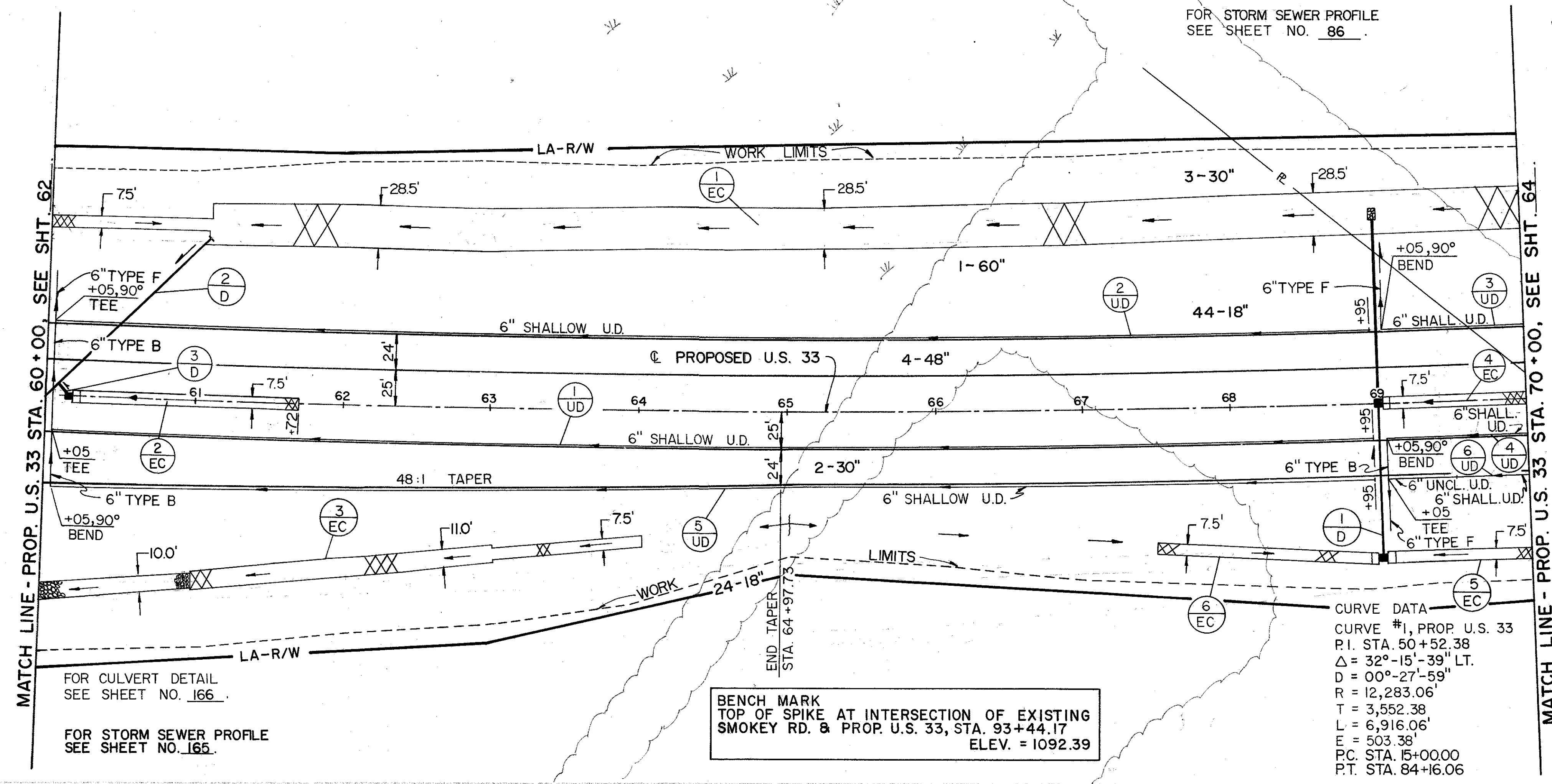
FOR STORM SEWER PROFILE
SEE SHEET NO. 86

CALCULATED BY R-JH DATE 10-14-85

CHECKED BY g-hg DATE 12-2-85

NO.	REVISION	DATE	BY	PROJECT
2	CHANGED			UNI-33-0.28

63
224

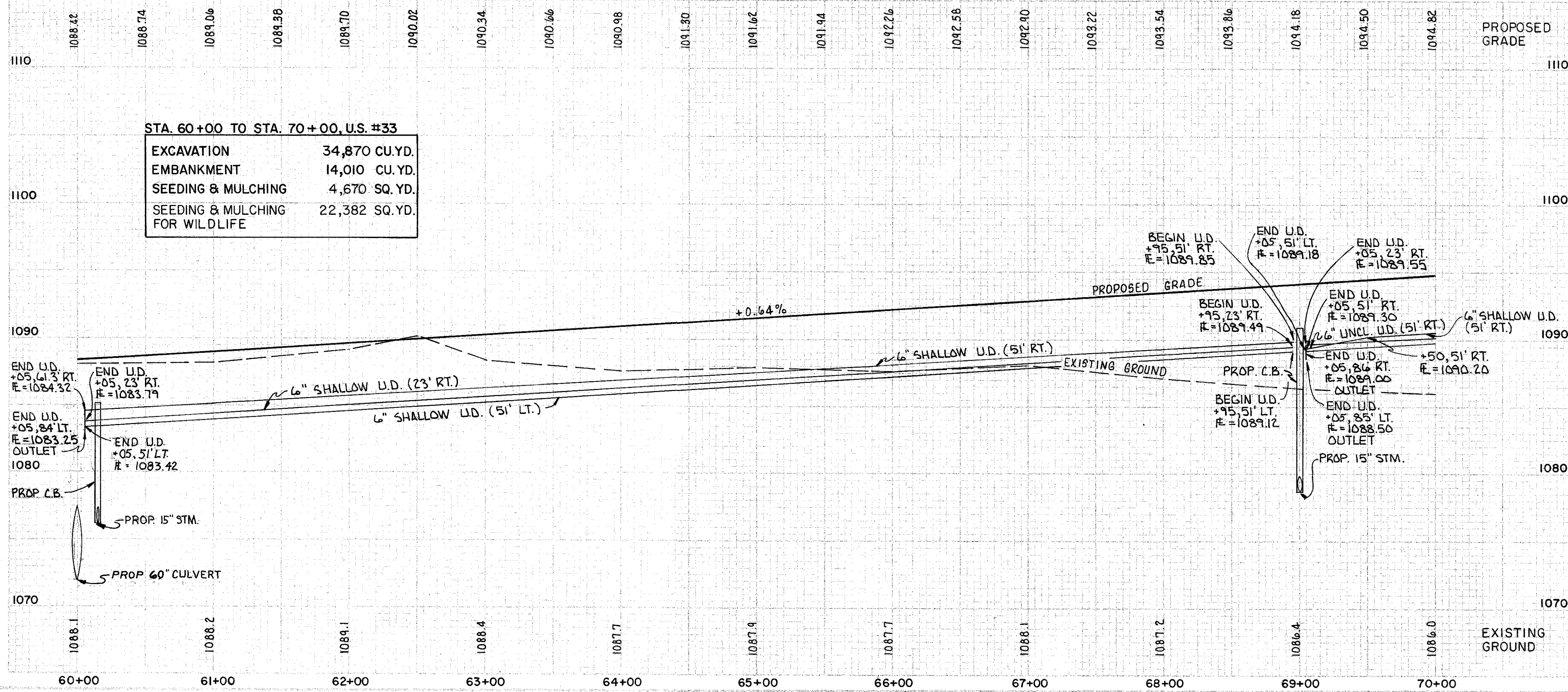


CURVE DATA
CURVE #1, PROP. U.S. 33
P.I. STA. 50+52.38
 $\Delta = 32^\circ - 15' - 39''$ LT.
D = 00°-27'-59"
R = 12,283.06'
T = 3,552.38'
L = 6,916.06'
E = 503.38'
P.C. STA. 15+00.00
P.T. STA. 84+16.06

BENCH MARK
TOP OF SPIKE AT INTERSECTION OF EXISTING
SMOKEY RD. & PROP. U.S. 33, STA. 93+44.17
ELEV. = 1092.39

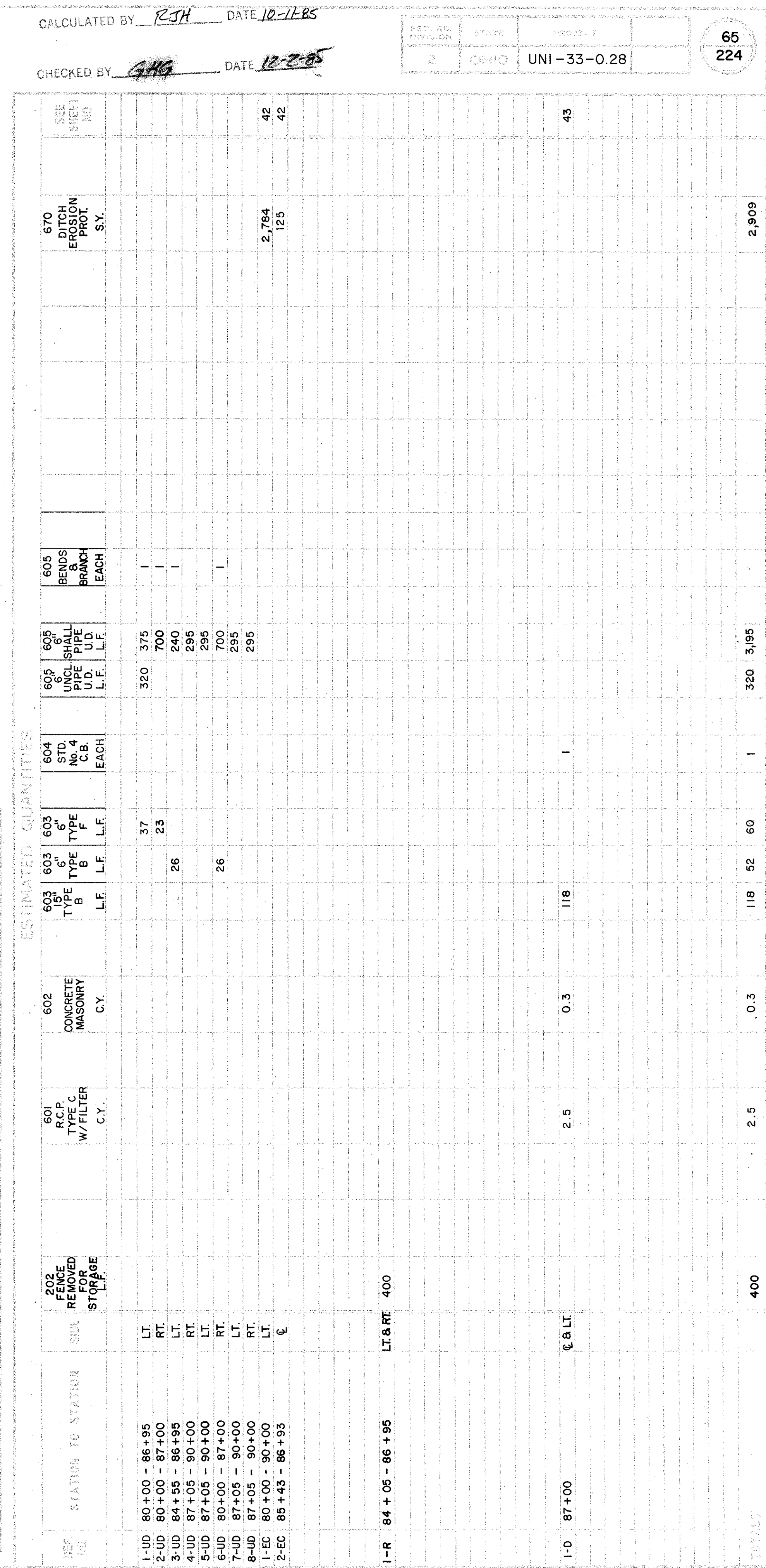
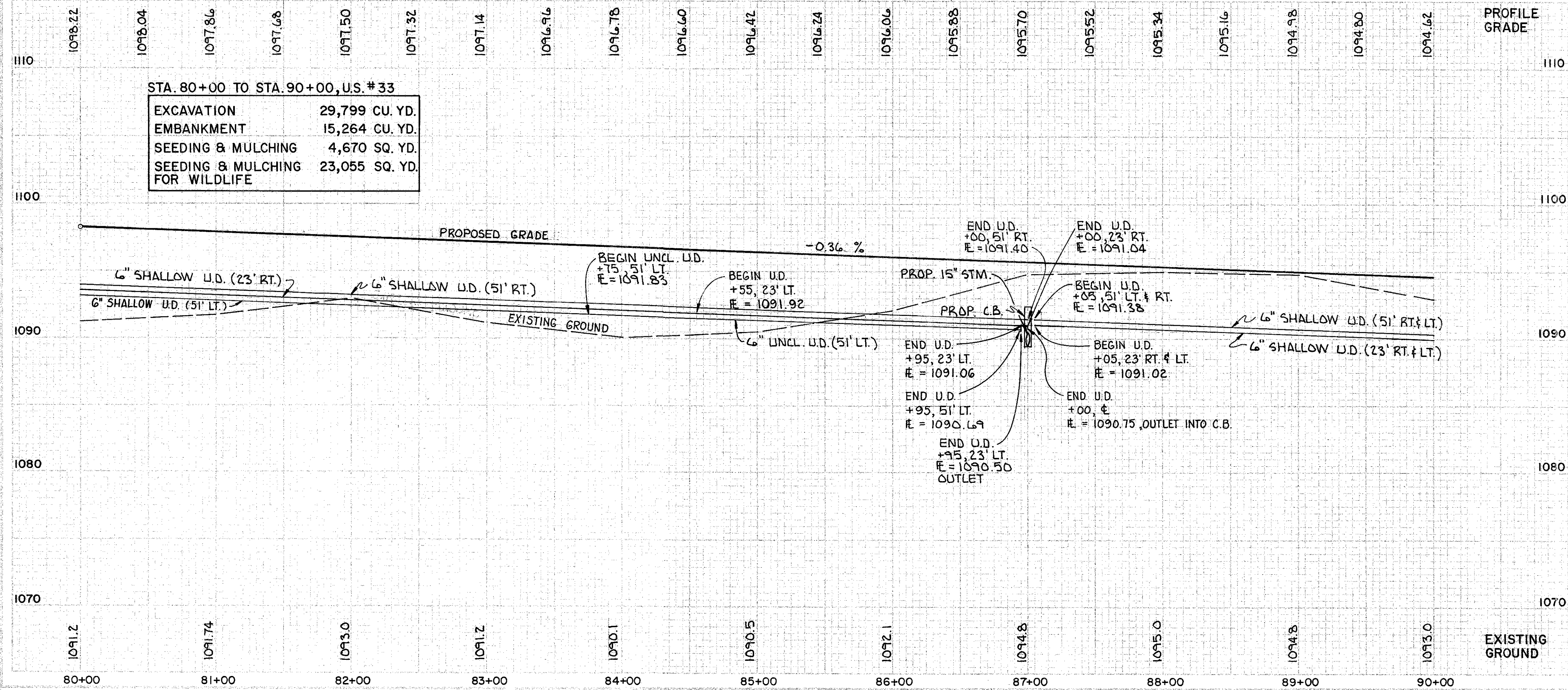
STA. 60+00 TO STA. 70+00, U.S. #33

EXCAVATION	34,870 CU. YD.
EMBANKMENT	14,010 CU. YD.
SEEDING & MULCHING	4,670 SQ. YD.
SEEDING & MULCHING FOR WILDLIFE	22,382 SQ. YD.

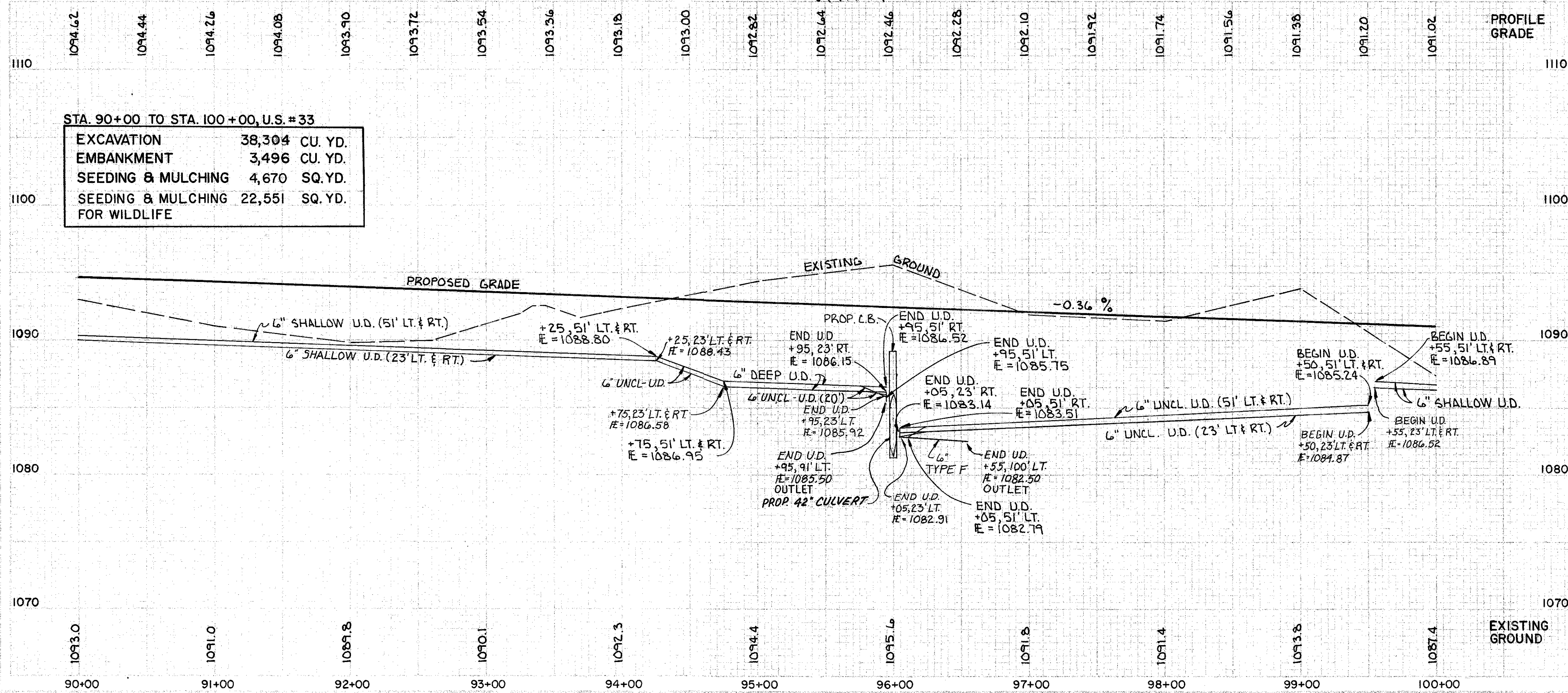
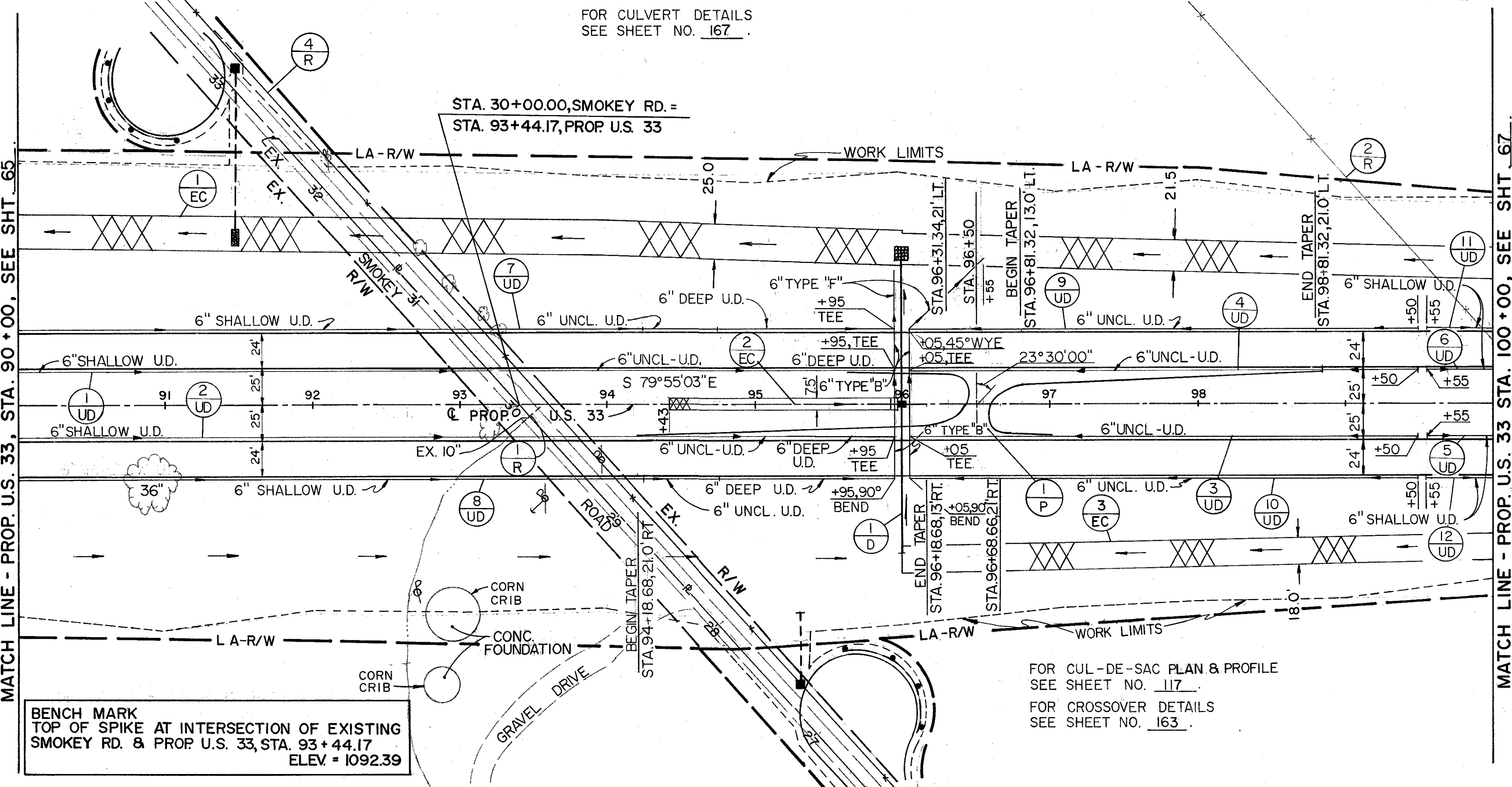


SEE SHEET NO.	ESTIMATED QUANTITIES	STATION TO STATION	REF. NO.
670	DITCH EXCAVATION S.T.		
605	BENDS R & B BRANCH		
605	UNCL. SHALL. PIPE U.D. L.F.		
603	STD. TYPE C L.F.		
603	6" TYPE B L.F.		
603	6" TYPE B L.F.		
603	6" TYPE B L.F.		
603	6" TYPE B L.F.		
602	CONCRETE MASONRY C.Y.		
601	R.C.P. TYPE C W/FILTER C.Y.		
1-UD	60+05 - 68+95		
2-UD	60+05 - 68+95		
3-UD	60+05 - 68+95		
4-UD	60+05 - 68+95		
5-UD	60+05 - 68+95		
6-UD	60+05 - 68+95		
1-EC	60+00 - 70+00		
2-EC	60+22 - 61+72		
3-EC	60+00 - 64+00		
4-EC	60+07 - 70+00		
5-EC	60+07 - 70+00		
6-EC	67+43 - 68+93		
1-D	60+00 - 61+08		
2-D	60+00 - 60+15		
3-D	60+00 - 60+15		

PLAN & PROFILE PROPOSED U.S. 33 STA. 60+00 TO STA. 70+00



PLAN & PROFILE PROPOSED U.S. 33 STA. 80+00 TO STA. 90+00



CALCULATED BY RJH DATE 10-10-85

CHECKED BY SAH DATE 12-3-85

FEED NO.	STATE	PROJECT
2	OHIO	UNI-33-0.28

66
224

* 706.02, OR 54" 707.02 (0.09), 707.09 (1"), OR 707.22									
ITEM NO.	DESCRIPTION TO QUANTITIES	202 FENCE REMOVED FOR STOR. 24"	202 PIPE REMOVED UNDER	601 R.C.P. W/FILTER MASONRY	602 CONCRETE C.Y.	603	603	603	604
						42" TYPE A	6" TYPE B	6" TYPE F	STD. No.4A C.B. EACH
1-UD	90+00 - 95+95	LT							
2-UD	90+00 - 95+95	RT							
3-UD	96+05 - 99+50	RT				26	42		
4-UD	96+05 - 99+50	LT				26	73		
5-UD	99+55 - 100+00	RT							
6-UD	99+55 - 100+00	LT							
7-UD	90+00 - 95+95	RT							
8-UD	90+00 - 95+95	LT							
1-EC	90+00 - 100+00	LT				26			
2-EC	94+43 - 95+93	£							
3-EC	96+00 - 100+00	RT							
1-P	96+50	LT/RT							
1-R	93+42 - 93+55	RT	20						
2-R	99+00 - 100+00	LT	150						
4-R	91+12 - 95+93	LT/RT	724						
1-D	96+00	LT/RT		4.9	2.2	198			
9-UD	96+05 - 99+50	LT							
10-UD	96+05 - 99+50	RT							
11-UD	99+55 - 100+00	LT				26			
12-UD	99+55 - 100+00	RT							

CURVE DATA
 CURVE #1, PROP. U.S. 33
 P.I. STA. 50+52.38
 $\Delta = 32^\circ-15'-39"$ LT.
 $D = 00^\circ-27'-59"$ LT.
 $R = 12,283.06'$
 $T = 3,552.38'$
 $L = 6,916.06'$
 $E = 503.38'$

FOR STORM SEWER PROFILES
 SEE SHEET NO. 97.

F-II(75)
 END PROJECT
 UNI-33-0.28
 STA. 105+01.34

END WORK
 U.S. 33
 STA. 105+01.34

BENCH MARK
 TOP OF SPIKE AT INTERSECTION OF
 EXISTING SMOKEY ROAD & PROP. U.S. 33
 STA. 93+44.17
 ELEV. = 1092.39

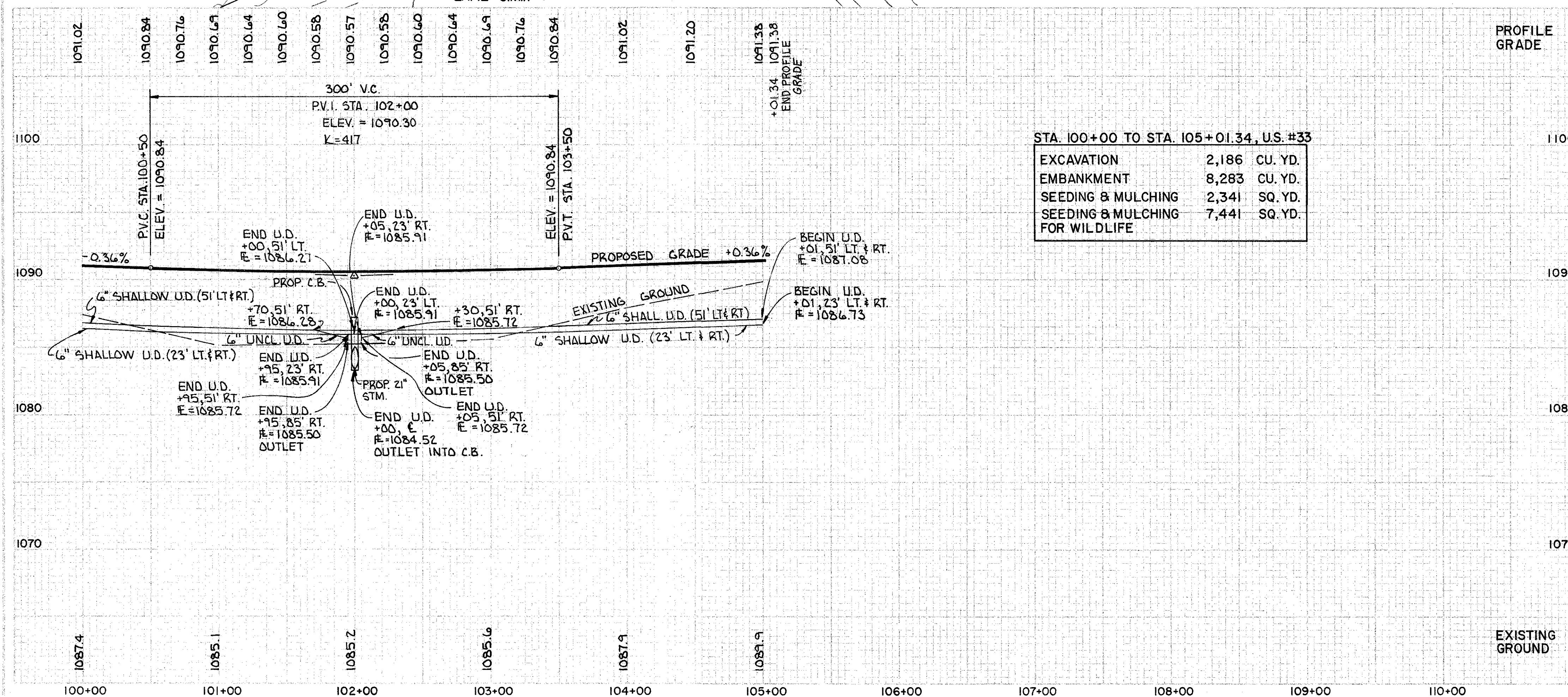
CALCULATED BY RJH DATE 10-14-85

CHECKED BY GAG DATE 12-2-85

FED. RD. DIST. NO. 2 STATE OHIO PROJECT UNI-33-0.28

67
 224

MATCH LINE - PROP. U.S. 33 STA. 100+00, SEE SHT. 66



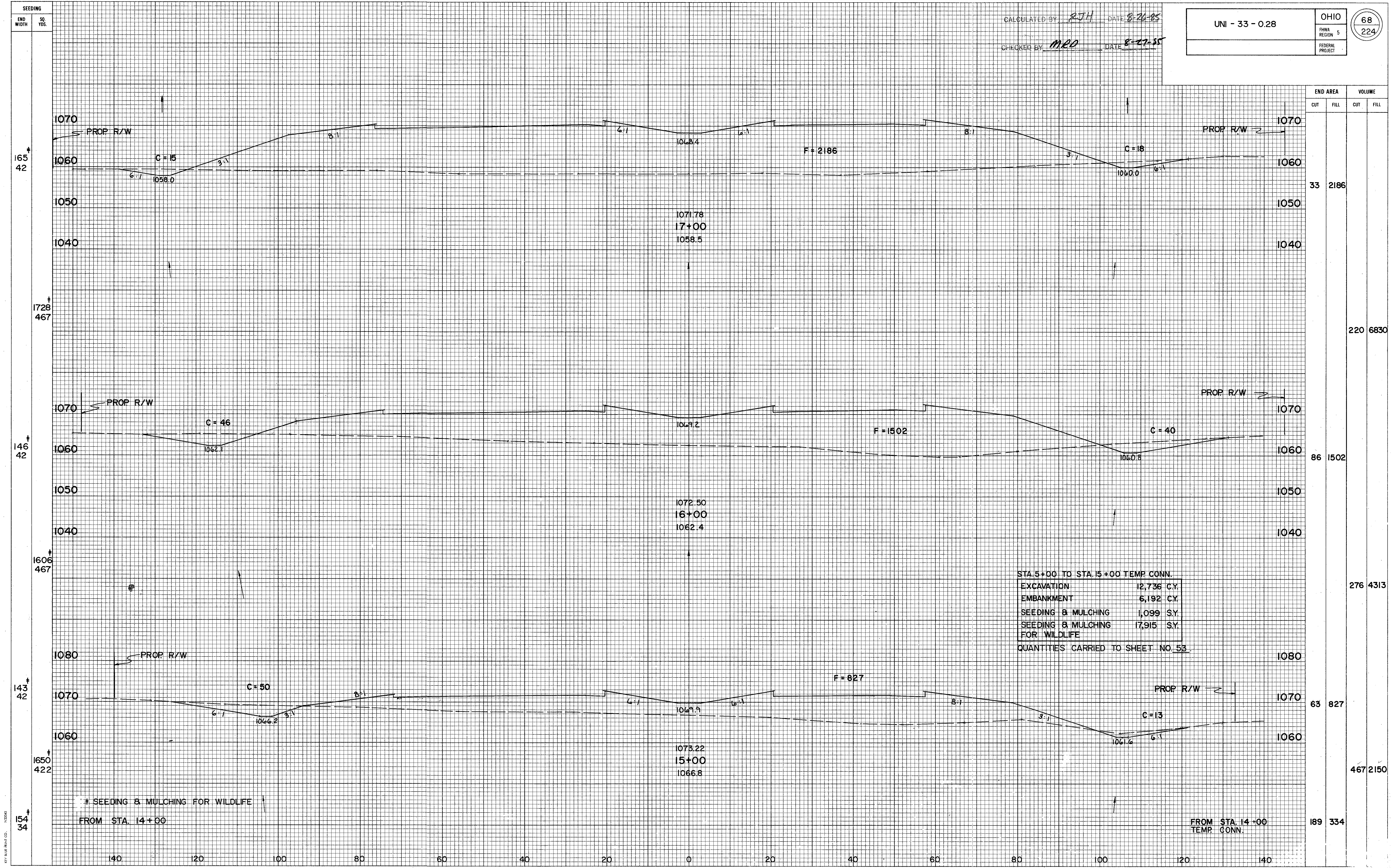
STA. 100+00 TO STA. 105+01.34, U.S. #33

EXCAVATION	2,186	CU. YD.
EMBANKMENT	8,283	CU. YD.
SEEDING & MULCHING	2,341	SQ. YD.
SEEDING & MULCHING FOR WILDLIFE	7,441	SQ. YD.

ESTIMATED QUANTITIES

ESTIMATED QUANTITIES												
REF. NO.	STATION TO STATION	300	202 REMOVED FOR STORAGE L.F.	602 CONCRETE MASONRY C.Y.	603 TYPE B L.F.	603 6" TYPE F L.F.	604 STD. NO. 4 C.B. EACH	605 UNCL. PIPE U.D. L.F.	605 SHALL PIPE U.D. L.F.	605 BENDS BRANCH L.F.	670 DITCH EARTH FILL SY.	SEE ONLY NO.
1-UD	100+00 - 105+01	LT				23		501				
2-UD	100+00 - 101+95	RT			26	36		195				
3-UD	102+03 - 105+01	RT			26	36		296				
4-UD	100+00 - 105+01	LT			26			501				
5-UD	100+00 - 101+95	RT						25	170			
6-UD	102+03 - 105+01	RT						25	271			
1-EC	100+43 - 101+93	℄									125	42
2-EC	102+07 - 103+57	℄									125	42
3-EC	100+00 - 105+01	LT									1200	42
4-EC	100+00 - 105+01	RT									1004	42
1-R	100+00 - 101+50	LT & RT	230									
2-R	104+00 - 105+20	RT	130									
1-D	102+00	℄ & RT		0.4	90		1					
			360	0.4	90	78	95	1	50	1934	2,454	

PLAN & PROFILE PROPOSED U.S. 33 STA. 100+00 TO STA. 105+01.34



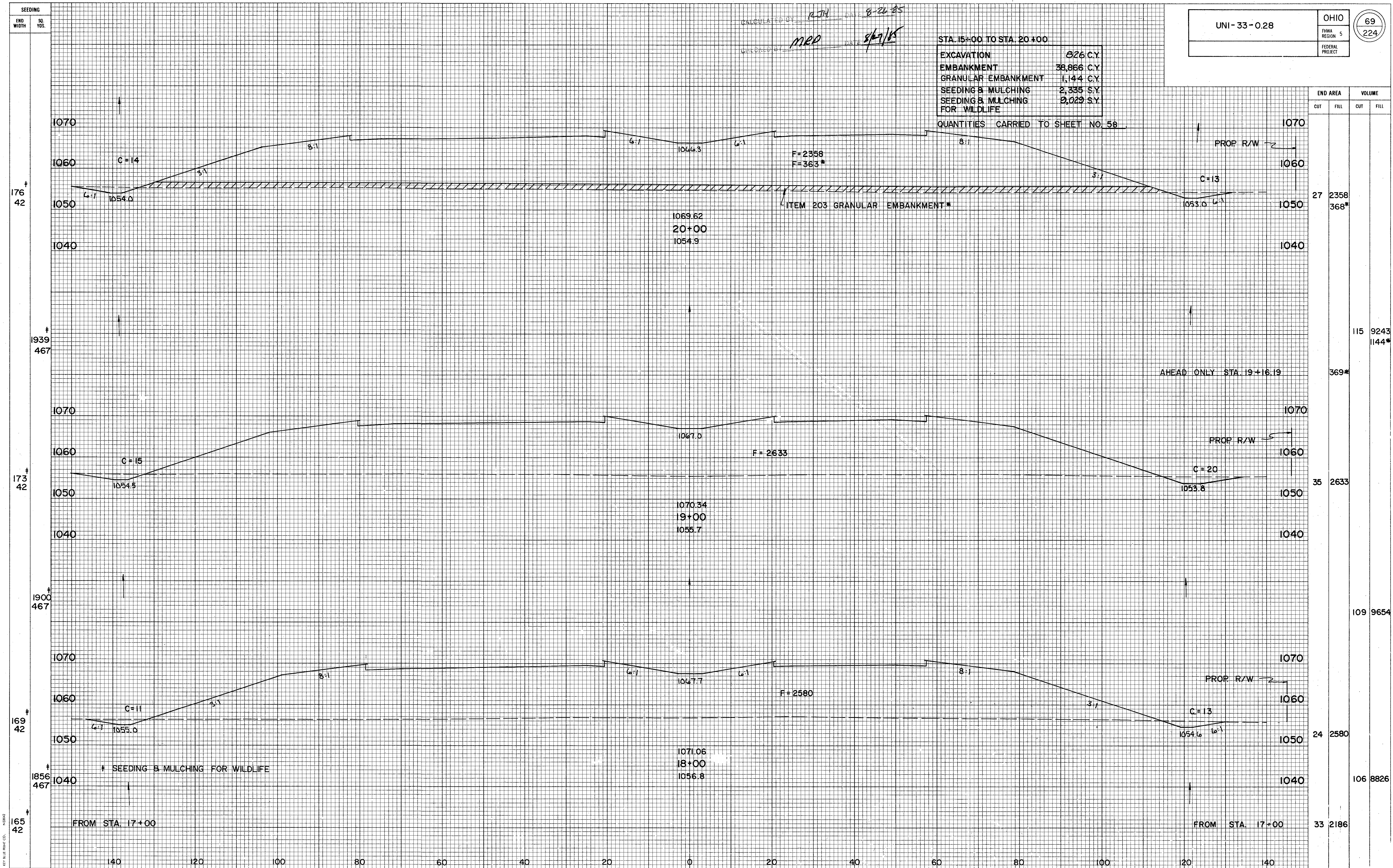
CALCULATED BY: RJH DATE: 8-26-85
CHECKED BY: MRD DATE: 8-27-85

UNI - 33 - 0.28		OHIO	68
		FHWA REGION 5	224
		FEDERAL PROJECT	

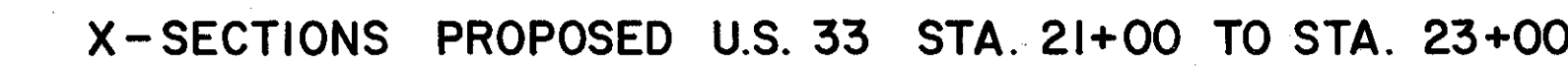
END AREA		VOLUME	
CUT	FILL	CUT	FILL
33	2186		
86	1502		
63	827		
189	334		

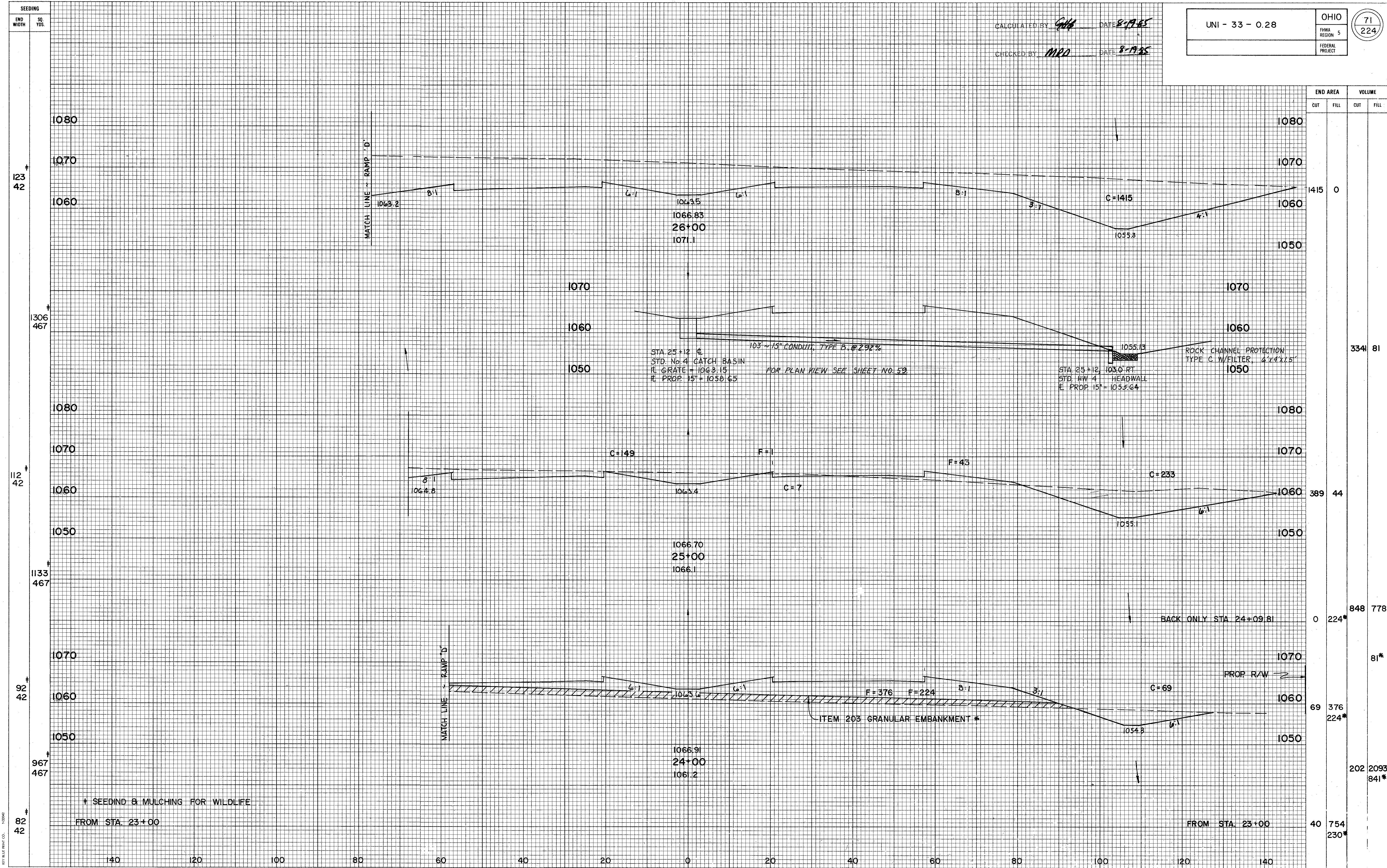
STA. 5+00 TO STA. 15+00 TEMP. CONN.
EXCAVATION 12,736 C.Y.
EMBANKMENT 6,192 C.Y.
SEEDING & MULCHING 1,099 S.Y.
SEEDING & MULCHING 17,915 S.Y.
FOR WILDLIFE
QUANTITIES CARRIED TO SHEET NO. 53

X-SECTIONS PROPOSED U.S. 33 STA. 15+00 TO STA. 17+00



X-SECTIONS PROPOSED U.S. 33 STA. 18+00 TO STA. 20+00





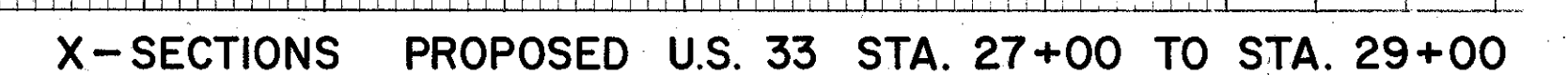
X-SECTIONS PROPOSED U.S. 33 STA. 24+00 TO STA. 26+00

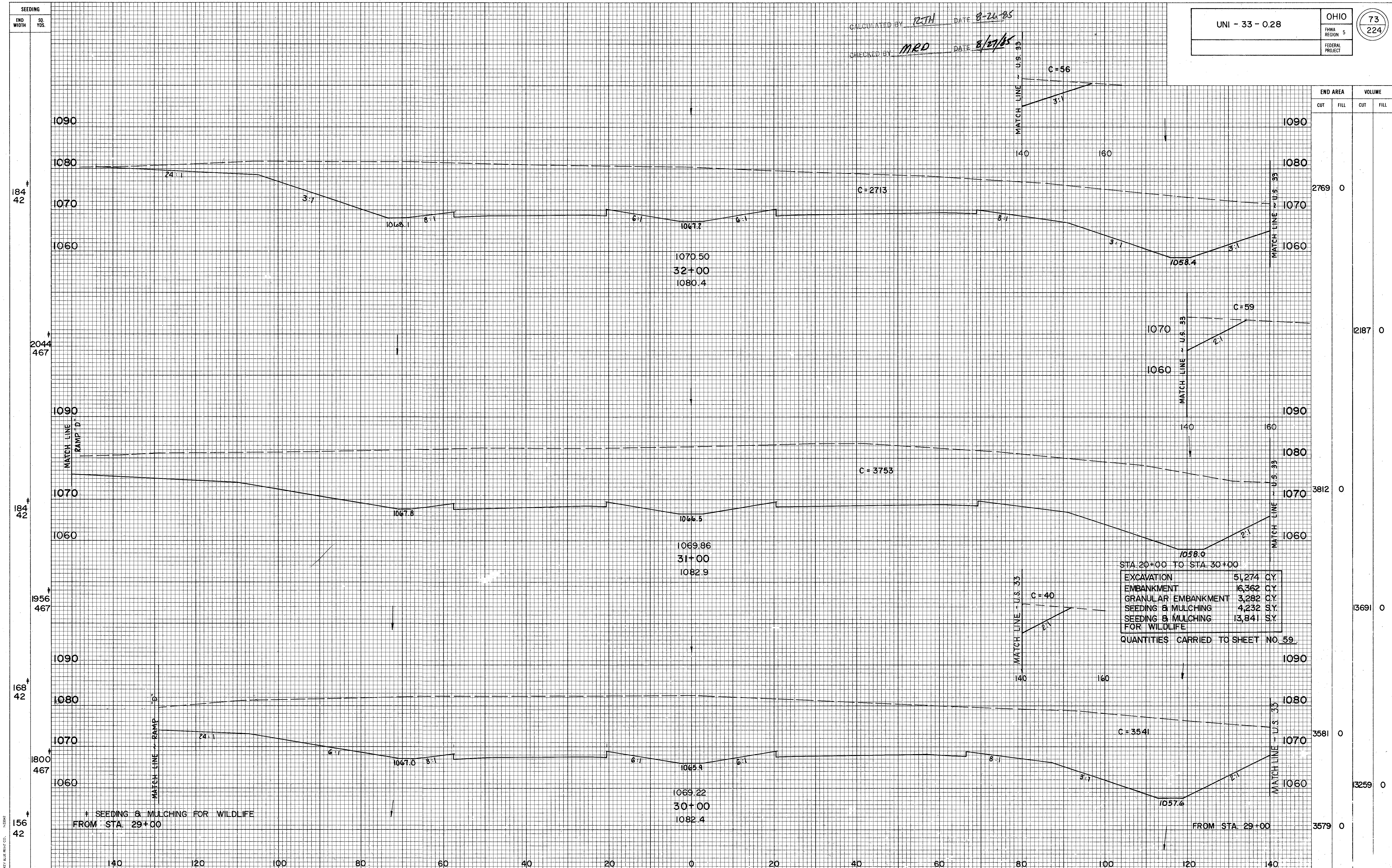
CHECKED BY MRC

DATE 8-2-83

FHWA REGION	5
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224





CALCULATED BY RTH DATE 8-26-85
CHECKED BY MED DATE 8/27/85

END AREA		VOLUME	
CUT	FILL	CUT	FILL
2769	0		
		12187	0
3812	0		
		13691	0
		3581	0
		13259	0
		3579	0

STA. 20+00 TO STA. 30+00

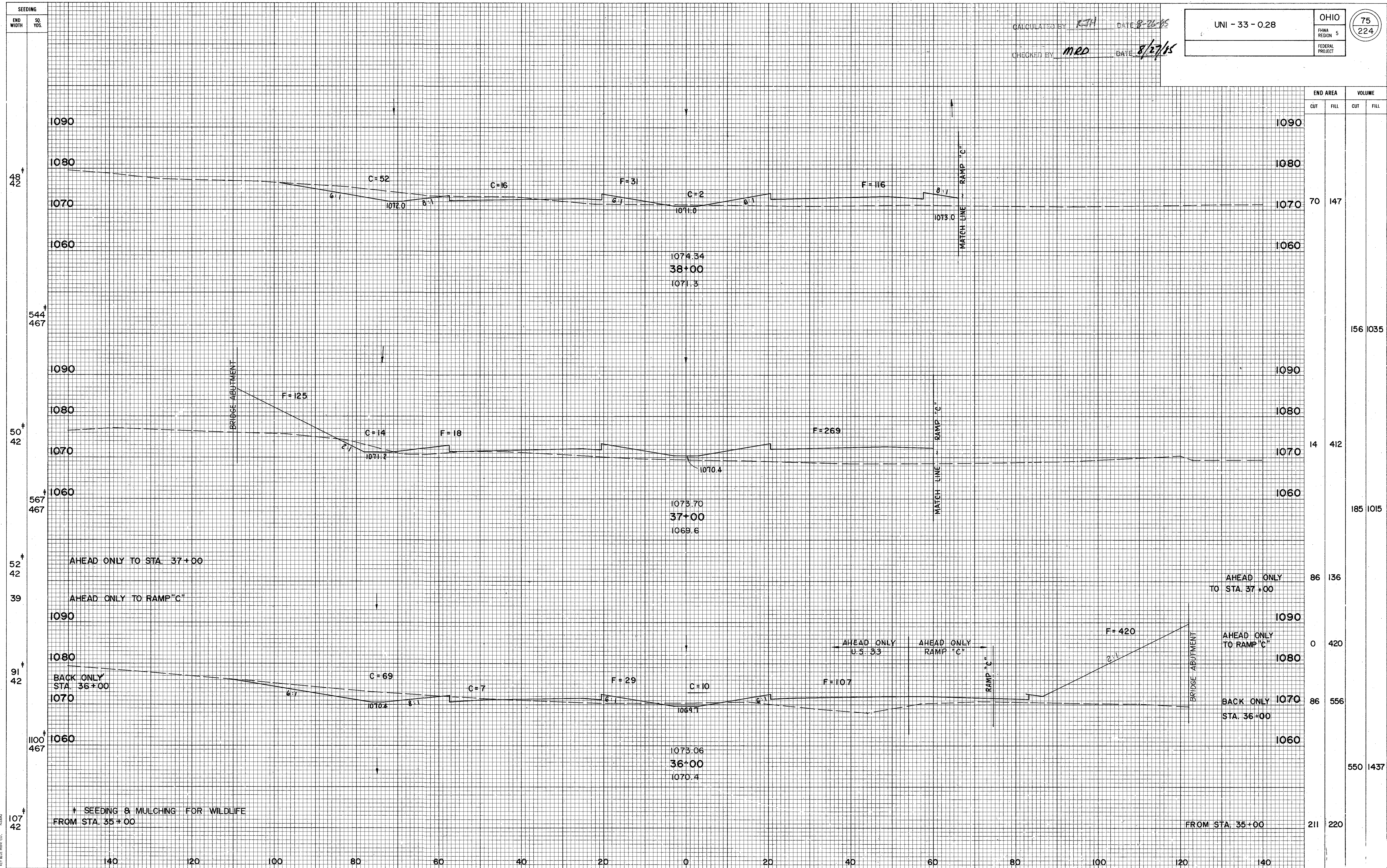
EXCAVATION	51,274 CY
EMBANKMENT	16,362 CY
GRANULAR EMBANKMENT	3,282 CY
SEEDING & MULCHING	4,232 SY
SEEDING & MULCHING FOR WILDLIFE	13,841 SY

QUANTITIES CARRIED TO SHEET NO. 59

X - SECTIONS PROPOSED U.S. 33 STA. 30+00 TO STA. 32+00

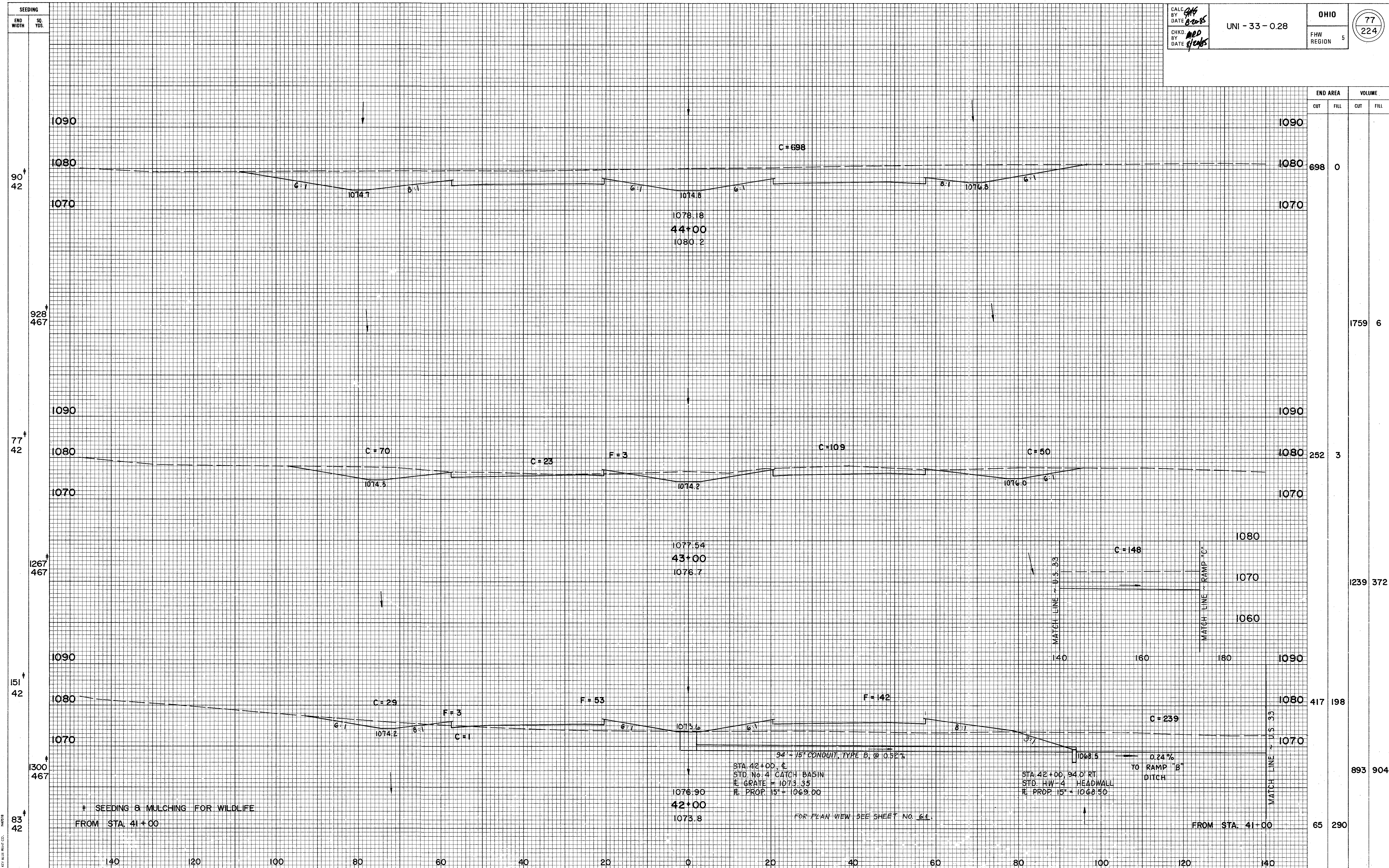


X-SECTIONS PROPOSED U.S. 33 STA. 33+00 TO STA. 35+00



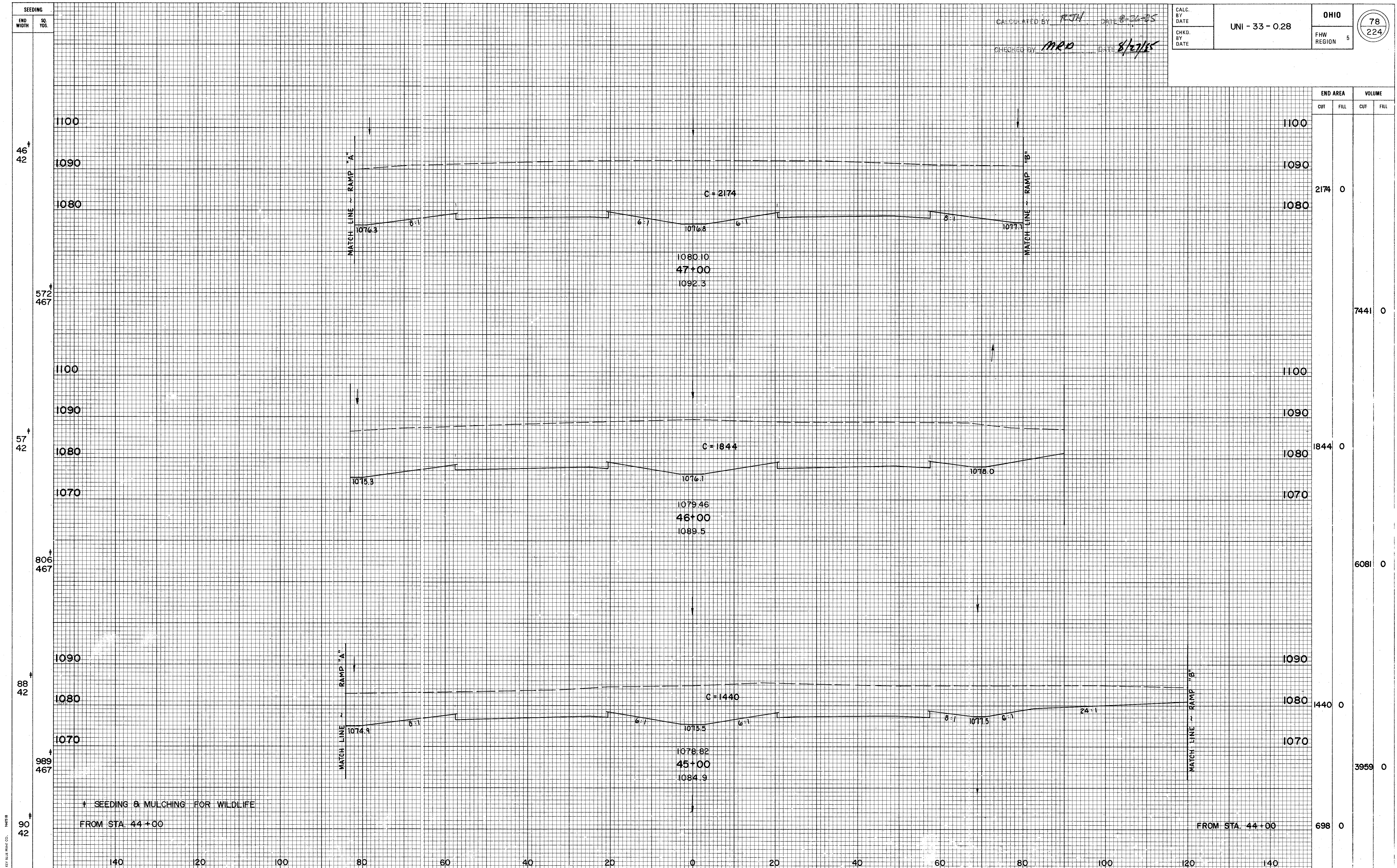
X-SECTIONS PROPOSED U.S. 33 STA. 36+00 TO STA. 38+00

X-SECTIONS PROPOSED U.S. 33 STA. 39+00 TO 41+00



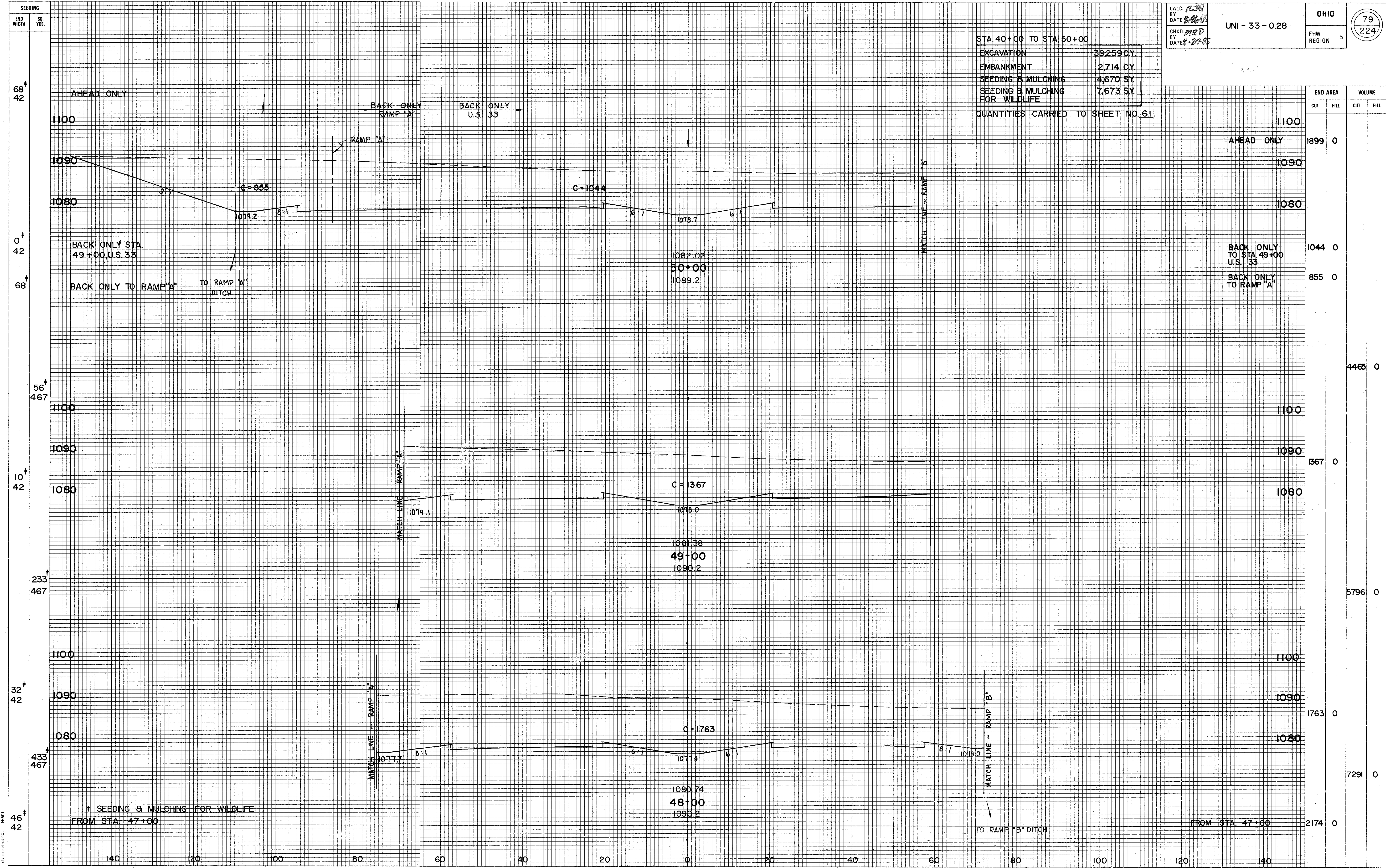
END AREA		VOLUME	
CUT	FILL	CUT	FILL
698	0	1759	6
252	3	1239	372
417	198	893	904
65	290		

X- SECTIONS PROPOSED U.S. 33 STA. 42+00 TO 44+00



CALCULATED BY RTH DATE 8-24-85
CHECKED BY MRD DATE 8/27/85

X-SECTIONS PROPOSED U.S. 33 STA. 45+00 TO STA. 47+00



STA. 40+00 TO STA. 50+00

EXCAVATION	39,259 C.Y.
EMBANKMENT	2,714 C.Y.
SEEDING & MULCHING	4,670 SY.
SEEDING & MULCHING FOR WILDLIFE	7,673 SY.

QUANTITIES CARRIED TO SHEET NO. 61.

CALC. *RJD*
BY *RJD*
DATE *8-26-85*

CHKD. *MRD*
BY *MRD*
DATE *8-27-85*

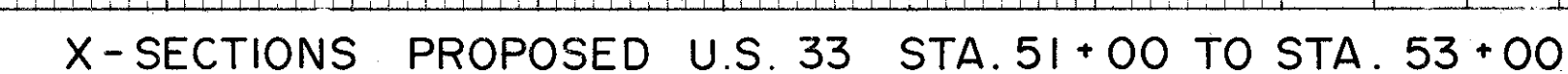
UNI - 33 - 0.28

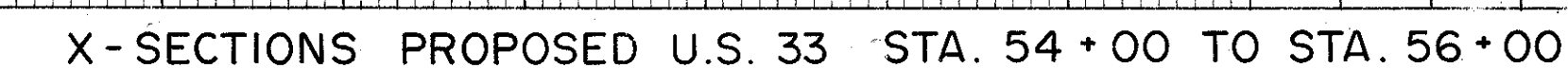
OHIO
FHW REGION 5

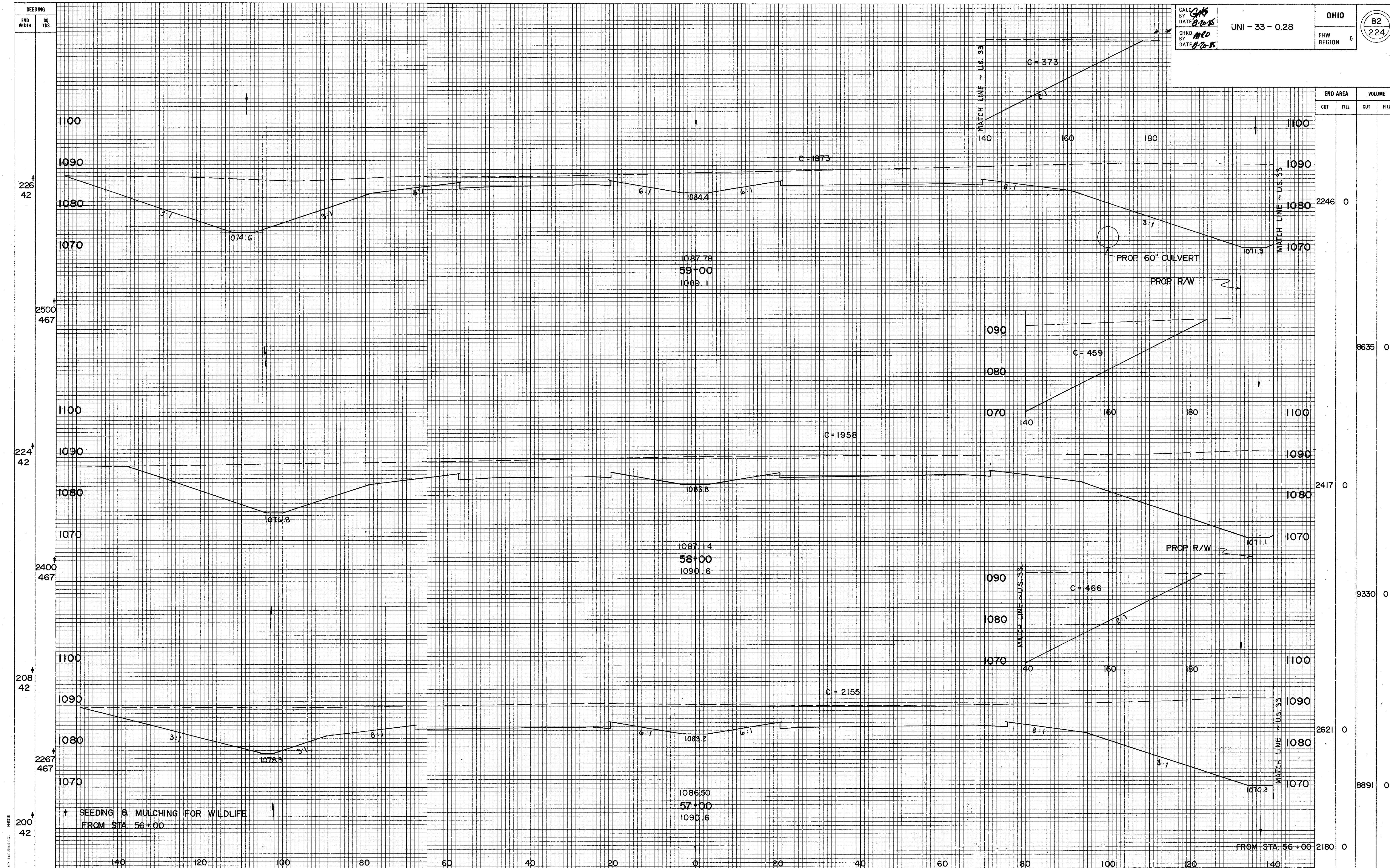
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224

END AREA		VOLUME	
CUT	FILL	CUT	FILL
1899	0		
1044	0		
855	0		
		4465	0
1367	0		
		5796	0
1763	0		
		7291	0
2174	0		

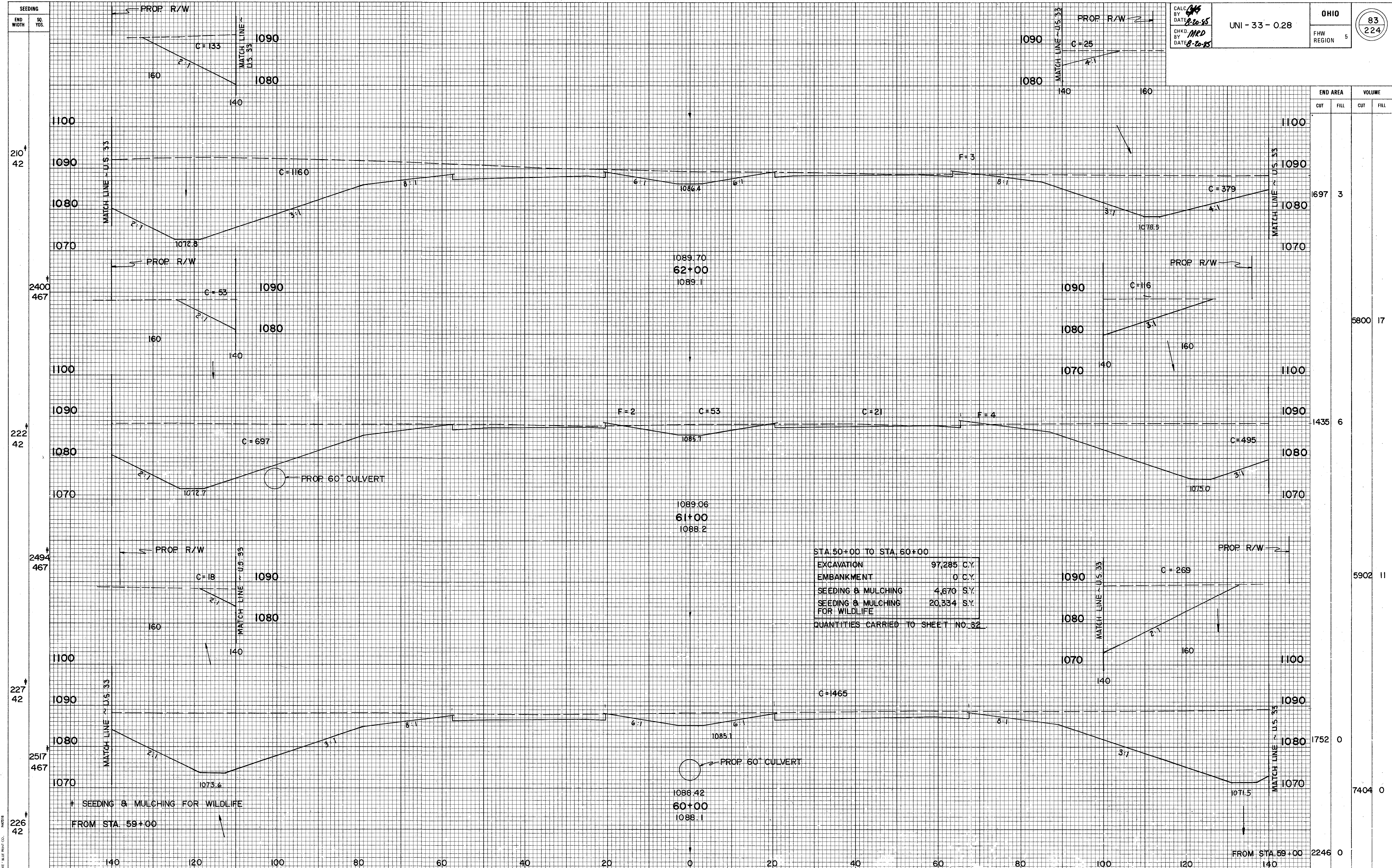
X-SECTIONS PROPOSED U.S. 33 STA. 48+00 TO STA. 50+00





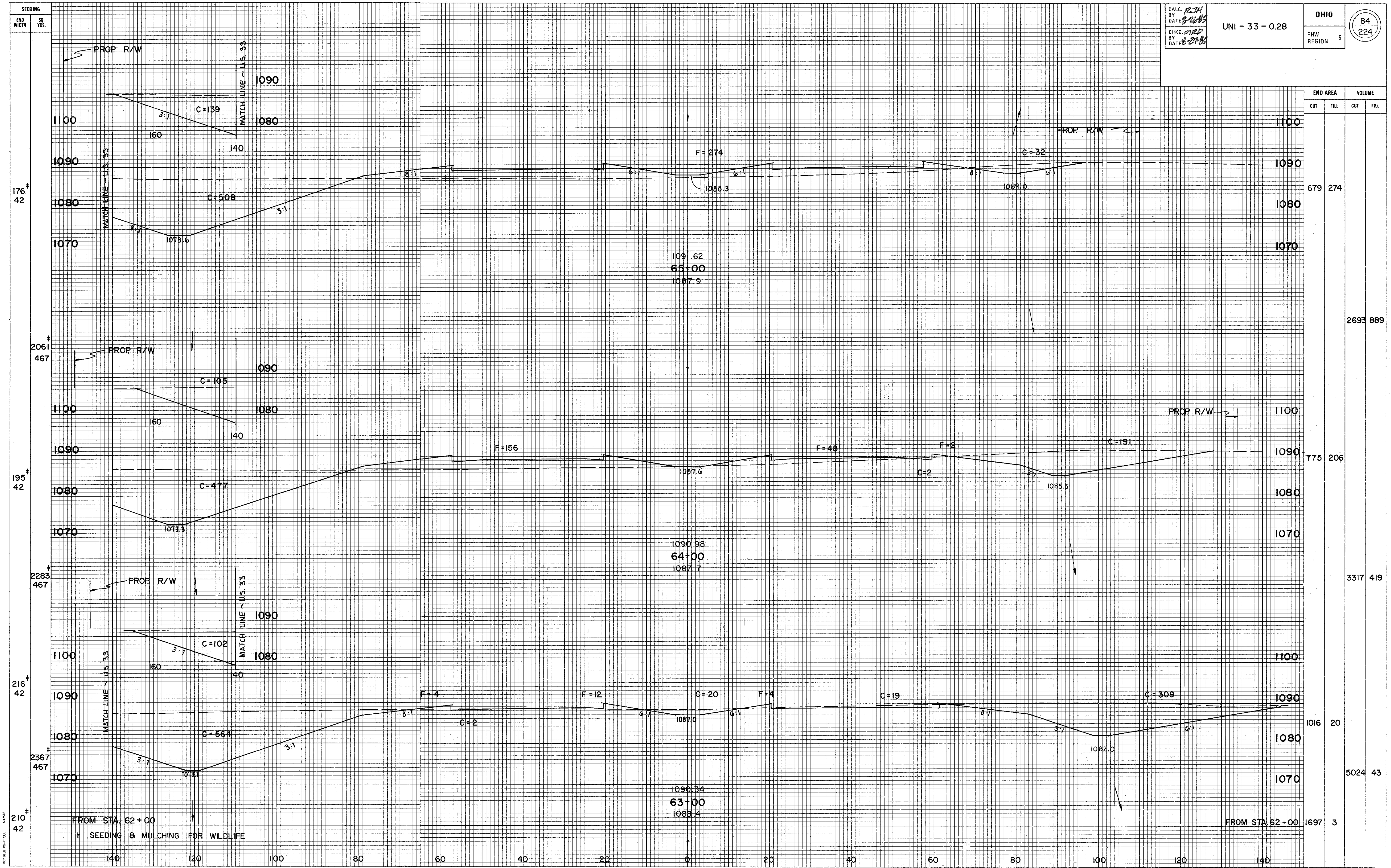


X-SECTIONS PROPOSED U.S. 33 STA. 57+00 TO STA. 59+00



STA. 50+00 TO STA. 60+00	
EXCAVATION	97,285 C.Y.
EMBANKMENT	0 C.Y.
SEEDING & MULCHING	4,670 S.Y.
SEEDING & MULCHING FOR WILDLIFE	20,334 S.Y.
QUANTITIES CARRIED TO SHEET NO. 32	

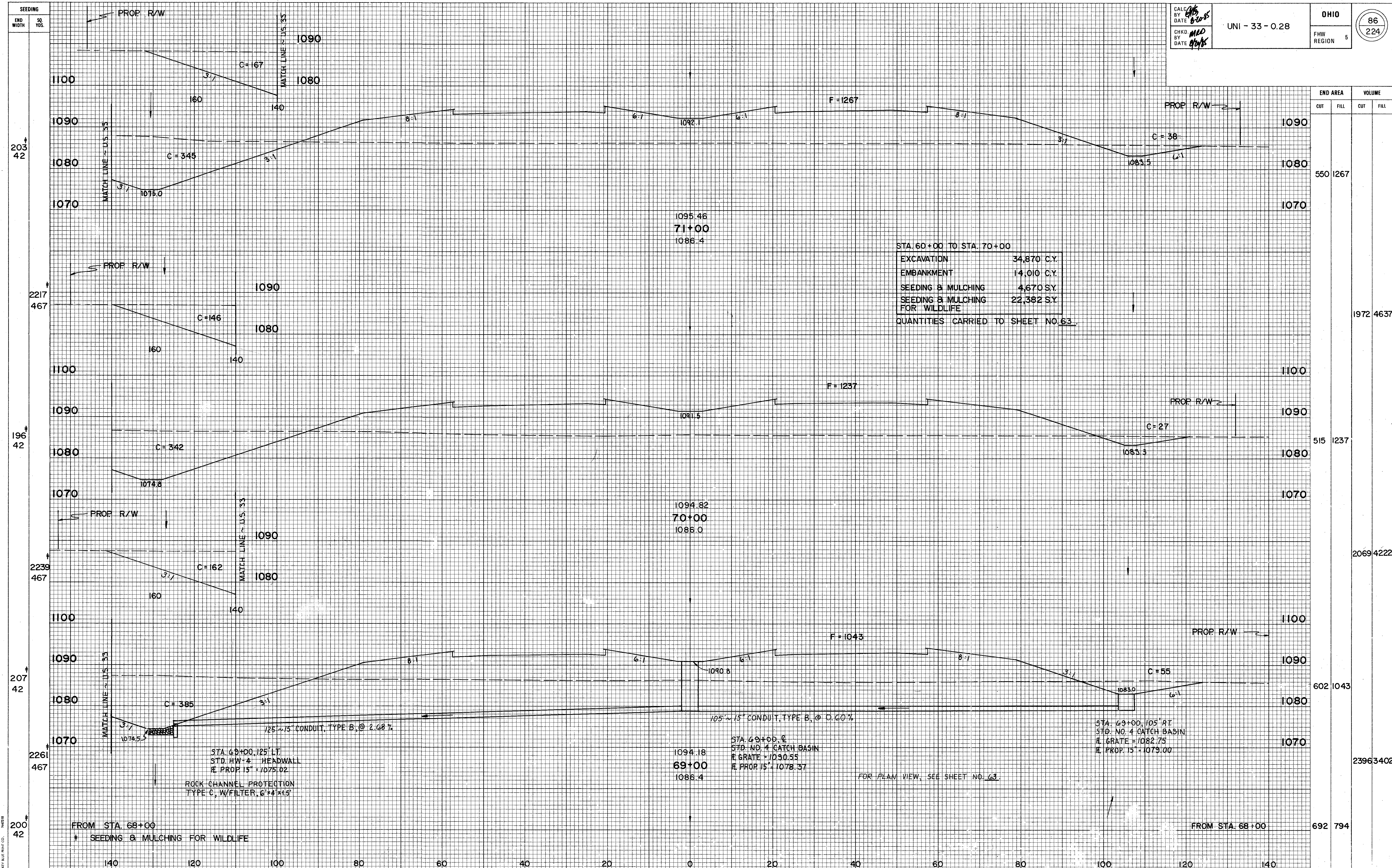
X-SECTIONS PROPOSED U.S. 33 STA. 60+00 TO STA. 62+00



END AREA		VOLUME	
CUT	FILL	CUT	FILL
679	274		
		2693	889
775	206		
		3317	419
1016	20		
		5024	43
1697	3		

X-SECTIONS PROPOSED U.S. 33 STA. 63+00 TO STA. 65+00



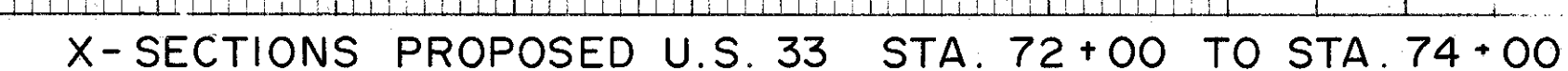


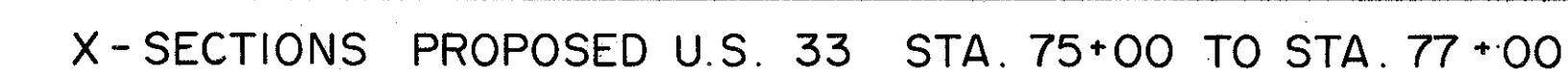
STA. 60+00 TO STA. 70+00

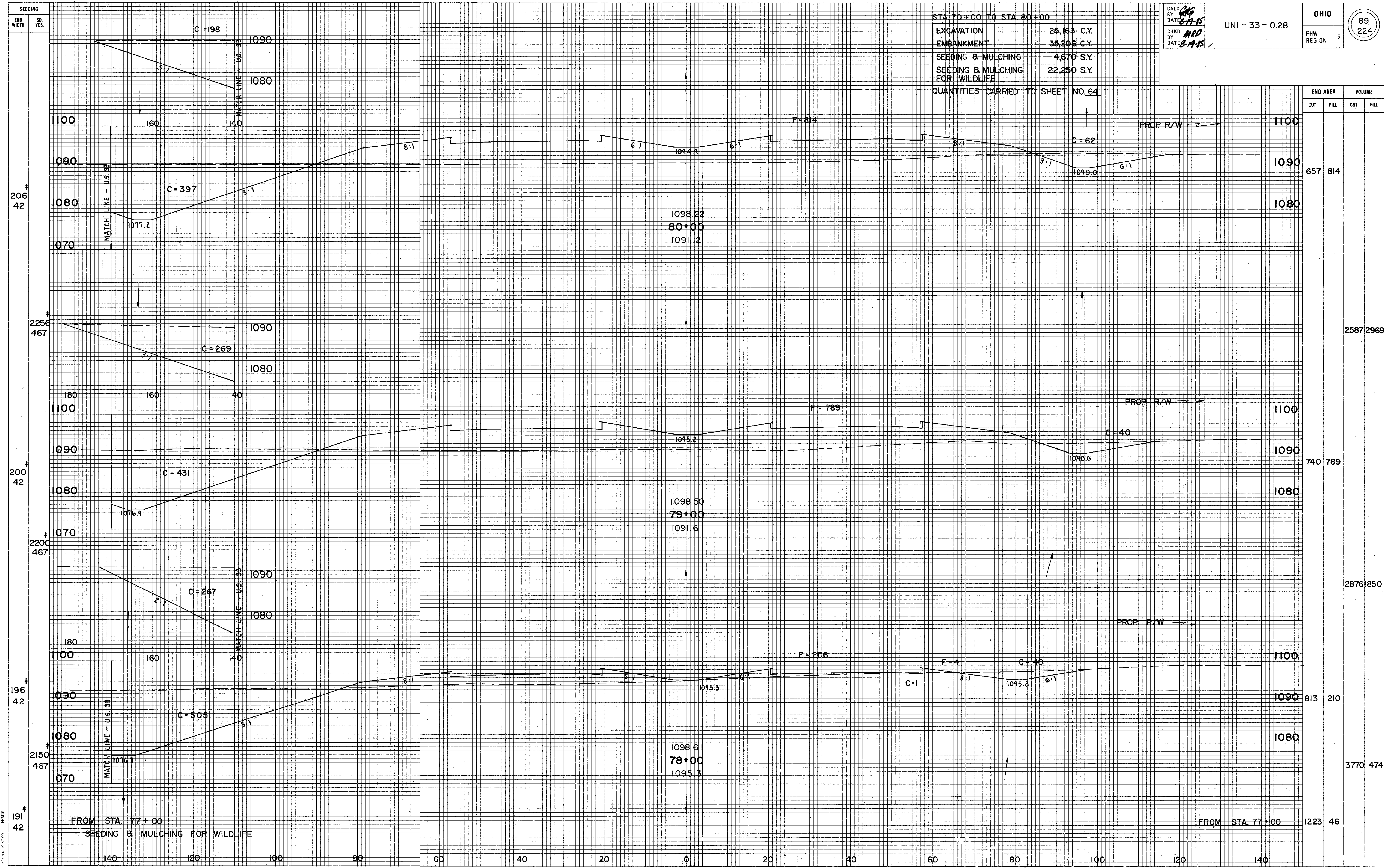
EXCAVATION	34,870 C.Y.
EMBANKMENT	14,010 C.Y.
SEEDING & MULCHING	4,670 SY.
SEEDING & MULCHING FOR WILDLIFE	22,382 SY.

QUANTITIES CARRIED TO SHEET NO. 63.

END AREA		VOLUME	
CUT	FILL	CUT	FILL
550	1267		
		1972	4637
		515	1237
		2069	4222
		602	1043
		2396	3402
		692	794







STA. 70+00 TO STA. 80+00

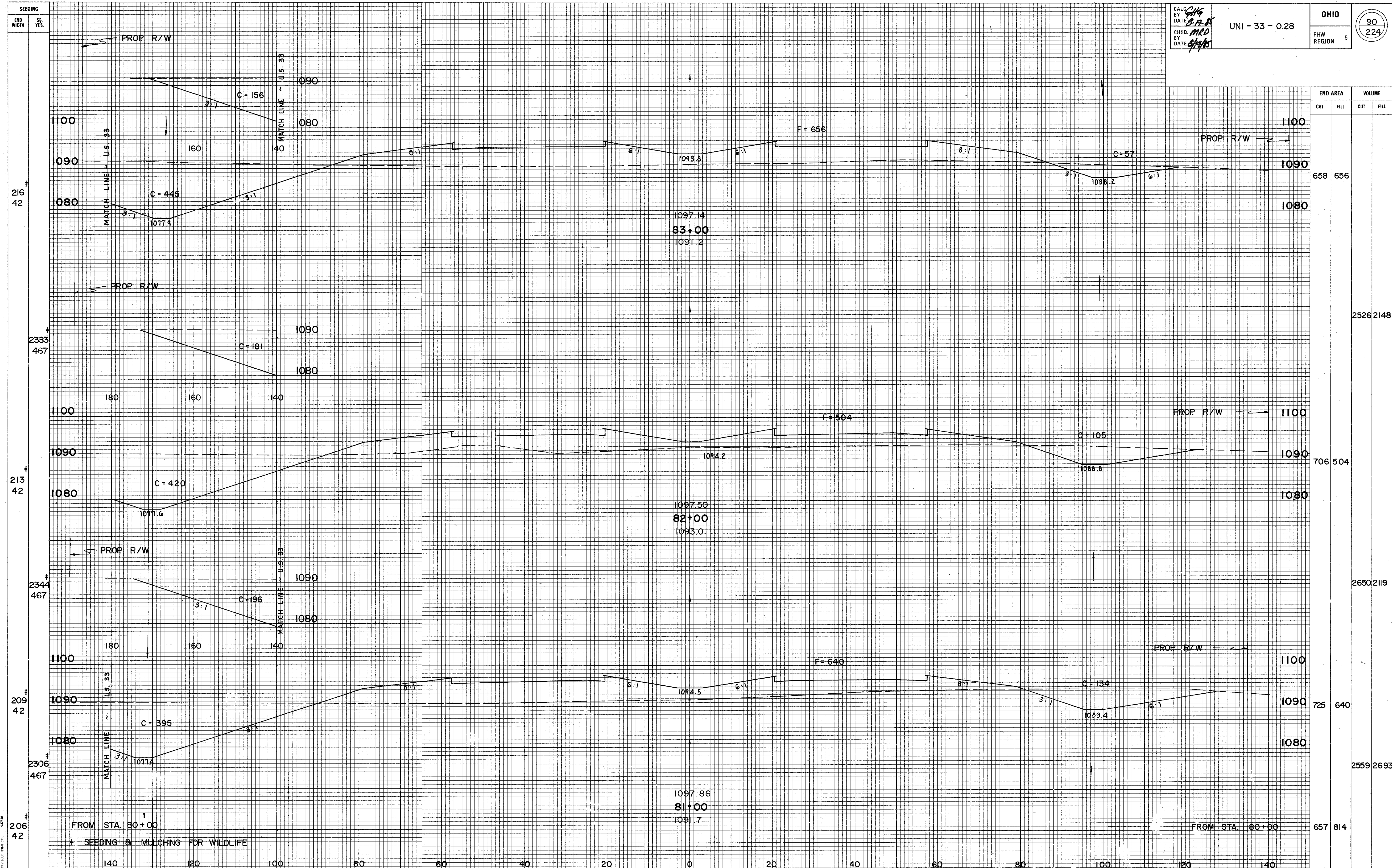
EXCAVATION	25,163 C.Y.
EMBANKMENT	35,206 C.Y.
SEEDING & MULCHING	4,670 S.Y.
SEEDING & MULCHING FOR WILDLIFE	22,250 S.Y.

QUANTITIES CARRIED TO SHEET NO. 64

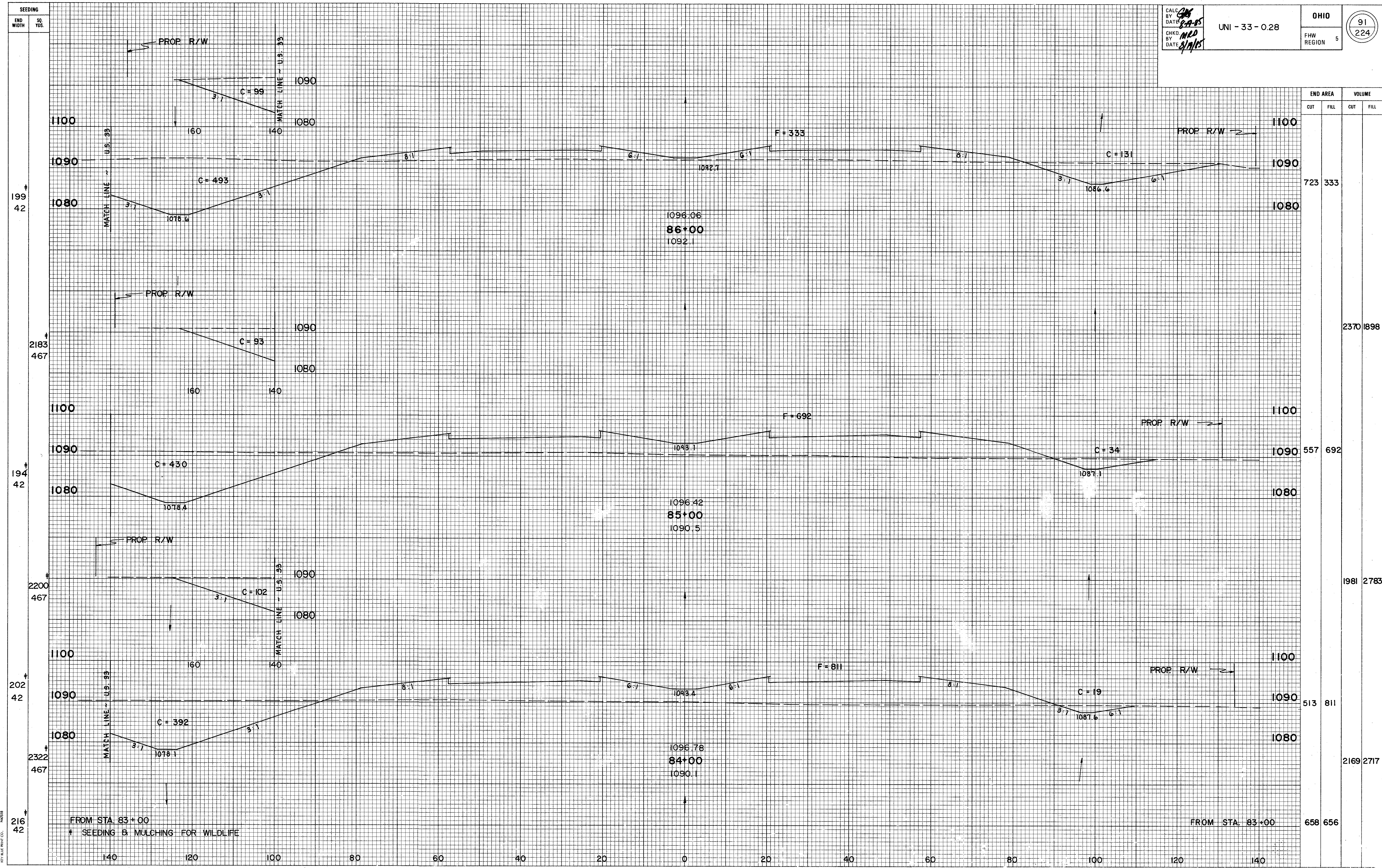
CALC. BY DATE CHKD. BY DATE	UNI - 33 - 0.28	OHIO FHWS REGION 5	89 224
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END AREA		VOLUME	
CUT	FILL	CUT	FILL
657	814		
		2587	2969
		740	789
		2876	1850
		813	210
		3770	474
		1223	46

X-SECTIONS PROPOSED U.S. 33 STA. 78+00 TO STA. 80+00

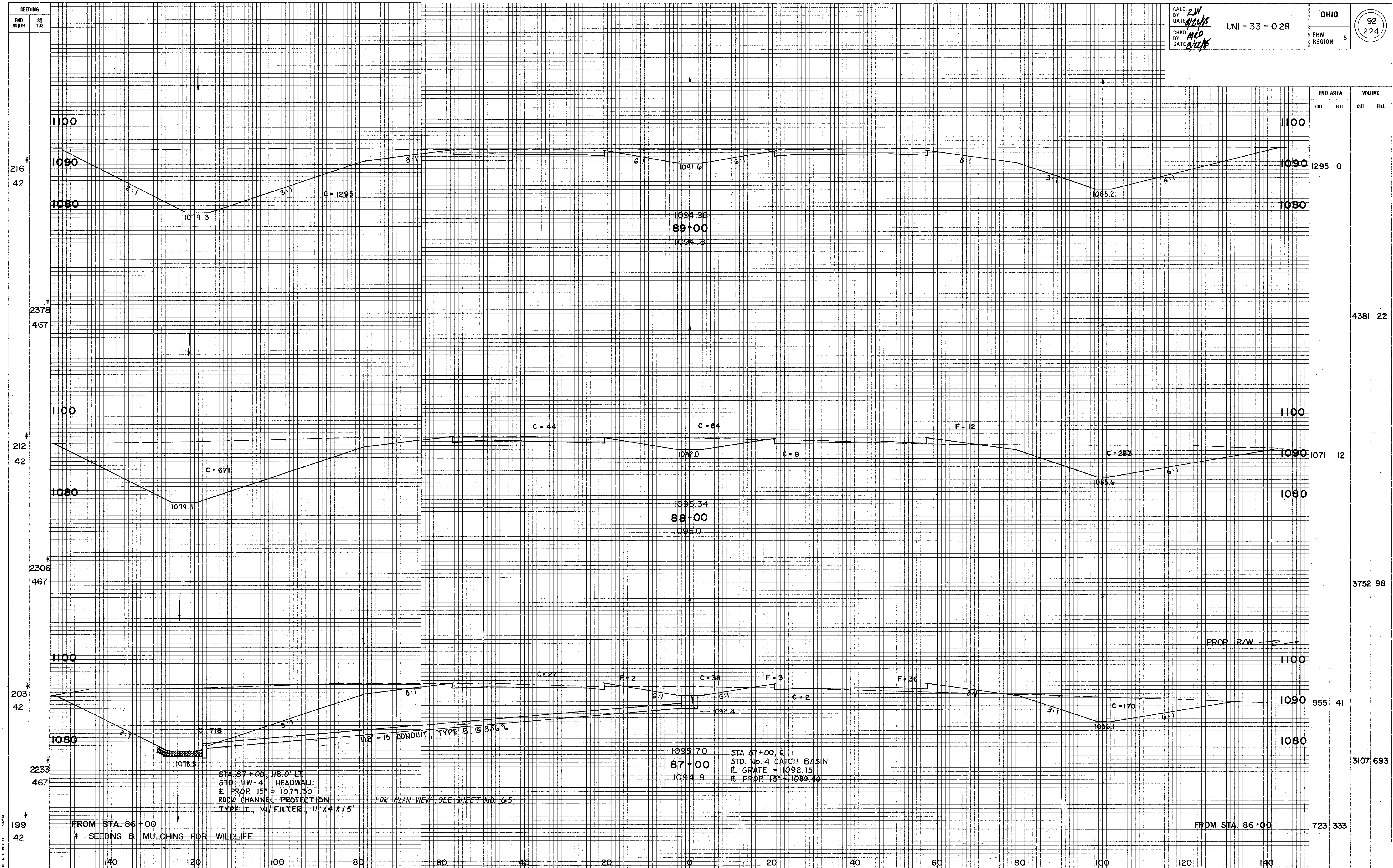


X-SECTIONS PROPOSED U.S. 33 STA. 81+00 TO STA. 83+00

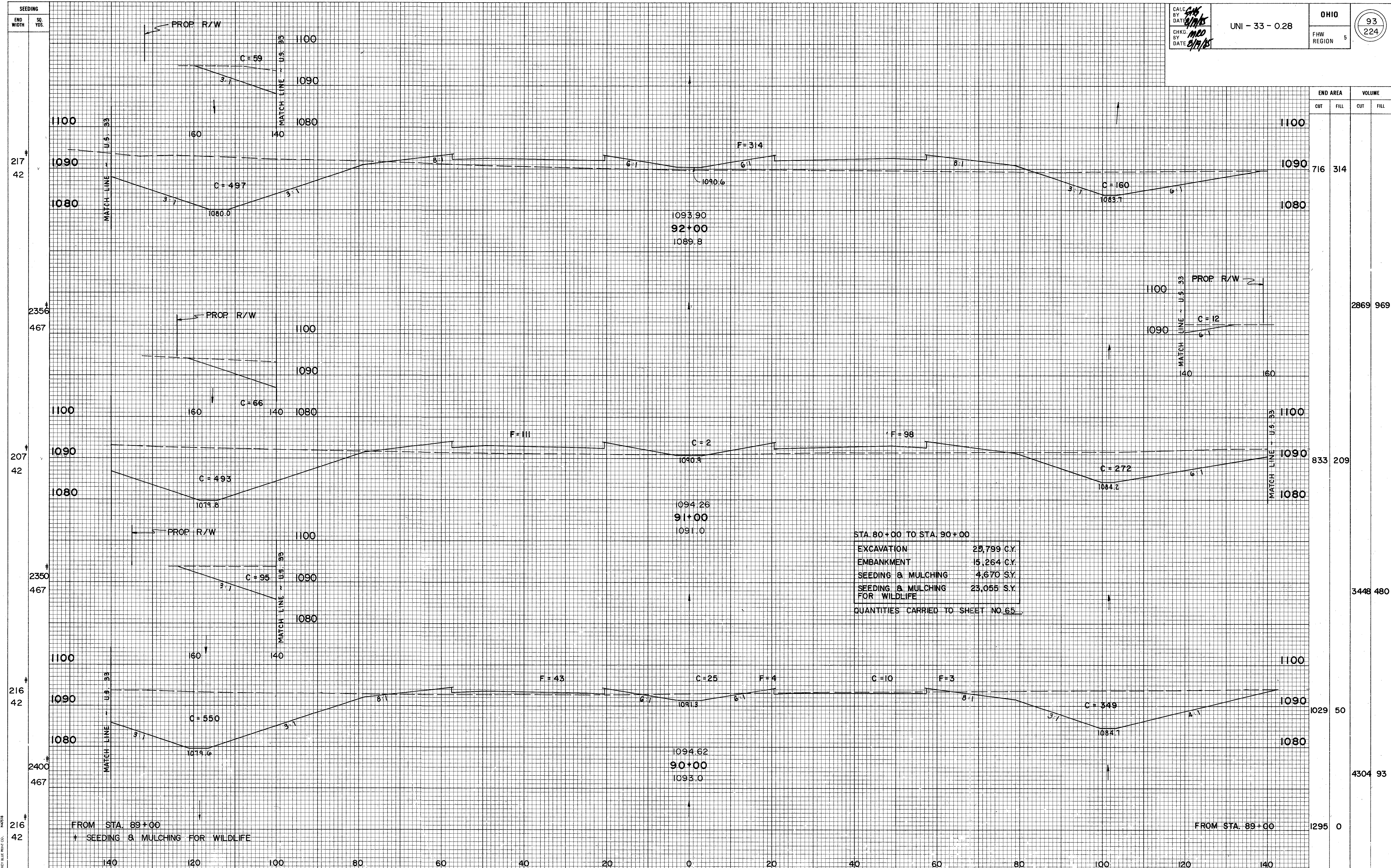


END AREA		VOLUME	
CUT	FILL	CUT	FILL
723	333		
		2370	1898
557	692		
		1981	2783
513	811		
		2169	2717
658	656		

X - SECTIONS PROPOSED U.S. 33 STA. 84 + 00 TO STA. 86 + 00

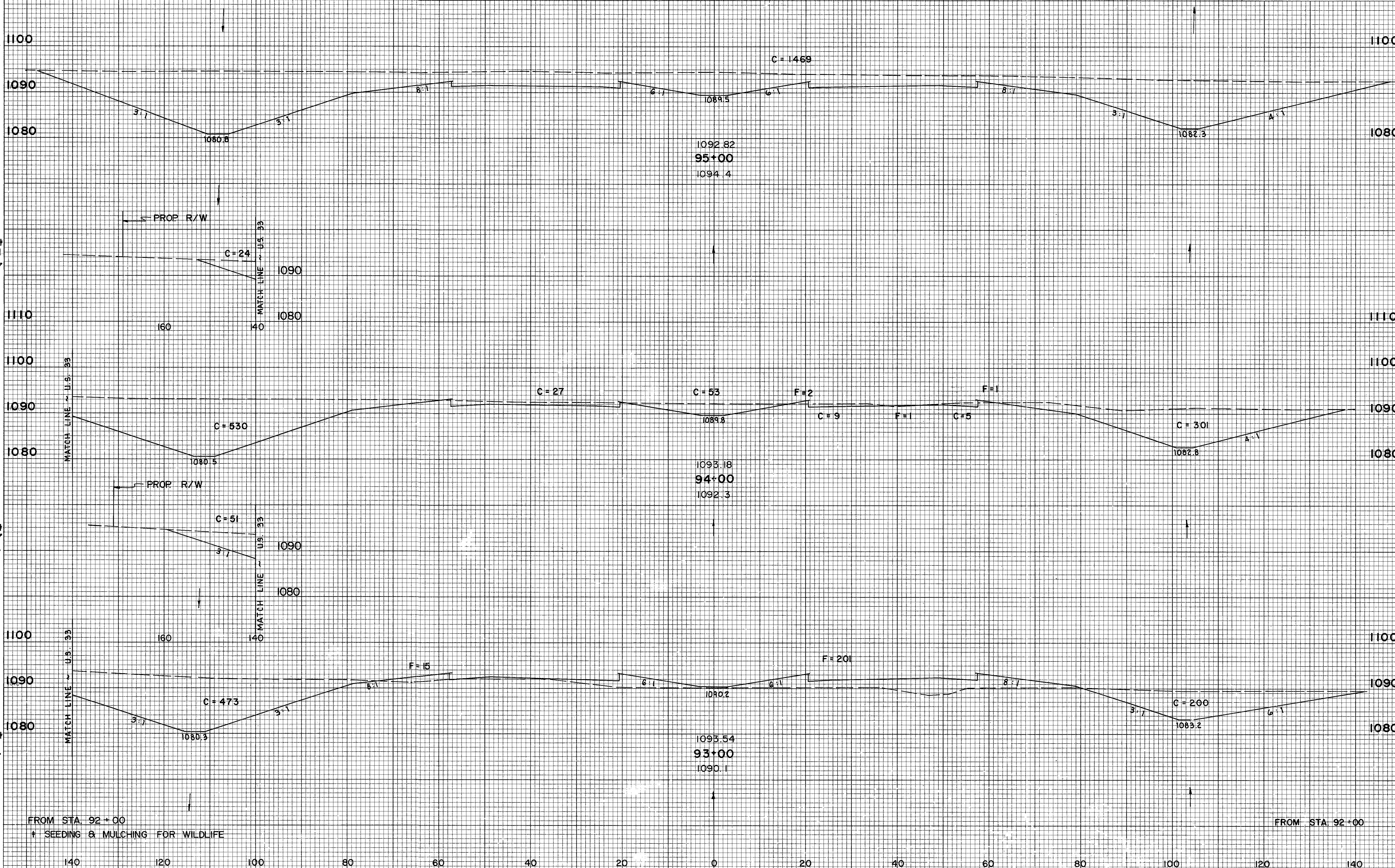


X-SECTIONS PROPOSED U.S. 33 STA. 87+00 TO STA. 89+00



X-SECTIONS PROPOSED U.S. 33 STA. 90+00 TO STA. 92+00

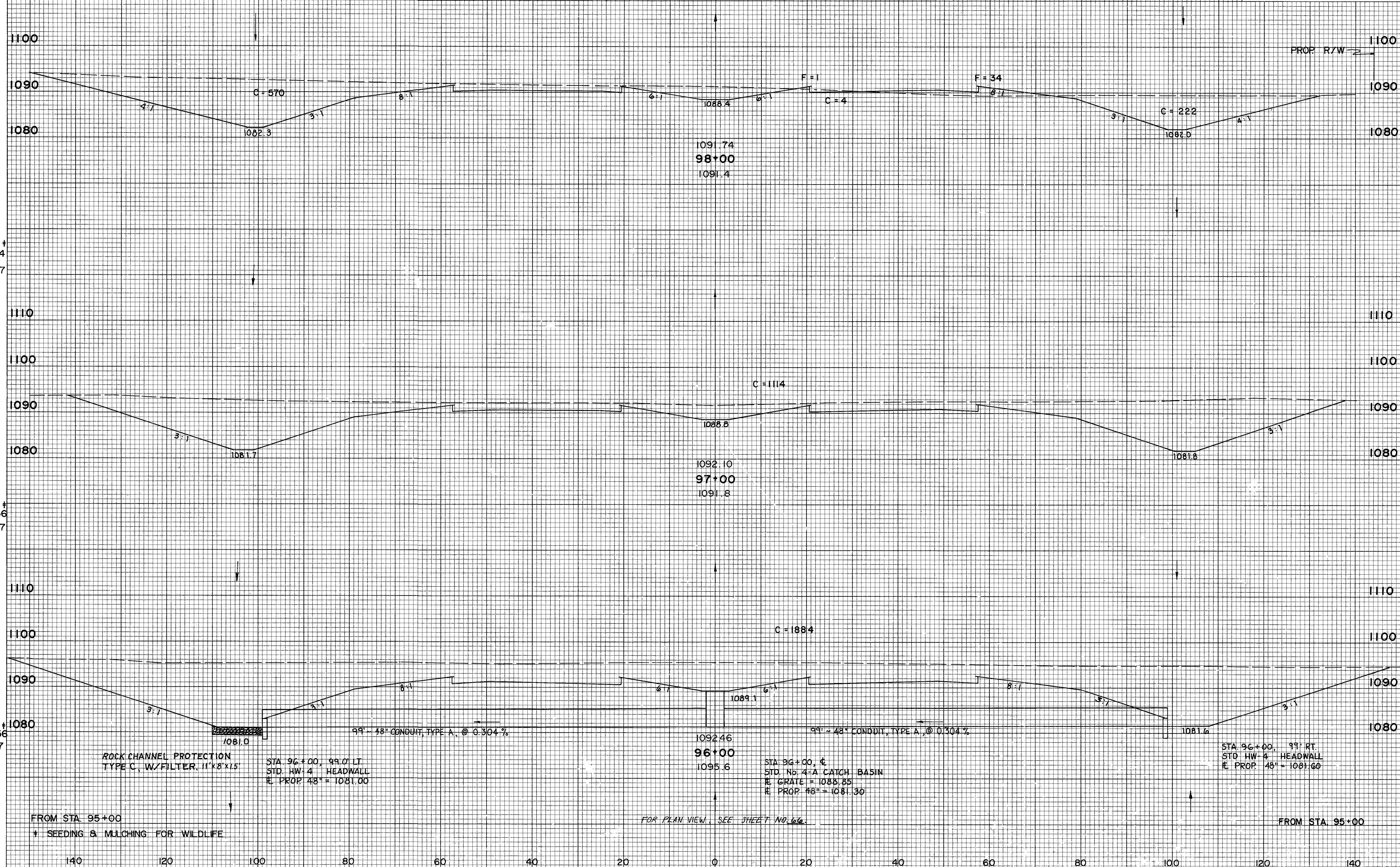
SEEDING
END WIDTH SQ. YDS.
216 42
2411 467
218 42
2417 467
217 42
2411 467
217 42



END AREA		VOLUME	
CUT	FILL	CUT	FILL
1469	0		
4478	7		
949	4		
3098	407		
724	216		
2667	981		
716	314		

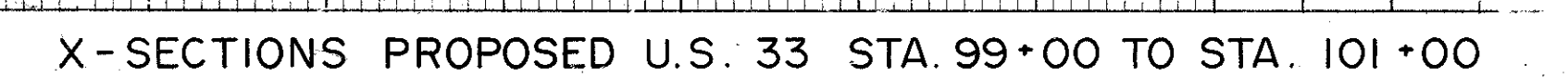
X-SECTIONS PROPOSED U.S. 33 STA. 93+00 TO STA. 95+00

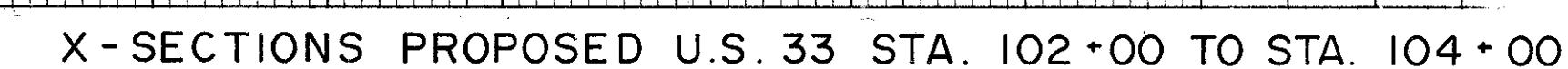
SEEDING
END WIDTH SQ. YDS.
188 42
2144 467
198 42
2256 467
208 42
2356 467
216 42

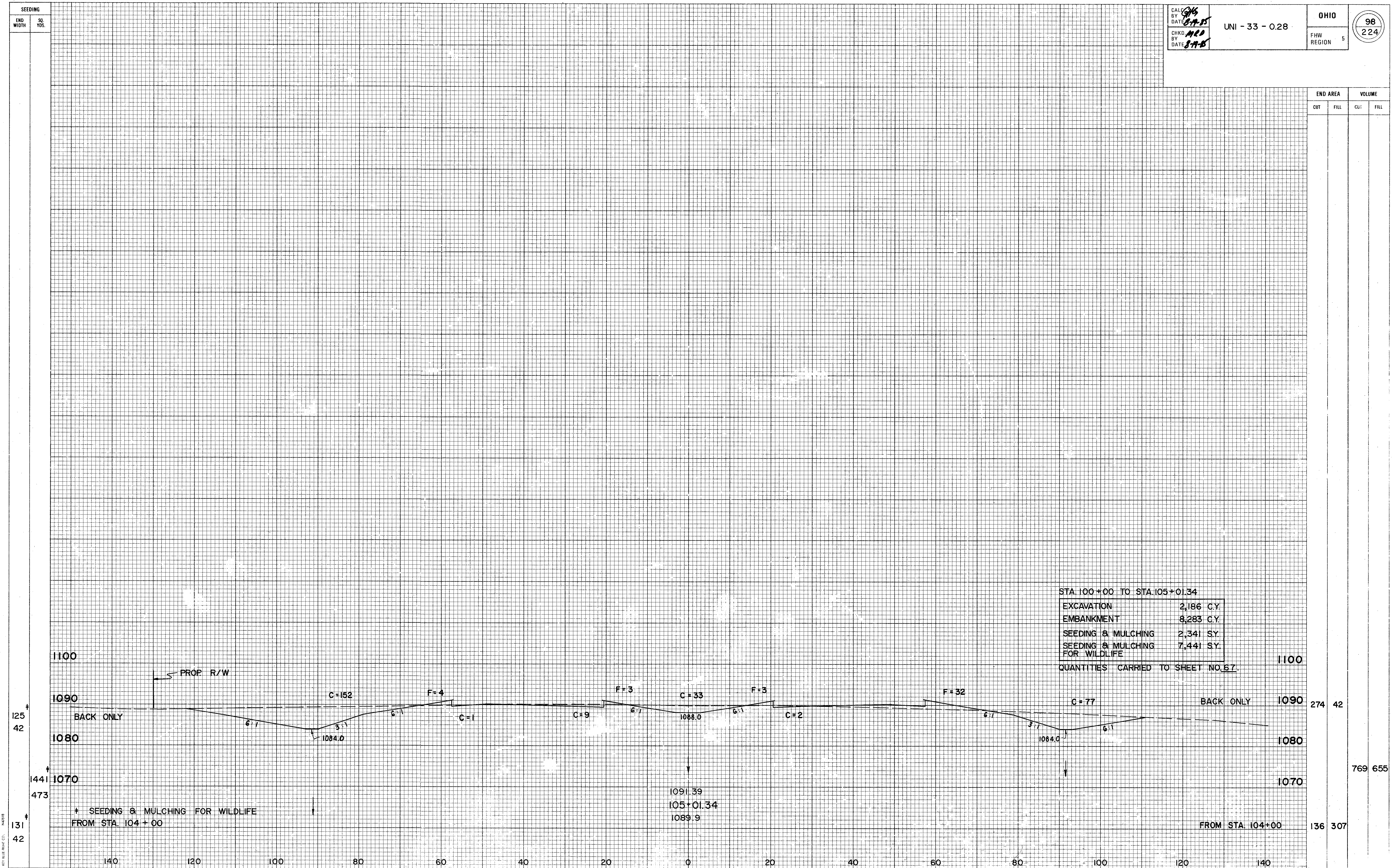


END AREA		VOLUME	
CUT	FILL	CUT	FILL
796	35		
		3537	65
		1114	0
		5552	0
		1884	0
		6209	0
		1469	0

X-SECTIONS PROPOSED U.S. 33 STA. 96+00 TO STA. 98+00







X-SECTIONS PROPOSED U.S. 33 STA. 105+01.34

MICROFILMED
JAN 3 1989

QUANTITY FOR REINFORCED CONCRETE APPROACH
SLAB SHALL INCLUDE THE INTEGRAL CURB. (SEE
STANDARD BRIDGE DRAWING ICD-1-82 DWG. 1 OF 5).
PAYMENT FOR THE INTEGRAL CURB SHALL BE INCLUDED
IN THE CONTRACT UNIT PRICE BID FOR ITEM 611-REINFORCED
CONCRETE APPROACH SLAB.

FOR U.S. 33 PLAN & PROFILE
SEE SHEET NO. 60.
FOR RAMP CURVE DATA SEE
INTERCHANGE GEOMETRIC LAYOUT,
SHEET NO. 124.
FOR INTERSECTION DETAILS
SEE SHEET NO. 157.

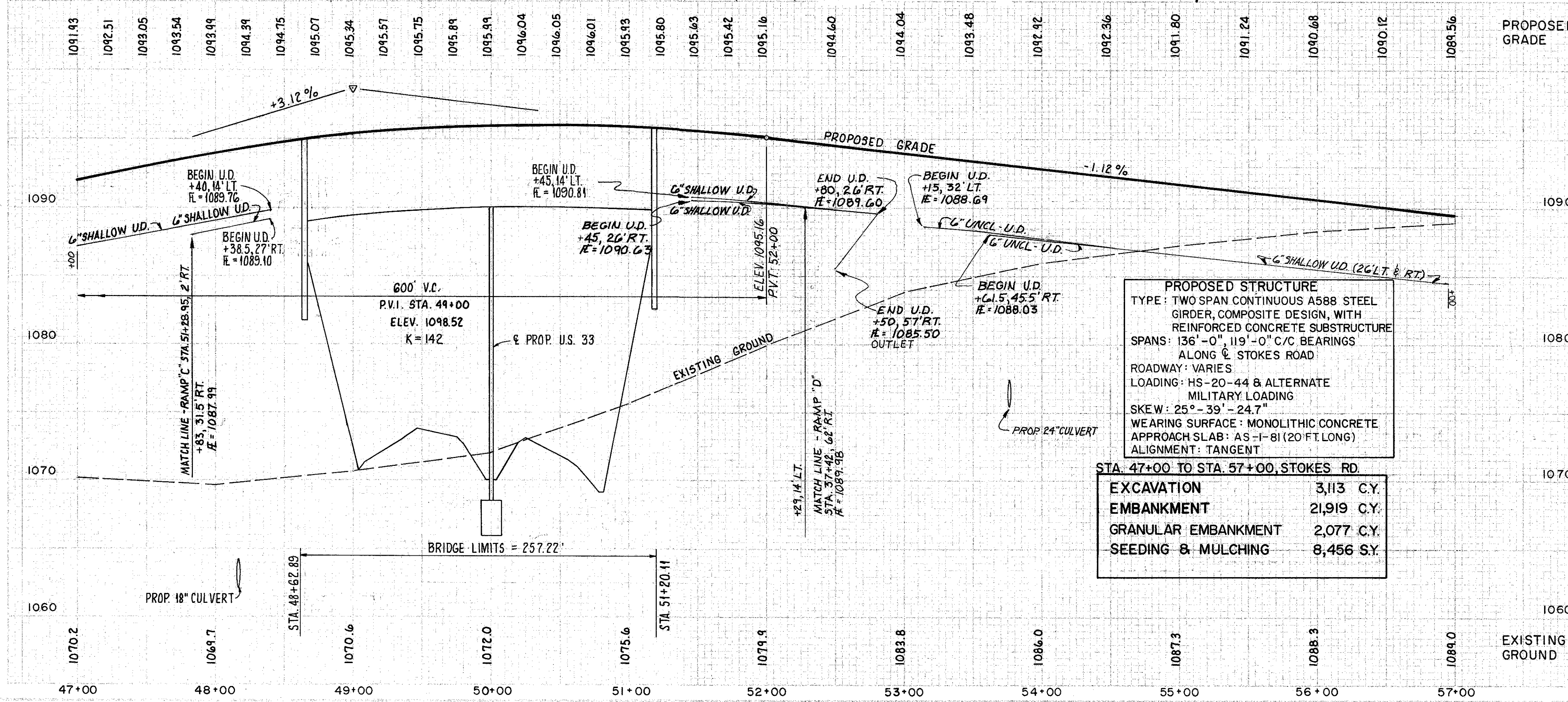
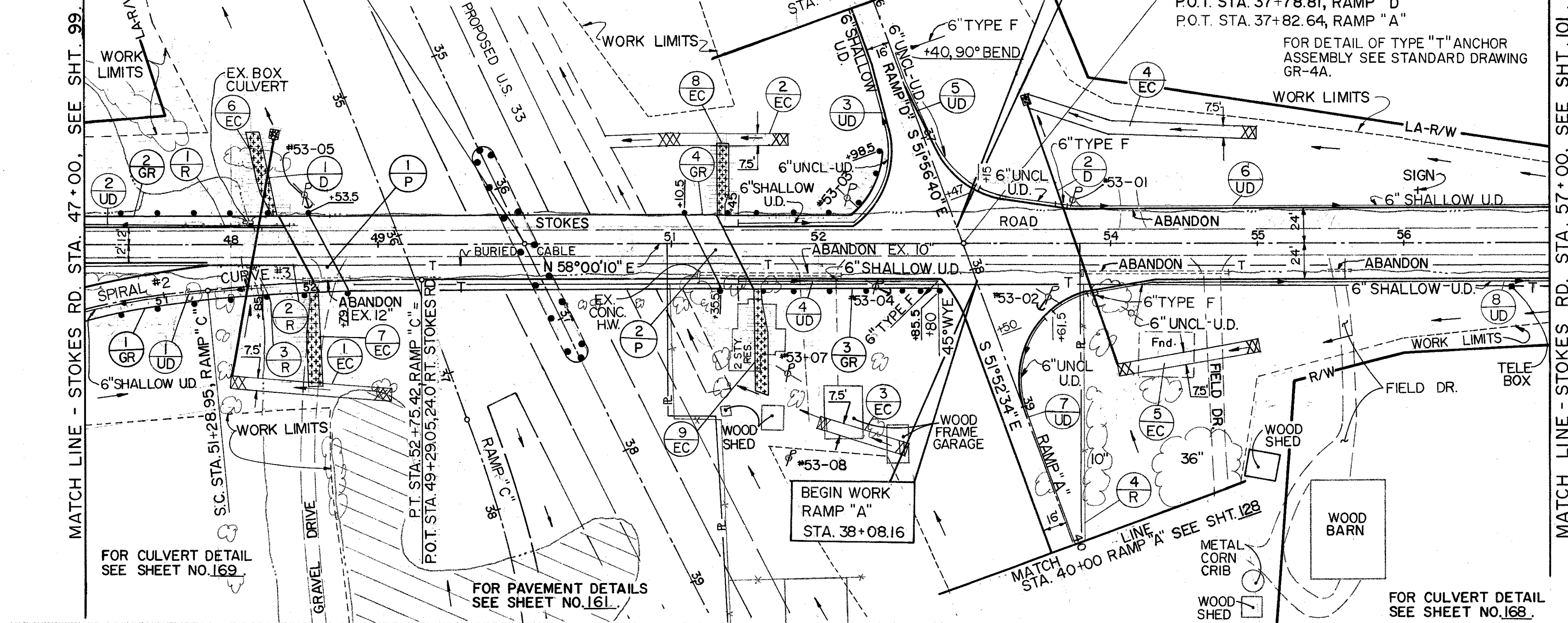
BENCH MARK
CHISELED "D" ON TOP OF NORTHWEST CORNER OF
ABUTMENT WALL ON NORTH WEST CORNER OF
STRUCTURE NO. UNION CO. 33.0043
ELEV. = 1061.40

CALCULATED BY RJH DATE 10-9-85

PROJECT
UNI-33-0.28

100
224

CHECKED BY GHH DATE 12-3-85



PROPOSED STRUCTURE
TYPE: TWO SPAN CONTINUOUS A588 STEEL
GIRDER, COMPOSITE DESIGN, WITH
REINFORCED CONCRETE SUBSTRUCTURE
SPANS: 136'-0", 119'-0" C/C BEARINGS
ALONG E. STOKES ROAD
ROADWAY: VARIES
LOADING: HS-20-44 & ALTERNATE
MILITARY LOADING
SKEW: 25°-39' - 24.7"
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLAB: AS-I-81 (20 FT. LONG)
ALIGNMENT: TANGENT

STA. 47+00 TO STA. 57+00, STOKES RD.

EXCAVATION 3,113 C.Y.
EMBANKMENT 21,919 C.Y.
GRANULAR EMBANKMENT 2,077 C.Y.
SEEDING & MULCHING 8,456 S.Y.

ESTIMATED QUANTITIES
* 706.02, 2250, D-LOAD OR 21" 707.01, OR 707.21
** 706.02, OR 706.08 OR 30" - 707.01, OR 707.21

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1-UD	50+43 - 51+85 "C"	RT.			
2-UD	47+00 - 48+40 "b"	LT.			
3-UD	51+45 - 56+00 "b"	RT.			
4-UD	51+45 - 52+80	LT.			
5-UD	36+40 - 37+47 "d"	LT.			
6-UD	53+15 - 57+00 "A"	LT.			
7-UD	38+50 - 40+00 "A"	RT.			
8-UD	53+61.5 - 57+00	RT.			
1-EC	48+00 - 37+00 "C"	RT.			
2-EC	50+58 - 51+80	LT.			
3-EC	52+00 - 39+00 "A"	RT.			
4-EC	37+00 "d" - 55+00	LT.			
5-EC	36+00 "A" - 55+00	LT.			
6-EC	48+33	LT.			
7-EC	48+58	RT.			
8-EC	51+31	LT.			
9-EC	51+56	RT.			
1-R	47+67 - 48+46	LT.			
2-R	47+78 - 48+46	RT.			
3-R	48+14	LT.			
4-R	40+00 "A" - 53+82	LT.			
1-P	48+43 - 48+63	LT.			
2-P	51+20 - 51+40	RT.			
1-D	48+00 - 48+30	LT.			
2-D	53+45 - 54+04	RT.			
1-GR	50+43 "C" - 48+79	RT.			
2-GR	47+00 - 48+63.5	LT.			
3-GR	51+35.5 - 52+85.5 "b"	RT.			
4-GR	51+10.5 - 56+98.5 "b"	LT.			
601	CONCRETE TYPE 1	C.Y.	1.4	0.9	1.71
602	CONCRETE TYPE 2	C.Y.	1.6	0.9	1.89
603	CONCRETE TYPE 3	C.Y.			
604	CONCRETE TYPE 4	C.Y.			
605	CONCRETE TYPE 5	C.Y.			
606	CONCRETE TYPE 6	C.Y.			
607	CONCRETE TYPE 7	C.Y.			
608	CONCRETE TYPE 8	C.Y.			
609	CONCRETE TYPE 9	C.Y.			
610	CONCRETE TYPE 10	C.Y.			
611	CONCRETE TYPE 11	C.Y.			
612	CONCRETE TYPE 12	C.Y.			
613	CONCRETE TYPE 13	C.Y.			
614	CONCRETE TYPE 14	C.Y.			
615	CONCRETE TYPE 15	C.Y.			
616	CONCRETE TYPE 16	C.Y.			
617	CONCRETE TYPE 17	C.Y.			
618	CONCRETE TYPE 18	C.Y.			
619	CONCRETE TYPE 19	C.Y.			
620	CONCRETE TYPE 20	C.Y.			
621	CONCRETE TYPE 21	C.Y.			
622	CONCRETE TYPE 22	C.Y.			
623	CONCRETE TYPE 23	C.Y.			
624	CONCRETE TYPE 24	C.Y.			
625	CONCRETE TYPE 25	C.Y.			
626	CONCRETE TYPE 26	C.Y.			
627	CONCRETE TYPE 27	C.Y.			
628	CONCRETE TYPE 28	C.Y.			
629	CONCRETE TYPE 29	C.Y.			
630	CONCRETE TYPE 30	C.Y.			
631	CONCRETE TYPE 31	C.Y.			
632	CONCRETE TYPE 32	C.Y.			
633	CONCRETE TYPE 33	C.Y.			
634	CONCRETE TYPE 34	C.Y.			
635	CONCRETE TYPE 35	C.Y.			
636	CONCRETE TYPE 36	C.Y.			
637	CONCRETE TYPE 37	C.Y.			
638	CONCRETE TYPE 38	C.Y.			
639	CONCRETE TYPE 39	C.Y.			
640	CONCRETE TYPE 40	C.Y.			
641	CONCRETE TYPE 41	C.Y.			
642	CONCRETE TYPE 42	C.Y.			
643	CONCRETE TYPE 43	C.Y.			
644	CONCRETE TYPE 44	C.Y.			
645	CONCRETE TYPE 45	C.Y.			
646	CONCRETE TYPE 46	C.Y.			
647	CONCRETE TYPE 47	C.Y.			
648	CONCRETE TYPE 48	C.Y.			
649	CONCRETE TYPE 49	C.Y.			
650	CONCRETE TYPE 50	C.Y.			
651	CONCRETE TYPE 51	C.Y.			
652	CONCRETE TYPE 52	C.Y.			
653	CONCRETE TYPE 53	C.Y.			
654	CONCRETE TYPE 54	C.Y.			
655	CONCRETE TYPE 55	C.Y.			
656	CONCRETE TYPE 56	C.Y.			
657	CONCRETE TYPE 57	C.Y.			
658	CONCRETE TYPE 58	C.Y.			
659	CONCRETE TYPE 59	C.Y.			
660	CONCRETE TYPE 60	C.Y.			
661	CONCRETE TYPE 61	C.Y.			
662	CONCRETE TYPE 62	C.Y.			
663	CONCRETE TYPE 63	C.Y.			
664	CONCRETE TYPE 64	C.Y.			
665	CONCRETE TYPE 65	C.Y.			
666	CONCRETE TYPE 66	C.Y.			
667	CONCRETE TYPE 67	C.Y.			
668	CONCRETE TYPE 68	C.Y.			
669	CONCRETE TYPE 69	C.Y.			
670	CONCRETE TYPE 70	C.Y.			
671	CONCRETE TYPE 71	C.Y.			
672	CONCRETE TYPE 72	C.Y.			
673	CONCRETE TYPE 73	C.Y.			
674	CONCRETE TYPE 74	C.Y.			
675	CONCRETE TYPE 75	C.Y.			
676	CONCRETE TYPE 76	C.Y.			
677	CONCRETE TYPE 77	C.Y.			
678	CONCRETE TYPE 78	C.Y.			
679	CONCRETE TYPE 79	C.Y.			
680	CONCRETE TYPE 80	C.Y.			
681	CONCRETE TYPE 81	C.Y.			
682	CONCRETE TYPE 82	C.Y.			
683	CONCRETE TYPE 83	C.Y.			
684	CONCRETE TYPE 84	C.Y.			
685	CONCRETE TYPE 85	C.Y.			
686	CONCRETE TYPE 86	C.Y.			
687	CONCRETE TYPE 87	C.Y.			
688	CONCRETE TYPE 88	C.Y.			
689	CONCRETE TYPE 89	C.Y.			
690	CONCRETE TYPE 90	C.Y.			
691	CONCRETE TYPE 91	C.Y.			
692	CONCRETE TYPE 92	C.Y.			
693	CONCRETE TYPE 93	C.Y.			
694	CONCRETE TYPE 94	C.Y.			
695	CONCRETE TYPE 95	C.Y.			
696	CONCRETE TYPE 96	C.Y.			
697	CONCRETE TYPE 97	C.Y.			
698	CONCRETE TYPE 98	C.Y.			
699	CONCRETE TYPE 99	C.Y.			
700	CONCRETE TYPE 100	C.Y.			

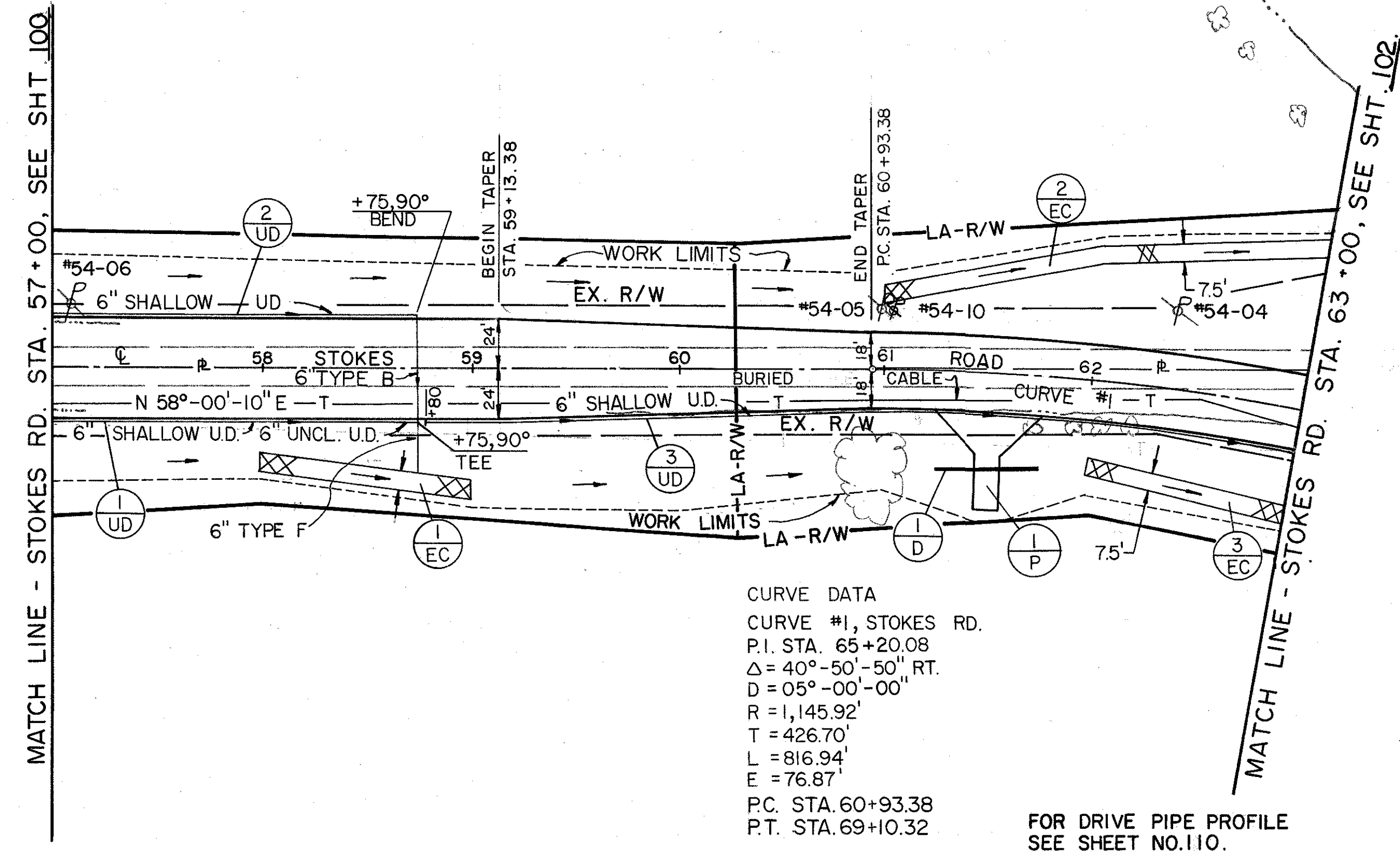
PLAN & PROFILE STOKES RD. STA. 47+00 TO STA. 57+00

CALCULATED BY RJA DATE 10-9-85

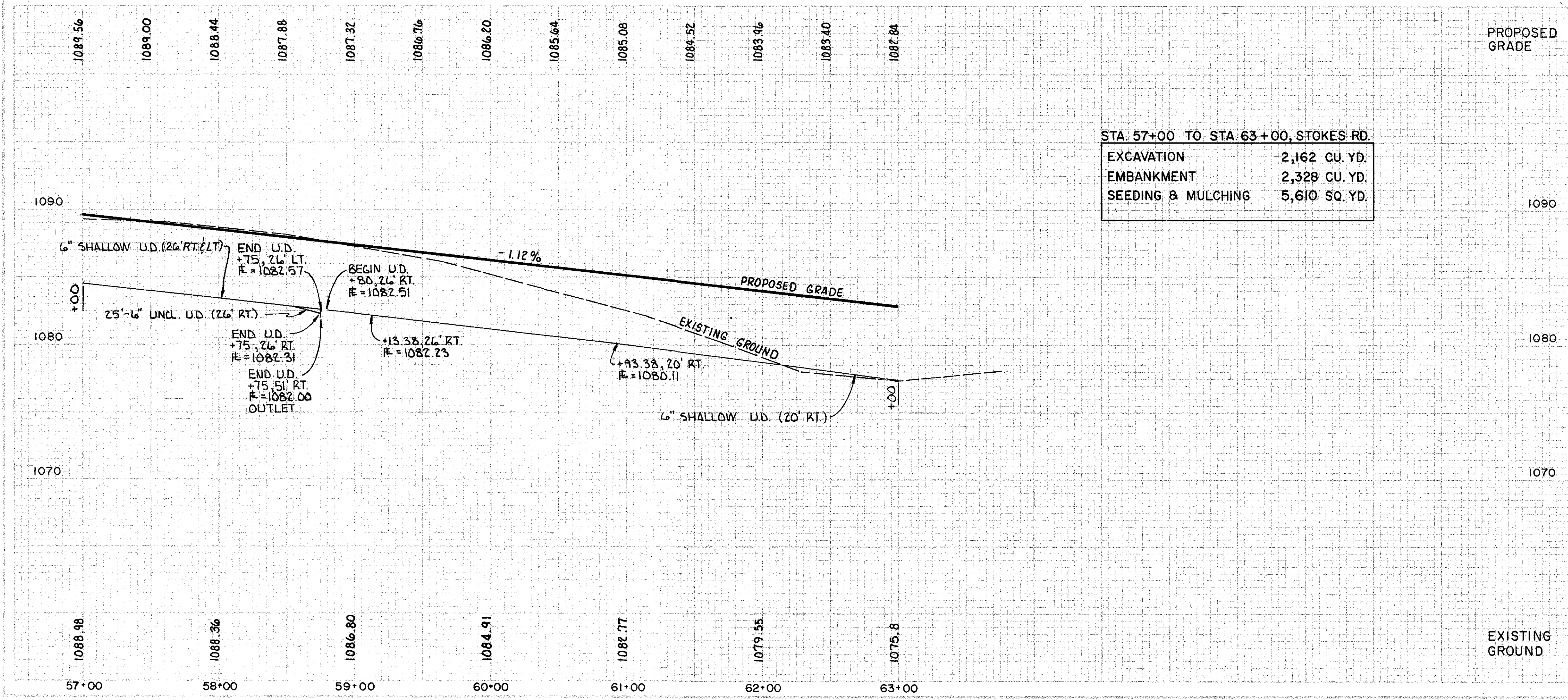
CHECKED BY SMG DATE 12-3-85

FED. RD. DISTRICT	STATE	PROJECT
2	OHIO	UNI-33-0.28

101
224



BENCH MARK
TOP OF SPIKE AT THE INTERSECTION OF
EXISTING U.S. 33 & S.R. 739
ELEV. = 1080.69

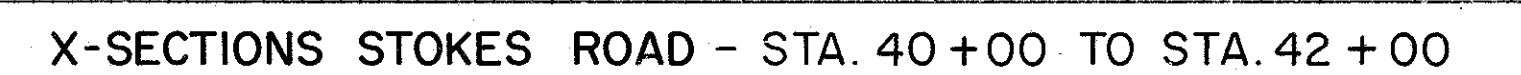


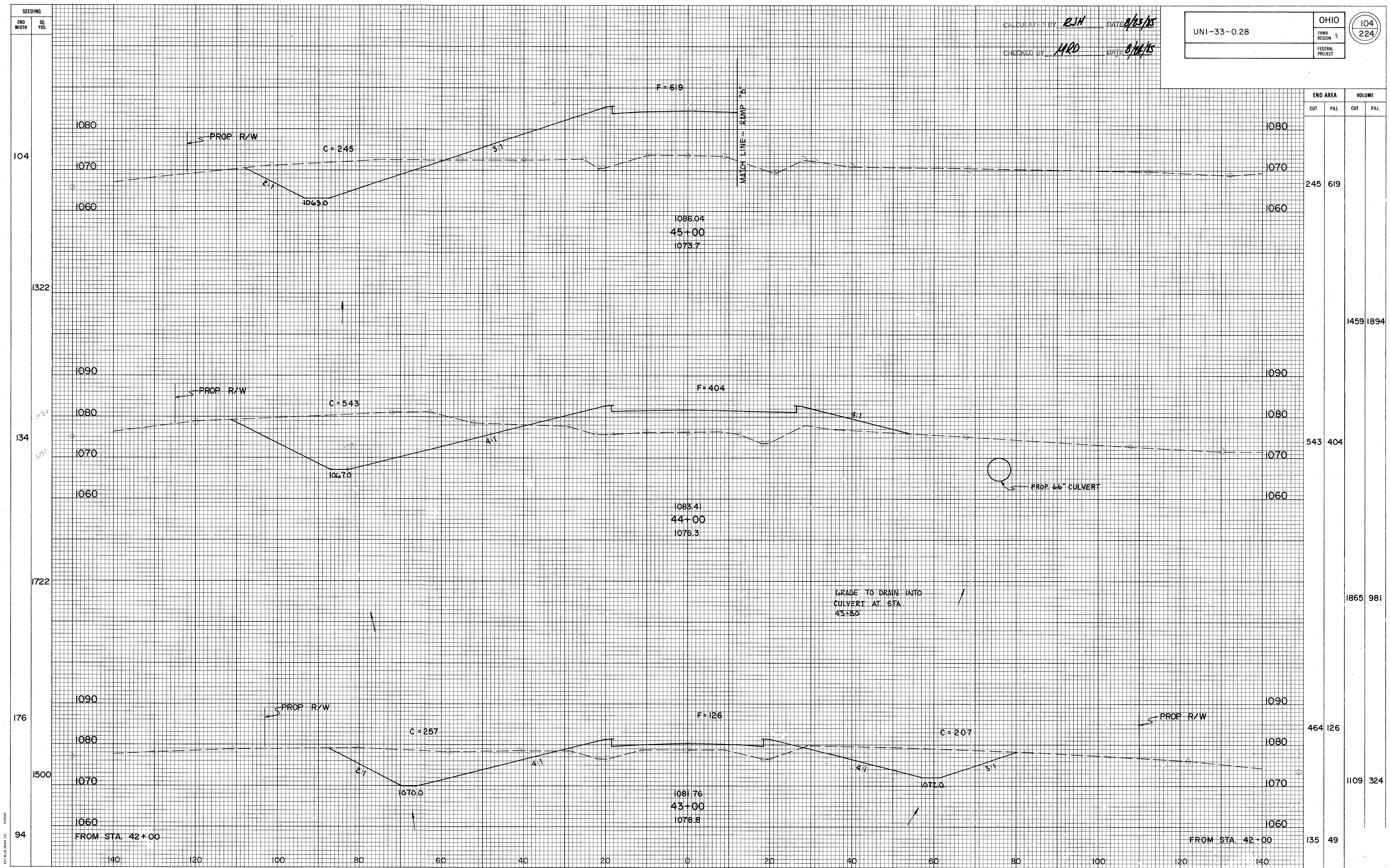
STA. 57+00 TO STA. 63+00, STOKES RD.
EXCAVATION 2,162 CU. YD.
EMBANKMENT 2,328 CU. YD.
SEEDING & MULCHING 5,610 SQ. YD.

ESTIMATED QUANTITIES

ITEM	STATION TO STATION	SIDE	304 6" AGGREGATE BASE C.Y.	603 12" TYPE D L.F.	603 6" TYPE B L.F.	603 6" TYPE F L.F.	605 6" SHALLOW U.D. L.F.	605 6" UNCL. U.D. L.F.	605 6" BENDS & BRANCH EACH	DITCH EROSION PROT. S.Y.	SEE SHEET NO.
1-UD	57+00 - 58+75	RT.									
2-UD	57+00 - 58+75	LT.									
3-UD	58+80 - 63+00	RT.									
1-EC	58+00 - 59+00	RT.									
2-EC	61+00 - 63+00	LT.									
3-EC	62+00 - 63+00	RT.									
1-P	61+50	RT.									
1-D	61+25 - 61+75	RT.									
TOTALS			18	50	52	25	150	25	1	85	42

PLAN & PROFILE STOKES RD. STA. 57+00 TO STA. 63+00





CALCULATED BY RJH DATE 8/23/15
CHECKED BY HRD DATE 8/16/15

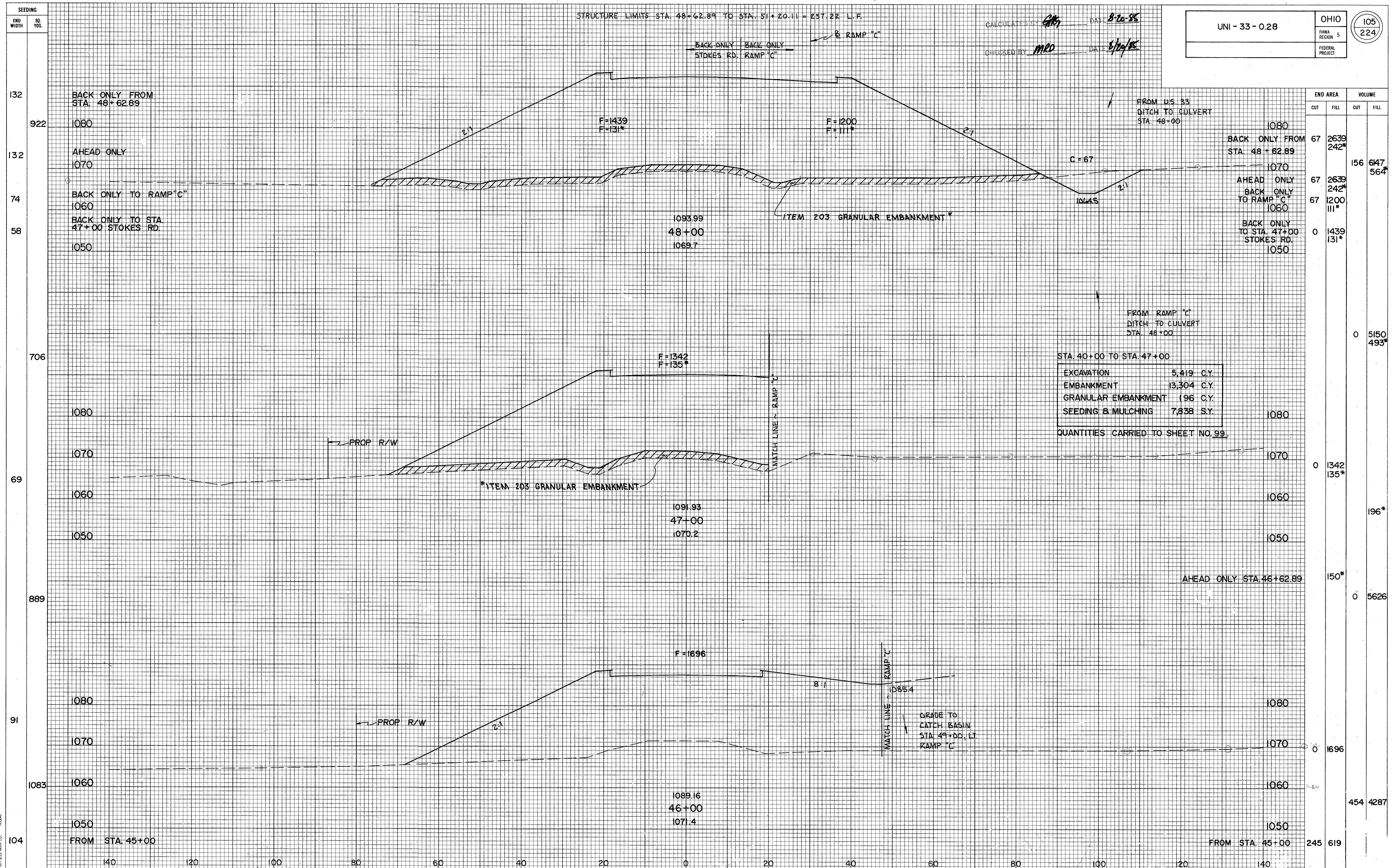
UNI-33-0.28

OHIO
FHWA
REGION 5
FEDERAL
PROJECT

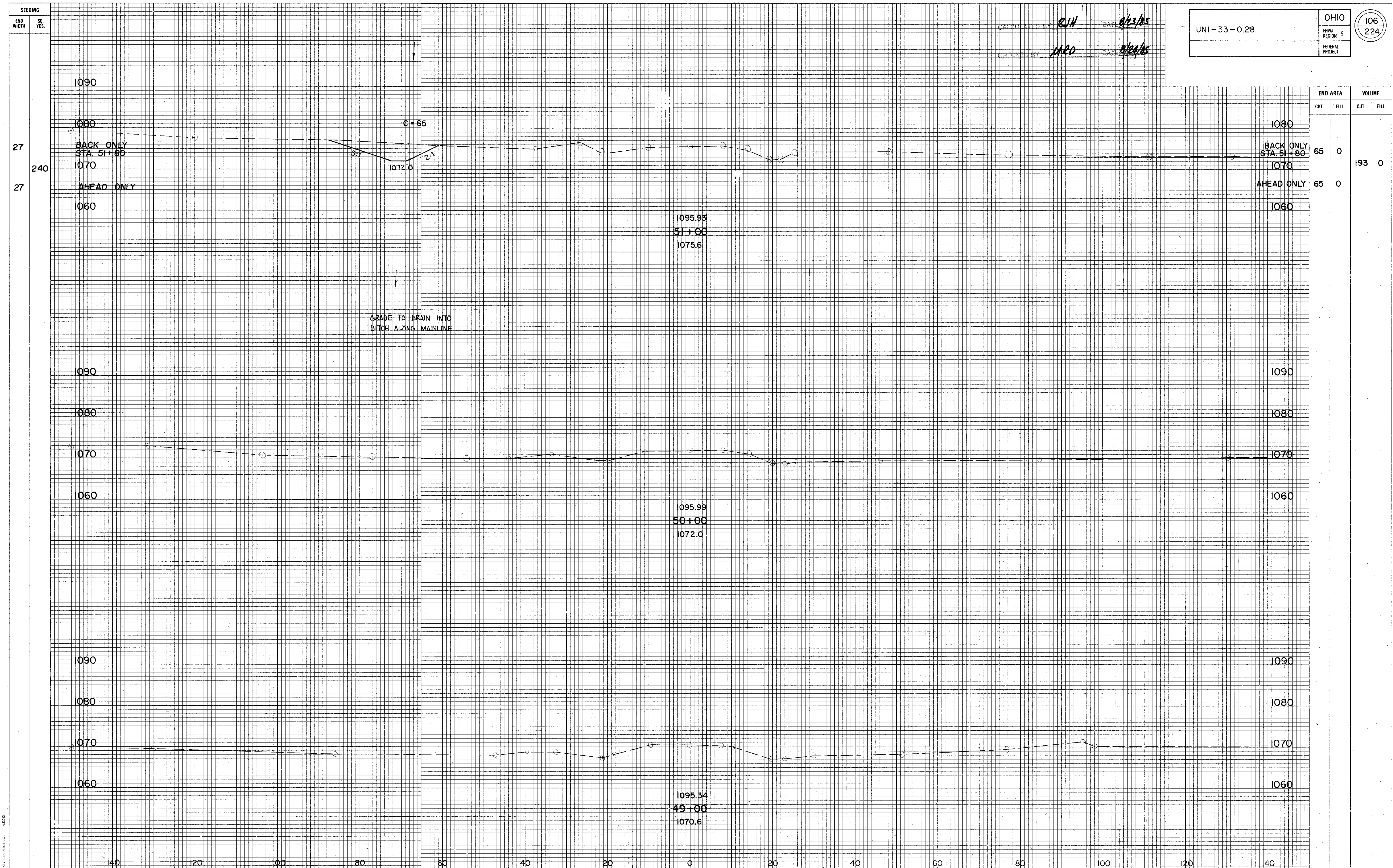
104
224

END AREA		VOLUME	
CUT	FILL	CUT	FILL
245	619		
543	404	1459	1894
464	126	1865	981
135	49	1109	324

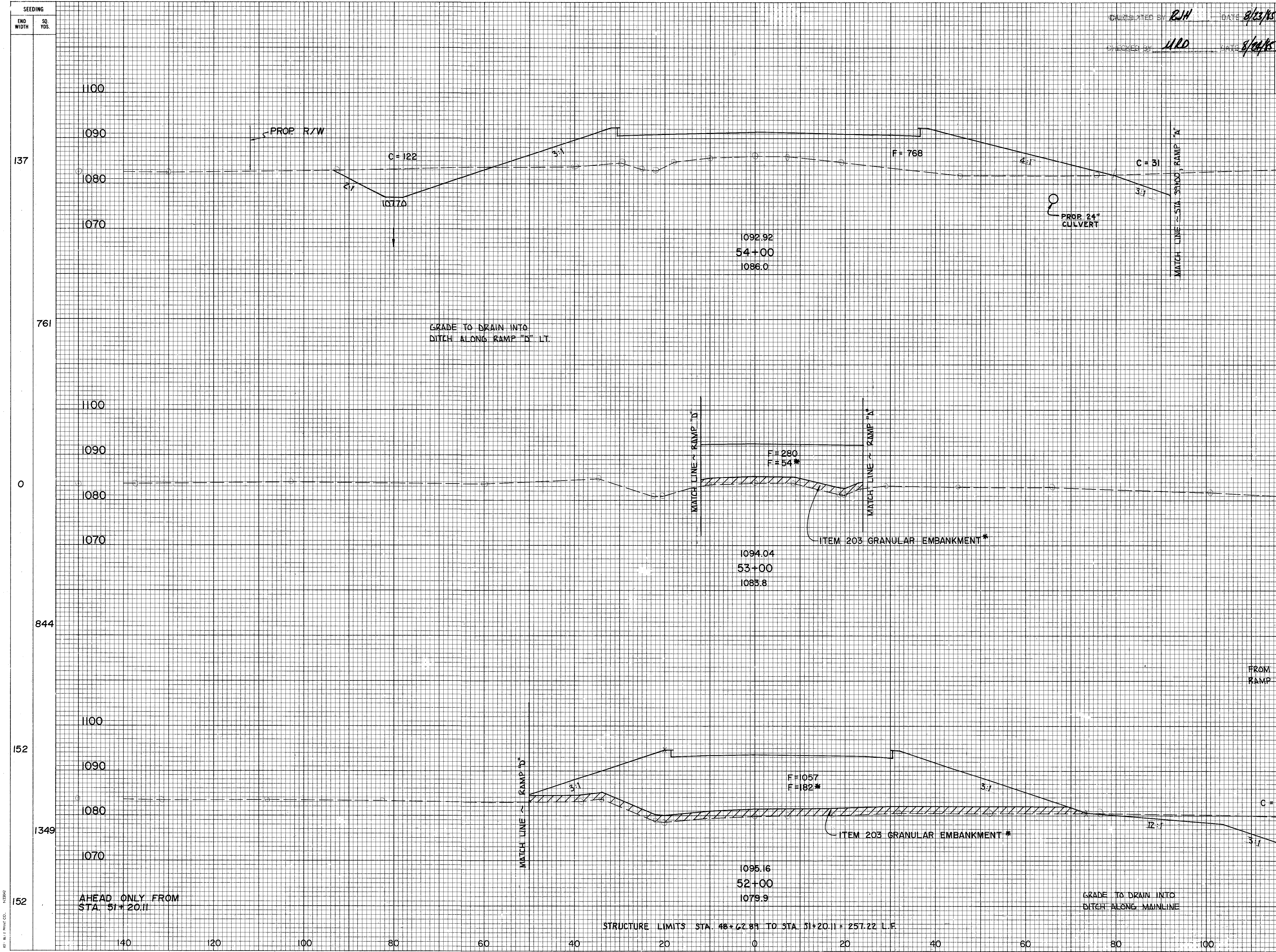
X-SECTIONS STOKES ROAD - STA. 43+00 TO STA. 45+00



X-SECTIONS STOKES ROAD - STA. 46+00 TO STA. 48+00



X-SECTIONS STOKES ROAD - STA. 49+00 TO STA. 51+00



END AREA		VOLUME	
CUT	FILL	CUT	FILL
153	768		
54*	283	1941	40*
0	280	54*	
378	2476	437*	
204	1057	182*	
604	3123	543*	
204	1054	185*	

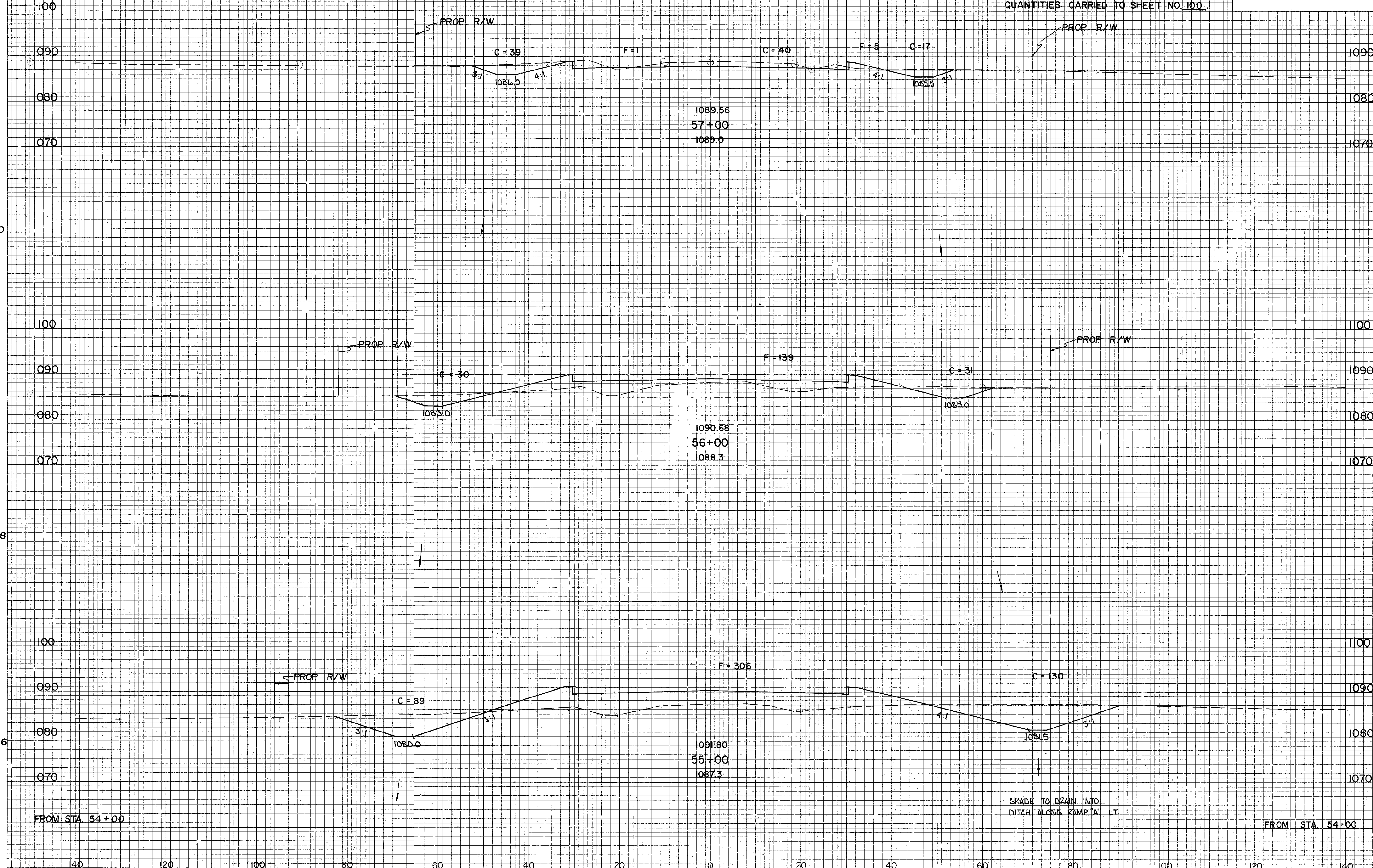
X-SECTIONS STOKES ROAD - STA. 52+00 TO STA. 54+00

SEEDING	
END WIDTH	SQ. YDS.
75	
96	
125	
1456	
137	

CALCULATED BY RJH DATE 8/22/85
 CHECKED BY MRD DATE 8/22/85

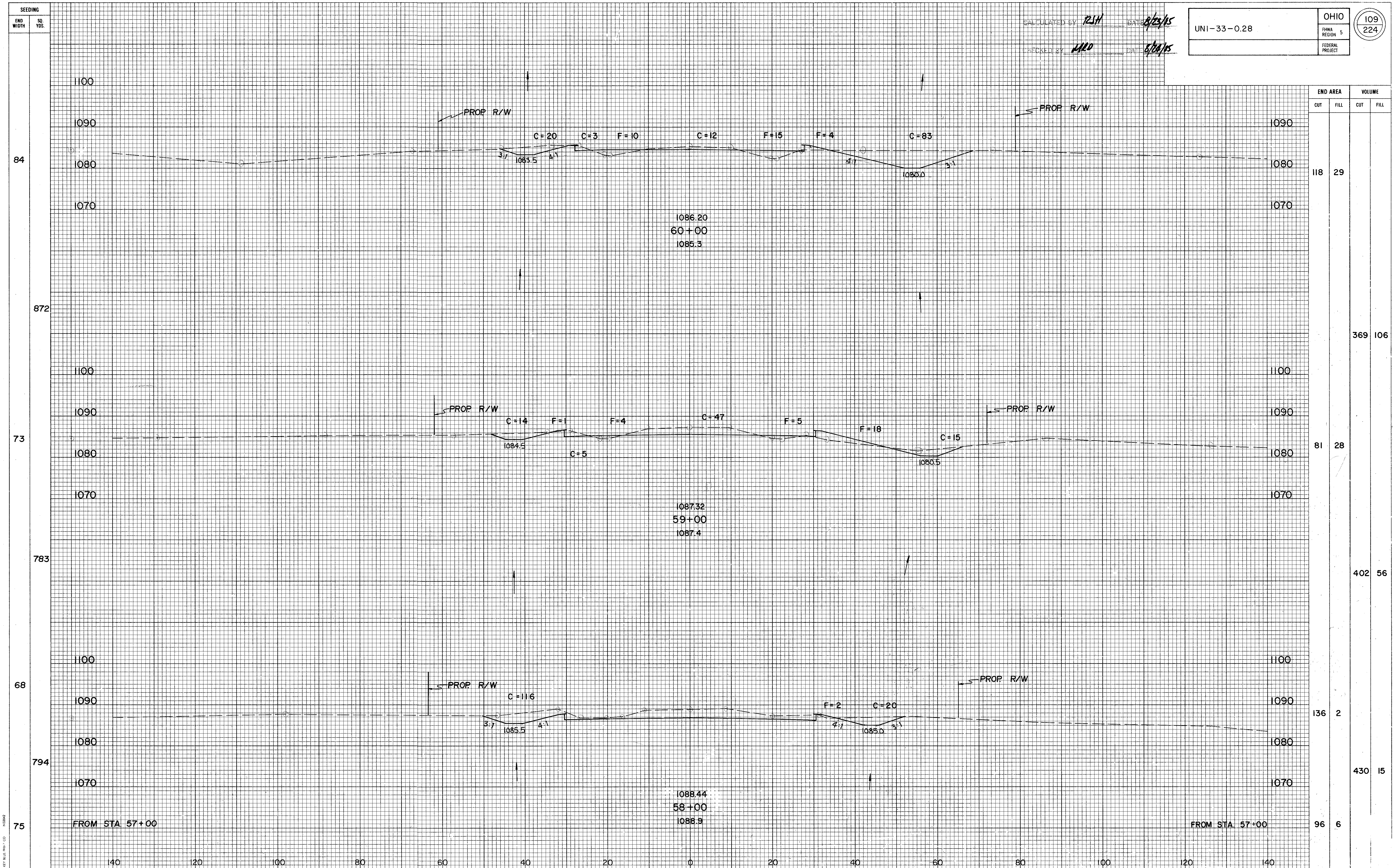
STA. 47+00 TO STA. 57+00
 EXCAVATION 3,113 C.Y.
 EMBANKMENT 21,919 C.Y.
 GRANULAR EMBANKMENT 2,077 C.Y.
 SEEDING & MULCHING 8,456 S.Y.
 QUANTITIES CARRIED TO SHEET NO. 100.

UNI - 33 - 0.28	
OHIO	108
FHWA REGION 5	224
FEDERAL PROJECT	

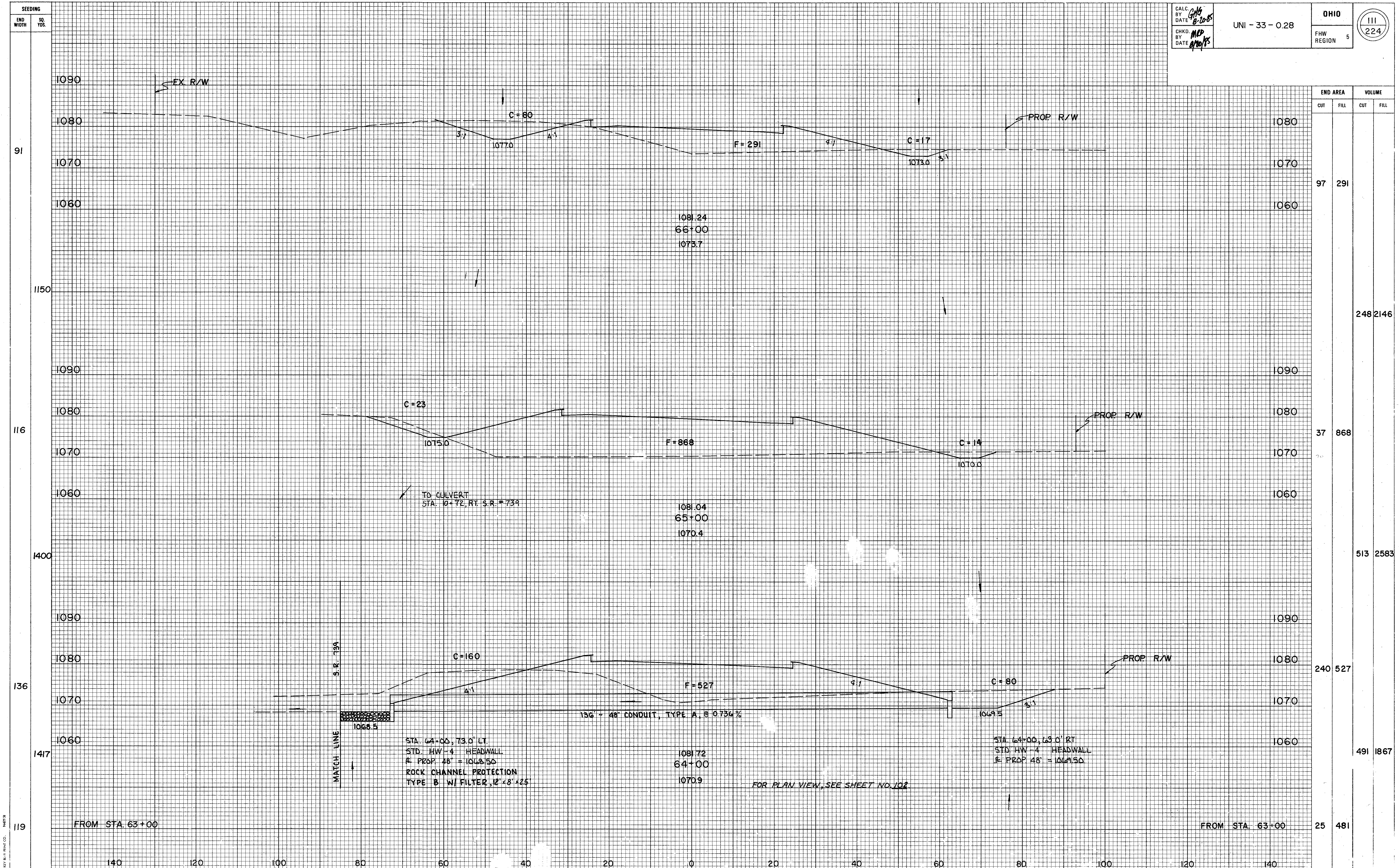


END AREA		VOLUME	
CUT	FILL	CUT	FILL
96	6		
61	139	291	269
219	306	519	824
153	768	689	1989

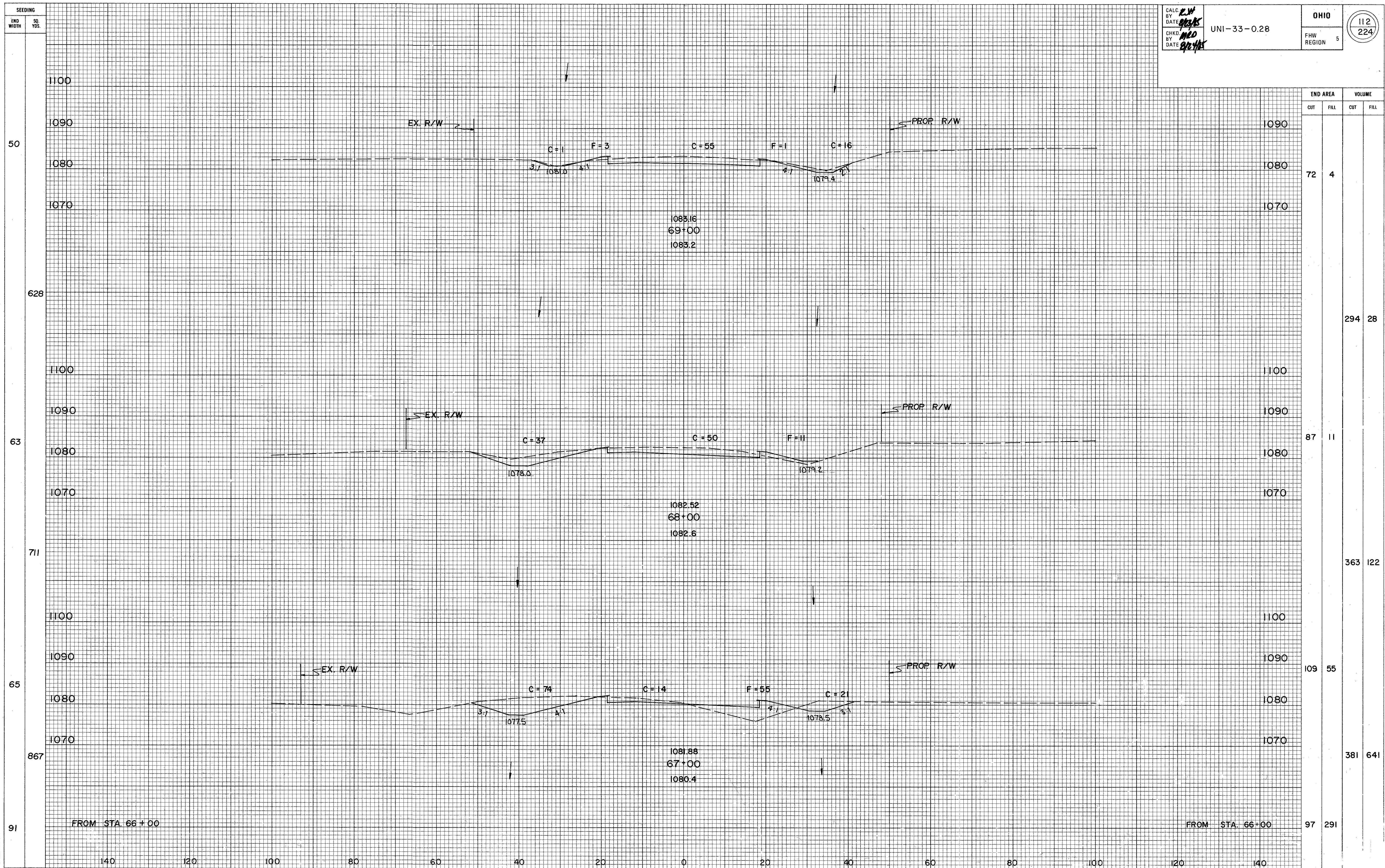
X-SECTIONS STOKES ROAD - STA. 55+00 TO STA. 57+00



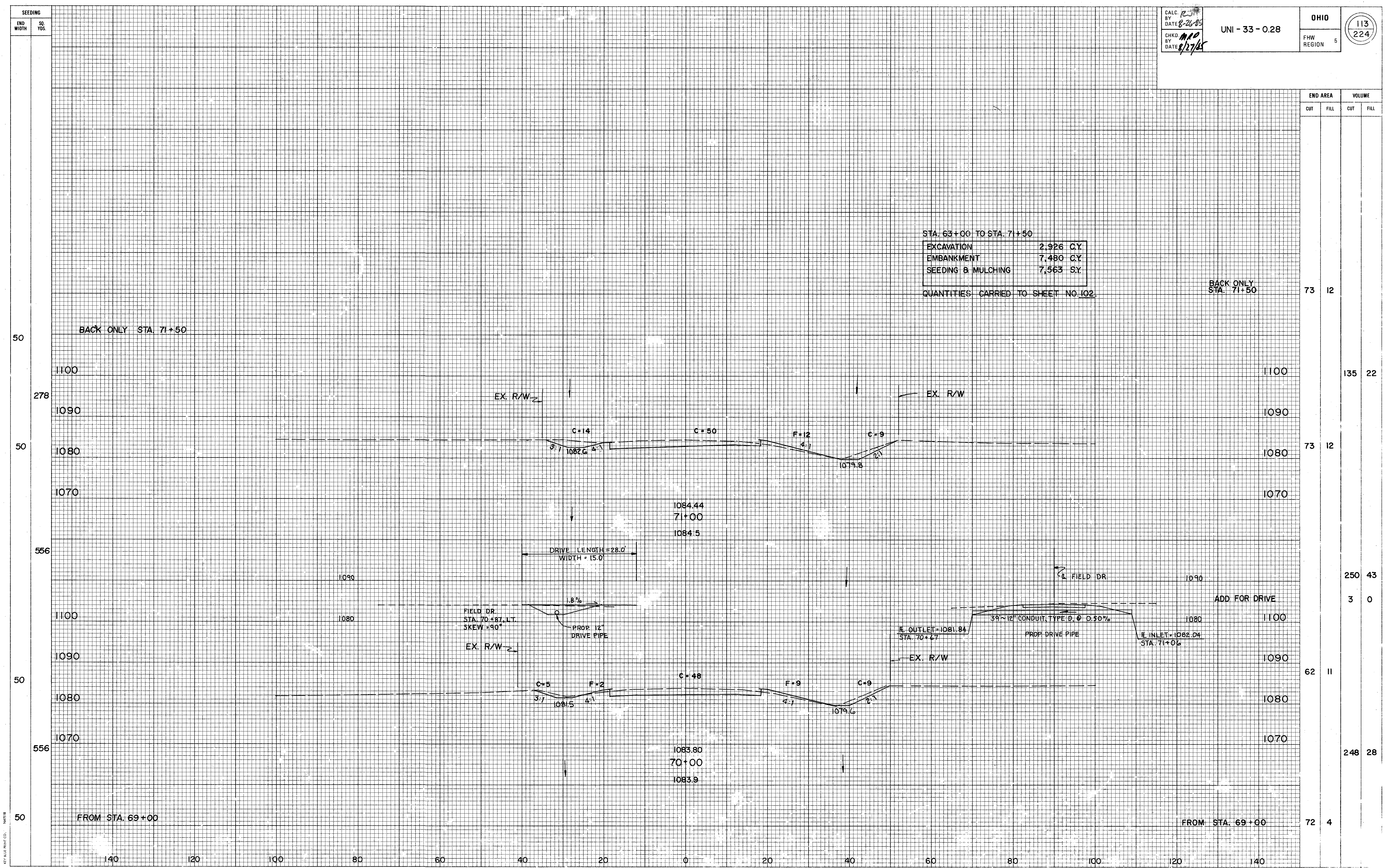
X-SECTIONS STOKES ROAD - STA. 58+00 TO STA. 60+00



X- SECTIONS STOKES ROAD - STA. 64+00 TO STA. 66+00



X-SECTIONS STOKES ROAD - STA. 67+00 TO STA. 69+00



STA. 63+00 TO STA. 71+50

EXCAVATION	2,926 CY
EMBANKMENT	7,480 CY
SEEDING & MULCHING	7,563 SY

QUANTITIES CARRIED TO SHEET NO. 102.

CALC. BY: RJS
DATE: 8-26-85
CHKD. BY: MPO
DATE: 8/27/85

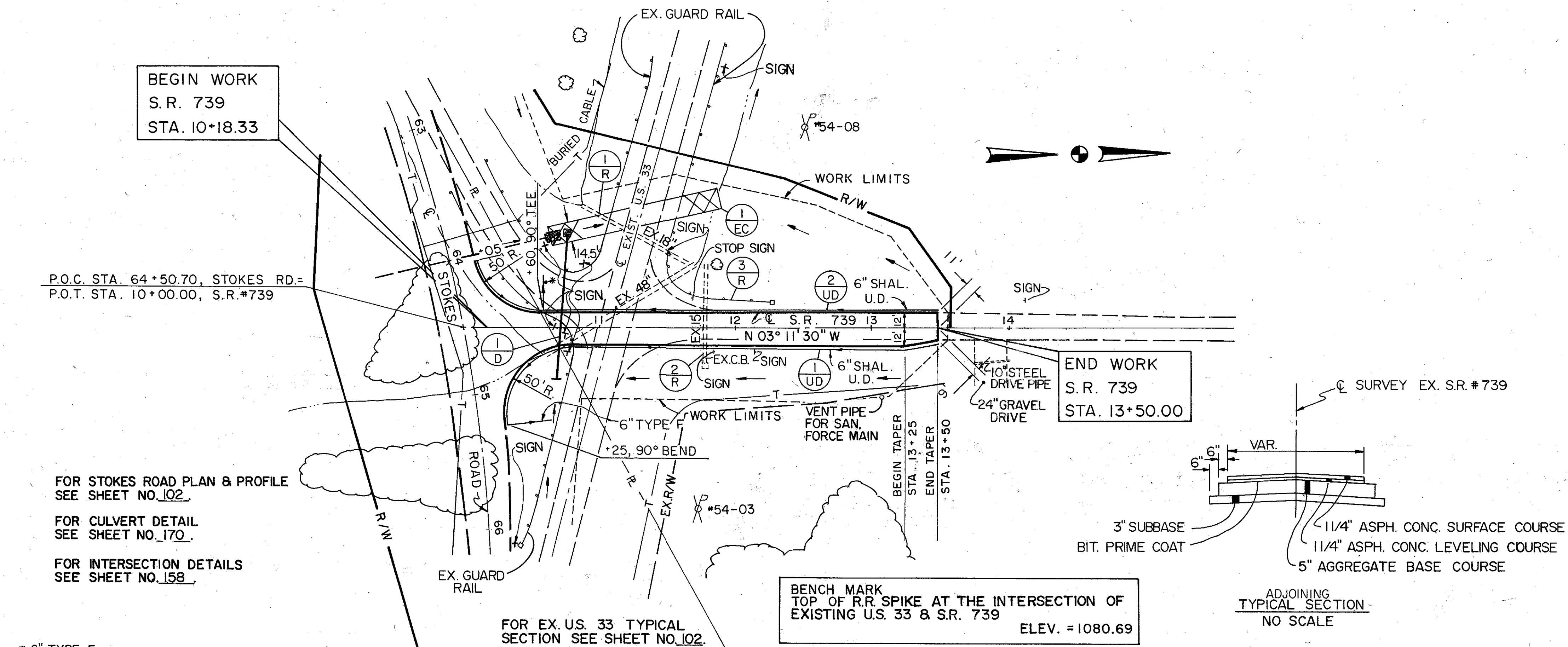
UNI - 33 - 0.28

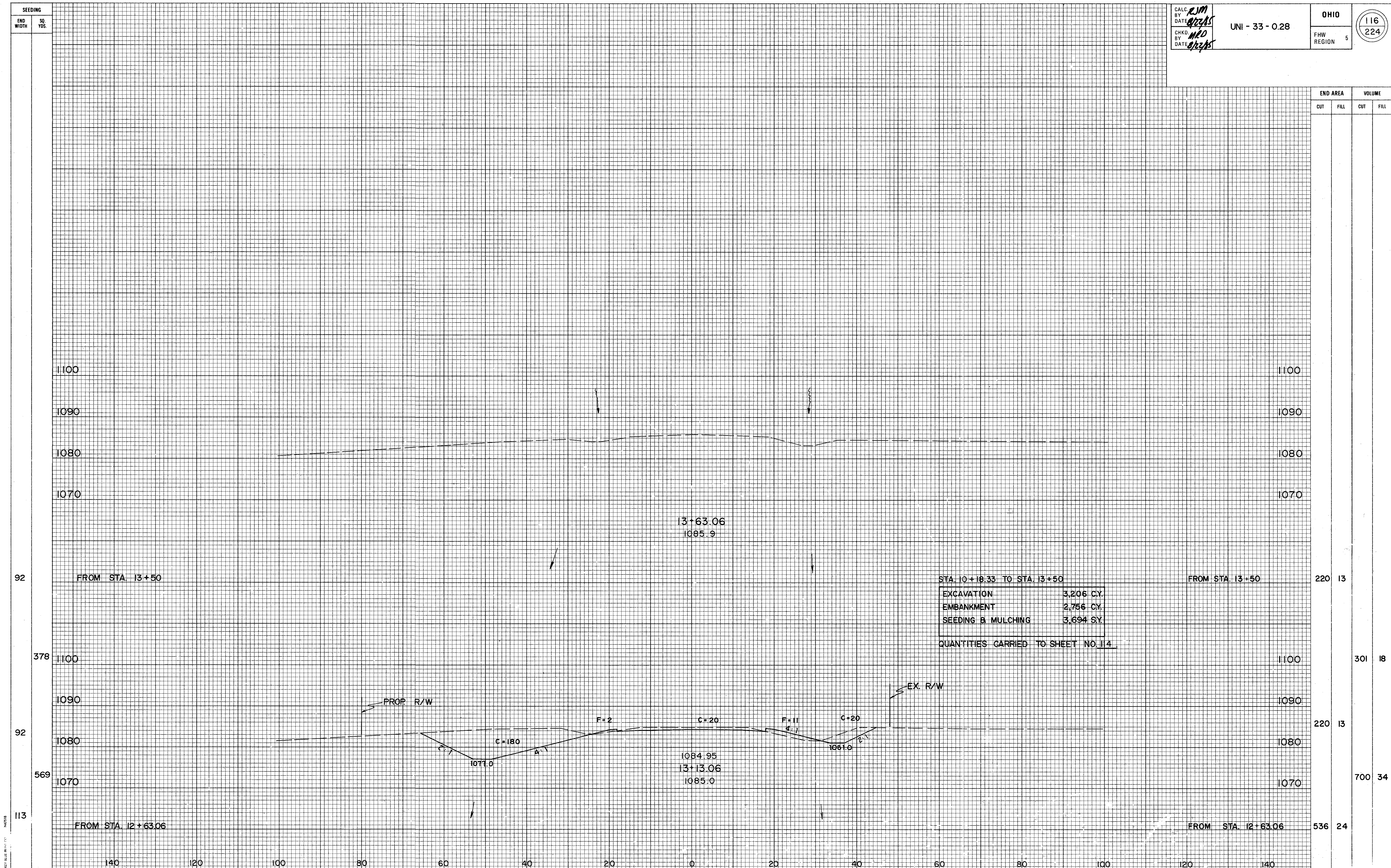
OHIO
FHWA REGION 5

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END AREA		VOLUME	
CUT	FILL	CUT	FILL
73	12		
		135	22
73	12		
		250	43
		3	0
62	11		
		248	28
72	4		

X - SECTIONS STOKES ROAD - STA. 70+00 TO STA. 71+00

[illegible]



FOR CUL-DE-SAC DETAILS
SEE SHEET NO.164.

FOR STORM SEWER PROFILE
SEE SHEET NO.165.

STA. 30+00.00, EX. SMOKEY RD.
STA. 93+44.17, PROP. U.S. 33

CURVE DATA (E/P)
 $\Delta = 66^\circ 25' 19''$
R = 61.0
T = 39.93'
L = 70.72'

CURVE DATA (E/P)
 $\Delta = 246^\circ 25' 19''$
R = 39.0
L = 167.73'

BENCH MARK
TOP OF SPIKE AT INTERSECTION OF
EXISTING SMOKEY RD. & PROP. U.S. 33
STA. 93+44.17
ELEV. = 1092.39

CURVE DATA (E/P)
 $\Delta = 246^\circ 25' 19''$
R = 39.0
L = 167.73'

CURVE DATA (E/P)
 $\Delta = 66^\circ 25' 19''$
R = 61.0
T = 39.93'
L = 70.72'

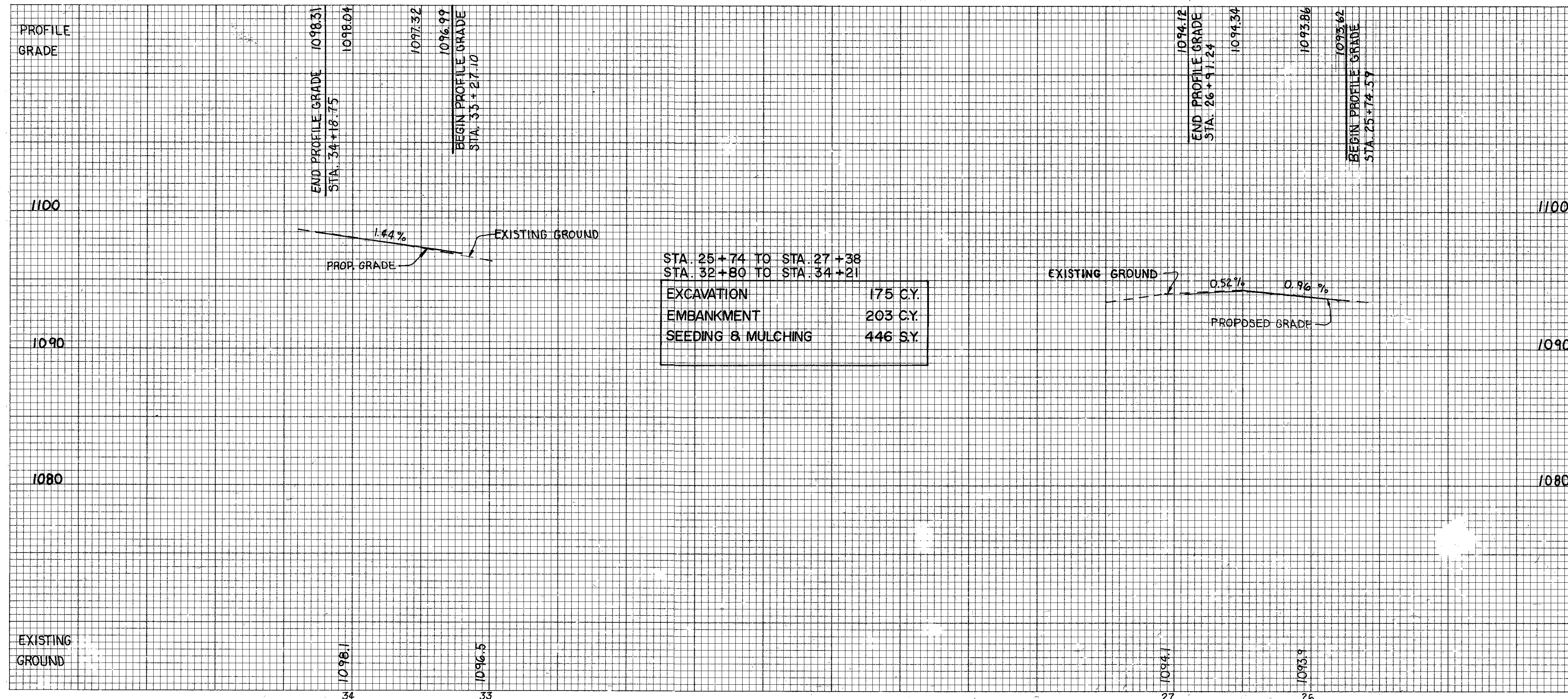
FOR STORM SEWER PROFILE
SEE SHEET NO.165.

FOR CUL-DE-SAC DETAILS
SEE SHEET NO.164.

FOR PROP. U.S. 33 PLAN & PROFILE
SEE SHEET NO.66.

FOR DRIVEWAY PROFILE
SEE SHEET NO.118.

ADJOINING
TYPICAL SECTION
NO SCALE



CALCULATED BY R.J.H. DATE 10-23-85

CHECKED BY G.H.G. DATE 12-5-85

UNI - 33 - 0.28

OHIO

REGION 5

FEDERAL
PROJECT

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ESTIMATED QUANTITIES

STATION TO STATION	SIDE	202 FENCE FOR STORM SEWER	304 8" AGGREGATE BASE	404 PRIME COAT CONC.	408 PRIME COAT GAL.	601 R.C.P. W/FILTER C.Y.	602 CONC. MASSORY C.Y.	603 15" TYPE C L.F.	603 15" TYPE C L.F.	604 2" 2" B C.B. EACH	SEE SHEET NO.
I-D 32+13 - 33+01	LT. RT.										43
2-D 27+30 - 27+66	RT.										
I-R 33+60 - 34+48	RT.	88									
2-R 25+96 - 26+39	RT.	43									
I-P 33+00 - 34+20	LT. RT.										
2-P 26+76 - 27+17	LT. RT.										
3-P 26+29	LT.										
10+AS											

PLAN & PROFILE SMOKEY RD. CUL-DE-SACS

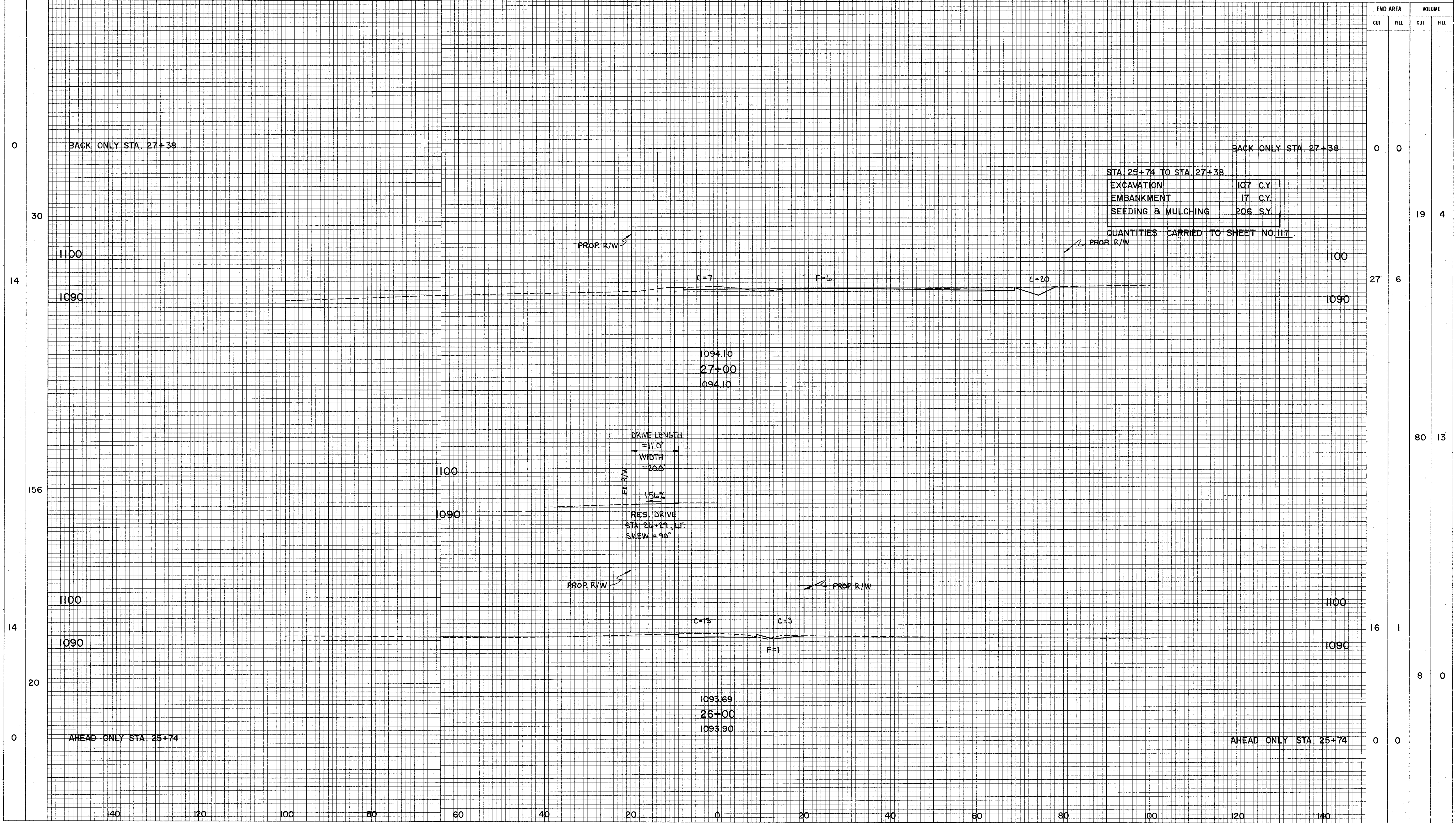
SEEDING
END
WIDTH
SQ.
YDS.

CALC. R.J.H.
BY
DATE 7-29-85
CHKD. M.B.D.
BY
DATE 7-30-85

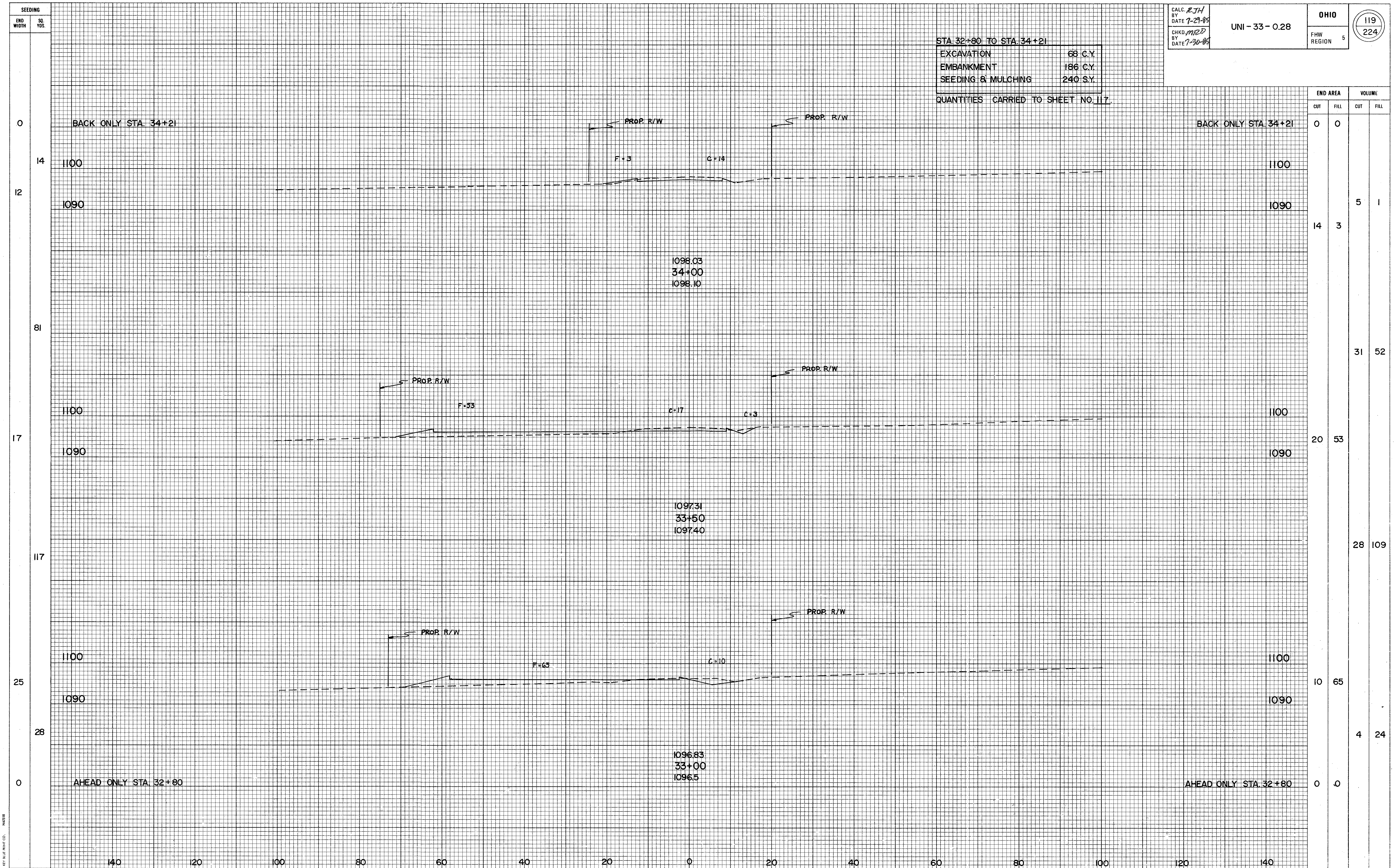
UNI - 33 - 0.28

OHIO
FHW
REGION 5

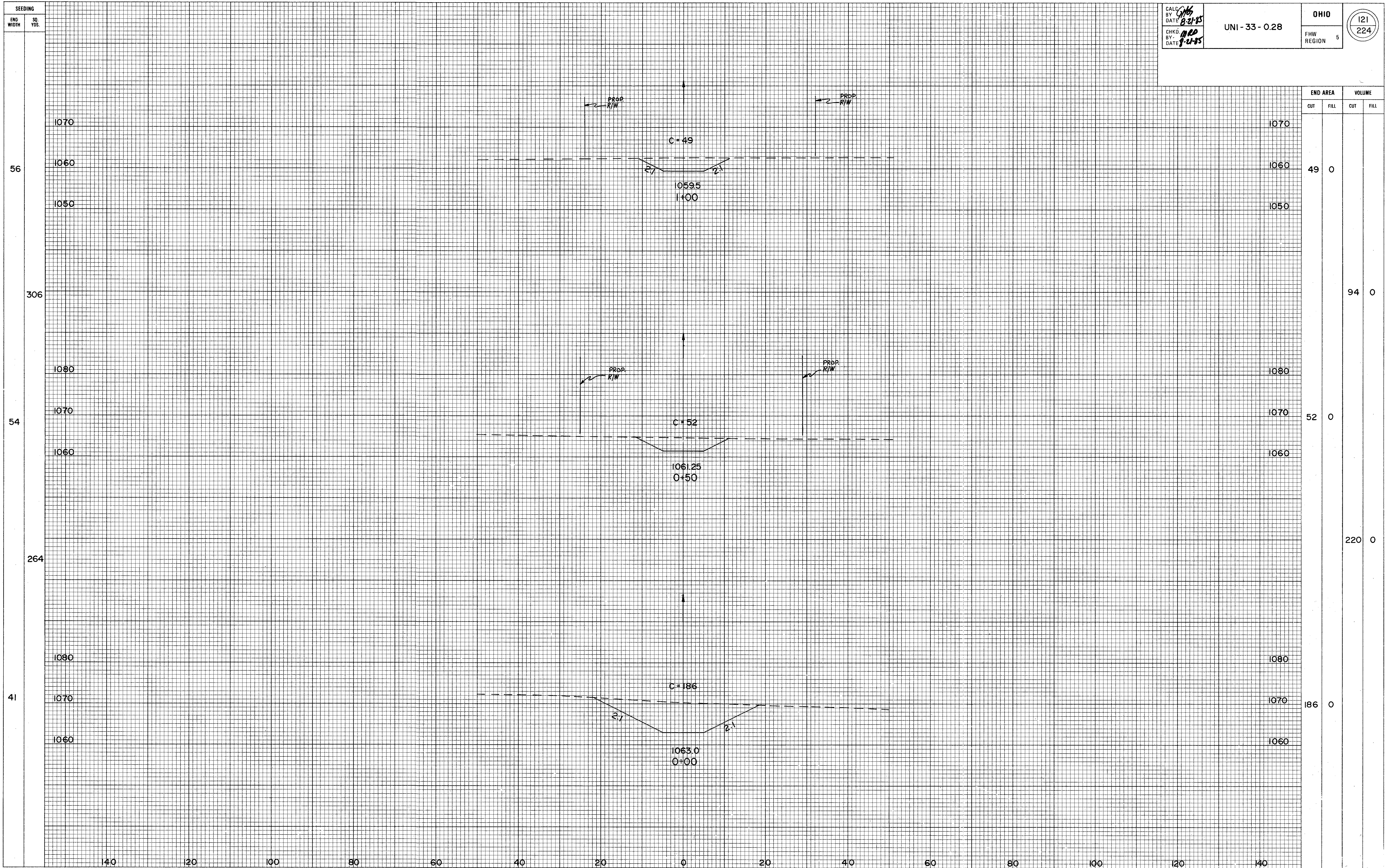
118
224



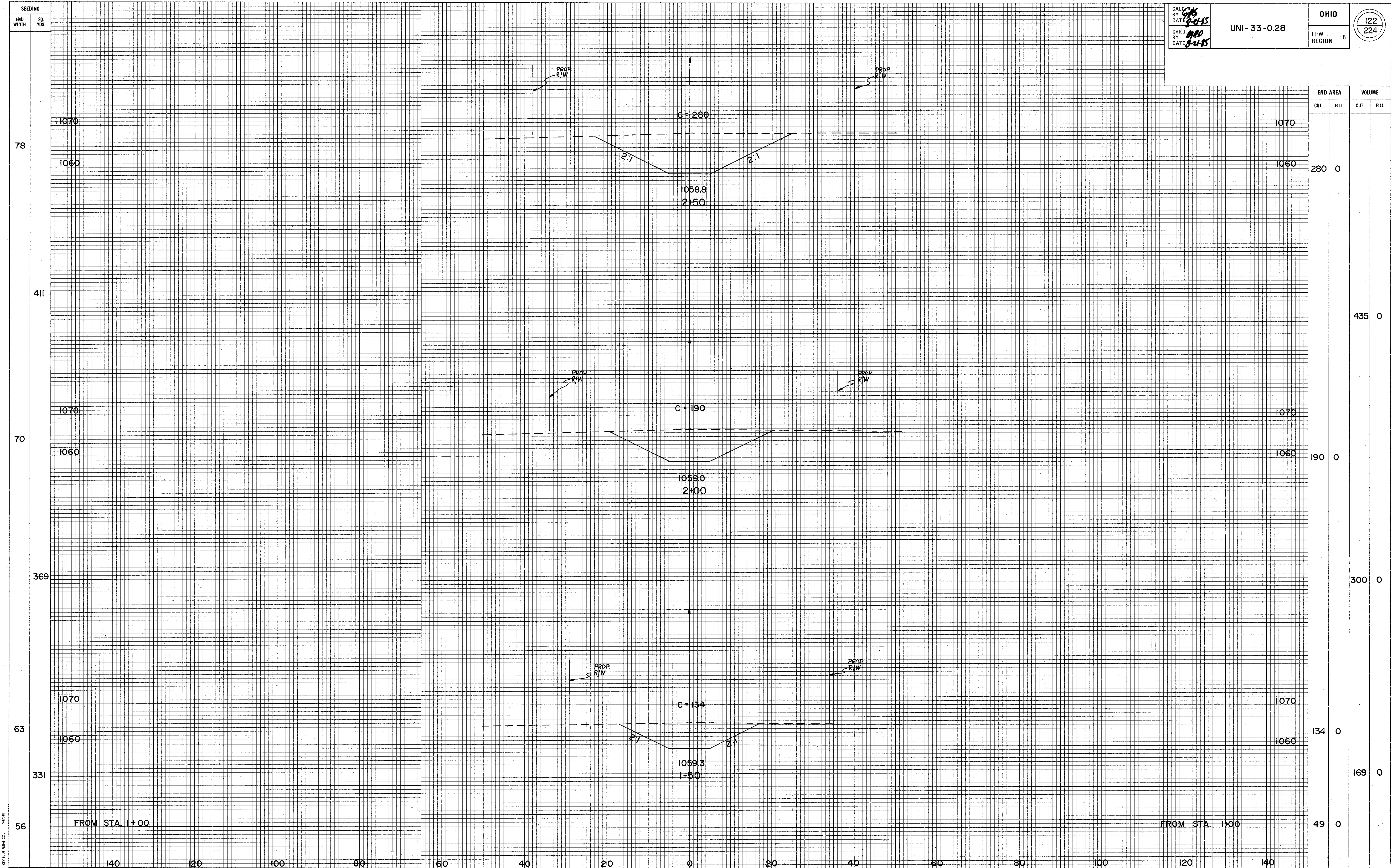
X-SECTIONS PROP. SMOKEY RD. CUL-DE-SACS STA. 26+00 TO STA. 27+00



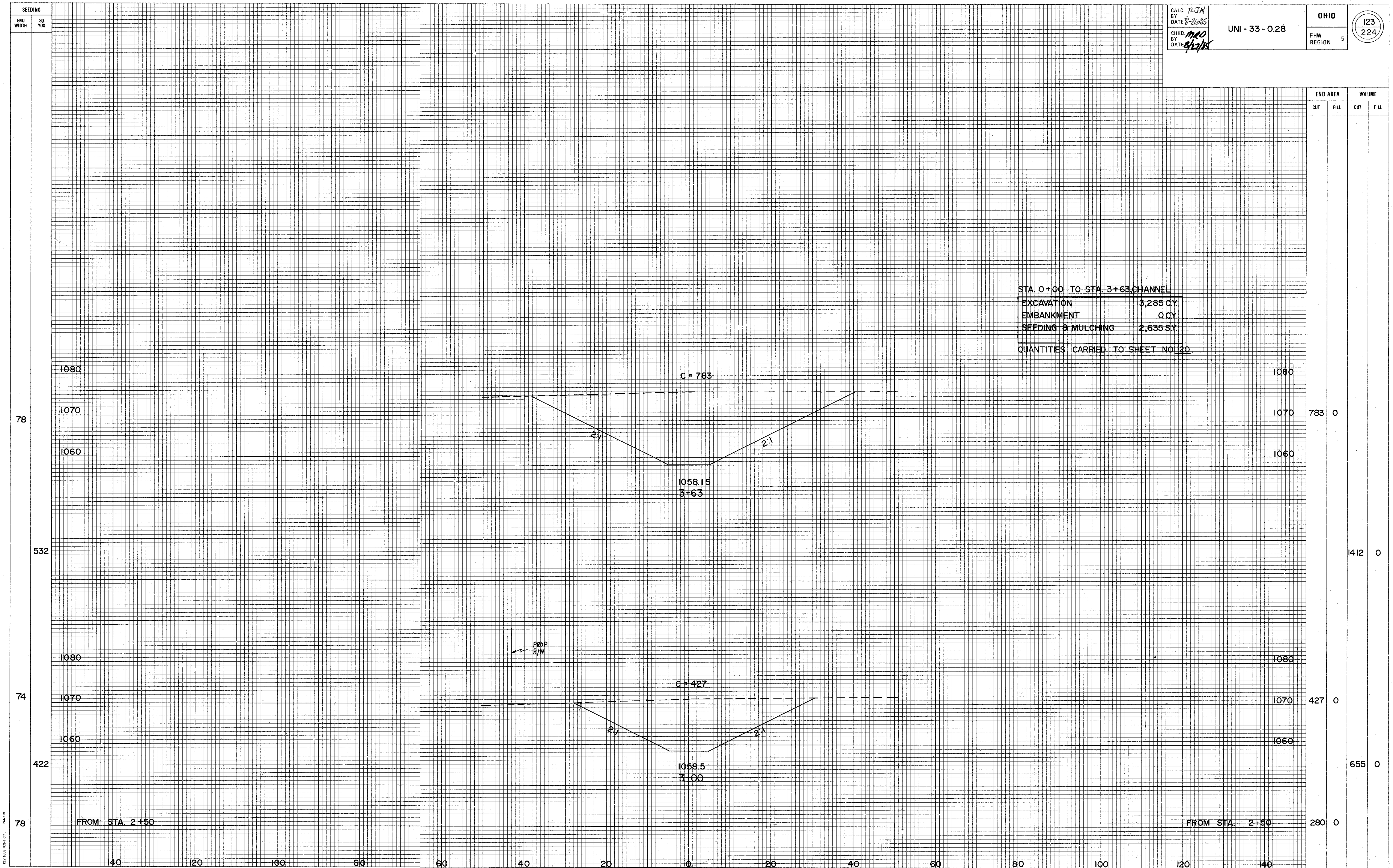
X-SECTIONS PROP. SMOKEY RD. CUL-DE-SACS — STA.33+00 TO STA. 34+00



X - SECTIONS PROPOSED CHANNEL STA. 0+00 TO STA. 1+00



X-SECTIONS PROPOSED CHANNEL STA. 1+50 TO STA. 2+50



STA 0+00 TO STA. 3+63.CHANNEL

EXCAVATION	3,285 CY.
EMBANKMENT	0 CY.
SEEDING & MULCHING	2,635 SY.

QUANTITIES CARRIED TO SHEET NO. 120.

END AREA		VOLUME	
CUT	FILL	CUT	FILL
783	0	1412	0
427	0	655	0
280	0		

X-SECTIONS PROPOSED CHANNEL STA. 3+00 TO STA. 3+63

INTERCHANGE GEOMETRIC LAYOUT

RAMP "D" ①

P.I. STA. 25+35.83
 $\Delta = 18^{\circ}-41'-56''$ LT.
Dc = $4^{\circ}-00'-00''$
R = 1,432.39'
T = 235.83'
L = 467.47'
E = 19.28'

RAMP "D" ②

P.I. STA. 33+81.09
 $\Delta = 18^{\circ}-08'-34''$ RT.
Dc = $5^{\circ}-00'-00''$
R = 1,145.92'
T = 182.96'
L = 362.86'
E = 14.51'

RAMP "A" ③

P.I. STA. 50+84.78
 $\Delta = 14^{\circ}-08'-35''$ LT.
Dc = $2^{\circ}-00'-00''$
R = 2,864.77'
T = 355.38'
L = 707.15'
E = 21.96'

RAMP "C" ④

P.I. STA. 35+03.55
 $\Delta = 4^{\circ}-36'-19''$ RT.
Dc = $1^{\circ}-00'-00''$
R = 5,729.58'
T = 230.39'
L = 460.53'
E = 4.63'

RAMP "C" ⑤

P.I. STA. 38+66.44
 $\Theta_s = 33^{\circ}-55'-06''$ RT.
L = 200.66'
LT = 132.75'
ST = 70.15'
P = 6.14'
LC = 198.93'

RAMP "C" ⑥

P.I. STA. 39+34.35
C.S. STA. 49+78.75
 $\Delta = 239^{\circ}-21'-35''$ RT.
Dc = $22^{\circ}-55'-06''$
R = 250.00'
L = 1,044.40'

RAMP "C" ⑦

P.I. STA. 50+36.46
 $\Theta_s = 20^{\circ}-11'-19''$ RT.
L = 150.20'
LT = 93.84'
ST = 57.71'
P = 2.94'
LC = 149.34'

RAMP "C" ⑧

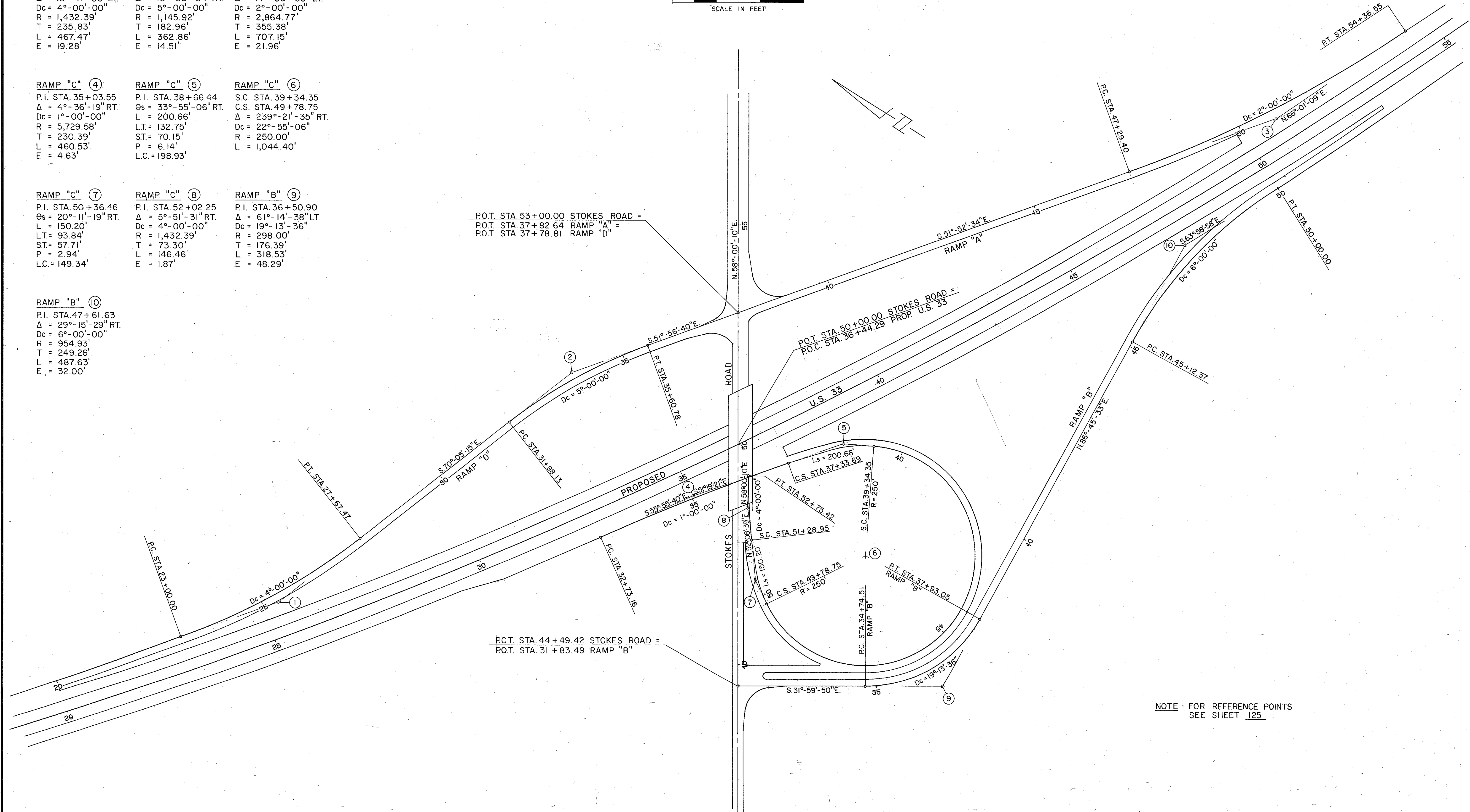
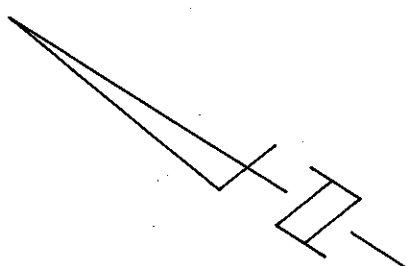
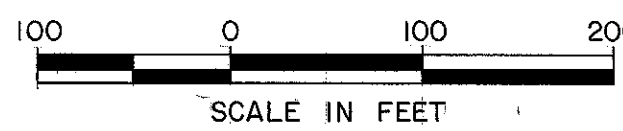
P.I. STA. 52+02.25
 $\Delta = 5^{\circ}-51'-31''$ RT.
Dc = $4^{\circ}-00'-00''$
R = 1,432.39'
T = 73.30'
L = 146.46'
E = 1.87'

RAMP "B" ⑨

P.I. STA. 36+50.90
 $\Delta = 61^{\circ}-14'-38''$ LT.
Dc = $19^{\circ}-13'-36''$
R = 298.00'
T = 176.39'
L = 318.53'
E = 48.29'

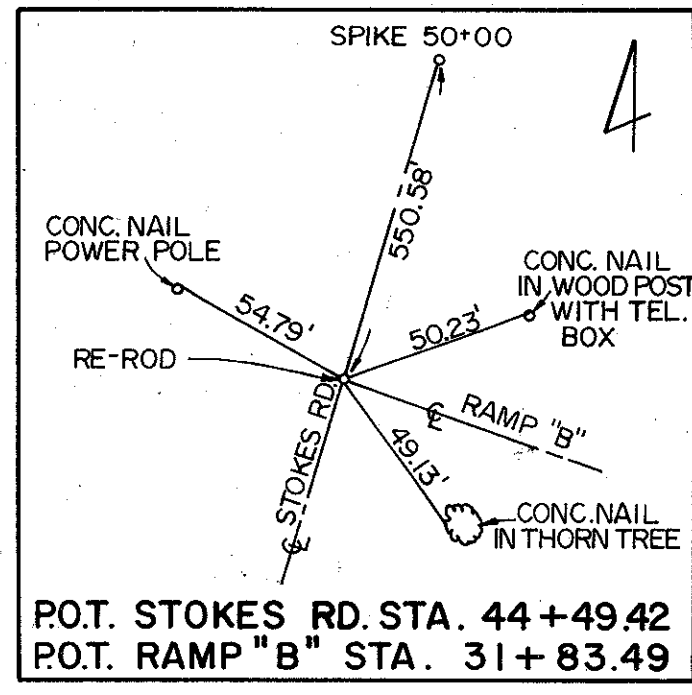
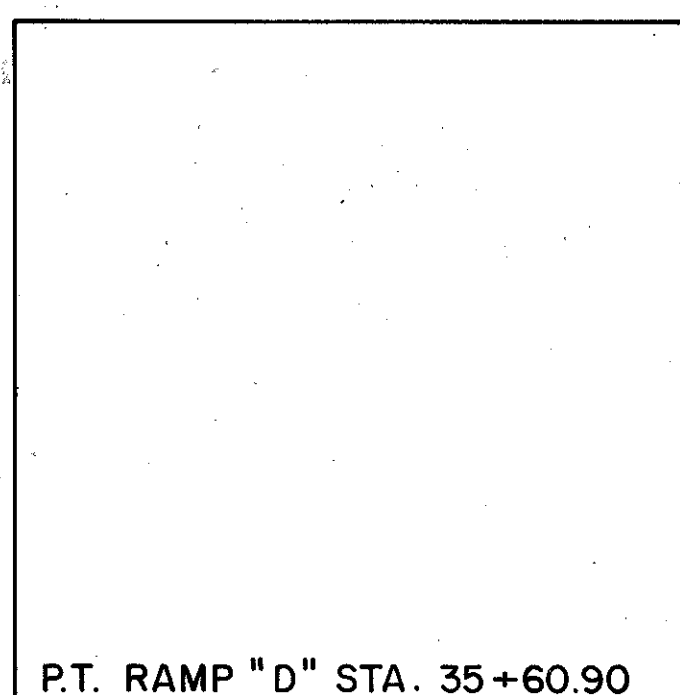
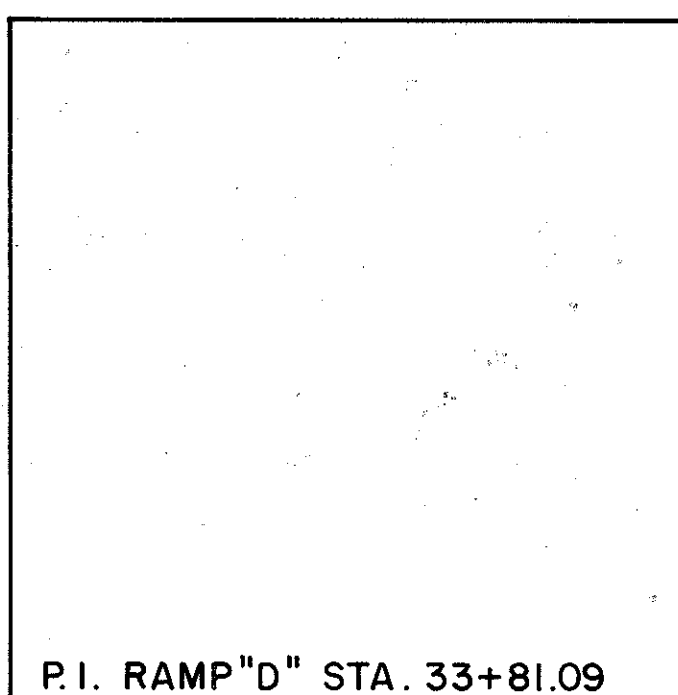
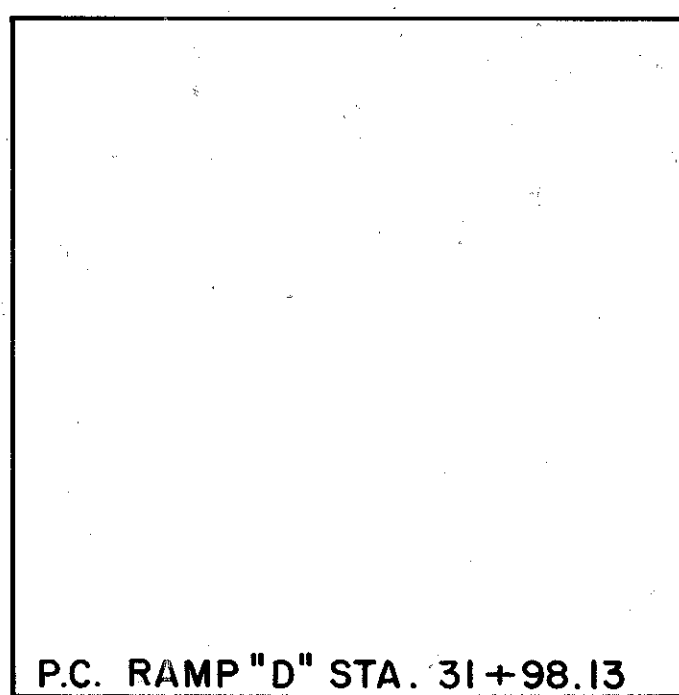
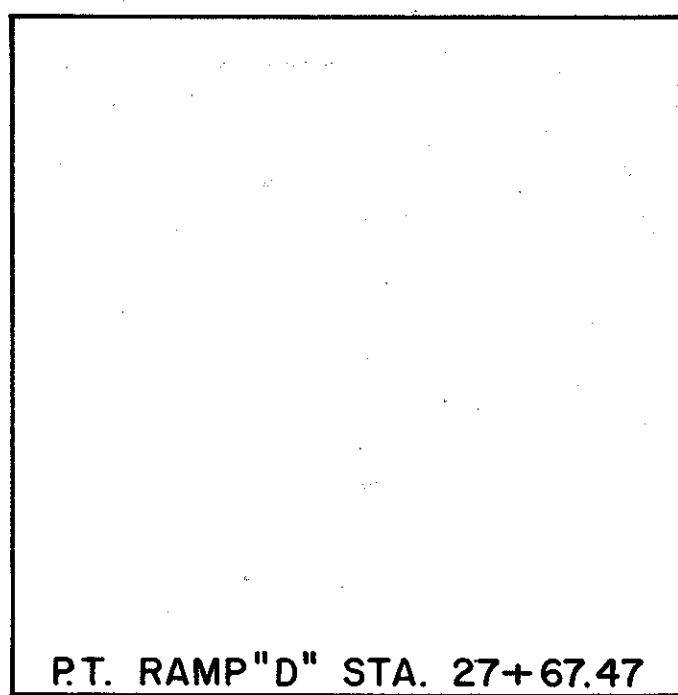
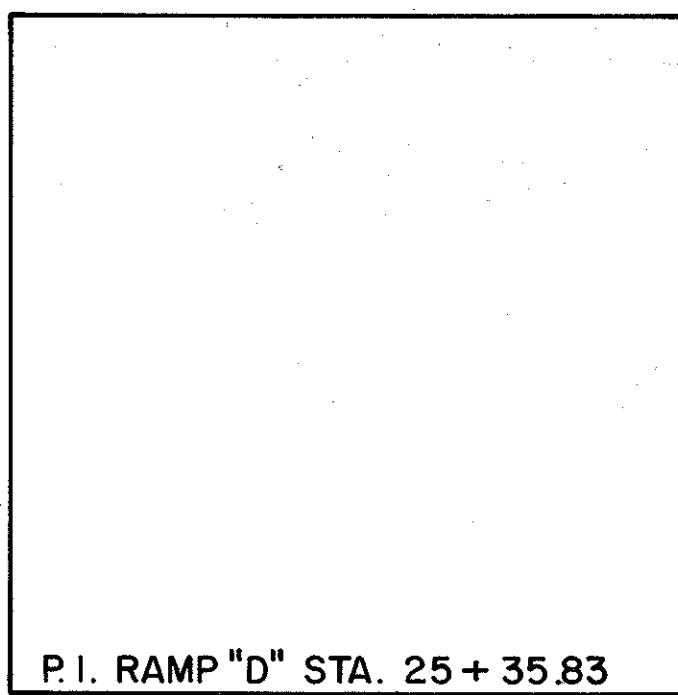
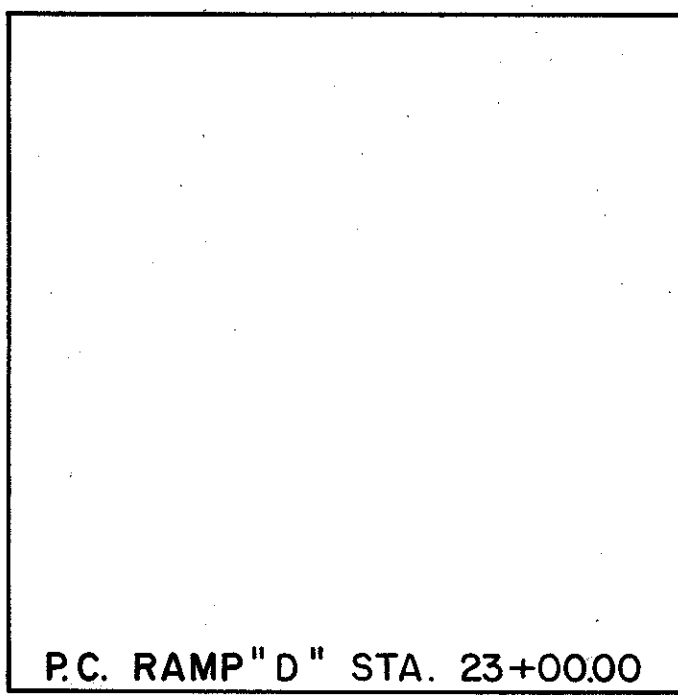
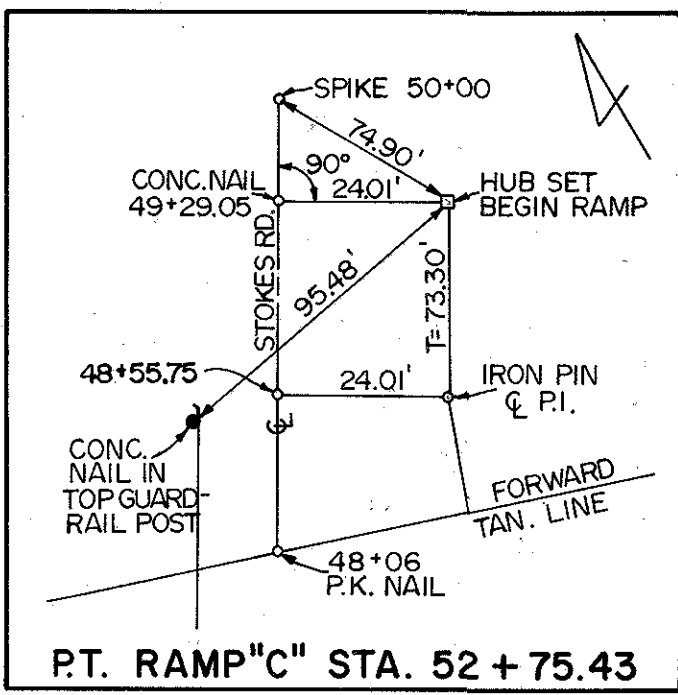
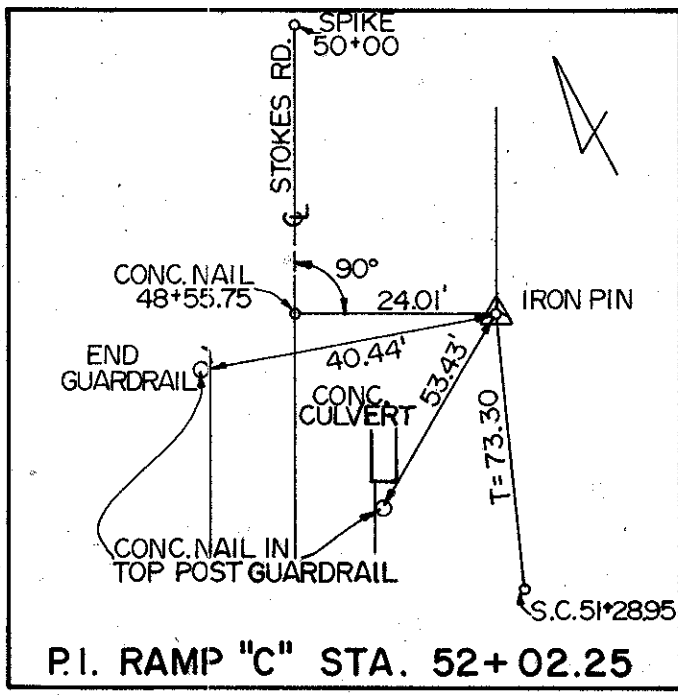
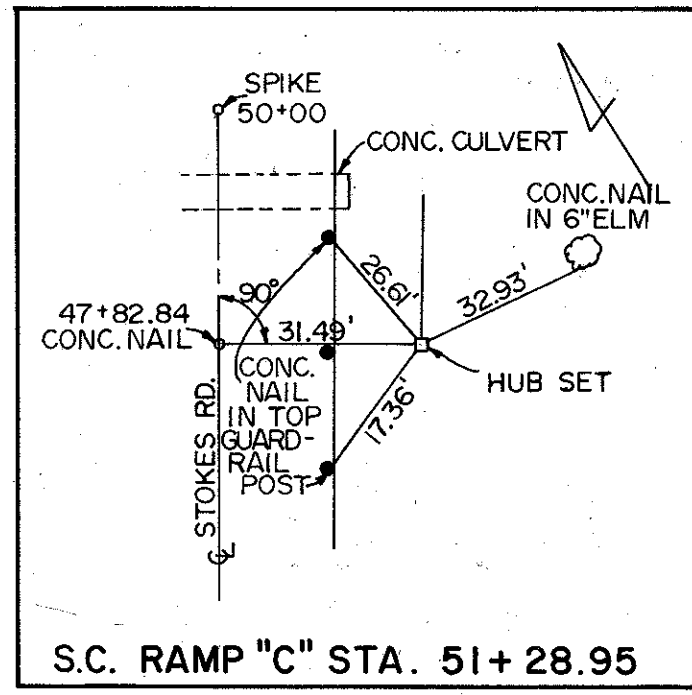
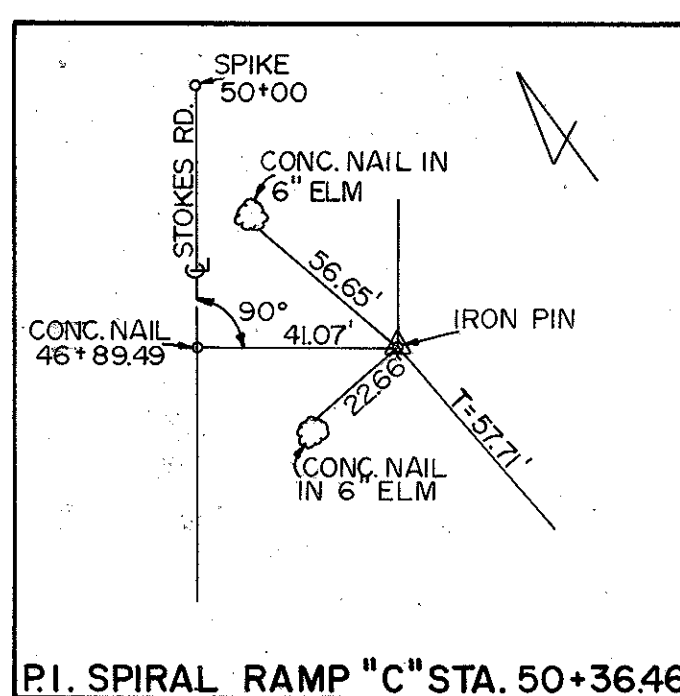
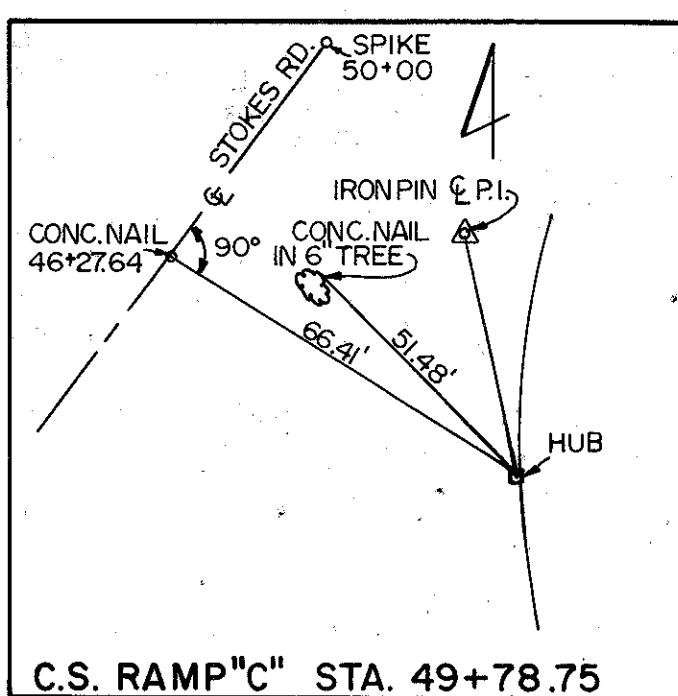
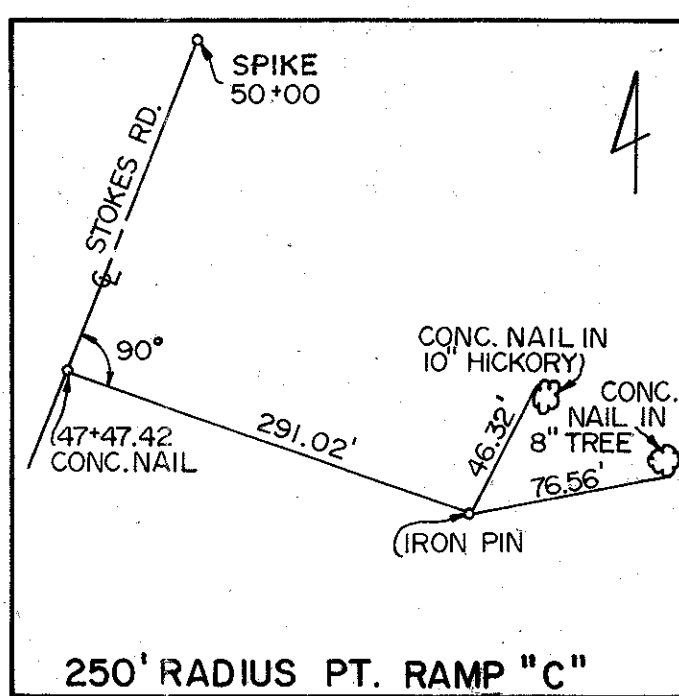
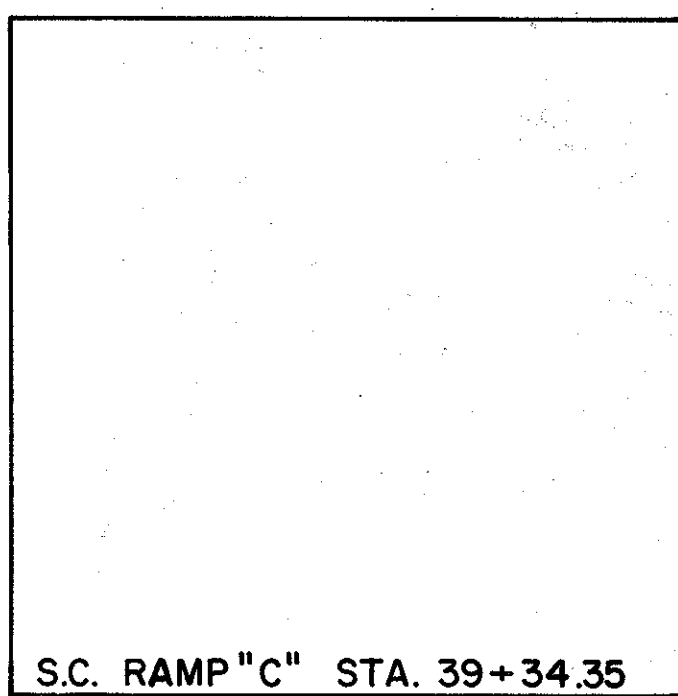
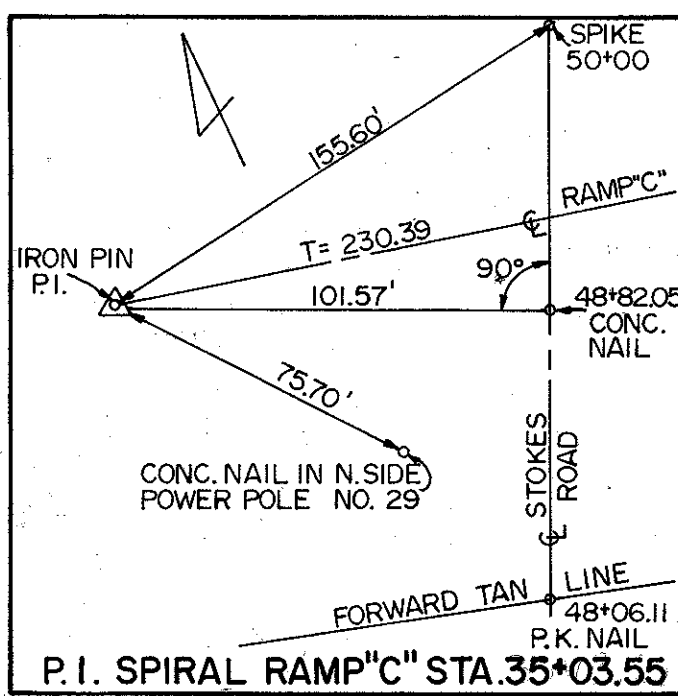
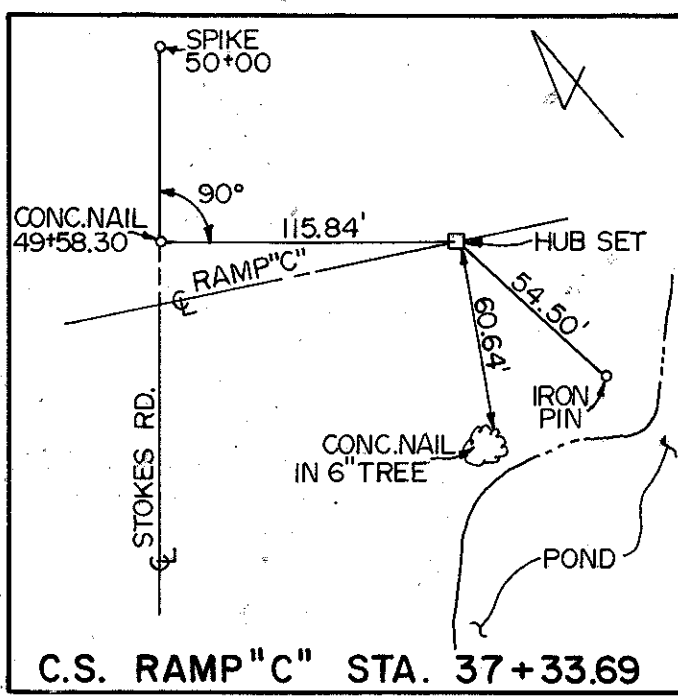
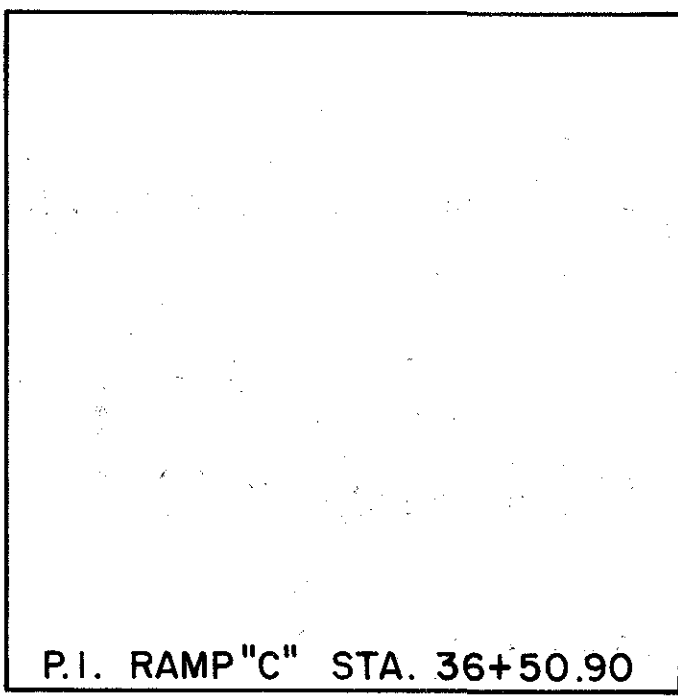
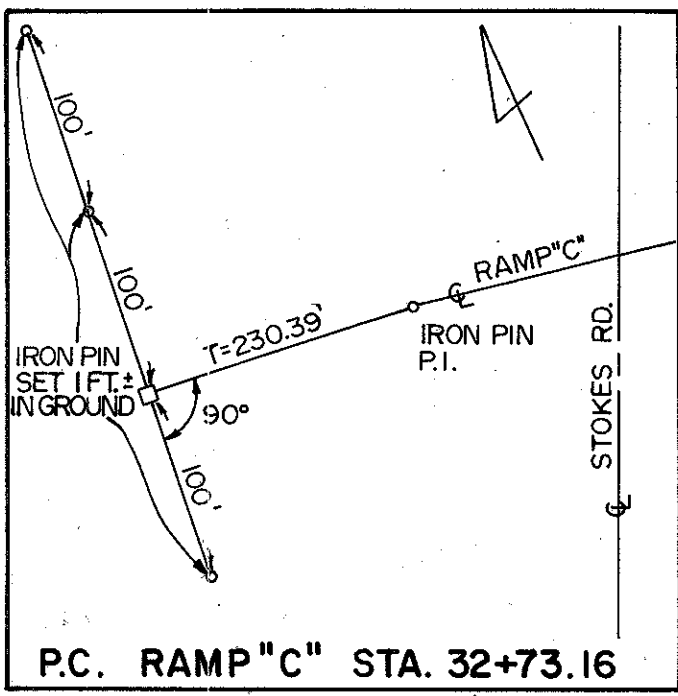
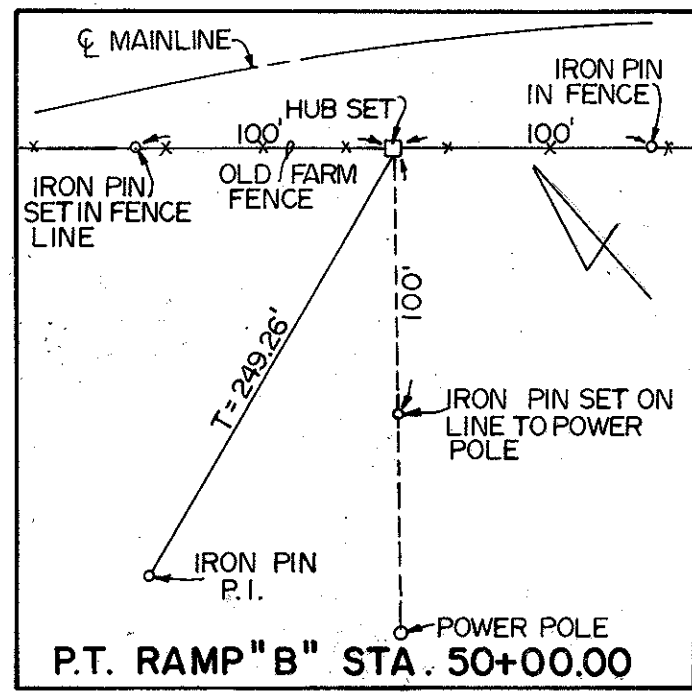
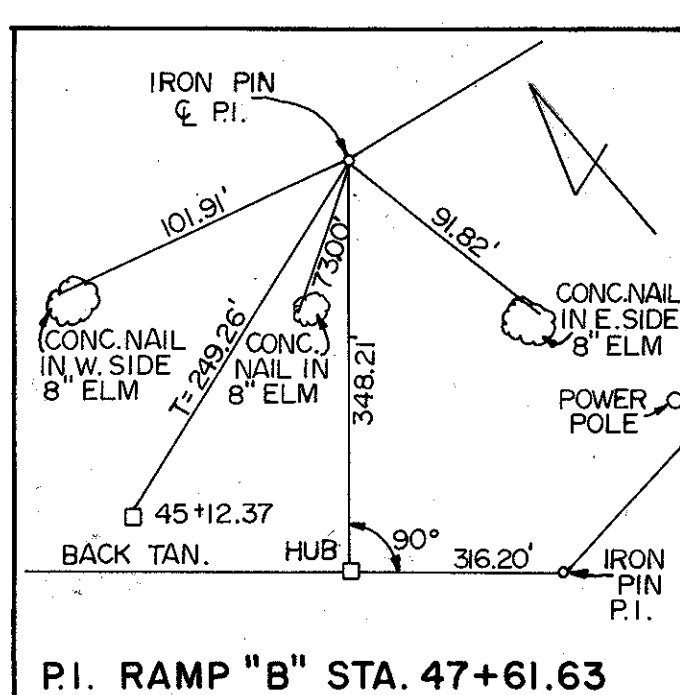
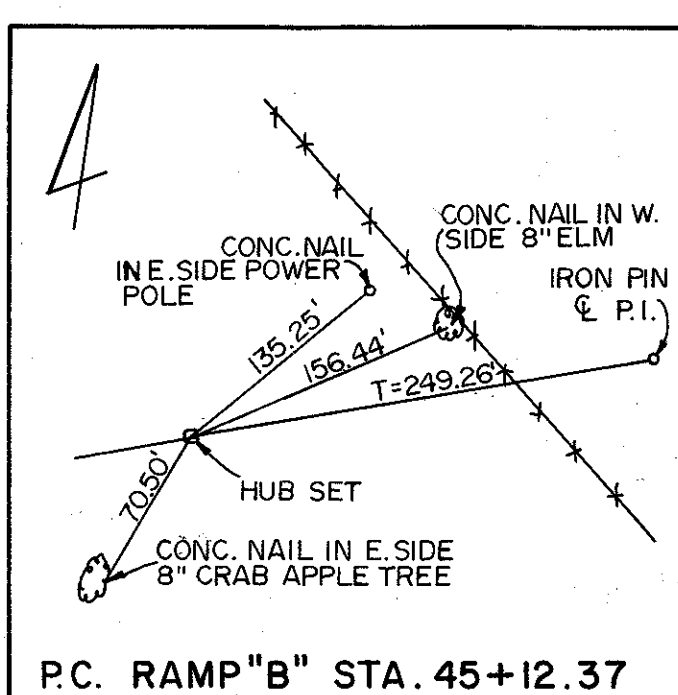
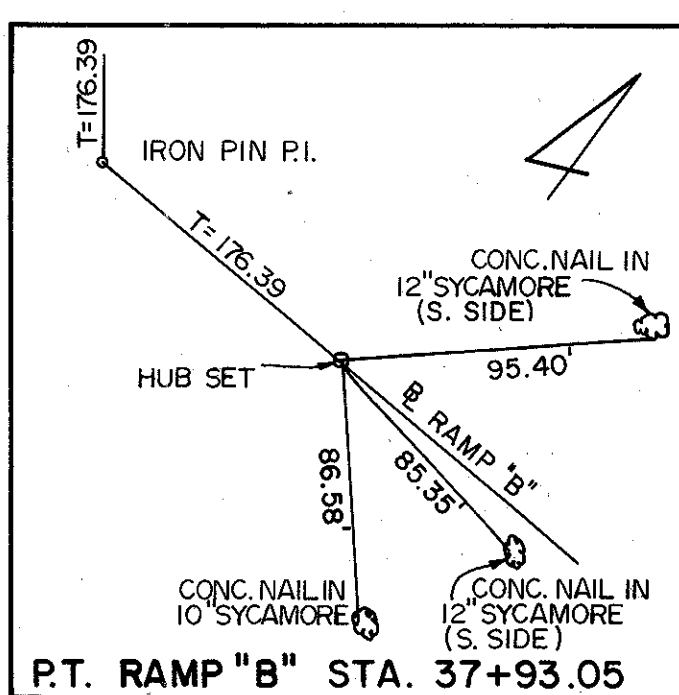
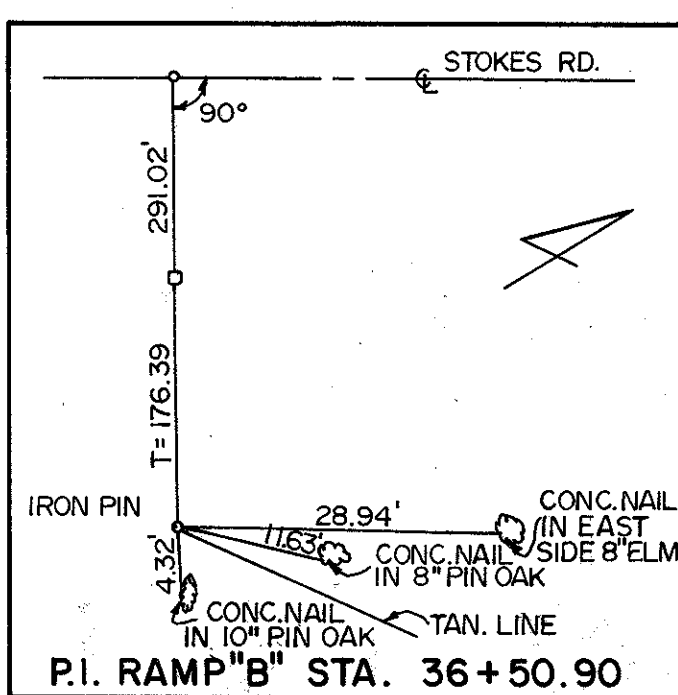
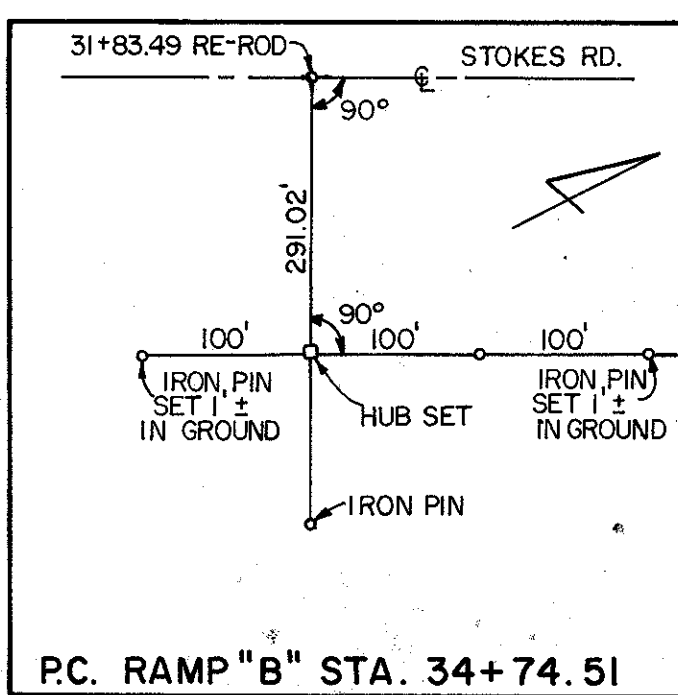
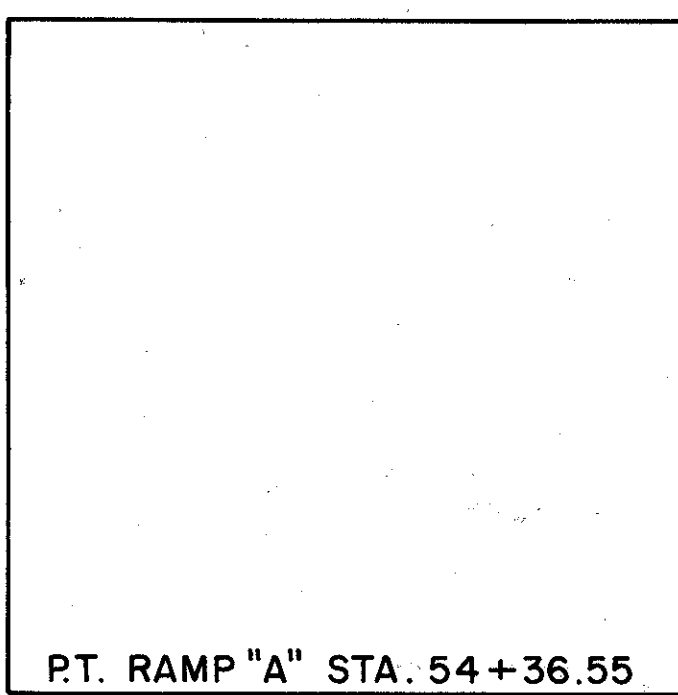
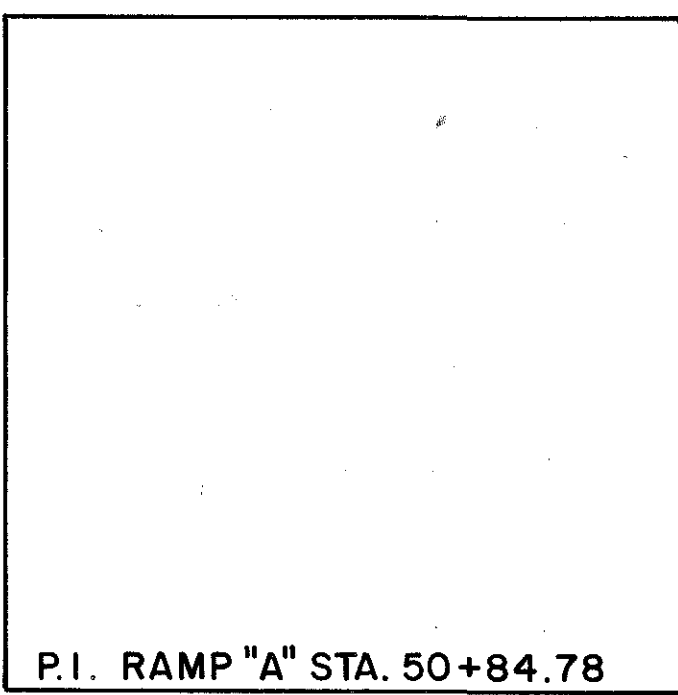
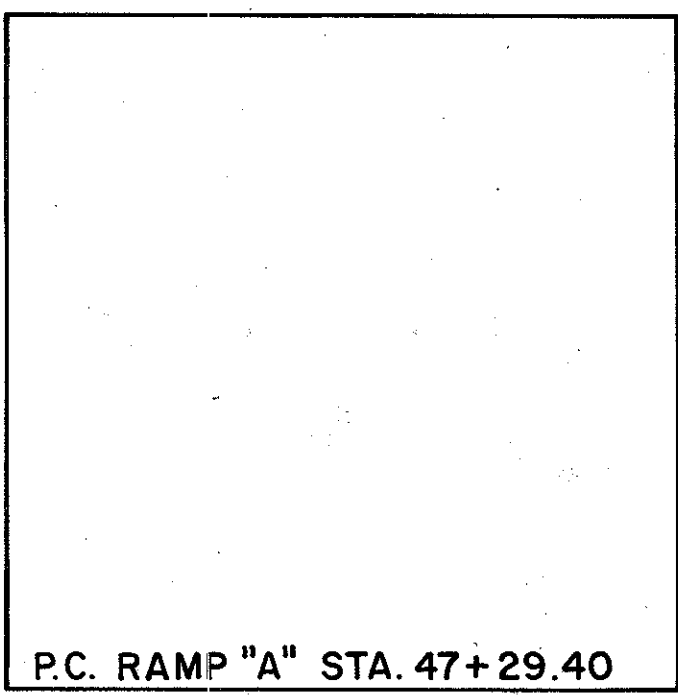
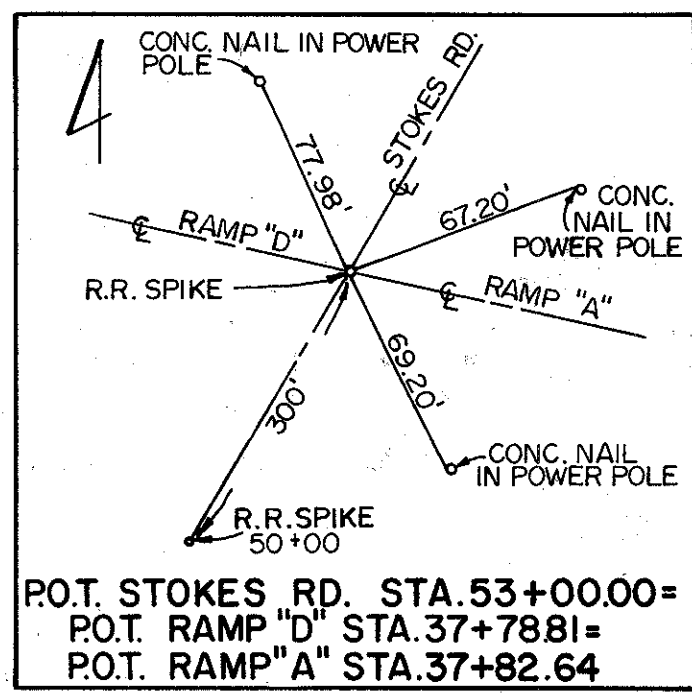
RAMP "B" ⑩

P.I. STA. 47+61.63
 $\Delta = 29^{\circ}-15'-29''$ RT.
Dc = $6^{\circ}-00'-00''$
R = 954.93'
T = 249.26'
L = 487.63'
E = 32.00'



NOTE: FOR REFERENCE POINTS
SEE SHEET 125

REFERENCE POINTS



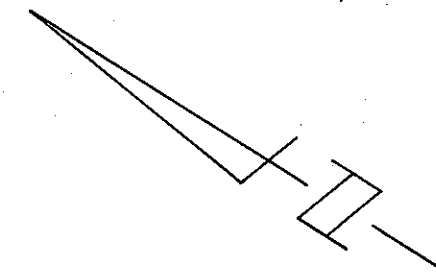
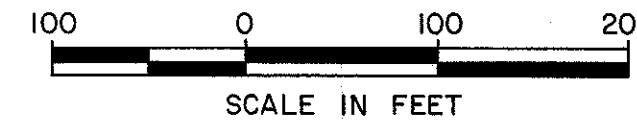
INTERCHANGE GRADING PLAN

CALC.
BY: **MRD**
DATE: **9-12-88**
CHKD.
BY: **CLB**
DATE: **9-16-88**

UNI-33-0.28

OHIO
FHWA
REGION 5

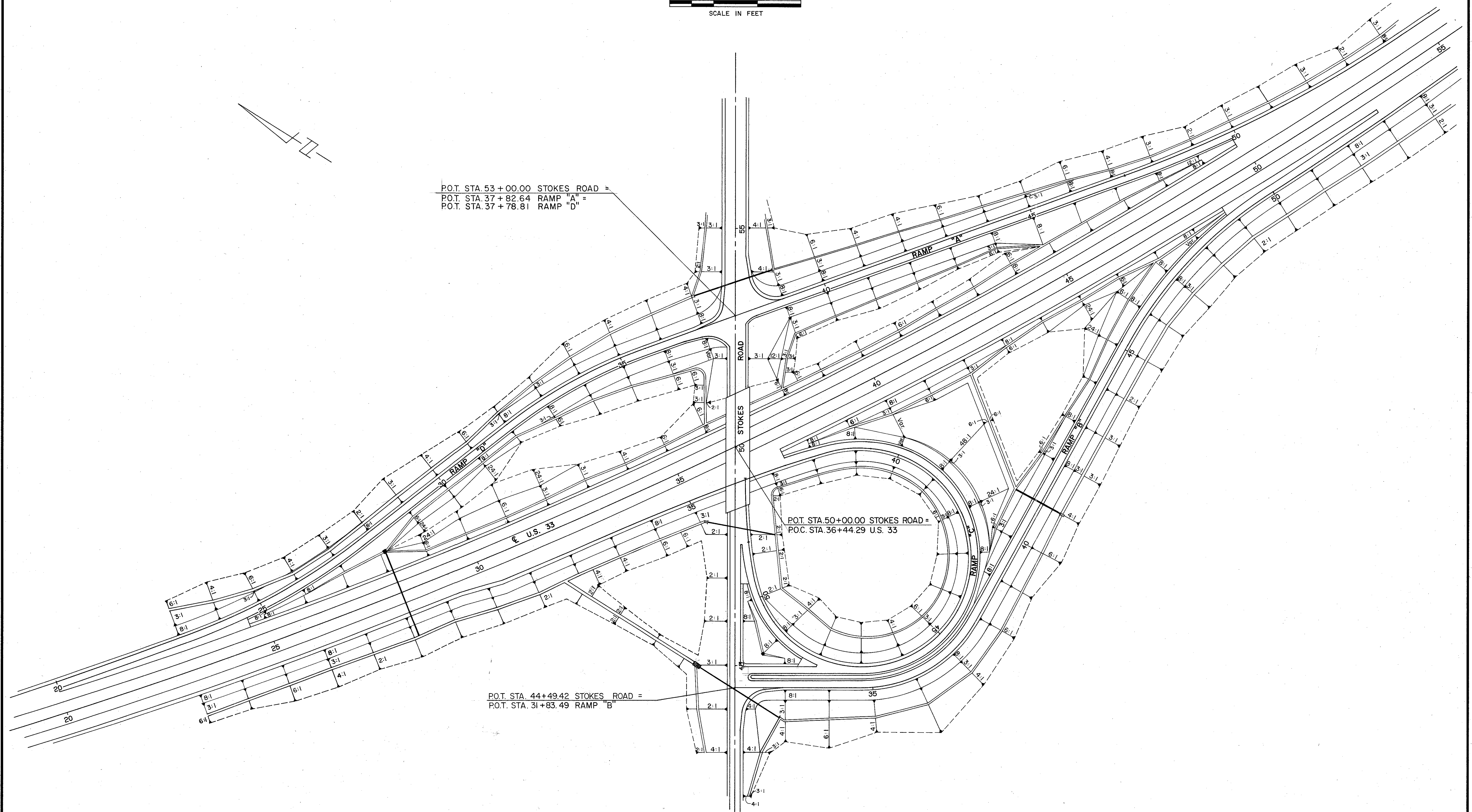
126
224



P.O.T. STA. 53+00.00 STOKES ROAD =
P.O.T. STA. 37+82.64 RAMP "A" =
P.O.T. STA. 37+78.81 RAMP "D"

P.O.T. STA. 50+00.00 STOKES ROAD =
P.O.C. STA. 36+44.29 U.S. 33

P.O.T. STA. 44+49.42 STOKES ROAD =
P.O.T. STA. 31+83.49 RAMP "B"



INTERCHANGE CROSS SECTION LAYOUT

CALC. BY MRD
DATE 9/9/85
CHKD BY G.H.
DATE 9/15/85

UNI-33-0.28

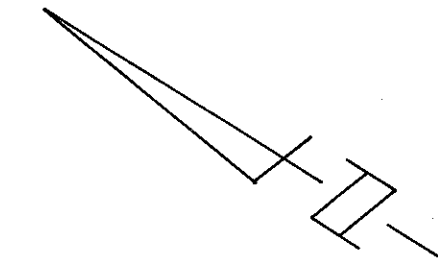
OHIO

FHWA
REGION 5

127

224

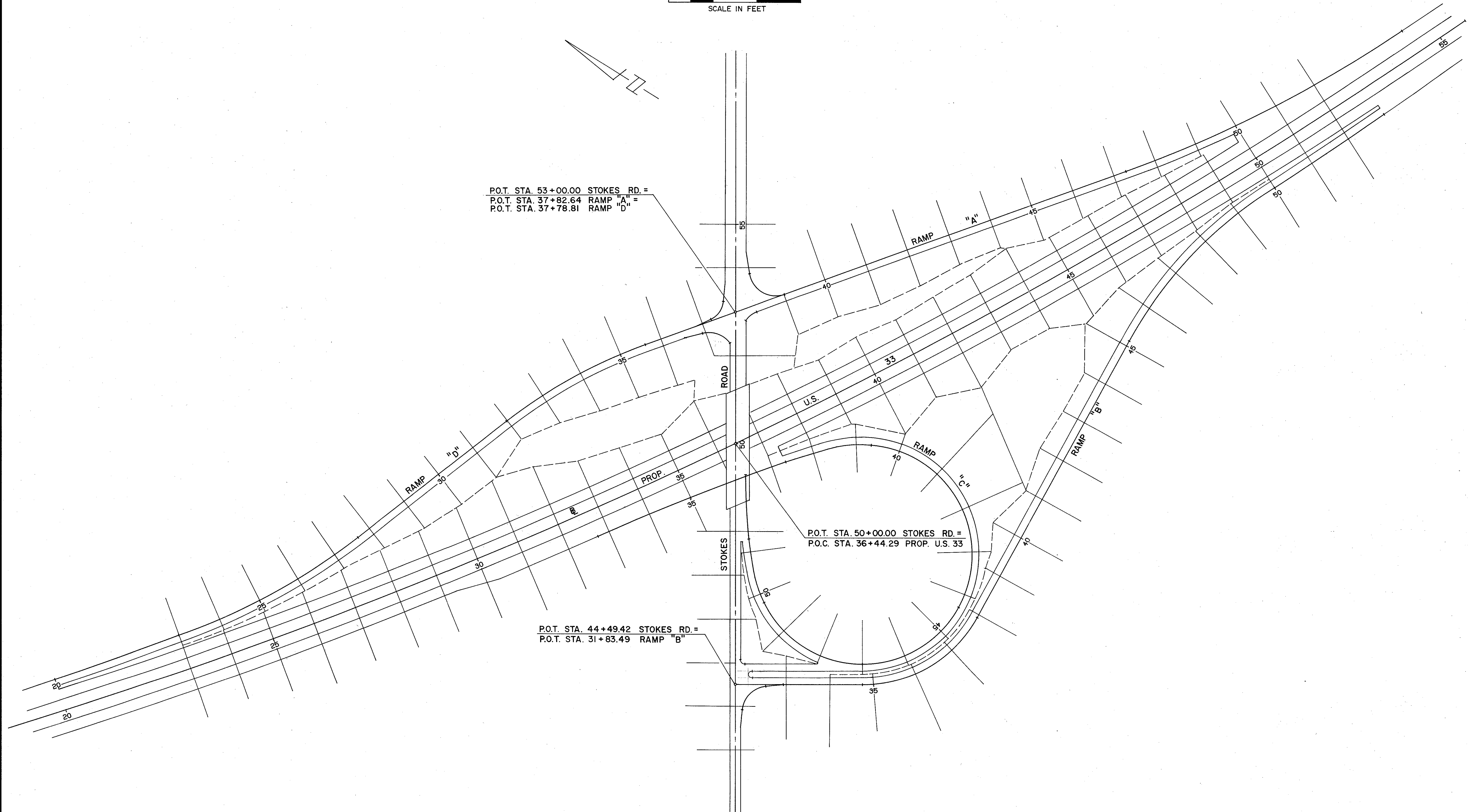
100 0 100 200
SCALE IN FEET



P.O.T. STA. 53+00.00 STOKES RD. =
P.O.T. STA. 37+82.64 RAMP "A" =
P.O.T. STA. 37+78.81 RAMP "D"

P.O.T. STA. 50+00.00 STOKES RD. =
P.O.C. STA. 36+44.29 PROP. U.S. 33

P.O.T. STA. 44+49.42 STOKES RD. =
P.O.T. STA. 31+83.49 RAMP "B"



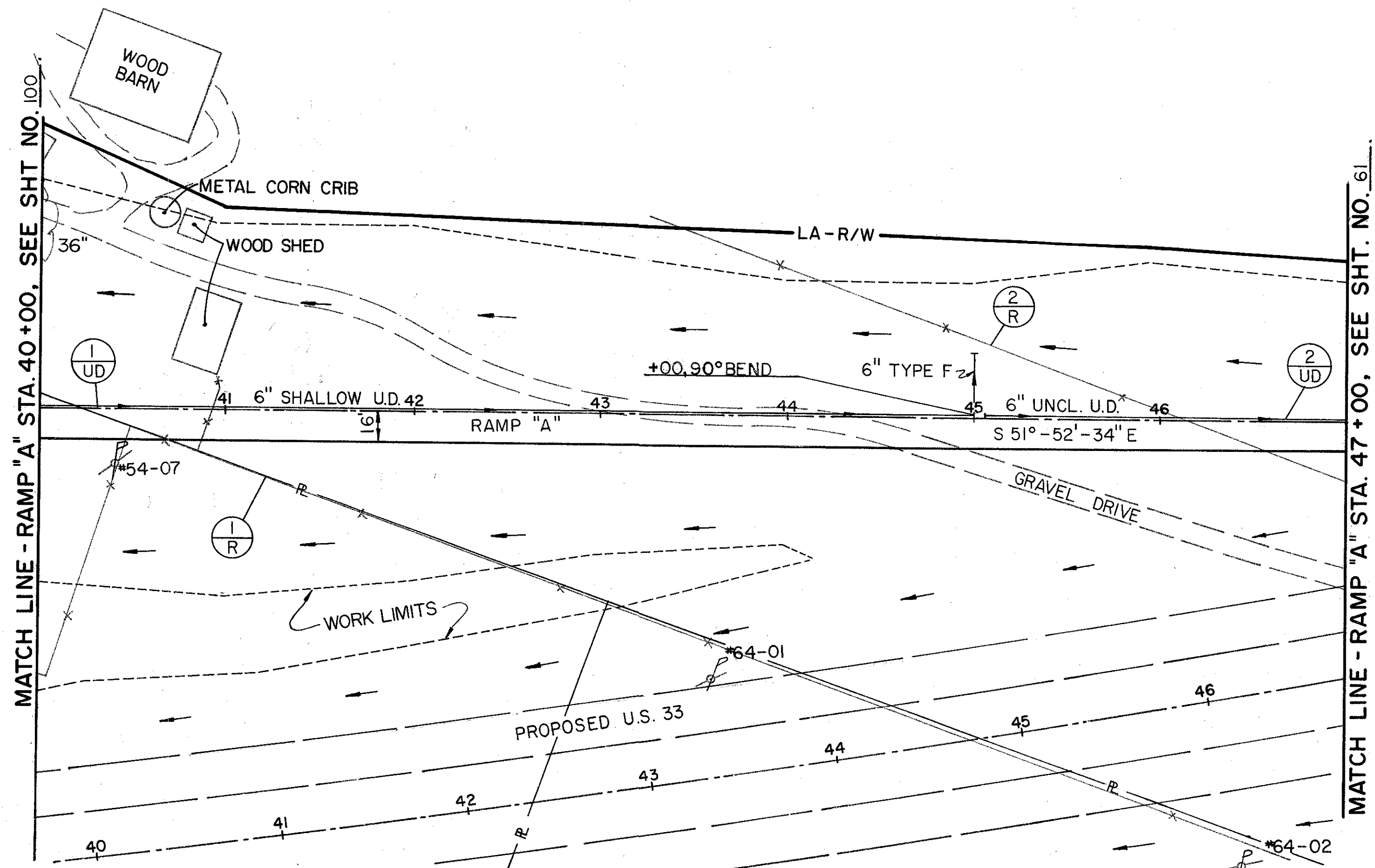
BENCH MARK
TOP OF R.R. SPIKE AT THE INTERSECTION
OF EXISTING U.S. 33 & S.R. 739
ELEV. = 1080.69

CALCULATED BY RJH DATE 10-9-85

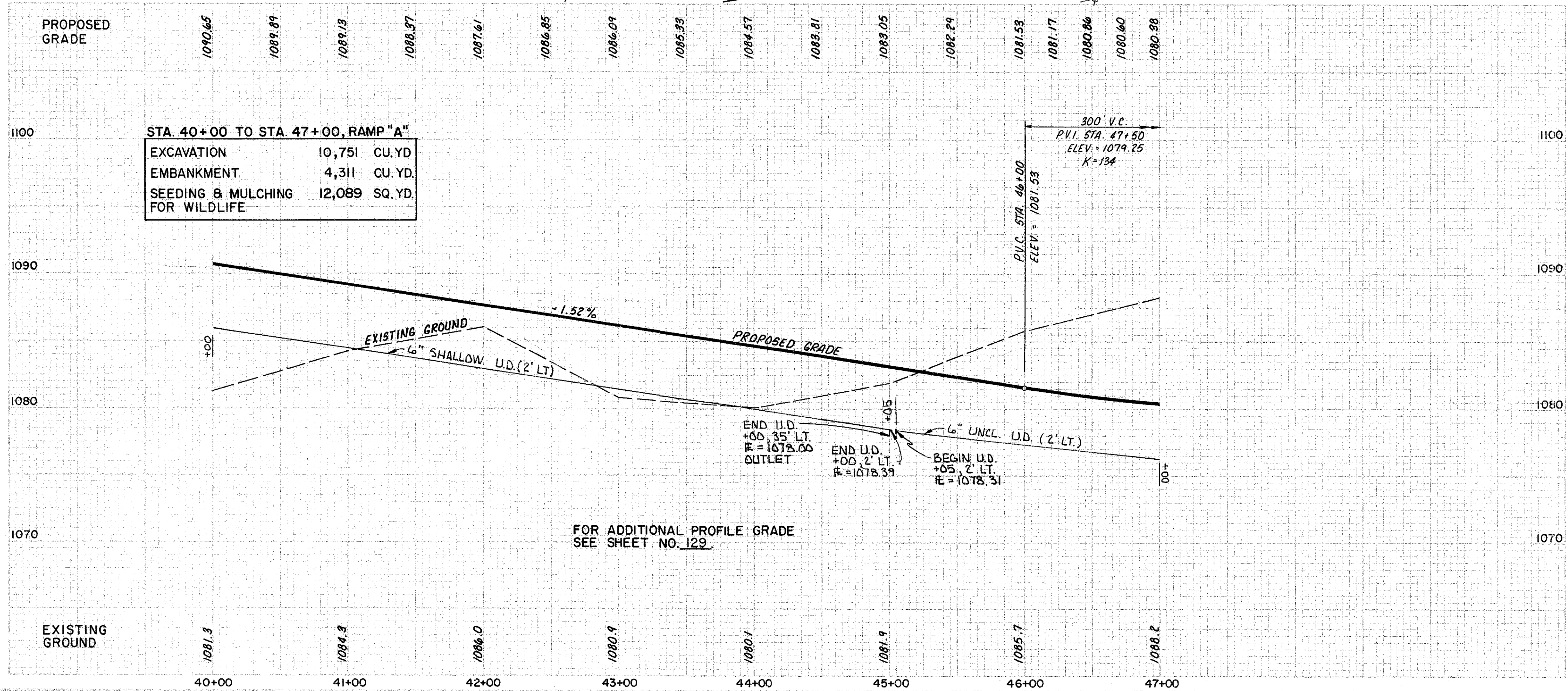
CHECKED BY GHL DATE 12-4-85

FED. RD. DIVISION	CTD. NO.	PROJECT
2	OHIO	UNI-33-0.28

128
224



FOR U.S. 33 PLAN & PROFILE
SEE SHEET NO. 61



ESTIMATED QUANTITIES

603	6\"/>
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603	6\"/>
-----	-------

202	FENCE REMOVED STORAGE LIN. FT.
-----	---

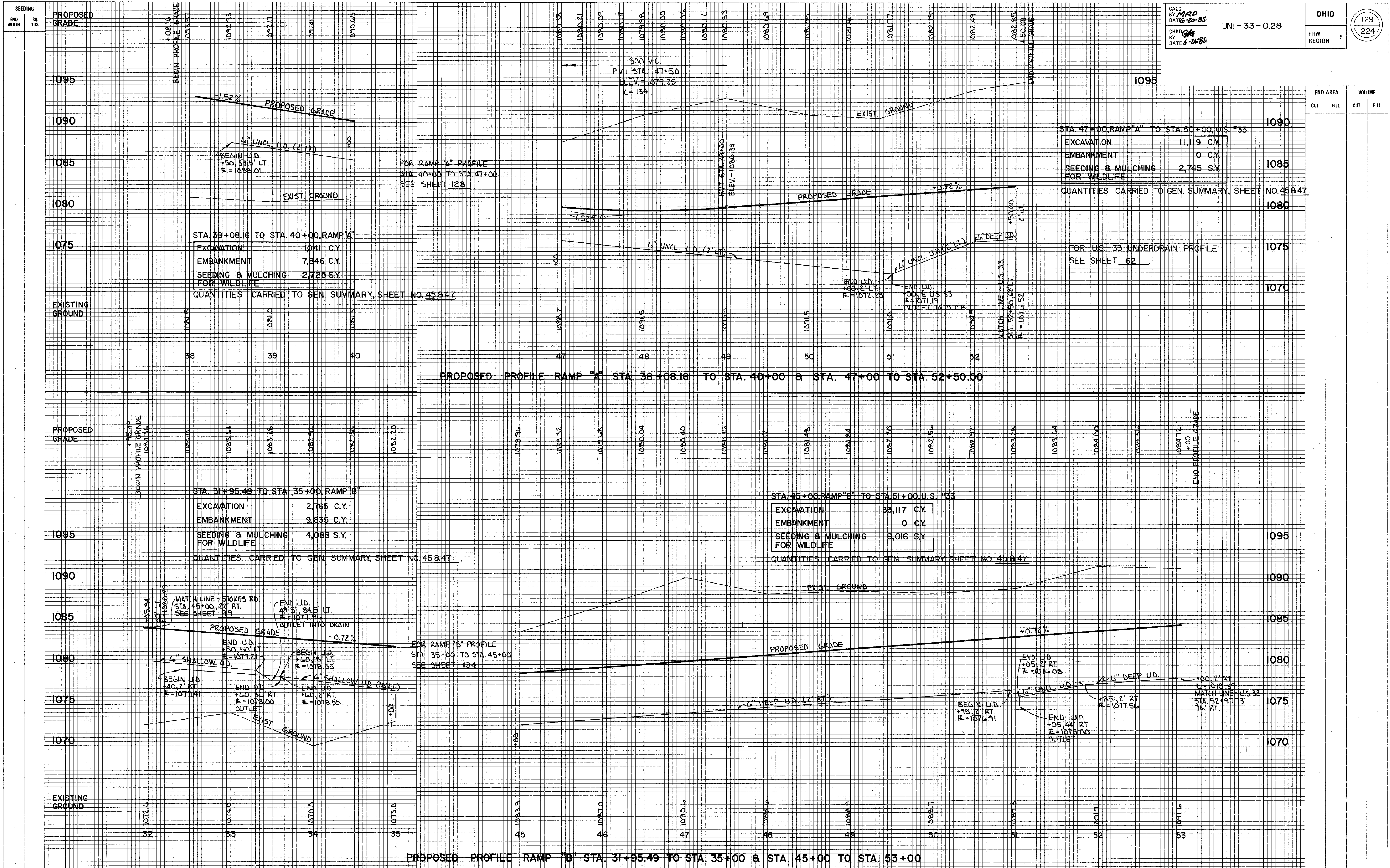
SEE STATION TO STATION	SEE LT.
---------------------------	------------

1-UD	40+00 - 45+00
2-UD	45+05 - 47+00

1-R	40+00 - 43+00
2-R	43+26 - 47+00

1-GR	40+75 - 42+25
------	---------------

PLAN & PROFILE - PROPOSED RAMP "A" STA. 40+00 TO STA. 47+00



CALC.
BY MRP
DATE 6-20-85
CHKD.
BY GMB
DATE 6-26-85

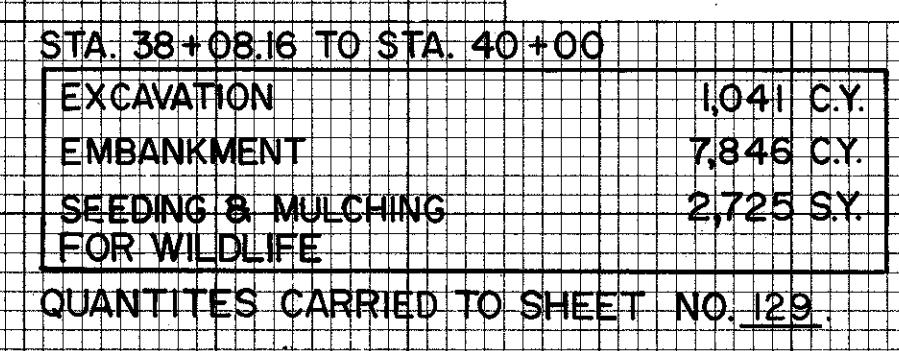
UNI - 33 - 0.28

OHIO
FHW
REGION 5

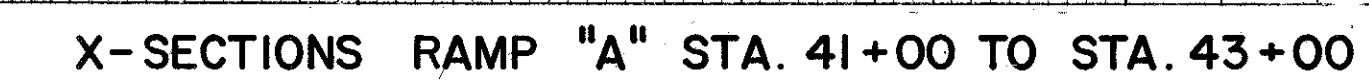
129
224

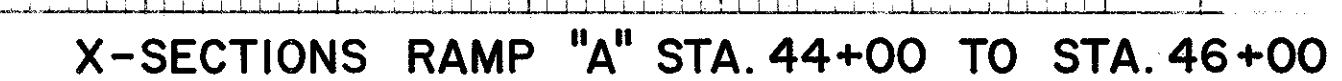
END AREA
CUT FILL
VOLUME
CUT FILL

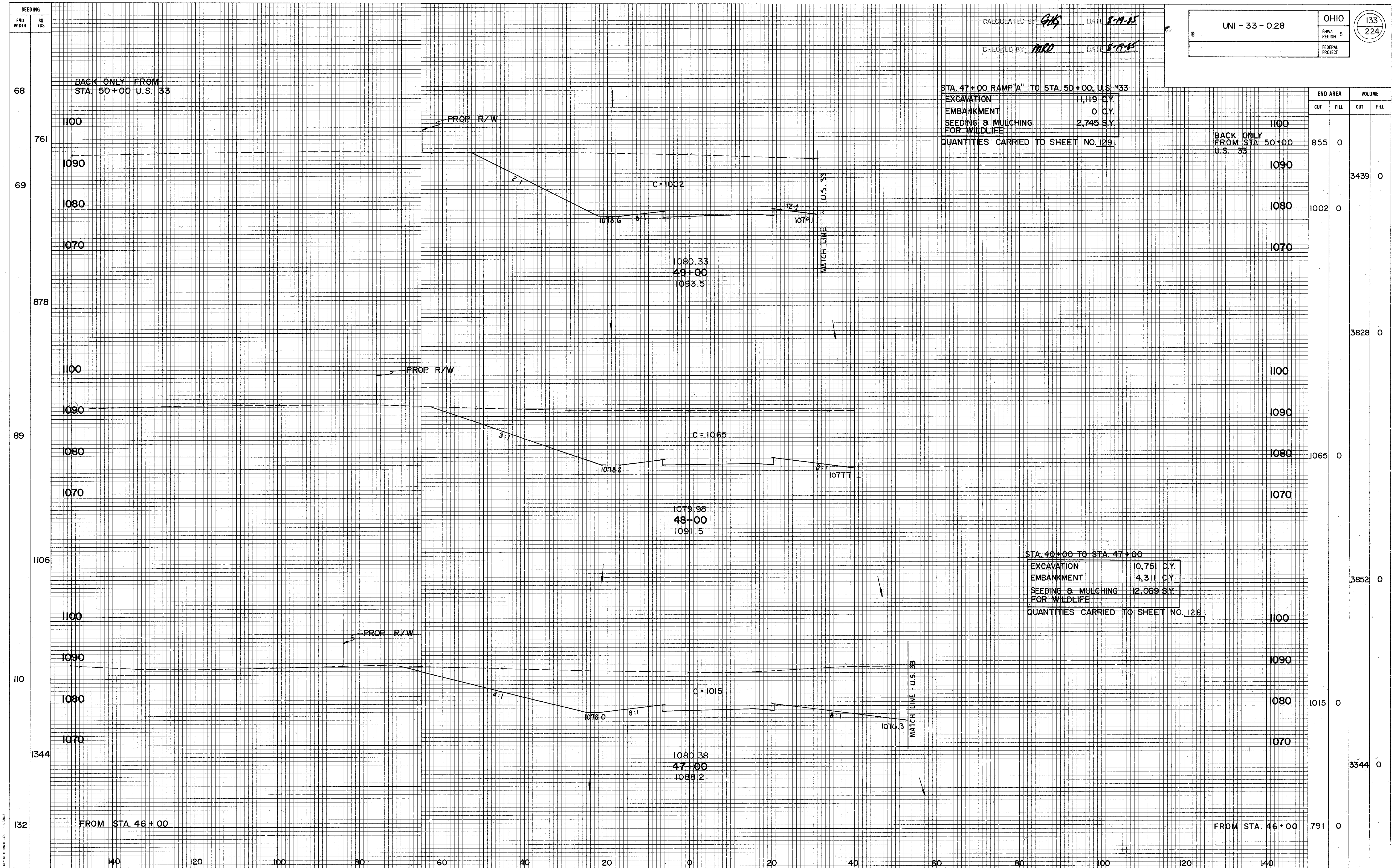
PROFILES RAMP "A" & "B"



X-SECTIONS RAMP "A" STA. 38+08.16 TO STA. 40+00







X-SECTIONS RAMP "A" STA. 47+00 TO STA. 49+00

SEEDING
END
WIDTH
SQ.
YDS.

CALC.
BY
DATE
CHKD.
BY
DATE

UNI-33-0.28

OHIO

FHW
REGION 5

135
224

152

1700

154

894

0

END AREA
CUT FILL
VOLUME
CUT FILL

254 725

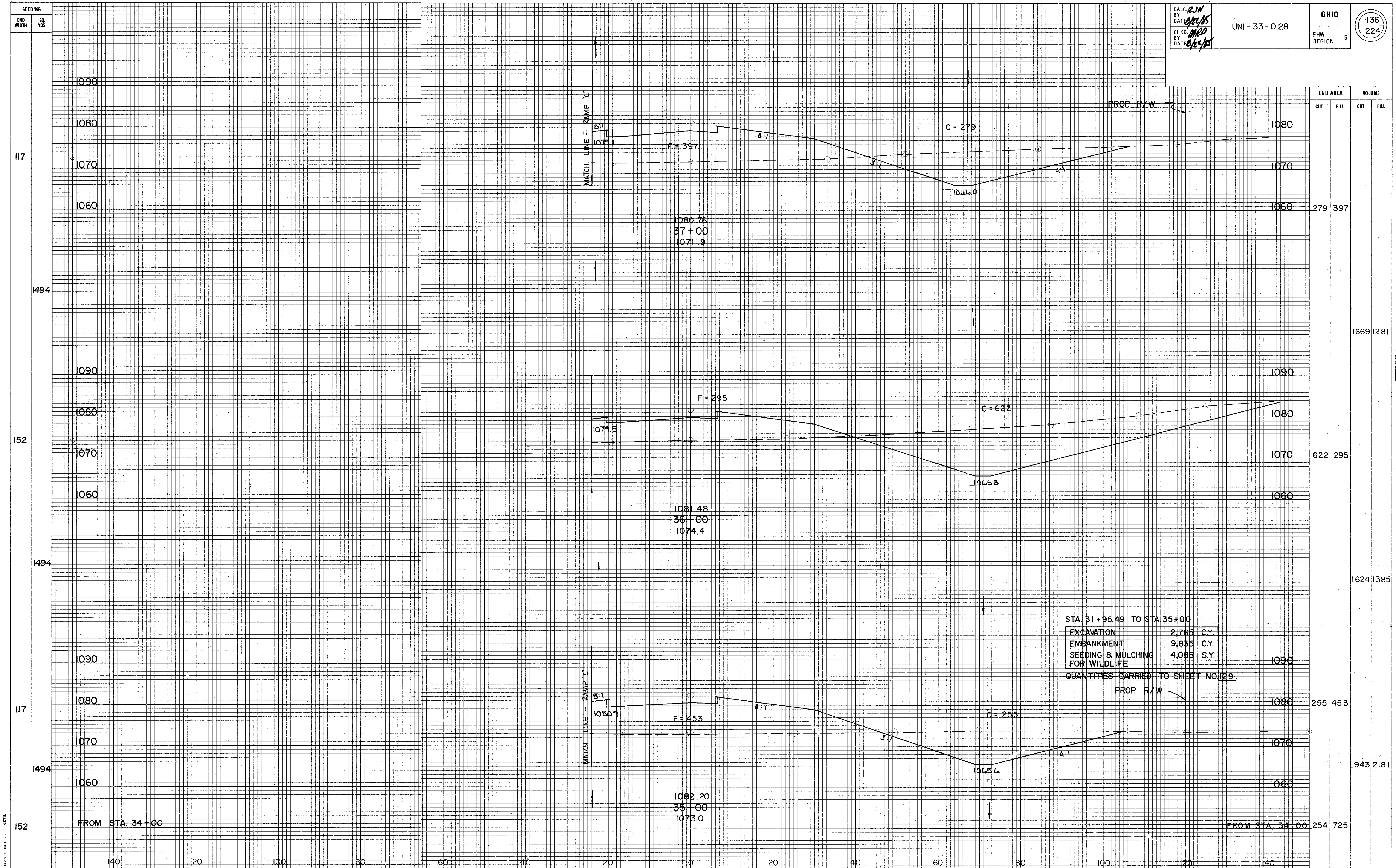
1131 3359

357 1089

691 4295

1130

X-SECTIONS RAMP "B" - STA. 31+95.49 TO STA. 34+00



X-SECTIONS RAMP "B" - STA. 35+00 TO STA. 37+00

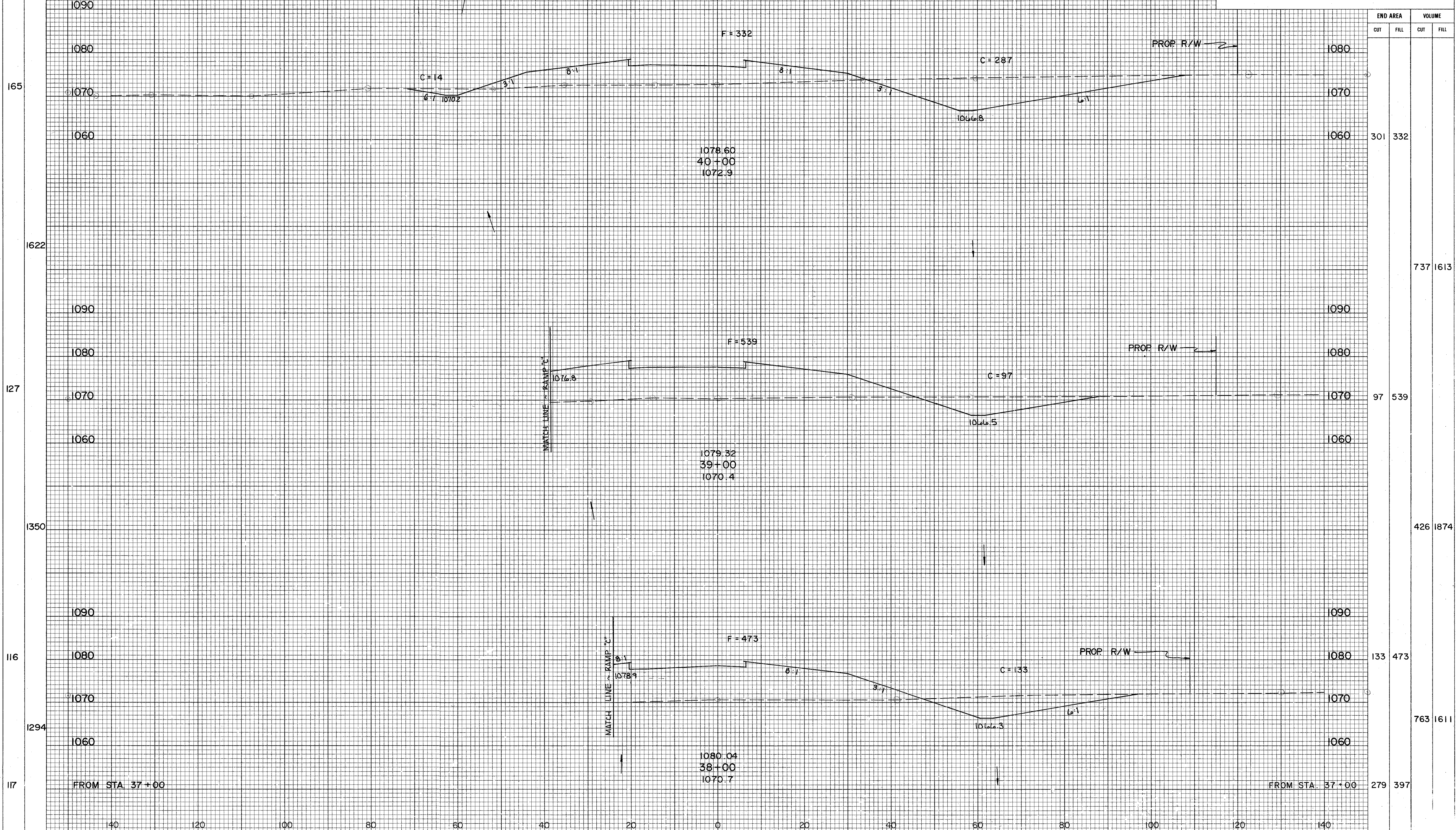
SEEDING
END
WIDTH
SQ.
YDS.

CALC BY: *RW*
DATE: *8/13/18*
CHKD BY: *MRD*
DATE: *8/14/18*

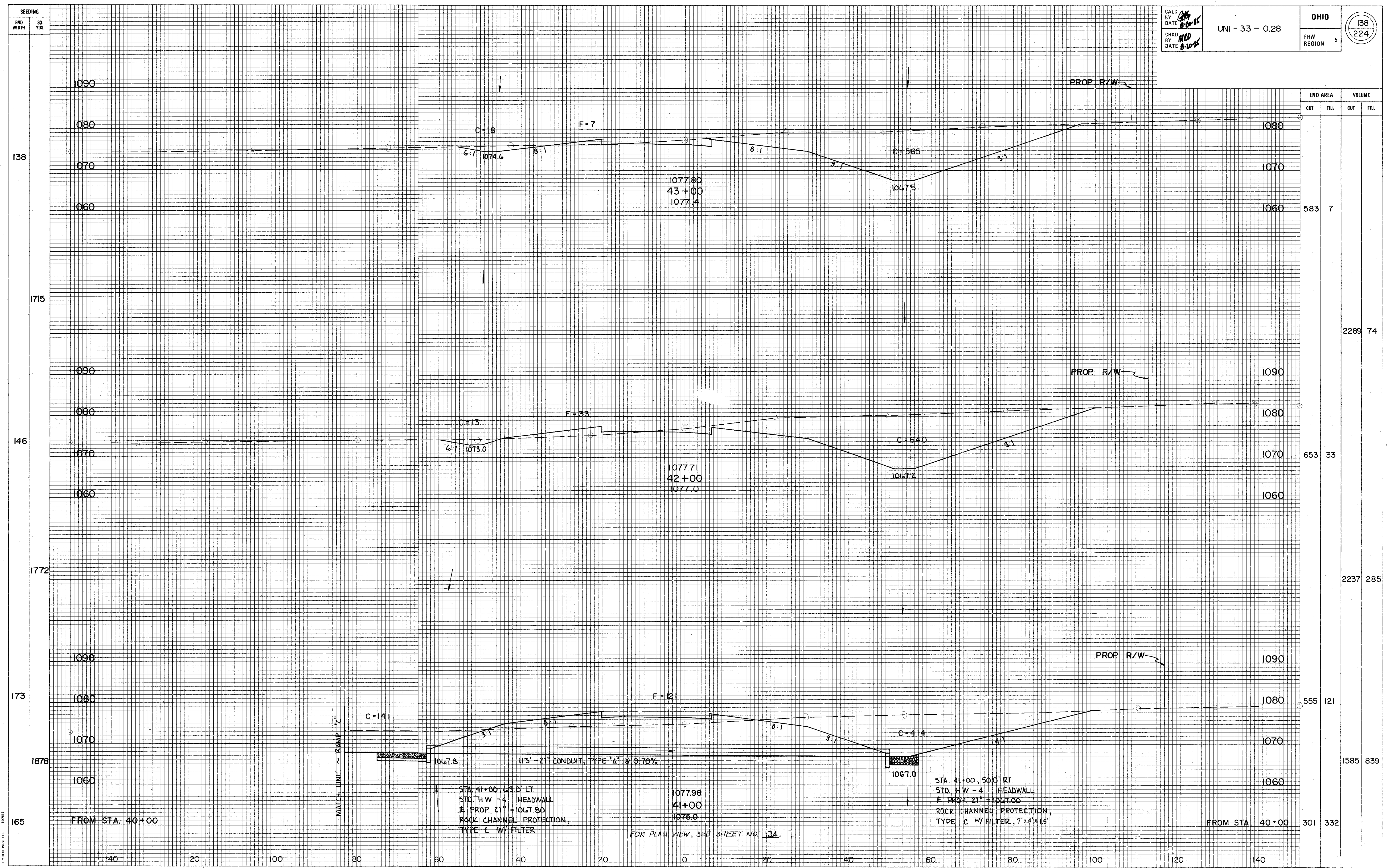
UNI-33-0.28

OHIO
FHW REGION 5

137
224

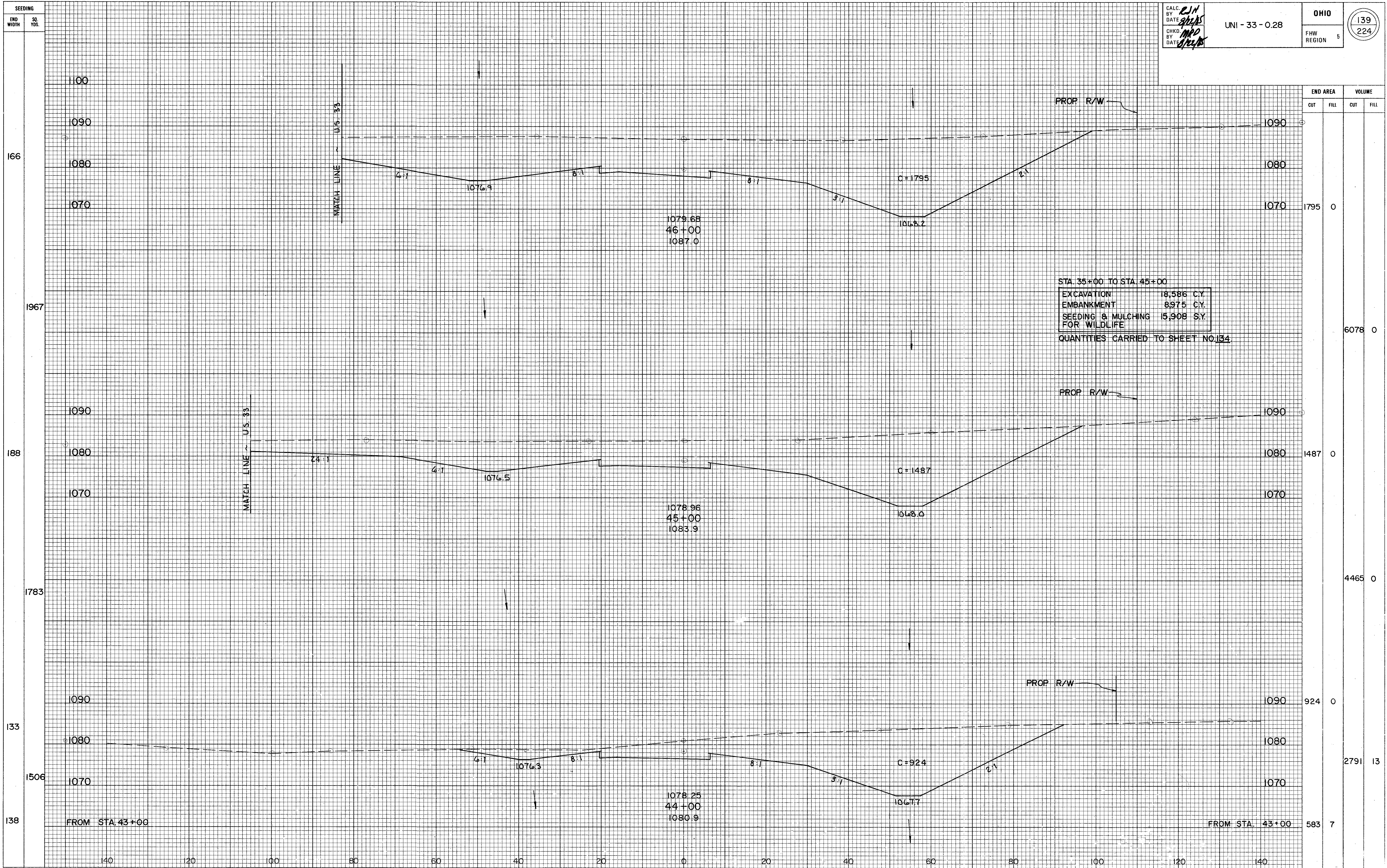


X-SECTIONS RAMP "B" - STA. 38+00 TO STA. 40+00



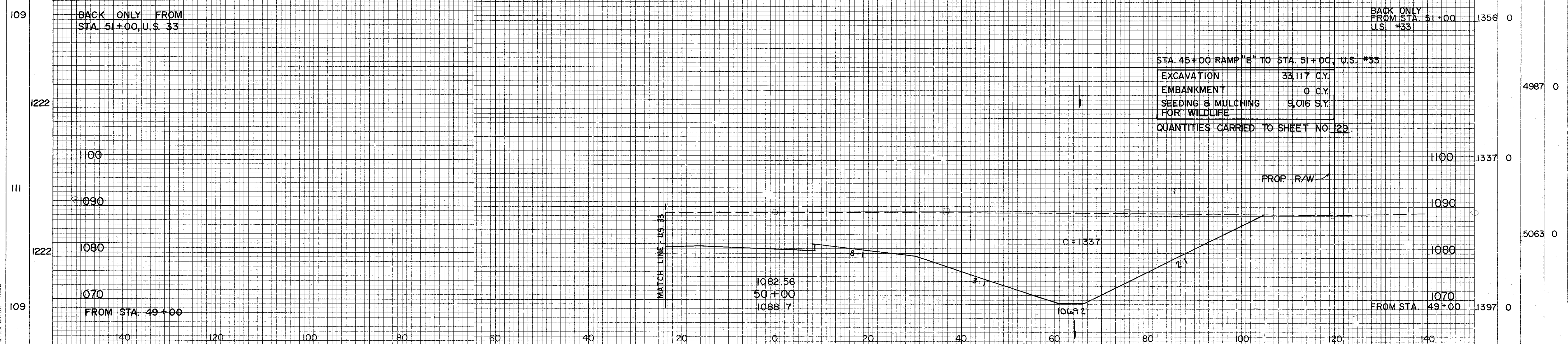
END AREA		VOLUME	
CUT	FILL	CUT	FILL
583	7	2289	74
653	33	2237	285
555	121	1585	839
301	332		

X-SECTIONS RAMP "B" - STA. 41+00 TO STA. 43+00



X-SECTIONS RAMP "B" - STA. 44+00 TO STA. 46+00

CALC. <i>RJW</i> BY DATE <i>8-22-85</i>	UNI - 33 - 028	OHIO	
CHKD. <i>MEO</i> BY DATE <i>8/22/85</i>		FHW REGION 5	



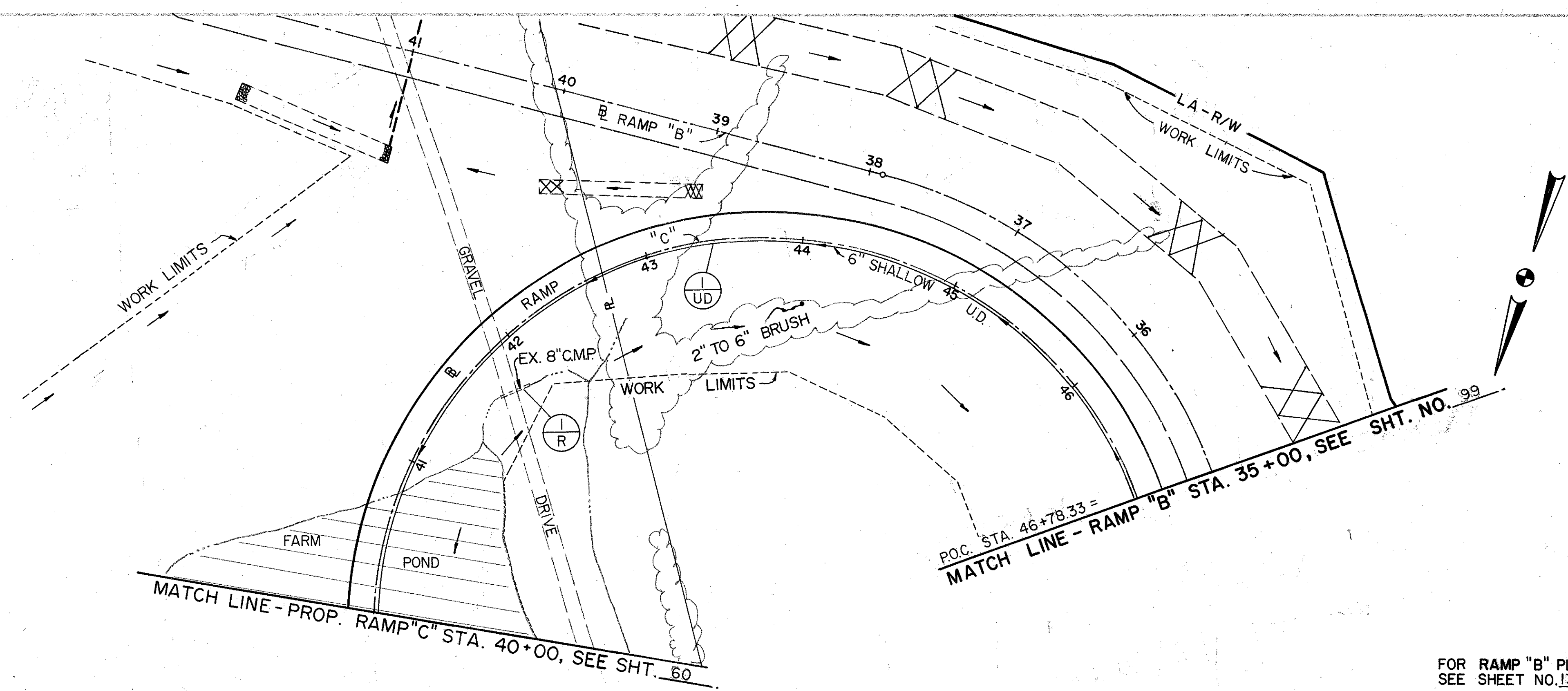
X-SECTIONS RAMP "B" - STA. 50 + 00

CALCULATED BY RJH DATE 10-8-85

CHECKED BY gfk DATE 12-4-85

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	UNI-33-0.28

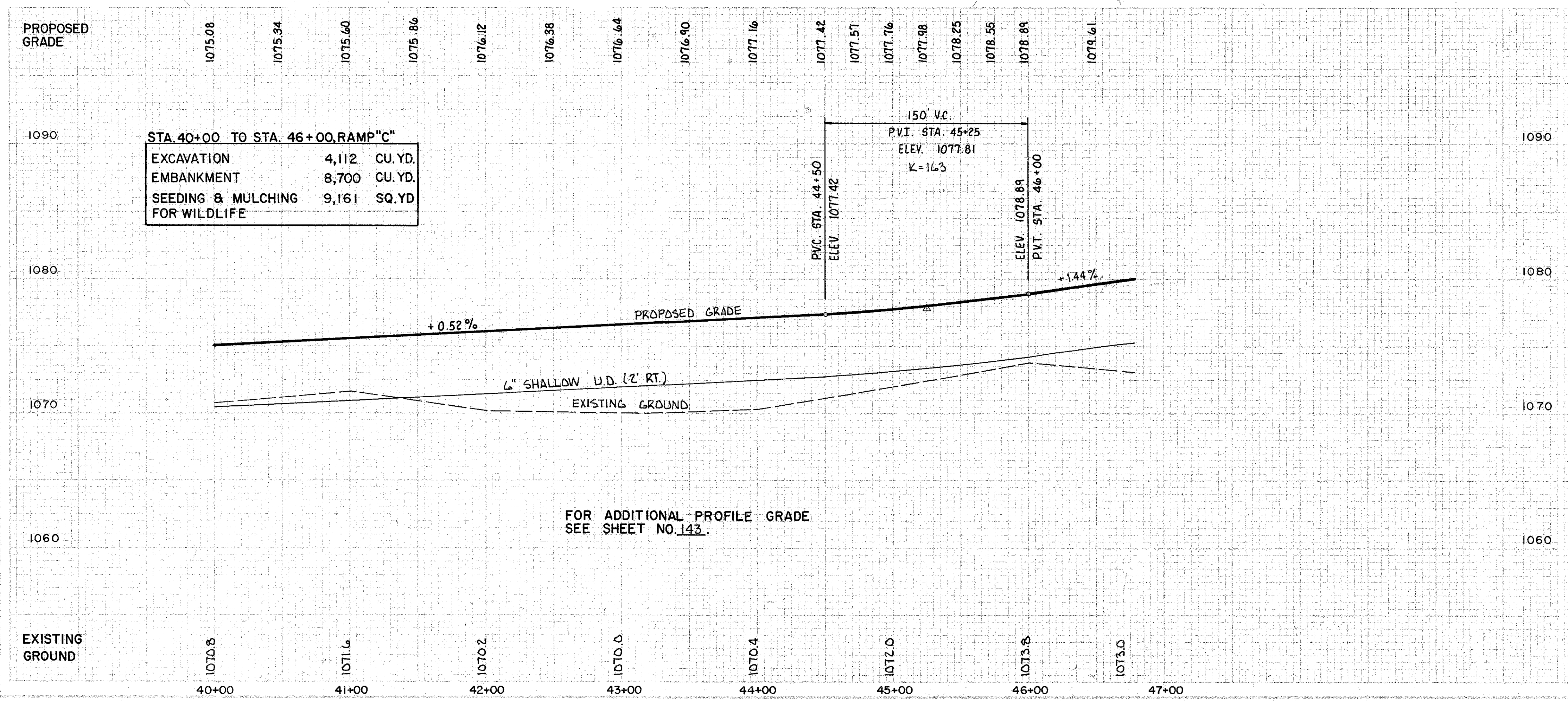
142
224



FOR RAMP "B" PLAN & PROFILE
SEE SHEET NO. 134.

FOR RAMP CURVE DATA
SEE INTERCHANGE GEOMETRIC
LAYOUT, SHEET NO. 124.

BENCH MARK
TOP OF SPIKE AT INTERSECTION OF
EXISTING SMOKEY ROAD & PROP. U.S. 33,
STA. 93+44.17
ELEV. = 1092.39

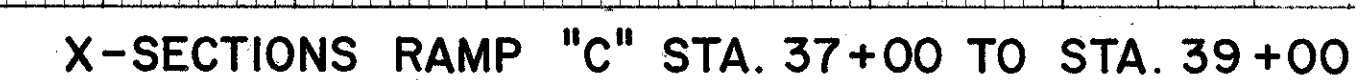


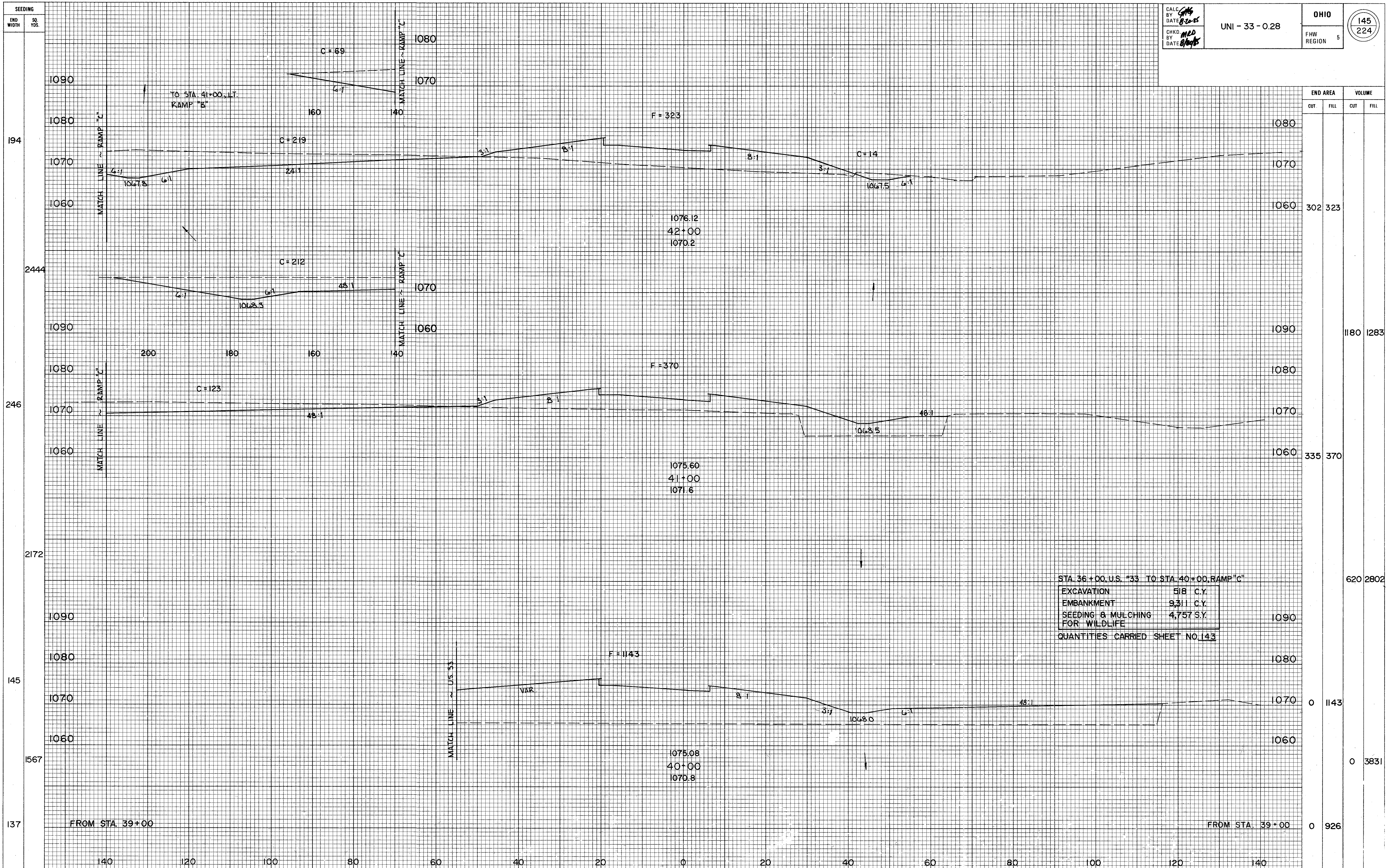
STA. 40+00 TO STA. 46+00, RAMP "C"	
EXCAVATION	4,112 CU. YD.
EMBANKMENT	8,700 CU. YD.
SEEDING & MULCHING FOR WILDLIFE	9,161 SQ. YD.

ESTIMATED QUANTITIES

SEE SHEET NO.	STATION TO STATION	RT.	RT.
605 6" SHALLOW U.D. L.F. 678	40+00 - 46+78	20	
202 PIPE REMOVED 24" DIA. L.F. 20	41+67 - 41+89		20

PROFILE RAMP "C"

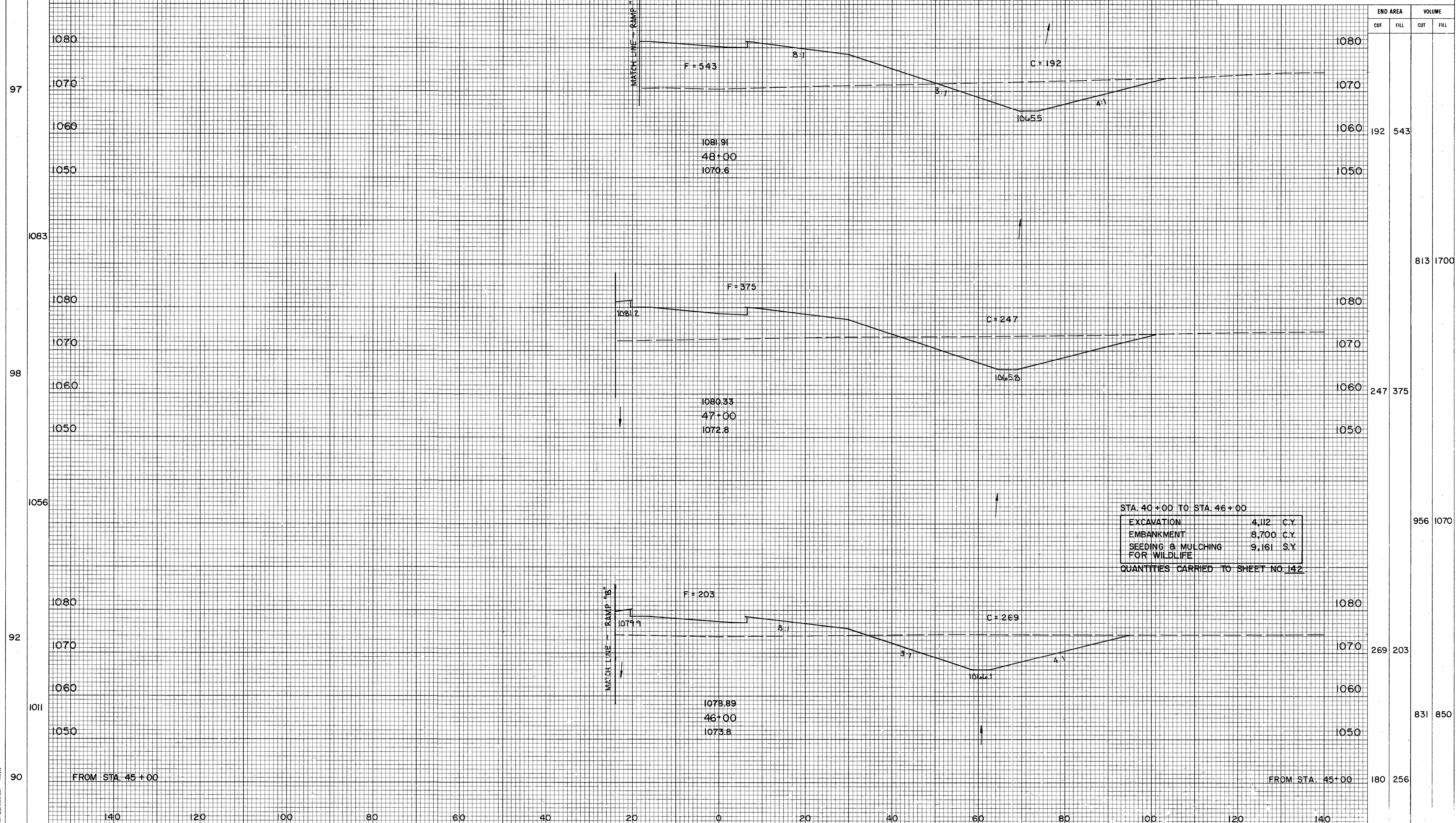




X-SECTIONS RAMP "C" STA. 40+00 TO STA. 42+00

CALC BY DATE	UNI-33-0.28	OHIO	
CHKD BY DATE		FHW REGION 5	





X-SECTIONS RAMP "C" STA. 46+00 TO STA. 48+00

SEEDING	
END WIDTH	SQ. YDS.

CALC. BY <i>GMH</i> DATE <i>8-20-85</i>	CHKD. BY <i>MRD</i> DATE <i>8-20-85</i>
--	--

UNI - 33 - 0.28

OHIO

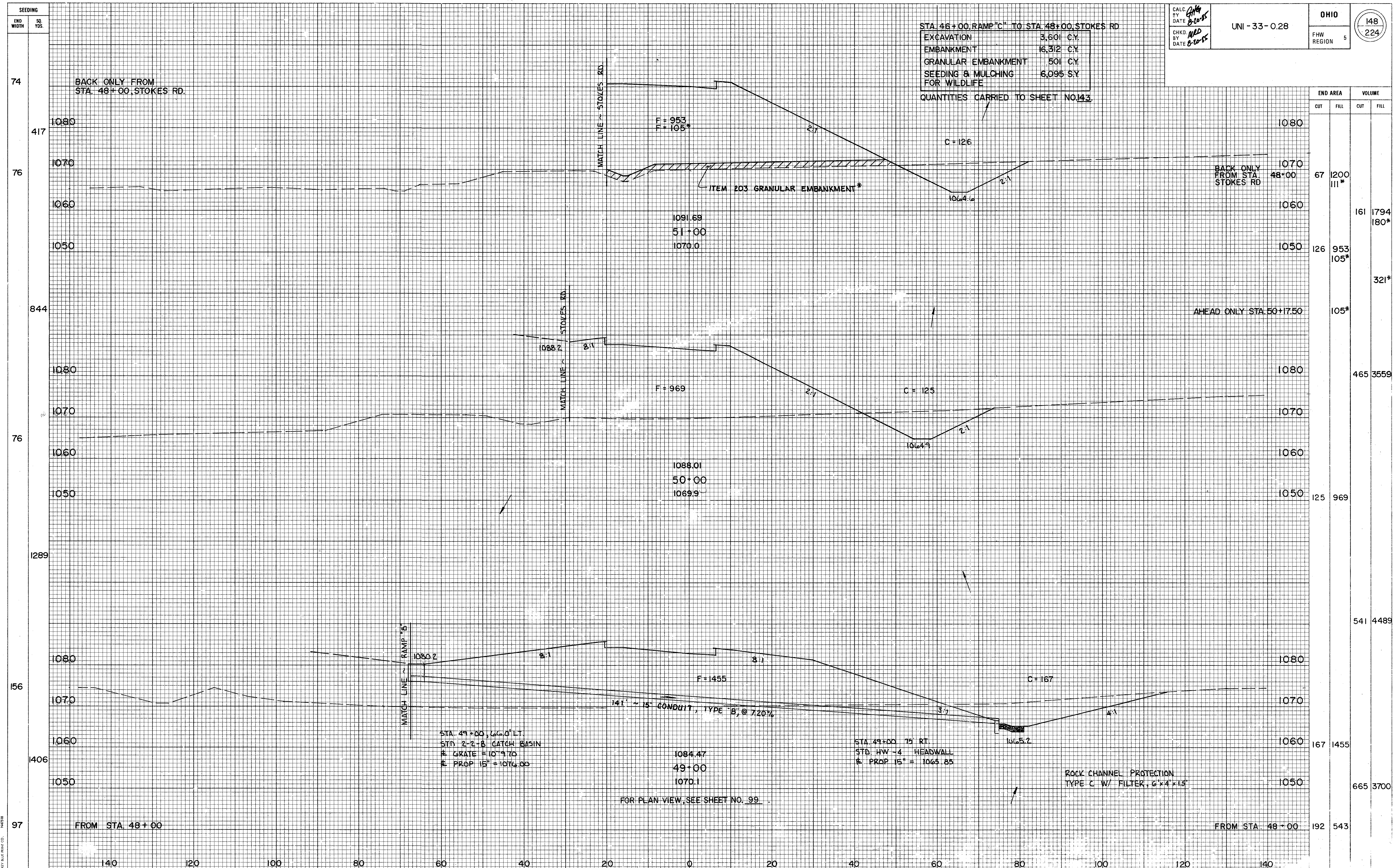
FHW
REGION

148
224

STA. 46+00, RAMP "C" TO STA. 48+00, STOKES RD

EXCAVATION	3,601	C.Y.
EMBANKMENT	16,312	C.Y.
GRANULAR EMBANKMENT	501	C.Y.
SEEDING & MULCHING FOR WILDLIFE	6,095	S.Y.

QUANTITIES CARRIED TO SHEET NO.143



X-SECTIONS RAMP "C" STA. 49+00 TO STA. 51+00

BENCH MARK
TOP NORTHWEST BOLT ON BURIED END
OF GUARD RAIL 80'± NORTHWEST OF
LOGAN/UNION COUNTY LINE SIGN
ELEV. = 1084.21

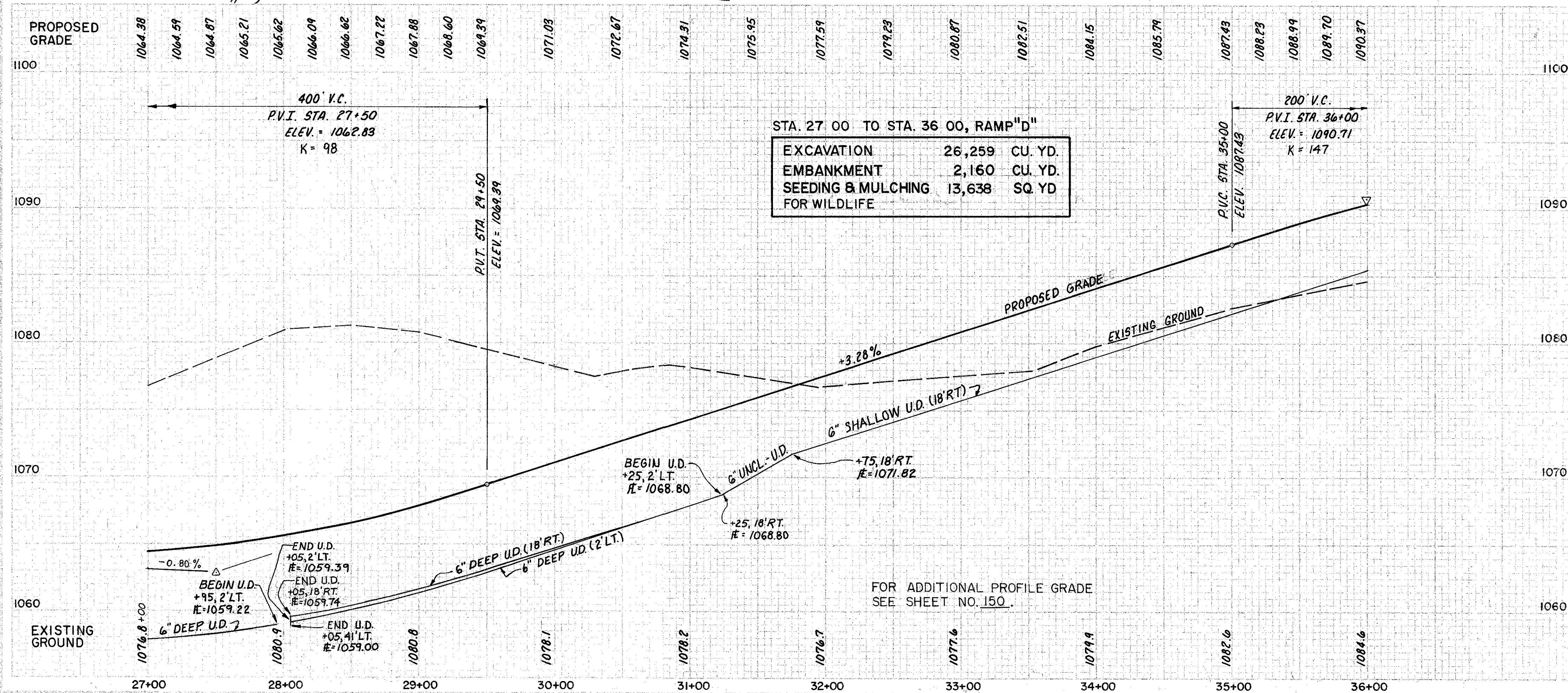
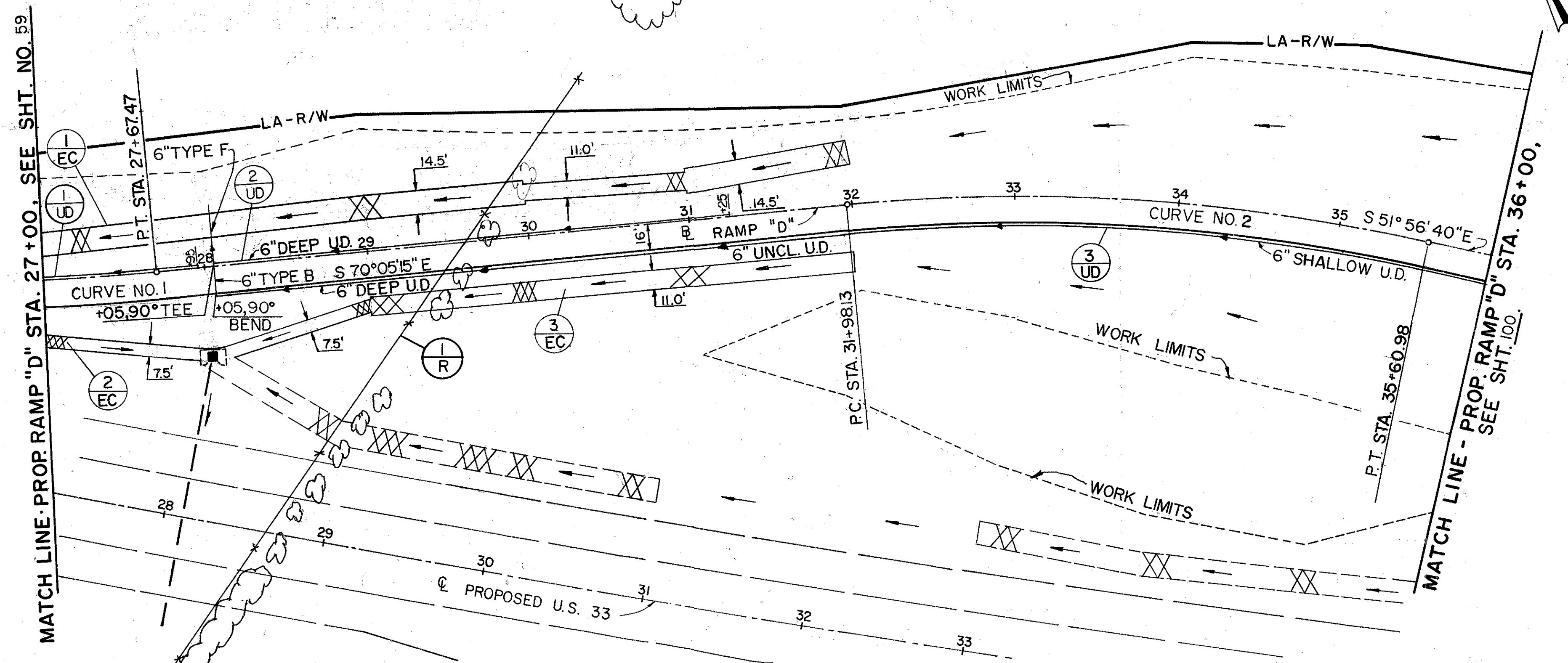
FOR RAMP CURVE DATA SEE
INTERCHANGE GEOMETRIC LAYOUT,
SHEET NO. 124.

FOR U.S. #33 PLAN & PROFILE
SEE SHEET NO. 59 & 60

CALCULATED BY R-JH DATE 10-8-85

CHECKED BY GAG DATE 12-4-85

FED. RD. DIVISION	STATE	PROJECT	149
2	OHIO	UNI-33-0.28	224



ESTIMATED QUANTITIES

ITEM	QUANTITY	UNIT	ITEM	QUANTITY	UNIT
1-UD	27+00 - 27+95	LT	202	20	39
2-UD	28+05 - 31+25	LT	202	20	39
3-UD	28+05 - 36+00	RT	202	20	39
1-EC	27+00 - 32+00	LT	202	20	39
2-EC	27+00 - 27+93	RT	202	20	39
3-EC	28+07 - 32+00	RT	202	20	39
1-R	28+95 - 30+05	LT&RT	202	20	39

* 706.01, 706.02, OR 706.08

PLAN & PROFILE PROP. RAMP "D" STA. 27+00 TO STA. 36+00

SEEDING
END
WIDTH
SQ.
YDS.

CALC
BY
DATE
MRD
6/20/88
CHKD
BY
DATE
Gly
6-26-88

UNI - 33 - 0.28

OHIO
FH
W
REGION
5

150
224

END AREA
CUT
FILL
VOLUME
CUT
FILL

PROPOSED
GRADE

+ 50
BEGIN PROFILE GRADE
10685.3

10685.3

10685.3

10671.3

10671.3

10668.3

10668.3

10664.3

10664.3

10665.3

10665.3

10665.3

10665.3

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10665.3

10665.3

10665.3

10665.3

10665.3

10665.3

10665.3

STA. 22+09.81, U.S. 33 TO STA. 27+00, RAMP "D"

EXCAVATION	8,420 C.Y.
EMBANKMENT	3,276 C.Y.
GRANULAR EMBANKMENT	671 C.Y.
SEEDING & MULCHING FOR WILDLIFE	4,612 S.Y.

QUANTITIES CARRIED TO GEN. SUMMARY, SHEET NO. 45 & 47

400' V.C.
P.V.I. STA. 27+50
ELEV. = 1062.83
K = 98

FOR RAMP "D" PROFILE
STA. 27+00 TO STA. 36+00
SEE SHEET 149

PROPOSED GRADE
6" UNCL. U.D.
6" SHALLOW U.D.
(18' RT.)
END U.D.
+40.2' LT.
E = 1086.69
END U.D.
+40.35' LT.
E = 1086.50
OUTLET

MATCH LINE - STOKES RD.
STA. 52+29.14' LT.
SEE SHEET 100

BEGIN U.D.
+47.18' LT.
E = 1088.64

EXCAVATION	1,748 C.Y.
EMBANKMENT	5,164 C.Y.
SEEDING & MULCHING FOR WILDLIFE	2,648 S.Y.

QUANTITIES CARRIED TO GEN. SUMMARY,
SHEET NO. 45 & 47

200' V.C.
P.V.I. STA. 36+00
ELEV. = 1090.71
K = 147

P.V.C. STA. 37+00
ELEV. = 1092.65

-0.80%
PROPOSED GRADE

BEGIN U.D.
+40.2' LT.
E = 1062.09

6" SHALLOW U.D. (2' LT.)

+40.2' LT.
E = 1066.91

6" UNCL. U.D.

+50.2' LT.
E = 1058.90

6" DEEP U.D. (2' LT.)

END U.D.
+75.2' LT.
E = 1057.79

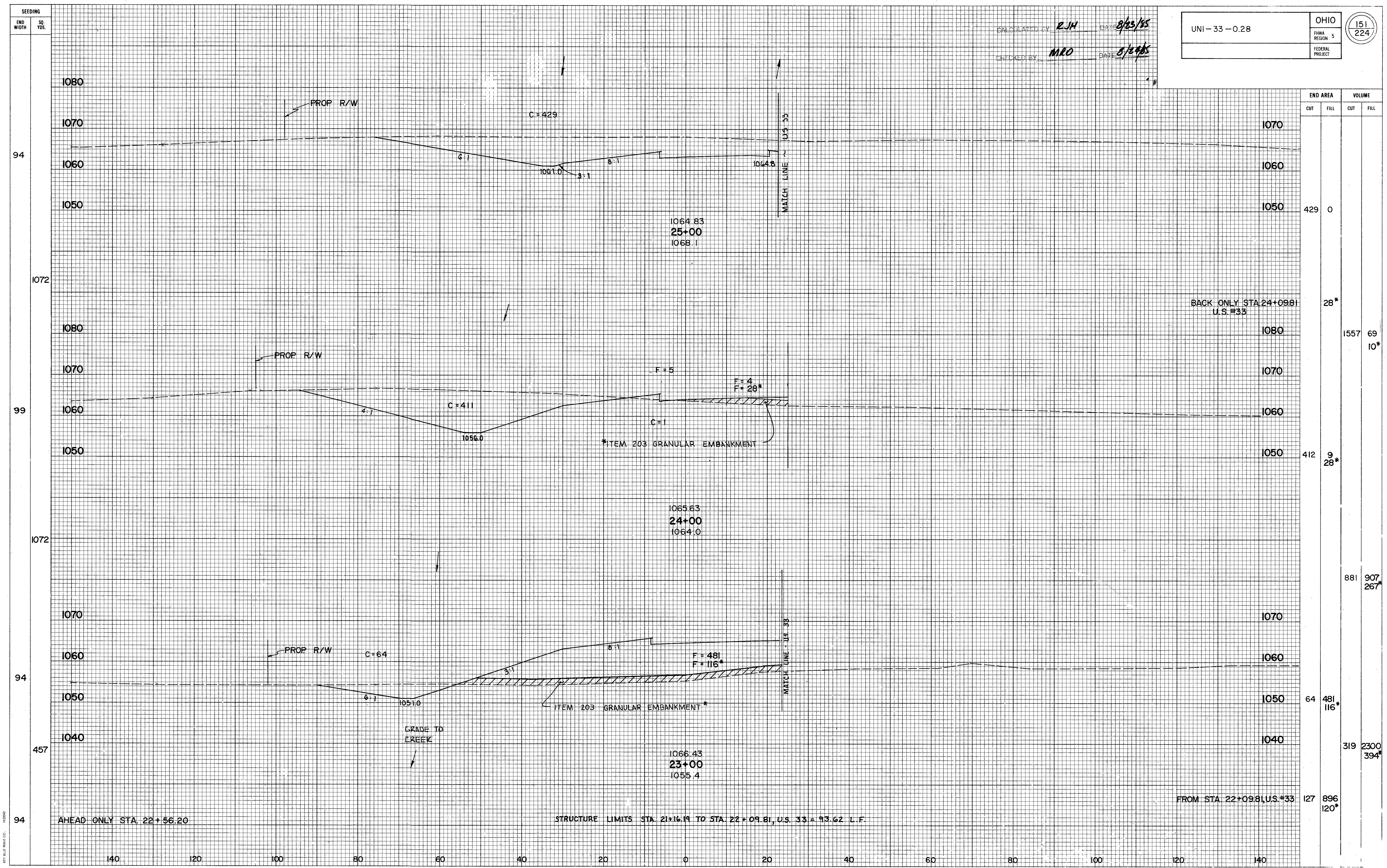
END U.D.
+75.42' LT.
E = 1057.60
OUTLET

EXIST. GROUND

EXISTING
GROUND

PROPOSED PROFILE RAMP "D" STA. 20+50 TO STA. 27+00 & STA. 36+00 TO STA. 37+66.04

PROFILE RAMP "D"

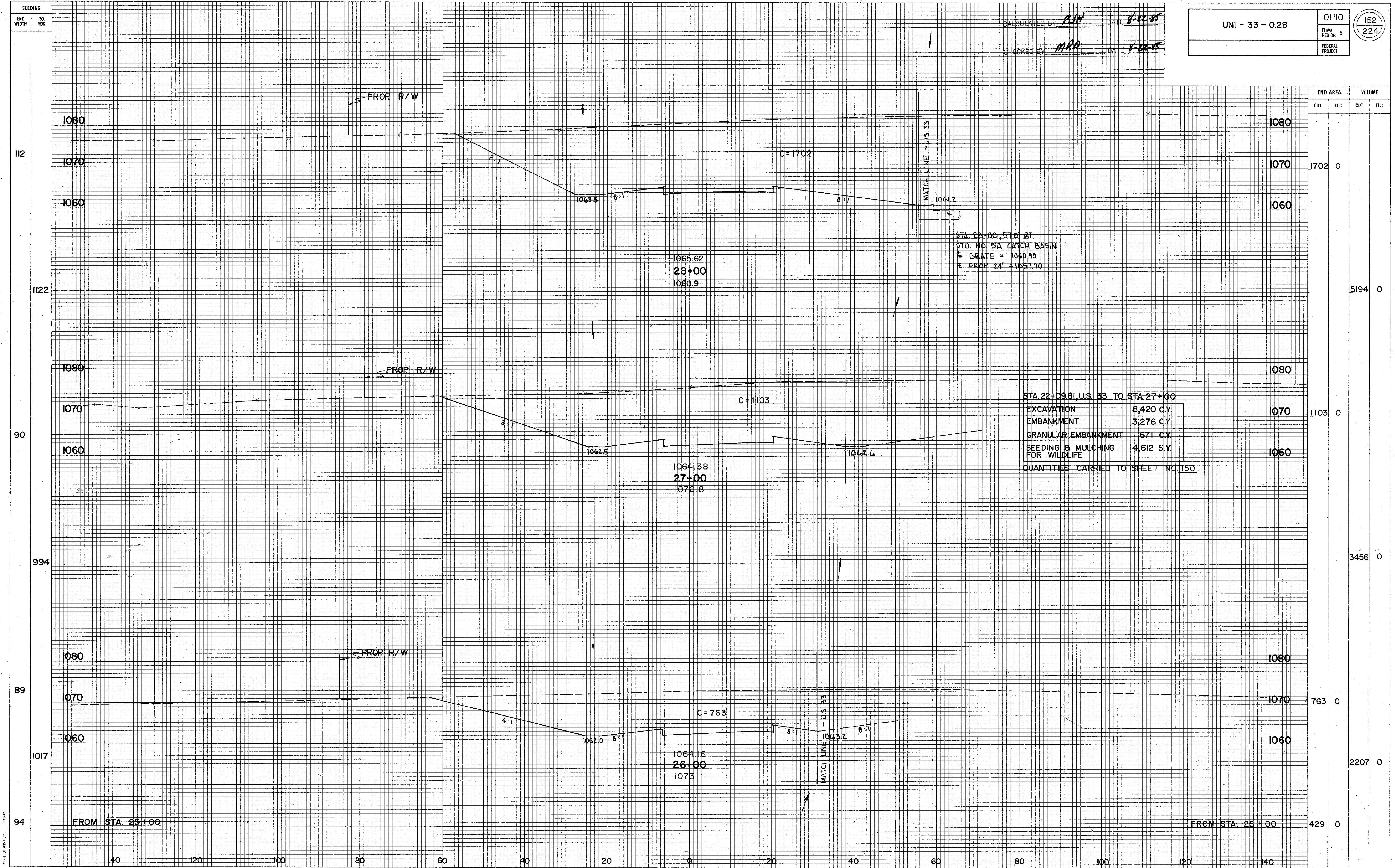


CALCULATED BY RJH DATE 8/23/85
CHECKED BY MRO DATE 8/24/85

UNI - 33 - 0.28	OHIO	151
	REGION 5	224
	FEDERAL PROJECT	

END AREA	VOLUME	
	CUT	FILL
429	0	
28*		
1557	69	10*
412	9	28*
881	907	267*
64	481	116*
319	2300	394*
127	896	120*

X-SECTIONS RAMP "D" STA. 23+00 TO STA. 25+00



CALCULATED BY: RJM DATE: 8-22-85
CHECKED BY: MRD DATE: 8-22-85

UNI - 33 - 0.28		OHIO
		FHWA REGION 5
		FEDERAL PROJECT

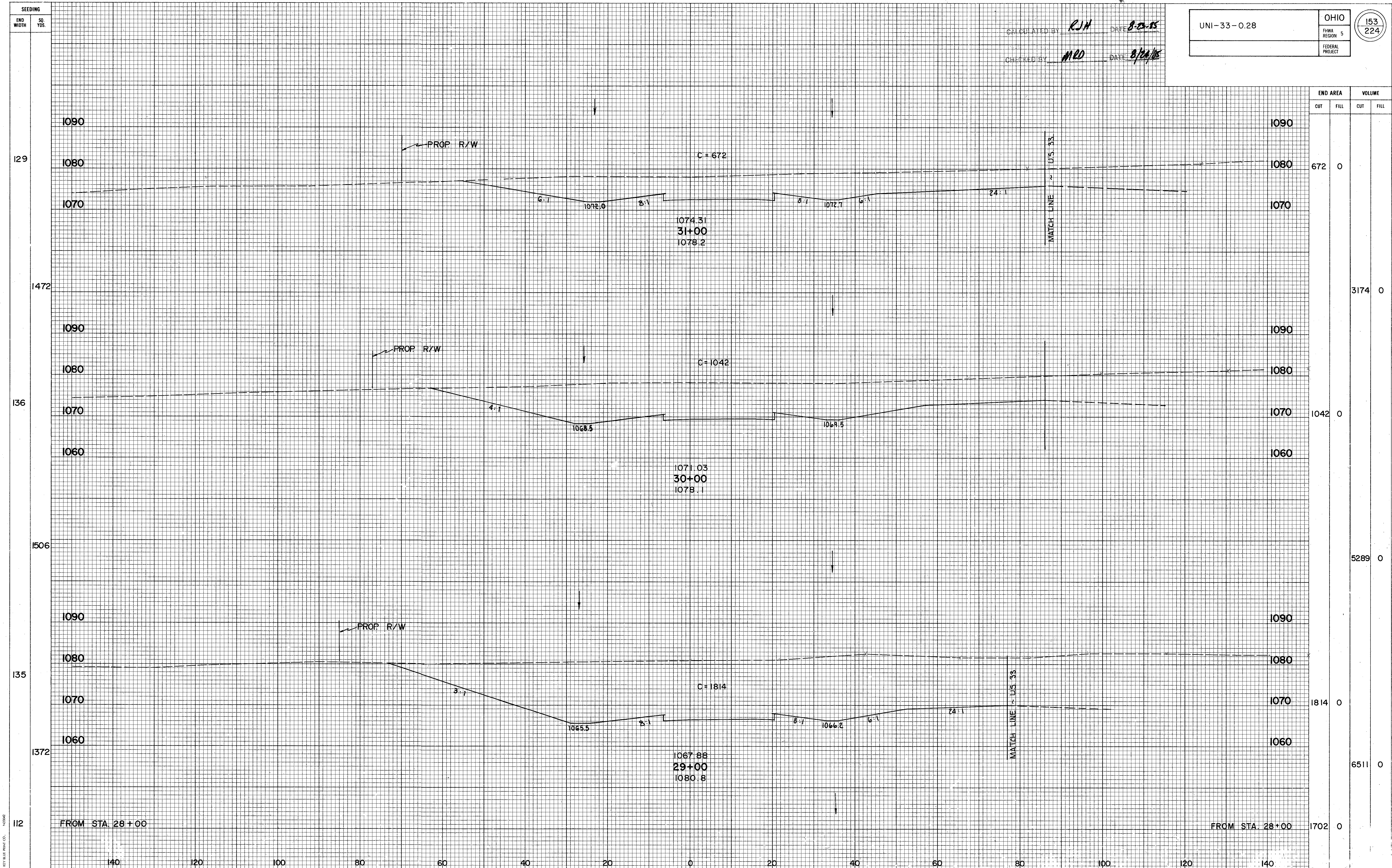
152
224

END AREA		VOLUME	
CUT	FILL	CUT	FILL
1702	0		
		5194	0
1103	0		
		3456	0
763	0		
		2207	0
429	0		

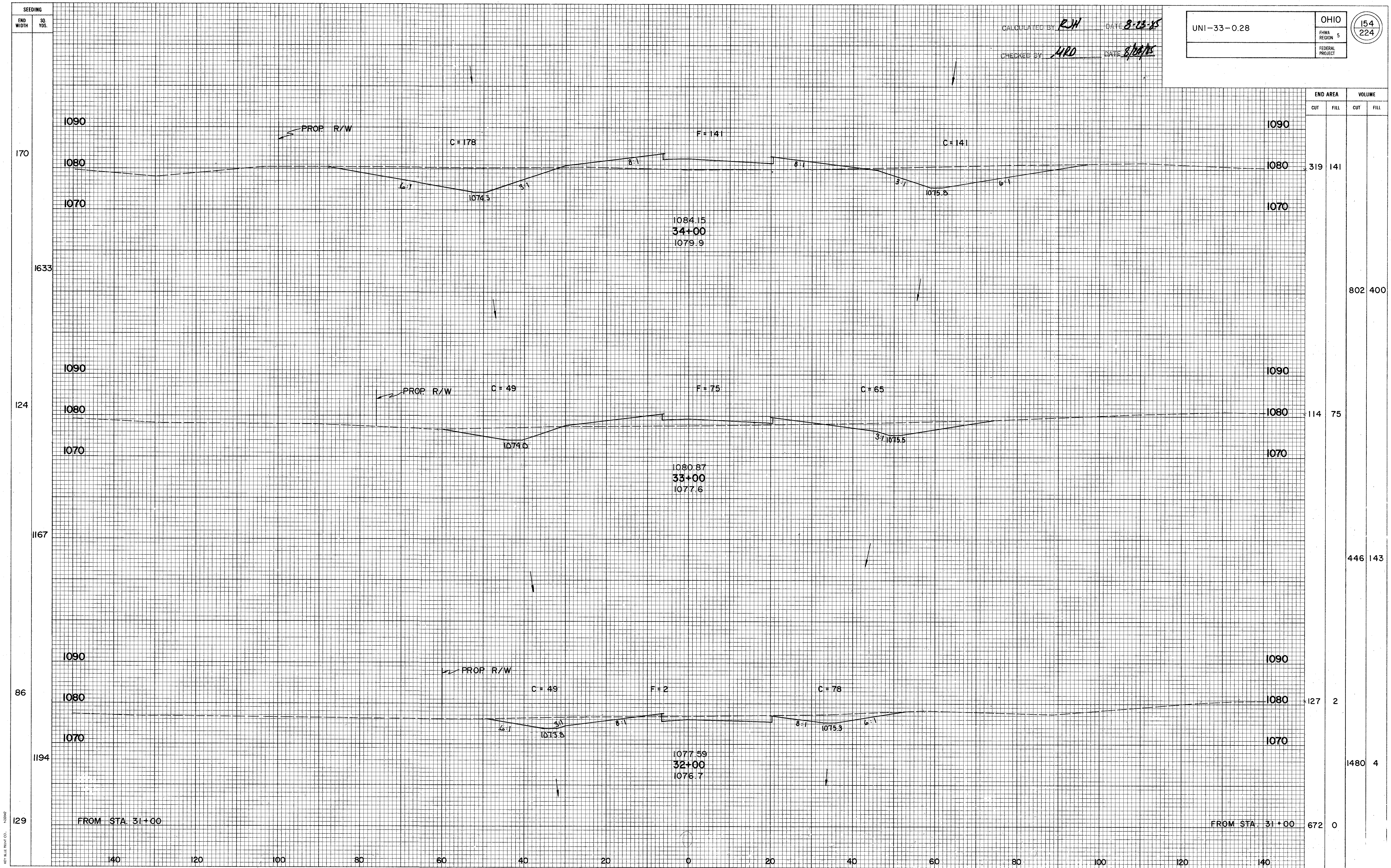
STA 28+00, 57.0 AT
STD. NO. 5A CATCH BASIN
E GRATE = 1060.95
E PROP 24" = 1057.10

STA. 22+09.81, U.S. 33 TO STA. 27+00
EXCAVATION 8,420 C.Y.
EMBANKMENT 3,276 C.Y.
GRANULAR EMBANKMENT 671 C.Y.
SEEDING & MULCHING 4,612 S.Y.
QUANTITIES CARRIED TO SHEET NO. 150.

X-SECTIONS RAMP "D" STA. 26+00 TO STA. 28+00



X-SECTIONS RAMP "D" STA. 29+00 TO STA. 31+00



X-SECTIONS RAMP "D" STA. 32+00 TO STA. 34+00

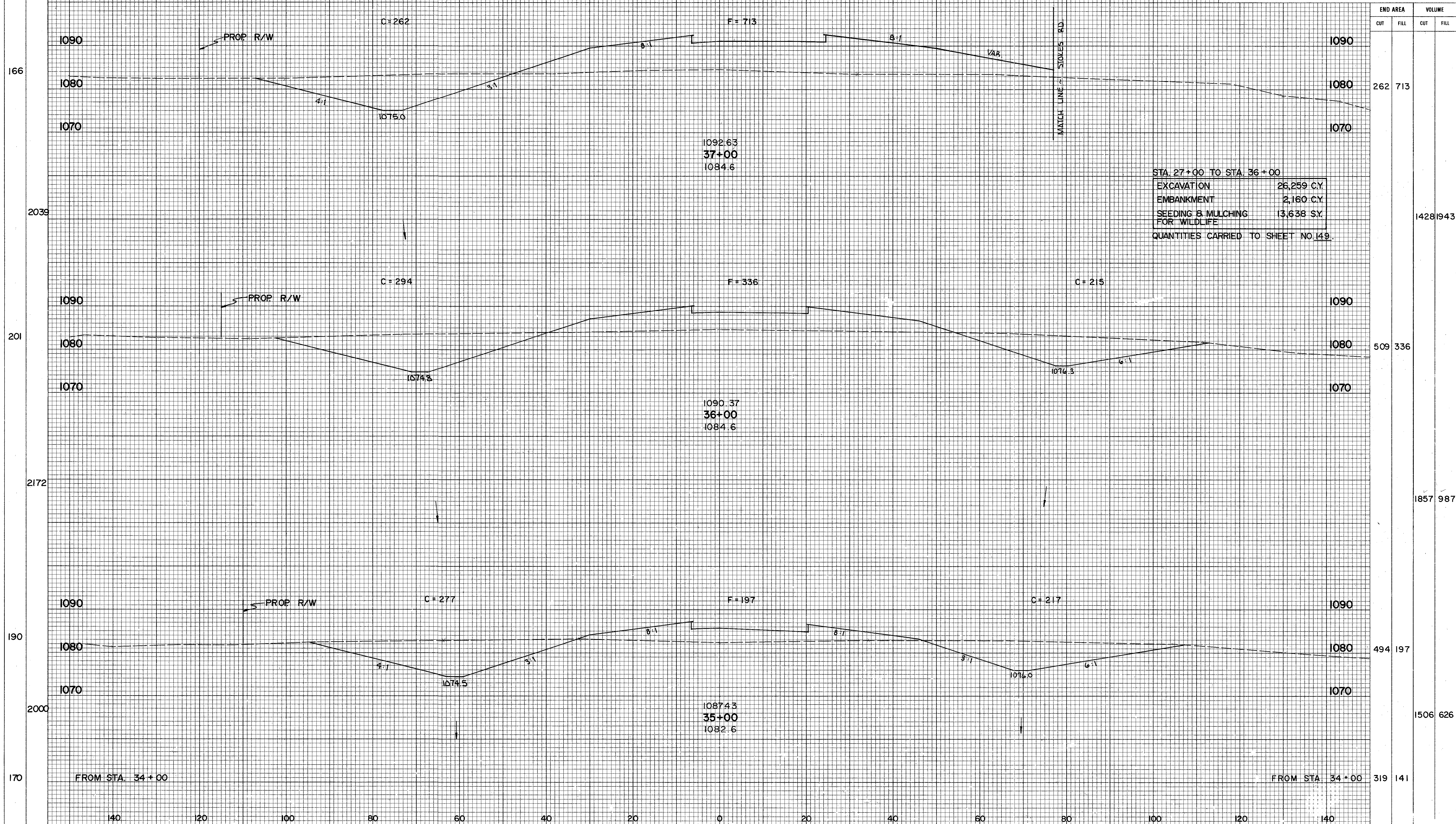
SEEDING
END
WIDTH
SQ.
YDS.

CALCULATED BY RJH DATE 8/22/85
CHECKED BY MCD DATE 8/22/85

UNI - 33 - 0.28

OHIO
FHWA
REGION 5
FEDERAL
PROJECT

155
224



X-SECTIONS RAMP "D" STA. 35+00 TO STA. 37+00

SEEDING	
END WIDTH	SQ. YDS.
0	
609	
166	

CALC. *YJH*
BY
DATE *8-26-85*
CHKD. *MD*
BY
DATE *9/1/85*

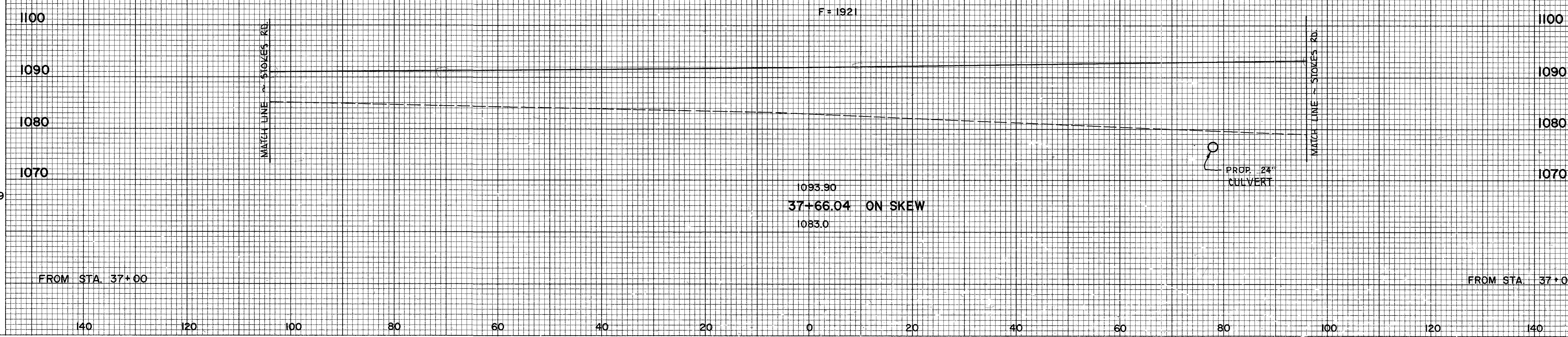
UNI-33-0.28
FHW REGION 5

OHIO
156
224

STA. 36+00 TO STA. 37+66.04

EXCAVATION	1,748 C.Y.
EMBANKMENT	5,164 C.Y.
SEEDING & MULCHING FOR WILDLIFE	2,648 SY.

QUANTITIES CARRIED TO SHEET NO. 150.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	1921		
		320	3221
262	713		

X-SECTIONS RAMP "D" STA. 37+66.04

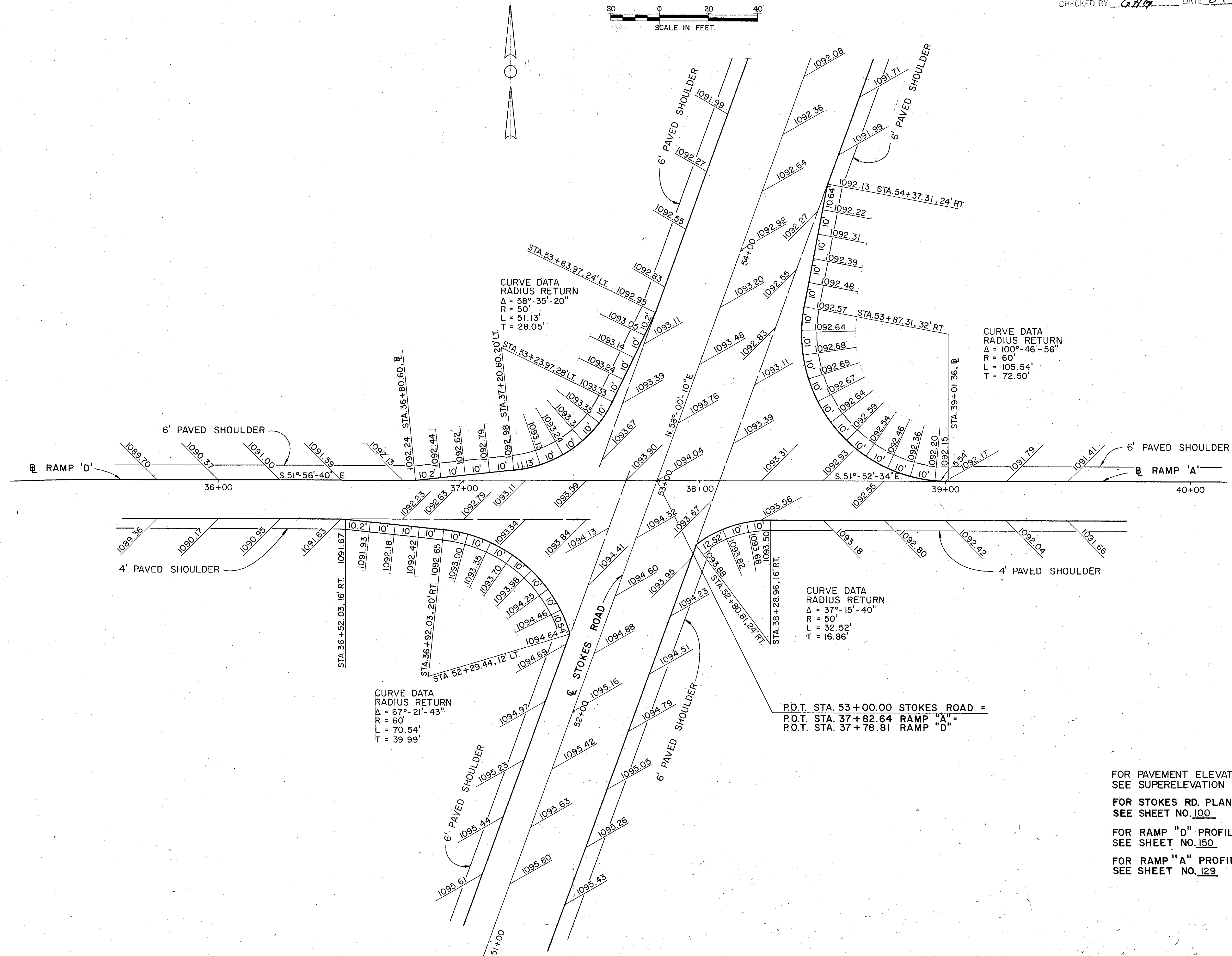
INTERSECTION DETAIL

CALCULATED BY RJH DATE 6-13-85

CHECKED BY G.H.G. DATE 8-1-85

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	UNI-33-0.28

157
224



FOR PAVEMENT ELEVATIONS NOT SHOWN
 SEE SUPERELEVATION TABLES, SHEET 50 & 51 .
 FOR STOKES RD. PLAN & PROFILE
 SEE SHEET NO. 100
 FOR RAMP "D" PROFILE
 SEE SHEET NO. 150
 FOR RAMP "A" PROFILE
 SEE SHEET NO. 129

INTERSECTION DETAIL

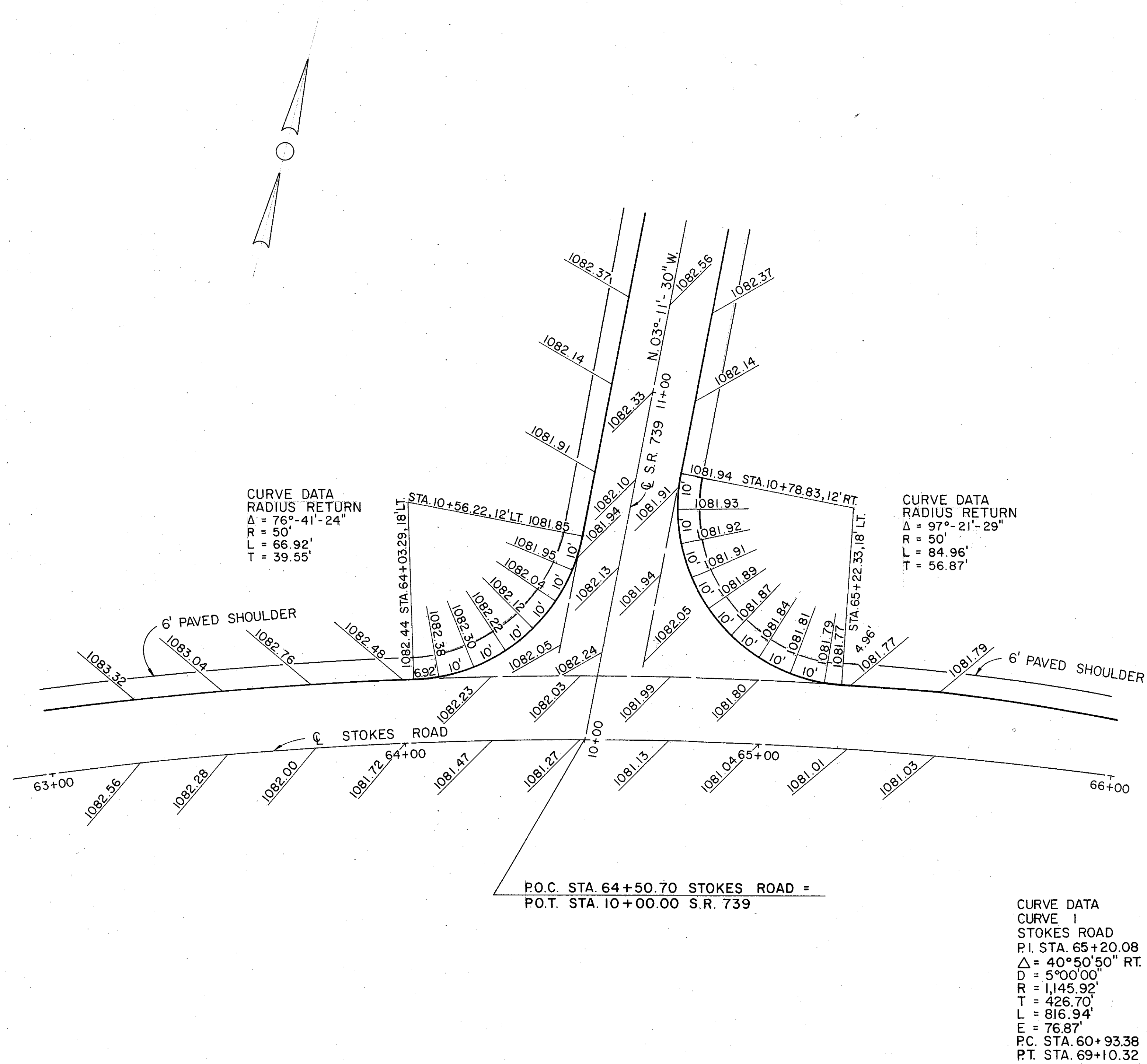
CALCULATED BY RJH DATE 6-14-85

CHECKED BY GHG DATE 8-1-85

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	UNI-33-0.28

158
224

20 0 20 40
SCALE IN FEET



FOR PAVEMENT ELEVATIONS NOT SHOWN
SEE SUPERELEVATION TABLE, SHEET 50

FOR STOKES ROAD PLAN & PROFILE
SEE SHEET NO. 102

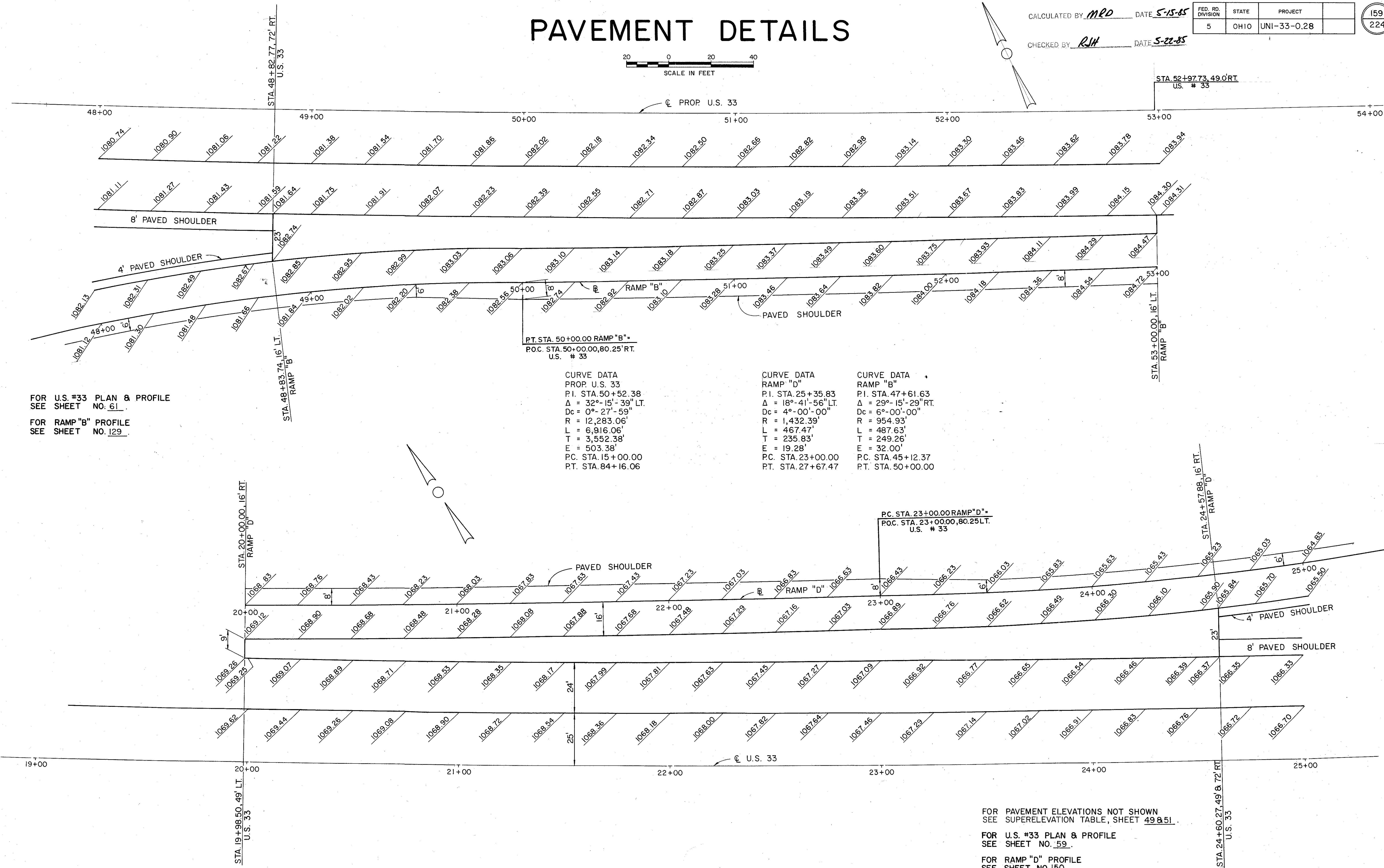
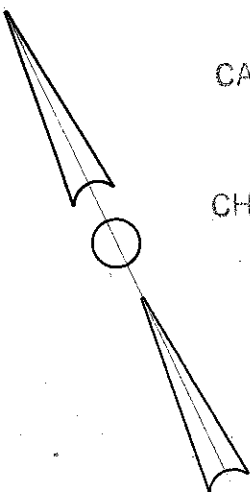
FOR S.R. 739 PLAN & PROFILE
SEE SHEET NO. 114

PAVEMENT DETAILS

CALCULATED BY MRO DATE 5-15-85
CHECKED BY RJH DATE 5-22-85

FED. RD. DIVISION	STATE	PROJECT
5	OH10	UNI-33-0.28

159
224



PAVEMENT DETAIL - RAMP "C"

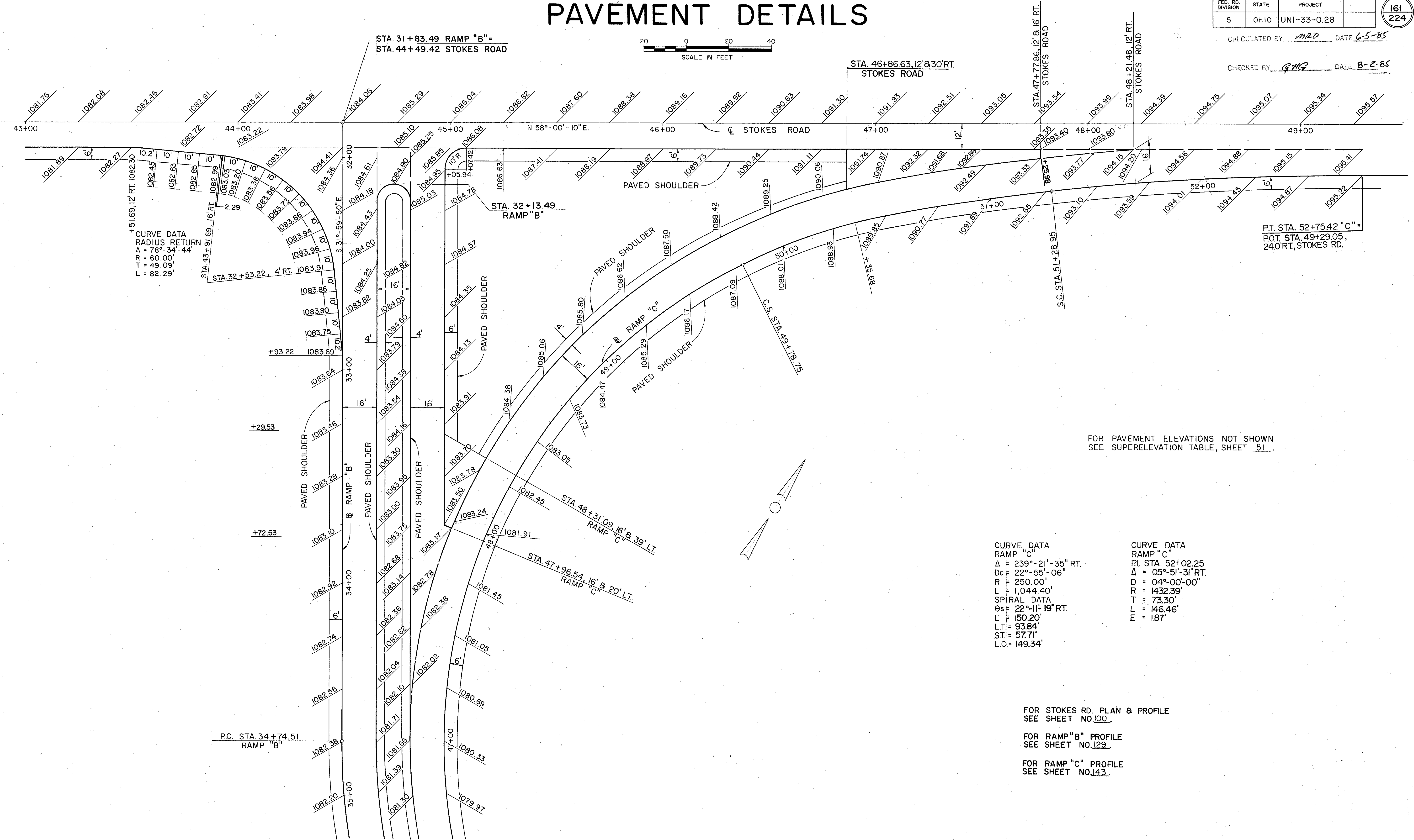
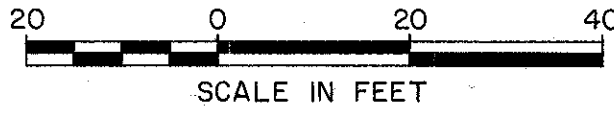
PAVEMENT DETAILS

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO	UNI-33-0.28	

161
224

CALCULATED BY MJD DATE 6-5-85

CHECKED BY GMB DATE 8-2-85



FOR PAVEMENT ELEVATIONS NOT SHOWN
SEE SUPERELEVATION TABLE, SHEET 51.

CURVE DATA
RAMP "C"
 $\Delta = 239^{\circ}-21'-35''$ RT.
 $D_c = 22^{\circ}-55'-06''$
 $R = 250.00'$
 $L = 1,044.40'$
SPIRAL DATA
 $\theta_s = 22^{\circ}-11'-19''$ RT.
 $L = 150.20'$
 $L.T. = 93.84'$
 $S.T. = 57.71'$
 $L.C. = 149.34'$

CURVE DATA
RAMP "C"
P.I. STA. 52+02.25
 $\Delta = 05^{\circ}-51'-31''$ RT.
 $D = 04^{\circ}-00'-00''$
 $R = 1432.39'$
 $T = 73.30'$
 $L = 146.46'$
 $E = 1.87'$

FOR STOKES RD. PLAN & PROFILE
SEE SHEET NO. 100.

FOR RAMP "B" PROFILE
SEE SHEET NO. 129.

FOR RAMP "C" PROFILE
SEE SHEET NO. 143.

PAVEMENT DETAILS

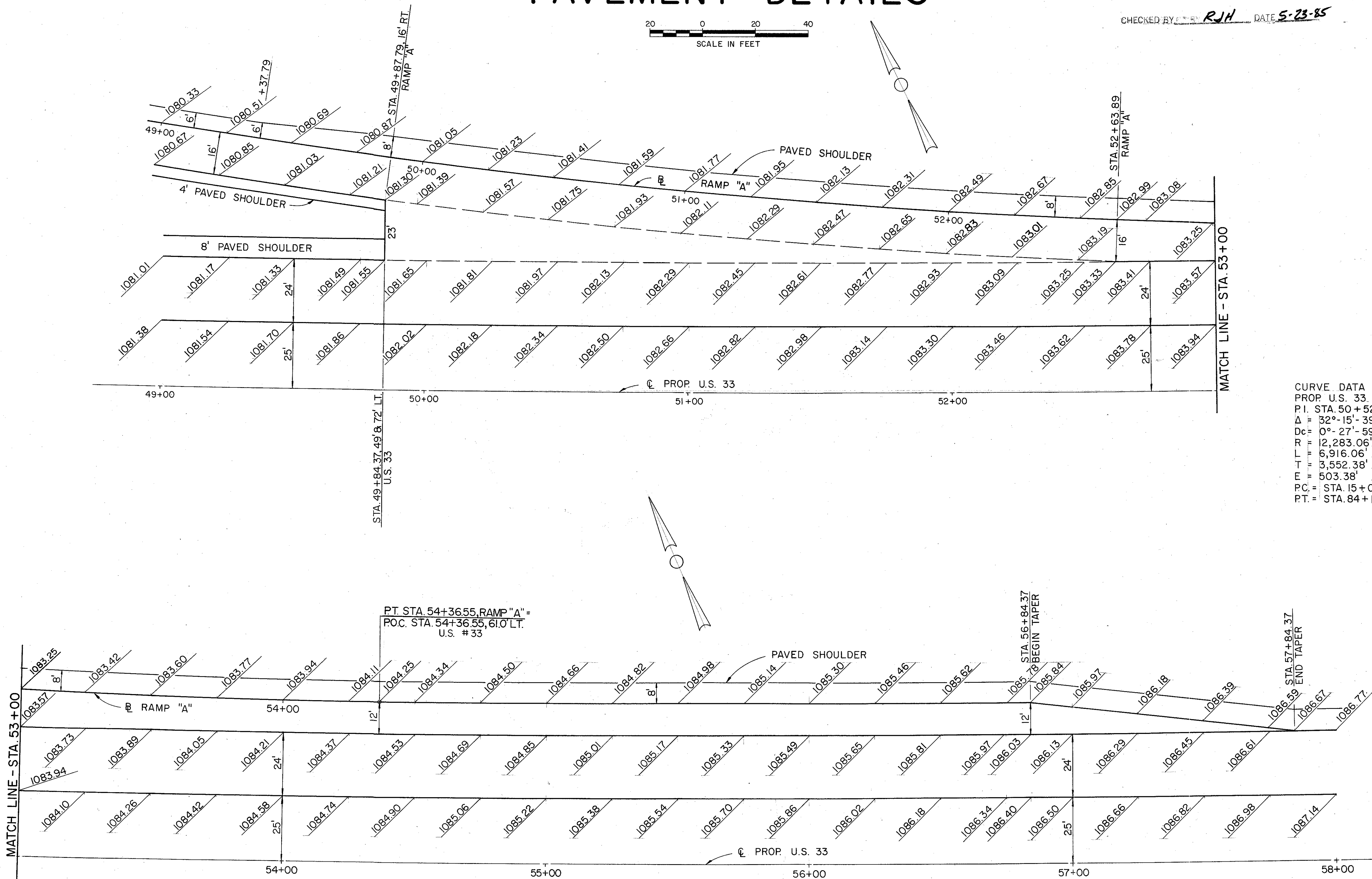
CALCULATED BY URD DATE 5-15-85

CHECKED BY RJH DATE 5-23-85

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO	UNI-33-0.28	

162
224

20 0 20 40
SCALE IN FEET

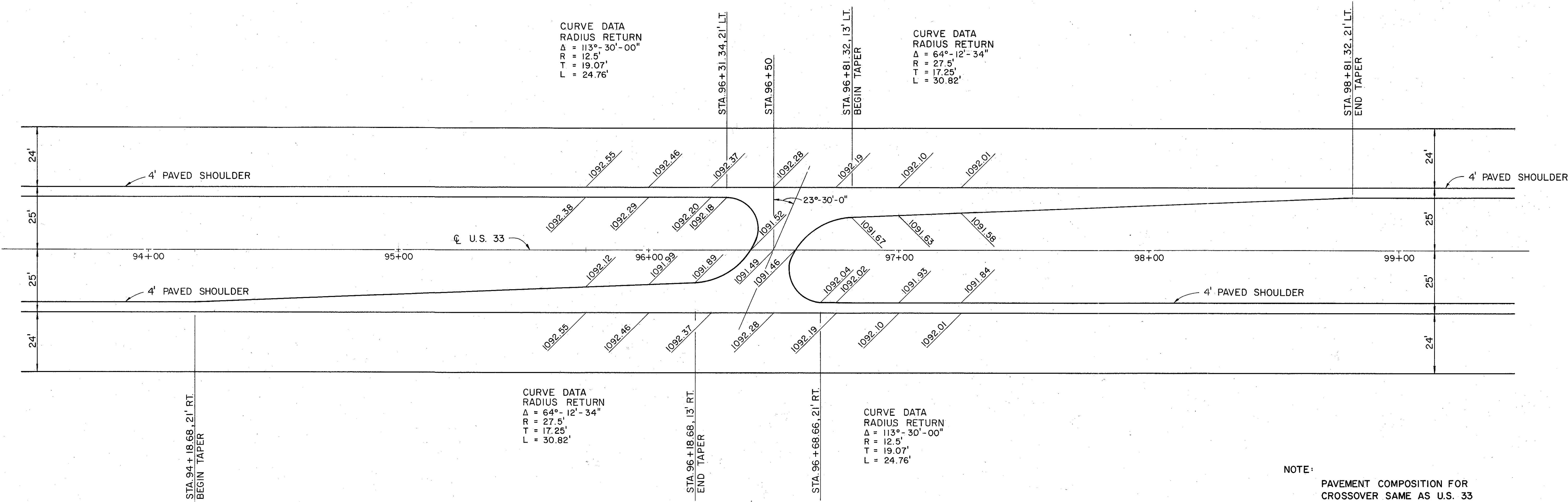


CROSSOVER DETAIL

CALCULATED BY MRD DATE 7-17-85
CHECKED BY GHG DATE 8-2-85

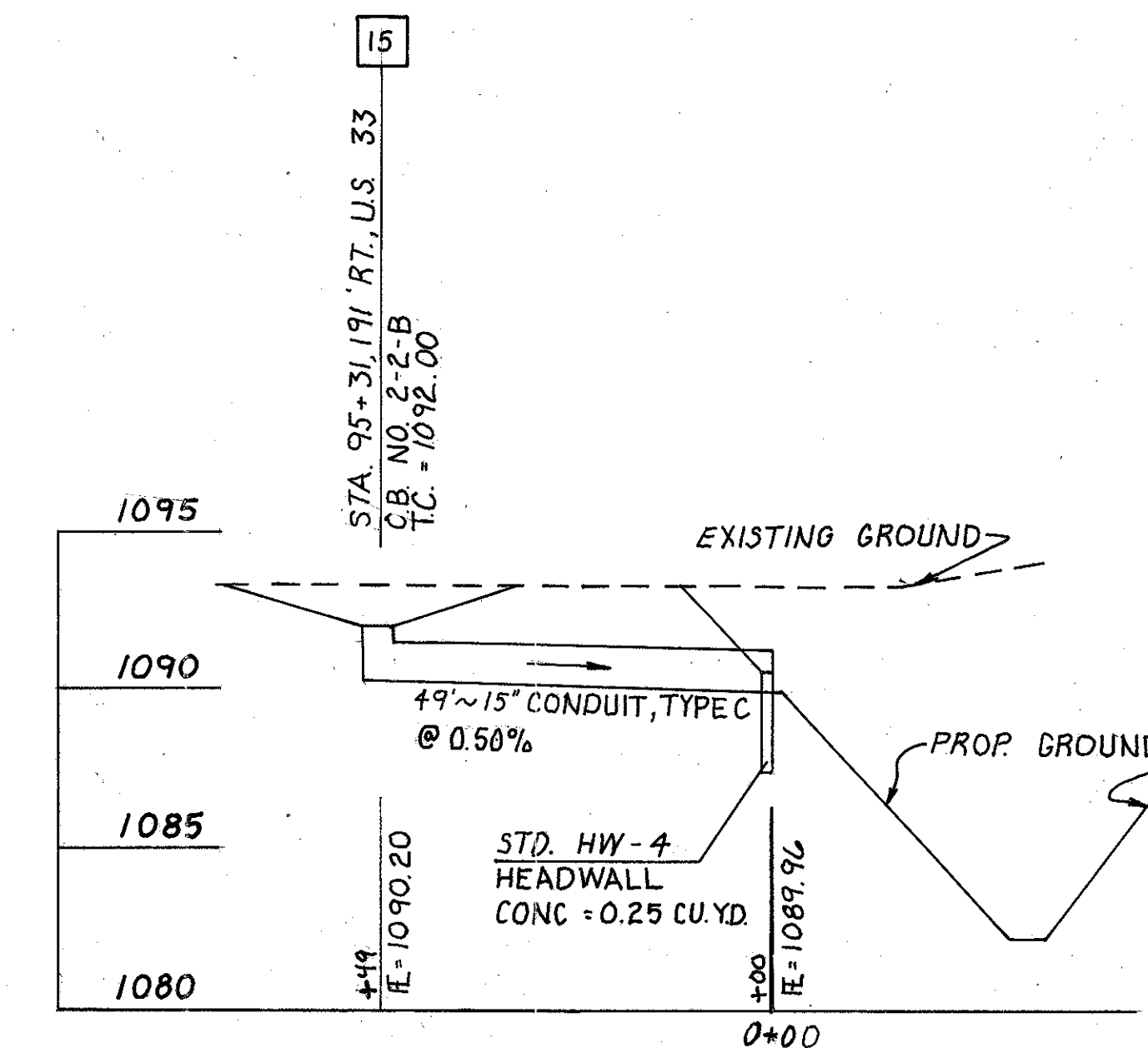
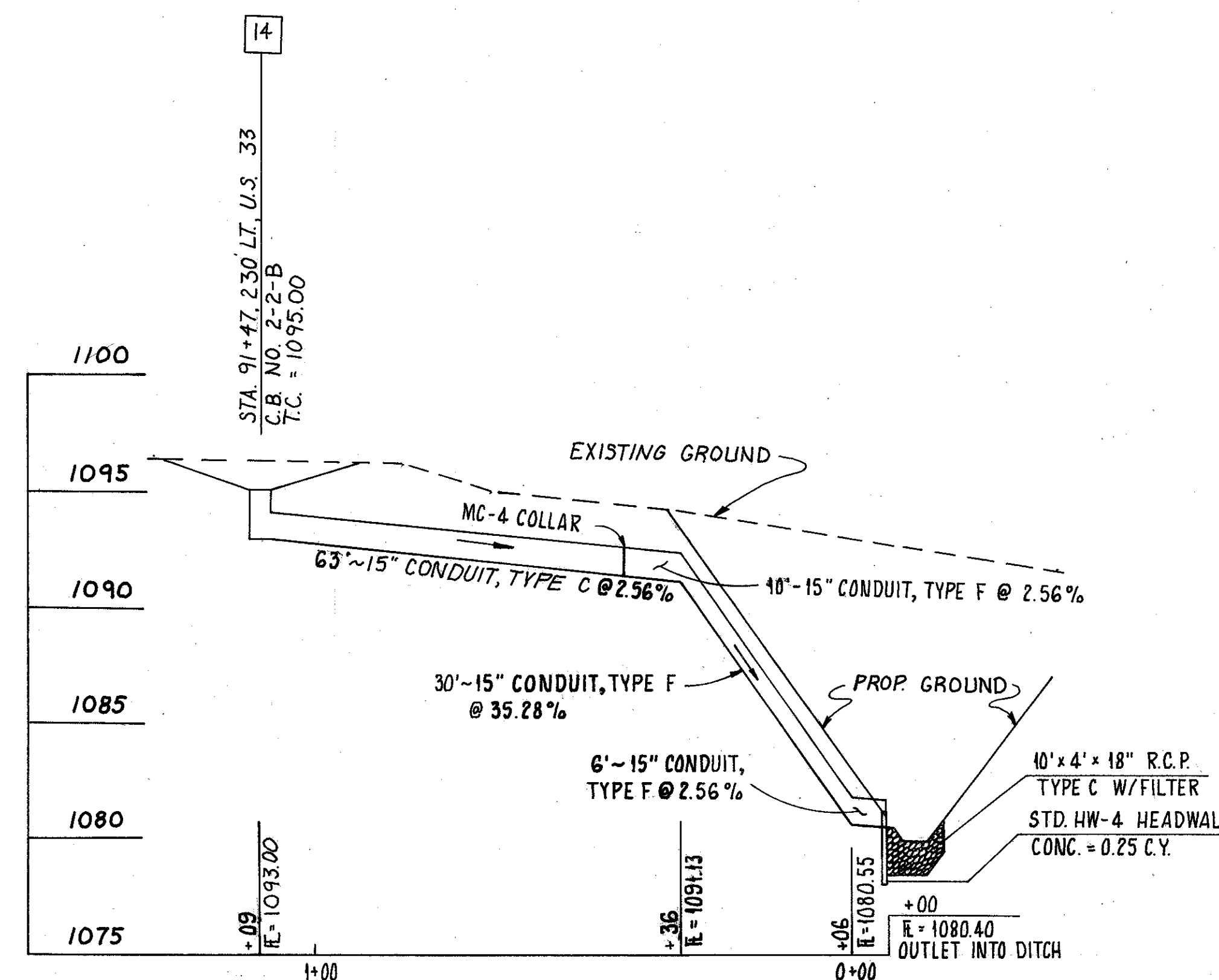
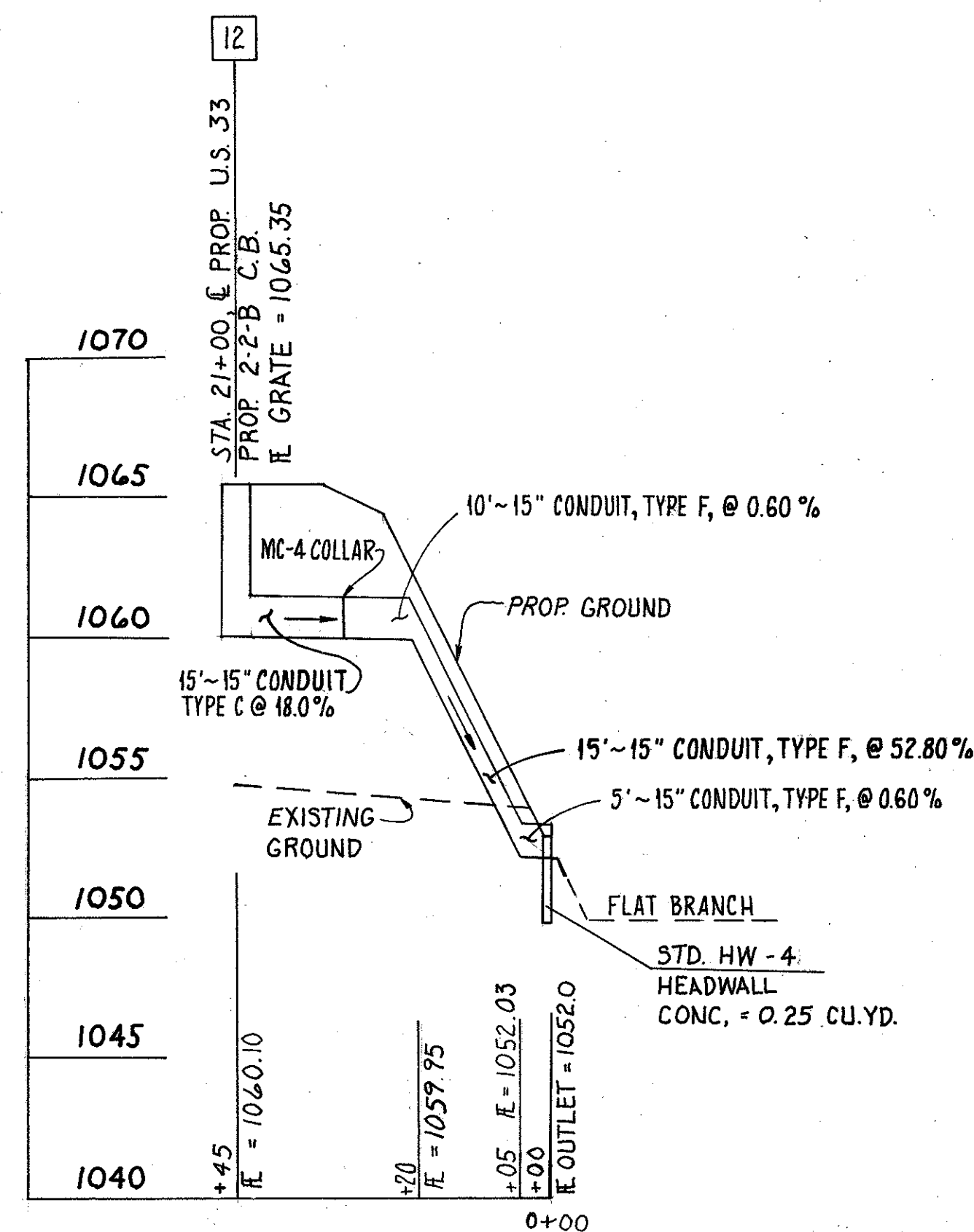
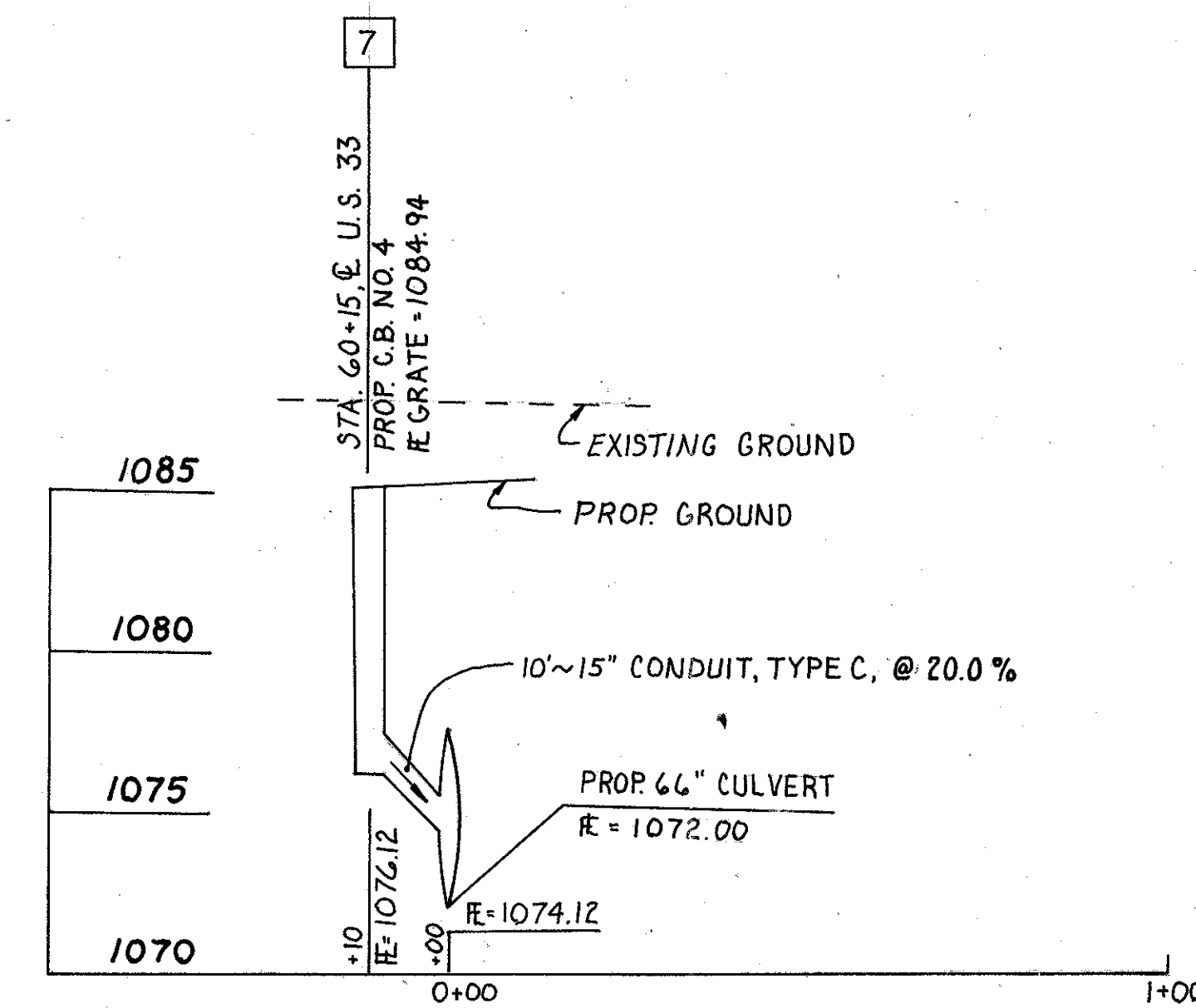
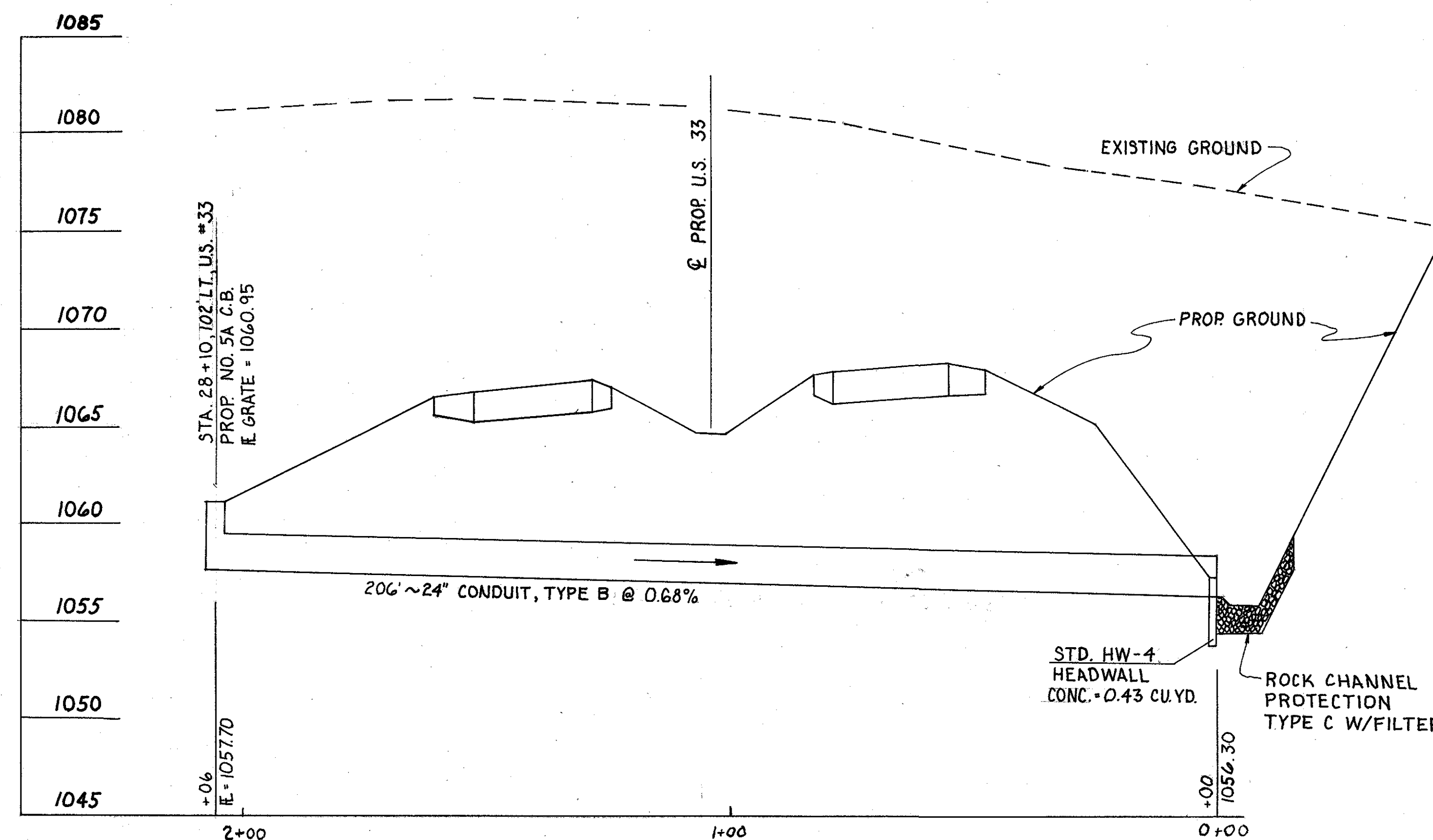
FED. RD. DIVISION	STATE	PROJECT
5	OHIO	UNI-33-0.28

163
224



NOTE: PAVEMENT COMPOSITION FOR CROSSOVER SAME AS U.S. 33 PAVED SHOULDER.

FOR U.S. 33 PLAN & PROFILE SEE SHEET NO. 66.



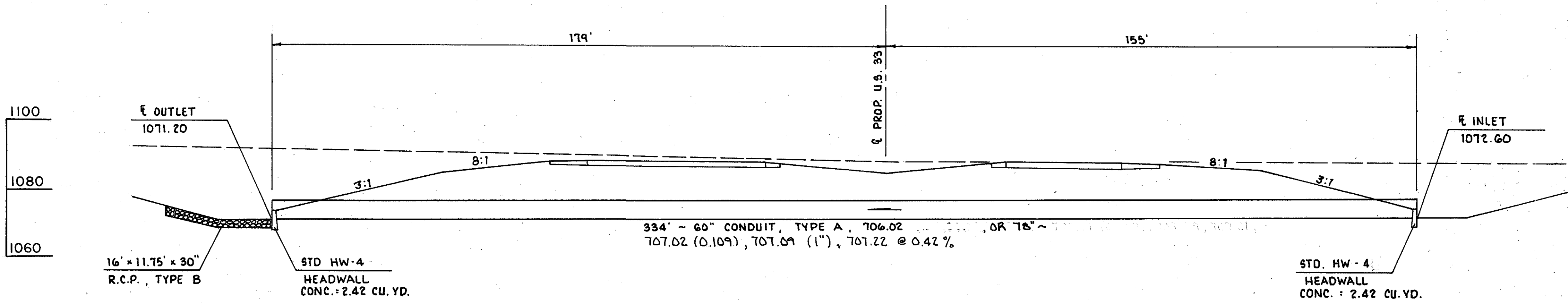
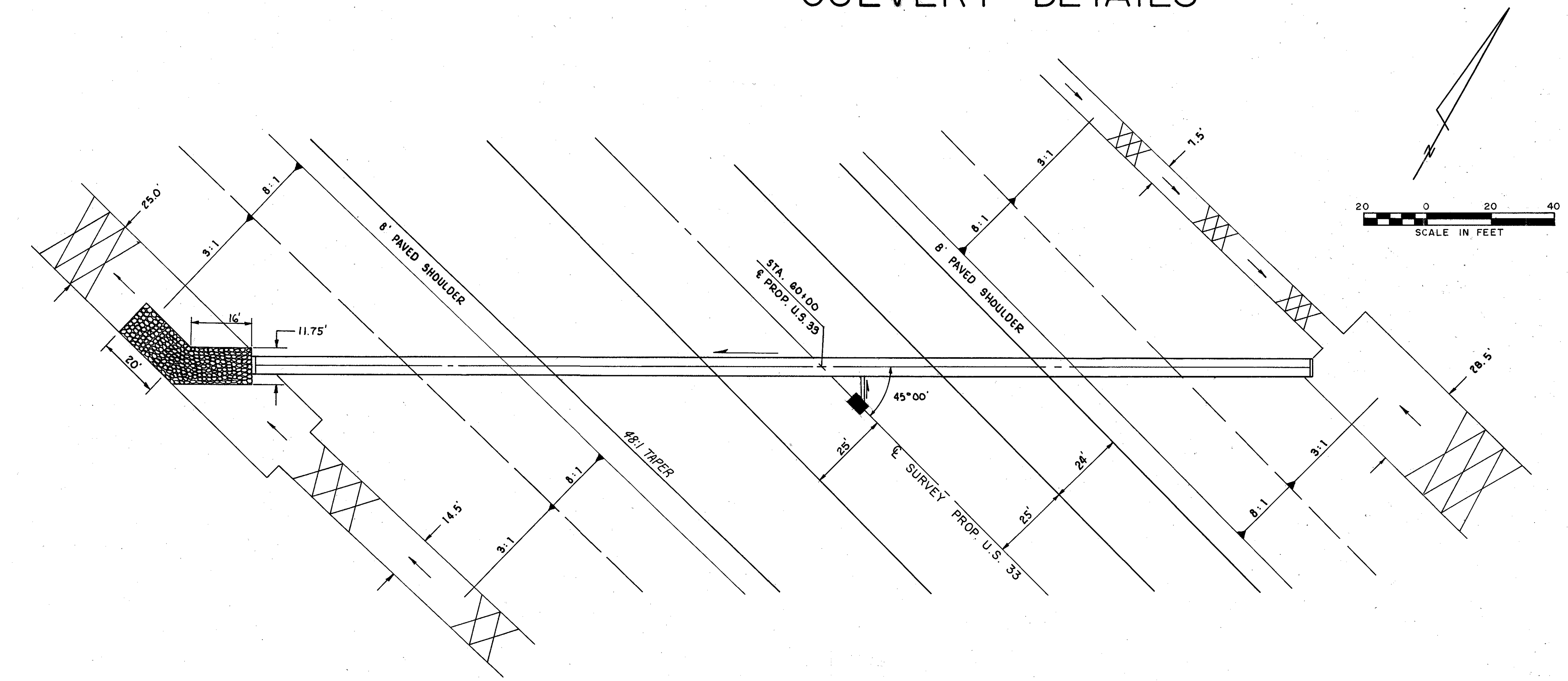
CULVERT DETAILS

CALC. R.J.H. BY DATE 7-9-85	OHIO	166
CHKD. BY DATE 6-17-85	UNI-33-0.28	224
	FHWA REGION 5	

CURVE DATA
CURVE NO. 1, PROP. U.S. 33
P.I. STA. 50+52.38
 $\Delta = 32^\circ 15' 39''$ LT.
 $D = 00^\circ 27' 59''$
 $R = 12,283.06'$
 $T = 3,552.38'$
 $L = 6,916.06'$
 $E = 503.38'$
P.C. STA. 15+00.00
P.T. STA. 84+16.06

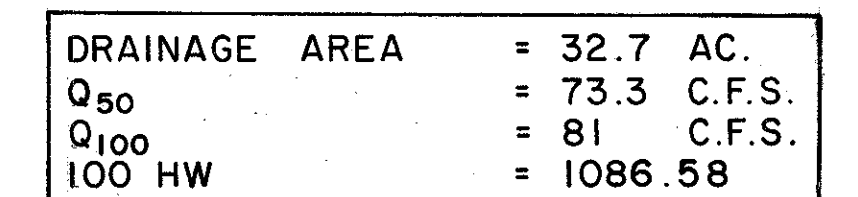
DRAINAGE AREA	= 169.03 AC.
Q_{50}	= 175 C.F.S.
Q_{100}	= 197 C.F.S.
100 HW	= 1079.50

ESTIMATED QUANTITIES		
601	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	= 51 CU. YD.
602	CONCRETE MASONRY	= 5.0 CU. YD.
603	60" CONDUIT, TYPE A, 706.02 TO 707.02 (0.109), 707.09 (1"), 707.22 @ 0.42% OR 78" ~	= 334 LIN. FT.
QUANTITIES CARRIED TO SHEET NO. 62 & 63		

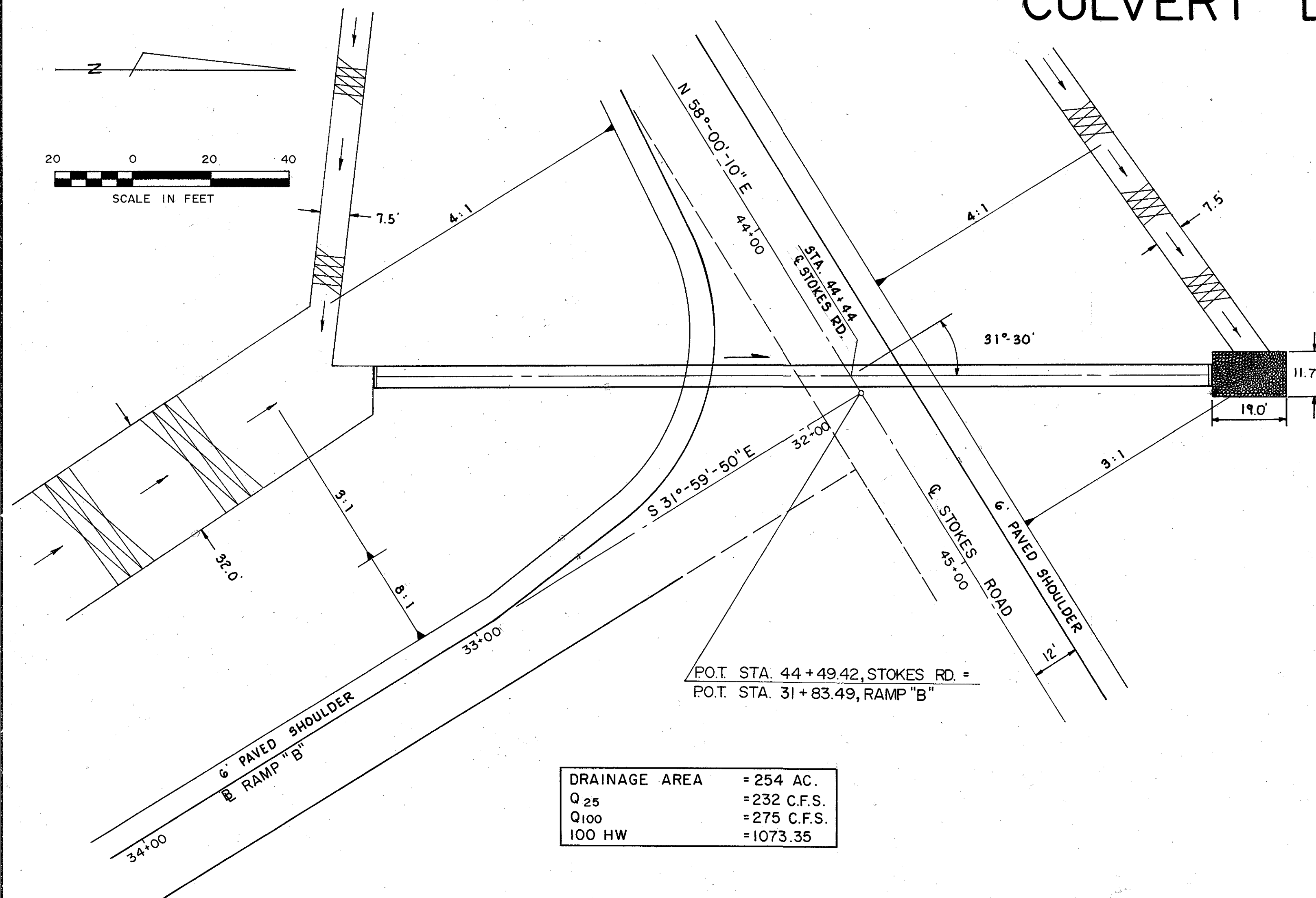


STA. 60+00
PROP. U.S. 33

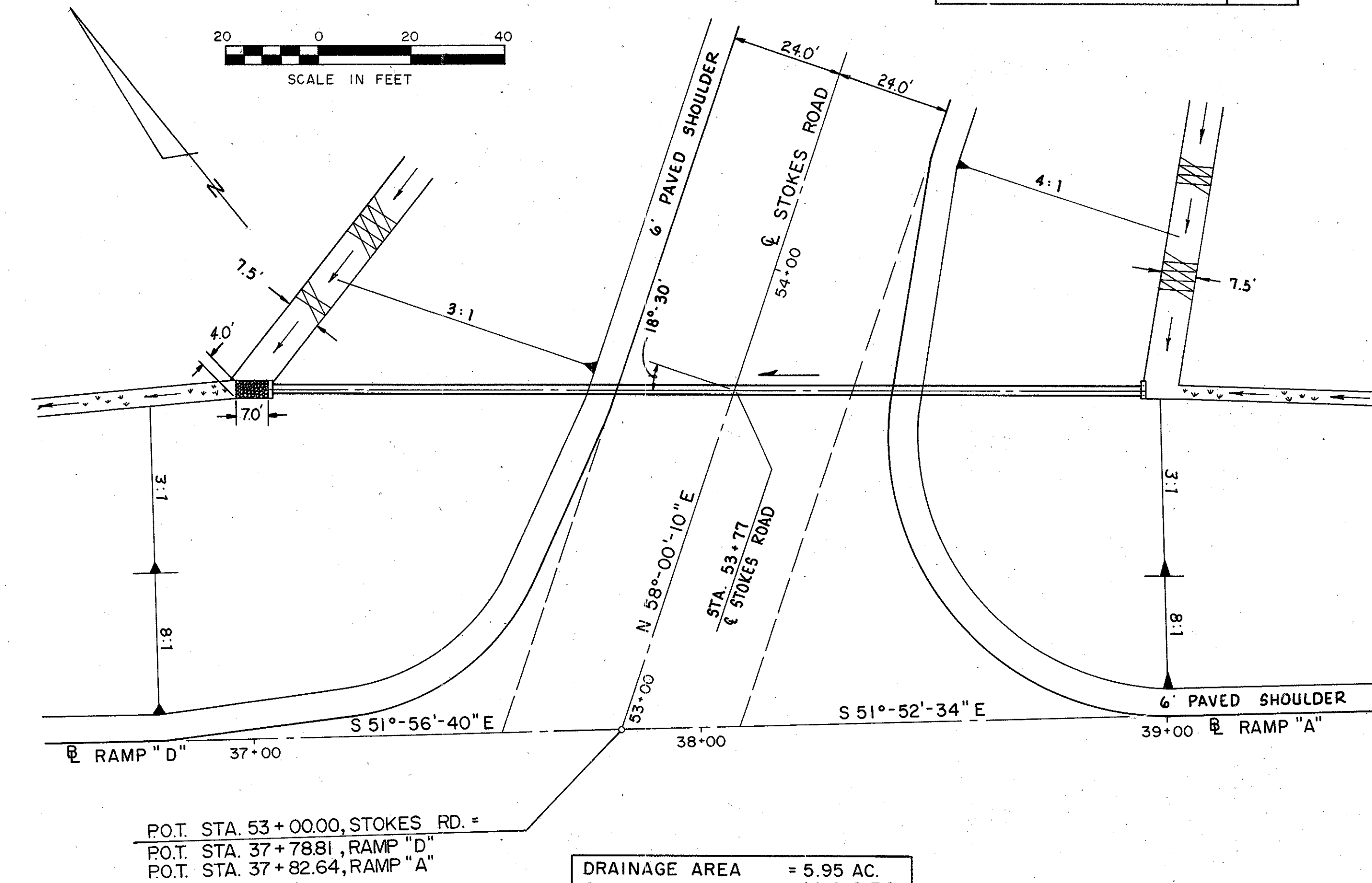
CALC. <i>RJH</i> BY DATE <i>5-28-85</i>	UNI-33-0.28	OHIO	167 224
CHKD. BY <i>CH</i> DATE <i>5-28-85</i>		FHWA REGION 5	



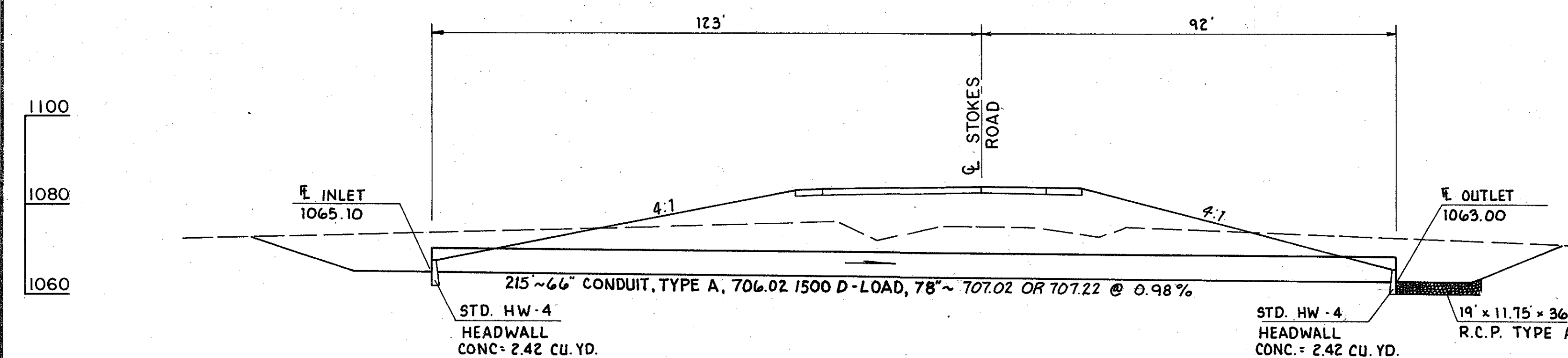
CHECKED BY G/HG DATE 6-18-85



DRAINAGE AREA	= 254 AC.
Q ₂₅	= 232 C.F.S.
Q ₁₀₀	= 275 C.F.S.
100 HW	= 1073.35

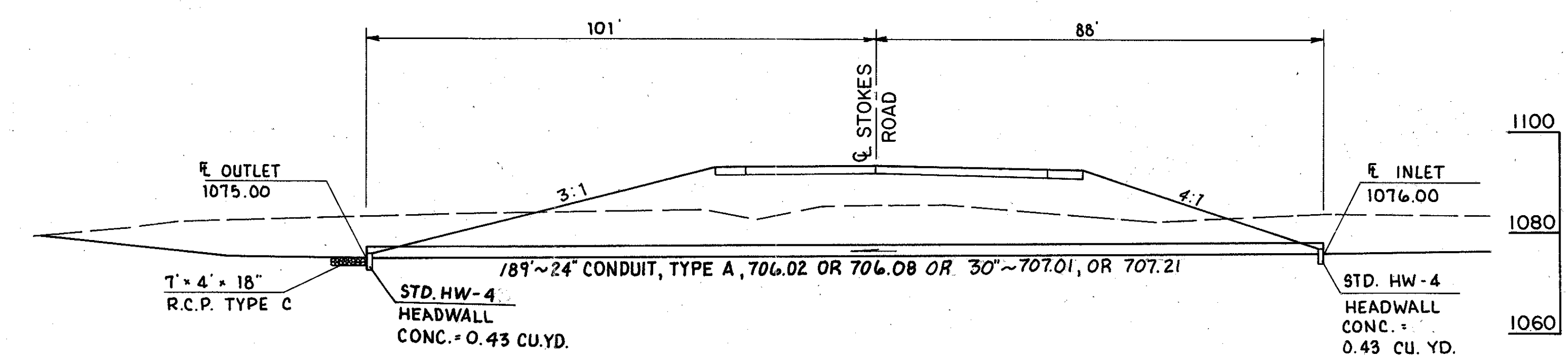


DRAINAGE AREA	= 5.95 AC.
Q ₂₅	= 14.8 C.F.S.
Q ₁₀₀	= 18 C.F.S.
100 HW	= 1078.28



<u>ESTIMATED QUANTITIES</u>		
601	ROCK CHANNEL PROTECTION, TYPE A WITH FILTER	= 24.8 CU. YD.
602	CONCRETE MASONRY	= 4.9 CU. YD.
603	66" CONDUIT, TYPE A, 706.02 1500 D- LOAD OR 78% TOT.02, OR TOT.22	= 215 LIN. FT.
QUANTITIES CARRIED TO SHEET NO. 99		

STA. 44+44
PROP. STOKES RD.



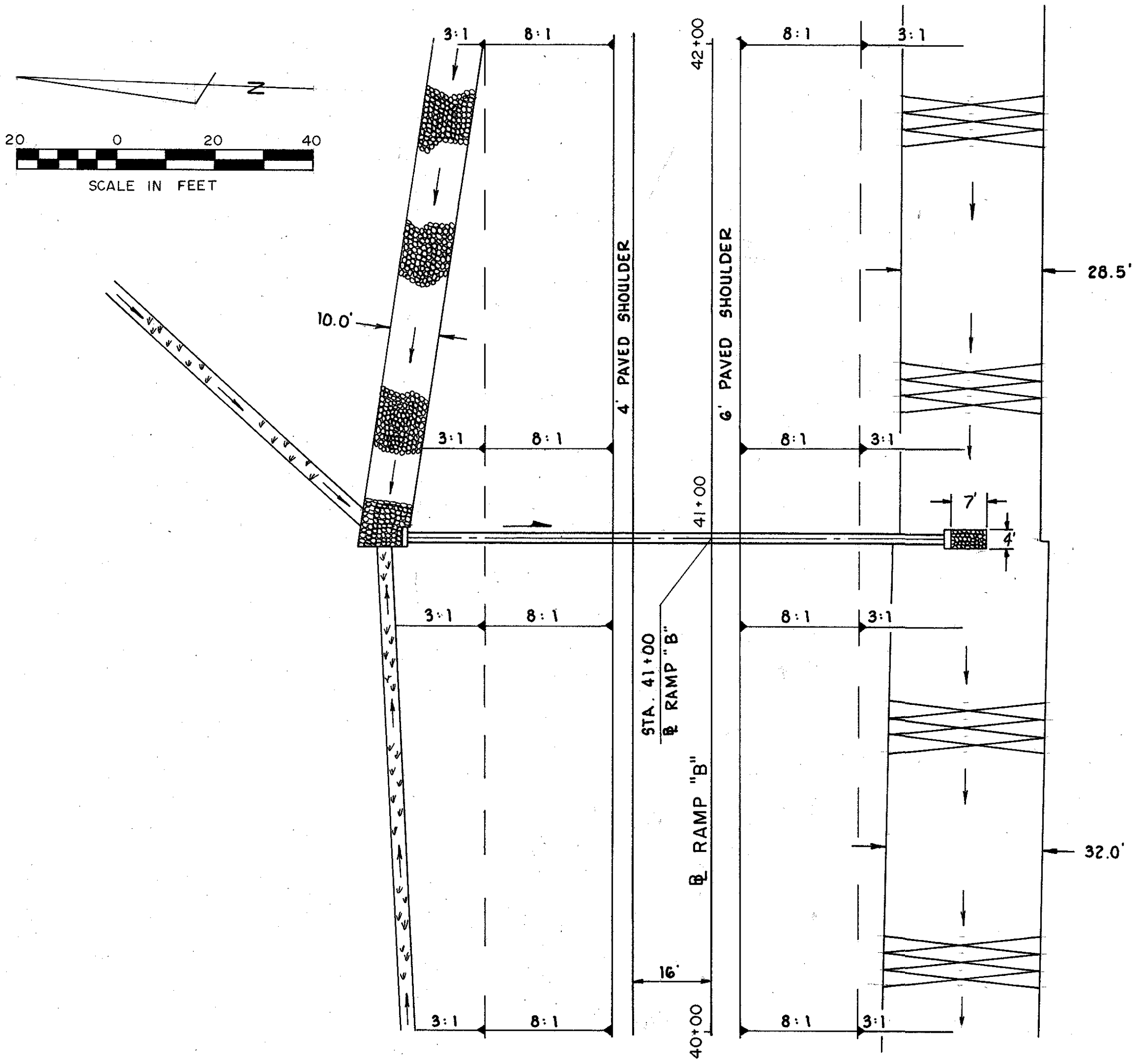
<u>ESTIMATED QUANTITIES</u>		
601	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	= 1.6 CU.YD.
602	CONCRETE MASONRY	= 0.9 CU.YD.
603	24" CONDUIT, TYPE A, 706.02 OR 706.08 OR 30"~ 707.01, OR 707.21	= 189 LIN.FT.

QUANTITIES CARRIED TO SHEET NO. 100

STA. 53+77
PROP. STOKES RD.

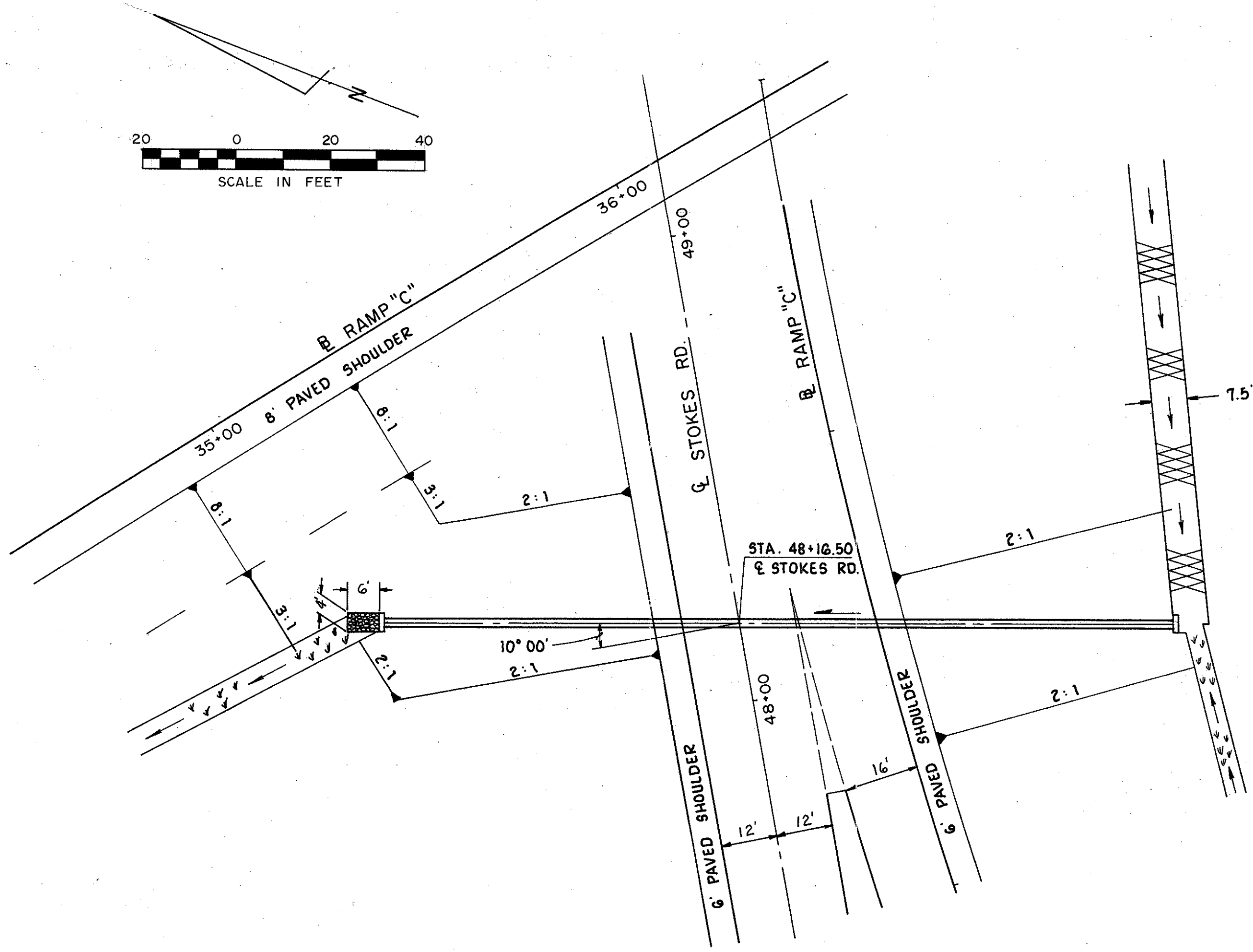
CULVERT DETAILS STA. 44+44 & STA. 53+77 STOKES ROAD

CULVERT DETAILS



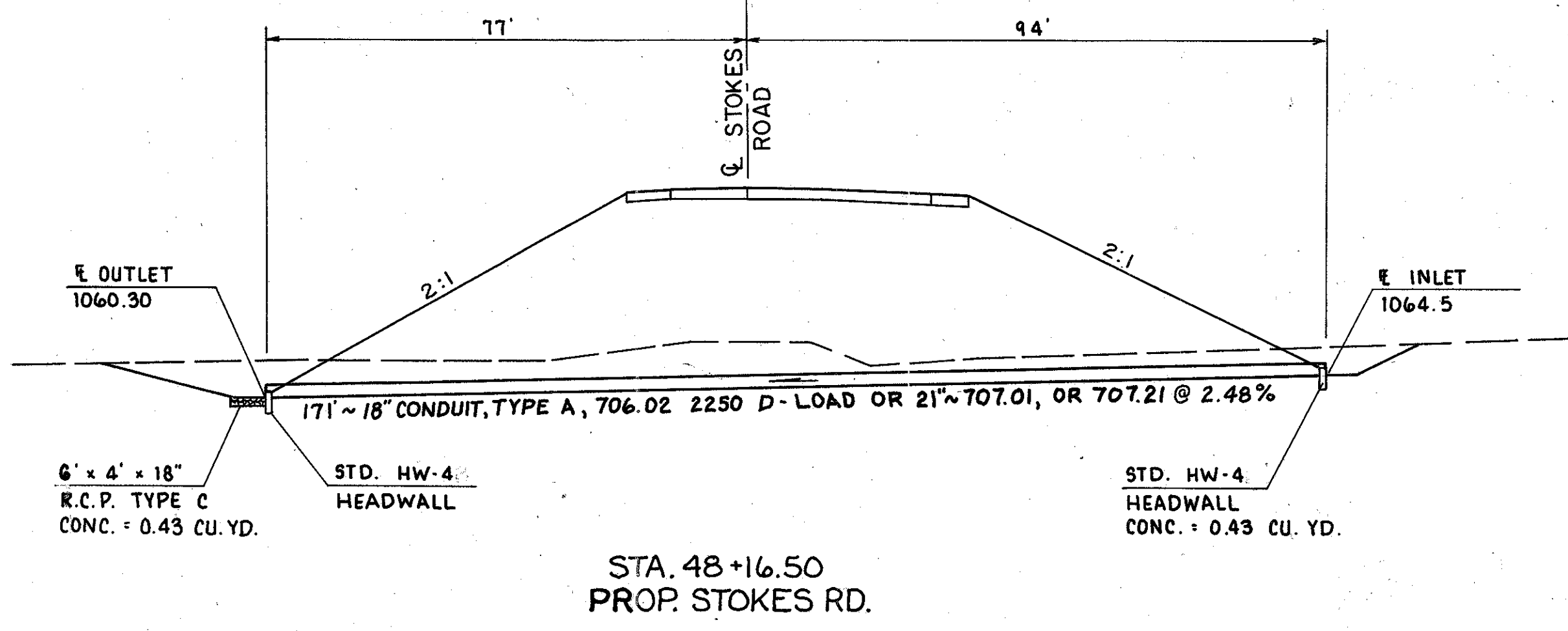
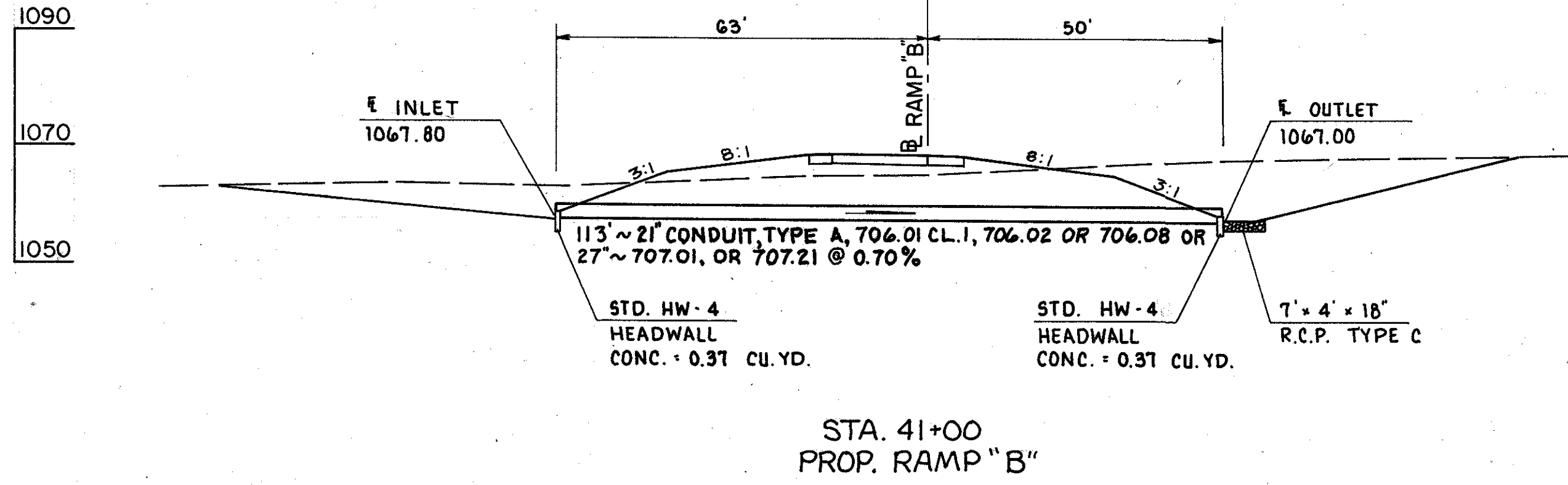
DRAINAGE AREA	= 5.64 AC.
Q ₁₀	= 10 C.F.S.
Q ₁₀₀	= 14.1 C.F.S.
100 HW	= 1070.13

ESTIMATED QUANTITIES		
601	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	= 1.6 CU. YD.
602	CONCRETE MASONRY	= 0.8 CU. YD.
603	21" CONDUIT, TYPE A, 706.01 CL. 1 706.02 OR 706.08 OR 27~707.01, OR 707.21	= 113 LIN. FT.
QUANTITIES CARRIED TO SHEET NO. 134		



DRAINAGE AREA	= 5.9 AC.
Q ₂₅	= 13.8 C.F.S.
Q ₁₀₀	= 16.8 C.F.S.
100 HW	= 1068.40

ESTIMATED QUANTITIES		
601	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	= 1.4 CU. YD.
602	CONCRETE MASONRY	= 0.9 CU. YD.
603	18" CONDUIT, TYPE A, 706.02 2250 D-LOAD OR 21~707.01 OR 707.21	= 177 LIN. FT.
QUANTITIES CARRIED TO SHEET NO. 100		



CULVERT DETAILS

ESTIMATED QUANTITIES	
601 ROCK CHANNEL PROTECTION TYPE B, WITH FILTER	8.9 CU. YD.
602 CONCRETE MASONRY	2.2 CU. YD.
603 48" CONDUIT, TYPE A, 706.02 OR 60" 707.02, OR 707.22	136 LIN. FT.
QUANTITIES CARRIED TO SHEET NO. 102	

DRAINAGE AREA	= 53.64 AC.
Q ₂₅	= 103.0 C.F.S.
Q ₁₀₀	= 122 C.F.S.
100 HW	= 1074.90

ESTIMATED QUANTITIES	
601 ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	1.4 CU. YD.
602 CONCRETE MASONRY	0.5 CU. YD.
603 15" CONDUIT, TYPE A, 706.01, 706.02, 706.08 OR 18" 707.01, OR 707.21	105 LIN. FT.
QUANTITIES CARRIED TO SHEET NO. 114	

CURVE DATA
 Q STOKES RD.
 P.I. STA. 65+20.08
 Δ = 40°50'50" RT.
 D = 05°00'00"
 R = 1,145.92'
 T = 426.70'
 L = 816.94'
 E = 76.87'

DRAINAGE AREA	= 1.20 AC.
Q ₂₅	= 3.3 C.F.S.
Q ₁₀₀	= 4.2 C.F.S.
100 HW	= 1076.22



LIGHTING SCHEMATIC



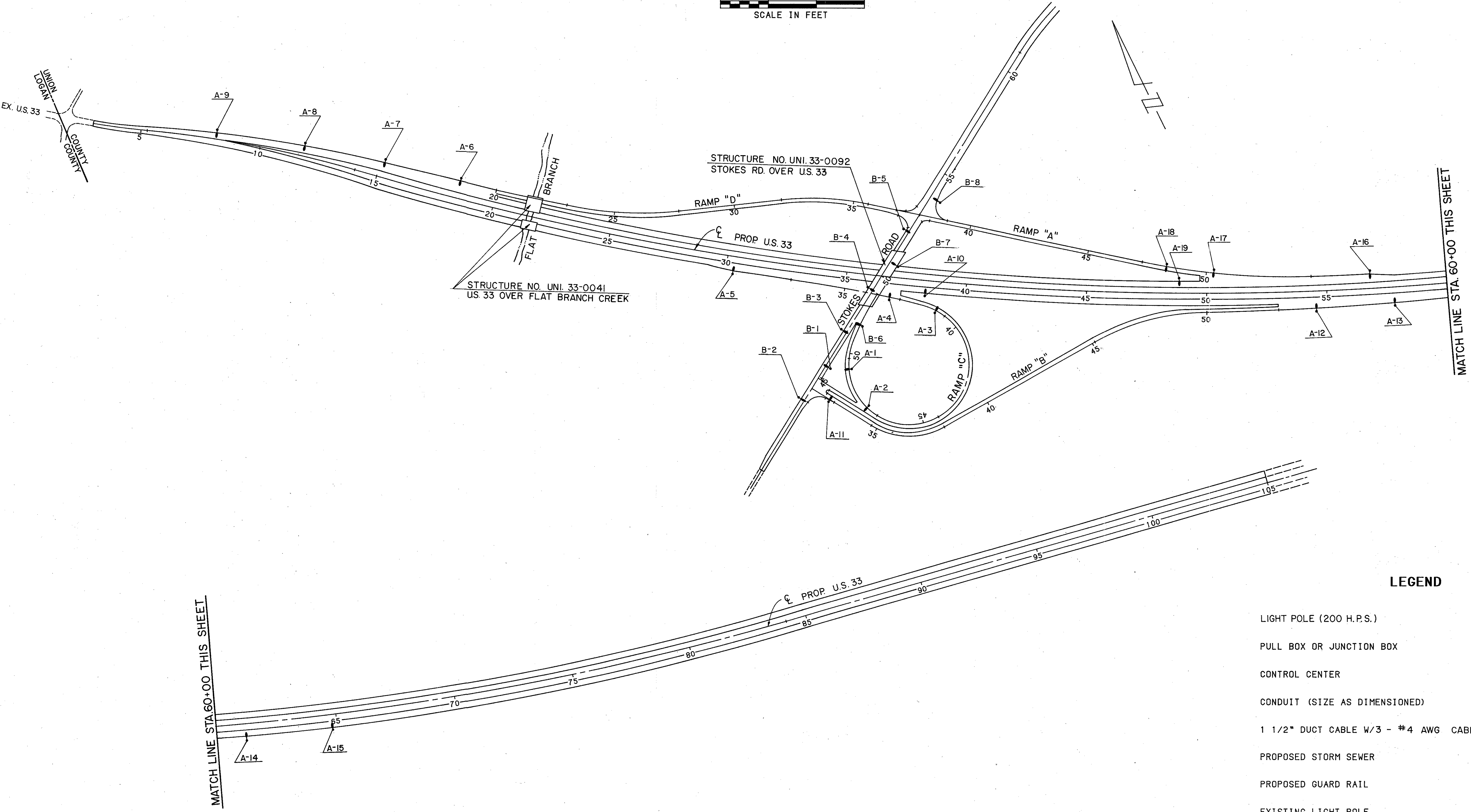
CALC. BY
DATE
CHKD. BY
DATE

MRD
9-28-85
JH
10-28-85

UNI-33-0.28

OHIO
FHWA
REGION 5

171
224
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10



LEGEND

LIGHT POLE (200 H.P.S.)	
PULL BOX OR JUNCTION BOX	
CONTROL CENTER	
CONDUIT (SIZE AS DIMENSIONED)	
1 1/2" DUCT CABLE W/3 - #4 AWG CABLES	
PROPOSED STORM SEWER	
PROPOSED GUARD RAIL	
EXISTING LIGHT POLE	
SUB-SUMMARY REFERENCE NUMBER	
1 1/2" DUCT CABLE W/3 - #2 AWG CABLES	

LIGHTING PLAN GENERAL NOTES

CALC. BY DATE MRD	OHIO	172
CHKD BY DATE MRD	FHWA REGION 5	224

210

210

SPECIFICATIONS

THESE NOTES ARE SUPPLEMENTAL TO ITEMS 625 AND 713 OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.

625.03 - GENERAL

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:

UNION RURAL ELECTRIC COOPERATIVE INC.
906 EAST FIFTH STREET
MARYSVILLE, OHIO 43040

POWER SUPPLY WILL BE 120/240 VOLT 3W GROUNDED NEUTRAL.

THIS PROJECT HAS BEEN DESIGNED ON THE BASIS OF 5% VOLTAGE DROP WITH A MAXIMUM UNIFORMITY OF 4.0 TO 1 FOR CONVENTIONAL UNITS.

625.07 - 713.11 LUMINAIRES

STYLE B LUMINAIRES SHALL HAVE SINGLE RATED 240 VOLT, 200 WATT, INTEGRAL REGULATOR BALLASTS FOR USE WITH HIGH PRESSURE SODIUM LAMPS AND SHALL BE GENERAL ELECTRIC M400, CROUSE-HINDS 2DOR, ITT AMERICAN 400, OR EQUAL APPROVED BY THE ENGINEER.

713.14 LAMPS

HIGH PRESSURE SODIUM LAMPS SHALL BE GENERAL ELECTRIC "LUCALOX", WESTINGHOUSE "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 "200 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 NO. UNI-33-0.41

EACH EXPANSION FITTING SHALL HAVE A COPPER EXTERNAL BONDING JUMPER.

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 . PAYMENT SHALL BE INCLUDED IN THE BID FOR THE ITEM(S) BEING LOCKED.

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.

625.02 HAZARDOUS MATERIALS

NO MATERIAL FURNISHED UNDER THIS SPECIFICATION SHALL CONTAIN POLYCHLORINATED BIPHENYLS (PCBs). TRANSFORMERS, BALLASTS AND CAPACITORS SHALL BE MARKED "NO PCBs" IN ACCORDANCE WITH FERERAL ENVIRONMENTAL PROTECTION AGENCY REGULATION 40 CFR 761.

CALC. BY DATE <i>MRD</i> <i>12-4-85</i>	UNI-33-0.28	OHIO	173
		FHWA REGION 5	224
CHKD BY DATE <i>G.H.G.</i> <i>12-12-86</i>			3
			10

SHEET NUMBER LEGEND: PLAN SHEET #/SUB-SUMMARY SHEET #

CALC. BY DATE 12-3-06 MED	UNI-33-0.28	OHIO	
		FHWA REGION 5	
CHKD BY DATE GHS 12-7-06			

LIGHTING PLAN SUB-SUMMARY

CALC. 12-3-85 BY MRD DATE	UNI-33-0.28	OHIO	
CHKD GHS BY 12-4-85 DATE		FHWA REGION 5	

LIGHTING PLAN SUB-SUMMARY.

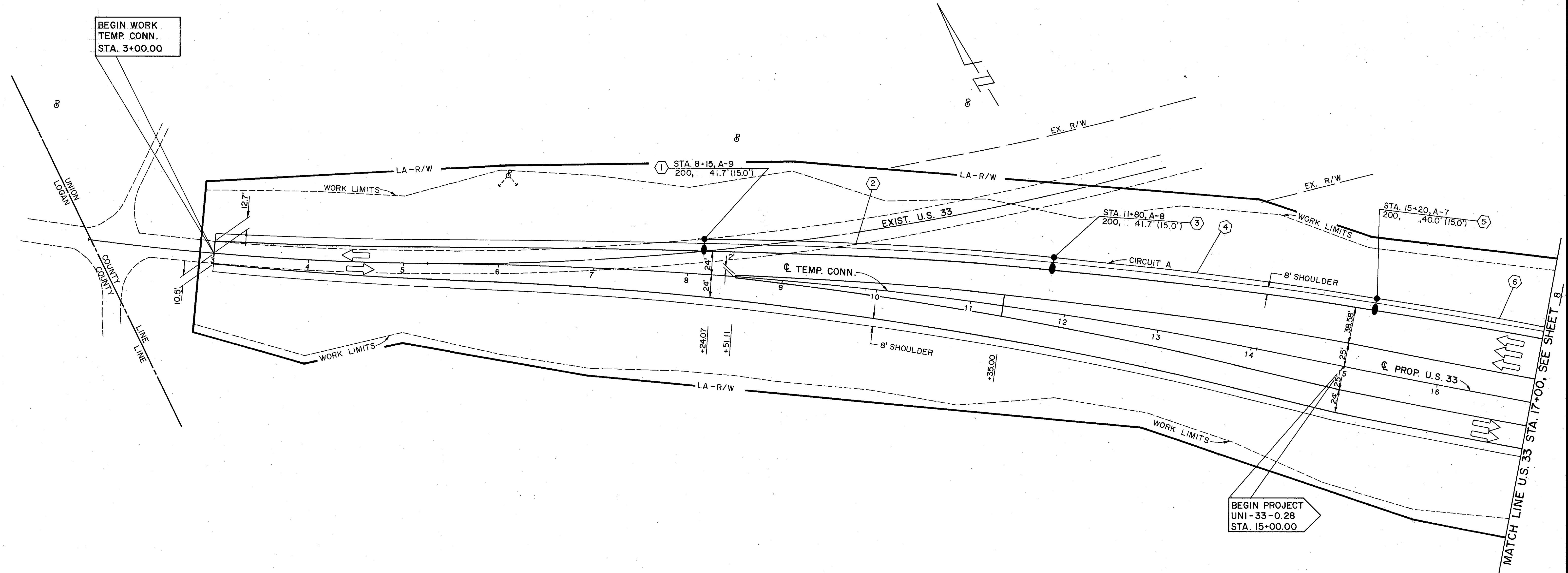
CALC. BY DATE 12-2-85 MRO	UNI-33-0.28	OHIO	176 224
		FHWA REGION 5	
CHKD BY DATE 12-2-85			

LIGHTING PLAN SUB-SUMMARY

LIGHTING PLAN



CALC. BY DATE MRD	OHIO FHWA REGION 5	177 224
CHKD. BY DATE 12-1-88	UNI-33-0.28	7 10



POLE LEGEND

STATION	CIRCUIT #
15+22	A-7
200 WATT	(13.0') MTG. HT. OFFSET FROM EDGE OF PAVEMENT

LIGHTING PLAN



CALC. BY: **MRD**
DATE: **11-25-85**
CHKD BY: **gms**
DATE: **12-2-85**

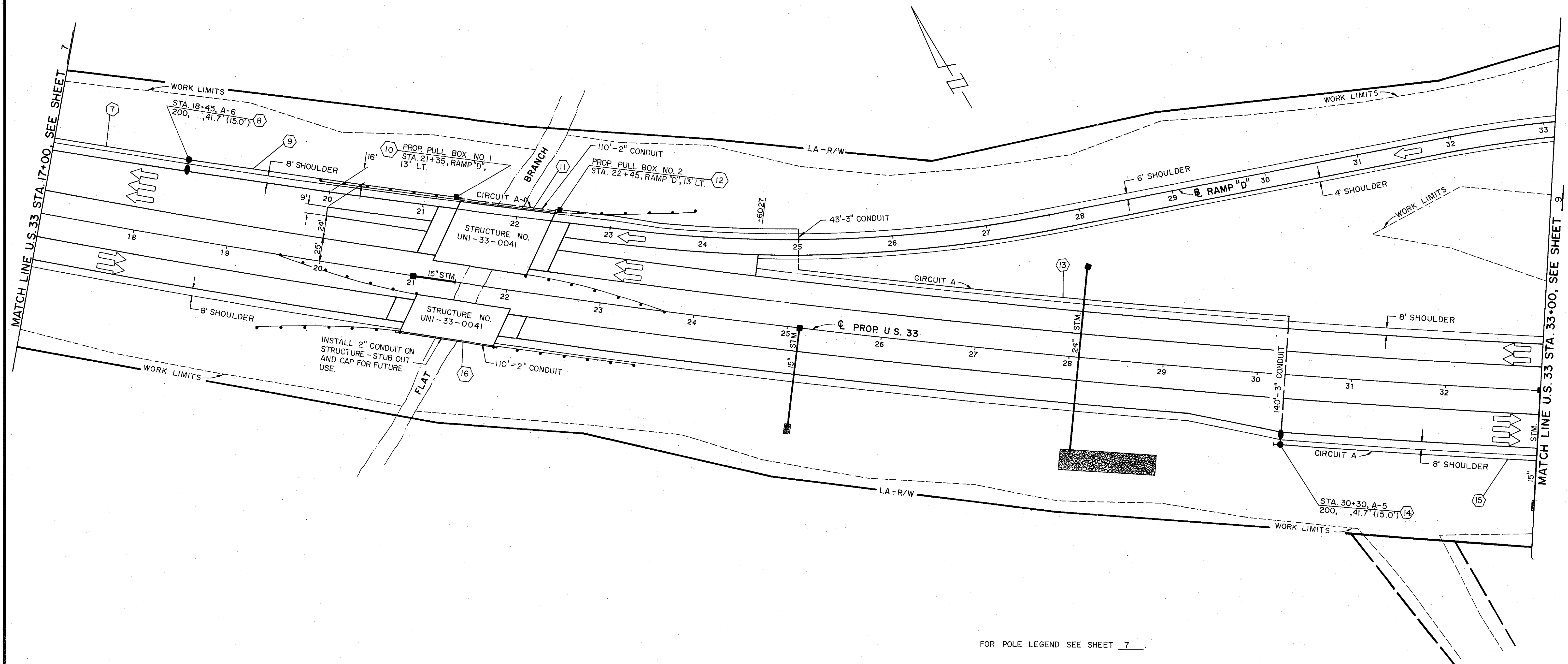
UNI-33-0.28

OHIO

FHWA
REGION 5

178
224

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10



FOR POLE LEGEND SEE SHEET 7

LIGHTING PLAN

CALC.
BY
DATE
MRD
11/21/85

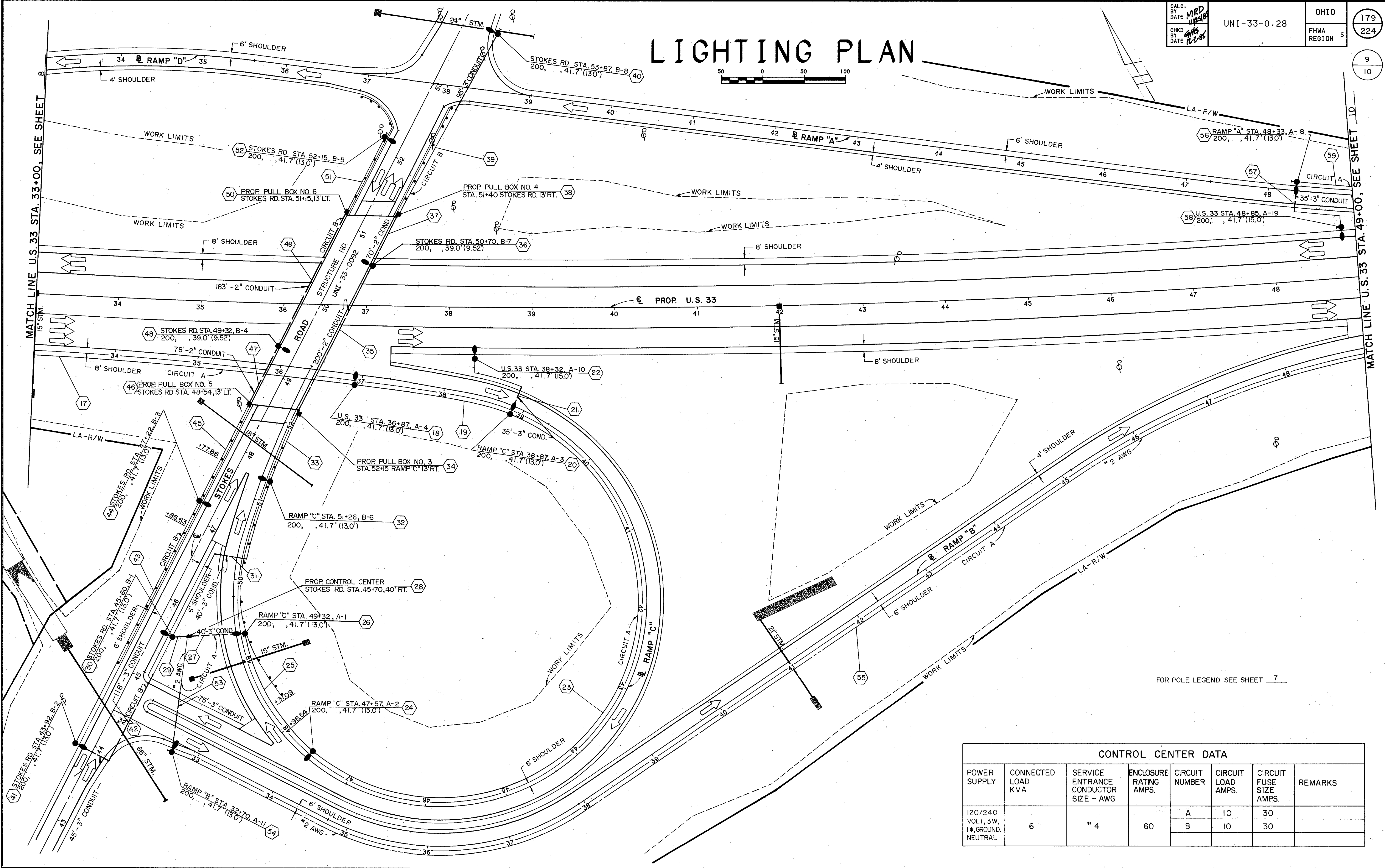
CHKD
BY
DATE
GHS
12/1/85

UNI-33-0.28

OHIO
FHWA
REGION 5

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224

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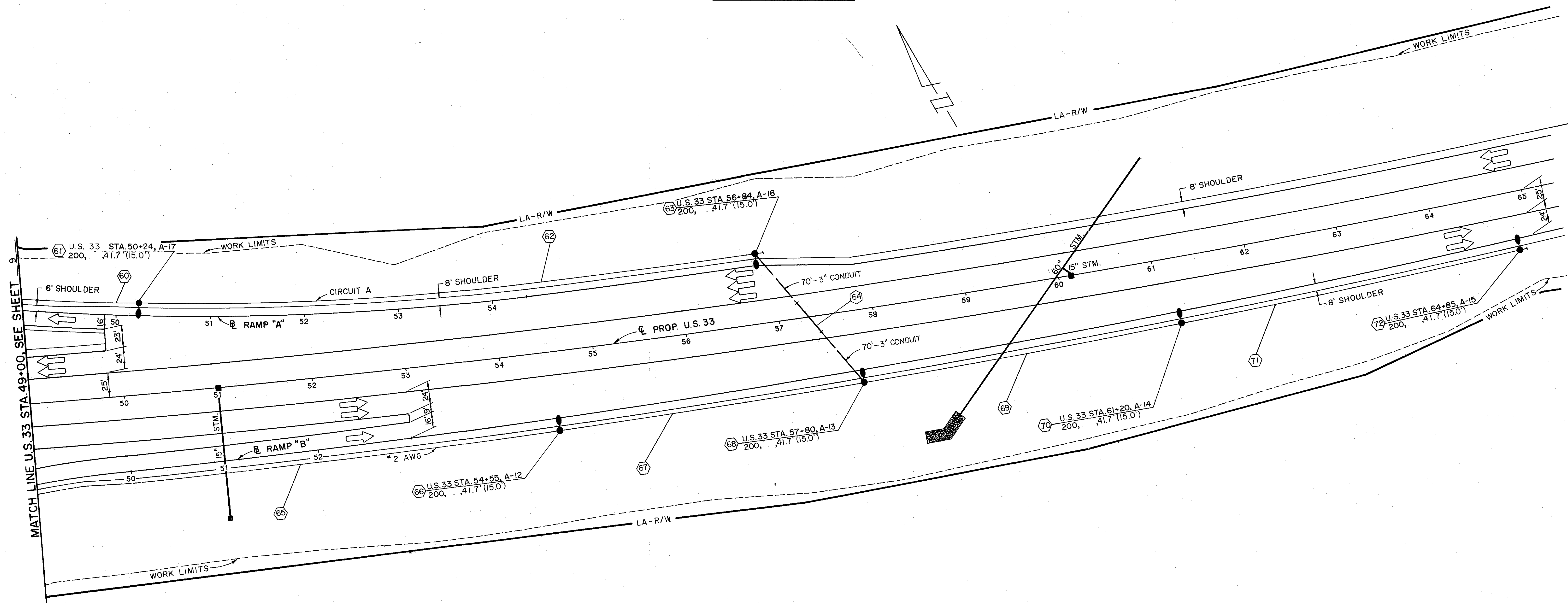


CONTROL CENTER DATA							
POWER SUPPLY	CONNECTED LOAD KVA	SERVICE ENTRANCE CONDUCTOR SIZE - AWG	ENCLOSURE RATING AMPS.	CIRCUIT NUMBER	CIRCUIT LOAD AMPS.	CIRCUIT FUSE SIZE AMPS.	REMARKS
120/240 VOLT, 3W, 1Ø, GROUND. NEUTRAL	6	* 4	60	A	10	30	
				B	10	30	

LIGHTING PLAN



CALC. BY DATE M.P.B. 12-8	UNI-33-0.28	OHIO FHWA REGION 5	180 224 10 10
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FOR POLE LEGEND SEE SHEET, 7

CALC. BY DATE 8-1-85	CHKD BY DATE 11-25-85
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HWA
REGION 5

224)

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TRAFFIC CONTROL - GENERAL SUMMARY

CALC. <i>RTM</i> BY DATE <i>9-5-85</i>	UNI-33-0.28	OHIO	183 224
CHKD BY <i>glt</i> DATE <i>9-23-85</i>		FHWA REGION 5	

SIGNING SUB-SUMMARY

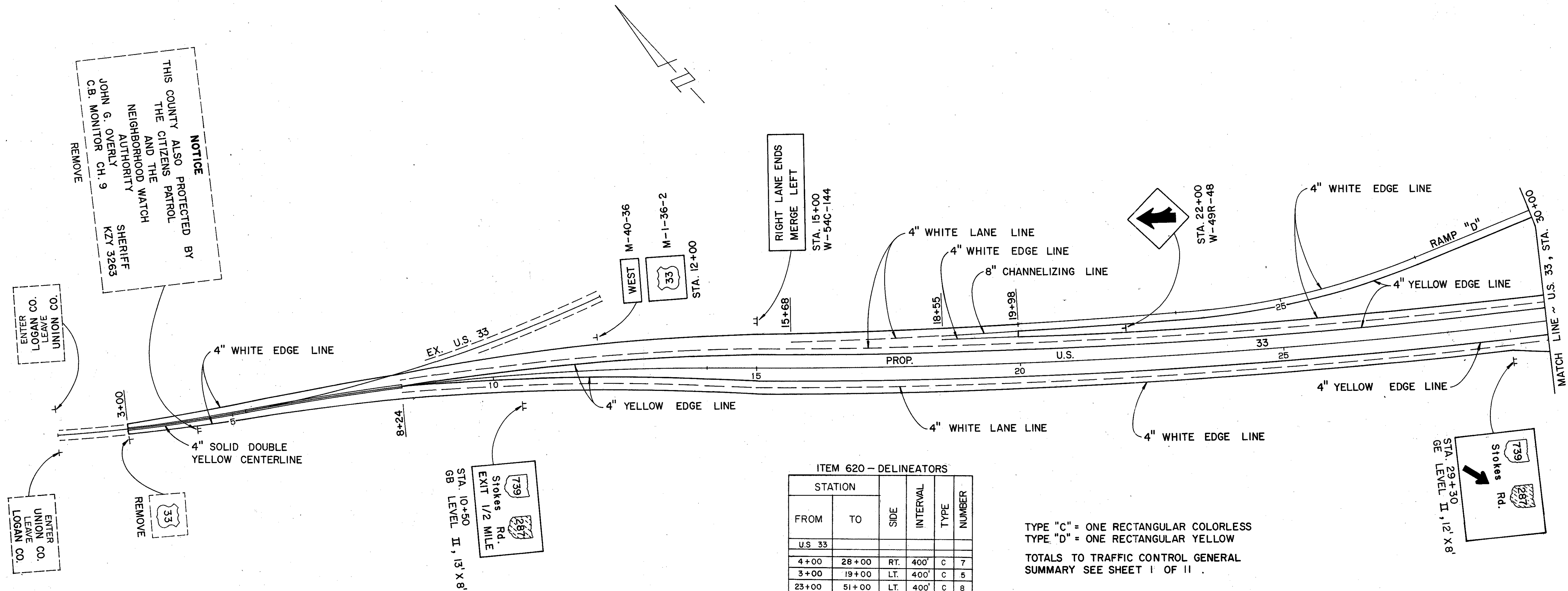
CALC. <i>RJM</i> BY DATE <i>9-5-88</i>	UNI-33-0.28	OHIO	184
CHKD BY DATE <i>[Signature]</i>		FHWA REGION 5	224
			4
			11

SIGNING SUB-SUMMARY

CALC. <i>RTH</i> BY DATE <i>9-5-85</i>	UNI-33-0.28	OHIO	185 224 5 11
		FHWA REGION 5	
CHKD BY <i>gls</i> DATE <i>10-2-85</i>			

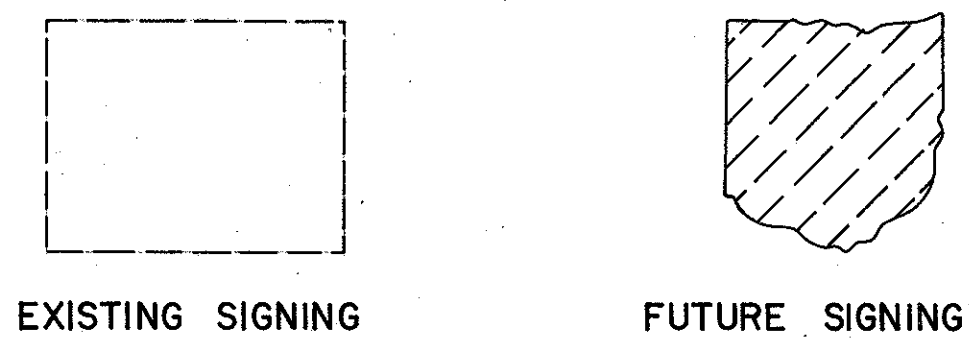
SIGNING SUB-SUMMARY

SIGNING AND PAVEMENT MARKING

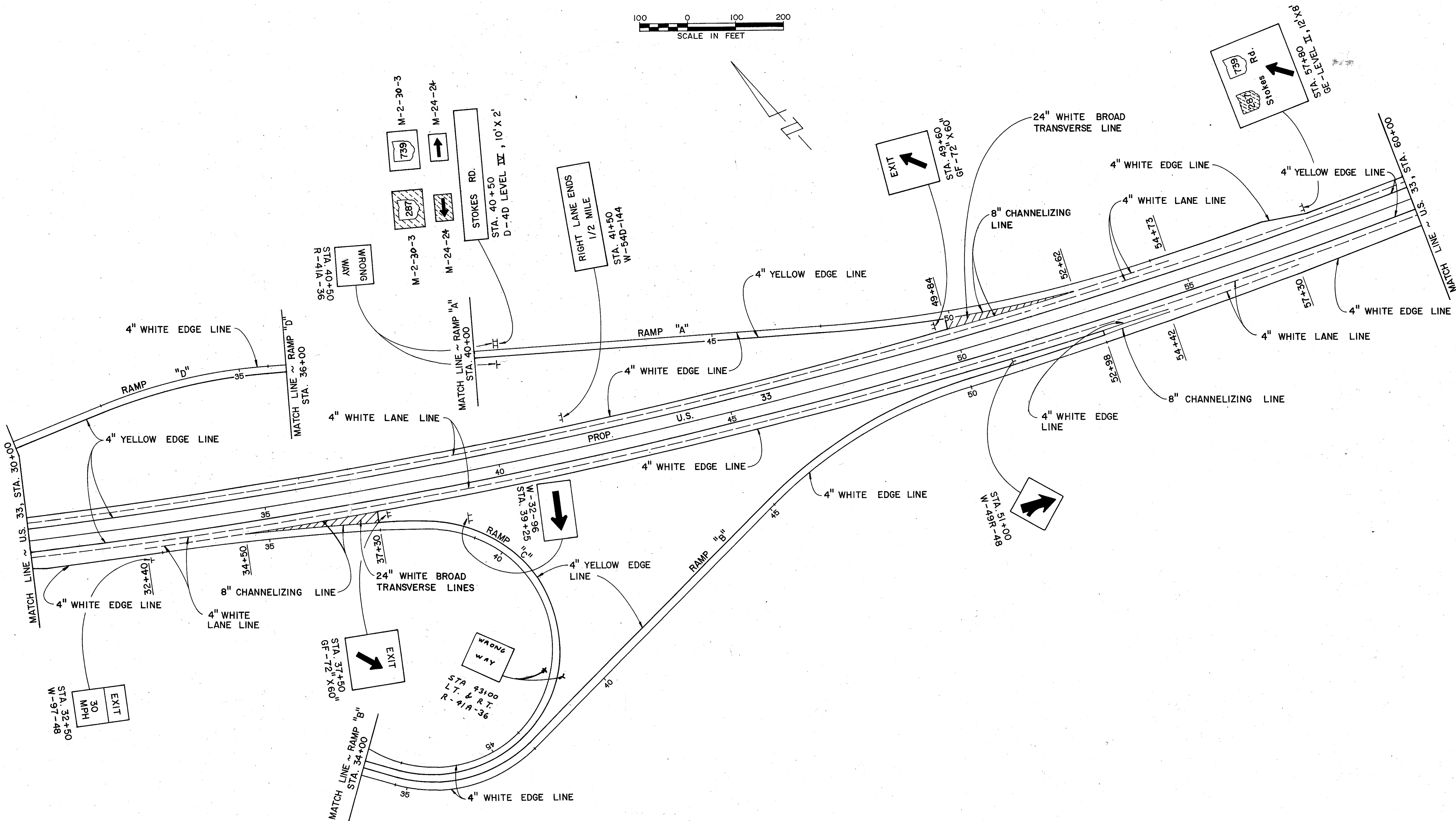


ITEM 620 - DELINEATORS					
STATION		SIDE	INTERVAL	TYPE	NUMBER
FROM	TO				
U.S. 33					
4+00	28+00	RT.	400'	C	7
3+00	19+00	LT.	400'	C	5
23+00	51+00	LT.	400'	C	8
39+00	51+00	RT.	400'	C	4
65+00	105+00	RT.	400'	C	11
57+00	105+00	LT.	400'	C	13
RAMP	"A"				
39+80	57+80	LT.	200'	C	10
RAMP	"B"				
32+50	35+50	RT.	100'	C	5
36+00	38+00	RT.	50'	C	5
39+00	65+00	RT.	100'	C	27
RAMP	"C"				
38+30	47+80	LT.	50'	D	20
29+30	38+30	RT.	100'	C	10
38+80	49+80	RT.	50'	C	23
50+80	52+80	RT.	100'	C	3
RAMP	"D"				
21+00	37+00	LT.	200'	C	9
TOTAL	TYPE "C"				140
	TYPE "D"				20

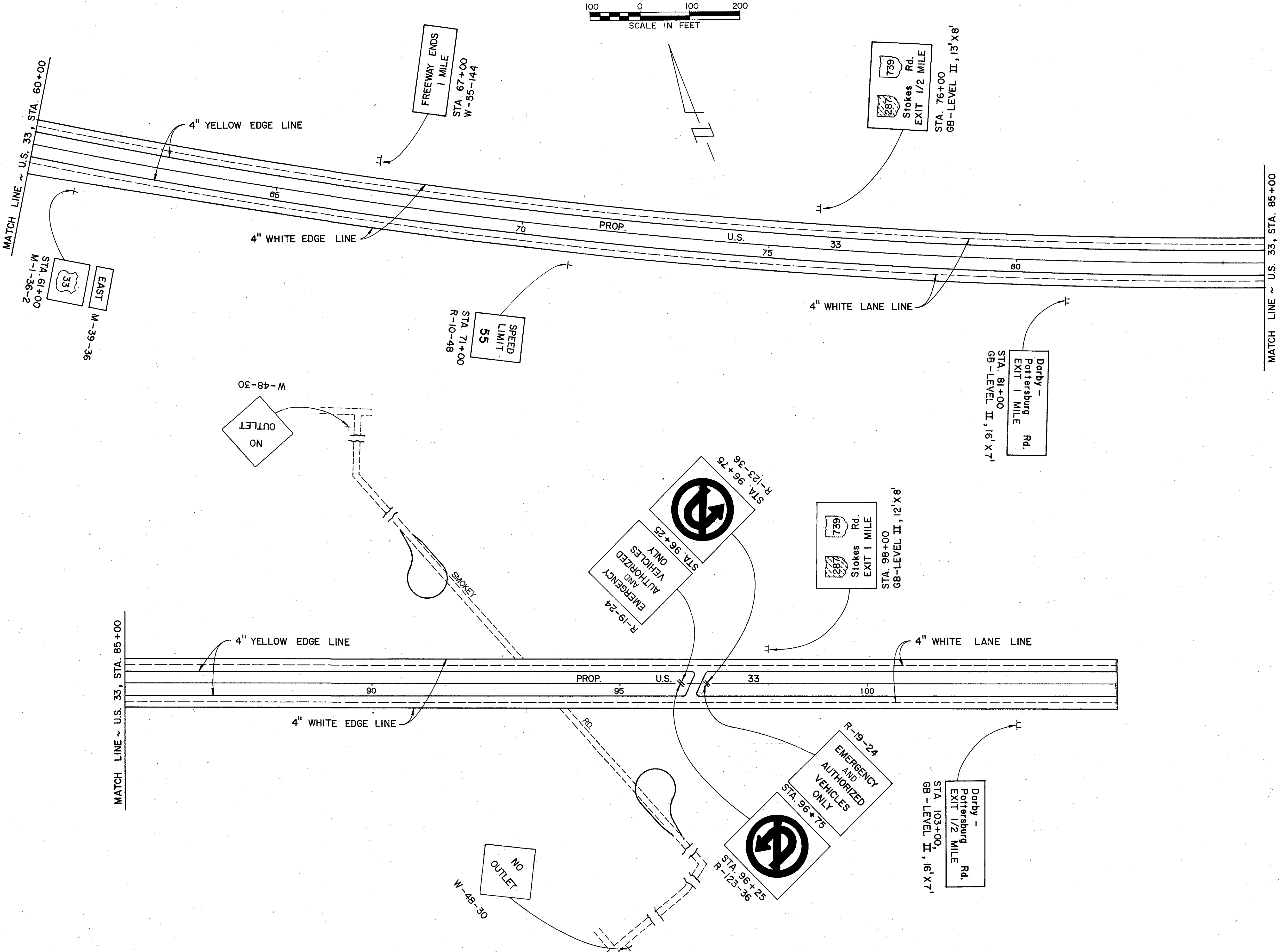
TYPE "C" = ONE RECTANGULAR COLORLESS
TYPE "D" = ONE RECTANGULAR YELLOW
TOTALS TO TRAFFIC CONTROL GENERAL
SUMMARY SEE SHEET 1 OF 11



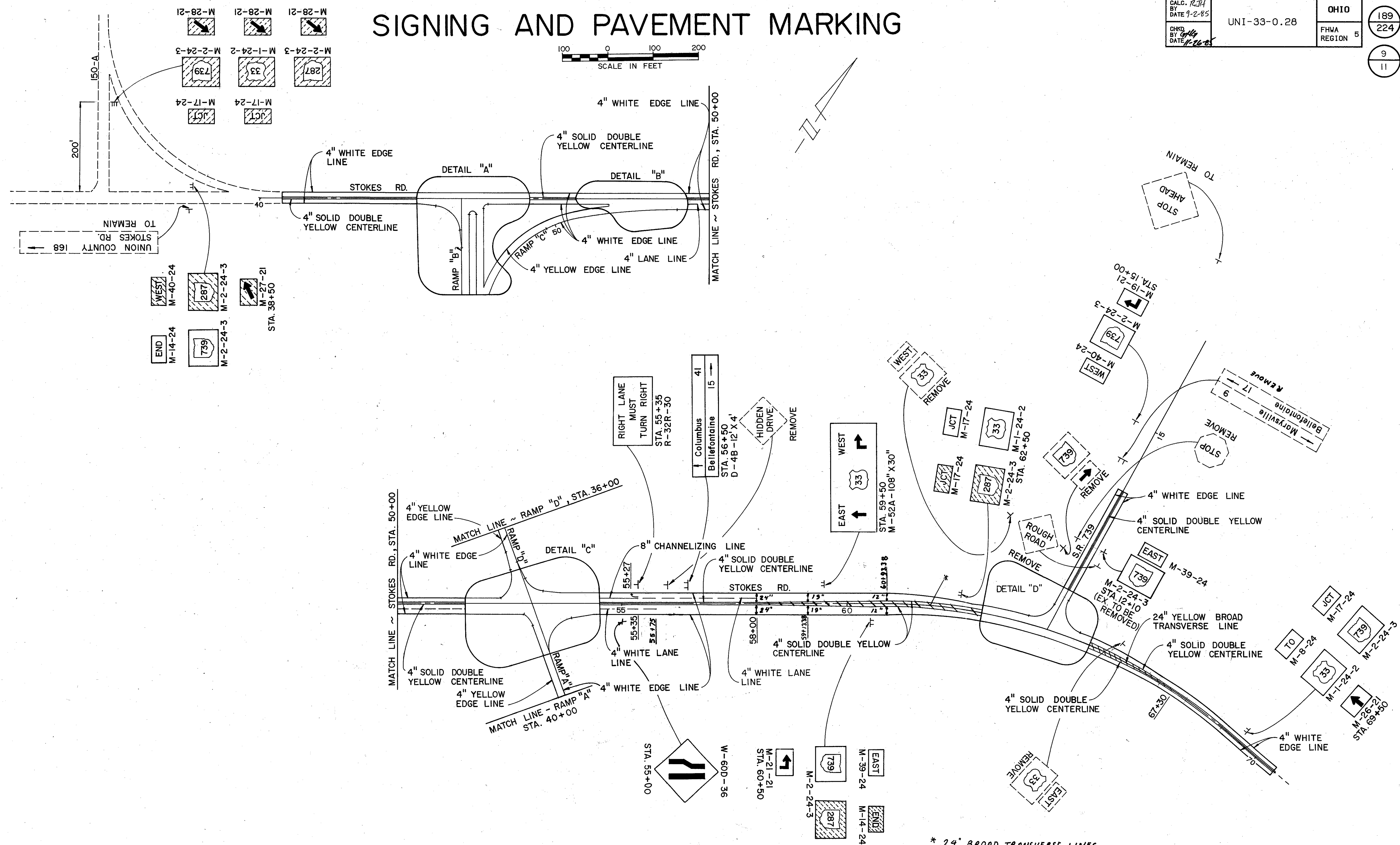
SIGNING AND PAVEMENT MARKING



SIGNING AND PAVEMENT MARKING



CALC. <i>RTH</i> BY DATE <i>9-2-85</i>	UNI-33-0.28	OHIO	189 224
		FHWA REGION 5	
CHKD. BY <i>9/14</i> DATE <i>9-26-85</i>			9 11



* 24' BROAD TRANSVERSE LINES
AT 24 FT. CENTER TO CENTER
AND SKEWED AT 45 DEG. TO THE
CENTER LINE OF THE ROADWAY.

SIGNING AND PAVEMENT MARKING

CALC. R.J.H.
BY
DATE 9-1-86
CHKD. J.L.G.
BY
DATE 9-1-86

UNI-33-0.28

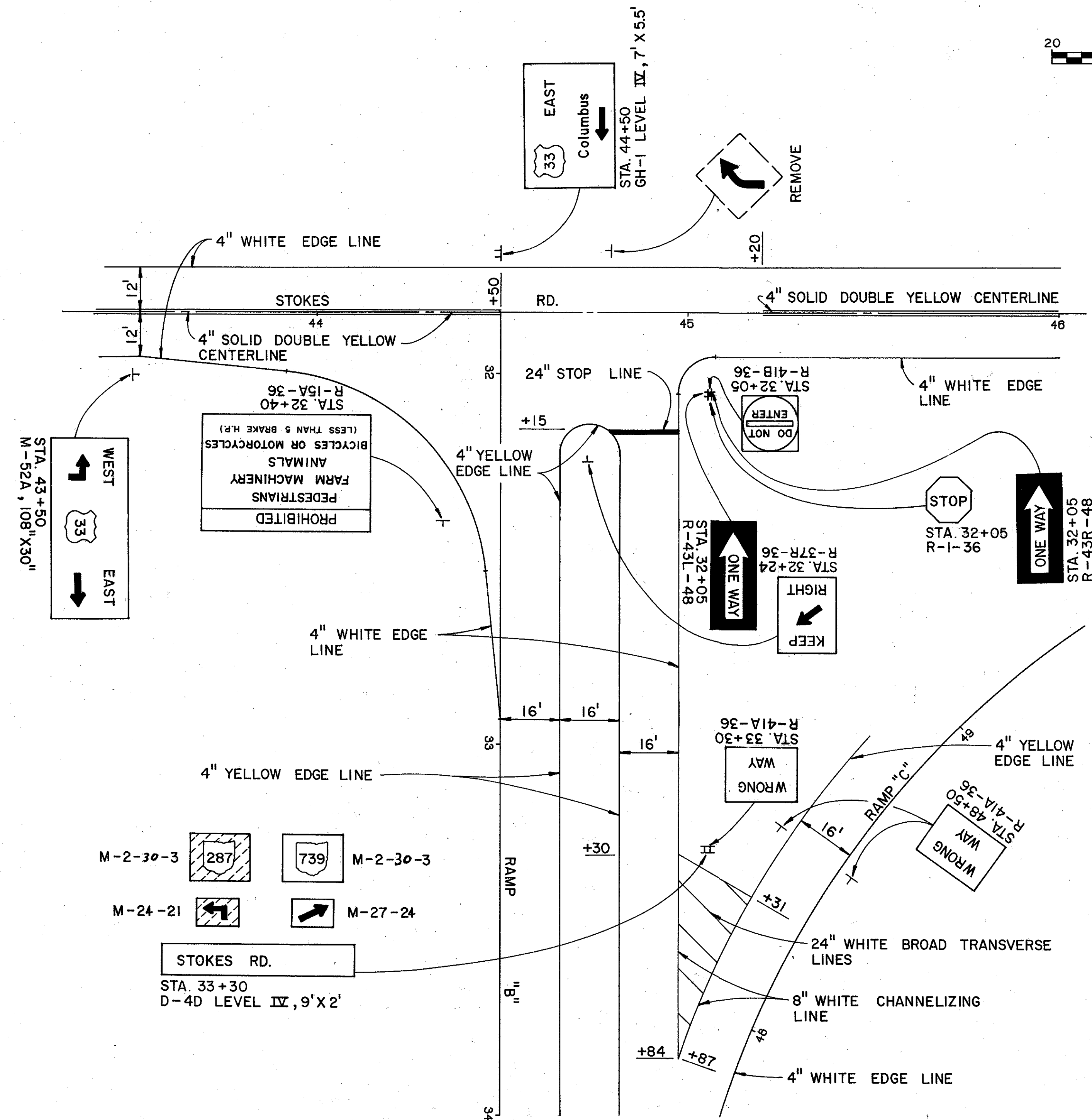
OHIO

FHWA
REGION 5

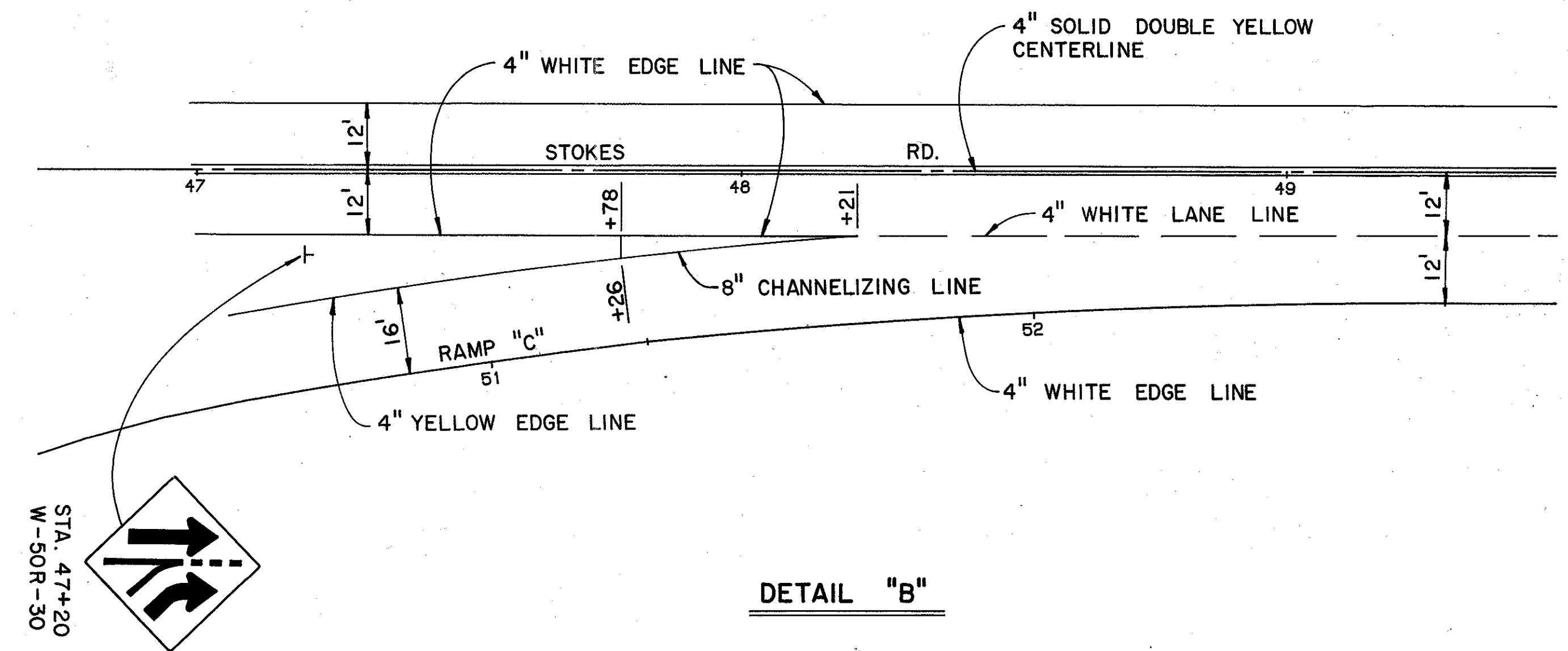
190
224

10
11

20 0 20 40
SCALE IN FEET



DETAIL "A"



DETAIL "B"

SIGNING AND PAVEMENT MARKING



CALC. R.J.H.
BY
DATE 7-1-85
CHKD. BY
DATE 11-27-85

UNI-33-0.28

OHIO

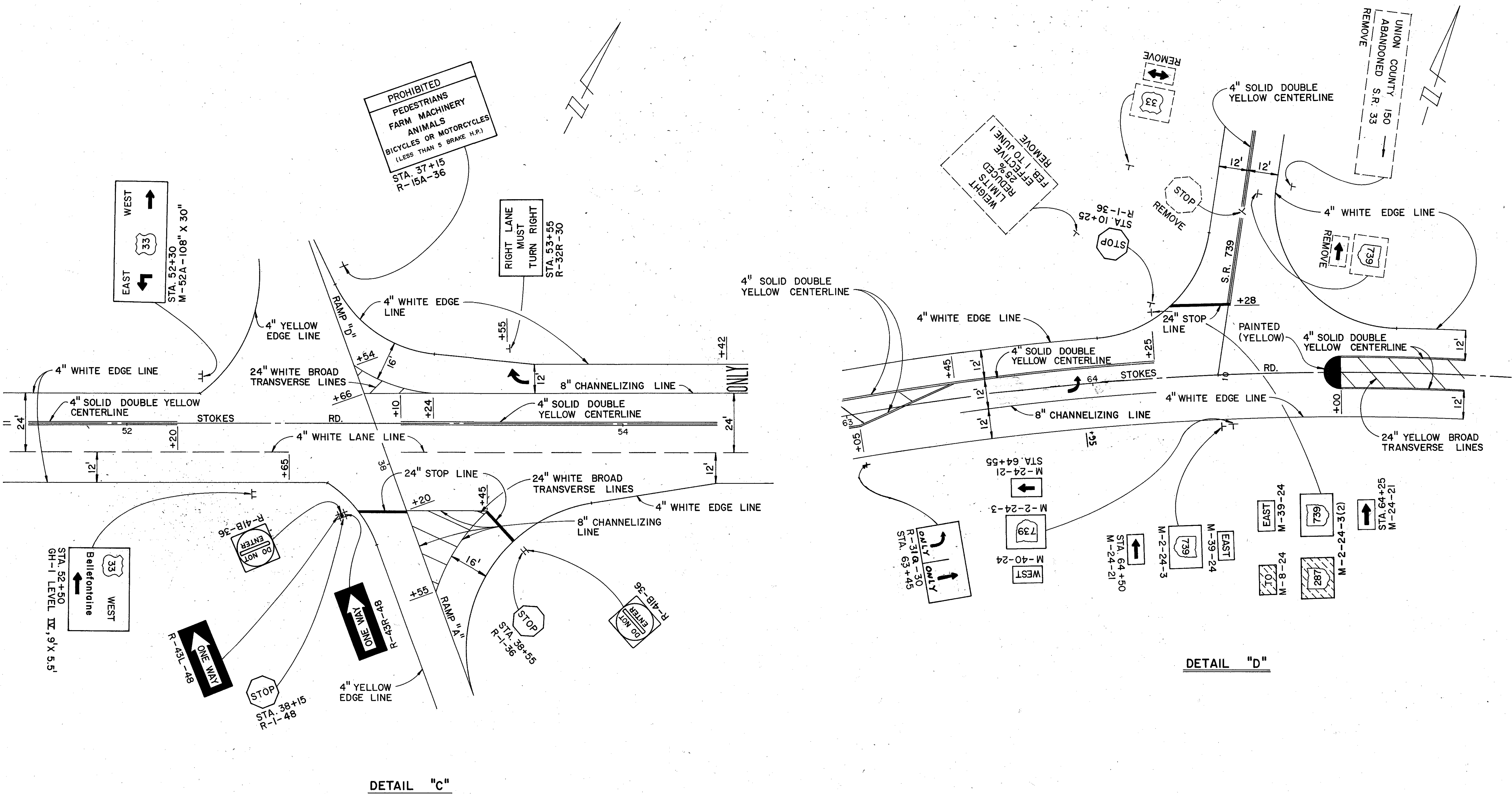
FHWA
REGION 5

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224

11

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NOTES

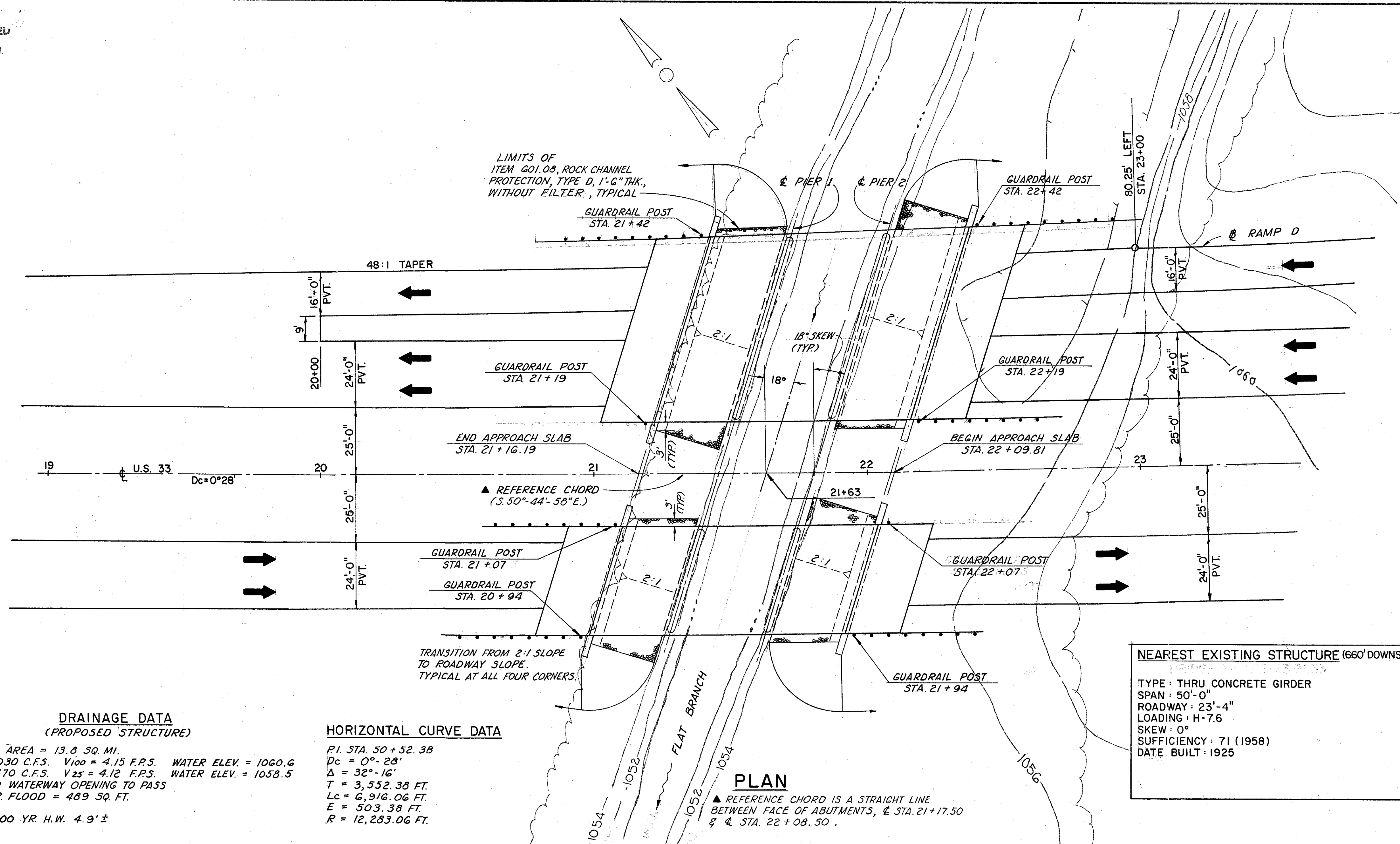
CAST-IN-PLACE REINFORCED CONCRETE PILES @ ABUTMENTS SHALL BE 12"Ø WITH AN AVERAGE PAY LENGTH OF 45 FT. FOR THE REAR ABUTMENT AND 45 FT. FOR THE FORWARD ABUTMENT.
CAST-IN-PLACE REINFORCED CONCRETE PILES @ PIERS SHALL BE 14"Ø WITH AN AVERAGE PAY LENGTH OF 45 FT. FOR PIER 1 AND 45 FT. FOR PIER 2.

EARTHWORK LIMITS SHOWN ARE APPROXIMATE, ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS-SECTIONS.

* ELEVATIONS MARKED WITH AN ASTERISK ARE AT TOP OF BENCH.

TRAFFIC COUNT

DESIGN YEAR A.D.T. (2005) = 18,190 (INCLUDES A.D.T.T.)
DESIGN YEAR A.D.T.T. (2005) = 4,002
D.H.V. = 1,819
D. = 60%
T. = 22%
V. = 60 M.P.H.



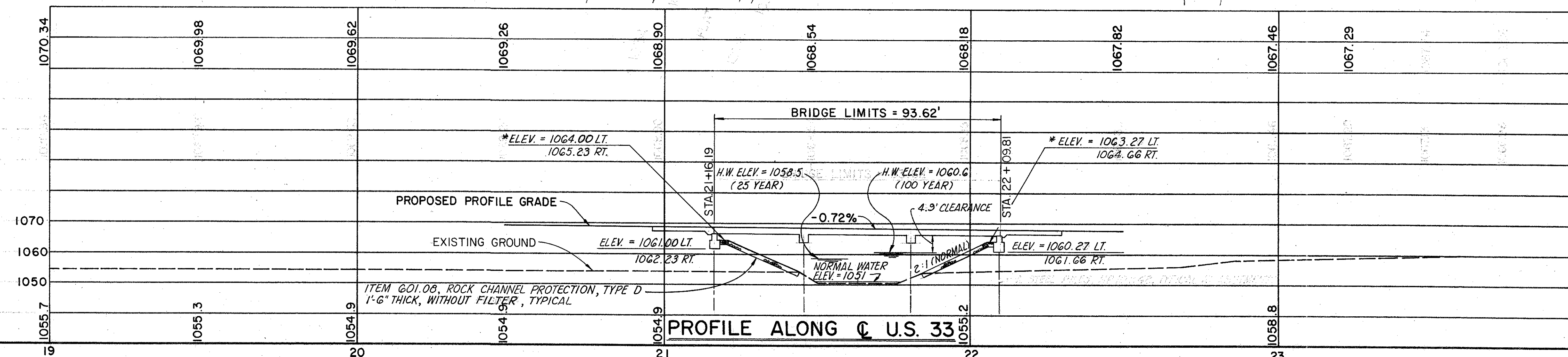
DRAINAGE DATA (PROPOSED STRUCTURE)

DRAINAGE AREA = 13.8 SQ. MI.
Q₁₀₀ = 2,030 C.F.S. V₁₀₀ = 4.15 F.P.S. WATER ELEV. = 1060.6
Q₂₅ = 1,470 C.F.S. V₂₅ = 4.12 F.P.S. WATER ELEV. = 1058.5
REQUIRED WATERWAY OPENING TO PASS A 100 YR. FLOOD = 489 SQ. FT.

CLEAR 100 YR. H.W. 4.9'±

HORIZONTAL CURVE DATA

P.I. STA. 50+52.38
Dc = 0°-28'
Δ = 32°-16'
T = 3,552.38 FT.
Lc = 6,916.06 FT.
E = 503.38 FT.
R = 12,283.06 FT.



PROPOSED STRUCTURE

TYPE: THREE SPAN CONTINUOUS REINFORCED CONCRETE SLAB WITH CAPPED PILE SUBSTRUCTURE
SPAN: 28'-0", 35'-0", 28'-0"
ROADWAY: WIDTH VARIES LEFT SIDE, 40'-0" F/F RAILING RIGHT SIDE
LOADING: HS-20-44 & ALTERNATE MILITARY LOADING
WEARING SURFACE: MONOLITHIC CONCRETE
SKEW: 18° L.F. FROM PERPENDICULAR TO REFERENCE CHORD
APPROACH SLAB: AS-1-81 (20 FT. LONG)
ALIGNMENT: 0° 28' CURVE TO THE LEFT
SUPERELEVATION: 3/16"/FT.

R. D. ZANDE & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

SITE PLAN

BRIDGE NO. UNI-33-0041 L/R
U.S. 33 OVER FLAT BRANCH

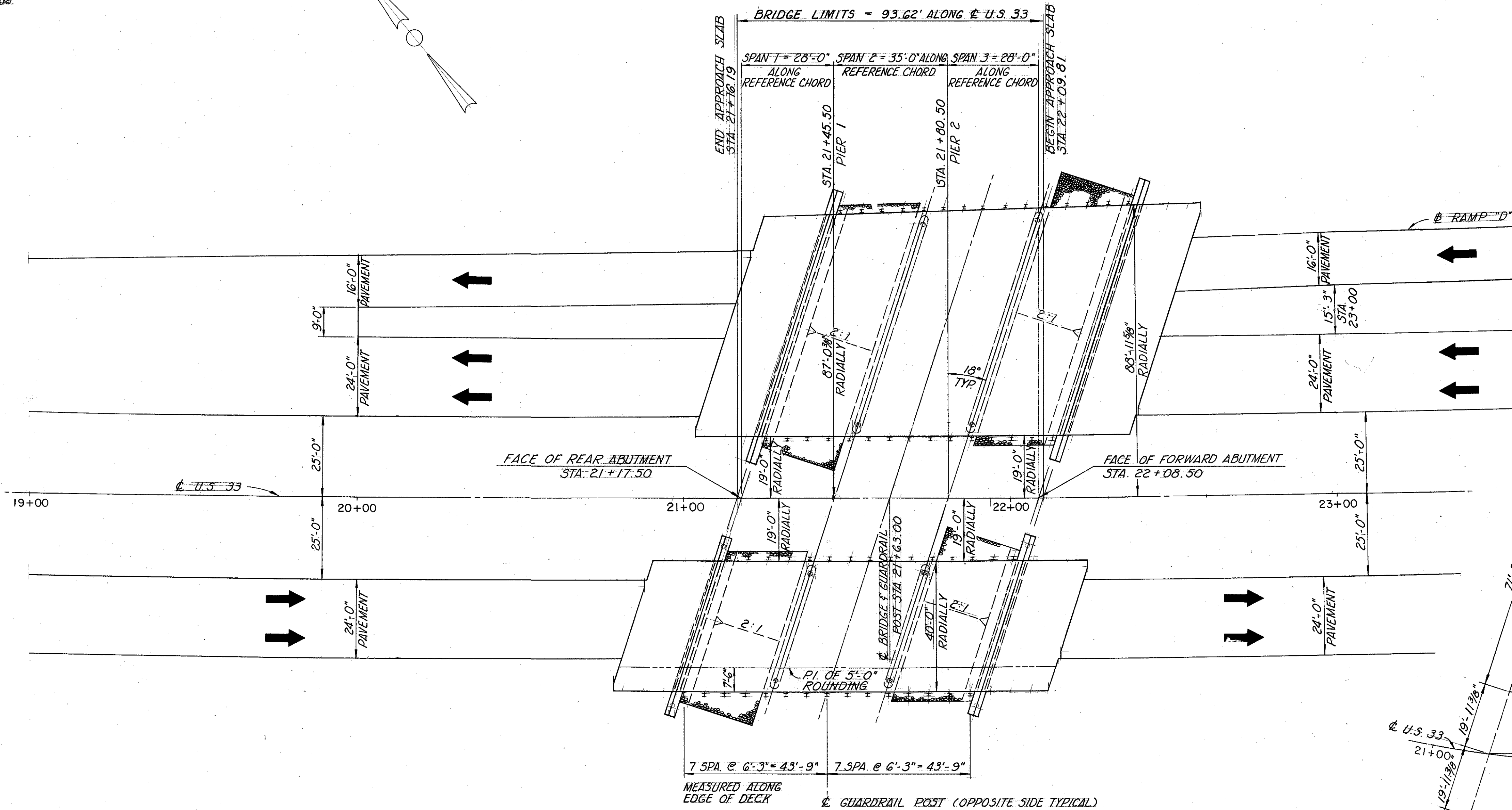
UNION COUNTY STA. 21+16.19
STA. 22+09.81

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
		J.W.E.	P.M.	G.J.T.	J.L.W. 6-6-85

UNI-33-0.28

NOTES

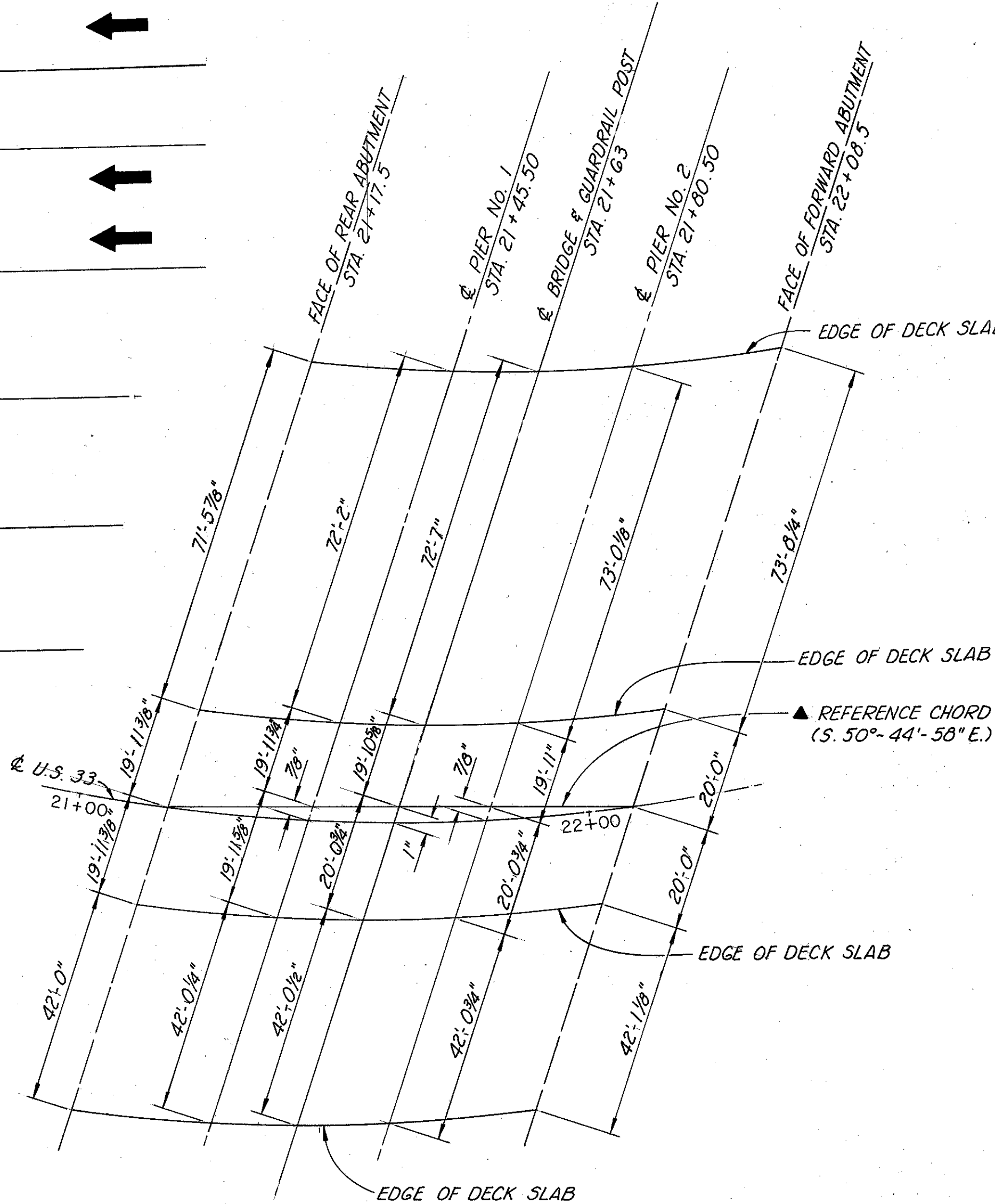
FOR RAILING DETAILS, SEE STD. DWG. DBR-2-73.



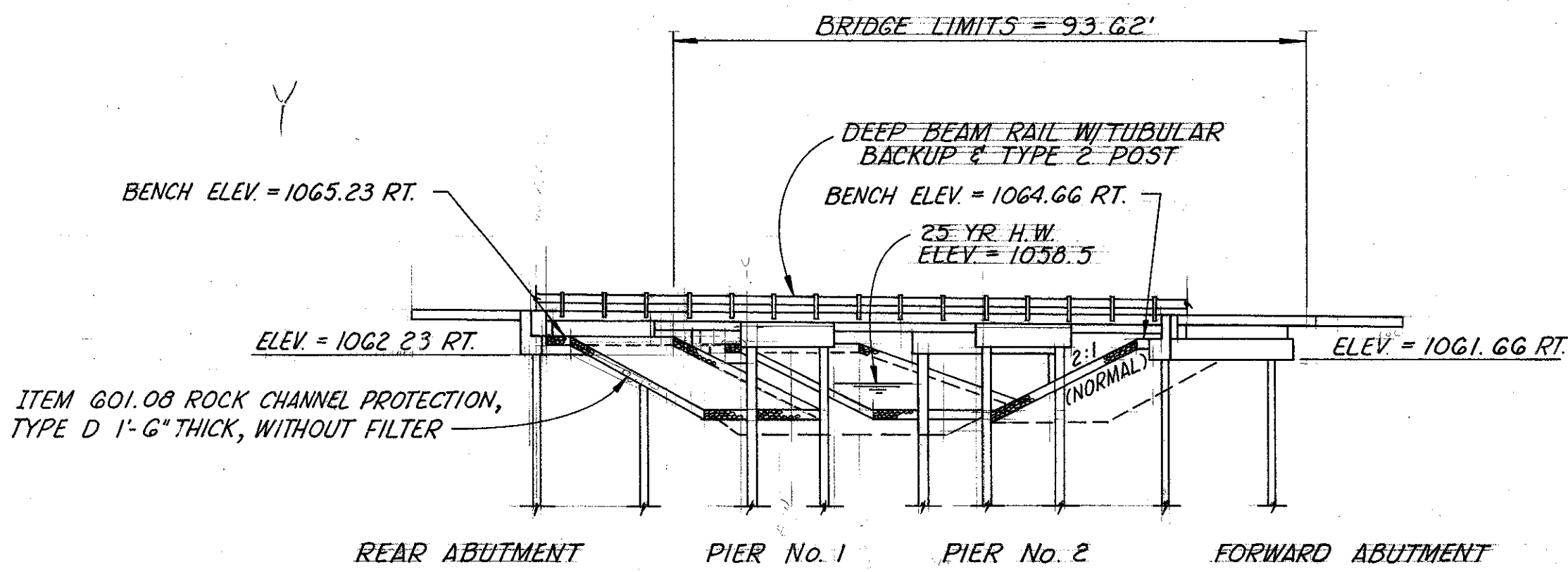
GENERAL PLAN

▲ REFERENCE CHORD IS A STRAIGHT LINE BETWEEN FACE OF ABUTMENTS, STA. 21+17.50 & STA. 22+08.50.

NOTE: SEE DIMENSION PLAN FOR DISTANCES TO EDGE OF DECK FROM REFERENCE LINE.



DIMENSION PLAN



GENERAL ELEVATION

NOTE: ALL PILES NOT SHOWN.

R. D. ZANDE & ASSOCIATES, LIMITED
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COLUMBUS, OHIO

GENERAL PLAN AND ELEVATION

BRIDGE NO. UNI-33-0041 L/R
U.S. 33 OVER FLAT BRANCH

STA. 21+16.19

STA. 22+09.81

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
J.W.E.	P.M.	P.M.	O.K.	G.J.T. 10-16-85	

UNI-33-0.28

[illegible]

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.

R. D. ZANDE & ASSOCIATES, LIMITED					3 / 8	
CONSULTING ENGINEERS COLUMBUS, OHIO						
EST. QUANTITIES & GENERAL NOTES						
BRIDGE NO. UNI-33-0041 L/R						
U.S. 33 OVER FLAT BRANCH						
STA 21+16.19						
STA 22+09.81						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DHK	VGO	VGO	JWE	GJT	10-16-85	



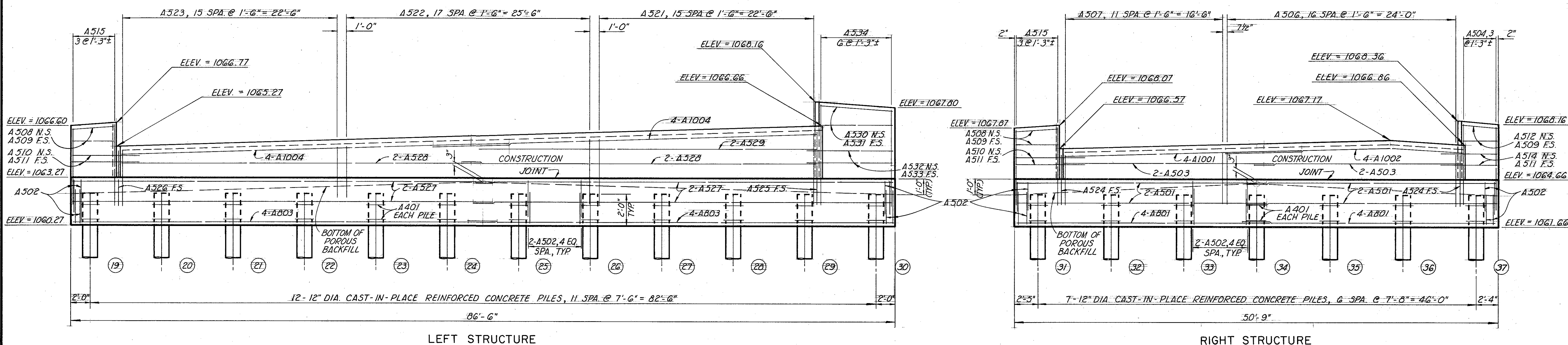
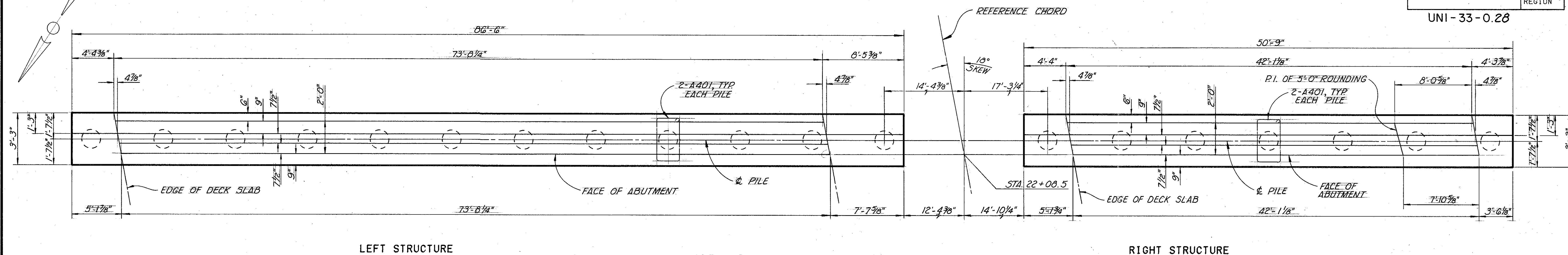
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVIS
CD	CD	P.M.	J.W.E.	G.J.T. 10-16-85	

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UNI-33-0.28

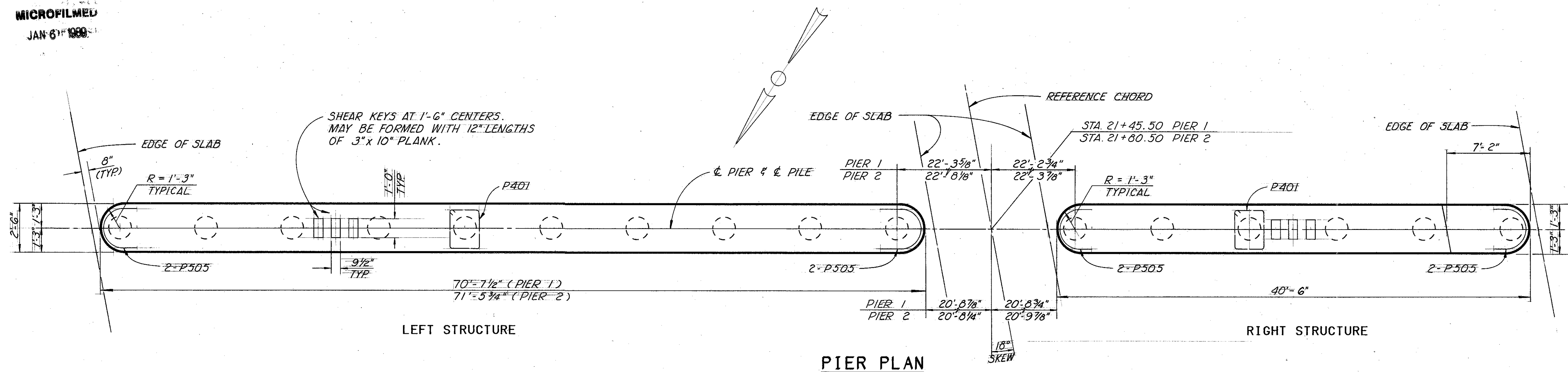


NOTE FOR ADDITIONAL DETAILS AND NOTES
SEE SHEET 4 OF 8.

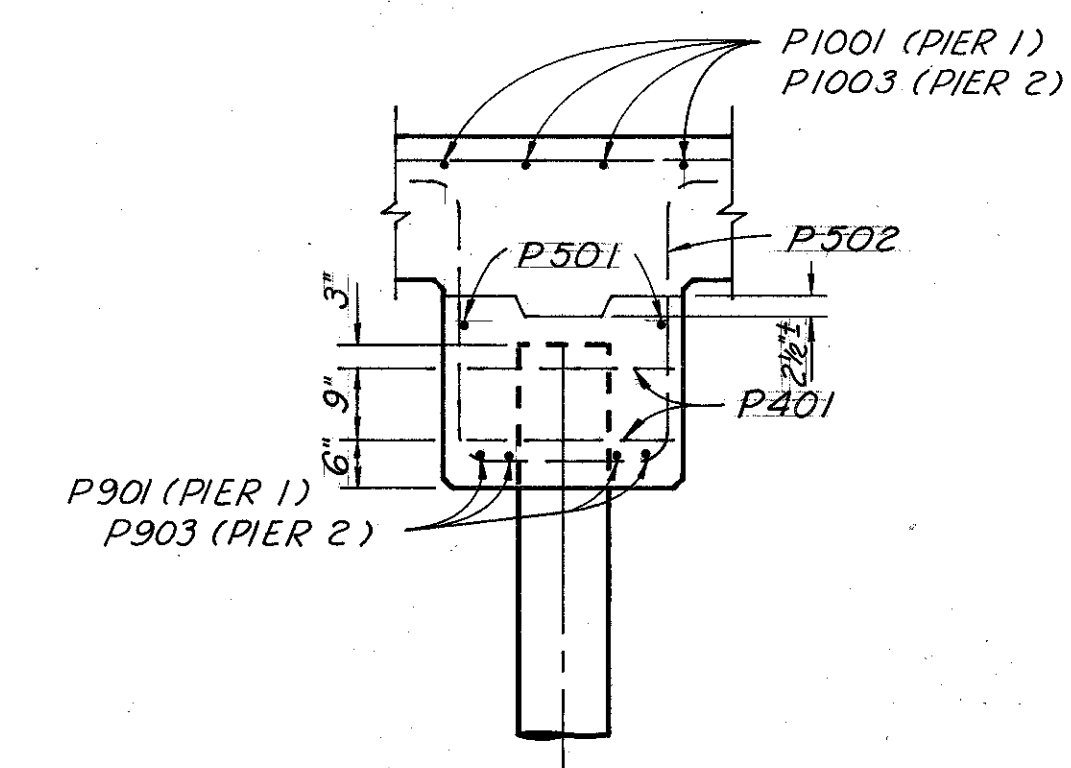
R. D. ZANDE & ASSOCIATES, LIMITED 5/8
CONSULTING ENGINEERS
COLUMBUS, OHIO

FORWARD ABUTMENT DETAILS
BRIDGE NO. UNI-33-0041 L/R
U.S. 33 OVER FLAT BRANCH
STA 21+16.19
22+09.81

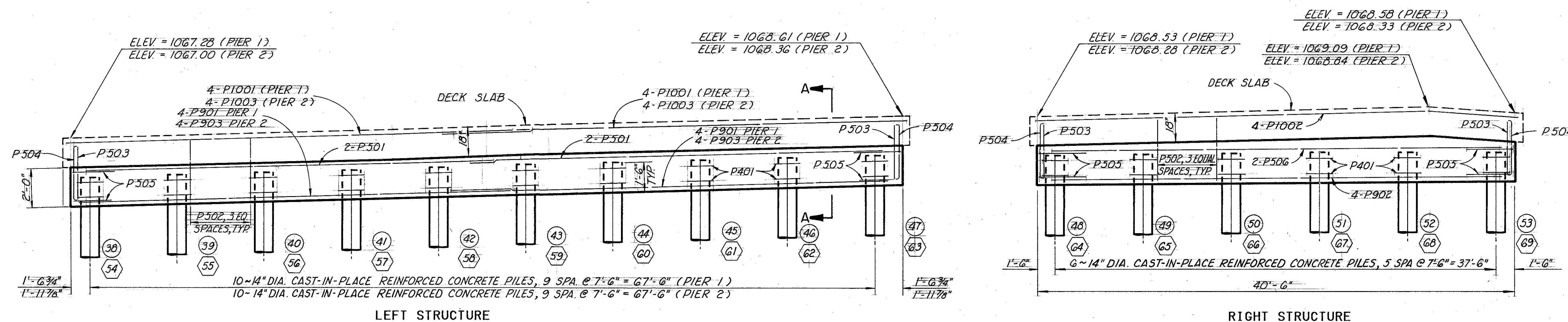
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.W.E.	J.W.E.	P.M.	O.K.	G.J.T.	10-16-85	



PIER PLAN



SECTION A-A



PIER ELEVATION

PILE NOTE: EXPOSED PILE CASINGS IN CAPPED PILE PIERS SHALL HAVE PILE ENCASEMENT SIMILAR TO THAT SHOWN ON STD. DRWG. CPP-2-73, REGARDLESS OF STREAM PH. THE ENCASEMENT SHALL CONSIST OF CLASS C CONCRETE PLACED WITHIN A SHELL OF EXTRA-STRENGTH VITRIFIED CLAY PIPE, GALVANIZED CORRUGATED STEEL PIPE, OR PLAIN OR CORRUGATED PLASTIC PIPE ALL HAVING A MINIMUM INSIDE DIAMETER OF 21" FOR 14" CAST-IN-PLACE CONCRETE PILES. ENCASEMENT SHALL EXTEND APPROXIMATELY 4' BELOW AND 4' ABOVE THE GROUND LINE.

AS AN ALTERNATE TO ENCASEMENT OF CAST-IN-PLACE CONCRETE PILES, AN EPOXY COATING MAY BE USED. THE COATING SHALL BE A MOISTURE INSENSITIVE 100% SOLIDS EPOXY RESIN WITH A SPECIAL BLEND OF FILLERS MADE EXPRESSLY FOR PILING AND PIER PROTECTION. IT SHALL BE APPLIED APPROXIMATELY 3/16" THICK TO SURFACES PREPARED ACCORDING TO THE EPOXY MANUFACTURER'S INSTRUCTIONS.

COST OF ENCASEMENT SHALL BE INCLUDED WITH THE PILES FOR PAYMENT.

NOTES

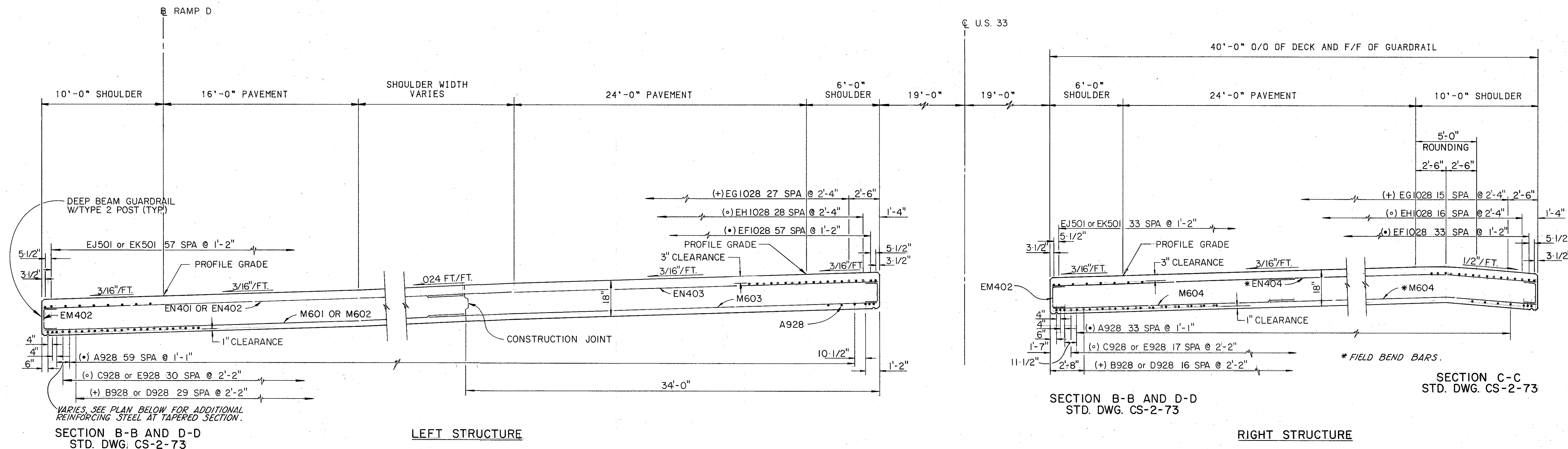
FOR PIER DETAILS NOT SHOWN, SEE STANDARD
DRAWING CPP-2-73.

REINFORCING STEEL LAP LENGTHS:
#5 BAR = 2'-0"
#9 BAR = 5'-5"
#10 BAR = 7'-8"

KEY

○ : INDICATES PIER No. 1 PILE NUMBER
◊ : INDICATES PIER No. 2 PILE NUMBER

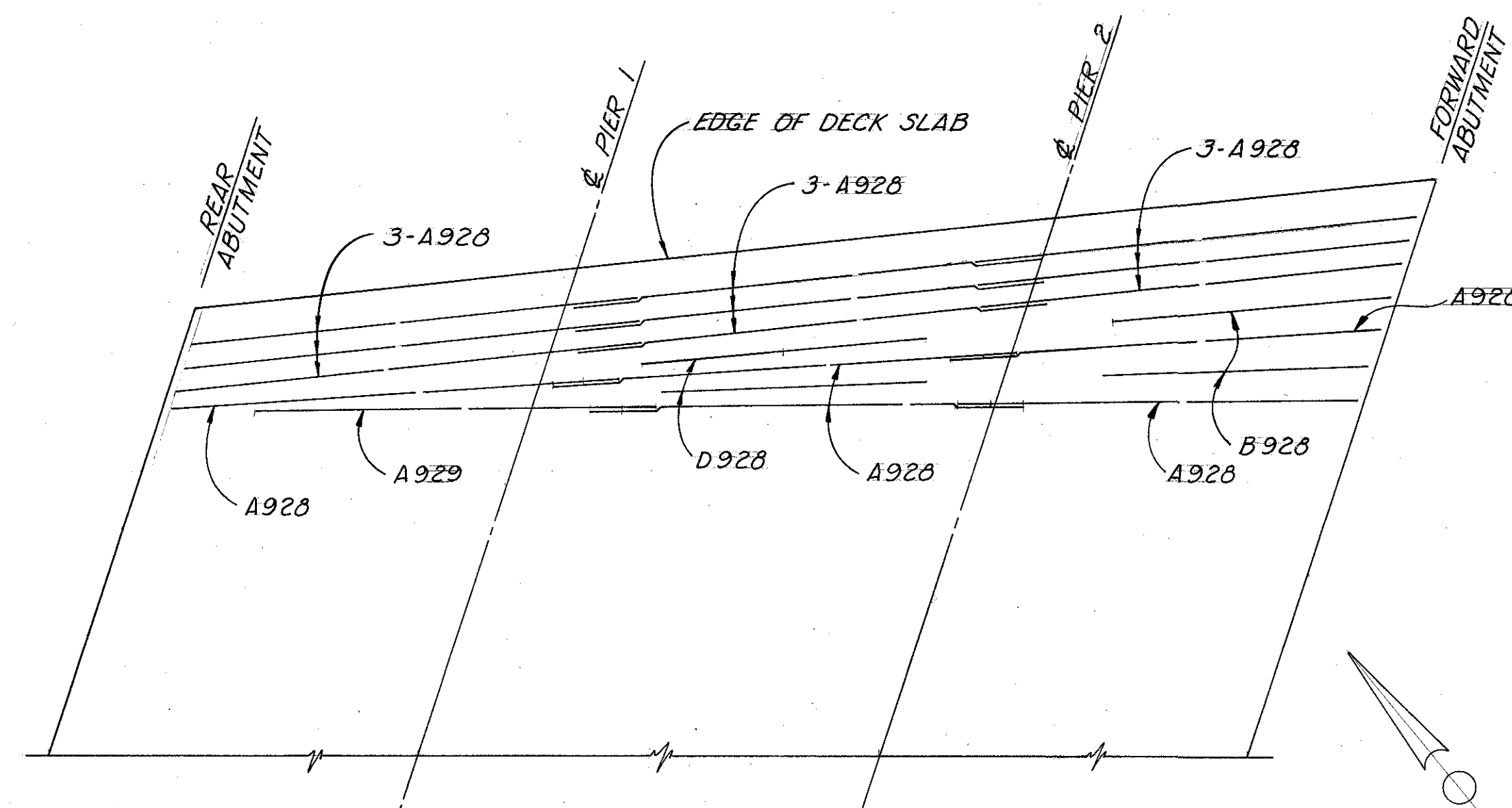
R. D. ZANDE & ASSOCIATES, LIMITED						6/8
CONSULTING ENGINEERS COLUMBUS, OHIO						
PIER PLAN BRIDGE NO. UNI-33-0041 L/R U.S. 33 OVER FLAT BRANCH STA 21+16.19 22+09.81						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.D.	C.D.	P.M.	J.W.E.	G.J.T.	10-16-85	



SUPERSTRUCTURE TRANSVERSE SECTIONS

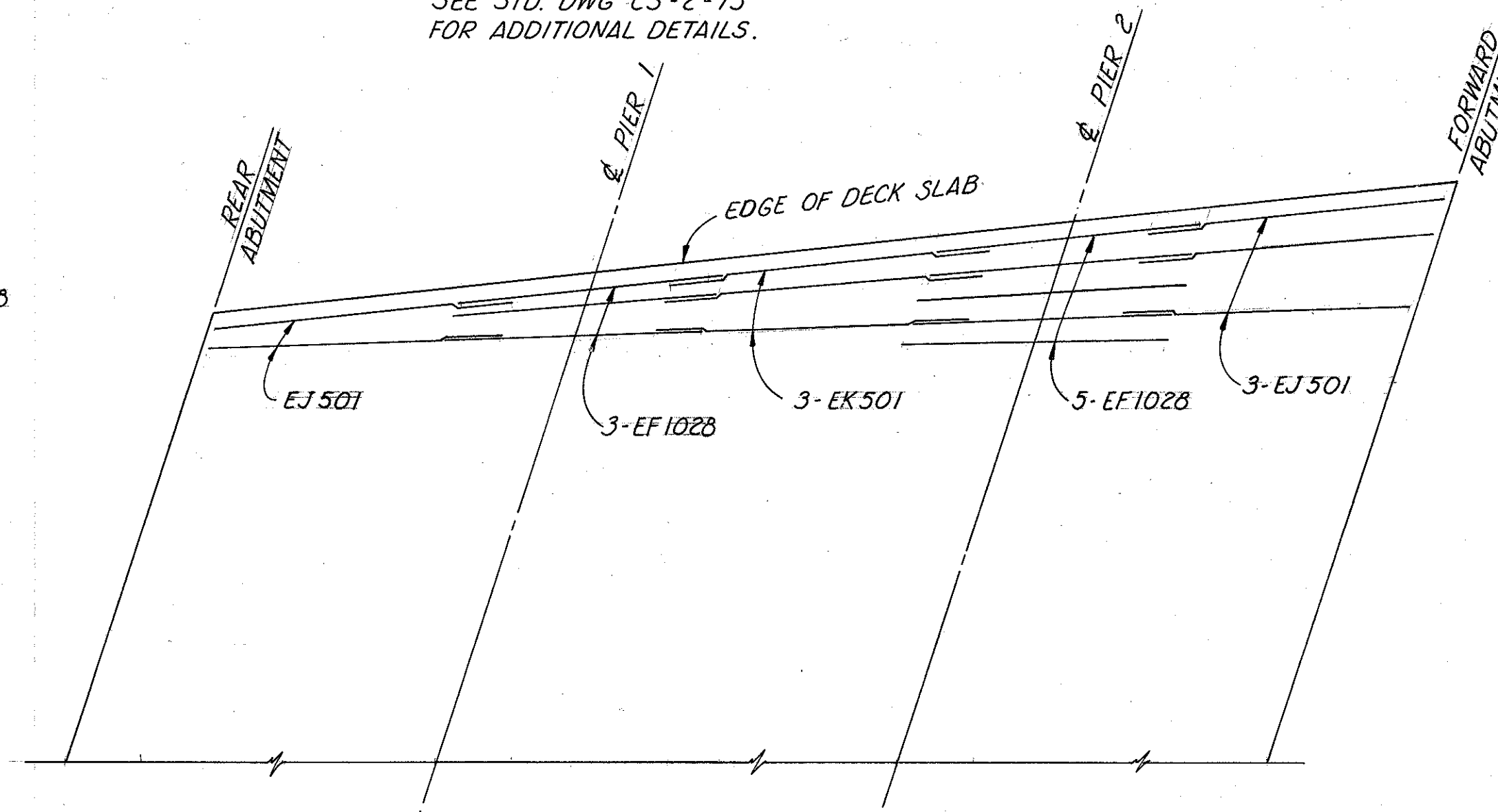
NOTE: DISTANCES ARE RADIAL.

SEE STD. DWG. CS-2-73
FOR ADDITIONAL DETAILS.

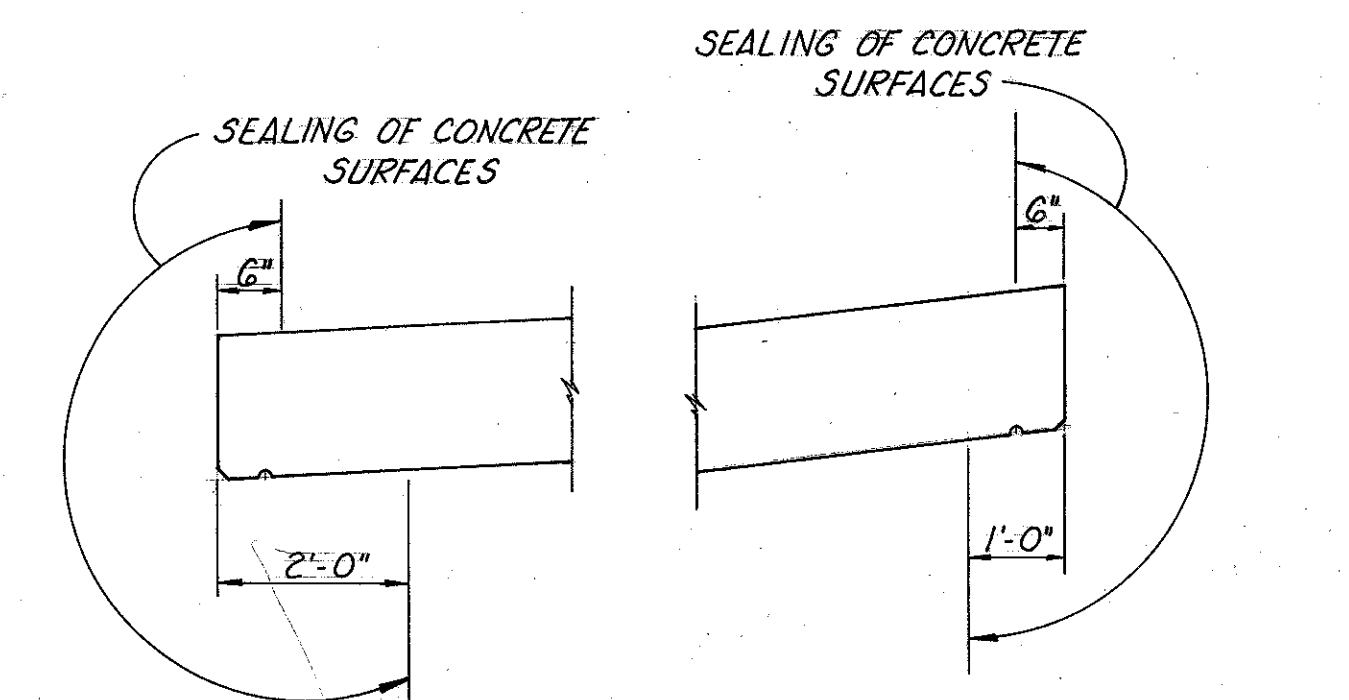


REINFORCING STEEL IN BOTTOM OF SLAB @ TAPER

NOTE: SEE DRAWING CS-2-73 FOR
ADDITIONAL REINFORCING STEEL.



REINFORCING STEEL IN TOP OF SLAB @ TAPER



R. D. ZANDE & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

SUPERSTRUCTURE DETAILS
BRIDGE NO. UNI-33-0041 L/R
U.S. 33 OVER FLAT BRANCH
STA 21+16.19
22+09.81

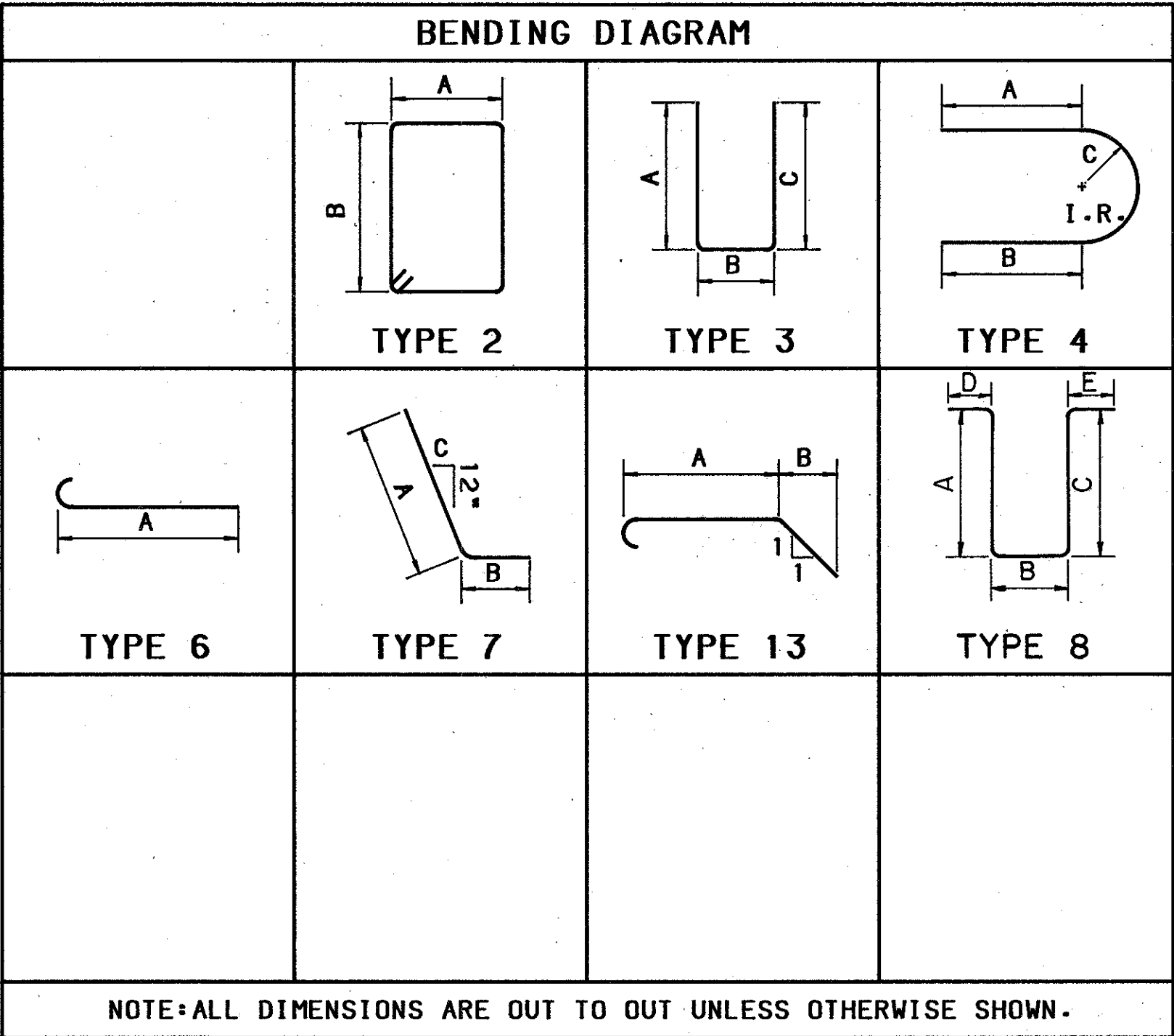
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.D.	C.D.	P.M.	O.K.	G.J.T.	10-18-85	

REINFORCING STEEL LIST

UNI-33-0.28

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	SHAPE	**
SUPERSTRUCTURE											
EN401	47	35-7	1117							STR.	
EN402	47	36-8	1152							STR.	
EN403	94	38-7	2423							STR.	
EN404	188	21-8	2721							STR.	
EM402	332	3-0	665	3	1-0	1-2	1-0			BENT	
EK501	98	15-0	1533							STR.	
EJ501	195	19-11	4051							STR.	
M601	41	35-7	2191							STR.	
M602	42	36-8	2313							STR.	
M603	83	38-7	4810							STR.	
M604	166	21-8	5403							STR.	
A928	320	33-0	35904							STR.	
B928	94	23-9	7591	6	22-6					BENT	
C928	96	22-1	7208	6	20-10					BENT	
D928	48	21-6	3509							STR.	
E928	48	18-3	2978							STR.	
A929	1	30-0	102							STR.	
EF1028	198	26-8	22723							STR.	
EG1028	88	16-7	6280							STR.	
EH1028	92	13-8	5412							STR.	
PIER											
P401	64	8-0	342	2	2-0 1/4	1-9				BENT	
P501	8	36-6	305							STR.	
P502	112	9-3	1081	8	2-11	2-2	2-11	0-10 1/2	0-10 1/2	BENT	
P503	8	9-1	76	8	2-11	2-0	2-11	0-10 1/2	0-10 1/2	BENT	
P504	8	4-5	37	3	0-10 1/2	2-11	0-10 1/2			BENT	
P505	16	6-4	106	4	1-7	1-7	0-11 1/2			BENT	
P506	4	40-2	168							STR.	
P901	8	37-1	1009							STR.	
P902	8	40-2	1093							STR.	
P903	8	37-7	1022							STR.	
P1001	8	39-8	1365							STR.	
P1002	8	41-7	1431	7	33-10	7-9	12-0			BENT	
P1003	8	40-2	1383							STR.	

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	SHAPE	**
ABUTMENT											
A401	74	9-2	453	2	1-9	2-7 3/4				BENT	
A501	16	26-2	437							STR.	
A502	362	6-10	2580	3	2-1	2-11	2-1			BENT	
A503	8	22-0	184							STR.	
A504	12	10-8	134	3	5-0	0-11	5-0			BENT	
A505	6	13-0	81	3	5-8	0-11	5-8			BENT	
A506	35	8-1	296	3	3-4	1-8	3-4			BENT	
A507	23	7-5	178	3	3-0	1-8	3-0			BENT	
A508	6	4-4	27							STR.	
A509	12	3-11	49							STR.	
A510	6	6-0	38							STR.	
A511	12	5-4	67							STR.	
A512	6	3-6	22							STR.	
A513	8	42-4	353							STR.	
A514	6	5-2	32							STR.	
A515	12	9-4	117	3	4-4	0-11	4-4			BENT	
A516	4	36-6	152							STR.	
A517	2	7-4	15							STR.	
A518	2	7-0	15							STR.	
A519	2	8-9	18							STR.	
A520	2	8-5	18							STR.	
A521	32	9-7	320	3	4-1	1-8	4-1			BENT	
A522	34	8-9	310	3	3-8	1-8	3-8			BENT	
A523	32	7-11	264	3	3-3	1-8	3-3			BENT	
A524	4	3-4	14							STR.	
A525	2	4-1	9							STR.	
A526	2	3-3	7							STR.	
A527	8	44-0	367							STR.	
A528	4	37-7	157							STR.	
A529	2	36-0	75							STR.	
A530	2	7-0	15							STR.	
A531	2	8-0	17							STR.	
A532	2	8-8	18							STR.	
A533	2	9-1	19							STR.	
A534	7	12-2	89	3	5-9	0-11	5-9			BENT	
A801	16	26-9	1143							STR.	
A802	8	43-0	918							STR.	
A803	8	44-9	956							STR.	
D801	150	5-3	2103	13	2-11	1-0				BENT	
A1001	8	30-0	1033							STR.	
A1002	8	19-4	665	7	11-9	7-7	17-6			BENT	
A1003	8	39-5	1357							STR.	
A1004	8	40-6	1394							STR.	



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.

NOTE

THE LETTER "E" BEFORE A BAR MARK DENOTES AN EPOXY COATED REINFORCING BAR. PAYMENT FOR THESE BARS SHALL BE UNDER ITEM 824 "EPOXY COATED REINFORCING STEEL, GRADE 60".

** INCREMENT

R. D. ZANDE & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

8 / 8

REINFORCING STEEL LIST
BRIDGE NO. UNI-33-0041 L/R
U.S. 33 OVER FLAT BRANCH
STA 21+16.19
22+09.81

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
JWE	VGO	VGO	DAK	GJT 10/16/85	

MICROFILMED
JAN 6 1988

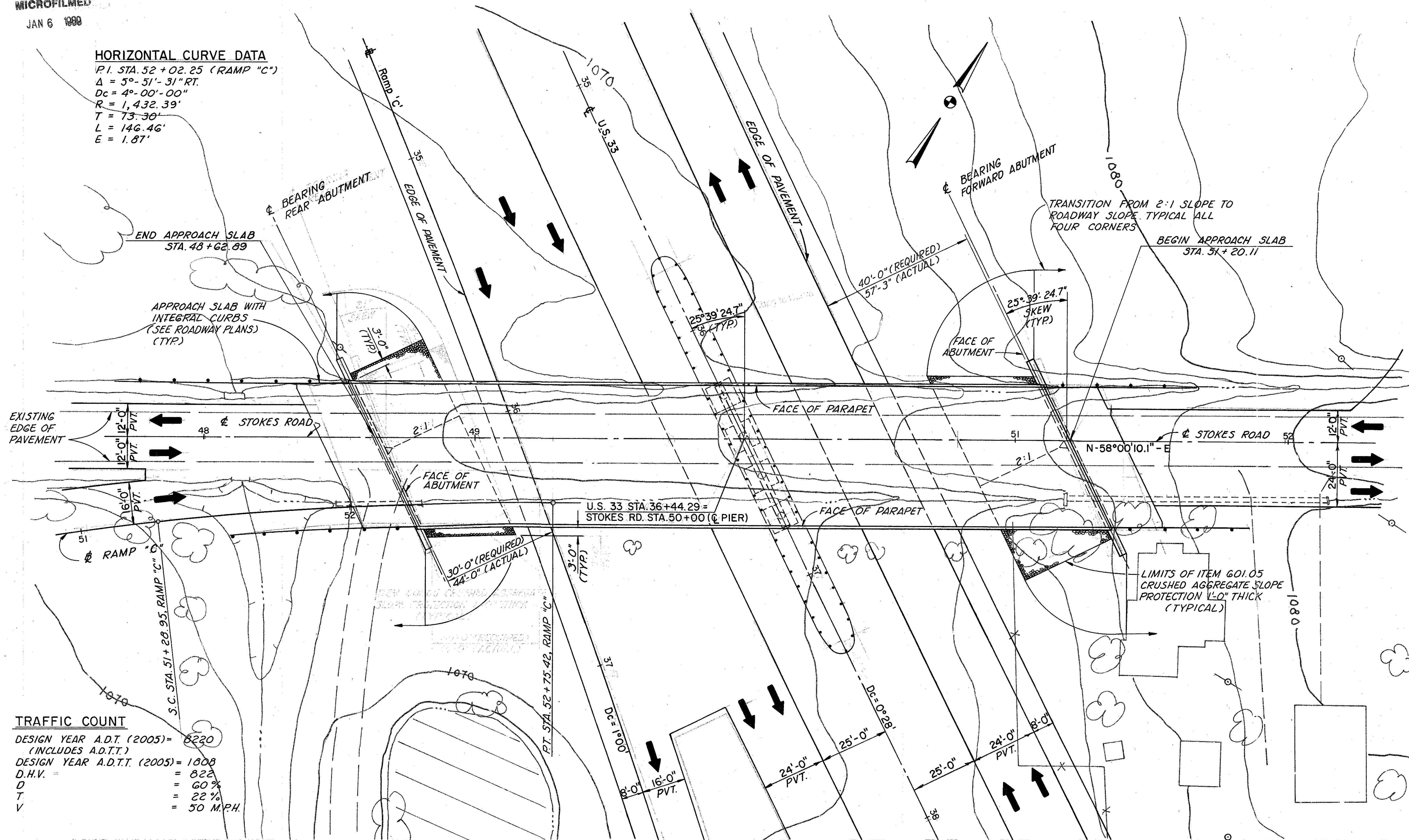
FHWA REGION	STATE	PROJECT	
5	OHIO		

200
224

UNI-33-0.28

HORIZONTAL CURVE DATA

P.I. STA. 52+02.25 (RAMP "C")
 $\Delta = 5^\circ-51'-31''$ RT.
 $D_c = 4^\circ-00'-00''$
 $R = 1,432.39'$
 $T = 73.30'$
 $L = 146.46'$
 $E = 1.87'$



TRAFFIC COUNT

DESIGN YEAR A.D.T. (2005) = 8220
(INCLUDES A.D.T.T.)
DESIGN YEAR A.D.T.T. (2005) = 1808
D.H.V. = 822
D = 60%
T = 22%
V = 50 M.P.H.

NOTES

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS-SECTIONS.

*ELEVATIONS MARKED WITH AN ASTERISK ARE AT TOP OF THE SPILL THRU SLOPE AT THE FACE OF ABUTMENT.

**AN 18" THICK GRANULAR BLANKET SHALL BE PLACED AT THE BASE OF THE EMBANKMENTS. THE GRANULAR BLANKET SHALL DAYLIGHT TO BOTH THE FRONT AND SIDE SLOPES AND EXTEND 200 FEET PAST THE ABUTMENT. MATERIAL SHALL BE ITEM 203 GRANULAR EMBANKMENT WITH NOT MORE THAN 15% BY WEIGHT PASSING THE No. 200 SIEVE. SEE ROADWAY PLANS FOR PAYMENT, QUANTITIES AND DETAILS.
14" DIAMETER CAST-IN-PLACE REINFORCED CONCRETE PILES HAVE AN ESTIMATED AVERAGE PAY LENGTH OF 60 FEET AT THE REAR AND FORWARD ABUTMENTS AND 45 FEET AT THE PIER.

EXISTING STRUCTURE
NONE

PROPOSED STRUCTURE

TYPE: TWO SPAN CONTINUOUS A588 STEEL GIRDER,
COMPOSITE DESIGN, WITH REINFORCED
CONCRETE SUBSTRUCTURE
SPANS: 136'-0", 119'-0" C/C BEARINGS ALONG
STOKES ROAD
ROADWAY: VARIES
LOADING: HS-20-44 (CASE II) & ALTERNATE MILITARY
LOADING
SKEW: 25°-39'-24.7" R.F.
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLAB: AS-1-B1 (20 FT. LONG)
ALIGNMENT: TANGENT

R. D. ZANDE & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

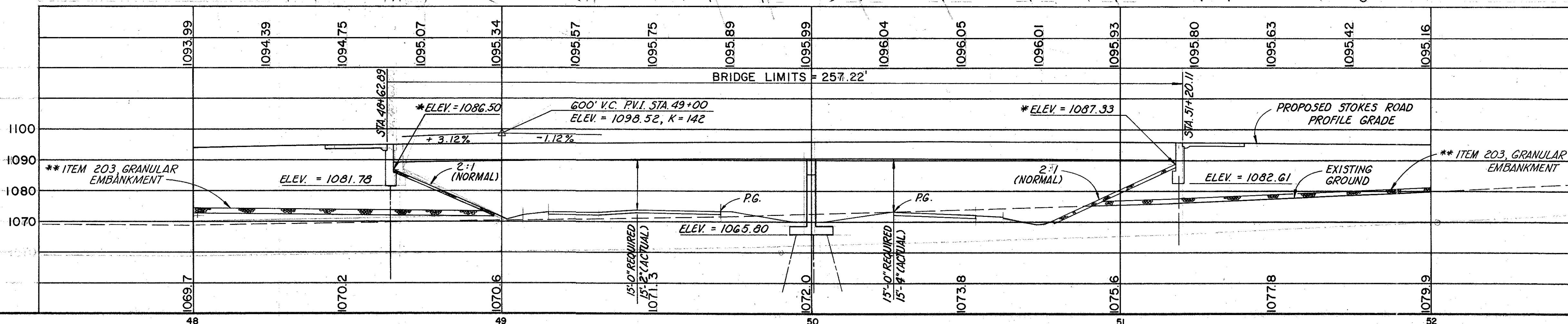
SITE PLAN

BRIDGE NO. UNI-33-0092
STOKES ROAD OVER U.S. 33

UNION COUNTY STA. 48+62.89
STA. 51+20.11

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
		J. W. E.	P. M.	G. J. T.	6-14-85

PROFILE ALONG C STOKES ROAD (OVER U.S. 33)



* FOR ADDITIONAL INFORMATION SEE LIGHTING PLAN
ON SHEET 179 AND STD. DWG. HL-4.

HOLES FOR SPLICE BOLTS ATTACHING GUARDRAIL TO THE
TERMINAL CONNECTOR AT ENDS OF PARAPETS SHALL BE
SLOTTED 29/32" x 3" AND ALL BOLTS SHALL BE TIGHTENED
AS SPECIFIED FOR EXPANSION JOINTS AS PER CMS 606.05
TO ALLOW FOR BRIDGE MOVEMENT.



(PILES NOT SHOWN)

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
O.H.K.	O.H.K.	P.M.	B.R.A.	G.J.T.-11/6/85	

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	ABUT	PIER	SUPER	GEN.		
503	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING				LUMP		
503	337	C.Y.	UNCLASSIFIED EXCAVATION	183	154				
505	LUMP	SUM	PILE DRIVING EQUIPMENT MOBILIZATION				LUMP		
506	LUMP	SUM	STATIC LOAD TEST				LUMP		
507	3360	L.F.	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, AS PER PLAN	1740	1620				
509	82457	LB.	REINFORCING STEEL, GRADE 60	11599	16195	54663			
511	72	C.Y.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS	72					
511	43	C.Y.	CLASS C CONCRETE, PIERS ABOVE FOOTINGS		43				
511	114	C.Y.	CLASS C CONCRETE, FOOTINGS	61	53				
511	585	C.Y.	CLASS S CONCRETE, SUPERSTRUCTURE (SEE PROPOSAL NOTE)			585			
512	16	S.Y.	TYPE A WATERPROOFING	16					
513	373900	LB.	STRUCTURAL STEEL (AISC CATAGORY III), (SEE PROPOSAL NOTE)			373900			
513	3114	EACH	WELDED STUD SHEAR CONNECTORS			3114			
516	127	S.F.	1/2" PREFORMED EXPANSION JOINT FILLER	127					
516	167	S.F.	1" PREFORMED EXPANSION JOINT FILLER	167					
516	158	L.F.	PVC WATERSTOP, AS PER PLAN	158					
518	104	C.Y.	POROUS BACKFILL	104					
518	185	L.F.	6" PERFORATED, HELICAL CORRUGATED STEEL PIPE 707.01	185					
518	96	L.F.	6" NON-PERFORATED HELICAL CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01	96					
523	3	HOUR	DYNAMIC LOAD TESTS				3		
601	580	S.Y.	CRUSHED AGGREGATE SLOPE PROTECTION				580		
625			SEE SHEET 173 FOR LIGHTING SUMMARY						
824	71527	LB.	EPOXY COATED REINFORCING STEEL, GRADE 60			71527			
SPECIAL	668	S.Y.	SEALING OF CONCRETE SURFACES, EPOXY (SEE PROPOSAL NOTE)		144	524			

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:
DRAWING NO. SHEET DATE

AS-1-81	1,2&3	11-27-81
BR-1	1	05-29-79
FB-1-82	1	05-10-82
ICD-1-82	1,2&5	08-01-84

AND TO SUPPLEMENTAL SPECIFICATIONS
NUMBER DATE TITLE

824	10-08-82	EPOXY COATED REINFORCING STEEL
836	11-12-85	CONCRETE CURING & PROTECTIVE MEMBRANE

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1983, INCLUDING THE 1984 INTERIM SPECIFICATIONS, AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA

DESIGN LOADING - HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING.
CONCRETE CLASS S - COMPRESSIVE STRENGTH = 4500 P.S.I.

CONCRETE CLASS C - COMPRESSIVE STRENGTH = 4000 P.S.I.

REINFORCING STEEL- ASTM A615, A616 OR A617 - GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.

SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615.

STRUCTURAL STEEL - ASTM A588 - YIELD STRENGTH 50,000 P.S.I.

DECK PROTECTION METHOD: EPOXY COATED REINFORCING STEEL AND 3 INCH CONCRETE COVER, TOP MAT ONLY.

MONOLITHIC WEARING SURFACE THICKNESS IS ASSUMED, FOR DESIGN PURPOSE, TO BE ONE INCH.

PILE DRIVING CONSTRAINTS: PRIOR TO DRIVING PILES AT THE ABUTMENTS, THE SPILL-THRU SLOPE EMBANKMENT SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 200 FEET BACK OF BOTH ABUTMENTS. AFTER THE EMBANKMENT HAS BEEN COMPLETED WITHIN THE ABOVE REQUIRED LIMITS, A 30 DAY WAITING PERIOD IS REQUIRED PRIOR TO EXCAVATING AND DRIVING PILES AT THE ABUTMENTS. THE DIRECTOR MAY SHORTEN THE WAITING PERIOD IF THE CONTRACTOR'S FIELD MEASUREMENTS SHOW THAT 90 PERCENT CONSOLIDATION HAS BEEN ATTAINED.

ITEM 506 STATIC LOAD TEST: THE CONTRACTOR SHALL CONDUCT A STATIC LOAD TEST ON A PILE LOCATED IN OR NEAR THE PIER FOOTING. THE DESIGN LOAD FOR THIS TEST SHALL BE 58 TONS.

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 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 68 TONS PER PILE AND THE DESIGN LOAD FOR THE PIER PILES IS 58 TONS PER PILE.

ABUTMENT PILING: ABUTMENT PILING BENDING STRESS MAY APPROACH, REACH OR EXCEED YIELD STRESS.

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 16,500 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.

UTILITY LINES: ALL EXPENSE INVOLVED IN RELOCATING 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.

ITEM SPECIAL. SEALING OF CONCRETE SURFACES: AN EPOXY CONCRETE SEALER SHALL BE APPLIED TO THE CONCRETE SURFACES SHOWN ON SHEET 6 & 9 OF 11. SEE THE PROPOSAL FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIALS REQUIREMENTS, AND APPLICATION PROCEDURES.

R. D. ZANDE & ASSOCIATES, LIMITED					3/11
CONSULTING ENGINEERS COLUMBUS, OHIO					
EST. QUANTITIES & GENERAL NOTES BRIDGE NO. UNI-33-0092 STOKES ROAD OVER U.S.33					
UNION COUNTY STA. 48+62.89 STA. 51+20.11					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
O.H.K.	V.G.O.	V.G.O.	B.R.A.	G.J.T.- 11/21/85	

NOTES

SEE STANDARD DRAWING ICD-1-82 SHEETS 1,2 & 5 FOR ADDITIONAL ABUTMENT DETAILS.

ANIMAL GUARD SHALL BE INCLUDED WITH ITEM 518-6" HELICAL NON-PERFORATED CSP FOR PAYMENT.

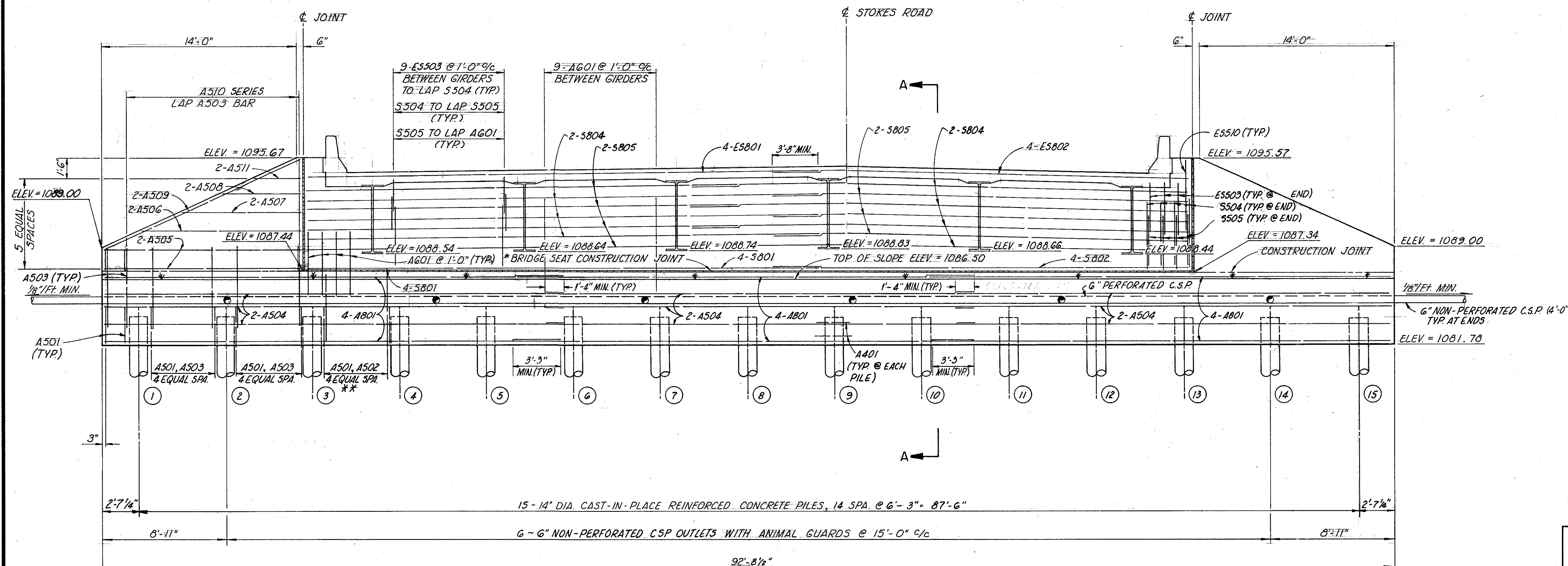
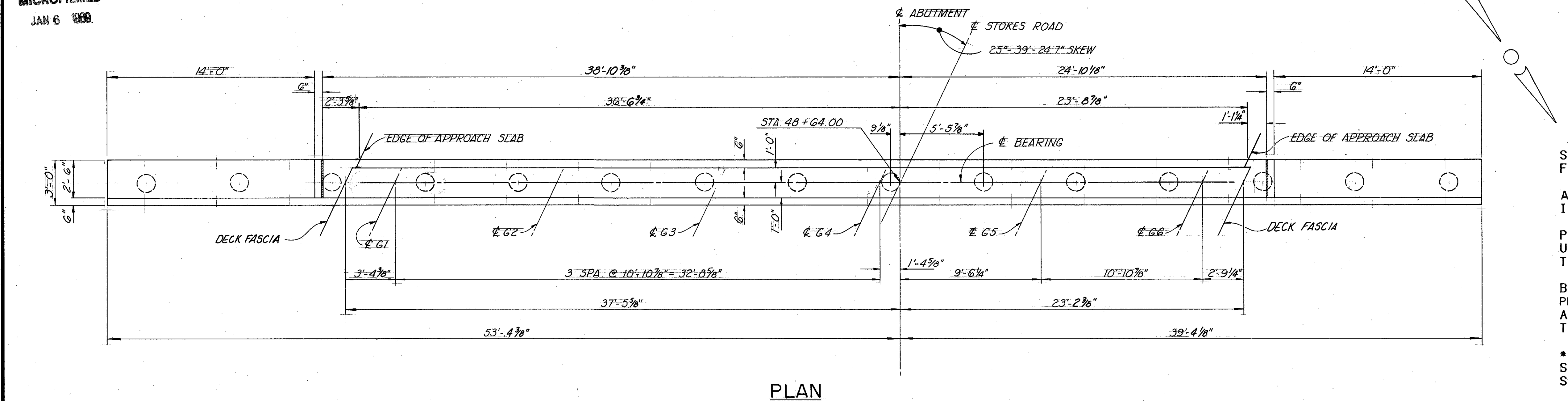
POROUS BACKFILL, 1.5 FT. THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE AND Laterally TO THE ENDS OF THE WINGWALLS.

BRIDGE SEAT REINFORCING: REINFORCING STEEL PROTRUDING FROM THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE GIRDER SUPPORTING BOLTS.

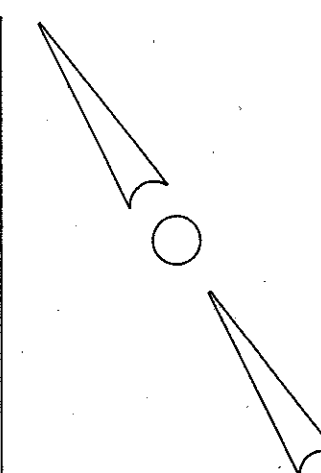
* CONCRETE AND REINFORCING STEEL ABOVE THE BRIDGE SEAT CONSTRUCTION JOINT INCLUDED WITH SUPER-STRUCTURE CONCRETE & REINFORCING STEEL.

SEE STANDARD DRAWING MC-4 FOR DETAILS OF ANIMAL GUARD.

**TYPICAL REINFORCEMENT BELOW BRIDGE SEAT CONSTRUCTION JOINT.



204
224



BRIDGE LIMIT

CONCRETE DECK SLAB

CUT 10-2" Ø HOLES IN GIRDER WEB

SLOPE PROTECTION

ANIMAL GUARD

6" HELICAL NON-PERFORATED CSP

SEE DETAIL B ON STANDARD DRAWING No. A5-I-81, SHEET 2 OF 3.

TYPE A WATERPROOFING APPROACH SLAB

ESB02 OR ESB03

ES503

S504

A601

S505

A601

A504

A502

A501

A601

8 1/4" BEARING STIFFENERS (ONE ON EACH SIDE)

2-1/4" DIA. BOLTS (6"-7 UNC) W/2 NUTS & 2-3"x3"x1/4" WASHERS PER BOLT

1/2" PREFORMED EXPANSION JOINT FILLER

6" PVC WATERSTOP

Ø 6" HELICAL PERFORATED CSP

ELEV = 1089.82

1/8" FT MIN.

6" NON-PERFORATED

* CONCRETE AND REINFORCING STEEL ABOVE THE BRIDGE SEAT
CONSTRUCTION JOINT INCLUDED WITH SUPER-STRUCTURE CONCRETE
AND REINFORCING STEEL FOR PAYMENT.



FOR REINFORCING STEEL DETAILS THAT ARE NOT SHOWN SEE SHEET 4/11.

FOR ABUTMENT DETAIL NOTES SEE SHEET 4/11.

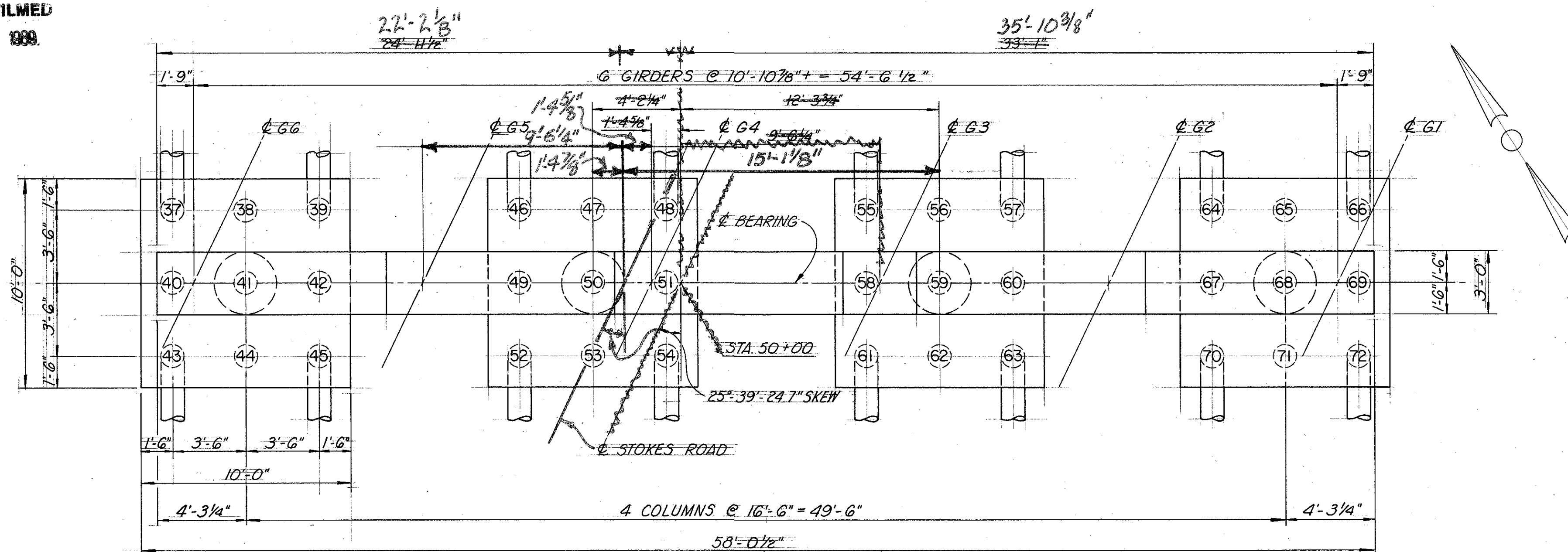
R. D. ZANDE & ASSOCIATES, LIMITED CONSULTING ENGINEERS COLUMBUS, OHIO					5 1
FORWARD ABUTMENT DETAILS BRIDGE NO. UNI-33-0092 STOKES ROAD OVER U.S.33 UNION COUNTY STA. 48+62.89 STA. 51+20.11					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISION
<i>O.H.K.</i>	<i>O.H.K.</i>	<i>P.M.</i>	<i>B.R.A.</i>	<i>G.J.T. - 11/6/85</i>	

NOTES

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.

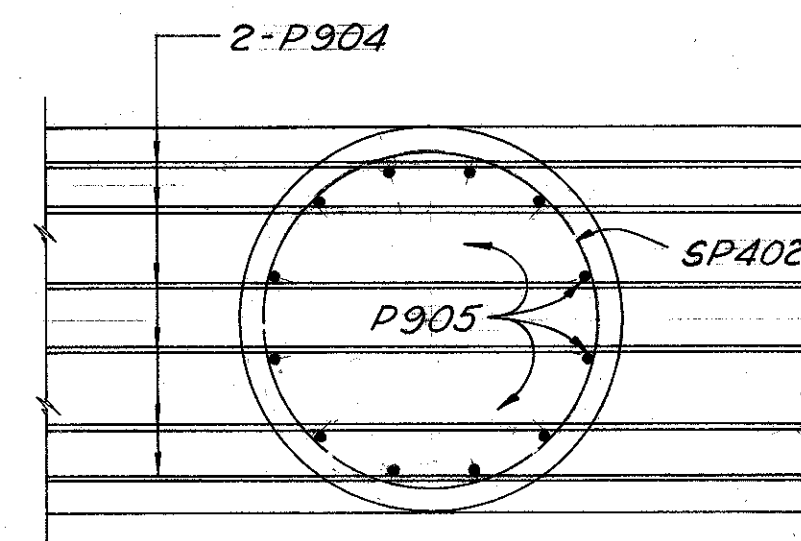
BEARING ANCHORS: AT THE OPTION OF THE CONTRACTOR, BEARING ANCHORS (OR FORMED HOLES), LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST IN PLACE.

SEE STANDARD DRAWING FB-1-B2 FOR BEARING ANCHOR ROD DETAIL.

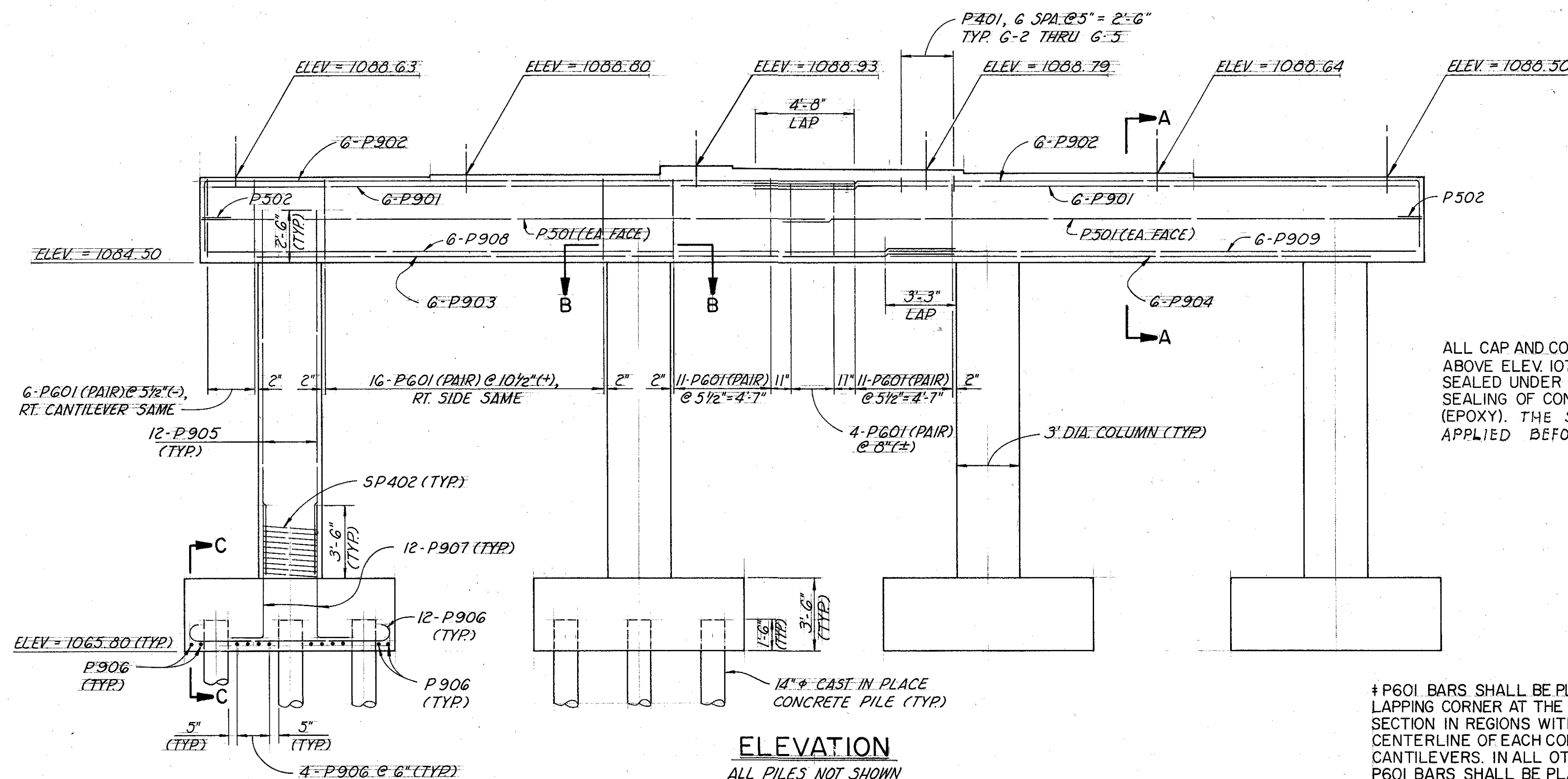
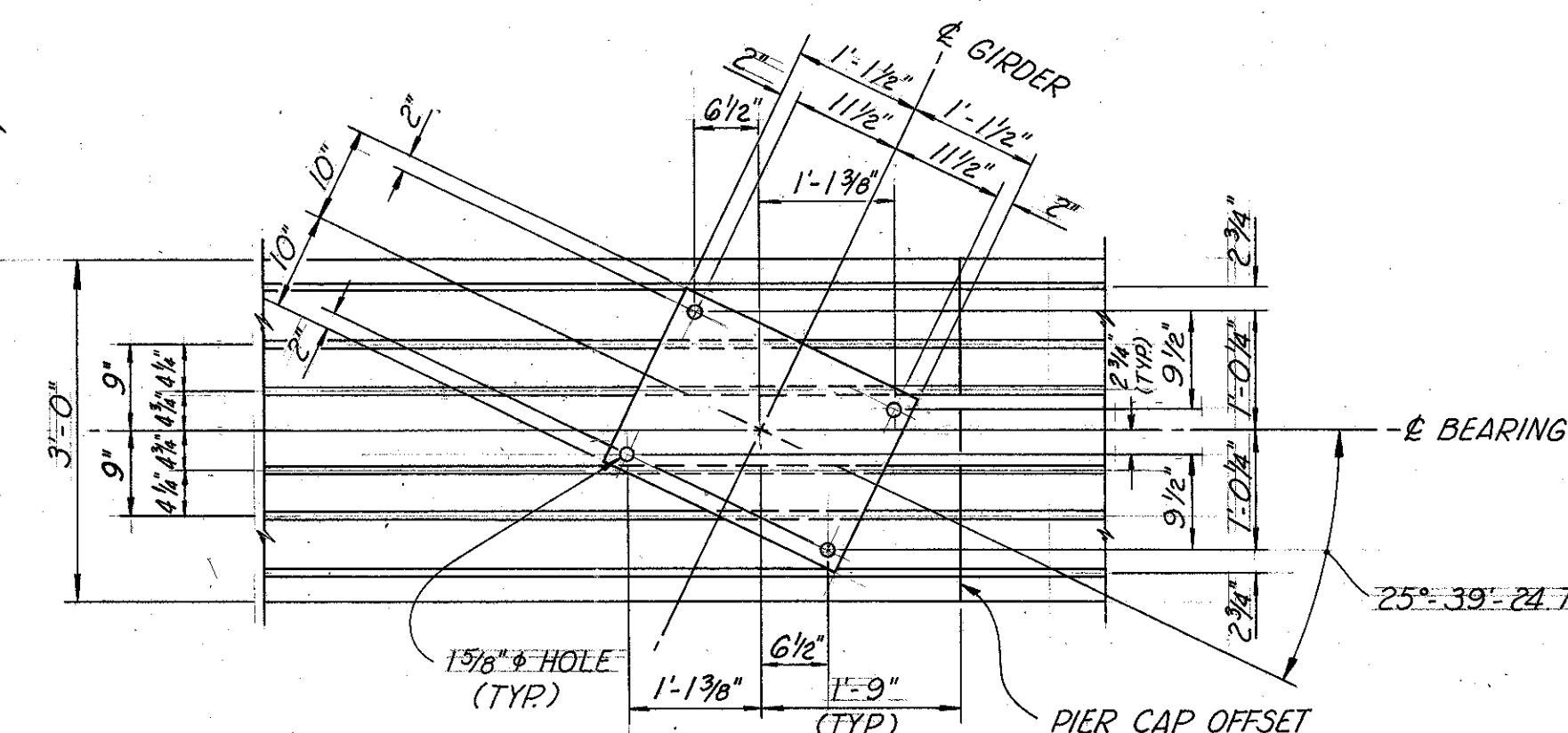


PLAN

- INDICATES VERTICAL PILE
- INDICATES PILE BATTERED 4:1



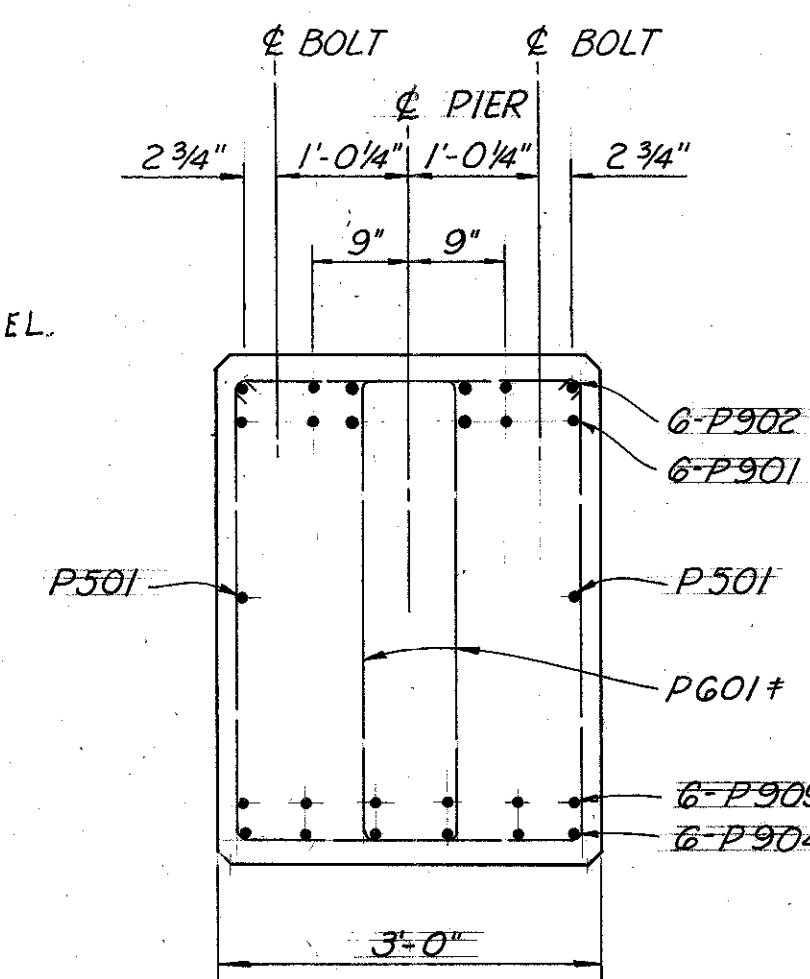
SECTION B-B



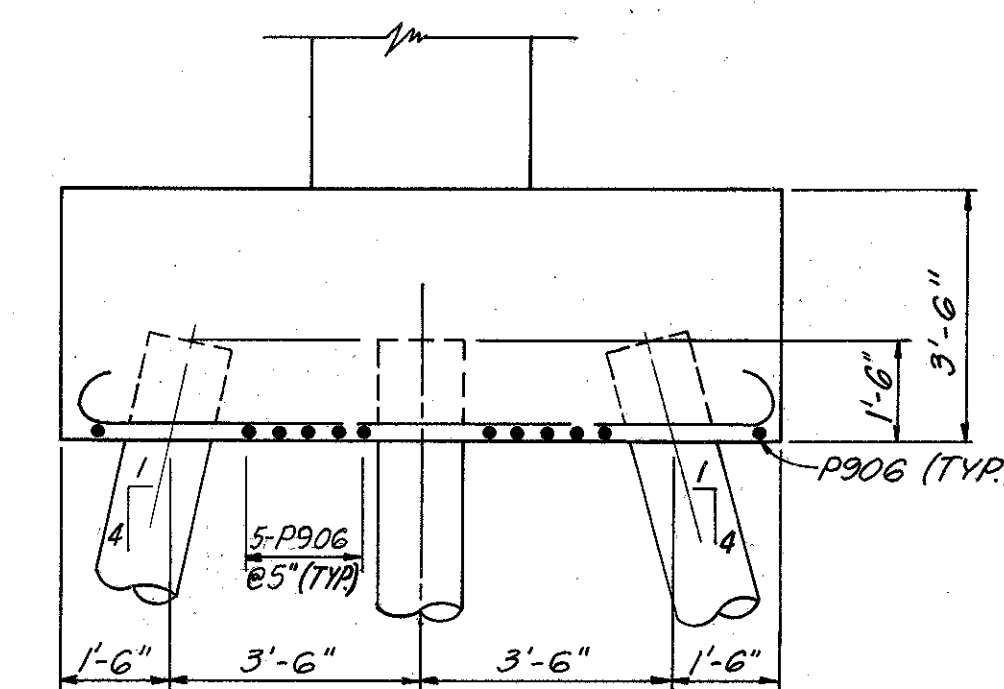
ELEVATION ALL PILES NOT SHOWN

ALL CAP AND COLUMN SURFACES ABOVE ELEV. 1070.00 SHALL BE SEALED UNDER ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY). THE SEALER SHALL BE APPLIED BEFORE ERECTING STEEL.

† P601 BARS SHALL BE PLACED WITH THE LAPPING CORNER AT THE BOTTOM OF THE SECTION IN REGIONS WITHIN 4'-0\"/>



SECTION A-A



SECTION C-C

COLUMN STEEL NOT SHOWN

R. D. ZANDE & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

PIER DETAILS
BRIDGE NO. UNI-33-0092
STOKES ROAD OVER U.S. 33

UNION COUNTY STA. 48+62.89
STA. 51+20.11

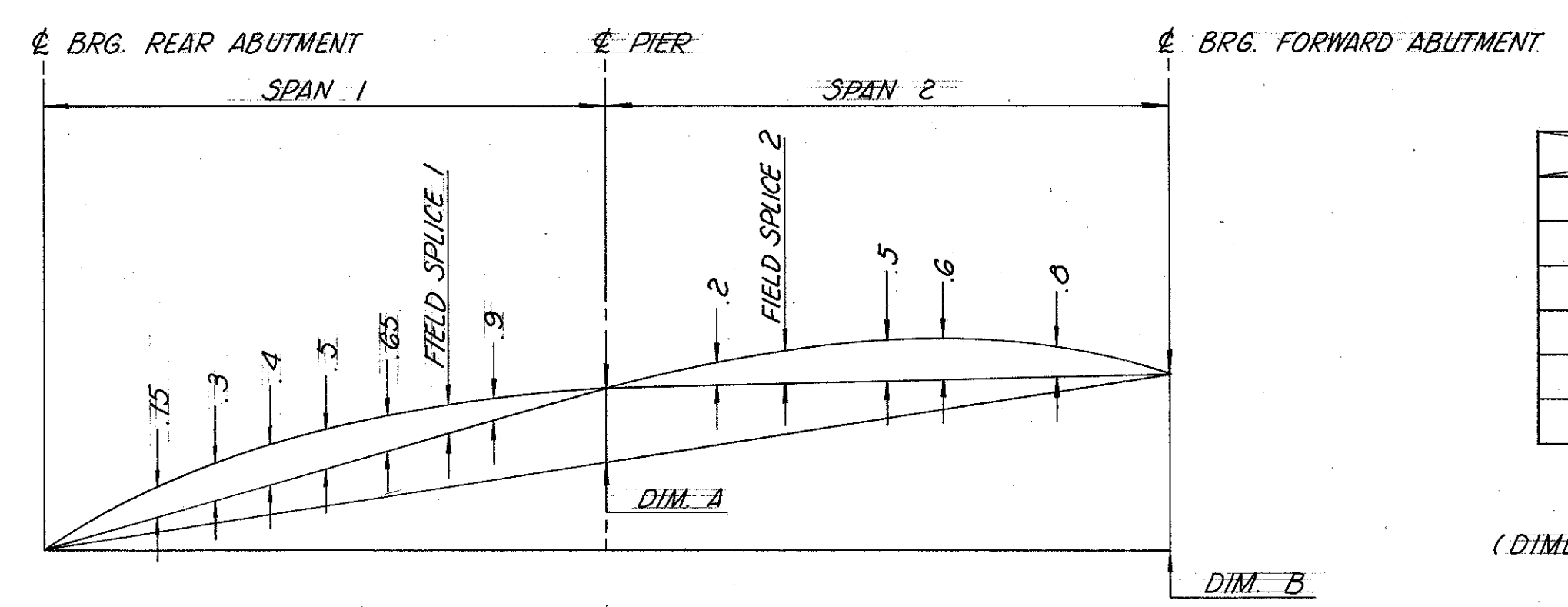
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.W.E.	J.W.E.	P.M.	O.H.K.	G.J.T.	11/6/85	

REVISED 10/2/86

UNI-33-0.28

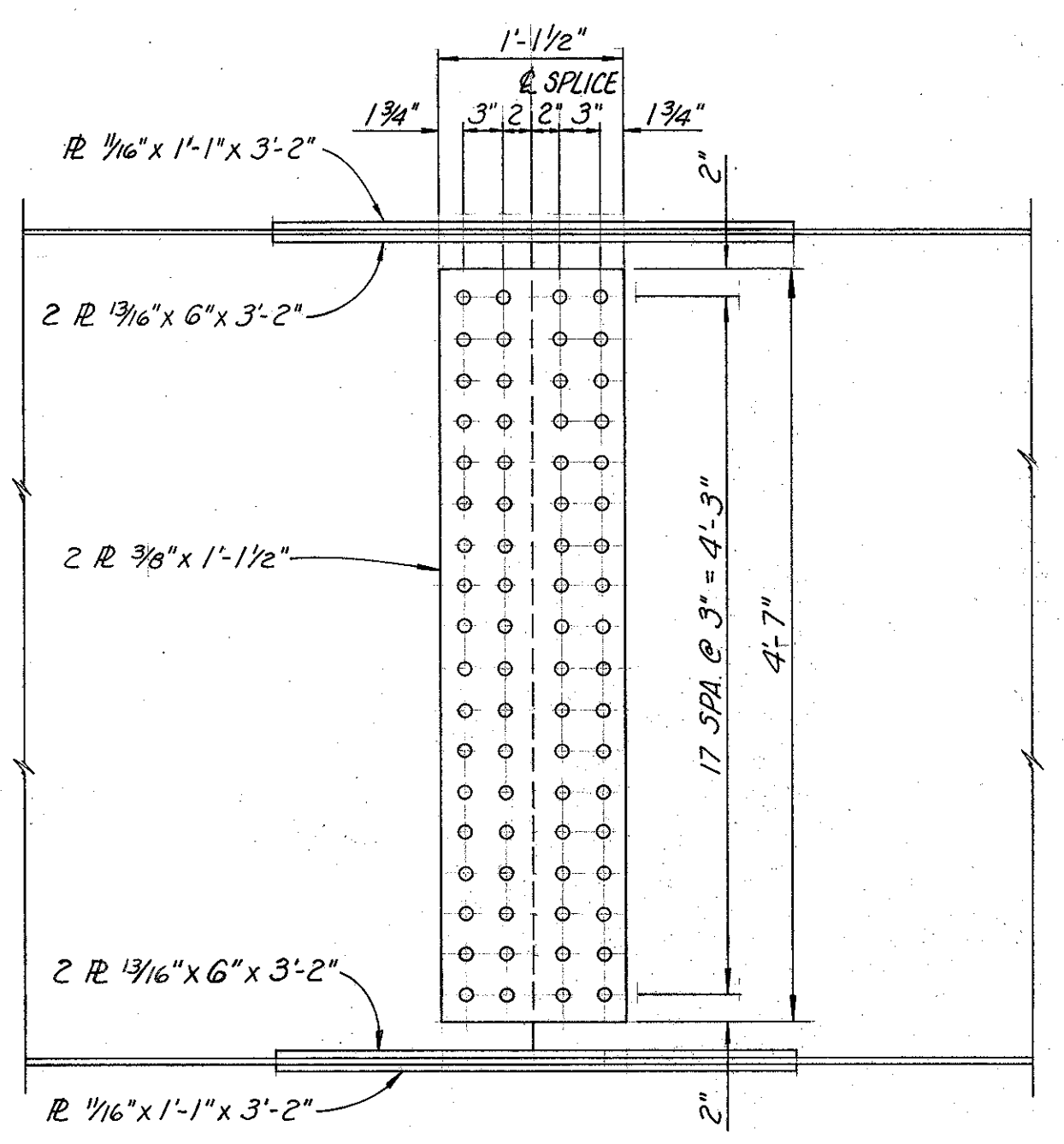
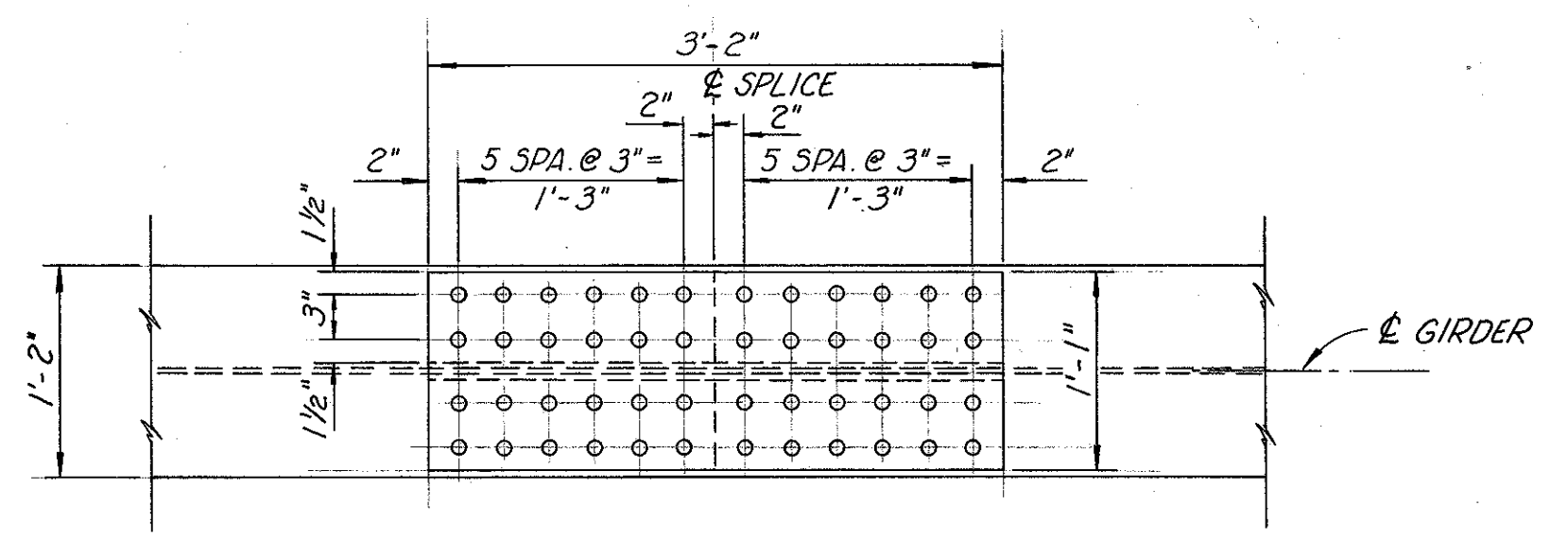
TABLE OF CAMBER AND DEFLECTION

	SPAN 1								SPAN 2							
	.15	.3	.4	.5	.65	F.S.1	.9	2	F.S.2	.5	.6	.8				
GIRDER 1																
STEEL WEIGHT DEFLECTION	3/8	5/8	11/16	5/8	1/2	5/16	1/8	0	1/8	1/4	1/4	3/16				
REMAINING DEAD LOAD DEFLECTION	1 1/16	2 15/16	3 1/8	3 1/16	2 1/4	1 9/16	5/16	1/16	5/8	1 1/8	1 5/16	1				
VERTICAL CURVE CORRECTION	1	1 5/8	1 7/8	1 5/16	1 3/4	1 1/2	1 1/16	1 5/16	1 5/16	1 1/2	1 7/16	1 5/16				
HORIZONTAL CURVE CORRECTION	0	0	0	0	0	0	0	0	0	0	0	0				
REQUIRED SHOP CAMBER	3 1/16	5 3/16	5 11/16	5 5/8	4 1/2	3 3/8	1 1/8	1	2 1/16	2 7/8	3	2 1/8				
GIRDER 2																
STEEL WEIGHT DEFLECTION	3/8	5/8	11/16	5/8	1/2	5/16	1/8	0	1/8	1/4	1/4	3/16				
REMAINING DEAD LOAD DEFLECTION	2 1/4	3 7/8	4 1/8	4	2 5/16	2	1/2	1/8	3/4	1 7/16	1 11/16	1 3/16				
VERTICAL CURVE CORRECTION	1	1 5/8	1 7/8	1 5/16	1 3/4	1 1/2	1 1/16	1 5/16	1 5/16	1 1/2	1 7/16	1 5/16				
HORIZONTAL CURVE CORRECTION	0	0	0	0	0	0	0	0	0	0	0	0				
REQUIRED SHOP CAMBER	3 5/8	6 1/16	6 11/16	6 9/16	5 3/16	3 13/16	1 5/16	1 1/16	2 3/16	3 3/16	2 3/8	1 7/16				
GIRDER 3																
STEEL WEIGHT DEFLECTION	3/8	5/8	11/16	5/8	1/2	5/16	1/8	0	1/8	1/4	1/4	3/16				
REMAINING DEAD LOAD DEFLECTION	2 1/4	3 7/8	4 1/8	4	2 5/16	2	1/2	1/8	3/4	1 7/16	1 11/16	1 3/16				
VERTICAL CURVE CORRECTION	1	1 5/8	1 7/8	1 5/16	1 3/4	1 1/2	1 1/16	1 5/16	1 5/16	1 1/2	1 7/16	1 5/16				
HORIZONTAL CURVE CORRECTION	0	0	0	0	0	0	0	0	0	0	0	0				
REQUIRED SHOP CAMBER	3 5/8	6 1/16	6 11/16	6 9/16	5 3/16	3 13/16	1 5/16	1 1/16	2 3/16	3 3/16	2 3/8	1 7/16				
GIRDER 4																
STEEL WEIGHT DEFLECTION	3/8	5/8	11/16	5/8	1/2	5/16	1/8	0	1/8	1/4	1/4	3/16				
REMAINING DEAD LOAD DEFLECTION	2 1/4	3 7/8	4 1/8	4	2 5/16	2	1/2	1/8	3/4	1 7/16	1 11/16	1 3/16				
VERTICAL CURVE CORRECTION	1	1 5/8	1 7/8	1 5/16	1 3/4	1 1/2	1 1/16	1 5/16	1 5/16	1 1/2	1 7/16	1 5/16				
HORIZONTAL CURVE CORRECTION	0	0	0	0	0	0	0	0	0	0	0	0				
REQUIRED SHOP CAMBER	3 5/8	6 1/16	6 11/16	6 9/16	5 3/16	3 13/16	1 5/16	1 1/16	2 3/16	3 3/16	2 3/8	1 7/16				
GIRDER 5																
STEEL WEIGHT DEFLECTION	3/8	5/8	11/16	5/8	1/2	5/16	1/8	0	1/8	1/4	1/4	3/16				
REMAINING DEAD LOAD DEFLECTION	2 1/4	3 7/8	4 1/8	4	2 5/16	2	1/2	1/8	3/4	1 7/16	1 11/16	1 3/16				
VERTICAL CURVE CORRECTION	1	1 5/8	1 7/8	1 5/16	1 3/4	1 1/2	1 1/16	1 5/16	1 5/16	1 1/2	1 7/16	1 5/16				
HORIZONTAL CURVE CORRECTION	0	0	0	0	0	0	0	0	0	0	0	0				
REQUIRED SHOP CAMBER	3 5/8	6 1/16	6 11/16	6 9/16	5 3/16	3 13/16	1 5/16	1 1/16	2 3/16	3 3/16	2 3/8	1 7/16				
GIRDER 6																
STEEL WEIGHT DEFLECTION	3/8	5/8	11/16	5/8	1/2	5/16	1/8	0	1/8	1/4	1/4	3/16				
REMAINING DEAD LOAD DEFLECTION	1 11/16	2 15/16	3 1/8	3 1/16	2 1/4	1 9/16	5/16	1/16	5/8	1 1/8	1 5/16	1				
VERTICAL CURVE CORRECTION	1	1 5/8	1 7/8	1 5/16	1 3/4	1 1/2	1 1/16	1 5/16	1 5/16	1 1/2	1 7/16	1 5/16				
HORIZONTAL CURVE CORRECTION	0	0	0	0	0	0	0	0	0	0	0	0				
REQUIRED SHOP CAMBER	3 1/16	5 3/16	5 11/16	5 5/8	4 1/2	3 3/8	1 1/8	1	2 1/16	2 7/8	3	2 1/8				

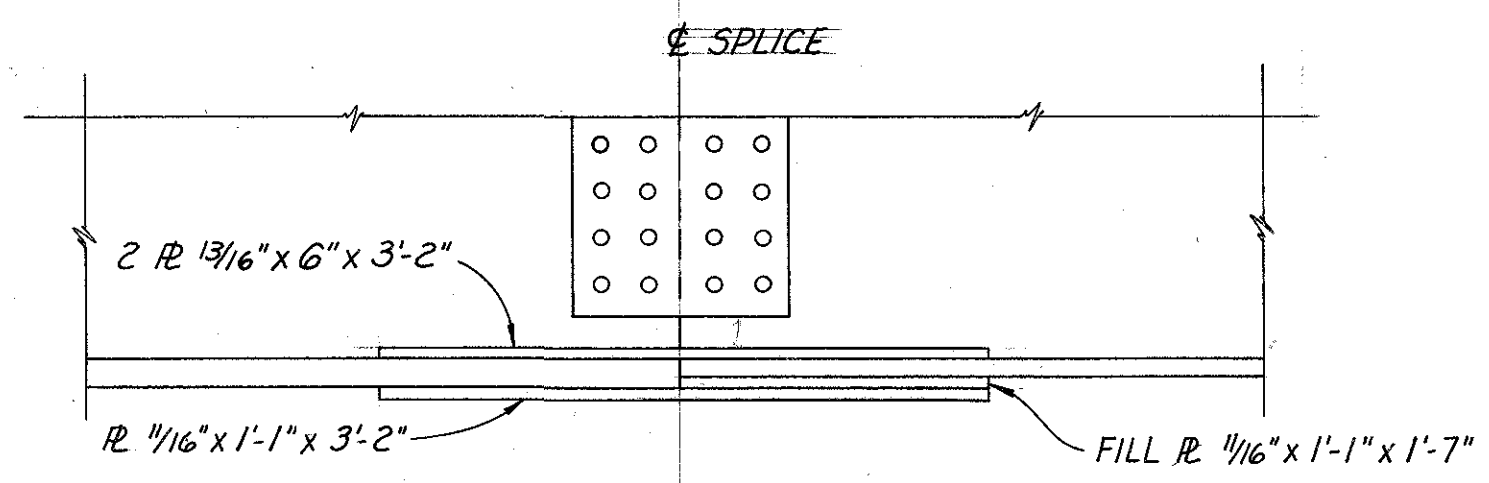
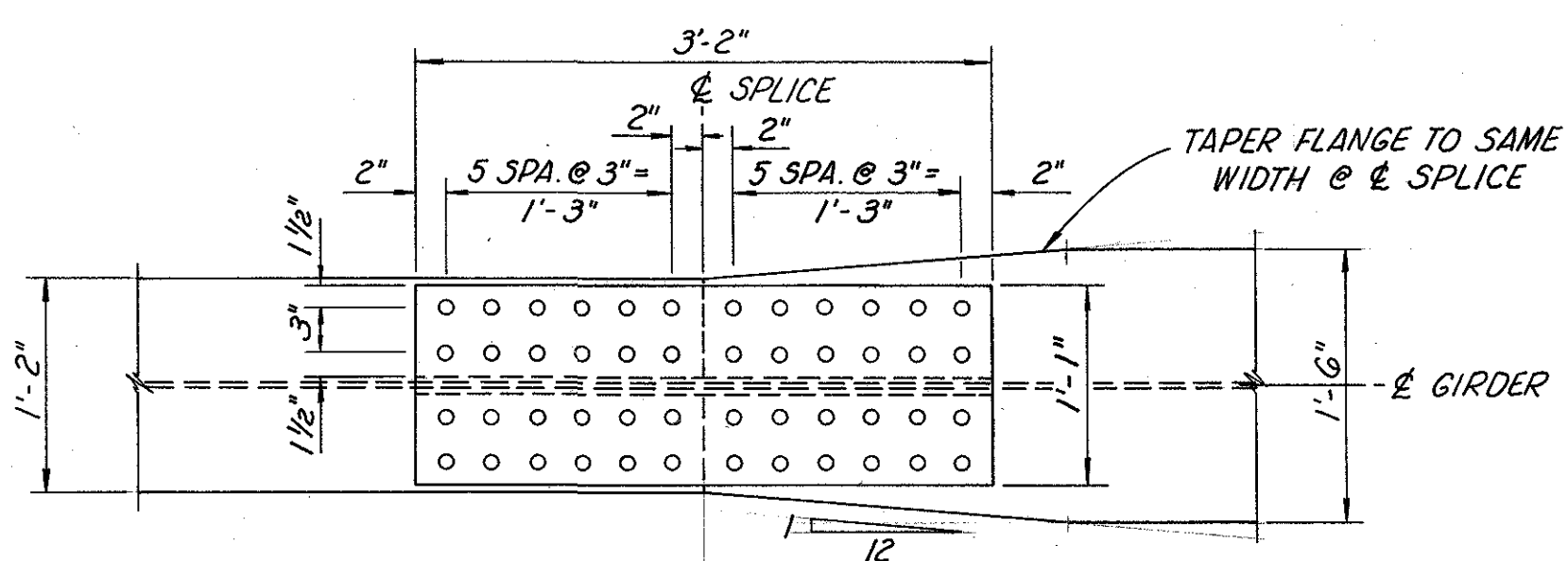


	DIM. A	DIM. B
GIRDER 1	0'-6 3/16"	0'-7 1/16"
GIRDER 2	0'-6 3/16"	0'-8 3/8"
GIRDER 3	0'-6 3/16"	0'-9 3/4"
GIRDER 4	0'-6 3/16"	0'-10 1/16"
GIRDER 5	0'-6 3/16"	0'-11 3/4"
GIRDER 6	0'-6 3/16"	1'-0 3/4"

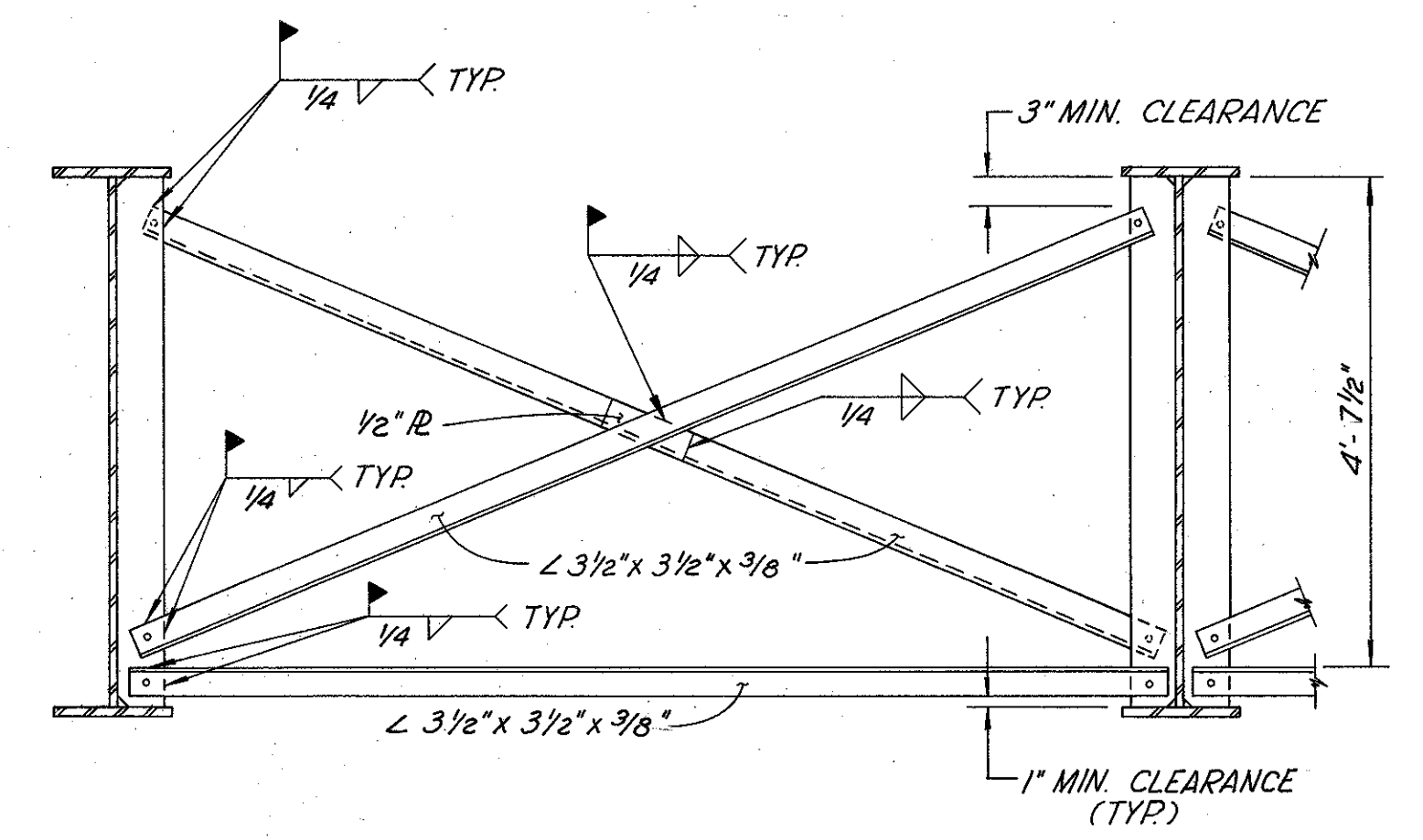
DIMENSIONS
(DIMENSIONS MEASURED ALONG TOP OF GIRDER WEB)



ELEVATION - FIELD SPICE 2
NOTE: HIGH STRENGTH BOLTS SHALL BE 7/8" DIAMETER A325 UNLESS OTHERWISE NOTED.
PLACE BOLT HEADS ON EXPOSED SIDE OF FASCIA GIRDER WEBS. PLACE NUTS ON TOP OF LOWER FLANGE SPICE.
ALL SPICE PLATES (EXCLUDING FILL PLATES) SHALL BE CYN MATERIAL.



PARTIAL ELEVATION - FIELD SPICE 1
NOTE: FOR DETAILS OF WEB SPICE AND TOP FLANGE SPICE SEE ELEVATION - FIELD SPICE 2.



INTERMEDIATE CROSSFRAME DETAIL
NOTE: ERECTION BOLT NOTES SEE SHEET 7/11.

R. D. ZANDE & ASSOCIATES, LIMITED						8	11
CONSULTING ENGINEERS							
COLUMBUS, OHIO							
SUPERSTRUCTURE DETAILS							
BRIDGE NO. UNI-33-0092							
STOKES ROAD OVER U.S.33							
UNION COUNTY STA. 48+62.89							
STA. 51+20.11							
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
O.H.K.	O.H.K.	P.M.	B.R.A.	G.J.T.	11/6/85		

UNI-33-0.28

NOTES

*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.

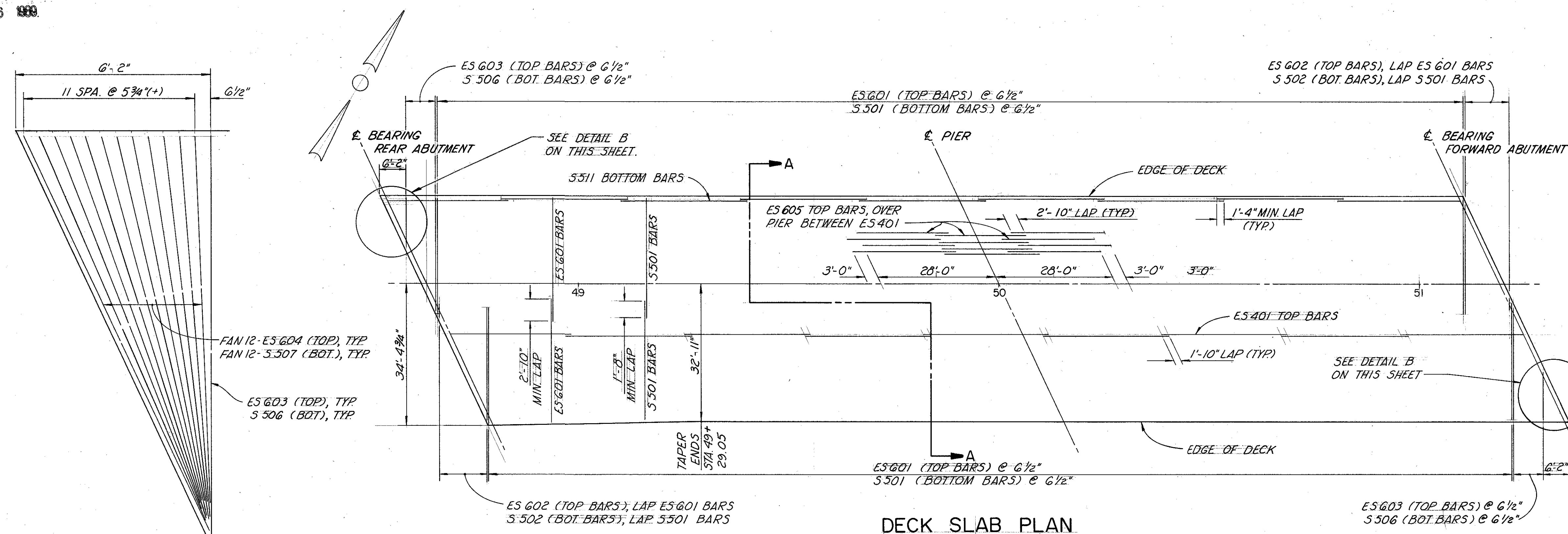
A HAUNCH WIDTH OF 9" SHALL BE USED FOR A COMPUTING QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 6" AND 12", PROVIDED THAT THE SLOPE SHALL BE NOT MORE THAN 1:4 FOR A HAUNCH LESS THAN 9" WIDTH.

FIELD BEND TRANSVERSE BARS TO FIT CROWN.

FIELD BENDING SHALL BE INCLUDED WITH ITEM 509 FOR PAYMENT.

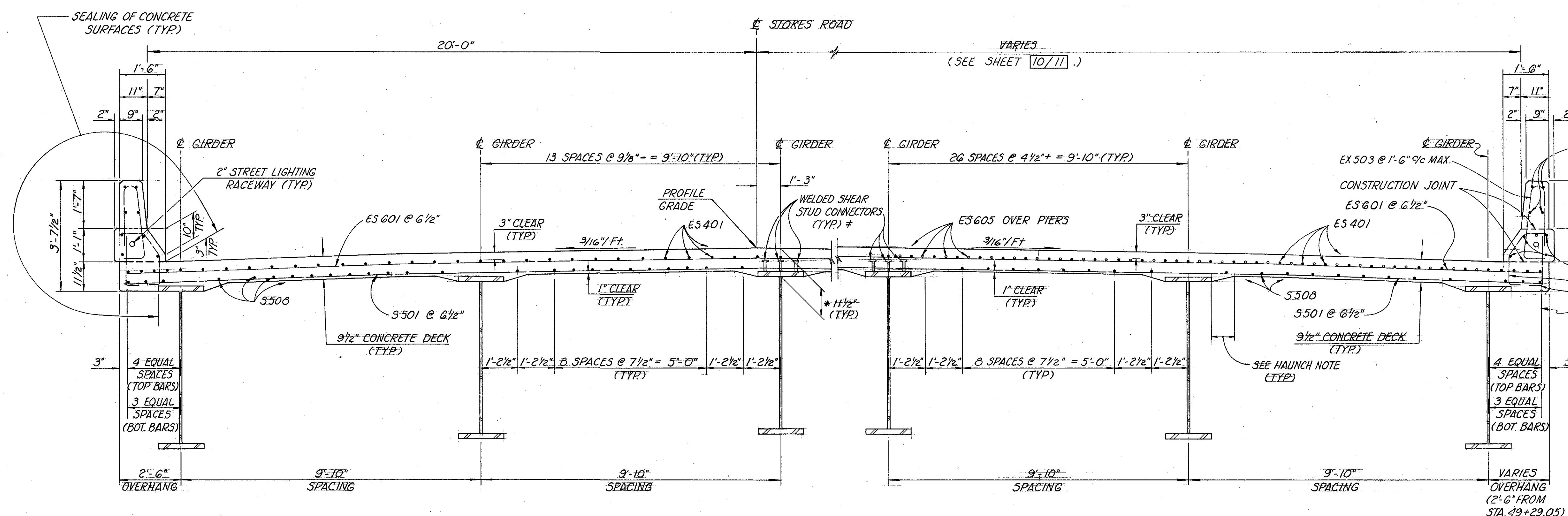
EPOXY COATED BARS THAT ARE FIELD CUT AND BARS WITH EPOXY COATING DAMAGE BY FIELD BENDING SHALL BE RECOATED AS PER APPROVED MANUFACTURER'S RECOMMENDATIONS.

FOR MORE RAILING AND PARAPET DETAILS SEE STANDARD DRAWING BR-1.



DECK SLAB PLAN

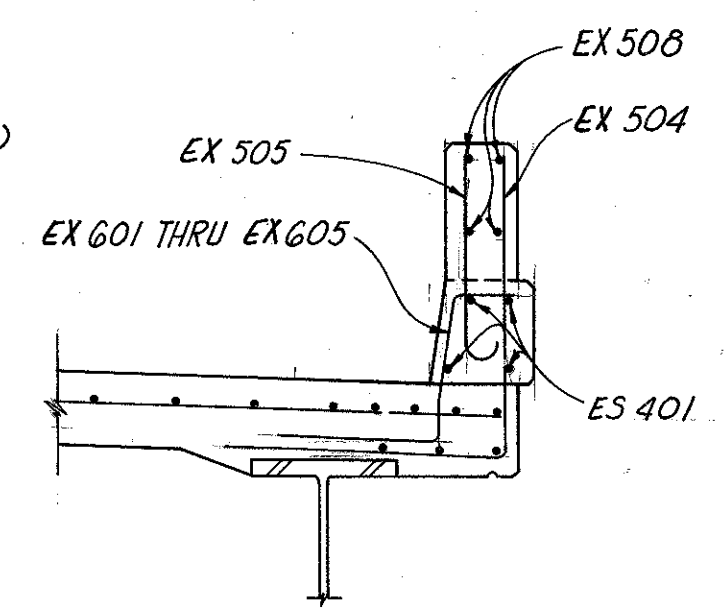
DETAIL B



SECTION A-A

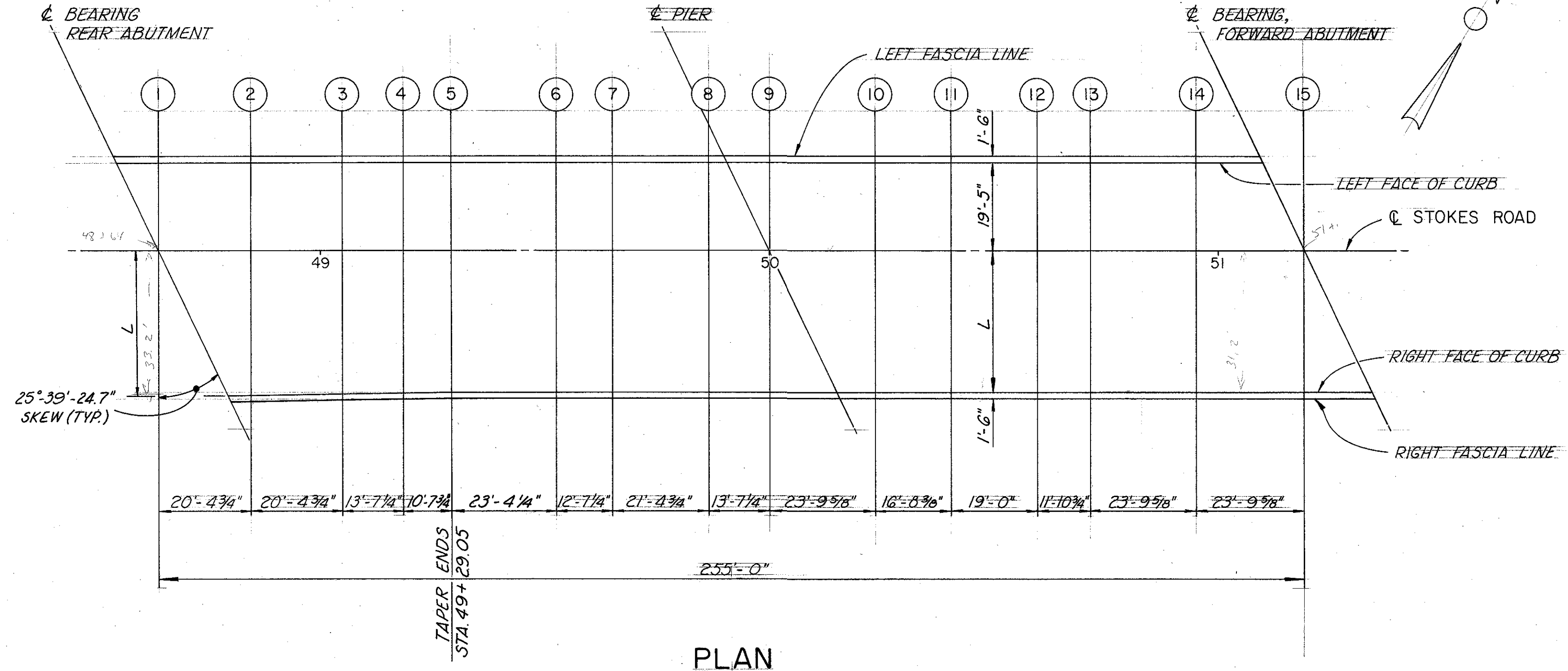
*WELDED SHEAR STUD CONNECTORS ARE NOT SHOWN AT ALL LOCATIONS.

FOR REINFORCING STEEL DETAIL OF PARAPET THRU TRANSITION, SEE SECTION C-C ON THIS SHEET.



SECTION C-C

R. D. ZANDE & ASSOCIATES, LIMITED					9 / 11
CONSULTING ENGINEERS					
COLUMBUS, OHIO					
SUPERSTRUCTURE DETAILS					
BRIDGE NO. UNI-33-0092					
STOKES ROAD OVER U.S.33					
UNION COUNTY STA. 48+62.89					
STA. 51+20.11					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
O.H.K.	O.H.K.	P.M.	B.R.A.	G.J.T.	11/6/85



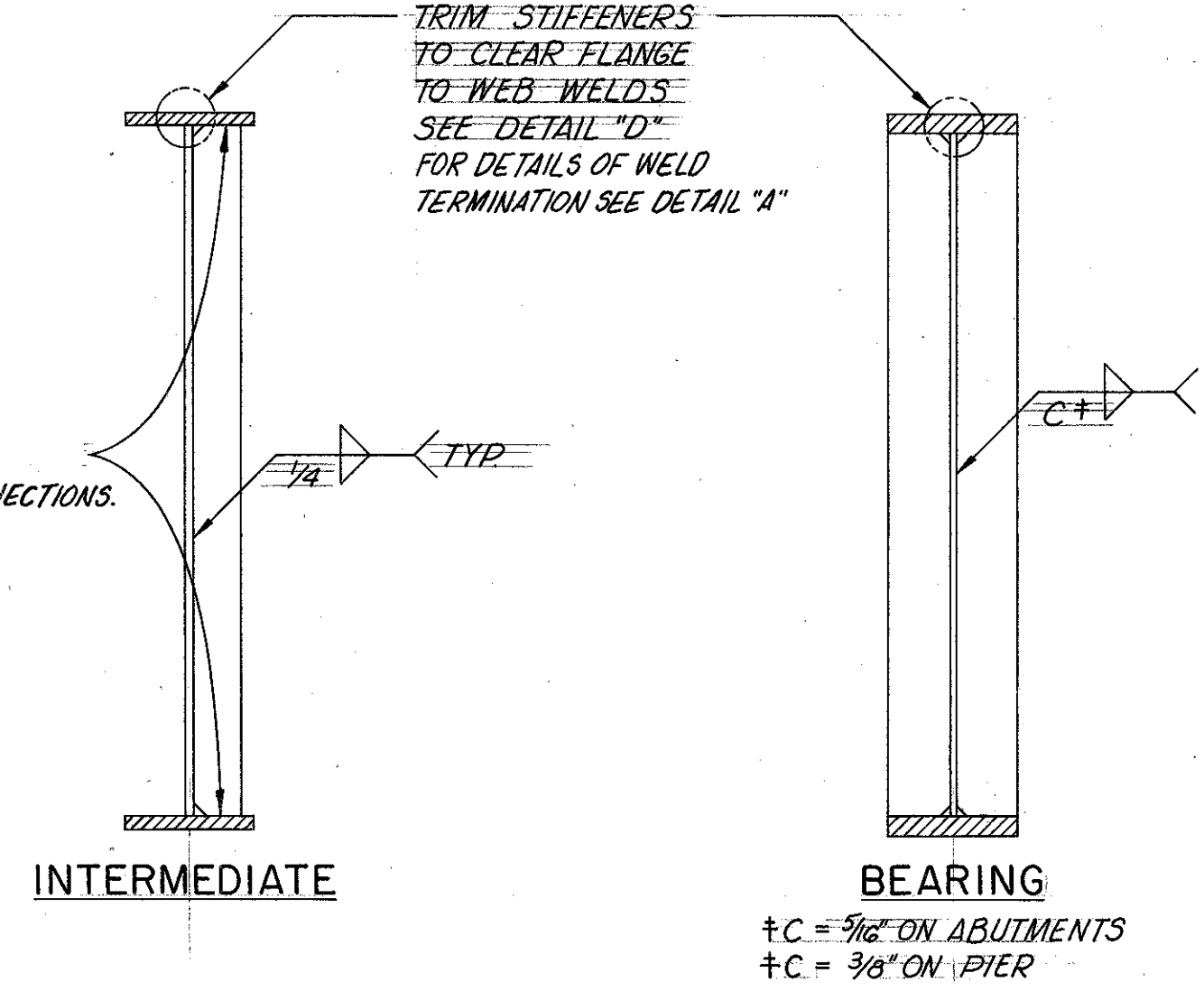
PLAN

TAPERED SECTION DECK WIDTH	
SECTION	L
1	32'-10 3/4"
2	32'-1 1/2"
3	31'-7 1/2"
4	31'-5 1/2"
5 THROUGH 15	31'-5"

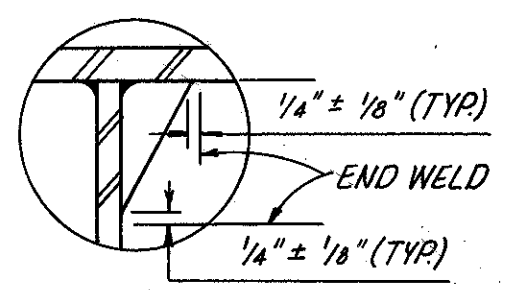
FIXED BEARING NO.	FIXED BEARINGS											MAXIMUM LOAD (KIPS)
	DIMENSIONS (INCHES) **											
	A	B	C	D	E	F	G	H	K	DIA.		
F-450	14	14	4	9	3	20	27	2 3/4	10 3/8	3	450	

** FOR LOCATION OF DIMENSIONS, DETAILS AND ADDITIONAL NOTES SEE STANDARD DRAWING NO. FB-1-82.

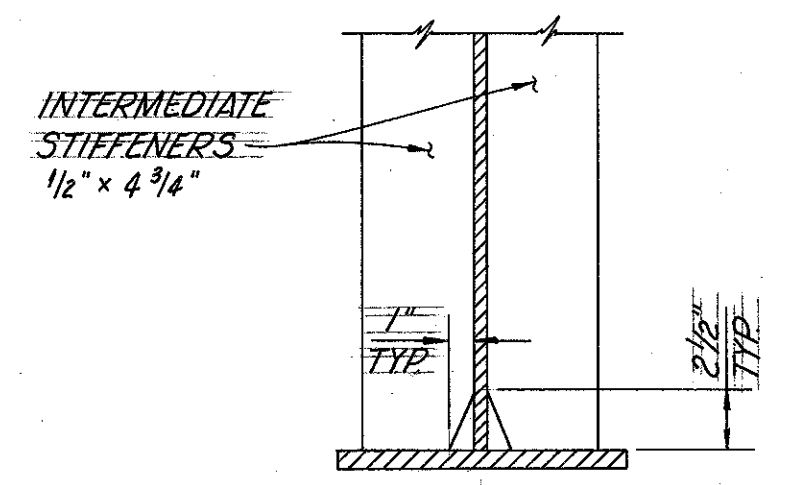
*** INTERMEDIATE STIFFENER FILLET WELD SIZES	
BASE METAL THICKNESS OF THICKER PART JOINED (T)	MINIMUM SIZE OF FILLET WELD
INCH	INCH
T ≤ 1/4	3/16
1/4 < T ≤ 1/2	3/16
1/2 < T ≤ 3/4	1/4
3/4 < T	5/16



STIFFENER DETAILS



DETAIL "A"

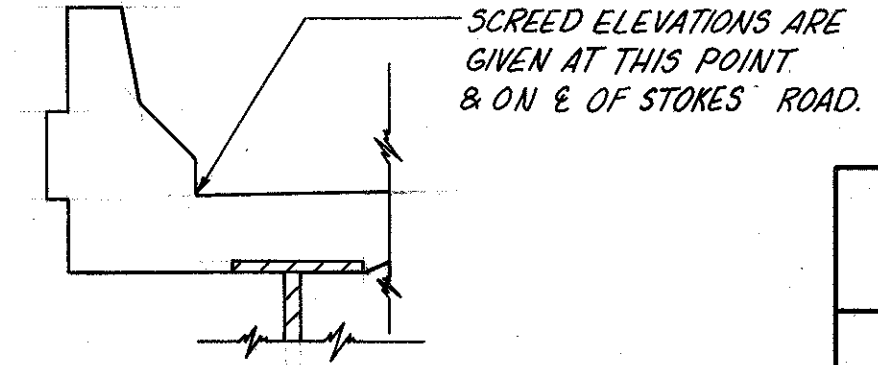


DETAIL "D"

TABLE OF DECK SCREED ELEVATIONS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
STATION	48+64.00	48+84.40	49+04.80	49+18.40	49+29.05	49+52.40	49+65.00	49+86.40	50+00.00	50+23.80	50+40.50	50+59.50	50+71.40	50+95.20	51+19.00
TOP OF SLAB ELEV.	1094.63	1094.68	1095.09	1095.21	1095.30	1095.47	1095.54	1095.64	1095.69	1095.74	1095.75	1095.74	1095.72	1095.65	—
DEFLECTION	0.09	0.24	0.32	0.32	0.29	0.17	0.10	0.01	0.00	0.04	0.09	0.13	0.13	0.07	—
SCREED SETTING ELEV.	1094.72	1095.12	1095.41	1095.53	1095.59	1095.64	1095.64	1095.65	1095.69	1095.78	1095.84	1095.87	1095.85	1095.72	—
TOP OF SLAB ELEV.	1094.93	1095.18	1095.39	1095.51	1095.60	1095.77	1095.84	1095.94	1095.99	1096.04	1096.05	1096.04	1096.02	1095.95	1095.84
DEFLECTION	0.00	0.18	0.30	0.32	0.31	0.23	0.16	0.04	0.00	0.01	0.06	0.12	0.13	0.10	0.00
SCREED SETTING ELEV.	1094.93	1095.36	1095.69	1095.83	1095.91	1096.00	1096.00	1095.98	1095.99	1096.05	1096.11	1096.16	1096.15	1096.05	1095.84
TOP OF SLAB ELEV.	—	1094.68	1094.89	1095.02	1095.11	1095.28	1095.35	1095.45	1095.50	1095.55	1095.56	1095.55	1095.53	1095.46	1095.35
DEFLECTION	—	0.05	0.21	0.29	0.32	0.32	0.24	0.12	0.05	0.0	0.01	0.07	0.11	0.13	0.07
SCREED SETTING ELEV.	—	1094.73	1095.10	1095.31	1095.43	1095.60	1095.59	1095.57	1095.55	1095.55	1095.57	1095.62	1095.64	1095.59	1095.42

SCREED ELEVATIONS ARE GIVEN AT THE TOP OF THE PORTLAND CEMENT DECK AND ARE REQUIRED BEFORE THE DECK IS PLACED. PROPER ALLOWANCE HAS BEEN MADE FOR THE DEAD LOAD DEFLECTION DUE TO THE WEIGHT OF THE CONCRETE.



R. D. ZANDE & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

SUPERSTRUCTURE DETAILS
BRIDGE NO. UNI-33-0092
STOKES ROAD OVER U.S.33

UNION COUNTY STA. 48+62.89
STA. 51+20.11

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
O.H.K.	O.H.K.	P.M.	B.R.A.	G.J.T.- 11/6/85	

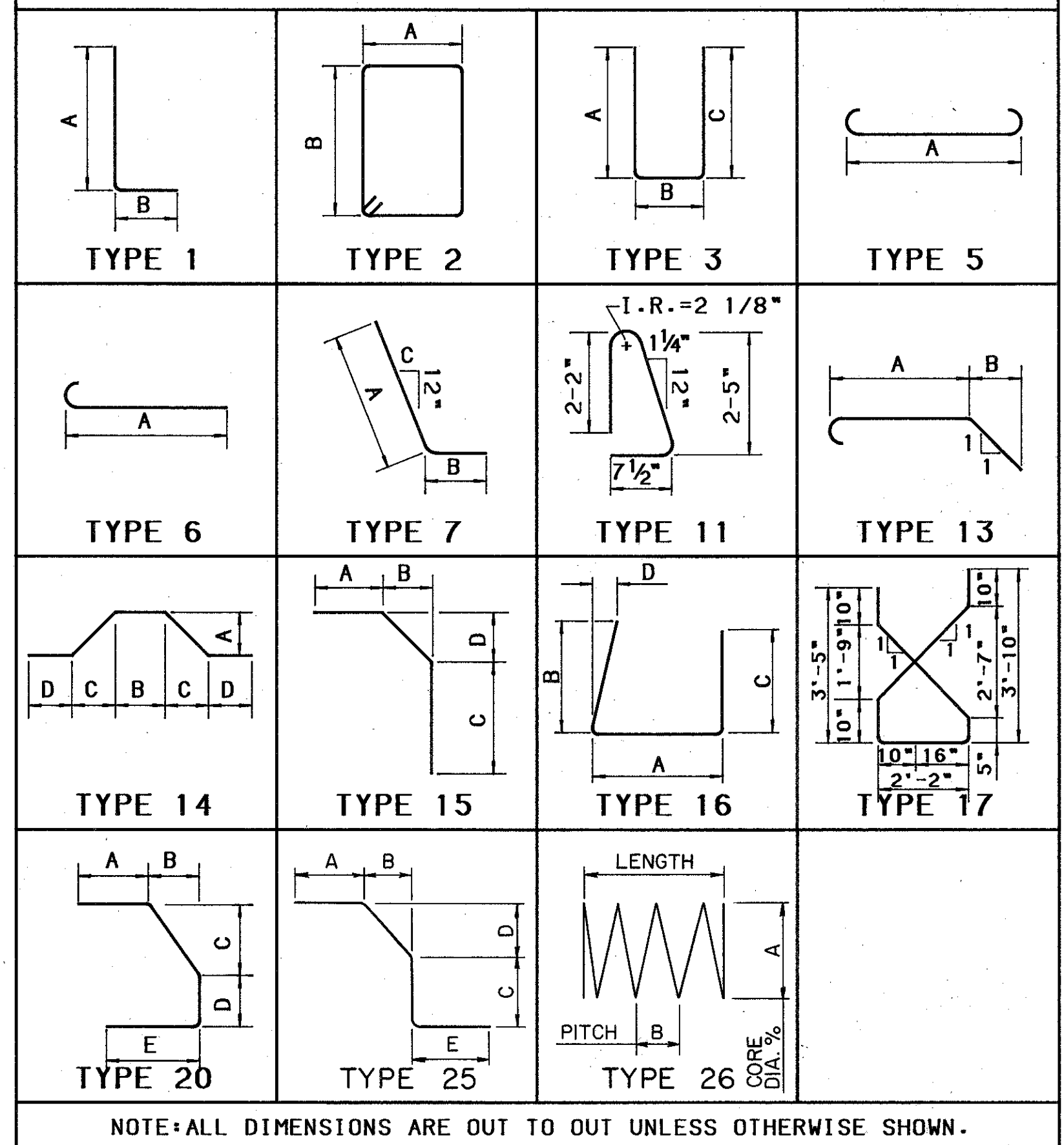
REINFORCING STEEL LIST

UNI-33-0.28

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	SHAPE	**
SUPERSTRUCTURE											
* ES401	738	30-3	14790							STR.	
S501	896	28-4	26478							STR.	
S502	50	3-7 27-7	813							STR.	1-0
ES503	102	7-1	754	3	2-10	1-8	2-10			BENT	
S504	106	8-3	912	3	3-2	2-2	3-2			BENT	
S505	106	10-5	1152	3	4-3	2-2	4-3			BENT	
S506	30	12-6 27-8	628							STR.	1-1
S507	24	11-5	286							STR.	
S508	549	29-10	17083							STR.	
ES509	4	9-9	41	3	3-11	2-2	3-11			BENT	
EX501	322	2-4	783	1	1-6 1/2	0-10 1/2				BENT	
EX502	322	3-2	1064	20	0-9	0-6	0-8 1/2	0-10 1/2	0-10 1/2	BENT	
EX503	322	5-3	1763	11						BENT	
EX504	32	5-3	175	1	3-1	2-3				BENT	
EX505	32	2-8	89	6	2-1					BENT	
EX506	40	7-0	292							STR.	
EX507	104	14-6	1573							STR.	
* EX508	16	12-0	200							STR.	
ES601	896	29-1	39140							STR.	
ES602	50	6-0 28-0	1277							STR.	0-11
ES603	30	12-6 27-8	905							STR.	1-1
ES604	24	11-4	409							STR.	
ES605	201	21-4	6441							STR.	
EX601	4	4-3	26	25	0-9	0-6	0-7 1/4	0-8 1/2	2-5	BENT	
EX602	4	4-2	25	25	0-8	0-5	0-7 1/4	0-8 1/2	2-5	BENT	
EX603	4	4-2	25	25	0-8	0-4	0-7 1/4	0-8 1/2	2-5	BENT	
EX604	4	4-1	25	25	0-7	0-3	0-7 1/4	0-8 1/2	2-5	BENT	
EX605	16	4-1	98	25	0-7	0-2	0-7 1/4	0-8 1/2	2-5	BENT	
ES801	4	37-0	395							STR.	
ES802	8	30-0	641							STR.	
ES803	4	36-0	384							STR.	
S804	18	37-0	1778							STR.	
S805	36	30-0	2884							STR.	
S806	18	36-0	1730							STR.	
S807	81	4-3	919	13	2-4 1/4	1-0				BENT	
PIER											
P401	28	3-10	72	3	0-8	2-8	0-8			BENT	
SP402	4	15-5	1620	26	32	0-3				BENT	
P501	4	29-9	124							STR.	
P502	2	4-10	10	3	1-2	2-8	1-2			BENT	
P503	12	4-2	52							STR.	
P601	70	11-2	1174	2		1-7 1/2	3-7 5/8			BENT	
P901	12	31-2	1272							STR.	
P902	12	33-5	1363	1	31-2	3-6				BENT	
P903	6	33-6	683							STR.	
P904	6	21-3	434							STR.	
P905	48	17-9	2897							STR.	
P906	96	12-2	3971	5	9-8					BENT	
P907	48	7-10	1278	1	6-6	1-7 1/2				BENT	
P908	6	37-0	755							STR.	
P909	6	24-0	490							STR.	

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	SHAPE	**
ABUTMENT											
A401	58	9-0	349	2	2-6 3/4	1-9				BENT	
A501	143	11-0	1641	2	2-8	2-7				BENT	
A502	97	9-11	1003	3	4-0	2-2	4-0			BENT	
A503	46	13-11	668	3	6-0	2-2	6-0			BENT	
A504	18	31-9	596							STR.	
A505	16	14-2	236							STR.	
A506	8	13-6	113							STR.	
A507	8	12-10	107							STR.	
A508	8	12-2	102							STR.	
A509	8	17-1	143	7	15-6	1-8	0-5 1/2			BENT	
A510	22	6-3 17-11	277	3	2-2 8-0	2-2	2-2 8-0			BENT	0-7
A511	8	11-4	95							STR.	
A512	20	5-7 17-7	242	3	1-10 7-10	2-2	1-10 7-10			BENT	0-8
A601	106	10-9	1712	17						BENT	
A801	48	33-8	4315							STR.	
SUPERSTRUCTURE LIGHT POLE PILASTER											
EL505	8	2-10	24	3	0-7	1-10	0-7			BENT	
EL506	8	8-5	72	16	2-4	3-2	3-2	0-4		BENT	
EL507	12	7-3	90	14	1-10	1-4	1-10	0-6		BENT	
EL508	8	3-2	26							STR.	

BENDING DIAGRAM



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.

NOTE

THE LETTER "E" BEFORE A BAR MARK DENOTES AN EPOXY COATED REINFORCING BAR. PAYMENT FOR THESE BARS SHALL BE UNDER ITEM 824 "EPOXY COATED REINFORCING STEEL, GRADE 60".

* BEND IN FIELD WHERE NECESSARY.

** INCREMENT

R. D. ZANDE & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

REINFORCING STEEL LIST
BRIDGE NO. UNI-33-0.92
STOKES ROAD OVER U.S.33

UNION COUNTY STA. 48+62.89
STA. 51+20.11

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
O.H.K.	O.H.K.	VGO	B.R.A.	G.J.T. 11/6/85	

CENTERLINE SURVEY PLAT
UNI-33-0.28
ALLEN TOWNSHIP
UNION COUNTY
V.M.S. 158 & 4933

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 5511.002 OF THE REVISED CODE
OF OHIO.

LEGEND

PROPOSED CENTERLINE MONUMENT
PROPOSED OFFSET MONUMENT

RECEIVED _____ OF _____
RECORDED 1-9-86
PLAT BOOK 4 PAGE 104
SIGNED _____
FEE _____ COUNTY RECORDER
SIGNED _____
DATE _____ COUNTY AUDITOR

I HEREBY CERTIFY THAT THIS PLAT IS
A TRUE DELINEATION OF A SURVEY MADE
FOR THE STATE OF OHIO IN 1985.

BY
R.D. ZANDE & ASSOCIATES, LTD.
CONSULTING ENGINEERS

Thodore L. Wallace DATE 10-1-85
REGISTERED SURVEYOR NO. 4650

CURVE DATA
CURVE NO. 1
C/L SURVEY PROP. U.S. #33
P.I. STA. 50+52.38
Δ = 32°15'39"LT.
D = 00°27'59"
R = 12,283.06'
T = 3,552.38'
L = 6,919.06'
E = 503.38'

CURVE DATA
CURVE NO. 1
C/L PROP. TEMP. CONN.
P.I. STA. 4+12.83
Δ = 04°30'39"RT.
D = 02°00'00"
R = 2,864.79'
T = 112.83'
L = 225.54'
E = 2.22'

CURVE DATA
CURVE NO. 2
C/L PROP. TEMP. CONN.
P.I. STA. 9+67.09
Δ = 11°00'17"RT.
D = 01°15'00"
R = 4,583.70'
T = 441.55'
L = 880.38'
E = 21.22'

CURVE DATA
CURVE NO. 1
C/L STOKES ROAD
P.I. STA. 65+20.08
Δ = 40°50'50"RT.
D = 05°00'00"
R = 1,145.92'
T = 426.70'
L = 816.94'
E = 76.87'

CURVE DATA
CURVE NO. 1
B/L RAMP "A"
P.I. STA. 50+84.78
Δ = 14°08'35"LT.
D = 02°00'00"
R = 2,864.77'
T = 355.38'
L = 707.15'
E = 21.96'

CURVE DATA
CURVE NO. 1
B/L RAMP "B"
P.I. STA. 36+50.90
Δ = 61°14'38"LT.
D = 19°13'36"
R = 298.00'
T = 176.39'
L = 318.53'
E = 48.29'

CURVE DATA
CURVE NO. 2
B/L RAMP "B"
P.I. STA. 47+61.63
Δ = 29°15'29"RT.
D = 06°00'00"
R = 954.93'
T = 249.26'
L = 487.63'
E = 32.00'

CURVE DATA
CURVE NO. 1
B/L RAMP "C"
P.I. STA. 35+03.55
Δ = 04°36'19"RT.
D = 01°00'00"
R = 5,729.58'
T = 230.39'
L = 460.53'
E = 4.63'

CURVE DATA
CURVE NO. 2
B/L RAMP "C"
P.I. STA. 52+02.25
Δ = 05°51'31"RT.
D = 04°00'00"
R = 1,432.39'
T = 73.30'
L = 146.46'
E = 1.87'

CURVE DATA
SPIRAL NO. 1
B/L RAMP "C"
P.I. STA. 47+61.63
Δ = 33°55'06"RT.
D = 06°00'00"
L.T. = 132.75'
S.T. = 70.15'
P. = 6.14'
L_c = 198.93'

CURVE DATA
SPIRAL NO. 2
B/L RAMP "C"
P.I. STA. 35+03.55
Δ = 20°11'19"RT.
D = 04°36'19"RT.
L.T. = 93.84'
S.T. = 57.71'
P. = 2.94'
L_c = 149.34'

CURVE DATA
CURVE NO. 3
B/L RAMP "C"
P.I. STA. 52+02.25
Δ = 05°51'31"RT.
D = 04°00'00"
R = 1,432.39'
T = 73.30'
L = 146.46'
E = 1.87'

CURVE DATA
CURVE NO. 1
B/L RAMP "D"
P.I. STA. 25+35.83
Δ = 18°41'56"LT.
D = 04°00'00"
R = 1,432.39'
T = 235.83'
L = 467.47'
E = 19.28'

P.O.T. STA. 37+78.81, B PROP RAMP "D"
P.O.T. STA. 37+82.64, B PROP RAMP "A"
P.O.T. STA. 53+00.00, C PROP STOKES RD.

P.O.C. STA. 36+44.29, C PROP U.S. #33
P.O.T. STA. 50+00.00, C PROP STOKES RD.

P.O.T. STA. 15+00.00, C PROP TEMP. CONN.
P.C. STA. 15+00.00, C PROP U.S. #33

B RAMP "B"

P.C. NO. 1 = STA. 34+74.51
P.T. NO. 1 = STA. 37+93.05

P.C. NO. 1 = STA. 32+73.16
C.S. NO. 1 = STA. 37+33.69
S.C. NO. 1 = STA. 39+34.35
C.S. NO. 2 = STA. 49+78.75
S.C. NO. 2 = STA. 51+28.95
P.T. NO. 3 = STA. 52+75.43

P.O.T. STA. 44+49.42, C PROP STOKES RD.
P.O.T. STA. 31+83.49, C PROP RAMP "B"

NOTE: FOR DETAILS OF PROPOSED
MONUMENTS SEE OHIO
DEPARTMENT OF TRANSPORTATION
STANDARD CONSTRUCTION DRAWING
MC-1, DATED 6-13-69

PROPOSED CENTERLINE MONUMENTS U.S. #33	
STA. 3+00	STA. 35+00
STA. 5+25.54	STA. 36+44.29
STA. 10+00	STA. 40+00
STA. 14+05.92	STA. 45+00
STA. 15+00	STA. 50+00
STA. 20+00	STA. 55+00
STA. 25+00	STA. 60+00
STA. 30+00	

EXISTING MONUMENT		
STATION	LOCATION	DESCRIPTION
STA. 15+00, U.S. 33	C	EXIST. IRON PIN
STA. 55+86.82, U.S. 33	140755 RT.	EXIST. IRON PIN
STA. 58+95.52, U.S. 33	929.70 RT.	EXIST. IRON PIN
STA. 47+90.96, STOKES RD.	C	SPIKE
STA. 50+00, STOKES RD.	C	SPIKE
STA. 50+98.45, STOKES RD.	29.93 RT.	EXIST. IRON PIN
STA. 53+79.92, STOKES RD.	30.10 RT.	EXIST. IRON PIN

PROPOSED OFFSET MONUMENT, STOKES ROAD		
STATION	LT.	RT.
STA. 40+00	25.0	25.0
STA. 45+00	30.0	35.0
STA. 55+00	40.0	40.0
STA. 60+00	35.0	40.0
STA. 60+93.38	30.0	35.0
STA. 65+00	40.0	35.0
STA. 69+10.32	25.0	25.0
STA. 72+00	25.0	25.0

TYPE FUNDS		COMPLETION DATE		SURVEYORS SEAL	
REV.	DATE				

CURVE DATA
CURVE NO. 1
C/L SURVEY PROP. U.S. #33
P.I. STA. 50+52.38
 $\Delta = 32^{\circ} 15' 39''$ LT.
D = $00^{\circ} 27' 59''$
R = 12,283.06'
T = 3,552.38'
L = 6,919.06'
E = 503.38'

CENTERLINE SURVEY PLAT
UNI-33-0.28
ALLEN TOWNSHIP
UNION COUNTY
V.M.S. 158

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 5511.002 OF THE REVISED CODE
OF OHIO.

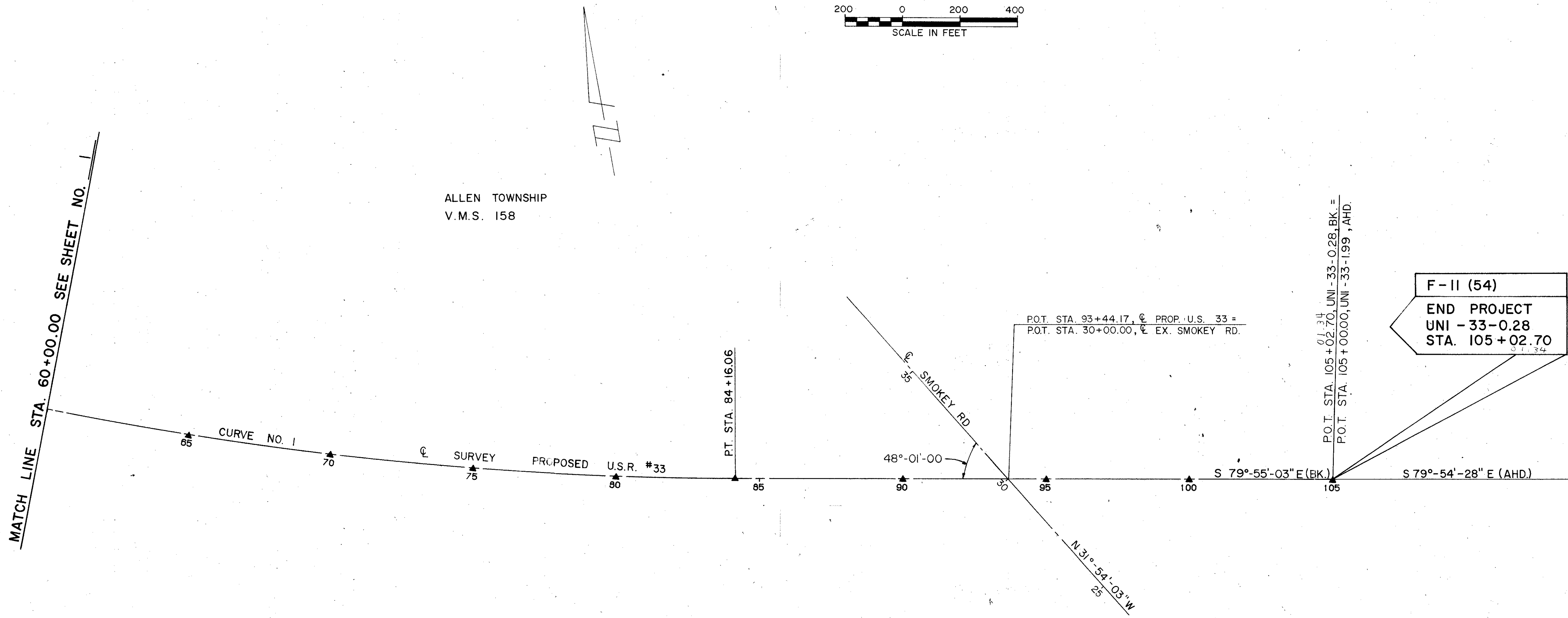
CALC. BY DATE	UNI-33-0.28	OHIO	212 224
CHKD BY DATE		FHWA REGION 5	
F-II (54)		FEDERAL PROJECT	2 14
SHEET 2 OF 2			

RECEIVED _____ OF _____
RECORDED 1-9-86
PLAT BOOK 4 PAGE 105
SIGNED _____
FEE _____ COUNTY RECORDER
SIGNED _____
DATE _____ COUNTY AUDITOR

I HEREBY CERTIFY THAT THIS PLAT IS
A TRUE DELINEATION OF A SURVEY MADE
FOR THE STATE OF OHIO IN 1985.

BY
R.D. ZANDE & ASSOCIATES, LTD.
CONSULTING ENGINEERS

Thomas L. Wallace DATE 10-1-85
REGISTERED SURVEYOR NO. 4650

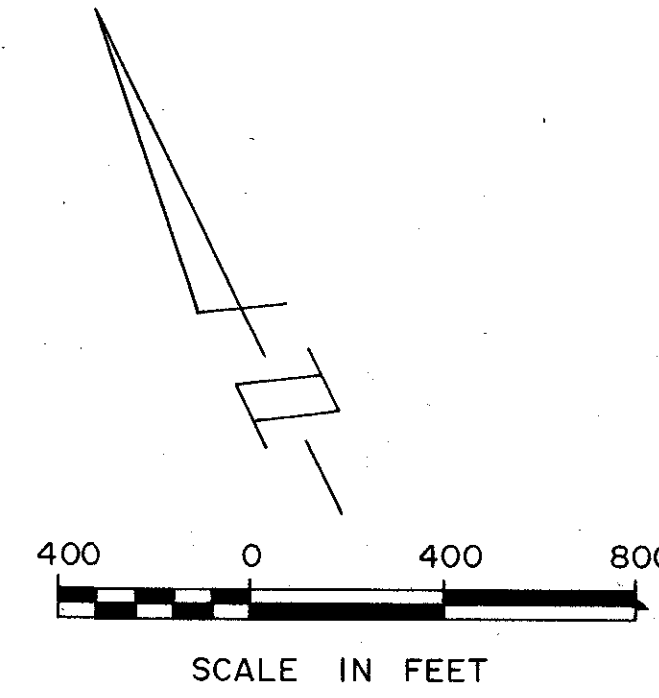


PROPOSED CENTERLINE MONUMENTS U.S. #33	
STA. 65+00	STA. 90+00
STA. 70+00	STA. 95+00
STA. 75+00	STA. 100+00
STA. 80+00	STA. 105+02.70
STA. 84+16.06	

EXISTING MONUMENTS		
STATION	LOCATION	DESCRIPTION
STA. 81+94.10, U.S. 33	1216.33' LT.	EXIST. IRON PIN
STA. 81+94.57, U.S. 33	1247.70' LT.	EXIST. IRON PIN

TYPE FUNDS		COMPLETION DATE	DESCRIPTION
REV.	DATE		

PROPERTY MAP
UNI-33-0.28
ALLEN TOWNSHIP
UNION COUNTY
V.M.S. 158 & 4933



CALC. BY DATE	UNI-33-0.28	OHIO	213 224
CHKD BY DATE		FHWA REGION 5	3 14
	F-11 (54)	FEDERAL PROJECT	

UTILITIES

COLUMBIA GAS OF OHIO
942 WEST GOODALE BOULEVARD
COLUMBUS, OHIO 43212
PHONE (614) 460-2097

UNITED TELEPHONE COMPANY OF OHIO
127 NORTH MAIN STREET
BELLEFONTAINE, OHIO 43311
PHONE (513) 599-9378

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

NOTE:
ACQUISITION FOR PARCEL NO'S 39 & 42
SHALL BE UNDER CONTRACT UNI-33-1.99.
*NO ADDITIONAL R/W REQUIRED

BEGIN ACQUISITION
UNI - 33 - 0.28
STA. 2+85.00

END ACQUISITION
UNI - 33 - 0.28
STA. 85+09.87

TYPE FUND		
COMPLETION DATE		DESCRIPTION
REV.	DATE	

SUMMARY OF ADDITIONAL RIGHT OF WAY

[illegible]R/W SUMMARY SHEET

SUMMARY OF ADDITIONAL RIGHT OF WAY

[illegible]

R/W SUMMARY SHEET

SUMMARY OF ADDITIONAL RIGHT OF WAY

[illegible]R/W SUMMARY SHEET

CURVE DATA
CURVE NO. 1
C. PROP. TEMP. CONN.
P.I. STA. 4+12.83
 $\Delta = 04^\circ 30' 39''$ LT.
D = 02' 00' 00"
R = 2,864.79'
T = 112.83'
L = 225.54'
E = 2.22'

CURVE DATA
CURVE NO. 2
C. PROP. TEMP. CONN.
P.I. STA. 9+67.09
 $\Delta = 11^\circ 00' 17''$ RT.
D = 01' 15' 00"
R = 4,583.70'
T = 441.55'
L = 880.38'
E = 21.22'

CURVE DATA
CURVE NO. 1
C. SURVEY PROP. U.S. 33
P.I. STA. 50+52.38
 $\Delta = 32^\circ 15' 39''$ LT.
D = 00' 27' 59"
R = 12,283.06'
T = 3,552.38'
L = 6,919.06'
E = 503.38'

CURVE DATA
CURVE NO. 1
C. RAMP "D"
P.I. STA. 25+35.83
 $\Delta = 18^\circ 41' 56''$ LT.
D = 04' 00' 00"
R = 1,432.39'
T = 235.83'
L = 467.47'
E = 19.28'

ALLEN TOWNSHIP VMS. 4933

ITEM 607 - FENCE, TYPE 47 = 4843 L.F.
QUANTITY CARRIED TO GENERAL SUMMARY

BEGIN PROJECT
UNI-33-0.28
STA. 15+00.00

FED. RD. DIVISION	STATE	PROJECT	FEDERAL PROJECT
5	OHIO	UNI-33-0.28	
F-11 (54)			

217
224

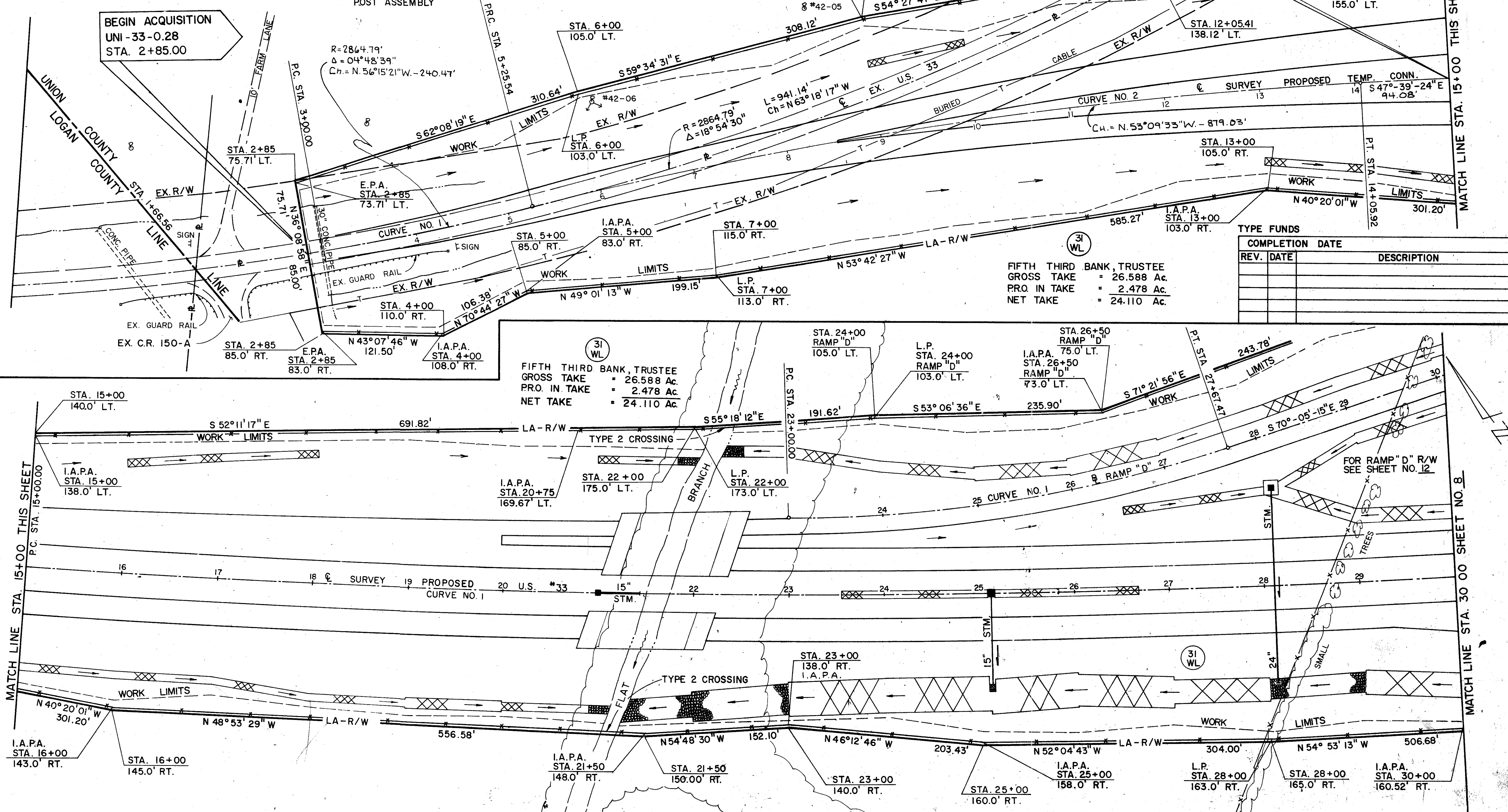
7
14

FENCE LEGEND

L.P. LINE POST
C.P.A. CORNER POST ASSEMBLY
E.P.A. END POST ASSEMBLY
I.A.P.A. INTERMEDIATE ANCHOR POST ASSEMBLY

STATE OF OHIO
(THE OHIO STATE UNIVERSITY)
GROSS TAKE = 1.666 Ac.
PRO. IN TAKE = 1.218 Ac.
NET TAKE = 0.448 Ac.

BEGIN ACQUISITION
UNI-33-0.28
STA. 2+85.00



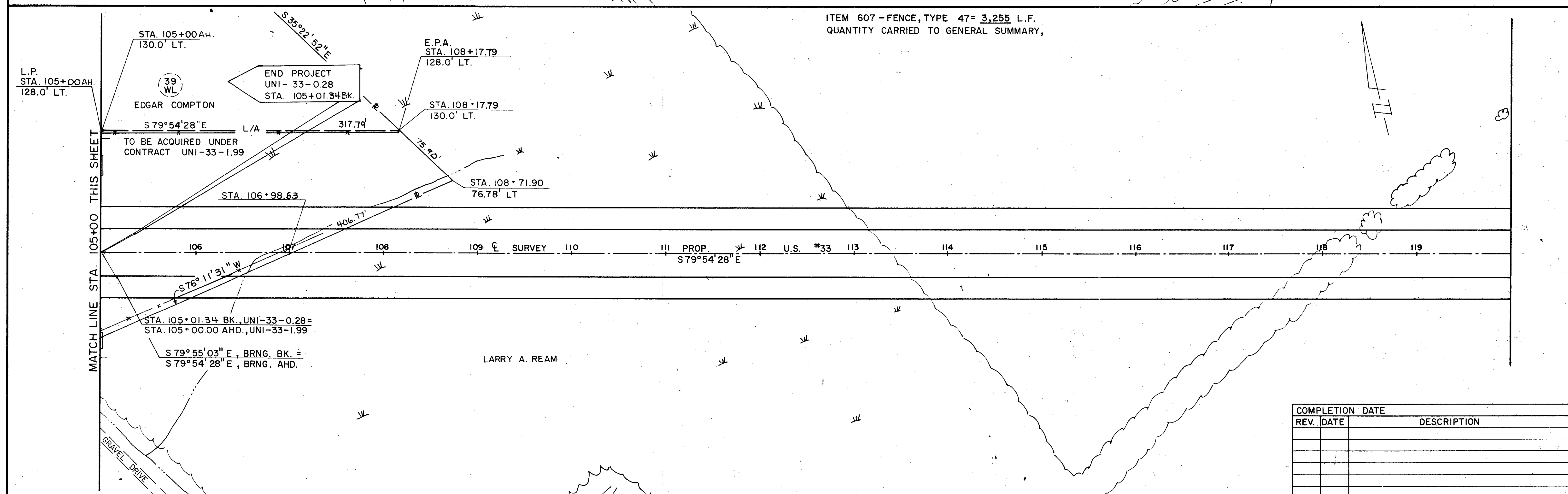
TYPE FUNDS

REV.	DATE	DESCRIPTION

FIFTH THIRD BANK, TRUSTEE
GROSS TAKE = 26.588 Ac.
PRO. IN TAKE = 2.478 Ac.
NET TAKE = 24.110 Ac.

FIFTH THIRD BANK, TRUSTEE
GROSS TAKE = 26.588 Ac.
PRO. IN TAKE = 2.478 Ac.
NET TAKE = 24.110 Ac.

R/W PLAN STA. 3+00 TO 15+00 U.S. 33 TEMP. CONN.
STA. 15+00 TO 30+00 PROPOSED U.S. 33



R/W PLAN RAMP "D"
STA. 63+00 TO STA. 72+00 STOKES RD.

ALLEN TOWNSHIP V.M.S. 4933 & 158

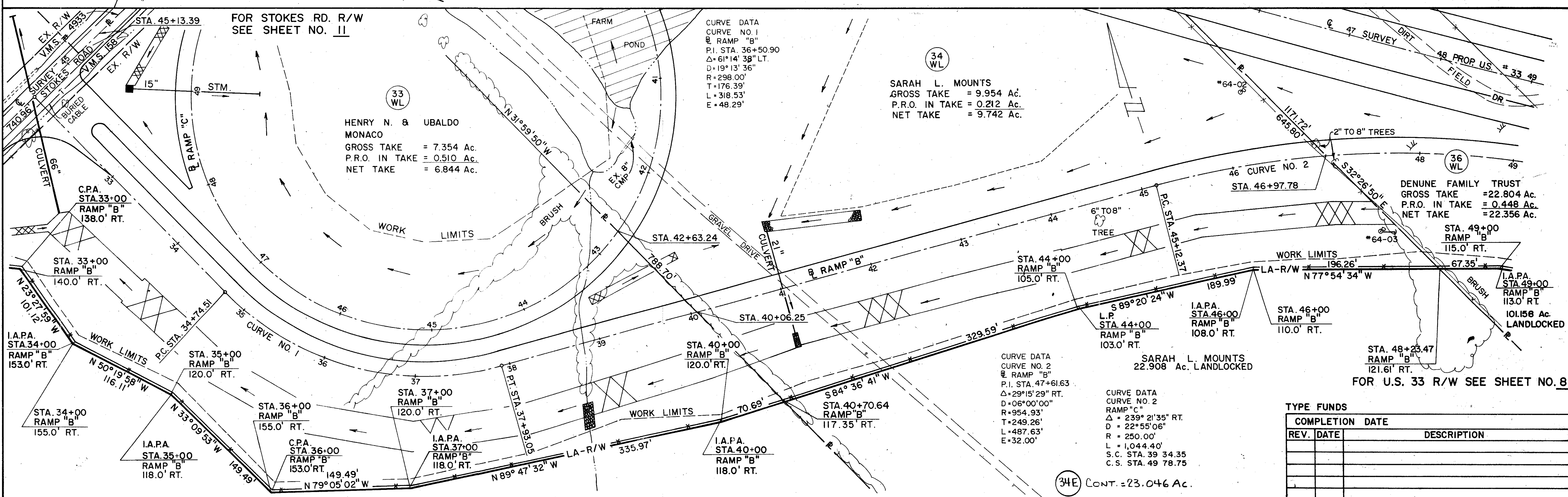
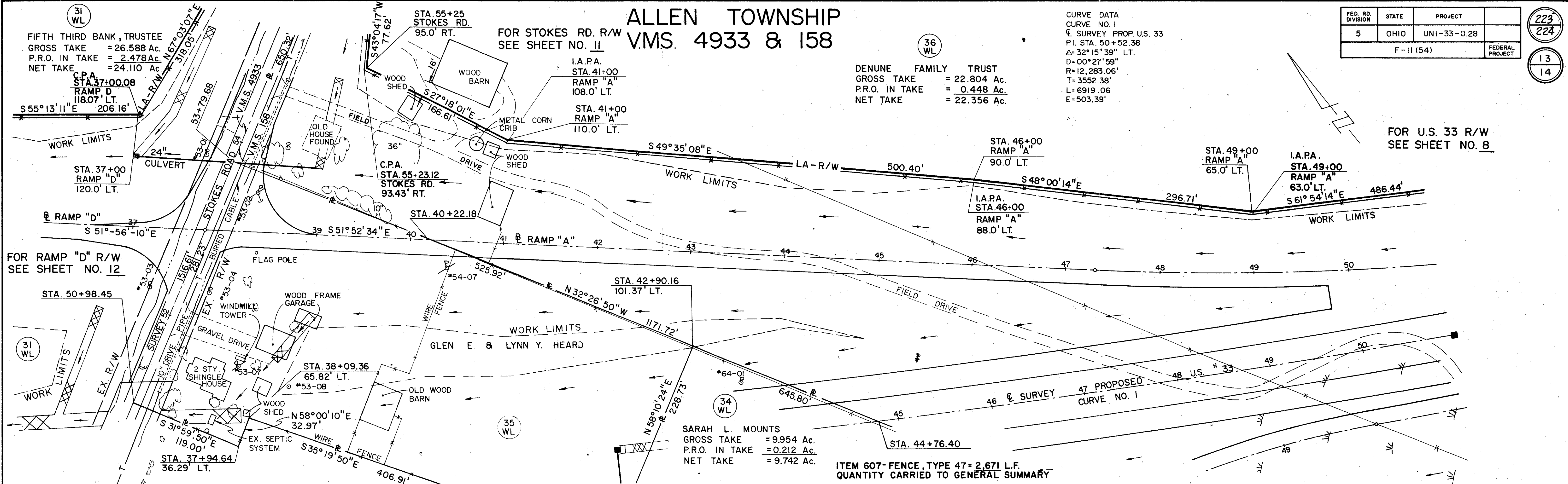
FED. RD. DIVISION	STATE	PROJECT
5	OHIO	UNI-33-0.28
F-11 (54)		FEDERAL PROJECT

223
224
13
14

CURVE DATA
CURVE NO. 1
P.I. STA. 50+52.38
Δ=32°15'39" LT.
D=00°27'59"
R=12,283.06'
T=3552.38'
L=6919.06'
E=503.39'

DENUNE FAMILY TRUST
GROSS TAKE = 22.804 Ac.
P.R.O. IN TAKE = 0.448 Ac.
NET TAKE = 22.356 Ac.

FOR U.S. 33 R/W
SEE SHEET NO. 8



TYPE FUNDS		
COMPLETION DATE		DESCRIPTION
REV.	DATE	

MICROFILMED

JAN 6 1989

GENERAL INFORMATION

INTRODUCTION

THIS REPORT CONSISTS OF THE SOILS INVESTIGATION OF 8.78 MILES OF PROPOSED USR 33, BEGINNING AT THE LOGAN-UNION COUNTY LINE, EXTENDING EASTWARD TO MARYSVILLE AND TERMINATING AT THE USR 36-SR 4 AND USR 33 INTERCHANGE.

FOR SOIL PROFILES INCLUDED IN THIS REPORT SEE THE PROJECT INDEX ON THIS SHEET.

GEOLOGY AND OBSERVATIONS OF THE PROJECT

THE PROJECT IS LOCATED ON THE GLACIATED MISSISSIPPI VALLEY PLAIN, IN AN AREA WHERE THICK GLACIAL DRIFT OVERLIES DOLOMITE BEDROCK OF THE MONROE GROUP. SMALL FARM PONDS WERE OBSERVED IN THE VICINITIES USR 33 STATIONS 40+00, 140+00, 205+00 AND 444+00.

EXPLORATION

EXPLORATORY BORINGS WERE MADE BY MEANS OF TRUCK-MOUNTED MECHANICAL SOIL AUGER, BETWEEN AUGUST 14, 1984 AND NOVEMBER 27, 1984. INCLUDED IN THIS REPORT ARE LOGS OF BORINGS MADE FOR THE STRUCTURE FOUNDATION INVESTIGATIONS ON THE PROJECT.

INVESTIGATIONAL FINDINGS

MATERIALS ENCOUNTERED ON THE PROJECT WERE PREDOMINANTLY COMPRISED OF SILT CLAYS (A-6A AND A-6B) AND CLAYS (A-7-6), WITH SOME SANDY SILTS (A-4A) AND SILTS (A-4B), GENERALLY HAVING LOW MOISTURE CONTENTS AND MOISTURE CONTENTS IN THE LOWER PORTIONS OF THE PLASTIC RANGE.

WET MATERIALS WERE ENCOUNTERED AT USR 33 STATIONS 17+00, 22+50, STOKES ROAD STATIONS 50+00 AND 57+00, RAMP A STATION 42+00, DARBY-POTTERSBERG ROAD STATIONS 36+00, RAMP E 151+00, HOLYCROSS-EPPS ROAD STATION 48+75, RAMP U STATION 105+12 AND RAMP V STATION 465+00.

LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS— 886 SAMPLES TESTED

DESCRIPTION	H.R.B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
GRAVEL	A-1-A(0)	A-1-A	70	25	2	1	2	NP	NP	13	1
GRAVEL WITH SAND	A-1-B(0)	A-1-B	17	43	24	8	8	NP	NP	14	2
FINE SAND	A-3(0)	A-3	0	14	79	3	4	NP	NP	21	1
COARSE AND FINE SAND	A-3A(0)	A-3A	0	8	66	15	11	NP	NP	19	4
GRAVEL WITH SAND AND SILT	A-2-4(0)	A-2-4	47	11	8	17	17	26	9	11	1
SANDY SILT	A-4A(7)	A-4A	11	6	11	30	42	26	7	16	53
SILT	A-4B(8)	A-4B	1	1	16	58	24	NP	NP	20	8
SILT AND CLAY	A-6A(9)	A-6A	6	4	7	30	53	32	13	17	356
SILTY CLAY	A-6B(11)	A-6B	4	3	7	28	58	37	17	19	222
CLAY	A-7-6(15)	A-7-6	2	1	3	23	71	46	24	21	238
VARIOUS OTHER MATERIALS											

VISUAL CLASSIFICATION

||||| SOD AND/OR TOPSOIL = X² APPROXIMATE DEPTH.

XXXX BERM MATERIAL



AUGER BORING-PLAN VIEW



DRIVE SAMPLE BORING-PLAN VIEW



AUGER BORING PLOTTED TO VERTICAL SCALE ONLY.



DRIVE SAMPLE BORING PLOTTED TO VERTICAL SCALE ONLY.

NOTE: FIGURES BESIDE BORINGS INDICATE WATER CONTENT IN PERCENT. e.g.

● WATER CONTENT NEARLY EQUAL TO OR GREATER THAN LIQUID LIMIT.

⊕ INDICATES A NON-PLASTIC MATERIAL WITH A HIGH WATER CONTENT.

— FREE WATER



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

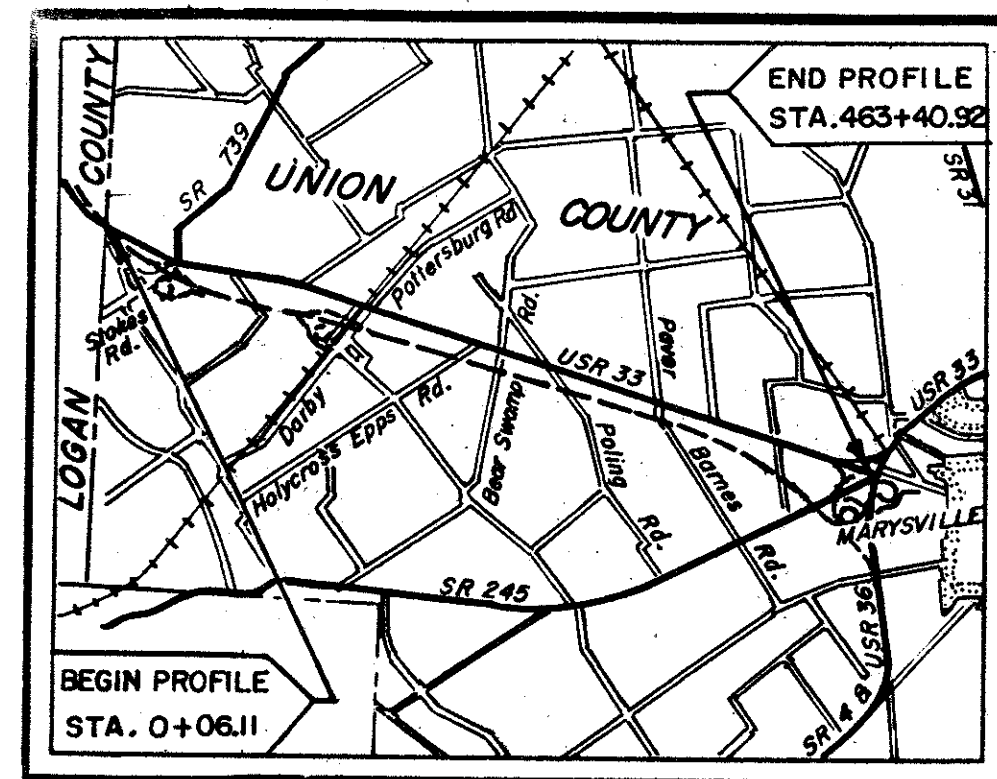
ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE SOIL PROFILE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATION, SOIL TESTS, AND BEDROCK BORINGS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, 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.

SOIL PROFILE
UNION COUNTY

UNI-33-0.28

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-TESTING LABORATORY
1600 WEST BROAD STREET COLUMBUS, OHIO 43223

NOTE: INFORMATION SHOWN BY THIS SUBGRADE PROFILE WAS OBTAINED SOLELY FOR USE IN ESTABLISHING DESIGN CONTROLS FOR THE PROJECT. THE STATE OF OHIO DOES NOT GUARANTEE THE ACCURACY OF THIS DATA AND IT IS NOT TO BE CONSTRUED AS A PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT.



LOCATION MAP

Recon - R.D.R. - 8/7/84 - 8/8/84

Drilling - C.E.G. - 8/14/84 - 9/20/84, 10/30/84 - 11/1/84, 11/26 & 27/84

Drafting - R.A.W. - 1/14/85

PROJECT		INDEX			
ALIGNMENT	PLAN VIEW SHEET	PROFILE SHEET	CUT MAX.	FILL EMB. MAX.	
USR 33 (MAINLINE)					
0+06.11	32+00	5	5	14'	16'
32+00	64+00	6	6	13'	5'
64+00	96+00	7	7	4'	11'
96+00	128+00	8	8	4'	7'
128+00	160+00	9	9	5'	6'
160+00	192+00	10	10	8'	10'
192+00	224+00	11	11	5'	19'
224+00	256+00	12	12	5'	24'
256+00	288+00	13	13	9'	11'
288+00	320+00	14	14	—	23'
320+00	352+00	15	15	6'	21'
352+00	384+00	16	16	—	8'
384+00	416+00	17	17	1'	22'
416+00	448+00	18	18	5'	22'
448+00	463+40.92	19	19	—	12'
TEMPORARY CONNECTOR		5	5	3'	7'
STOKES ROAD		20	21	—	25'
RAMP A	20	21	14'	11'	
RAMP B	20	21	12'	12'	
RAMP C	20	22	4'	28'	
RAMP D	20	22	15'	11'	
DARBY POTTERSBERG ROAD		23	24	—	18'
RAMP E	23	24	4'	16'	
RAMP F	23	24	3'	10'	
RAMP G	23	25	—	6'	
RAMP H	23	25	2'	17'	
HOLYCROSS-EPPTS ROAD		25	25	—	22'
BEAR SWAMP ROAD		25	25	15'	—
POLING ROAD		26	26	—	26'
RAMP N	17	28	—	10'	
RAMP U	27	28	7'	28'	
RAMP V	27	29	1'	27'	
RAMP W	27	29	—	22'	
RAMP X	27	29	1'	6'	
RAMP Y	27	29	3'	15'	

SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON PLASTIC

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

STATION & OFFSET DEPTH										STATION & OFFSET DEPTH										STATION & OFFSET DEPTH										STATION & OFFSET DEPTH									
FROM TO										FROM TO										FROM TO										FROM TO									
%	%	%	%	%	L.L.	P.I.	W.C.	CLASS		%	%	%	%	%	L.L.	P.I.	W.C.	CLASS		%	%	%	%	%	L.L.	P.I.	W.C.	CLASS	%	%	%	%	%	L.L.	P.I.	W.C.	CLASS		
AGG	C.S.	F.S.	SILT	CLAY						AGG	C.S.	F.S.	SILT	CLAY						AGG	C.S.	F.S.	SILT	CLAY						AGG	C.S.	F.S.	SILT	CLAY					
10+50.000	CL	00.8-05.0	0	1	6	26	67	38	17	25	A-6B *									67+00.000	CL	00.8-05.0	0	0	0	27	73	51	28	20	A-7-6								
		05.0-10.0	0	2	6	32	60	37	17	23	A-6B																												
		10.0-15.0	9	4	7	30	50	37	17	18	A-6B																												
		15.0-20.0	11	3	8	34	44	31	13	16	A-6A																												
13+00.000	CL	00.8-05.0	8	2	5	29	56	35	16	16	A-6B *									72+00.000	CL	00.2-05.0	0	1	2	21	76	52	29	33	A-7-6								
		05.0-10.0	11	5	6	28	50	32	13	18	A-6A																												
		10.0-15.0	10	4	10	39	37	32	14	14	A-6A																												
		15.0-20.0	13	6	11	37	33	38	18	16	A-6B																												
17+00.000	CL	00.8-05.0	0	2	9	35	54	NP	NP	22	A-4A									75+85.070	LT	00.8-05.0	0	1	3	20	76	53	30	20	A-7-6								
		05.0-10.0	0	4	12	32	52	33	12	24	A-6A																												
		10.0-13.0	20	4	10	34	32	32	11	16	A-6A																												
		13.0-20.0	20	8	11	33	28	35	17	13	A-6B																												
21+00.000	CL	00.8-05.0	14	1	6	28	51	34	14	26	A-6A																												
		05.0-10.0	18	3	14	30	35	35	16	24	A-6B																												
		10.0-15.0	11	9	16	36	28	NP	NP	13	A-4A																												
		15.0-20.0	16	5	10	36	33	34	17	13	A-6B																												
22+50.080	LT	02.5-04.0	7	4	13	35	41	33	11	14	A-6A																												
		05.0-06.5	13	8	13	32	34	26	9	10	A-4A																												
		07.5-09.0	15	9	12	31	33	25	9	11	A-4A																												
		10.0-11.5	0	8	13	36	43	-	-	11																													
		12.5-14.0	16	7	11	29	37	-	-	13																													
		15.0-16.5	18	6	12	30	34	24	8	16	A-4A																												
		17.5-19.0	47	11	8	17	17	26	9	11	A-2-4																												
		20.0-21.5	32	18	11	17	22	23	7	11	A-4A																												
		25.0-26.5	37	11	11	19	22	22	7	17	A-4A																												
		30.0-31.5	26	8	13	25	28	22	6	14	A-4A																												
		35.0-36.5	21	8	13	34	24	NP	NP	11	A-4A																												
		40.0-41.5	37	7	10	26	20	NP	NP	12	A-4A																												
		45.0-46.5	0	14	79	3	4	NP	NP	21	A-3																												
		50.0-51.5	38	11	14	24	13	NP	NP	10	A-4A																												
41+00.000	CL	00.2-05.0	0	1	8	27	64	48	29	16	A-7-6																												
		05.0-07.0	14	2	6	25	53	48	28	15	A-7-6																												
		07.0-10.0	9	4	7	28	52	41	21	17	A-7-6																												
		10.0-15.0	0	3	8	41	48	34	10	18	A-4A																												
		15.0-20.0	11	4	8	28	49	33	19	16	A-6B																												
45+00.000	CL	00.8-05.0	0	1	6	23	70	30	14	15	A-6A																												
		05.0-07.0	0	0	32	33	35	31	17	23	A-6B *																												
		07.0-10.0	0	0	3	26	71	32	16	24	A-6B *																												
		10.0-12.0	0	0	11	36	53	32	16	26	A-6B																												
		12.0-15.0	0	0	2	24	74	39	18	28	A-6B																												
		15.0-20.0	0	1	5	25	69	40	20	24	A-6B																												
49+00.000	CL	00.2-05.0	0	0	19	38	43	31	15	15	A-6A																												
		05.0-08.0	0	0	37	23	40	34	19	22	A-6B						</																						

SUMMARY OF SOIL TEST DATA
NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON PLASTIC
* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

SOIL PROFILE
UNION COUNTY
UNI-33-0.28
OHIO STATE HIGHWAY TESTING
LABORATORY
1800 W. BROAD ST. COLUMBUS, OHIO 43228

STATION & OFFSET DEPTH
FROM TO

DARBY-POTTERS ROAD

STATION & OFFSET DEPTH FROM TO	% AGG	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS
32+00.012 LT 00.3-05.0	0	2	5	26	67	45	21	22	A-7-6 *
05.0-10.0	0	0	1	26	73	45	25	20	A-7-6
10.0-15.0	0	1	2	20	77	45	26	24	A-7-6
15.0-20.0	0	1	1	20	78	46	26	23	A-7-6
20.0-25.0	0	0	1	25	74	45	23	24	A-7-6
36+00.038 RT 00.5-05.0	2	3	7	35	53	45	25	16	A-7-6
05.0-10.0	0	1	3	23	73	46	25	29	A-7-6
10.0-15.0	3	1	2	22	72	40	17	24	A-6B
15.0-20.0	0	0	0	21	79	41	18	25	A-7-6
20.0-25.0	0	0	20	61	19	NP	NP	25	A-4B
25.0-28.0	0	0	24	52	24	30	15	22	A-6A
28.0-30.0	0	0	2	21	77	30	12	32	A-6A
41+00.040 RT 00.5-05.0	0	1	5	19	75	43	21	21	A-7-6
05.0-10.0	0	1	2	20	77	43	21	17	A-7-6
10.0-15.0	0	1	1	24	74	43	21	20	A-7-6
15.0-20.0	3	3	3	24	67	43	20	23	A-7-6
20.0-25.0	3	3	7	34	53	28	9	18	A-4A
45+00.040 RT 00.5-05.0	4	2	2	17	75	55	29	25	A-7-6
05.0-10.0	0	1	4	21	74	56	33	24	A-7-6
10.0-15.0	0	1	1	22	76	39	18	22	A-6B
15.0-20.0	0	0	0	26	74	41	21	20	A-7-6
20.0-25.0	0	1	3	27	69	40	20	20	A-6B
53+00.040 RT 00.2-05.0	0	3	2	28	67	46	24	19	A-7-6
05.0-10.0	0	0	1	18	81	46	24	20	A-7-6
10.0-15.0	0	3	2	19	76	47	25	22	A-7-6
15.0-20.0	0	1	1	17	81	46	23	24	A-7-6
20.0-25.0	0	2	1	26	71	47	26	23	A-7-6
57+00.040 RT 00.5-05.0	4	1	1	17	77	58	30	28	A-7-6
05.0-10.0	3	1	6	24	66	39	18	19	A-6B
10.0-15.0	0	0	0	24	76	40	17	21	A-6B
15.0-20.0	0	0	0	41	59	40	20	22	A-6B
20.0-25.0	4	0	0	28	68	35	15	22	A-6A

RAMP E

151+00.000 BL 00.8-05.0	0	0	1	19	80	51	25	29	A-7-6
05.0-10.0	0	1	3	37	59	51	29	34	A-7-6
10.0-15.0	0	2	3	27	68	43	21	22	A-7-6
15.0-20.0	0	0	0	30	70	42	19	—	A-7-6
20.0-25.0	13	1	3	25	58	NP	NP	21	A-4A
154+00.000 BL 00.8-05.0	0	1	4	25	70	45	20	24	A-7-6 *
05.0-10.0	0	1	5	28	66	45	23	23	A-7-6 *
10.0-15.0	9	1	4	28	58	32	14	22	A-6A
15.0-20.0	7	3	9	34	47	32	14	20	A-6A
20.0-25.0	11	2	6	30	51	32	13	19	A-6A

RAMP F

131+00.000 BL 00.2-05.0	0	0	3	23	74	51	29	22	A-7-6 *
05.0-10.0	0	1	1	19	79	43	23	24	A-7-6
10.0-15.0	0	0	0	22	78	43	23	22	A-7-6
15.0-20.0	0	0	1	22	77	44	25	25	A-7-6
135+00.000 BL 00.8-05.0	0	1	2	28	69	44	22	15	A-7-6 *
05.0-10.0	0	0	0	30	70	45	23	19	A-7-6
10.0-15.0	0	0	0	25	75	45	23	24	A-7-6
15.0-20.0	0	3	2	21	74	45	23	25	A-7-6
139+00.000 BL 00.8-05.0	0	1	3	28	68	46	27	20	A-7-6 *
05.0-10.0	0	2	5	32	61	46	26	18	A-7-6
10.0-15.0	0	0	1	26	73	37	18	20	A-6B
15.0-20.0	0	2	5	30	63	36	17	21	A-6B
140+50.075 RT 00.2-05.0	0	0	1	21	78	46	25	38	A-7-6
05.0-10.0	0	0	1	24	75	46	25	21	A-7-6
10.0-15.0	0	0	0	19	81	46	26	25	A-7-6
15.0-20.0	0	0	0	30	70	34	17	24	A-6B
20.0-25.0	0	3	7	33	57	34	17	20	A-6B
25.0-30.0	0	2	5	31	62	34	17	22	A-6B

RAMP G

134+00.000 BL 00.8-05.0	10	3	7	32	48	34	16	11	A-6B *
05.0-10.0	10	4	9	35	42	34	16	11	A-6B
10.0-15.0	0	0	0	22	78	44	23	22	A-7-6
15.0-20.0	0	0	0	24	76	44	22	25	A-7-6

STATION & OFFSET DEPTH
FROM TO

RAMP H

140+00.000 BL 00.8-05.0	0	1	7	28	64	41	22	14	A-7-6
05.0-10.0	0	0	1	29	70	40	19	17	A-6B
10.0-15.0	0	0	0	24	76	59	43	22	A-7-6
15.0-20.0	0	0	1	21	78	48	25	25	A-7-6
20.0-25.0	0	1	1	27	71	40	20	22	A-6B
144+00.000 BL 00.3-05.0	0	0	2	23	75	49	28	20	A-7-6
05.0-10.0	9	1	1	22	67	49	28	22	A-7-6
10.0-15.0	0	0	0	24	76	42	23	22	A-7-6
15.0-20.0	0	0	0	27	73	37	17	20	A-6B
20.0-25.0	0	1	3	27	69	37	17	23	A-6B

HOLYCROSS-EPPS ROAD

41+00.012 RT 00.5-05.0	4	4	6	27	59	37	15	18	A-6A *
05.0-10.0	6	3	6	27	58	34	13	17	A-6A
10.0-15.0	6	4	6	26	58	33	12	18	A-6A
15.0-20.0	7	3	7	30	53	29	11	16	A-6A
45+00.012 RT 00.5-05.0	4	4	7	28	57	38	18	18	A-6B
05.0-10.0	3	3	7	31	56	38	18	16	A-6B
10.0-15.0	0	1	1	26	72	38	18	23	A-6B
15.0-20.0	4	4	2	30	60	38	16	20	A-6B
48+75.015 LT 02.5-04.0	0	3	8	27	62	38	16	26	A-6B
05.0-06.5	0	2	6	27	65	40	22	20	A-6B
07.5-09.0	10	3	7	29	51	40	23	22	A-6B
10.0-11.5	0	3	8	32	57	34	12	15	A-6A
12.5-14.0	8	3	7	30	52	33	11	18	A-6A
15.0-16.5	15	3	7	28	47	35	14	19	A-6A
17.5-19.0	13	3	7	30	47	35	15	17	A-6A
20.0-21.5	6	3	7	29	55	32	12	21	A-6A
25.0-26.5	14	3	6	28	49	32	12	18	A-6A
30.0-31.5	0	3	7	33	57	30	11	16	A-6A
35.0-36.5	0	5	1	26	68	28	10	29	A-4A
40.0-41.5	18	7	10	33	32	28	11	14	A-6A
53+00.012 RT 00.5-06.0	7	4	8	22	59	36	16	20	A-6B
05.0-10.0	5	3	6	26	60	36	17	17	A-6B
10.0-15.0	0	4	7	31	58	36	17	17	A-6B
15.0-20.0	5	6	9	28	52	36	17	18	A-6B

BEAR SWAMP ROAD

48+00.012 LT 00.5-04.0	27	7	10	24	32	33	12	18	A-6A *
04.0-09.0	7	5	8	27	53	34	14	17	A-6A *
09.0-15.0	7	4	8	27	54	33	14	16	A-6A
15.0-20.0	7	4	8	28	53	33	15	26	A-6A
56+00.012 LT 00.5-05.0	6	5	8	29	52	35	15	16	A-6A *
05.0-10.0	3	4	7	27	59	35	15	18	A-6A
10.0-15.0	5	4	8	29	54	35	16	17	A-6B
15.0-20.0	4	6	8	29	53	36	16	20	A-6B

POLING ROAD

43+00.012 LT	00.5-05.0	6	5	7	28	54	34	14	12	A-6A *
	05.0-10.0	5	5	8	30	52	33	13	15	A-6A
	10.0-15.0	5	6	8	31	50	35	16	19	A-6B
	15.0-20.0	6	4	8	29	53	35	16	17	A-6B
48+65.015 LT	02.5-04.0	4	4	8	29	55	32	13	12	A-6A
	05.0-06.5	4	4	8	27	57	31	11	14	A-6A
	07.5-09.0	5	4	8	29	54	34	13	17	A-6A
	10.0-11.5	5	4	8	27	56	33	13	16	A-6A
	12.5-14.0	9	5	8	27	51	34	15	16	A-6A
	15.0-16.5	9	7	9	25	50	34	15	17	A-6A
	17.5-19.0	8	5	8	27	52	31	12	15	A-6A
	20.0-21.5	19	6	10	23	42	31	12	18	A-6A
	25.0-26.5	6	4	8	29	53	29	12	16	A-6A
	30.0-31.5	7	5	9	28	51	29	12	17	A-6A
	35.0-36.5	8	4	8	31	49	29	12	17	A-6A
40.0-41.5	8	4	9	30	49	28	10	15	A-4A	
51+48.015 LT	02.5-04.0	4	5	9	32	50	32	12	16	A-6A
	05.0-06.5	6	5	8	30	51	32	13	13	A-6A
	07.5-09.0	4	5	9	28	54	31	12	15	A-6A
	10.0-11.5	7	5	8	27	53	31	12	16	A-6A
	12.5-14.0	5	9	9	32	45	31	12	18	A-6A
	15.0-16.5	5	7	8	34	46	31	12	19	A-6A
	17.5-19.0	8	5	8	29	50	31	12	24	A-6A
	20.0-21.5	14	4	7	31	44	29	11	19	A-6A
	25.0-26.5	9	6	9	29	47	29	12	15	A-6A
	30.0-31.5	7	4	6	29	54	29	12	20	A-6A
	35.0-36.5	12	5	7	30	46	29	12	12	A-6A
40.0-41.5	10	5	8	30	47	29	12	20	A-6A	
58+00.012 LT	00.5-05.0	0	2	8	28	62	35	16	21	A-6B
	05.0-10.0	10	2	7	26	55	41	21	22	A-7-6
	10.0-15.0	7	5	8	30	50	33	14	16	A-6A
	15.0-20.0	6	4	7	29	54	33	14	16	A-6A
	20.0-25.0	0	0	0	31	69	32	14	21	A-6A
	25.0-30.0	0	0	0	34	66	33	14	23	A-6A
64+00.012 LT	00.5-05.0	0	1	4	29	66	39	20	18	A-6B *
	05.0-10.0	7	3	5	26	59	37	18	17	A-6B
	10.0-15.0	0	1	1	24	74	35	14	20	A-6A
	15.0-20.0	10	5	9	26	50	35	15	15	A-6A

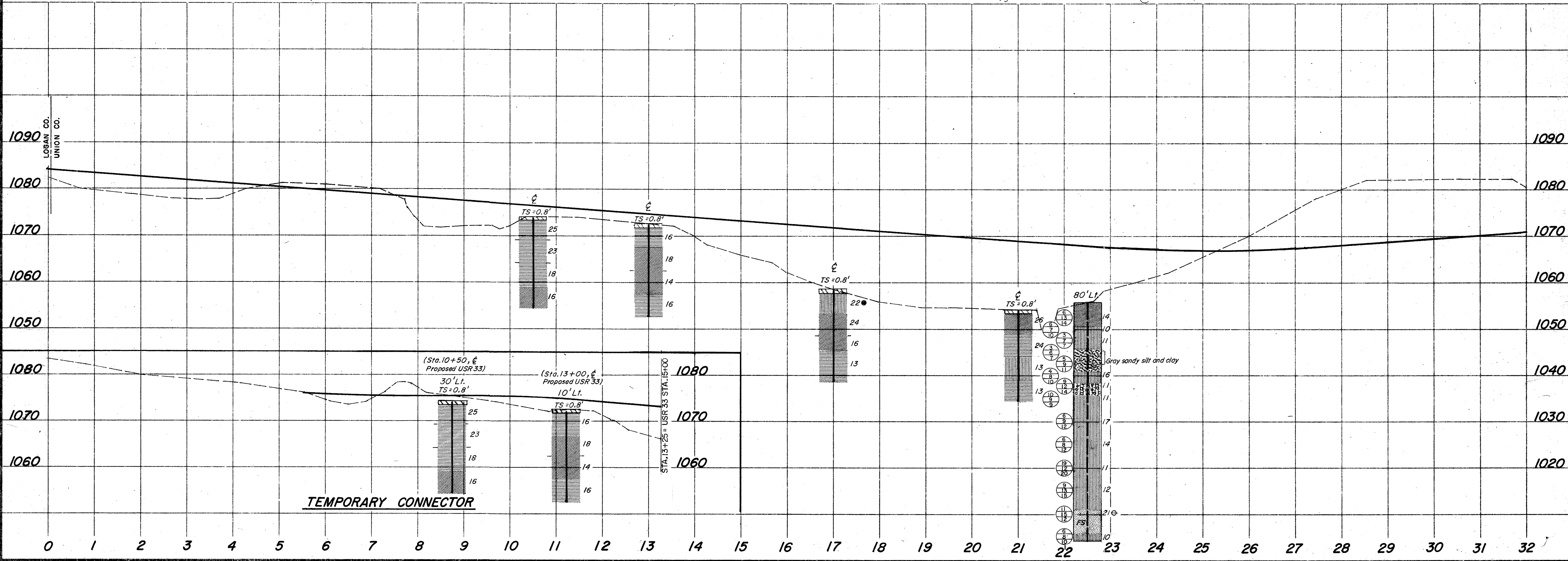
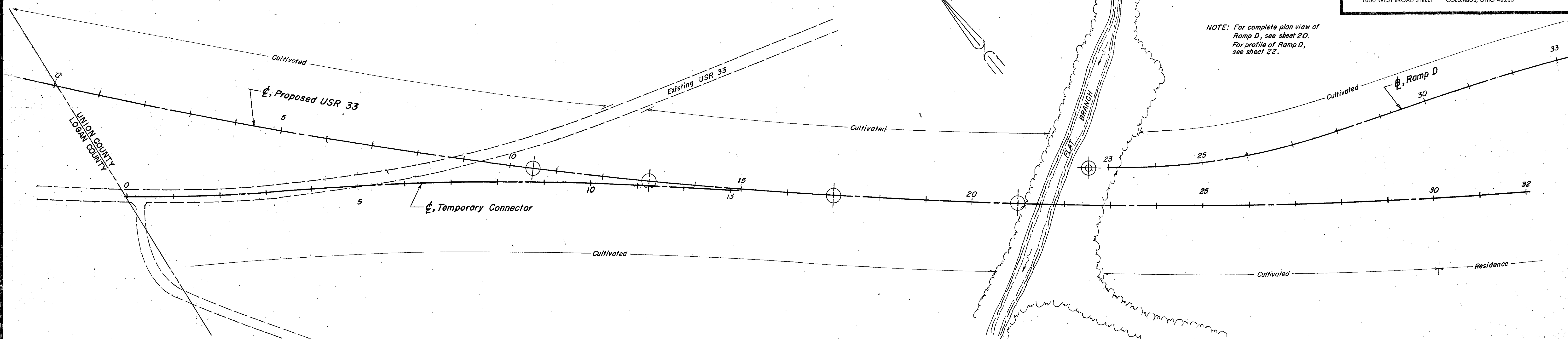
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JAN 6 1969

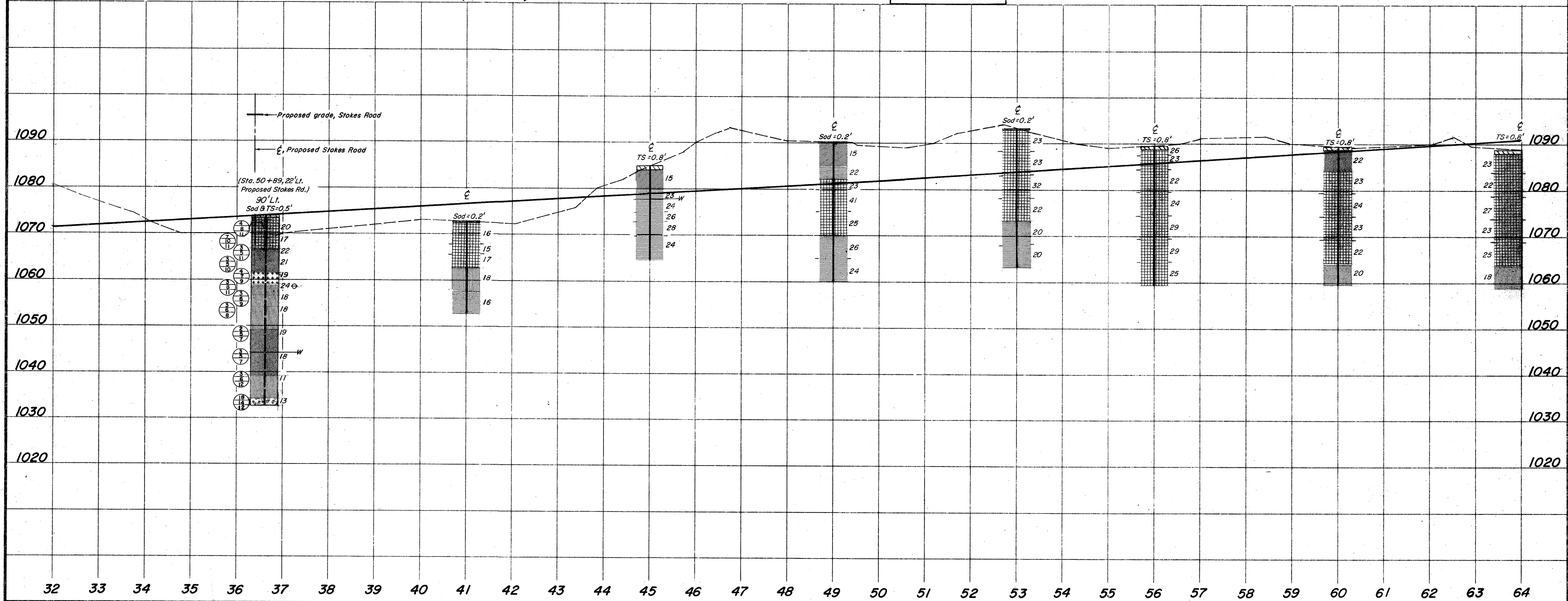
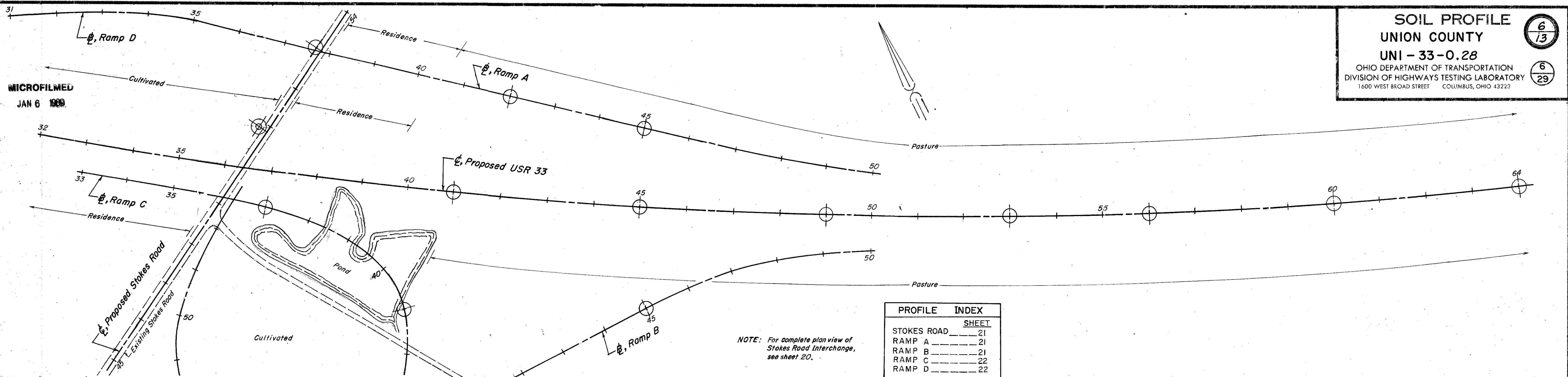
SOIL PROFILE
UNION COUNTY
UNI-33-0.28
OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS TESTING LABORATORY
1600 WEST BROAD STREET COLUMBUS, OHIO 43223

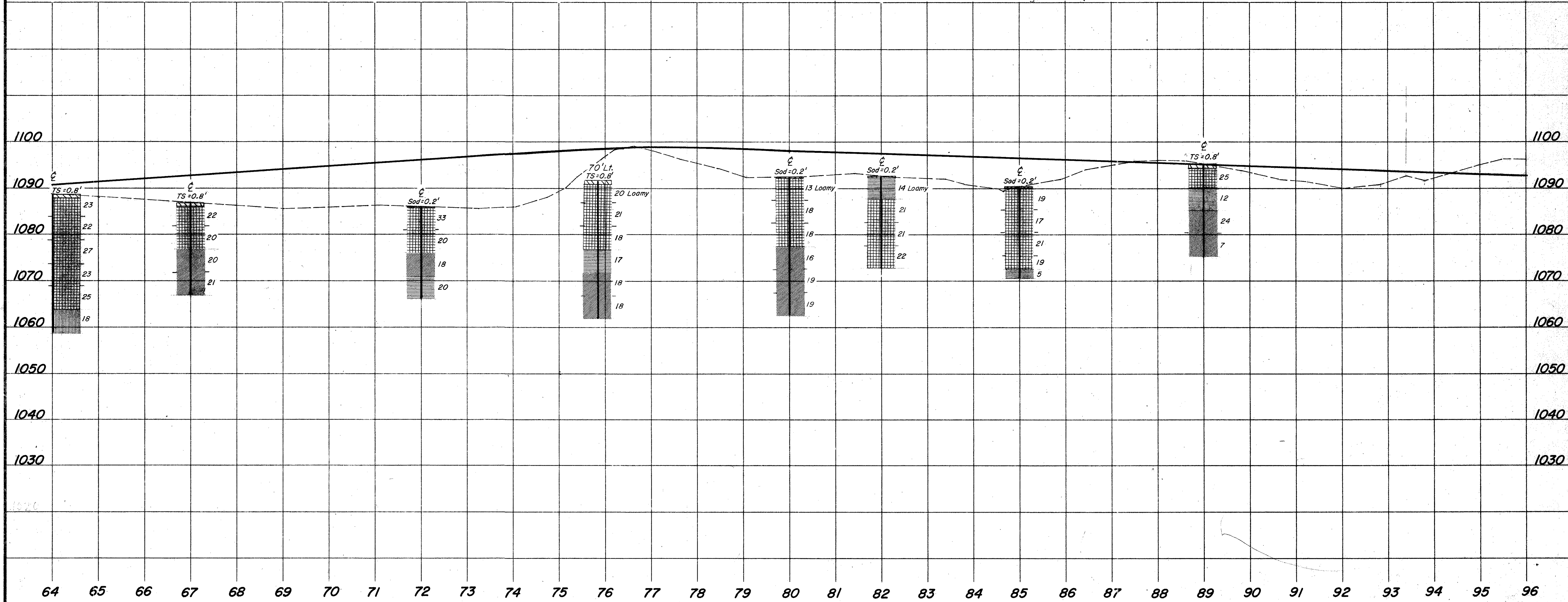
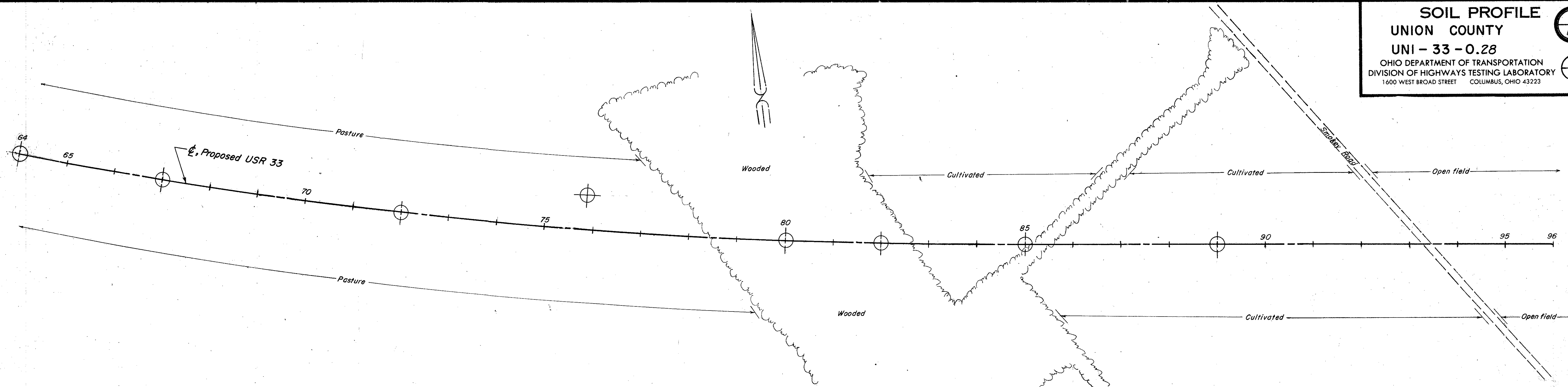
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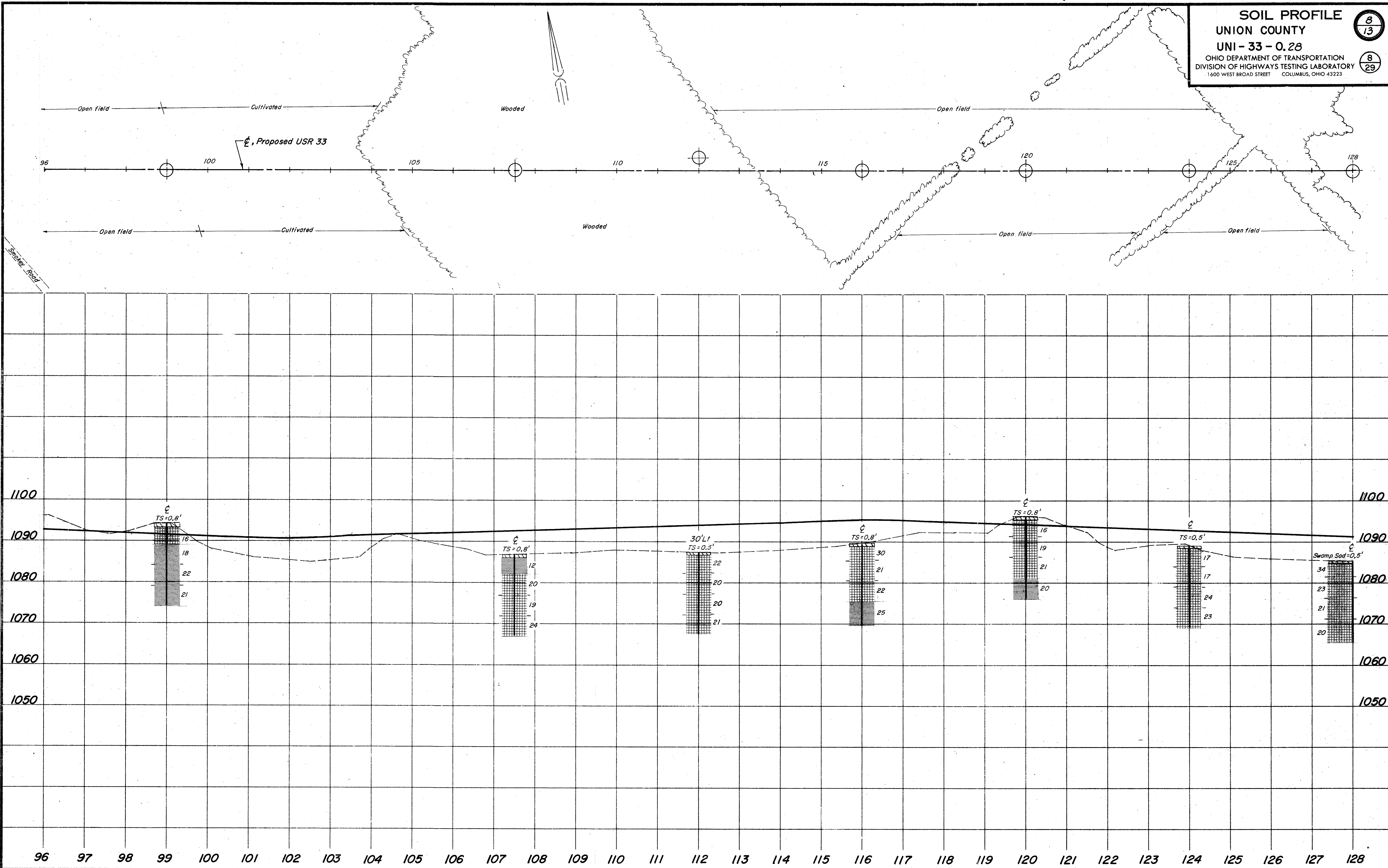
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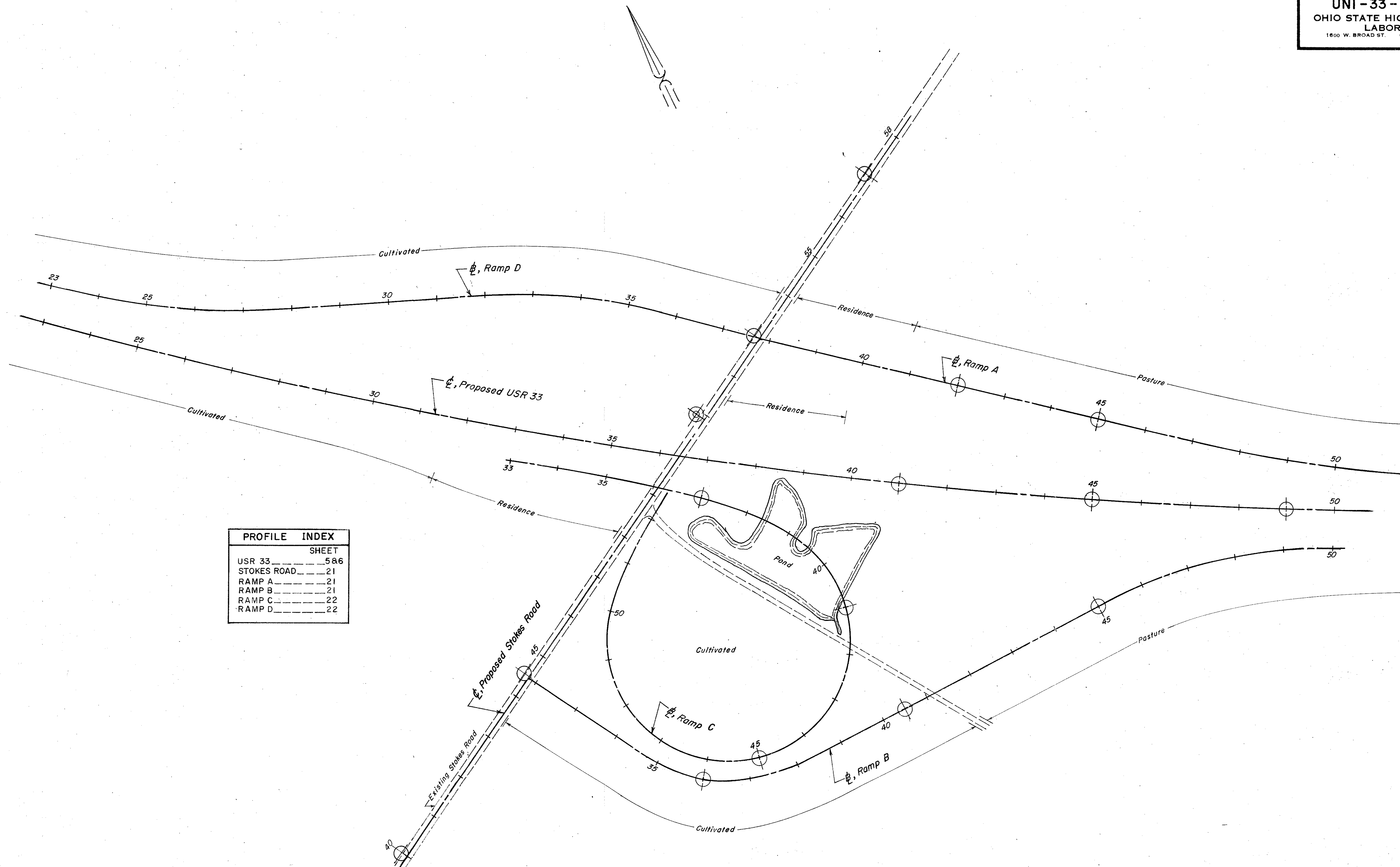
NOTE: For complete plan view of
Ramp D, see sheet 20.
For profile of Ramp D,
see sheet 22.











1090
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RAMP D

23 24 25 26 27 28 29 30 31 32 33 34 35 36 37

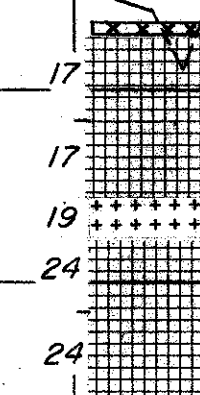
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RAMP C

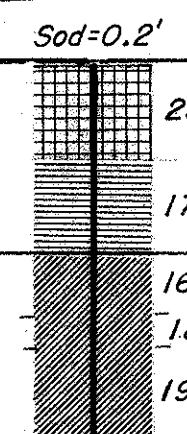
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52

(Sta. 53+00, 12' Lt.
Stokes Road)
5' Lt.

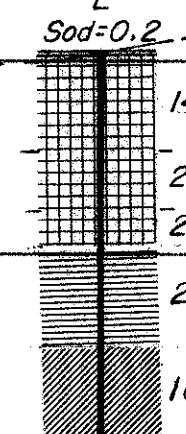


Stokes Road

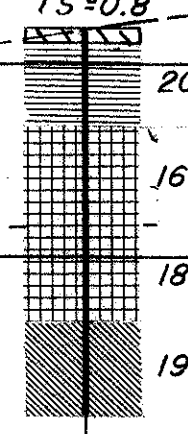
Sod=0.2'



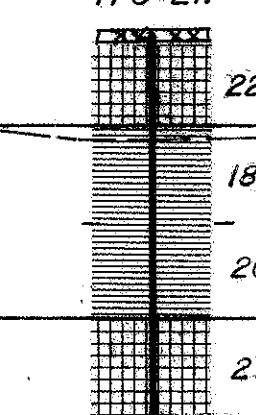
Sod=0.2'



TS=0.8'



(Sta. 44+50, 12' Lt.
Proposed Stokes Rd.)
17.5' Lt.



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13
1
2

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 OCTOBER 2 AND 3, 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 1027.5 FEET AND WAS TERMINATED AFTER PENETRATING IN EXCESS OF 6.5 FEET OF MATERIAL REQUIRING IN EXCESS OF 30 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 1032.5 FEET AND WAS TERMINATED AFTER PENETRATING IN EXCESS OF 6.5 FEET OF MATERIAL REQUIRING 18 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 28.0-FOOT DEPTH, ELEVATION 1041.0 FEET AND IN BORING B-2 AT 30.0-FOOT DEPTH, ELEVATION 1044.0 FEET.

- 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
- Top of Rock

- Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- 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



LOG OF BORING															
Date Started		10-3-84		Sampler Type		SS		Dia.		1 3/8"		Water Elev. 1041.0'			
Date Completed		10-3-84		Casing Length				Dia.							
Boring No.		B-1		Station & Offset		48+99		44'		RT. (REAR ABUTMENT)		Surface Elev. 1069.0'			
Elev.	Depth	Std. Pen. (N)	Rec. Loss ft.	Loss ft.	Description				Physical Characteristics				SHTL Class.		
						Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	
1069.0	0				TOPSOIL AND SOD										
1068.5	2														
1064.0	4	2/5/10			BROWN SILT AND CLAY	1	6	3	6	29	56	31	14	17	A-6a
	6	4/9/16			BROWN SILT AND CLAY	2	8	2	6	31	53	31	14	16	A-6a
1061.5	8														
	10	3/9/15			BROWN-GRAY SILT AND CLAY	3	9	4	7	28	52	31	14	17	A-6a
1059.0	12	2/6/11			BROWN SILT AND CLAY	4	0	2	7	36	55	31	14	17	A-6a
1056.5	14	4/7/11			GRAY SILT AND CLAY	5	0	2	6	32	60	29	12	18	A-6a
1054.0	16	3/5/6			GRAY SILT AND CLAY	6	8	2	6	28	56	30	13	18	A-6a
1051.5	18														
	20	2/4/6			GRAY SILT AND CLAY	7	10	2	6	26	56	30	13	19	A-6a
1049.0	22	3/5/6			GRAY SANDY CLAY	8	14	4	10	24	48	30	13	16	A-6a
	24														
1048.0	26	3/6/8			GRAY GRAVELLY CLAY	9	13	3	7	28	49	39	17	15	A-6b
	28														
1039.0	30														
	32	7/11/11			GRAY SANDY GRAVEL	10	66	21	5	4	4	NP	NP	12	A-1-a
	34														
1034.0	36	7/14/18			GRAY SILTY SANDY GRAVEL	11	50	31	8	5	6	NP	NP	10	A-1-a
	38														
1029.0	40														
1027.5	42	19/20/20			GRAY SANDY GRAVEL	12	49	36	6	5	4	NP	NP	13	A-1-b
Z BOTTOM OF BORING															

⌊ BOTTOM OF BORING

LOG OF BORING																	
Date Started		10-2-84		Sampler Type		SS		Dia.		1 3/8"		Water Elev.		1044.0'			
Date Completed		10-2-84		Casing Length				Dia.									
Boring No.		B-2		Station & Offset		50+89		22' LT.		(FORWARD ABUTMENT)		Surface Elev. 1074.0'					
Elev.	Depth	Std. Pen.	Rec. Loss	Description				Sample	Physical				Characteristics				
	(N)	ft.	ft.					No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1074.0	0																
1073.5	2			TOPSOIL AND SOD													
1071.5	4	4/8/11		BROWN-GRAY SILTY CLAY				1	0	0	1	23	76	44	20	20	A-7-6
1069.0	6	7/10/11		BROWN-GRAY SILTY CLAY				2	0	0	1	22	77	43	17	21	A-7-6
1066.5	8	3/5/11		BROWN-GRAY SILT AND CLAY				3	0	0	8	31	61	30	11	22	A-6a
1064.0	10	3/5/10		BROWN SILT AND CLAY				4	0	1	4	56	39	30	12	21	A-6a
1061.5	12	4/7/9		GRAY SILT				5	0	1	12	70	17	NP	MP	19	A-4b
1059.0	14	3/8/11		GRAY SANDY SILT				6	0	2	30	45	23	NP	NP	24	A-4a
1056.5	16	3/6/9		GRAY GRAVELLY SILT				7	14	2	6	26	52	27	10	18	A-4a
1054.0	18	3/6/8		GRAY SANDY SILT				8	0	2	9	39	50	27	10	18	A-4a
	20																
	22																
	24																
1049.0	26	2/5/7		GRAY SILT AND CLAY				9	0	2	9	37	52	28	11	19	A-6a
	28																
1044.0	30	3/5/7		GRAY GRAVELLY CLAY				10	12	3	8	29	48	29	14	18	A-6a
	32																
1039.0	34	3/6/12		GRAY GRAVELLY SANDY SILT				11	15	9	13	30	33	21	6	11	A-4a
	36																
	38																
1034.0	40	18/14/12		GRAY SANDY GRAVEL				12	70	25	2	1	2	NP	NP	13	A-1-a
1032.5																	
Z BOTTOM OF BORING																	

⌊ BOTTOM OF BORING

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.

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.

NOTE: Information shown by this subsurface investigation was obtained solely for the use in establishing design controls for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

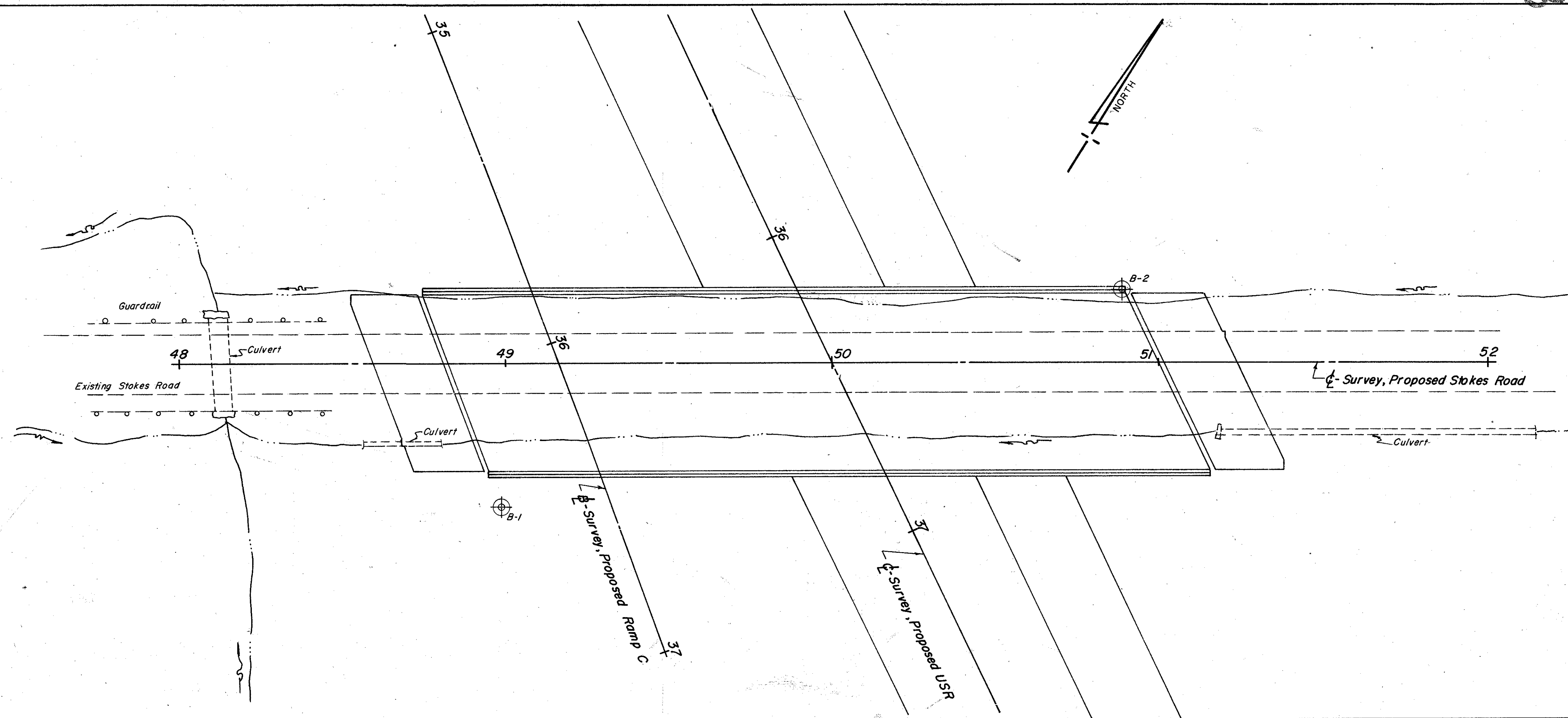
OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - TESTING LABORATORY
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. UNI-33-
UNDER STOKES ROAD
SEC. UNI-33-0.00

CHECKED BY R.D.R. REVIEWED BY R.D.R. DATE 10/19/84

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JAN 6 1989

UNI-33-0.28



1100
1090
1080
1070
1060
1050
1040
1030
1020
1010

B-1
2/5/10
4/9/16
3/9/15
2/6/11
4/7/11
3/5/6
2/4/6
3/5/6
3/6/8
7/11/11
7/14/18
19/20/20

Proposed grade, USR 33

B-2
4/8/11
7/10/11
3/5/11
3/5/10
4/7/19
3/6/11
3/6/9
3/6/8
2/5/7
3/5/7
3/6/12
18/14/12

1100
1090
1080
1070
1060
1050
1040
1030
1020
1010

48

49

50

51

52

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-			
UNDER STOKES ROAD			
SEC. UNI-33-0.00			
PLAN AND PROFILE			
DRAWN BY A.F.	CHECKED BY R.D.R.	REVIEWED BY R.D.R.	DATE 10/19/84